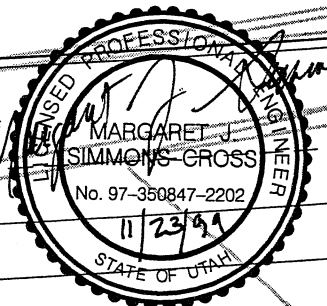
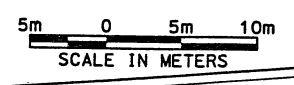
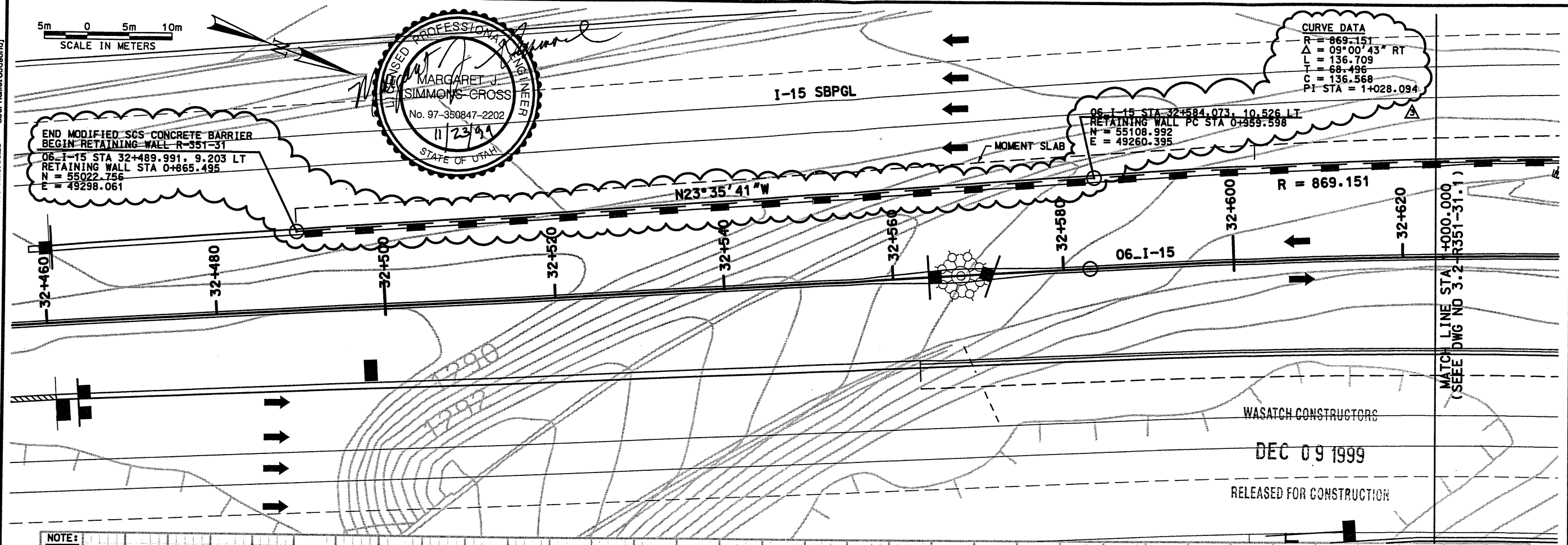


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 Date: 23-NOV-1999 Time: 08:25 User name: daddsonj



END MODIFIED SC CONCRETE BARRIER
 BEGIN RETAINING WALL R-351-31
 06-I-15 STA 32+489.991, 9.203 LT
 RETAINING WALL STA 0+865.495
 N = 55022.756
 E = 49298.061

CURVE DATA
 R = 869.151
 $\Delta = 09^{\circ}00'43''$ RT
 L = 136.709
 T = 68.496
 C = 136.568
 PI STA = 1+028.094



WASATCH CONSTRUCTORS
 DEC 09 1999
 RELEASED FOR CONSTRUCTION

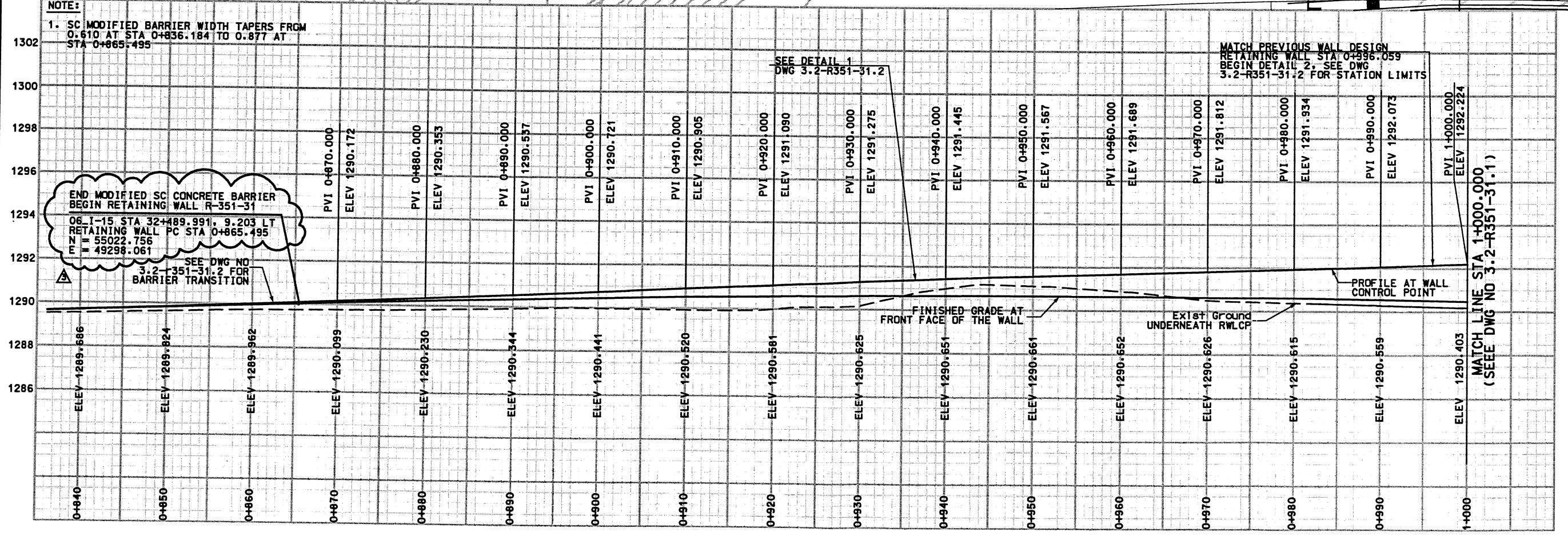
NOTE:

1. SC MODIFIED BARRIER WIDTH TAPERS FROM
 0.610 AT STA 0+836.184 TO 0.877 AT
 STA 0+865.495

END MODIFIED SC CONCRETE BARRIER
 BEGIN RETAINING WALL R-351-31
 06-I-15 STA 32+489.991, 9.203 LT
 RETAINING WALL PC STA 0+865.495
 N = 55022.756
 E = 49298.061

SEE DWG NO
 3.2-R351-31.2 FOR
 BARRIER TRANSITION

MATCH PREVIOUS WALL DESIGN
 RETAINING WALL STA 0+996.059
 BEGIN DETAIL 2, SEE DWG
 3.2-R351-31.2 FOR STATION LIMITS



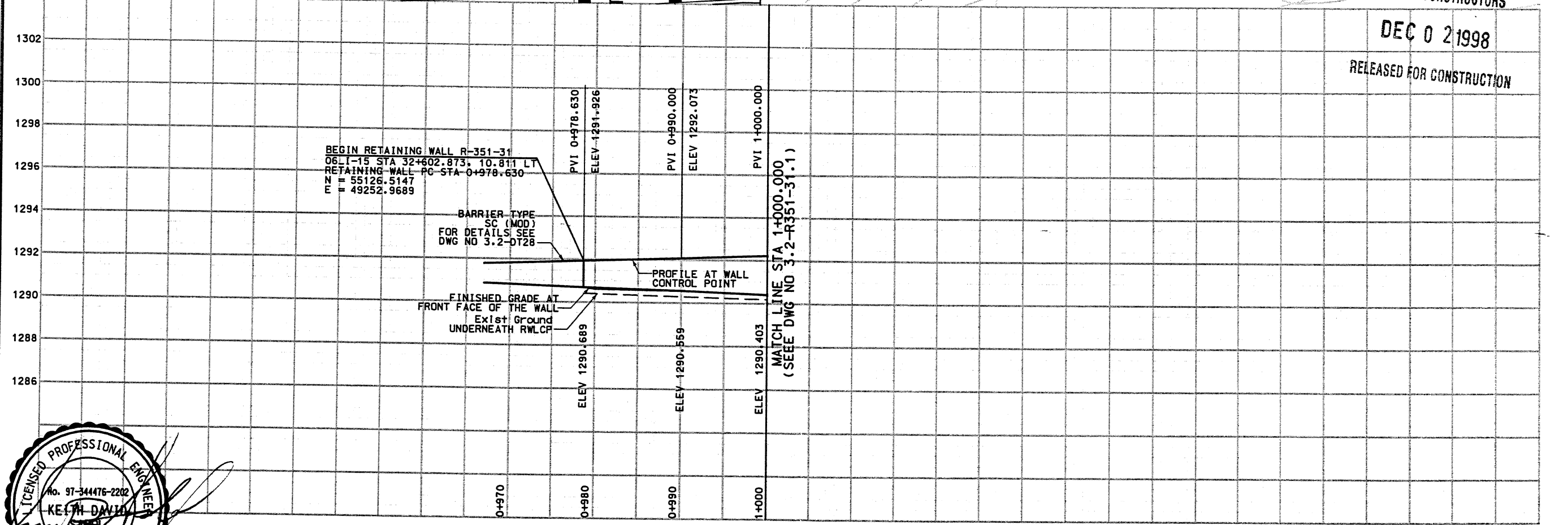
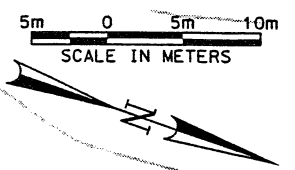
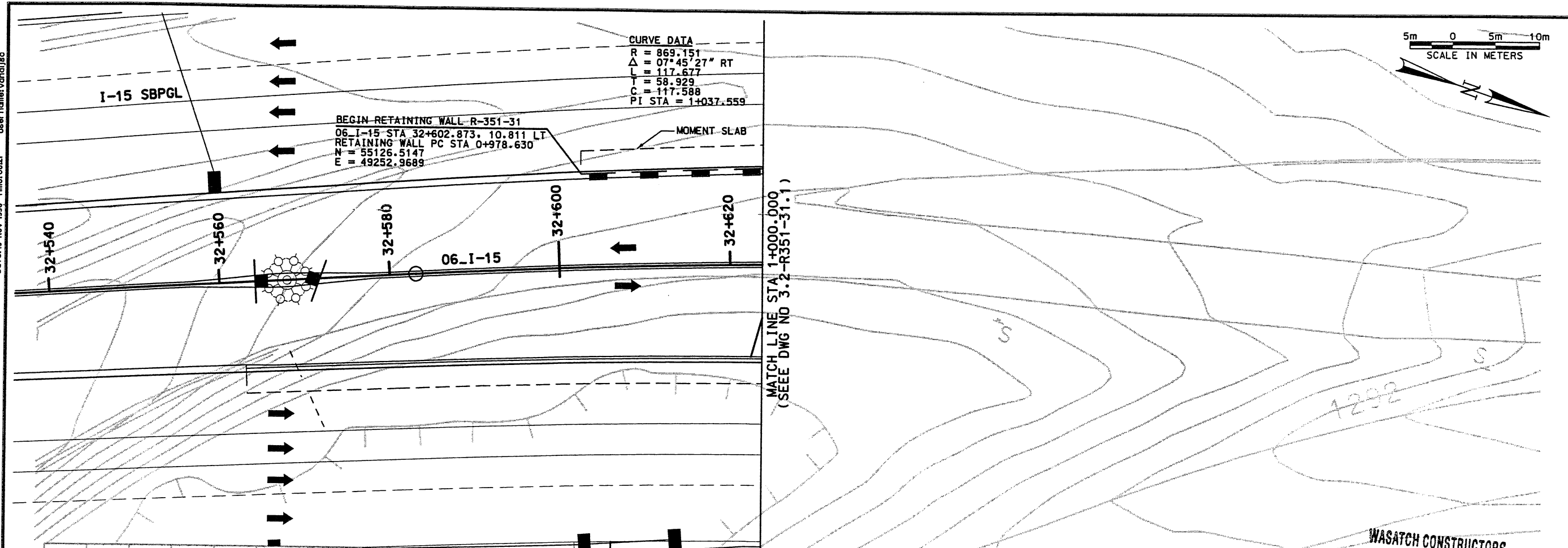
WALL R-351-31
 FRONT FACE OF WALL

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	NO.	DATE
△	11/18/98	△	11/18/98
△	09/14/99	△	11/22/99
△	11/22/99	△	11/22/99
3212415		3212415	
SVERDRUP/DE LEUW		SVERDRUP/DE LEUW	
UTAH DEPARTMENT OF TRANSPORTATION		UTAH DEPARTMENT OF TRANSPORTATION	
I-15 CORRIDOR RECONSTRUCTION		SITUATION & LAYOUT	
SECTION 3-2		SECTION 3-2	
PROJECT NUMBER #SP-15-7(135)296		PROJECT NUMBER #SP-15-7(135)296	
SALT LAKE COUNTY		SALT LAKE COUNTY	
DWG. NO. 3.2-R351-31.1A		DWG. NO. 3.2-R351-31.1A	
SHT. 1 OF 10		SHT. 1 OF 10	

