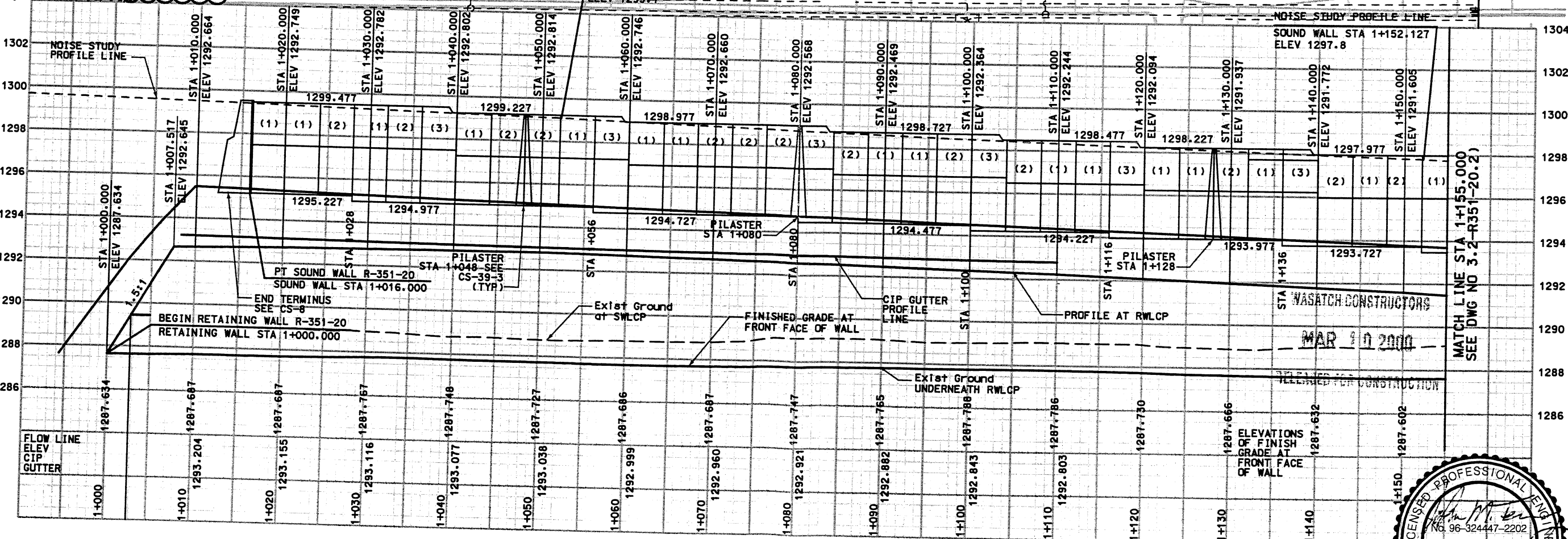
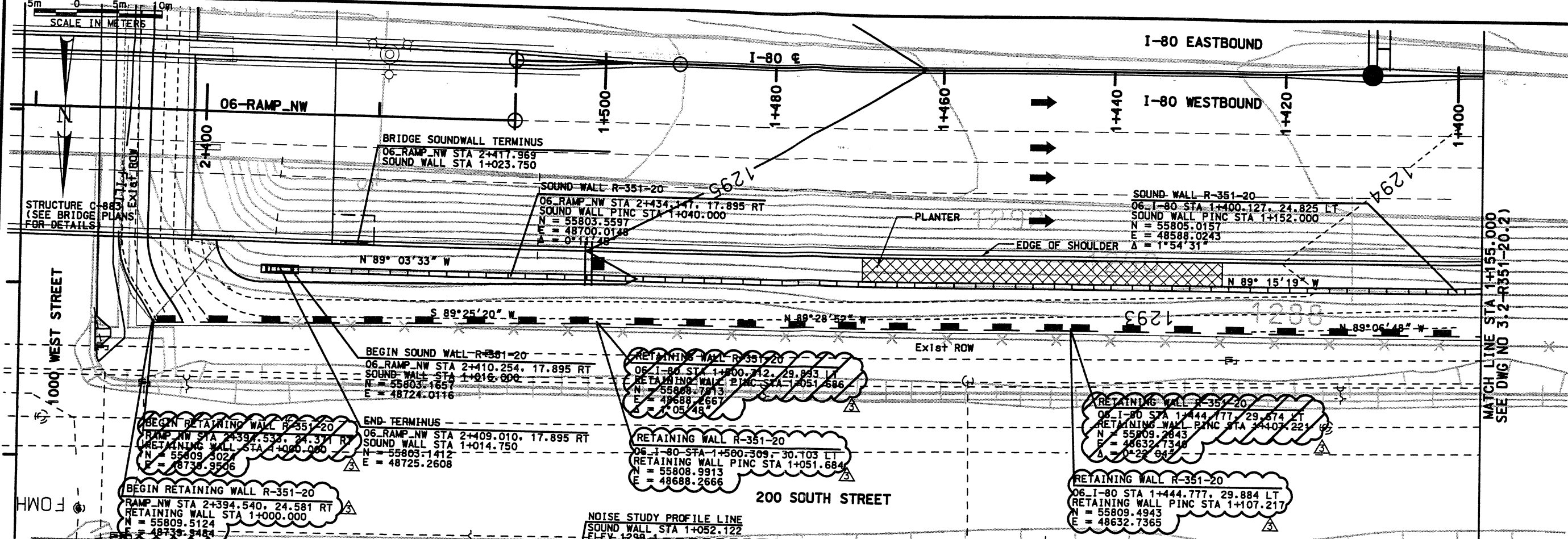


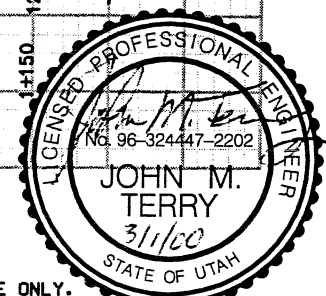
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Date: 29-FEB-2000 10:09:23 User Name: wall



NOTE:
 PILASTERS ARE PLACED ON THE ROADWAY SIDE OF SOUND WALL

WALL R-351-20
 VIEW IS FRONT FACE OF WALL

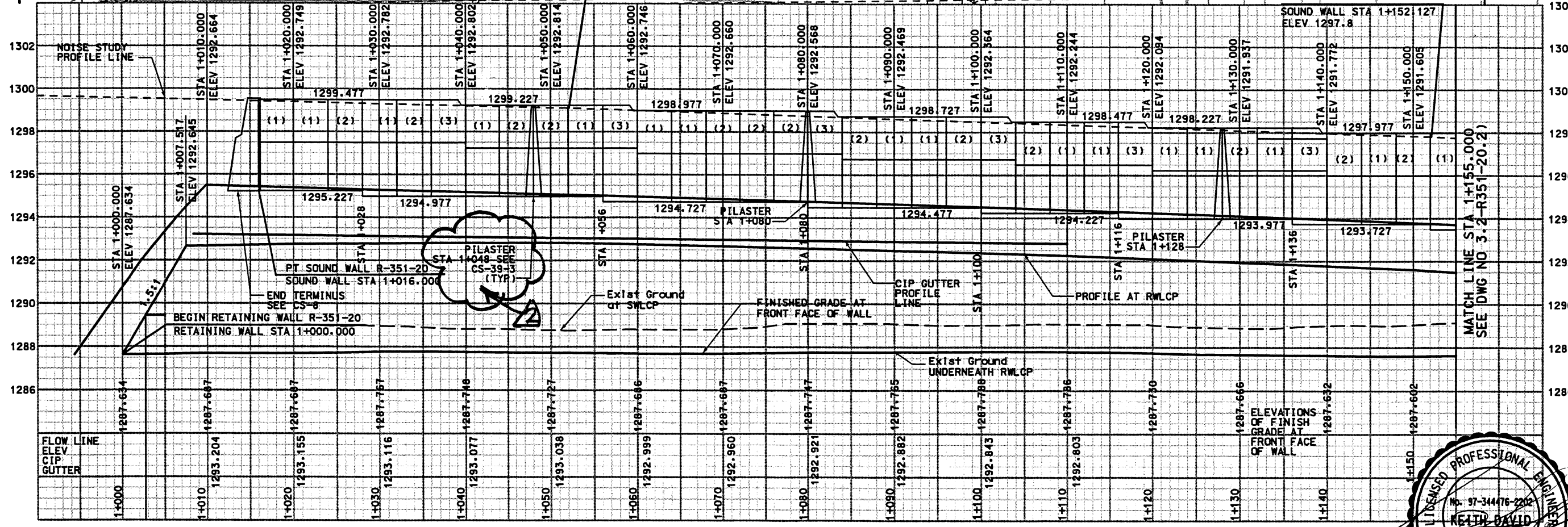
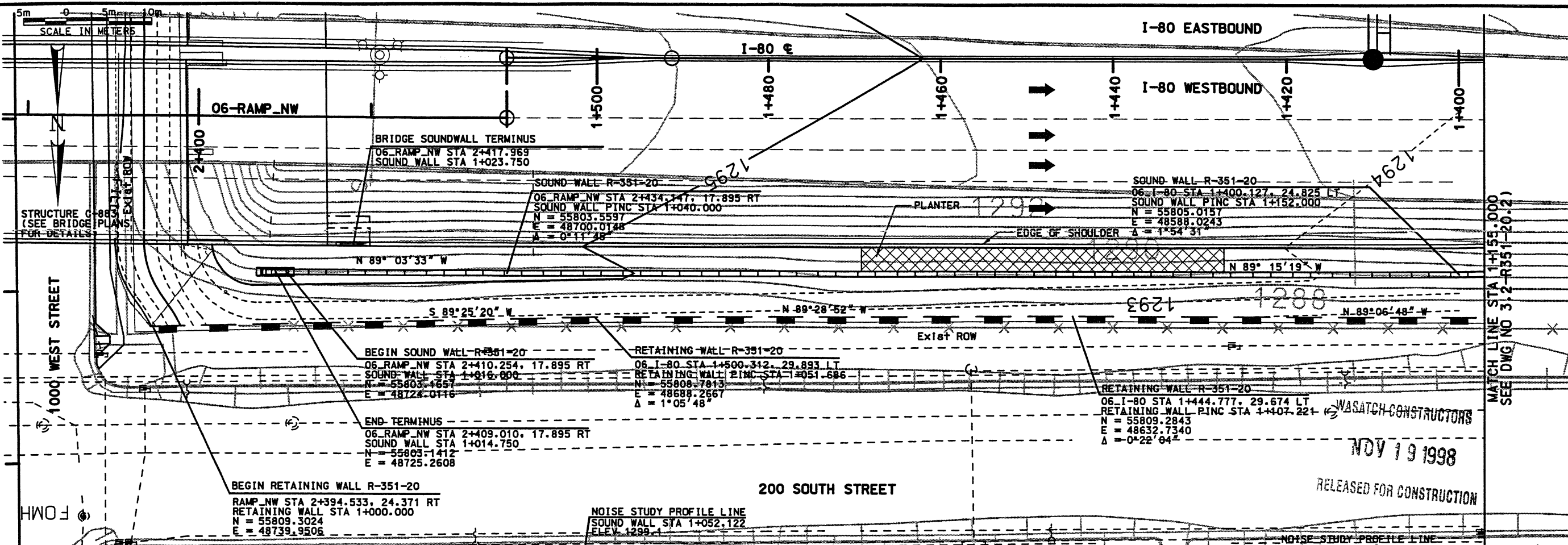


APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE		
1	10/14/98	RELEASE FOR CONSTRUCTION USE WALL STAGE 1 ONLY	
2	11/11/98	REVISED CS REFERENCE FOR PILASTER ELEMENT	
3	03/03/00	RELEASE FOR USE WALL 2ND STAGE CONSTRUCTION	
UTAH DEPARTMENT OF TRANSPORTATION		SVERRUP/DE LEUW	
I-15 CORRIDOR RECONSTRUCTION		SECTION 3.2	
SITATION & LAYOUT		PROJECT NUMBER #SP-15-7(135)296	
DESIGN PLG 11/11/98		CHECK MC 11/11/98	
DATE 11/11/98		PROJECT DESIGN ENGINEER MARVIN COOK	
DRAWN SVD 11/11/98		CHECK PLG 11/11/98	
DATE 11/11/98		SECTION MANAGER KEITH SABOL	
QUANT.		CHECK	
3213414			
SALT LAKE COUNTY		DWG. NO. 3.2-R351-20.1	
SHT. 1		OF 11	

SEALED FOR THE NO. OF RELEASE ONLY.
 RFC After Final Approval

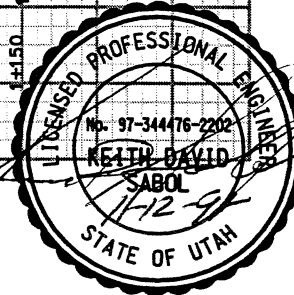
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Date: 11/11/98 Time: 11:37 User: rname: rcooking



NOTE:
 PILASTERS ARE PLACED ON THE ROADWAY SIDE OF SOUND WALL

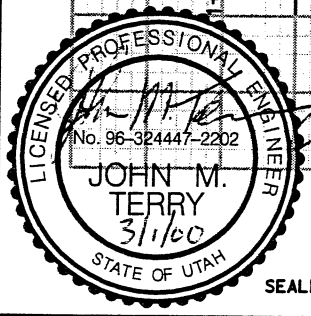
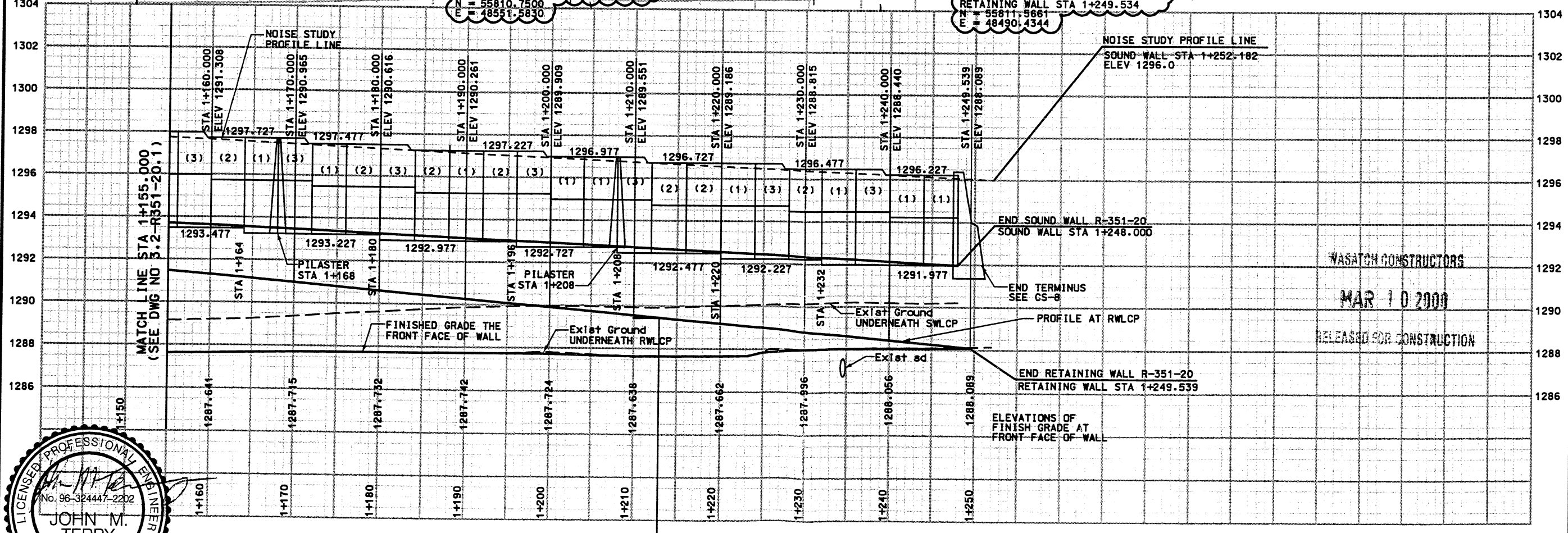
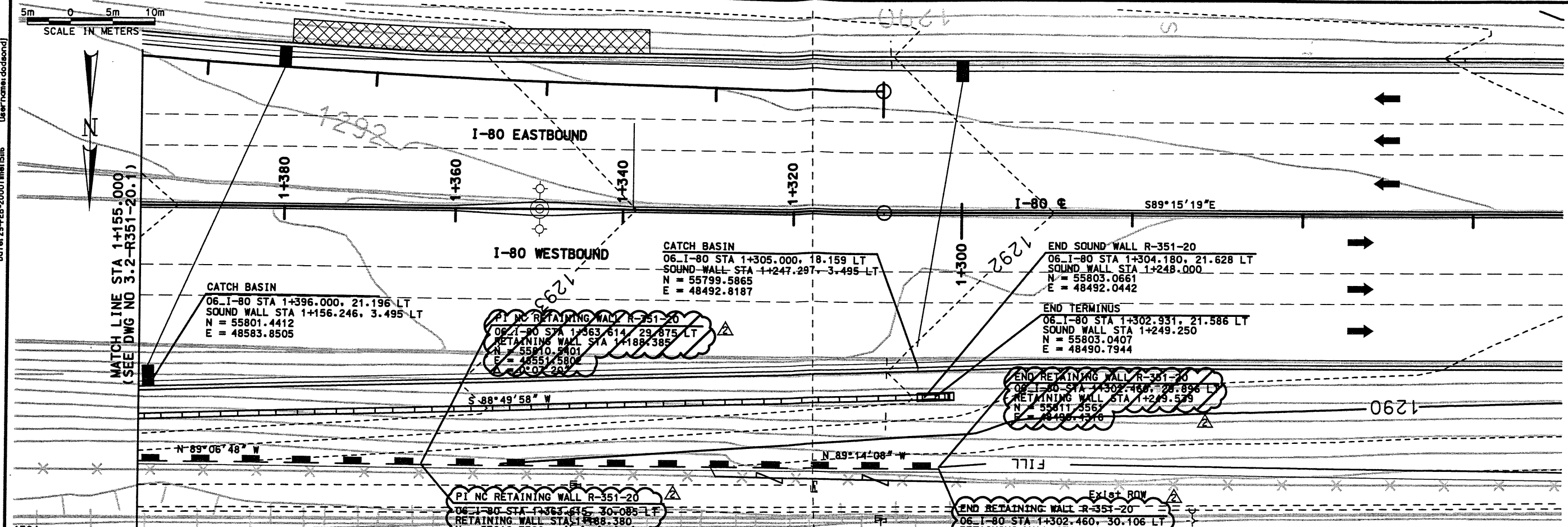
WALL R-351-20
 VIEW IS FRONT FACE OF WALL



APPROVED FOR CONSTRUCTION		NO.	DATE	DESCRIPTION
		10/14/98	RELEASE FOR CONSTRUCTION USE WALL STAGE 1 ONLY	
		11/11/98	REVISED CS REFERENCE FOR PILASTER ELEMENT	
UTAH DEPARTMENT OF TRANSPORTATION		DESIGN	MC	11/11/98
CORRIDOR RECONSTRUCTION		PROJECT	ENGINEER	
SITATION & LAYOUT		DATE	11/11/98	
SECTION 3.2		APPROVED	11/11/98	
PROJECT NUMBER		#SP-15-7(135)296	SECTION	MANAGER
SALT LAKE COUNTY		DWG. NO.	3.2-R351-20.1	
SHT.		1 OF 11		

SCALE IN METERS
0 5m 10m

Date: 29-FEB-2000 11:51:16 User: rname.dcds00d



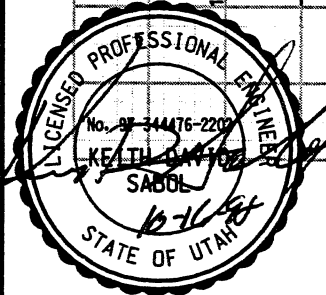
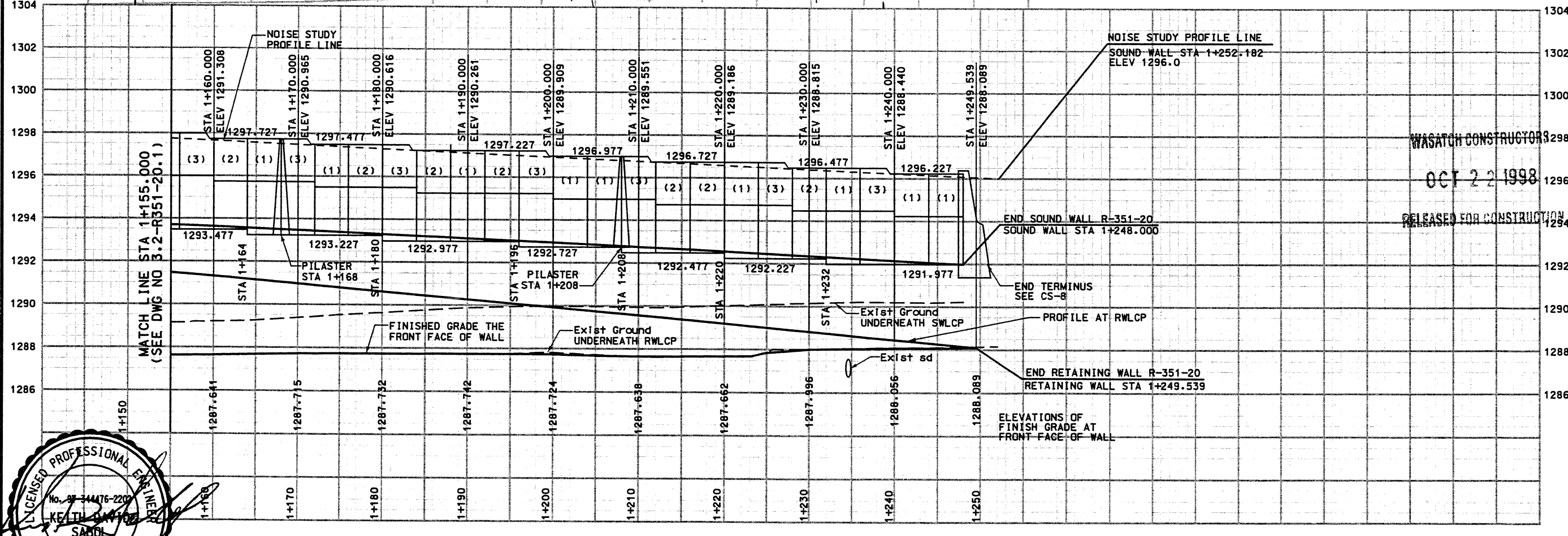
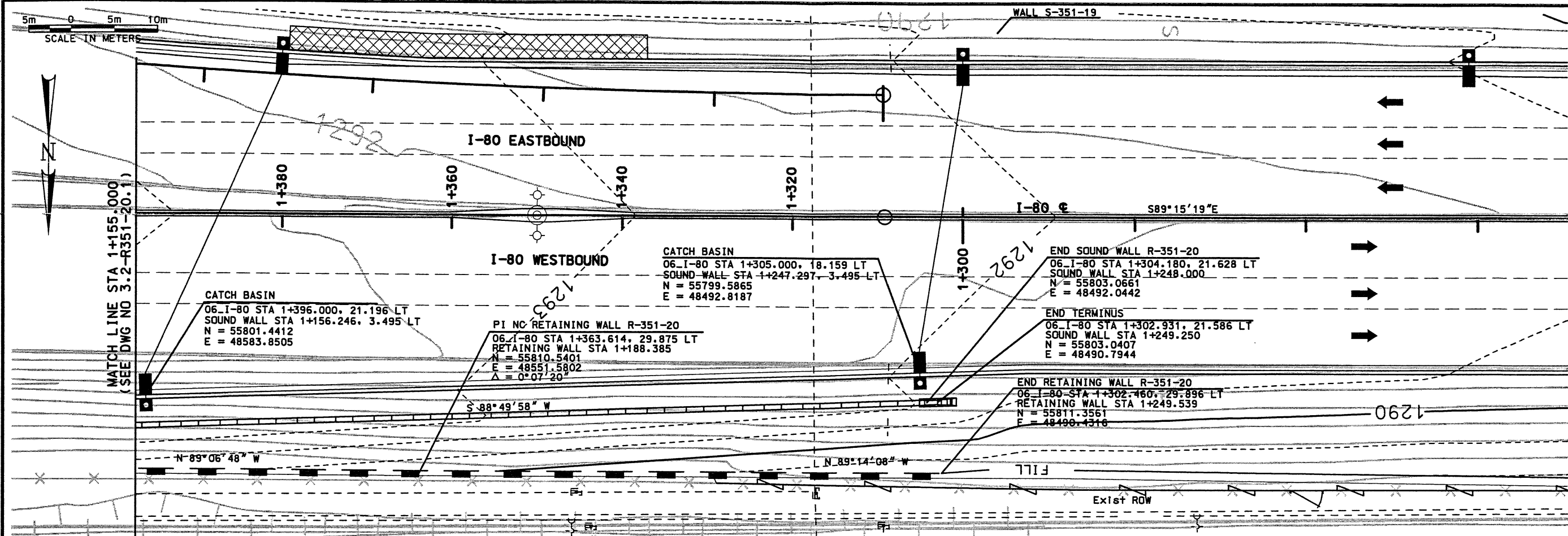
SEALED FOR THE NO. OF RELEASE ONLY.

WALL R-351-20
VIEW IS FRONT FACE OF WALL

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE		
1	10/14/98	RELEASE FOR CONSTRUCTION USE WALL STAGE 1 ONLY	
2	03/03/00	RELEASE FOR USE WALL 2ND STAGE CONSTRUCTION	
UTAH DEPARTMENT OF TRANSPORTATION		3213414	
SVERDRUP/DE LEUW		CHECK MC	10/11/98
MARVIN COOK		CHECK PLC	10/11/98
PROJECT DESIGN ENGINEER		DRAWN	SVD
DATE		DATE	QUANT.
APPROVED 10/14/98		DATE	SECTION MANAGER
APPROVED 10/14/98		DATE	SECTION MANAGER
I-15 CORRIDOR RECONSTRUCTION		SALT LAKE COUNTY	
SITATION & LAYOUT		DWG. NO.	
SECTION 3.2		3.2-R351-20.2	
PROJECT NUMBER #SP-15-(135)296		SHT. 2 of 11	

RFC After Final Approval

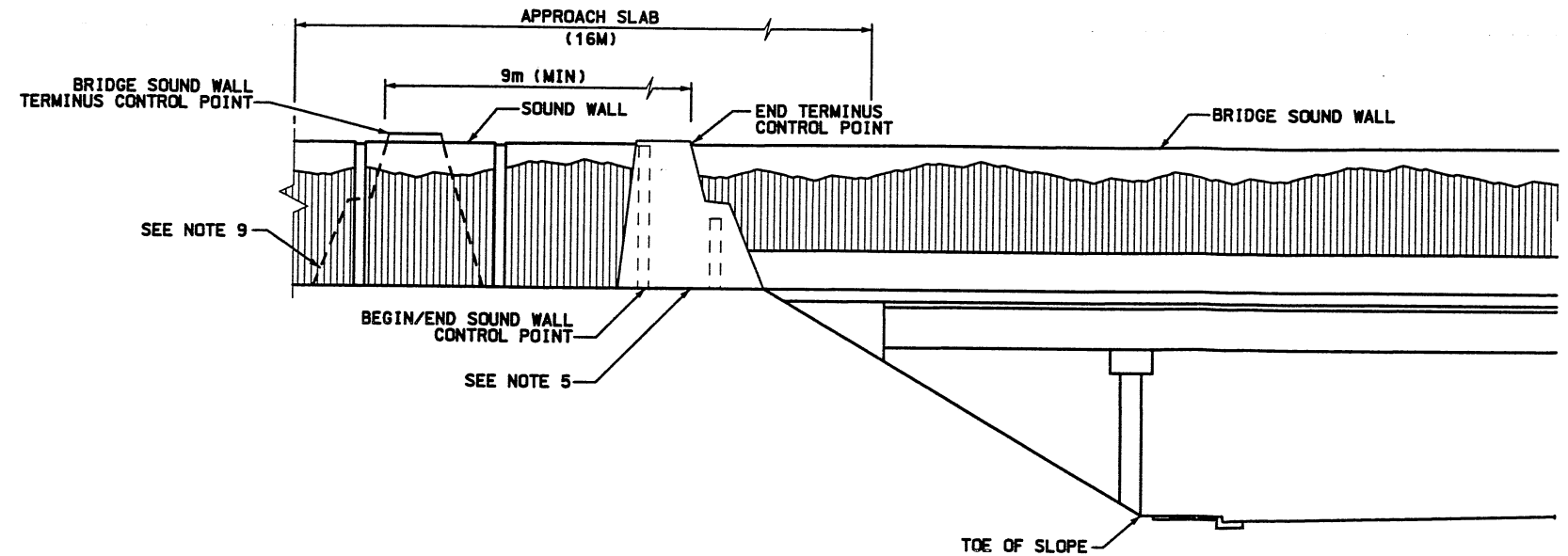
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WALL R-351-20
 VIEW IS FRONT FACE OF WALL

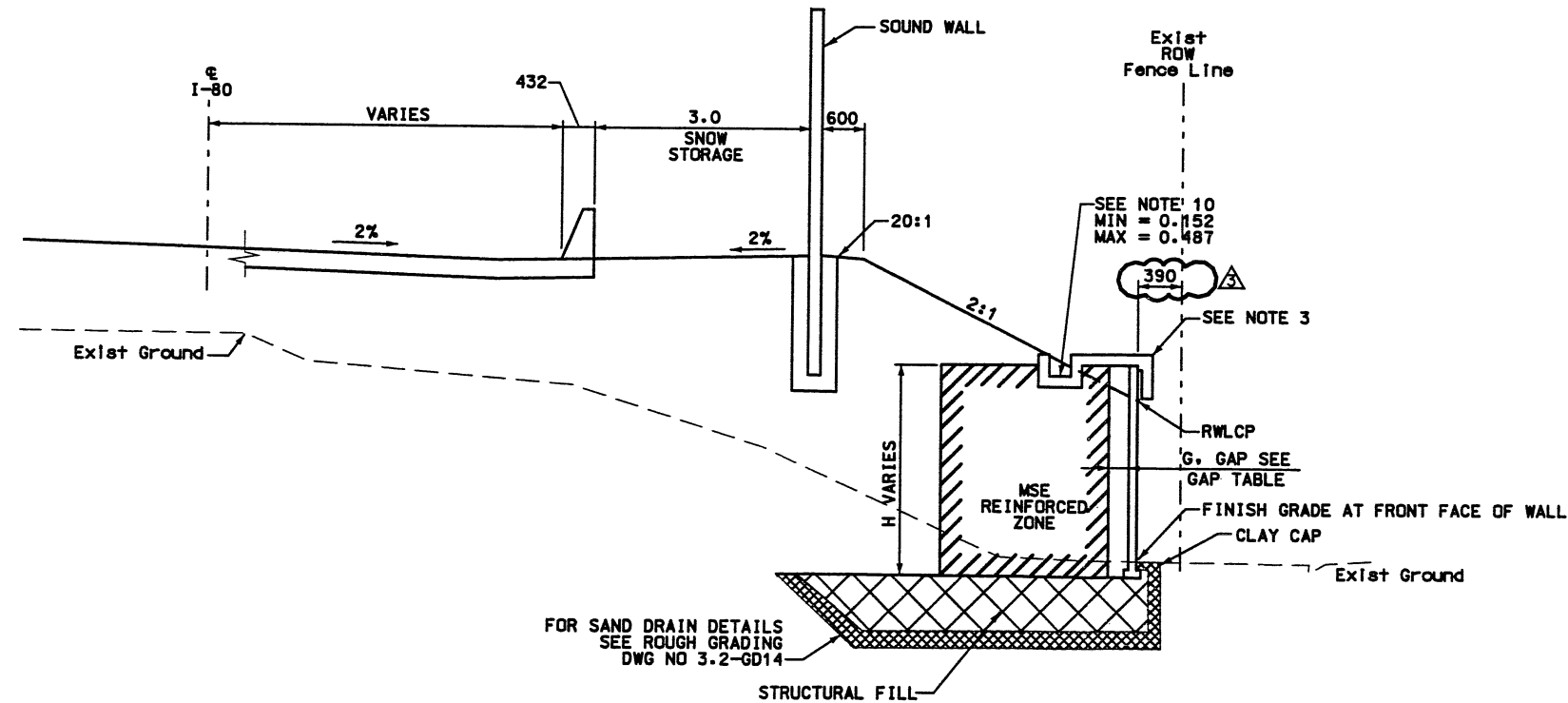
APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	RELEASE FOR CONSTRUCTION USE WALL STAGE 1 ONLY	
	10/14/98		
UTAH DEPARTMENT OF TRANSPORTATION		3213414	
SVERDRUP/DE LEUW		DESIGN PLC 10/14/98	CHECK MC 10/14/98
MARRIN COOK		PROJECT DESIGN ENGINEER	CHECK PLC 10/14/98
DATE 10/14/98		DATE 10/14/98	CHECK QUANT.
KEITH SABOL		SECTION MANAGER	
DATE 10/14/98		DATE	
I-15 CORRIDOR RECONSTRUCTION		SITATION & LAYOUT	
SECTION 3.2		PROJECT NUMBER #SP-15-7(135)296	
SALT LAKE COUNTY		DWG. NO. 3.2-R351-20.2	
SHT. 2 OF 11			

Date: 25-FEB-2000 Time: 10:35 User: rname: wall



SOUND WALL OVER BRIDGE TRANSITION

WALL HEIGHT VS POST EMBEDMENT		
WALL HEIGHT (H)	1.5:1.0 SLOPE POST EMBEDMENT	2:1 SLOPE POST EMBEDMENT
2.00	1.800	1.500
2.25	1.963	1.663
2.50	2.125	1.825
2.75	2.288	1.988
3.00	2.450	2.150
3.25	2.613	2.313
3.50	2.775	2.475
3.75	2.938	2.638
4.00	3.100	2.800
4.25	3.263	2.963
4.50	3.425	3.125
4.75	3.588	3.288
5.00	3.750	3.450



RETAINING WALL DETAILS

NTS
WALL R-351-20
2 STAGE MSE

GAP TABLE					
WALL	RETAINING WALL STA	G. (MM) SEE NOTE*		MAXIMUM EXPECTED LATERAL MOVEMENT (MM)	MINIMUM EXPECTED POST-CONSTRUCTION GAP (MM)
R-351-20	1+000.000	450	TAPER	145	305
	1+007.517	650		345	305
	1+060.000	650	TAPER	345	305
	1+250.000	450		145	305

NOTE*:
G = DISTANCE BETWEEN BACK OF WALL PANEL AND WIRE FACE AT INITIAL CONSTRUCTION TO ACCOMODATE EXPECTED LATERAL MOVEMENT DURING CONSTRUCTION AND PRIMARY FOUNDATION SETTLEMENT.

- NOTES:
- OVEREXCAVATE EXISTING SOILS AS REQUIRED. BACKFILL EXCAVATION WITH STRUCTURAL FILL AS PER CORRIDOR STANDARD SPECIFICATION 220.2.
 - CONSTRUCT 300 mm CLAY CAP WITH LOW PLASTIC SILTY CLAY AS PER CORRIDOR STANDARD SPECIFICATION.
 - FOR COPING DETAILS SEE CORRIDOR STANDARD PLAN CS-30-2. CIP GUTTER DETAIL.
 - FOR SOUNDWALL DETAILS SEE CS-5 AND CS-6.
 - FOR SOUNDWALL TERMINUS ELEMENT DETAILS SEE CS-8.
 - FOR SOUNDWALL PILASTER ELEMENT DETAILS SEE CS-39-3.
 - SEE CS-57 FOR ADDITIONAL SIDE SLOPE TREATMENT DETAILS.
 - FOR SOUNDWALL REINFORCING DETAILS SEE UDOT STANDARDS 545-01, AND 545-02.
 - FOR BRIDGE SOUND WALL TERMINUS ELEMENT DETAIL, SEE CS-97-1.
 - CIP GUTTER DEPTH VARIES FROM STATION 1+007.517 TO STA 1+110.000. SEE S&L FOR ELEV. FROM STA 1+110.000 TO STA 1+249.539 USE CIP TYPE 1 GUTTER.



