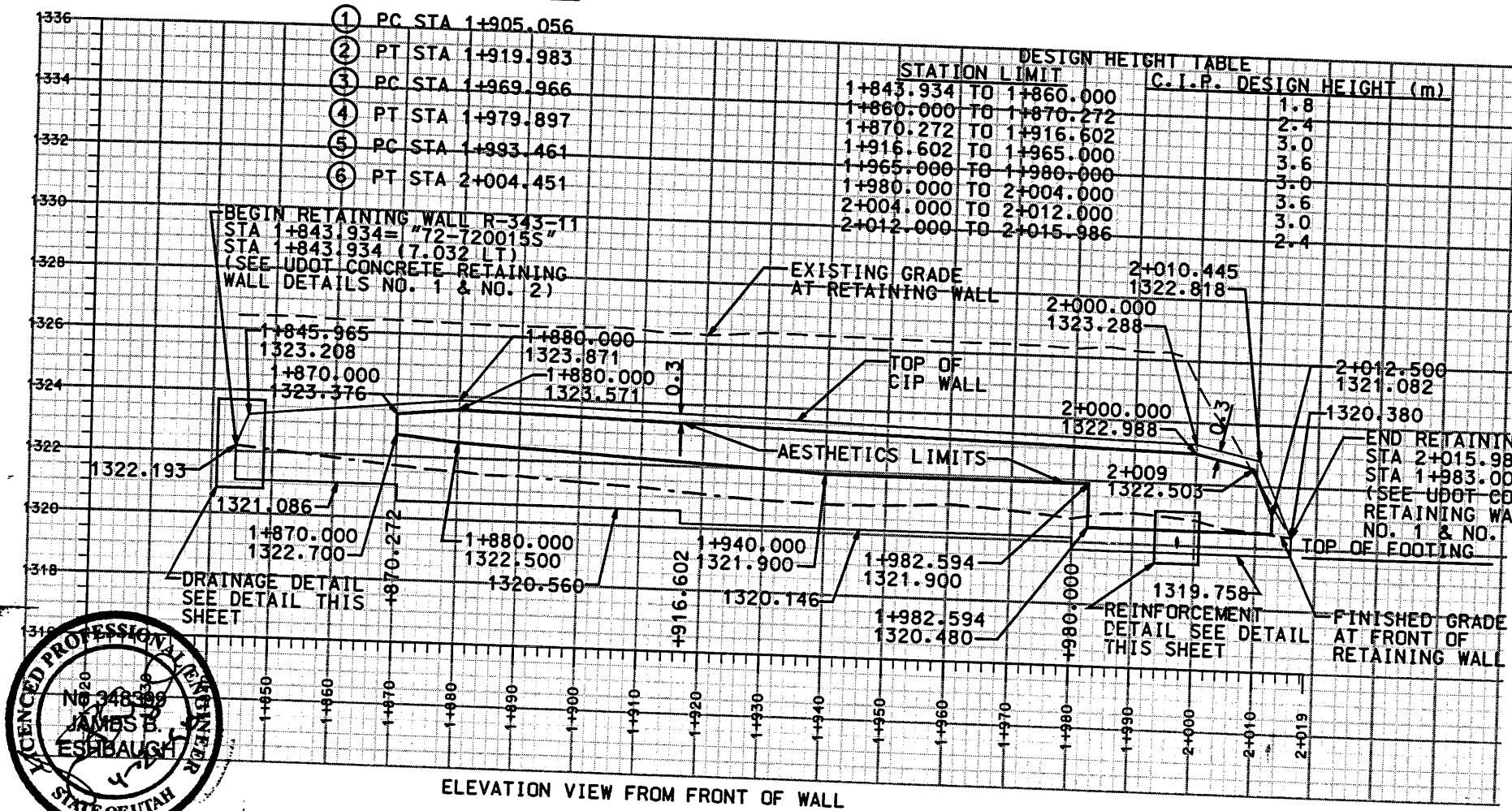


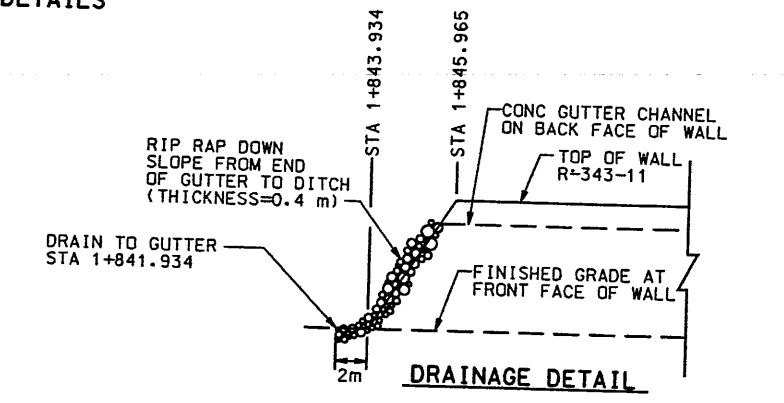
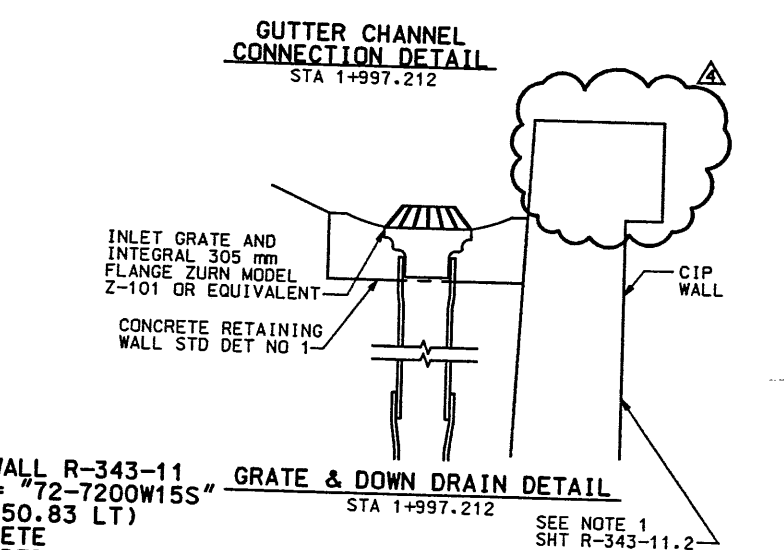
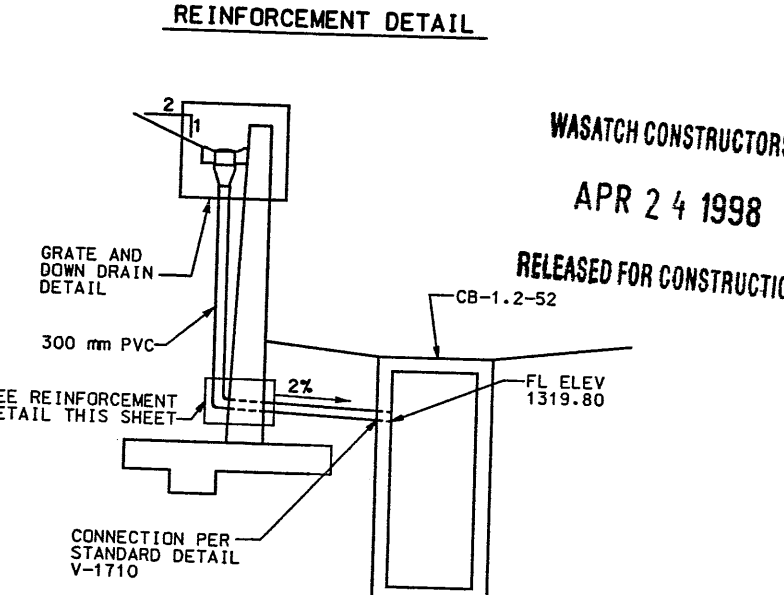
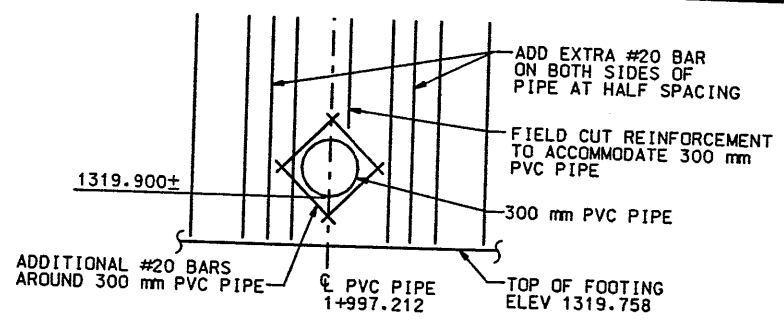
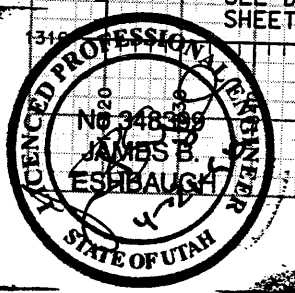
WALL R-343-11
ALIGNMENT GEOMETRY

- ① PC STA 1+905.056
- ② PT STA 1+919.983
- ③ PC STA 1+969.966
- ④ PT STA 1+979.897
- ⑤ PC STA 1+993.461
- ⑥ PT STA 2+004.451

STATION LIMIT	C.I.P. DESIGN HEIGHT (m)
1+843.934 TO 1+860.000	1.8
1+860.000 TO 1+870.272	2.4
1+870.272 TO 1+916.602	3.0
1+916.602 TO 1+965.000	3.6
1+965.000 TO 1+980.000	3.0
1+980.000 TO 2+004.000	3.6
2+004.000 TO 2+012.000	3.0
2+012.000 TO 2+015.986	2.4



ELEVATION VIEW FROM FRONT OF WALL



WASATCH CONSTRUCTORS
APR 24 1998
RELEASED FOR CONSTRUCTION

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

NO.	DATE	DESCRIPTION
1	9-4-97	INITIAL RELEASE
2	9-30-97	TOTAL SHEET REVISION
3	4-17-98	ASTHETIC REVISION
4	4-21-98	ASTHETIC REVISION FIELD DESIGN CHANGE #1-0172

APPROVED FOR CONSTRUCTION

DESIGN: JIM ESRBAUGH
DATE: 9/97
PROJECT DESIGN ENGINEER

DRAWN: DON GRUHL
DATE: 9/97
PROJECT MANAGER

QUANT.: 1212407

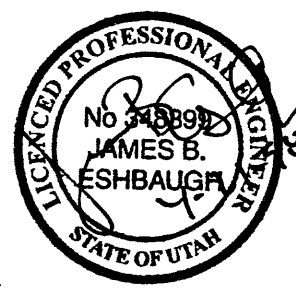
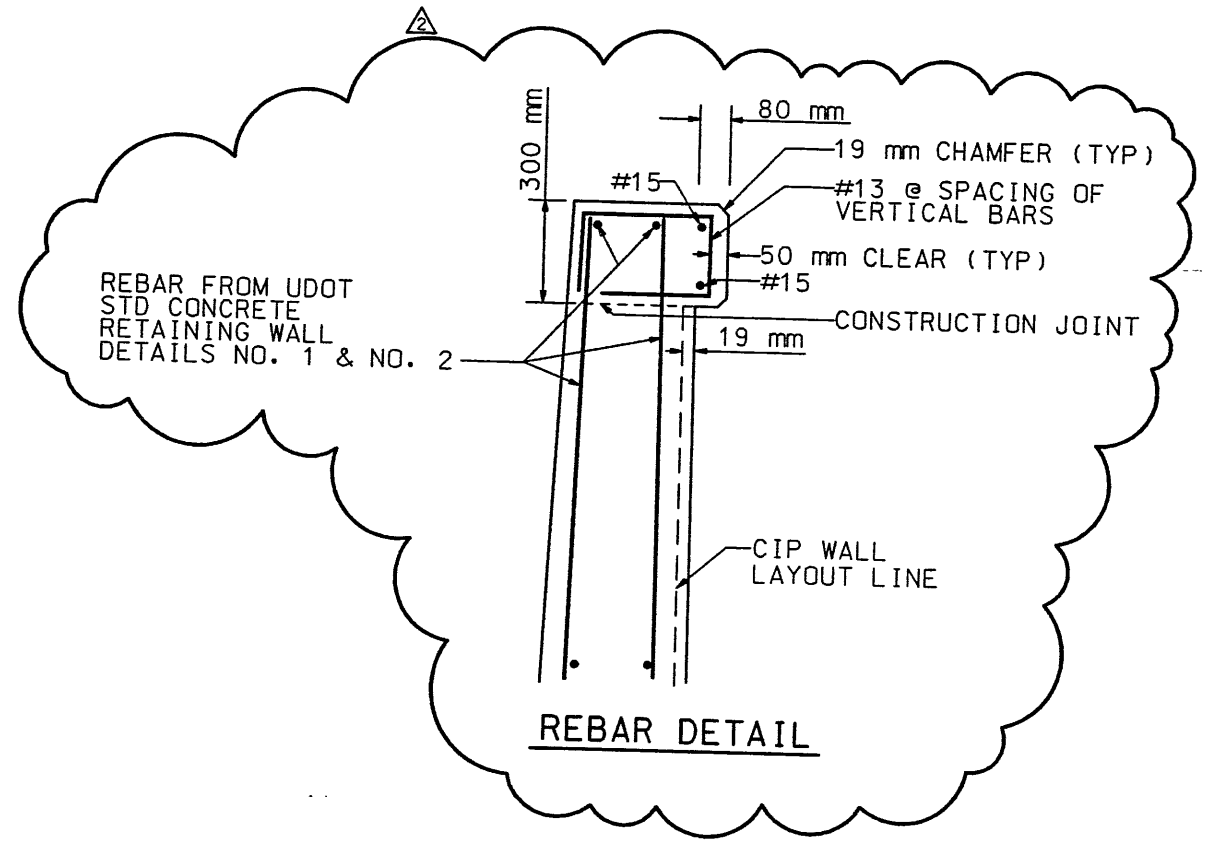
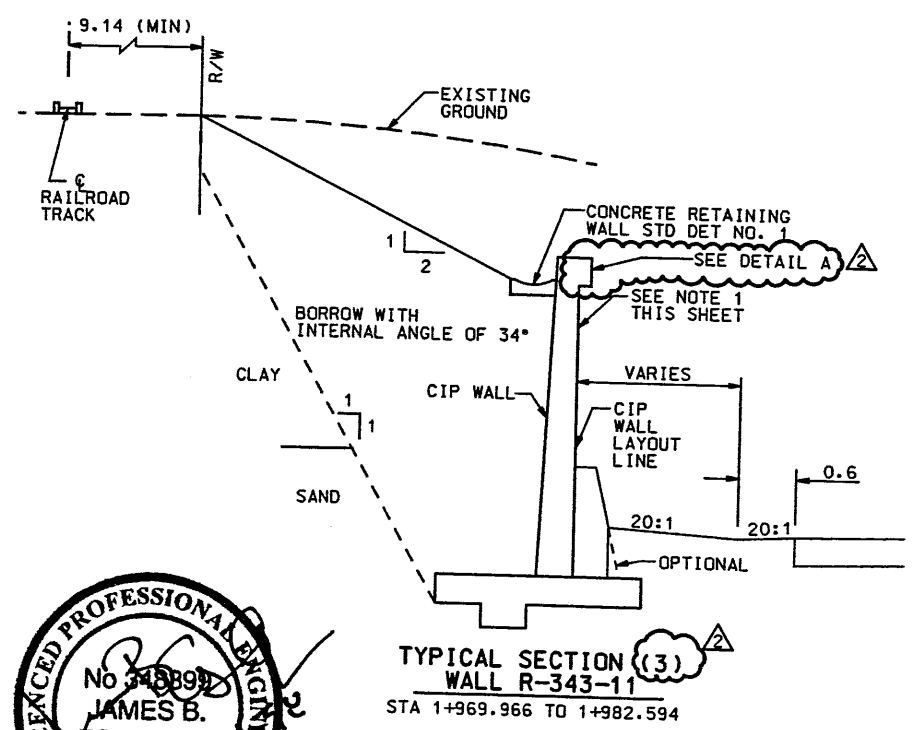
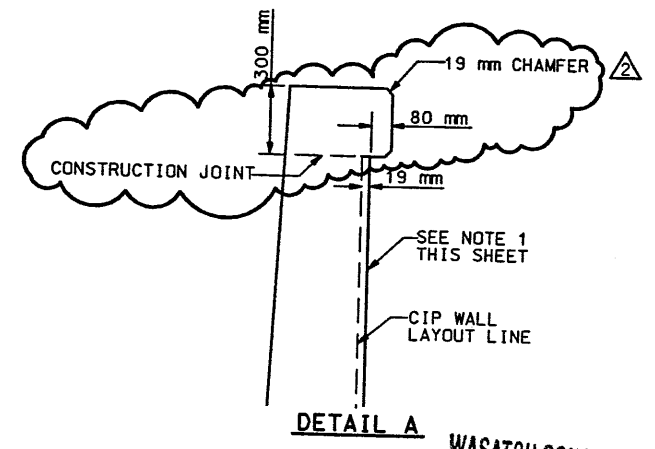
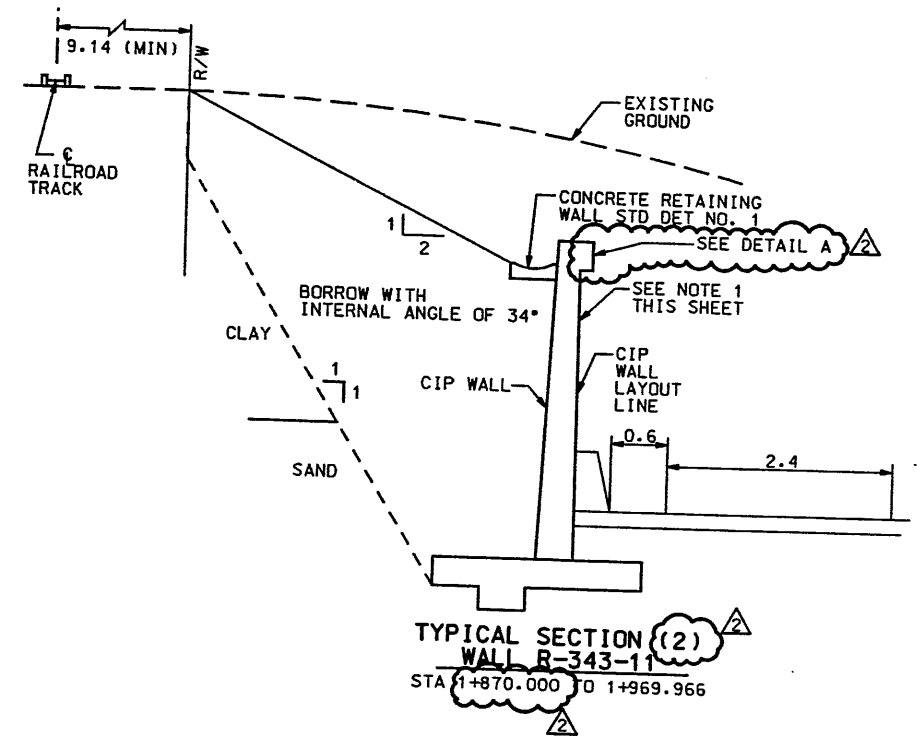
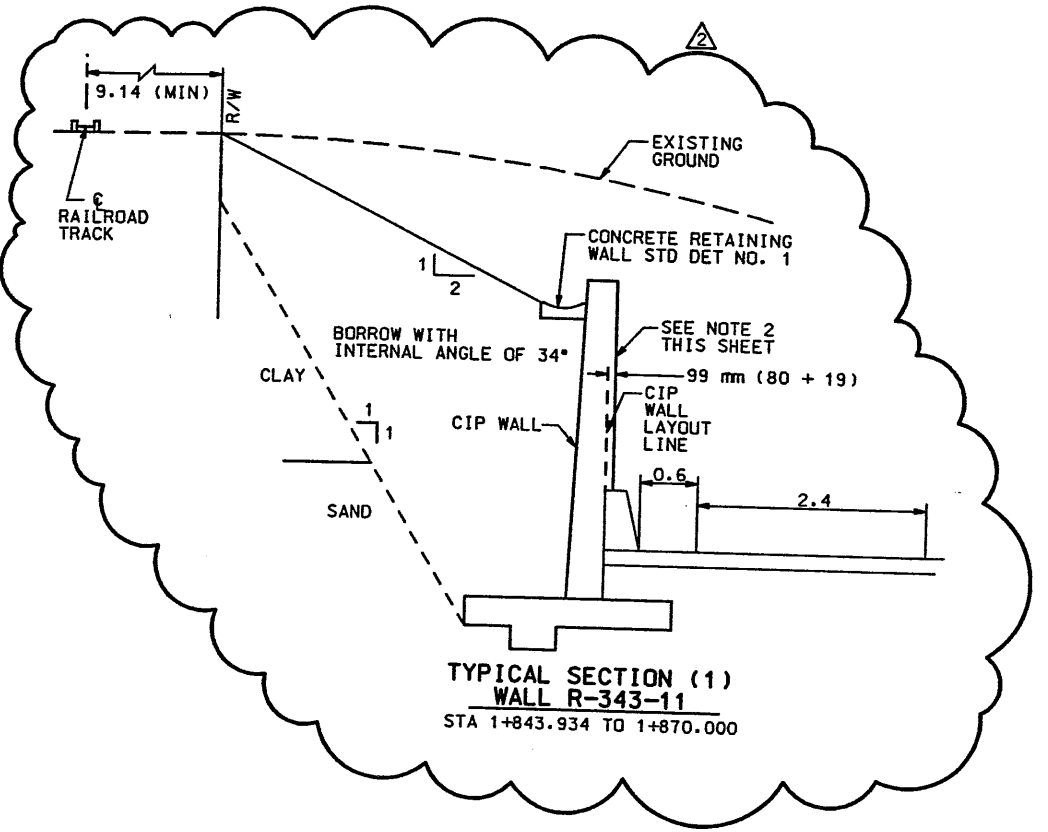
I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
RET WALL R-343-11
SECTION 1.2
PROJECT NUMBER: #SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2R-343-11.1
SHT. 1 OF 5
REF.

Date: 21-Apr-1998 Time: 15:56 User: nmcocyle/jm
 File: c:\p1\15_cocd\12_97\sheet1_115\wall\72pp25.dgn

SEE OTHER TYPICAL SECTIONS ON SHEET 1.2R-343-11.2a

- NOTE:
- (1) CORRIDOR STANDARD PLAN RETAINING WALL AESTHETICS DWG CS-6 TEXTURE TYPE C - SEE DETAIL A
 - (2) 80 mm COPING WIDTH WILL EXTEND DOWN TO BARRIER
 - (3) 80mm COPING WIDTH WILL EXTEND DOWN TO FOOTING

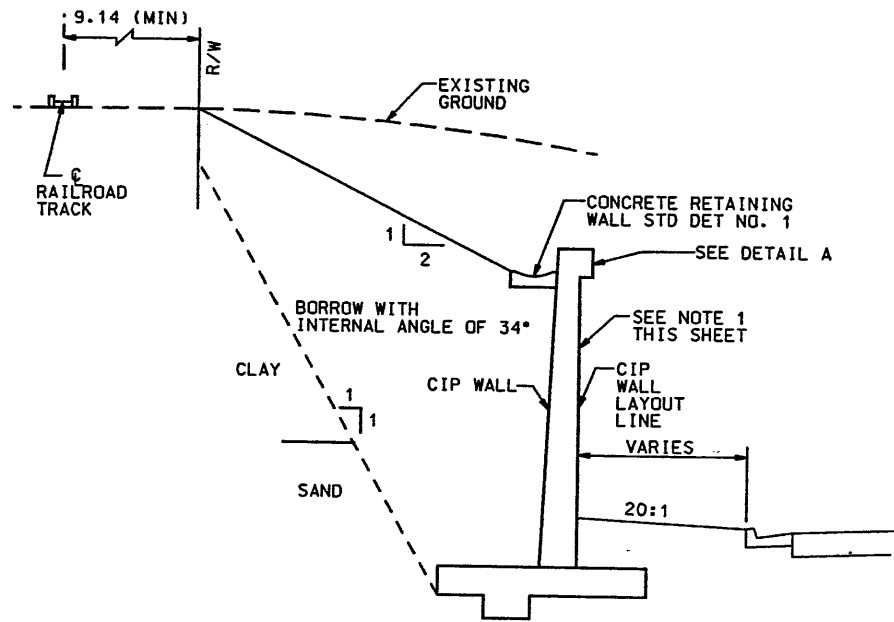


WASATCH CONSTRUCTORS
 APR 24 1998
 RELEASED FOR CONSTRUCTION

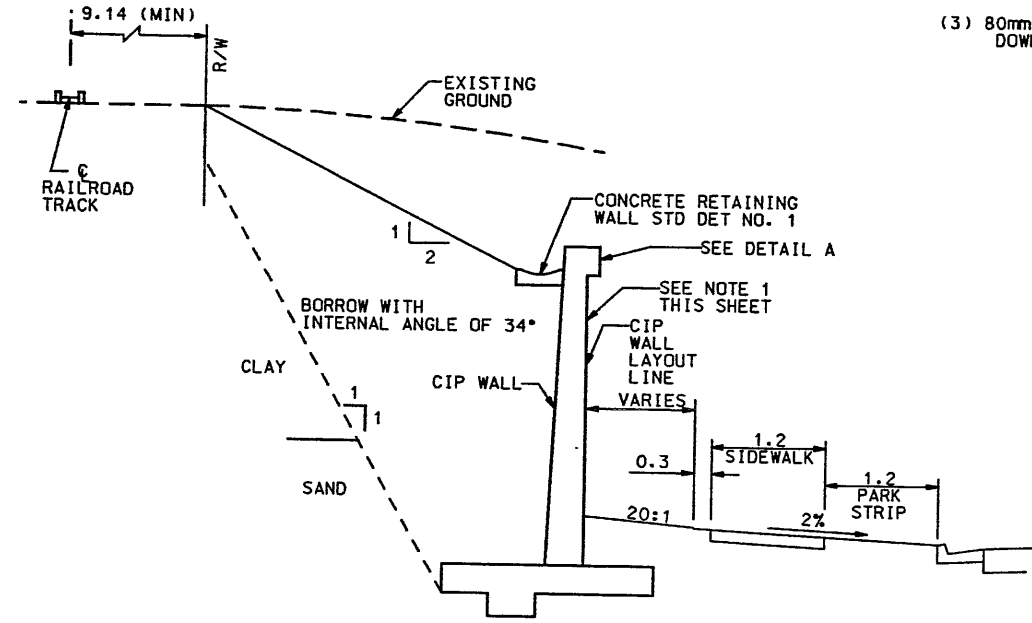
APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	INITIALS	RELEASE
1	9-30-97	JIM	9/30
2	4-20-98	JIM	4/20
UTAH DEPARTMENT OF TRANSPORTATION		FIELD DESIGN CHANGE # 1-0172	
URS Greiner		1212407	
SVERDRUP/DE LEUW		DESIGN	CHK
8/97	JIM ESHAUGH	9/97	JIM
PROJECT DESIGN ENGINEER		CHK	CHK
8/97	DOB GRAL	9/97	JIM
APPROVED		DATE	CHK
8/97	DOB GRAL	9/97	JIM
SECTION MANAGER		QUANT.	CHK
I-15 CORRIDOR RECONSTRUCTION		1212407	
MISC DETAILS RET WALL R-343-11		SECTION 1.2	
PROJECT NUMBER *SP-15-7(135)296		SALT LAKE COUNTY	
DWG. NO. 1.2R-343-11.2		SHT. 2 OF 5	

User: name.coyte/jm Date: 01/21/98 Time: 15:57

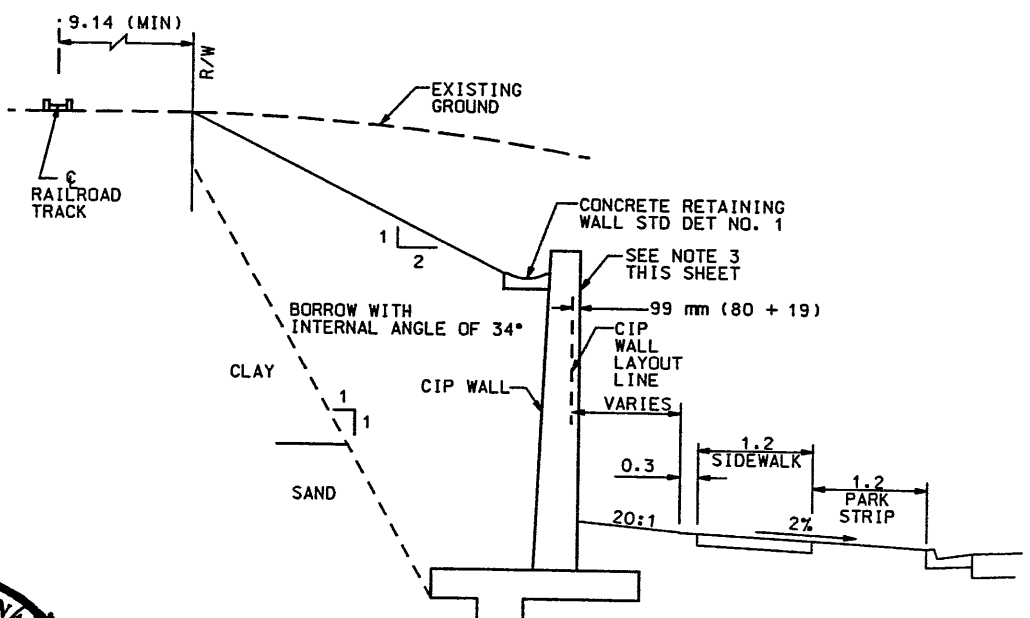
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TYPICAL SECTION (4)
WALL R-343-11
STA 1+982.594 TO 2+001.717



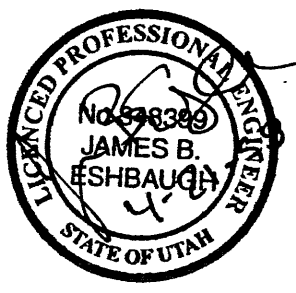
TYPICAL SECTION (5)
WALL R-343-11
STA 2+001.717 TO 2+012.500



TYPICAL SECTION (6)
WALL R-343-11
STA 2+012.500 TO 2+015.986

- NOTE:
- (1) CORRIDOR STANDARD PLAN RETAINING WALL AESTHETICS DWG CS-6 TEXTURE TYPE C - SEE DETAIL A
 - (2) 80 mm COPING WIDTH WILL EXTEND DOWN TO BARRIER
 - (3) 80mm COPING WIDTH WILL EXTEND DOWN TO FOOTING

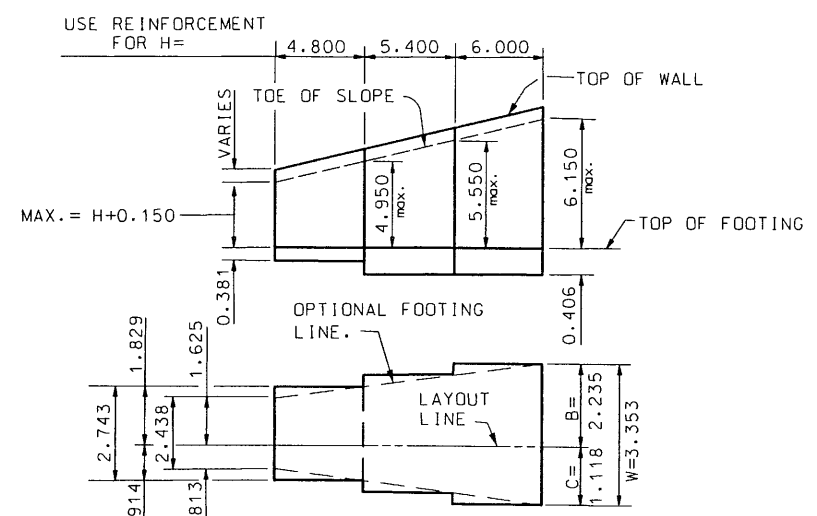
WASATCH CONSTRUCTORS
APR 24 1998
RELEASED FOR CONSTRUCTION



APPROVED FOR CONSTRUCTION		DATE 4/20/98	DESCRIPTION INITIAL RELEASE FIELD DESIGN CHANGE 1-0172
UTAH DEPARTMENT OF TRANSPORTATION			
URS Greiner SVEDRUP/DE LEUW			
DESIGN	JIM	04/98	CHECK
DRAWN	JMC	04/98	CHECK
QUANT.	DON	04/98	CHECK
SECTION 1.2		1212407	
I-15 CORRIDOR RECONSTRUCTION			
MISC DETAILS RET WALL R-343-11			
PROJECT NUMBER *SP-15-7(135)296			
SALT LAKE COUNTY			
DWG. NO.			
1.2R-343-11.2a			
SHT. 3 OF 3			

Date: 24-FEB-1998 Time: 11:01 User: name: stottt

Filename: c:\vgn\15_cadd\279\sheet_files\wall\y-wll4.dgn



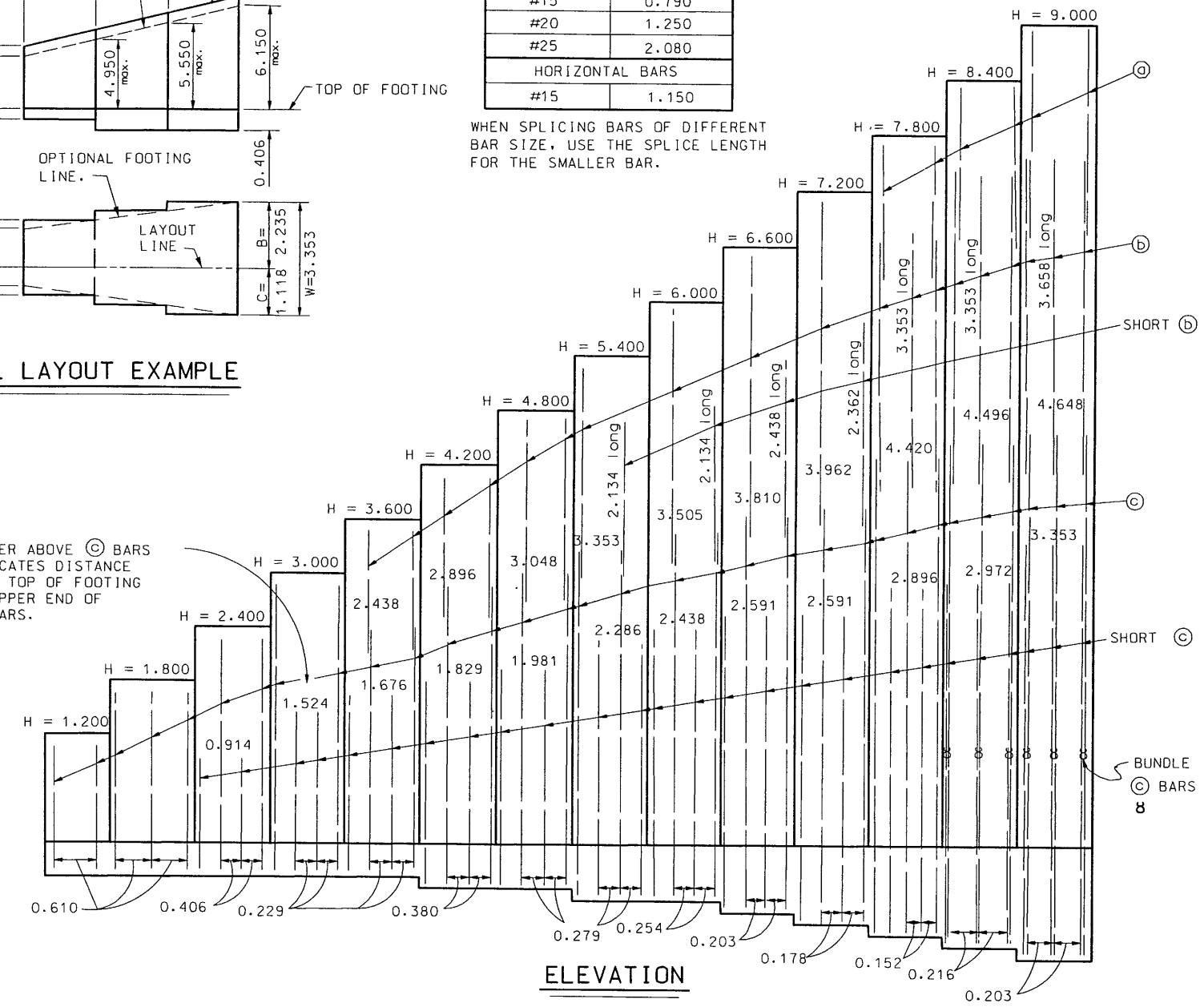
TYPICAL LAYOUT EXAMPLE

REINFORCING STEEL SPLICES	
BAR SIZE	SPLICE LENGTH
VERTICAL BARS	
#15	0.790
#20	1.250
#25	2.080
HORIZONTAL BARS	
#15	1.150

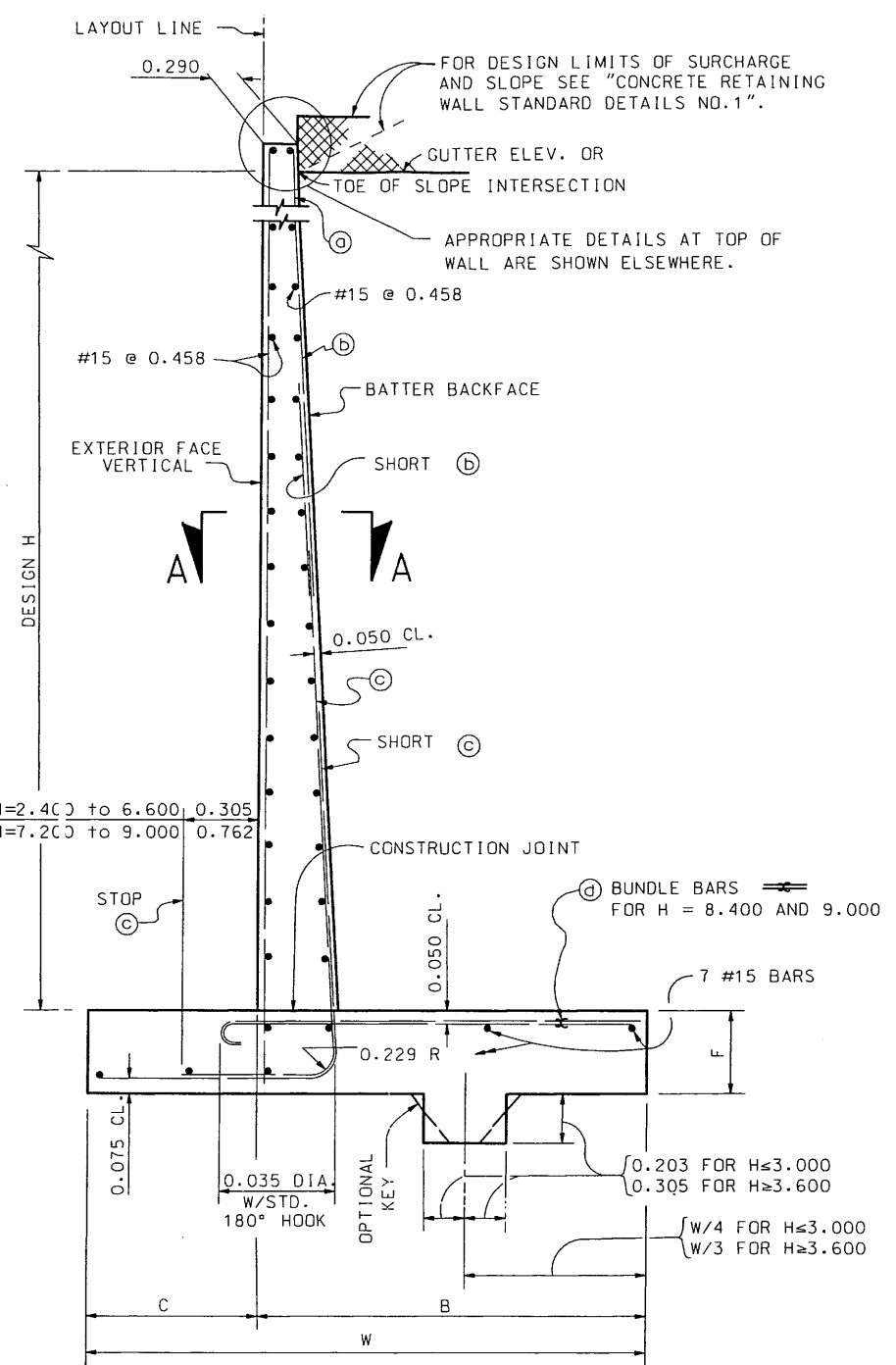
NOTE:
BAR CUT-OFFS MAY BE VARIED
IN INCREMENTS OF 0.150 m.

WHEN SPLICING BARS OF DIFFERENT
BAR SIZE, USE THE SPLICE LENGTH
FOR THE SMALLER BAR.

NUMBER ABOVE (C) BARS
INDICATES DISTANCE
FROM TOP OF FOOTING
TO UPPER END OF
(C) BARS.

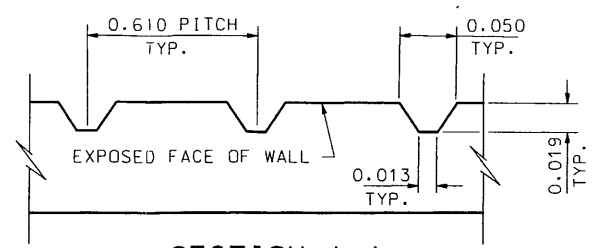


ELEVATION



SPREAD FOOTING SECTION

- NOTES: 1. ALL DIMENSIONS SHOWN ARE IN METERS.
2. FOR DETAILS NOT SHOWN AND DRAINAGE NOTES SEE "CONCRETE RETAINING WALL STANDARD DETAILS NO. 1."
3. QUANTITIES APPLY TO DESIGN H PORTION AND EXCLUDE THE ADDED PORTION ABOVE "GUTTER ELEVATION."



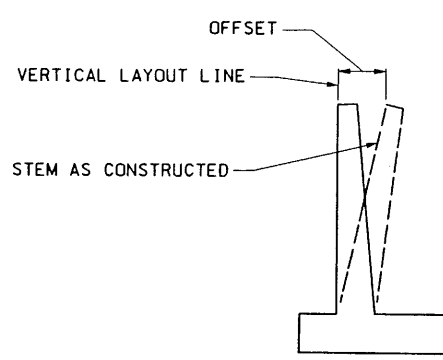
SECTION A-A

TABLE OF REINFORCING STEEL DIMENSIONS AND DATA														
DESIGN H	1.200	1.800	2.400	3.000	3.600	4.200	4.800	5.400	6.000	6.600	7.200	7.800	8.400	9.000
W	0.965	1.270	1.575	1.880	2.184	2.438	2.743	3.048	3.353	3.657	4.038	4.344	4.648	5.105
C	0.305	0.406	0.508	0.610	0.711	0.813	0.914	1.016	1.118	1.219	1.346	1.448	1.549	1.651
B	0.660	0.864	1.067	1.270	1.473	1.625	1.829	2.032	2.235	2.438	2.692	2.896	3.099	3.454
F SPREAD FTG.	0.356	0.356	0.356	0.356	0.356	0.381	0.381	0.406	0.406	0.457	0.508	0.584	0.660	0.711
BATTER	1:24	1:24	1:24	1:24	1:24	1:24	1:24	1:24	1:24	1:24	1:19	1:16	1:16	1:14
(a) BARS														
(b) BARS					#15@.458	#20@.762	#20@.558	#25@.558	#25@.508	#25@.406	#25@.356	#25@.304	#25@.216	#25@.203
(c) BARS	#15@.610	#15@.610	#15@.406	#15@.229	#20@.229	#30@.380	#30@.279	#35@.279	#35@.254	#35@.203	#35@.178	#35@.152	#35@.216 8	#35@.203 8
(d) BARS	#15@.610	#15@.610	#15@.406	#15@.229	#15@.229	#25@.380	#25@.279	#35@.279	#35@.254	#35@.203	#35@.178	#35@.152	#30@.216 8	#30@.203 8
.610 LEVEL SURCHARGE TOE PRESSURE kPa	76.6	91.0	105.3	110.1	134.1	158.0	167.6	191.5	205.9	220.3	234.6	253.8	272.9	296.9
2:1 UNLIMITED SCOPE TOE PRESSURE kPa	52.7	71.8	95.8	119.7	129.3	158.0	172.4	201.1	225.0	263.3	282.5	311.2	340.0	359.1
SPREAD FOOTING STEEL kg/m	25	30	42	55	76	119	156	219	278	366	451	606	668	754
CONC. m³/m	0.8	1.2	1.5	1.9	2.4	2.8	3.2	3.7	4.2	4.8	5.9	7.2	8.2	9.7

UTAH DEPARTMENT OF TRANSPORTATION		SALT LAKE CITY, UTAH		STRUCTURES DIVISION	
DESIGN	CHECK	DATE	BY	NO.	REVISIONS
GROUP LEADER	DESIGN	DATE	BY	NO.	REVISIONS
CHIEF STRUCTURAL ENGR.	APPROVED	DATE	BY	NO.	REVISIONS
CONCRETE RETAINING WALL		STANDARD DETAILS NO. 2		PROJECT NUMBER *SP-15-7(135)296	
SALT LAKE COUNTY		1.2R-343-11.3		DRG. NO.	
SHT. 4		OF 5		3/22/95	

Date: 24-FEB-1998 Time: 10:57 User: nme:stottt

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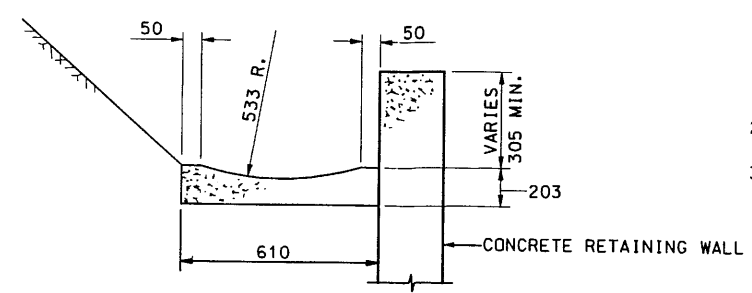


**TABLE OF OFFSETS
(IN METERS)**

H	OFF.	H	OFF.
1.200	0.006	4.800	0.032
1.800	0.010	5.400	0.038
2.400	0.013	6.000	0.044
3.000	0.016	6.600	0.050
3.600	0.019	7.200	0.057
4.200	0.025	7.800 TO 11.000	0.064

APPROXIMATE WALL OFFSET VALUES

VALUES FOR OFFSETTING FORMS TO BE DETERMINED BY THE ENGINEER



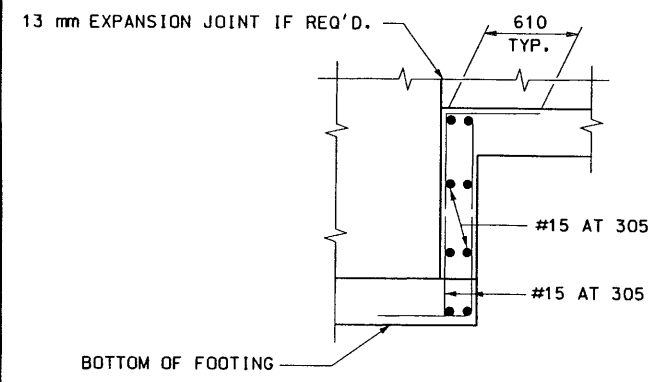
TYPICAL GUTTER DETAIL

GENERAL NOTES

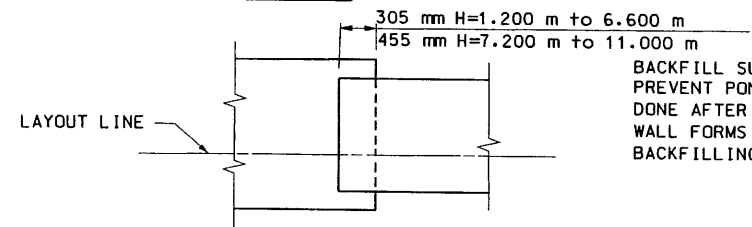
1. USE EPOXY-COATED REINFORCING STEEL CONFORMING TO AASHTO M 31M GRADE 400.
2. DESIGN H MAY BE EXCEEDED BY 150 mm BEFORE GOING TO THE NEXT SIZE.
3. ALL DIMENSIONS SHOWN ARE IN METERS UNLESS SPECIFIED OTHERWISE.

DESIGN DATA

CAST-IN-PLACE CONCRETE: $f_c = 10 \text{ MPa}$; $f_d(\text{REINF.}) = 160 \text{ MPa}$; $n=8$.
 EARTH: UNIT DENSITY = 1920 kg/m^3
 IN CASE OF SLOPING GROUND CONDITIONS ABOVE THE TOP OF THE WALL, EARTH PRESSURE SHALL BE DETERMINED FROM THE RANKINE EQUATIONS FOR LATERAL EARTH PRESSURE WITH $\phi = 33^\circ 42'$.
 610 mm SURCHARGE: EQUIVALENT FLUID PRESSURE = 5.6 KN/m^3 MAX. FOR DETERMINATION OF THE PRESSURE.



ELEVATION

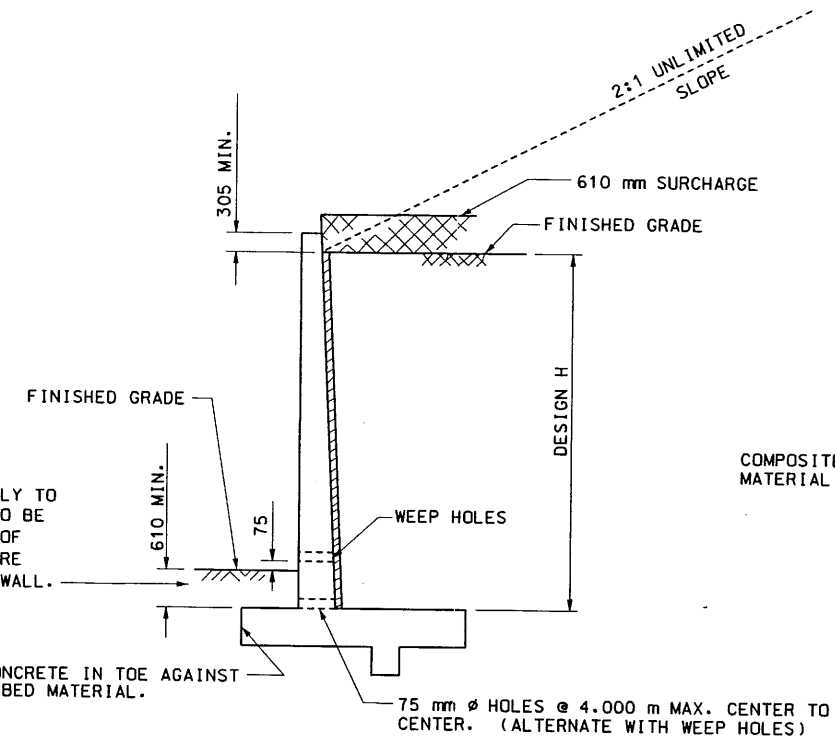


PLAN

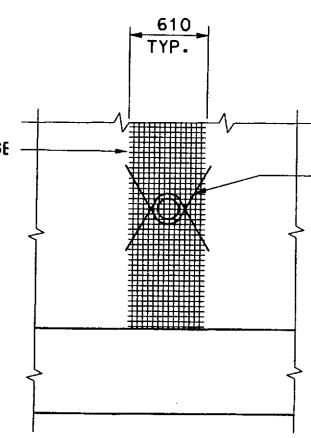
FOOTING STEP DETAILS

BACKFILL SUFFICIENTLY TO PREVENT PONDING. TO BE DONE AFTER REMOVAL OF WALL FORMS AND BEFORE BACKFILLING BEHIND WALL.

PLACE CONCRETE IN TOE AGAINST UNDISTURBED MATERIAL.

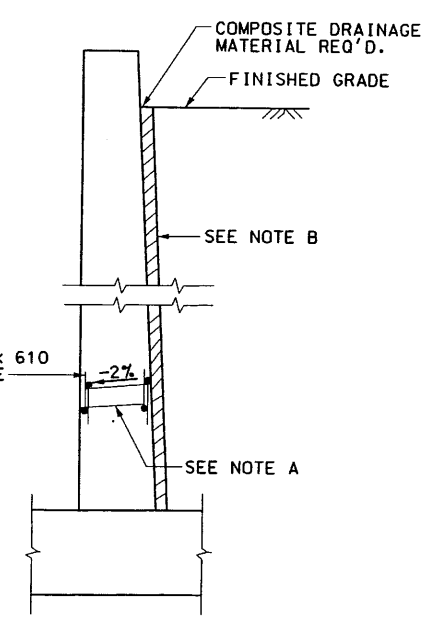


DESIGN AND DRAINAGE



PARTIAL ELEVATION

@ BACK FACE OF WALL



SECTION

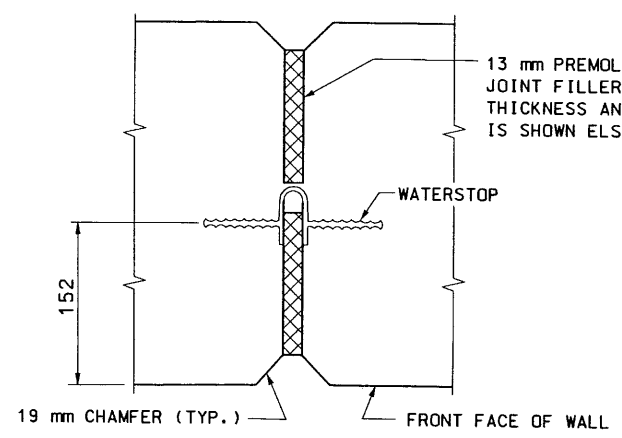
WEEP HOLE DETAIL

NOTES:

- A. 100 mm ϕ DRAINS @ 4.000 m MAX. CENTER TO CENTER.
- B. COMPOSITE DRAINAGE MATERIAL REQUIRED FROM BOTTOM OF WALL TO TOP OF FINISHED GRADE.

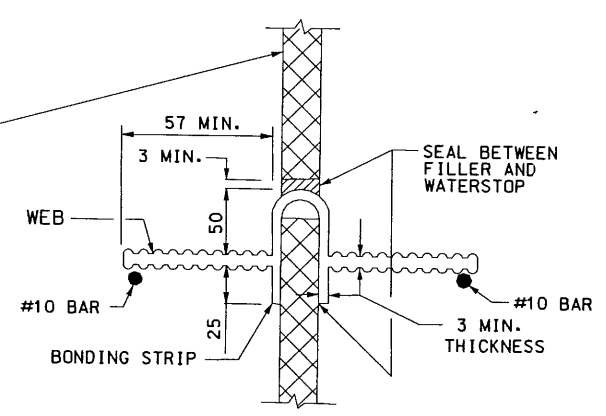
WATER STOP NOTES

1. WATERSTOP TO HAVE FIVE OR MORE PAIRS OF RAISED RIBS TO PROVIDE 65 mm^2 MIN. RIB CROSS-SECTIONAL AREA ON EACH HALF OF THE WATERSTOP. HEIGHT OF RIBS TO BE 2 mm M.N.
2. HOLES WILL BE PERMITTED IN THE OUTER 13 mm OF THE WEB FOR WIRE, RINGS, ETC. TIE WEB TO #10 REINFORCING BARS @ 305 mm MAX. INTERVALS TO SUPPORT THE WATERSTOP IN PROPER POSITION DURING CONCRETE PLACEMENT. ALTERNATIVE DETAIL MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL.



WALL EXPANSION JOINT (PLAN VIEW)

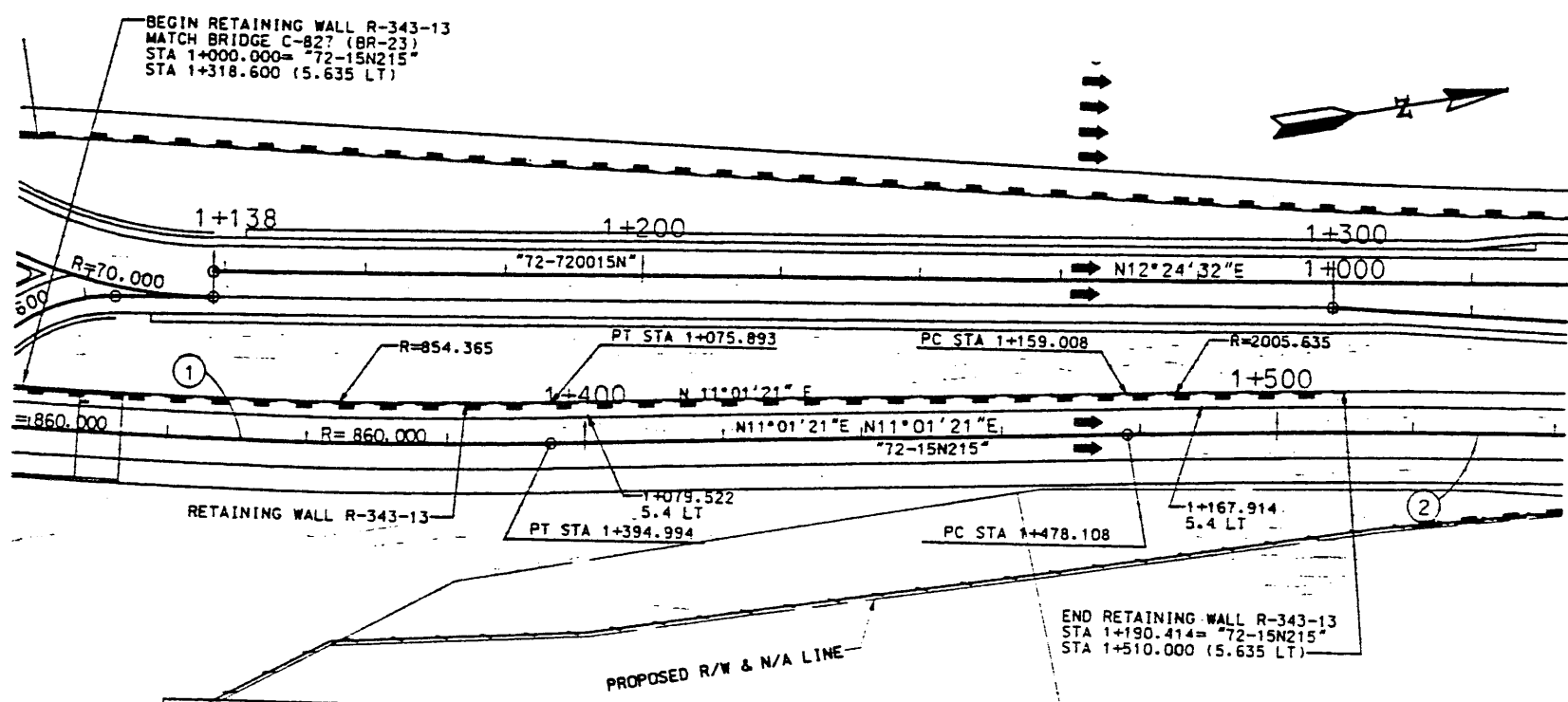
PLACE JOINTS AT 30.500 m MAX. SPACING



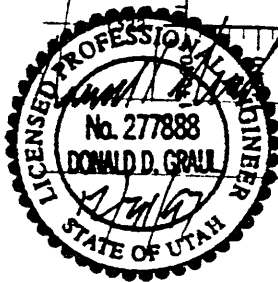
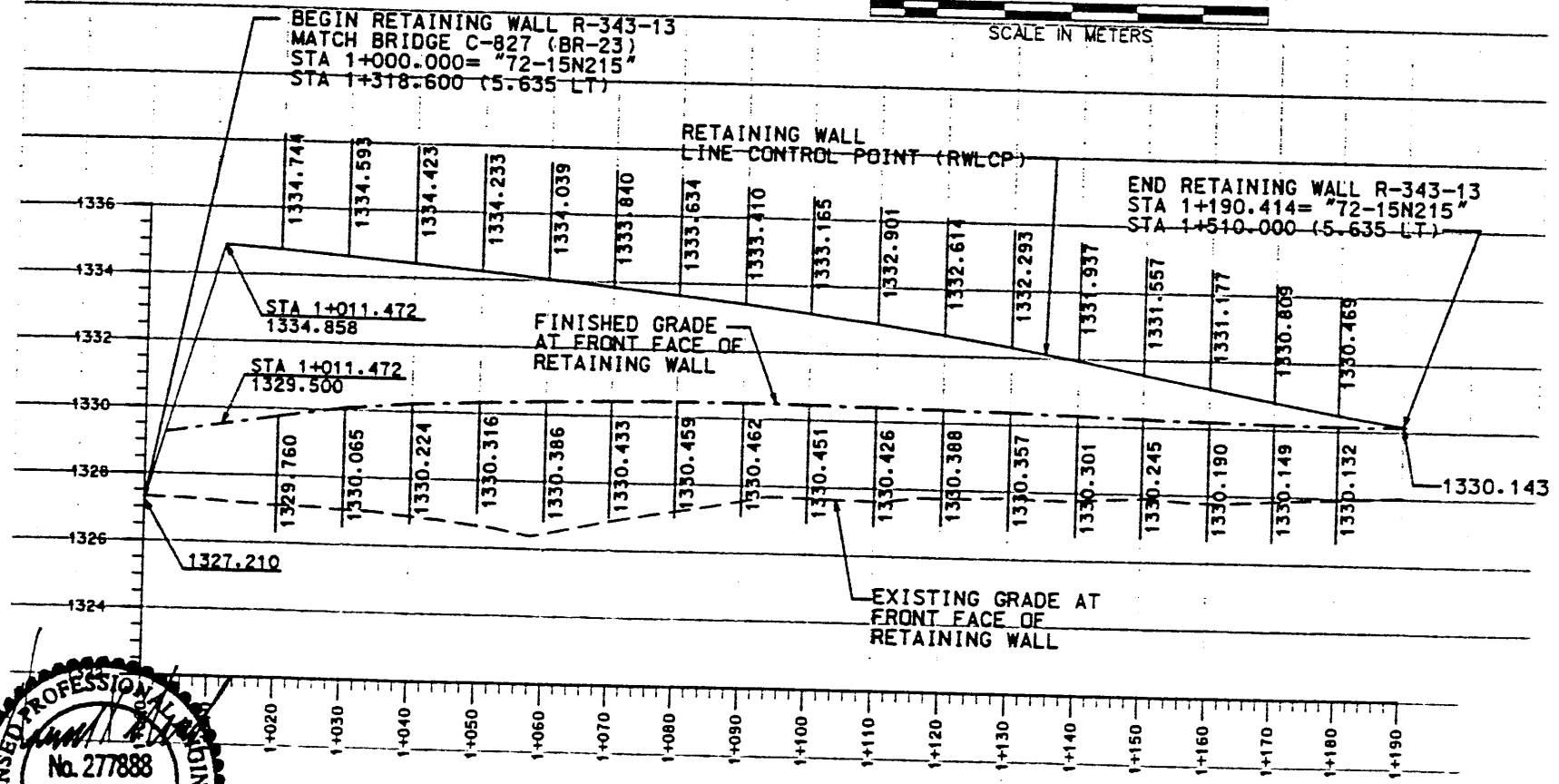
WATERSTOP DETAIL

UTAH DEPARTMENT OF TRANSPORTATION SALT LAKE CITY, UTAH STRUCTURES DIVISION	DESIGN	DRAWN	CHECK	DATE	BY	NO.	REVISIONS
CONCRETE RETAINING WALL STANDARD DETAILS NO. 1	GROUP LEADER	CHIEF STRUCTURAL ENGR.	CHECK	DATE	BY	NO.	REVISIONS
PROJECT NUMBER *SP-15-7(135)296	APPROVED	DATE	CHECK	DATE	BY	NO.	REVISIONS
SALT LAKE COUNTY	1.2R-343-11.4	DRG. NO.	51	OF	51	SHT.	3/22/95

Date: 30-DEC-1997 Time: 13:43 User: rnmw 87011r

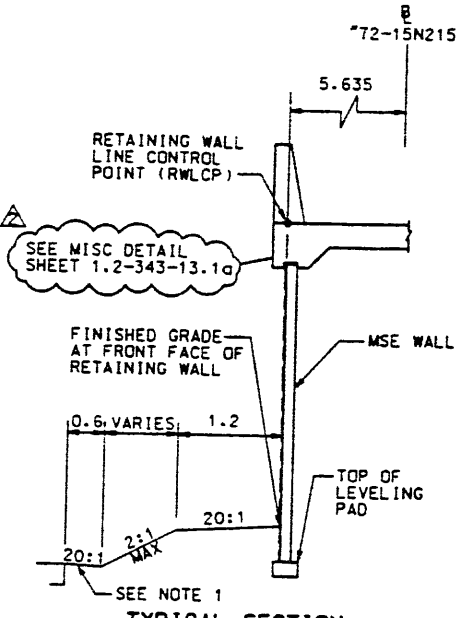
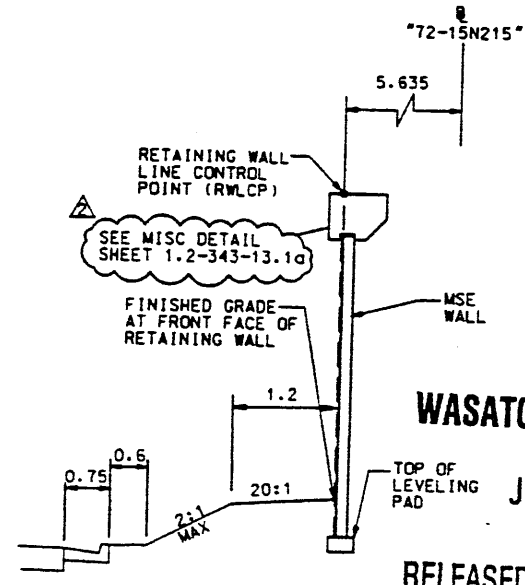


CURVE NO.	△	R	L	T
①	13°51'59"	860.000	208.131	104.576
②	3°37'22"	2000.000	126.455	63.249

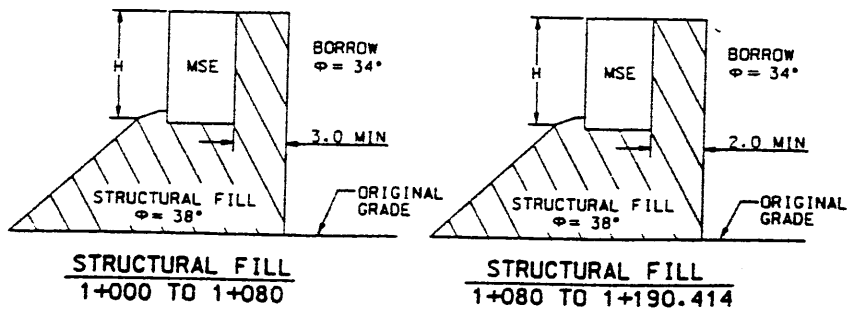


NOTE:
THE FOUNDATION BEARING MATERIALS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER DURING SITE PREPARATION. ANY UNDESIRABLE MATERIALS WILL NEED TO BE REMOVED AND REPLACED WITH BORROW IN ORDER TO ACHIEVE ACCEPTABLE CONDITIONS AT THE BASE OF THE WALL.

NOTE:
ALL STRUCTURAL FILL PLACED BELOW AND BEHIND THE WALL AS SHOWN ON THE PLANS SHALL HAVE AN INTERNAL FRICTION ANGLE OF AT LEAST 38°



NOTE:
1. FOR STA 1+011.472 TO STA 1+012.831 CURB AND GUTTER SECTION APPLIES PER ROADWAY PLAN



APPROVED FOR CONSTRUCTION

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

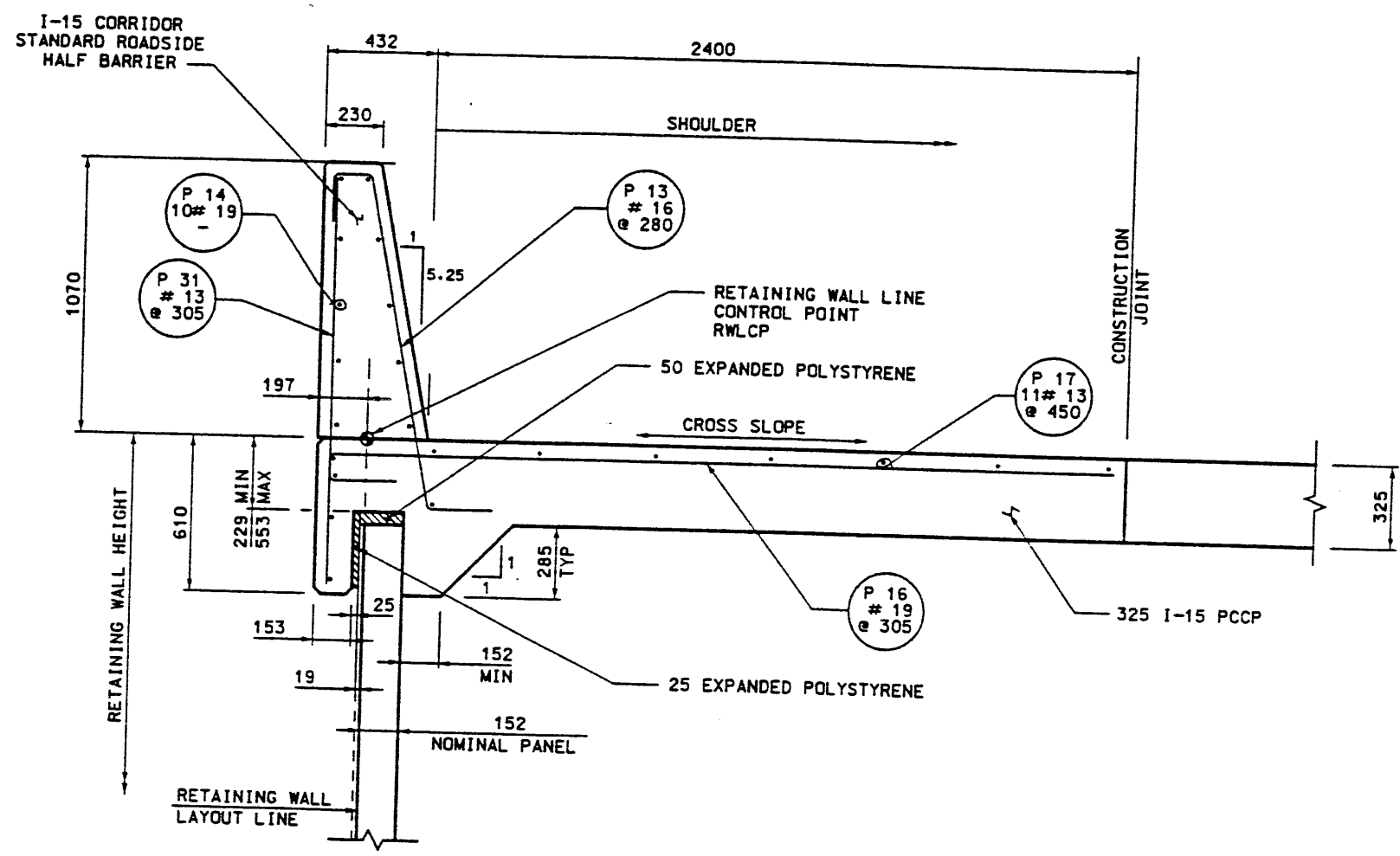
1-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
RET WALL R-343-13
SECTION 1.2
PROJECT NUMBER #SP-15-7(135)296

NO.	DATE	DESCRIPTION
1	10-11-97	INITIAL RELEASE
2	12-31-97	RELEASED FOR GPP / MOMENT SLAB

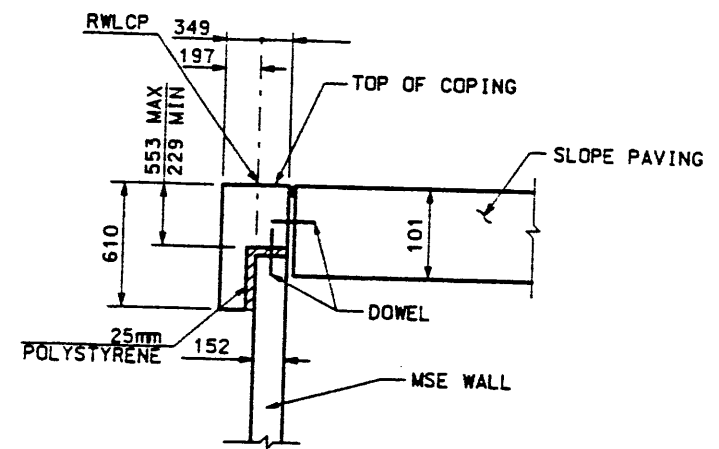
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JAM	JAM	9/97	JAM	JAM	9/97
DRN	DRN	9/97	DRN	DRN	9/97
QUANT.	QUANT.		QUANT.	QUANT.	

SALT LAKE COUNTY
DWC NO. 1.2R-343-13.1
SMT 1 of 10
REF.

Date: 30-DEC-1997 Time: 10:28
 User: rnmstottr
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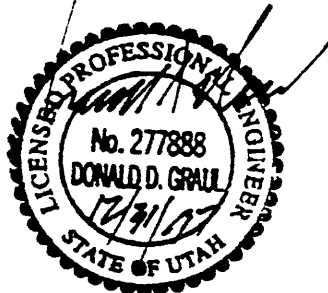
MSE SINGLE STAGE WITH BARRIER ON MOMENT SLAB
NO SCALE



CROSS SECTION C-C WITH ABUTMENT SLOPE (NON SPUI)
SLOPE PAVING / COPING DETAILS
NO SCALE

BARRIER REINFORCING STEEL SCHEDULE				
MARK	LOCATION	SIZE NO.	LENGTH	SKETCH
P13	OUTSIDE	16	1994	
P14	OUTSIDE LONGITUDINAL	19	VARIES	
P15	OUTSIDE	13	VARIES	
P16	OUTSIDE BARRIER ON MSE WALL	19	3240	
P17	OUTSIDE BARRIER ON MSE WALL	13	VARIES	
P18	OUTSIDE BARRIER	19	2340	
P30		16	2440	
P31		13	1370	
P32		19	4310 MAX	

- NOTES:**
- 50mm MINIMUM COVER OVER REINFORCING.
 - USE 325 PCCP $f'c=27.5 \text{ MPa}$ (4,000 PSI) FOR MOMENT SLAB.



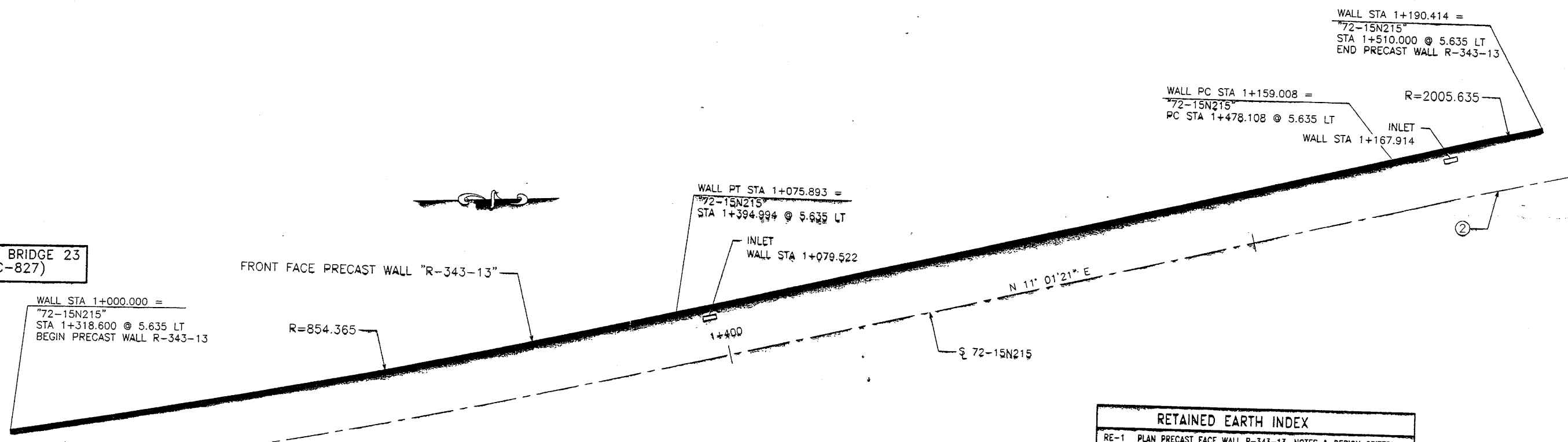
WASATCH CONSTRUCTORS
JAN 02 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION
 UTAH DEPARTMENT OF TRANSPORTATION
 SVERDRUP/DE LEUW
 I-15 CORRIDOR RECONSTRUCTION
 MISC. DETAILS
 RET. WALL R-343-13
 SECTION 1.2
 PROJECT NUMBER #SP-15-7(135)296
 SALT LAKE COUNTY
 1.2R-343-13.1a
 SHT. 2 of 10

NO.	DATE	DESCRIPTION
1	12/31/97	RELEASED FOR DEPARTMENT BLAW
2	12/31/97	
3	12/31/97	
4	12/31/97	
5	12/31/97	
6	12/31/97	
7	12/31/97	
8	12/31/97	
9	12/31/97	
10	12/31/97	

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10-07-97
FINAL P

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-07-97	RELEASE FOR CONSTRUCTION



MATCH BRIDGE 23 (C-827)

RETAINED EARTH INDEX	
RE-1	PLAN PRECAST FACE WALL R-343-13, NOTES & DESIGN CRITERIA
RE-2	TYPICAL DETAILS
RE-3	TYPICAL DETAILS
RE-4	TYPICAL CROSS SECTIONS
RE-5	ELEVATION PRECAST WALL "R-343-13"
RE-6	ELEVATION PRECAST WALL "R-343-13"
RE-7	SPECIAL PANEL DETAILS
RE-8	SPECIAL PANEL DETAILS

PLAN VIEW WALL "R-343-13"

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

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	Δ
①	860.000	208.131	104.576	13°51'59"
②	2000.000	126.455	63.249	3°37'22"

All Dimensions Are In Meters Unless Noted Otherwise

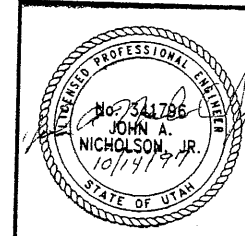
DESIGN PARAMETERS	
ANGLE OF INTERNAL FRICTION (SELECT)	= 38°
ANGLE OF INTERNAL FRICTION (BASE)	= 38°
ANGLE OF INTERNAL FRICTION (RANDOM)	= 38°
UNIT WEIGHT BACKFILL	= 135 PCF.
TRAFFIC SURCHARGE	= 250 PSF
SEISMIC ACCELERATION COFF.	= 0.12g (TYP)
SEISMIC ACCELERATION COFF.	= 0.32g (AT BRIDGE ABUTMENTS)
DESIGN CRITERIA	
SAFETY FACTOR (OVERTURNING)	= 2.0
SAFETY FACTOR (SLIDING)	= 1.5
SAFETY FACTOR (PULLOUT)	= 1.5
DESIGN LIFE	= 75 YEARS

GENERAL NOTES

- ALL WALLS ARE SHOWN FRONT FACE. NOTE STATIONING.
- PANEL TYPE IS DESIGNATED ON EACH PANEL. CONNECTOR LABELS INDICATE NUMBER OF CONNECTORS PER SOIL REINFORCING MESH LOCATION.
EXAMPLE: 5B2-10 IS A "B2-10" PANEL WITH FIVE (5) CONNECTORS PER SOIL REINFORCING MESH LOCATION.
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: 4W20-12 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 12" 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.
IF NO MESH IS SHOWN, 4W11-6 MESH SHALL BE USED.
- 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 SHEET RE-3 FOR DETAIL.

WASATCH CONSTRUCTORS
OCT 15 1997
RELEASED FOR CONSTRUCTION

METRIC



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RETAINED EARTH™ WALLS	SCALE:
PLAN VIEW PRECAST WALL "R-343-13"	1.2R-343-13.2
UTAH I-15 INTERCHANGE	JOB NO:
SALT LAKE COUNTY, UTAH	239-0007/10
UTAH DEPARTMENT OF TRANSP.	RE-1

NO.	DATE	DESCRIPTION	BY	CHK

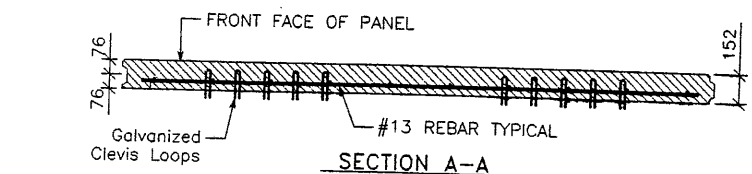
VSL CORPORATION
2840 Roca Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-4669

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

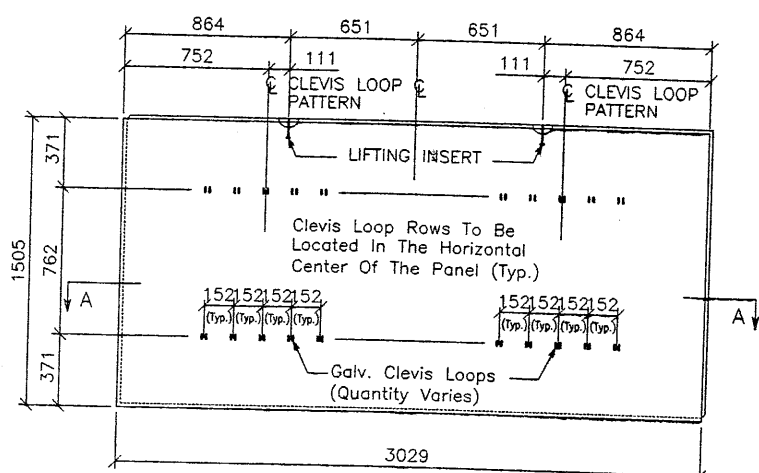
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FINAL PLOT 10-07-97

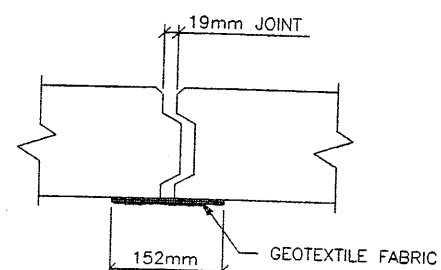
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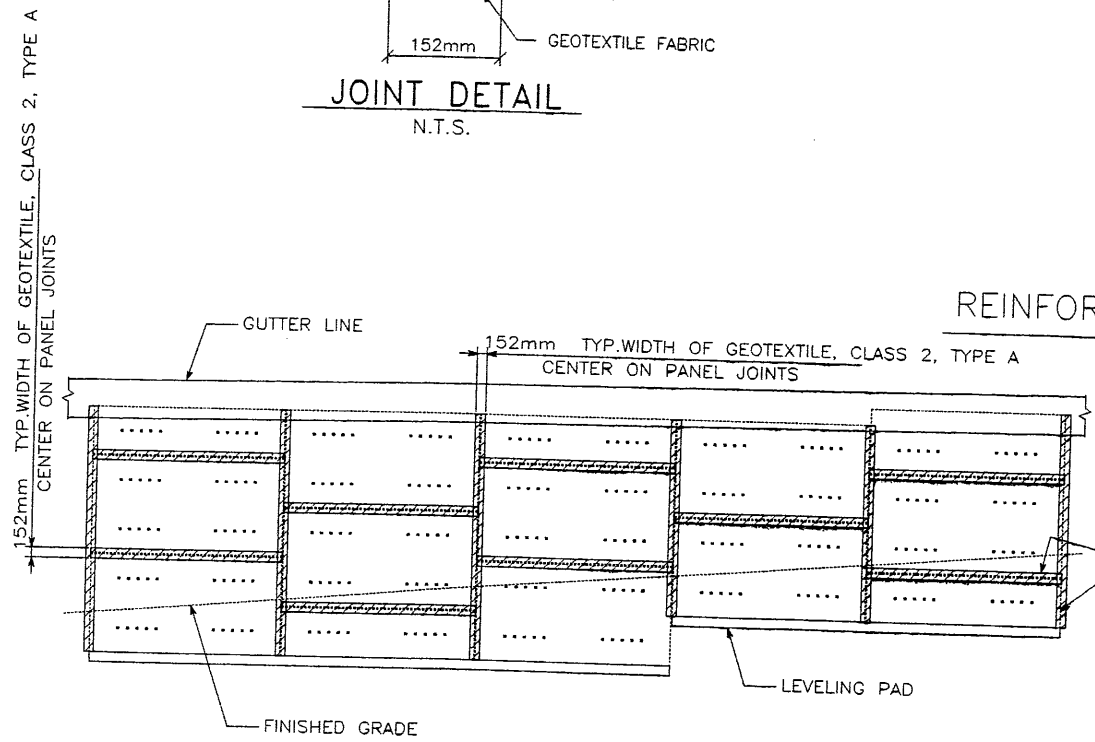
SECTION A-A



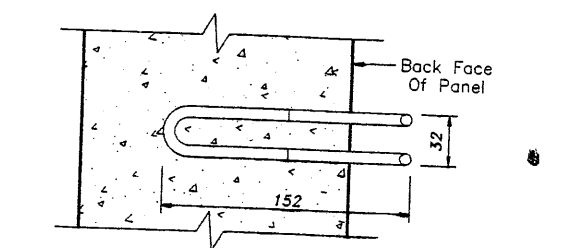
STANDARD "5A-10" PANEL
Back Face View



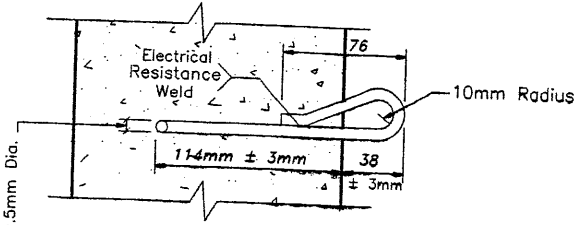
JOINT DETAIL
N.T.S.



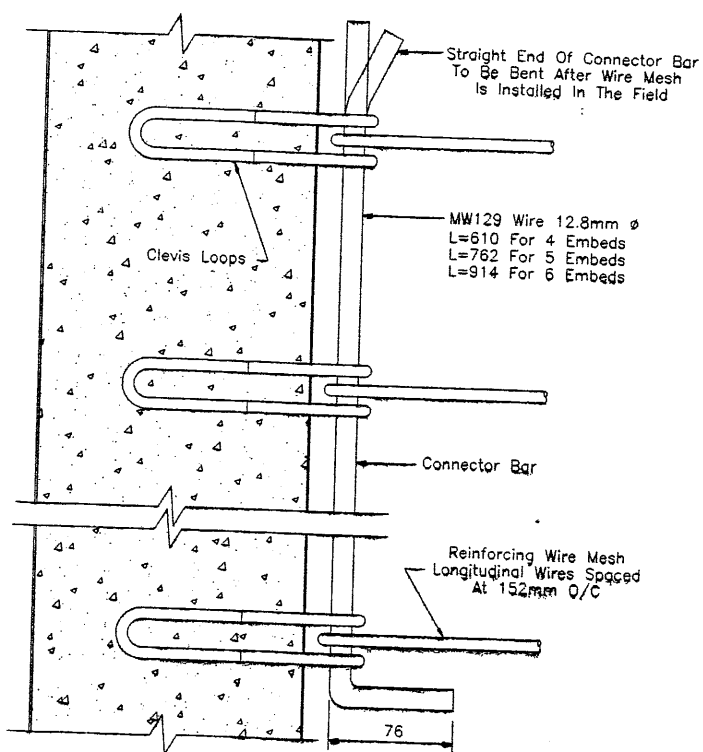
PARTIAL WALL ELEVATION



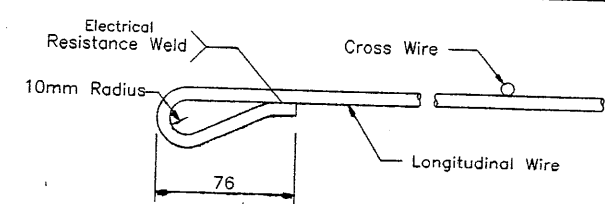
CLEVIS LOOP DETAIL
N.T.S.



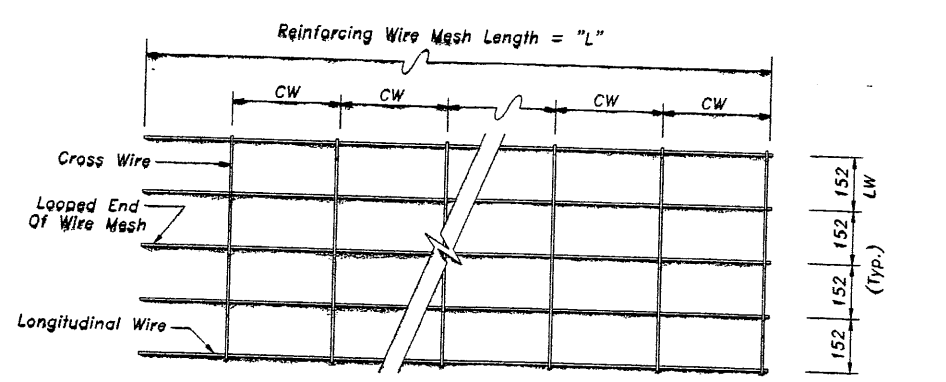
CLEVIS LOOP DETAIL
N.T.S.



REINFORCING MESH CONNECTION DETAIL
N.T.S.



WIRE MESH LOOP DETAIL
N.T.S.



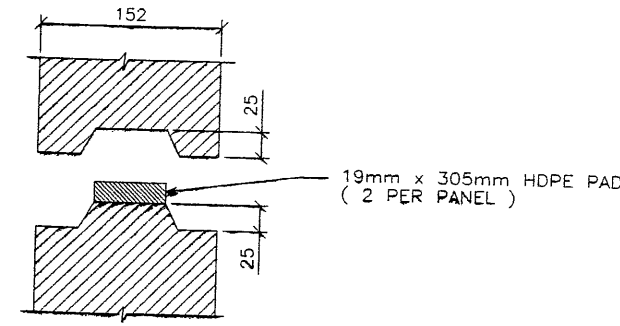
WIRE MESH DESIGNATION $5W11 + W11 \times 1.0 (5W11-12)$

No. Of Longitudinal Wires
 Size Of Longitudinal Wires (LS)
 Size Of Cross Wires (CS)
 Spacing (Ft.) Of Cross Wires (CW)

NOTE: FOR EXAMPLE ABOVE,
 EQUIVALENT WIRE MESH DESIGNATION = $6 \times 12-W11W11-24" \times "L"$
 (LW) (CW)(LS) (CS)

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, $F_y = 448 \text{ MPa}$.
 Mesh Shall Be Galvanized To ASTM
 A-123 To A Minimum Effective
 Thickness Of 0.086 mm.



HORZ. JOINT DETAIL
N.T.S.

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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.

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-07-97	RELEASE FOR CONSTRUCTION

DES.	MM	DRN.	DDO	CHK.	MM	RETAINED EARTH™	NO.	DATE	REVISION	BY	CHK
09-03-97		09-03-97	DDO		09-03-97						

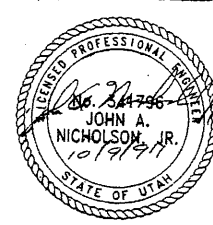
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 Raleigh, NC 27612
 Telephone: (919) 761-6272
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WASATCH CONSTRUCTORS
 OCT 15 1997
 RELEASED FOR CONSTRUCTION

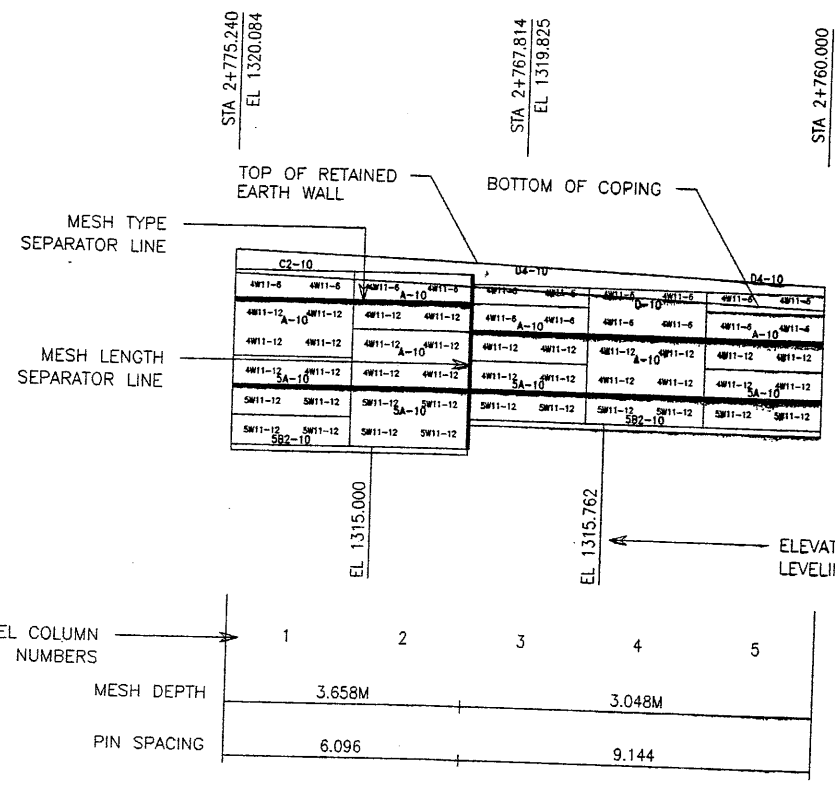
METRIC



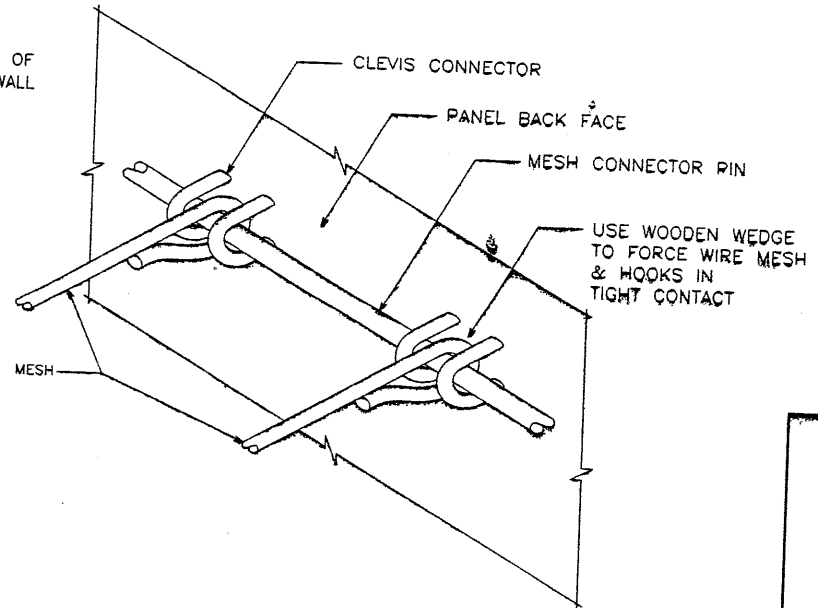
RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-13"
 TYPICAL DETAILS
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE:
 1.2R-343-13.3
 JOB NO.
 239-0007 4/10
 RE-2

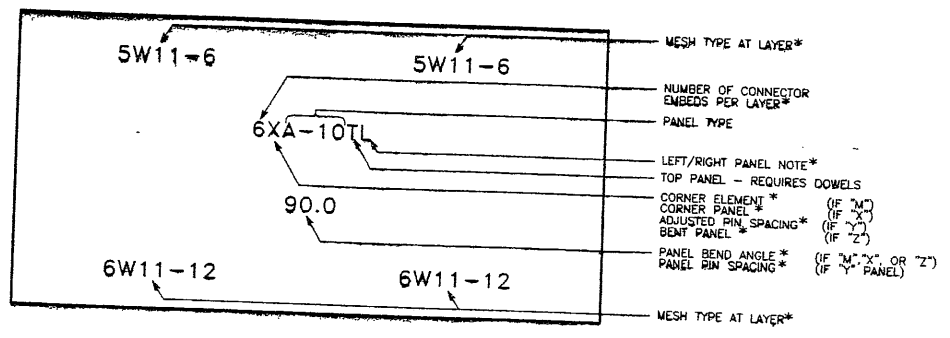
FINAL PI 0-07-97 E:\PROJECT\239-0007\2SERIES\72-13\RE-3



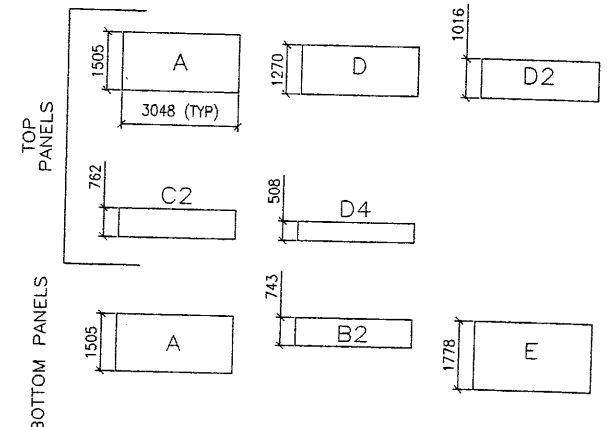
1 WALL ELEVATION KEY (FRONT FACE SHOWN)



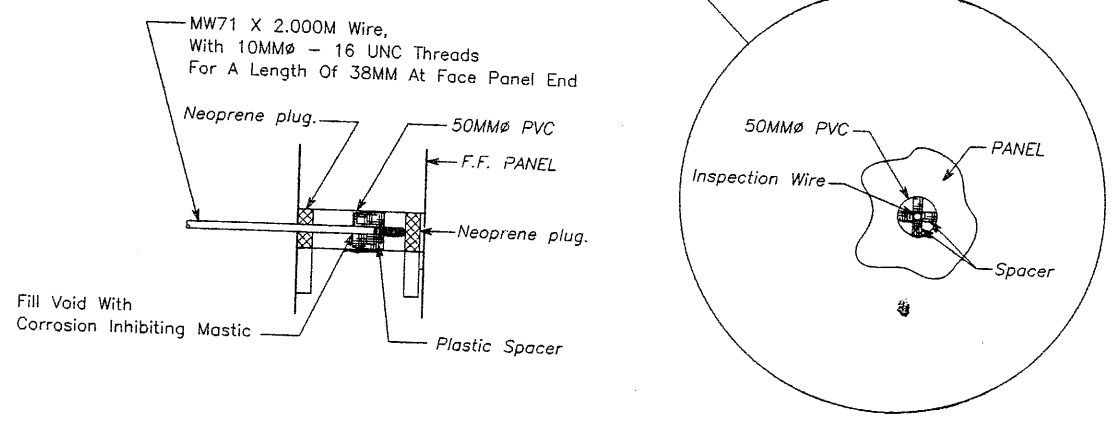
2 MESH CLEVIS CONNECTOR
VSL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,170.



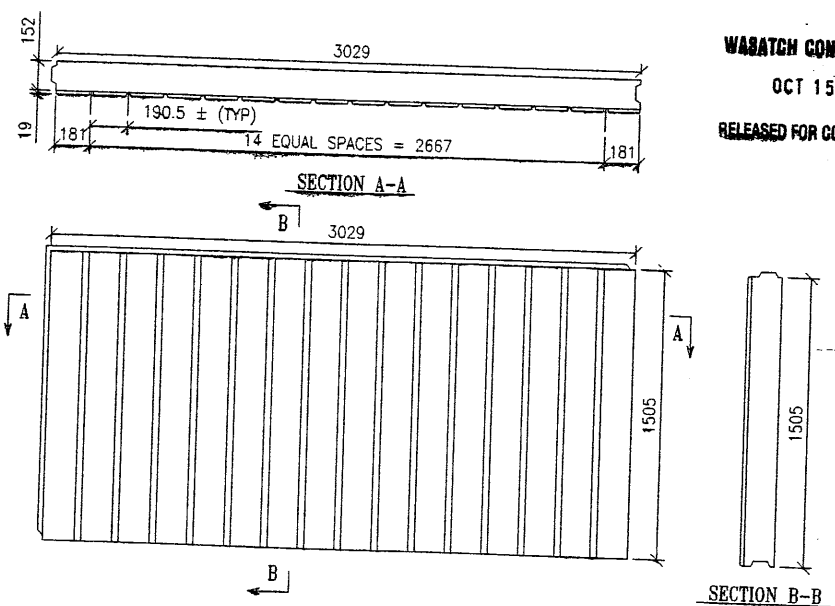
3 PANEL LABELS



4 PANEL TYPES
ALL DIMENSIONS ARE IN MILLIMETERS



5 INSPECTION WIRE DETAIL (PANEL FRONT FACE SHOWN)



6 ARCHITECTURAL PANEL FINISH (PANEL FRONT FACE SHOWN)

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NO.	DATE	DESCRIPTION
1	10-07-97	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

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WABATCH CONSTRUCTORS
OCT 15 1997
RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
PRECAST WALL "R-343-13"
TYPICAL DETAILS

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

SCALE:
1.2R-343-13.4

JOB NO:
239-0007

RE-3

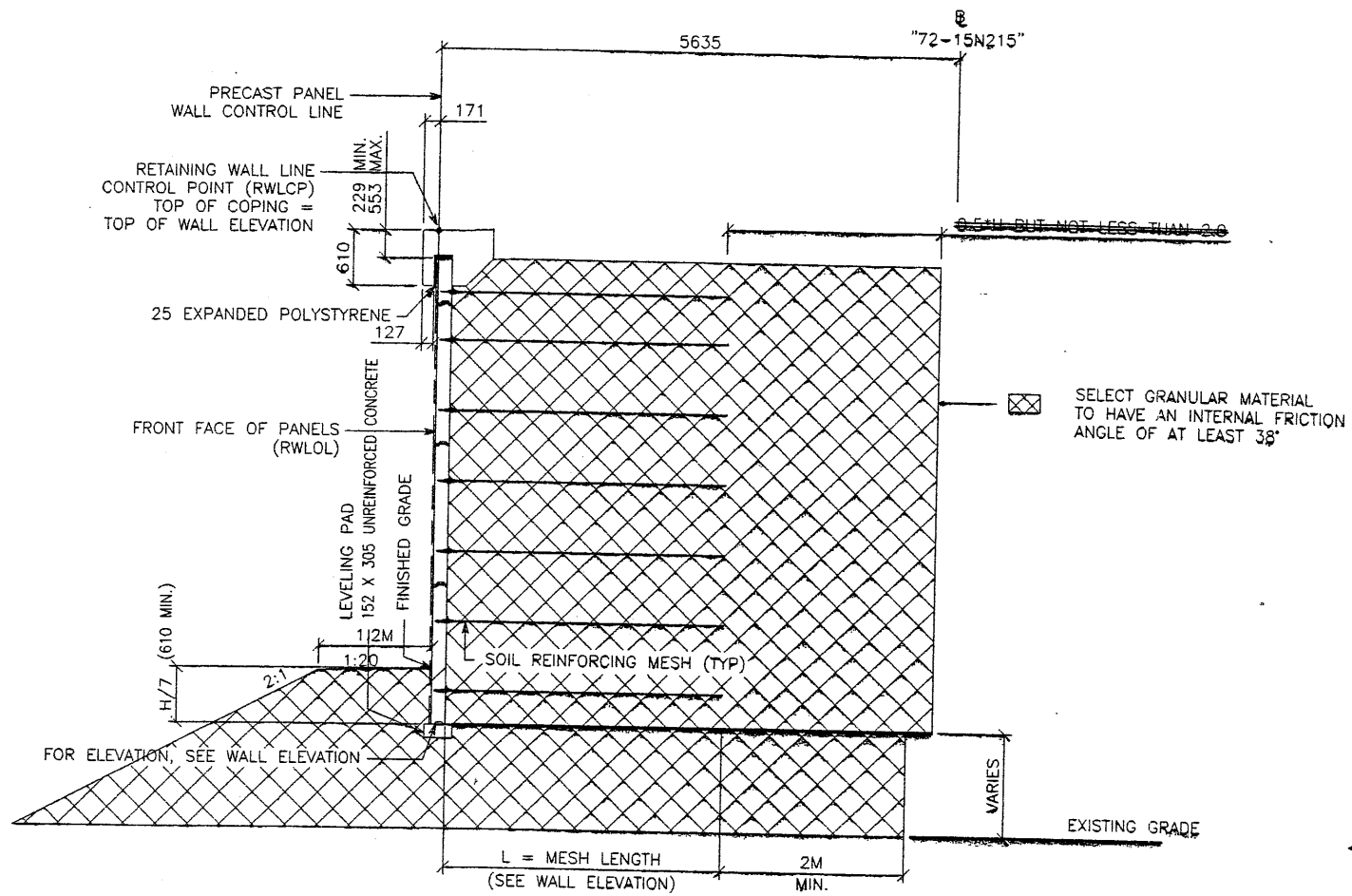
PROFESSIONAL ENGINEER
JOHN A. NICHOLSON, JR.
10/9/97
STATE OF UTAH

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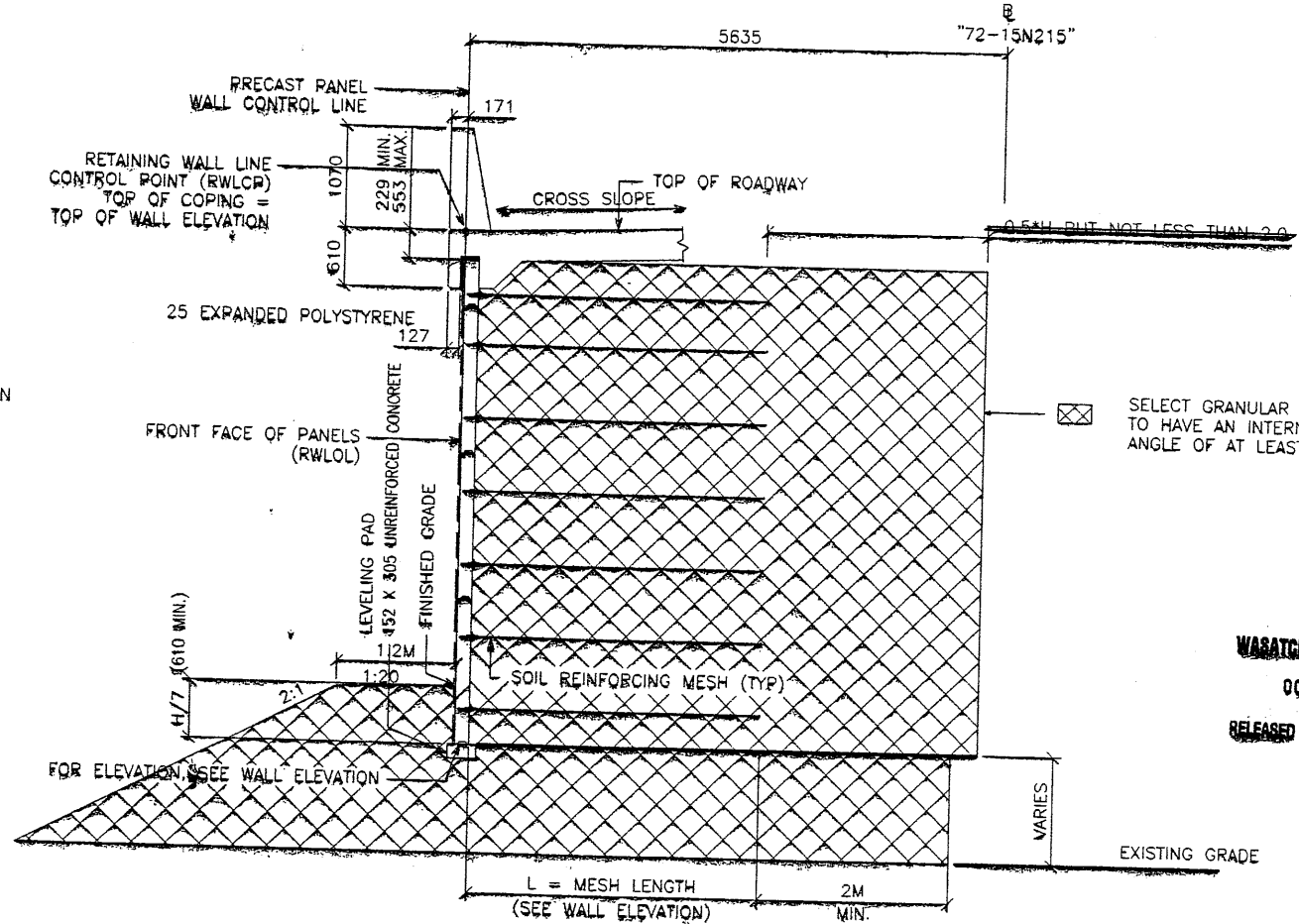
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FINAL PL 7-07-97

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NO.	DATE	DESCRIPTION
△	10-07-97	RELEASE FOR CONSTRUCTION <i>OK</i>



TYPICAL CROSS SECTION STA 1+000.000 TO 1+011.472
 (MSE SINGLE STAGE WITH MOMENT SLAB)
 SCALE: 1:40 (FULL SIZE)
 SCALE: 1:80 (HALF SIZE)

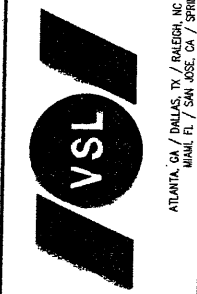


TYPICAL CROSS SECTION STA 1+011.472 TO 1+190.414
 (MSE SINGLE STAGE WITH MOMENT SLAB)
 SCALE: 1:40 (FULL SIZE)
 SCALE: 1:80 (HALF SIZE)

*Note: See S+L Sht 1.2R-343-13.1
 For limits of Structural Fill*

WARATCH CONSTRUCTORS
 OCT 15 1997
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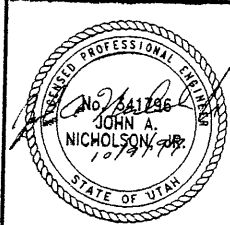
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RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-13"
 TYPICAL CROSS SECTIONS
 UTAH 1-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

METRIC



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SCALE: 1.2R-343-13.5
 JOB NO: 239-0007 6/10
 RE-4

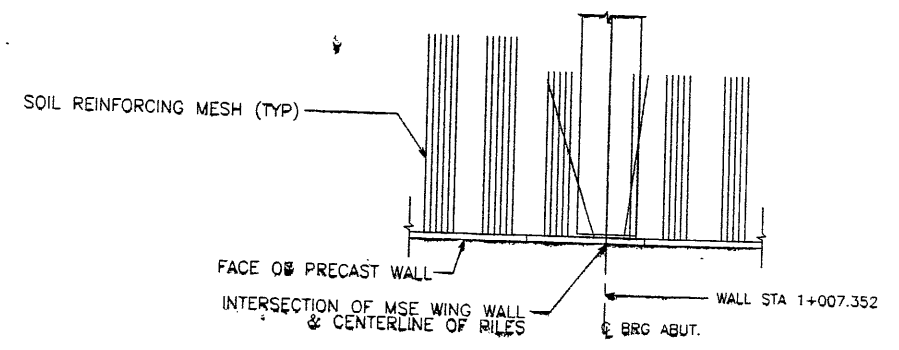
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-07-97

FINAL PLC

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-07-97	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION

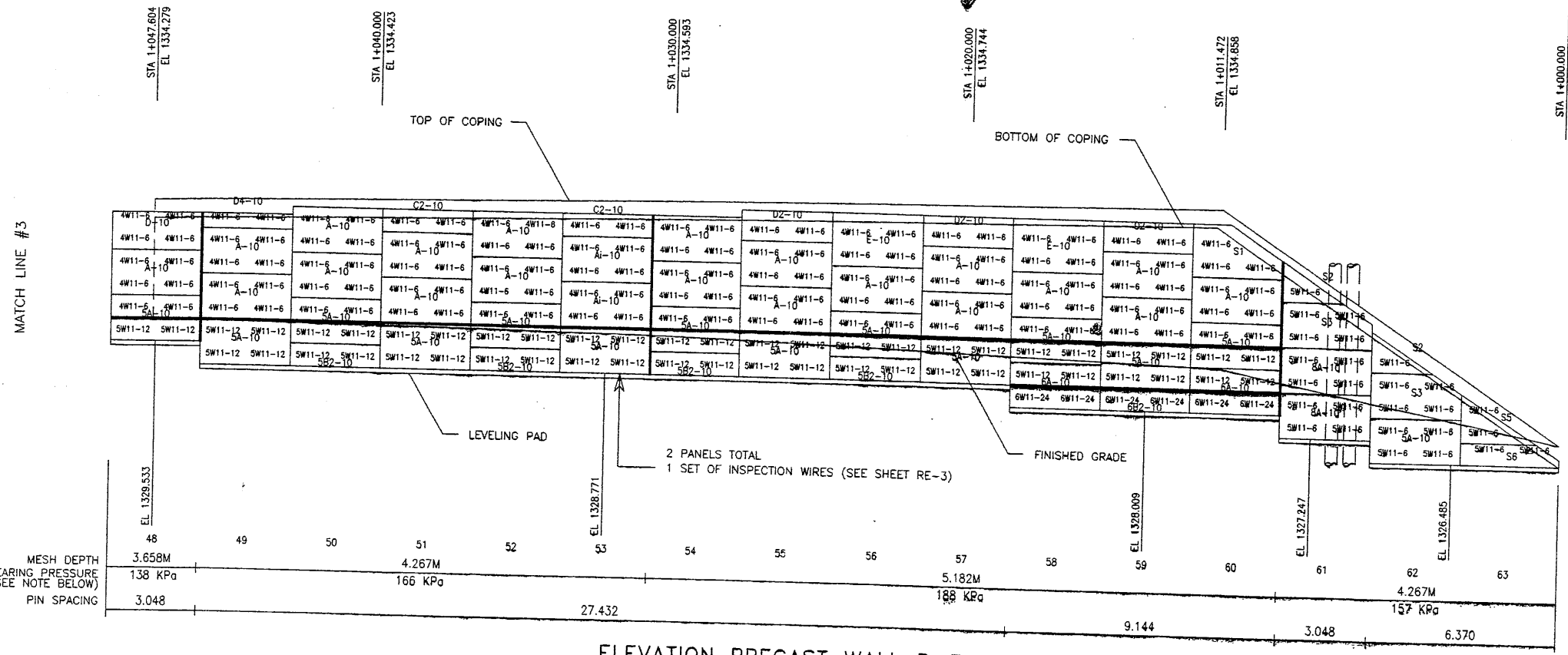


WALL STA 1+000.000 =
 "72-15N215"
 STA 1+318.600 @ 5.635 LT
 NOMINAL PANEL FACE (RWLOL)

WARATCH CONSTRUCTORS
 OCT 15 1997
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ELEVATION PRECAST WALL R-343-13
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 206.59 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

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

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METRIC

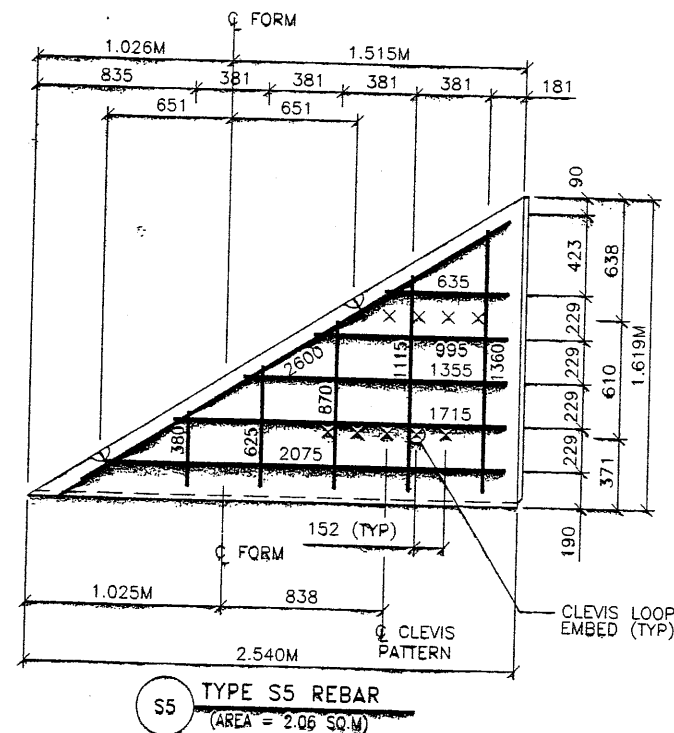
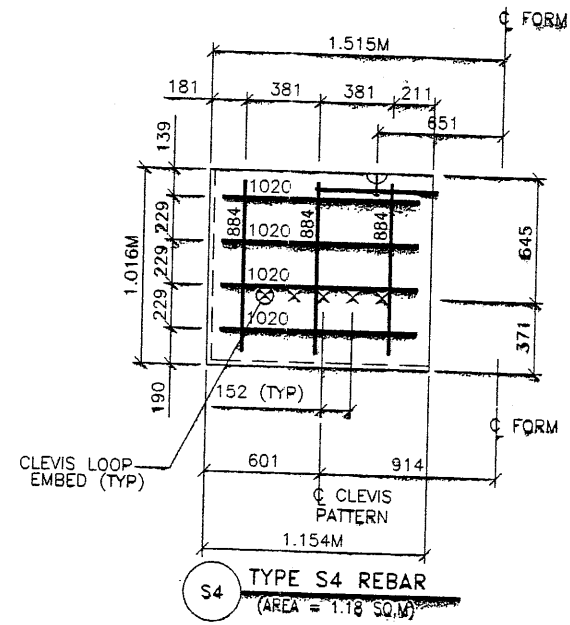
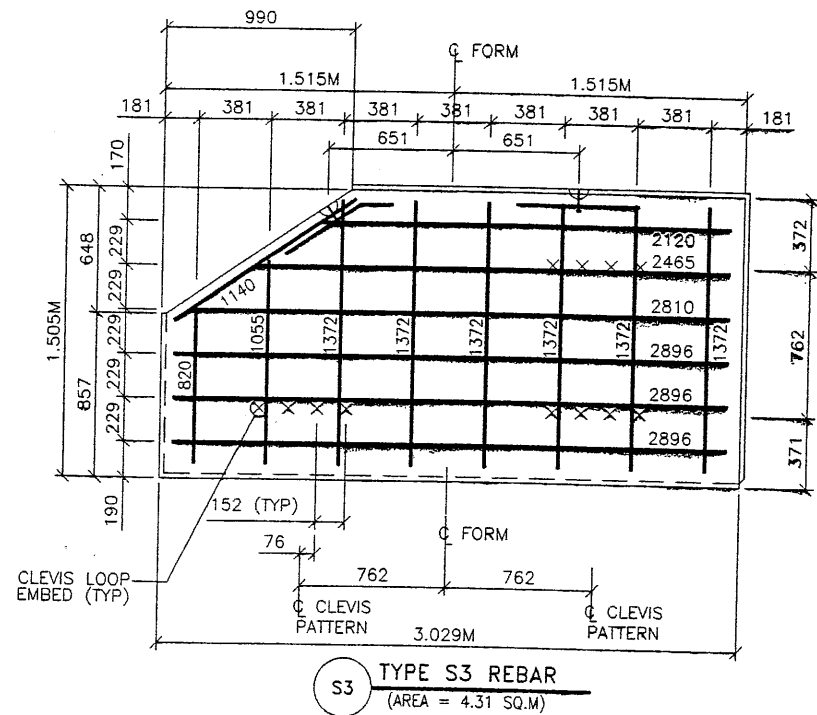
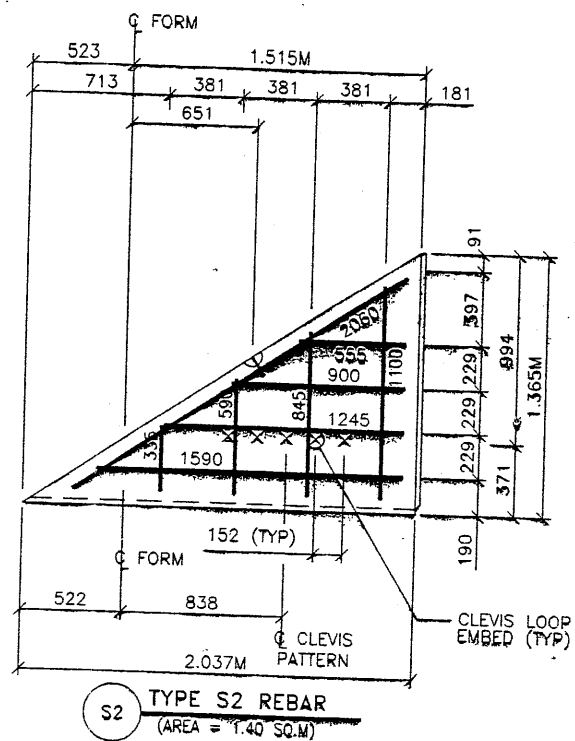
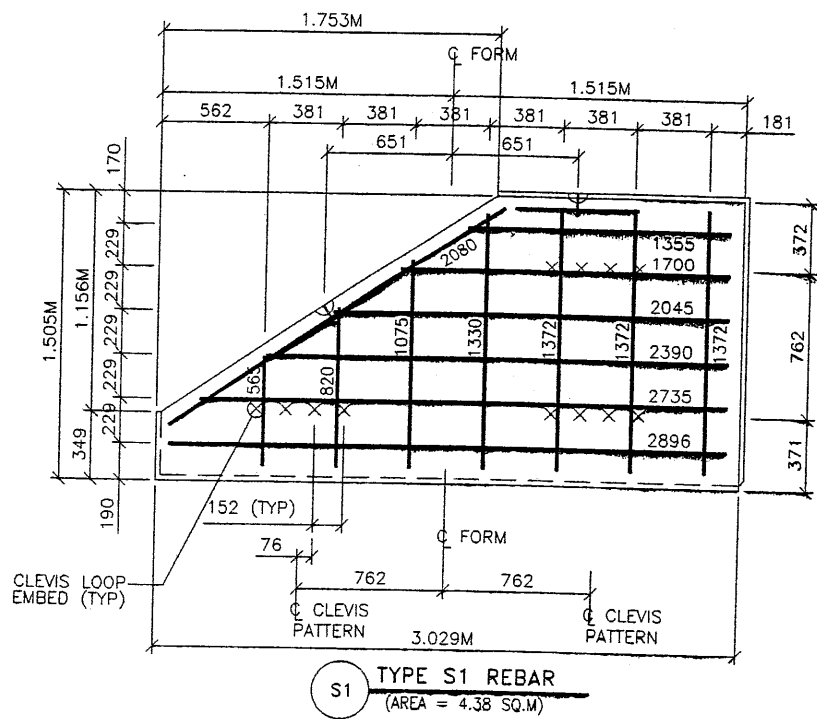
RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-13"
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE:
 1.2R-343-13.7
 JOB NO:
 239-0007 8/10
 RE-6

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-06-97

FINAL PLOT



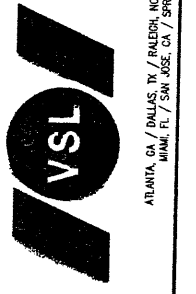
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	11-11-97	RELEASE FOR CONSTRUCTION

- 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.

WARREN CONSTRUCTORS
NOV 13 1997
RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

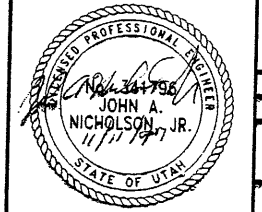
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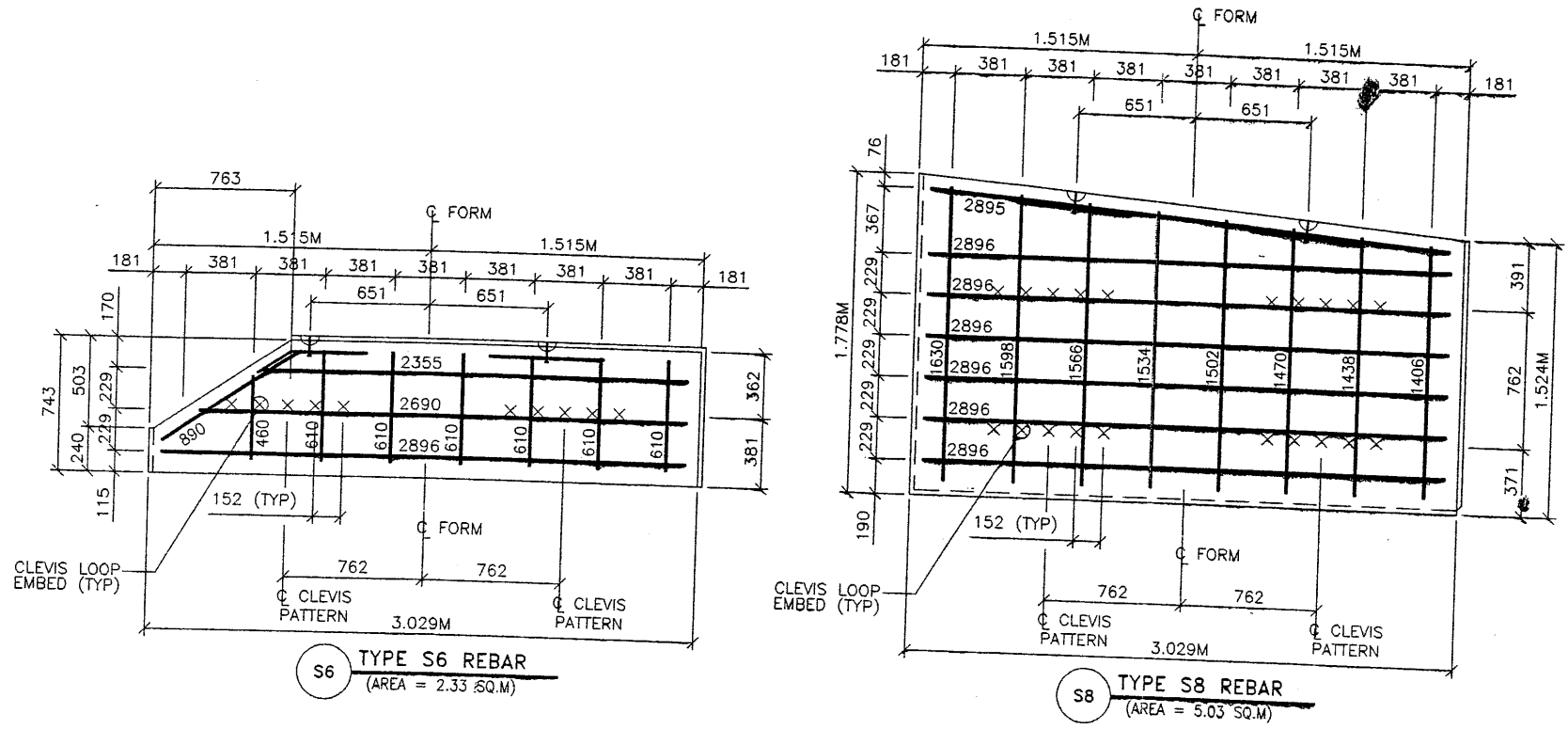
RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-13"
 SPECIAL PANEL REINFORCEMENT
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

METRIC



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SCALE:	1.2R-343-13.8
JOB NO:	239-0007 9/10
RE-7	



S6 TYPE S6 REBAR
(AREA = 2.33 SQ.M)

S8 TYPE S8 REBAR
(AREA = 5.03 SQ.M)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	11-11-97	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.

WASATCH CONSTRUCTORS
NOV 13 1997

RELEASED FOR CONSTRUCTION

WASATCH CONSTRUCTORS
NOV 13 1997

RELEASED FOR CONSTRUCTION

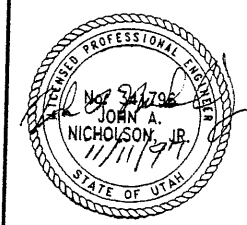
NO.	DATE	DESCRIPTION	NO.	DATE	BY

DES: 10-06-97 JUN
DRN: 10-06-97 DDO
CHK: 10-06-97 JUN

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27617-6772
Tel: (919) 781-4672
Fax: (919) 781-4669

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

RETAINED EARTH™ WALLS
PRECAST WALL "R-343-13"
SPECIAL PANEL REINFORCEMENT
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.



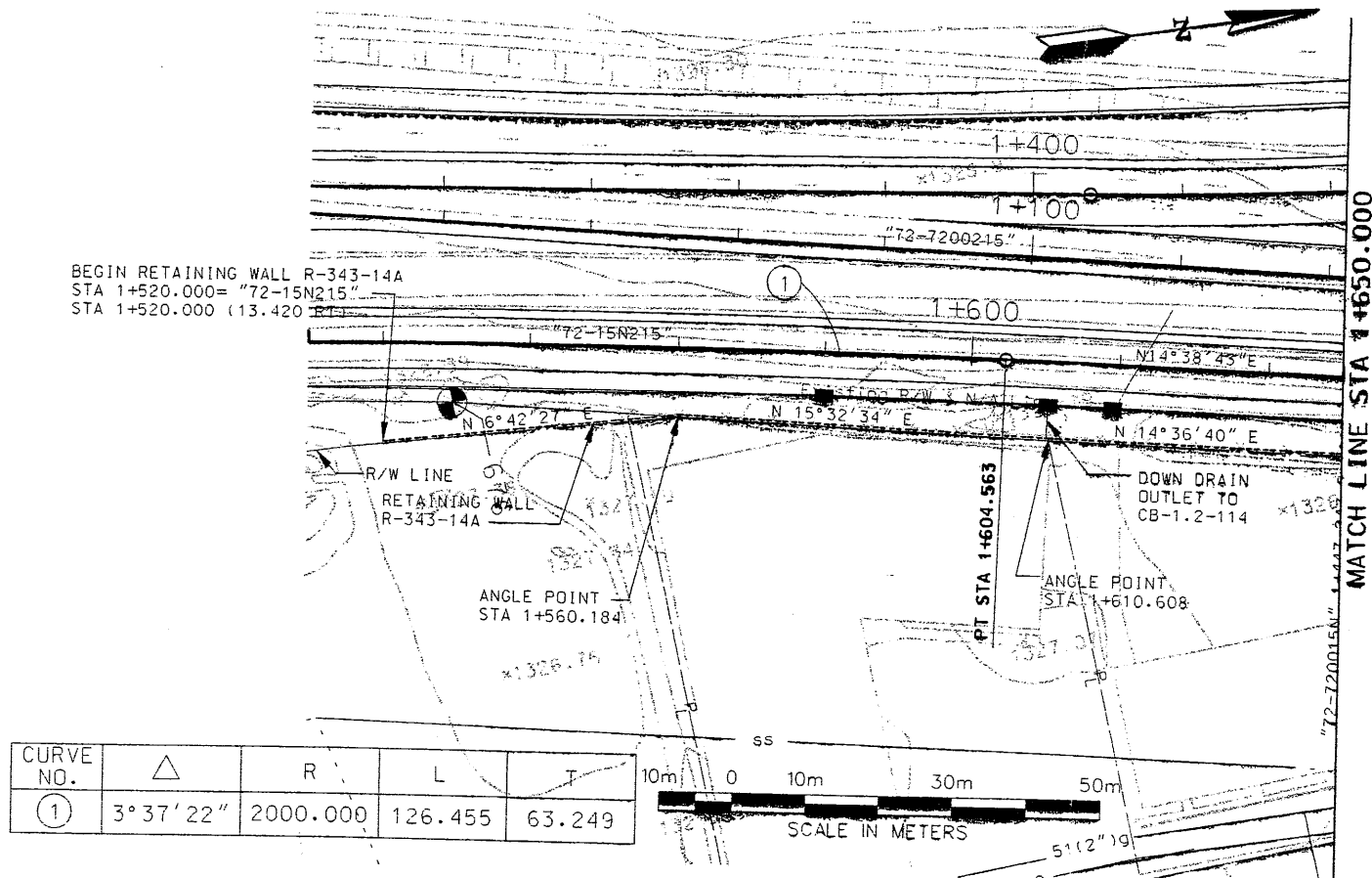
METRIC

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.

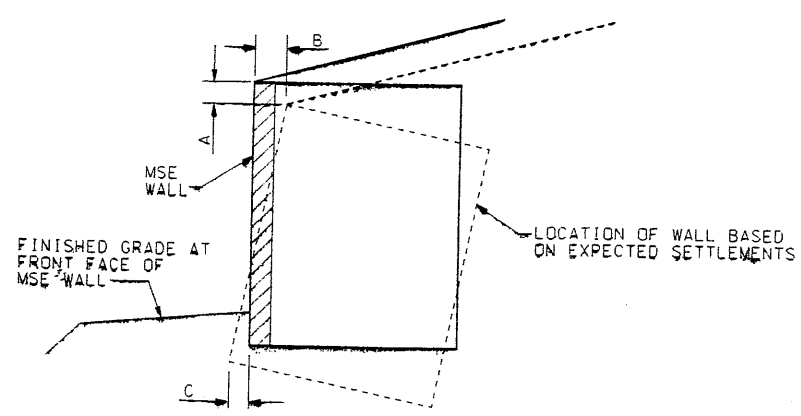
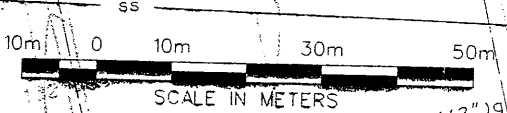
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JOB NO: 239-0007 10/10
RE-8

Active File Levels(1-64)
 First Reference File Levels(1-43, 46, 47, 49, 50, 54, 60-64)
 Second Reference File Levels(1-22, 24-32, 34, 35, 37-62, 64)
 Third Reference File Levels(1-64)
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Date: 15-Oct-1997 Time: 16:43 User: ramer.fulk.jd



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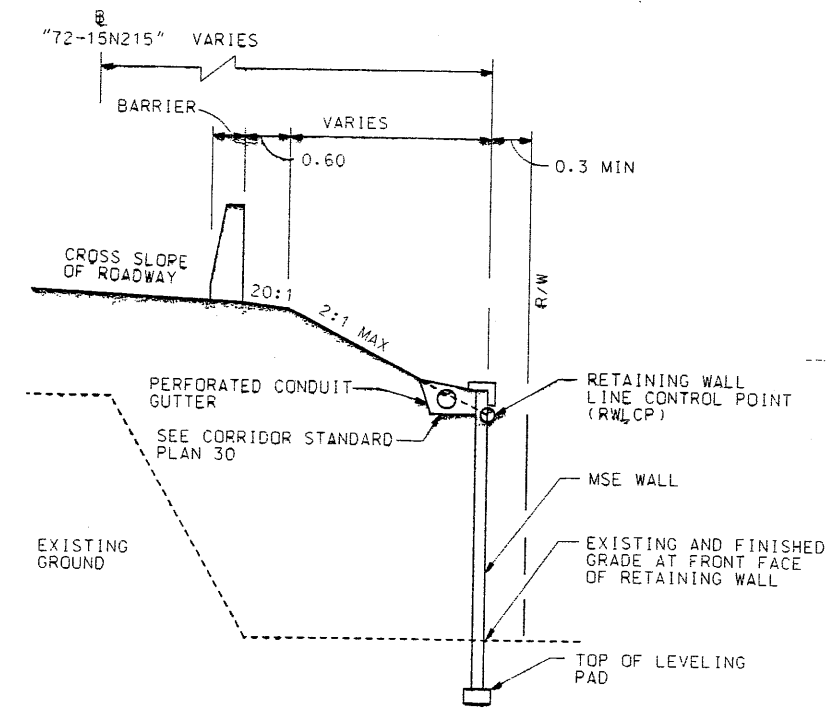
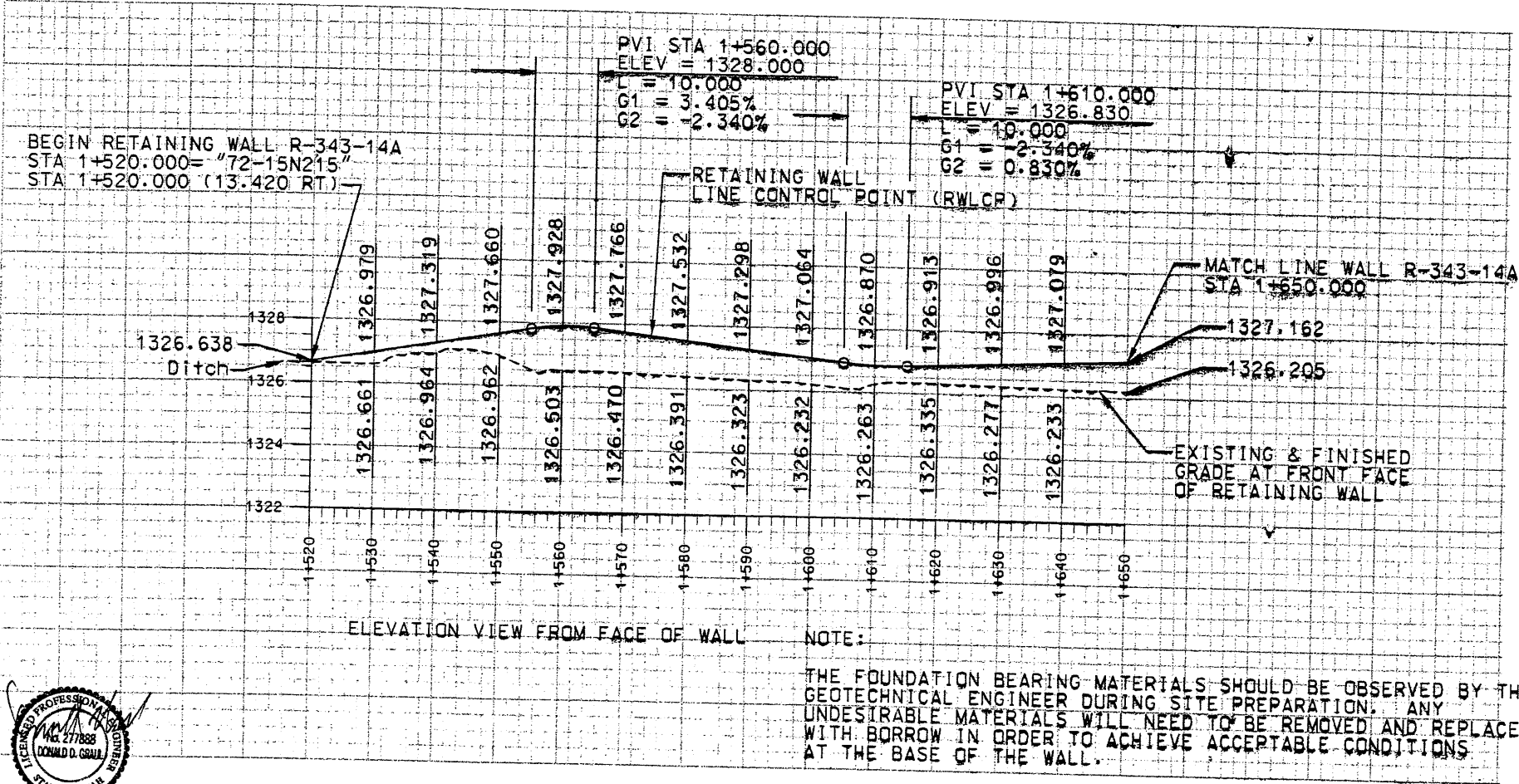


ESTIMATED SETTLEMENT TABLE

STATION LIMITS	REFERENCE STATION	WALL SETTLEMENT mm	TOP OF WALL ROTATION mm	LATERAL DISPLACEMENT AT BOTTOM OF WALL mm
		A	B	C
1+520.000 TO 1+814.715	1+770***	10 TO 30	7	**

** LATERAL DISPLACEMENT AT BOTTOM OF WALL SHOULD BE LESS THAN ONE HALF OF THE SETTLEMENT AT FRONT FACE OF WALL. TERRACON RECOMMENDS CONSTRUCTING THE WALL TOE AT THE DESIGN LOCATION.
 *** THESE VALUES CALCULATED AT REFERENCED STATION; ROTATIONS AT OTHER STATIONS CAN BE ESTIMATED IN PROPORTION TO WALL HEIGHT.