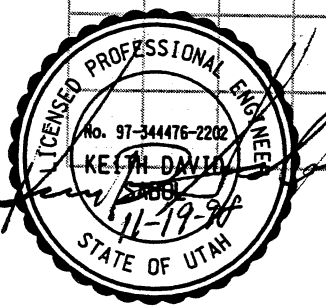
RFC After Final Approval

Date: 19-NOV-1998 Time: 08:21 User: name.vandjlec

File name: P:\15_cadd\15_cadd\06_97_sheets_files\walls\06_wall_31a.dgn



WASATCH CONSTRUCTORS
 DEC 0 2 1998
 RELEASED FOR CONSTRUCTION

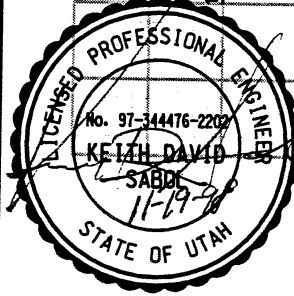
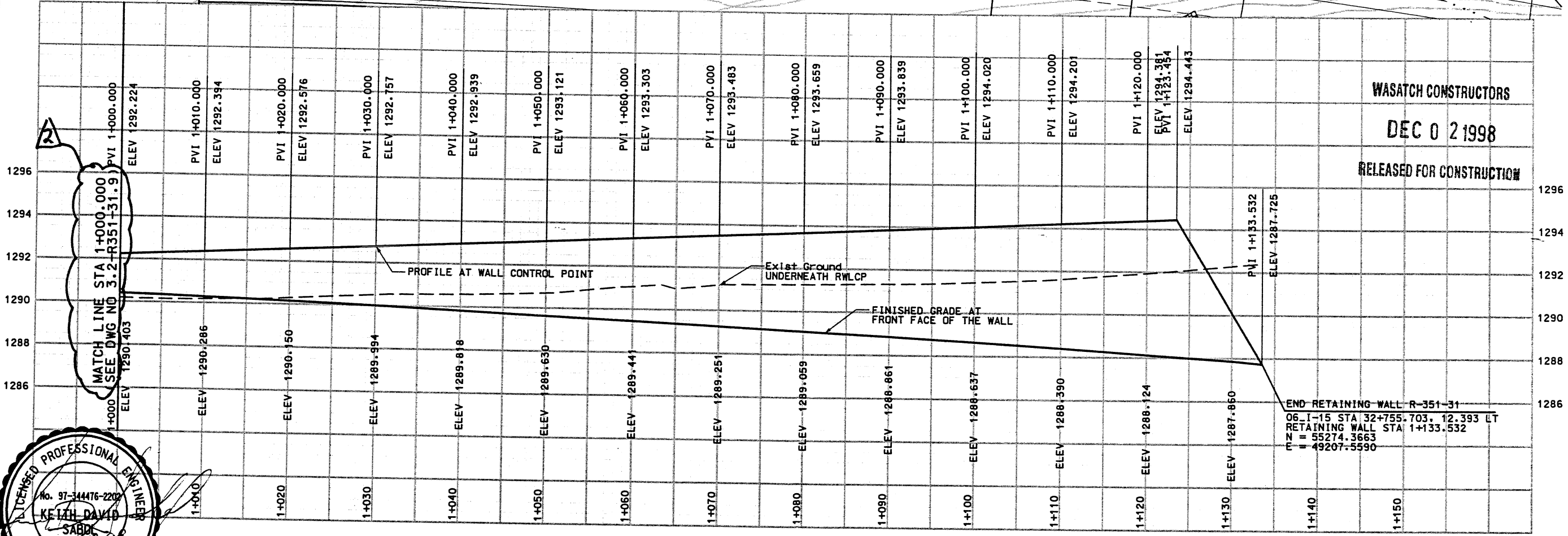
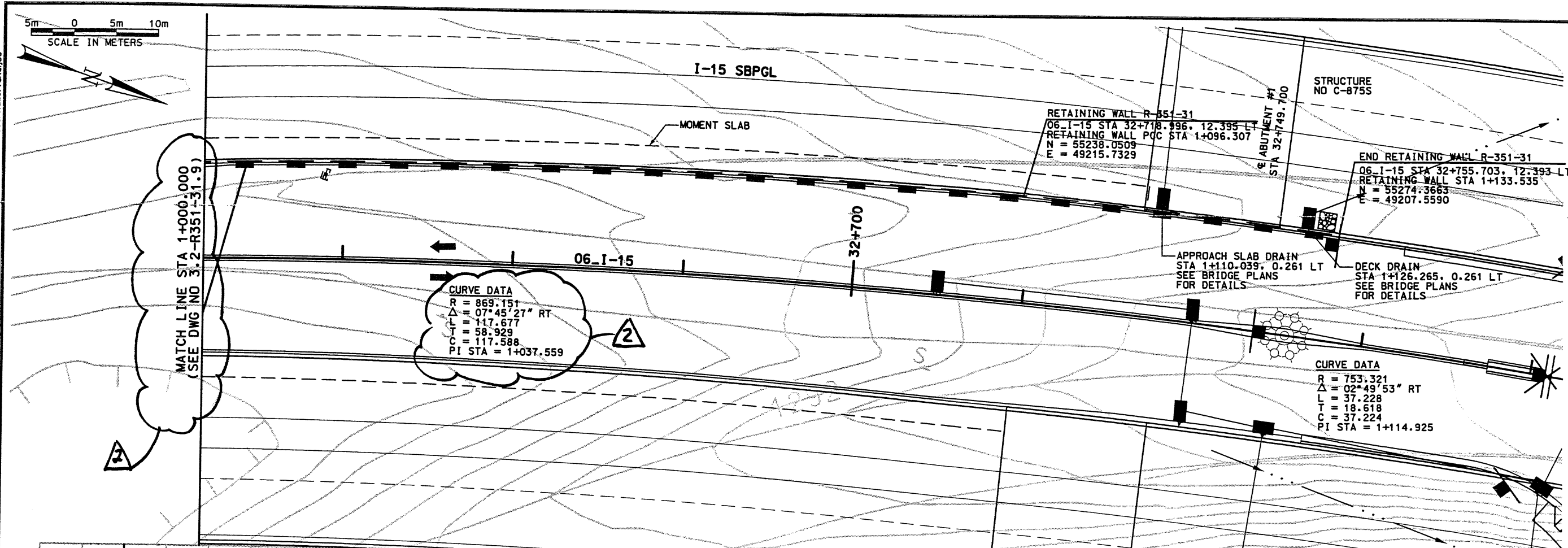
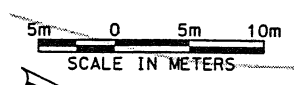


WALL R-351-31
 FRONT FACE OF WALL

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	NO.	DATE
A	11/18/98		
RELEASED FOR CONSTRUCTION			
UTAH DEPARTMENT OF TRANSPORTATION			
SVERDRUP/DE LEUW		DESIGN MC	CHECK CC
11/18/98		11/18/98	11/18/98
MARVIN COOK		DRANN SVD	CHECK CC
PROJECT DESIGN ENGINEER		11/18/98	11/18/98
DATE		QUANT.	
APPROVED 11/18/98		3212415	
KEITH SABOL			
SECTION MANAGER			
DATE			
11-19-98			
I-15 CORRIDOR RECONSTRUCTION		SALT LAKE COUNTY	
SITUATION & LAYOUT		DWG. NO.	
SECTION 3.2		3.2-R351-31.1A	
PROJECT NUMBER		#SP-15-7(135)296	
SHT. 1 OF 9			

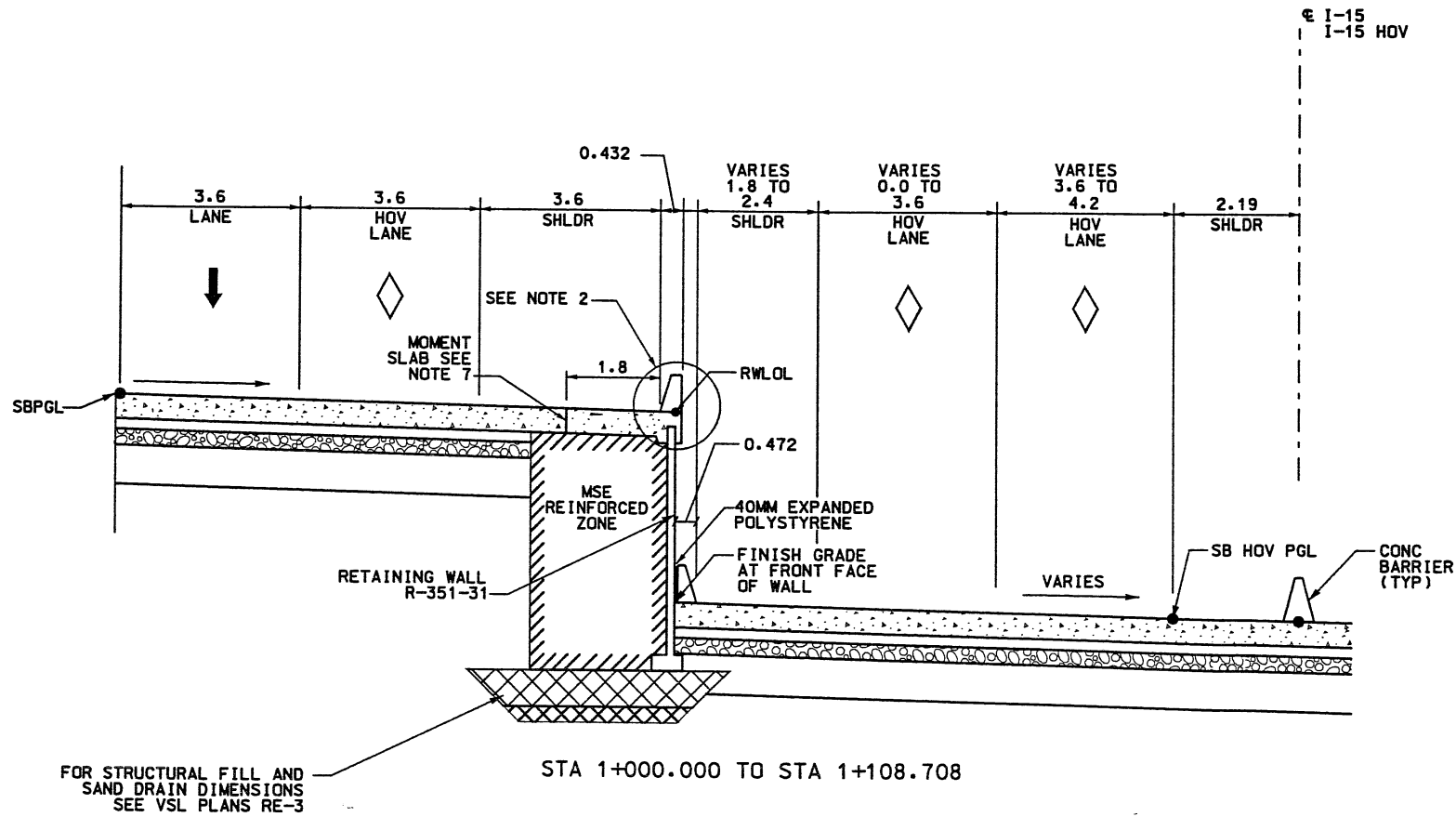
Filename: F:\15_cadd\15_cadd\06_97\sheet_files\wall\06_wall_31b.dgn

Date: 19-NOV-1998 Time: 08:49 Username: vandjasc



WALL R-351-31
FRONT FACE OF WALL

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	NO.	DESCRIPTION
△	10/14/98	△	RELEASE FOR CONSTRUCTION ONLY
△	11/18/98	△	EXTENDED WALL LIMIT
UTAH DEPARTMENT OF TRANSPORTATION		SVERDRUP/DE LEUW	
I-15 CORRIDOR RECONSTRUCTION		SITUATION & LAYOUT	
SECTION 3.2		PROJECT NUMBER *SP-15-7(135)296	
SALT LAKE COUNTY		DWG. NO. 3.2-R351-31.1	
APPROVAL RECORD	DATE	DESIGN MC	CHECK PLC
11/18/98	MARVIN COOK	11/18/98	11/18/98
PROJECT DESIGN ENGINEER	PROJECT DESIGN ENGINEER	DESIGN MC	CHECK PLC
APPROVED 11/18/98	DATE	11/18/98	11/18/98
KEITH SABOL	SECTION MANAGER	QUANT.	CHECK
DATE	SECTION MANAGER	QUANT.	CHECK
		3212415	



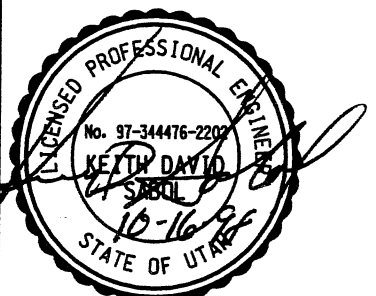
FOR STRUCTURAL FILL AND SAND DRAIN DIMENSIONS SEE VSL PLANS RE-3

STA 1+000.000 TO STA 1+108.708

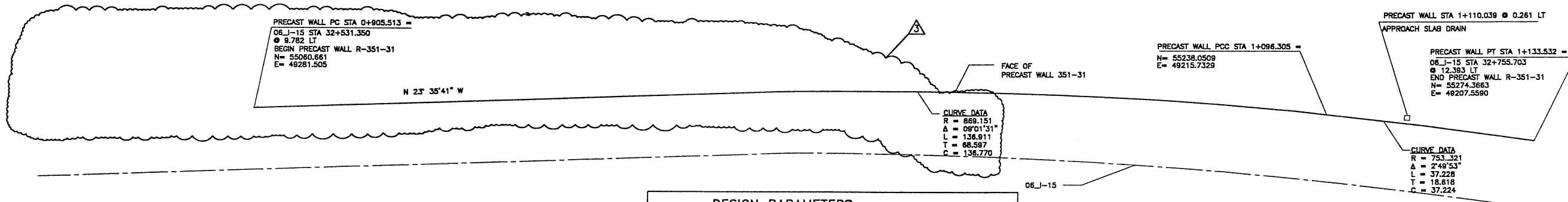
I-15 HOV
NTS
WALL R-351-31
1 STAGE MSE

WASATCH CONSTRUCTORS
OCT 22 1998
RELEASED FOR CONSTRUCTION

- NOTES:
- 1) OVEREXCAVATE EXISTING SOILS AS REQUIRED. REFILL EXCAVATION WITH STRUCTURAL FILL.
 - 2) FOR COPING DETAILS STA 1+000.000 TO STA 1+108.708, SEE CS-28-1.
 - 3) FOR COPING DETAILS STA 1+108.708 TO STA 1+123.113, SEE CS-54-4, SECTION A.
 - 4) FOR COPING DETAILS STA 1+123.113 TO STA 1+127.991 SEE CS-54-5 SECTION I.
 - 5) FOR COPING DETAILS STA 1+127.991 TO STA 1+133.532 SEE CS-54-4 SECTION F.
 - 6) FOR CONCRETE BARRIER AND TRANSITION SEE DWG NO 3.2-DT28
 - 7) FOR MOMENT SLAB DETAILS SEE CS-28-1.



APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	10/14/98 RELEASE FOR CONSTRUCTION MSE WALL ONLY	
A			
UTAH DEPARTMENT OF TRANSPORTATION		SYVERDRUP/DE LEUW	
DESIGN	DP	CHECK	PLC
10/14/98	10/14/98	10/14/98	10/14/98
DESIGN	DP	CHECK	PLC
10/14/98	10/14/98	10/14/98	10/14/98
DRAWN	SVD	CHECK	PLC
10/14/98	10/14/98	10/14/98	10/14/98
QUANT.			3212415
SECTION MANAGER	KEITH SABOL		
PROJECT NUMBER	#SP-15-7(135)296		
I-15 CORRIDOR RECONSTRUCTION		TYPICAL SECTION	
SECTION 3.2			
SALT LAKE COUNTY			
DWG. NO.		3.2-R351-31.2	
SHT.	3	OF	9



RETAINED EARTH INDEX	
RE-1	PLAN PRECAST WALL R-351-31, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTION
RE-3A	PRECAST WALL R-351-31
RE-3	PRECAST WALL R-351-31
RE-4	PRECAST WALL R-351-31
RE-5	SPECIAL PANELS
RE-6	SPECIAL PANELS

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
10-02-98	10-02-98	RELEASE FOR CONSTRUCTION
11-13-98	11-13-98	LENGTHENED WALL
02-04-00	02-04-00	LENGTHENED WALL

DESIGN PARAMETERS	
ANGLE OF INTERNAL FRICTION (SELECT)	= 34°
ANGLE OF INTERNAL FRICTION (BASE)	= 34°
ANGLE OF INTERNAL FRICTION (RANDOM)	= 34°
UNIT WEIGHT BACKFILL	= 135 PCF. (21.2 KN/M ³)
TRAFFIC SURCHARGE	= 250 PSF (12KPa)
SEISMIC ACCELERATION COEFF.	= 0.27g (TYP)

DESIGN CRITERIA	
SAFETY FACTOR (OVERTURNING)	= 2.0
SAFETY FACTOR (SLIDING)	= 1.5
SAFETY FACTOR (PULLOUT)	= 1.5
DESIGN LIFE	= 75 YEARS

DES.	DRN.	CHK.	RETAINED EARTH™	NO.	DATE	REVISION	BY	CHK
JL	RSW	JL						

VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Phone: (919) 911-8272
 Fax: (919) 911-4889

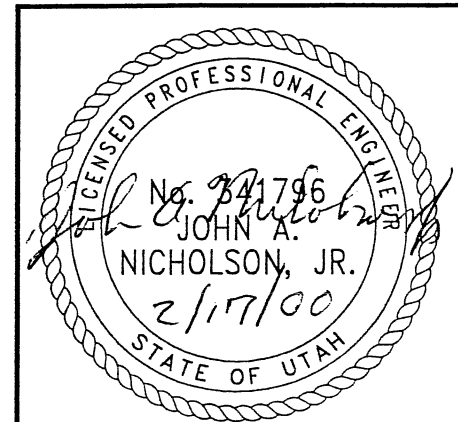
VSL
 ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
 MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

WASATCH CONSTRUCTORS
 MAR 23 2000
 RELEASED FOR CONSTRUCTION

PLAN VIEW MSE WALL "R-351-31"

SCALE: 1=400 (FULL SIZE)
 SCALE: 1=800 (HALF SIZE)

METRIC



CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO THE MANUFACTURER'S SPECIFICATION.

VSL Corporation (VSL) is not responsible for any errors or omissions in this drawing, specifications and calculations on this sheet. The use of such information in any construction project without the written consent of VSL Corporation is strictly prohibited, and VSL disclaims any liability therefor.

