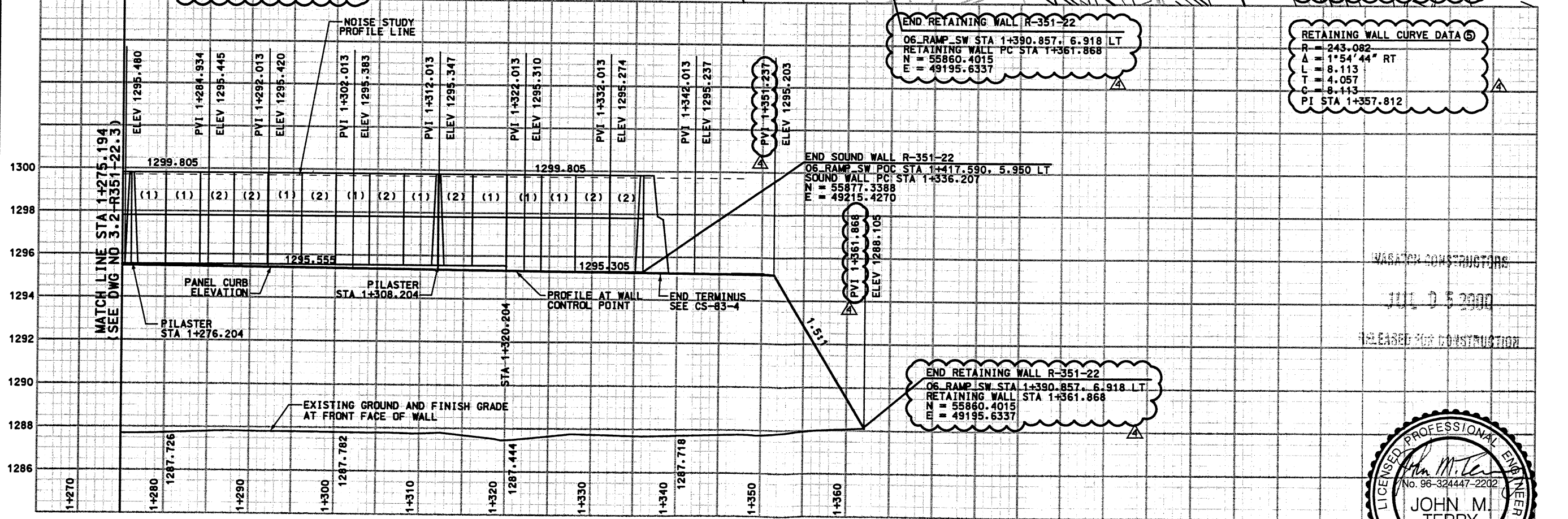
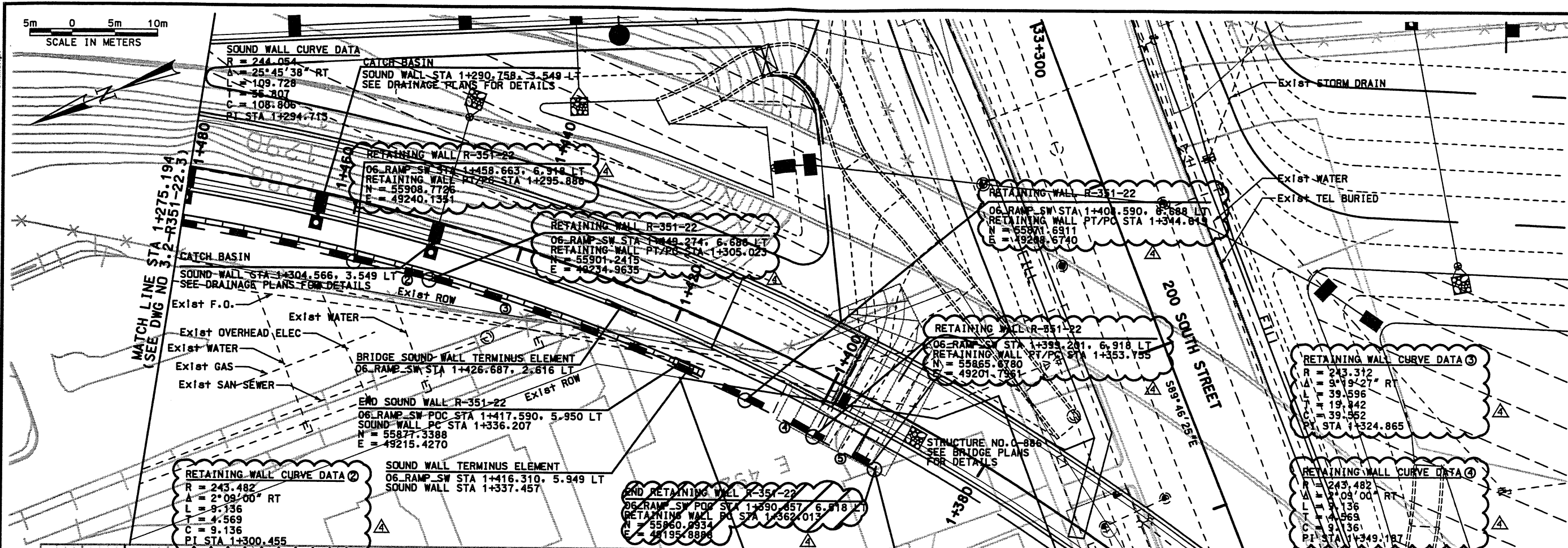


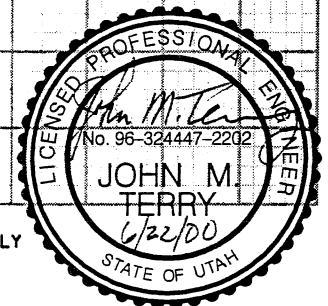
5m 0 5m 10m
SCALE IN METERS

Date: 22-JUN-2007 Time: 15:21 User: alimorh



WALL R-351-22
VIEW IS FRONT FACE OF WALL

SEALED FOR RELEASE NO. 4 ONLY



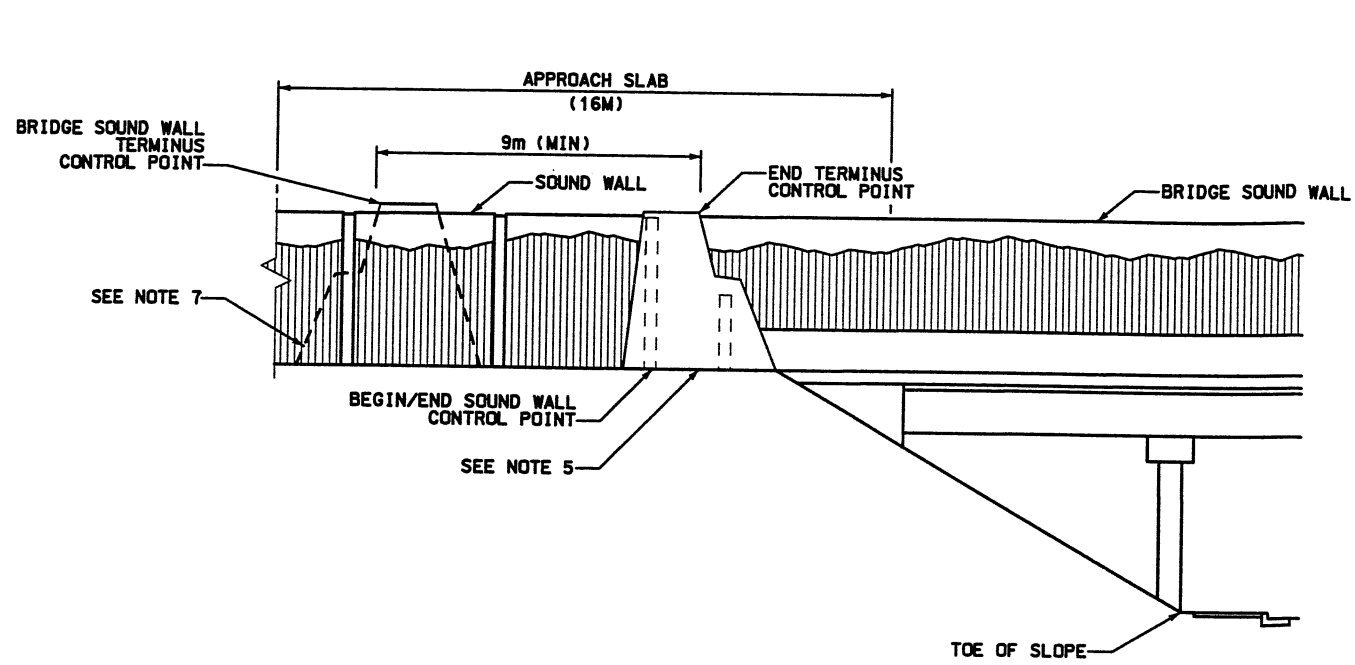
APPROVED FOR CONSTRUCTION	
NO.	DATE
A	10/12/98
A	11/13/98
A	11/23/98
A	06/23/00
DESCRIPTION	
RELEASE USE WALL STAGE 1 ONLY	
MODIFY END TERMINUS LOCATION	
REVISED CS REFERENCE FOR END TERMINUS	
RELEASE FOR 2ND STAGE CONSTRUCTION, FDC 7-0157	
UTAH DEPARTMENT OF TRANSPORTATION	
SVERDRUP/DE LEUW	
DESIGN DP	CHECK PLC
11/23/98	11/23/98
DRAWN_SVD	CHECK PLC
11/23/98	11/23/98
SECTION MANAGER	CHECK
QUANT.	
3212416	
I-15 CORRIDOR RECONSTRUCTION	
SITUATION & LAYOUT	
SECTION 3.2	
PROJECT NUMBER #SP-15-7(135)296	
SALT LAKE COUNTY	
DWG. NO. 3.2-R351-22.3	
SHT. 3 OF 11	

REC After Final Approval

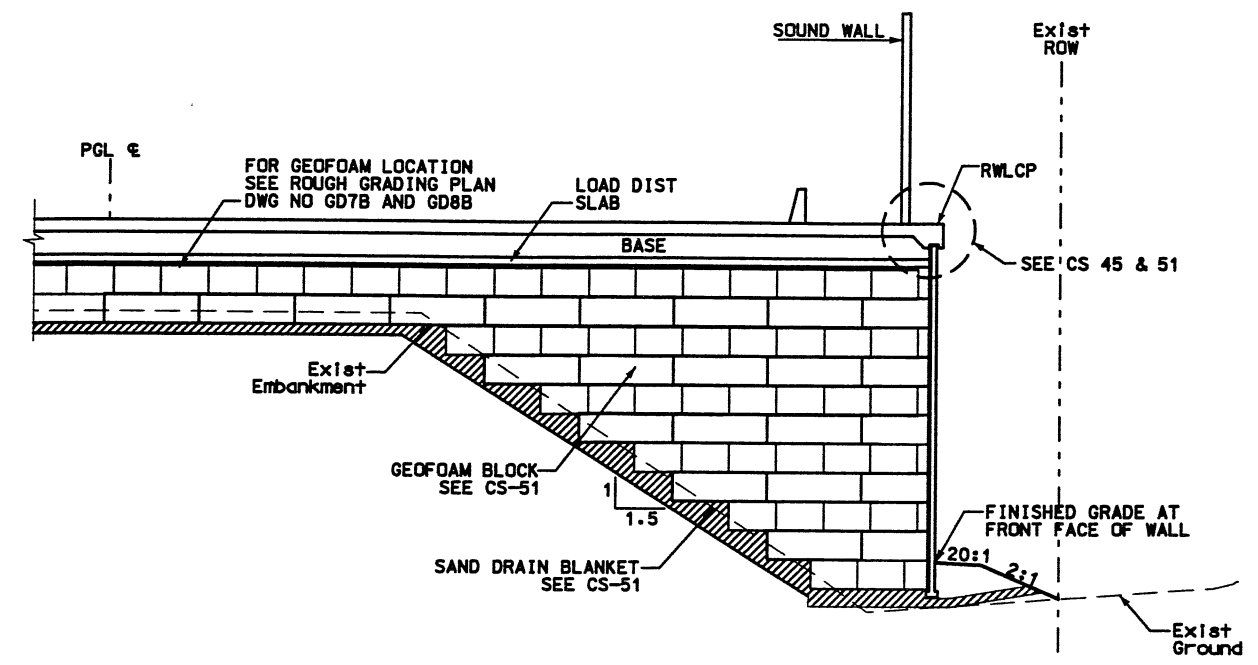
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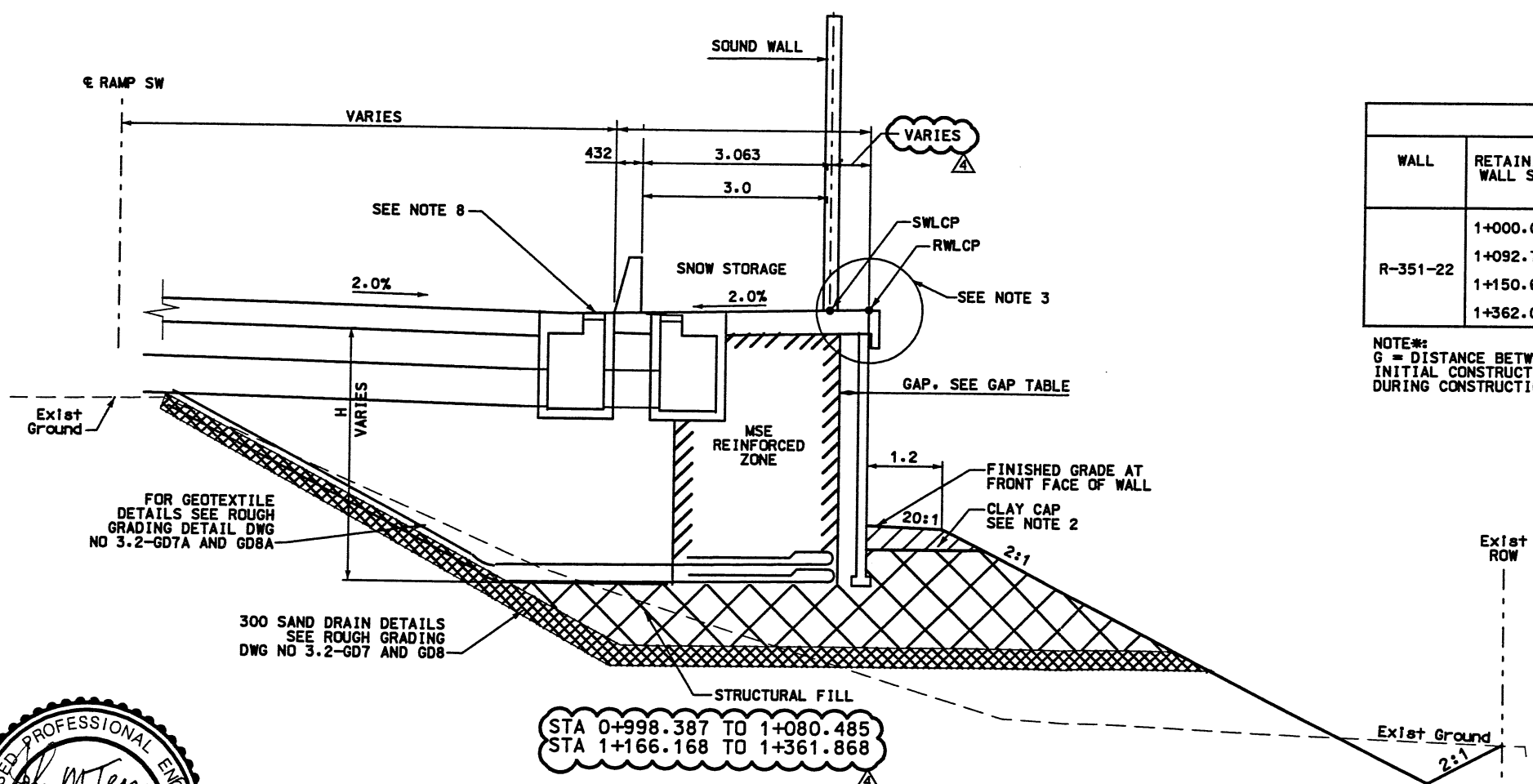
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SOUND WALL OVER BRIDGE TRANSITION



GEOFOAM TYPICAL
STATION 1+080.485 TO 1+166.168



STA 0+998.387 TO 1+080.485
STA 1+166.168 TO 1+361.868

RETAINING WALL DETAILS
NTS

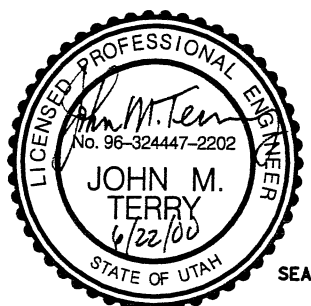
WALL R-351-22
2 STAGE MSE

GAP TABLE				
WALL	RETAINING WALL STA	G. (mm) SEE NOTE*	MAXIMUM EXPECTED LATERAL MOVEMENT (mm)	MINIMUM EXPECTED POST-CONSTRUCTION GAP (mm)
R-351-22	1+000.000	550	245	305
	1+092.784	550	245	305
	1+150.696	650	345	305
	1+362.013	650	345	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
JUL 05 2000
RELEASED FOR CONSTRUCTION

- NOTES:
- OVEREXCAVATE EXISTING SOILS AS REQUIRED. REFILL EXCAVATION WITH STRUCTURAL FILL AS PER CORRIDOR STANDARD SPECIFICATION 220.2.
 - CONSTRUCT 0.3 m CLAY CAP WITH LOW PLASTIC SILTY CLAY AS PER CORRIDOR STANDARD SPECIFICATION.
 - FOR COPING DETAILS SEE CORRIDOR STANDARD PLAN CS-83.2.
 - FOR SOUNDWALL AESTHETIC DETAILS SEE STANDARDS CS-5 AND CS-6.
 - FOR SOUNDWALL TERMINUS ELEMENT DETAILS SEE CS-83-4.
 - FOR SOUNDWALL PILASTER ELEMENT DETAIL SEE CS-39-2.
 - FOR BRIDGE SOUNDWALL TERMINUS ELEMENT DETAIL, SEE CS-97-1.
 - CONTRACTOR TO ADJUST STATION AND LOCATION OF INLETS NEXT TO MSE WALLS TO MISS THE MSE STRAPS. SEE VSL SHOP DRAWINGS FOR INLET LOCATION NEXT TO MSE WALL.
 - FOR MSE WALL GEOFOAM WALL INTERFACE SEE CS-48.



