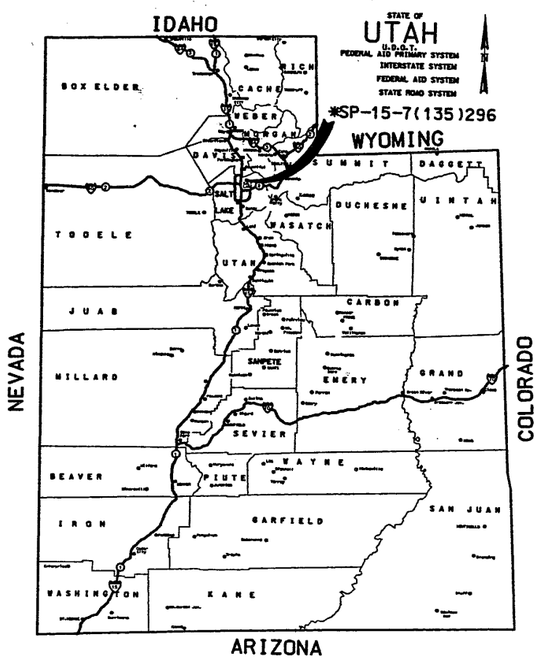


UTAH
DEPARTMENT OF TRANSPORTATION

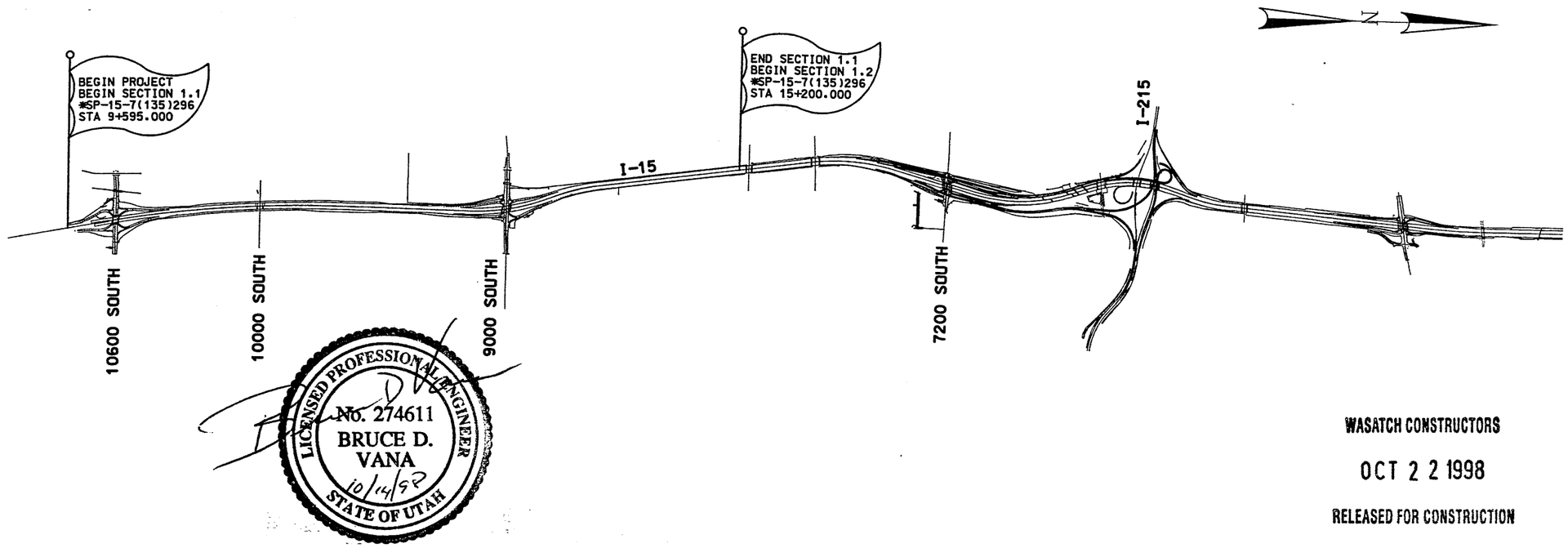
PLANS OF PROPOSED STATE ROAD
I-15

***SP-15-7(135)296**
I-15 CORRIDOR RECONSTRUCTION
SALT LAKE COUNTY

DESIGN SECTION 1.1, 5.6 KILOMETERS
ROADWAY, GRADING, DRAINAGE, SIGNING,
LIGHTING, SIGNALS, PAVEMENT MARKINGS,
RETAINING WALLS, ATMS, STRUCTURES.

FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.
UTAH	UTAH	*SP-15-7(135)296	1

METRIC



LICENSED PROFESSIONAL ENGINEER
No. 274611
BRUCE D.
VANA
10/14/98
STATE OF UTAH

WASATCH CONSTRUCTORS

OCT 2 2 1998

RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	10/12/98	100% FULL ROADWAY

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Date: 24-NOV-1998 Time: 18:3 Username: lucas

SHEET INDEX

ROADWAY DRAWINGS

SHEET NO.	DESCRIPTION
1.1-1	TITLE
1.1-1A	SHEET INDEX
1.1-1A.2	UDOT STD DRAWINGS
1.1-1A.3 TO 1.1-1A.4	CORRIDOR STD DRAWINGS
1.1-1B TO 1.1-1B.1	SHEET REFERENCE
1.1-1C TO 1.1-1J	SURVEY CONTROL
1.1-2A TO 1.1-2K	TYPICAL SECTIONS AND DETAILS
1.1-2L	SHEET DELETED
1.1-2M TO 1.1-2R	TYPICAL SECTIONS AND DETAILS
1.1-3A.1 TO 1.1-3C	QUANTITIES
1.1-3D	SHEET DELETED
1.1-3D.1 TO 1.1-3G.1	QUANTITIES
1.1-DT1 TO 1.1-DT37	DETAILS
1.1-DT38	SHEET DELETED
1.1-DT39 TO 1.1-DT44	DETAILS
1.1-4-1 TO 1.1-4-1E	MOT REFERENCE SHEETS
1.1-4-2 TO 1.1-4-2AL	MOT TYPICAL SECTIONS AND DETAILS
1.1-4-3 TO 1.1-4-62	MOT PLANS
1.1-4-65 TO 1.1-4-87	MOT PLANS
1.1-4-RD1 TO 1.1-4-RD42	TEMPORARY PAVING PLANS
1.1-4-PR1 TO 1.1-4-PR4	TEMPORARY PROFILES
1.1-4-DD1 TO 1.1-4-DD2	TEMPORARY DRAINAGE DETAILS
1.1-4-DR1 TO 1.1-4-DR16	TEMPORARY DRAINAGE PLANS
1.1-4-XS1 TO 1.1-4-XS4	TEMPORARY PAVING CROSS SECTIONS
1.1-TU1 TO 1.1-TU25	TOPOGRAPHY AND UTILITY PLANS
1.1-RD1 TO 1.1-RD18	ROADWAY PLANS
1.1-PR1 TO 1.1-PR43	ROADWAY PROFILES
1.1-DR1 TO 1.1-DR28	DRAINAGE PLANS
1.1-ED1 TO 1.1-ED18	EDGE DRAIN PLANS
1.1-DP1 TO 1.1-DP36	DRAINAGE PROFILES
1.1-DD1 TO 1.1-DD21	DRAINAGE DETAILS
1.1-GR1 TO 1.1-GR23	GRADING PLANS
1.1-GD1 TO 1.1-GD7	GRADING DETAILS
1.1-SS1A TO 1.1-SS98	SIGNING PLANS & DETAILS
1.1-PM1 TO 1.1-PM26	PAVEMENT MARKING PLANS
1.1-S1 TO 1.1-S9	SIGNAL PLANS
1.1-L1A TO 1.1-L31	LIGHTING PLANS
1.1-ATMS1 TO 1.1-ATMS22	ATMS PLANS
1.1-LW1 TO 1.1-LW25	LANDSCAPE PLANS
1.1-IR1 TO 1.1-IR24	IRRIGATION PLANS
1.1-XS1 TO 1.1-XS71	CROSS SECTIONS

SHEET INDEX

STRUCTURE DRAWINGS

SHEET NO.	DESCRIPTION	SHEETS
E-1445A	DRY CREEK BOX CULVERT	7
F-609N	9000 SOUTH BRIDGE (NORTHBOUND)	29
F-609S	9000 SOUTH BRIDGE (SOUTHBOUND)	28
F-646N	10000 SOUTH BRIDGE (NORTHBOUND)	16
F-646S	10000 SOUTH BRIDGE (SOUTHBOUND)	16
F-663	10600 SOUTHBRIDGE	26

SHEET INDEX

WALL DRAWINGS

SHEET NO.	DESCRIPTION
1.1-R342	WALL KEY PLAN
1.1-WADET.1 TO 1.1-WADET.2	WALL DETAILS
1.1R-342-1.1 TO 1.1R-342-1.5	WALL PLANS & DETAILS
1.1R-342-3.1 TO 1.1R-342-3.2	WALL PLANS & DETAILS
1.1R-342-5.1 TO 1.1R-342-5.5	WALL PLANS & DETAILS
1.1R-342-7.1 TO 1.1R-342-7.9	WALL PLANS & DETAILS
1.1R-342-8.1 TO 1.1R-342-8.13	WALL PLANS & DETAILS
1.1R-342-9.1 TO 1.1R-342-9.10	WALL PLANS & DETAILS
1.1R-342-10.1 TO 1.1R-342-10.9	WALL PLANS & DETAILS
1.1R-342-11.1 TO 1.1R-342-11.9	WALL PLANS & DETAILS
1.1R-342-12.1 TO 1.1R-342-12.9	WALL PLANS & DETAILS
1.1R-342-13.1 TO 1.1R-342-13.9	WALL PLANS & DETAILS
1.1R-342-14.1 TO 1.1R-342-14.8	WALL PLANS & DETAILS
1.1R-342-15.1 TO 1.1R-342-15.13	WALL PLANS & DETAILS
1.1R-342-16.1 TO 1.1R-342-16.13	WALL PLANS & DETAILS

GENERAL NOTES:

1. ALL WORK TO BE DONE IN ACCORDANCE WITH THE UTAH DEPARTMENT OF TRANSPORTATION, I-15 CORRIDOR SPECIFICATIONS (METRIC) FOR ROAD AND BRIDGE CONSTRUCTION, AS CONTAINED IN RFP SECTION 7.1, DATED OCTOBER 1, 1996, AND AMENDED BY ADDENDUM NO. 1, DATED NOVEMBER 1, 1996, ADDENDUM NO. 3, DATED DECEMBER 2, 1996, ADDENDUM NO.4 DATED DECEMBER 16, 1996, ADDENDUM NO. 5, DATED DECEMBER 30, 1996 ADDENDUM NO. 6 DATED FEBRUARY 14, 1997, AND ADDENDUM NO. 7, DATED FEBRUARY 21, 1997, AS MODIFIED BY THE SPECIAL PROVISIONS LISTED BELOW, AND IN ACCORDANCE WITH THE UTAH DEPARTMENT OF TRANSPORTATION STANDARD DRAWINGS, AS CONTAINED IN RFP SECTION 7.2, DATED OCTOBER 1, 1996 AND AMENDED BY ADDENDUM NO. 3, DATED DECEMBER 2, 1996, AS MODIFIED BY THE SPECIAL PROVISIONS LISTED BELOW:

   - GENERAL SPECIAL PROVISION NO. 104.6.

2. (DELETED)

3. THE HORIZONTAL AND VERTICAL COORDINATE REFERENCE SYSTEM APPLICABLE TO THIS PROJECT SHALL BE THE "I-15 CORRIDOR SURVEYING AND MAPPING" SP-7 (107) 296 JULY 1995.

LICENSED PROFESSIONAL ENGINEER
No. 179901
SCOTT J. LUCAS
11/25/98
STATE OF UTAH

INDEX

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
2	10/12/98	100% FULL ROADWAY
1	11/25/98	FINAL PACKAGE REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER INC.
SVERDRUP/DE LEUW

DESIGN SJL 7/97 CHECK BDV 7/98
DRAWN PJ 7/97 CHECK BDV 7/98
QUANT. N/A CHECK N/A

APPROVAL RECOMM. 7/98 SCOTT J. LUCAS — PROJECT DESIGN ENGINEER — DATE
APPROVED 7/98 BRUCE VANA — SECTION MANAGER — DATE

I-15 CORRIDOR RECONSTRUCTION
SHEET INDEX
SECTION 1.1
PROJECT NUMBER *SP-15-7(11357296

SALT LAKE COUNTY
DWG. NO. 1.1-1A
SHT. 2 OF 832

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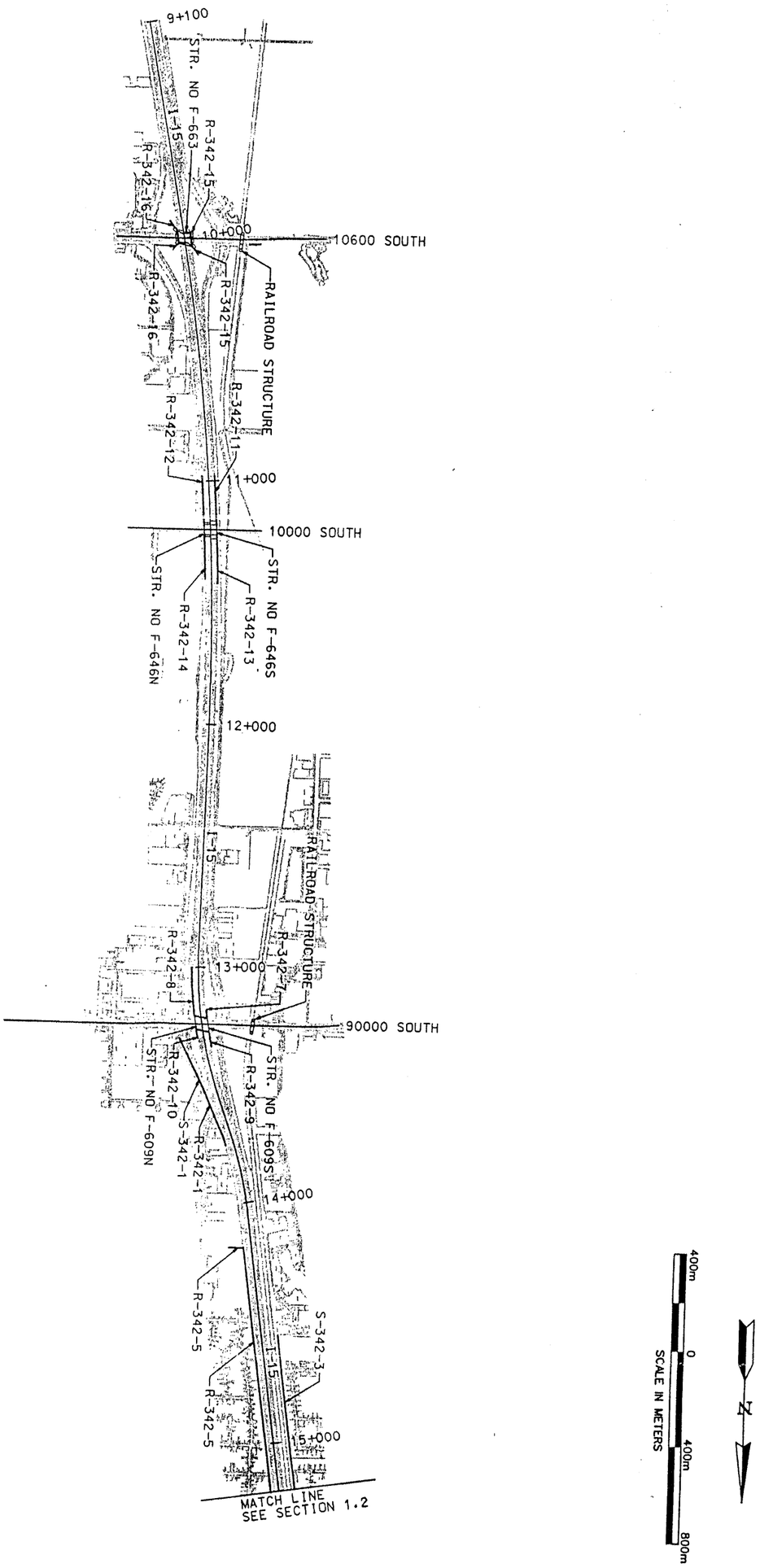
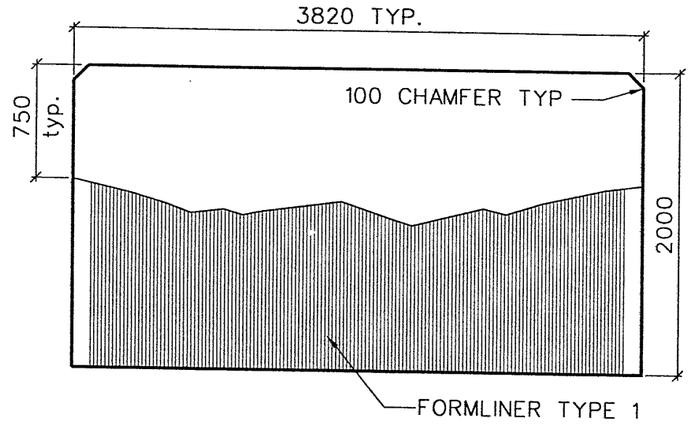


I-15 CORRIDOR RECONSTRUCTION	UTAH DEPARTMENT OF TRANSPORTATION H.W. LOCHNER SVERDRUP/DE LEUW				APPROVED FOR CONSTRUCTION
RETAINING WALL KEY PLAN					NO. / DATE / DESCRIPTION
SECTION 1.1	APPROVAL RECOMM. 9/10/97 DATE — SCOTT LUCAS PROJECT DESIGN ENGINEER	DESIGN BJL 9/10/97	CHECK BDV 9/10/97		1 3/12/98 ORIGINAL RELEASE-I-15 SB GDP
PROJECT NUMBER *SP-15-7(135)296	APPROVED 9/10/97 DATE — BRUCE VANA SECTION MANAGER	DRAWN LAU 9/10/97	CHECK BDV 9/10/97	1113100	2 5/14/98 10600 SO SPUI GDP
		QUANT.	CHECK		

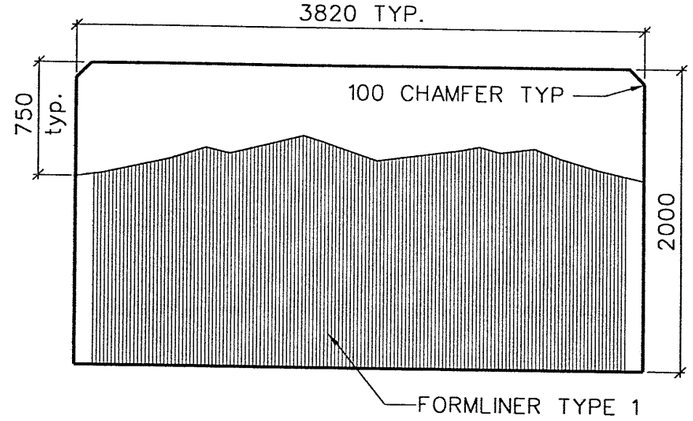
SALT LAKE COUNTY

DWG. NO. 1.1R-342

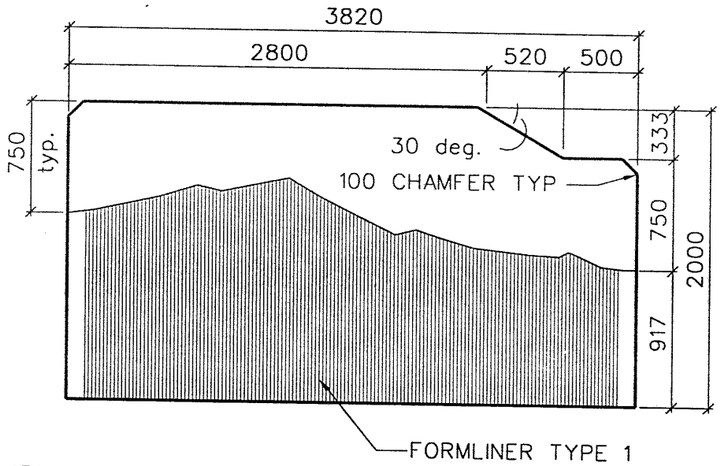
SHT. ___ OF ___



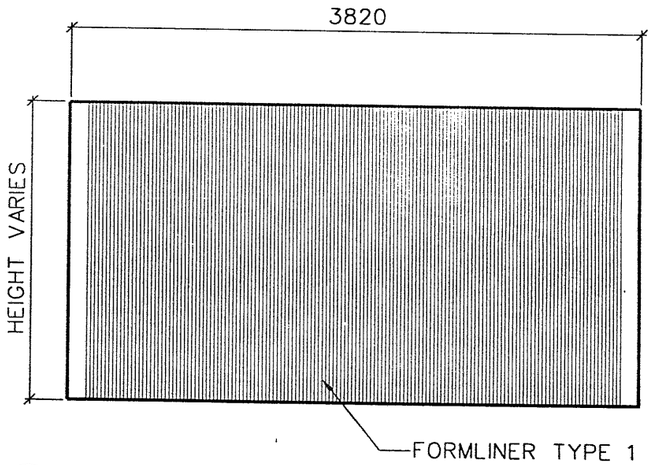
1 CAP PANEL FRONT



2 CAP PANEL BACK



3 STEP DOWN CAP PANEL (SAME BOTH SIDES)



4 STANDARD NOISE WALL PANEL

NOTES:

1. THE STANDARD NOISE WALL PANEL SHALL HAVE FRACTURED FIN TEXTURE APPLIED TO BOTH SIDES OF THE PANEL FOR THE FULL HEIGHT OF THE PANEL.
2. MOUNTAIN PATTERNS ON THE PLANS ARE FOR INFORMATION ONLY. FULL SCALE PLOTS SHALL BE ISSUED FOR A PATTERN FOR USE IN PREPARING FORMLINERS.
3. ALL POSTS SHALL HAVE THE FORMLINER TREATMENT TO THE HIGHWAY SIDE OF THE WALL. POSTS SHALL BE PLAIN ON THE NEIGHBORHOOD SIDE.
4. CAP PANEL TYPES SHALL BE PLACED RANDOMLY DURING CONSTRUCTION. CONTRACTOR SHOULD STRIVE TO LIMIT THE PLACEMENT OF PANELS TO A MAXIMUM OF 5 OF ONE TYPE IN A ROW. ALTERNATING PANELS IS NOT ACCEPTABLE.
5. I-15 COORIDOR DWG. NO. SW-72 ADDRESSES AESTHETICS ONLY FOR PRECAST POST & PANEL WALLS. ALL OTHER FEATURES SHALL BE IN CONFORMANCE WITH UDOT STD. DWG. 545-01 & 02 AND 546-01 & 02.