RETAINED EARTH™ WALLS PLAN VIEW MSE WALL "R-351-31"
UTAH I-15 INTERCHANGE SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.
DWG. NO. 3.2R-351-31.3
JOB NO. 239-0007
SHT. NO. RE-1

RFC After Final Approval

H:\RE_EARTH\PROJECT\239-00\1998\6S-WALLS\6S-31\RE-1
 FINA1 PLOT 10-02-98

RETAINED EARTH INDEX	
RE-1	PLAN PRECAST WALL R-351-31, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTION
RE-3	PRECAST WALL R-351-31
RE-4	PRECAST WALL R-351-31
RE-5	SPECIAL PANELS
RE-6	SPECIAL PANELS

APPROVED FOR CONSTRUCTION			NO	DATE	BY
NO.	DATE	DESCRIPTION			
△	10-02-98	RELEASE FOR CONSTRUCTION			
△	11-12-98	CHANGED BEGINNING OF WALL			

PRECAST WALL PC STA 1+978.630 =
 06J-15 STA 32+602.873
 @ 10.811 LT
 BEGIN PRECAST WALL R-351-31
 N= 55126.5147
 E= 49252.9689

CURVE DATA
 R = 869.151
 Δ = 8°20'55"
 L = 96.305
 T = 48.202
 C = 96.255

FACE OF
 PRECAST WALL 351-31

PRECAST WALL PCC STA 1+096.305 =
 N= 55238.0509
 E= 49215.7329

PRECAST WALL STA 1+110.039 @ 0.261 LT
 APPROACH SLAB DRAIN

PRECAST WALL PT STA 1+133.532 =
 06J-15 STA 32+755.707
 @ 12.016 LT
 END PRECAST WALL R-351-31
 N= 55274.3663
 E= 49207.5590

CURVE DATA
 R = 753.321
 Δ = 2°49'53"
 L = 37.228
 T = 18.618
 C = 37.224

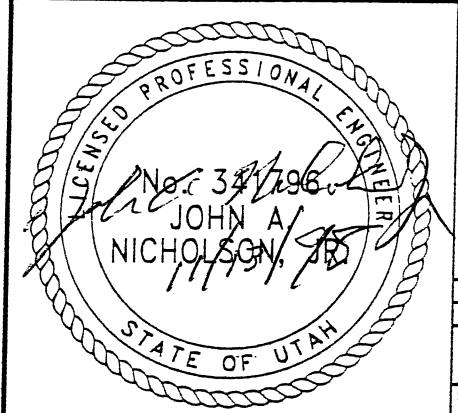
DESIGN PARAMETERS	
ANGLE OF INTERNAL FRICTION (SELECT)	= 34°
ANGLE OF INTERNAL FRICTION (BASE)	= 34°
ANGLE OF INTERNAL FRICTION (RANDOM)	= 34°
UNIT WEIGHT BACKFILL	= 135 PCF. (21.2 KN/M ³)
TRAFFIC SURCHARGE	= 250 PSF (12KPa)
SEISMIC ACCELERATION COFF.	= 0.27g (TYP)
DESIGN CRITERIA	
SAFETY FACTOR (OVERTURNING)	= 2.0
SAFETY FACTOR (SLIDING)	= 1.5
SAFETY FACTOR (PULLOUT)	= 1.5
DESIGN LIFE	= 75 YEARS

PLAN VIEW MSE WALL "R-351-31"

SCALE: 1=250 (FULL SIZE)
 SCALE: 1=500 (HALF SIZE)

METRIC

CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO THE MANUFACTURER'S SPECIFICATION.



WASATCH CONSTRUCTORS
 DEC 0 2 1998
 RELEASED FOR CONSTRUCTION

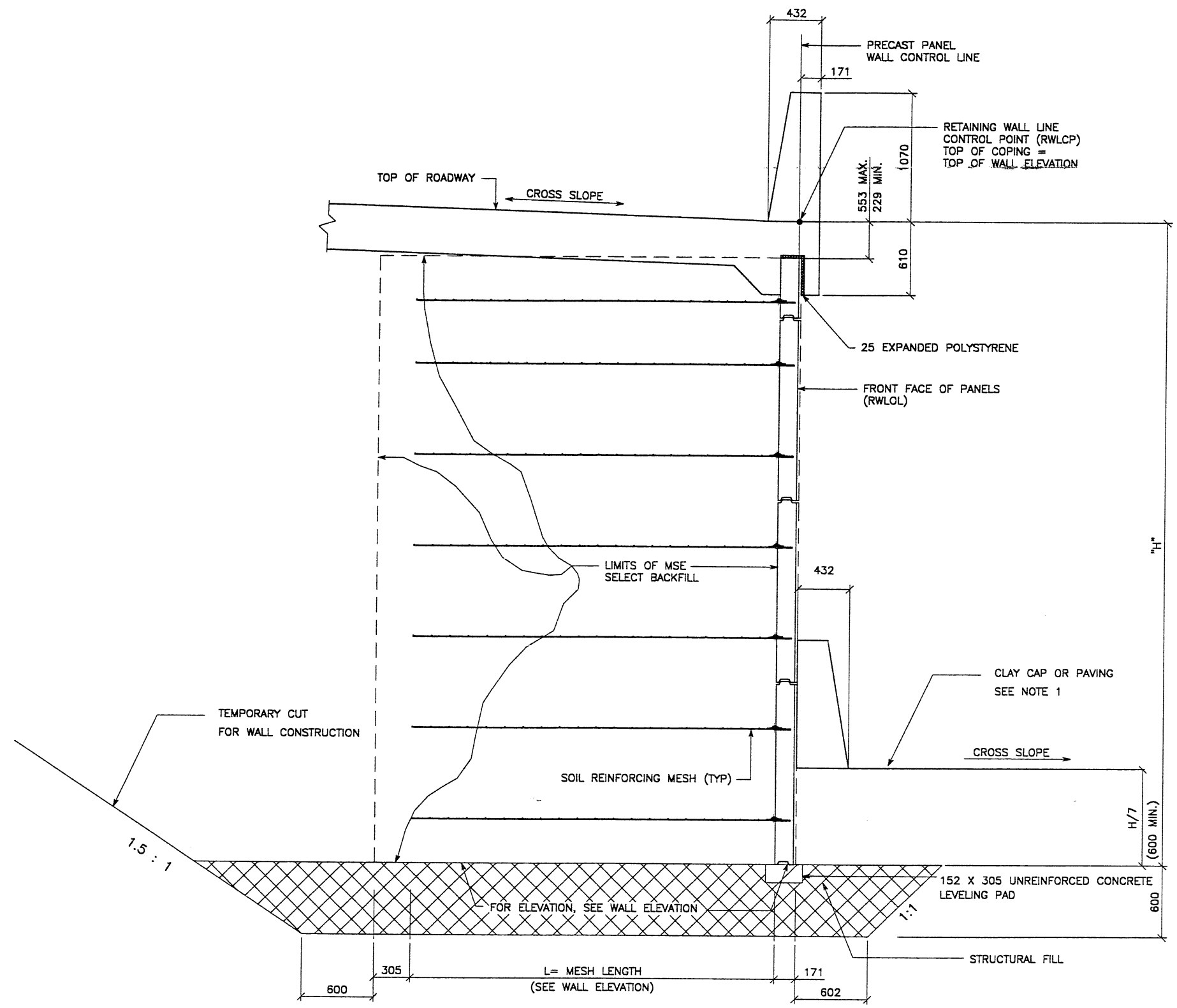
RETAINED EARTH™ WALLS
 PLAN VIEW MSE WALL "R-351-31"
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3,2R-351-31.3
JOB NO.	239-0007
SHEET NO.	RE-1

VSL CORPORATION
 2840 Plaza Plus, e. Suite 200
 Raleigh, NC 27612
 Telephone (919) 781 8272
 Fax (919) 781 6989

ALABAMA, CA / DALLAS, TX / FARGO, ND (CORPORATE OFFICE)
 MINN. / SAN JOSE, CA / SPRINGFIELD, VA

VSL Corporation (VSL) is a leading international contractor and manufacturer of retaining walls and structures. The use of VSL Retained Earth™ walls is a proven and reliable method for retaining earth. VSL Retained Earth™ walls are designed and constructed in accordance with the VSL Retained Earth™ design and construction manual. VSL Retained Earth™ walls are available in a variety of heights and lengths. VSL Retained Earth™ walls are a cost-effective and reliable solution for retaining earth.



TYPICAL CROSS SECTION - STA 1+000.000 TO STA 1+108.700
 (SEE DWG. NO. 3.2R-351-31.02 FOR ADDITIONAL INFORMATION)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO THE MANUFACTURER'S SPECIFICATION.

METRIC

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-02-98	RELEASE FOR CONSTRUCTION

DES.	DRN.	CHK.	RETAINED EARTH™	NO.	DATE	BY	CHK.
JL	RSW	JL	<input checked="" type="checkbox"/>				

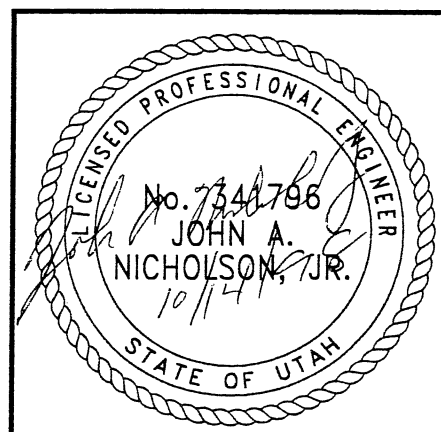
VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-6272
 Fax: (919) 81-4969

VSL

ALUMINA, CA / DANIAS, TX / RALEIGH, NC (CORPORATE OFFICE)
 MANA, FL / SAN JOSE, CA / SPRINGFIELD, VA

WASATCH CONSTRUCTORS
 OCT 22 1998
 RELEASED FOR CONSTRUCTION

- IF THE HOV LANE PAVEMENT EXTENDS TO THE WALLS AND ADEQUATE DRAINAGE IS PROVIDED, NO CLAY CAP IS REQUIRED. OTHERWISE, CONSTRUCT CLAY CAP WITH 300 MM OF LOW PLASTICITY CLAY (AASHTO CLASSIFICATION A-6) TO PAVEMENT EDGE. GRADE TO DRAIN.



RETAINED EARTH™ WALLS
 WIRE FACED WALL "R-351-31"
 TYPICAL CROSS SECTION

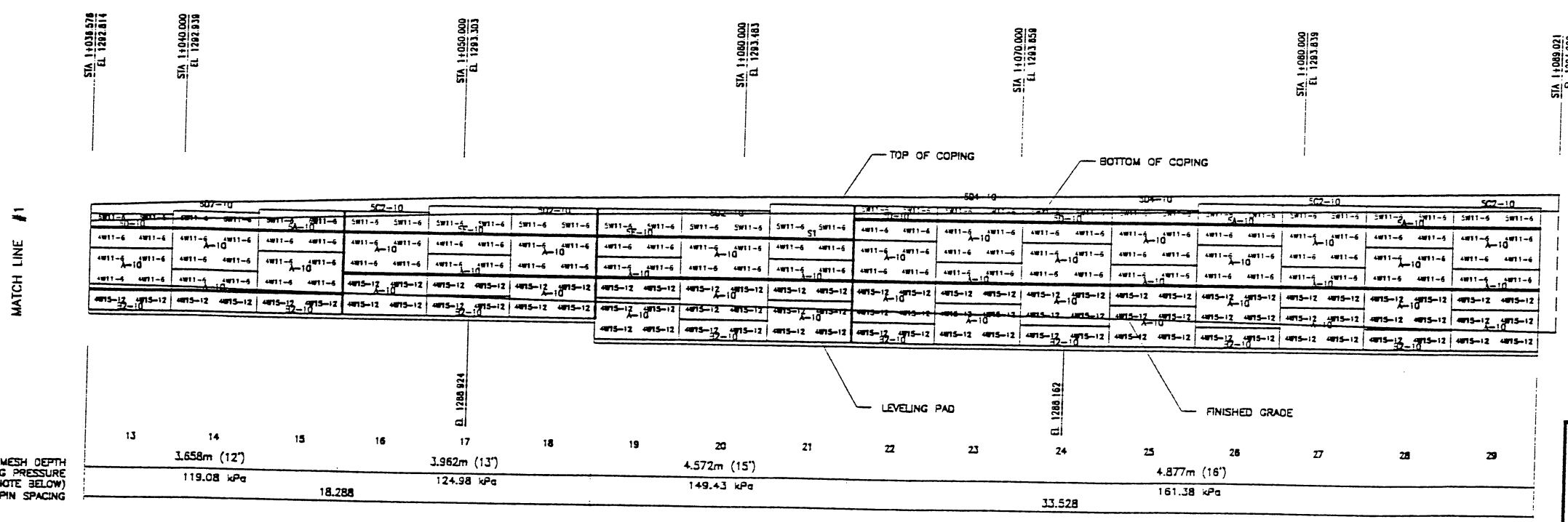
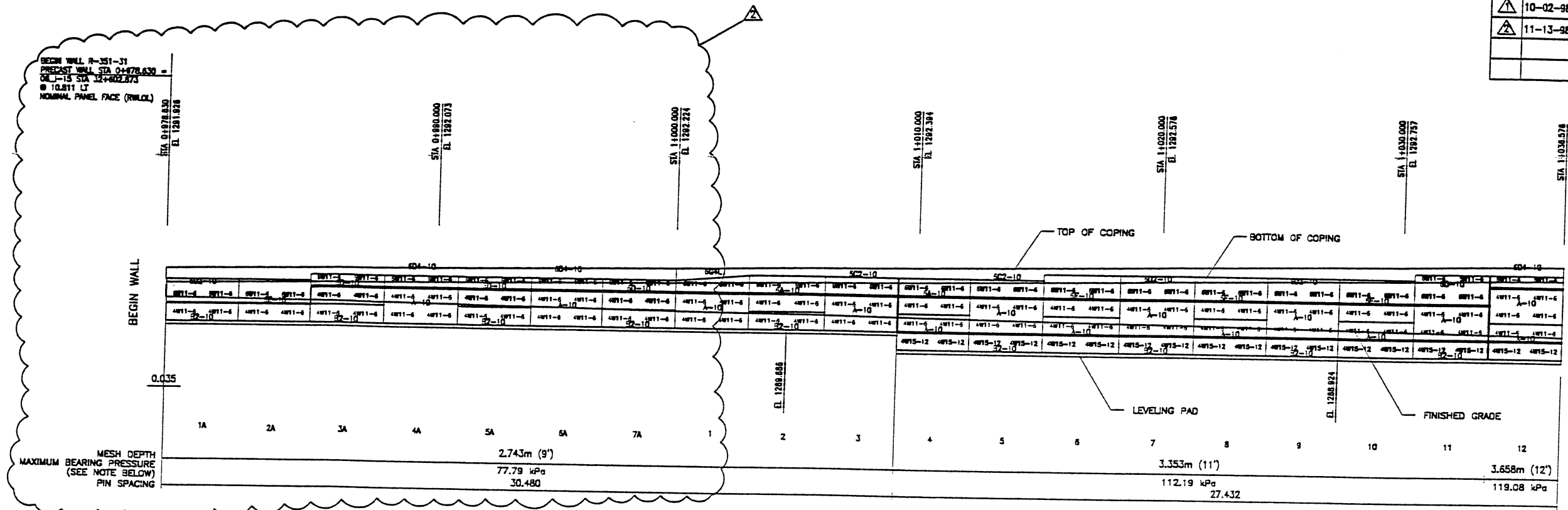
UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-31.4
JOB NO.	239-0007
SHT. NO.	RE-2

FINAL PLOT 11-13-98 H:\RE_EARTH\PROJECT\239-0007\1998\6S-WALLS\6S-31\6S-31.DWG

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-02-98	RELEASE FOR CONSTRUCTION
△	11-13-98	LENGTHENED WALL

NO.	DATE	REVISION	BY	CHK



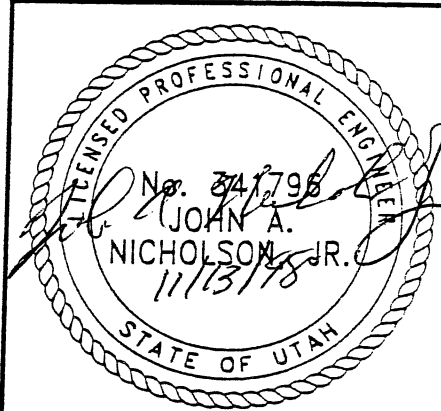
ELEVATION PRECAST WALL R-351-31
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 663.65 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

METRIC

NOTE:
 THE INDICATED MAXIMUM BEARING PRESSURE AT FINAL STAGE FOR STATIC LOAD CONDITION.

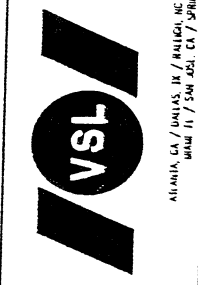
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO THE MANUFACTURER'S SPECIFICATION.

WASATCH CONSTRUCTORS
 DEC 0 2 1998
 RELEASED FOR CONSTRUCTION



RETAINED EARTH™ WALLS
 PRECAST WALL "R-351-31"
 UTAH I-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

NO.	329-35-31.5
DATE	239-0007
REV.	RE-3



VSL CORPORATION
 2840 Plaza Park, Suite 200
 Raleigh, NC 27617
 Telephone (919) 781-4477
 Fax (919) 781-1649

VSL Corporation (PWS) has a full program of design, production, and construction services for precast concrete structures. We are a leader in the design and construction of precast concrete structures for a wide range of applications. Our services include design, production, and construction of precast concrete structures for a wide range of applications.

