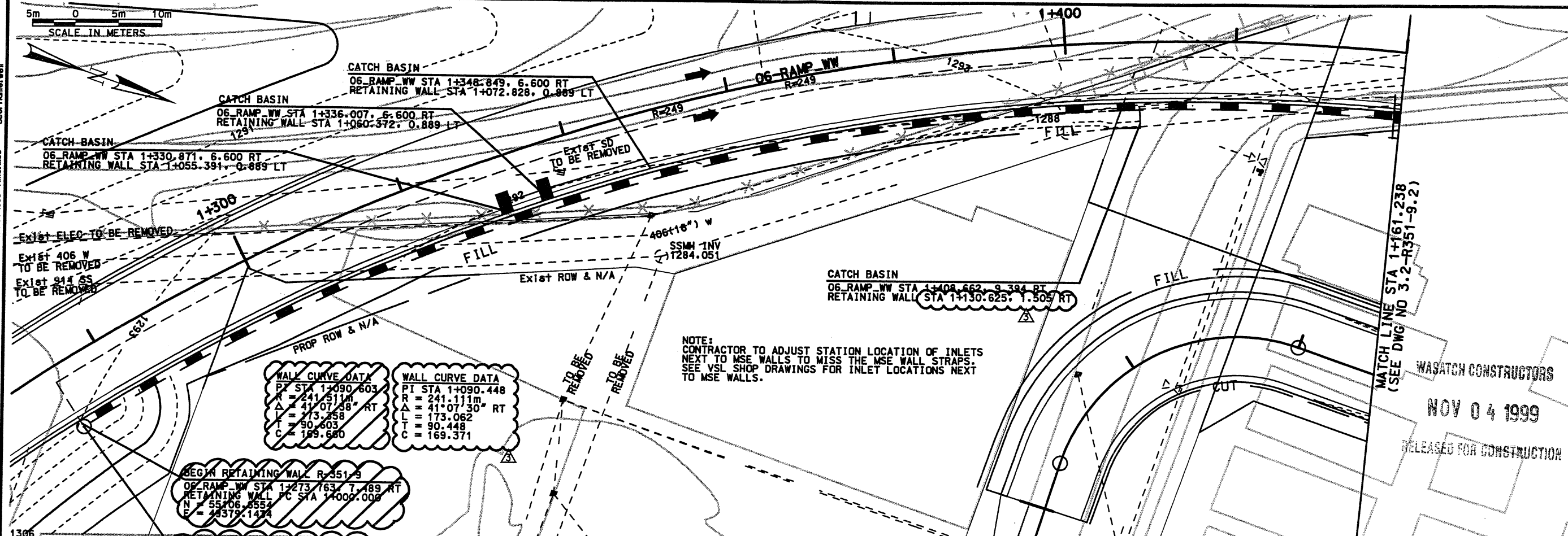
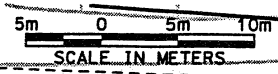


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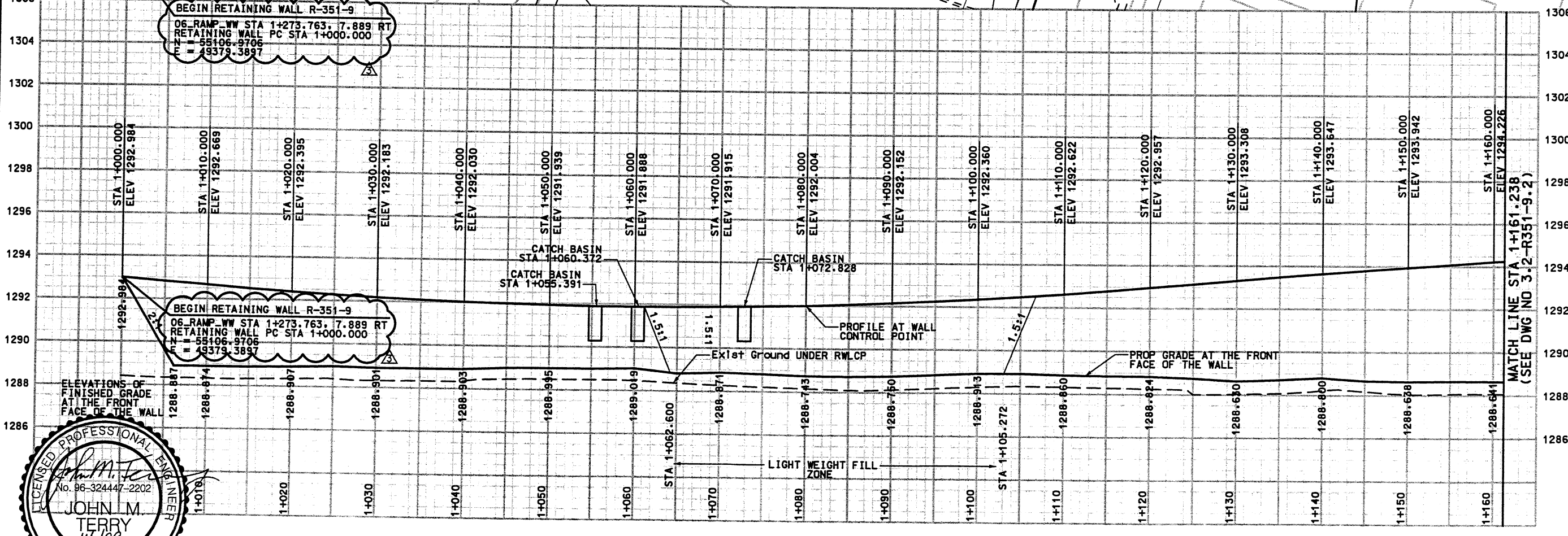


NOTE: CONTRACTOR TO ADJUST STATION LOCATION OF INLETS NEXT TO MSE WALLS TO MISS THE MSE WALL STRAPS. SEE VSL SHOP DRAWINGS FOR INLET LOCATIONS NEXT TO MSE WALLS.

BEGIN RETAINING WALL R-351-9
 O6_RAMP_WW STA 1+273.763, 7.889 RT
 RETAINING WALL PC STA 1+000.000
 N = 55106.9706
 E = 49379.3897

BEGIN RETAINING WALL R-351-9
 O6_RAMP_WW STA 1+273.763, 7.889 RT
 RETAINING WALL PC STA 1+000.000
 N = 55106.9706
 E = 49379.3897

BEGIN RETAINING WALL R-351-9
 O6_RAMP_WW STA 1+273.763, 7.889 RT
 RETAINING WALL PC STA 1+000.000
 N = 55106.9706
 E = 49379.3897



SEALED FOR THE NO. OF SUBMITTAL ONLY.

WALL R-351-9
 VIEW IS FRONT FACE OF WALL

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	NO.	DATE
1	02/18/98	1	02/18/98
2	09/14/98	2	09/14/98
3	11/01/98	3	11/01/98

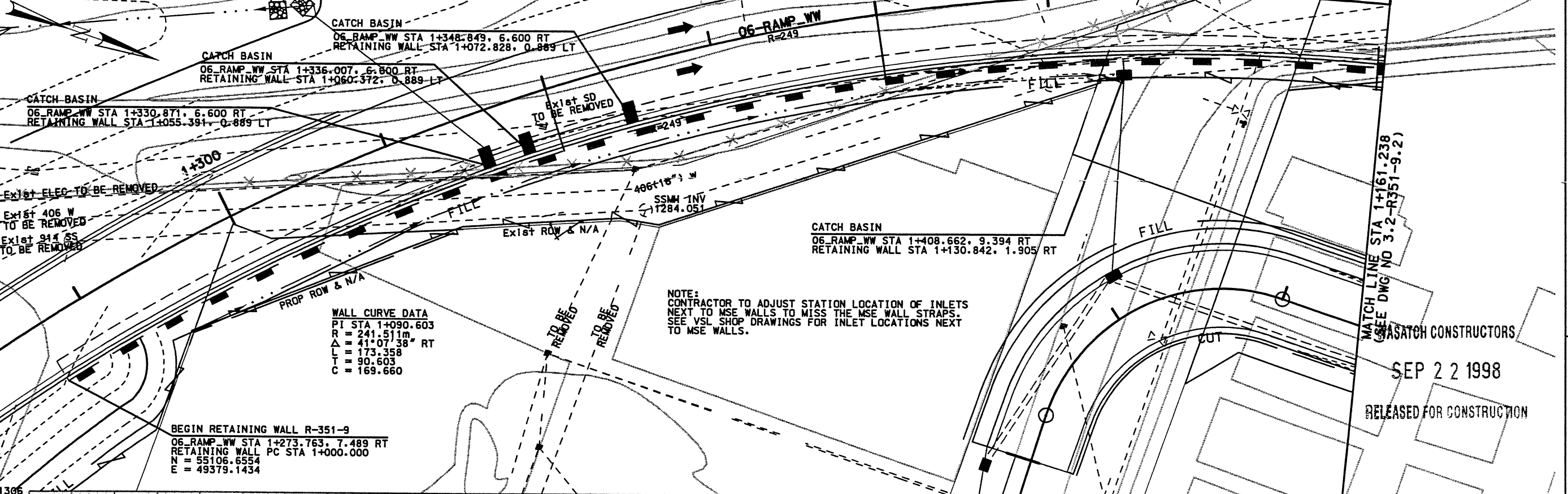
DESIGN	MC	CHECK	PC	09/14/98
DRAWN	SVD	CHECK	MC	09/14/98
SECTION MANAGER	QUANT.			

APPROVAL	08/14/98	MARVIN COOK	PROJECT DESIGN ENGINEER
RECORD	08/14/98	DATE	
APPROVED	08/14/98	KEITH SARDOL	SECTION MANAGER
		DATE	

UTAH DEPARTMENT OF TRANSPORTATION	SVERDRUP/DE LEUW
I-15 CORRIDOR RECONSTRUCTION	SITUATION & LAYOUT
SECTION 3.2	SECTION 3.2
PROJECT NUMBER #SP-15-7(135)296	
SALT LAKE COUNTY	
DWG. NO. 3.2-R351-9.1	
SHT. 1 OF 9	

NOV 04 1999
 RELEASED FOR CONSTRUCTION
 WASATCH CONSTRUCTORS

5m 0 5m 10m
SCALE IN METERS



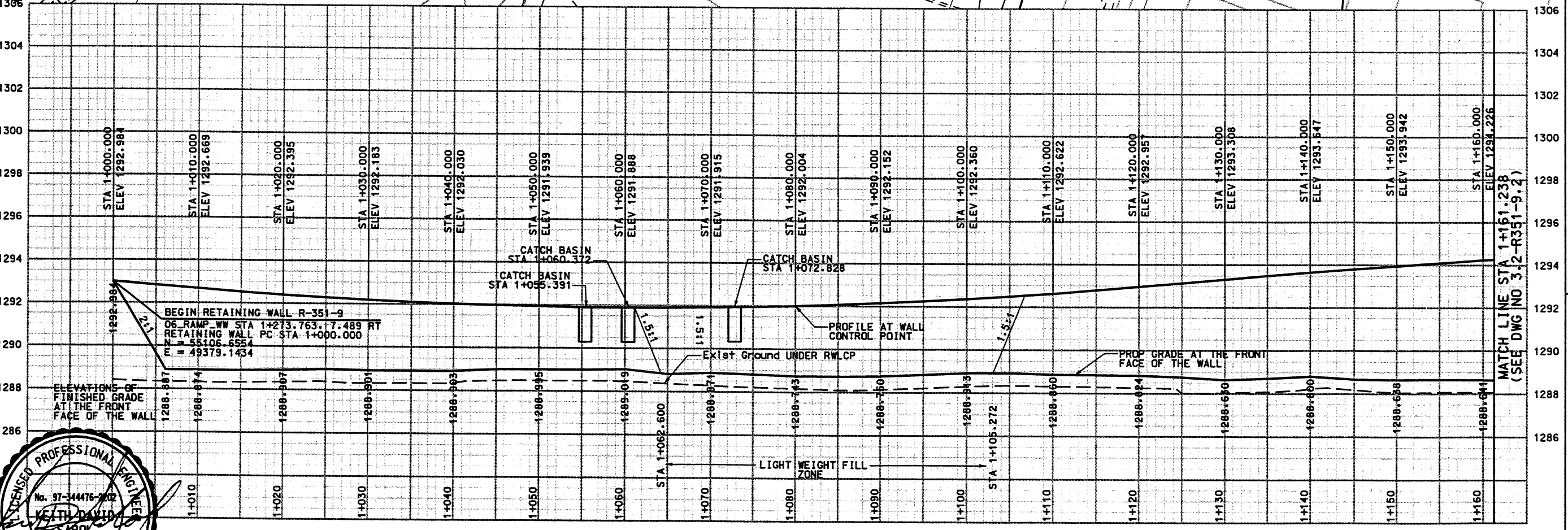
WALL CURVE DATA
PI STA 1+090.603
R = 241.511m
Δ = 41°07'38" RT
L = 173.358
T = 90.603
C = 169.660

BEGIN RETAINING WALL R-351-9
06_RAMP_WW STA 1+273.763, 7.489 RT
RETAINING WALL PC STA 1+000.000
N = 55106.6554
E = 49379.1434

NOTE:
CONTRACTOR TO ADJUST STATION LOCATION OF INLETS
NEXT TO MSE WALLS TO MISS THE MSE WALL STRAPS.
SEE VSL SHOP DRAWINGS FOR INLET LOCATIONS NEXT
TO MSE WALLS.

MATCH LINE STA 1+161.238
(SEE DWG NO 3.2-R351-9.2)

SEP 22 1998
RELEASED FOR CONSTRUCTION

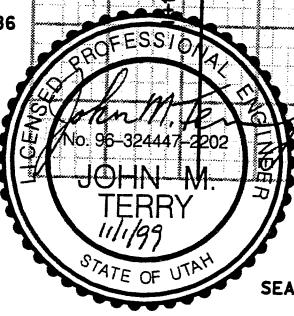
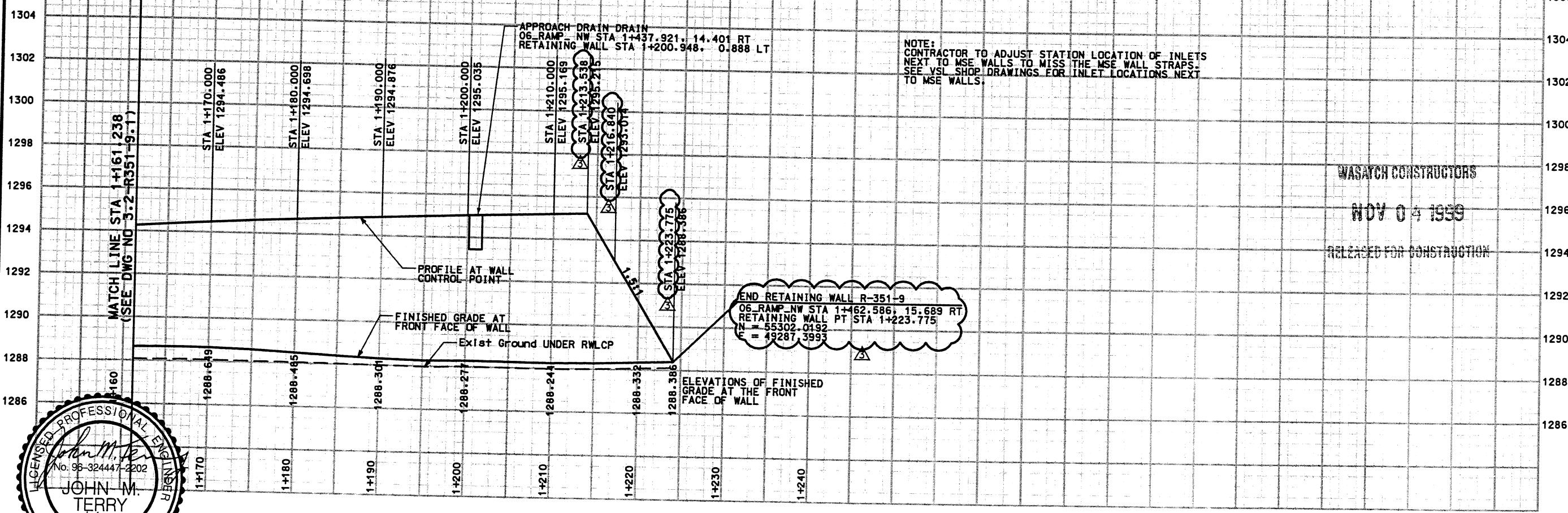
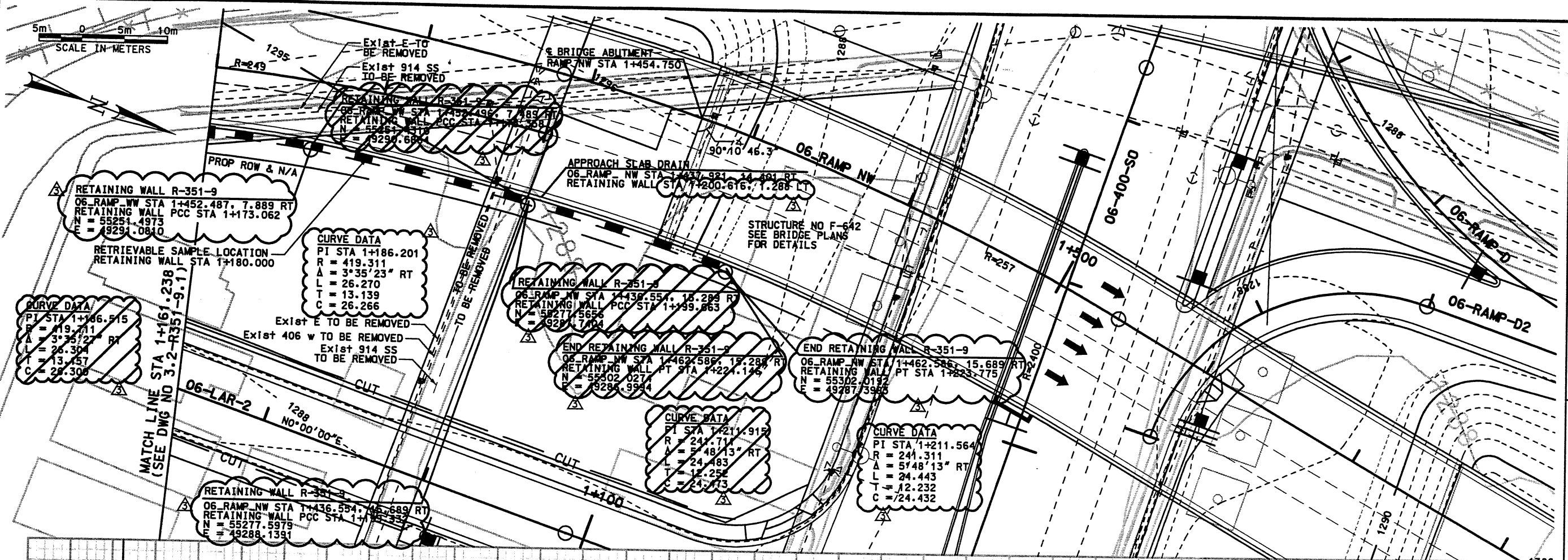


WALL R-351-9
VIEW IS FRONT FACE OF WALL

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	NO.	DATE
▲	02/18/98	▲	09/14/98
RELEASE FOR USE STAGE1 ONLY		RELEASE FOR USE STAGE1 ONLY	
3212405		3212405	
UTAH DEPARTMENT OF TRANSPORTATION		SVERDRUP/DE LEUW	
I-15 CORRIDOR RECONSTRUCTION		SITUATION & LAYOUT	
SECTION 3.2		SECTION 3.2	
PROJECT NUMBER *SP-15-7(135)296		PROJECT NUMBER	
SALT LAKE COUNTY		SALT LAKE COUNTY	
DWG. NO. 3.2-R351-9.1		DWG. NO.	
SHT. 1 OF 1		SHT. 1 OF 1	
APPROVAL 09/14/98 MARVIN COOK PROJECT DESIGN ENGINEER		CHECK PC 09/11/98	
APPROVED 09/14/98 KEITH SABOL SECTION MANAGER		CHECK MC 09/11/98	
DATE		CHECK	
DATE		QUANT.	
DATE		CHECK	

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Date: 01/NOV/99 Time: 11:44 User: name.well



SEALED FOR THE NO. OF SUBMITTAL ONLY.

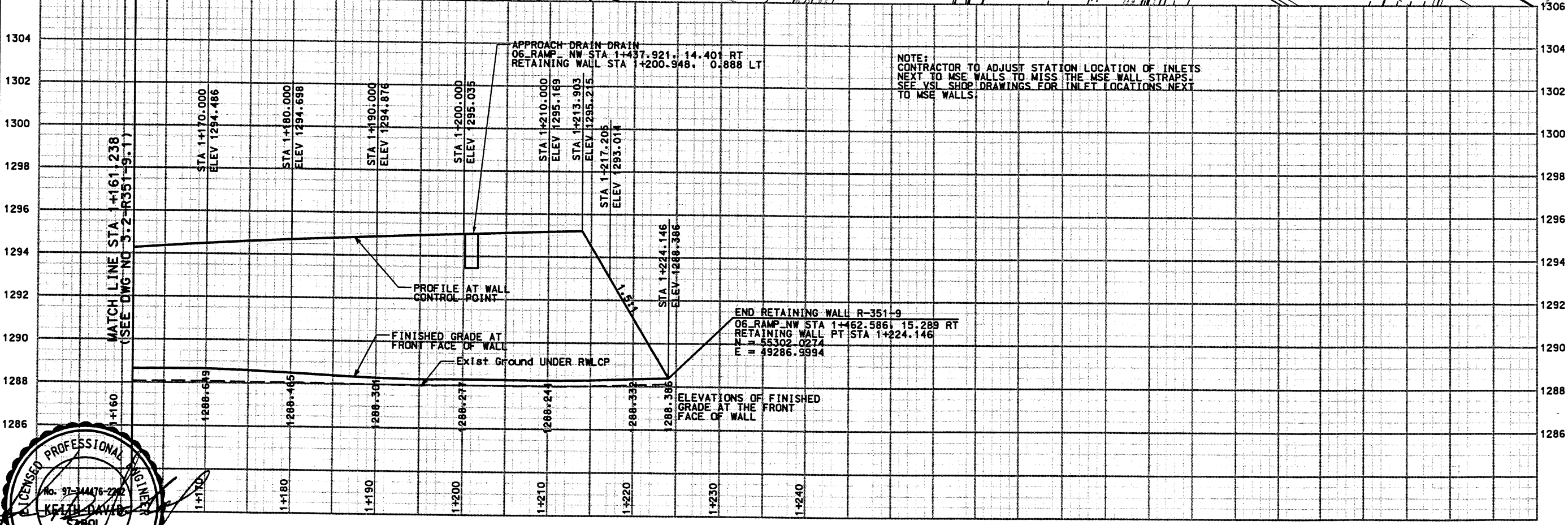
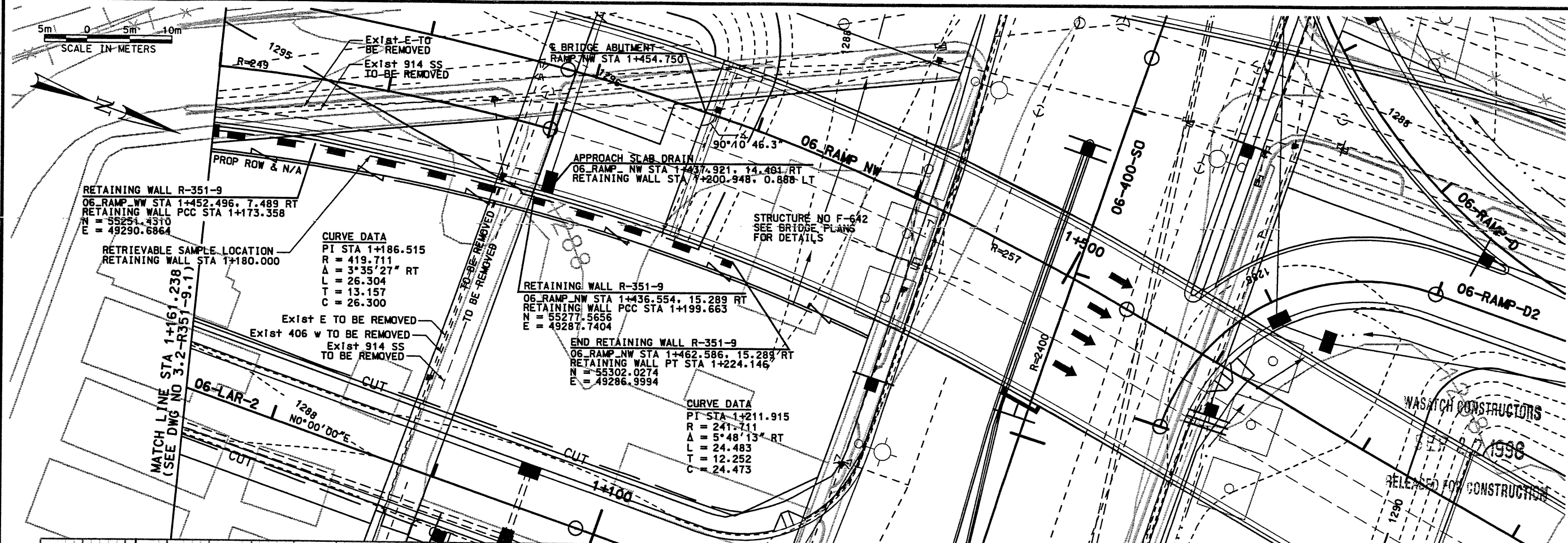
WALL R-351-9
 VIEW IS FRONT FACE OF WALL

APPROVED FOR CONSTRUCTION	
NO.	DATE
Δ	02/19/98
Δ	08/14/98
Δ	11/01/98

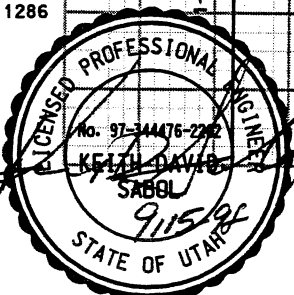
UTAH DEPARTMENT OF TRANSPORTATION	
SVENDRUP/DE LEUW	
DESIGN	CHECK
MC 09/14/98	PC 09/14/98
DRAWN	CHECK
SVD 09/14/98	MC 09/14/98
DATE	DATE
09/14/98	09/14/98
PROJECT NUMBER	SECTION NUMBER
*SP-15-(135)296	3212405
SALT LAKE COUNTY	
DWG. NO. 3.2-R351-9.2	
SHT. 2 OF 9	

RFC After Final Approval!