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	6-16-97	ORIGINAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
H.W. LOCHNER
SVERDRUP/DE LEUW

DESIGN	S.JL 6/97	CHECK	6/97
DRAWN	MB 6/97	CHECK	6/97
QUANT.			

APPROVAL RECOMMENDED 6/97 DATE — SCOTT J. LUCAS PROJECT DESIGN ENGINEER
APPROVED 6/97 DATE — BRUCE VANA SECTION MANAGER

I-15 CORRIDOR RECONSTRUCTION
RETAINING WALL DETAILS
SECTION 1.1
PROJECT NUMBER SP-15-7(135)296
SALT LAKE COUNTY
DWG. NO. I.I-WADET.I
SHT. ____ OF ____

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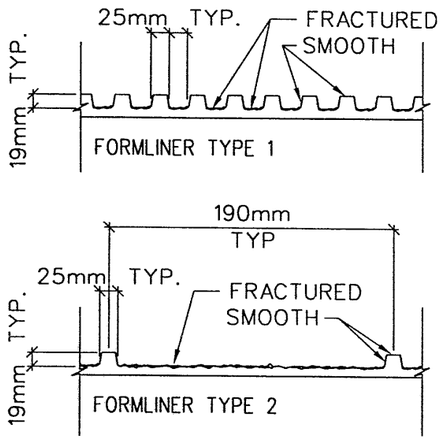
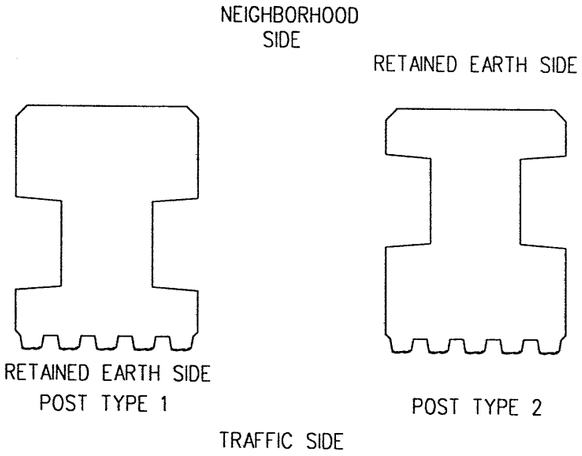


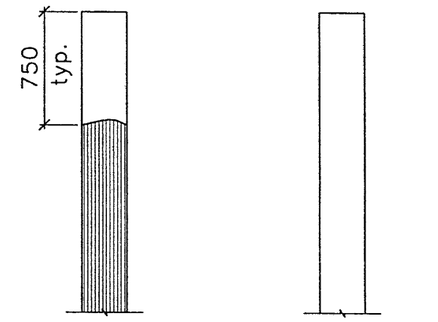
1 FORMLINER TYPES
ALL DIMENSIONS APPROXIMATE



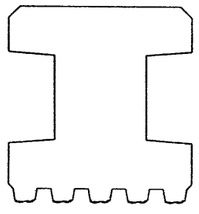
NOTE:

FORMLINER TREATMENTS ARE IN ADDITION TO REQUIRED DIMENSIONS AS OUTLINED IN UDOT STANDARD DRAWING 545-01 & 02 AND 546-01 & 02.

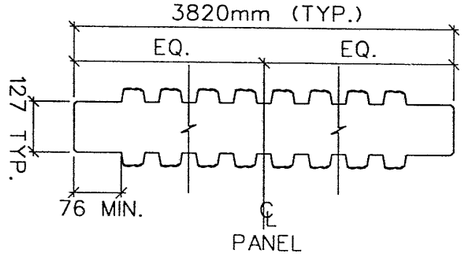
2 POST TYPES FOR RETAINING WALLS



3 POST ELEVATIONS TYP.



4 NOISE WALL POST



5 PANEL FORMLINER PLACEMENT

NOTES:

1) CENTER THE FRACTURED FIN TEXTURE ON ALL PANELS, EITHER IN A GROOVE OR ON A FIN.
2) THE INTENT OF THIS DETAIL IS TO INDICATE A CONSISTENT PLACEMENT OF THE FORMLINER IN THE FORM SO THAT ALL PANELS, ON BOTH SIDES, HAVE THE SAME GENERAL PLACEMENT OF RIDGES AND VALLEYS AND WILL ALIGN CLOSELY WHEN WALL PANELS ARE ASSEMBLED IN THE FIELD. THIS APPLIES TO BOTH THE MOUNTAIN PANELS AS WELL AS THE STANDARD PANELS.
3) PLACE ANY SEAMS IN THE FORMLINER SO THAT THEY WILL NOT BE ON A RIDGE ON THE FINAL CONCRETE PANELS.

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	6-16-97	ORIGINAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
H.W. LOCHNER
SVERDRUP/DE LEUW

DESIGN SJL 6/97 CHECK BDV 6/97
DRAWN MB 6/97 CHECK

SCOTT J. LUCAS
PROJECT DESIGN ENGINEER

APPROVAL RECOMM. 6/97 DATE
APPROVED 6/97 DATE

I-15 CORRIDOR RECONSTRUCTION
RETAINING WALL DETAILS
SECTION 1.1
PROJECT NUMBER SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.1-WADET.2

SHT. ____ OF ____

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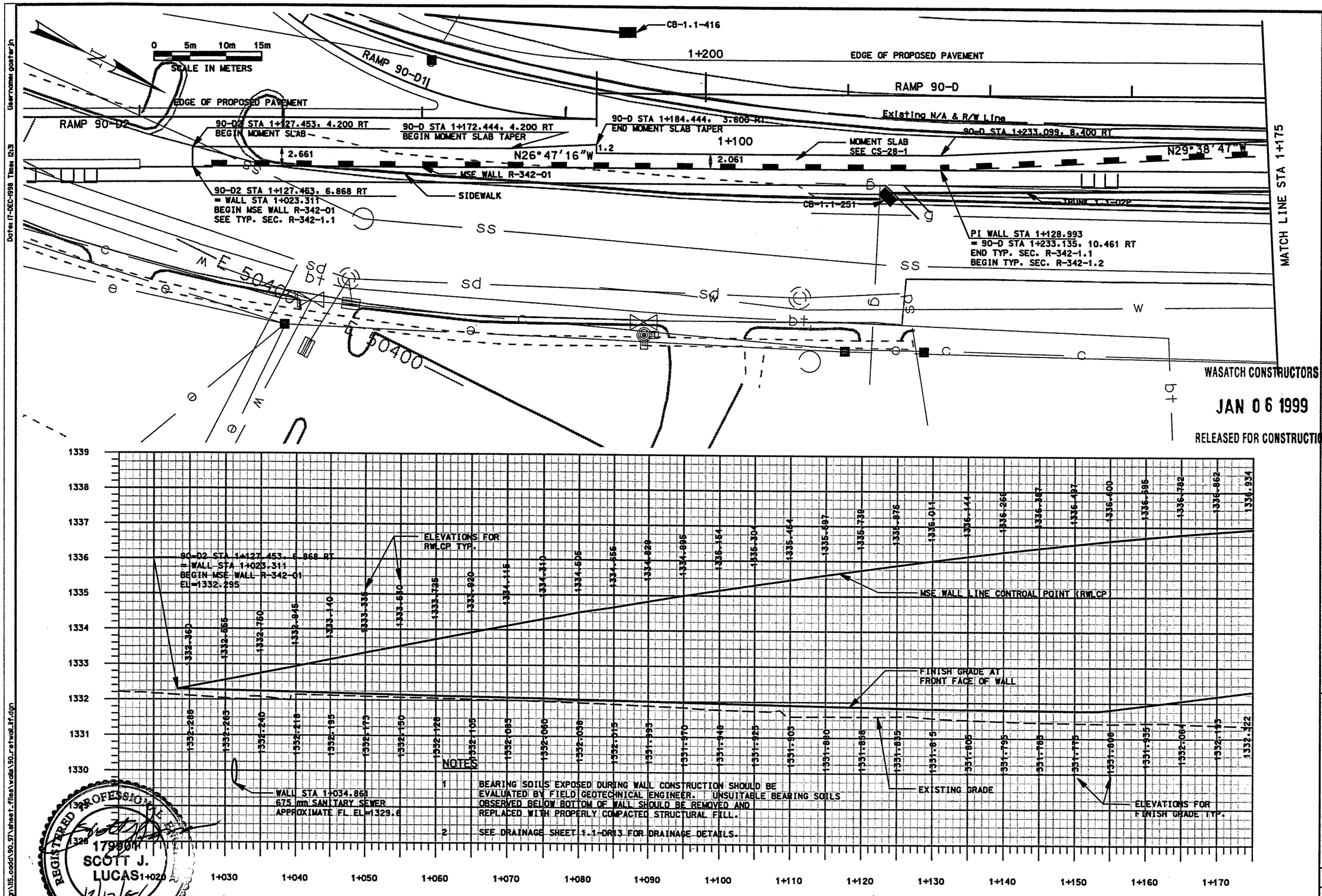

NOTES

1. BEARING SOILS EXPOSED DURING WALL CONSTRUCTION SHOULD BE EVALUATED BY FIELD GEOTECHNICAL ENGINEER. UNSUITABLE BEARING SOILS OBSERVED BELOW BOTTOM OF WALL SHOULD BE REMOVED AND REPLACED WITH PROPERLY COMPACTED STRUCTURAL FILL.
2. SEE DRAINAGE SHEET 1.1-DR13 FOR DRAINAGE DETAILS.

REGISTERED PROFESSIONAL ENGINEER
17990
SCOTT J. LUCAS
12/17/98
STATE OF UTAH

MSE WALL R-342-01 PROFILE

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	12/18/98	ORIGINAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER INC.
SVERDRUP/DE LEUW

DESIGN JHG 12/98 CHECK SL 12/4/98
DRAWN JHG 12/98 CHECK SL 12/4/98
QUANT. CHECK

APPROVAL RECOMM. 12/98 DATE SCOTT LUCAS PROJECT DESIGN ENGINEER
APPROVED 12/98 DATE BRUCE VANA PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
S & L RET. WALL R-342-1
SECTION 1.1
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
DWG.NO. 1.1R-342-1.1
SHT. 1 OF 6
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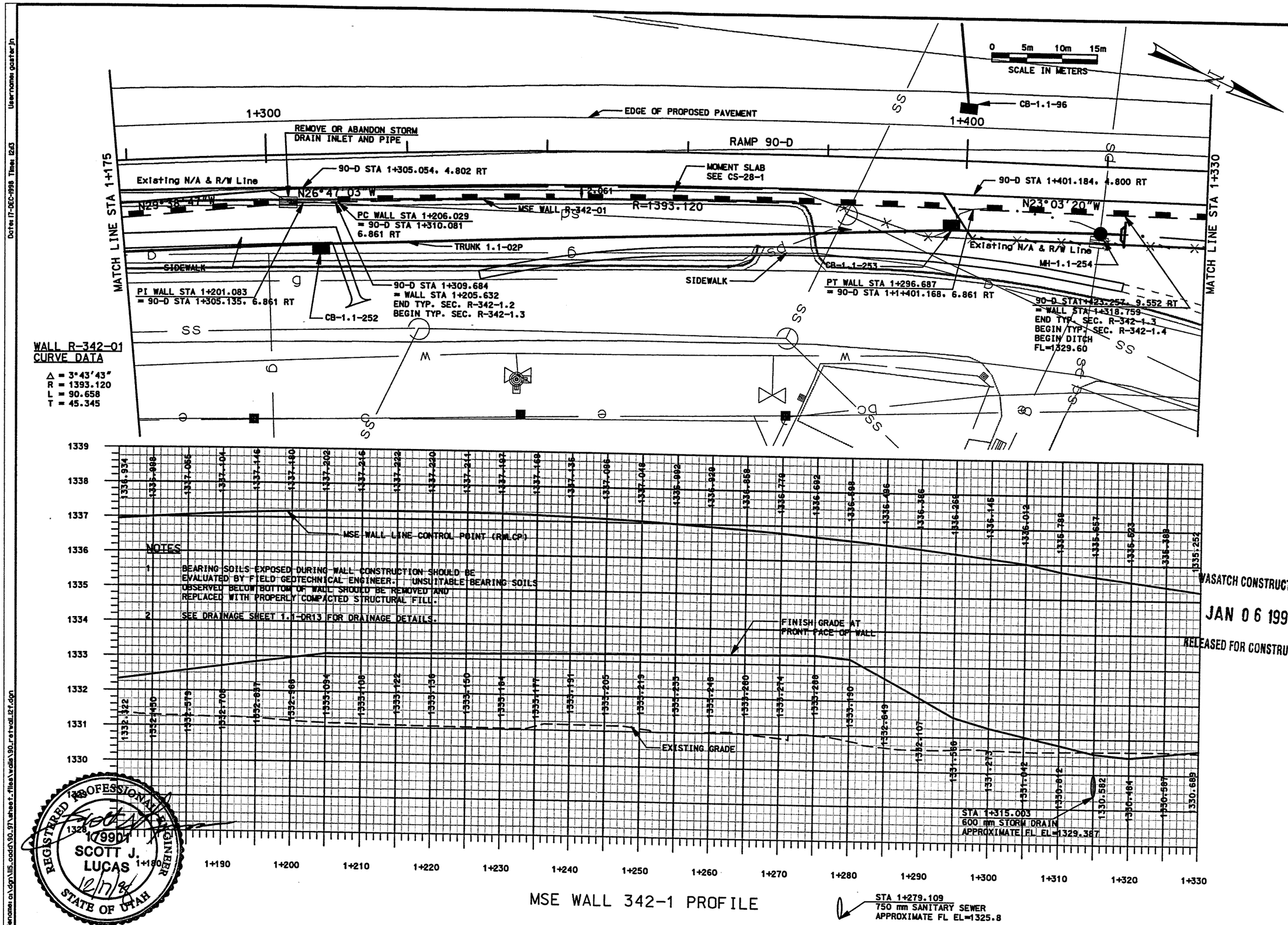

NOTES

1. BEARING SOILS EXPOSED DURING WALL CONSTRUCTION SHOULD BE EVALUATED BY FIELD GEOTECHNICAL ENGINEER. UNSUITABLE BEARING SOILS OBSERVED BELOW BOTTOM OF WALL SHOULD BE REMOVED AND REPLACED WITH PROPERLY COMPACTED STRUCTURAL FILL.
2. SEE DRAINAGE SHEET 1.1-DR13 FOR DRAINAGE DETAILS.

MSE WALL 342-1 PROFILE

STA 1+279.109
750 mm SANITARY SEWER
APPROXIMATE FL EL=1325.8

REGISTERED PROFESSIONAL ENGINEER
179901
SCOTT J. LUCAS
12/17/98
STATE OF UTAH

WASATCH CONSTRUCTORS
JAN 06 1999
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	12/18/98	ORIGINAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER INC.
SVERDRUP/DE LEUW

DESIGN JHG 12/98 CHECK
DRAWN JHG 12/98 CHECK
QUANT. CHECK

APPROVAL RECOMM. 12/98 SCOTT LUCAS
DATE PROJECT DESIGN ENGINEER
APPROVED 12/98 BRUCE VANA
DATE PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
S & L RET. WALL R-342-1
SECTION 1.1
PROJECT NUMBER #SP-15-7(135)296

SALT LAKE COUNTY
DWG.NO. 1.1R-342-1.2
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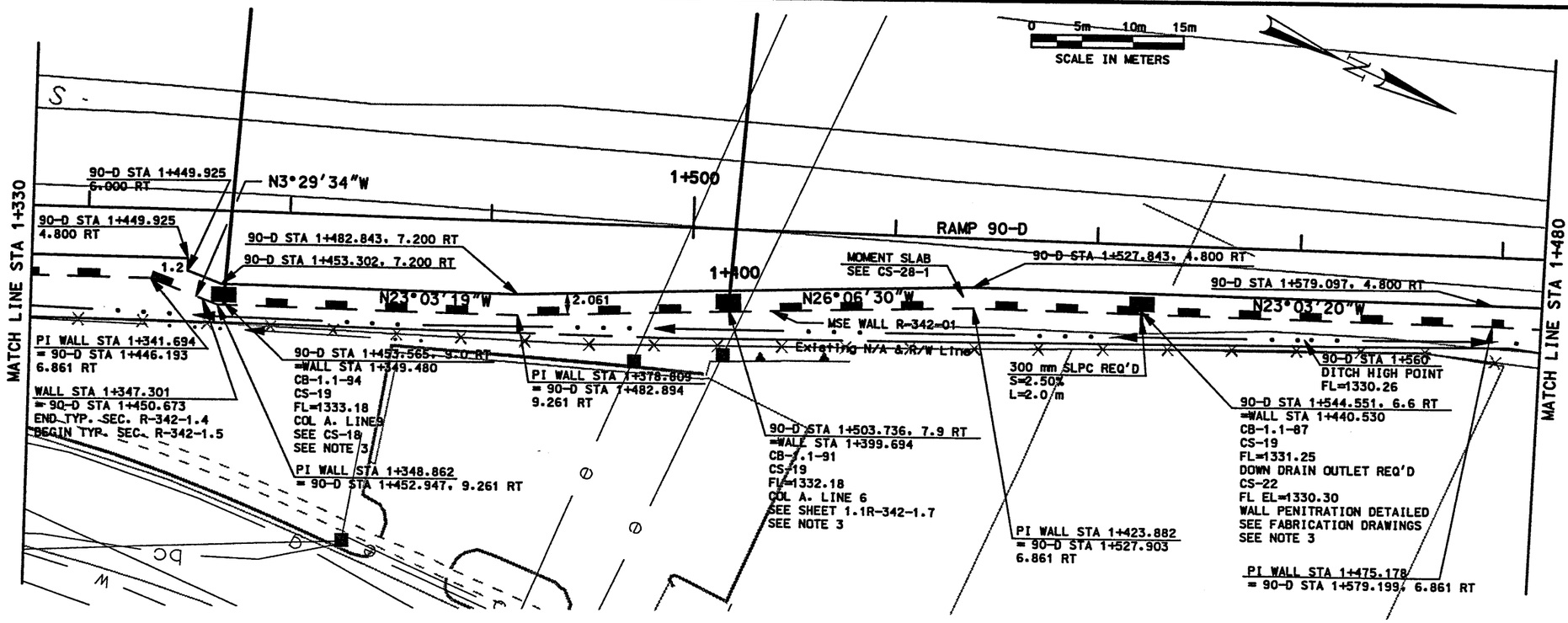