UTAH I-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

NO.	329-35-31.5
DATE	239-0007
REV.	RE-3

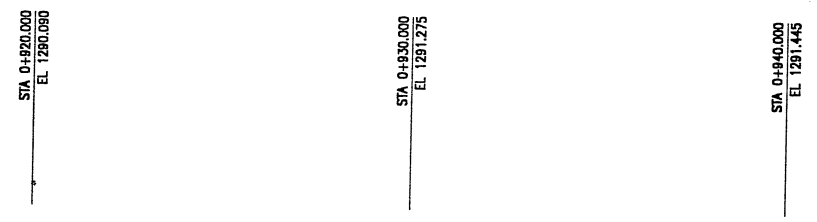
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	02-04-00	EXTENDED WALL

BEGIN WALL R-351-31
 PRECAST WALL STA 0+905.513
 06 J-15 STA 32+531.350
 @ 9.782 LT
 NOMINAL PANEL FACE (RWLOL)



C2-10		C3-10		D2-10		D3-10		D4-10	
4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6
148	158	168	178	188					
					3.66m (12')				
					77.79 kPa				
					15.240				

MESH DEPTH
 MAXIMUM BEARING PRESSURE
 (SEE NOTE BELOW)
 PIN SPACING



D2-10		D3-10		D4-10		D5-10		D6-10		D7-10		D8-10		D9-10		D10-10		D11-10		D12-10		D13-10		D14-10		D15-10		D16-10		D17-10		D18-10		D19-10		D20-10	
4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	4W11-6	
198	208	218	228	238	248	258	268	278	288	298	308	318	328	338	348	358	368	378																			
										3.66m (12')																											
										77.79 kPa																											
										57.912																											

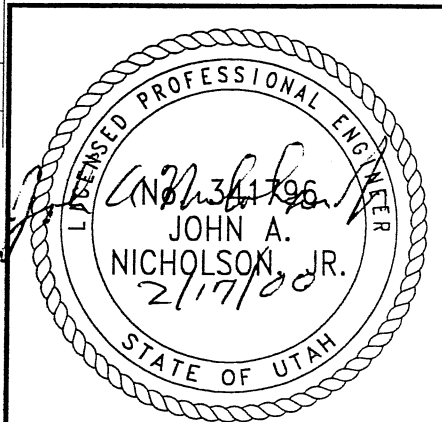
MESH DEPTH
 MAXIMUM BEARING PRESSURE
 (SEE NOTE BELOW)
 PIN SPACING

ELEVATION PRECAST WALL R-351-31
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF PANELS = 772.09 (SM)) SCALE 1:200 (HALF SIZE)

METRIC

CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO THE MANUFACTURER'S SPECIFICATION.

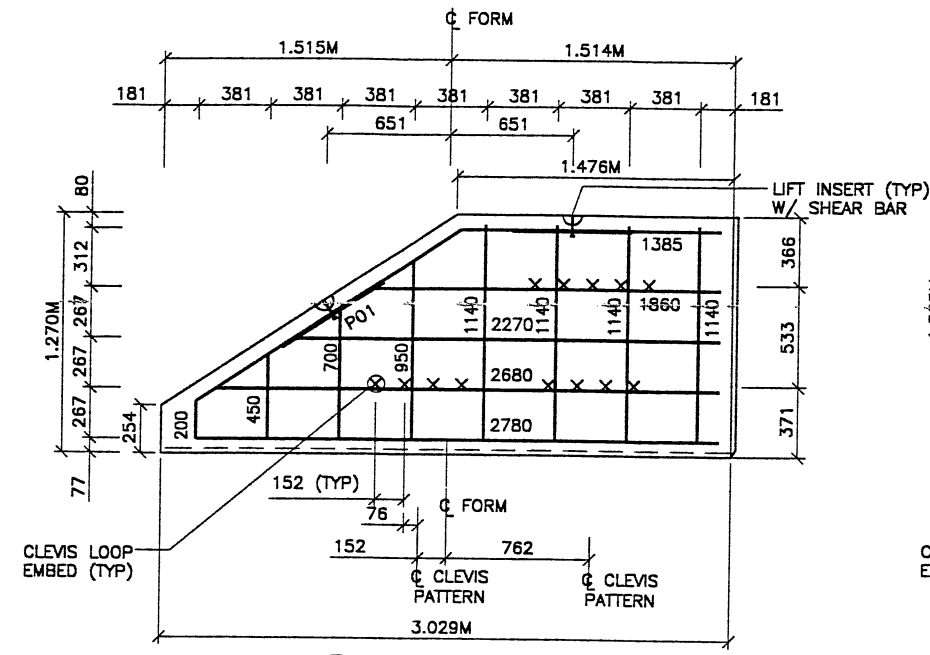
WASATCH CONSTRUCTORS
 MAR 23 2000
 RELEASED FOR CONSTRUCTION



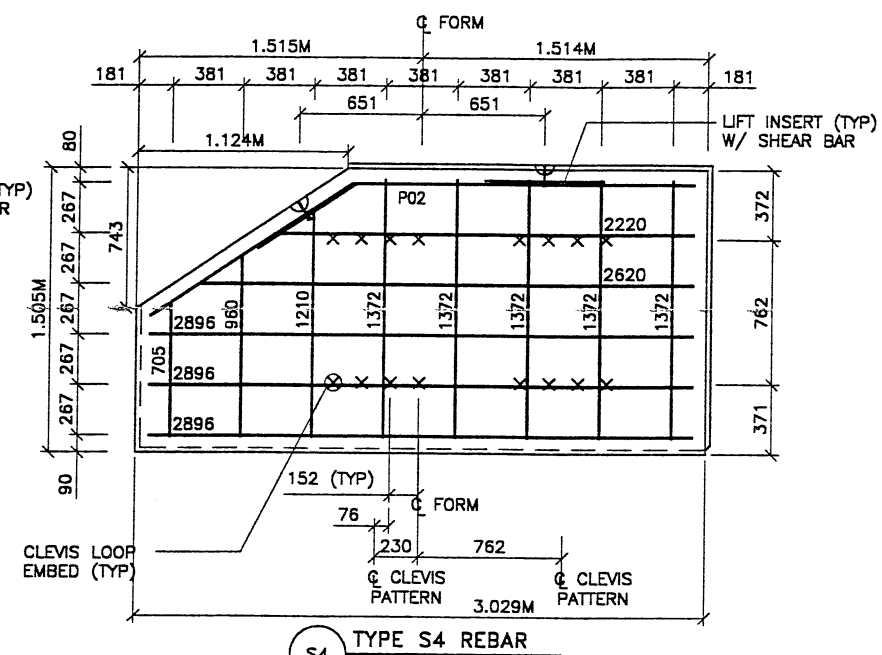
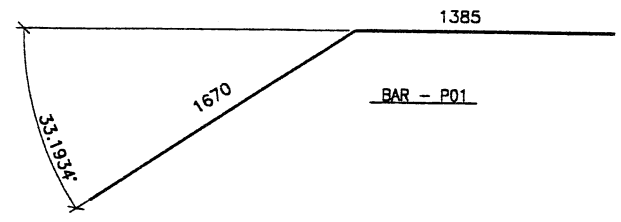
DES.	JL	10-02-98	JL	RETAINED EARTH™	NO.		BY	CHK
DRN.	RSW	10-02-98	RSW					
CHK.	JL	10-02-98	JL					
VSL CORPORATION 2840 Pratt Place, Suite 200 Raleigh, NC 27612 Telephone: (919) 781-6272 Fac: (919) 781-6069								
ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE) MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA								
RETAINED EARTH™ WALLS PRECAST WALL "R-351-31" UTAH I-15 RECONSTRUCTION SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.								
DWG. NO. 3.2R-351-31.5A								
JOB NO: 239-0007								
SH. NO. RE-3A								

RFC After Final Approval

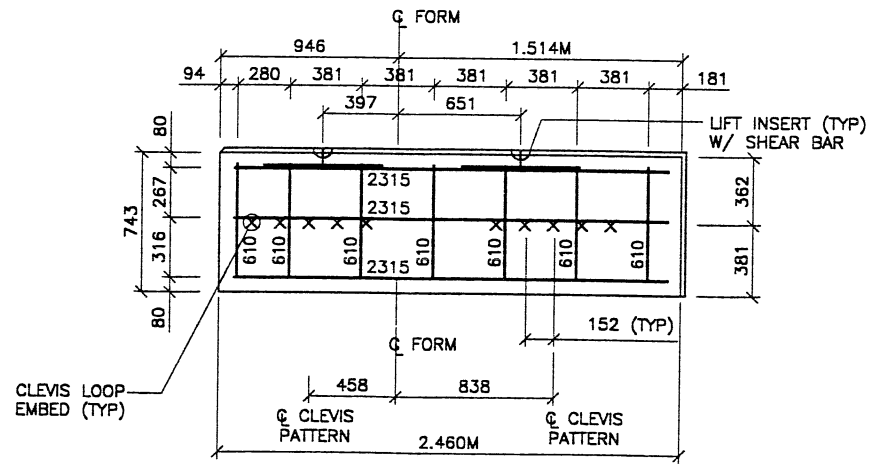
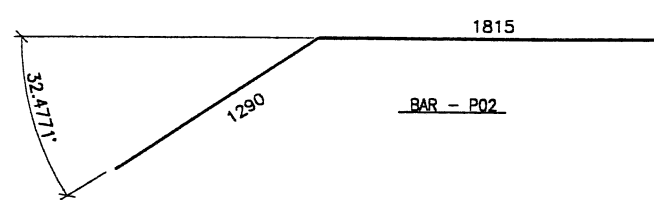
FINAL 10-02-98 H:\RE_EARTH\PROJEC 7-0007\1998\6S-WALLS\6S-31\SPECIALS (X-UTAH.DWG) XF



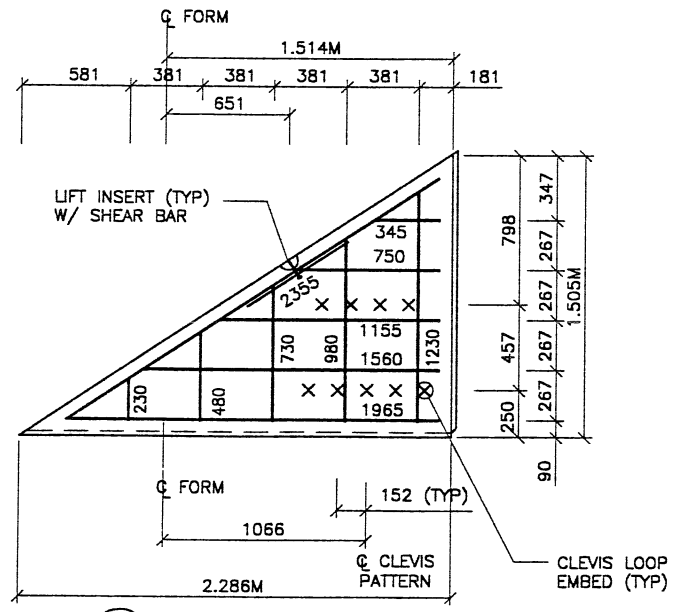
S2 TYPE S2 REBAR
(AREA = 3.08 SQ.M)



S4 TYPE S4 REBAR
(AREA = 4.21 SQ.M)



TYPE 5YB2-10R2.47 REBAR
(AREA = 1.88 SQ.M)



S3 TYPE S3 REBAR
(AREA = 1.74 SQ.M)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-02-98	RELEASE FOR CONSTRUCTION

- PANEL REINFORCEMENT NOTES:**
- PANELS ARE SHOWN BACK FACE.
 - HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
 - ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
 - ALL REINFORCING BARS ARE #13 METRIC. LABELS ON EACH BAR INDICATE LENGTH. EXAMPLE: 1345 IS A #13 BAR 1345 mm LONG.
 - PANEL REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT CONFORMING TO THE SPECIFICATIONS OF ASTM DESIGNATION A615, GRADE 60.
 - ALL REINFORCING STEEL TO BE GALVANIZED IN ACCORDANCE WITH ASTM 767 CLASS I.
 - CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 20,700 KPa.
 - EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 - ALL PANELS TO USE 9.5mm# CLEVIS LOOPS.
 - VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.
 - LIFT INSERTS ARE 6 3/4" LONG IN ALL PANELS LESS THAN 1.524M TALL. PANELS TALLER THAN 1.524M SHALL HAVE 11" LONG LIFT ANCHORS.

NO.	DATE	REVISION	CHK

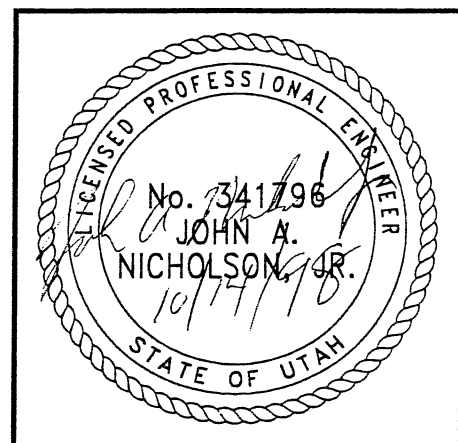
VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27617
Telephone: (919) 761-6272
Fax: (919) 761-4999

VSL
ATLANTA, GA / DALLAS, TX / HANCOCK, ME (CORPORATE OFFICE)
MINN. R. / SAN JOSE, CA / SPRINGFIELD, VA

WASATCH CONSTRUCTORS

OCT 22 1998

RELEASED FOR CONSTRUCTION



RETAINED EARTH™ WALLS
PRECAST WALL "R-351-31"
SPECIAL PANEL DETAILS

UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

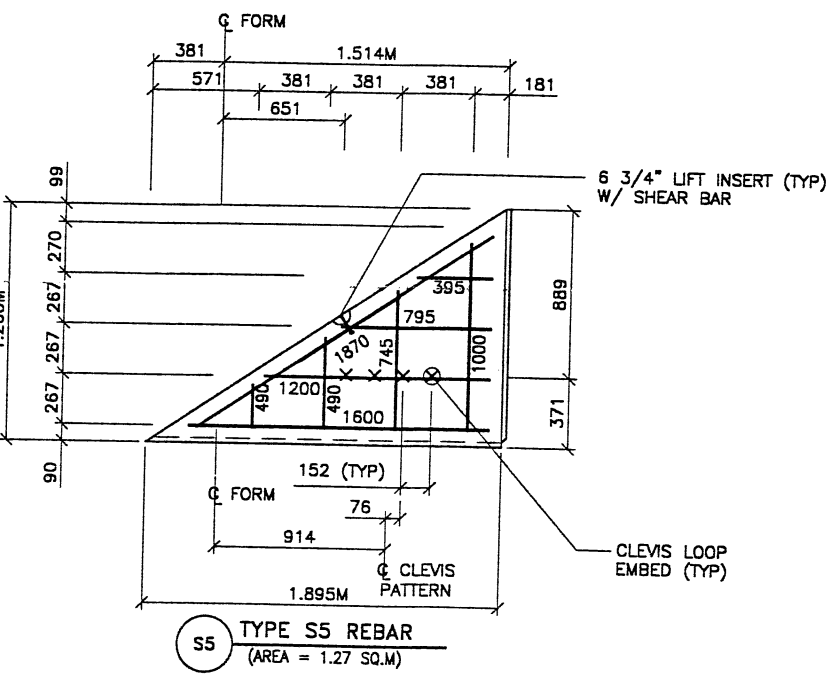
DWG. NO.
3.2-R-351-31.7

JOB NO.
239-0007

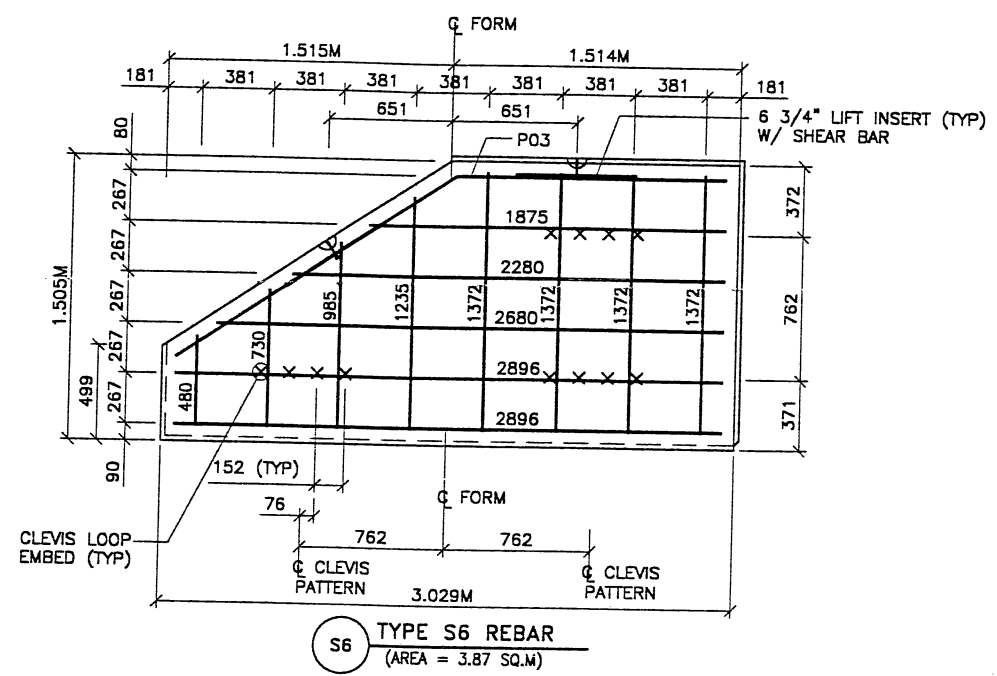
SHT. NO.
RE-5

METRIC

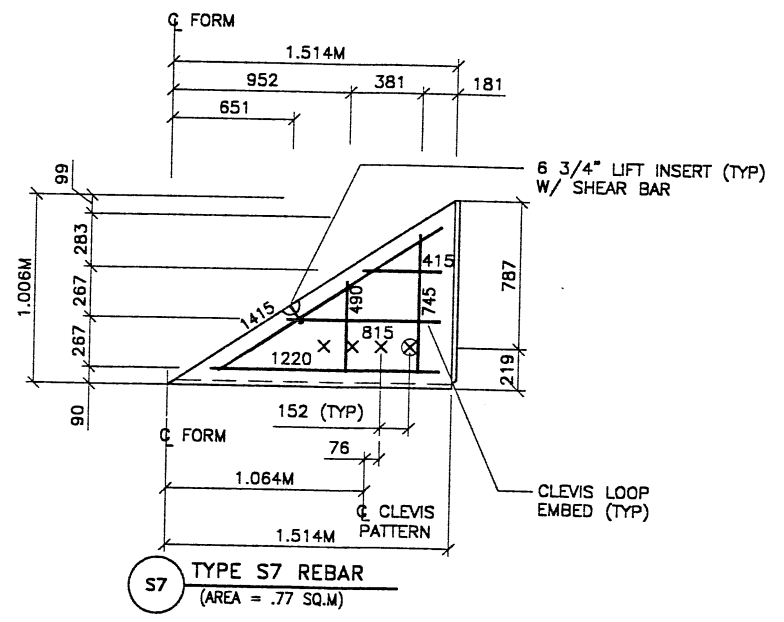
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO THE MANUFACTURER'S SPECIFICATION.