WAMATCH CONSTRUCTORS
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TYPICAL SECTION WALL R-343-14A
 STA 1+520.00 TO STA 1+600.000
 STA 1+620 TO STA 1+700



UTAH DEPARTMENT OF TRANSPORTATION
 JRS Greiner
 SVERDRUP/DE LEUW

APPROVED FOR CONSTRUCTION	DATE	DESCRIPTION
	10-15-97	INITIAL RELEASE

NO.	DATE	CHECK	DATE	CHECK
1		JAN	9/97	JAN
		JUN	9/97	JUN
		CHECK	9/97	CHECK

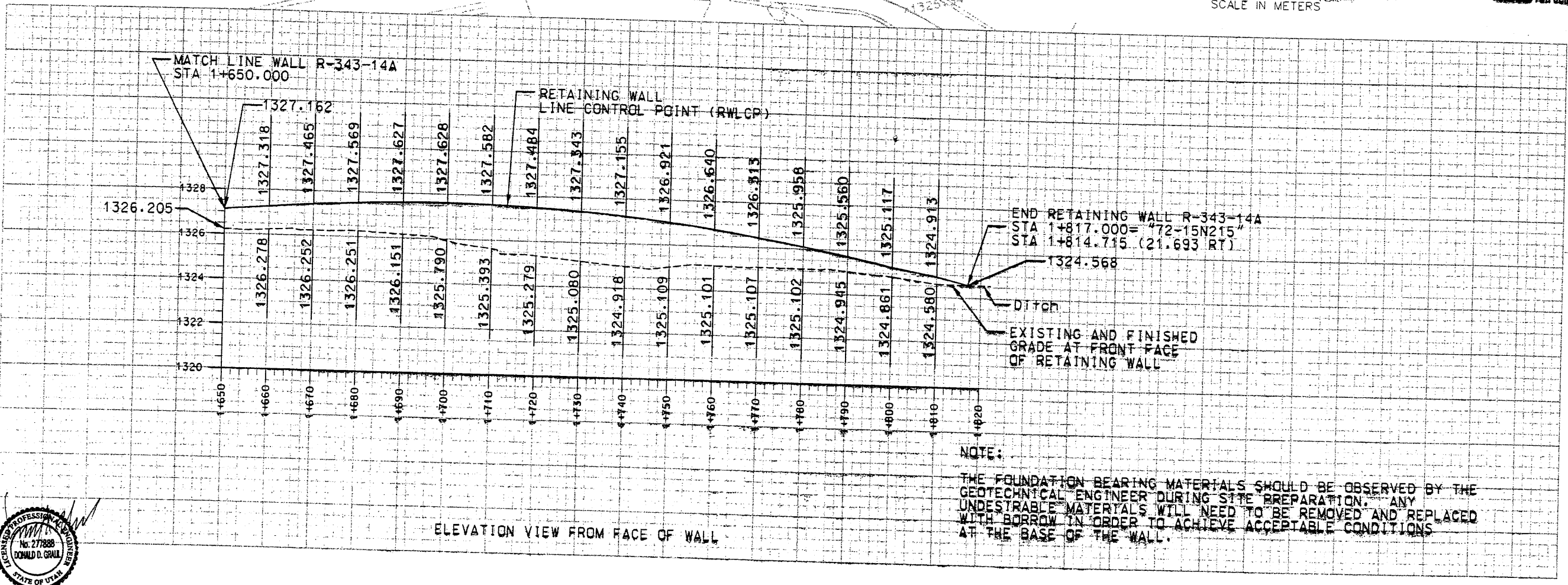
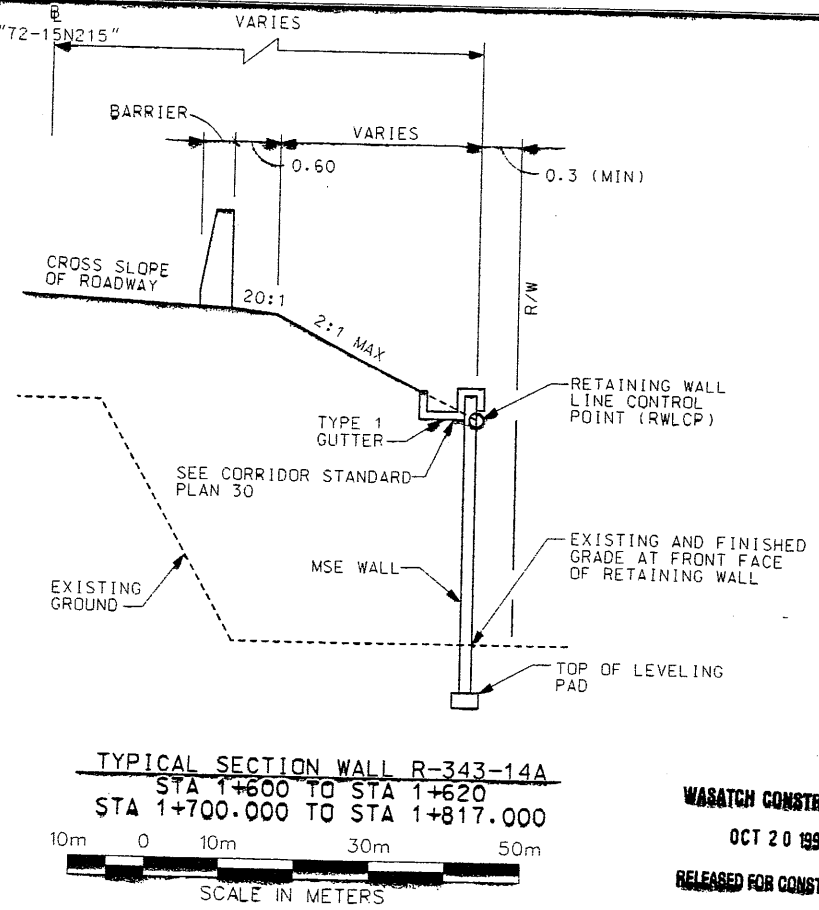
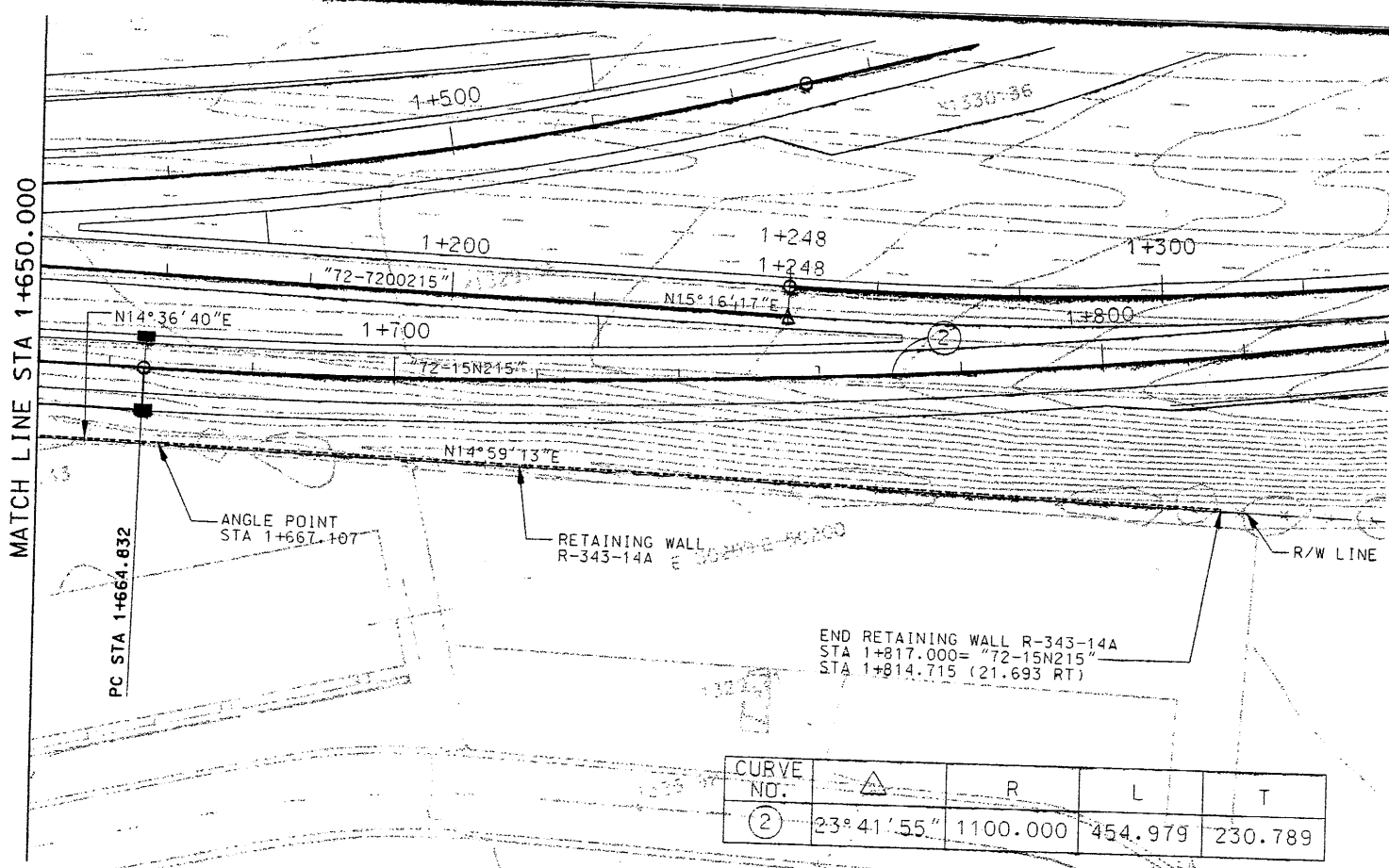
1212405

I-15 CORRIDOR RECONSTRUCTION
 SITUATION/LAYOUT RET WALL R-343-14A
 SECTION 1.2
 PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
 DWG. NO. 1.2R-343-14A.1
 SHT. 1 OF 13

Scale: 500,000:1
 First Reference File Levels: [1-64]
 First Reference File Levels: [1-42, 44, 46, 47, 49, 50, 54, 60-64]
 Second Reference File Levels: [1-22, 24-32, 34, 35, 37-62, 64]
 Third Reference File Levels: [2-64]

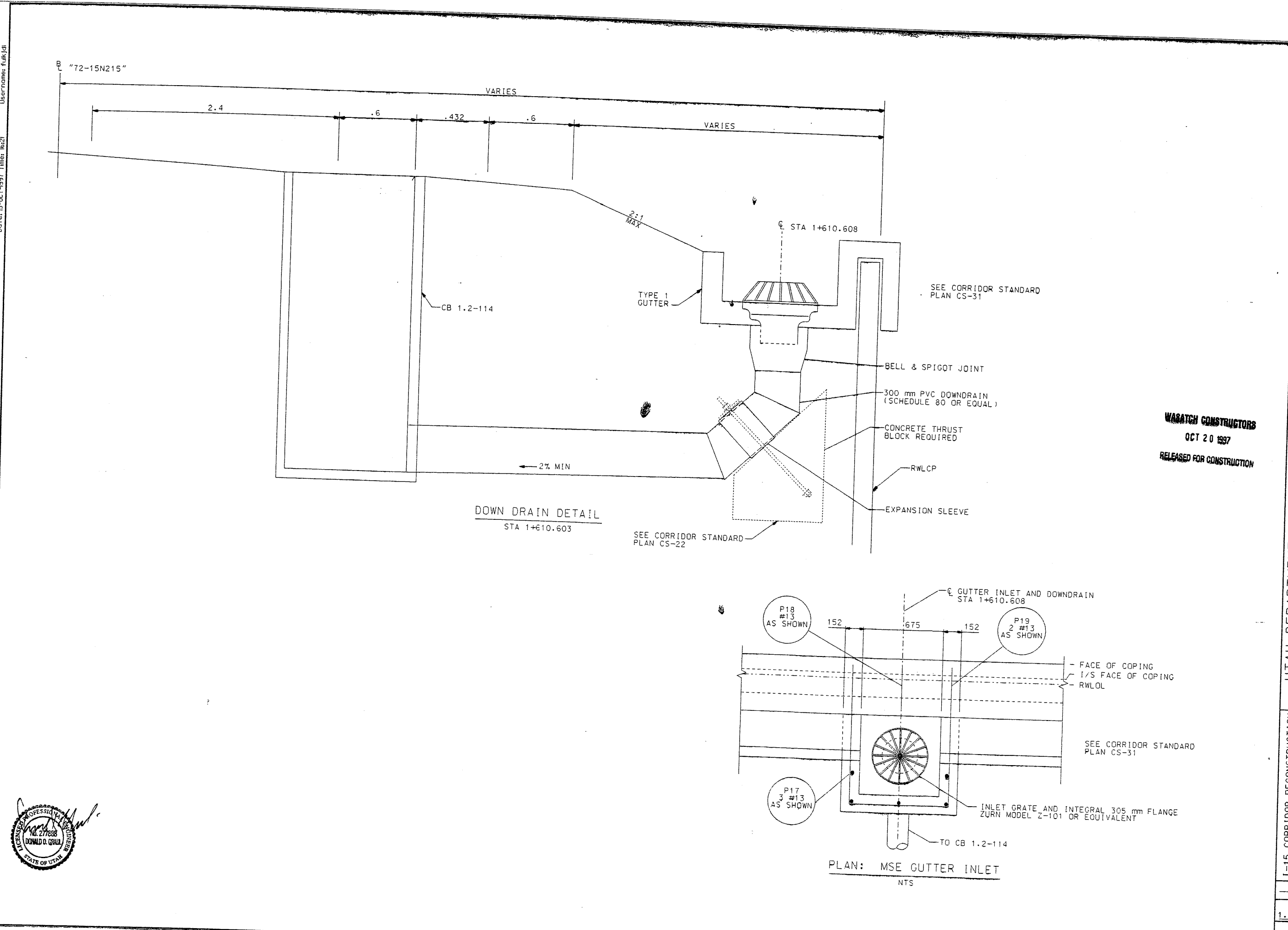
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 Date: 15-OCT-1997
 Time: 16:46



NOTE:
 THE FOUNDATION BEARING MATERIALS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER DURING SITE PREPARATION. ANY UNDESIRABLE MATERIALS WILL NEED TO BE REMOVED AND REPLACED WITH BORROW IN ORDER TO ACHIEVE ACCEPTABLE CONDITIONS AT THE BASE OF THE WALL.

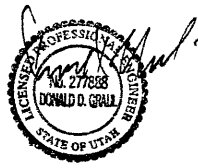
APPROVED FOR CONSTRUCTION		NO. DATE		10-15-97		INITIAL RELEASE	
UTAH DEPARTMENT OF TRANSPORTATION		URS Greiner		SVERDRUP/DE LEUW		1212405	
I-15 CORRIDOR RECONSTRUCTION		SITUATION/LAYOUT RET WALL R-343-14A		SECTION 1.2		PROJECT NUMBER *SP-15-7(135)296	
SALT LAKE COUNTY		1.2R-343-14A.2		SHT. 2 OF 13			

Active File Levels: I-40, 42, 44
 First Reference Filename:
 Second Reference File Levels:
 Third Reference File Levels:
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WASATCH CONSTRUCTORS
 OCT 20 1997
 RELEASED FOR CONSTRUCTION

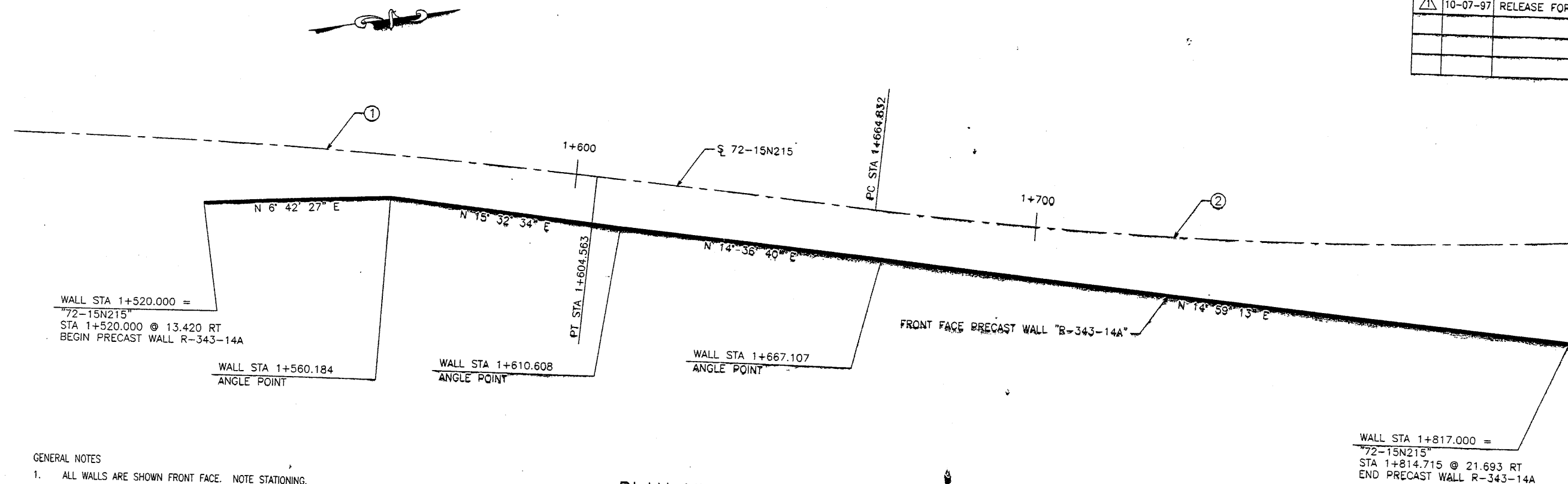
I-15 CORRIDOR RECONSTRUCTION		UTAH DEPARTMENT OF TRANSPORTATION		APPROVED FOR CONSTRUCTION	
DETAILS RET WALL R-343-14A		URS Greiner		DESCRIPTION	
SECTION 1.2		SVERDRUP/DE LEUW		INITIAL RELEASE	
PROJECT NUMBER *SP-15-7(135)296		DESIGN DA	CHECK JC	DATE	
		9/97	9/97	10-15-97	
		PROJECT DESIGN ENGINEER	CHECK DA		
		RICK CHAPMAN	9/97		
		DATE	CHECK RS		
		9/97	9/97		
		PROJECT DESIGN ENGINEER	QUANT.		
		DATE	1212402		
		APPROVED			
		9/97			
		DATE			
		PROJECT DESIGN ENGINEER			
		DATE			
		PROJECT DESIGN ENGINEER			
		DATE			
SALT LAKE COUNTY		DWG. NO.		SHT. 3 OF 13	
1.2R-343-14A.2A				RFF	



PLAN: MSE GUTTER INLET
 NTS

FINAL PL -07-97 E:\PROJECT\239-0007\72SERIES\72-14A\

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-07-97	RELEASE FOR CONSTRUCTION <i>OK</i>



GENERAL NOTES

- ALL WALLS ARE SHOWN FRONT FACE. NOTE STATIONING.
- PANEL TYPE IS DESIGNATED ON EACH PANEL. CONNECTOR LABELS INDICATE NUMBER OF CONNECTORS PER SOIL REINFORCING MESH LOCATION.
EXAMPLE: 5B2-10 IS A "B2-10" PANEL WITH FIVE (5) CONNECTORS PER SOIL REINFORCING MESH LOCATION.
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: 5W11-12 MESH HAS FIVE (5) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 12" 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 SHEET RE-3 FOR DETAIL.

PLAN VIEW WALL "R-343-14A"

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

DESIGN PARAMETERS	
ANGLE OF INTERNAL FRICTION (SELECT)	= 34°
COEFFICIENT OF FRICTION AT BASE	= 0.47
ANGLE OF INTERNAL FRICTION (RANDOM)	= 34°
UNIT WEIGHT BACKFILL	= 135 PCF.
TRAFFIC SURCHARGE	= 250 PSF
SEISMIC ACCELERATION COFF.	= 0.12g (TYP)
SEISMIC ACCELERATION COFF.	= 0.32g (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	△
①	2000.000	126.455	63.249	3°37'22"
②	1100.000	454.979	230.789	23°41'55"

All Dimensions Are in Meters Unless Noted Otherwise

RETAINED EARTH INDEX	
RE-1	PLAN PRECAST FACE WALL R-343-14A, NOTES & DESIGN CRITERIA
RE-2	TYPICAL DETAILS
RE-3	TYPICAL DETAILS
RE-4	TYPICAL CROSS SECTION
RE-5	ELEVATION PRECAST WALL "R-343-14A"
RE-6	ELEVATION PRECAST WALL "R-343-14A"
RE-7	ELEVATION PRECAST WALL "R-343-14A"
RE-8	ELEVATION PRECAST WALL "R-343-14A"
RE-9	ELEVATION PRECAST WALL "R-343-14A"
RE-10	SPECIAL PANEL DETAILS

WASATCH CONSTRUCTORS
OCT 20 1997
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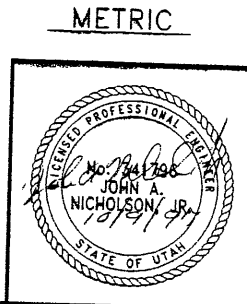
NO.	DATE	DESCRIPTION	BY	CHK

VSL CORPORATION
2840 Plaza Place, Suite 200
Eden, NC 27612
Telephone: (919) 761-6272
Fax: (919) 761-4989



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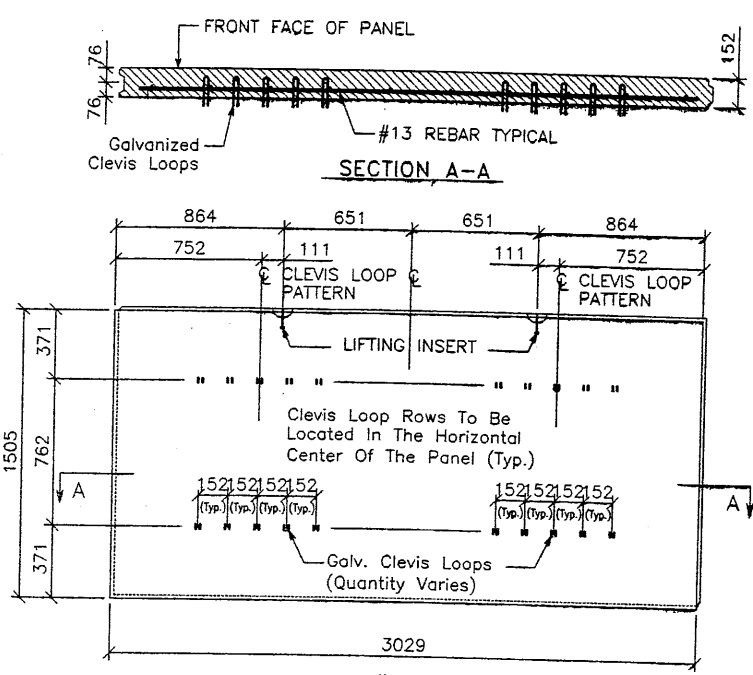
RETAINED EARTH™ WALLS
PLAN VIEW PRECAST WALL "R-343-14A"
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.



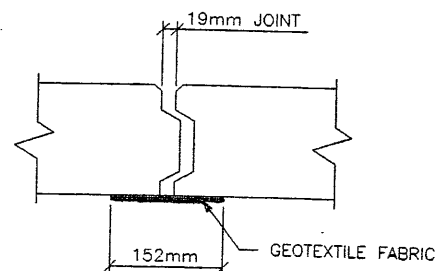
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

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JOB NO.:	239-0007
DATE:	4/13
REVISION:	RE-1

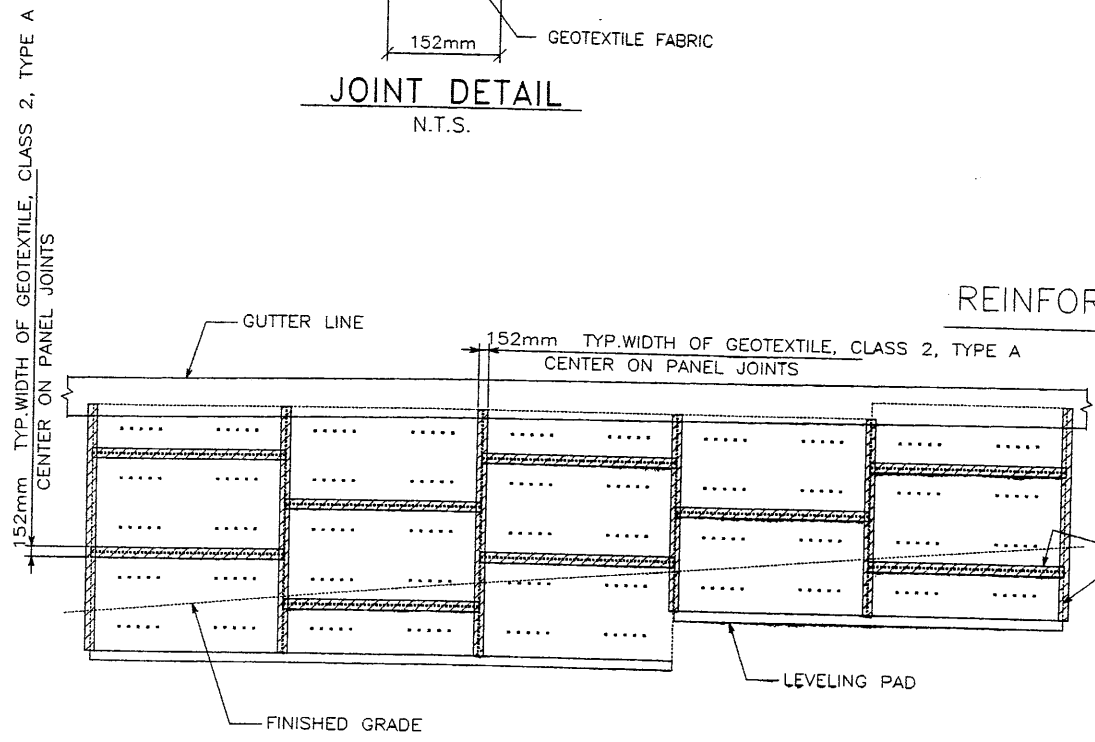
FINAL P 10-07-97 E:\PROJECT\239-0007\72SERIES\72-14A



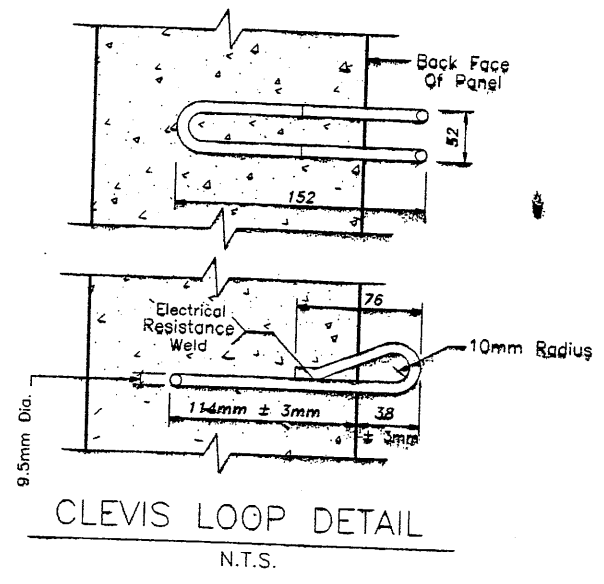
STANDARD "5A-10" PANEL
Back Face View



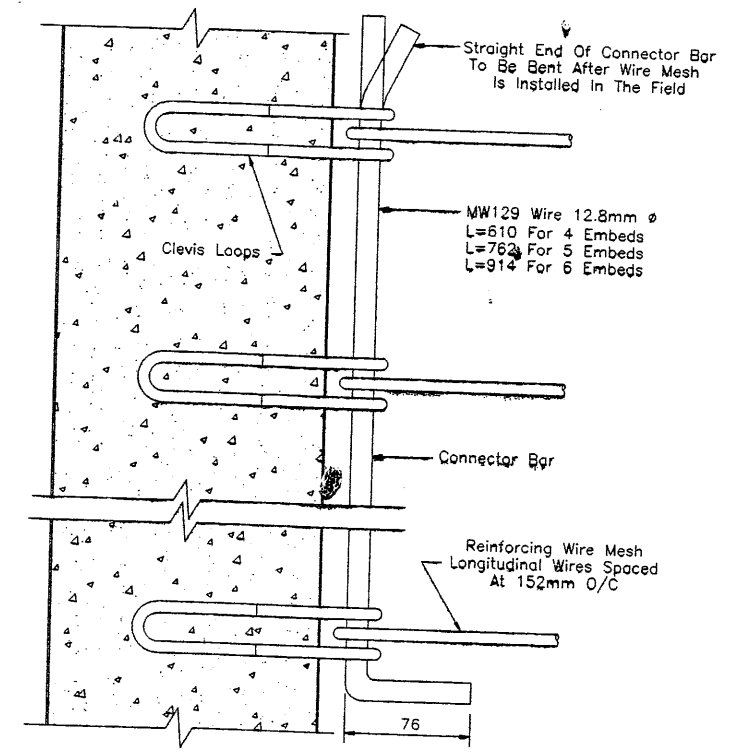
JOINT DETAIL
N.T.S.



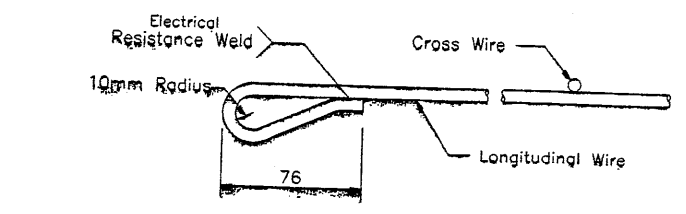
PARTIAL WALL ELEVATION



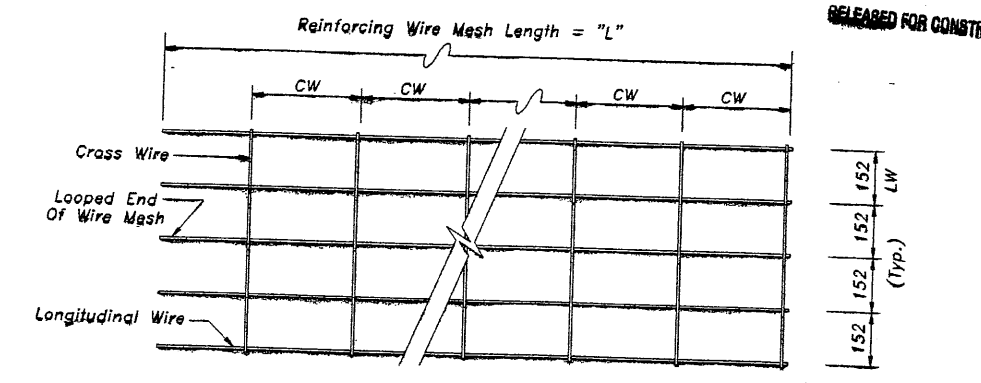
CLEVIS LOOP DETAIL
N.T.S.



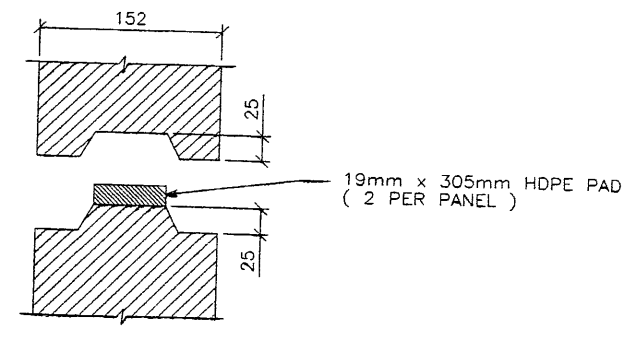
REINFORCING MESH CONNECTION DETAIL
N.T.S.



WIRE MESH LOOP DETAIL
N.T.S.

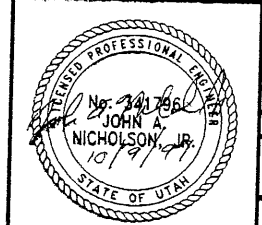


REINFORCING MESH DETAIL
WIRE MESH DESIGNATION: 5W11 + W11 x 1.0 (5W11-12)
NOTE: FOR EXAMPLE ABOVE, EQUIVALENT WIRE MESH DESIGNATION = 6 X 12-W11XW11-24" X "L" (LW) (CW)(LS) (CS)



HORZ. JOINT DETAIL
N.T.S.

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WARATCH CONSTRUCTORS
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VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6772
Fax: (919) 781-6993

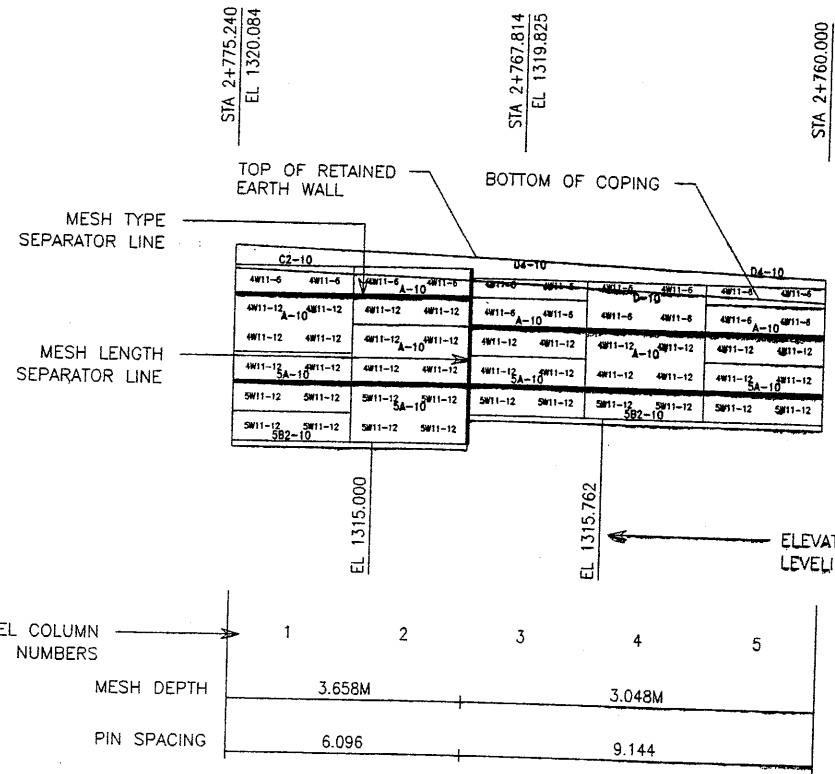


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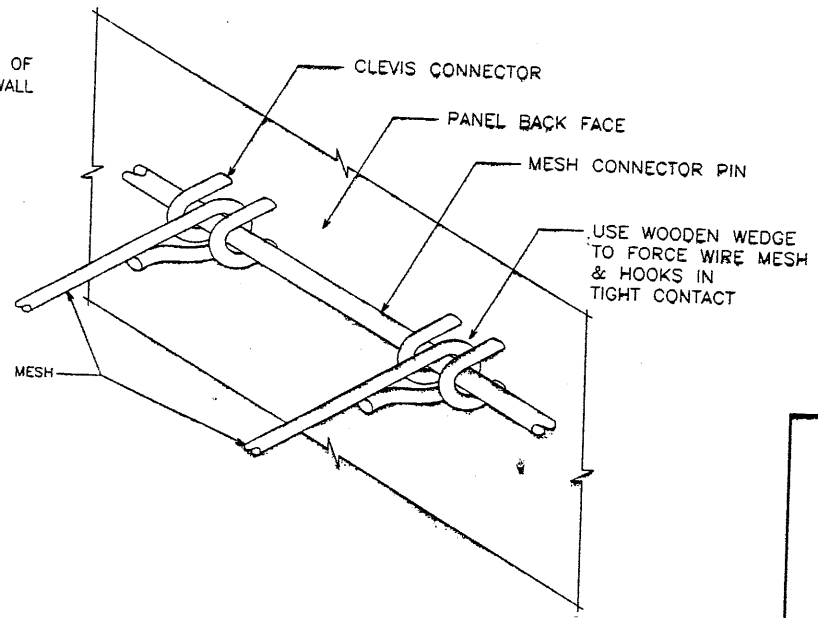
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-14A"
TYPICAL DETAILS
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE:	1.2R-343-14A.4
JOB NO:	239-0007
DATE:	5/13
REVISION:	RE-2

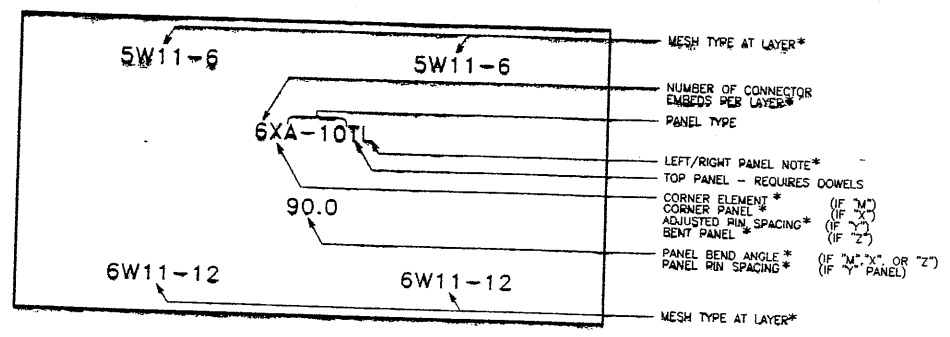
FINAL PLOT 1-07-97 E:\PROJECT\239-0007\2SERIES\72-14A\RE-3



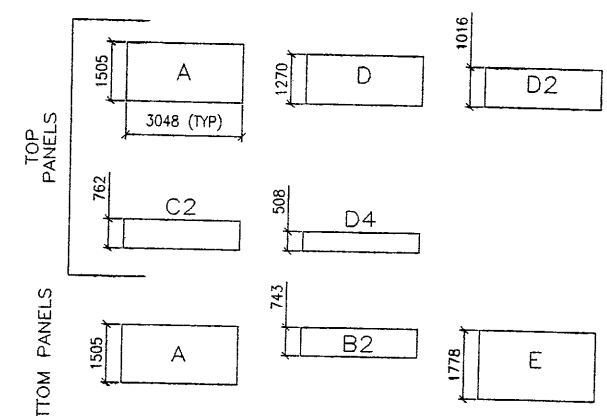
1 WALL ELEVATION KEY
(FRONT FACE SHOWN)



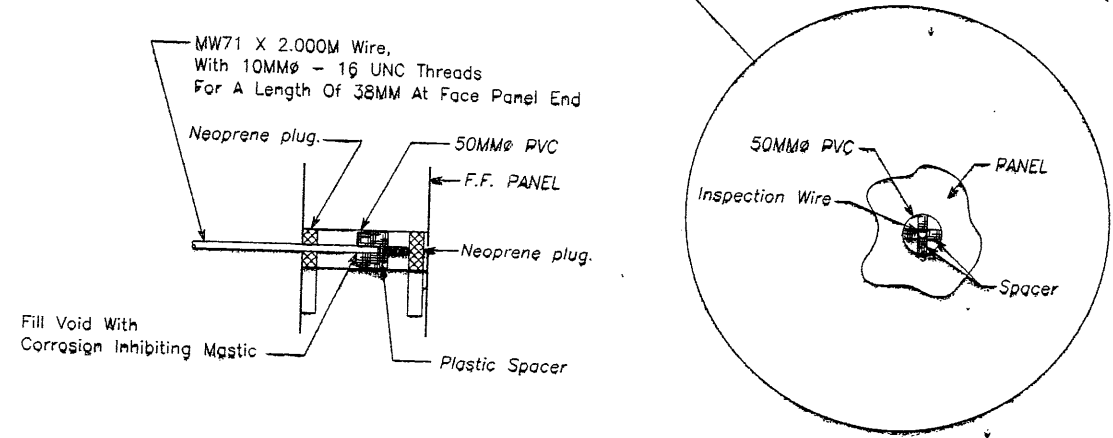
2 MESH CLEVIS CONNECTOR
VSL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,170.



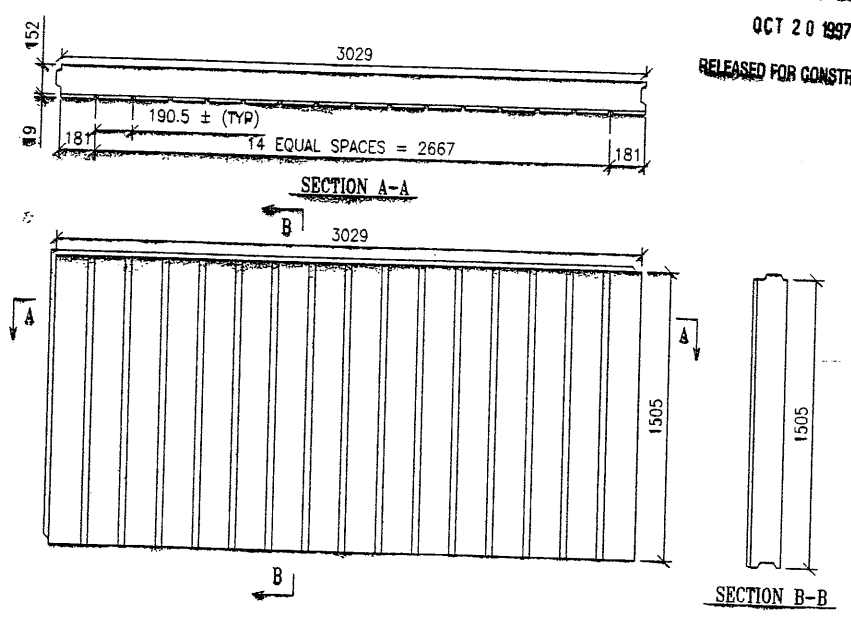
3 PANEL LABELS



4 PANEL TYPES
ALL DIMENSIONS ARE IN MILLIMETERS



5 INSPECTION WIRE DETAIL
(PANEL FRONT FACE SHOWN)



6 ARCHITECTURAL PANEL FINISH
(PANEL FRONT FACE SHOWN)

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NO.	DATE	DESCRIPTION
1	10-07-97	RELEASE FOR CONSTRUCTION

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VSL
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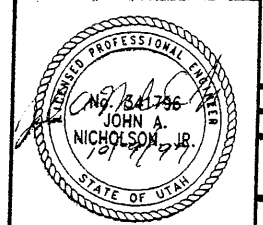
WASATCH CONSTRUCTORS
OCT 20 1997
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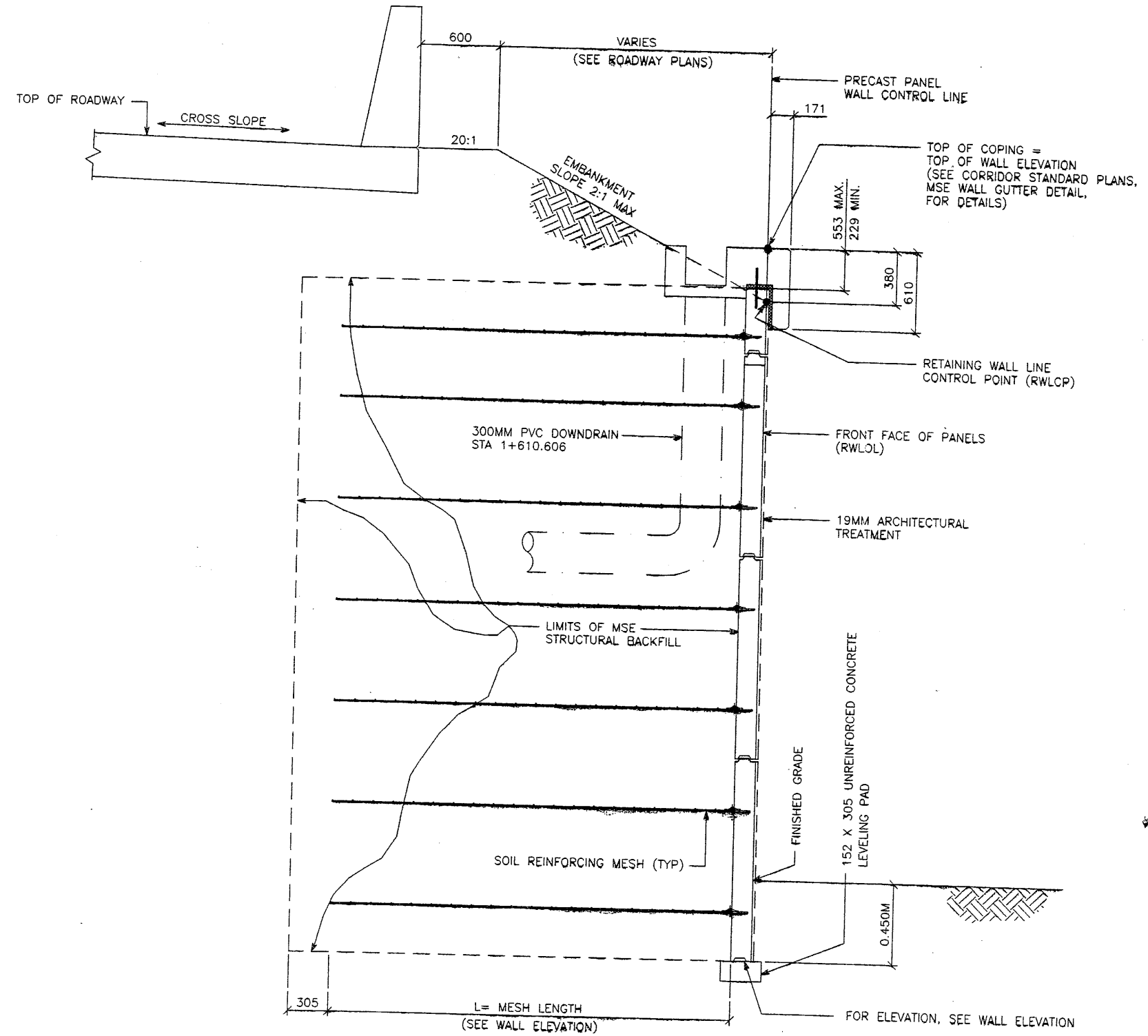
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-14A"
TYPICAL DETAILS
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

METRIC
SCALE:
1.2R-343-14A.5
JOB NO:
239-0007 6/13
RE-3

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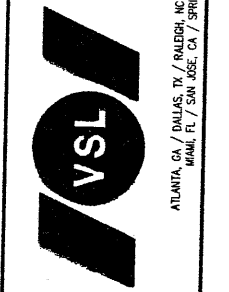
TYPICAL CROSS SECTION
 (MSE SINGLE STAGE WITH GUTTER DETAIL)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

NOTE: SEE SHEETS 14A.1, 14A.2, AND 14A.2A FOR GUTTER DETAILS

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-07-97	RELEASE FOR CONSTRUCTION

DES.	DRN.	CHK.	NO.	DATE	REVISION	CHK

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 Raleigh, NC 27612
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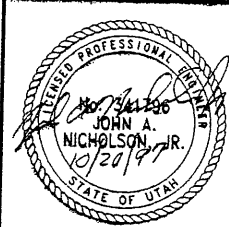


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RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-14A"
 TYPICAL CROSS SECTIONS
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

METRIC



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SCALE:	1.2R-343-14A.6
JOB NO:	239-0007 7/13
	RE-4

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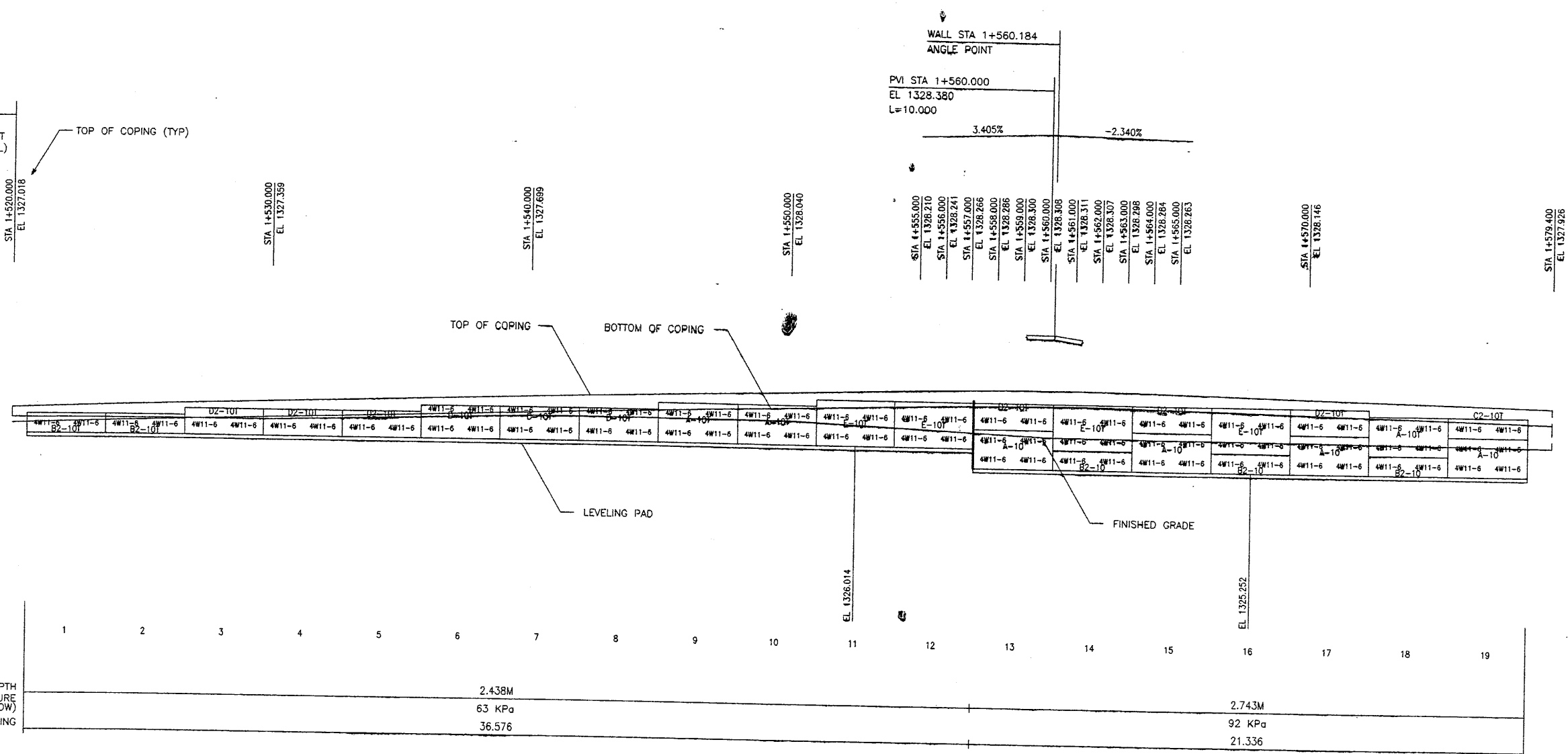
10-07-97

FINAL P

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-07-97	RELEASE FOR CONSTRUCTION <i>OK</i>

DES.	MM	DRN.	DDO	CHK.	MM	NO.	DATE	REVISION	BY	CHK

BEGIN WALL R-343-14A
WALL STA 1+520.000 =
"72-15N215"
STA 1+520.000 @ 13.420 RT
NOMINAL PANEL FACE (RWLOL)



WASATCH CONSTRUCTORS
OCT 20 1997
RELEASED FOR CONSTRUCTION

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fac: (919) 781-0969



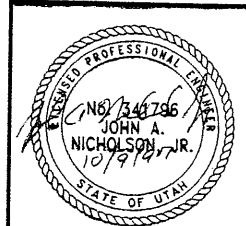
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warrant the accuracy of the
information provided by VSL.
THESE ARE FOR

MESH DEPTH	2.438M	2.743M
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	63 KPa	92 KPa
PIN SPACING	36.576	21.336

ELEVATION PRECAST WALL R-343-14A
(FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
(TOTAL SURFACE AREA OF PANELS = 621.32 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.

METRIC

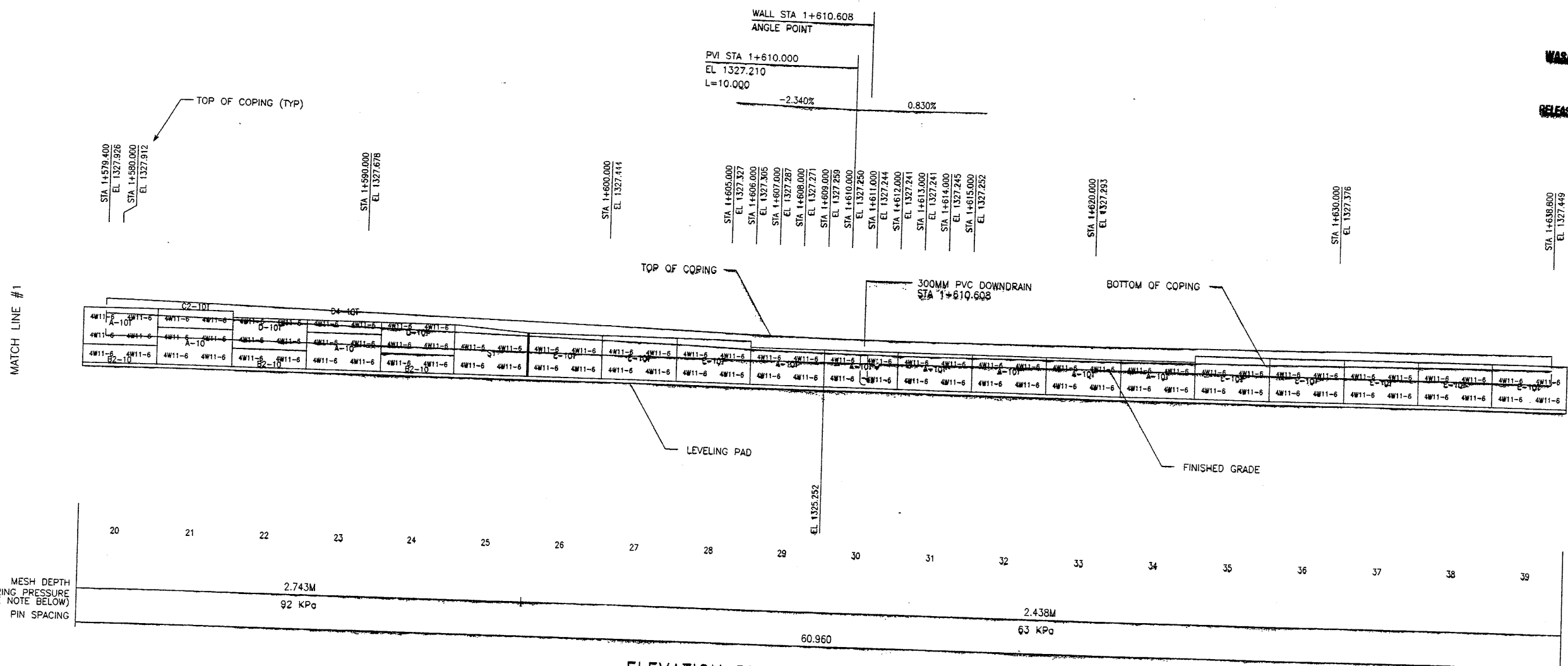


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ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS
OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO
THE MANUFACTURER'S SPECIFICATION.

RETAINED EARTH™ WALLS
PRECAST WALL "R-343-14A"
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE:
1:2R-343-14A.7
JOB NO:
239-0007/13
RE-5

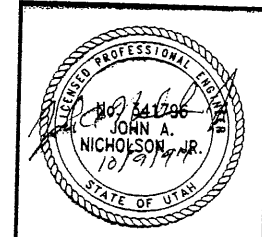
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-07-97	RELEASE FOR CONSTRUCTION



ELEVATION PRECAST WALL R-343-14A
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 621.32 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.

METRIC



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RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-14A"
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE:	1.2R-343-14A.8
JOB NO:	239-0007 9/13
	RE-6



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

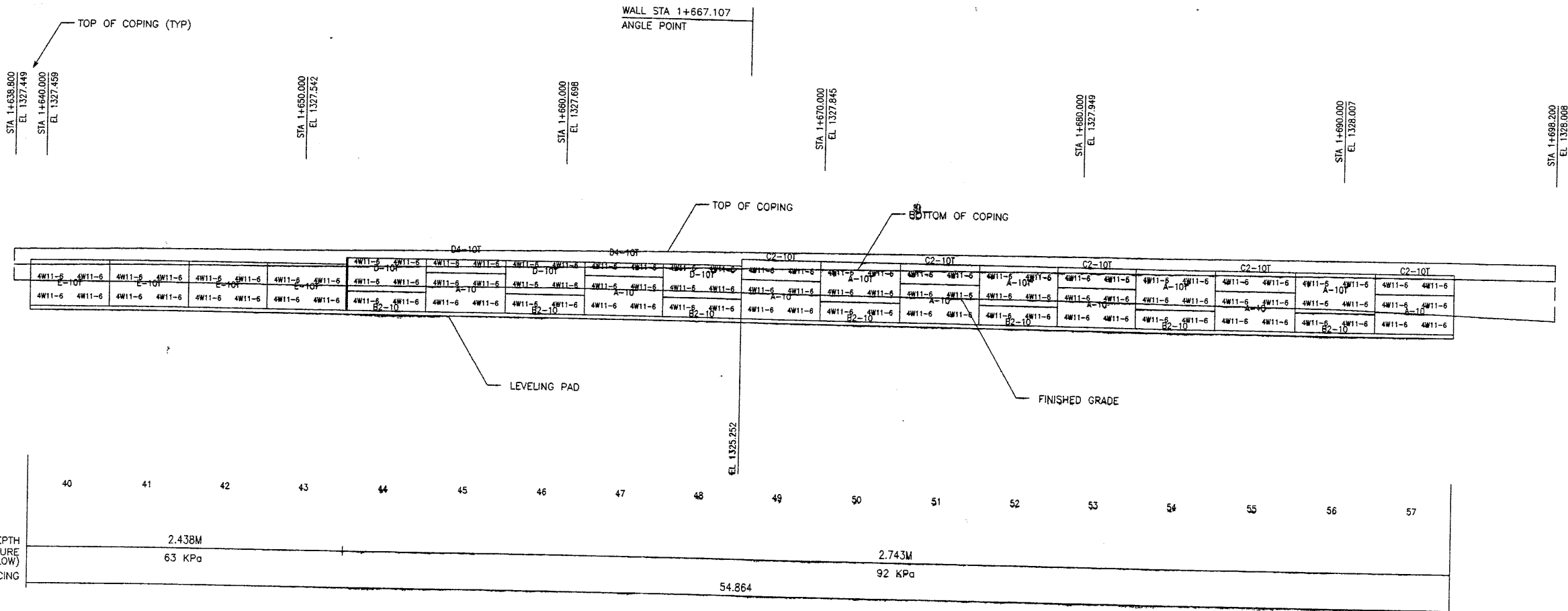
WASATCH CONSTRUCTORS
 OCT 20 1997
 RELEASED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	MM	DDO	MM	NO.	DATE	REVISION	BY	CHK

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

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-07-97	RELEASE FOR CONSTRUCTION

DES.	DRN.	CHK.	NO.	DATE	BY
MM	DDO	MM			



ELEVATION PRECAST WALL R-343-14A
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 683.82 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

MESH DEPTH 2.438M
 MAXIMUM BEARING PRESSURE (SEE NOTE BELOW) 63 KPa
 PIN SPACING 54.864

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

WASATCH CONSTRUCTORS
 OCT 20 1997
 RELEASED FOR CONSTRUCTION

VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27604
 Tel: (919) 781-6272
 Fax: (919) 781-6889

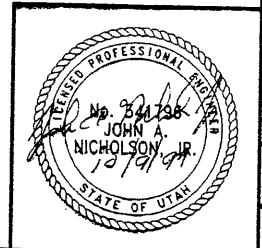


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 MINN. TL / SAN JOSE, CA / SPRINGFIELD, VA

VSL Corporation ("VSL")
 owns a patent in the United States
 and other countries for its
 retaining wall system. VSL
 warrants that the system
 described herein is suitable
 for the use intended and
 that it was prepared and
 published in good faith and
 to the best of VSL's
 knowledge and belief. VSL
 makes no warranty, express
 or implied, as to the
 accuracy or completeness
 of the information
 contained herein. VSL
 shall not be liable for
 any damages, including
 consequential damages,
 arising out of the use
 of the system described
 herein, whether or not
 such damages were
 foreseeable. VSL's
 liability shall be limited
 to the repair or
 replacement of the
 system described herein
 under the terms of the
 VSL retaining wall
 system warranty.

RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-14A"
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

METRIC



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 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.

SCALE:	1.2R-343-14A.9
JOB NO.:	239-0007
REVISION:	10/13
NO.	10
DATE	10/13
BY	CHK

RE-7

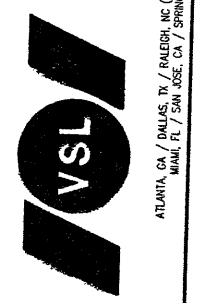
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0-07-97
FINAL PI

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-07-97	RELEASE FOR CONSTRUCTION <i>dl</i>

WABATCH CONSTRUCTORS
OCT 20 1997
RELEASED FOR CONSTRUCTION

DES.	DRN.	CHK.	RETAINED EARTH™	NO.	DATE	REVISION	CHK

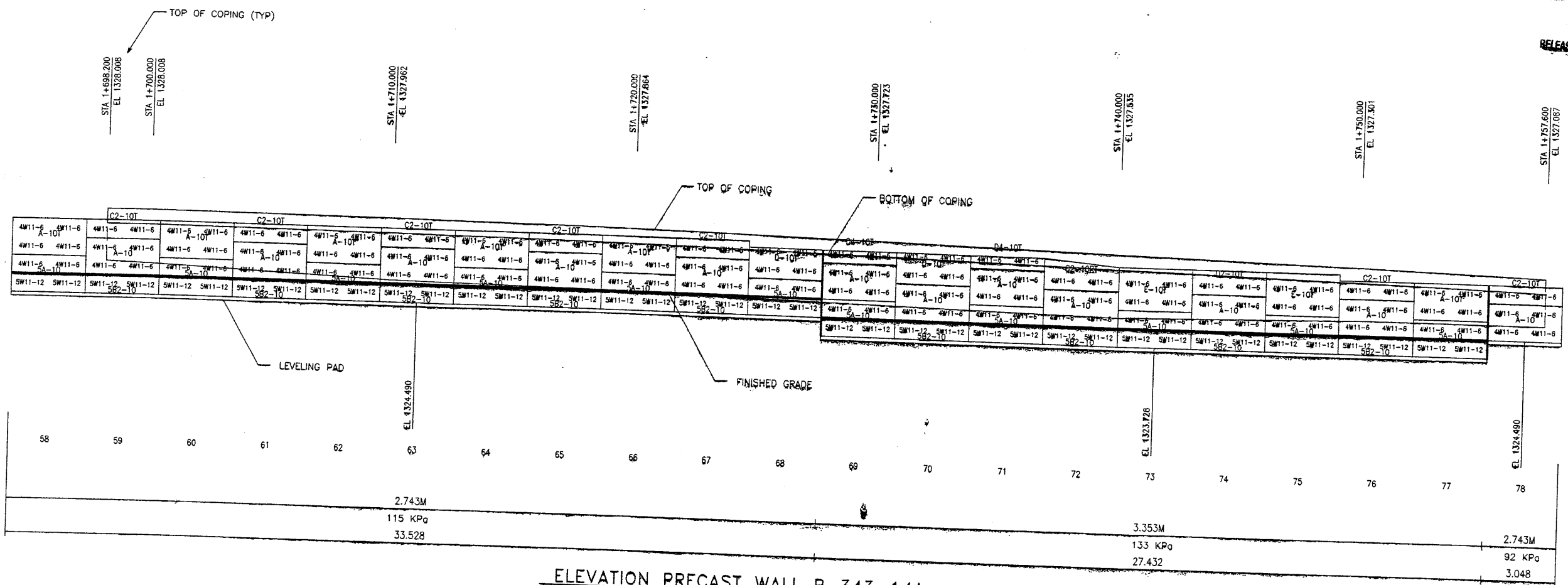
VSL CORPORATION
2840 Peach Place, Suite 200
Raleigh, NC 27613
Telephone: (919) 781-6272
Fax: (919) 781-4869



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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-14A"
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

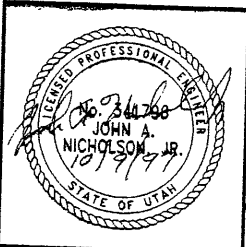
SCALE:
1.2R-343-14A.10
JOB NO:
239-0007 *n/13*
RE-8



STATION	MESH DEPTH	MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	PIN SPACING
58			
59			
60			
61			
62			
63	2.743M	115 KPa	33.528
64			
65			
66			
67			
68			
69			
70			
71			
72			
73	3.353M	133 KPa	27.432
74			
75			
76			
77			
78	2.743M	92 KPa	3.048

ELEVATION PRECAST WALL R-343-14A
(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 621.32 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

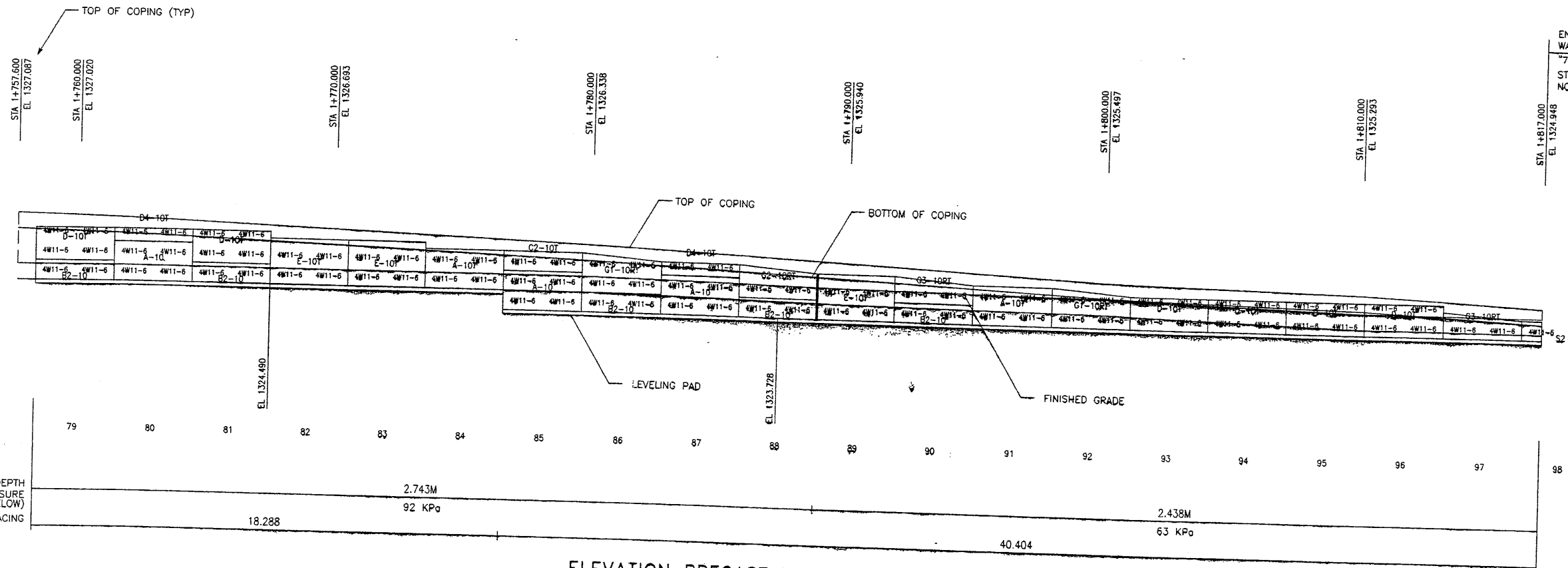
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3-07-97

FINAL

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-07-97	RELEASE FOR CONSTRUCTION

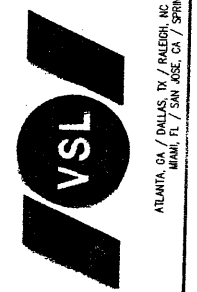
NO.	DATE	REVISION



END WALL R-343-14A
WALL STA 1+817.000 =
"72-15N215"
STA 1+814.715 @ 21.693 RT
NOMINAL PANEL FACE (RWLOL)

WATCH CONSTRUCTORS
OCT 20 1997
RELEASED FOR CONSTRUCTION

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



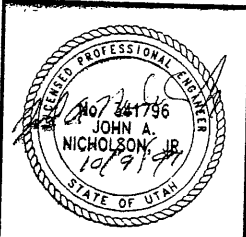
ATLANTA, GA / DALLAS, TX / DENVER, CO (CORPORATE OFFICE)
MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

ELEVATION PRECAST WALL R-343-14A
(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 621.32 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.

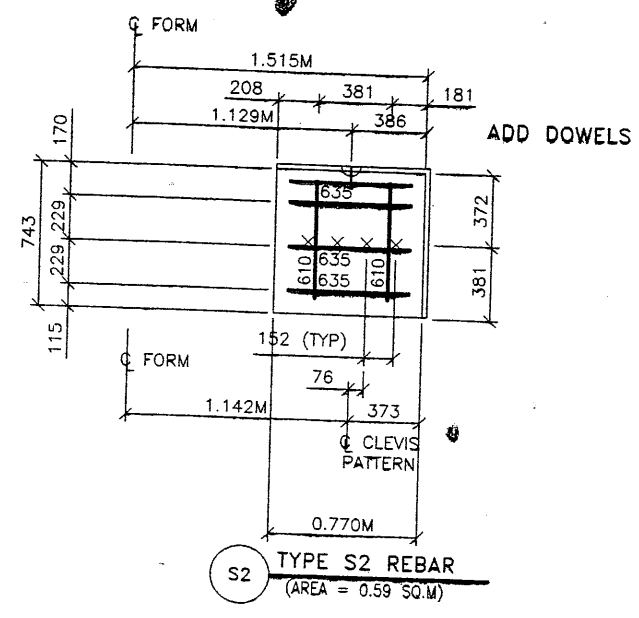
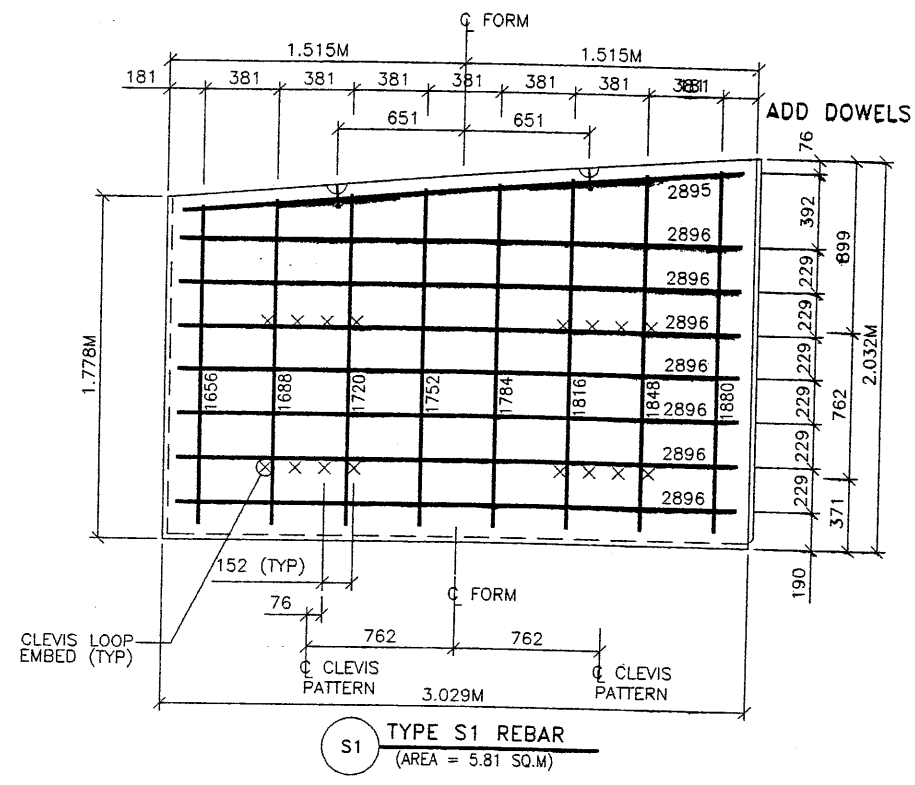
METRIC

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



RETAINED EARTH™ WALLS
PRECAST WALL "R-343-14A"
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE:
1.2R-343-14A.11
JOB NO:
239-0007
RE-9



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-07-97	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.

WASATCH CONSTRUCTORS
 OCT 20 1997
 RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

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

VSL
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 PREPARED BY VSL.

RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-14A"
 SPECIAL PANEL REINFORCEMENT
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

METRIC

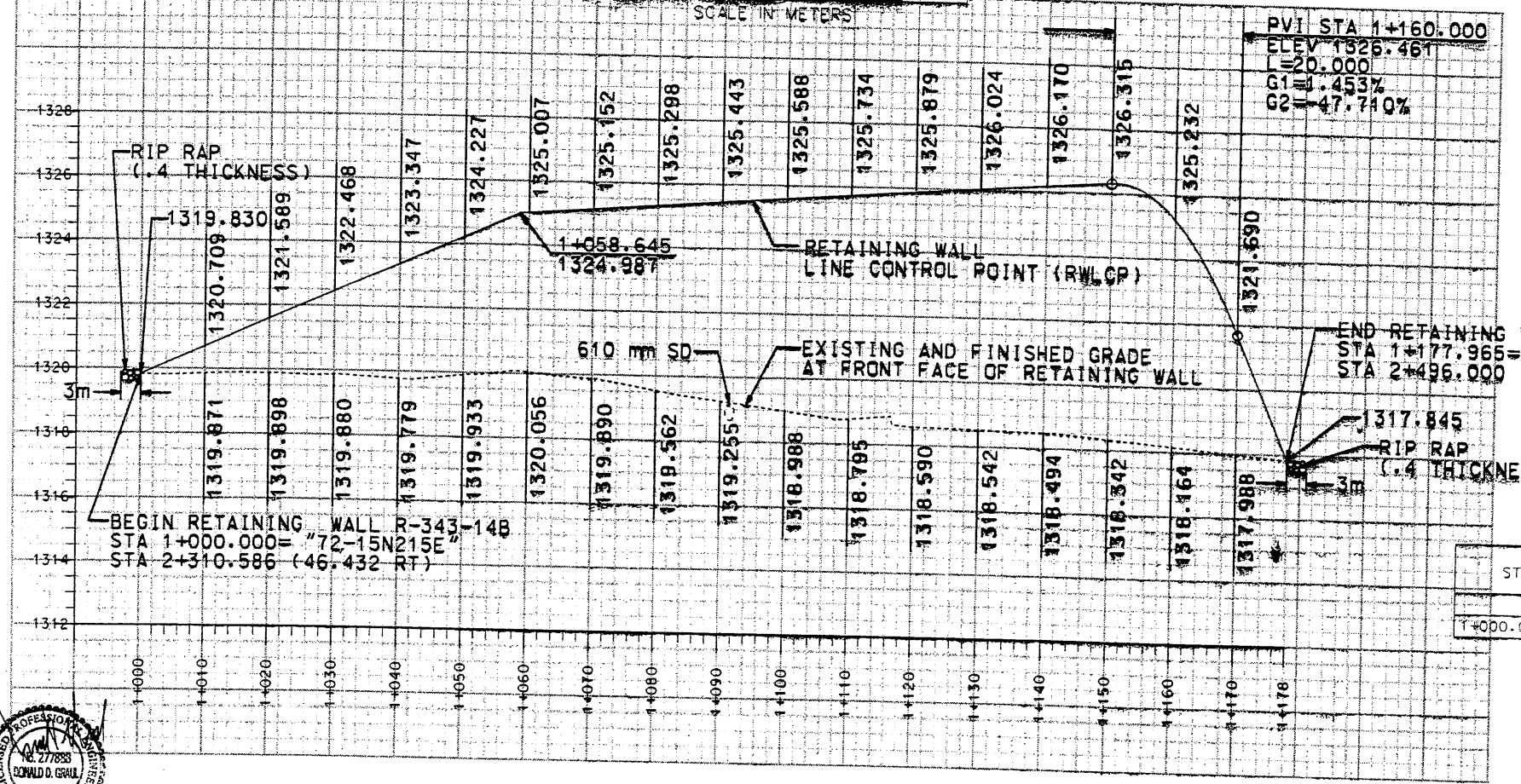
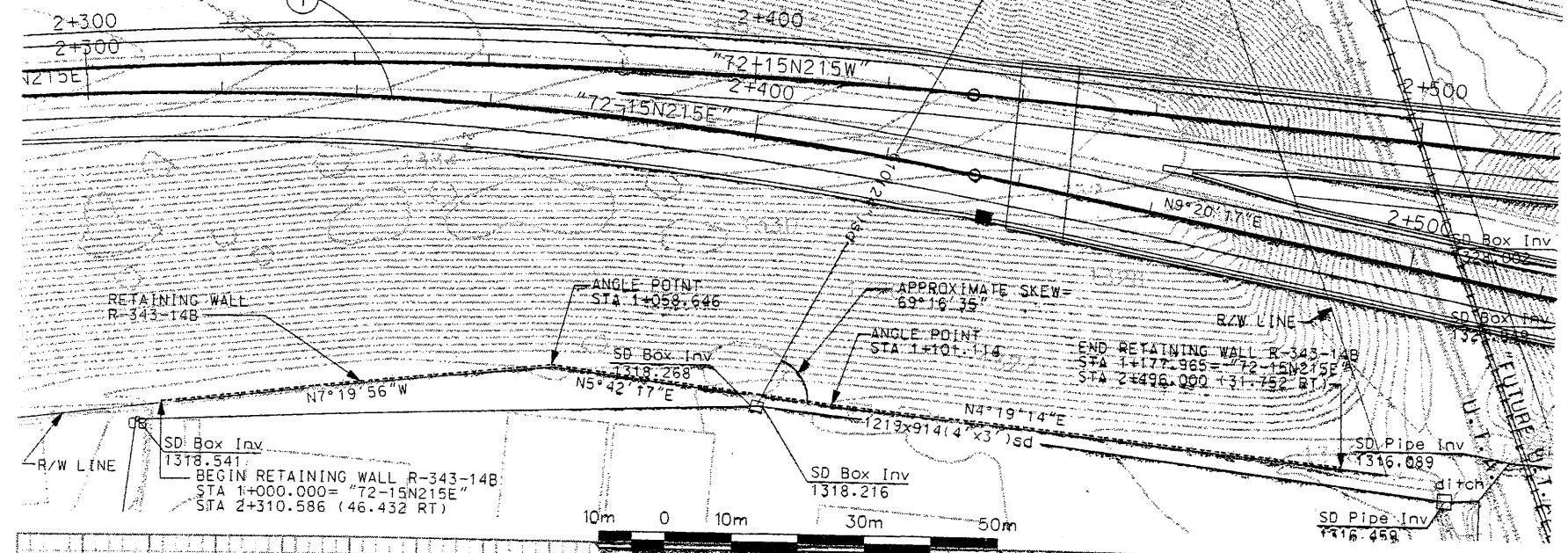
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SCALE:
 1.2R-343-14A.12
 JOB NO:
 239-0007/13
 RE-10

Date: 09-OCT-1997 Time: 11:47 User Name: fukl.cdi

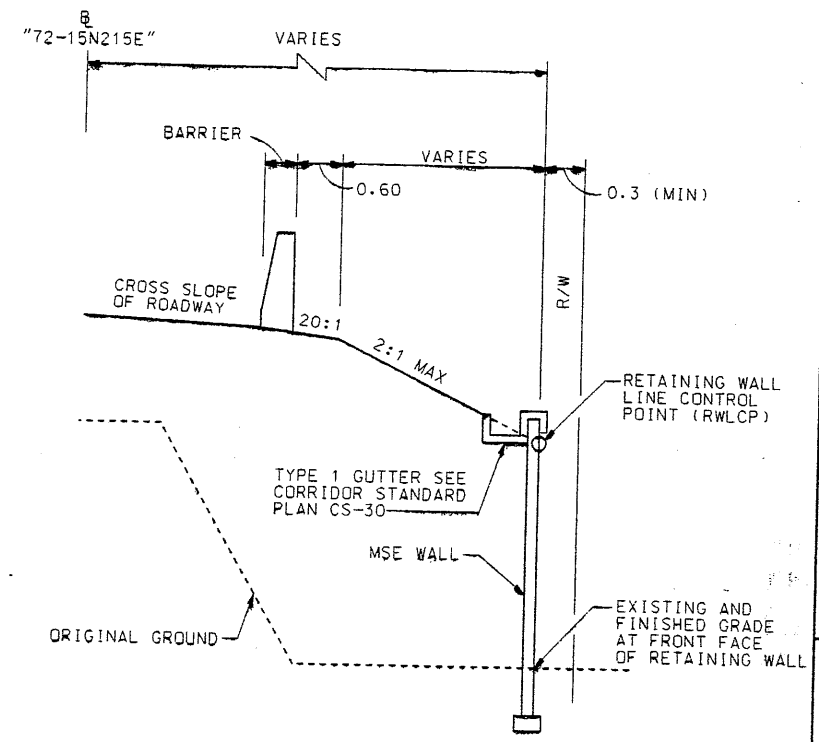
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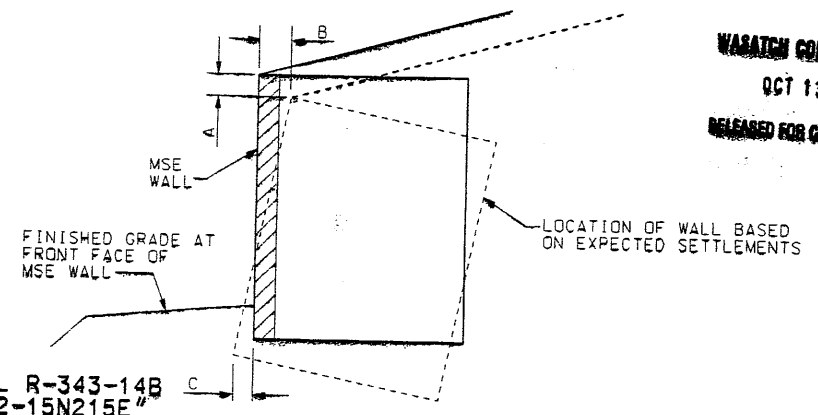


ELEVATION VIEW FROM FRONT OF WALL

NOTE: THE FOUNDATION BEARING MATERIALS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER DURING SITE PREPARATION. ANY UNDESIRABLE MATERIALS WILL NEED TO BE REMOVED AND REPLACED WITH BORROW IN ORDER TO ACHIEVE ACCEPTABLE CONDITIONS AT THE BASE OF THE WALL.



TYPICAL SECTION RETAINING WALL R-343-14B STA 1+000.000 TO STA 1+177.965



WASATCH CONSTRUCTORS
 OCT 13 1997
 RELEASED FOR CONSTRUCTION

ESTIMATED SETTLEMENT TABLE

STATION LIMITS	REFERENCE STATION	WALL SETTLEMENT mm	TOP OF WALL ROTATION mm	LATERAL DISPLACEMENT AT BOTTOM OF WALL mm
1+000.000 TO 1+177.965	1+140***	30 TO 50	47	**

** LATERAL DISPLACEMENT AT BOTTOM OF WALL SHOULD BE LESS THAN ONE HALF OF THE SETTLEMENT AT FRONT FACE OF WALL. TERRACON RECOMMENDS CONSTRUCTING THE WALL TOE AT THE DESIGN LOCATION.
 *** THESE VALUES CALCULATED AT REFERENCED STATION; ROTATIONS AT OTHER STATIONS CAN BE ESTIMATED IN PROPORTION TO WALL HEIGHT.

UTAH DEPARTMENT OF TRANSPORTATION
 SVERDRUP/DE LEUW
 URS Greiner

I-15 CORRIDOR RECONSTRUCTION
 SITUATION/LAYOUT RET WALL R-343-14B
 SECTION 1.2
 PROJECT NUMBER *SP-15-7(135)296

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	10-9-97	INITIAL RELEASE
2		
3		
4		
5		

DESIGN JMM 9/97 CHECK BH 9/97
 DRAWN DMK 9/97 CHECK JBE 9/97
 QUANT. / CHECK /

12.12.404

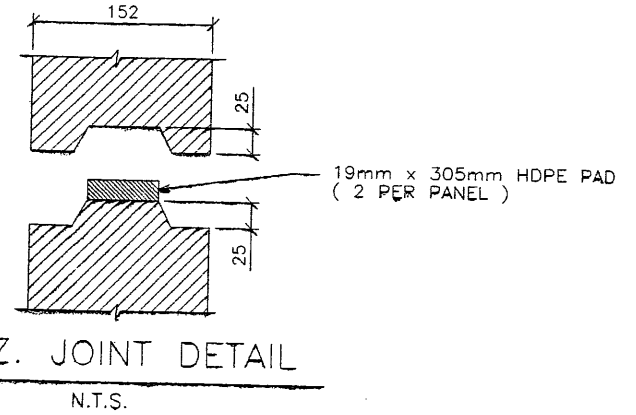
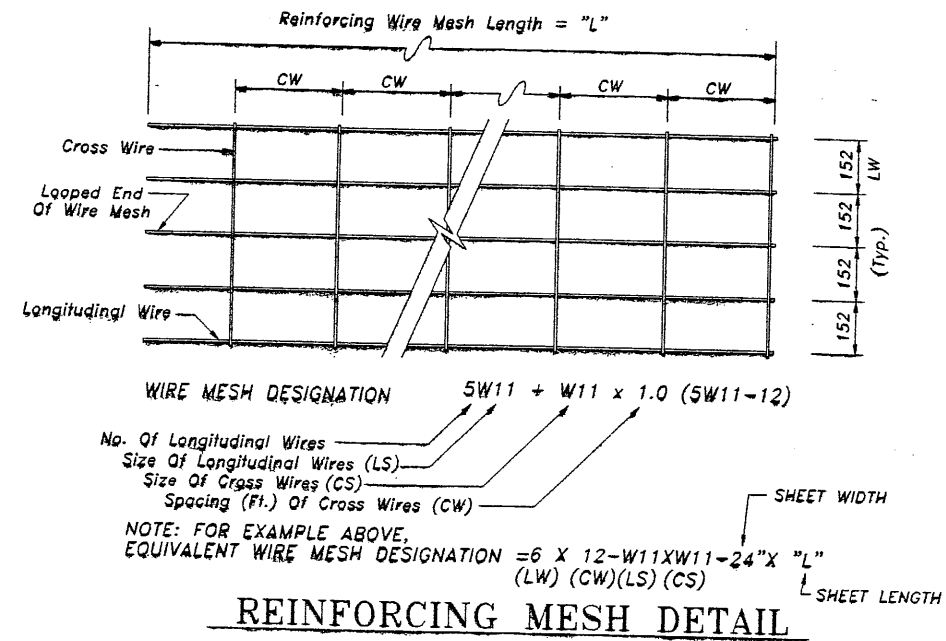
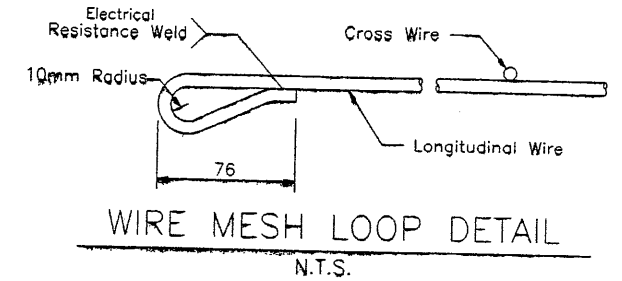
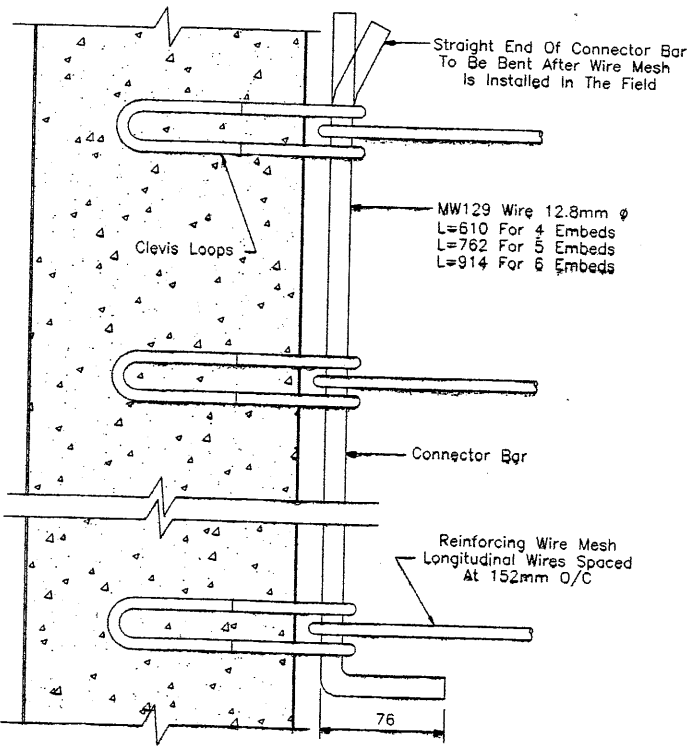
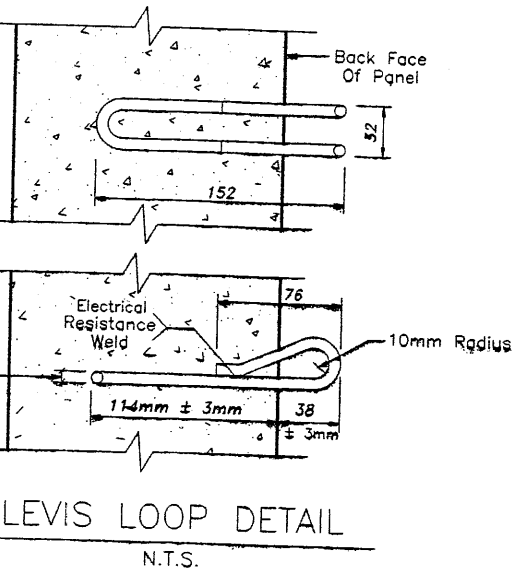
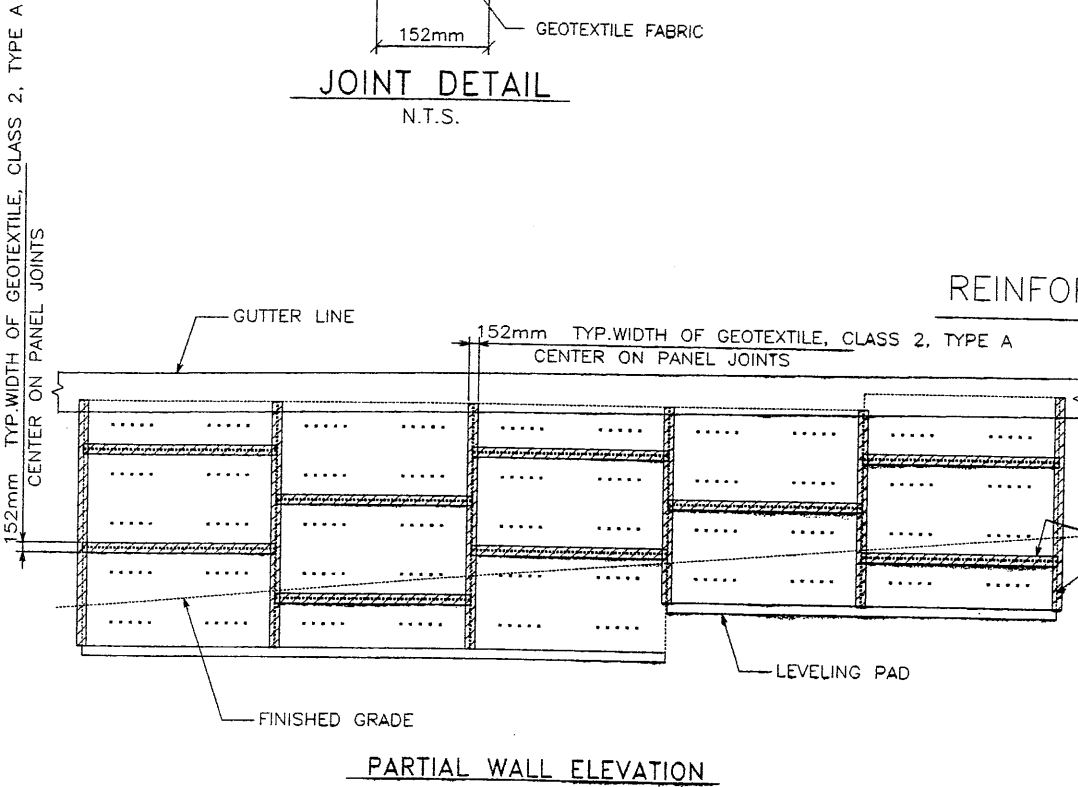
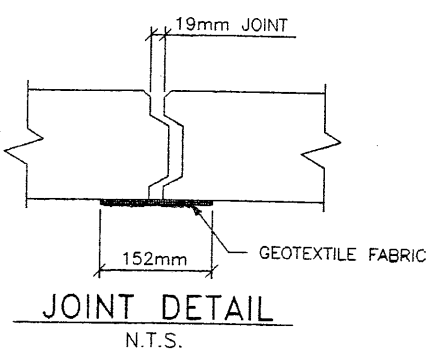
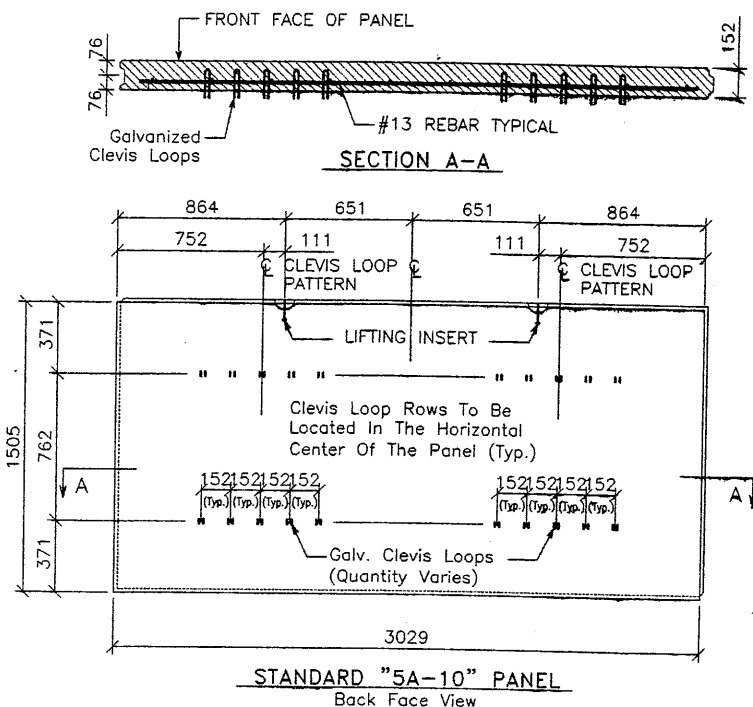
SALT LAKE COUNTY
 Dwg. No. 1.2R-343-14B.1
 SHT. 1 OF 11

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0-06-97

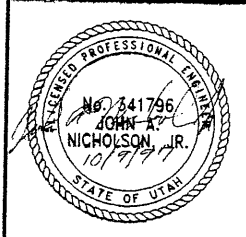
FINAL

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
Δ	10-06-97	RELEASE FOR CONSTRUCTION



APPLY ADHESIVE COATING TO PANELS ONLY. DO NOT APPLY ADHESIVE TO GEOTEXTILE OR WITHIN 51mm OF JOINT (TYP.)

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WARATCH CONSTRUCTORS
OCT 13 1997
RELEASED FOR CONSTRUCTION

DES.	DRN.	CHK.	RETAINED EARTH™	NO.	DATE	REVISION	BY	CHK.
09-15-97	09-15-97	09-15-97						

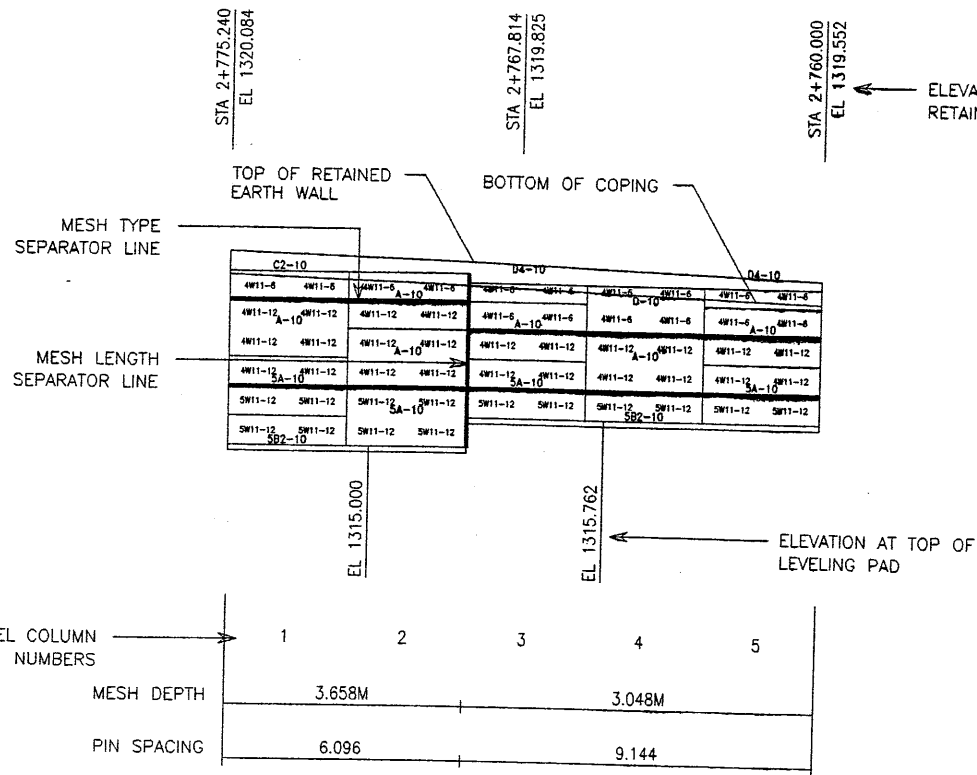
VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-6889

ATLANTA, GA / DALLAS, TX / INDEPENDENCE, MO (SEPARATE OFFICE)
MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

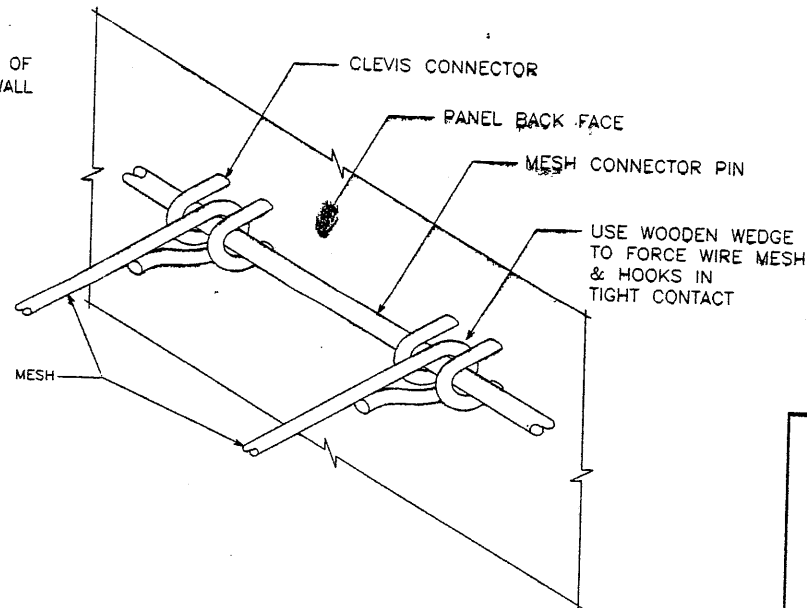
VSL

RETAINED EARTH™ WALLS
PRECAST WALL "R-343-14B"
TYPICAL DETAILS
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

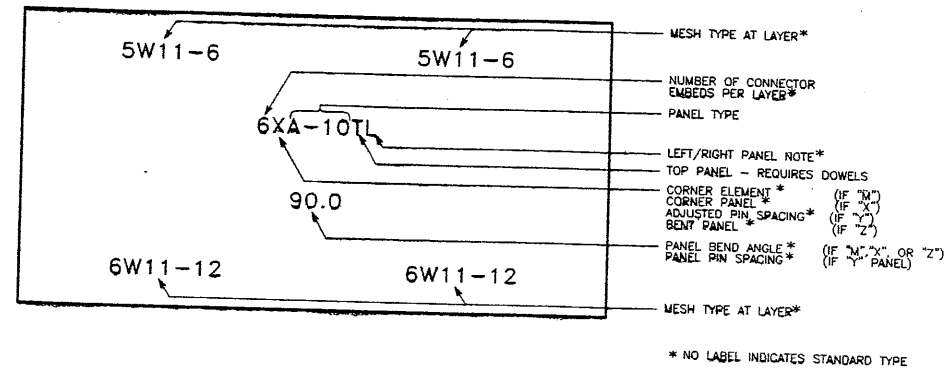
SCALE: 1.2R-343-14B.3
JOB NO: 239-0007 3/11
RE-2



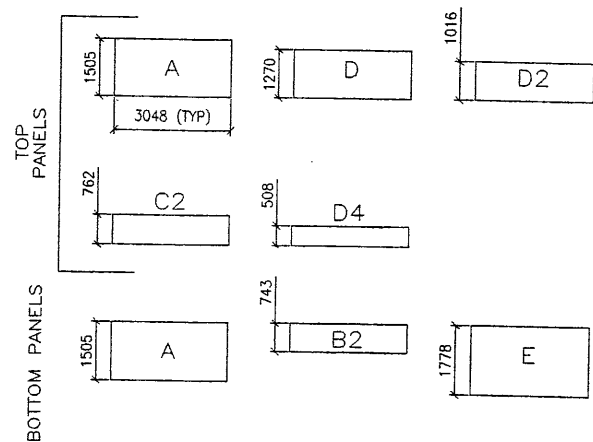
1 WALL ELEVATION KEY (FRONT FACE SHOWN)



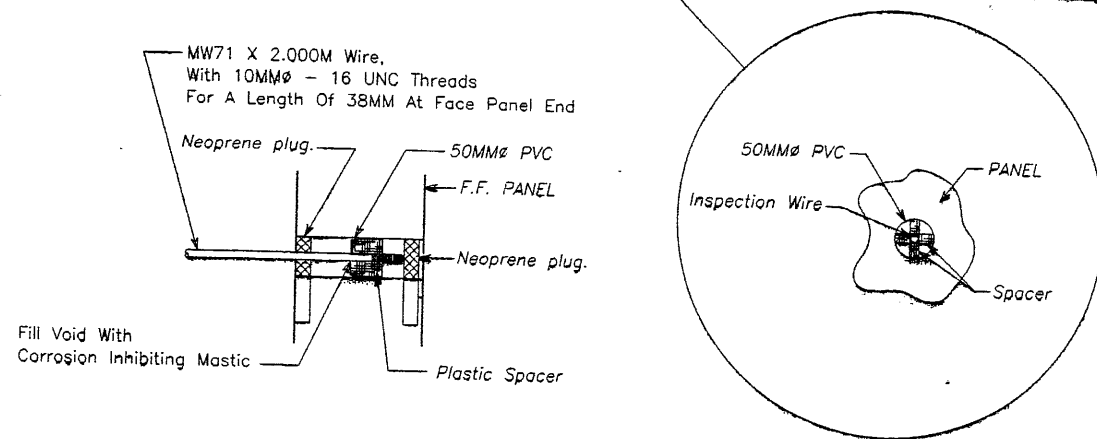
2 MESH CLEVIS CONNECTOR
VSL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,170.



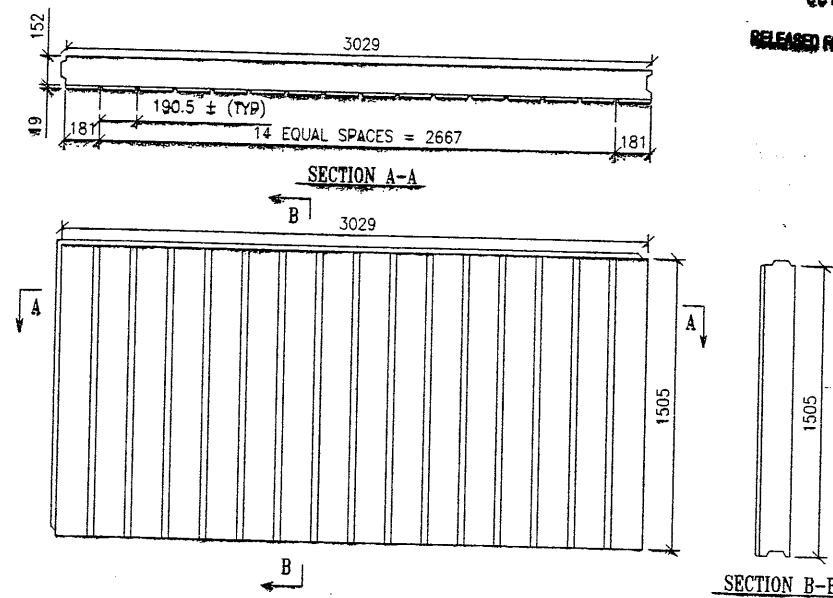
3 PANEL LABELS



4 PANEL TYPES
ALL DIMENSIONS ARE IN MILLIMETERS



5 INSPECTION WIRE DETAIL (PANEL FRONT FACE SHOWN)



6 ARCHITECTURAL PANEL FINISH (PANEL FRONT FACE SHOWN)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-06-97	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
 OCT 13 1997
 RELEASED FOR CONSTRUCTION

VSL
 VSL CORPORATION
 2840 Pike Road, Suite 200
 Raleigh, NC 27605
 Telephone: (919) 781-6272
 Fax: (919) 781-4889

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RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-14B"
 TYPICAL DETAILS
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE:
 1.2R-343-14B.4
 JOB NO:
 239-0007
 RE-3

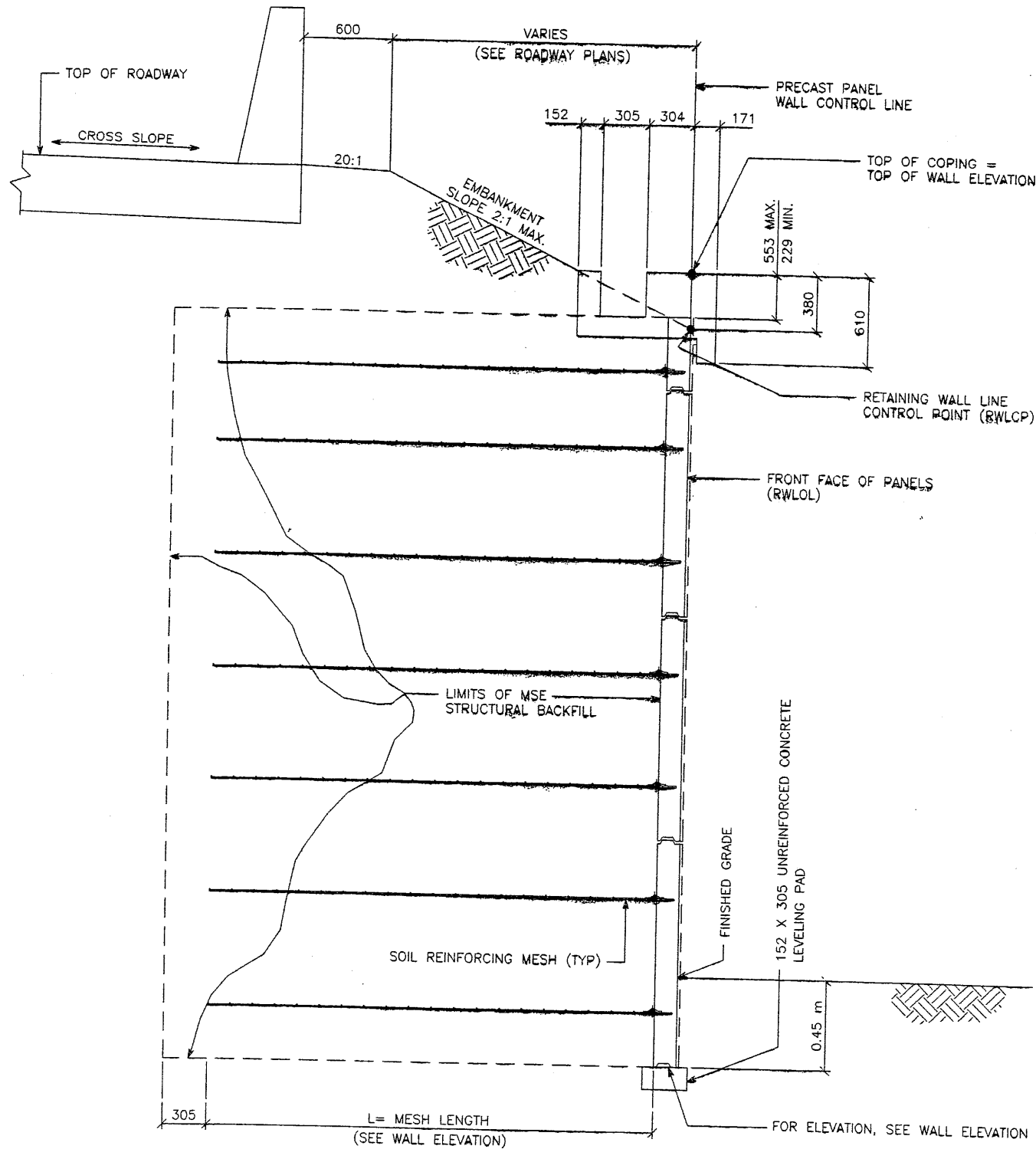
LICENSED PROFESSIONAL ENGINEER
 No. 241798
 JOHN A. NICHOLSON, JR.
 10/9/97
 STATE OF UTAH

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.

E:\PROJECT\239-0007\SERIES\72-14B\RE-4

0-06-97

FINAL



TYPICAL CROSS SECTION
(MSE SINGLE STAGE WITH GUTTER DETAIL)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-06-97	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY

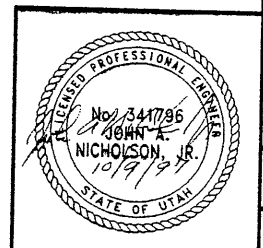
VSL CORPORATION
 2800 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-6772
 Fax: (919) 781-6965

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WASATCH CONSTRUCTORS
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RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-14B"
 TYPICAL CROSS SECTIONS
 UTAH 1-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.



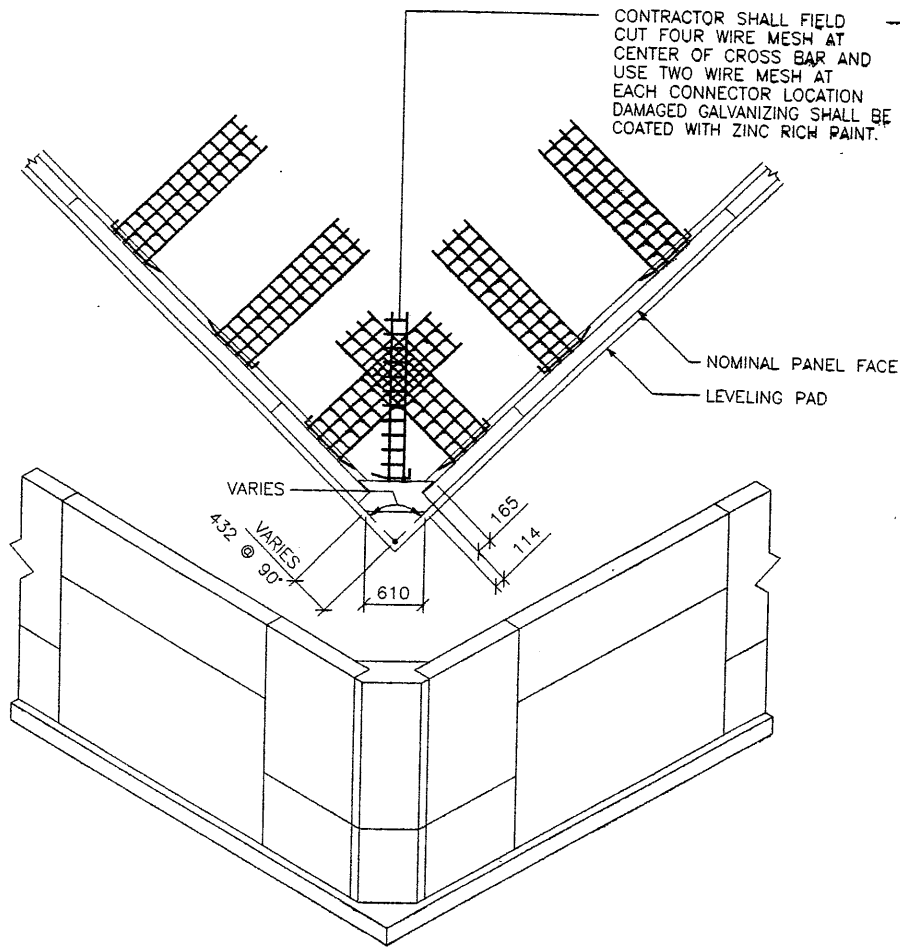
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SCALE:	1.2R-343-14B.5
JOB NO.:	239-0007 5/11
	RE-4

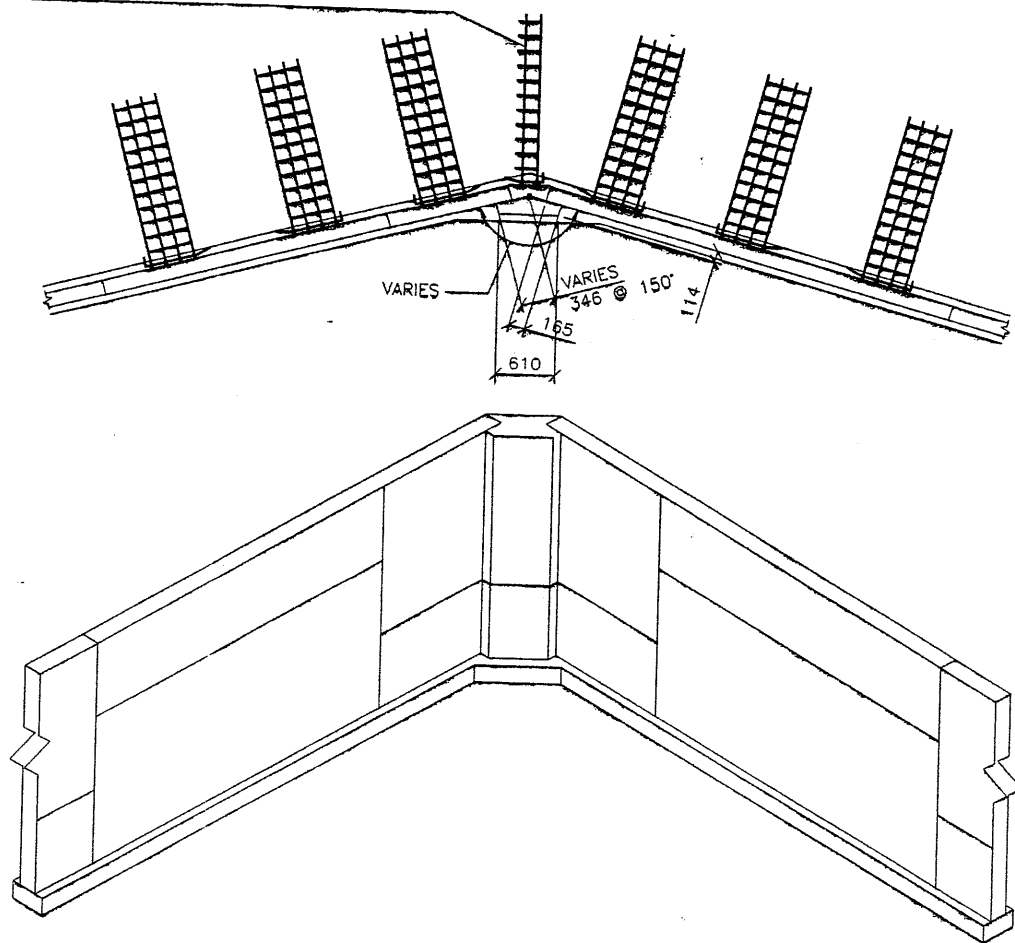
E:\PROJECT\239-007-14B\RE-5

3-06-97

FINAL

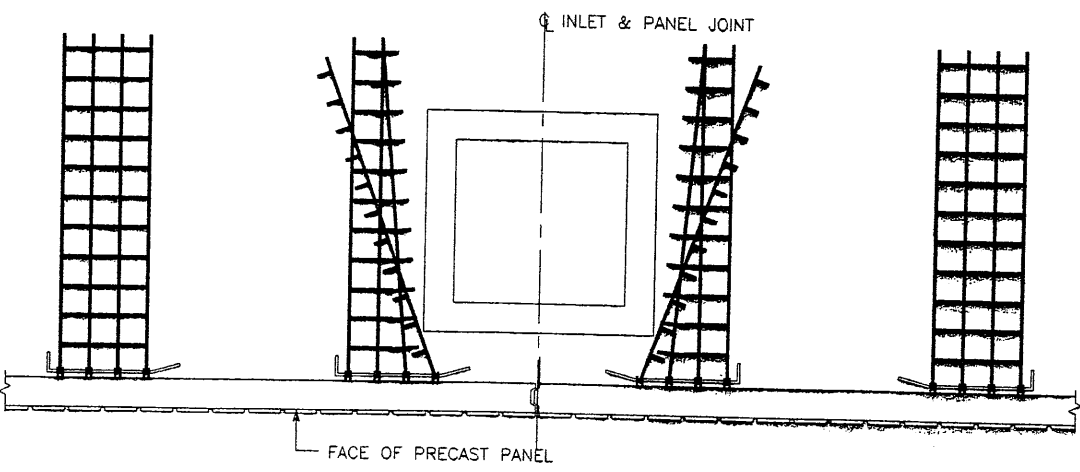


80 OUTSIDE CORNER ELEMENT
PLAN VIEW / ISOMETRIC



80 INSIDE CORNER ELEMENT
PLAN VIEW / ISOMETRIC

INLET/MANHOLE SHALL BE CENTERED ON CENTERLINE OF CLOSEST OBSTRUCTED PANEL JOINT.
SEE WALL ELEVATIONS FOR LOCATION.
FIELD CUT & SKEW SOIL REINFORCING TO AVOID INLET. DAMAGED GALVANIZING SHALL BE COATED WITH ZINC RICH PAINT.



100 INLET OBSTRUCTION DETAIL

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Raleigh, NC 27612
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Fax: (919) 781-4995



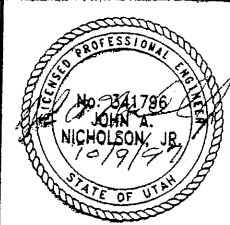
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MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

WASATCH CONSTRUCTORS
OCT 13 1997
RELEASED FOR CONSTRUCTION

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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-14B"
SPECIAL DETAILS
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

METRIC



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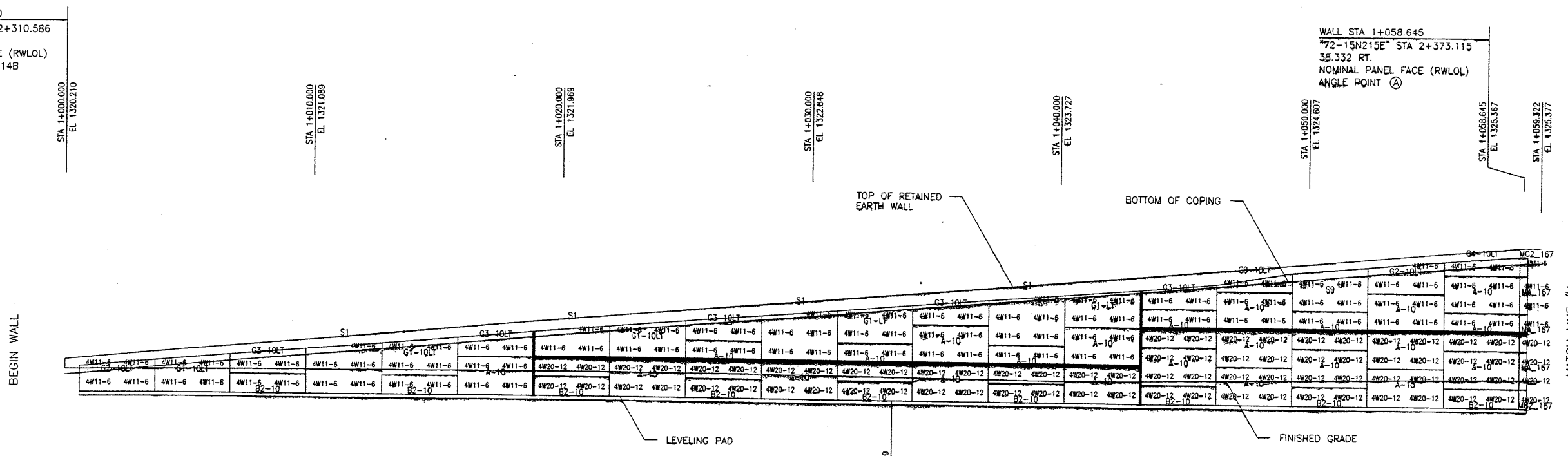
SCALE:
1.2R-343-14B.6
JOB NO:
239-0007 6/11
RE-5

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-06-97	RELEASE FOR CONSTRUCTION

DES.	DRN.	CHK.	RETAINED EARTH™	NO.	DATE	REVISION	CHK.
MM	JPS	MM					
09-15-97	09-15-97	09-15-97					

WALL STA 1+000.000
 "72-15N215E" STA 2+310.586
 @ 46.432 RT
 NOMINAL PANEL FACE (RWLOL)
 BEGIN WALL R-343-14B

WALL STA 1+058.645
 "72-15N215E" STA 2+373.115
 @ 38.332 RT.
 NOMINAL PANEL FACE (RWLOL)
 ANGLE POINT A

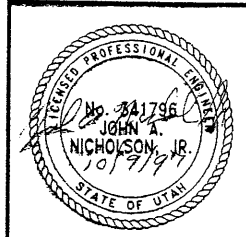


MESH DEPTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)																					
			2.438									3.658									
							136 KPa														4.267
											58.222										

ELEVATION PRECAST WALL 72-14B
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 1,061.14 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

WASATCH CONSTRUCTORS
 OCT 13 1997
 RELEASED FOR CONSTRUCTION

METRIC



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 Fax: (919) 781-6869



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RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-14B"
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE: 1.2R-343-14B.7
 JOB NO: 239-0007/7/h
 RE-6

0-06-97

E:\PROJECT\239-0007\7SERIES\72-14B\72-1

FINAL

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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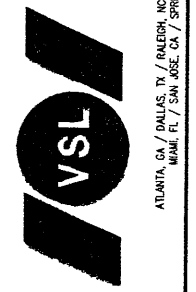
0-06-97

FINAL PL

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	10-06-97	RELEASE FOR CONSTRUCTION

DES.	DRN.	CHK.	RETAINED EARTH™	NO.	DATE	REVISION	CHK
09-15-97	09-15-97	09-15-97					

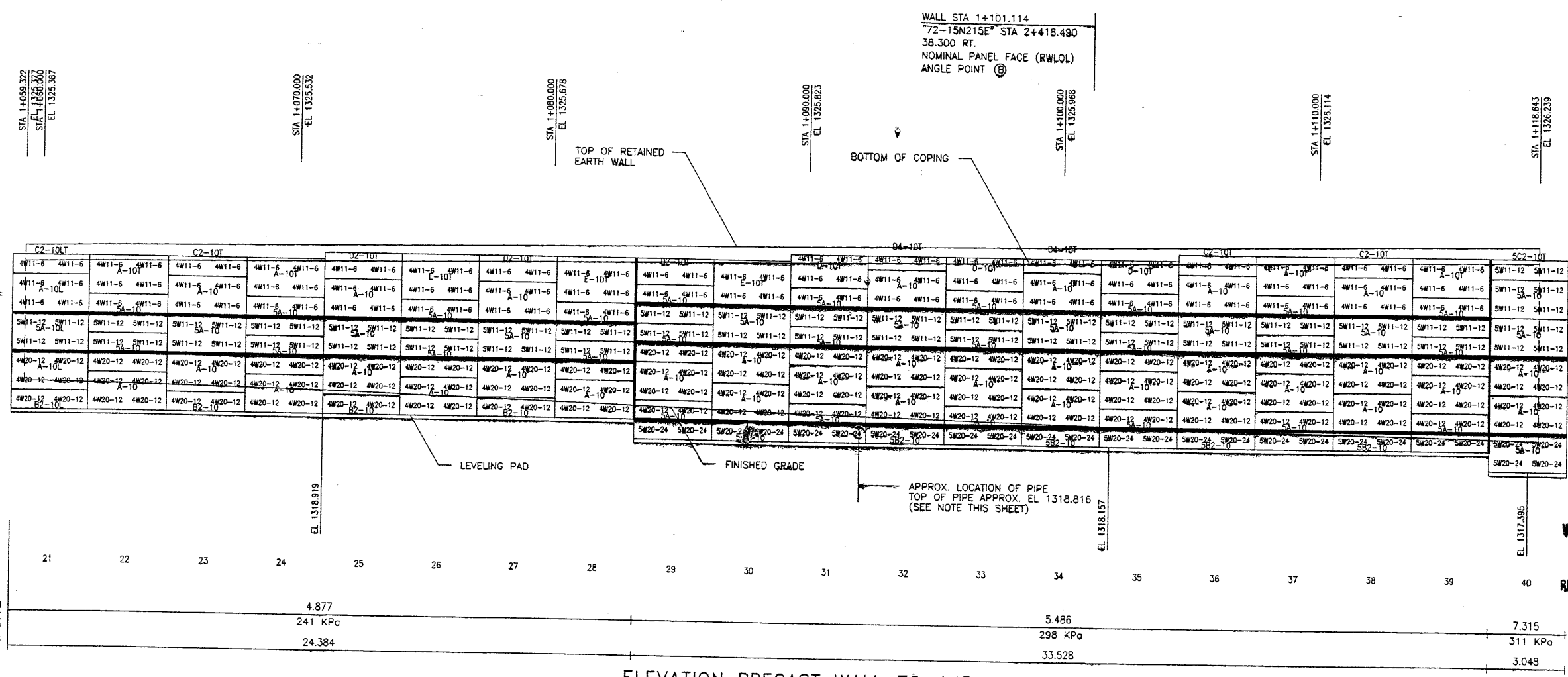
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 2840 Plaza Place, Suite 200
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RETAINED EARTH™ WALLS
PRECAST WALL "72-14B"
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE:
 1:2R-343-14B.8
 JOB NO:
 239-0007
 RE-7



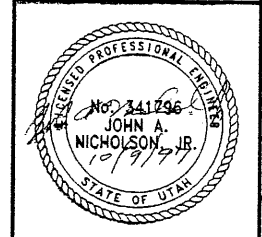
ELEVATION PRECAST WALL 72-14B
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 1,061.14 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

CONTRACTOR NOTE:
 CONTRACTOR PLEASE VERIFY PIPE LOCATION (VERTICAL AND HORIZONTAL). FIELD CUT PANEL AS REQUIRED TO FIT AROUND PIPE. NOTIFY VSL IF PIPE INTERFERES WITH SOIL REINFORCING MESH.

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

WASATCH CONSTRUCTORS
 OCT 13 1997
 RELEASED FOR CONSTRUCTION

METRIC

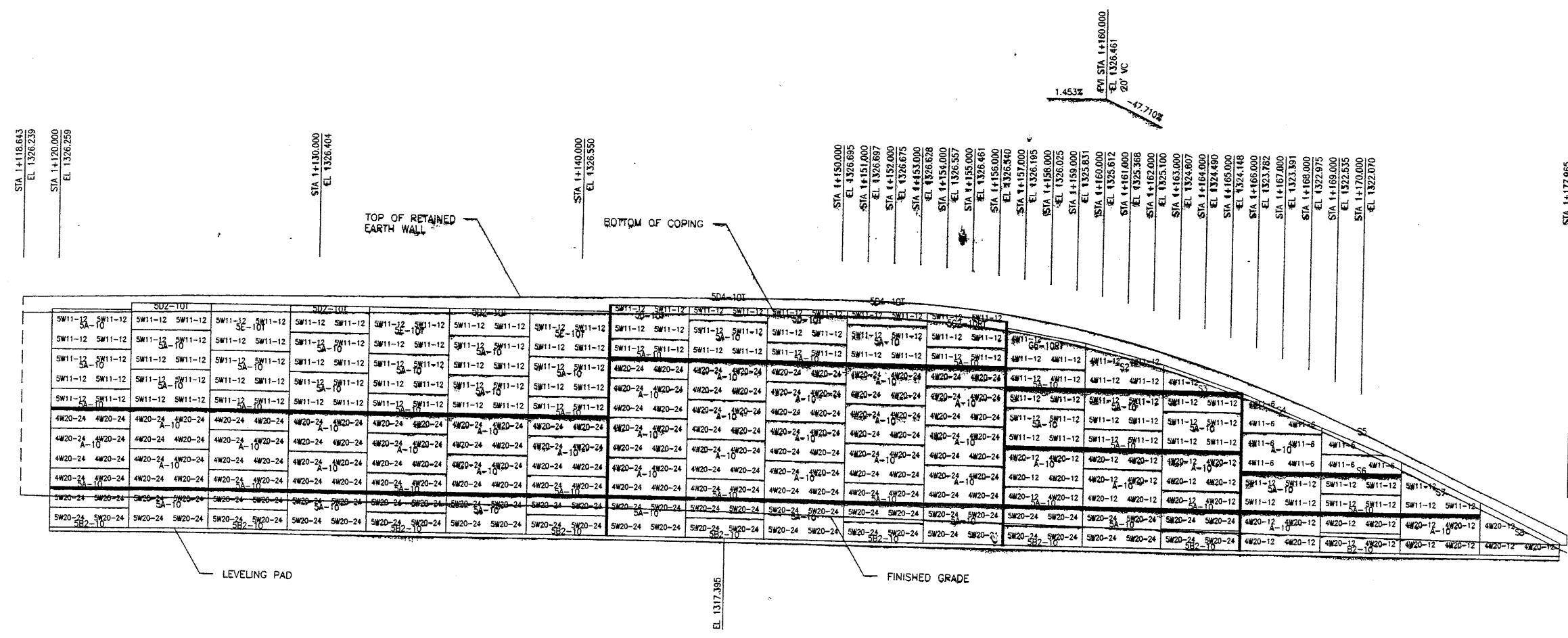


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FINAL PLAN 10-06-97

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APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-06-97	RELEASE FOR CONSTRUCTION



STATION	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59		
MESH DEPTH	7.315			9.144			6.096			4.267			0.292								
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	311 KPa			304 KPa			310 KPa														
PIN SPACING																					

ELEVATION PRECAST WALL 72-14B
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 1,061.14 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

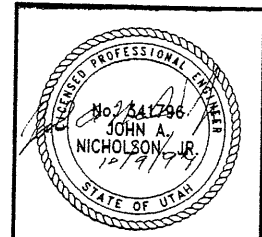
APPROVER NOTE:
 MAXIMUM FINAL UNFACTORED BEARING PRESSURES
 ARE INDICATED BELOW "MESH DEPTH LINE".
 REVIEWER TO VERIFY MAXIMUM BEARING
 CAPACITY OF FOUNDATION.

WALL STA 1+177.965
 "72-15N215E" STA 2+496.000
 @ 31.752 RT
 NOMINAL PANEL FACE (RWL/L)
 END WALL R-343-14B

END WALL

WASATCH CONSTRUCTORS
 OCT 13 1997
 RELEASED FOR CONSTRUCTION

METRIC



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

VSL CORPORATION
 2640 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 761-6272
 Fax: (919) 761-4889

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DES: 09-15-97
 DRN: 09-15-97
 CHK: 09-15-97

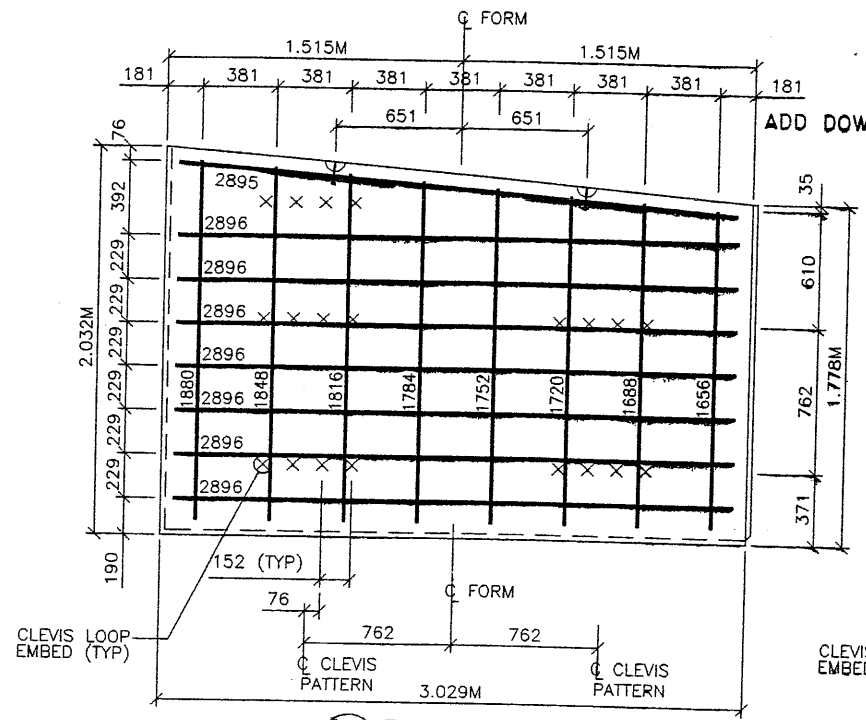
RETAINED EARTH™
 NO. DATE REVISION BY CHK

SCALE:
 1:2R-343-14B.9
 JOB NO:
 239-0007
 RE-8

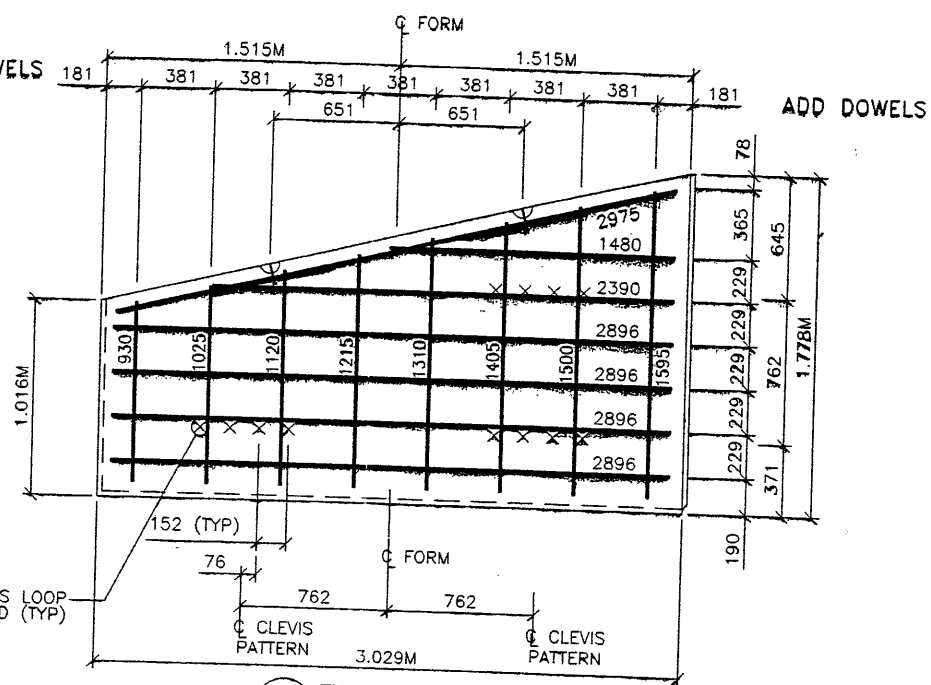
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3-06-97

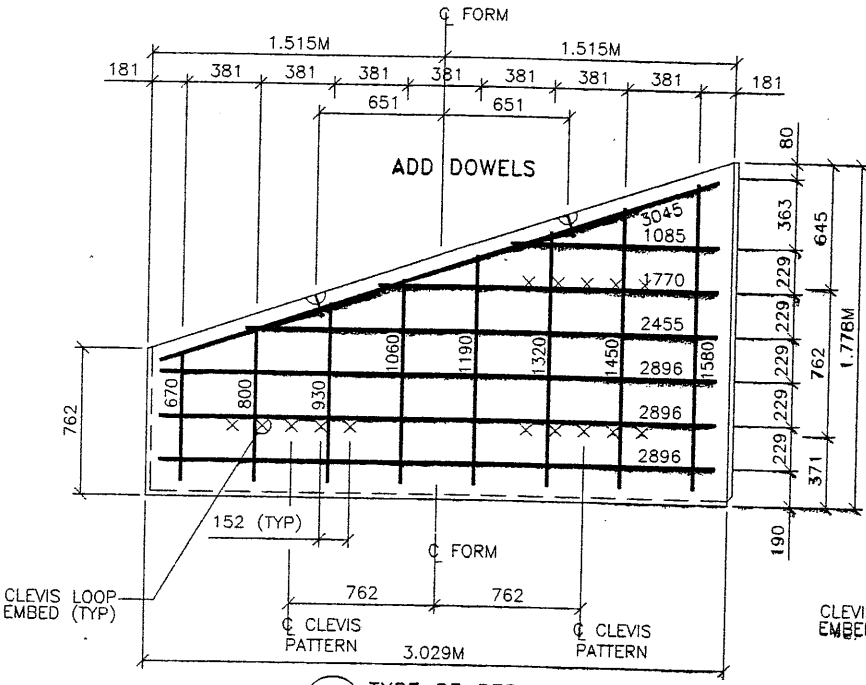
FINAL PL



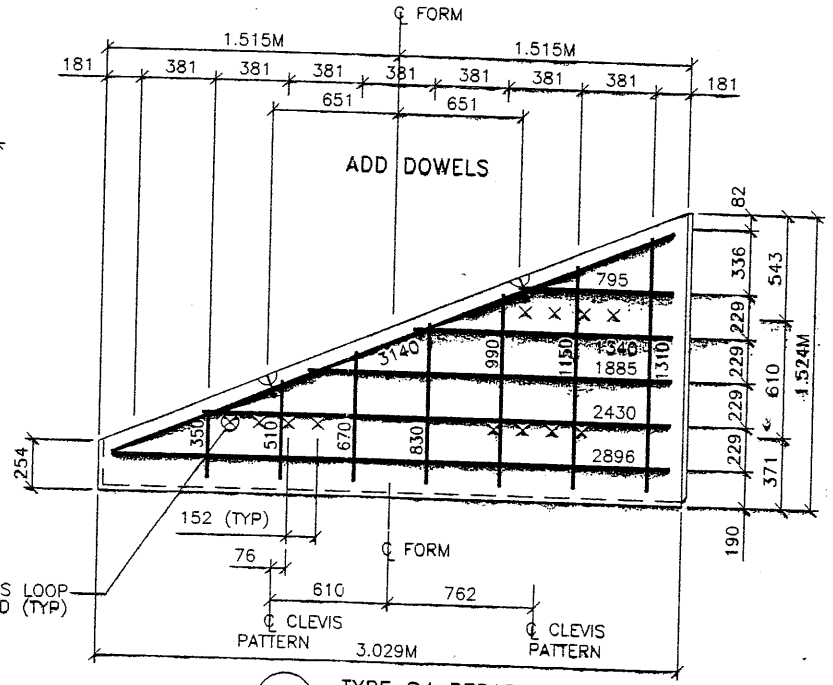
S1 TYPE S1 REBAR
(AREA = 5.81 SQ.M)



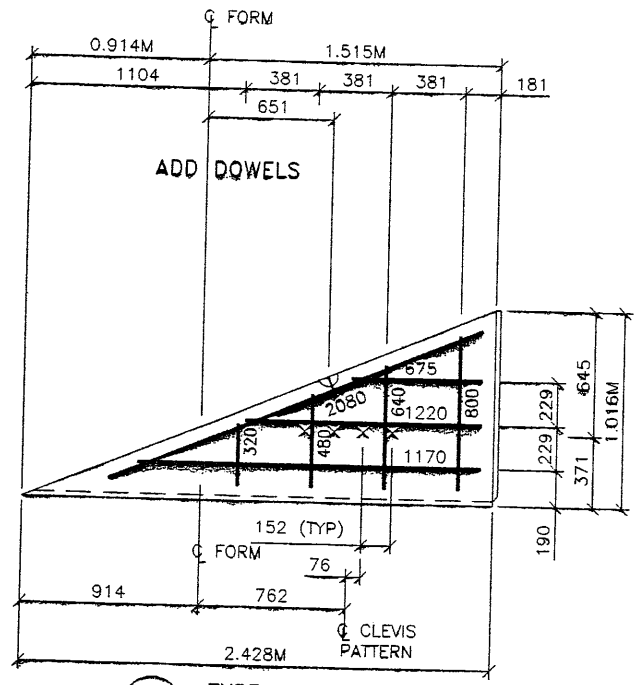
S2 TYPE S2 REBAR
(AREA = 4.26 SQ.M)



S3 TYPE S3 REBAR
(AREA = 3.87 SQ.M)



S4 TYPE S4 REBAR
(AREA = 2.71 SQ.M)



S5 TYPE S5 REBAR
(AREA = 1.24 SQ.M)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-06-97	RELEASE FOR CONSTRUCTION

- 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 27,500 KPa.
 8. EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 9. ALL PANELS TO USE 9.5mmØ CLEVIS LOOPS.
 10. VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.