SEALED FOR THE NO. OF RELEASE ONLY.

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	10/14/98	RELEASE FOR CONSTRUCTION MSE WALL STAGE 1 ONLY
2	11/11/98	REVISED CS REFERENCE FOR PILASTER ELEMENT
3	11/11/98	RELEASE FOR MSE WALL 2ND STAGE CONSTRUCTION

UTAH DEPARTMENT OF TRANSPORTATION

SVERRUP/DE LEUW

DESIGN: MARVIN COOK
DATE: 11/21/98
PROJECT DESIGN ENGINEER

DRAWN: KEITH SABOL
DATE: 11/21/98
SECTION MANAGER

QUANT. CHECK

3213414

1-15 CORRIDOR RECONSTRUCTION

TYPICAL SECTION

SECTION 3.2

PROJECT NUMBER #SP-15-7(135)296

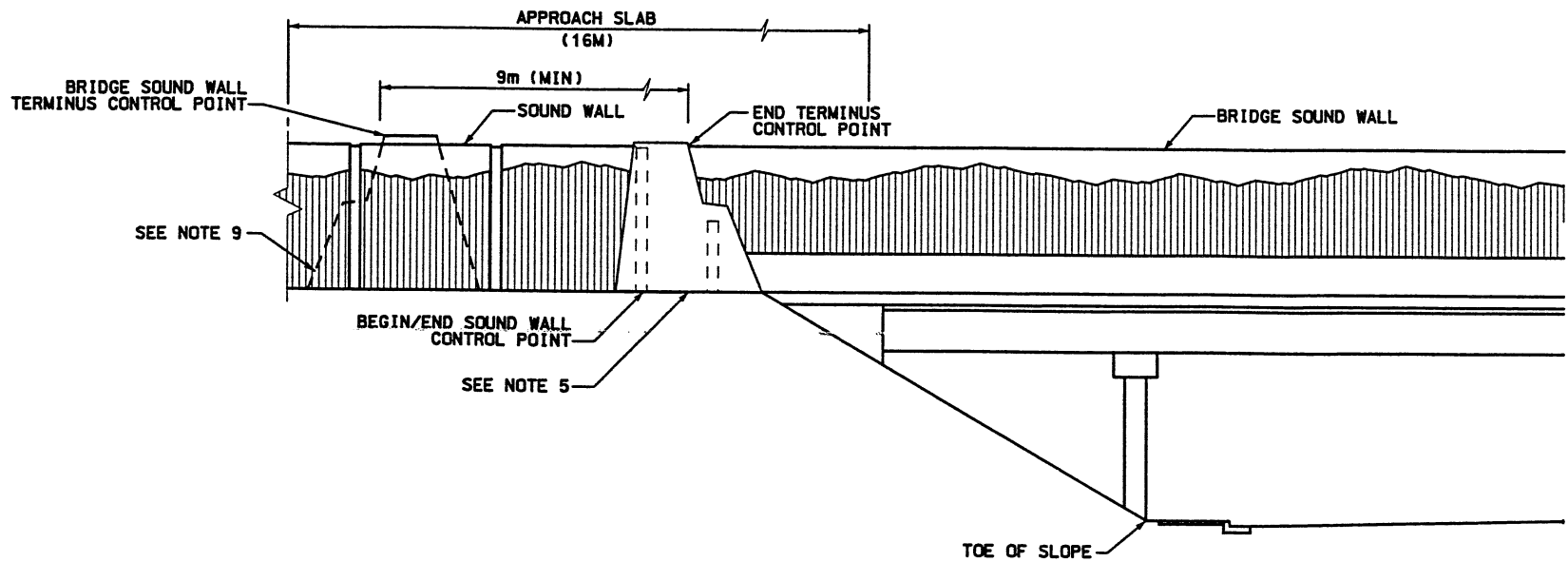
SALT LAKE COUNTY

DWG. NO. 3.2-R351-20.3

SHT. 3 OF 11

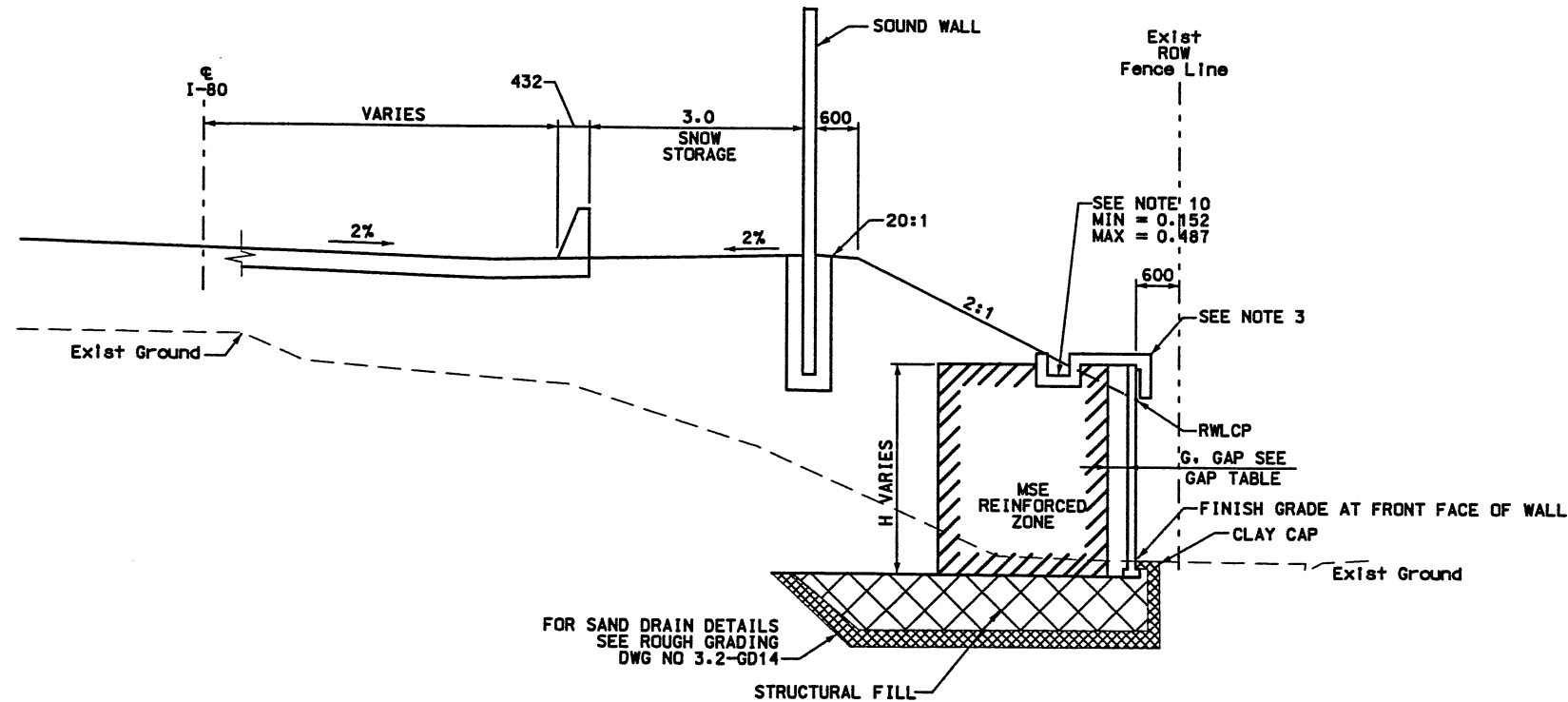
WASATCH CONSTRUCTORS
MAR 10 2000
RELEASED FOR CONSTRUCTION

RFC After Final Approval



SOUND WALL OVER BRIDGE TRANSITION

WALL HEIGHT (H)	1.5:1.0 SLOPE POST EMBEDMENT	2:1 SLOPE POST EMBEDMENT
2.00	1.800	1.500
2.25	1.963	1.663
2.50	2.125	1.825
2.75	2.288	1.988
3.00	2.450	2.150
3.25	2.613	2.313
3.50	2.775	2.475
3.75	2.938	2.638
4.00	3.100	2.800
4.25	3.263	2.963
4.50	3.425	3.125
4.75	3.588	3.288
5.00	3.750	3.450



RETAINING WALL DETAILS
NTS

WALL R-351-20
2 STAGE MSE

WALL	RETAINING WALL STA	G. (MM) SEE NOTE*	MAXIMUM EXPECTED LATERAL MOVEMENT (MM)	MINIMUM EXPECTED POST-CONSTRUCTION GAP (MM)	
R-351-20	1+000.000	450	TAPER	145	305
	1+007.517	650	CONSTANT	345	305
	1+060.000	650	CONSTANT	345	305
	1+250.000	450	TAPER	145	305

NOTE*:
G = DISTANCE BETWEEN BACK OF WALL PANEL AND WIRE FACE AT INITIAL CONSTRUCTION TO ACCOMMODATE EXPECTED LATERAL MOVEMENT DURING CONSTRUCTION AND PRIMARY FOUNDATION SETTLEMENT.

- NOTES:
- OVEREXCAVATE EXISTING SOILS AS REQUIRED. BACKFILL EXCAVATION WITH STRUCTURAL FILL AS PER CORRIDOR STANDARD SPECIFICATION 220.2.
 - CONSTRUCT 300 mm CLAY CAP WITH LOW PLASTIC SILTY CLAY AS PER CORRIDOR STANDARD SPECIFICATION.
 - FOR COPING DETAILS SEE CORRIDOR STANDARD PLAN CS-30-2, CIP GUTTER DETAIL.
 - FOR SOUNDWALL DETAILS SEE CS-5 AND CS-6.
 - FOR SOUNDWALL TERMINUS ELEMENT DETAILS SEE CS-8.
 - FOR SOUNDWALL PILASTER ELEMENT DETAILS SEE CS-39-3.
 - SEE CS-57 FOR ADDITIONAL SIDE SLOPE TREATMENT DETAILS.
 - FOR SOUNDWALL REINFORCING DETAILS SEE UDOT STANDARDS 545-01, AND 545-02.
 - FOR BRIDGE SOUND WALL TERMINUS ELEMENT DETAIL, SEE CS-97-1.
 - CIP GUTTER DEPTH VARIES FROM STATION 1+007.517 TO STA 1+110.000. SEE S&L FOR ELEV. FROM STA 1+110.000 TO STA 1+249.539 USE CIP TYPE 1 GUTTER.

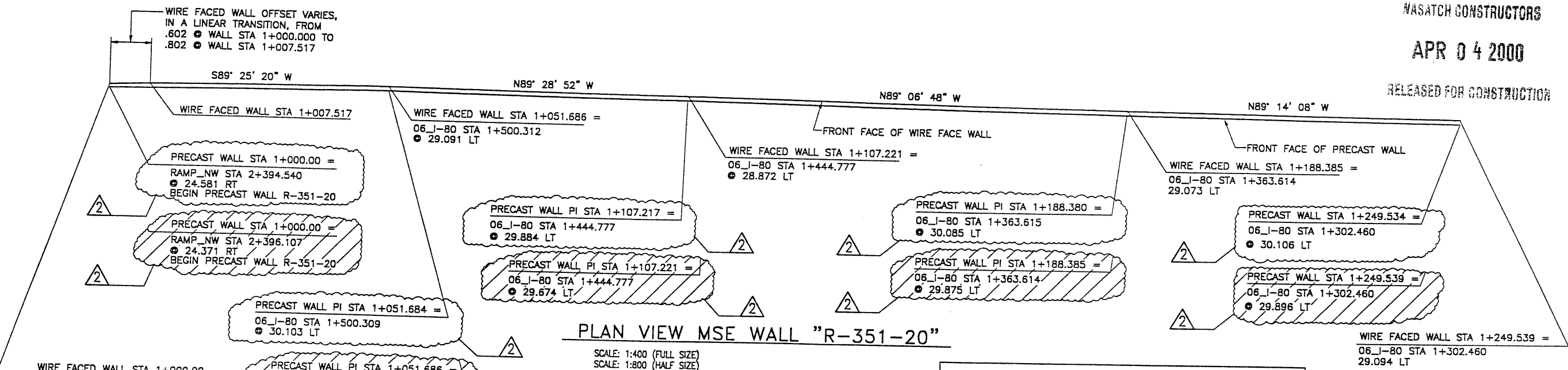
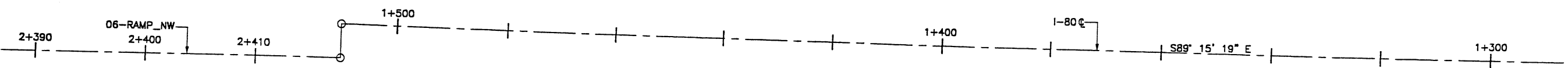
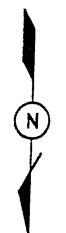


WASATCH CONSTRUCTORS
NOV 19 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION	NO.	DATE	DESCRIPTION
	10/14/98	10/14/98	RELEASE FOR CONSTRUCTION USE WALL STAGE 1 ONLY
	11/11/98	11/11/98	REVISED CS REFERENCE FOR PILASTER ELEMENT
UTAH DEPARTMENT OF TRANSPORTATION			
SVERDRUP/DE LEUW		DESIGN PLC. 11/11/98	CHECK MC 11/11/98
3213414		DRAWN SVD 11/11/98	CHECK PLC 11/11/98
MARVIN COOK		PROJECT DESIGN ENGINEER	CHECK
KEITH SABOL		SECTION MANAGER	CHECK
I-15 CORRIDOR RECONSTRUCTION		TYPICAL SECTION	SECTION 3.2
PROJECT NUMBER #SP-15-(135)296			
SALT LAKE COUNTY		DWG. NO.	3.2-R351-20.3
SHT. 3 OF 11			

REFERENCE (X-UTAH.DWG)

NOTE:
BACKFILL THE WALL GAP TO AN ELEVATION EQUAL TO 1.5m ABOVE FINISHED GRADE DUE TO THE POTENTIAL FOR TRAFFIC IMPACT ON THE PRECAST WALL PANELS FROM THE ADJACENT ROADWAY. SEE VSL STANDARD DRAWING STD-20 FOR ADDITIONAL DETAILS.



PLAN VIEW MSE WALL "R-351-20"

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

RETAINED EARTH INDEX	
RE-1	PLAN WIRE FACED WALL R-351-20, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTIONS • WIRE FACED WALL
RE-3	TYPICAL CROSS SECTION
RE-4	WIRE FACED WALL R-351-20
RE-5	WIRE FACED WALL R-351-20
RE-6	WIRE FACED WALL R-351-20
RE-7	WIRE FACED WALL R-351-20
RE-8	WIRE FACED WALL R-351-20
RE-9	PRECAST WALL R-351-20
RE-10	PRECAST WALL R-351-20
RE-11	PRECAST WALL R-351-20
RE-12	PRECAST WALL R-351-20
RE-13	PRECAST WALL R-351-20
RE-14	SPECIAL PANEL DETAILS
RE-15	SPECIAL PANEL DETAILS

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
SEISMIC ACCELERATION COEFF.	= 0.27g 50 YR

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

METRIC

CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS TO BE VERIFIED BY OTHERS. 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.

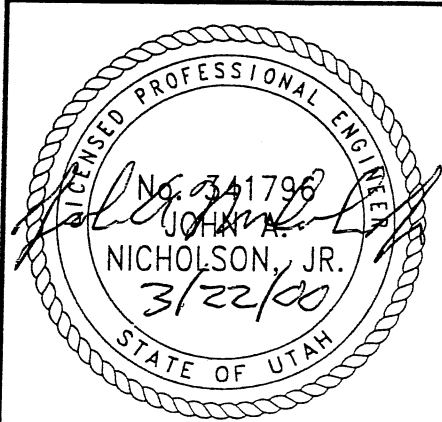
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	10-07-98	RELEASE FOR 1st. STAGE CONST. ONLY
▲	03-06-00	RELEASE FOR 2nd. STAGE CONSTRUCTION

NASATCH CONSTRUCTORS
APR 04 2000
RELEASED FOR CONSTRUCTION

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-6869



UTAH RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.



RETAINED EARTH™ WALLS PLAN VIEW MSE WALL "R-351-20"	DWG. NO. 3.2-R351-20.4
UTAH RECONSTRUCTION SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.	JOB NO. 239-0007
	SHEET NO. RE-1

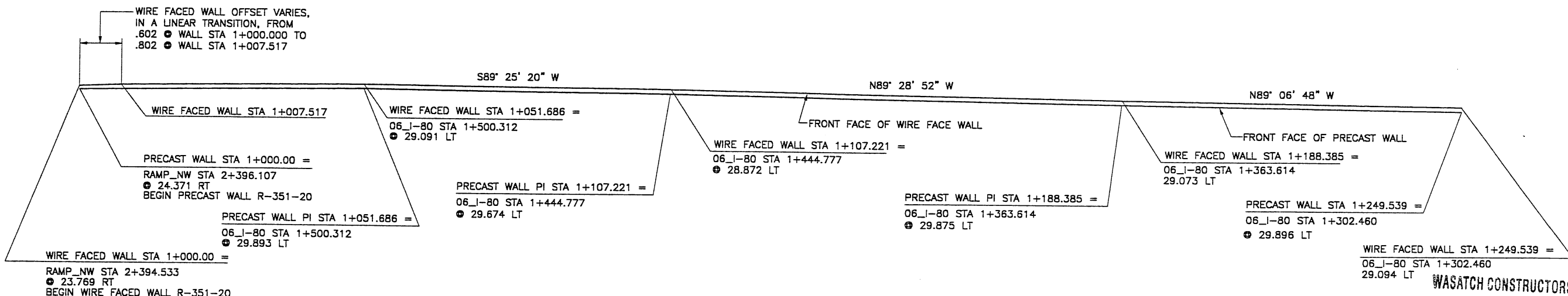
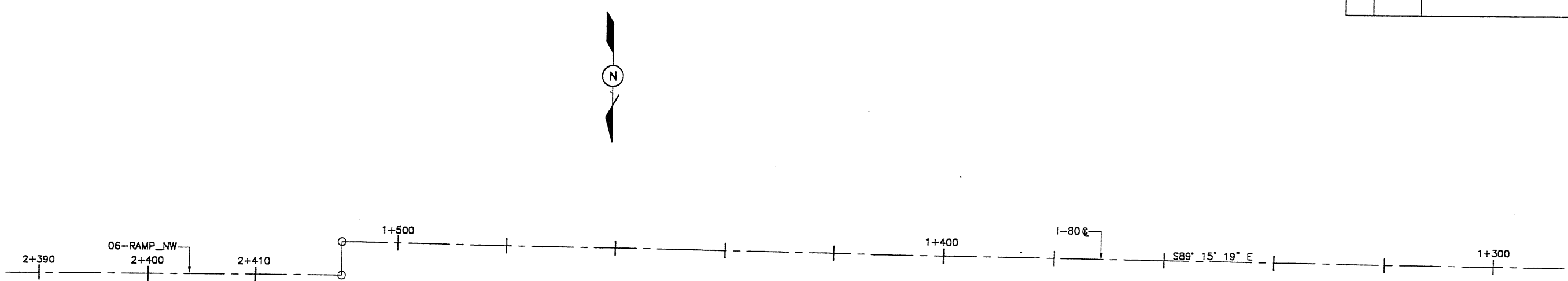
2ND STAGE DESIGN
BASED ON POST SETTLEMENT SURVEY OF WIRE FACE, LATERAL OUT WARD DISPLACEMENTS RANGED FROM 136mm TO 527mm MEASURED AT THE BASE OF THE WALL.

NOTE:
THE WALL CONNECTIONS ON WALL 351-20 MAY BE ROTATED A MAXIMUM OF 42° VERTICALLY (COL 1-6) AND 55° VERTICALLY (COL 7-82). SEE DETAIL "SECTION ROTATED" ON VSL STANDARD DRAWING NO. 18 FOR MORE INFORMATION.

FINAL PLOT 03-06-00

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY

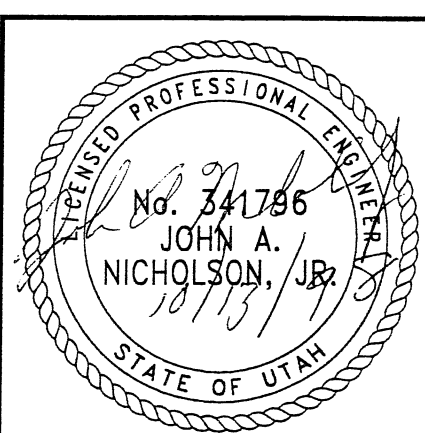
NO.	DATE	REVISION	CHK



PLAN VIEW MSE WALL "R-351-20"
 SCALE: 1:400 (FULL SIZE)
 SCALE: 1:800 (HALF SIZE)

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
SEISMIC ACCELERATION COFF. = 0.27g 50 YR
DESIGN CRITERIA
SAFETY FACTOR (OVERTURNING) = 2.0
SAFETY FACTOR (SLIDING) = 1.5
SAFETY FACTOR (PULLOUT) = 1.5
DESIGN LIFE = 75 YEARS

RETAINED EARTH INDEX
RE-1 PLAN WIRE FACED WALL R-351-20, NOTES & DESIGN CRITERIA
RE-2 TYPICAL CROSS SECTIONS @ WIRE FACED WALL
RE-3 TYPICAL CROSS SECTION
RE-4 WIRE FACED WALL R-351-20
RE-5 WIRE FACED WALL R-351-20
RE-6 WIRE FACED WALL R-351-20
RE-7 WIRE FACED WALL R-351-20
RE-8 WIRE FACED WALL R-351-20



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
 2840 Pico Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-6272
 Fax: (919) 781-6969

VSL

ALBANY, GA / DALLAS, TX / BALTIMORE, MD (CORPORATE OFFICE)
 MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

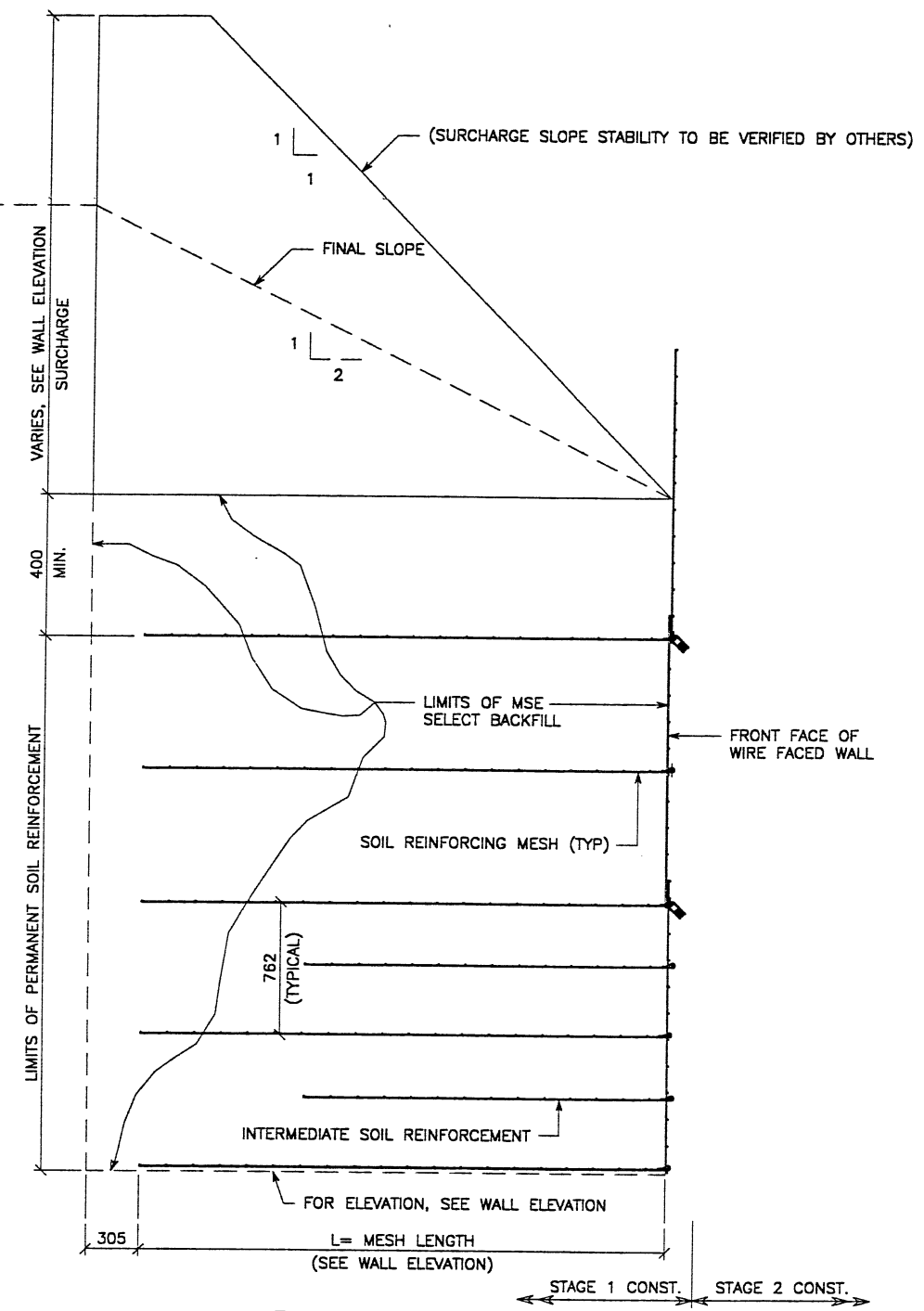
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WASATCH CONSTRUCTORS
 OCT 22 1998
 RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
PLAN VIEW MSE WALL "R-351-20"
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.
DWG. NO. 3.2-R351-20.4
JOB NO. 239-0007
SHT. NO. RE-1

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY

NO.	DATE	REVISION



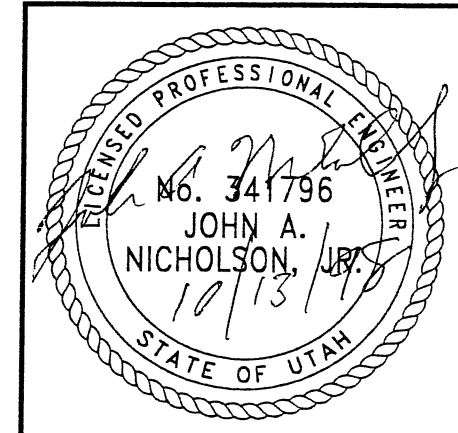
SEE FOSTER GEOTECHNICAL STD
 DWG FOR PLACEMENT OF
 INTERMEDIATE SOIL REINFORCEMENT

NOTE: INTERMEDIATE SOIL REINFORCEMENT SHALL BE PLACED BEGINNING AT THE BOTTOM OF A WALL SECTION TO A HEIGHT ENDING 4.5M BELOW THE TOP OF COPING. IF A WALL SECTION IS LESS THAN 4.5M TALL, PLACE 2 ROWS OF INTERMEDIATE SOIL REINFORCEMENT AT THE BOTTOM OF THE WALL. SEE FOSTER GEOTECHNICAL STANDARD DRAWINGS FOR PLACEMENT DETAILS.

TYPICAL CROSS SECTION
STAGE 1 CONSTRUCTION WITH SURCHARGE
 (SEE FIG. 8-2.2 DESIGN MEMORANDUM 3.2.52 WALL R-351-20)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (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
 OCT 22 1998
 RELEASED FOR CONSTRUCTION

VSL CORPORATION
 2810 Plaza Place, Suite 200
 Raleigh, NC 27604
 Phone: (919) 781-6272
 Fax: (919) 781-6885



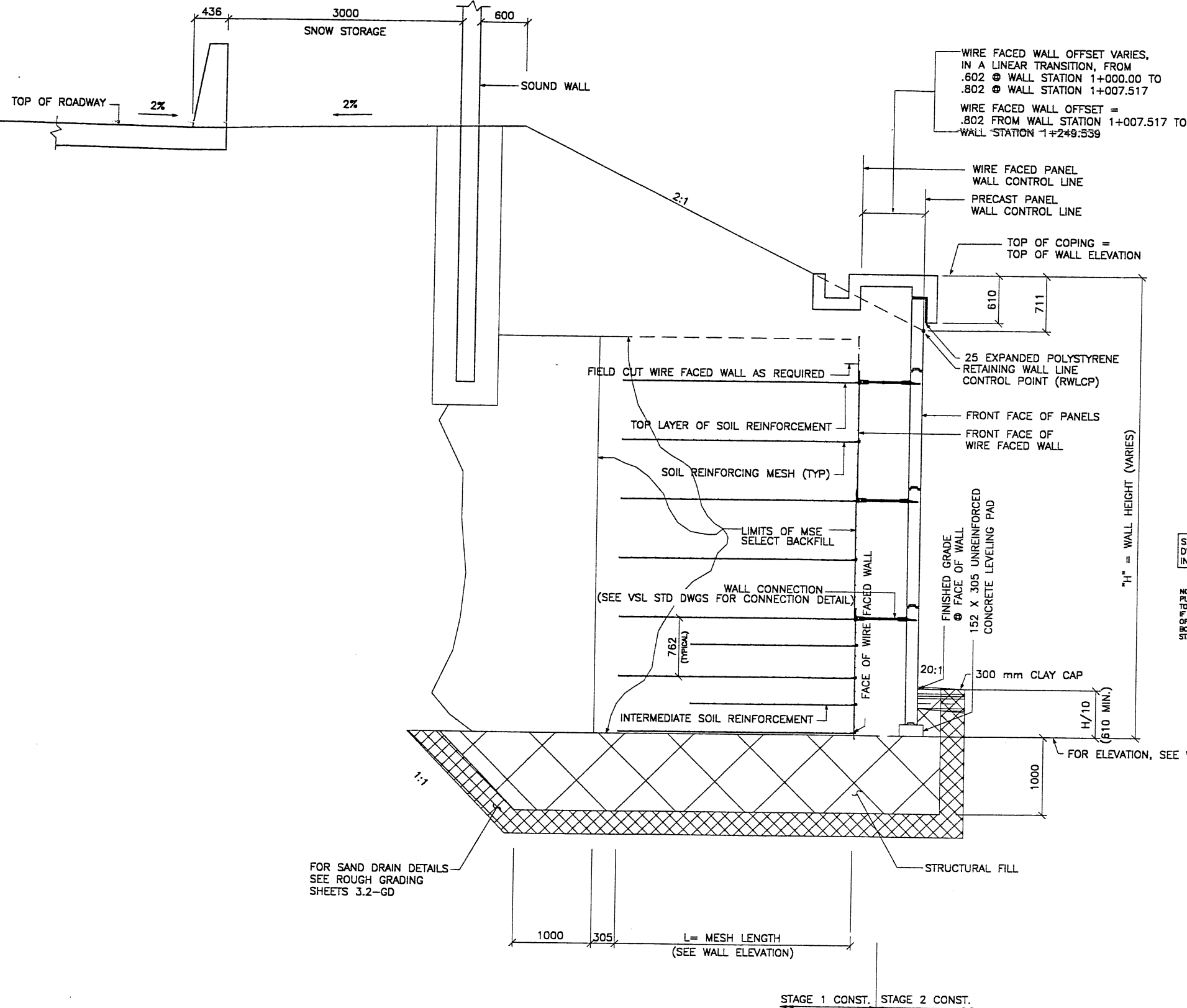
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RETAINED EARTH™ WALLS
 WIRE FACED WALL "R-351-20"
 TYPICAL SECTIONS @ WIRE FACED WALL
 UTAH 1-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2-R351-20.5
JOB NO.	239-0007
SHT. NO.	RE-2

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY



SEE FOSTER GEOTECHNICAL STD DWG FOR PLACEMENT OF INTERMEDIATE SOIL REINFORCEMENT

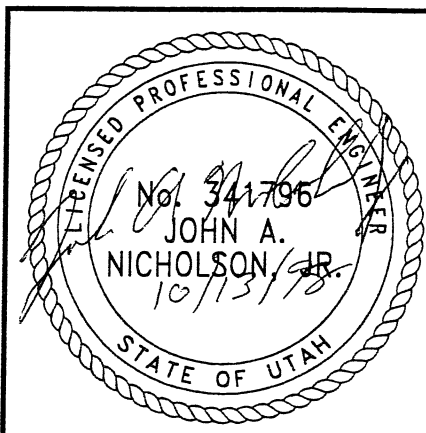
NOTE: INTERMEDIATE SOIL REINFORCEMENT SHALL BE PLACED BEGINNING AT THE BOTTOM OF A WALL SECTION TO A HEIGHT ENDING 4.5M BELOW THE TOP OF COPING. IF A WALL SECTION IS LESS THAN 4.5M TALL, PLACE 2 ROWS OF INTERMEDIATE SOIL REINFORCEMENT AT THE BOTTOM OF THE WALL. SEE FOSTER GEOTECHNICAL STANDARD DRAWINGS FOR PLACEMENT DETAILS.

