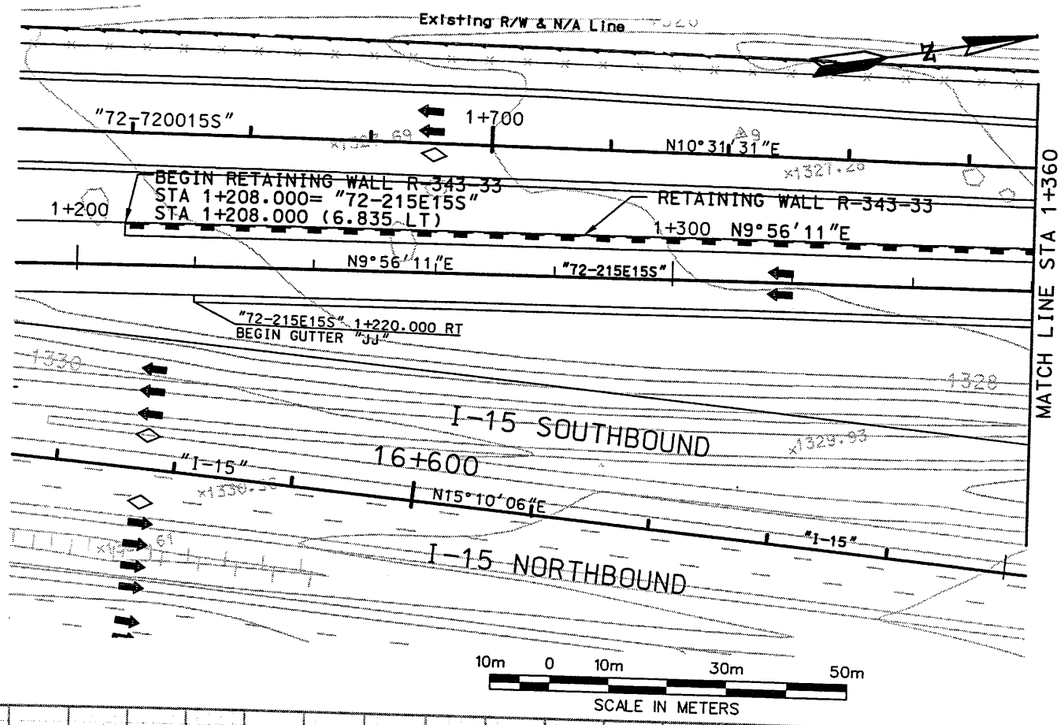
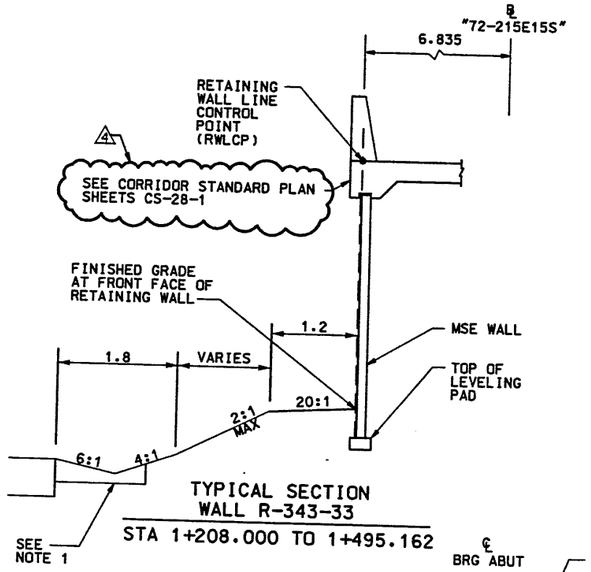
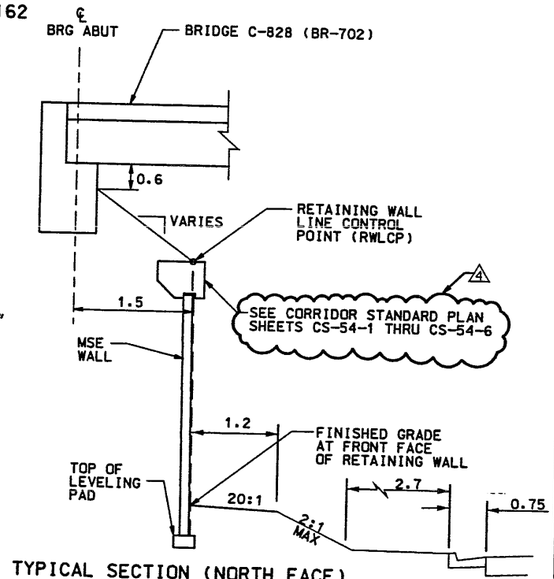


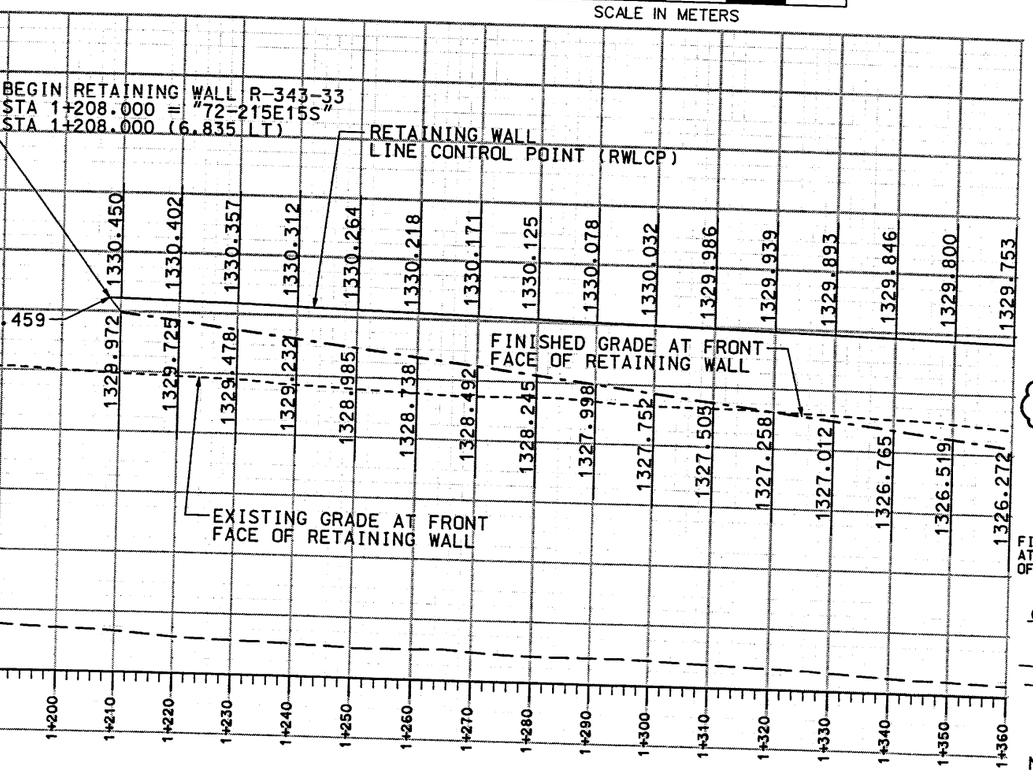


TYPICAL SECTION
WALL R-343-33
STA 1+208.000 TO 1+495.162

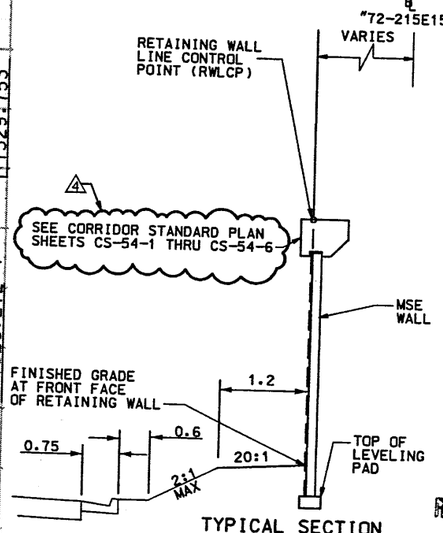
NOTE:
1. FOR STA 1+473.887 TO STA 1+496.508 USE CURB & GUTTER SECTION SHOWN BELOW



TYPICAL SECTION (NORTH FACE)
WALL R-343-33
STA 1+501.500 TO 1+513.970



ELEVATION VIEW FROM BACK OF WALL
(WEST FACE)



TYPICAL SECTION
WALL R-343-33
STA 1+495.162 TO 1+501.500
STA 1+513.970 TO 1+520.308

NOTE:

ANY CLAY LAYERS WITHIN 1.5 METERS OF THE BASE OF THE WALL WILL NEED TO BE REMOVED AND REPLACED WITH BORROW BELOW THE WALL AS DETERMINED BY THE GEOTECHNICAL ENGINEER DURING SITE PREPARATION.

WASATCH CONSTRUCTORS

NOV 24 1998

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	10-2-97	INITIAL RELEASE
2	12-1-97	REVISED FOR WALL/BRIDGE INTERFACE
3	12-31-97	RELEASED FOR GDP / MOMENT SLAB
4	11-13-98	NOC-0165

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN PRV	9/97	CHECK
DRAWN GP	9/97	CHECK
QUANT.	/	CHECK

APPROVAL RECOMM.	9/97	DON GRAUL
	DATE	PROJECT DESIGN ENGINEER
APPROVED	9/97	RICK CHAPMAN
	DATE	PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
RET WALL R-343-33
SECTION 1.2

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

1214000

SALT LAKE COUNTY

DWG. NO.
1.2R-343-33.1

SHT. 1 OF 14/3

REF.

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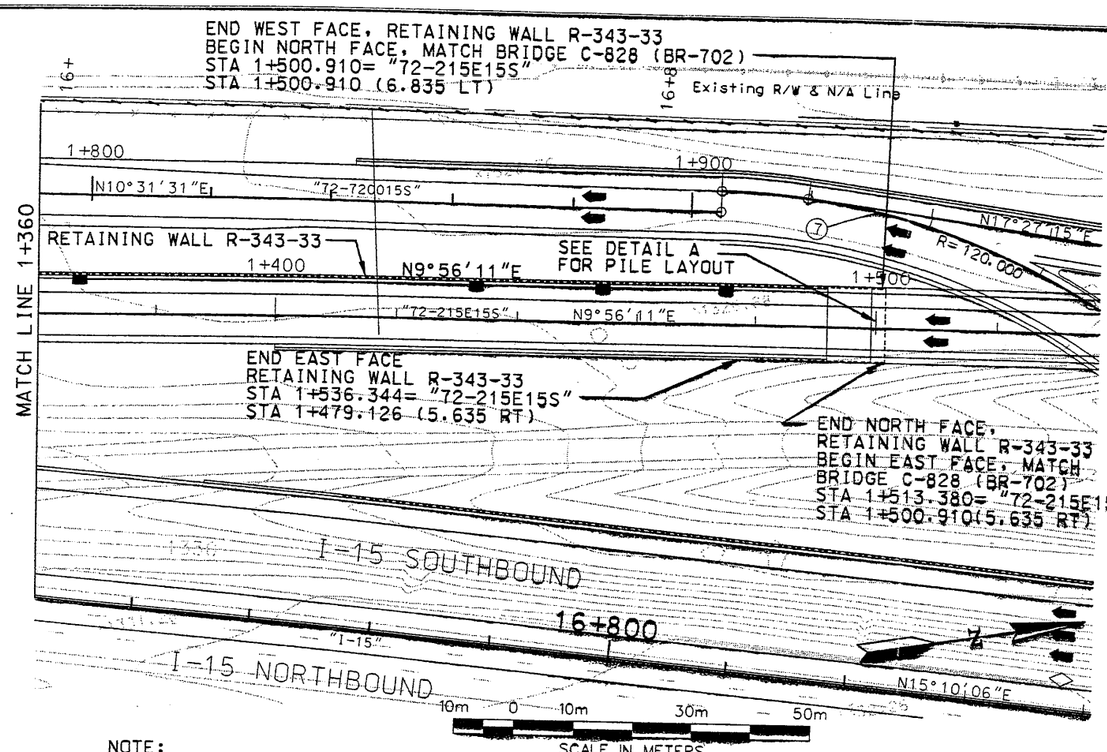
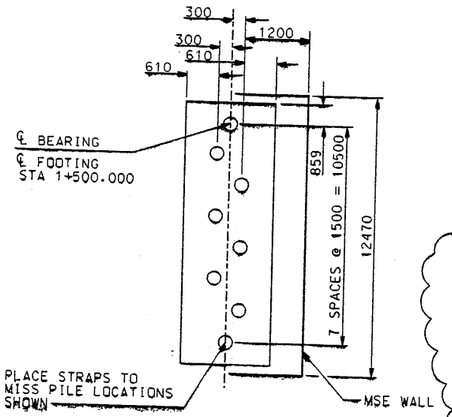
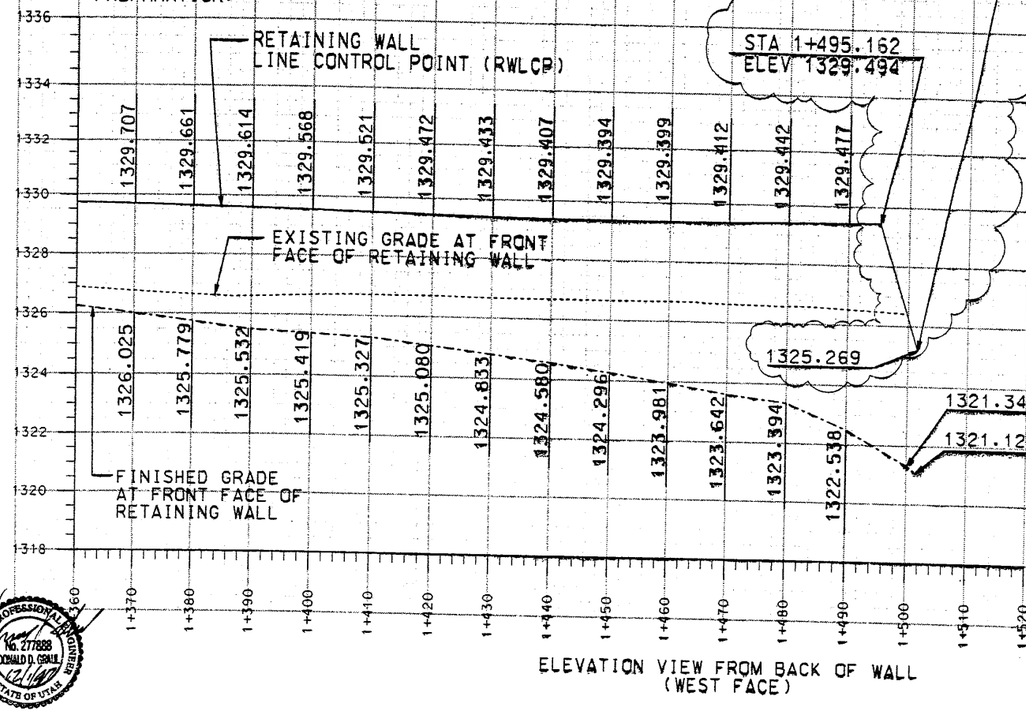


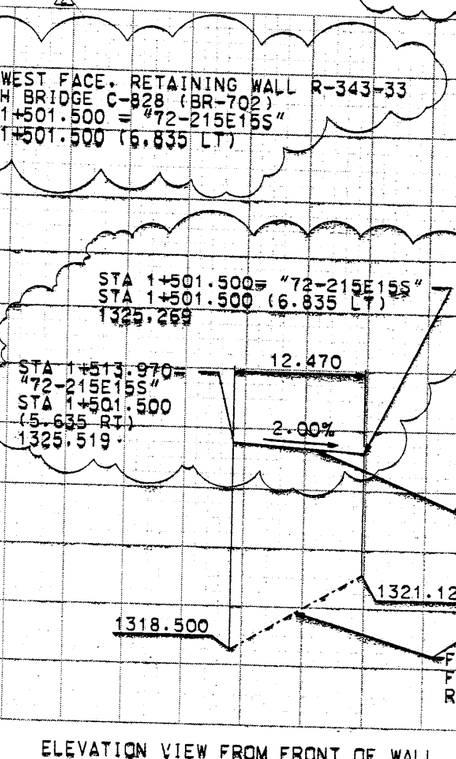


DETAIL A
PILE SLEEVE LAYOUT
N.T.S.

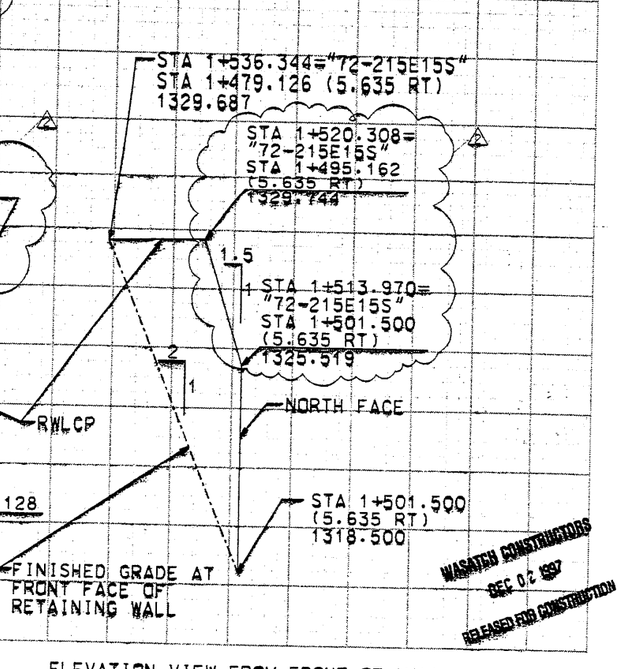
NOTE:
ANY CLAY LAYERS WITHIN 1.5 METERS OF THE BASE OF THE WALL WILL NEED TO BE REMOVED AND REPLACED WITH BORROW BELOW THE WALL AS DETERMINED BY THE GEOTECHNICAL ENGINEER DURING SITE PREPARATION.



ELEVATION VIEW FROM BACK OF WALL
(WEST FACE)



ELEVATION VIEW FROM FRONT OF WALL
(NORTH FACE)



ELEVATION VIEW FROM FRONT OF WALL
(EAST FACE)

WASATCH CONSTRUCTORS
DEC 02 1997
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	10-2-97	INITIAL RELEASE
2	12-1-97	REVISED FOR WALL/BRIDGE INTERFACE

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN	PRV	9/97
DRAWN	GP	9/97
QUANT.	/	/
CHECK	JMM	9/97
CHECK	HT	9/97
CHECK	/	/

APPROVAL RECOMM. 9/97 RICK CHAPMAN — PROJECT DESIGN ENGINEER — DATE
APPROVED 9/97 DON GRAUL — SECTION MANAGER — DATE

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT RET WALL R-343-33
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296
1212406
SALT LAKE COUNTY
DWG. NO. 1.2R-343-33.2
SHT. 2 OF 14

LICENSED PROFESSIONAL ENGINEER No. 277888 DONALD D. GRAUL STATE OF UTAH

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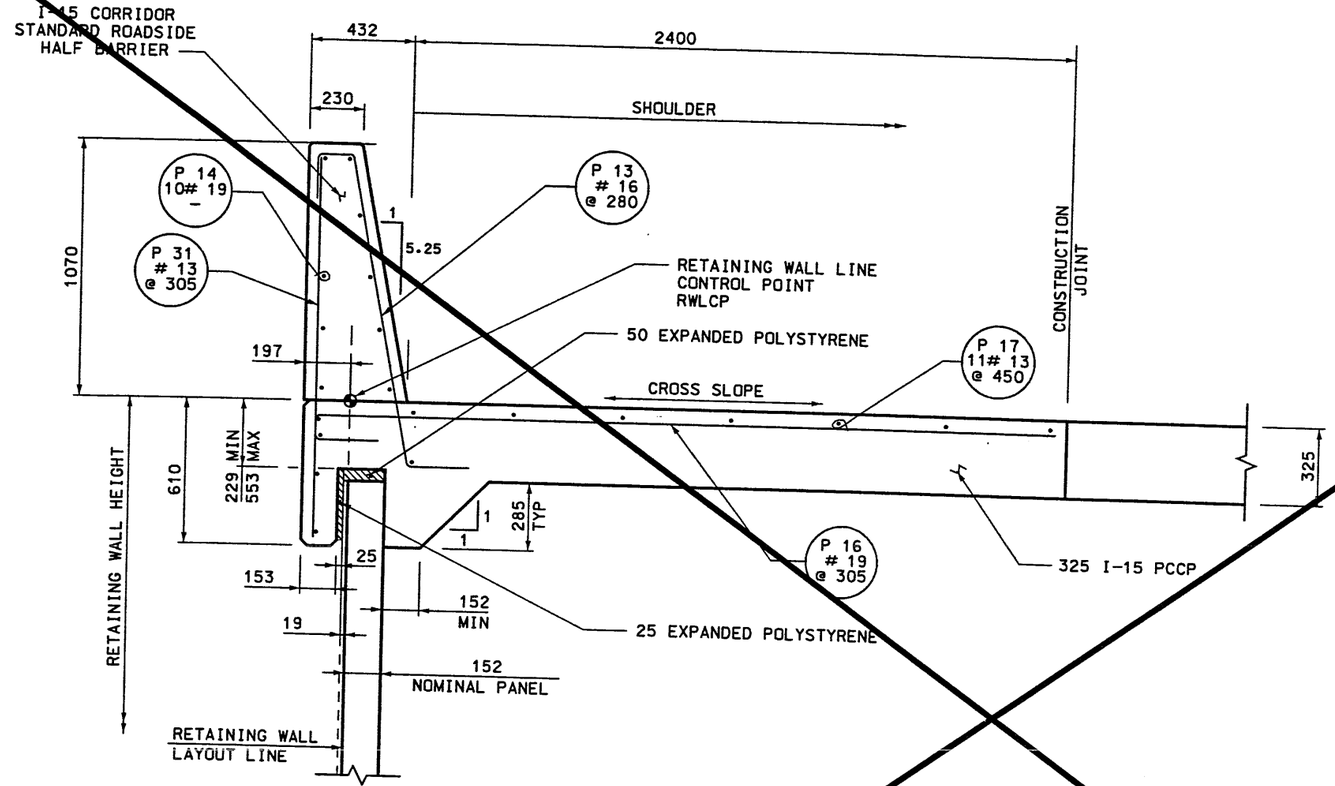
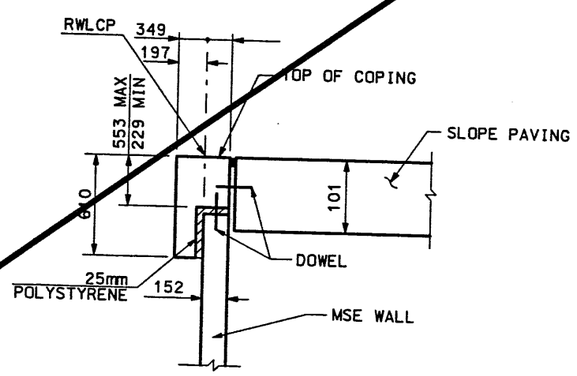


MSE SINGLE STAGE WITH BARRIER ON MOMENT SLAB

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	130, 230, 1290, 270
P14	OUTSIDE LONGITUDINAL	19	VARIES	
P15	OUTSIDE	13	VARIES	
P16	OUTSIDE BARRIER ON MSE WALL	19	3240	2730, 510
P17	OUTSIDE BARRIER ON MSE WALL	13	VARIES	
P18	OUTSIDE BARRIER	19	2340	2130, 160, 50
P30		16	2440	2025, 270
P31		13	1370	1190, 180
P32		19	4310 MAX	3800, 510

NOTES:

1. 50mm MINIMUM COVER OVER REINFORCING.
2. USE 325 PCCP f'c=27.5 MPa (4,000 PSI) FOR MOMENT SLAB.

WASATCH CONSTRUCTORS

NOV 24 1998

RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	12/31/97	RELEASED FOR CONSTRUCTION SLAB
2	11/13/98	NOC-0165 / SHEET DELETED

UTAH DEPARTMENT OF TRANSPORTATION

SVERDRUP/DE LEUW

DESIGN	MC	12/97	CHECK
DRAWN	RS	12/97	CHECK
QUANT.			CHECK

RICK CHAPMAN — PROJECT DESIGN ENGINEER — APPROVAL RECOMM. 12/97 DATE

DON GRAUL — SECTION MANAGER — APPROVED 12/97 DATE

I-15 CORRIDOR RECONSTRUCTION

MISC. DETAILS
RET. WALL R-343-33

SECTION 1.2

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

1214000

SALT LAKE
COUNTY

DWG. NO.
1.2R-343-33.2a

SHT. 3 OF 14

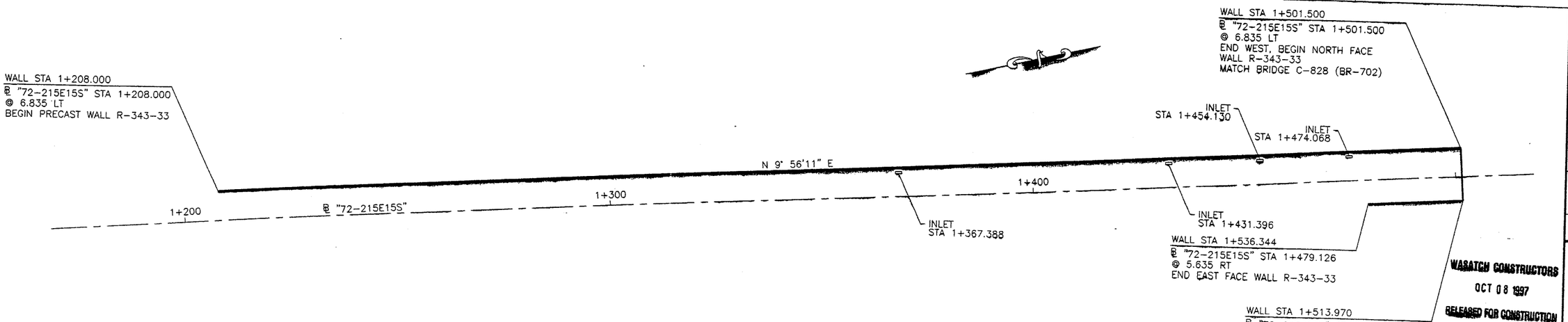
Filename:c:\dgn\15.cadd\72.97\sheet_files\walls\72_retwall-33.02a.dgn

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

NO.	DATE	REVISION	BY	CHK

DES.	09-11-97	MM
DRN.	09-11-97	JPS
CHK.	09-11-97	MM

RETAINED EARTH™



WASATCH CONSTRUCTORS
OCT 08 1997
RELEASED FOR CONSTRUCTION

PLAN VIEW WALL "R-343-33"

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

GENERAL NOTES

1. ALL WALLS ARE SHOWN FRONT FACE. NOTE STATIONING.
2. 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:
3. 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 (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 12" CENTERS.
   EXAMPLE: 5W11-24 MESH HAS FIVE (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 24" CENTERS.
   EXAMPLE: 5W20-24 MESH HAS FIVE (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 24" CENTERS.
   EXAMPLE: 6W11-6 MESH HAS SIX (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 6" CENTERS.
   EXAMPLE: 6W11-24 MESH HAS SIX (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 24" CENTERS.
   EXAMPLE: 6W20-24 MESH HAS SIX (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 24" CENTERS.
4. SEE RETAINED EARTH INSTALLATION MANUAL FOR PROPER WALL ERECTION PROCEDURES AND GUIDELINES.
5. CONSTRUCTION PROCEDURES SHALL PREVENT BACKFILL SATURATION AND PONDING.
6. 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.
7. CARE SHALL BE TAKEN TO PREVENT DAMAGE TO GALVANIZING. DAMAGED GALVANIZING SHALL BE COATED WITH ZINC RICH PAINT.
8. 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.
9. VSL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,170.
10. 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 (21.2 kN/m^3)
TRAFFIC SURCHARGE = 250 PSF
SEISMIC ACCELERATION COFF. = 0.25g (TYP)

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-343-33, NOTES & DESIGN CRITERIA
RE-2	TYPICAL DETAILS
RE-3	TYPICAL DETAILS
RE-4	TYPICAL CROSS SECTIONS
RE-5	SPECIAL DETAILS
RE-6	ELEVATION PRECAST WALL "R-343-33"
RE-7	ELEVATION PRECAST WALL "R-343-33"
RE-8	ELEVATION PRECAST WALL "R-343-33"
RE-9	ELEVATION PRECAST WALL "R-343-33"
RE-10	SPECIAL PANEL DETAILS
RE-11	SPECIAL PANEL DETAILS
RE-12	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.

REGISTERED PROFESSIONAL ENGINEER
No. 361796
JOHN A. NICHOLSON, JR.
10/7/97
STATE OF UTAH

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-4272
Fax: (919) 781-4869

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

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RETAINED EARTH™ WALLS
PLAN VIEW PRECAST WALL "R-343-33"

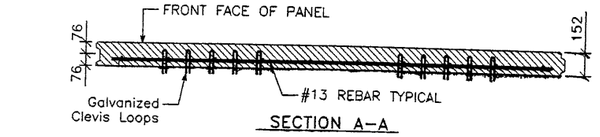
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE: 1.2R-343-33.3

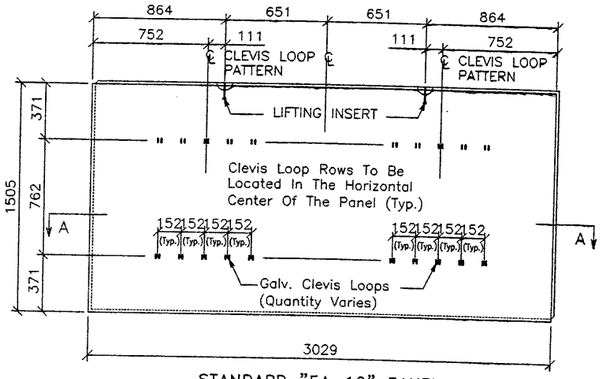
JOB NO: 239-0007 4/14

RE-1

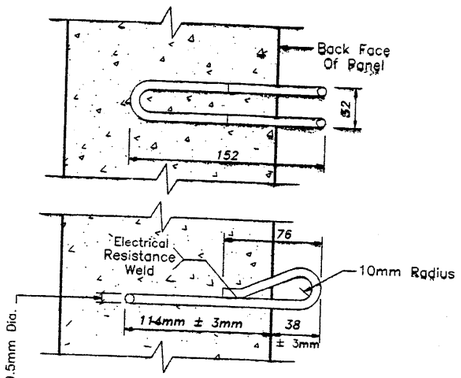
FINAL PLOT 09-23-97 E:\APROJECT\239-0007\72SERIES\72-33\RE-1



SECTION A-A



STANDARD "5A-10" PANEL
Back Face View



CLEVIS LOOP DETAIL
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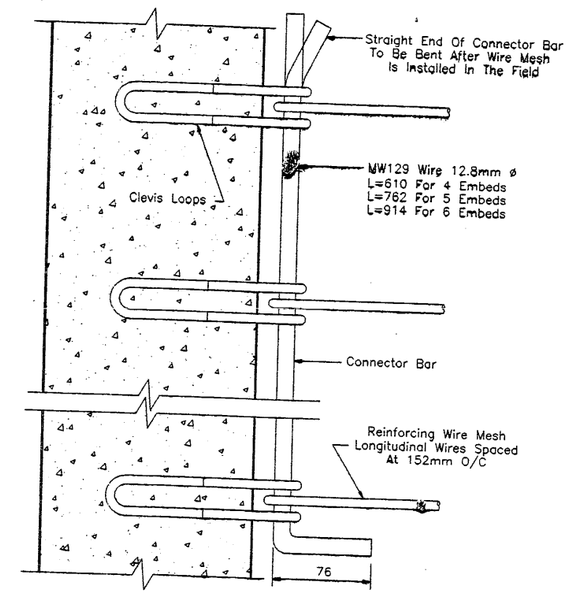

REINFORCING MESH CONNECTION DETAIL
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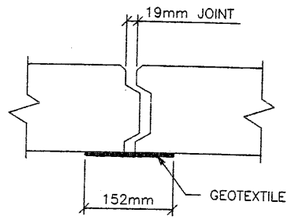

JOINT DETAIL
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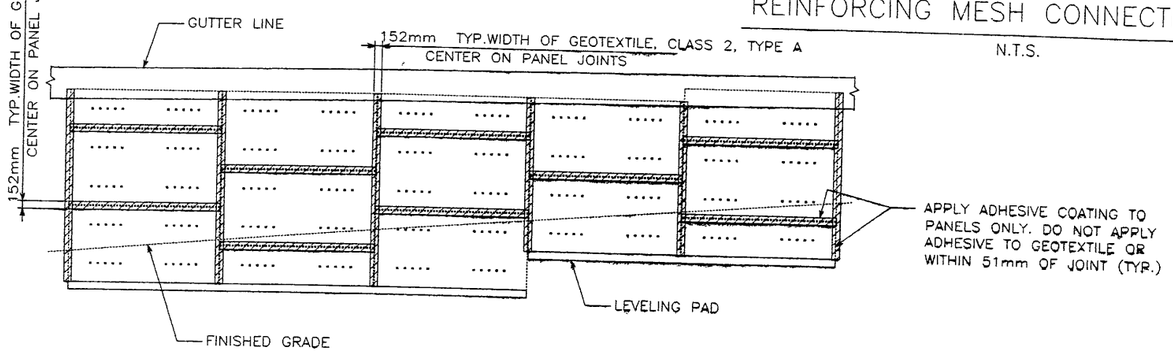
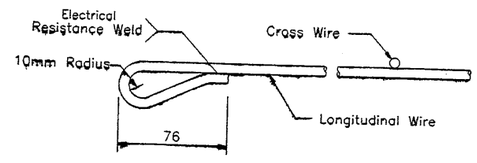


PARTIAL WALL ELEVATION



WIRE MESH LOOP DETAIL
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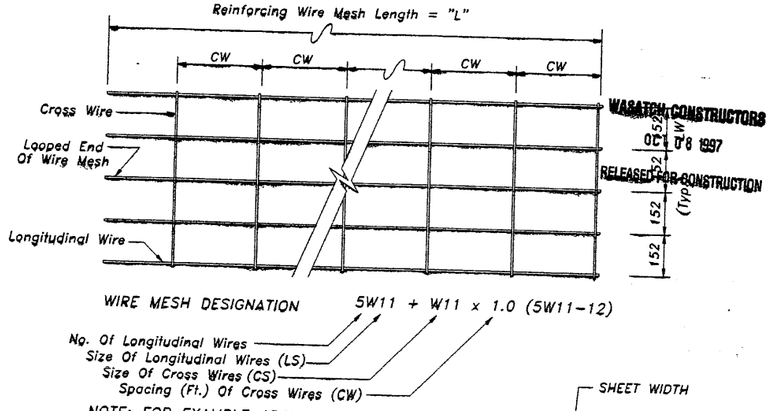
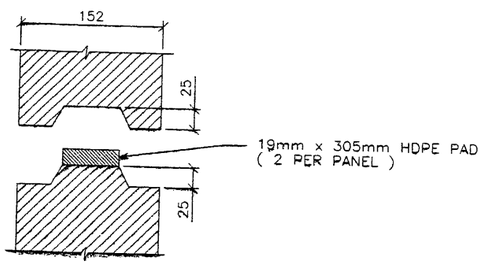


NOTE: FOR EXAMPLE ABOVE,
EQUIVALENT WIRE MESH DESIGNATION =6 X 12-W11XW11-24"X "L"
(LW) (CW)(LS) (CS)

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.



HORZ. JOINT DETAIL
N.T.S.

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.

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

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

NO.	DATE	REVISION	BY	CHK

DES. 09-11-97 MM
DRN. 09-11-97 JPS
CHK. 09-11-97 MM
RETAINED EARTH™

WASATCH CONSTRUCTORS
OCT 08 1997
RELEASED FOR CONSTRUCTION

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

ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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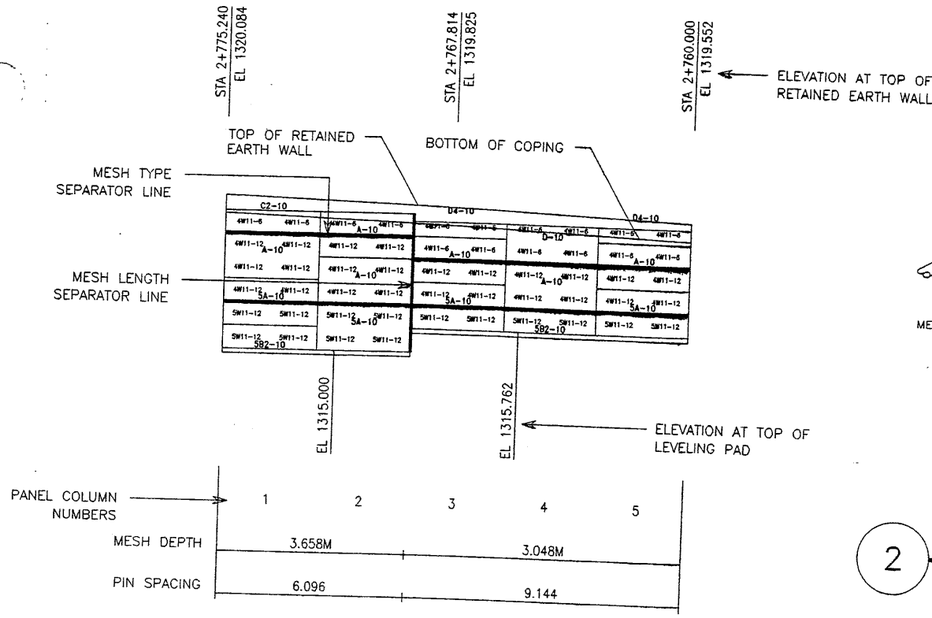
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-33"
TYPICAL DETAILS

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

SCALE: 1.2R-343-33.4
JOB NO: 239-0007 5/14
RE-2

E:\APROJECT\239-0007\72SERIES\72-33\RE-2
FINAL PLOT 09-23-97



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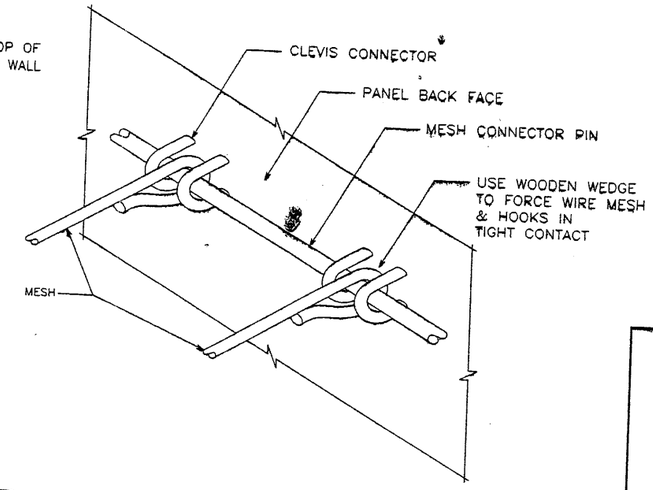

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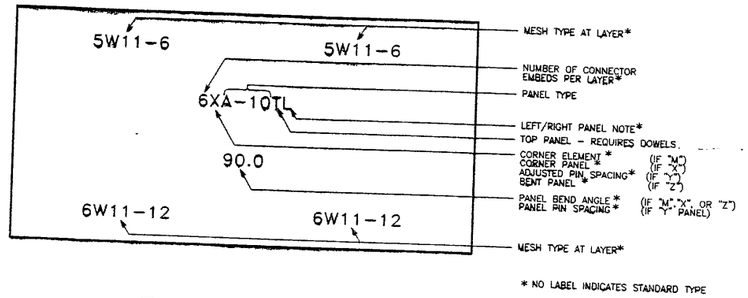
VSL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,170.



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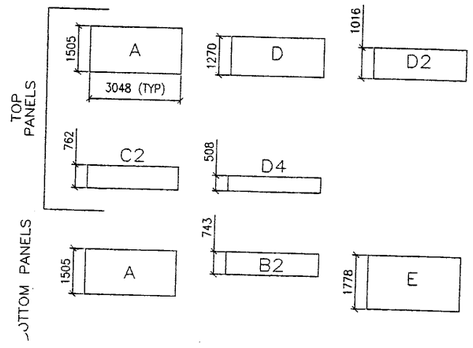

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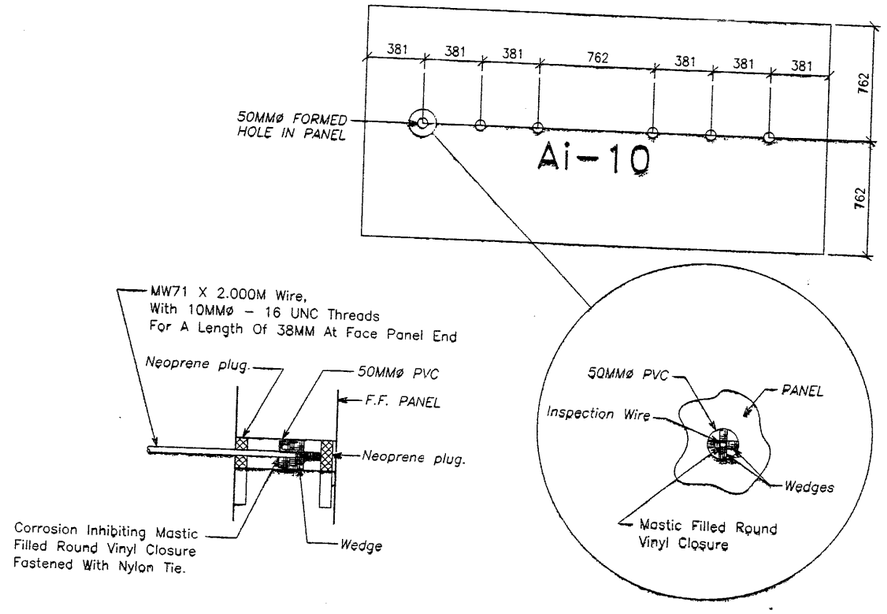
ALL DIMENSIONS ARE IN MILLIMETERS



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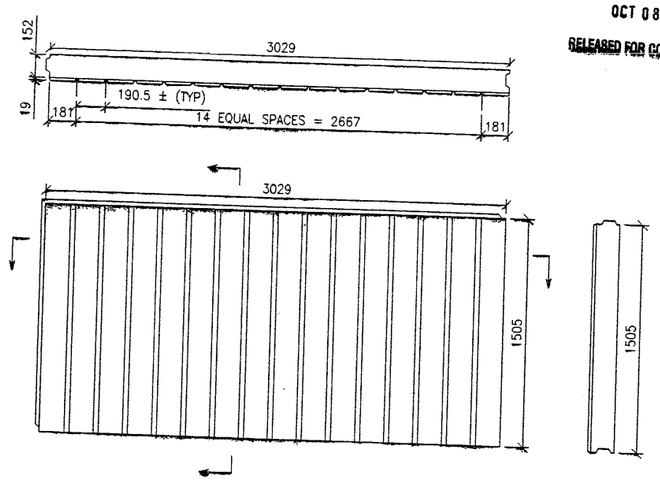

6

APPROVED FOR CONSTRUCTION

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

WASATCH 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.

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

NO.	DATE	REVISION	BY	CHK

DES.	09-05-97	MM
DRN.	09-05-97	JPS
CHK.	09-05-97	MM

VSL RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-4969
ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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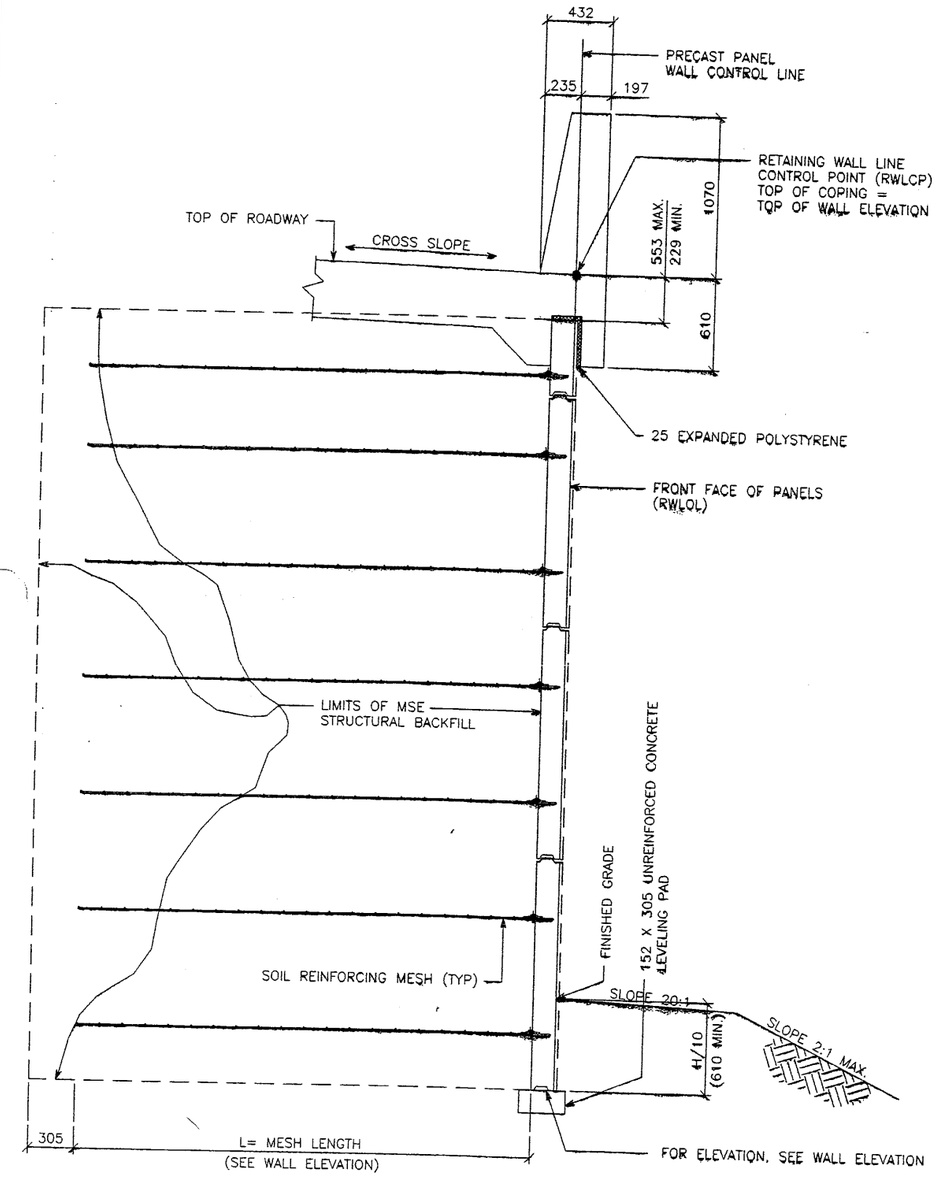
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-33"
TYPICAL DETAILS

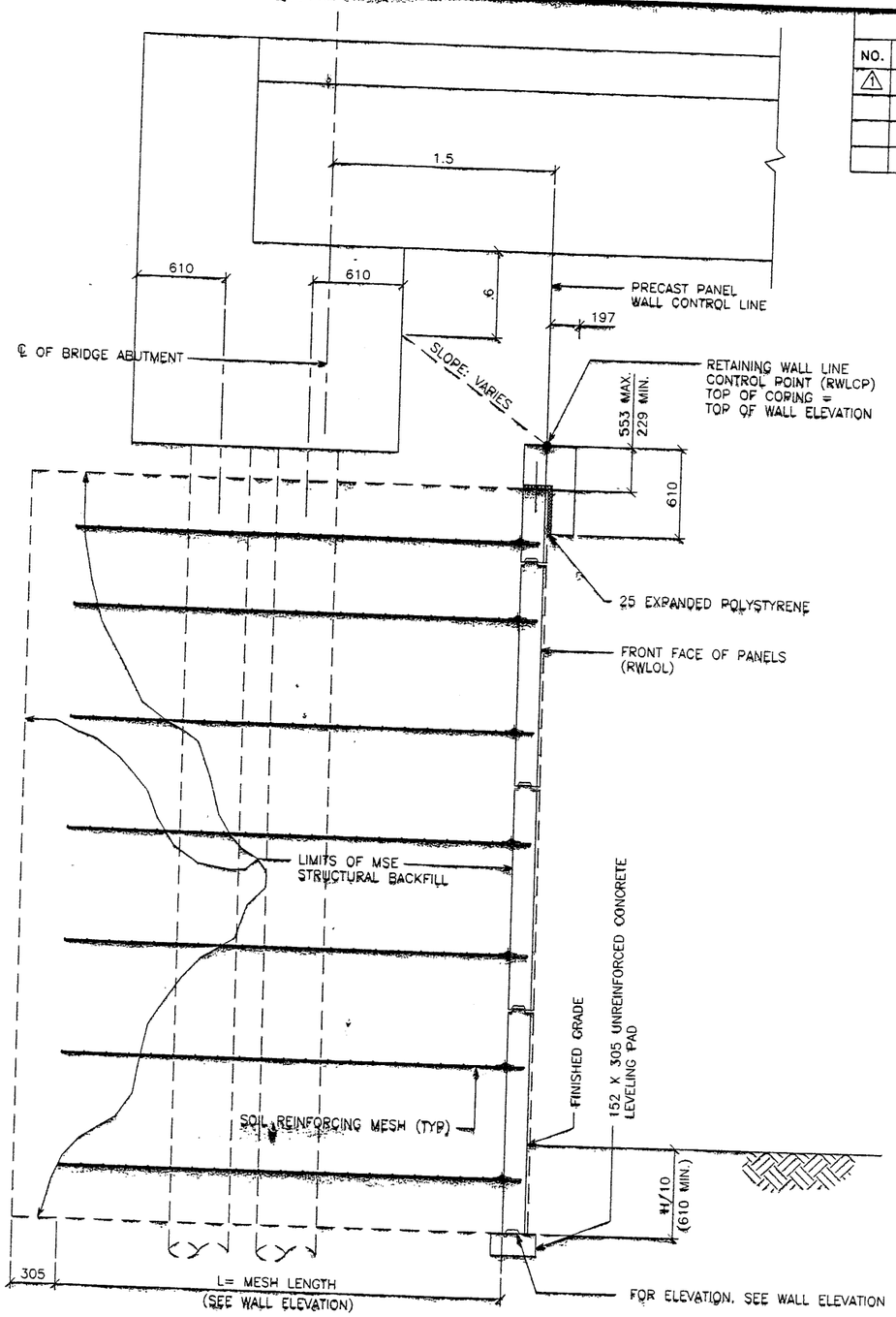
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE: 1.2R-343-33.5
JOB NO: 239-0007 6/14
RE-3

E:\APROJECT\239-0007\72SERIES\72-33\RE-3
FINAL PLOT 09-23-97



TYPICAL CROSS SECTION – STA 1+208.000 TO STA 1+496.508
(MSE SINGLE STAGE WITH MOMENT SLAB)
SCALE: 1:20 (FULL SIZE)
SCALE: 1:40 (HALF SIZE)



TYPICAL CROSS SECTION – NORTH FACE
(MSE SINGLE STAGE WITH COPING)
SCALE: 1:20 (FULL SIZE)
SCALE: 1:40 (HALF SIZE)

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METRIC

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

WASATCH CONSTRUCTORS
OCT 08 1997
RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION

DES. 09-11-97 MM
DRN. 09-11-97 JPS
CHK. 09-11-97 MM

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2840 Plaza Place, Suite 200
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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-33"
TYPICAL CROSS SECTIONS

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

SCALE: 1.2R-343-33.6

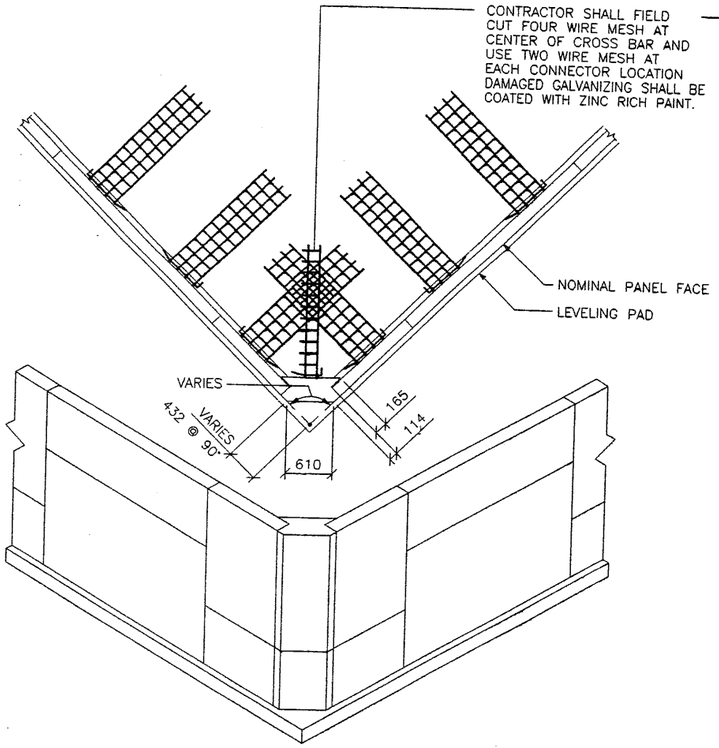
JOB NO: 239-0007 7/4

RE-4

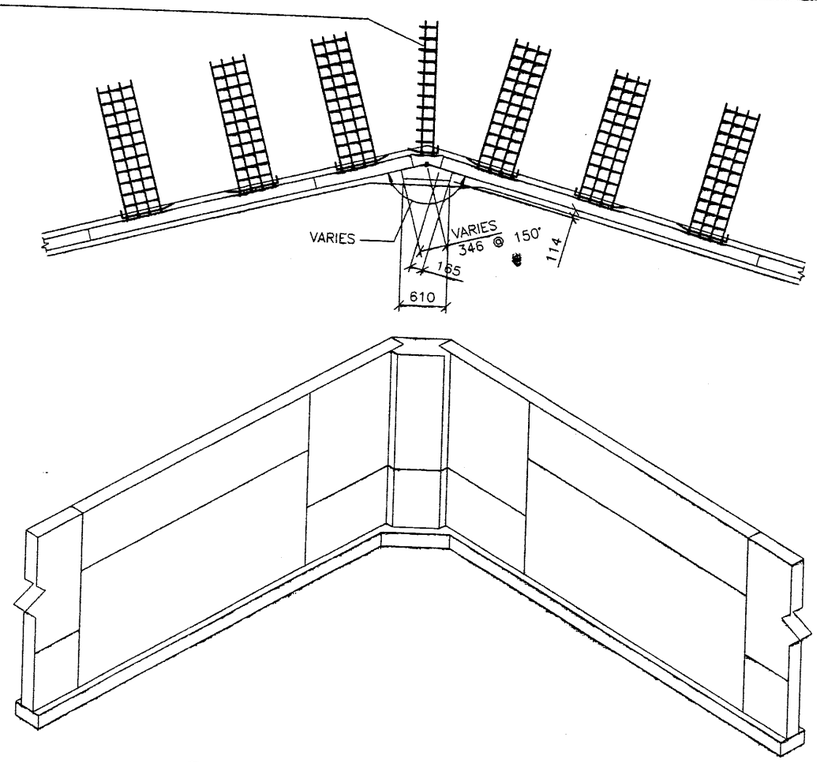
REGISTERED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
STATE OF UTAH

E:\APROJECT\239-0007\72SERIES\72-33\RE-4

FINAL PLOT 09-23-97



80 OUTSIDE CORNER ELEMENT
PLAN VIEW / ISOMETRIC

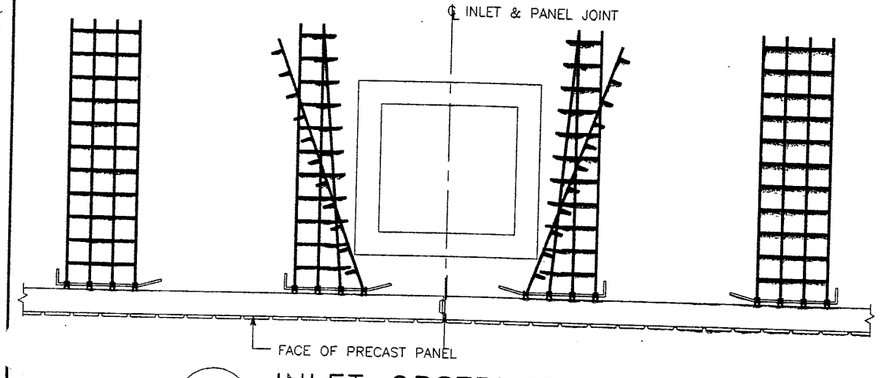


80 INSIDE CORNER ELEMENT
PLAN VIEW / ISOMETRIC

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

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

NO.	DATE	REVISION	BY	CHK

DES. 09-11-97 MM
DRN. 09-11-97 JPS
CHK. 09-11-97 MM

RETAINED EARTH™

PARSON CONSTRUCTORS
OCT 08 1997
RELEASED FOR CONSTRUCTION

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-33"
SPECIAL DETAILS

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

METRIC

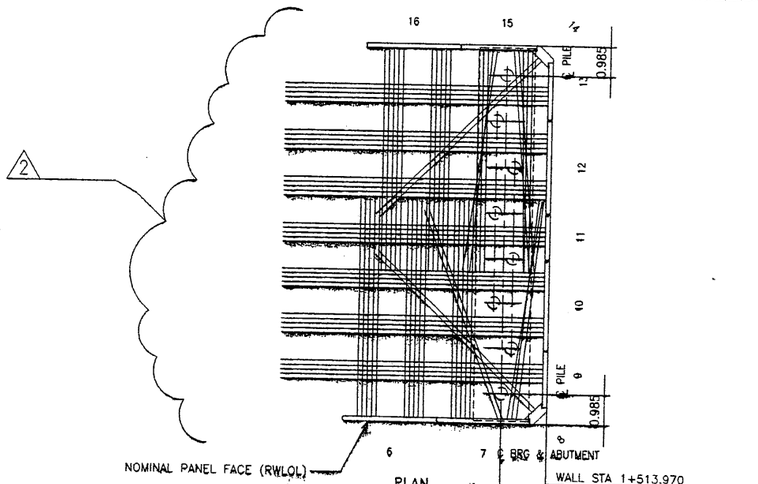
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

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

SCALE: 1.2R-343-33.7
JOB NO: 239-0007
8/14
RE-5

E:\APROJECT\239-0007\72SERIES\72-33\RE-5
FINAL PLOT 09-23-97

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9-23-97	RELEASE FOR CONSTRUCTION
2	11-13-97	WALL/BRG INTERFACE REVISIONS



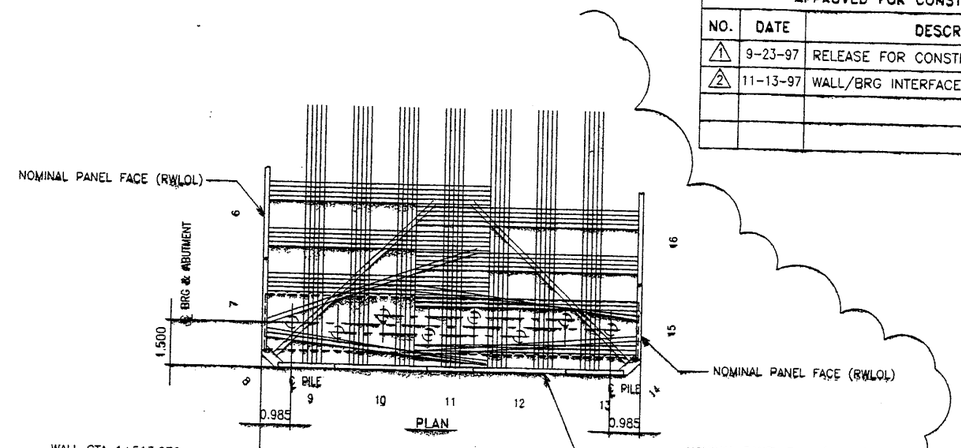
WALL STA 1+536.344
"72-215E15S" STA 1+479.126
@ 5.635 RT
NOMINAL PANEL FACE (RWLOL)
END EAST WALL R-343-33

STA 1+536.344
EL 1329.687

WALL STA 1+513.970
"72-215E15S" STA 1+501.500
@ 5.635 RT
NOMINAL PANEL FACE (RWLOL)
BEGIN EAST WALL
END NORTH WALL

STA 1+520.308
EL 1329.744

STA 1+513.970
EL 1325.519



WALL STA 1+513.970
"72-215E15S" STA 1+501.500
@ 5.635 RT
NOMINAL PANEL FACE (RWLOL)
BEGIN EAST WALL
END NORTH WALL

WALL STA 1+501.500
"72-215E15S" STA 1+501.500
@ 6.835 LT
NOMINAL PANEL FACE (RWLOL)
BEGIN NORTH WALL
END WEST WALL

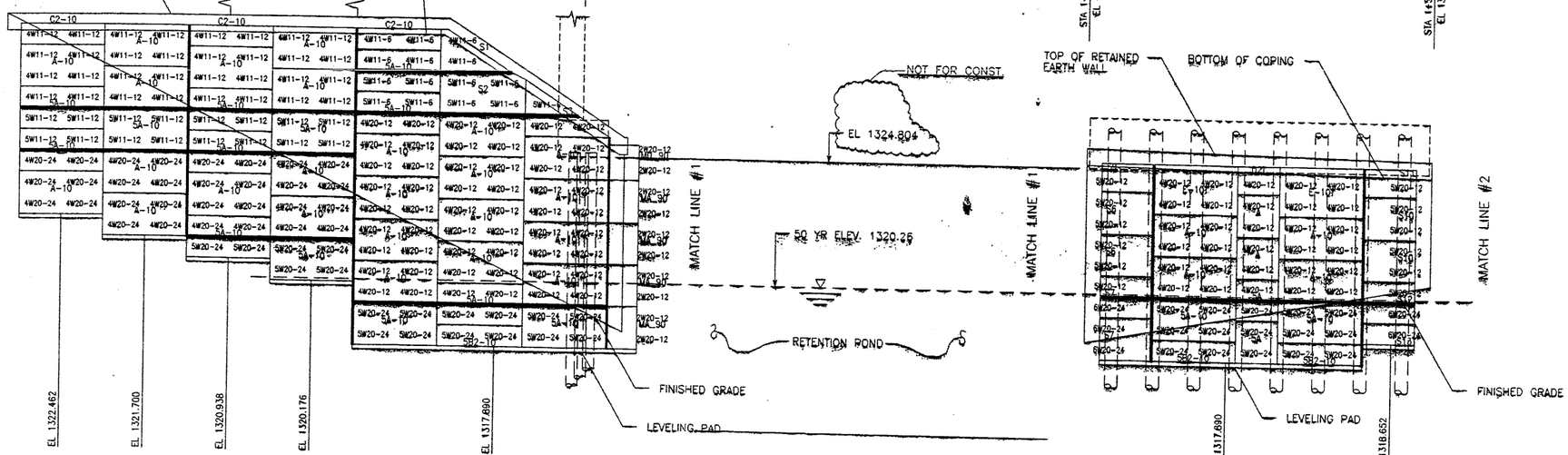
WALL STA 2+342.770

STA 1+513.970
EL 1325.519

STA 1+501.500
EL 1325.269

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.



	1	2	3	4	5	6	7	8
MESH DEPTH	0.488	5.791		7.315		7.315		
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)		185 kPa		217 kPa		266 kPa		
PIN SPACING		3.048	3.048	3.048	3.048	3.048	3.048	3.048 0.550

	9	10	11	12
MESH DEPTH	0.550	8.534		0.550
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)		308 kPa		
PIN SPACING		1.875	7.620	1.875

WASATCH CONSTRUCTORS
DEC 02 1997
RELEASED FOR CONSTRUCTION

METRIC

ELEVATION PRECAST WALL R-343-33

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 1,541.08 SM)

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

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REGISTERED PROFESSIONAL ENGINEER
No. 241766
JOHN A. NICHOLSON, JR.
11/13/97
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK.