Date: 05-SEP-1998 Time: 13:18 User: vmeier cooking

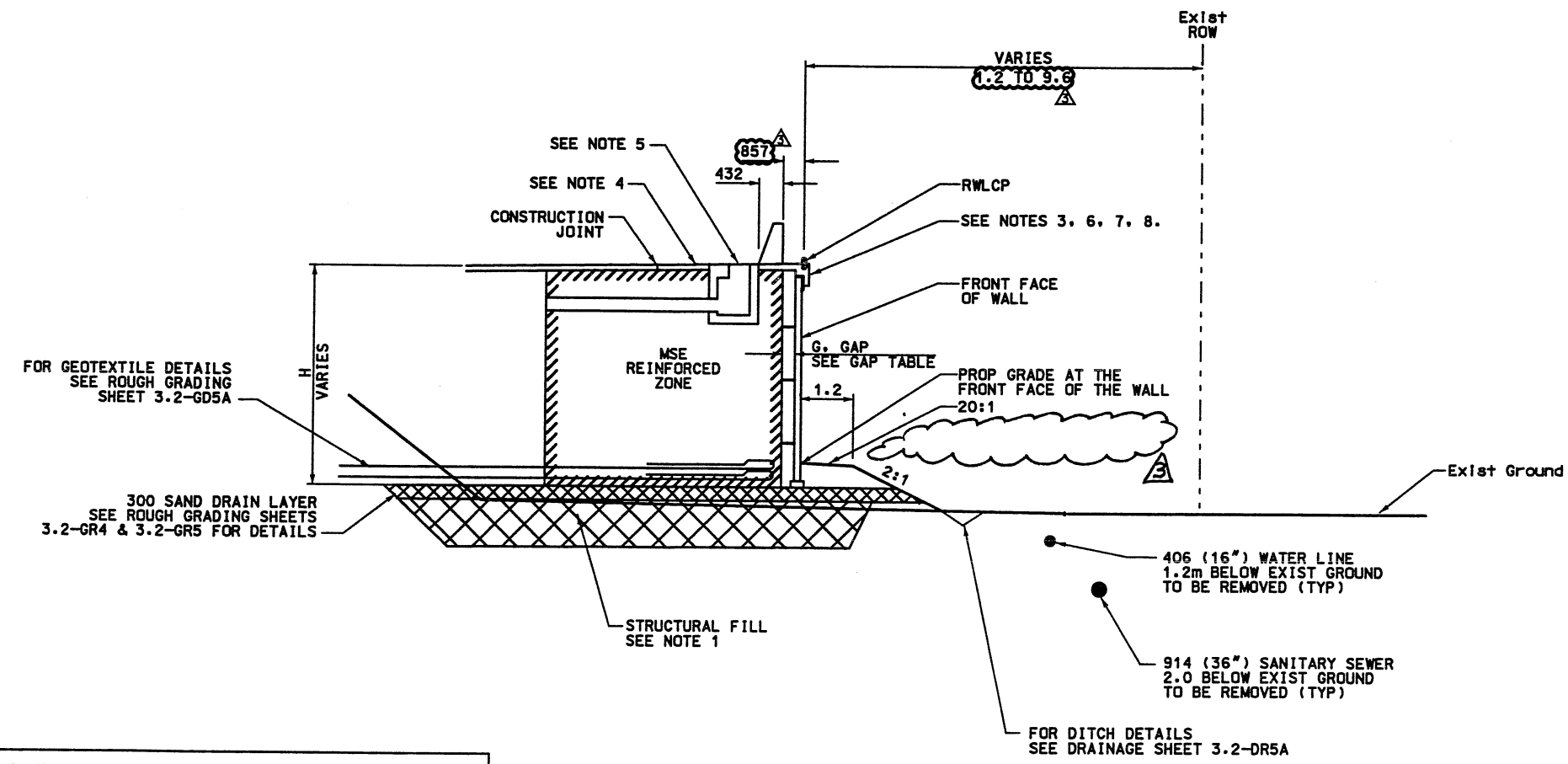


NOTE:
CONTRACTOR TO ADJUST STATION LOCATION OF INLETS
NEXT TO MSE WALLS TO MISS THE MSE WALL STRAPS.
SEE VSI SHOP DRAWINGS FOR INLET LOCATIONS NEXT
TO MSE WALLS.



WALL R-351-9
VIEW IS FRONT FACE OF WALL

APPROVED FOR CONSTRUCTION		NO.		DATE		DESCRIPTION	
		02/19/98		02/19/98		RELEASE FOR MSE STAGE 1 ONLY	
		09/14/98		09/14/98		RELEASE FOR MSE STAGE 1 ONLY	
UTAH DEPARTMENT OF TRANSPORTATION		SVDRUP/DE LEUW		CHECK PC		09/14/98	
I-15 CORRIDOR RECONSTRUCTION		DESIGN MC		CHECK MC		09/14/98	
SITUATION & LAYOUT		MARVIN COOK		CHECK MC		09/14/98	
SECTION 3.2		PROJECT DESIGN ENGINEER		CHECK MC		09/14/98	
PROJECT NUMBER #SP-15-7(135)296		DATE		CHECK		QUANT.	
		09/14/98		09/14/98		3212405	
SALT LAKE COUNTY		DATE		09/14/98		09/14/98	
DWC. NO. 3.2-R351-9.2		DATE		09/14/98		09/14/98	
SHT. 2 OF 11		DATE		09/14/98		09/14/98	

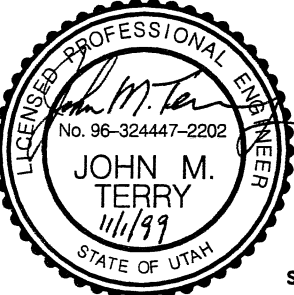


GAP TABLE			
RETAINING WALL STATIONS	G (mm), SEE NOTE *	MAX EXPECTED LATERAL MOVEMENT (mm)	MIN EXPECTED POST-CONSTRUCTION GAP (mm)
1+000.000	450 } CONSTANT 450 } TAPERS 650 } TAPERS 450 }	145	305
1+103.042		145	305
1+213.903		345	305
1+224.146		145	305

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.

RETAINING WALL DETAILS
NTS
WALL R-351-9
2 STAGE MSE

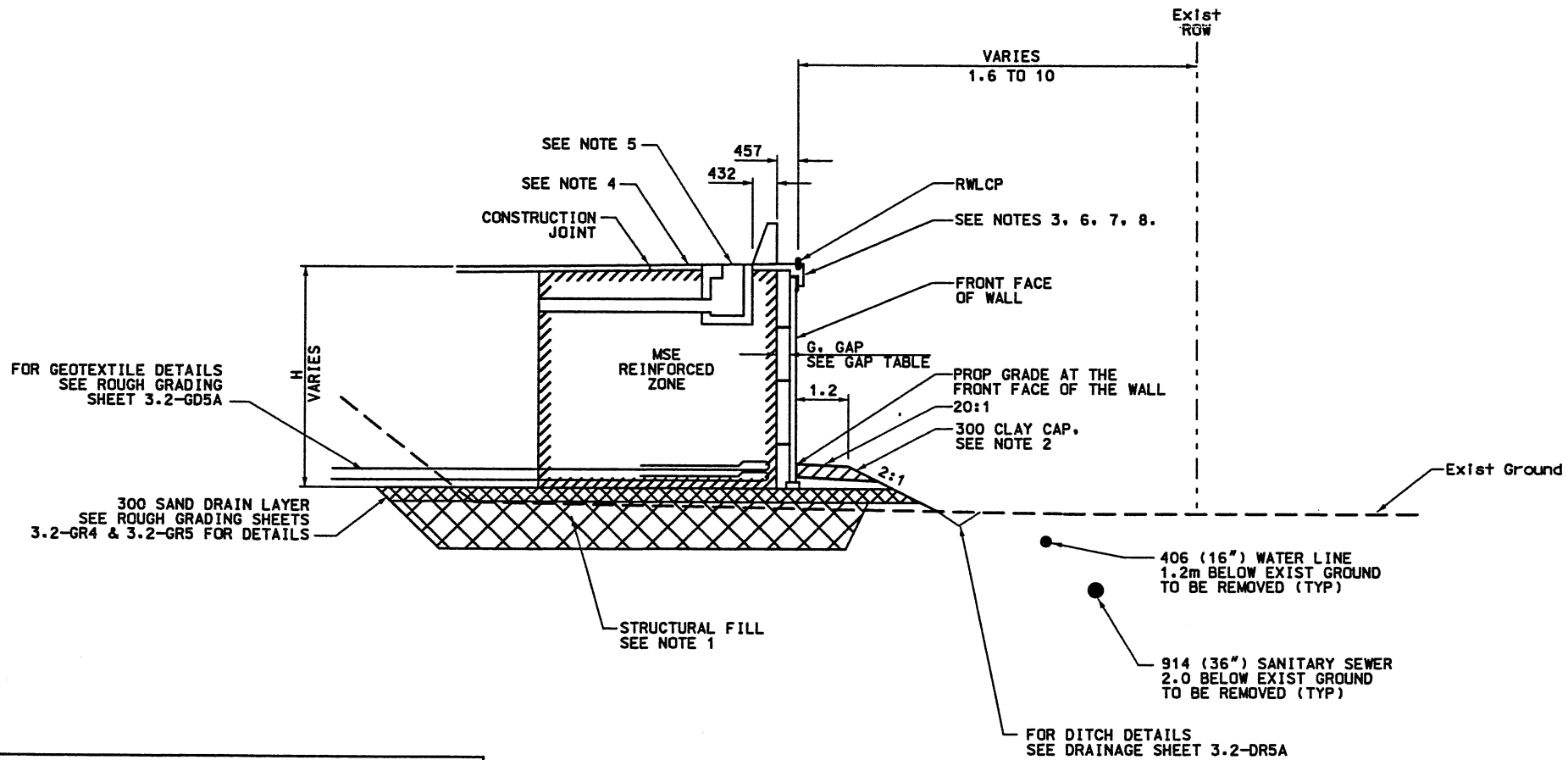
- NOTES:
- OVEREXCAVATE EXISTING SOILS AS REQUIRED. REFILL EXCAVATION WITH STRUCTURAL FILL.
 - FOR COPING DETAILS SEE CS-29.
 - FOR MOMENT SLAB JOINT DETAILS SEE CS-29.
 - CONTRACTOR TO ADJUST STATION AND LOCATION OF INLETS NEXT TO MSE WALLS TO MISS THE MSE STRAPS. SEE VSL SHOP DRAWINGS FOR INLET LOCATION NEXT TO MSE WALL. FOR ADDITIONAL DRAINAGE DETAILS SEE SHEET 3.2-DR4 AND 3.2-DR5.
 - FOR COPING DETAILS STA 1+200.616 TO STA 1+212.440 SEE CS-54-9 SECTION R.
 - FOR COPING DETAILS STA 1+212.440 TO STA 1+216.840 SEE CS-54-9 SECTION T.
 - FOR COPING DETAILS STA 1+216.840 TO STA 1+223.775 SEE CS-54-9 SECTION U.



SEALED FOR THE NO. OF SUBMITTAL ONLY.

WASATCH CONSTRUCTORS
NOV 04 1999
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	NO.	DATE
△	02/25/98	△	02/25/98
△	09/15/98	△	09/15/98
△	11/01/98	△	11/01/98
RELEASE FOR MSE STAGE 1 ONLY		RELEASE FOR MSE STAGE 1 ONLY	
RELEASE FOR MSE STAGE 2		RELEASE FOR MSE STAGE 2	
UTAH DEPARTMENT OF TRANSPORTATION		SVERDRUP/DE LEUW	
I-15 CORRIDOR RECONSTRUCTION		TYPICAL SECTION	
SECTION 3.2		SECTION 3.2	
PROJECT NUMBER #SP-15-7(135)296		PROJECT NUMBER #SP-15-7(135)296	
SALT LAKE COUNTY		SALT LAKE COUNTY	
DWG. NO. 3.2-R351-9.3		DWG. NO. 3.2-R351-9.3	
SHT. 3 OF 9		SHT. 3 OF 9	

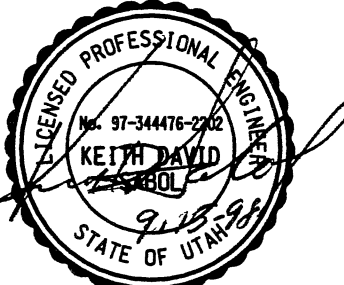


GAP TABLE			
RETAINING WALL STATIONS	G (mm), SEE NOTE *	MAX EXPECTED LATERAL MOVEMENT (mm)	MIN EXPECTED POST-CONSTRUCTION GAP (mm)
1+000.000	450	145	305
1+103.042	450	145	305
1+213.903	650	345	305
1+224.146	450	145	305

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.

RETAINING WALL DETAILS
NTS
WALL R-351-9
2 STAGE MSE

- NOTES:
- OVEREXCAVATE EXISTING SOILS AS REQUIRED. REFILL EXCAVATION WITH STRUCTURAL FILL.
 - CONSTRUCT CLAY CAP WITH LOW PLASTIC SILTY CLAY (300mm THICK).
 - FOR COPING DETAILS SEE CS-29.
 - FOR MOMENT SLAB JOINT DETAILS SEE CS-29.
 - 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 ADDITIONAL DRAINAGE DETAILS SEE SHEET 3.2-DR4 AND 3.2-DR5.
 - FOR COPING DETAILS STA 1+200.505 TO STA 1+212.805 SEE CS-54-9 SECTION R.
 - FOR COPING DETAILS STA 1+212.805 TO STA 1+217.205 SEE CS-54-9 SECTION T.
 - FOR COPING DETAILS STA 1+217.205 TO STA 1+224.146 SEE CS-54-9 SECTION U.

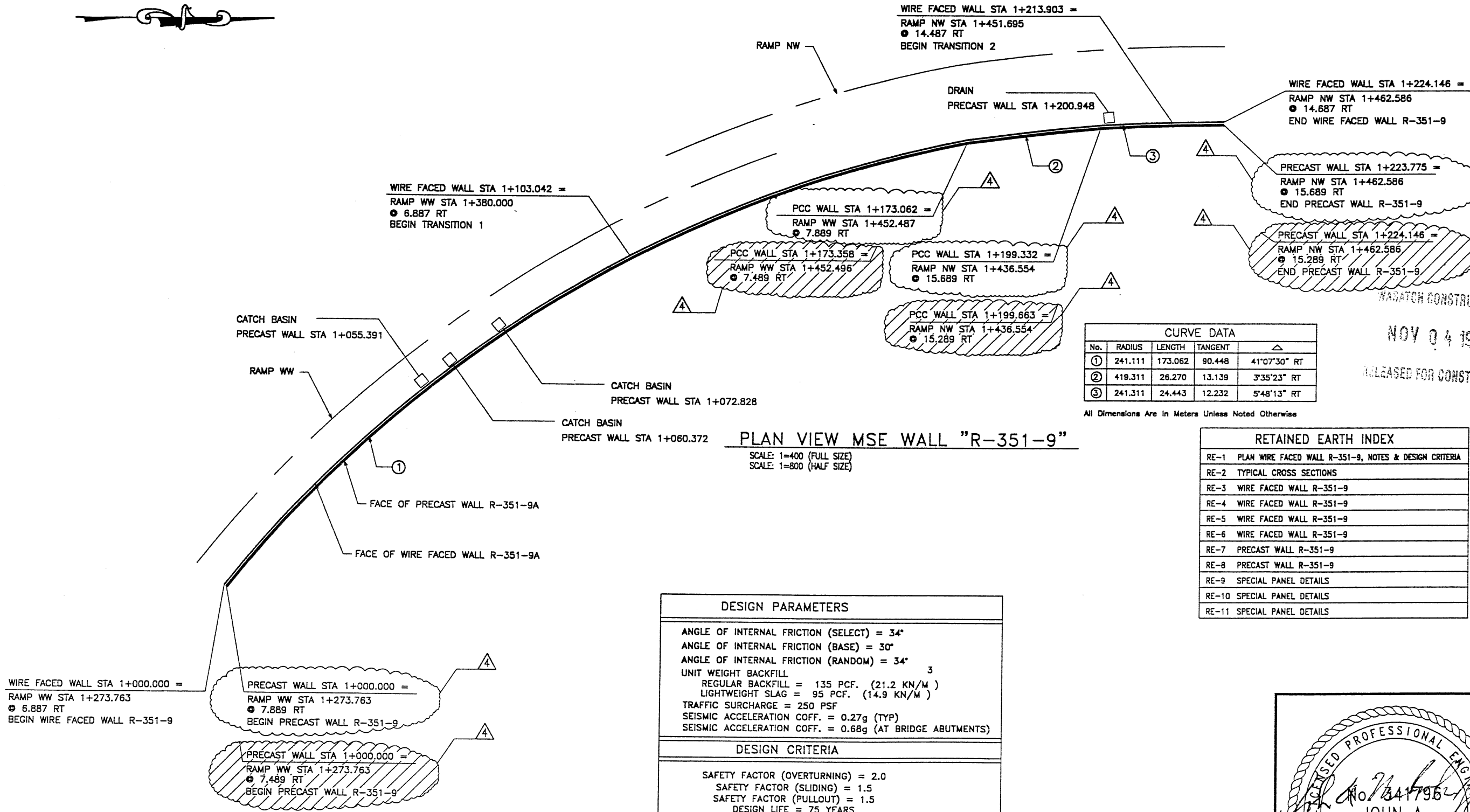


WASATCH CONSTRUCTORS
SEP 22 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE		
Δ	02/25/98	RELEASE FOR MSE, STAGE 1 ONLY	
Δ	09/14/98	RELEASE FOR MSE, STAGE 1 ONLY	
UTAH DEPARTMENT OF TRANSPORTATION		SVERDRUP/DE LEUW	
I-15 CORRIDOR RECONSTRUCTION		TYPICAL SECTION	
SECTION 3.2		PROJECT #SP-15-7(135)296	
SALT LAKE COUNTY		DWG. NO. 3.2-R351-9.3	
SHT. 3		OF 11	

H:\RE_EARTH\PROJECT\239-0007\1997\65-WALLS\65-09\SUBMTL-5\RE-1

FINAL PLOT 02-17-98



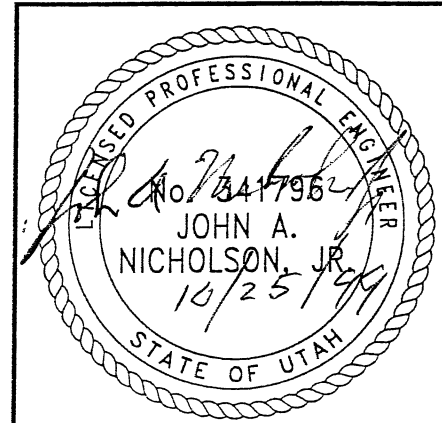
PLAN VIEW MSE WALL "R-351-9"
SCALE: 1=400 (FULL SIZE)
SCALE: 1=800 (HALF SIZE)

DESIGN PARAMETERS	
ANGLE OF INTERNAL FRICTION (SELECT) = 34°	
ANGLE OF INTERNAL FRICTION (BASE) = 30°	
ANGLE OF INTERNAL FRICTION (RANDOM) = 34°	
UNIT WEIGHT BACKFILL	
REGULAR BACKFILL = 135 PCF. (21.2 KN/M ³)	
LIGHTWEIGHT SLAG = 95 PCF. (14.9 KN/M ³)	
TRAFFIC SURCHARGE = 250 PSF	
SEISMIC ACCELERATION COFF. = 0.27g (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	

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	Δ
①	241.111	173.062	90.448	41°07'30" RT
②	419.311	26.270	13.139	3°35'23" RT
③	241.311	24.443	12.232	5°48'13" RT

All Dimensions Are In Meters Unless Noted Otherwise

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



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

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△ 01-21-98		RELEASE FOR 1ST STAGE CONST. ONLY
△ 02-17-98		REVISED S&L DWG
△ 08-31-98		REVISED S&L DWG
△ 10-12-99		RELEASED FOR 2ND STAGE CONSTRUCTION

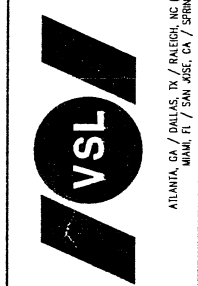
DES.	FH	NO.	DATE
DRN.	DSW		
CHK.	FH		
	RETAINED EARTH™		
VSL CORPORATION 2840 Plaza Place, Suite 200 Raleigh, NC 27617 Telephone: (919) 781-6572 Fax: (919) 781-4999			
ATLANTA, GA / DALLAS, TX / FAIRFAX, VA (CORPORATE OFFICE) MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA			
RETAINED EARTH™ WALLS PLAN VIEW MSE WALL "R-351-9" UTAH I-15 INTERCHANGE SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.			
DWG. NO. 3.2R-351-9.4			
JOB NO. 239-0007			
SHL. NO. RE-1			

FINA T 02-17-98 H:\RE_EARTH\PROJECT\239-0007\1997 S\65-09\SUBMITL-5\RE-1 INCE (X-UTAH.DWG)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	01-21-98	RELEASE FOR 1ST STAGE CONST. ONLY
△	02-17-98	REVISED S&L DWG
△	08-31-98	REVISED S&L DWG

NO.	DATE	REVISION

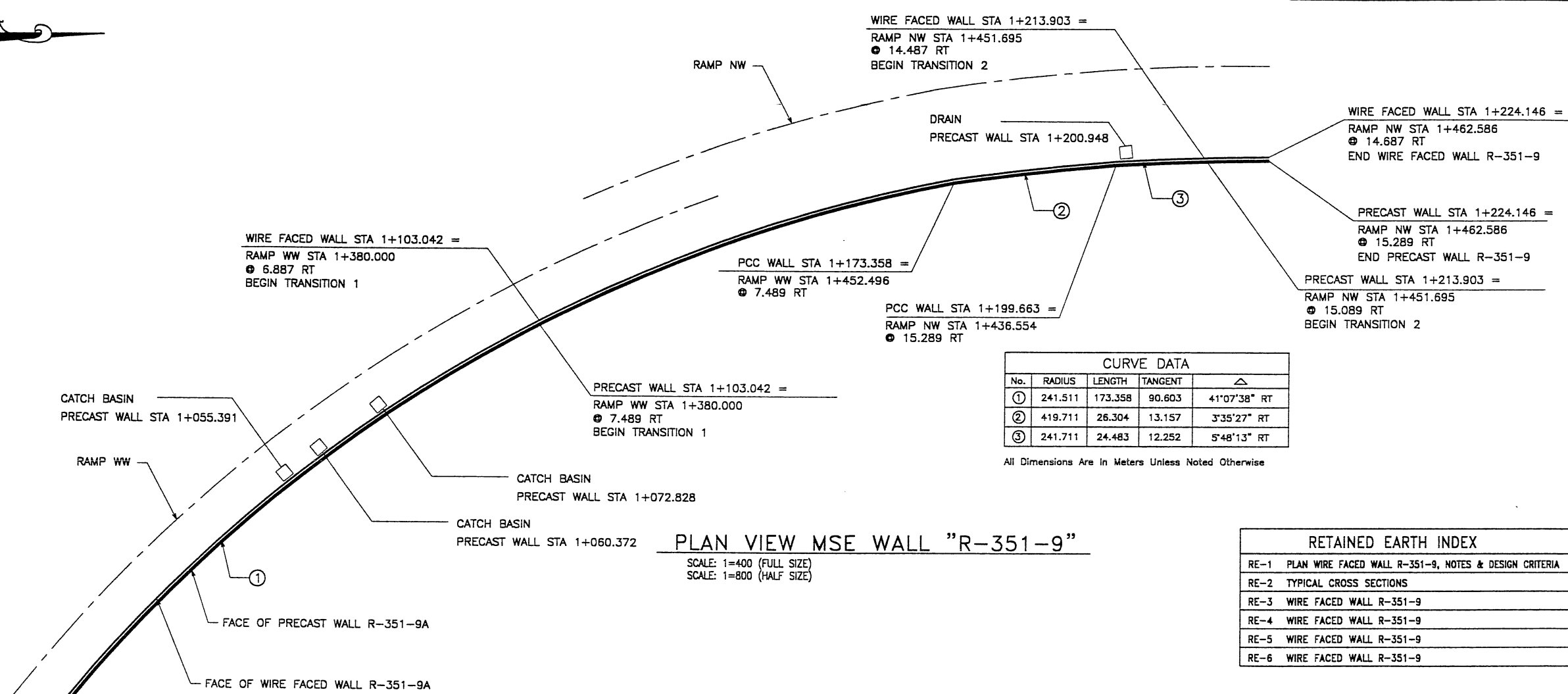
VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-6272
 Fax: (919) 781-6959