WASATCH CONSTRUCTORS
OCT 22 1998
RELEASED FOR CONSTRUCTION

TYPICAL CROSS SECTION
(SEE DWG NO. 3.2R-351-20.3 FOR ADDITIONAL INFORMATION)

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METRIC



RETAINED EARTH™ WALLS
WIRE FACED WALL "R-351-20"
TYPICAL CROSS SECTION
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-20.6
JOB NO.	239-0007
SHT. NO.	RE-3

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27617 781-6272
Telephone: (919) 781-6272
Fax: (919) 781-6869



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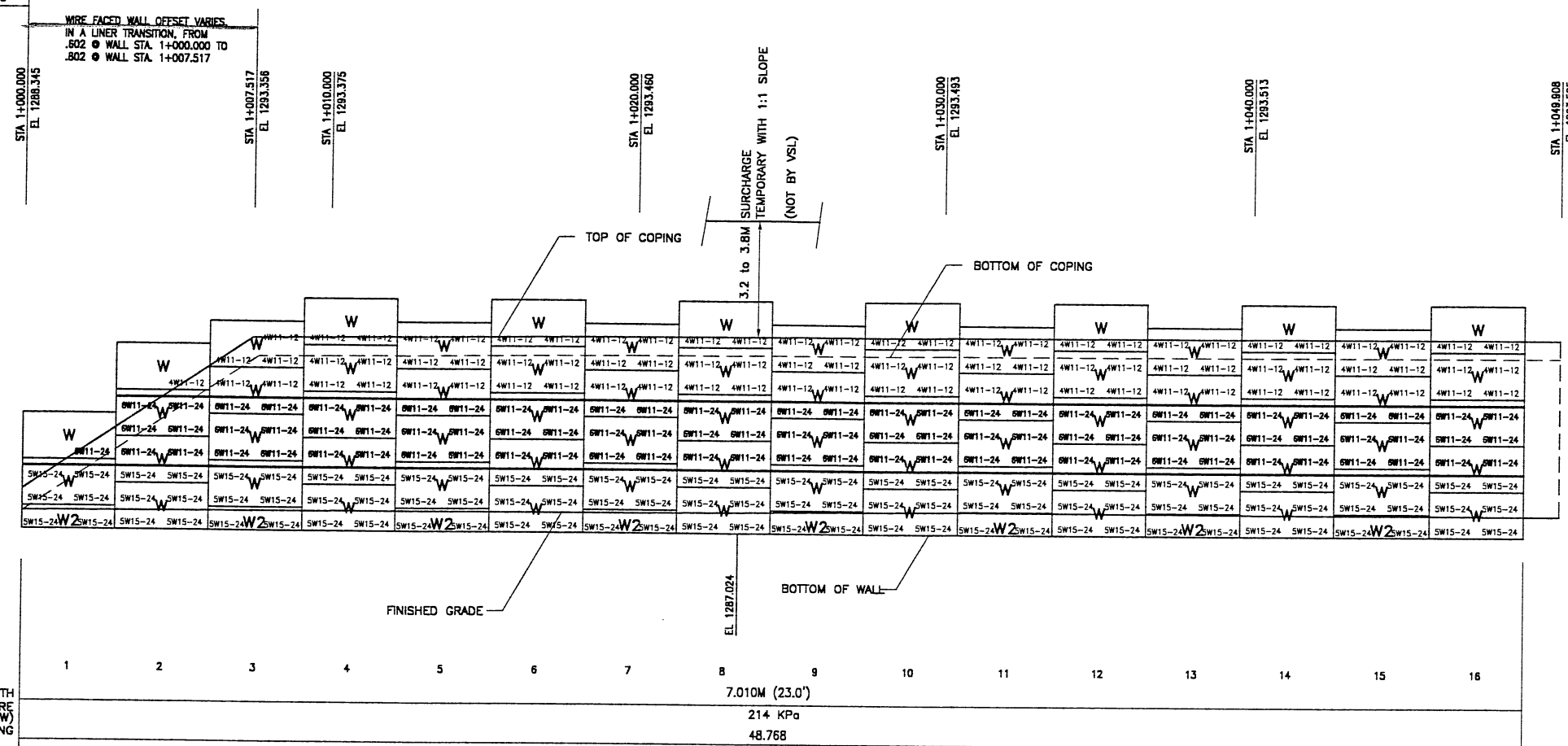
DES.	10-07-98	MM
DRN.	10-07-98	RSW
CHK.	10-07-98	MM

NO.	DATE	REVISION	BY	CHK

CE (X-UTAH.DWG) X
NEWBS-20.DWG
H:\RE_EARTH\PROJECT\239-0007\1998\65-WALLS
10-07-98
FINAL

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY

BEGIN WIRE FACED WALL R-351-20
WIRE FACED WALL STA 1+000.000 =
RAMP_NW STA 2+394.533
@ 23.769 RT



MESH DEPTH
7.010M (23.0')

MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)
214 KPa

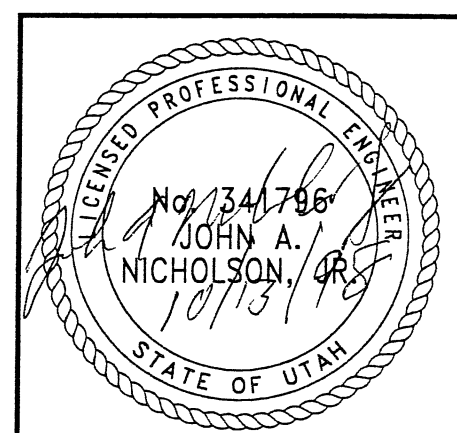
PIN SPACING
48.768

RETAINING WALL "R-351-20" - 1ST STAGE: WIRE FACED WALL
(FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
(TOTAL SURFACE AREA OF FACING = 1472.63 SM) SCALE 1:200 (HALF SIZE)

METRIC

NOTE:
THE INDICATED MAXIMUM BEARING PRESSURES
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
OCT 22 1998
RELEASED FOR CONSTRUCTION

DES.	MM	CHK.	MM	NO.	DATE	REVISION	CHK
08-28-98	JHU	08-28-98	JHU				
08-28-98	MM	08-28-98	MM				

VSL CORPORATION
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Fax: (919) 781-4869

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

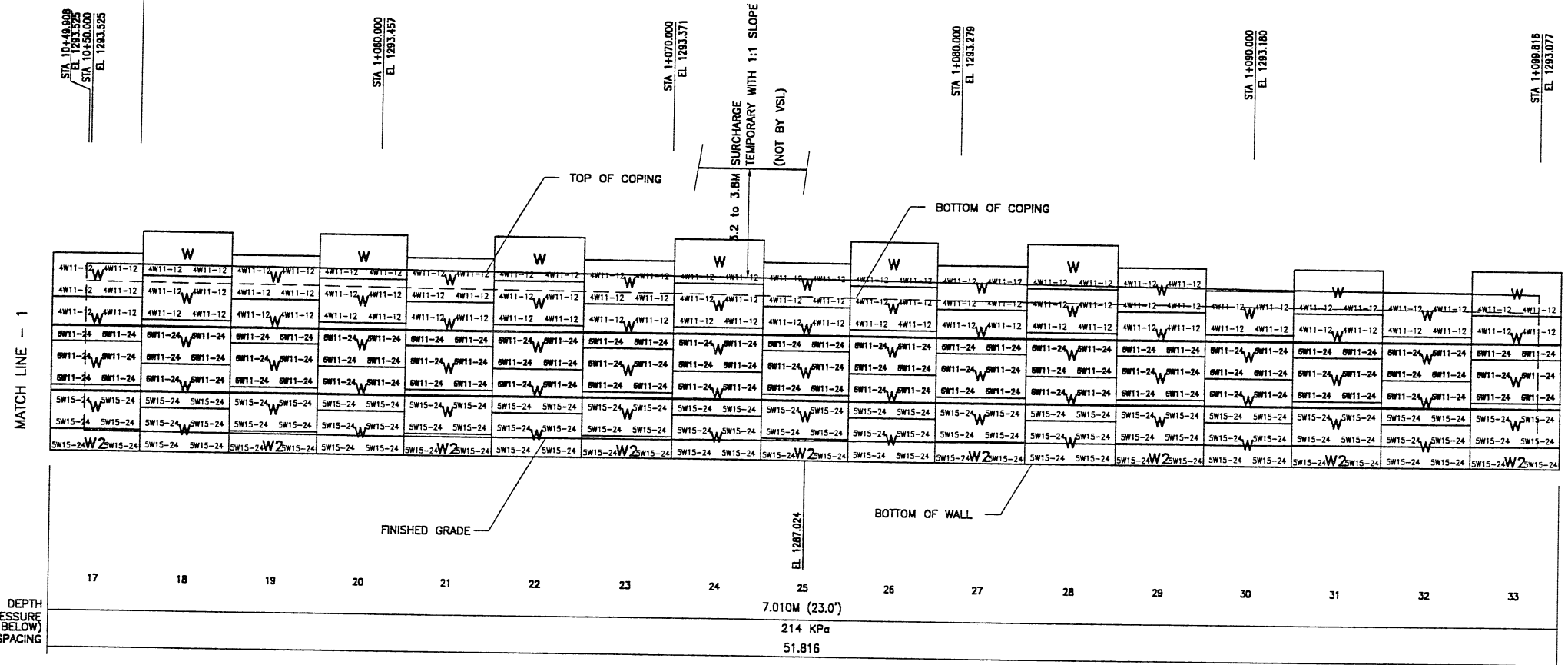
RETAINED EARTH™ WALLS
WALL "R-351-20" - 1ST STAGE: WIRE FACED WALL
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-20.7
JOB NO.	239-0007
SHT. NO.	RE-4

NCE (X-UTRHL.DWG)
 WFW6S-20.DWG
 H:\RE_EARTH\PROJECT\239-0007\1998\6S-WALL
 T 10-07-98
 FINAL

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY

WIRE FACED WALL STA 1+051.686 =
 08_1-80 STA 1+500.312
 ● 29.091 LT

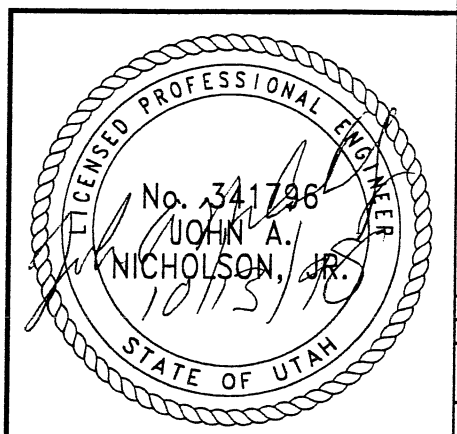


RETAINING WALL "R-351-20" - 1ST STAGE: WIRE FACED WALL
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF FACING = 1472.63 SM) SCALE 1:200 (HALF SIZE)

METRIC

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

CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY.
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 OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO
 THE MANUFACTURER'S SPECIFICATION.



WASATCH CONSTRUCTORS
 OCT 22 1998
 RELEASED FOR CONSTRUCTION

DES.	MM	08-28-98	REVISION	NO.	DATE	BY	CHK
DRN	JHU	08-28-98					
CHK	MM	08-28-98					

RETAINED EARTH™

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 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-6772
 Fax: (919) 781-9959

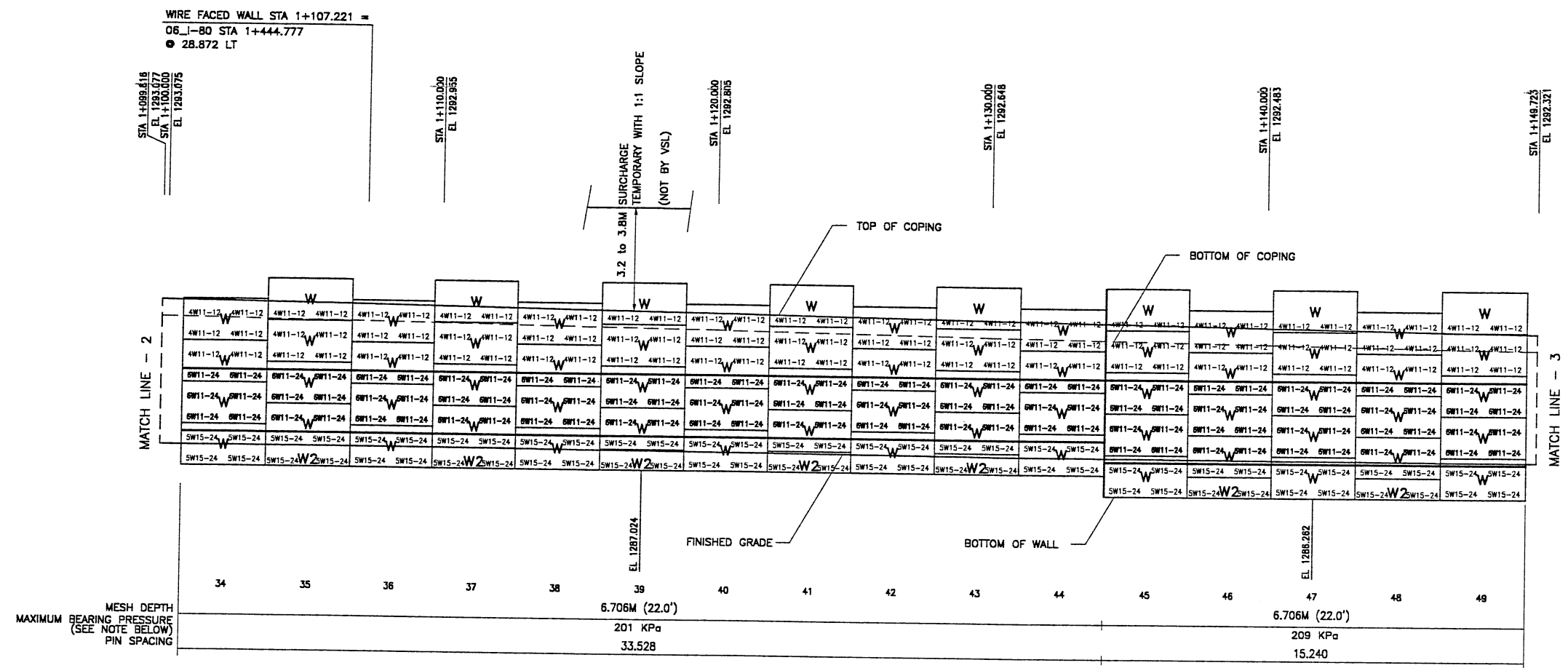
ATLANTA, GA / DALLAS, TX / BALTIMORE, MD (CORPORATE OFFICE)
 MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

RETAINED EARTH™ WALLS
 WALL "R-351-20" - 1ST STAGE: WIRE FACED WALL
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO. 3.2R-351-20.8
 JOB NO. 239-0007
 SHEET NO. RE-5

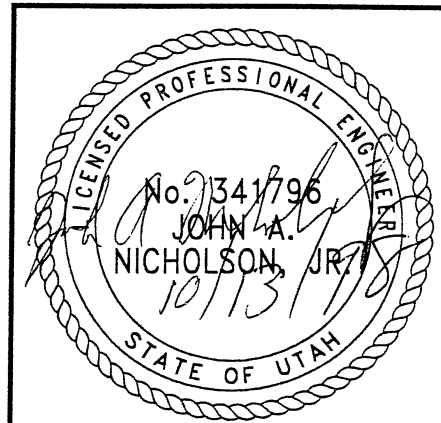
FINAL 10-07-98
 H:\RE_EARTH\PROJECT\239-0007\1998\9WSERIE\SUBMTL-1\9W-06
 NCE (X-UTAH.DWG)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY



RETAINING WALL "R-351-20" - 1ST STAGE: WIRE FACED WALL
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF FACING = 1472.63 SM) SCALE 1:200 (HALF SIZE)

WASATCH CONSTRUCTORS
 OCT 22 1998
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METRIC

	MM	JHU	MM	RETAINED EARTH™	NO.	DATE	REVISION	CHK	BY
DES.	08-28-98	MM							
DRN.	08-28-98	JHU							
CHK.	08-28-98	MM							

VSL CORPORATION
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 Fax: (919) 981-9889

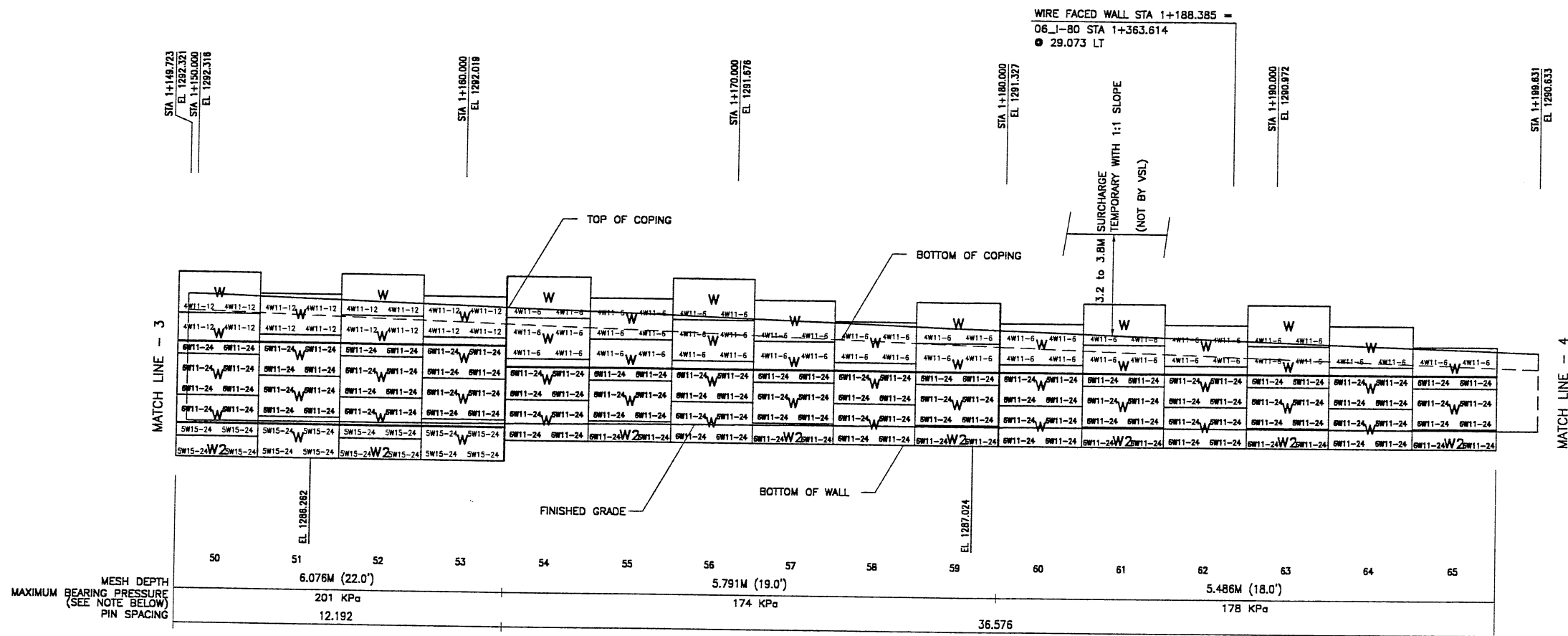
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RETAINED EARTH™ WALLS
WALL "R-351-20" - 1ST STAGE: WIRE FACED WALL
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-20.9
JOB NO.	239-0007
SHT. NO.	RE-6

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY

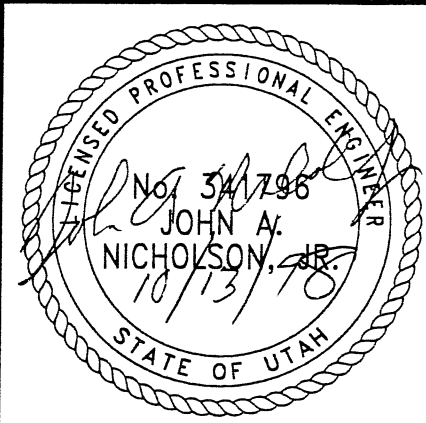


RETAINING WALL "R-351-20" - 1ST STAGE: WIRE FACED WALL
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF FACING = 1472.63 SM) SCALE 1:200 (HALF SIZE)

WASATCH CONSTRUCTORS
 OCT 22 1998
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METRIC

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DES.	MM	MM	MM	REVISION	DATE	BY	CHK
08-28-98	JHU	JHU	JHU				
08-28-98	JHU	JHU	JHU				
08-28-98	JHU	JHU	JHU				

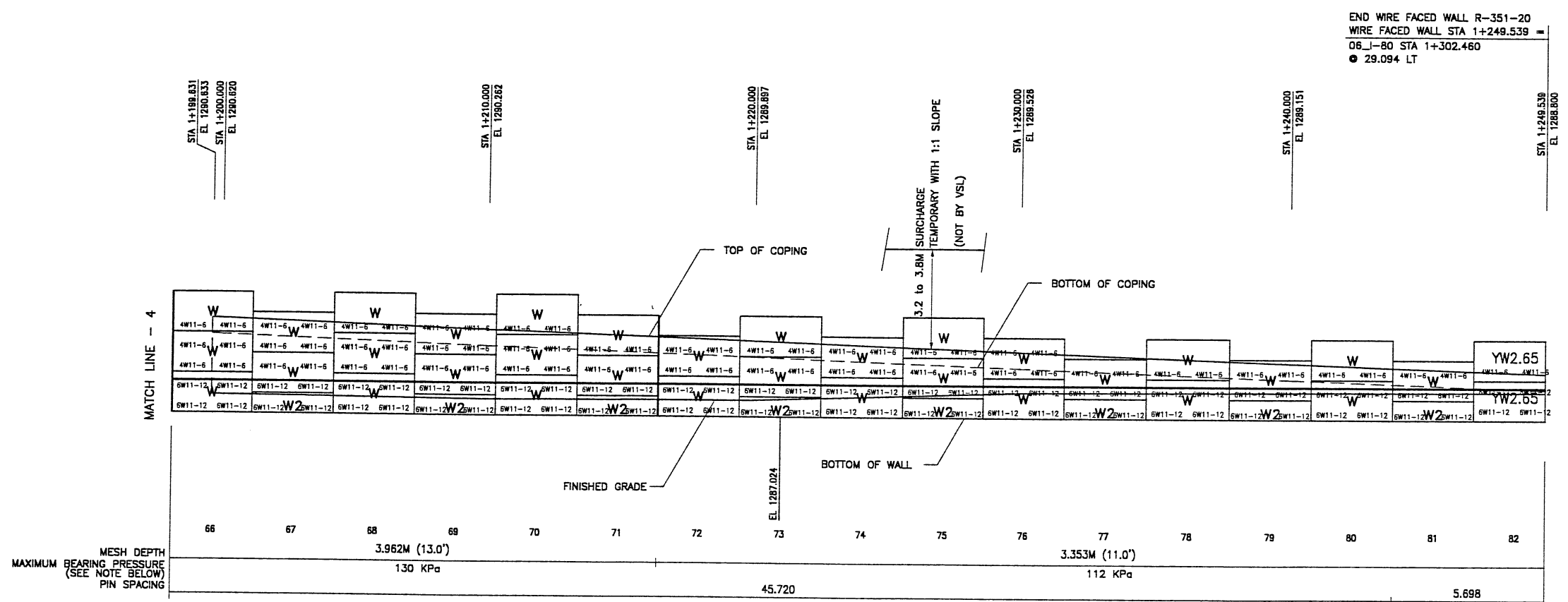
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RETAINED EARTH™ WALLS
 WALL "R-351-20" - 1ST STAGE: WIRE FACED WALL
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO. 3.2R-351-20.10
 JOB NO. 239-0007
 SHT. NO. RE-7

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY



END WIRE FACED WALL R-351-20
 WIRE FACED WALL STA 1+249.539 =
 06-80 STA 1+302.460
 ● 29.094 LT

MATCH LINE - 4

END WALL

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

RETAINING WALL "R-351-20" - 1ST STAGE: WIRE FACED WALL
 (FRONT FACE SHOWN)

(TOTAL SURFACE AREA OF FACING = 1472.63 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

WASATCH CONSTRUCTORS

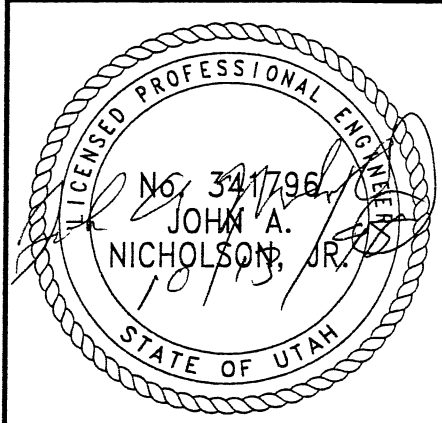
OCT 22 1998

RELEASED FOR CONSTRUCTION

METRIC

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

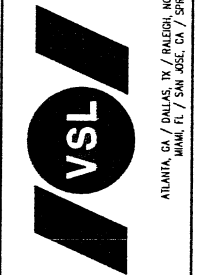
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 OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO
 THE MANUFACTURER'S SPECIFICATION.



RETAINED EARTH™ WALLS
 WALL "R-351-20" - 1ST STAGE: WIRE FACED WALL
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-20.11
JOB NO.	239-0007
SHT. NO.	RE-8

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 Raleigh, NC 27617
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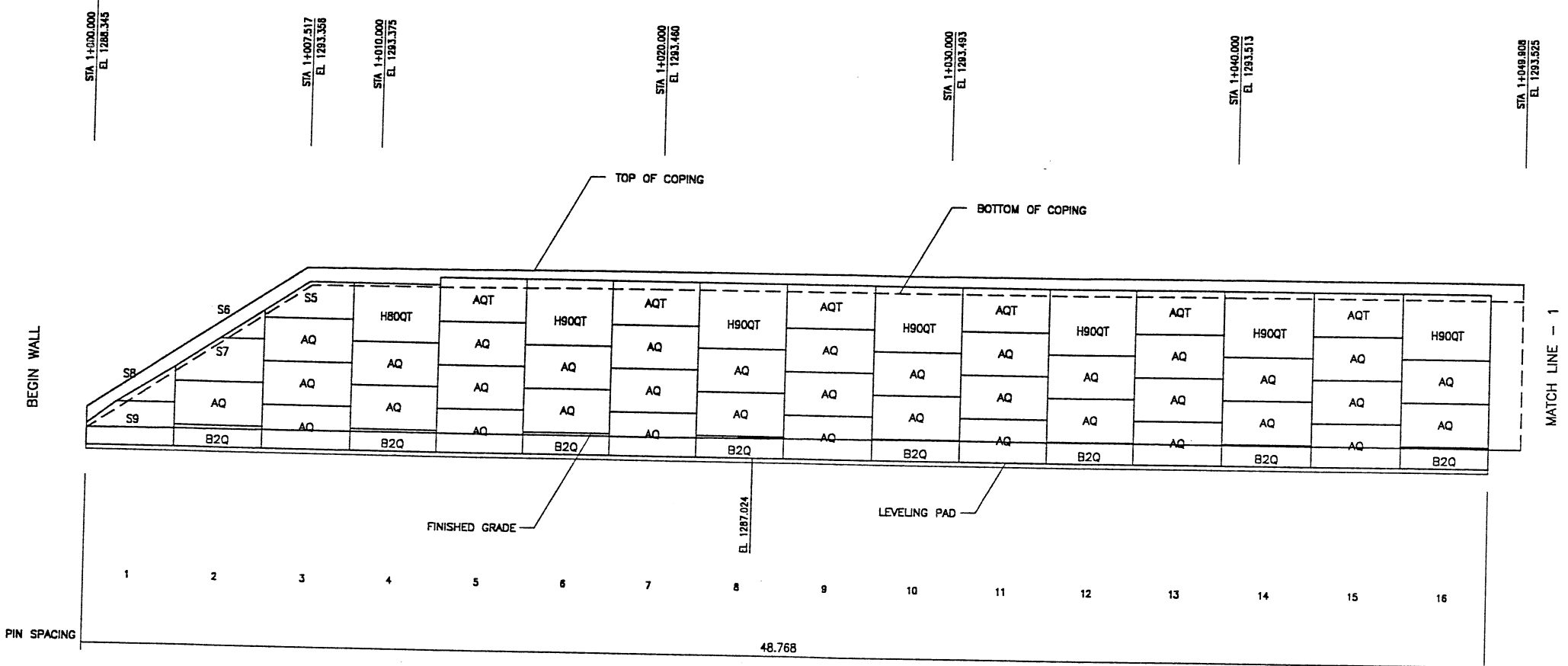
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DIES.	MM	MM	MM
DRN.	JHJ	JHJ	JHJ
CHK.	MM	MM	MM

NO.	DATE	REVISION	BY	CHK

REFERENCE (X-UTAH.DWG)

BEGIN PRECAST WALL R-351-20
PRECAST WALL STA 1+000.000 =
RAMP_NW STA 2+394.540
@ 24.581 RT



RETAINING WALL "R-351-20" - 2ND STAGE: PRECAST WALL
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF FACING = 1176.83 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

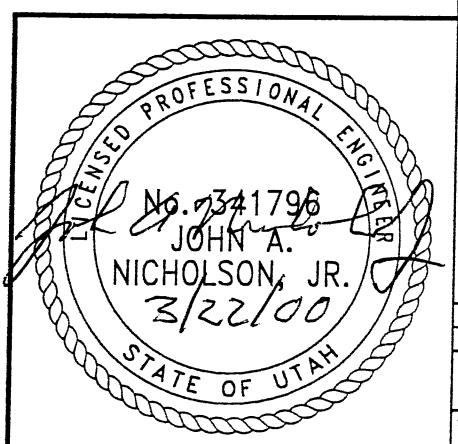
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	03-06-00	RELEASE FOR 2nd. STAGE CONSTRUCTION

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

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 Fax: (919) 781-4869

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WASATCH CONSTRUCTORS
APR 04 2000
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RETAINED EARTH™ WALLS WALL "R-351-20" - 2ND STAGE: PRECAST WALL
UTAH I-15 INTERCHANGE SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.
DWG. NO. 3.2R-351-20.12
JOB NO. 239-0007
SHT. NO. RE-9

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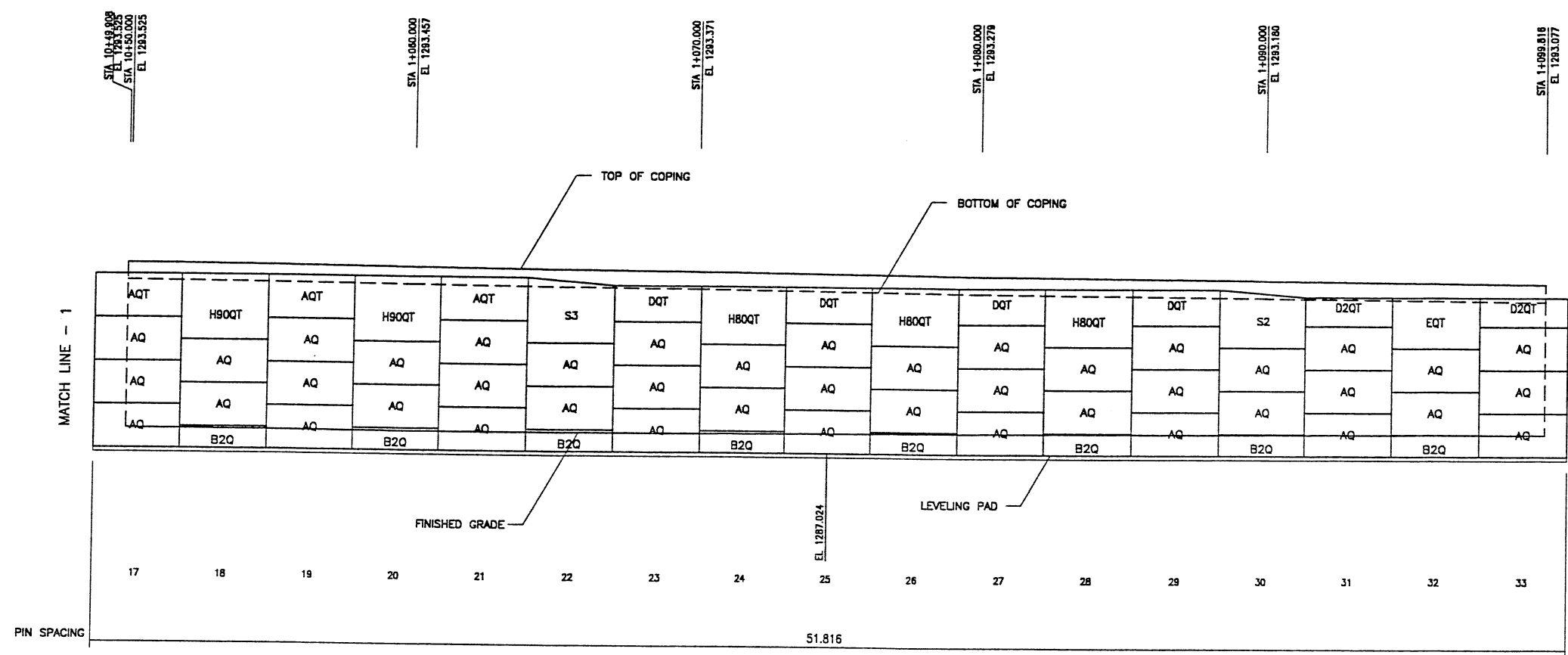
METRIC

RFC After Final Approval

FINAL PLOT 03-06-00

FINAL PLOT 03-06-00

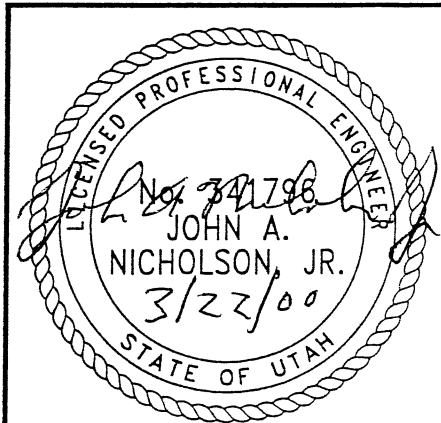
REFERENCE (X-UTAHLOWG)



RETAINING WALL "R-351-20" - 2ND STAGE: PRECAST WALL
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF FACING = 1176.63 SM) SCALE 1:200 (HALF SIZE)

METRIC

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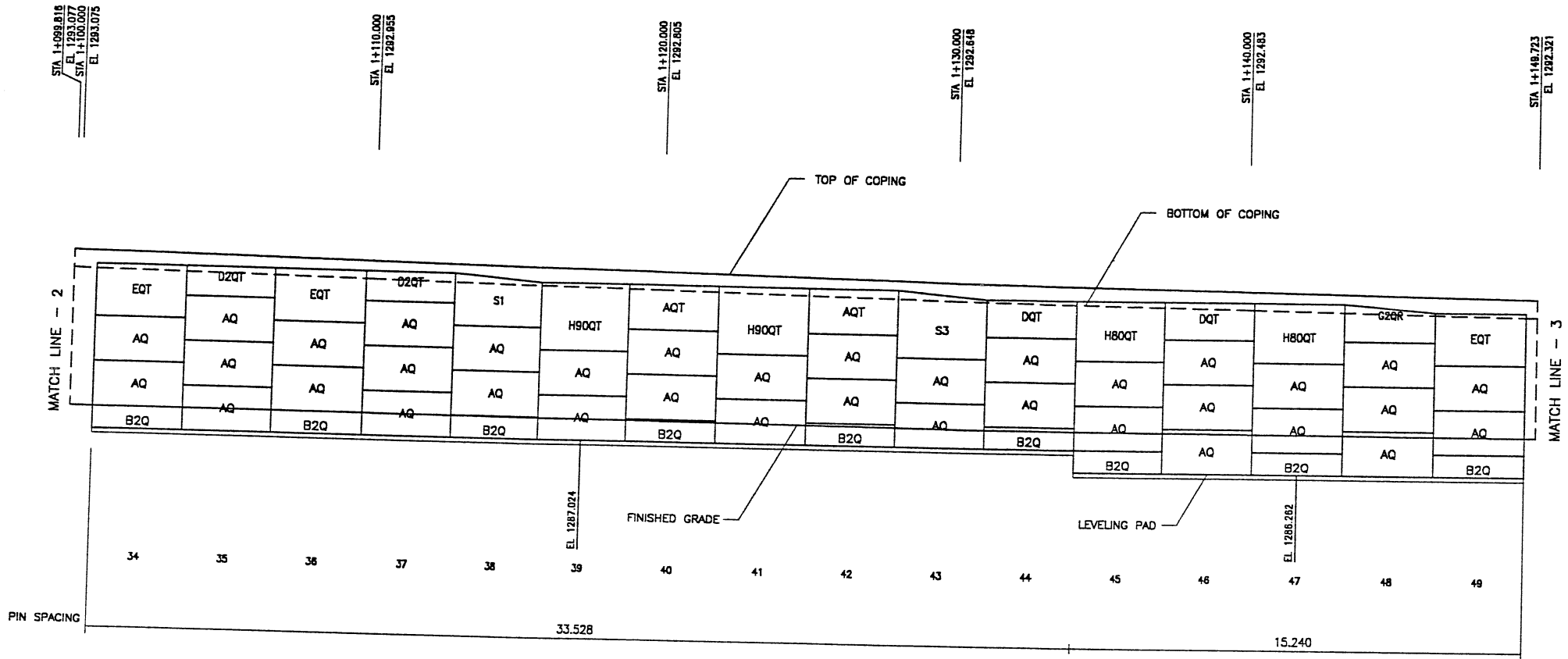
WASATCH CONSTRUCTORS
 APR 04 2000
 RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	03-06-00	RELEASE FOR 2ND STAGE CONST.