DES. 09-11-97 MM
DRN. 09-11-97 JPS
CHK. 09-11-97 4M

RETAINED EARTH™

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

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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-33"

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

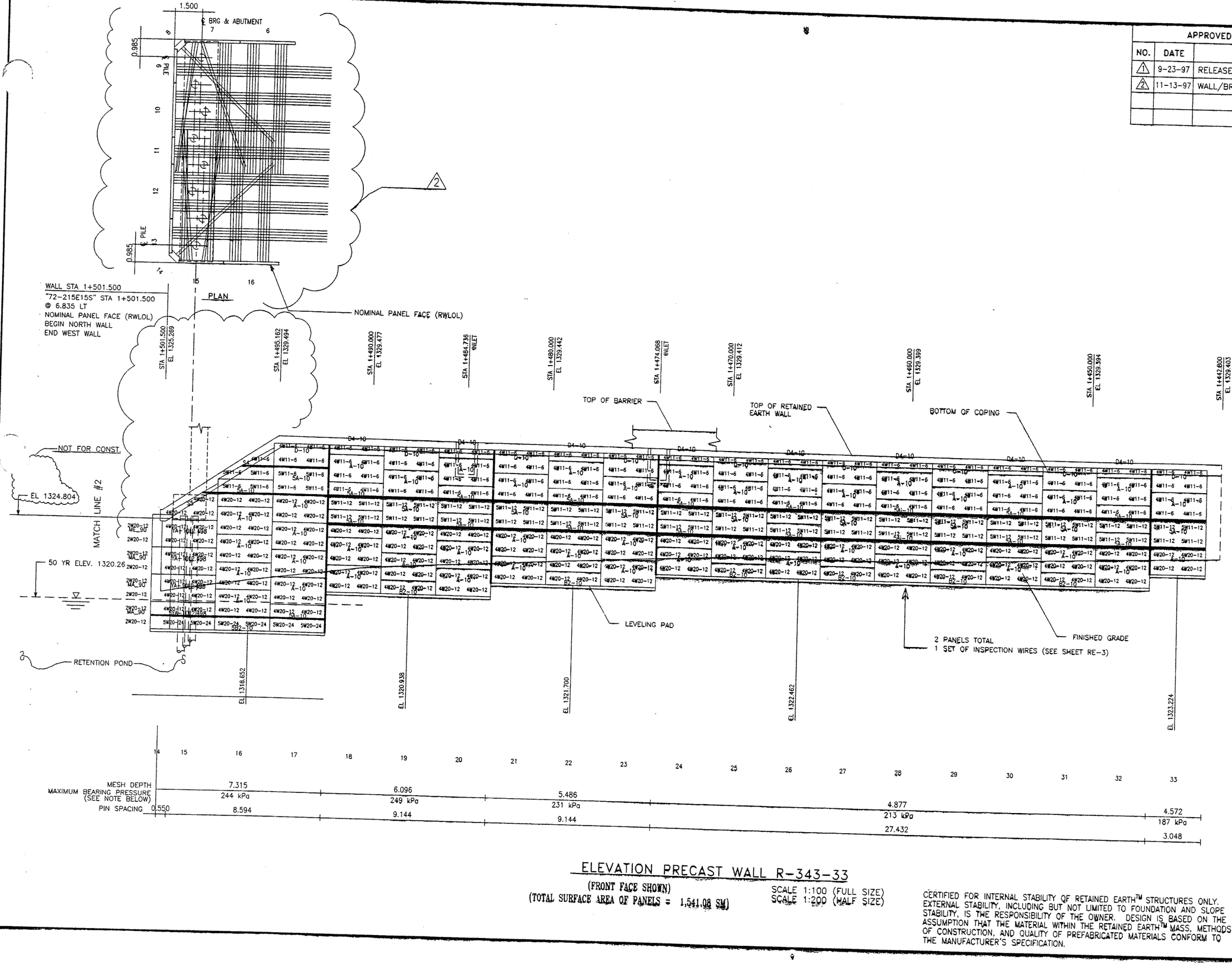
SCALE: 1.2R-343-33.8

JOB NO: 239-0007 9/14

RE-6

FINAL PLOT 11-13-97 H:\RE_EARTH\APROJECT\239-0007\72SERIES\72-33\SUBMTL-2\72-

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9-23-97	RELEASE FOR CONSTRUCTION
2	11-13-97	WALL/BRG INTERFACE REVISIONS



ELEVATION PRECAST WALL R-343-33

(FRONT FACE SHOWN)

(TOTAL SURFACE AREA OF PANELS = 1,541.08 SM)

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

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WASATCH CONSTRUCTORS
DEC 02 1997
RELEASED FOR CONSTRUCTION

METRIC

REGISTERED PROFESSIONAL ENGINEER
No. 344795
JOHN A. NICHOLSON, JR.
11/13/97
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK

DES.	09-11-97	MM
DRN.	09-11-97	JPS
CHK.	09-11-97	MM

RETAINED EARTH™

VSL CORPORATION
8340 Mason Phoenix, Suite 200
Raleigh, NC 27615
Telephone: (919) 781-6272
Fax: (919) 781-4969

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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-33"

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

SCALE: 1.2R-343-33.9

JOB NO: 239-0007 10/14

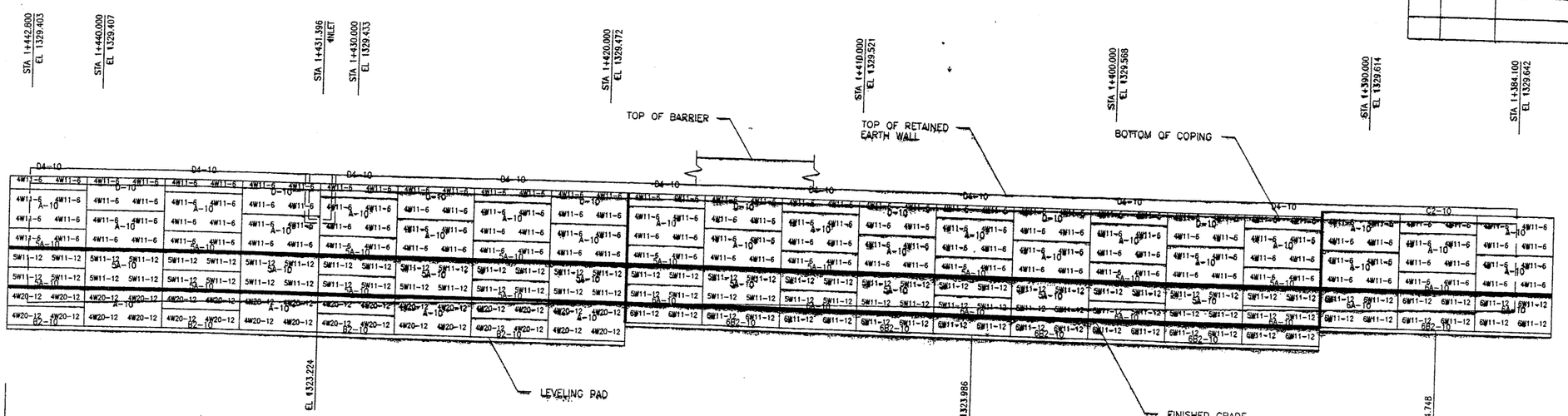
RE-7

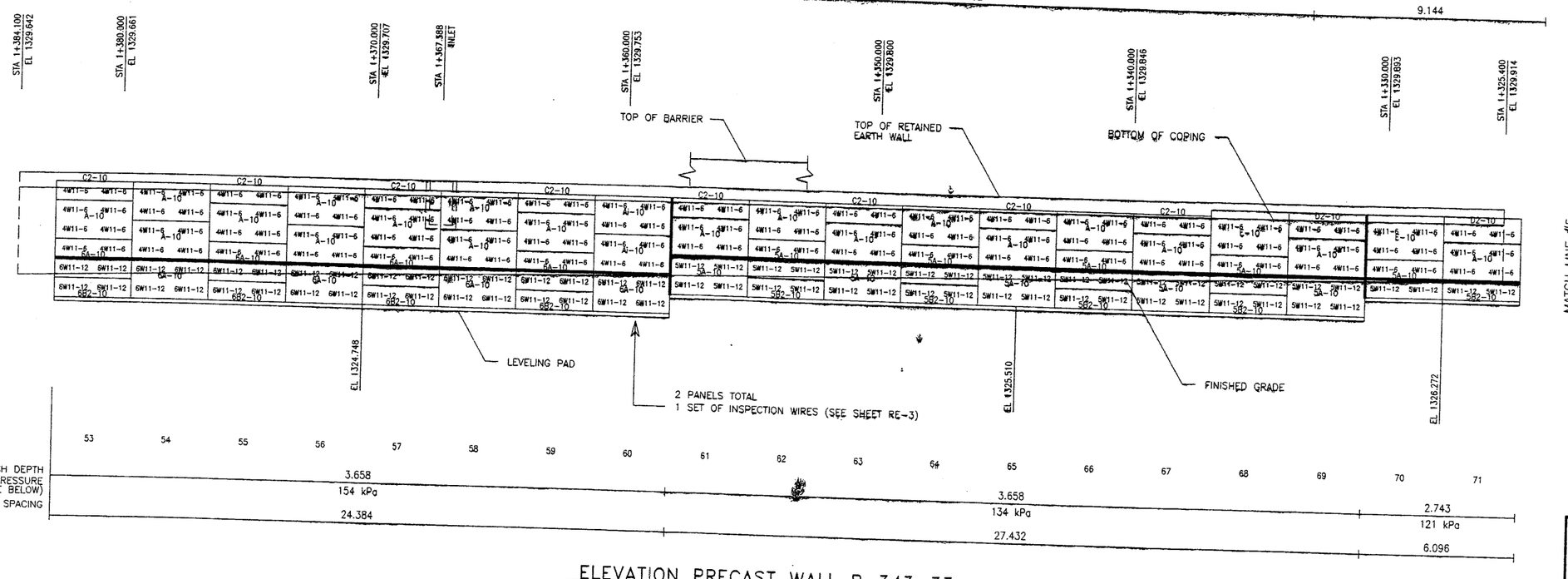
H:\RE_EARTH\APROJECT\239-0007\72SERIES\72-33\SUBMTL-2\72-33 FINAL PLOT 11-13-97

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

NO.	DATE	REVISION	BY	CHK

DES. 09-11-97 MM
DRN. 09-11-97 JPS
CHK. 09-11-97 MM
VSL RETAINED EARTH™





WASATCH CONSTRUCTORS
OCT 08 1997
RELEASED FOR CONSTRUCTION

METRIC

ELEVATION PRECAST WALL R-343-33

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

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REGISTERED PROFESSIONAL ENGINEER
No. 341746
JOHN A. NICHOLSON, JR.
9/30/97
STATE OF UTAH

VSL CORPORATION
9840 Pilot Place, Suite 200
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Fax: (919) 781-4969

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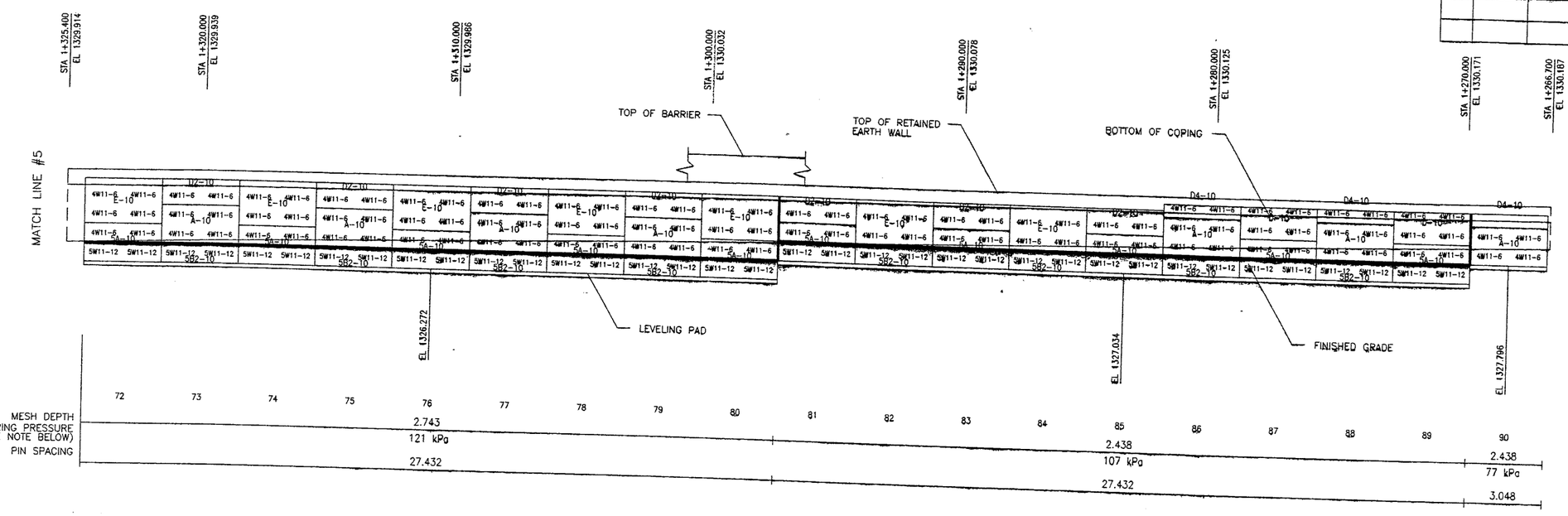
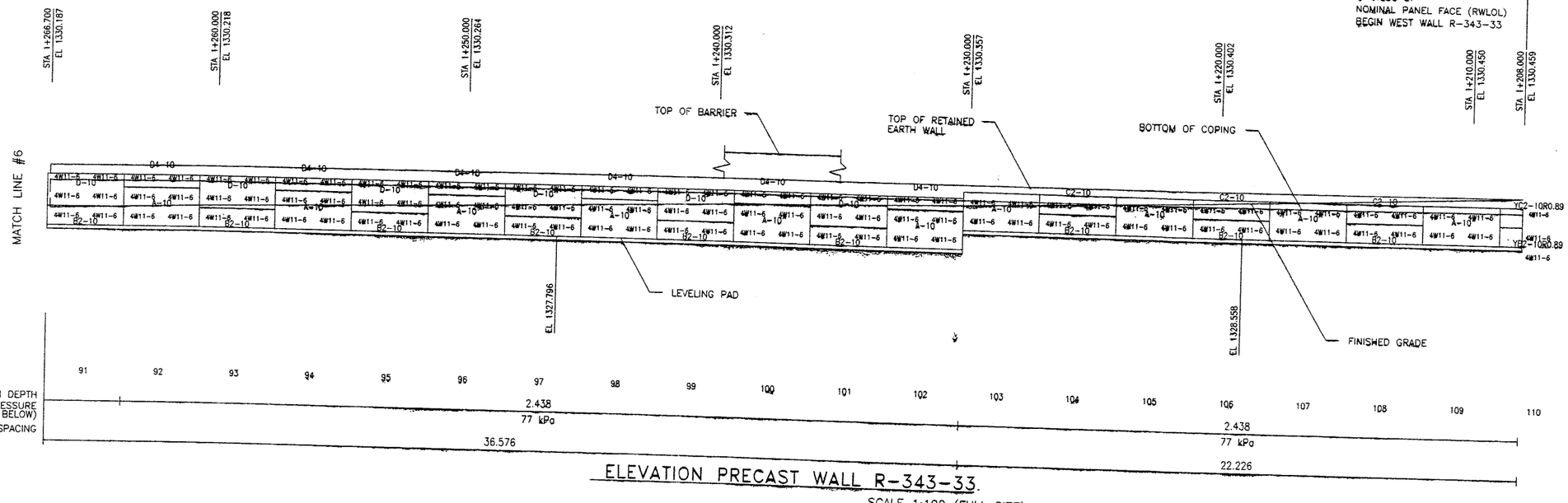
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-33"
I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE: 1.2R-343-33.10
JOB NO: 239-0007 n/14
RE-8

FINAL PLOT 09-23-97
E:\APROJECT\239-0007\72SERIES\72-33\72-33

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





ELEVATION PRECAST WALL R-343-33

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

METRIC

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WASATCH CONSTRUCTORS
OCT 08 1997
RELEASED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
No. 344796
JOHN A. NICHOLSON
9/23/97
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK

DES.	09-11-97	MM
DRN.	09-11-97	JPS
CHK.	09-11-97	MM

RETAINED EARTH™

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

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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-33"
I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

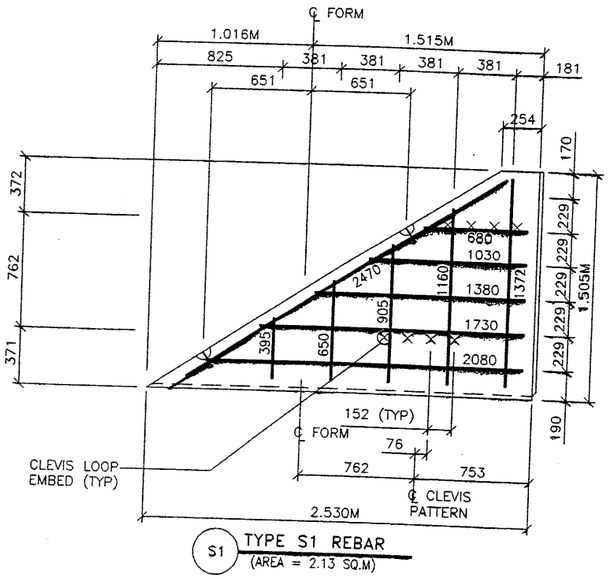
SCALE: 1.2R-343-33.11

JOB NO: 239-0007 13/14

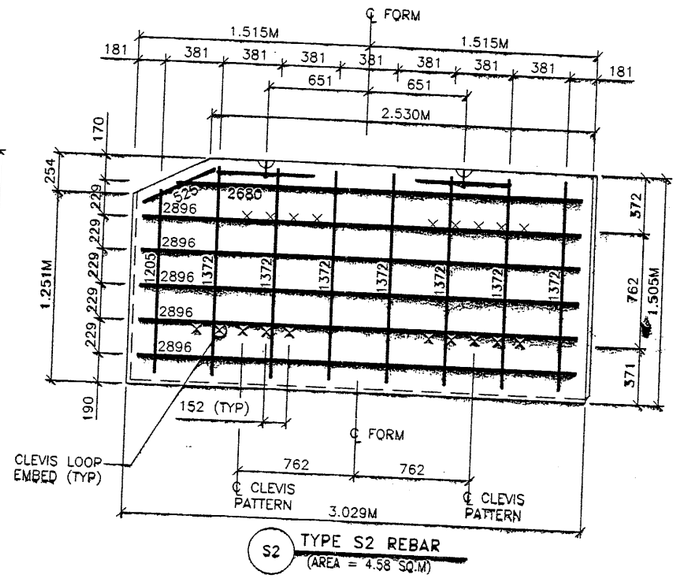
RE-9

FINAL PLOT 09-23-97

E:\APROJECT\239-0007\72SERIES\72-33\72-33

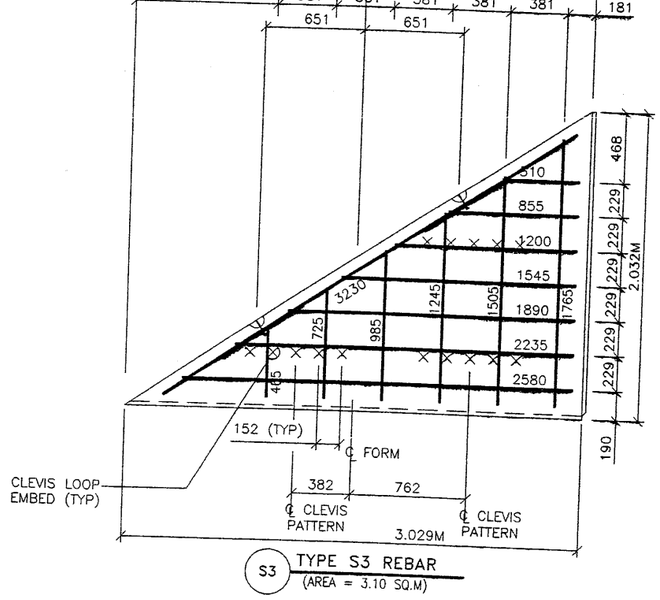


S1 TYPE S1 REBAR
(AREA = 2.13 SQ.M)

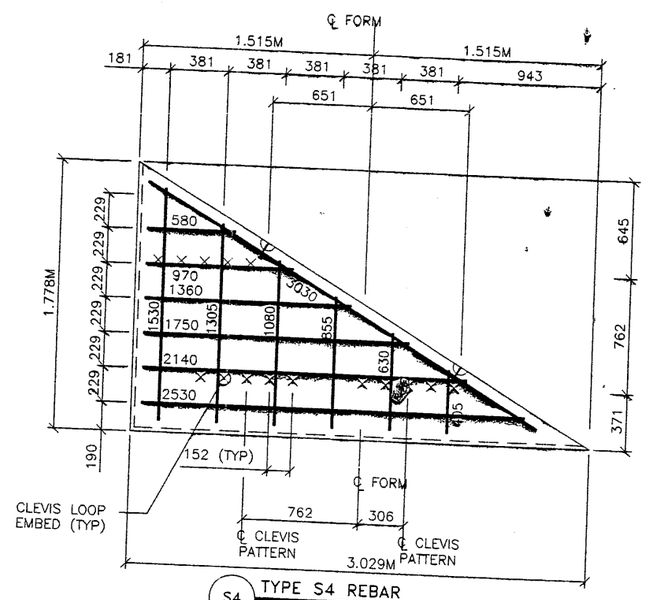


S2 TYPE S2 REBAR
(AREA = 4.58 SQ.M)

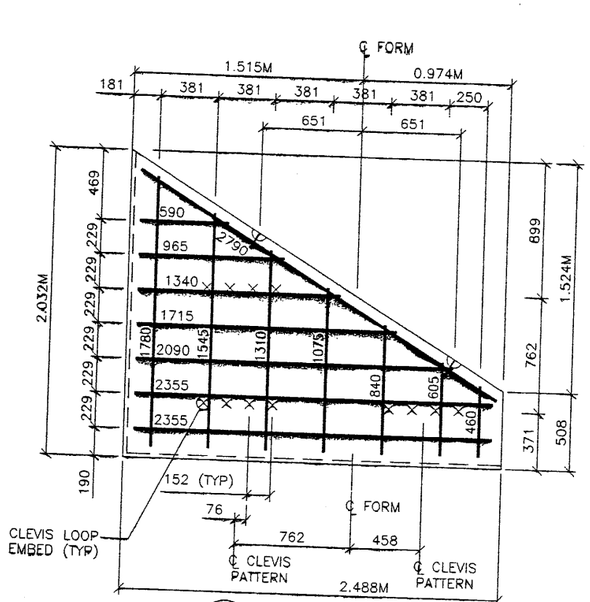
PANEL REINFORCEMENT NOTES:
1. PANELS ARE SHOWN BACK FACE.
2. HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
3. ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
4. ALL REINFORCING BARS ARE #13 METRIC. LABELS ON EACH BAR INDICATE LENGTH. EXAMPLE: 1345 IS A #13 BAR 1345 mm LONG.
5. PANEL REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT CONFORMING TO THE SPECIFICATIONS OF ASTM DESIGNATION A615, GRADE 60.
6. ALL REINFORCING STEEL TO BE GALVANIZED IN ACCORDANCE WITH ASTM 767 CLASS I.
7. CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 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.



S3 TYPE S3 REBAR
(AREA = 3.10 SQ.M)



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



S5 TYPE S5 REBAR
(AREA = 3.17 SQ.M)

WASATCH CONSTRUCTORS
DEC 02 1997
RELEASED FOR CONSTRUCTION

METRIC

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LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
11/13/97
STATE OF UTAH

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	11-13-97	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES.	10-03-97	JN
DRN.	10-03-97	LOP
CHK.	10-03-97	JN

RETAINED EARTH™

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

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

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RETAINED EARTH™ WALLS
PRECAST WALL "R-343+33"
SPECIAL PANEL REINFORCEMENT

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

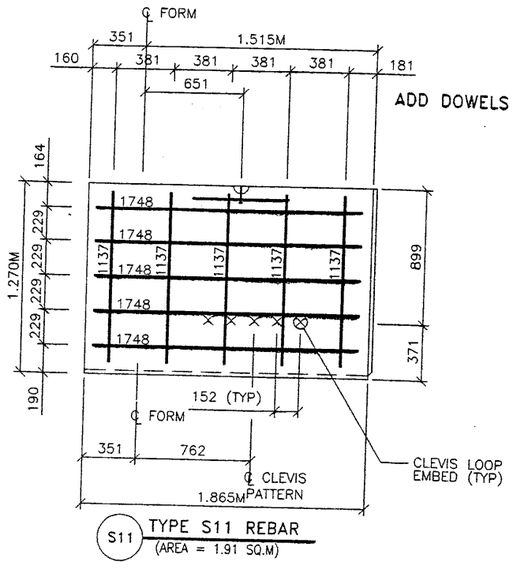
SCALE: 1.2R-343-33.12

JOB NO: 239-0007 13/14

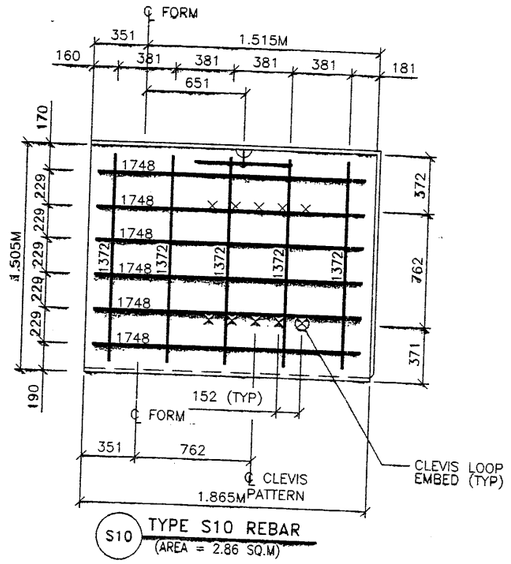
RE-10

H:\RE_EARTH\APROJECT\239-0007\72SERIES\72-33\SUBMTL-2\SPECIALS

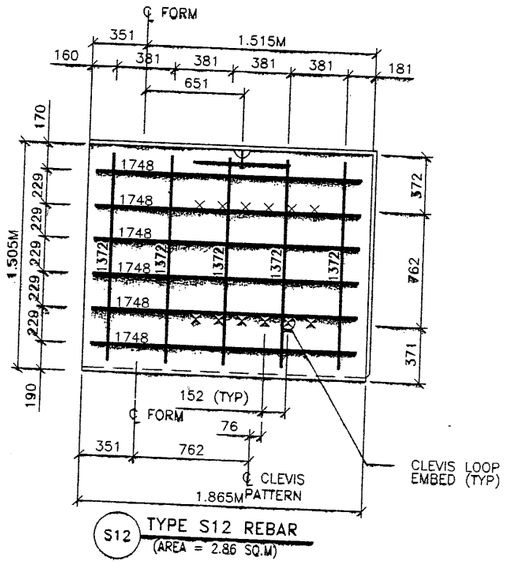
FINAL PLOT 11-13-97



S11 TYPE S11 REBAR
(AREA = 1.91 SQ.M)



S10 TYPE S10 REBAR
(AREA = 2.86 SQ.M)



S12 TYPE S12 REBAR
(AREA = 2.86 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.
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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	11-13-97	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES.	DRN.	CHK.	RETAINED EARTH™
JN 10-03-97	LOP 10-03-97	JN 10-03-97	

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone (919) 781-6272
Fax (919) 781-4869

ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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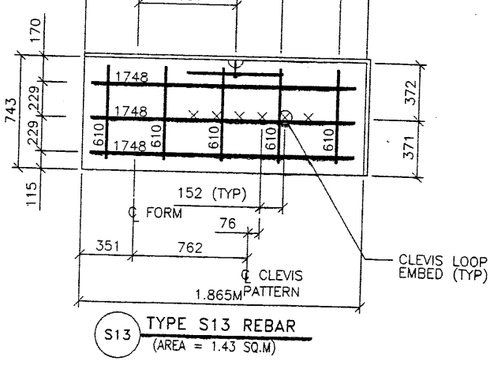
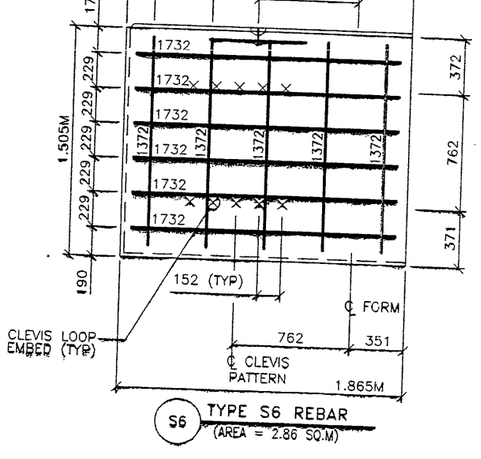
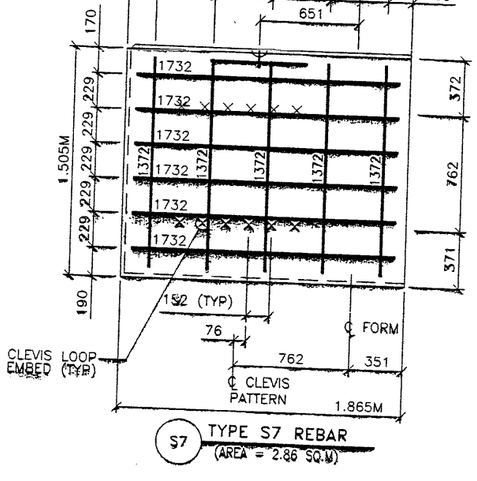


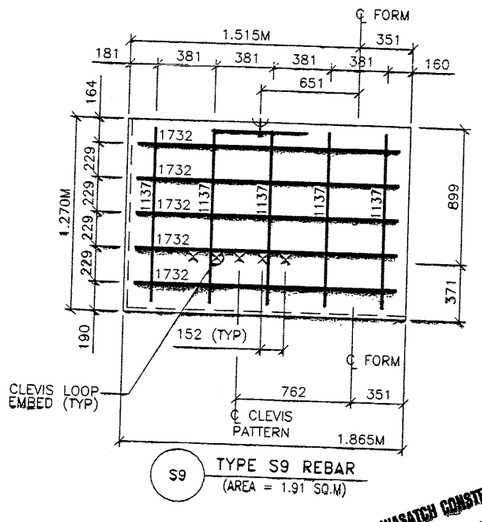
S13 TYPE S13 REBAR
(AREA = 1.43 SQ.M)



S6 TYPE S6 REBAR
(AREA = 2.86 SQ.M)



S7 TYPE S7 REBAR
(AREA = 2.86 SQ.M)



S9 TYPE S9 REBAR
(AREA = 1.91 SQ.M)

WASATCH CONSTRUCTORS
DEC 0 2 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.

REGISTERED PROFESSIONAL ENGINEER
No. 241796
JOHN A. NICHOLSON, JR.
11/18/97
STATE OF UTAH

RETAINED EARTH™ WALLS
PRECAST WALL "R-343+33"
SPECIAL PANEL REINFORCEMENT

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

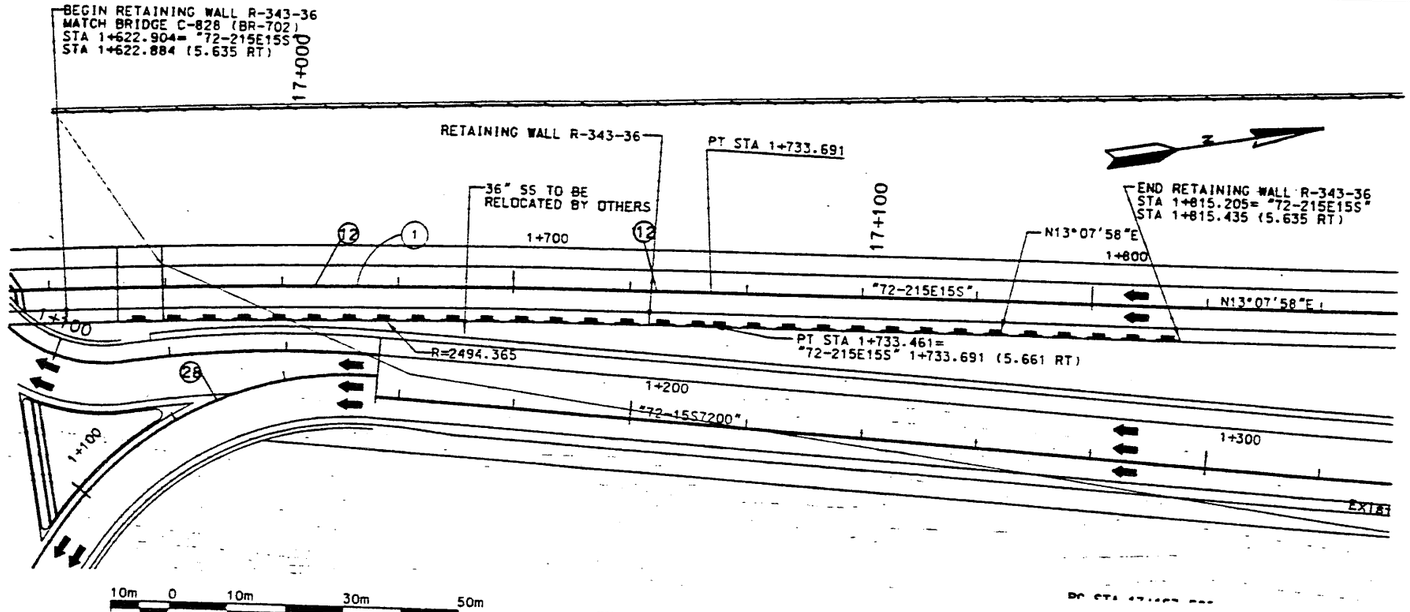
SCALE: 1.2R-343-33.13

JOB NO: 239-0007 14/14

RE-11

H:\RE_EARTH\APROJECT\239-0007\72SERIES\72-33\SUBMTL-2\SPECIALS

FINAL PLOT 11-13-97



CURVE NO.	△	R	L	T
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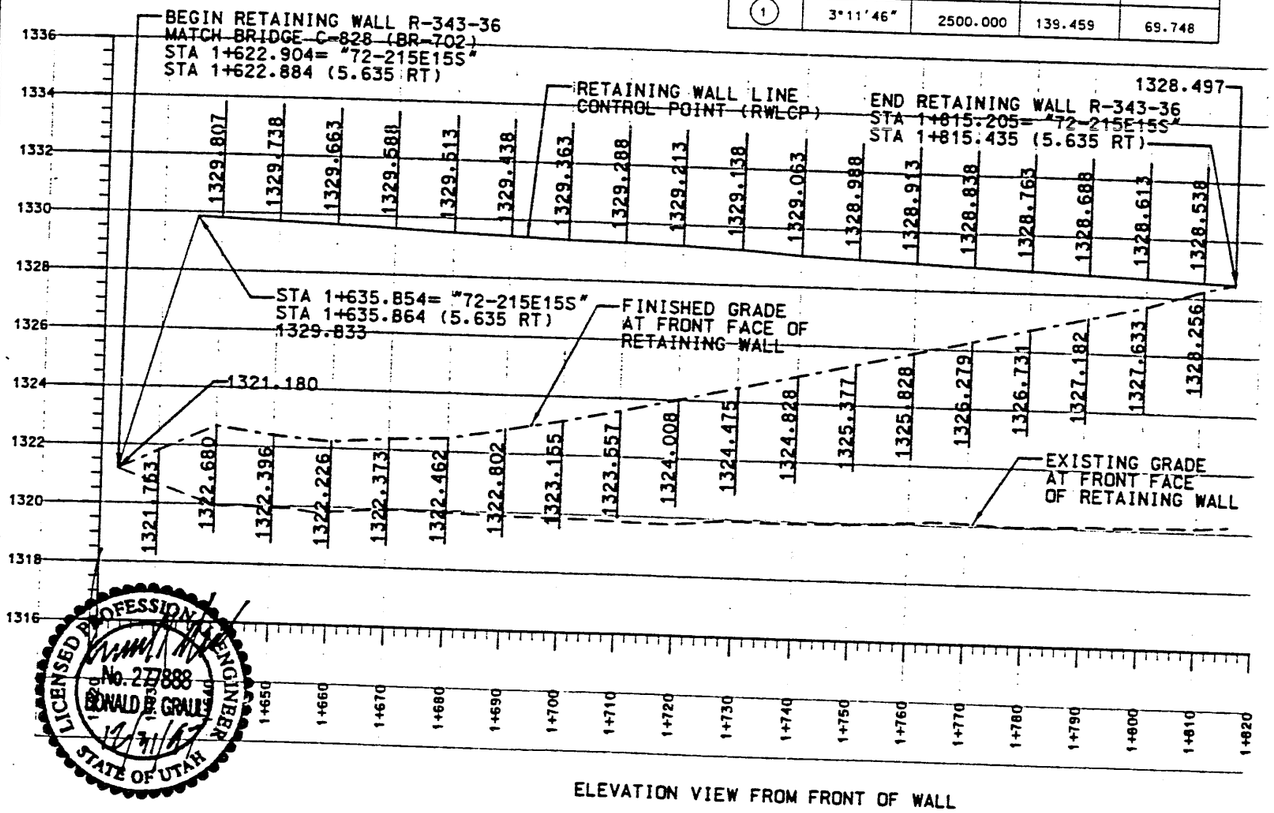


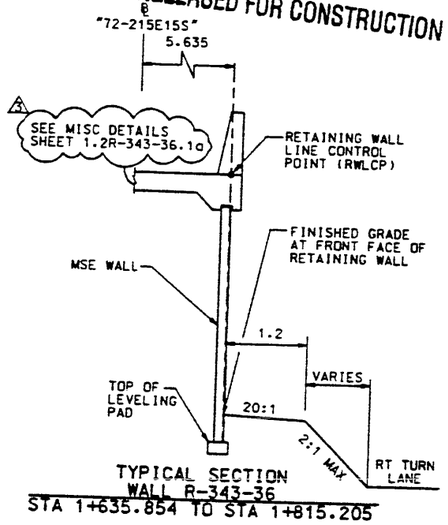
ELEVATION VIEW FROM FRONT OF WALL

LICENSED PROFESSIONAL ENGINEER
No. 277888
RONALD L. GRAULL
STATE OF UTAH

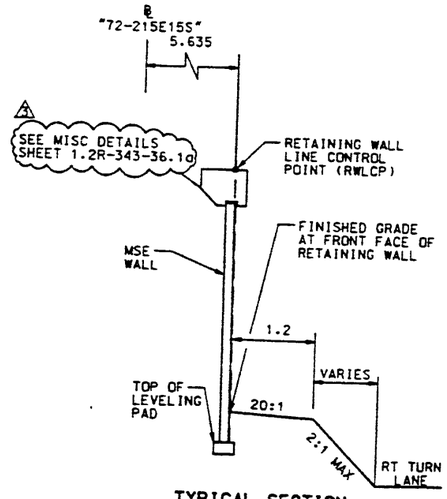
WASATCH CONSTRUCTORS

JAN 02 1998

RELEASED FOR CONSTRUCTION



TYPICAL SECTION
WALL R-343-36
STA 1+635.854 TO STA 1+815.205



TYPICAL SECTION
WALL R-343-36
STA 1+622.904 TO STA 1+635.854

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	9-12-97	INITIAL RELEASE
2	11-26-97	WALL/BRIDGE INTERFACE REVISION
3	12-31-97	RELEASED FOR CDP / MOMENT SLAB

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN LR 11/96 | CHECK JHM 8/97
DRAWN DRB 11/97 | CHECK JHM 8/97
QUANT. | CHECK

APPROVAL RECOMM. 8/97 DATE — DON GRAUL PROJECT DESIGN ENGINEER
APPROVED 8/97 DATE — RICK CHAPMAN PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
RET WALL R-343-36
SECTION 1.2

PROJECT NUMBER 1212310
IM-SP-15-7(113)1296

SALT LAKE COUNTY

DWG. NO.
1.2R-343-36.1

SHT. 1 OF 16

REF.

Date: 30-DEC-1997 Time: 13:47 User name: stoltr
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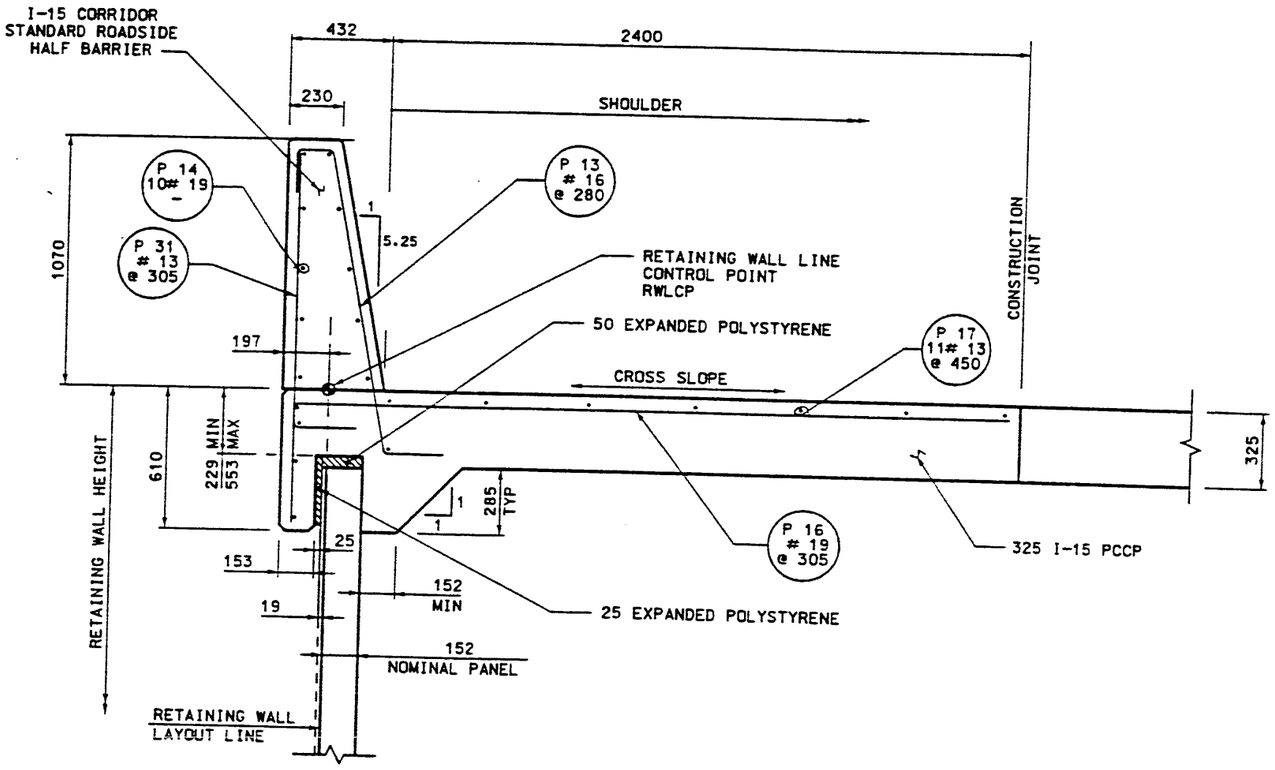
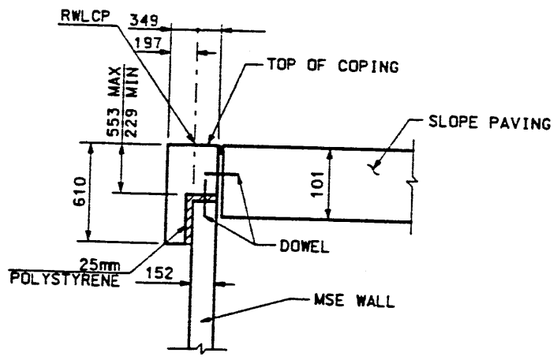


MSE SINGLE STAGE WITH BARRIER ON MOMENT SLAB

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	130, 230, 1290, 270
P14	OUTSIDE LONGITUDINAL	19	VARIES	
P15	OUTSIDE	13	VARIES	
P16	OUTSIDE BARRIER ON MSE WALL	19	3240	2730, 510
P17	OUTSIDE BARRIER ON MSE WALL	13	VARIES	
P18	OUTSIDE BARRIER	19	2340	2130, 160, 50
P30		16	2440	2025, 270
P31		13	1370	1190, 180
P32		19	4310 MAX	3800, 510

NOTES:

1. 50mm MINIMUM COVER OVER REINFORCING.
2. USE 325 PCCP f'c=27.5 MPa (4,000 PSI) FOR MOMENT SLAB.

WASATCH CONSTRUCTORS

JAN 0 2 1998

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER No. 277888 DONALD D. GRAEL STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	12/31/97	RELEASED FOR CONSTRUCTION

UTAH DEPARTMENT OF TRANSPORTATION

SVERORUP/DE LEUW

RICK CHAPMAN — PROJECT DESIGN ENGINEER — 12/97
DON GRAEL — SECTION MANAGER — 12/97

I-15 CORRIDOR RECONSTRUCTION
MISC. DETAILS
RET. WALL R-343-36
SECTION 1.2
PROJECT NUMBER #SP-15-7(1135)296
1212310

SALT LAKE COUNTY
DWG. NO. 1.2R-343-36.1a
SHT. 2 OF 11

Date: 30-DEC-1997 Time: 10:25 User: nameofuser
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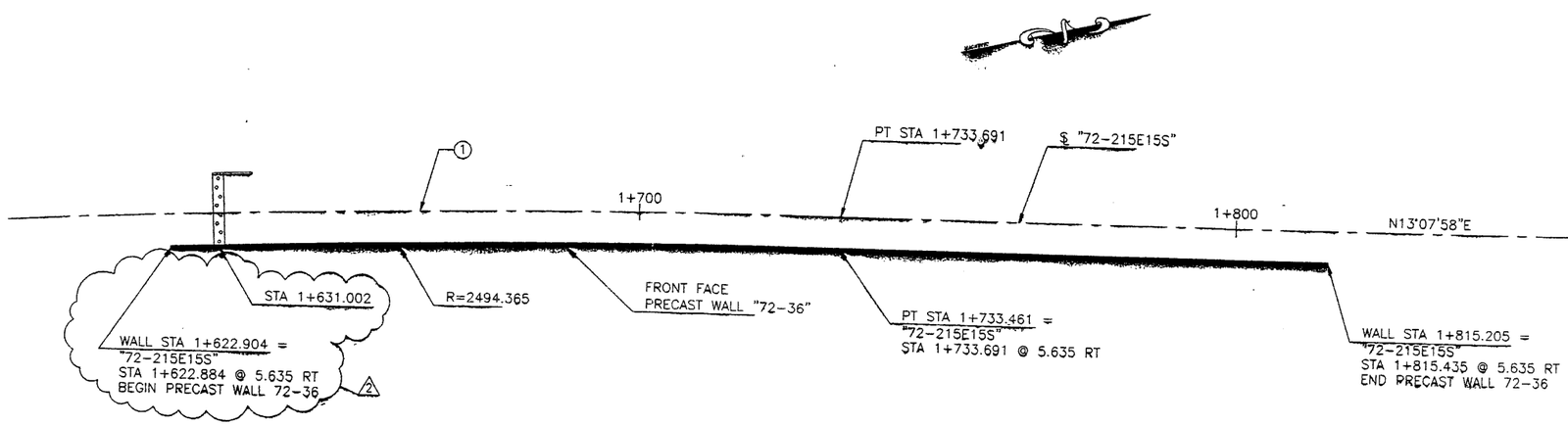
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9-15-97	RELEASE FOR CONSTRUCTION
2	11-12-97	WALL/BRG. INTERFACE REVISIONS



PLAN VIEW WALL "72-36"

SCALE: 1=400 (FULL SIZE)
SCALE: 1=800 2/3 (HALF SIZE)

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	△
1	2500.000	139.459	69.748	3°11'46"

All Dimensions Are In Meters Unless Noted Otherwise

GENERAL NOTES

1. ALL WALLS ARE SHOWN FRONT FACE. NOTE STATIONING.
2. 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 REINFORCEING MESH LOCATION.
   IF NO CONNECTORS ARE SHOWN, FOUR (4) CONNECTOR PANELS SHALL BE USED:
3. 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: 4W20-24 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 24" CENTERS.
   EXAMPLE: 5W11-12 MESH HAS FIVE (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 12" CENTERS.
   EXAMPLE: 5W11-24 MESH HAS FIVE (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 24" CENTERS.
   EXAMPLE: 6W11-24 MESH HAS SIX (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 24" CENTERS.
   IF NO MESH IS SHOWN, 4W11-12 MESH SHALL BE USED.
4. SEE RETAINED EARTH INSTALLATION MANUAL FOR PROPER WALL ERECTION PROCEDURES AND GUIDELINES.
5. CONSTRUCTION PROCEDURES SHALL PREVENT BACKFILL SATURATION AND PONDING.
6. 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.
7. CARE SHALL BE TAKEN TO PREVENT DAMAGE TO GALVANIZING. DAMAGED GALVANIZING SHALL BE COATED WITH ZINC RICH PAINT.
8. 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.
9. VSL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,170.
10. 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 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 "72-36", NOTES & DESIGN CRITERIA
RE-2	TYPICAL DETAILS
RE-3	TYPICAL DETAILS
RE-4	TYPICAL CROSS SECTION
RE-5	ELEVATION PRECAST WALL "72-36"
RE-6	ELEVATION PRECAST WALL "72-36"
RE-7	ELEVATION PRECAST WALL "72-36"
RE-8	ELEVATION PRECAST WALL "72-36"

WASATCH CONSTRUCTORS
DEC 02 1997
RELEASED FOR CONSTRUCTION

METRIC

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REGISTERED PROFESSIONAL ENGINEER
No. 341286
JOHN A. NICHOLSON, JR.
11/25/97
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK.

DES. 09-08-97 MM.
DRN. 09-08-97 DGB
CHK. 09-08-97 MM.

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-4869

VSL

ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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RETAINED EARTH™ WALLS
PLAN VIEW PRECAST WALL "72-36"

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

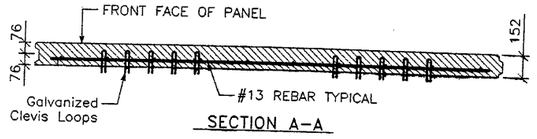
SCALE: 1.2R-343-36.2

JOB NO: 239-0007 3/11

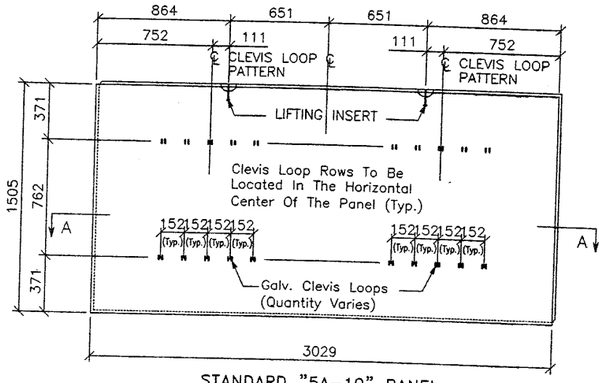
RE-1

E:\APROJECT\239-0007\72SERIES\72-36\RE-1

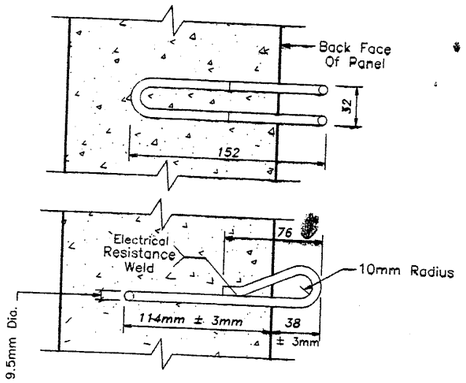
FINAL PLOT 11-12-97



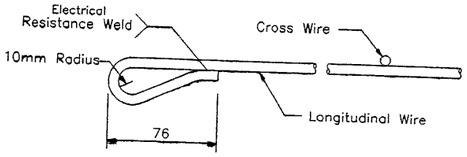
SECTION A-A



STANDARD "5A-10" PANEL
Back Face View



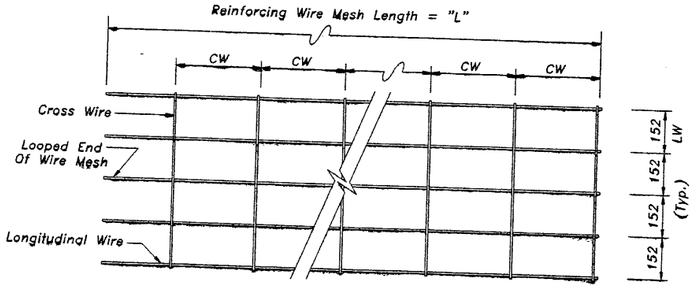
CLEVIS LOOP DETAIL
N.T.S.



WIRE MESH LOOP DETAIL
N.T.S.

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9/15/97	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
SEP 17 1997
RELEASED FOR CONSTRUCTION

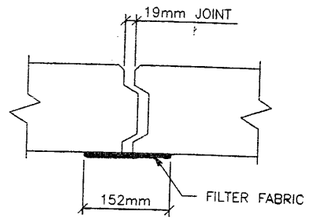


WIRE MESH DESIGNATION 5W11 + W11 x 1.0 (5W11-12)

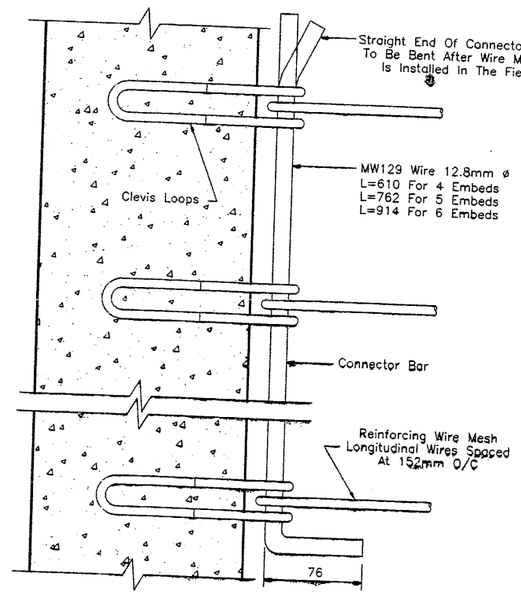
No. Of Longitudinal Wires
Size Of Longitudinal Wires (LS)
Size Of Cross Wires (CS)
Spacing (Ft.) Of Cross Wires (CW)
SHEET WIDTH
SHEET LENGTH

NOTE: FOR EXAMPLE ABOVE,
EQUIVALENT WIRE MESH DESIGNATION =6 X 12-W11XW11-24"X "L"
(LW) (CW)(LS) (CS)

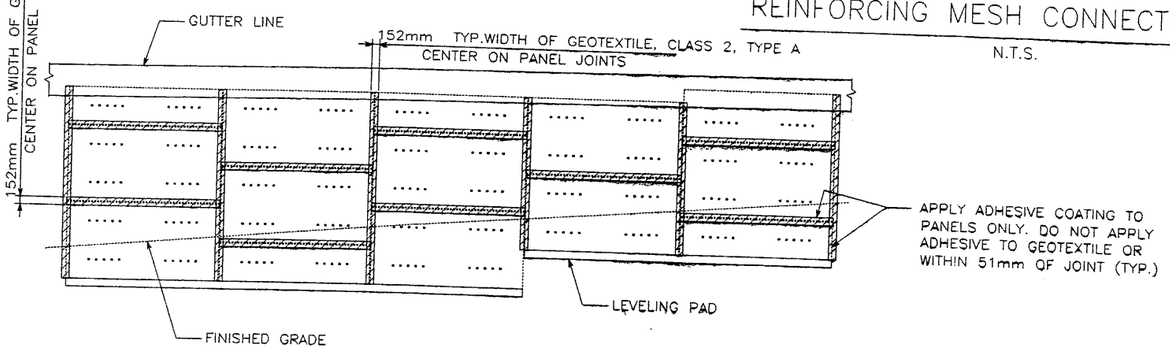
NOTE : W11 (71 sq mm) And W20 (129 sq mm) Steel Wire Material And Welding Of Cross Wires And Loops Shall Conform To ASTM A82 And ASTM 185, Fy = 448 MPa. Mesh Shall Be Galvanized To ASTM A-123 To A Minimum Effective Thickness Of 0.086 mm.



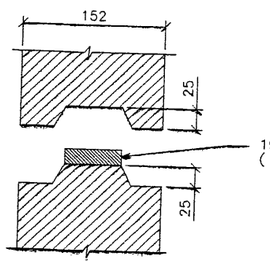
HORIZONTAL JOINT DETAIL
N.T.S.



REINFORCING MESH CONNECTION DETAIL
N.T.S.



PARTIAL WALL ELEVATION



PANEL JOINT DETAIL
N.T.S.

METRIC

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LICENSED PROFESSIONAL ENGINEER
No. 244956
JOHN A. NICHOLSON, JR.
9/15/97
STATE OF UTAH

REVISION	NO.	DATE	BY	CHK

	DES.	DRN.	CHK.
MM	09-08-97	09-08-97	09-08-97
DDO			
MM			

RETAINED EARTH™

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

ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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RETAINED EARTH™ WALLS
PRECAST WALL "~~33-00~~" 2935-36 (72-34)
TYPICAL DETAILS

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

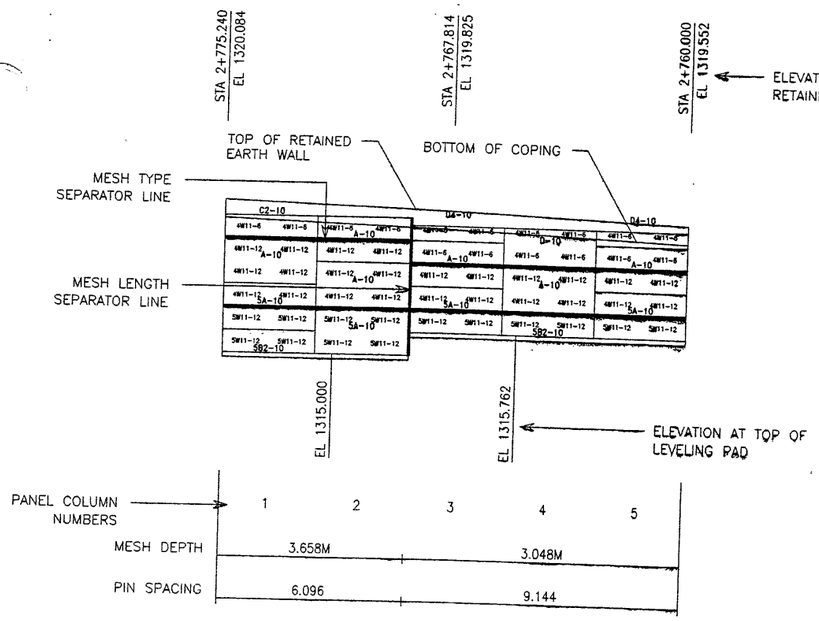
DWG. NO.
1.2R-343-36.3

JOB NO:
239-0007 4/11

SHT. NO.
RE-2

E:\APROJECT\239-0007\33SERIES\33-09\RE-2

FINAL PLOT 09-08-97



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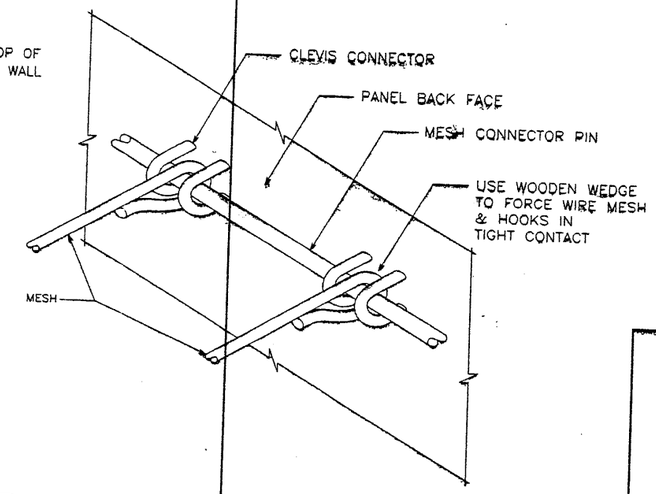

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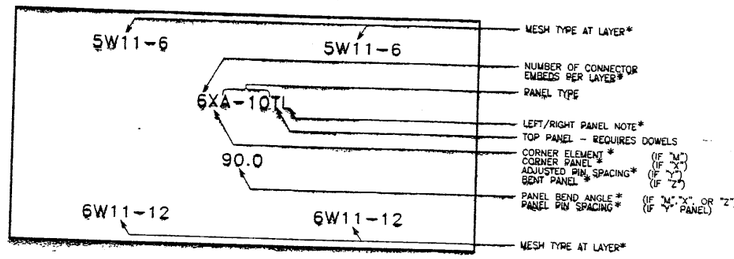
VSL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,170.



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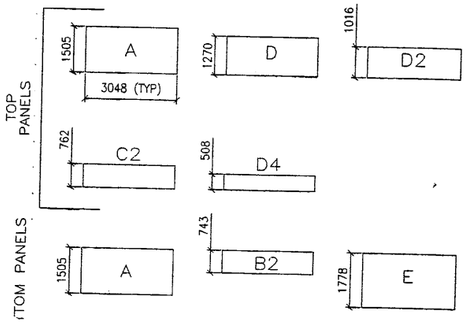
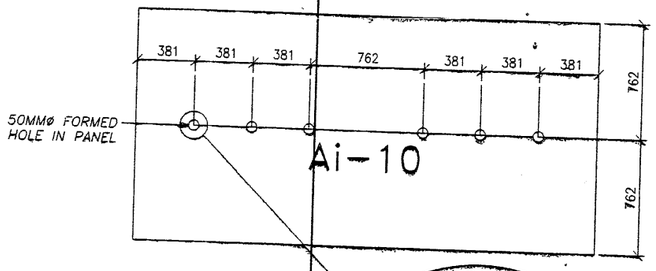
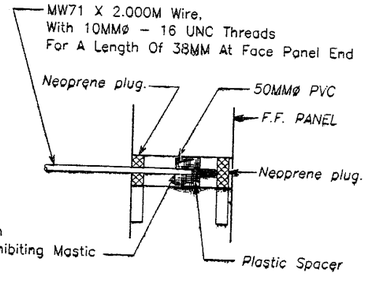
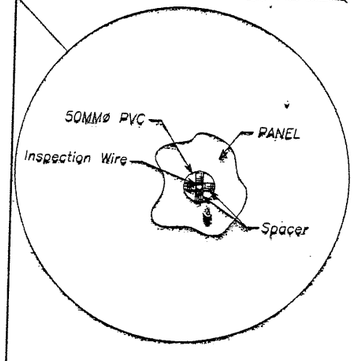


4

ALL DIMENSIONS ARE IN MILLIMETERS







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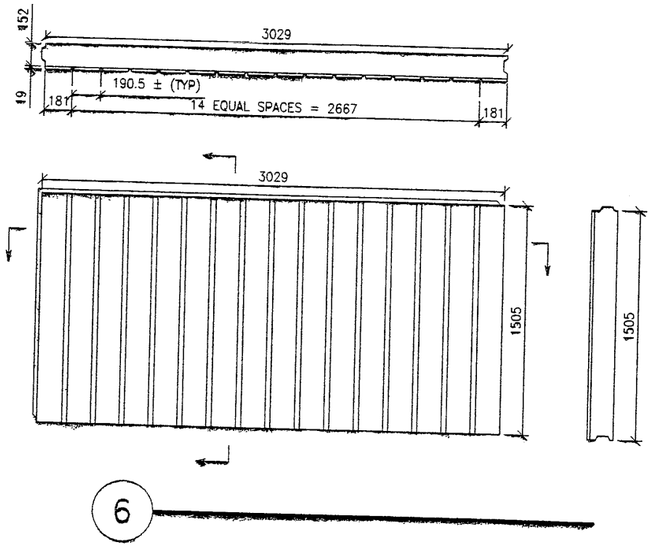

6

METRIC

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LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
11/15/97
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	9/15/97	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
SEP 17 1997
RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. 09-08-97 MM
DRN. 09-08-97 DGB
CHK. 09-08-97 MM

RETAINED EARTH™

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Fax: (919) 781-4969

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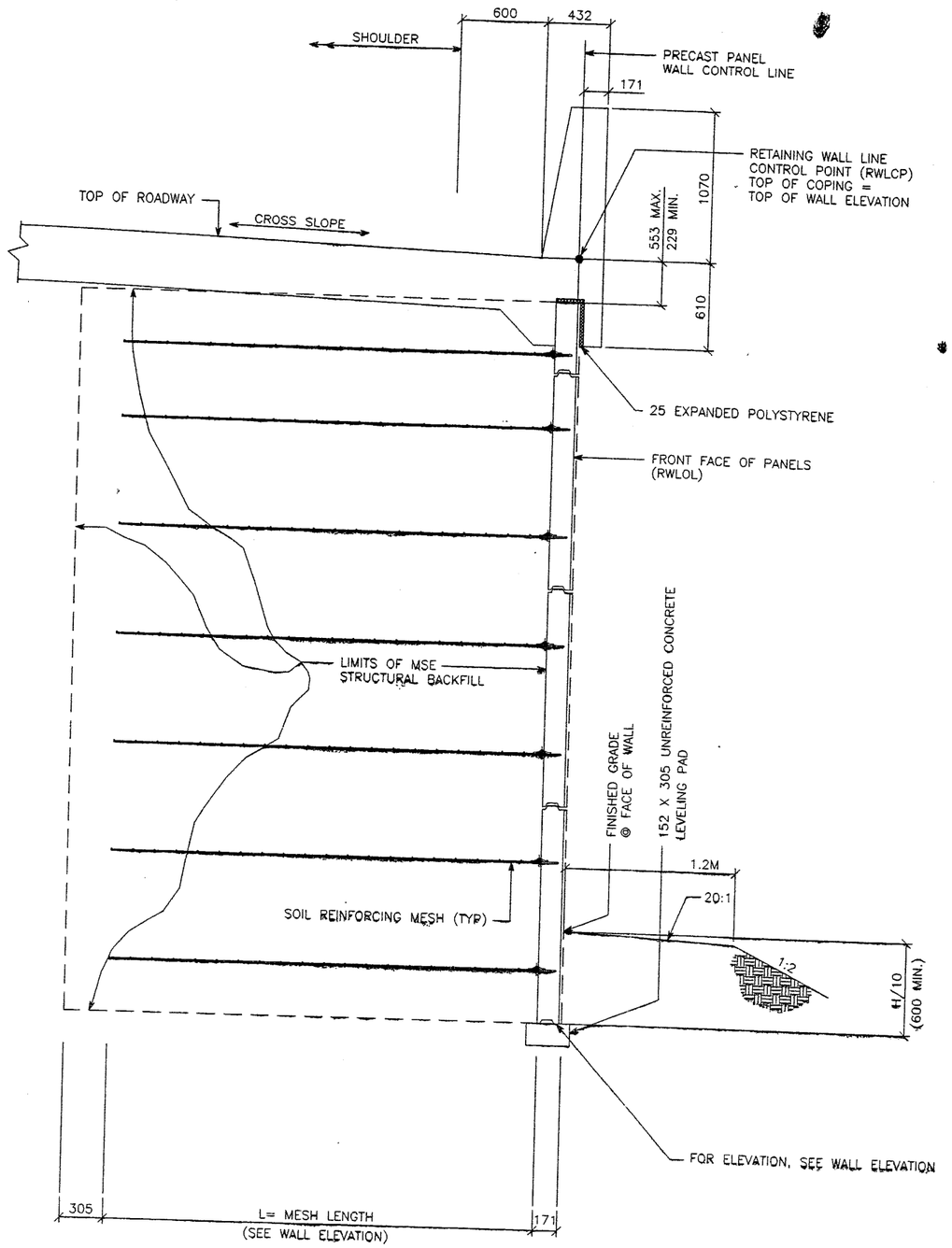
RETAINED EARTH™ WALLS
PRECAST WALL "72-36"
TYPICAL DETAILS

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

DWG. NO. 1.2R-343-36.4
JOB NO: 239-0007
SHT. NO. RE-3
5/11

E:\APROJECT\239-0007\72SERIES\72-36\RE-3

FINAL PLOT 09-08-97



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

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9/15/97	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
SEP 17 1997
RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. 09-08-97 MM
DRN. 09-08-97 DCB
CHK. 09-08-97 MM

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RETAINED EARTH™ WALLS
WIRE FACED WALL "72-36"
TYPICAL CROSS SECTION

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

METRIC

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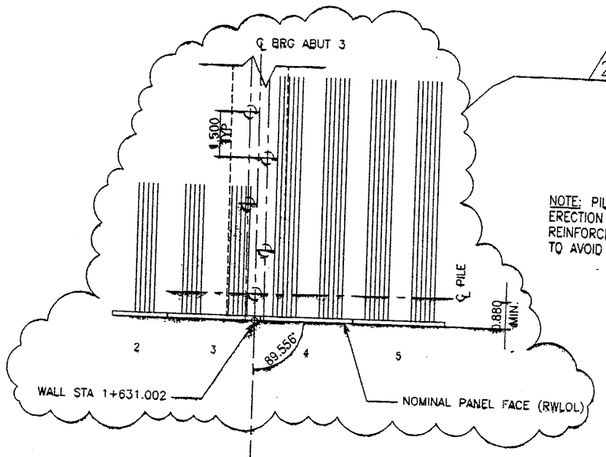
REGISTERED PROFESSIONAL ENGINEER
No. 144736
JOHN A. NICHOLSON, JR.
9/15/97
STATE OF UTAH

DWG. NO.
1.2R-343-36.5
JOB NO:
239-0007 6/11
SHT. NO.
RE-4

E:\APROJECT\239-0007\72SERIES\72-36\RE-4
FINAL PLOT 09-08-97



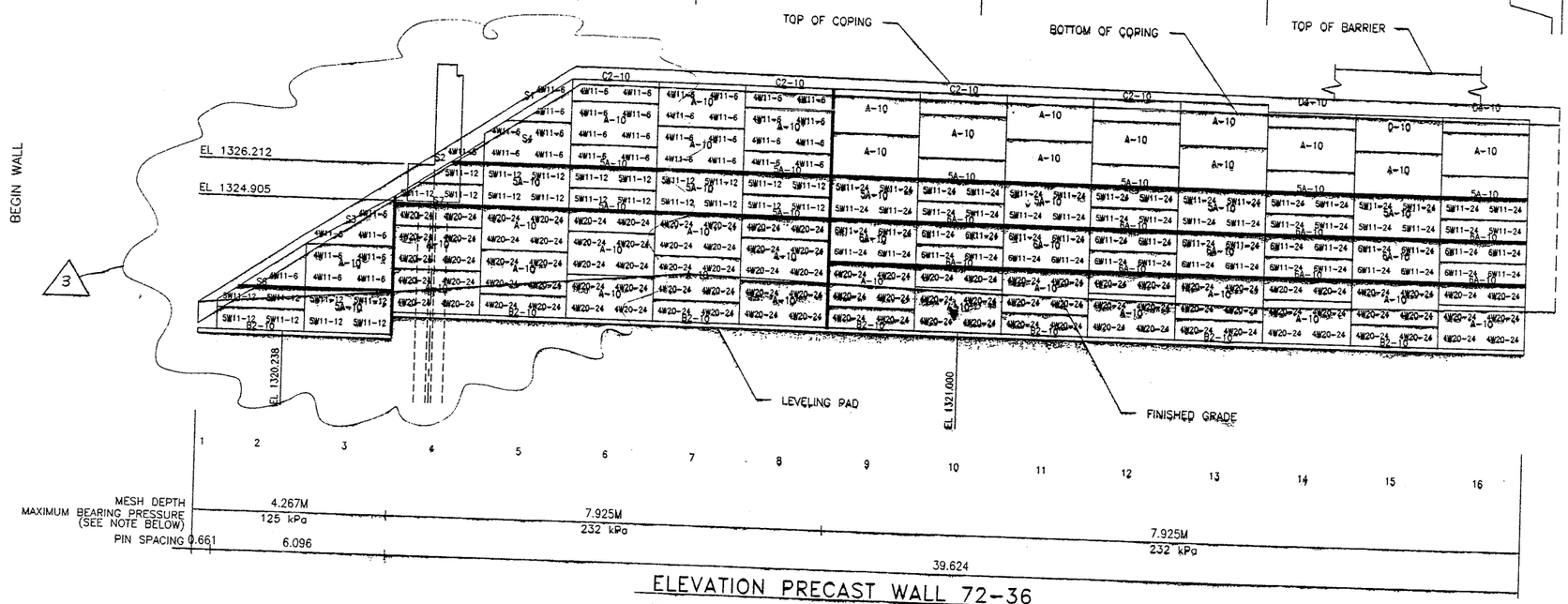
NOTE: PILES TO BE LOCATED PRIOR TO ERECTION OF MSE WALL. SOIL REINFORCEMENT TO BE FIELD ADJUSTED TO AVOID PILES.

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

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9-15-97	RELEASE FOR CONSTRUCTION
2	11-12-97	WALL/BRG INTERFACE REVISIONS
3	1-6-98	WALL LENGTH & SPECIAL PANELS CHANGE

WASATCH CONSTRUCTORS
JAN 12 1998
RELEASED FOR CONSTRUCTION

WALL STA 1+622.904 =
"72-215E15S"
STA 1+622.884 @ 5.635 RT
BEGIN PRECAST WALL 72-36



ELEVATION PRECAST WALL 72-36
(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 1032.43 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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METRIC

REGISTERED PROFESSIONAL ENGINEER
No. 241796
JOHN A. NICHOLSON
11/12/97
STATE OF UTAH

	BY	CHK
REVISION		
DATE		
NO.		
DES.	MM	09-08-97
DRN.	DGB	08-28-97
CHK.	MM	09-08-97

RETAINED EARTH™

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

ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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RETAINED EARTH™ WALLS
PRECAST WALL "72-36"

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

SCALE: 1.2R-343-36.6

JOB NO: 239-0007 7/11

RE-5

FINAL PLOT 01-06-98
H:\RE_EARTH\APROJECT\239-0007\1997\72SERIES\72-36\SUBMTL-3\W72-36

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9/15/97	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
SEP 17 1997
RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. 09-08-97 MM
DRN. 08-28-97 DGB
CHK. 09-08-97 MM

RETAINED EARTH™

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2840 Plaza Place, Suite 200
Raleigh, NC 27612
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Fax: (919) 781-4969

ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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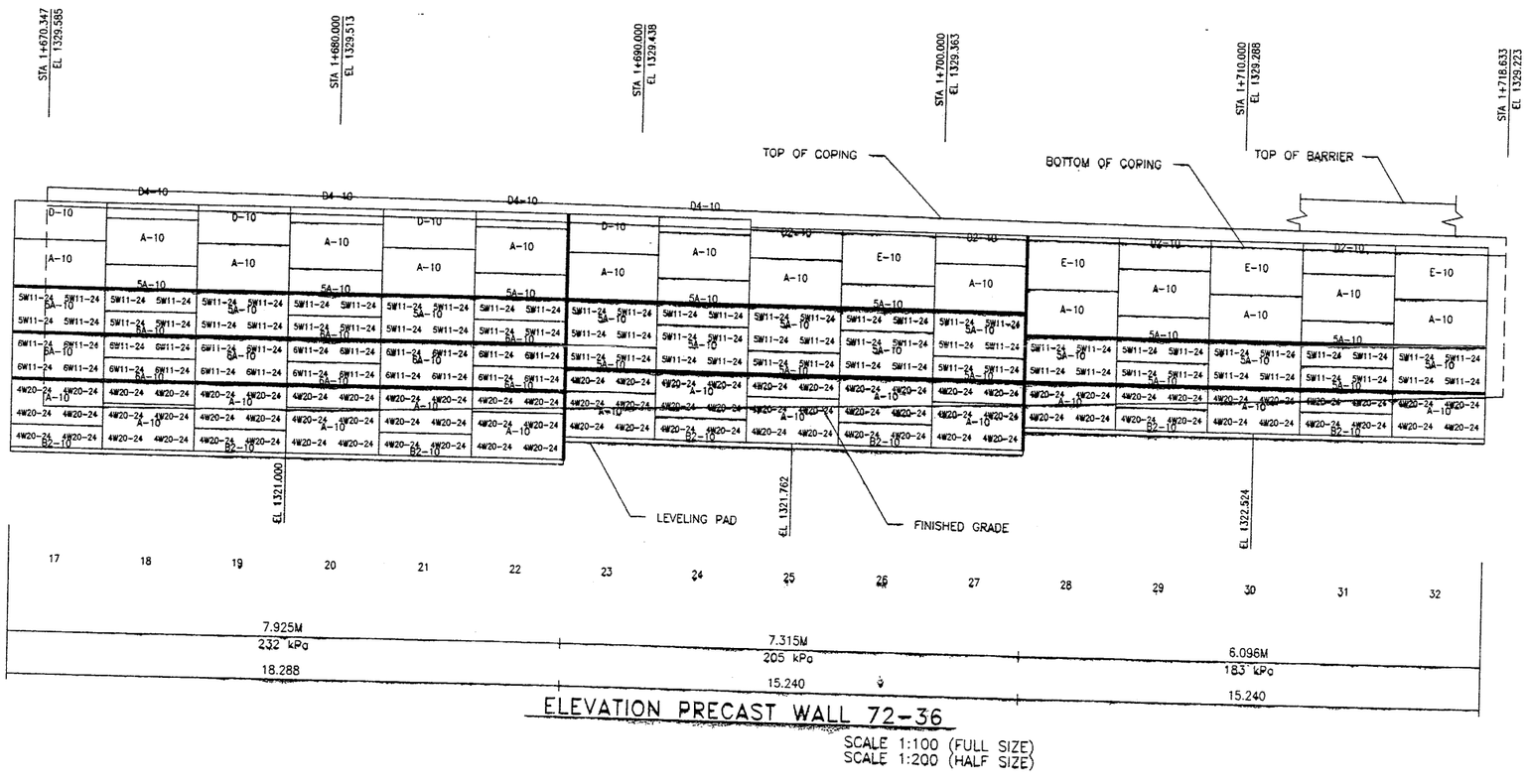

ELEVATION PRECAST WALL 72-36

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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REGISTERED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
9/15/97
STATE OF UTAH

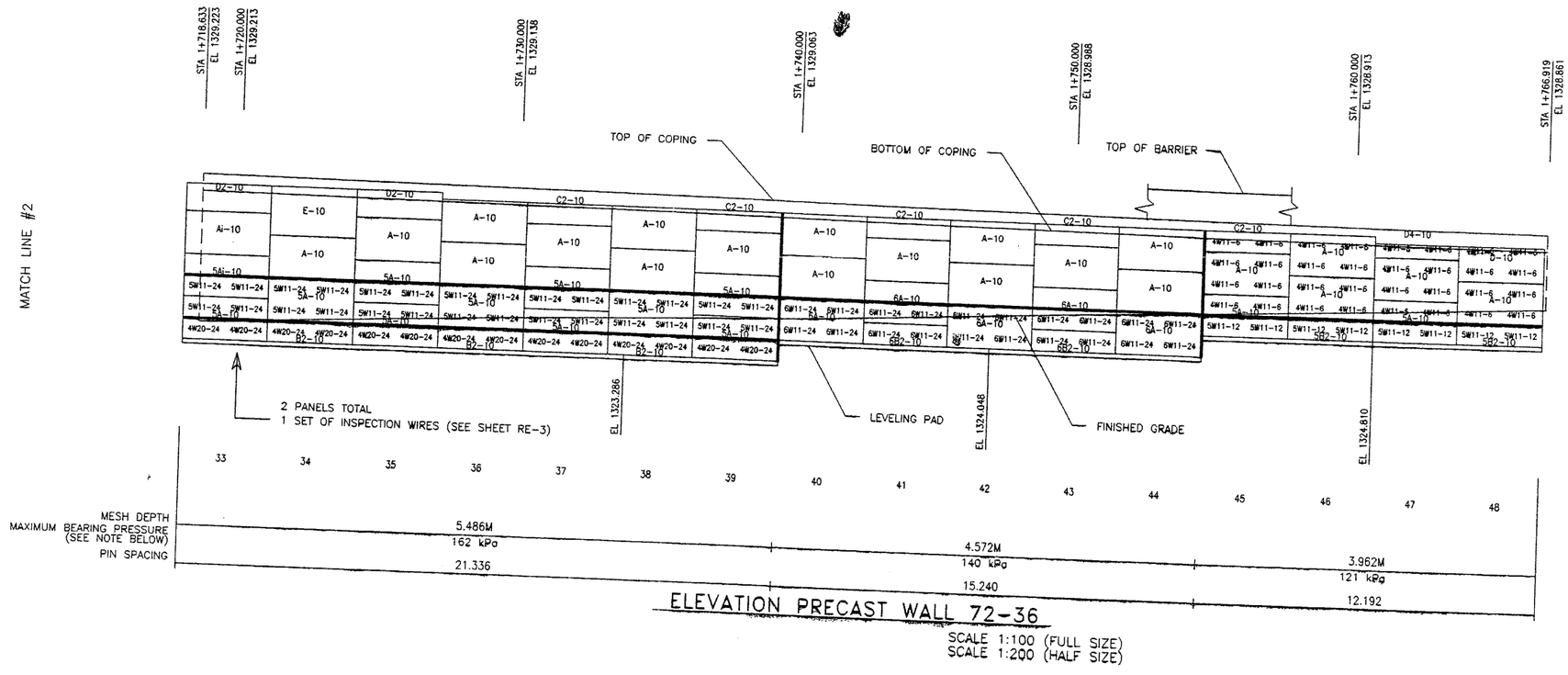
RETAINED EARTH™ WALLS
PRECAST WALL "72-36"
I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO. 1.2R-343-36.7
JOB NO: 239-0007 8/11
SHT. NO. RE-6

FINAL PLOT 09-08-97

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9/15/97	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
SEP 17 1997
RELEASED FOR CONSTRUCTION



ELEVATION PRECAST WALL 72-36

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. 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.