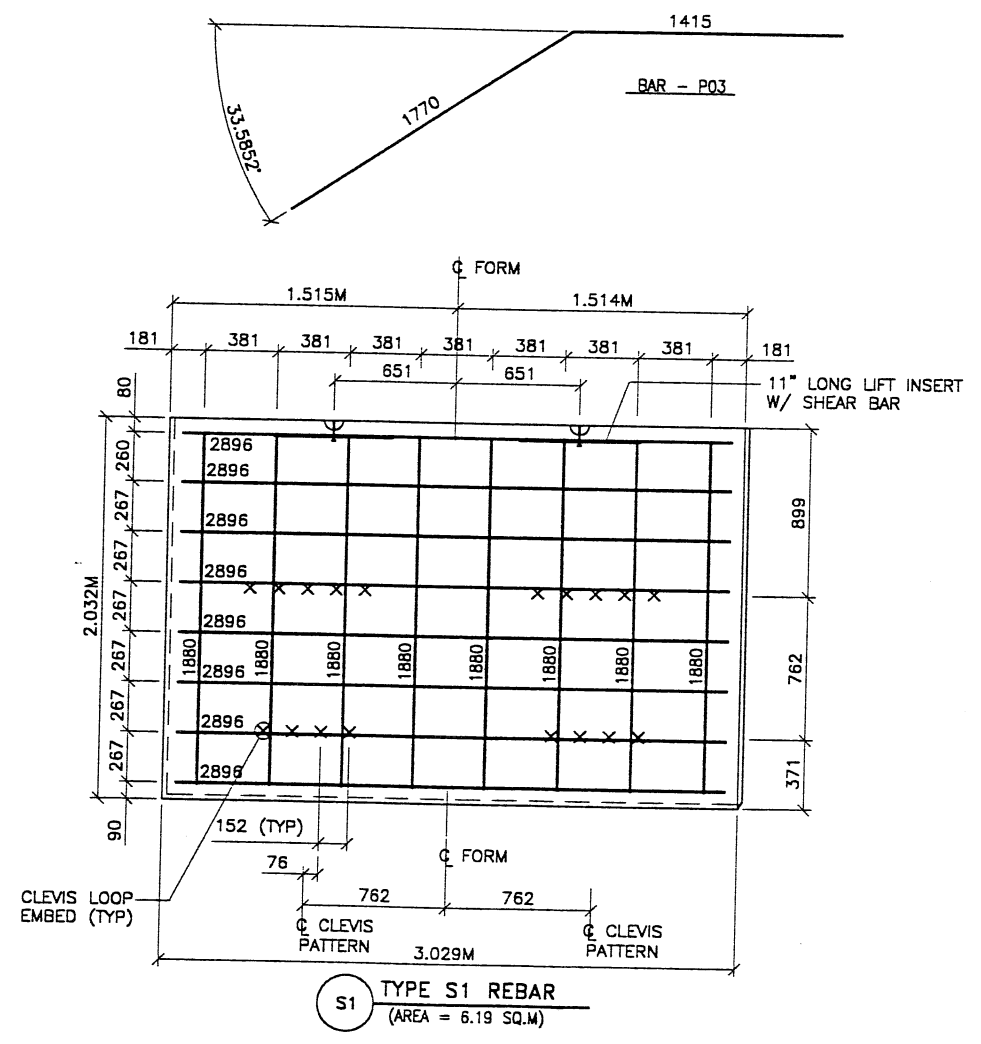
S5 TYPE S5 REBAR
(AREA = 1.27 SQ.M)



S6 TYPE S6 REBAR
(AREA = 3.87 SQ.M)



S7 TYPE S7 REBAR
(AREA = .77 SQ.M)



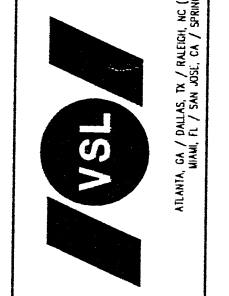
S1 TYPE S1 REBAR
(AREA = 6.19 SQ.M)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-02-98	RELEASE FOR CONSTRUCTION

- PANEL REINFORCEMENT NOTES:**
- PANELS ARE SHOWN BACK FACE.
 - HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
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 - EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 - ALL PANELS TO USE 9.5mm# CLEVIS LOOPS.
 - UNDER PATENT 4,725,170.
 - LIFT INSERTS ARE 6 3/4" LONG IN ALL PANELS LESS THAN 1.524M TALL. PANELS TALLER THAN 1.524M SHALL HAVE 11" LONG LIFT ANCHORS.

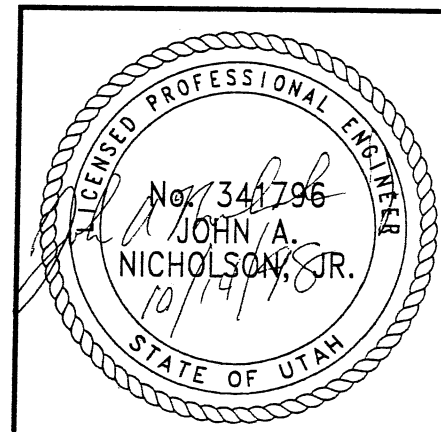
NO.	DATE	REVISION	BY	CHK

VSL CORPORATION
2840 Piedmont Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-6889



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WASATCH CONSTRUCTORS
OCT 22 1998
RELEASED FOR CONSTRUCTION

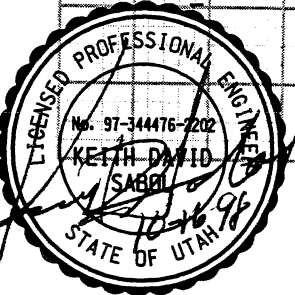
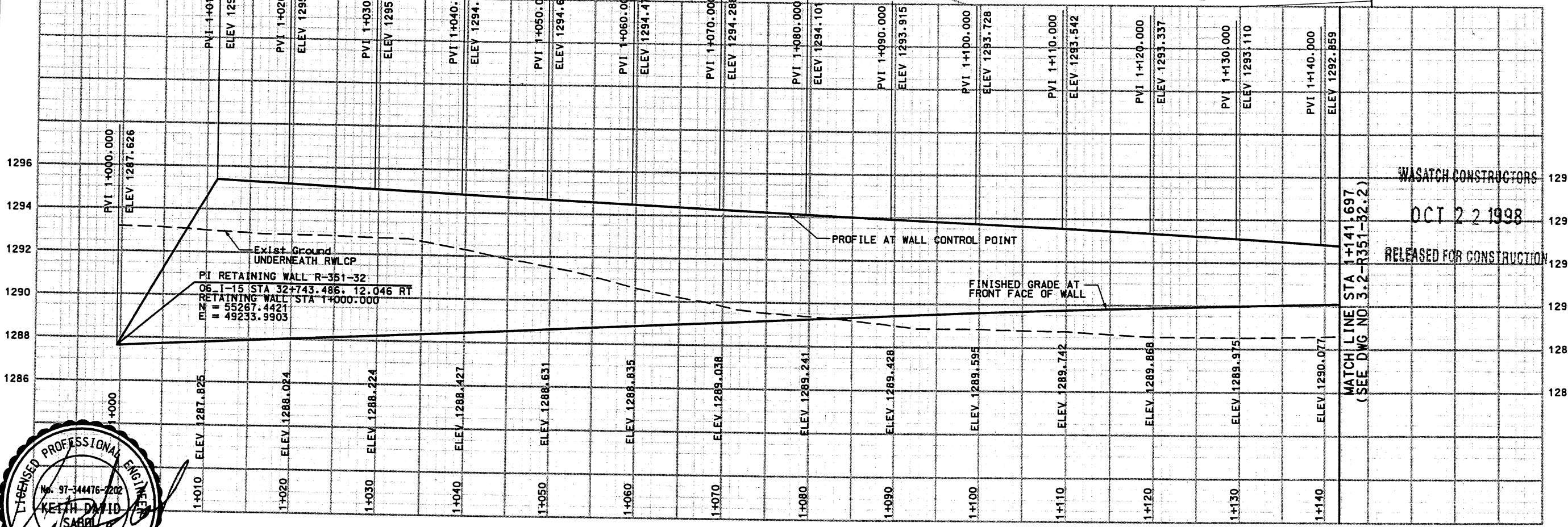
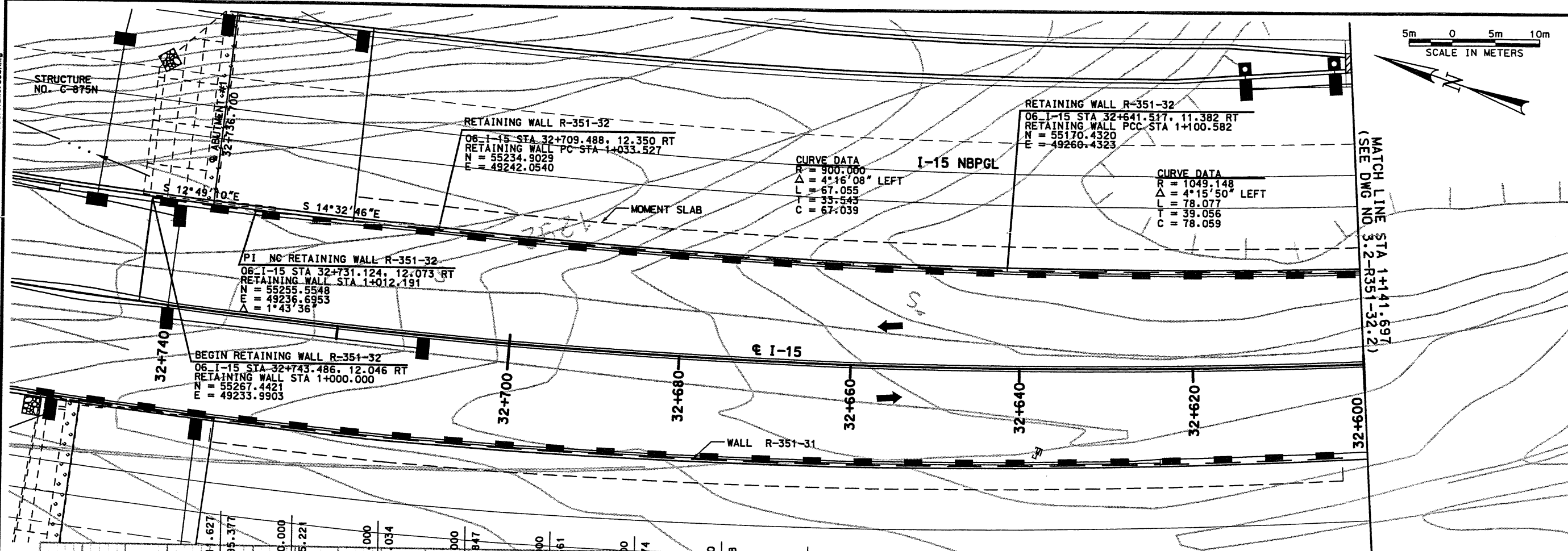
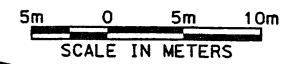


CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO THE MANUFACTURER'S SPECIFICATION.

METRIC

RETAINED EARTH™ WALLS PRECAST WALL "R-351-31" SPECIAL PANEL DETAILS	UTAH I-15 RECONSTRUCTION SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.
DWG. NO. 3.2-R-351-31.8	
JOB NO. 239-0007	
SHEET NO. RE-6	

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 Date: 15-OCT-1998 Time: 14:11
 User: name: cooking

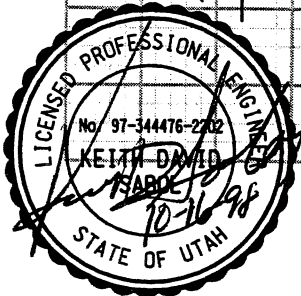
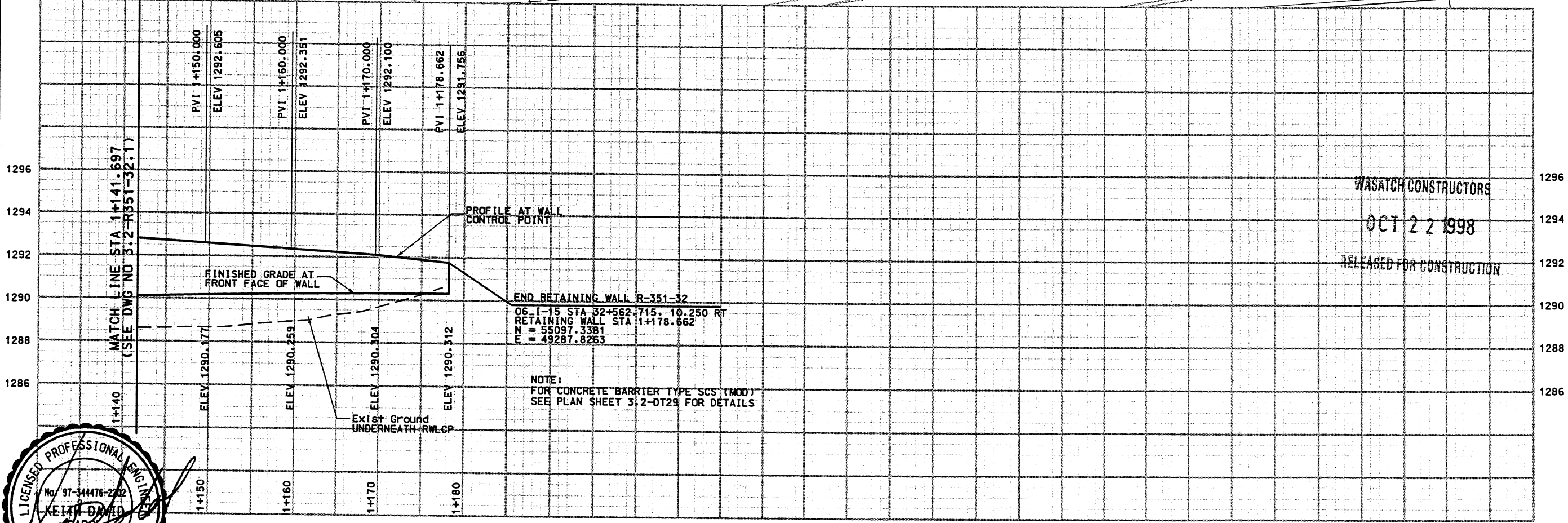
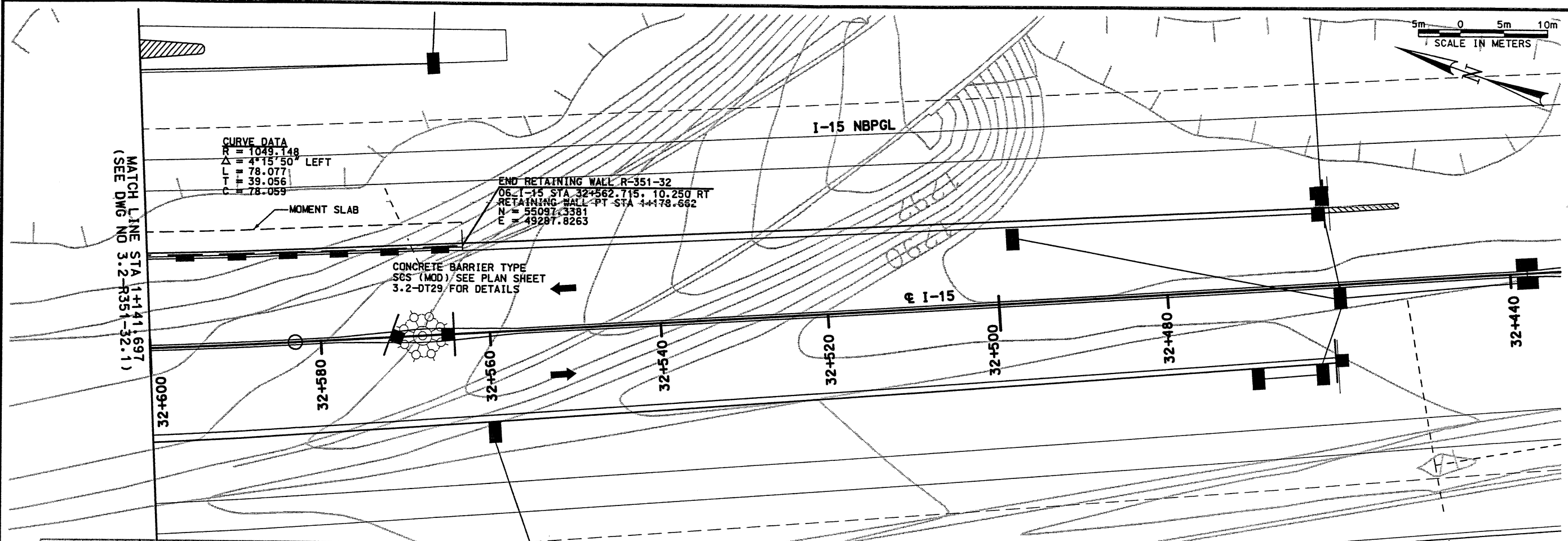