SEALED FOR RELEASE NO. 4 ONLY

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
10/08/98	RELEASE	MSE WALL STAGE 1 ONLY
11/20/98	REMOVE	MFC CLOUDS1 COMPLETE GAP TABLE.
5/21/98	FINAL	SUBMITTAL COMMENTS
6/23/00	RELEASE	FOR 2ND STAGE CONSTRUCTION. FDC 7-0157

UTAH DEPARTMENT OF TRANSPORTATION
SVERRUP/DE LEUW

DESIGN	JFA 11/20/98	CHECK	PLC 11/20/98
DRAWN	SVD 11/20/98	CHECK	PLC 11/20/98
QUANT.		CHECK	

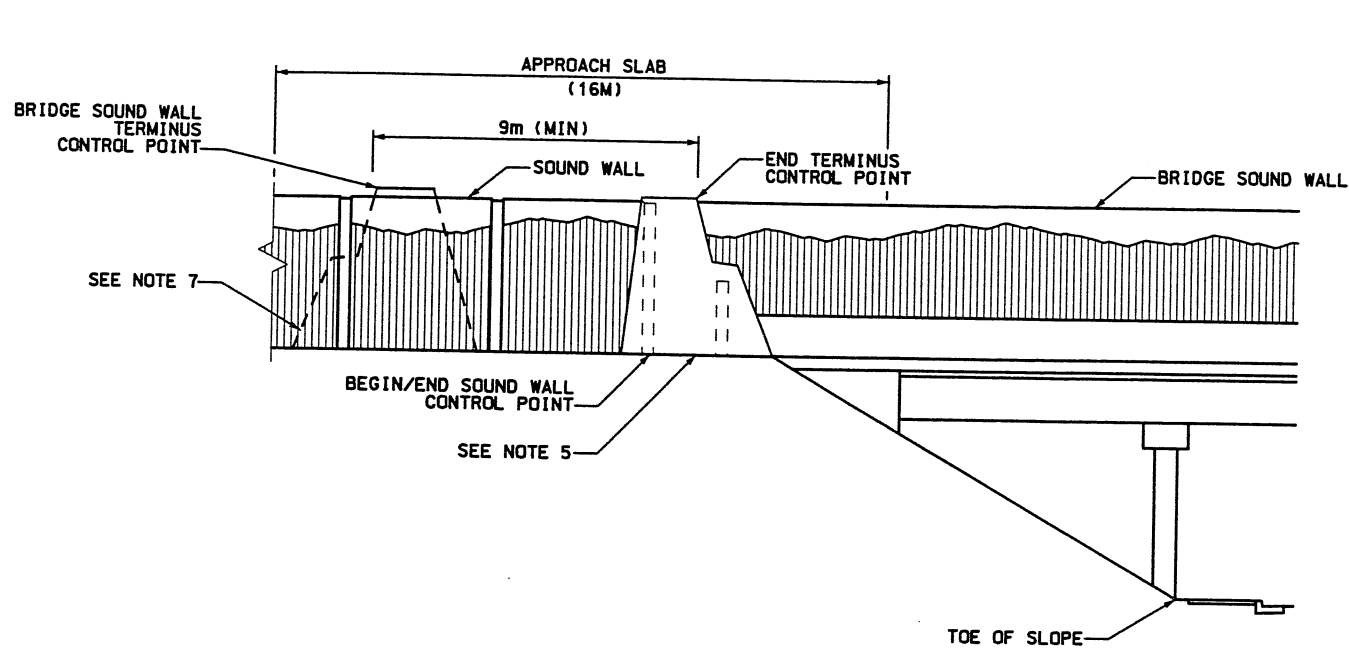
3212416

I-15 CORRIDOR RECONSTRUCTION
TYPICAL SECTION
SECTION 3.2
PROJECT NUMBER #SP-15-7(135)296

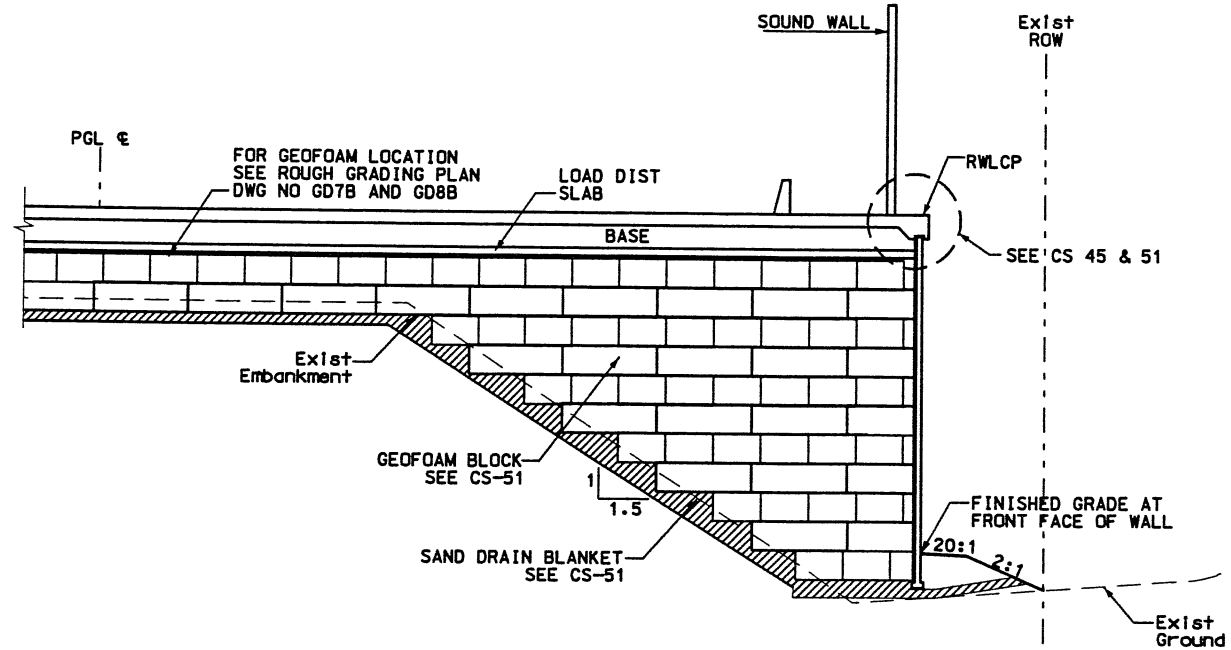
SALT LAKE COUNTY
DWG. NO. 3.2-R351-22.4

SHT. 4 OF 11

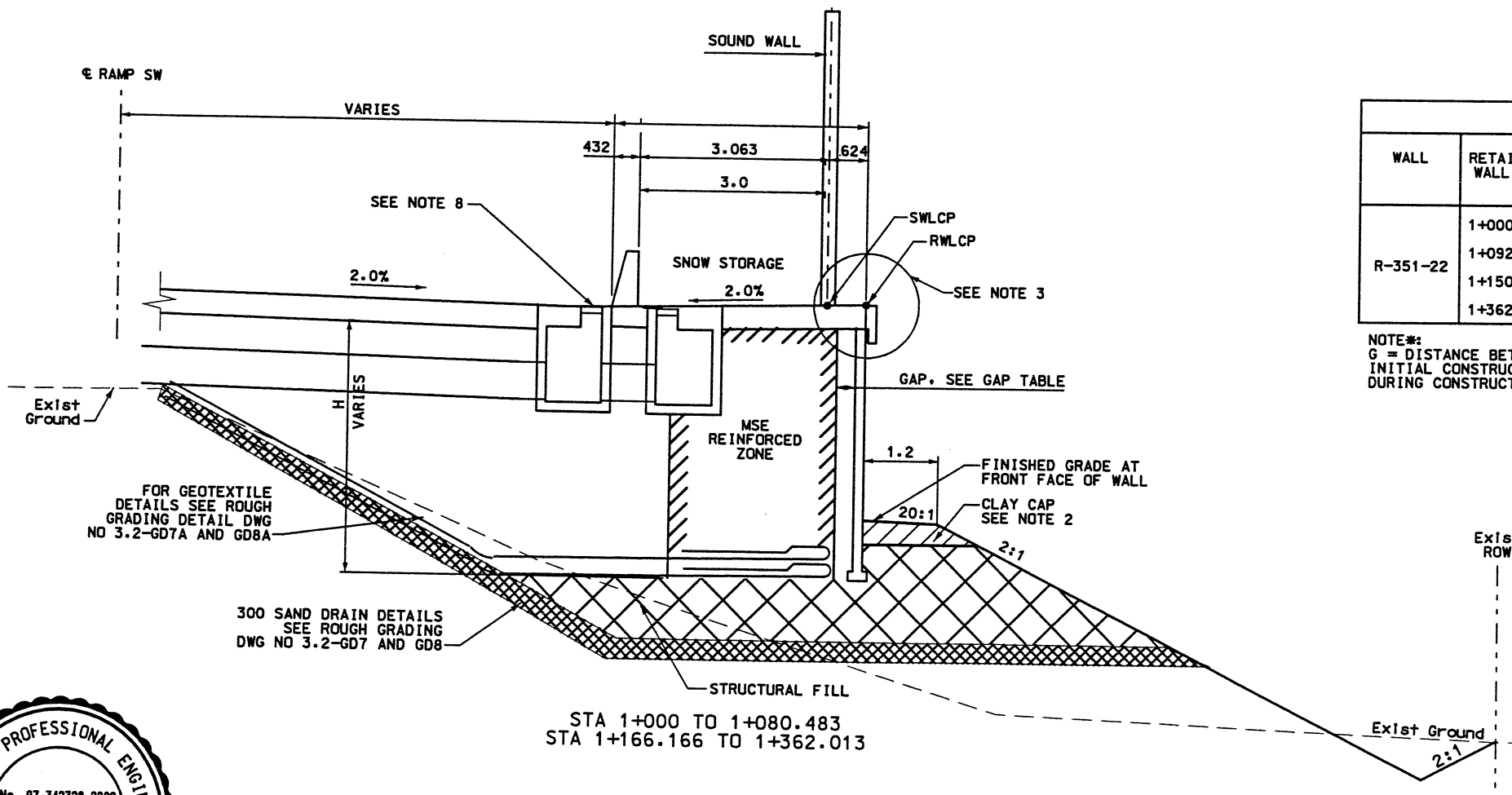
R/C After Final Approval!



SOUND WALL OVER BRIDGE TRANSITION



**GEOFOAM TYPICAL
STATION 1+080.483 TO 1+166.166**



RETAINING WALL DETAILS
NTS
WALL R-351-22
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-351-22	1+000.000	550	CONSTANT	245
	1+092.784	550	GEOFOAM	245
	1+150.696	650	CONSTANT	345
	1+362.013	650	CONSTANT	345

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

JUN 03 1999

RELEASED FOR CONSTRUCTION

NOTES:

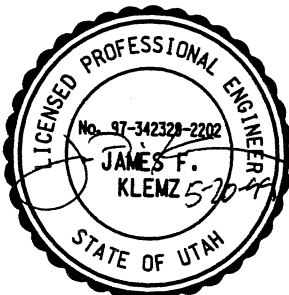
- OVEREXCAVATE EXISTING SOILS AS REQUIRED. REFILL EXCAVATION WITH STRUCTURAL FILL AS PER CORRIDOR STANDARD SPECIFICATION 220.2.
- CONSTRUCT 0.3 m CLAY CAP WITH LOW PLASTIC SILTY CLAY AS PER CORRIDOR STANDARD SPECIFICATION.
- FOR COPING DETAILS SEE CORRIDOR STANDARD PLAN CS-83.2.
- FOR SOUNDWALL AESTHETIC DETAILS SEE STANDARDS CS-5 AND CS-6.
- FOR SOUNDWALL TERMINUS ELEMENT DETAILS SEE CS-83-4.
- FOR SOUNDWALL PILASTER ELEMENT DETAIL SEE CS-39-2.
- FOR BRIDGE SOUNDWALL TERMINUS ELEMENT DETAIL, SEE CS-97-1.
- CONTRACTOR TO ADJUST STATION AND LOCATION OF INLETS NEXT TO MSE WALLS TO MISS THE MSE STRAPS. SEE VSL SHOP DRAWINGS FOR INLET LOCATION NEXT TO MSE WALL.
- FOR MSE WALL GEOFOAM WALL INTERFACE SEE CS-48.

APPROVED FOR CONSTRUCTION		DESCRIPTION
NO.	DATE	
1	10/08/98	RELEASE MSE WALL STAGE 1 ONLY
2	11/20/98	REMOVE NFC CLOUDS1 COMPLETE GAP TABLE.
3	5/21/99	FINAL SUBMITTAL COMMENTS

UTAH DEPARTMENT OF TRANSPORTATION		SVERDRUP/DE LEUW	
DESIGN	CHECK	PLC	DATE
JFA 11/20/98	PLC 11/20/98		
MARVIN COOK	PLC 11/20/98		
PROJECT DESIGN ENGINEER	CHECK		
DATE			
APPROVED 11/20/98	DATE		
APPROVED 11/20/98	DATE		
KEITH SABOL	SECTION MANAGER		
QUANT.			
			3212416

I-15 CORRIDOR RECONSTRUCTION	
TYPICAL SECTION	SECTION 3.2
	PROJECT NUMBER #SP-15-7(135)296

SALT LAKE COUNTY	
DWG. NO.	3.2-R351-22.4
SHT. 4	OF 11



FINAL PLOT 09-11-98 H:\RE_EARTH\PROJECT\239-000\98\65-WALLS\65-22\SUBMITL-2\RE-1.DWG

WIRE FACED WALL STA 1+382.013 =
 O6_RAMP_SW STA 1+380.857
 ● 5.916 LT
 BEGIN WIRE FACED WALL R-351-22
 PRECAST WALL STA 1+382.013 =
 O6_RAMP_SW STA 1+390.857
 ● 6.518 LT
 BEGIN PRECAST WALL R-351-22
 PRECAST WALL STA 1+380.267 =
 O6_RAMP_SW STA 1+404.857
 ● 5.951 LT
 BEGIN SOUNDWALL
 WIRE FACED WALL PC STA 1+351.382 =
 O6_RAMP_SW STA 1+416.671
 ● 5.716 LT

PRECAST WALL CURVE DATA
 R=243.482
 Δ=28°58'11"
 L=123.109
 T=62.900

WIRE FACED WALL PC STA 1+238.904 =
 O6_RAMP_SW STA 1+517.260
 ● 5.716 LT

PRECAST WALL PC STA 1+238.904 =
 O6_RAMP_SW STA 1+517.260
 ● 6.518 LT

RETAINED EARTH INDEX	
RE-1	PLAN WIRE FACED WALL R-347-21, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTION
RE-3	WIRE FACED WALL R-355-22
RE-4	WIRE FACED WALL R-355-22
RE-5	WIRE FACED WALL R-355-22
RE-6	WIRE FACED WALL R-355-22
RE-7	WIRE FACED WALL R-355-22

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	09-28-98	RELEASE FOR 1ST STAGE CONST. ONLY

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

WASATCH CONSTRUCTORS
 OCT 16 1998
 RELEASED FOR CONSTRUCTION

VSL CORPORATION
 2810 Piedmont Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-8272
 Fax: (919) 781-4969

ALABAMA, GA / DALLAS, TX / INGLEWOOD, NC (CORPORATE OFFICE)
 MAINT. TX / SAN ANGELO, TX / SPRINGFIELD, VA

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)
= 0.68g (AT BRIDGE ABUTMENT FOR 250 YEAR SEISMIC)

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

FACE OF PRECAST WALL 351-22
 FACE OF WIRE FACED WALL 351-22

WIRE FACED WALL STA 1+166.166 =
 O6_RAMP_SW STA 1+590.000
 ● 5.716 LT

PRECAST WALL STA 1+150.696 =
 O6_RAMP_SW STA 1+605.470
 ● 6.518 LT

WIRE FACED WALL STA 1+150.696 =
 O6_RAMP_SW STA 1+605.470
 ● 6.061 LT

WIRE FACED WALL STA 1+092.784 =
 O6_RAMP_SW STA 1+663.382
 ● 6.061 LT

PRECAST WALL STA 1+092.784 =
 O6_RAMP_SW STA 1+663.382
 ● 6.518 LT

WIRE FACED WALL STA 1+080.483 =
 O6_RAMP_SW STA 1+675.683
 ● 5.716 LT

WIRE FACED WALL STA 1+000.000 =
 O6_RAMP_SW STA 1+756.166
 ● 5.916 LT
 END WIRE FACED WALL R-351-22

PRECAST WALL STA 1+000.000 =
 O6_RAMP_SW STA 1+756.166
 ● 6.518 LT
 END PRECAST WALL R-351-22

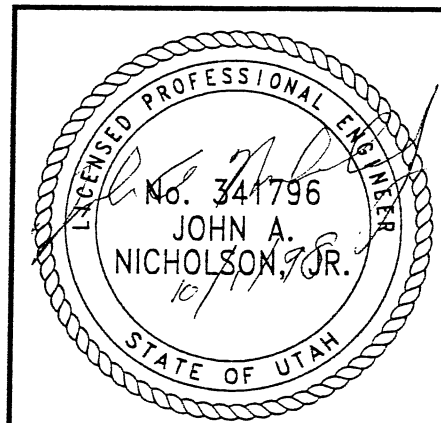
WIRE FACED WALL STA 1+005.204 =
 O6_RAMP_SW STA 1+750.962
 ● 5.816 LT

PRECAST WALL STA 1+008.204 =
 O6_RAMP_SW STA 1+747.962
 ● 5.946 LT
 END SOUNDWALL

PLAN VIEW MSE WALL "R-351-22"

SCALE: 1=500 (FULL SIZE)
 SCALE: 1=1000 (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.

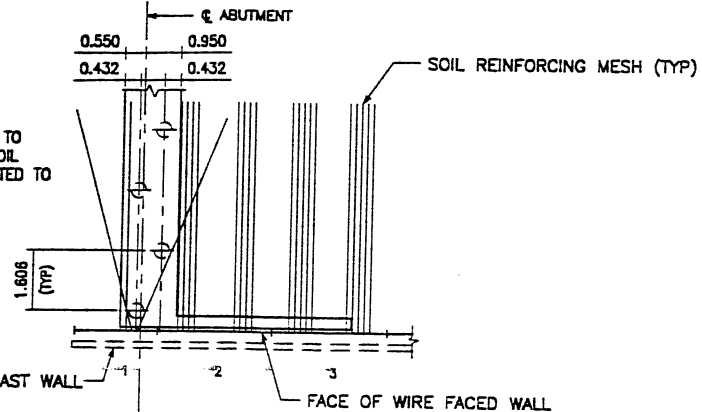
RETAINED EARTH™ WALLS
 PLAN VIEW MSE WALL "R-351-22"
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-22.5
JOB NO.	239-0007
SHT. NO.	RE-1

H:\RE_EARTH\PROJECT\239-000\98\6S-WALLS\6S-22\SUBMITL-2\W6S-22.DWG

PLOT 09-11-98

NOTE: PILES TO BE LOCATED PRIOR TO ERECTION OF WIRE FACED WALL. SOIL REINFORCEMENT TO BE FIELD ADJUSTED TO AVOID PILES.