LICENSED PROFESSIONAL ENGINEER
No. 341786
JOHN A. NICHOLSON, JR.
9/15/97
STATE OF UTAH

				NO.	DATE
DES.	09-08-97	MM			
DRN.	08-28-97	DGB			
CHK.	09-08-97	MM			

RETAINED EARTH™

REVISION BY CHK

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-4869

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RETAINED EARTH™ WALLS
PRECAST WALL "72-36"

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

DWG. NO.
1.2R-343-36.8

JOB NO:
239-0007

SHT. NO.
RE-7

FINAL PLOT 09-08-97

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	9/15/97	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
SEP 17 1997
RELEASED FOR CONSTRUCTION

ELEVATION PRECAST WALL 72-36

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

WALL STA 1+815.205 =
"72-215E15S"
STA 1+815.435 @ 5.635 RT
END PRECAST WALL 72-36

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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REGISTERED PROFESSIONAL ENGINEER
No. 144796
JOHN A. NICHOLSON, JR.
9/15/97
STATE OF UTAH

	BY	CHK
NO.	DATE	REVISION

DES. 09-08-97 MM
DRN. 08-28-97 DCB
CHK. 09-08-97 MM

RETAINED EARTH™

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RETAINED EARTH™ WALLS
PRECAST WALL "72-36"

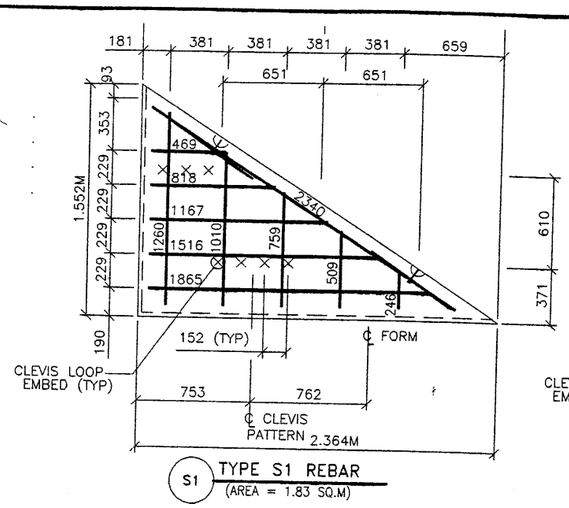
I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.
1.2R-343-36.9

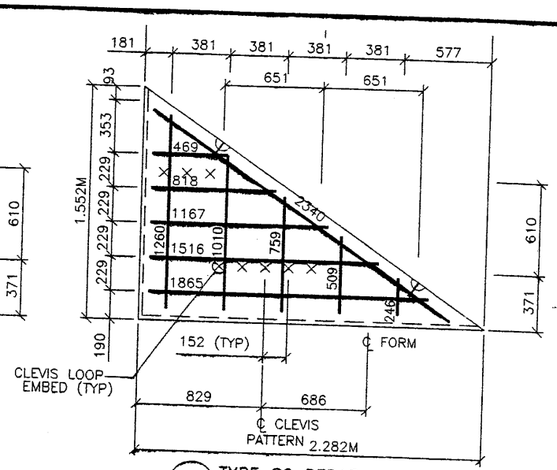
JOB NO:
239-0007 10/11

SHT. NO.
RE-8

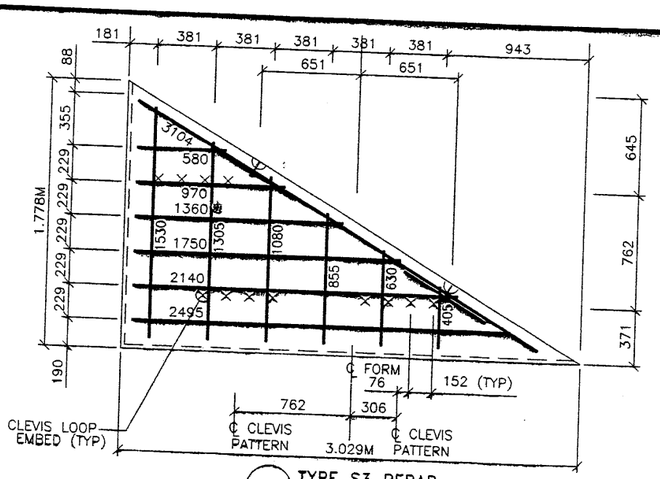
FINAL PLOT 09-08-97



S1 TYPE S1 REBAR
(AREA = 1.83 SQ.M)



S2 TYPE S2 REBAR
(AREA = 1.83 SQ.M)



S3 TYPE S3 REBAR
(AREA = 2.80 SQ.M)

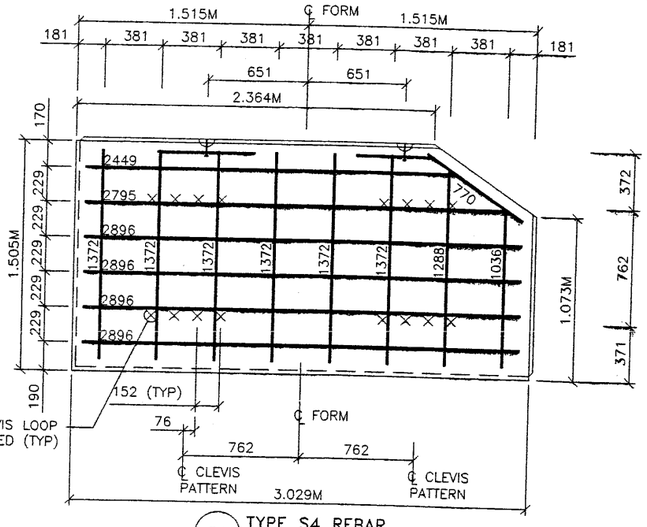
PANEL REINFORCEMENT NOTES:
1. PANELS ARE SHOWN BACK FACE.
2. HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
3. ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
4. ALL REINFORCING BARS ARE #13 METRIC. LABELS ON EACH BAR INDICATE LENGTH. EXAMPLE: 1345 IS A #13 BAR 1345 mm LONG.
5. PANEL REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT CONFORMING TO THE SPECIFICATIONS OF ASTM DESIGNATION A615, GRADE 60.
6. ALL REINFORCING STEEL TO BE GALVANIZED IN ACCORDANCE WITH ASTM 767 CLASS I.
7. CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 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
JAN 12 1998
RELEASED FOR CONSTRUCTION

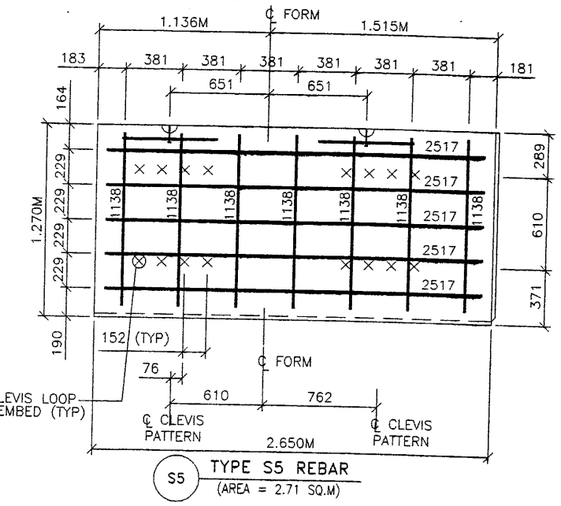
APPROVED FOR CONSTRUCTION			
NO.	DATE	DESCRIPTION	BY CHK
1	11-12-97	RELEASE FOR CONSTRUCTION	
2	1-6-98	WALL LENGTH & SPECIAL PANELS CHANGE	

NO.	DATE	REVISION
DES.	09-24-97	JN
DRN.	09-24-97	DDO
CHK.	09-24-97	JN

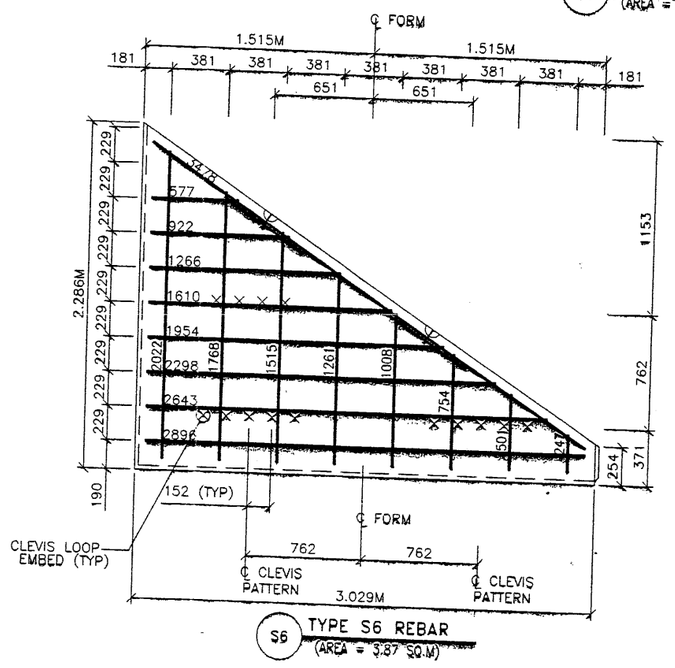
RETAINED EARTH™



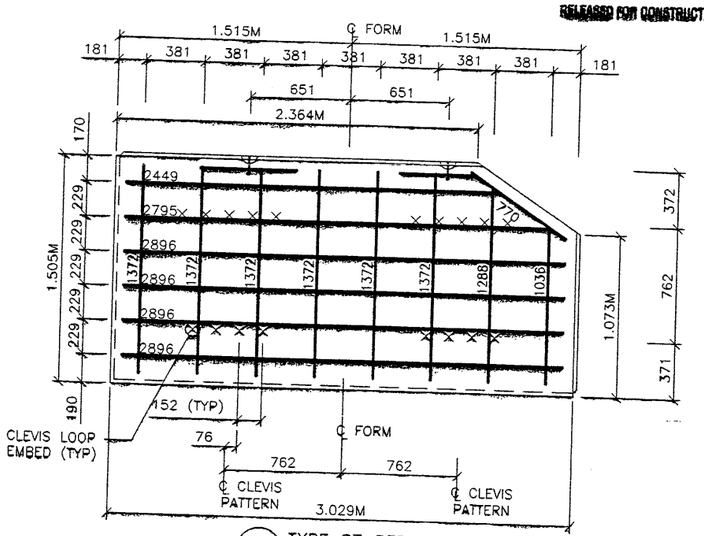
S4 TYPE S4 REBAR
(AREA = 4.45 SQ.M)



S5 TYPE S5 REBAR
(AREA = 2.71 SQ.M)



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



S7 TYPE S7 REBAR
(AREA = 4.45 SQ.M)

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.

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
STATE OF UTAH
11/18/97

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

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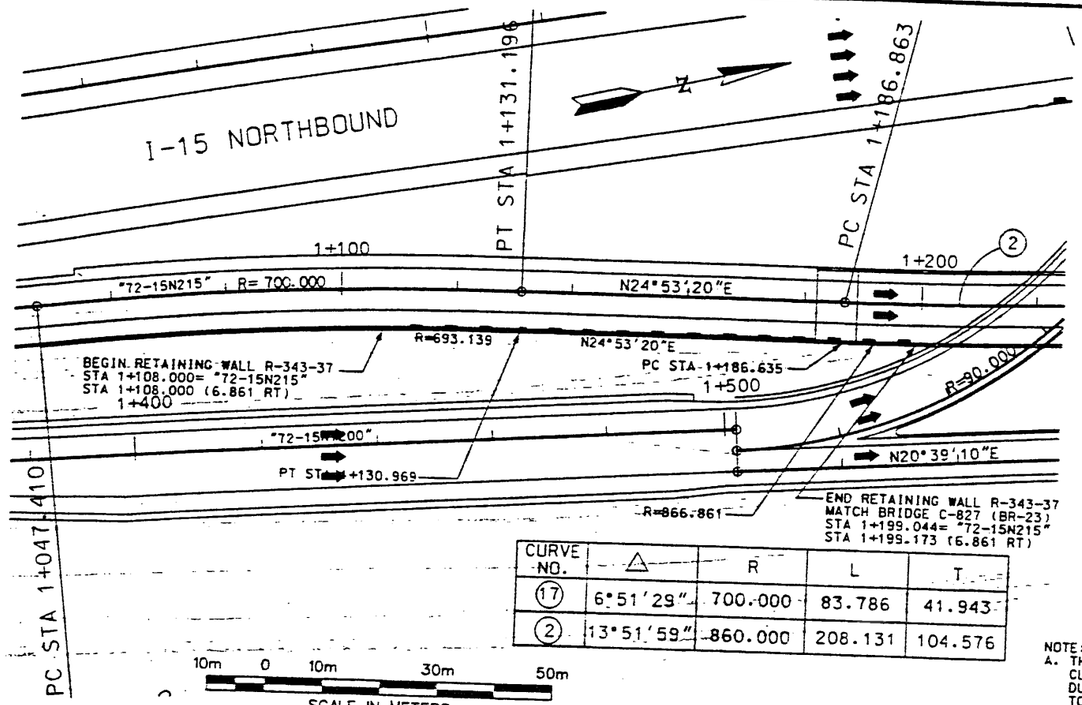
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-36"
SPECIAL PANEL REINFORCEMENT

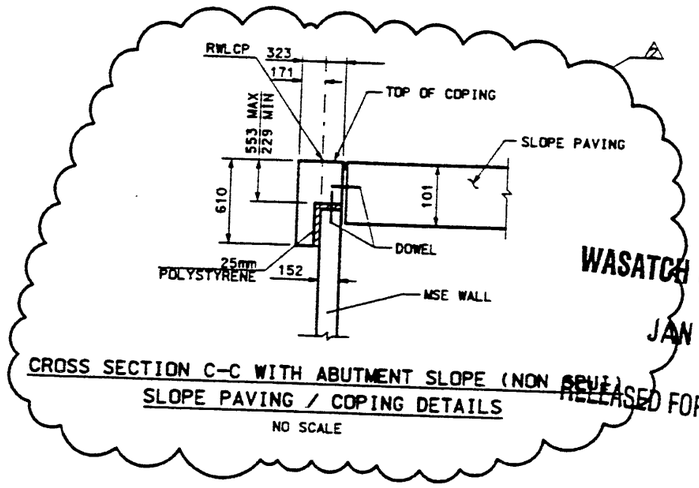
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE: 1.2R-343-36.10
JOB NO: 239-0007 11/11
RE-9

E:\APROJECT\239-0007\72SERIES\72-36\SPECIALS
FINAL PLOT 11-12-97



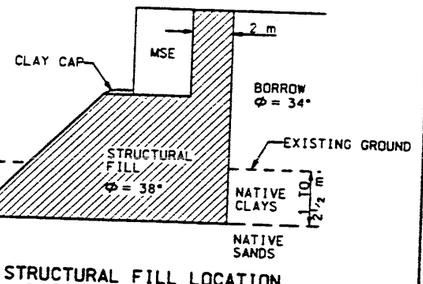
CURVE NO.	△	R	L	T
(17)	6°51'29"	700.000	83.786	41.943
(2)	13°51'59"	860.000	208.131	104.576



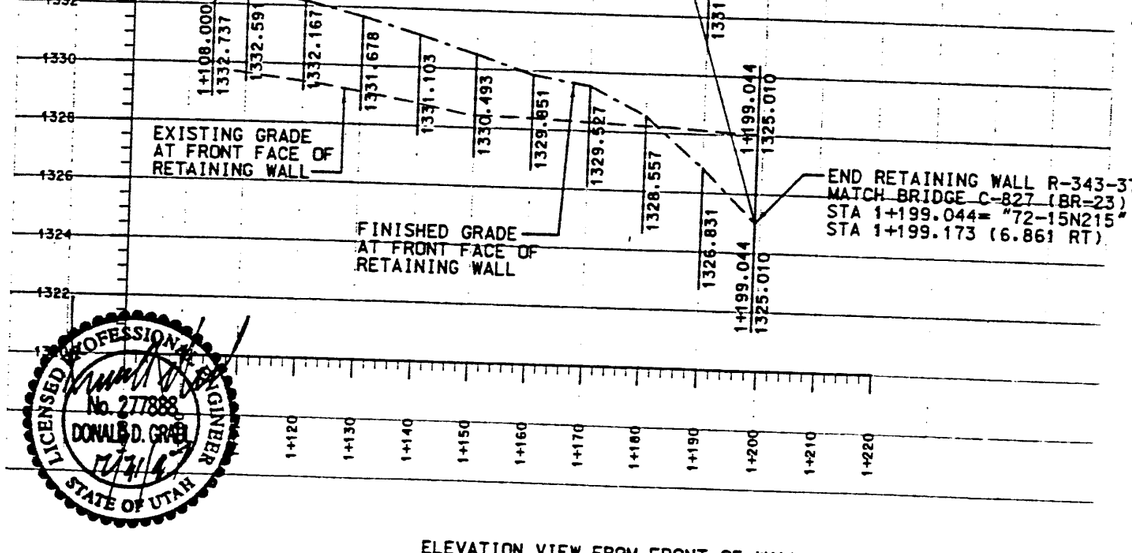
CROSS SECTION C-C WITH ABUTMENT SLOPE (NON SPUI)
SLOPE PAVING / COPING DETAILS
NO SCALE

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

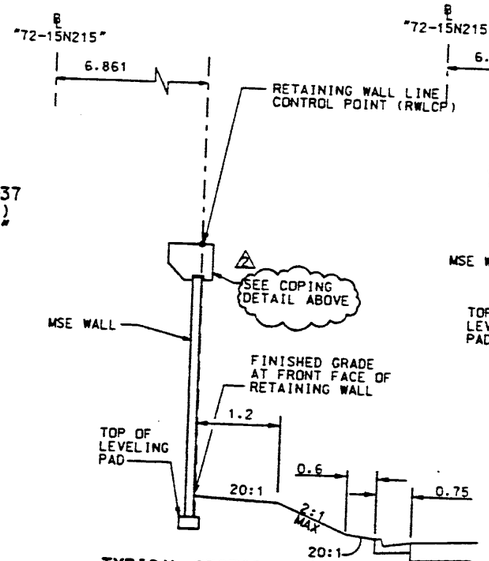
B. BASE OF OVEREXCAVATION EXTENDS TO BOTTOM OF NATIVE CLAYS. ESTIMATED TO RANGE FROM 1 TO 2 1/2 m THICK.



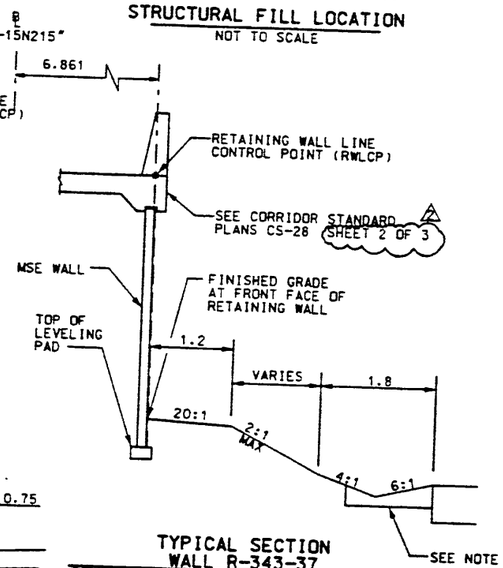
STRUCTURAL FILL LOCATION
NOT TO SCALE



ELEVATION VIEW FROM FRONT OF WALL



TYPICAL SECTION
WALL R-343-37
STA 1+184.253 TO STA 1+199.044



TYPICAL SECTION
WALL R-343-37
STA 1+108.000 TO STA 1+184.253

NOTE:
1. FOR STA 1+168.352 TO STA 1+183.993 USE CURB & GUTTER SECTION SHOWN ON ADJACENT TYPICAL SECTION

LICENSED PROFESSIONAL ENGINEER
No. 277888
DONALD D. GRAY
STATE OF UTAH

WASATCH CONSTRUCTORS
JAN 02 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	10-30-97	INITIAL RELEASE
2	12-31-97	RELEASED FOR GDP / MOMENT SLAB

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN	JM	10/97	CHECK
DRAWN	JM	10/97	CHECK
QUANT.			CHECK

RICK CHAPMAN — PROJECT DESIGN ENGINEER — 10/97 DATE
DON GRAY — PROJECT MANAGER — 10/97 DATE
APPROVAL RECOM.
APPROVED

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
RET WALL R-343-37
SECTION 1.2

PROJECT NUMBER MSP-15-7(135)296
1212310

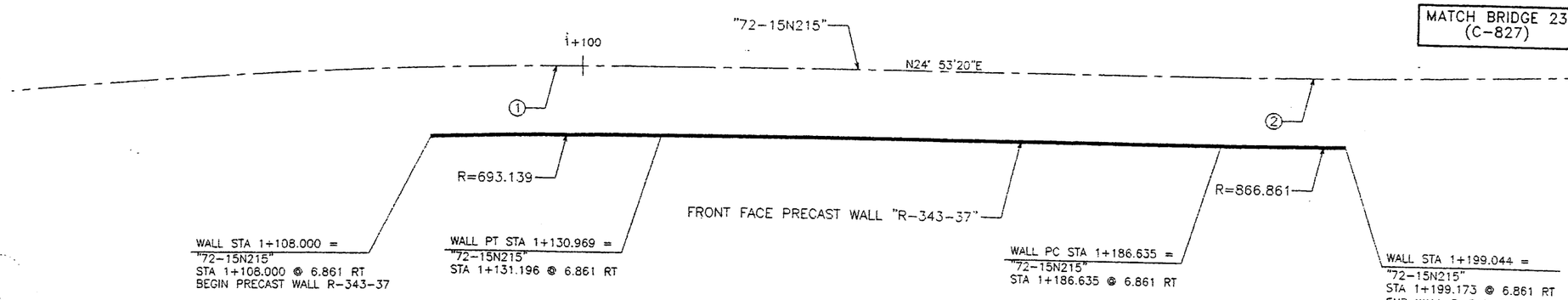
SALT LAKE COUNTY
DWG. NO. 1.2R-343-37.1
SHT. 1 OF 8
REF.

File:noname.dgn \\fs_todd\12_97\sheet_files\ydlas\72pp42.dgn
Date: 30-DEC-1997 Time: 13:40 User:noname.stotler

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

WASATCH CONSTRUCTORS
NOV 03 1997
RELEASED FOR CONSTRUCTION

MATCH BRIDGE 23
(C-827)



PLAN VIEW WALL "R-343-37"

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

RETAINED EARTH INDEX	
RE-1	PLAN PRECAST FACE WALL R-343-37, NOTES & DESIGN CRITERIA
RE-2	TYPICAL DETAILS
RE-3	TYPICAL DETAILS
RE-4	TYPICAL CROSS SECTIONS
RE-5	ELEVATION PRECAST WALL "R-343-37"
RE-6	SPECIAL PANEL DETAILS
RE-7	SPECIAL PANEL DETAILS

GENERAL NOTES

1. ALL WALLS ARE SHOWN FRONT FACE. NOTE STATIONING.
2. 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 REINFORCEING MESH LOCATION.
   IF NO CONNECTORS ARE SHOWN, FOUR (4) CONNECTOR PANELS SHALL BE USED.
3. SOIL REINFORCING MESH TYPE IS DESIGNATED ON EACH PANEL. MESH LABELS INDICATE WIRE SIZE AND SPACING. LONGITUDINAL WIRE AND CROSSBAR SIZES ARE THE SAME UNLESS NOTED OTHERWISE:
   EXAMPLE: 4W11-6 MESH HAS FOUR (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 6" CENTERS.
   EXAMPLE: 5W11-6 MESH HAS FIVE (5) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 6" CENTERS.
   EXAMPLE: 5W11-12 MESH HAS FIVE (5) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 12" CENTERS.
   EXAMPLE: 5W15-18 MESH HAS FIVE (5) W15 LONGITUDINAL WIRES WITH W15 CROSSBARS AT 18" CENTERS.
4. SEE RETAINED EARTH INSTALLATION MANUAL FOR PROPER WALL ERECTION PROCEDURES AND GUIDELINES.
5. CONSTRUCTION PROCEDURES SHALL PREVENT BACKFILL SATURATION AND PONDING.
6. 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.
7. CARE SHALL BE TAKEN TO PREVENT DAMAGE TO GALVANIZING. DAMAGED GALVANIZING SHALL BE COATED WITH ZINC RICH PAINT.
8. 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.
9. VSL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,170.
10. ALL PANELS SHALL HAVE AN ARCHITECTURAL FINISH, SEE SHEET RE-3 FOR DETAIL.

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	△
①	700.000	83.786	41.943	6°51'29"
②	860.000	208.131	104.576	13°51'59"

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

METRIC

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REGISTERED PROFESSIONAL ENGINEER
No. 341296
JOHN A. NICHOLSON JR.
10/27/97
STATE OF UTAH

					CHK
					BY
				REVISION	
				DATE	
				NO.	
DES.	09-26-97	MM	RETAINED EARTH™		
DRN	09-26-97	LOP			
CHK.	09-26-97	MM			

VSL CORPORATION
3840 Plaza Place, Suite 200
Raleigh, NC 27612
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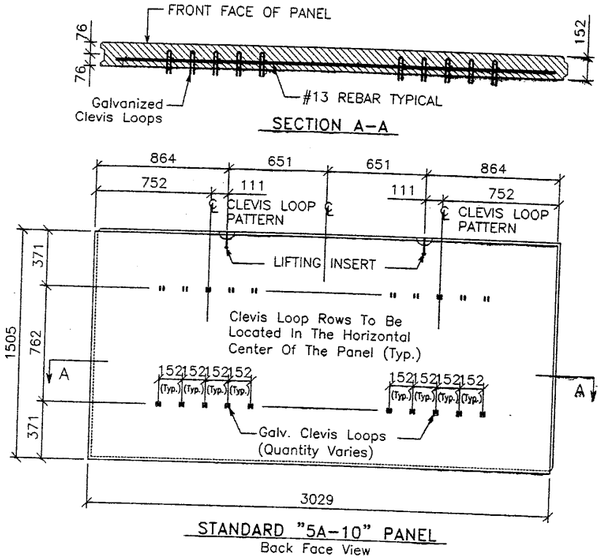
RETAINED EARTH™ WALLS
PLAN VIEW PRECAST WALL "R-343-37"

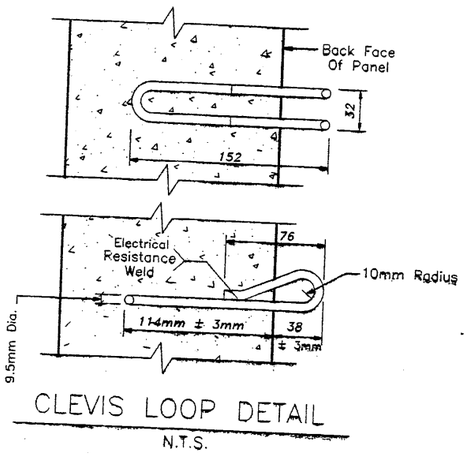
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE: 1.2R-343-37.2
JOB NO: 239-0007 2/8
RE-1

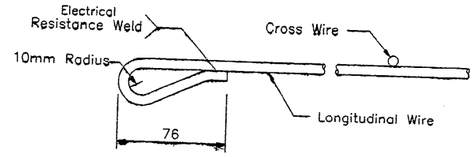
FINAL PLOT 10-21-97
E:\APROJECT\239-0007\72SERIES\72-37\RE-1



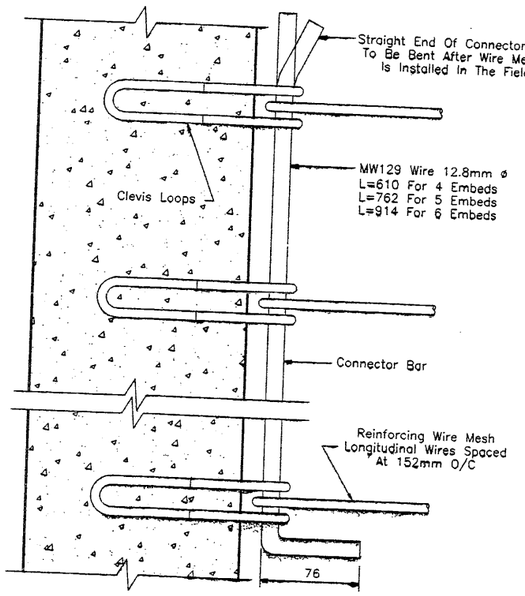
STANDARD "5A-10" PANEL
Back Face View



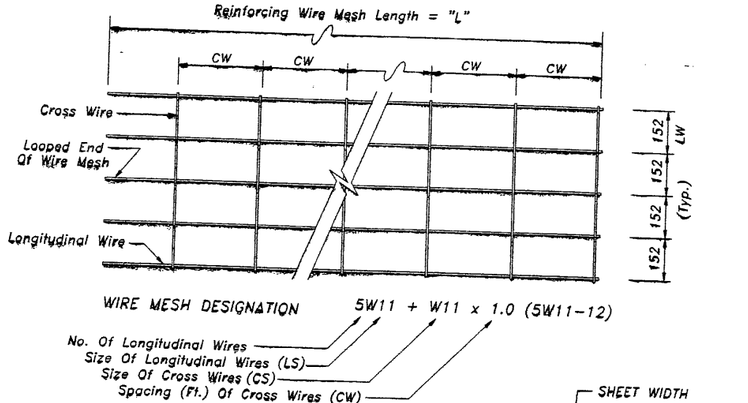
CLEVIS LOOP DETAIL
N.T.S.



WIRE MESH LOOP DETAIL
N.T.S.



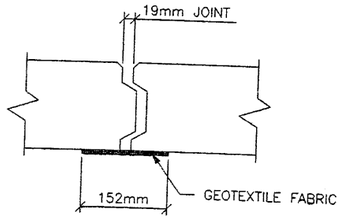
REINFORCING MESH CONNECTION DETAIL
N.T.S.



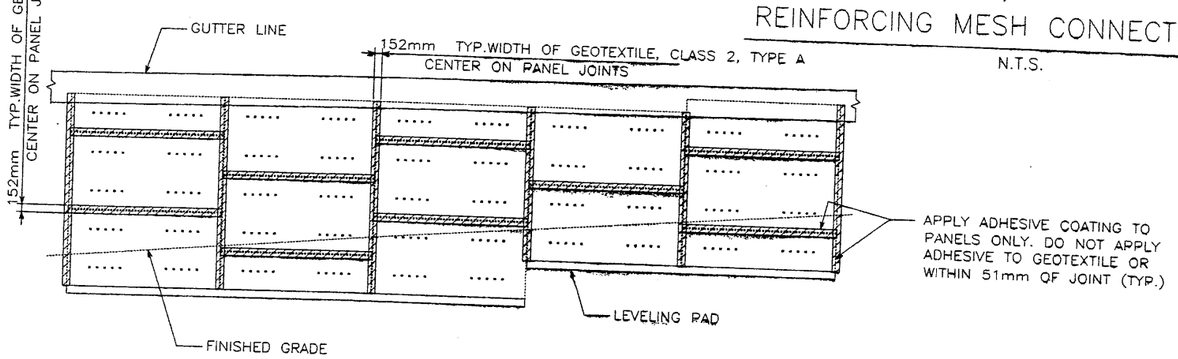
NOTE: FOR EXAMPLE ABOVE,
EQUIVALENT WIRE MESH DESIGNATION =6 X 12-W11XW11-24"X "L"
(LW) (CW)(LS) (CS)

REINFORCING MESH DETAIL

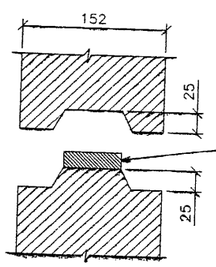
NOTE : W11 (71 sq mm) And W20 (129 sq mm) Steel Wire Material And Welding Of Cross Wires And Loops Shall Conform To ASTM A82 And ASTM 185. Fy = 448 MPa. Mesh Shall Be Galvanized To ASTM A-123 To A Minimum Effective Thickness Of 0.086 mm.



JOINT DETAIL
N.T.S.



PARTIAL WALL ELEVATION



HORZ. JOINT DETAIL
N.T.S.

METRIC

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APPROVED FOR CONSTRUCTION

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

WASATCH CONSTRUCTORS
NOV 03 1997
RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK
	-			

DES. MM 09-26-97
DRN. LOP 09-26-97
CHK. MM 09-26-97

RETAINED EARTH™

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

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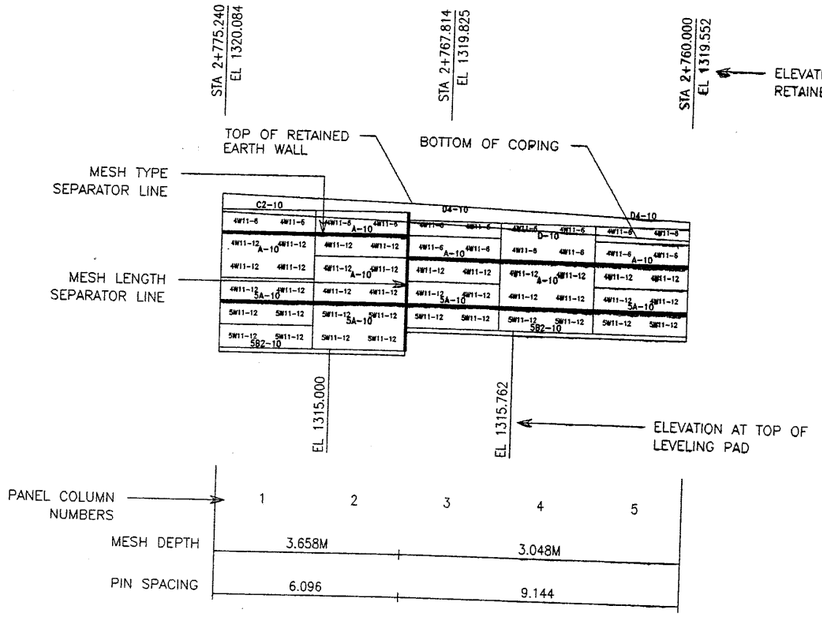
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-37"
TYPICAL DETAILS

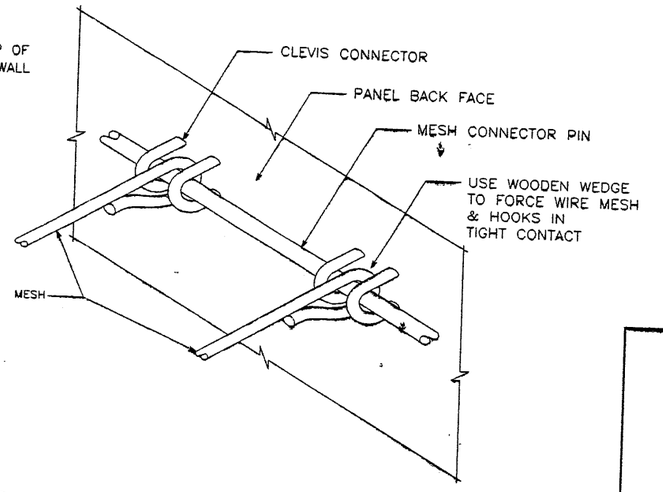
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE: 1.2R-343-37.3
JOB NO: 239-0007
3/8
RE-2

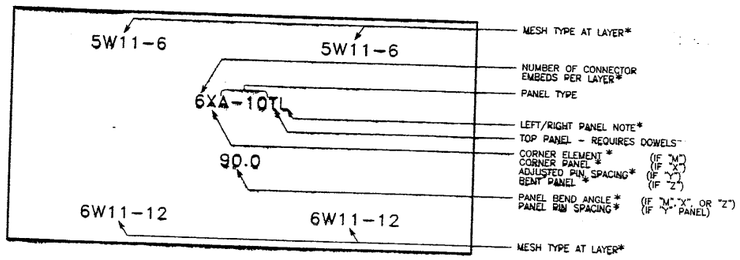
10-21-97
FINAL P
E:\APROJECT\239-0007\72SERIES\72-37\P



1 WALL ELEVATION KEY
(FRONT FACE SHOWN)

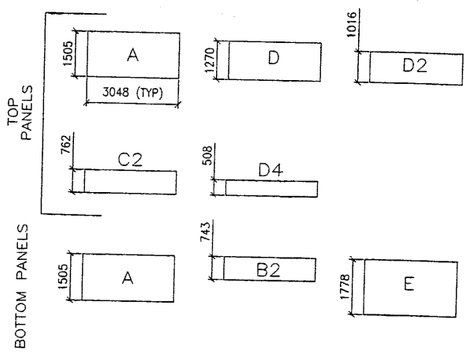


2 MESH CLEVIS CONNECTOR
VSL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,170.

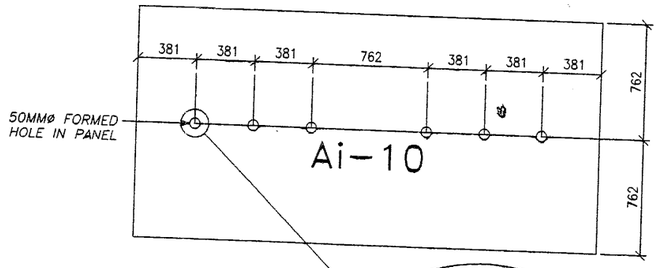


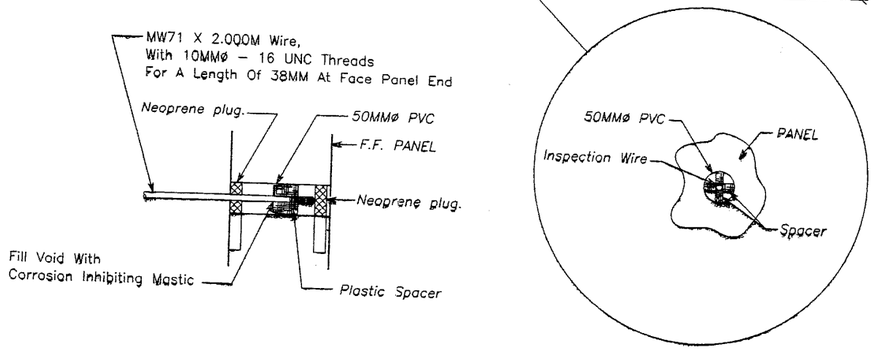
* NO LABEL INDICATES STANDARD TYPE

3 PANEL LABELS

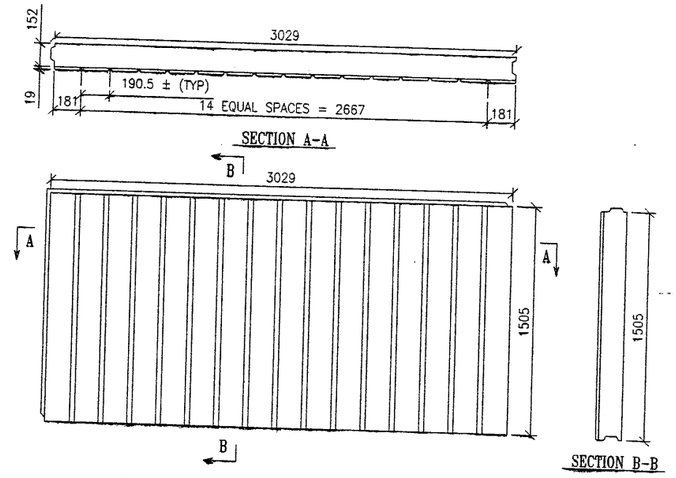


4 PANEL TYPES
ALL DIMENSIONS ARE IN MILLIMETERS





5 INSPECTION WIRE DETAIL
(PANEL FRONT FACE SHOWN)



6 ARCHITECTURAL PANEL FINISH
(PANEL FRONT FACE SHOWN)

METRIC

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

WASATCH CONSTRUCTORS
NOV 03 1997
RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. MM 09-26-97
DRN. LOP 09-26-97
CHK. MM 09-26-97

RETAINED EARTH™

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

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

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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-37"
TYPICAL DETAILS

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

SCALE:
1.2R-343-37.4

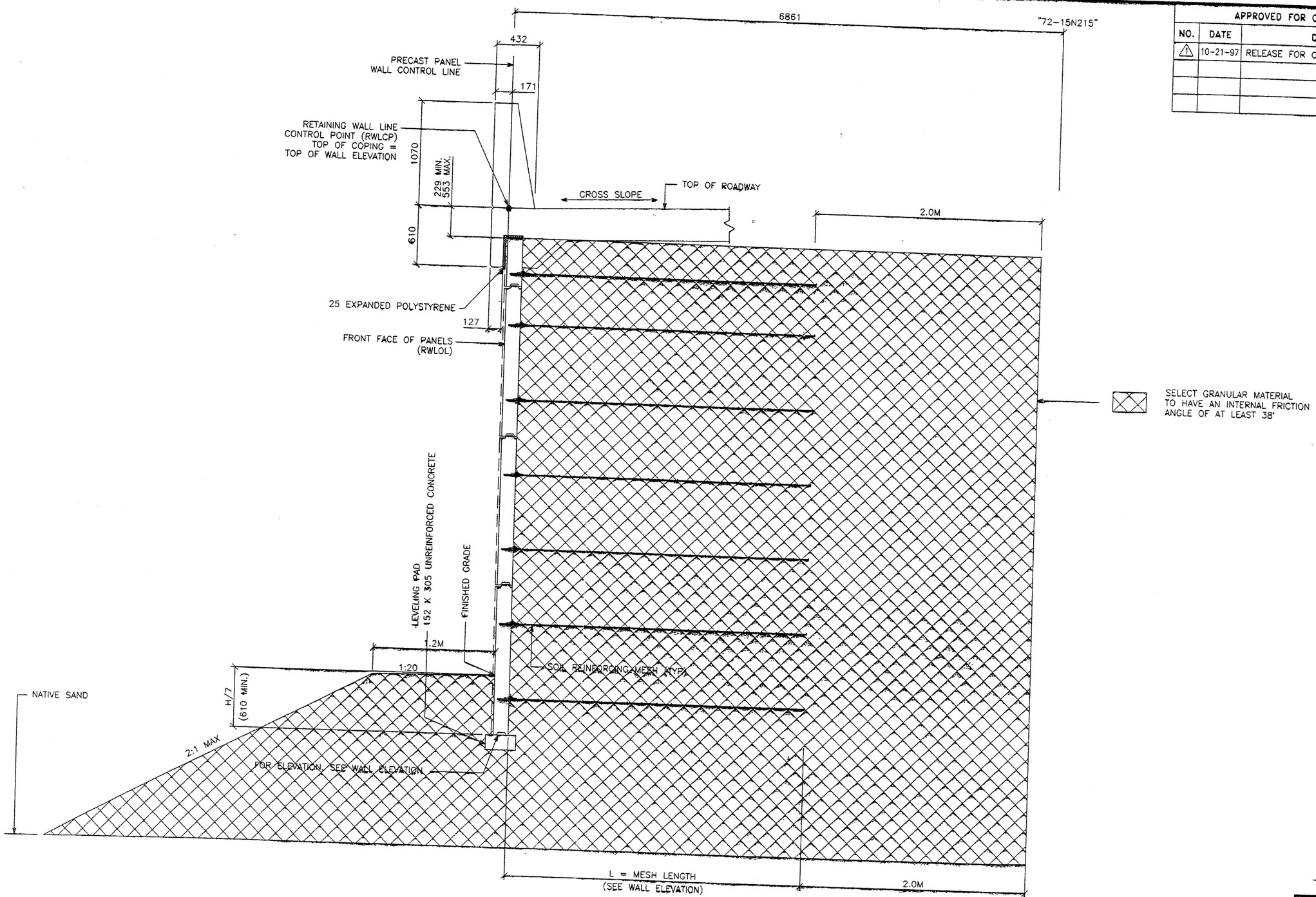
JOB NO:
239-0007 4/8

RE-3

LICENSED PROFESSIONAL ENGINEER
No. 241795
JOHN A. NICHOLSON, JR.
10/23/97
STATE OF UTAH

E:\APROJECT\239-0007\72SERIES\72-37\RE-3

FINAL PLOT 10-21-97



TYPICAL CROSS SECTION
(MSE SINGLE STAGE WITH MOMENT SLAB)

(SEE DWG 1.2R-343-37.1 FOR ADDITIONAL INFORMATION)

SCALE: 1:20 (FULL SIZE)

SCALE: 1:40 (HALF SIZE)

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METRIC

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

WASATCH CONSTRUCTORS
NOV 03 1997
RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES.	09-26-97	MM
DRN.	09-26-97	LOP
CHK.	09-26-97	MM

RETAINED EARTH™

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

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

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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-37"
TYPICAL CROSS SECTION

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

SCALE: 1.2R-343-37.5

JOB NO: 239-0007 5/8

RE-4

LICENSED PROFESSIONAL ENGINEER
No. 341786
JOHN A. NICHOLSON, JR.
10/23/97
STATE OF UTAH

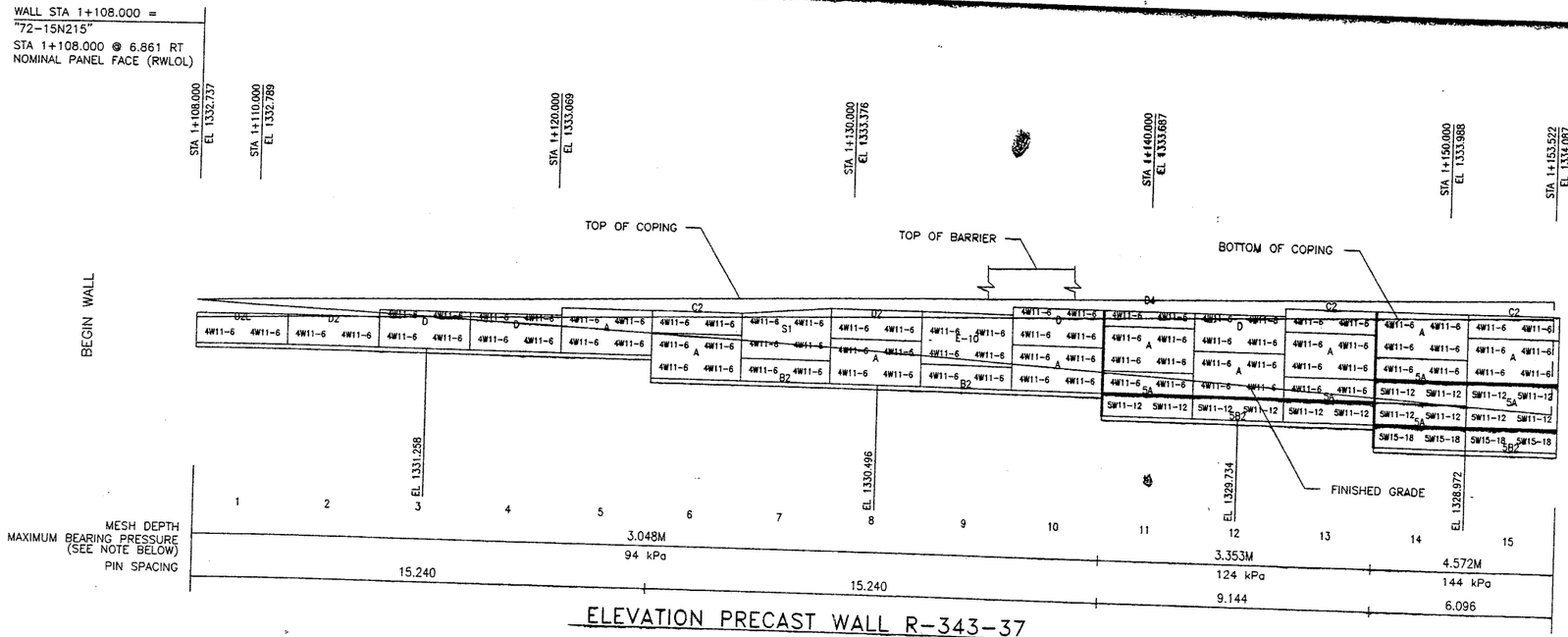
FINAL PI 10-21-97

E:\APROJECT\239-0007\72SERIES\72-37\RF

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

WASATCH CONSTRUCTORS
NOV 03 1997
RELEASED FOR CONSTRUCTION

WALL STA 1+108.000 =
"72-15N215"
STA 1+108.000 @ 6.861 RT
NOMINAL PANEL FACE (RWLOL)

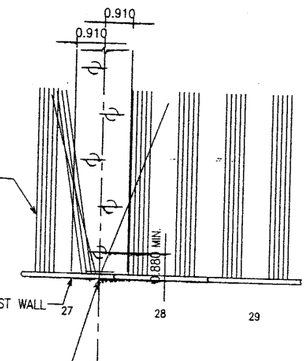


ELEVATION PRECAST WALL R-343-37

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 374.20 SM)

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

MATCH LINE #1

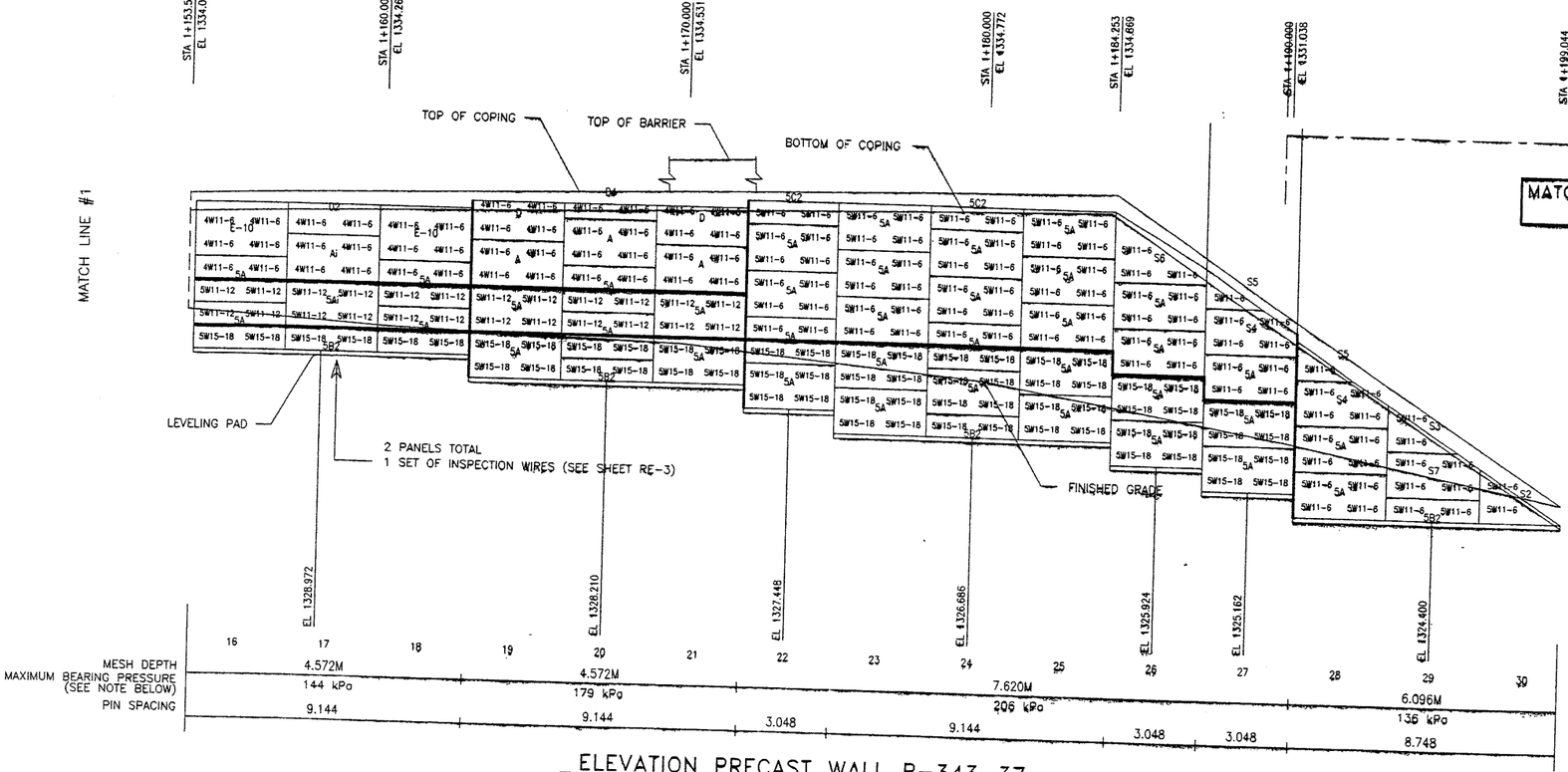


WALL STA 1+199.044 =
"72-15N215"
STA 1+199.173 @ 6.861 RT
NOMINAL PANEL FACE (RWLOL)

INTERSECTION OF MSE WING WALL & CENTERLINE OF PILES

MATCH BRIDGE 23
(C-827)

END WALL



ELEVATION PRECAST WALL R-343-37

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 374.20 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.

REGISTERED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
10/21/97
STATE OF UTAH

	NO.	DATE	REVISION	BY CHK
		-		

DES.	09-26-97	MM
DRN.	09-26-97	LOP
CHK.	09-26-97	MM

RETAINED EARTH™

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

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

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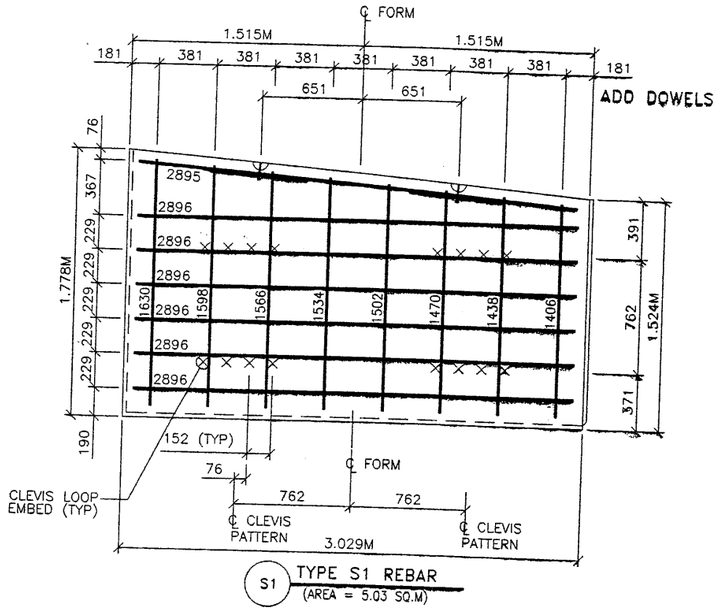
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-37"

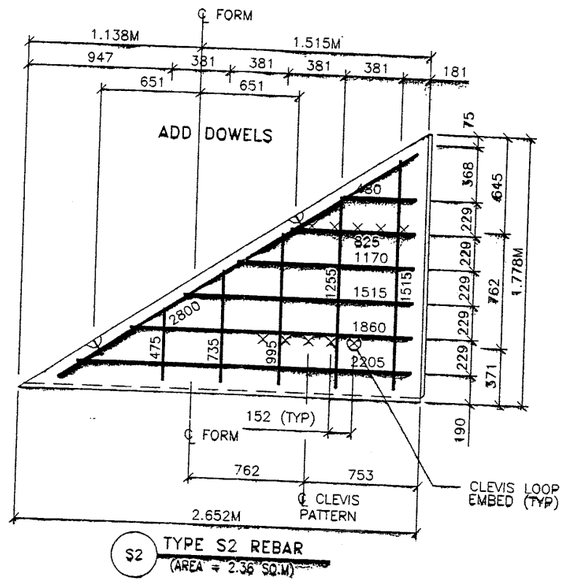
I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE: 1.2R-343-37.6
JOB NO: 239-0007 6/8
RE-5

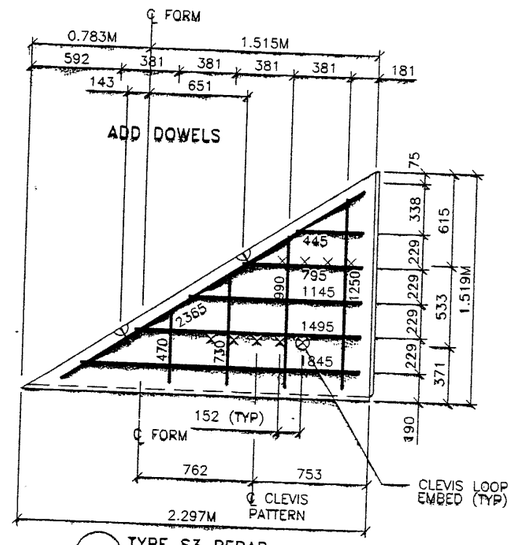
FINAL PLOT 10-21-97 E:\APROJECT\239-0007\72SERIES\72-37\W72-37



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

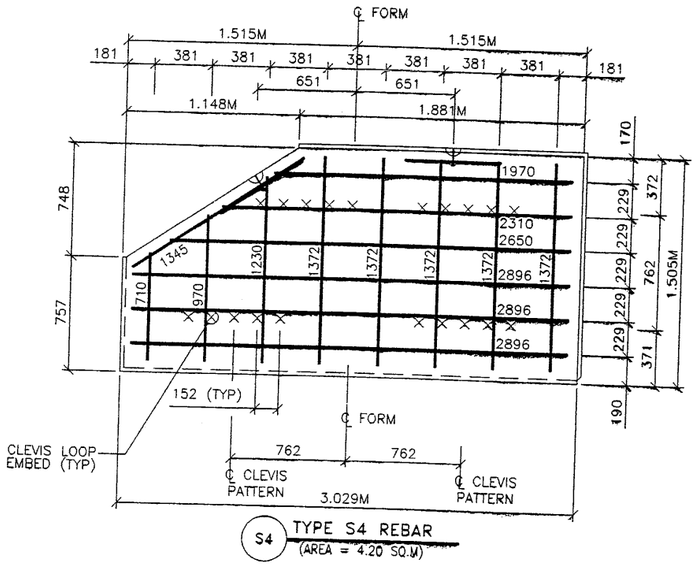


S2 TYPE S2 REBAR
(AREA = 2.36 SQ.M)

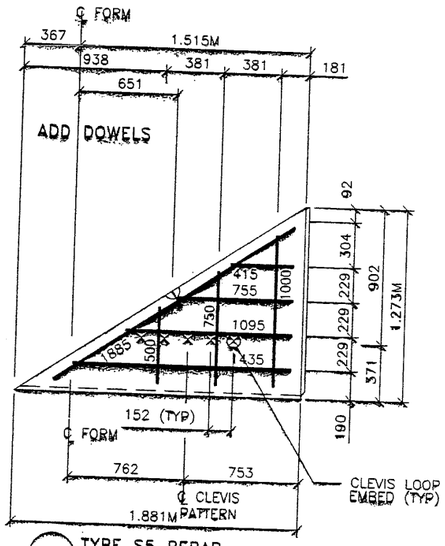


S3 TYPE S3 REBAR
(AREA = 1.74 SQ.M)

PANEL REINFORCEMENT NOTES:
1. PANELS ARE SHOWN BACK FACE.
2. HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
3. ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
4. ALL REINFORCING BARS ARE #13 METRIC. LABELS ON EACH BAR INDICATE LENGTH. EXAMPLE: 1345 IS A #13 BAR 1345 mm LONG.
5. PANEL REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT CONFORMING TO THE SPECIFICATIONS OF ASTM DESIGNATION A615, GRADE 60.
6. ALL REINFORCING STEEL TO BE GALVANIZED IN ACCORDANCE WITH ASTM 767 CLASS I.
7. CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 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.



S4 TYPE S4 REBAR
(AREA = 4.20 SQ.M)



S5 TYPE S5 REBAR
(AREA = 1.21 SQ.M)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	11-21-97	RELEASE FOR CONSTRUCTION

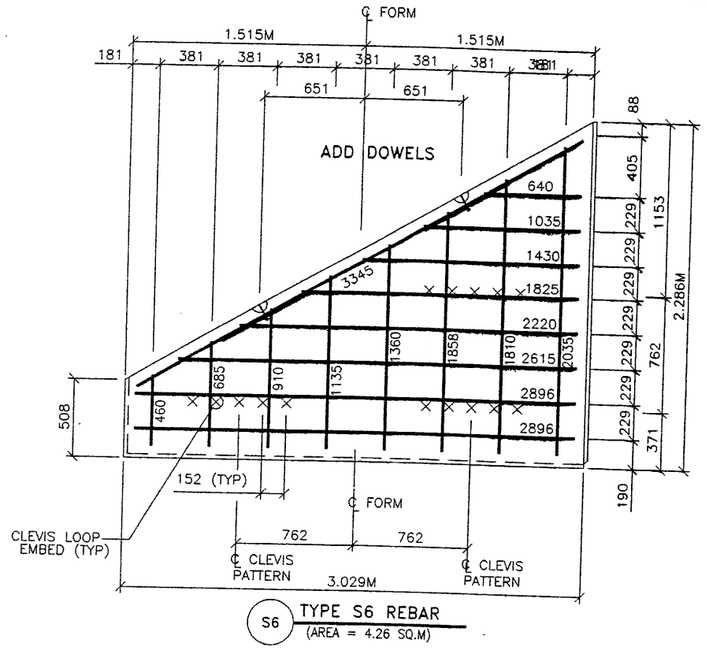
WASATCH CONSTRUCTORS
DEC 02 1997
RELEASED FOR CONSTRUCTION

METRIC

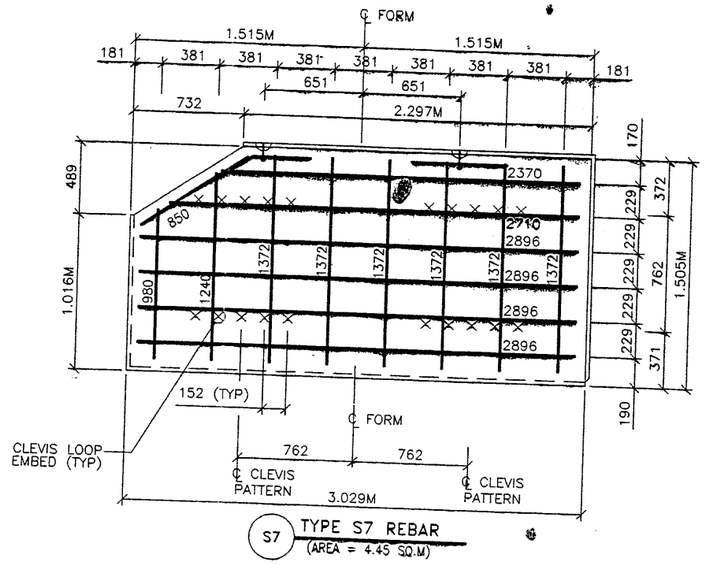
CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY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

LICENSED PROFESSIONAL ENGINEER
No. 341795
JOHN A. NICHOLSON, JR.
11/21/97
STATE OF UTAH

	BY	CHK



S6 TYPE S6 REBAR
(AREA = 4.26 SQ.M)



S7 TYPE S7 REBAR
(AREA = 4.45 SQ.M)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	11-21-97	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.
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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
DEC 02 1997
RELEASED FOR CONSTRUCTION

METRIC

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LICENSED PROFESSIONAL ENGINEER
No. 141798
JOHN A. NICHOLSON, JR.
11/21/97
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK

DES. 11-21-97 JN
DRN. 11-21-97 DDO
CHK. 11-21-97 JN

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-4869

ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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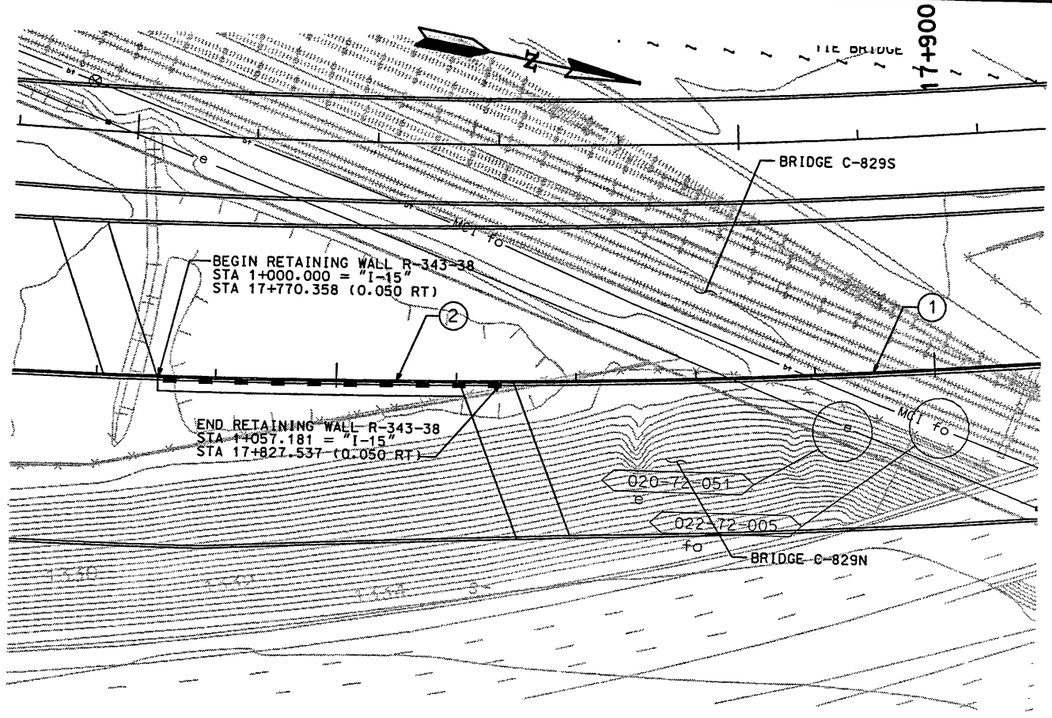
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-37"
SPECIAL PANEL REINFORCEMENT

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

SCALE: 1.2R-343-37.8
JOB NO: 239-0007
8/8
RE-7

FINAL PLOT 11-21-97 H:\RE_EARTH\APROJECT\239-0007\72SERIES\SPECIALS

Date: 15-JUN-1998 Time: 12:54 Username: STOTTRJ

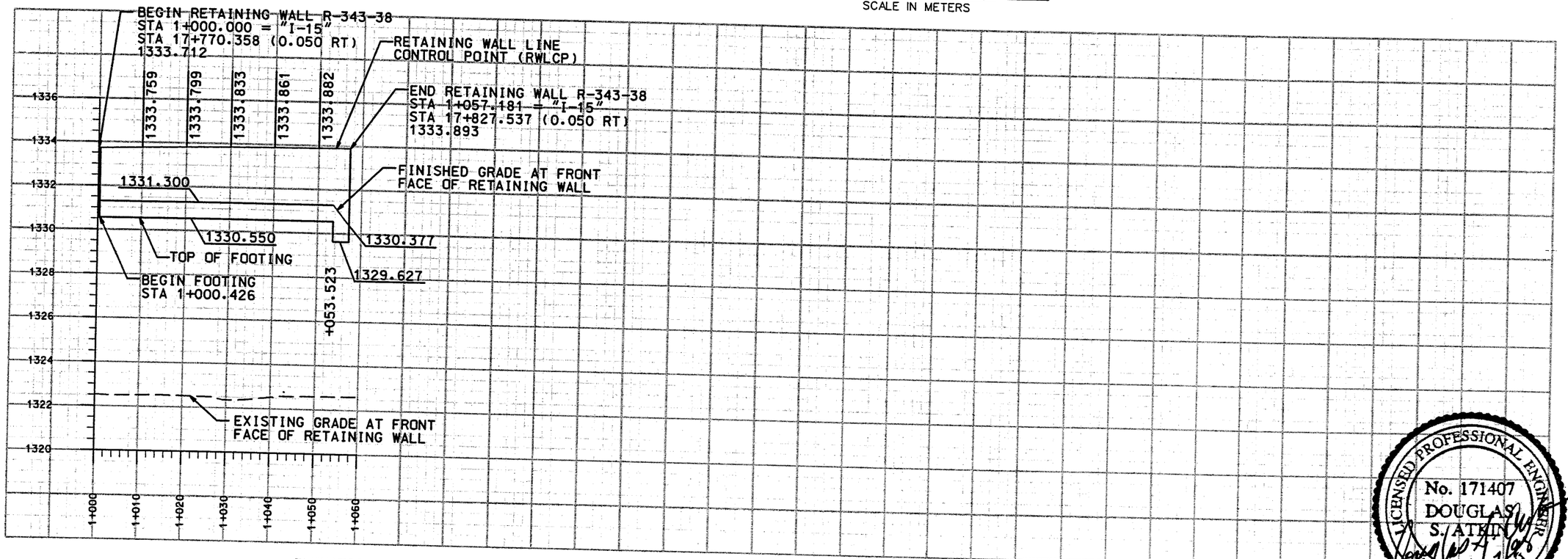


CURVE NO.	△	R	L	T
1	32°31'00"	1400.000	794.535	408.285
2	2°20'24"	1400.050	57.181	28.595

DESIGN HEIGHT TABLE

STATION LIMIT	C.I.P. DESIGN HEIGHT (m)
1+000.000 TO 1+000.426	3.6 (NO FOOTING)
1+000.426 TO 1+053.523	3.6
1+053.523 TO 1+057.181	4.2

10m 0 10m 30m 50m
SCALE IN METERS



ELEVATION VIEW FROM BACK FACE OF RETAINING WALL

WASATCH CONSTRUCTORS

JUN 29 1998

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATEIN
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	6-15-98	INITIAL RELEASE
	- -	- -
	- -	- -

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KWM	2/98	CHECK JBE	
DRAWN NH	2/98	CHECK JBE	
QUANT. /		CHECK	

APPROVAL RECOMM. 2/98 RICK CHAPMAN DATE PROJECT DESIGN ENGINEER
APPROVED 2/98 DON GRAUL DATE PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
RETAINING WALL R-343-38
SECTION 1.2

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

SALT LAKE COUNTY

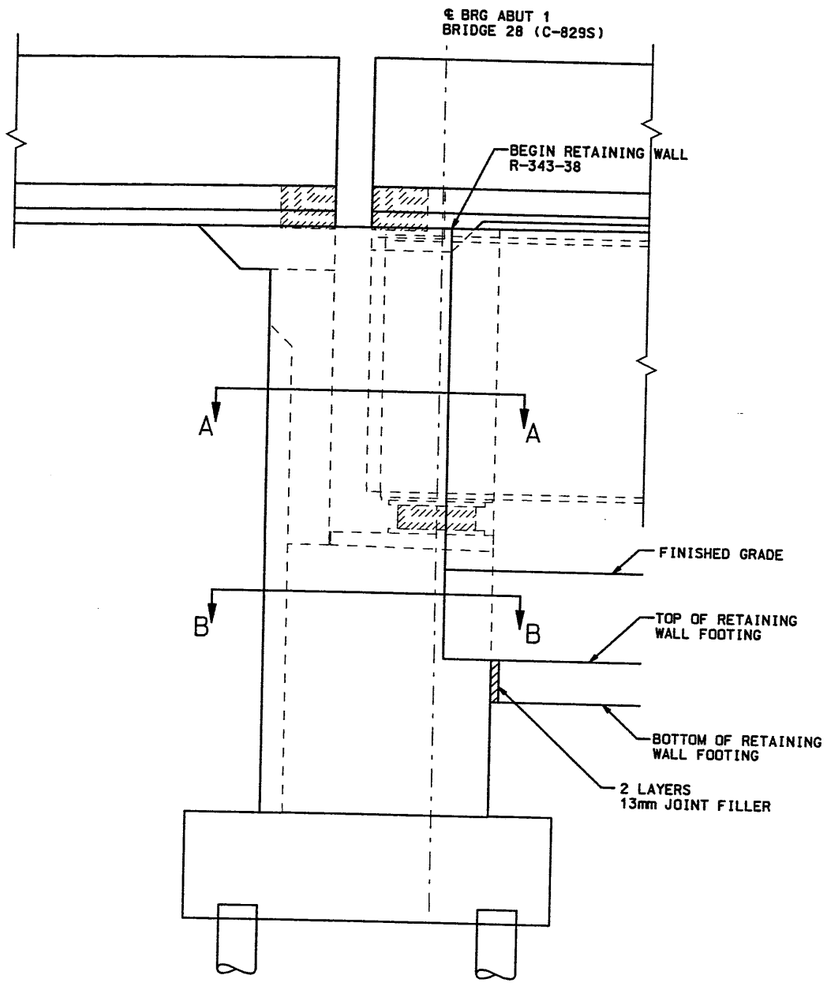
DWG. NO.
1.2R-343-38.1

SHT. 1 OF 6

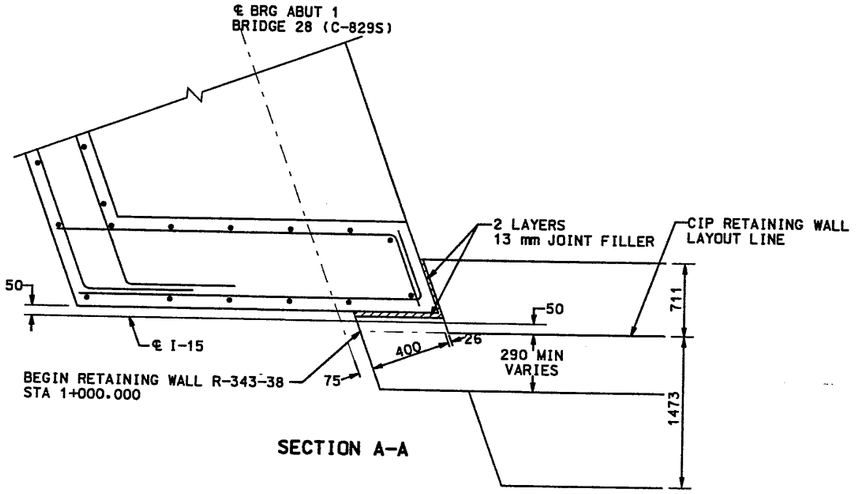
REF.

Filename: P:\I15_road\I15_road\72.97\sheet_files\walls\72_retwall-38.0i.dgn

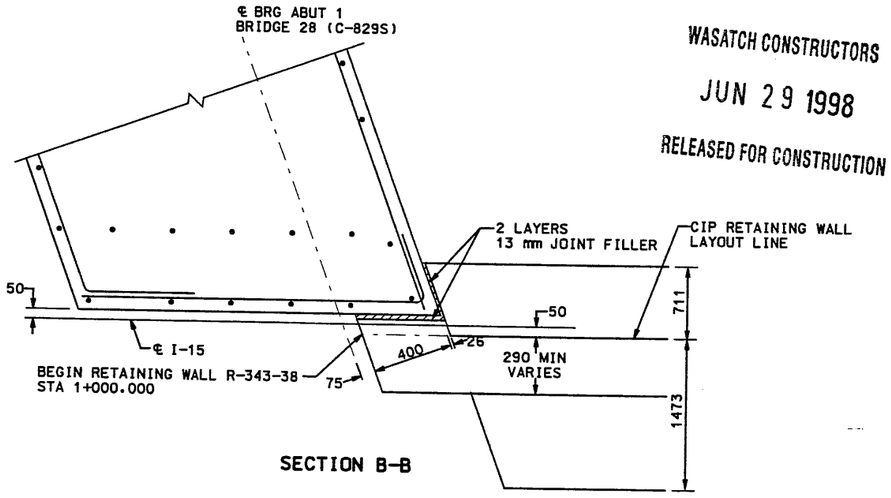
Filename: PW15.oadd\15.oadd\72_97\sheet_files\walls\72_ret-wall-38_02.dgn
Date: 15-JUN-1998 Time: 12:53 Username: STOTTRJ



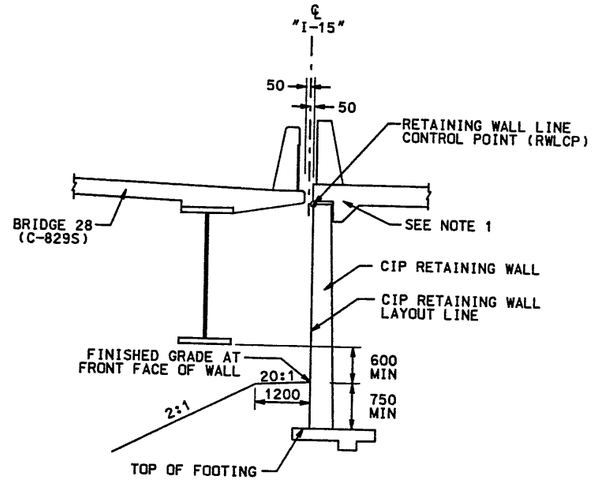
VIEW FROM BACK FACE OF RETAINING WALL



SECTION A-A



SECTION B-B



TYPICAL SECTION
RETAINING WALL R-343-38
STA 1+000.426 TO STA 1+057.181

NOTE:

1. SEE CORRIDOR STANDARD PLAN CS-224 APPROACH SLAB DETAIL. SEE MOMENT SLAB DETAIL SHEET 1.2R-343-38.4 FOR ROADWAY SECTION.