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RETAINED EARTH™ WALLS
 PLAN VIEW MSE WALL "R-351-9"
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-9.4
JOB NO.	239-0007
SHT. NO.	RE-1



CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	Δ
①	241.511	173.358	90.603	41°07'38" RT
②	419.711	26.304	13.157	3°35'27" RT
③	241.711	24.483	12.252	5°48'13" RT

All Dimensions Are In Meters Unless Noted Otherwise

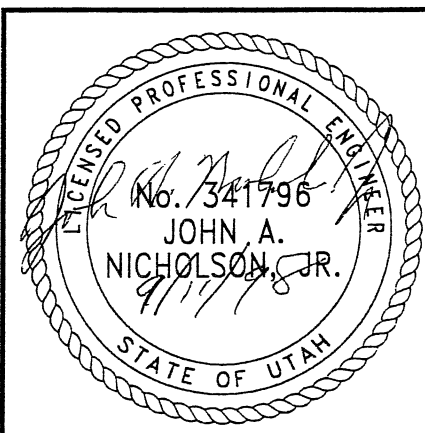
PLAN VIEW MSE WALL "R-351-9"

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

DESIGN PARAMETERS	
ANGLE OF INTERNAL FRICTION (SELECT)	= 34°
ANGLE OF INTERNAL FRICTION (BASE)	= 30°
ANGLE OF INTERNAL FRICTION (RANDOM)	= 34°
UNIT WEIGHT BACKFILL	
REGULAR BACKFILL	= 135 PCF. (21.2 KN/M ³)
LIGHTWEIGHT SLAG	= 95 PCF. (14.9 KN/M ³)
TRAFFIC SURCHARGE	= 250 PSF
SEISMIC ACCELERATION COEFF.	= 0.27g (TYP)
SEISMIC ACCELERATION COEFF.	= 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

RETAINED EARTH INDEX	
RE-1	PLAN WIRE FACED WALL R-351-9, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTIONS
RE-3	WIRE FACED WALL R-351-9
RE-4	WIRE FACED WALL R-351-9
RE-5	WIRE FACED WALL R-351-9
RE-6	WIRE FACED WALL R-351-9

WASATCH CONSTRUCTORS
 SEP 22 1998
 RELEASED FOR CONSTRUCTION




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

METRIC

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△ 01-21-98		RELEASE FOR 1ST STAGE CONST. ONLY
△ 02-17-98		REVISED S&L DWG
△ 08-31-98		REVISED S&L DWG

NO.	DATE	REVISION

VSL CORPORATION
 2040 Prince George Drive, Suite 700
 Fairfax, VA 22031
 Telephone: (919) 784-6272
 Fax: (919) 781-6859



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

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RETAINED EARTH™ WALLS
 WIRE FACED WALL "R-351-9"
 TYPICAL CROSS SECTION
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-9.5
JOB NO.	239-0007
SHT. NO.	RE-2

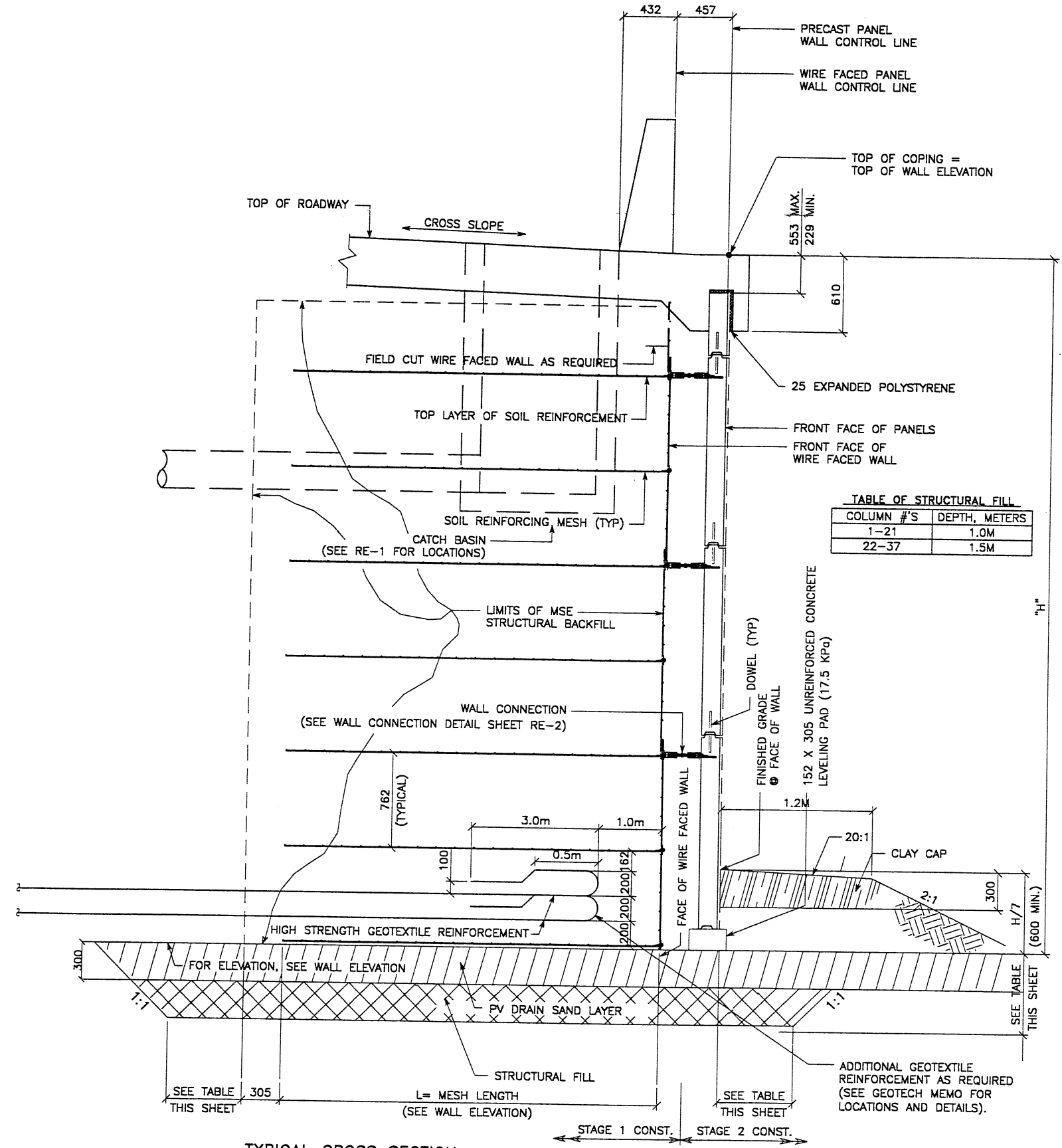
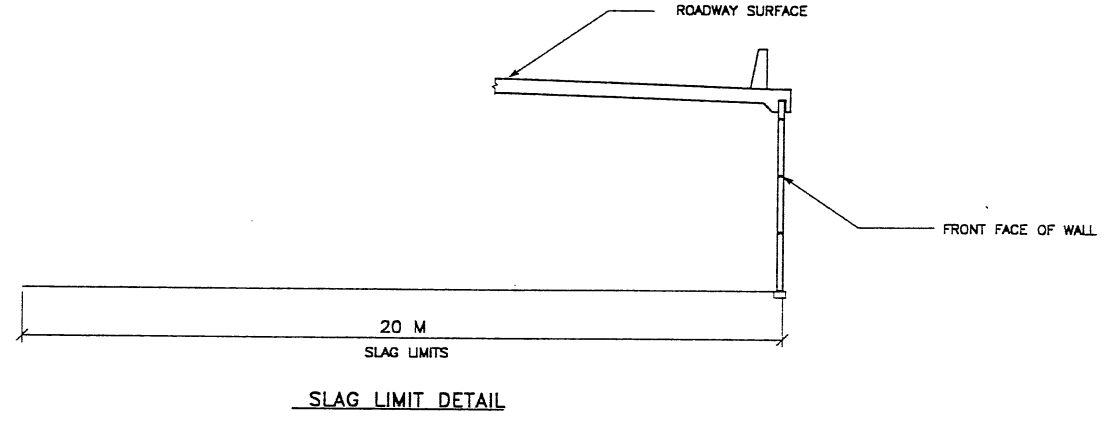


TABLE OF STRUCTURAL FILL

COLUMN #'S	DEPTH, METERS
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22-37	1.5M

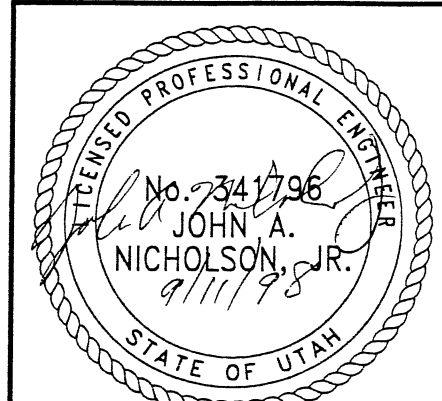
SEE VSL STANDARD DWG FOR PLACEMENT OF INTERMEDIATE SOIL REINFORCEMENT



TYPICAL CROSS SECTION
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

METRIC

WASATCH CONSTRUCTORS
 SEP 22 1998
 RELEASED FOR CONSTRUCTION



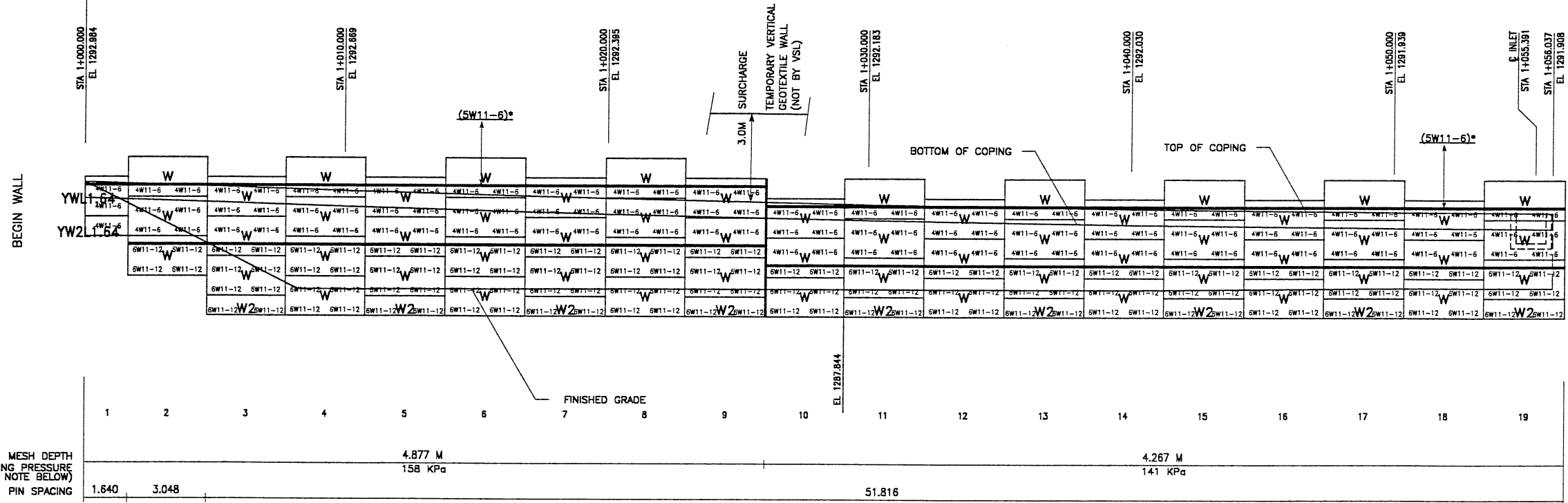
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

FINA T 02-18-98 H:\RE_EARTH\PROJECT\239-000\1997\65-W\SUBMTL-5\W65-09 INCE (X-UTAH.DWG)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	01-21-98	RELEASE FOR 1ST STAGE CONST. ONLY
△	02-17-98	REVISED S&L DWG
△	08-31-98	REVISED S&L DWG

NO.	DATE	REVISION	BY	CHK

BEGIN WIRE FACED WALL R-351-9
 WIRE FACED WALL STA 1+000.000 =
 RAMP WW STA 1+273.763
 ● 6.887 RT



MATCH LINE #1

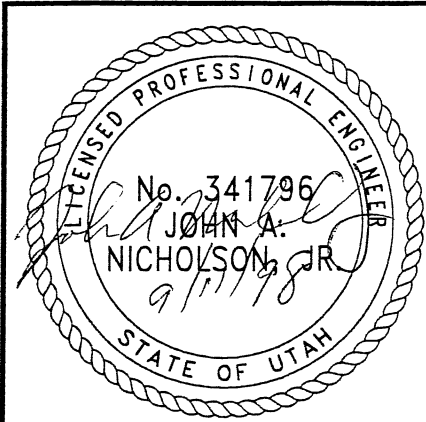
RETAINING WALL "R-351-9" - 1ST STAGE: WIRE FACED WALL
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF FACING = 1398.57 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

METRIC

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 MESH TO BE USED ON ADDITIONAL WIRE WALL FACING ADDED AFTER SETTLEMENT.

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WASATCH CONSTRUCTORS
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VSL CORPORATION
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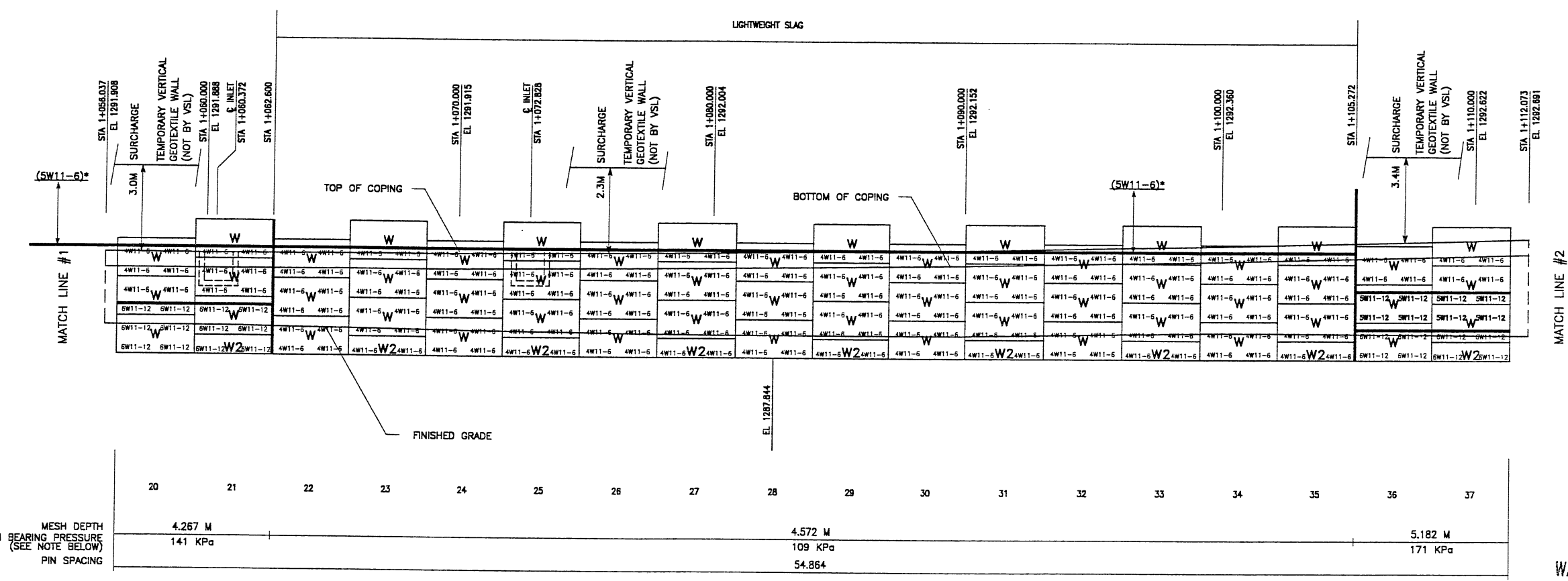
RETAINED EARTH™ WALLS
 WALL "R-351-9" - 1ST STAGE: WIRE FACED WALL
 UTAH 1-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-9.6
JOB NO.	239-0007
SHT. NO.	RE-3

H:\RE_EARTH\PROJECT\239-0007\1997\65-WA
 SUBMIT-5\W5-09
 02-18-98
 FINAL

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
⚠	01-21-98	RELEASE FOR 1ST STAGE CONST. ONLY
⚠	02-17-98	REVISED S&L DWG
⚠	08-31-98	REVISED S&L DWG <i>AS</i>

NO.	DATE	REVISION



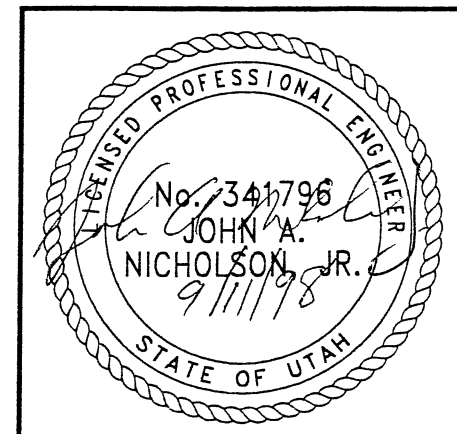
RETAINING WALL "R-351-9" - 1ST STAGE: WIRE FACED WALL
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF FACING = 1398.57 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

METRIC

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

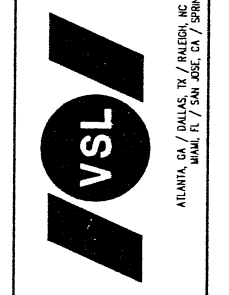
* INDICATES SOIL REINFORCING TYPE
 MESH TO BE USED ON ADDITIONAL
 WIRE WALL FACING ADDED AFTER
 SETTLEMENT.

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 STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE
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 THE MANUFACTURER'S SPECIFICATION.



WASATCH CONSTRUCTORS
 SEP 22 1998
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 Fax: (919) 781-4969



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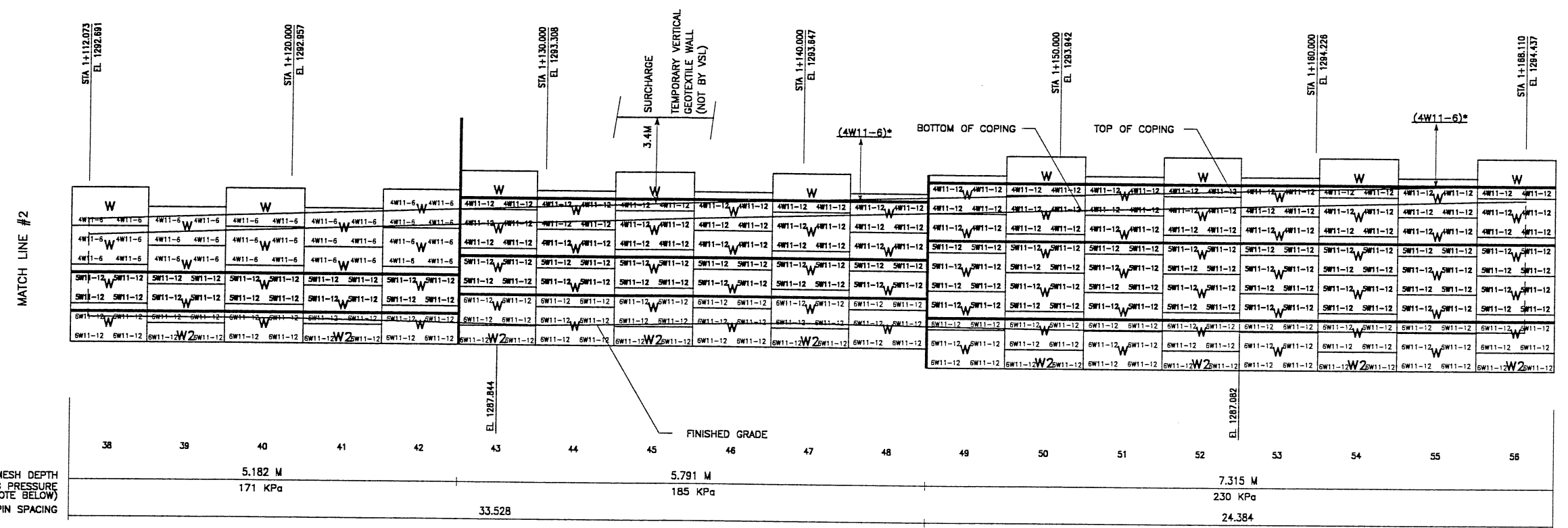
RETAINED EARTH™ WALLS
 WALL "R-351-9" - 1ST STAGE: WIRE FACED WALL
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-9.7
JOB NO.	239-0007
SHT. NO.	RE-4

FINA: OT 02-18-98 H:\RE_EARTH\PROJECT\239-0007\1997\65-W\09\SUBMITL-5\W65-09 PENCE (X-UTAH.DWG)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	01-21-98	RELEASE FOR 1ST STAGE CONST. ONLY
2	02-17-98	REVISED S&L DWG
3	08-31-98	REVISED S&L DWG

DES.	MM	DRN	CHK	NO.	DATE	REVISION	CHK
8-12-98	8-12-98	8-12-98	8-12-98				



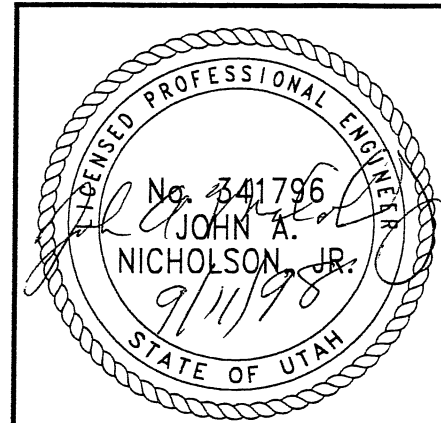
RETAINING WALL "R-351-9" - 1ST STAGE: WIRE FACED WALL
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF FACING = 1398.57 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

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

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METRIC



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 SEP 22 1998
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 MAINT. FL / SAN JOSE, CA / SPRINGFIELD, VA

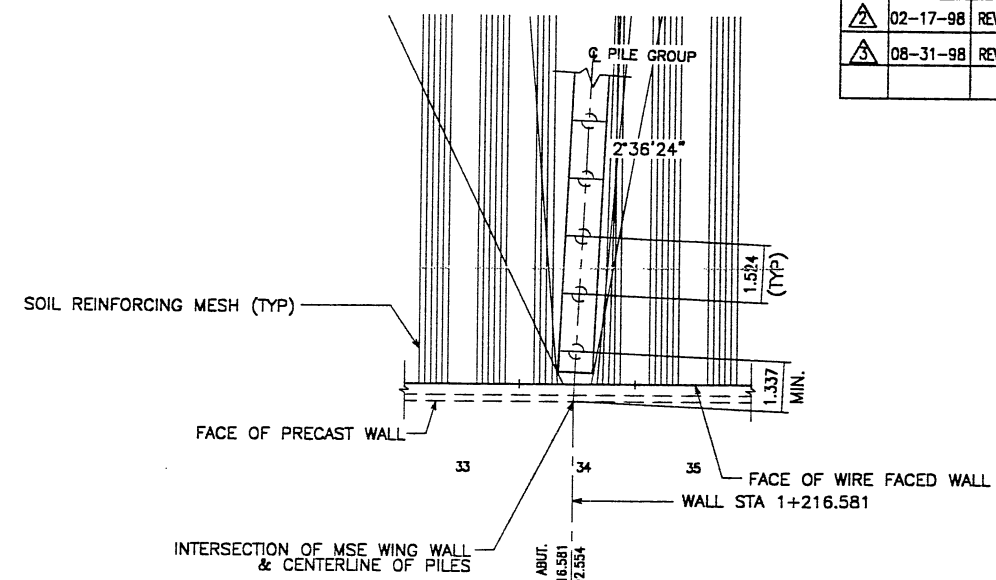
RETAINED EARTH™ WALLS
 WALL "R-351-9" - 1ST STAGE: WIRE FACED WALL
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-9.8
JOB NO.	239-0007
SHT. NO.	RE-5

H:\RE_EARTH\PROJECT\239-0007\1997\65-W
 SUBMITL-5\W65-09
 02-18-98
 FINA

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

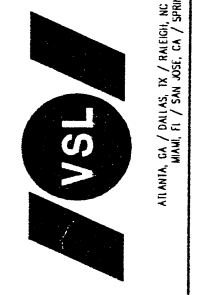
SPECIAL NOTE: PANEL CONNECTIONS AT ABUTMENT TO BE DETERMINED IN THE FUTURE.