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	09-25-98	RELEASE FOR 1ST STAGE CONST. ONLY

NO.	DATE	REVISION

MATCH BRIDGE C-394

END WIRE FACED WALL R-351-22
WIRE FACED WALL STA 1+000.000 =
06_RAMP_SW STA 1+756.166
● 5.916 LT

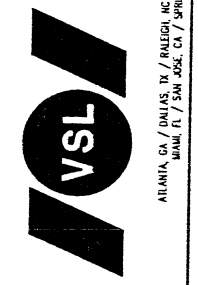
END SOUNDWALL R-351-22
WALL STA 1+008.204 =
06_RAMP_SW STA 1+747.962
● 5.946 LT

WIRE FACED WALL STA 1+005.204 =
06_RAMP_SW STA 1+750.962
● 5.816 LT

SURCHARGE VARIES
(+0.9M TO 3.8M)
TEMPORARY VERTICAL
GEOTEXTILE WALL
(NOT BY VSL)

WASATCH CONSTRUCTORS
OCT 16 1998
RELEASED FOR CONSTRUCTION

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27617
Telephone (919) 861 6172
Fax (919) 861-6959

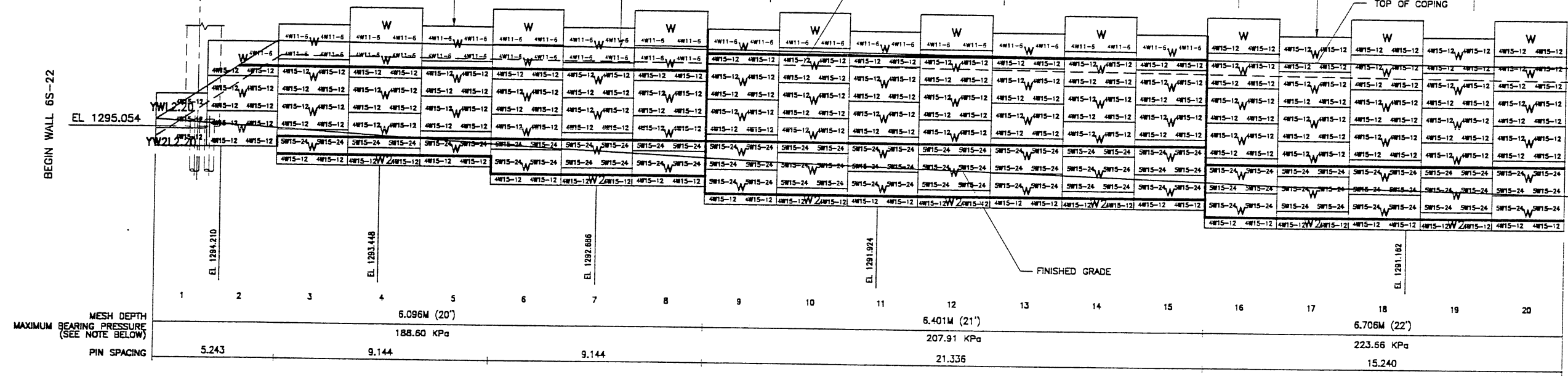


VSL Corporation (VSL) is a leading international provider of retaining wall and earth retention solutions. The company's products and services are used worldwide in a wide range of applications, including highway construction, industrial and commercial facilities, and infrastructure projects. VSL is committed to providing high-quality, innovative solutions that meet the needs of its customers.

RETAINED EARTH™ WALLS
WALL "R-351-22" - 1ST STAGE: WIRE FACED WALL
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-22.7
JOB NO.	239-0007
SHT. NO.	RE-3

7 of 11

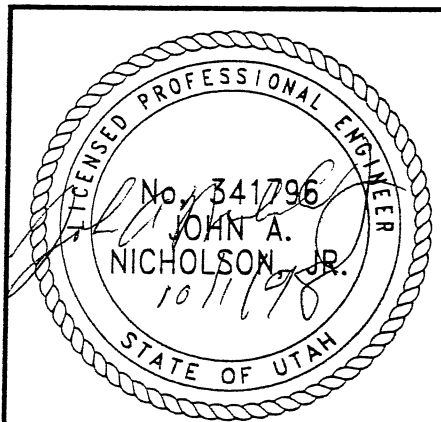


RETAINING WALL "R-351-22" - 1ST STAGE: WIRE FACED WALL

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF FACING = 2833.25 SM)

SCALE 1:100 (FULL SIZE)
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.


* 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.

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
09-25-98		RELEASE FOR 1ST STAGE CONST. ONLY
07-16-99		ADDED LIMITS OF GEOFOAM PANELS AND CS
		DRAWING REFERENCE

NO.	DATE	REVISION

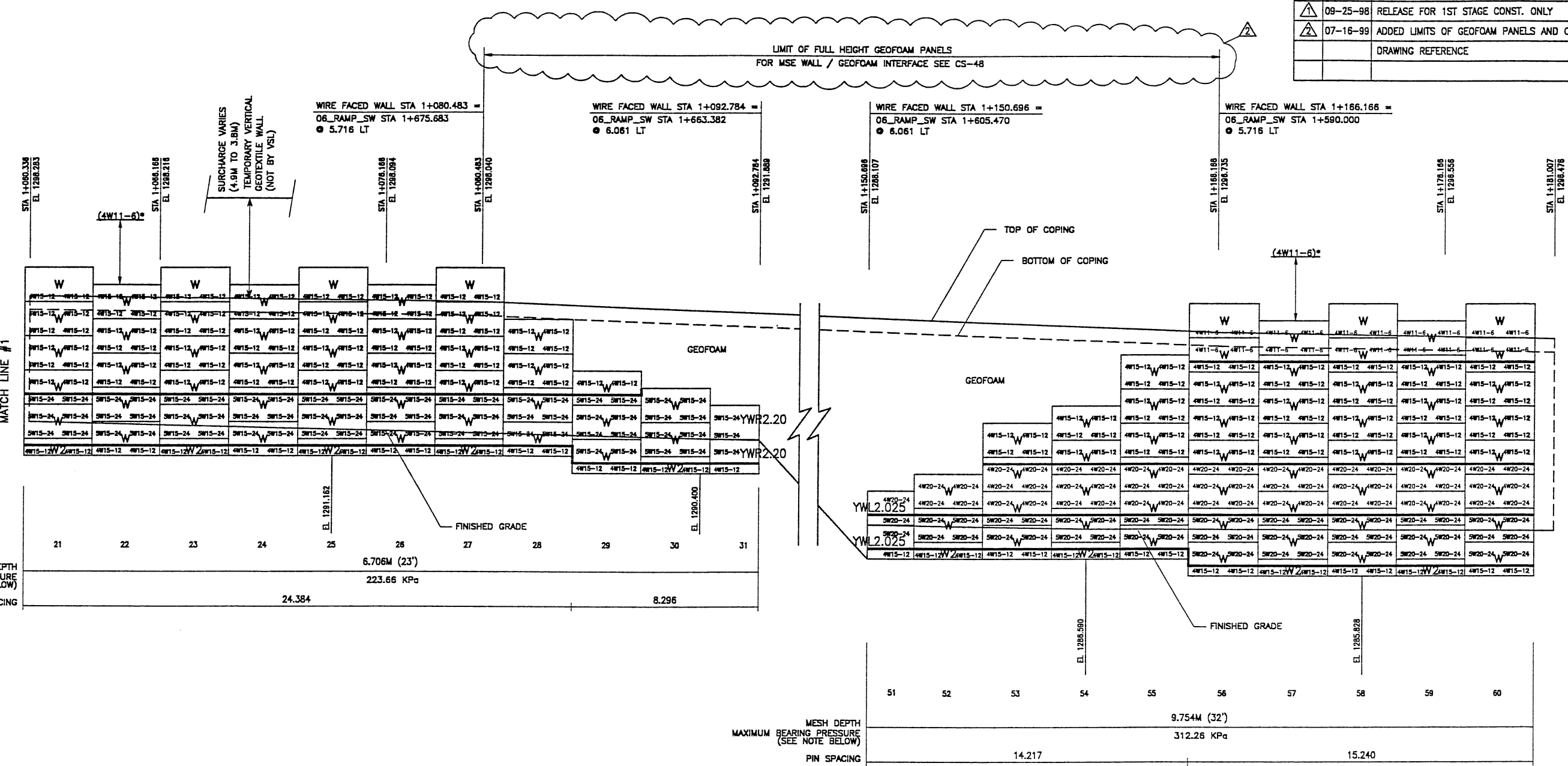
VSL CORPORATION
 2010 Plaza Place, Suite 200
 Raleigh, NC 27617-6772
 Tel: (919) 781-4667
 Fax: (919) 781-4669



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

VSL Corporation hereby certifies that the design and construction of the retaining wall shown on this sheet, the use of the retaining wall mass, methods of construction, and quality of prefabricated materials conform to the manufacturer's specification. The use of the retaining wall mass, methods of construction, and quality of prefabricated materials conform to the manufacturer's specification. Any other use is strictly prohibited and VSL is not responsible for any consequences THEREAFTER.

RETAINED EARTH™ WALLS
WALL "R-351-22" - 1ST STAGE: WIRE FACED WALL
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.
DWG. NO. 3.2R-351-22.8
JOB NO. 239-0007
SHT. NO. RE-4



RETAINING WALL "R-351-22" - 1ST STAGE: WIRE FACED WALL

(FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF FACING = 2841.58 SM)

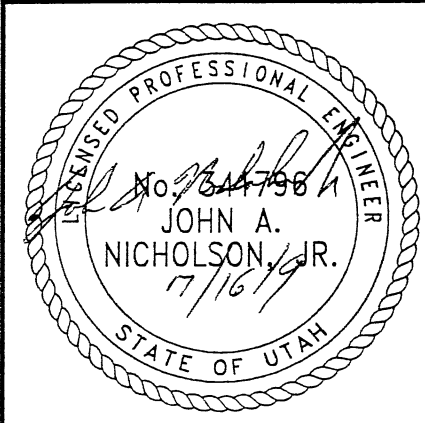
SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

METRIC

* 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.

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.




FINAL PLOT 09-11-98
 H:\RE_EARTH\PROJECT\239-0007\1998\6S-WALLS\6S-22\SUBMITL-2\W6S-22.DWG
 REFERENCE (X-UTAH.DWG)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	09-28-98	RELEASE FOR 1ST STAGE CONST. ONLY
▲	03-04-99	REVISED BOTTOM OF WALL ELEV. <i>[Signature]</i>

DES.	DATE	BY	REVISION

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

ALUMINUM CLIP BOLTS BY BULFINCH (CORPORATE OFFICE)
 MIAMI, FL / SAN JOSE, CA / BRUNSWICK, VA



VSL Corporation (VSL) has prepared this design and calculation report in accordance with the provisions of the International Building Code (IBC) and the American Institute of Steel Construction, Inc. (AISC) Specification for Structural Steel Buildings (1989). The use of such information is made without warranty, expressed or implied, by VSL Corporation. It is the responsibility of the user to verify the accuracy of the information and to ensure that it is suitable for the intended application. VSL Corporation and its employees shall not be held liable for any damages, including consequential damages, arising out of the use of this information.

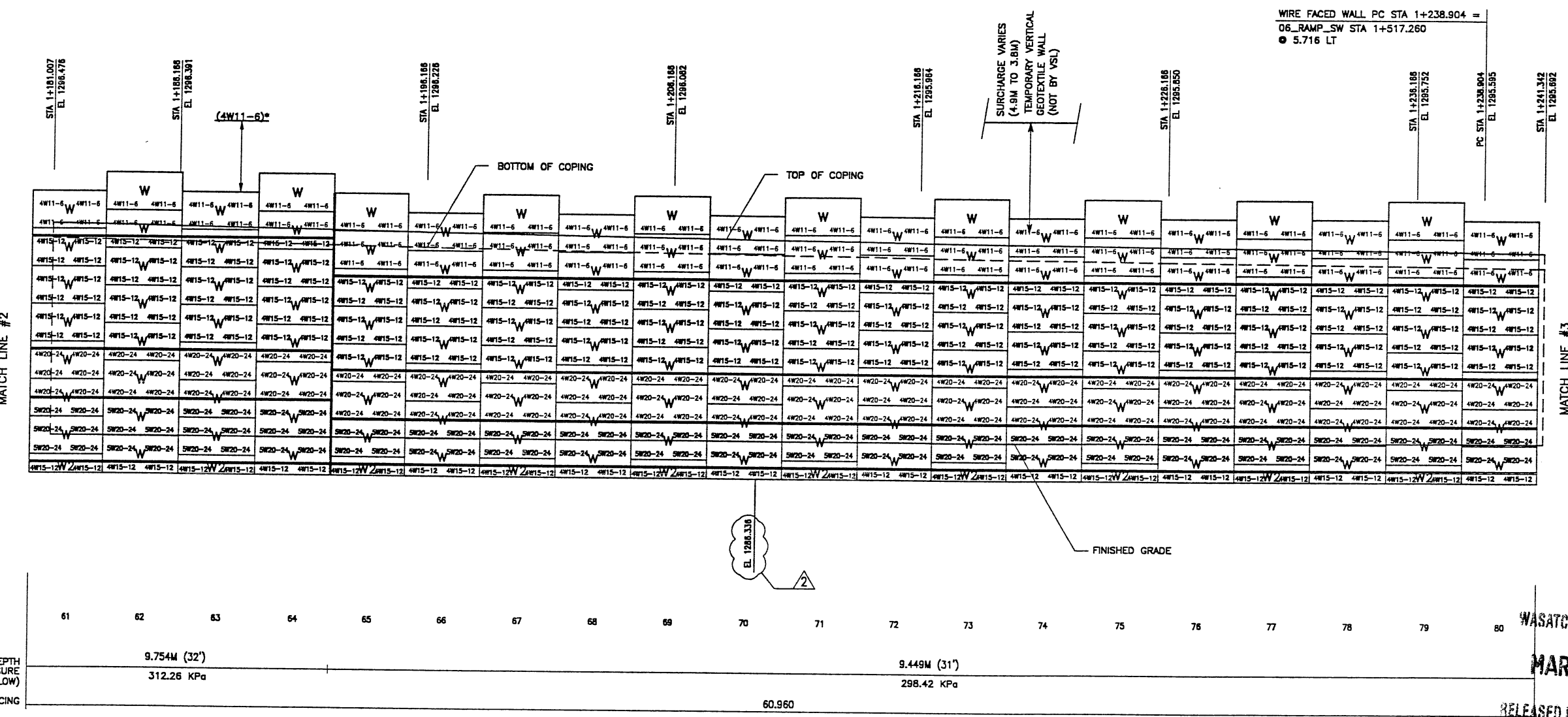
RETAINED EARTH™ WALLS
 WALL "R-351-22" - 1ST STAGE: WIRE FACED WALL

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

DWG. NO.
 3.2R-351-22.9

JOB NO:
 239-0007

SHT. NO.
 RE-5



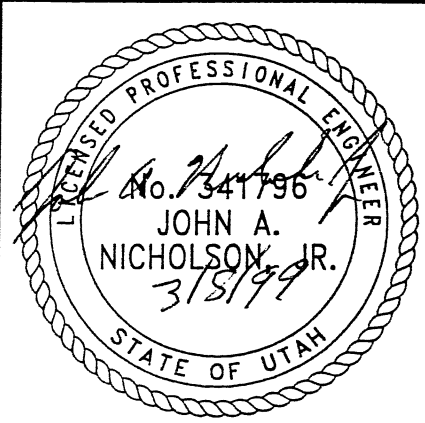
RETAINING WALL "R-351-22" - 1ST STAGE: WIRE FACED WALL
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF FACING = 2841.58 SM)

* 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.

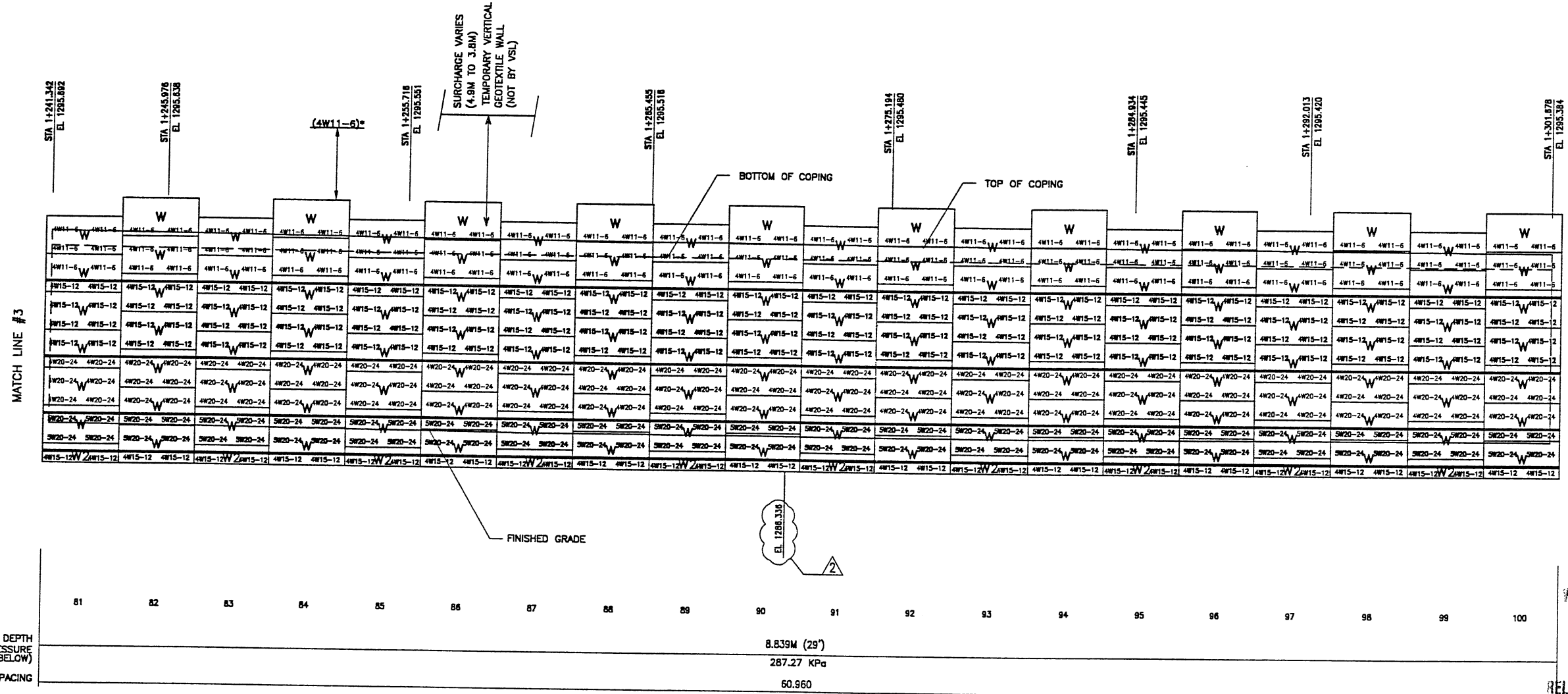
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

METRIC



WASATCH CONSTRUCTORS
 MAR 15 1999
 RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	09-25-98	RELEASE FOR 1ST STAGE CONST. ONLY
△	03-04-99	REVISED BOTTOM OF WALL ELEV. <i>o</i>

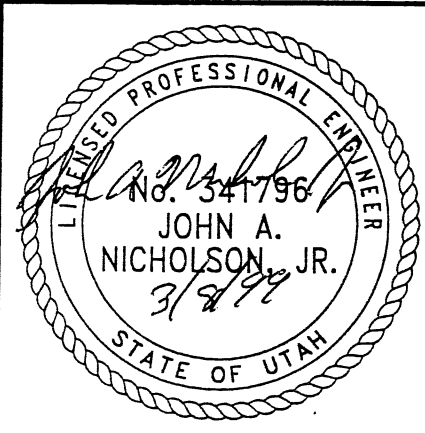


RETAINING WALL "R-351-22" - 1ST STAGE: WIRE FACED WALL
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF FACING = 2841.58 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

METRIC

* 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.