WASATCH CONSTRUCTORS

JUN 29 1998

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS
S. ATKIN
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	6-15-98	INITIAL RELEASE
-	- -	- -
-	- -	- -
-	- -	- -

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KWM 2/98 CHECK JBE 2/98
DRAWN NH 2/98 CHECK JBE 2/98
QUANT. / CHECK /

APPROVAL RECOMM. 2/98 RICK CHAPMAN
DATE PROJECT DESIGN ENGINEER
APPROVED 2/98 DON GRAUL
DATE PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
DETAIL SHEET
RETAINING WALL R-343-38
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE
COUNTY
DWG. NO.
1.2R-343-38.2

SHT. 2 OF 6

REF.

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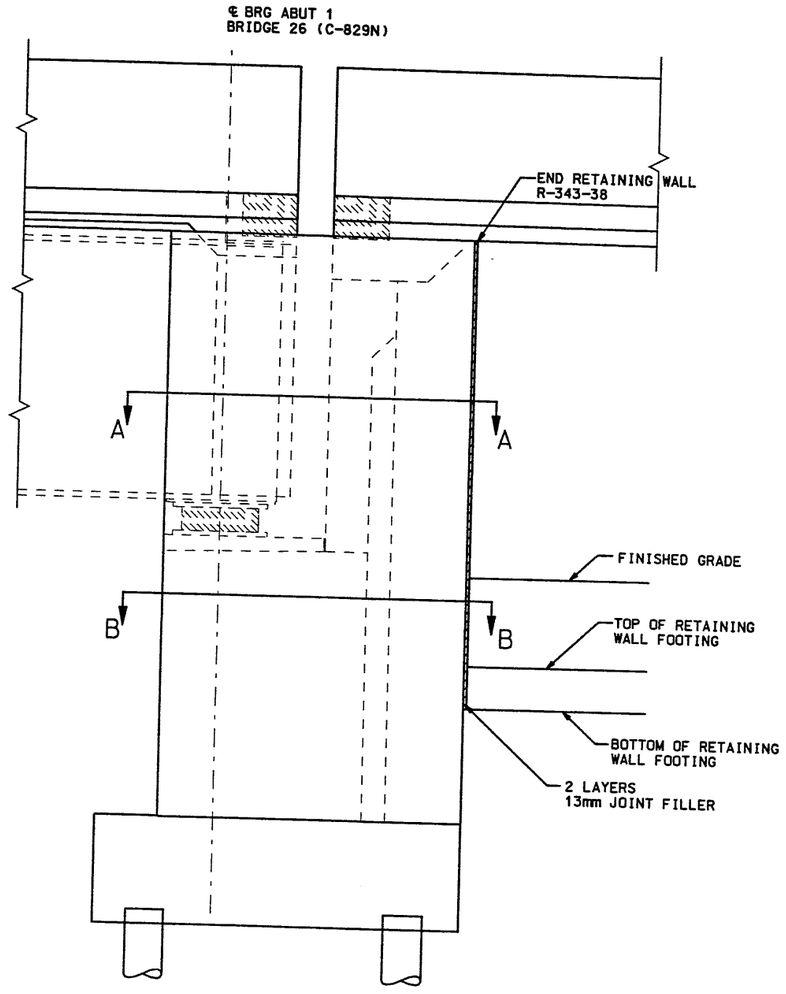
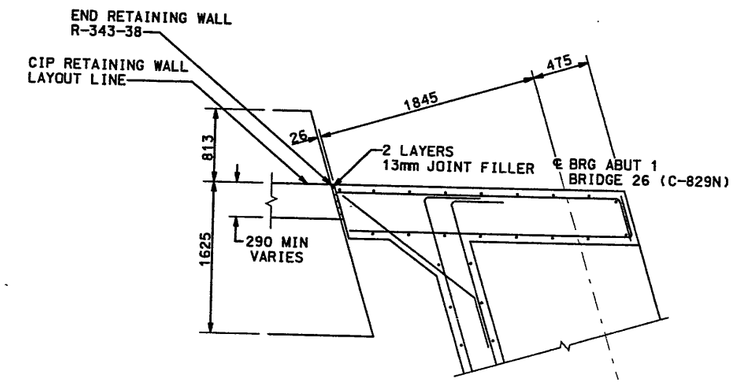
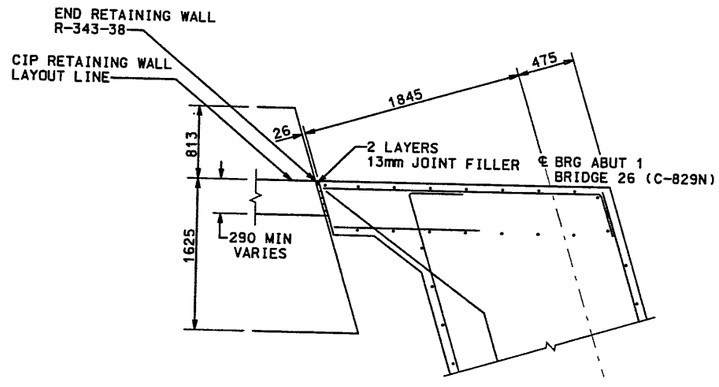


VIEW FROM FRONT FACE OF RETAINING WALL



SECTION A-A



SECTION B-B

NOTE:

1. ALL DIMENSIONS IN mm UNLESS OTHERWISE NOTED.

WASATCH CONSTRUCTORS

JUN 29 1998

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKEN
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	6-15-98	INITIAL RELEASE
-	-	-
-	-	-

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KWM	2/98	CHECK JBE	2/98
DRAWN NH	2/98	CHECK JBE	2/98
QUANT.		CHECK	

APPROVAL RECOMM. 2/98 RICK CHAPMAN
DATE PROJECT DESIGN ENGINEER

APPROVED 2/98 DON GRAUL
DATE PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
DETAIL SHEET
RETAINING WALL R-343-38
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE
COUNTY
DWG. NO.
1.2R-343-38.3

SHT. 3 OF 6

REF.

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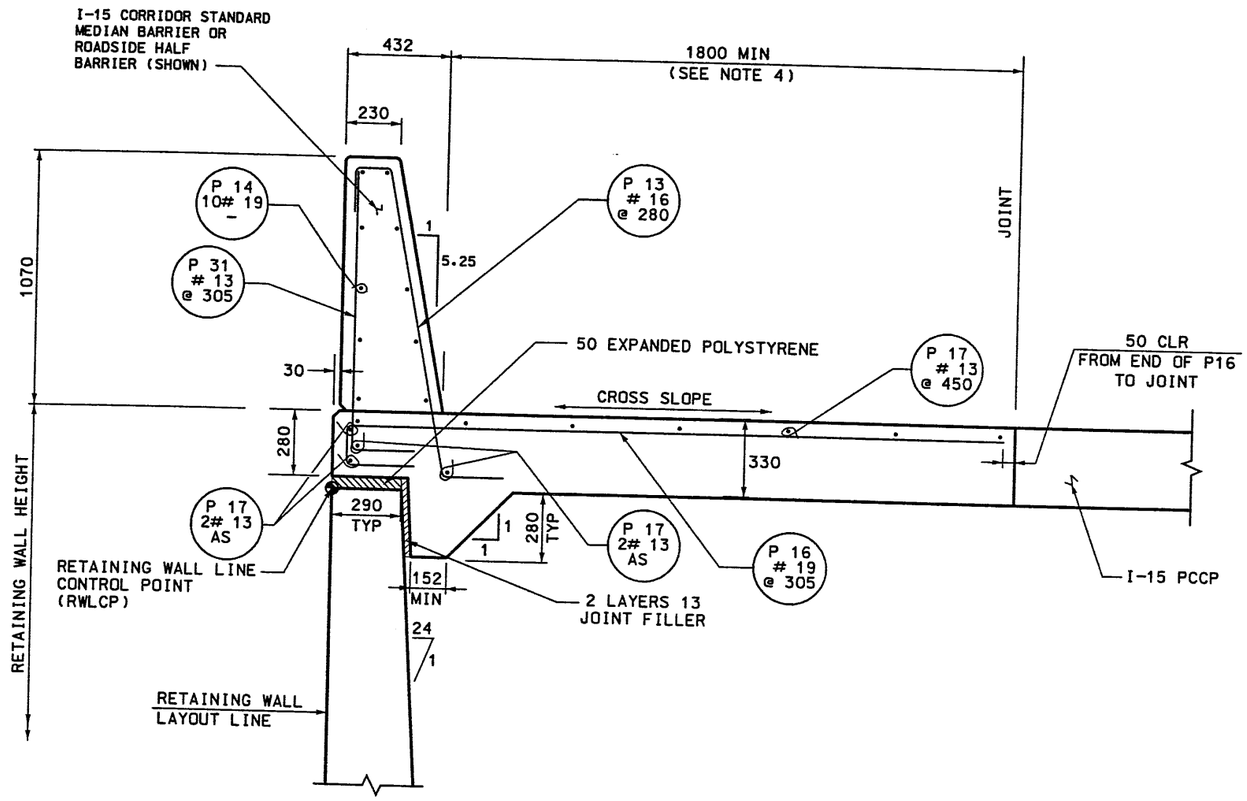

CAST IN PLACE RETAINING WALL WITH BARRIER ON MOMENT SLAB

NTS

BARRIER REINFORCING STEEL SCHEDULE

MARK	LOCATION	SIZE NO.	LENGTH	SKETCH
P13	OUTSIDE BARRIER	16	1920	130, 1290, 230, 270
P14	OUTSIDE LONGITUDINAL	19	VARIES	VARIES
P16	MOMENT SLAB TRANSVERSE	19	2525*	2130*, 165, 230
P17	MOMENT SLAB LONGITUDINAL	13	VARIES	VARIES
P31	OUTISDE BARRIER	13	1370	1190, 180

* FOR MOMENT SLABS LESS THAN 10 METERS LONG, THE HORIZONTAL BAR LENGTH IS 2730 FOR A TOTAL LENGTH OF 3125.

WASATCH CONSTRUCTORS

JUN 29 1998

RELEASED FOR CONSTRUCTION

NOTES:

1. 50mm MINIMUM COVER OVER REINFORCING.
2. USE PCC f'c=27.5 MPa (4000 PSI) FOR MOMENT SLAB.
3. P17 BARS ARE ON TOP OF P16 TO ACT AS STIRRUPS.
4. IF MOMENT SLAB IS LESS THAN 10 METERS LONG THEN THE MINIMUM MOMENT SLAB WIDTH IS 2400 MIN WIDE AND NOT 1800 MIN.
5. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE NOTED.
6. LOCATE TRANSVERSE CONSTRUCTION JOINTS AT THE SAME LOCATION AS THE PAVEMENT JOINTS.
7. CROSS SLOPE OF THE MOMENT SLAB SHALL MATCH THE ROADWAY CROSS SLOPE.

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
6/11/98
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	6-15-98	INITIAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
SVERDRUP/DE LEUW

DESIGN	KM	01/98	
DRAWN	RS	01/98	
QUANT.			
CHECK	GDD	01/98	
CHECK	JE	01/98	
CHECK			

RICK CHAPMAN, PROJECT DESIGN ENGINEER — APPROVAL RECOMM. 04/03/98 DATE
DON GRAUL, SECTION MANAGER — APPROVED 04/03/98 DATE

I-15 CORRIDOR RECONSTRUCTION
MISC DETAIL WALL R-343-38
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296
SALT LAKE COUNTY
DWG. NO. 1.2R-343-38.4
SHT. 4 OF 6

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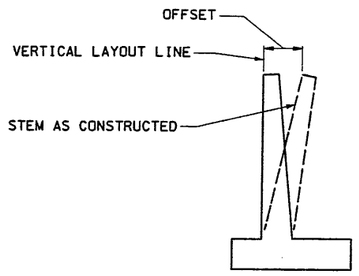
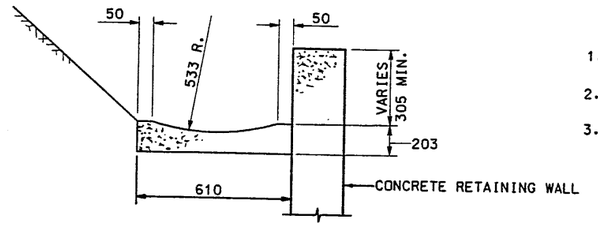


TABLE OF OFFSETS
(IN METERS)

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.

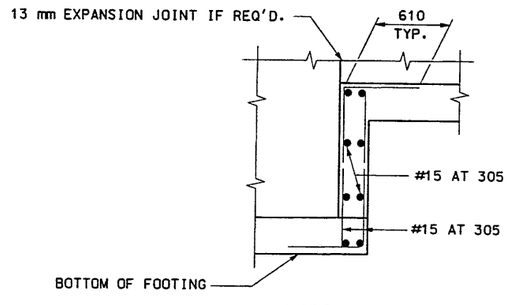
DESIGN DATA

CAST-IN-PLACE CONCRETE: f_c = 10 MPa: f_a(REINF.) = 160 MPa: n=8.

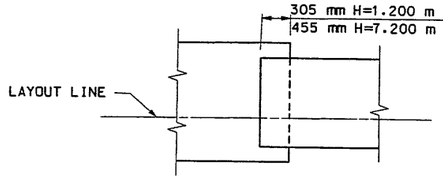
EARTH: UNIT DENSITY = 1920 kg/m^3

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 ø = 33° 42′.

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

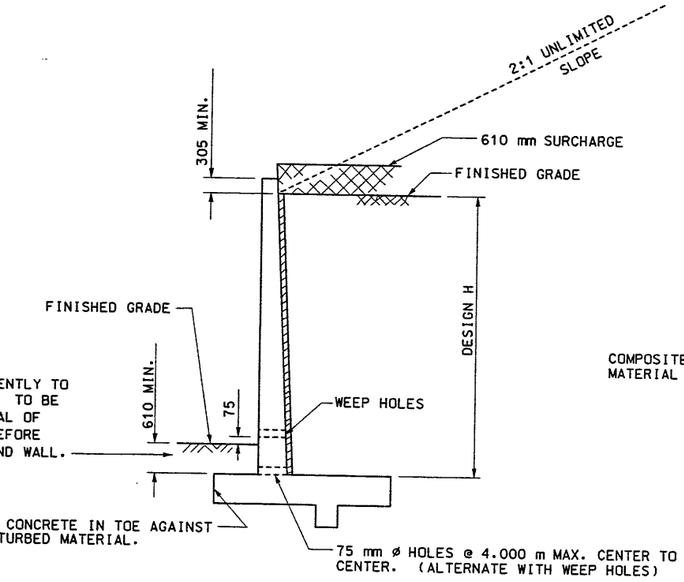


ELEVATION



PLAN

FOOTING STEP DETAILS



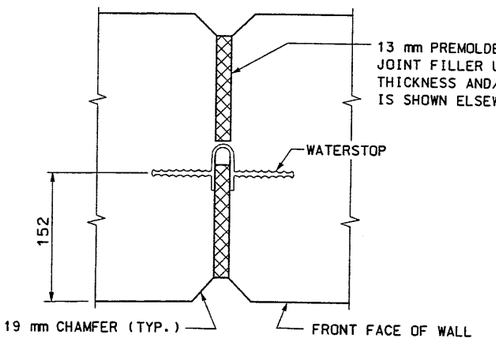
DESIGN AND DRAINAGE

PARTIAL ELEVATION

@ BACK FACE OF WALL

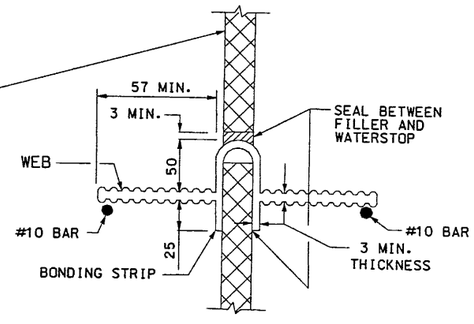
SECTION

WEEP HOLE DETAIL



WALL EXPANSION JOINT (PLAN VIEW)

PLACE JOINTS AT 30.500 m MAX. SPACING



WATERSTOP 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 ø DRAINS @ 4.000 m MAX. CENTER TO CENTER.

B. COMPOSITE DRAINAGE MATERIAL REQUIRED FROM BOTTOM OF WALL TO TOP OF FINISHED GRADE.

WASATCH CONSTRUCTORS

JUN 29 1998

RELEASED FOR CONSTRUCTION

NO.	DATE	BY	REVISIONS	REMARKS
				3/22/95

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

CHECK | CHECK | CHECK

DESIGN | DRAWN | QUANT.

GROUP LEADER | CHIEF STRUCTURAL ENGR.

APPROVAL RECOMM. - DATE

APPROVED - DATE

CONCRETE RETAINING WALL
STANDARD DETAILS NO. 1

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

SALT LAKE COUNTY

1.2R-343-38.5 DRG. NO.

SHT. 5 OF 6

Date:15-JUN-1998 Time:14:02 Username:STOTTRJ
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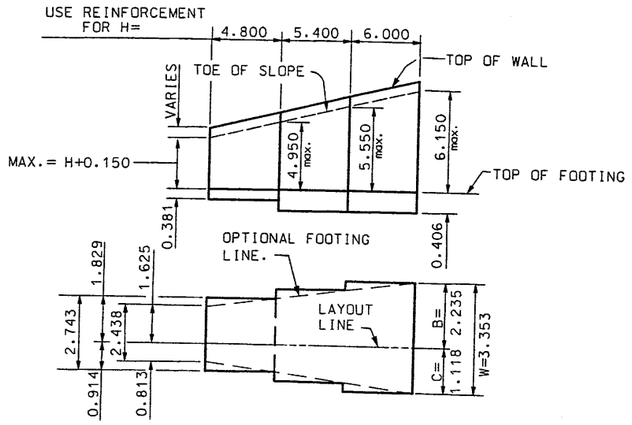
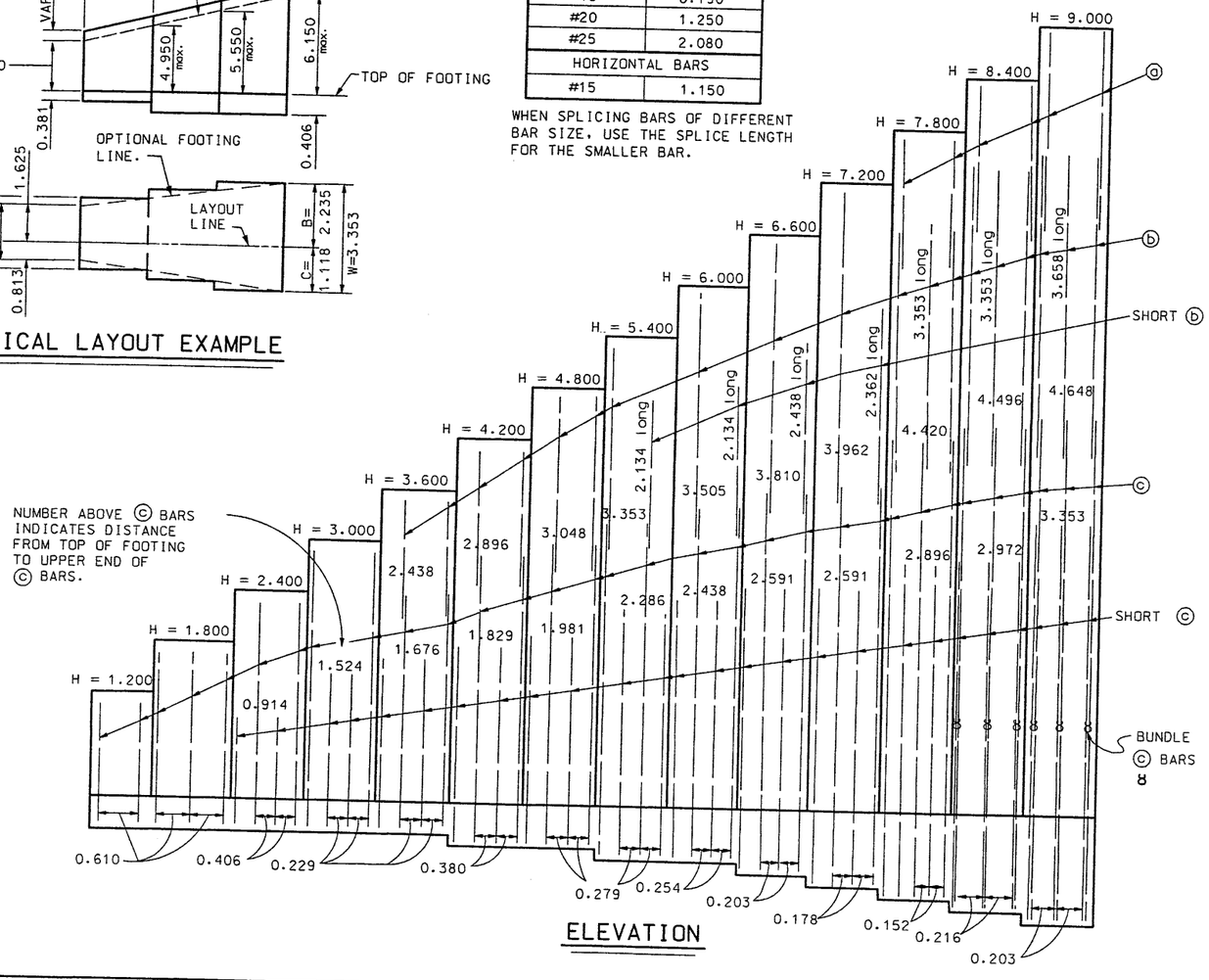


TYPICAL LAYOUT EXAMPLE

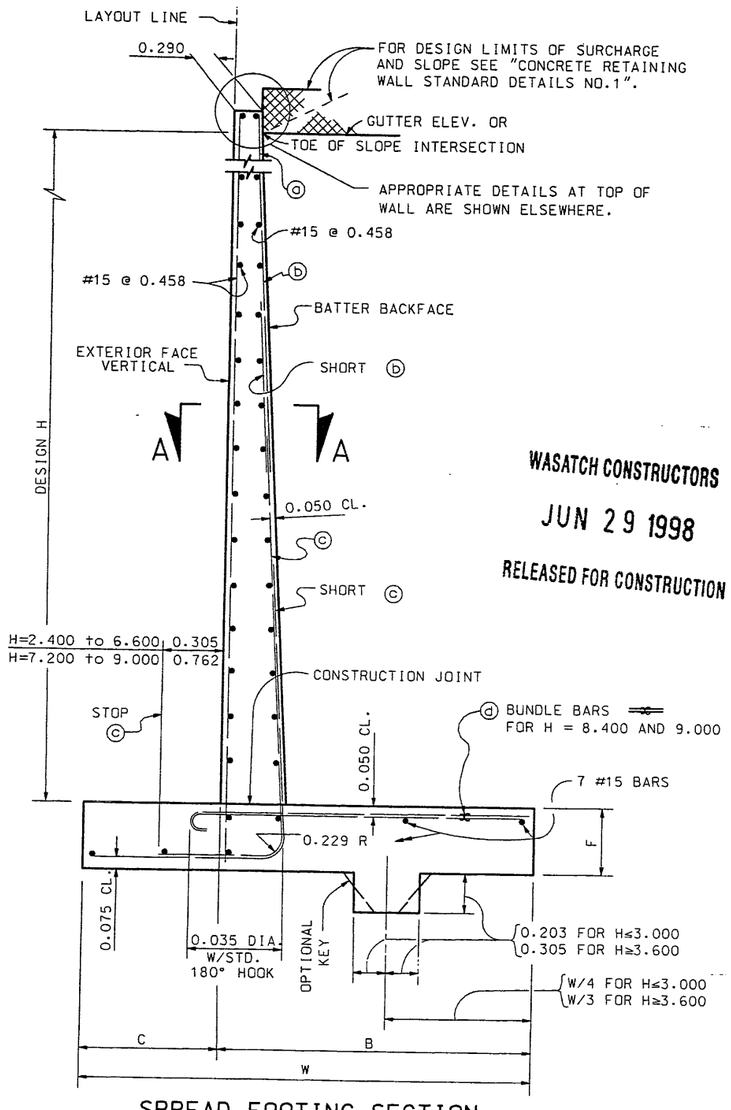
REINFORCING STEEL SPLICES	
BAR SIZE	SPLICE LENGTH
VERTICAL BARS	
#15	0.790
#20	1.250
#25	2.080
HORIZONTAL BARS	
#15	1.150

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

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

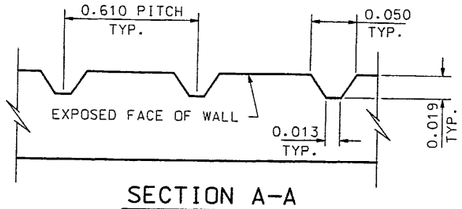


ELEVATION



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													#20@.610	#20@.432	#20@.406
ⓑ BARS						#15@.458	#20@.762	#20@.558	#25@.558	#25@.508	#25@.406	#25@.356	#25@.304	#25@.216	#25@.203
ⓒ 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 &	#35@.203 &
ⓓ 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 &	#30@.203 &
.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

WASATCH CONSTRUCTORS

JUN 29 1998

RELEASED FOR CONSTRUCTION

NO.	DATE	BY	REMARKS
REVISIONS			3/22/95

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN — CHECK
DRAWN — CHECK
QUANT. — CHECK
GROUP LEADER — DATE
CHIEF STRUCTURAL ENGR. — DATE
APPROVAL RECOMM. — APPROVED

CONCRETE RETAINING WALL
STANDARD DETAILS NO. 2

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

SALT LAKE COUNTY

1.2R-343-38.6 DRG. NO.

SHT. 6 OF 6

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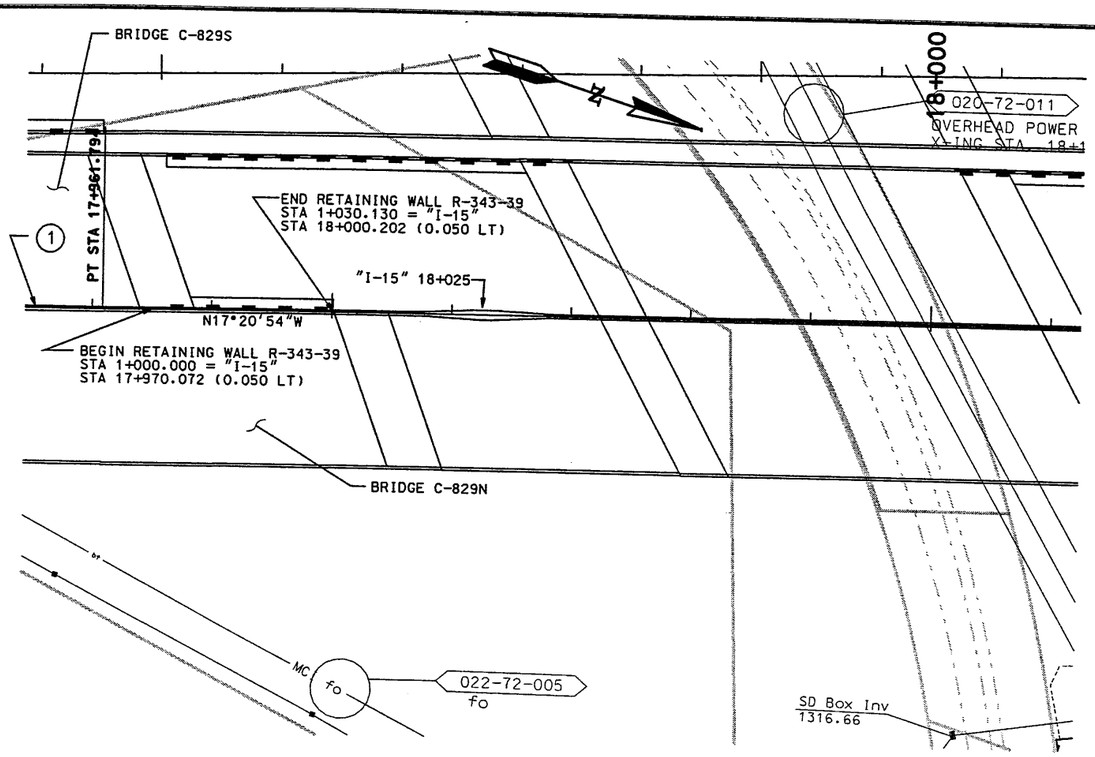


CURVE NO.	△	R	L	T
1	32°31'00"	1400.000	794.535	408.285

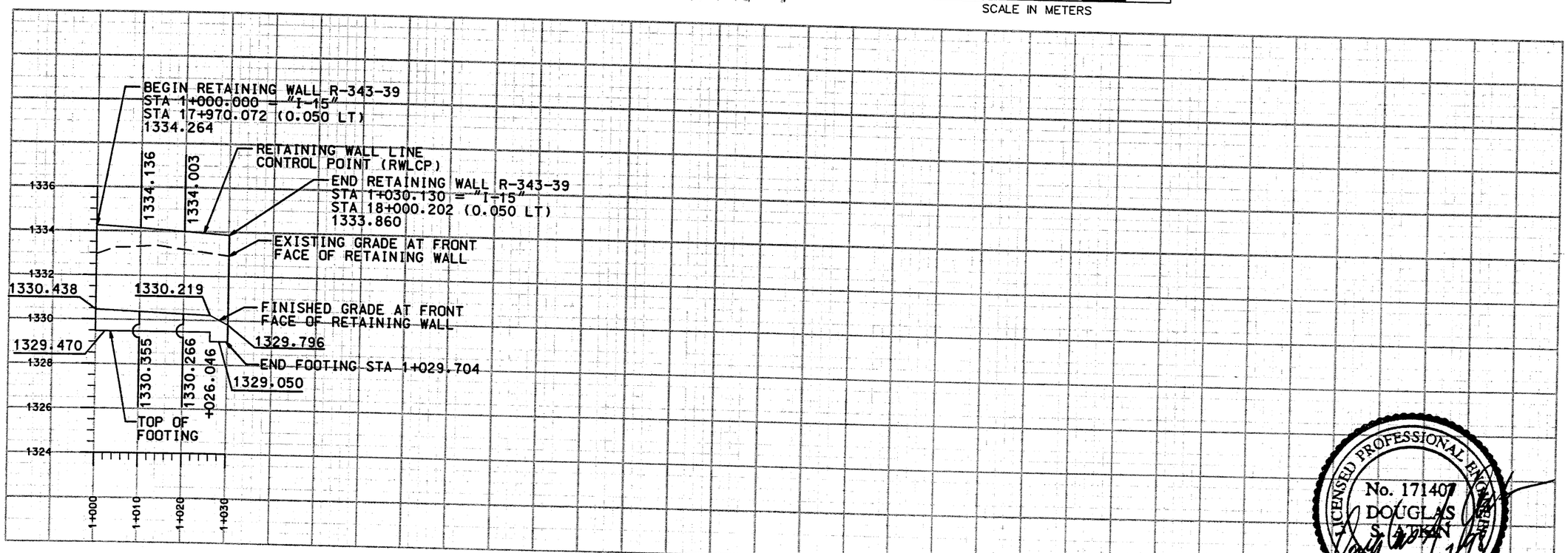
DESIGN HEIGHT TABLE

STATION LIMIT	C.I.P. DESIGN HEIGHT (m)
1+000.000 TO 1+029.704	4.8
1+029.704 TO 1+030.130	4.8 (NO FOOTING)

WASATCH CONSTRUCTORS

JUN 29 1998

RELEASED FOR CONSTRUCTION



ELEVATION VIEW FROM FRONT FACE OF RETAINING WALL

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	6-12-98	INITIAL RELEASE
	- -	
	- -	
	- -	

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KWL	2/98	CHECK JBE	2/98
DRAWN NH	2/98	CHECK JBE	2/98
QUANT.	/	CHECK	/

APPROVAL RECOMM. 2/98 RICK CHAPMAN PROJECT DESIGN ENGINEER
DATE
APPROVED 2/98 DON GRAUL PROJECT MANAGER
DATE

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
RETAINING WALL R-343-39
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296
SALT LAKE COUNTY
DWG. NO. 1.2R-343-39.1
SHT. 1 OF 6
REF.

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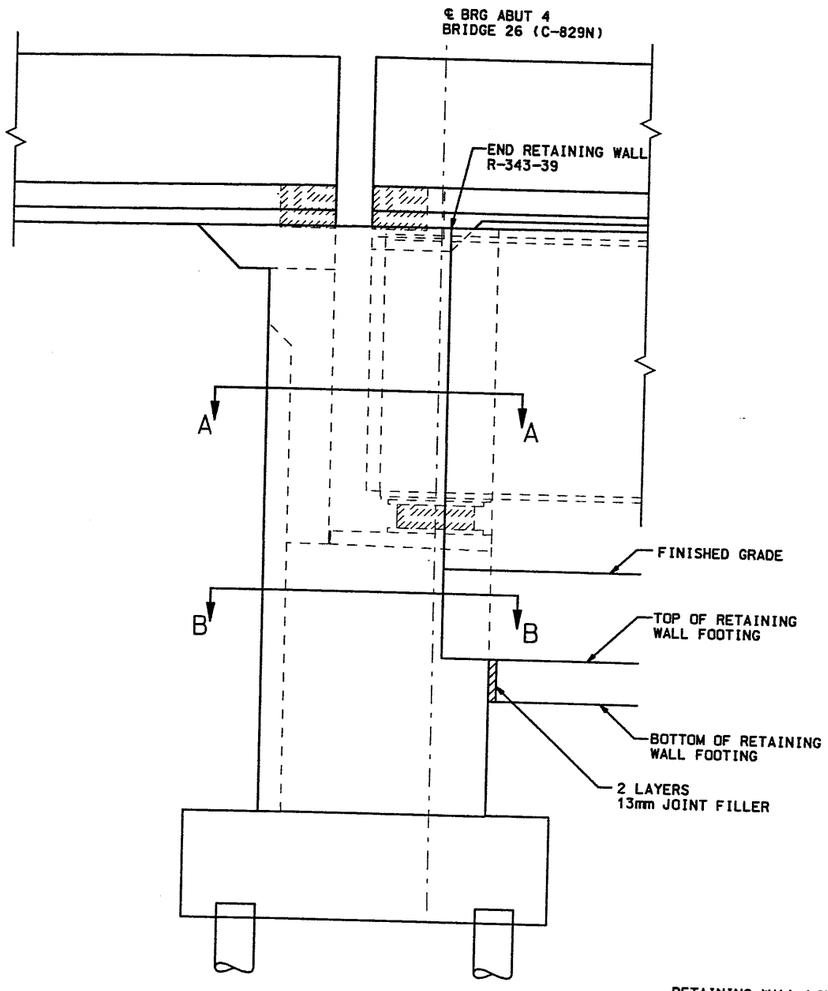
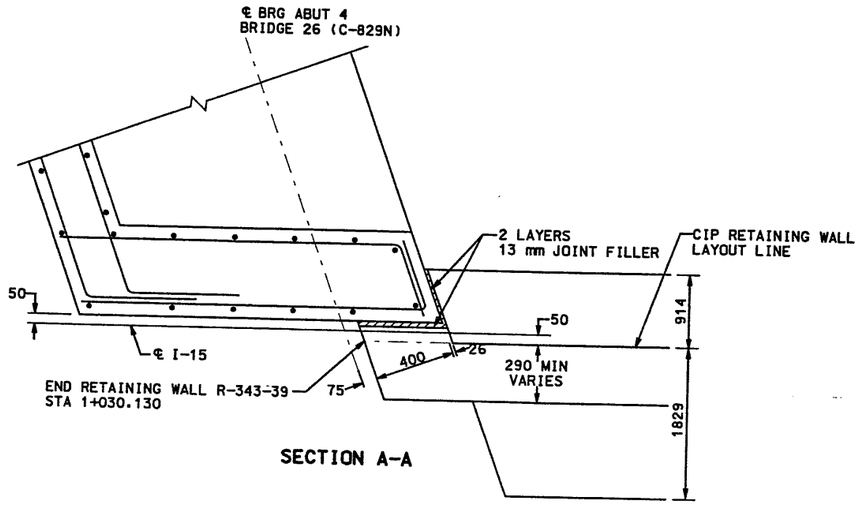
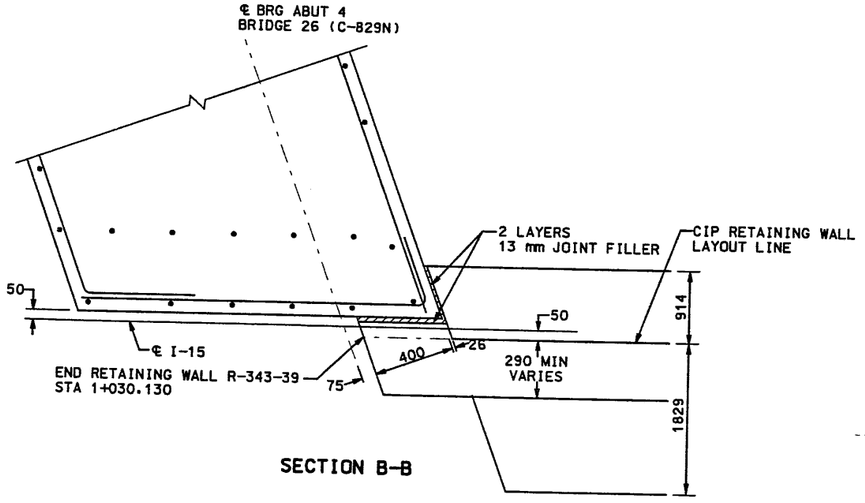


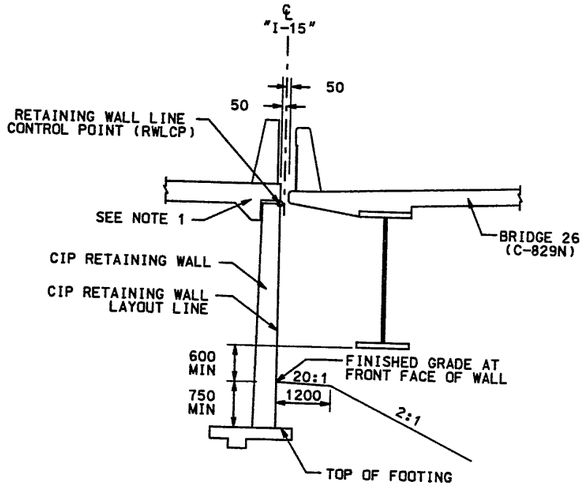
VIEW FROM BACK FACE OF RETAINING WALL



SECTION A-A



SECTION B-B



TYPICAL SECTION
RETAINING WALL R-343-38
STA 1+000.000 TO STA 1+029.704

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS
S. ATKIN
STATE OF UTAH
6/17/98

WASATCH CONSTRUCTORS

JUN 29 1998

RELEASED FOR CONSTRUCTION

NOTE:

1. SEE CORRIDOR STANDARD PLAN CS-224 FOR APPROACH SLAB DETAIL. SEE MOMENT SLAB DETAIL SHEET 1.2R-343-39.4 FOR ROADWAY SECTION.
2. ALL DIMENSIONS IN mm UNLESS OTHERWISE NOTED.

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	6-15-98	INITIAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

APPROVAL RECOMM.	2/98	RICK CHAPMAN	PROJECT DESIGN ENGINEER
APPROVED	2/98	DON GRAUL	PROJECT MANAGER
DESIGN	KWM	2/98	CHECK JBE 2/98
DRAWN	NH	2/98	CHECK JBE 2/98
QUANT.		/	CHECK /

I-15 CORRIDOR RECONSTRUCTION
DETAIL SHEET
RETAINING WALL R-343-39
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE
COUNTY
DWG.NO.
1.2R-343-39.2

SHT. 2 OF 6

REF.

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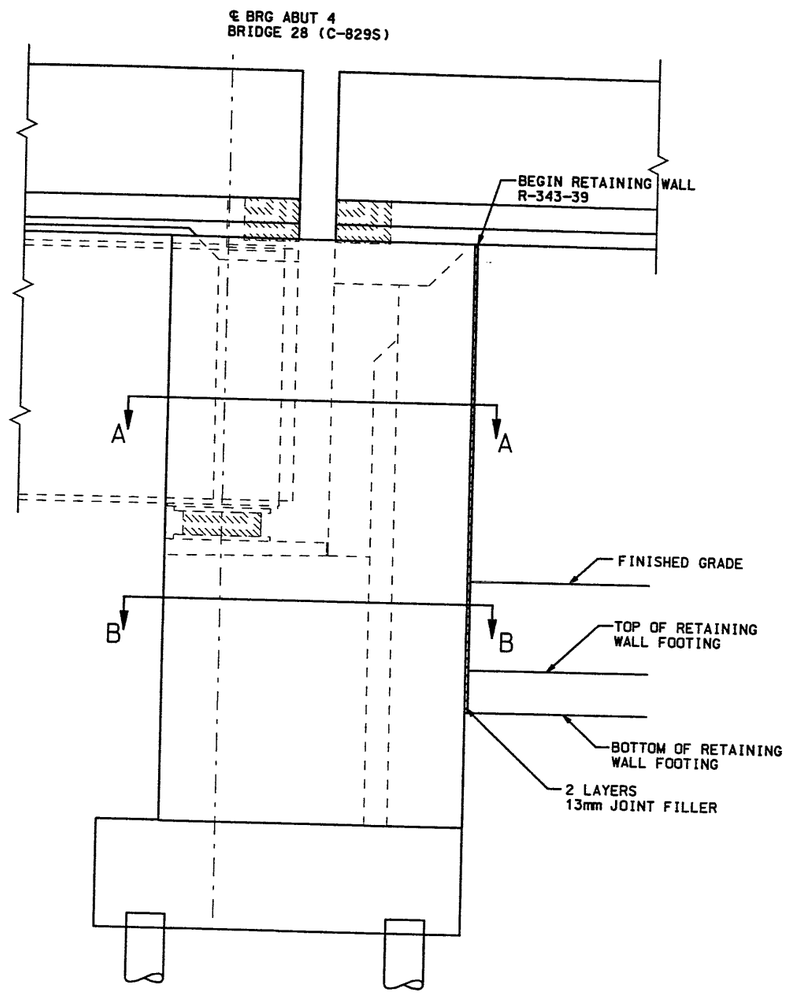
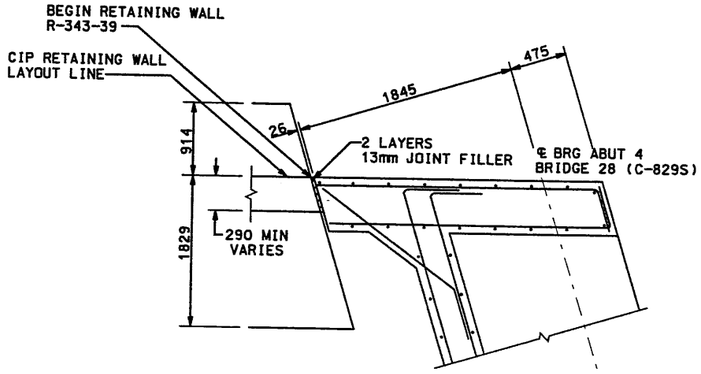
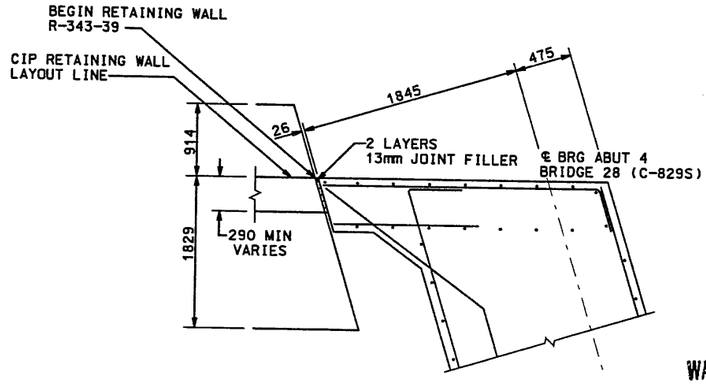


VIEW FROM FRONT FACE OF RETAINING WALL



SECTION A-A



SECTION B-B

WASATCH CONSTRUCTORS

JUN 29 1998

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH
6/17/98

NOTE:

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE NOTES.

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	6-15-98	Original Issue

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

APPROVAL RECOMM.	2/98	RICK CHAPMAN	DATE / PROJECT DESIGN ENGINEER
APPROVED	2/98	DON GRAUL	DATE / PROJECT MANAGER
DESIGN	KWM	2/98	CHECK JBE 2/98
DRAWN	NH	2/98	CHECK JBE 2/98
QUANT.		/	CHECK /

I-15 CORRIDOR RECONSTRUCTION

DETAIL SHEET
RETAINING WALL R-343-39

SECTION 1.2

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

SALT LAKE
COUNTY

DWG. NO.
1.2R-343-39.3

SHT. 3 OF 6

REF.

Date: 15-JUN-1998 Time: 13:18 Username: STOTTRJ

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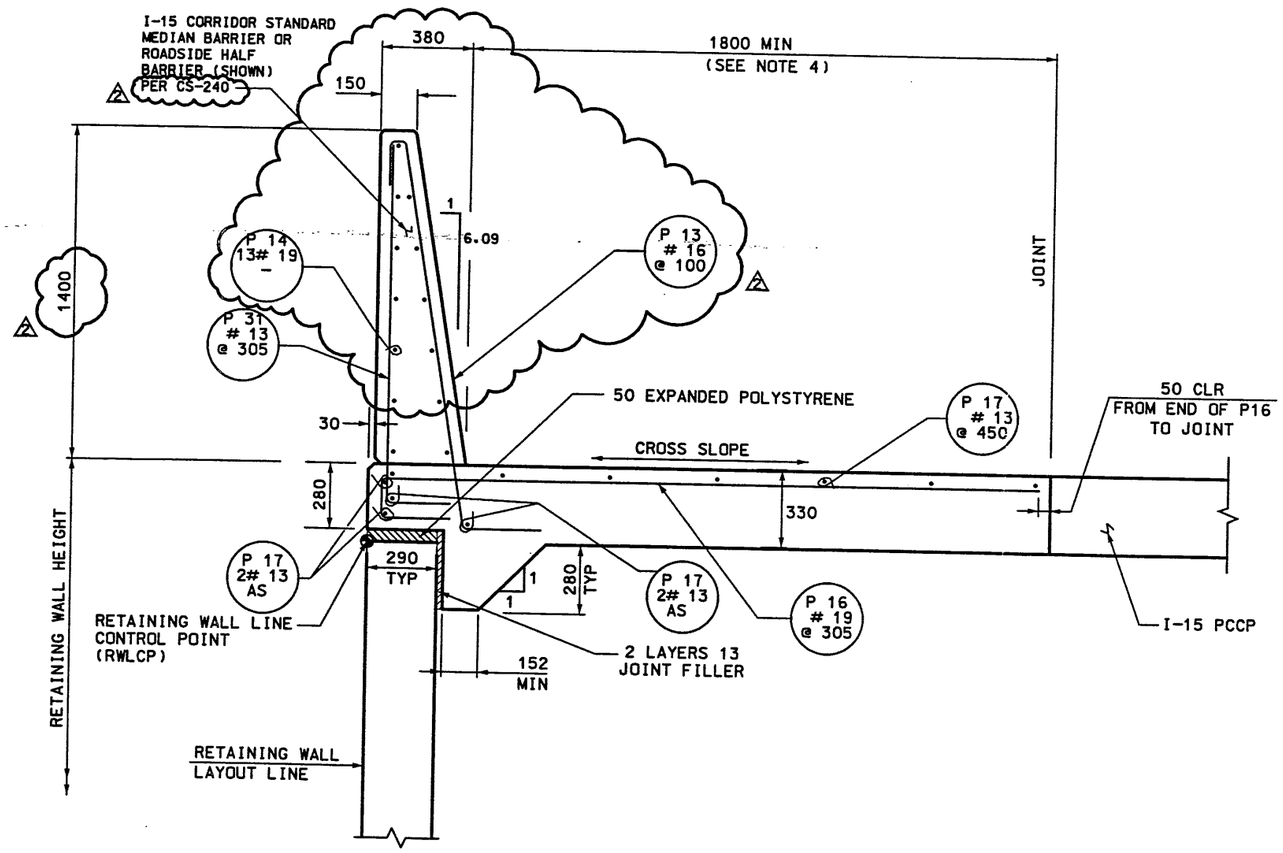
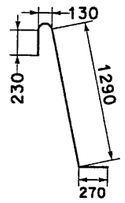
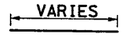
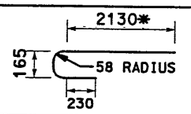
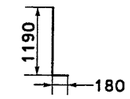
Date:27-MAY-1999 Time:16:43 Username:frampton



CAST IN PLACE RETAINING WALL WITH BARRIER ON MOMENT SLAB

NTS

BARRIER REINFORCING STEEL SCHEDULE				
MARK	LOCATION	SIZE NO.	LENGTH	SKETCH
P13	OUTSIDE BARRIER	16	1920	
P14	OUTSIDE LONGITUDINAL	19	VARIES	
P16	MOMENT SLAB TRANSVERSE	19	2525*	
P17	MOMENT SLAB LONGITUDINAL	13	VARIES	
P31	OUTISDE BARRIER	13	1370	

* FOR MOMENT SLABS LESS THAN 10 METERS LONG. THE HORIZONTAL BAR LENGTH IS 2730 FOR A TOTAL LENGTH OF 3125.

WASATCH CONSTRUCTORS

JUN 2 1 1999

RELEASED FOR CONSTRUCTION

NOTES:

1. 50mm MINIMUM COVER OVER REINFORCING.
2. USE PCC f'c=27.5 MPa (4000 PSI) FOR MOMENT SLAB.
3. P17 BARS ARE ON TOP OF P16 TO ACT AS STIRRUPS.
4. IF MOMENT SLAB IS LESS THAN 10 METERS LONG THEN THE MINIMUM MOMENT SLAB WIDTH IS 2400 MIN WIDE AND NOT 1800 MIN.
5. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE NOTED.
6. LOCATE TRANSVERSE CONSTRUCTION JOINTS AT THE SAME LOCATION AS THE PAVEMENT JOINTS.
7. CROSS SLOPE OF THE MOMENT SLAB SHALL MATCH THE ROADWAY CROSS SLOPE.

LICENSED PROFESSIONAL ENGINEER
No. 97-178589-2202
VON ARDEN LARSON
5/28/99
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	6-15-98	INITIAL RELEASE
2	5-28-99	FDN 7-0040, REVISED BARRIER TYPE

UTAH DEPARTMENT OF TRANSPORTATION
SVERDRUP/DE LEUW

DESIGN RM 01/98 | DRAWN RS 01/98 | QUANT. — | CHECK BCO 01/98 | CHECK JE 01/98 | CHECK — 01/98

RICK CHAPMAN, PROJECT DESIGN ENGINEER, DATE 04/03/98
DON GRAUL, SECTION MANAGER, DATE 04/03/98
APPROVAL RECOMM.
APPROVED

I-15 CORRIDOR RECONSTRUCTION
MISC DETAIL WALL R-343-39
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2R-343-39.4
SHT. 4 OF 6

SP-15-7(135)296

RFC After Final Approval

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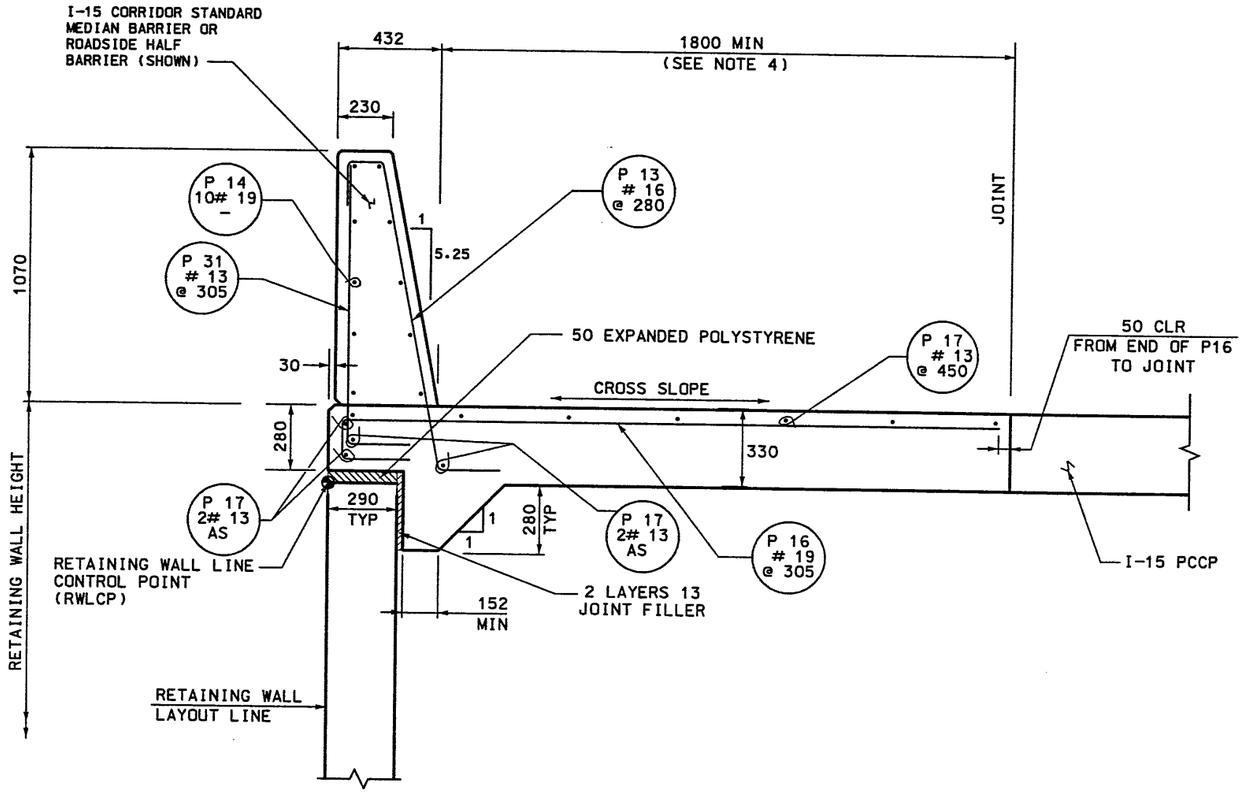

CAST IN PLACE RETAINING WALL WITH BARRIER ON MOMENT SLAB

NTS

BARRIER REINFORCING STEEL SCHEDULE				
MARK	LOCATION	SIZE NO.	LENGTH	SKETCH
P13	OUTSIDE BARRIER	16	1920	130, 230, 1260, 270
P14	OUTSIDE LONGITUDINAL	19	VARIES	VARIES
P16	MOMENT SLAB TRANSVERSE	19	2525*	2130*, 165, 58 RADIUS, 230
P17	MOMENT SLAB LONGITUDINAL	13	VARIES	VARIES
P31	OUTISDE BARRIER	13	1370	1190, 180

* FOR MOMENT SLABS LESS THAN 10 METERS LONG, THE HORIZONTAL BAR LENGTH IS 2730 FOR A TOTAL LENGTH OF 3125.

WASATCH CONSTRUCTORS

JUN 29 1998

RELEASED FOR CONSTRUCTION

NOTES:

1. 50mm MINIMUM COVER OVER REINFORCING.
2. USE PCC f'c=27.5 MPa (4000 PSI) FOR MOMENT SLAB.
3. P17 BARS ARE ON TOP OF P16 TO ACT AS STIRRUPS.
4. IF MOMENT SLAB IS LESS THAN 10 METERS LONG THEN THE MINIMUM MOMENT SLAB WIDTH IS 2400 MIN WIDE AND NOT 1800 MIN.
5. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE NOTED.
6. LOCATE TRANSVERSE CONSTRUCTION JOINTS AT THE SAME LOCATION AS THE PAVEMENT JOINTS.
7. CROSS SLOPE OF THE MOMENT SLAB SHALL MATCH THE ROADWAY CROSS SLOPE.

LICENSED PROFESSIONAL ENGINEER No. 171407 DOUGLAS R. WATKIN STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
0	6-15-98	INITIAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION

SVERDRUP/DE LEUW

DESIGN KM 01/98 CHECK QCD 01/98
DRAWN RS 01/98 CHECK JE 01/98
QUANT. CHECK 01/98

RICK CHAPMAN PROJECT DESIGN ENGINEER
APPROVAL RECOMM. 04/03/98 DATE

DON GRAUL SECTION MANAGER
APPROVED 04/03/98 DATE

I-15 CORRIDOR RECONSTRUCTION
MISC DETAIL WALL R-343-39
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2R-343-39.4
SHT. 4 OF 6

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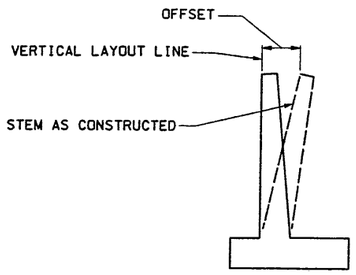
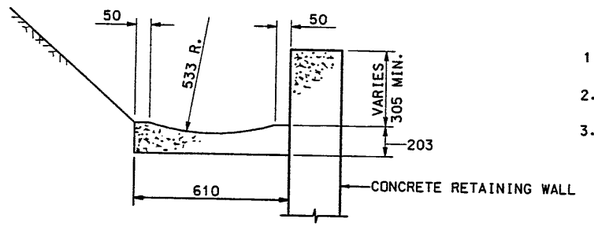


TABLE OF OFFSETS
(IN METERS)

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.

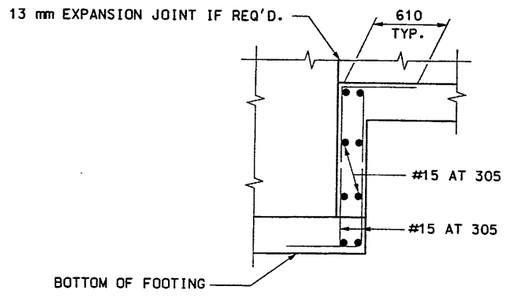
DESIGN DATA

CAST-IN-PLACE CONCRETE: f_c = 10 MPa: f_a(REINF.) = 160 MPa: n=8.

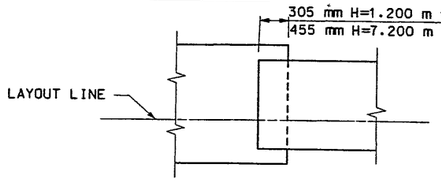
EARTH: UNIT DENSITY = 1920 kg/m^3

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 ø = 33° 42'.

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

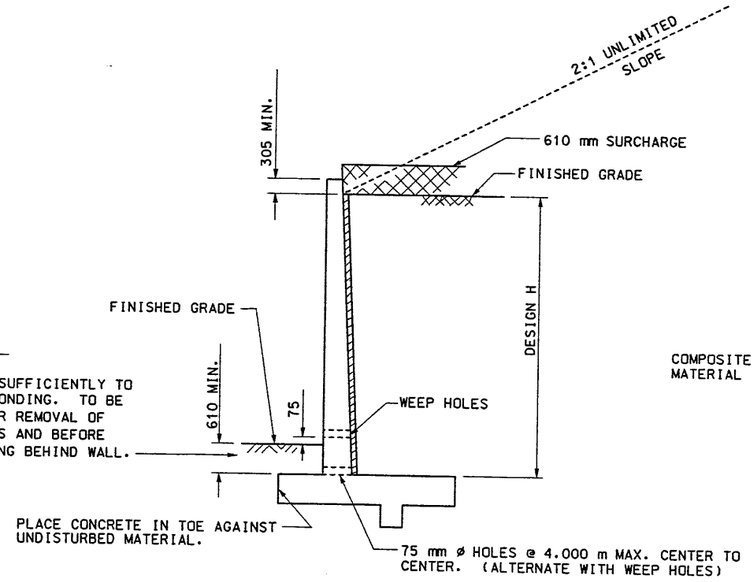


ELEVATION

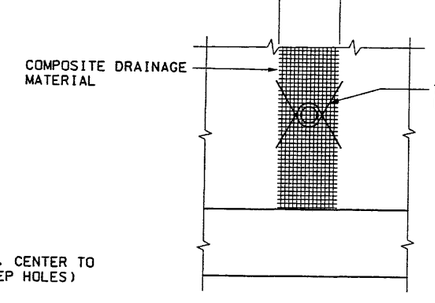


PLAN

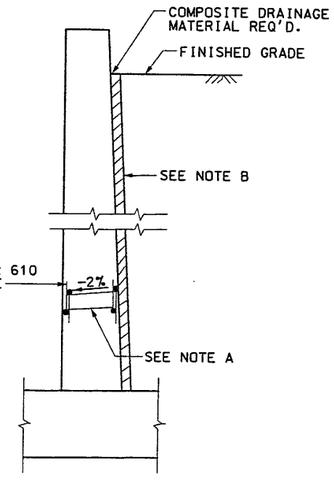
FOOTING STEP DETAILS



DESIGN AND DRAINAGE

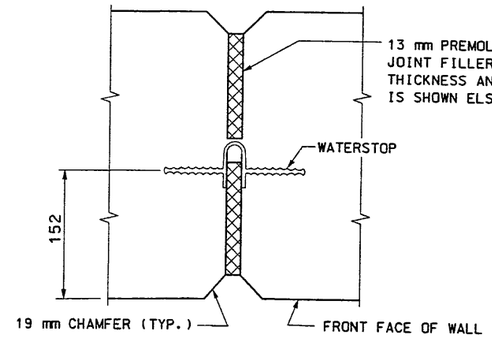


PARTIAL ELEVATION
@ BACK FACE OF WALL



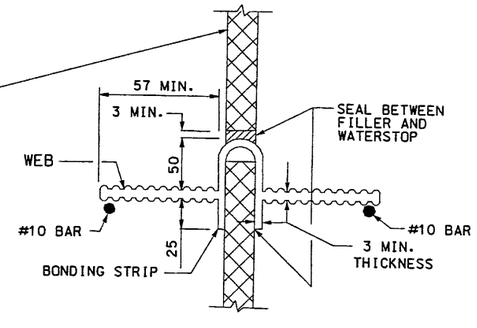
SECTION

WEEP HOLE DETAIL



WALL EXPANSION JOINT (PLAN VIEW)

PLACE JOINTS AT 30.500 m MAX. SPACING



WATERSTOP 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 ø DRAINS @ 4.000 m MAX. CENTER TO CENTER.

B. COMPOSITE DRAINAGE MATERIAL REQUIRED FROM BOTTOM OF WALL TO TOP OF FINISHED GRADE.

WASATCH CONSTRUCTORS

JUN 29 1998

RELEASED FOR CONSTRUCTION

NO.	DATE	BY	REVISIONS REMARKS
			3/22/95

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN | CHECK
DRAWN | CHECK
QUANT. | CHECK

APPROVAL RECOMM. | GROUP LEADER | DATE
APPROVED | CHIEF STRUCTURAL ENGR. | DATE

CONCRETE RETAINING WALL
STANDARD DETAILS NO. 1

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

SALT LAKE COUNTY

1.2R-343-39.5 DRG. NO.

SHT. 5 OF 6

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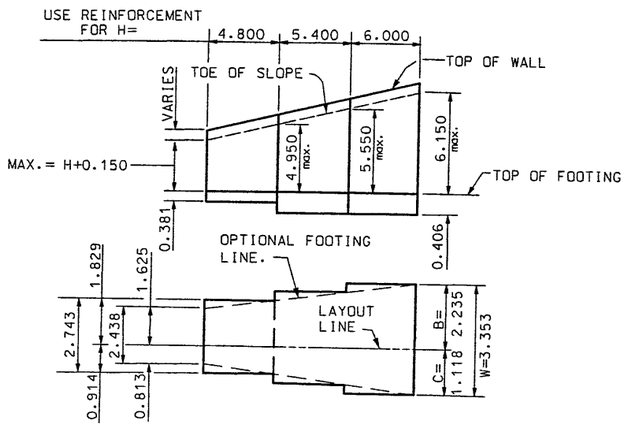
Date:15-JUN-1998 TimesMdl Username:STOTTRJ

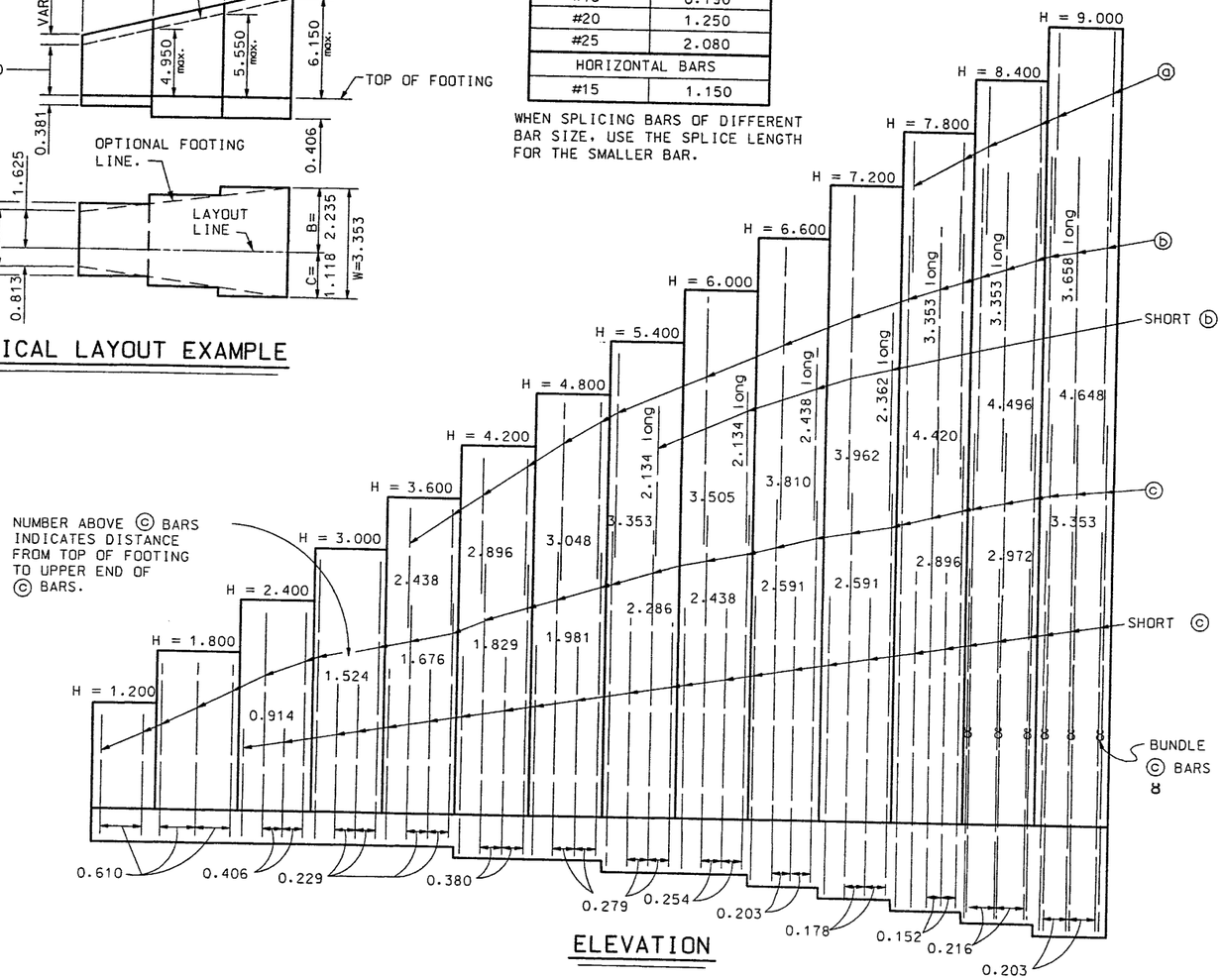


TYPICAL LAYOUT EXAMPLE

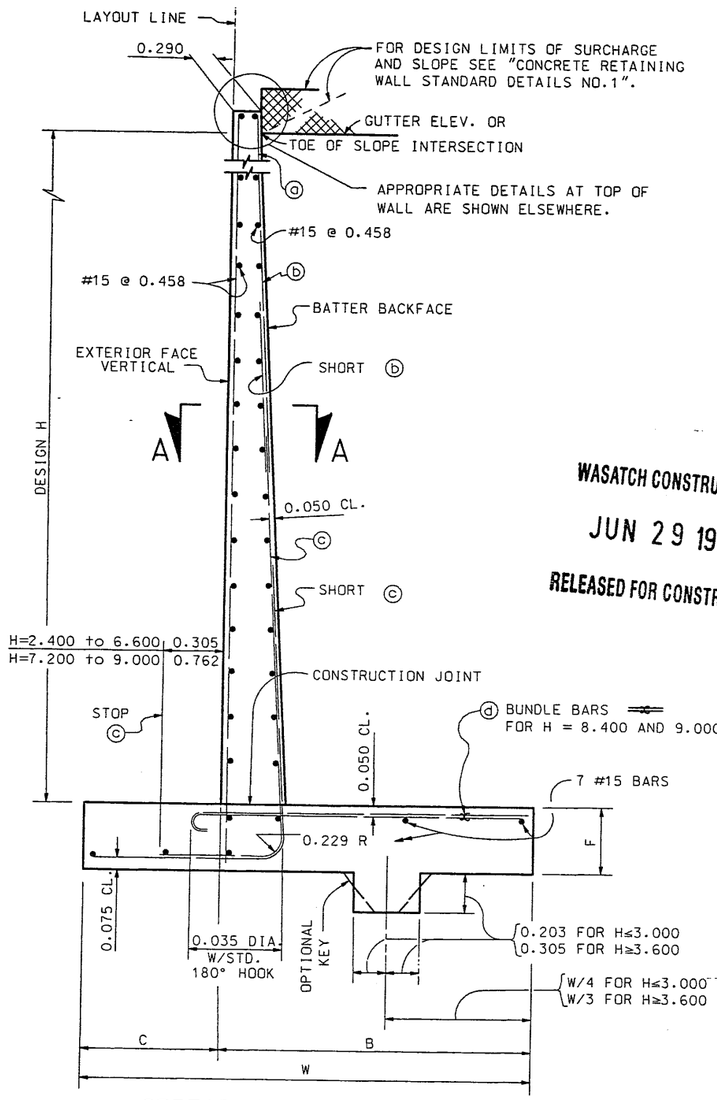
REINFORCING STEEL SPLICES	
BAR SIZE	SPLICE LENGTH
VERTICAL BARS	
#15	0.790
#20	1.250
#25	2.080
HORIZONTAL BARS	
#15	1.150

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

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

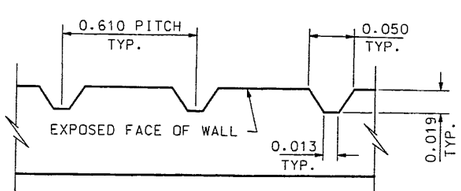


ELEVATION



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													#20@.610	#20@.432	#20@.406
ⓑ BARS						#15@.458	#20@.762	#20@.558	#25@.558	#25@.508	#25@.406	#25@.356	#25@.304	#25@.216	#25@.203
ⓒ 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 &	#35@.203 &
ⓓ 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 &	#30@.203 &
.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. m^3/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

WASATCH CONSTRUCTORS
JUN 29 1998
RELEASED FOR CONSTRUCTION

NO.	DATE	BY	REMARKS	REVISIONS	3/22/95

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN | CHECK
DRAWN | CHECK
QUANT. | CHECK
GROUP LEADER | DATE
CHIEF STRUCTURAL ENGR. | DATE
APPROVAL RECOMM. | APPROVED

CONCRETE RETAINING WALL
STANDARD DETAILS NO. 2

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

SALT LAKE COUNTY

1.2R-343-39.6 DRG. NO.