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
⚠	01-21-98	RELEASE FOR 1ST STAGE CONST. ONLY
⚠	02-17-98	REVISED S&L DWG
⚠	08-31-98	REVISED S&L DWG

DES.	MM	DRN.	RSW	CHK.	MM	NO.	DATE	REVISION	BY	CHK
	8-12-98									
	8-12-98									
	8-12-98									

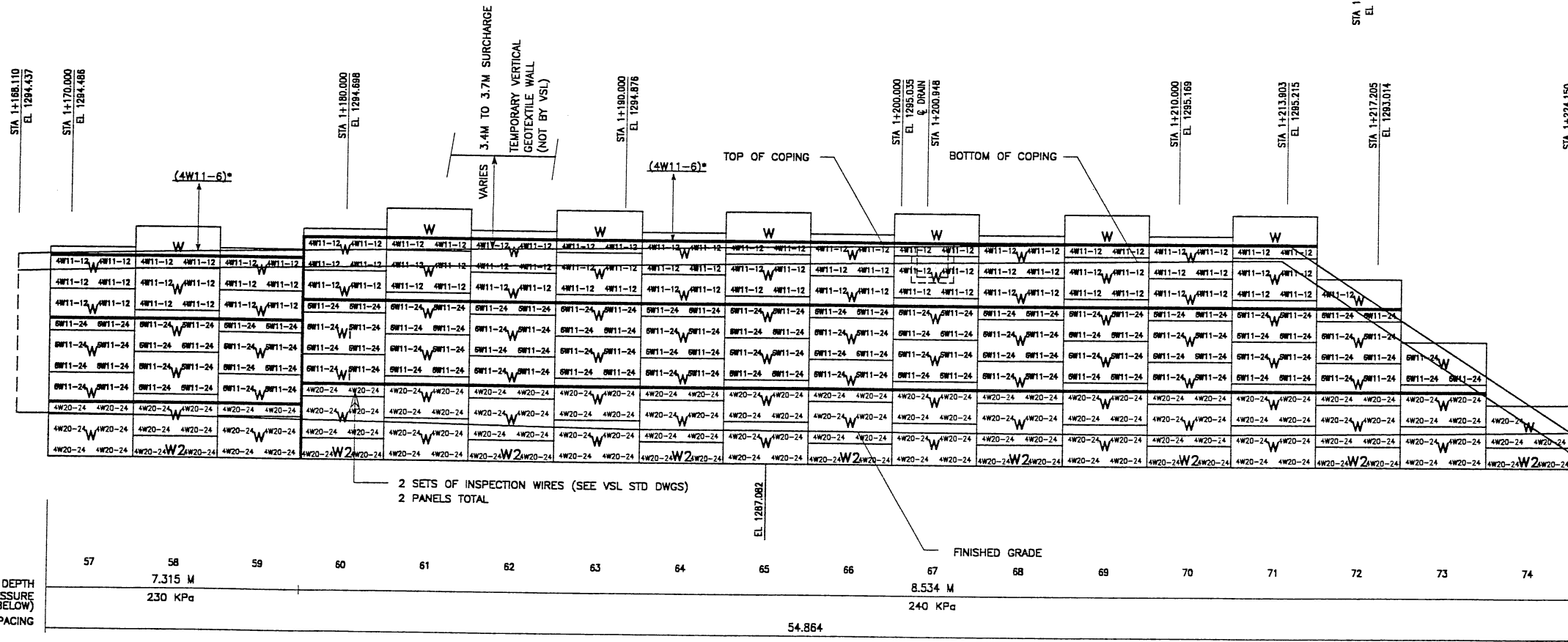
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END WIRE FACED WALL R-351-9
 WIRE FACED WALL STA 1+224.146 =
 RAMP NW STA 1+462.586
 ● 14.687 RT

END WALL
 WASATCH CONSTRUCTORS
 SEP 22 1998
 RELEASED FOR CONSTRUCTION



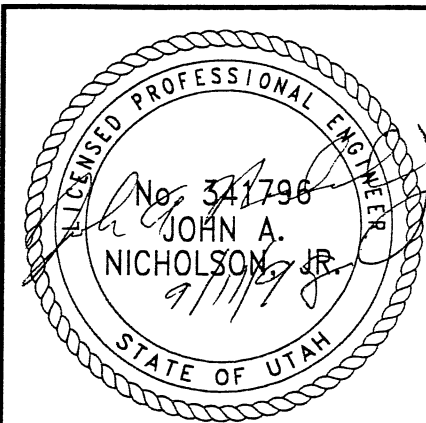
RETAINING WALL "R-351-9" - 1ST STAGE: WIRE FACED WALL
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF FACING = 1398.57 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

METRIC

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 MESH TO BE USED ON ADDITIONAL WIRE WALL FACING ADDED AFTER SETTLEMENT.

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RETAINED EARTH™ WALLS
 WALL "R-351-9" - 1ST STAGE: WIRE FACED WALL
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-9.9
JOB NO.	239-0007
SHF. NO.	RE-6

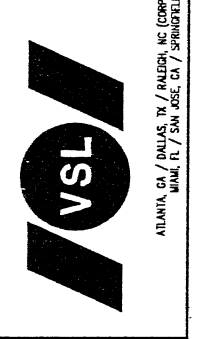
BEGIN PRECAST WALL R-351-9
PRECAST WALL STA 1+000.000 =
RAMP WW STA 1+273.763
● 7.669 RT

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	10-12-99	RELEASE FOR 2ND STAGE CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES.	DRN.	CHK.	RETAINED EARTH™
10-12-99	DSW	FH	VSL

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fac: (919) 781-4989



WASATCH CONSTRUCTORS

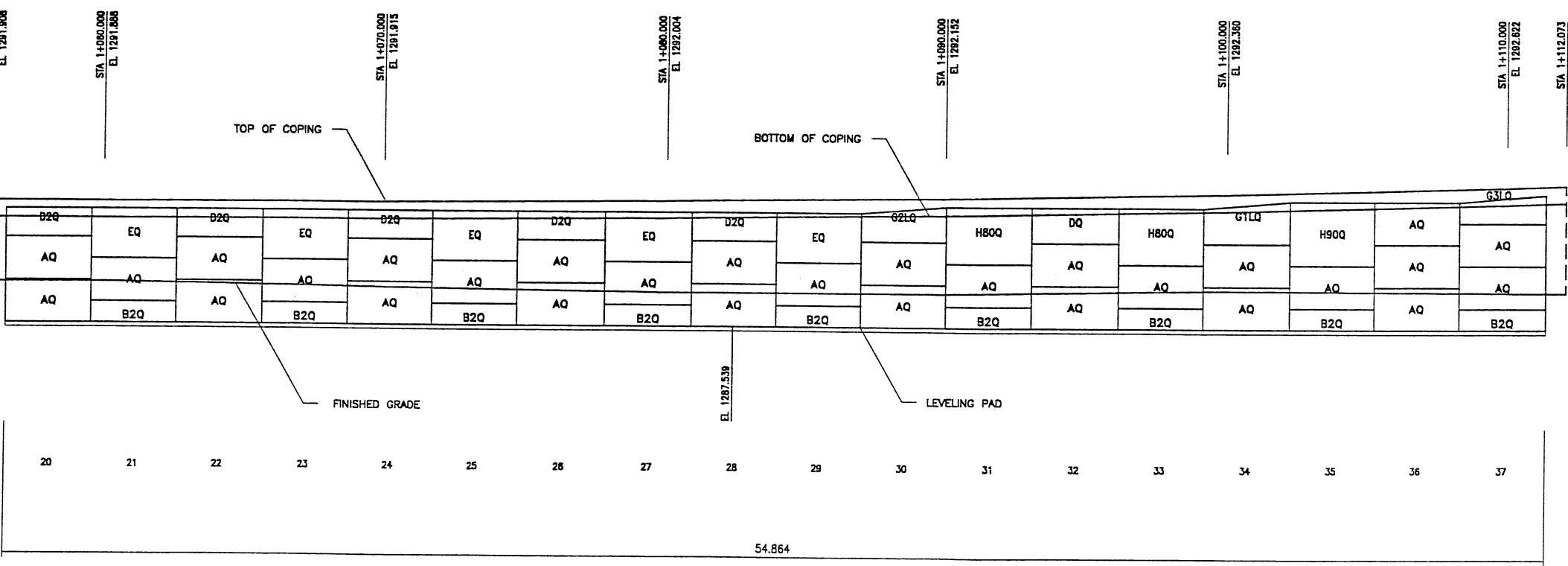
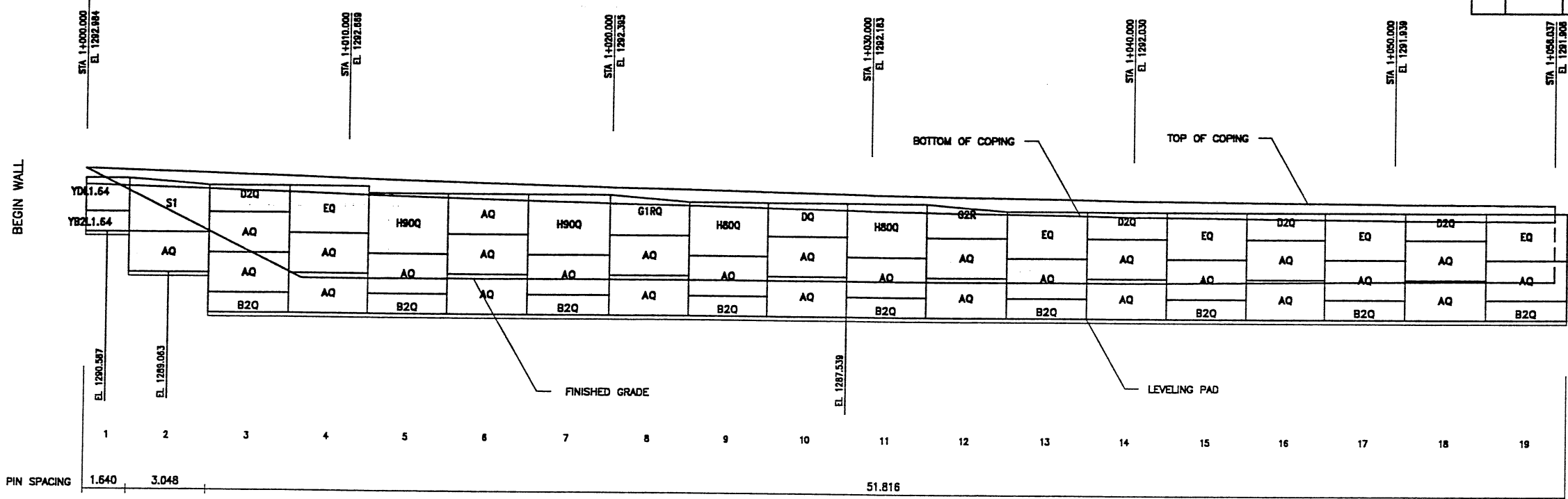
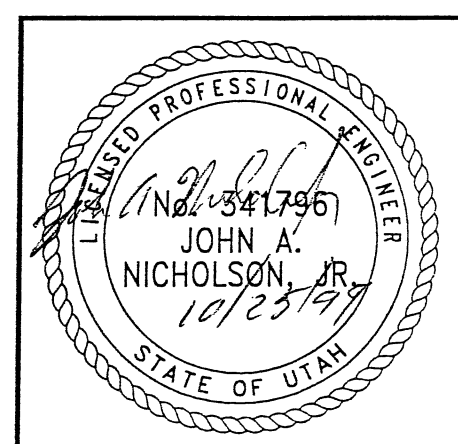
NOV 04 1999

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RETAINED EARTH™ WALLS
WALL "R-351-9" - 2ND STAGE: PRECAST WALL
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-9.10
JOB NO.	239-0007
SHT. NO.	RE-7



RETAINING WALL "R-351-9" - 2ND STAGE: PRECAST WALL

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF FACING = 1202.16 SM)

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

METRIC

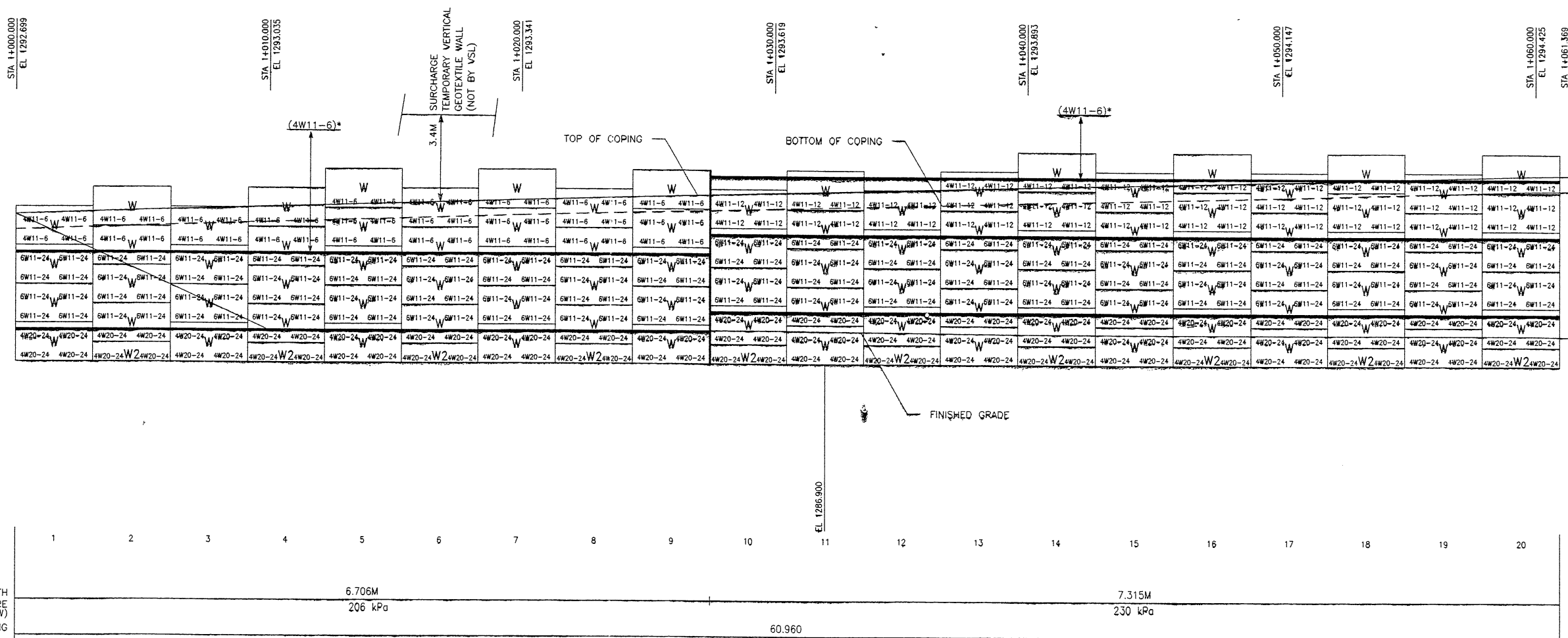
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

RFC After Final Approval

H:\RE_EARTH\PROJECT\239-0007\1997\65-WALLS\JBM1L-4\W65-09 FINAL PLC - 18-98

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	02-18-98	RELEASE FOR 1ST STAGE CONST. ONLY

BEGIN WIRE FACED WALL R-351-9B
 WIRE FACED WALL 1+000.000B =
 RAMP WW STA 1+389.470
 © 7.032 RT

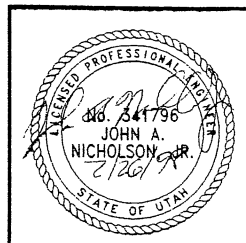


RETAINING WALL "R-351-9B" - 1ST STAGE: WIRE FACED WALL
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF FACING = 897.22 SM) SCALE 1:200 (HALF SIZE)

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
 MESH TO BE USED ON ADDITIONAL
 WIRE WALL FACING ADDED AFTER
 SETTLEMENT.

WASATCH CONSTRUCTORS
 MAR 02 1998
 RELEASED FOR CONSTRUCTION
 METRIC



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VSL CORPORATION
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 Raleigh, NC 27612
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 Fax: (919) 781-4969

RETAINED EARTH™

DES: 11-04-97 MM
 DRN: 11-04-97 DDO
 CHK: 11-04-97 MM

NO. DATE
 NO. DATE

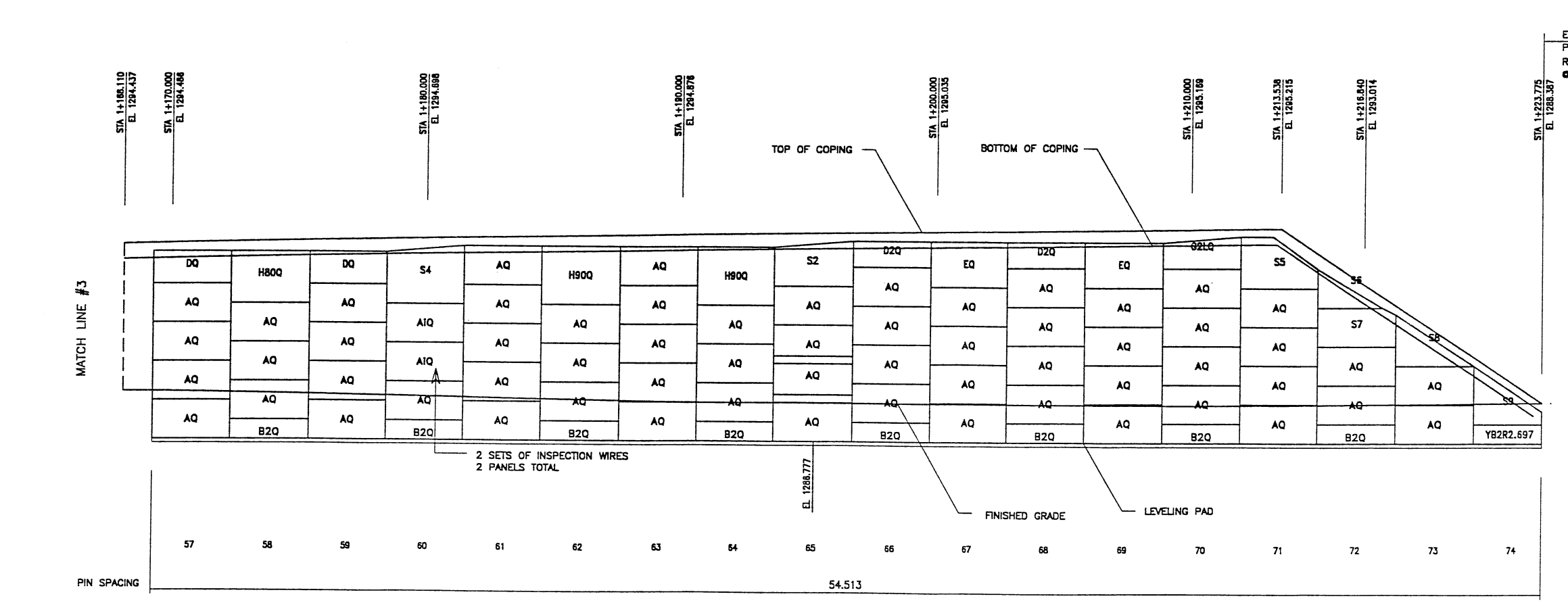
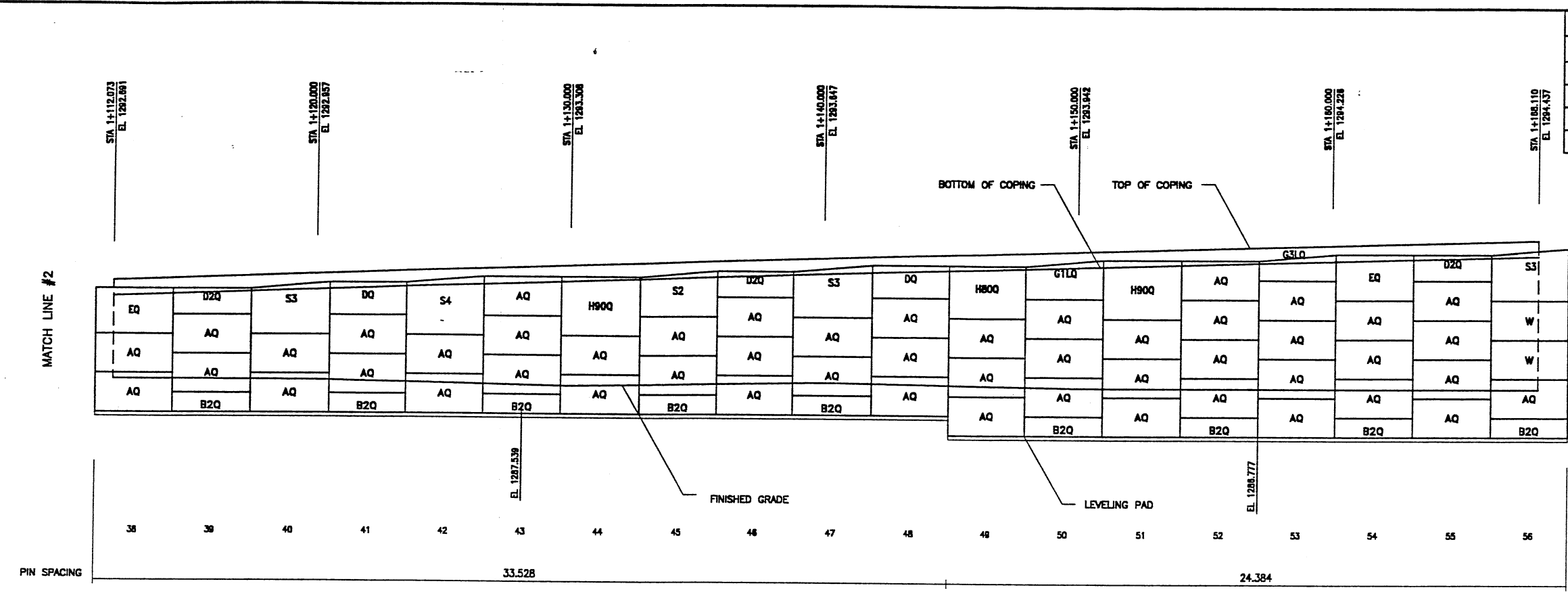
REFVISION

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RETAINED EARTH™ WALLS
 WALL "R-351-9B" - 1ST STAGE: WIRE FACED WALL
 UTAH 1-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE:
 3.2R-351-9.10
 JOB NO:
 239-0007
 RE-7

10 of 11



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	10-12-99	RELEASE FOR 2ND STAGE CONSTRUCTION

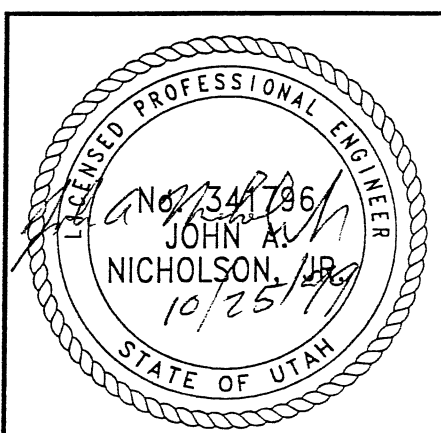
DES.	DRN.	CHK.	NO.	DATE	REVISION	BY

END PRECAST WALL R-351-9
 PRECAST WALL STA 1+223.775 =
 RAMP NW STA 1+462.586
 @ 15.689 RT

WASATCH CONSTRUCTORS
 NOV 04 1999
 RELEASED FOR CONSTRUCTION

RETAINING WALL "R-351-9" - 2ND STAGE: PRECAST WALL
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF FACING = 1202.16 SM)