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 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 15 1999
 RELEASED FOR CONSTRUCTION

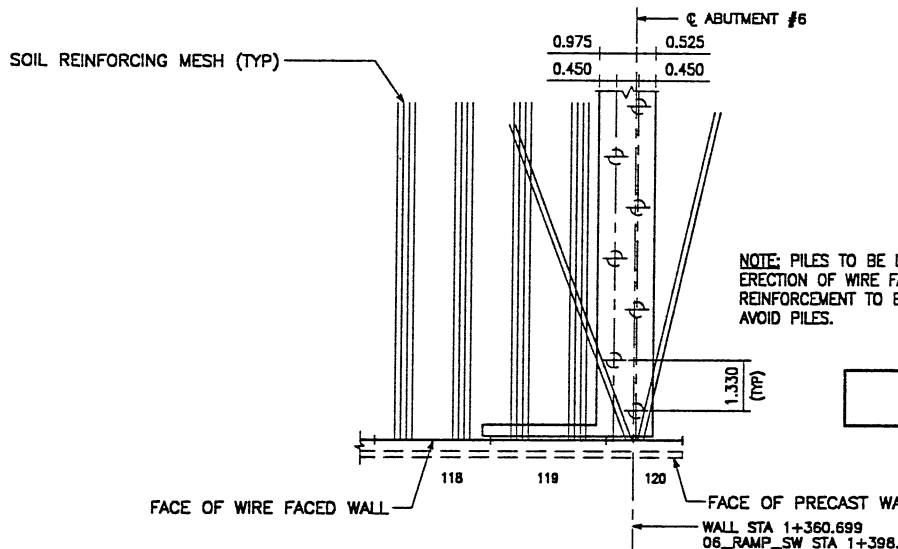
DES.	06-01-98	JL	RETAINED EARTH™
DRN.	06-01-98	RSW	
CHK.	06-01-98	JL	

VSL CORPORATION
 2840 Plaza Place, Suite 200
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 Fac: (919) 781-4889

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RETAINED EARTH™ WALLS
 WALL "R-351-22" - 1ST STAGE: WIRE FACED WALL
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.
 3.2R-351-22.10
 JOB NO.
 239-0007
 SHT. NO.
 RE-6



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	09-25-98	RELEASE FOR 1ST STAGE CONST. ONLY
△	03-04-99	REVISED BOTTOM OF WALL ELEV. <i>[Signature]</i>

DES.	DRN.	CHK.	RETAINED EARTH™	NO.	DATE
06-01-98	JL	06-01-98	JL		
06-01-98	JL	06-01-98	JL		

VSL CORPORATION
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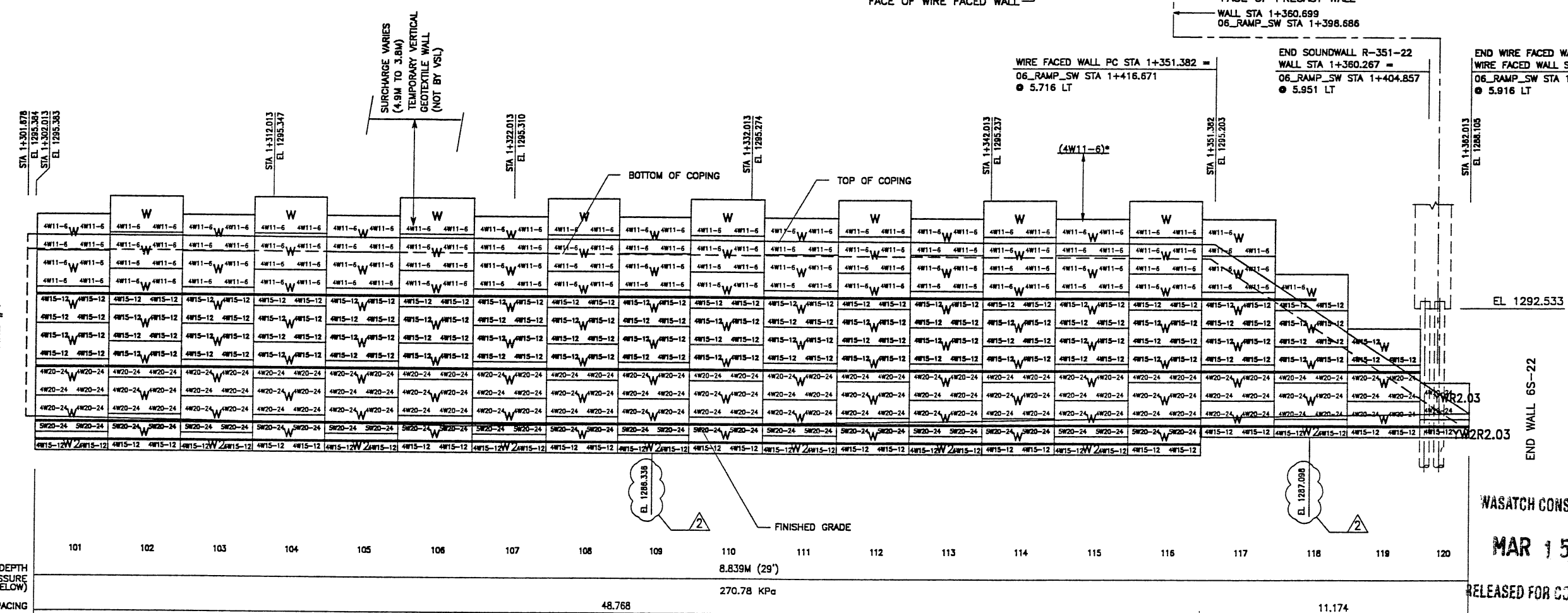
RETAINED EARTH™ WALLS
 WALL "R-351-22" - 1ST STAGE: WIRE FACED WALL

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

DWG. NO.
3.2R-351-22.11

JOB NO.
239-0007

SHT. NO.
RE-7



RETAINING WALL "R-351-22" - 1ST STAGE: WIRE FACED WALL
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF FACING = 2841.58 SM)

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

METRIC

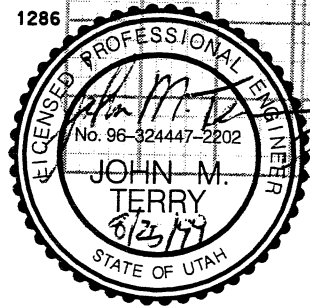
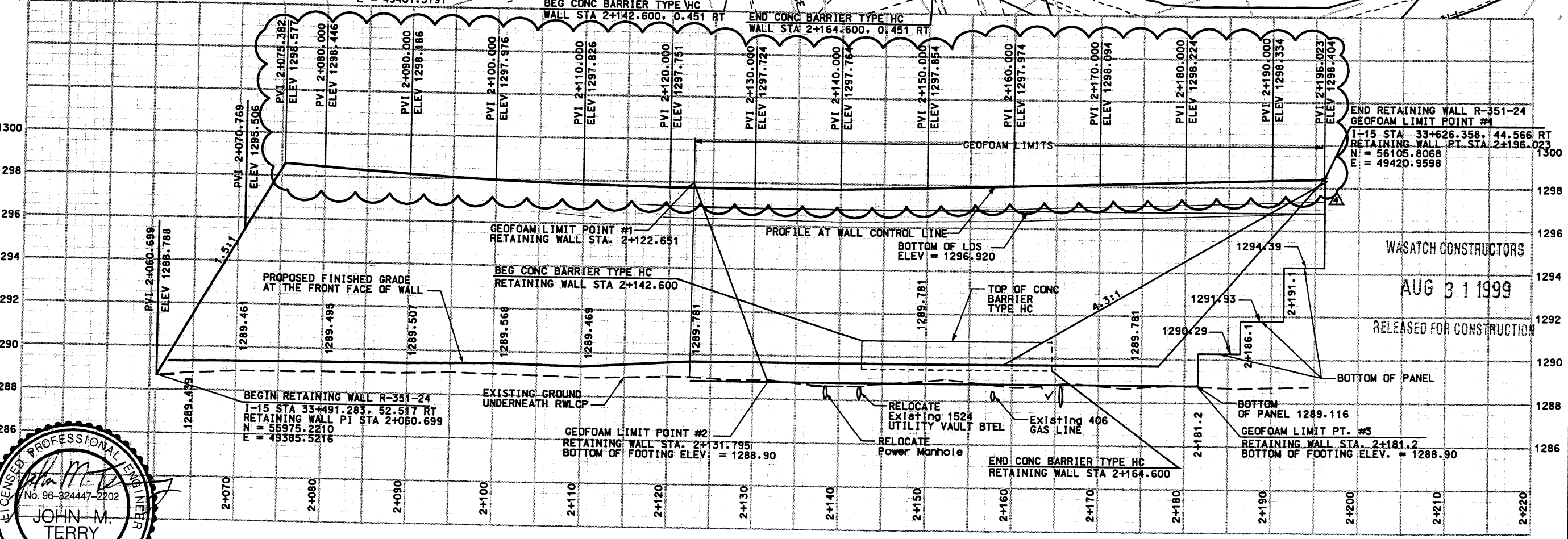
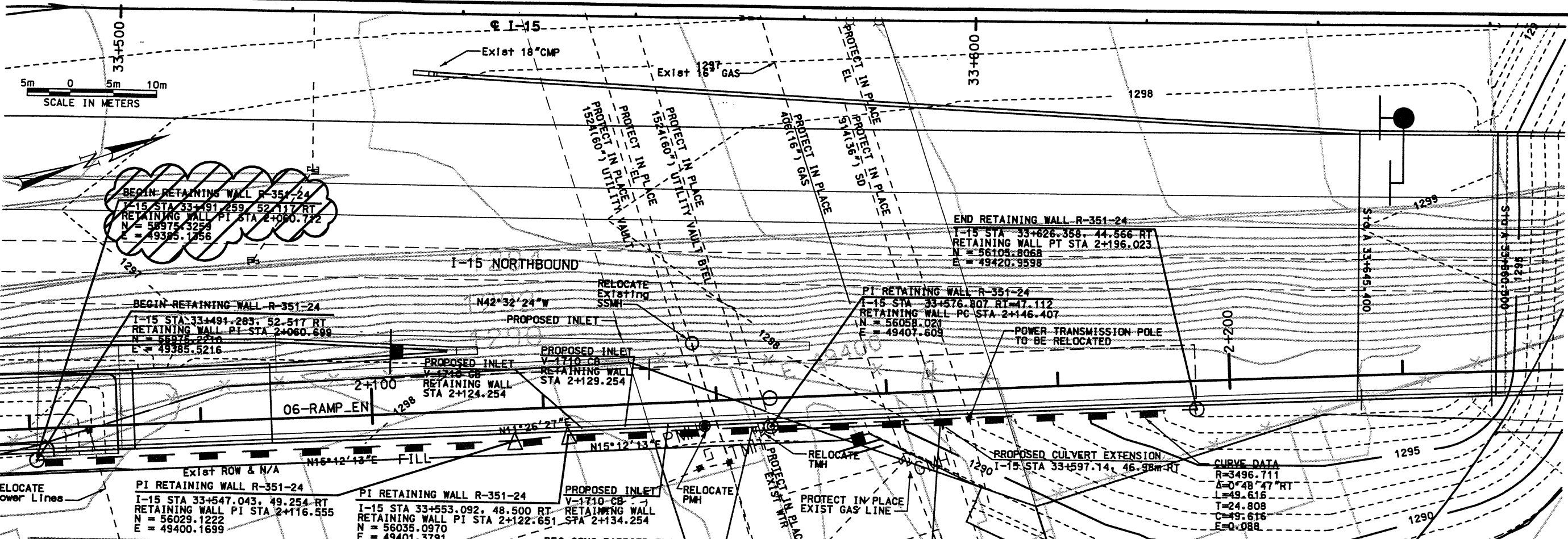
STATE OF UTAH
 LICENSED PROFESSIONAL ENGINEER
 No. 341796
 JOHN A. NICHOLSON, JR.
 3/8/99

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.

* 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.

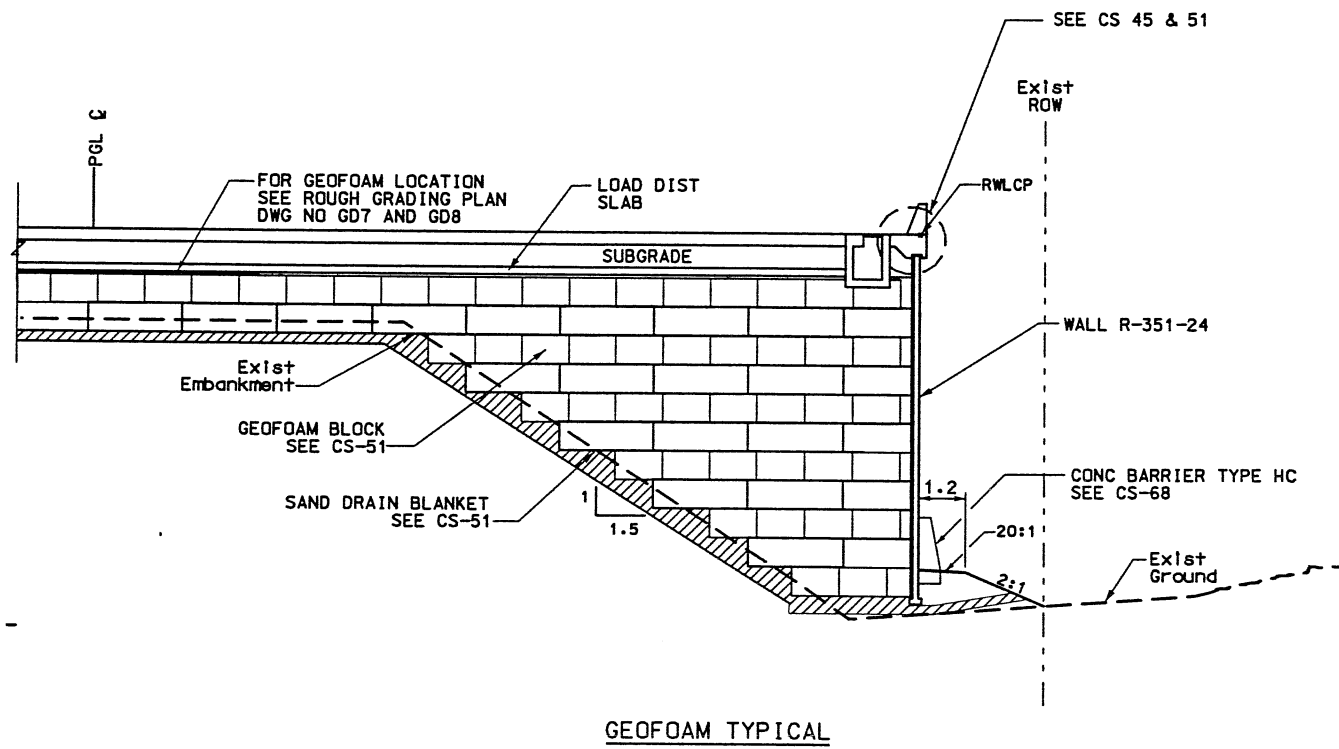
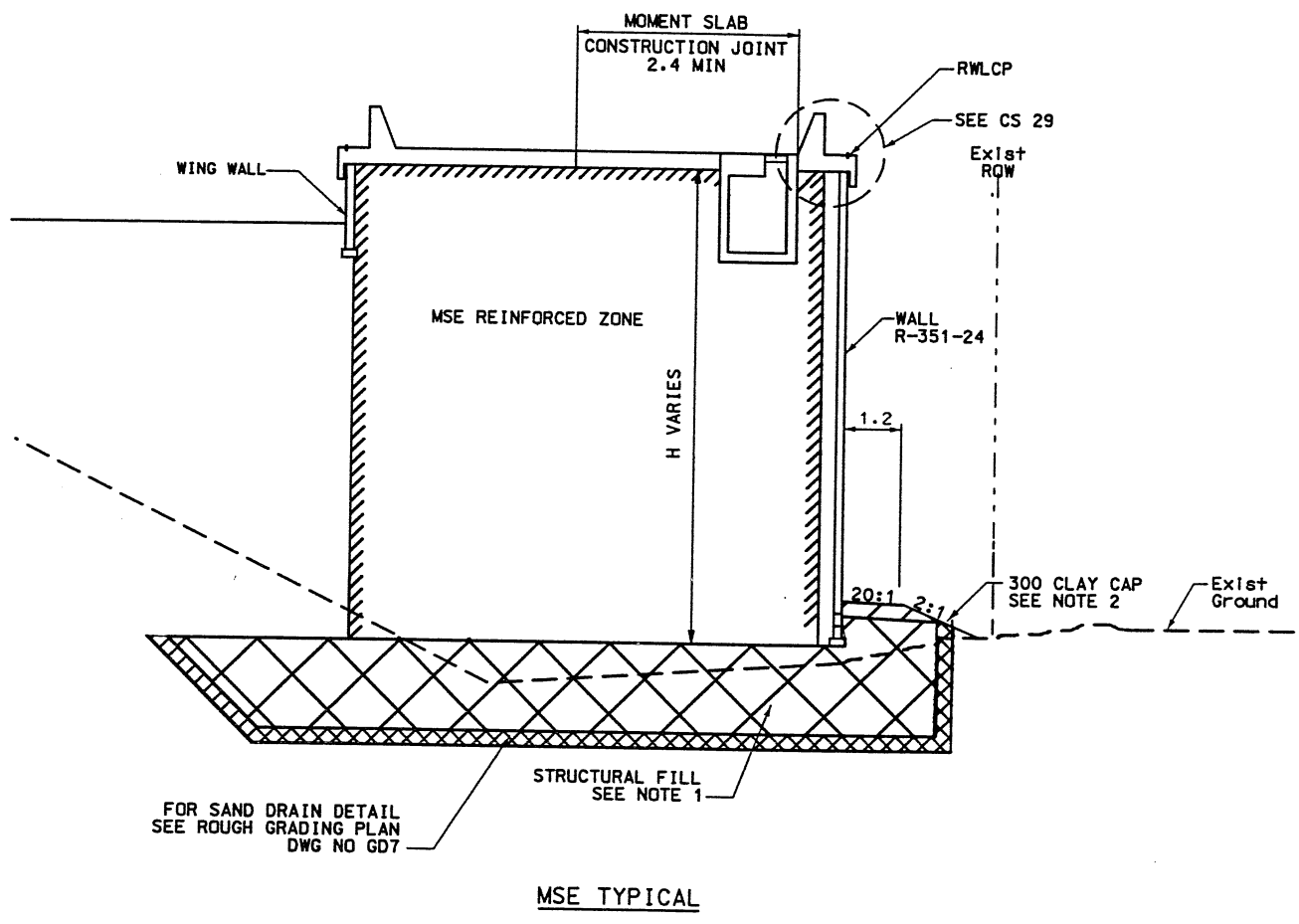
Date: 24-AUG-1999 Time: 16:04
 User: ramesh.wall
 File: \\gis-cadd\06_97\sheet_files\wall\06_wall_24.rev