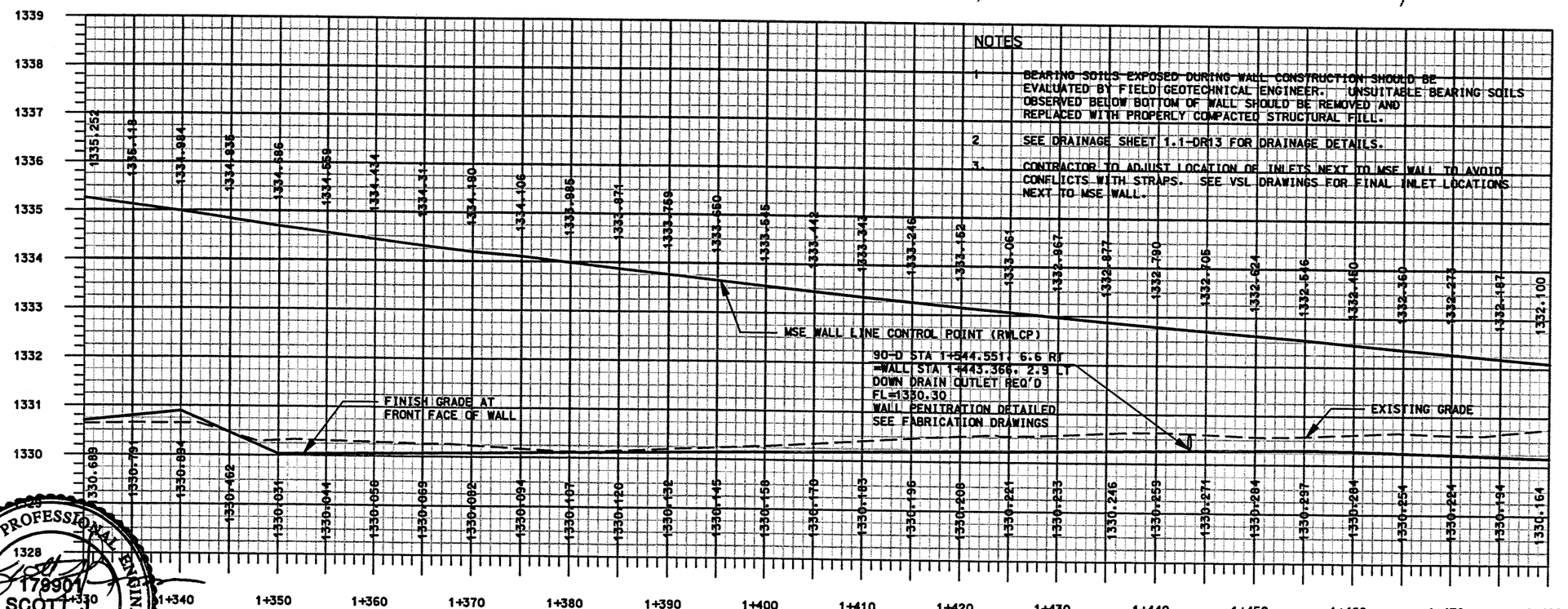

NOTES

1. BEARING SOILS EXPOSED DURING WALL CONSTRUCTION SHOULD BE EVALUATED BY FIELD GEOTECHNICAL ENGINEER. UNSUITABLE BEARING SOILS OBSERVED BELOW BOTTOM OF WALL SHOULD BE REMOVED AND REPLACED WITH PROPERLY COMPACTED STRUCTURAL FILL.
2. SEE DRAINAGE SHEET 1.1-DR13 FOR DRAINAGE DETAILS.
3. CONTRACTOR TO ADJUST LOCATION OF INLETS NEXT TO MSE WALL TO AVOID CONFLICTS WITH STRAPS. SEE VSL DRAWINGS FOR FINAL INLET LOCATIONS NEXT TO MSE WALL.

MSE WALL 342-1 PROFILE

REGISTERED PROFESSIONAL ENGINEER
179901
SCOTT J. LUCAS
12/17/98
STATE OF UTAH

WASATCH CONSTRUCTORS
JAN 06 1999
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	12/18/98	ORIGINAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER INC.
SVERDRUP/DE LEUW

DESIGN JHG 12/98 CHECK
DRAWN JHG 12/98 CHECK
QUANT. CHECK

APPROVAL RECOMM. 12/98 DATE SCOTT LUCAS PROJECT DESIGN ENGINEER
APPROVED 12/98 DATE BRUCE VANA PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
S & L RET. WALL R-342-1
SECTION 1.1
PROJECT NUMBER #SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.1R-342-1.3
SHT. 3 OF 6
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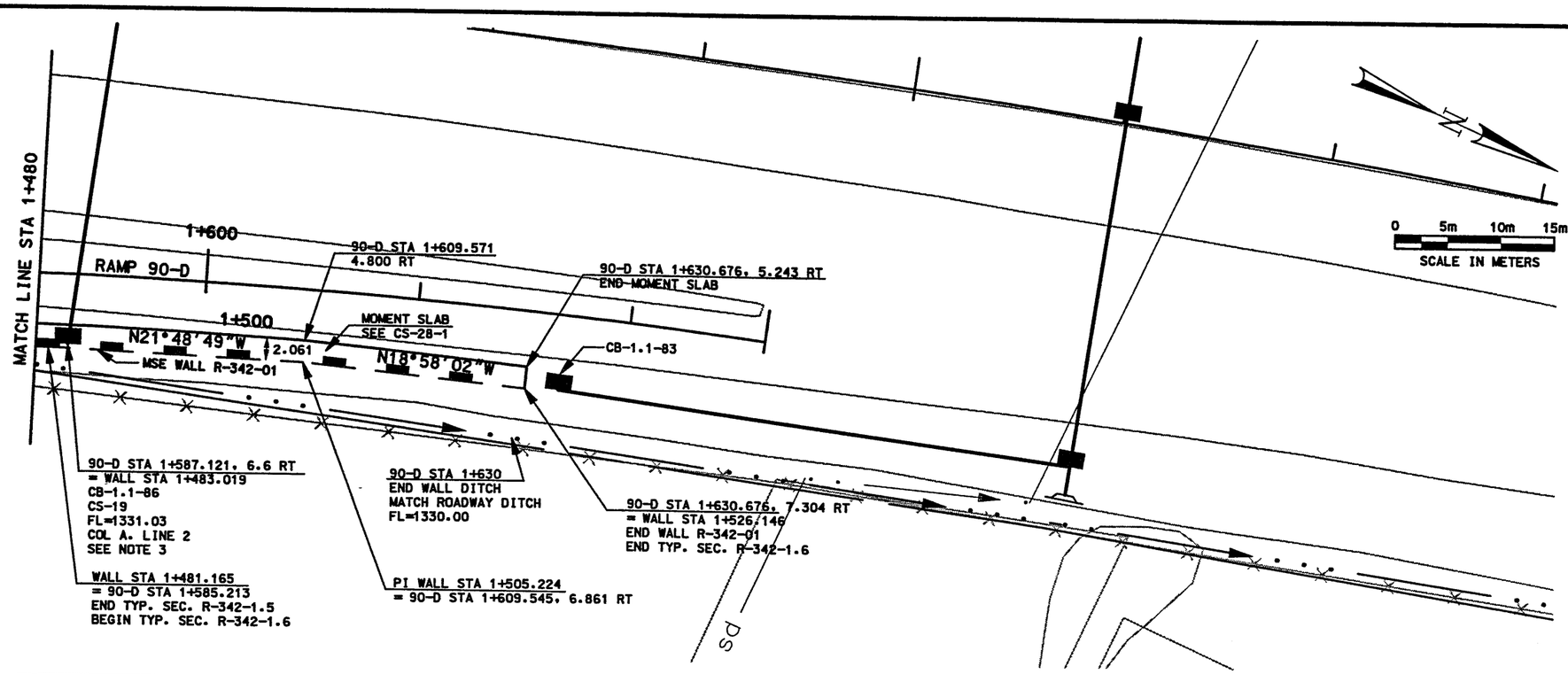

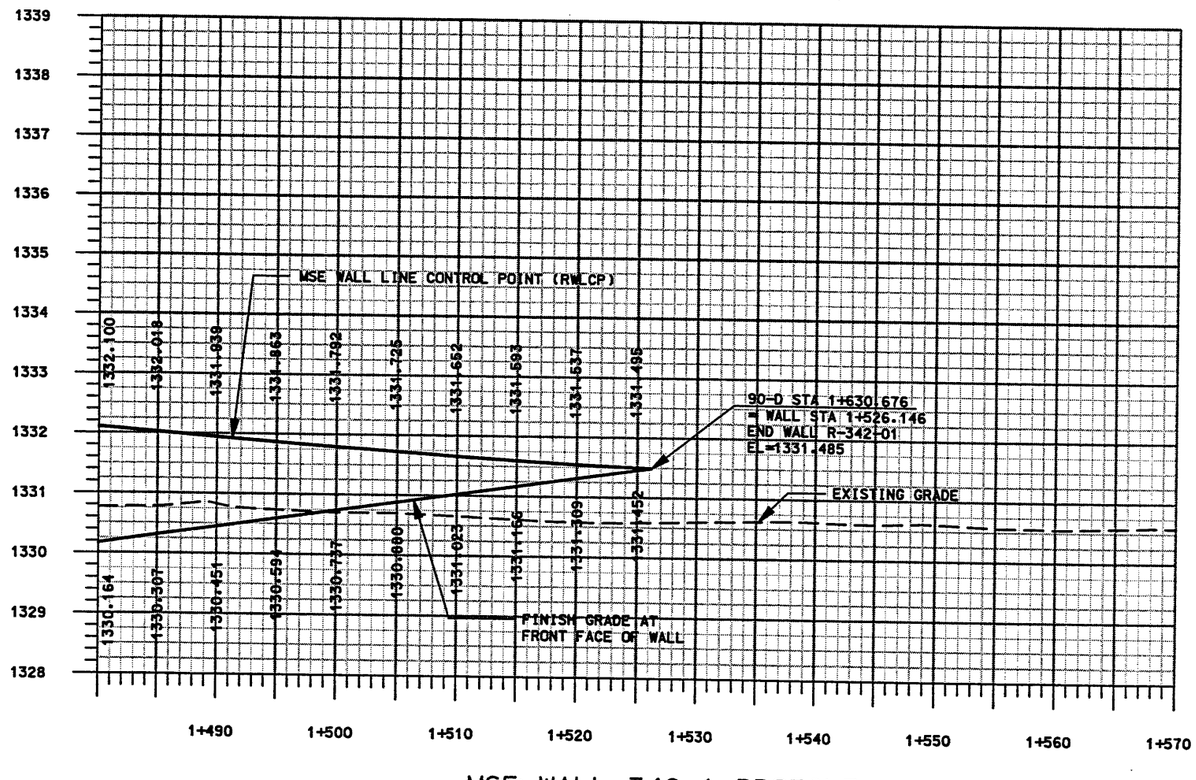

MSE WALL 342-1 PROFILE

NOTES

1 BEARING SOILS EXPOSED DURING WALL CONSTRUCTION SHOULD BE EVALUATED BY FIELD GEOTECHNICAL ENGINEER. UNSUITABLE BEARING SOILS OBSERVED BELOW BOTTOM OF WALL SHOULD BE REMOVED AND REPLACED WITH PROPERLY COMPACTED STRUCTURAL FILL.

2 SEE DRAINAGE SHEET 1.1-DR13 FOR DRAINAGE DETAILS.

3 CONTRACTOR TO ADJUST LOCATION OF INLETS NEXT TO MSE WALL TO AVOID CONFLICTS WITH STRAPS. SEE VSL DRAWINGS FOR FINAL INLET LOCATIONS NEXT TO MSE WALL.

WASATCH CONSTRUCTORS
JAN 06 1999
RELEASED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
179901
SCOTT J. LUCAS
12/17/98
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	12/18/98	ORIGINAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER INC.
SVERDRUP/DE LEUW

APPROVAL RECOMM. 12/98 SCOTT LUCAS — DATE — PROJECT DESIGN ENGINEER
APPROVED 12/98 BRUCE VANA — DATE — PROJECT MANAGER
DESIGN JHG 12/98 CHECK
DRAWN JHG 12/98 CHECK
QUANT. CHECK

I-15 CORRIDOR RECONSTRUCTION
S & L RET. WALL R-342-1
SECTION 1.1
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.1R-342-1.4
SHT. 4 OF 6
REF.

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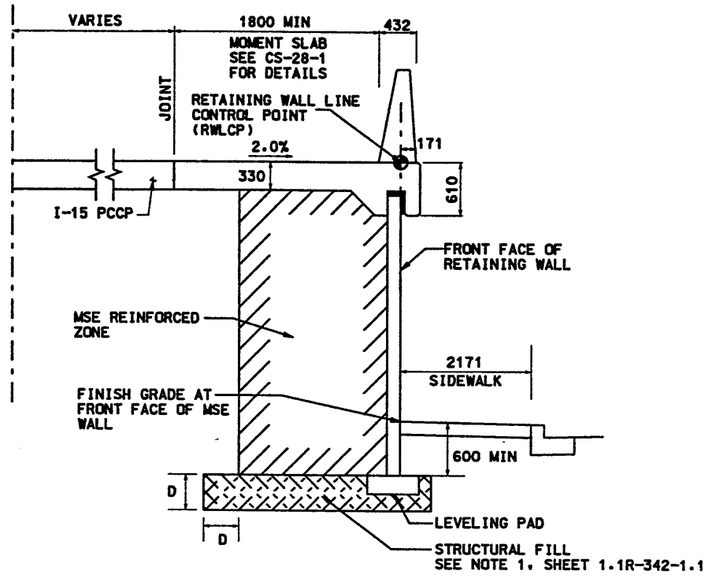
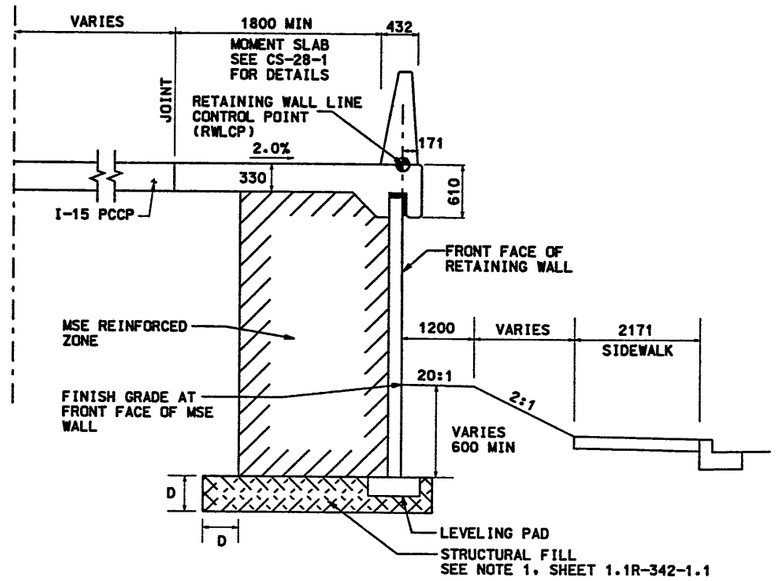
Date: 18-DEC-1998 Time: 10:27 Username: gasterjn

℄ RAMP 90-D AND 90-D2



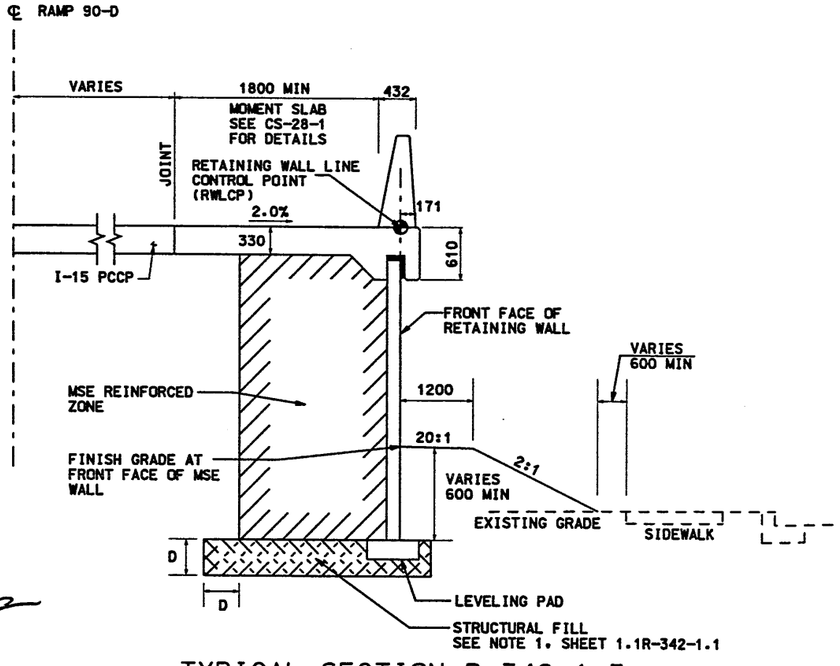
TYPICAL SECTION R-342-1.1
MSE WALL STA 1+023.311 TO
MSE WALL STA 1+128.993

℄ RAMP 90-D



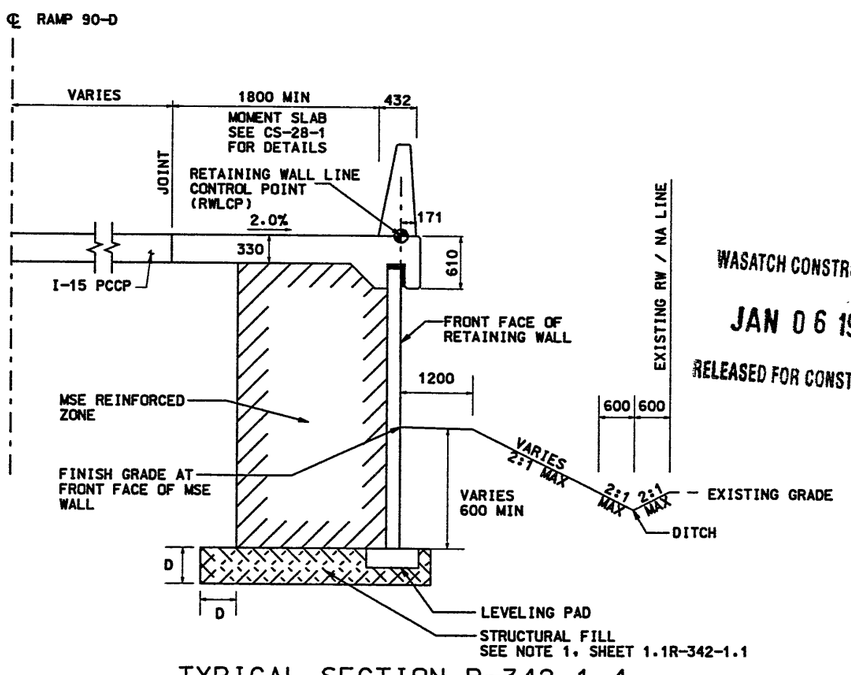
TYPICAL SECTION R-342-1.2
MSE WALL STA 1+128.993
MSE WALL STA 1+205.632

℄ RAMP 90-D



TYPICAL SECTION R-342-1.3
MSE WALL STA 1+205.632
MSE WALL STA 1+318.759

℄ RAMP 90-D



TYPICAL SECTION R-342-1.4
MSE WALL STA 1+318.759 TO
MSE WALL STA 1+347.301

WASATCH CONSTRUCTORS

JAN 06 1999

RELEASED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
179901
SCOTT J.
LUCAS
12/8/98
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	12/18/98	ORIGINAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER INC.
SVERDRUP/DE LEUW

DESIGN JHG 12/98 | CHECK 12/98
DRAWN JHG 12/98 | CHECK 12/98
QUANT. | CHECK

	DATE	PROJECT DESIGN ENGINEER	PROJECT MANAGER
APPROVAL RECOM.	12/98	SCOTT LUCAS	
APPROVED	12/98		BRUCE VANA

I-15 CORRIDOR RECONSTRUCTION
S & L RET. WALL R-342-1
SECTION 1.1
PROJECT NUMBER #SP-15-7(135)296
SALT LAKE COUNTY
DWG. NO. 1.1R-342-1.5
SHT. 5 OF 6
REF.