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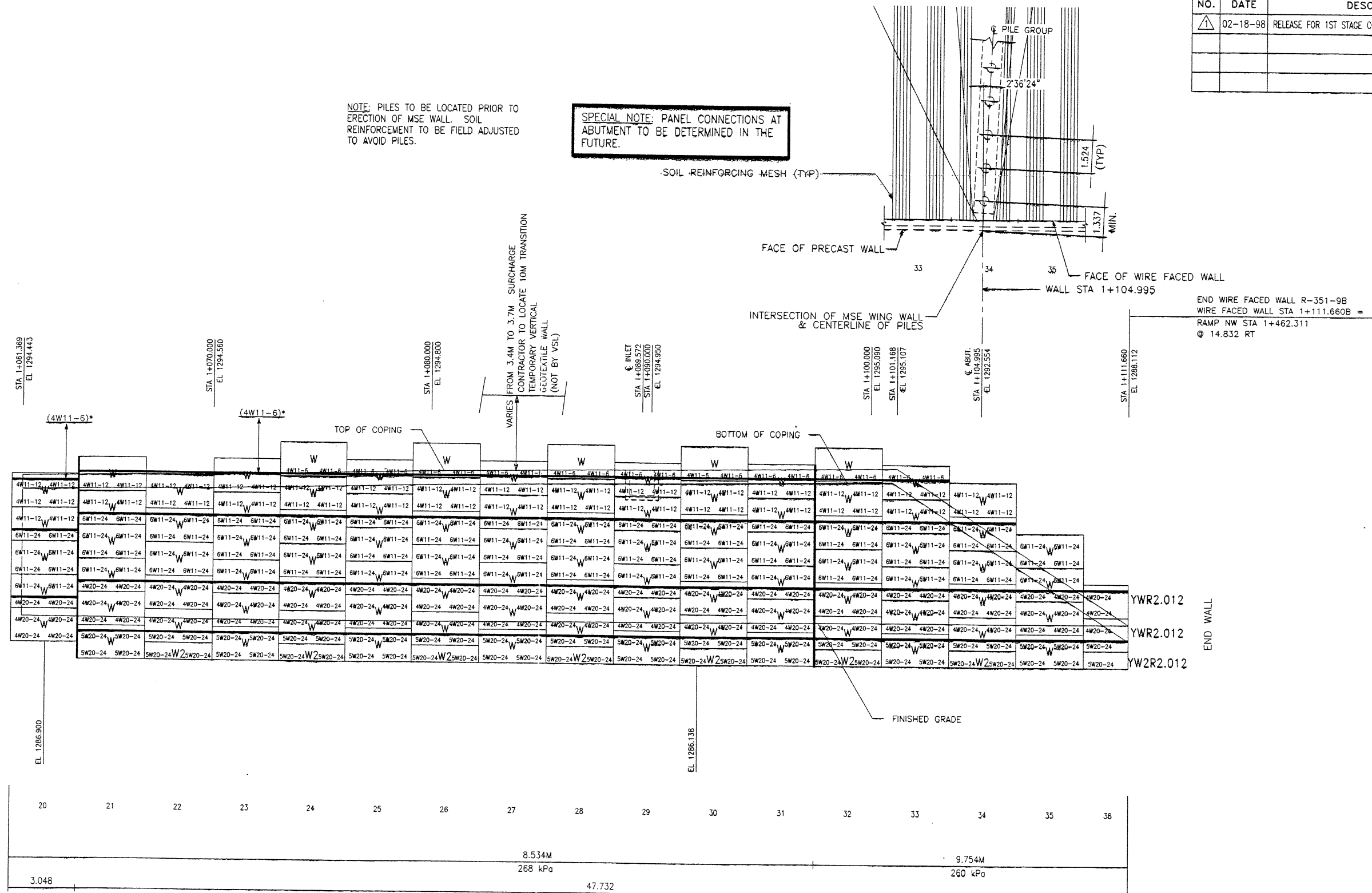
RETAINED EARTH™ WALLS WALL "R-351-9" - 2ND STAGE: PRECAST WALL
UTAH I-15 INTERCHANGE SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.
DWG. NO. 3.2R-351-9.11
JOB NO. 239-0007
SHT. NO. RE-8

RFC After Final Approval

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	02-18-98	RELEASE FOR 1ST STAGE CONST. ONLY

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

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



MATCH LINE #1

END WALL

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

20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
8.534M										9.754M						
3.048										260 kPa						
47.732																

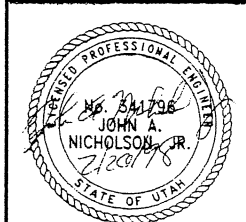
RETAINING WALL "R-351-9B" - 1ST STAGE: WIRE FACED WALL

(FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
(TOTAL SURFACE AREA OF FACING = 897.22 SM) SCALE 1:200 (HALF SIZE)

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 MESH TO BE USED ON ADDITIONAL WIRE WALL FACING ADDED AFTER SETTLEMENT.

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VSL CORPORATION
2800 Plaza Place, Suite 200
Raleigh, NC 27612
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Fax: (919) 781-6965

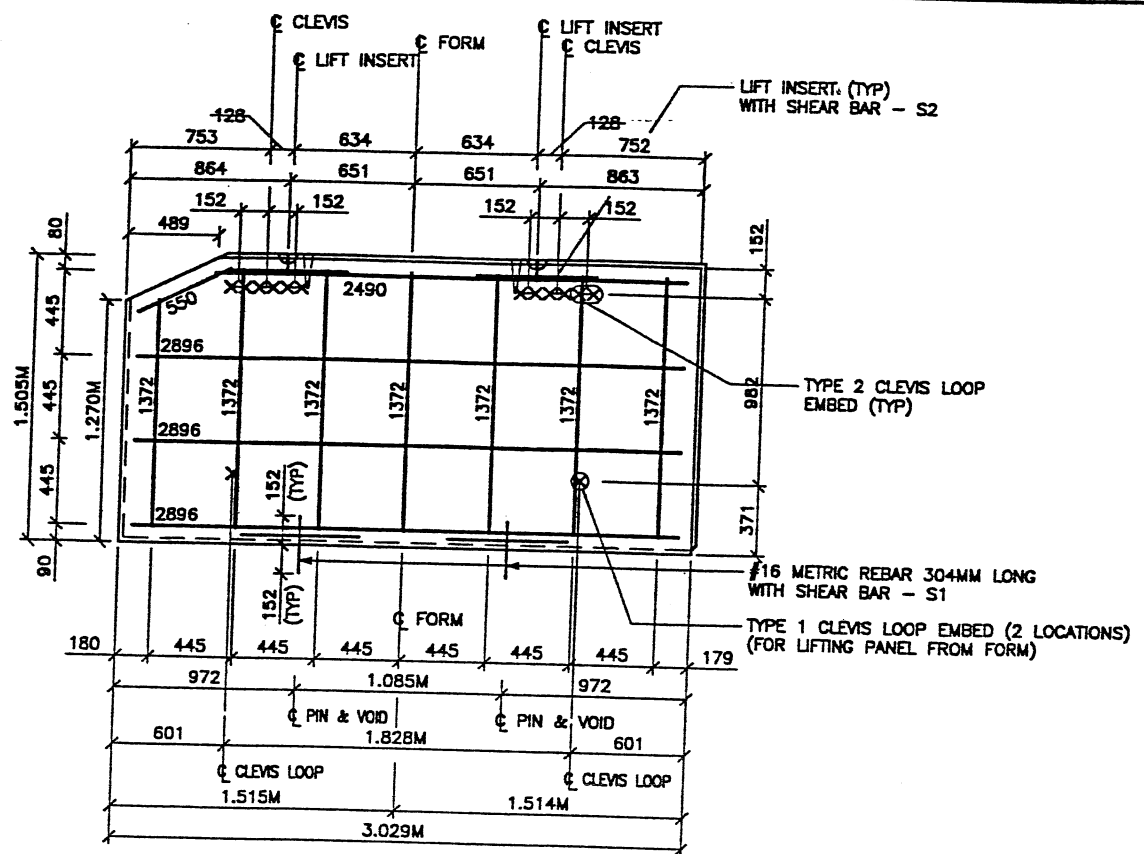


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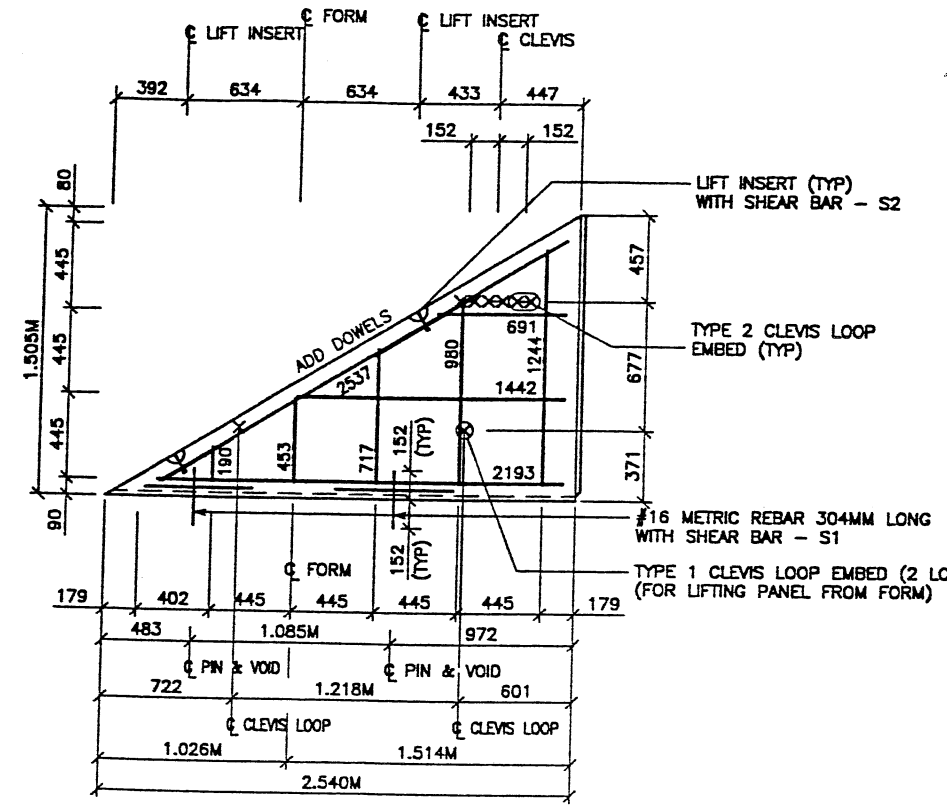
RETAINED EARTH™ WALLS
WALL "R-351-9B" - 1ST STAGE: WIRE FACED WALL
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE:	3.2R-351-9.1
JOB NO.:	239-0007
RE-8	

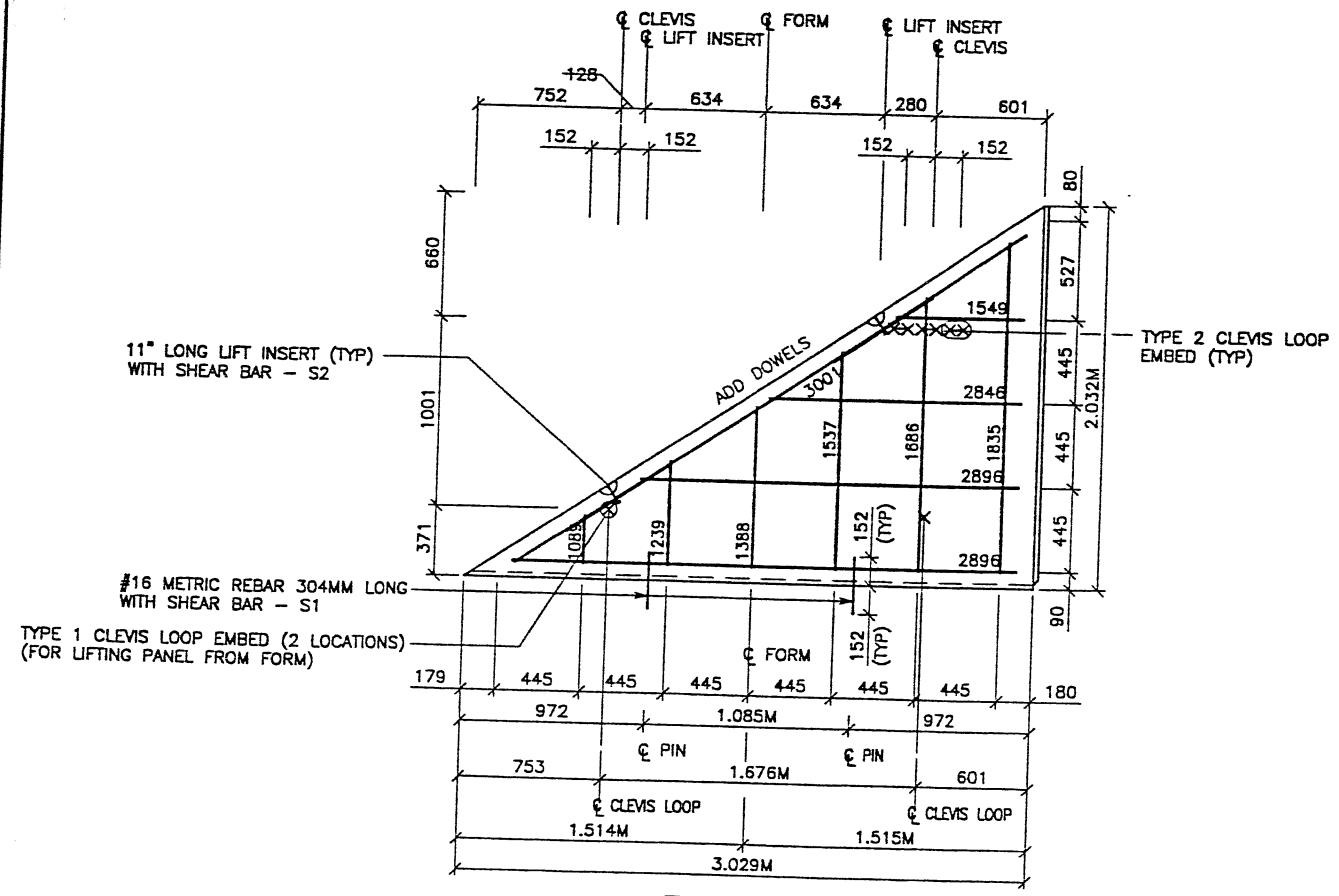
REFERENCE (X-UTAH.DWG)



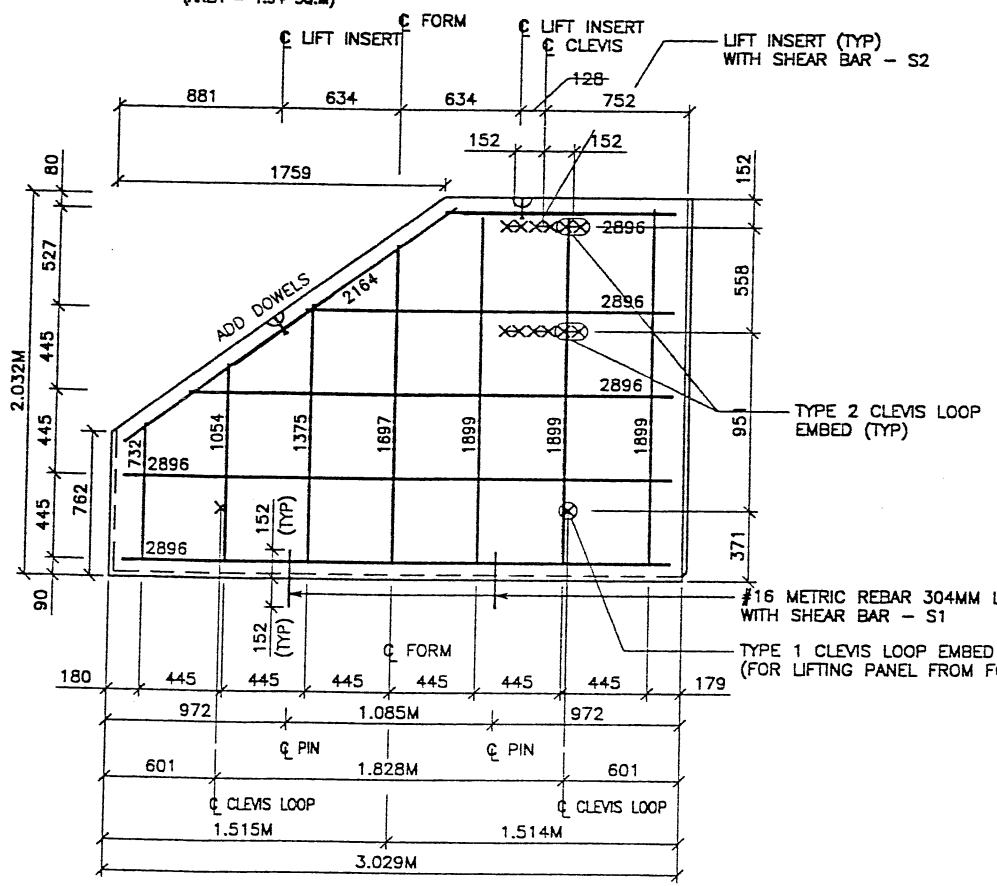
TYPE S7 REBAR
(AREA = 4.58 SQ.M)



TYPE S6 REBAR
(AREA = 1.94 SQ.M)



TYPE S8 REBAR
(AREA = 3.10 SQ.M)

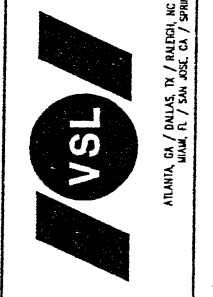


TYPE S5 REBAR
(AREA = 5.06 SQ.M)

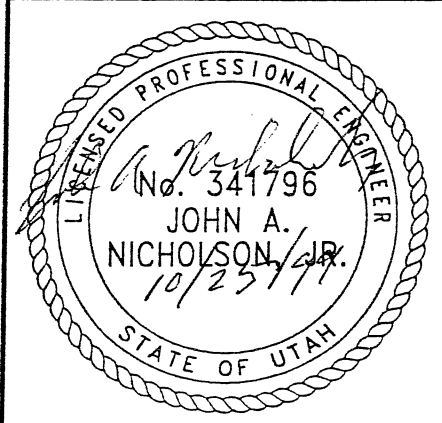
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-12-99	RELEASE FOR 2ND STAGE CONSTRUCTION

- 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 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 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6772
Fax: (919) 781-9869



WASATCH CONSTRUCTORS
NOV 04 1999
RELEASED FOR CONSTRUCTION



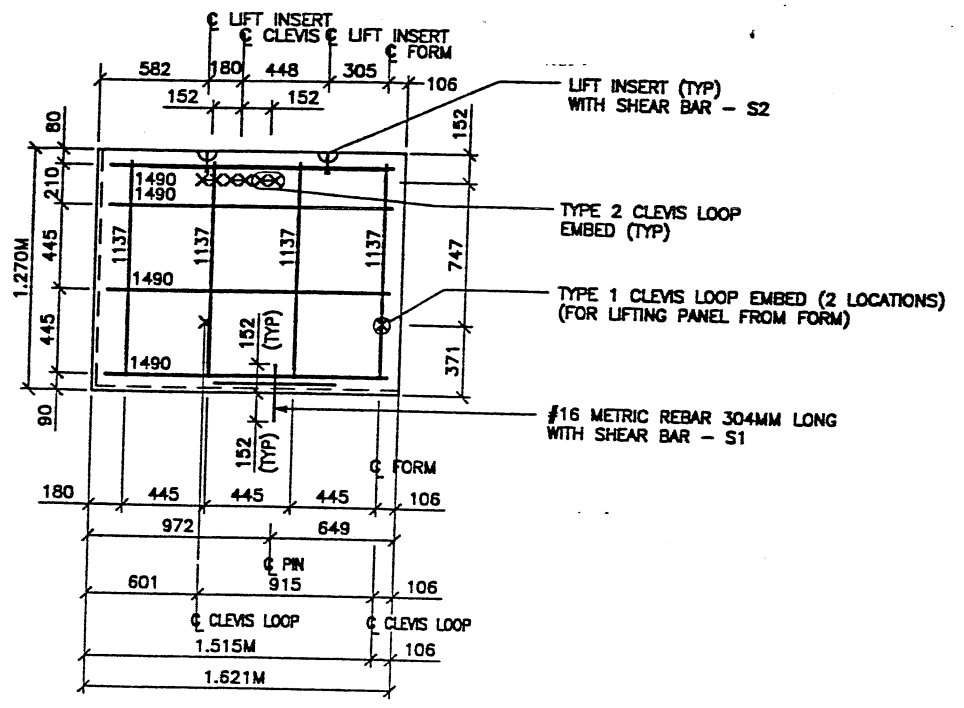
RETAINED EARTH™ WALLS
WALL "R-351-9"
2-STAGE PANEL REINFORCEMENT
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.
3,2R-351-9.12
JOB NO:
239-0007
SHEET NO.
RE-9

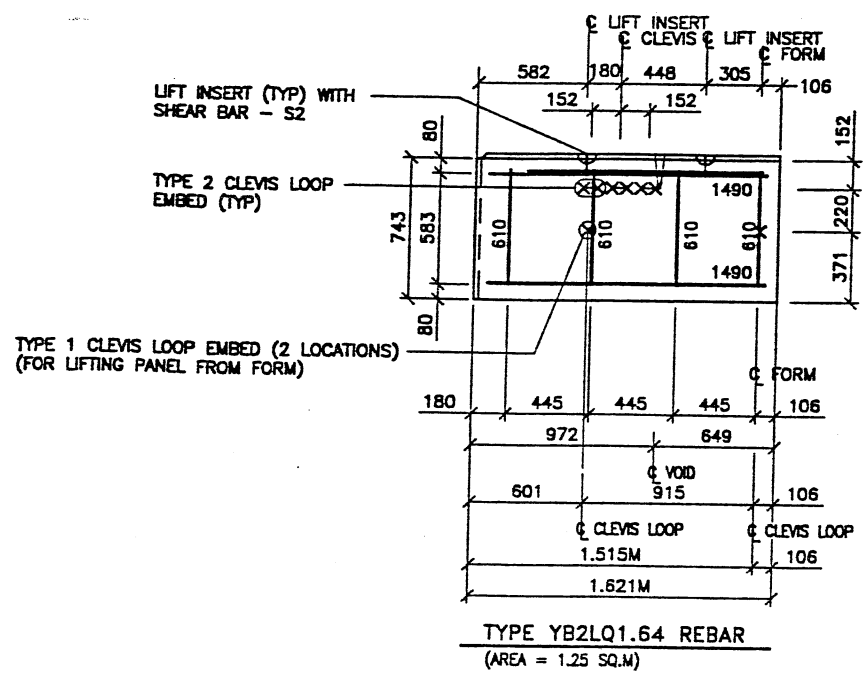
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

RFC After Final Approval

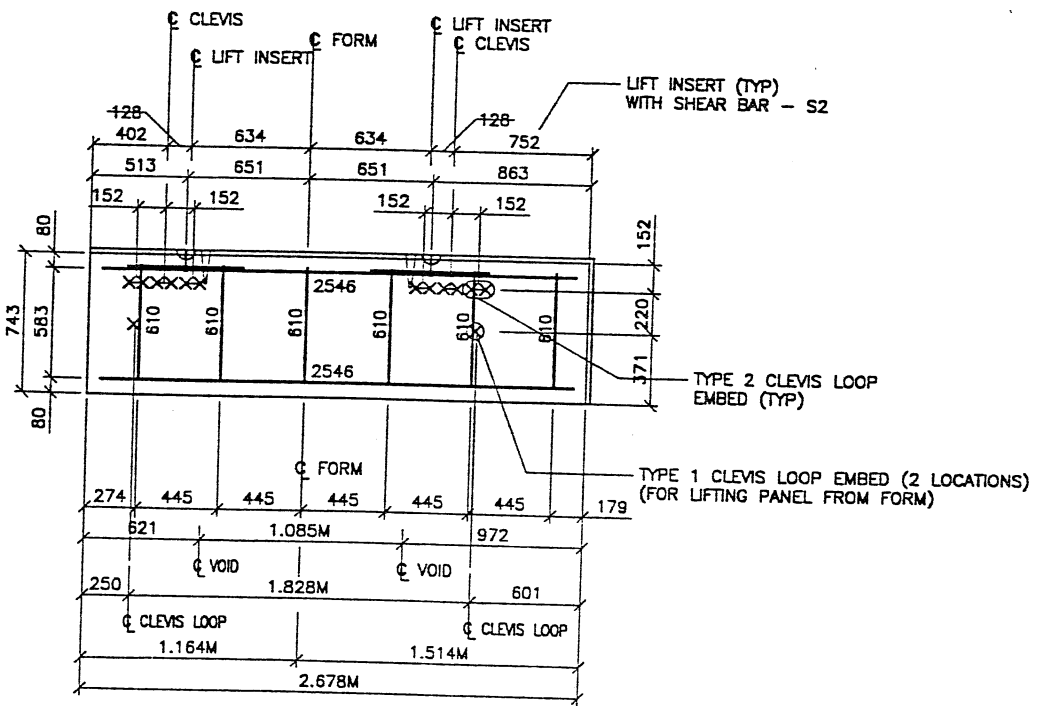
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	10-12-99	RELEASE FOR 2ND STAGE CONSTRUCTION