SEALED FOR RELEASE NO. 3 ONLY.
 (REALIGNMENT OF RETAINING WALL
 CONTROL POINT DUE TO FIRST STAGE
 SETTLEMENT AND SECOND STAGE
 MSE PANEL ALIGNMENT)

WALL R-351-24

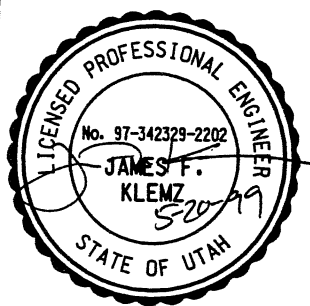
UTAH DEPARTMENT OF TRANSPORTATION		APPROVED FOR CONSTRUCTION	
NO.	DATE	DESCRIPTION	
1	11/21/87	RELEASE FOR MSE STAGE 1 & GEOFOAM WALL ONLY	
2	01/26/98	RELEASE FOR MSE STAGE 1 & GEOFOAM WALL ONLY	
3	02/16/98	RELEASE FOR 2ND STAGE CONSTRUCTION	
4	08/20/98	REVISED WALL PROFILE	
SVERDRUP/DE LEUW		DESIGN JFA 11/14/87	CHECK KS 11/14/87
MARVIN COOK		PROJECT DESIGN ENGINEER	CHECK KS 11/14/87
DATE 11/14/87		DRAWN FJG 11/14/87	CHECK KS 11/14/87
APPROVED 11/14/87		DATE 11/14/87	CHECK
KEITH SABOL		SECTION MANAGER	QUANT.
3212409			
I-15 CORRIDOR RECONSTRUCTION		SITUATION & LAYOUT	
SECTION 3.2		SALT LAKE COUNTY	
PROJECT NUMBER #SP-15-7(135)296		DWG. NO. 3.2-R351-24.1	
SHT. 1 OF 12			



RETAINING WALL DETAILS
NTS
WALL R351-24
STAGE 2 MSE

WASATCH CONSTRUCTORS
JUN 03 1999
RELEASED FOR CONSTRUCTION

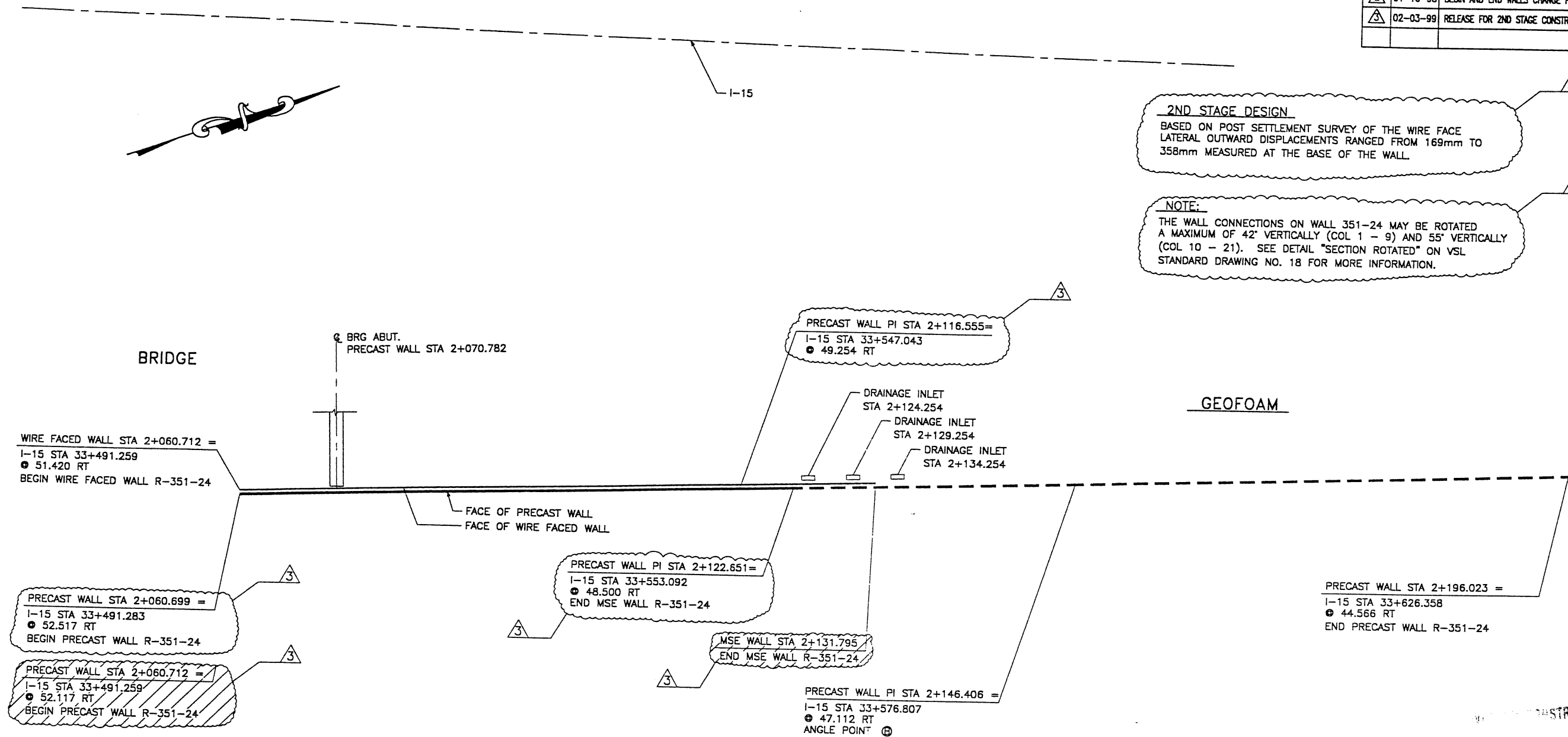
- NOTES:
- 1) OVEREXCAVATE EXISTING SOILS AS REQUIRED. REFILL EXCAVATION WITH STRUCTURAL FILL.
 - 2) CONSTRUCT 0.3 m CLAY CAP WITH LOW PLASTIC SILTY CLAY (AASHTO CLASSIFICATION A-6).
 - 3) FOR GEOFOAM DETAILS SEE CORRIDOR STANDARD PLANS CS-43 THRU CS-51.
 - 4) FOR MSE WALL GEOFOAM WALL INTERFACE SEE CS-48.



APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE		
1	11/25/97	RELEASE FOR MSE & GEOFOAM WALL STAGE 1 ONLY	
2	01/26/98	RELEASE FOR MSE & GEOFOAM WALL STAGE 1 ONLY	
3	05/21/98	FINAL SUBMITTAL COMMENTS	
UTAH DEPARTMENT OF TRANSPORTATION		SVERRUP/DE LEUW	
I-15 CORRIDOR RECONSTRUCTION		SECTION 3.2	
TYPICAL SECTION		PROJECT NUMBER *SP-15-7(135)296	
SECTION 3.2		SALT LAKE COUNTY	
DWG. NO. 3.2-R351-24.2		DATE	
APPROVAL		CHECK	
DESIGN JFA 11/21/97	CHECK KS 11/21/97	QUANT.	
DRAWN FJG 11/21/97	CHECK KS 11/21/97	3212409	
APPROVED 11/21/97	DATE	SECTION MANAGER	
MARVIN COOK	DATE	KEITH SABOL	
PROJECT DESIGN ENGINEER	DATE	SECTION MANAGER	
SHT. 2 OF 9			

C:\MSE-DWGS\65-SERIES\65-24\RE-1
 FINAL PLOT 02-03-99

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	11-25-97	RELEASE FOR 1ST STAGE CONST. ONLY
2	01-16-98	BEGIN AND END WALLS CHANGE PER NEW S & L
3	02-03-99	RELEASE FOR 2ND STAGE CONSTRUCTION



2ND STAGE DESIGN
 BASED ON POST SETTLEMENT SURVEY OF THE WIRE FACE
 LATERAL OUTWARD DISPLACEMENTS RANGED FROM 169mm TO
 358mm MEASURED AT THE BASE OF THE WALL.

NOTE:
 THE WALL CONNECTIONS ON WALL 351-24 MAY BE ROTATED
 A MAXIMUM OF 42° VERTICALLY (COL 1 - 9) AND 55° VERTICALLY
 (COL 10 - 21). SEE DETAIL "SECTION ROTATED" ON VSL
 STANDARD DRAWING NO. 18 FOR MORE INFORMATION.

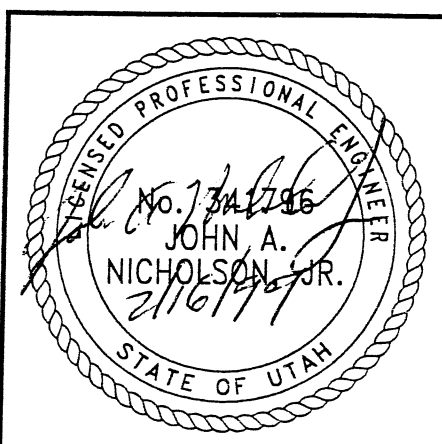
DESIGN PARAMETERS
ANGLE OF INTERNAL FRICTION (SELECT) = 34°
ANGLE OF INTERNAL FRICTION (BASE) = 30°
ANGLE OF INTERNAL FRICTION (RANDOM) = 34°
UNIT WEIGHT BACKFILL = 135 PCF. (21.2 KN/M ³)
TRAFFIC SURCHARGE = 250 PSF
SEISMIC ACCELERATION COFF. = 0.28g (TYP)
SEISMIC ACCELERATION COFF. = 0.68g (AT BRIDGE ABUTMENTS)
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-351-24"
 SCALE: 1=250 (FULL SIZE)
 SCALE: 1=500 (HALF SIZE)

RETAINED EARTH INDEX	
RE-1	PLAN WIRE FACED WALL R-351-24, NOTES & DESIGN CRITERIA
RE-2	WALL CONNECTION DETAILS ● STAGE CONST.
RE-3	TYPICAL DETAILS
RE-4	TYPICAL CROSS SECTIONS ● WIRE FACED WALL
RE-5	TYPICAL CROSS SECTIONS
RE-6	WIRE FACED WALL R-351-24
RE-7	WIRE FACED WALL R-351-24
RE-8	PRECAST WALL R-351-24
RE-9	SPECIAL PANEL DETAILS
RE-10	SPECIAL PANEL DETAILS

METRIC

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 THE MANUFACTURER'S SPECIFICATION.



RETAINED EARTH™ WALLS
 PLAN VIEW MSE WALL "R-351-24"
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2-R-351-24.3
JOB NO.	239-0007
SHT. NO.	RE-1

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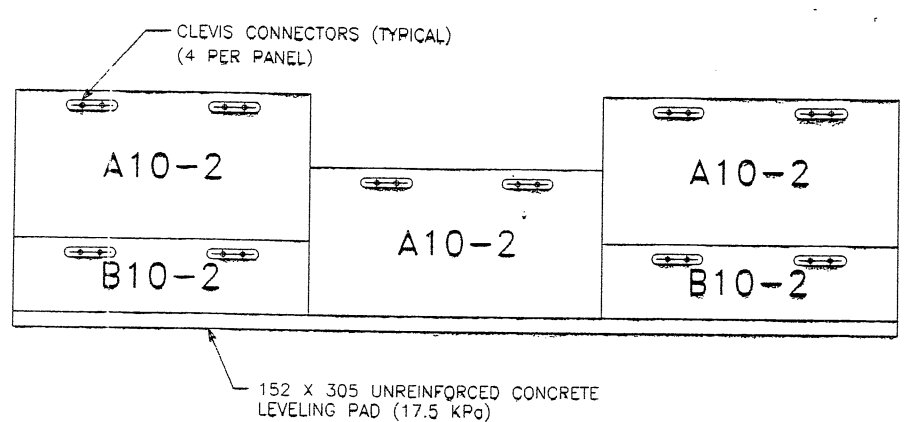
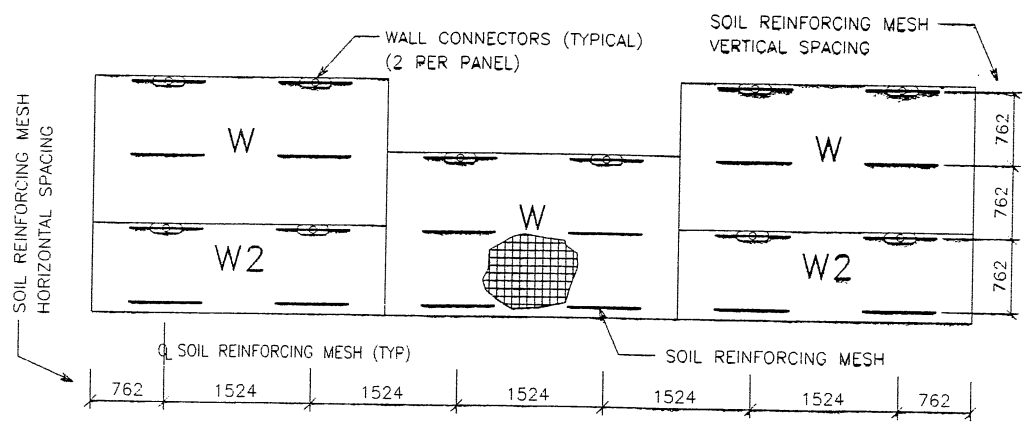
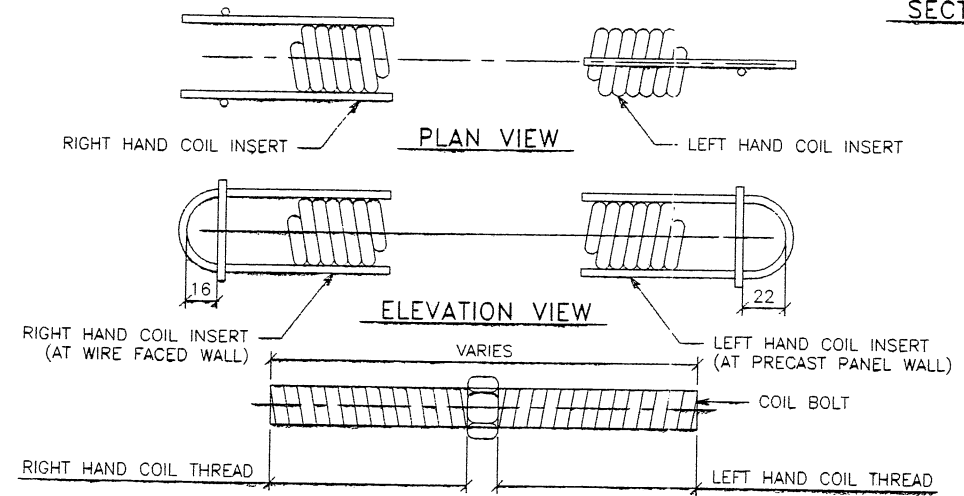
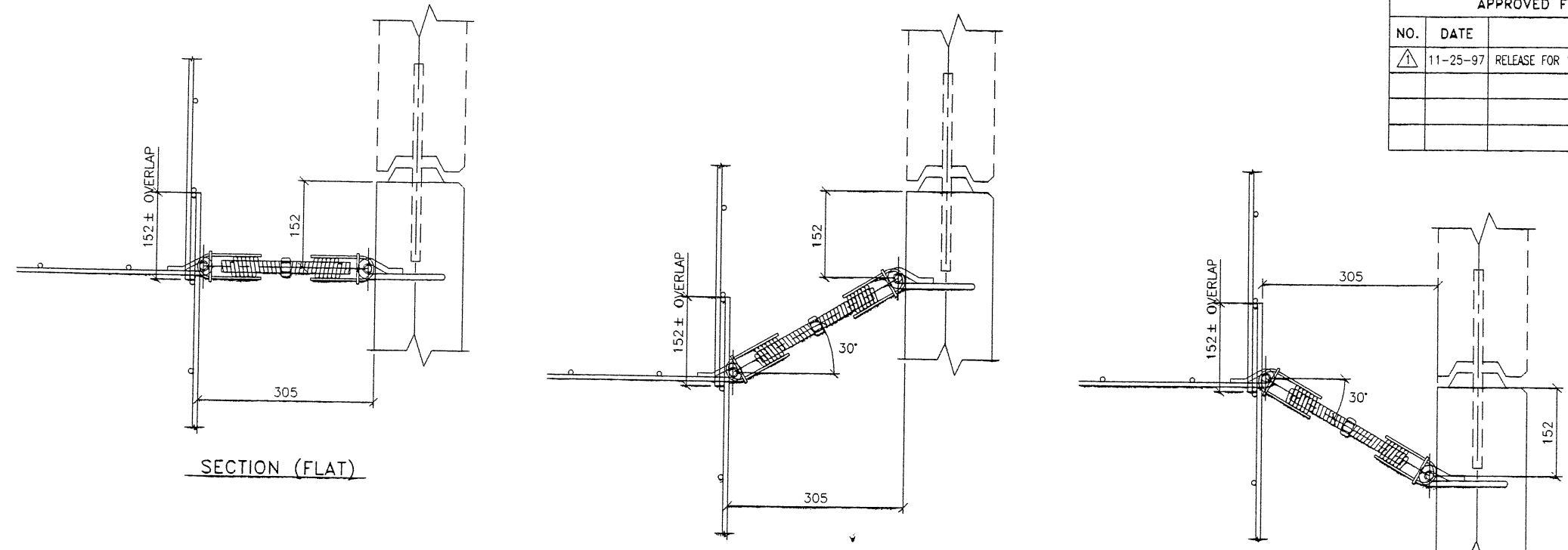
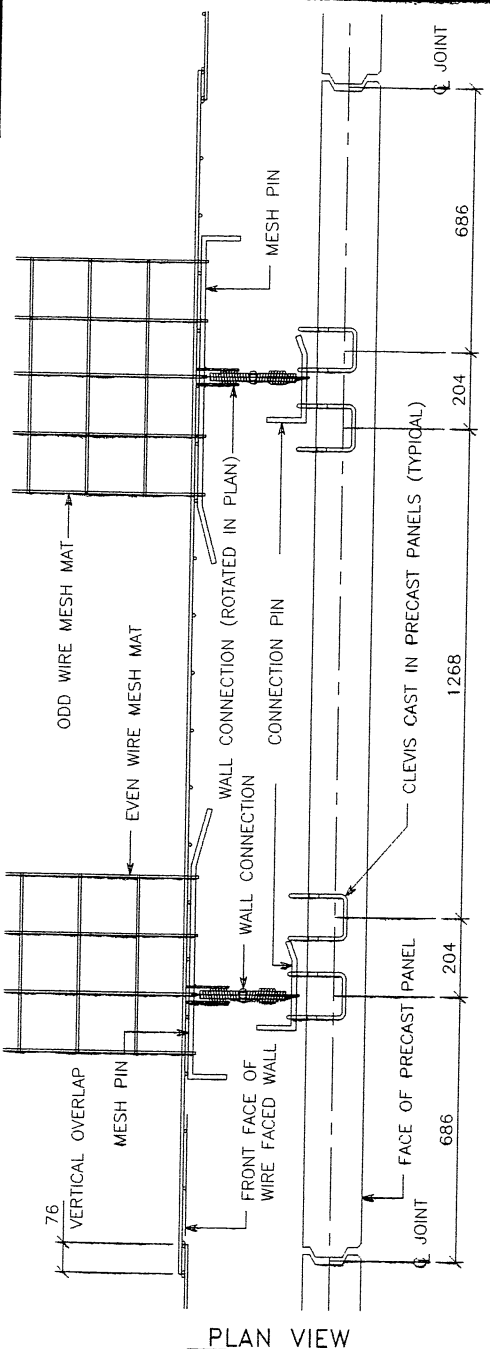
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DES.	MM	JPS	MM	NO.	DATE	REVISION	BY	CHK
DES.	09-10-97							
DRN.	09-10-97							
CHK.	09-10-97							