SHT. 6 OF 6

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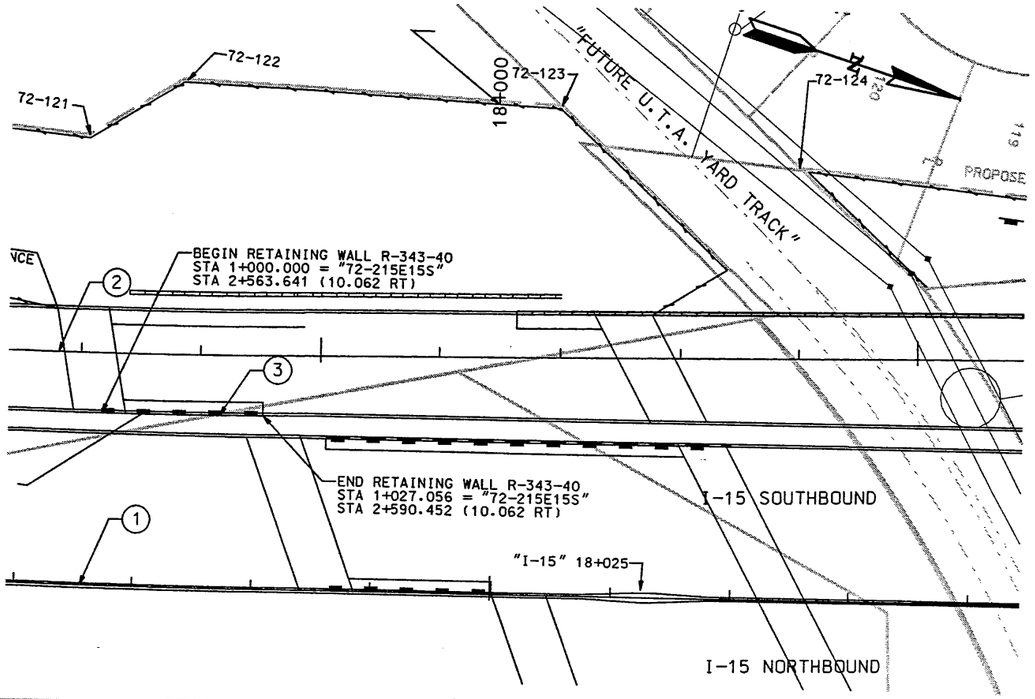

CURVE NO.	△	R	L	T
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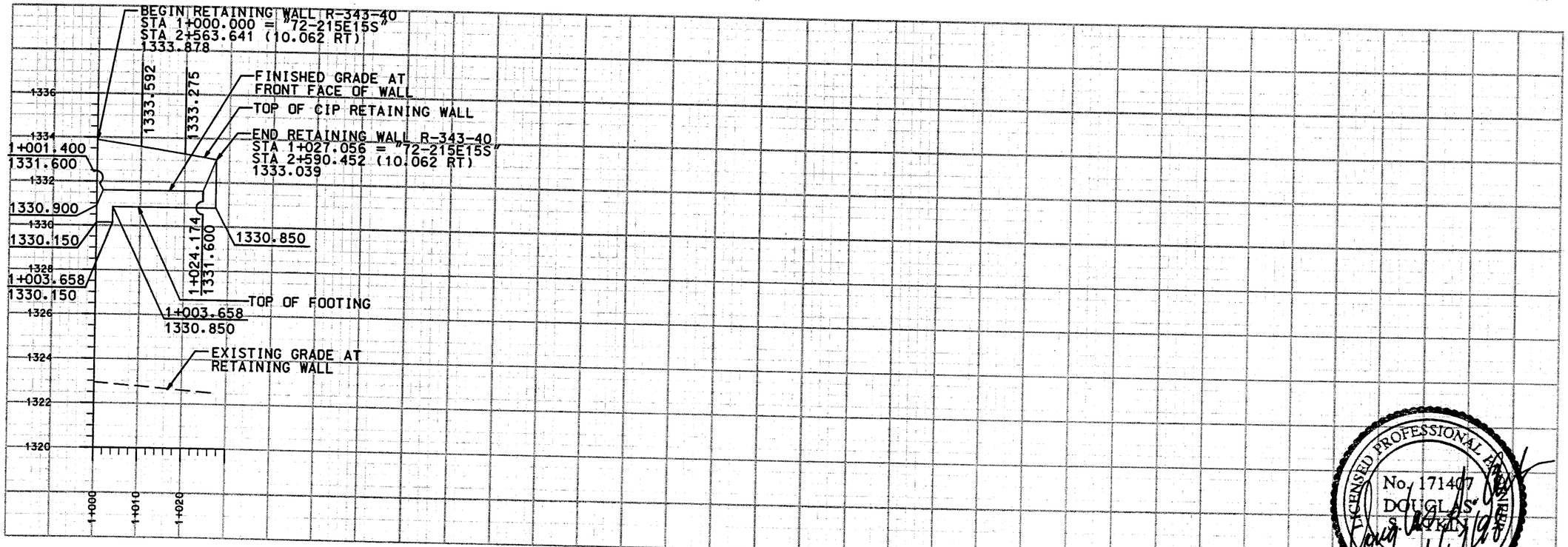
②	19°57'55"	1100.000	383.308	193.617
③	01°23'47"	1110.062	27.056	13.529

DESIGN HEIGHT TABLE

STATION LIMIT	C.I.P. DESIGN HEIGHT (m)
1+000.000 TO 1+003.658	3.6
1+003.658 TO 1+020.807	3.0
1+020.807 TO 1+027.056	2.4

10m 0 10m 30m 50m
SCALE IN METERS



ELEVATION VIEW FROM FRONT OF RETAINING WALL

WASATCH CONSTRUCTORS

JUN 29 1998

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. MAYER
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	6-15-98	INITIAL RELEASE
	- -	- -
	- -	- -

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KMM 2/98 CHECK JBE
DRAWN MH 2/98 CHECK JBE
QUANT. / CHECK

APPROVAL RECOMM. 2/98 RICK CHAPMAN DATE PROJECT DESIGN ENGINEER
APPROVED 2/98 DON GRAUL DATE PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
RETAINING WALL R-343-40
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2R-343-40.1
SHT. 1 OF 5
REF.

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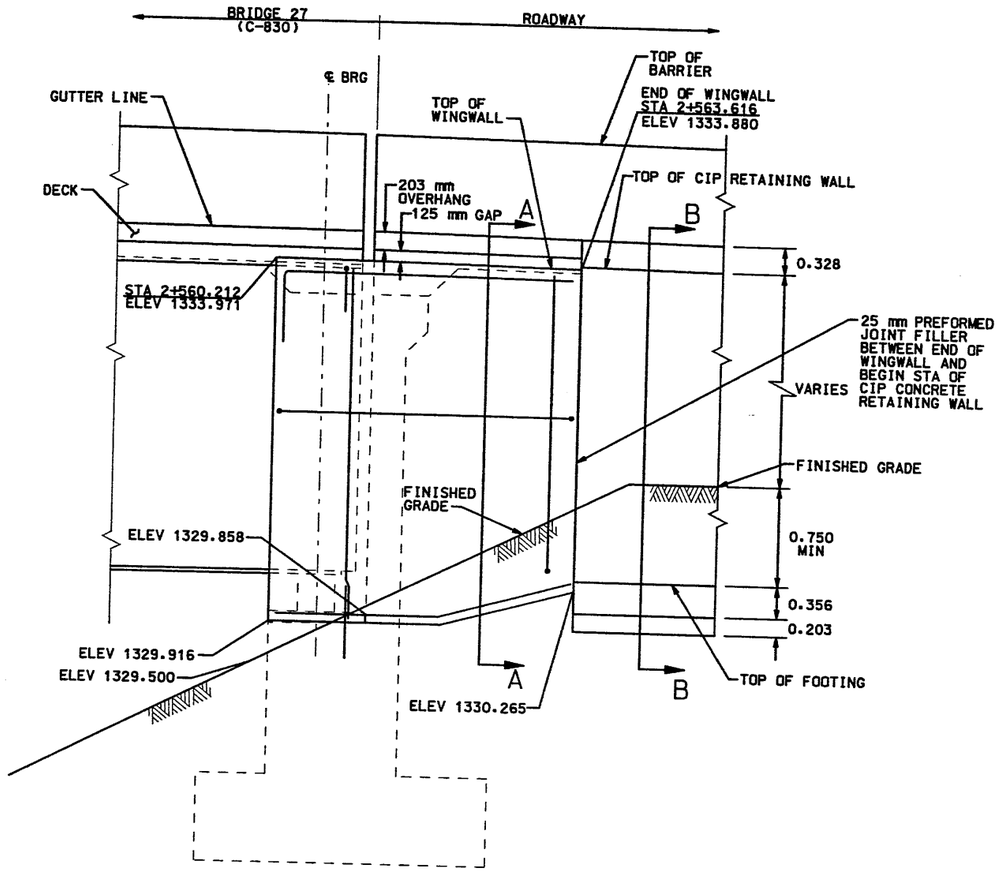
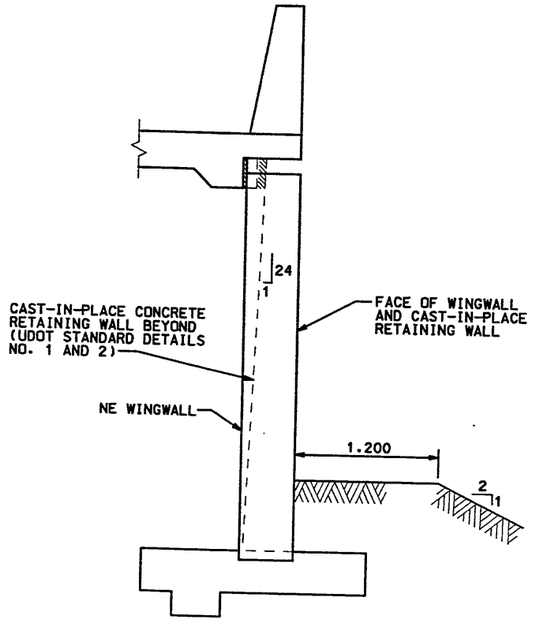
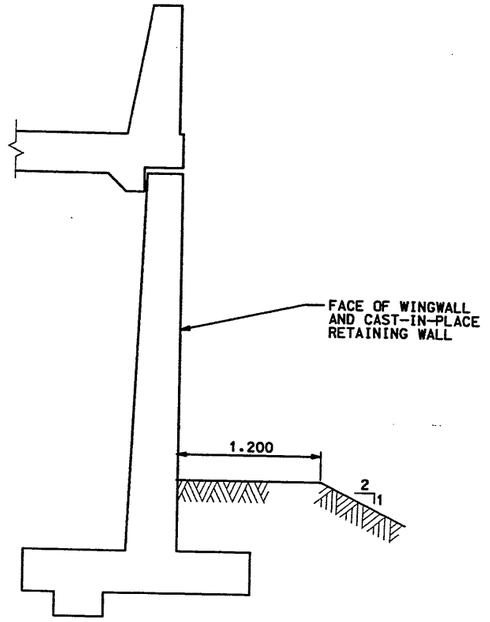


WINGWALL/RETAINING WALL INTERFACE



SECTION A-A

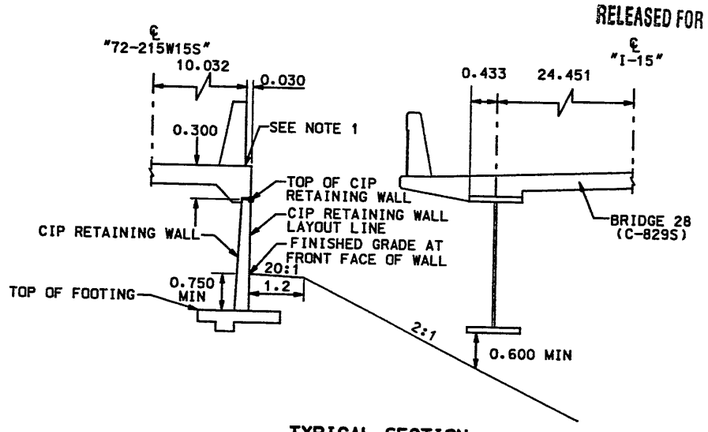


SECTION B-B

WASATCH CONSTRUCTORS

JUN 29 1998

RELEASED FOR CONSTRUCTION



TYPICAL SECTION
RETAINING WALL R-343-40
STA 1+000.000 TO STA 1+027.056

NOTE:

1. SEE CORRIDOR STANDARD PLAN CS-224:
   FOR APPROACH SLAB DETAIL
   SEE MOMENT SLAB DETAIL
   SHEET 1.2R-343-40.3 FOR ROADWAY SECTION

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS SLAWSON
6/17/98
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	6-12-98	INITIAL RELEASE
	- -	- -
	- -	- -
	- -	- -

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KWM	2/98	CHECK JBE	2/98
DRAWN NH	2/98	CHECK JBE	2/98
QUANT.		CHECK	/

APPROVAL RECOMM.	2/98	RICK CHAPMAN	PROJECT DESIGN ENGINEER
APPROVED	2/98	DON GRAUL	PROJECT MANAGER
	DATE		

I-15 CORRIDOR RECONSTRUCTION
DETAIL SHEET
RETAINING WALL R-343-40
SECTION 1.2
PROJECT NUMBER #SP-15-7(1135)296
SALT LAKE COUNTY
DWG. NO. 1.2R-343-40.2
SHT. 2 OF 5
REF.

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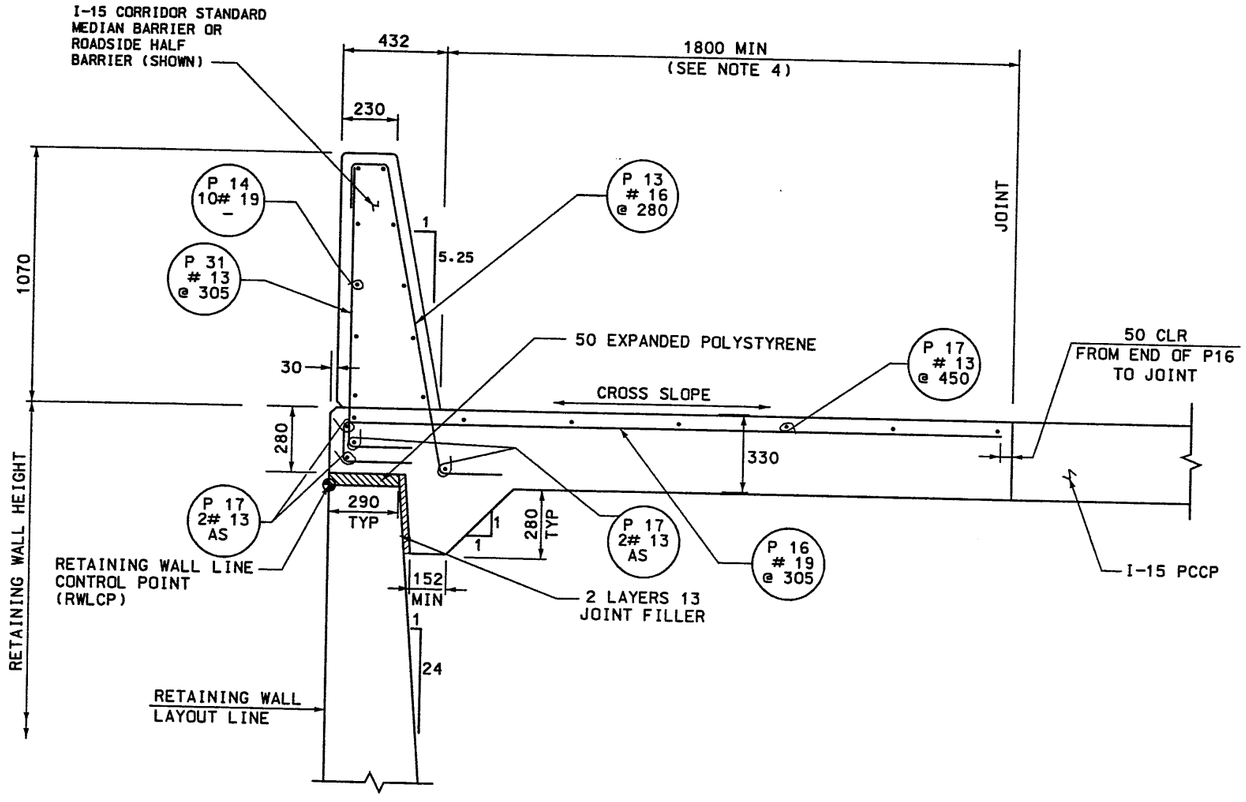

CAST IN PLACE RETAINING WALL WITH BARRIER ON MOMENT SLAB

NTS

BARRIER REINFORCING STEEL SCHEDULE

MARK	LOCATION	SIZE NO.	LENGTH	SKETCH
P13	OUTSIDE BARRIER	16	1920	130, 230, 1290, 270
P14	OUTSIDE LONGITUDINAL	19	VARIES	VARIES
P16	MOMENT SLAB TRANSVERSE	19	2525*	2130*, 165, 58 RADIUS, 230
P17	MOMENT SLAB LONGITUDINAL	13	VARIES	VARIES
P31	OUTISDE BARRIER	13	1370	1190, 180

* FOR MOMENT SLABS LESS THAN 10 METERS LONG, THE HORIZONTAL BAR LENGTH IS 2730 FOR A TOTAL LENGTH OF 3125.

WASATCH CONSTRUCTORS

JUN 29 1998

RELEASED FOR CONSTRUCTION

NOTES:

1. 50mm MINIMUM COVER OVER REINFORCING.
2. USE PCC f'c=27.5 MPa (4000 PSI) FOR MOMENT SLAB.
3. P17 BARS ARE ON TOP OF P16 TO ACT AS STIRRUPS.
4. IF MOMENT SLAB IS LESS THAN 10 METERS LONG THEN THE MINIMUM MOMENT SLAB WIDTH IS 2400 MIN WIDE AND NOT 1800 MIN.
5. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE NOTED.
6. LOCATE TRANSVERSE CONSTRUCTION JOINTS AT THE SAME LOCATION AS THE PAVEMENT JOINTS.
7. CROSS SLOPE OF THE MOMENT SLAB SHALL MATCH THE ROADWAY CROSS SLOPE.

LICENSED PROFESSIONAL ENGINEER No. 171407 DOUGLAS STOTTER STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
2	6-12-98	INITIAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION

SVERDRUP/DE LEUW

DESIGN KM 01/98 CHECK QCD 01/98
DRAWN RS 01/98 CHECK JE 01/98
QUANT. CHECK

RICK CHAPMAN PROJECT DESIGN ENGINEER
APPROVAL RECOMM. 04/03/98 DATE
DON GRAUL SECTION MANAGER
APPROVED 04/03/98 DATE

I-15 CORRIDOR RECONSTRUCTION
MISC DETAIL WALL R-343-40
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2R-343-40.3
SHT. 3 OF 5

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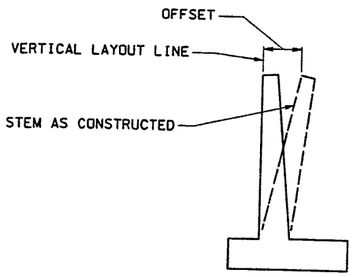
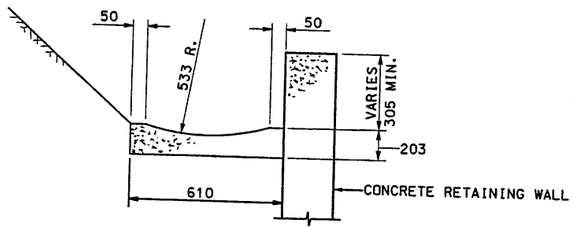


TABLE OF OFFSETS
(IN METERS)

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.

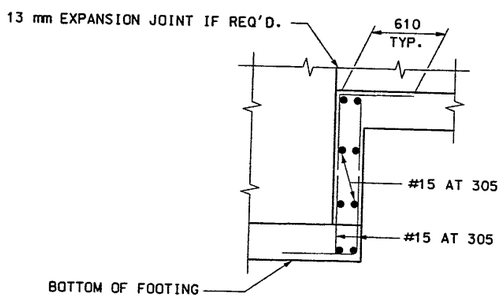
DESIGN DATA

CAST-IN-PLACE CONCRETE: f_c = 10 MPa: f_a(REINF.) = 160 MPa: n=8.

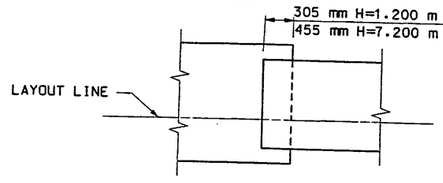
EARTH: UNIT DENSITY = 1920 kg/m^3

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 ø = 33° 42'.

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

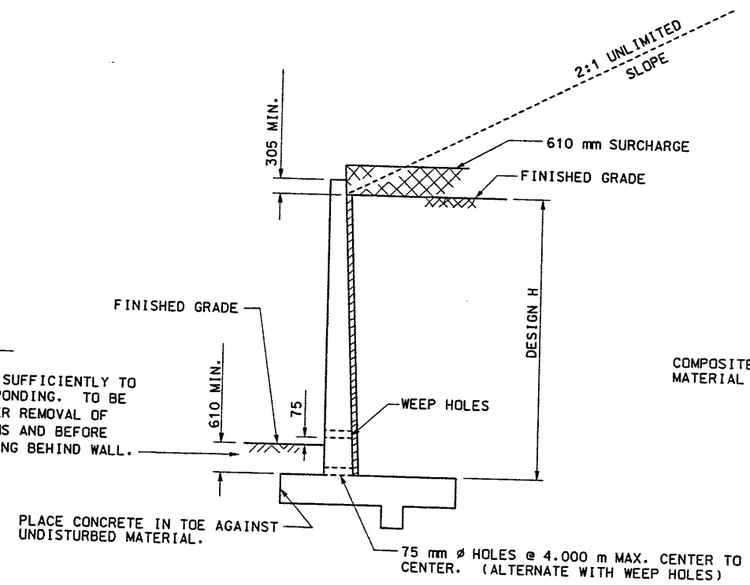


ELEVATION

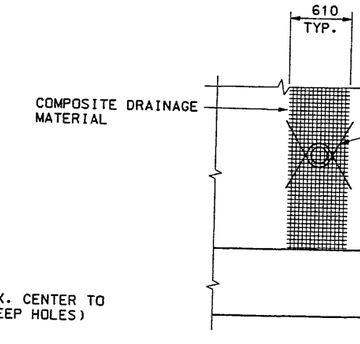


PLAN

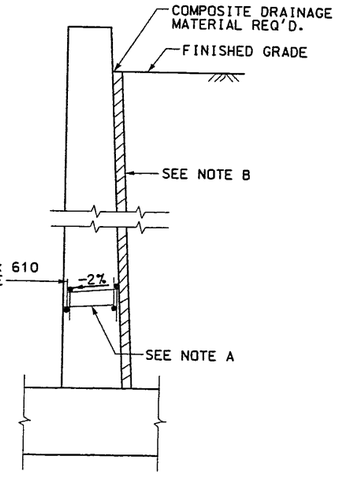
FOOTING STEP DETAILS



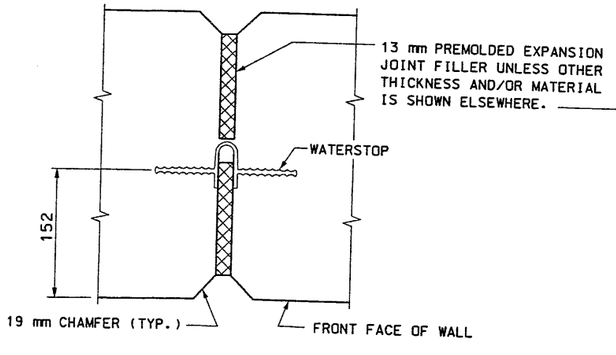
DESIGN AND DRAINAGE



PARTIAL ELEVATION
@ BACK FACE OF WALL

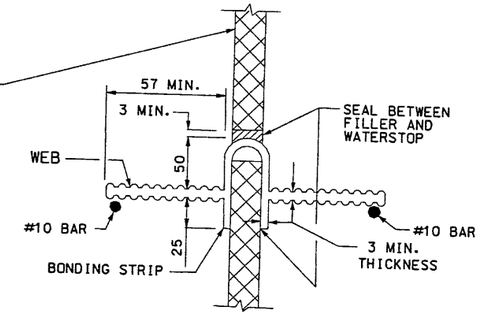


SECTION



WALL EXPANSION JOINT (PLAN VIEW)

PLACE JOINTS AT 30.500 m MAX. SPACING



WATERSTOP 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.

WEEP HOLE DETAIL

NOTES:

A. 100 mm ø DRAINS @ 4.000 m MAX. CENTER TO CENTER.

B. COMPOSITE DRAINAGE MATERIAL REQUIRED FROM BOTTOM OF WALL TO TOP OF FINISHED GRADE.

WASATCH CONSTRUCTORS

JUN 29 1998

RELEASED FOR CONSTRUCTION

REVISIONS

NO.	DATE	BY	REMARKS
			3/22/95

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN | CHECK
DRAWN | CHECK
QUANT. | CHECK

APPROVAL RECOMM. GROUP LEADER DATE
APPROVED CHIEF STRUCTURAL ENGR. DATE

CONCRETE RETAINING WALL
STANDARD DETAILS NO. 1

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

SALT LAKE
COUNTY

1.2R-343-40.4
DRG. NO.

SHT. 4 OF 5

Date:15-JUN-1998 Time:14:13 Username:STOTTRJ

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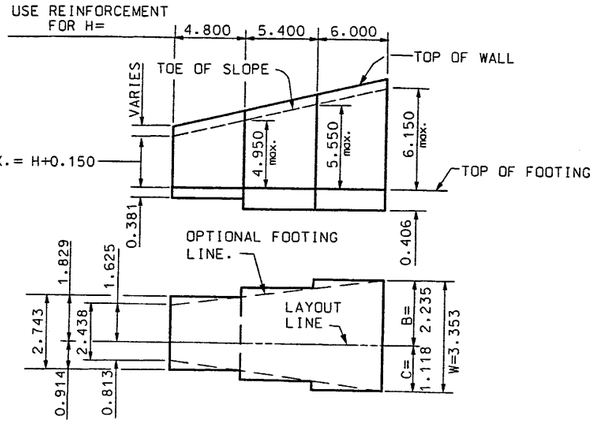
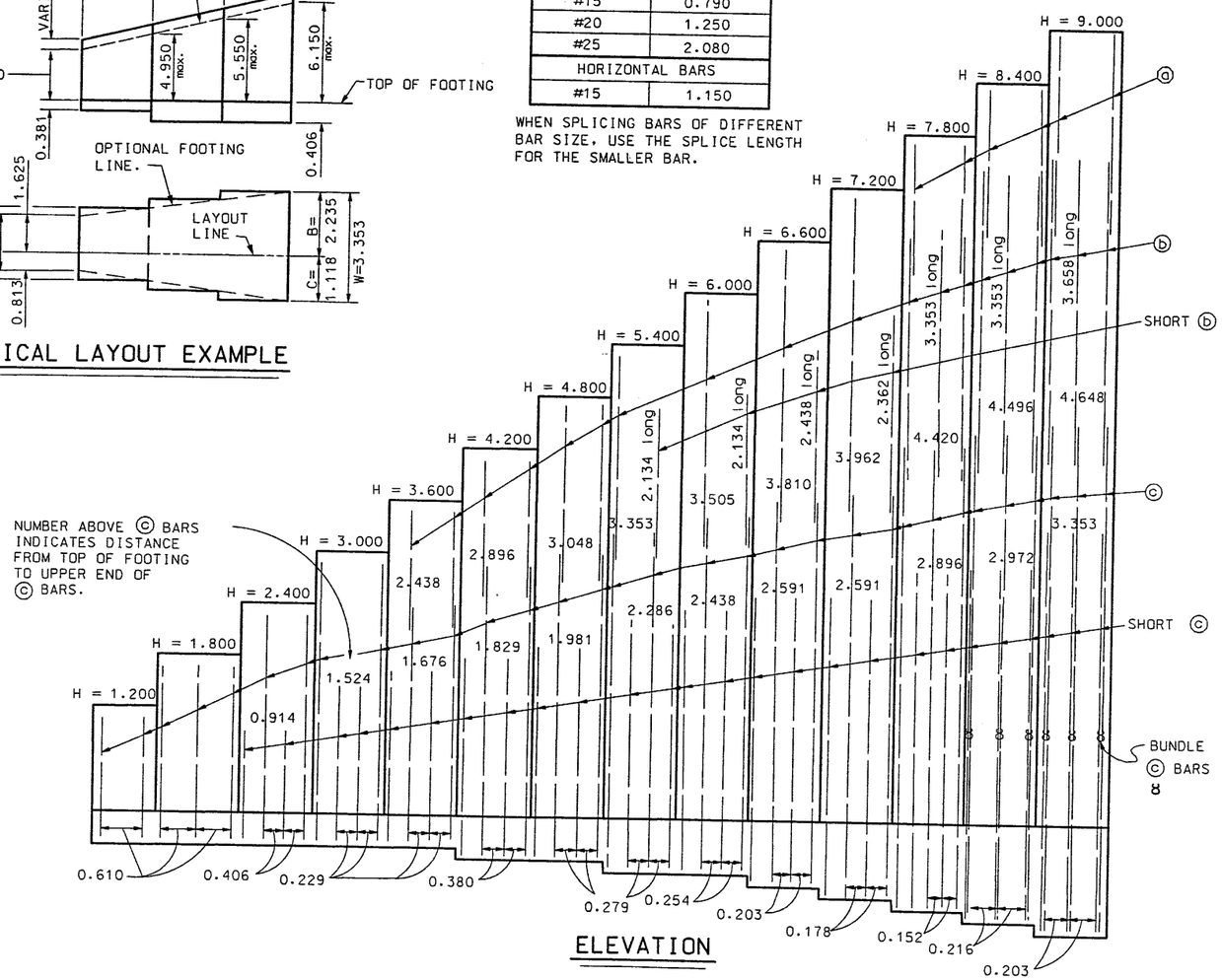


TYPICAL LAYOUT EXAMPLE

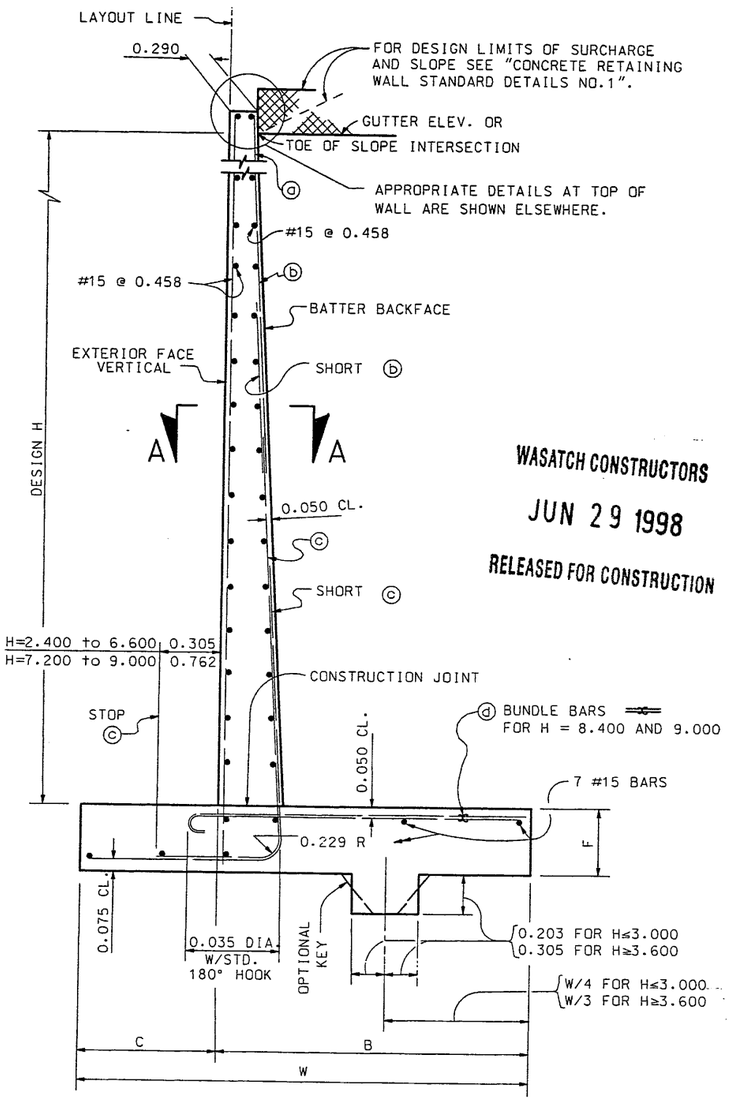
REINFORCING STEEL SPLICES	
BAR SIZE	SPLICE LENGTH
VERTICAL BARS	
#15	0.790
#20	1.250
#25	2.080
HORIZONTAL BARS	
#15	1.150

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

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

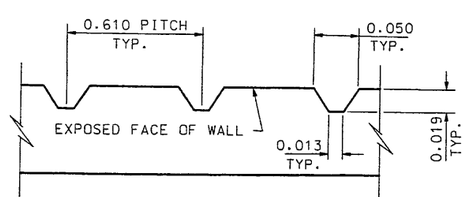


ELEVATION



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

WASATCH CONSTRUCTORS
JUN 29 1998
RELEASED FOR CONSTRUCTION

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													#20@.610	#20@.432	#20@.406
ⓑ BARS						#15@.458	#20@.762	#20@.558	#25@.558	#25@.508	#25@.406	#25@.356	#25@.304	#25@.216	#25@.203
ⓒ 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 &	#35@.203 &
ⓓ 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 &	#30@.203 &
.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. m^3/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

NO.	DATE	BY	REVISIONS	REMARKS	3/22/95

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

DESIGN — CHECK
DRAWN — CHECK
QUANT. — CHECK
GROUP LEADER — DATE — APPROVAL RECOM.
CHIEF STRUCTURAL ENGR. — DATE — APPROVED

CONCRETE RETAINING WALL
STANDARD DETAILS NO. 2

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

SALT LAKE COUNTY

1.2R-343-40.5 DRG. NO.

SHT. 5 OF 5

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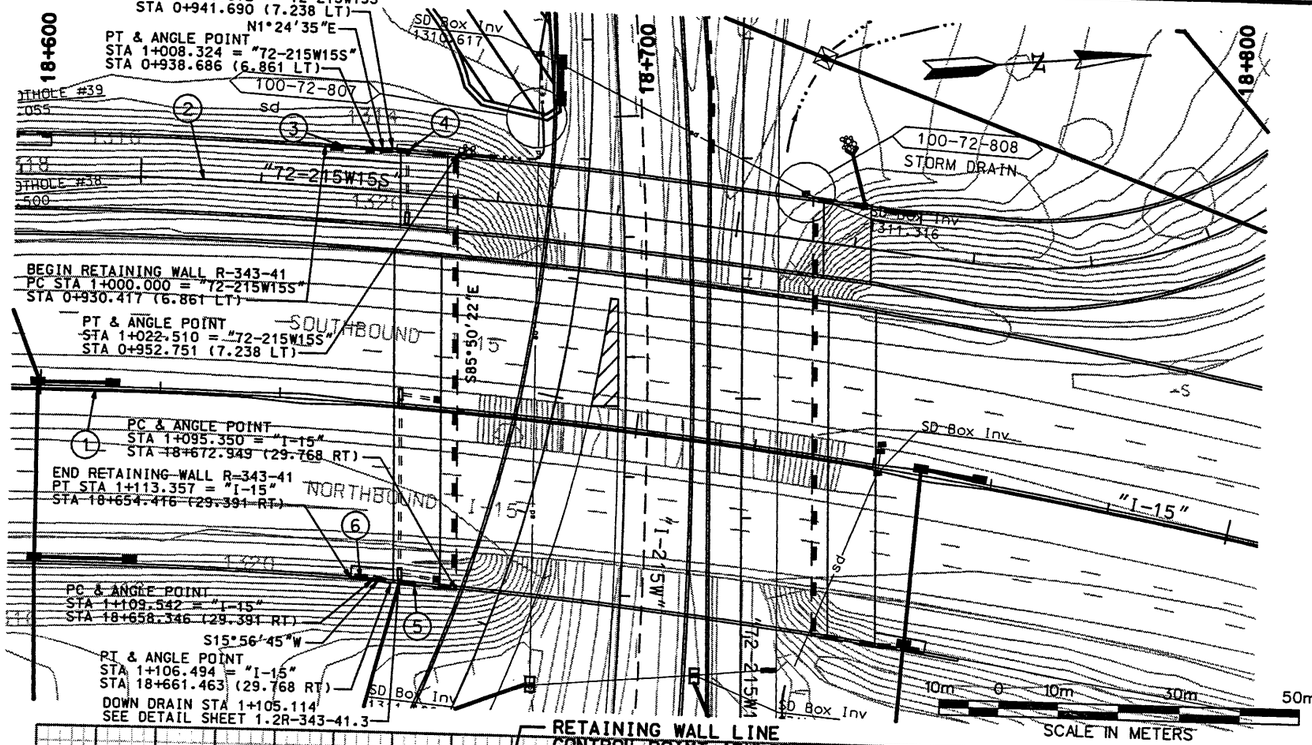

ELEVATION VIEW FROM BACK OF RETAINING WALL

CURVE NO.	△	R	L	T
①	35°08'59"	1000.000	613.479	316.736
②	24°11'45"	1035.530	437.300	221.958
③	00°27'27"	1042.391	8.324	4.162
④	00°36'43"	1042.768	11.138	5.569
⑤	00°39'29"	970.232	11.144	5.572
⑥	00°13'31"	970.609	3.815	1.908

POINT NO.	WALL STATION	ROADWAY	ROADWAY STATION	OFFSET	WALL ELEV
7	1+000.000	"72-215W15S"	0+930.417	6.861 LT	1323.815
8	1+008.324	"72-215W15S"	0+938.686	6.861 LT	1323.898
9	1+011.372	"72-215W15S"	0+941.690	7.238 LT	1323.939
10	1+011.974	"72-215W15S"	0+942.288	7.238 LT	1323.945
11	1+019.451	"72-215W15S"	0+949.713	7.238 LT	1320.235
12	1+022.510	"72-215W15S"	0+952.751	7.238 LT	1320.264
13	1+035.662	"72-215W15S"	0+953.915	5.862 RT	1319.869
14	1+065.452	"I-15"	18+670.121	0.000 LT	1319.056
15	1+095.350	"I-15"	18+672.949	29.768 RT	1318.710
16	1+098.411	"I-15"	18+669.794	29.768 RT	1318.694
17	1+105.892	"I-15"	18+662.083	29.768 RT	1321.946
18	1+106.494	"I-15"	18+661.463	29.768 RT	1321.943
19	1+109.542	"I-15"	18+658.346	29.391 RT	1321.945
20	1+113.357	"I-15"	18+654.416	29.391 RT	1321.926
21	1+020.510	"72-215W15S"	0+950.765	7.238 LT	1313.560
22	1+022.510	"72-215W15S"	0+952.751	7.238 LT	1313.560
23	1+095.350	"I-15"	18+672.949	29.768 RT	1313.560
24	1+097.350	"I-15"	18+670.888	29.768 RT	1313.560
25	1+097.350	"I-15"	18+670.888	29.768 RT	1313.922

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH
9/5/98

WASATCH CONSTRUCTORS

AUG 10 1998

RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
△	08-06-98	INITIAL RELEASE TO ALL
	- -	- -
	- -	- -

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KMM 3/98 CHECK JBE
DRAWN MH 3/98 CHECK JBE
QUANT. / CHECK

RICK CHAPMAN 3/98 APPROVAL RECOMM.
PROJECT DESIGN ENGINEER DATE

DON GRAUL 3/98 APPROVED
PROJECT MANAGER DATE

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
RETAINING WALL R-343-41
SECTION 1.2
PROJECT NUMBER #SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2R-343-41.1
SHT. 1 OF 10
REF.

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Date: 05-AUG-1998 Time: 14:22

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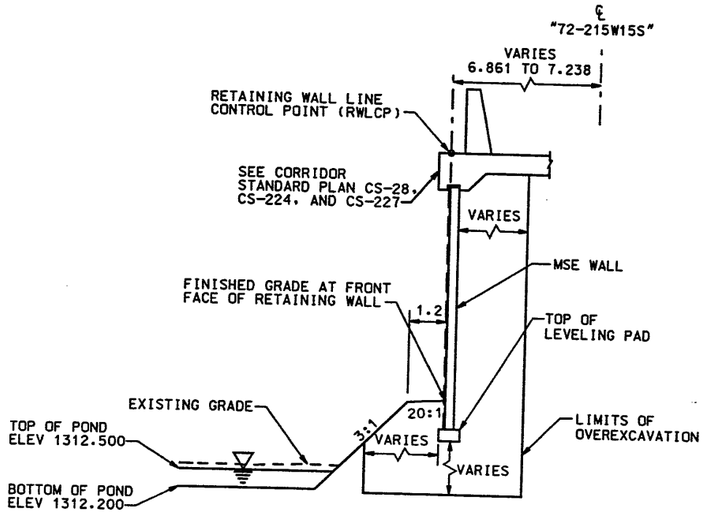
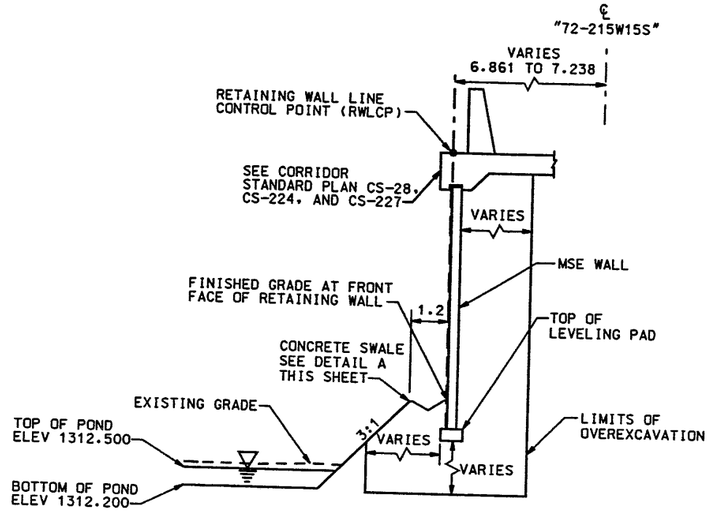
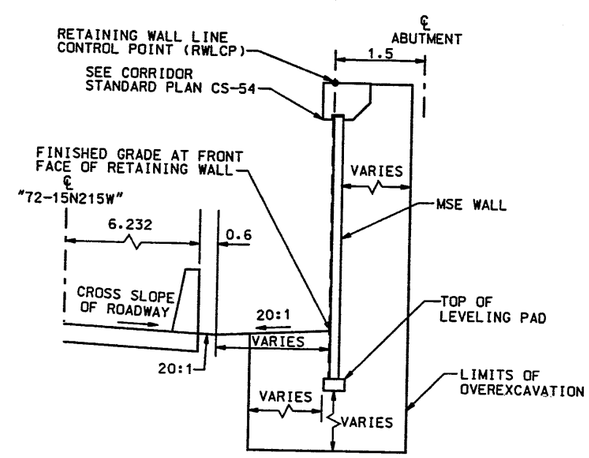


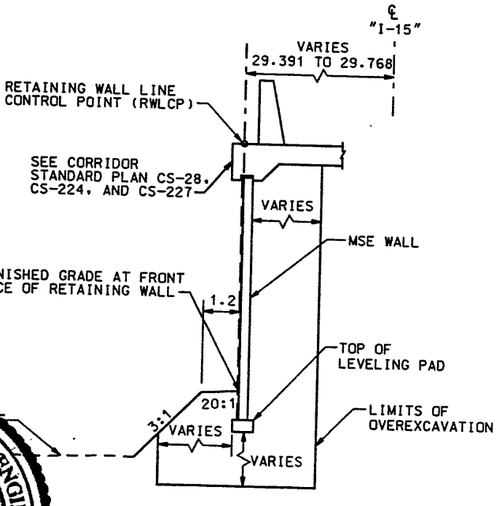
TYPICAL SECTION
WALL R-343-41
STA 1+000.000 TO STA 1+014.000



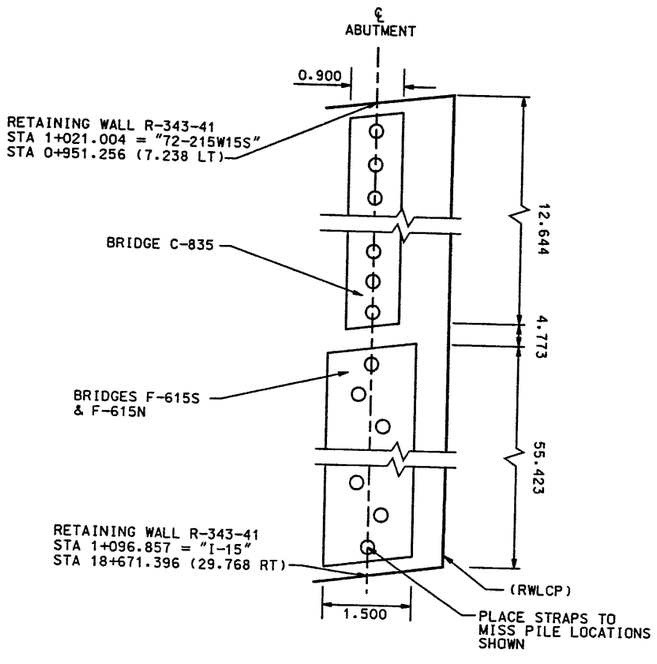
TYPICAL SECTION
WALL R-343-41
STA 1+014.000 TO STA 1+022.510



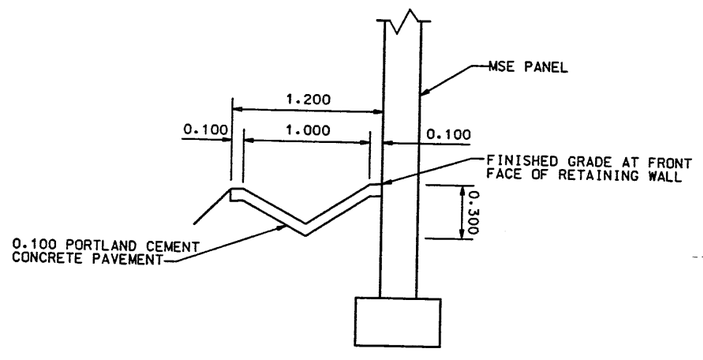
TYPICAL SECTION
WALL R-343-41
STA 1+022.510 TO STA 1+095.350



TYPICAL SECTION
WALL R-343-41
STA 1+095.350 TO STA 1+113.357



PILE LAYOUT
N.T.S.
BRIDGES C-835, F-615S, & F-615N



DETAIL A
CONCRETE SWALE

WASATCH CONSTRUCTORS

AUG 1 0 1998

RELEASED FOR CONSTRUCTION

NOTE:

DEPTH OF OVEREXCAVATION WILL BE EVALUATED BY FIELD GEOTECHNICAL ENGINEER. REMOVALS MAY EXTEND UP TO 6 M DEEP. ALTERNATIVES TO OVEREXCAVATION INCLUDE INSTALLING GEOPIERS OR STONE COLUMNS. SEE DM 1.2-62 DATED 3/5/98.

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	08-06-98	INITIAL RELEASE TO ALL

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KWM 3/98 CHECK JBE 3/98
DRAWN NH 3/98 CHECK JBE 3/98
QUANT. / CHECK

APPROVAL RECOMM. 3/98 RICK CHAPMAN PROJECT DESIGN ENGINEER
APPROVED 3/98 DON GRAUL PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
DETAILS RETAINING WALL R-343-41
SECTION 1.2
PROJECT NUMBER #SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2R-343-41.2
SHT. 2 OF 10
REF.

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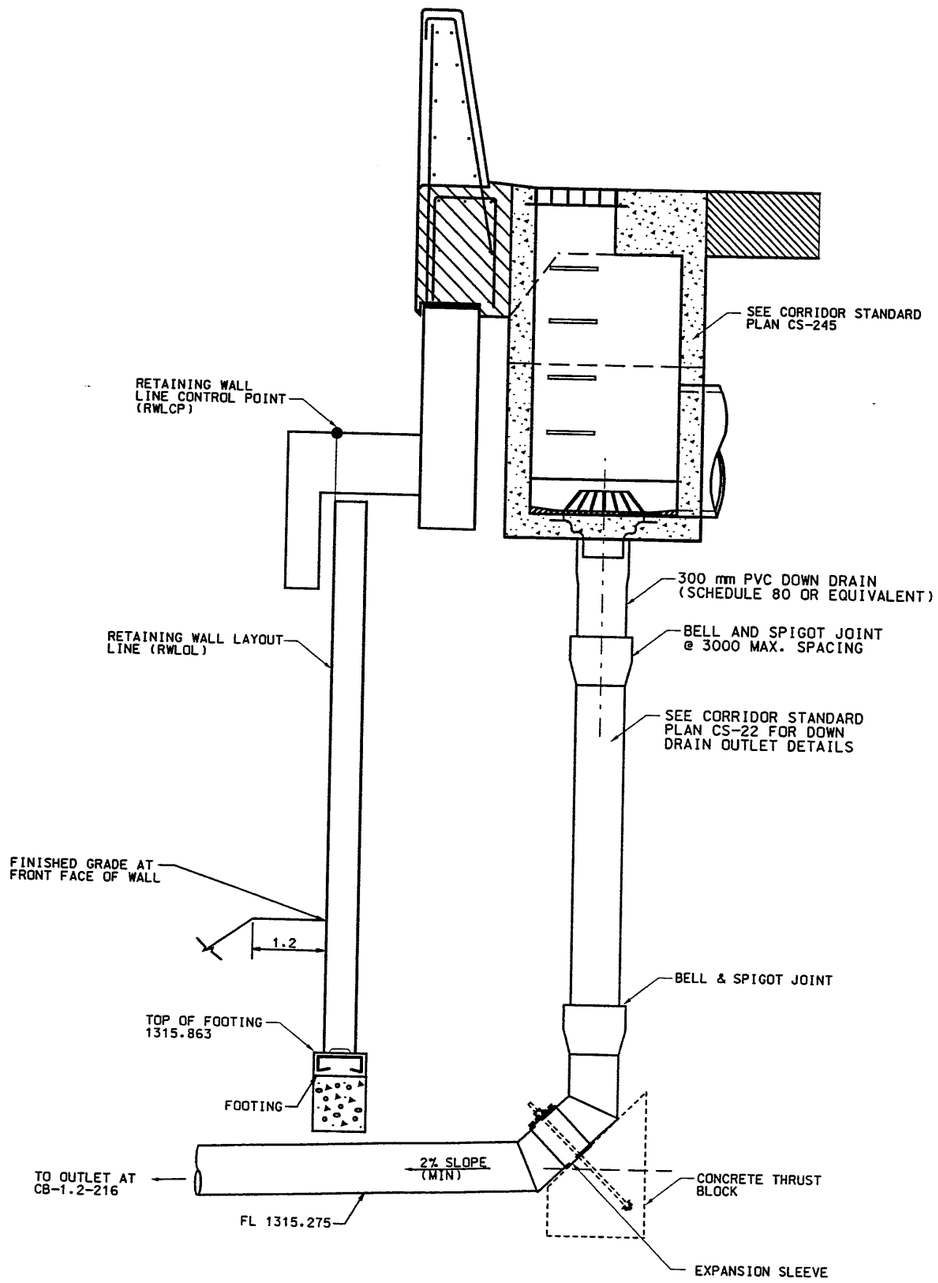
Date: 05-AUG-1998 Time: 14:39 Username: jamieoow



DOWN DRAIN DETAIL
STA 1+105.114

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

WASATCH CONSTRUCTORS

AUG 10 1998

RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	08-06-98	INITIAL RELEASE TO ALL

UTAH DEPARTMENT OF TRANSPORTATION
SVERDRUP/DE LEUW

DESIGN	KNM 3/98	CHECK JME 3/98	
DRAWN	KNM 3/98	CHECK JME 3/98	
QUANT.		CHECK	

APPROVAL RECOMM. 3/98 DATE — RICK CHAPMAN PROJECT DESIGN ENGINEER
APPROVED 3/98 DATE — DON GRAUL SECTION MANAGER

I-15 CORRIDOR RECONSTRUCTION
MISC DETAILS RET/WALL R-343-41
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2R-343-41.3
SHT. 3 OF 10

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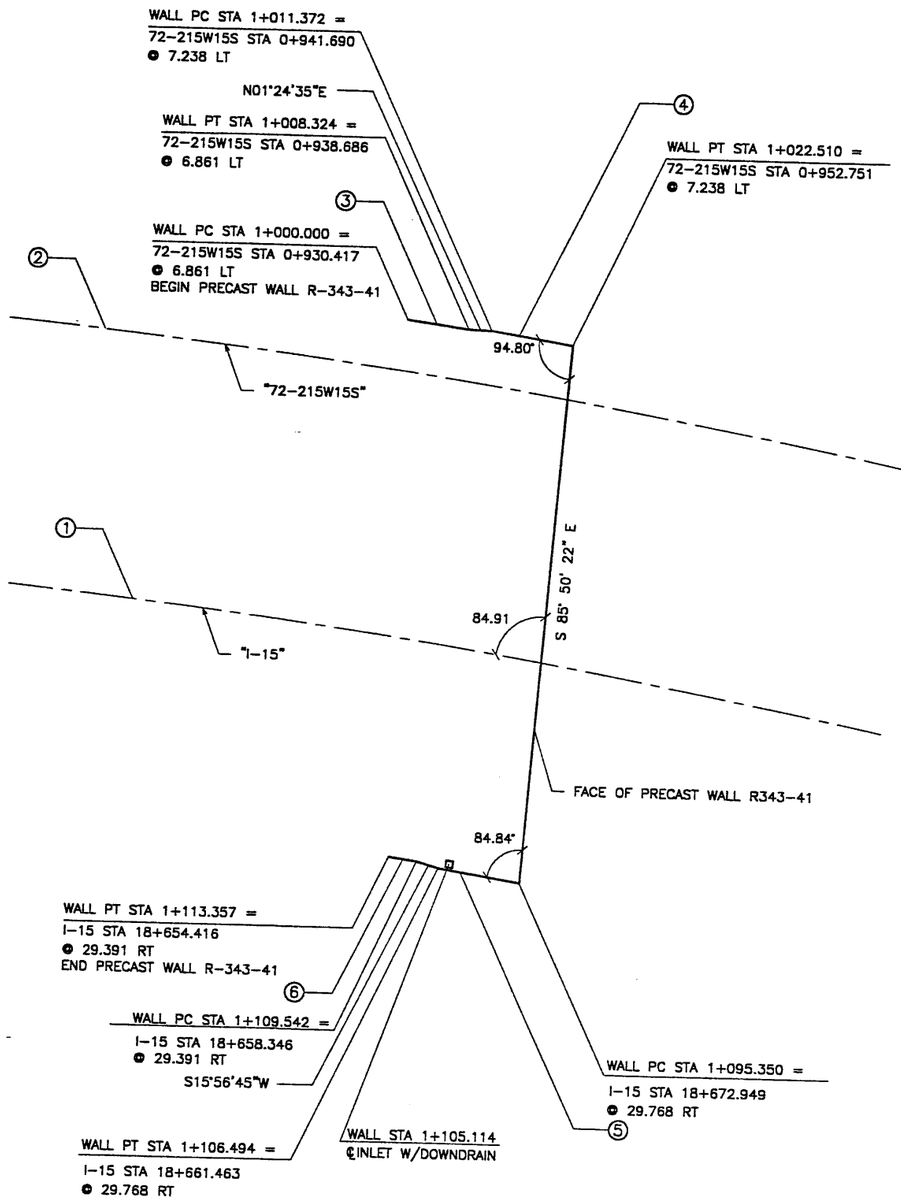

PLAN VIEW MSE WALL "R-343-41"

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

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	△
①	1000.000	613.479	316.736	35°08'59"
②	1035.530	437.300	221.958	24°11'45"
③	1042.391	8.324	4.162	00°27'27"
④	1042.768	11.138	5.569	00°36'43"
⑤	970.232	11.144	5.572	00°39'29"
⑥	970.609	3.815	1.908	00°13'31"

All Dimensions Are In Meters Unless Noted Otherwise

RETAINED EARTH INDEX	
RE-1	PLAN PRECAST WALL R-343-41, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTION
RE-3	PRECAST WALL R-343-41
RE-4	PRECAST WALL R-343-41
RE-5	SPECIAL PANEL DETAILS
RE-6	SPECIAL PANEL DETAILS
RE-7	SPECIAL PANEL DETAILS

DESIGN PARAMETERS
ANGLE OF INTERNAL FRICTION (SELECT) = 34°
ANGLE OF INTERNAL FRICTION (BASE) = 34°
ANGLE OF INTERNAL FRICTION (RANDOM) = 34°
UNIT WEIGHT BACKFILL = 135 PCF. (21.2 KN/M^3)
TRAFFIC SURCHARGE = 250 PSF (12 KPa)
SEISMIC ACCELERATION COFF. = 0.12g (TYP)
SEISMIC ACCELERATION COFF. = 0.283g (AT BRIDGE ABUTMENTS)
DESIGN CRITERIA
SAFETY FACTOR (OVERTURNING) = 2.0
SAFETY FACTOR (SLIDING) = 1.5
SAFETY FACTOR (PULLOUT) = 1.5
DESIGN LIFE = 75 YEARS

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	7-13-98	RELEASE FOR CONST.

WASATCH CONSTRUCTORS
AUG 18 1998
RELEASED FOR CONSTRUCTION

METRIC

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
7/17/98
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK

DES. 05-15-98 JL
DRN. 05-15-98 RSW
CHK. 05-15-98 JL
RETAINED EARTH™

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

ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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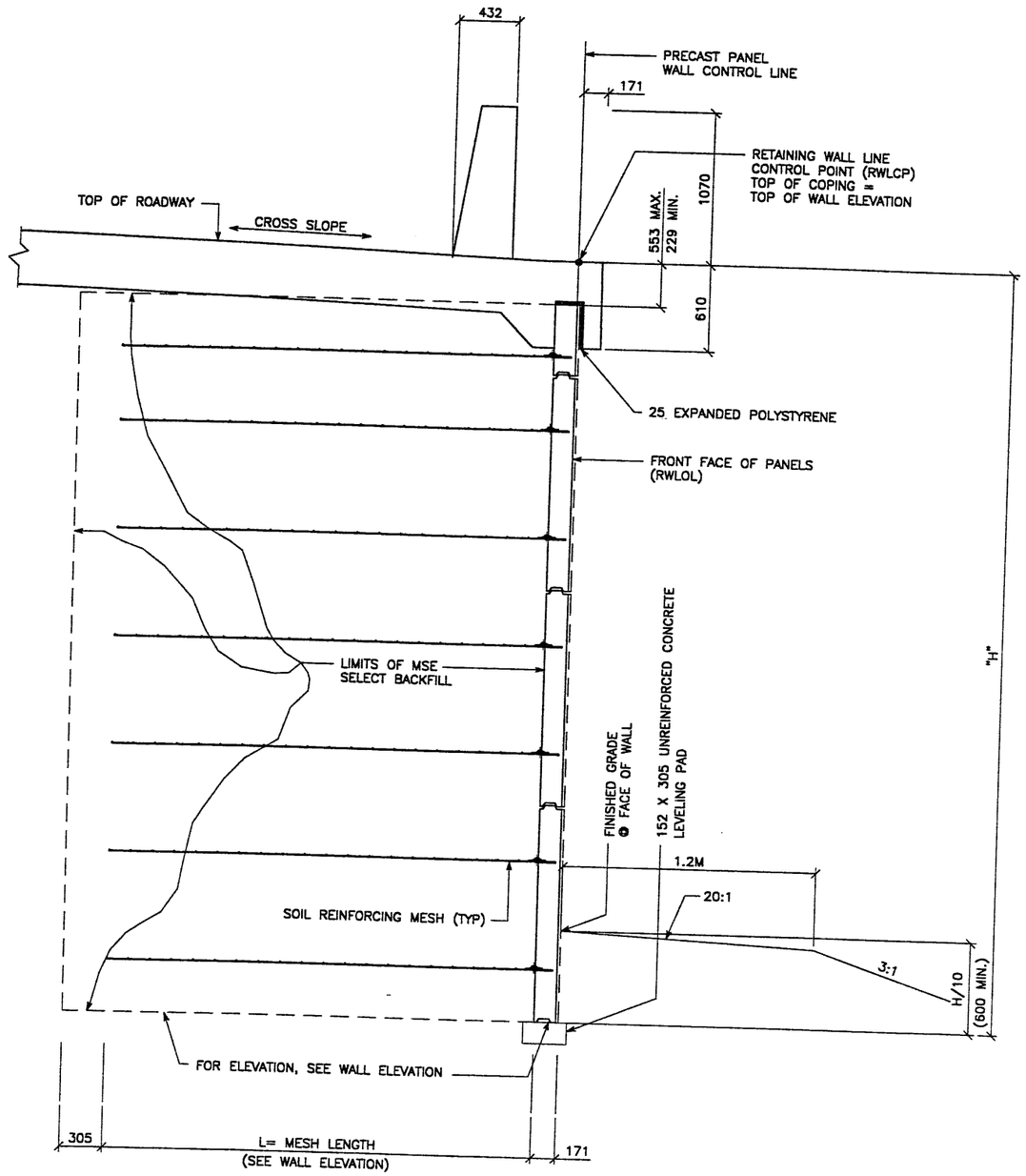
RETAINED EARTH™ WALLS
PLAN VIEW MSE WALL "R-343-41"

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

DWG. NO. 1.2R-343-41.4
JOB NO: 239-0007 4/10
SHT. NO. RE-1

FINAL PLOT 07-13-98
H:\RE_EARTH\APROJECT\239-0007\1998\72SERIES\72-41\RE-1



TYPICAL CROSS SECTION

STA 1+000.000 TO STA 1+022.510

STA 1+095.350 TO STA 1+113.357

(SEE DWG. NO. 1.2R-343-41.2 FOR ADDITIONAL INFORMATION)

SCALE: 1:20 (FULL SIZE)

SCALE: 1:40 (HALF SIZE)

WASATCH CONSTRUCTORS

AUG 1 0 1998

RELEASED FOR CONSTRUCTION

METRIC

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LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
7/16/98
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	7-13-98	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. 05-28-98 JL
DRN. 05-28-98 RSW
CHK. 05-28-98 JL

VSL RETAINED EARTH™

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

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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-41"
TYPICAL CROSS SECTION

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

DWG. NO. 1.2R-343-41.5

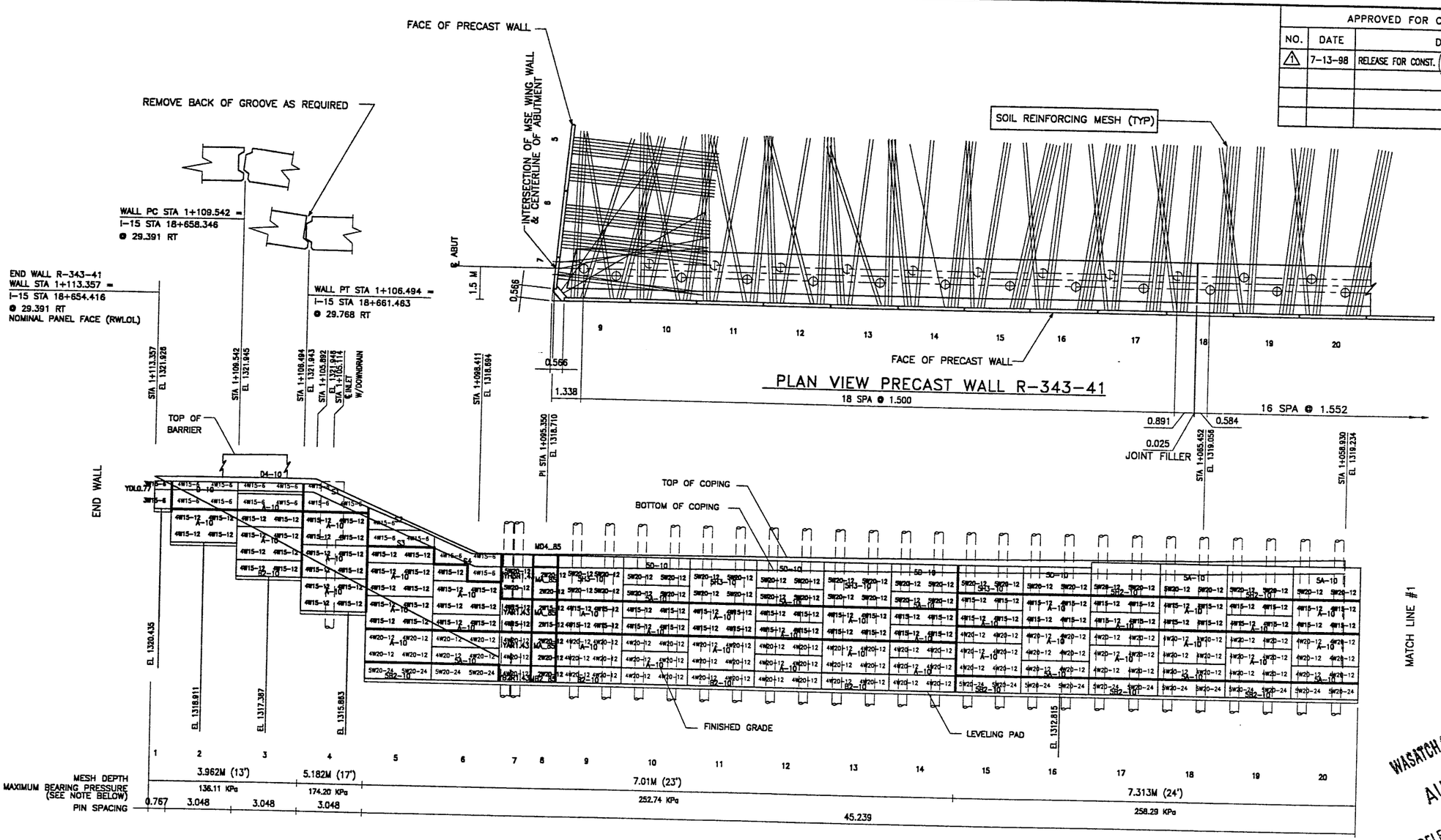
JOB NO: 239-0007 5/10

SHT. NO. RE-2

FINAL PLOT 07-13-98

H:\RE_EARTH\APROJECT\239-0007\1998\72...ES\72-41\RE-2

...RENCE (X-UTAH.DWG)



ELEVATION PRECAST WALL R-343-41

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 683.23 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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APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	7-13-98	RELEASE FOR CONST.

NO.	DATE	REVISION	BY	CHK

DES. 06-03-98 JL
DRN. 06-03-98 RSW
CHK. 06-03-98 JL

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
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ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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WASATCH CONSTRUCTORS
AUG 10 1998
RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
7/16/98
STATE OF UTAH

RETAINED EARTH™ WALLS
PRECAST WALL "R-343-41"

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

DWG. NO. 1.2R-343-41.6
JOB NO: 239-0007 6/10
SHT. NO. RE-3

H:\RE_EARTH\APROJECT\239-0007\1998\...RIES\72-41\72-41.DWG
FINAL PLOT 07/13/98

NCE (X-UTAH.DWG)
RIES\72-41\72-41.DW
H:\RE_EARTH\PROJECT\239-0007\199
FINAL 07-27-98

APPROVED FOR CONSTRUCTION			
NO.	DATE	DESCRIPTION	BY CHK
1	7-27-98	RELEASE FOR CONST.	

NO.	DATE	REVISION

DES. JL 07-27-98
DRN. RSW 07-27-98
CHK. JL 07-27-98

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
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ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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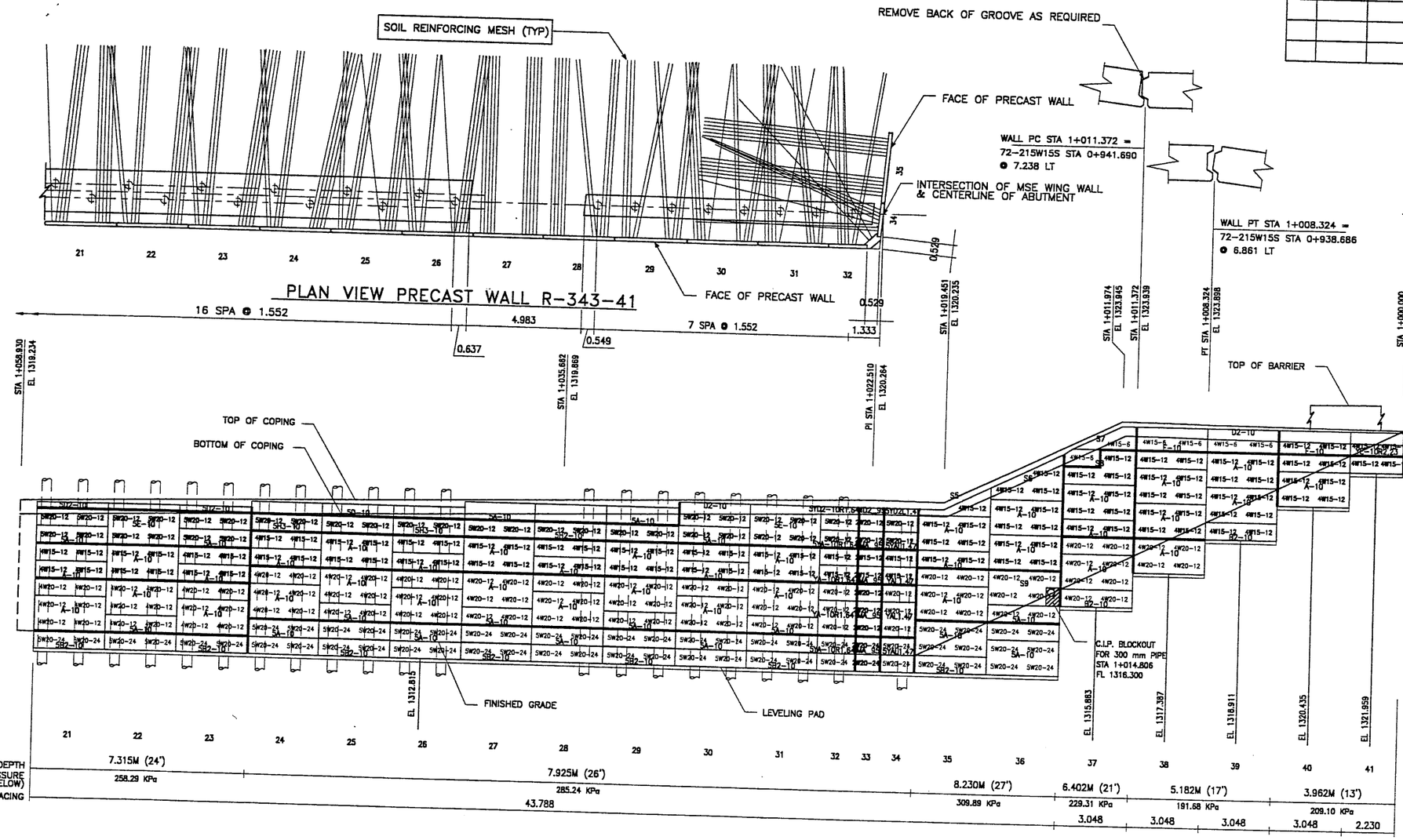

ELEVATION PRECAST WALL R-343-41

(FRONT FACE SHOWN)

(TOTAL SURFACE AREA OF PANELS = 683.23 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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WASATCH CONSTRUCTORS
AUG 10 1998
RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
7/10/98
STATE OF UTAH

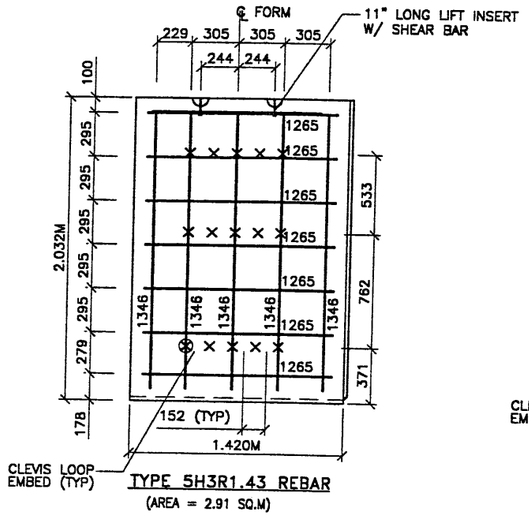
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-41"

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

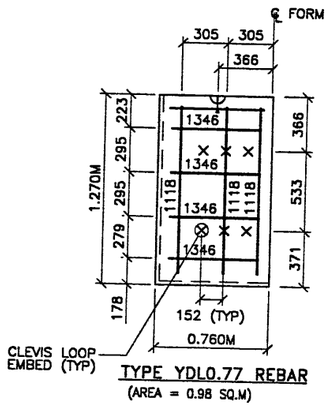
DWG. NO.
1.2R-343-41.7

JOB NO:
239-0007 7/10

SHT. NO. RE-4



TYPE 5H3R1.43 REBAR
(AREA = 2.91 SQ.M)



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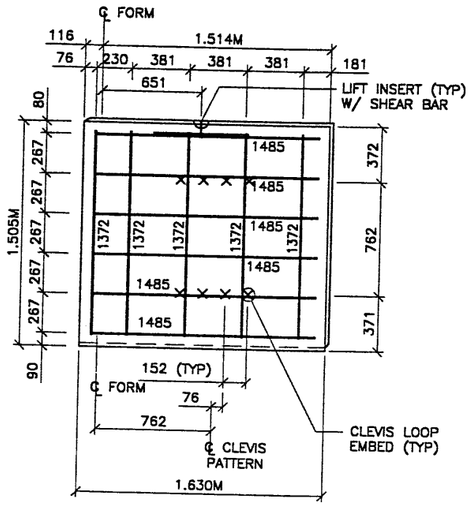
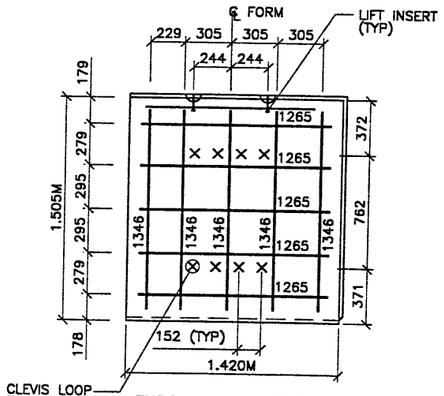
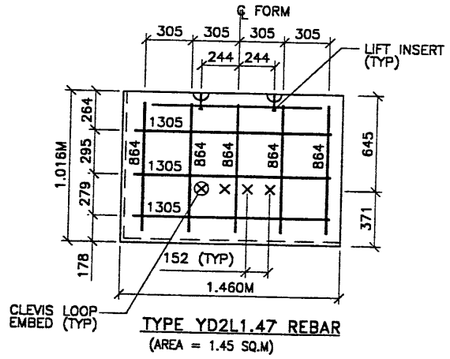
(AREA = 0.98 SQ.M)



TYPE YA-10R1.64 REBAR
(AREA = 2.50 SQ.M)



TYPE YAR1.43 REBAR
(AREA = 2.18 SQ.M)



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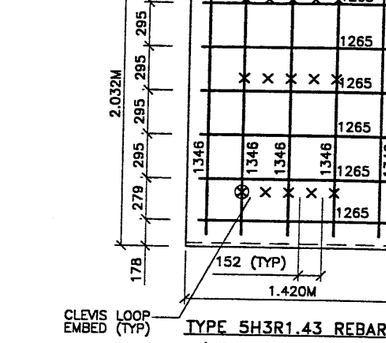
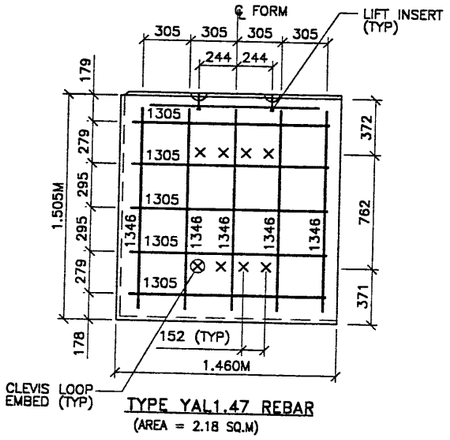
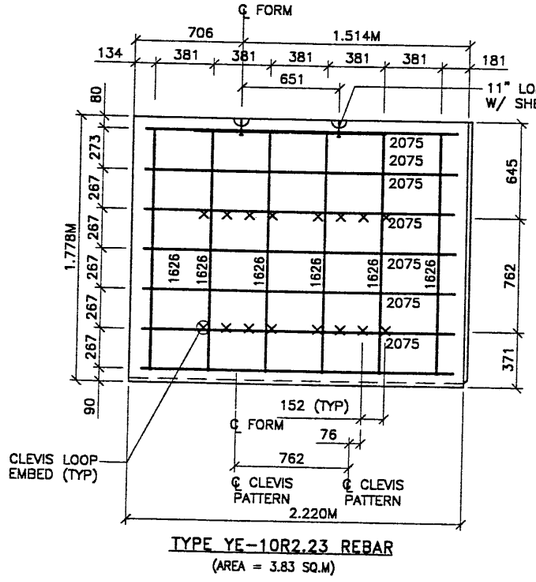
(AREA = 1.45 SQ.M)



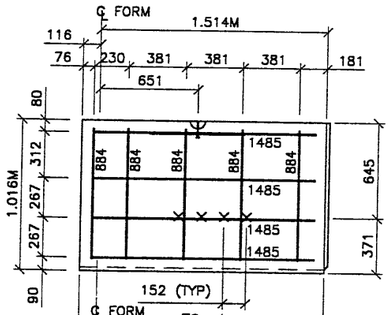
TYPE YB2R1.43 REBAR
(AREA = 1.09 SQ.M)



TYPE YAL1.47 REBAR
(AREA = 2.18 SQ.M)



TYPE YE-10R2.23 REBAR
(AREA = 3.83 SQ.M)



TYPE YD2-10R1.64 REBAR
(AREA = 2.50 SQ.M)

PANEL REINFORCEMENT NOTES:
1. PANELS ARE SHOWN BACK FACE.
2. HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
3. ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
4. ALL REINFORCING BARS ARE #13 METRIC. LABELS ON EACH BAR INDICATE LENGTH. EXAMPLE: 1345 IS A #13 BAR 1345 mm LONG.
5. PANEL REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT CONFORMING TO THE SPECIFICATIONS OF ASTM DESIGNATION A615, GRADE 60.
6. ALL REINFORCING STEEL TO BE GALVANIZED IN ACCORDANCE WITH ASTM 767 CLASS I.
7. CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 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

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	BY / CHK
1	7-13-98	RELEASE FOR CONST.	