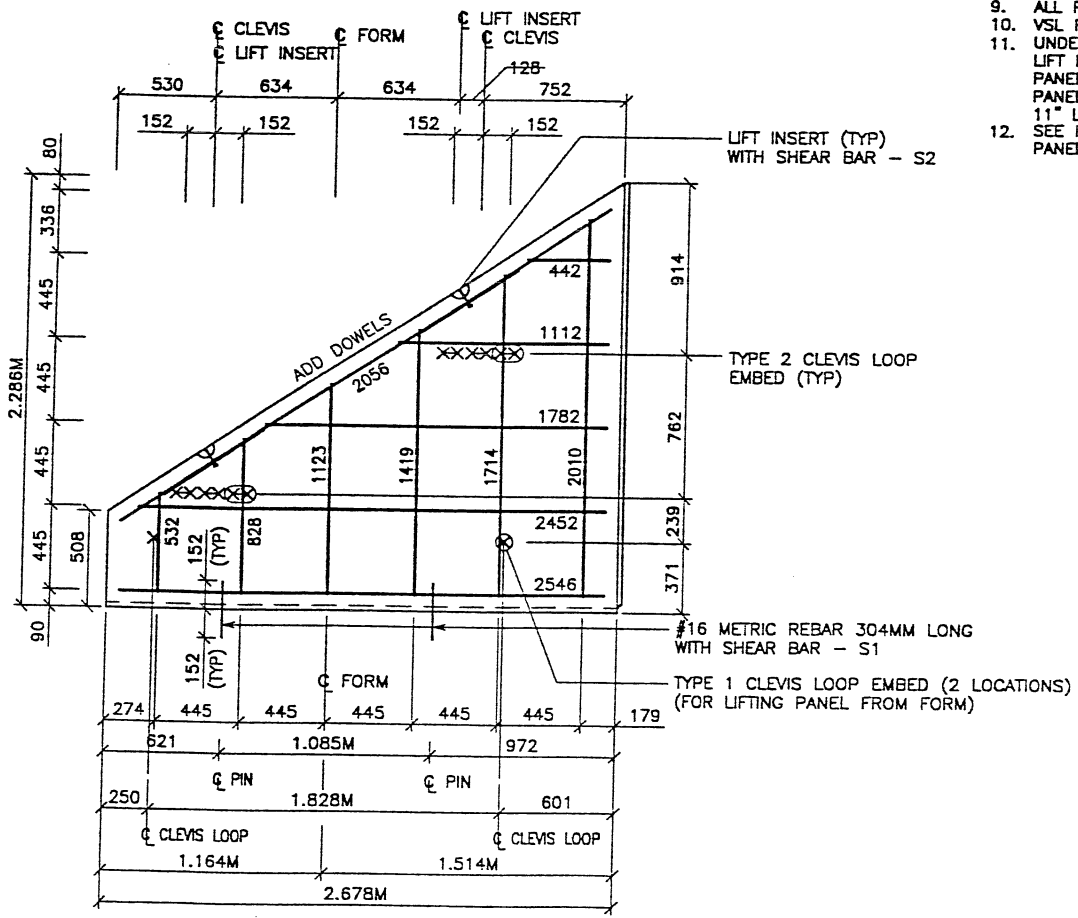
TYPE YDLQ1.64 REBAR
(AREA = 2.08 SQ.M)



TYPE YB2LQ1.64 REBAR
(AREA = 1.25 SQ.M)



TYPE YB2RQ2.697 REBAR
(AREA = 2.05 SQ.M)

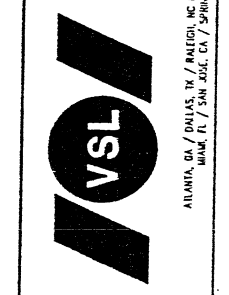


TYPE S9 REBAR
(AREA = 3.77 SQ.M)

- 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.
 5. PANEL REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT CONFORMING TO THE SPECIFICATIONS OF ASTM DESIGNATION A615, GRADE 60.
 6. ALL REINFORCING STEEL TO BE GALVANIZED IN ACCORDANCE WITH ASTM 767 CLASS I.
 7. CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 25,200 KPa.
 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.

NO.	DATE	DESCRIPTION

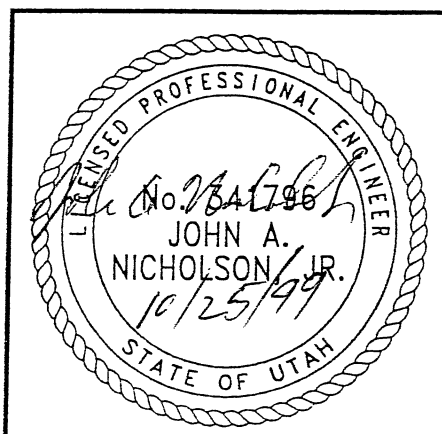
VSL CORPORATION
2810 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-8272
Fax: (919) 781-6969



WASATCH CONSTRUCTORS

NOV 04 1999

RELEASED FOR CONSTRUCTION



RETAINED EARTH™ WALLS
WALL "R-351-9"
2-STAGE PANEL REINFORCEMENT
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

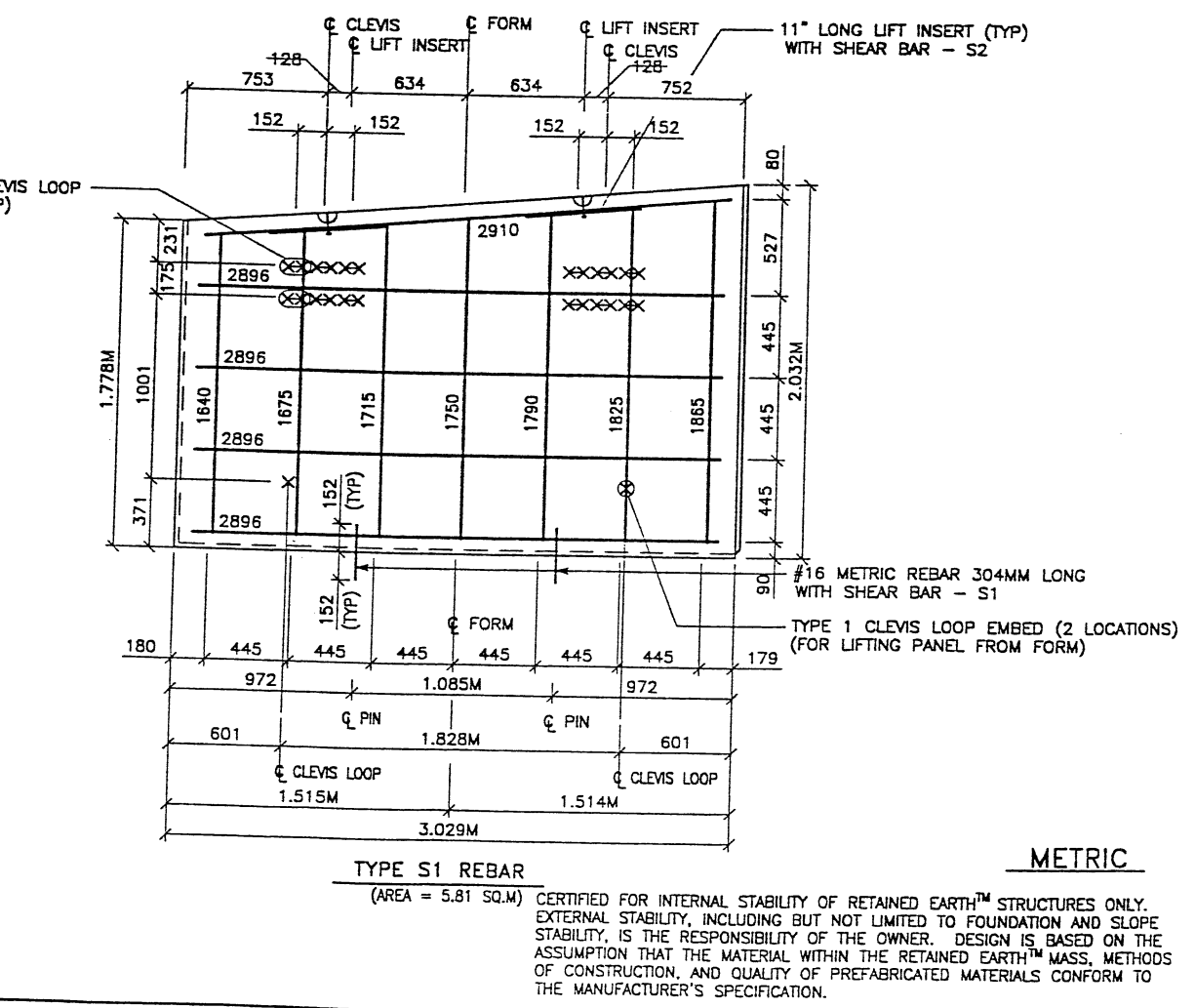
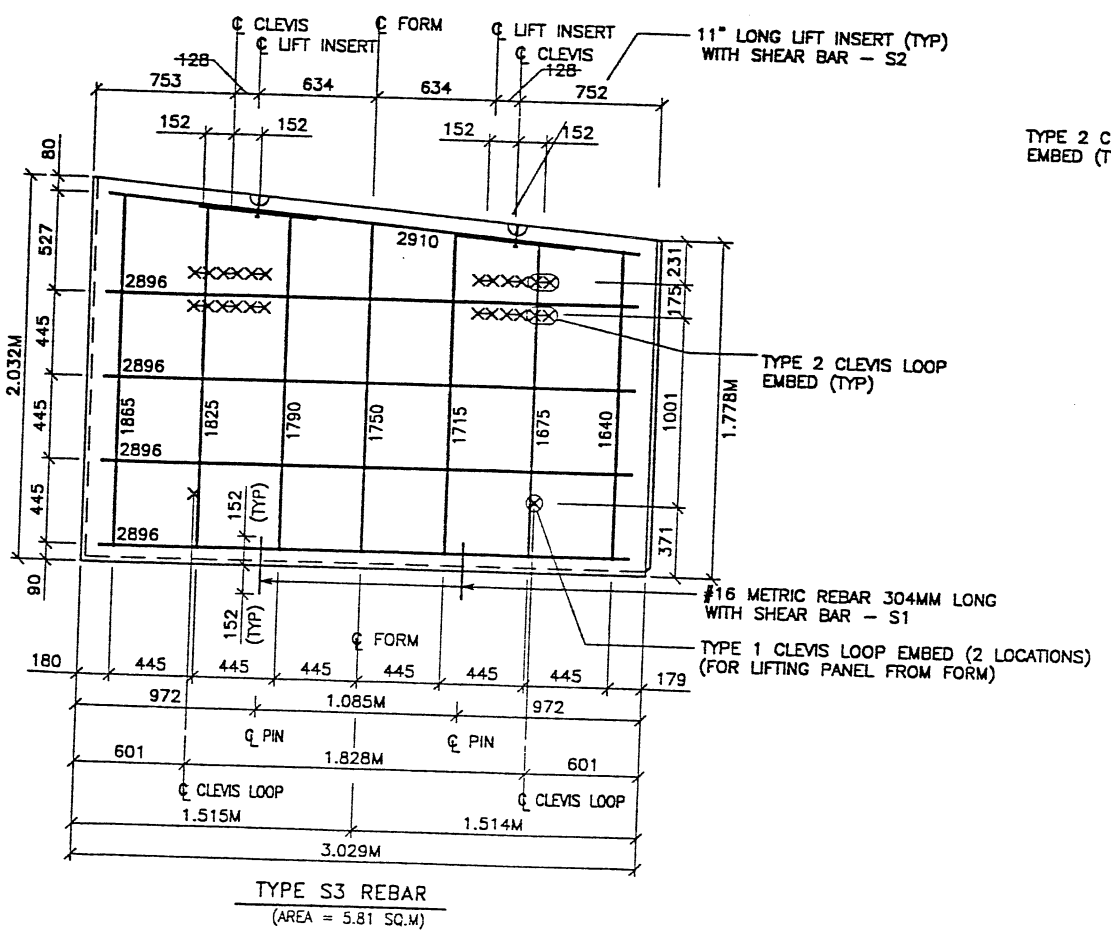
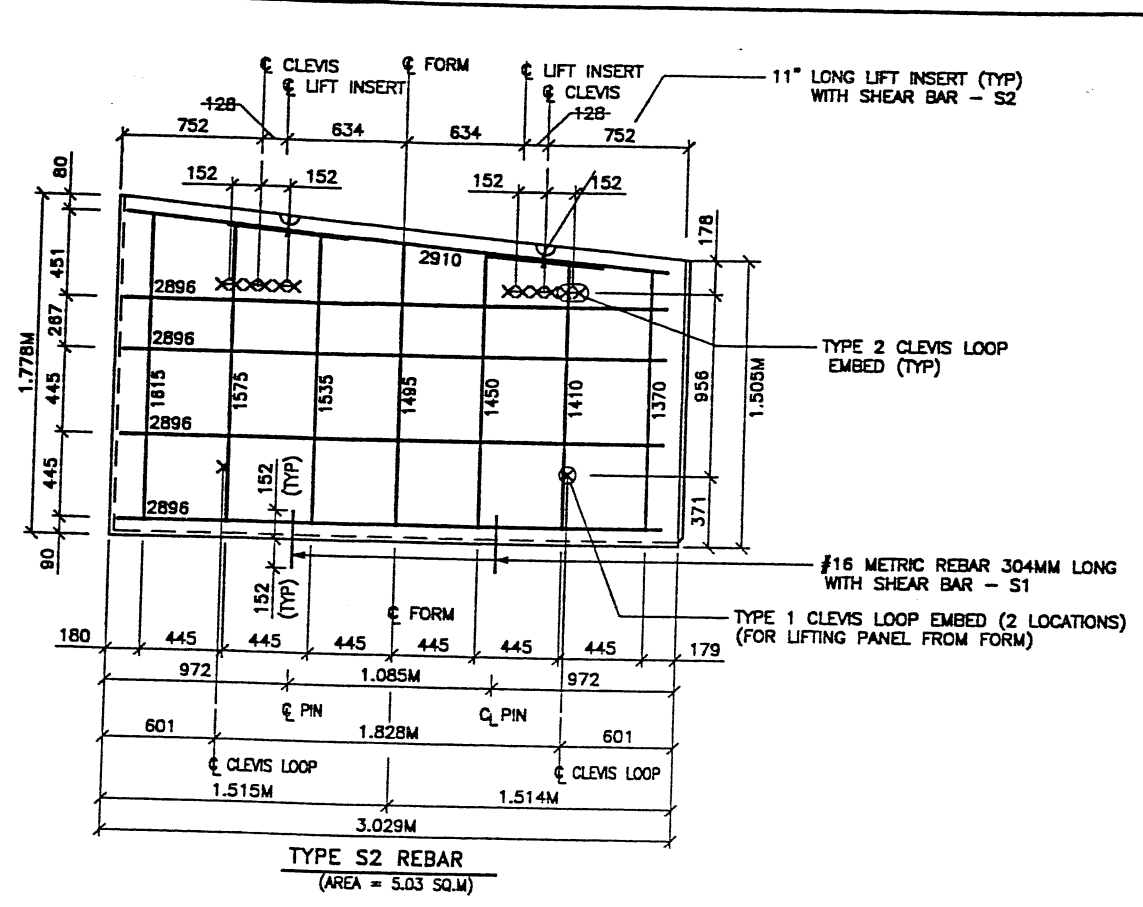
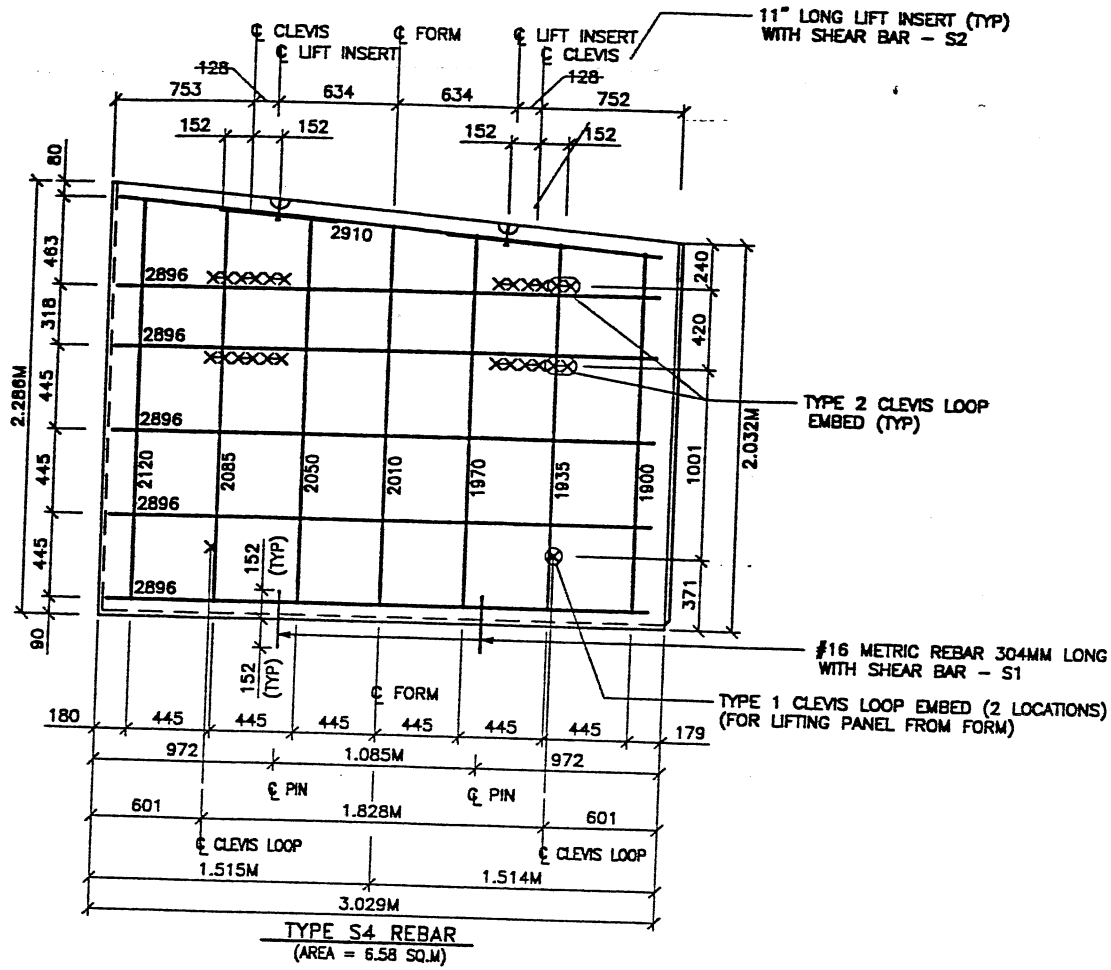
DWG. NO.	3.2R-351-9.13
JOB NO.	239-0007
SHEET NO.	RE-10

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METRIC

RFC After Final Approval

REFERENCE (X-UTAH.DWG)



APPROVED FOR CONSTRUCTION			
NO.	DATE	DESCRIPTION	CHK
1	10-12-99	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.
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 - SEE FOSTER GEOTECHNICAL STD. PLANS FOR ADD'L PANEL DETAILS

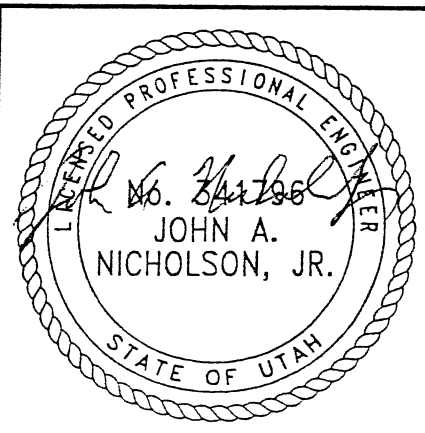
DES.	DRN.	CHK.	DATE	NO.	REVISION
10-12-99	10-12-99	10-12-99			

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-8272
Fac: (919) 781-8869

ATLANTA, GA / DALLAS, TX / MEMPHIS, TN / PHOENIX, AZ / RICHMOND, VA
MINNEAPOLIS, MN / SAN JOSE, CA / SPRINGFIELD, IL

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WASATCH CONSTRUCTORS
NOV 04 1999
RELEASED FOR CONSTRUCTION



RETAINED EARTH™ WALLS
WALL "R-351-9"
2-STAGE PANEL REINFORCEMENT
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2R-351-9.14
JOB NO.	239-0007
SHT. NO.	RE-11

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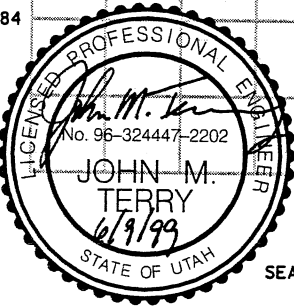
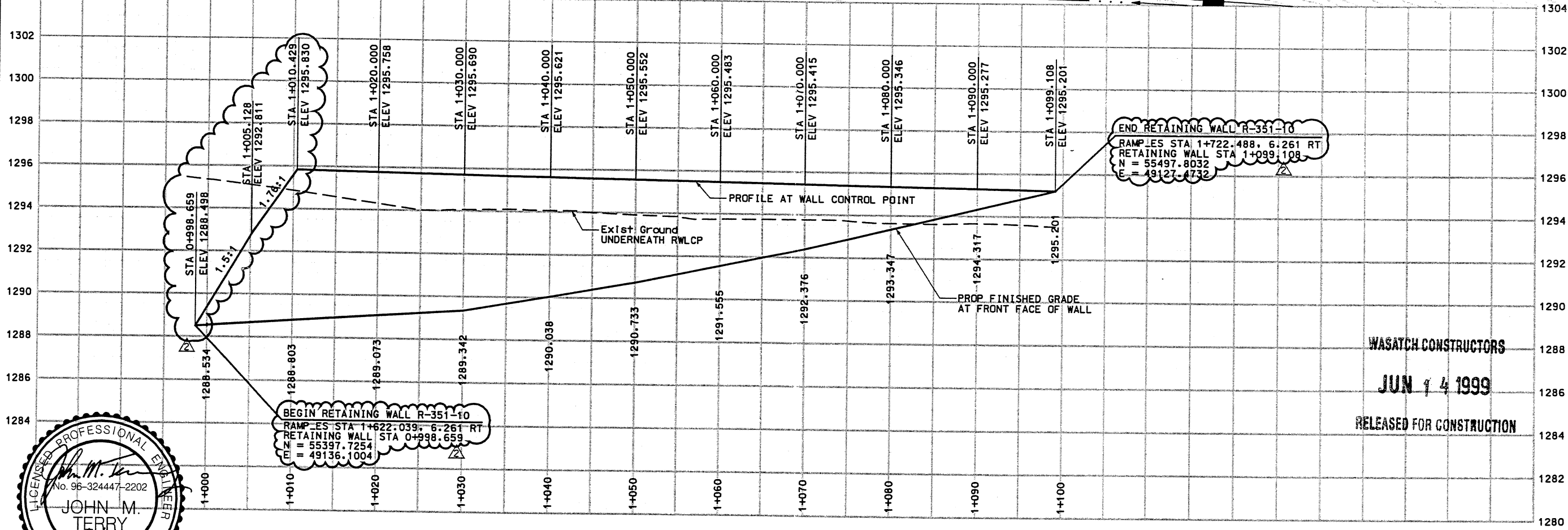
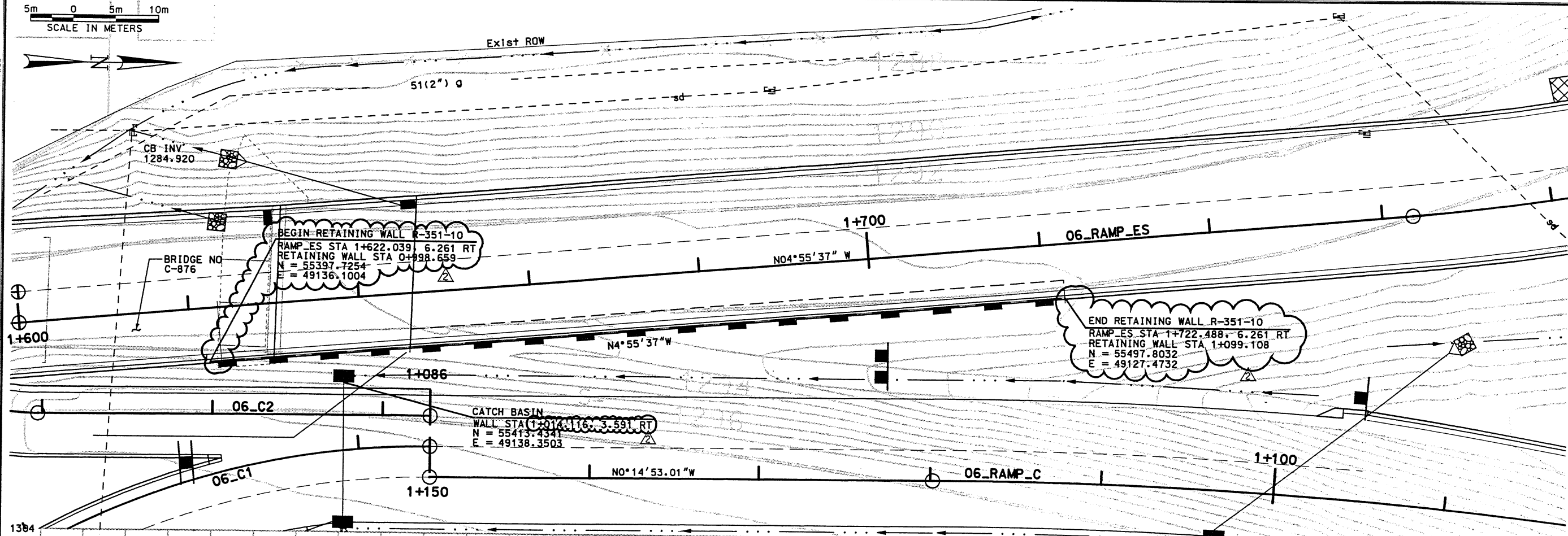
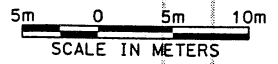
METRIC