E:\PROJECT\239-0007\65-WALLS\65-24\F

-25-97

FINAL PLO



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	11-25-97	RELEASE FOR 1ST STAGE CONST. ONLY

WASATCH CONSTRUCTORS
DEC 03 1997
RELEASED FOR CONSTRUCTION

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Raleigh, NC 27612
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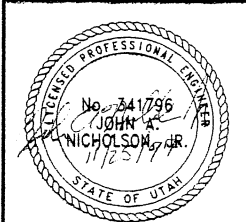


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RETAINED EARTH™ WALLS
WIRE FACED WALL "R-351-24"
WALL CONNECTION DETAILS @ STAGE CONST.
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

METRIC



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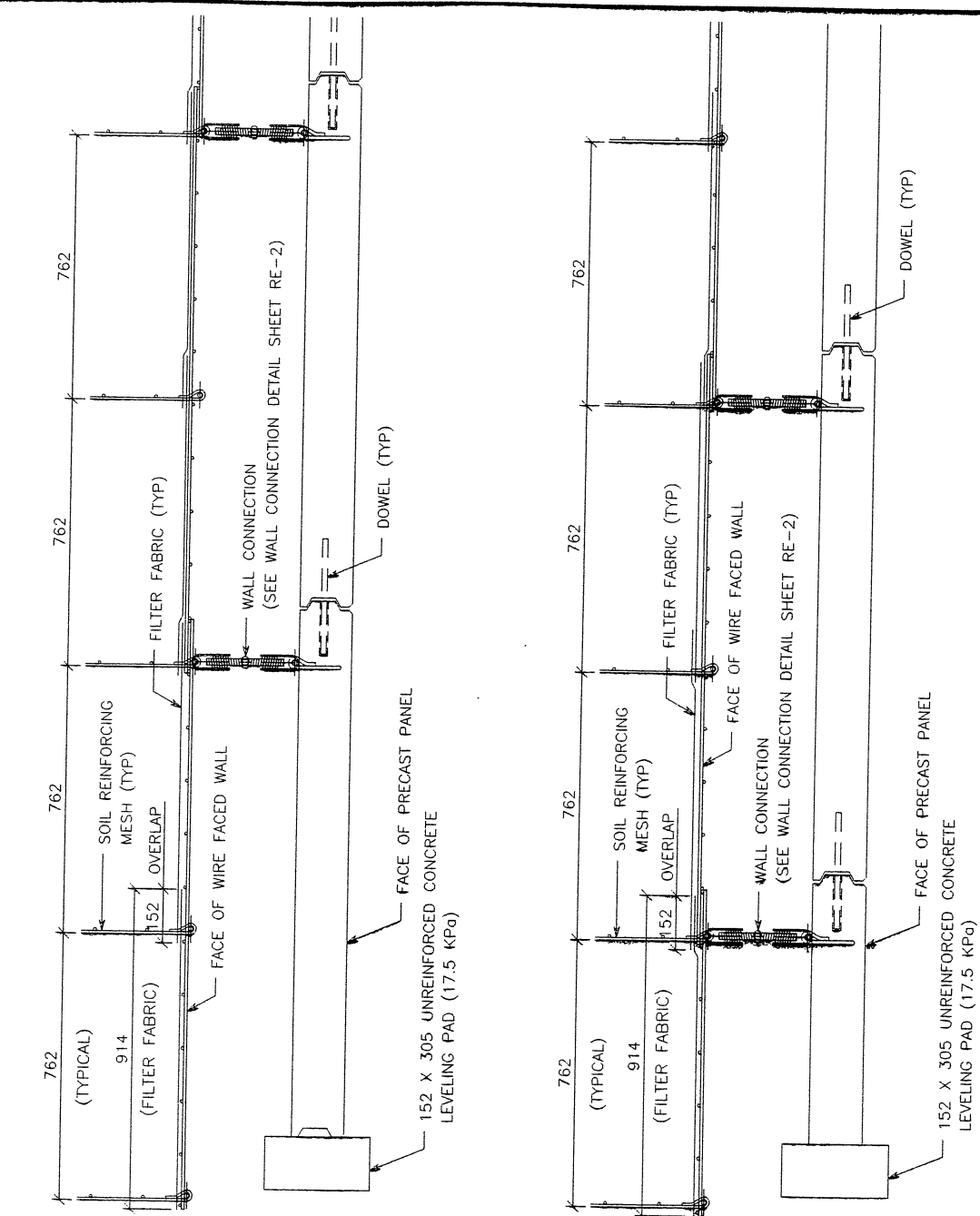
DWG. NO.	3.2-R-351-24.4
JOB NO.	239-0007
SHT NO.	RE-2

4 of 9

E:\APPROVECT\239-0007\6S-WALLS\6S-24\F

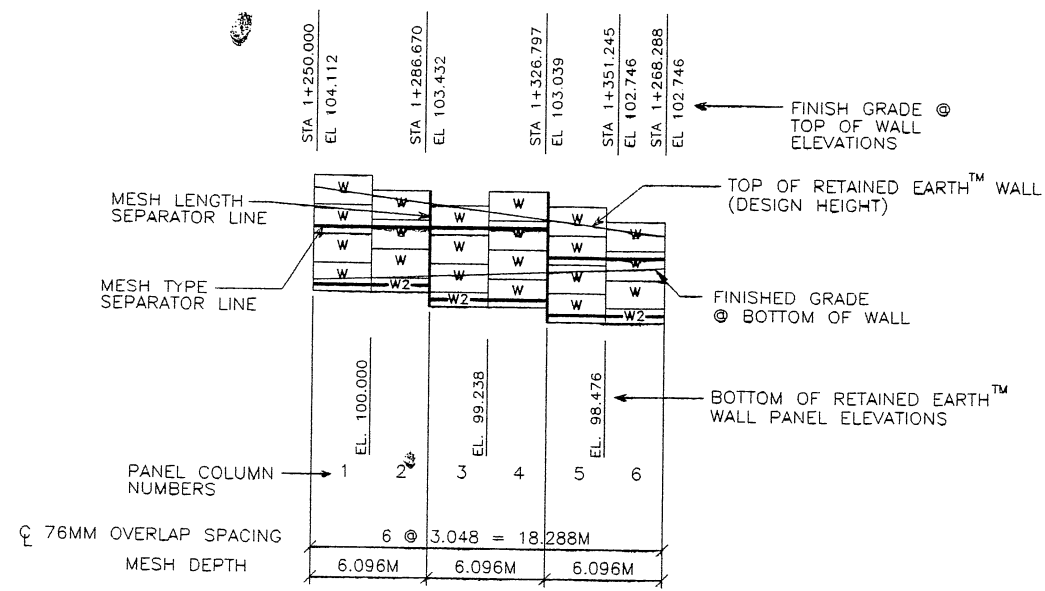
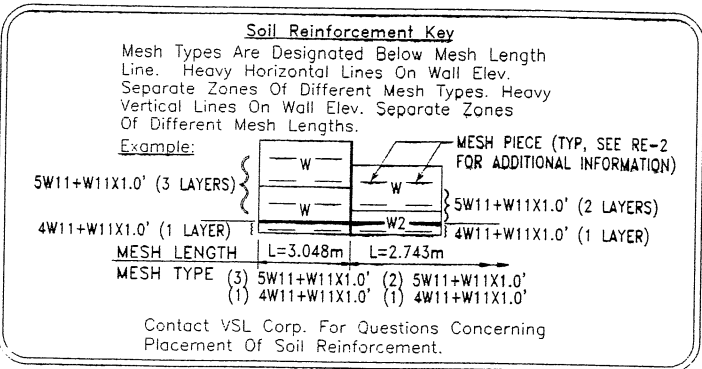
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FIRIAL PLC

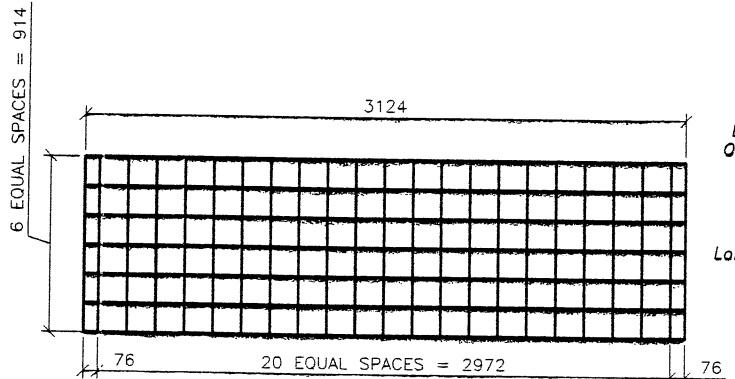


SECTION AT WIRE FACE PANEL TYPE "W"

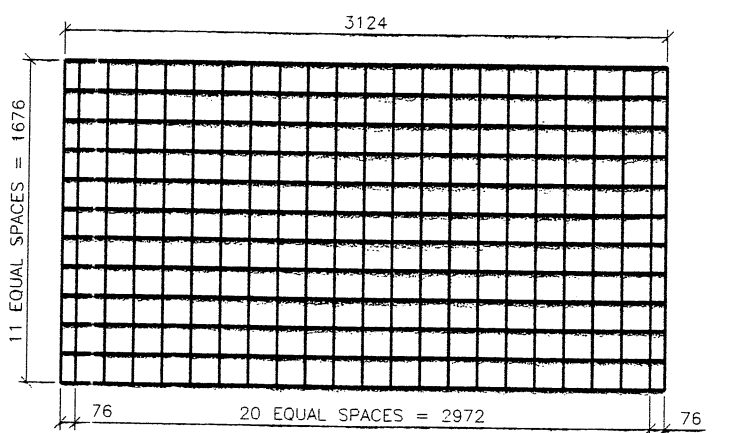
SECTION AT WIRE FACE PANEL TYPE "W2"



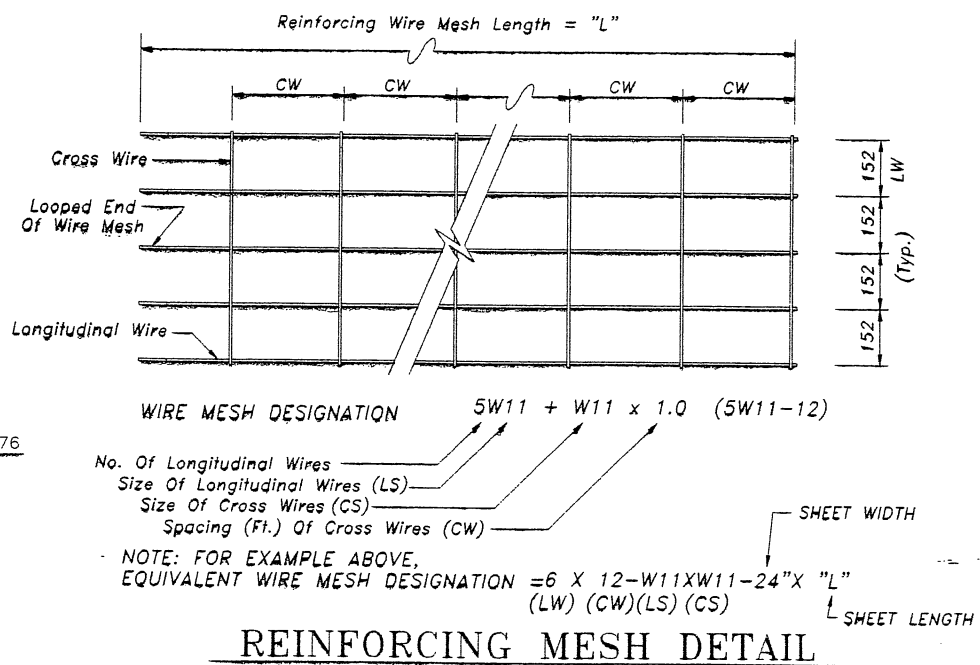
1 WIRE FACED WALL ELEVATION KEY (FRONT FACE SHOWN)



TYPE "W2" WIRE FACE BAR LAYOUT (W11 x W11)



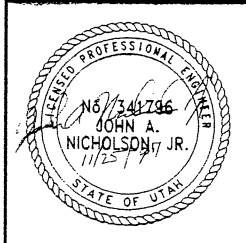
TYPE "W" WIRE FACE BAR LAYOUT (W11 x W11)



REINFORCING MESH DETAIL

NOTE: W11 (71 sq mm) And W20 (129 sq mm) Steel Wire Material And Welding Of Cross Wires And Loops Shall Conform To ASTM A82 And ASTM 185. Fy = 448 MPa. Mesh Shall Be Galvanized To ASTM A-123 To A Minimum Effective Thickness Of 0.086 mm.

METRIC



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APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	11-25-97	RELEASE FOR 1ST STAGE CONST. ONLY

DES.	MM	DRN.	DDO	CHK.	MM	NO.	DATE	REVISION	BY	CHK
	09-10-97									
	09-10-97									
	09-10-97									

WATCH CONSTRUCTORS
DEC 03 1997
RELEASED FOR CONSTRUCTION

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RETAINED EARTH™ WALLS
WIRE FACED WALL "R-351-24"
TYPICAL DETAILS
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

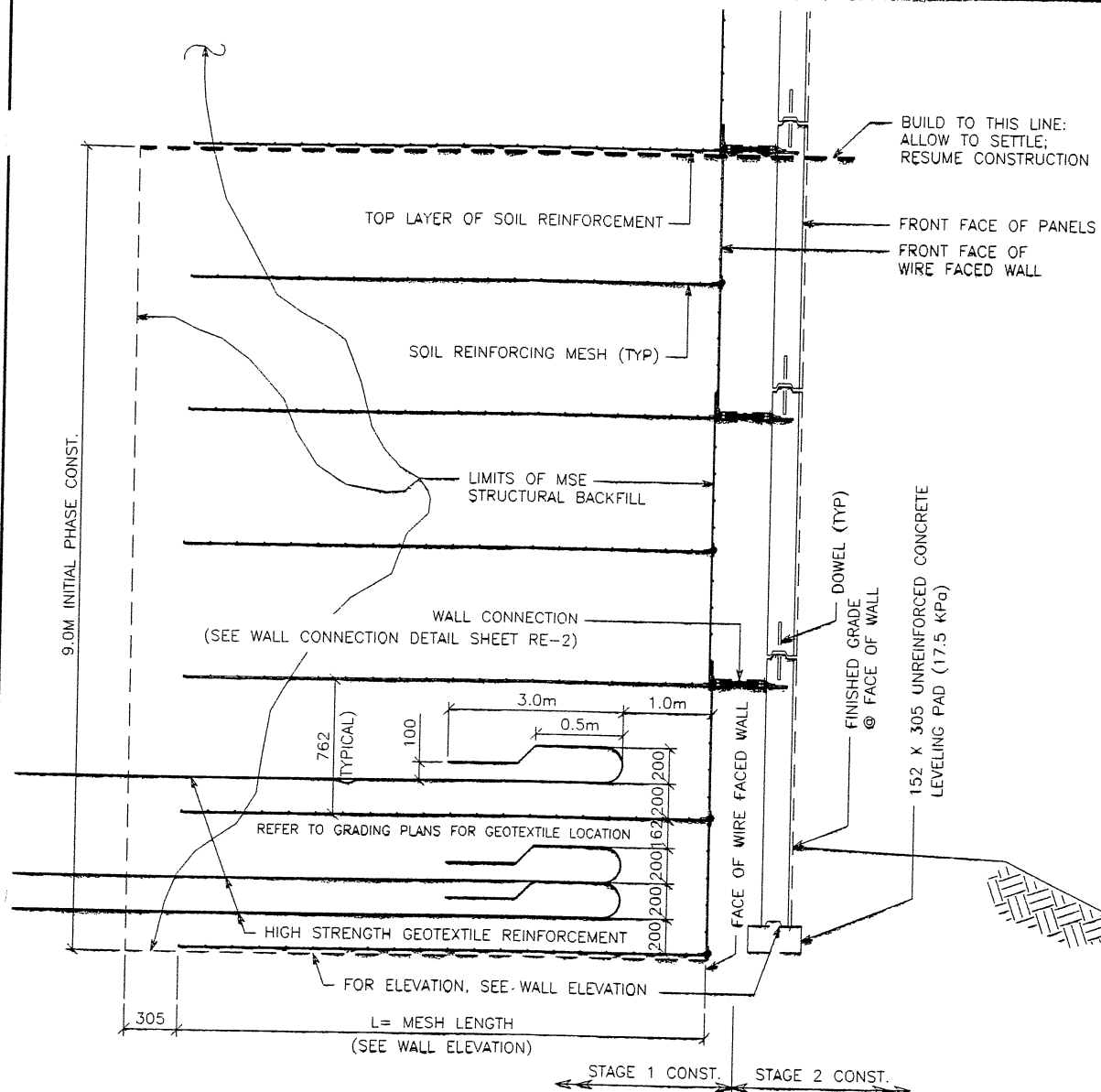
DWG. NO.	3.2-R-351-24.5
JOB NO.	239-0007
SHT. NO.	RE-3