DES. 03-06-00		JN	RETAINED EARTH™	NO.	DATE
DRN. 03-06-00		DSW			
CHK. 03-06-00		JN			
<p>VSL CORPORATION 2840 Plaza Place, Suite 200 Raleigh, NC 27612 Telephone: (919) 781-6272 Fax: (919) 781-4969</p> <p>ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE) MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA</p>					
<p>RETAINED EARTH™ WALLS WALL "R-351-20" - 2ND STAGE: PRECAST WALL UTAH I-15 INTERCHANGE SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.</p>					
DWG. NO.		3.2R-351-20.13			
JOB NO.		239-0007			
SCALE		RE-10			

RFC After Final Approval

REFERENCE (X-UTAH.DWG)



RETAINING WALL "R-351-20" - 2ND STAGE: PRECAST WALL
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF FACING = 1176.63 SM) SCALE 1:200 (HALF SIZE)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	03-06-00	RELEASE FOR 2nd. STAGE CONSTRUCTION

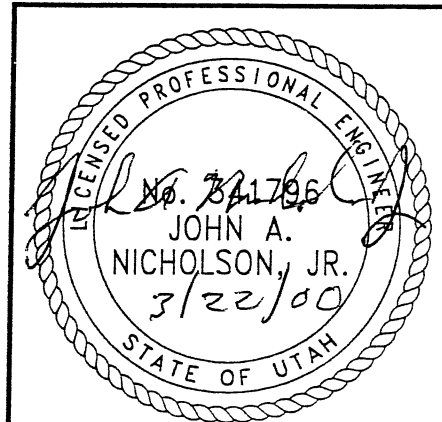
VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 761-6272
 Fax: (919) 761-1899



ATLANTA, GA / DALLAS, TX / DENVER, CO (CORPORATE OFFICE)
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WASATCH CONSTRUCTORS
 APR 04 2000
 RELEASED FOR CONSTRUCTION



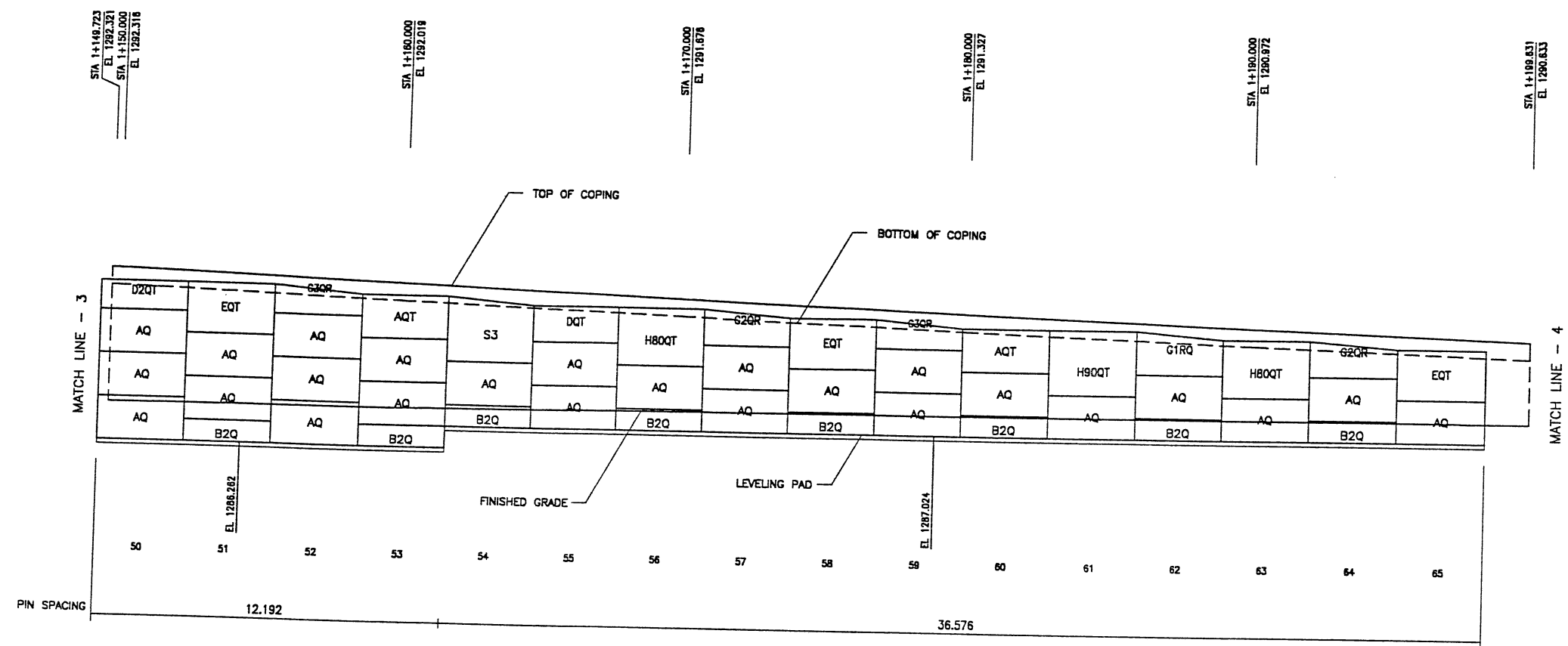
RETAINED EARTH™ WALLS WALL "R-351-20" - 2ND STAGE: PRECAST WALL
UTAH 1-15 INTERCHANGE SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.
DWG. NO. 3.2R-351-20.14
JOB NO. 239-0007
SHT. NO. RE-11

METRIC
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RFC After Final Approval

FINAL PLOT 03-06-00

REFERENCE (X-UTAH.DWG)



FINAL PLOT 10-07-98

RETAINING WALL "R-351-20" - 2ND STAGE: PRECAST WALL
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF FACING = 1176.63 SM) SCALE 1:200 (HALF SIZE)

METRIC

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APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	03-06-00	RELEASE FOR 2nd. STAGE CONSTRUCTION

DES.	CHK.	DATE	NO.	DATE	REVISION	BY	CHK
JN	JN	03-06-00					
DSW	DSW	03-05-00					
JN	JN	03-06-00					

VSL CORPORATION
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 Raleigh, NC 27604
 Telephone: (919) 791-8772
 Fax: (919) 791-4869

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

VSL Corporation (VSL) makes a strict proprietary disclaimer of all rights in the design and construction of the retaining wall. The design and construction of the retaining wall is based on the information provided by the client. VSL is not responsible for any errors or omissions in the design or construction of the retaining wall. The client is responsible for the accuracy of the information provided and for the safety of the retaining wall. VSL makes no warranty, expressed or implied, for the retaining wall. THE CLIENT ASSUMES ALL LIABILITY THEREFOR.

WASATCH CONSTRUCTORS
 APR 04 2000
 RELEASED FOR CONSTRUCTION

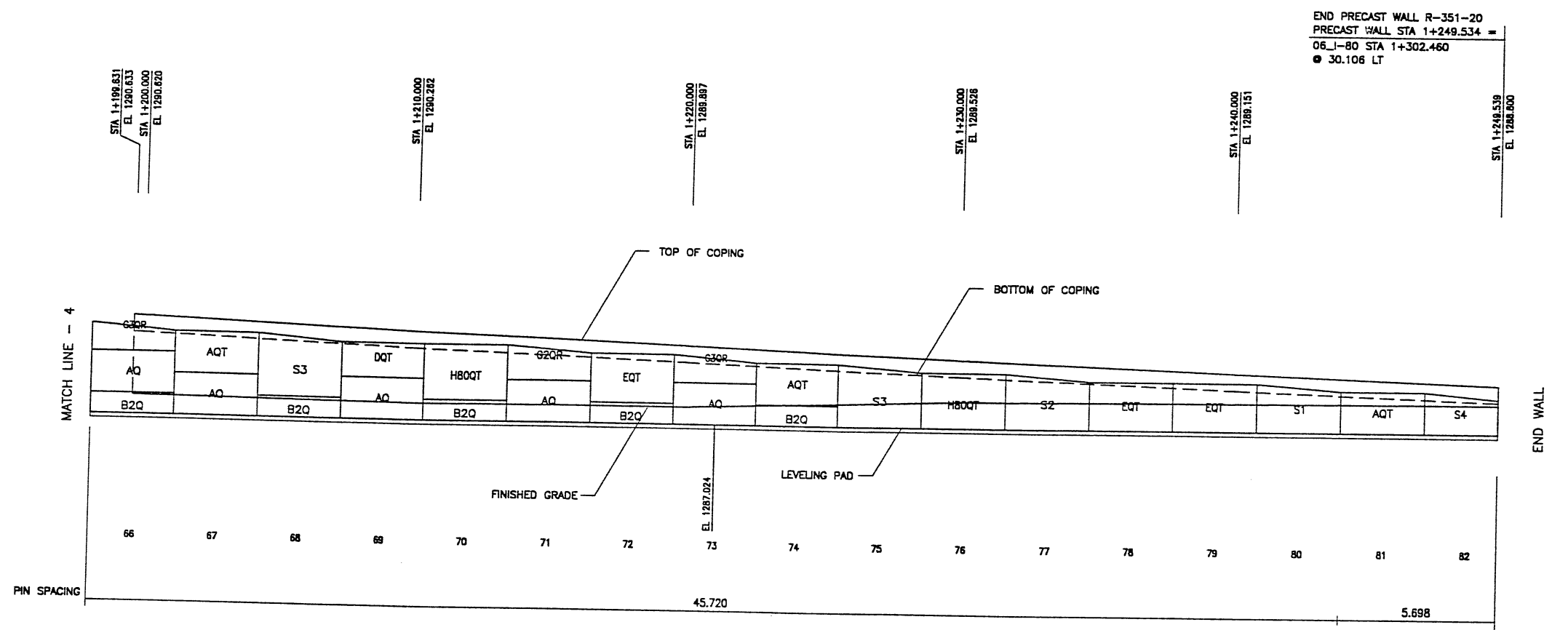
JOHN A. NICHOLSON, JR.
 3/22/00

RETAINED EARTH™ WALLS WALL "R-351-20" - 2ND STAGE: PRECAST WALL
UTAH I-15 INTERCHANGE SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.
DWG. NO. 3.2R-351-20.15
JOB NO. 239-0007
SHEET NO. RE-12

RFC After Final Approval

XREFERENCE (X-UTAH.DWG)

FINAL PLOT 03-06-00



RETAINING WALL "R-351-20" - 2ND STAGE: PRECAST WALL
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF FACING = 1176.63 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 TO BE VERIFIED BY OTHERS. 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
▲	03-06-00	RELEASE FOR 2nd. STAGE CONSTRUCTION

END PRECAST WALL R-351-20
 PRECAST WALL STA 1+249.534 =
 06_L-80 STA 1+302.460
 ● 30.106 LT

NO.	DATE	REVISION	CHK

VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27617-7818-6772
 Tel: (919) 781-4669
 Fax: (919) 781-4669



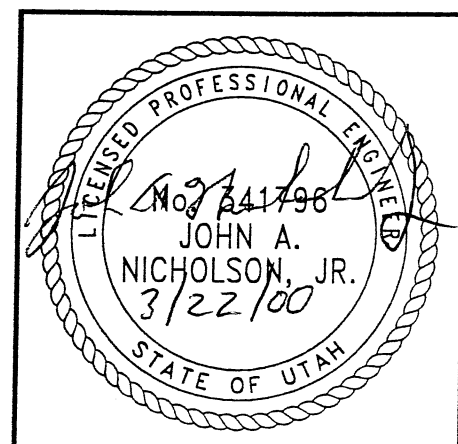
ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
 MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

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WASATCH CONSTRUCTORS

APR 04 2000

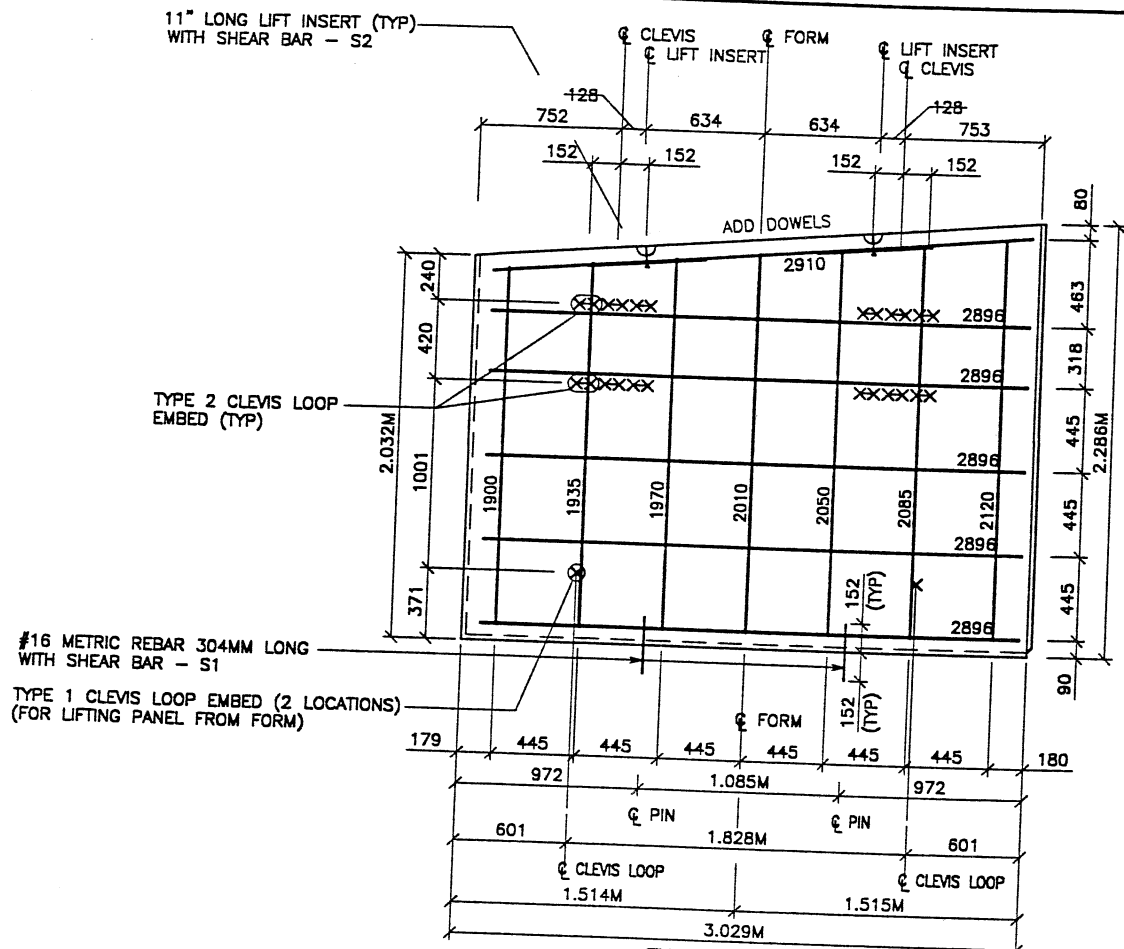
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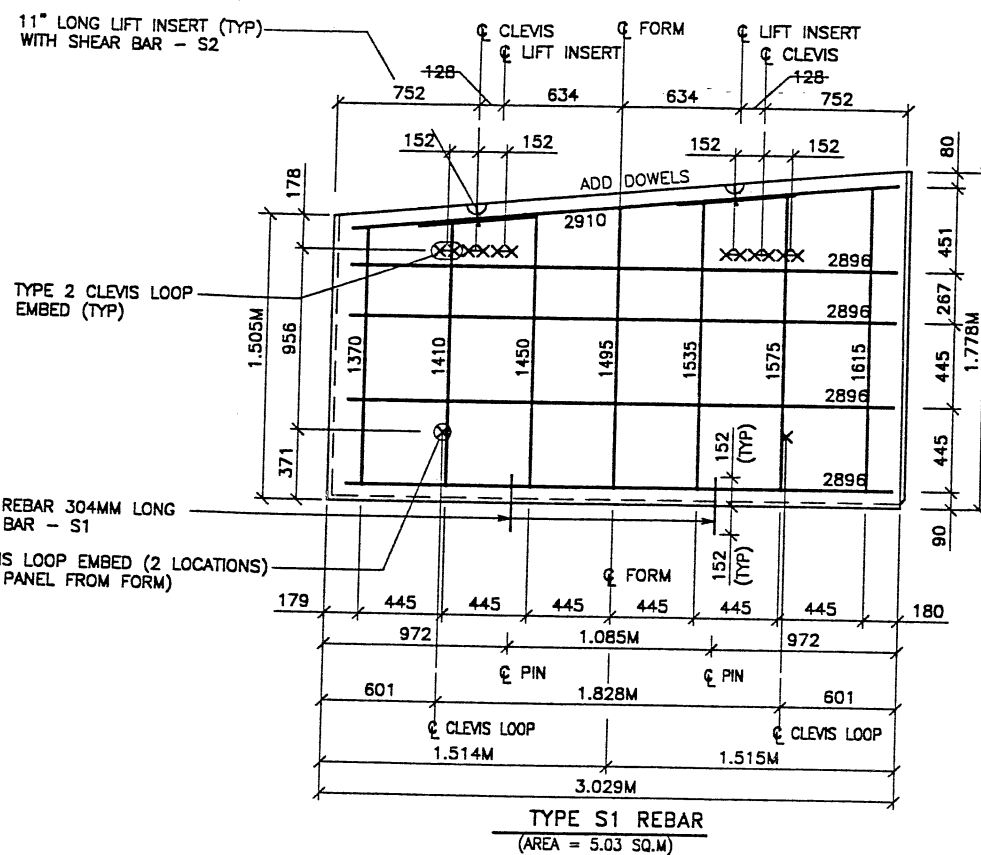
RETAINED EARTH™ WALLS: WALL "R-351-20" - 2ND STAGE: PRECAST WALL	UTAH I-15 INTERCHANGE SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.
DWG. NO. 3.2R-351-20.16	JOB NO. 239-0007
SHEET NO. RE-13	

RFC After Final Approval

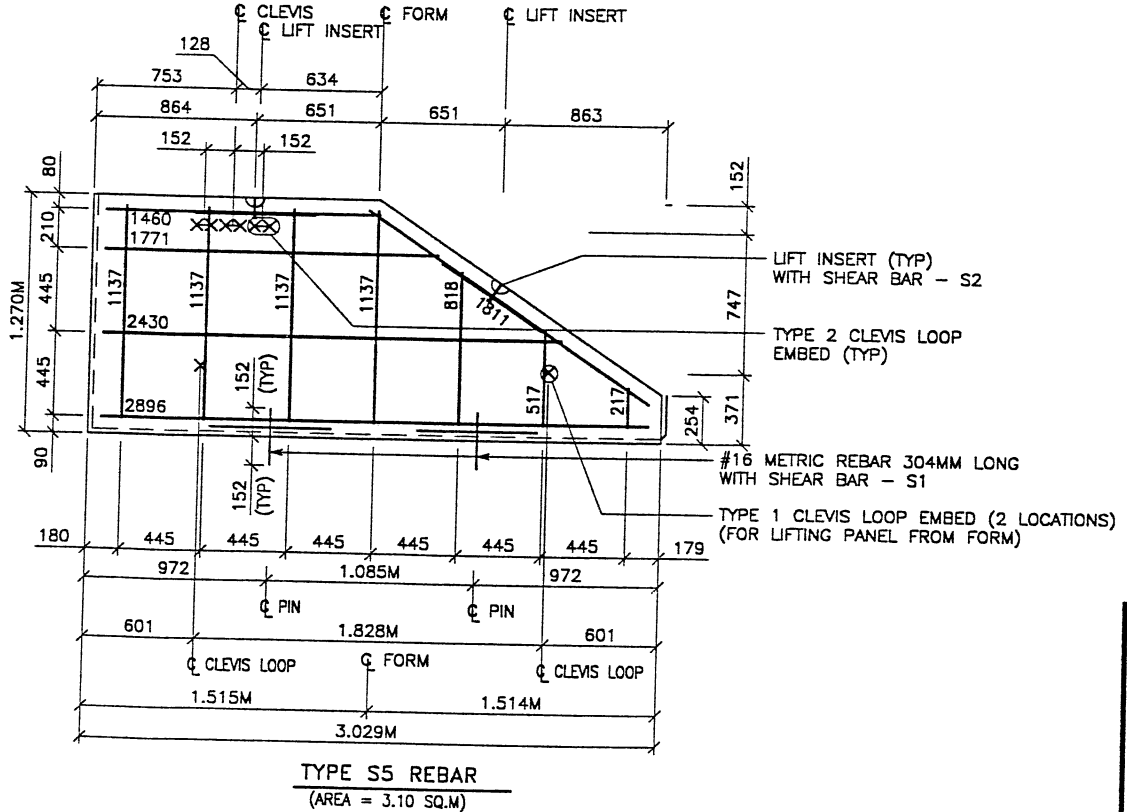
ENCE (X-UTAH.DWG)



#16 METRIC REBAR 304MM LONG WITH SHEAR BAR - S1
TYPE 1 CLEVIS LOOP EMBED (2 LOCATIONS) (FOR LIFTING PANEL FROM FORM)



TYPE S1 REBAR
(AREA = 5.03 SQ.M)



TYPE S5 REBAR
(AREA = 3.10 SQ.M)

METRIC

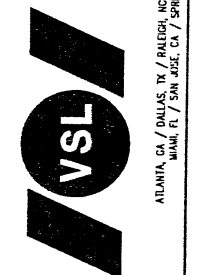
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS TO BE VERIFIED BY OTHERS. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	03-05-00	RELEASE FOR 2ND STAGE 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 25,200 KPa.
 - EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 - ALL PANELS TO USE 9.5mm# WIDE 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.
 - SEE FOSTER GEOTECHNICAL STD. PLANS FOR ADD'L PANEL DETAILS

NO.	DATE	DESCRIPTION	BY	CHK
1	03-05-00	RELEASE FOR 2ND STAGE CONSTRUCTION		

VSL CORPORATION
2840 Photo Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-8272
Fax: (919) 781-8889

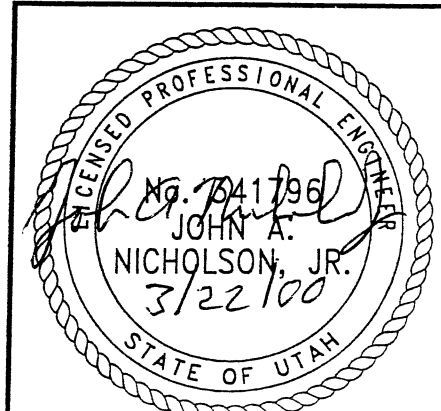


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WASATCH CONSTRUCTORS

APR 04 2000

RELEASED FOR CONSTRUCTION



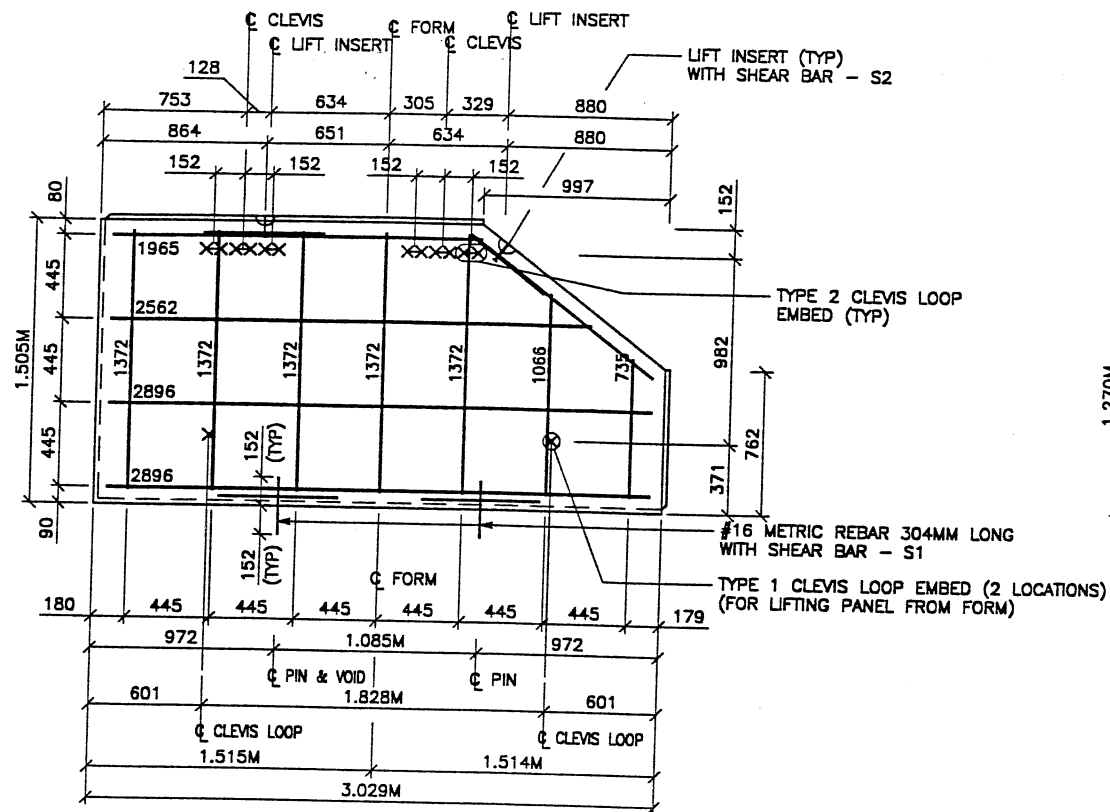
RETAINED EARTH™ WALLS
WALL R-351-20"
2-STAGE PANEL REINFORCEMENT
600 NORTH / I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-20.17
JOB NO.	239-0007
REVISION	RE-14

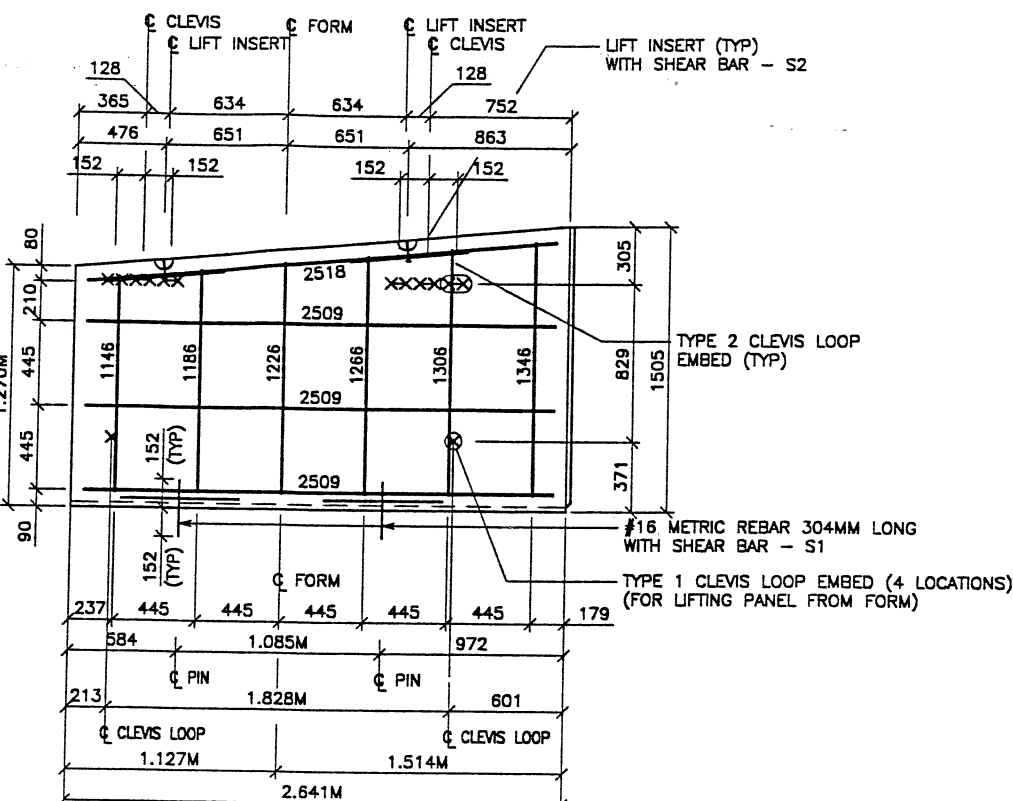
RFC After Final Approval

FINAL PLOT 03-06-00

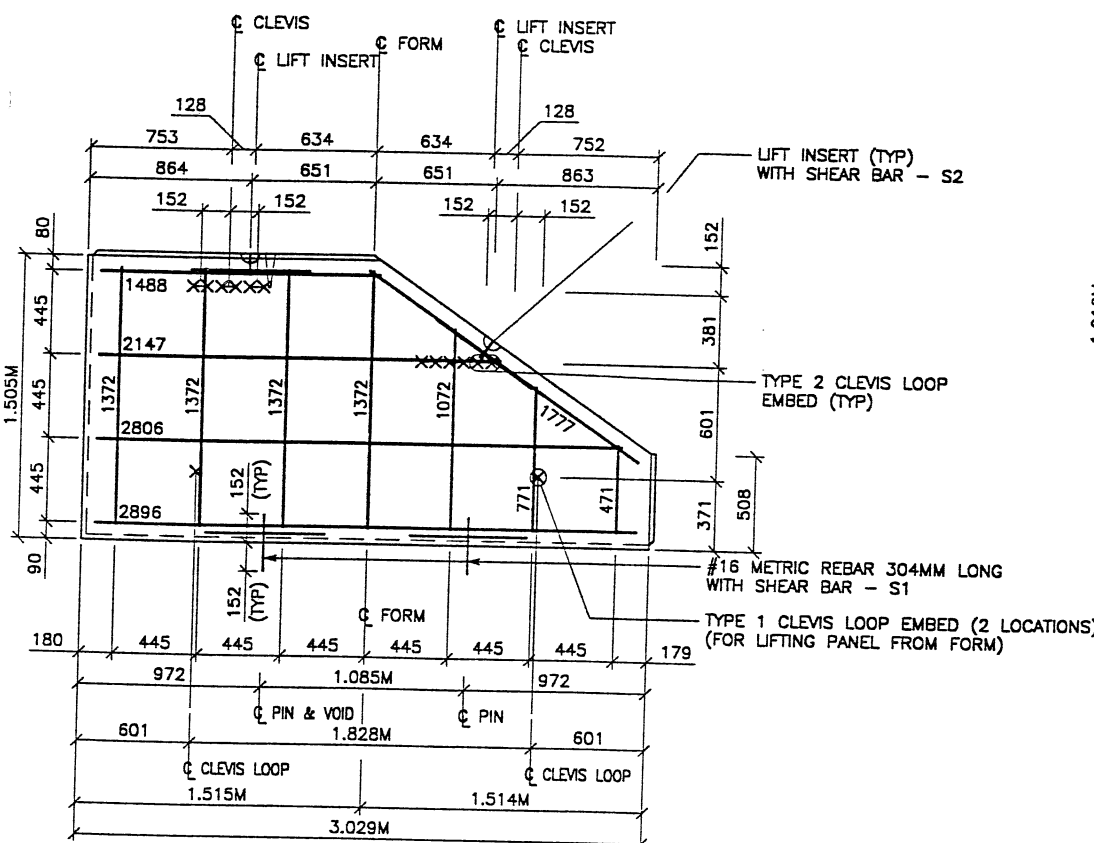
REFERENCE (X-UTAH.DWG)



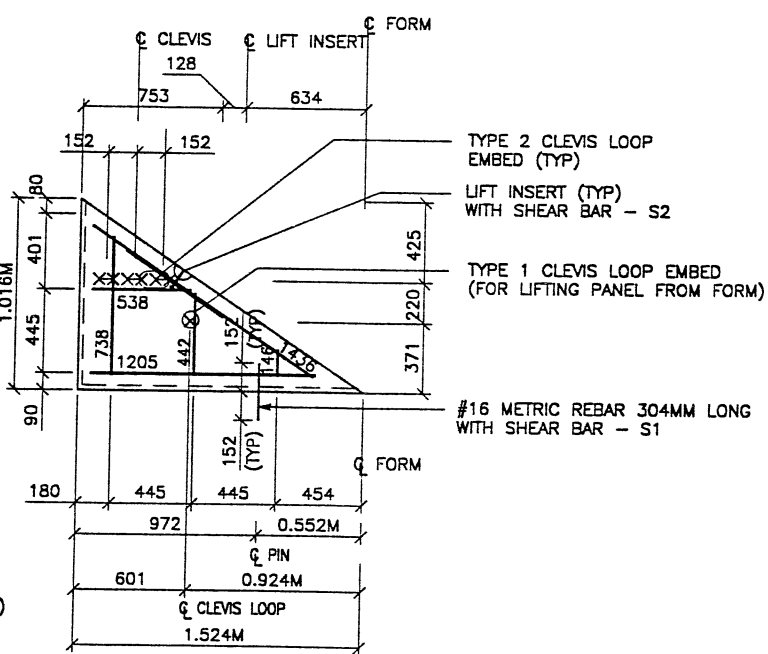
TYPE S9 REBAR
(AREA = 4.26 SQ.M)



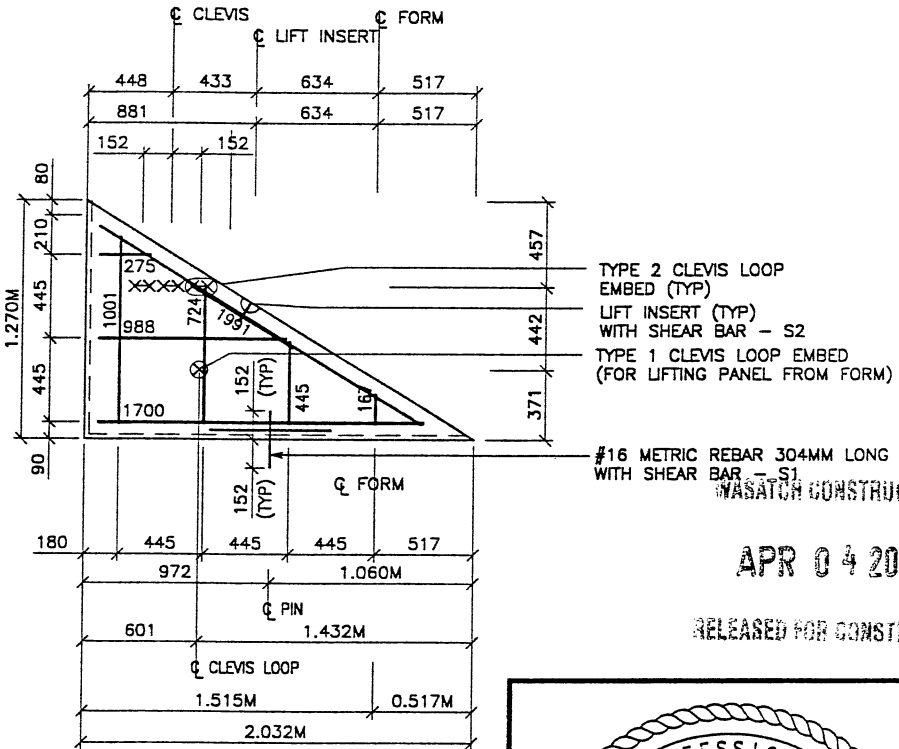
TYPE S4 REBAR
(AREA = 3.70 SQ.M)



TYPE S7 REBAR
(AREA = 3.87 SQ.M)



TYPE S6 REBAR
(AREA = 0.77 SQ.M)



TYPE S8 REBAR
(AREA = 1.29 SQ.M)

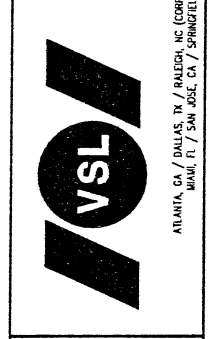
METRIC

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	03-05-00	RELEASE FOR 2ND STAGE 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 1.
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 - EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 - ALL PANELS TO USE 9.5mm WIDE 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.
 - SEE FOSTER GEOTECHNICAL STD. PLANS FOR ADD'L PANEL DETAILS

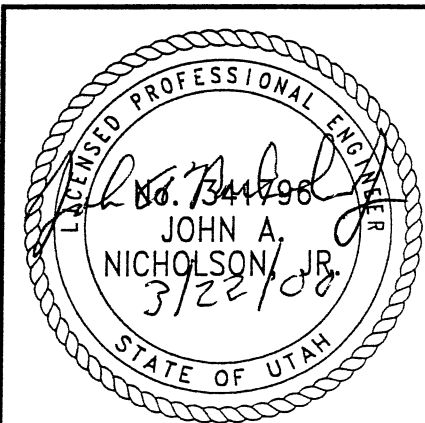
NO.	DATE	REVISION	CHK

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



VSL Corporation (VSL) is a steel property... (small text describing the company's services and products)

RETAINED EARTH™ WALLS	DWG. NO.	3.2R-351-20.18
WALL R-351-20"	JOB NO.	239-0007
2-STAGE PANEL REINFORCEMENT	Sheet No.	RE-15
600 NORTH / I-15 INTERCHANGE		
SALT LAKE COUNTY, UTAH		
UTAH DEPARTMENT OF TRANSP.		



CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS TO BE VERIFIED BY OTHERS. 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.

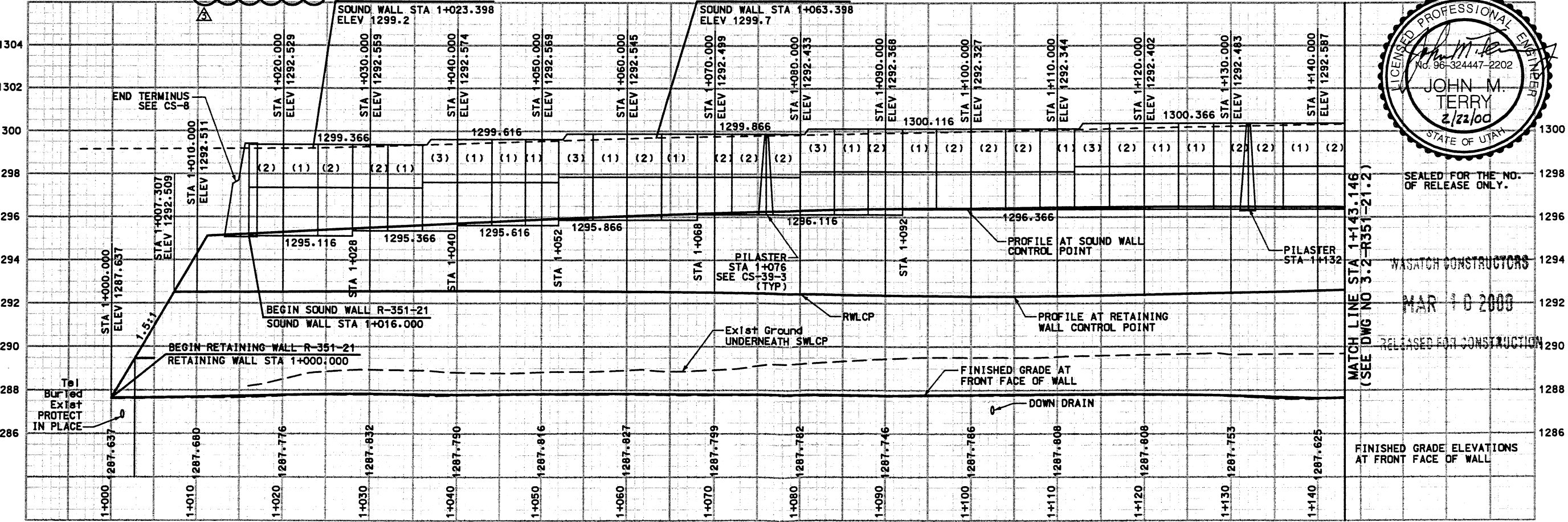
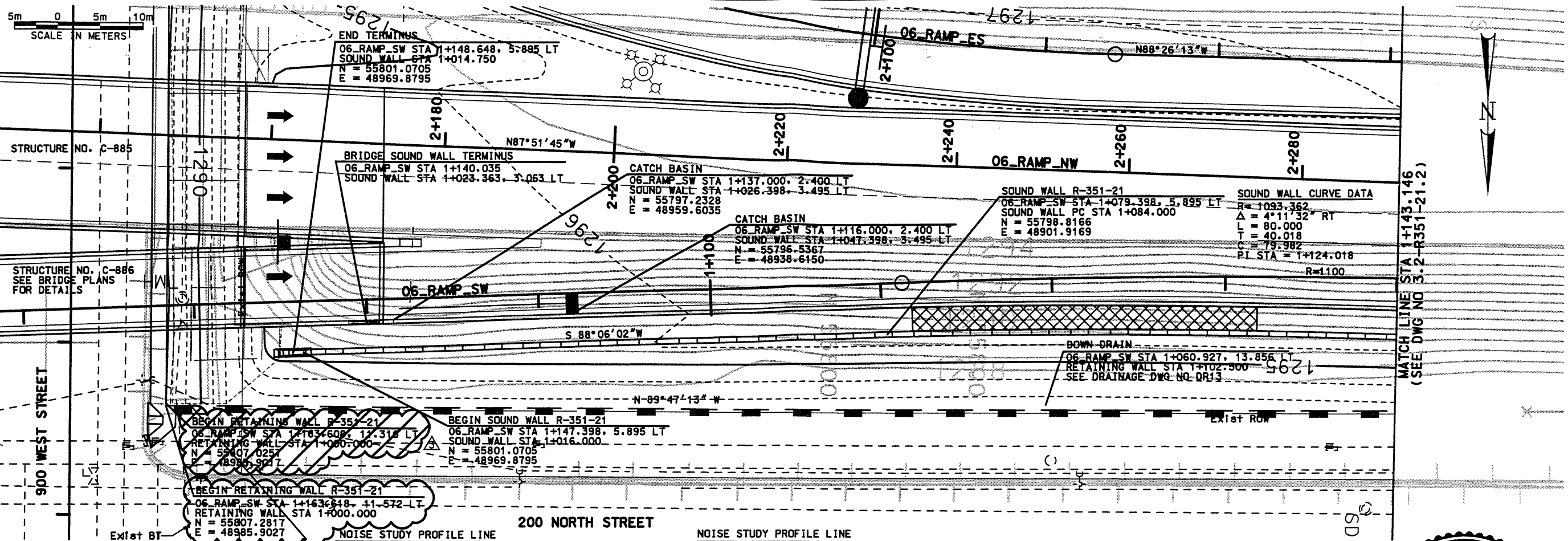
RFC After Final Approval

FINAL PLOT 03-06-00

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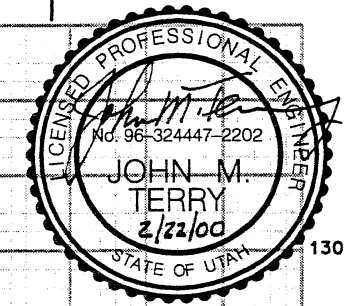
Date: 22-FEB-2000 10:00:00

Username: wall



WALL R-351-21
VIEW IS FRONT FACE OF WALL

- NOTES:
- 1) PILASTERS ARE PLACED ON THE ROADWAY SIDE OF SOUNDWALL.



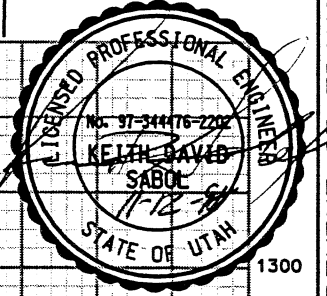
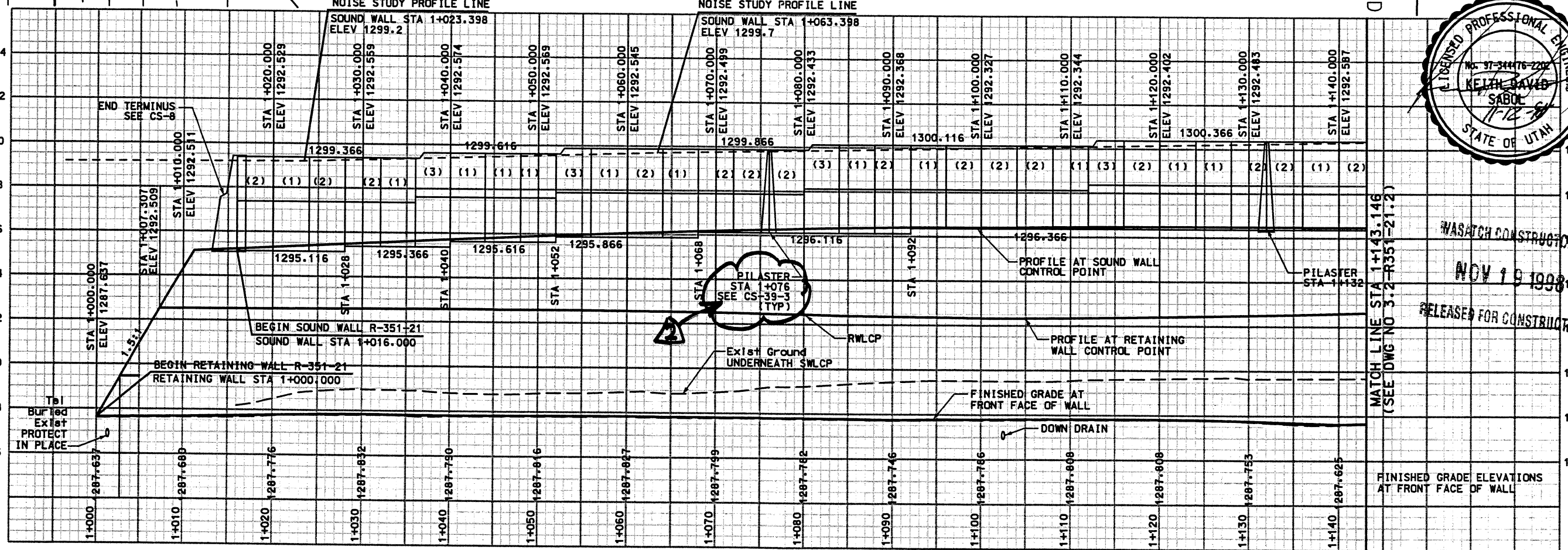
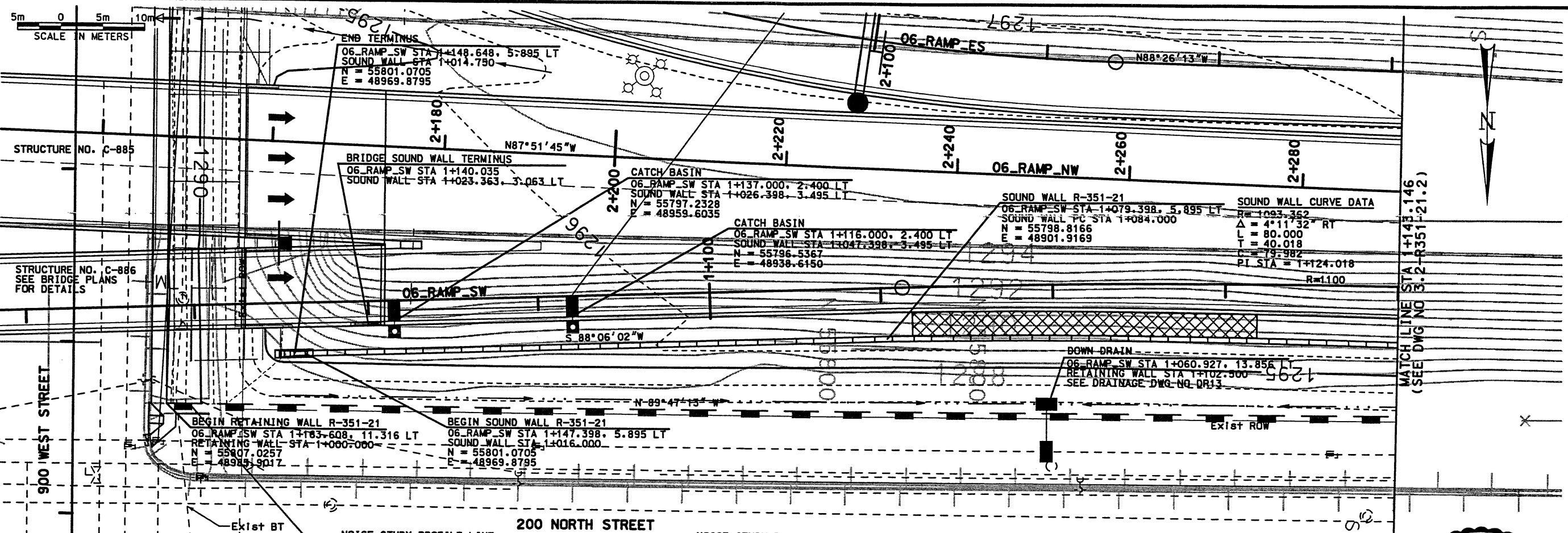
SEAL FOR THE NO. OF RELEASE ONLY.

WASATCH CONSTRUCTORS

MAR 10 2000

RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE		
▲	10/14/98	RELEASE FOR CONSTRUCTION USE WALL STAGE 1 ONLY	
▲	11/11/98	REVISED CS REFERENCE FOR PILASTER ELEMENT	
▲	02/22/00	RELEASE FOR USE WALL 2ND STAGE CONSTRUCTION	
UTAH DEPARTMENT OF TRANSPORTATION		DESIGN MC	10/14/98
SVERRUP/DE LEUW		CHECK PLC	10/14/98
MARVIN COOK		CHECK	
PROJECT DESIGN ENGINEER		QUANT.	3213415
DATE			
APPROVED 10/14/98			
KEITH SABOL			
SECTION MANAGER			
SALT LAKE COUNTY			
SECTION 3.2			
PROJECT NUMBER		#SP-15-7(135)296	
SHT.		1 OF 10	



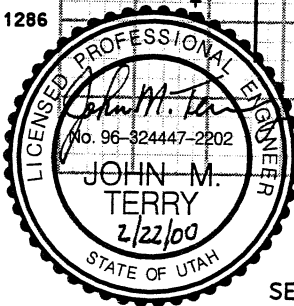
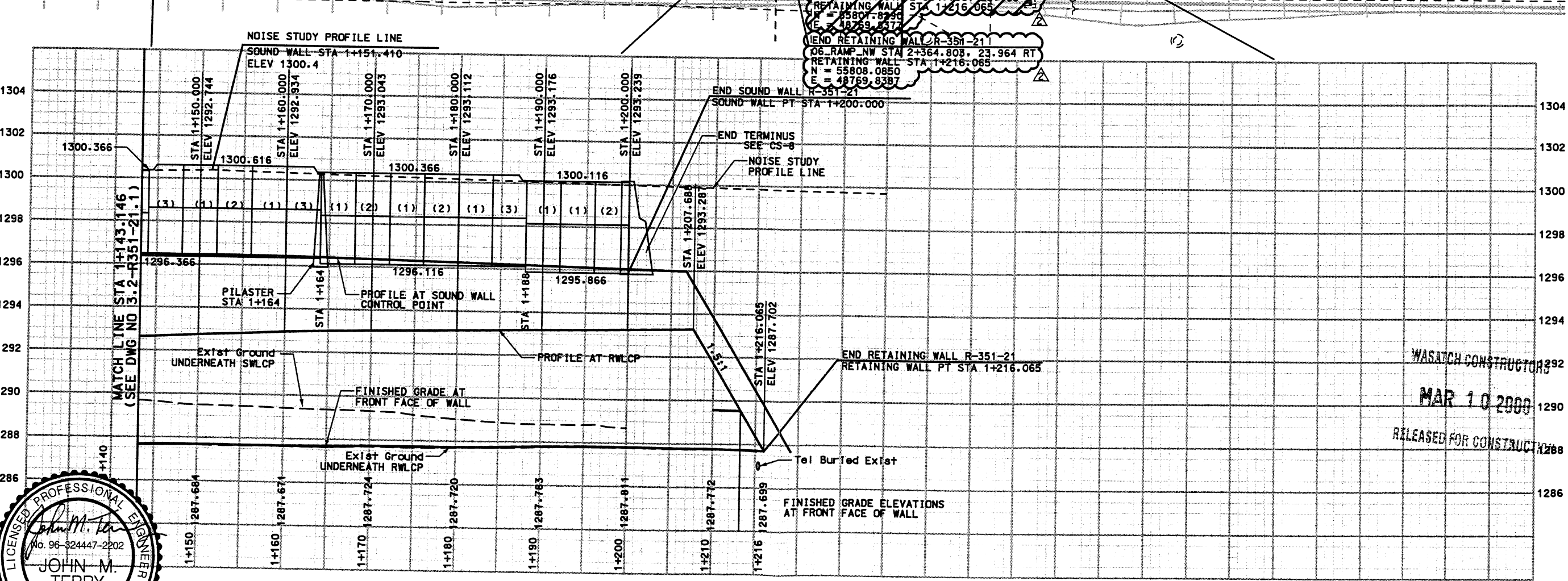
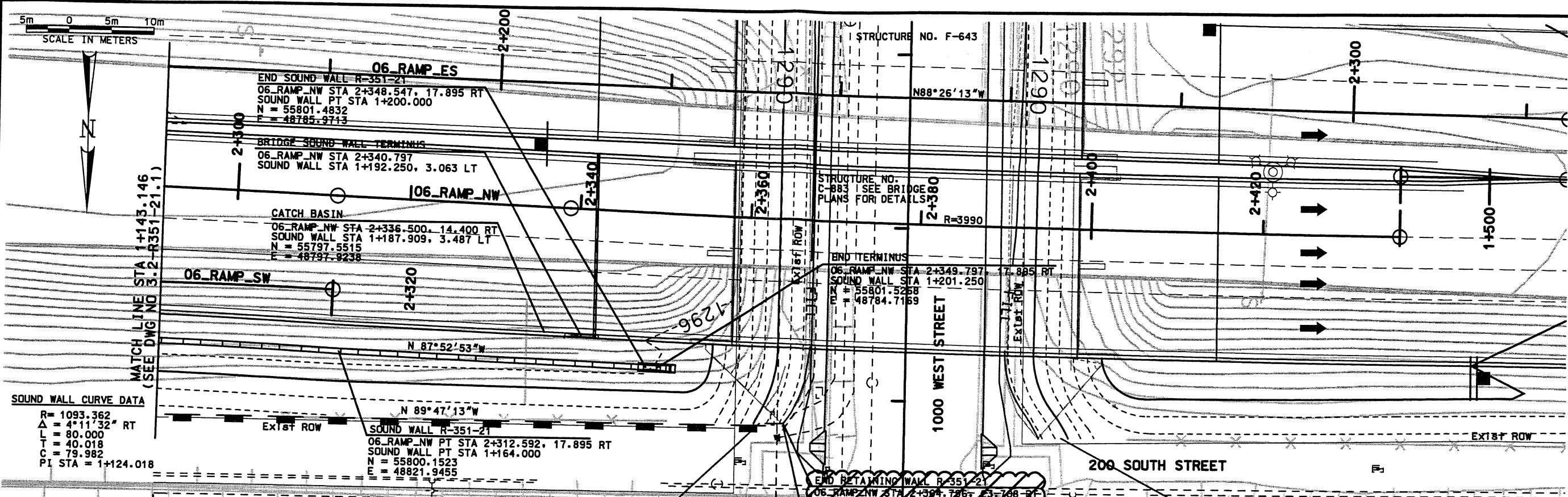
RELEASED FOR CONSTRUCTION
 NOV 19 1998
 WASATCH CONSTRUCTION

WALL R-351-21
 VIEW IS FRONT FACE OF WALL

NOTES:
 1) PILASTERS ARE PLACED ON THE ROADWAY SIDE OF SOUNDWALL.

UTAH DEPARTMENT OF TRANSPORTATION		APPROVED FOR CONSTRUCTION	
NO.	DATE	DESCRIPTION	
▲	10/14/98	RELEASE FOR CONSTRUCTION USE WALL STAGE 1 ONLY	
▲	11/11/98	REVISED CS REFERENCE FOR PILASTER ELEMENT	
SVERDRUP/DE LEUW		DESIGN PLC 10/14/98	CHECK MC 10/14/98
MARVIN COOK		DRAWN SVD 10/14/98	CHECK PLC 10/14/98
PROJECT DESIGN ENGINEER		QUANT.	3213415
APPROVED 10/14/98		DATE	DATE
KEITH SABOL		SECTION MANAGER	
I-15 CORRIDOR RECONSTRUCTION		SECTION 3.2	
SITUATION & LAYOUT		PROJECT NUMBER #SP-15-7(135)296	
SALT LAKE COUNTY		DWG. NO. 3.2-R351-21.1	
SHT. 1		OF 10	

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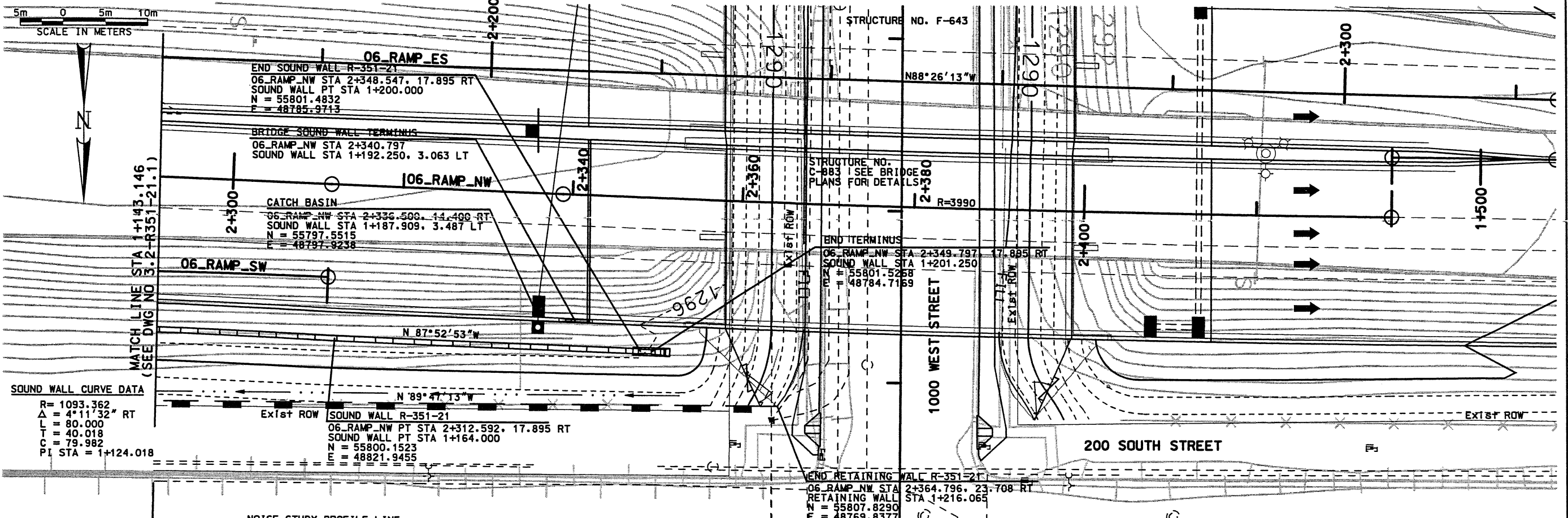
WALL R-351-21
VIEW IS FRONT FACE OF WALL

RFC After Final Approval

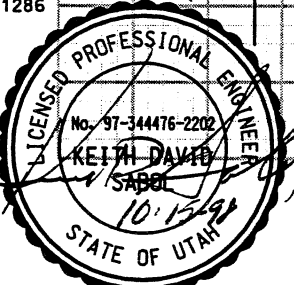
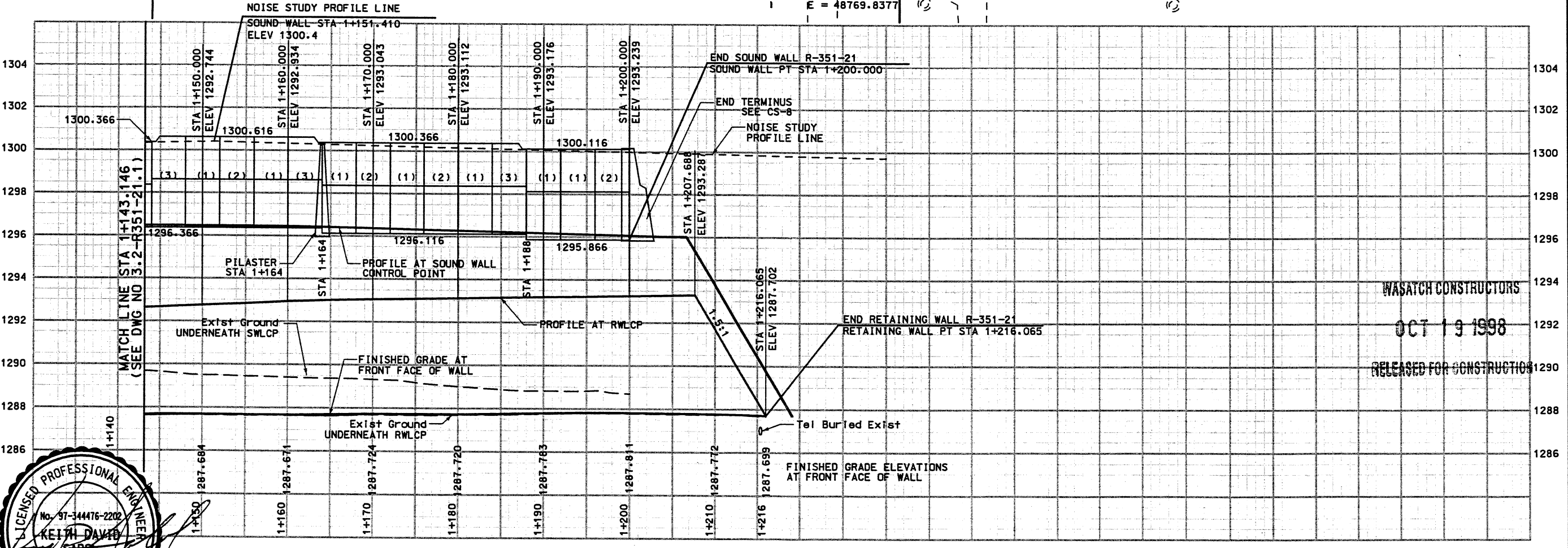
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NO.	DATE	NO.	DATE
1	10/14/98	1	10/14/98
2	02/22/00	2	02/22/00
10/14/98 RELEASE FOR CONSTRUCTION MSE WALL STAGE 1 ONLY		02/22/00 RELEASE FOR MSE WALL 2ND STAGE CONSTRUCTION	
UTAH DEPARTMENT OF TRANSPORTATION		SVERDRUP/DE LEUW	
I-15 CORRIDOR RECONSTRUCTION		SITUATION & LAYOUT	
SECTION 3.2		PROJECT NUMBER #SP-15-7(135)296	
DESIGN	CHECK	DATE	QUANT.
MARVIN COOK	MC	10/14/98	3213415
PROJECT DESIGN ENGINEER	CHECK	DATE	
KEITH SABOL	CHECK	DATE	
SECTION MANAGER	CHECK	DATE	
SALT LAKE COUNTY		DWG. NO. 3.2-R351-21.2	
SHT. 2 OF 10			

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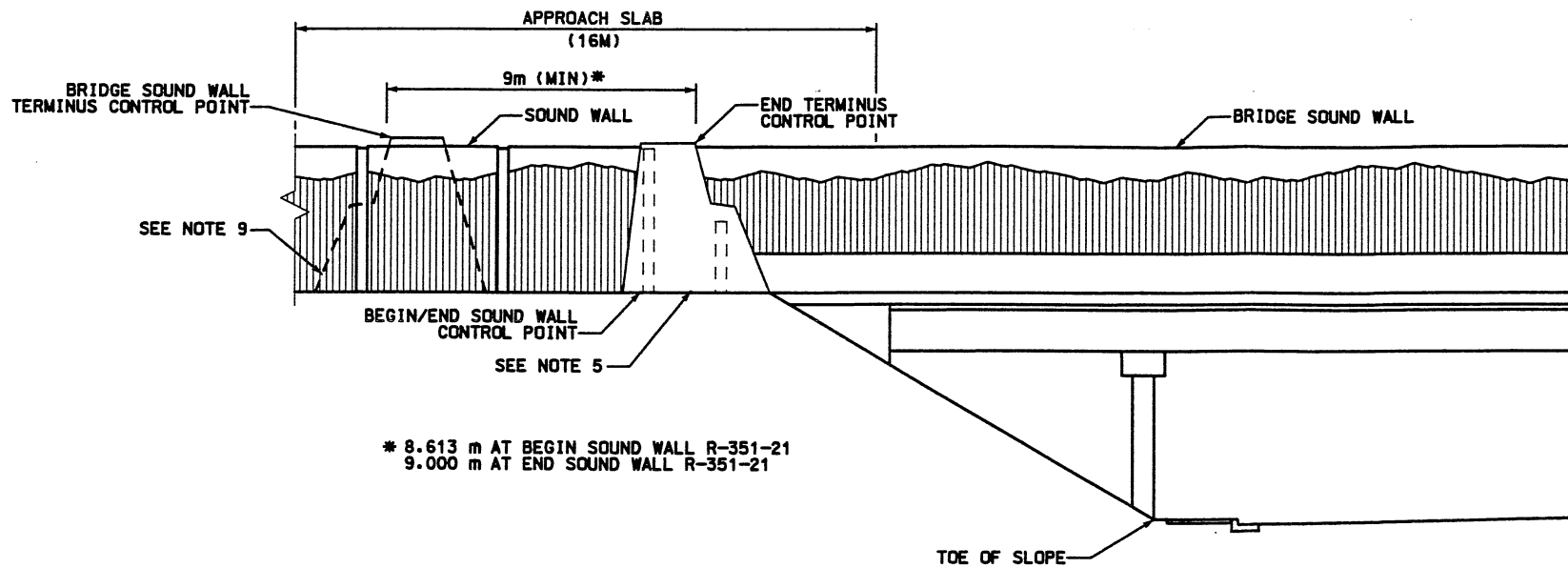


SOUND WALL CURVE DATA
R = 1093.362
Δ = 4°11'32" RT
L = 80.000
T = 40.018
C = 79.982
PI STA = 1+124.018

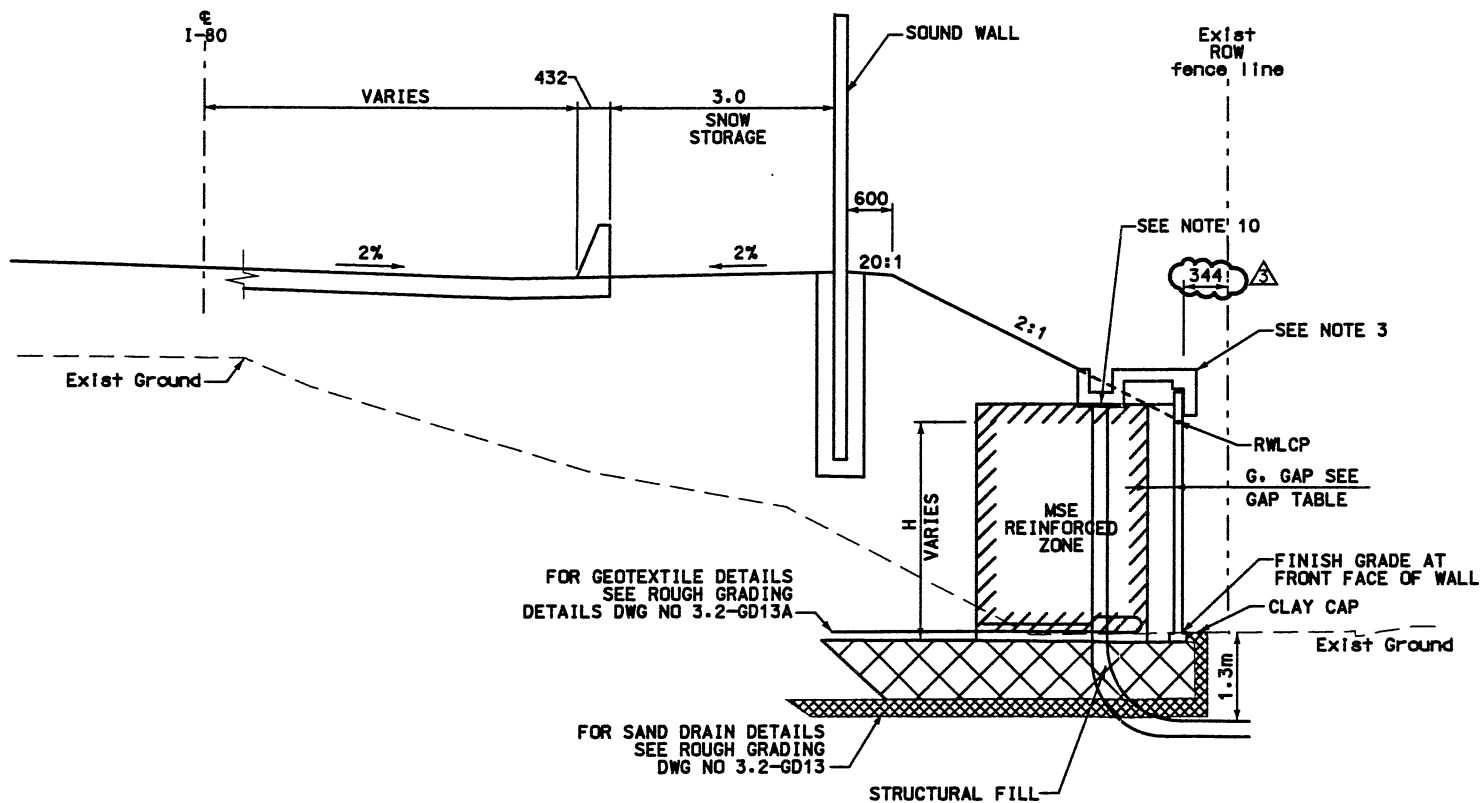


WALL R-351-21
VIEW IS FRONT FACE OF WALL

APPROVED FOR CONSTRUCTION		DATE	DESCRIPTION
NO.	DATE	10/14/98	RELEASE FOR CONSTRUCTION USE WALL STAGE 1 ONLY
UTAH DEPARTMENT OF TRANSPORTATION		DESIGN P.L.C.	10/14/98
SVERDRUP/DE LEUW		CHECK MC	10/14/98
I-15 CORRIDOR RECONSTRUCTION		PROJECT DESIGN ENGINEER	MARVIN COOK
SITUATION & LAYOUT		DATE	10/14/98
SECTION 3.2		APPROVED 10/14/98	DATE
PROJECT NUMBER #SP-15-7(135)296		SECTION MANAGER	KEITH SABOL
SALT LAKE COUNTY		CHECK P.L.C.	10/14/98
DWG. NO. 3.2-R351-21.2		CHECK QUANT.	3213415
SHT. 2 OF 10			



SOUND WALL OVER BRIDGE TRANSITION



RETAINING WALL DETAILS
NTS

WALL R-351-21
2 STAGE MSE

WALL HEIGHT (H)	1.5:1.0 SLOPE POST EMBEDMENT	2:1 SLOPE POST EMBEDMENT
2.00	1.800	1.500
2.25	1.963	1.663
2.50	2.152	1.825
2.75	2.288	1.988
3.00	2.450	2.150
3.25	2.613	2.313
3.50	2.775	2.475
3.75	2.938	2.630
4.00	3.100	2.800
4.25	3.263	2.963
4.50	3.425	3.125
4.75	3.588	3.288
5.00	3.750	3.450

NOTES:

- OVEREXCAVATE EXISTING SOILS AS REQUIRED. REFILL EXCAVATION WITH STRUCTURAL FILL AS PER CORRIDOR STANDARD SPECIFICATION 220.2.
- CONSTRUCT 300 mm CLAY CAP WITH LOW PLASTIC SILTY CLAY AS PER CORRIDOR STANDARD SPECIFICATION.
- FOR COPING DETAILS SEE CORRIDOR STANDARD PLAN CS-30-2
- FOR SOUNDWALL DETAILS SEE CS-5 AND CS-6.
- FOR SOUNDWALL TERMINUS ELEMENT DETAILS SEE CS-8.
- FOR SOUNDWALL PILASTER ELEMENT DETAILS SEE CS-39-3.
- SEE CS-57 FOR ADDITIONAL SIDE SLOPE TREATMENT DETAILS
- FOR SOUNDWALL REINFORCING DETAILS SEE UDOT STANDARDS 545-01, AND 545-02.
- FOR BRIDGE SOUND WALL TERMINUS ELEMENT DETAIL, SEE CS-97-1.
- FOR DOWN DRAIN DETAILS SEE DRAINAGE DWG NO DR13.