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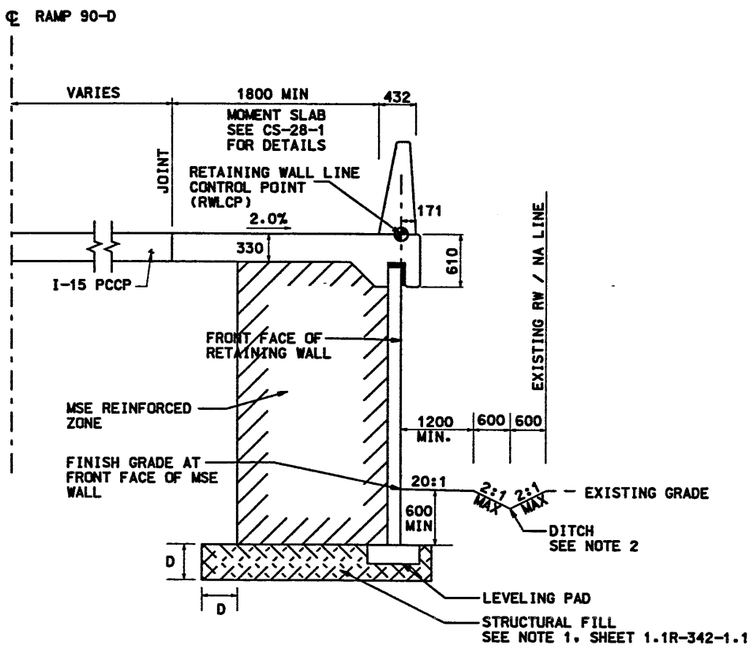
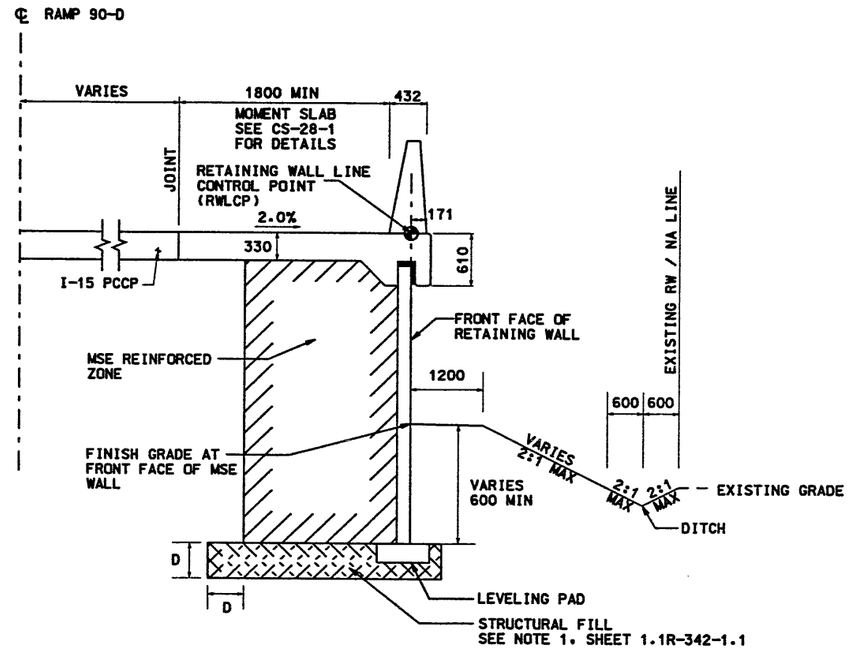


TYPICAL SECTION R-342-1.5
MSE WALL STA 1+347.301
MSE WALL STA 1+481.165



TYPICAL SECTION R-342-1.6
MSE WALL STA 1+481.165 TO
MSE WALL STA 1+526.146

REGISTERED PROFESSIONAL ENGINEER
179901
SCOTT J.
LUCAS
6/18/98
STATE OF UTAH

NOTE

1. BORROW. Φ = 34°
2. 90-D STA 1+450.673 TO 90-D STA 1+494.158
   90-D STA 1+567.360 TO 90-D STA 1+585.213
   SLOPE OF DITCH = 1:1 MAX
   WIDTH OF DITCH = 300 mm EACH SIDE

WASATCH CONSTRUCTORS

JAN 06 1999

RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	12/18/98	ORIGINAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER INC.
SVERDRUP/DE LEUW

DESIGN JHG 12/98 CHECK CHECK
DRAWN JHG 12/98 CHECK CHECK
QUANT. CHECK

APPROVAL RECOMM. 12/98 SCOTT LUCAS
DATE PROJECT DESIGN ENGINEER
APPROVED 12/98 BRUCE VANA
DATE PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
S & L RET. WALL R-342-1
SECTION 1.1
PROJECT NUMBER #SP-15-7(135)296

SALT LAKE
COUNTY
DWG. NO.
1.1R-342-1.6

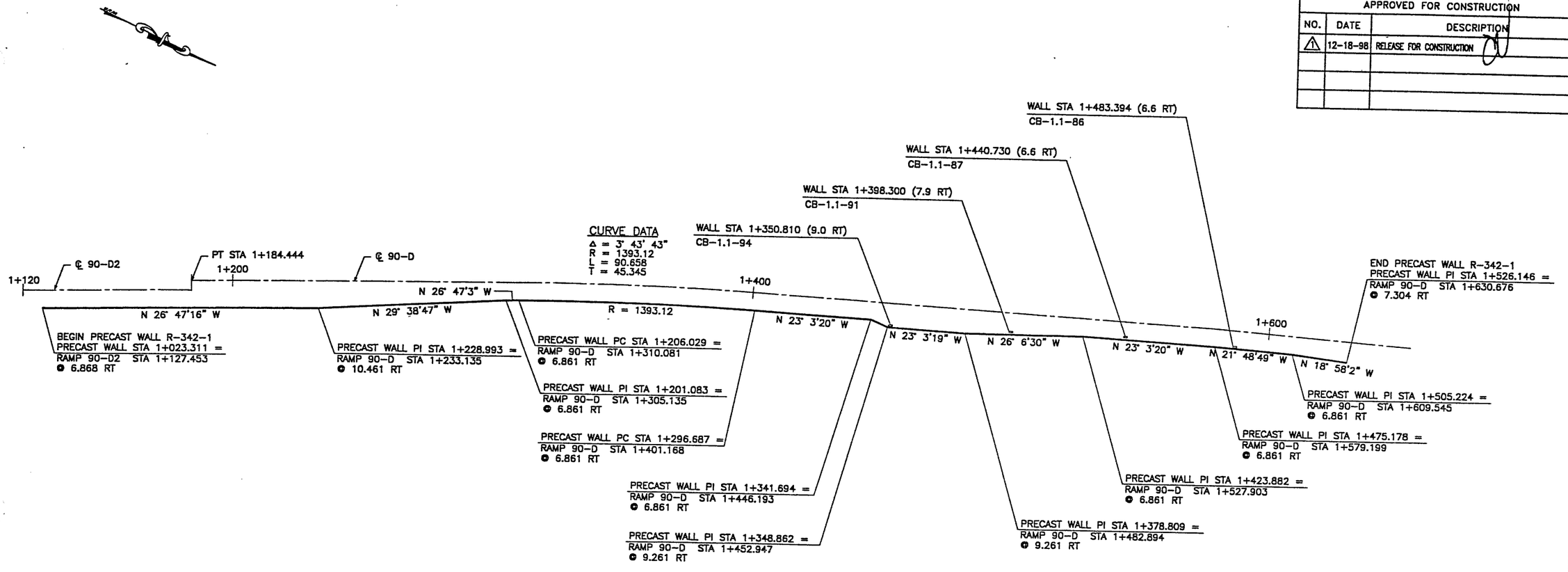
SHT. 6 OF 6

REF.

Filename: o:\dgn\I15.oadd\90.97\sheet_files\walls\90_typical_02w.dgn

XREF (X-UTAH.DWG)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-18-98	RELEASE FOR CONSTRUCTION



PLAN VIEW MSE WALL "R-342-1"

SCALE: 1=600 (FULL SIZE)
SCALE: 1=1200 (HALF SIZE)

DESIGN PARAMETERS
ANGLE OF INTERNAL FRICTION (SELECT) = 34°
ANGLE OF INTERNAL FRICTION (BASE) = 24.23°
ANGLE OF INTERNAL FRICTION (RANDOM) = 34°
UNIT WEIGHT BACKFILL = 135 PCF. (21.2 KN/M^3)
TRAFFIC SURCHARGE = 250 PSF (12 KPa)
SEISMIC ACCELERATION COFF. = 0.12g (TYP)
SEISMIC ACCELERATION COFF. = 0.32g (AT BRIDGE ABUTMENTS)
DESIGN CRITERIA
SAFETY FACTOR (OVERTURNING) = 2.0
SAFETY FACTOR (SLIDING) = 1.5
SAFETY FACTOR (PULLOUT) = 1.5
DESIGN LIFE = 75 YEARS

RETAINED EARTH INDEX	
RE-1	PLAN PRECAST WALL R-342-1, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTIONS
RE-3	TYPICAL CROSS SECTIONS
RE-4	TYPICAL CROSS SECTIONS
RE-5	ELEVATION PRECAST WALL R-342-1
RE-6	ELEVATION PRECAST WALL R-342-1
RE-7	ELEVATION PRECAST WALL R-342-1
RE-8	ELEVATION PRECAST WALL R-342-1
RE-9	ELEVATION PRECAST WALL R-342-1
RE-10	SPECAIL PANEL
RE-11	SPECAIL PANEL

WASATCH CONSTRUCTORS

JAN 06 1999

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.
12/18/98
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK

DES. 12-09-98 MM
DRN. 12-09-98 DSW
CHK. 12-09-98 MM
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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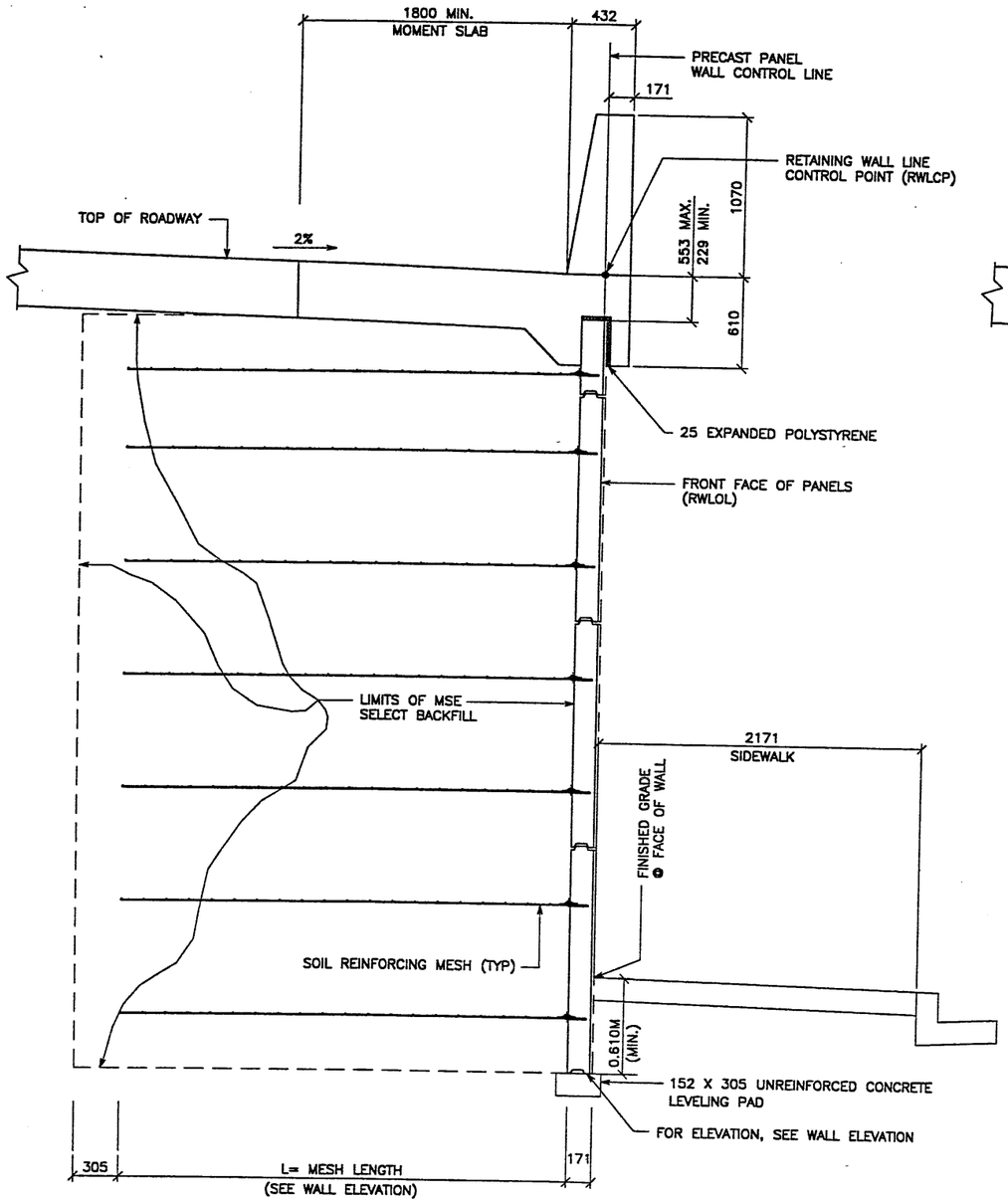
RETAINED EARTH™ WALLS
PLAN VIEW MSE WALL "R-342-1"

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

DWG. NO. 1.1R-342-1.7
JOB NO: 239-0007
SHT. NO. RE-1

FINAL PLOT 12-18-98 H:\RE_EARTH\APROJECT\239-0007\1998\90SPECS\90-01\RE-1.DWG

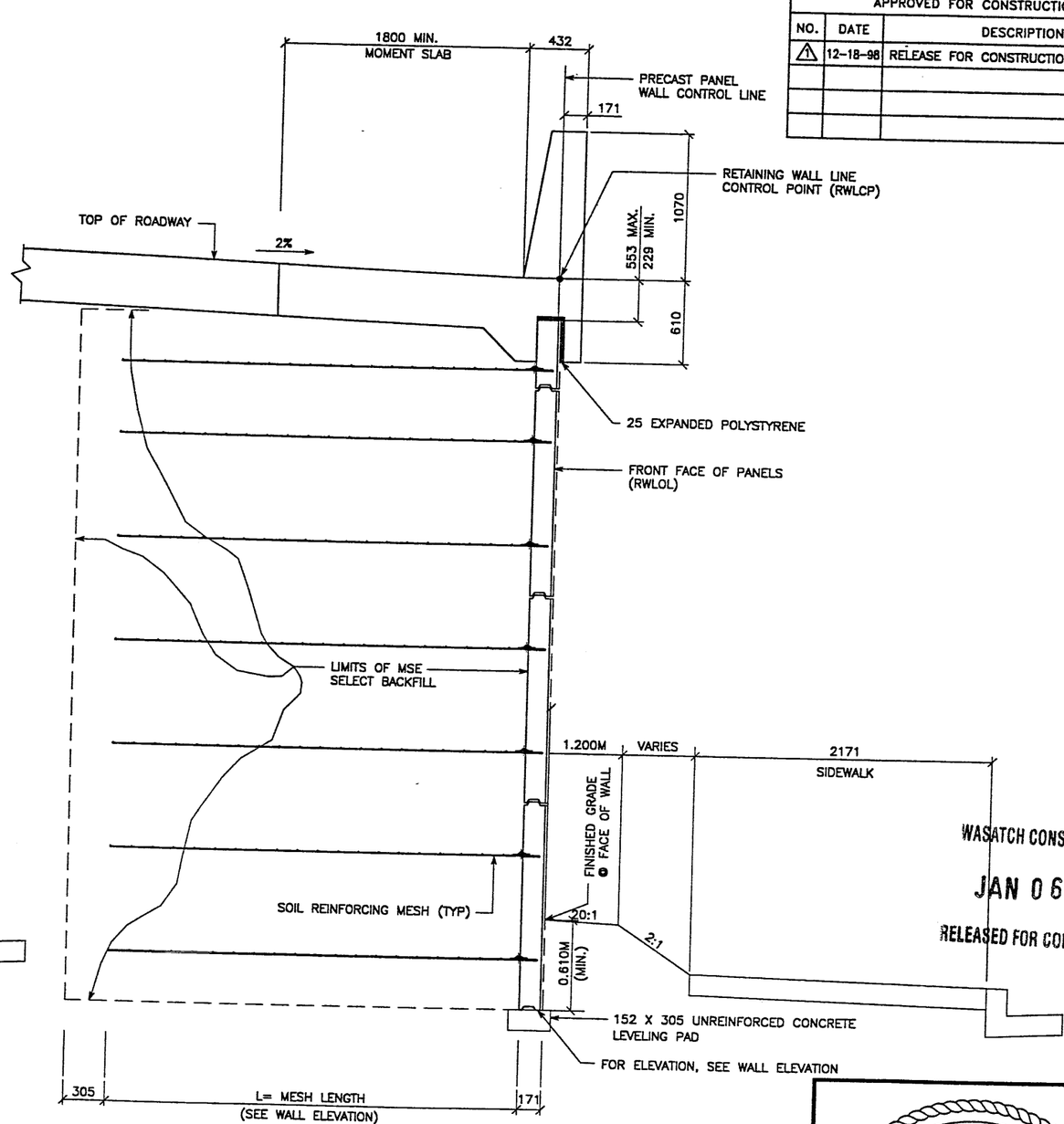


TYPICAL CROSS SECTION – STA 1+023.311 TO 1+128.993

(SEE DWG. NO. 2.1R–342–1.5 FOR ADDITIONAL INFORMATION)

SCALE: 1:20 (FULL SIZE)

SCALE: 1:40 (HALF SIZE)



TYPICAL CROSS SECTION – STA 1+128.993 TO 1+205.632

(SEE DWG. NO. 1.1R–342–1.5 FOR ADDITIONAL INFORMATION)

SCALE: 1:20 (FULL SIZE)

SCALE: 1:40 (HALF SIZE)

NOTE: STRUCTURAL FILL BELOW WALL IS NOT REQ'D. DIMENSION "D" = ZERO

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	12-18-98	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. 12-09-98 MM
DRN. 12-09-98 DSW
CHK. 12-09-98 MM