VSL CORPORATION
2940 Plaza Place, Suite 200
Raleigh, NC 27607-8147
Tel: (919) 781-4872
Fax: (919) 781-4869

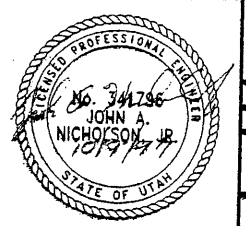
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VSL

WASATCH CONSTRUCTORS
OCT 13 1997
RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
PRECAST WALL "R-343-14B"
SPECIAL PANEL REINFORCEMENT
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

METRIC



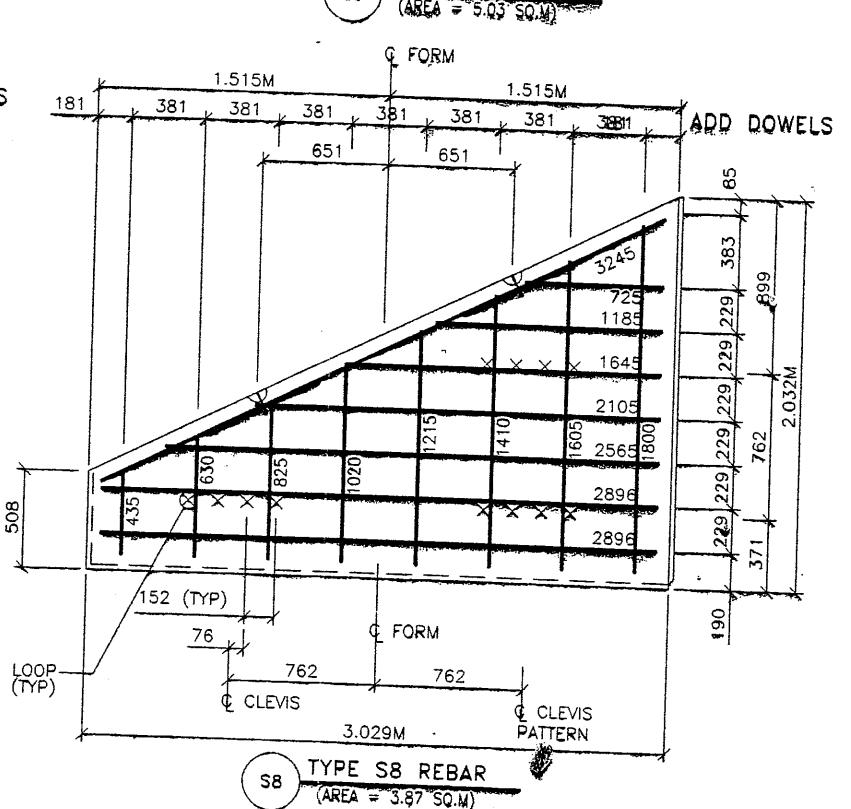
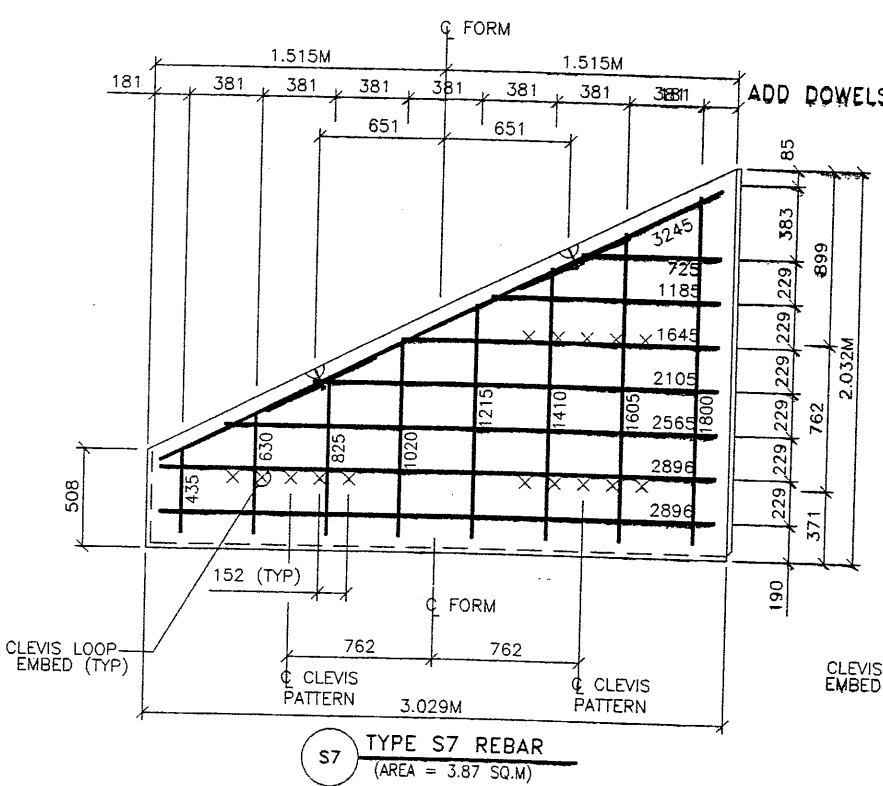
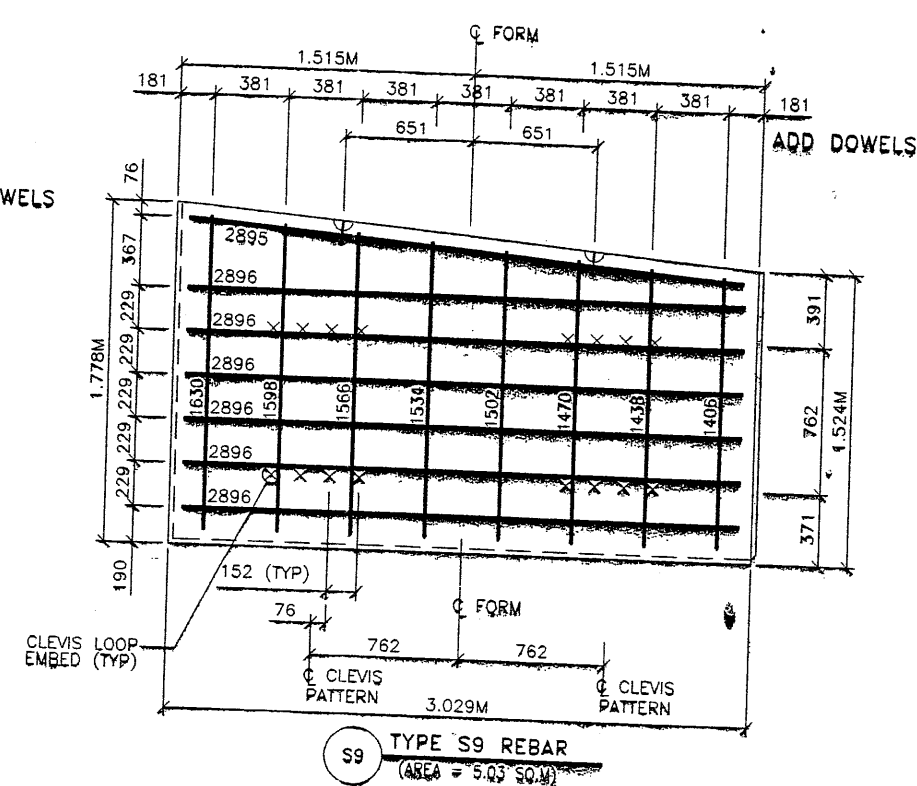
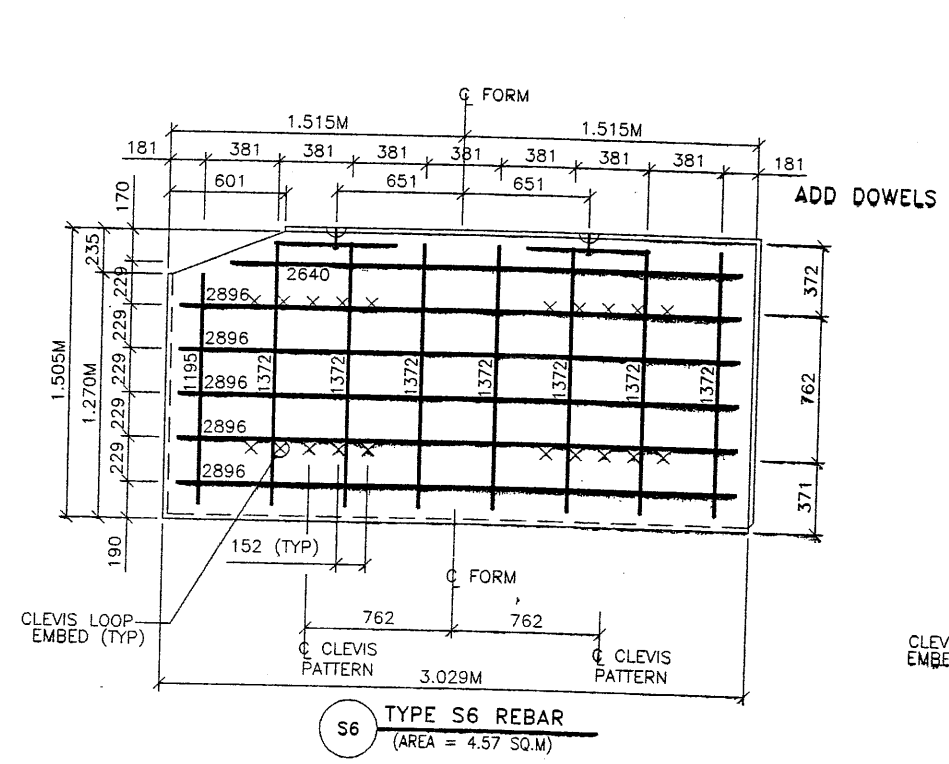
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SCALE:
1.2R-343-14B.10

JOB NO:
239-0007

RE-9

E:\PROJECT\239-0007\72SERIES\72-141
 3-06-97
 FINAL



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-26-97	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 9.5mm Ø CLEVIS LOOPS.
 - VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.

WASATCH CONSTRUCTORS
 OCT 13 1997
 RELEASED FOR CONSTRUCTION

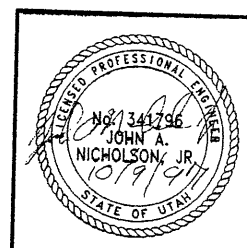
VSL CORPORATION
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 Telephone: (919) 781-6272
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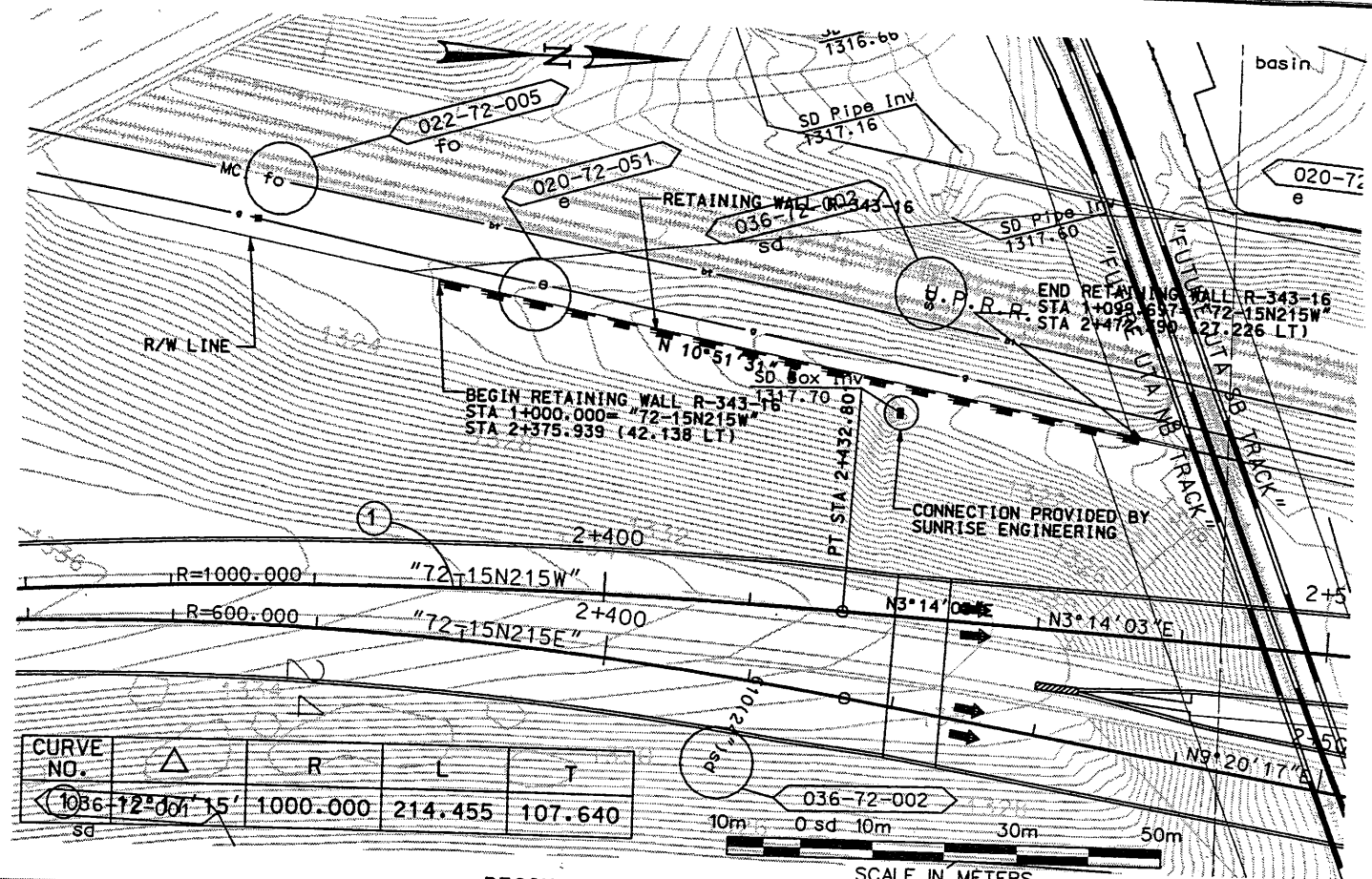
RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-14B"
 SPECIAL PANEL REINFORCEMENT
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE:
 1:2R-343-14B.11
 JOB NO:
 239-0007/II
 RE-10

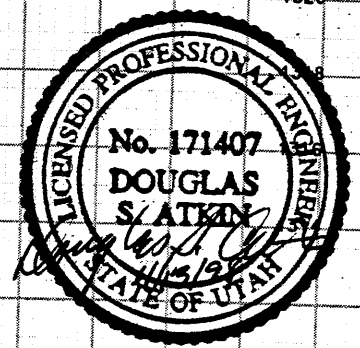
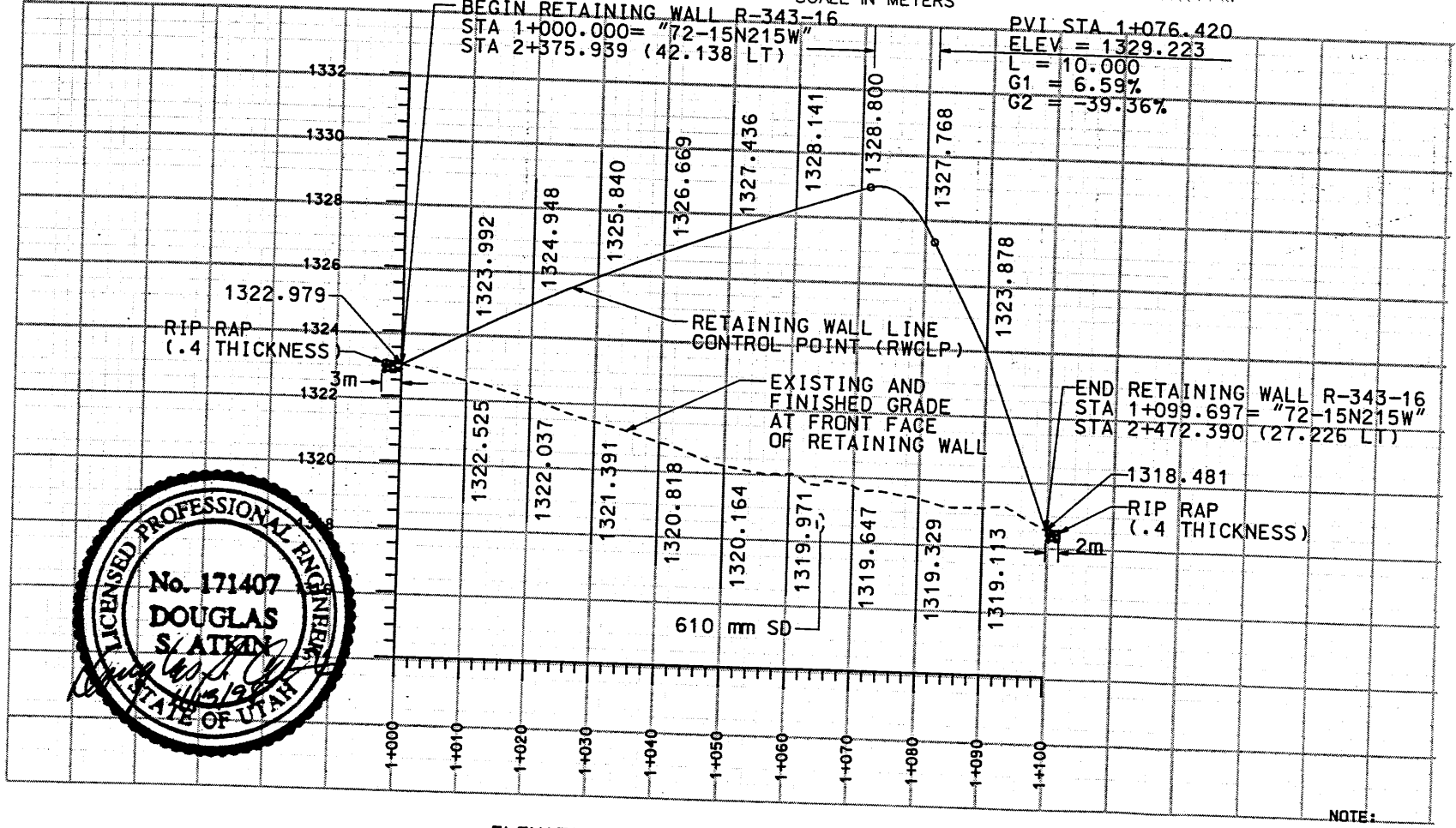


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Date: 13-NOV-1998 Time: 18:22 User: ramer mockkk

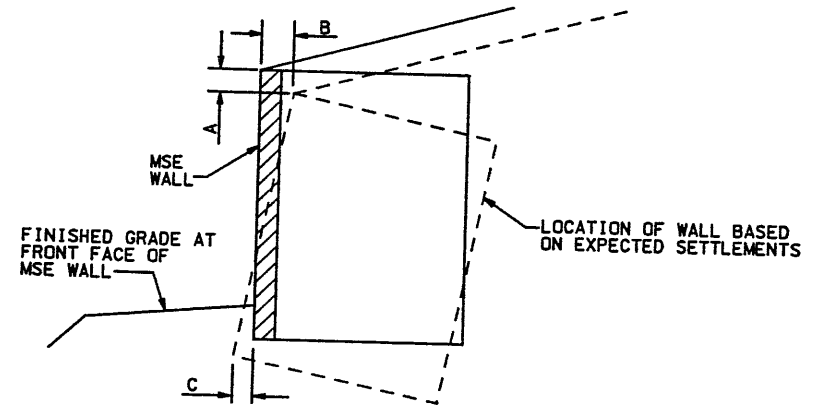


CURVE NO.	Δ	R	L	T
1036-72-001	15'	1000.000	214.455	107.640



ELEVATION VIEW FROM BACK OF WALL

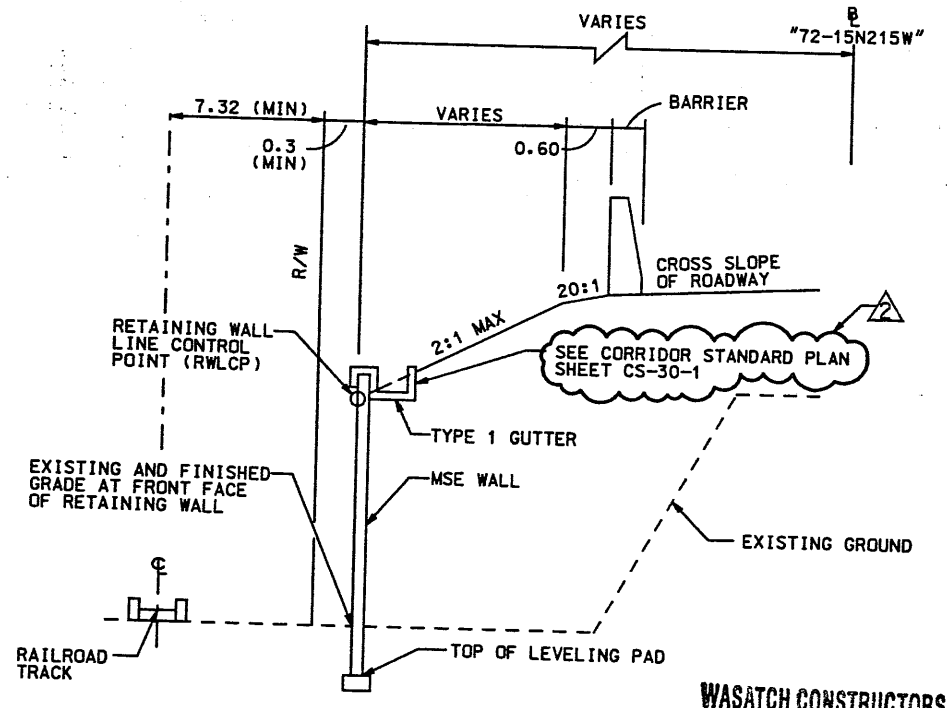
NOTE:
THE FOUNDATION BEARING MATERIALS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER DURING SITE PREPARATION. ANY UNDESIRABLE MATERIALS WILL NEED TO BE REMOVED AND REPLACED WITH BORROW IN ORDER TO ACHIEVE ACCEPTABLE CONDITIONS AT THE BASE OF THE WALL.



ESTIMATED SETTLEMENT TABLE

STATION LIMITS	REFERENCE STATION	WALL SETTLEMENT mm	TOP OF WALL ROTATION mm	LATERAL DISPLACEMENT AT BOTTOM OF WALL mm
1+000.000 TO 1+099.697	1+078***	A	B	C
		30 TO 50	47	**

** LATERAL DISPLACEMENT AT BOTTOM OF WALL SHOULD BE LESS THAN ONE HALF OF THE SETTLEMENT AT FRONT FACE OF WALL. TERRACON RECOMMENDS CONSTRUCTING THE WALL TOE AT THE DESIGN LOCATION.
*** THESE VALUES CALCULATED AT REFERENCED STATION: ROTATIONS AT OTHER STATIONS CAN BE ESTIMATED IN PROPORTION TO WALL HEIGHT.



TYPICAL SECTION WALL R-343-16 STA 1+000.000 TO STA 1+099.697

WASATCH CONSTRUCTORS
NOV 24 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	10-1-97	INITIAL RELEASE
2	11-13-98	MDC-0284

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

APPROVAL	DATE	DATE	DATE	DATE
DESIGN	JMM	9/97	CHECK	KJM
PROJECT DESIGN	ENGINEER	9/97	CHECK	EMR
DRAWN	DMK	9/97	CHECK	EMR
PROJECT MANAGER	QUANT.	/	CHECK	/

1-15 CORRIDOR RECONSTRUCTION	SALT LAKE COUNTY
SITUATION/LAYOUT RET WALL R-343-16	DWG. NO. 1.2R-343-16.1
SECTION 1.2	SHT. 1 OF 10
PROJECT NUMBER #SP-15-7(135)296	REF. 20

Filename: c:\dgn\15_cadd\12_97\sheet_1\15a\wall16.dgn

E:\PROJECT\239-0007\72SERIES\72-16

3-23-97

FINAL

WALL STA 1+000.000 =
72-15N215W
STA 2+375.939 @ 42.138 LT
BEGIN PRECAST WALL R-343-16

FRONT FACE PRECAST WALL "R-343-16"

WALL STA 1+099.697 =
72-15N215W
STA 2+472.390 @ 27.226 LT
END PRECAST WALL R-343-16

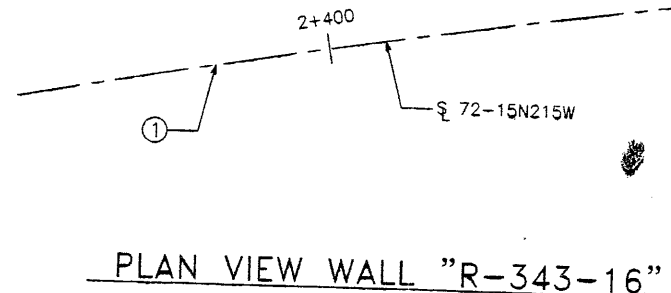
N 10° 51' 31" E

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	△
①	1000.000	214.455	107.640	12°17'15"

All Dimensions Are In Meters Unless Noted Otherwise

GENERAL NOTES

- ALL WALLS ARE SHOWN FRONT FACE. NOTE STATIONING.
- PANEL TYPE IS DESIGNATED ON EACH PANEL. CONNECTOR LABELS INDICATE NUMBER OF CONNECTORS PER SOIL REINFORCING MESH LOCATION.
EXAMPLE: 5B2-10 IS A "B2-10" PANEL WITH FIVE (5) CONNECTORS PER SOIL REINFORCING MESH LOCATION.
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: 4W11-12 MESH HAS FOUR (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 12" CENTERS.
EXAMPLE: 4W20-12 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 12" CENTERS.
EXAMPLE: 4W20-24 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 24" CENTERS.
EXAMPLE: 5W11-12 MESH HAS FIVE (5) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 12" CENTERS.
EXAMPLE: 5W20-24 MESH HAS FIVE (5) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 24" CENTERS.
EXAMPLE: 6W20-24 MESH HAS SIX (6) 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 SHEET RE-3 FOR DETAIL.



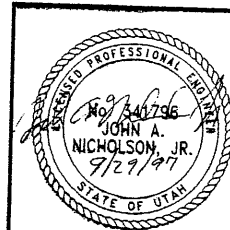
SCALE: 1=250 (FULL SIZE)
SCALE: 1=500 (HALF SIZE)

DESIGN PARAMETERS	
ANGLE OF INTERNAL FRICTION (SELECT)	= 34°
ANGLE OF INTERNAL FRICTION (BASE)	= 30°
ANGLE OF INTERNAL FRICTION (RANDOM)	= 34°
UNIT WEIGHT BACKFILL	= 135 PCF.
TRAFFIC SURCHARGE	= 250 PSF
SEISMIC ACCELERATION COEFF.	= 0.13g (TYP)
SEISMIC ACCELERATION COEFF.	= 0.32g (AT BRIDGE ABUTMENTS)
DESIGN CRITERIA	
SAFETY FACTOR (OVERTURNING)	= 2.0
SAFETY FACTOR (SLIDING)	= 1.5
SAFETY FACTOR (PULLOUT)	= 1.5
DESIGN LIFE	= 75 YEARS

ALLOWABLE BEARING CAPACITY = 260 kPa

RETAINED EARTH INDEX	
RE-1	PLAN PRECAST FACE WALL R-343-16, NOTES & DESIGN CRITERIA
RE-2	TYPICAL DETAILS
RE-3	TYPICAL DETAILS
RE-4	TYPICAL CROSS SECTIONS
RE-5	ELEVATION PRECAST WALL "R-343-16"
RE-6	ELEVATION PRECAST WALL "R-343-16"
RE-7	SPECIAL PANEL DETAILS
RE-8	SPECIAL PANEL DETAILS
RE-9	SPECIAL PANEL DETAILS

METRIC



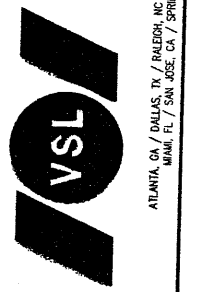
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APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	9-23-97	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
OCT 08 1997
RELEASED FOR CONSTRUCTION

DES.	MM	DRN.	DDO	CHK.	MM	NO.	DATE	BY	CHK
	09-15-97								

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6772
Fax: (919) 781-6660



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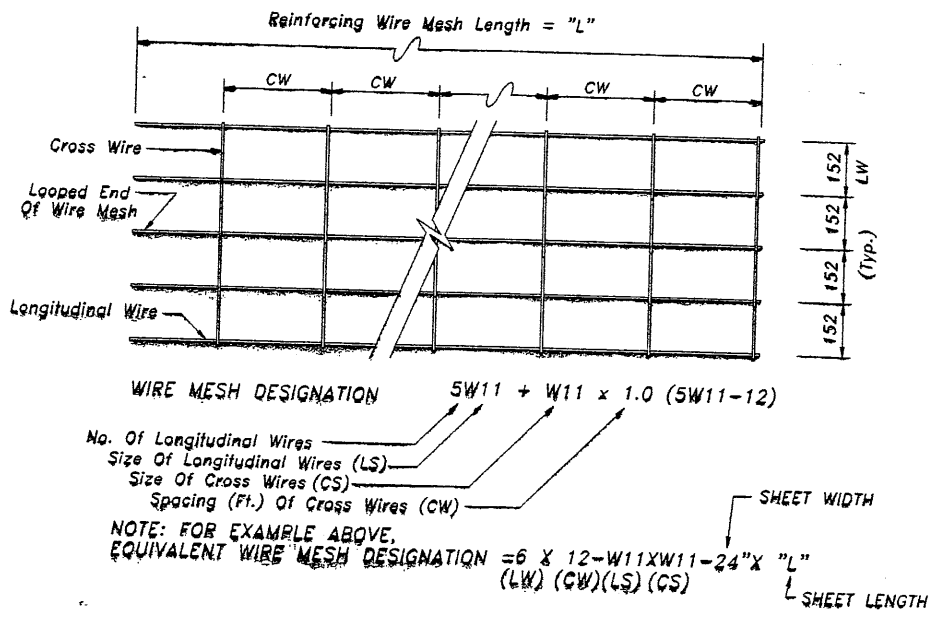
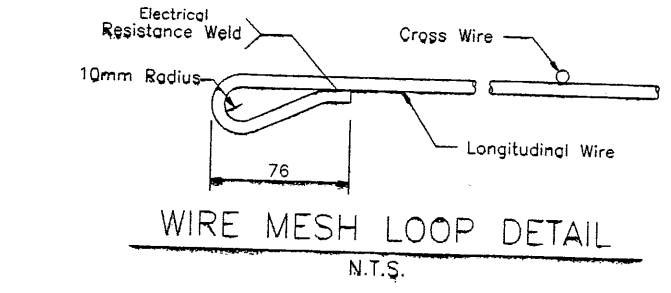
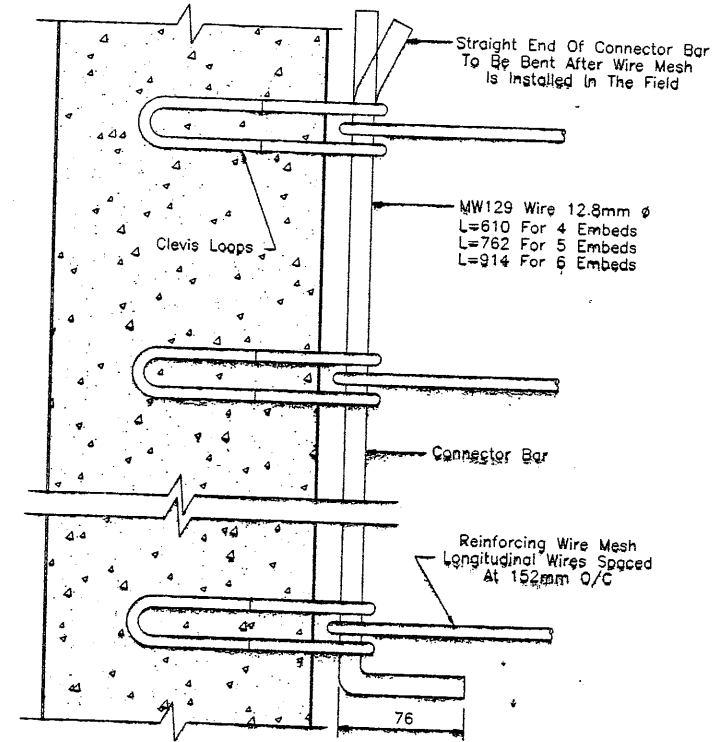
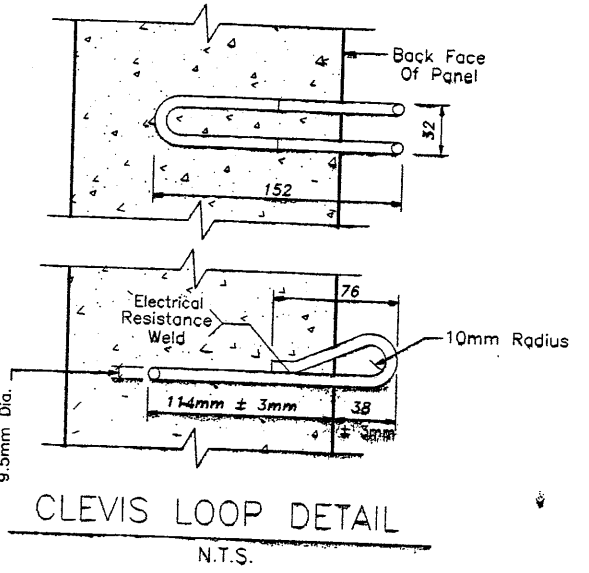
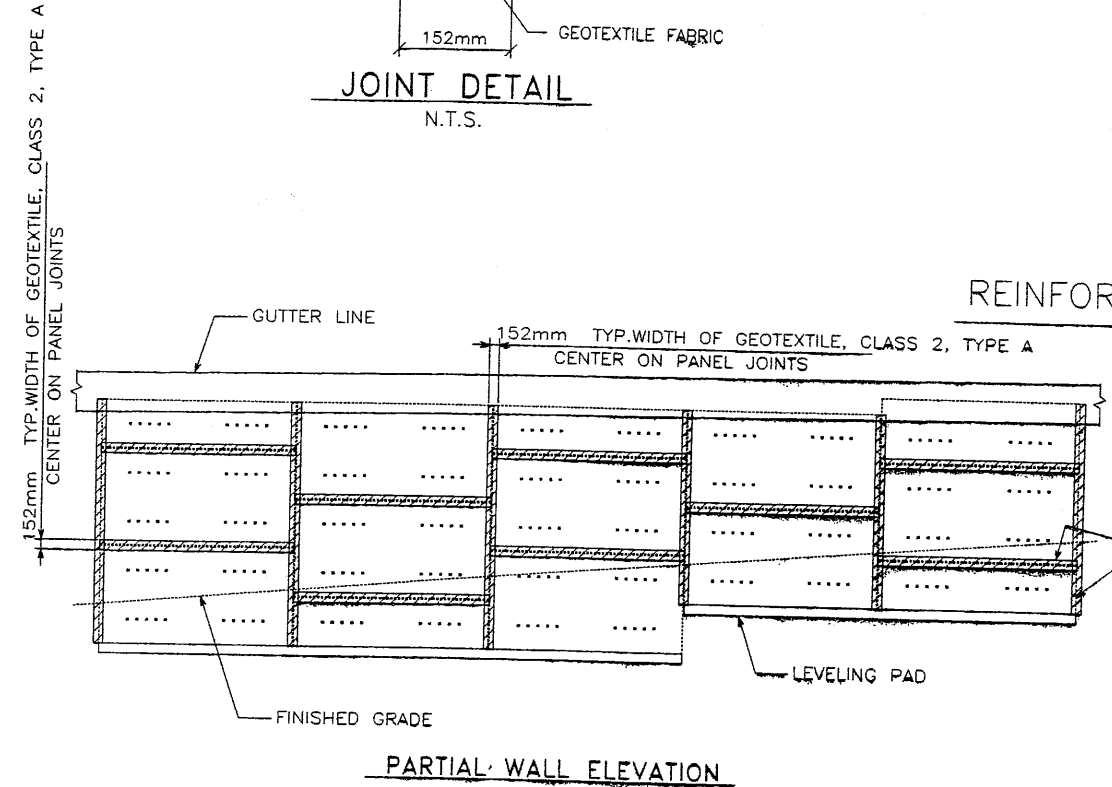
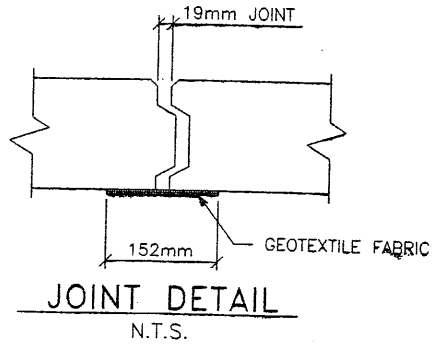
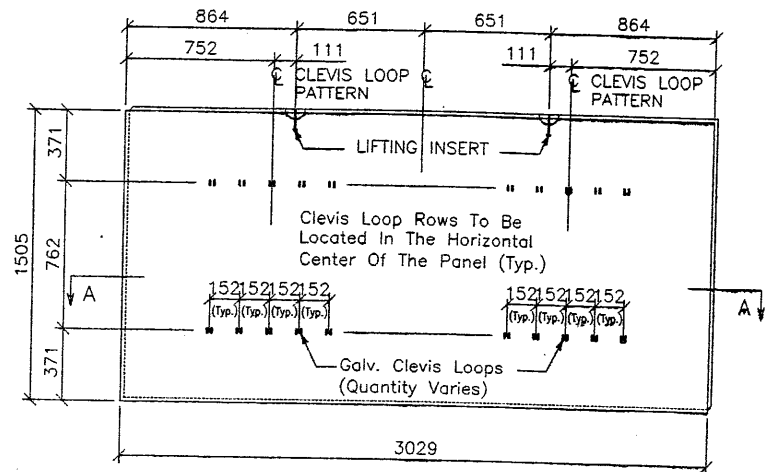
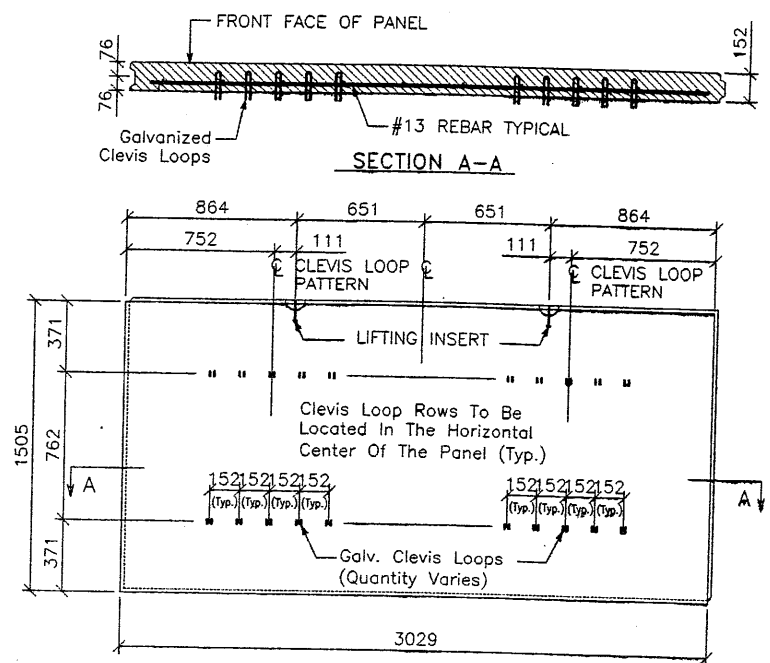
RETAINED EARTH™ WALLS
PLAN VIEW PRECAST WALL "R-343-16"
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE:	1.2R-343-16.2
JOB NO:	239-0007
	2/10
	RE-1

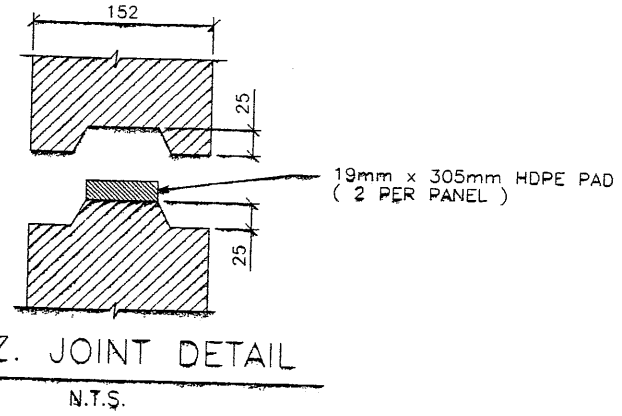
9-22-97

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FINAL P.



NOTE: W11 (71 sq mm) And W20 (129 sq mm) Steel Wire Material And Welding Of Cross Wires And Loops Shall Conform To ASTM A62 And ASTM 185. $F_y = 448$ MPa. Mesh Shall Be Galvanized To ASTM A-123 To A Minimum Effective Thickness Of 0.086 mm.



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9-23-97	RELEASE FOR CONSTRUCTION

WABATCH CONSTRUCTORS
OCT 08 1997
RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. 09-15-97 MM
DRN. 09-15-97 DDO
CHK. 09-15-97 MM

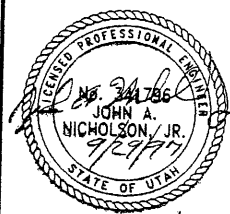
VSL CORPORATION
2840 Rapp Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-8272
Fax: (919) 781-9869

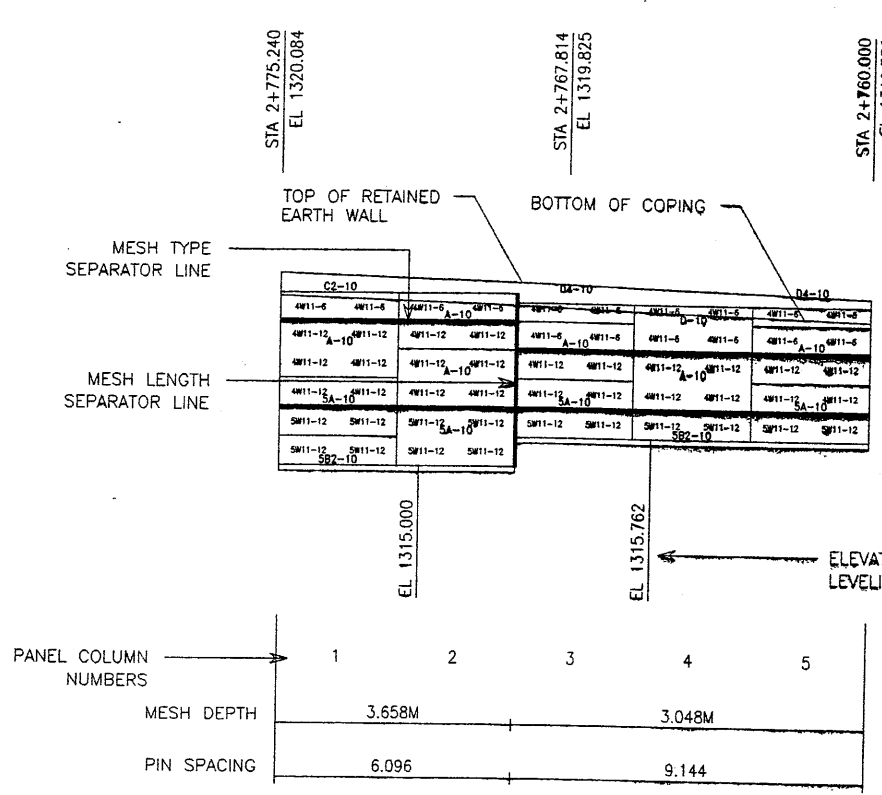
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MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

RETAINED EARTH™ WALLS
PRECAST WALL "R-343-16"
TYPICAL DETAILS
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

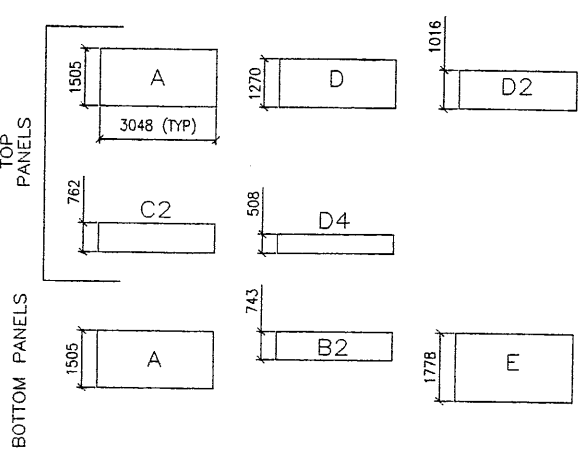
SCALE:
1.2R-343-16.3
JOB NO:
239-0007/3/10
RE-2

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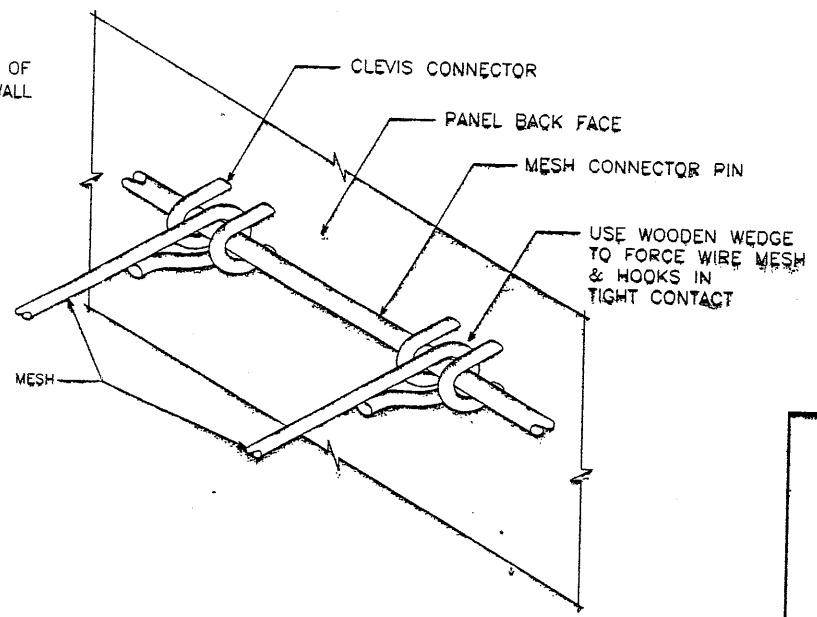




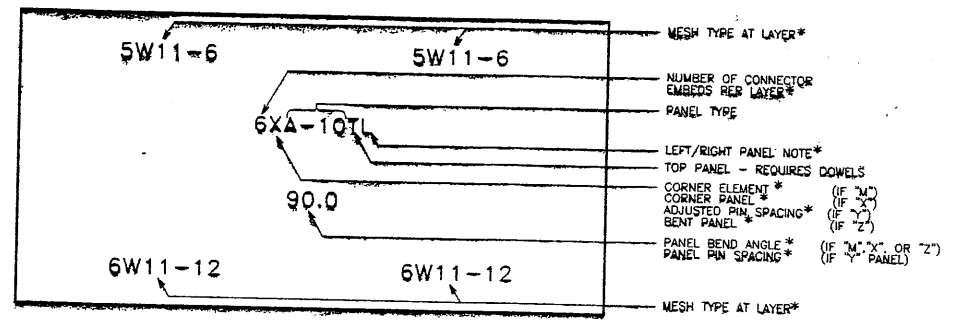
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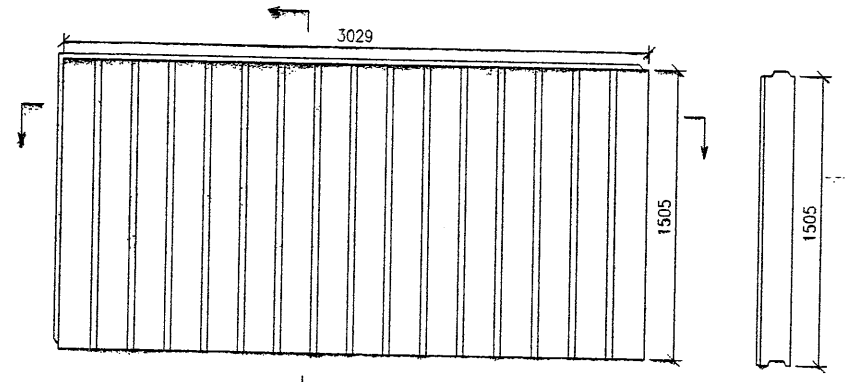
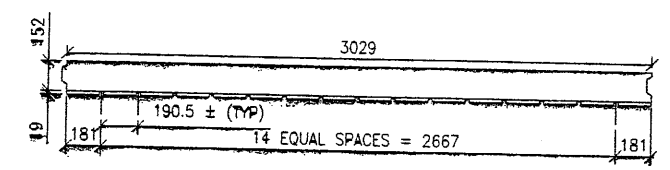
4 ALL DIMENSIONS ARE IN MILLIMETERS



2 VSL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,170.



3



6

METRIC

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	9-23-97	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
OCT 08 1997
RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	CHK

DES.	MM	DOO	MM	RETAINED EARTH™
09-15-97		09-15-97		
09-15-97		09-15-97		

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-8272
Fax: (919) 781-4889

ATLANTA, GA / DALLAS, TX / ENGLEWOOD, CO (CORPORATE OFFICE)
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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-16"
TYPICAL DETAILS
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

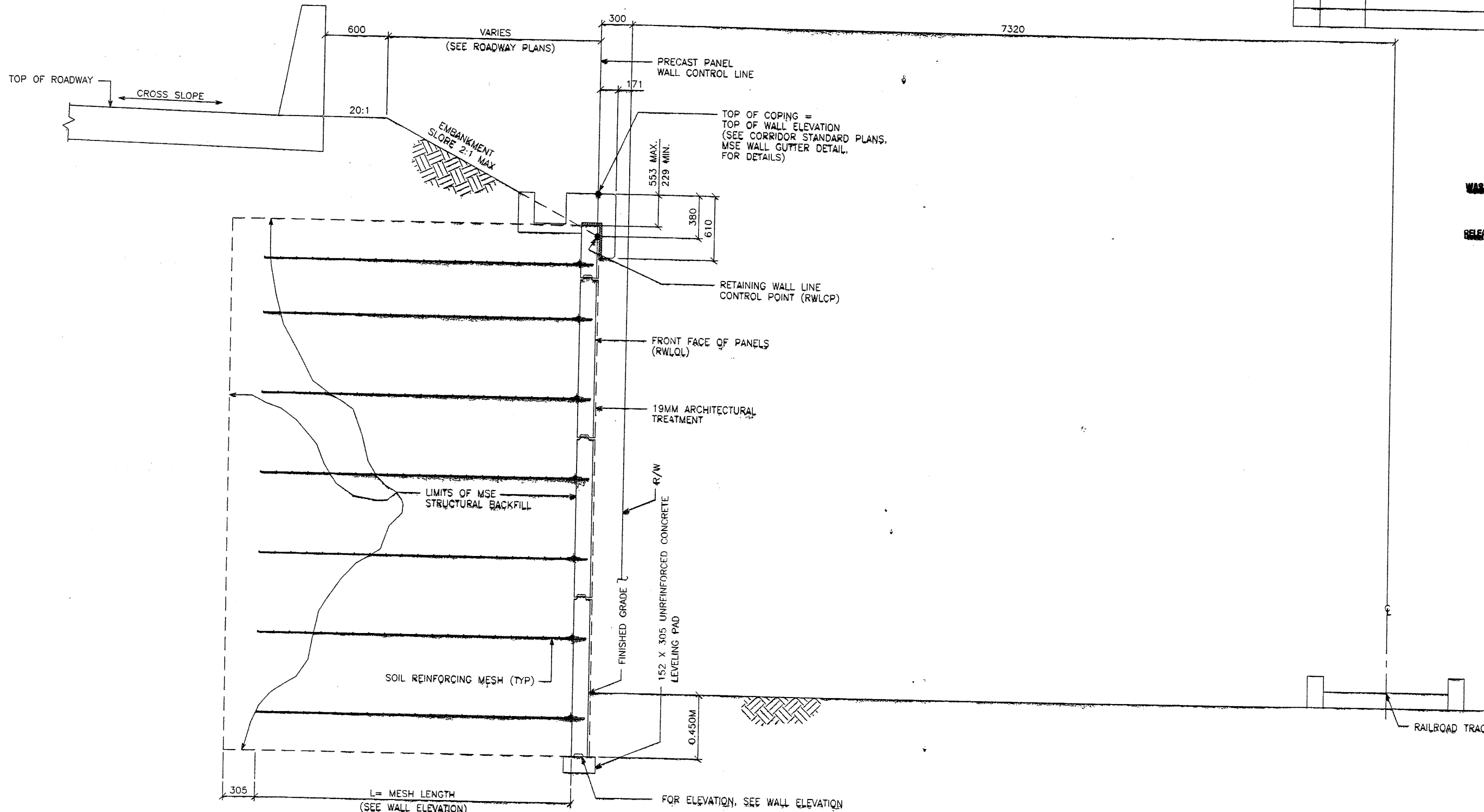
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SCALE:	1.2R-343-16.4
JOB NO.:	239-0007
	4/10
	RE-3

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1-22-97

FINAL P



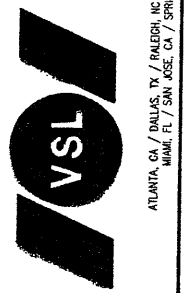
TYPICAL CROSS SECTION
(MSE SINGLE STAGE WITH GUTTER DETAIL)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	9-23-97	RELEASE FOR CONSTRUCTION ✓

WATCH CONSTRUCTORS
 OCT 08 1997
 RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	CHK

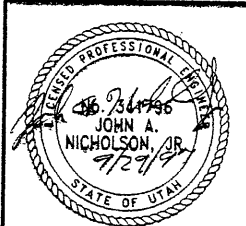
VSL CORPORATION
 2840 Pina Place, Suite 200
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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-16"
TYPICAL CROSS SECTIONS
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

METRIC



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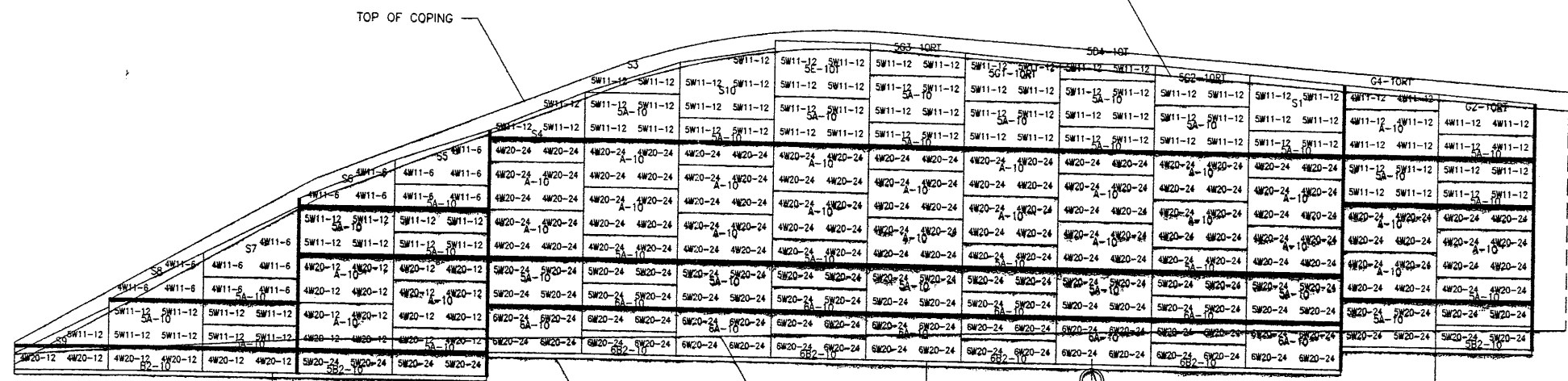
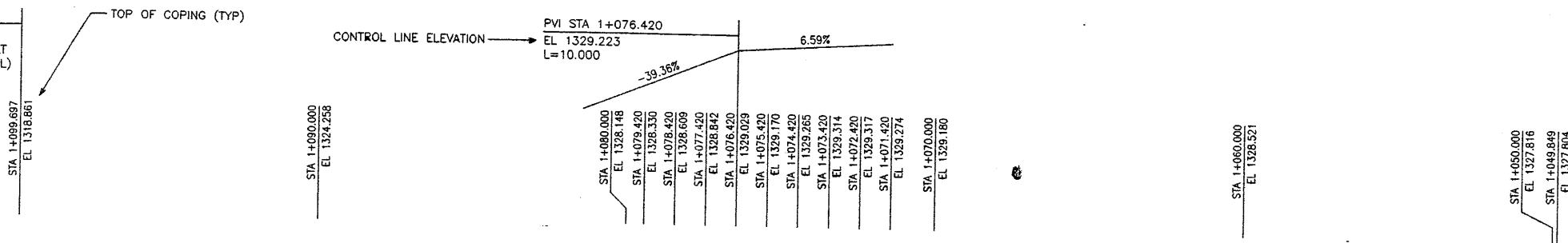
SCALE:	1.2R-343-16.5
JOB NO:	239-0007 5/10
	RE-4

E:\PROJECT\239-0007\2SERIES\72-16\W72-1'

9-22-97

FINAL

END WALL R-343-16
WALL STA 1+099.697 =
"72-15N215W"
STA 2+472.390 @ 27.226 LT
NOMINAL PANEL FACE (RWLOL)



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MESH DEPTH		4.267M		5.486M					8.534M							6.706M
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)		170 KPa		298 KPa					366 KPa							303 KPa
PIN SPACING			15.240						27.432							6.096

ELEVATION PRECAST WALL R-343-16
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.

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9-23-97	RELEASE FOR CONSTRUCTION

DES.	MM	DD	DD	MM	NO.	DATE	BY
DES.	09-15-97	MM	09-15-97	DD	09-15-97	MM	CHK.
DRN.	09-15-97	MM	09-15-97	DD	09-15-97	MM	CHK.
CHK.	09-15-97	MM	09-15-97	DD	09-15-97	MM	CHK.

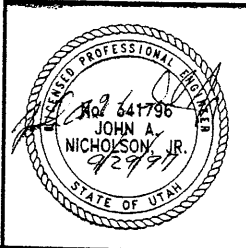
WATCH CONSTRUCTORS
OCT 08 1997
RELEASED FOR CONSTRUCTION

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Tel: (919) 781-6772
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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-16"
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.



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

SCALE:	1.2R-343-16.6
JOB NO:	239-0007 6/10
	RE-5

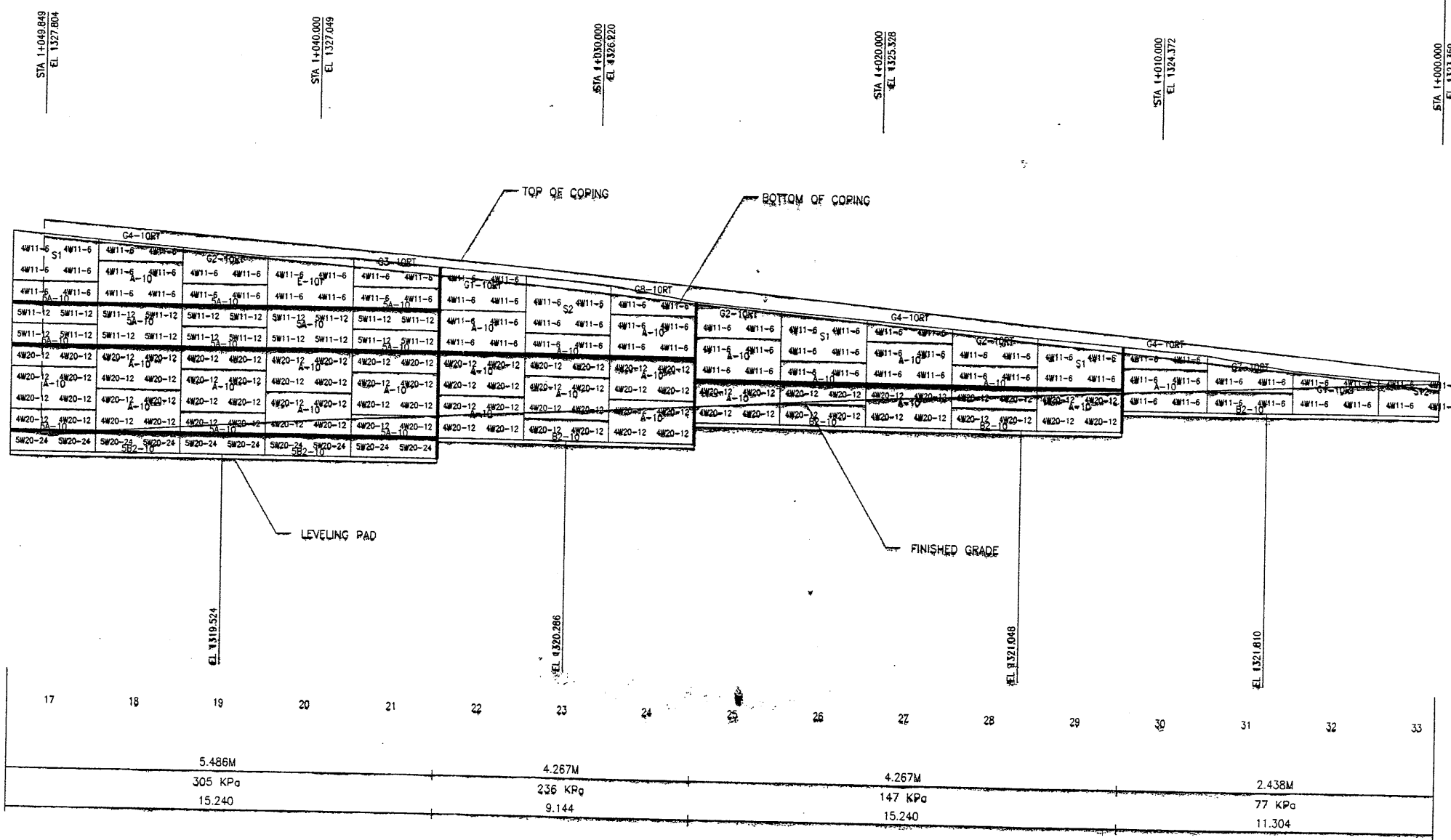
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1-22-97

FINAL P

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
9-23-97		RELEASE FOR CONSTRUCTION

BEGIN WALL R-343-16
WALL STA 1+000.000 =
"72-15N215W"
STA 2+375.939 @ 42.138 LT
NOMINAL PANEL FACE (RWLOL)



ELEVATION PRECAST WALL R-343-16
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.

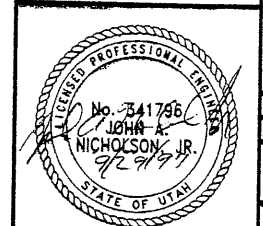
WASATCH CONSTRUCTORS
OCT 08 1997
RELEASED FOR CONSTRUCTION



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METRIC

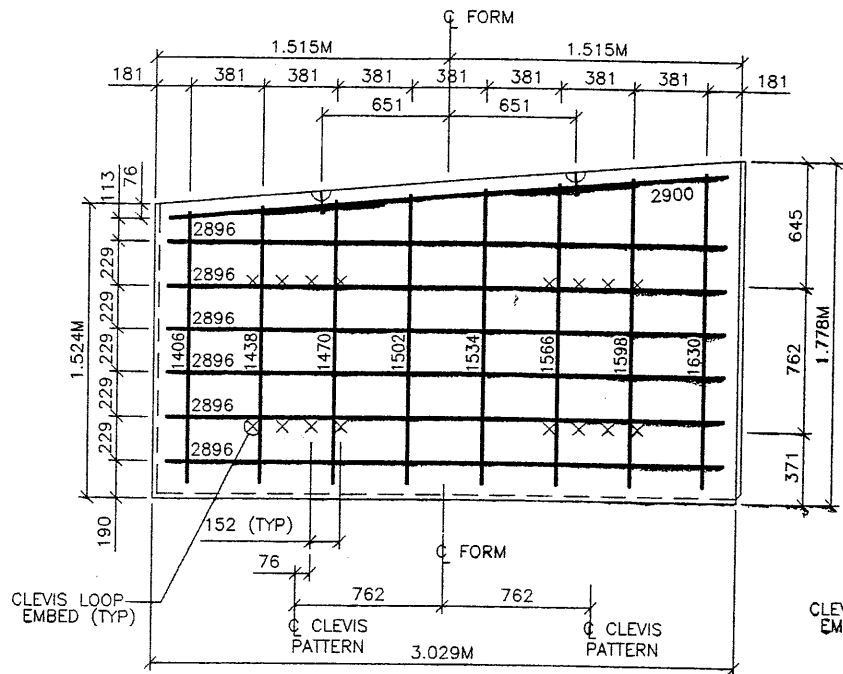


CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

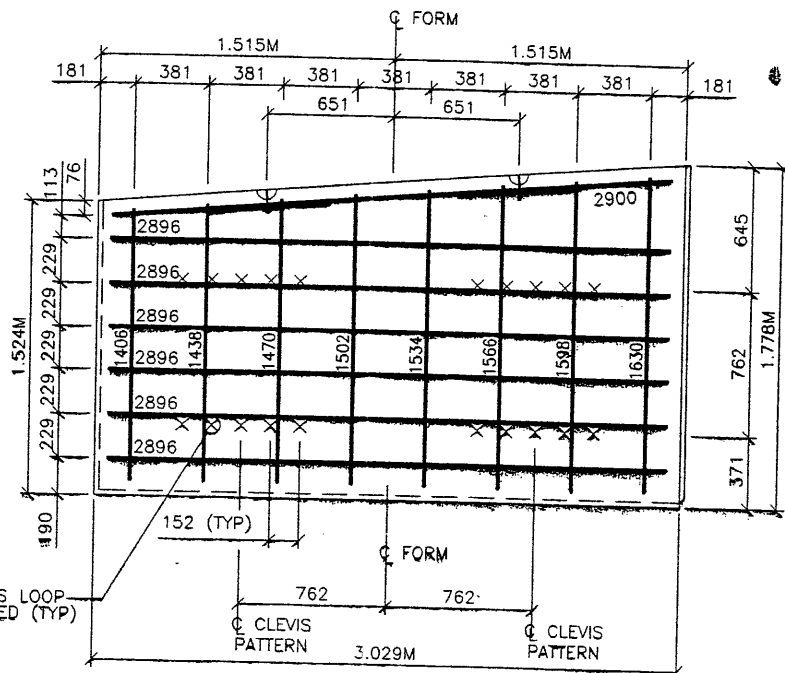
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-16"
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE:	1.2R-343-16.7
JOB NO:	239-0007 7/10
REVISION	RE-6

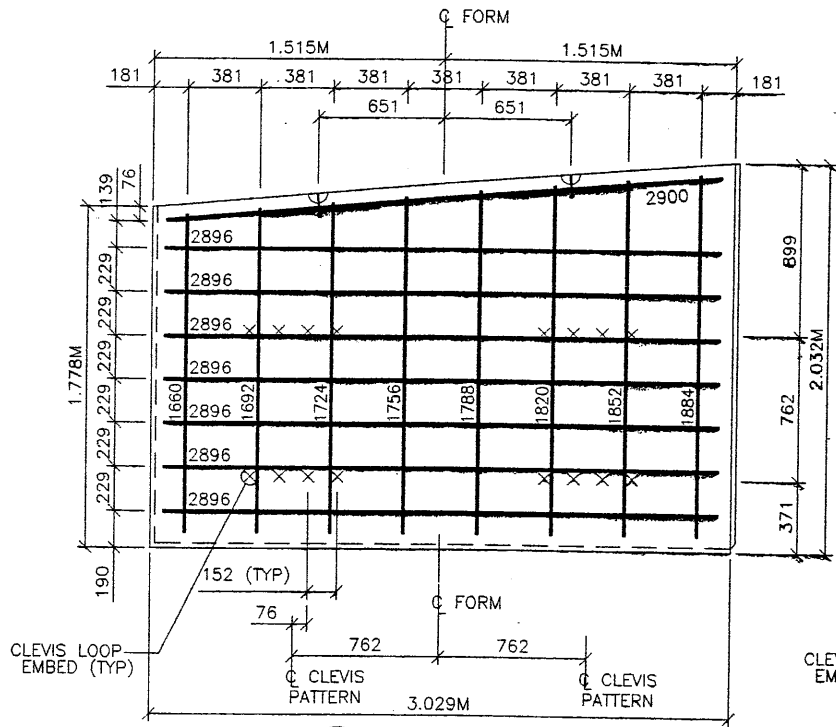
DES.	DRN.	CHK.	NO.	DATE	BY	CHK.
09-15-97	MM					
09-15-97	DDO					
09-15-97	MM					



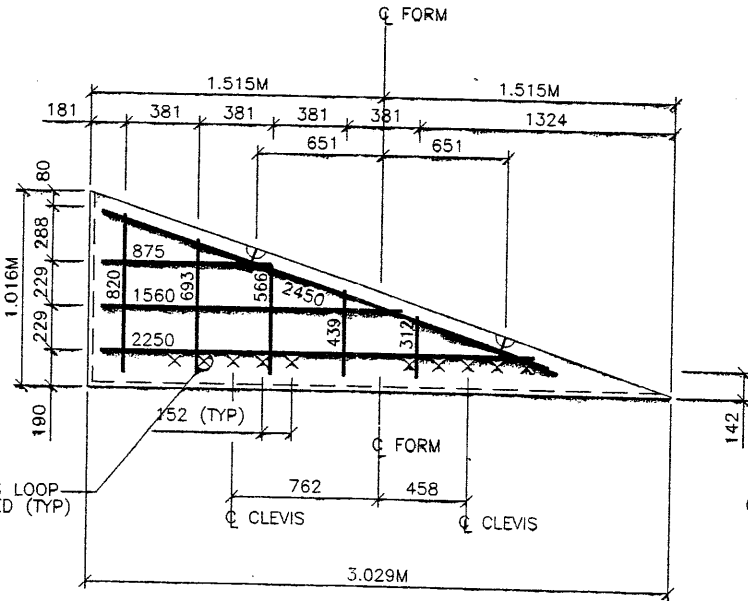
S1 TYPE S1 REBAR
(AREA = 5.03 SQ.M)



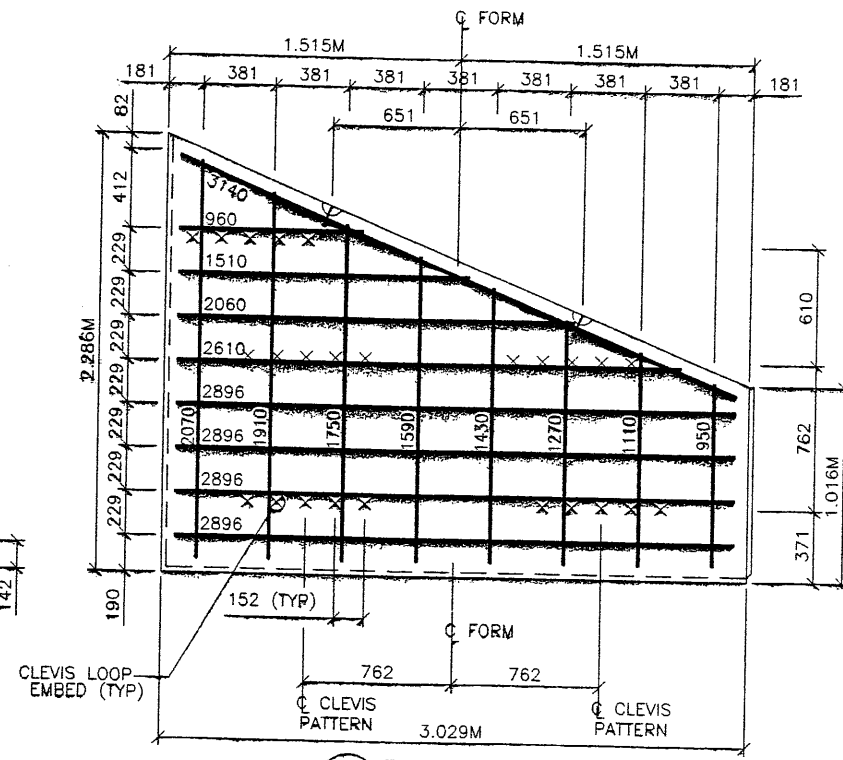
S11 TYPE S11 REBAR
(AREA = 5.03 SQ.M)



S2 TYPE S2 REBAR
(AREA = 5.81 SQ.M)



S3 TYPE S3 SHOWN
(AREA = 1.55 SQ.M)



S4 TYPE S4 REBAR
(AREA = 5.03 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 EPOXY COATED TO 0.5mm THICKNESS. REFER TO SPECIAL PROVISIONS, SECTION 508.
 7. CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 27,500 KPa.
 8. EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 9. ALL PANELS TO USE 9.5mmØ CLEVIS LOOPS.
 10. VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9-23-97	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Facsimile: (919) 781-6965

VSL

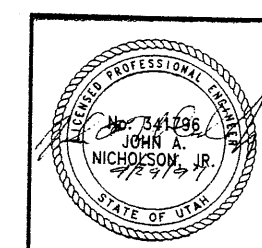
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CONSTRUCTORS
OCT 08 1997
RELEASED FOR CONSTRUCTION

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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-16"
SPECIAL PANEL REINFORCEMENT
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE:
1.2R-343-16.8
JOB NO:
239-0007
8/10
RE-7



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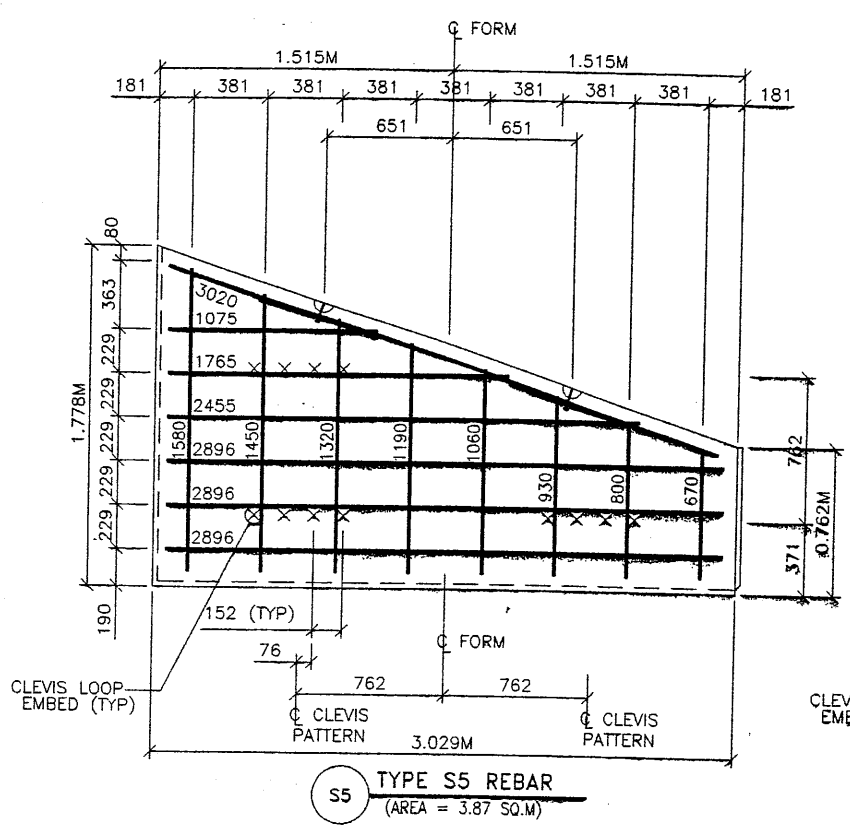
METRIC

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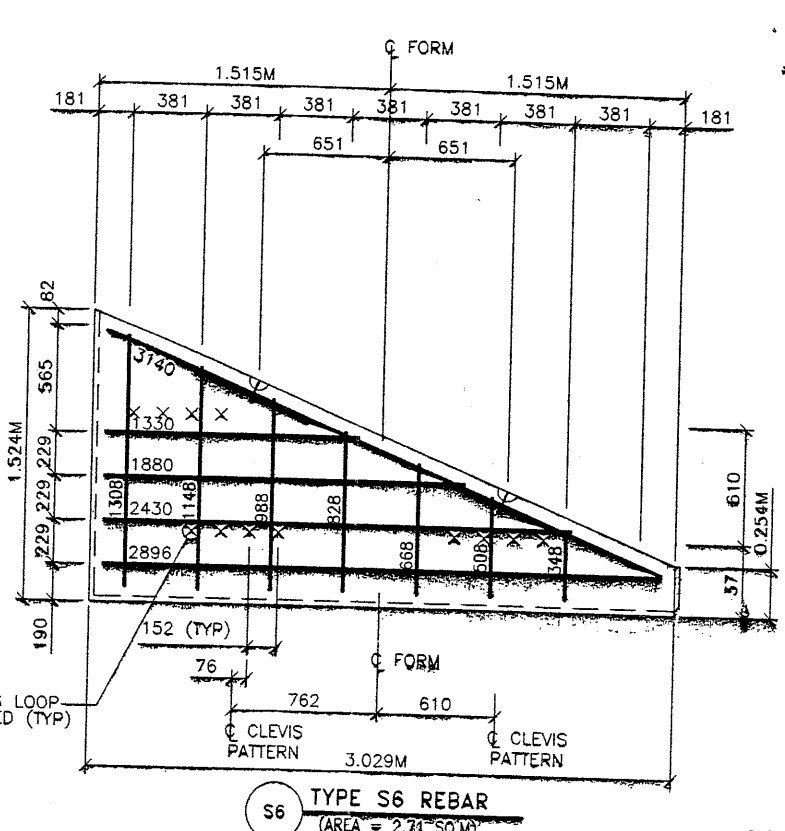
9-23-97

FINAL

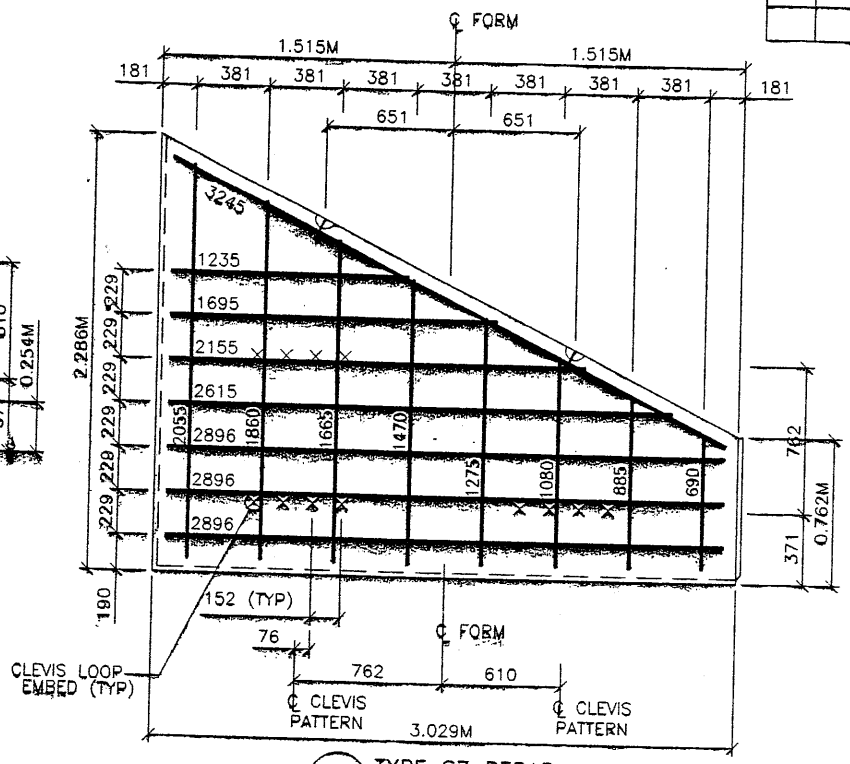
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	9-23-97	RELEASE FOR CONSTRUCTION



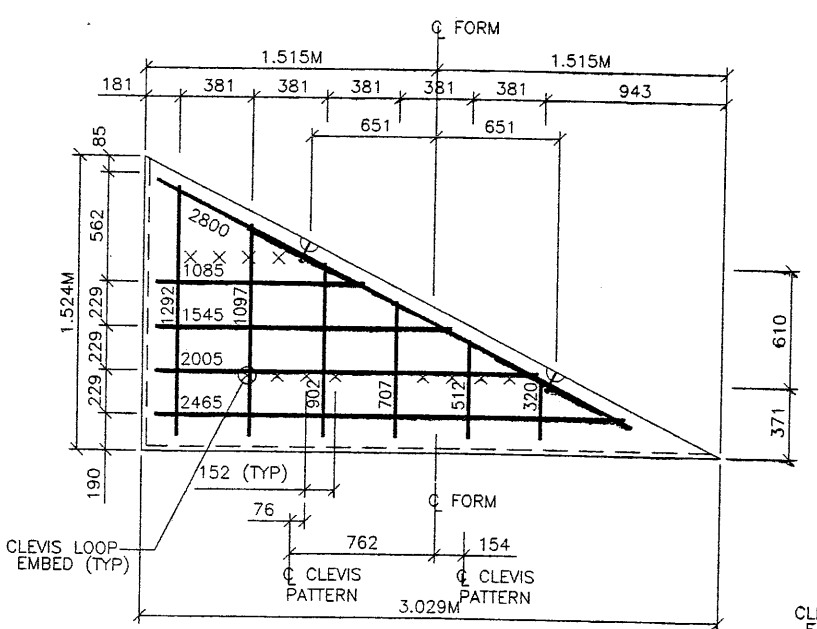
S5 TYPE S5 REBAR
(AREA = 3.87 SQ.M)



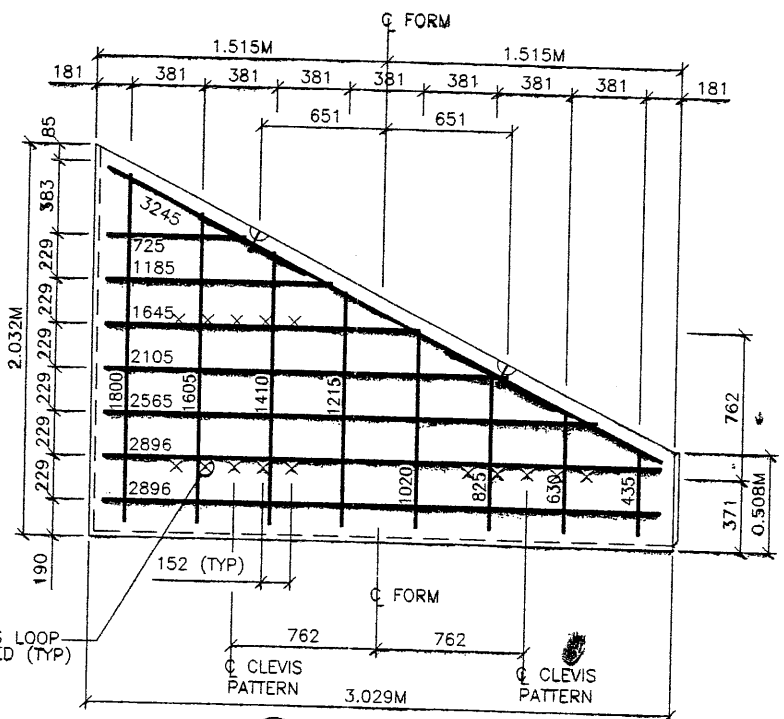
S6 TYPE S6 REBAR
(AREA = 2.71 SQ.M)



S7 TYPE S7 REBAR
(AREA = 4.65 SQ.M)



S8 TYPE S8 REBAR
(AREA = 2.32 SQ.M)

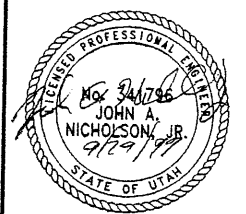


S9 TYPE S9 REBAR
(AREA = 3.87 SQ.M)

- 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 EPOXY COATED TO 0.5mm THICKNESS. REFER TO SPECIAL PROVISIONS, SECTION 508.
 7. CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 27,500 KPa.
 8. EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 9. ALL PANELS TO USE 9.5mmØ CLEVIS LOOPS.
 10. VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.

WATCH CONSTRUCTORS
OCT 08 1997
RELEASED FOR CONSTRUCTION

METRIC



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

REVISION		NO.	DATE

DES. 09-23-97 JUN
DRN. 09-23-97 000
CHK. 09-23-97 JUN

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

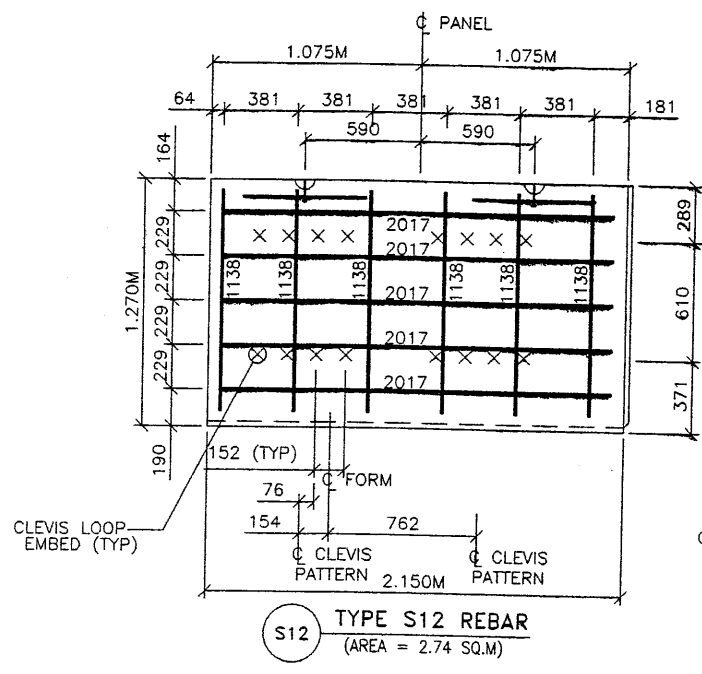
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MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

VSL

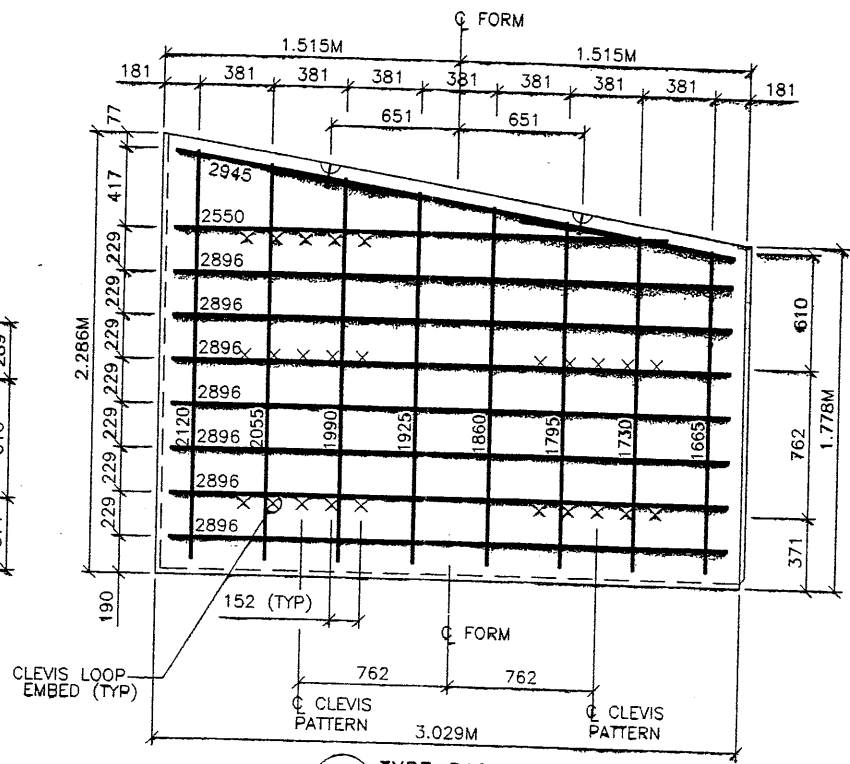
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-16"
SPECIAL PANEL REINFORCEMENT
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE:
1.2R-343-16.9
JOB NO:
239-0007 9/10
RE-8

FINAL F 9-23-97 E:\PROJECT\239-0007\72SERIES\72-16



S12 TYPE S12 REBAR
(AREA = 2.74 SQ.M)



S10 TYPE S10 REBAR
(AREA = SQ.M)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	9-23-97	RELEASE FOR CONSTRUCTION

- PANEL REINFORCEMENT NOTES:**
- PANELS ARE SHOWN BACK FACE.
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 - VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.

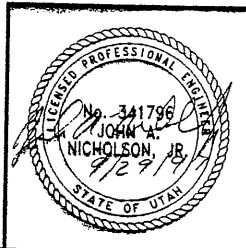
NO.	DATE	REVISION	BY	CHK

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6772
Fax: (919) 781-6969

VSL
ATLANTA, GA / DALLAS, TX / FRENCH, NC (CORPORATE OFFICE)
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WARREN CONSTRUCTORS
OCT 08 1997
RELEASED FOR CONSTRUCTION

METRIC



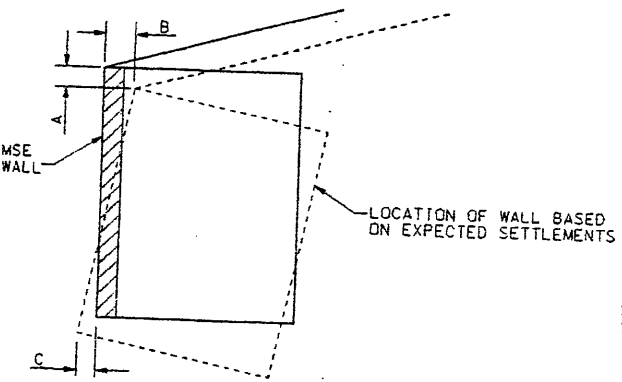
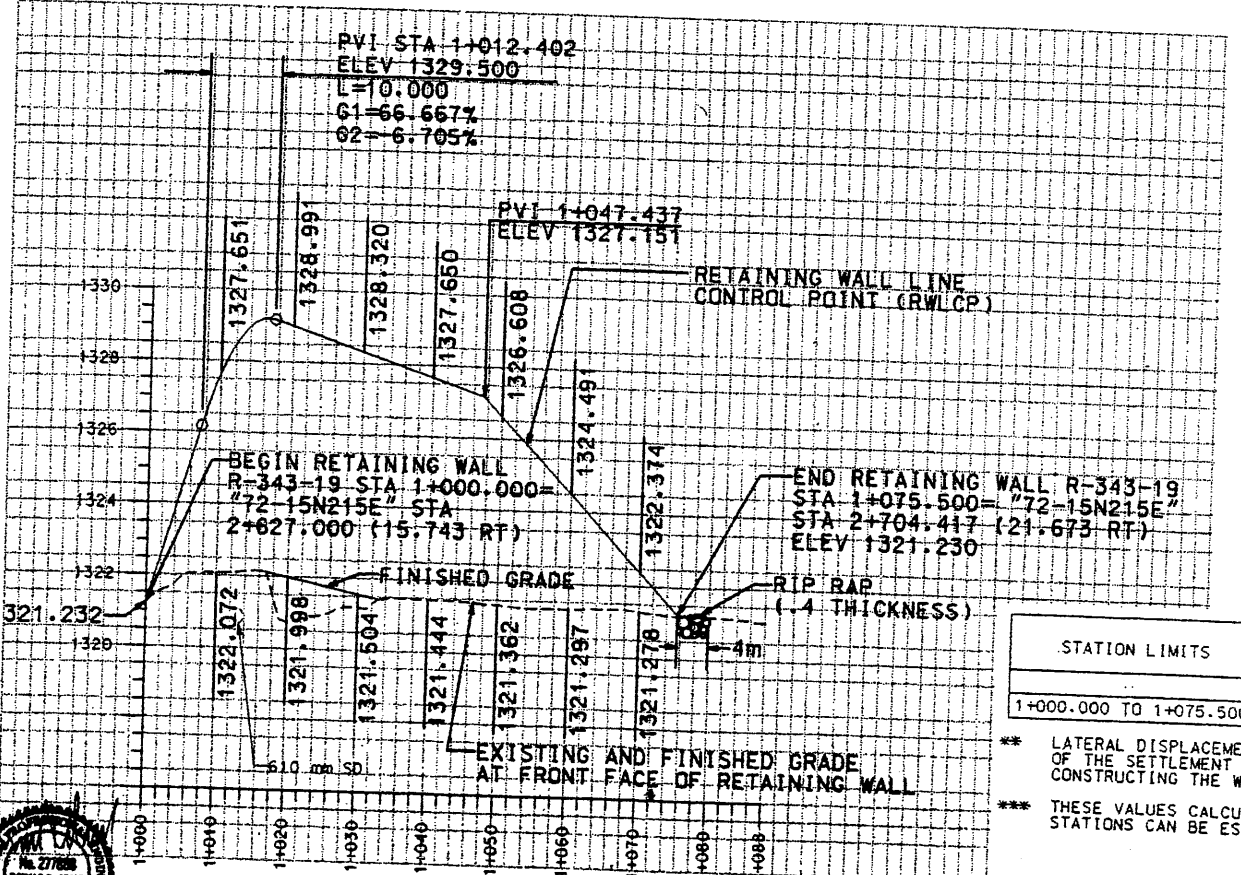
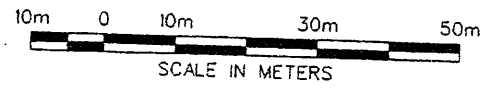
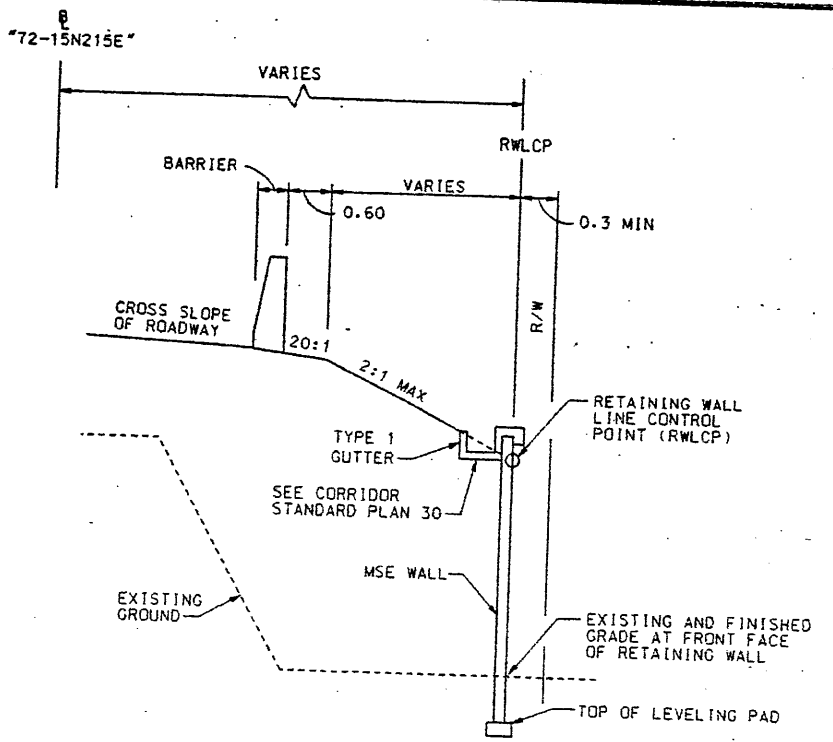
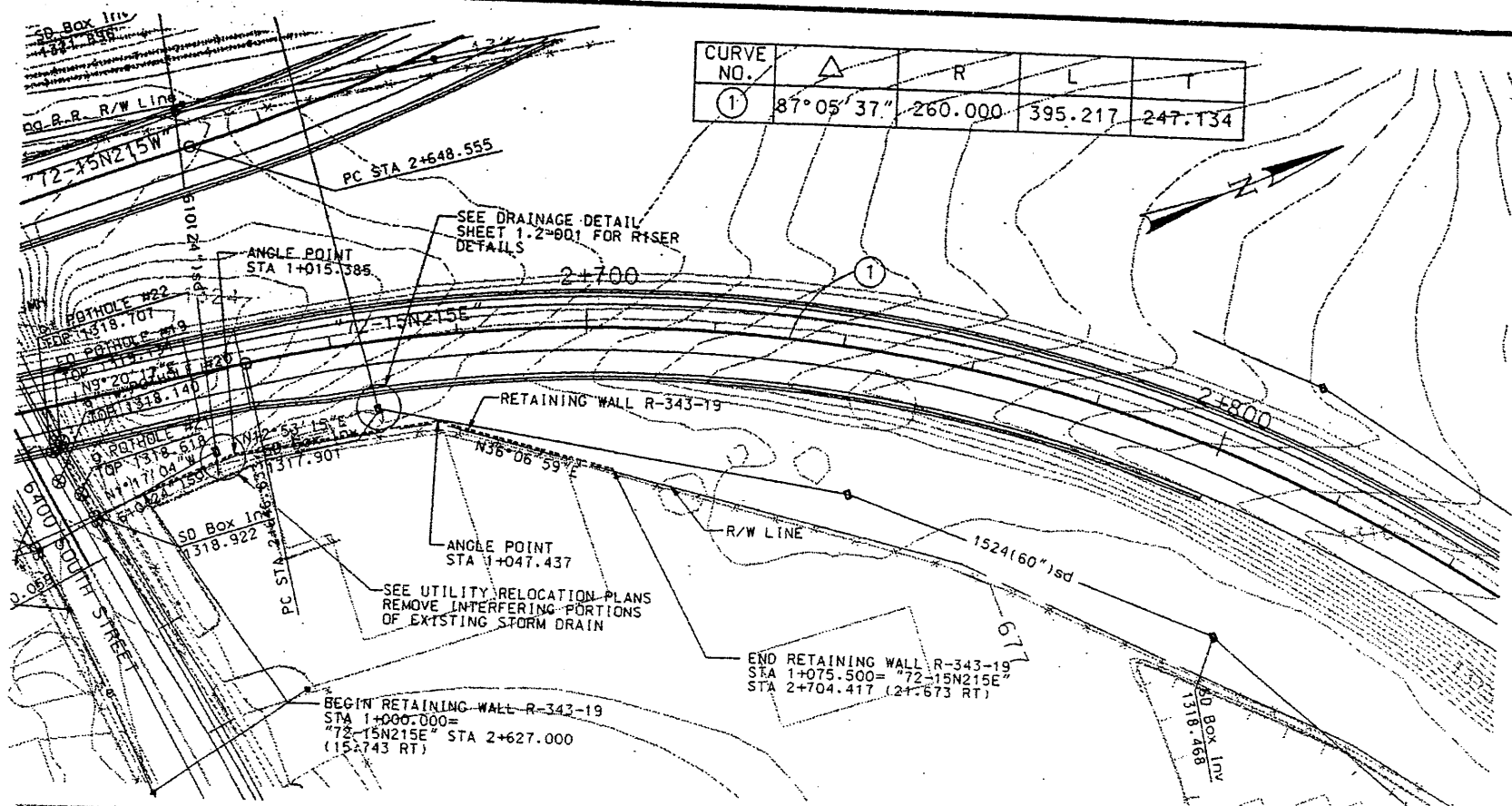
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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-16"
SPECIAL PANEL REINFORCEMENT

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

SCALE: 1:2R-343-16.10
JOB NO: 239-0007 10/10
RE-9

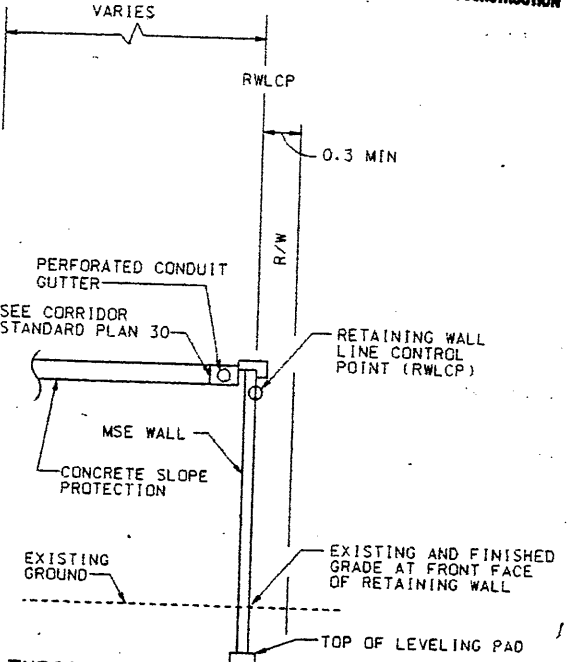
CURVE NO.	Δ	R	L	T
1	87°05'37"	260.000	395.217	247.134



ESTIMATED SETTLEMENT TABLE

STATION LIMITS	REFERENCE STATION	WALL SETTLEMENT mm	TOP OF WALL ROTATION mm	LATERAL DISPLACEMENT AT BOTTOM OF WALL mm
1+000.000 TO 1+075.500	1+012.402***	A	B	C

** LATERAL DISPLACEMENT AT BOTTOM OF WALL SHOULD BE LESS THAN ONE HALF OF THE SETTLEMENT AT FRONT FACE OF WALL. TERRACON RECOMMENDS CONSTRUCTING THE WALL TOE AT THE DESIGN LOCATION.
 *** THESE VALUES CALCULATED AT REFERENCED STATION; ROTATIONS AT OTHER STATIONS CAN BE ESTIMATED IN PROPORTION TO WALL HEIGHT.



RELEASED FOR CONSTRUCTION
 OCT 27 1997
 SVERDRUP/DE LEUW

Scale: 500,000/100,000
 Rotations: 10/0000
 Pen: Tabular VEX, PLOT, L00E9400, 040
 Output: CHM5P2, L00E9400, 040
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ELEVATION VIEW FROM FACE OF WALL

NOTE: THE FOUNDATION BEARING MATERIALS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER DURING SITE PREPARATION. ANY UNDESIRABLE MATERIALS WILL NEED TO BE REMOVED AND REPLACED WITH BORROW IN ORDER TO ACHIEVE ACCEPTABLE CONDITIONS AT THE BASE OF THE WALL.

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	NO.	DATE
1	10-21-97	1	10-21-97
			INITIAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION			
URS Greiner		SVERDRUP/DE LEUW	
SECTION 1.2			
PROJECT NUMBER #SP-15-7(135)296		QUANT. / CHECK	
DESIGN	CHECK	DATE	10/27
DRAWN	CHECK	DATE	10/27
APPROVED	CHECK	DATE	10/27
PROJECT MANAGER	CHECK	DATE	10/27

1-15 CORRIDOR RECONSTRUCTION	SALT LAKE COUNTY
SITUATION/LAYOUT RET WALL R-343-19	DWG. NO. 1.2R-343-19.1
SECTION 1.2	SHT. 1 OF 11
PROJECT NUMBER #SP-15-7(135)296	REF.

E:\PROJECT\239-0007\2SERIES\72-19.DWG
7-17-97
FINAL PLOT

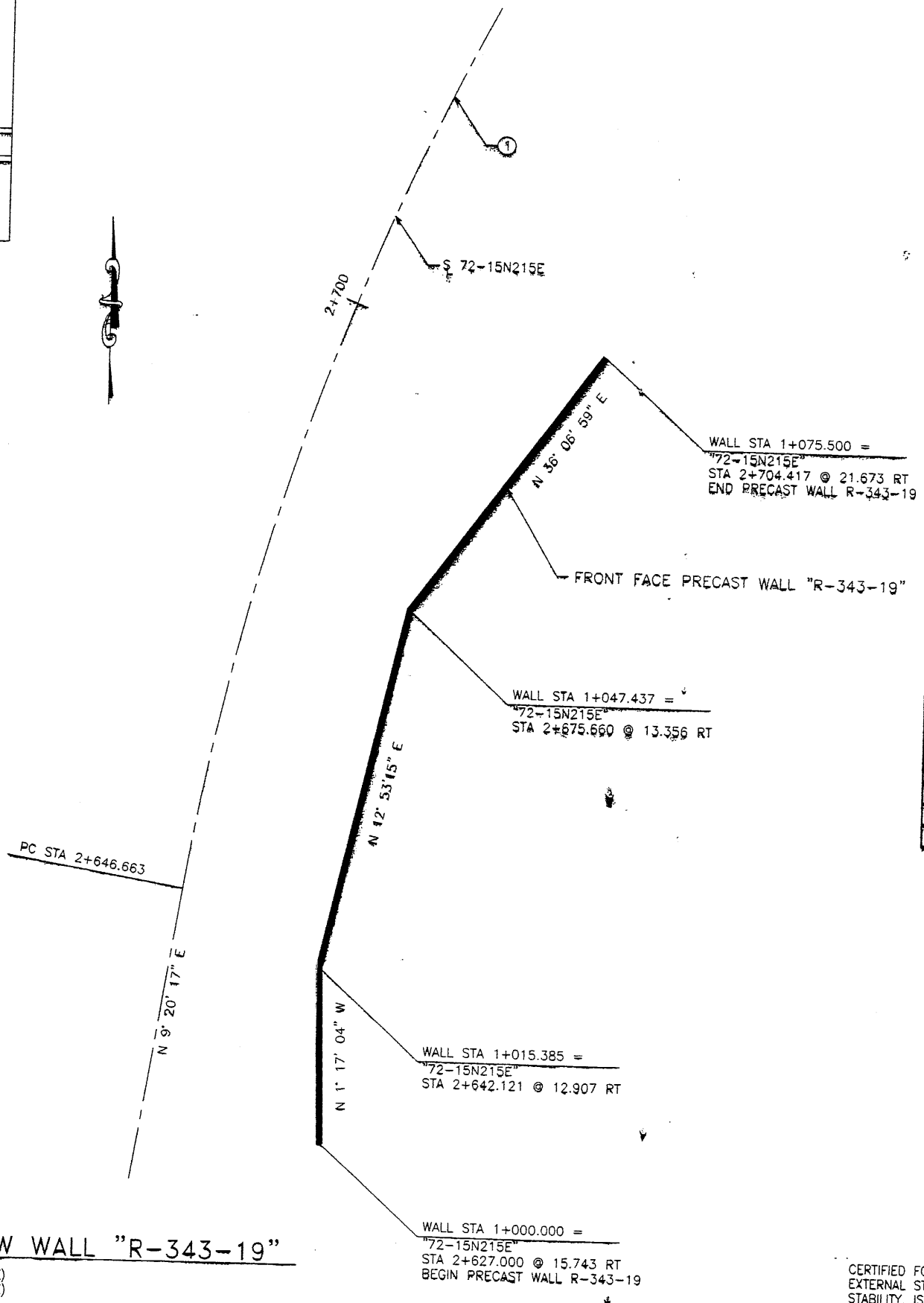
DESIGN PARAMETERS	
ANGLE OF INTERNAL FRICTION (SELECT) = 34°	
ANGLE OF INTERNAL FRICTION (BASE) = 30°	
ANGLE OF INTERNAL FRICTION (RANDOM) = 34°	
UNIT WEIGHT BACKFILL = 135 PCF.	
TRAFFIC SURCHARGE = 250 PSF	
SEISMIC ACCELERATION COFF. = 0.13g (TYP)	
SEISMIC ACCELERATION COFF. = 0.32g (AT BRIDGE ABUTMENTS)	
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	260.000	395.217	247.134	87°05'37"

All Dimensions Are In Meters Unless Noted Otherwise

GENERAL NOTES

- ALL WALLS ARE SHOWN FRONT FACE. NOTE STATIONING.
- PANEL TYPE IS DESIGNATED ON EACH PANEL. CONNECTOR LABELS INDICATE NUMBER OF CONNECTORS PER SOIL REINFORCING MESH LOCATION.
EXAMPLE: 5B2-10 IS A "B2-10" PANEL WITH FIVE (5) CONNECTORS PER SOIL REINFORCING MESH LOCATION.
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: 4W20-12 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 12" CENTERS.
EXAMPLE: 4W20-24 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 24" 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: 5W20-24 MESH HAS FIVE (5) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 24" CENTERS.
EXAMPLE: 6W20-24 MESH HAS SIX (6) 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 SHEET RE-3 FOR DETAIL.



PLAN VIEW WALL "R-343-19"

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

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
①	10-08-97	RELEASE FOR CONSTRUCTION

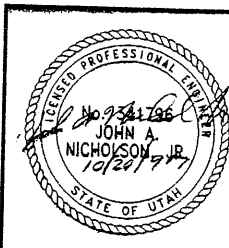
RETAINED EARTH INDEX	
RE-1	PLAN PRECAST FACE WALL R-343-19, NOTES & DESIGN CRITERIA
RE-2	TYPICAL DETAILS
RE-3	TYPICAL DETAILS
RE-4	TYPICAL CROSS SECTIONS
RE-5	ELEVATION PRECAST WALL "R-343-19"
RE-6	ELEVATION PRECAST WALL "R-343-19"
RE-7	SPECIAL DETAILS
RE-8	SPECIAL PANEL DETAILS
RE-9	SPECIAL PANEL DETAILS
RE-10	SPECIAL PANEL DETAILS

WARATCH CONSTRUCTORS
OCT 27 1997
RELEASED FOR CONSTRUCTION

VSL CORPORATION
2800 Riva Plaza, Suite 200
Raleigh, NC 27603
Telephone: (919) 781-8272
Fax: (919) 781-4869

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

RETAINED EARTH™ WALLS
PLAN VIEW PRECAST WALL "R-343-19"
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.



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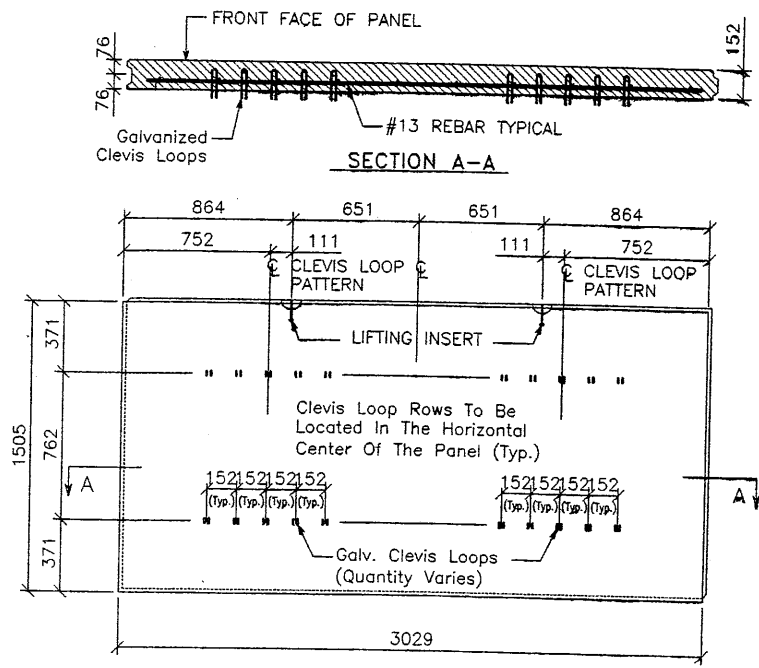
SCALE:	1.2R-343-19.2
JOB NO:	239-0007
	2/11
	RE-1

NO.	DATE	REVISION	BY	CHK

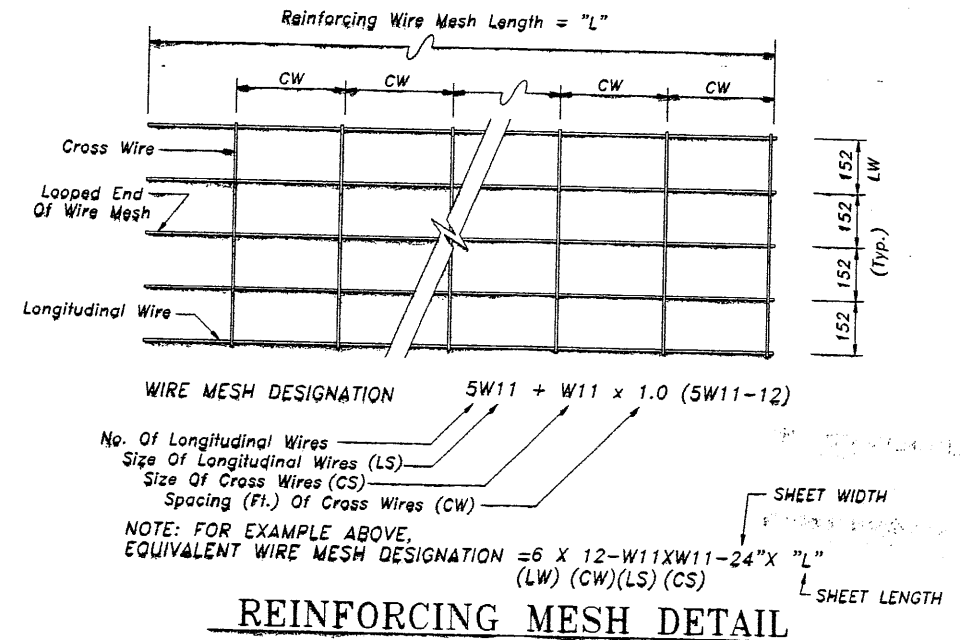
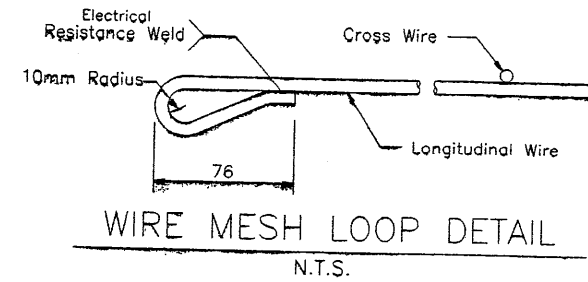
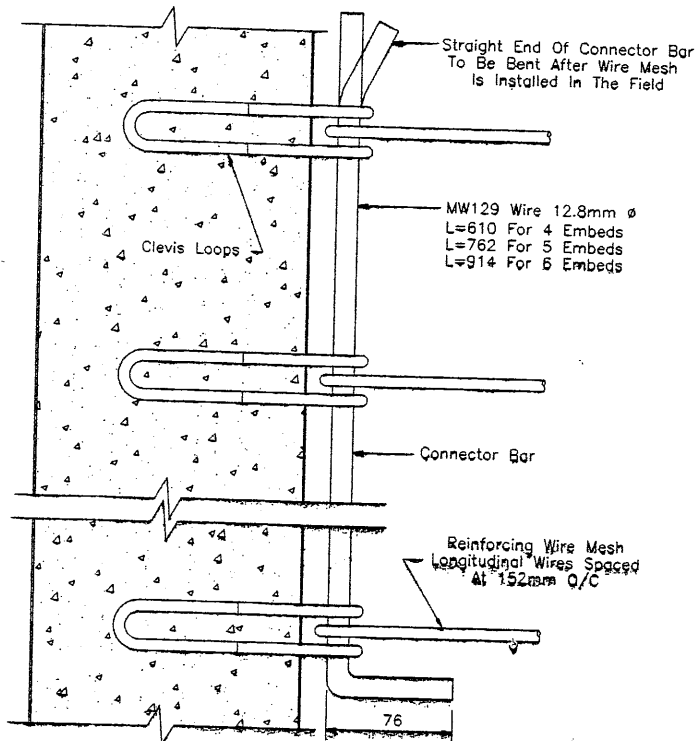
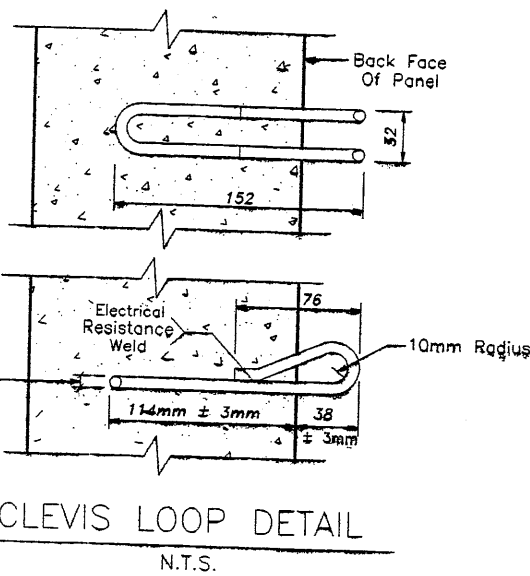
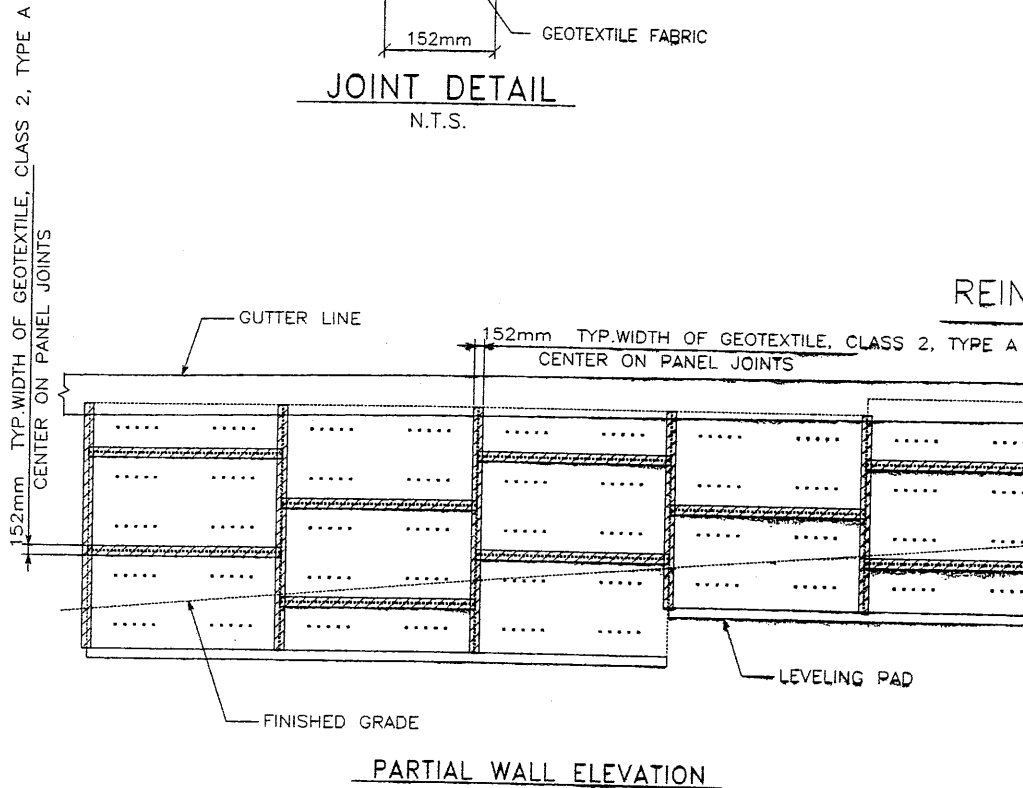
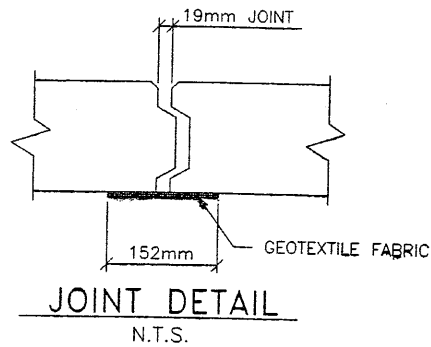
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7-08-97

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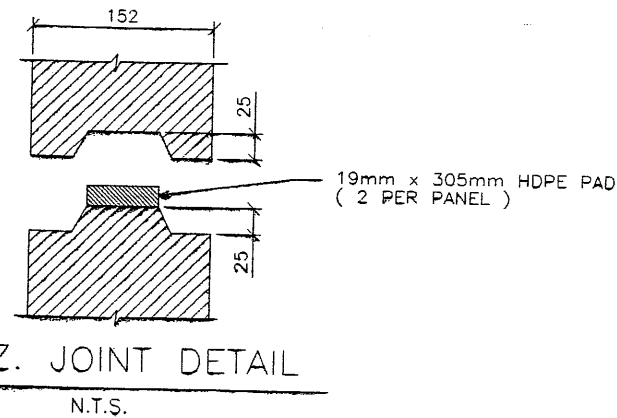


STANDARD "5A-10" PANEL
Back Face View

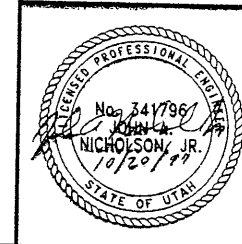


NOTE: W11 (71 sq mm) And W20 (129 sq mm) Steel Wire Material And Welding Of Cross Wires And Loops Shall Conform To ASTM A82 And ASTM 185, Fy = 448 MPa. Mesh Shall Be Galvanized To ASTM A-123 To A Minimum Effective Thickness Of 0.086 mm.

WATCH CONSTRUCTORS
OCT 27 1997
RELEASED FOR CONSTRUCTION



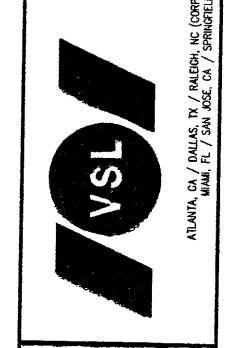
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-08-97	RELEASE FOR CONSTRUCTION

DES.	MM	DDO	MM	NO.	DATE	REVISION	BY	CHK
09-17-97	MM	09-17-97	DDO					
09-17-97	MM	09-17-97	MM					

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



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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-19"
TYPICAL DETAILS

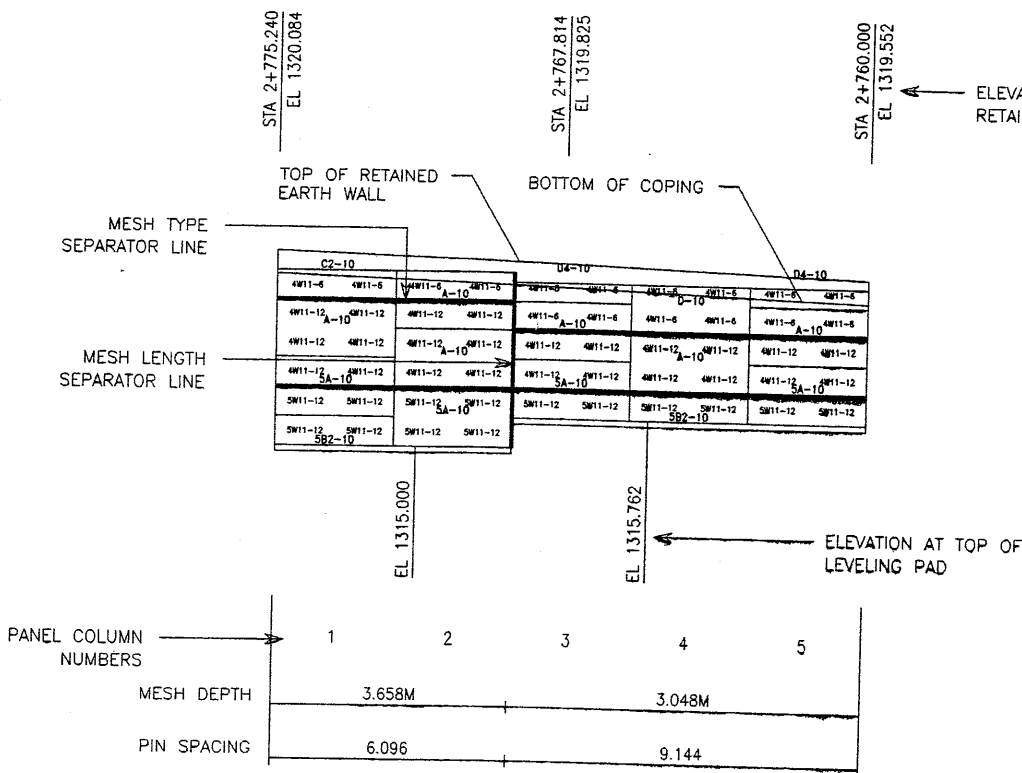
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP

SCALE: 1.2R-343-19.3

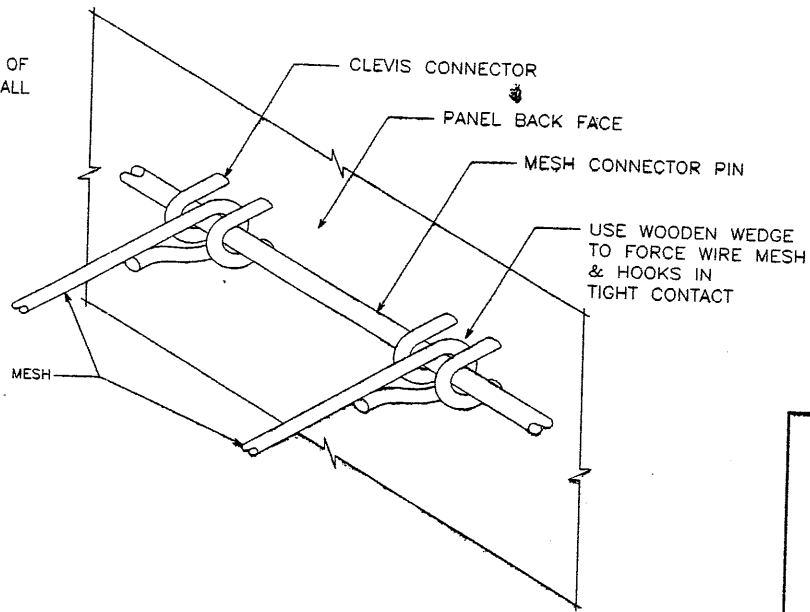
JOB NO: 239-0007/3/11

RE-2

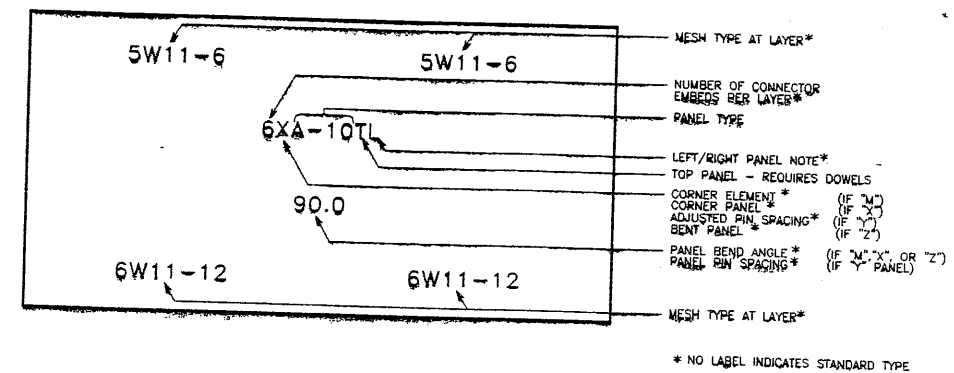
FINAL PLOT 7-08-97 E:\PROJECT\239-0007\72SERIES\72-19 RE-3



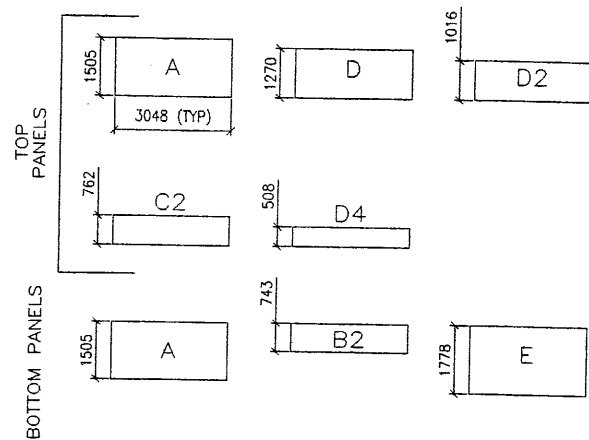
1 WALL ELEVATION KEY
(FRONT FACE SHOWN)



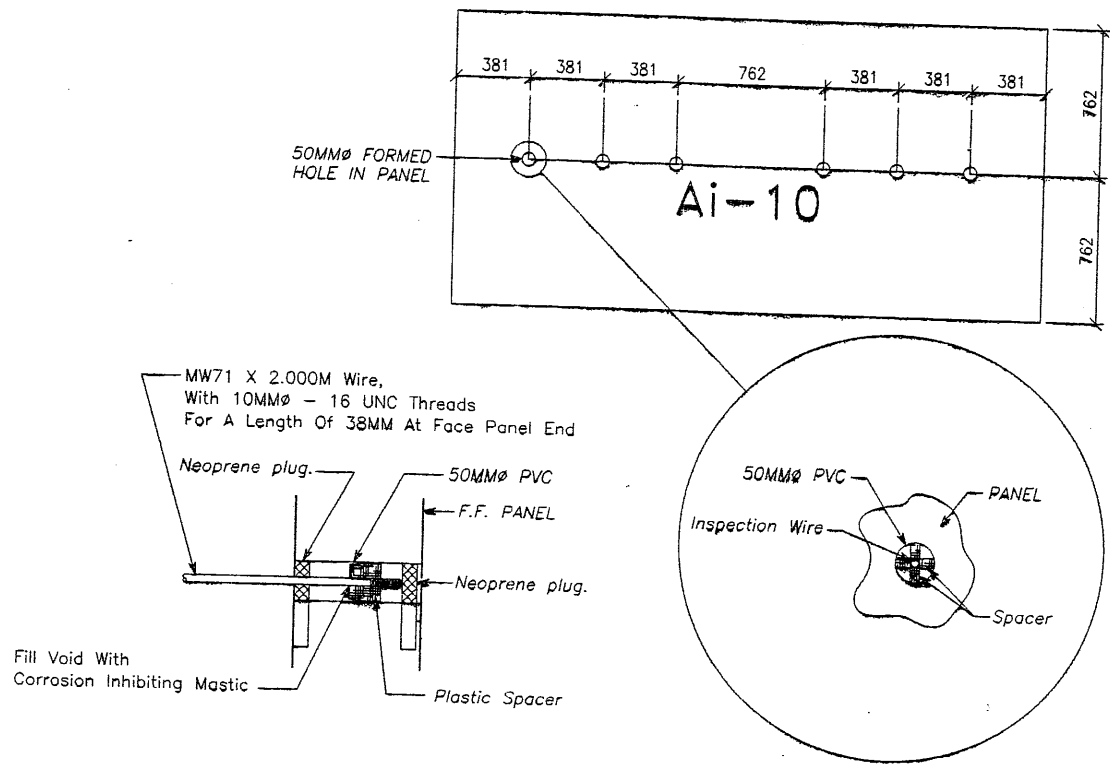
2 MESH CLEVIS CONNECTOR
VSL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,170.



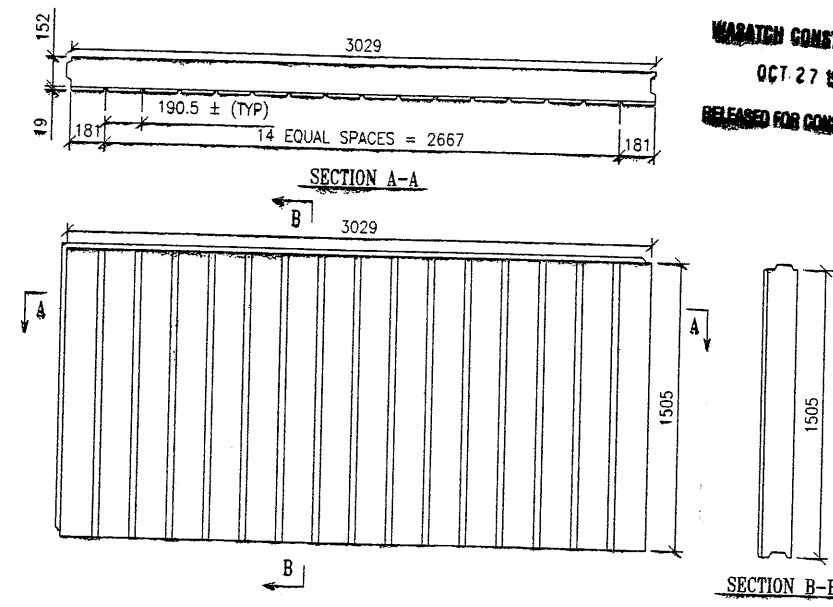
3 PANEL LABELS



4 PANEL TYPES
ALL DIMENSIONS ARE IN MILLIMETERS



5 INSPECTION WIRE DETAIL
(PANEL FRONT FACE SHOWN)



6 ARCHITECTURAL PANEL FINISH
(PANEL FRONT FACE SHOWN)

METRIC

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-08-97	RELEASE FOR CONSTRUCTION <i>OK</i>

DES.	DRN.	CHK.	RETAINED EARTH™
09-17-97	09-17-97	09-17-97	
MM	DDO	MM	

VSL CORPORATION
2810 Plano Pkwy, Suite 200
Dallas, TX 75241-6272
Tel: (972) 761-4688
Fax: (972) 761-4689

WABACH CONSTRUCTORS
OCT 27 1997
RELEASED FOR CONSTRUCTION

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

RETAINED EARTH™ WALLS
PRECAST WALL "R"-343-19.4
TYPICAL DETAILS

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

SCALE:
1.2R-343-19.4

JOB NO:
239-0007

RE-3

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™ WALLS MEETS METHODS OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO THE MANUFACTURER'S SPECIFICATION.

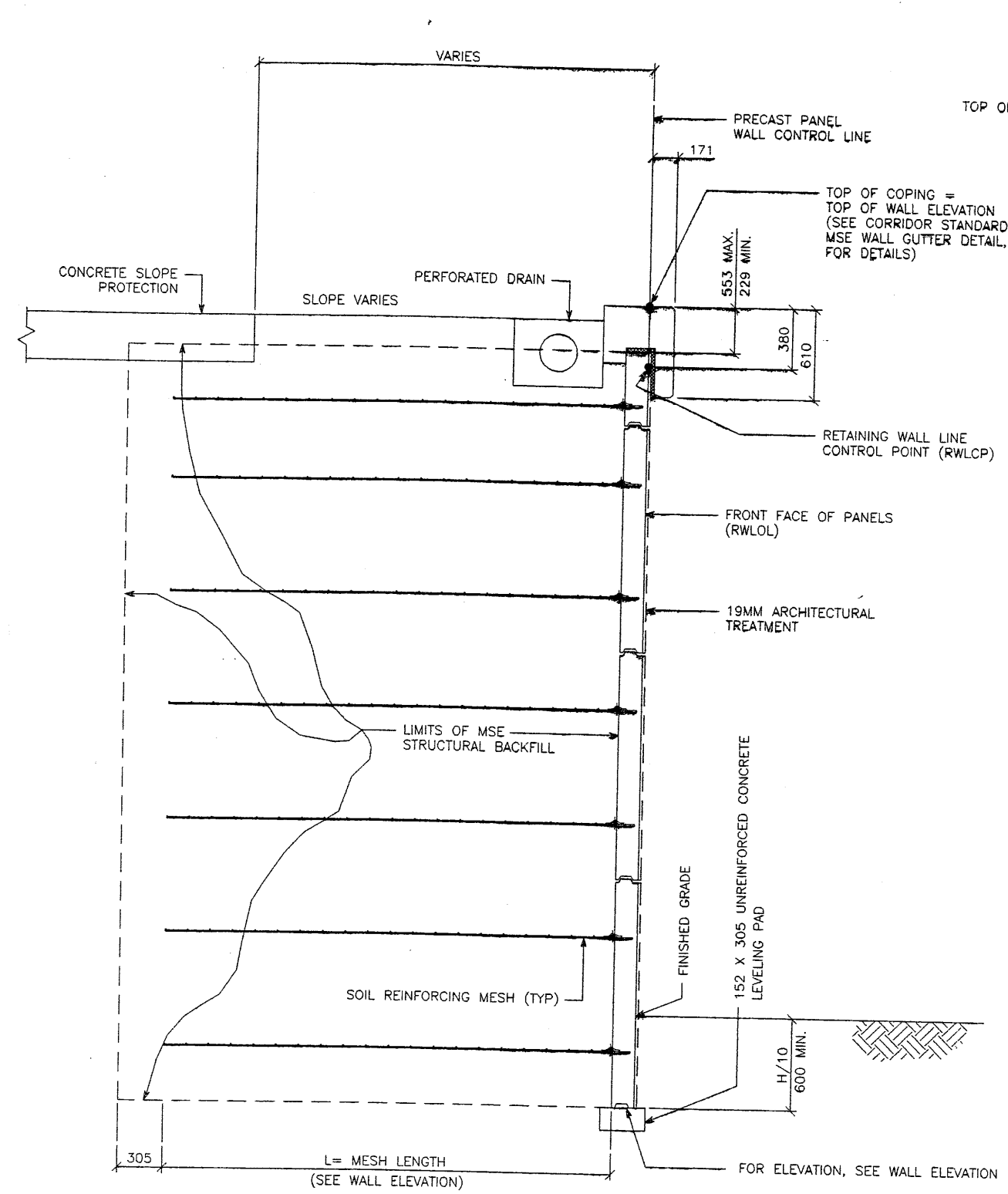
NICHOLSON, JR.
10/20/97
STATE OF UTAH

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08-97

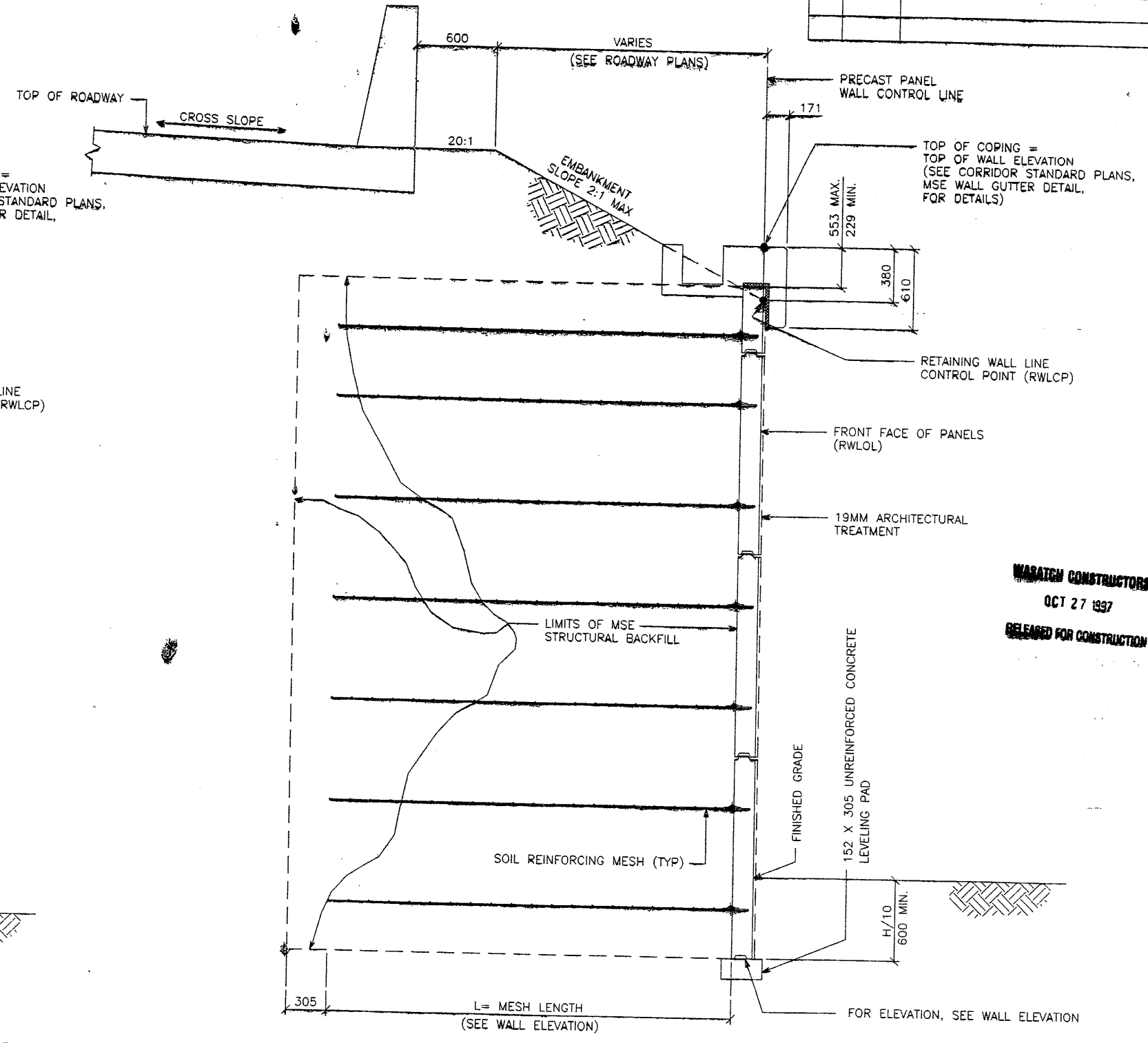
FINAL

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
10-08-97		RELEASE FOR CONSTRUCTION



TYPICAL CROSS SECTION STA 1+000.000 TO 1+047.437

(SEE DWG. NO. 1.2R-343-19.1 FOR ADDITIONAL INFORMATION)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

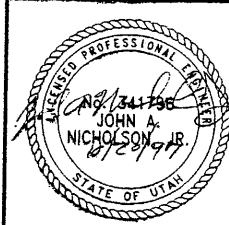


TYPICAL CROSS SECTION STA 1+047.437 TO 1+075.500
 (MSE SINGLE STAGE WITH GUTTER DETAIL)

(SEE DWG. NO. 1.2R-343-19.1 FOR ADDITIONAL INFORMATION)

SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

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



WARREN CONSTRUCTORS
 OCT 27 1997
 RELEASED FOR CONSTRUCTION

DES.	09-17-97	MM		NO.		DATE		REVISION		BY	CHK
DRN.	09-17-97	DDO									
CHK.	09-17-97	MM									
		(VSL) RETAINED EARTH™									

VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
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VSL
 ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
 MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-19"
 TYPICAL CROSS SECTIONS
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSPORTATION

SCALE:
 1.2R-343-19.5
 JOB NO:
 239-0007 **5/11**
 RE-4

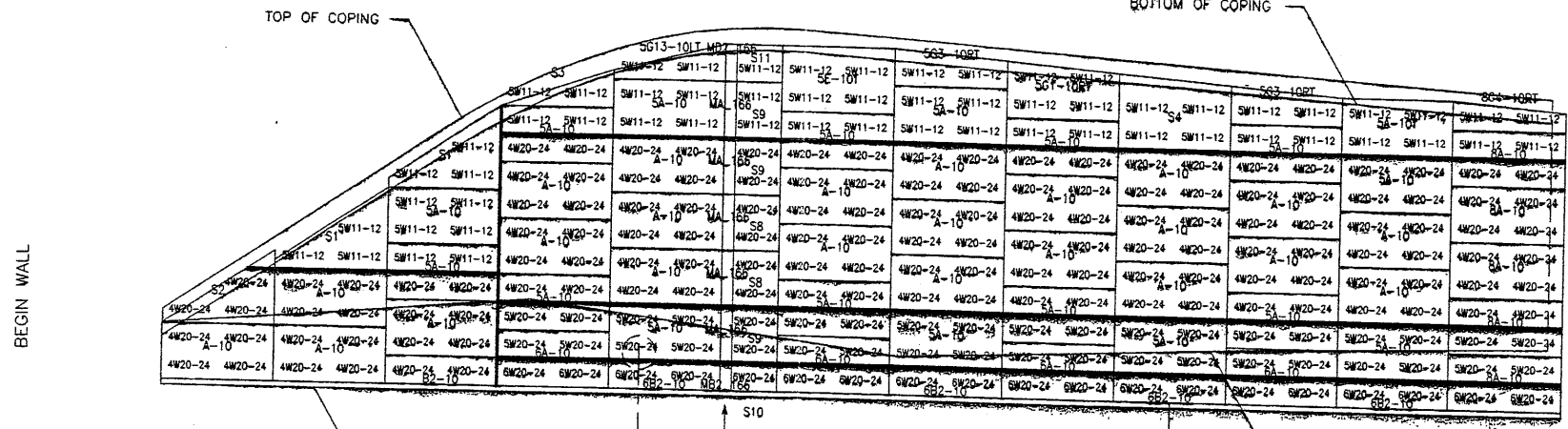
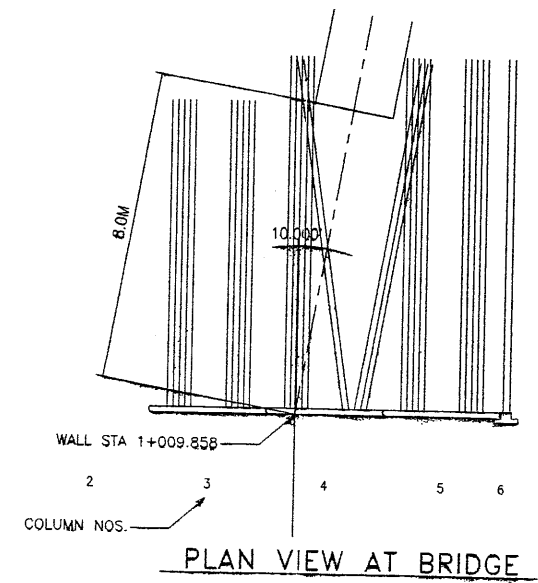
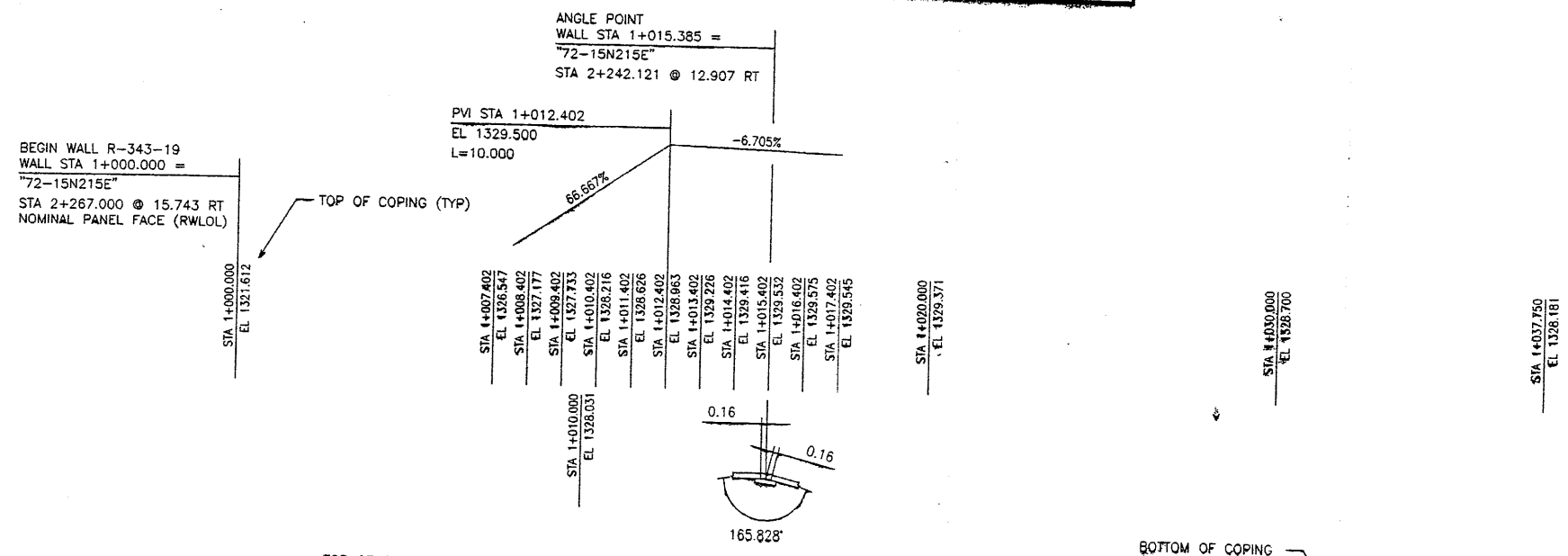
E:\PROJECT\239-0007\2SERIES\72-19\W72-19

0-16-97

FINAL P.