WALL	RETAINING WALL STA	G. (MM) SEE NOTE*	MAXIMUM EXPECTED LATERAL MOVEMENT (MM)	MINIMUM EXPECTED POST-CONSTRUCTION GAP (MM)	
R-351-21	1+000.000	450	TAPER	145	305
	1+007.307	650	CONSTANT	345	305
	1+207.688	650	CONSTANT	345	305
	1+216.065	450	TAPER	145	305

NOTE*:
G = DISTANCE BETWEEN BACK OF WALL PANEL AND WIRE FACE AT INITIAL CONSTRUCTION TO ACCOMMODATE EXPECTED LATERAL MOVEMENT DURING CONSTRUCTION AND PRIMARY FOUNDATION SETTLEMENT.

WASATCH CONSTRUCTORS

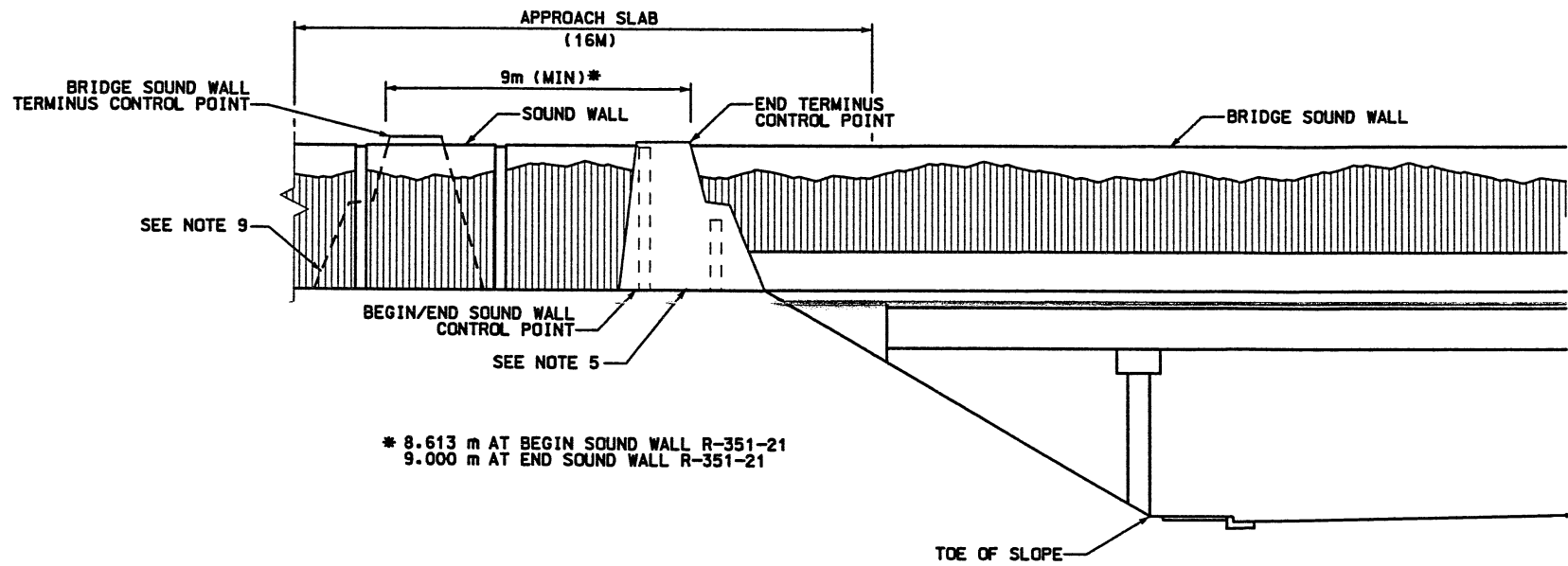
MAR 10 2000

RELEASED FOR CONSTRUCTION



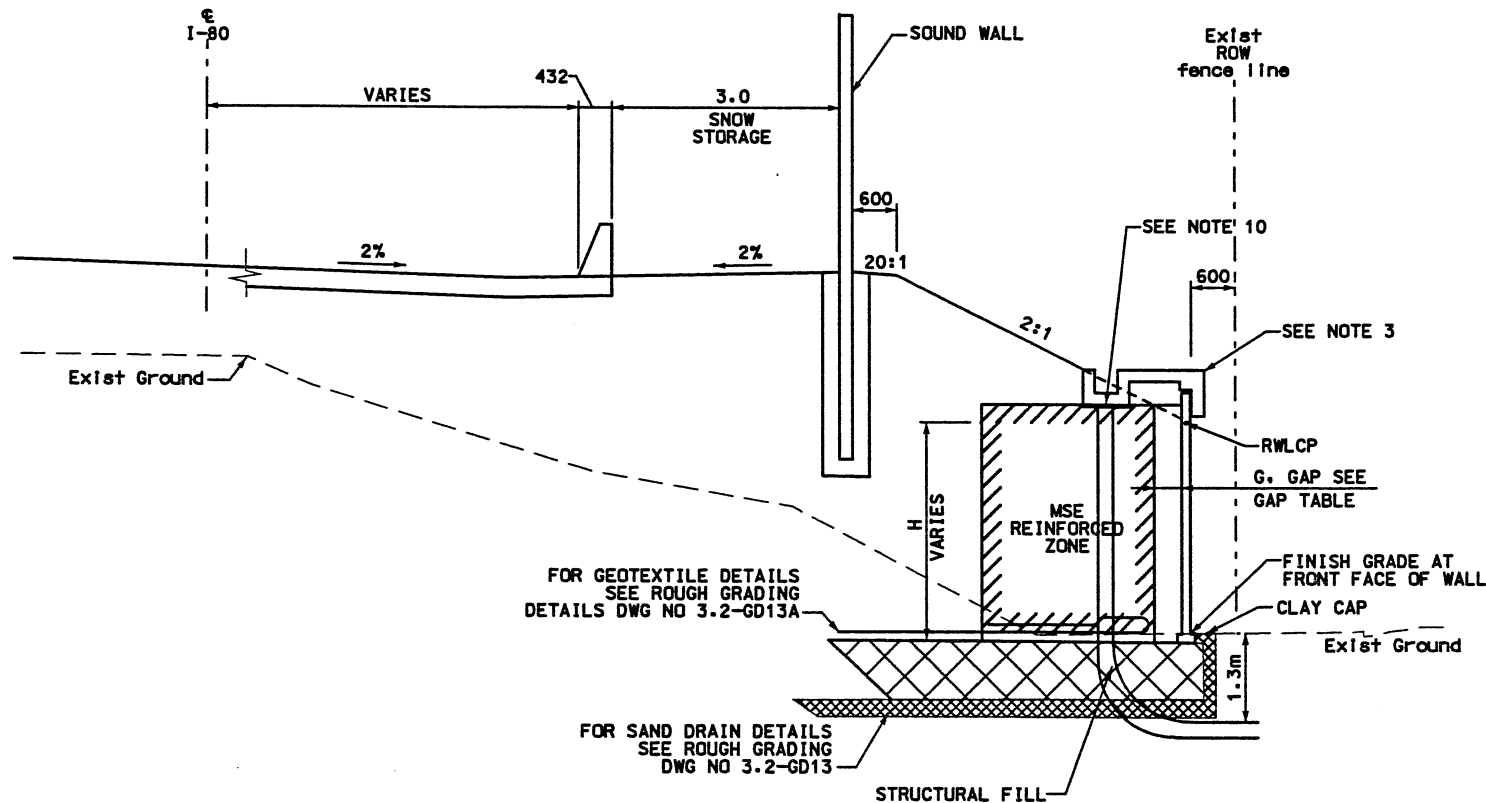
SEALED FOR THE NO. OF RELEASE ONLY.

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	10/14/98 RELEASE FOR CONSTRUCTION MSE STAGE 1 AND SOUNDWALL ONLY	
Δ		11/11/98 REVISED CS REFERENCE FOR PILASTER ELEMENT	
Δ		02/22/00 RELEASE FOR MSE WALL 2ND STAGE CONSTRUCTION	
UTAH DEPARTMENT OF TRANSPORTATION		SVERDRUP/DE LEUW	
I-15 CORRIDOR RECONSTRUCTION		SECTION 3.2	
TYPICAL SECTION		PROJECT NUMBER #SP-15-7(135)296	
MARVIN COOK DESIGN J.F.A. 10/14/98 DATE 10/14/98		CHECK P.L.C. 10/14/98	
KEITH SABOL PROJECT DESIGN ENGINEER DATE 10/14/98		CHECK P.L.C. 10/14/98	
QUANT.		3213415	
SECTION MANAGER		CHECK	
COUNTY		SALT LAKE	
DWG. NO.		3.2-R351-21.3	
SHT.		3 OF 10	



* 8.613 m AT BEGIN SOUND WALL R-351-21
 9.000 m AT END SOUND WALL R-351-21

SOUND WALL OVER BRIDGE TRANSITION



RETAINING WALL DETAILS
 NTS

WALL R-351-21
 2 STAGE MSE

WALL HEIGHT (H)	1.5:1.0 SLOPE POST EMBEDMENT	2:1 SLOPE POST EMBEDMENT
2.00	1.800	1.500
2.25	1.963	1.663
2.50	2.152	1.825
2.75	2.288	1.988
3.00	2.450	2.150
3.25	2.613	2.313
3.50	2.775	2.475
3.75	2.938	2.630
4.00	3.100	2.800
4.25	3.263	2.963
4.50	3.425	3.125
4.75	3.588	3.288
5.00	3.750	3.450

WASATCH CONSTRUCTORS

NOV 19 1998

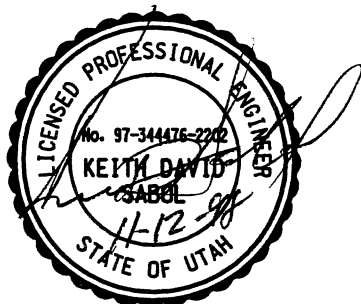
NOTES:

RELEASED FOR CONSTRUCTION

- OVEREXCAVATE EXISTING SOILS AS REQUIRED. REFILL EXCAVATION WITH STRUCTURAL FILL AS PER CORRIDOR STANDARD SPECIFICATION 220.2.
- CONSTRUCT 300 mm CLAY CAP WITH LOW PLASTIC SILTY CLAY AS PER CORRIDOR STANDARD SPECIFICATION.
- FOR COPING DETAILS SEE CORRIDOR STANDARD PLAN CS-30-2
- FOR SOUNDWALL DETAILS SEE CS-5 AND CS-6.
- FOR SOUNDWALL TERMINUS ELEMENT DETAILS SEE CS-8
- FOR SOUNDWALL PILASTER ELEMENT DETAILS SEE CS-39-3.
- SEE CS-57 FOR ADDITIONAL SIDE SLOPE TREATMENT DETAILS
- FOR SOUNDWALL REINFORCING DETAILS SEE UDOT STANDARDS 545-01, AND 545-02.
- FOR BRIDGE SOUND WALL TERMINUS ELEMENT DETAIL, SEE CS-97-1.
- FOR DOWN DRAIN DETAILS SEE DRAINAGE DWG NO DR13.

WALL	RETAINING WALL STA	G. (MM) SEE NOTE*	MAXIMUM EXPECTED LATERAL MOVEMENT (MM)	MINIMUM EXPECTED POST-CONSTRUCTION GAP (MM)
R-351-21	1+000.000	450	145	305
	1+007.307	650	345	305
	1+207.688	650	345	305
	1+216.065	450	145	305

NOTE*:
 G = DISTANCE BETWEEN BACK OF WALL PANEL AND WIRE FACE AT INITIAL CONSTRUCTION TO ACCOMMODATE EXPECTED LATERAL MOVEMENT DURING CONSTRUCTION AND PRIMARY FOUNDATION SETTLEMENT.



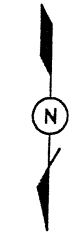
APPROVED FOR CONSTRUCTION	DESCRIPTION	DATE	NO.
	RELEASE FOR CONSTRUCTION USE STAGE 1 AND SOUNDWALL ONLY	10/14/98	A
UTAH DEPARTMENT OF TRANSPORTATION	DESIGNER	CHECKER	QUANT.
	MARVIN COOK	JFA 10/14/98	3213415
I-15 CORRIDOR RECONSTRUCTION	PROJECT	DATE	
	SECTION 3.2	10/14/98	
TYPICAL SECTION	PROJECT NUMBER	DATE	
	#SP-15-7(135)296	10/14/98	
SALT LAKE COUNTY			
DWG. NO. 3.2-R351-21.3			
SHT. 3 OF 10			

XREFERENCE (X-UTAH.DWG)

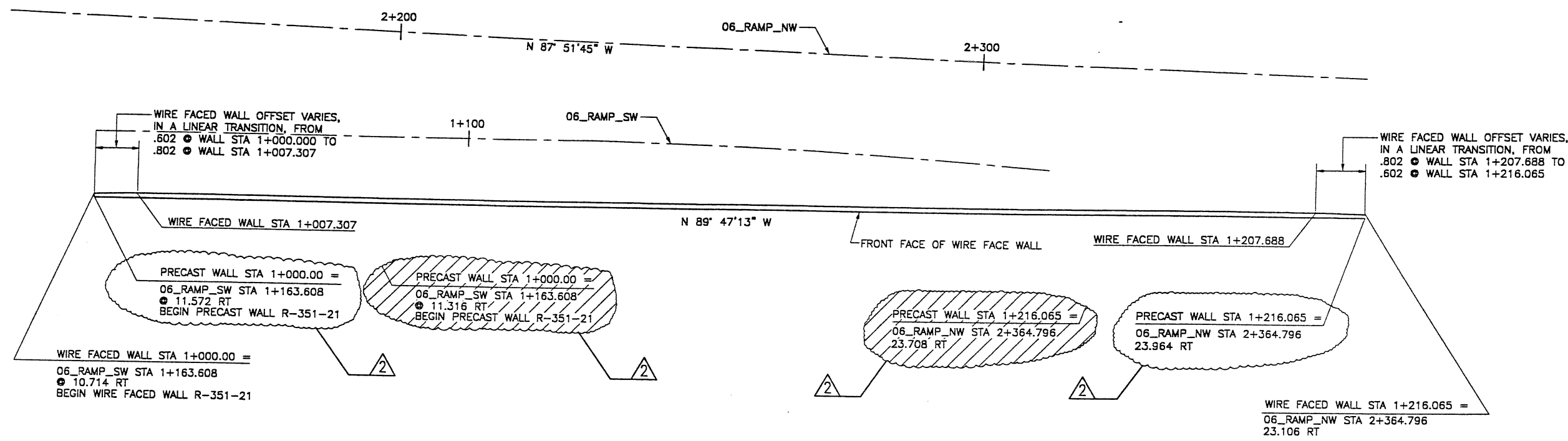
H:\RE_EARTH\PROJECT\239-0007\1998\65-WALLS\65-21\RE-1.DWG

FINAL PLOT 02-22-00

NOTE:
 BACKFILL THE WALL GAP TO AN ELEVATION EQUAL TO 1.5m ABOVE FINISHED GRADE DUE TO THE POTENTIAL FOR TRAFFIC IMPACT ON THE PRECAST WALL PANELS FROM THE ADJACENT ROADWAY. SEE VSL STANDARD DRAWING STD-20 FOR ADDITIONAL DETAILS.



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY
△	02-22-00	RELEASE FOR 2nd. STAGE CONSTRUCTION <i>gm</i>



2ND STAGE DESIGN
 BASED ON POST SETTLEMENT SURVEY OF WIRE FACE, LATERAL OUT WARD DISPLACEMENTS RANGED FROM 157mm TO 558mm MEASURED AT THE BASE OF THE WALL

NOTE:
 THE WALL CONNECTIONS ON WALL 351-21 MAY BE ROTATED A MAXIMUM OF 42° VERTICALLY (COL 1-6 & 66-71) AND 55° VERTICALLY (COL 7-65). SEE DETAIL "SECTION ROTATED" ON VSL STANDARD DRAWING NO. 18 FOR MORE INFORMATION.

PLAN VIEW MSE WALL "R-351-21"

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

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
SEISMIC ACCELERATION COFF.	= 0.27g (TYP)
SEISMIC ACCELERATION COFF.	= 0.68g (AT BRIDGE ABUTMENT)
DESIGN CRITERIA	
SAFETY FACTOR (OVERTURNING)	= 2.0
SAFETY FACTOR (SLIDING)	= 1.5
SAFETY FACTOR (PULLOUT)	= 1.5
DESIGN LIFE	= 75 YEARS

RETAINED EARTH INDEX	
RE-1	PLAN WIRE FACED WALL R-351-21, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTIONS ● WIRE FACED WALL
RE-3	TYPICAL CROSS SECTION
RE-4	WIRE FACED WALL R-351-21
RE-5	WIRE FACED WALL R-351-21
RE-6	WIRE FACED WALL R-351-21
RE-7	WIRE FACED WALL R-351-21
RE-8	PRECAST FACED WALL R-351-21
RE-9	PRECAST FACED WALL R-351-21
RE-10	PRECAST FACED WALL R-351-21
RE-11	PRECAST FACED WALL R-351-21
RE-12	SPECIAL PANEL DETAILS
RE-13	SPECIAL PANEL DETAILS
RE-14	SPECIAL PANEL DETAILS

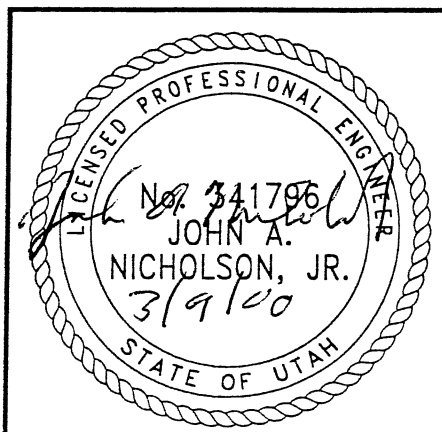
METRIC

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



APPROVED FOR CONSTRUCTION		NO.	DATE	DESCRIPTION	REVISION	DATE	CHK
△	10-07-98			RELEASE FOR 1ST STAGE CONST. ONLY			
△	02-22-00			RELEASE FOR 2nd. STAGE CONSTRUCTION <i>gm</i>			

DES.	DRN.	CHK.	RETAINED EARTH™
JL	LOP	JL	
09-03-98	09-03-98	09-03-98	

VSL CORPORATION
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VSL

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

RETAINED EARTH™ WALLS
 PLAN VIEW MSE WALL "R-351-21"

DWG. NO.
3.2-R351-21.4

JOB NO.
239-0007

SHT. NO.
RE-1


RFC After Final Approval

H:\RE_EARTH\PROJECT\239-0007\1998\6
 S:\65-21\RE-1.DWG
 09-03-98
 FINAL

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY

DES.	DRN.	CHK.	NO.	DATE	BY
JL	LOP	JL			CHK
09-03-98	09-03-98	09-03-98			

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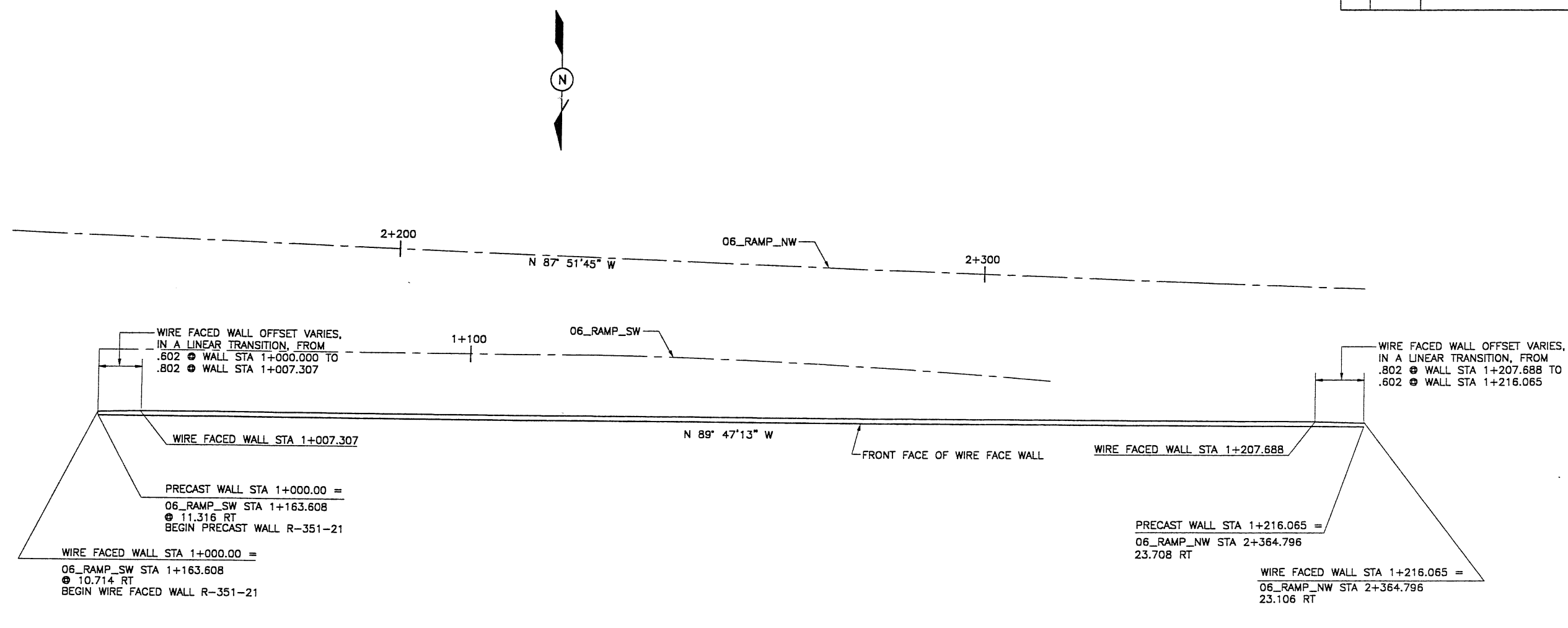


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RETAINED EARTH™ WALLS
PLAN VIEW MSE WALL "R-351-21"
 UTAH I-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2-R351-21.4
JOB NO.	239-0007
SHT. NO.	RE-1



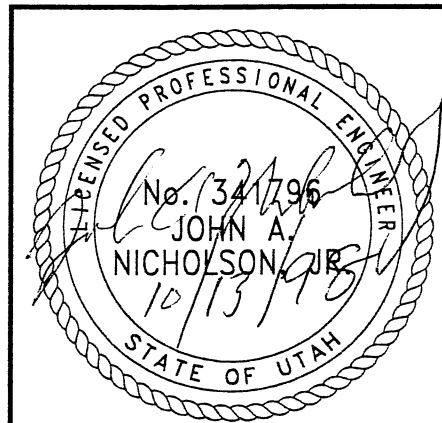
PLAN VIEW MSE WALL "R-351-21"
 SCALE: 1:400 (FULL SIZE)
 SCALE: 1:800 (HALF SIZE)

DESIGN PARAMETERS
ANGLE OF INTERNAL FRICTION (SELECT) = 34°
ANGLE OF INTERNAL FRICTION (BASE) = 34°
ANGLE OF INTERNAL FRICTION (RANDOM) = 34°
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TRAFFIC SURCHARGE = 250 PSF
SEISMIC ACCELERATION COFF. = 0.27g (TYP)
SEISMIC ACCELERATION COFF. = 0.68g (AT BRIDGE ABUTMENT)
DESIGN CRITERIA
SAFETY FACTOR (OVERTURNING) = 2.0
SAFETY FACTOR (SLIDING) = 1.5
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RETAINED EARTH INDEX
RE-1 PLAN WIRE FACED WALL R-351-21, NOTES & DESIGN CRITERIA
RE-2 TYPICAL CROSS SECTIONS @ WIRE FACED WALL
RE-3 TYPICAL CROSS SECTION
RE-4 WIRE FACED WALL R-351-21
RE-5 WIRE FACED WALL R-351-21
RE-6 WIRE FACED WALL R-351-21
RE-7 WIRE FACED WALL R-351-21

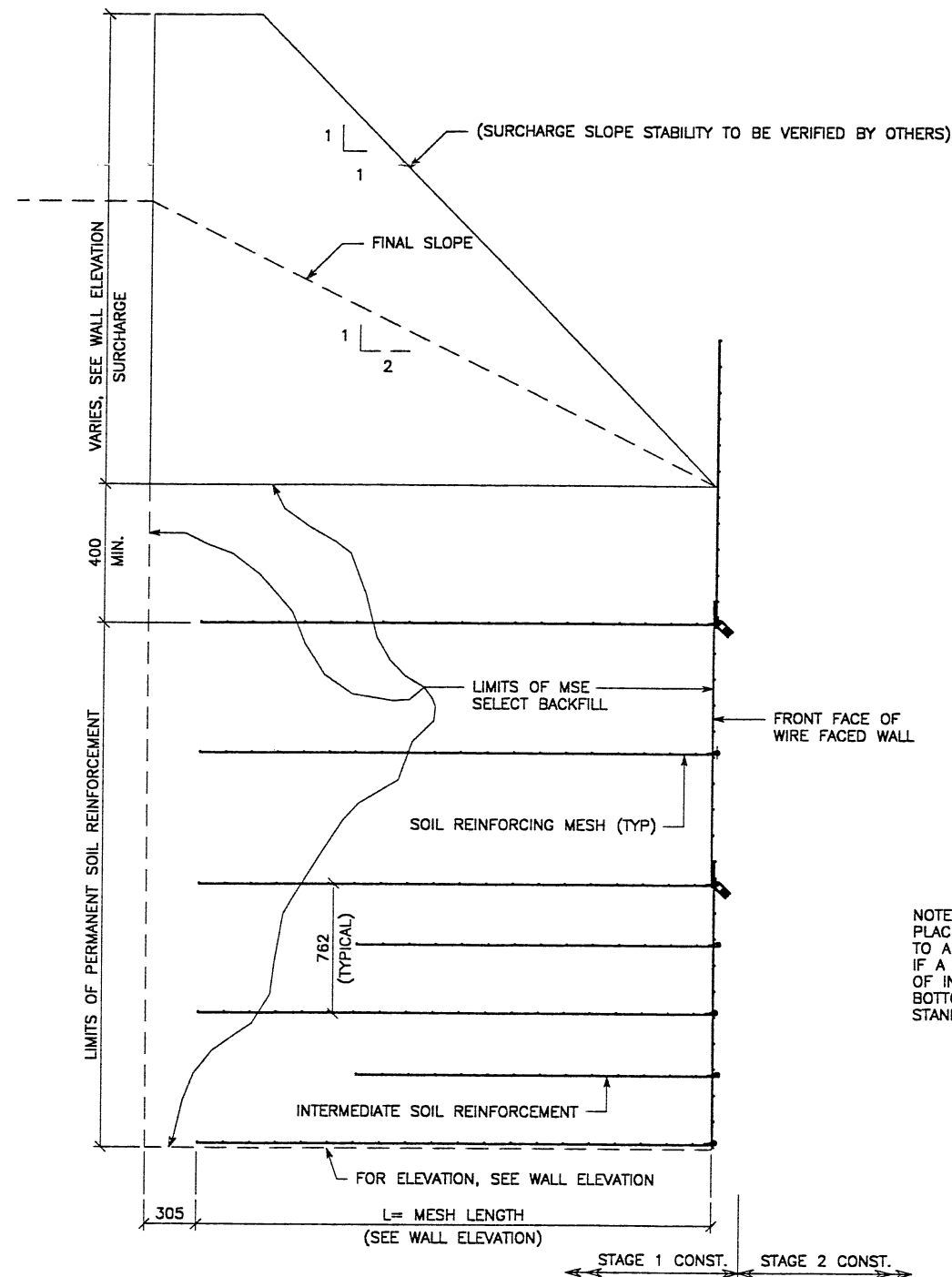
METRIC

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WASATCH CONSTRUCTORS
OCT 19 1998
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H:\RE_EARTH\PROJECT\239-0007\1998\16S-21\RE-2.DWG
 DATE: 09-03-98
 FILE: X-UTAH.DWG



SEE FOSTER GEOTECHNICAL STD
 DWG FOR PLACEMENT OF
 INTERMEDIATE SOIL REINFORCEMENT

NOTE: INTERMEDIATE SOIL REINFORCEMENT SHALL BE PLACED BEGINNING AT THE BOTTOM OF A WALL SECTION TO A HEIGHT ENDING 4.5M BELOW THE TOP OF COPING. IF A WALL SECTION IS LESS THAN 4.5M TALL, PLACE 2 ROWS OF INTERMEDIATE SOIL REINFORCEMENT AT THE BOTTOM OF THE WALL. SEE FOSTER GEOTECHNICAL STANDARD DRAWINGS FOR PLACEMENT DETAILS.

TYPICAL CROSS SECTION
STAGE 1 CONSTRUCTION WITH SURCHARGE
 (SEE FIG. 8-2 DESIGN MEMORANDUM 3.2.54 WALL R-351-21)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY

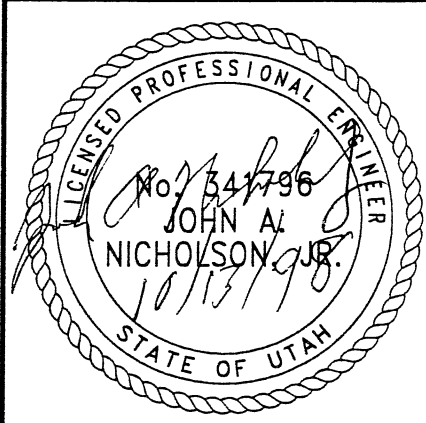
DES.	DRN.	CHK.	NO.	DATE	REVISION	BY
JL	LOP	JL				CHK

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WASATCH CONSTRUCTORS
OCT 19 1998
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RETAINED EARTH™ WALLS
 WIRE FACED WALL "R-351-21"
 TYPICAL SECTIONS @ WIRE FACED WALL
 UTAH 1-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2-R351-21.5
JOB NO.	239-0007
SHT. NO.	RE-2

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METRIC

FINA DT 09-03-98 H:\RE_EARTH\PROJECT\239-0007\1998 S\6S-21\RE-3.DWG VANCE (X-UTAH.DWG)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY

NO.	DATE	REVISION

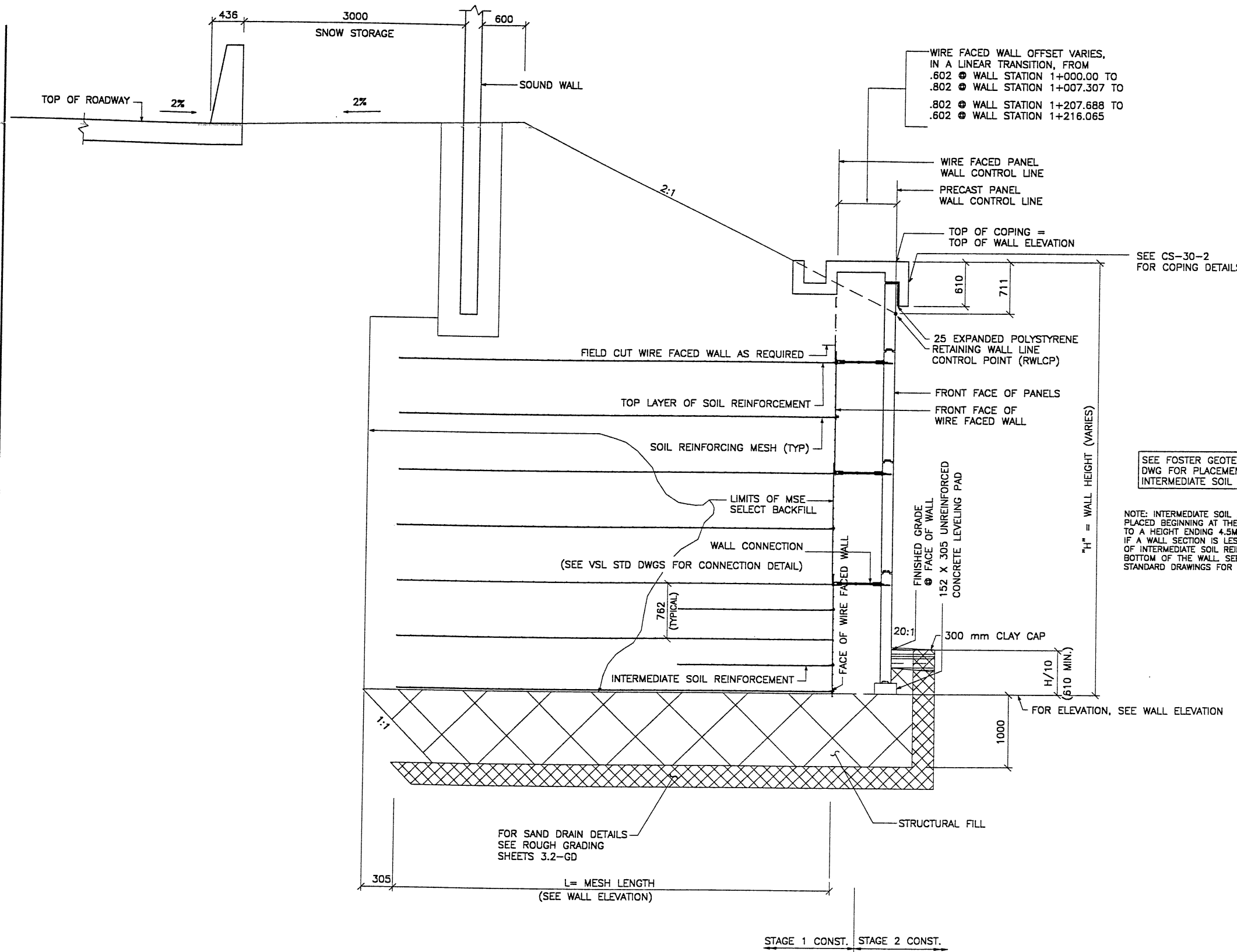
VSL CORPORATION
 2840 Plaza Drive, Suite 200
 Raleigh, NC (919) 781-8272
 Atlanta, GA (919) 781-4889
 Dallas, TX (919) 781-4889
 Miami, FL (919) 781-4889
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RETAINED EARTH™ WALLS
WIRE FACED WALL "R-351-21"
TYPICAL CROSS SECTION
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