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-8272
Fax: (919) 781-1969

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

JAN 06 1999

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
12/30/98
STATE OF UTAH

RETAINED EARTH™ WALLS
WIRE FACED WALL "R-342-1"
TYPICAL CROSS SECTION

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

DWG. NO.
1.1R-342-1.8

JOB NO:
239-0007

SHT. NO. RE-2

FINAL PLOT 12-18-98

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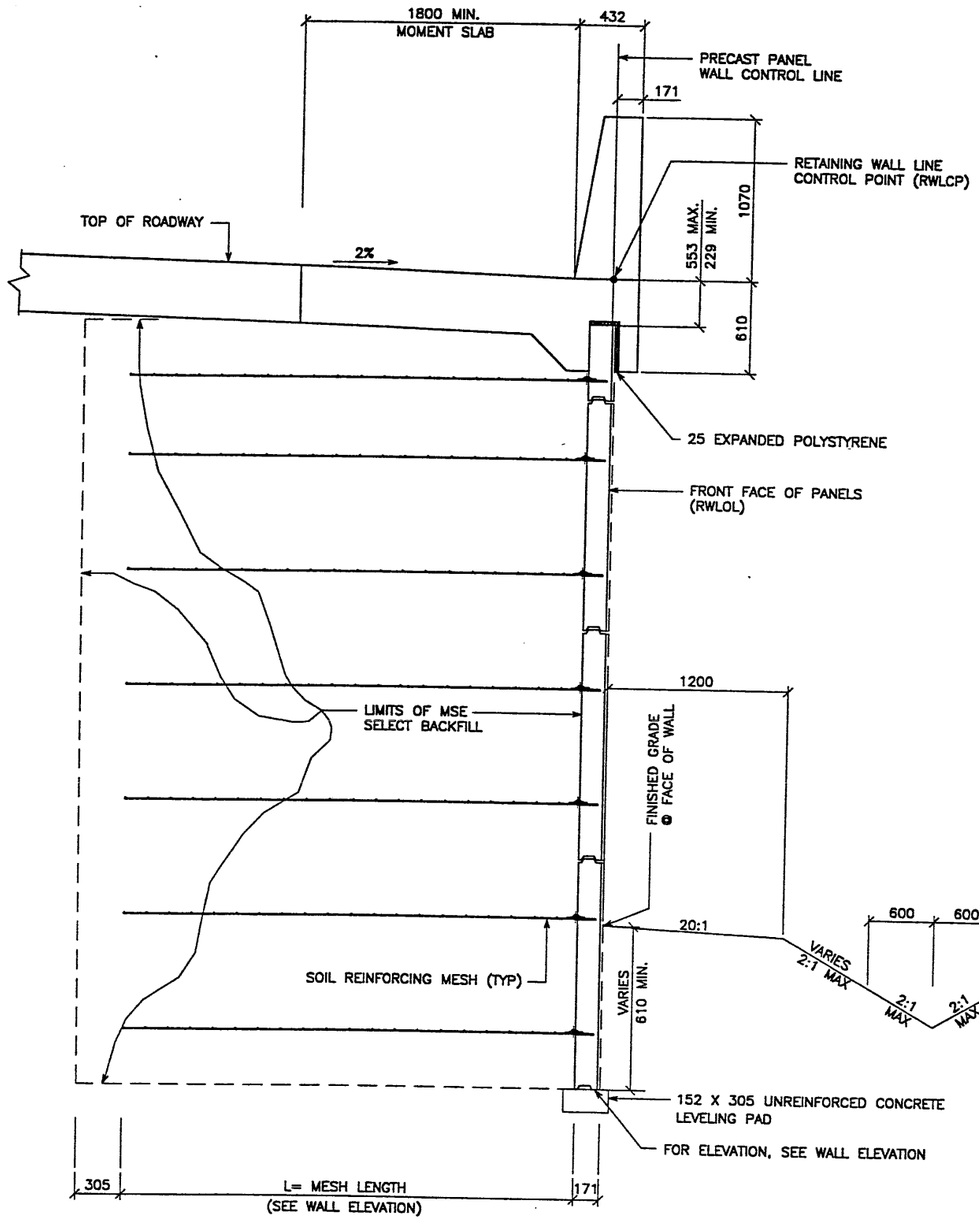
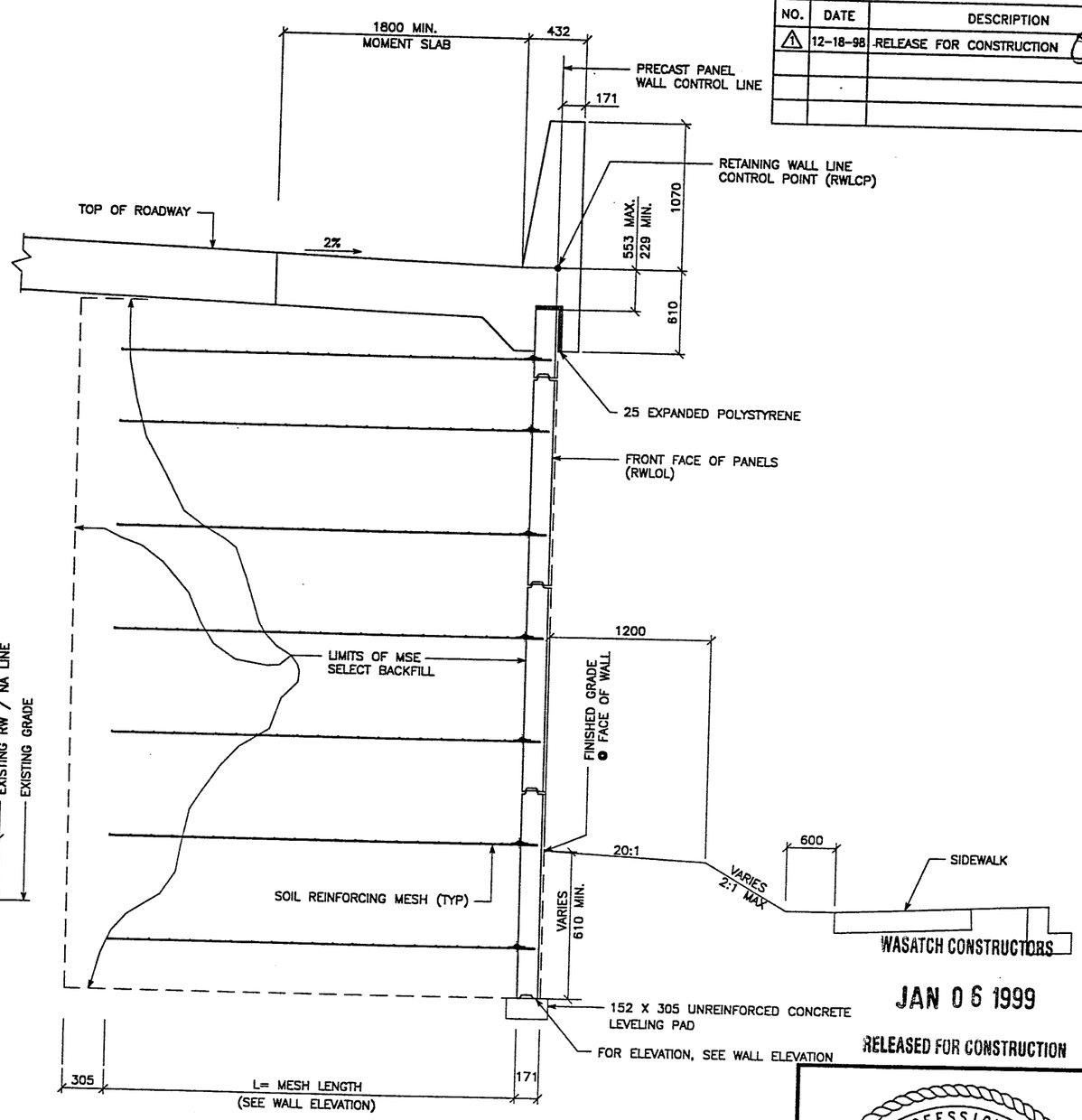


TYPICAL CROSS SECTION – STA 1+318.759 TO 1+347.301
TYPICAL CROSS SECTION – STA 1+481.165 TO 1+526.146

(SEE DWG. NO. 1.1R–342–1.5 FOR ADDITIONAL INFORMATION)
SCALE: 1:20 (FULL SIZE)
SCALE: 1:40 (HALF SIZE)



TYPICAL CROSS SECTION – STA 1+205.632 TO 1+318.759

(SEE DWG. NO. 1.1R–342–1.5 FOR ADDITIONAL INFORMATION)
SCALE: 1:20 (FULL SIZE)
SCALE: 1:40 (HALF SIZE)

NOTE: STRUCTURAL FILL BELOW WALL IS NOT REQ'D. DIMENSION "D" = ZERO

METRIC

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APPROVED FOR CONSTRUCTION			
NO.	DATE	DESCRIPTION	BY / CHK
1	12-18-98	RELEASE FOR CONSTRUCTION	

				NO.	DATE	REVISION	BY	CHK
DES.	12-09-98	MM						
DRN.	12-09-98	DSW						
CHK.	12-09-98	MM						

RETAINED EARTH™

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

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RETAINED EARTH™ WALLS
WIRE FACED WALL "R-342-1"
TYPICAL CROSS SECTION

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

WASATCH CONSTRUCTORS

JAN 06 1999

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
12/18/98
STATE OF UTAH

DWG. NO.
1.1R-342-1.9

JOB NO:
239-0007

SHT. NO.
RE-3

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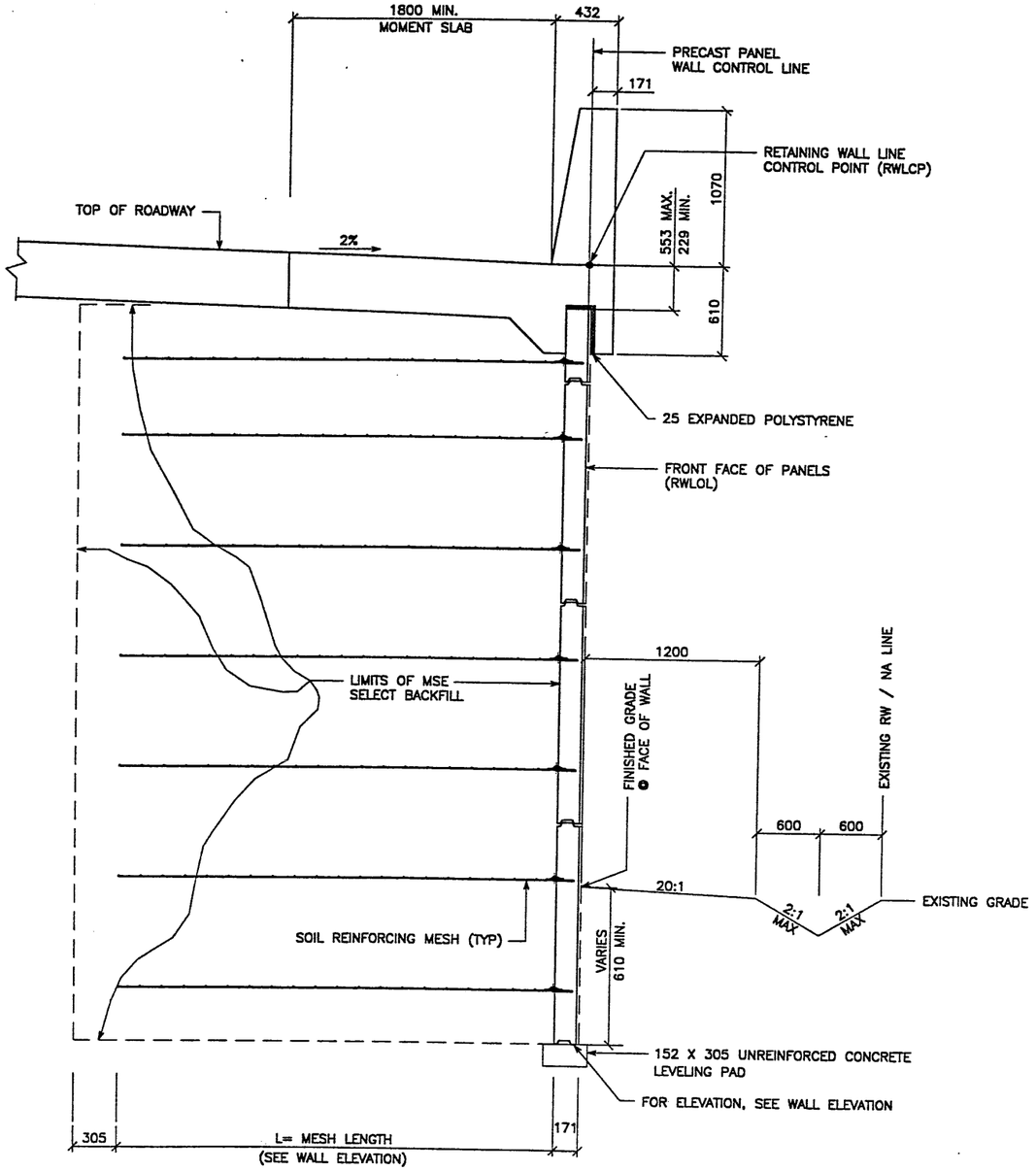
FINAL PLOT 12-18-98



TYPICAL CROSS SECTION – STA 1+347.301 TO 1+481.165

(SEE DWG. NO. 1.1R-342-1.5 FOR ADDITIONAL INFORMATION)

SCALE: 1:20 (FULL SIZE)

SCALE: 1:40 (HALF SIZE)

NOTE: STRUCTURAL FILL BELOW WALL IS NOT REQ'D. DIMENSION "D" = ZERO

APPROVED FOR CONSTRUCTION			
NO.	DATE	DESCRIPTION	
1	12-18-98	RELEASE FOR CONSTRUCTION	

NO.	DATE	REVISION	BY	CHK

DES.	12-09-98	MM
DRN.	12-09-98	DSW
CHK.	12-09-98	MM

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
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Fax: (919) 781-1989

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WASATCH CONSTRUCTORS

JAN 06 1999

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LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
12/18/98
STATE OF UTAH

RETAINED EARTH™ WALLS
WIRE FACED WALL "R-342-1"
TYPICAL CROSS SECTION

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

DWG. NO.	1.1R-342-1.10
JOB NO:	239-0007
SHT. NO.	RE-4

XREF ~ICE (X-UTAH.DWG)
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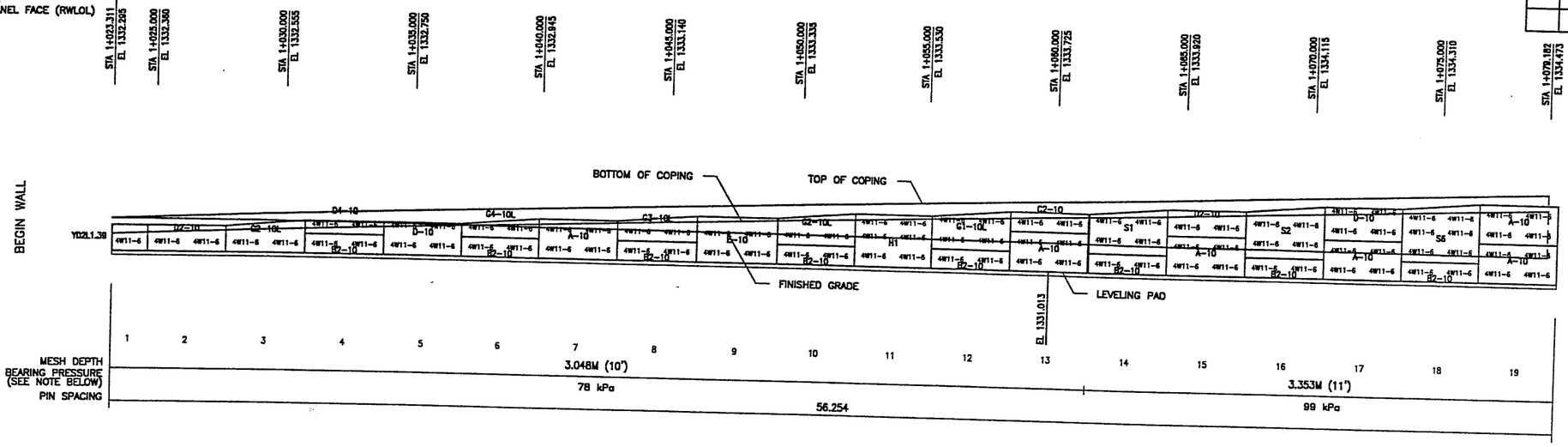
FINAL PLOT 12-18-98

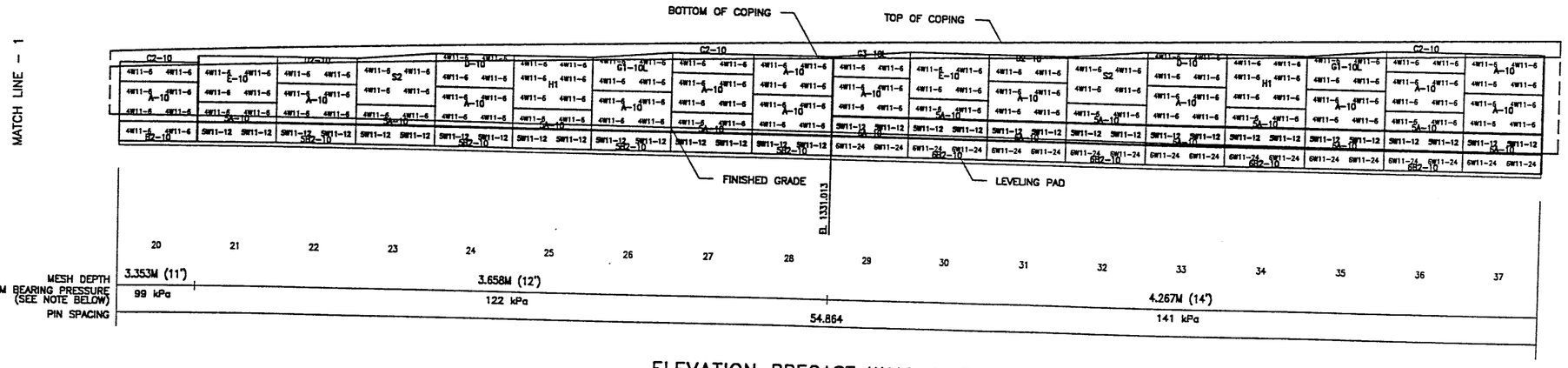
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-18-98	RELEASE FOR CONSTRUCTION

BEGIN WALL R-342-1
WALL PT STA 1+023.311 =
RAMP 90-D2 STA 1+127.453
@ 6.868 RT
NOMINAL PANEL FACE (RWLOL)



MATCH LINE - 1

WALL R-342-1
WALL PI STA 1+128.993 =
RAMP 90-D STA 1+233.135
@ 10.461 RT
NOMINAL PANEL FACE (RWLOL)



MATCH LINE - 2

WASATCH CONSTRUCTORS

JAN 06 1999

RELEASED FOR CONSTRUCTION

ELEVATION PRECAST WALL R-342-1

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 1927.58 SM)

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

METRIC

APPROVER NOTE:
MAXIMUM FINAL UNFACTORED BEARING PRESSURES (DUE TO STATIC LOAD COMBINATION) ARE INDICATED BELOW "MESH DEPTH LINE" REVIEWER TO VERIFY MAXIMUM BEARING CAPACITY OF FOUNDATION.

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LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
12/18/98
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK

DES. 12-09-98 MM
DRN. 12-09-98 DSW
CHK. 12-09-98 MM

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-8272
Fax: (919) 781-4969

ATLANTA, GA / DALLAS, TX / RALEIGH, NC (CORPORATE OFFICE)
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RETAINED EARTH™ WALLS
PRECAST WALL "R-342-1"

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

DWG. NO. 1.1R-342-1.11
JOB NO: 239-0007
SHT. NO. RE-5

FINAL PLOT 12-18-98
H:\RE_EARTH\PROJECT\239-0007\1998\90SERIES\90-01\ME15X10.DWG
XP NCE (X-UTAH.DWG)

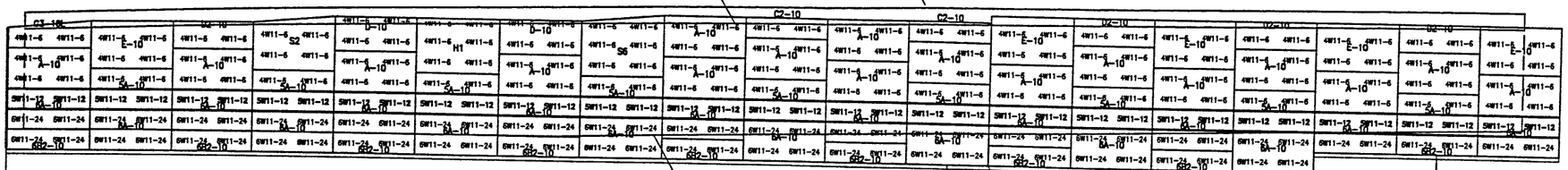
H:\RE_EARTH\APROJECT\239-0007\1998\90SERIES\ \WET15X10.DWG
XF ACE (X-UTAH.DWG)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-18-98	RELEASE FOR CONSTRUCTION

MATCH LINE – 2

STA 1+133.052 EL 1336.145 | STA 1+140.000 EL 1336.289 | STA 1+145.000 EL 1336.387 | STA 1+150.000 EL 1336.497 | STA 1+155.000 EL 1336.600 | STA 1+160.000 EL 1336.695 | STA 1+165.000 EL 1336.782 | STA 1+170.000 EL 1336.862 | STA 1+175.000 EL 1336.934 | STA 1+180.000 EL 1336.998 | STA 1+185.000 EL 1337.055 | STA 1+190.000 EL 1337.104 | STA 1+190.923 EL 1337.112

BOTTOM OF COPING — TOP OF COPING



38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56

MESH DEPTH: 4.572M (15')
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW): 164 kPa
PIN SPACING: 48.768 | 9.144

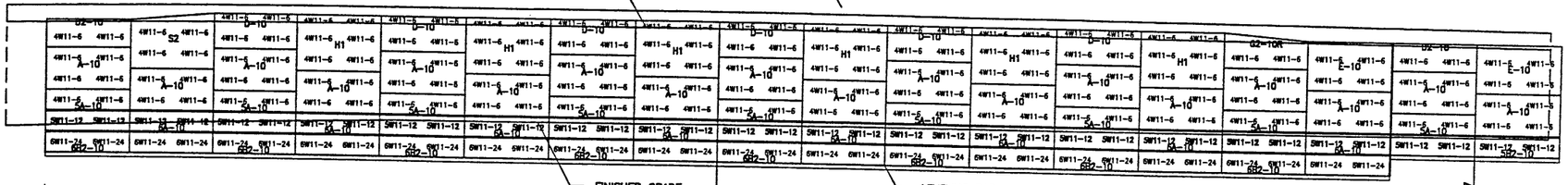
MATCH LINE – 3

WALL R-342-1
WALL PI STA 1+201.083 =
RAMP 90-D STA 1+305.135
@ 6.861 RT
NOMINAL PANEL FACE (RWLOL)

WALL R-342-1
WALL PC STA 1+206.029 =
RAMP 90-D STA 1+310.081
@ 6.861 RT
NOMINAL PANEL FACE (RWLOL)

STA 1+180.923 EL 1337.112 | STA 1+195.000 EL 1337.146 | STA 1+200.000 EL 1337.160 | STA 1+205.000 EL 1337.202 | STA 1+210.000 EL 1337.216 | STA 1+215.000 EL 1337.222 | STA 1+220.000 EL 1337.220 | STA 1+225.000 EL 1337.211 | STA 1+230.000 EL 1337.197 | STA 1+235.000 EL 1337.169 | STA 1+240.000 EL 1337.138 | STA 1+245.000 EL 1337.096 | STA 1+248.793 EL 1337.079

BOTTOM OF COPING — TOP OF COPING



57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74

PIN SPACING: 4.527M (15') | 4.267M (14')
MESH DEPTH: 164 kPa | 141 kPa
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW): 48.768 | 6.096

MATCH LINE – 4

ELEVATION PRECAST WALL R-342-1

(FRONT FACE SHOWN) (TOTAL SURFACE AREA OF PANELS = 1927.58 SM)

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

APPROVER NOTE:
MAXIMUM FINAL UNFACTORED BEARING PRESSURES (DUE TO STATIC LOAD COMBINATION) 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.