MEET BRIDGE

NOTE: CONTRACTOR TO COORDINATE MESH PLACEMENT WITH PILES AT BRIDGE ABUTMENT



MESH DEPTH	7.925M	9.144M												
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	225 KPa	296 KPa												
PIN SPACING	15.240	21.336												
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
						0.322								

ELEVATION PRECAST WALL R-343-19

(FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
(TOTAL SURFACE AREA OF PANELS = 471.63 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.

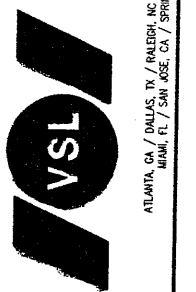
CONTRACTOR NOTE:
CONTRACTOR PLEASE VERIFY PIPE LOCATION (VERTICAL AND HORIZONTAL). FIELD CUT PANEL AS REQUIRED TO FIT AROUND PIPE. NOTIFY VSL IF PIPE INTERFERES WITH SOIL REINFORCING MESH.

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

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION

DES.	DRN.	CHK.	NO.	DATE	REVISION	BY	CHK.
09-17-97	09-17-97	09-17-97					

VSL CORPORATION
2810 Plaza Place, Suite 200
Raleigh, NC 27604
Tel: (919) 781-4872
Fax: (919) 781-4869

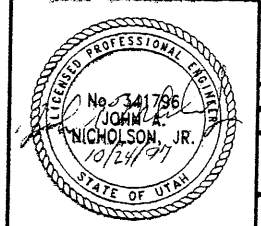


WASATCH CONSTRUCTORS
OCT 27 1997
RELEASED FOR CONSTRUCTION

VSL Corporation (VSL) does a strict proprietary review of all drawings and calculations. VSL is not responsible for any errors or omissions in this drawing. VSL is not responsible for any errors or omissions in this drawing. VSL is not responsible for any errors or omissions in this drawing.

RETAINED EARTH™ WALLS
PRECAST WALL "R-343-19"
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

METRIC

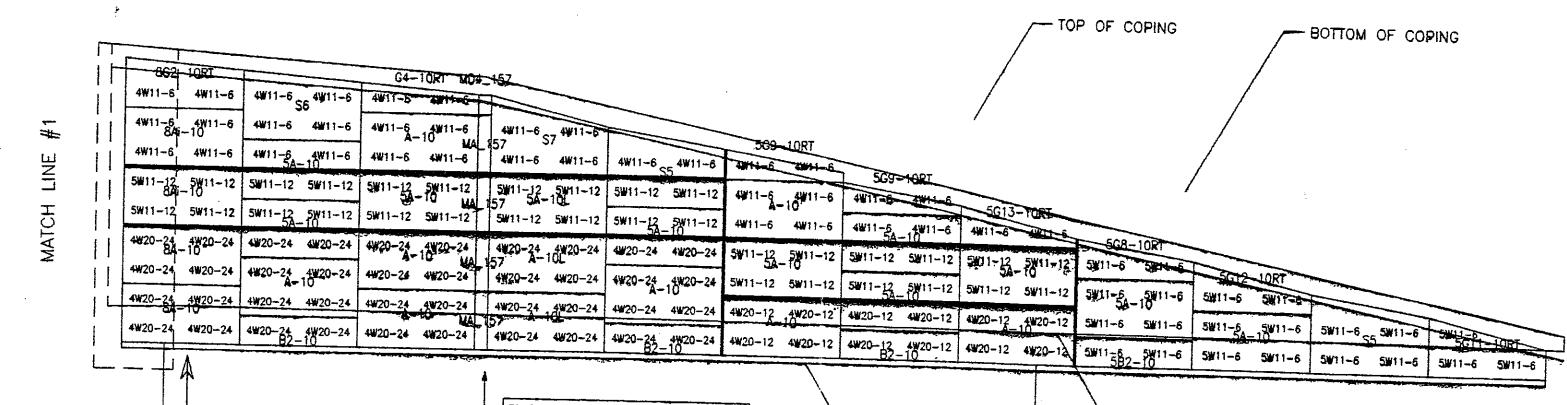
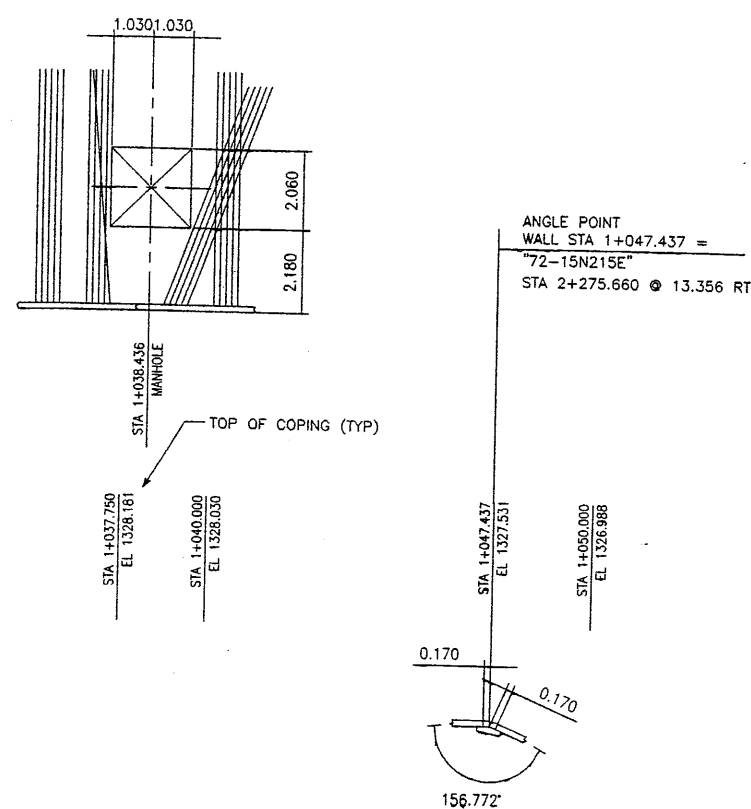


SCALE: 1:2R-343-19.6
JOB NO: 239-0007
RE-5

E:\APROJECT\239-0007\72SERIES\72-19\W72-1

0-16-97

FINAL

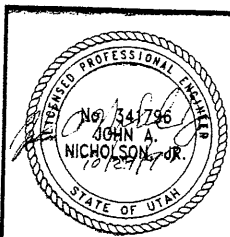


STATION	MESH DEPTH	MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	PIN SPACING
15	6.096M	233 KPa	9.144
16			
17			
18			
19			
20	4.267M	185 KPa	27.432
21			
22			
23			
24	2.438M	118 KPa	
25			
26			
27			
0+460			

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

ELEVATION PRECAST WALL R-343-19
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 471.63 SM)
 SCALE 1:100 (FULL SIZE)
 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.



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION

DES.	MM.	DDO	MM	NO.	DATE	REVISION	CHK
09-17-97							
09-17-97							
09-17-97							

VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 791-4272
 Fax: (919) 791-4669

VSL

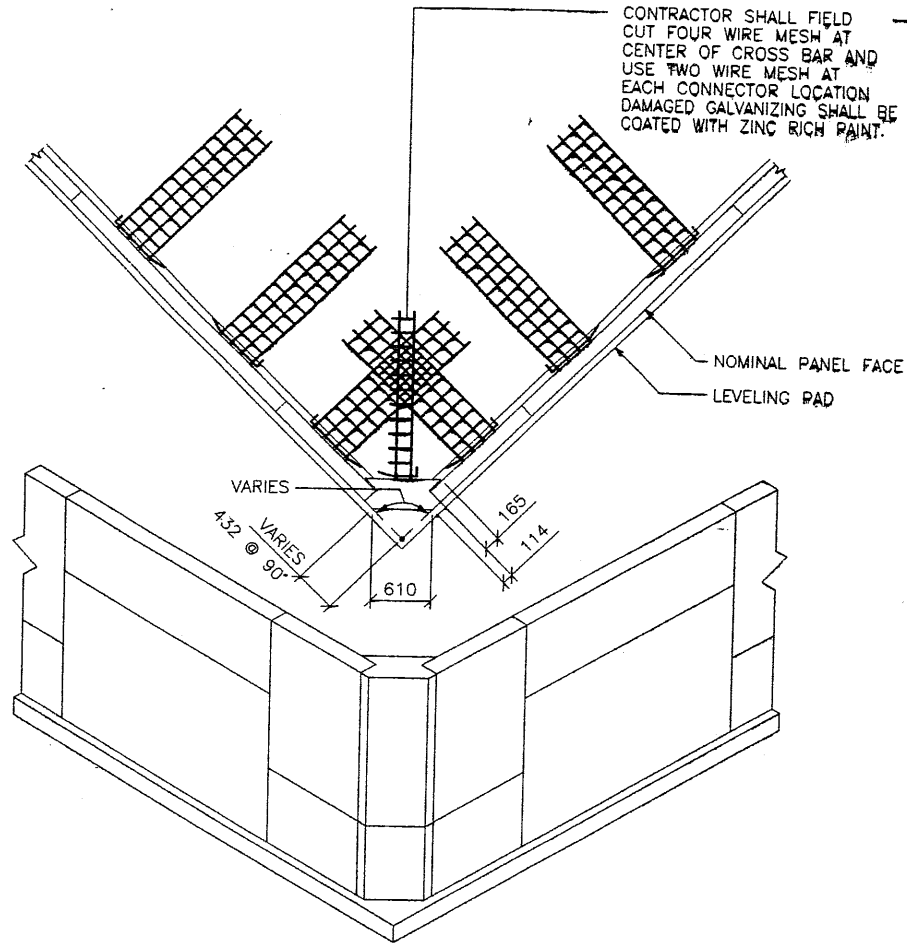
ALABAMA, CA / DANIEL, TX / FLORENCE, NC (CORPORATE OFFICE)
 MANASSAS, VA / SAN JOSE, CA / SPRINGFIELD, VA

WARREN CONSTRUCTORS
 OCT 27 1997
 RELEASED FOR CONSTRUCTION

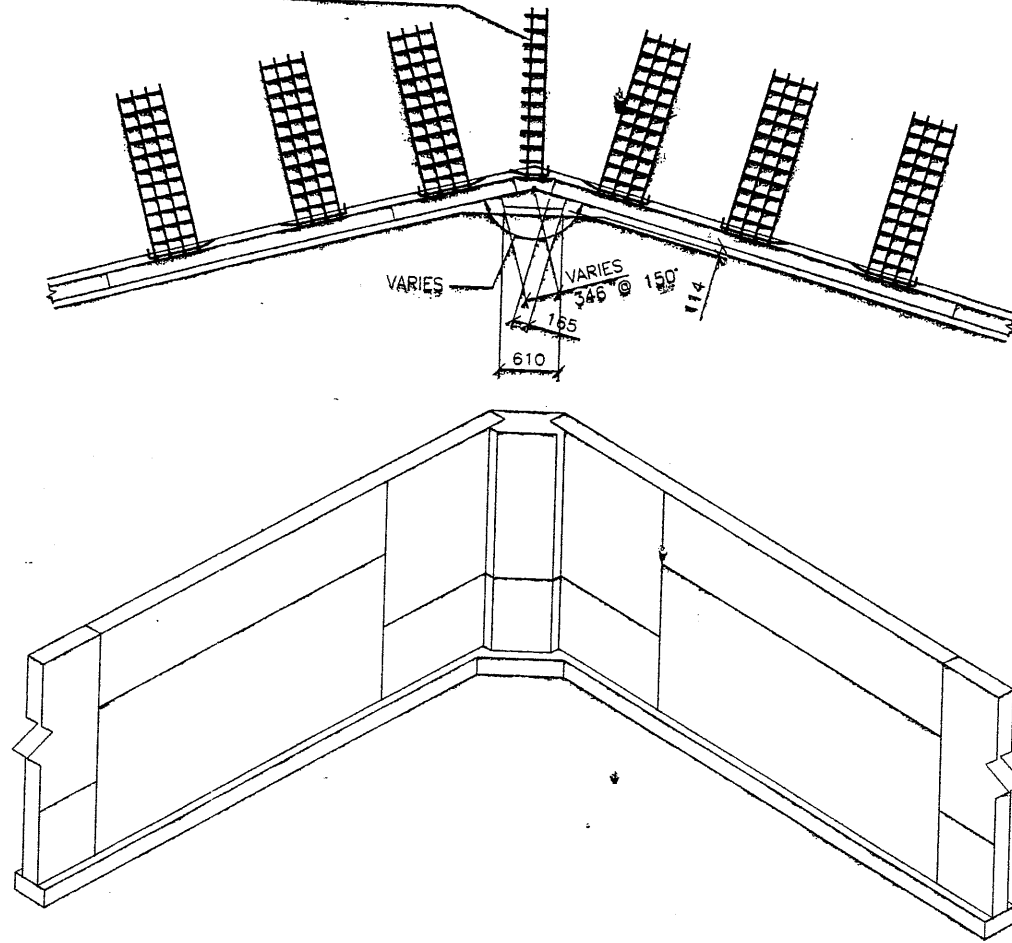
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 certifies that the design,
 drawings and calculations
 are the work of a duly
 licensed professional engineer
 on this project. The use of
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 is prohibited. VSL does not
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 damages or injury resulting
 from the use of this
 information.

RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-19"
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE:	1.2R-343-19.7
JOB NO.:	239-0007 2/1
	RE-6



80 OUTSIDE CORNER ELEMENT
PLAN VIEW / ISOMETRIC



80 INSIDE CORNER ELEMENT
PLAN VIEW / ISOMETRIC

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-08-97	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY

VSL CORPORATION
2840 Piedmont Place, Suite 200
Atlanta, GA 30328
Tel: (404) 811-6272
Fax: (404) 811-4868

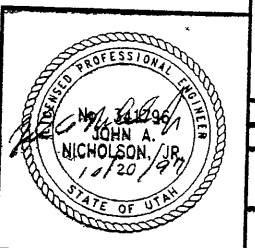
ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

VSL

WARATCH CONSTRUCTORS
OCT 27 1997
RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
PRECAST WALL "R-343-19"
SPECIAL DETAILS

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



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

SCALE:
1.2R-343-19.8

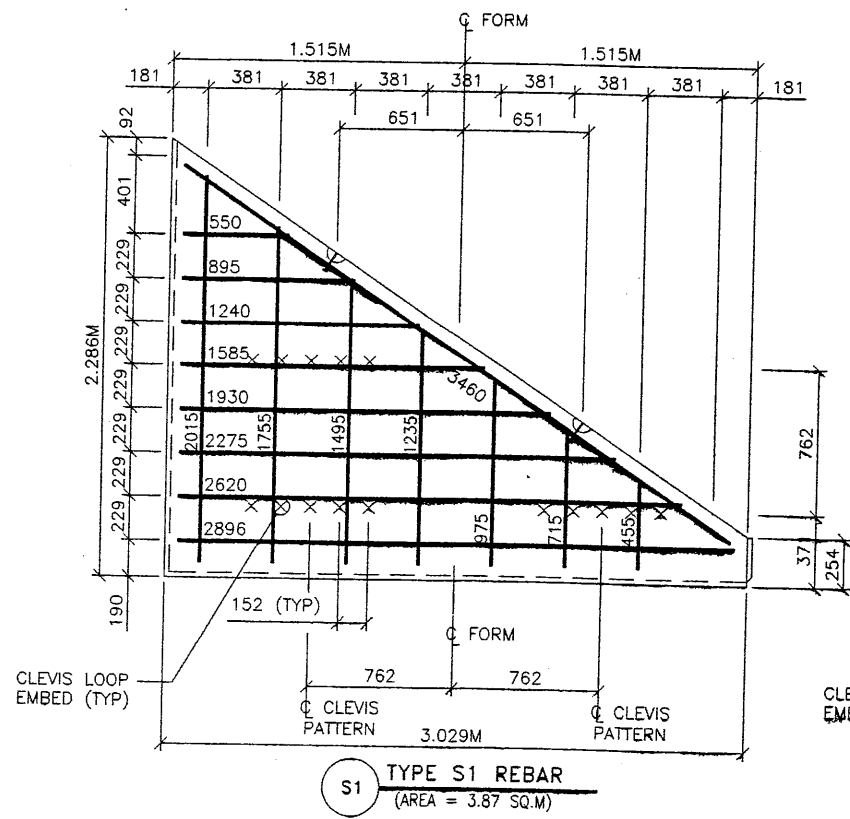
JOB NO:
239-0007 8/11

RE-7

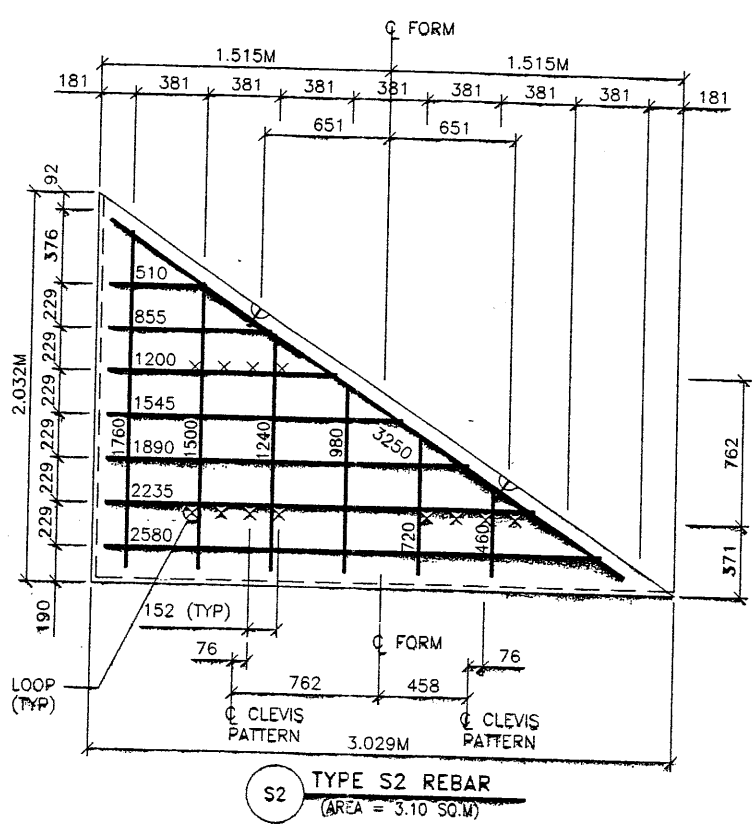
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7-16-97

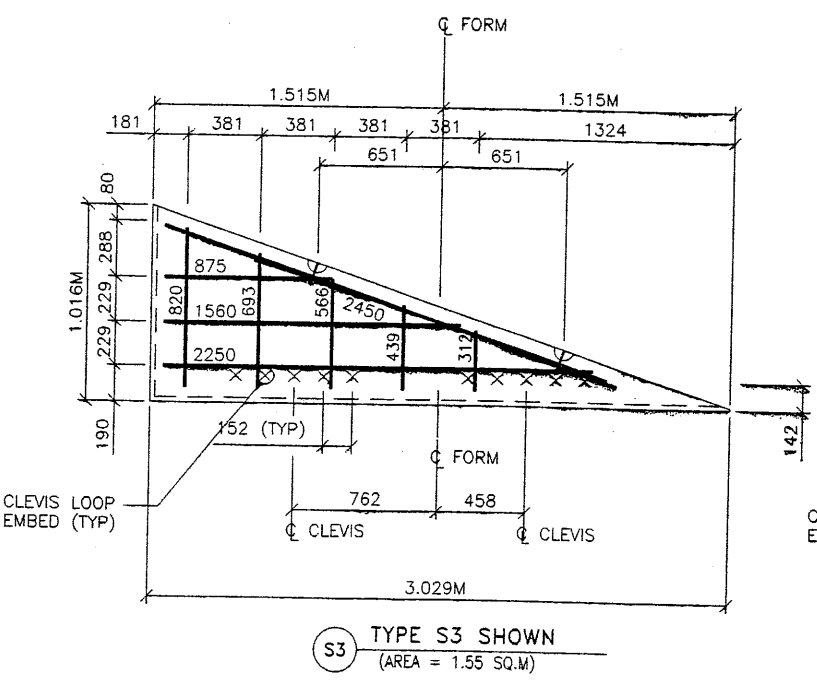
FINAL P



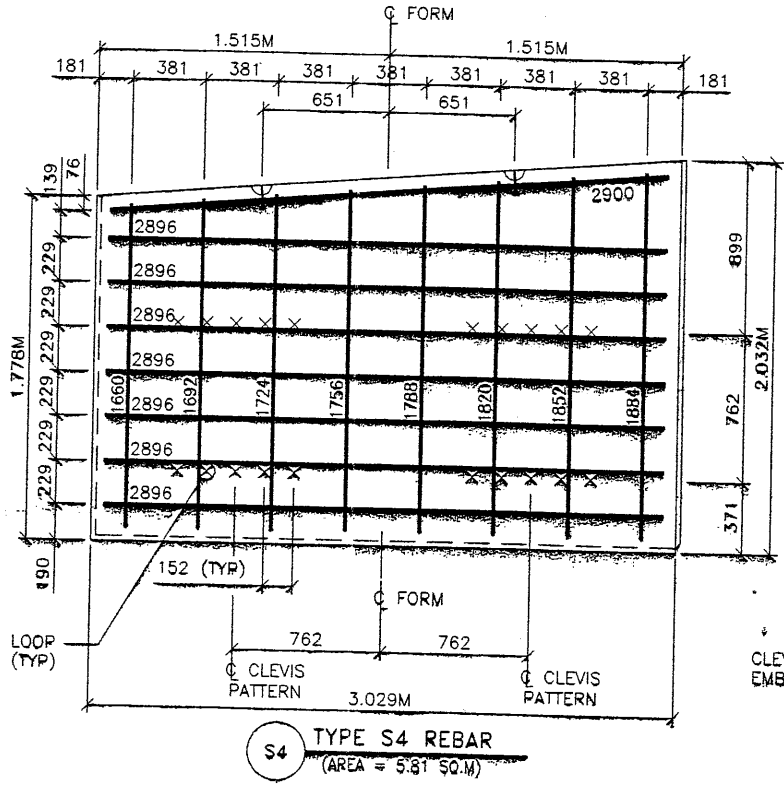
S1 TYPE S1 REBAR
(AREA = 3.87 SQ.M)



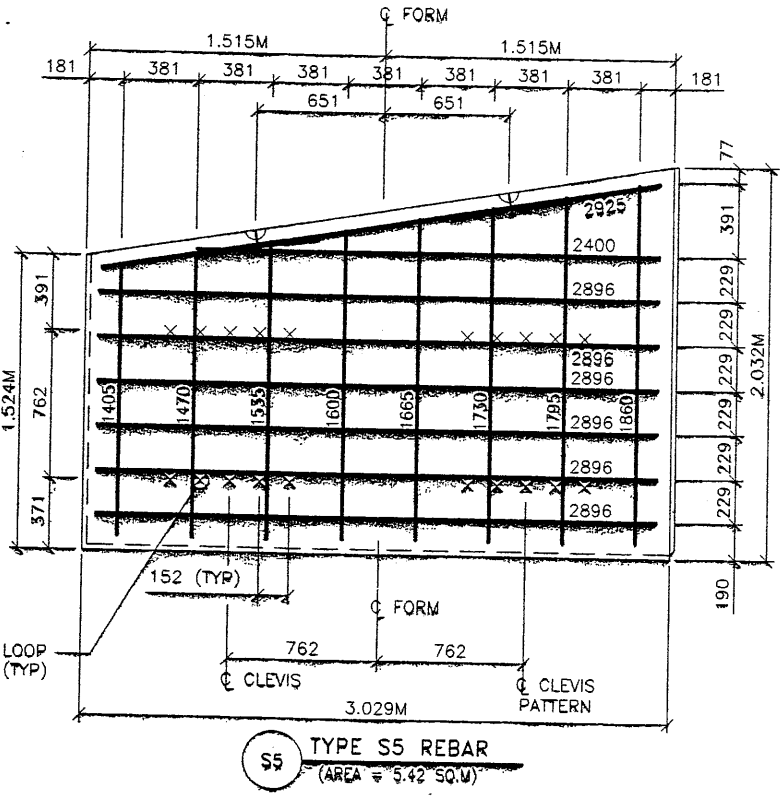
S2 TYPE S2 REBAR
(AREA = 3.10 SQ.M)



S3 TYPE S3 SHOWN
(AREA = 1.55 SQ.M)



S4 TYPE S4 REBAR
(AREA = 5.81 SQ.M)



S5 TYPE S5 REBAR
(AREA = 5.42 SQ.M)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-16-97	RELEASE FOR CONSTRUCTION

- 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 1.
 7. CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 27,500 KPa.
 8. EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 9. ALL PANELS TO USE 9.5mmØ CLEVIS LOOPS.
 10. VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.

WASATCH CONSTRUCTORS
OCT 27 1997
RELEASED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY	CHK

VSL CORPORATION
2840 Plaza Place, Suite 600
Raleigh, NC 27612
Telephone: (919) 781-8272
Fax: (919) 781-4863

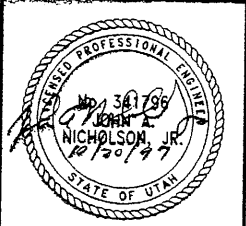
ATLANTA, GA / DALLAS, TX / FALCON, NC (CORPORATE OFFICE)
MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

VSL

RETAINED EARTH™ WALLS
PRECAST WALL "R-343-19"
SPECIAL PANEL REINFORCEMENT
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP

SCALE:
1.2R-343-19.9
JOB NO:
239-0007 9/11
RE-8

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.

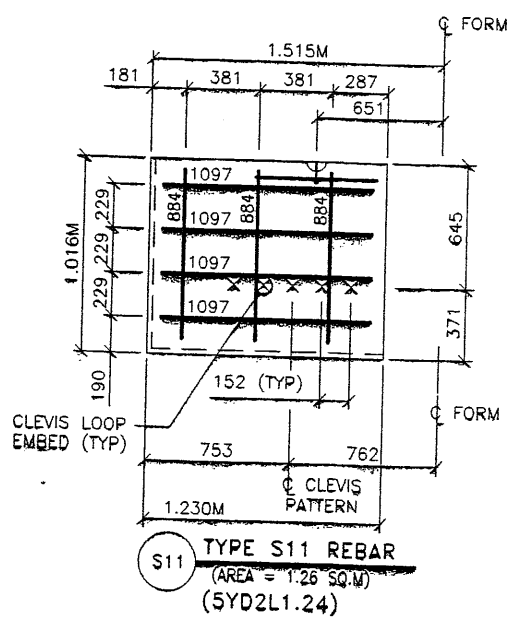
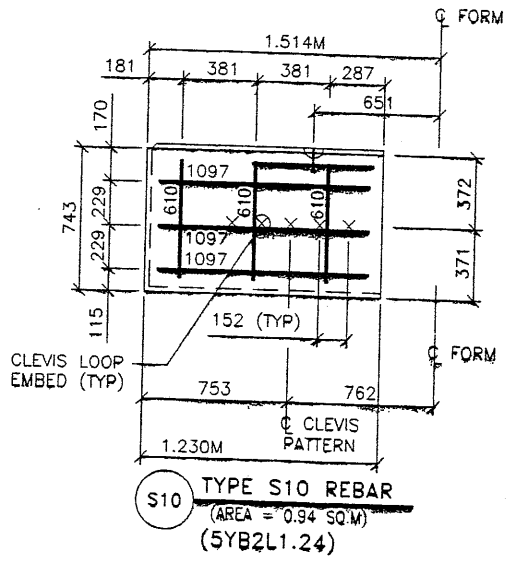
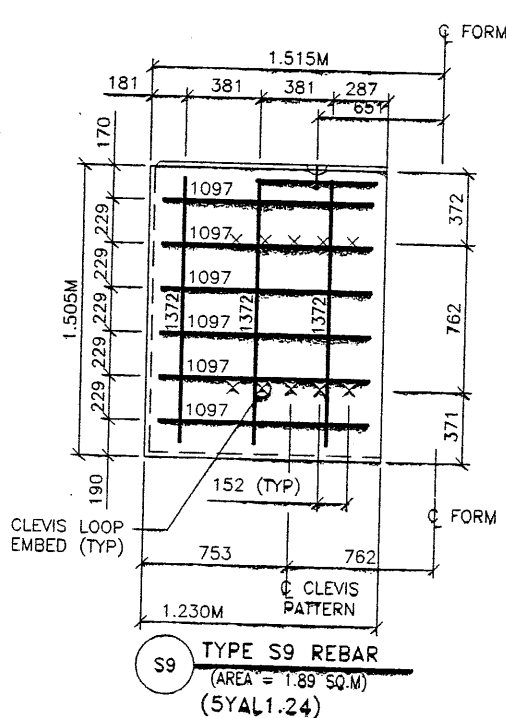
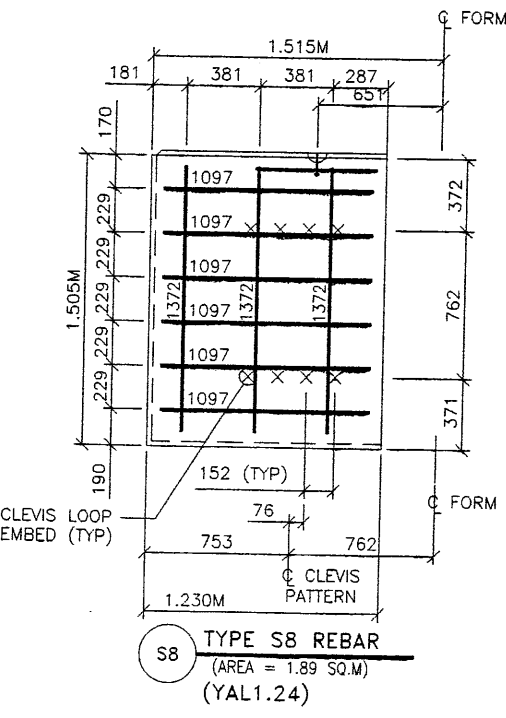
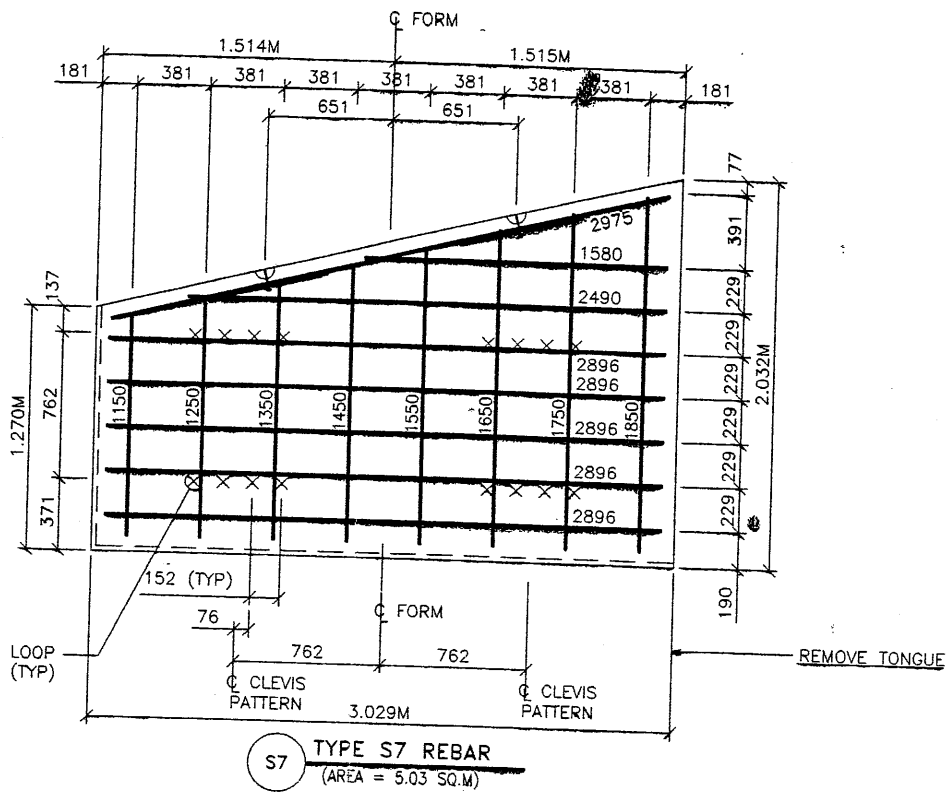
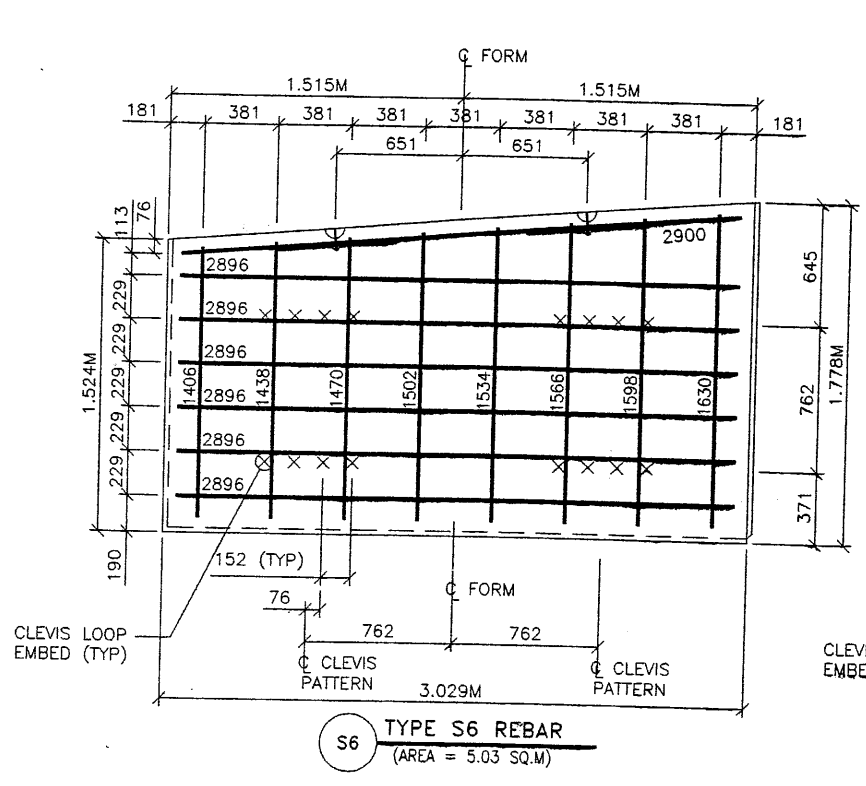


METRIC

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-16-97

FINAL PL

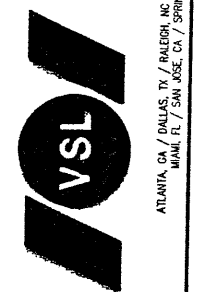


APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-16-97	RELEASE FOR CONSTRUCTION

- 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.

NO.	DATE	DESCRIPTION	NO.	DATE	BY

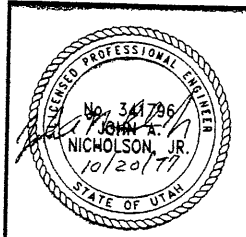
VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-6772
 Fax: (919) 781-4869



WATCH CONSTRUCTORS
 OCT 27 1997
 RELEASED FOR CONSTRUCTION

VSL Corporation (VSL) does a strict proprietary design and construction of its Retained Earth™ walls. The design and construction of the walls is based on the "Retained Earth™" system. Each wall is designed to the site conditions and the material used. The design and construction of the walls is based on the "Retained Earth™" system. Each wall is designed to the site conditions and the material used.

RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-19"
 SPECIAL PANEL REINFORCEMENT
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.



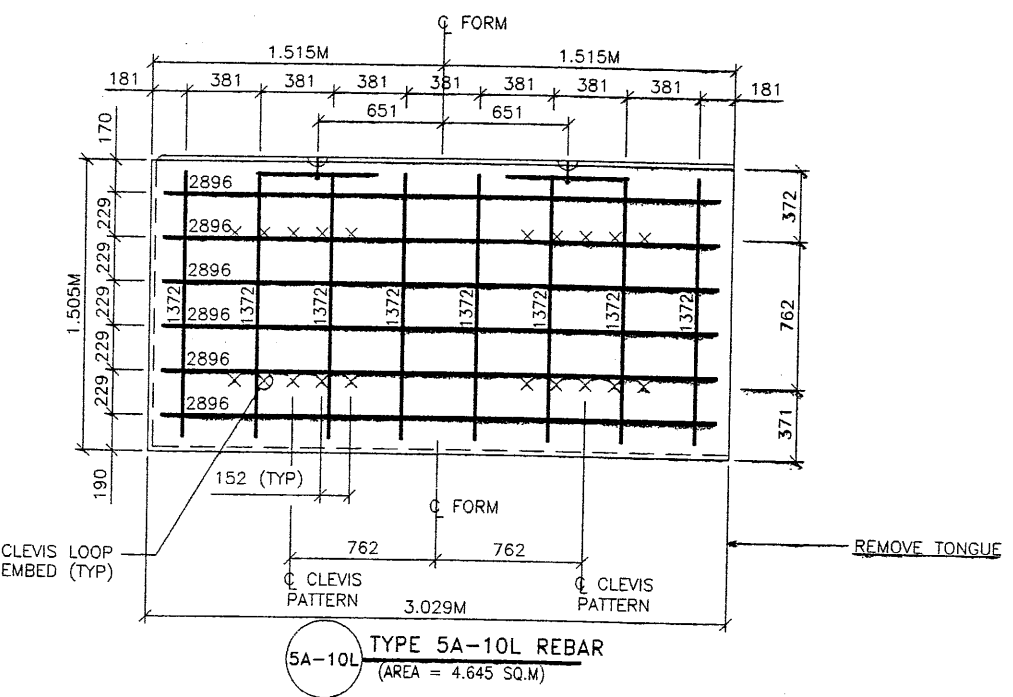
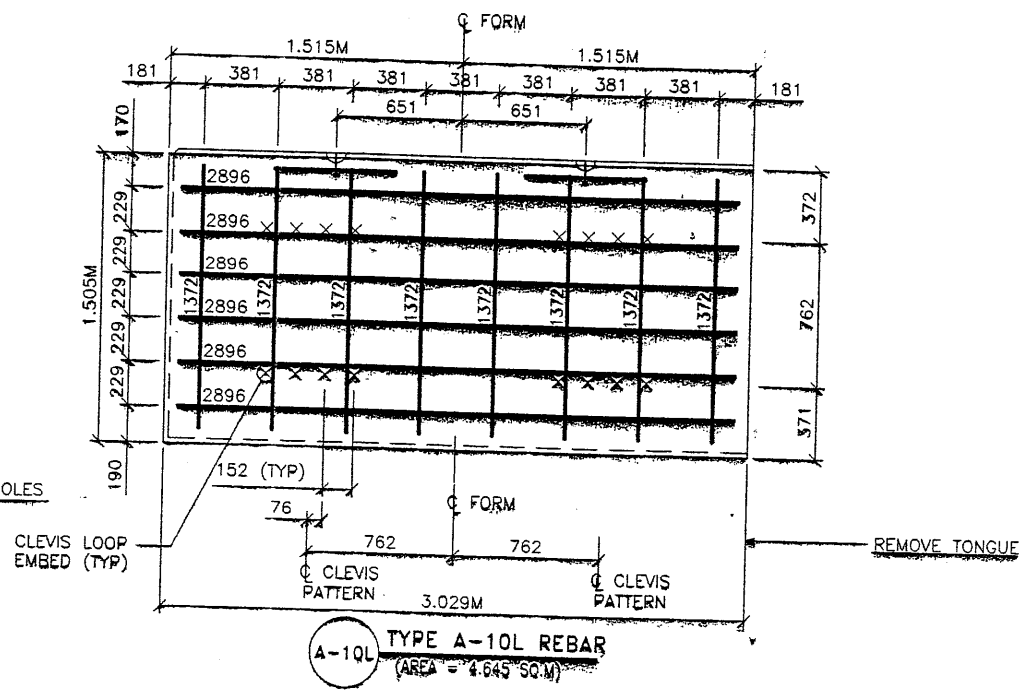
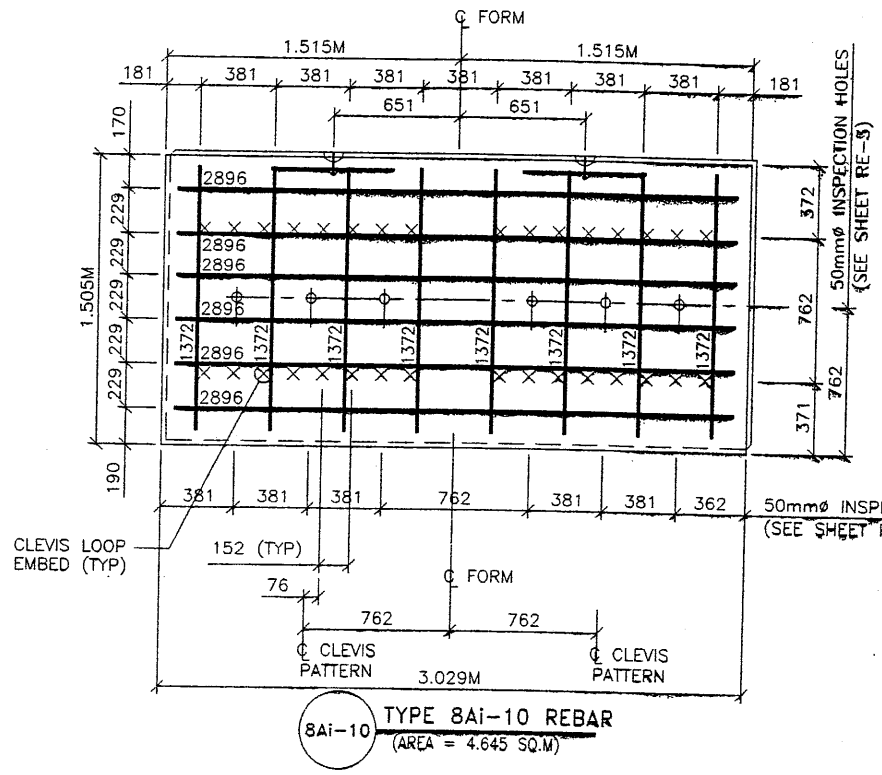
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

SCALE: 1.2R-343-19.10
 JOB NO: 239-0007
 RE-9

E:\PROJECT\239-0007\72SERIES\72-19\SP

7-16-97

FINAL PL

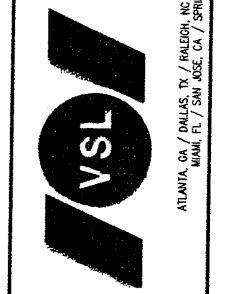


APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	10-16-97	RELEASE FOR CONSTRUCTION

- 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 27,500 KPa.
 8. EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 9. ALL PANELS TO USE 9.5mmØ CLEVIS LOOPS.
 10. VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4.725.170.

NO.	DATE	DESCRIPTION
1	10-16-97	RELEASE FOR CONSTRUCTION

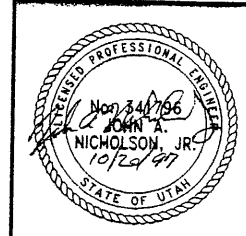
VSL CORPORATION
 2810 Plaza Blvd, Suite 200
 Redwood City, CA 94063
 Telephone: (415) 781-6272
 Fax: (415) 781-6869



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WATCH CONSTRUCTORS
 OCT 27 1997
 RELEASED FOR CONSTRUCTION

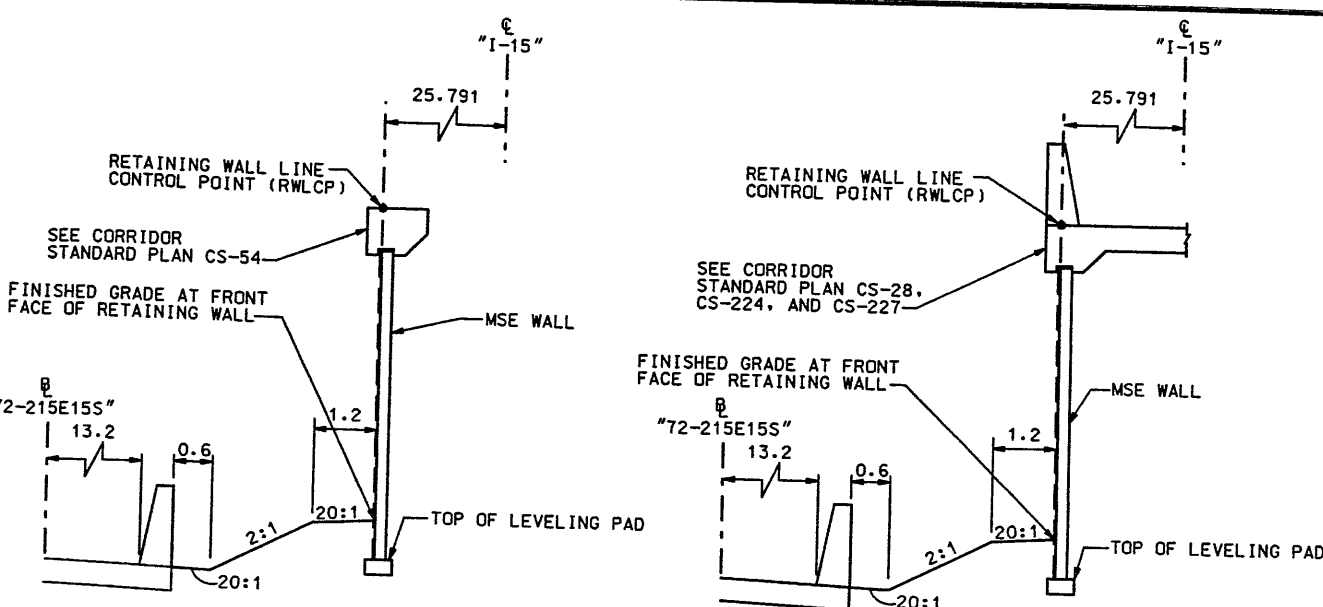
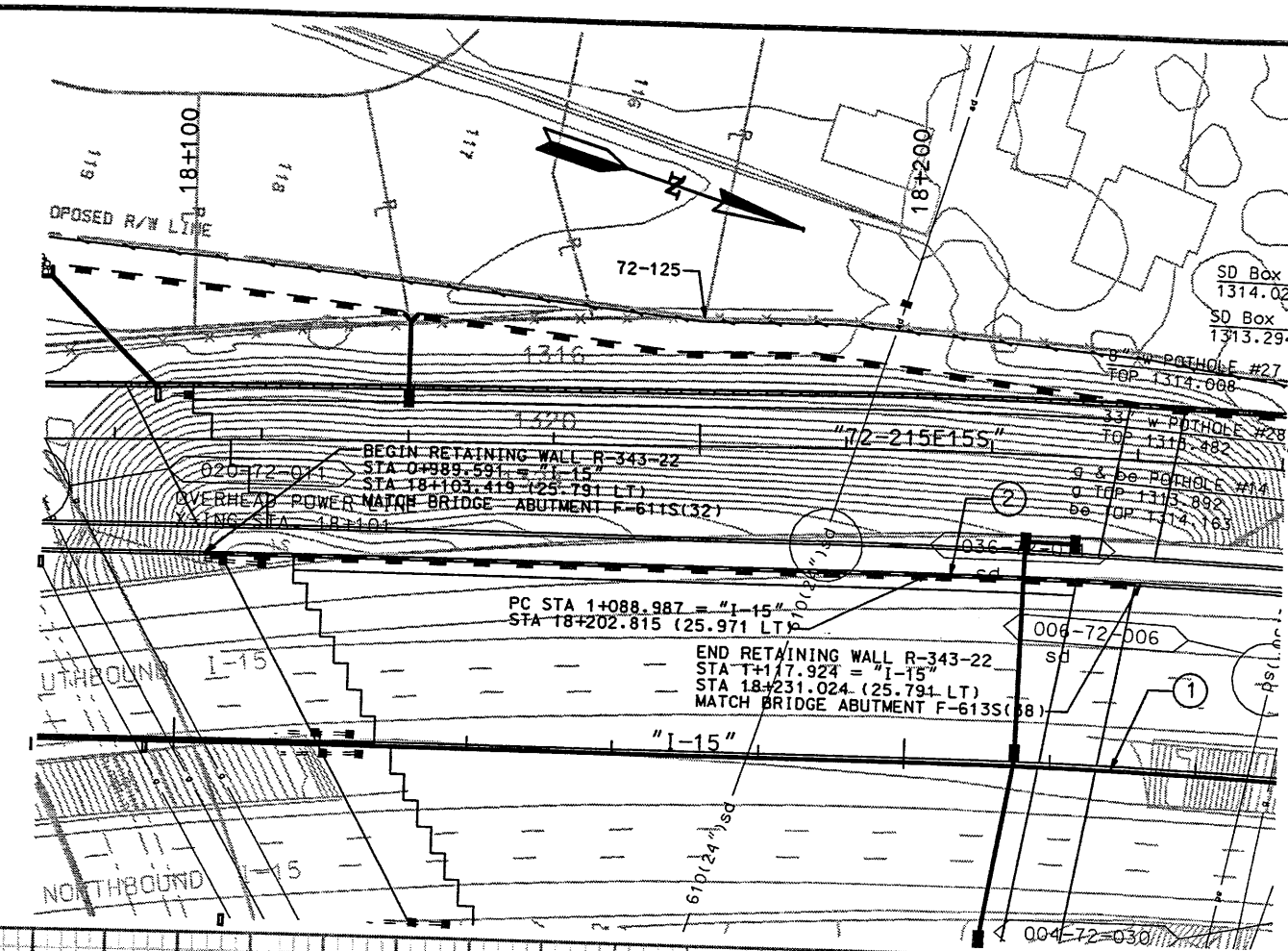
RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-19"
 SPECIAL PANEL REINFORCEMENT
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.



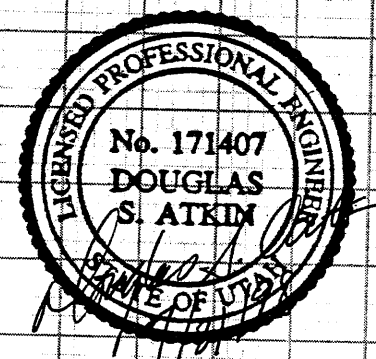
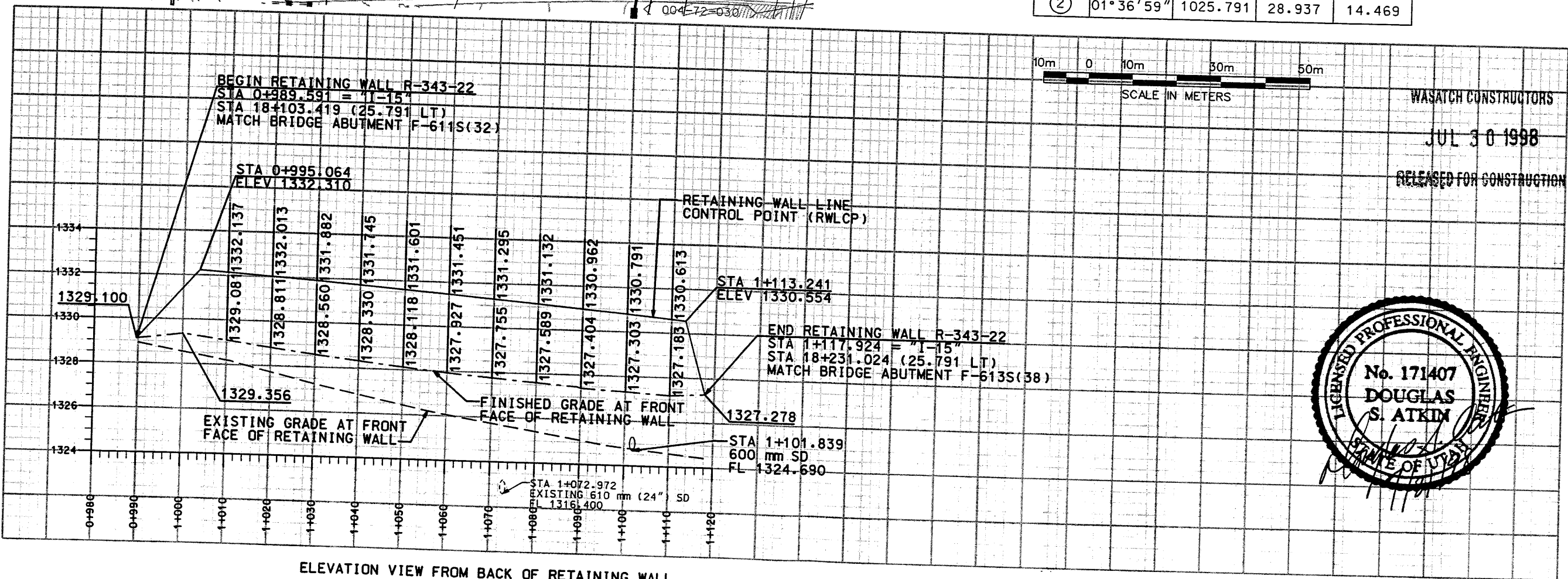
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

SCALE:
 1.2R-343-19.11
 JOB NO:
 239-0007
 RE-10

Date: 20-JUL-1998 Time: 16:20 Username: huffakn
 File: c:\dgn\15_cadd\72_37_sheet_files\wals\72_retwall-22.dgn



CURVE NO.	Δ	R	L	T
①	35° 08' 59"	1000.000	613.479	316.736
②	01° 36' 59"	1025.791	28.937	14.469



WASATCH CONSTRUCTORS
 JUL 30 1998
 RELEASED FOR CONSTRUCTION

UTAH DEPARTMENT OF TRANSPORTATION
 SVERDRUP/DE LEUW

I-15 CORRIDOR RECONSTRUCTION
 SITUATION/LAYOUT
 RETAINING WALL R-343-22
 SECTION 1-2
 PROJECT NUMBER #SP-15-7(135)296

APPROVED FOR CONSTRUCTION
 NO. DATE 7-21-98 INITIAL RELEASE

DESIGN: RICK CHAPMAN 11/97
 DRAWN: DON GRALL 11/97
 CHECK: JBE 11/97
 PROJECT DESIGN ENGINEER
 PROJECT MANAGER

SALT LAKE COUNTY
 DWG. NO. 1.2R-343-22.1
 SHT. 1 OF 6
 REF.

NOTE:
 THE FOUNDATION BEARING MATERIALS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER DURING SITE PREPARATION. ANY UNDESIRABLE MATERIALS WILL NEED TO BE REMOVED AND REPLACED WITH BORROW IN ORDER TO ACHIEVE ACCEPTABLE CONDITIONS AT THE BASE OF THE WALL.

PRECAST WALL STA 0+989.591 =
I-15 STA 18+103.419
● 25.791 LT
BEGIN PRECAST WALL R-343-22

FACE OF PRECAST WALL 343-22

PRECAST WALL PC STA 1+088.987 =
I-15 STA 18+202.815
● 25.791 LT

PRECAST WALL STA 1+117.924 =
I-15 STA 18+231.024
● 25.791 LT
END PRECAST WALL R-343-22

BRIDGE F-611S(32)

BRIDGE F-613S(38)

I-15

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	Δ
①	1000.000	613.479	316.736	35°08'59"
②	1025.791	28.937	14.469	01°36'59"

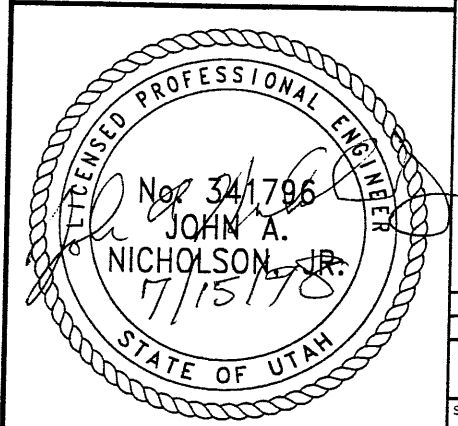
All Dimensions Are In Meters Unless Noted Otherwise

PLAN VIEW WALL "R-343-22"

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

DESIGN PARAMETERS	
ANGLE OF INTERNAL FRICTION (SELECT) = 34°	
ANGLE OF INTERNAL FRICTION (BASE) = 31°	
ANGLE OF INTERNAL FRICTION (RANDOM) = 34°	
UNIT WEIGHT BACKFILL = 135 PCF. (21.2 KN/M ³)	
TRAFFIC SURCHARGE = 250 PSF (12 KPa)	
SEISMIC ACCELERATION COFF. = 0.12g (TYP)	
SEISMIC ACCELERATION COFF. = 0.32g (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 PRECAST FACE WALL R-343-22, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTION
RE-3	ELEVATION PRECAST WALL "R-343-22"
RE-4	ELEVATION PRECAST WALL "R-343-22"
RE-5	SPECIAL PANEL DETAILS



METRIC

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- 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: 5W11-12 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: 4W20-12 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 12" 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 DETAILS.

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	07-06-98	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

VSL CORPORATION
2840 Riva Plaza, Suite 200
Raleigh, NC 27617
Telephone: (919) 781-6272
Fax: (919) 781-4669

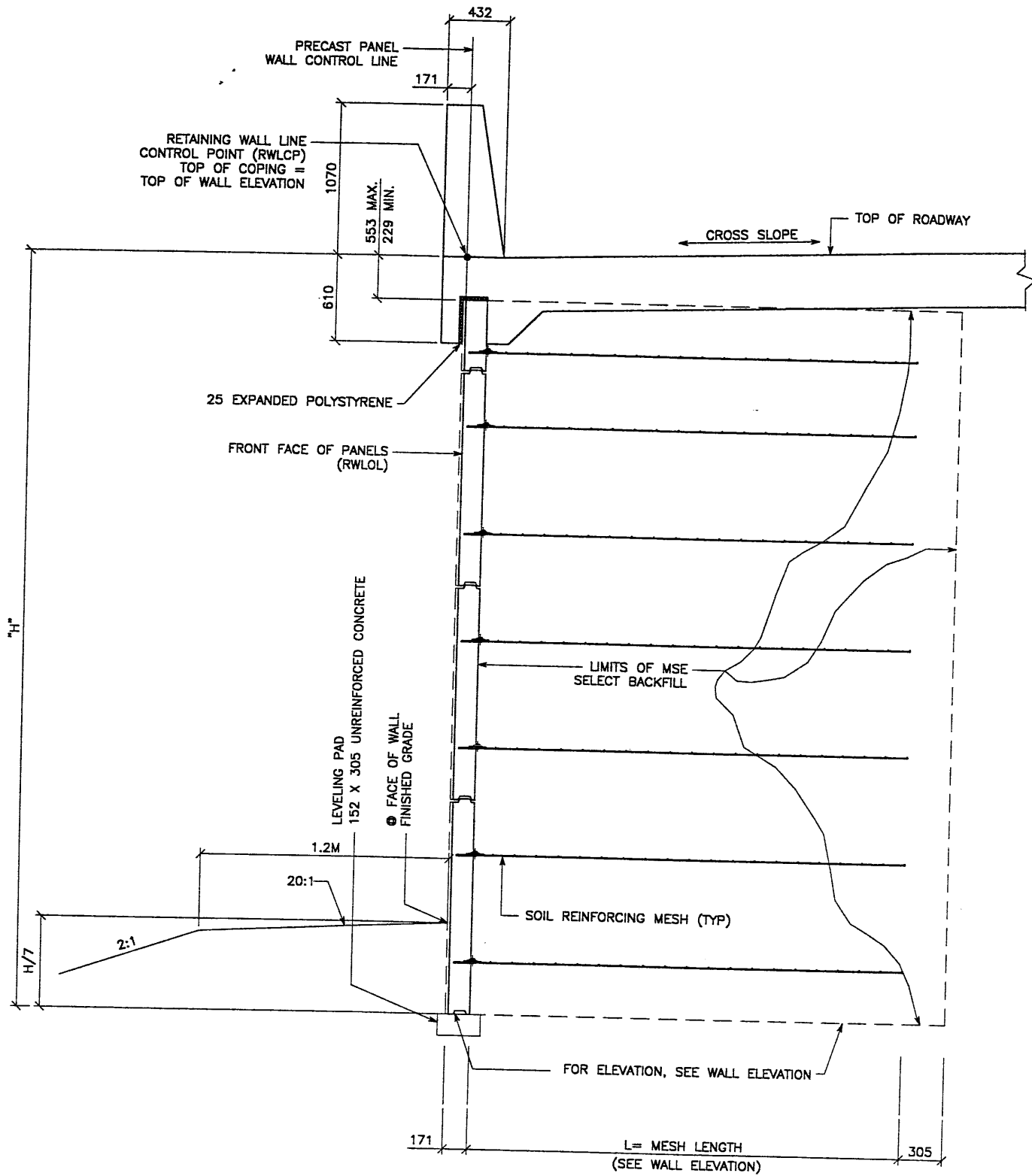
WASATCH CONSTRUCTORS
JUL 30 1998
RELEASED FOR CONSTRUCTION

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

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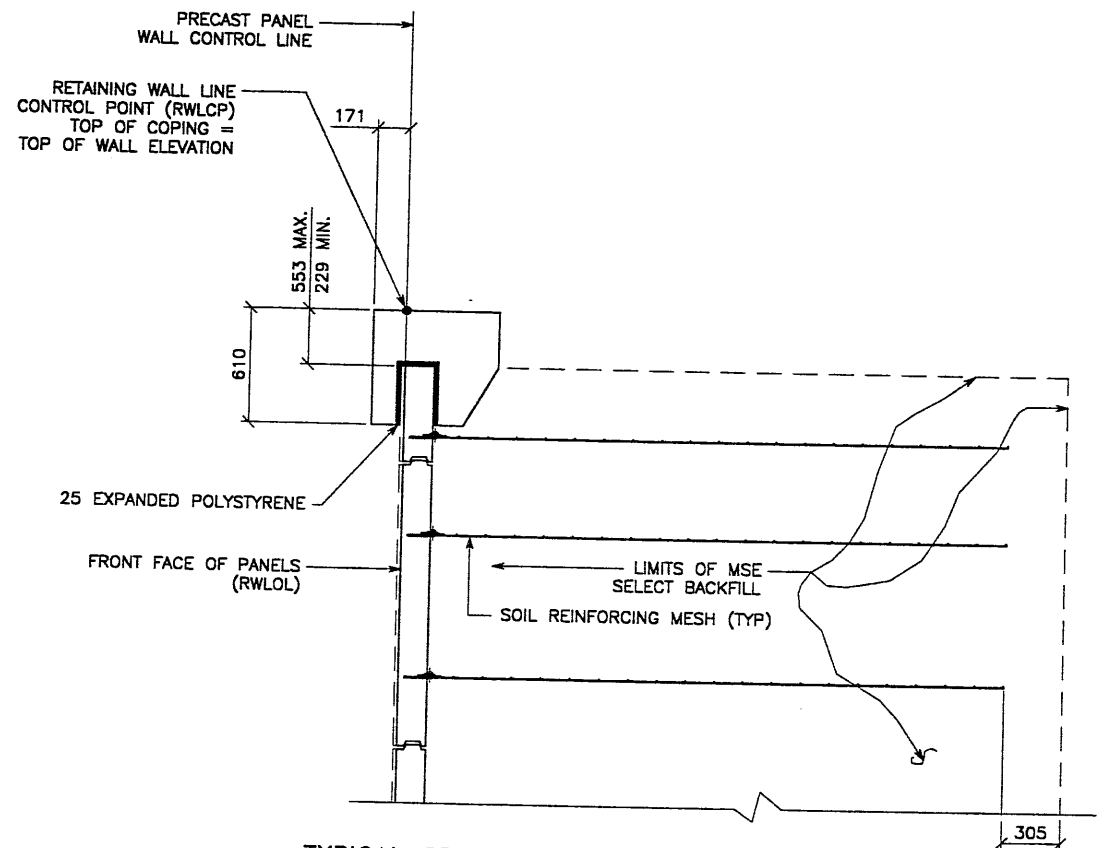
RETAINED EARTH™ WALLS
PLAN VIEW PRECAST WALL "R-343-22"
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.
1.2R-343-22.2
JOB NO.
239-0007
SHT. NO.
RE-1



TYPICAL CROSS SECTION - STA 0+995.064 TO STA 1+113.241
 (SEE DWG. NO. 1.2R-343-22.1 FOR ADDITIONAL INFORMATION)

SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

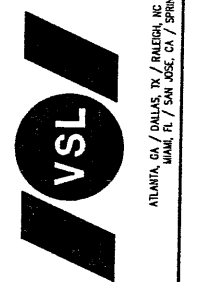


TYPICAL CROSS SECTION - STA 0+989.591 TO 0+995.064
 STA 1+113.241 TO 1+117.924
 (SEE DWG. NO. 1.2R-343-22.1 FOR ADDITIONAL INFORMATION)
 SCALE: 1:20 (FULL SIZE)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	07-06-98	RELEASE FOR CONSTRUCTION

DES.	NO.	DATE	REVISION	BY
JL	06-10-98			
LOP	06-10-98			
JL	06-10-98			

VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-8772
 Fax: (919) 781-8889

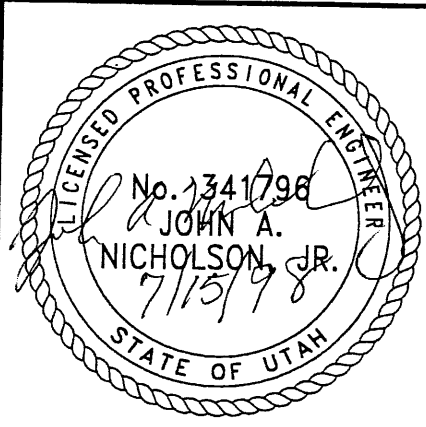


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WASATCH CONSTRUCTORS

JUL 30 1998

RELEASED FOR CONSTRUCTION



METRIC

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

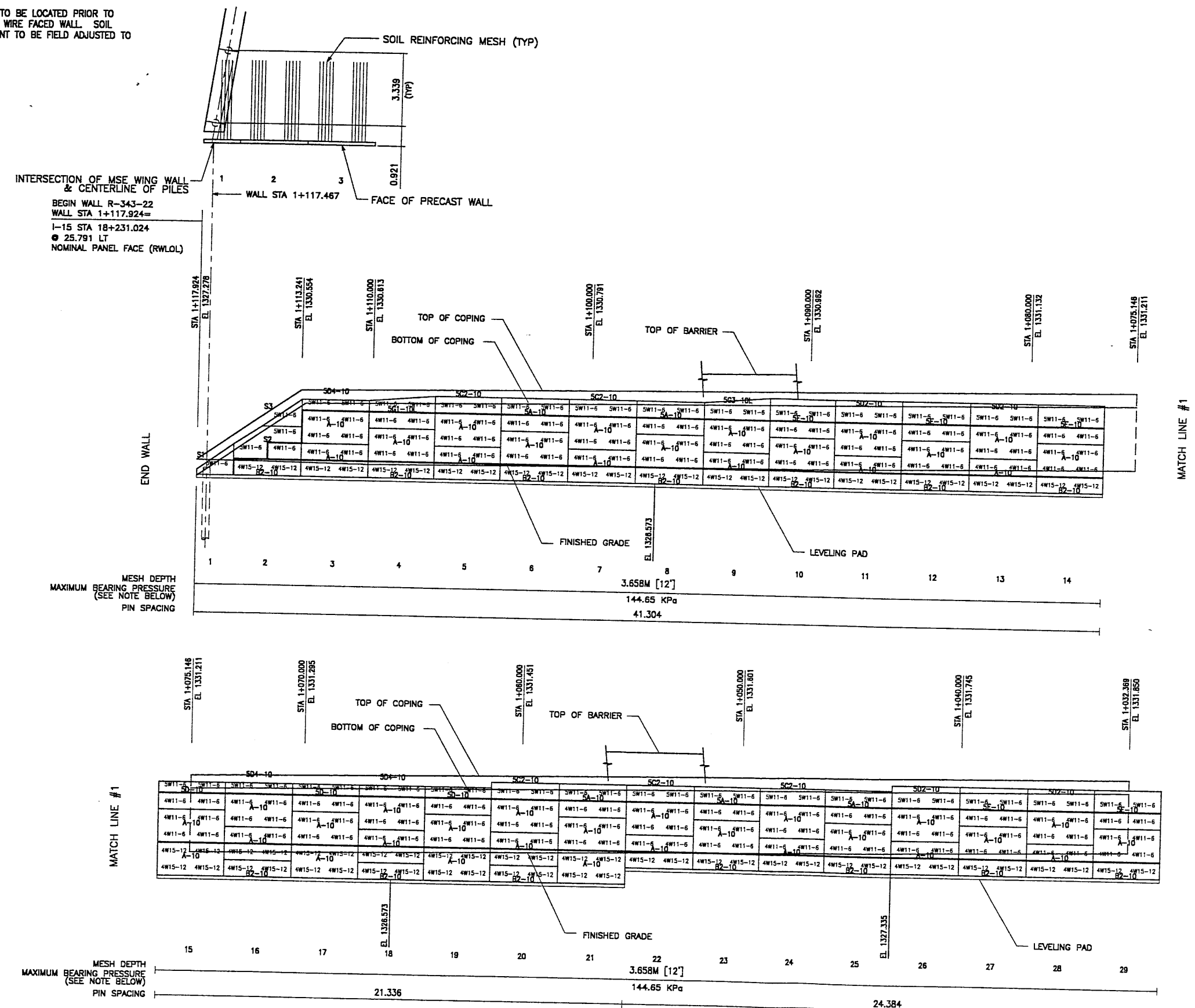
RETAINED EARTH™ WALLS PRECAST WALL R-343-22 TYPICAL CROSS SECTION	DWG. NO. 1.2R-343-22.3
UTAH I-15 RECONSTRUCTION SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.	JOB NO. 239-0007/3/6
	SHT. NO. RE-2

XR-REFERENCE (X-UTRHDWG)

H:\RE_EARTH\PROJECT\339-0007\1998\72SERIES\SUBMIT-2\72-22.DWG

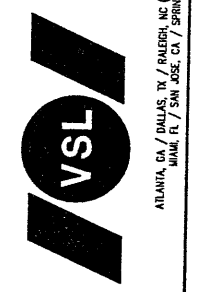
FINAL JT 06-10-98

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	CHK
▲	07-06-98	RELEASE FOR CONSTRUCTION	

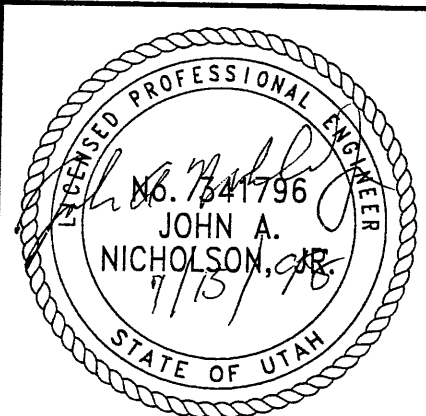
VSL CORPORATION
 7800 Price Street, Suite 200
 Redwood City, CA 94063
 Telephone: (919) 781-8272
 Fax: (919) 781-8689



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WASATCH CONSTRUCTORS
 JUL 30 1998
 RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-22"
 UTAH I-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.



DWG. NO.
1.2R-343-22.4
 JOB NO.
239-0007 4/6
 SHT. NO.
RE-3

ELEVATION PRECAST WALL R-343-22

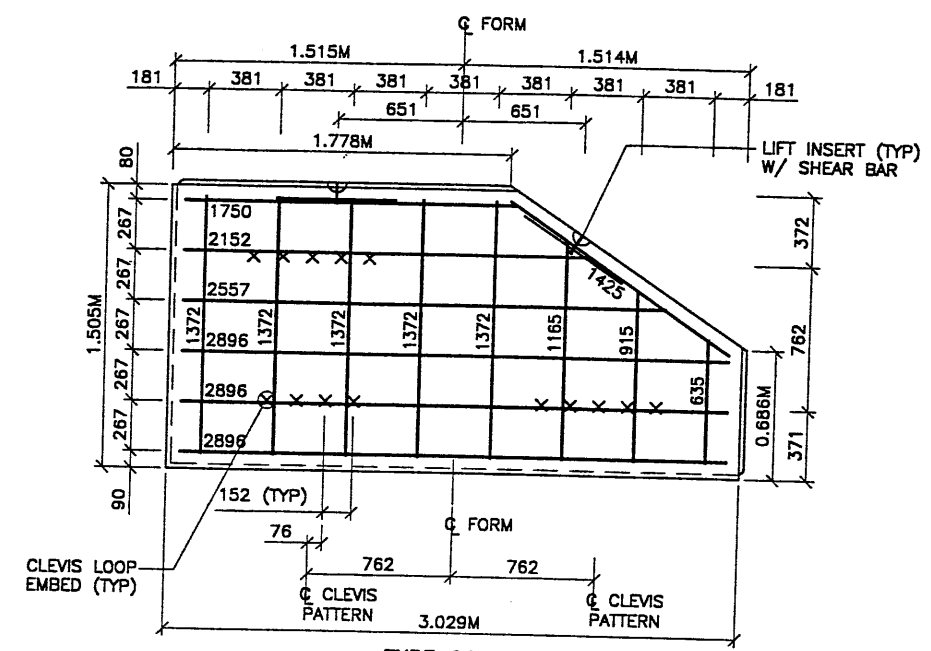
(FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 493.74 SM)

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

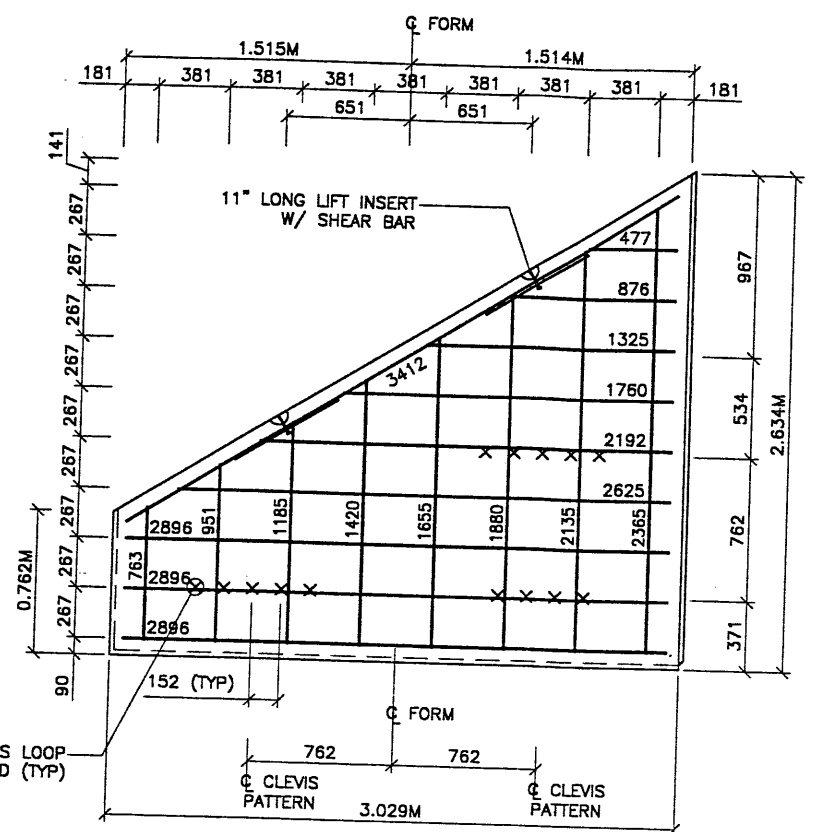
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

METRIC

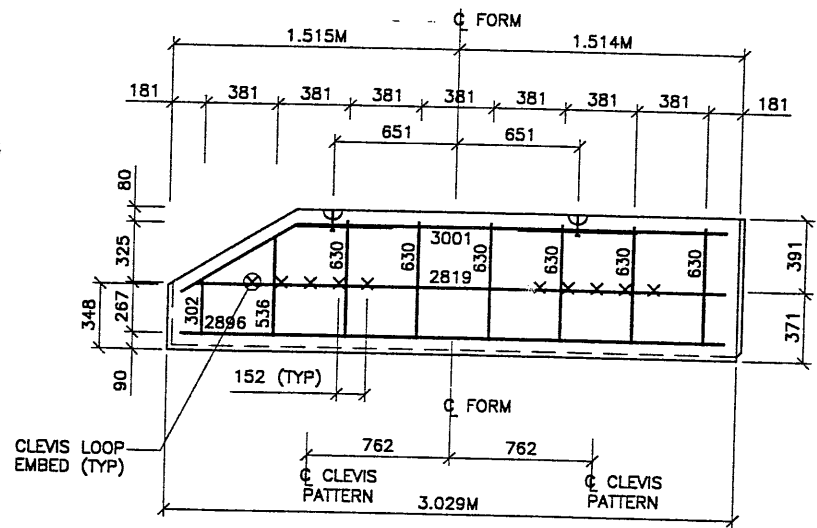
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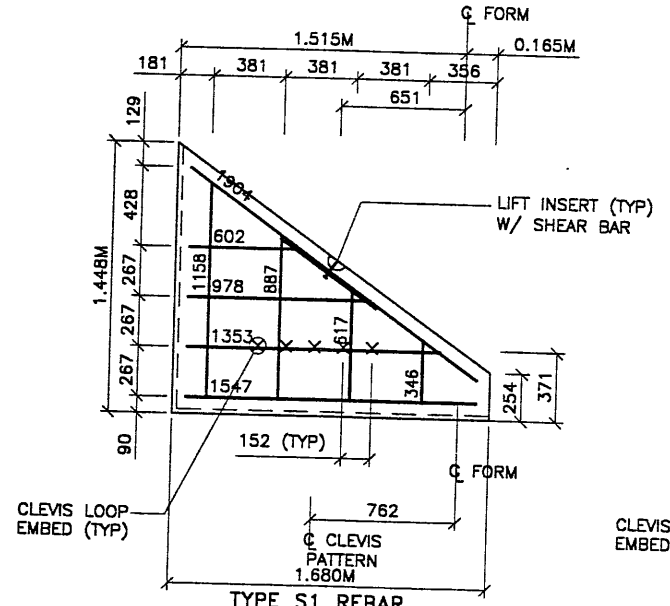
TYPE S2 REBAR
(AREA = 4.11 SQ.M)



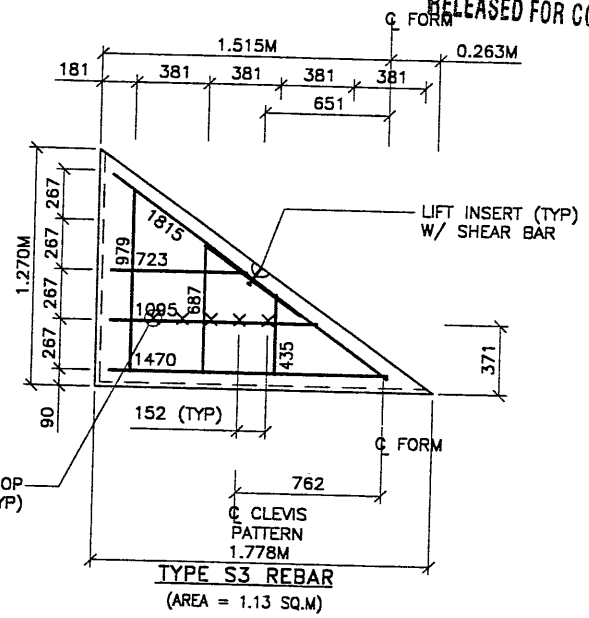
TYPE S5 REBAR
(AREA = 5.21 SQ.M)



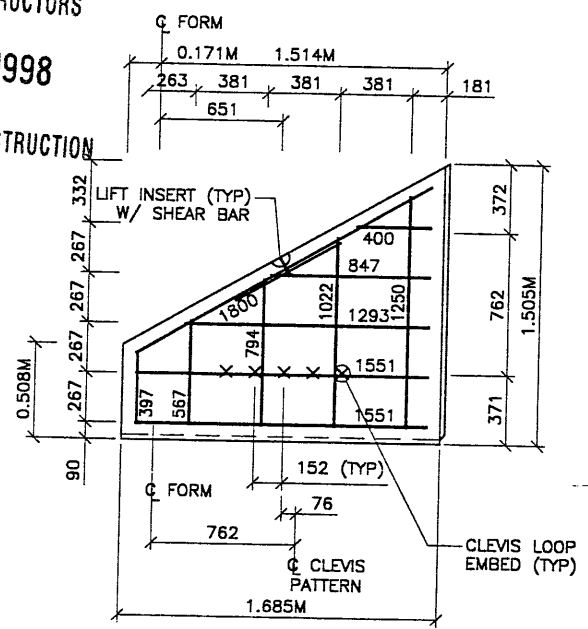
TYPE S4 REBAR
(AREA = 2.17 SQ.M)



TYPE S1 REBAR
(AREA = 1.43 SQ.M)



TYPE S3 REBAR
(AREA = 1.13 SQ.M)



TYPE S6 REBAR
(AREA = 1.71 SQ.M)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
Δ	07-06-98	RELEASE FOR CONSTRUCTION

- PANEL REINFORCEMENT NOTES:**
- PANELS ARE SHOWN BACK FACE.
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 - 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.
 - EQUVALENT WELDED WIRE FABRIC MAY BE USED.
 - ALL PANELS TO USE 9.5mm# CLEVIS LOOPS.
 - VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.
 - LIFT INSERTS ARE 6 3/4" LONG IN ALL PANELS LESS THAN 1.524M TALL. PANELS TALLER THAN 1.524M SHALL HAVE 11" LONG LIFT ANCHORS.

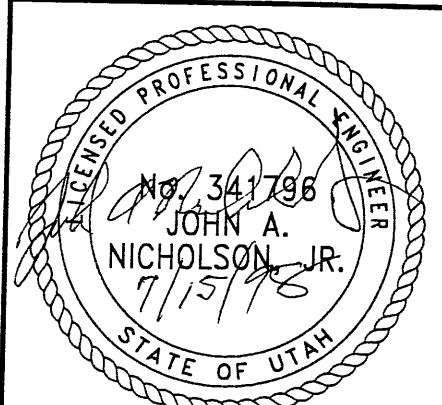
WASATCH CONSTRUCTORS

JUL 30 1998

RELEASED FOR CONSTRUCTION

METRIC

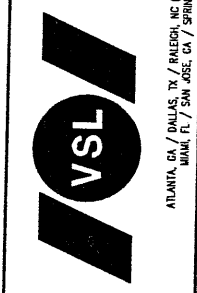
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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



RETAINED EARTH™ WALLS
PRECAST WALL "R-343-22"
SPECIAL PANEL DETAILS
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO. 1.2R-343-22.6
JOB NO. 239-0007/6
SHT. NO. RE-5

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27617
Telephone: (919) 781-8272
Fax: (919) 781-6869

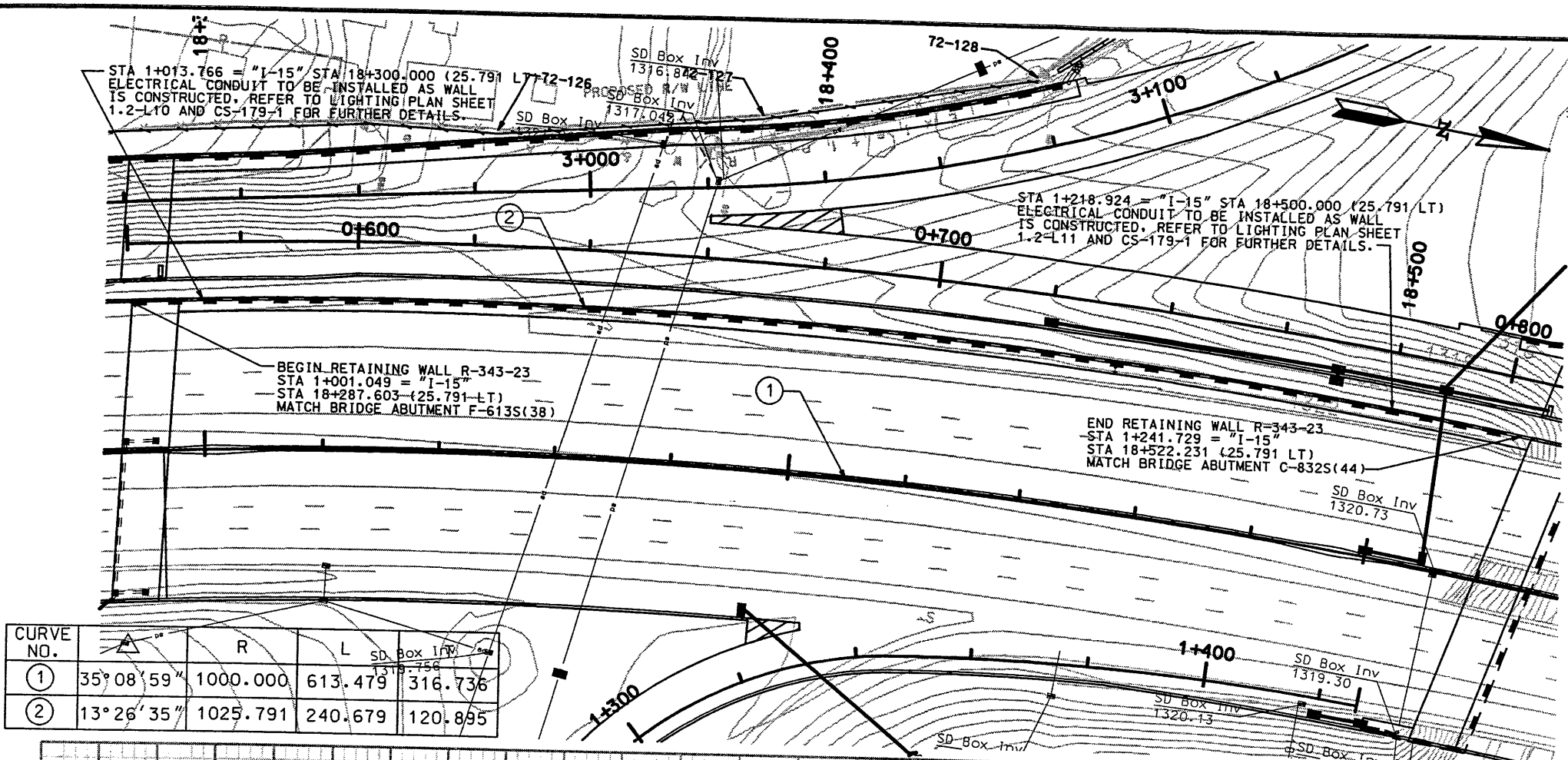


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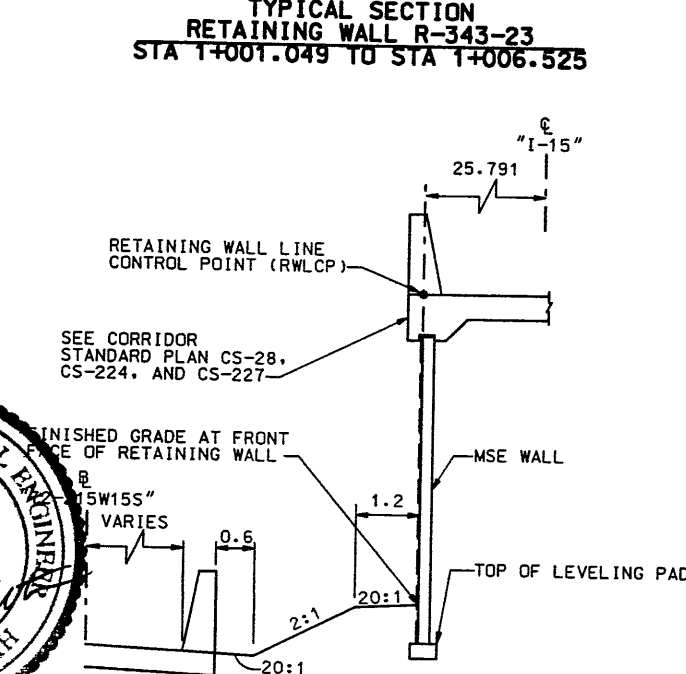
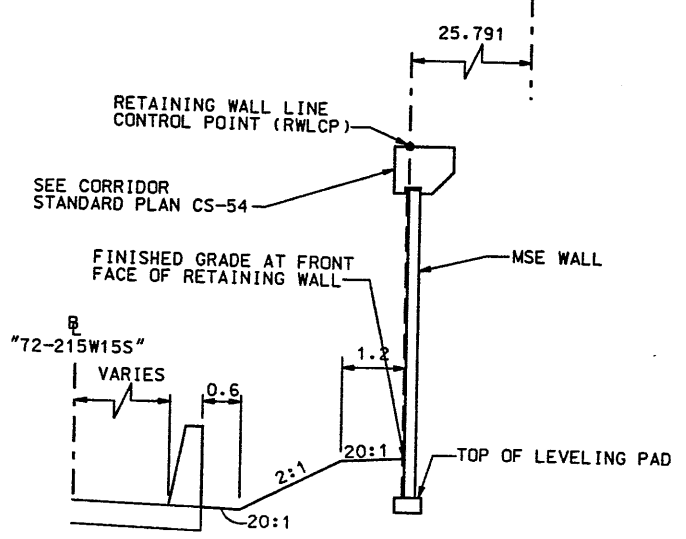
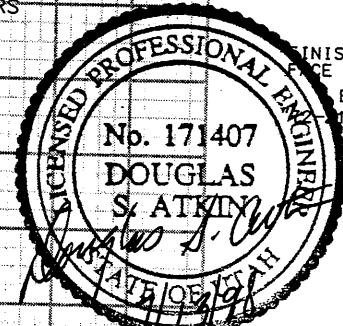
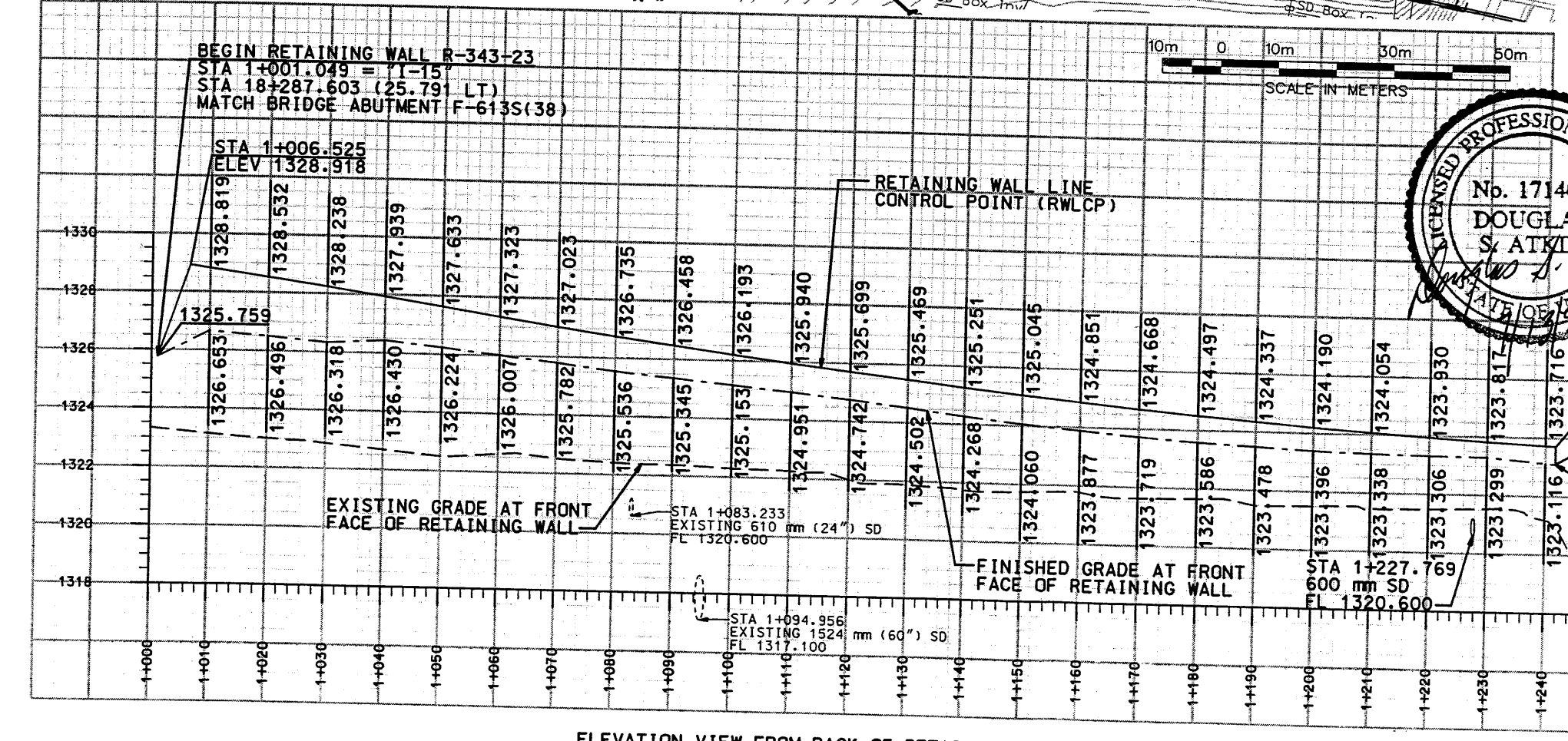
NO.	DATE	DESCRIPTION	NO.	DATE	BY	CHK
Δ	07-06-98	RELEASE FOR CONSTRUCTION				

NO.	DATE	BY	CHK

Username: huffdtkn
Date: 03-Jul-1998 Time: 03:53



CURVE NO.	Δ	R	L	SD Box Inv
①	35° 08' 59"	1000.000	613.479	316.736
②	13° 26' 35"	1025.791	240.679	120.895



NOTE:
THE FOUNDATION BEARING MATERIALS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER DURING SITE PREPARATION. ANY UNDESIRABLE MATERIALS WILL NEED TO BE REMOVED AND REPLACED WITH BORROW IN ORDER TO ACHIEVE ACCEPTABLE CONDITIONS AT THE BASE OF THE WALL.

APPROVED FOR CONSTRUCTION

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

NO.	DATE	DESCRIPTION
1	7-13-98	INITIAL RELEASE

DESIGN	CHKD	DATE
11/97	11/97	11/97

DESIGN	CHKD	DATE
11/97	11/97	11/97

DESIGN	CHKD	DATE
11/97	11/97	11/97

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
RETAINING WALL R-343-23
SECTION 1-2
PROJECT NUMBER #SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2R-343-23.1
SHT. 1 OF 6

Filename: c:\dgn\15_cadd\72_97\sheet_files\wall\23_01.dgn

NCE (X-UTAH)JWG

3\72-23\RE-1

H:\RE_EARTH\PROJECT\239-0007\1998\

YT 06-03-98

FINA

WALL STA 1+001.049 =
"I-15"
STA 18+287.603 @ 25.791 LT
BEGIN PRECAST WALL 343-23

FRONT FACE PRECAST WALL "343-23"

BRIDGE F-613S(38)

WALL STA 1+241.729=
"I-15"
STA 18+522.231 @ 25.791 LT
END PRECAST WALL 343-23

BRIDGE C-832S(44)

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	Δ
①	1000.000	613.479	316.736	35°08'59"
②	1025.791	240.679	120.895	13°26'35"

All Dimensions Are in Meters Unless Noted Otherwise

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: 5W11-12 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: 4W20-12 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 12" 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 DETAILS.

DESIGN PARAMETERS	
ANGLE OF INTERNAL FRICTION (SELECT) = 34°	
ANGLE OF INTERNAL FRICTION (BASE) = 31°	
ANGLE OF INTERNAL FRICTION (RANDOM) = 34°	
UNIT WEIGHT BACKFILL = 135 PCF. (21.2 KN/M ³)	
TRAFFIC SURCHARGE = 250 PSF (12 KPa)	
SEISMIC ACCELERATION COEFF. = 0.12g (TYP)	
SEISMIC ACCELERATION COEFF. = 0.32g (AT BRIDGE ABUTMENTS)	
DESIGN CRITERIA	
SAFETY FACTOR (OVERTURNING) = 2.0	
SAFETY FACTOR (SLIDING) = 1.5	
SAFETY FACTOR (PULLOUT) = 1.5	
DESIGN LIFE = 75 YEARS	

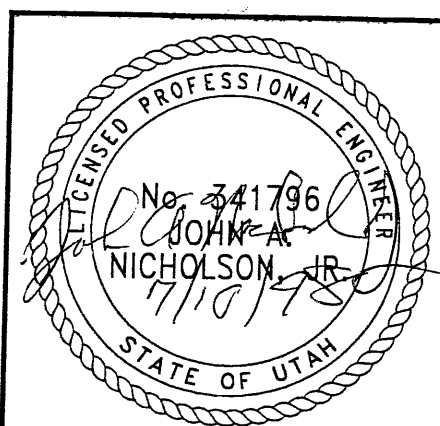
RETAINED EARTH INDEX	
RE-1	PLAN PRECAST FACE WALL R-343-23, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTION
RE-3	ELEVATION PRECAST WALL "R-343-23"
RE-4	ELEVATION PRECAST WALL "R-343-23"
RE-5	SPECIAL PANEL DETAILS

PLAN VIEW WALL "R-343-23"

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

METRIC

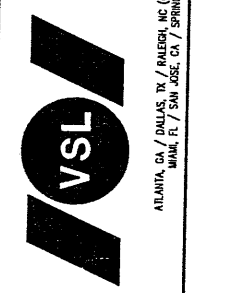
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APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	7-02-98	RELEASE FOR CONSTRUCTION

DES.	DRN.	CHK.	JL	RSW	JL	NO.	DATE	REVISION	BY	CHK
06-03-98	06-03-98	06-03-98	JL	RSW	JL					

VSL CORPORATION
2500 Plaza Place, Suite 200
Durham, NC 27707
Tel: (919) 286-6372
Fax: (919) 286-4888



WASATCH CONSTRUCTORS

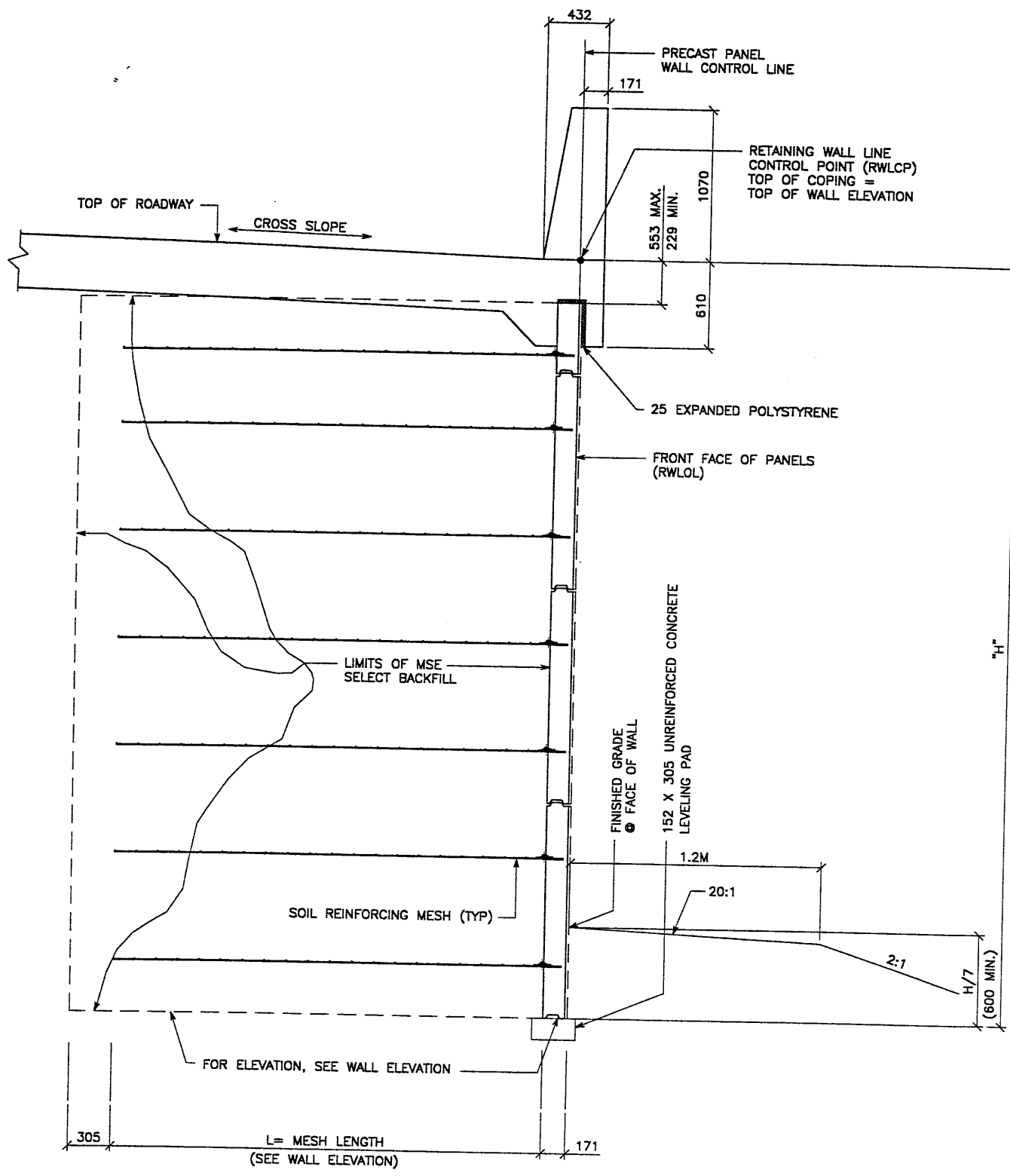
JUL 17 1998

RELEASED FOR CONSTRUCTION

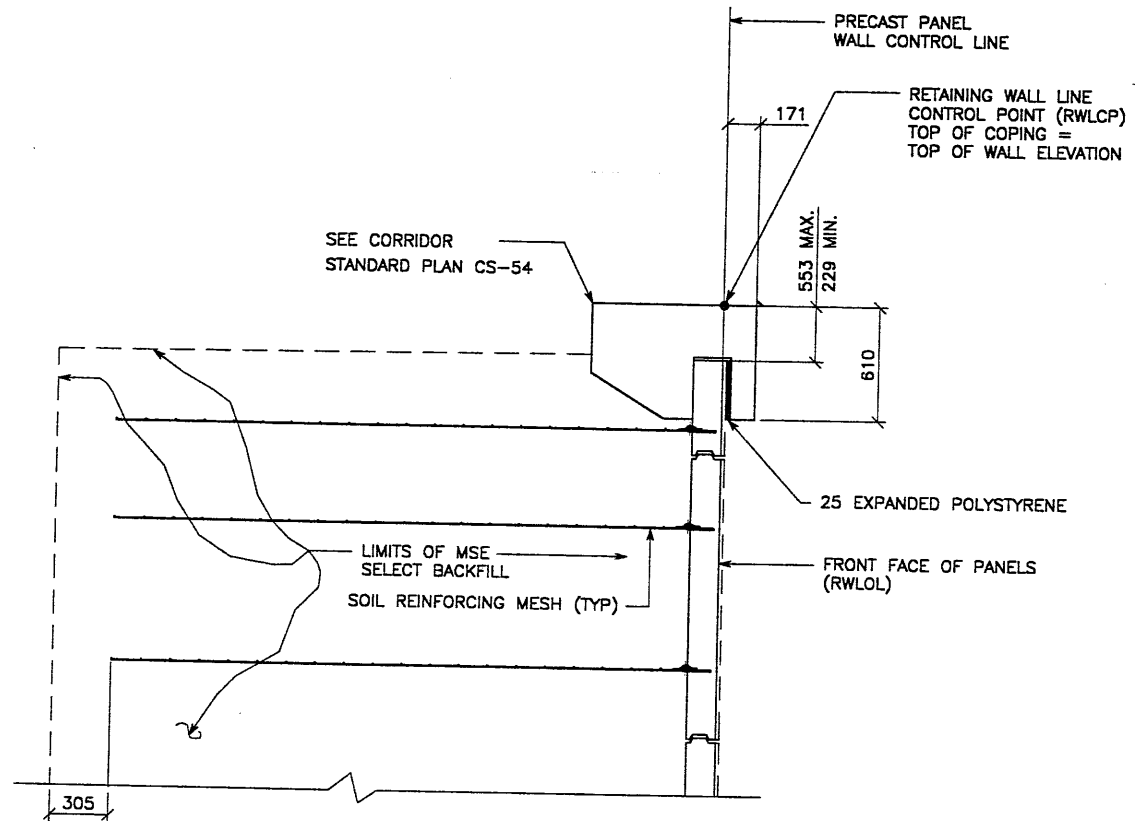
RETAINED EARTH™ WALLS
PLAN VIEW PRECAST WALL "R-343-23"
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	1.2R-343-23.2
JOB NO.	239-0007
SHT. NO.	RE-1

H:\RE_EARTH\PROJECT\239-0007\1998\7 5\72-23\RE-2
 T 06-03-98
 FINAI
 VICE (X-UTAH.DWG)



TYPICAL CROSS SECTION - STA 1+006.525 TO STA 1+241.729
 (SEE DWG. NO. 1.2R-343-23.1 FOR ADDITIONAL INFORMATION)
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 SCALE: 1:40 (HALF SIZE)

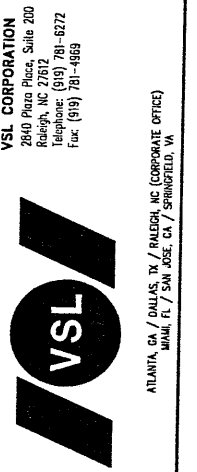


TYPICAL CROSS SECTION - STA 1+001.049 TO 1+006.525
 (SEE DWG. NO. 1.2R-343-23.1 FOR ADDITIONAL INFORMATION)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	07-02-98	RELEASE FOR CONSTRUCTION

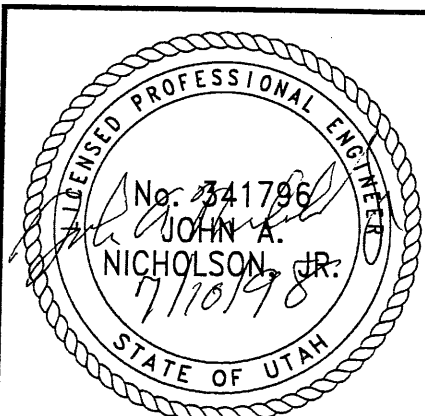
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JL	RSW	JL	<input checked="" type="checkbox"/>					
06-04-98	06-04-98	06-04-98						

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 2640 Plaza Place, Suite 200
 Raleigh, NC 27612
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 Fax: (919) 781-6959



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WASATCH CONSTRUCTORS
JUL 17 1998
RELEASED FOR CONSTRUCTION



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METRIC

RETAINED EARTH™ WALLS PRECAST WALL "R-343-23" TYPICAL CROSS SECTION
UTAH 1-15 RECONSTRUCTION SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.
DWG. NO. 1.2R-343-23.3
JOB NO. 239-0007 3/6
SHT. NO. RE-2

DE (X-UTAH.DWG)

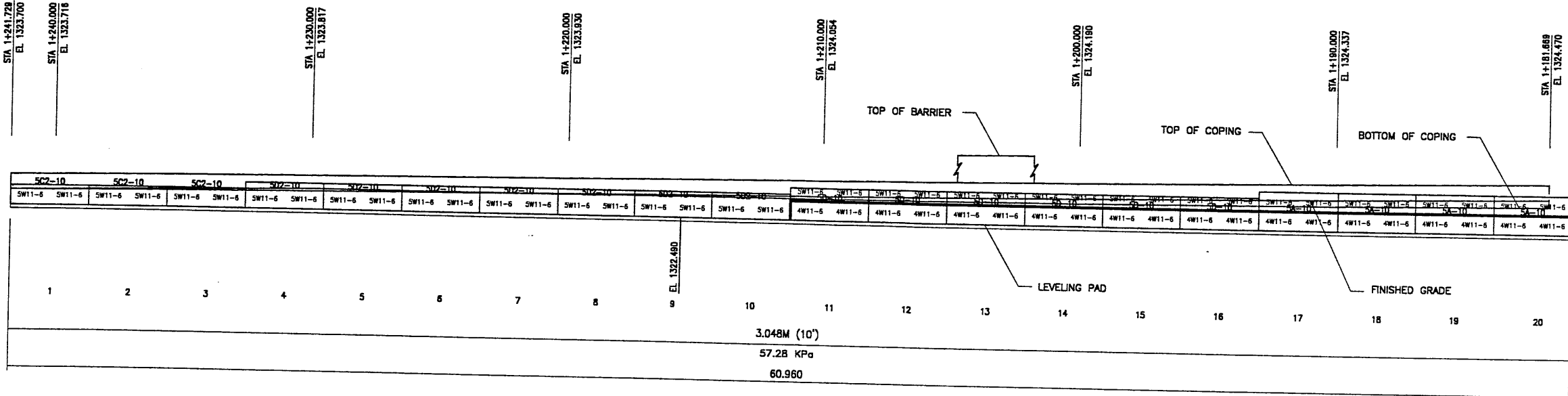
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YES\72-23\72-23.DWG

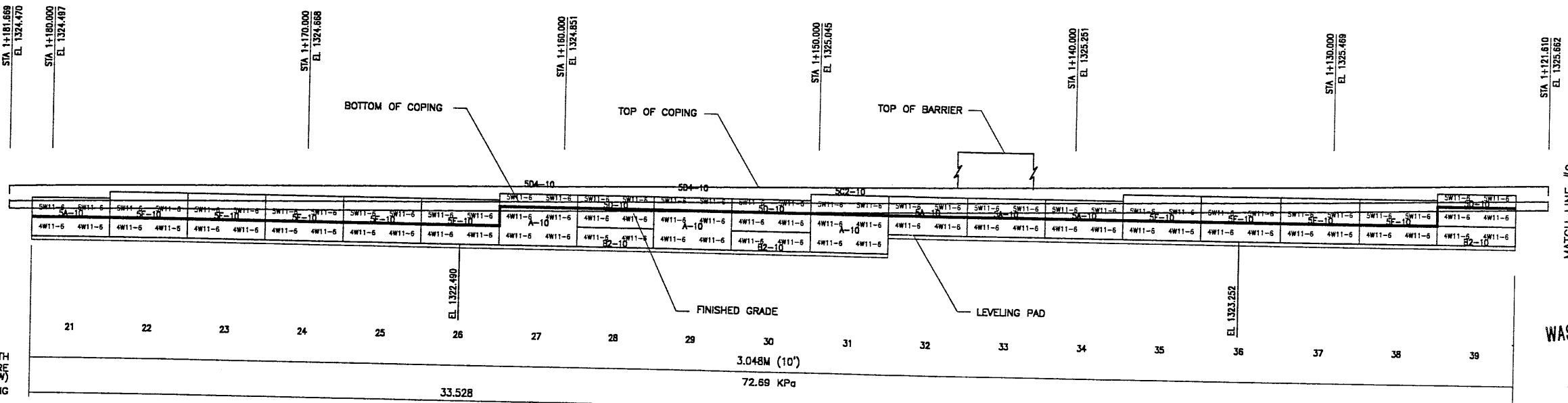
T 06-05-98

FINA

END WALL R-343-23
WALL STA 1+241.729 =
I-15 STA 18+552.231
● 25.791 LT
NOMINAL PANEL FACE (RWLOL)



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



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

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

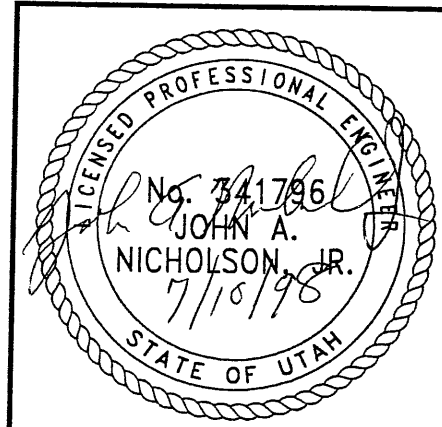
ELEVATION PRECAST WALL R-343-23

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 419.08 SM)

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

METRIC

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THE MANUFACTURER'S SPECIFICATION.

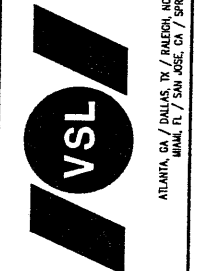


WASATCH CONSTRUCTORS
JUL 17 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	7-02-98	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

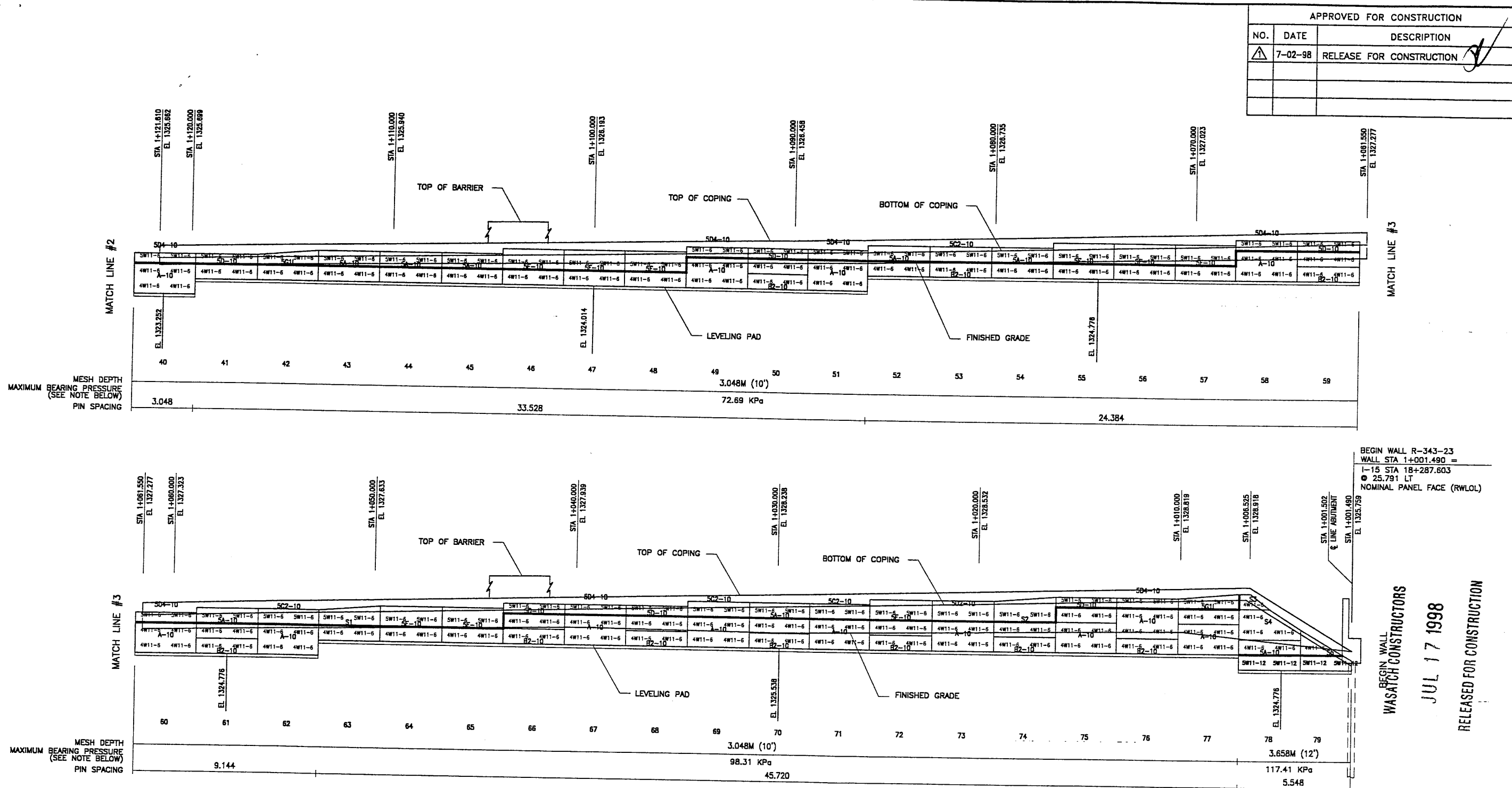
VSL CORPORATION
2810 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-4669



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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-23"
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	1.2R-343-23.4
JOB NO.	239-0007
SHT. NO.	RE-3



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
7-02-98		RELEASE FOR CONSTRUCTION

DES.	06-05-98	JL
DRW.	06-05-98	RSW
CHK.	06-05-98	JL

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

BEGIN WALL R-343-23
 WALL STA 1+001.490 =
 1-15 STA 18+287.603
 @ 25.791 LT
 NOMINAL PANEL FACE (RWLOL)

BEGIN WALL
 WASATCH CONSTRUCTORS
 JUL 17 1998
 RELEASED FOR CONSTRUCTION

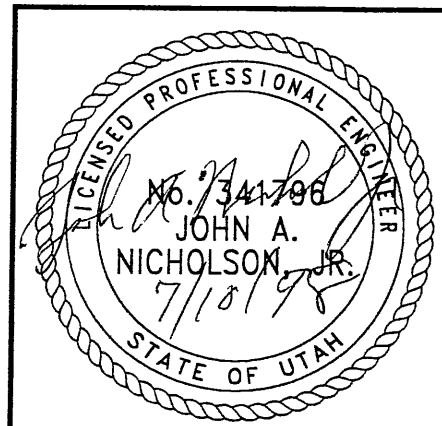
APPROVER NOTE:
 MAXIMUM FINAL UNFACTORED BEARING PRESSURES
 ARE INDICATED BELOW "MESH DEPTH LINE"
 REVIEWER TO VERIFY MAXIMUM BEARING
 CAPACITY OF FOUNDATION.

ELEVATION PRECAST WALL R-343-23

(FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 419.08 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

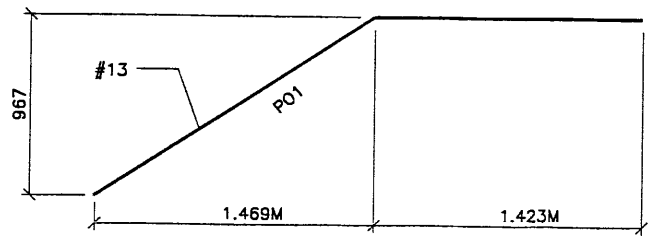
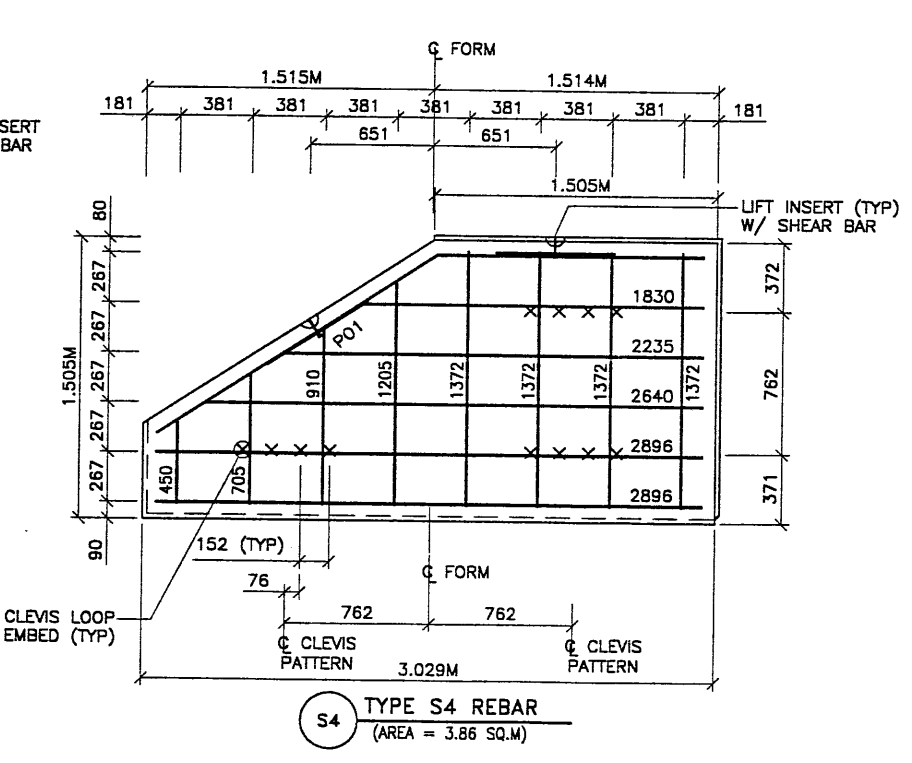
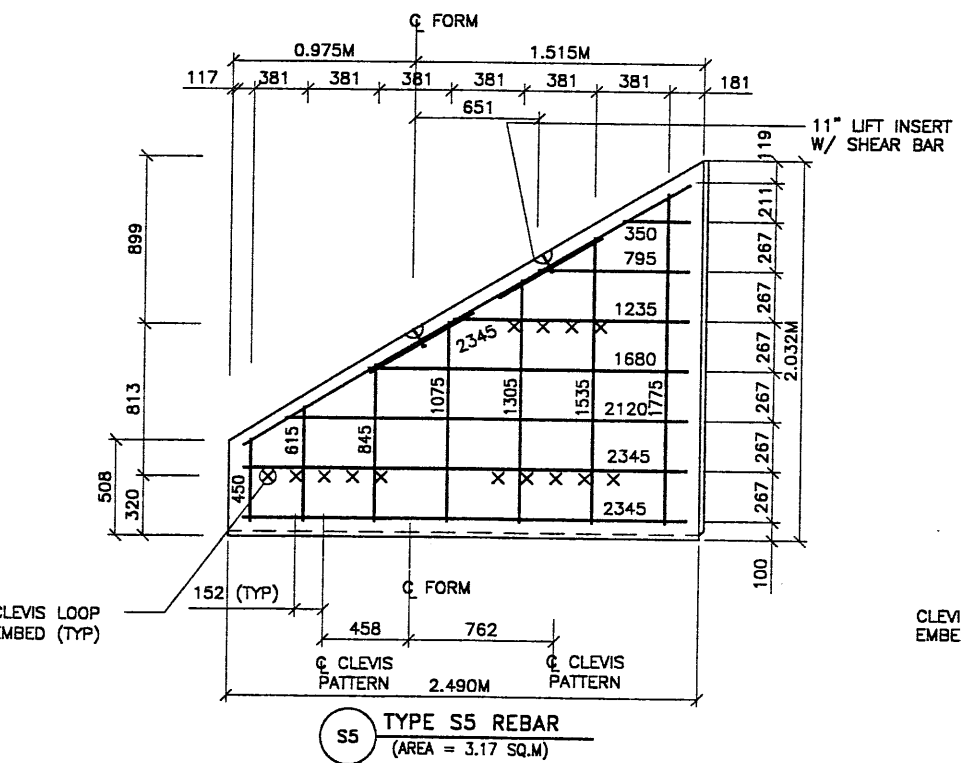
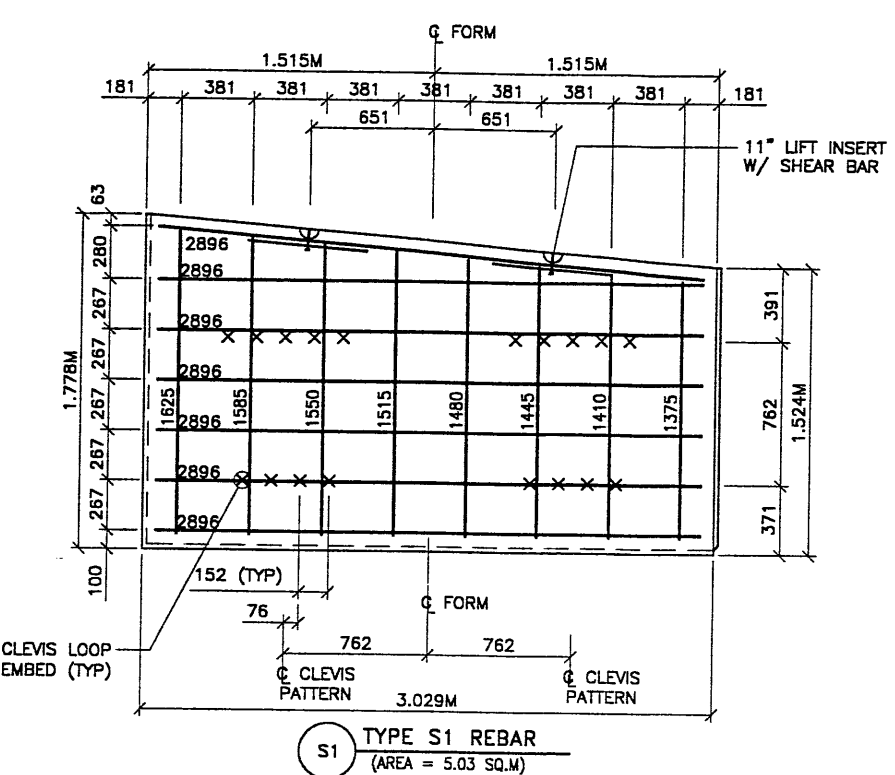
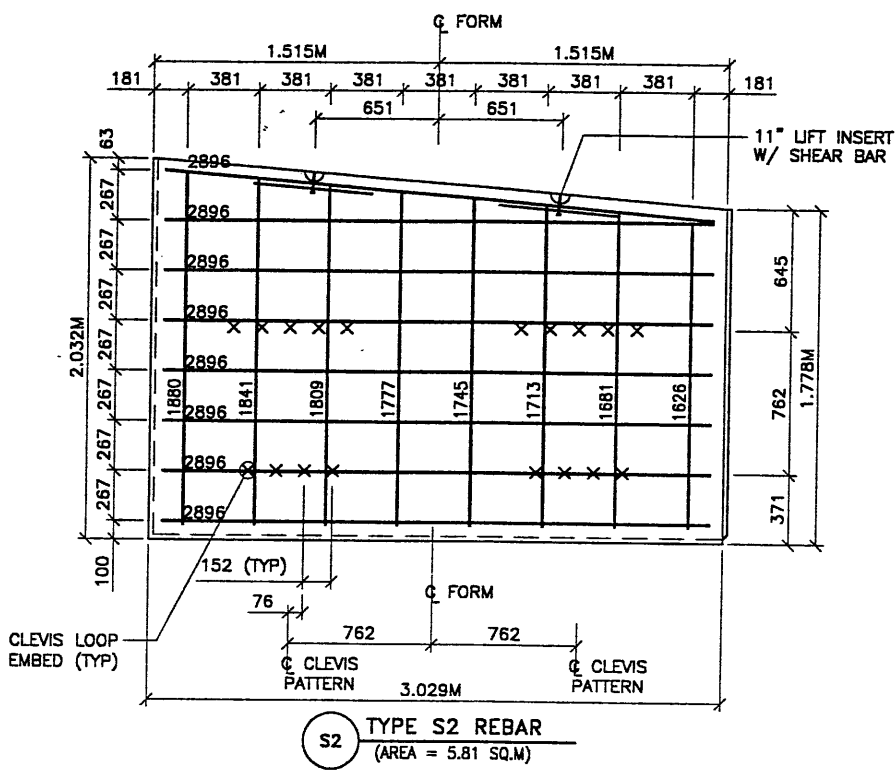
METRIC

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

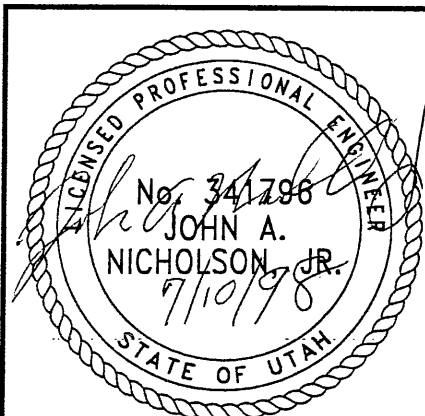
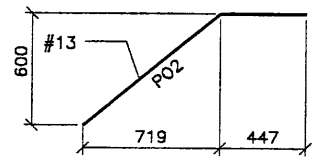
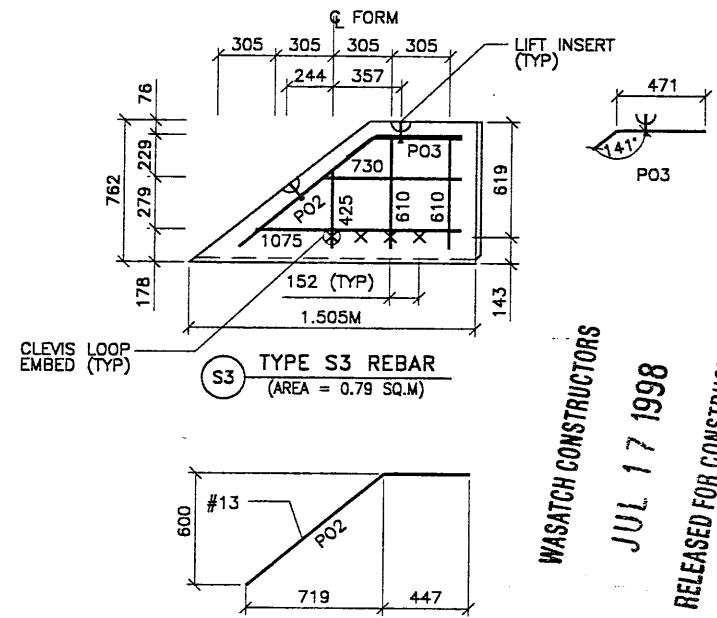


RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-23"
 UTAH I-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	1.2R-343-23.5
JOB NO.	239-0007 5/6
SHT. NO.	RE-4



- 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 787 CLASS I.
 7. CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 27,500 KPa.
 8. EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 9. ALL PANELS TO USE 9.5mm#9 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.



METRIC

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APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	07-02-98	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

VSL CORPORATION
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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-23"
SPECIAL PANEL DETAILS

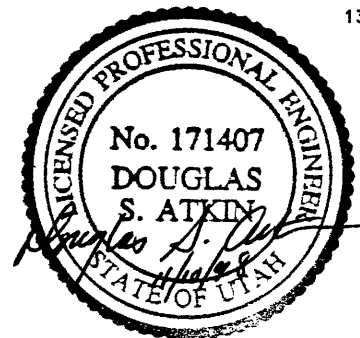
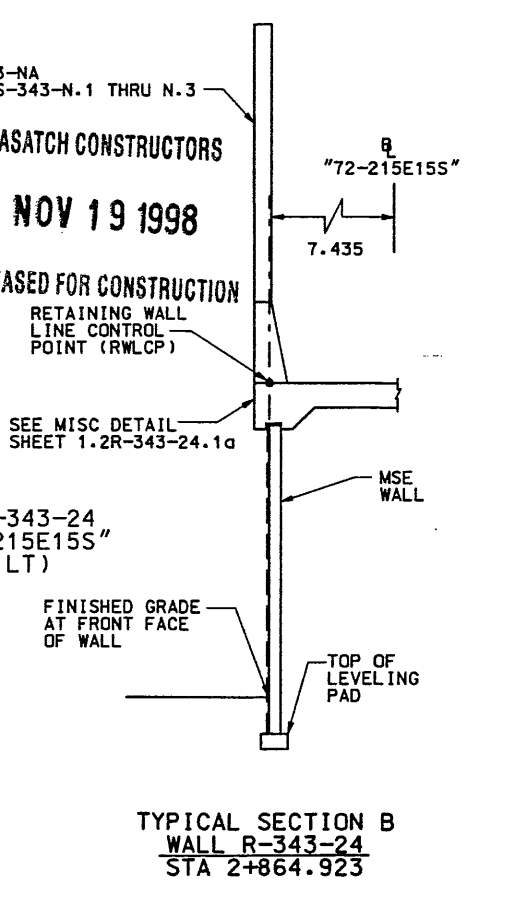
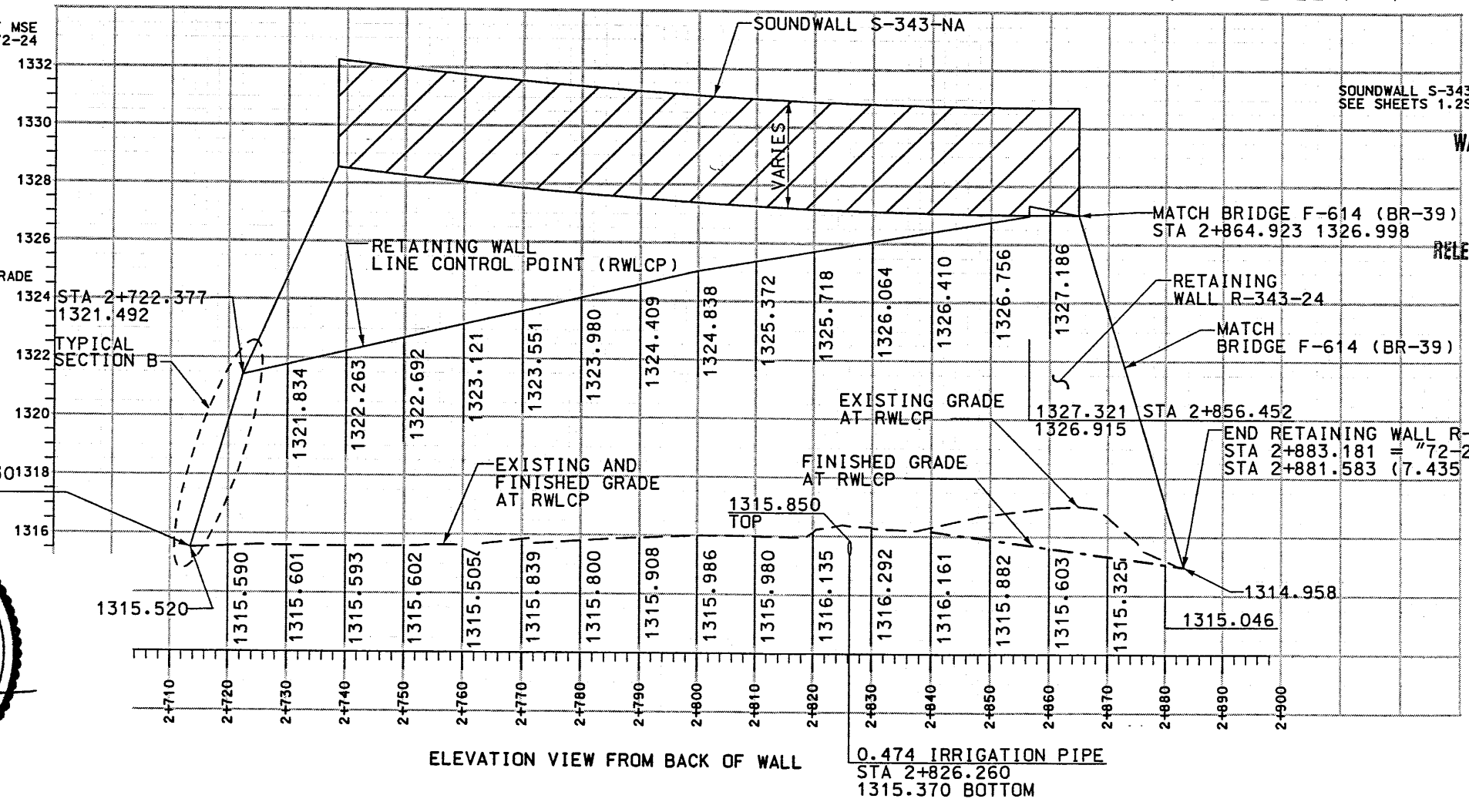
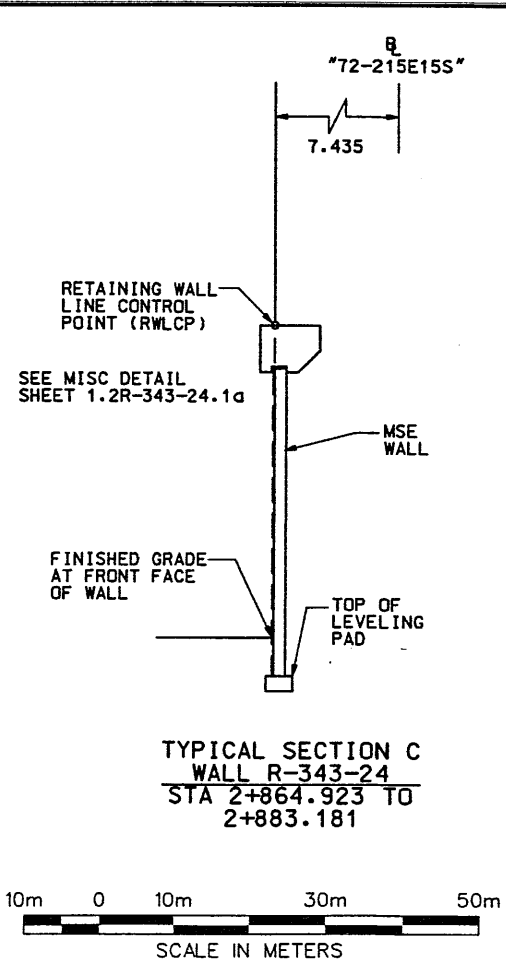
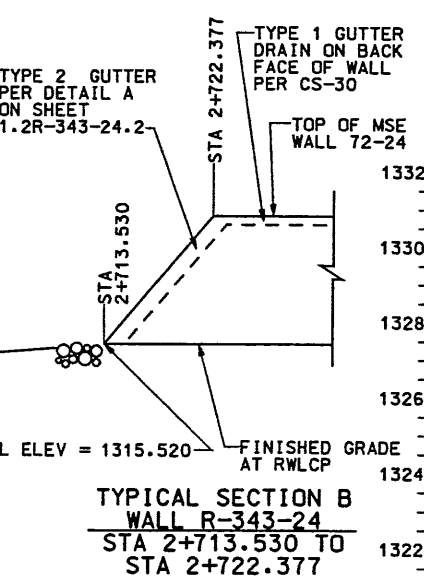
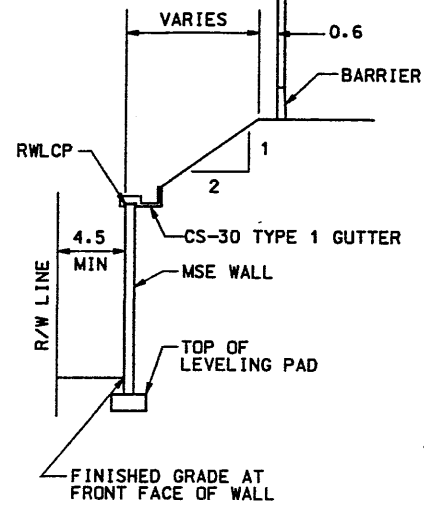
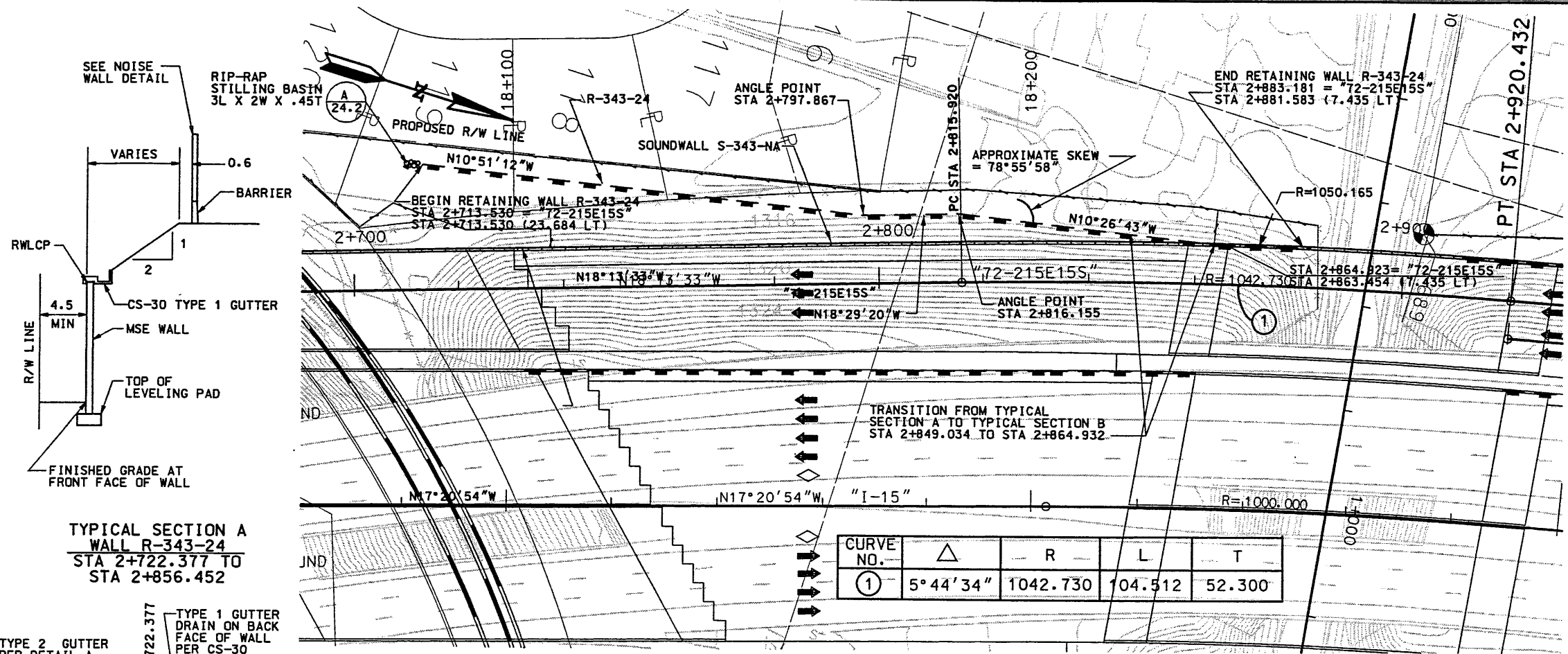
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	1.2R-343-23.6
JOB NO.	239-0007
SHT. NO.	RE-5

WASATCH CONSTRUCTORS
JUL 17 1998
RELEASED FOR CONSTRUCTION

Username: mookkv Date: 10-NOV-1998 Time: 15:52

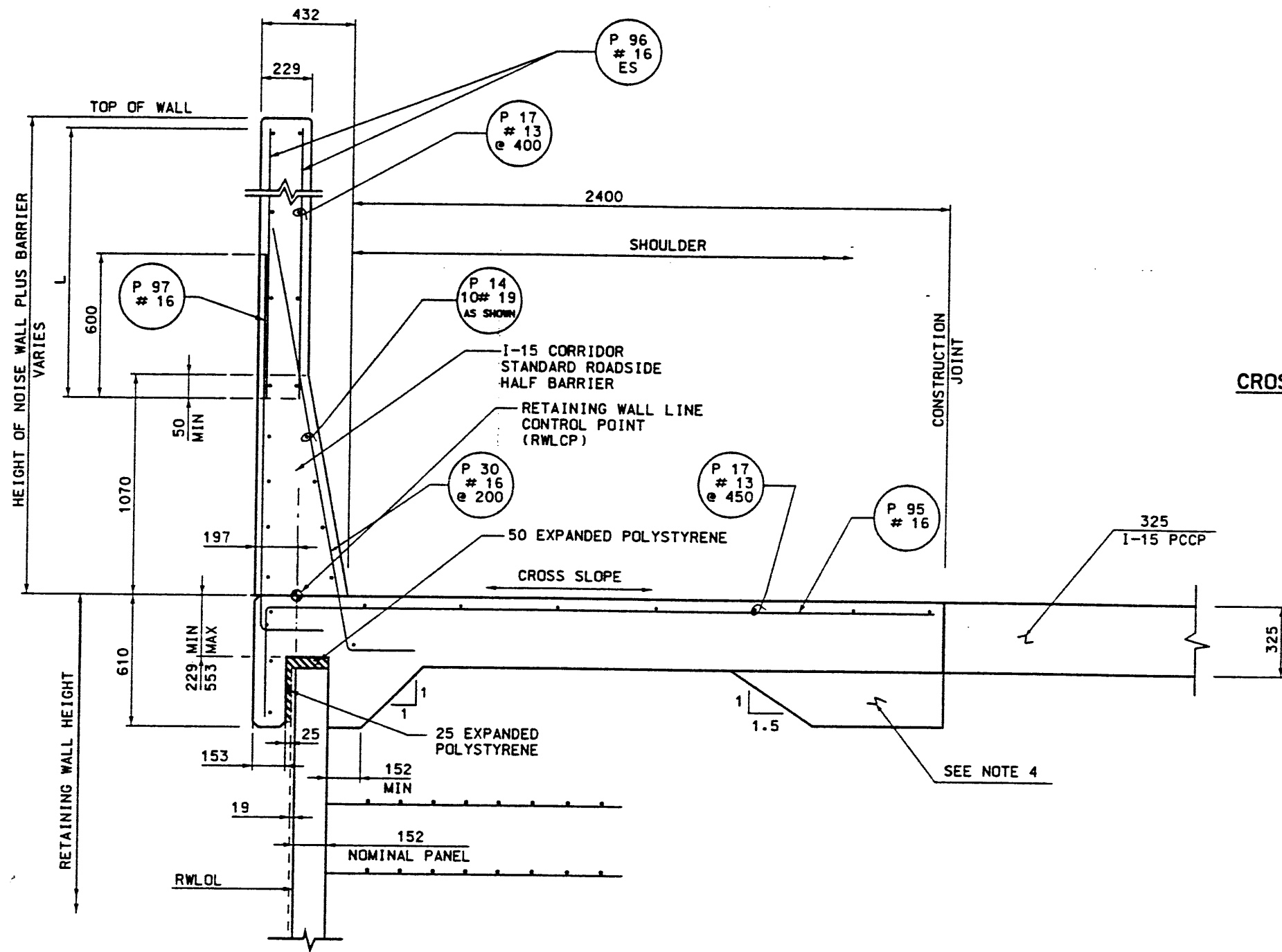
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WASATCH CONSTRUCTORS
NOV 19 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	INITIAL RELEASE	RELEASED FOR GDP / MOMENT SLAB
1	9-9-97		
2	12-31-97		
3	03-24-98		FIELD DESIGN CHANGE 1-0103
4	11-10-98		REFERENCED SOUNDWALL

UTAH DEPARTMENT OF TRANSPORTATION		DESIGNER		CHECK		QUANT.	
URS Greiner		DESIGN	EMR	8/97	CHECK	KJM	8/97
SVERDRUP/DE LEUW		PROJECT DESIGN ENGINEER	DATE	8/97	PROJECT MANAGER	DATE	8/97
I-15 CORRIDOR RECONSTRUCTION		SECTION 1-2		PROJECT NUMBER		#SP-15-7(135)296	
SALT LAKE COUNTY		DWG. NO.		1.2R-343-24.1		SHT. 1 OF 14	
REF.							