NO.	DATE	REVISION

DES. 06-02-98 RSW
DRN. 06-02-98 RSW
CHK. 06-02-98 JL

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-4869

ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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RETAINED EARTH™ WALL
PRECAST WALL "R-343-41"
SPECIAL PANEL DETAILS

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

DWG. NO.
1.2R-343-41.8

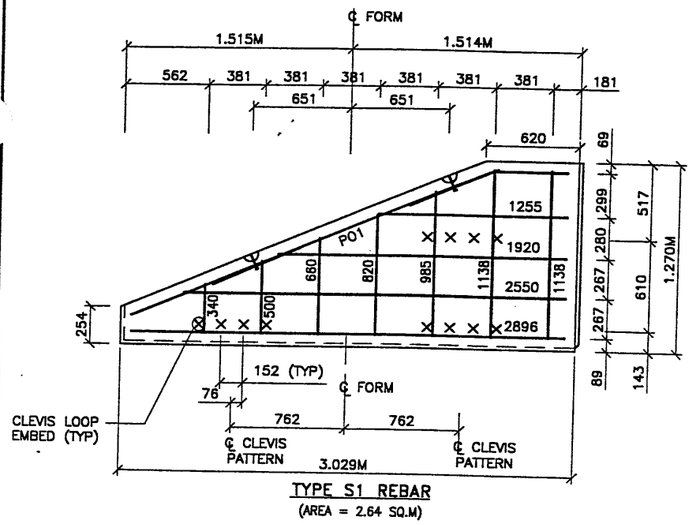
JOB NO:
239-0007

SHT. NO.
RE-5

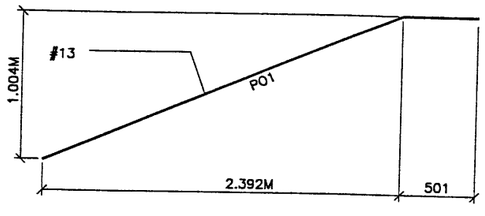
RELEASED FOR CONSTRUCTION
AUG 10 1998
FOR BIDDING PURPOSES ONLY
FOR GATCH CONSTRUCTORS

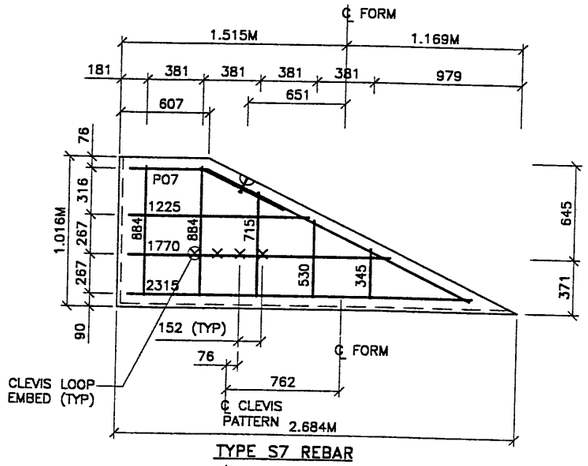
LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
7/16/98
STATE OF UTAH

FINAL T 07-13-98 H:\RE_EARTH\APROJECT\239-0007\1998\7...S\72-41\SPECIALS\...ENCE (X-UTAH.DWG)

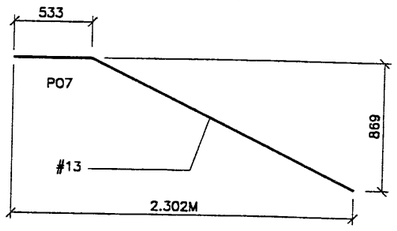


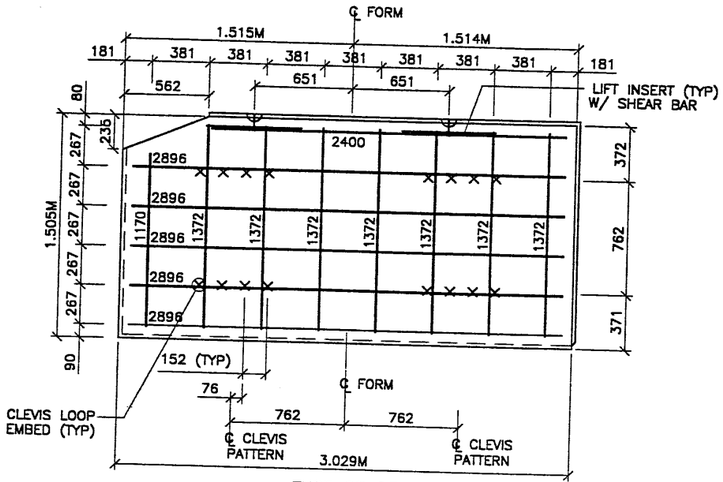
TYPE S1 REBAR
(AREA = 2.64 SQ.M)



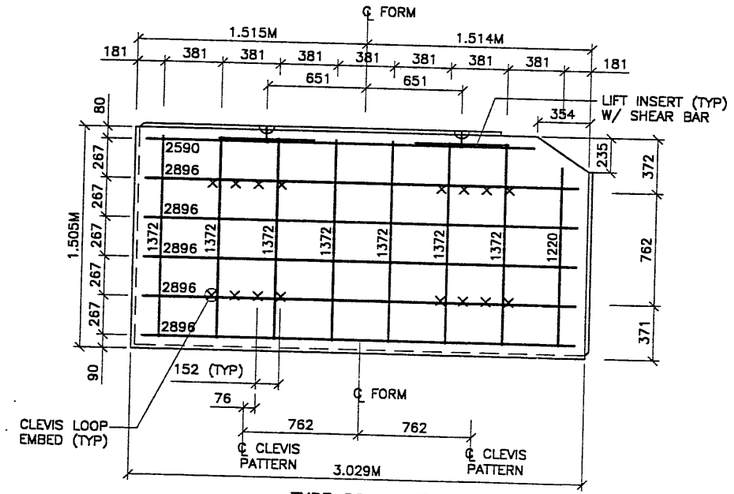


TYPE S7 REBAR
(AREA = 1.67 SQ.M)

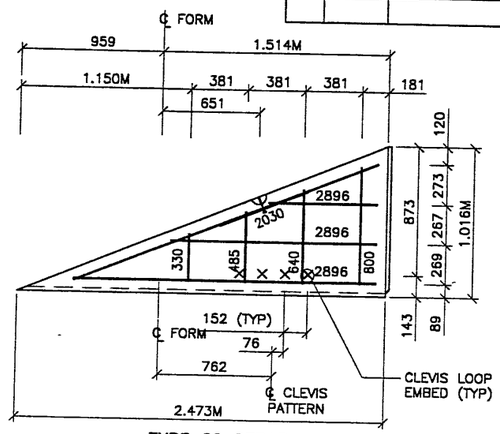




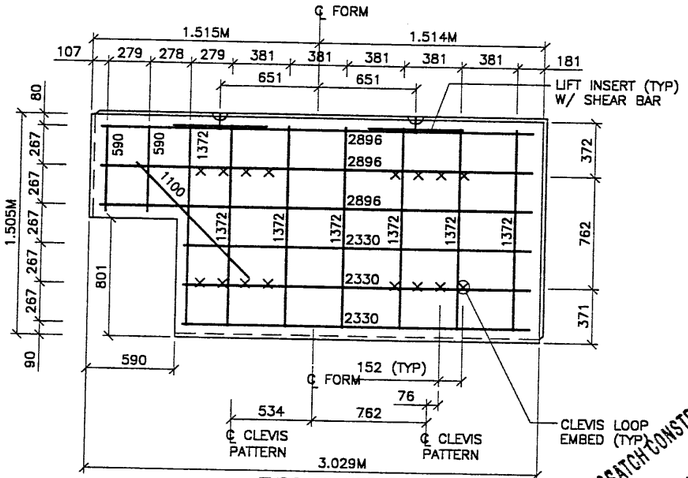
TYPE S3 REBAR
(AREA = 4.57 SQ.M)



TYPE S8 REBAR
(AREA = 4.60 SQ.M)



TYPE S2 REBAR
(AREA = 1.26 SQ.M)



TYPE S9 REBAR
(AREA = 4.18 SQ.M)

PANEL REINFORCEMENT NOTES:
1. PANELS ARE SHOWN BACK FACE.
2. HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
3. ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
4. ALL REINFORCING BARS ARE #13 METRIC. LABELS ON EACH BAR INDICATE LENGTH. EXAMPLE: 1345 IS A #13 BAR 1345 mm LONG.
5. PANEL REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT CONFORMING TO THE SPECIFICATIONS OF ASTM DESIGNATION A615, GRADE 60.
6. ALL REINFORCING STEEL TO BE GALVANIZED IN ACCORDANCE WITH ASTM 767 CLASS I.
7. CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 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

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	7-27-98	RELEASE FOR CONST.

NO.	DATE	REVISION	BY	CHK
		-		

DES. 07-27-98 RSW
DRN. 07-27-98 RSW
CHK. 07-27-98 JL

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone (919) 781-5272
Fax (919) 781-4969

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

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RECEIVED
AUG 10 1998
WASATCH CONSTRUCTORS

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
8/1/98
STATE OF UTAH

RETAINED EARTH™ WALLS
PRECAST WALL "R-343-41"
SPECIAL PANEL DETAILS

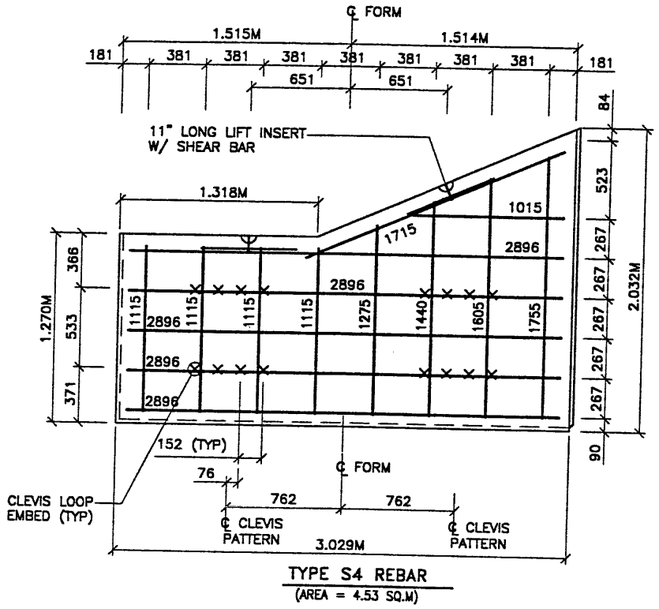
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.
1.2R-343-41.9

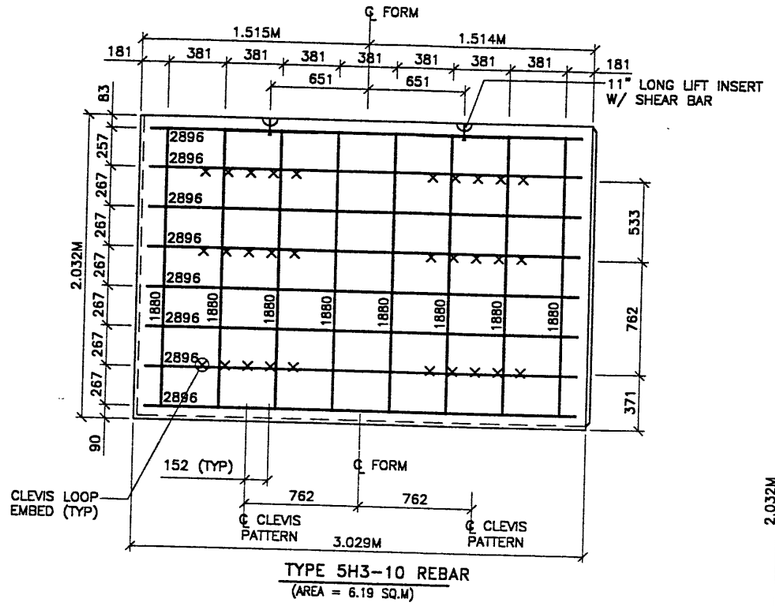
JOB NO:
239-0007 9/10

SHT. NO.
RE-6

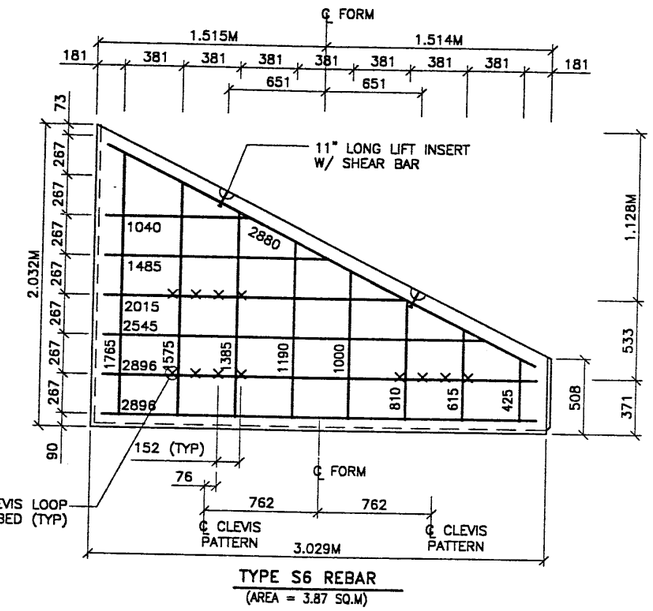
H:\RE_EARTH\APPROJECT\239-0007\1998\7 07-27-98 FINAL
S\72-41\SPECIALS
NCE (X-UTAH.DWG)



TYPE S4 REBAR
(AREA = 4.53 SQ.M)



TYPE 5H3-10 REBAR
(AREA = 6.19 SQ.M)



TYPE S6 REBAR
(AREA = 3.87 SQ.M)

TYPE S5 REBAR
AREA = 1.78 SQ.M)

TYPE 5H2-10 REBAR
(AREA = 6.97 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.
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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
AUG 10 1998
RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
7/16/98
STATE OF UTAH

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	7-13-98	RELEASE FOR CONST.

NO.	DATE	REVISION	BY	CHK

DES. 06-03-98 RSW
DRN. 06-03-98 RSW
CHK. 06-03-98 JL
RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-8272
Fax: (919) 781-4669

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

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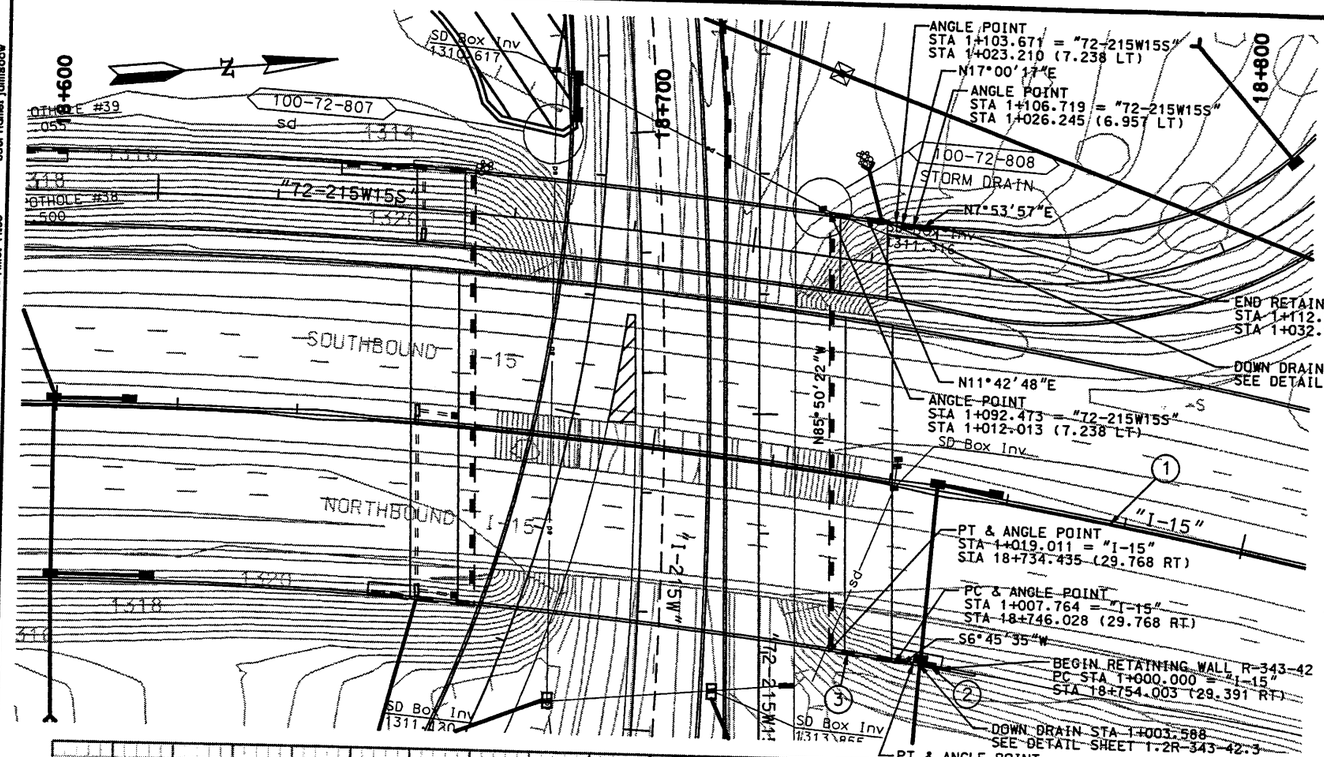
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-41"
SPECIAL PANEL DETAILS

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

DWG. NO. 1.2R-343-41.10
JOB NO: 239-0007 10/10
SHT. NO. RE-7

H:\RE_EARTH\PROJECT\239-0007\1998\7... FINAL PLT 07-13-98
S\72-41\SPECIALS
FENCE (X-UTAH.DWG)



ELEVATION VIEW FROM BACK OF RETAINING WALL

CURVE NO.	△	R	L	T
①	35°8'59"	1000.000	613.479	316.736
②	00°16'42"	970.609	4.716	2.358
③	00°39'51"	970.232	11.247	5.624

10m 0 10m 30m 50m
SCALE IN METERS

POINT NO.	WALL STATION	ROADWAY	ROADWAY STATION	OFFSET	WALL ELEV
4	1+000.000	"I-15"	18+754.003	29.391 RT	1322.423
5	1+004.716	"I-15"	18+749.144	29.391 RT	1322.399
6	1+007.764	"I-15"	18+746.028	29.768 RT	1322.366
7	1+008.373	"I-15"	18+745.400	29.768 RT	1322.362
8	1+015.925	"I-15"	18+737.616	29.768 RT	1319.033
9	1+019.011	"I-15"	18+734.435	29.768 RT	1319.018
10	1+049.135	"I-15"	18+729.748	0.000 LT	1319.355
11	1+079.259	"72-215W15S"	1+013.750	5.862 RT	1320.373
12	1+092.473	"72-215W15S"	1+012.013	7.238 LT	1320.244
13	1+095.548	"72-215W15S"	1+015.087	7.238 LT	1320.215
14	1+103.065	"72-215W15S"	1+022.604	7.238 LT	1323.919
15	1+103.671	"72-215W15S"	1+023.210	7.238 LT	1323.922
16	1+106.719	"72-215W15S"	1+026.245	6.957 LT	1323.885
17	1+112.598	"72-215W15S"	1+032.111	7.348 LT	1323.800
18	1+017.011	"I-15"	18+736.497	29.768 RT	1313.918
19	1+019.011	"I-15"	18+734.435	29.768 RT	1313.918
20	1+055.229	"I-15"	18+728.834	6.024 LT	1313.918
21	1+092.473	"72-215W15S"	1+012.013	7.238 LT	1314.737
22	1+094.473	"72-215W15S"	1+014.012	7.238 LT	1314.737

NOTE:

RETRIEVABLE SAMPLES TO BE INSTALLED AT APPROX. STA 1+110.000

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

WASATCH CONSTRUCTORS
AUG 10 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	08-06-98	INITIAL RELEASE TO ALC
	- -	- -
	- -	- -
	- -	- -

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

APPROVAL RECOMM.	3/98	RICK CHAPMAN	PROJECT DESIGN ENGINEER
APPROVED	3/98	DON GRAUL	PROJECT MANAGER
DESIGN	KWM	3/98	CHECK JBE 3/98
DRAWN	HH	3/98	CHECK JBE 3/98
QUANT.			CHECK

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
RETAINING WALL R-343-42
SECTION 1.2
PROJECT NUMBER #SP-15-7(1135)296
SALT LAKE COUNTY
DWG. NO. 1.2R-343-42.1
SHT. 1 OF 11
REF.

Filenames on \dgn\I15_coord\72_97\sheet_files\walls\72_retwall-42.01.dgn
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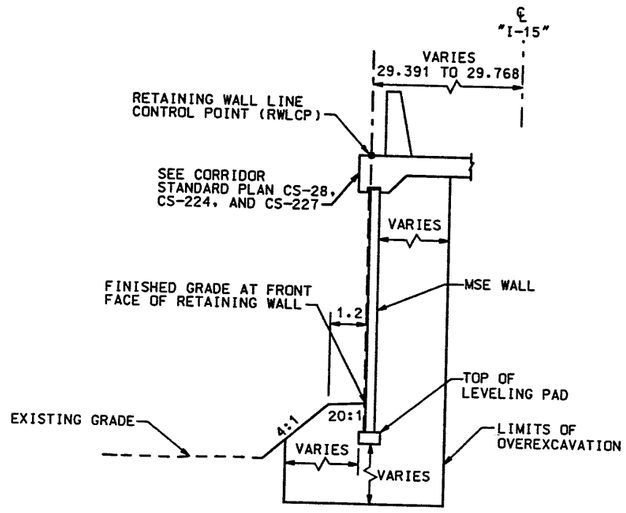
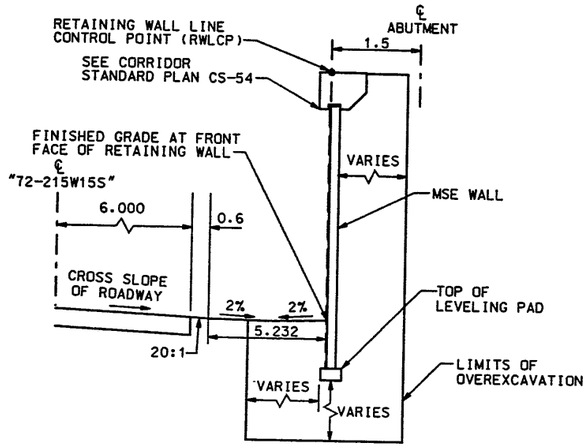
Date: 05-AUG-1998 Time: 14:43 Username: jamisaow



TYPICAL SECTION
WALL R-343-42
STA 1+000.000 TO STA 1+019.011



TYPICAL SECTION
WALL R-343-42
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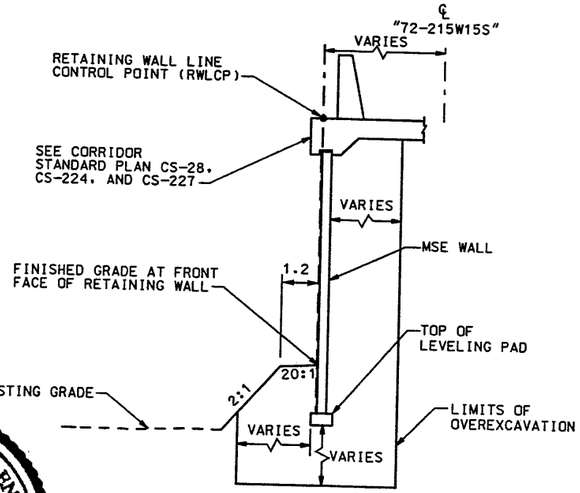
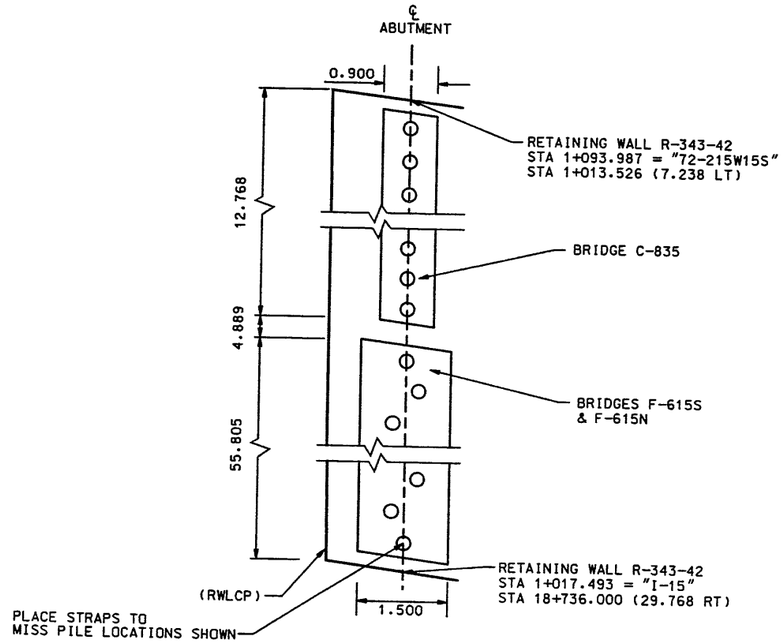


TYPICAL SECTION
WALL R-343-42
STA 1+092.473 TO STA 1+112.598



PILE LAYOUT
N.T.S.
BRIDGES C-835, F-615S, & F-615N

WASATCH CONSTRUCTORS
AUG 19 1998
RELEASED FOR CONSTRUCTION

NOTE:

DEPTH OF OVEREXCAVATION WILL BE EVALUATED BY FIELD GEOTECHNICAL ENGINEER. REMOVALS MAY EXTEND UP TO 6 M DEEP. ALTERNATIVES TO OVEREXCAVATION INCLUDE INSTALLING GEOPIERS OR STONE COLUMNS. SEE DM 1.2-62 DATED 3/5/98.

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	08-06-98	INITIAL RELEASE TO ALL
	- -	- -
	- -	- -
	- -	- -

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KNW	3/98	CHECK JBE	3/98
DRAWN NH	3/98	CHECK JBE	3/98
QUANT. /		CHECK /	

APPROVAL RECOMM. 3/98 RICK CHAPMAN — PROJECT DESIGN ENGINEER
APPROVED 3/98 DON GRAUL — PROJECT MANAGER
DATE DATE

I-15 CORRIDOR RECONSTRUCTION
DETAILS RETAINING WALL R-343-42
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2R-343-42.2
SHT. 2 OF 11
REF.

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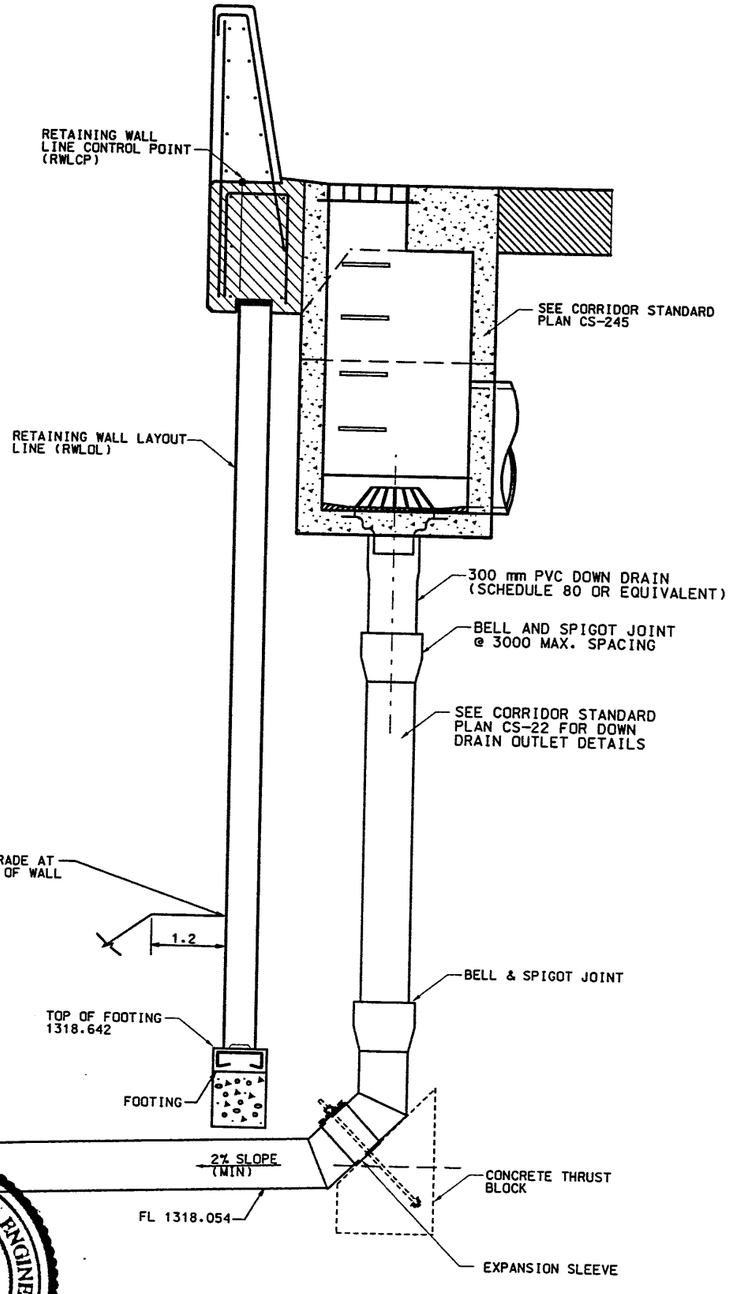
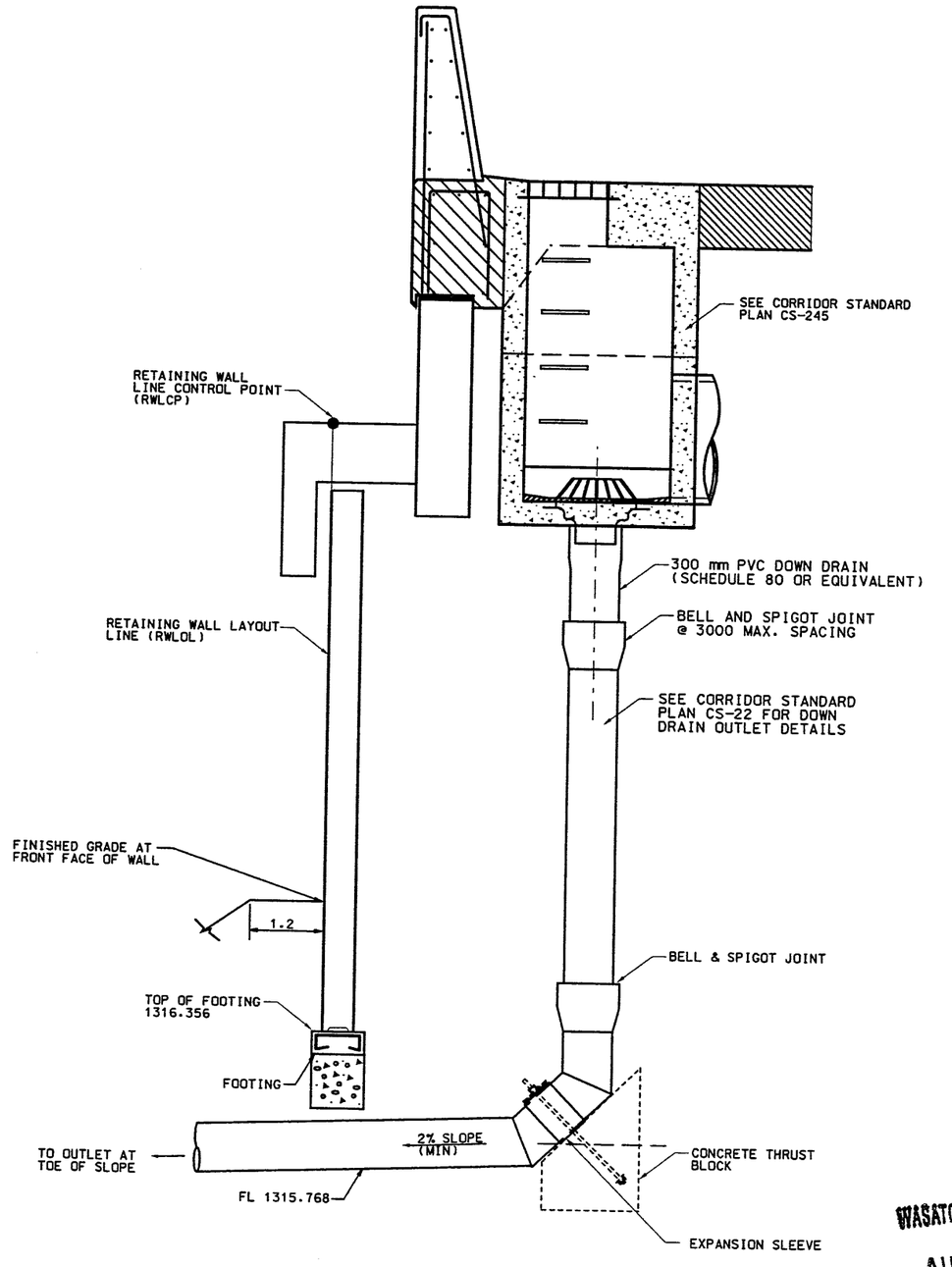


DOWN DRAIN DETAIL
STA 1+003.588



DOWN DRAIN DETAIL
STA 1+101.160

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH
8/5/98

WASATCH CONSTRUCTORS
AUG 10 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	08-06-98	INITIAL RELEASE TO ALL

UTAH DEPARTMENT OF TRANSPORTATION
SVERDRUP/OE LEUW

DESIGN	EBM	3/98	CHECK
DRAWN	KMM	3/98	CHECK
QUANT.			CHECK
APPROVAL RECOMM.	RICK CHAPMAN, PROJECT DESIGN ENGINEER	3/98 DATE	
APPROVED	DON GRAUL, SECTION MANAGER	3/98 DATE	

I-15 CORRIDOR RECONSTRUCTION
MISC DETAILS RET/WALL R-343-42
SECTION 1.2
PROJECT NUMBER #SP-15-7(135)296
SALT LAKE COUNTY
DWG. NO. 1.2R-343-42.3
SHT. 3 OF 11

Filename: o:\dgn\15_coddy\72.97\sheet_files\walls\72_retwall-42.03.dgn

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.
TRAFFIC SURCHARGE = 250 PSF
SEISMIC ACCELERATION COFF. = 0.12g (TYP)
SEISMIC ACCELERATION COFF. = 0.283g (AT BRIDGE ABUTMENTS)

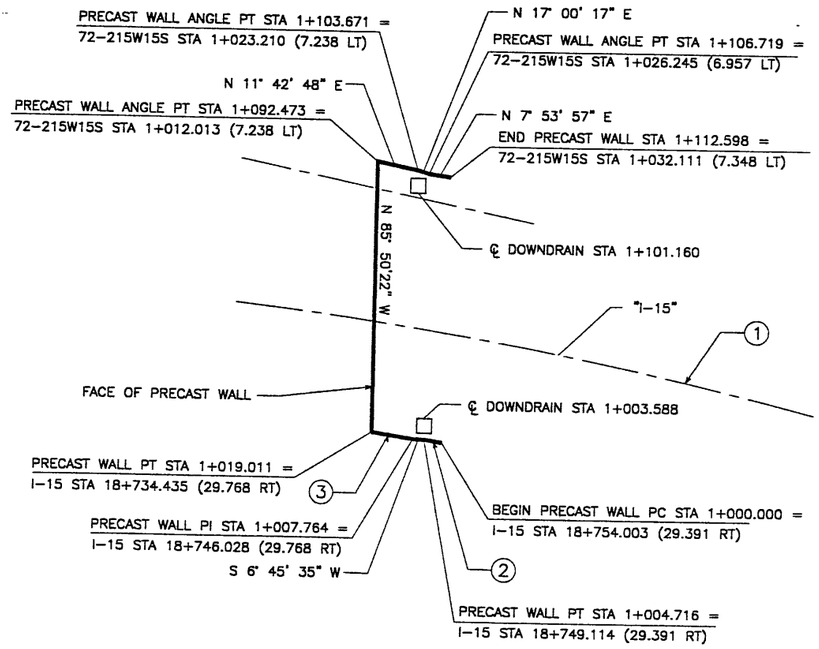
DESIGN CRITERIA
SAFETY FACTOR (OVERTURNING) = 2.0
SAFETY FACTOR (SLIDING) = 1.5
SAFETY FACTOR (PULLOUT) = 1.5
DESIGN LIFE = 75 YEARS

GENERAL NOTES

1. ALL WALLS ARE SHOWN FRONT FACE. NOTE STATIONING.
2. 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:
3. 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: 5W11-12 MESH HAS FIVE (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 12" CENTERS.
   EXAMPLE: 5W20-24 MESH HAS FIVE (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 24" CENTERS.
   EXAMPLE: 6W11-12 MESH HAS SIX (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 12" CENTERS.
4. SEE RETAINED EARTH INSTALLATION MANUAL FOR PROPER WALL ERECTION PROCEDURES AND GUIDELINES.
5. CONSTRUCTION PROCEDURES SHALL PREVENT BACKFILL SATURATION AND PONDING.
6. 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.
7. CARE SHALL BE TAKEN TO PREVENT DAMAGE TO GALVANIZING. DAMAGED GALVANIZING SHALL BE COATED WITH ZINC RICH PAINT.
8. 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.
9. VSL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,170.
10. ALL PANELS SHALL HAVE AN ARCHITECTURAL FINISH, SEE SHEET RE-3 FOR DETAIL.

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	△
①	1000.000	613.479	316.736	35°08'59"
②	970.609	4.716	2.358	00°16'42"
③	970.232	11.247	5.624	00°39'51"

All Dimensions Are In Meters Unless Noted Otherwise



PLAN VIEW WALL "R-343-42"

SCALE: 1=800 (FULL SIZE)
SCALE: 1=1600 (HALF SIZE)

RETAINED EARTH INDEX	
RE-1	PLAN PRECAST FACE WALL R-343-42, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTIONS
RE-3	TYPICAL CROSS SECTIONS
RE-4	ELEVATION PRECAST WALL "R-343-42"
RE-5	ELEVATION PRECAST WALL "R-343-42"
RE-6	SPECIAL PANEL DETAILS
RE-7	SPECIAL PANEL DETAILS
RE-8	SPECIAL PANEL DETAILS

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	07-14-98	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK.

DES. JL 05-27-98 | DRN. LOP 05-27-98 | CHK. JL 05-27-98 | RETAINED EARTH™

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

ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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WASATCH CONSTRUCTORS

AUG 10 1998

RELEASED FOR CONSTRUCTION

METRIC

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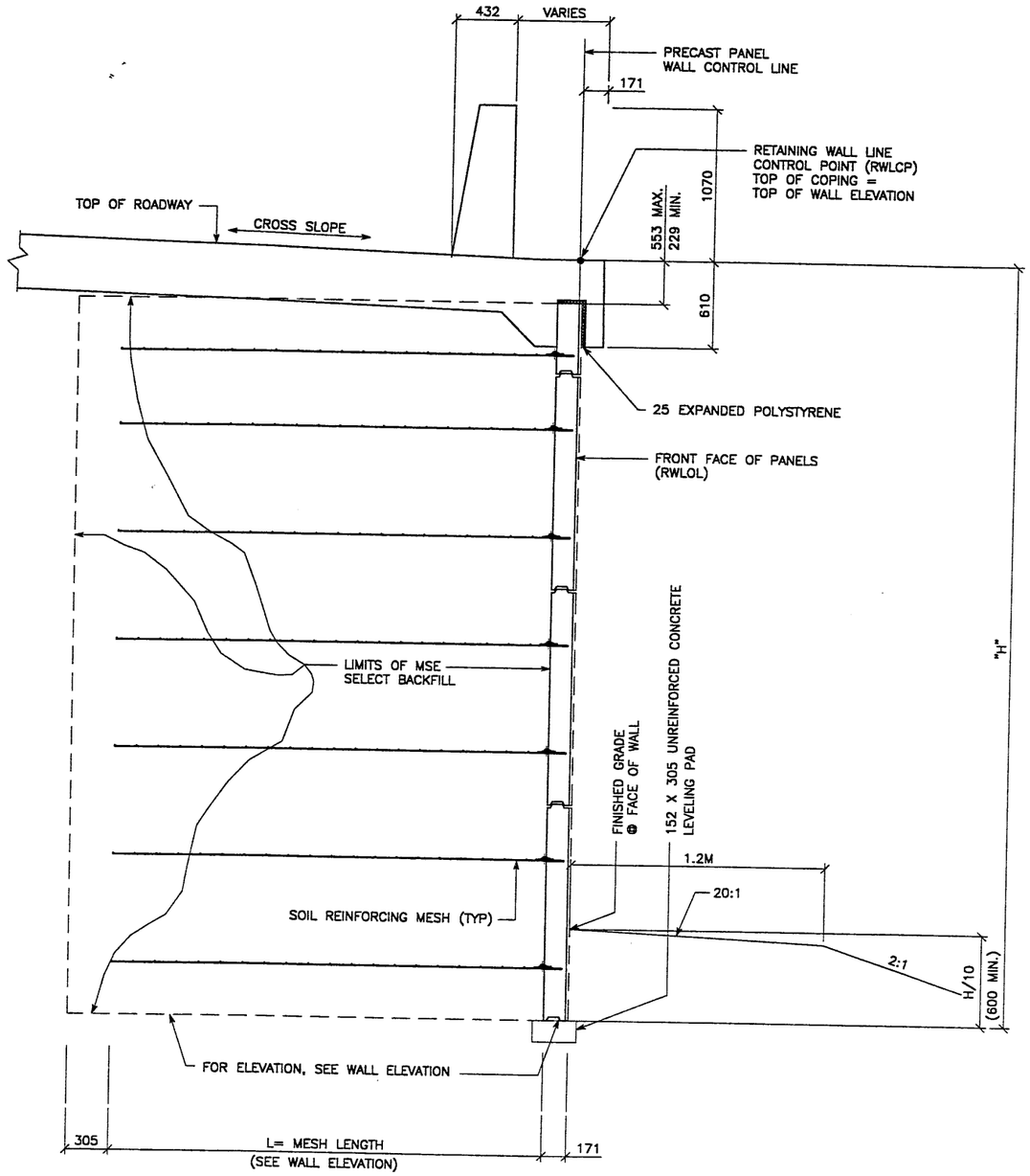
LICENSED PROFESSIONAL ENGINEER
No. 334796
JOHN A. NICHOLSON, JR.
7/16/98
STATE OF UTAH

RETAINED EARTH™ WALLS
PLAN VIEW PRECAST WALL "R-343-42"

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

DWG. NO. 1.2R-343-42.4
JOB NO: 239-0007 4/11
SHT. NO. RE-1

FINAL 05-27-98 H:\RE_EARTH\APROJECT\239-0007\1998\72-42\RE-1 ...ICE (X-UTAH.DWG)



TYPICAL CROSS SECTION

STA 1+092.473 TO STA 1+112.598

(SEE DWG. NO. 1.2R-343-42.2 FOR ADDITIONAL INFORMATION)

SCALE: 1:20 (FULL SIZE)

SCALE: 1:40 (HALF SIZE)

METRIC

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APPROVED FOR CONSTRUCTION			
NO.	DATE	DESCRIPTION	BY CHK
1	07-13-98	RELEASE FOR CONSTRUCTION	

NO.	DATE	REVISION

DES. 05-28-98 JL
DRN. 05-28-98 LOP
CHK. 05-28-98 JL

RETAINED EARTH™

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

ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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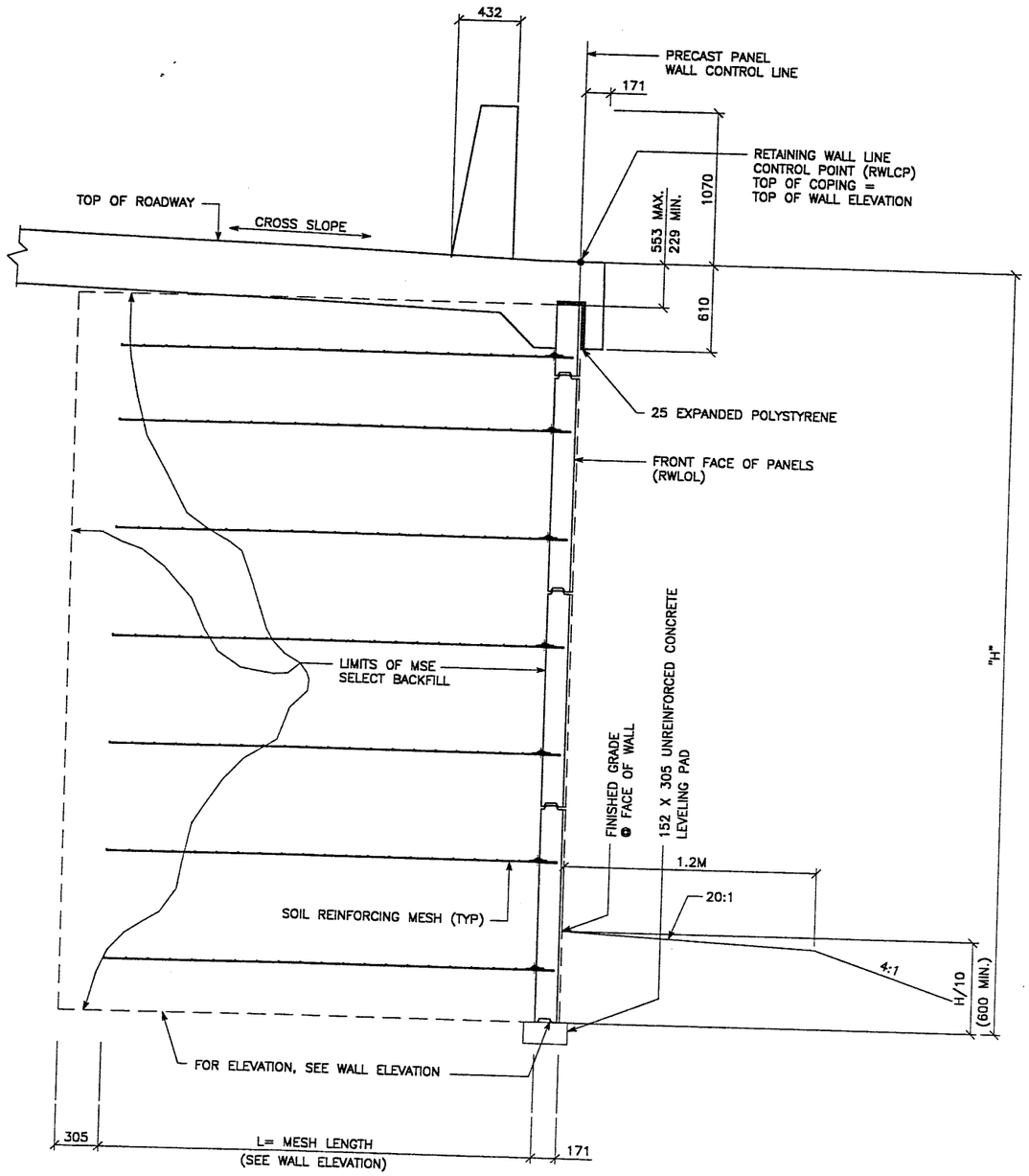

TYPICAL CROSS SECTION

STA 1+000.000 TO STA 1+019.011

(SEE DWG. NO. 1.2R-343-42.2 FOR ADDITIONAL INFORMATION)

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.

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	07-13-98	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS

AUG 10 1998

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
7/16/98
STATE OF UTAH

BY	CHK

NO.	DATE	REVISION

DES. JL 05-28-98
DRN. LOP 05-28-98
CHK. JL 05-28-98

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
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ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-42"
TYPICAL CROSS SECTION

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

DWG. NO.
1.2R-343-42.6

JOB NO:
239-0007 6/11

SHT. NO.
RE-3

H:\RE_EARTH\APROJECT\239-0007\1998\7\72-42\RE-2.DWG
05-28-98
FINAL

H:\RE_EARTH\APROJECT\239-0007\1998\72SERIES\12-42.DWG
05-28-98
FINAL

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	07-14-98	RELEASE FOR CONSTRUCTION

FACE OF PRECAST WALL

INTERSECTION OF MSE WING WALL & CENTERLINE OF PILES

℄ ABUT & PILES

SOIL REINFORCING MESH (TYP)

REMOVE BACK OF GROOVE AS REQUIRED

END WALL
WALL STA 1+112.598 =
72-215W15S STA 1+032.111
@ 7.348 LT

WALL PI STA 1+106.719 =
72-215W15S STA 1+026.245
@ 6.957 LT

WALL PI STA 1+103.671 =
72-215W15S STA 1+023.210
@ 7.238 LT

WALL STA 1+101.160 =
INLET W/ DOWNDRAIN

WALL PI STA 1+092.473 =
72-215W15S STA 1+012.013
@ 7.238 LT

STA 1+112.598 EL 1323.800
STA 1+106.719 EL 1323.885
STA 1+103.671 EL 1323.922
STA 1+103.085 EL 1323.916
STA 1+095.548 EL 1320.215
STA 1+092.473 EL 1320.244
STA 1+079.259 EL 1320.373
STA 1+055.742 EL 1319.578

1.500 | 0.596 | 7 | 8 | 0.596 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20

1.359 | 7 SPA @ 1.524 | 0.579 | 4.938 | 0.708 | 16 SPA @ 1.552

PLAN VIEW PRECAST WALL R-343-42

END WALL

TOP OF COPING

BOTTOM OF COPING

1 SET OF INSPECTION WIRES (SEE VSL STD DWGS)

EL. 1320.188 | EL. 1317.880 | EL. 1317.118 | EL. 1316.356 | EL. 1313.308 | EL. 1313.308

LEVELING PAD

FINISHED GRADE

2W20-12 MESH FOR COL #8

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20

MESH DEPTH	4.877M [16']	5.486M [18']	7.620M [25']
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	175.69 KPa	226.04 KPa	288.71 KPa
PIN SPACING	19.529		.596

7.620M [25']		
288.71 KPa		
.596	35.772	

ELEVATION PRECAST WALL R-343-42

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 682.70 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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MATCH LINE #1

WASATCH CONSTRUCTORS
AUG 10 1998
RELEASED FOR CONSTRUCTION
WASATCH CONSTRUCTORS
AUG 8
USED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341296
JOHN A. NICHOLSON, JR.
11/16/98
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK

DES. 05-28-98 JL
DRN. 05-28-98 LOP
CHK. 05-28-98 JL

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-4869

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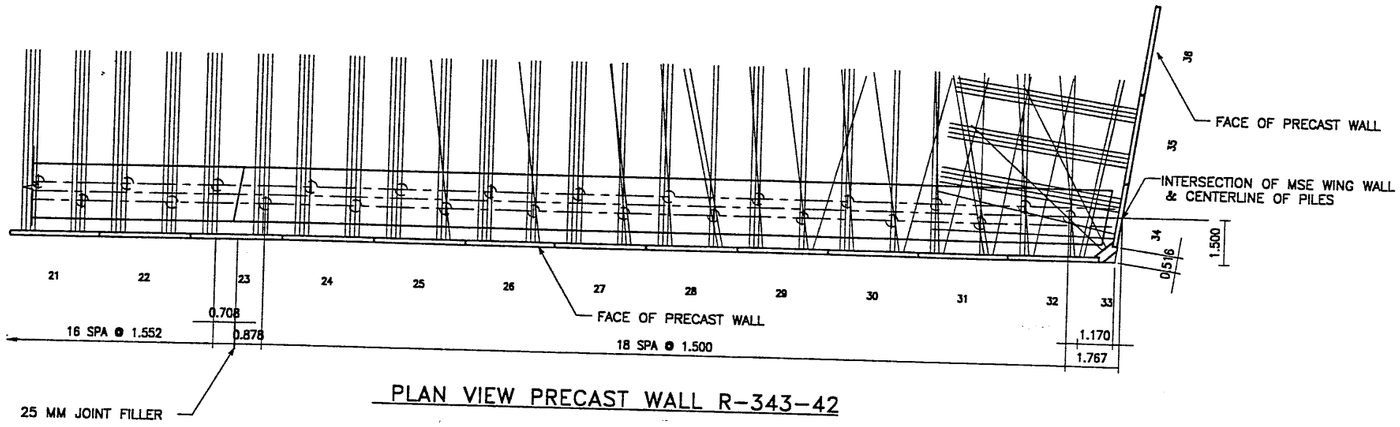
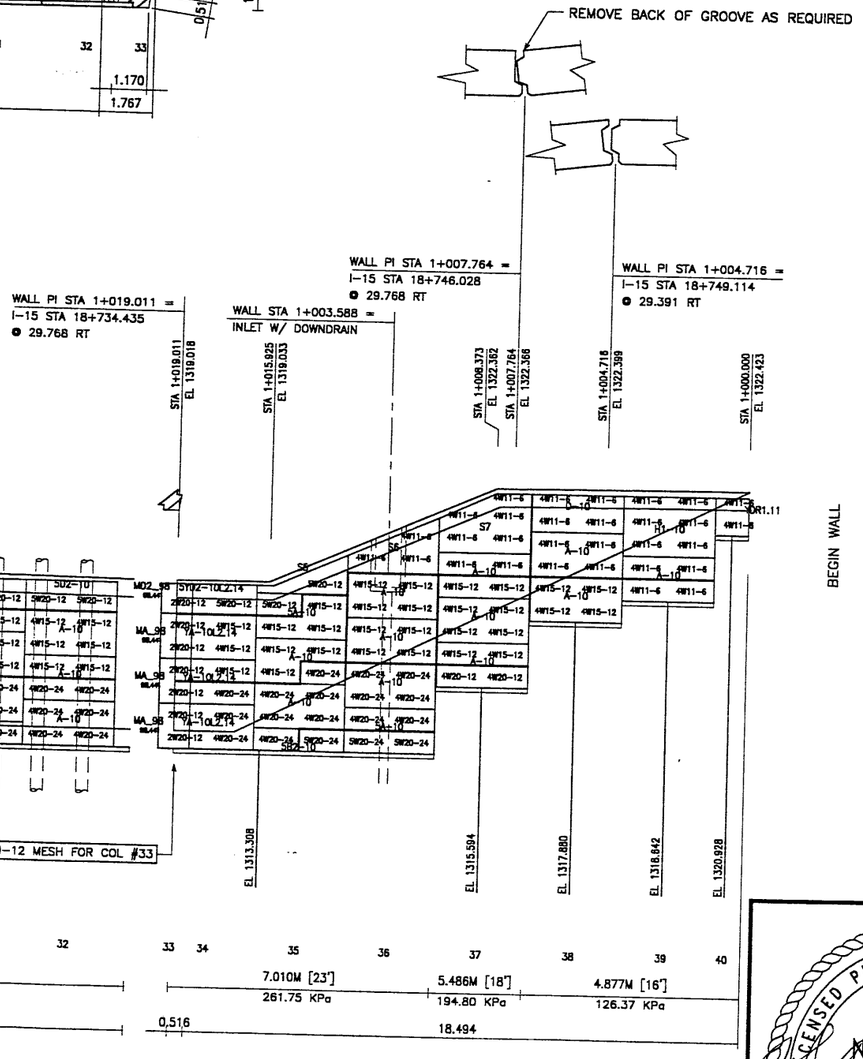
RETAINED EARTH™ WALLS
PRECAST WALL "343-42"

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

DWG. NO. 1.2R-343-42.7
JOB NO: 239-0007 7/11
SHT. NO. RE-4



PLAN VIEW PRECAST WALL R-343-42



ELEVATION PRECAST WALL R-343-42

(FRONT FACE SHOWN)

(TOTAL SURFACE AREA OF PANELS = 682.70 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.

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APPROVED FOR CONSTRUCTION			
NO.	DATE	DESCRIPTION	CHK
1	07-14-98	RELEASE FOR CONSTRUCTION	BY

NO.	DATE	REVISION	BY	CHK

DES. 05-28-98 JL
DRN. 05-28-98 LOP
CHK. 05-28-98 JL
VSL RETAINED EARTH™

VSL CORPORATION
2810 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-8272
Fax: (919) 781-4959

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WASATCH CONSTRUCTORS

AUG 10 1998

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 134796
JOHN A. NICHOLSON, JR.
7/16/98
STATE OF UTAH

RETAINED EARTH™ WALLS
PRECAST WALL "R-343-42"

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

DWG. NO. 1.2R-343-42.8

JOB NO: 239-0007 8/11

SHT. NO. RE-5

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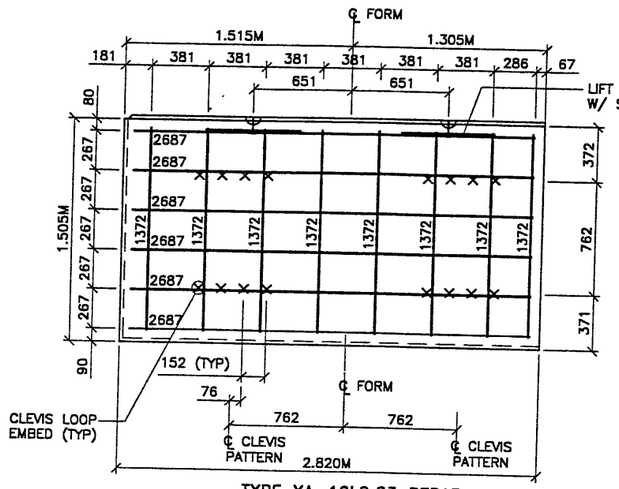
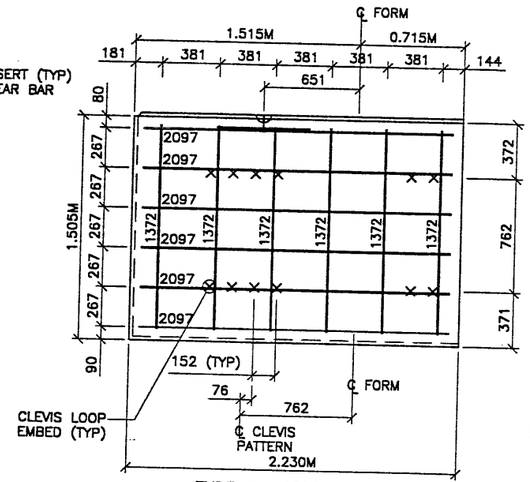
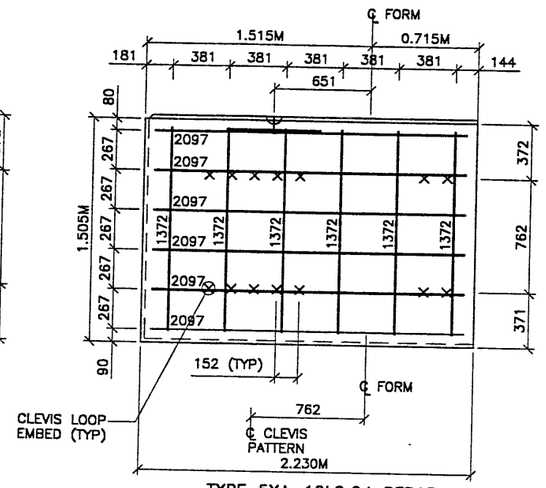
FINAL 05-28-98



TYPE YA-10L2.83 REBAR
(AREA = 4.31 SQ.M)

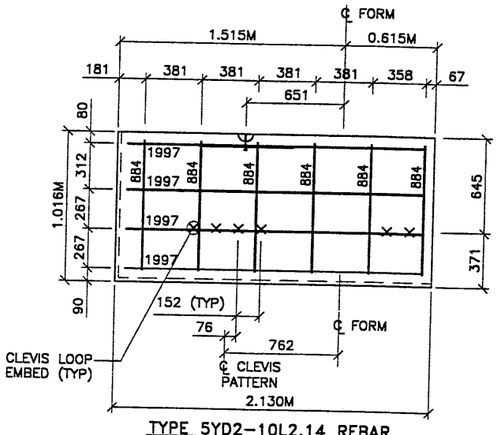


TYPE YA-10L2.24 REBAR
(AREA = 3.41 SQ.M)



TYPE 5YA-10L2.24 REBAR
(AREA = 3.41 SQ.M)

PANEL REINFORCEMENT NOTES:
1. PANELS ARE SHOWN BACK FACE.
2. HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
3. ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
4. ALL REINFORCING BARS ARE #13 METRIC. LABELS ON EACH BAR INDICATE LENGTH. EXAMPLE: 1345 IS A #13 BAR 1345 mm LONG.
5. PANEL REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT CONFORMING TO THE SPECIFICATIONS OF ASTM DESIGNATION A615, GRADE 60.
6. ALL REINFORCING STEEL TO BE GALVANIZED IN ACCORDANCE WITH ASTM 767 CLASS I.
7. CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 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.



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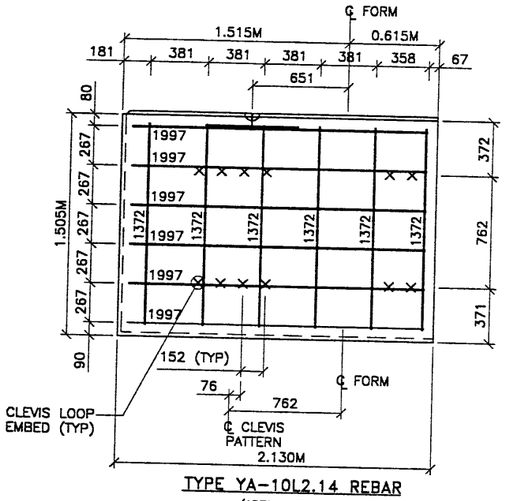
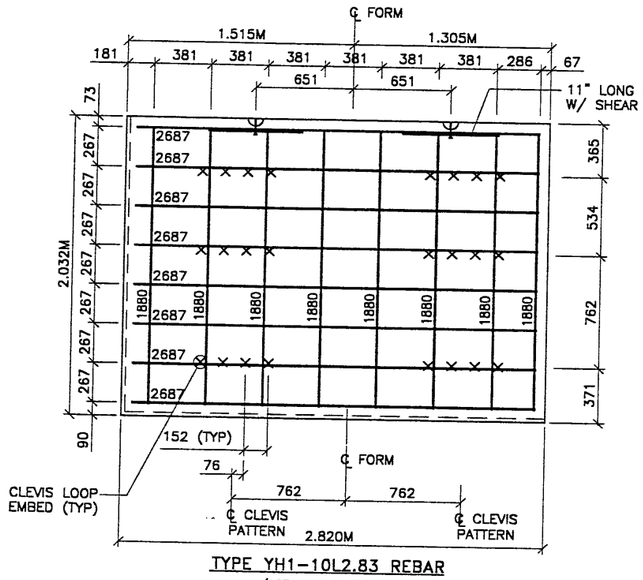
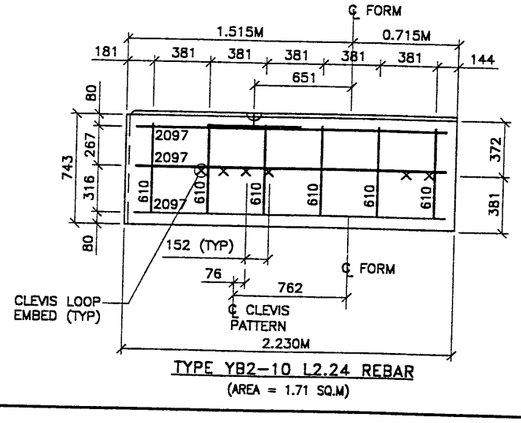
(AREA = 2.17 SQ.M)



TYPE YA-10L2.14 REBAR
(AREA = 3.26 SQ.M)



TYPE YH1-10L2.83 REBAR
(AREA = 5.75 SQ.M)



TYPE YB2-10 L2.24 REBAR
(AREA = 1.71 SQ.M)

METRIC

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APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	07-14-98	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS

AUG 10 1998

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
7/16/98
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK

DES. JL 05-21-98
DRN. LOP 05-21-98
CHK. JL 05-21-98

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone (919) 781-8272
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ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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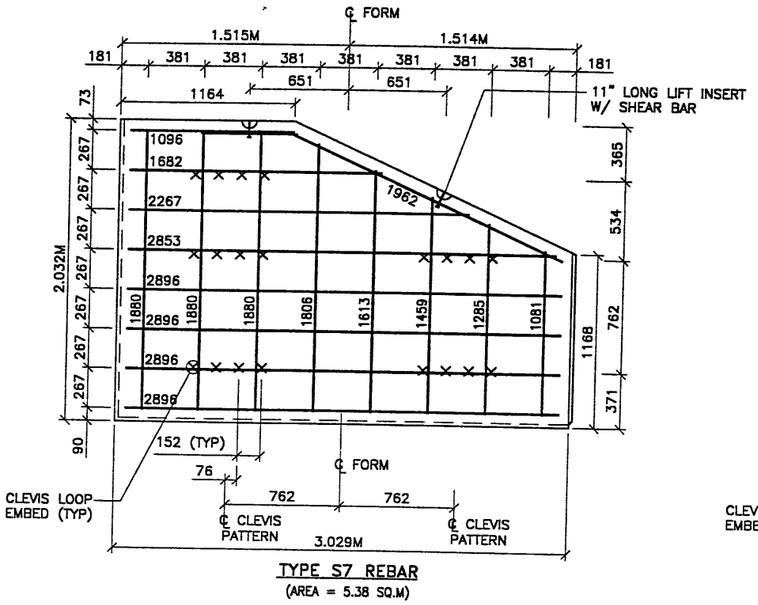
RETAINED EARTH™ WALLS
PRECAST WALL "R-343-42"
SPECIAL PANEL DETAILS

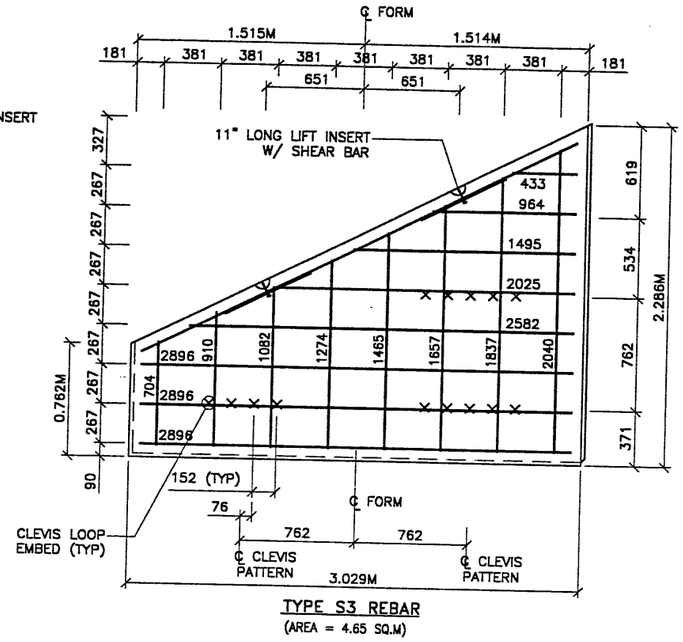
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO. 1.2R-343-42.9
JOB NO: 239-0007 9/11
SHT. NO. RE-6

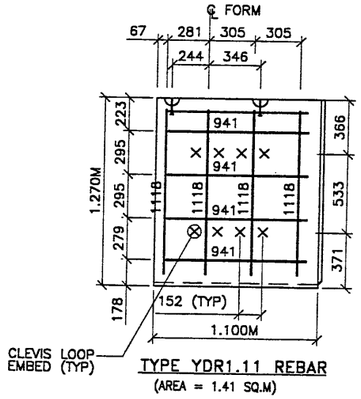
H:\RE_EARTH\PROJECT\239-0007\1998\72-42\SPECIALS.DWG
05-21-98
FINAL



TYPE S7 REBAR
(AREA = 5.38 SQ.M)



TYPE S3 REBAR
(AREA = 4.65 SQ.M)



TYPE YDR1.11 REBAR
(AREA = 1.41 SQ.M)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	07-14-98	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.

WASATCH CONSTRUCTORS

AUG 10 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.