WASATCH CONSTRUCTORS

JAN 06 1999

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
12/18/98
STATE OF UTAH

DES.	12-09-98	MM	
DRN.	12-09-98	DSW	
CHK.	12-09-98	MM	

RETAINED EARTH™

NO.	DATE	REVISION	BY	CHK

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-4689

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

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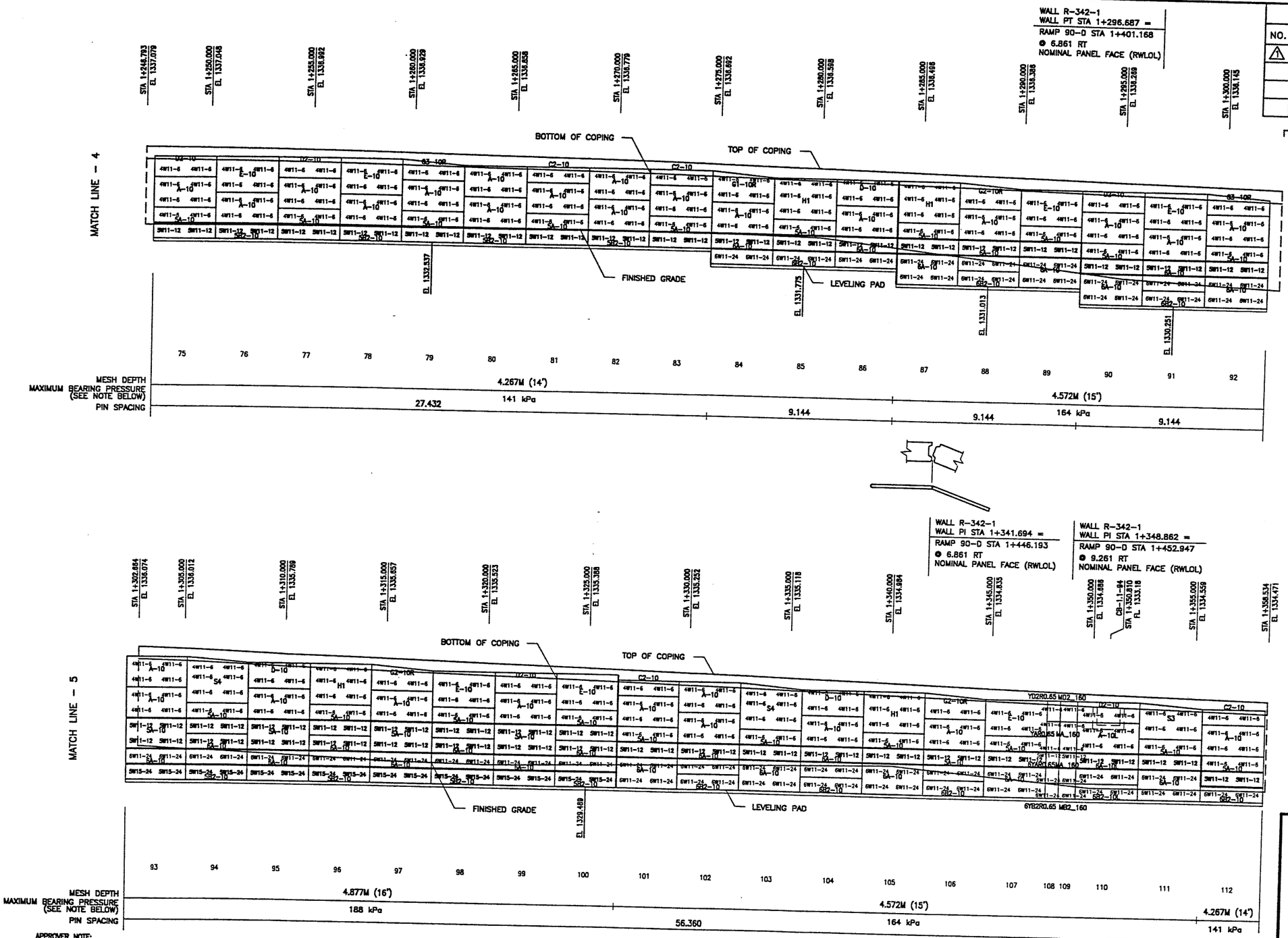
RETAINED EARTH™ WALLS
PRECAST WALL "R-342-1"

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

DWG. NO.	1.1R-342-1.12
JOB NO:	239-0007
SHT. NO.	RE-6

FINAL PL 12-18-98



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

(DUE TO STATIC LOAD COMBINATION)

ELEVATION PRECAST WALL R-342-1

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 1927.58 SM)

METRIC

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

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

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY	CHK
1	12-18-98	RELEASE FOR CONSTRUCTION		

NO.	DATE	REVISION

DES. 12-09-98 MM
DRN. 12-09-98 DSW
CHK. 12-09-98 MM

RETAINED EARTH™

WASATCH CONSTRUCTORS

JAN 06 1999

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
12/7/98
STATE OF UTAH

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-342-1"

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

DWG. NO. 1.1R-342-1.13
JOB NO: 239-0007
SHT. NO. RE-7

FINAL PLOT 12-18-98
H:\RE_EARTH\PROJECT\239-0007\1998\90SERIES\9[illegible]
[illegible]\WET5X10.DWG
XP[illegible]VICE (X-UTAH.DWG)

WALL R-342-1
WALL PI STA 1+378.809 =
RAMP 90-D STA 1+482.894
@ 9.261 RT
NOMINAL PANEL FACE (RWLOL)

STA 1+358.534 EL. 1334.471
STA 1+360.000 EL. 1334.434
STA 1+365.000 EL. 1334.311
STA 1+370.000 EL. 1334.190
STA 1+375.000 EL. 1334.108
STA 1+380.000 EL. 1333.985
STA 1+385.000 EL. 1333.871
STA 1+390.000 EL. 1333.759
STA 1+395.000 EL. 1333.650
CB-1.1-91 STA 1+398.300 FL 1332.18
STA 1+400.000 EL. 1333.545
STA 1+405.000 EL. 1333.442
STA 1+410.000 EL. 1333.343
STA 1+414.405 EL. 1333.256

MATCH LINE - 6

BOTTOM OF COPING
TOP OF COPING
FINISHED GRADE
EL. 1328.469
LEVELING PAD

MATCH LINE - 7

	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130
MESH DEPTH	4.267M (14')									3.658M (12')								
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	141 kPa									122 kPa								
PIN SPACING	54.864																	

WALL R-342-1
WALL PI STA 1+423.882 =
RAMP 90-D STA 1+527.903
@ 6.861 RT
NOMINAL PANEL FACE (RWLOL)

STA 1+414.405 EL. 1333.256
STA 1+415.000 EL. 1333.246
STA 1+420.000 EL. 1333.152
STA 1+425.000 EL. 1333.061
STA 1+430.000 EL. 1332.967
STA 1+435.000 EL. 1332.877
STA 1+440.000 EL. 1332.790
CB-1.1-87 STA 1+440.730 FL 1331.25
STA 1+445.000 EL. 1332.705
STA 1+450.000 EL. 1332.624
STA 1+455.000 EL. 1332.546
STA 1+460.000 EL. 1332.450
STA 1+465.000 EL. 1332.360
STA 1+470.000 EL. 1332.273
STA 1+470.275 EL. 1332.268

MATCH LINE - 7

BOTTOM OF COPING
TOP OF COPING
FINISHED GRADE
EL. 1329.469
LEVELING PAD

MATCH LINE - 8

	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149
MESH DEPTH	3.658M (12')									3.353M (11')									
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	122 kPa									99 kPa									
PIN SPACING	57.912																		

ELEVATION PRECAST WALL R-342-1

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 1927.58 SM)

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

APPROVER NOTE:
MAXIMUM FINAL UNFACTORED BEARING PRESSURES (DUE TO STATIC LOAD COMBINATION) 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.

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY	CHK
1	12-18-98	RELEASE FOR CONSTRUCTION		

NO.	DATE	REVISION

DES. 12-09-98 MM
DRN. 12-09-98 DSW
CHK. 12-09-98 MM

RETAINED EARTH™

VSL CORPORATION
2810 Plaza Pace, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-4969

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

JAN 06 1999

RELEASED FOR CONSTRUCTION

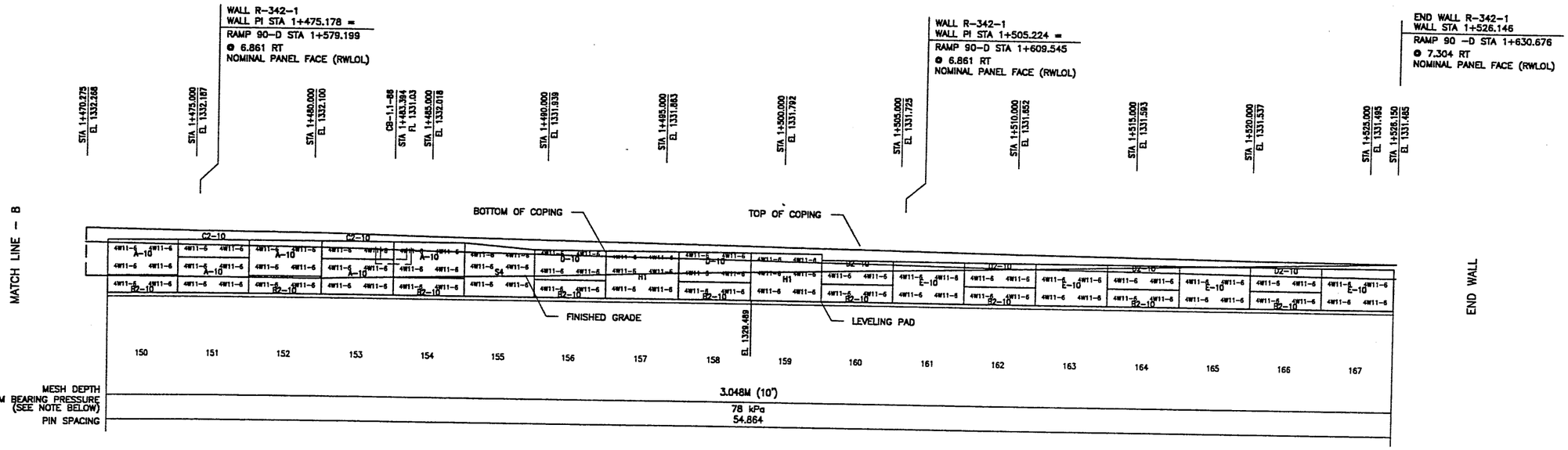
LICENSED PROFESSIONAL ENGINEER
No. 341096
JOHN A. NICHOLSON, JR.
12/18/98
STATE OF UTAH

RETAINED EARTH™ WALLS
PRECAST WALL "R-342-1"

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

DWG. NO.
1.1R-342-1.14
JOB NO:
239-0007
SHT. NO. RE-8

FINAL PLOT 12-18-98
H:\RE_EARTH\PROJECT\239-0007\1998\90SERIES\90-01\MET5X10.DWG
XREF 'NCE (X-UTAH.DWG)



ELEVATION PRECAST WALL R-342-1

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 1927.58 SM)

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

APPROVER NOTE:
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REVIEWER TO VERIFY MAXIMUM BEARING CAPACITY OF FOUNDATION.

METRIC

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APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	12-18-98	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. 12-09-98 MM
DRN. 12-09-98 DSW
CHK. 12-09-98 MM

RETAINED EARTH™ (VSL)

WASATCH CONSTRUCTORS

JAN 06 1999

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
12/98
STATE OF UTAH

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
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Fax: (919) 781-4569

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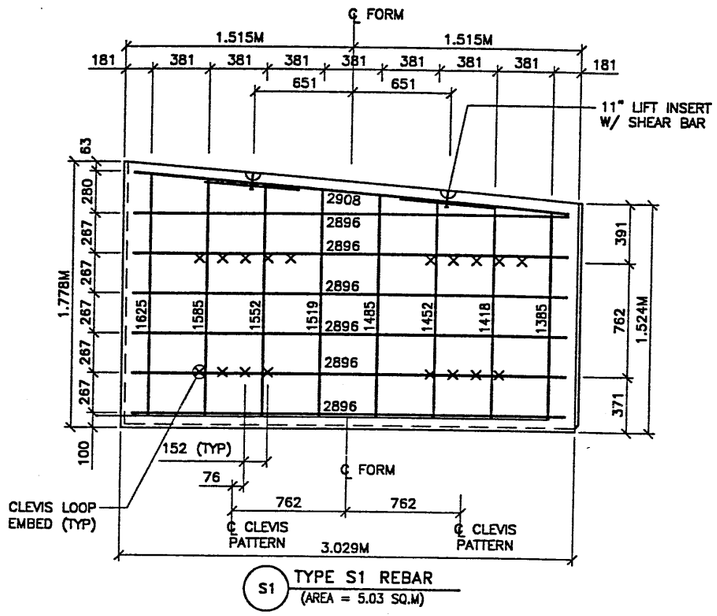
RETAINED EARTH™ WALLS
PRECAST WALL "R-342-1"

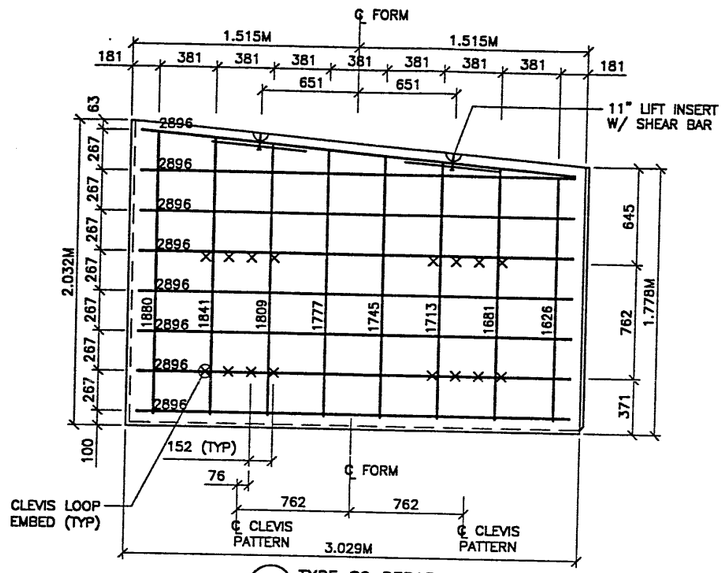
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO. 1.1R-342-1.15
JOB NO: 239-0007
SHT. NO. RE-9

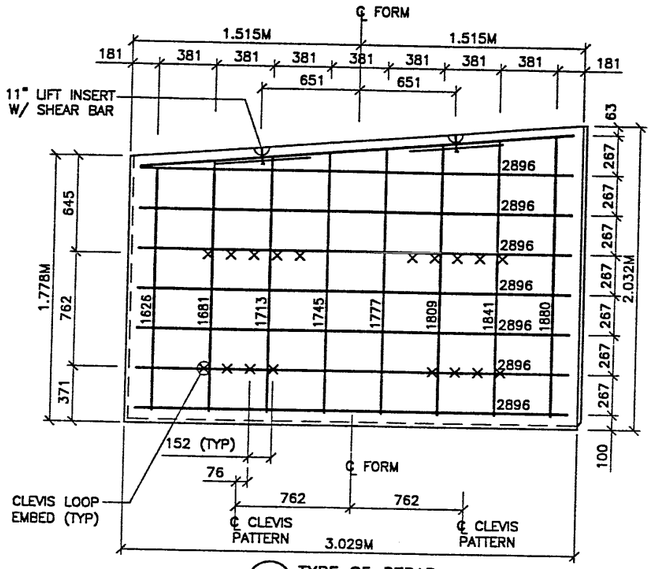
FINAL PLOT 12-18-98 H:\RE_EARTH\PROJECT\239-0007\1998\90SERIES\90-01\WET5X10.DWG XREF 'ICE (X-UTAH.DWG)



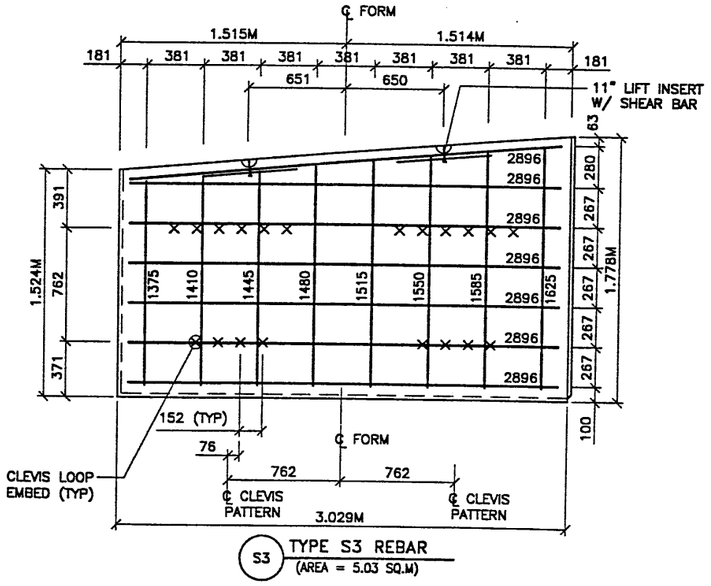
S1 TYPE S1 REBAR
(AREA = 5.03 SQ.M)



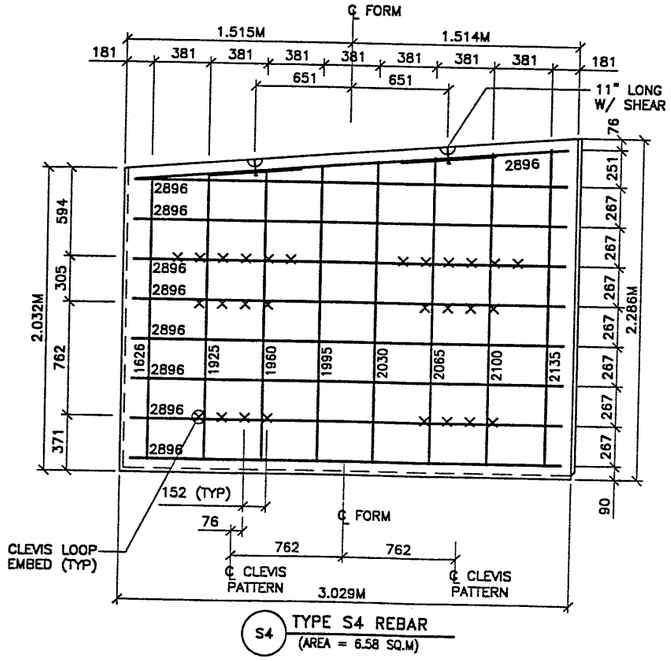
S2 TYPE S2 REBAR
(AREA = 5.81 SQ.M)



S5 TYPE S5 REBAR
(AREA = 5.81 SQ.M)



S3 TYPE S3 REBAR
(AREA = 5.03 SQ.M)



S4 TYPE S4 REBAR
(AREA = 6.58 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 25,200 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.
12. SEE VSL STD. DRAWINGS FOR ADD'L PANEL DETAILS.