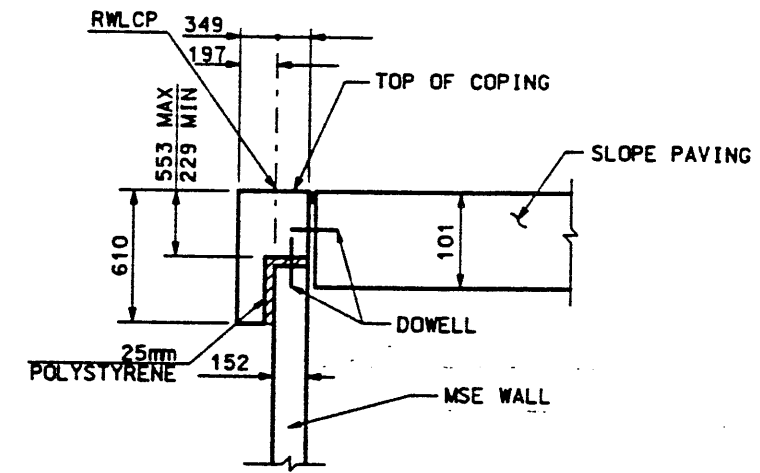


MSE SINGLE STAGE WITH SOUNDWALL AND BARRIER ON MOMENT SLAB

NO SCALE

NOTES:

- 50mm MINIMUM COVER OVER REINFORCING.
- USE 325 PCCP $f'c=27.5 \text{ MPa}$ (4,000 PSI) FOR MOMENT SLAB.
- TOE OF BARRIER/EDGE OF SHOULDER IS 235mm INSIDE RETAINING WALL LAYOUT LINE (RWLOL).
- ADD COUNTERWEIGHT FOR NOISE WALL PLUS BARRIER HEIGHT GREATER THAN 4.3m HIGH.



CROSS SECTION C-C WITH ABUTMENT SLOPE (NON SPUI)
SLOPE PAVING / COPING DETAILS

NO SCALE

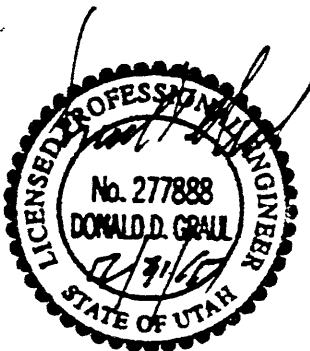
WASATCH CONSTRUCTORS

JAN 02 1998

RELEASED FOR CONSTRUCTION

NOISE WALL/BARRIER REINFORCING STEEL SCHEDULE		
HEIGHT OF NOISE WALL PLUS BARRIER (m)	BAR SIZE AND SPACING	
5	#16 @ 230	
4	#16 @ 300	
3	#16 @ 300	
MARK	LENGTH	SKETCH
P95	3010	
P96	L	
P97	2200	
P98	4310	

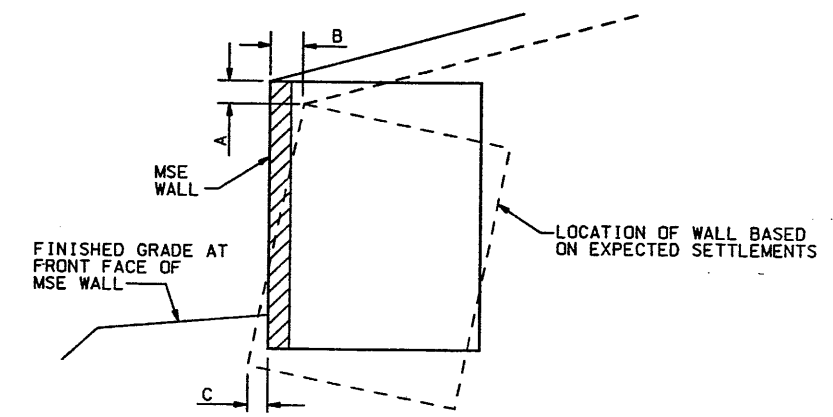
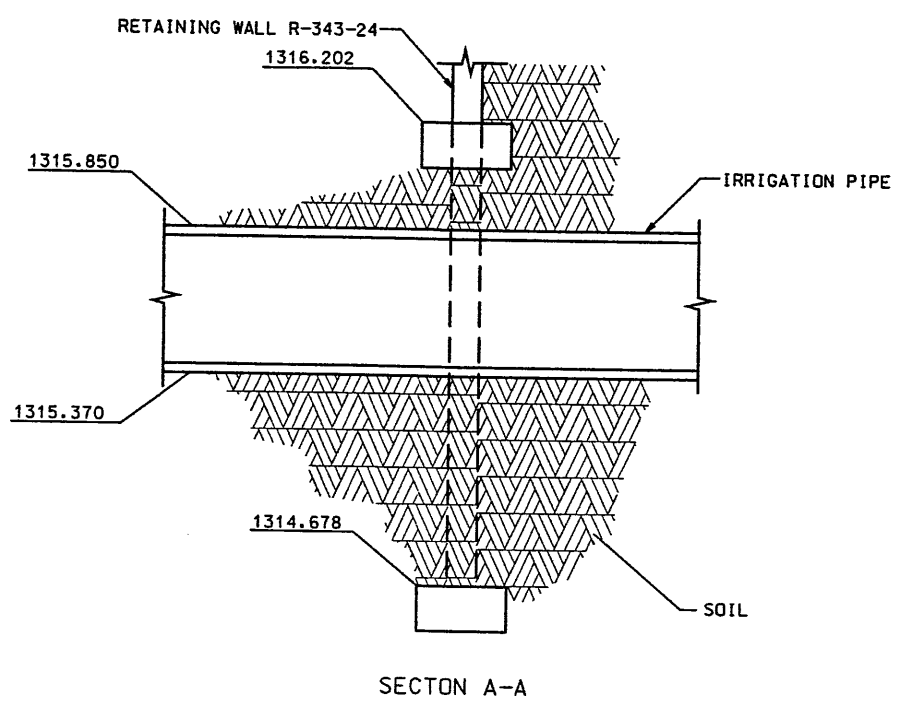
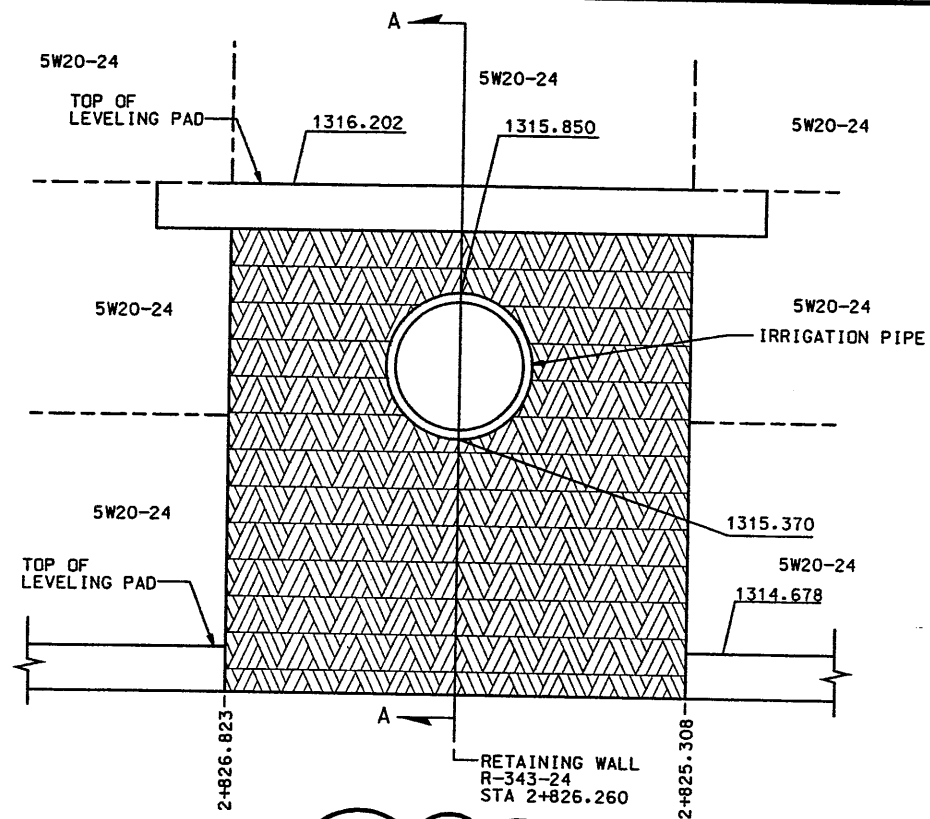
* BASED UPON 1086 MAX FROM BACK OF BARRIER TO OUTSIDE FACE OF COPING.



APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	NO.	DATE
1	12/31/97		
RELEASED FOR CONSTRUCTION			
UTAH DEPARTMENT OF TRANSPORTATION		SVERDRUP/DE LEUW	
DESIGN	MC	CHECK	JE
DATE	12/31/97	CHECK	JE
DESIGN	RS	CHECK	JE
DATE	12/31/97	CHECK	JE
DESIGN	DR	CHECK	JE
DATE	12/31/97	CHECK	JE
DESIGN	DR	CHECK	JE
DATE	12/31/97	CHECK	JE
DESIGN	DR	CHECK	JE
DATE	12/31/97	CHECK	JE
I-15 CORRIDOR RECONSTRUCTION		PROJECT NUMBER	
MISC DETAILS		#SP-15-7(135)206	
RET. WALL R-343-24		SECTION 1.2	
SALT LAKE COUNTY		COUNTY	
1.2R-343-24.1a		DWC. NO.	
2		14	
SHT. 2		OF 14	

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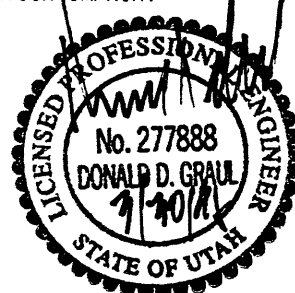
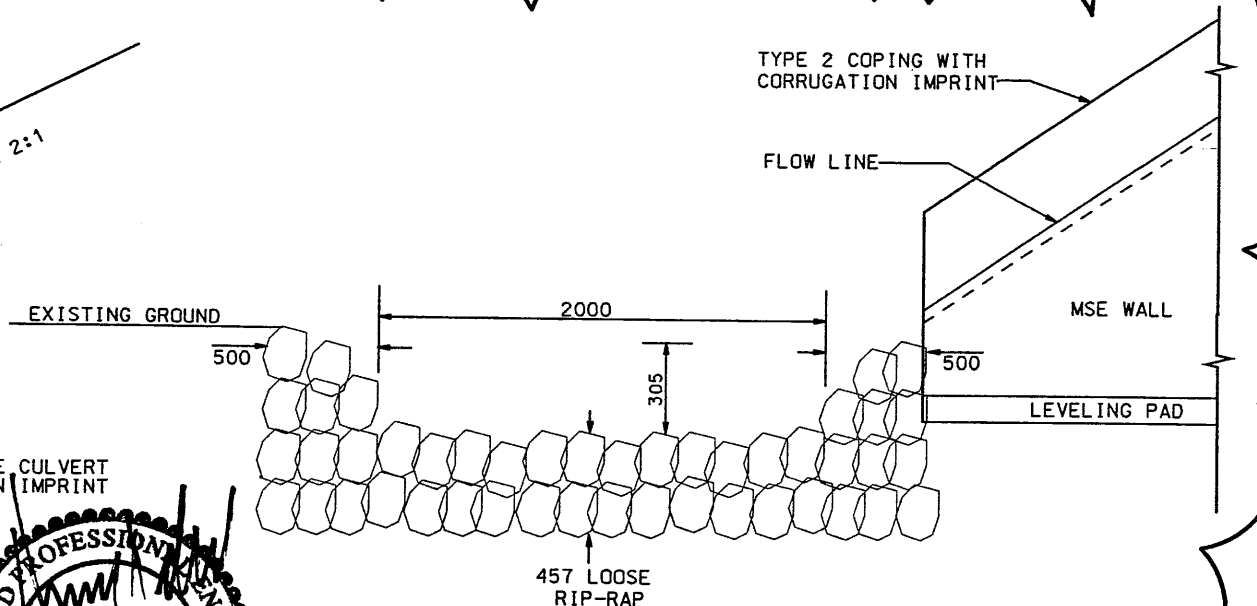
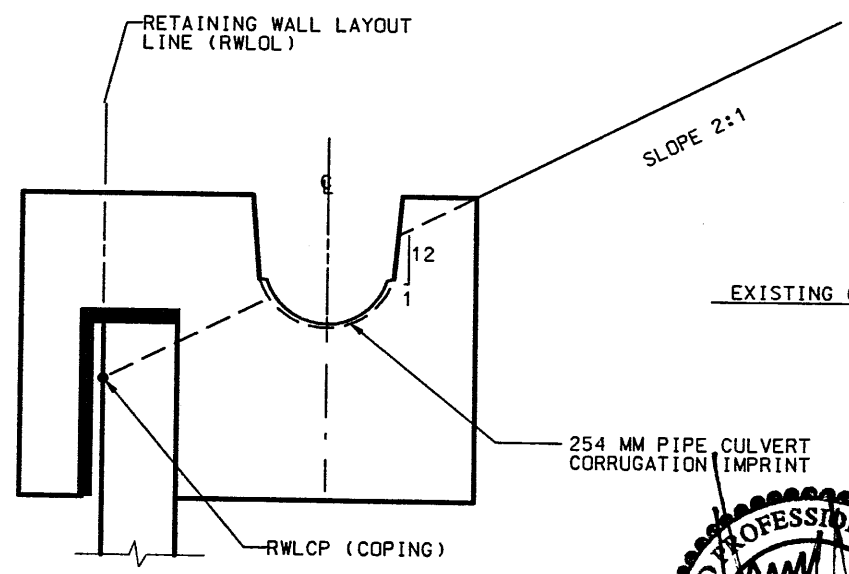
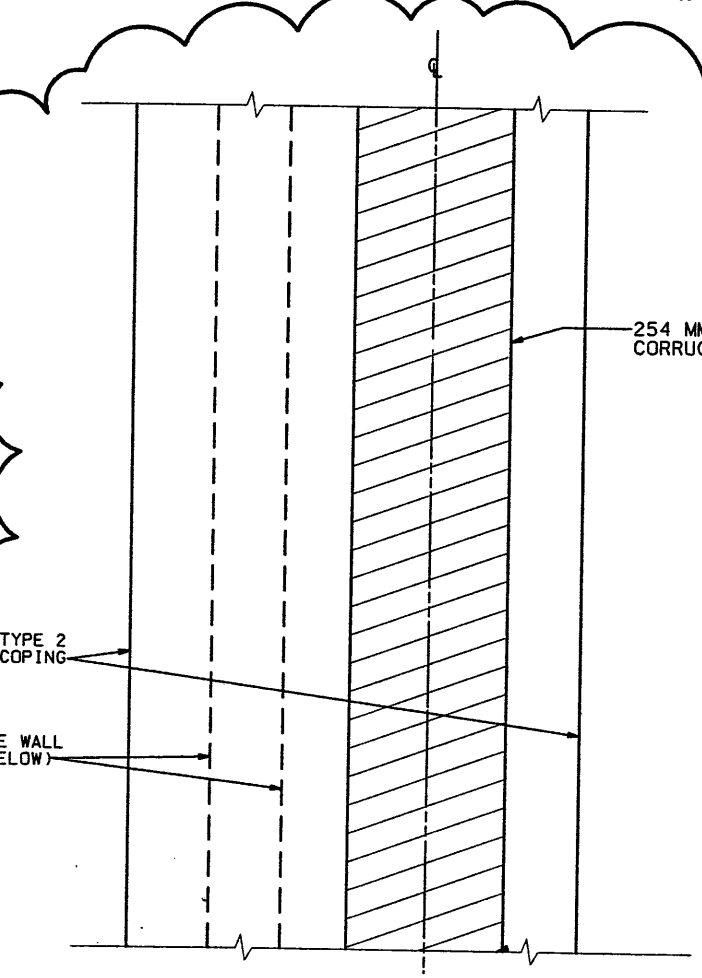
WASATCH CONSTRUCTORS
APR - 9 1998
RELEASED FOR CONSTRUCTION



ESTIMATED SETTLEMENT TABLE

STATION LIMITS	REFERENCE STATION	WALL SETTLEMENT	TOP OF WALL ROTATION mm	LATERAL DISPLACEMENT AT BOTTOM OF WALL mm
2+713.530 TO 2+883.181	2+865***	25 TO 50	19	**

** LATERAL DISPLACEMENT AT BOTTOM OF WALL SHOULD BE LESS THAN ONE HALF OF THE SETTLEMENT AT FRONT FACE OF WALL. TERRACON RECOMMENDS CONSTRUCTING THE WALL TOE AT THE DESIGN SECTION.
 *** THESE VALUES CALCULATED AT REFERENCED STATION; ROTATIONS AT OTHER STATIONS CAN BE ESTIMATED IN PROPORTION TO WALL HEIGHT.



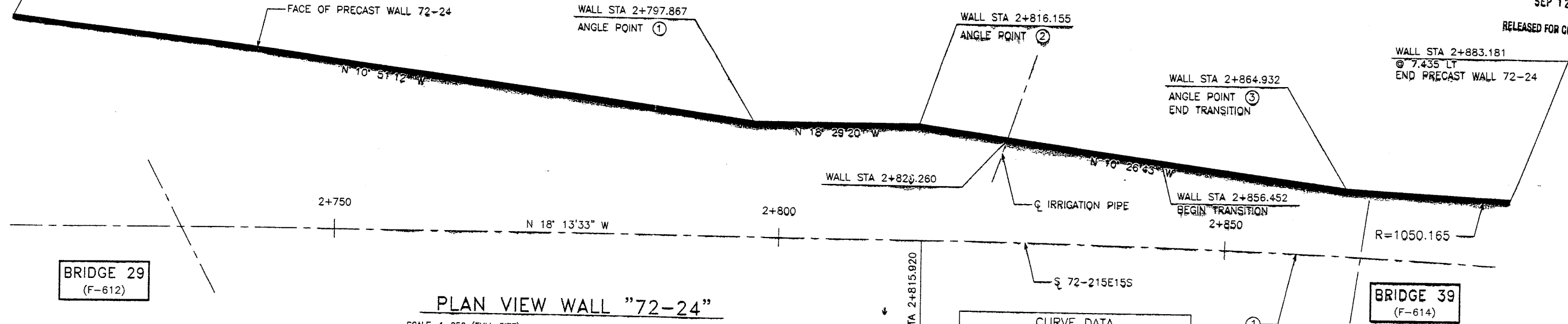
UTAH DEPARTMENT OF TRANSPORTATION
 URS Greiner
 SVERDRUP/DE LEUW

APPROVED FOR CONSTRUCTION	NO.	DATE	DESCRIPTION
APPROVED	1212402	9-9-97	INITIAL RELEASE
DESIGNED		03-24-98	FIELD DESIGN CHANGE 1-0103
DRAWN			
CHECKED			
PROJECT MANAGER			

I-15 CORRIDOR RECONSTRUCTION
 MSC DETAILS WALL R-343-24
 SECTION 1.3
 PROJECT NUMBER #SP-15-7(135)296

SALT LAKE COUNTY
 DWG. NO. 1.2R-343-24.2
 SHT. 3 OF 14

WALL STA 2+713.530 =
72-215E15S
STA 2+713.530 @ 23.684 LT
BEGIN PRECAST WALL 72-24



PLAN VIEW WALL "72-24"
SCALE: 1=250 (FULL SIZE)
SCALE: 1=500 (HALF SIZE)

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	Δ
①	1042.730	104.512	52.300	5°44'34"

All Dimensions Are in Meters Unless Noted Otherwise

RETAINED EARTH INDEX	
RE-1	PLAN PRECAST FACE WALL 72-24, NOTES & DESIGN CRITERIA
RE-2	TYPICAL DETAILS
RE-3	TYPICAL DETAILS
RE-4	TYPICAL CROSS SECTIONS
RE-5	ELEVATION PRECAST WALL "72-24"
RE-6	ELEVATION PRECAST WALL "72-24"
RE-7	ELEVATION PRECAST WALL "72-24"
RE-8	TYPICAL PANEL REINFORCEMENT
RE-9	"G" PANEL REINFORCEMENT
RE-10	SPECIAL PANEL DETAILS
RE-11	SPECIAL PANEL DETAILS

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.	
TRAFFIC SURCHARGE = 250 PSF	
SEISMIC ACCELERATION COFF. = 0.12g (TYP)	
SEISMIC ACCELERATION COFF. = 0.32g (AT BRIDGE ABUTMENTS)	
DESIGN CRITERIA	
SAFETY FACTOR (OVERTURNING) = 2.0	
SAFETY FACTOR (SLIDING) = 1.5	
SAFETY FACTOR (PULLOUT) = 1.5	
DESIGN LIFE = 75 YEARS	

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 IS A "B2" 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: 4W11-12 MESH HAS FOUR (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 12" CENTERS.
EXAMPLE: 4W20-12 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 12" CENTERS.
EXAMPLE: 4W20-24 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 24" 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: 5W11-24 MESH HAS FIVE (5) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 24" CENTERS.
EXAMPLE: 5W20-24 MESH HAS FIVE (5) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 24" CENTERS.
EXAMPLE: 6W11-6 MESH HAS SIX (6) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 6" CENTERS.
EXAMPLE: 6W11-24 MESH HAS SIX (6) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 24" CENTERS.
EXAMPLE: 6W20-24 MESH HAS SIX (6) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 24" CENTERS.

IF NO MESH IS SHOWN, 4W20-24 MESH SHALL BE USED.
- 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 SHEET RE-3 FOR DETAIL.

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
①	9/9/97	RELEASED FOR CONSTRUCTION R-343-24

WASATCH CONSTRUCTORS
SEP 12 1997
RELEASED FOR CONSTRUCTION

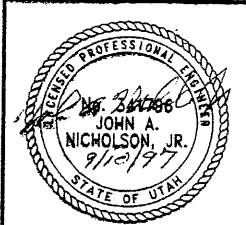
DES.	MM	DD	MM	NO.	DATE	BY	CHK
09-03-97		03-03-97	09-03-97				

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

RETAINED EARTH™ WALLS
PLAN VIEW PRECAST WALL "72-24"
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.
1.2R-343-24.3
JOB NO.
239-0007
SHT. NO.
RE-1

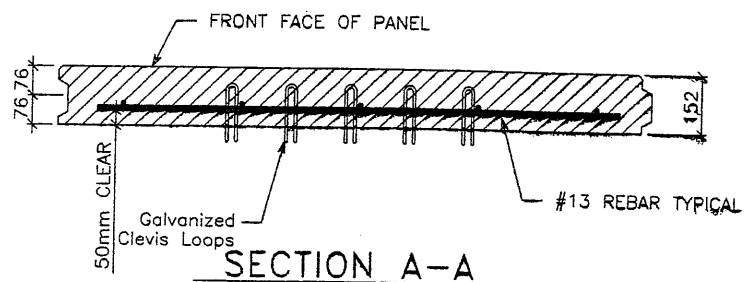


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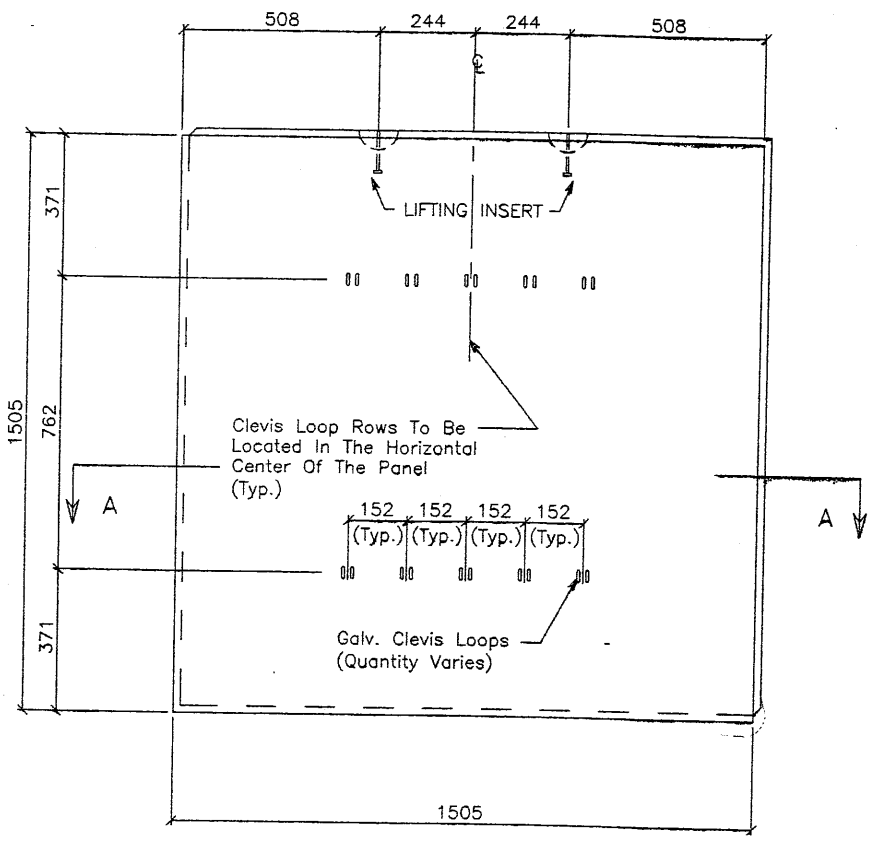
FINAL PLOT 03-97 E:\PROJECT\239-0007\RIES\72-24\RE-1

E:\PROJECT\239-0007\RIES\72-24\RE-2

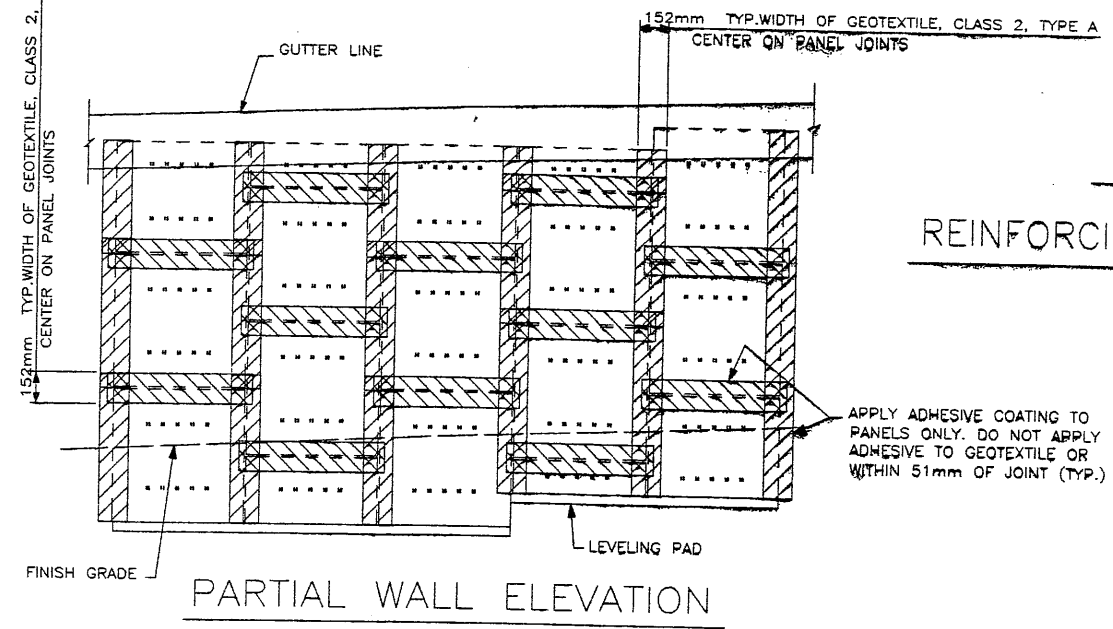
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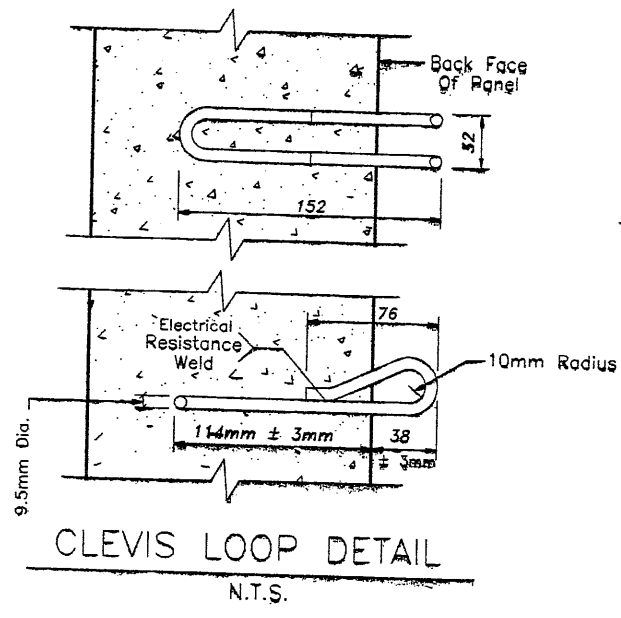
SECTION A-A



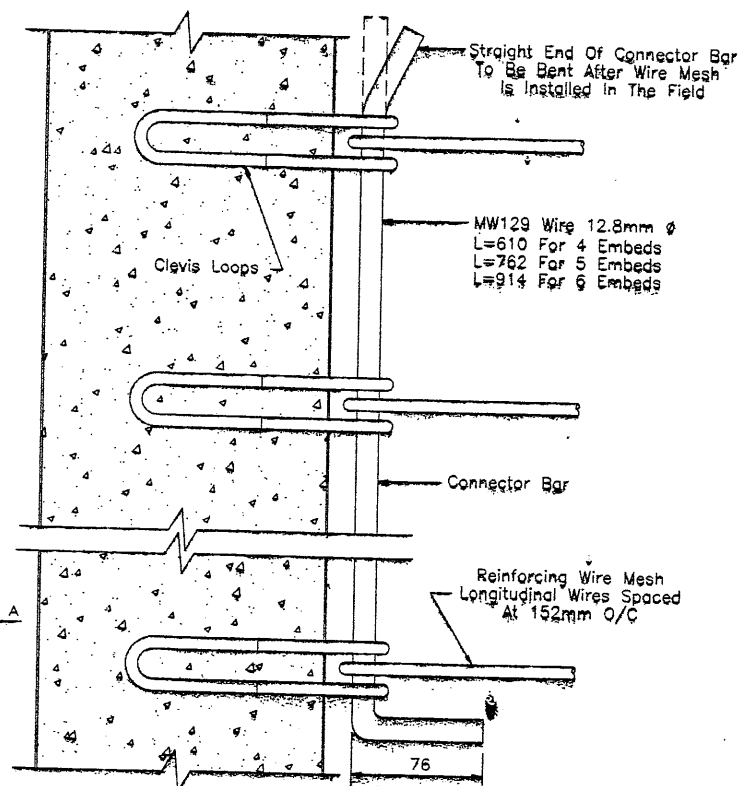
STANDARD "5A" PANEL
Back Face View



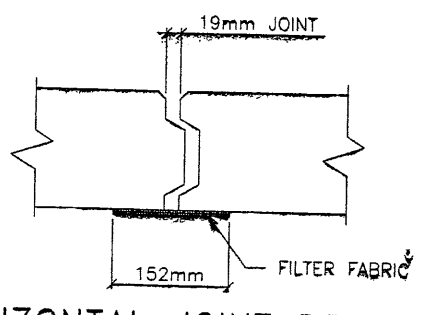
PARTIAL WALL ELEVATION



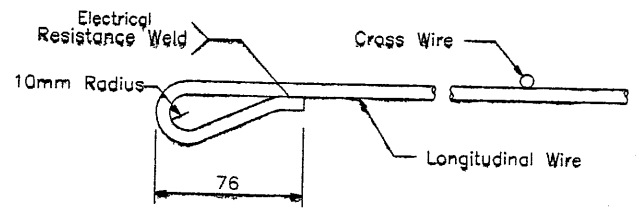
CLEVIS LOOP DETAIL
N.T.S.



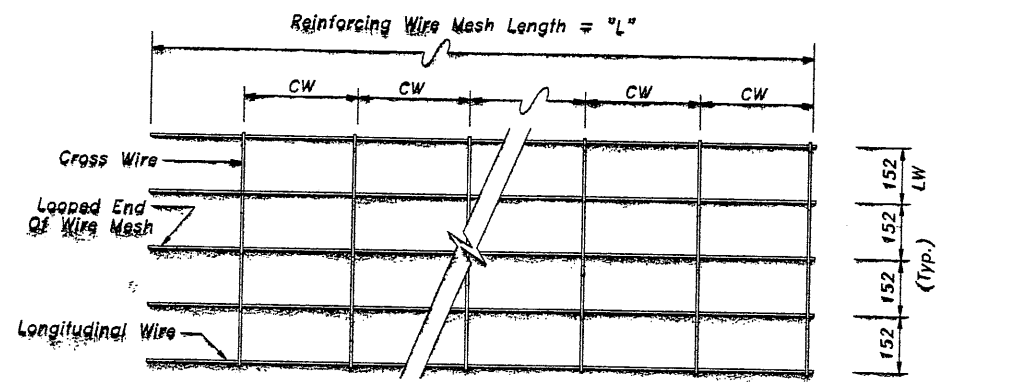
REINFORCING MESH CONNECTION DETAIL
N.T.S.



HORIZONTAL JOINT DETAIL
N.T.S.

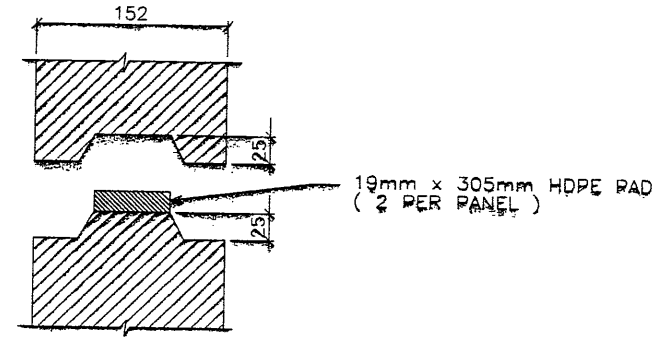


WIRE MESH LOOP DETAIL
N.T.S.



WIRE MESH DESIGNATION: 5W11 + W11 x 1.0 (5W11-12)
 No. Of Longitudinal Wires
 Size Of Longitudinal Wires (LS)
 Size Of Cross Wires (CS)
 Spacing (Ft.) Of Cross Wires (CW)
 SHEET WIDTH
 SHEET LENGTH
 NOTE: FOR EXAMPLE ABOVE,
 EQUIVALENT WIRE MESH DESIGNATION = 6 X 12-W11XW11-24" X "L"
 (LW) (CW) (LS) (CS)

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.



PANEL JOINT DETAIL
N.T.S.

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APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	9/9/97	RELEASED FOR CONSTRUCTION R-343-24

WASATCH CONSTRUCTORS
SEP 12 1997
RELEASED FOR CONSTRUCTION

DES.	MM	DRN.	DDO	CHK.	MM	NO.	DATE	REVISION	BY	CHK
09-03-97		09-03-97		09-03-97						

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

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RETAINED EARTH™ WALLS
PRECAST WALL "72-24"
TYPICAL DETAILS
UTAH 1-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.



DWG. NO.	1.2R-343-24.4
JOB NO.	239-0007/14
SHT. NO.	RE-2

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03-97

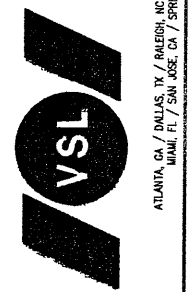
FINAL PLOT

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9/9/97	RELEASED FOR CONSTRUCTION R-343-24

WASATCH CONSTRUCTORS
 SEP 12 1997
 RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

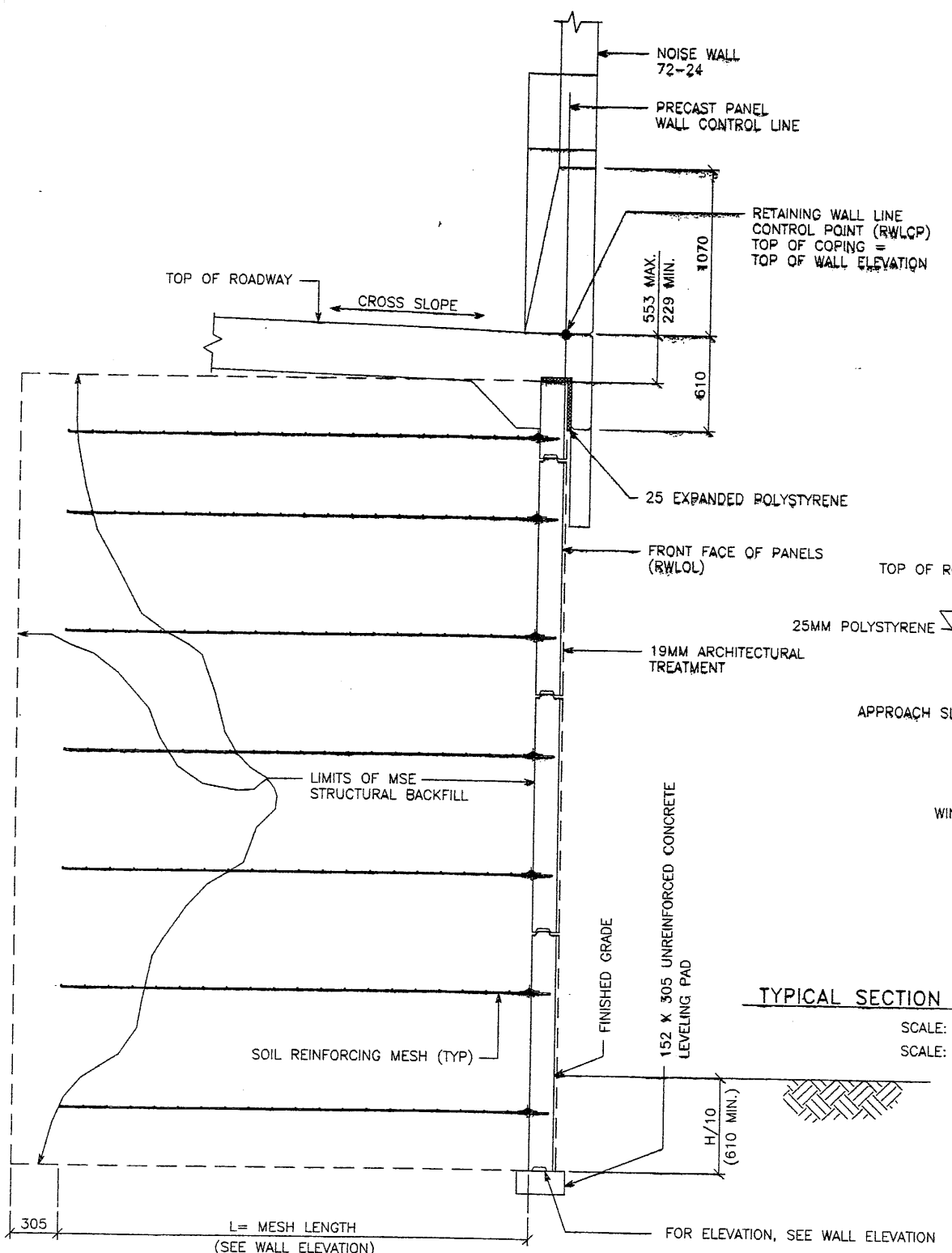
VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-6272
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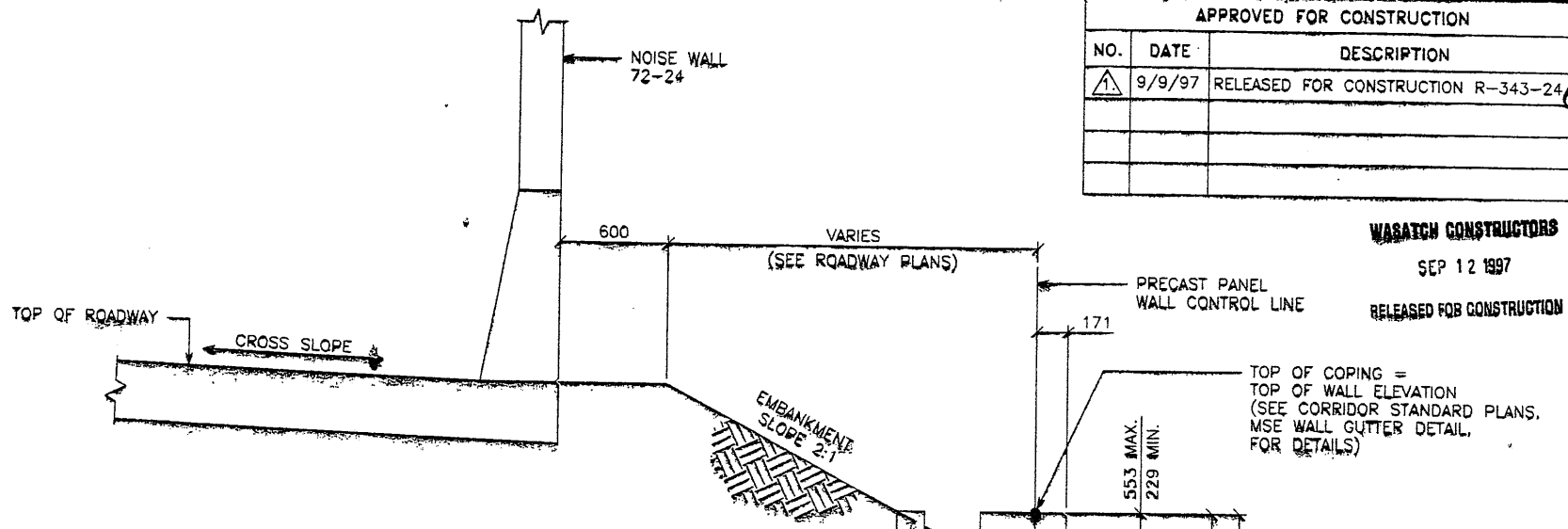
RETAINED EARTH™ WALLS
 PRECAST WALL "72-24"
 TYPICAL CROSS SECTIONS
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO. 1.2R-343-24.6
 JOB NO. 239-0007
 SHEET NO. RE-4



TYPICAL SECTION - STA 2+864.923 TO 2+883.181
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

TYPICAL CROSS SECTION - STA 2+864.923 (MSE SINGLE STAGE WITH MOMENT SLAB)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

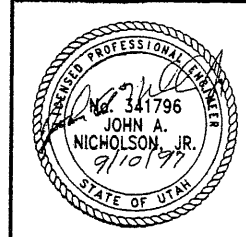


TYPICAL CROSS SECTION - STA 2+713.530 TO 2+843.794 (MSE SINGLE STAGE WITH GUTTER DETAIL)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

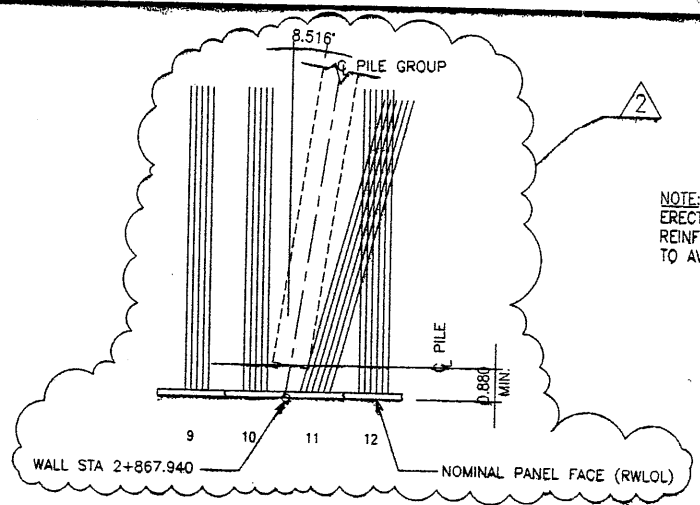
METRIC

NOTE: FOR WALL STA 2+843.794 TO 2+864.272 SEE CORRIDOR STANDARD PLANS, FOR DETAILS OF TRANSITION FROM MSE SINGLE STAGE WALL WITH GUTTER TO MSE SINGLE STAGE WALL WITH MOMENT SLAB.

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13-97
FINAL PLOT



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
△	9/9/97	RELEASED FOR CONSTRUCTION R-343-24
△	11-13-97	WALL/BRG. INTERFACE REVISIONS

END WALL STA 2+883.181 = § "72-215E15S"
STA 2+881.583 (7.435 LT)
NOMINAL PANEL FACE (RWLOL)

STA 2+883.181
EL. 1314.958

WALL STA 2+864.932 = § "72-215E15S"
STA 2+863.454 (7.435 LT)
NOMINAL PANEL FACE (RWLOL)

STA 2+867.940
EL. 1325.014

STA 2+864.932
EL. 1326.998

STA 2+860.000
EL. 1327.186

STA 2+856.452
EL. 1327.321

STA 2+850.000
EL. 1327.162

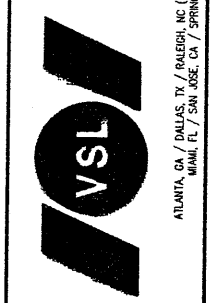
STA 2+840.000
EL. 1326.816

STA 2+830.000
EL. 1326.470

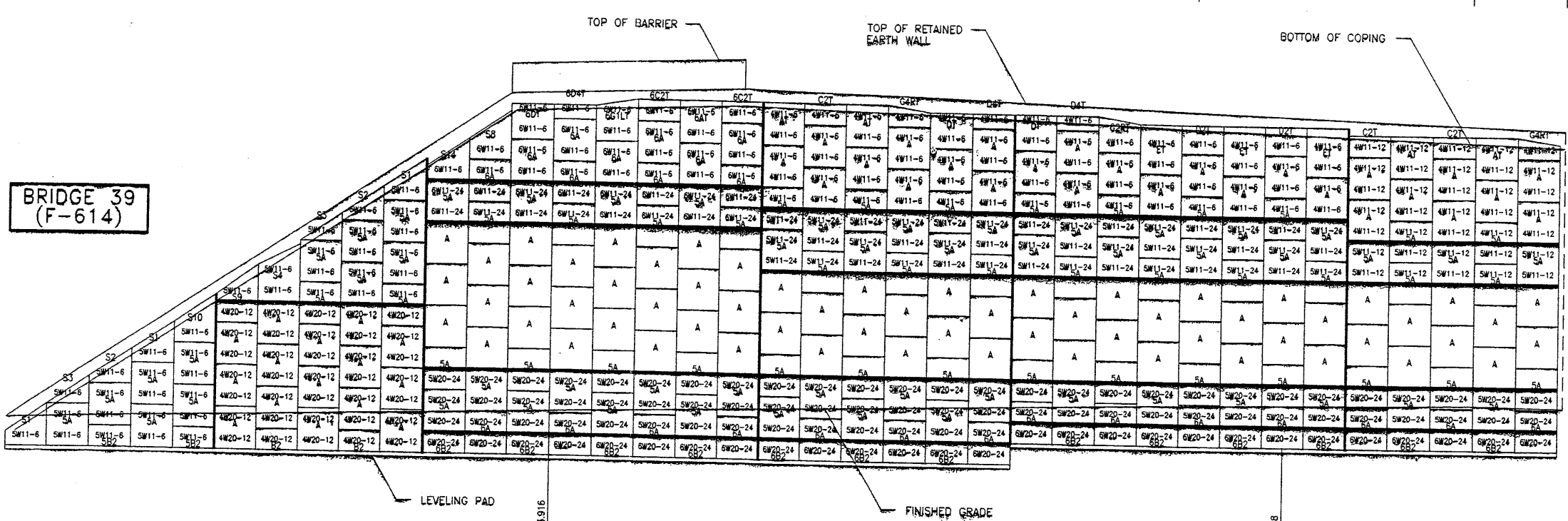
STA 2+826.631
EL. 1326.353

WARATCH CONSTRUCTORS
NOV 25 1997
RELEASED FOR CONSTRUCTION

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



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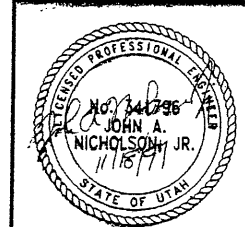
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MESH DEPTH	4.267		7.925		10.363		9.754		9.144		8.534																										
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	138 KPa		280 KPa		368 KPa		382 KPa		364 KPa		368 KPa																										
PIN SPACING	36.576		36.576		36.576		36.576		36.576		36.576		36.576		36.576		36.576		36.576		36.576		36.576		36.576		36.576		36.576		36.576		36.576		36.576		

ELEVATION PRECAST WALL 72-24
(FRONT FACE SHOWN)

(TOTAL SURFACE AREA OF PANELS = 1,560.43 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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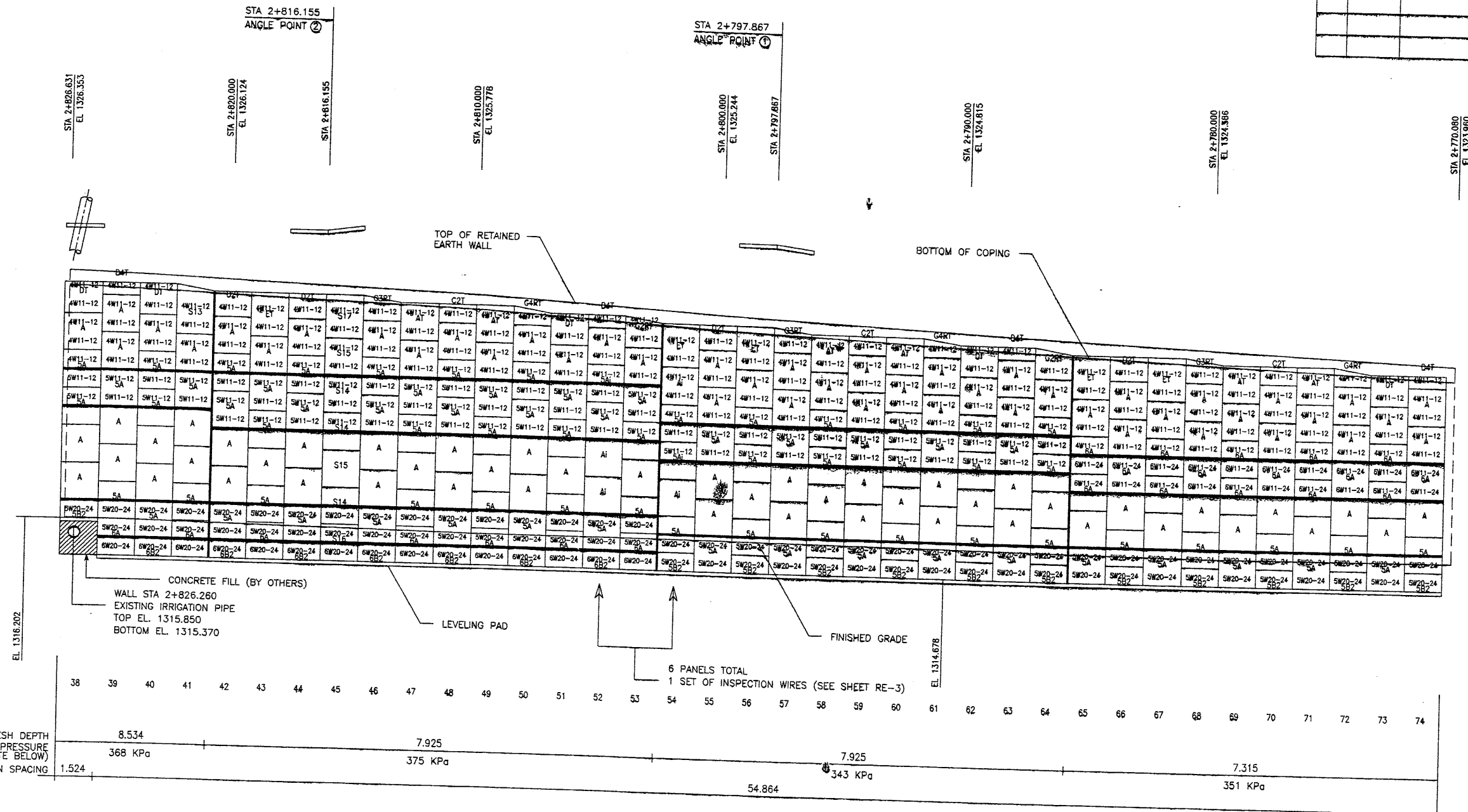


SCALE:	1:2R-343-24.7
JOB NO.:	239-0007/8/14
REVISION:	RE-5

RETAINED EARTH™ WALLS
PRECAST WALL "72-24"
I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

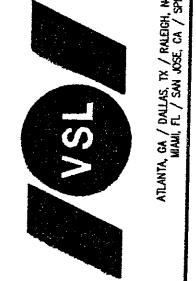
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09-02-97	09-02-97	09-02-97	09-02-97				
RETAINED EARTH™							

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9/9/97	RELEASED FOR CONSTRUCTION R-343-24



WARATCH CONSTRUCTORS
 SEP 12 1997
 RELEASED FOR CONSTRUCTION

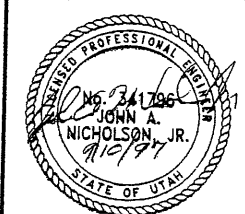
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RETAINED EARTH™ WALLS
PRECAST WALL "72-24"
 I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	1.2R-343-24.8
JOB NO.	239-0007
SHT. NO.	RE-6



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.

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

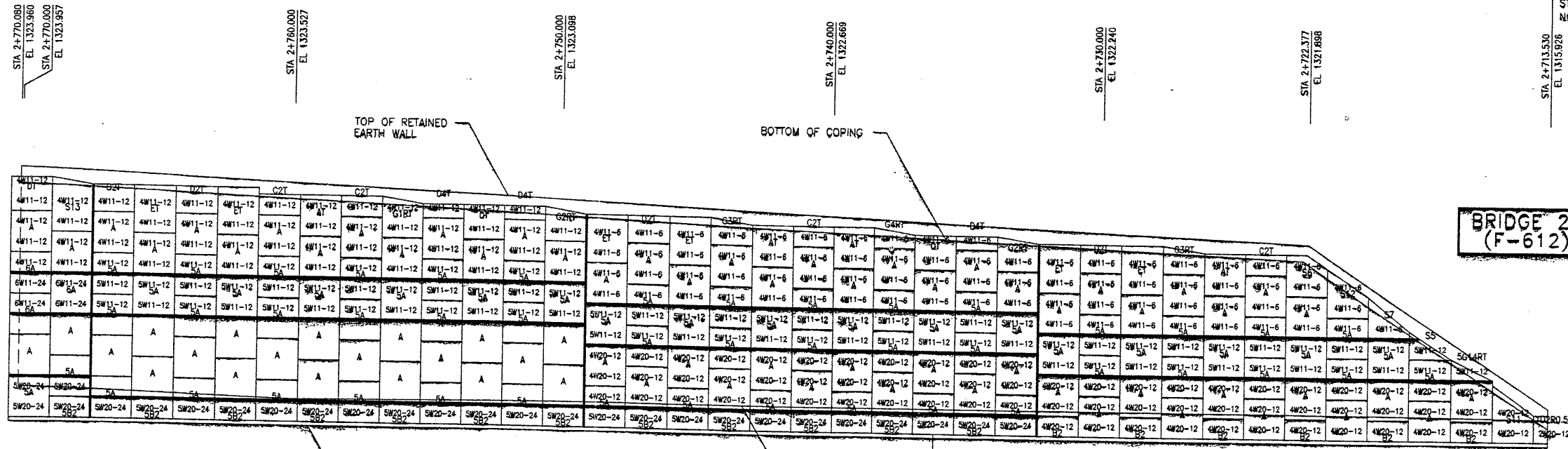
METRIC

ELEVATION PRECAST WALL 72-24
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9/9/97	RELEASED FOR CONSTRUCTION R-343-24

BEGIN WALL STA 2+713.530 =
 S 72-215E15S
 STA 2+713.530 (23.684 LT)
 NOMINAL PANEL FACE (RWLOL)

WASATCH CONSTRUCTORS
 SEP 12 1997
 RELEASED FOR CONSTRUCTION



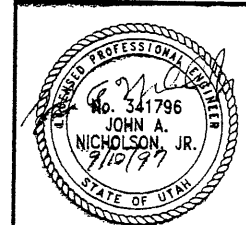
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(F-612)

75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112
7.315					6.706										6.096					5.486																	
351 KPa					324 KPa										291 KPa					268 KPa																	
					56.908																																

ELEVATION PRECAST WALL 72-24
 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.

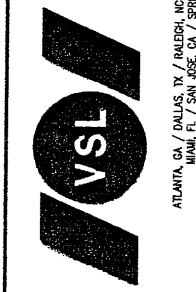
METRIC



CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY.
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 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
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 Raleigh, NC 27612
 Telephone: (919) 781-6072
 Fax: (919) 781-4999



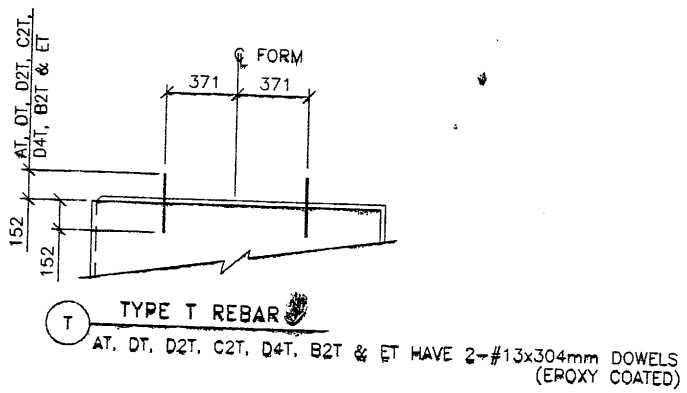
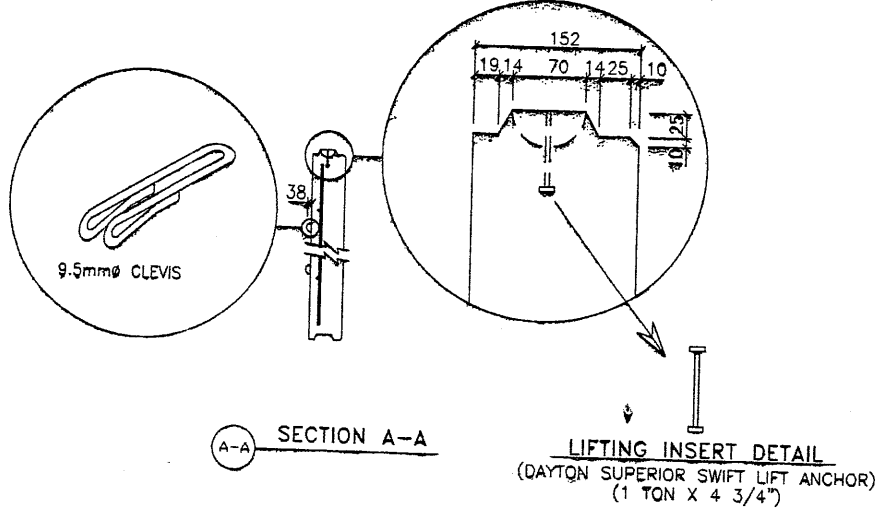
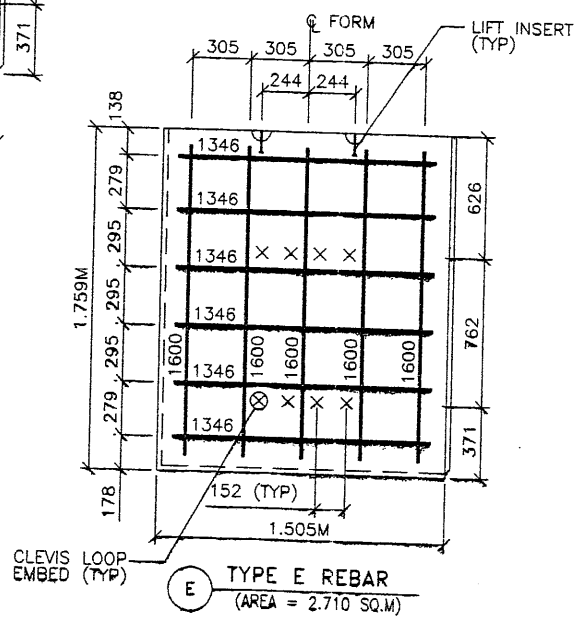
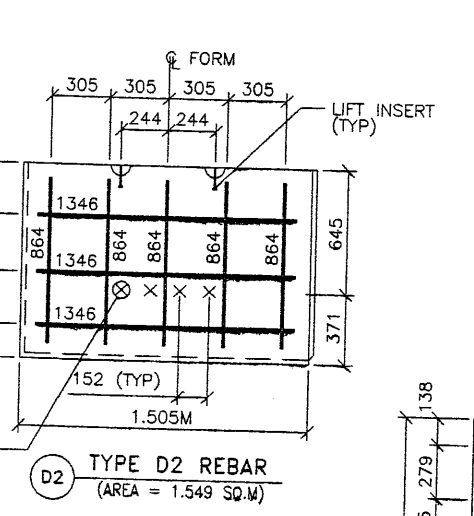
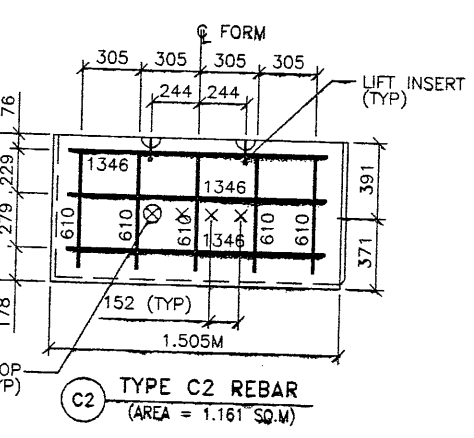
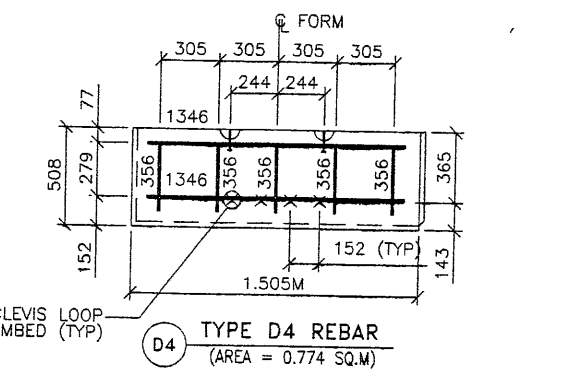
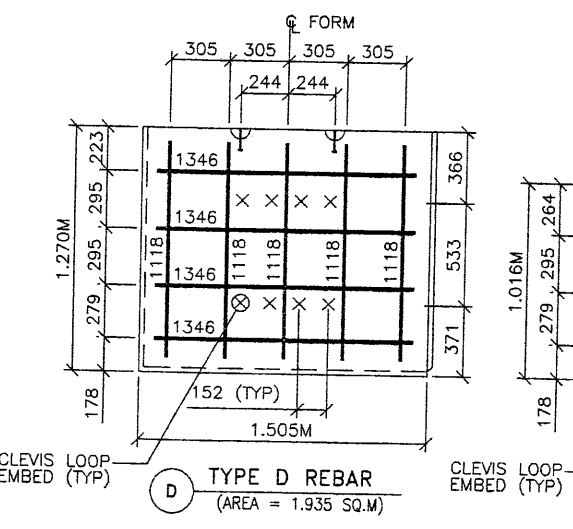
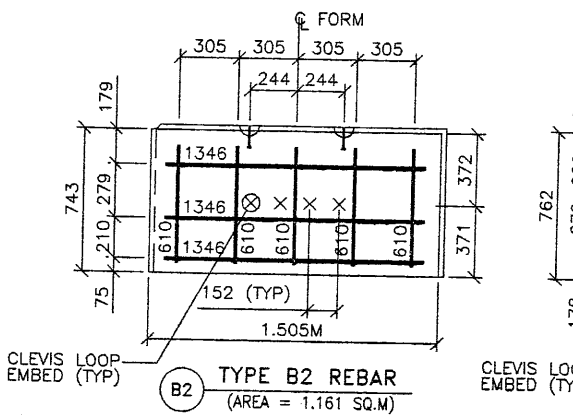
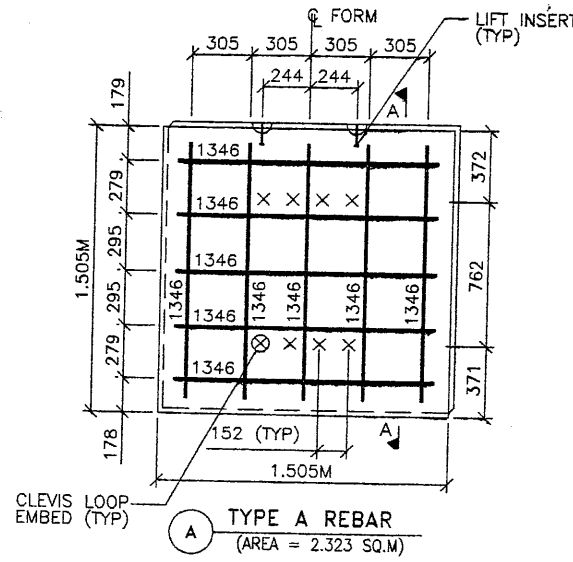
RETAINED EARTH™ WALLS
 PRECAST WALL "72-24"
 I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	1.2R-343-24.9
JOB NO.	239-0007
SHT. NO.	RE-7

H:\RE_EARTH\PROJECT\239-0007\REBAR\BAR

03-97

FINAL PLO



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9/9/97	RELEASED FOR CONSTRUCTION R-343-24

- 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.
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 - 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.

WASATCH CONSTRUCTORS
SEP 12 1997
RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

VSL CORPORATION
8940 Plaza Place, Suite 200
Raleigh, NC 27617
Telephone: (919) 781-6272
Fax: (919) 781-1889

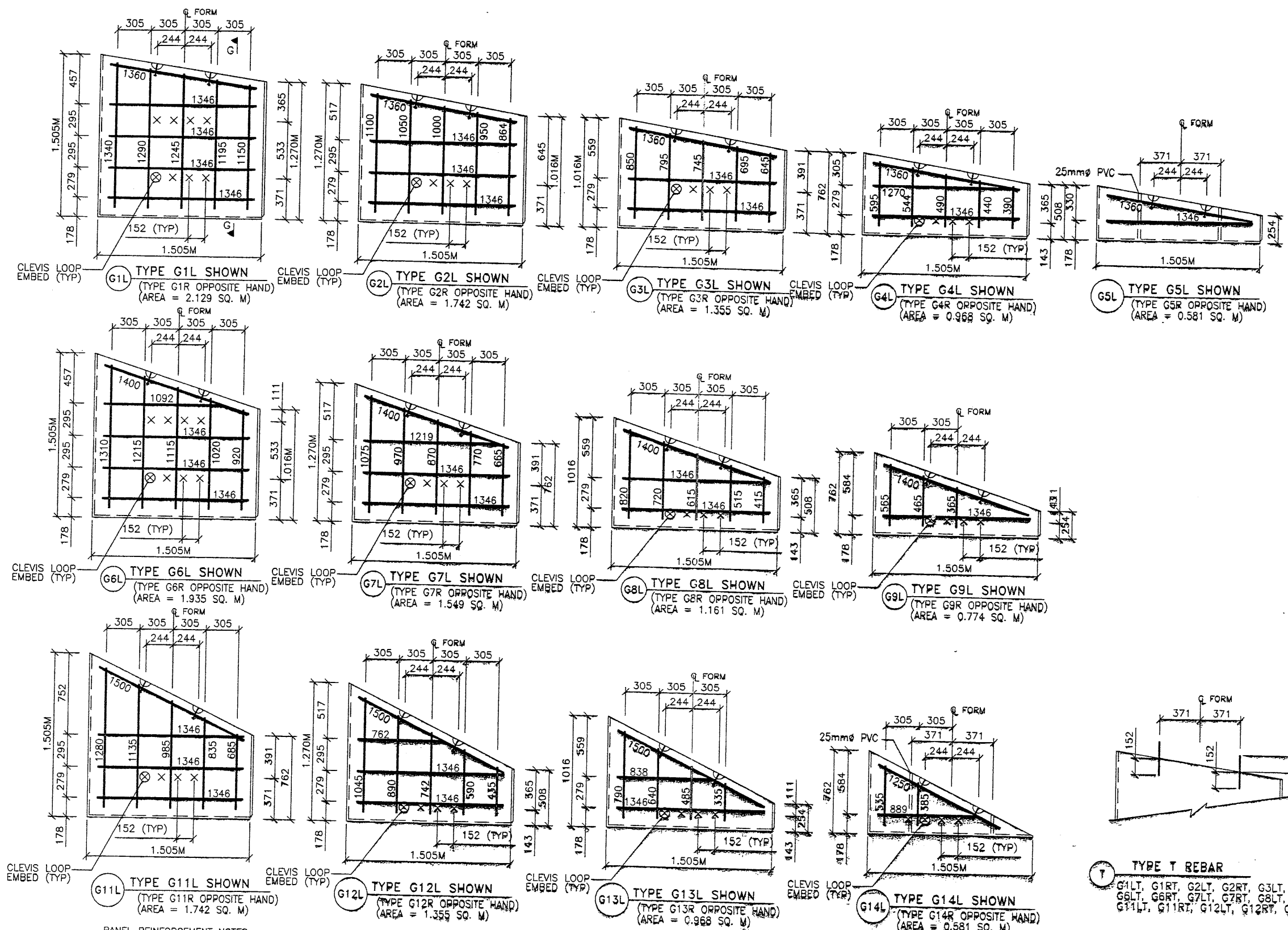
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RETAINED EARTH™ WALLS
PRECAST WALL "72-24"
PANEL REINFORCEMENT 1.524M x 1.524M
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.



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DWG. NO. 1.2R-343-24.10
JOB NO. 239-0007
SHT. NO. RE-8



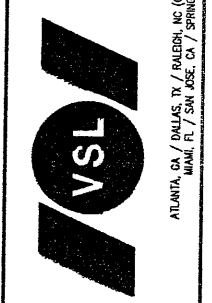
- PANEL REINFORCEMENT NOTES:**
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APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
9/9/97		RELEASED FOR CONSTRUCTION R-343-24

WASATCH CONSTRUCTORS
SEP 12 1997
RELEASED FOR CONSTRUCTION

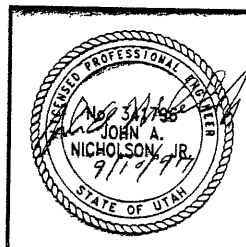
DES.	MM	DDO	MM	NO.	DATE	REVISION	CHK
09-03-97							
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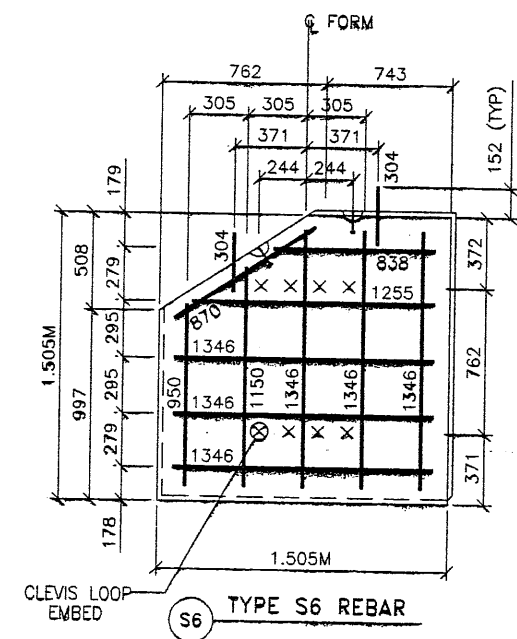
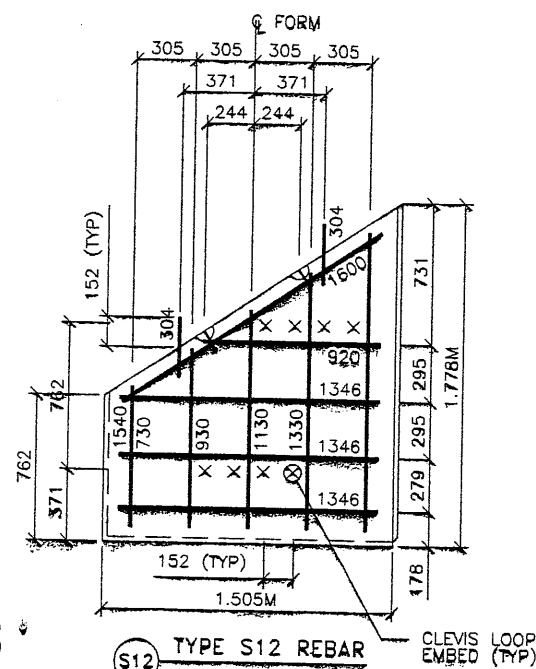
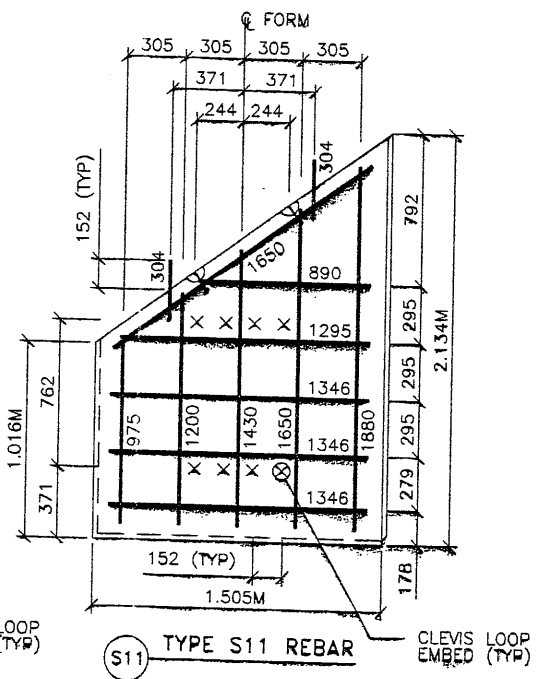
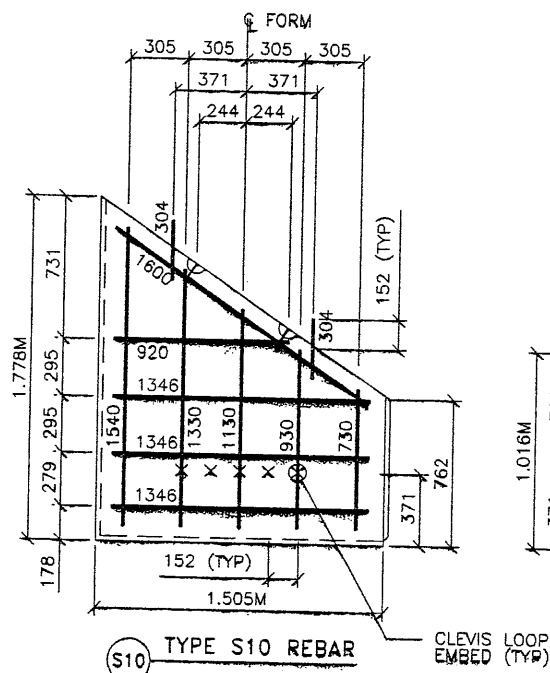
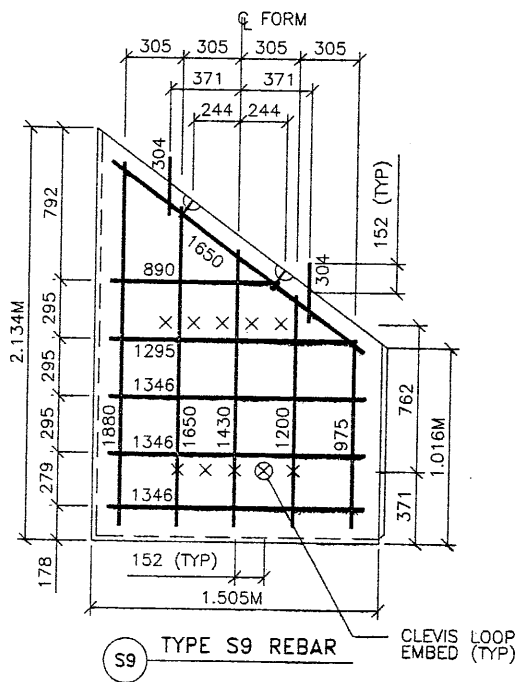
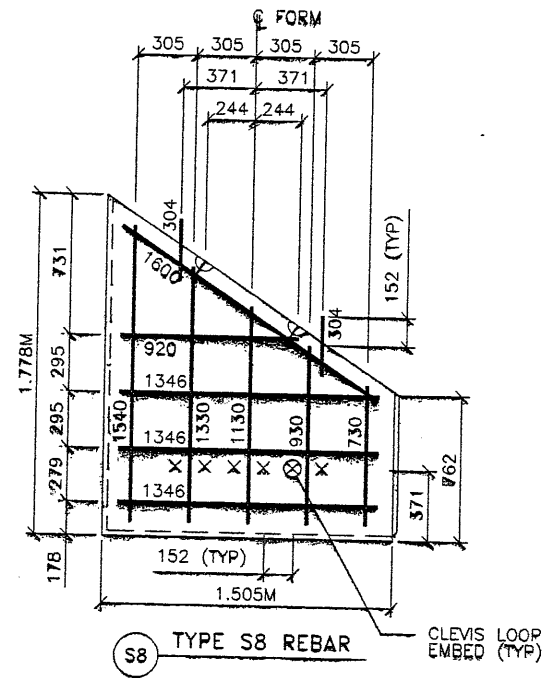
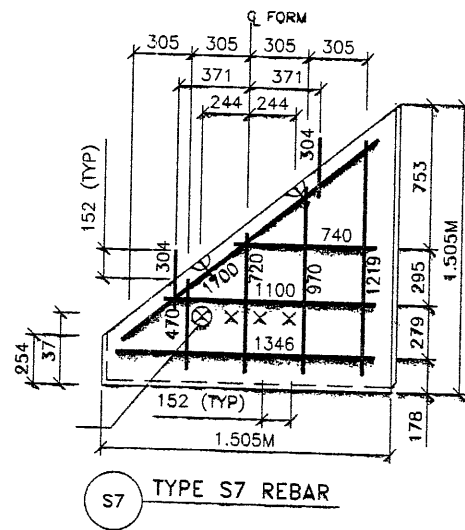
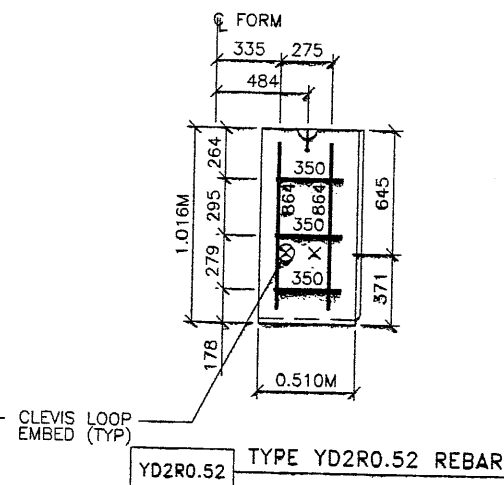
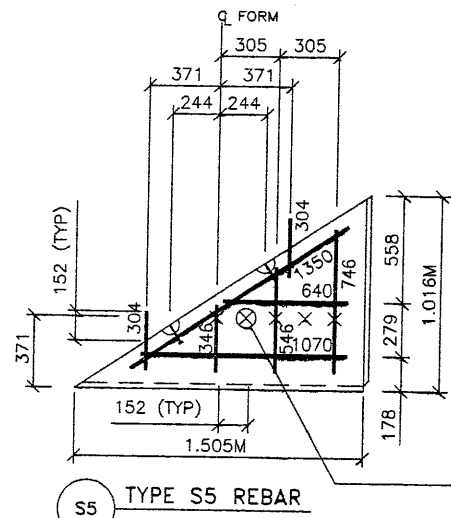
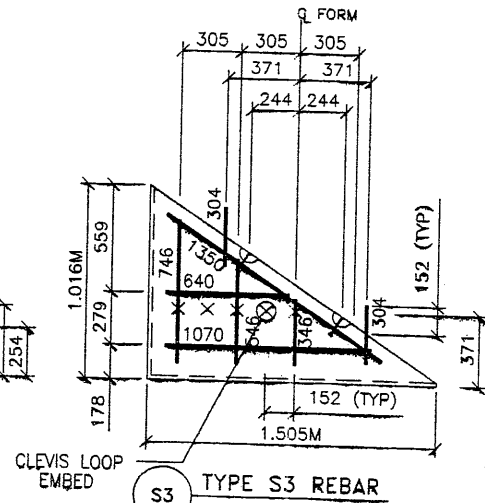
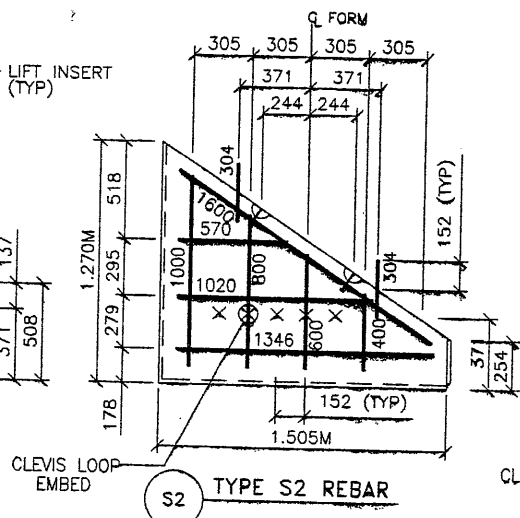
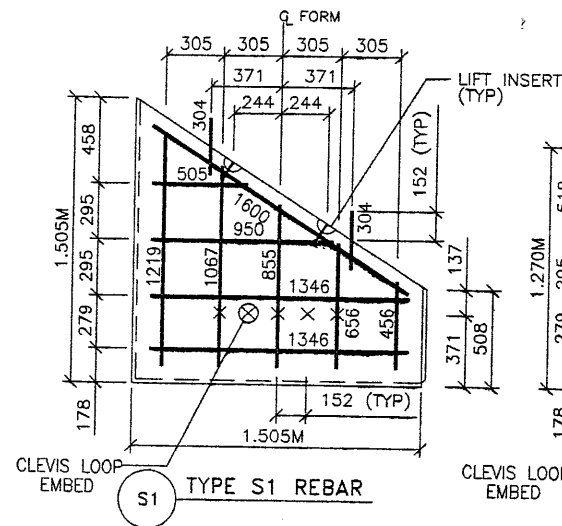
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RETAINED EARTH™ WALLS
PRECAST WALL "72-24"
"G" PANEL REINFORCEMENT 1.524M x 1.524M
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.



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DWG. NO.	1.2R-343-24.11
JOB NO.	239-0007
SHT. NO.	RE-9

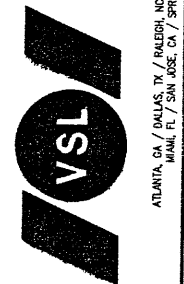


APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9/9/97	RELEASED FOR CONSTRUCTION R-343-24

- PANEL REINFORCEMENT NOTES:**
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 - VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.

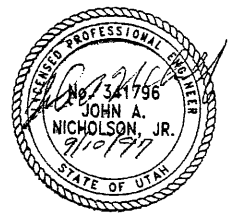
WASATCH CONSTRUCTORS
SEP 12 1997
RELEASED FOR CONSTRUCTION

VSL CORPORATION
2810 Peach Plaza, Suite 200
Raleigh, NC 27613
Telephone: (919) 781-6272
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RETAINED EARTH™ WALLS
PRECAST WALL "72-24"
SPECIAL PANEL REINFORCEMENT
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

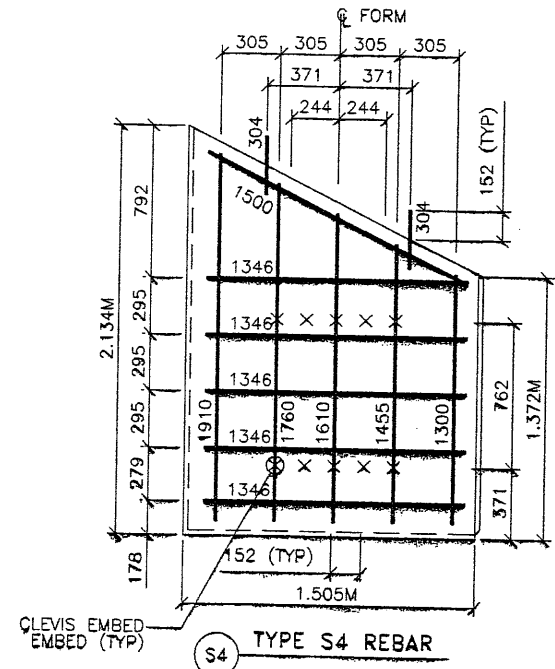
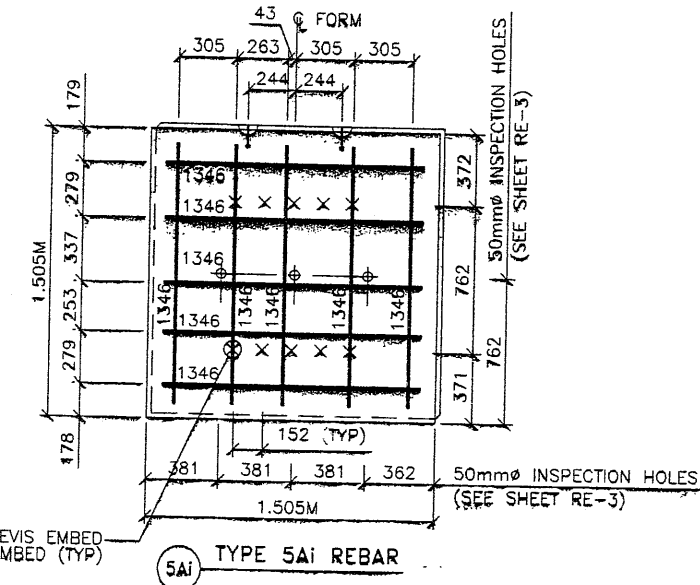
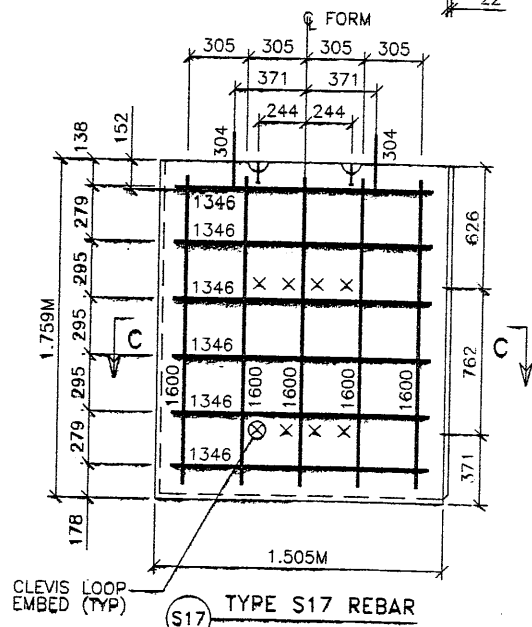
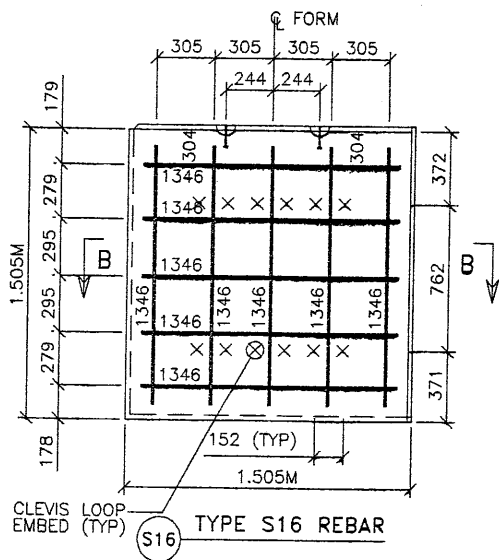
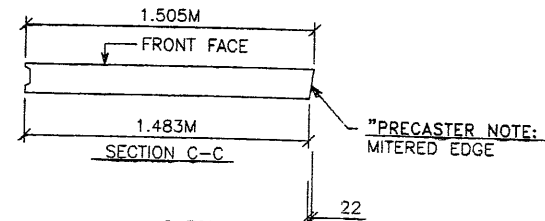
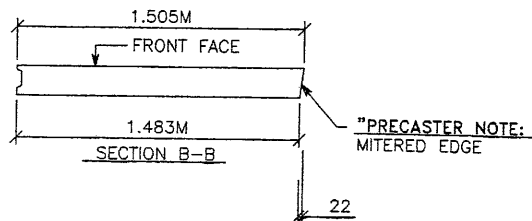
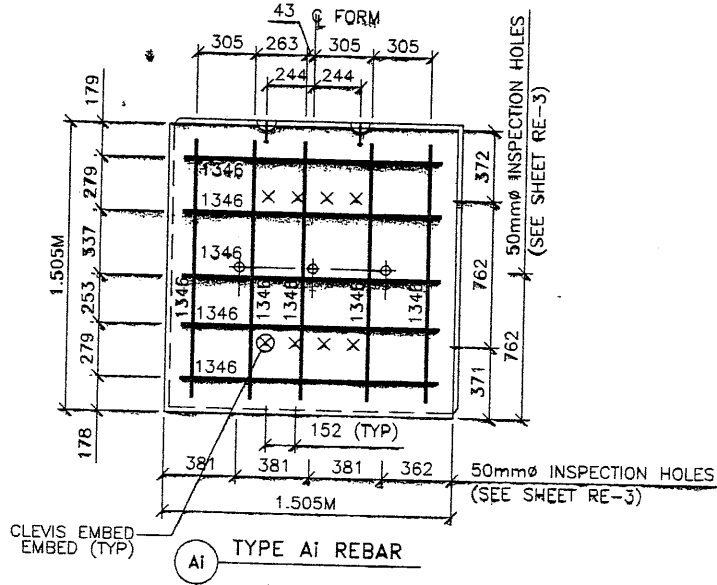
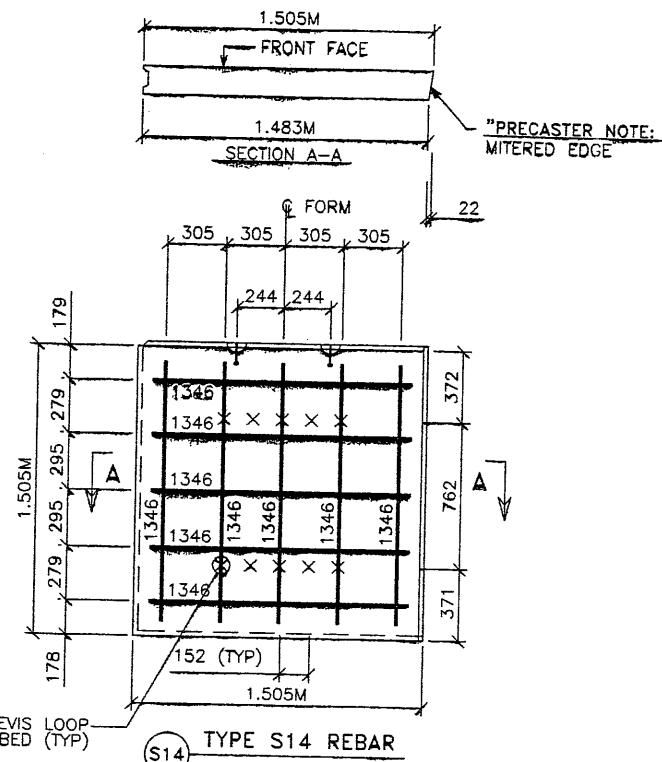
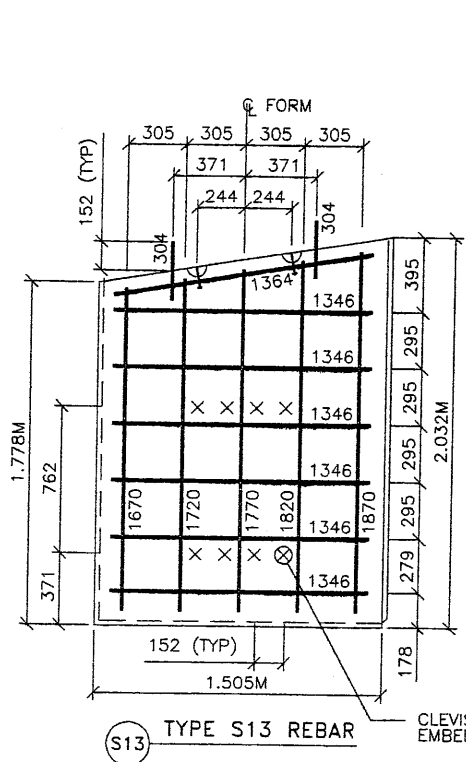


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DWG. NO.	1.2R-343-24.12
JOB NO.	239-0007
SHT. NO.	RE-10

NO.	DATE	DESCRIPTION	NO.	DATE	REVISION	BY	CHK

METRIC



- PANEL REINFORCEMENT NOTES:
- PANELS ARE SHOWN BACK FACE.
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 - VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.

WASATCH CONSTRUCTORS
SEP 12 1997
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9/9/97	RELEASED FOR CONSTRUCTION R-343-24

DES.	MM	DRN.	DDO	CHK.	RETAINED EARTH™	NO.	DATE

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone (919) 781-6772
Fax: (919) 781-6885

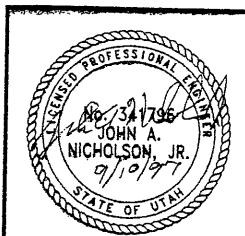
ATLANTA, GA / DALLAS, TX / BALTIMORE, MD (CORPORATE OFFICE)
MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

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RETAINED EARTH™ WALLS
PRECAST WALL "72-24"
SPECIAL PANEL REINFORCEMENT
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

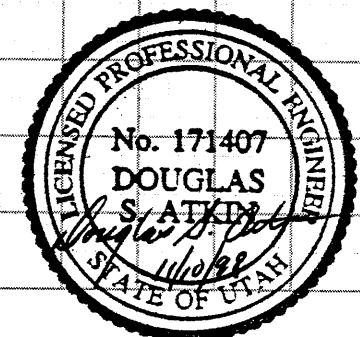
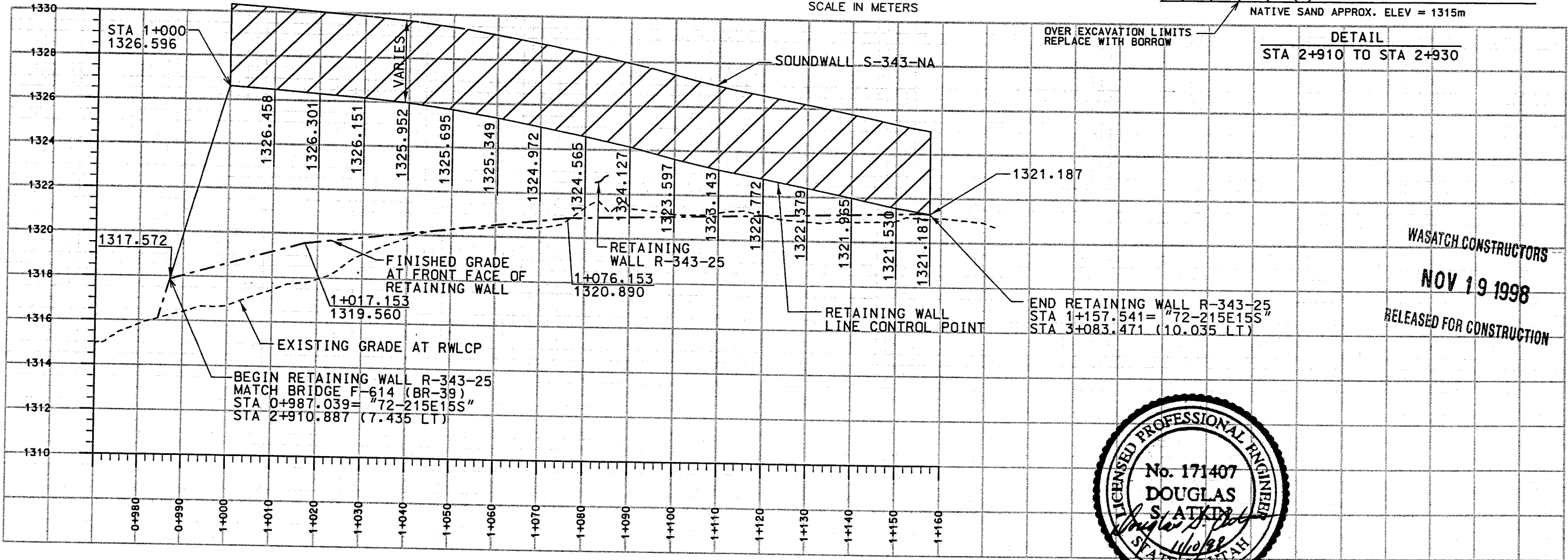
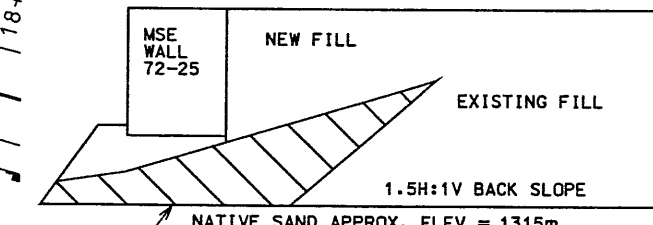
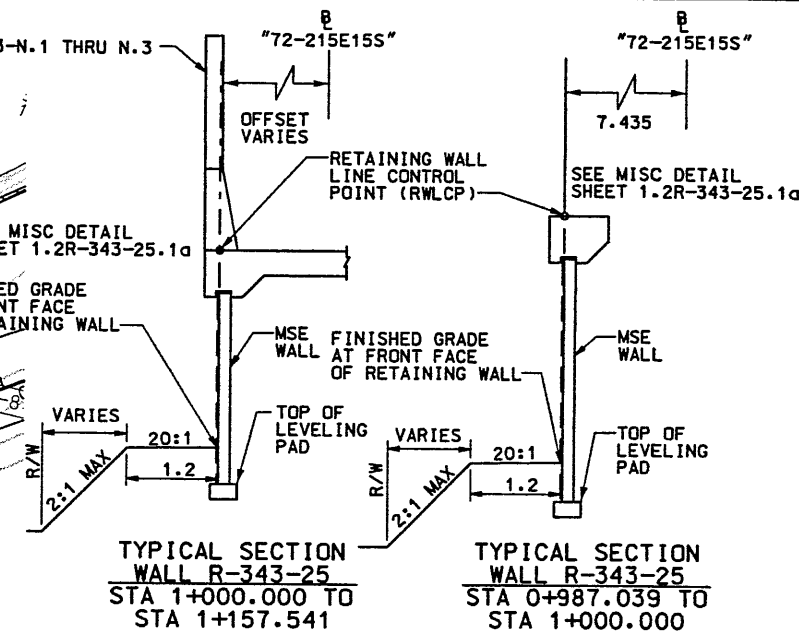
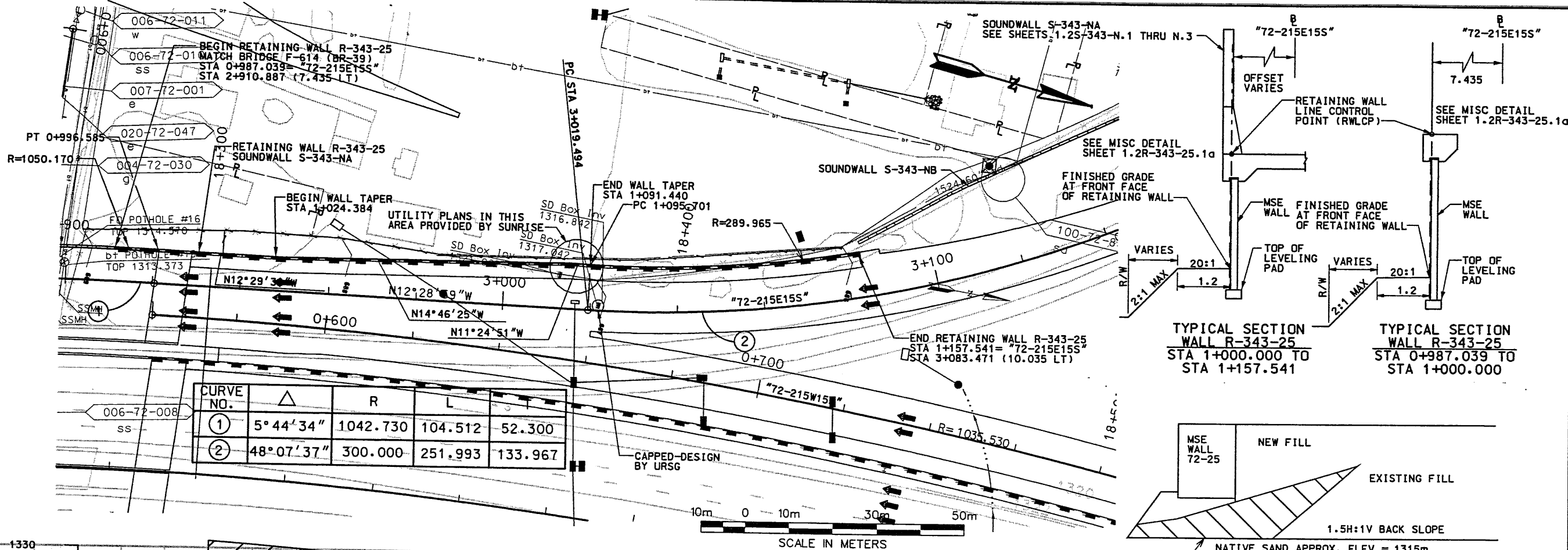
DWG. NO. 1.2R-343-24.13
JOB NO. 239-0007
SHT. NO. RE-11

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Userrname: mackkw
Date: 10-NOV-1998 Time: 16:48

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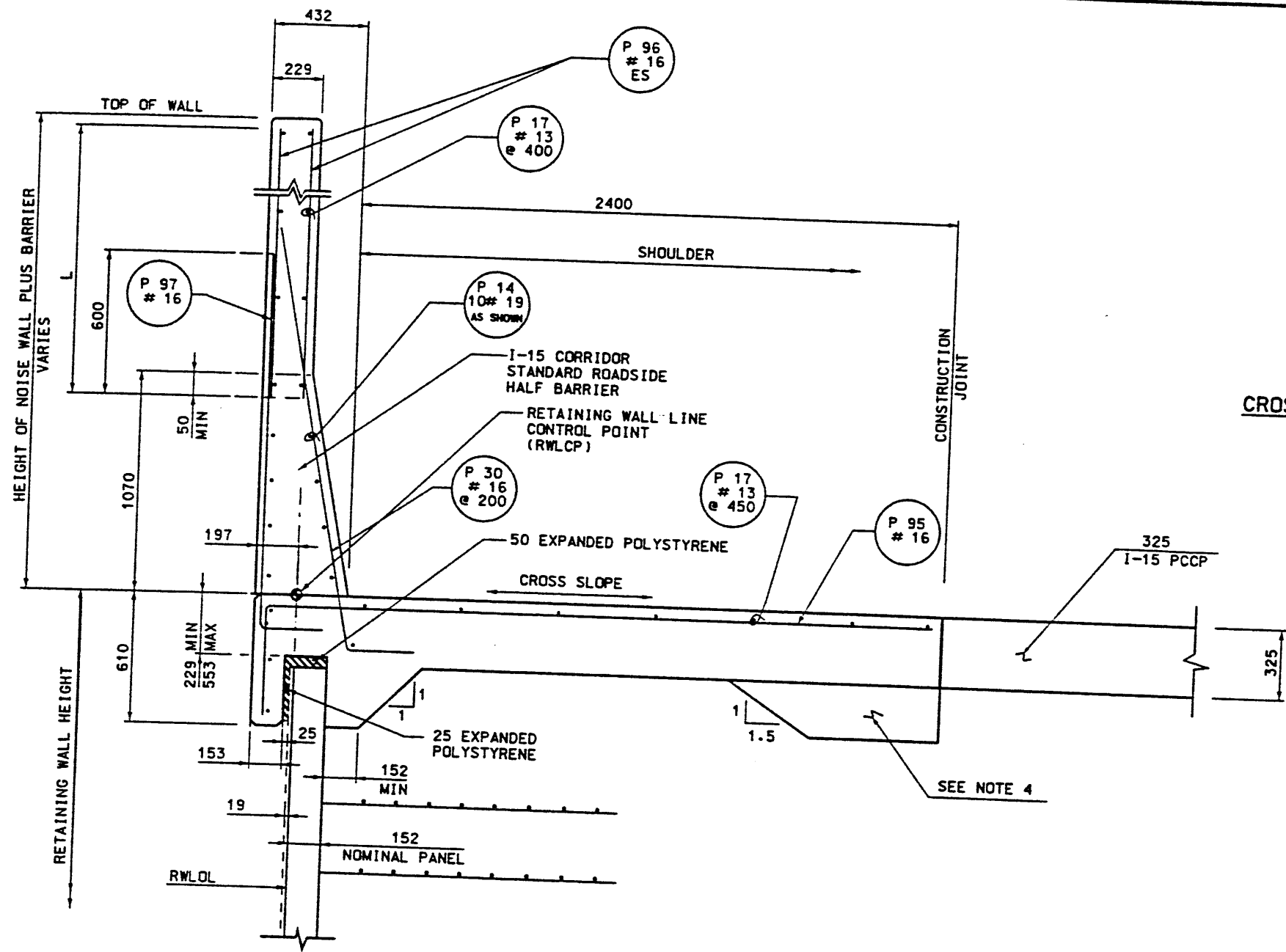
WASATCH CONSTRUCTORS
NOV 19 1998
RELEASED FOR CONSTRUCTION

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NO.	DATE	INITIAL RELEASE	RELEASED FOR CONSTRUCTION
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2	12-31-97		
3	11-10-98		

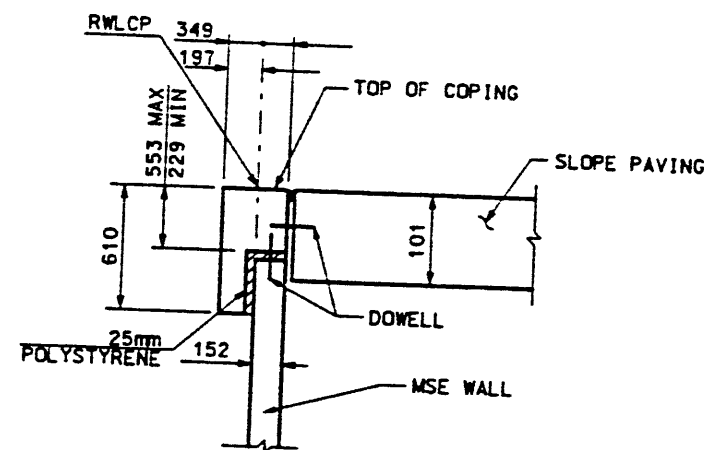
UTAH DEPARTMENT OF TRANSPORTATION		SVERDRUP/DE LEUW	
DESIGN	CHK	DATE	QUANT.
1212310			

I-15 CORRIDOR RECONSTRUCTION		SALT LAKE COUNTY	
SITUATION/LAYOUT	SECTION 1.2	DWG. NO.	1.2R-343-25.1
RET WALL R-343-25		SHT.	1 OF 13
PROJECT NUMBER	#SP-15-7(135)296	REF.	1 12

Dot: 30-DEC-1997 11:04:26 User: noma (sottr)



MSE SINGLE STAGE WITH SOUNDWALL AND BARRIER ON MOMENT SLAB
NO SCALE



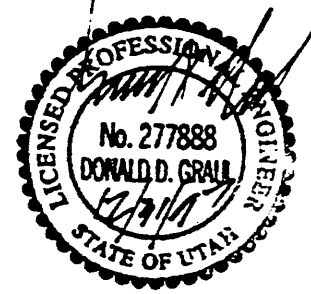
CROSS SECTION C-C WITH ABUTMENT SLOPE (NON SPUI)
SLOPE PAVING / COPING DETAILS
NO SCALE

WASATCH CONSTRUCTORS
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NOISE WALL/BARRIER REINFORCING STEEL SCHEDULE		
HEIGHT OF NOISE WALL PLUS BARRIER (m)	BAR SIZE AND SPACING	
5	#16 @ 230	
4	#16 @ 300	
3	#16 @ 300	
MARK	LENGTH	SKETCH
P95	3010	
P96	L	
P97	2200	
P98	4310	

* BASED UPON 1086 MAX FROM BACK OF BARRIER TO OUTSIDE FACE OF COPING.

- NOTES:**
- 50mm MINIMUM COVER OVER REINFORCING.
 - USE 325 PCCP $f'c=27.5$ MPa (4,000 PSI) FOR MOMENT SLAB.
 - TOE OF BARRIER/EDGE OF SHOULDER IS 235mm INSIDE RETAINING WALL LAYOUT LINE (RWLOL).
 - ADD COUNTERWEIGHT FOR NOISE WALL PLUS BARRIER HEIGHT GREATER THAN 4.3m HIGH.

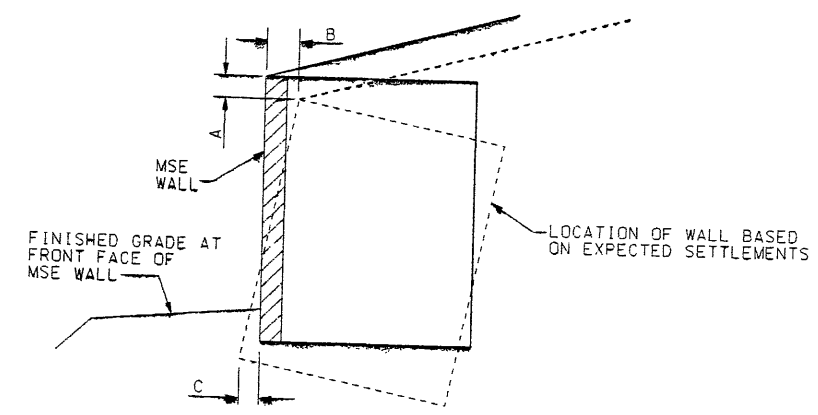


APPROVED FOR CONSTRUCTION		DATE		DESCRIPTION	
NO.	DATE	NO.	DATE	RELEASED FOR CONSTRUCTION	
UTAH DEPARTMENT OF TRANSPORTATION			SYVERDRUP/DE LEUW		
1-15 CORRIDOR RECONSTRUCTION		MISC DETAILS		SECTION 1.2	
RET. WALL R-343-25		PROJECT NO. R-343-25		PROJECT NUMBER #SP-15-7(135)296	
SALT LAKE COUNTY		DWG. NO. 1.2R-343-25.1a		SHT. 2 of 19	

Active File Levels: [1-64]
 First Reference File Levels:
 Second Reference File Levels:
 Third Reference File Levels:
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WASATCH CONSTRUCTORS
 SEP 19 1997
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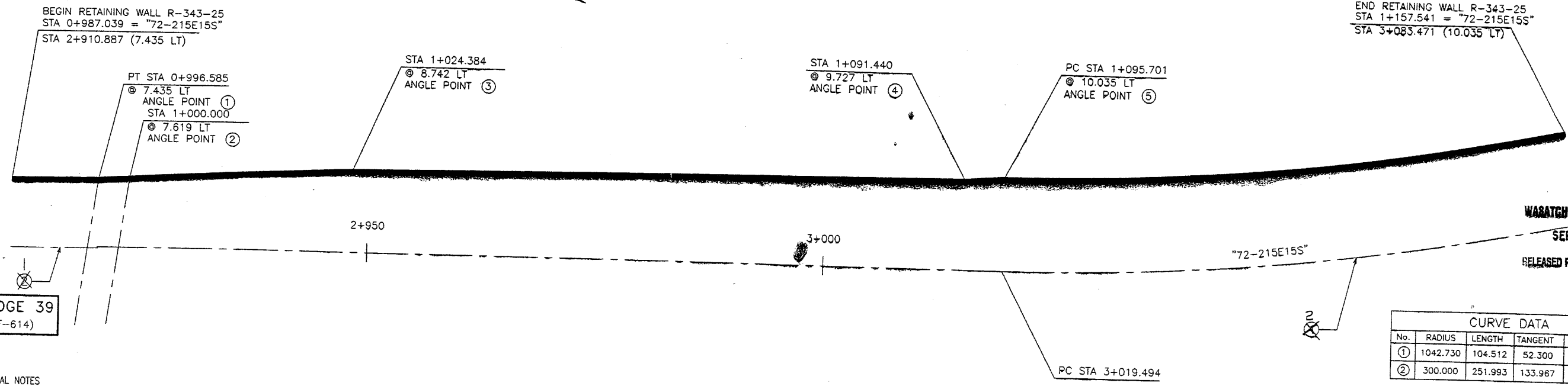
ESTIMATED SETTLEMENT TABLE

STATION LIMITS	REFERENCE STATION	WALL SETTLEMENT mm	TOP OF WALL ROTATION mm	LATERAL DISPLACEMENT AT BOTTOM OF WALL mm
0+987.039 TO 1+157.541	0+987***	40 TO 60	25	**

** LATERAL DISPLACEMENT AT BOTTOM OF WALL SHOULD BE LESS THAN ONE HALF OF THE SETTLEMENT AT FRONT FACE OF WALL. TERRACON RECOMMENDS CONSTRUCTING THE WALL TOE AT THE DESIGN LOCATION.
 *** THESE VALUES CALCULATED AT REFERENCED STATION; ROTATIONS AT OTHER STATIONS CAN BE ESTIMATED IN PROPORTION TO WALL HEIGHT.

I-15 CORRIDOR RECONSTRUCTION		UTAH DEPARTMENT OF TRANSPORTATION		APPROVED FOR CONSTRUCTION	
MISC. DETAILS RET WALL R-343-25		URS Greiner		DESCRIPTION	
SECTION 1.2		SVERDRUP/DE LEUW		NO. Δ	
PROJECT NUMBER *SP-15-7(135)296		DESIGN: EMR 8/97		DATE 9-17-97	
SALT LAKE COUNTY		DRAWN: RS 8/97		INITIAL RELEASE <i>CR</i>	
1.2R-343-25.2		CHECK: KMM 8/97		DATE - - -	
SHT. 3 OF 13		SECTION MANAGER		QUANT. 1212403	

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	9/16/97	RELEASE FOR CONSTRUCTION <i>OK</i>



END RETAINING WALL R-343-25
STA 1+157.541 = "72-215E15S"
STA 3+083.471 (10.035 LT)

WATCH CONSTRUCTORS
SEP 19 1997
RELEASED FOR CONSTRUCTION

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	Δ
①	1042.730	104.512	52.300	5°44'34"
②	300.000	251.993	133.967	48°07'37"

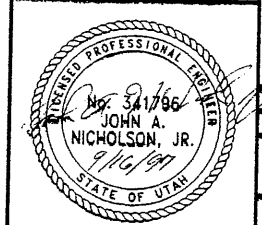
All Dimensions Are In Meters Unless Noted Otherwise

RETAINED EARTH INDEX	
RE-1	PLAN PRECAST FACE WALL R-343-25, NOTES & DESIGN CRITERIA
RE-2	TYPICAL DETAILS
RE-3	TYPICAL DETAILS
RE-4	TYPICAL CROSS SECTIONS
RE-5	ELEVATION PRECAST WALL "R-343-25"
RE-6	ELEVATION PRECAST WALL "R-343-25"
RE-7	ELEVATION PRECAST WALL "R-343-25"
RE-8	TYPICAL PANEL REINFORCEMENT
RE-9	"G" PANEL REINFORCEMENT
RE-10	SPECIAL PANEL DETAILS

- 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 IS A "B2" 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: 4W11-12 MESH HAS FOUR (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 12" CENTERS.
EXAMPLE: 4W20-12 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 12" 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.
IF NO MESH IS SHOWN, 4W20-12 MESH SHALL BE USED.
 - 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 SHEET RE-3 FOR DETAIL.

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.	
TRAFFIC SURCHARGE = 250 PSF	
SEISMIC ACCELERATION COEFF. = 0.12g (TYP)	
SEISMIC ACCELERATION COEFF. = 0.32g (AT BRIDGE ABUTMENTS)	
DESIGN CRITERIA	
SAFETY FACTOR (OVERTURNING) = 2.0	
SAFETY FACTOR (SLIDING) = 1.5	
SAFETY FACTOR (PULLOUT) = 1.5	
DESIGN LIFE = 75 YEARS	

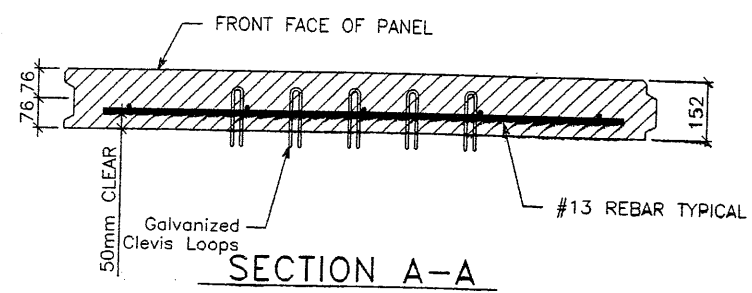
METRIC



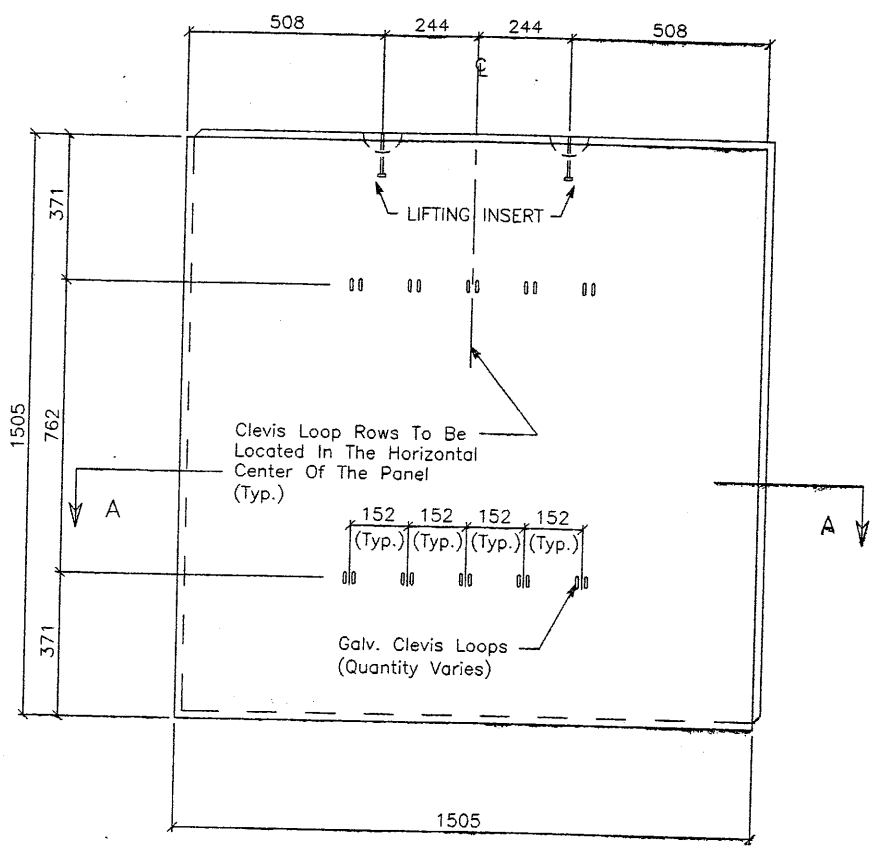
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VSL CORPORATION 2840 Plaza Place, Suite 200 Dallas, TX 75241 Telephone: (972) 781-6772 Fax: (972) 781-6689	DES: 09-10-97	MM	RETAINED EARTH™ 	BY: CHK
	DRN: 09-10-97	LOP		NO. DATE
VSL ATLANTA, GA / DALLAS, TX / BALDWIN, NC (CORPORATE OFFICE) MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA	RETAINED EARTH™ WALLS PLAN VIEW WALL "R-343-25" I-15 INTERCHANGE SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSPORTATION			
	DWG. NO. 1.2R-343-25.3			
	JOB NO. 239-0007			
	SHT. NO. RE-1			

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 7-10-97
 FINAL PL

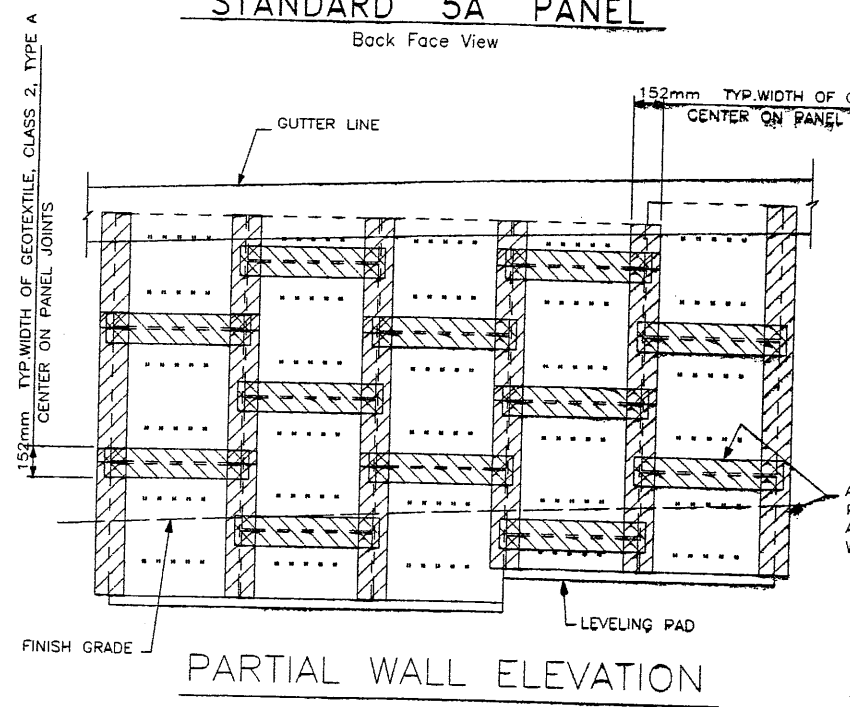


SECTION A-A

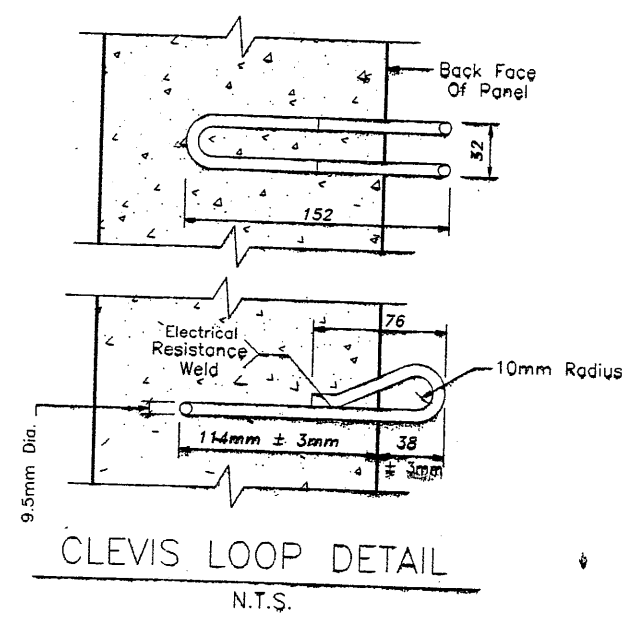


STANDARD "5A" PANEL

Back Face View

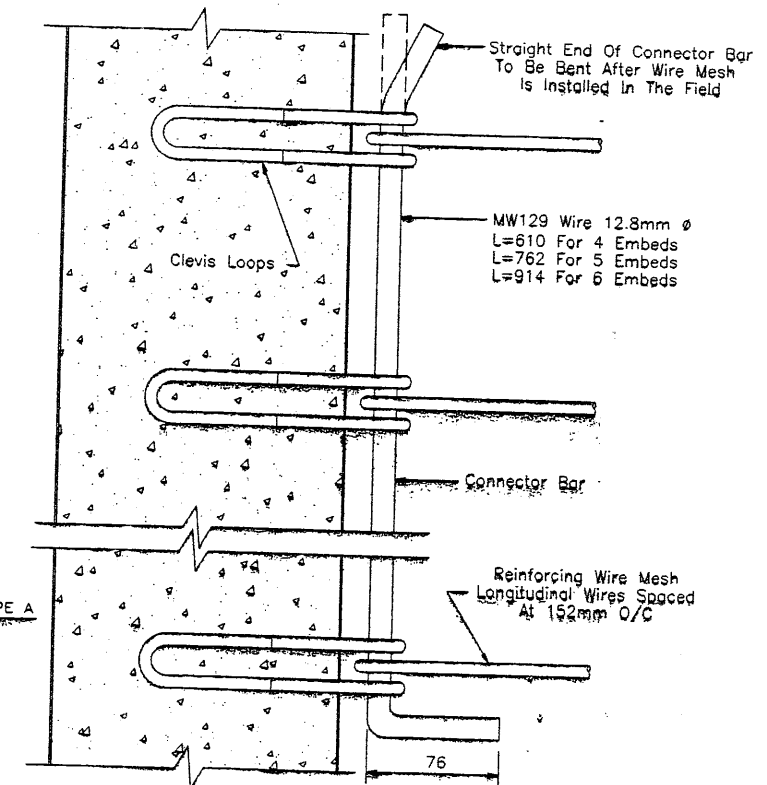


PARTIAL WALL ELEVATION



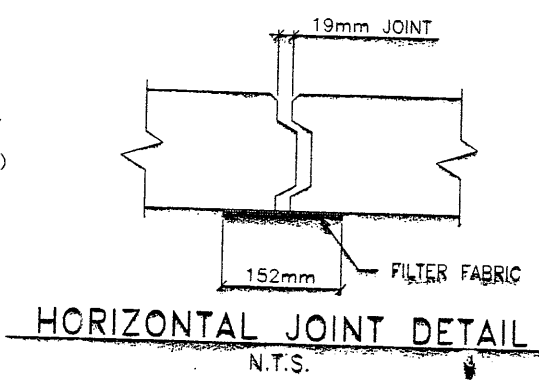
CLEVIS LOOP DETAIL

N.T.S.



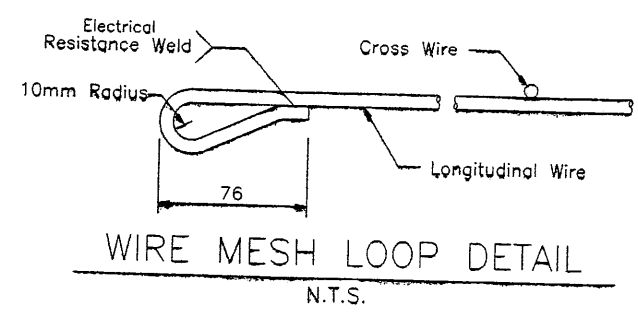
REINFORCING MESH CONNECTION DETAIL

N.T.S.



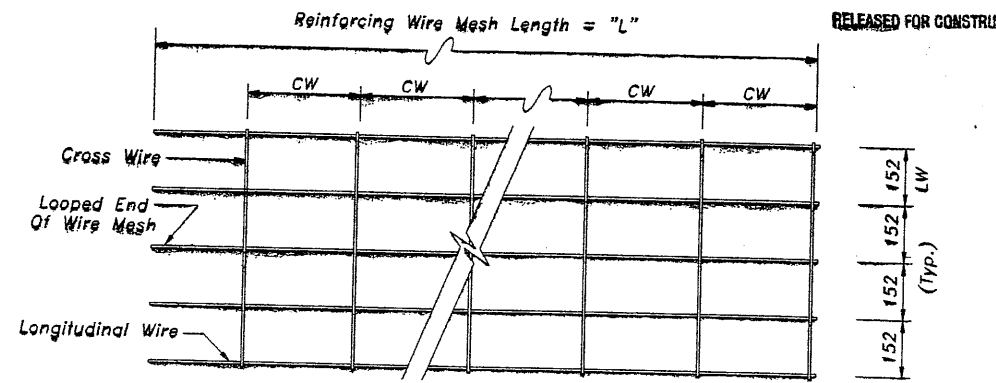
HORIZONTAL JOINT DETAIL

N.T.S.



WIRE MESH LOOP DETAIL

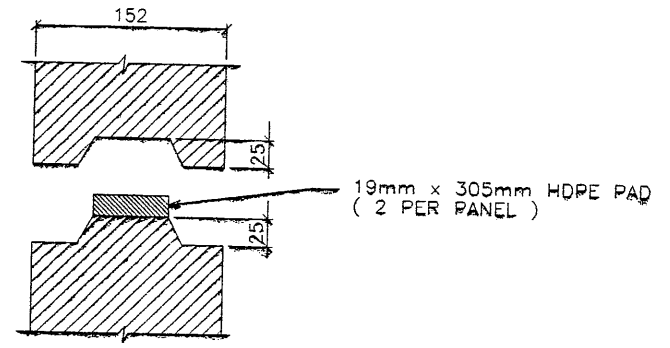
N.T.S.



WIRE MESH DESIGNATION

5W11 + W11 x 1.0 (5W11-12)
 No. Of Longitudinal Wires
 Size Of Longitudinal Wires (LS)
 Size Of Cross Wires (CS)
 Spacing (Et.) Of Cross Wires (CW)
 NOTE: FOR EXAMPLE ABOVE,
 EQUIVALENT WIRE MESH DESIGNATION = 6 X 12-W11XW11-24"X "L"
 (LW) (CW)(LS) (CS)
 SHEET WIDTH
 SHEET LENGTH

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.



PANEL JOINT DETAIL

N.T.S.