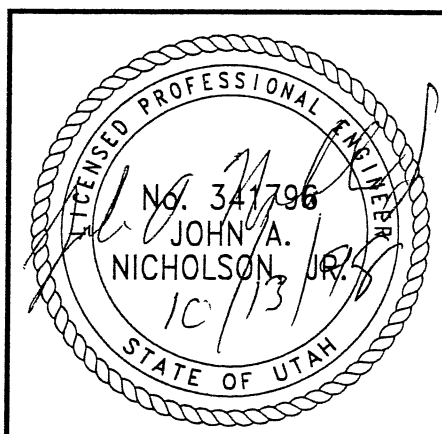
DWG. NO.	3.2R-351-21.6
JOB NO.	239-0007
SH. NO.	RE-3



TYPICAL CROSS SECTION
 (SEE DWG NO. 3.2R-351-20.3 FOR ADDITIONAL INFORMATION)

METRIC

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ANCE (X-UTAH.DWG) WFW6S-21.DWG H:\RE_EARTH\PROJECT\239-0007\1998\6S-W T 09-03-98 FINAL

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY

NO.	DATE	REVISION

VSL CORPORATION
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 Raleigh, NC 27617
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 Fax: (919) 781-6869

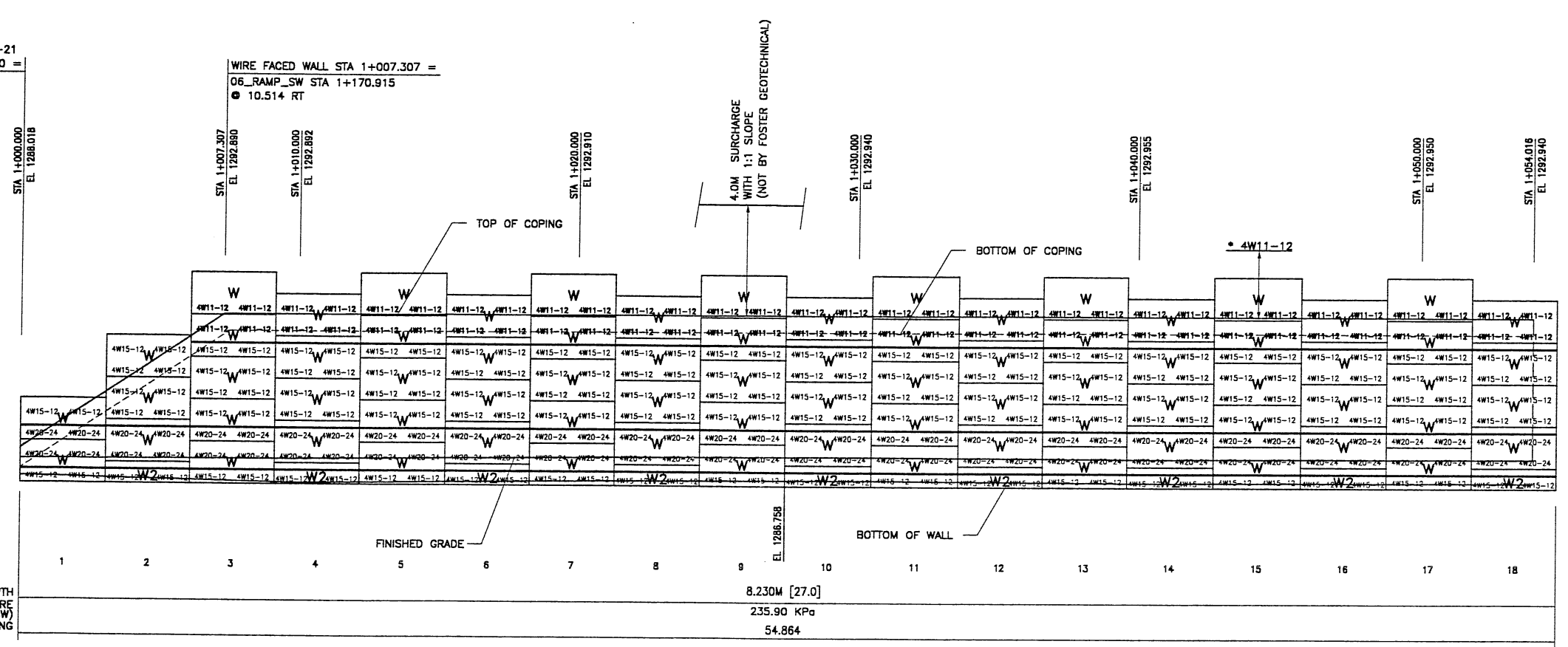


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BEGIN WIRE FACED WALL R-351-21
 WIRE FACED WALL STA 1+000.000 =
 06_RAMP_SW STA 1+163.608
 ● 10.714 RT

WIRE FACED WALL STA 1+007.307 =
 06_RAMP_SW STA 1+170.915
 ● 10.514 RT



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

8.230M [27.0]
 235.90 KPa
 54.864

RETAINING WALL "R-351-21" - 1ST STAGE: WIRE FACED WALL
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF FACING = 1719.08 SM)

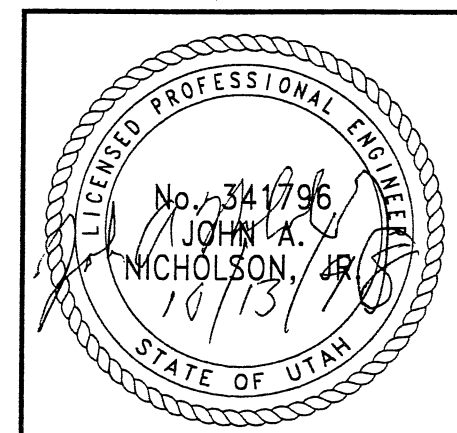
SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

METRIC

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

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 OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO
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WASATCH CONSTRUCTORS
 OCT 19 1998
 RELEASED FOR CONSTRUCTION




RETAINED EARTH™ WALLS	DWG. NO.
WALL "R-351-21" - 1ST STAGE: WIRE FACED WALL	3.2R-351-21.7
UTAH I-15 INTERCHANGE SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.	JOB NO: 239-0007
	SHT. NO. RE-4

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY

NO.	DATE	REVISION

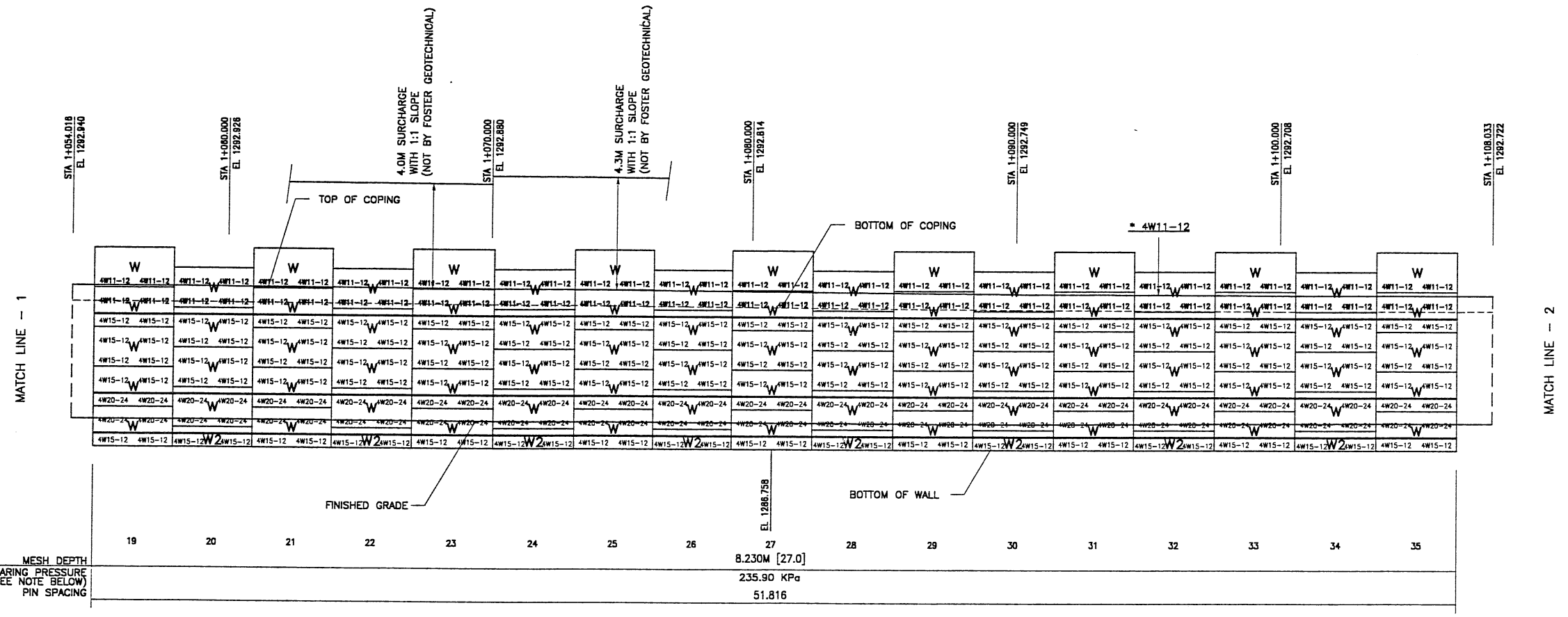
VSL CORPORATION
2840 Plaza Place, Suite 200
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Tel: (919) 781-4869



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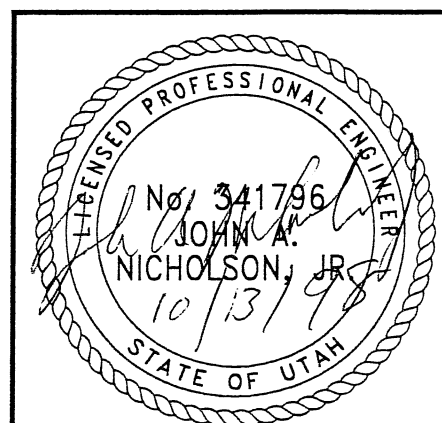
RETAINED EARTH™ WALLS
WALL "R-351-21" - 1ST STAGE: WIRE FACED WALL
UTAH 1-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.
DWG. NO. 3.2R-351-21.8
JOB NO. 239-0007
SHT. NO. RE-5



RETAINING WALL "R-351-21" - 1ST STAGE: WIRE FACED WALL
(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF FACING = 1719.08 SM)
SCALE 1:100 (FULL SIZE)
SCALE 1:200 (HALF SIZE)

WASATCH CONSTRUCTORS
OCT 19 1998
RELEASED FOR CONSTRUCTION

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* INDICATES SOIL REINFORCING TYPE MESH TO BE USED ON ADDITIONAL WIRE WALL FACING ADDED AFTER SETTLEMENT.
NOTE: THE INDICATED MAXIMUM BEARING PRESSURES AT FINAL STAGE FOR STATIC LOAD CONDITION.

FENCE (X-UTAH.DWG)

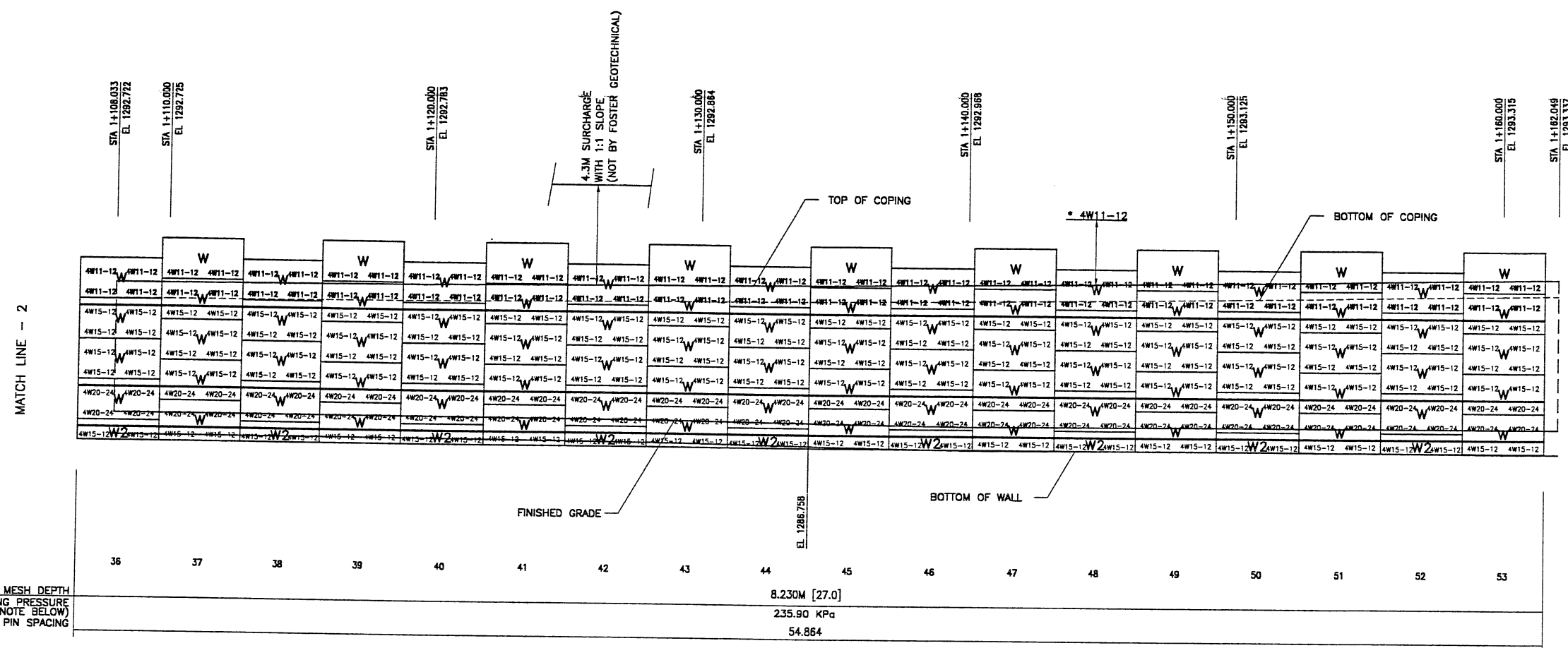
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FINA LOT 09-03-98

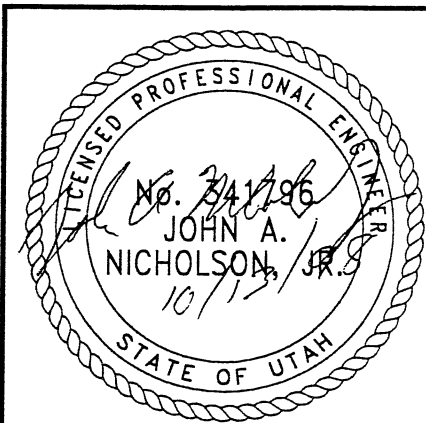
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY

DES.	CHK.	NO.	DATE	REVISION	BY	CHK
09-03-98 JL						
09-03-98 LOP						
09-03-98 JL						



RETAINING WALL "R-351-21" - 1ST STAGE: WIRE FACED WALL
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF FACING = 1719.08 SM) SCALE 1:200 (HALF SIZE)

WASATCH CONSTRUCTORS
 OCT 19 1998
 RELEASED FOR CONSTRUCTION



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METRIC

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RETAINED EARTH™ WALLS	DWG. NO.	3.2R-351-21.9
WALL "R-351-21" - 1ST STAGE: WIRE FACED WALL	JOB NO.	239-0007
UTAH I-15 INTERCHANGE	SHT. NO.	RE-6
SALT LAKE COUNTY, UTAH		
UTAH DEPARTMENT OF TRANSP.		

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-07-98	RELEASE FOR 1ST STAGE CONST. ONLY

DES.	DRN.	CHK.	DATE	NO.	DATE
JL	LOP	JL	09-03-98		

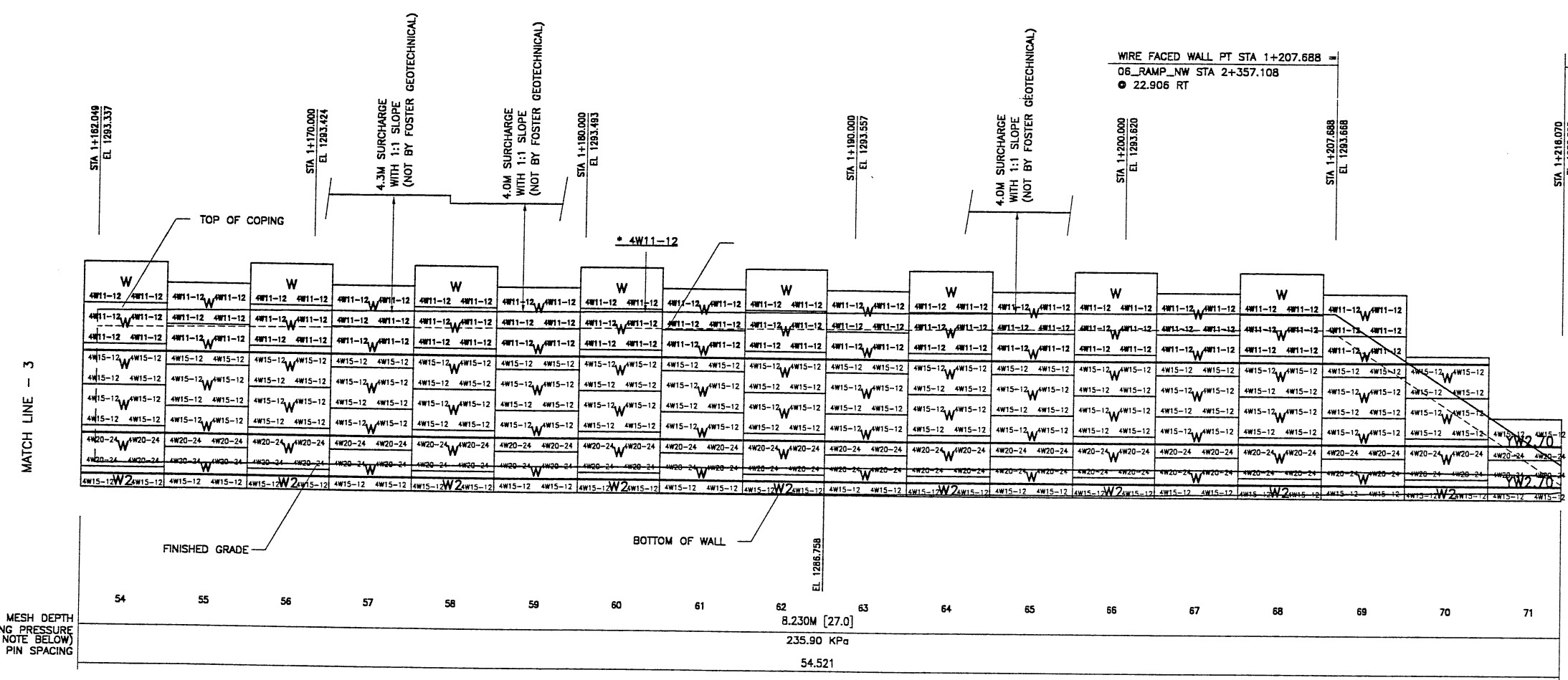
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 Raleigh, NC 27617-7816-6772
 Telephone: (919) 781-6772
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VSL Corporation (V.S.L.) is a strict liability professional engineer. The design of any structure is the responsibility of the engineer. The engineer's responsibility is not limited to the design of the structure, but also includes the selection of materials and the supervision of construction. The engineer is not responsible for the design of any structure which is not designed or constructed in accordance with the specifications and standards of the American Institute of Steel Construction, Inc. (AISC) or the American Institute of Concrete Construction, Inc. (AICC). Any other use of this design is strictly prohibited. VSL CORPORATION ACCEPTS NO LIABILITY THEREFOR.

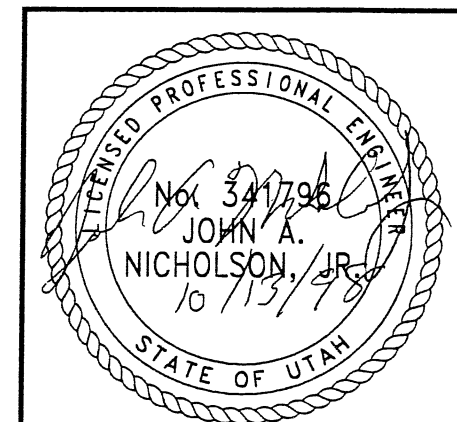
RETAINED EARTH™ WALLS
WALL "R-351-21" - 1ST STAGE: WIRE FACED WALL
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.
DWG. NO. 3.2R-351-21.10
JOB NO. 239-0007
SHT. NO. RE-7



RETAINING WALL "R-351-21" - 1ST STAGE: WIRE FACED WALL
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF FACING = 1719.08 SM)

SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

WASATCH CONSTRUCTORS
OCT 19 1998
RELEASED FOR CONSTRUCTION



METRIC

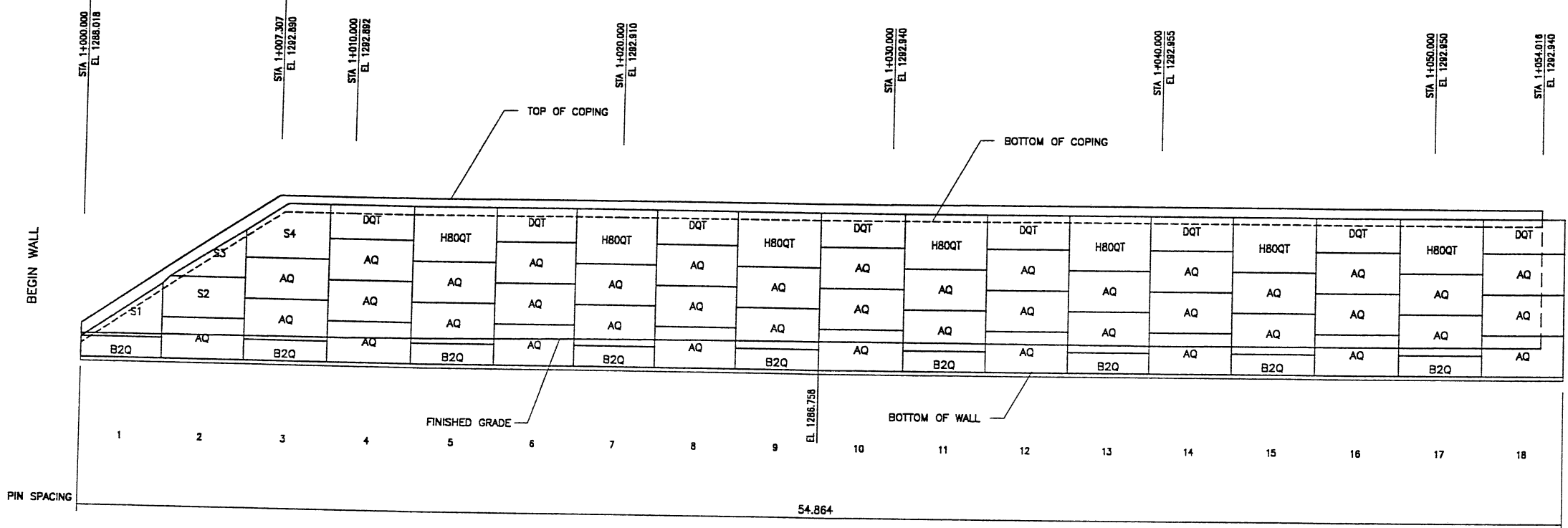
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

REFERENCE (X-UTAH.DWG)

APPROVED FOR CONSTRUCTION			
NO.	DATE	DESCRIPTION	BY
1	02-22-00	RELEASE FOR 2nd. STAGE CONSTRUCTION	Jmt

BEGIN PRECAST FACED WALL R-351-21
 PRECAT FACED WALL STA 1+000.000 =
 06_RAMP_SW STA 1+163.608
 ● 11.572 RT

PRECAST FACED WALL STA 1+007.307 =
 06_RAMP_SW STA 1+170.915
 ● 11.572 RT

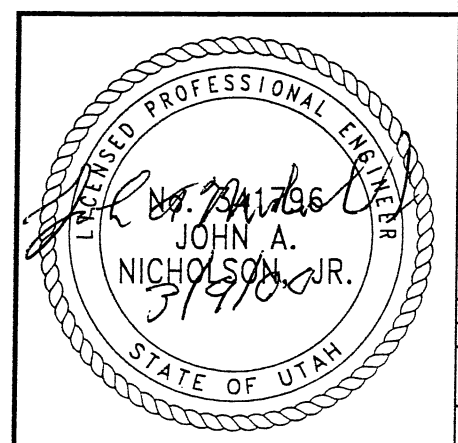


RETAINING WALL "R-351-21" - 2nd. STAGE: PRECAST FACED WALL
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF FACING = 1234.97 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

WASATCH CONSTRUCTORS
 MAR 23 2000
 RELEASED FOR CONSTRUCTION

METRIC

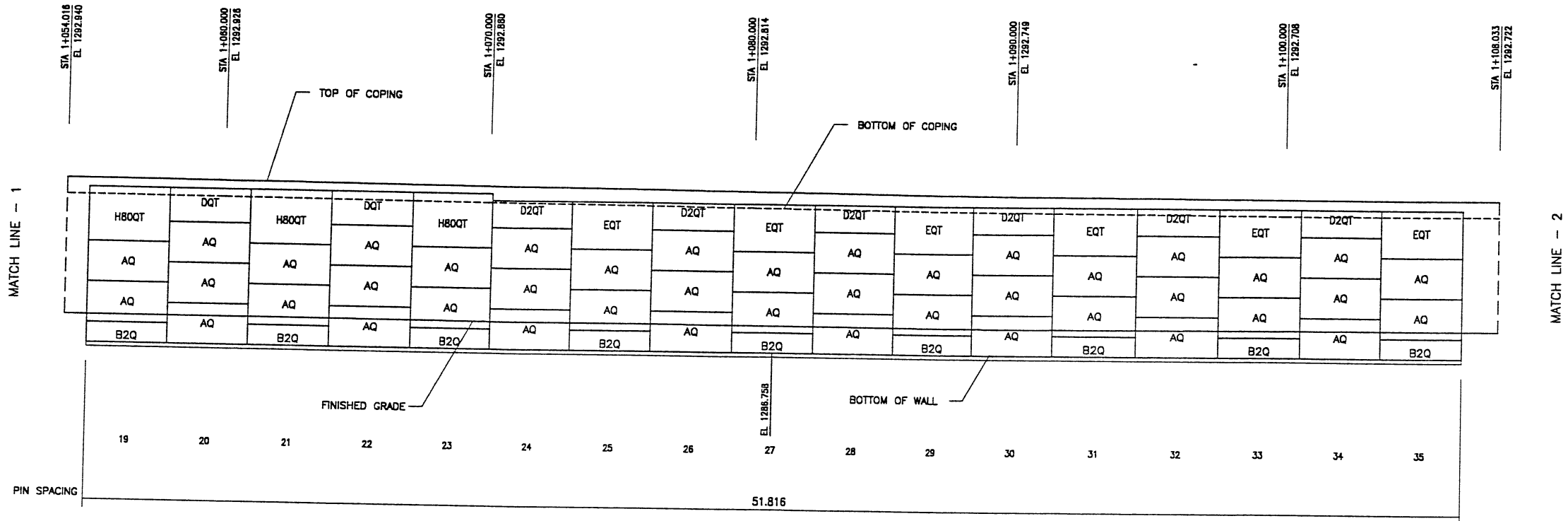
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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



DES. 09-03-98 JL		RETAINED EARTH™	NO. DATE	REVISION	CHK
DRN. 09-03-98 LOP					
CHK. 09-03-98 JL					
<p>VSL CORPORATION 2840 Plaza Place, Suite 200 Raleigh, NC 27612 Telephone: (919) 781-8272 Fax: (919) 781-4959</p> <p>ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE) MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA</p>					
<p>RETAINED EARTH™ WALLS WALL "R-351-21" - 2nd. STAGE: PRECAST WALL UTAH I-15 INTERCHANGE SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.</p>					
<p>DWG. NO. 3.2R-351-21.11 JOB NO. 239-0007 SHL. NO. RE-8</p>					

RFC After Final Approval

FINAL PLOT 02-22-00



RETAINING WALL "R-351-21" - 2nd. STAGE: PRECAST FACED WALL
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF FACING = 1234.97 SM) SCALE 1:200 (HALF SIZE)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	02-22-00	RELEASE FOR 2nd. STAGE CONSTRUCTION <i>JmT</i>

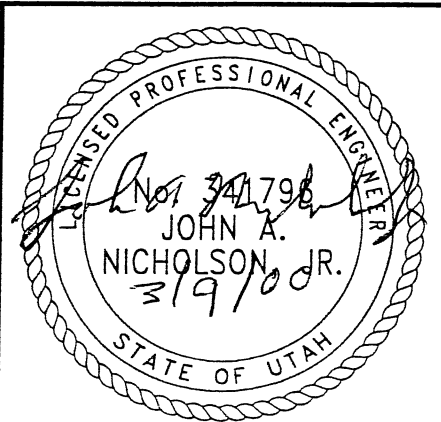
NO.	DATE	REVISION

VSL CORPORATION
 2840 Pines Bluffs, Suite 200
 Raleigh, NC 27617
 Telephone: (919) 781-8272
 Fax: (919) 781-4869

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

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WASATCH CONSTRUCTORS
MAR 23 2000
 RELEASED FOR CONSTRUCTION



RETAINED EARTH™ WALLS WALL "R-351-21" - 2nd. STAGE: PRECAST WALL
UTAH I-15 INTERCHANGE SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.
DWG. NO. 3.2R-351-21.12
JOB NO. 239-0007
SHT. NO. RF-9

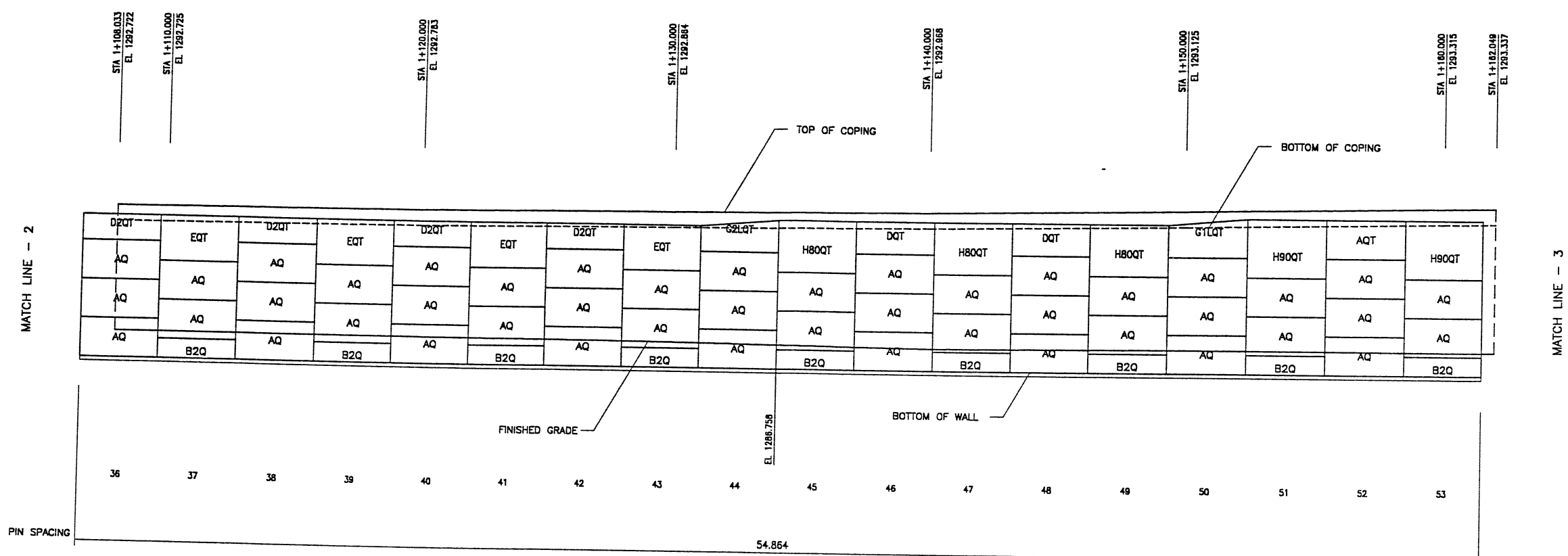
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

METRIC

RFC After Final Approval

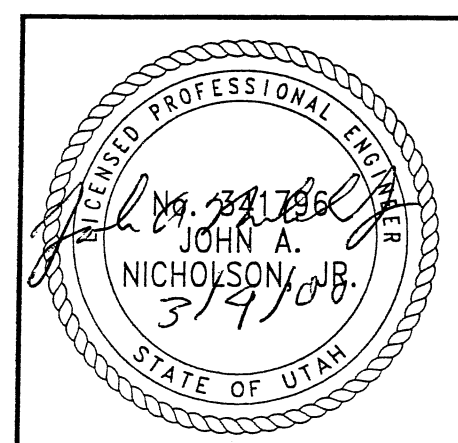
REFERENCE (X-UTAH.DWG)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	02-22-00	RELEASE FOR 2nd. STAGE CONSTRUCTION <i>Just</i>



RETAINING WALL "R-351-21" - 2nd. STAGE: PRECAST FACED WALL
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF FACING = 1234.97 SM) SCALE 1:200 (HALF SIZE)

WASATCH CONSTRUCTORS
 MAR 23 2000
 RELEASED FOR CONSTRUCTION



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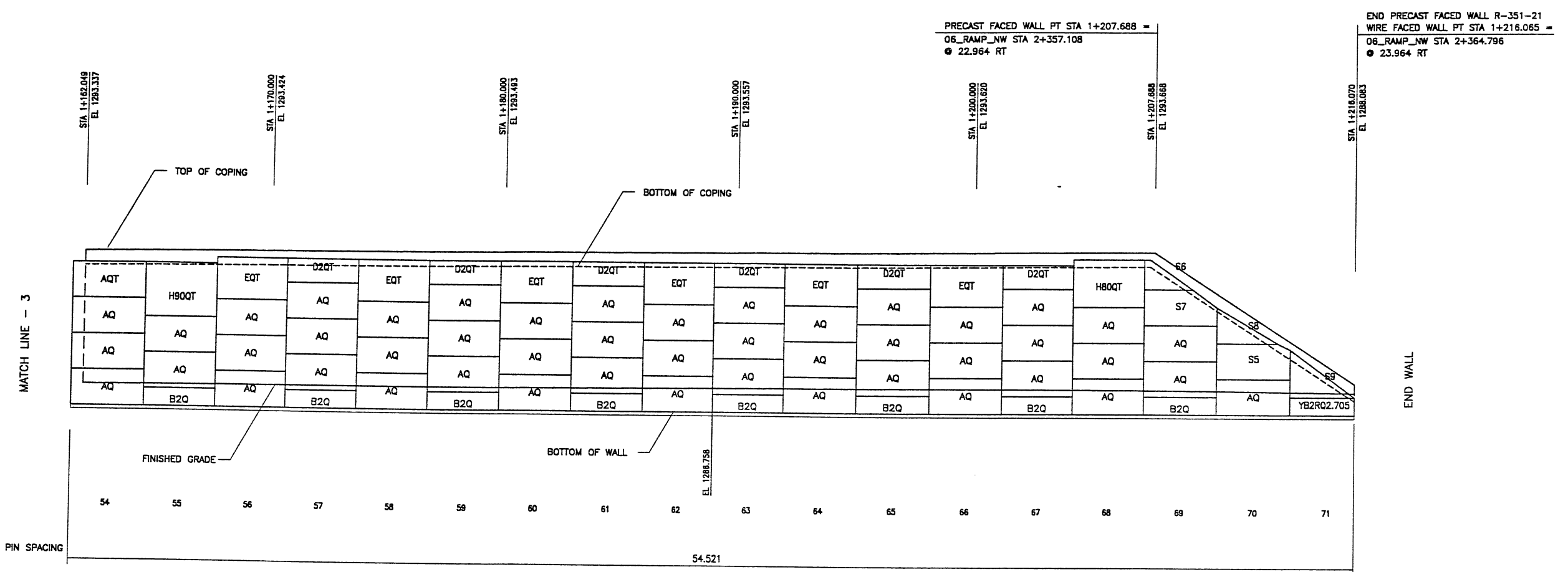
DES.	09-03-98	JL	RETAINED EARTH™	NO.	DATE	REVISION	BY	CHK
	09-03-98	LOP						
	09-03-98	JL						
<p>VSL CORPORATION 2840 Pico Plaza, Suite 200 Raleigh, NC (919) 781-9272 Fax (919) 781-6859</p> <p>ALABAMA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE) MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA</p>								
<p>RETAINED EARTH™ WALLS WALL "R-351-21" - 2nd. STAGE: PRECAST WALL UTAH I-15 INTERCHANGE SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.</p>								
<p>DWG. NO. 3.2R-351-21.13</p>								
<p>JOB NO. 239-0007</p>								
<p>SHT. NO. RE-10</p>								

RFC After Final Approval

FINAL PLOT 02-22-00

REFERENCE (X-UTAH.DWG)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	02-22-00	RELEASE FOR 2nd. STAGE CONSTRUCTION <i>mt</i>



RETAINING WALL "R-351-21" - 2nd. STAGE: PRECAST FACED WALL
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF FACING = 1234.97 SM)

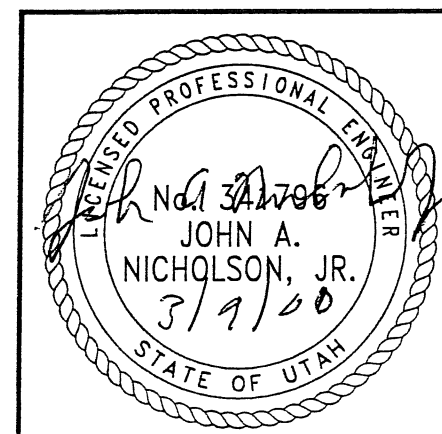
SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

WASATCH CONSTRUCTORS

MAR 23 2000

RELEASED FOR CONSTRUCTION

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.