5049

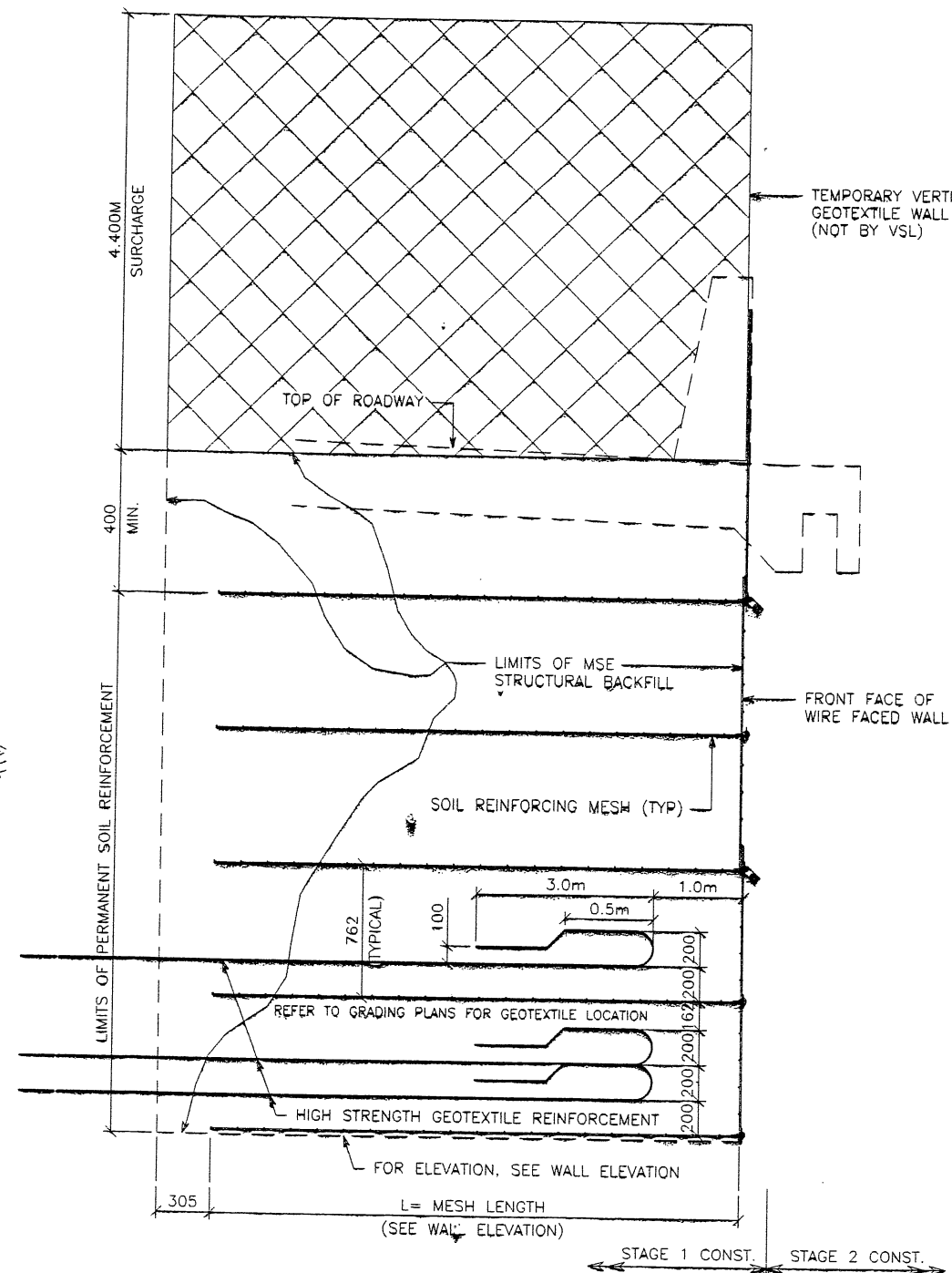
J:\6S-WALLS\6S-24\RE-4

-25-97

FINAL PLC



TYPICAL CROSS SECTION AT VERTICAL PHASE CONST.
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)



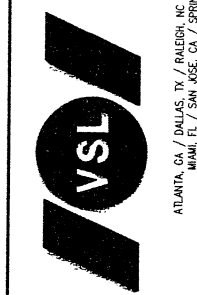
TYPICAL CROSS SECTION AT FINAL PHASE OF WIRE FACE WALL
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
⚠	11-25-97	RELEASE FOR 1ST STAGE CONST. ONLY <i>OK</i>

WARATCH CONSTRUCTORS
 02-03-1997
 RELEASED FOR CONSTRUCTION

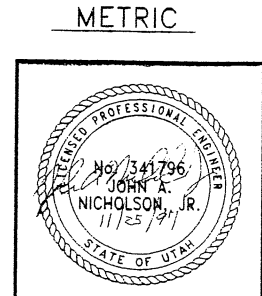
DES.	MM	DD	YY	CHK.	MM	DD	YY	NO.	DATE	REVISION	BY	CHK
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	09	10	97	JPS	09	10	97					
	09	10	97		09	10	97					

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 Fax: (919) 781-4869



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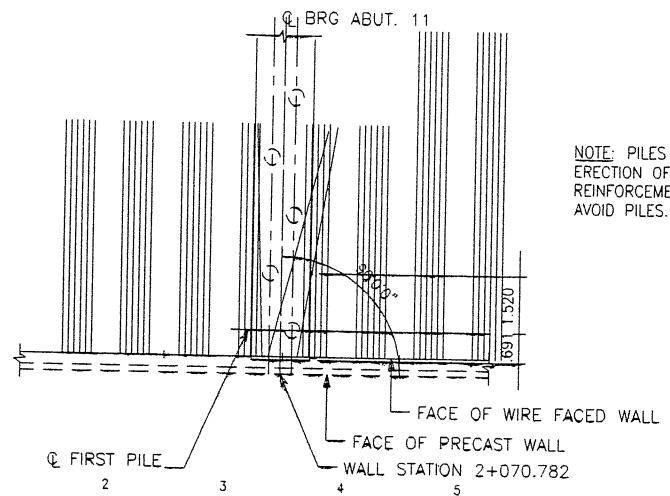
RETAINED EARTH™ WALLS
 WIRE FACED WALL "6S-24"
 TYPICAL SECTIONS @ WIRE FACED WALL
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.



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DWG. NO.	3.2-R-351-24.6
JOB NO.	239-0007
SHT NO.	RE-4

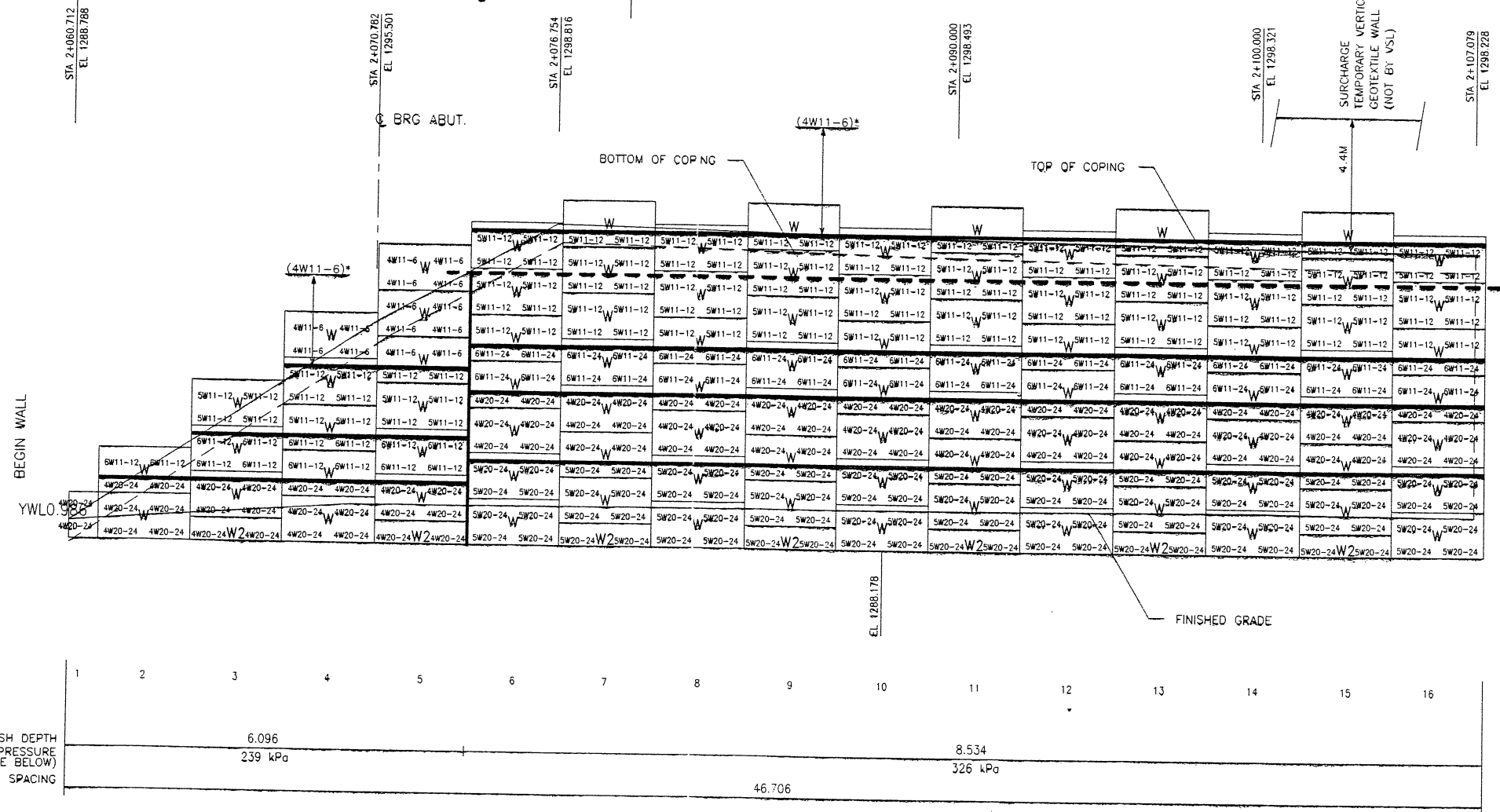
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	11-25-97	RELEASE FOR 1ST STAGE CONST. ONLY
2	01-16-98	REVISED PER NEW S & L REPLACES, PREVIOUS SUBMITTAL



SPECIAL NOTE: PANEL CONNECTIONS AT ABUTMENT TO BE DETERMINED IN THE FUTURE.

BEGIN WIRE FACED WALL R-351-24
WIRE FACED WALL STA 2+060.712 =
I-15 STA 33+491.259
@ 52.117 RT

WIRE FACED WALL PI STA 2+079.075 =
I-15 STA 33+509.591
@ 50.588 RT
ANGLE POINT (A)

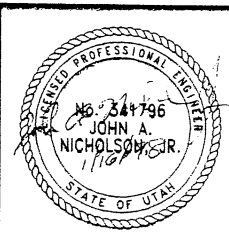


MESH DEPTH	6.096
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	239 kPa
PIN SPACING	46.706

RETAINING WALL "R-351-24" - 1ST STAGE: WIRE FACED WALL

FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
(TOTAL SURFACE AREA OF FACING = 654.77 SM) SCALE 1:200 (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.



RETAINED EARTH™ WALLS
WALL "R-351-24" - 1ST STAGE: WIRE FACED WALL
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE: 3.2-R-351-24.8
JOB NO: 239-0007
RE-6

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27607-1861-6772
Tel: (919) 781-4869
Fax: (919) 781-4869

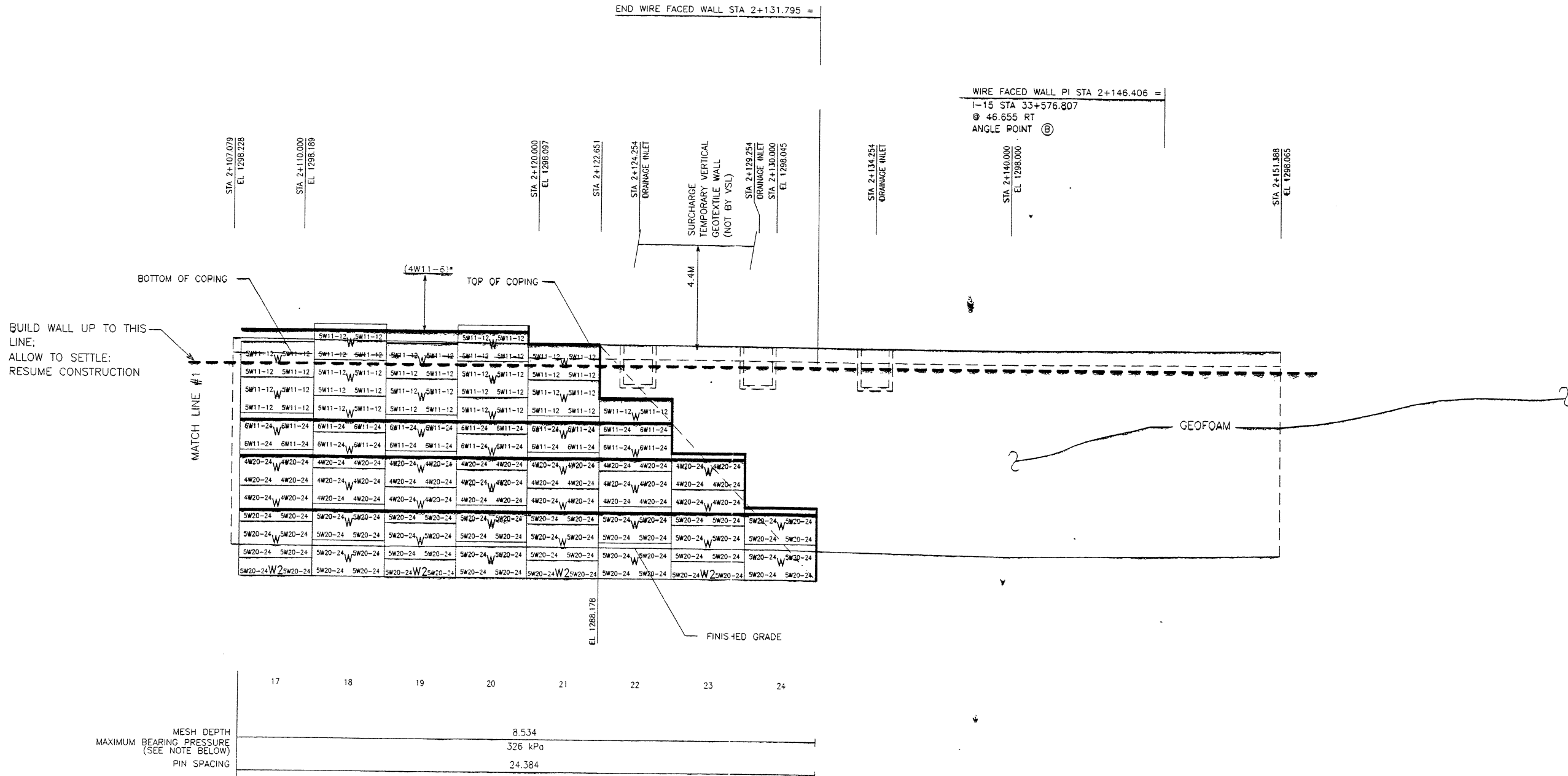
ATLANTA, GA / DALLAS, TX / FREDERICK, NC (CORPORATE OFFICE)
MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

VSL CORPORATION logo

NO.	DATE	REVISION
1	11-25-97	RELEASE FOR 1ST STAGE CONST. ONLY
2	01-16-98	REVISED PER NEW S & L REPLACES, PREVIOUS SUBMITTAL

FINAL PLOT - 14-98 H:\R1_EARTH\PROJECT\239-0007\1997\05-WALLS\65-BM1L-4\W6S-24

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	11-25-97	RELEASE FOR 1ST STAGE CONST. ONLY
△	01-16-98	REVISED PER NEW S & L REPLACES, PREVIOUS SUBMITTAL



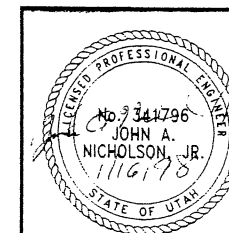
RETAINING WALL "R-351-24" - 1ST STAGE: WIRE FACED WALL

APPROVER NOTE:
 MAXIMUM FINAL UNFACTORED BEARING PRESSURES ARE INDICATED BELOW "MESH DEPTH LINE". REVIEWER TO VERIFY MAXIMUM BEARING CAPACITY OF FOUNDATION.

* INDICATES SOIL REINFORCING TYPE (FRONT FACE SHOWN)
 MESH TO BE USED ON ADDITIONAL (TOTAL SURFACE AREA OF FACING = 654.77 SM)
 WIRE WALL FACING ADDED AFTER SETTLEMENT.