WALL R-351-32
FRONT FACE OF WALL

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	RELEASE FOR CONSTRUCTION USE WALL ONLY	
1	10/14/98		
UTAH DEPARTMENT OF TRANSPORTATION			
SITUATION & LAYOUT		SECTION 3-2	
PROJECT NUMBER #SP-15-7(135)296		DESIGNER: MARVIN COOK	
DATE: 10/14/98		CHECK: MC 10/14/98	
APPROVED: 10/14/98		CHECK: PJC 10/14/98	
DATE: 10/14/98		CHECK: QUANT.	
SECTION MANAGER: KEITH SABOL		QUANT: 3212414	
SALT LAKE COUNTY		DWG. NO. 3.2-R351-32.1	
SHT. 1 OF 12			

RELEASED FOR CONSTRUCTION
 OCT 22 1998
 WASATCH CONSTRUCTORS

MATCH LINE STA 1+141.697
 (SEE DWG NO. 3.2-R351-32.2)



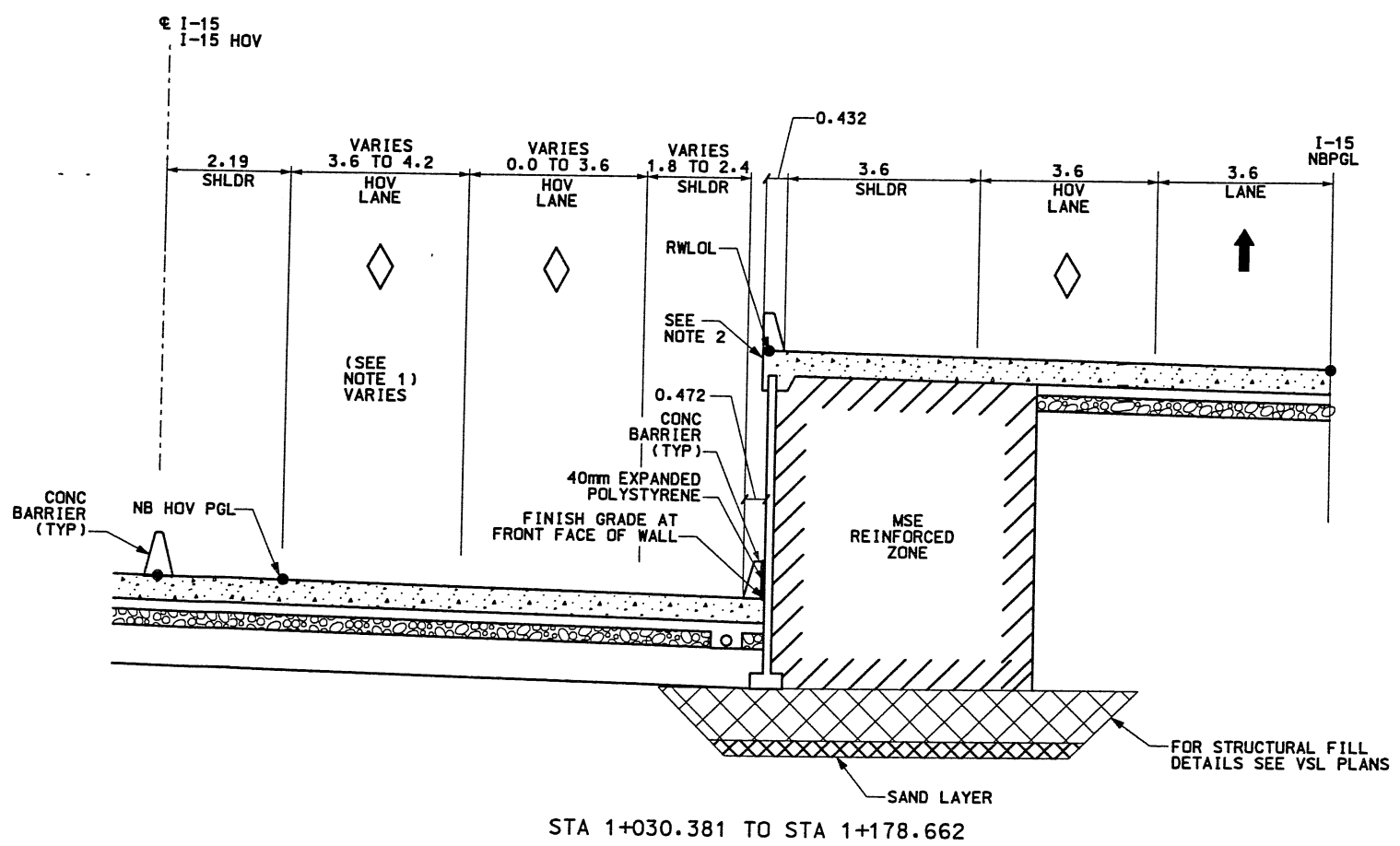
APPROVED FOR CONSTRUCTION	
NO.	DATE
1	10/14/98
DESCRIPTION	
RELEASE FOR CONSTRUCTION USE WALL ONLY	

UTAH DEPARTMENT OF TRANSPORTATION			
DESIGN	CHECK	DATE	MC
PLC	PLC	10/14/98	10/14/98
DRAWN	SVD	DATE	QUANT.
PLC	PLC	10/14/98	
APPROVED 10/14/98		DATE	SECTION MANAGER
MARVIN COOK		DATE	KEITH SABOL
PROJECT DESIGN ENGINEER		DATE	SECTION MANAGER
APPROVAL RECORD		DATE	SECTION MANAGER
10/14/98		DATE	SECTION MANAGER
10/14/98		DATE	SECTION MANAGER
10/14/98		DATE	SECTION MANAGER

I-15 CORRIDOR RECONSTRUCTION	SVERDRUP/DE LEUW
SITUATION & LAYOUT	
SECTION 3.2	
PROJECT NUMBER	*SP-15-7(135)296

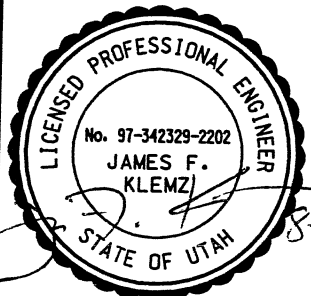
SALT LAKE COUNTY
DWG. NO.
3.2-R351-32.2
SHT. 2 OF 12

WALL R-351-32
FRONT FACE OF WALL



STA 1+030.381 TO STA 1+178.662

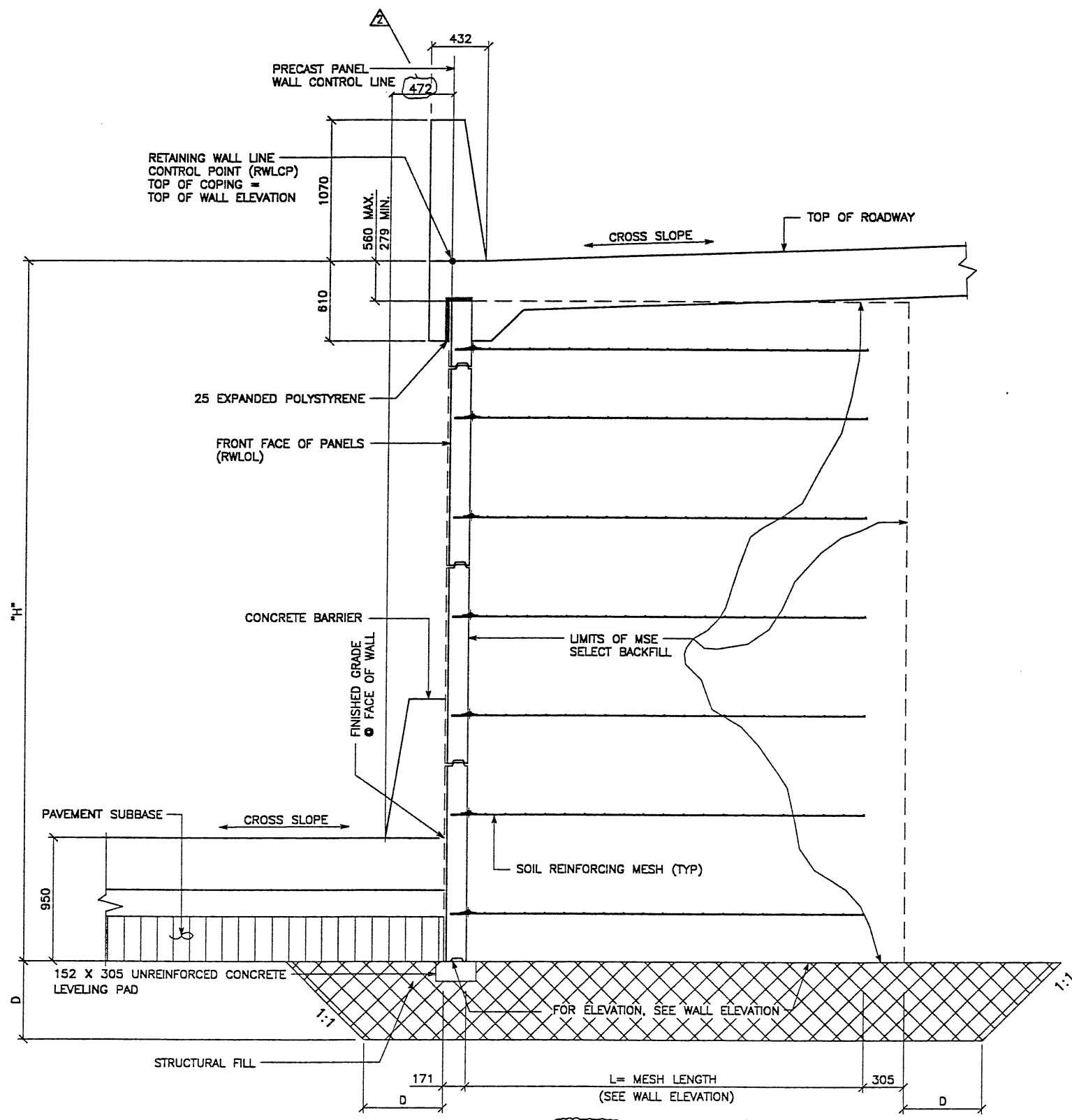
I-15 HOV
 NTS
 WALL R-351-32
 1 STAGE MSE



WASATCH CONSTRUCTORS
AUG 31 1999
 RELEASED FOR CONSTRUCTION

- NOTES:**
- 1) OVEREXCAVATE EXISTING SOILS AS REQUIRED. REFILL EXCAVATION WITH STRUCTURAL FILL.
 - 2) FOR COPING DETAILS STA 1+000.000 TO STA 1+006.200 SEE CS-54-5, SECTION J.
 - 3) FOR COPING DETAILS STA 1+006.200 TO STA 1+007.700 SEE CS-54-6, SECTION O
 - 4) FOR COPING DETAILS STA 1+007.700 TO STA 1+010.841 SEE CS 54-6, SECTION N.
 - 5) FOR COPING DETAILS STA 1+010.841 TO STA 1+011.627 SEE CS 54-6, SECTION M.
 - 6) FOR COPING DETAILS STA 1+011.627 TO STA 1+030.381 SEE CS 54-6, SECTION L.
 - 7) FOR MOMENT SLAB DETAILS SEE CS-28.
 - 8) FOR BARRIER AND TRANSITION DETAILS SEE DWG NO 3.2-DT29.
 - 9) FOR STRUCTURAL FILL DETAILS SEE VSL PLANS.

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	RELEASE FOR CONSTRUCTION USE WALL ONLY	
Δ	10/14/98	FINAL SUBMITTAL COMMENTS <i>JKL</i>	
Δ	08/13/99		
UTAH DEPARTMENT OF TRANSPORTATION		3212415	
SVERDRUP/DE LEUW		DESIGN	MC
APPROVAL	DATE	CHECK	DATE
RECOMM.	10/14/98	DP	10/14/98
		MC	10/14/98
		PLC	10/14/98
		PLC	10/14/98
		QUANT.	
MARVIN COOK		PROJECT DESIGN ENGINEER	
KEITH SABOL		SECTION MANAGER	
I-15 CORRIDOR RECONSTRUCTION		TYPICAL SECTION	
SECTION 3.2		PROJECT NUMBER *SP-15-7(135)296	
SALT LAKE COUNTY		DWG. NO.	
3.2-R351-32.3		SHT. 3 OF 11	

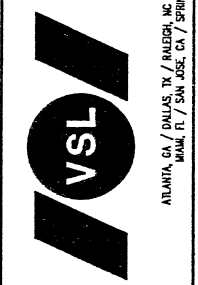


TYPICAL CROSS SECTION - STA 1+030.381 TO STA 1+178.662
 (LOOKING BACK STATION)
 (SEE DWG. NO. 3.2R-351-32.3 FOR ADDITIONAL INFORMATION)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-02-98	RELEASE FOR CONSTRUCTION
△	07-16-99	MODIFIED TYPICAL SECTION

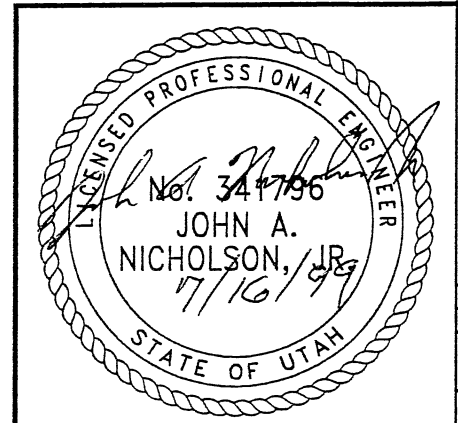
DES.	DRN.	CHK.	RETAINED EARTH™	NO.	DATE	BY
JL	DDL	JL	<input checked="" type="checkbox"/>			CHK

VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-8272
 Fax: (919) 781-4869



VSL Corporation (VSL) is a strict liability professional engineer. The design and construction of any structure which is retained earth™ shall be the responsibility of the owner. VSL is not responsible for any failure of any structure which is retained earth™. Any other use is strictly prohibited. VSL does not assume any liability therefor.

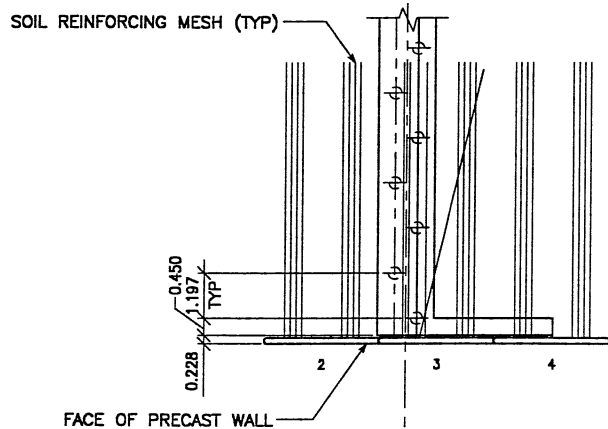
RETAINED EARTH™ WALLS
 WIRE FACED WALL "R-351-32"
 TYPICAL CROSS SECTION
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.



DWG. NO.	3.2R-351-32.5
JOB NO.	239-0007
SHT. NO.	RE-2

METRIC

CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO THE MANUFACTURER'S SPECIFICATION.