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WASATCH CONSTRUCTORS
 SEP 19 1997
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NO.	DATE	REVISION	BY	CHK

VSL CORPORATION
 8840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-6272
 Fax: (919) 781-0969

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RETAINED EARTH™ WALLS
 PRECAST WALL "72-25"
 TYPICAL DETAILS

UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSPORTATION

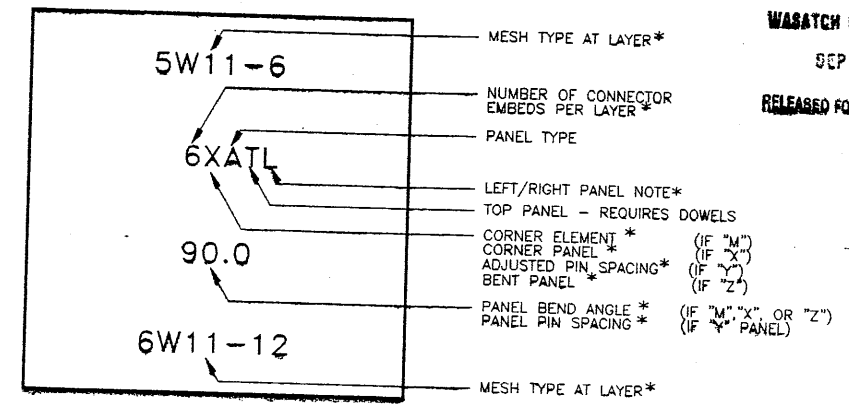
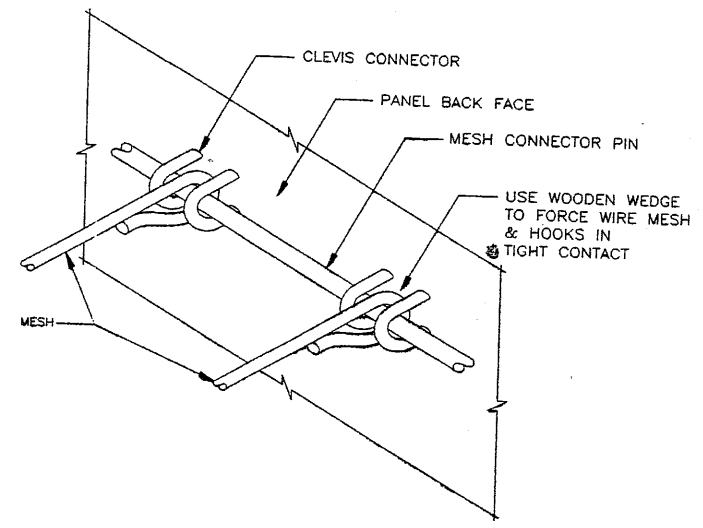
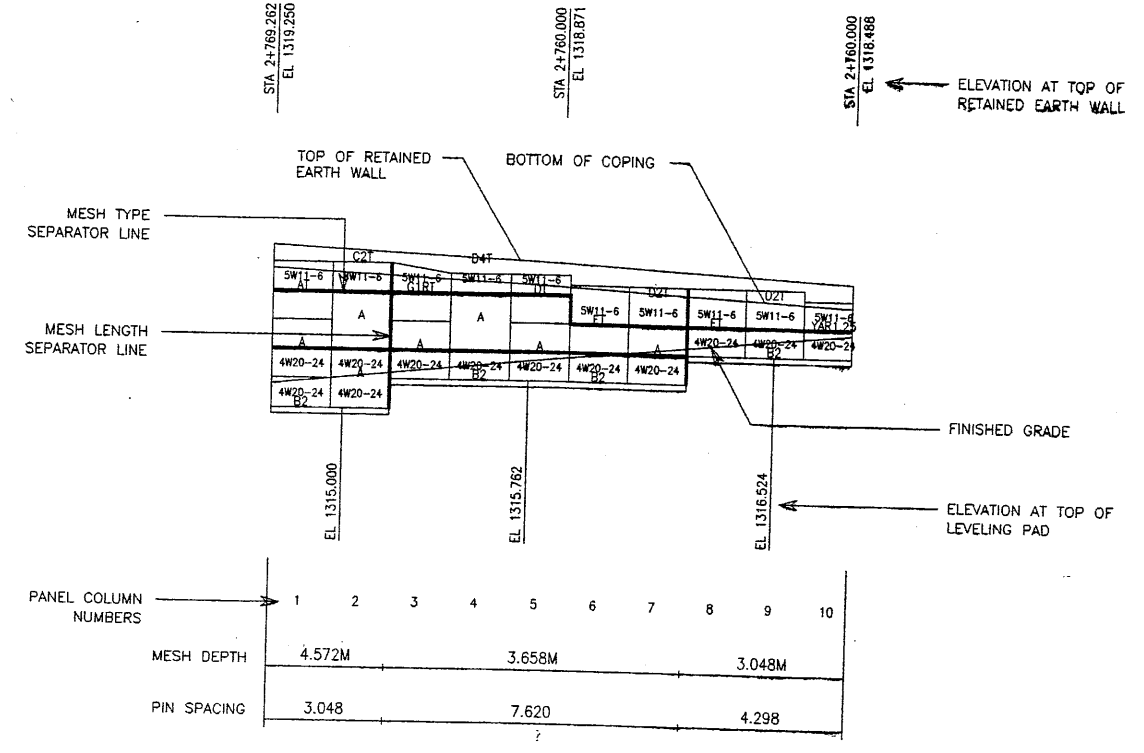
DWG. NO. 1:2R-343-25.4
 JOB NO. 239-0007
 SHEET NO. RE-2

10-24-97
 JOHN A. NICHOLSON, JR.
 9/16/97
 STATE OF UTAH

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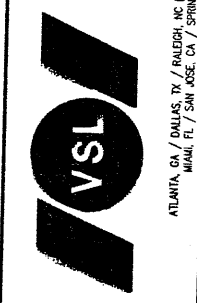
FINAL PL 7-10-97 E:\PROJECT\239-0007\72-25\RE-3

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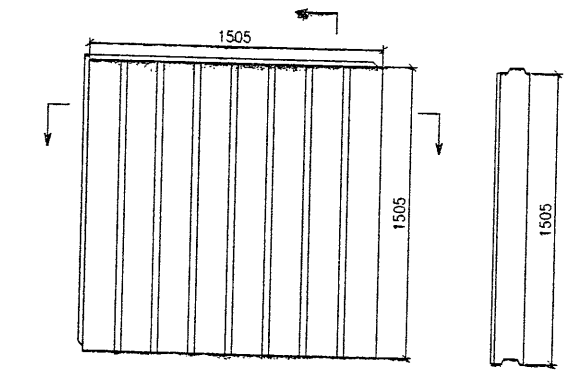
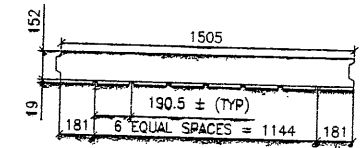
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-25"
TYPICAL DETAILS
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO. 1.2R-343-25.5
JOB NO. 239-0007
SHT. NO. RE-3

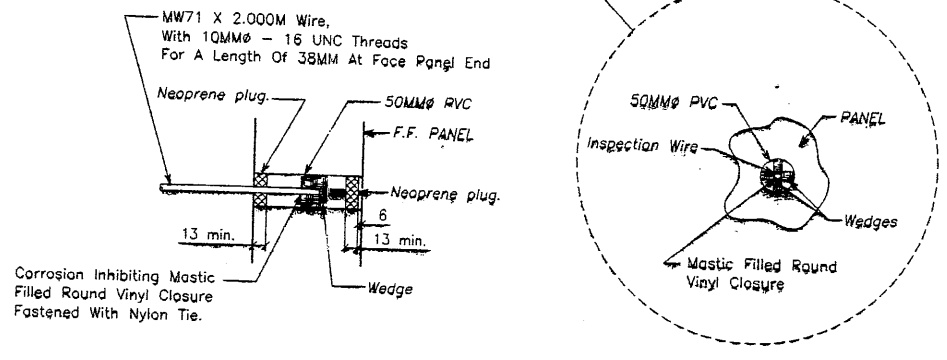
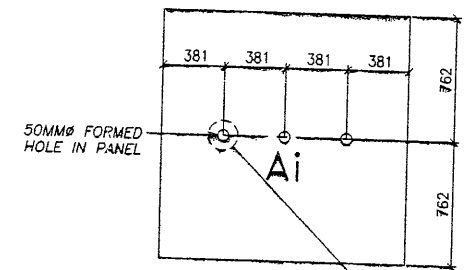
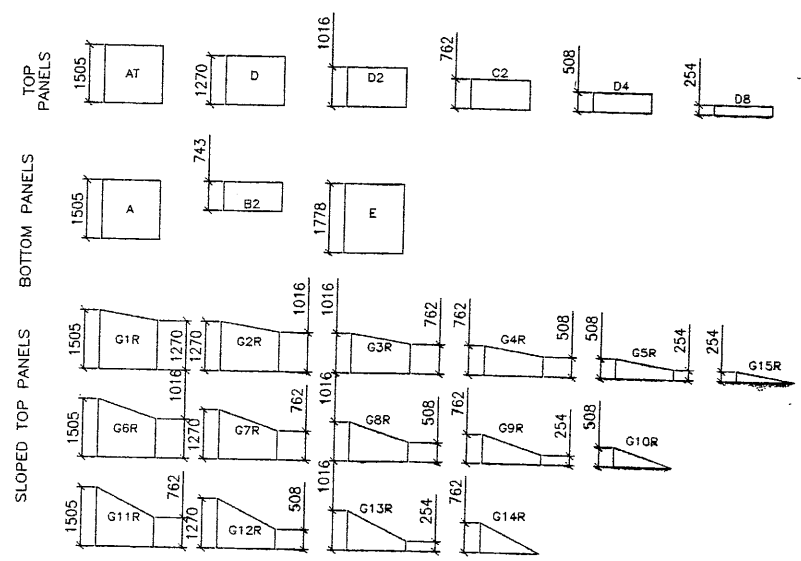
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2
VSL RETAINED EARTH™ IS PROTECTED UNDER U.S. PATENT 4,725,170.

3



6

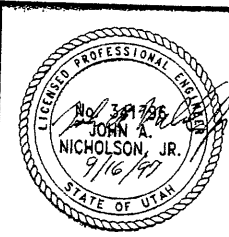


Corrosion Inhibiting Mastic Filled Round Vinyl Closure Fastened With Nylon Tie.

5

4
ALL DIMENSIONS ARE IN MILLIMETERS

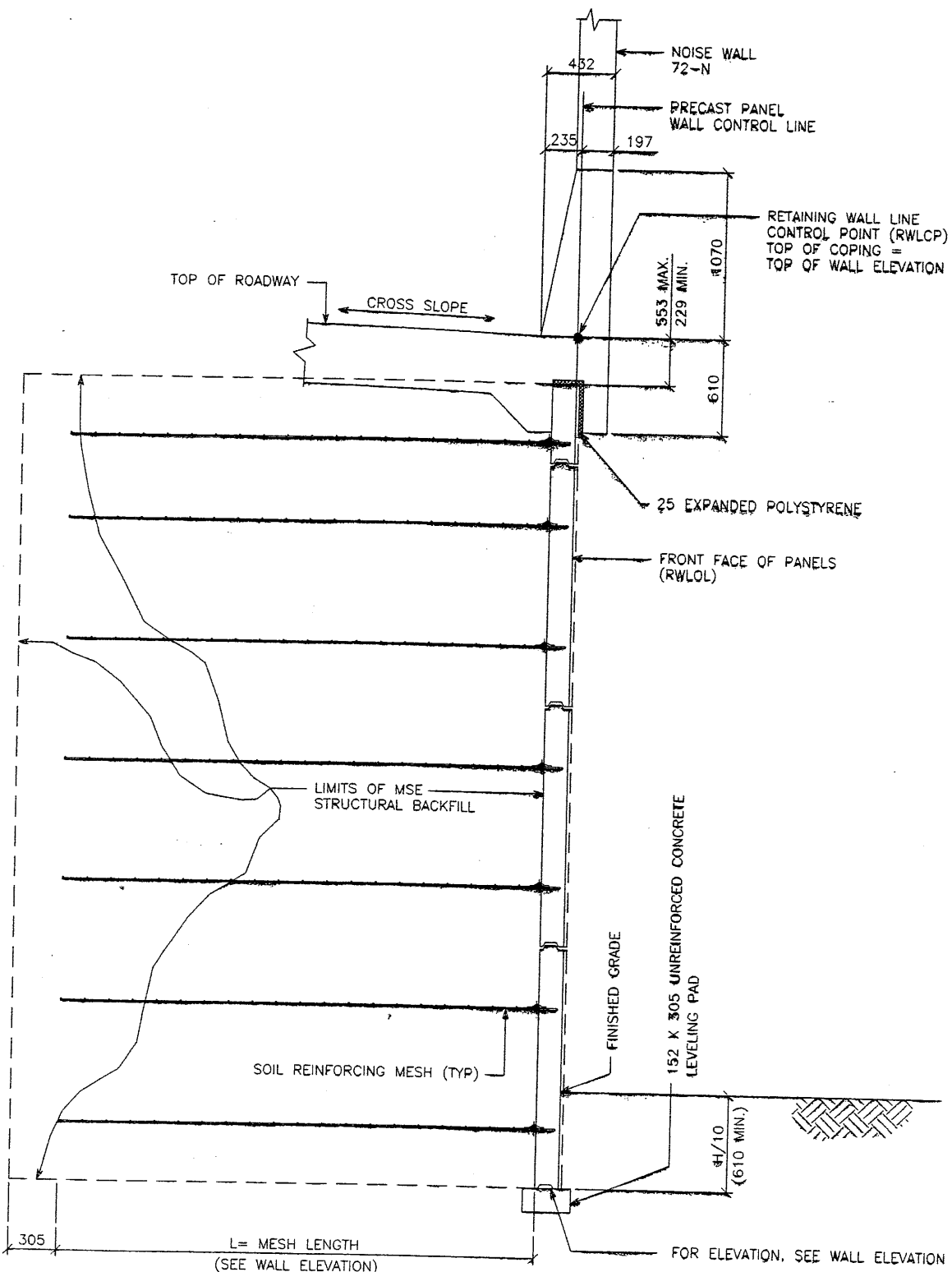
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3-10-97

FINAL PL



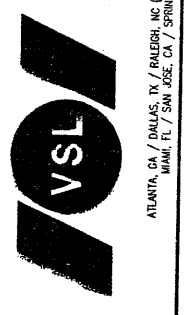
TYPICAL CROSS SECTION
 (MSE SINGLE STAGE WITH MOMENT SLAB)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

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NO.	DATE	DESCRIPTION	CHK
1	9/16/97	RELEASE FOR CONSTRUCTION	OK

WARATCH CONSTRUCTORS
 SEP 19 1997
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DES.	MM	NO.	DATE	REVISION
DES. 09-10-97	MM			
DRN. 09-10-97	DDO			
CHK. 09-10-97	MM			

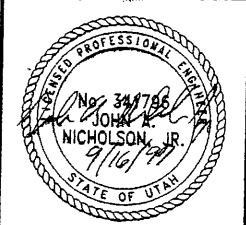
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RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-25"
 TYPICAL CROSS SECTION
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSPORTATION

METRIC



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DWG. NO.	1.2R-343-25.6
JOB NO.	239-0007 7/13
SHT. NO.	RE-4

FINAL PL 9-10-97

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	9/16/97	RELEASE FOR CONSTRUCTION
▲	10-22-97	ADDED DETAIL FOR SKEWING MESH @ ABUT. PILE

DES.	MM	LOP	MM	RETAINED EARTH™	NO.	DATE	REVISION	BY	CHK
DES. 09-10-97									
DRN. 09-10-97									
CHK. 09-10-97									

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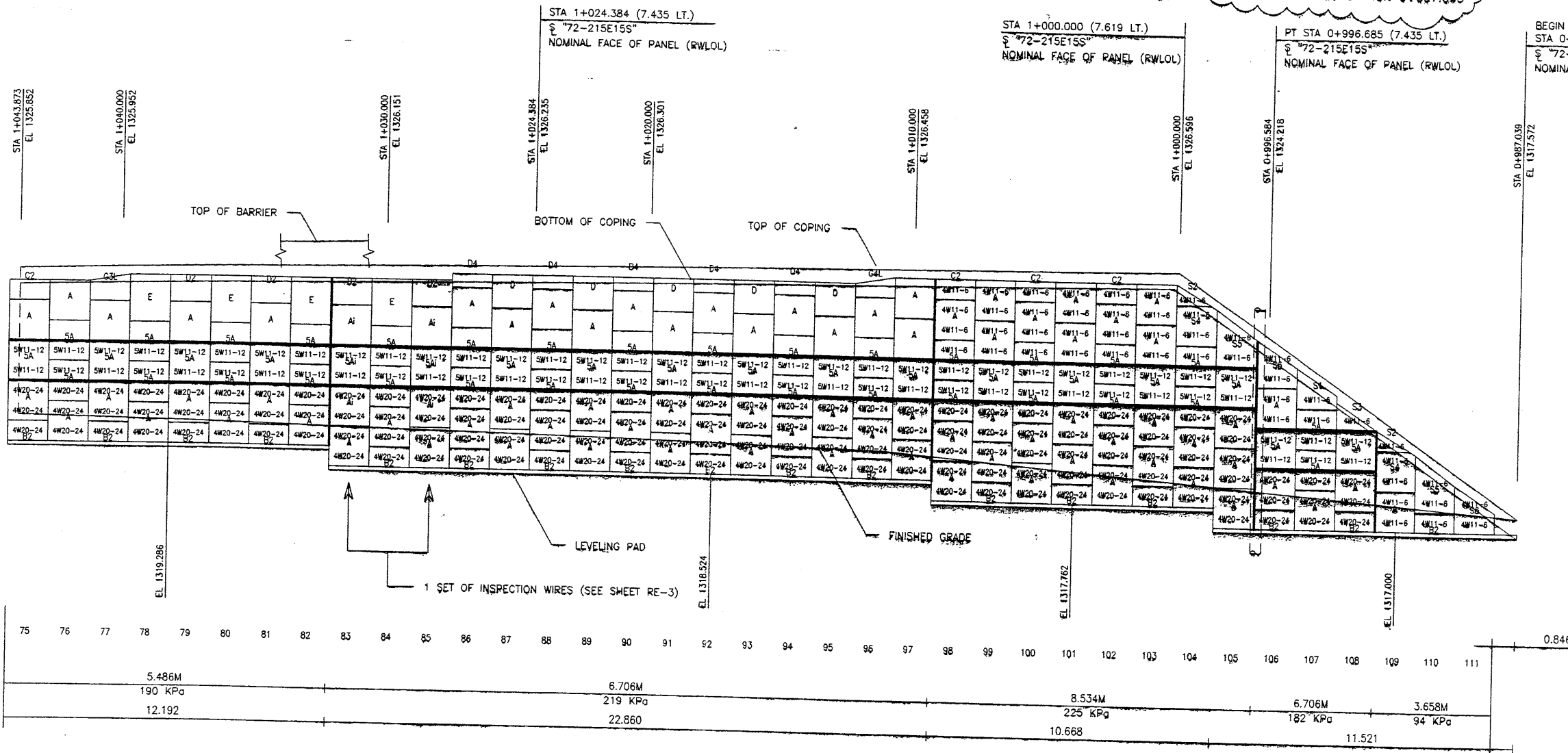
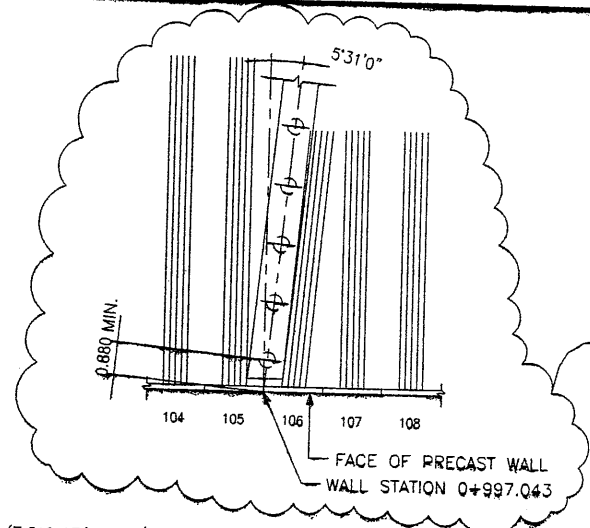
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WASATCH CONSTRUCTORS
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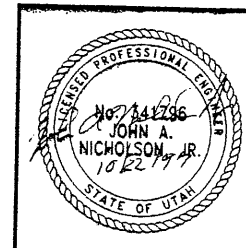
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-25"
I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	1.2R-343-25.9
JOB NO.	239-0007 10/13
SHT. NO.	RE-7



ELEVATION PRECAST WALL R-343-25
(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 747.36 SM)
SCALE 1:100 (FULL SIZE)
SCALE 1:200 (HALF SIZE)

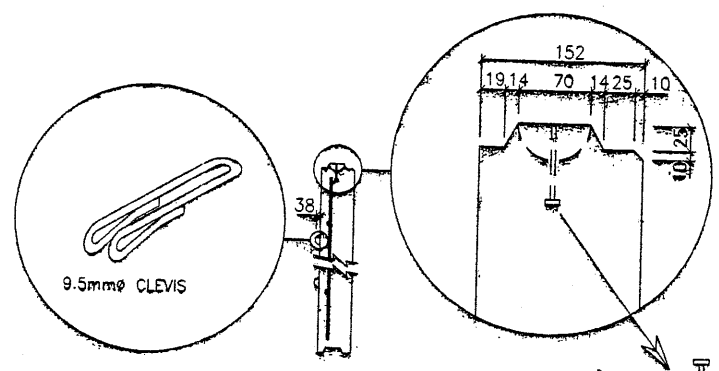
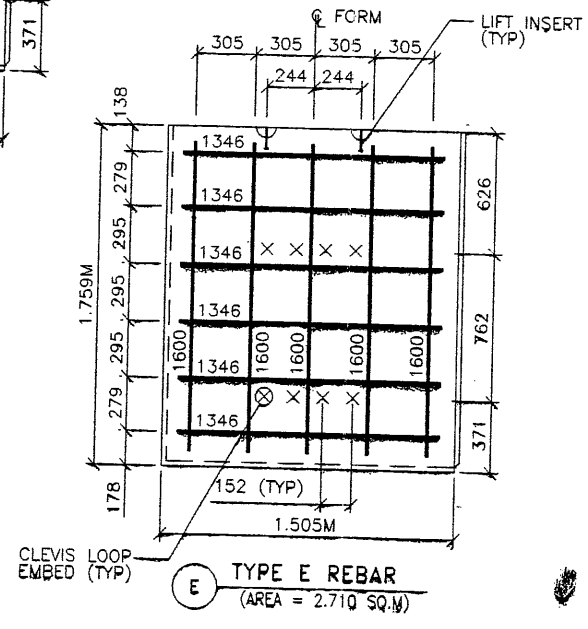
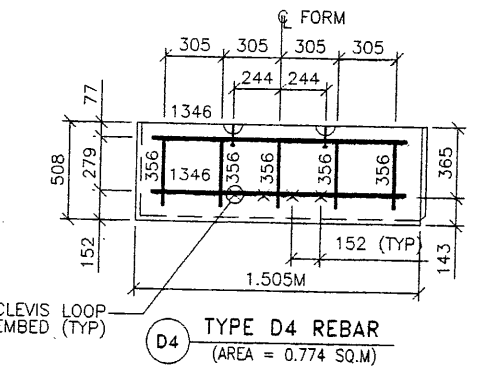
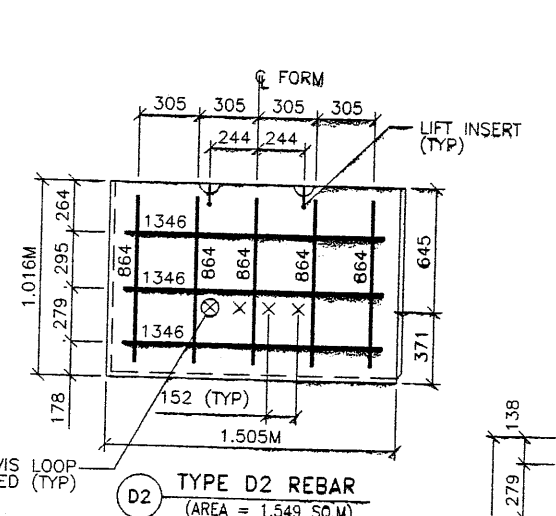
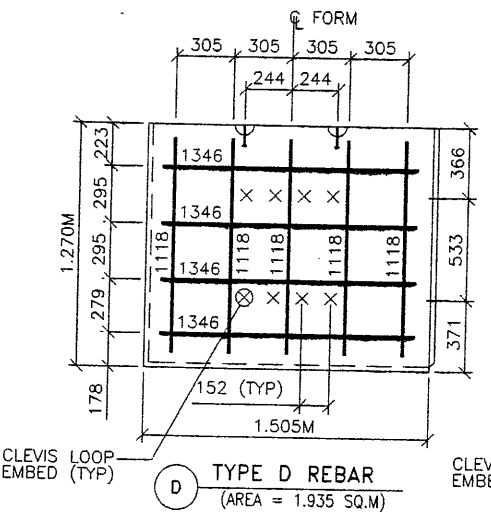
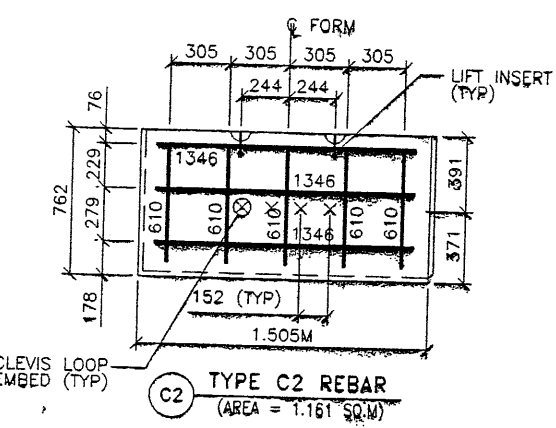
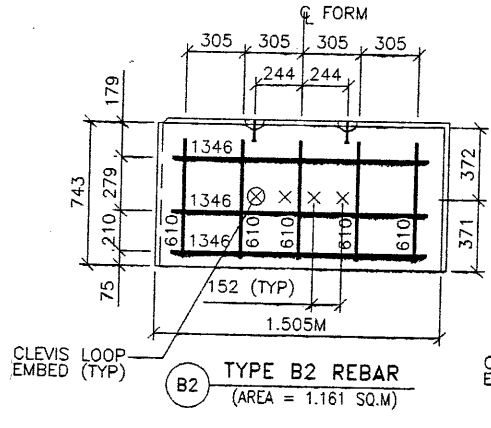
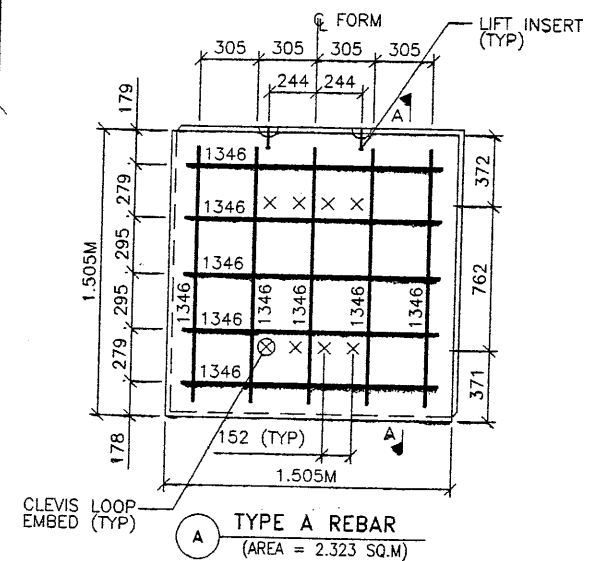
METRIC



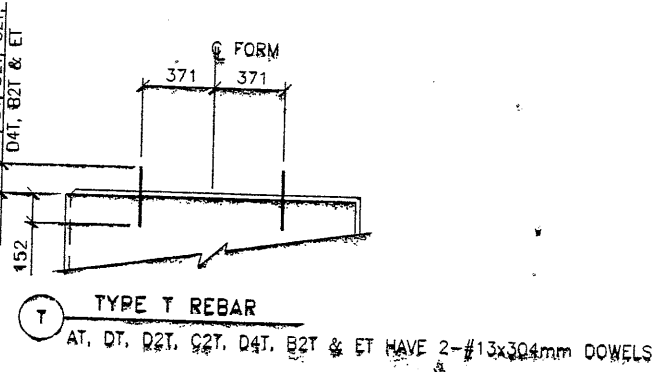
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

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

MESH DEPTH	5.486M	6.706M	8.534M	6.706M	3.658M
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	190 KPa	219 KPa	225 KPa	182 KPa	94 KPa
PIN SPACING	12.192	22.860	10.668	11.521	



SECTION A-A

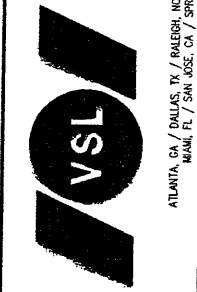


APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	9/16/97	RELEASE FOR CONSTRUCTION

- 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 EPOXY COATED TO 0.5mm THICKNESS. REFER TO SPECIAL PROVISIONS, SECTION 508.
 - 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.

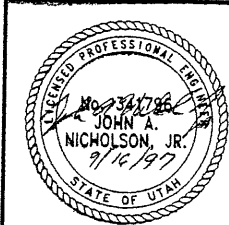
WASATCH CONSTRUCTORS
SEP 19 1997
RELEASED FOR CONSTRUCTION

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6772
Fax: (919) 781-6959



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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-25"
PANEL REINFORCEMENT 1.524M x 1.524M
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.



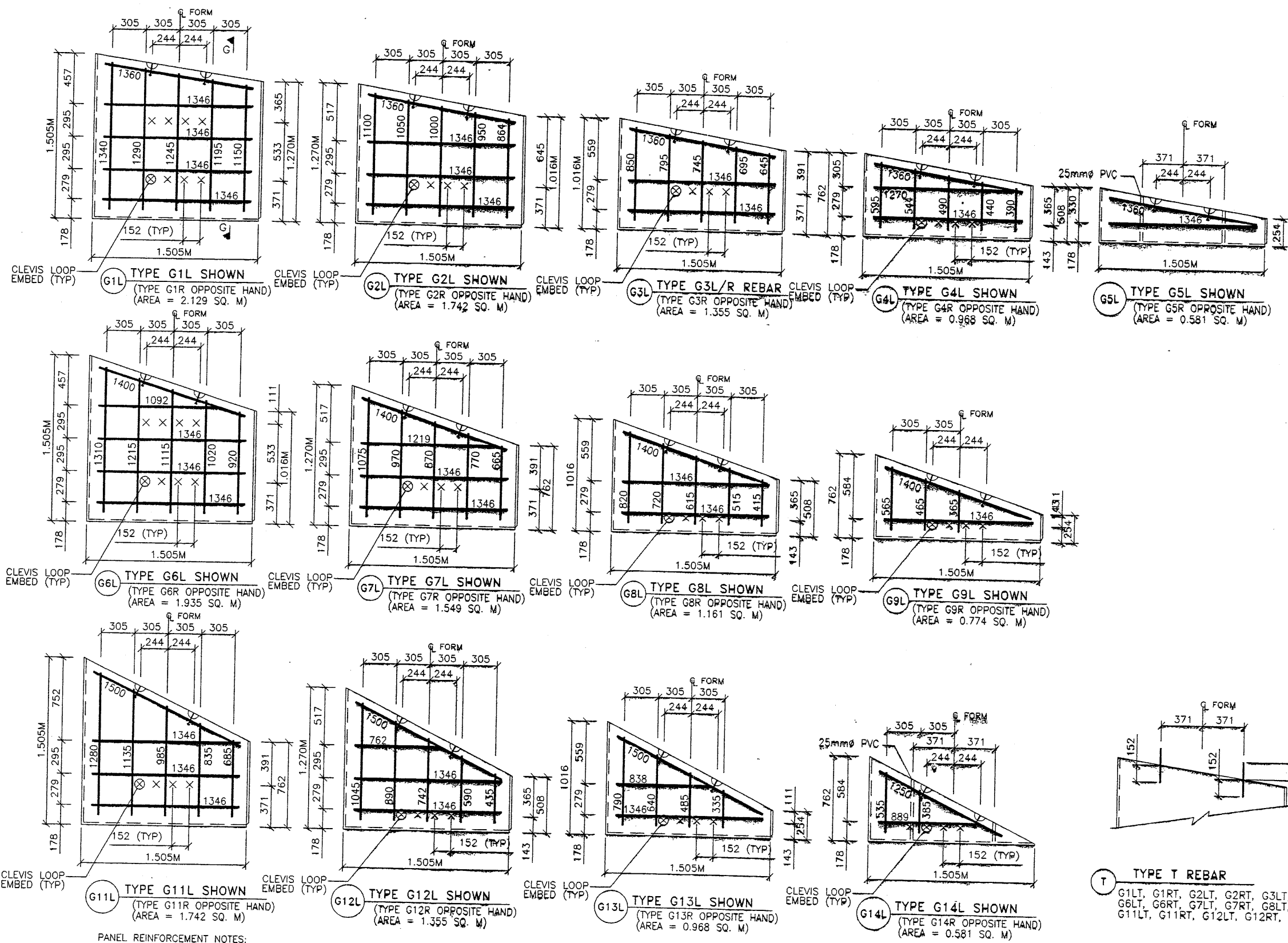
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DWG. NO.	1.2R-343-25.10
JOB NO.	239-0007 11/3
SHT. NO.	RE-8

NO.	DATE	REVISION	BY

H:\RE_EARTH\PROJECT\239-0007\REBAR

FINAL P: 1-10-97

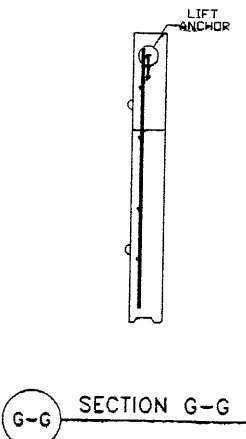
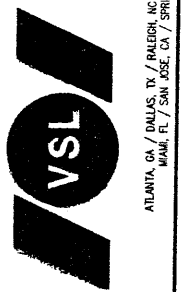


APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9/16/97	RELEASE FOR CONSTRUCTION <i>SW</i>

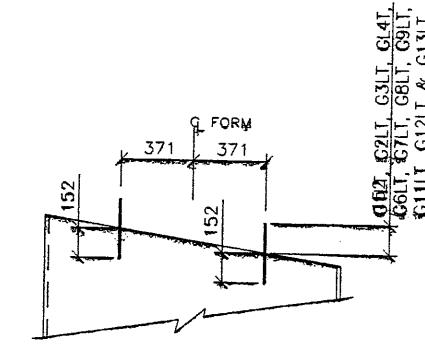
WABATCH CONSTRUCTORS
 SEP 19 1997
 RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	CHK

DES: 09-10-97
 DRN: 09-10-97
 CHK: 09-10-97
 RETAINED EARTH™
 VSL CORPORATION
 8940 Plaza Place, Suite 200
 Raleigh, NC 27617-7811
 Tel: (919) 781-6772
 Fax: (919) 781-4669



G-G SECTION G-G



T TYPE T REBAR

G11L, G11RT, G12L, G12RT, G13L, G13RT, G14L, G14RT,
 G6L, G6RT, G7L, G7RT, G8L, G8RT, G9L, G9RT,
 G11LT, G11RT, G12LT, G12RT, G13LT & G13RT HAVE 2-#13x304mm DOWELS

- 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.
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 - 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 Ø CLEVIS LOOPS. VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.

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METRIC



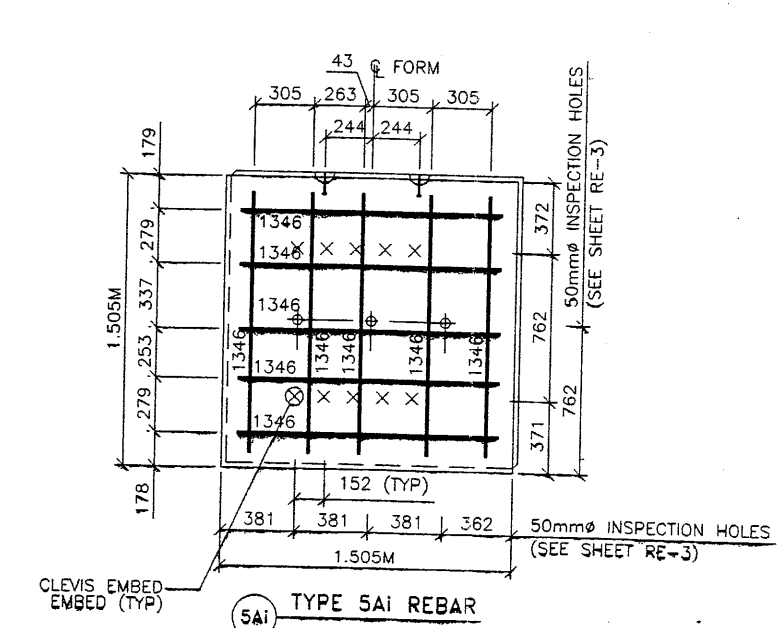
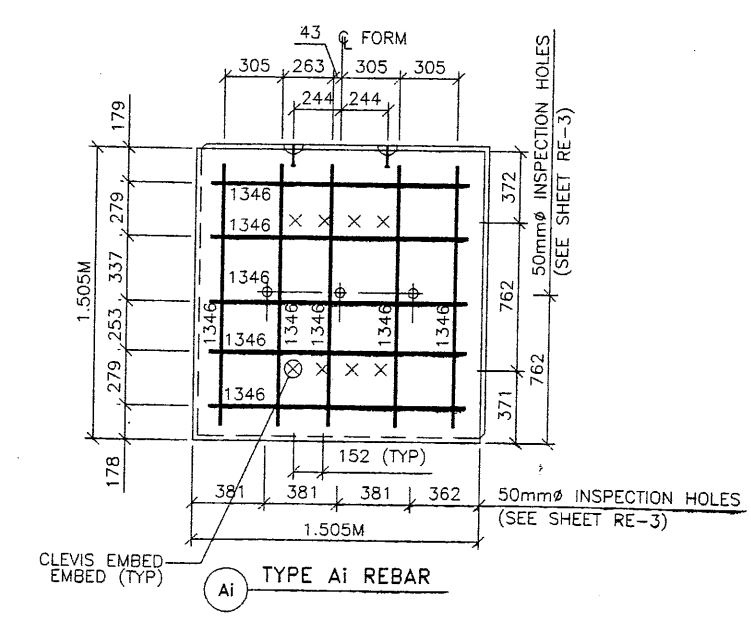
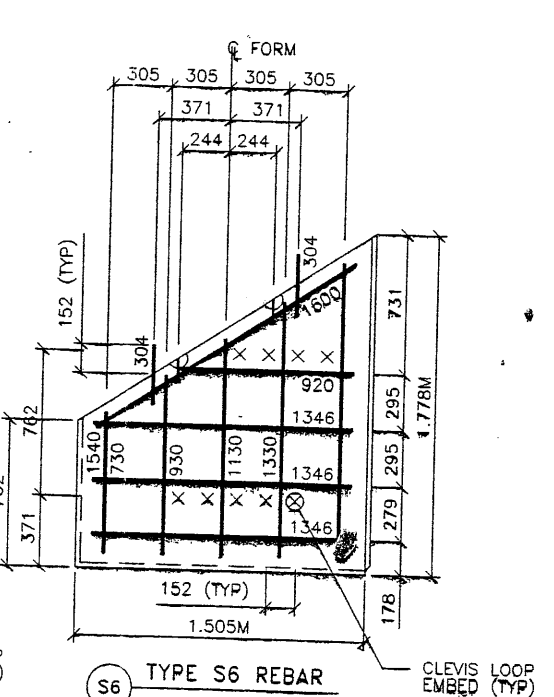
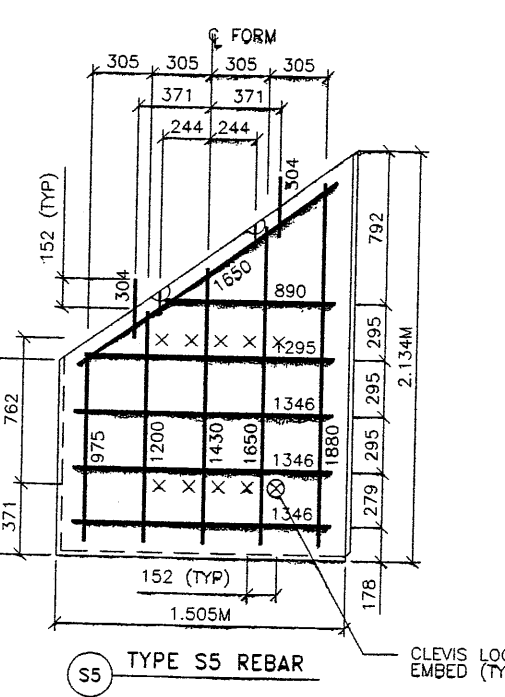
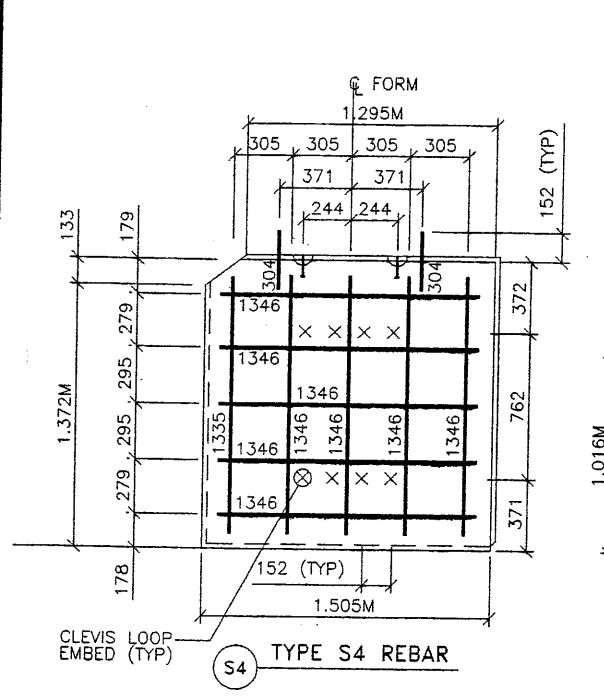
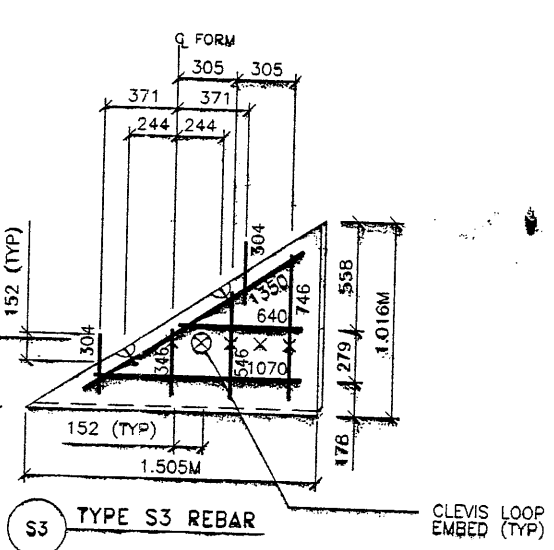
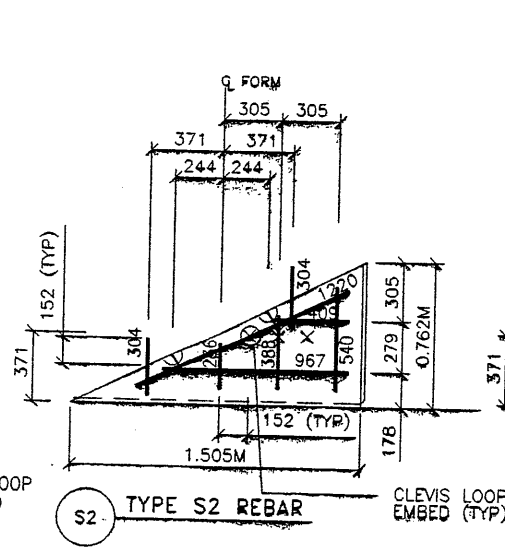
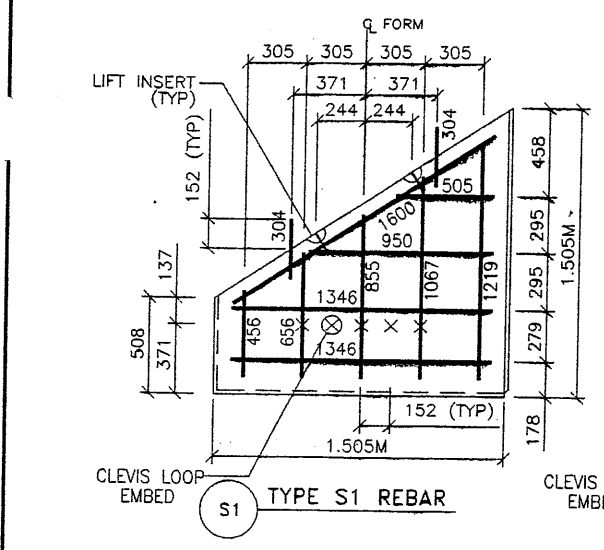
RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-25"
 "G" PANEL REINFORCEMENT 1.524M x 1.524M
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	1.2R-343-25.11
JOB NO.	239-0007
SHT. NO.	RE-9

E:\APROJECT\239-0007\SERIES\72-25\SPECIALS

-10-97

FINAL PLC

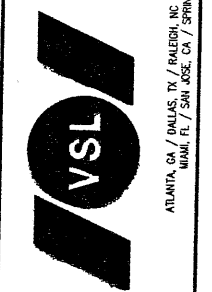


APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9/16/97	RELEASE FOR CONSTRUCTION

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WASATCH CONSTRUCTORS
 SEP 19 1997
 RELEASED FOR CONSTRUCTION

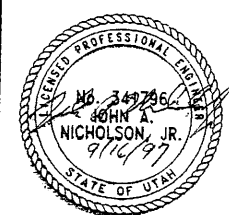
VSL CORPORATION
 2940 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-6272
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RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-25"
 SPECIAL PANEL REINFORCEMENT
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

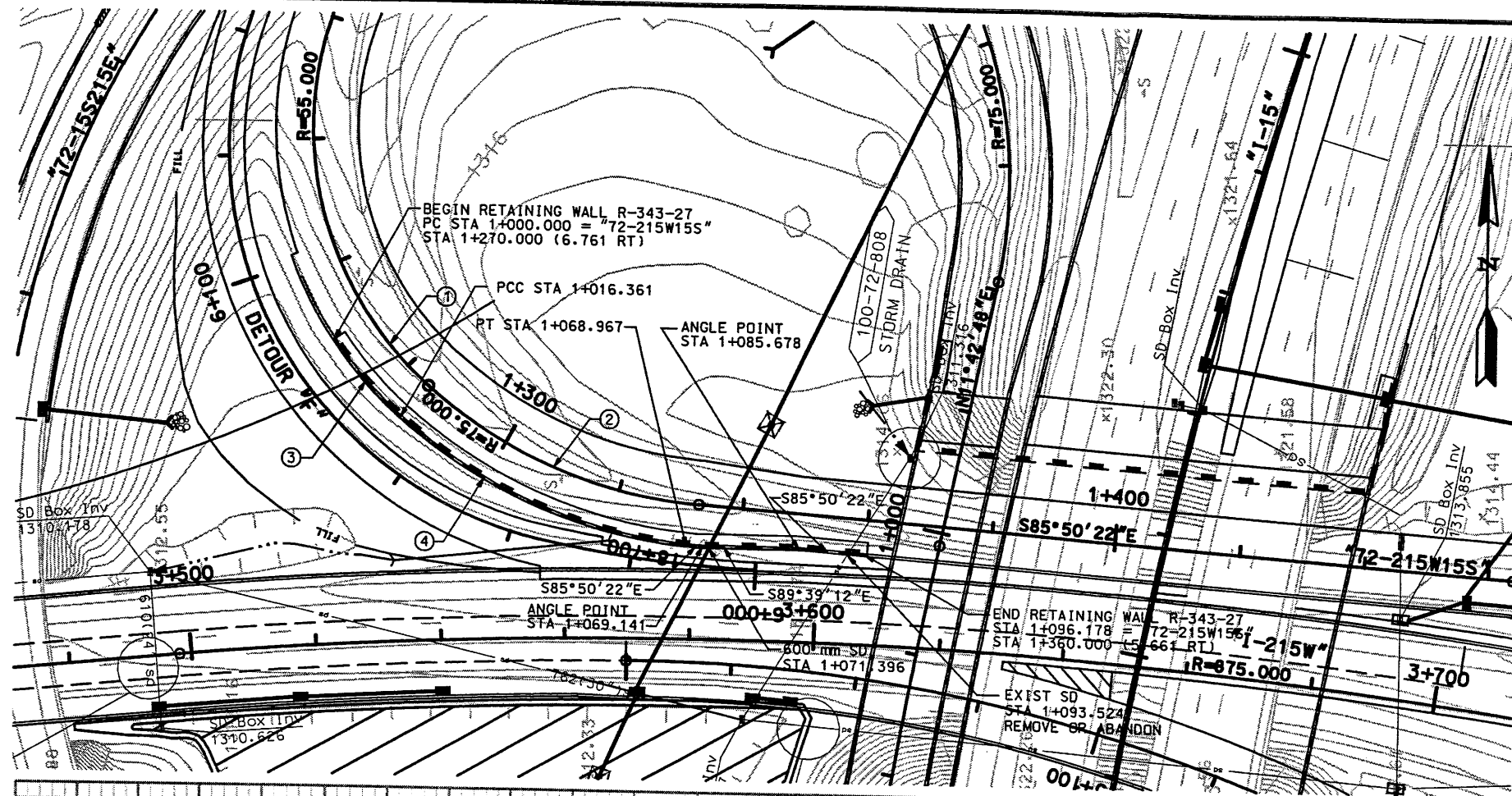
METRIC



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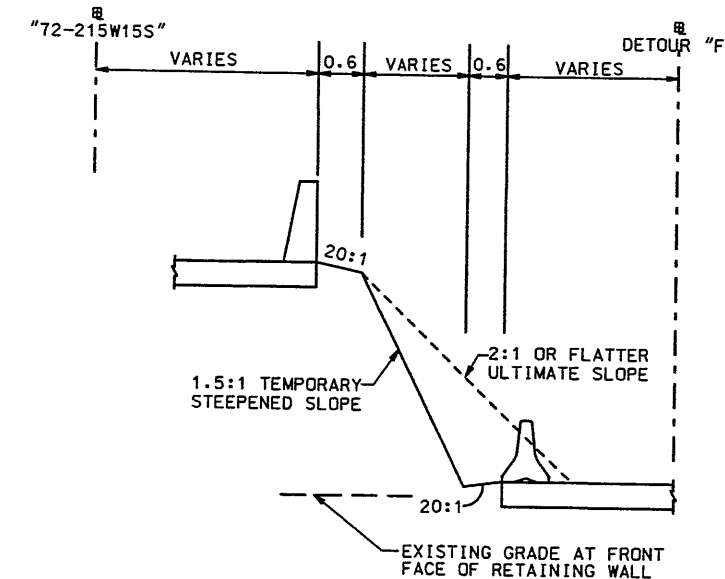
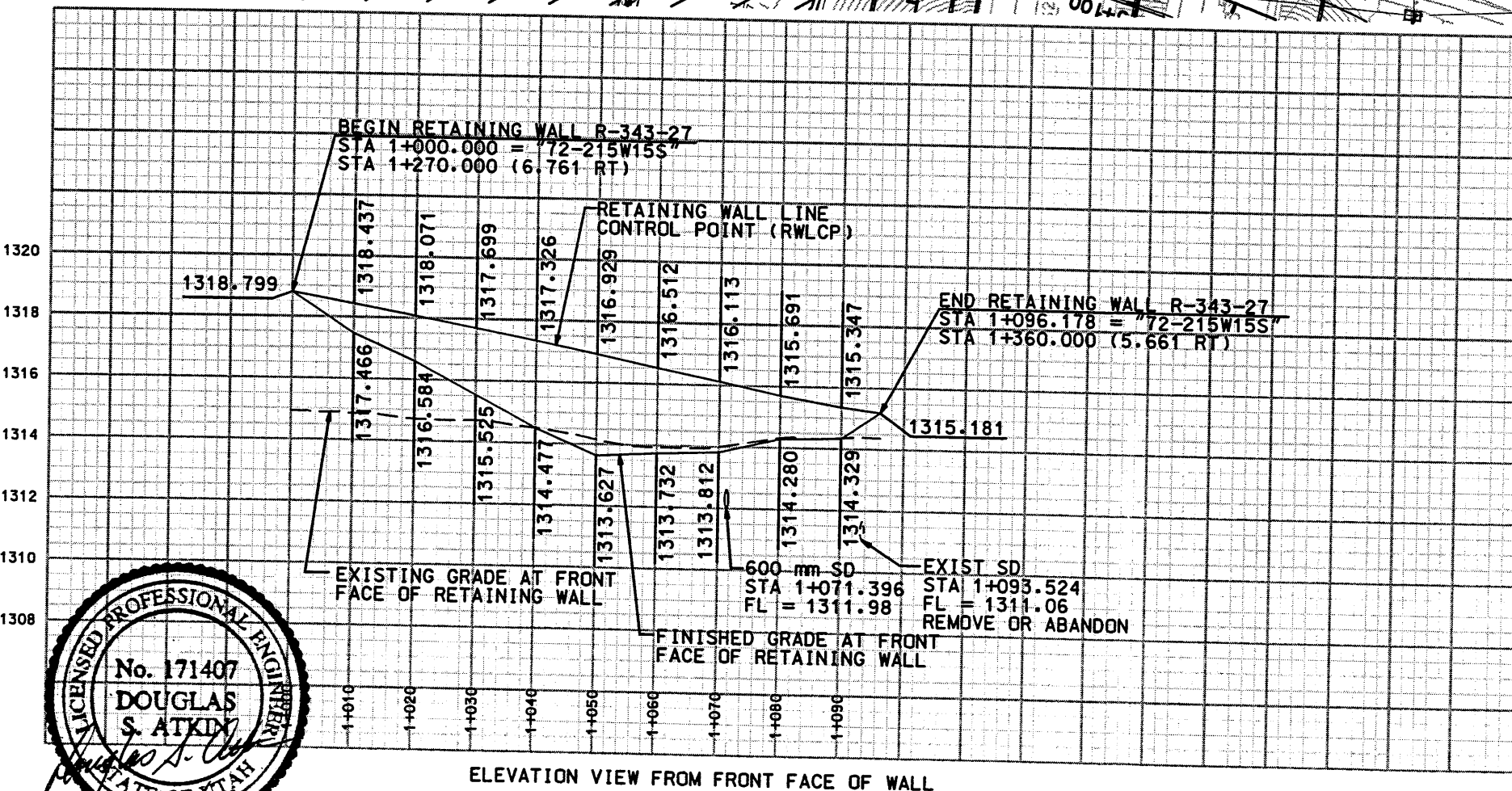
DWG. NO.	1.2R-343-25.12
JOB NO.	239-0007
SHT. NO.	RE-10

Username: coylejlm
 Date: 14-OCT-1998 Time: 07:44

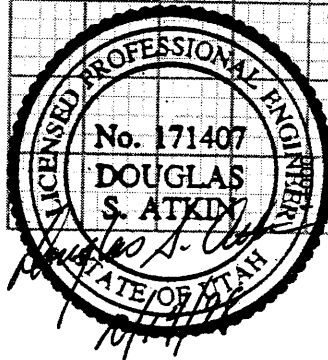


CURVE NO.	Δ	R	L	T
①	205° 40' 45"	55.000	197.438	
②	36° 51' 52"	75.000	48.256	24.996
③	15° 10' 41"	61.761	16.361	8.229
④	36° 51' 54"	81.761	52.606	27.250

APPROVED FOR CONSTRUCTION
 WASATCH CONSTRUCTORS
 OCT 19 1998
 RELEASED FOR CONSTRUCTION



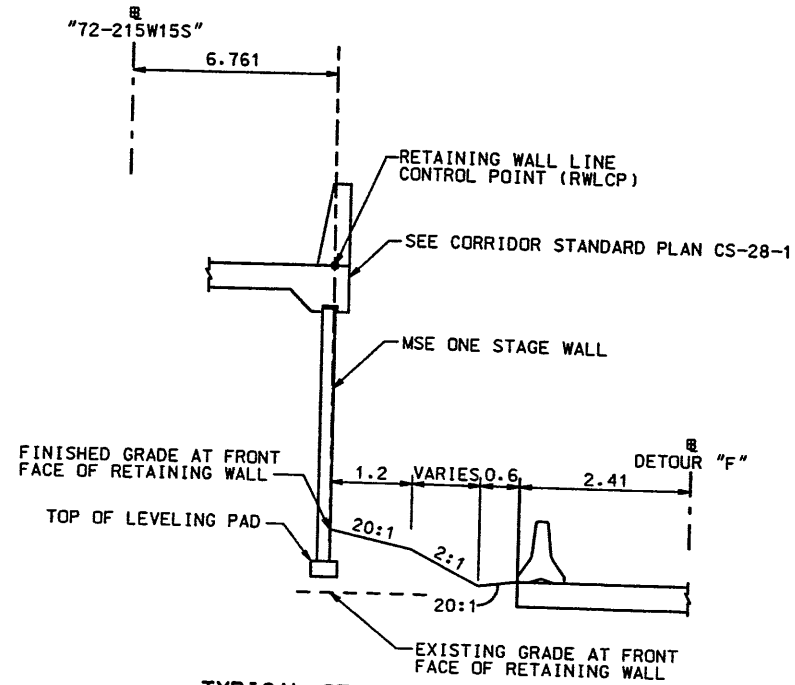
NOTE:
 THE FOUNDATION BEARING MATERIALS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER DURING SITE PREPARATION. ANY UNDESIRABLE MATERIALS WILL NEED TO BE REMOVED AND REPLACED WITH BORROW IN ORDER TO ACHIEVE ACCEPTABLE CONDITIONS AT THE BASE OF THE WALL.



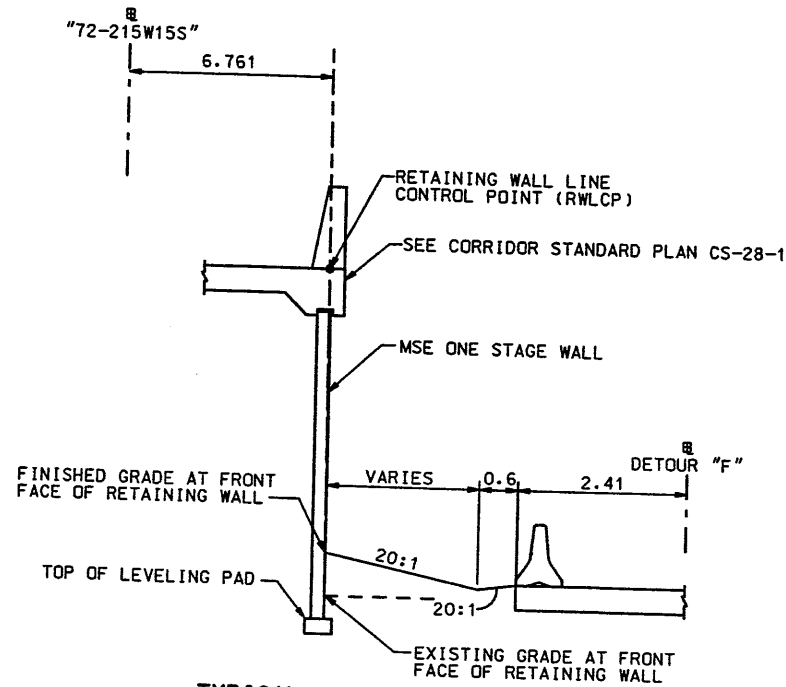
APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	INITIAL	RELEASE
A	10-14-98		
UTAH DEPARTMENT OF TRANSPORTATION		URS Grøiner	
SVERDRUP/DE LEUW		DESIGN	CHECK
I-15 CORRIDOR RECONSTRUCTION		7/98	7/98
SITUATION/LAYOUT		RETAINING WALL R-343-27	
SECTION 1.2		PROJECT NUMBER	#SP-15-7(135)296
SALT LAKE COUNTY		DWG. NO.	1.2R-343-27.1
SHT. 1	OF 8		
REF.			

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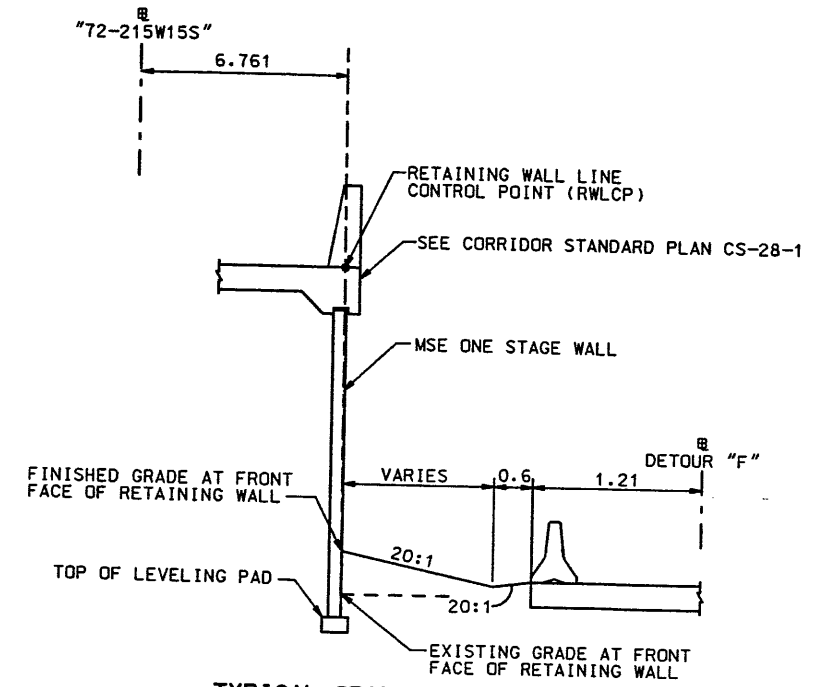
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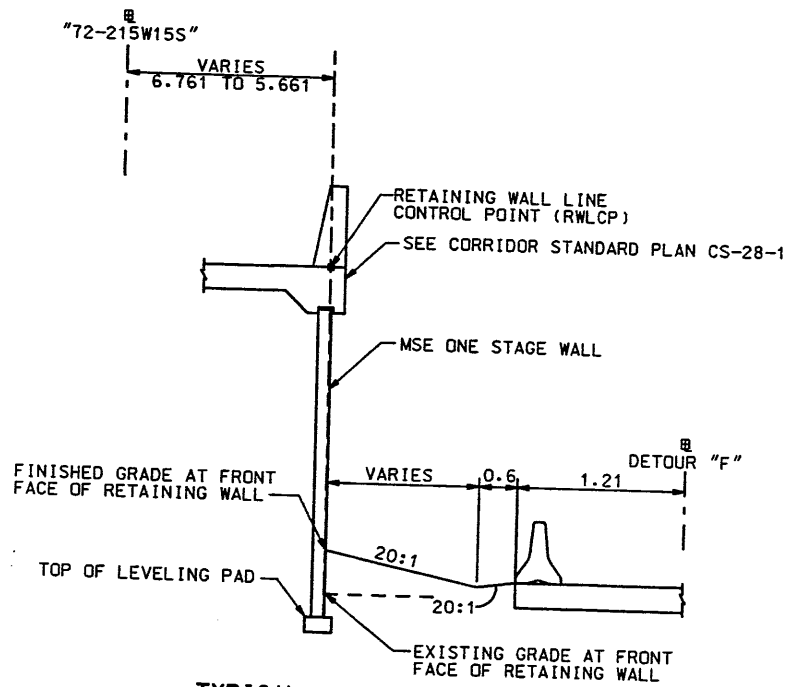
TYPICAL SECTION
RETAINING WALL R-343-27
STA 1+000.000 TO STA 1+045.000



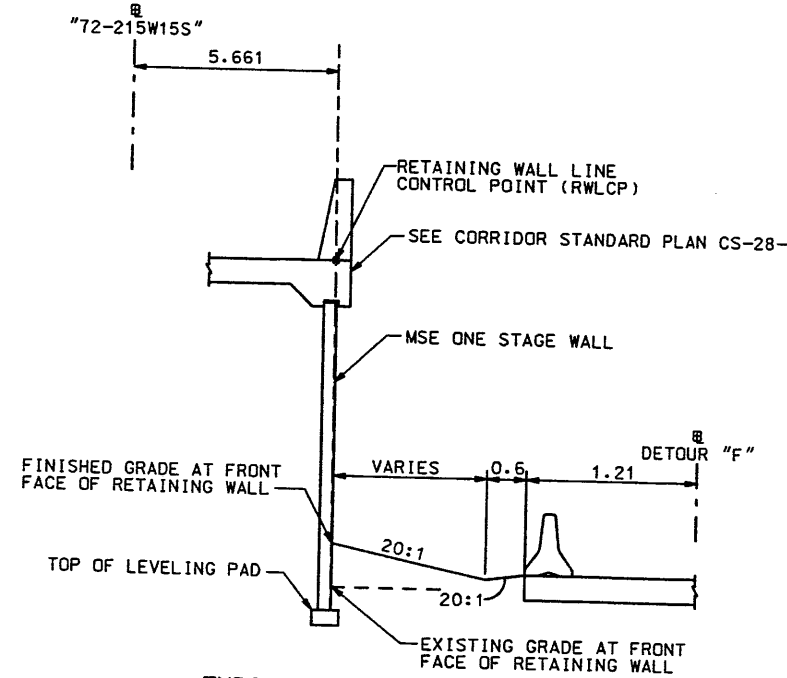
TYPICAL SECTION
RETAINING WALL R-343-27
STA 1+045.000 TO STA 1+054.466



TYPICAL SECTION
RETAINING WALL R-343-27
STA 1+054.466 TO STA 1+069.141

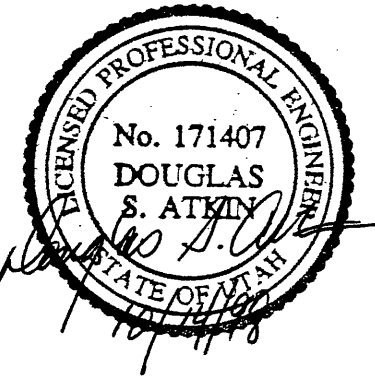


TYPICAL SECTION
RETAINING WALL R-343-27
STA 1+069.141 TO STA 1+085.678



TYPICAL SECTION
RETAINING WALL R-343-27
STA 1+085.678 TO STA 1+096.178

WASATCH CONSTRUCTORS
OCT 19 1998
RELEASED FOR CONSTRUCTION



APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	NO.	DATE
1	10-14-98		
INITIAL RELEASE		3/8	
UTAH DEPARTMENT OF TRANSPORTATION			
URS Gröiner			
SYNERUP/DE LEU			
DESIGN	CHK	DATE	CHK
KW	JBE	7/98	7/98
DRAWN	CJ	7/98	7/98
QUANT.			
			1212424
I-15 CORRIDOR RECONSTRUCTION		SECTION 1.2	
DETAILS RETAINING WALL R-343-27		#SP-15-7(135)296	
SALT LAKE COUNTY		DWG. NO.	
1.2R-343-27.2		SHT. 2 OF 8	
REF.			

H:\RE_EARTH\PROJECT\239-0007\1998\65-46\RE-1
 09-17-98
 FINAL

BEGIN PRECAST WALL R-343-27
 PRECAST WALL PC STA. 1+000.000=
 "72-215W15S" STA. 1+270.000
 ● 6.761 RT

CURVE DATA
 R= 61.761
 Δ= 15°10'41"
 L= 16.361
 T= 8.229

PRECAST WALL PCC STA. 1+016.361

FRONT FACE PRECAST WALL R-343-27

CURVE DATA
 R= 81.761
 Δ= 36°51'54"
 L= 52.606
 T= 27.250

PRECAST WALL PT STA. 1+068.967

S 85°50'22" E

ANGLE POINT

PRECAST WALL STA. 1+069.141

S 89°39'12" E

①72-215W15S

1+350

S 85°50'22" E

ANGLE POINT
PRECAST WALL STA. 1+085.678

600mm SD
PRECAST WALL STA. 1+071.396

END PRECAST WALL R-343-27
 PRECAST WALL STA. 1+096.1780=
 "72-215W15S" STA. 1+360.000
 ● 5.661 RT

EXIST SD
 PRECAST WALL STA. 1+093.524
 REMOVE OR ABANDON

PLAN VIEW WALL "R-343-27"

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

RETAINED EARTH INDEX	
RE-1	PLAN PRECAST FACE WALL R-343-27, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTIONS
RE-3	TYPICAL CROSS SECTIONS
RE-4	ELEVATION PRECAST WALL "R-343-27"
RE-5	ELEVATION PRECAST WALL "R-343-27"
RE-6	SPECIAL PANEL DETAILS

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

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

VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-6272
 Fax: (919) 781-6869
 ATLANTA, GA / DALLAS, TX / BALTIMORE, MD (CORPORATE OFFICE)
 MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

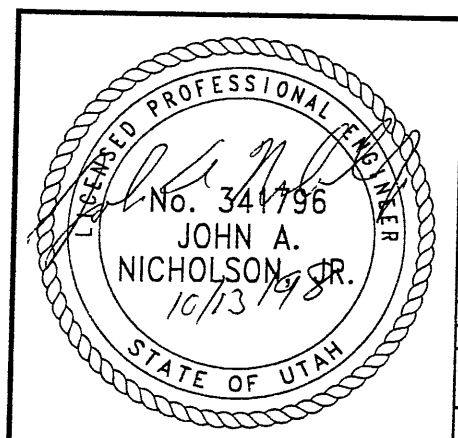
WASATCH CONSTRUCTORS
 OCT 19 1998
 RELEASED FOR CONSTRUCTION

- 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: 4W15-6 MESH HAS FOUR (4) W15 LONGITUDINAL WIRES WITH W15 CROSSBARS AT 6" CENTERS.
EXAMPLE: 5W15-6 MESH HAS FIVE (5) W15 LONGITUDINAL WIRES WITH W15 CROSSBARS AT 6" 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 DETAILS.
 - GEOTECHNICAL ENGINEER TO FIELD VERIFY FOUNDATION CONDITIONS AND EXTENT OF STRUCTURAL FILL.

DESIGN PARAMETERS	
ANGLE OF INTERNAL FRICTION (SELECT) = 34°	
ANGLE OF INTERNAL FRICTION (BASE) = 24° 13' 40"	
ANGLE OF INTERNAL FRICTION (RANDOM) = 34°	
UNIT WEIGHT BACKFILL = 135 PCF. (21.2 KN/M ³)	
TRAFFIC SURCHARGE = 250 PSF (12 KPa)	
SEISMIC ACCELERATION COEFF. = 0.11g (TYP)	
DESIGN CRITERIA	
SAFETY FACTOR (OVERTURNING) = 2.0	
SAFETY FACTOR (SLIDING) = 1.5	
SAFETY FACTOR (PULLOUT) = 1.5	
DESIGN LIFE = 75 YEARS	

METRIC

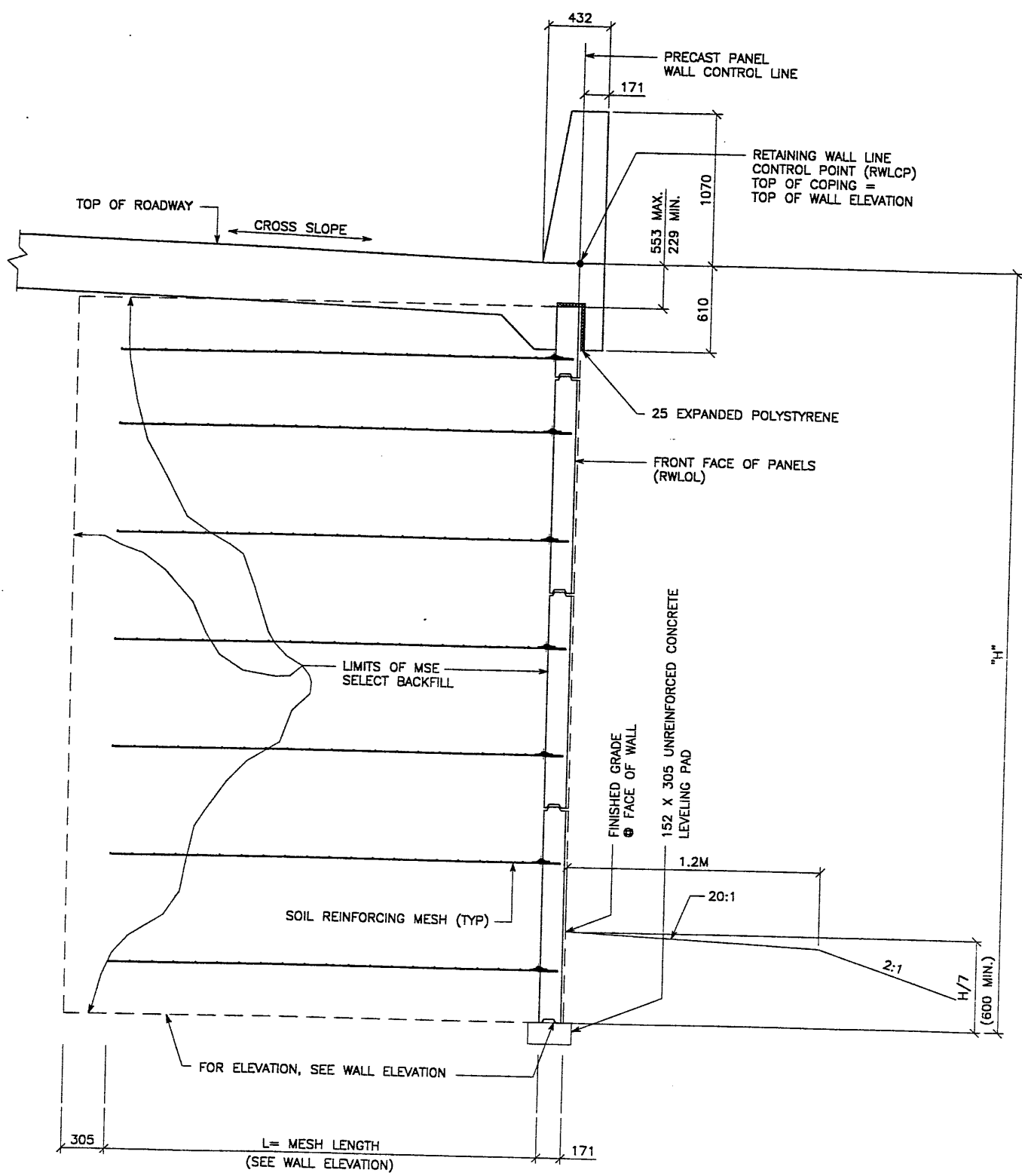
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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



RETAINED EARTH™ WALLS
 PLAN VIEW PRECAST WALL "R-343-27"
 UTAH 1-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.
 1.2R-343-27.3
 JOB NO.
 239-0007 3/8
 SH. NO.
 RE-1

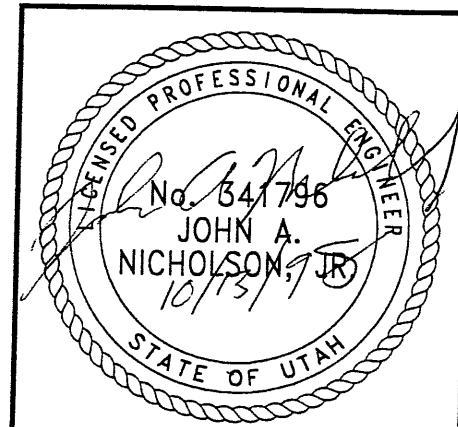
10-02-98
 FINAL
 H:\RE_EARTH\PROJECT\239-0007\1998\72-27\RE-2
 CE (X-UTAH.DWG)



TYPICAL CROSS SECTION - STA 1+000.000 TO STA 1+045.000
 (SEE DWG. NO. 1.2R-343-27.2 FOR ADDITIONAL INFORMATION)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-07-98	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
OCT 19 1998
 RELEASED FOR CONSTRUCTION



METRIC
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NO.		DATE		DESCRIPTION	
△		10-07-98		RELEASE FOR CONSTRUCTION	

DES.	DRN.	CHK.	RETAINED EARTH™
JL	JL	JL	✓
09-17-98	09-17-98	09-17-98	

VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 791-8272
 Fax: (919) 791-4669

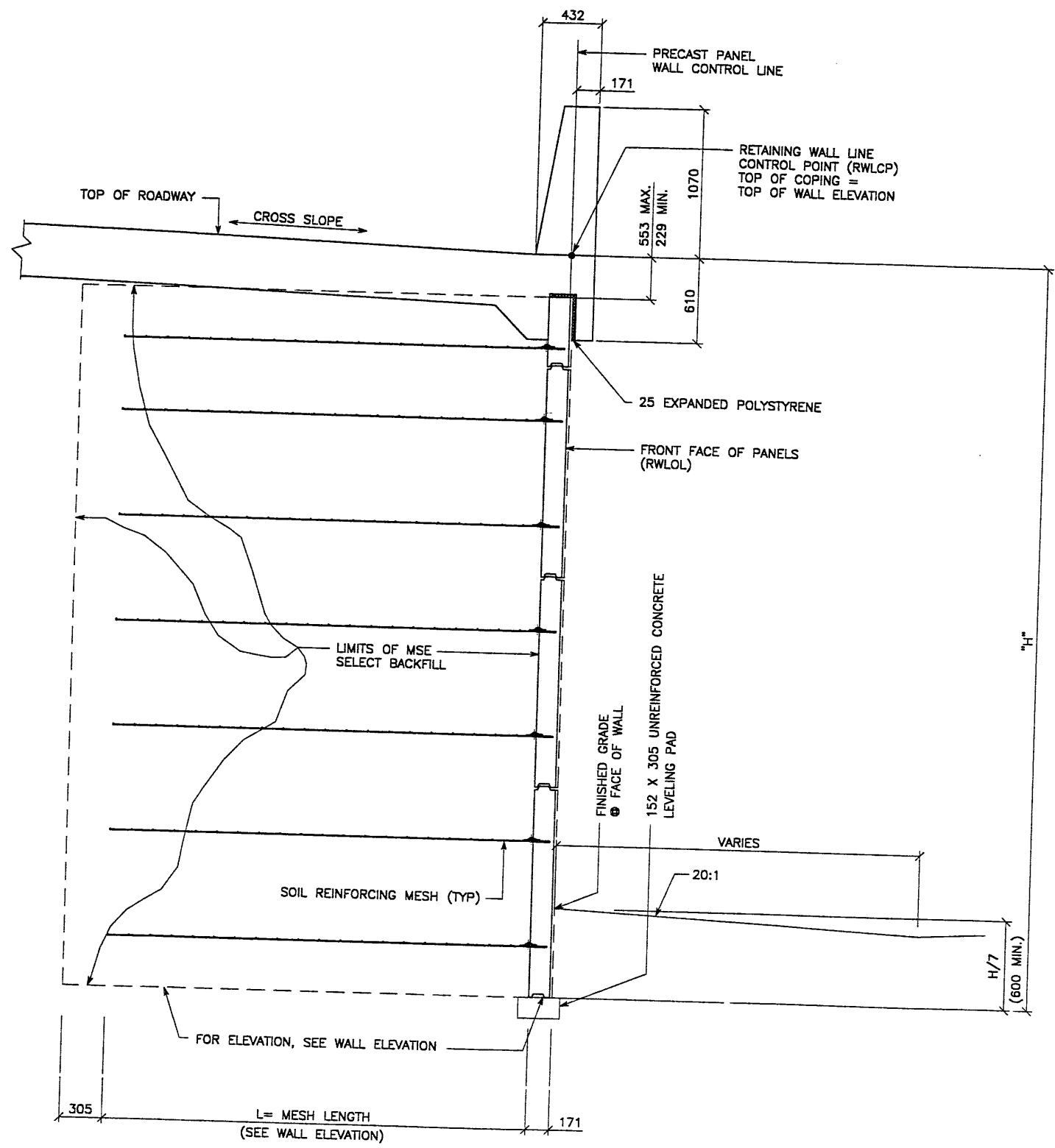
VSL
 ATLANTA, GA / DALLAS, TX / MILWAUKEE, WI (CORPORATE OFFICE)
 MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, IL

RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-27"
 TYPICAL CROSS SECTION

UTAH 1-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	1.2R-343-27.4
JOB NO.	239-0007 4/8
SHT. NO.	RE-2

H:\RE_EARTH\PROJECT\239-0007\1998\72F\72-27\RE-2
 FINAL 10-02-98



TYPICAL CROSS SECTION - STA 1+045.000 TO STA 1+096.178
 (SEE DWG. NO. 1.2R-343-27.2 FOR ADDITIONAL INFORMATION)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

METRIC

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APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-07-98	RELEASE FOR CONSTRUCTION

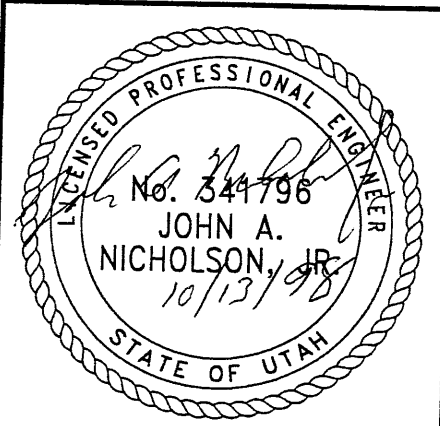
DES.	DRN.	CHK.	DATE	BY	REVISION
JL	JHU	JL	09-17-98		
JL	JHU	JL	09-17-98		
JL	JHU	JL	09-17-98		

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WASATCH CONSTRUCTORS
 OCT 19 1998
 RELEASED FOR CONSTRUCTION



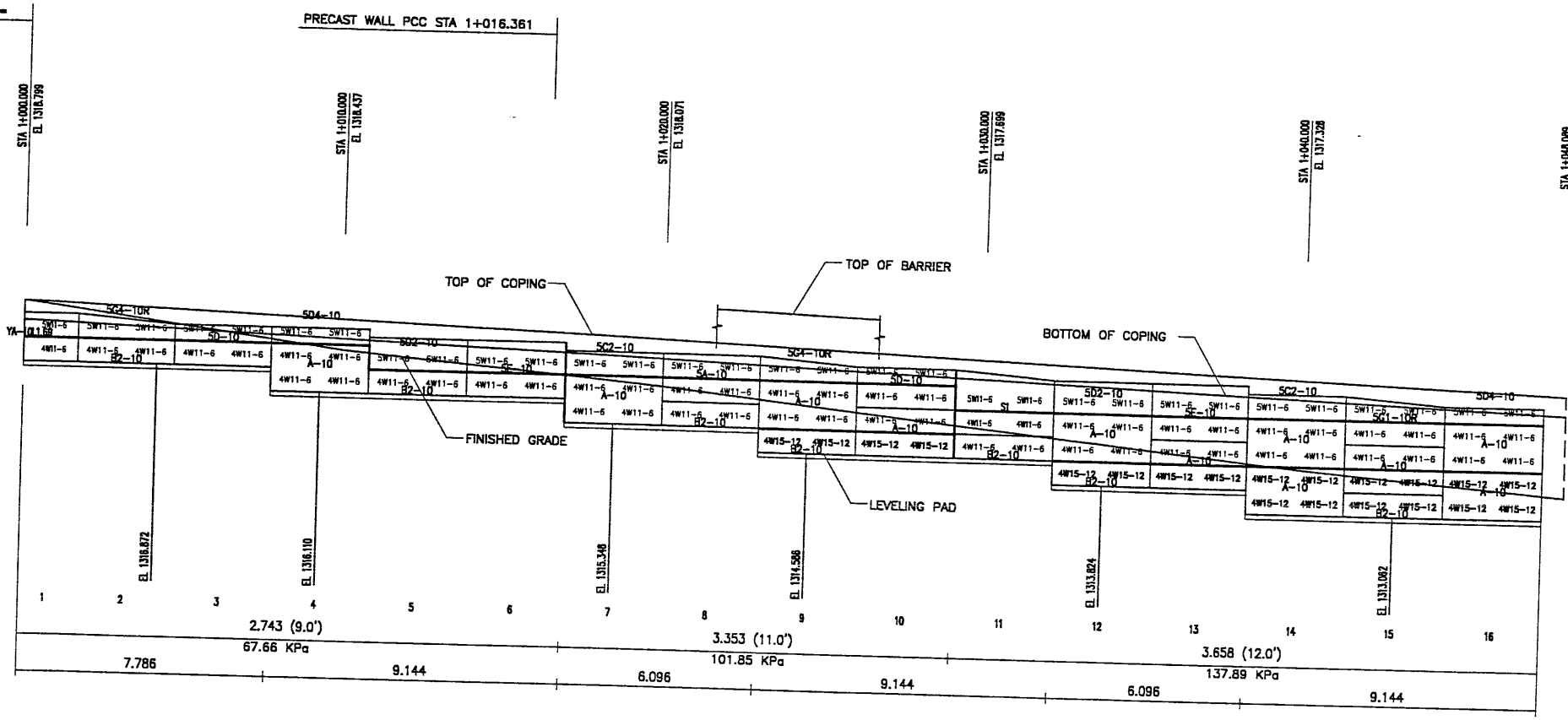
RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-27"
 TYPICAL CROSS SECTION
 UTAH 1-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	1.2R-343-27.5
JOB NO.	239-0007
SH. NO.	RE-3

J:\239-0007\1998\72SERIES\72-27\72-27.dwg
 10-07-98
 FINAL

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	10-07-98	RELEASE FOR CONSTRUCTION

BEGIN WALL R-343-27
 PRECAST WALL STA 1+000.000 =
 "72-215W15S" STA 1+270.000
 ● 6.761 RT
 NOMINAL PANEL FACE (RWL/L)



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

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
7.786			2.743 (9.0')			67.66 KPa			3.353 (11.0')			101.85 KPa			9.144		
9.144			6.096			9.144			6.096			137.89 KPa			9.144		

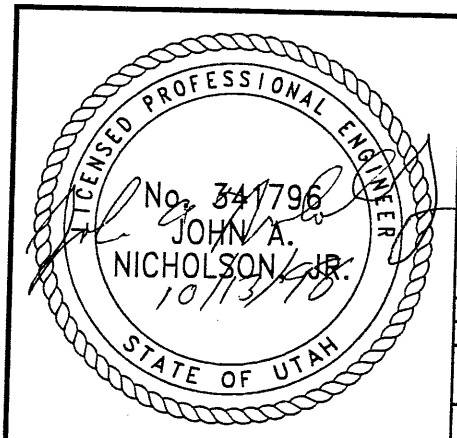
ELEVATION PRECAST WALL R-343-27
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 253.15 SM)

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

METRIC

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

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



WASATCH CONSTRUCTORS
 OCT 19 1998
 RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-27"
 UTAH I-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.
 1.2R-343-27.6
 JOB NO.
 239-0007/8
 SHEET NO.
 RE-4

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 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-8272
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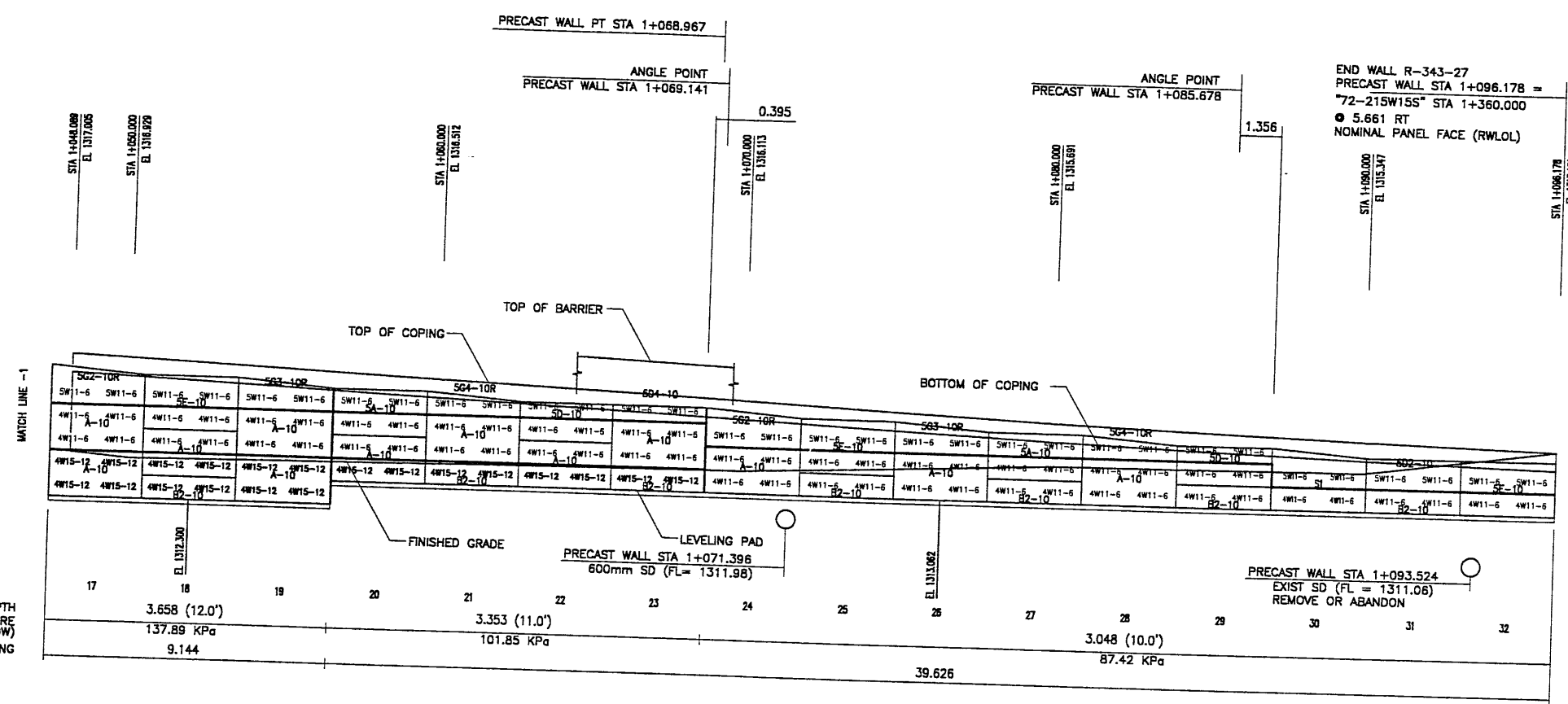
ACE (X-UTAH.DWG)

d:\239-0007\1998\72SERIES\72-27\72-2

T 10-07-98

FINAL

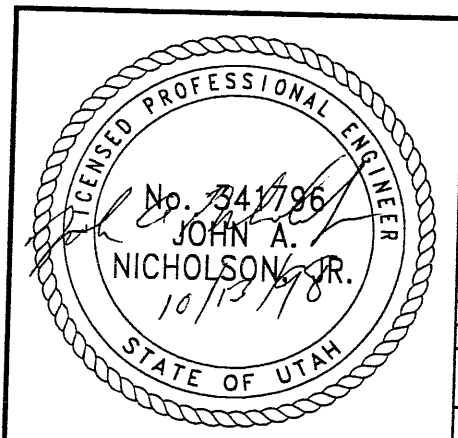
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	10-07-98	RELEASE FOR CONSTRUCTION



ELEVATION PRECAST WALL R-343-27
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF PANELS = 253.15 SM) SCALE 1:200 (HALF SIZE)

METRIC

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WASATCH CONSTRUCTORS
OCT 19 1998
RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-27"
 UTAH I-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	1.2R-343-27.7
JOB NO.	239-0007 7/8
SHT. NO.	RE-5

VSL CORPORATION
 2840 River Place, Suite 200
 Raleigh, NC 27612
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NO.	DATE	DESCRIPTION	BY	CHK

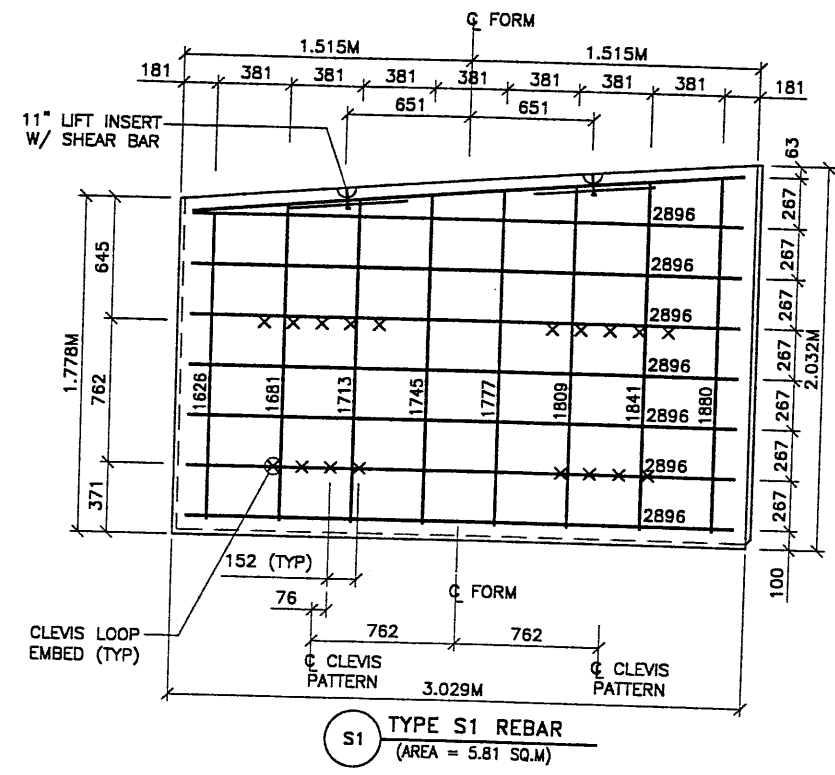
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DRN.	09-17-98	JHU
CHK.	09-17-98	JL

NO.	DATE	REVISION

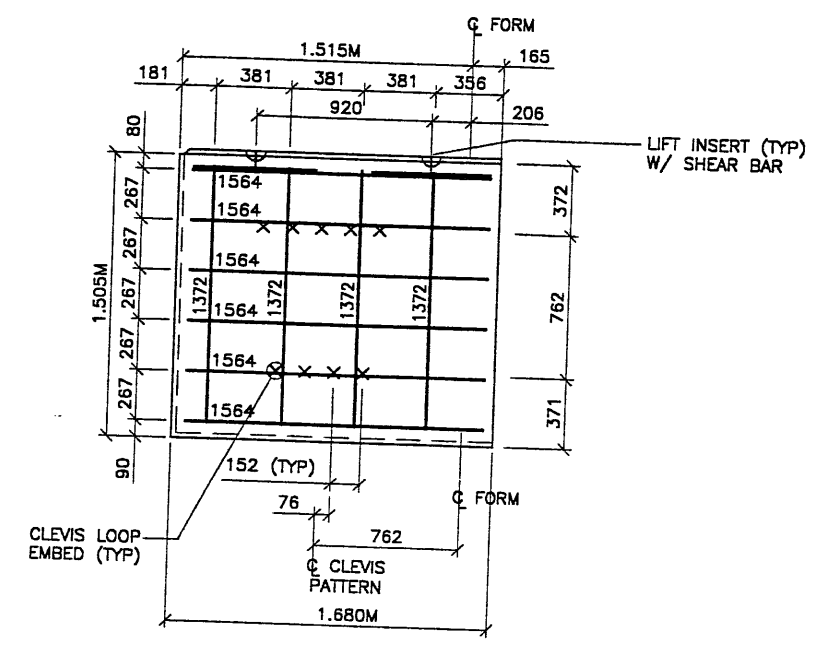
FINAL T 10-07-98

J:\239-0007\1998\72\72-27\SPECIALS.DWG

ANCE (X-UTAH.DWG)



S1 TYPE S1 REBAR
(AREA = 5.81 SQ.M)



TYPE YA-10L1.69 REBAR
(AREA = 2.58 SQ.M)

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

- 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 20,700 KPa.
 8. EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 9. ALL PANELS TO USE 9.5mmØ 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.

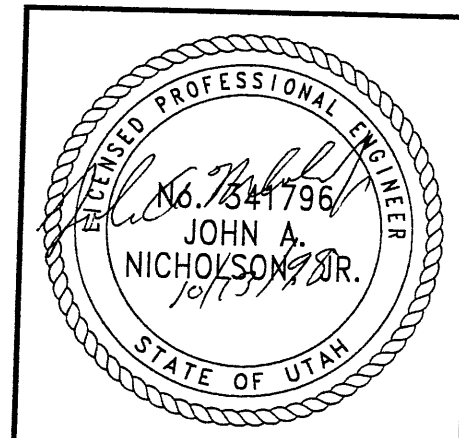
VSL CORPORATION
2810 Pineda Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-0272
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WASATCH CONSTRUCTORS
OCT 19 1998
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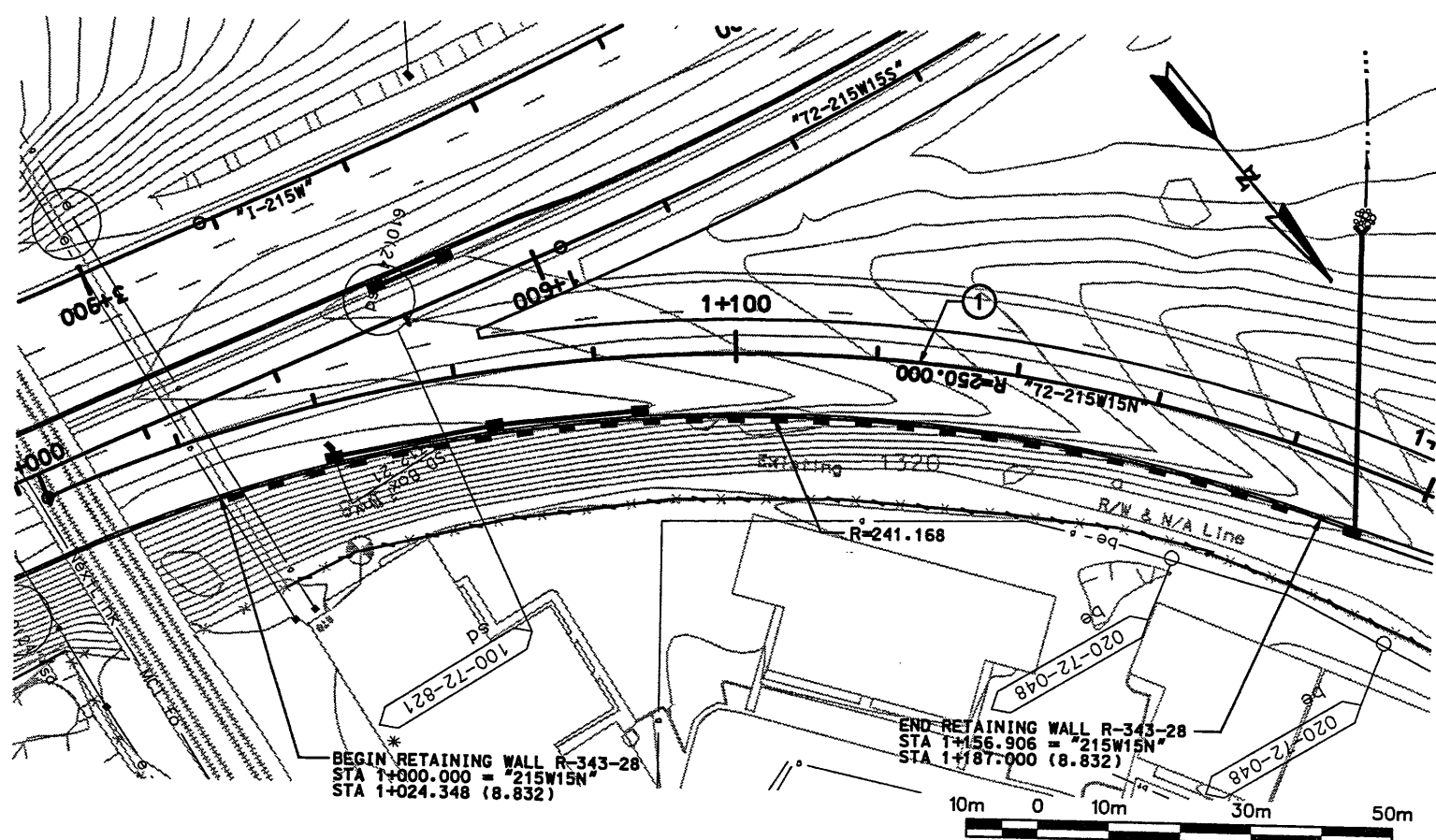


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METRIC

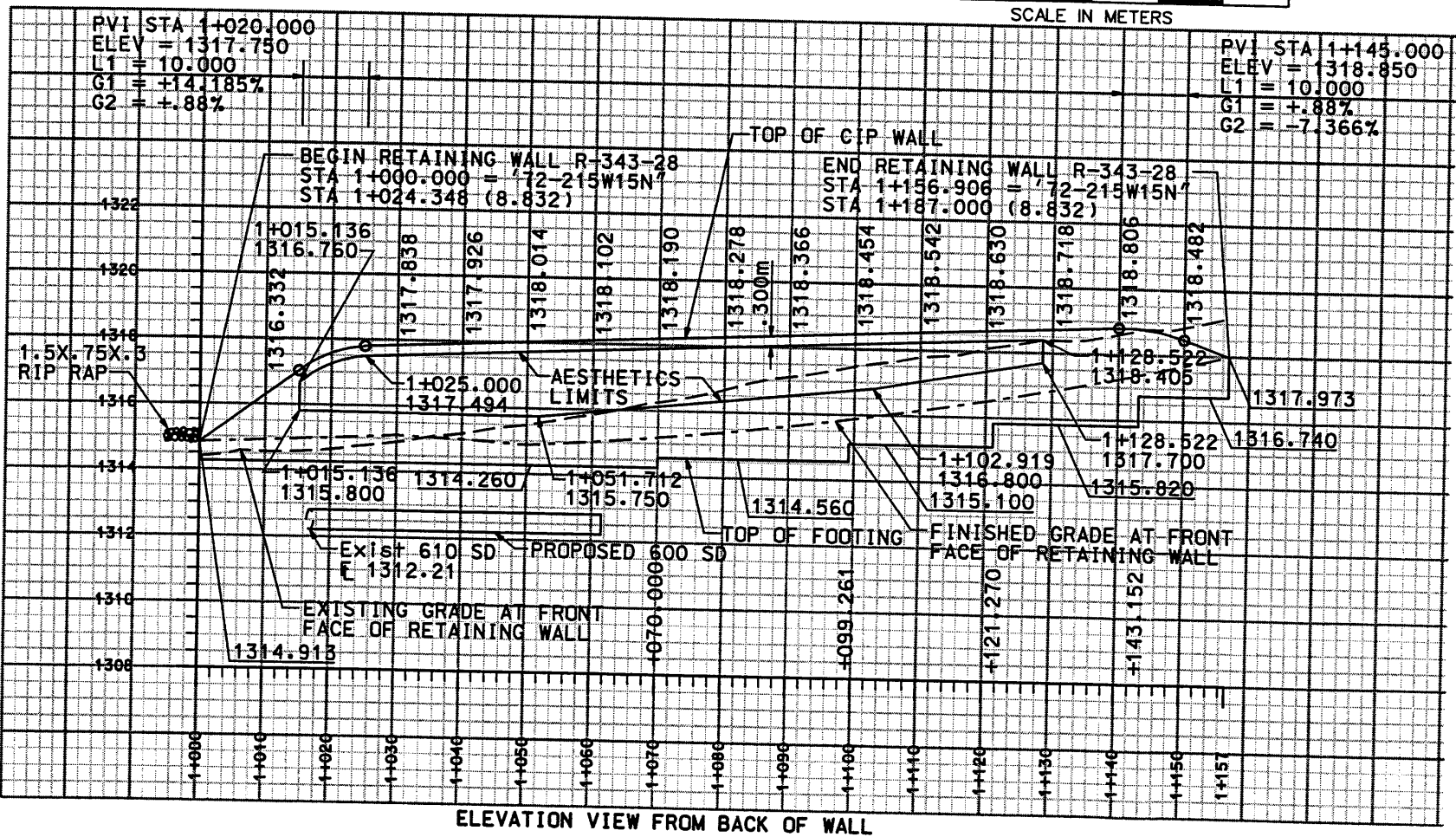
RETAINED EARTH™ WALLS PRECAST WALL "R-353-27" SPECIAL PANEL DETAILS	UTAH I-15 RECONSTRUCTION SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.
DWG. NO. 3.2-R-353-27.8	JOB NO: 239-0007
SHT. NO. RE-6	DATE: 10/18/98

Date: 09-NOV-1998 Time: 16:37 Username: coyie.jm

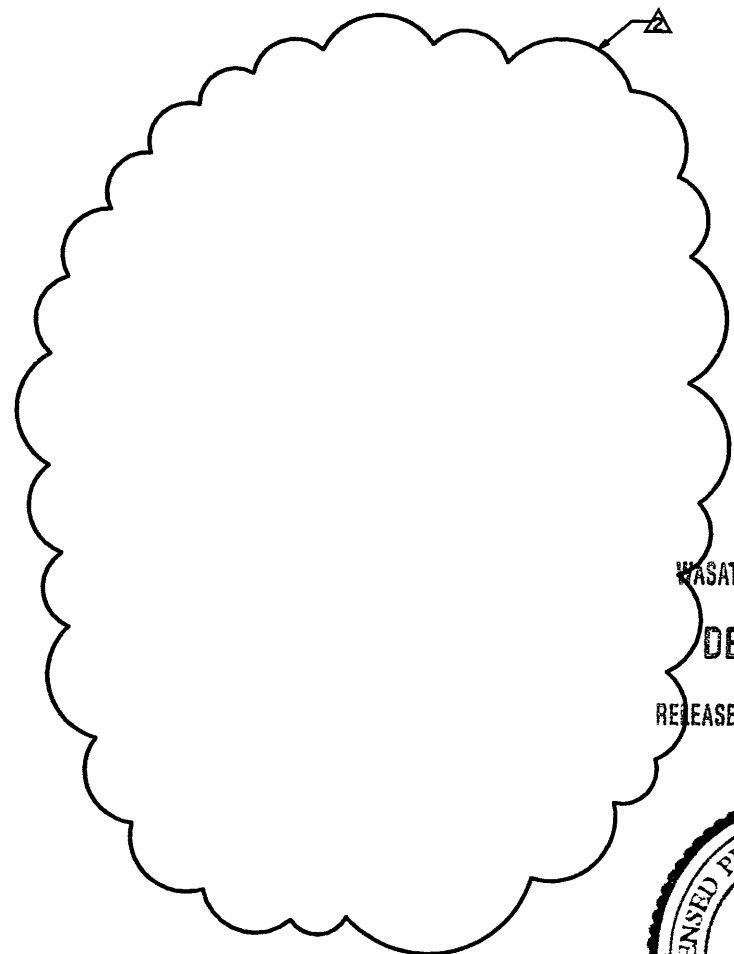


CURVE NO.	△	R	L	T
①	73°46'44"	250.000	321.921	187.633

STATION LIMIT	C.I.P. DESIGN HEIGHT (m)
1+000.000 TO 1+006.006	1.2
1+006.006 TO 1+010.234	1.8
1+010.234 TO 1+014.464	2.4
1+014.464 TO 1+020.000	3.0
1+020.000 TO 1+067.159	3.6
1+067.159 TO 1+070.000	4.2
1+070.000 TO 1+121.207	3.6
1+121.207 TO 1+143.152	3.0
1+143.152 TO 1+156.906	1.8



ELEVATION VIEW FROM BACK OF WALL



- NOTES:
- CORRIDOR STANDARD PLAN RETAINING WALL AESTHETICS DRAWING CS-6 TEXTURE TYPE A - SEE DETAIL A
 - CAST IN PLACE RETAINING WALL SHALL BE BUILT IN CONFORMANCE WITH UDOT CONCRETE RETAINING WALL STANDARD DETAILS NO.1 AND NO. 2.
 - THE FOUNDATION BEARING MATERIALS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER DURING SITE PREPARATION. ANY UNDESIRABLE MATERIALS WILL NEED TO BE REMOVED AND REPLACED WITH BORROW IN ORDER TO ACHIEVE ACCEPTABLE CONDITIONS AT THE BASE OF THE WALL.
 - TEXTURE TYPE A SUPERSEEDS TEXTURE TYPE AA SHEET 1.2R-343-28.2

APPROVED FOR CONSTRUCTION

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

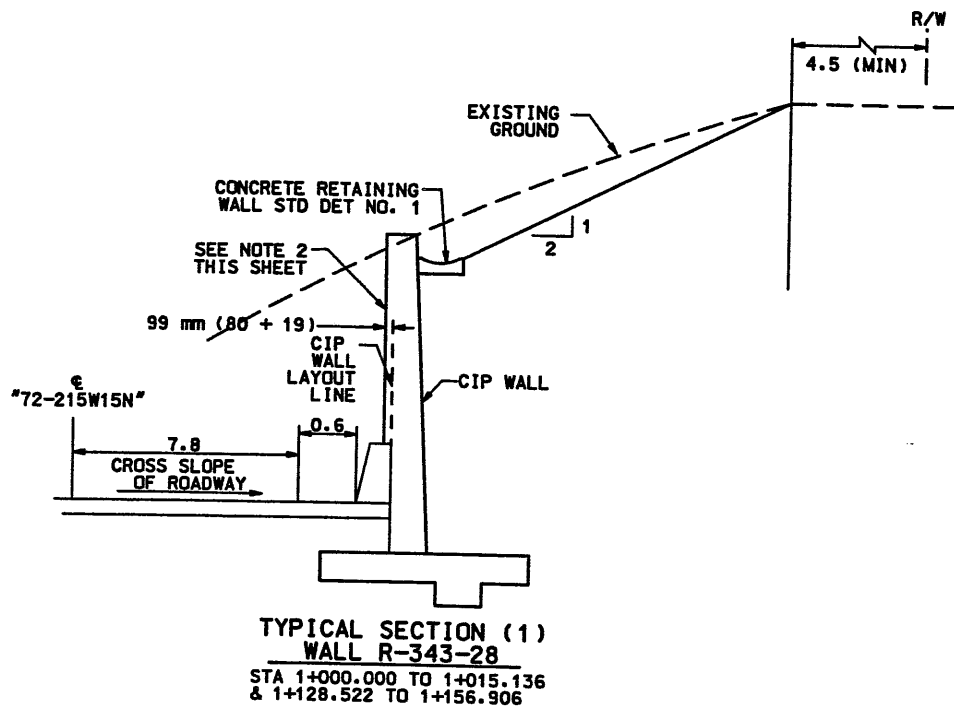
DESIGNER: RICK CHAPMAN
DATE: 1/98
PROJECT DESIGN ENGINEER: [Signature]
DRAWN BY: [Signature]
CHECKED BY: [Signature]
PROJECT MANAGER: [Signature]

DESIGN JOB: 1/98
CHECK JOB: 1/98
DRAWN: 1/98
CHECK: 1/98
QUANT.: /

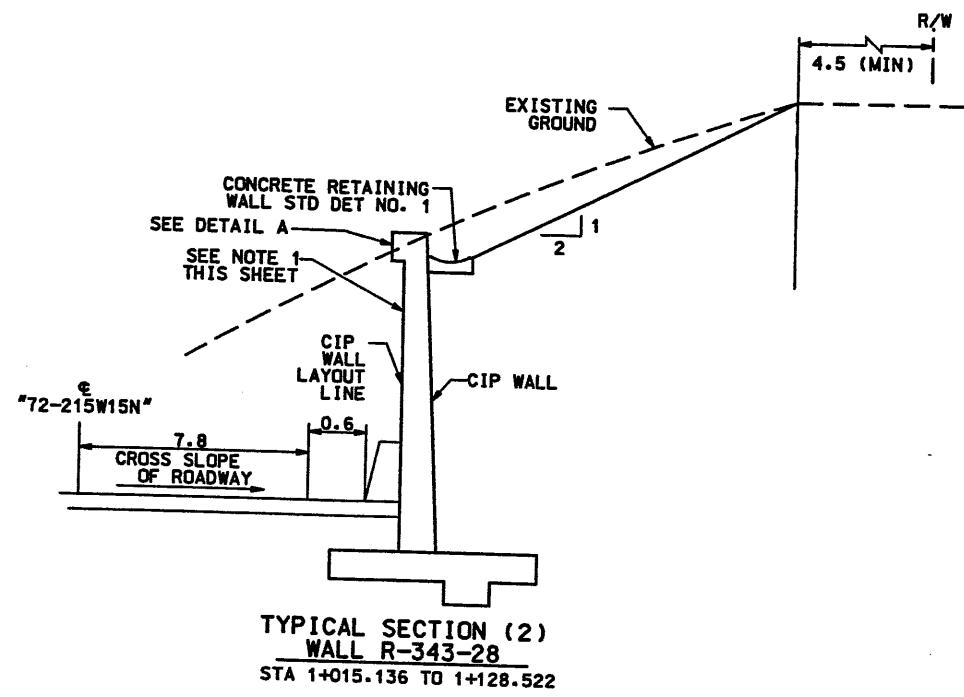
1-15 CORRIDOR RECONSTRUCTION
SIT./LAYOUT RET WALL R-343-28
SECTION 1.2
PROJECT NUMBER: #SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2R-343-28.1
SHT. 1 OF 14
REF.

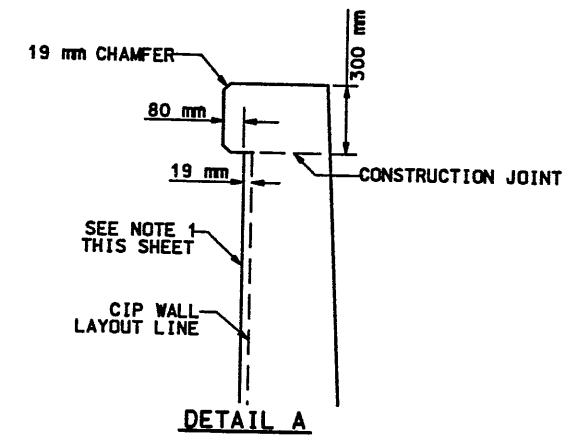
Date: 09-NOV-1998 Time: 16:33 User: nmcocylejm
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TYPICAL SECTION (1)
WALL R-343-28
 STA 1+000.000 TO 1+015.136
 & 1+128.522 TO 1+156.906

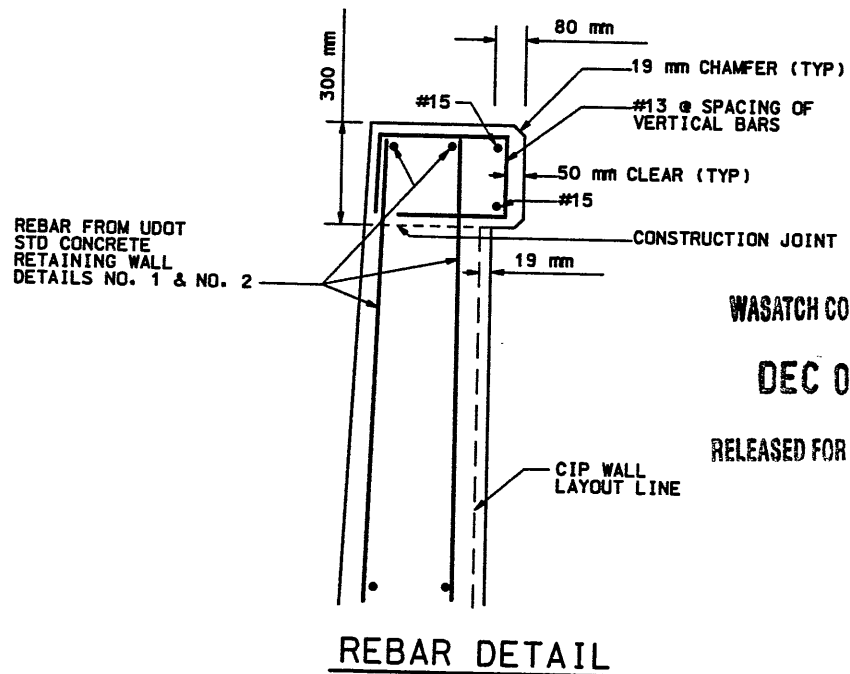


TYPICAL SECTION (2)
WALL R-343-28
 STA 1+015.136 TO 1+128.522



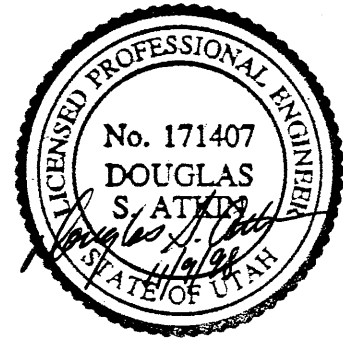
DETAIL A

- NOTE:**
- (1) CORRIDOR STANDARD PLAN RETAINING WALL AESTHETICS DWG CS-6 TEXTURE TYPE A - SEE DETAIL A
 - (2) 80 mm COPING WIDTH WILL EXTEND DOWN TO BARRIER



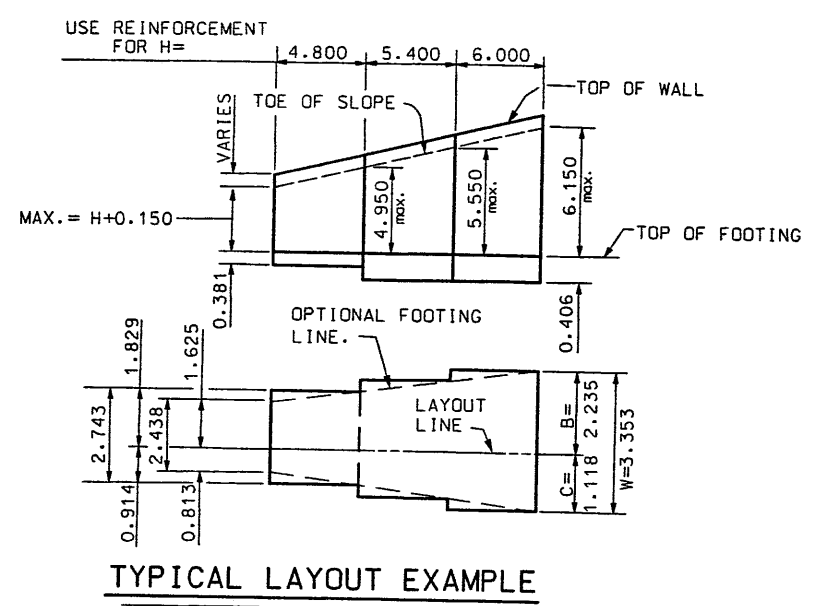
REBAR DETAIL

WASATCH CONSTRUCTORS
DEC 0 2 1998
 RELEASED FOR CONSTRUCTION



APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	NO.	DATE
A	11-09-98		
UTAH DEPARTMENT OF TRANSPORTATION URS Greiner SVERRUP/DE LEUW			
DESIGN	CHK	DESIGN	CHK
PRY	9/97	CHK	JMM
DATE	9/97	DATE	9/97
PROJECT DESIGN ENGINEER		PROJECT DESIGN ENGINEER	
JTM		JTM	
DATE	9/97	DATE	9/97
DRWN	DMK	DRWN	DMK
DATE	9/97	DATE	9/97
SECTION MANAGER		SECTION MANAGER	
QUANT.		QUANT.	
I-15 CORRIDOR RECONSTRUCTION MISC DETAILS RET WALL R-343-28 SECTION 1.2 PROJECT NUMBER #SP-15-7(135)296			
SALT LAKE COUNTY			
DWC. NO. 1.2R-343-28.1A			
SHT. 2A of 4A			

Dortch 31-MAR-98 Time:1:59 User:amei:huffain

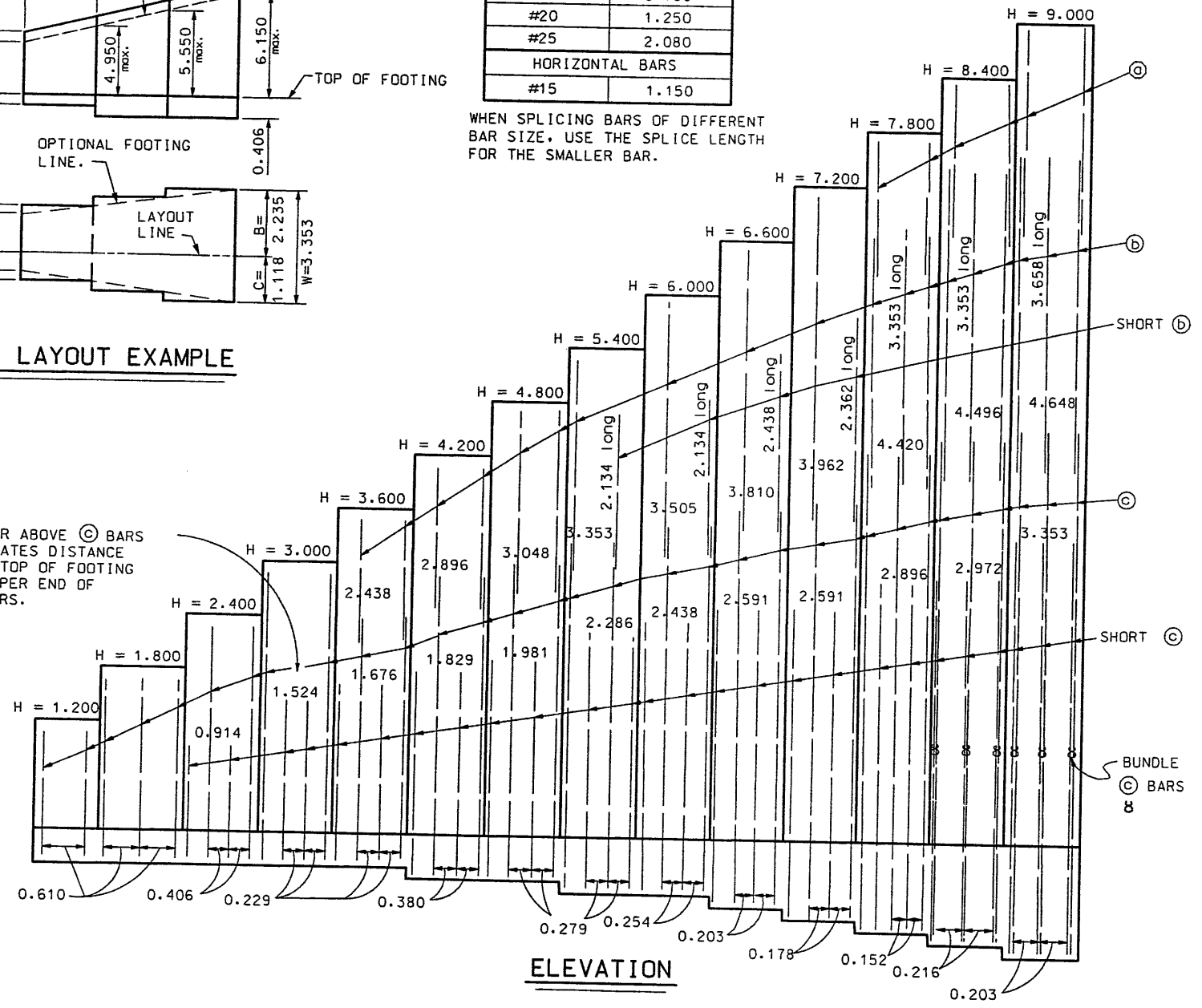


REINFORCING STEEL SPLICES	
BAR SIZE	SPLICE LENGTH
VERTICAL BARS	
#15	0.790
#20	1.250
#25	2.080
HORIZONTAL BARS	
#15	1.150

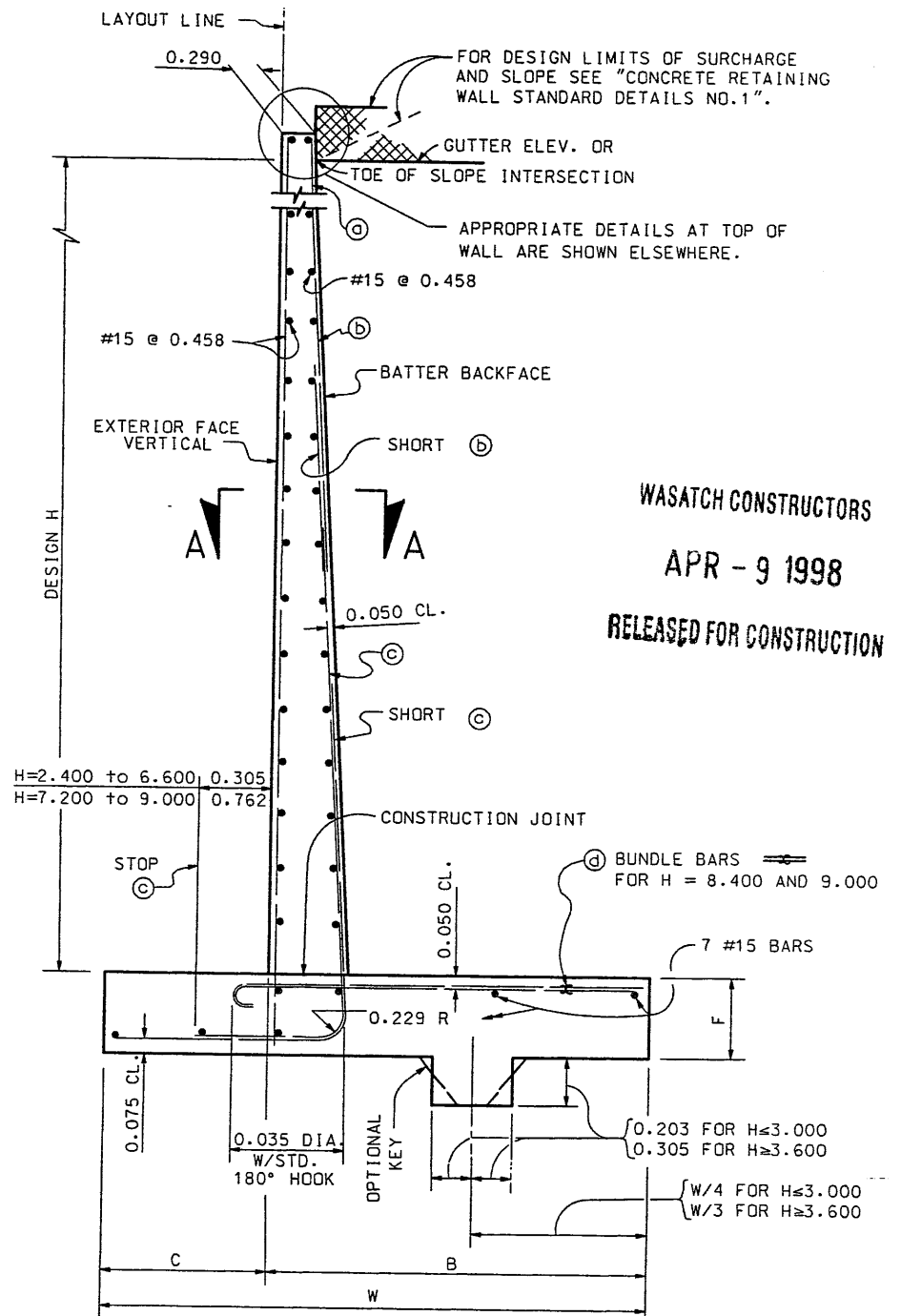
NOTE:
BAR CUT-OFFS MAY BE VARIED
IN INCREMENTS OF 0.150 m.

WHEN SPLICING BARS OF DIFFERENT
BAR SIZE, USE THE SPLICE LENGTH
FOR THE SMALLER BAR.

NUMBER ABOVE © BARS
INDICATES DISTANCE
FROM TOP OF FOOTING
TO UPPER END OF
© BARS.

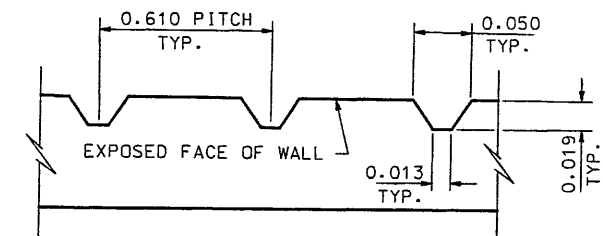


ELEVATION



SPREAD FOOTING SECTION

- NOTES: 1. ALL DIMENSIONS SHOWN ARE IN METERS.
2. FOR DETAILS NOT SHOWN AND DRAINAGE NOTES SEE "CONCRETE RETAINING WALL STANDARD DETAILS NO. 1."
3. QUANTITIES APPLY TO DESIGN H PORTION AND EXCLUDE THE ADDED PORTION ABOVE "GUTTER ELEVATION."



SECTION A-A

TABLE OF REINFORCING STEEL DIMENSIONS AND DATA														
DESIGN H	1.200	1.800	2.400	3.000	3.600	4.200	4.800	5.400	6.000	6.600	7.200	7.800	8.400	9.000
W	0.965	1.270	1.575	1.880	2.184	2.438	2.743	3.048	3.353	3.657	4.038	4.344	4.648	5.105
C	0.305	0.406	0.508	0.610	0.711	0.813	0.914	1.016	1.118	1.219	1.346	1.448	1.549	1.651
B	0.660	0.864	1.067	1.270	1.473	1.625	1.829	2.032	2.235	2.438	2.692	2.896	3.099	3.454
F SPREAD FTG.	0.356	0.356	0.356	0.356	0.356	0.381	0.381	0.406	0.406	0.457	0.508	0.584	0.660	0.711
BATTER	1:24	1:24	1:24	1:24	1:24	1:24	1:24	1:24	1:24	1:24	1:19	1:16	1:16	1:14
© BARS														
© BARS														
© BARS	#15@.610	#15@.610	#15@.406	#15@.229	#20@.229	#30@.380	#30@.279	#35@.279	#35@.254	#35@.203	#35@.178	#35@.152	#35@.216 8	#35@.203 8
© BARS	#15@.610	#15@.610	#15@.406	#15@.229	#15@.229	#25@.380	#25@.279	#35@.279	#35@.254	#35@.203	#35@.178	#35@.152	#30@.216 8	#30@.203 8
.610 LEVEL SURCHARGE TOE PRESSURE kPa	76.6	91.0	105.3	110.1	134.1	158.0	167.6	191.5	205.9	220.3	234.6	253.8	272.9	296.9
2:1 UNLIMITED SCOPE TOE PRESSURE kPa	52.7	71.8	95.8	119.7	129.3	158.0	172.4	201.1	225.0	263.3	282.5	311.2	340.0	359.1
SPREAD FOOTING STEEL kg/m	25	30	42	55	76	119	156	219	278	366	451	606	668	754
CONC. m³/m	0.8	1.2	1.5	1.9	2.4	2.8	3.2	3.7	4.2	4.8	5.9	7.2	8.2	9.7

UTAH DEPARTMENT OF TRANSPORTATION
 SALT LAKE COUNTY, UTAH
 STRUCTURES DIVISION

CONCRETE RETAINING WALL
 STANDARD DETAILS NO. 2

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

SALT LAKE COUNTY
 1.2R-343-28.2
 DRG. NO.

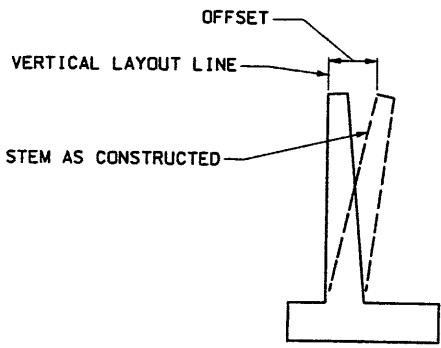
SHEET 3 of 4

WASATCH CONSTRUCTORS
 APR - 9 1998
 RELEASED FOR CONSTRUCTION

4/7/98
 3/22/95

REVISIONS
 NO. DATE BY

User name: huffdabn Date: 31-MAR-1998 Time: 12:01

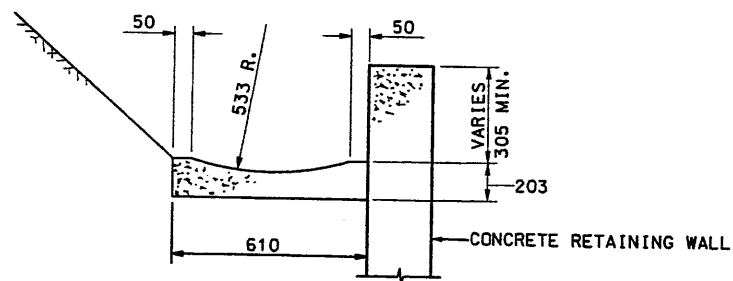


**TABLE OF OFFSETS
(IN METERS)**

H	OFF.	H	OFF.
1.200	0.006	4.800	0.032
1.800	0.010	5.400	0.038
2.400	0.013	6.000	0.044
3.000	0.016	6.600	0.050
3.600	0.019	7.200	0.057
4.200	0.025	7.800 TO 11.000	0.064

APPROXIMATE WALL OFFSET VALUES

VALUES FOR OFFSETTING FORMS TO BE DETERMINED BY THE ENGINEER



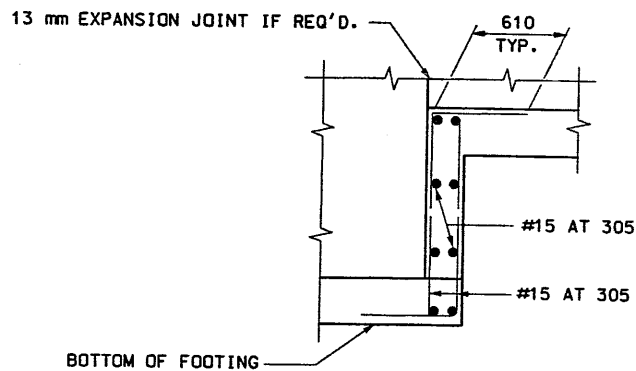
TYPICAL GUTTER DETAIL

GENERAL NOTES

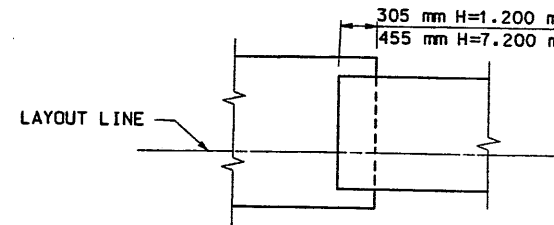
1. USE EPOXY-COATED REINFORCING STEEL CONFORMING TO AASHTO M 31M GRADE 400.
2. DESIGN H MAY BE EXCEEDED BY 150 mm BEFORE GOING TO THE NEXT SIZE.
3. ALL DIMENSIONS SHOWN ARE IN METERS UNLESS SPECIFIED OTHERWISE.

DESIGN DATA

CAST-IN-PLACE CONCRETE: $f_c = 10 \text{ MPa}$; $f_a(\text{REINF.}) = 160 \text{ MPa}$; $n=8$.
 EARTH: UNIT DENSITY = 1920 kg/m^3
 IN CASE OF SLOPING GROUND CONDITIONS ABOVE THE TOP OF THE WALL. EARTH PRESSURE SHALL BE DETERMINED FROM THE RANKINE EQUATIONS FOR LATERAL EARTH PRESSURE WITH $\phi = 33^\circ 42'$.
 610 mm SURCHARGE: EQUIVALENT FLUID PRESSURE = 5.6 kN/m^3 MAX. FOR DETERMINATION OF THE PRESSURE.



ELEVATION

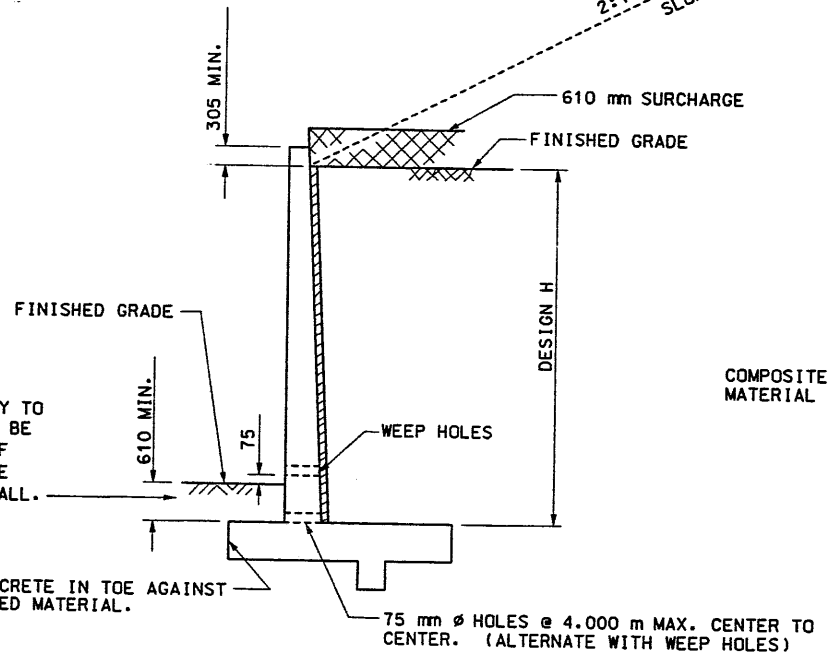


PLAN

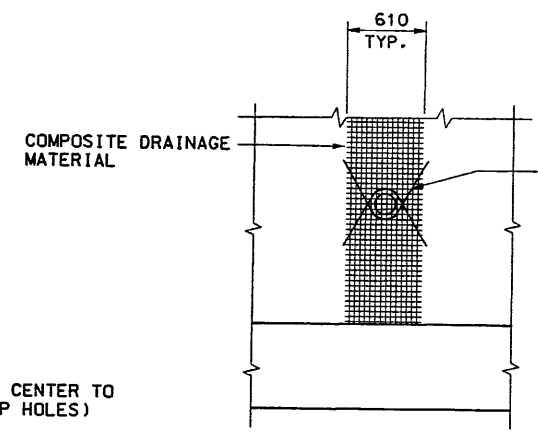
FOOTING STEP DETAILS

BACKFILL SUFFICIENTLY TO PREVENT PONDING. TO BE DONE AFTER REMOVAL OF WALL FORMS AND BEFORE BACKFILLING BEHIND WALL.

PLACE CONCRETE IN TOE AGAINST UNDISTURBED MATERIAL.

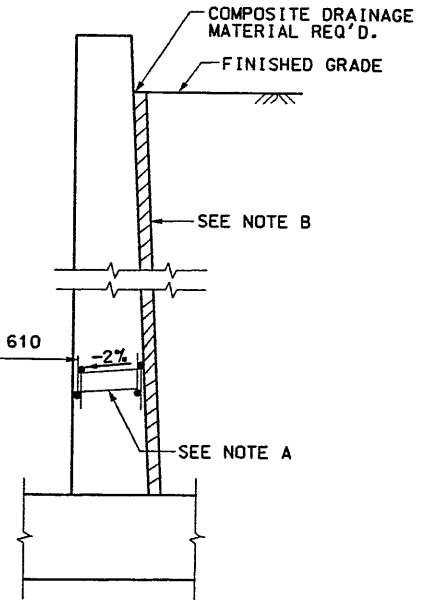


DESIGN AND DRAINAGE



PARTIAL ELEVATION

@ BACK FACE OF WALL



SECTION

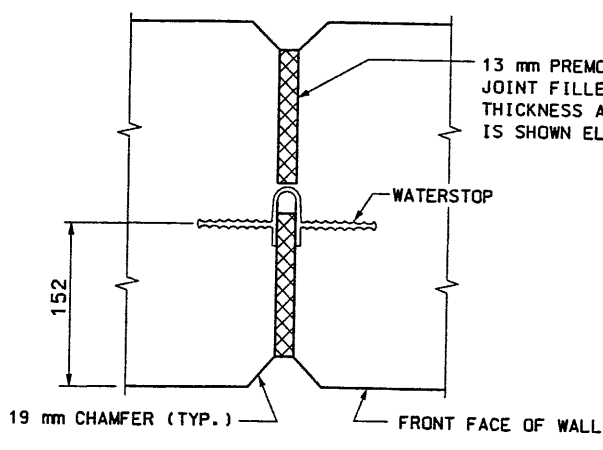
WEEP HOLE DETAIL

WATER STOP NOTES

1. WATERSTOP TO HAVE FIVE OR MORE PAIRS OF RAISED RIBS TO PROVIDE 65 mm^2 MIN. RIB CROSS-SECTIONAL AREA ON EACH HALF OF THE WATERSTOP. HEIGHT OF RIBS TO BE 2 mm MIN.
2. HOLES WILL BE PERMITTED IN THE OUTER 13 mm OF THE WEB FOR WIRE, RINGS, ETC. TIE WEB TO #10 REINFORCING BARS @ 305 mm MAX. INTERVALS TO SUPPORT THE WATERSTOP IN PROPER POSITION DURING CONCRETE PLACEMENT. ALTERNATIVE DETAIL MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

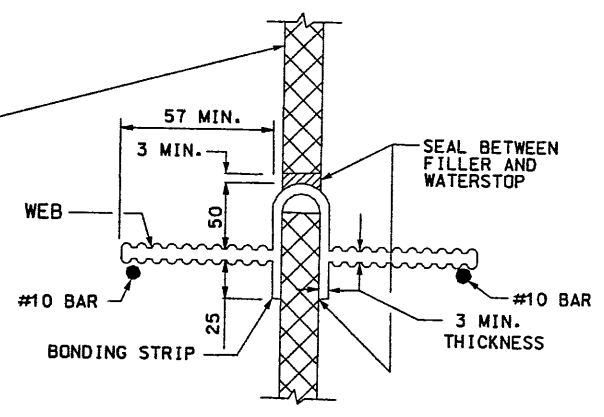
NOTES:

- A. 100 mm ϕ DRAINS @ 4.000 m MAX. CENTER TO CENTER.
- B. COMPOSITE DRAINAGE MATERIAL REQUIRED FROM BOTTOM OF WALL TO TOP OF FINISHED GRADE.