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

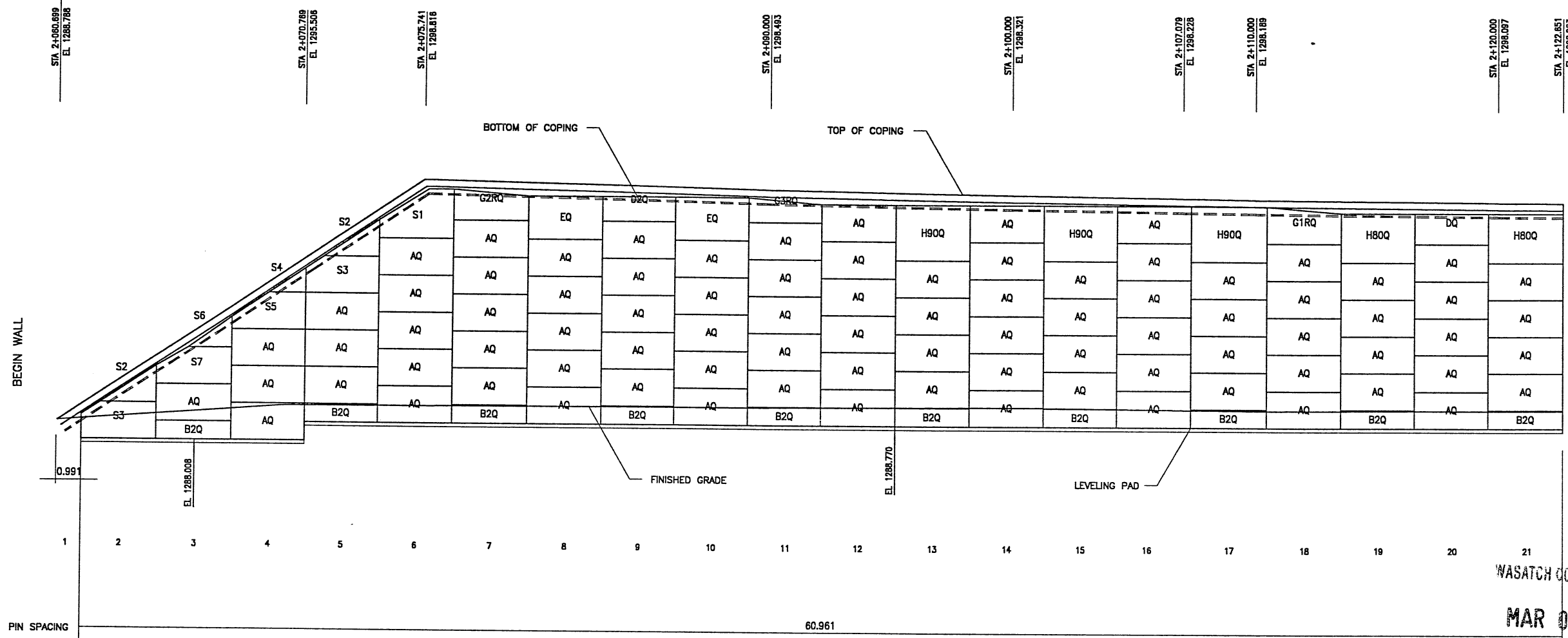
METRIC



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.

DES:	09-10-97	MM
DRN:	09-10-97	JPS
CHK:	09-10-97	MM
RETAINED EARTH™		
VSL CORPORATION		
2840 Plaza Place, Suite 200 Raleigh, NC 27612 Telephone: (919) 781-6272 Fax: (919) 781-4989		
VSL ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE) MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA		
RETAINED EARTH™ WALLS WALL "R-351-24" - 1ST STAGE: WIRE FACED WALL		
UTAH 1-15 INTERCHANGE SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.		
SCALE:	3.2-R-351-24.9	
JOB NO:	239-0007	
	RE-7	

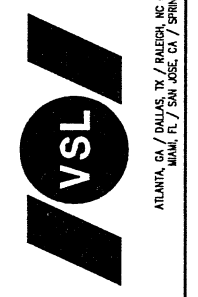
BEGIN PRECAST WALL R-351-24
PRECAST WALL STA 2+060.699 =
+15 STA 33+491.283
● 52.517 RT



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	02-03-99	RELEASE FOR 2ND STAGE CONSTRUCTION

DES.	NO.	DATE	BY	CHK.	NO.	DATE	BY	CHK.
DES.	02-03-99	JUN						
DRN.	02-03-99	DSW						
CHK.	02-03-99	JUN						

VSL CORPORATION
2810 Plaza Place, Suite 200
Raleigh, NC 27612
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WASATCH CONSTRUCTORS

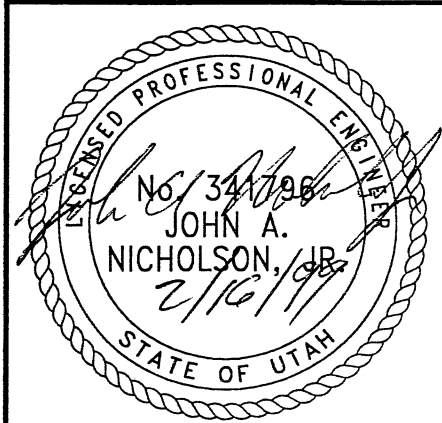
MAR 01 1999

RELEASED FOR CONSTRUCTION

RETAINING WALL "R-351-24" - 2ND STAGE: PRECAST WALL
(FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
(TOTAL SURFACE AREA OF FACING = 507.21 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.



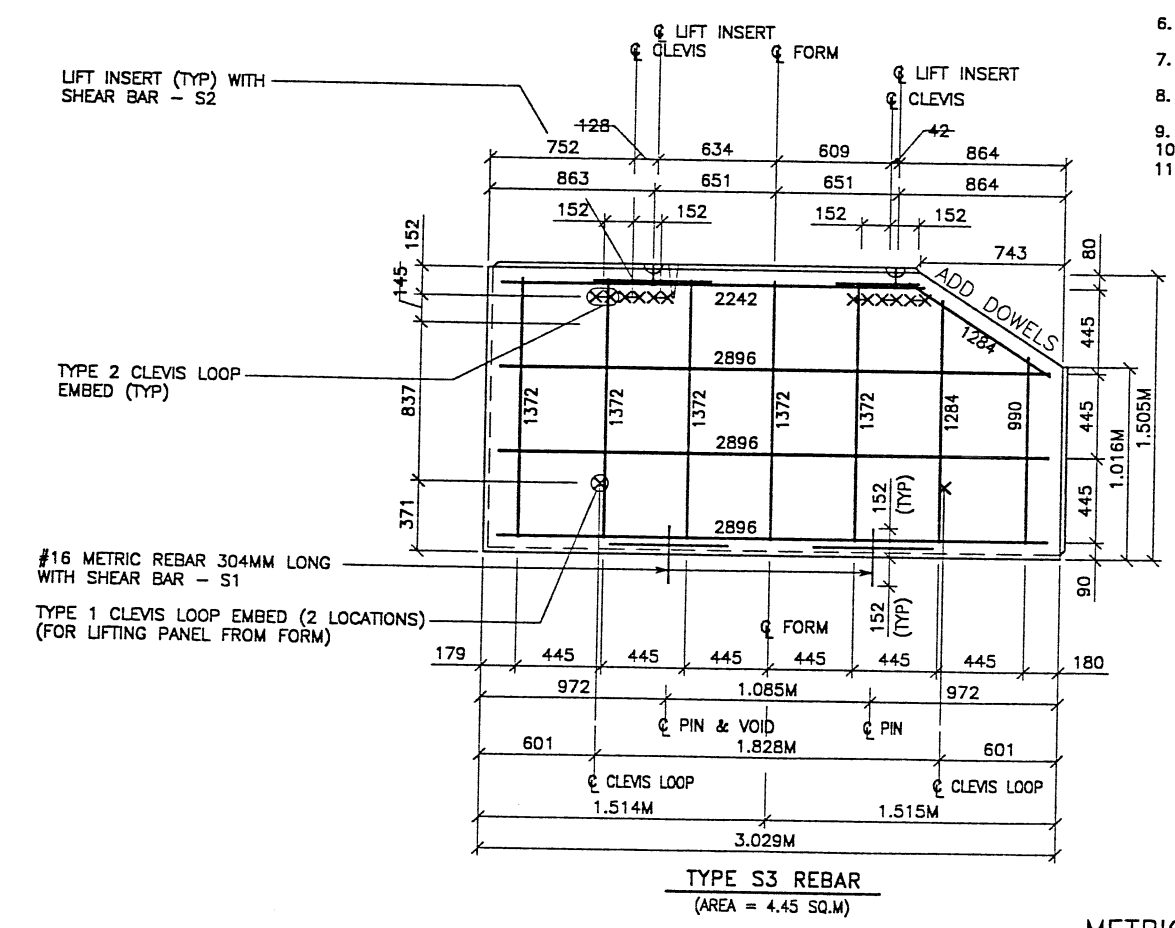
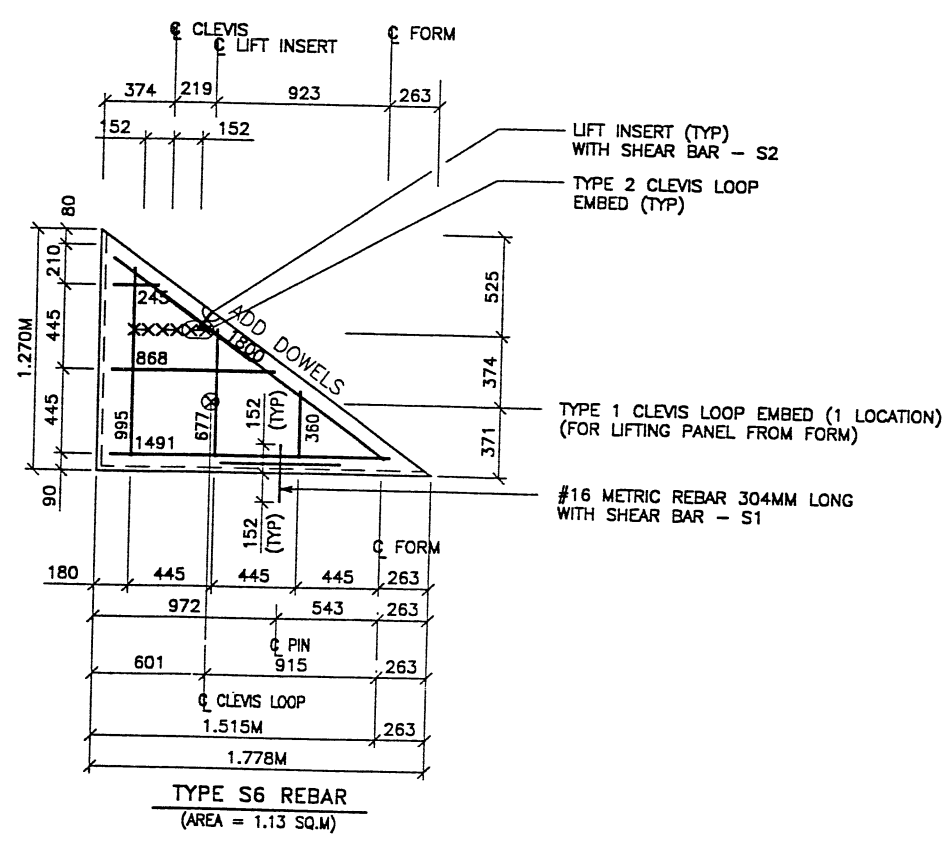
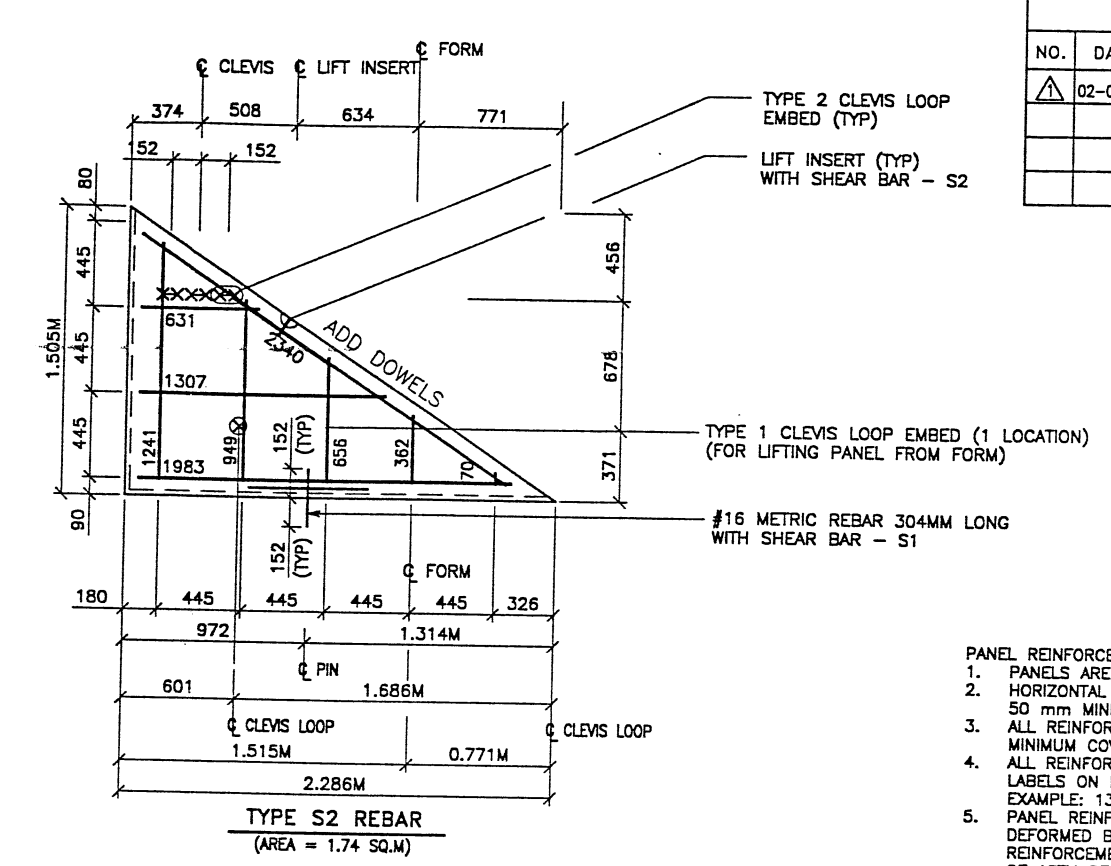
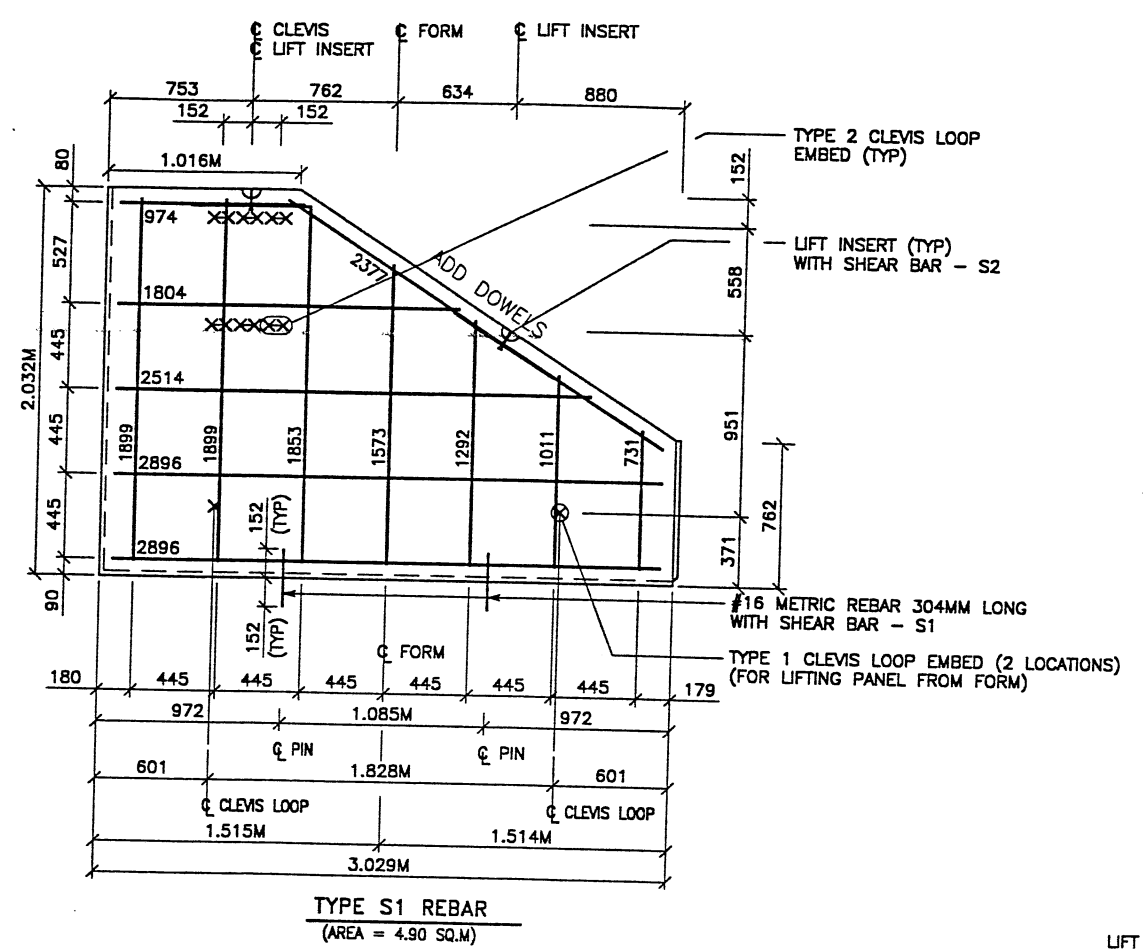
RETAINED EARTH™ WALLS
WALL "R-351-24" - 2ND STAGE: PRECAST WALL
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2-R-351-24.10
JOB NO.	239-0007
SHT. NO.	RE-8

FINAL PLOT 02-03-99

C:\VISE-WALLS\65-SERIES\65-24\SPECIALS.DWG

REFERENCE (X-UTAH.DWG)



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	02-03-99	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 27,500 KPa.
 - EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 - ALL PANELS TO USE 9.5mm ϕ 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.

VSL CORPORATION
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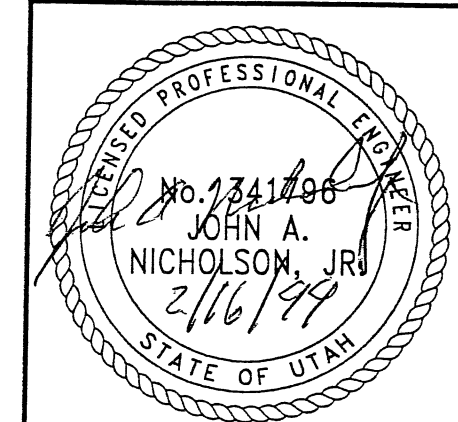
RETAINED EARTH™ WALLS
WALL R-351-24"
2-STAGE PANEL REINFORCEMENT

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

DWG. NO.
3.2R-351-24.11

JOB NO.
239-0007

SHT. NO.
RE-9



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WASATCH CONSTRUCTORS
MAR 01 1999
RELEASED FOR CONSTRUCTION