DES. 09-03-98 JL		RETAINED EARTH™		NO. DATE	BY CHK	
DRN. 09-03-98 LOP		VSL				REVISION
CHK. 09-03-98 JL		VSL				

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

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

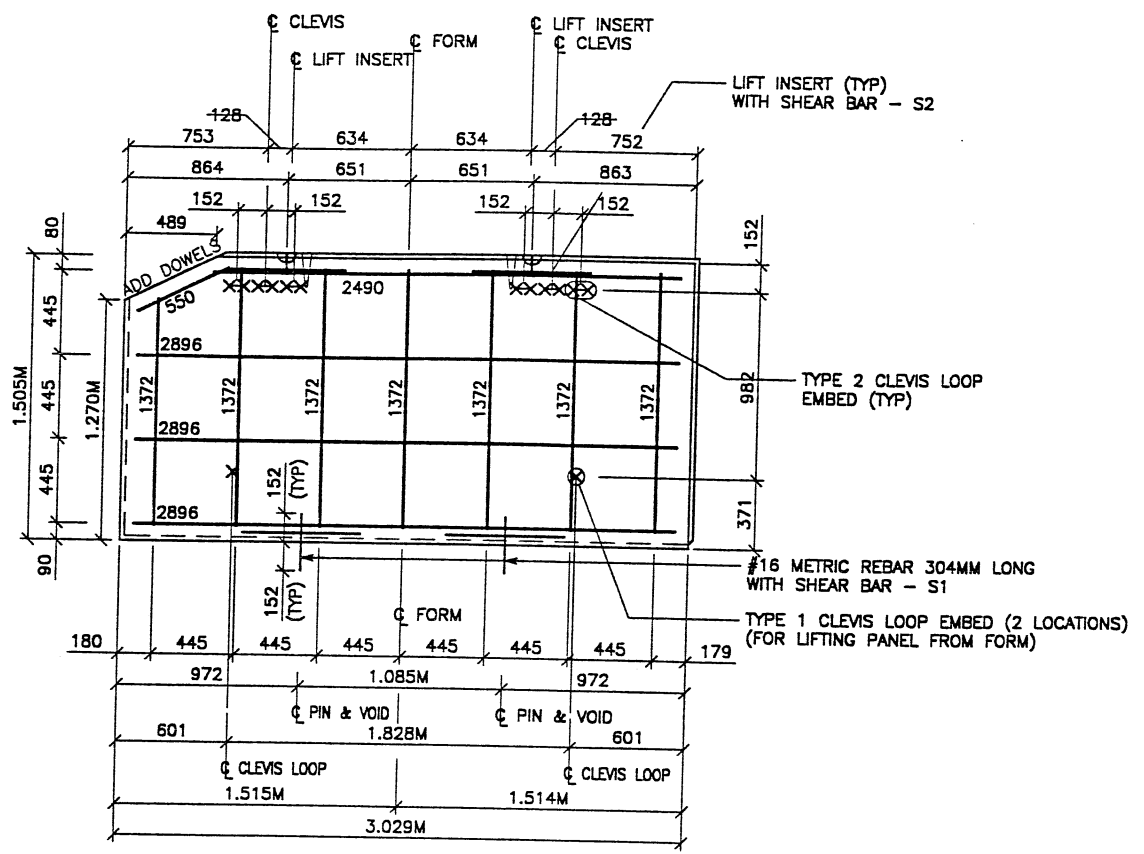
RETAINED EARTH™ WALLS
 WALL "R-351-21" - 2nd. STAGE: PRECAST WALL
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO. 3.2R-351-21.14
 JOB NO. 239-0007
 SH. NO. RE-11

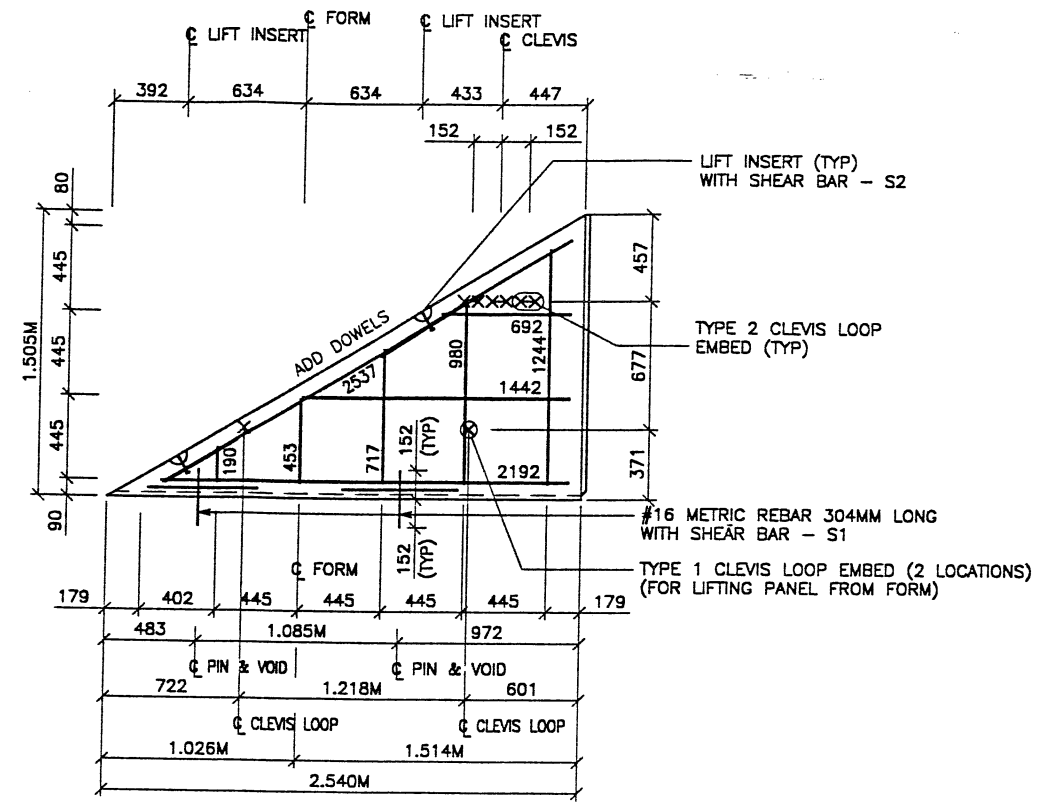
RFC After Final Approval

FINAL PLOT 02-22-00

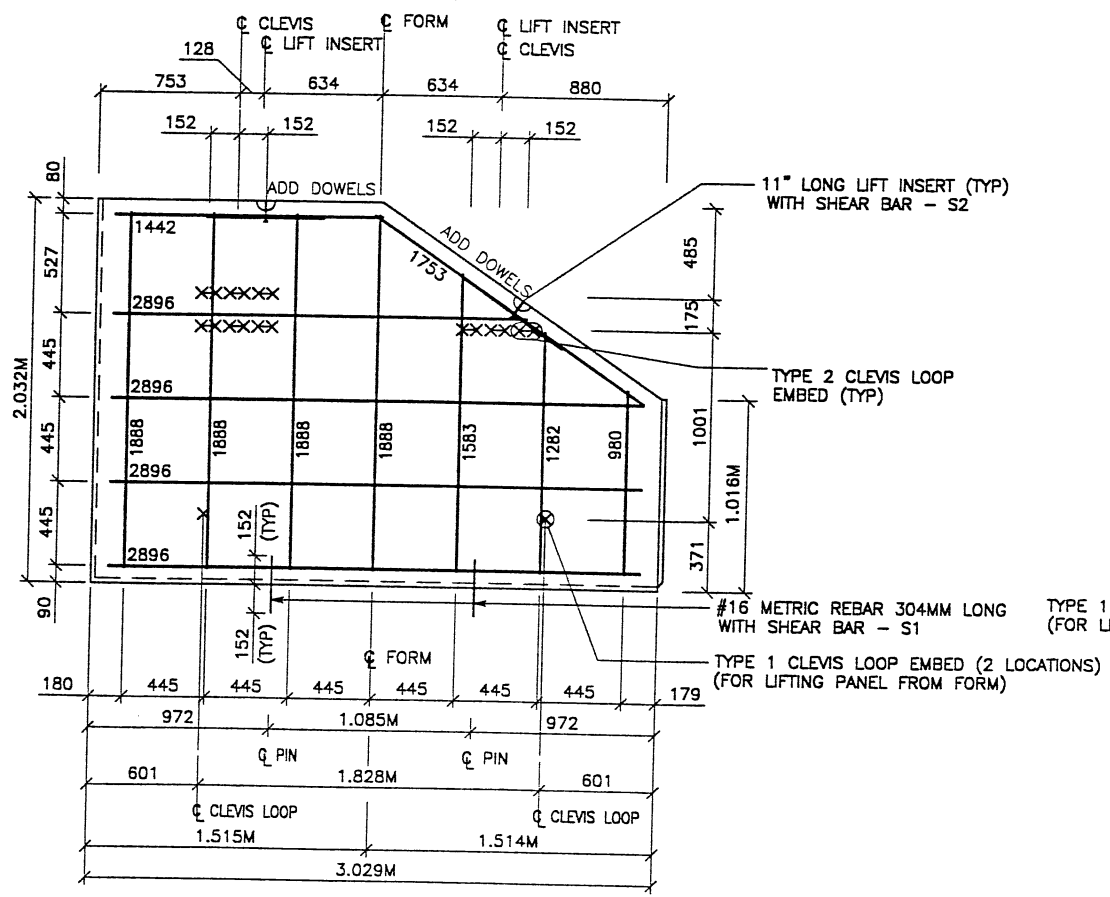
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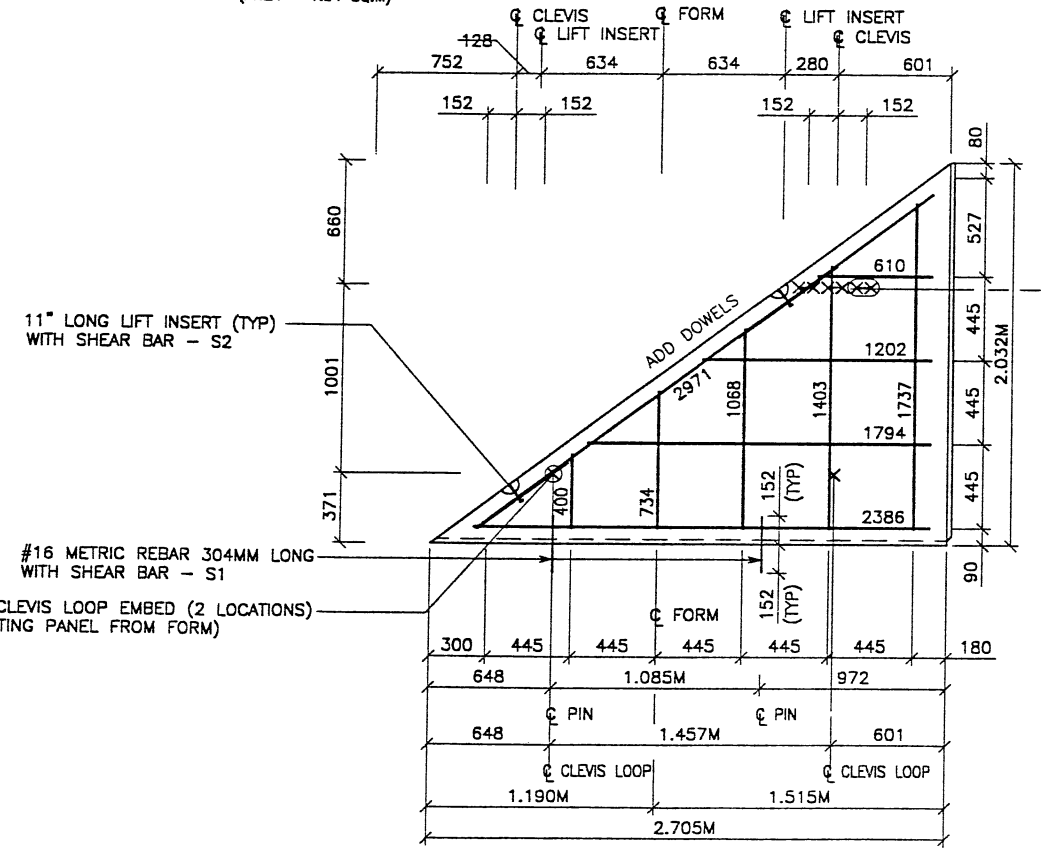
TYPE S5 REBAR
(AREA = 4.58 SQ.M)



TYPE S8 REBAR
(AREA = 1.94 SQ.M)



TYPE S4 REBAR
(AREA = 5.42 SQ.M)



TYPE S9 REBAR
(AREA = 2.75 SQ.M)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	02-22-00	RELEASE FOR 2ND STAGE 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 1.
 - CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 25,200 KPa.
 - EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 - ALL PANELS TO USE 9.5mm# WIDE 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.
 - SEE FOSTER GEOTECHNICAL STD. PLANS FOR ADD'L PANEL DETAILS

VSL CORPORATION
2840 Race Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-6859



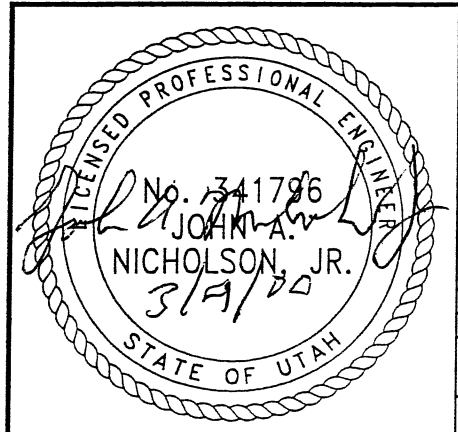
ATLANTA, GA / DALLAS, TX / BALDWIN, NC (CORPORATE OFFICE)
MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

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WASATCH CONSTRUCTORS

MAR 23 2000

RELEASED FOR CONSTRUCTION



RETAINED EARTH™ WALLS
WALL "R-351-21"
2-STAGE PANEL REINFORCEMENT
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

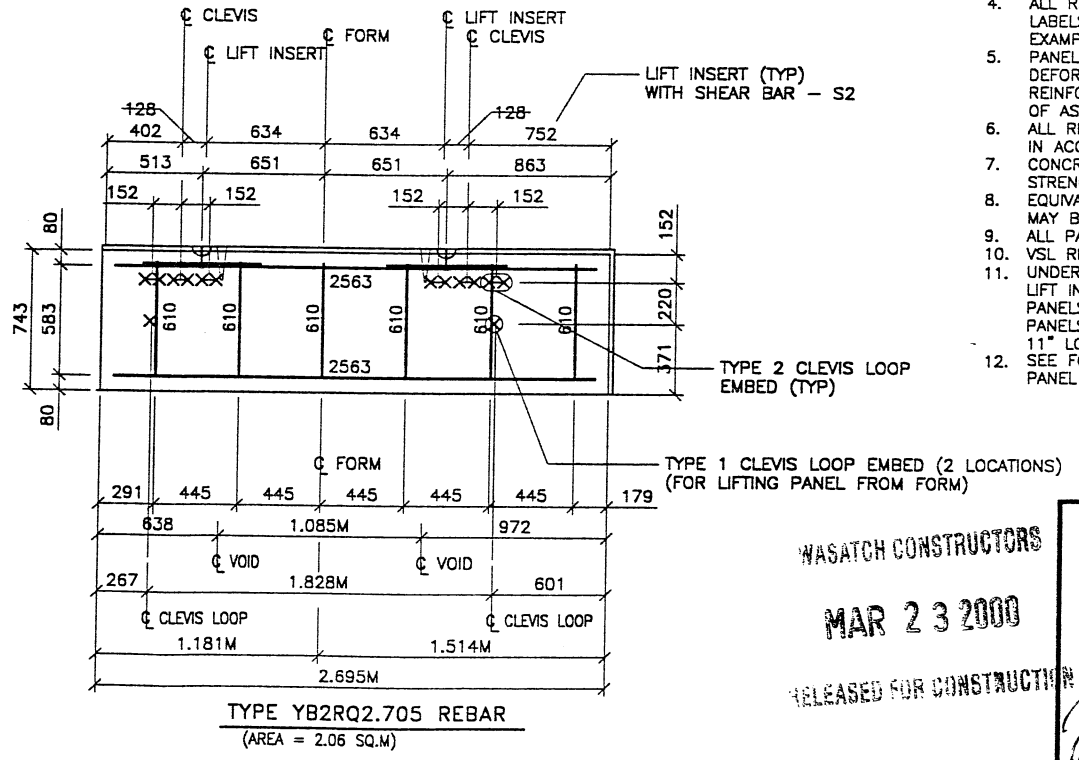
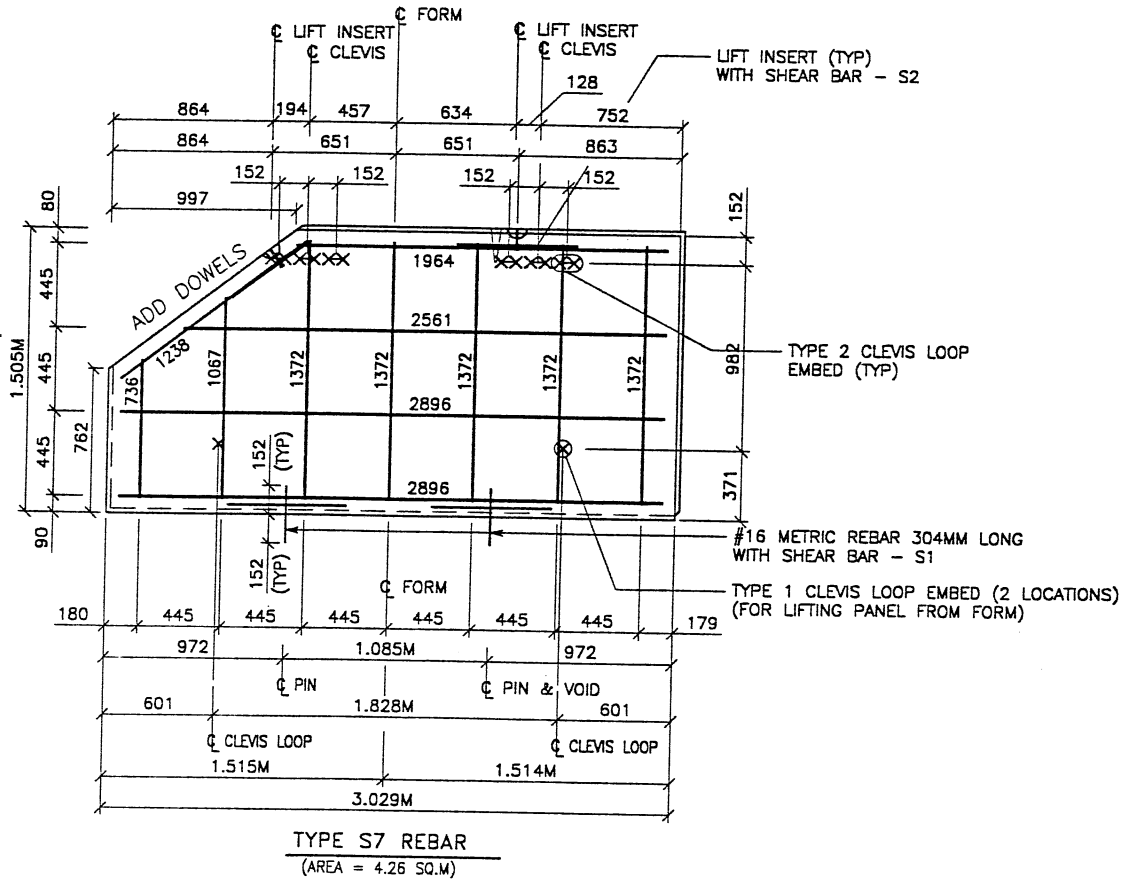
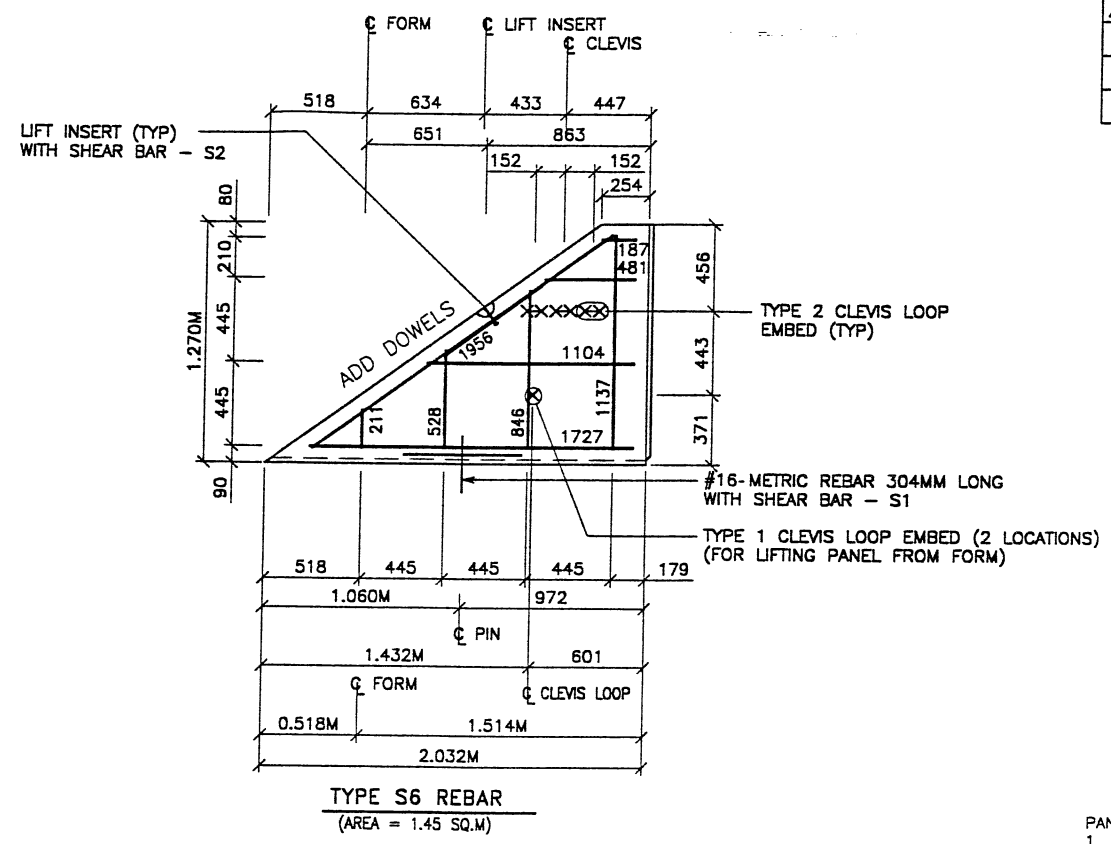
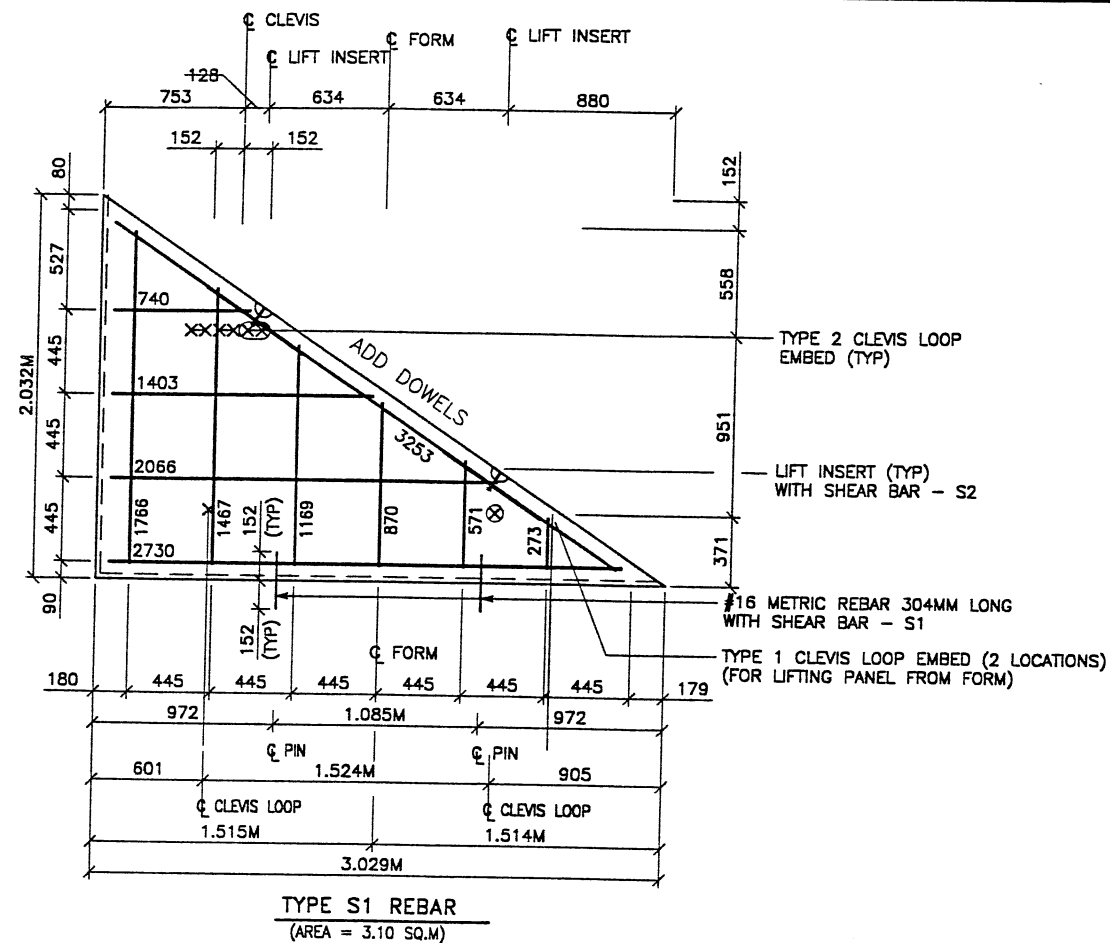
DWG. NO.	3.2R-351-21.15
JOB NO.	239-0007
SHT. NO.	RE-12

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.

RFC After Final Approval

FINAL PLOT 02-22-00

REFERENCE (X-UTAH.DWG)



- 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 REINFORCEMENT STEEL TO BE GALVANIZED IN ACCORDANCE WITH ASTM 767 CLASS I.
 - CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 25,200 Kpa.
 - EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 - ALL PANELS TO USE 9.5mm WIDE 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.
 - SEE FOSTER GEOTECHNICAL STD. PLANS FOR ADD'L PANEL DETAILS

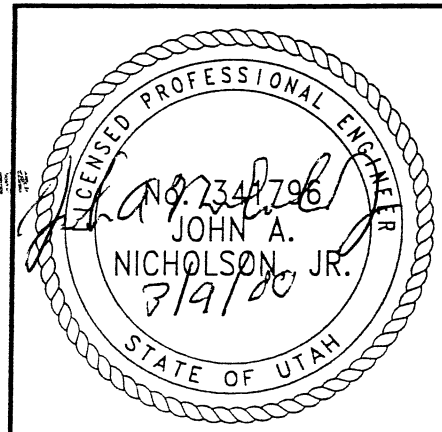
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
Δ	02-22-00	RELEASE FOR 2ND STAGE CONSTRUCTION <i>JMT</i>

DES.	DRN.	CHK.	RETAINED EARTH™	NO.	DATE	BY
02-22-00	FH	DSW	FH			

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-8272
Fax: (919) 781-8959

ALABAMA, GA, ILLINOIS, TX, MICHIGAN, NC (CORPORATE OFFICE)
MINN. R. / SAN JOSE, CA / SPRINGFIELD, VA

WASATCH CONSTRUCTORS
MAR 23 2000
RELEASED FOR CONSTRUCTION



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RETAINED EARTH™ WALLS
WALL "R-351-21"
2-STAGE PANEL REINFORCEMENT
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-21.16
JOB NO.	239-0007
Sht. NO.	RE-13

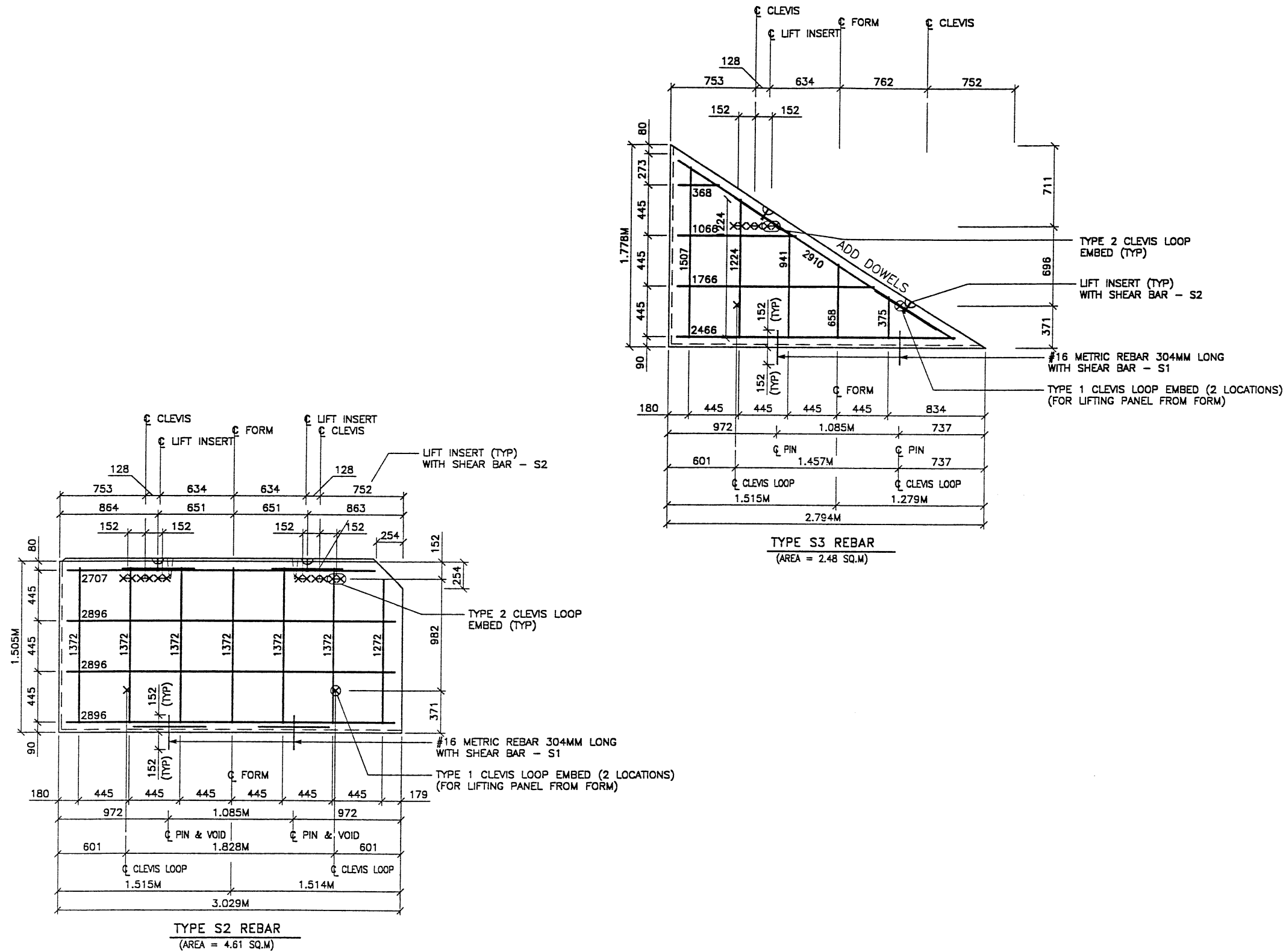
RFC After Final Approval

FINAL PLOT 02-22-00

XREFERENCE (X-UTAH.DWG)

FINAL PLOT 02-22-00

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	02-22-00	RELEASE FOR 2ND STAGE CONSTRUCTION <i>jm</i>



- PANEL REINFORCEMENT NOTES:**
1. PANELS ARE SHOWN BACK FACE.
 2. HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
 3. ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
 4. ALL REINFORCING BARS ARE #13 METRIC. LABELS ON EACH BAR INDICATE LENGTH. EXAMPLE: 1345 IS A #13 BAR 1345 mm LONG.
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 8. EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 9. ALL PANELS TO USE 9.5mm# WIDE CLEVIS LOOPS.
 10. VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.
 11. 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.
 12. SEE FOSTER GEOTECHNICAL STD. PLANS FOR ADD'L PANEL DETAILS

DES.		DRN.		CHK.		RETAINED EARTH™	
02-22-00	FH	02-22-00	DSW	02-22-00	FH	VSL	

VSL CORPORATION
2800 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-8272
Fax: (919) 781-4869

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

WASATCH CONSTRUCTORS
MAR 23 2000
RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
WALL R-351-21.17
2-STAGE PANEL REINFORCEMENT
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

LICENSED PROFESSIONAL ENGINEER
STATE OF UTAH
John A. Nicholson, Jr.
3/9/00

DWG. NO. 3.2R-351-21.17
JOB NO. 239-0007
SHT. NO. RE-14

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.

RFC After Final Approval