WALL EXPANSION JOINT (PLAN VIEW)

PLACE JOINTS AT 30.500 m MAX. SPACING



WATERSTOP DETAIL

UTILITY 11/18	DESIGN 11/18	DRAWN 11/18	CHECK 11/18	DATE 11/18	BY 11/18	REMARKS 11/18	REVISIONS 11/18
UTAH DEPARTMENT OF TRANSPORTATION SALT LAKE CITY, UTAH STRUCTURES DIVISION							
CONCRETE RETAINING WALL STANDARD DETAILS NO. 1							
PROJECT NUMBER *SP-15-7(135)296							
SALT LAKE COUNTY 1.2R-343-28.3 DRG. NO.							
SHT. 4 of 4							

WASATCH CONSTRUCTORS
APR - 9 1998
RELEASED FOR CONSTRUCTION

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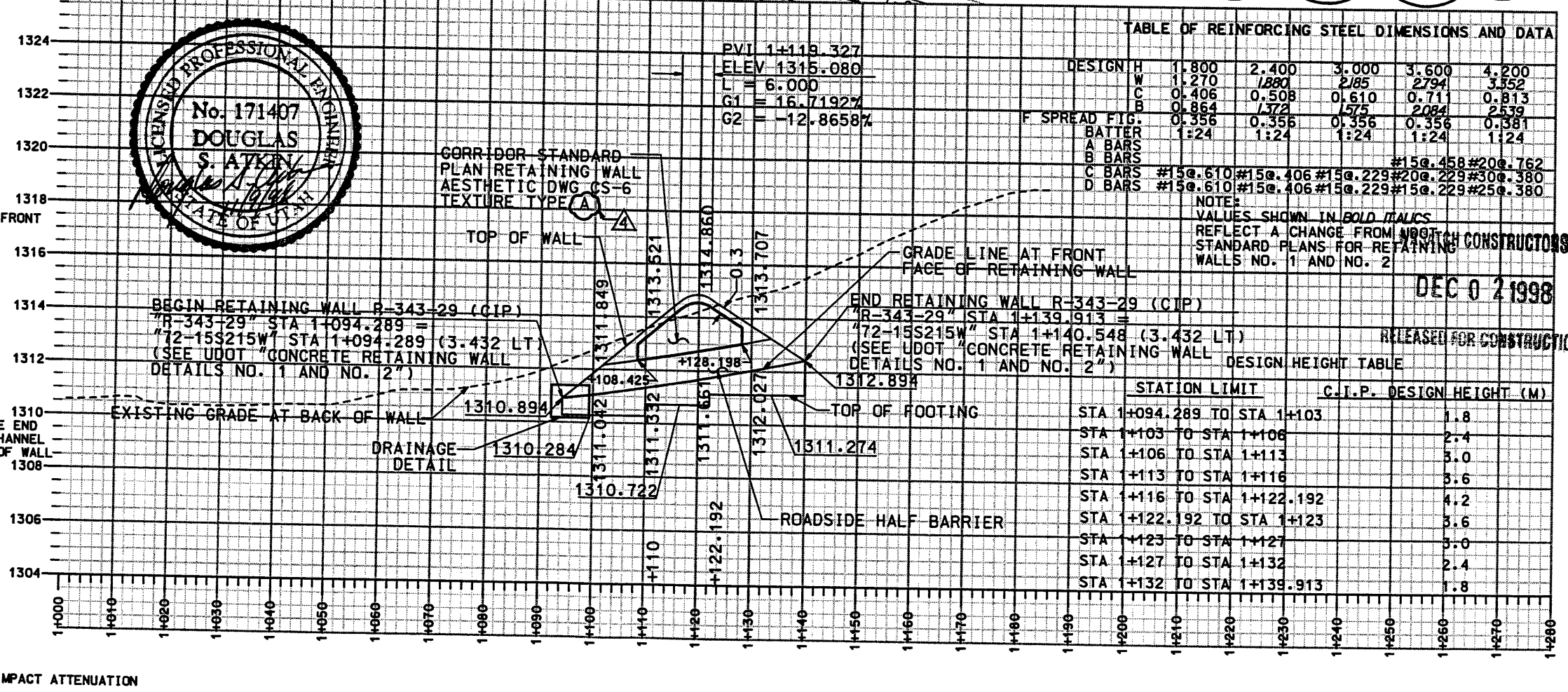
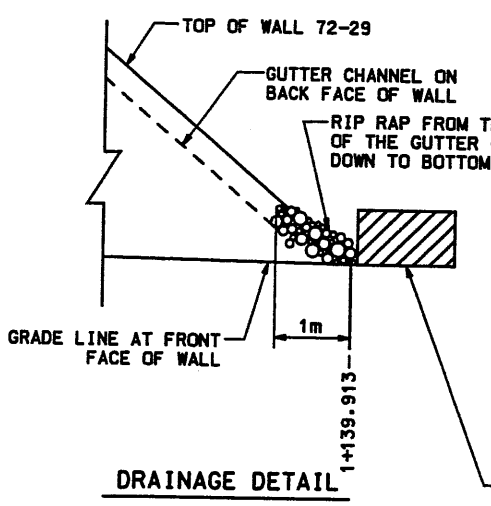
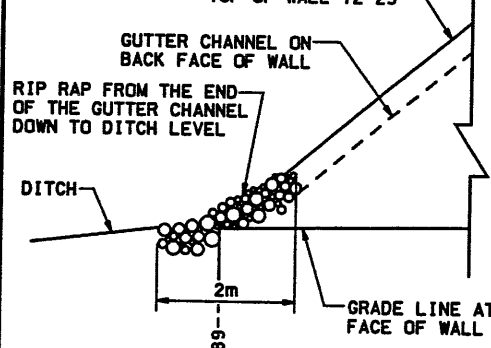
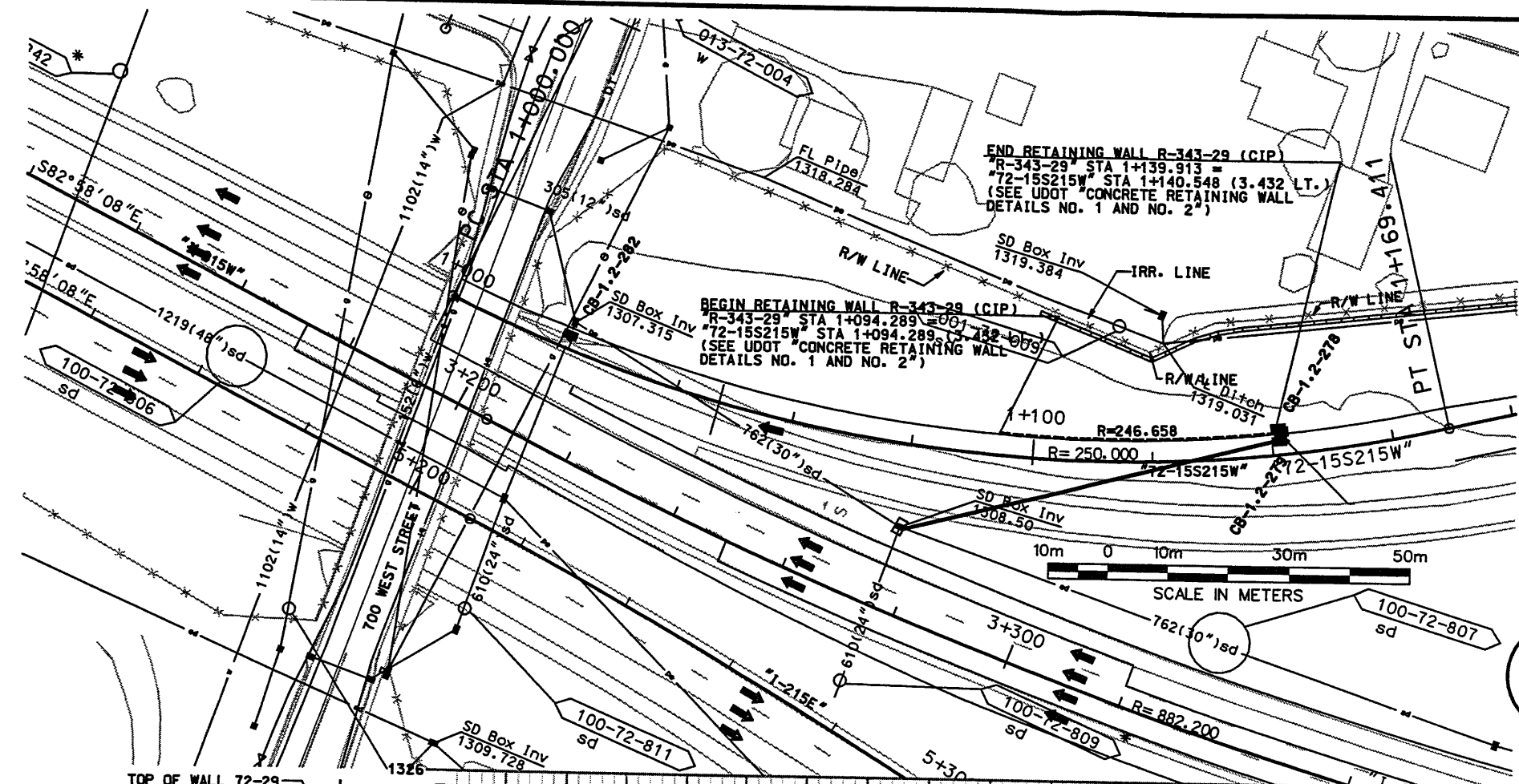


TABLE OF REINFORCING STEEL DIMENSIONS AND DATA

DESIGN H	1.800	2.400	3.000	3.600	4.200
W	1.270	1.880	2.185	2.794	3.552
C	0.406	0.508	0.610	0.711	0.813
B	0.864	1.372	1.575	2.084	2.539
F SPREAD FIG.	0.356	0.356	0.356	0.356	0.381
BATTER	1:24	1:24	1:24	1:24	1:24
A BARS	#15@.610 #15@.406 #15@.229 #20@.229 #30@.380				
B BARS	#15@.610 #15@.406 #15@.229 #15@.229 #25@.380				

NOTE:
VALUES SHOWN IN BOLD ITALICS
REFLECT A CHANGE FROM UDOT
STANDARD PLANS FOR RETAINING
WALLS NO. 1 AND NO. 2

STATION LIMIT C.I.P. DESIGN HEIGHT (M)

STATION LIMIT	C.I.P. DESIGN HEIGHT (M)
STA 1+094.289 TO STA 1+103	1.8
STA 1+103 TO STA 1+106	2.4
STA 1+106 TO STA 1+113	3.0
STA 1+113 TO STA 1+116	3.6
STA 1+116 TO STA 1+122.192	4.2
STA 1+122.192 TO STA 1+123	3.6
STA 1+123 TO STA 1+127	3.0
STA 1+127 TO STA 1+132	2.4
STA 1+132 TO STA 1+139.913	1.8

ELEVATION VIEW FROM FRONT OF WALL

APPROVED FOR CONSTRUCTION

UTAH DEPARTMENT OF TRANSPORTATION

URS Greiner
SVERDRUP/DE LEUW

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
RETAINING WALL R-343-29
SECTION 1.2
PROJECT NUMBER #SP-15-711351296

SALT LAKE COUNTY
DWG. NO. 1.2R-343-29.1

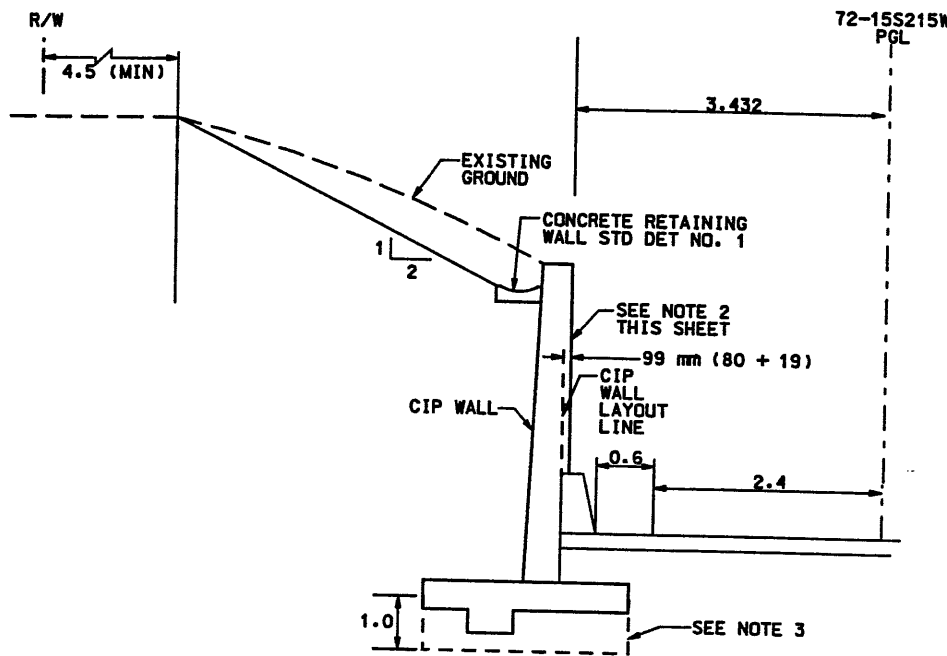
SHT. 1 OF 4

NO.	DATE	DESCRIPTION
1	8-28-97	INITIAL RELEASE
2	10-8-97	TOTAL REVISION
3	4-17-98	ASTHETIC REVISION
4	11-09-98	NO. 0230 COPYING

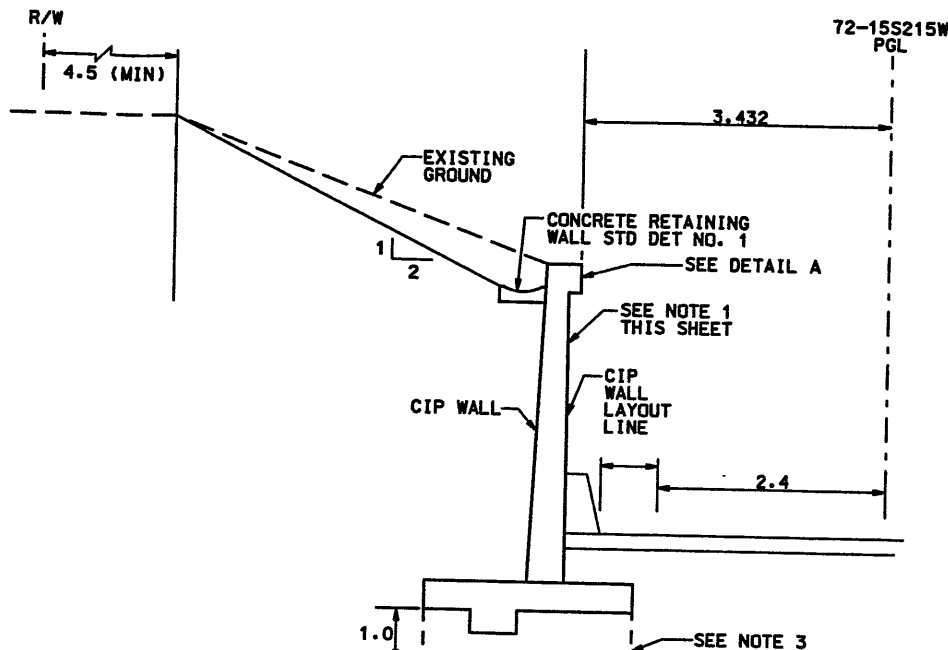
DESIGNER: [Signature] CHECK: RC
DRAWN: CJ CHECK: PRV
QUANT.: / CHECK: /

APPROVAL RECORD:
APPROVED: [Signature] DATE: [Date]
PROJECT DESIGN ENGINEER: [Signature]
RICK CHAPMAN PROJECT MANAGER

RELEASED FOR CONSTRUCTION
DEC 02 1998

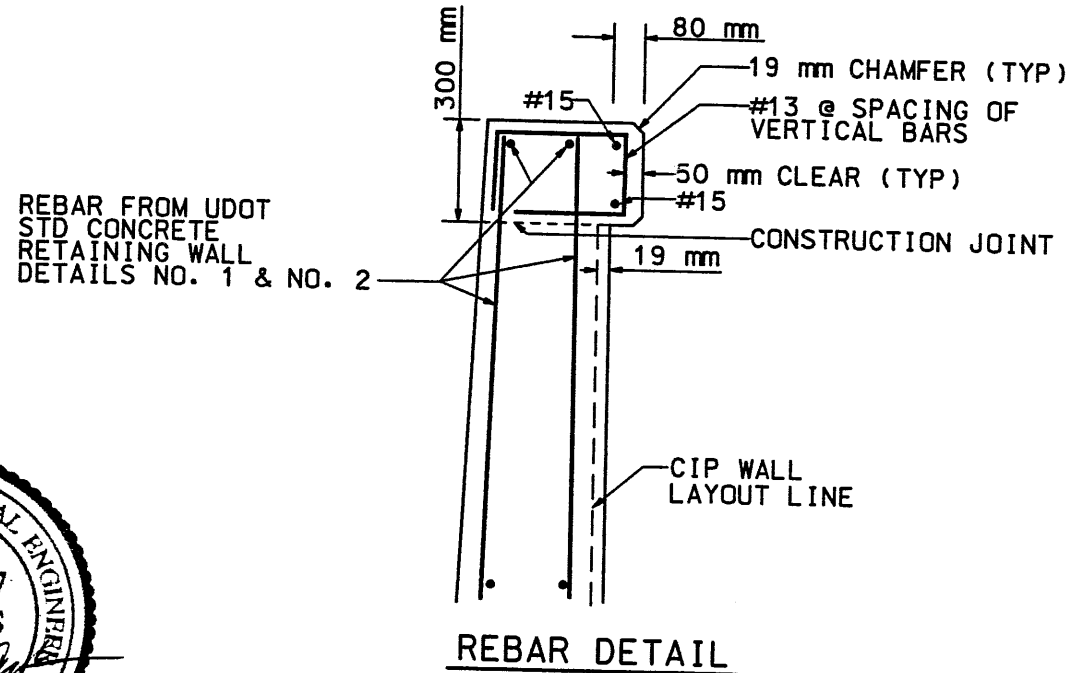


TYPICAL SECTION (1)
WALL R-343-29
 STA 1+094.289 TO 1+108.425
 STA 1+128.198 TO 1+139.913

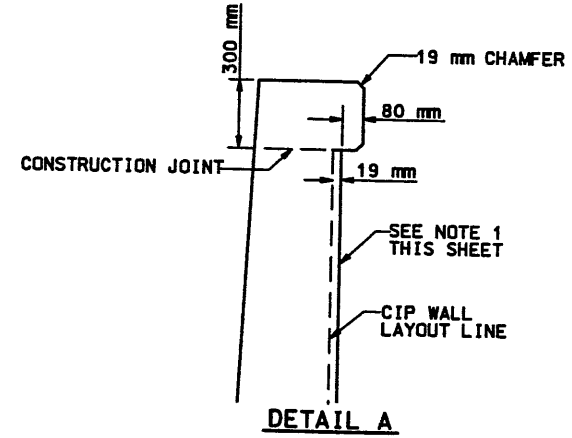


TYPICAL SECTION (2)
WALL R-343-29
 STA 1+108.425 TO 1+128.198

- NOTE:**
- (1) CORRIDOR STANDARD PLAN RETAINING WALL AESTHETICS DWG CS-6 TEXTURE TYPE A - SEE DETAIL A
 - (2) 80 mm COPING WIDTH WILL EXTEND DOWN TO BARRIER
 - (3) FOR DESIGN HEIGHT WALL LOCATIONS OF 3.5 AND 4.2 METERS, OVEREXCAVATE 1 METER BELOW FOOTING AND REPLACE WITH BORROW WITH AN INTERNAL FRICTION ANGLE OF AT LEAST 34°



REBAR DETAIL



DETAIL A

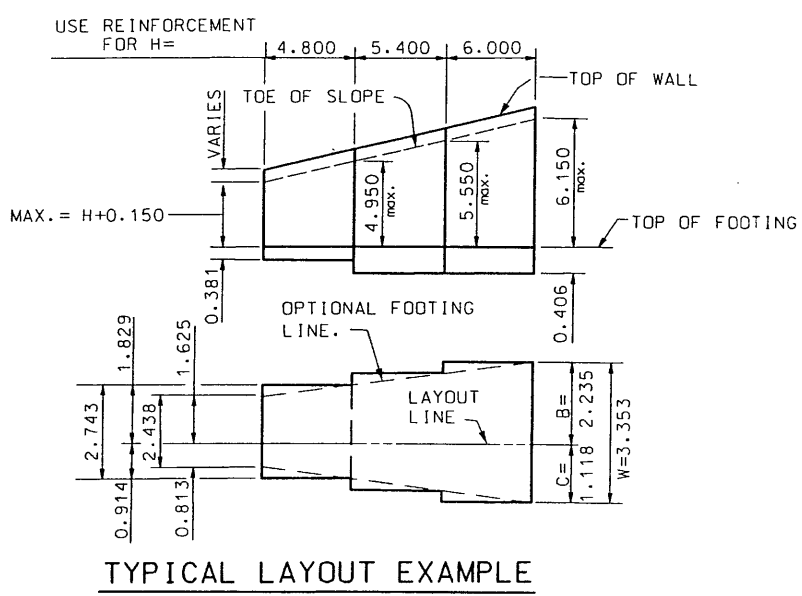
WASATCH CONSTRUCTORS
DEC 02 1998
 RELEASED FOR CONSTRUCTION



APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	NO.	DATE
Δ	11-09-98	NO. 0230	COPING
UTAH DEPARTMENT OF TRANSPORTATION			
URS Greiner SVERDRUP/DE LEUW			
DESIGN	PRV	DATE	CHECK
JIM EMBALUM		9/87	JIM
PROJECT DESIGN ENGINEER			
DRAWN	DATE	CHECK	DATE
JIM	9/87	JIM	9/87
QUANT.		CHECK	
I-15 CORRIDOR RECONSTRUCTION			
MISC DETAILS RET WALL R-343-29			
SECTION 1.2			
PROJECT NUMBER #SP-15-7(135)296			
SALT LAKE COUNTY			
DWG. NO. 1.2R-343-29.1A			
SHT.	OF		4

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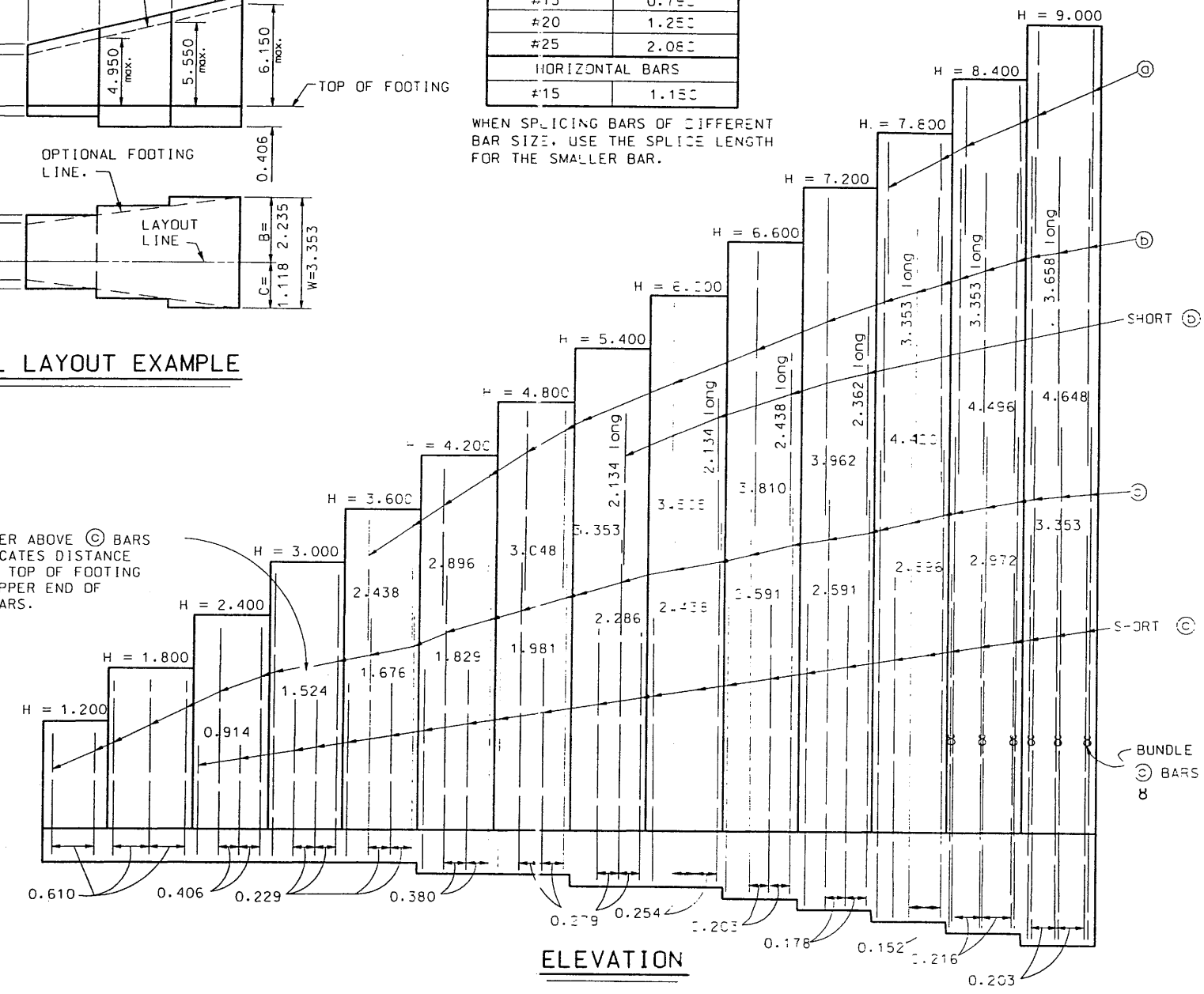
REINFORCING STEEL SPLICES	
BAR SIZE	SPLICE LENGTH
VERTICAL BARS	
#15	0.75C
#20	1.25C
#25	2.08C
HORIZONTAL BARS	
#15	1.15C

NOTE:
BAR CUT-OFFS MAY BE VARIED
IN INCREMENTS OF 0.150 m.

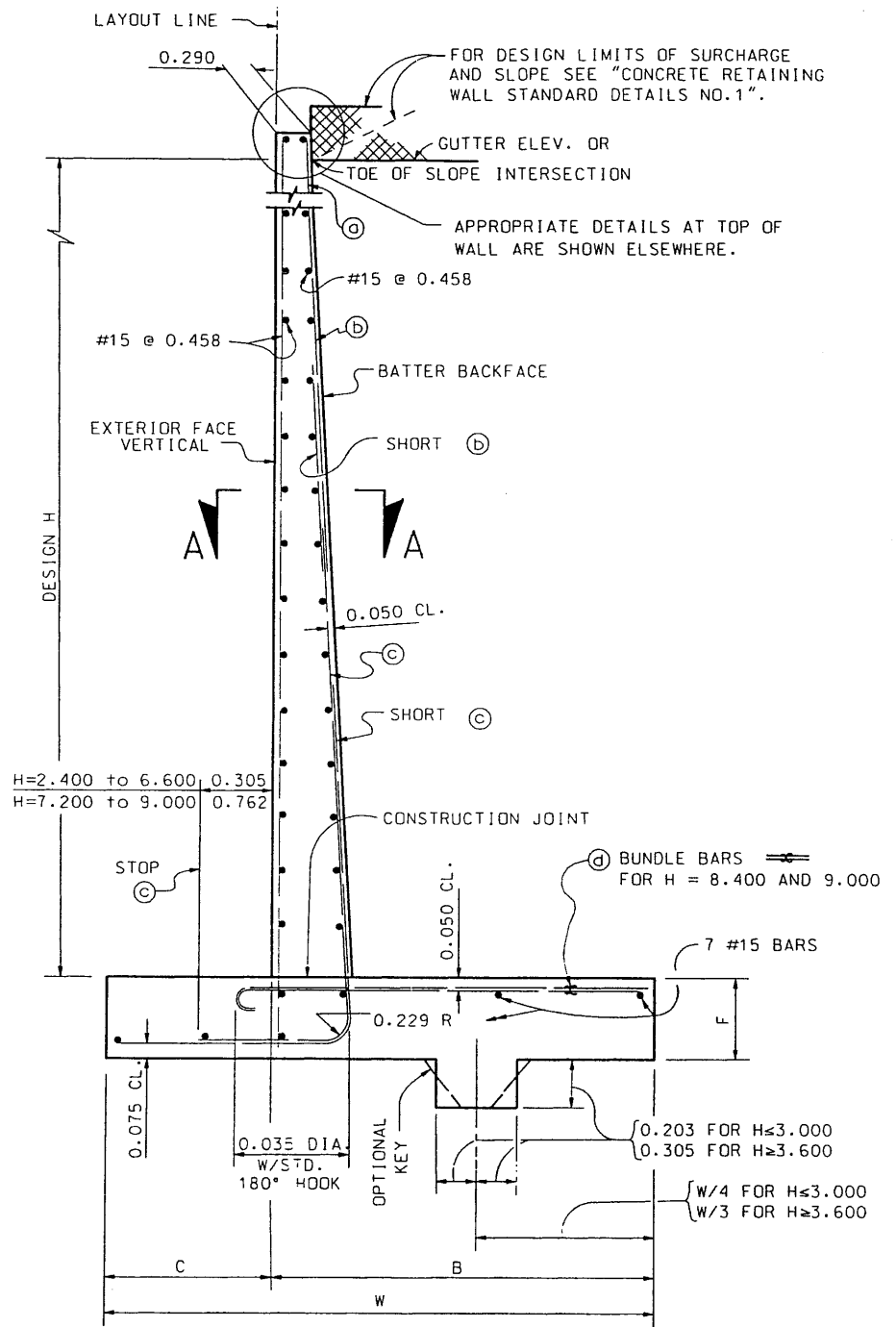
WHEN SPLICING BARS OF DIFFERENT
BAR SIZE, USE THE SPLICE LENGTH
FOR THE SMALLER BAR.

TYPICAL LAYOUT EXAMPLE

NUMBER ABOVE © BARS
INDICATES DISTANCE
FROM TOP OF FOOTING
TO UPPER END OF
© BARS.

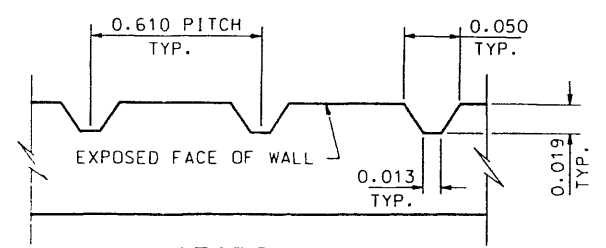


ELEVATION



SPREAD FOOTING SECTION

- NOTES: 1. ALL DIMENSIONS SHOWN ARE IN METERS.
2. FOR DETAILS NOT SHOWN AND DRAINAGE NOTES SEE "CONCRETE RETAINING WALL STANDARD DETAILS NO. 1."
3. QUANTITIES APPLY TO DESIGN H PORTION AND EXCLUDE THE ADDED PORTION ABOVE "GUTTER ELEVATION."



SECTION A-A

TABLE OF REINFORCING STEEL DIMENSIONS AND DATA														
DESIGN H	1.200	1.800	2.400	3.000	3.600	4.200	4.800	5.400	6.000	6.600	7.200	7.800	8.400	9.000
W	0.965	1.270	1.575	1.880	2.184	2.438	2.743	3.048	3.353	3.657	4.038	4.344	4.648	5.105
C	0.305	0.406	0.508	0.610	0.711	0.813	0.914	1.016	1.118	1.219	1.346	1.448	1.549	1.651
B	0.660	0.864	1.067	1.270	1.473	1.625	1.829	2.032	2.235	2.438	2.692	2.896	3.099	3.454
F SPREAD FTG.	0.356	0.356	0.356	0.356	0.356	0.381	0.381	0.406	0.406	0.457	0.508	0.584	0.660	0.711
BATTER	1:24	1:24	1:24	1:24	1:24	1:24	1:24	1:24	1:24	1:24	1:19	1:16	1:16	1:14
© BARS														
© BARS														
© BARS	#15@.610	#15@.610	#15@.406	#15@.229	#20@.229	#30@.380	#30@.275	#35@.279	#35@.254	#35@.203	#35@.175	#35@.152	#35@.216	#35@.203
© BARS	#15@.610	#15@.610	#15@.406	#15@.229	#15@.229	#25@.380	#25@.275	#35@.279	#35@.254	#35@.203	#35@.175	#35@.152	#30@.216	#30@.203
1.610 LEVEL SURCHARGE TOE PRESSURE kPa	76.6	91.0	105.3	110.1	134.1	158.0	167.6	191.5	205.9	220.3	234.6	253.8	272.9	296.9
2:1 UNLIMITED SCOPE TOE PRESSURE kPa	52.7	71.8	95.8	119.7	129.3	158.0	172.4	201.1	225.0	263.3	282.5	311.2	340.0	359.1
SPREAD FOOTING	STEEL kg/m	25	30	42	55	76	119	156	219	278	366	451	606	754
	CONC. m³/m	0.8	1.2	1.5	1.9	2.4	2.8	3.2	3.7	4.2	4.8	5.9	7.2	9.7

UTAH DEPARTMENT OF TRANSPORTATION
 SALT LAKE CITY, UTAH
 STRUCTURES DIVISION
 CONCRETE RETAINING WALL
 STANDARD DETAILS NO. 2
 PROJECT NUMBER *SP-15-7(135)296
 SALT LAKE COUNTY
 1.2R-343-29.2
 DRG. NO.
 SHEET 3 OF 4
 REVISIONS
 NO. DATE BY
 REMARKS
 3/22/95

Date: 24-FEB-1998 Time: 11:44 Username: tottrf

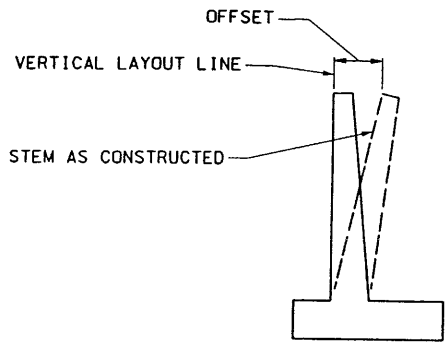
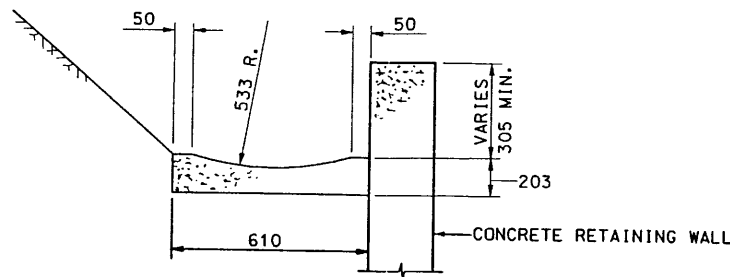


TABLE OF OFFSETS
(IN METERS)

H	OFF.	H	OFF.
1.200	0.006	4.800	0.032
1.800	0.010	5.400	0.038
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3.000	0.016	6.600	0.050
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4.200	0.025	7.800 TO 11.000	0.064

APPROXIMATE WALL OFFSET VALUES

VALUES FOR OFFSETTING FORMS TO BE DETERMINED BY THE ENGINEER



TYPICAL GUTTER DETAIL

GENERAL NOTES

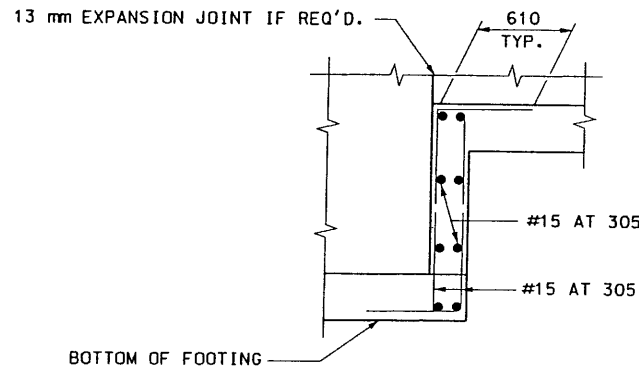
- USE EPOXY-COATED REINFORCING STEEL CONFORMING TO AASHTO M 31M GRADE 400.
- DESIGN H MAY BE EXCEEDED BY 150 mm BEFORE GOING TO THE NEXT SIZE.
- ALL DIMENSIONS SHOWN ARE IN METERS UNLESS SPECIFIED OTHERWISE.

DESIGN DATA

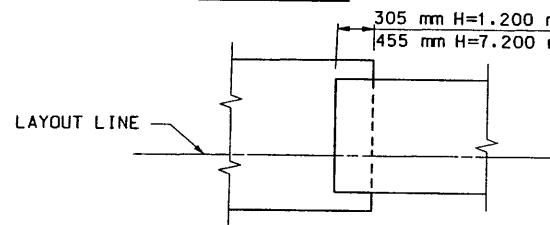
CAST-IN-PLACE CONCRETE: $f_c = 10 \text{ MPa}$; $f_o(\text{REINF.}) = 160 \text{ MPa}$; $n=8$.
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IN CASE OF SLOPING GROUND CONDITIONS ABOVE THE TOP OF THE WALL. EARTH PRESSURE SHALL BE DETERMINED FROM THE RANKINE EQUATIONS FOR LATERAL EARTH PRESSURE WITH $\phi = 33^\circ 42'$.

610 mm SURCHARGE: EQUIVALENT FLUID PRESSURE = 5.6 kN/m^3 MAX. FOR DETERMINATION OF THE PRESSURE.



ELEVATION

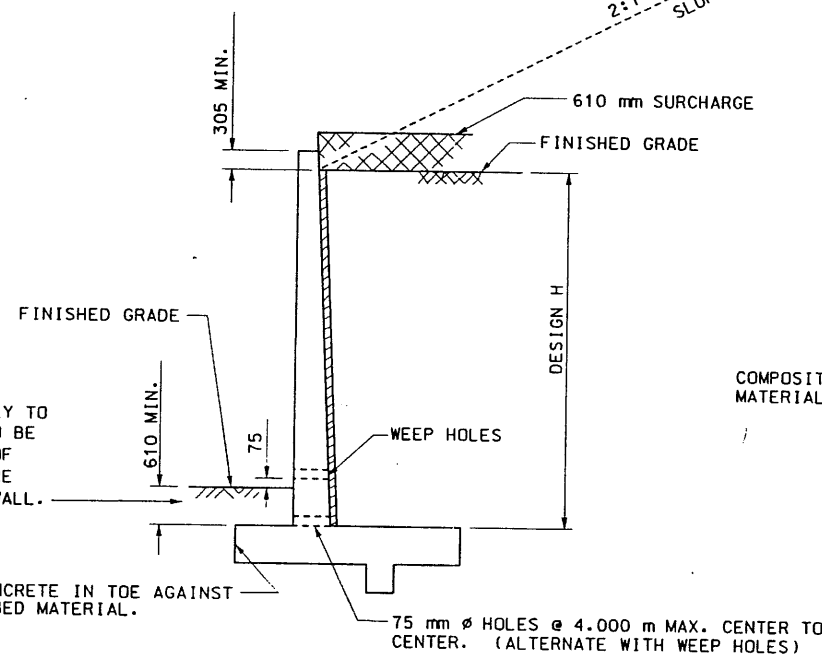


PLAN

FOOTING STEP DETAILS

BACKFILL SUFFICIENTLY TO PREVENT PONDING. TO BE DONE AFTER REMOVAL OF WALL FORMS AND BEFORE BACKFILLING BEHIND WALL.

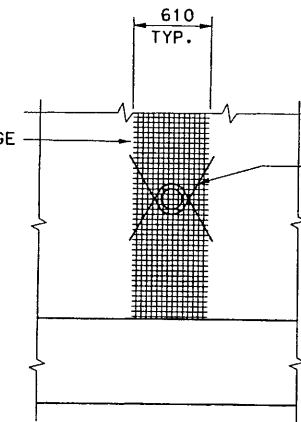
PLACE CONCRETE IN TOE AGAINST UNDISTURBED MATERIAL.



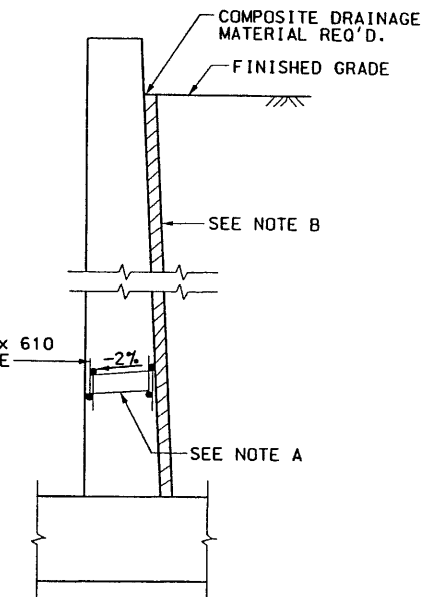
DESIGN AND DRAINAGE

COMPOSITE DRAINAGE MATERIAL

TWO #15 x 610 EACH FACE



PARTIAL ELEVATION
@ BACK FACE OF WALL



SECTION

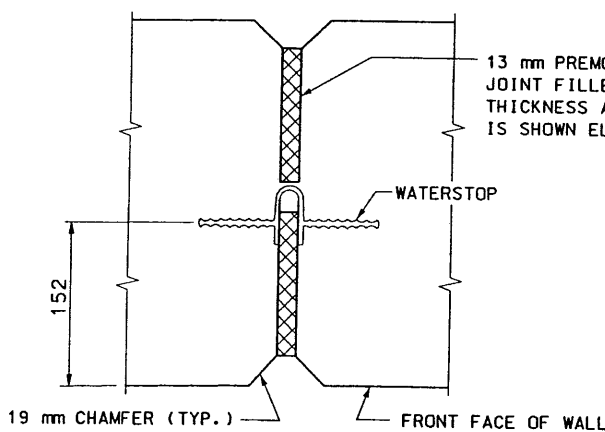
WEEP HOLE DETAIL

WATER STOP NOTES

- WATERSTOP TO HAVE FIVE OR MORE PAIRS OF RAISED RIBS TO PROVIDE 65 mm^2 MIN. RIB CROSS-SECTIONAL AREA ON EACH HALF OF THE WATERSTOP. HEIGHT OF RIBS TO BE 2 mm MIN.
- HOLES WILL BE PERMITTED IN THE OUTER 13 mm OF THE WEB FOR WIRE, RINGS, ETC. TIE WEB TO #10 REINFORCING BARS @ 305 mm MAX. INTERVALS TO SUPPORT THE WATERSTOP IN PROPER POSITION DURING CONCRETE PLACEMENT. ALTERNATIVE DETAIL MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

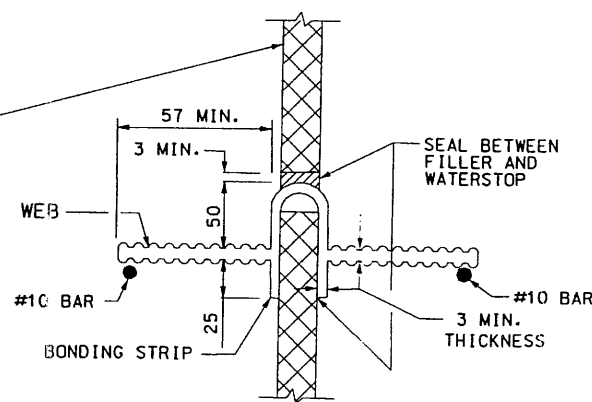
NOTES:

- 100 mm ϕ DRAINS @ 4.000 m MAX. CENTER TO CENTER.
- COMPOSITE DRAINAGE MATERIAL REQUIRED FROM BOTTOM OF WALL TO TOP OF FINISHED GRADE.



WALL EXPANSION JOINT (PLAN VIEW)

PLACE JOINTS AT 30.500 m MAX. SPACING



WATERSTOP DETAIL

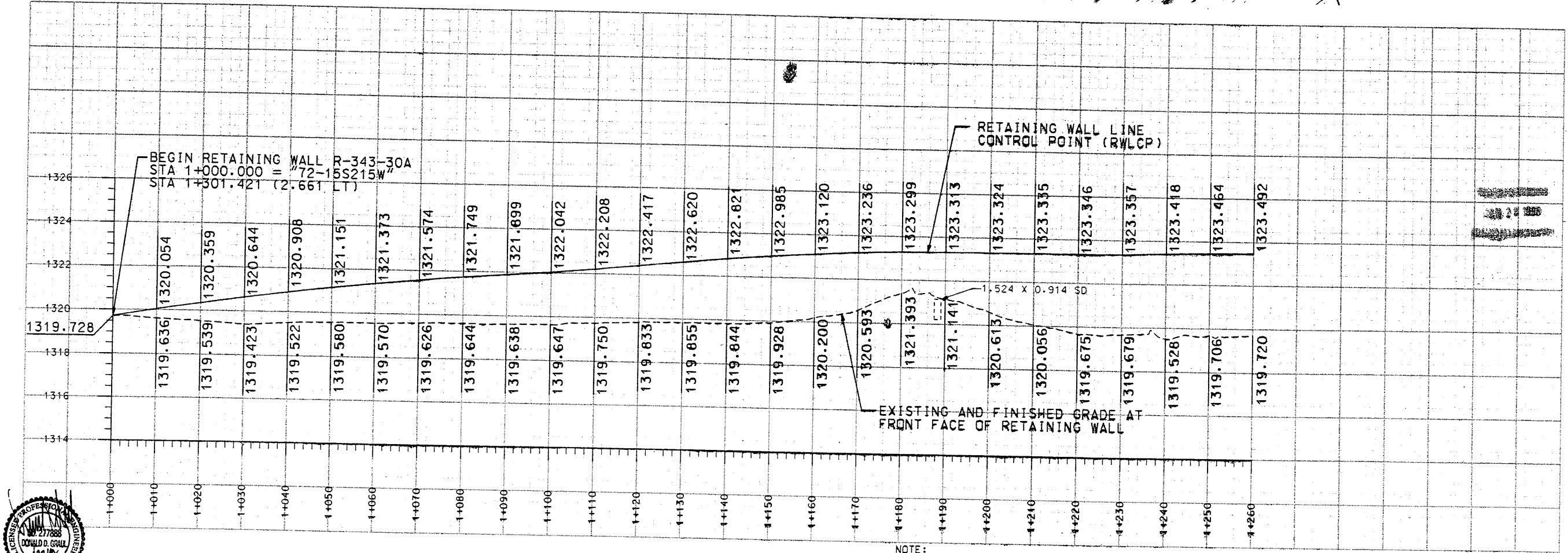
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DESIGN	DRAWN	QUANT.
DATE	DATE	DATE
PERSONAL RECORD	GROUP LEADER	CHIEF STRUCTURAL ENGR.
APPROVED	DATE	DATE
CONCRETE RETAINING WALL STANDARD DETAILS NO. 1		PROJECT NUMBER *SP-15-7(135)296
SALT LAKE COUNTY		1.2R-343-29.3 DRG. NO.
SHT. 4 OF 4		REVISIONS NO. DATE BY REMARKS 3/22/95

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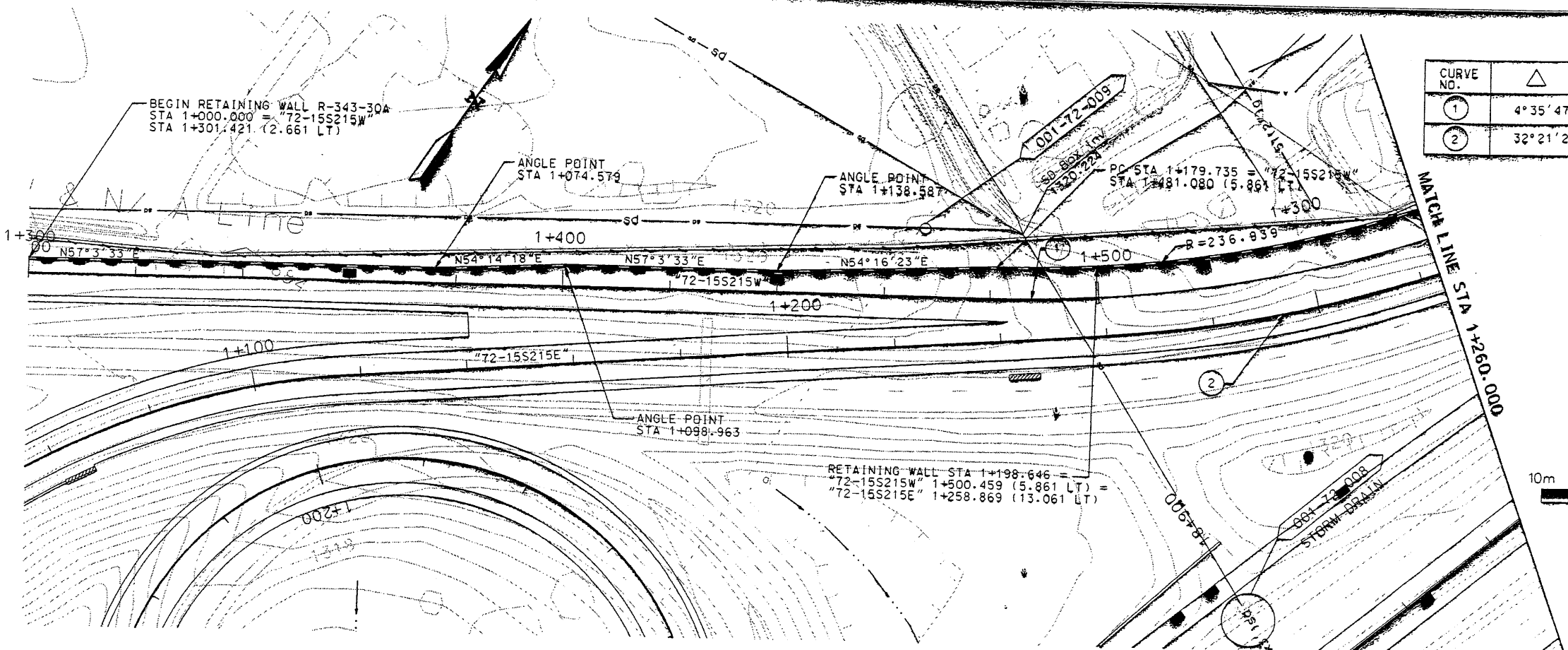
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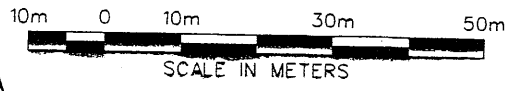


ELEVATION VIEW FROM BACK OF WALL

NOTE:
 THE FOUNDATION BEARING MATERIALS SHOULD BE OBSERVED BY THE
 GEOTECHNICAL ENGINEER DURING SITE PREPARATION. ANY
 UNDESIRABLE MATERIALS WILL NEED TO BE REMOVED AND REPLACED
 WITH BORROW IN ORDER TO ACHIEVE ACCEPTABLE CONDITIONS
 AT THE BASE OF THE WALL



CURVE NO.	△	R	L	T
①	4°35'47"	242.800	19.478	9.744
②	32°21'27"	250.000	141.186	72.531



UTAH DEPARTMENT OF TRANSPORTATION
 URS Greiner
 SVERDRUP/DE LEUW

I-15 CORRIDOR RECONSTRUCTION
 SITUATION/LAYOUT
 RET WALL R-343-30A
 SECTION 1.2
 PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
 DWG. NO. 1.2R-343-30A&B.1

SHT. 1 OF 18
 REF.

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	1-20-98	INITIAL RELEASE

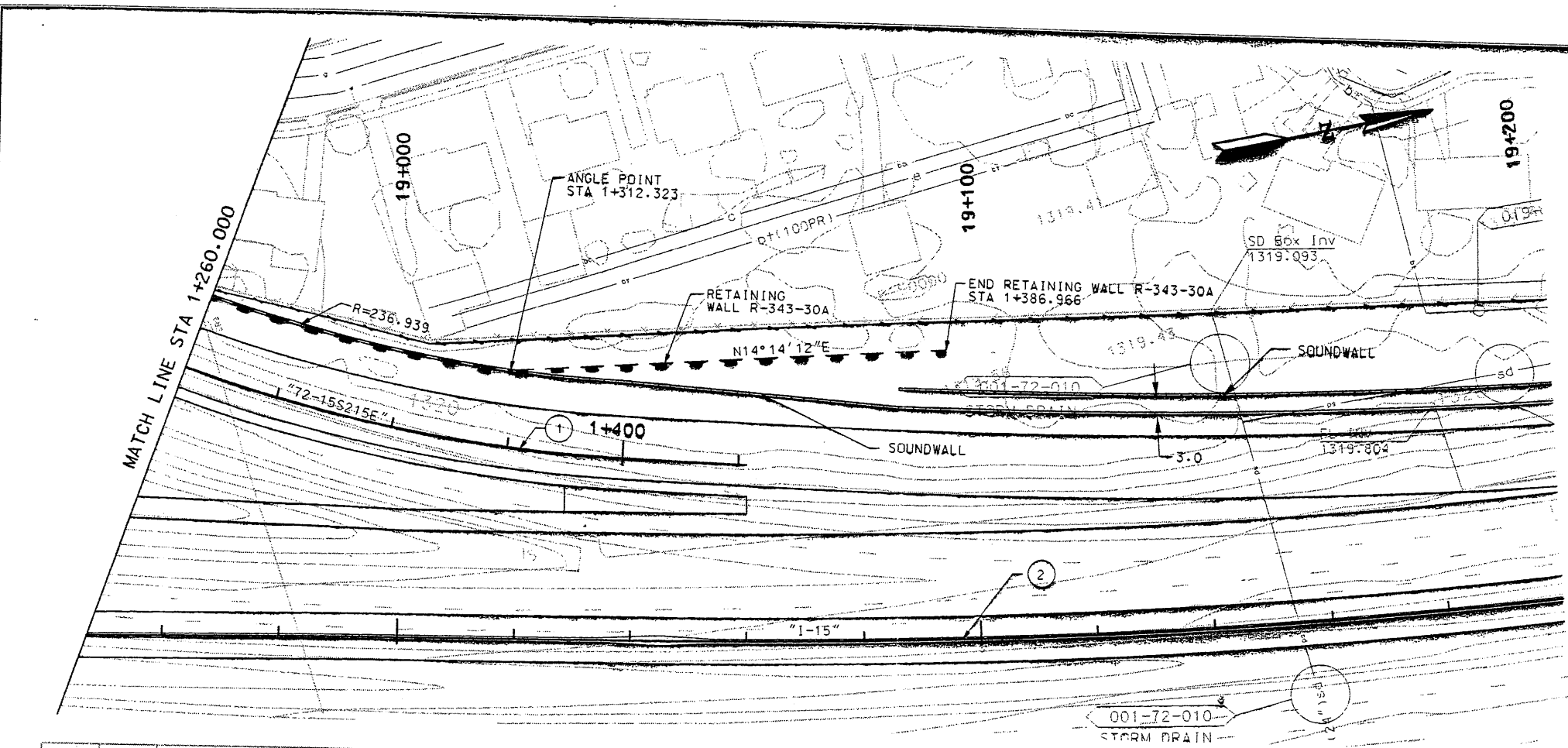
DESIGN: RICK CHAPMAN
 PROJECT DESIGN ENGINEER: URS Greiner
 DRAWN: DON GRULL
 PROJECT MANAGER: URS Greiner

APPROVAL RECORD:
 10/97: [Signature] RICK CHAPMAN
 10/97: [Signature] PROJECT DESIGN ENGINEER
 10/97: [Signature] DON GRULL
 10/97: [Signature] PROJECT MANAGER

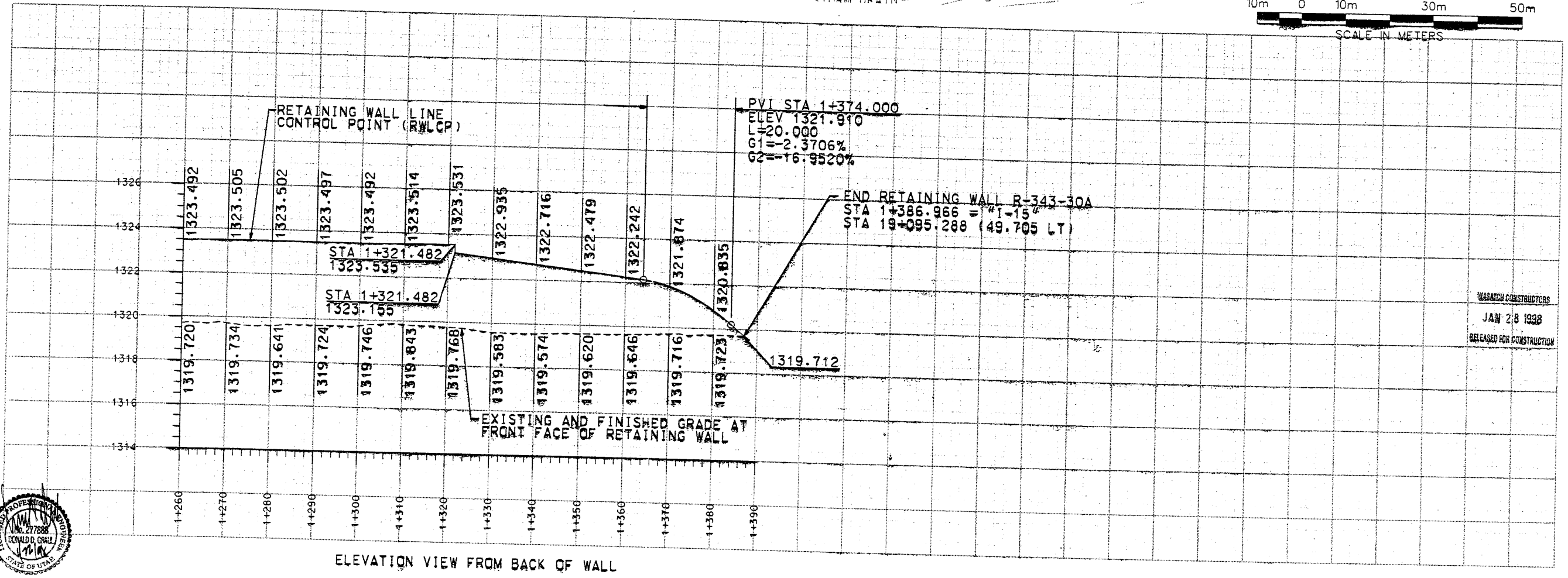
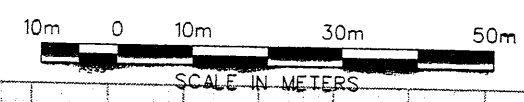
QUANT.: 1212425

Active File Levels: (1-64)
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 First Reference File Levels: (1-6, 8-25, 27-57, 59-64)
 Second Reference Filename: c:\dgn\ref\12xrow01.dgn
 Second Reference File Levels: (1-8, 10-64)
 Third Reference Filename:
 Third Reference File Levels:

Filename: c:\dgn\15_caddy\12_97\sheet_files\walls\12pp40a.dgn
 User: jamisocw
 Date: 22-JAN-98 Time: 16:01



CURVE NO.	△	R	L	T
①	32°21'27"	250.000	141.186	72.531
②	13°7'13"	1165.000	266.778	133.975



ELEVATION VIEW FROM BACK OF WALL



APPROVED FOR CONSTRUCTION

NO. DATE 1-20-98 INITIAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
 URS Greiner
 SVERORUP/DE LEUW

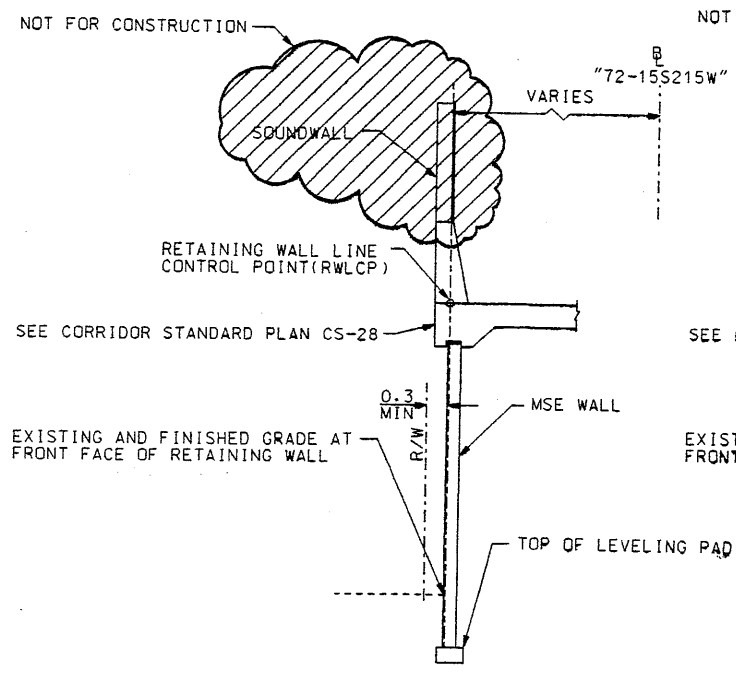
DESIGN: RY 10/97 CHECK: JUE 10/97
 DRAWN: RY 10/97 CHECK: JUE 10/97
 QUANT.: 1212425

PERSONAL RECORD: 10/97 RICK CHAPMAN
 DATE PROJECT DESIGN ENGINEER
 APPROVED: 10/97 DON GRAUL PROJECT MANAGER

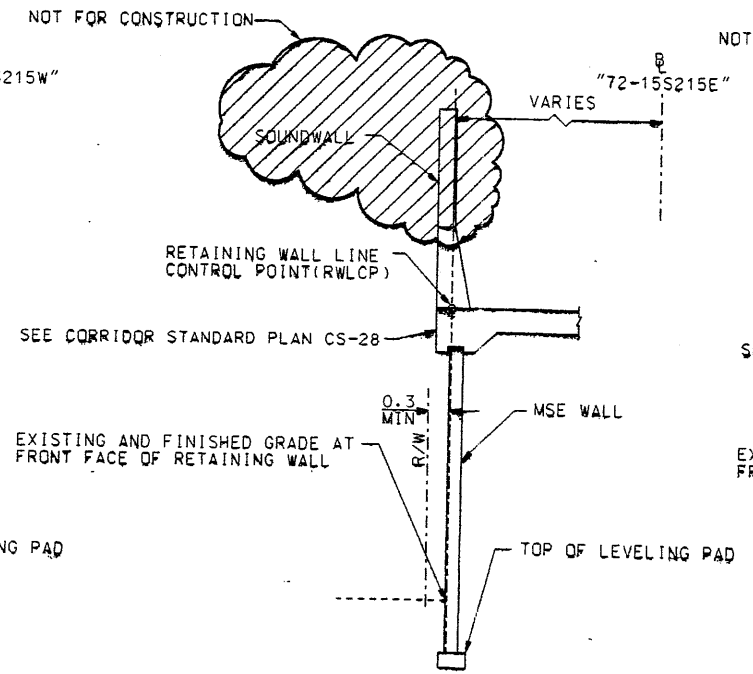
1-15 CORRIDOR RECONSTRUCTION
 SALT LAKE COUNTY
 SITUATION/LAYOUT
 RET WALL R-343-30A
 SECTION 1.2
 PROJECT NUMBER #SP-15-7(135)296

1.2R-343-30A&B.2
 SHT. 2 OF 18
 REF.

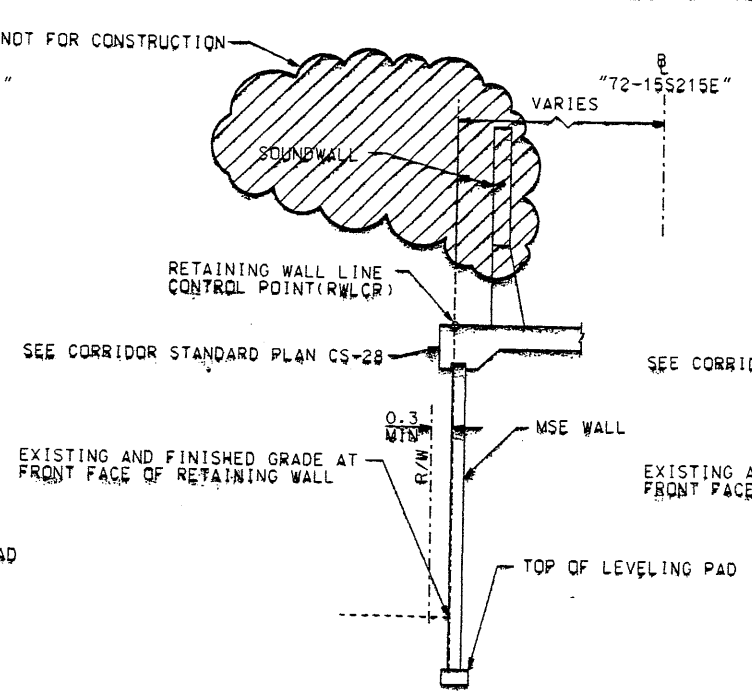
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 Rotation: 360,000,000
 Pen Tables: \\N:\PLOT\OCES\...
 Outlets: \\CV\SHIP2\oces\400\valm
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 User: jomiso
 Date: 22-JAN-1998 Time: 15:55



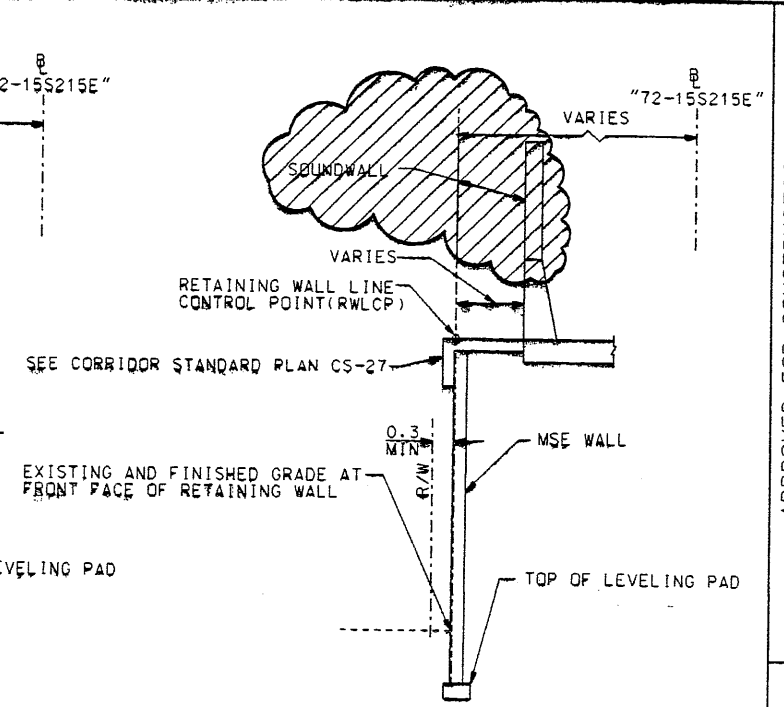
TYPICAL SECTION
 RETAINING WALL R-343-30A
 STA 1+000.000 TO STA 1+198.646



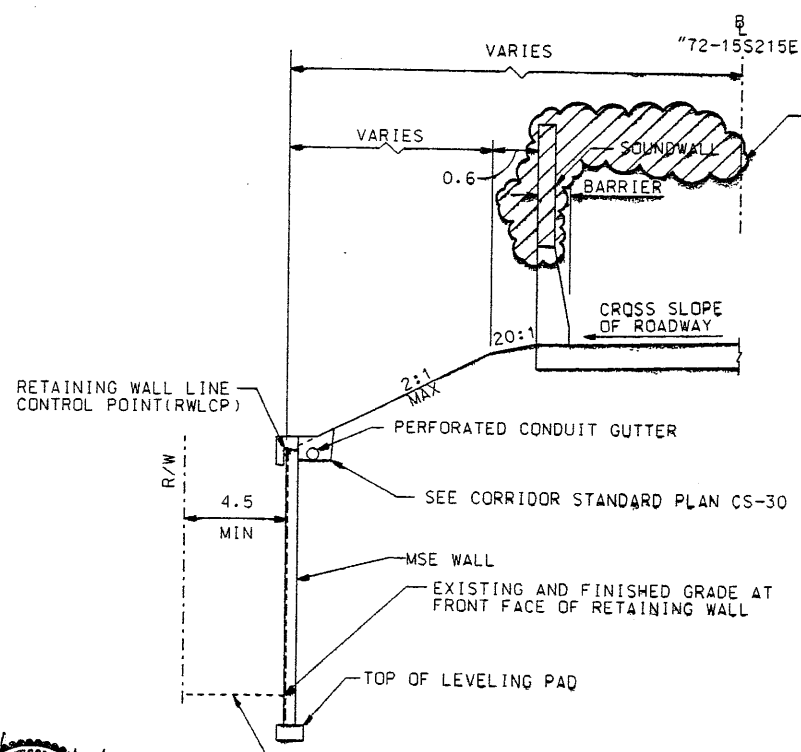
TYPICAL SECTION
 RETAINING WALL R-343-30A
 STA 1+198.646 TO STA 1+312.323



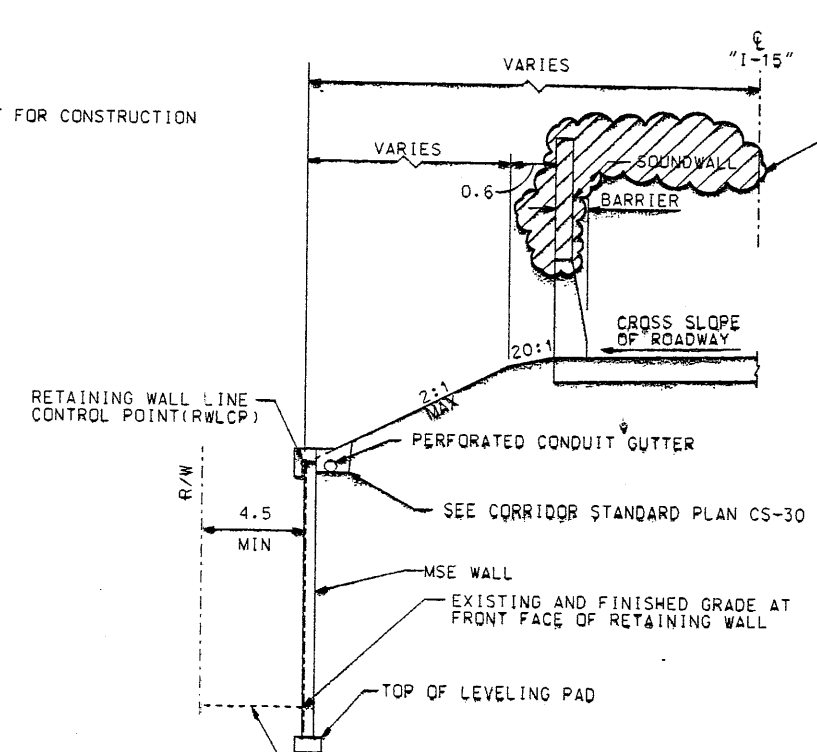
TYPICAL SECTION
 RETAINING WALL R-343-30A
 STA 1+312.323 TO STA 1+314.110



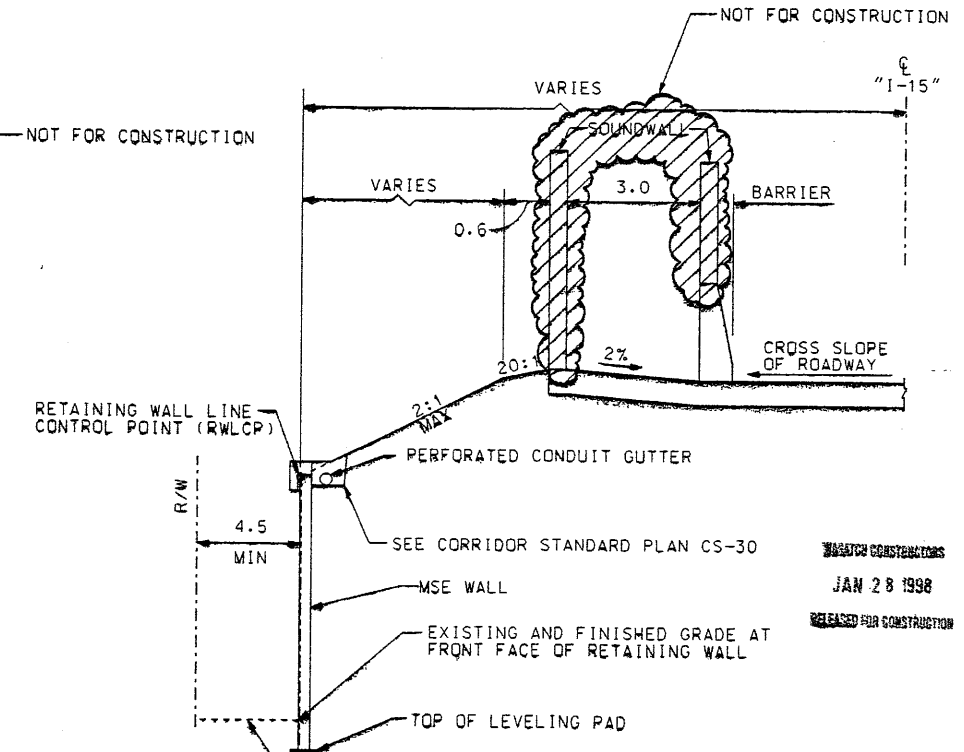
TYPICAL SECTION
 RETAINING WALL R-343-30A
 STA 1+314.110 TO STA 1+321.482



TYPICAL SECTION
 RETAINING WALL R-343-30A
 STA 1+321.482 TO STA 1+352.193



TYPICAL SECTION
 RETAINING WALL R-343-30A
 STA 1+352.193 TO STA 1+379.200



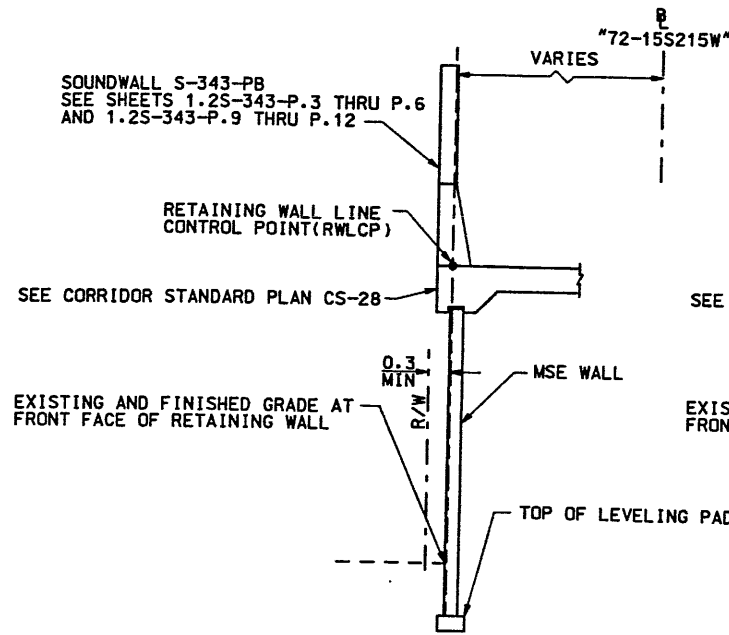
TYPICAL SECTION
 RETAINING WALL R-343-30A
 STA 1+379.200 TO STA 1+386.966



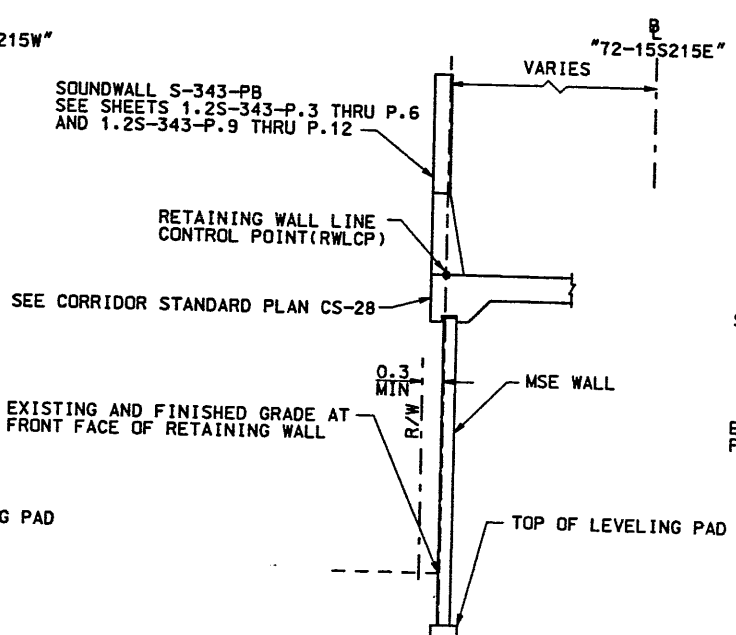
APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	INITIAL	RELEASE
1	1-20-98		
UTAH DEPARTMENT OF TRANSPORTATION			
URS Greiner			
SVERDRUP/DE LEUW			
DESIGN	PRV	CHECK	DATE
JBE	10/97	JBE	10/97
DRWN	PRV	CHECK	DATE
JBE	10/97	JBE	10/97
QUANT.	1212425		
PROJECT NUMBER	#SP-15-7(135)296		
SECTION	SECTION 1.2		
DETAIL SHEET	RET WALL R-343-30A		
RECONSTRUCTION	I-15 CORRIDOR RECONSTRUCTION		
DATE	JAN 28 1998		
STATUS	RELEASED FOR CONSTRUCTION		
COUNTY	SALT LAKE		
DWG. NO.	1.2R-343-30A&B.3		
SHT.	3 OF 18		
REF.			

Username: mockkv Date: 10-NOV-1998 Time: 15:52

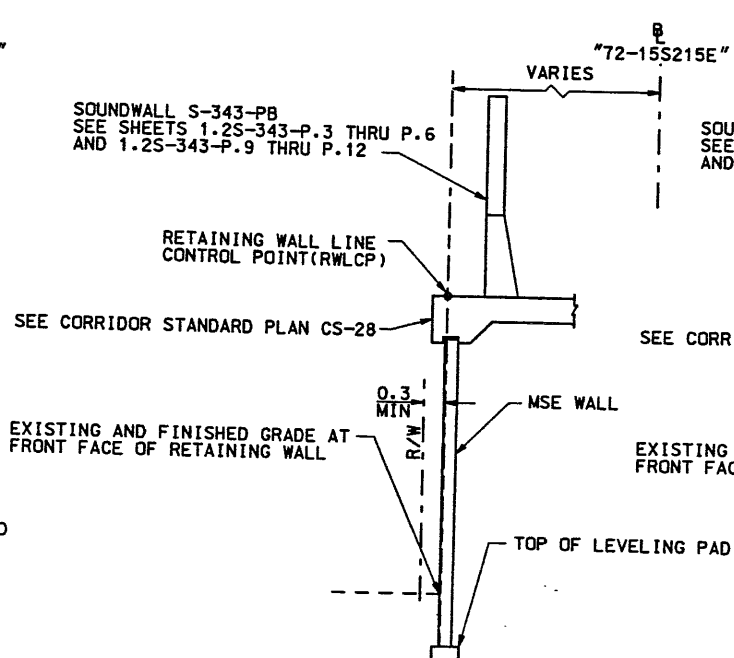
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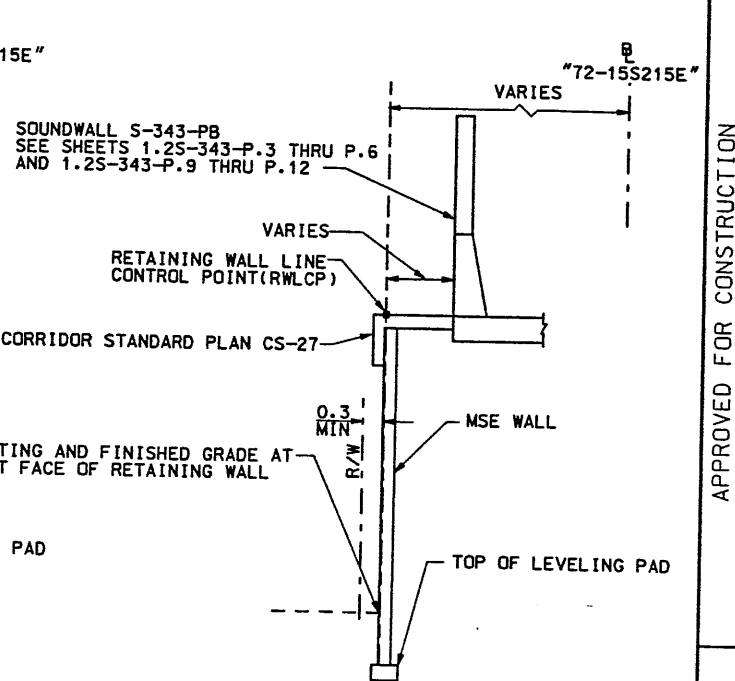
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RETAINING WALL R-343-30A
STA 1+000.000 TO STA 1+198.646



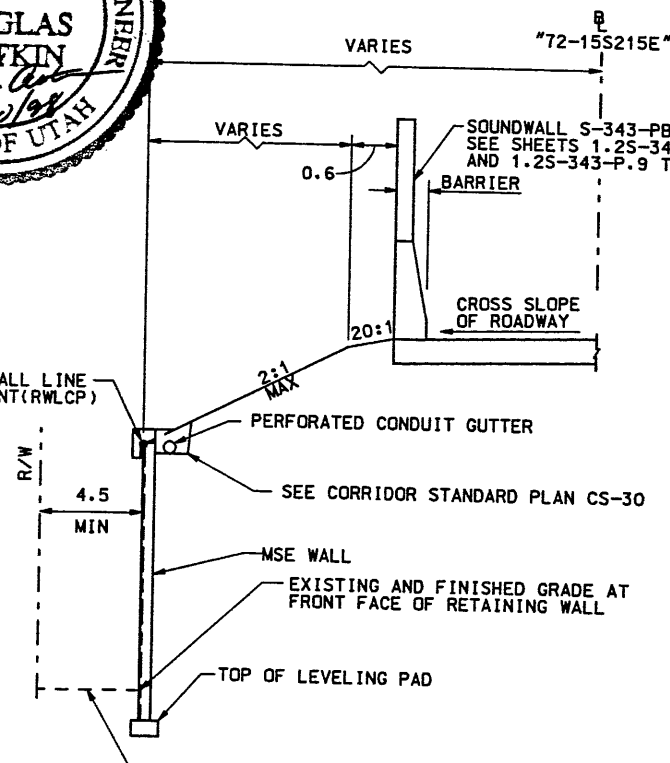
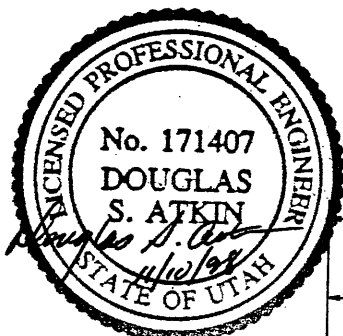
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RETAINING WALL R-343-30A
STA 1+198.646 TO STA 1+312.323



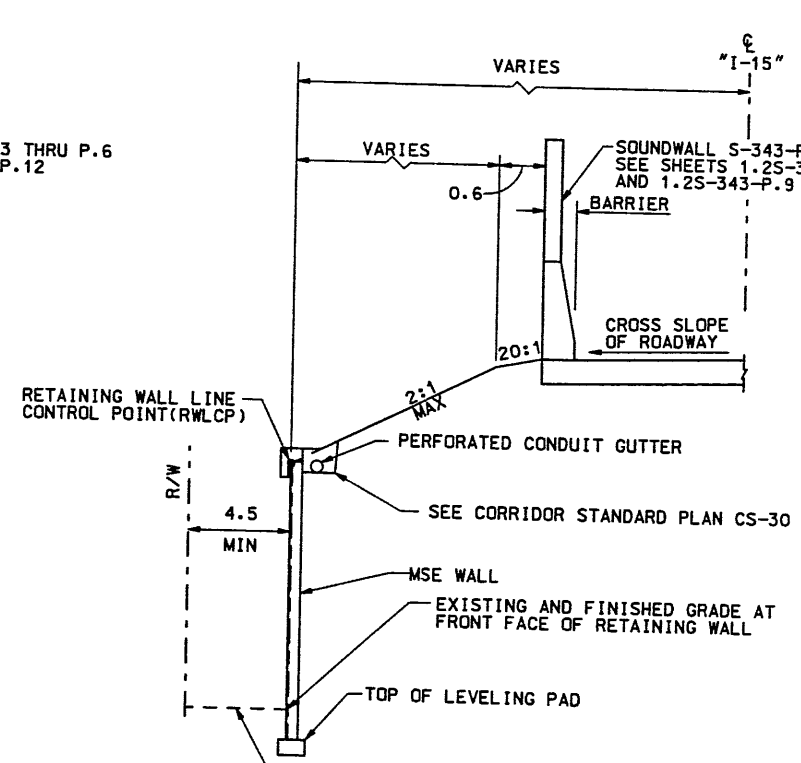
TYPICAL SECTION
RETAINING WALL R-343-30A
STA 1+312.323 TO STA 1+314.110



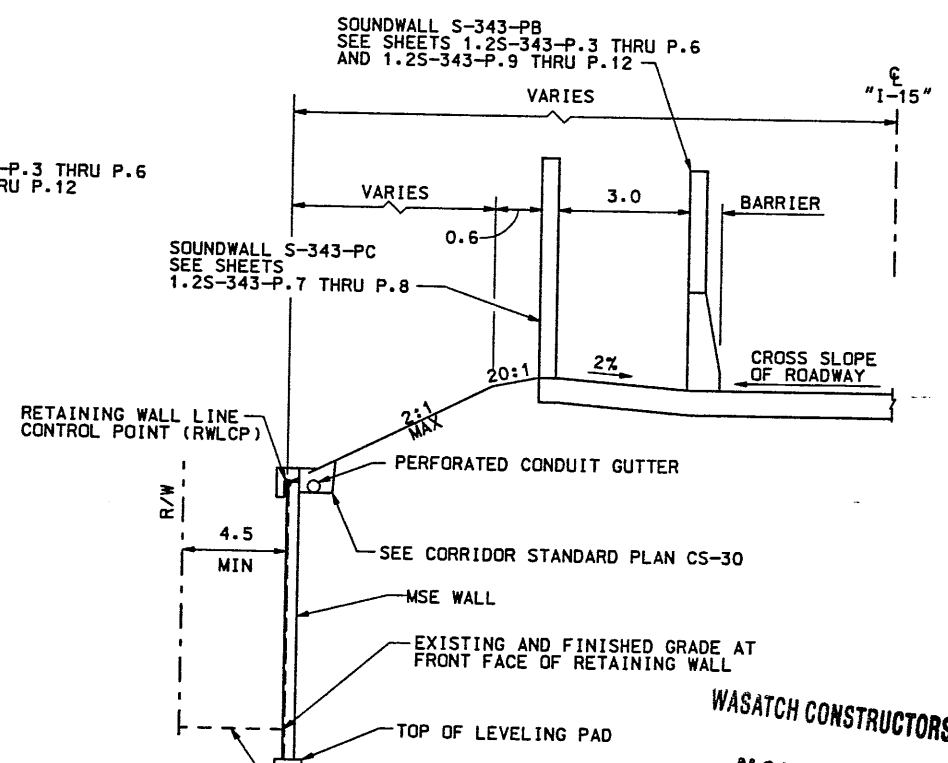
TYPICAL SECTION
RETAINING WALL R-343-30A
STA 1+314.110 TO STA 1+321.482



TYPICAL SECTION
RETAINING WALL R-343-30A
STA 1+321.482 TO STA 1+352.193



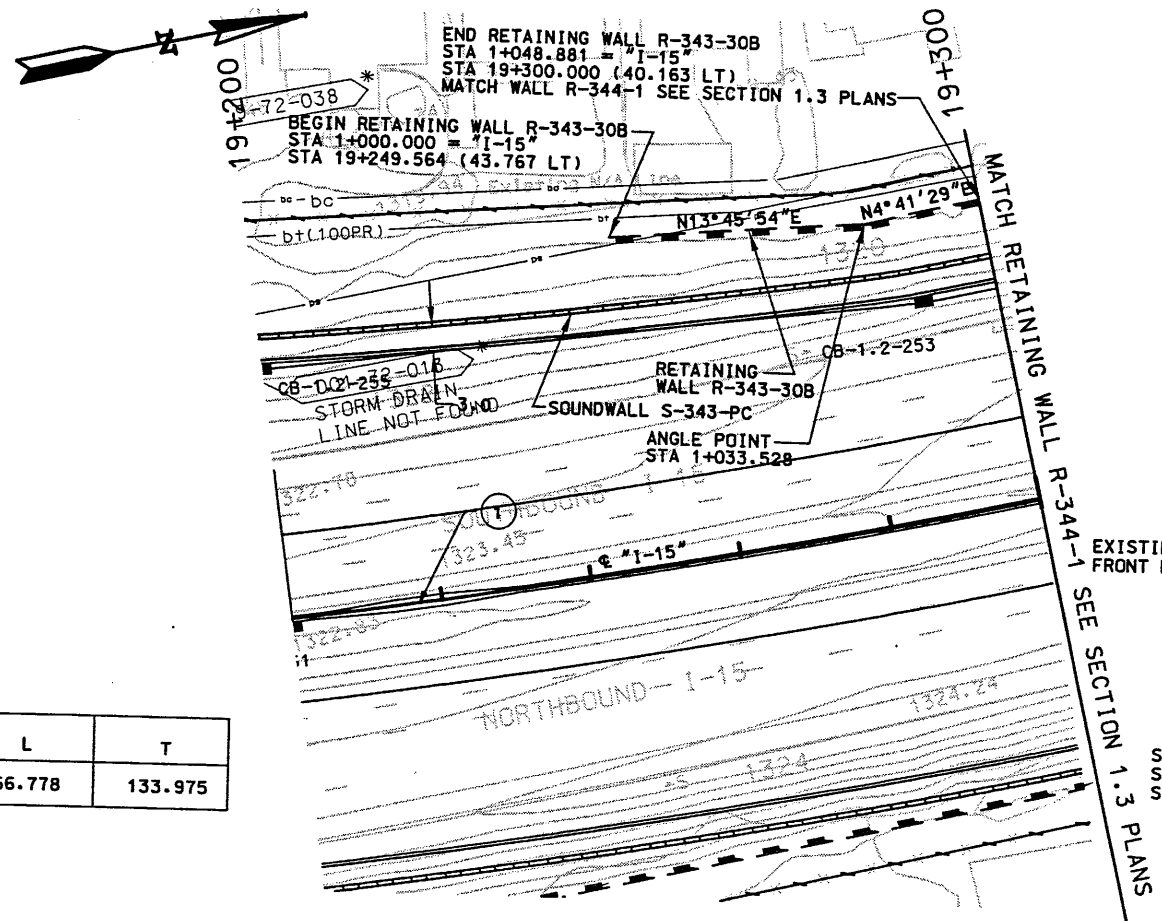
TYPICAL SECTION
RETAINING WALL R-343-30A
STA 1+352.193 TO STA 1+379.200



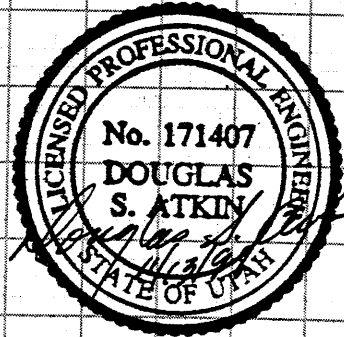
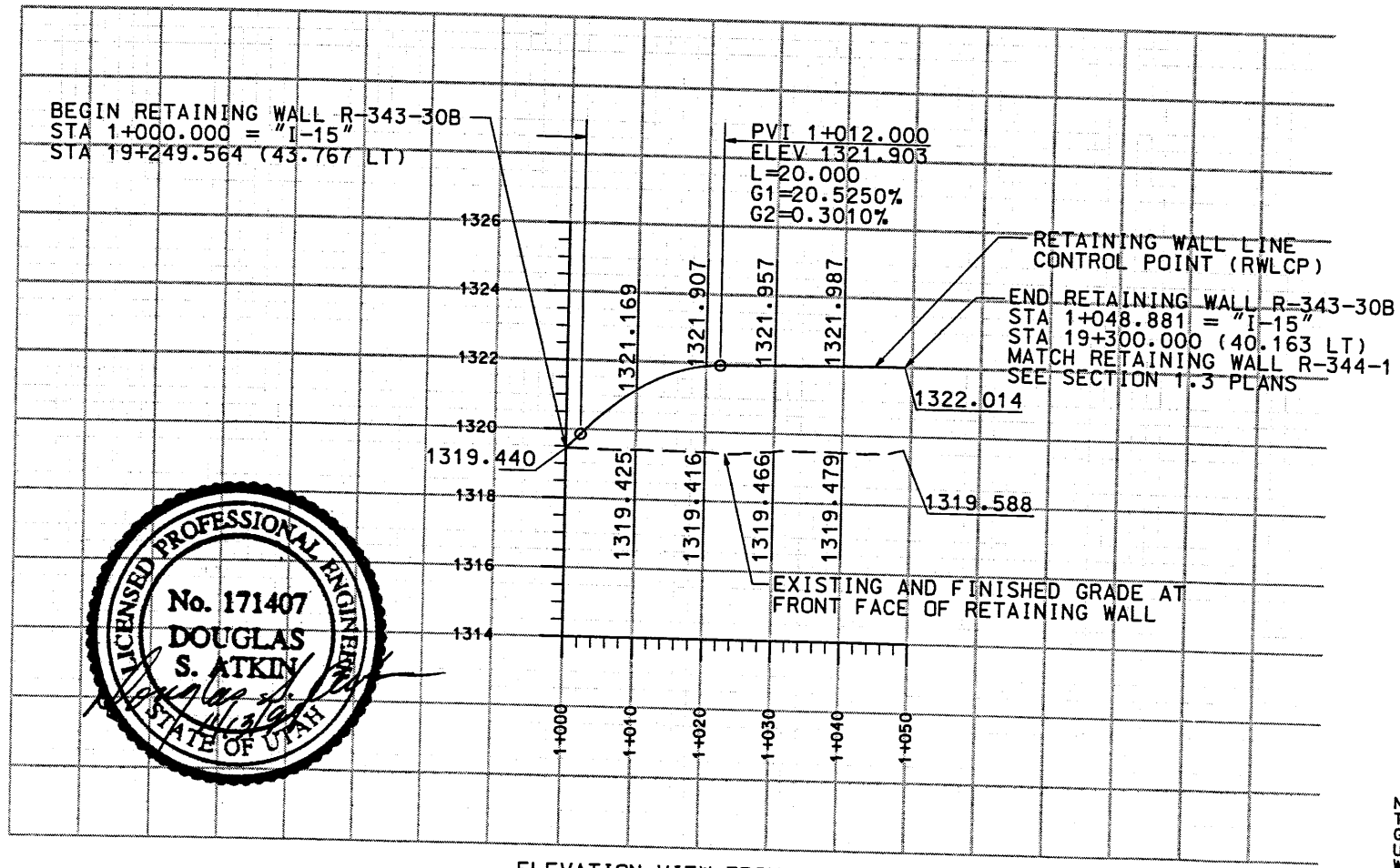
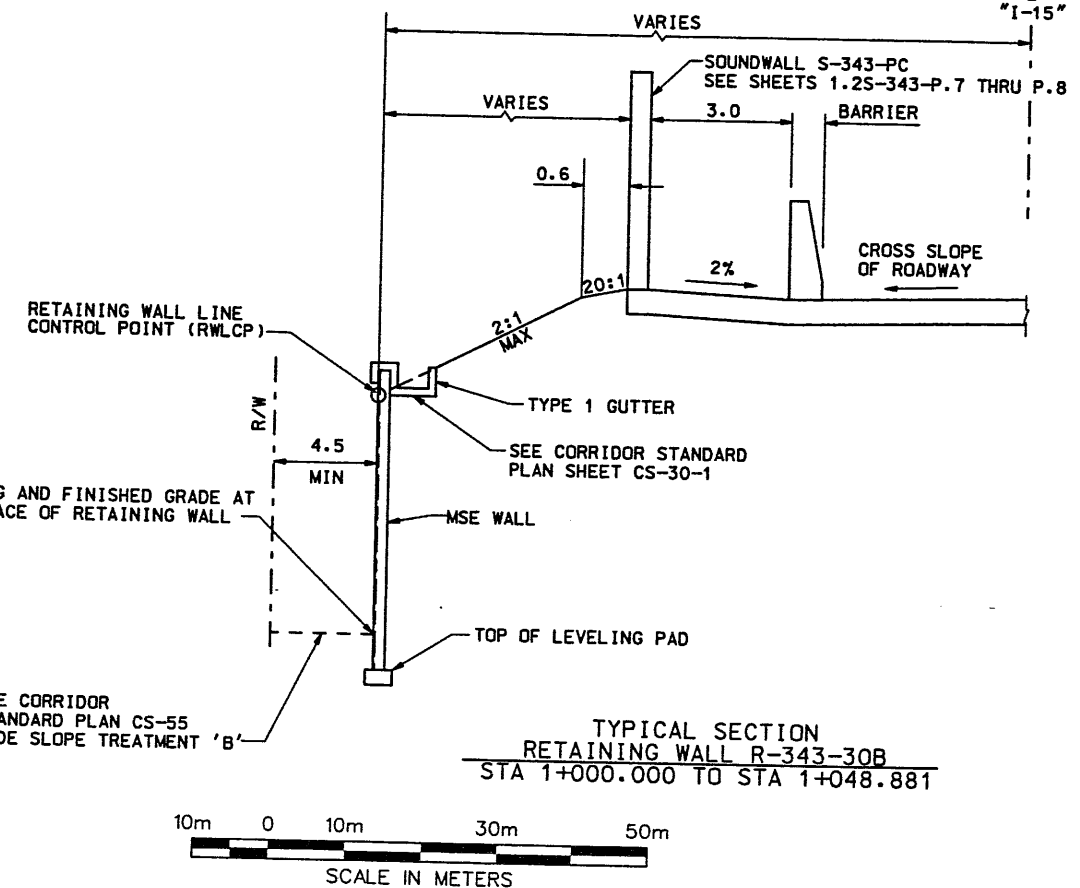
TYPICAL SECTION
RETAINING WALL R-343-30A
STA 1+379.200 TO STA 1+386.966

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	INITIAL RELEASE	REFERENCED SOUNDWALL
1	1-20-98		
2	11-10-98		
UTAH DEPARTMENT OF TRANSPORTATION			
URS Greiner			
SVERDRUP/DE LEUW			
DESIGN	CHECK	DATE	QUANT.
10/97	10/97	10/97	1212425
10/97	10/97	10/97	
10/97	10/97	10/97	
10/97	10/97	10/97	
I-15 CORRIDOR RECONSTRUCTION			
DETAIL SHEET			
RET WALL R-343-30A			
SECTION 1.2			
PROJECT NUMBER #SP-15-7(135)296			
SALT LAKE COUNTY			
DWG. NO. 1.2R-343-30A&B.3c			
SHT. 42 OF 18			
REF.			

WASATCH CONSTRUCTORS
NOV 19 1998
RELEASED FOR CONSTRUCTION



CURVE NO.	△	R	L	T
1	13° 7' 13"	1165.000	266.778	133.975



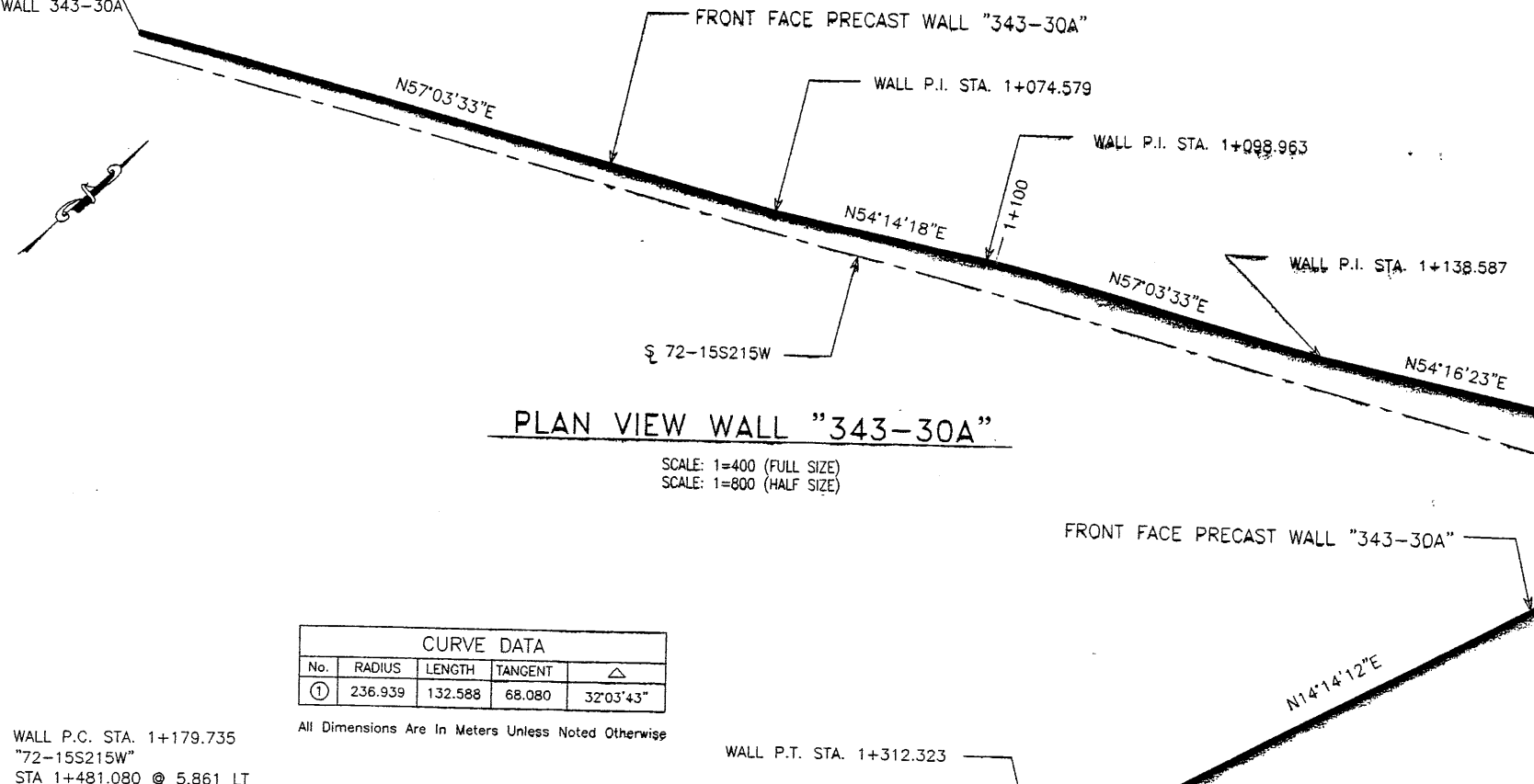
NOTE:
 THE FOUNDATION BEARING MATERIALS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER DURING SITE PREPARATION. ANY UNDESIRABLE MATERIALS WILL NEED TO BE REMOVED AND REPLACED WITH BORROW IN ORDER TO ACHIEVE ACCEPTABLE CONDITIONS AT THE BASE OF THE WALL.

WASATCH CONSTRUCTORS
 NOV 24 1998
 RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	INITIAL RELEASE	REFERENCED SOUNDWALL
1	1-22-98	JBE	
2	11-13-98	NOG-0234	
UTAH DEPARTMENT OF TRANSPORTATION			
URS Greiner			
SVERDRUP/DE LEUW			
DESIGN	CHK	DATE	QUANT.
DESIGN	CHK	10/97	1214000
DRAWN	CHK	10/97	
PROJECT ENGINEER	DATE	PROJECT MANAGER	
RICK CHAPMAN	10/97	DOUG BRAL	
APPROVAL	DATE	APPROVED	DATE
REC'D	10/97	10/97	
I-15 CORRIDOR RECONSTRUCTION			
SITUATION/LAYOUT			
RET WALL R-343-30B			
SECTION 1.2			
PROJECT NUMBER #SP-15-7(135)296			
SALT LAKE COUNTY			
DWG. NO. 1.2R-343-30A&B.4			
SHT. 54 OF 18			
REF.			

1998\72SERIES\72-30\SUBMTL1\RE-1.DWG

WALL STA 1+000.000 =
"72-15S215W"
STA 1+301.421 @ 2.661 LT
BEGIN PRECAST WALL 343-30A



PLAN VIEW WALL "343-30A"

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

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	Δ
①	236.939	132.588	68.080	32°03'43"

All Dimensions Are In Meters Unless Noted Otherwise

RETAINED EARTH INDEX	
RE-1	PLAN WALLS 343-30A, 343-30B, NOTES & DESIGN CRITERIA
RE-2	TYPICAL DETAILS
RE-3	TYPICAL DETAILS
RE-4	TYPICAL CROSS SECTIONS
RE-5	TYPICAL CROSS SECTIONS
RE-6	TYPICAL CROSS SECTIONS
RE-7	ELEVATION PRECAST WALL "343-30A"
RE-8	ELEVATION PRECAST WALL "343-30A"
RE-9	ELEVATION PRECAST WALL "343-30A"
RE-10	ELEVATION PRECAST WALL "343-30A"
RE-11	ELEVATION PRECAST WALL "343-30B"
RE-12	SPECIAL PANEL DETAILS
RE-13	SPECIAL PANEL DETAILS

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	1/8/98	RELEASE FOR CONSTRUCTION <i>[Signature]</i>

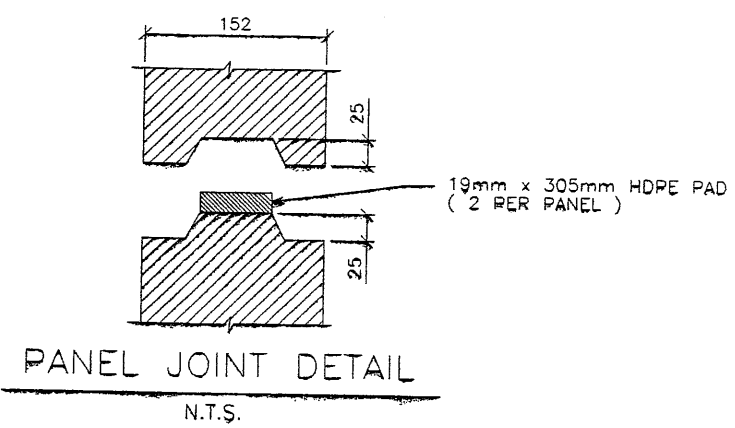
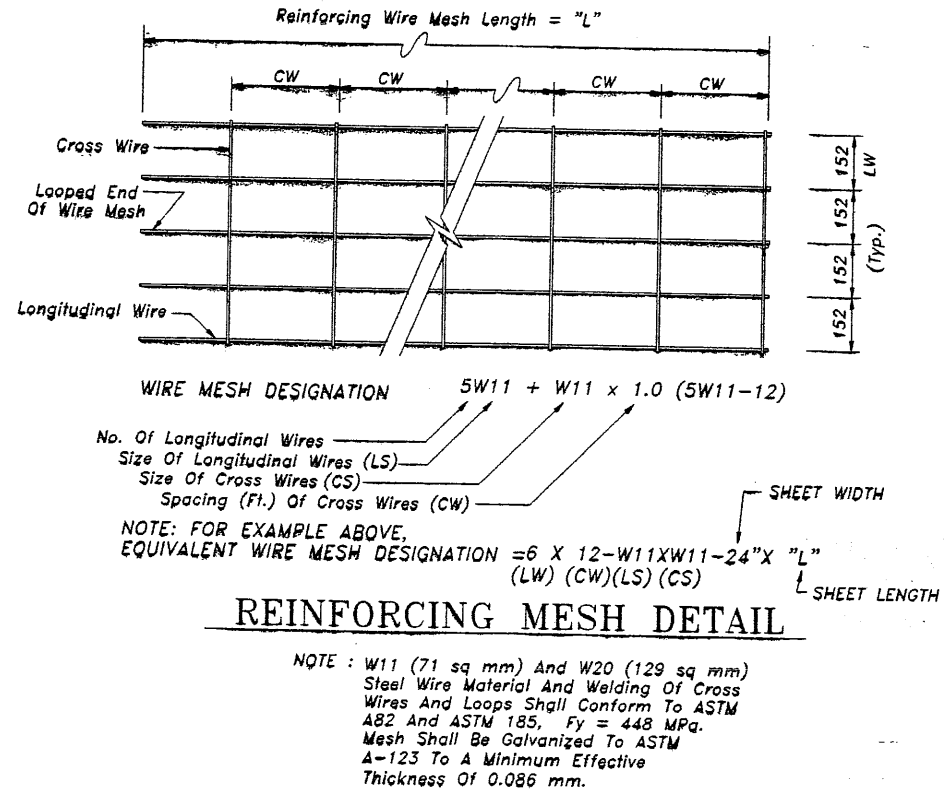
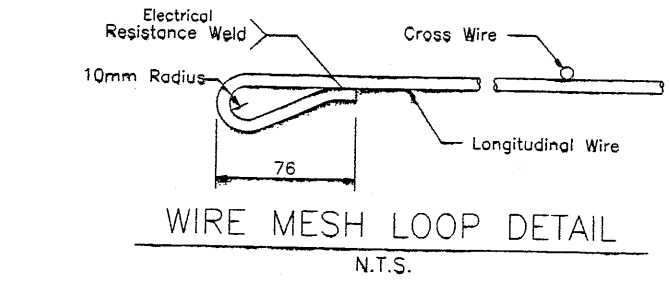
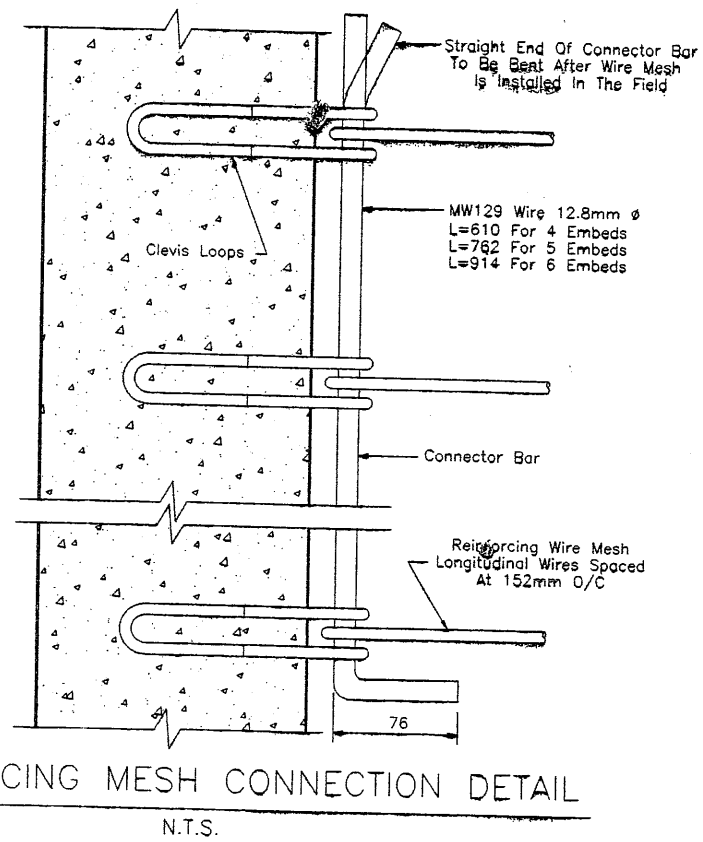
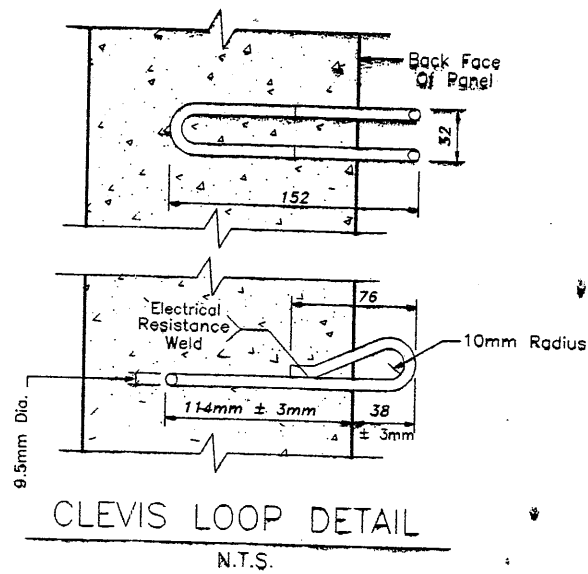
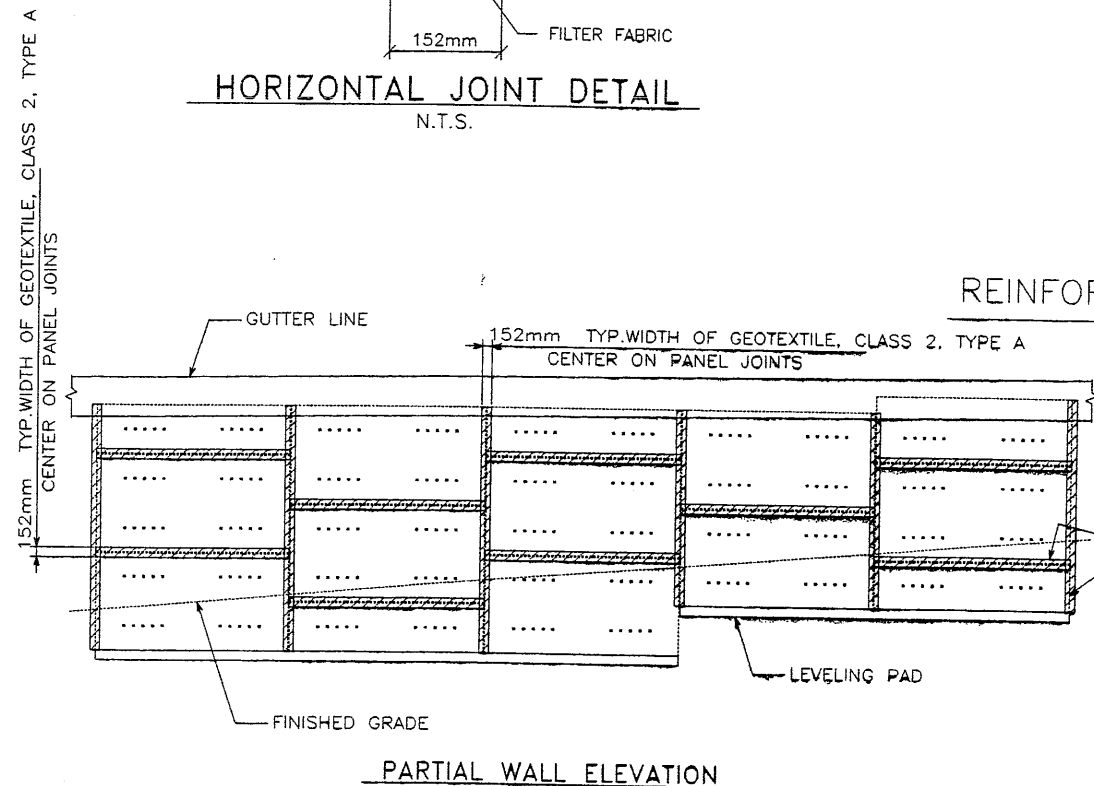
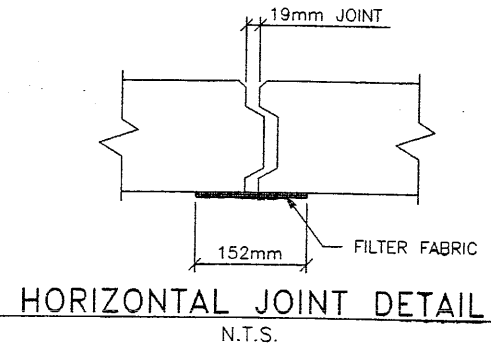
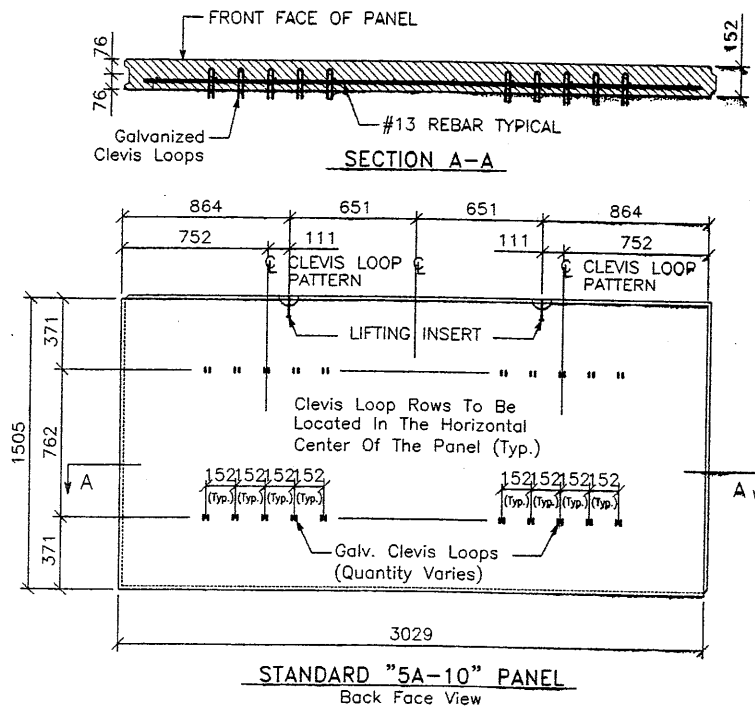
GENERAL NOTES

- ALL WALLS ARE SHOWN FRONT FACE. NOTE STATIONING.
- PANEL TYPE IS DESIGNATED ON EACH PANEL. CONNECTOR LABELS INDICATE NUMBER OF CONNECTORS PER SOIL REINFORCING MESH LOCATION.
EXAMPLE: 5B2-10 IS A "B2-10" PANEL WITH FIVE (5) CONNECTORS PER SOIL REINFORCING MESH LOCATION.
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: 4W20-12 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 12" 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.

VSU CORPORATION
8840 Peachtree Plaza, Suite 200
Atlanta, GA 30339
Telephone: (404) 761-6272
Fax: (404) 761-4669

PL. INC. (CORPORATE OFFICE)
V. SPRINGFIELD, VA

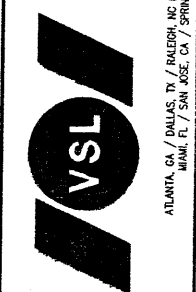
NO.	DATE	REVISION	BY	CHK



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	1/8/98	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

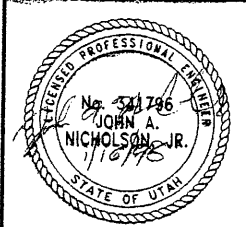
VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27617
Telephone: (919) 781-6772
Fax: (919) 781-4989



UTAH 1-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

WASATCH CONSTRUCTORS
JAN 28 1998
RELEASED FOR CONSTRUCTION

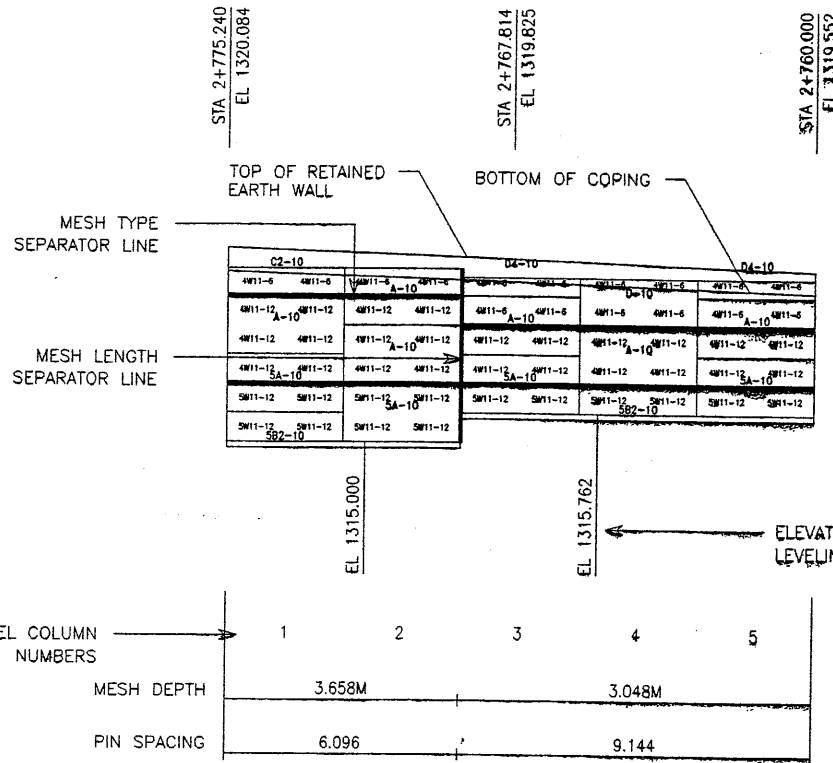
METRIC



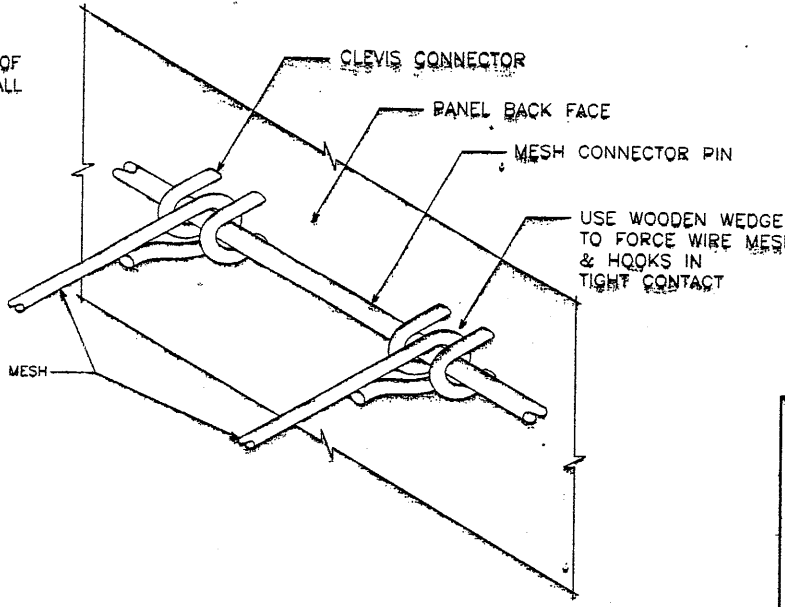
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

SCALE:	1:2R-343-30.6
JOB NO:	239-0007 7/18
RE-2	

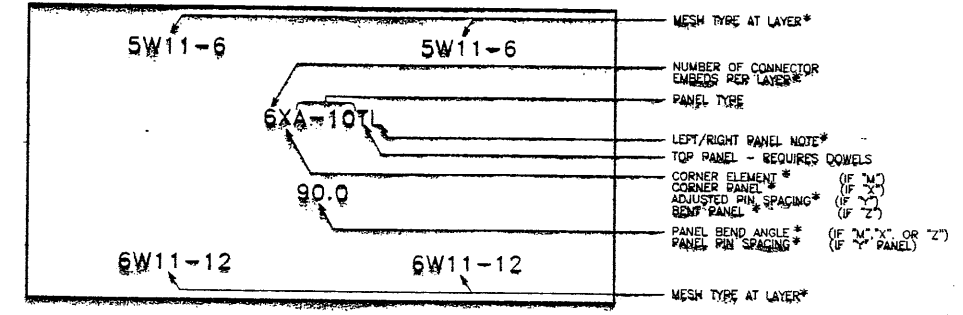
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
Δ	1/8/98	RELEASE FOR CONSTRUCTION



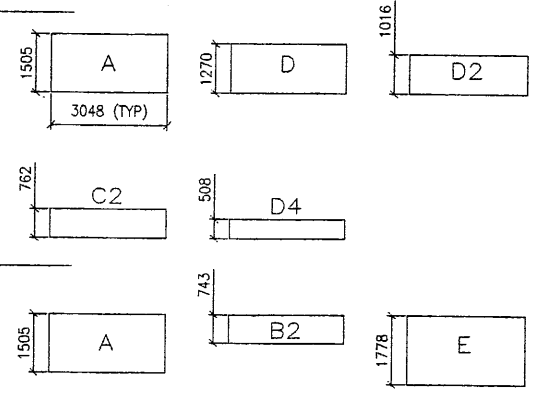
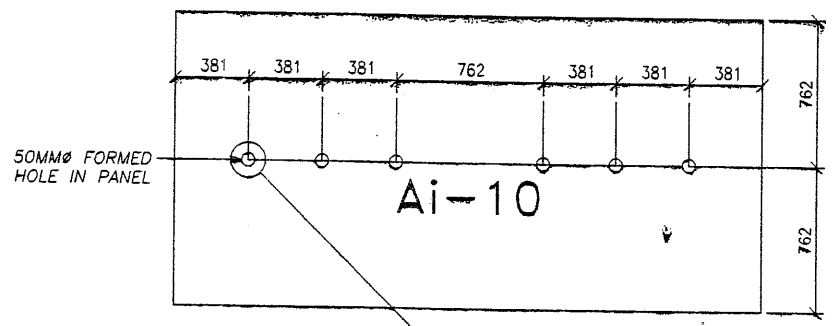
1 WALL ELEVATION KEY
(FRONT FACE SHOWN)



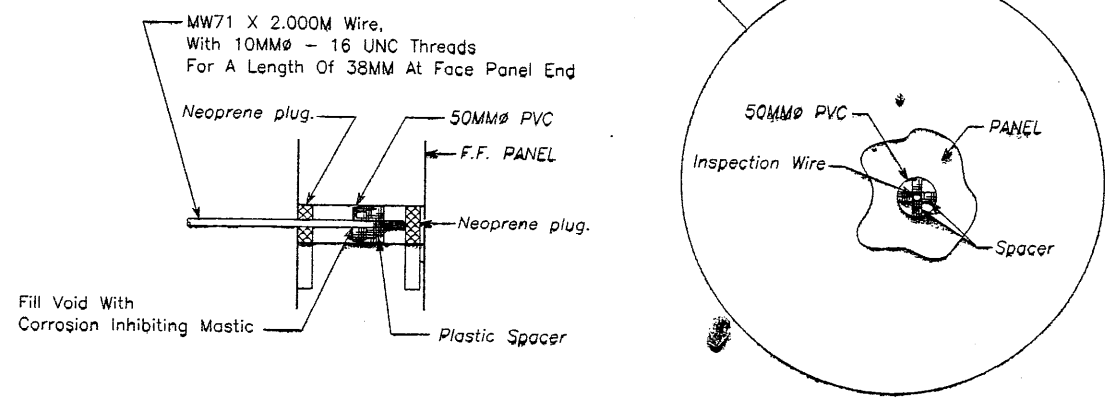
2 MESH CLEVIS CONNECTOR
VSL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,120



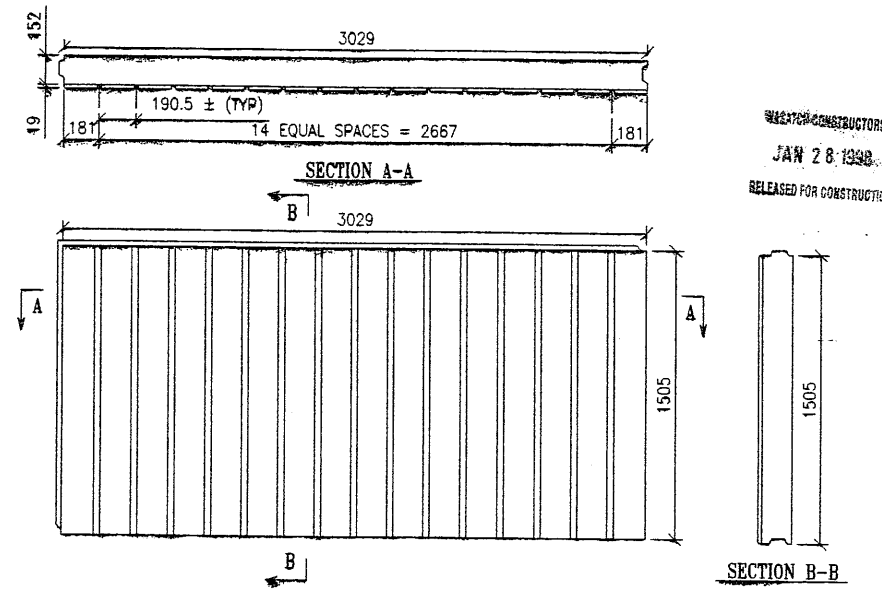
3 PANEL LABELS



4 PANEL TYPES
ALL DIMENSIONS ARE IN MILLIMETERS

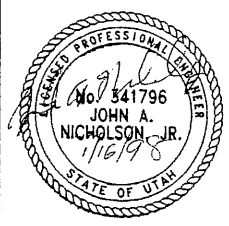


5 INSPECTION WIRE DETAIL
(PANEL FRONT FACE SHOWN)



6 ARCHITECTURAL PANEL FINISH
(PANEL FRONT FACE SHOWN)

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



VSL
ATLANTA GA / DALLAS TX / FAIRBANKS AK (CORPORATE OFFICE)
MIAMI FL / SAN JOSE CA / SPRINGFIELD VA

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

DESIGNED BY: MM 1-8-98
DRAWN BY: RSW 1-8-98
CHECKED BY: MM 1-8-98

RETAINED EARTH™

REVISION NO. DATE BY CHK

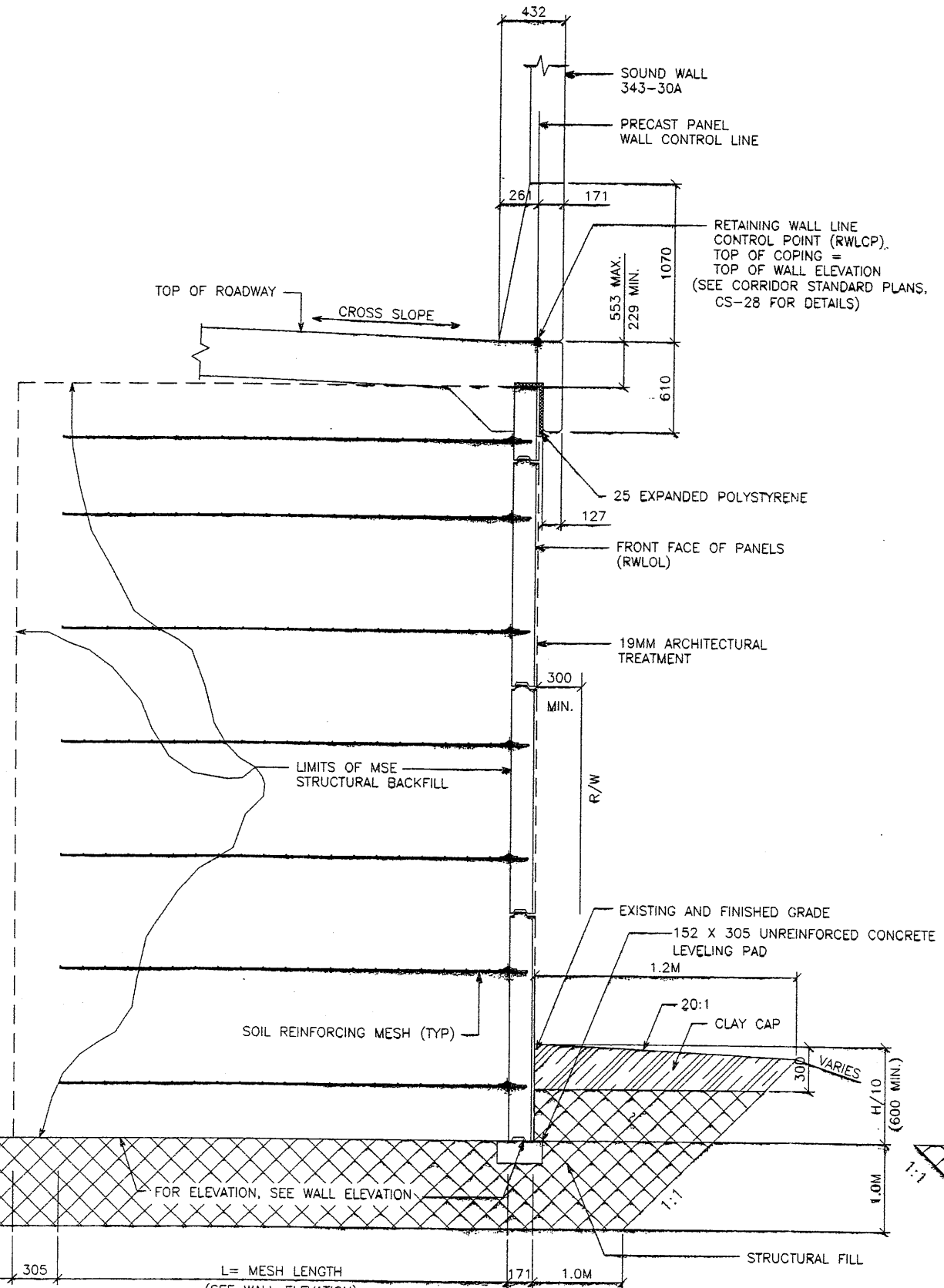
RE-3

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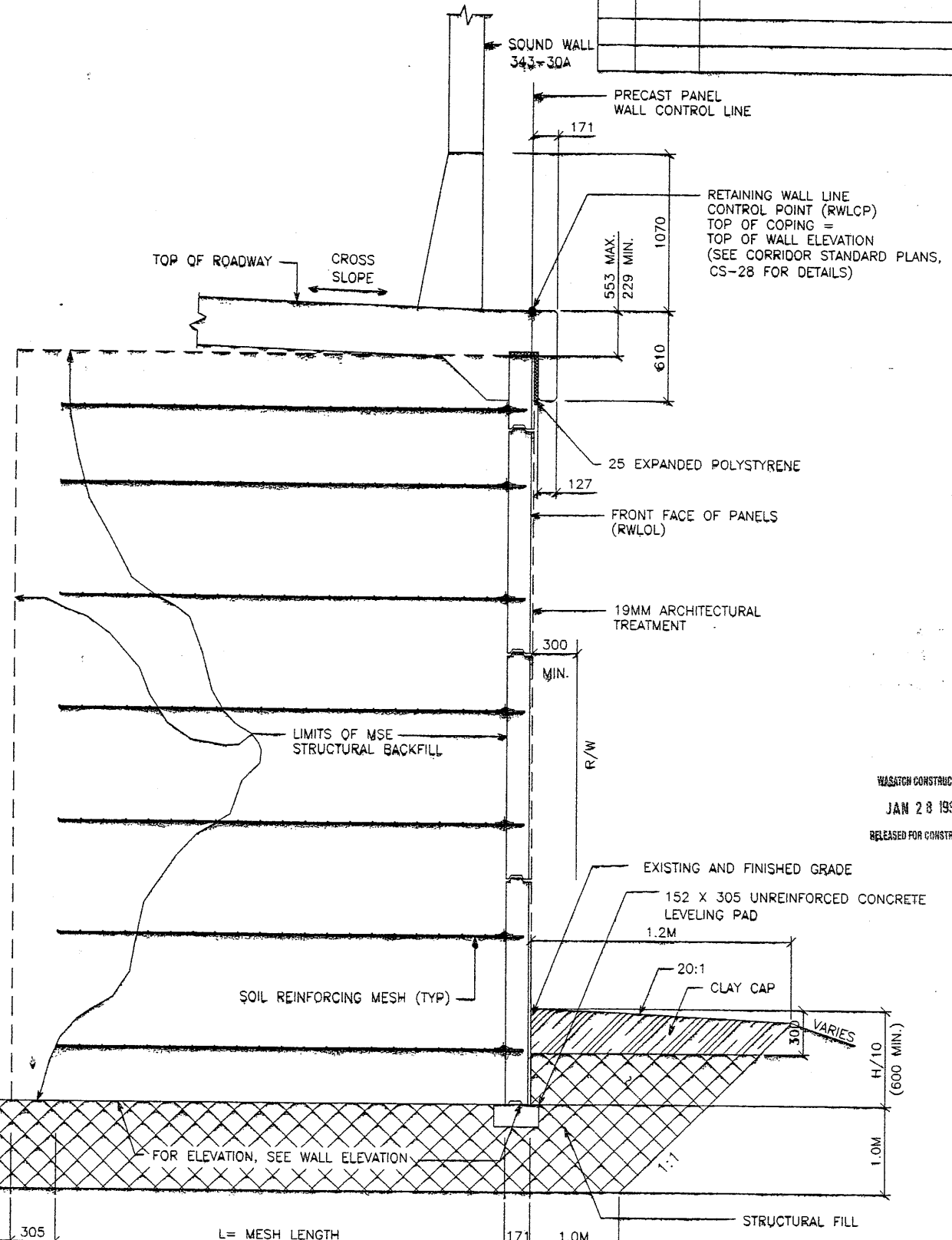
-98

FINAL PLOT

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	1/8/98	RELEASE FOR CONSTRUCTION <i>OK</i>

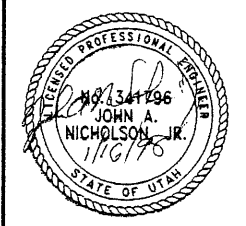


TYPICAL CROSS SECTION - RETAINING WALL 343-30A
 STA. 1+000.000 TO STA. 1+312.323
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)



TYPICAL CROSS SECTION - RETAINING WALL 343-30A
 STA. 1+312.323 TO STA. 1+321.482
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

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



DES.	MM.	1-8-98	DESIGNED
DRN.	RSW	1-8-98	DRAWN
CHK.	MM	1-8-98	CHECKED

VSL CORPORATION
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 Fax: (919) 781-6869

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WASATCH CONSTRUCTORS
 JAN 28 1998
 RELEASED FOR CONSTRUCTION

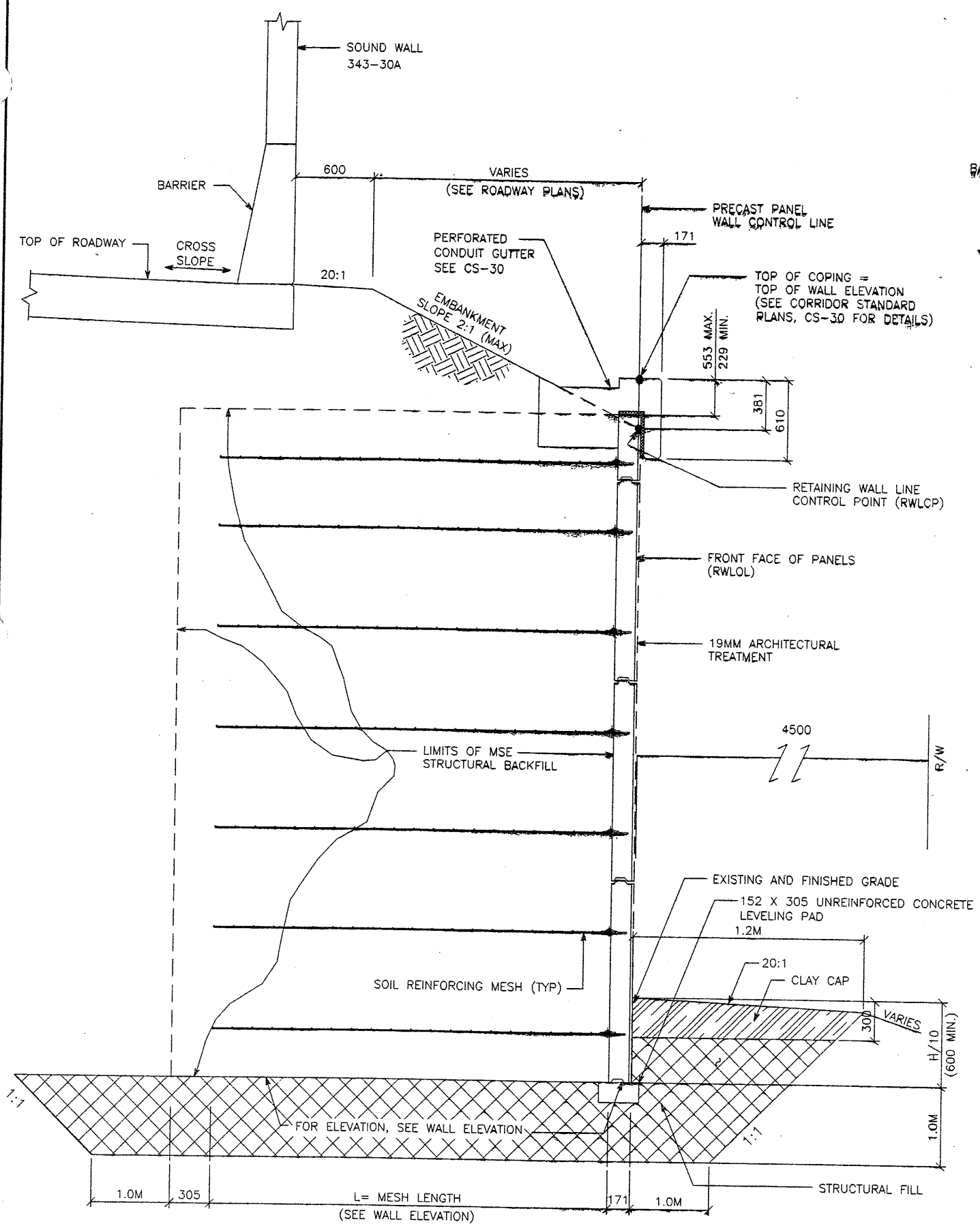
RETAINED EARTH™ WALLS
 PRECAST WALL "343-30A"
 TYPICAL CROSS SECTIONS

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

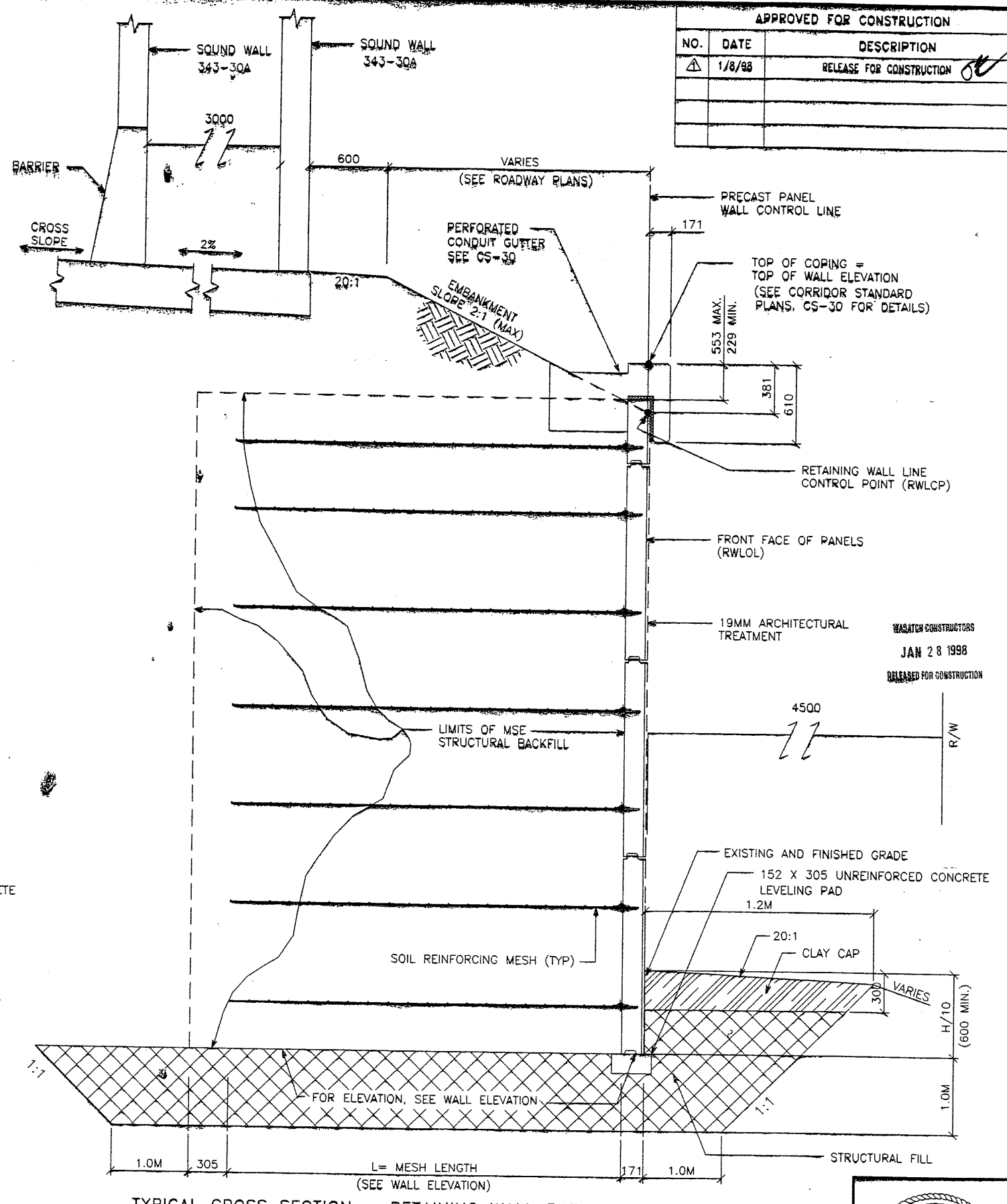
SCALE: 1.2R-343-30.8
 JOB NO: 239-0007/1/18
 RE-4

H:\RE_EARTH\PROJECT\239-0007\872SERIES\72-30\SUBMTL1\RE-5.DWG

FINAL PLOT 1-98

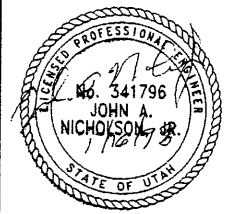


TYPICAL CROSS SECTION - RETAINING WALL 343-30A
STA. 1+321.482 TO STA. 1+379.200
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)



TYPICAL CROSS SECTION - RETAINING WALL 343-30A
STA. 1+379.200 TO STA. 1+386.966
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

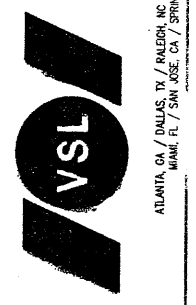
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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



APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	1/8/98	RELEASE FOR CONSTRUCTION

DES.	MM	DRN.	MM	CHK.	MM	NO.	DATE	BY	CHK
	1-8-98		1-8-98		1-8-98				

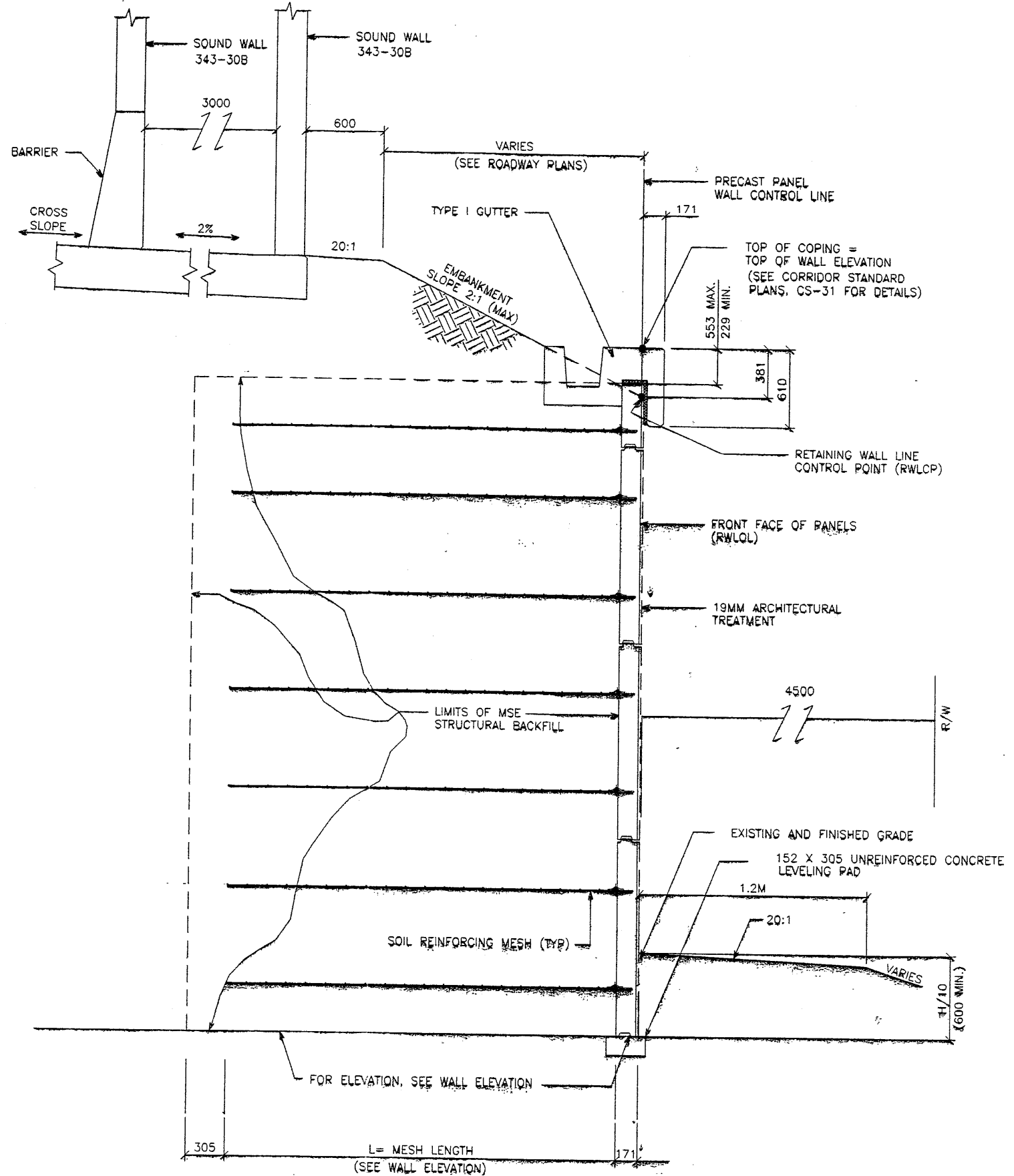
VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-6772
 Fax: (919) 781-6989



WATCH CONSTRUCTORS
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RETAINED EARTH™ WALLS
 PRECAST WALL "343-30A"
 TYPICAL CROSS SECTIONS
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE: 1:20-343-30.9
 JOB NO: 239-0007
 RE-5



TYPICAL CROSS SECTION - RETAINING WALL 343-30B
 STA. 1+000.000 TO STA. 1+048.881

SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

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APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	1/8/98	RELEASE FOR CONSTRUCTION

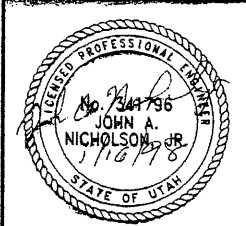
DES.	MM	DRN.	RSW	CHK.	MM	NO.	DATE	REVISION	BY	CHK

VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612 781-6272
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METRIC



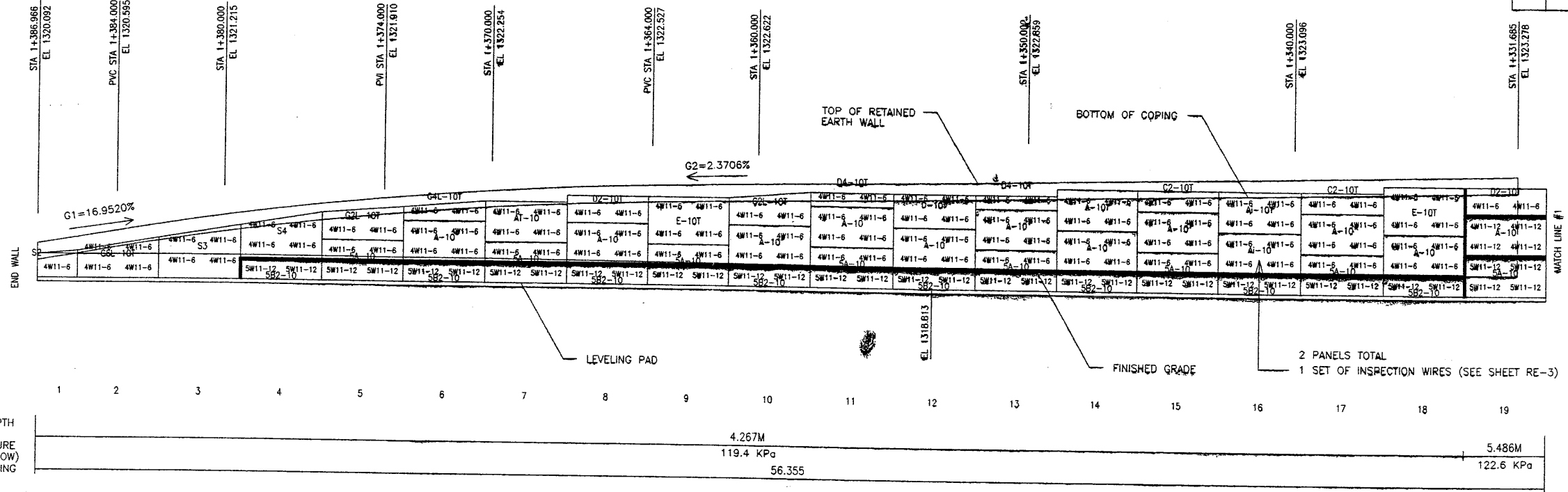
RETAINED EARTH™ WALLS
 PRECAST WALL 343-30B
 TYPICAL CROSS SECTIONS

UTAH 1-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

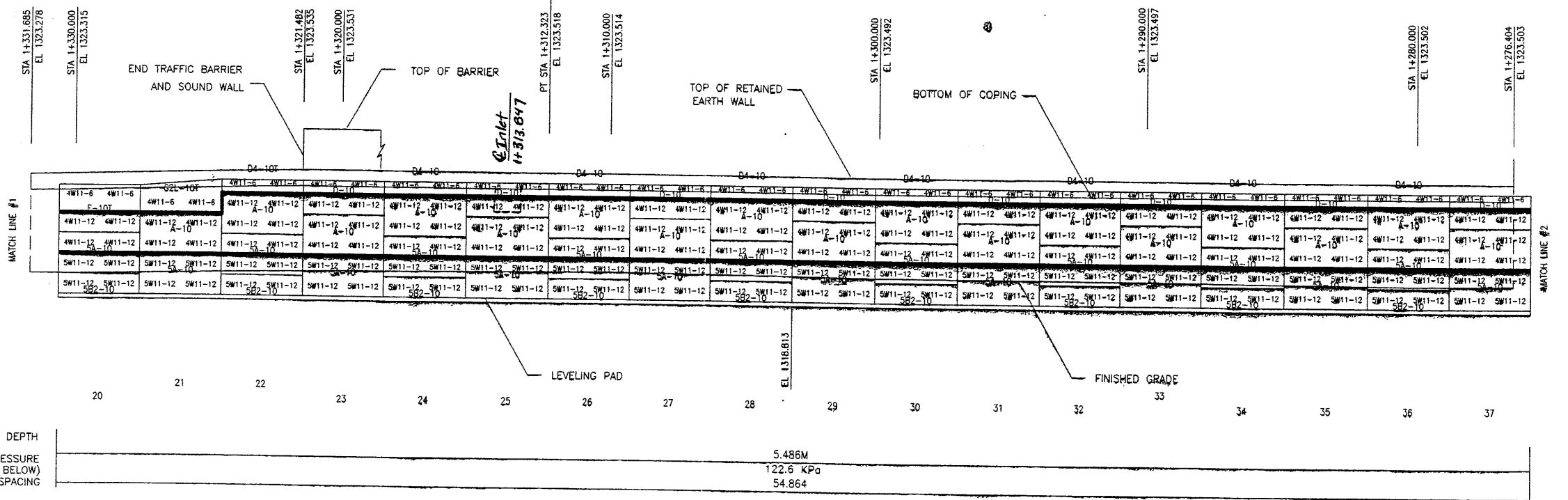
SCALE:
 1:20-343-30.10
 JOB NO:
 239-0007/118
 RE-6

WALL STA 1+386.966
 "I-15" STA 19+095.288
 (49.795 LT)
 FRONT FACE OF WALL

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	1/8/98	RELEASE FOR CONSTRUCTION



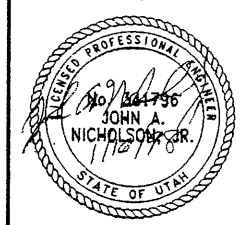
ELEVATION PRECAST WALL 343-30A



ELEVATION PRECAST WALL 343-30A

(FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF PANELS = 1241.03 SM) SCALE 1:200 (HALF SIZE)

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REVISION		NO.	DATE	BY	CHK

DES.	1-8-98	MM
DRN.	1-8-98	RSW
CHK.	1-8-98	MM

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RETAINED EARTH™ WALLS
 PRECAST WALL "343-30A"
 I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

WASATCH CONSTRUCTORS
 JAN 28 1998
 RELEASED FOR CONSTRUCTION

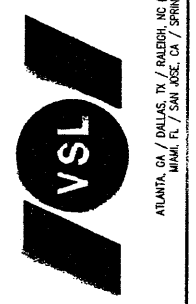
METRIC

SCALE:
 1.2R-343-30.11
 JOB NO:
 239-0007/18
 RE-7

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	1/8/98	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	CHK

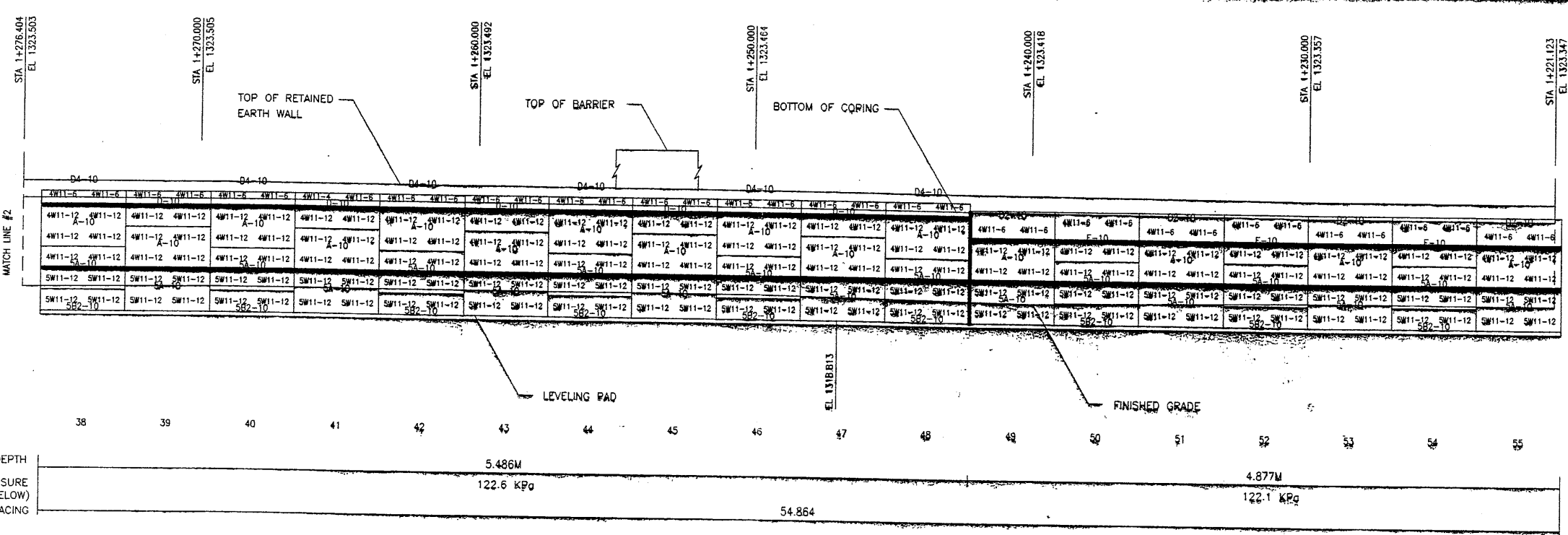
VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
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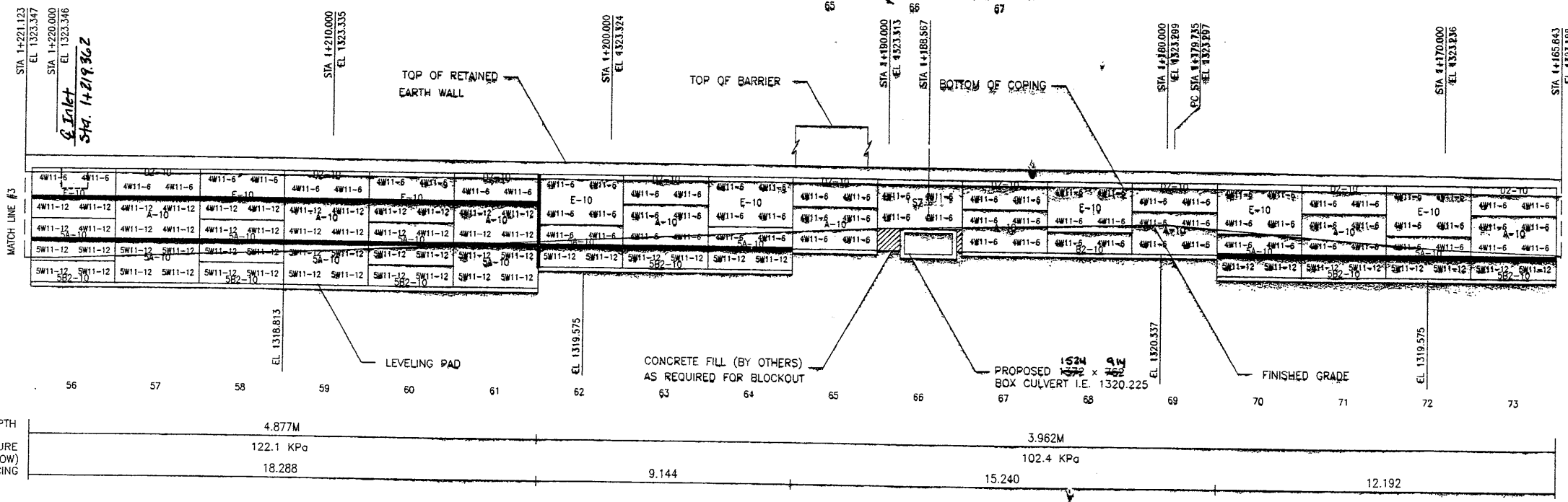
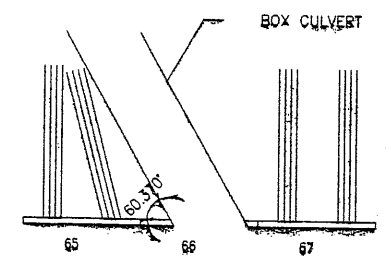
VSL Corporation (VSL) does a strict proprietary design and calculation of retaining walls and structures. The design and calculation are based on the VSL design manual. The design and calculation are based on the VSL design manual. The design and calculation are based on the VSL design manual.