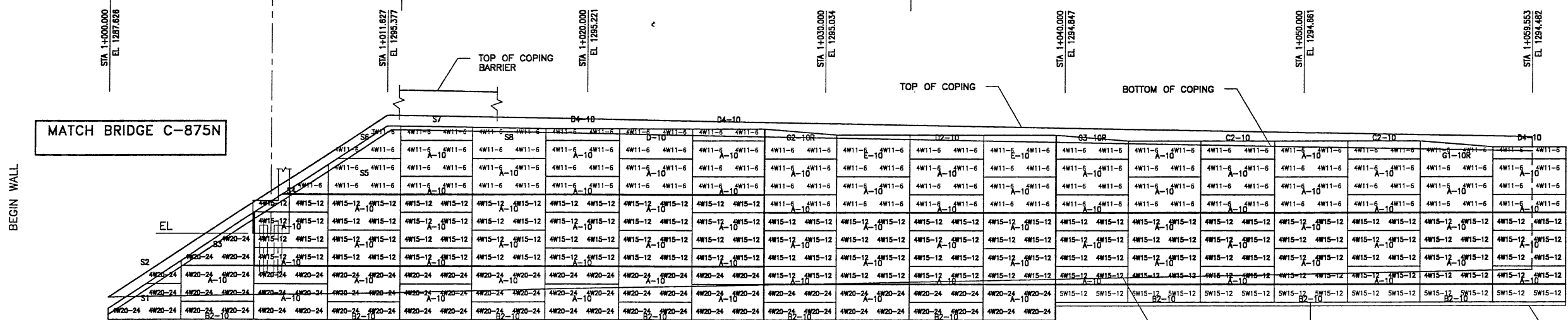
PLAN VIEW PRECAST WALL R-351-32

BEGIN WALL R-351-32
 WALL PI STA 1+000.000 =
 06_J-15 STA 32+743.486
 ● 12.046 RT
 NOMINAL PANEL FACE (RWL/L)

ABUTMENT
 WALL STA 1+006.693
 BRIDGE C-875N
 06_J-15 STA 32+736.700
 ● 12.046 RT

WALL PI STA 1+012.191 =
 06_J-15 STA 32+731.124
 ● 12.073 RT

WALL PC STA 1+033.527 =
 06_J-15 STA 32+709.488
 ● 12.350 RT

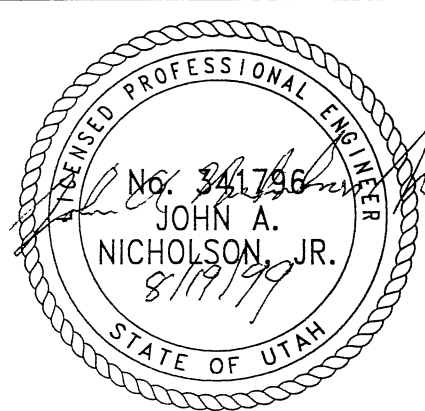


MESH DEPTH	7.315M (24')	7.010M (24')	6.096M (20')
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	231.08 KPa	222.83 KPa	200.96 KPa
PIN SPACING	39.624		21.336

ELEVATION PRECAST WALL R-351-32
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF PANELS = 946.46 SM) SCALE 1:200 (HALF SIZE)

METRIC

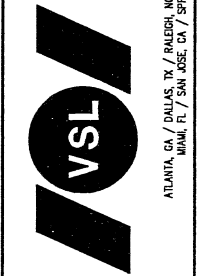
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO THE MANUFACTURER'S SPECIFICATION.



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	10-02-98	RELEASE FOR CONSTRUCTION
▲	08-13-99	REVISED @ ABUTMENT STATION

DES.	DRN.	CHK.	DATE	NO.	BY
JL	DDL	JL			

VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-6272
 Fax: (919) 781-4669

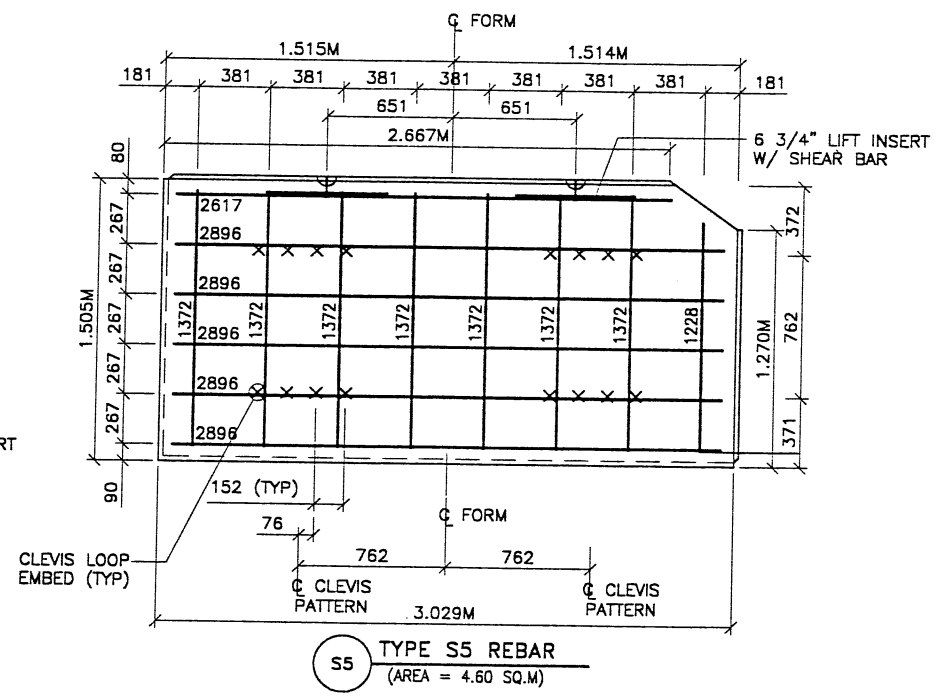
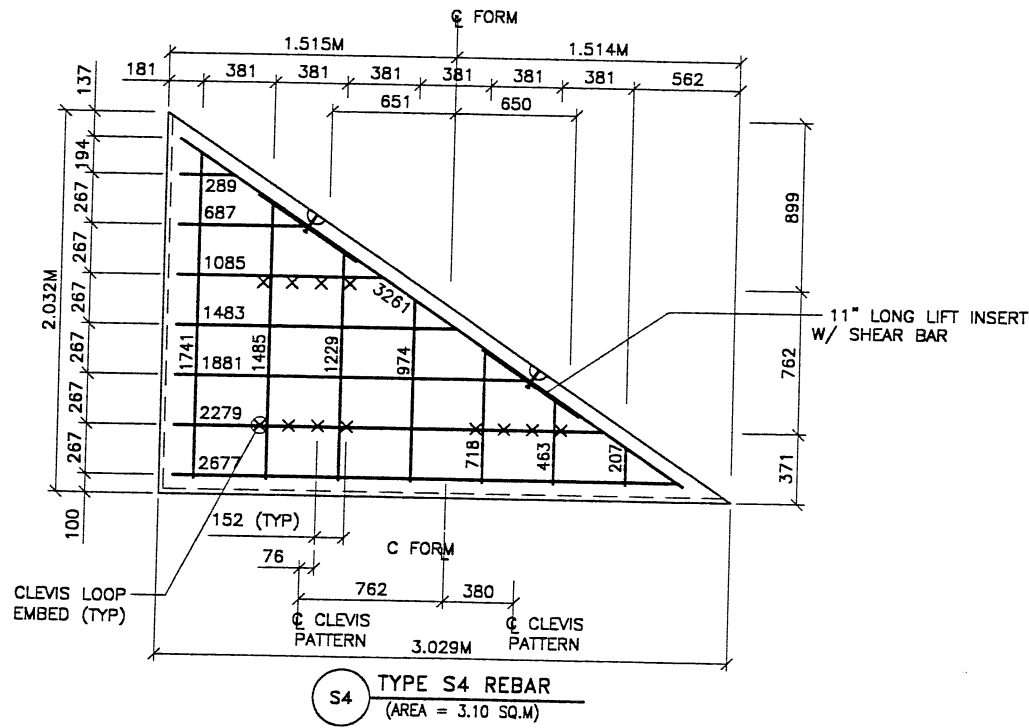
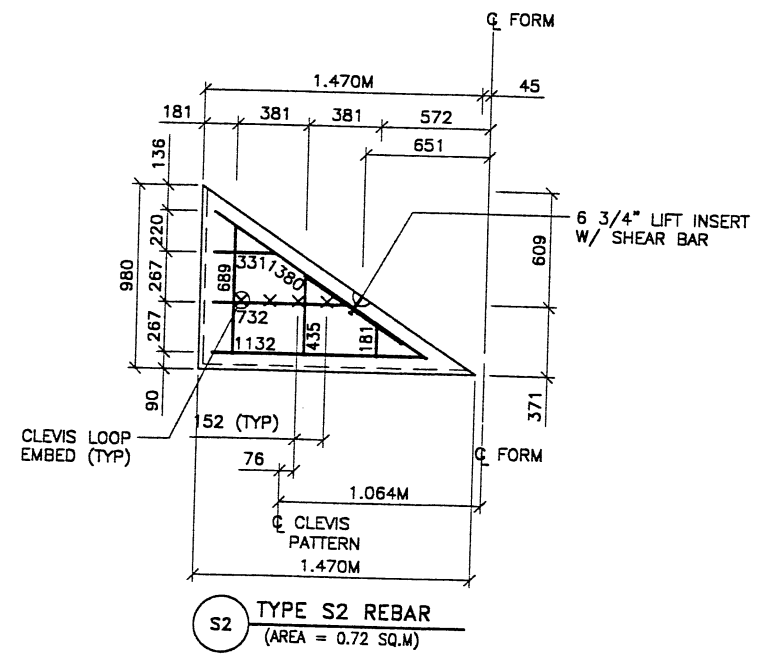
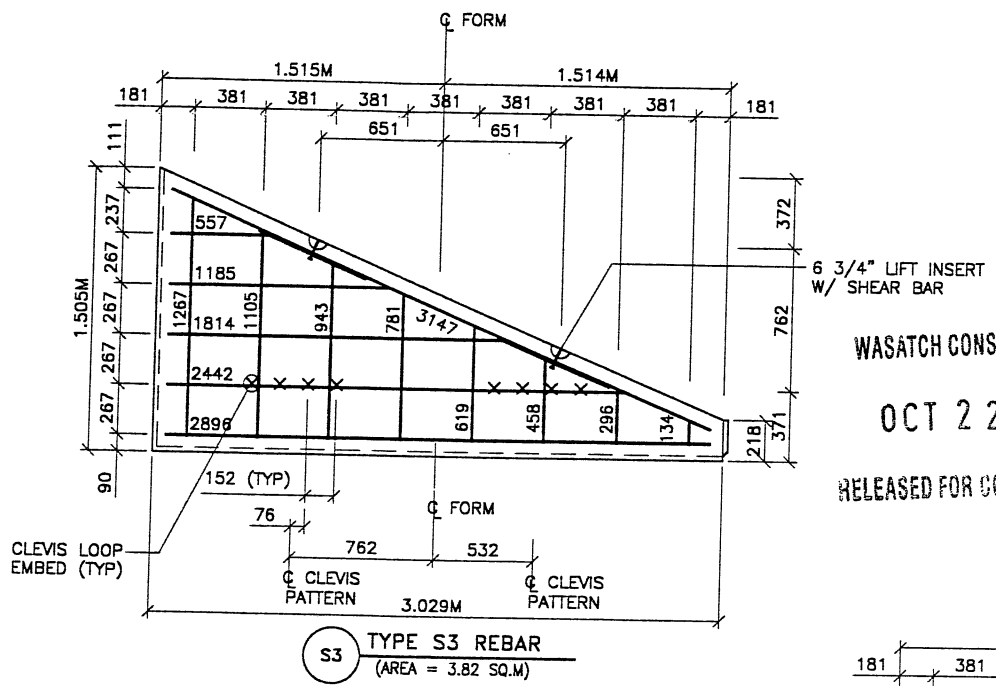
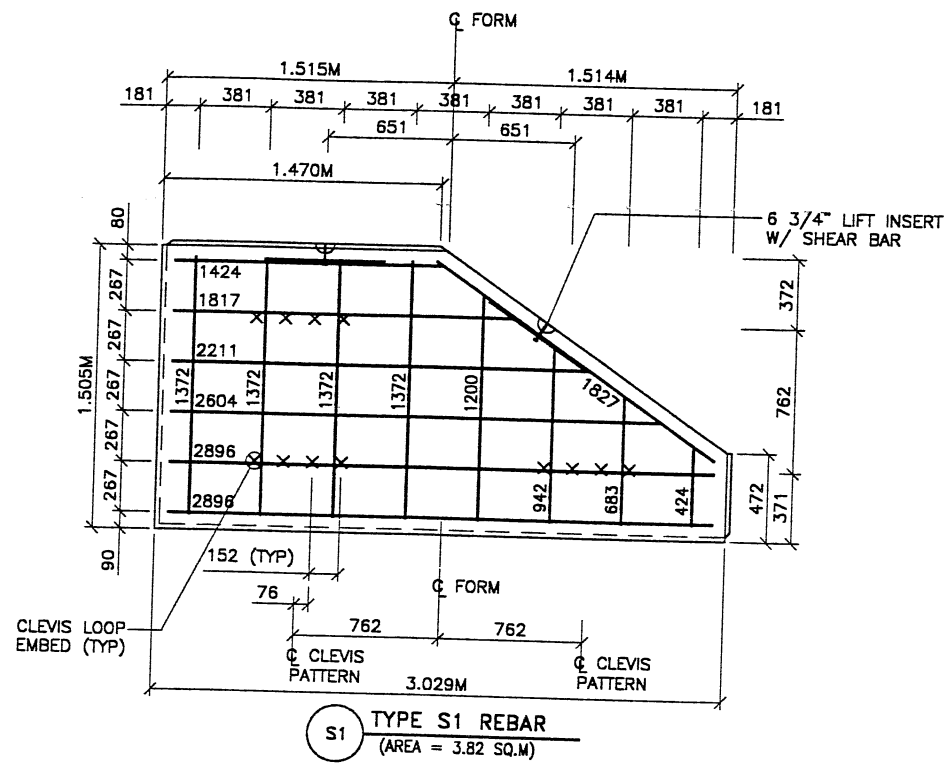


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RETAINED EARTH™ WALLS PRECAST WALL "351-32"
UTAH I-15 RECONSTRUCTION SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.
DWG. NO. 3.2R-351-32.7
JOB NO. 239-0007
SHT. NO. RE-4

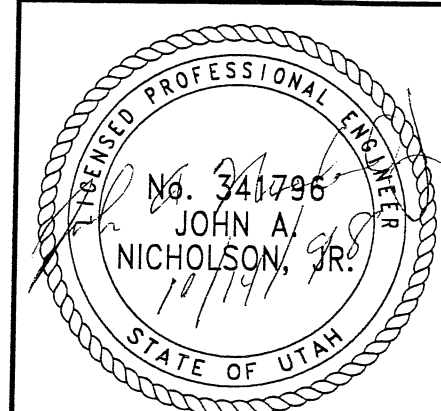
10-02-98
 FINAL
 H:\RE_EARTH\PROJECT\239
 \1998\6S-WALLS\6S-32\SUBMITL-2\SPECIALS.DWG
 (X-UTAH.DWG)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-02-98	RELEASE FOR CONSTRUCTION



- PANEL REINFORCEMENT NOTES:
1. PANELS ARE SHOWN BACK FACE.
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 3. ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
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 9. ALL PANELS TO USE 9.5mmØ CLEVIS LOOPS. VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.
 10. LIFT INSERTS ARE 6 3/4" LONG IN ALL PANELS LESS THAN 1.524M TALL. PANELS TALLER THAN 1.524M SHALL HAVE 11" LONG LIFT ANCHORS.

WASATCH CONSTRUCTORS
 OCT 22 1998
 RELEASED FOR CONSTRUCTION



CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO THE MANUFACTURER'S SPECIFICATION.