METRIC

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

WASATCH CONSTRUCTORS

JAN 06 1999

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
12/18/98
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	12-18-98	RELEASE FOR CONSTRUCTION

	DES.	DRN.	CHK.
	12-09-98	12-09-98	12-09-98
	MM	DSW	MM

RETAINED EARTH™

NO.	DATE	REVISION	BY	CHK

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-8272
Fax: (919) 781-1969

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RETAINED EARTH™ WALLS
PRECAST WALL "R-342-1"
SPECIAL PANEL DETAILS

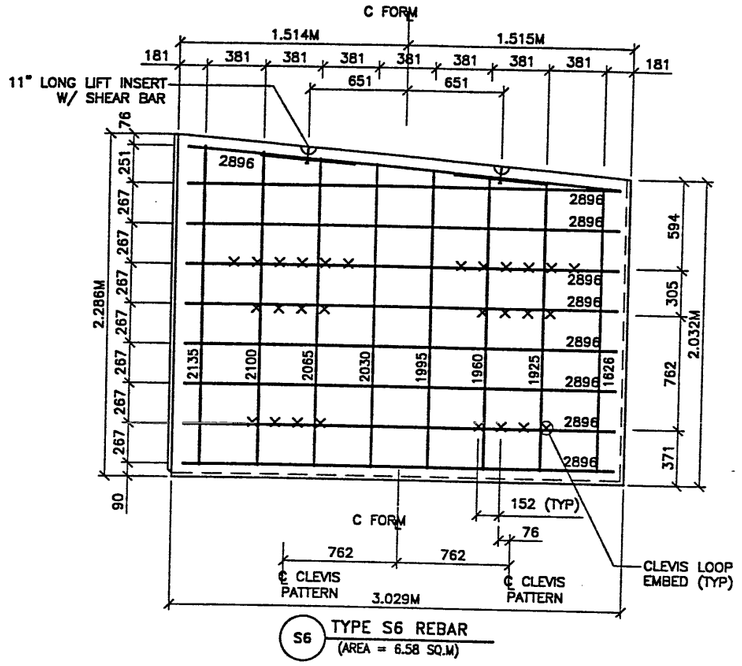
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.
1.1R-342-1.16

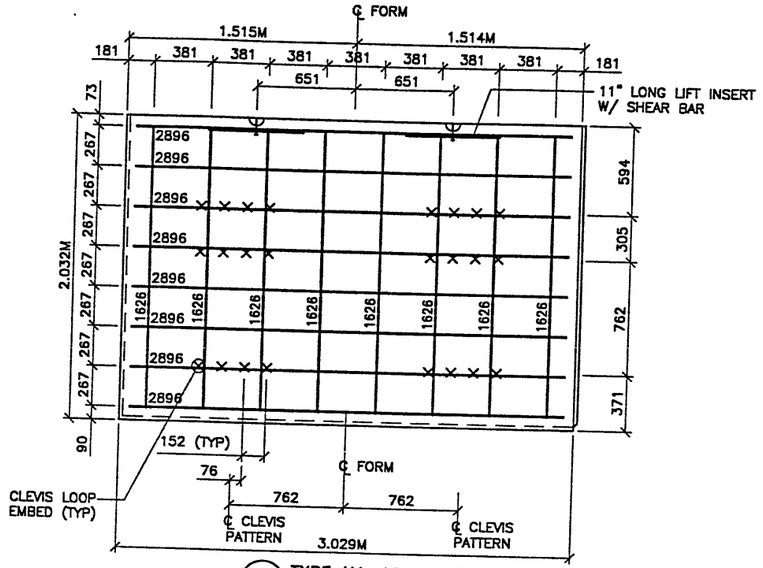
JOB NO:
239-0007

SHT. NO.
RE-10

H:\RE_EARTH\PROJECT\239-0007\1998\90-01\SPECIALS.DWG
FINAL PLOT 12-18-98
NCE (X-UTAH.DWG)

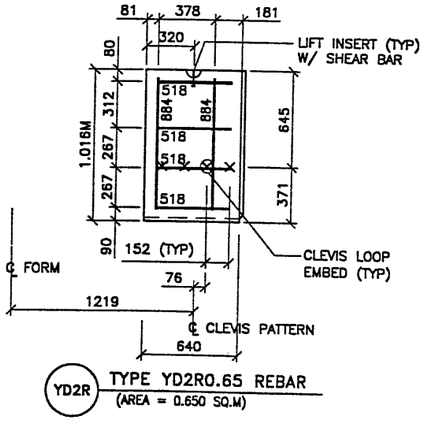


S6 TYPE S6 REBAR
(AREA = 6.58 SQ.M)

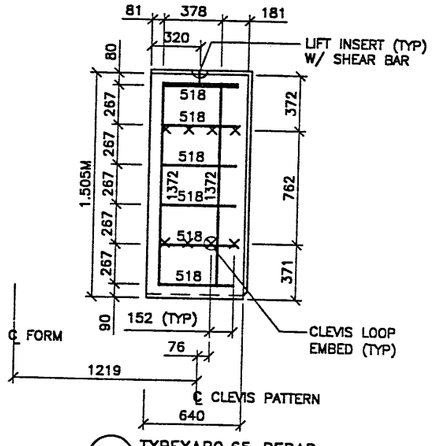


H1 TYPE H1-10 REBAR
(AREA = 6.19 SQ.M)

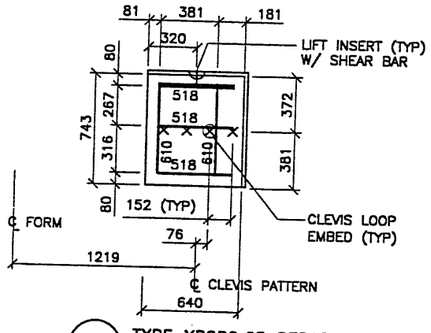
PANEL REINFORCEMENT NOTES:
1. PANELS ARE SHOWN BACK FACE.
2. HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
3. ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
4. ALL REINFORCING BARS ARE #13 METRIC. LABELS ON EACH BAR INDICATE LENGTH. EXAMPLE: 1345 IS A #13 BAR 1345 mm LONG.
5. PANEL REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT CONFORMING TO THE SPECIFICATIONS OF ASTM DESIGNATION A615, GRADE 60.
6. ALL REINFORCING STEEL TO BE GALVANIZED IN ACCORDANCE WITH ASTM 767 CLASS I.
7. CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 25,200 KPa.
8. EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
9. ALL PANELS TO USE 9.5mmø 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.
12. SEE VSL STD. DRAWINGS FOR ADD'L PANEL DETAILS.



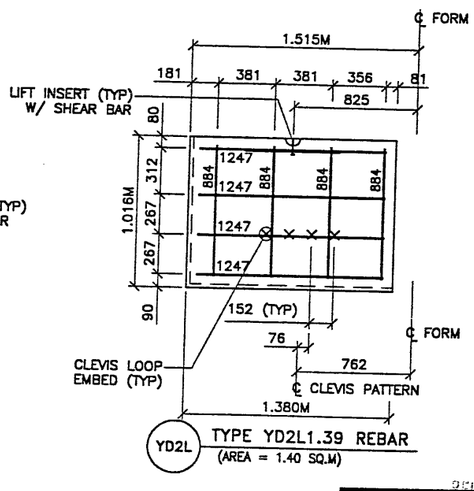
YD2R TYPE YD2R0.65 REBAR
(AREA = 0.650 SQ.M)



YAR TYPEYAR0.65 REBAR
(AREA = 0963 SQ.M)



YB2R TYPE YB2R0.65 REBAR
(AREA = 0.476 SQ.M)



YD2L TYPE YD2L1.39 REBAR
(AREA = 1.40 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.

WASATCH CONSTRUCTORS

JAN 06 1999

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
12/18/98
STATE OF UTAH

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-18-98	RELEASE FOR CONSTRUCTION

	NO.	DATE	REVISION	BY	CHK

DES. 12-09-98 MM
DRN. 12-09-98 DSW
CHK. 12-09-98 MM

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-8272
Fax: (919) 781-1969

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-342-1"
SPECIAL PANEL DETAILS

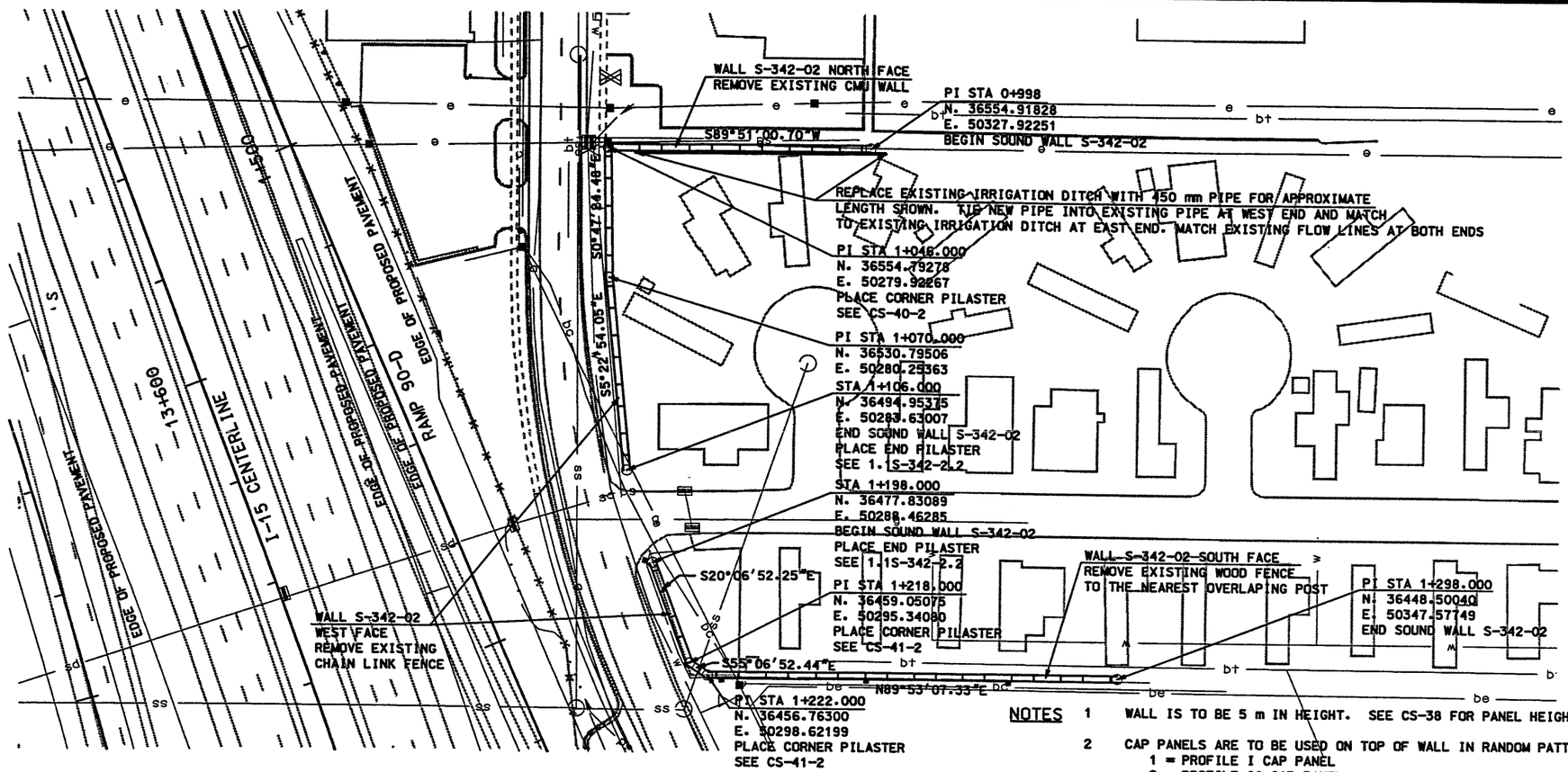
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

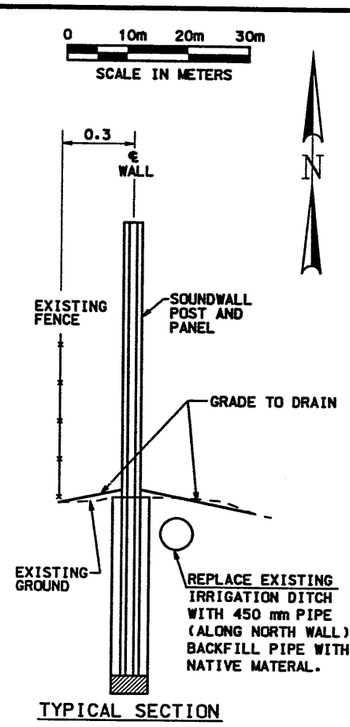
DWG. NO.
1.1R-342-1.17

JOB NO:
239-0007

SHT. NO.
RE-11

FINAL PLOT 12-18-98
H:\RE_EARTH\APROJECT\239-0007\1998\90'ES\90-01\SPECIALS.DWG
ENCE (X-UTAH.DWG)





TYPICAL SECTION

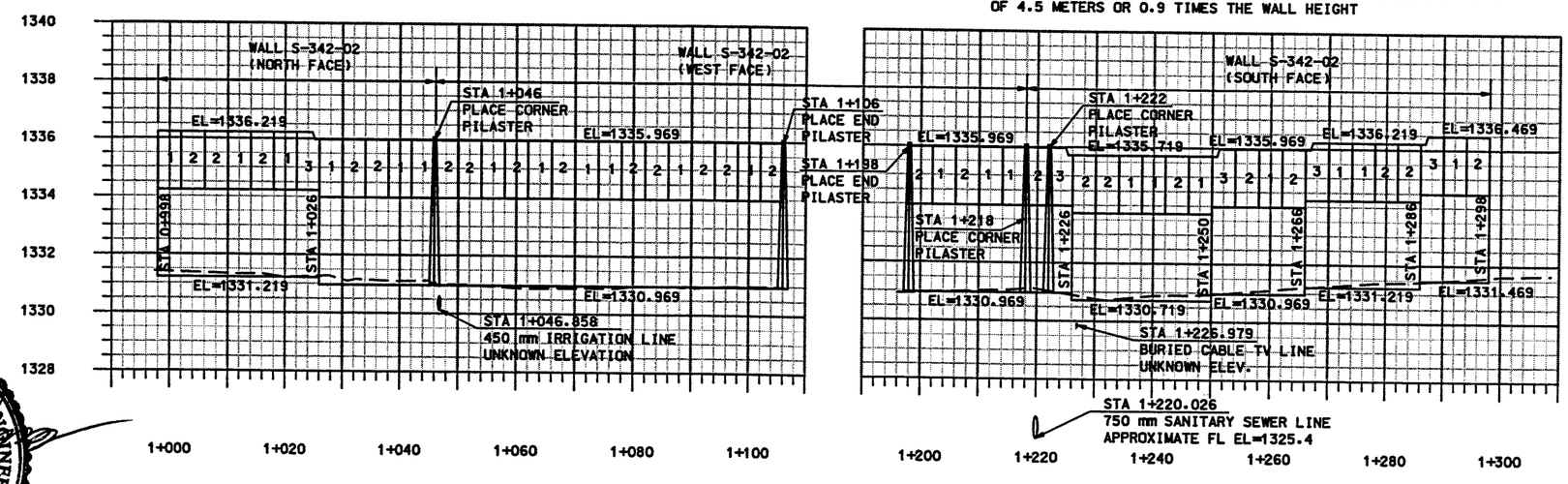
NOTES

1 WALL IS TO BE 5 m IN HEIGHT. SEE CS-38 FOR PANEL HEIGHT COMBINATIONS

2 CAP PANELS ARE TO BE USED ON TOP OF WALL IN RANDOM PATTERN AS SHOWN. SEE CS-5 AND CS-9 AS APPLICABLE.
1 = PROFILE I CAP PANEL
2 = PROFILE II CAP PANEL
3 = 250 mm STEP DOWN PANEL

3 REPLACE LANDSCAPING TO MATCH EXISTING

4 ALL POSTS SUPPORTING PILASTERS MUST HAVE AN EMBEDMENT DEPTH OF 4.5 METERS OR 0.9 TIMES THE WALL HEIGHT



PROFILE OF POST & PANEL SOUND WALL S-342-02

REGISTERED PROFESSIONAL ENGINEER
179901
SCOTT J. LUCAS
12/7/98
STATE OF UTAH

WASATCH CONSTRUCTORS
JAN 06 1999
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	12/18/98	ORIGINAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
H.W. LOCHNER, INC.
SVERDRUP/DE LEUW

APPROVAL RECOMM. 12/98 DATE — SCOTT LUCAS PROJECT DESIGN ENGINEER
APPROVED 12/98 DATE — BRUCE VANA PROJECT MANAGER

DESIGN BJL 11/98 — CHECK SJL 12/98
DRAWN BJL 11/98 — CHECK SJL 12/98
QUANT. — CHECK

I-15 CORRIDOR RECONSTRUCTION
SOUND WALL PLAN/PROFILE
SECTION 1.1
PROJECT NUMBER #SP-15-7(135)296

SALT LAKE COUNTY
DWG.NO. 1.1S-342-2.1
SHT. 1 OF 2
REF.