RFC After Final Approval

FINAL PLOT 10-12-99

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Date: 09-JUN-1999 Time: 10:59 User: rmm:wall

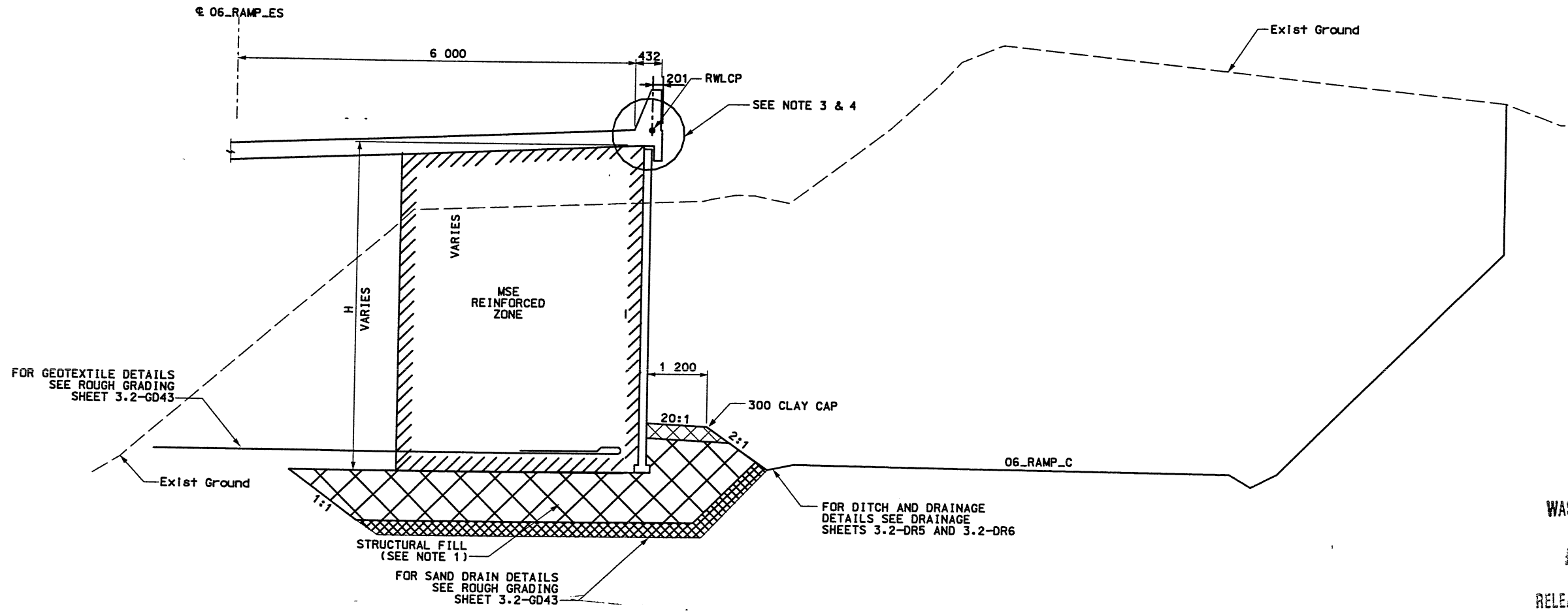


SEALED FOR THE NO. OF SUBMITTAL ONLY.

WALL R-351-10
FRONT FACE OF WALL

WASATCH CONSTRUCTORS
JUN 14 1999
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE		
1	06/18/98	RELEASE WALL FOR STAGE 1 CONSTRUCTION ONLY	
2	06/07/99	REVISED ALIGNMENT, NDC-0322	
UTAH DEPARTMENT OF TRANSPORTATION		SVERDRUP/DE LEUW	
I-15 CORRIDOR RECONSTRUCTION		SITUATION & LAYOUT	
SECTION 3.2		PROJECT NO. #SP-15-7(135)296	
DESIGNER: MARVIN COOK		CHECKER: PC	
DATE: 06/18/98		DATE: 06/18/98	
PROJECT DESIGN ENGINEER		DRAWN: SVD	
APPROVED: 06/18/98		DATE: 06/18/98	
SECTION MANAGER: KEITH SABOL		QUANT.:	
		3213405	
SALT LAKE COUNTY		DWG. NO. 3.2-R351-10.1	
SHT. 1 OF 9			



FOR GEOTEXTILE DETAILS
SEE ROUGH GRADING
SHEET 3.2-GD43

STRUCTURAL FILL
(SEE NOTE 1)

FOR SAND DRAIN DETAILS
SEE ROUGH GRADING
SHEET 3.2-GD43

FOR DITCH AND DRAINAGE
DETAILS SEE DRAINAGE
SHEETS 3.2-DR5 AND 3.2-DR6

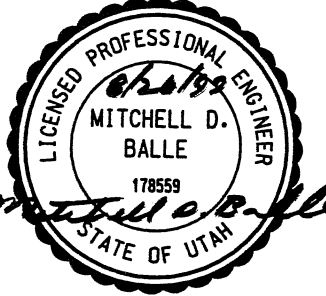
RETAINING WALL DETAILS
NTS

WALL R-351-10
1 STAGE MSE

NOTES:

- 1) OVEREXCAVATE EXISTING SOILS AS REQUIRED. REFILL EXCAVATION WITH STRUCTURAL FILL.
- 2) CONSTRUCT 300 mm CLAY CAP WITH LOW PLASTIC SILTY CLAY.
- 3) COPING DETAILS FOR STA 1+000.000 TO STA 1+022.313 SEE CORRIDOR STANDARD CS-54.
- 4) COPING DETAILS FOR STA 1+022.313 TO STA 1+099.108 SEE CORRIDOR STANDARD CS-28-1.

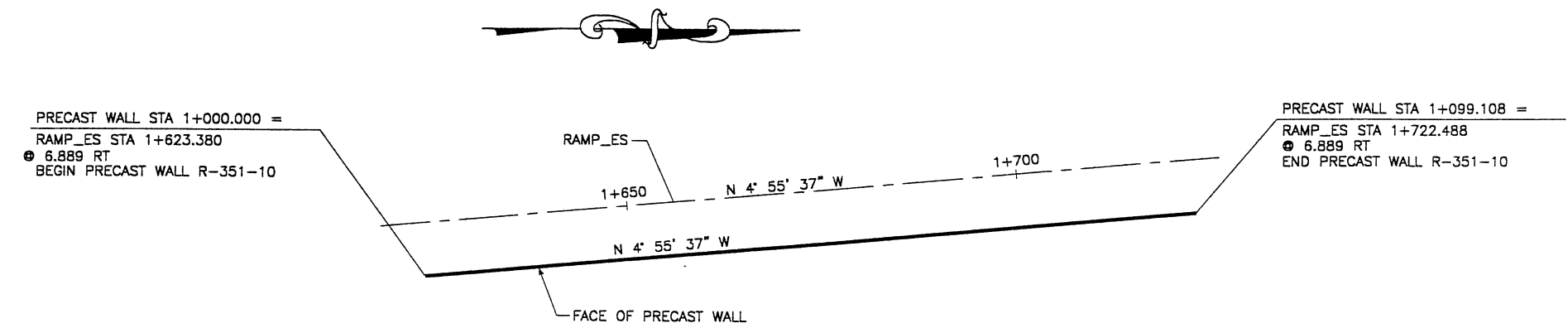
WASATCH CONSTRUCTORS
AUG 31 1999
RELEASED FOR CONSTRUCTION



SEALED FOR REV 3 ONLY.

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	INITIAL	RELEASE
▲	05/21/99		
▲	06/07/99		REVISED SECTION: NDC-0322
▲	08/13/99		FINAL SUBMITTAL COMMENTS
UTAH DEPARTMENT OF TRANSPORTATION		SVERDRUP/DE LEUW	
DESIGN: DP		CHECK: PLC	PLC
DRAWN: SVD		CHECK: PLC	PLC
QUANT.		3213405	
APPROVAL: MARVIN COOK		PROJECT DESIGN ENGINEER	
DATE: 06/18/99		DATE: 06/18/99	
APPROVED: KEITH SABOL		SECTION MANAGER	
DATE: 06/18/99		DATE: 06/18/99	
I-15 CORRIDOR RECONSTRUCTION		TYPICAL SECTION	
SECTION 3-2		PROJECT NUMBER: *SP-15-7(135)296	
SALT LAKE COUNTY		DWG. NO. 3.2-R351-10.2	
SHT. 2		OF 9	

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	06-15-98	RELEASE FOR CONSTRUCTION



PLAN VIEW WALL "R-351-10"

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

GENERAL NOTES

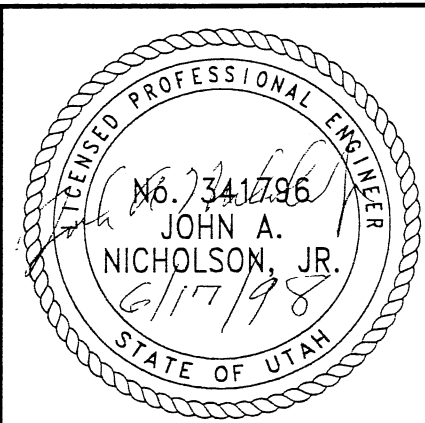
- ALL WALLS ARE SHOWN FRONT FACE. NOTE STATIONING.
- PANEL TYPE IS DESIGNATED ON EACH PANEL. CONNECTOR LABELS INDICATE NUMBER OF CONNECTORS PER ROW.
EXAMPLE: 5B2-10 IS A "B2-10" PANEL WITH FIVE (5) CONNECTORS PER ROW. IF NO CONNECTORS ARE SHOWN, FOUR (4) CONNECTOR PANELS SHALL BE USED.
- SOIL REINFORCING MESH TYPE IS DESIGNATED ON EACH PANEL. MESH LABELS INDICATE WIRE SIZE AND SPACING. LONGITUDINAL WIRE AND CROSSBAR SIZES ARE THE SAME UNLESS NOTED OTHERWISE:
EXAMPLE: 4W11-6 MESH HAS FOUR (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 6" CENTERS.
EXAMPLE: 5W11-6 MESH HAS FIVE (5) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 6" CENTERS.
EXAMPLE: 5W11-12 MESH HAS FIVE (5) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 12" CENTERS.
EXAMPLE: 6W11-12 MESH HAS SIX (6) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 12" CENTERS.
EXAMPLE: 4W20-24 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 24" CENTERS.
- SEE RETAINED EARTH INSTALLATION MANUAL FOR PROPER WALL ERECTION PROCEDURES AND GUIDELINES.
- CONSTRUCTION PROCEDURES SHALL PREVENT BACKFILL SATURATION AND PONDING.
- HEAVY EQUIPMENT SHALL NOT BE USED WITHIN ONE METER OF THE BACK OF THE RETAINED EARTH PANELS. HAND COMPACTORS SHALL BE USED IN THIS AREA.
- CARE SHALL BE TAKEN TO PREVENT DAMAGE TO GALVANIZING. DAMAGED GALVANIZING SHALL BE COATED WITH ZINC RICH PAINT.
- BEARING PADS AND FILTER FABRIC ARE NOT REQUIRED BETWEEN THE LEVELING PAD AND THE FIRST ROW OF PANELS. TEMPORARY WEDGES MAY BE USED TO PROVIDE PROPER ALIGNMENT.
- VSL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,170.
- ALL PANELS SHALL HAVE AN ARCHITECTURAL FINISH, SEE VSL STANDARD SHEET STD-7 FOR DETAIL.

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 = 21.20 KN/M ³
TRAFFIC SURCHARGE =	250 PSF = 12 KP _a
SEISMIC ACCELERATION COFF. =	0.27g (10% IN 50 YEARS)
SEISMIC ACCELERATION COFF. =	0.68g (AT BRIDGE ABUTMENTS 10% IN 250 YEARS)
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 PRECAST FACE WALL R-351-10, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTIONS
RE-3	TYPICAL CROSS SECTIONS
RE-4	ELEVATION PRECAST WALL "R-351-10"
RE-5	ELEVATION PRECAST WALL "R-351-10"
RE-6	SPECIAL PANEL DETAILS
RE-7	SPECIAL PANEL DETAILS

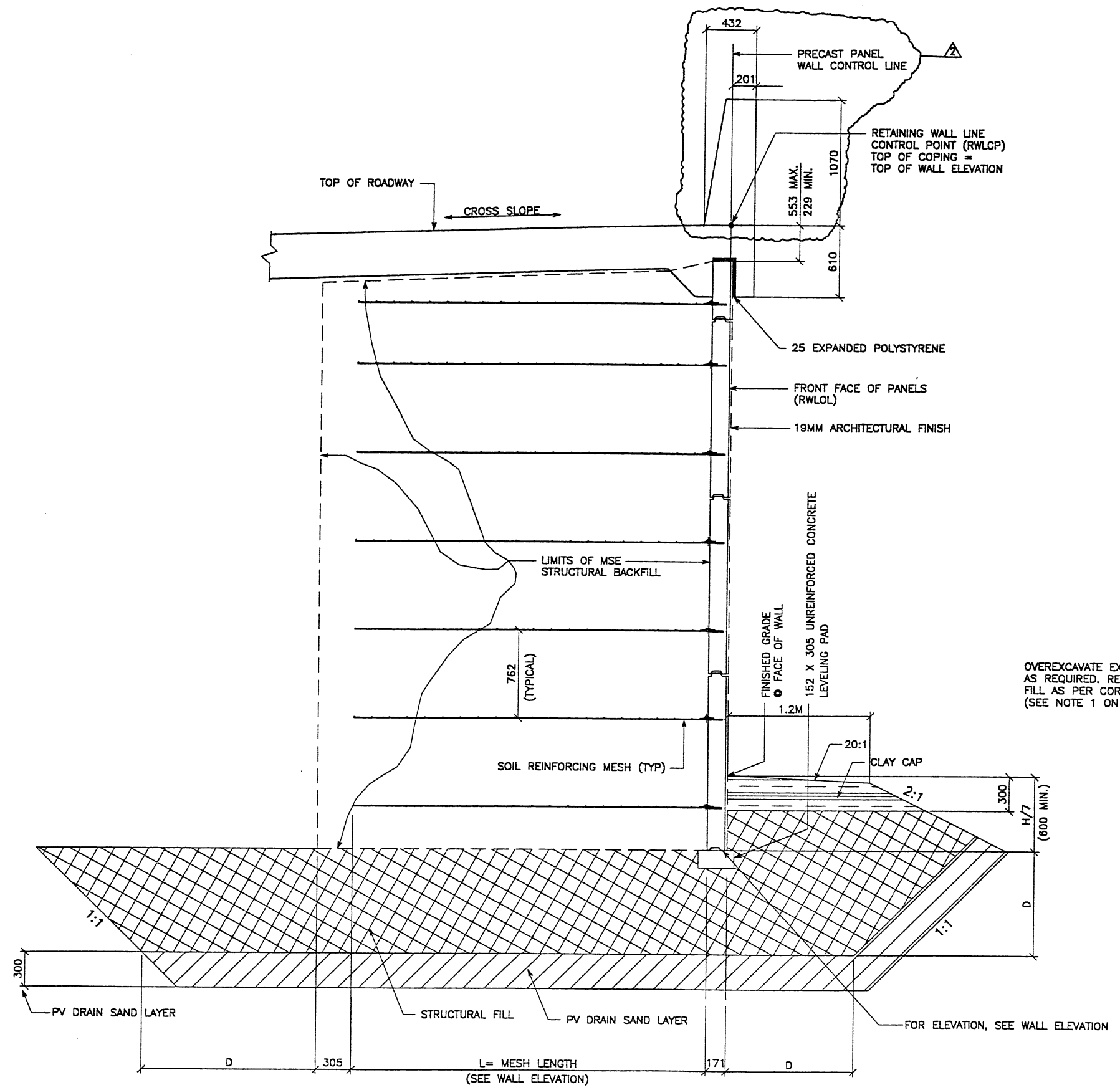
METRIC

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WASATCH CONSTRUCTORS
JUN 24 1998
 RELEASED FOR CONSTRUCTION

 VSL CORPORATION 2840 Pharo Drive, Suite 200 Raleigh, NC 27612 (919) 881 8772 Telephone: (919) 881 8772 Fax: (919) 881 4989	
DLS. 04-22-98 DRN 04-22-98 CHK. 04-22-98	MM JHU MM
RETAINED EARTH™ PLAN VIEW PRECAST WALL "R-351-10" UTAH I-15 RECONSTRUCTION SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.	
DWG. NO. 3.2-R-351-10.3 JOB NO. 239-0007 SHT. NO. RE-1	
NO. DATE REVISION BY CHK	



TYPICAL CROSS SECTION STA 1+006.822 TO STA 1+099.108
 (SEE DWG NO. 3.2-R-351-10.2 FOR ADDITIONAL INFORMATION)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

OVEREXCAVATE EXISTING SOILS TO DEPTH "D"
 AS REQUIRED. REFILL EXCAVATION WITH STRUCTURAL
 FILL AS PER CORRIDOR STANDARD SPECIFICATION 220.2.
 (SEE NOTE 1 ON 3.2-R351-10.2)

METRIC

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

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	06-15-98	RELEASE FOR CONSTRUCTION
△	07-16-99	MODIFIED TYPICAL SECTION

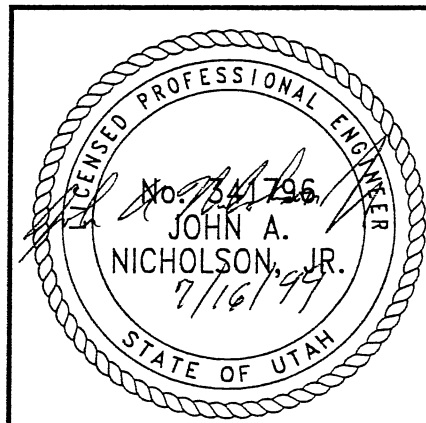
DES.	MM	MM	MM	REVISION
04-22-98	04-22-98	04-22-98	04-22-98	
DRN.				
CHK.				

VSL CORPORATION
 2940 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-8272
 Fax: (919) 781-4869

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

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RETAINED EARTH™ WALLS
 PRECAST WALL "R-351-10"
 TYPICAL CROSS SECTION
 UTAH I-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

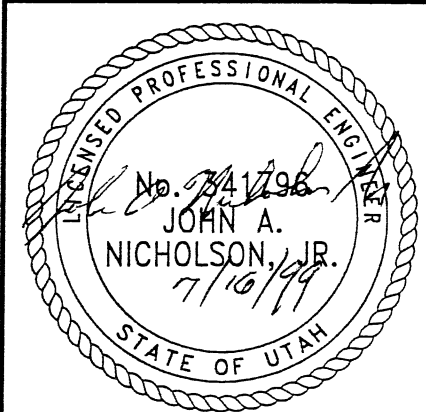


DWG. NO.	3.2-R-351-10.4
JOB NO.	239-0007
SHT. NO.	RE-2

THIS SHEET NO LONGER NEEDED

METRIC

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RETAINED EARTH™ WALLS
 PRECAST WALL "R-351-10"
 UTAH I-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.
 3.2-R-351-10.5
 JOB NO.
 239-0007
 SHEET NO.
 RE-3

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 Employees (919) 781-6272
 Fax (919) 781-6969

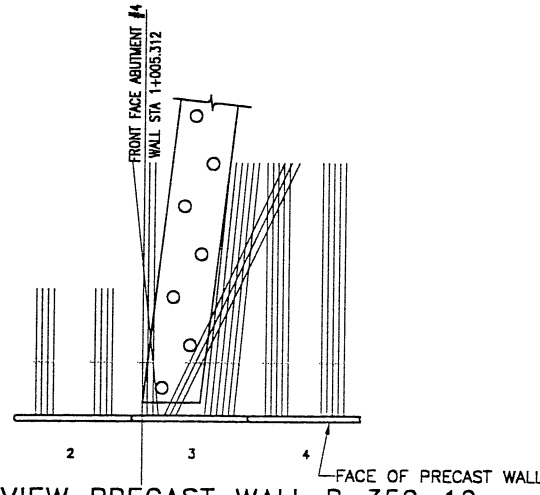
ATLANTA, GA / DALLAS, TX / BALDWIN, NC (CORPORATE OFFICE)
 MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

DES. 04-22-98 MM
 DRN. 04-22-98 JHU
 CHK. 04-22-98 MM
 RETAINED EARTH™

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	06-15-98	RELEASE FOR CONSTRUCTION
▲	07-16-99	DELETED TYPICAL SECTION

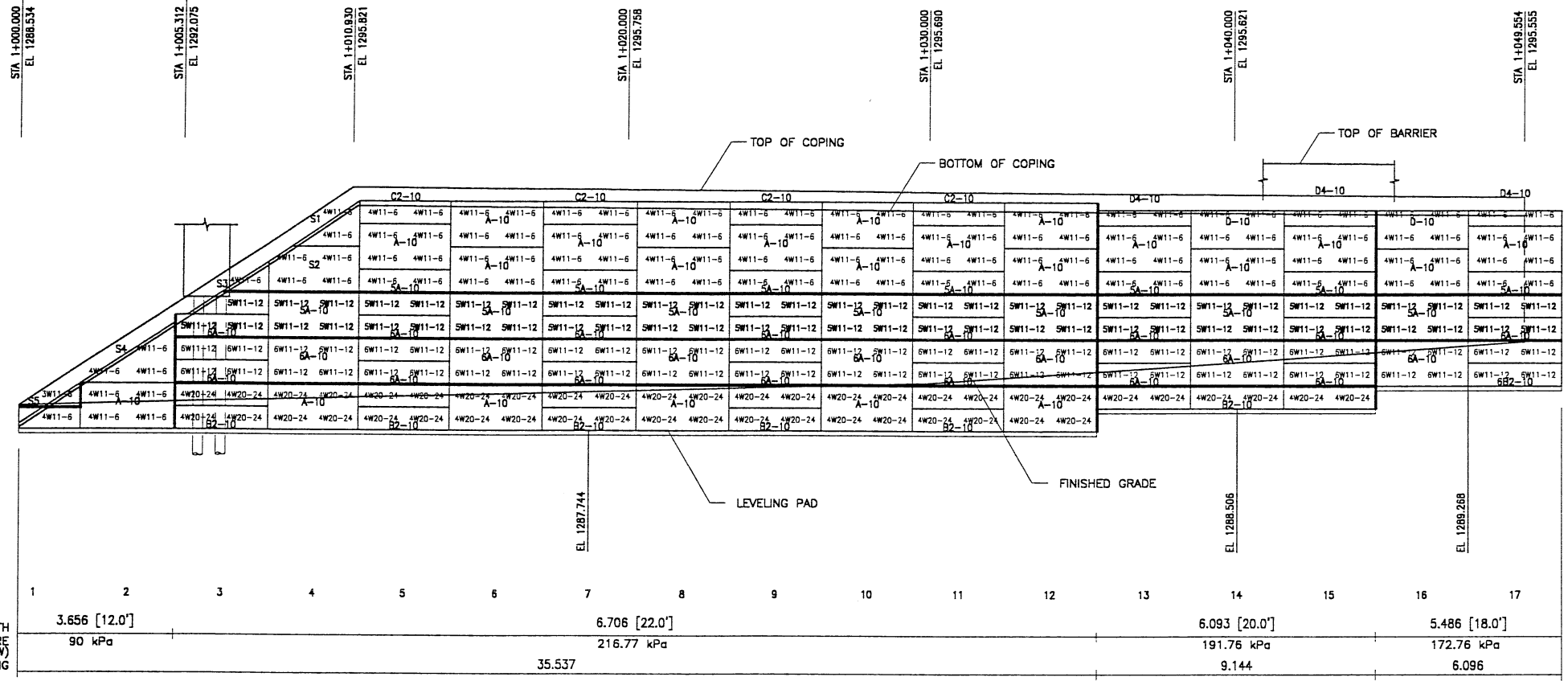
NO. DATE REVISION BY CHK

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	06-15-98	RELEASE FOR CONSTRUCTION



BEGIN WALL R-351-10
 PRECAST WALL STA 1+000.000 =
 RAMP ES STA 1+623.380
 @ 6.889 RT
 NOMINAL PANEL FACE (RWLOL)

PLAN VIEW PRECAST WALL R-350-10



ELEVATION PRECAST WALL R-351-10
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 490.21 SM)

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

GRID	MESH DEPTH	MAXIMUM BEARING PRESSURE
1	3.656 [12.0']	90 kPa
2		
3		6.706 [22.0']
4		216.77 kPa
5		35.537
6		
7		
8		
9		
10		
11		
12		
13		
14		6.093 [20.0']
15		191.76 kPa
16		5.486 [18.0']
17		172.76 kPa

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

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.