RETAINED EARTH™ WALLS
 PRECAST WALL "343-30A"
 I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE:
 1:2R-343-30.12
 JOB NO:
 239-0007 13/18
 RE-8



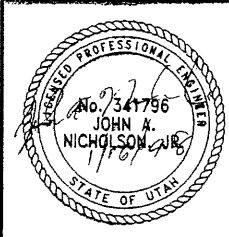
ELEVATION PRECAST WALL 343-30A



ELEVATION PRECAST WALL 343-30A

(FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 1241.03 SM)
 SCALE 1:100 (FULL SIZE)
 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.



WASATCH CONSTRUCTORS
 JAN 28 1998
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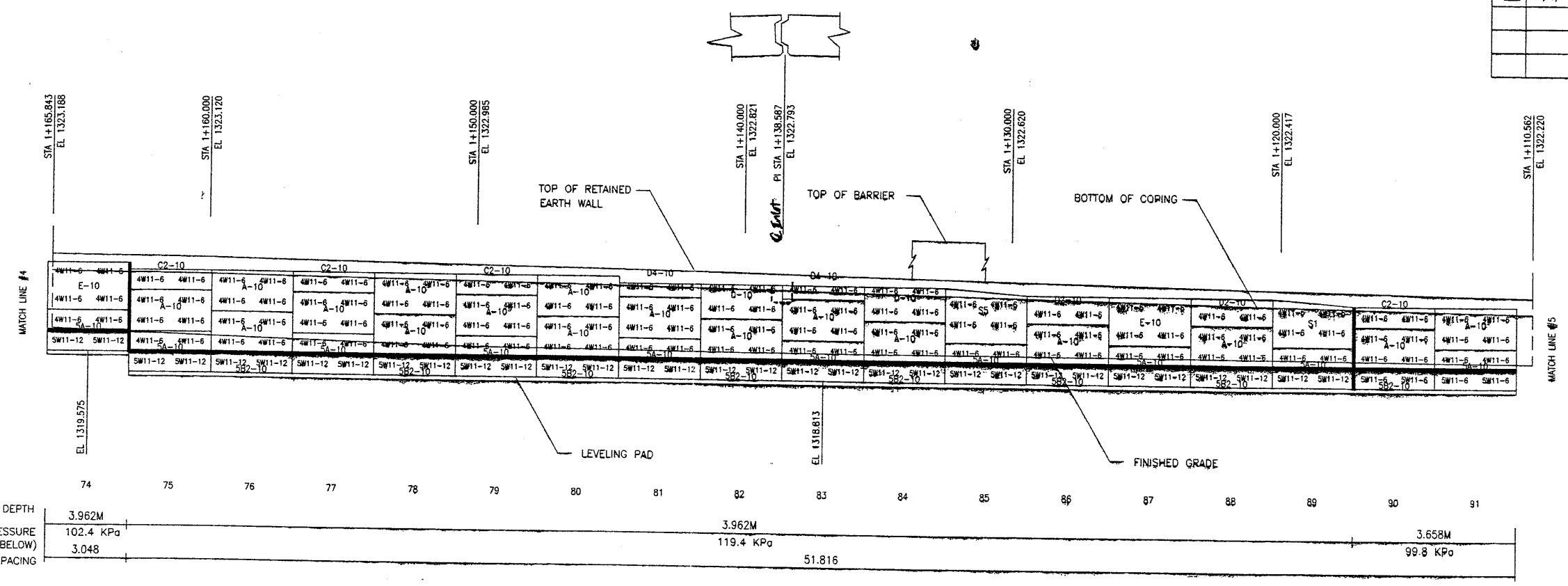
METRIC

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

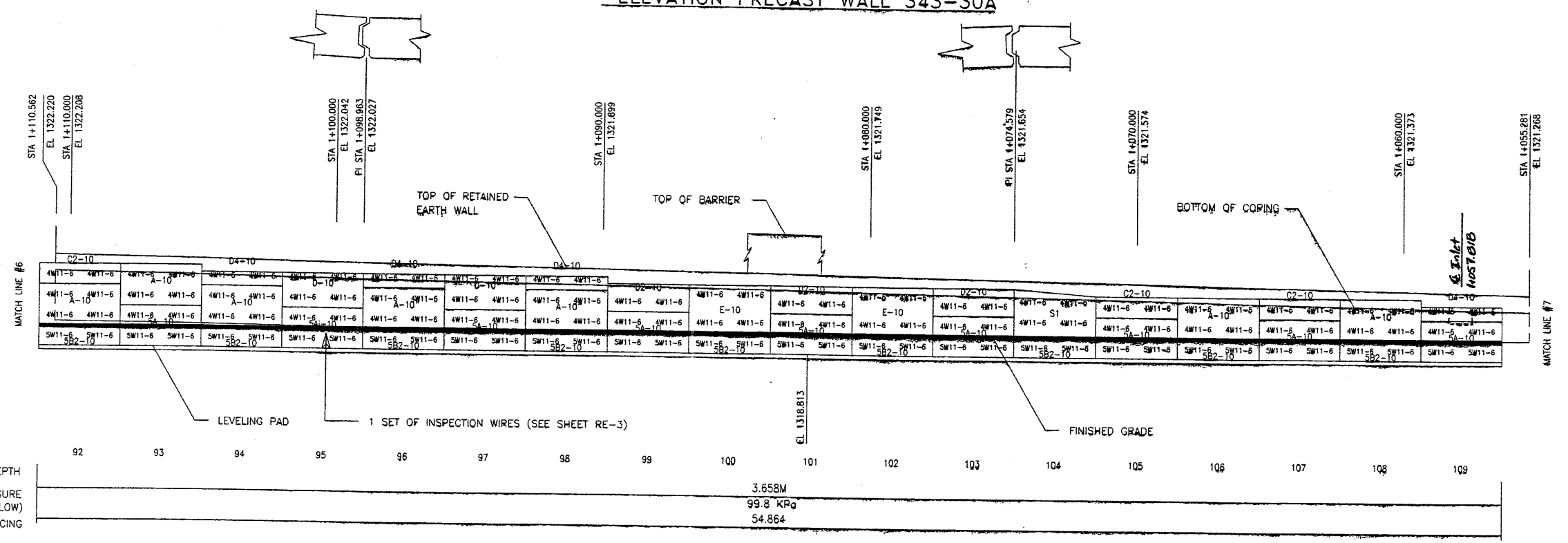
MESH DEPTH	MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	PIN SPACING
5.486M	122.6 kPa	54.864
4.877M	122.1 kPa	54.864

MESH DEPTH	MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	PIN SPACING
4.877M	122.1 KPa	18.288
3.962M	102.4 KPa	9.144
15.240	15.240	15.240
12.192	12.192	12.192

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	1/8/98	RELEASE FOR CONSTRUCTION <i>ol</i>



ELEVATION PRECAST WALL 343-30A

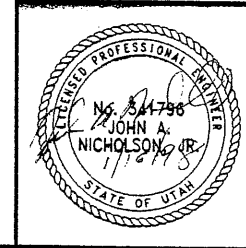


ELEVATION PRECAST WALL 343-30A

(FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 1241.03 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

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

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 STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE
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METRIC

NO.	DATE	DESCRIPTION	BY	CHK

DES.	MM	RETAINED EARTH™
1-8-98	RSW	
1-8-98	MM	
1-8-98		

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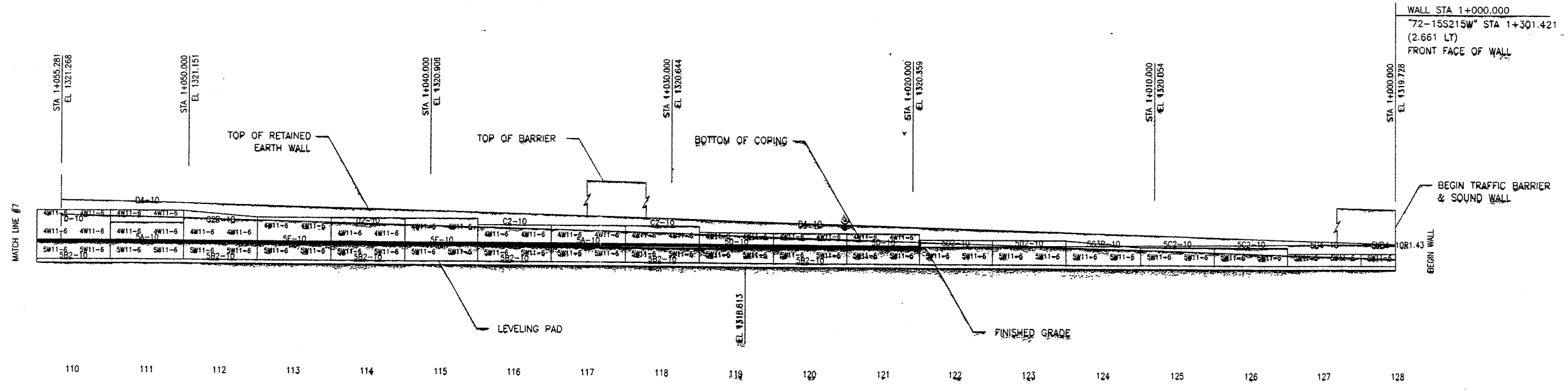
ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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RETAINED EARTH™ WALLS
 PRECAST WALL "343-30A"
 I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE:
 1.2R-343-30.13
 JOB NO:
 239-0007/18
 RE-9

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	1/8/98	RELEASE FOR CONSTRUCTION <i>SW</i>

NO.	DATE	REVISION

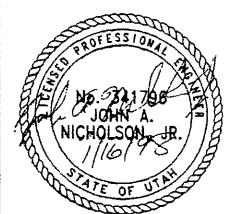


MESH DEPTH	3.658M
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	99.8 KPa
PIN SPACING	56.294

ELEVATION PRECAST WALL 343-30A
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF PANELS = 1241.03 SM) SCALE 1:200 (HALF SIZE)

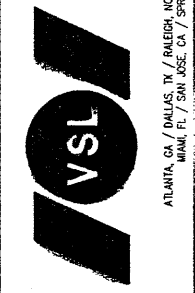
APPROVER NOTE:
 MAXIMUM UNFACTORED BEARING PRESSURES
 ARE INDICATED BELOW "MESH DEPTH LINE"
 REVIEWER TO VERIFY MAXIMUM BEARING
 CAPACITY OF FOUNDATION.

RELEASED FOR CONSTRUCTION
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RETAINED EARTH™ WALLS
 PRECAST WALL "343-30A"
 1-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE:	1:2R-343-30.14
JOB NO:	239-0007 15/18
	RE-10

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	1/8/98	RELEASE FOR CONSTRUCTION

DES.	MM	DRN.	CHK.	RETAINED EARTH™	NO.	DATE	BY	CHK
	1-8-98							

VSL CORPORATION
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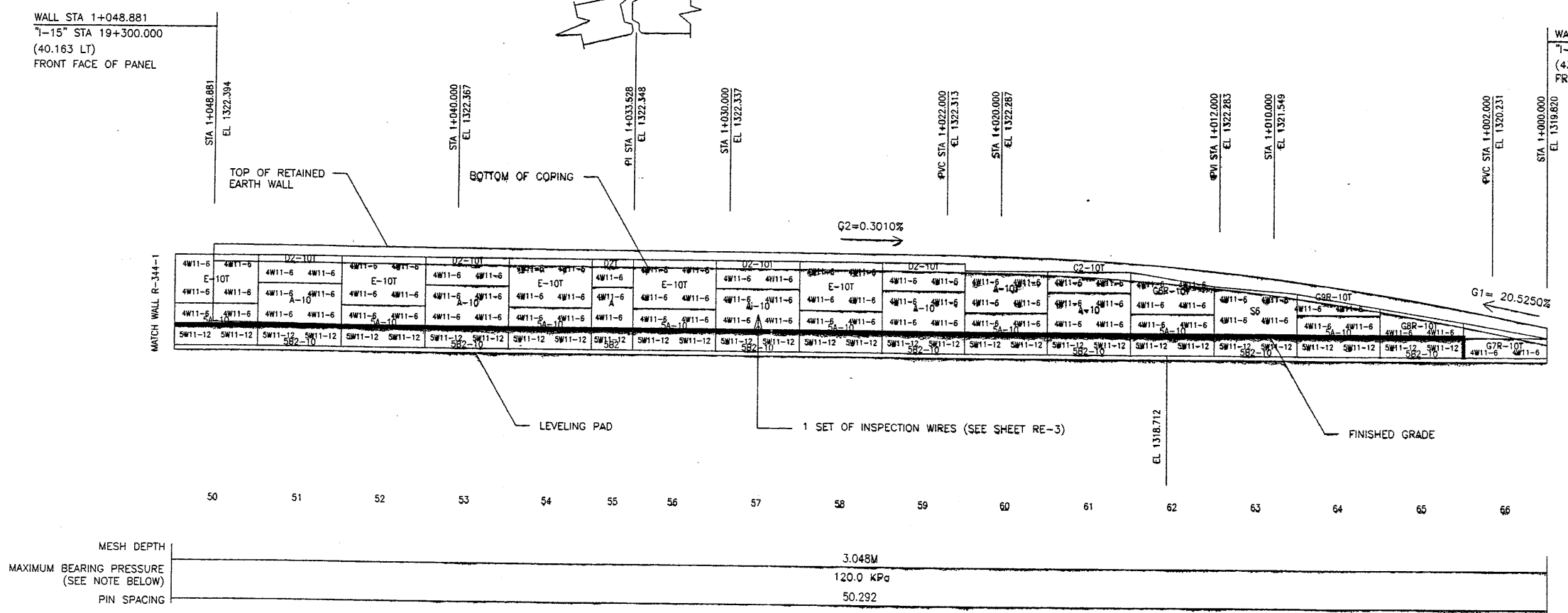


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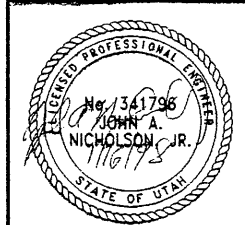
RETAINED EARTH™ WALLS
PRECAST WALL "343-30B"
 1-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE:
 1:2R-343-30.15
 JOB NO:
 239-0007
 1/8/98
RE-11



ELEVATION PRECAST WALL 343-30B
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 144.00 SM)
 SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

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

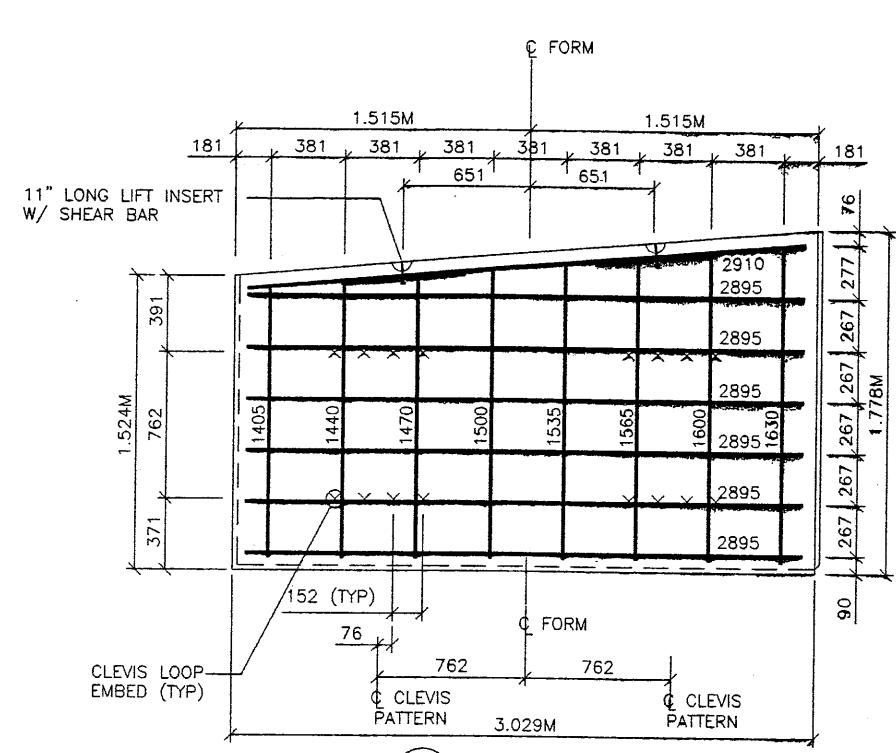


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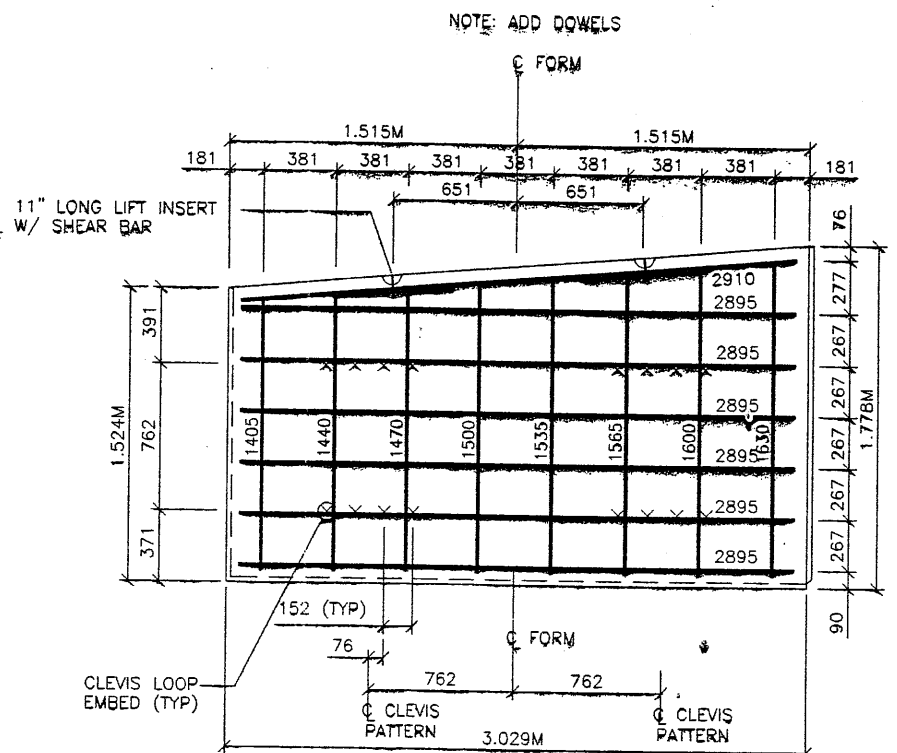
WAGATCH CONSTRUCTORS
 JAN 28 1998
 RELEASED FOR CONSTRUCTION

METRIC

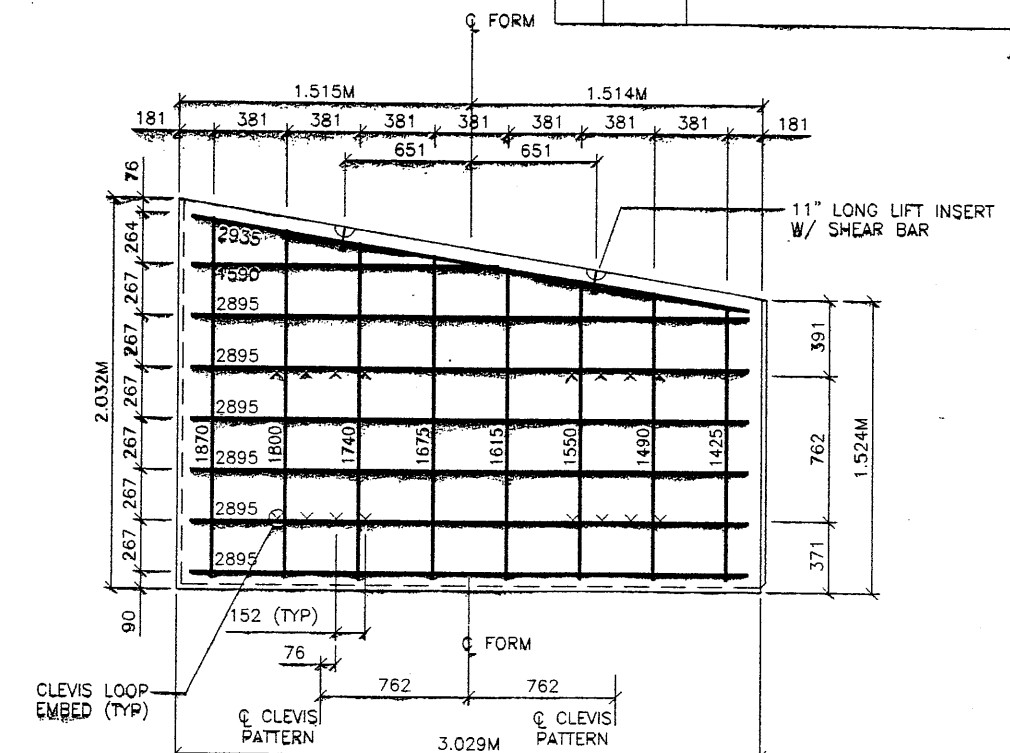
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	1/8/98	RELEASE FOR CONSTRUCTION



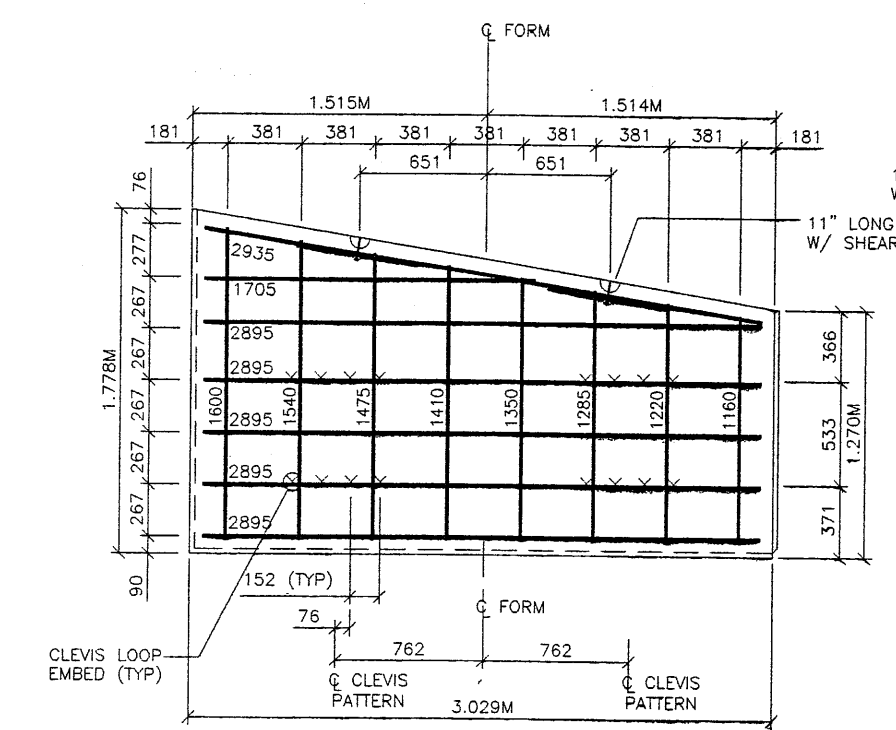
S1 TYPE S1 REBAR
(AREA = 5.032 SQ.M)



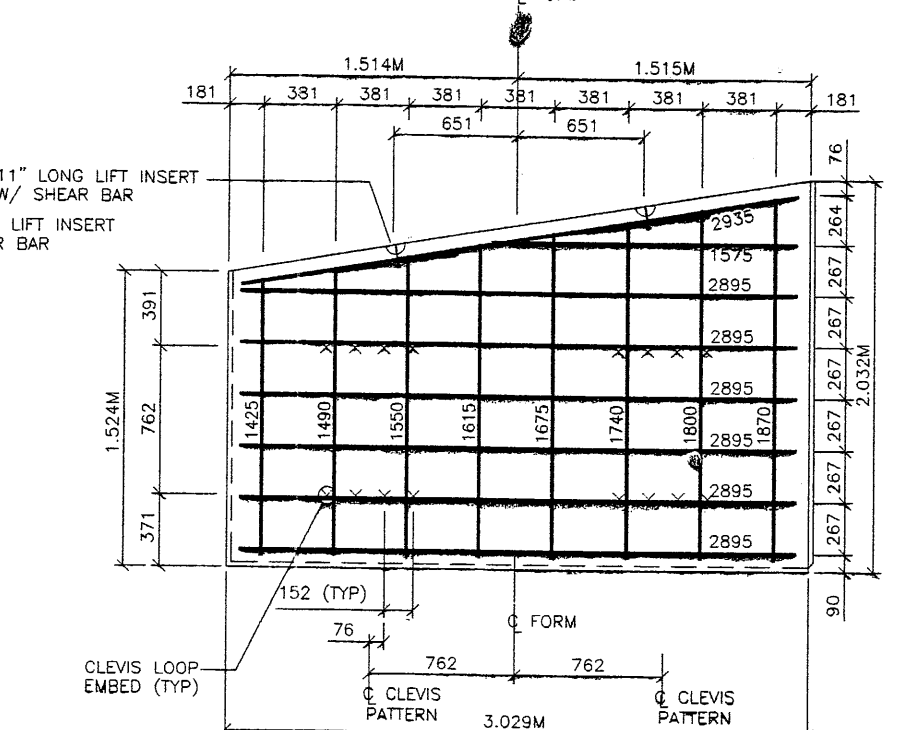
S6 TYPE S6 REBAR
(AREA = 5.032 SQ.M)



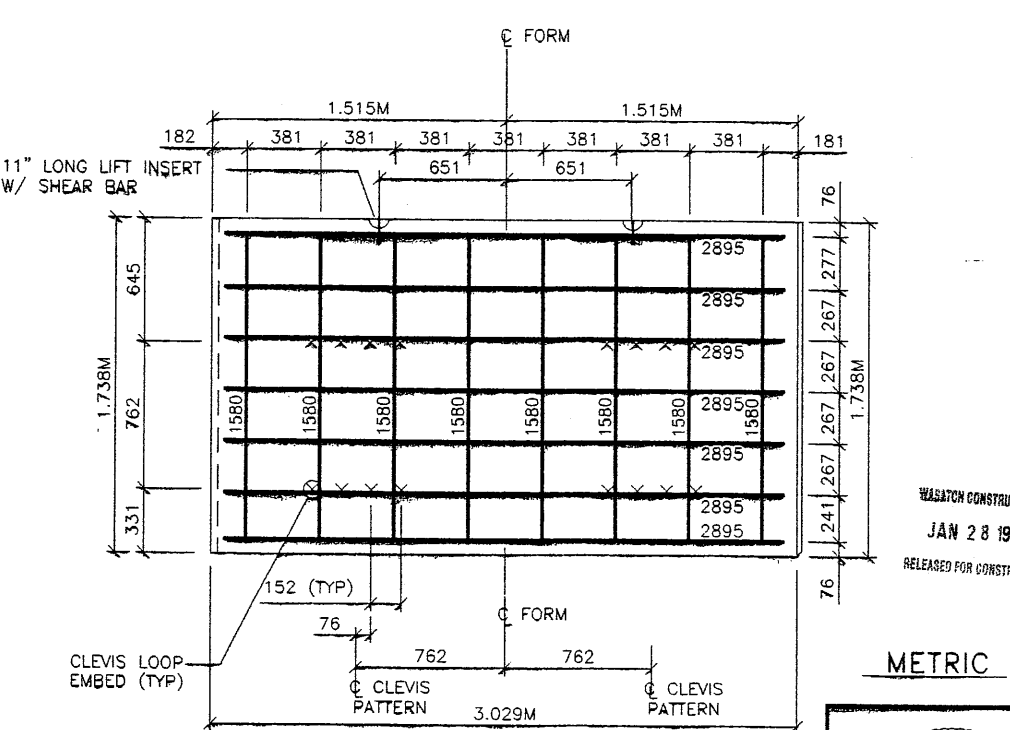
S3 TYPE S3 REBAR
(AREA = 5.419 SQ.M)



S4 TYPE S4 REBAR
(AREA = 4.645 SQ.M)

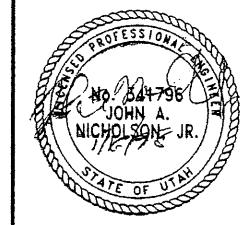


S5 TYPE S5 REBAR
(AREA = 5.419 SQ.M)



S7 TYPE S7 REBAR
(AREA = 5.264 SQ.M)

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WASATCH CONSTRUCTORS
JAN 28 1998
RELEASED FOR CONSTRUCTION

METRIC

REVISION		NO.	DATE	BY	CHK

DES:	MM	RSW	MM	RETAINED EARTH™
1-8-98		1-8-98		
DRN:				
CHK:				

VSL CORPORATION
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Telephone: (919) 761-4872
Fax: (919) 761-4869

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VSL

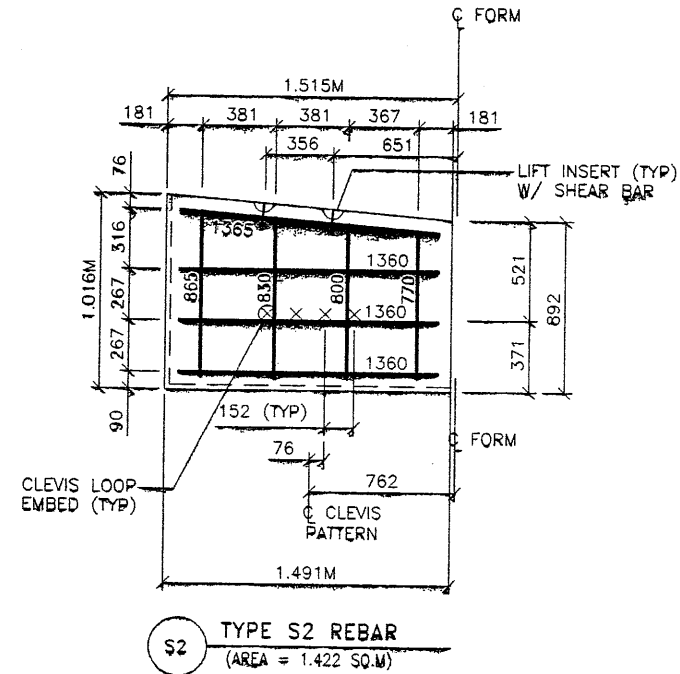
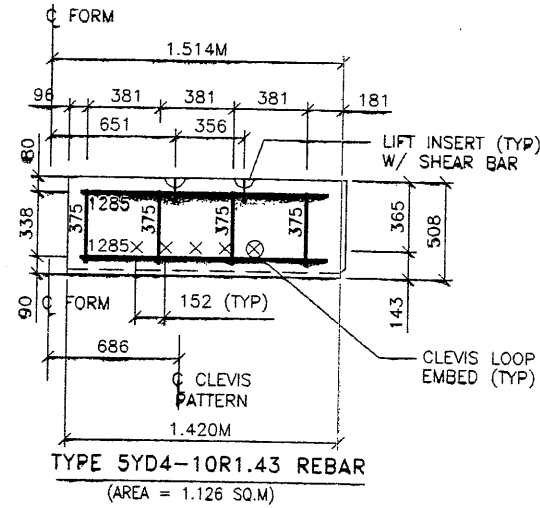
RETAINED EARTH™ WALLS
SPECIAL PANEL DETAILS

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

SCALE:
1.2R-343-30.16

JOB NO:
239-0007 17/18

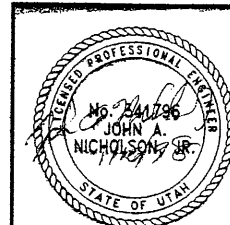
RE-12



APPROVED FOR CONSTRUCTION		
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△	1/8/98	RELEASE FOR CONSTRUCTION <i>de</i>

SEALING CONTRACTORS
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RETAINED EARTH™ WALLS
 STANDARD DRAWING
 "G" PANEL REINFORCEMENT 1.524M x 3.048M
 UTAH I-15 INTERCHANGE
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

SCALE:
 1.2R-343-30.17
 JOB NO:
 239-0007 18/18
 RE-13

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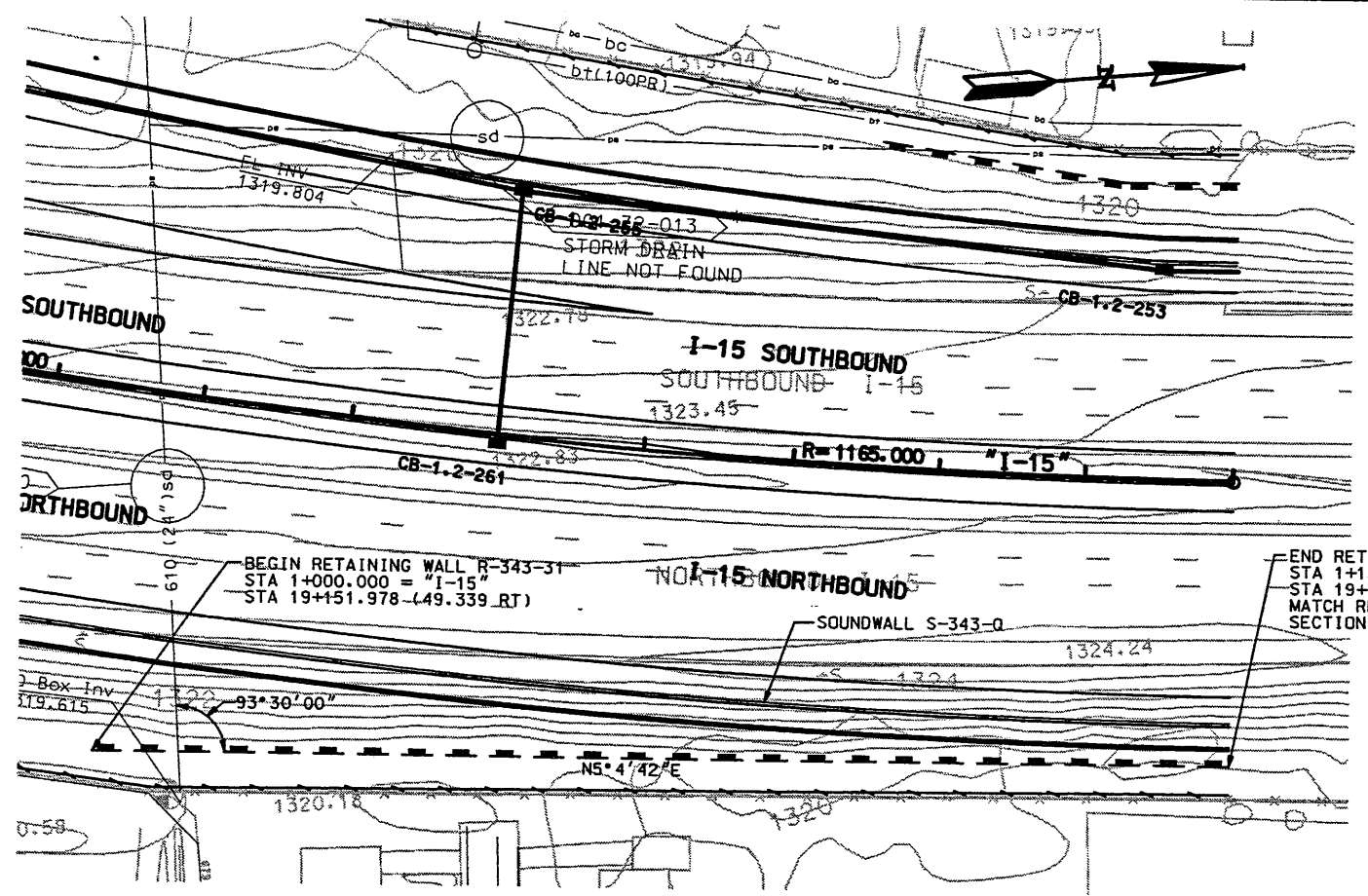
ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
 MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

DES.	MM	RSW	MM	RETAINED EARTH™
1-8-98				
1-8-98				
1-8-98				

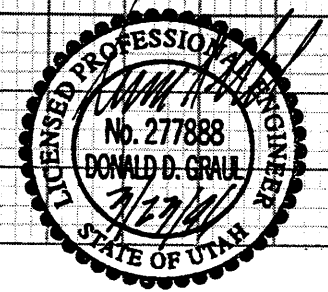
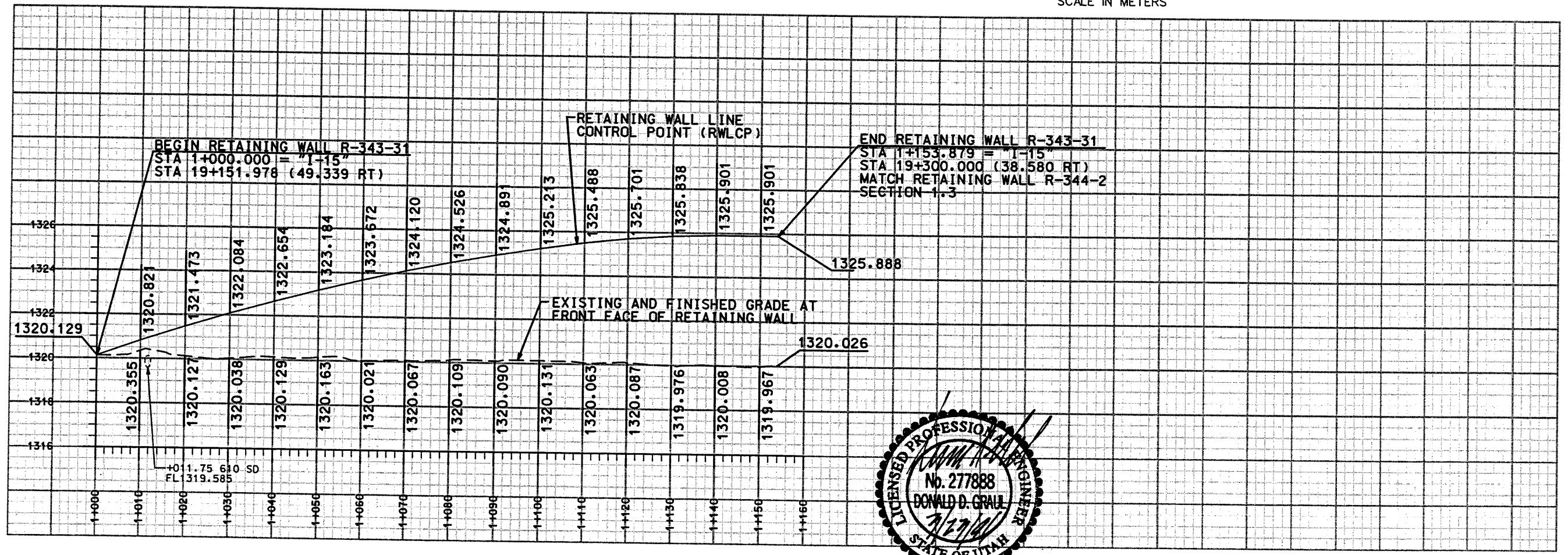
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Users: rames mockky

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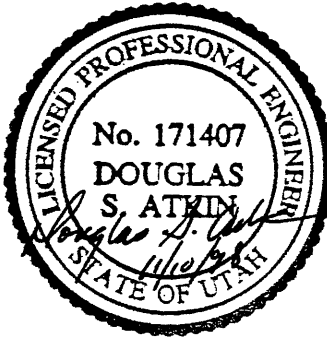
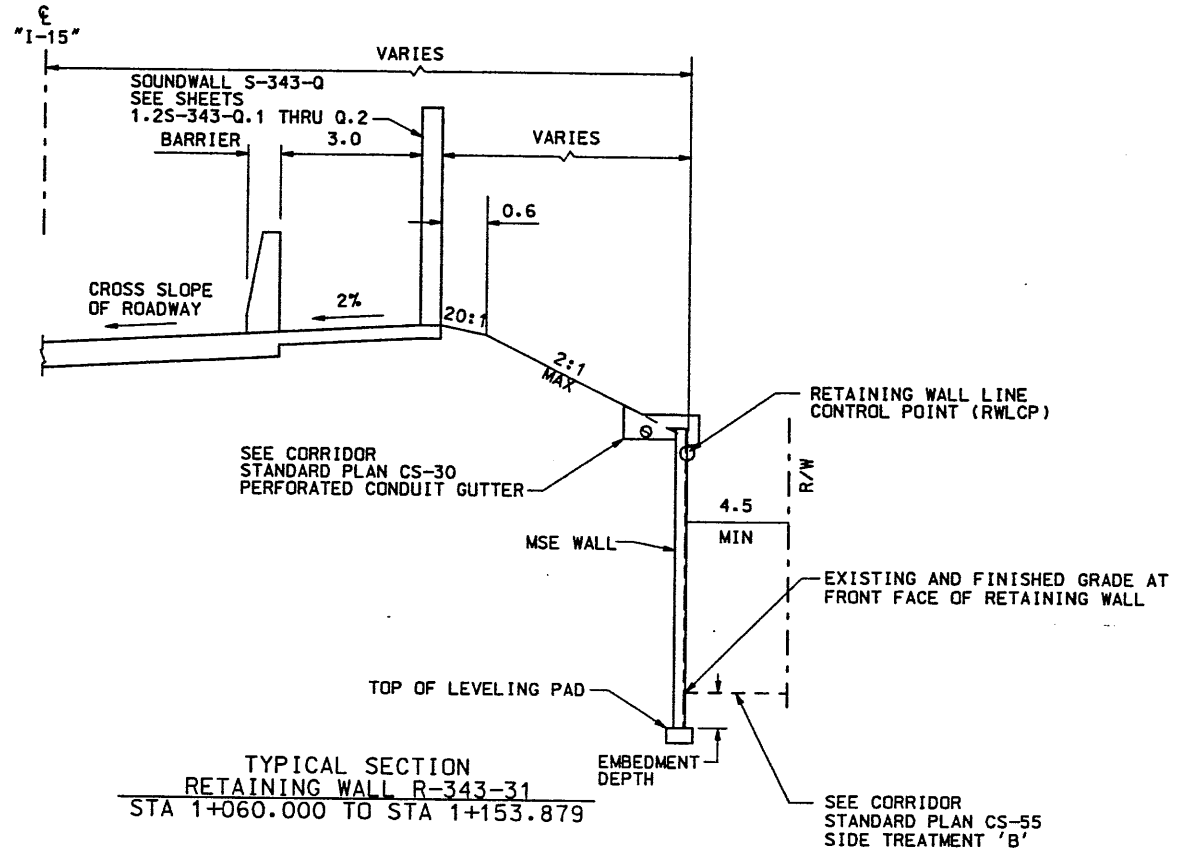
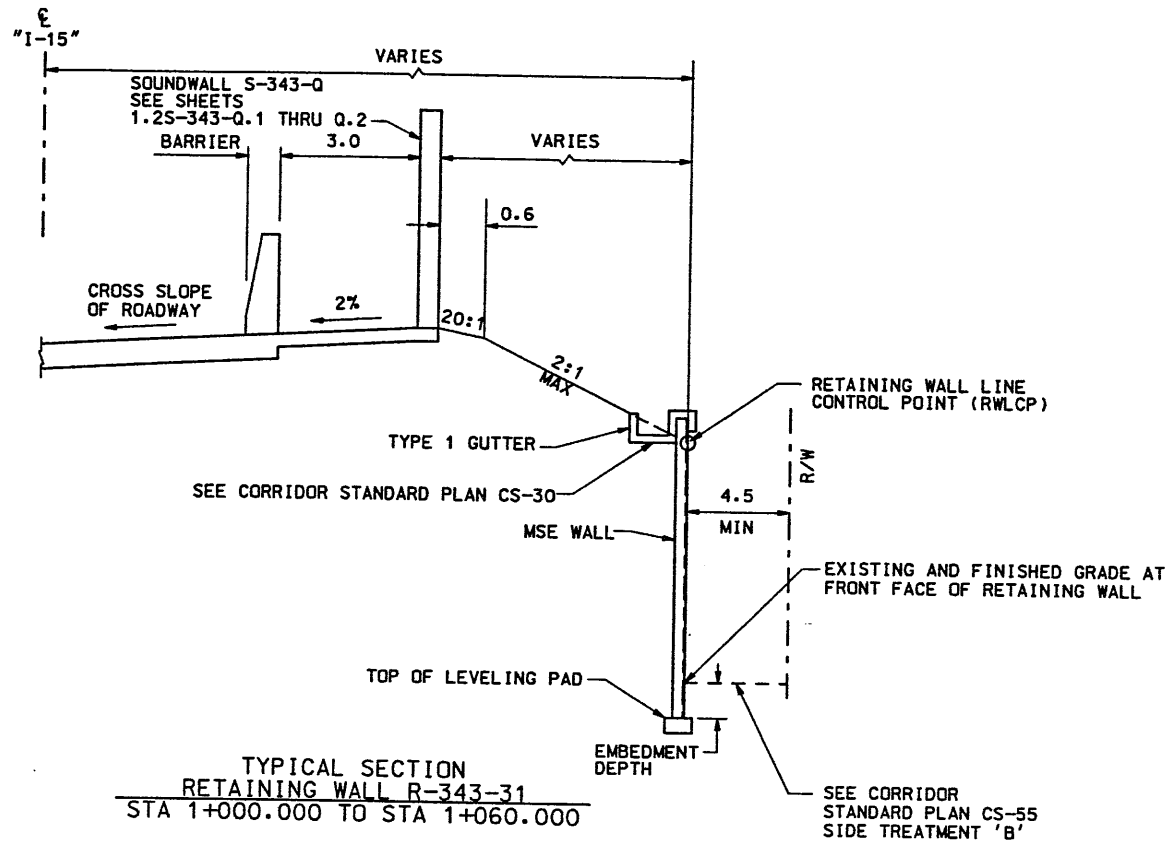


WASATCH CONSTRUCTORS
MAR 27 1998
RELEASED FOR CONSTRUCTION



NOTE:
THE FOUNDATION BEARING MATERIALS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER DURING SITE PREPARATION. ANY UNDESIRABLE MATERIALS WILL NEED TO BE REMOVED AND REPLACED WITH BORROW IN ORDER TO ACHIEVE ACCEPTABLE CONDITIONS AT THE BASE OF THE WALL

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	INITIAL	RELEASE
1	3-23-98		
UTAH DEPARTMENT OF TRANSPORTATION		1213404	
URS Greiner		DESIGN PRV 1/98	
SVERDRUP/DE LEUW		DRAWN PRV 1/98	
PROJECT DESIGN ENGINEER		CHECK JBE 1/98	
DATE 1/98		CHECK JBE 1/98	
PROJECT MANAGER		CHECK	
DATE 1/98		QUANT.	
I-15 CORRIDOR RECONSTRUCTION		PROJECT NUMBER	
SITUATION/LAYOUT		#SP-15-(135)296	
RETAINING WALL R-343-31		COUNTY	
SECTION 1.2		SALT LAKE	
DWG. NO.		1.2R-343-31.1	
SHT. 1 OF 7		REF.	



WASATCH CONSTRUCTORS
 NOV 19 1998
 RELEASED FOR CONSTRUCTION

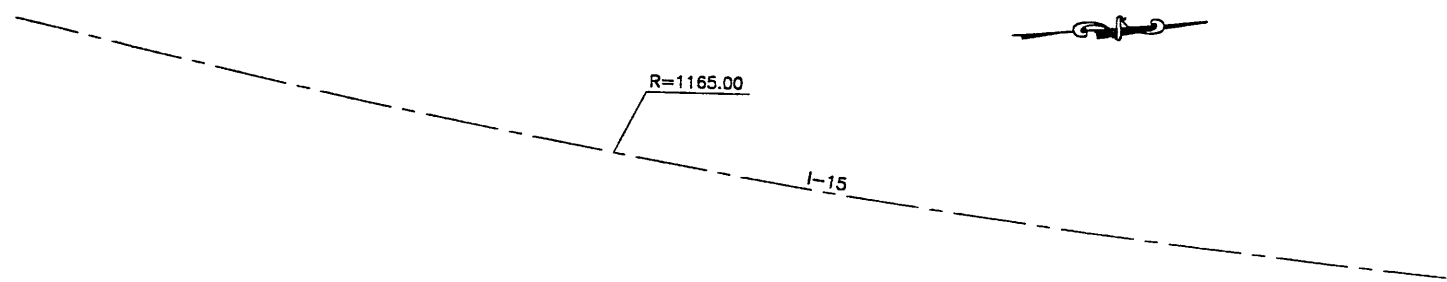
APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	3-23-98	INITIAL RELEASE
Δ	Δ	11-10-98	REFERENCED SOUNDWALL
UTAH DEPARTMENT OF TRANSPORTATION		URS Greiner	
SVERDRUP/DE LEUW		DESIGN	PRV 1/98
		DRAWN	PRV 1/98
		QUANT.	/
		CHECK	JBE 1/98
		CHECK	JBE 1/98
		CHECK	/
		PROJECT NUMBER	1213404
I-15 CORRIDOR RECONSTRUCTION		TYPICAL SECTIONS	
RETAINING WALL R-343-31		SECTION 1.2	
		PROJECT NUMBER #SP-15-7(135)296	
SALT LAKE COUNTY		DWG. NO.	
		1.2R-343-31.1a	
SHT. 2 OF 7		REF.	

FACE (X-UTAH) (DWG)

H:\RE_EARTH\PROJECT\239-0007\1998\725\72-31\RE-1

FINAL PLOT 02-25-98

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	03-16-98	RELEASE FOR CONSTRUCTION



PRECAST WALL STA 1+000.000 =
I-15 STA 19+151.978
⊙ 49.339 RT
BEGIN PRECAST WALL R-343-31

FACE OF PRECAST WALL 343-31

N 5° 4' 42\"/>

PRECAST WALL STA 1+153.879 =
I-15 STA 19+300.000
⊙ 38.580 RT
BEGIN PRECAST WALL R-343-31

WASATCH CONSTRUCTORS
MAR 27 1998
RELEASED FOR CONSTRUCTION

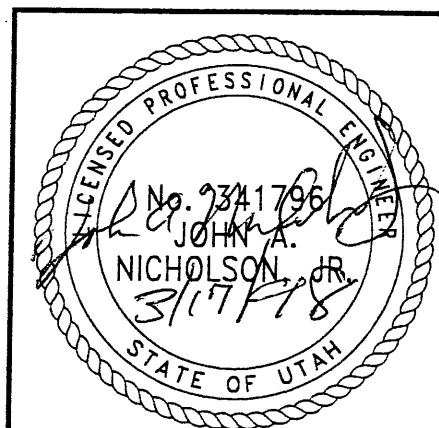
- GENERAL NOTES**
- ALL WALLS ARE SHOWN FRONT FACE. NOTE STATIONING.
 - PANEL TYPE IS DESIGNATED ON EACH PANEL. CONNECTOR LABELS INDICATE NUMBER OF CONNECTORS PER ROW.
EXAMPLE: 5B2-10 IS A "B2-10" PANEL WITH FIVE (5) CONNECTORS PER ROW.
IF NO CONNECTORS ARE SHOWN, FOUR (4) CONNECTOR PANELS SHALL BE USED:
 - 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: 5W11-12 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: 4W20-12 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 12" 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 DETAILS.

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 (12 KPa)
SEISMIC ACCELERATION COFF. = 0.12g (TYP)
SEISMIC ACCELERATION COFF. = 0.32g (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 WALL "R-343-31"

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

RETAINED EARTH INDEX
RE-1 PLAN PRECAST FACE WALL R-343-31, NOTES & DESIGN CRITERIA
RE-2 TYPICAL CROSS SECTION
RE-3 ELEVATION PRECAST WALL "R-343-31"
RE-4 ELEVATION PRECAST WALL "R-343-31"
RE-5 SPECIAL PANEL DETAILS



METRIC

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

NO.	DATE	REVISION	BY

DES. 02-23-98	MM
DRN. 02-23-98	LOP
CHK. 02-23-98	MM

RETAINED EARTH™
VSL

VSL CORPORATION
2610 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 881-5272
Fax: (919) 881-4889

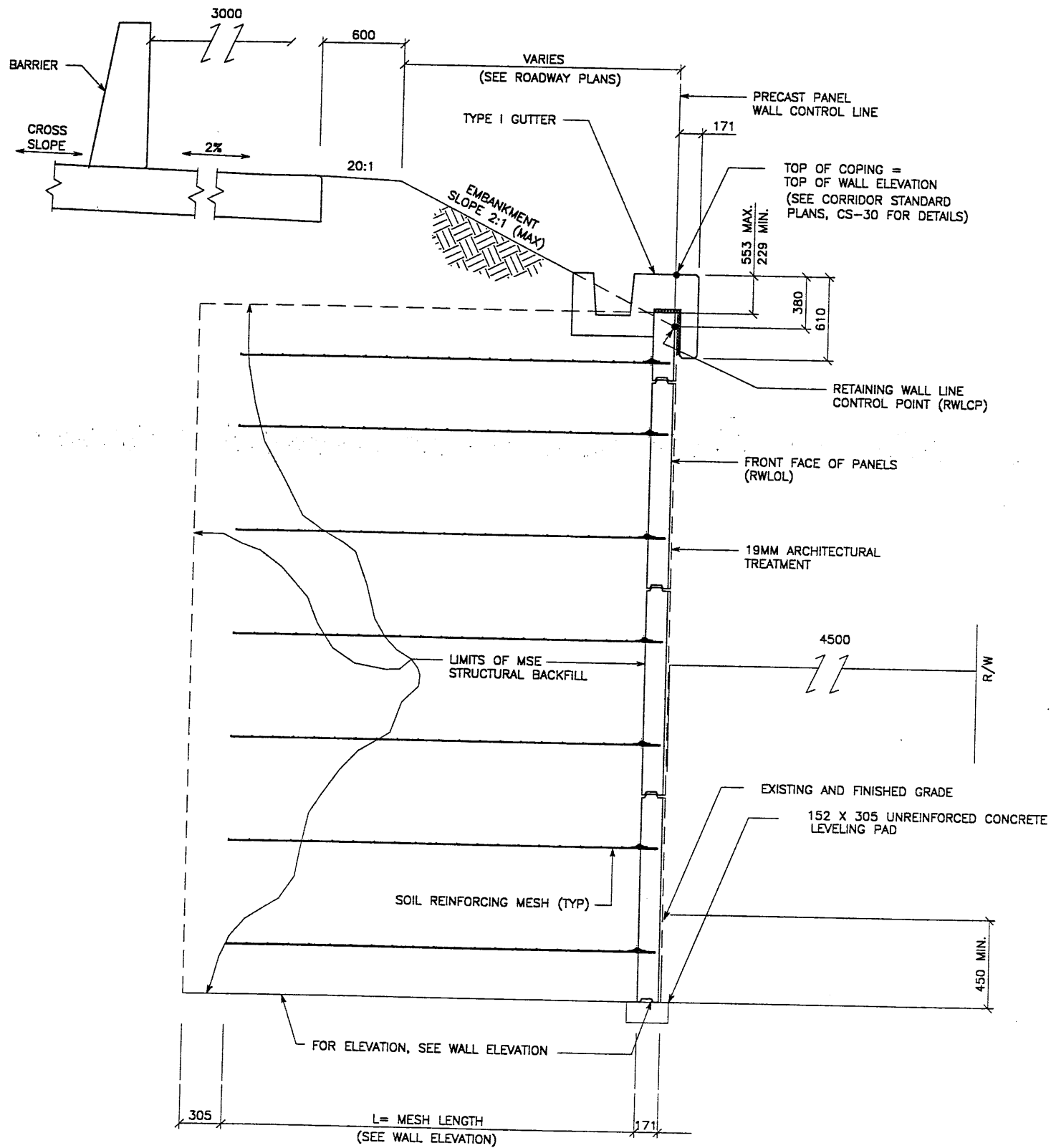
ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

RETAINED EARTH™ WALLS
PLAN VIEW PRECAST WALL "R-343-31"
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

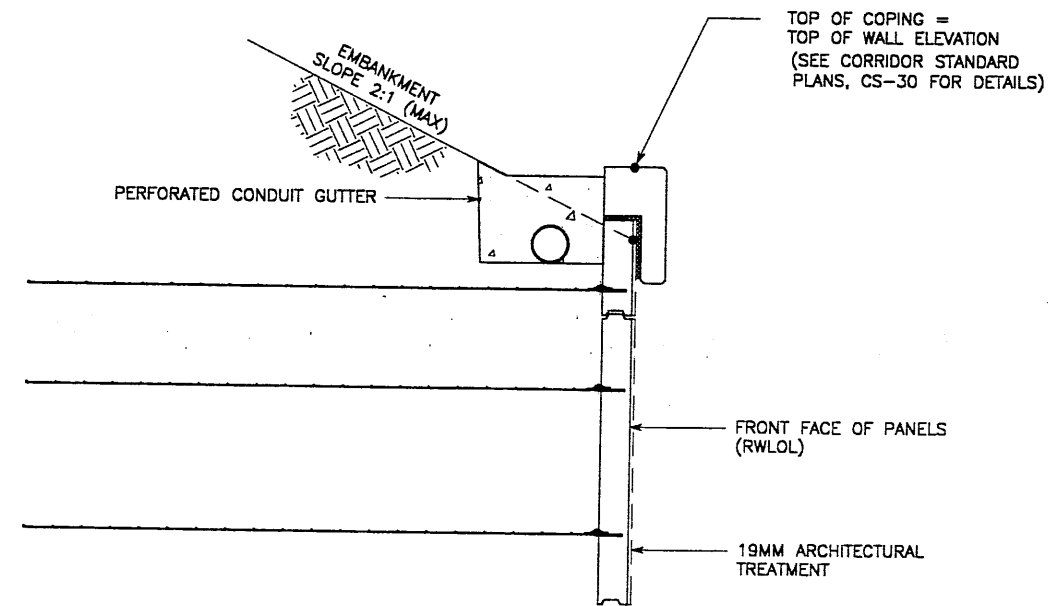
DWG. NO.
1.2R-343-31.2

JOB NO.
239-0007/3/7

SHT. NO.
RE-1



TYPICAL CROSS SECTION - RETAINING WALL 343-31
 STA. 1+000.000 TO STA. 1+060.000
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

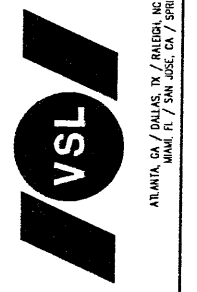


STA. 1+060.000 TO STA. 1+153.879
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
Δ	03-16-98	RELEASE FOR CONSTRUCTION

DES.	MM	DIR.	LOP	CHK.	RETAINED EARTH™	NO.	DATE	REVISION	BY

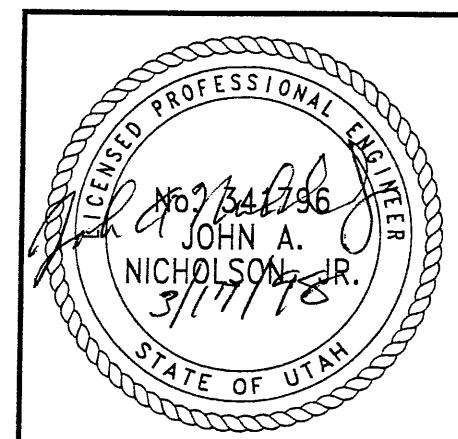
VSL CORPORATION
 2840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-8272
 Fax: (919) 781-6989



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WASATCH CONSTRUCTORS
MAR 2 1998
 RELEASED FOR CONSTRUCTION

WASATCH CONSTRUCTORS
MAR 27 1998
 RELEASED FOR CONSTRUCTION



RETAINED EARTH™ WALLS
 PRECAST WALL "343-31"
 TYPICAL CROSS SECTIONS

UTAH 1-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	1.2R-343-31.3
JOB NO.	239-0007 4/7
SHT. NO.	RE-2

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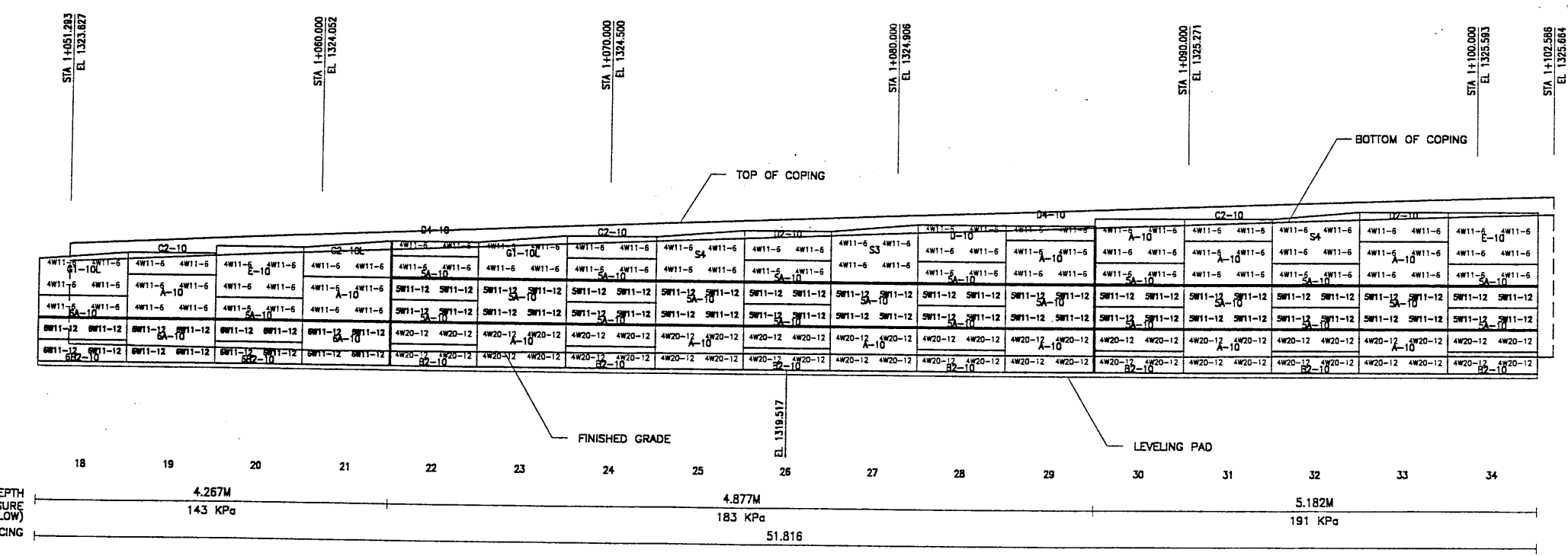
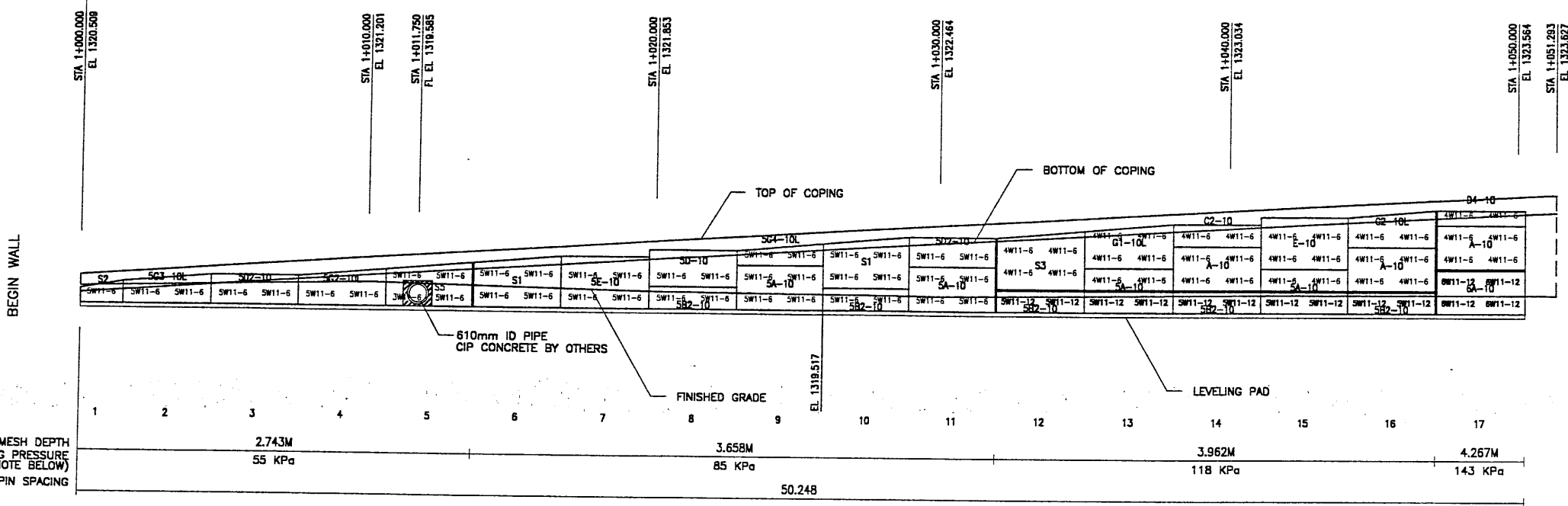
METRIC

H:\RE_EARTH\PROJECT\239-0007\1998\2SERIES\71-2-31
 FINAL PI 02-19-98

BEGIN WALL R-343-31
 WALL STA 1+000.000 =
 I-15 STA 19+151.978
 @ 49.339 RT
 NOMINAL PANEL FACE (RWLOL)

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	03-16-98	RELEASE FOR CONSTRUCTION



ELEVATION PRECAST WALL R-343-31
 (FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 678.41 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.

CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY.
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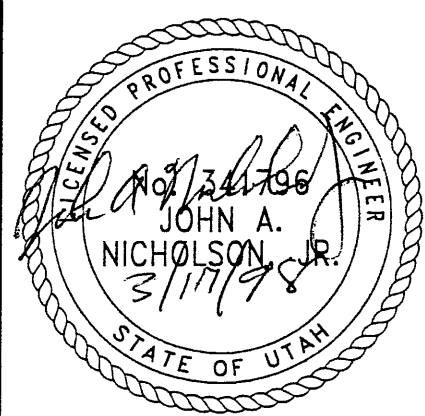
NO.	DATE	REVISION

VSL CORPORATION
 7840 Plaza Place, Suite 200
 Raleigh, NC 27612
 Telephone: (919) 781-6272
 Fax: (919) 781-6559



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WASATCH CONSTRUCTORS
MAR 27 1998
RELEASED FOR CONSTRUCTION



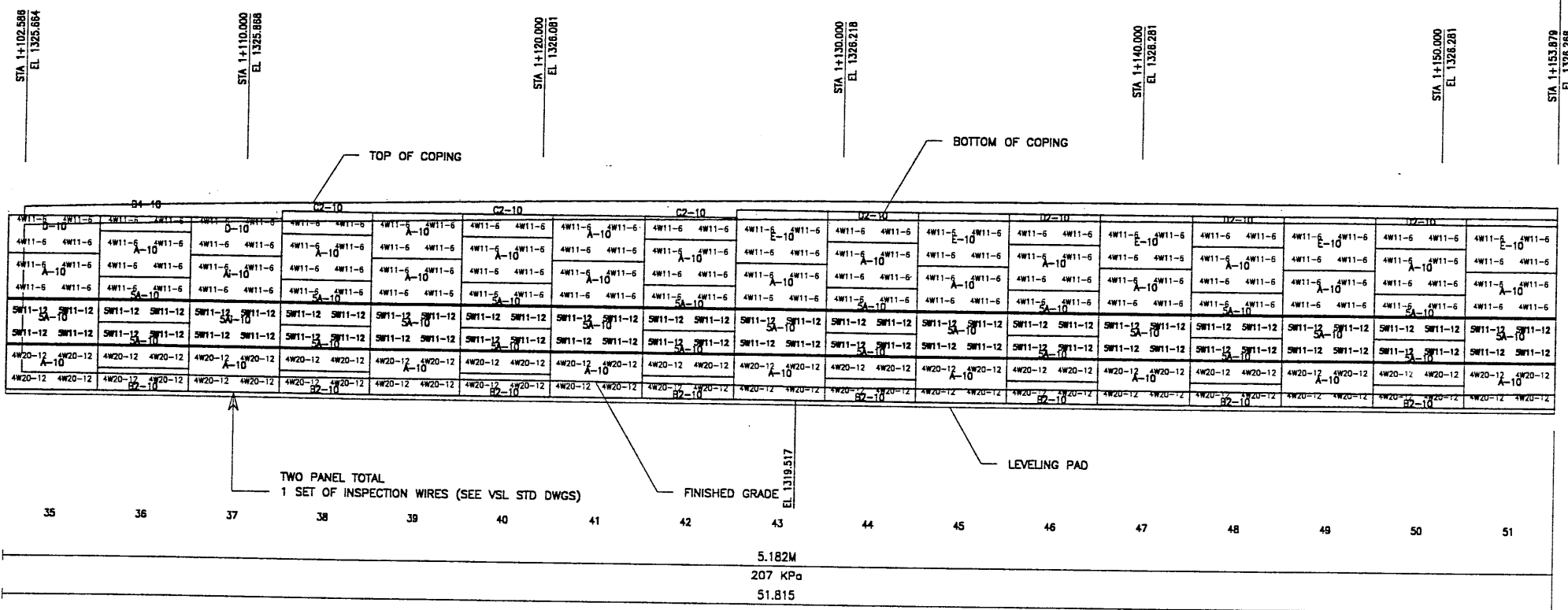
RETAINED EARTH™ WALLS PRECAST WALL "R-343-31"
UTAH I-15 RECONSTRUCTION SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.
DWG. NO. 1.2R-343-31.4
JOB NO. 239-0007
SHT. NO. RE-3

XP REFERENCE (X-UTAH.DWG)

H:\RE_EARTH\PROJECT\239-0007\1998\2SERIES\72-31\72-31

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	03-16-98	RELEASE FOR CONSTRUCTION

END WALL R-343-31
 WALL STA 1+153.879 =
 I-15 STA 19+300.000
 ● 38.580 RT
 NOMINAL PANEL FACE (RWLOL)

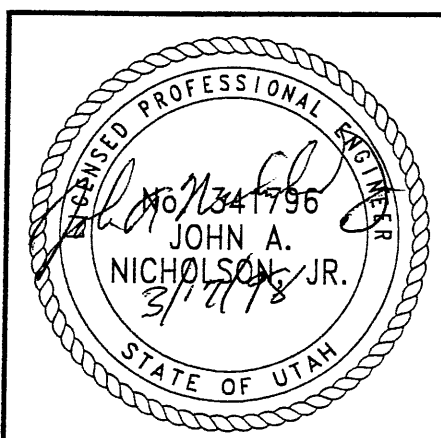


ELEVATION PRECAST WALL R-343-31
 (FRONT FACE SHOWN) SCALE 1:100 (FULL SIZE)
 (TOTAL SURFACE AREA OF PANELS = 678.41 SM) SCALE 1:200 (HALF SIZE)

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

METRIC

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 THE MANUFACTURER'S SPECIFICATION.



WASATCH CONSTRUCTORS
 MAR 27 1998
 RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS PRECAST WALL "R-343-31"
UTAH I-15 RECONSTRUCTION SALT LAKE COUNTY, UTAH UTAH DEPARTMENT OF TRANSP.
DWG. NO. 1.2R-343-31.5
JOB NO. 239-0007/7
SHT. NO. RE-4

VSL CORPORATION
 2840 Rice Place, Suite 200
 Raleigh, NC 27617
 Telephone: (919) 781-6272
 Fax: (919) 781-4669

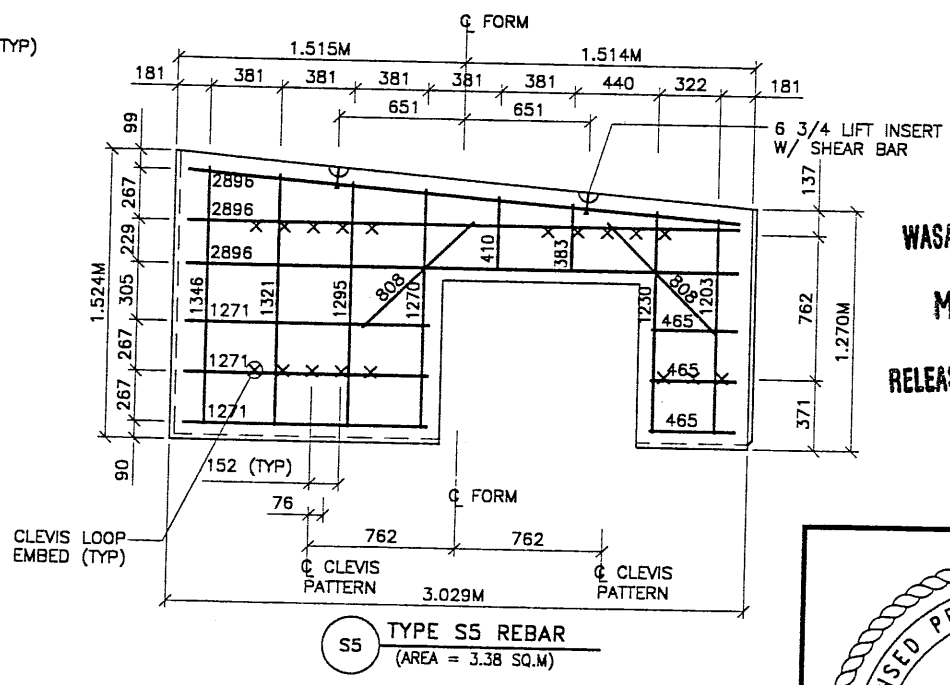
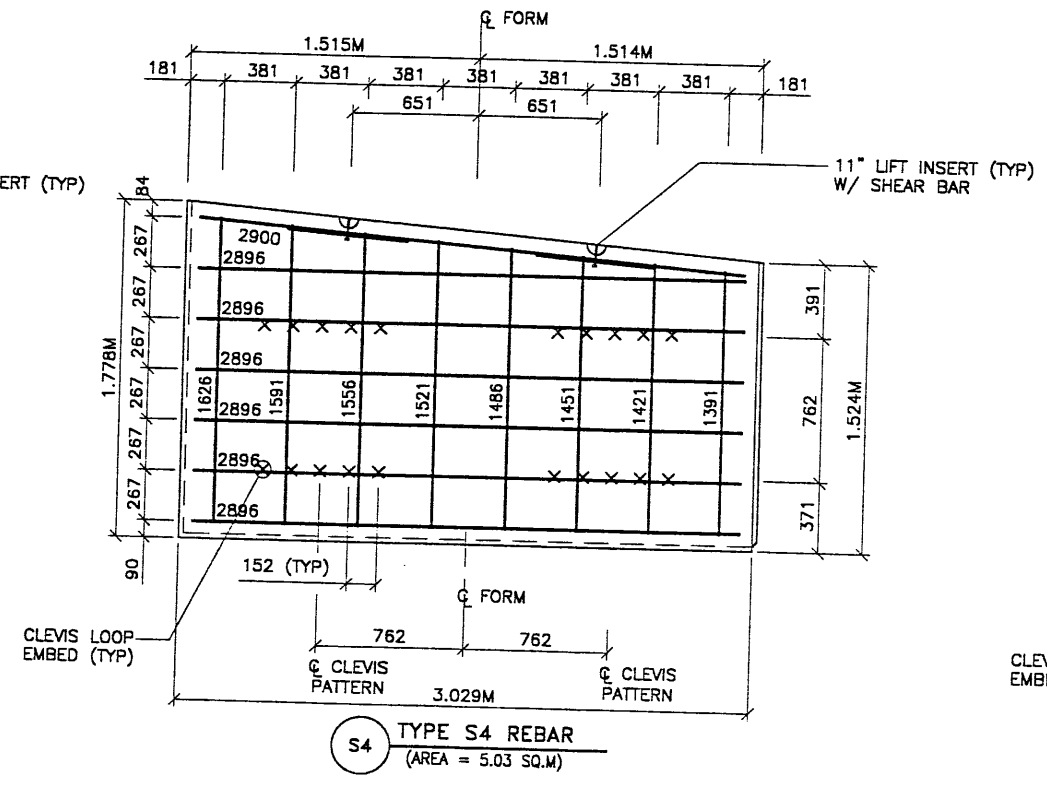
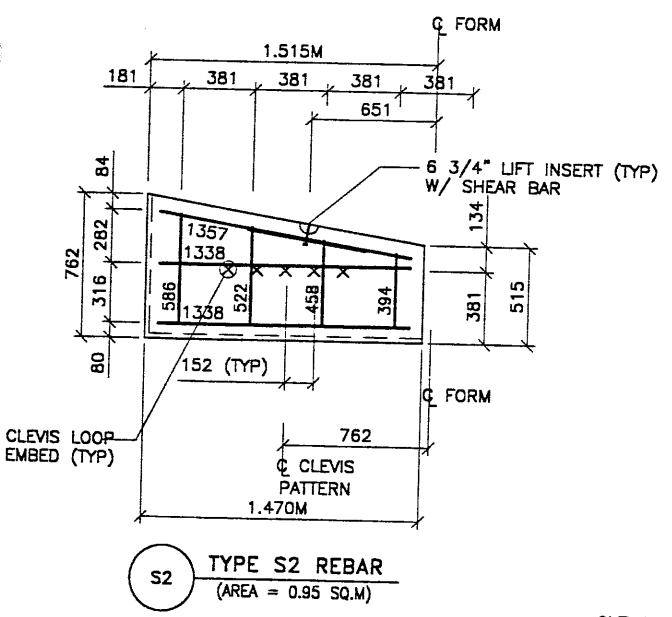
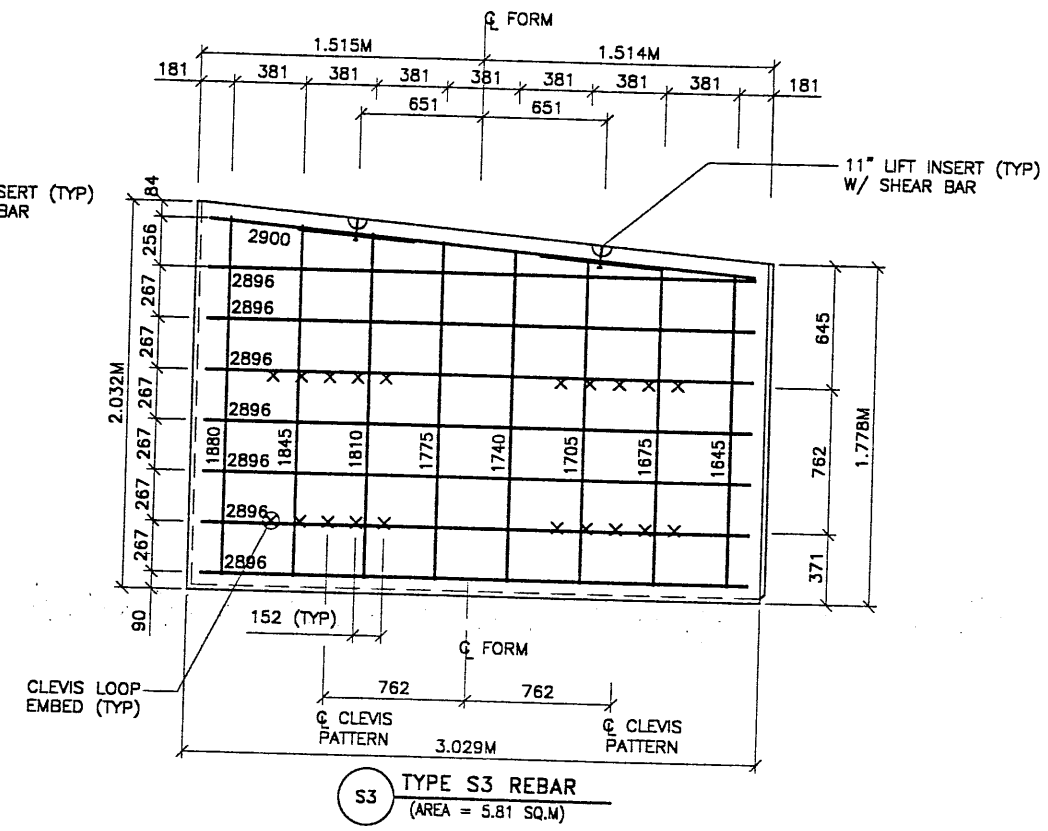
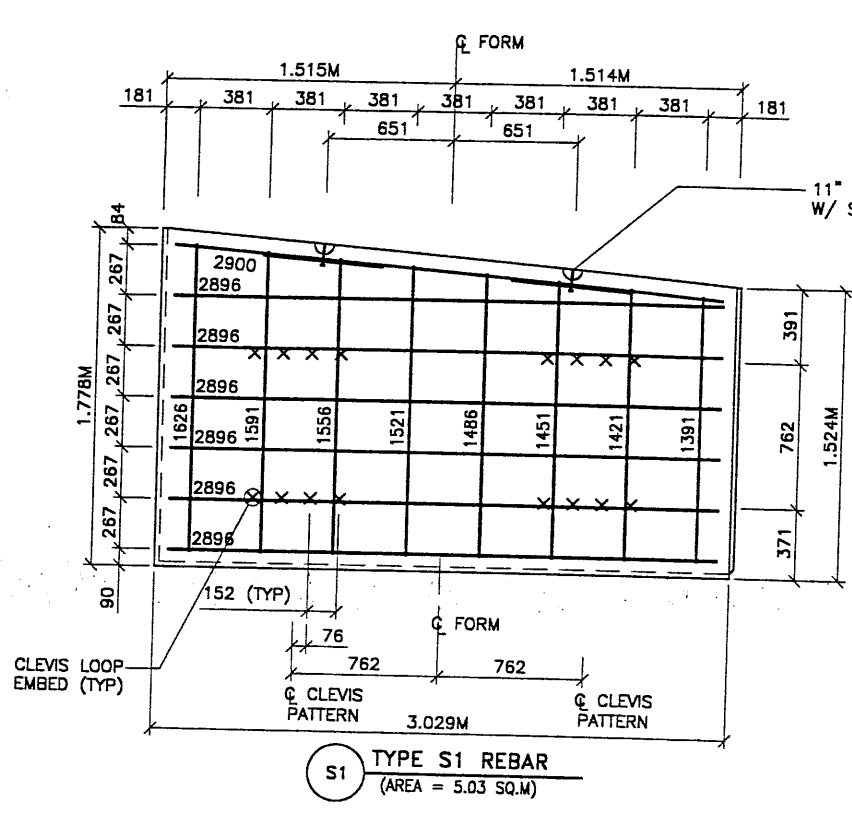
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NO.	DATE	DESCRIPTION	BY	CHK

FINAL PLOT 02-23-98 H:\RE_EARTH\PROJECT\239-0007\1998\72S-72-31\SPECIALS

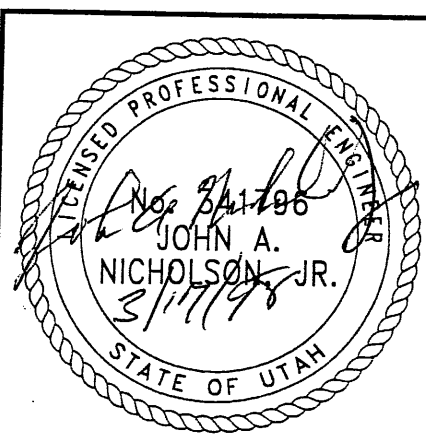
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	03-16-98	RELEASE FOR CONSTRUCTION



- 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 27,500 KPa.
 8. EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 9. ALL PANELS TO USE 9.5mmØ 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.

METRIC

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WASATCH CONSTRUCTORS
MAR 27 1998
RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
PRECAST WALL "R-343-31"
SPECIAL PANEL DETAILS
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	1.2R-343-31.6
JOB NO.	239-0007/7
SHT. NO.	RE-5

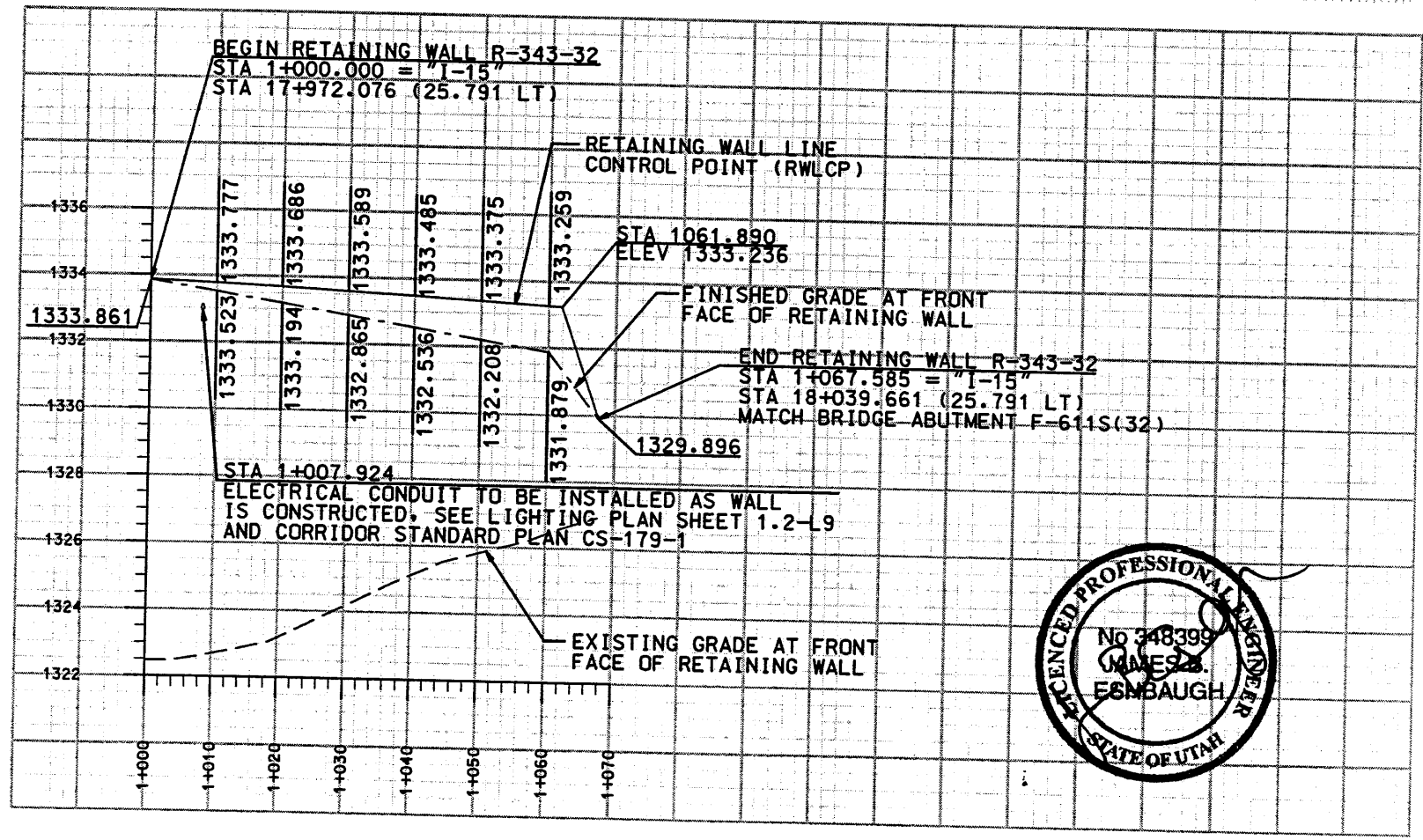
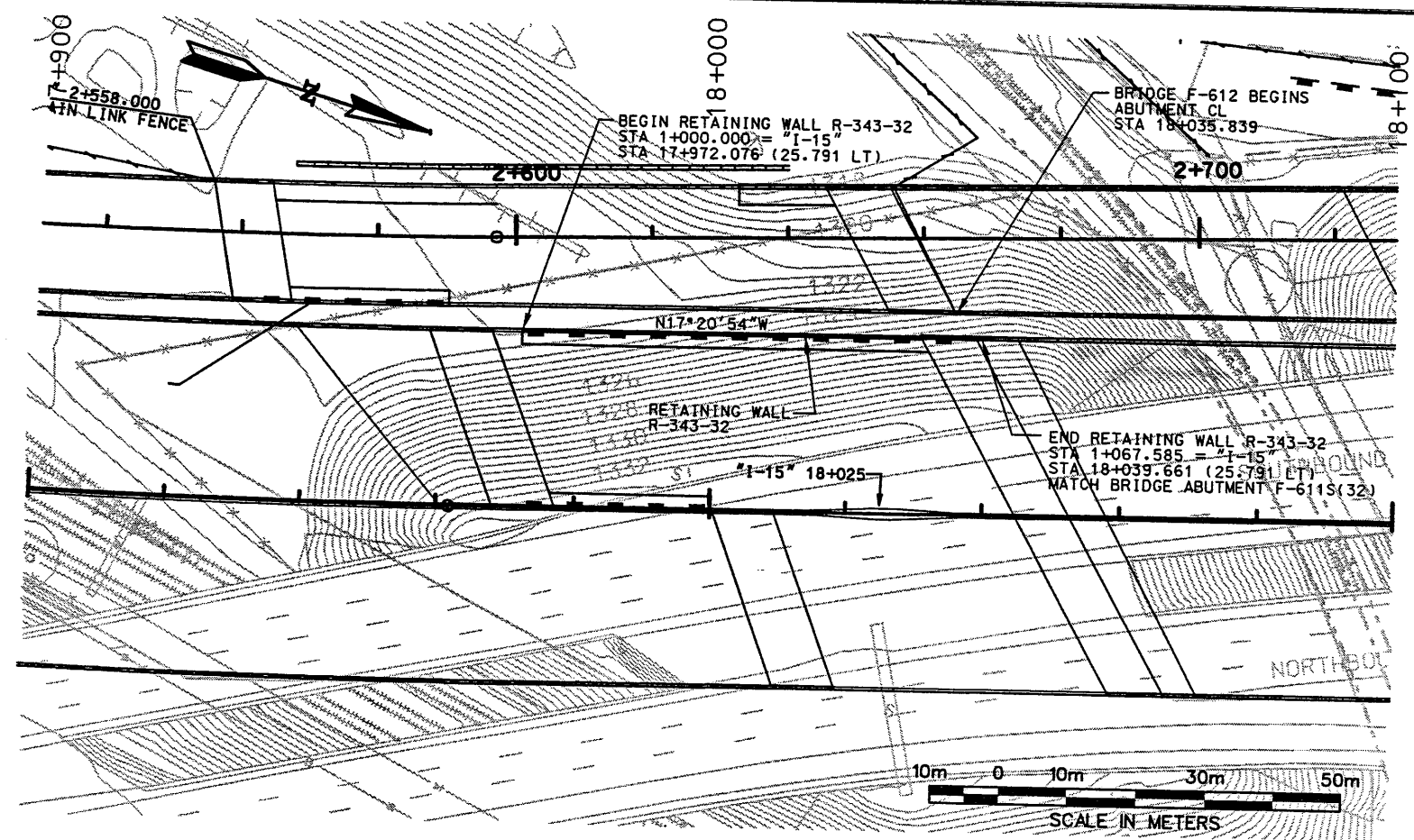
VSL CORPORATION
2840 Plano Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-8272
Fax: (919) 781-4889

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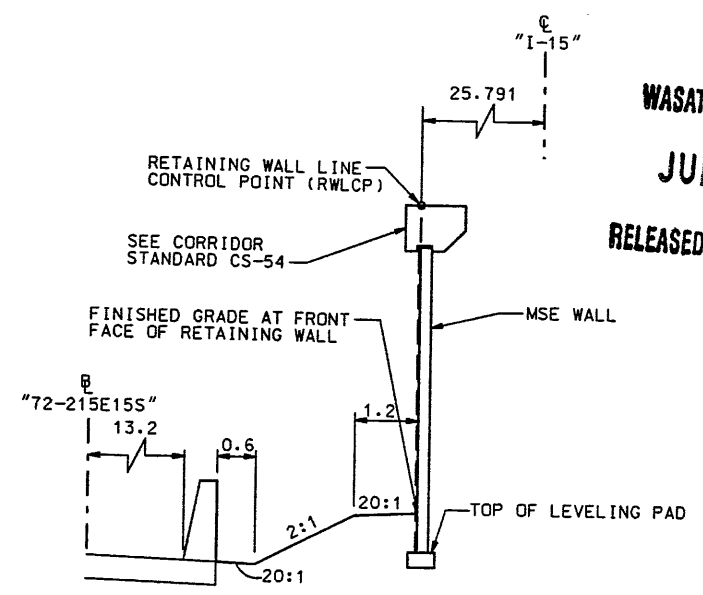
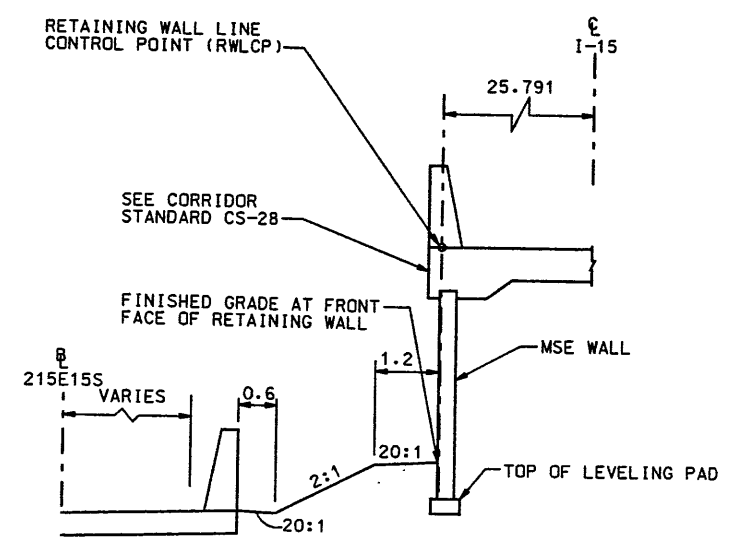
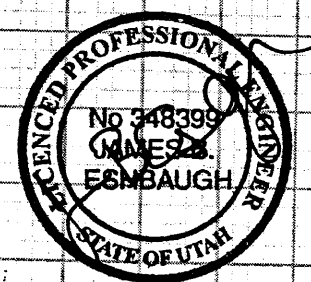
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Uerrname: STOTTRJ

Date: 12-JUN-1998 Time: 09:06



ELEVATION VIEW FROM BACK OF RETAINING WALL

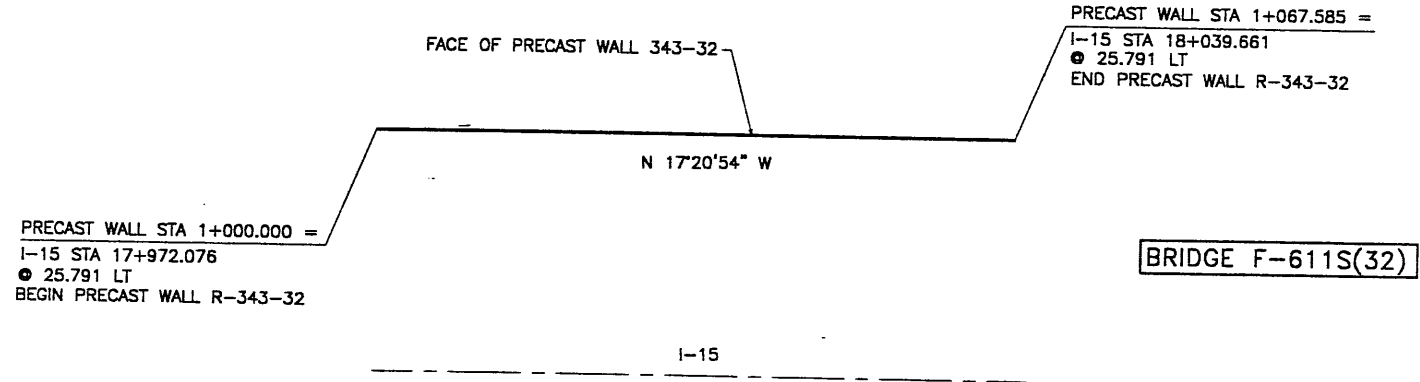


WASATCH CONSTRUCTORS
JUN 16 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION		DESCRIPTION	
NO.	DATE	NO.	DATE
1	6-09-98		
UTAH DEPARTMENT OF TRANSPORTATION		1212401	
SITUATION/LAYOUT		DESIGN PRV 11/97	
RETAINING WALL R-343-32		CHECK JBE 11/97	
SECTION 1.2		DRAWN PRV 11/97	
PROJECT NUMBER #SP-15-7(135)296		CHECK JBE 11/97	
SALT LAKE COUNTY		PROJECT MANAGER	
DWG. NO. 1.2R-343-32.1		DATE	
SHT. 1 OF 1		DATE	
REF.		DATE	

NOTE: THE FOUNDATION BEARING MATERIALS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER DURING SITE PREPARATION. ANY UNDESIRABLE MATERIALS WILL NEED TO BE REMOVED AND REPLACED WITH BORROW IN ORDER TO ACHIEVE ACCEPTABLE CONDITIONS AT THE BASE OF THE WALL.

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
▲	06-05-98	RELEASE FOR CONSTRUCTION



BRIDGE F-611S(32)

GENERAL NOTES

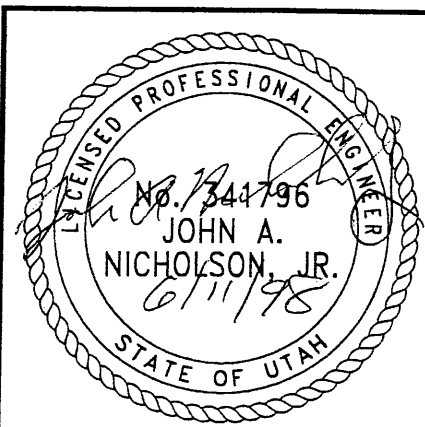
- ALL WALLS ARE SHOWN FRONT FACE. NOTE STATIONING.
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EXAMPLE: 5B2-10 IS A "B2-10" PANEL WITH FIVE (5) CONNECTORS PER ROW.
IF NO CONNECTORS ARE SHOWN, FOUR (4) CONNECTOR PANELS SHALL BE USED:
- SOIL REINFORCING MESH TYPE IS DESIGNATED ON EACH PANEL. MESH 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: 5W11-12 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: 4W20-12 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 12" 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 DETAILS.

DESIGN PARAMETERS
ANGLE OF INTERNAL FRICTION (SELECT) = 34°
ANGLE OF INTERNAL FRICTION (BASE) = 34°
ANGLE OF INTERNAL FRICTION (RANDOM) = 34°
UNIT WEIGHT BACKFILL = 135 PCF. (21.2 KN/M ³)
TRAFFIC SURCHARGE = 250 PSF (12 KPa)
SEISMIC ACCELERATION COFF. = 0.12g (TYP)
SEISMIC ACCELERATION COFF. = 0.32g (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 WALL "R-343-32"

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

RETAINED EARTH INDEX
RE-1 PLAN PRECAST FACE WALL R-343-32, NOTES & DESIGN CRITERIA
RE-2 TYPICAL CROSS SECTION
RE-3 ELEVATION PRECAST WALL "R-343-32"
RE-4 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.

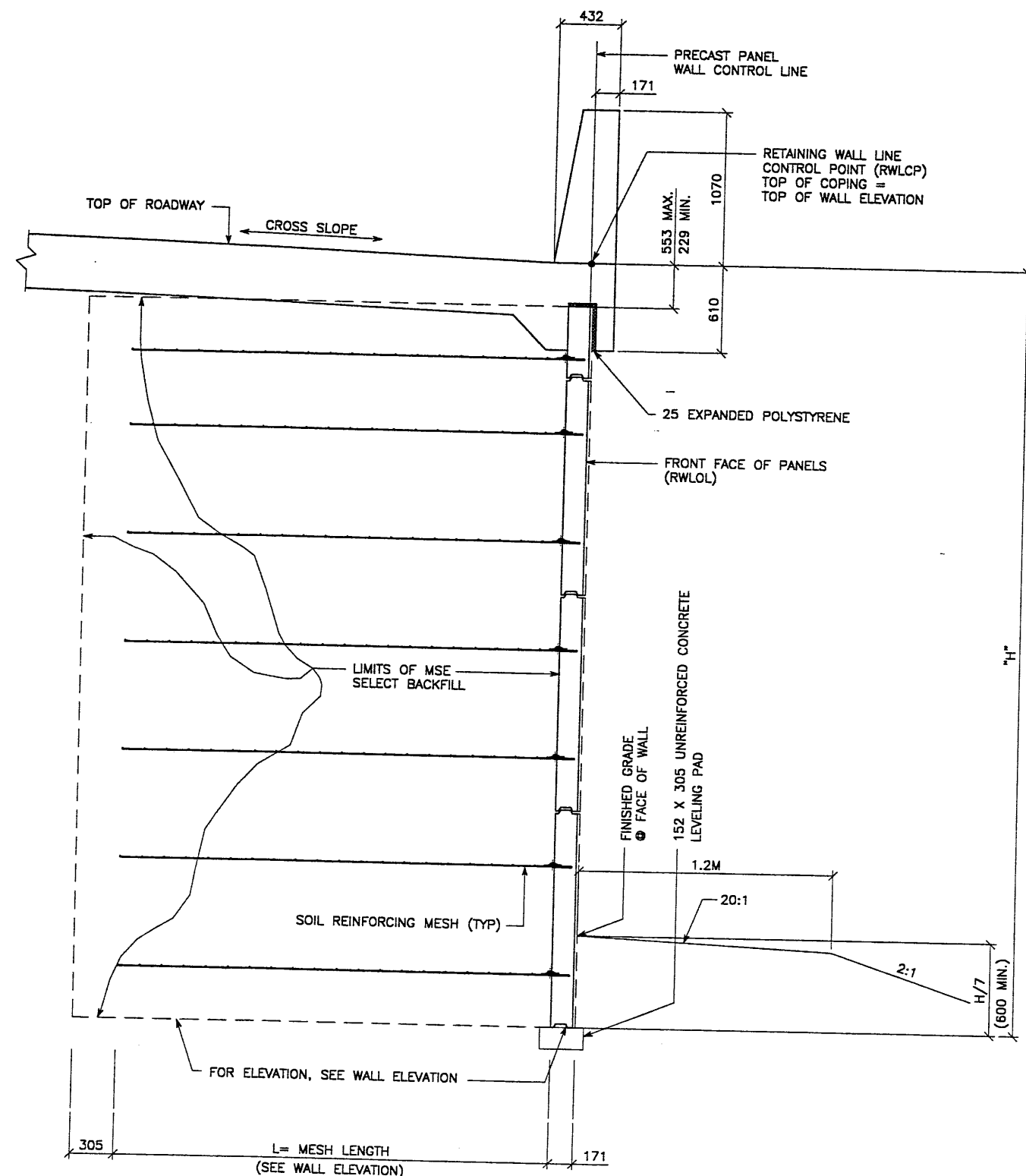
METRIC

WASATCH CONSTRUCTORS
JUN 16 1998
RELEASED FOR CONSTRUCTION

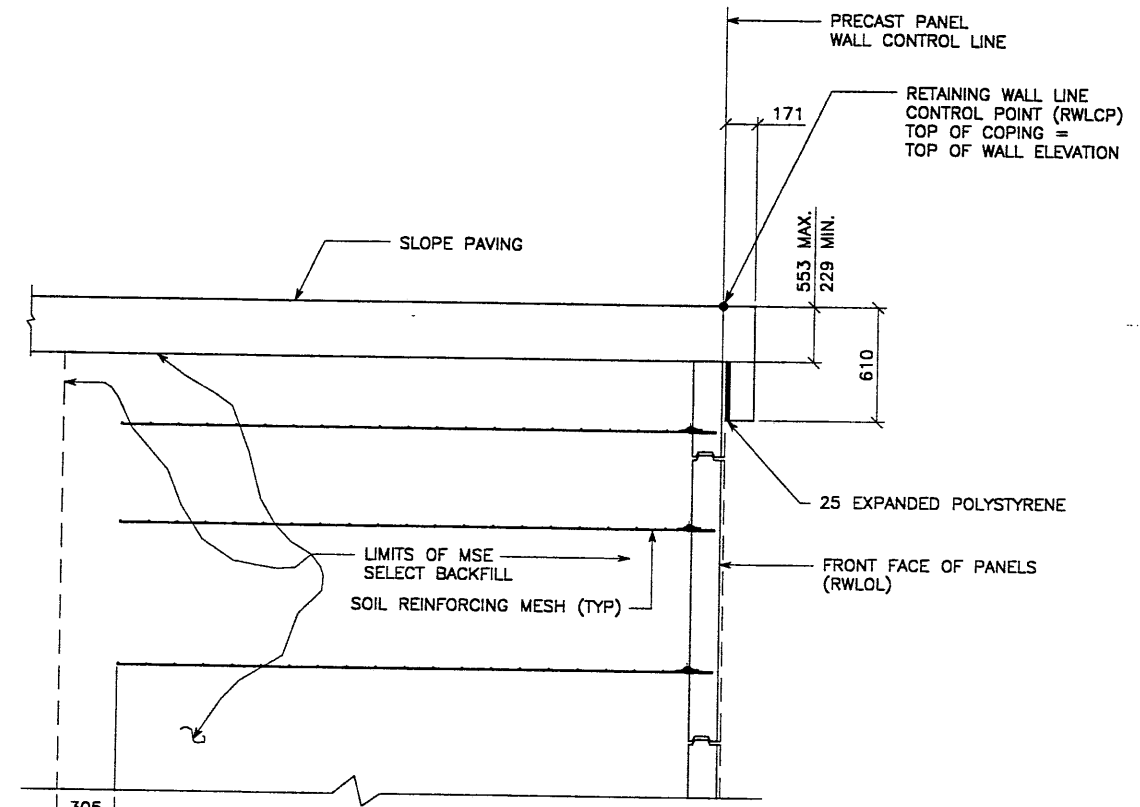
VSL CORPORATION 2840 Phyllis Drive, Suite 200 Boulder, CO 80501 Telephone: (303) 781-6272 Fac: (303) 781-4669	DES.	JL	05-20-98	RETAINED EARTH™ 	NO.	DATE	BY	CHK
	DRN.	RSW	05-20-98					
				CHK.	JL	05-20-98		
				REVISION				

RETAINED EARTH™ WALLS
PLAN VIEW PRECAST WALL "R-343-32"
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.	1.2R-343-32.2
JOB NO.	239-0007
SHT. NO.	RE-1



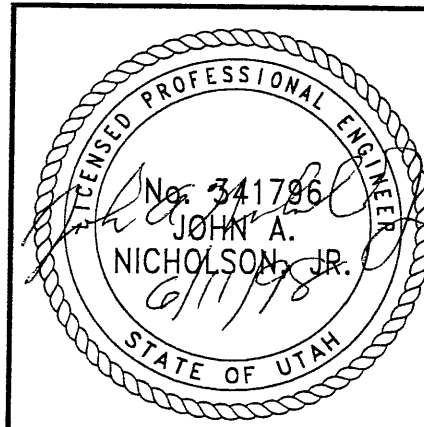
TYPICAL CROSS SECTION - STA 1+000.000 TO STA 1+065.616
 (SEE DWG. NO. 1.2R-343-32.1 FOR ADDITIONAL INFORMATION)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)



TYPICAL CROSS SECTION - STA 1+065.616 TO 1+067.585
 (SEE DWG. NO. 1.2R-343-32.1 FOR ADDITIONAL INFORMATION)
 SCALE: 1:20 (FULL SIZE)
 SCALE: 1:40 (HALF SIZE)

METRIC

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APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
△	06-05-98	RELEASE FOR CONSTRUCTION

DES.	DRN.	CHK.	RETAINED EARTH™	NO.	DATE	REVISION	BY
JL	RSW	JL					CHK
05-20-98	05-20-98	05-20-98					

VSL CORPORATION
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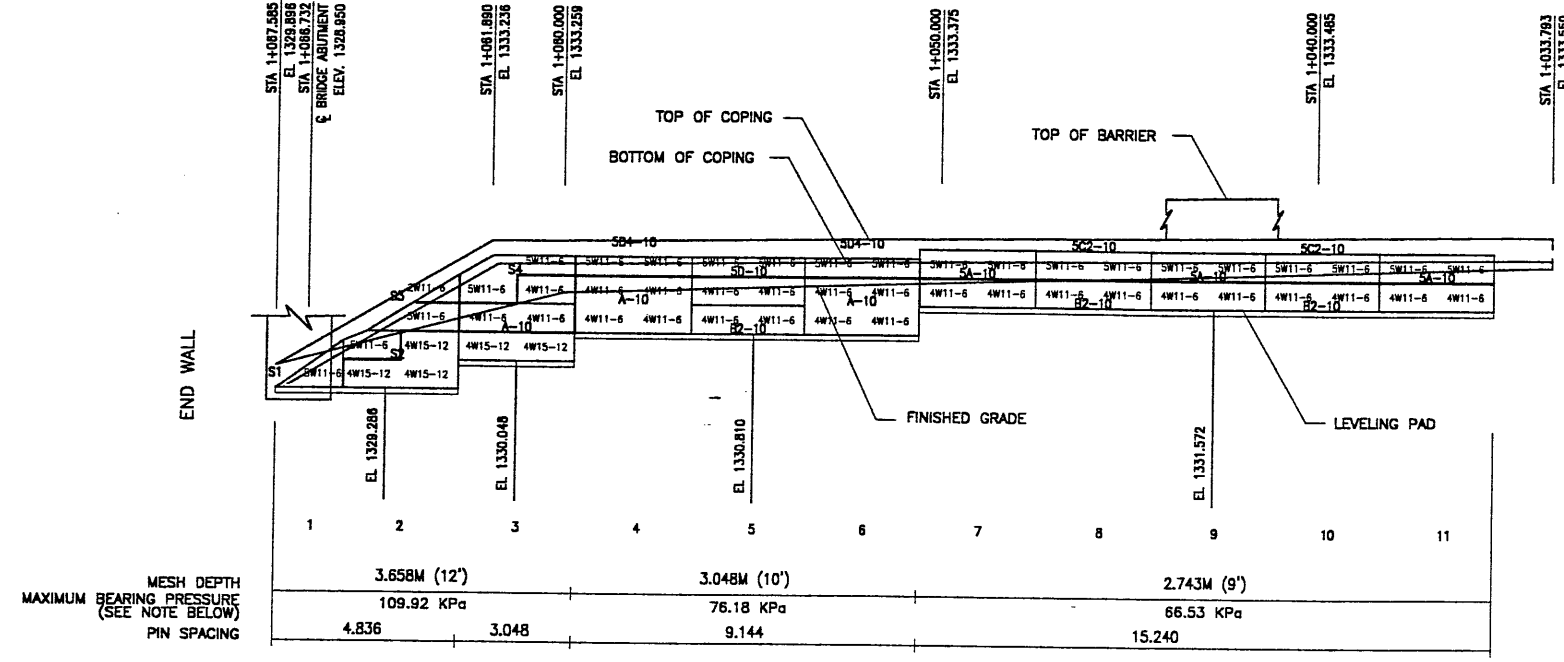
VSL Corporation (VSL) does a strict proprietary design and construction of its Retained Earth™ walls. Information for such information is not to be used for any other project without the written consent of VSL. VSL is not responsible for any errors or omissions in this drawing. VSL is not responsible for any errors or omissions in this drawing. VSL is not responsible for any errors or omissions in this drawing.

WASATCH CONSTRUCTORS
JUN 16 1998
RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-32"
 TYPICAL CROSS SECTION
 UTAH I-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.	1.2R-343-32.3
JOB NO.	239-0007/3/5
SHT. NO.	RE-2

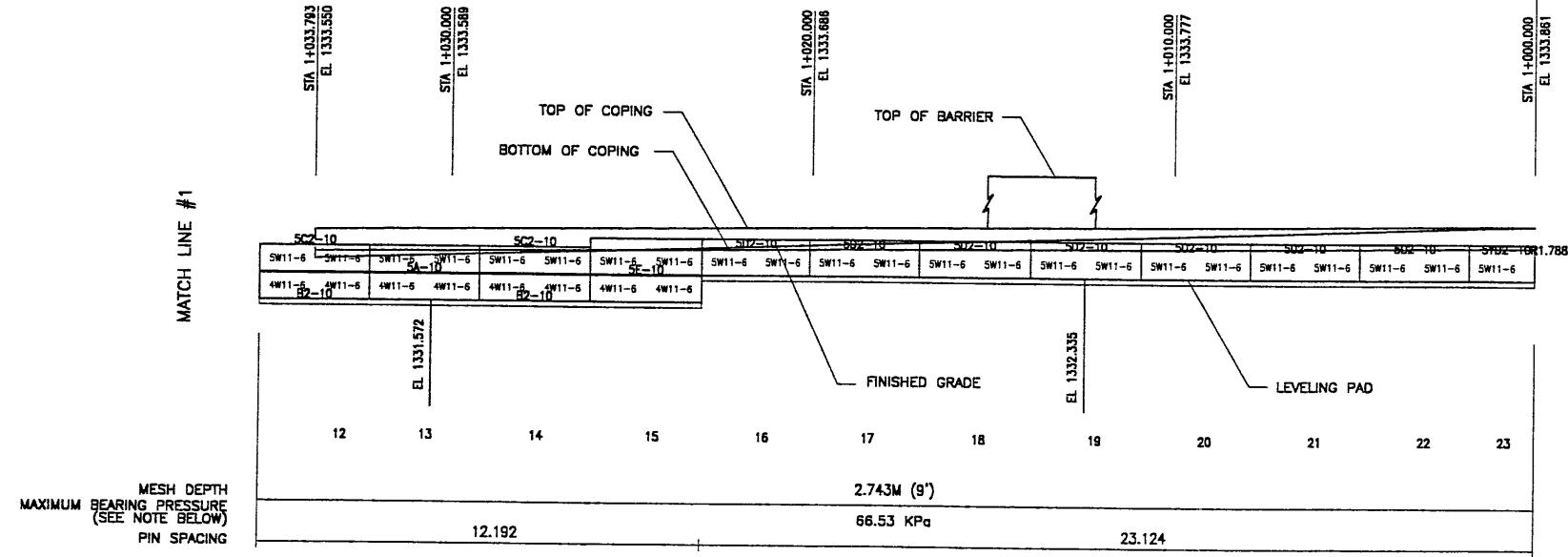
END WALL R-343-32
 WALL STA 1+067.585 =
 I-15 STA 18+039.661
 @ 25.791 LT
 NOMINAL PANEL FACE (RWL/L)



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

MATCH LINE #1

BEGIN WALL R-343-32
 WALL STA 1+000.000 =
 I-15 STA 17+972.076
 @ 25.791 LT
 NOMINAL PANEL FACE (RWL/L)



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

BEGIN WALL

ELEVATION PRECAST WALL R-343-32

(FRONT FACE SHOWN)
 (TOTAL SURFACE AREA OF PANELS = 100.55 SM)

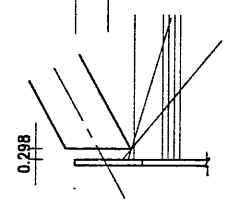
SCALE 1:100 (FULL SIZE)
 SCALE 1:200 (HALF SIZE)

METRIC

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	6-05-98	RELEASE FOR CONSTRUCTION

END WALL R-343-32
 WALL STA 1+067.585 =
 I-15 STA 18+039.661

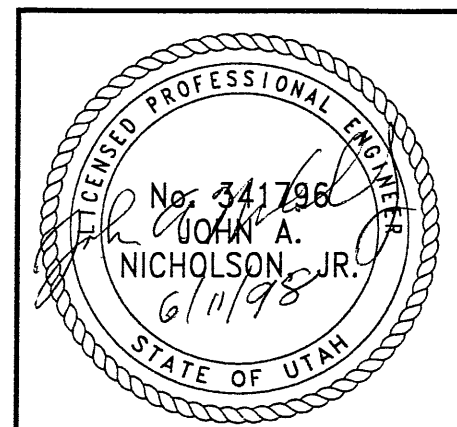
BRIDGE ABUTMENT
 WALL STA 1+066.732 =
 I-15 STA 18+038.808



WASATCH CONSTRUCTORS

JUN 16 1998

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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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DES.	05-20-98	JL	RETAINED EARTH™	NO.	DATE	BY	CHK
DRN.	05-20-98	RSW					
CHK.	05-20-98	JL					

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RETAINED EARTH™ WALLS
 PRECAST WALL "R-343-32"
 UTAH I-15 RECONSTRUCTION
 SALT LAKE COUNTY, UTAH
 UTAH DEPARTMENT OF TRANSP.

DWG. NO.
 1.3R-343-32.4

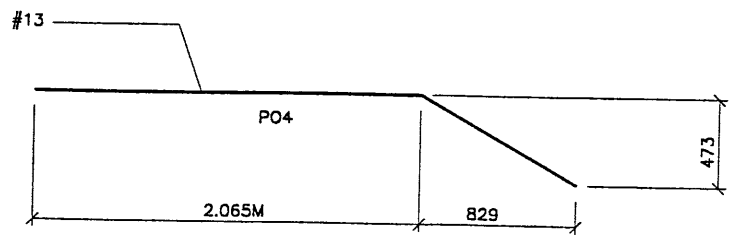
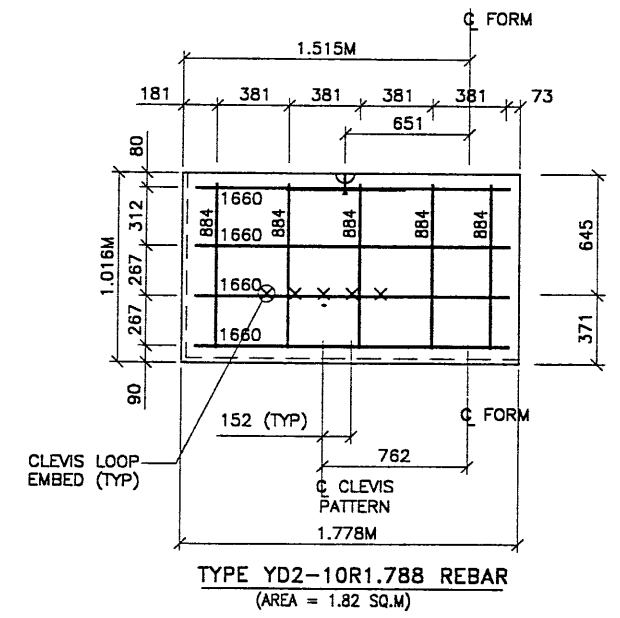
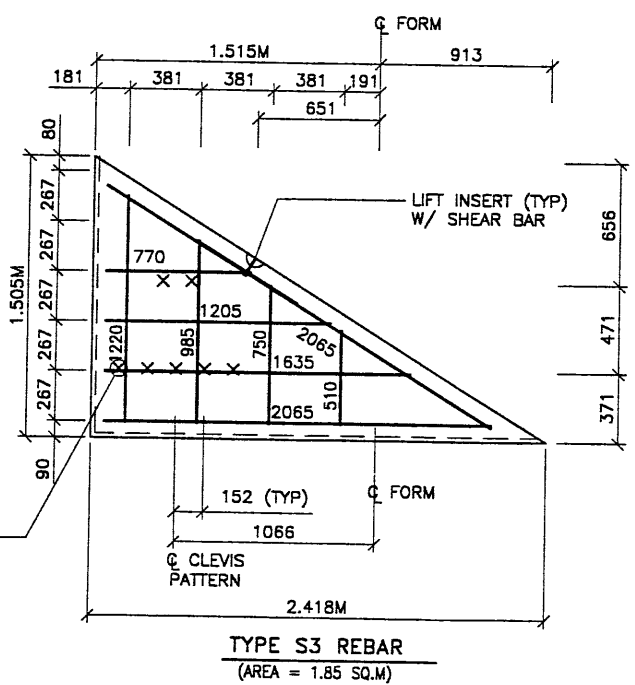
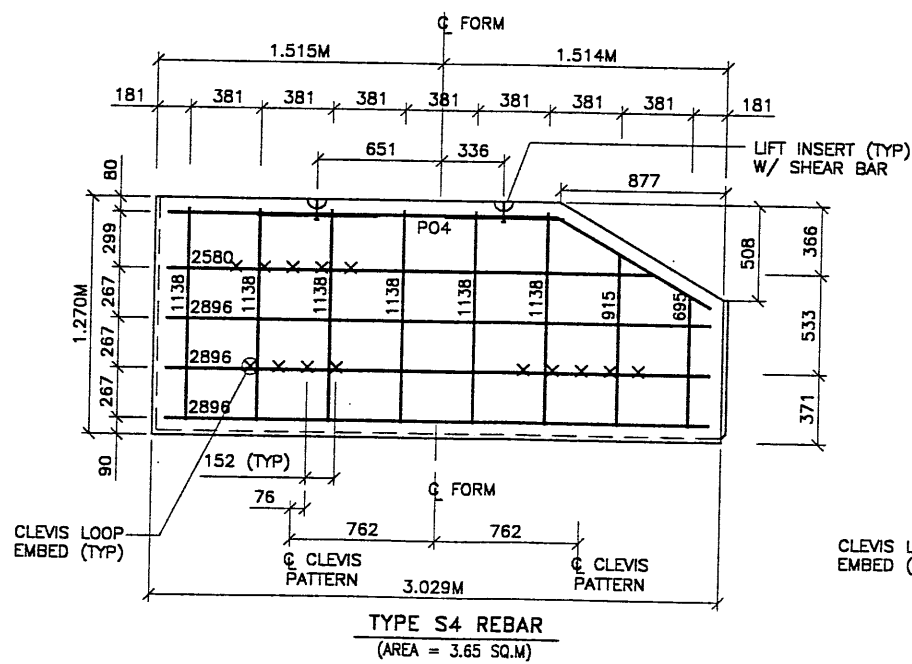
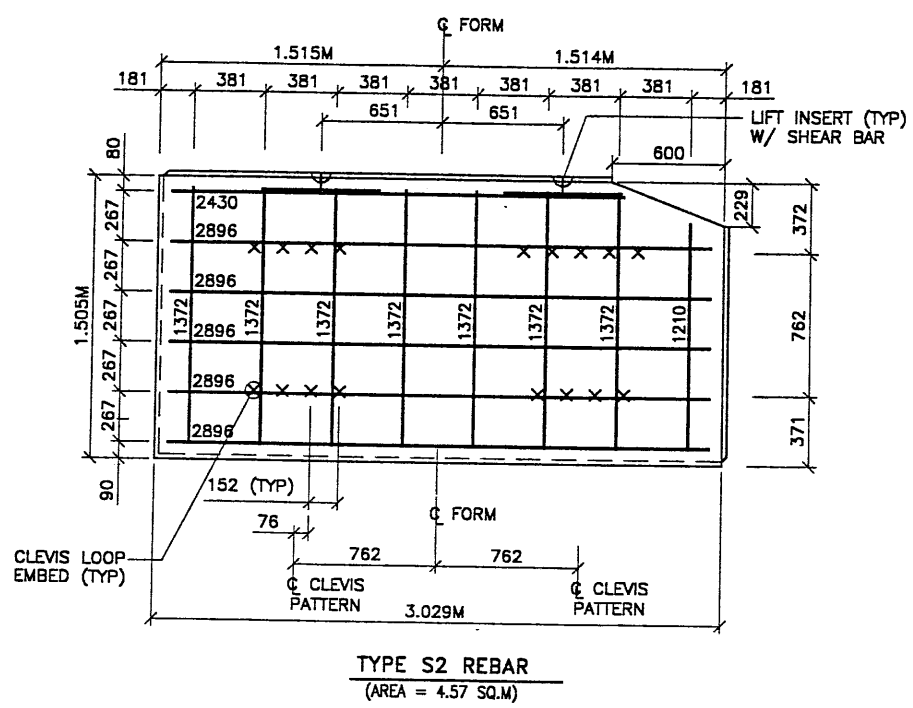
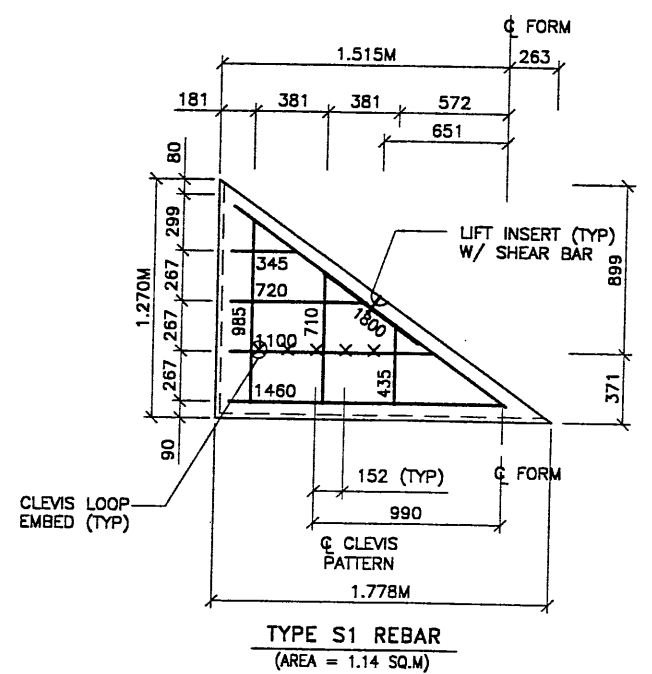
JOB NO.
 239-0007 4/5

SHT. NO.
 RE-3

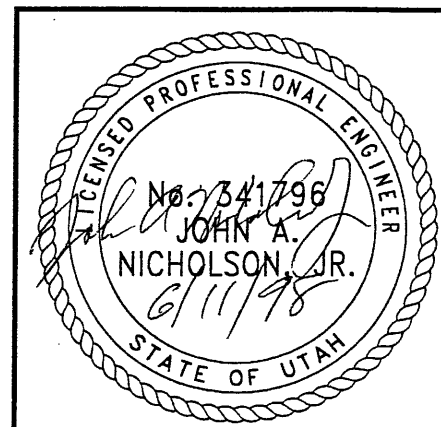
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	06-05-98	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	CHK

- 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 27,500 KPa.
 8. EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
 9. ALL PANELS TO USE 9.5mmØ 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.



WASATCH CONSTRUCTORS
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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-32"
SPECIAL PANEL DETAILS

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

DWG. NO.	1.2R-343-32.5
JOB NO.	239-0007/5/5
SHT. NO.	RE-4