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 Fax: (919) 781-6869

ATLANTA, GA / DALLAS, TX / RENO, NV (CORPORATE OFFICE)
 MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

RETAINED EARTH™ WALLS
 PRECAST WALL "R-351-32"
 SPECIAL PANEL DETAILS

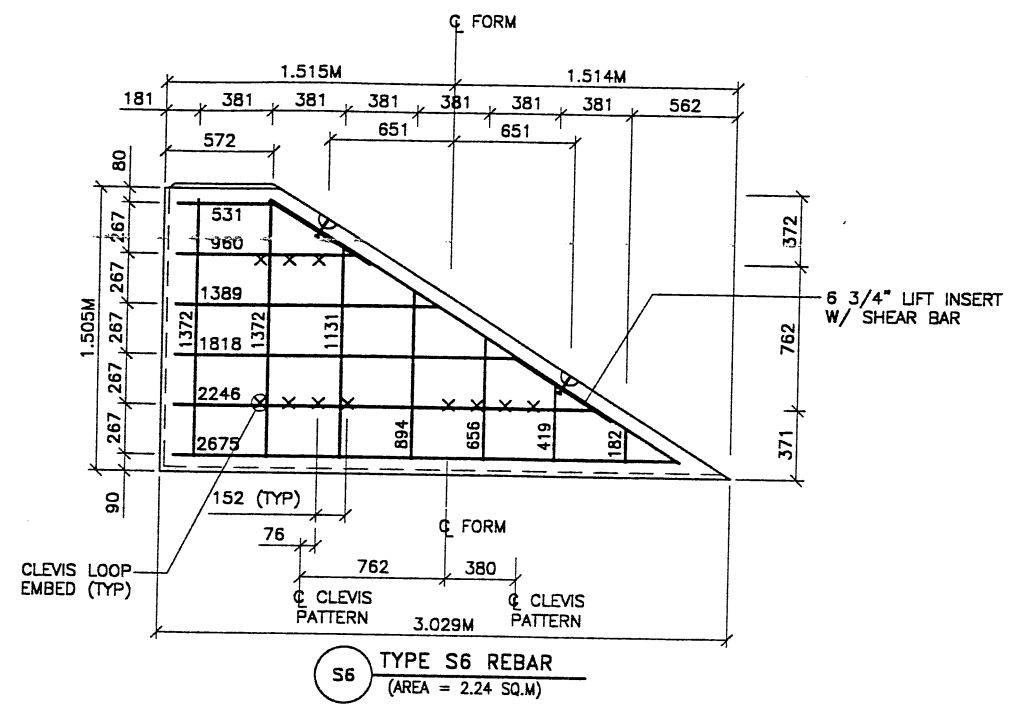
UTAH I-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO. 3.2R-351-32.10
 JOB NO. 239-0007
 SH. NO. RE-7

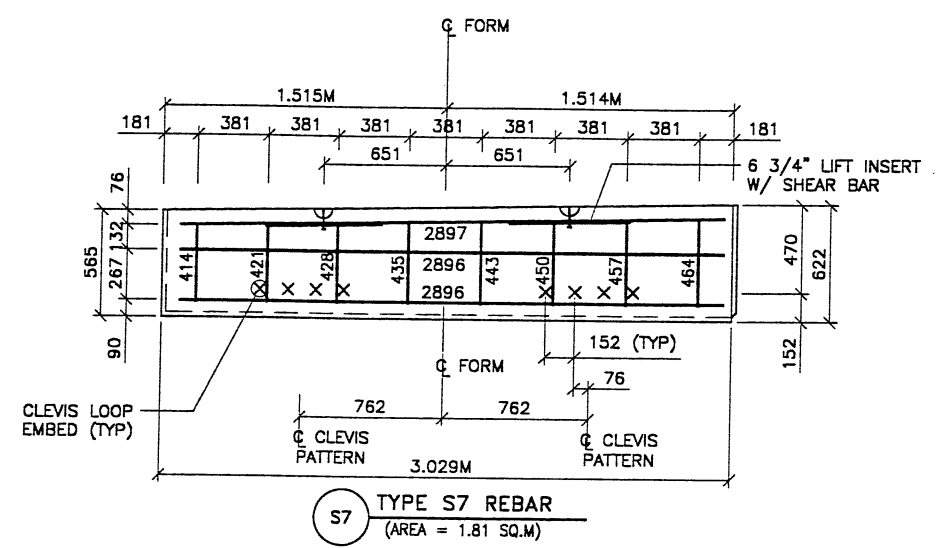
10 OF 12

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-02-98	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION



S6 TYPE S6 REBAR
(AREA = 2.24 SQ.M)

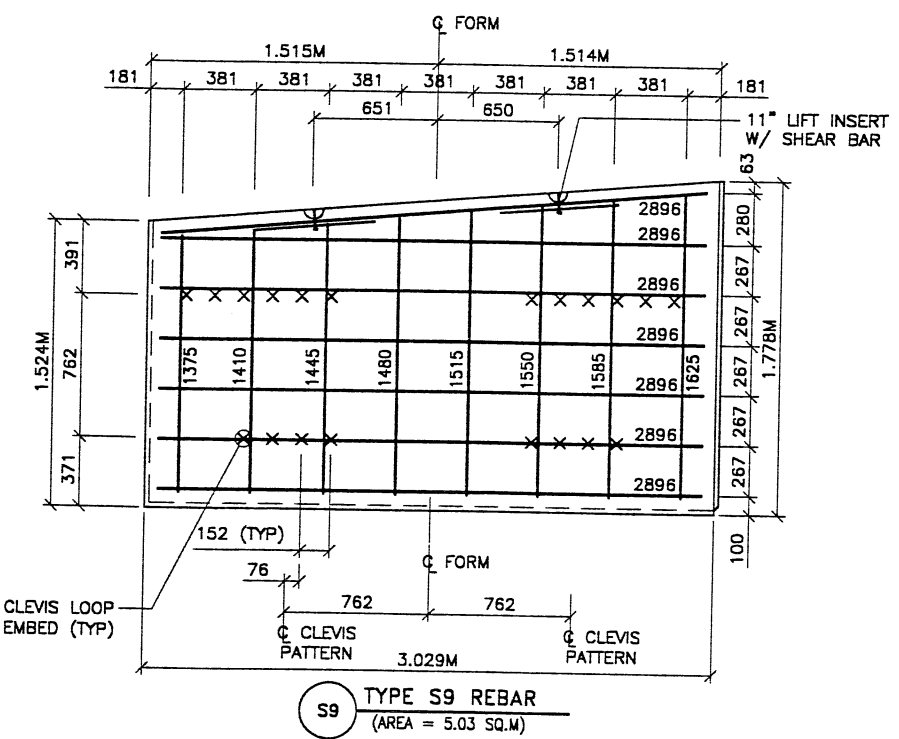
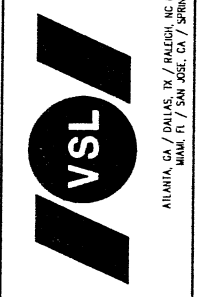


S7 TYPE S7 REBAR
(AREA = 1.81 SQ.M)

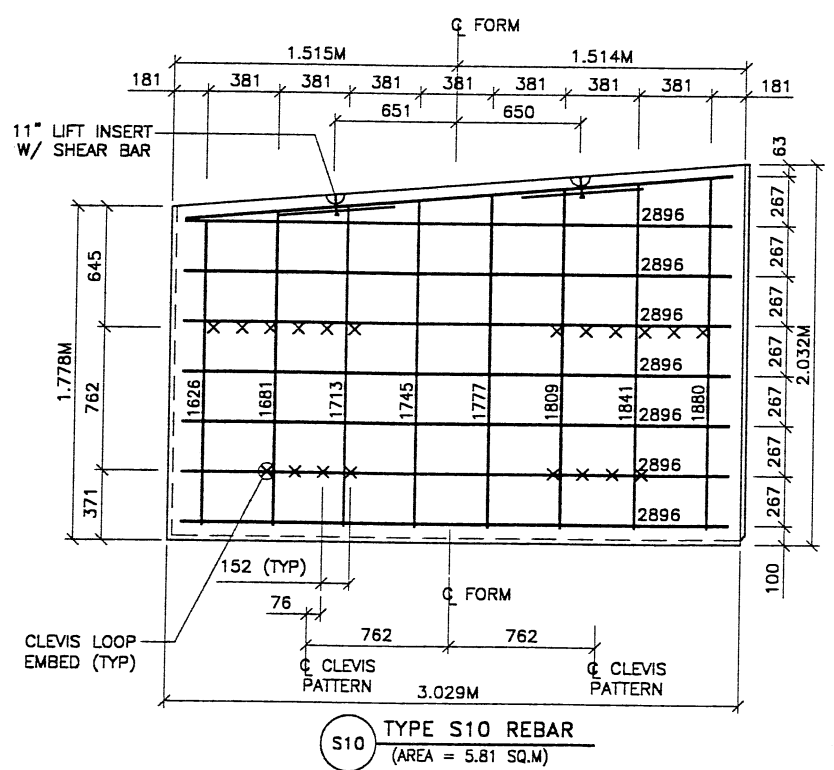
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WASATCH CONSTRUCTORS
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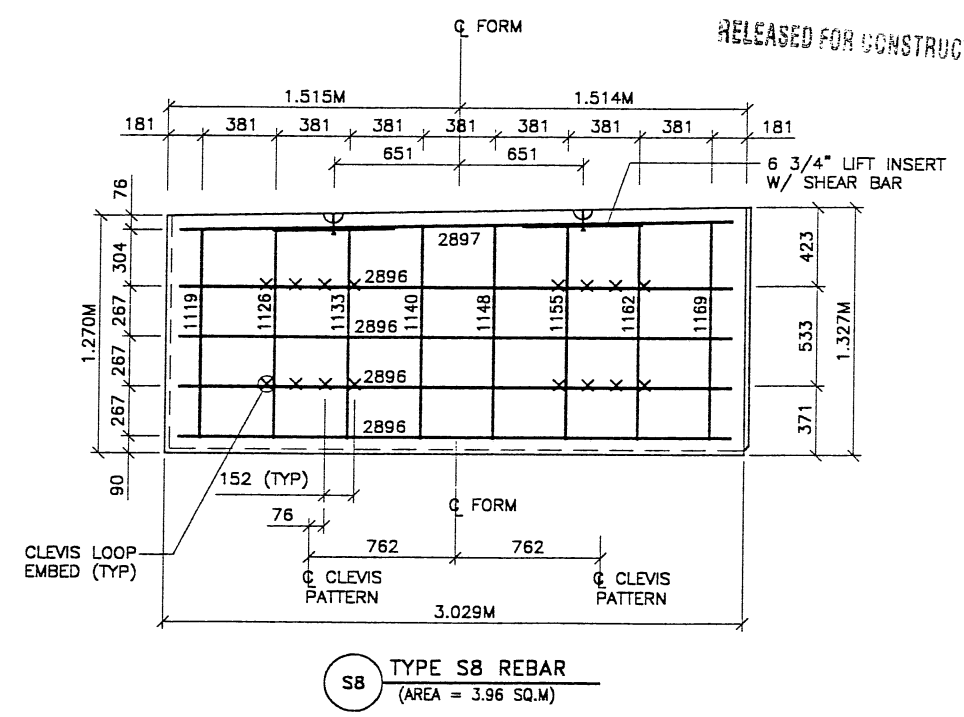
VSL CORPORATION
2810 Peachtree, Suite 200
Atlanta, GA 30328
Telephone: (404) 781-8272
Fax: (404) 781-4869



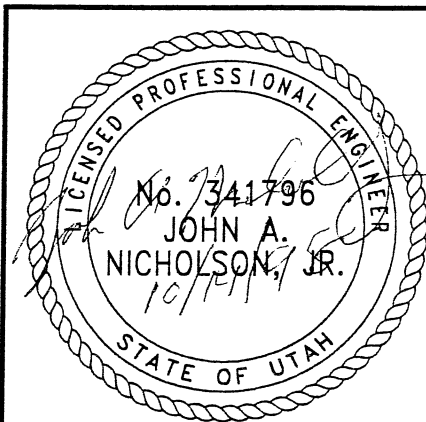
S9 TYPE S9 REBAR
(AREA = 5.03 SQ.M)



S10 TYPE S10 REBAR
(AREA = 5.81 SQ.M)



S8 TYPE S8 REBAR
(AREA = 3.96 SQ.M)



METRIC

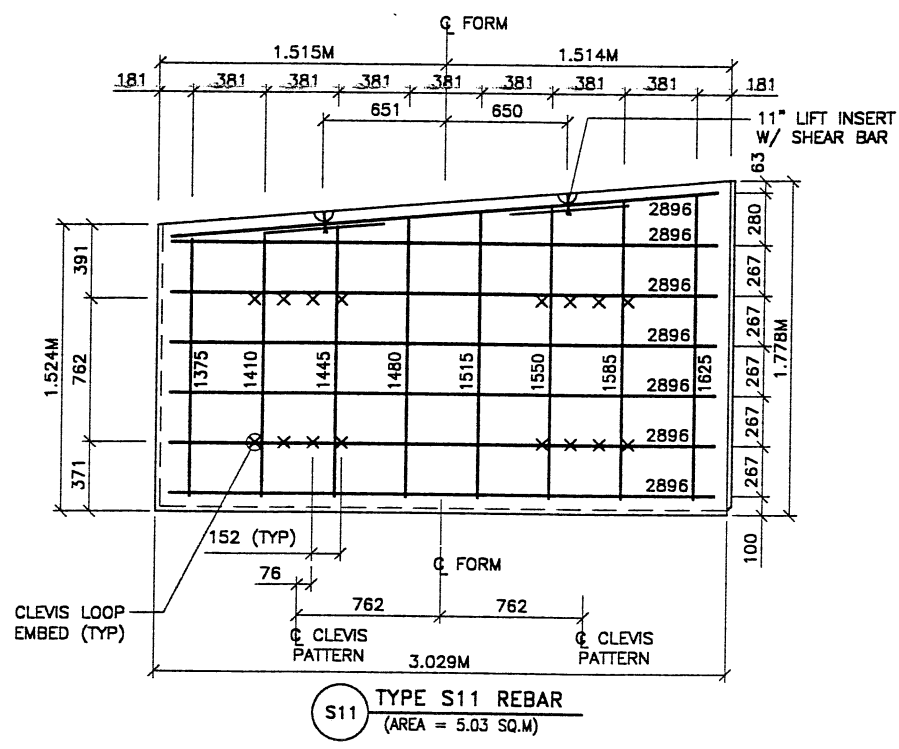
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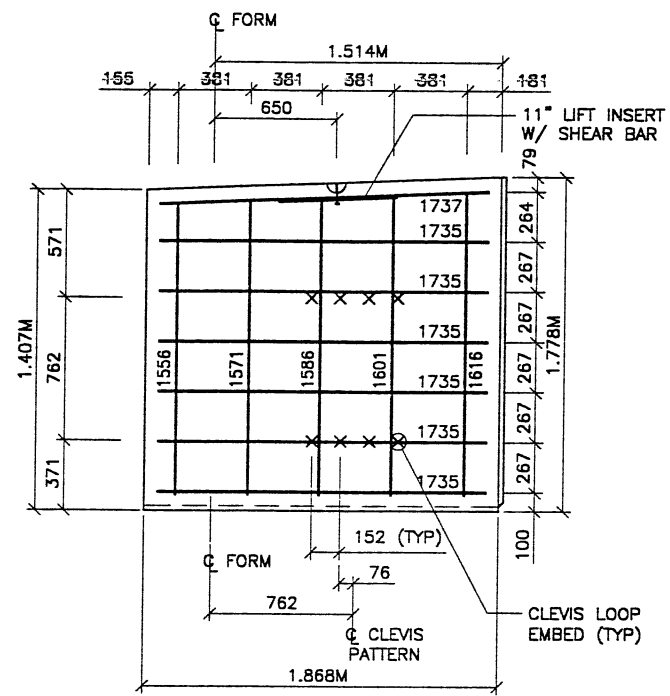
RETAINED EARTH™ WALLS
PRECAST WALL "R-349-14"
SPECIAL PANEL DETAILS
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-32.11
JOB NO.	239-0007
SHT. NO.	RE-8

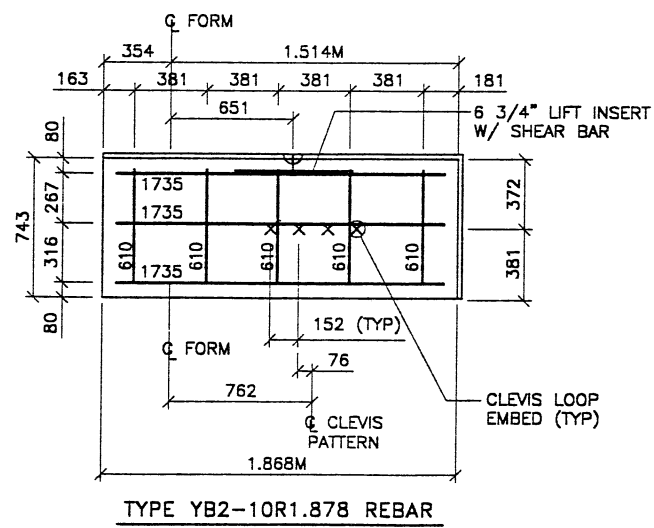
H:\RE_EARTH\PROJECT2\1998\6S-WALLS\6S-32\SUBMTL-2\SPECIALS.DWG
 FINA T 10-02-98



S11 TYPE S11 REBAR
 (AREA = 5.03 SQ.M)



S12 TYPE S12 REBAR
 (AREA = 3.26 SQ.M)



TYPE YB2-10R1.878 REBAR

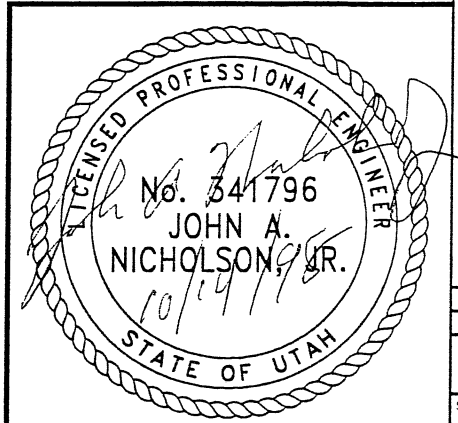
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METRIC

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APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-02-98	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
 OCT 22 1998
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 ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
 MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

RETAINED EARTH™ WALLS
 PRECAST WALL "R-351-32"
 Y - PANEL DETAILS

UTAH I-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-32.12
JOB NO.	239-0007
SHT NO.	RE-9

DES: 10-02-98
 DRN: 10-02-98
 CHK: 10-02-98

REVISION

DATE

NO.

BY

CHK