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
7/16/98
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK

DES. JL 05-21-98
DRN. LOP 05-21-98
CHK. JL 05-21-98
RETAINED EARTH™

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

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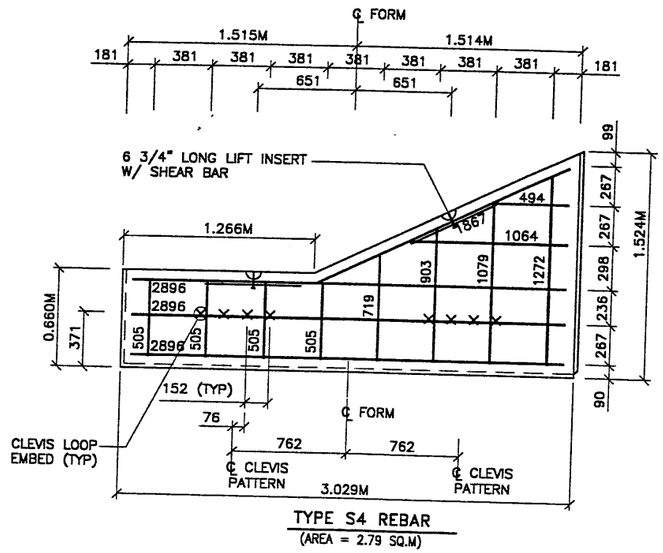
ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

RETAINED EARTH™ WALLS
PRECAST WALL "R-343-42"
SPECIAL PANEL DETAILS

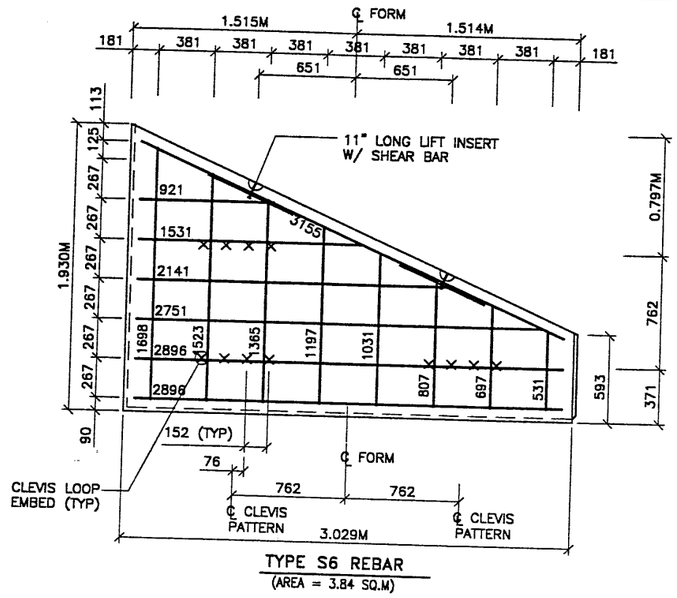
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO. 1.2R-343-42.10
JOB NO: 239-0007 10/11
SHT. NO. RE-7

H:\RE_EARTH\APROJECT\239-0007\1998\72-42\SPECIALS.DWG
05-21-98
FINAL



TYPE S4 REBAR
(AREA = 2.79 SQ.M)



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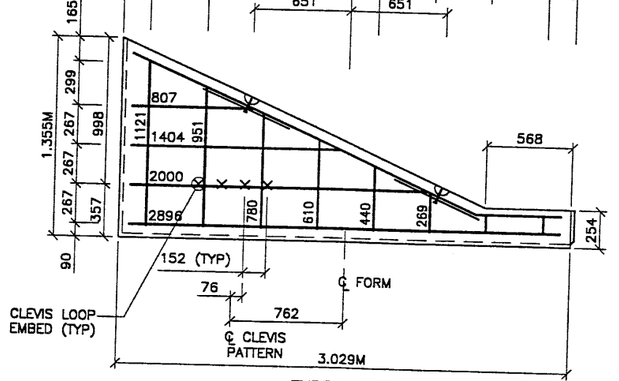
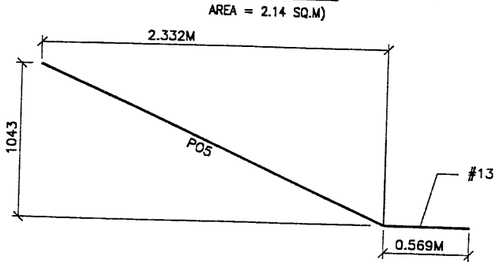
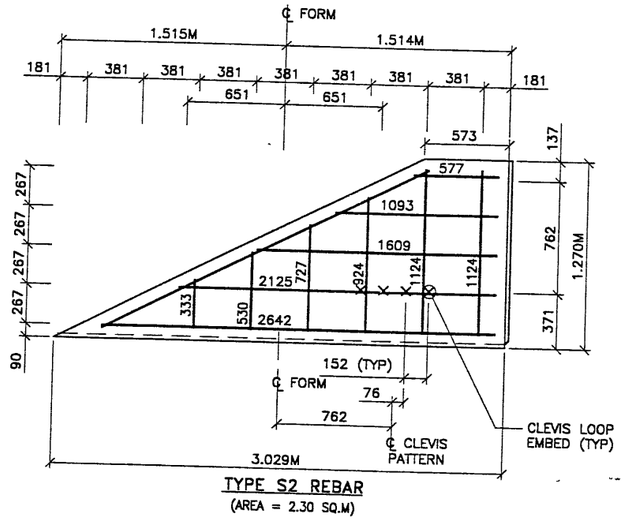


TYPE S5 REBAR
AREA = 2.14 SQ.M)





TYPE S2 REBAR
(AREA = 2.30 SQ.M)

PANEL REINFORCEMENT NOTES:
1. PANELS ARE SHOWN BACK FACE.
2. HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
3. ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
4. ALL REINFORCING BARS ARE #13-METRIC. LABELS ON EACH BAR INDICATE LENGTH. EXAMPLE: 1345 IS A #13 BAR 1345 mm LONG.
5. PANEL REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT CONFORMING TO THE SPECIFICATIONS OF ASTM DESIGNATION A615, GRADE 60.
6. ALL REINFORCING STEEL TO BE GALVANIZED IN ACCORDANCE WITH ASTM 767 CLASS I.
7. CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 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

AUG 10 1998

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
7/16/98
STATE OF UTAH

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	07-14-98	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. JL 05-21-98
DRN. LOP 05-21-98
CHK. JL 05-21-98

RETAINED EARTH™

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

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

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RETAINED EARTH™ WALLS
PRECAST WALL "R-343-42"
SPECIAL PANEL DETAILS

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

DWG. NO.
1.2R-343-42.11

JOB NO:
239-0007 W/11

SHT. NO.
RE-8

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05-21-98
FINAL
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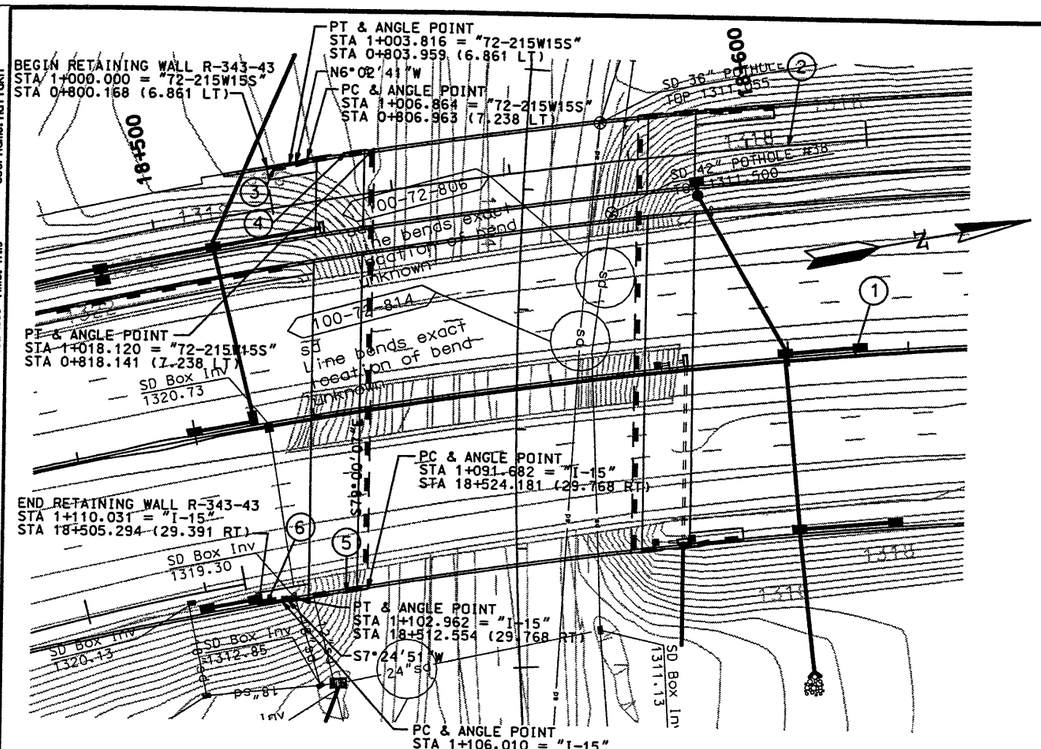

CURVE NO.	△	R	L	T
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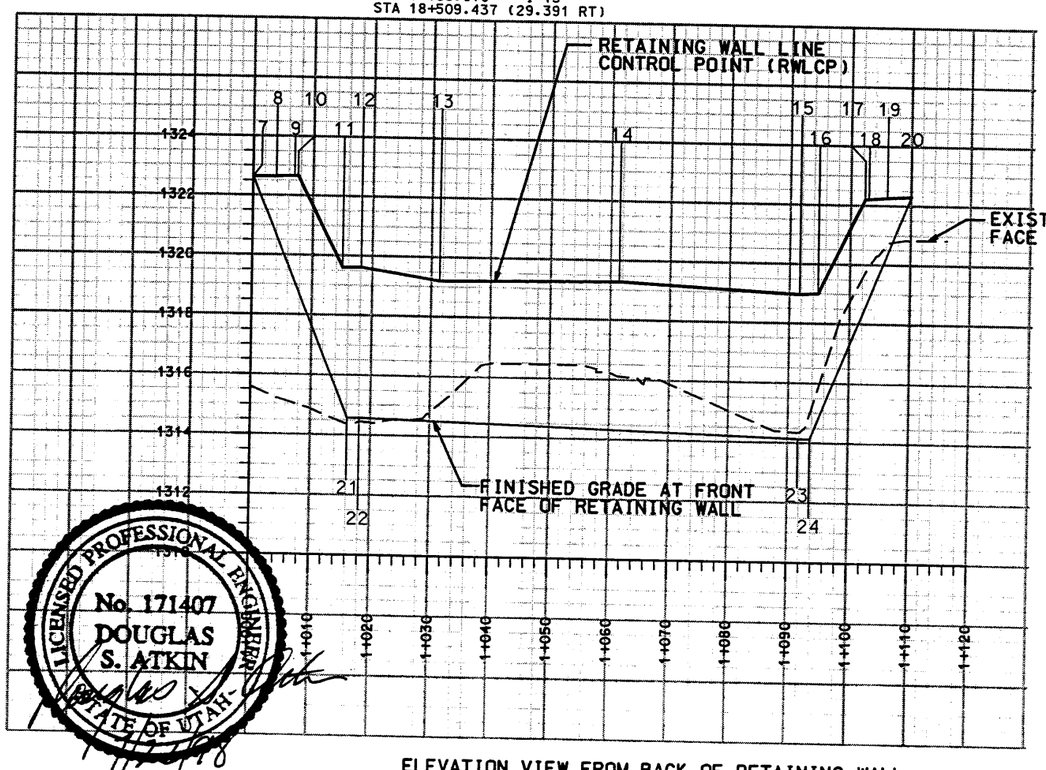
②	24°11'45"	1035.530	437.300	221.958
③	0°12'35"	1042.391	3.816	1.908
④	0°37'06"	1042.768	11.256	5.628
⑤	0°39'58"	970.232	11.281	5.640
⑥	0°14'15"	970.609	4.021	2.011

10m 0 10m 30m 50m
SCALE IN METERS



ELEVATION VIEW FROM BACK OF RETAINING WALL

POINT NO.	WALL STATION	ROADWAY	ROADWAY STATION	OFFSET	WALL ELEV
7	1+000.000	"72-215W15S"	0+800.168	6.861 LT	1322.625
8	1+003.816	"72-215W15S"	0+803.959	6.861 LT	1322.634
9	1+006.864	"72-215W15S"	0+806.963	7.238 LT	1322.657
10	1+007.473	"72-215W15S"	0+807.568	7.238 LT	1322.660
11	1+015.031	"72-215W15S"	0+815.074	7.238 LT	1319.595
12	1+018.120	"72-215W15S"	0+818.141	7.238 LT	1319.616
13	1+031.394	"72-215W15S"	0+815.998	5.862 RT	1319.195
14	1+061.474	"I-15"	18+529.392	0.000 LT	1319.282
15	1+091.682	"I-15"	18+524.181	29.768 RT	1318.968
16	1+094.777	"I-15"	18+520.991	29.768 RT	1318.998
17	1+102.352	"I-15"	18+513.183	29.768 RT	1322.193
18	1+102.962	"I-15"	18+512.554	29.768 RT	1322.199
19	1+106.010	"I-15"	18+509.437	29.391 RT	1322.251
20	1+110.031	"I-15"	18+505.294	29.391 RT	1322.300
21	1+016.120	"72-215W15S"	0+816.155	7.238 LT	1314.565
22	1+018.120	"72-215W15S"	0+818.141	7.238 LT	1314.565
23	1+091.682	"I-15"	18+524.181	29.768 RT	1314.125
24	1+093.682	"I-15"	18+522.119	29.768 RT	1314.125

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

WASATCH CONSTRUCTORS
JUL 29 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	7-22-98	INITIAL RELEASE
	- -	
	- -	
	- -	

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KWM 3/98 CHECK JBE
DRAWN HH 3/98 CHECK JBE
QUANT. / CHECK

RICK CHAPMAN
PROJECT DESIGN ENGINEER
APPROVAL RECOMM. 3/98 DATE

DON GRAUL
PROJECT MANAGER
APPROVED 3/98 DATE

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
RETAINING WALL R-343-43
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296
SALT LAKE COUNTY
DWG. NO. 1.2R-343-43.1
SHT. 1 OF 11
REF.

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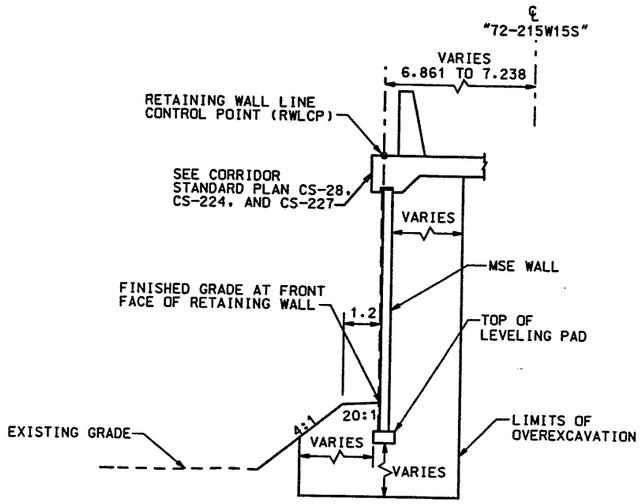
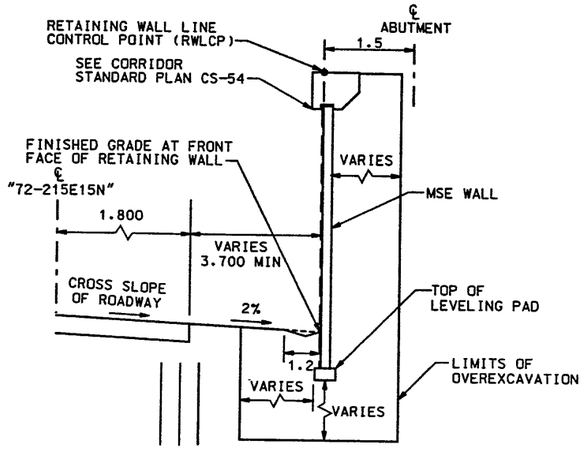
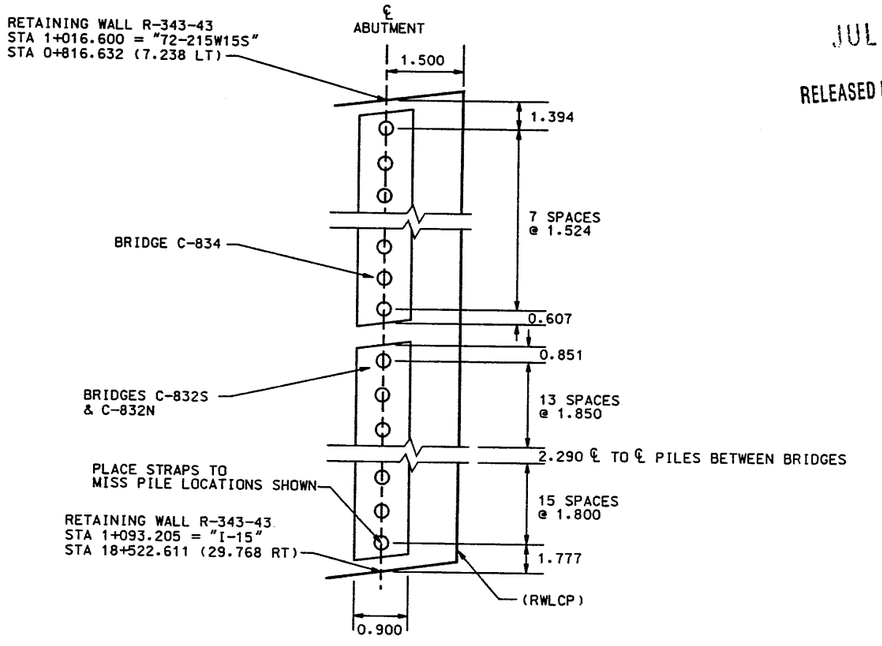
Date: 22-JUL-1998 Time: 08:33 Username: hurffakn



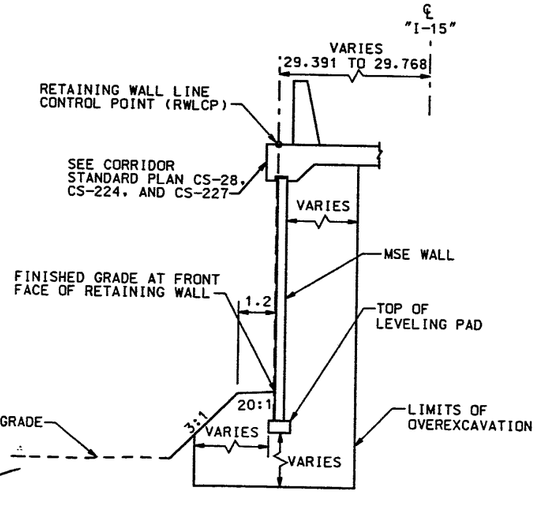
TYPICAL SECTION
WALL R-343-43
STA 1+000.000 TO STA 1+018.120



TYPICAL SECTION
WALL R-343-43
STA 1+018.120 TO STA 1+091.682



PILE LAYOUT
N.T.S.
BRIDGES C-834, C-832S, & C-832N



TYPICAL SECTION
WALL R-343-43
STA 1+091.682 TO STA 1+110.031

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

WASATCH CONSTRUCTORS

JUL 29 1998

RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	7-22-98	INITIAL RELEASE
	- -	
	- -	
	- -	

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KWJ	3/98	CHECK JBE 3/98
DRAWN NH	3/98	CHECK JBE 3/98
QUANT.	/	CHECK /

APPROVAL RECOMM. 3/98 DATE — RICK CHAPMAN — PROJECT DESIGN ENGINEER
APPROVED 3/98 DATE — DON GRAUL — PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
DETAILS RETAINING WALL R-343-43
SECTION 1.2
PROJECT NUMBER #SP-15-7(135)296
SALT LAKE COUNTY
DWG. NO. 1.2R-343-43.2
SHT. 2 OF 11
REF.

Filename: o:\dgn\15_oddb\72_87\sheet_files\walls\72_retwall-43_02.dgn

GENERAL NOTES

1. ALL WALLS ARE SHOWN FRONT FACE. NOTE STATIONING.
2. PANEL TYPE IS DESIGNATED ON EACH PANEL. CONNECTOR LABELS INDICATE NUMBER OF CONNECTORS PER ROW.

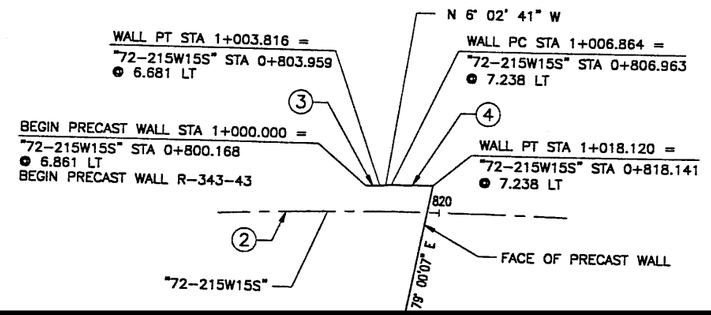
   EXAMPLE: 5B2-10 IS A "B2-10" PANEL WITH FIVE (5) CONNECTORS PER ROW.

   IF NO CONNECTORS ARE SHOWN, FOUR (4) CONNECTOR PANELS SHALL BE USED:
3. 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: 5W11-12 MESH HAS FIVE (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 12" CENTERS.
   EXAMPLE: 5W20-24 MESH HAS FIVE (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 24" CENTERS.
   EXAMPLE: 6W11-12 MESH HAS SIX (4) W11 LONGITUDINAL WIRES WITH W11 CROSSBARS AT 12" CENTERS.
4. SEE RETAINED EARTH INSTALLATION MANUAL FOR PROPER WALL ERECTION PROCEDURES AND GUIDELINES.
5. CONSTRUCTION PROCEDURES SHALL PREVENT BACKFILL SATURATION AND PONDING.
6. 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.
7. CARE SHALL BE TAKEN TO PREVENT DAMAGE TO GALVANIZING. DAMAGED GALVANIZING SHALL BE COATED WITH ZINC RICH PAINT.
8. 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.
9. VSL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,170.
10. ALL PANELS SHALL HAVE AN ARCHITECTURAL FINISH, SEE SHEET RE-3 FOR DETAIL.

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	△
①	1000.000	613.479	316.736	35°08'59"
②	1035.530	437.300	221.958	24°11'45"
③	1042.391	3.816	1.908	00°12'35"
④	1042.768	11.256	5.628	00°37'06"
⑤	970.232	11.281	5.640	00°39'58"
⑥	970.609	4.021	2.011	00°14'15"

All Dimensions Are In Meters Unless Noted Otherwise



RETAINED EARTH INDEX	
RE-1	PLAN PRECAST FACE WALL R-343-43, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTIONS
RE-3	TYPICAL CROSS SECTIONS
RE-4	ELEVATION PRECAST WALL "R-343-43"
RE-5	ELEVATION PRECAST WALL "R-343-43"
RE-6	SPECIAL PANEL DETAILS
RE-7	SPECIAL PANEL DETAILS
RE-8	Y PANEL DETAILS
RE-9	Y PANEL DETAILS

APPROVED FOR CONSTRUCTION			
NO.	DATE	DESCRIPTION	BY
1	07-14-98	RELEASE FOR CONSTRUCTION	CHK

NO.	DATE	REVISION	BY	CHK

DES. JL 06-02-98
DRN. DDL 06-02-98
CHK. JL 06-02-98

RETAINED EARTH™

VSL CORPORATION
2940 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-4969

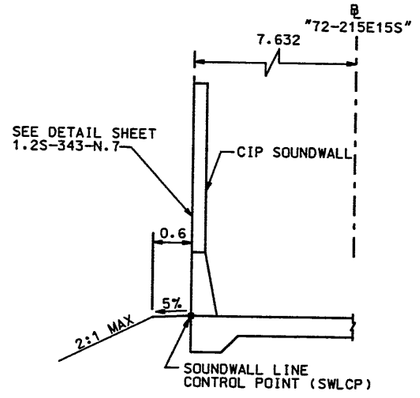
ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

WASATCH CONSTRUCTORS

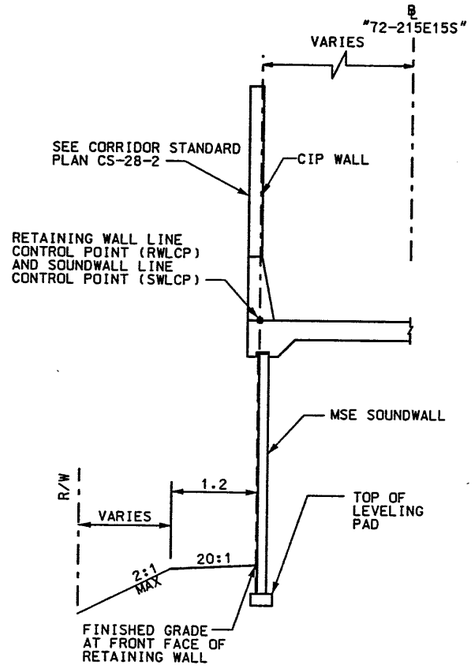
Date: 14-MAY-1998 Time: 15:51 Username: sfottrl

AESTHETIC PANEL LAYOUT

TYPE OF PANEL	NUMBER OF PANELS	PANEL LENGTH	TOTAL LENGTH	STA TO STA
TERMINUS	1	2.500	2.500	0+708.152 TO 0+710.652
D	0.5	2.438	1.219	0+710.652 TO 0+711.871
A/B	7	7.315	51.205	0+711.871 TO 0+763.076
D	1	2.438	2.438	0+763.076 TO 0+765.514
A/B	6	7.315	43.890	0+765.514 TO 0+809.404
C	1	7.315	7.315	0+809.404 TO 0+816.719
D	1	2.438	2.438	0+816.719 TO 0+819.157
A/B	7	7.315	51.205	0+819.157 TO 0+870.362
D	1	2.438	2.438	0+870.362 TO 0+872.800
A/B	8	7.315	58.520	0+872.800 TO 0+931.320
D	1	2.438	2.438	0+931.320 TO 0+933.758
A/B	8	7.315	58.520	0+933.758 TO 0+992.278
D	1	2.438	2.438	0+992.278 TO 0+994.716
A/B	7	7.315	51.205	0+994.716 TO 1+045.921
D	1	2.438	2.438	1+045.921 TO 1+048.359
C	1	7.315	7.315	1+048.359 TO 1+055.674
B	1	7.315	7.315	1+055.674 TO 1+062.989
C	2	7.315	21.945	1+062.989 TO 1+077.619
A/B	3	7.315	21.945	1+077.619 TO 1+099.564
D	1	2.438	2.438	1+099.564 TO 1+102.002
A/B	7	7.315	51.205	1+102.002 TO 1+153.207
D	0.5	2.438	1.219	1+153.207 TO 1+154.426
TERMINUS	1	3.115	3.115	1+154.426 TO 1+157.541



TYPICAL SECTION
SOUNDWALL S-343-NA
STA 0+708.152 TO STA 0+722.119
STA 0+806.735 TO STA 0+933.980



TYPICAL SECTION
SOUNDWALL S-343-NA
STA 1+005.250 TO STA 1+157.541

NOTES:

1. CIP AESTHETIC TREATMENT SHALL BE IN ACCORDANCE WITH CORRIDOR STANDARD DRAWING CS-97.
2. SEE BRIDGE PLANS FOR DETAILS STA 0+722.119 TO STA 0+806.735 AND STA 0+933.980 TO STA 1+005.250.

LICENSED PROFESSIONAL ENGINEER
No. 277888
DONALD D. GRAUL
5/14/98
STATE OF UTAH

WASATCH CONSTRUCTORS

MAY 20 1998

RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	5-14-98	INITIAL RELEASE
	- -	- -
	- -	- -

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN	KMM 2/98	CHECK JRE 2/98
DRAWN	NH 2/98	CHECK JRE 2/98
QUANT.		CHECK

APPROVAL RECOMM. 2/98 DATE — RICK CHAPMAN PROJECT DESIGN ENGINEER
APPROVED 2/98 DATE — DON GRAUL PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
DETAIL SHEET
SOUNDWALL S-343-NA
SECTION 1.2
PROJECT NUMBER #SP-15-7(135)296
SALT LAKE COUNTY
DWG. NO. 1.2S-343-N.3
SHT. 3 OF 7
REF.

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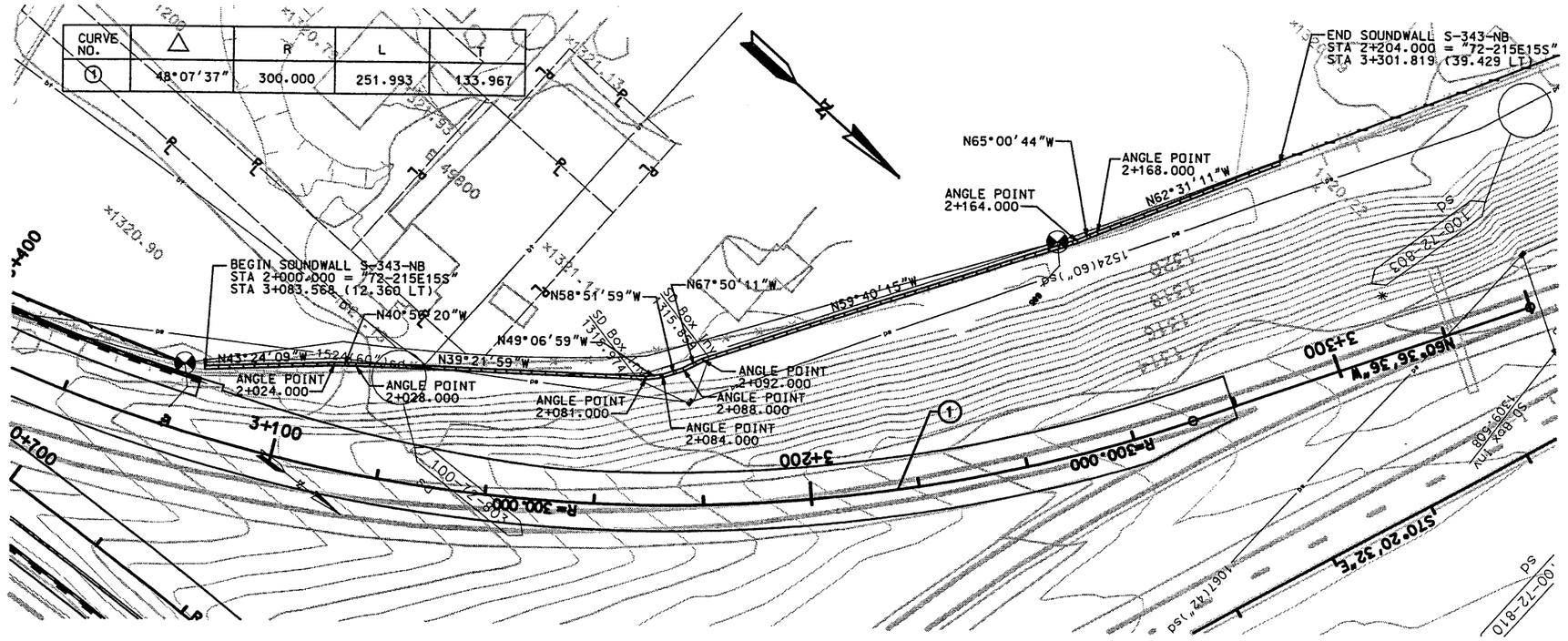
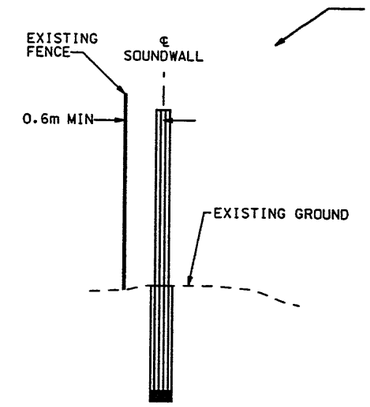
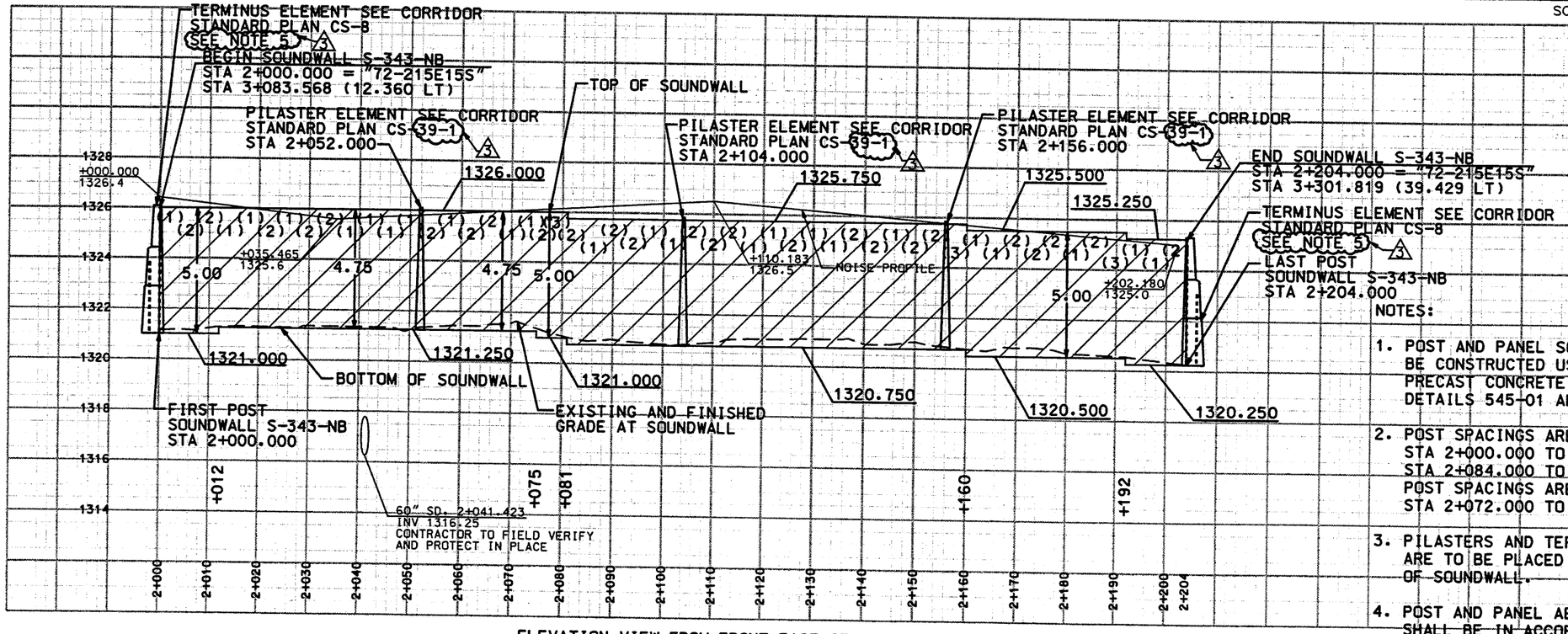




TYPICAL SECTION
SOUNDWALL S-343-NB
STA 2+000.000 TO STA 2+204.000

WASATCH CONSTRUCTORS
DEC 0 2 1998
RELEASED FOR CONSTRUCTION

10m 0 10m 30m
SCALE IN METERS



ELEVATION VIEW FROM FRONT FACE OF WALL

NOTES:

1. POST AND PANEL SOUNDWALL SHALL BE CONSTRUCTED USING UDOT STANDARD PRECAST CONCRETE SOUNDWALL DETAILS 545-01 AND 545-02.
2. POST SPACINGS ARE 4.000 M FROM STA 2+000.000 TO STA 2+072 AND STA 2+084.000 TO STA 2+204.000. POST SPACINGS ARE 3.000 M FROM STA 2+072.000 TO 2+084.000.
3. PILASTERS AND TERMINUS ELEMENTS ARE TO BE PLACED ON ROADWAY SIDE OF SOUNDWALL.
4. POST AND PANEL AESTHETIC TREATMENT SHALL BE IN ACCORDANCE WITH CORRIDOR STANDARD DRAWINGS CS-6 AND CS-7.
5. POSTS AT TERMINUS ELEMENTS SHALL HAVE A MINIMUM EMBEDMENT DEPTH OF 4.500m.

LICENSED PROFESSIONAL ENGINEER No. 171407 DOUGLAS S. ATKIN STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	4-14-98	INITIAL RELEASE
2	5-14-98	TOTAL SHEET REVISION PER FDM NO. 1-0189
3	11-9-98	NDC-0281

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KWM 2/98 CHECK JBE 2/98
DRAWN NH 2/98 CHECK JBE 2/98
QUANT. / CHECK /

APPROVAL RECOMM. 2/98 RICK CHAPMAN DATE PROJECT DESIGN ENGINEER
APPROVED 2/98 DON GRAUL DATE PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT SOUNDWALL S-343-NB
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2S-343-N.4
SHT. 4 OF 7
REF.

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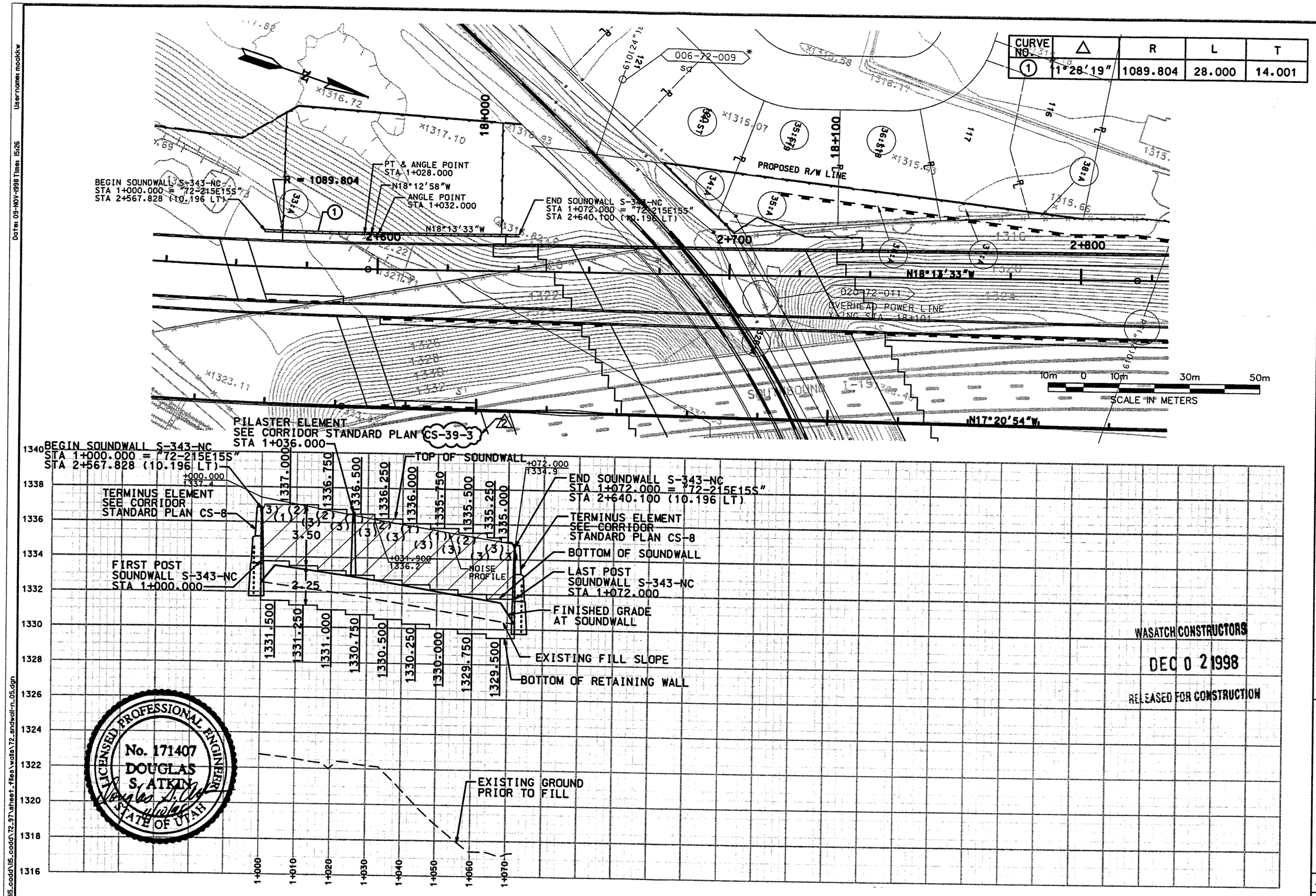

CURVE NO.	△	R	L	T
1	1°28'19"	1089.804	28.000	14.001

WASATCH CONSTRUCTORS

DEC 0 2 1998

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	5-14-98	INITIAL RELEASE
2	11-9-98	NDC-0281

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KWM 5/98 CHECK JBE 5/98
DRAWN NH 5/98 CHECK JBE 5/98
QUANT. / CHECK /

APPROVAL RECOMM. 5/98 RICK CHAPMAN
DATE PROJECT DESIGN ENGINEER
APPROVED 5/98 DON GRAUL
DATE PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
SOUNDWALL S-343-NC
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE
COUNTY
DWG.NO.
1.2S-343-N.5

SHT. 5 OF 7

REF.

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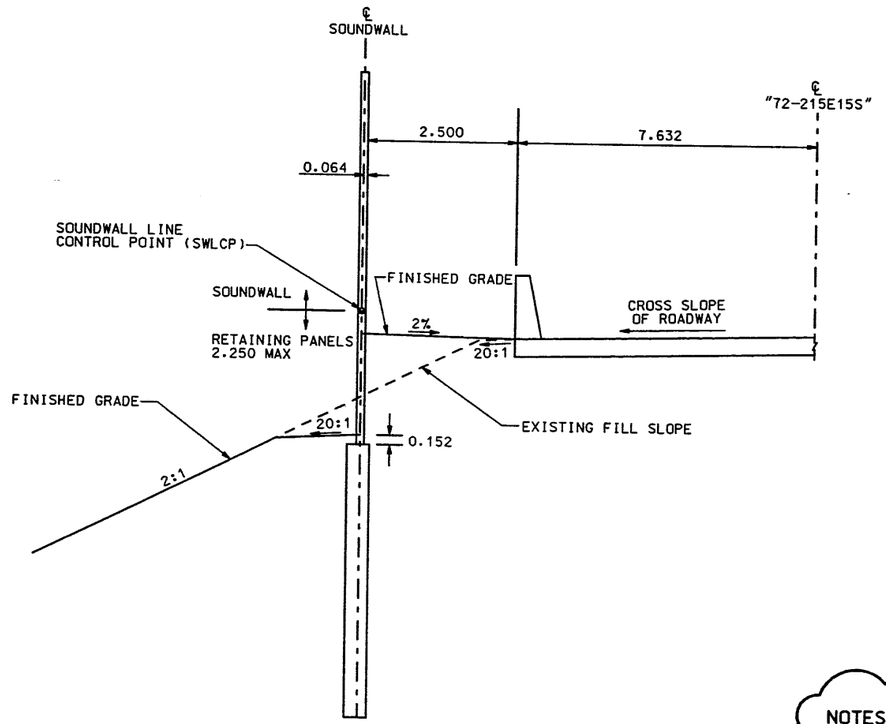

TYPICAL SECTION
SOUNDWALL S-343-NC
STA 1+000.000 TO STA 1+072.000

WASATCH CONSTRUCTORS

JUL 15 1998

RELEASED FOR CONSTRUCTION

NOTES:

1. UNLESS OTHERWISE NOTED ALL POST SPACINGS ARE 4.000 M.
2. PILASTERS AND TERMINUS ELEMENTS ARE TO BE PLACED ON ROADWAY SIDE OF SOUNDWALL.
3. POST AND PANEL AESTHETIC TREATMENT SHALL BE IN ACCORDANCE WITH CORRIDOR STANDARD DRAWINGS CS-5 AND CS-38.

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	5-14-98	INITIAL RELEASE
2	7-10-98	REVISION PER NOC-0209

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KNM 5/98	CHECK JBE 5/98	APPROVAL RECOM. 5/98 DATE	RICK CHAPMAN PROJECT DESIGN ENGINEER
DRAWN MH 5/98	CHECK JBE 5/98	APPROVED 5/98 DATE	DON GRAUL PROJECT MANAGER
QUANT.	CHECK		

I-15 CORRIDOR RECONSTRUCTION
DETAIL SHEET
SOUNDWALL S-343-NC
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296
SALT LAKE COUNTY
DWG. NO. 1.2S-343-N.6
SHT. 6 OF 7
REF.

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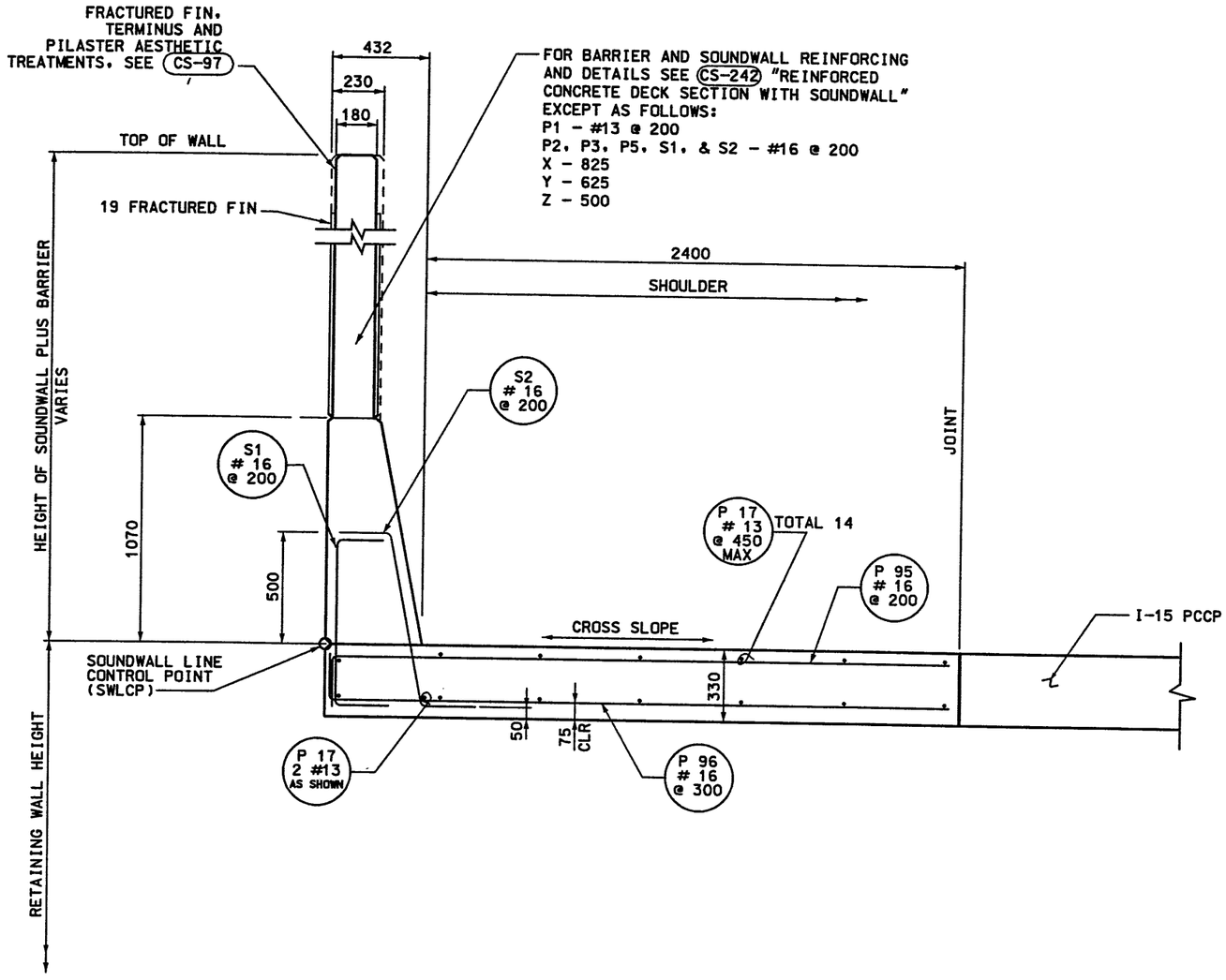

SOUNDWALL AND BARRIER ON MOMENT SLAB

NTS

NOISE WALL/BARRIER REINFORCING STEEL SCHEDULE			
HEIGHT OF NOISE WALL PLUS BARRIER (m)			BAR SPACING
5			@ 230
4			@ 300
3			@ 300
MARK	LENGTH	SIZE NO.	SKETCH
P95	3240	16	2730, 510
P96	2980	16	250, 2730
S1	1280	16	780, 250
S2	1295	16	780, 250, 150, 250

WASATCH CONSTRUCTORS

MAY 2 0 1998

RELEASED FOR CONSTRUCTION

NOTES:

1. 50mm MINIMUM COVER OVER REINFORCING.
2. ALL CAST IN PLACE CONCRETE SHALL BE CLASS AA (AB) CONCRETE, f' c=28 Mpa.
3. ALL DIMENSION ARE IN mm UNLESS OTHERWISE NOTED.
4. LOCATE TRANSVERSE CONSTRUCTION JOINTS AT THE SAME LOCATION AS THE PAVEMENT JOINTS.
5. MATCH ROADWAY CROSS SLOPES.
6. EXPANSION JOINTS SHALL BE LOCATED AS SHOWN ON PROFILES USING DETAIL 2 ON CS-242.
7. EXPANSION JOINT MATERIAL SHALL BE GREY COLORED "POLYTIGHT N" OR APPROVED EQUAL AFFIXED TO SOUNDWALL WITH EPOXY AS SUPPLIED BY THE MANUFACTURER.

LICENSED PROFESSIONAL ENGINEER
No. 277888
DONALD D. GRAUL
STATE OF UTAH
5/14/98

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	5-14-98	INITIAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN	MD 01/98	CHECK	JE
DRAWN	RJS 01/98	CHECK	
QUANT.		CHECK	

APPROVAL RECOMM. 01/05/98 RICK CHAPMAN, PROJECT DESIGN ENGINEER, DATE
APPROVED 01/05/98 DON GRAUL, SECTION MANAGER, DATE

I-15 CORRIDOR RECONSTRUCTION
RETAINING WALLS TYPICAL DET
SOUNDWALL AND BARRIER
PROJECT NUMBER #SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2S-343-N.7
SHT. 7 OF 7

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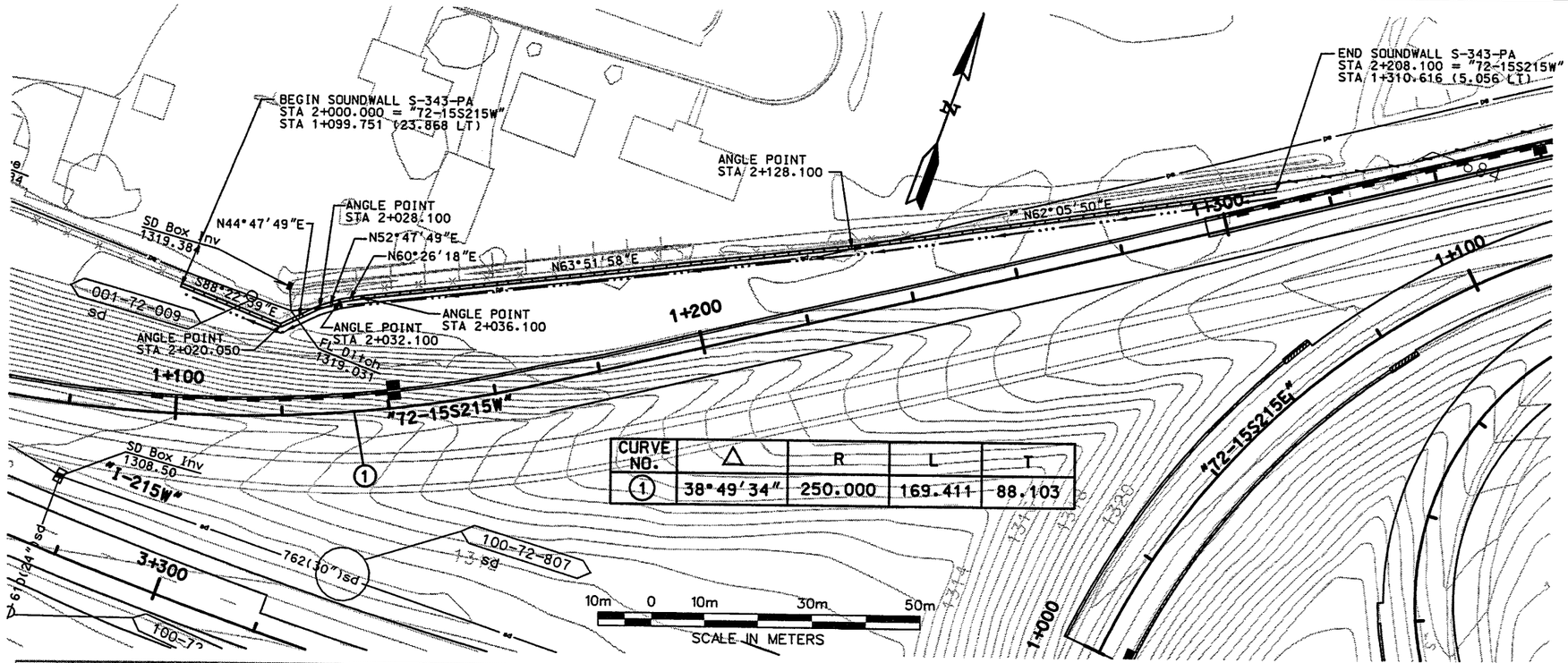

ELEVATION VIEW FROM FRONT FACE OF WALL

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH
11-9-98

WASATCH CONSTRUCTORS
DEC 0 2 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	5-29-98	INITIAL RELEASE
2	11-9-98	NOC-0281

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KMW 2/98 CHECK JBE 2/98
DRAWN RJS 2/98 CHECK JBE 2/98
QUANT. CHECK

APPROVAL RECOM. 2/98 RICK CHAPMAN
DATE PROJECT DESIGN ENGINEER
APPROVED 2/98 DON GRAUL
DATE PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
SOUNDWALL S-343-PA
SECTION 1.2
PROJECT NUMBER #SP-15-7(135)296

SALT LAKE
COUNTY
DWG.NO.
1.2S-343-P.1
SHT. 1 OF 11
REF.

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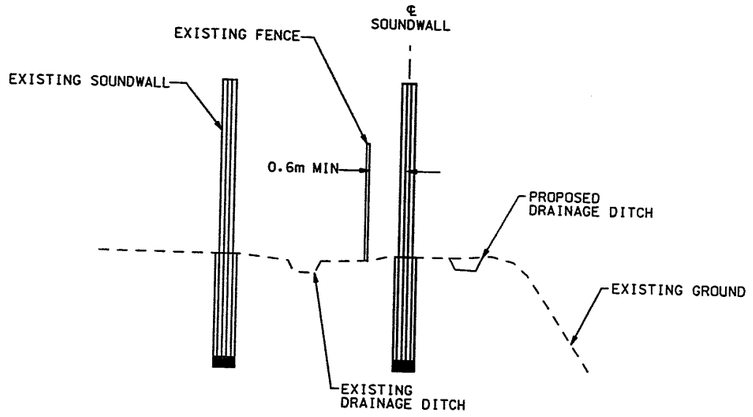
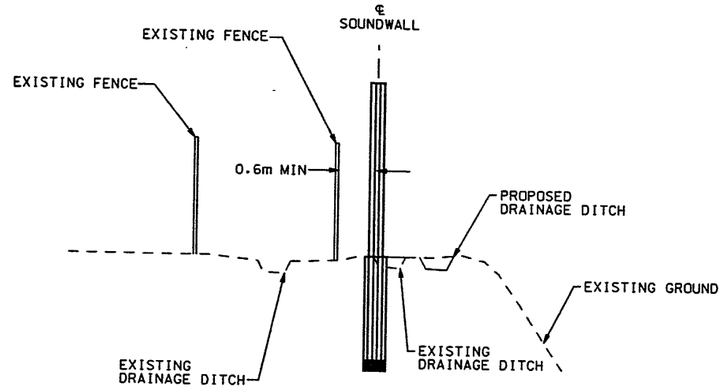


TYPICAL SECTION
SOUNDWALL S-343-PA
STA 2+000.000 TO STA 2+020.100



TYPICAL SECTION
SOUNDWALL S-343-PA
STA 2+020.100 TO STA 2+208.100

NOTES:

1. UNLESS OTHERWISE NOTED ALL POST SPACINGS ARE 4.000 M.
2. PILASTERS AND TERMINUS ELEMENTS ARE TO BE PLACED ON ROADWAY SIDE OF SOUNDWALL.
3. POST AND PANEL AESTHETIC TREATMENT SHALL BE IN ACCORDANCE WITH CORRIDOR STANDARD DRAWINGS CS-5 AND CS-38.
4. POSTS AT TERMINUS ELEMENTS AND PLASTERS SHALL HAVE A MINIMUS EMBEDMENT DEPTH OF 0.9 X WALL HEIGHT. (3)

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS
S ATKIN
STATE OF UTAH

WASATCH CONSTRUCTORS

DEC 0 2 1998

RELEASED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	5-29-98	INITIAL RELEASE
2	7-10-98	REVISION PER NOC-0208
3	11- 9-98	NOC-0281

APPROVED FOR CONSTRUCTION

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KMW 2/98 CHECK JBE 2/98
DRAWN NH 2/98 CHECK JBE 2/98
QUANT. CHECK

APPROVAL RECOMM. 2/98 DATE RICK CHAPMAN PROJECT DESIGN ENGINEER
APPROVED 2/98 DATE DON GRAUL PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
DETAIL SHEET
SOUNDWALL S-343-PA
SECTION 1.2
PROJECT NUMBER #SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2S-343-P.2
SHT. 2 OF 11
REF.

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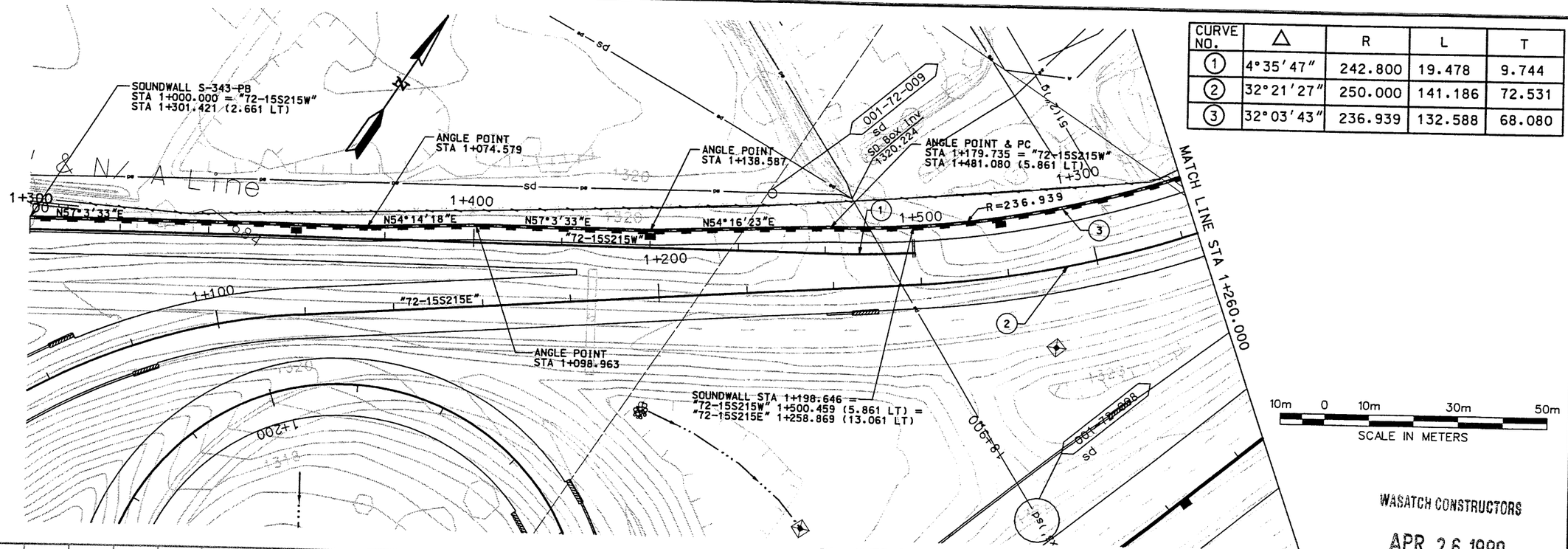
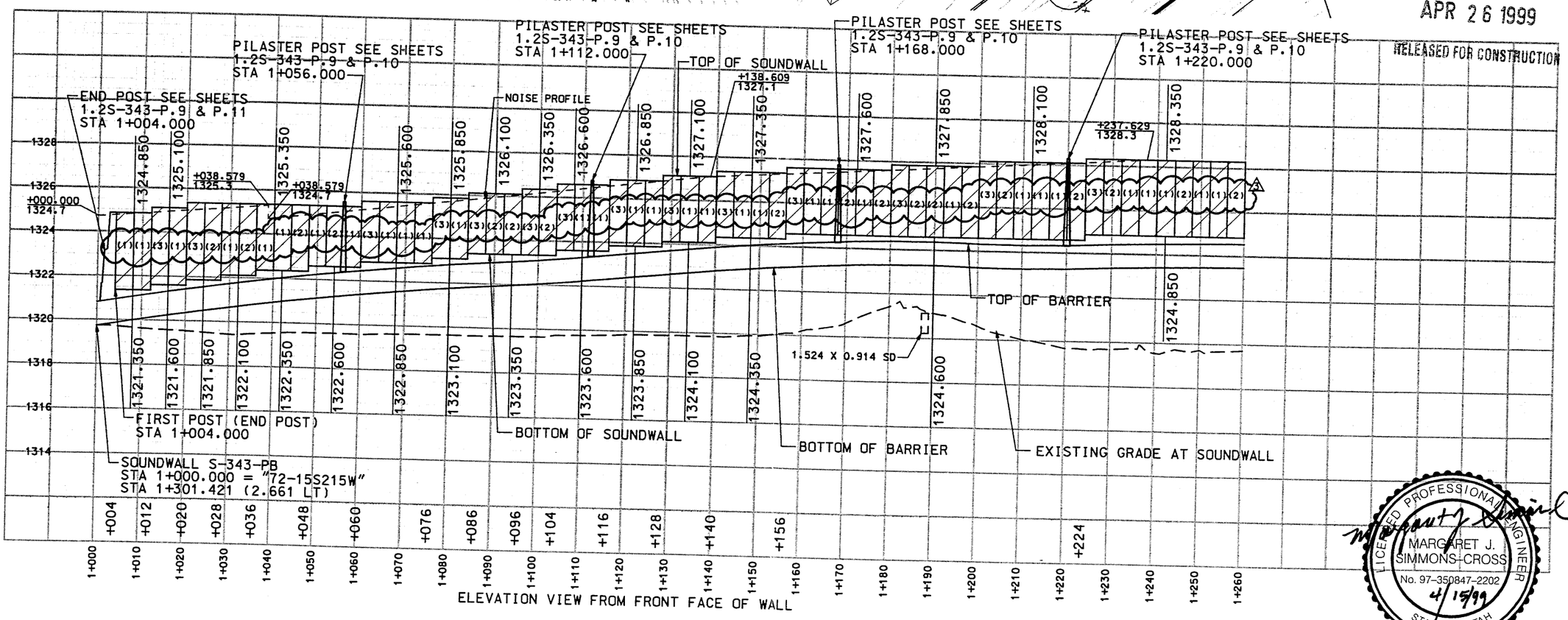
2	32°21'27"	250.000	141.186	72.531
3	32°03'43"	236.939	132.588	68.080





WASATCH CONSTRUCTORS

APR 26 1999

RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	5-29-98	INITIAL RELEASE
2	11-16-98	PILASTER POST DETAILS
3	4-15-99	ADDED PANEL TYPES

UTAH DEPARTMENT OF TRANSPORTATION

URS Greiner
SVERDRUP/DE LEUW

DESIGN KM 2/98 CHECK JBE 2/98
DRAWN RJS 2/98 CHECK JBE 2/98
QUANT. CHECK

APPROVAL RECOM. DATE 2/98 RICK CHAPMAN PROJECT DESIGN ENGINEER
APPROVED DATE 2/98 DON GRAUL PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
SOUNDWALL S-343-PB
SECTION 1.2

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

- -
1214000

SALT LAKE COUNTY
DWG. NO. 1.2S-343-P.3
SHT. 3 OF 11
REF.

LICENSED PROFESSIONAL ENGINEER
MARGARET J. SIMMONS-CROSS
No. 97-350847-2202
4/15/99
STATE OF UTAH

RFC After Final Approval

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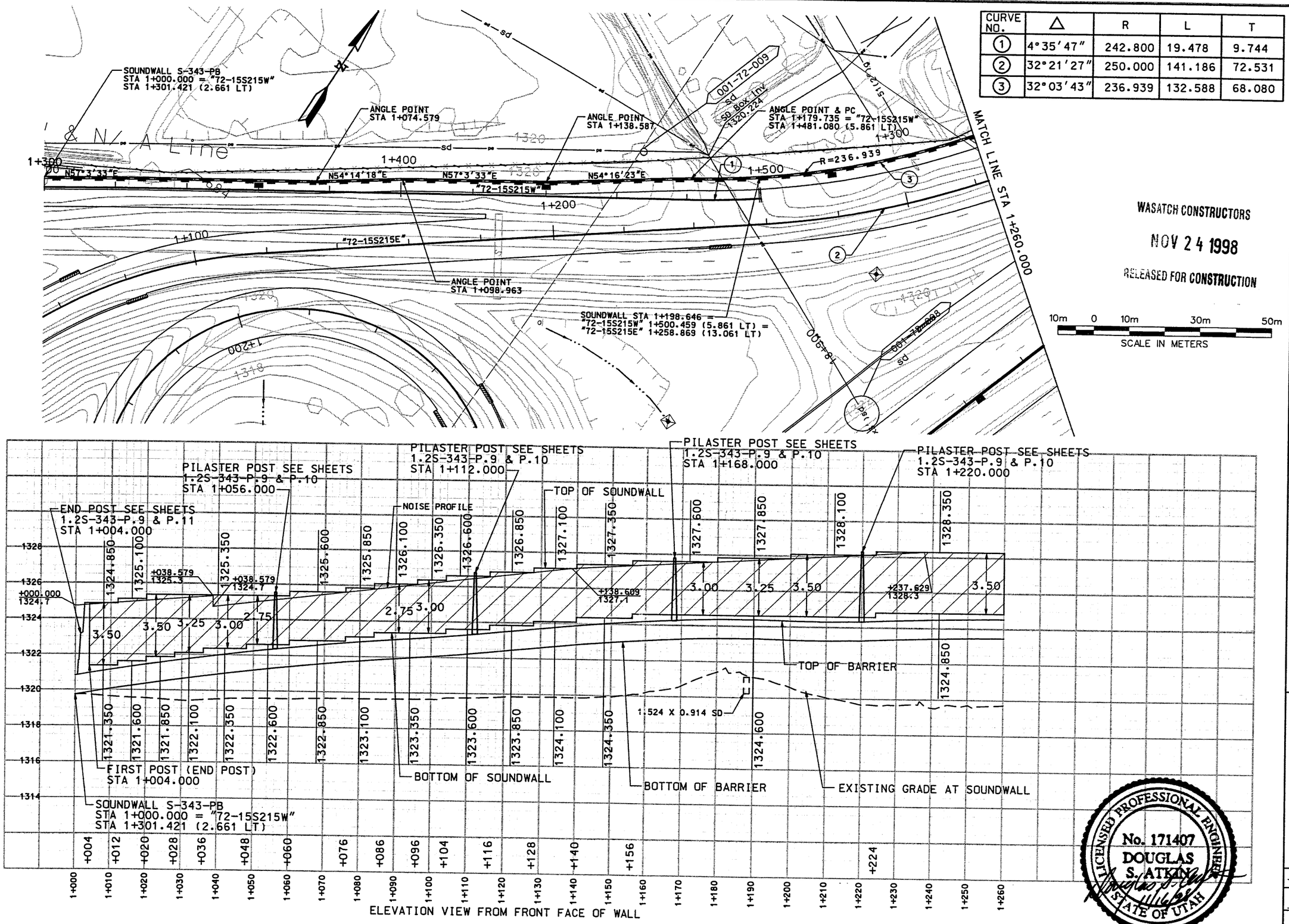

CURVE NO.	△	R	L	T
1	4°35'47"	242.800	19.478	9.744
2	32°21'27"	250.000	141.186	72.531
3	32°03'43"	236.939	132.588	68.080

WASATCH CONSTRUCTORS
NOV 24 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	5-29-98	INITIAL RELEASE
2	11-16-98	PILASTER POST DETAILS

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN KWM 2/98 CHECK JBE 2/98
DRAWN RJS 2/98 CHECK JBE 2/98
QUANT. CHECK
1214000

APPROVAL RECOMM. 2/98 RICK CHAPMAN DATE PROJECT DESIGN ENGINEER
APPROVED 2/98 DON GRAUL DATE PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
SOUNDWALL S-343-PB
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
DWG.NO. 1.2S-343-P.3
SHT. 3 OF 11
REF.

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

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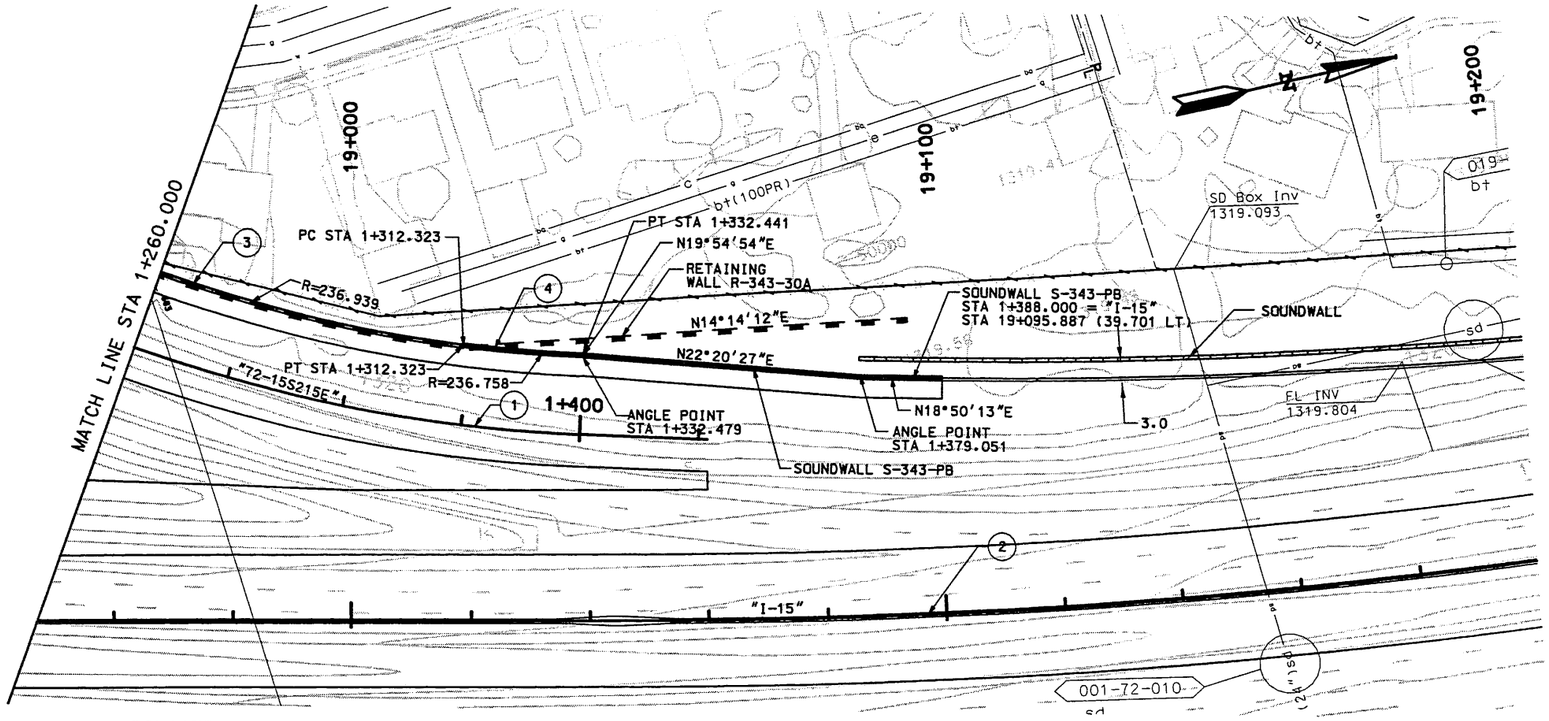


CURVE NO.	Δ	R	L	T
1	32°21'27"	250.000	141.186	72.531
2	13°7'13"	1165.000	266.778	133.975
3	32°03'43"	236.939	132.588	68.080
4	04°52'07"	236.758	20.118	10.065

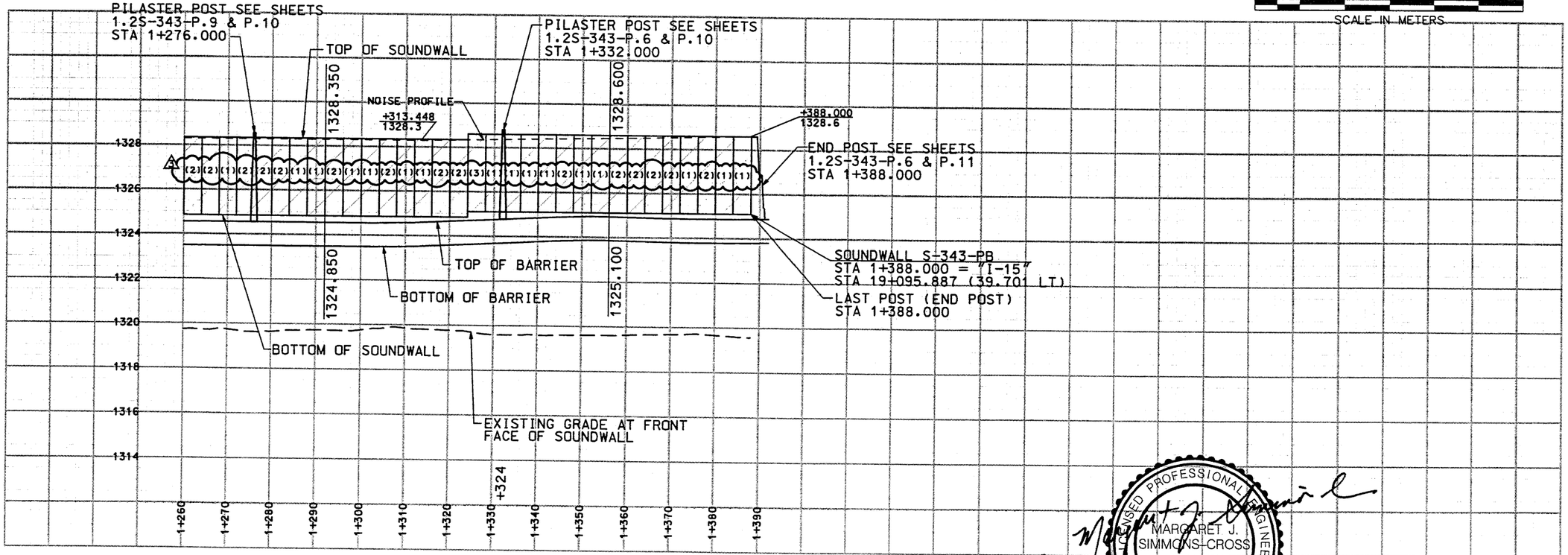
WASATCH CONSTRUCTORS

APR 26 1999

RELEASED FOR CONSTRUCTION

10m 0 10m 30m 50m

SCALE IN METERS



ELEVATION VIEW FROM FRONT FACE OF WALL

LICENSED PROFESSIONAL ENGINEER
MARGARET J. SIMMONS-CROSS
No. 97-350847-2202
4/15/99
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	5-29-98	INITIAL RELEASE
2	11-13-98	PILASTER POST DETAILS
3	4-15-99	ADDED PANEL DETAILS
	- -	

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

APPROVAL RECOMM. 2/98 RICK CHAPMAN DATE PROJECT DESIGN ENGINEER
APPROVED 2/98 DON GRAUL DATE PROJECT MANAGER
DESIGN KWM 2/98 CHECK JBE 2/98
DRAWN RJS 2/98 CHECK JBE 2/98
QUANT. CHECK
- -
1214000

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT SOUNDWALL S-343-PB
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2S-343-P.4
SHT. 4 OF 11
REF.