NO.	DATE	DESCRIPTION	REVISION	NO.	DATE	BY	CHK
1	06-15-98	RELEASE FOR CONSTRUCTION					

DES. 04-22-98 MM
 DRN 04-22-98 JHU
 CHK 04-22-98 MM

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

RETAINED EARTH™ WALLS
 PRECAST WALL "R-351-10"
 UTAH I-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.
 3.2-R-351-10.6
 JOB NO.
 239-0007
 SHEET NO.
 RE-4

WASATCH CONSTRUCTORS
 JUN 24 1998
 RELEASED FOR CONSTRUCTION


LICENSED PROFESSIONAL ENGINEER
 No. 341796
 JOHN A. NICHOLSON, JR.
 STATE OF UTAH

ICE (X-UTAH.DWG)
 07\1998\6S-WALLS\6S-10\6S-10A
 H:\RE_EARTH\PROJEC
 06-15-98
 FINA

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	06-15-98	RELEASE FOR CONSTRUCTION <i>AV</i>

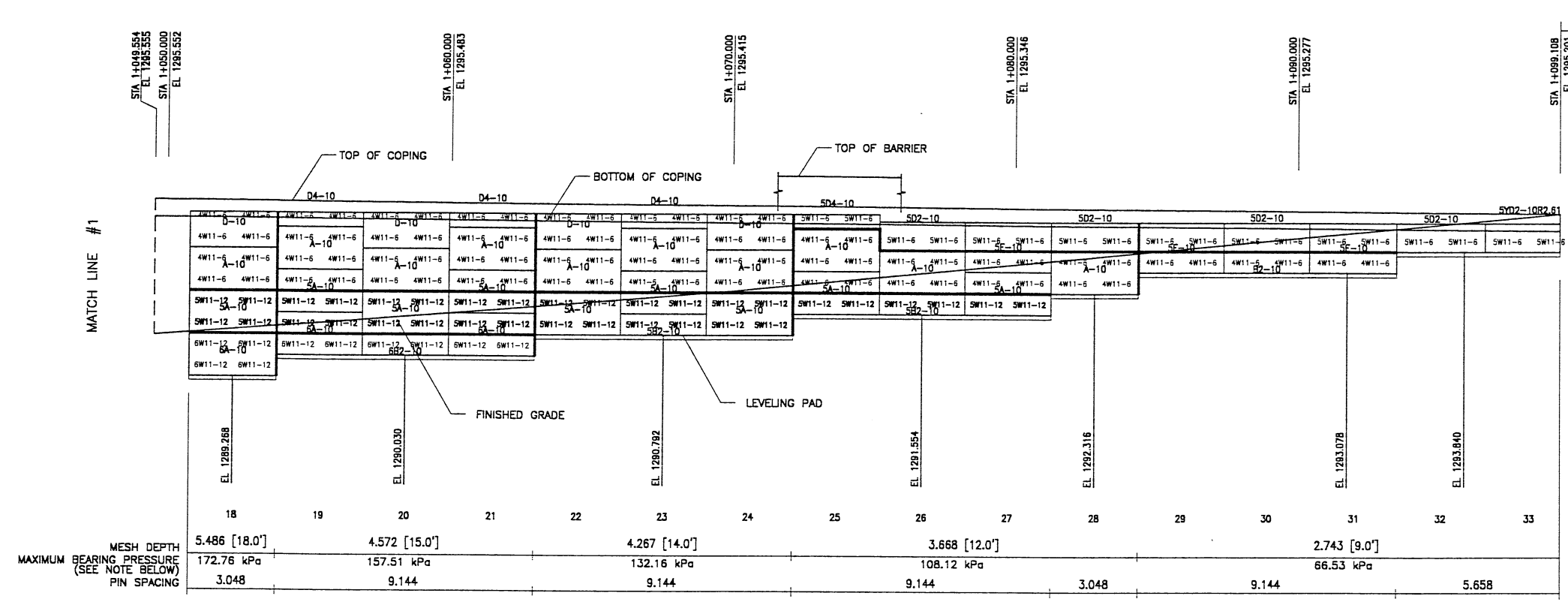
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04-22-98	MM	04-22-98	JHL			
04-22-98	MM	04-22-98	JHL			
04-22-98	MM	04-22-98	JHL			

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 Fax: (919) 781-4969



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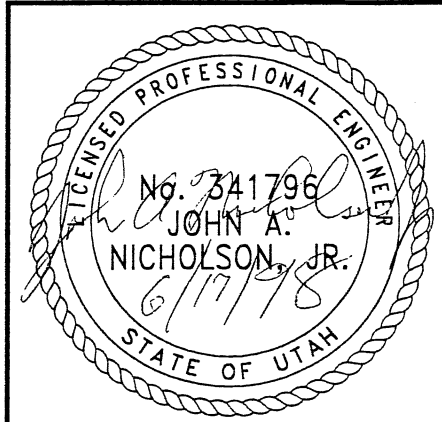
END WALL R-351-10
 PRECAST WALL STA 1+099.108 =
 RAMP ES STA 1+722.488
 ● 6.889 RT
 NOMINAL PANEL FACE (RWLOL)

ELEVATION PRECAST WALL R-351-10
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 490.21 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

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

METRIC

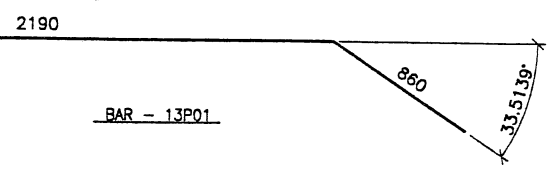
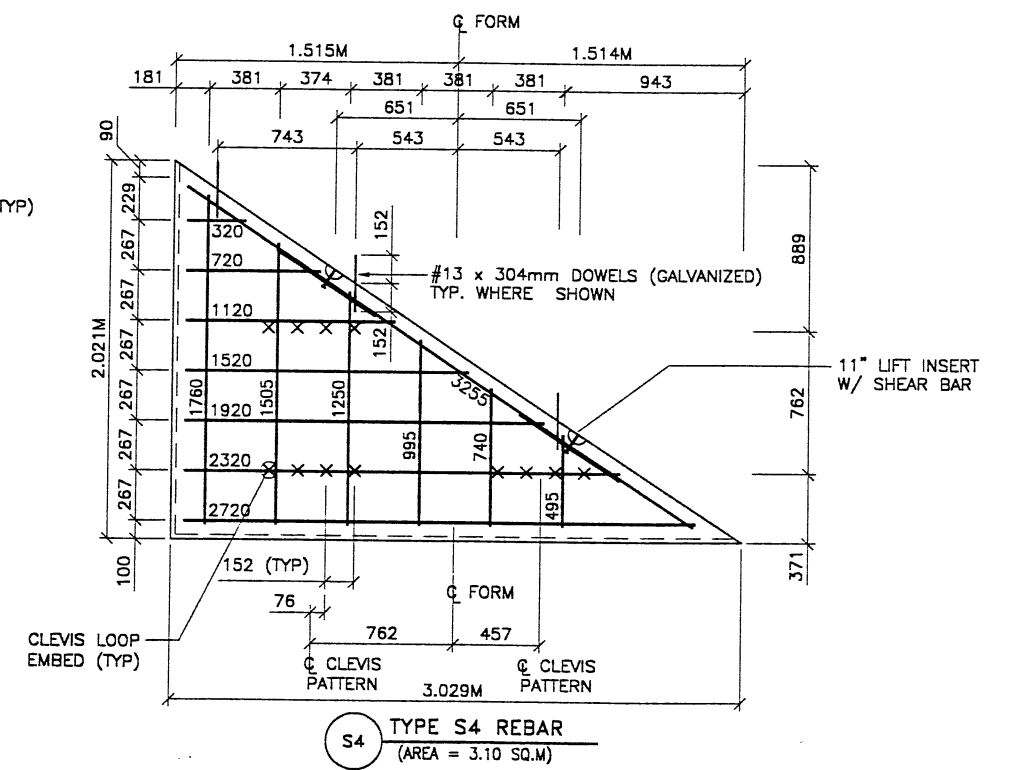
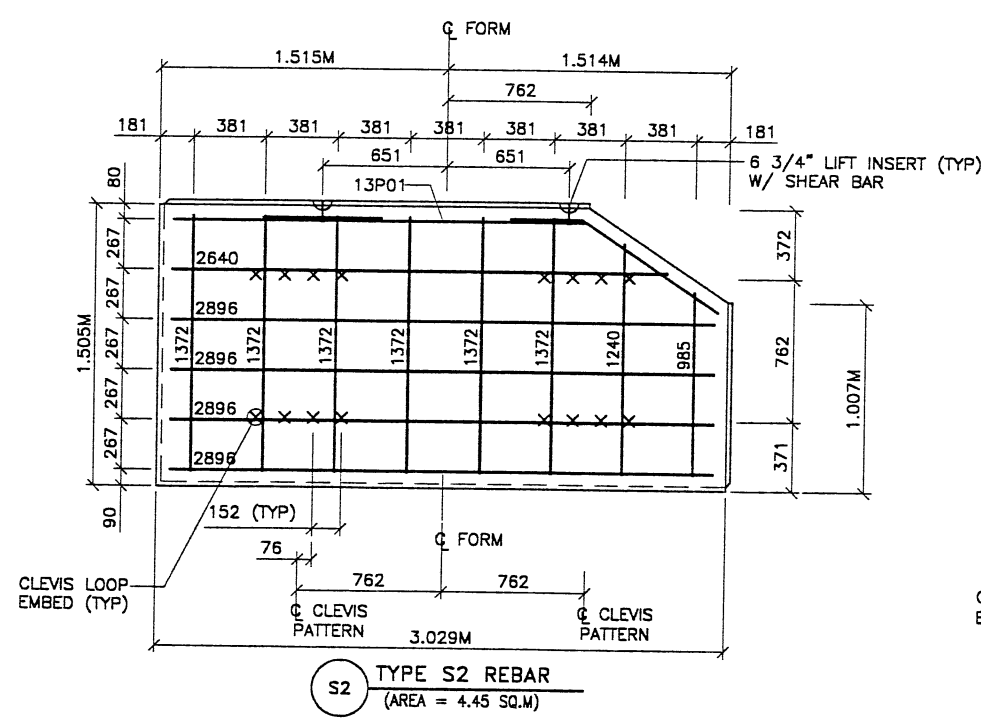
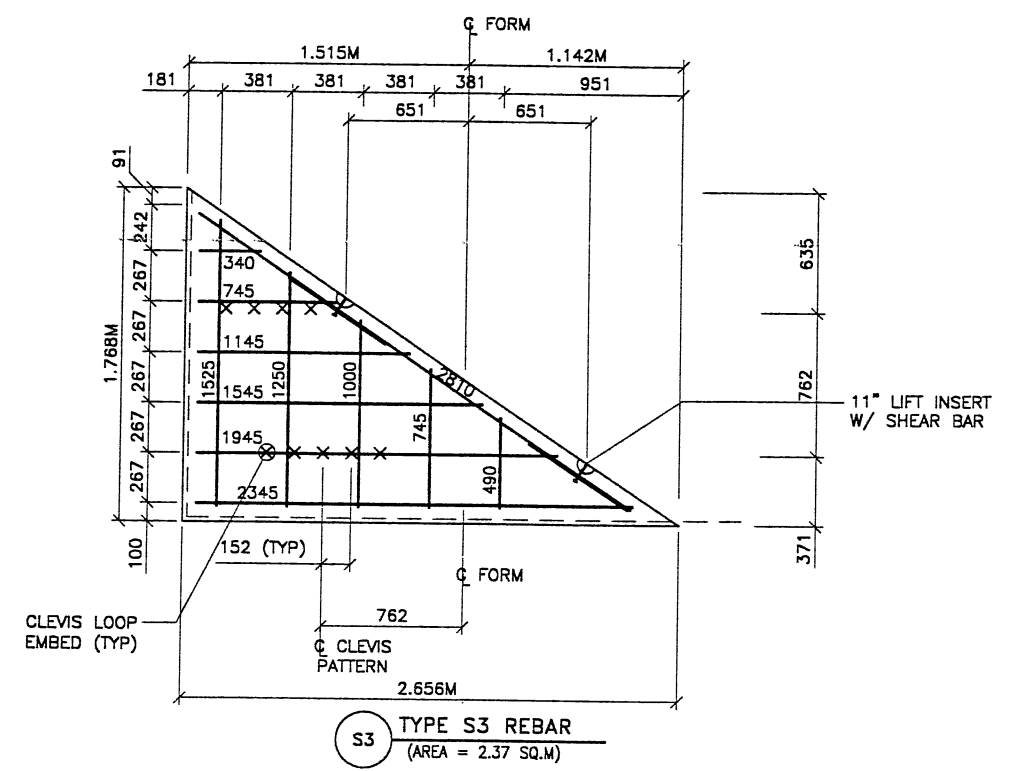
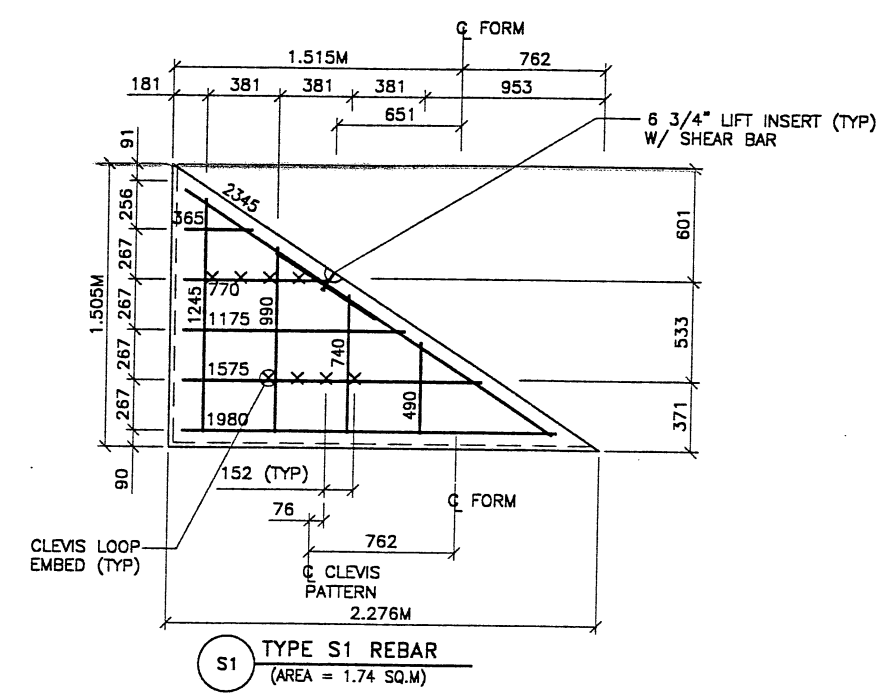
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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



WASATCH CONSTRUCTORS
 JUN 24 1998
 RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
 PRECAST WALL "R-351-10"
 UTAH I-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	3.2-R-351-10.7
JOB NO.	239-0007
SHT. NO.	RE-5

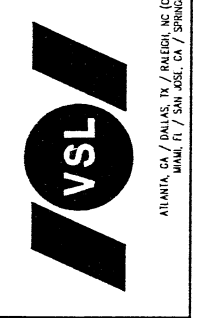


APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	06-15-98	RELEASE FOR CONSTRUCTION

- PANEL REINFORCEMENT NOTES:
- PANELS ARE SHOWN BACK FACE.
 - HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
 - ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
 - ALL REINFORCING BARS ARE #13 METRIC. LABELS ON EACH BAR INDICATE LENGTH. EXAMPLE: 1345 IS A #13 BAR 1345 mm LONG.
 - PANEL REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT CONFORMING TO THE SPECIFICATIONS OF ASTM DESIGNATION A615, GRADE 60.
 - ALL REINFORCING STEEL TO BE GALVANIZED IN ACCORDANCE WITH ASTM 767 CLASS 1.
 - CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 27,500 KPa.
 - EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 - ALL PANELS TO USE 9.5mmØ 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.

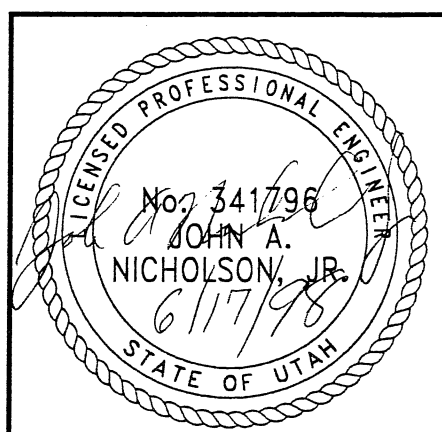
DES	MM	DRN	JHU	CHK	DATE	NO.	REVISION	BY	CHK
	04-22-98								
	04-22-98								
	04-22-98								

VSL CORPORATION
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WASATCH CONSTRUCTORS
JUN 24 1998
RELEASED FOR CONSTRUCTION



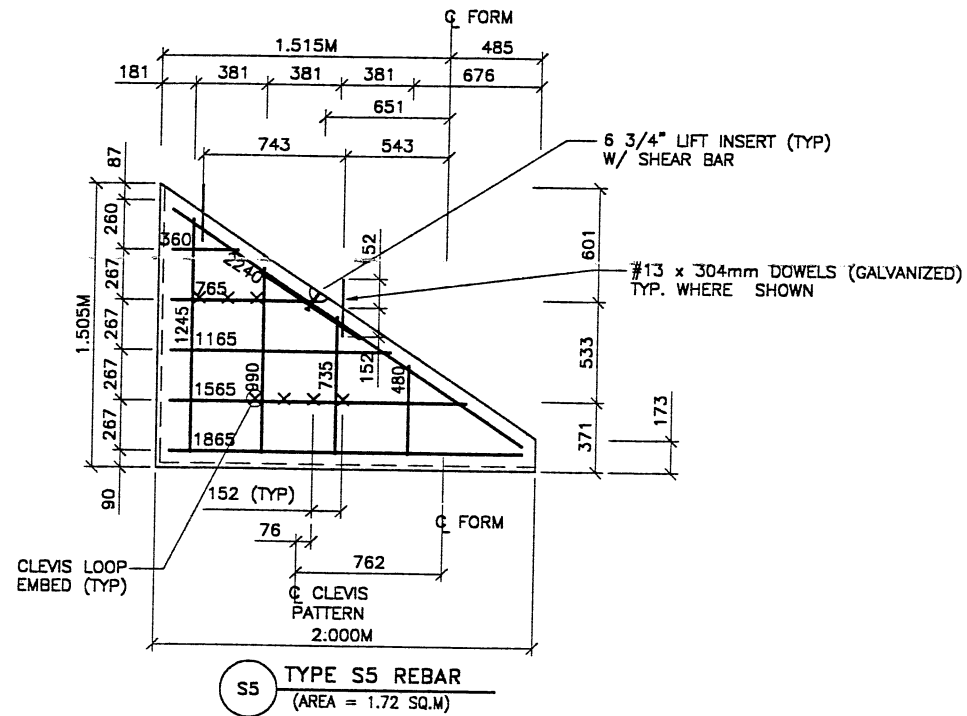
RETAINED EARTH™ WALLS
PRECAST WALL "R-351-10"
SPECIAL PANEL DETAILS

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

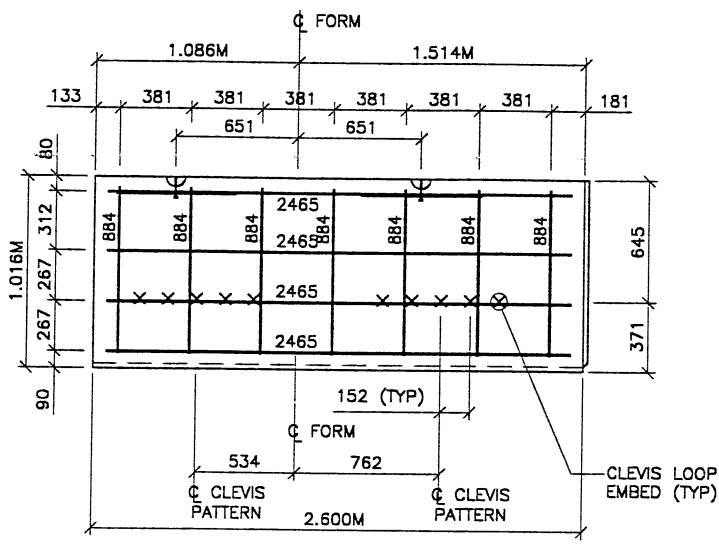
DWG. NO.	3.2-R-351-10.8
JOB NO.	239-0007
SHT. NO.	RE-6

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METRIC



S5 TYPE S5 REBAR
(AREA = 1.72 SQ.M)

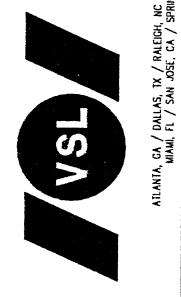


YD2-10R2.61 TYPE YD2-10R2.61 REBAR
(AREA = 2.65 SQ.M)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	06-15-98	RELEASE FOR CONSTRUCTION

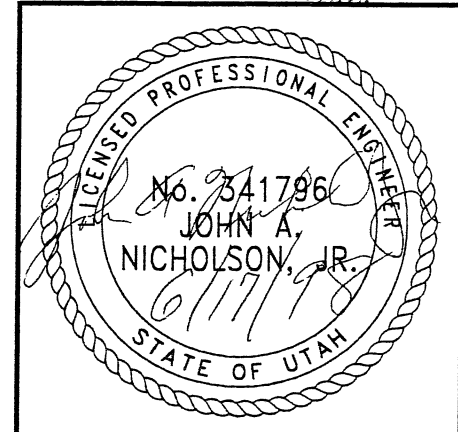
- PANEL REINFORCEMENT NOTES:**
- PANELS ARE SHOWN BACK FACE.
 - HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
 - ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
 - ALL REINFORCING BARS ARE #13 METRIC. LABELS ON EACH BAR INDICATE LENGTH. EXAMPLE: 1345 IS A #13 BAR 1345 mm LONG.
 - PANEL REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT CONFORMING TO THE SPECIFICATIONS OF ASTM DESIGNATION A615, GRADE 60.
 - ALL REINFORCING STEEL TO BE GALVANIZED IN ACCORDANCE WITH ASTM 767 CLASS I.
 - CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 27,500 KPa.
 - EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 - ALL PANELS TO USE 9.5mmØ 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.

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WASATCH CONSTRUCTORS
JUN 24 1998
RELEASED FOR CONSTRUCTION



RETAINED EARTH™ WALLS PRECAST WALL "R-351-10" SPECIAL PANEL DETAILS
UTAH I-15 RECONSTRUCTION SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.
DWG. NO. 3.2-R-351-10.9
JOB NO. 239-0007
SHT. NO. RE-7

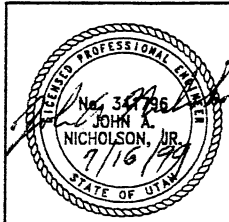
METRIC

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THIS SHEET NO LONGER NEEDED

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METRIC



RETAINED EARTH™ WALLS
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE: 3.2R-351-9.10
JOB NO: 239-0007
RE-7

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MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

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Fax: (919) 791-4889

DES. 11-04-97 MM
DRN. 11-04-97 DDO
CHK. 11-04-97 MM
RETAINED EARTH™

NO. DATE

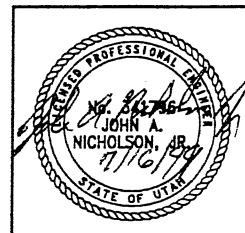
REVISION

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	02-18-98	RELEASE FOR 1ST STAGE CONST. ONLY
△	07-16-99	DELETED WALL R-351-98

BY CHK

THIS SHEET NO LONGER NEEDED

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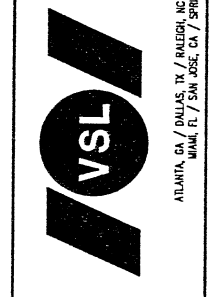


METRIC

RETAINED EARTH™ WALLS
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE:
 3.2R-351-9.11
 JOB NO:
 239-0007
 RE-8

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

DES. 11-04-97 MM
 DRN. 11-04-97 DDO
 CHK. 11-04-97 MM

RETAINED EARTH™

NO. DATE

REVISION

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	02-18-98	RELEASE FOR 1ST STAGE CONST. ONLY
△	07-16-99	DELETED WALL R-351-98

BY CHK