RFC After Final Approval

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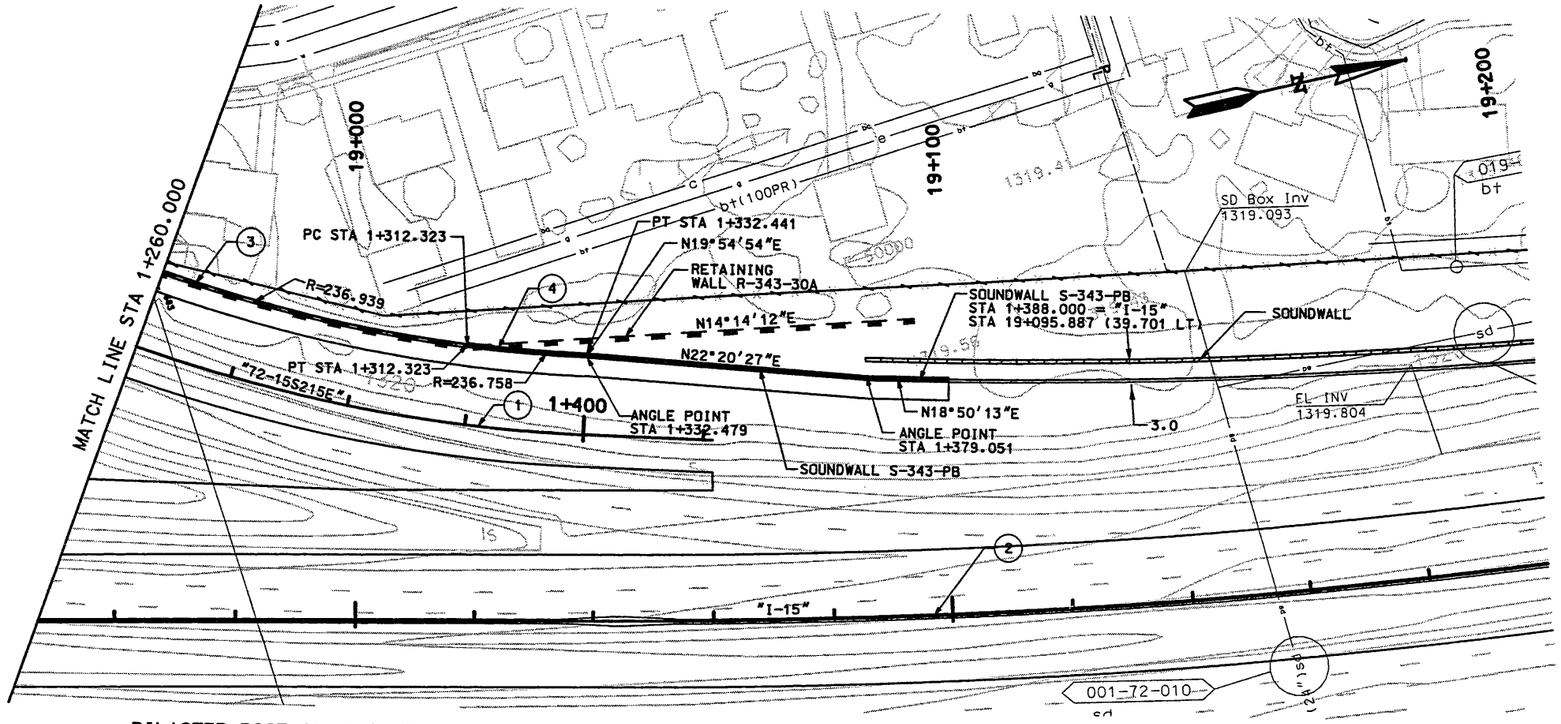


CURVE NO.	△	R	L	T
①	32°21'27"	250.000	141.186	72.531
②	13°7'13"	1165.000	266.778	133.975
③	32°03'43"	236.939	132.588	68.080
④	04°52'07"	236.758	20.118	10.065

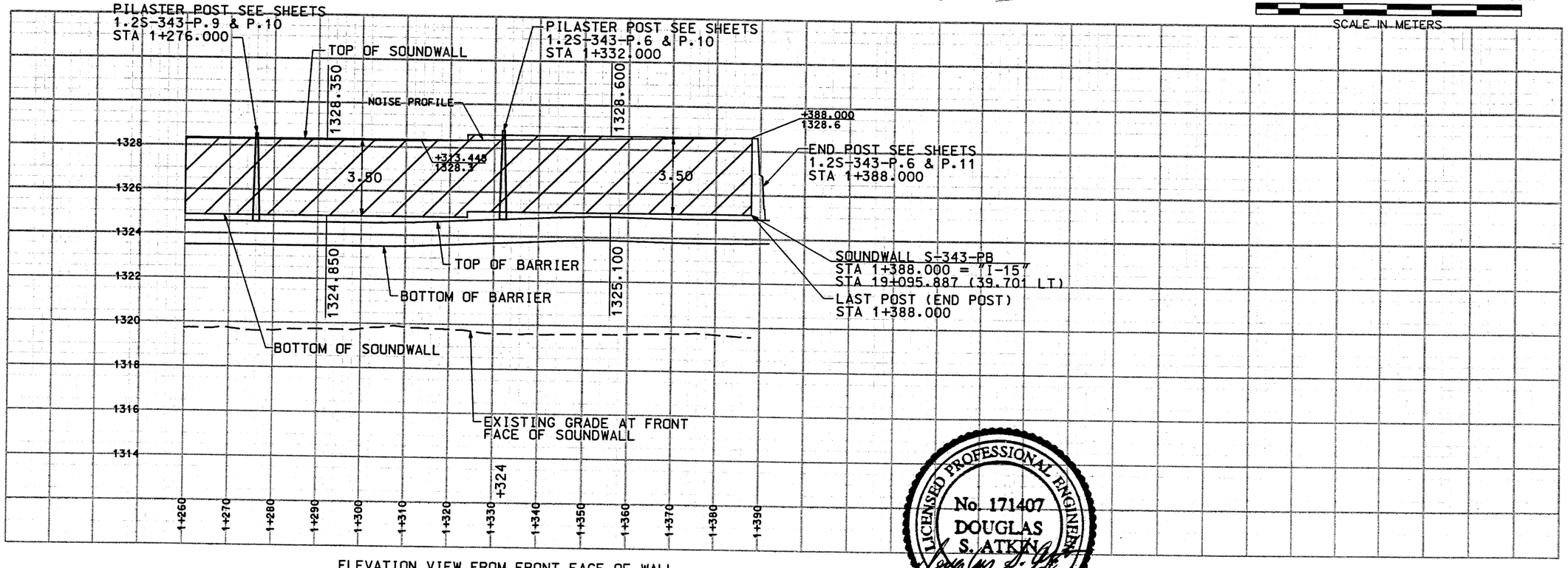
WASATCH CONSTRUCTORS

NOV 24 1998

RELEASED FOR CONSTRUCTION

10m 0 10m 30m 50m

SCALE IN METERS



ELEVATION VIEW FROM FRONT FACE OF WALL

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	5-29-98	INITIAL RELEASE
2	11-13-98	PILASTER POST DETAILS

UTAH DEPARTMENT OF TRANSPORTATION

URS Greiner
SVERDRUP/DE LEUW

DESIGN KMA 2/98 CHECK JBE 2/98
DRAWN RJS 2/98 CHECK JBE 2/98
QUANT. CHECK

APPROVAL RECOMM. 2/98 RICK CHAPMAN PROJECT DESIGN ENGINEER
APPROVED 2/98 DON GRAUL PROJECT MANAGER
DATE DATE

I-15 CORRIDOR RECONSTRUCTION

SITUATION/LAYOUT
SOUNDWALL S-343-PB

SECTION 1.2

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

SALT LAKE COUNTY

DWG. NO. 1.2S-343-P.4

SHT. 4 OF 11

REF.

1214000

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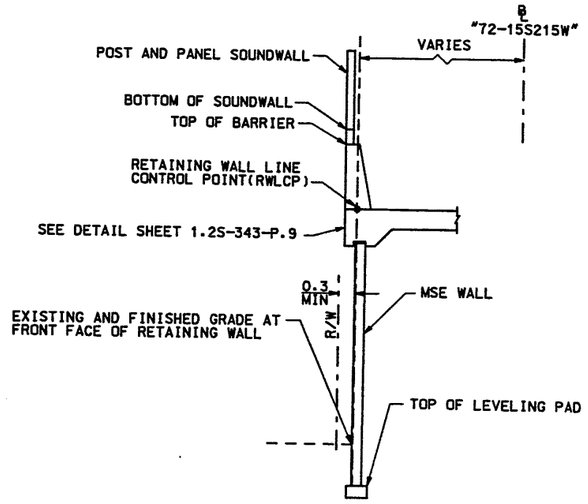
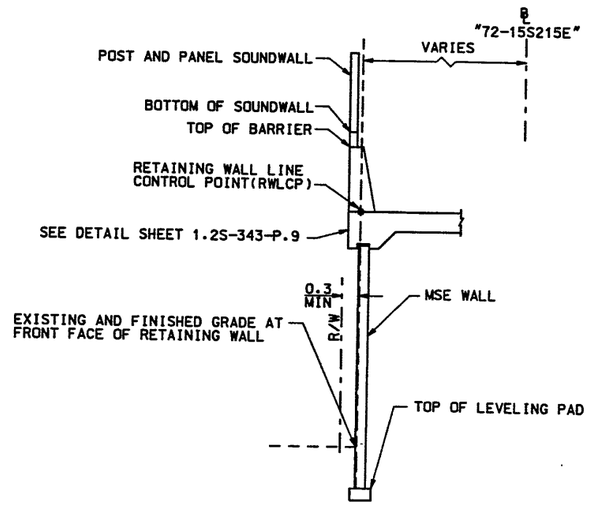
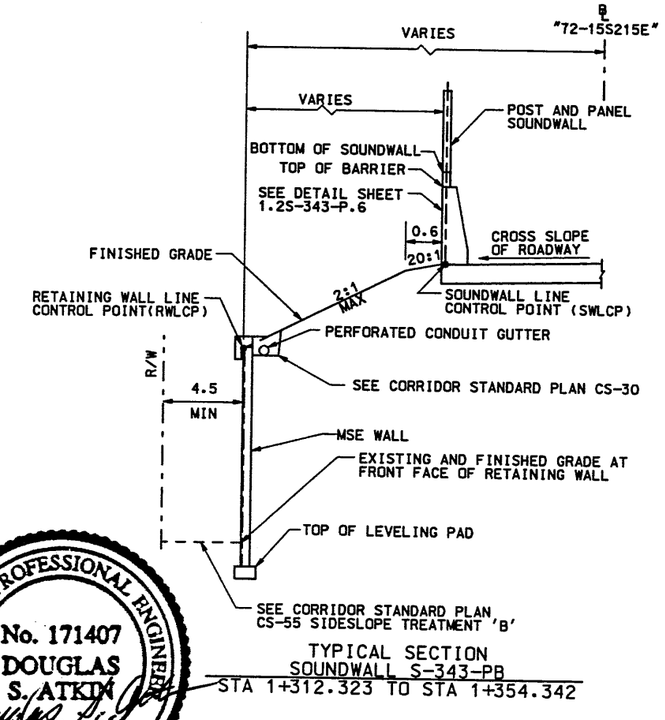


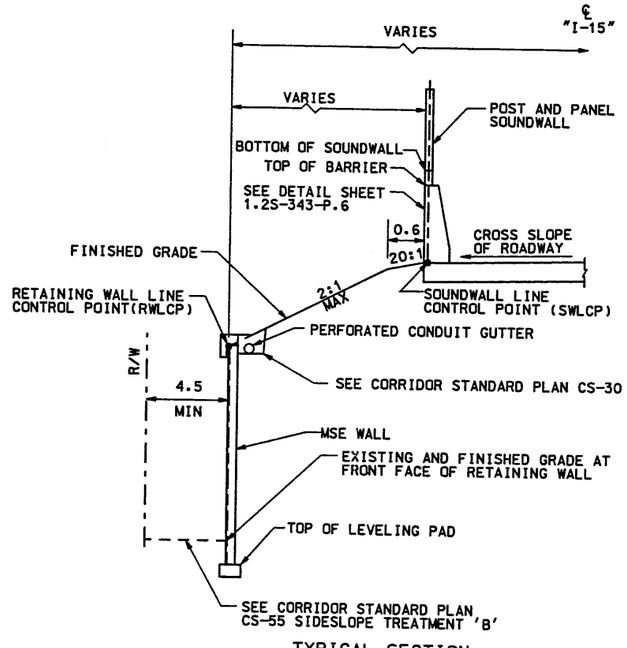
TYPICAL SECTION
SOUNDWALL S-343-PB
STA 1+000.000 TO STA 1+198.646



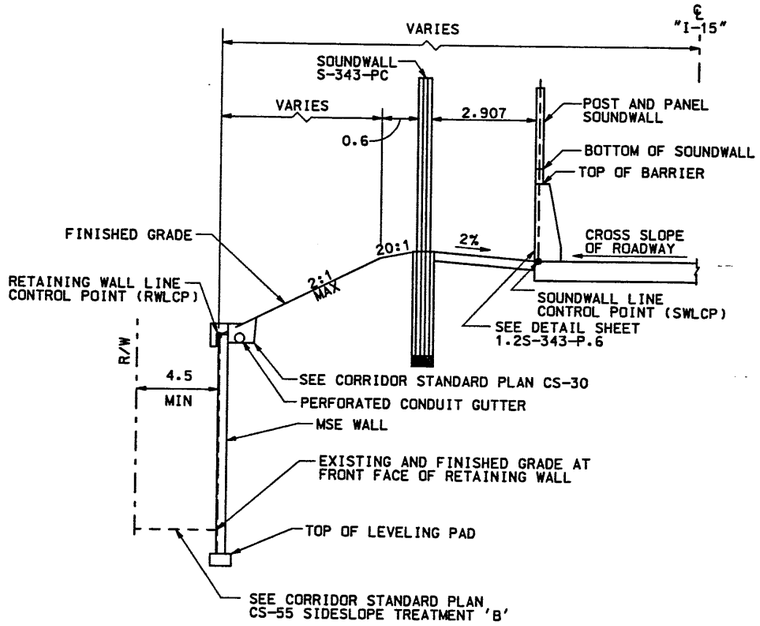
TYPICAL SECTION
SOUNDWALL S-343-PB
STA 1+198.646 TO STA 1+312.323



TYPICAL SECTION
SOUNDWALL S-343-PB
STA 1+312.323 TO STA 1+354.342



TYPICAL SECTION
SOUNDWALL S-343-PB
STA 1+354.342 TO STA 1+378.700



TYPICAL SECTION
SOUNDWALL S-343-PB
STA 1+378.700 TO STA 1+388.000

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

WASATCH CONSTRUCTORS

NOV 24 1998

RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	5-29-98	INITIAL RELEASE
2	11-16-98	PILASTER POST DETAILS
-	- -	- -
-	- -	- -

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN	KMA 2/98	CHECK	JBE 2/98
DRAWN	MH 2/98	CHECK	JBE 2/98
QUANT.		CHECK	

APPROVAL RECOM.: RICK CHAPMAN, PROJECT DESIGN ENGINEER, DATE 2/98
APPROVED: DON GRAUL, PROJECT MANAGER, DATE 2/98

I-15 CORRIDOR RECONSTRUCTION
DETAIL SHEET SOUNDWALL S-343-PB
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296
1214000

SALT LAKE COUNTY
DWG. NO. 1.2S-343-P.5
SHT. 5 OF 11
REF.

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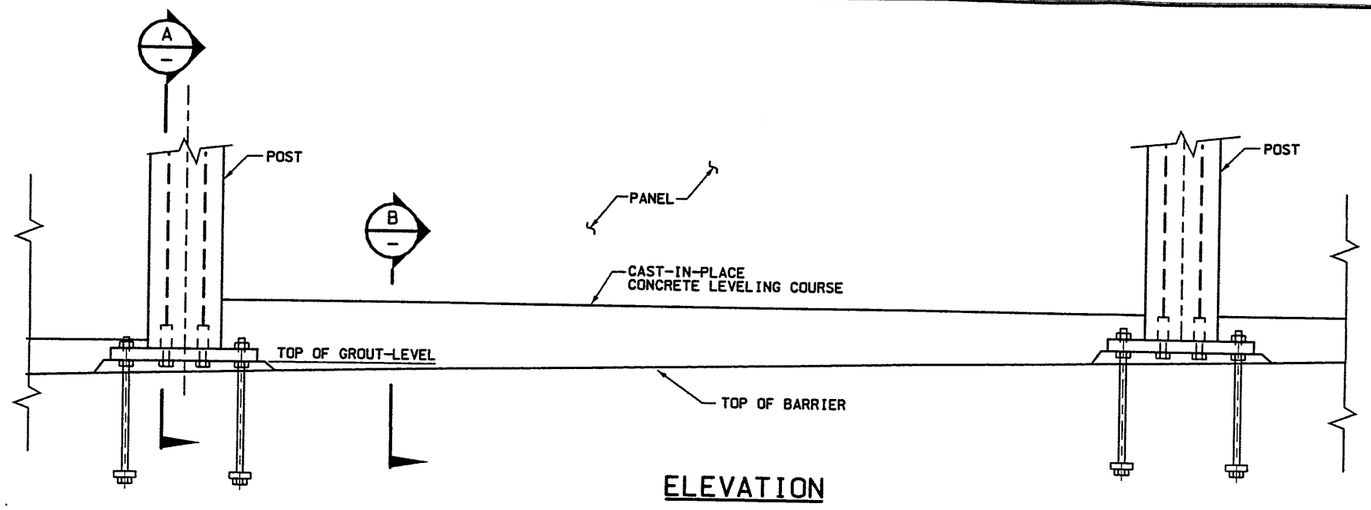
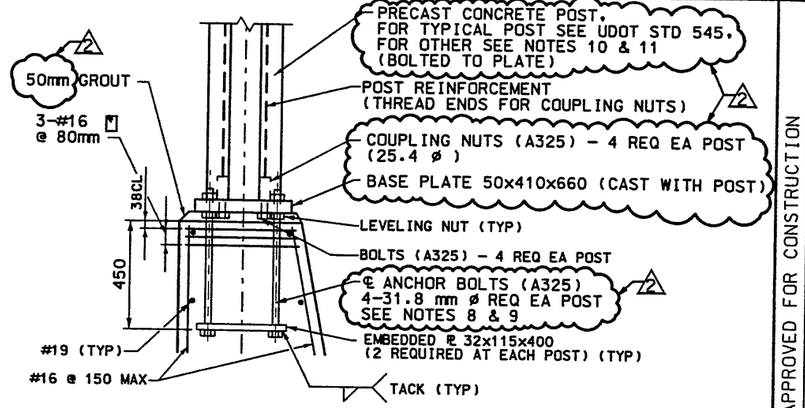
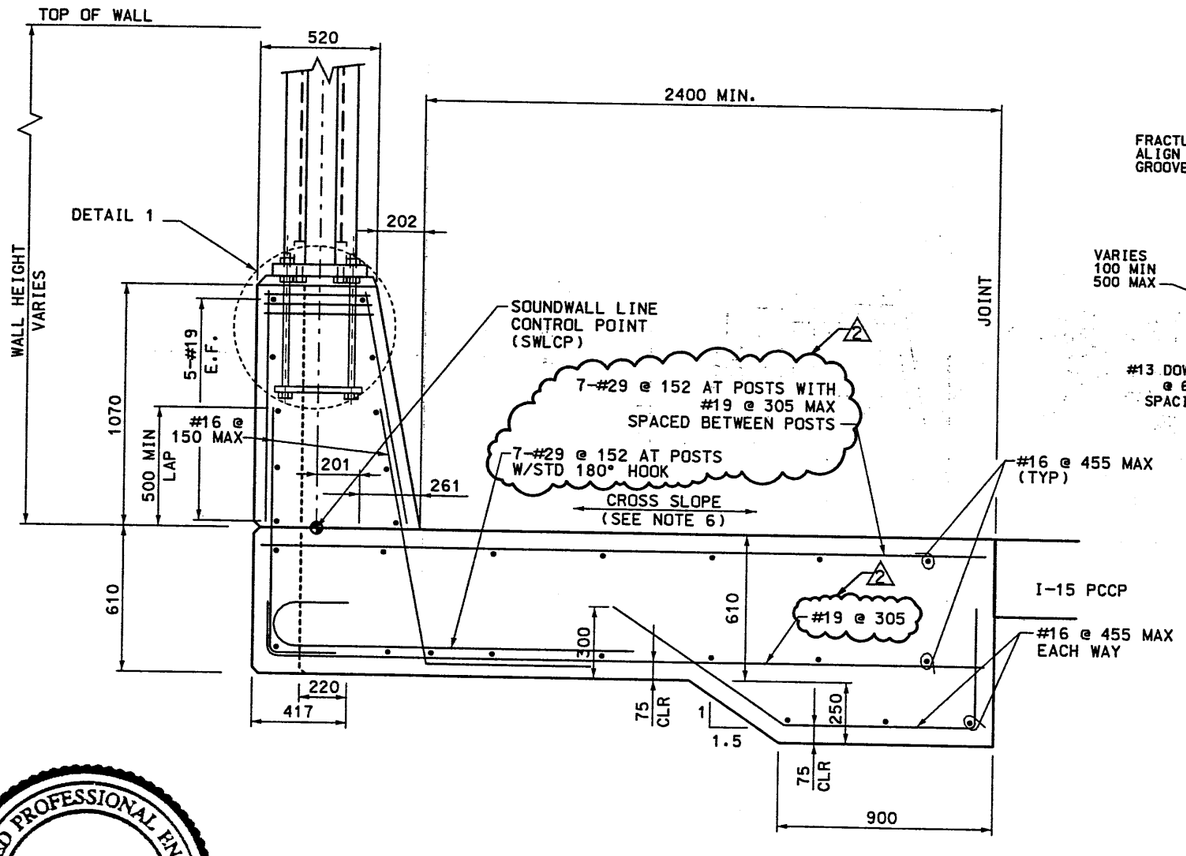


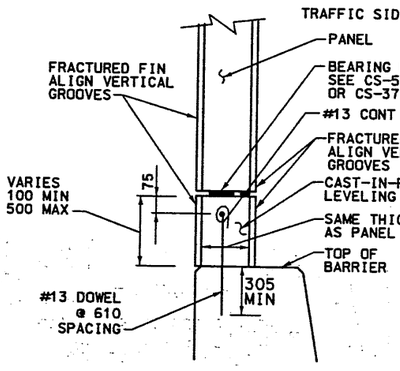
ELEVATION



DETAIL 1



SECTION A



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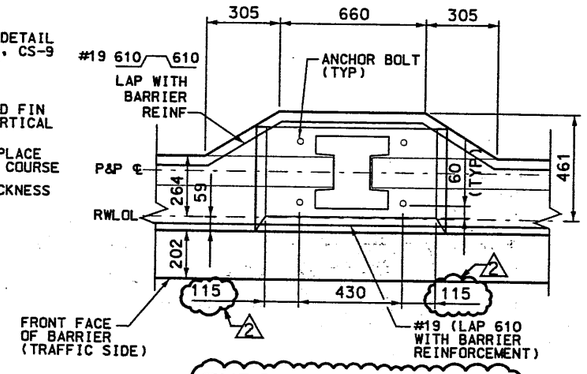

TYPICAL POST PLAN

NOTES:

1. 50mm MINIMUM COVER OVER REINFORCING UNLESS OTHERWISE SHOWN.
2. USE f'c=35 MPa FOR POST AND PILASTER, AND f'c=28 MPa FOR MOMENT SLAB AND LEVELING COURSE.
3. ALL STRUCTURAL STEEL SHALL CONFORM TO AASHTO M 270M GRADE 345.
4. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
5. LOCATE TRANSVERSE CONSTRUCTION JOINTS AT THE SAME LOCATION AS THE PAVEMENT JOINTS.
6. MATCH ROADWAY CROSS SLOPES.
7. BASE PLATE SHALL BE PRECAST WITH POST. SEE SPECIFICATION 724.
8. ALL ANCHOR BOLTS, NUTS, AND BASE PLATE ASSEMBLIES SHALL BE GALVANIZED. SEE SPECIFICATION 724.
9. ANCHOR BOLTS SHALL CONFORM TO ASTM A449 OR A325.
10. SEE SHEET 1.2S-343-P.10 FOR ADDITIONAL DETAILS AT PRECAST PILASTER.
11. SEE SHEET 1.2S-343-P.9 FOR PILASTER POST PLAN.

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

PRECAST POST AND PANEL SOUNDWALL ON BARRIER WITH MOMENT SLAB

NTS

WASATCH CONSTRUCTORS

NOV 24 1998

RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	6-02-98	INITIAL RELEASE
2	11-16-98	PILASTER POST DETAILS
-	- -	- -
-	- -	- -

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN	RBA	2/98	CHECK JBE
DRAWN	RJS	2/98	CHECK JBE
QUANT.	/	/	CHECK

APPROVAL RECOMM. 2/98 RICK CHAPMAN PROJECT DESIGN ENGINEER
APPROVED 2/98 DON GRAUL PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
DETAIL SHEET SOUNDWALL S-343-PB
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296
1214000

SALT LAKE COUNTY
DWG.NO. 1.2S-343-P.6
SHT. 6 OF 11
REF.

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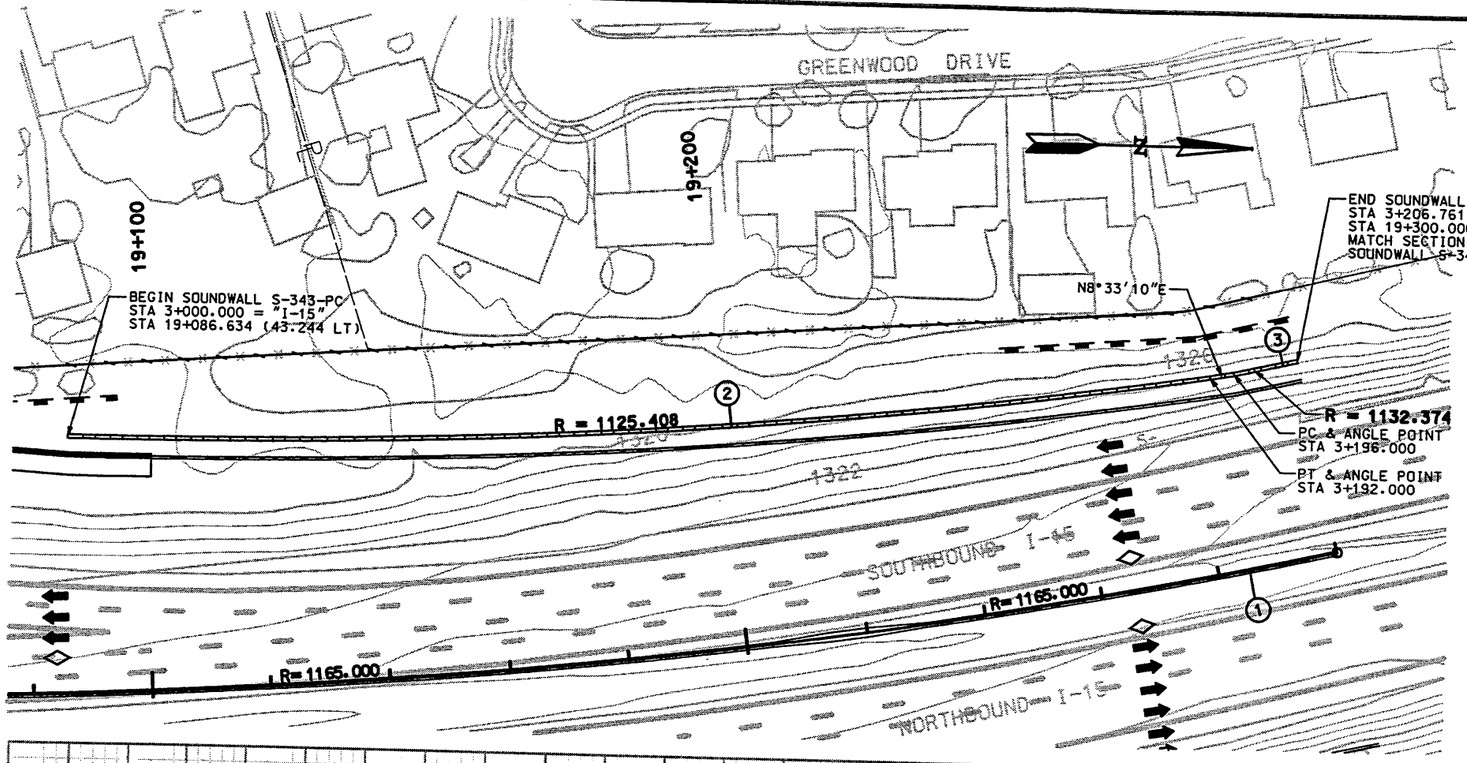

CURVE NO.	△	R	L	T
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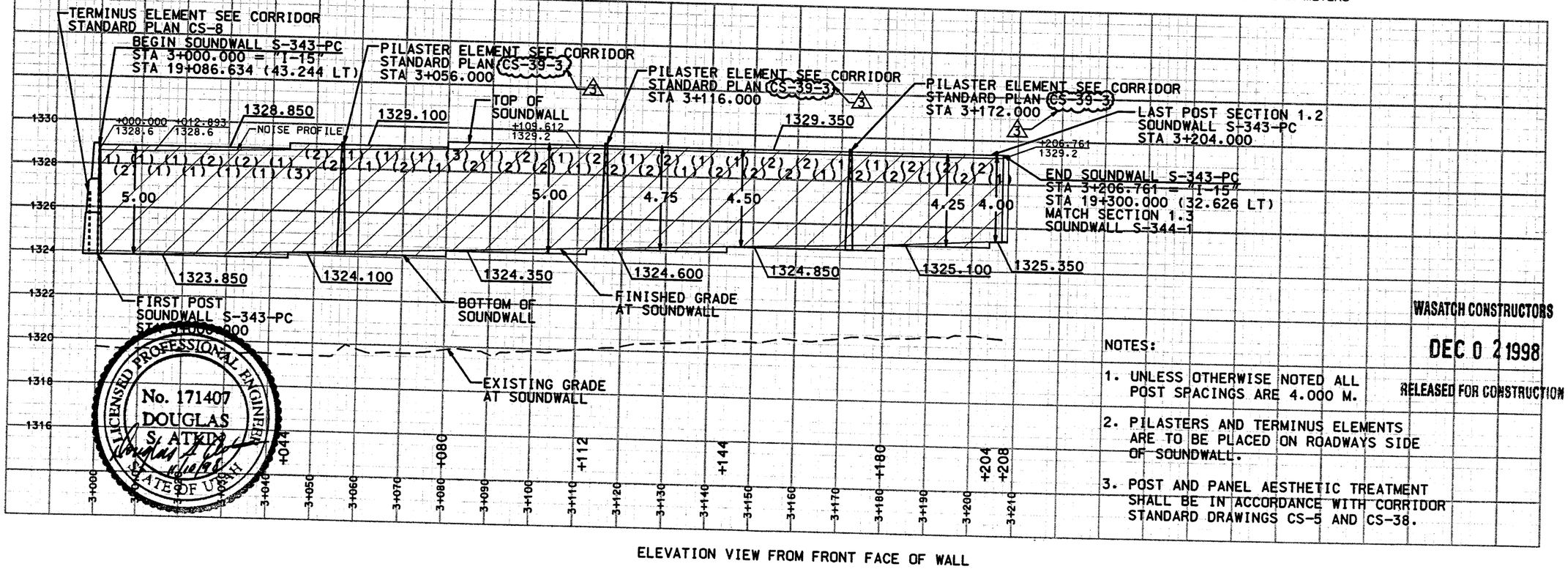
②	9°46'30"	1125.408	192.000	96.234
③	1°18'11"	1132.374	25.751	25.751

10m 0 10m 30m 50m
SCALE IN METERS



ELEVATION VIEW FROM FRONT FACE OF WALL

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

WASATCH CONSTRUCTORS
DEC 0 2 1998
RELEASED FOR CONSTRUCTION

NOTES:

1. UNLESS OTHERWISE NOTED ALL POST SPACINGS ARE 4.000 M.
2. PILASTERS AND TERMINUS ELEMENTS ARE TO BE PLACED ON ROADWAYS SIDE OF SOUNDWALL.
3. POST AND PANEL AESTHETIC TREATMENT SHALL BE IN ACCORDANCE WITH CORRIDOR STANDARD DRAWINGS CS-5 AND CS-38.

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	5-29-98	INITIAL RELEASE
2	7-10-98	REVISION PER NDC-0208
3	11-9-98	NDC - 0281
-	-	-

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

DESIGN	KMJ	CHECK	JBE 2/98
DRAWN	NH	CHECK	JBE 2/98
QUANT.		CHECK	

APPROVAL RECOMM. 2/98 DATE — RICK CHAPMAN PROJECT DESIGN ENGINEER
APPROVED 2/98 DATE — DON GRAUL PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
SOUNDWALL S-343-PC
SECTION 1.2

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

SALT LAKE COUNTY
DWG. NO. 1.2S-343-P.7
SHT. 7 OF 11
REF.

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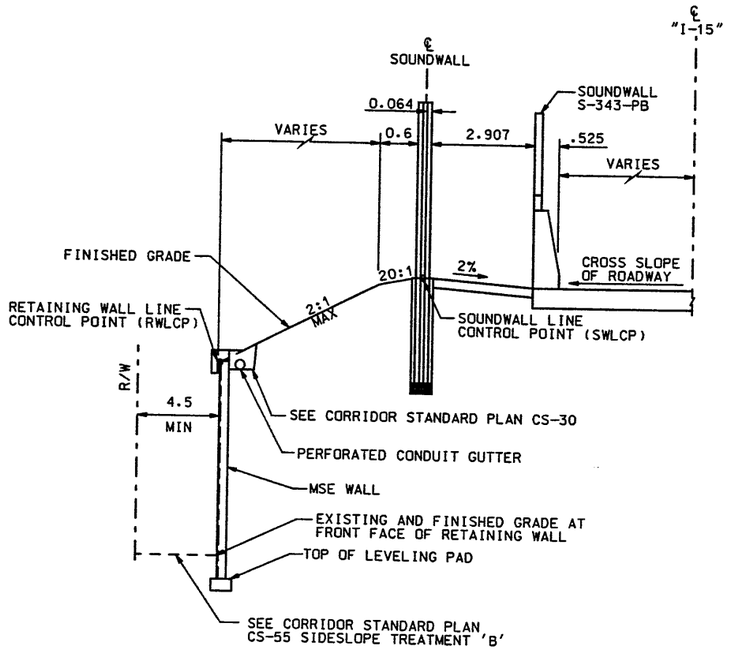
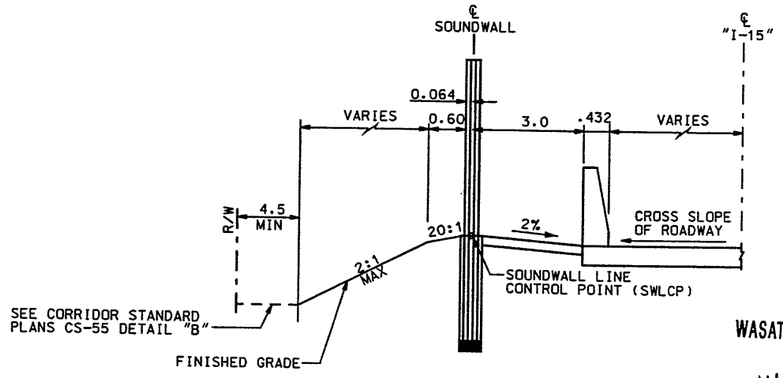
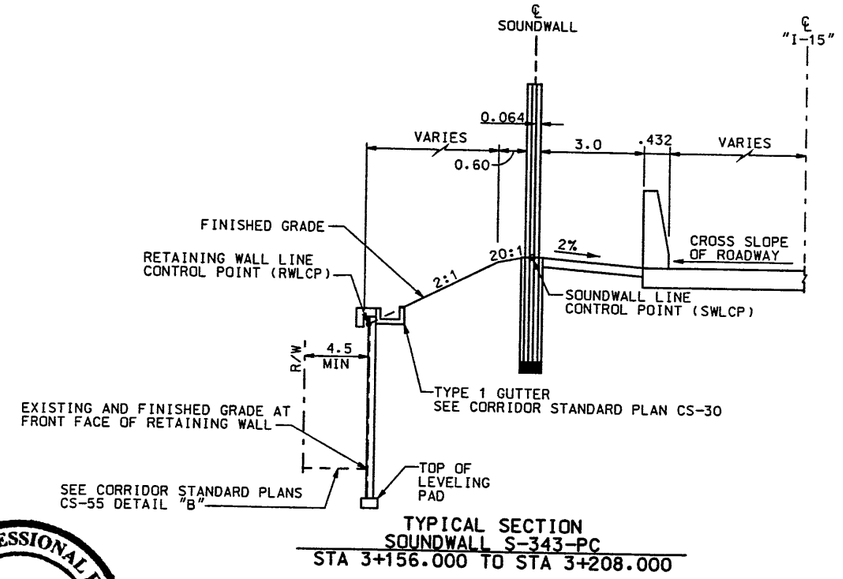


TYPICAL SECTION
SOUNDWALL S-343-PC
STA 3+000.000 TO STA 3+008.000



TYPICAL SECTION
SOUNDWALL S-343-PC
STA 3+008.000 TO STA 3+156.000



TYPICAL SECTION
SOUNDWALL S-343-PC
STA 3+156.000 TO STA 3+208.000

LICENCED PROFESSIONAL ENGINEER
No 348399
JAMES B ESHBAUGH
STATE OF UTAH

WASATCH CONSTRUCTORS

JUN - 5 1998

RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	5-29-98	INITIAL RELEASE
	- -	
	- -	
	- -	

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

APPROVAL RECOMM.	2/98 DATE	RICK CHAPMAN PROJECT DESIGN ENGINEER	DESIGN KWM 2/98 CHECK JBE 2/98
APPROVED	2/98 DATE	DON GRAUL PROJECT MANAGER	DRAWN NH 2/98 CHECK JBE 2/98
			QUANT. CHECK

I-15 CORRIDOR RECONSTRUCTION
DETAIL SHEET
SOUNDWALL S-343-PC
SECTION 1.2
PROJECT NUMBER #SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.2S-343-P.8
SHT. 8 OF 8
REF.

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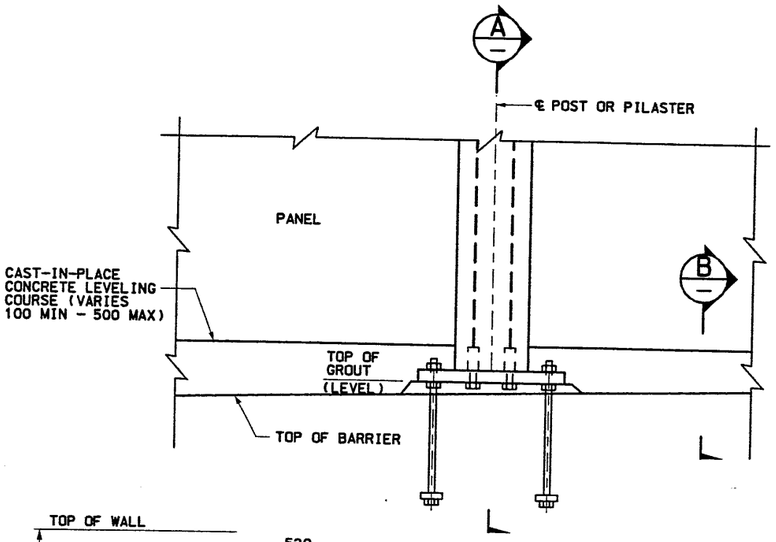

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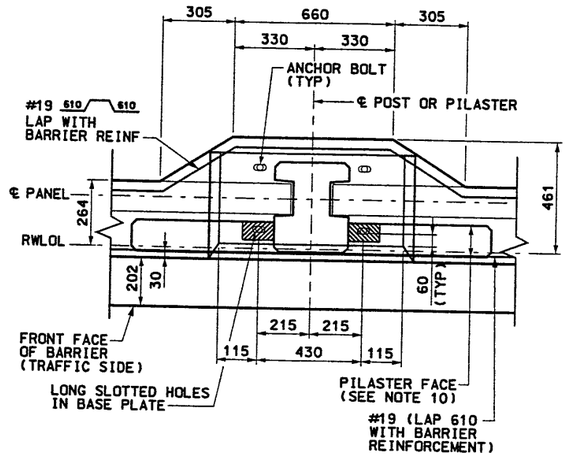
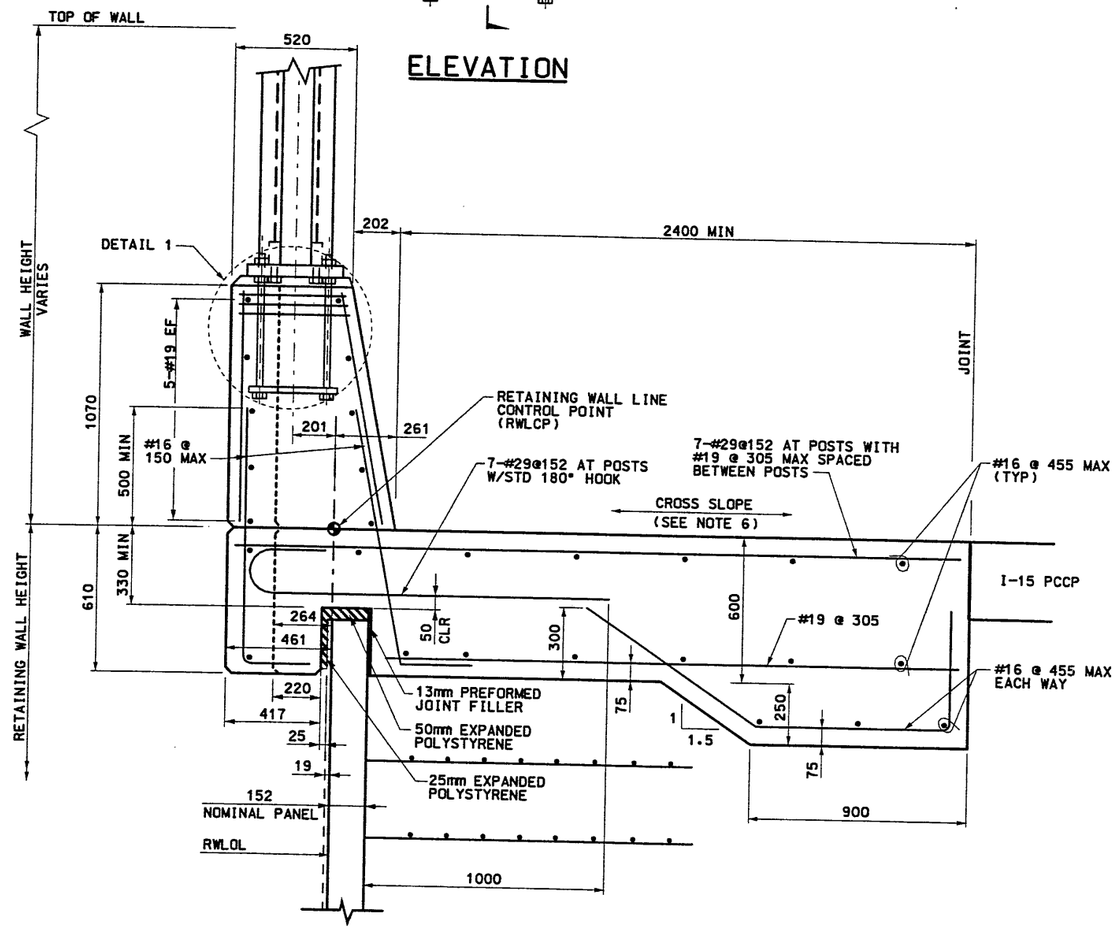
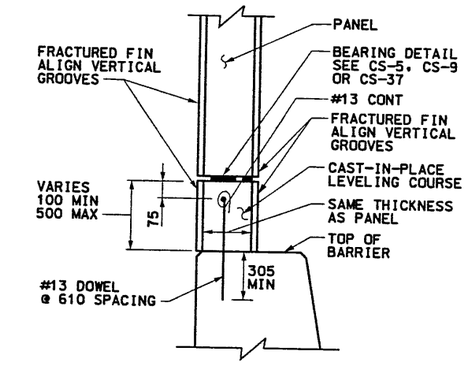


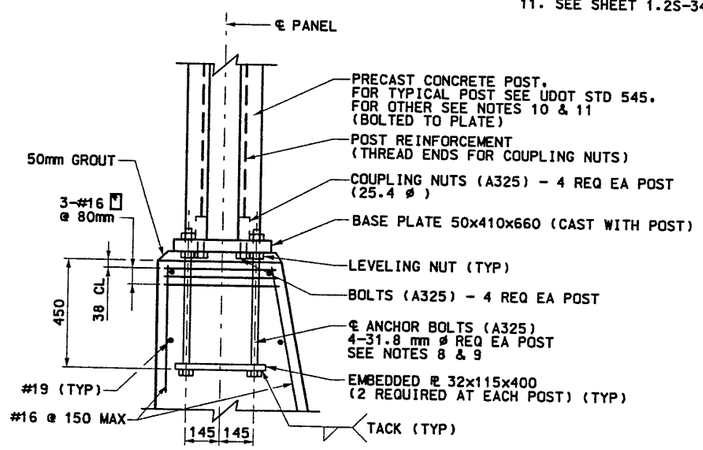
PILASTER POST PLAN



SECTION A



SECTION B



DETAIL 1

NOTES:

1. 50mm MINIMUM COVER OVER REINFORCING UNLESS OTHERWISE SHOWN.
2. USE f'c=35 MPa FOR POST AND PILASTER, AND f'c=28 MPa FOR MOMENT SLAB AND LEVELING COURSE.
3. ALL STRUCTURAL STEEL SHALL CONFORM TO AASHTO M 270M GRADE 345.
4. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
5. LOCATE TRANSVERSE CONSTRUCTION JOINTS AT THE SAME LOCATION AS THE PAVEMENT JOINTS.
6. MATCH ROADWAY CROSS SLOPES.
7. BASE PLATE SHALL BE PRECAST WITH POST. SEE SPECIFICATION 724.
8. ALL ANCHOR BOLTS, NUTS, AND BASE PLATE ASSEMBLIES SHALL BE GALVANIZED. SEE SPECIFICATION 724.
9. ANCHOR BOLTS SHALL CONFORM TO ASTM A449 OR A325.
10. SEE SHEET 1.2S-343-P.10 FOR ADDITIONAL DETAILS AT PRECAST PILASTER.
11. SEE SHEET 1.2S-343-P.6 FOR TYPICAL POST PLAN

WASATCH CONSTRUCTORS

NOV 24 1998

RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	11-16-98	INITIAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION

SVERDRUP/DE LEUW

DESIGN CCC 8/98 CHECK SAG 8/98

DRAWN CER 8/98 CHECK SAG 8/98

QUANT. CHECK

ROBERT B. ANDERSON PROJECT DESIGN ENGINEER

APPROVAL RECOMM. 9/98 DATE

DONALD GRAUL PROJECT MANAGER

APPROVED 9/98 DATE

I-15 CORRIDOR RECONSTRUCTION

DETAIL SHEET SOUNDWALL S-343-PB

SECTION 1.2

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

1214000

SALT LAKE COUNTY

DWG. NO. 1.2S-343-P.9

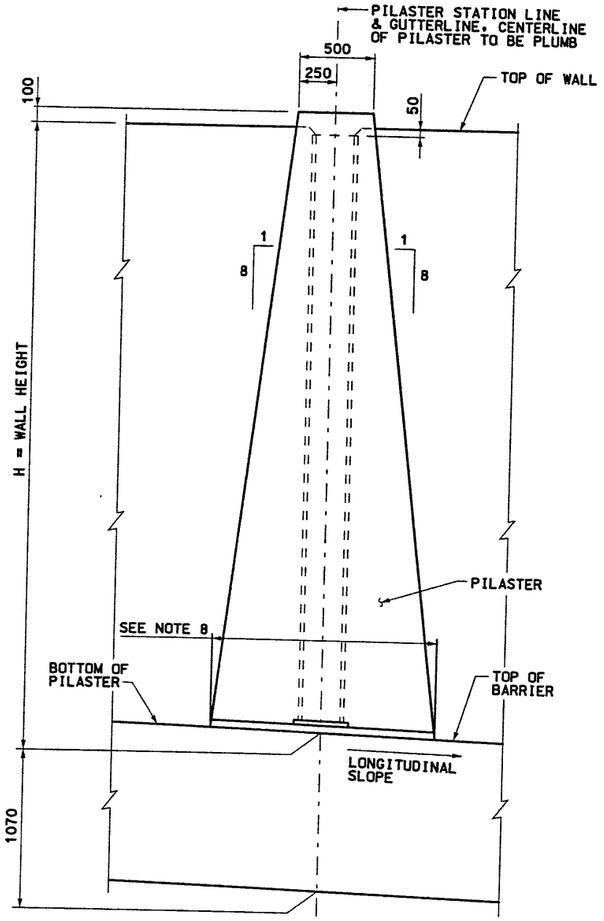
SHT. 9 OF 11

REF. 72 SNDWALL-P 09

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

MSE SINGLE STAGE WITH PRECAST POST AND PANEL SOUNDWALL ON BARRIER WITH MOMENT SLAB

NTS



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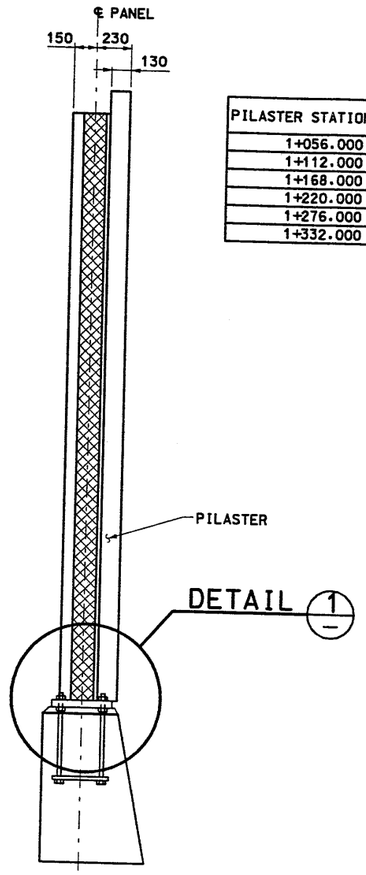
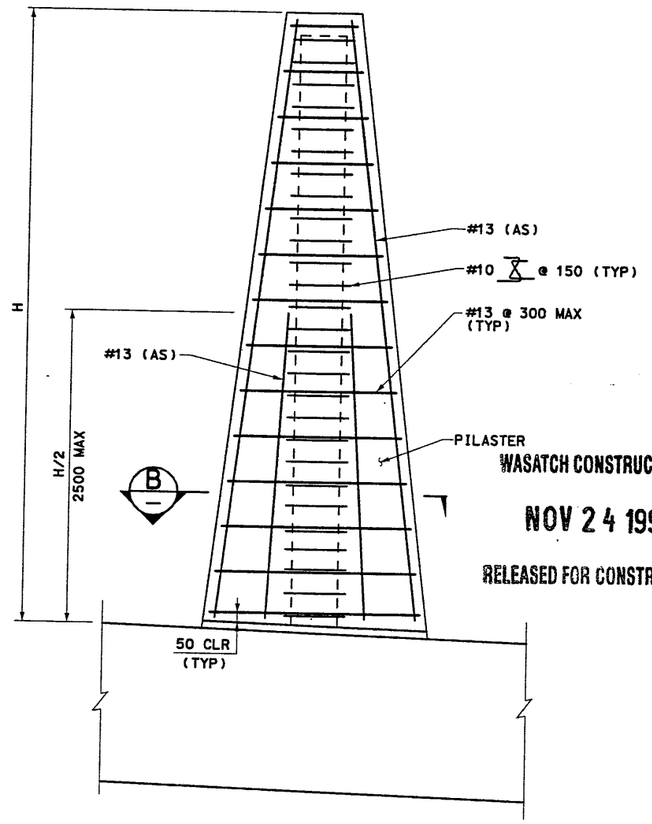


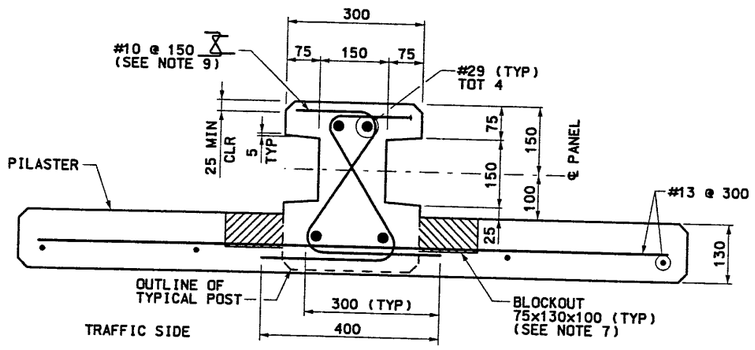
SIDE

PILASTER LAYOUT

PILASTER STATION LINE	WALL HEIGHT (H)	LONGITUDINAL SLOPE (%)
1+056.000	2998	0.85
1+112.000	3284	1.13
1+168.000	3324	1.13
1+220.000	3763	0.72
1+276.000	3788	0.05
1+332.000	3833	0.05



PILASTER FACE - REINFORCING



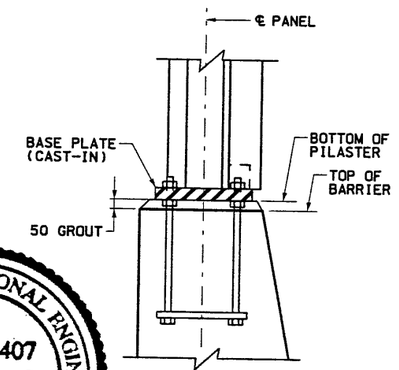
SECTION B

NOTES:

1) FABRICATOR FOR PRECAST UNITS SHALL SIZE AND LOCATE ANY LIFTING DEVICES FOR APPLIED LIFTING LOADS.
2) ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
3) CHAMFER ALL EXPOSED CONCRETE CORNERS 20mm EXCEPT WHERE NOTED OTHERWISE.
4) PROVIDE 50mm CONCRETE COVER TO REINFORCING STEEL EXCEPT WHERE SPECIFIED OTHERWISE.
5) PILASTER CONCRETE SHALL BE CLASS AA (AE) EXCEPT WHERE SPECIFIED OTHERWISE. f'c=35 MPa.
6) ALL EXPOSED SURFACES TO HAVE AN ORDINARY SURFACE FINISH WITH COATING OF CORRIDOR THEME COLOR.
7) FILL BLOCKOUT WITH NON-SHRINK MORTAR AFTER BASE PLATE IS GROUTED AND ANCHOR BOLTS ARE TIGHTENED.
8) SLOPE BOTTOM OF PILASTER TO FOLLOW LONGITUDINAL SLOPE AWAY FROM BASEPLATE. PROVIDE LEVEL SLOPE AT BASEPLATE.
9) AT TYPICAL POST, TRIM BAR EXTENSION TO MAINTAIN 50mm COVER.

PRECAST PILASTER DETAILS

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS
S. ATKIN
STATE OF UTAH
1/16/98



DETAIL 1

WASATCH CONSTRUCTORS
NOV 24 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	11-16-98	INITIAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
SVERDRUP/DE LEUW

DESIGN CCC 8/98 CHECK SAG 8/98
DRAWN CER 8/98 CHECK SAG 8/98
QUANT. CHECK

APPROVAL RECOMM. 10/98 DATE ROBERT B. ANDERSON PROJECT DESIGN ENGINEER
APPROVED 10/98 DATE DONALD GRAUL PROJECT MANAGER

1214000

I-15 CORRIDOR RECONSTRUCTION
DETAIL SHEET
SOUNDWALL S-343-PB
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE
COUNTY

DWG. NO. 1.2S-343-P.10
SHT. 10 OF 11
REF. 72 SNDWALL-P 10

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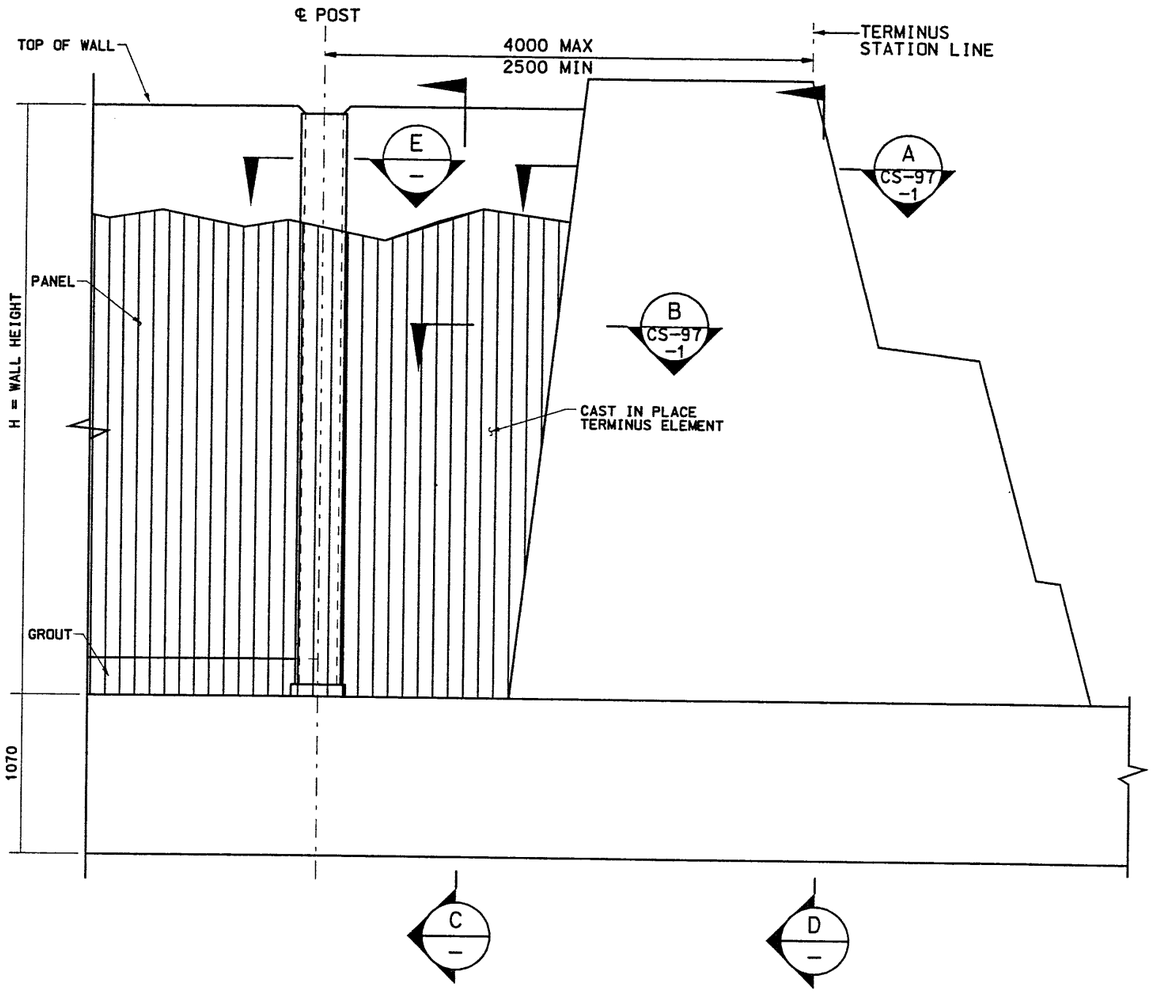
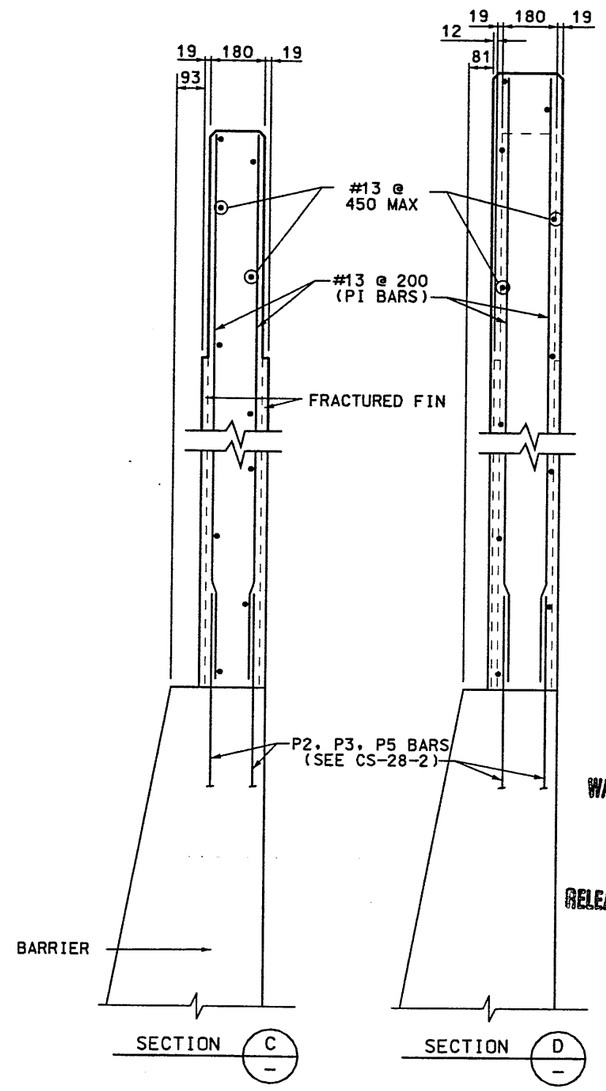
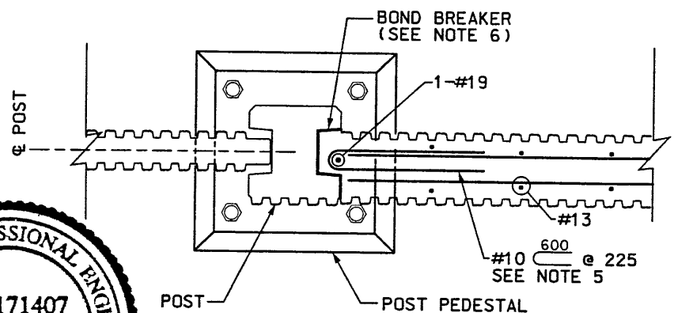


ELEVATION



SECTION C

SECTION D



SECTION E

NOTES:

1) ALL CAST-IN-PLACE CONCRETE SHALL BE CLASS AA (AE) EXCEPT WHERE OTHERWISE NOTED. f'c = 28 MPa. CHAMFER ALL EXPOSED CONCRETE CORNERS 20mm OR 13mm RADIUS. PROVIDE 50mm CONCRETE COVER TO REINFORCING STEEL EXCEPT WHERE SPECIFIED OTHERWISE.

2) ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE NOTED.

3) END OF WALL LAYOUT SHOWN. BEGIN OF WALL LAYOUT SIMILAR.

4) SEE CS-97-1 & CS-97-3 FOR TERMINUS ELEMENT DETAILS, SECTIONS A & B.

5) ROTATE BEND TO MEET CLEARANCE CRITERIA.

6) 1 LAYER OF ROOFING FELT (14 N/m) BETWEEN CIP CONCRETE AND THE POST AND PEDESTAL.

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
STATE OF UTAH

WASATCH CONSTRUCTORS
NOV 24 1998
RELEASED FOR CONSTRUCTION

BEGIN/END OF WALL LAYOUT

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	11-16-98	INITIAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
SVERDRUP/DE LEUW

APPROVAL RECOMM. 10/98 DATE — ROBERT B. ANDERSON, PROJECT DESIGN ENGINEER
APPROVED 10/98 DATE — DONALD GRAUL, PROJECT MANAGER
DESIGN CCC 8/98 — CHECK SAG 8/98
DRAWN CER 8/98 — CHECK SAG 8/98
QUANT. — CHECK

1214000

I-15 CORRIDOR RECONSTRUCTION
DETAIL SHEET SOUNDWALL S-343-PB
SECTION 1.2
PROJECT NUMBER *SP-15-7(135)296
SALT LAKE COUNTY
DWG. NO. 1.2S-343-P.11
SHT. 11 OF 11
REF. 72 sndwall-P.11

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Date:16-NOV-1998 Time:12:15 Username:mockkw

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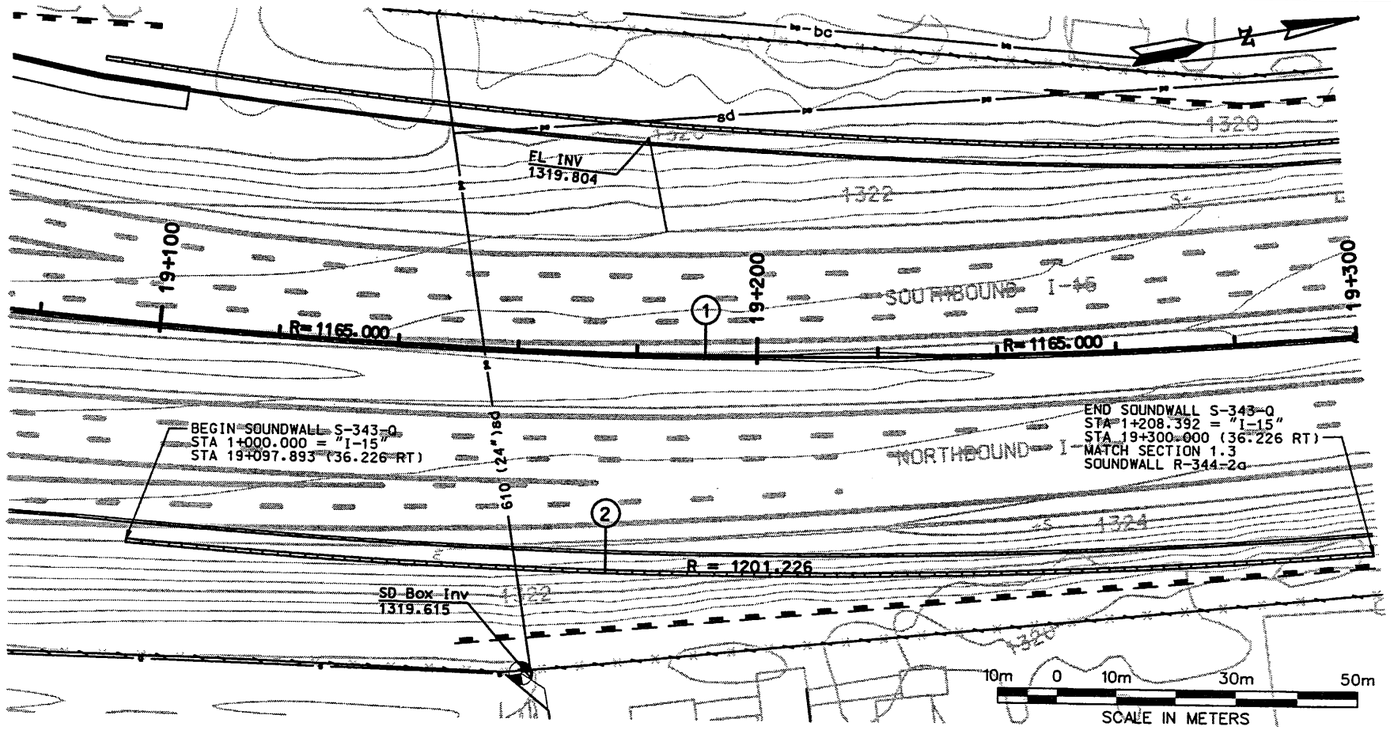
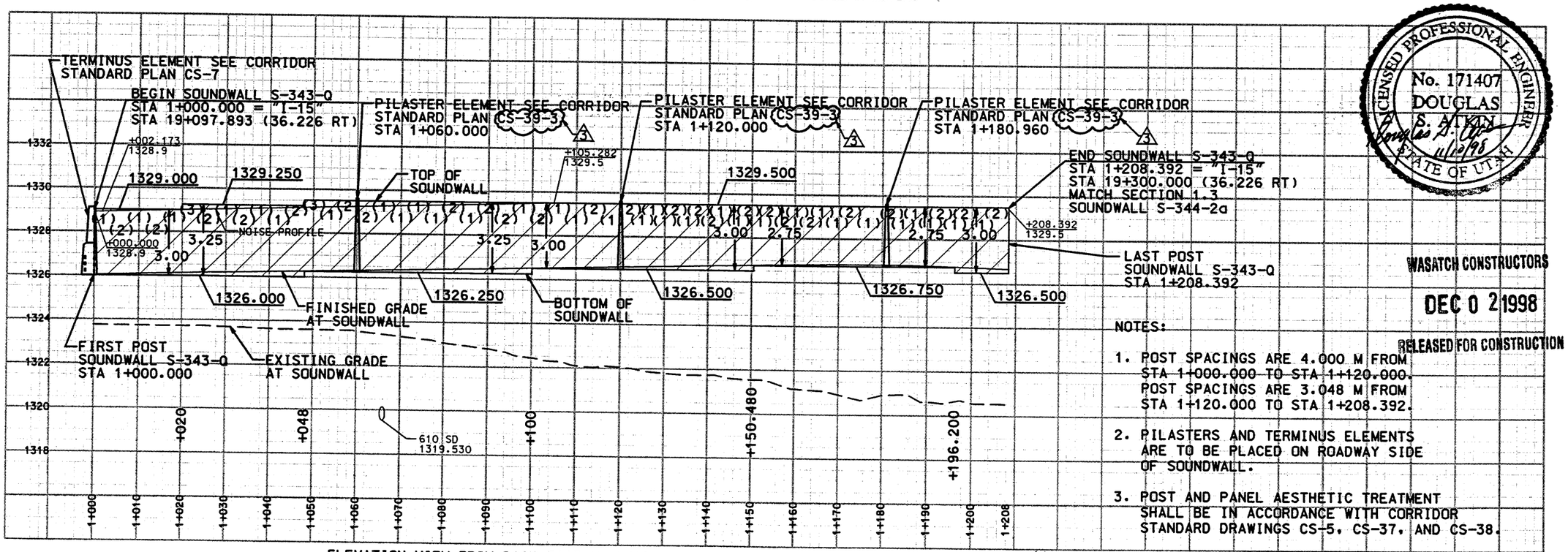


CURVE NO.	△	R	L	T
①	13°07'13"	1165.000	266.778	133.975
②	9°56'23"	1201.226	208.392	104.458



ELEVATION VIEW FROM BACK FACE OF WALL

LICENSED PROFESSIONAL ENGINEER
No. 171407
DOUGLAS S. ATKIN
Douglas S. Atkin 11/19/98
STATE OF UTAH

WASATCH CONSTRUCTORS

DEC 0 2 1998

RELEASED FOR CONSTRUCTION

NOTES:

1. POST SPACINGS ARE 4.000 M FROM STA 1+000.000 TO STA 1+120.000. POST SPACINGS ARE 3.048 M FROM STA 1+120.000 TO STA 1+208.392.
2. PILASTERS AND TERMINUS ELEMENTS ARE TO BE PLACED ON ROADWAY SIDE OF SOUNDWALL.
3. POST AND PANEL AESTHETIC TREATMENT SHALL BE IN ACCORDANCE WITH CORRIDOR STANDARD DRAWINGS CS-5, CS-37, AND CS-38.

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	4-12-98	INITIAL RELEASE
2	7-10-98	REVISION PER NOC-0206
3	11-9-98	NOC - 0281

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

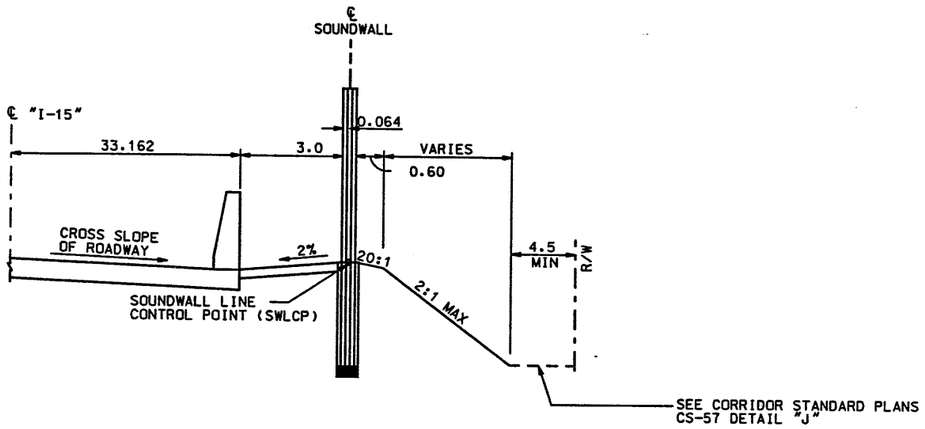
DESIGN ENM 2/98 CHECK JRE 2/98
DRAWN MH 2/98 CHECK JRE 2/98
QUANT. CHECK

APPROVAL RECOMM. 2/98 RICK CHAPMAN PROJECT DESIGN ENGINEER DATE
APPROVED 2/98 DON GRAUL PROJECT MANAGER DATE

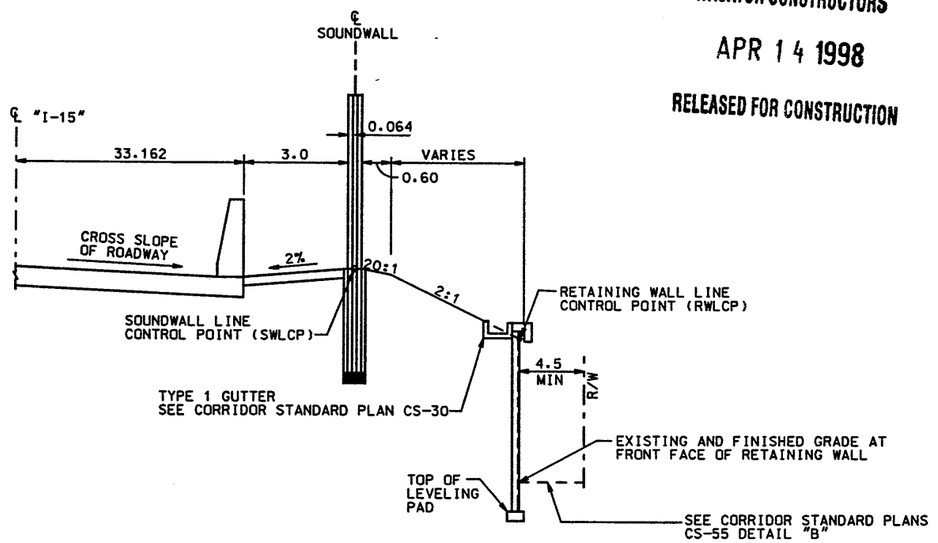
I-15 CORRIDOR RECONSTRUCTION
SITUATION/LAYOUT
SOUNDWALL S-343-Q
SECTION 1.2
PROJECT NUMBER #SP-15-7(1351)296

SALT LAKE COUNTY
DWG. NO. 1.2S-343-Q.1
SHT. 1 OF 2
REF.

Date: 13-APR-1998 Time: 12:41 Username: atottrj



TYPICAL SECTION
SOUNDWALL S-343-Q
STA 1+000.000 TO STA 1+055.767



TYPICAL SECTION
SOUNDWALL S-343-Q
STA 1+055.767 TO STA 1+208.392

WASATCH CONSTRUCTORS

APR 14 1998

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 277888
DONALD D. GRAUL
4/13/98
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	4-13-98	INITIAL RELEASE
	- -	
	- -	
	- -	

UTAH DEPARTMENT OF TRANSPORTATION
URS Greiner
SVERDRUP/DE LEUW

APPROVAL RECOMM.	2/98	RICK CHAPMAN PROJECT DESIGN ENGINEER	DESIGN KMA 2/98 CHECK JDE 2/98
APPROVED	2/98	DON GRAUL PROJECT MANAGER	DRAWN NH 2/98 CHECK JDE 2/98
	DATE		QUANT. CHECK

I-15 CORRIDOR RECONSTRUCTION
DETAIL SHEET
SOUNDWALL S-343-Q
SECTION 1.2

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

SALT LAKE
COUNTY

DWG. NO.
1.2S-343-Q.2

SHT. 2 OF 2

REF.

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