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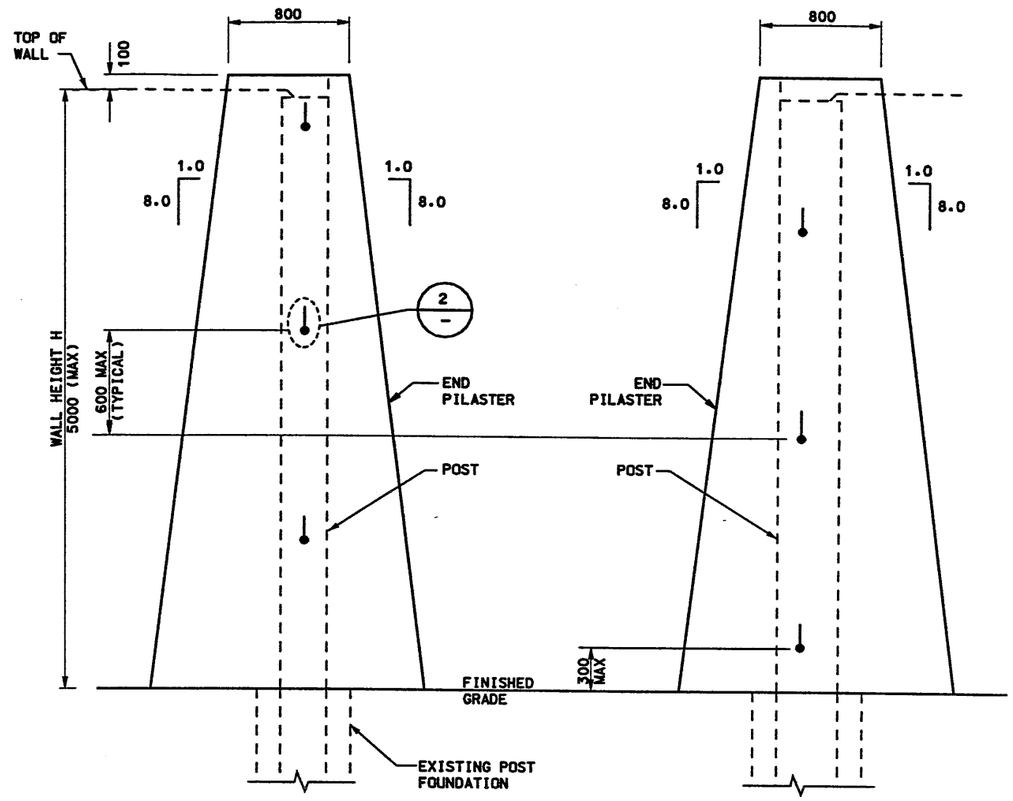
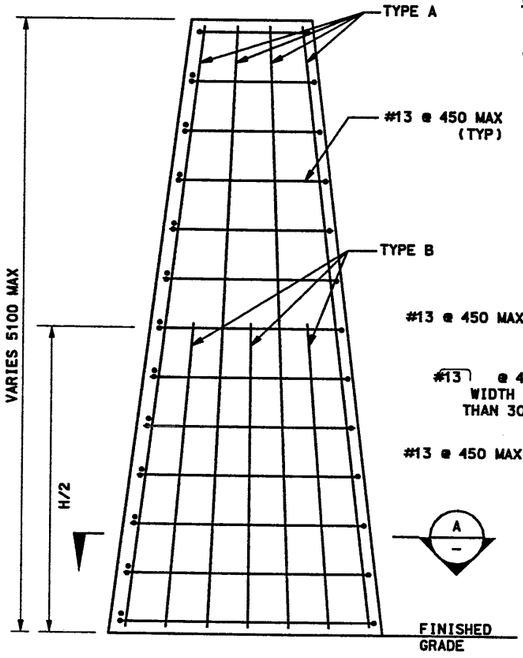


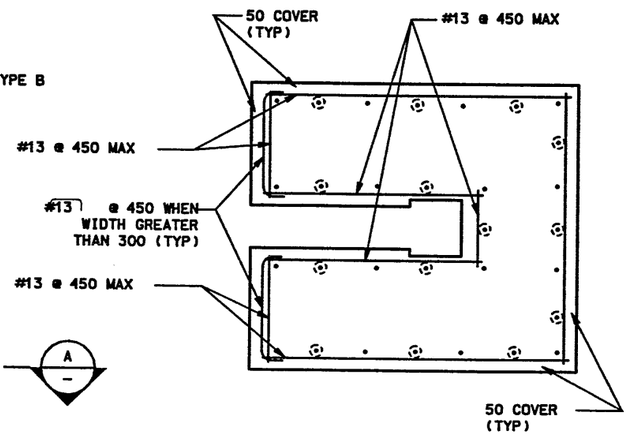
ELEVATION



ELEVATION

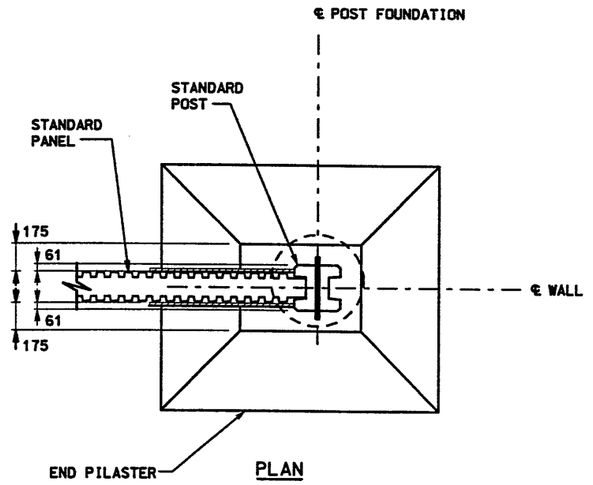
LEGEND:

- TYPE A: #13 FULL HEIGHT REINFORCEMENT @ 300 MAX
- TYPE B: #13 HALF HEIGHT REINFORCEMENT @ 300 MAX



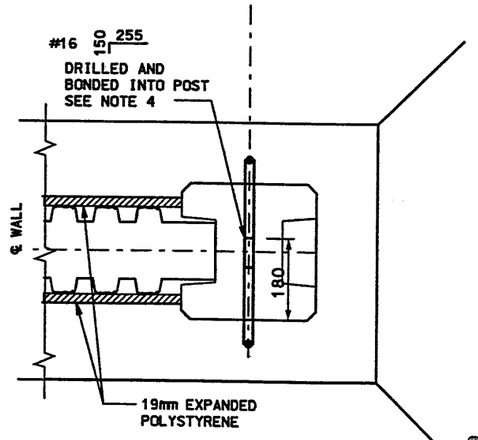
SECTION A
NTS

TYPICAL END PILASTER REINFORCEMENT
(FOR EACH LEG)



PLAN

RETAINING/SOUNDWALL END PILASTER
FOR TYPE I POST



DETAIL 2

TYPICAL ANCHOR DETAIL
NTS

REGISTERED PROFESSIONAL ENGINEER
179901
SCOTT J. LUCAS
12/17/98
STATE OF UTAH

WASATCH CONSTRUCTORS
JAN 06 1999
RELEASED FOR CONSTRUCTION

NOTES:

1) ALL CAST-IN-PLACE CONCRETE SHALL BE CLASS AA (AE) EXCEPT WHERE OTHERWISE NOTED. f'c=28MPa. CHAMFER ALL EXPOSED CONCRETE CORNERS 20mm OR 13mm RADIUS. PROVIDE 50mm COVER TO REINFORCING STEEL EXCEPT WHERE SPECIFIED OTHERWISE.

2) ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

3) FOR POST FOUNDATION BACKFILL. SEE UDOT STD. 546-1 & 546-2.

4) FOR ADDITIONAL INFORMATION ON DRILLING AND BONDING. REFER TO STANDARD SPECIFICATION (550).

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	12/18/98	INITIAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER INC.
SVERDRUP/DE LEUW

APPROVAL RECOMM. 12/98 DATE	SCOTT LUCAS PROJECT DESIGN ENGINEER	DESIGN JHG 12/98	CHECK JHG 12/98
APPROVED 12/98 DATE	BRUCE VANA PROJECT MANAGER	DRAWN JHG 12/98	CHECK JHG 12/98
		QUANT.	CHECK

I-15 CORRIDOR RECONSTRUCTION
END PILASTER
SECTION 1.1
PROJECT NUMBER #SP-15-7(135)296
SALT LAKE COUNTY
DWG. NO. 1.1S-342-2.2
SHT. 2 OF 2
REF.

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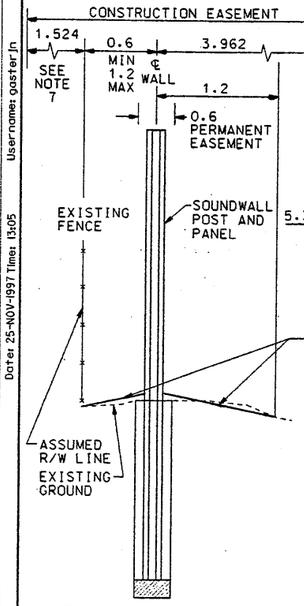
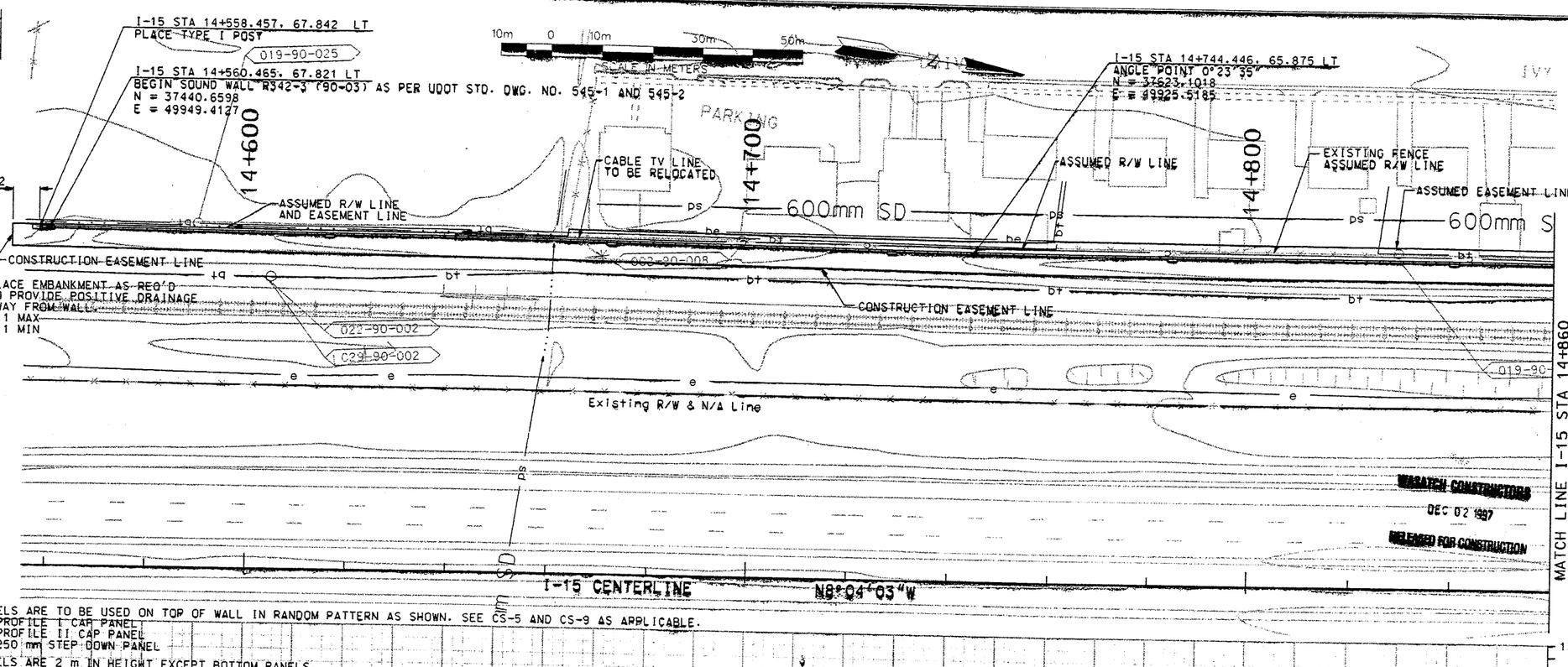


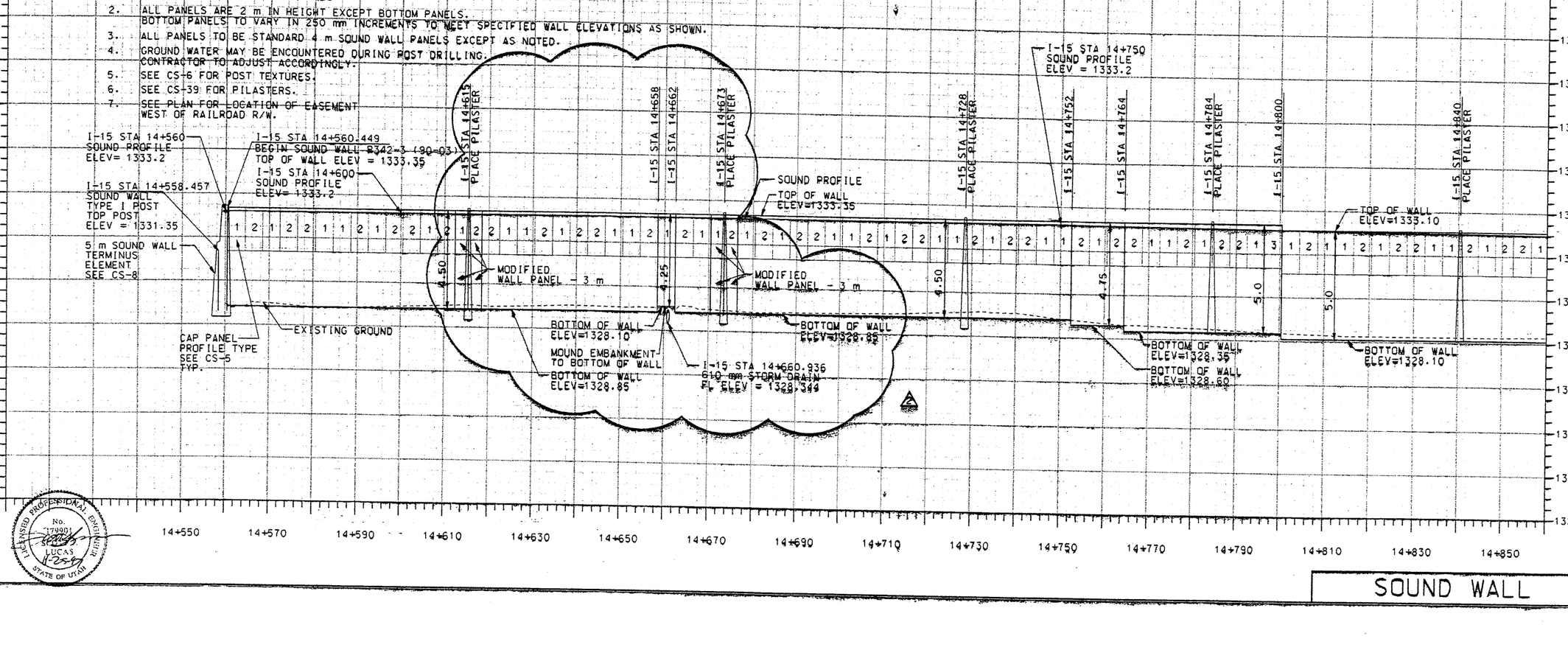
TYPICAL SECTION
I-15 STA 14+560.465 TO
I-15 STA 15+200.427



WASATCH CONSTRUCTORS
DEC 02 1997
RELEASED FOR CONSTRUCTION

NOTES:

1. CAP PANELS ARE TO BE USED ON TOP OF WALL IN RANDOM PATTERN AS SHOWN. SEE CS-5 AND CS-9 AS APPLICABLE.
   1 = PROFILE I CAP PANEL
   2 = PROFILE II CAP PANEL
   3 = 250 mm STEP DOWN PANEL
2. ALL PANELS ARE 2 m IN HEIGHT EXCEPT BOTTOM PANELS. BOTTOM PANELS TO VARY IN 250 mm INCREMENTS TO MEET SPECIFIED WALL ELEVATIONS AS SHOWN.
3. ALL PANELS TO BE STANDARD 4 m SOUND WALL PANELS EXCEPT AS NOTED.
4. GROUND WATER MAY BE ENCOUNTERED DURING POST DRILLING. CONTRACTOR TO ADJUST ACCORDINGLY.
5. SEE CS-6 FOR POST TEXTURES.
6. SEE CS-39 FOR PILASTERS.
7. SEE PLAN FOR LOCATION OF EASEMENT WEST OF RAILROAD R/W.



LICENSED PROFESSIONAL ENGINEER
No. 179901
SCOTT J. LUCAS
STATE OF UTAH

SOUND WALL

NO.	DATE	DESCRIPTION
1	11/19/97	ORIGINAL RELEASE
2	11/25/97	REVISED WALL SECTION

APPROVED FOR CONSTRUCTION

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER, INC.
SVERDRUP/DE LEUW

APPROVAL RECOMM.	10/97	SCOTT J. LUCAS
	DATE	PROJECT DESIGN ENGINEER
APPROVED	10/97	BRUCE D. VANA
	DATE	PROJECT MANAGER

DESIGN	SJL	10/97
CHECK	BDV	10/97
DRAWN	BJL	10/97
CHECK	BDV	10/97
QUANT.	N/A	
CHECK		

I-15 CORRIDOR RECONSTRUCTION
SOUND WALL PLAN/PROFILE
SECTION 1.1
PROJECT NUMBER *SP-15-7(135)296
1112403
SALT LAKE COUNTY
DWG. NO. 1.1R-342-3.1
SHT. 1 OF 2
REF.

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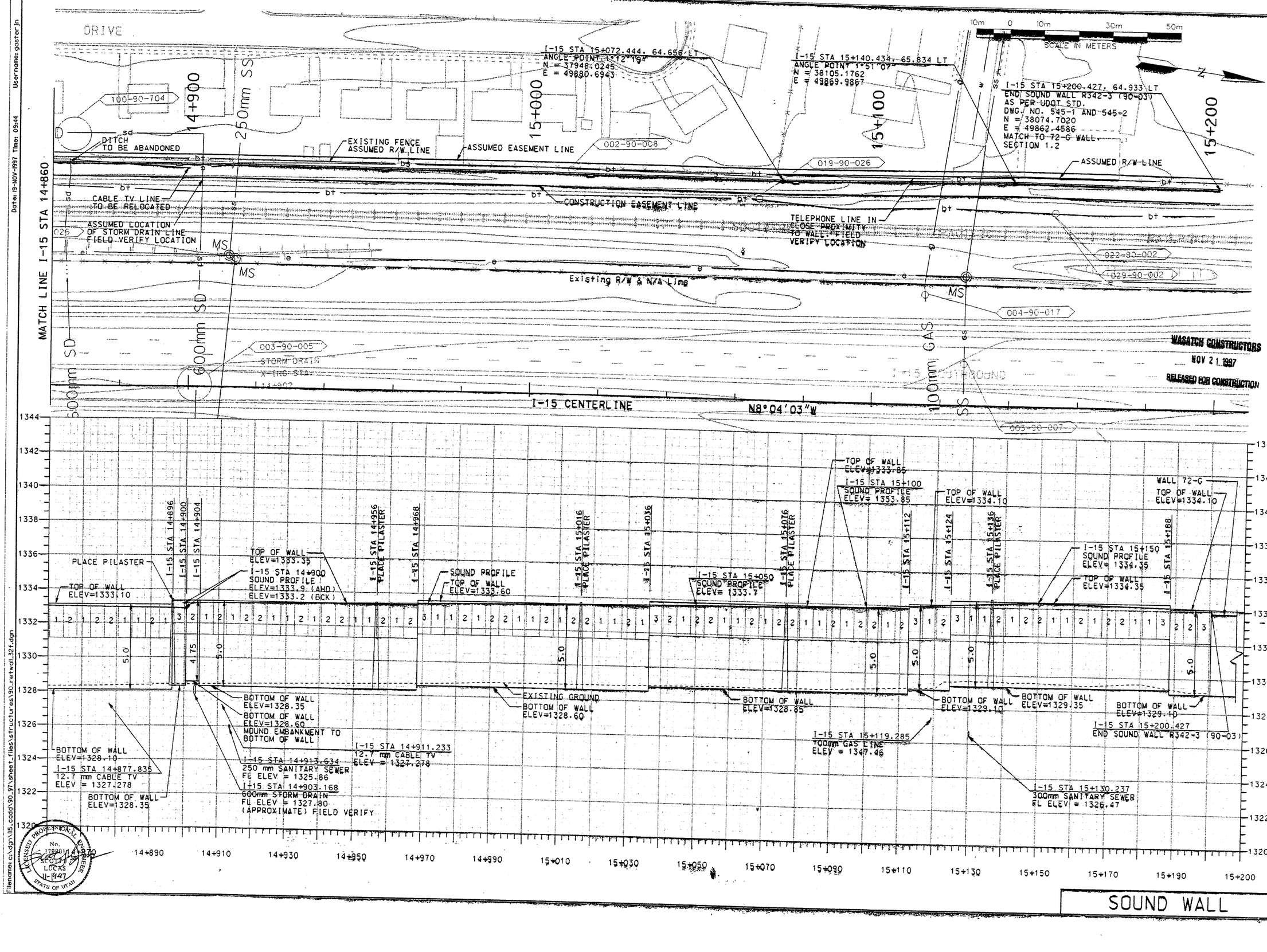

NO.	DATE	DESCRIPTION
1	11/19/97	ORIGINAL RELEASE

APPROVED FOR CONSTRUCTION

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER, INC.
SVERDRUP/DE LEUW

	DESIGN	CHECK	DATE
SJL	SJL	BDV	10/97
BJL	DRAWN	BDV	10/97
N/A	QUANT.	N/A	CHECK

APPROVAL RECOMM. 10/97 SCOTT J. LUCAS — PROJECT DESIGN ENGINEER — DATE
APPROVED 10/97 BRUCE D. VANA — PROJECT MANAGER — DATE

I-15 CORRIDOR RECONSTRUCTION
SOUND WALL PLAN/PROFILE
SECTION 1.1
PROJECT NUMBER *SP-15-7(135)296
1112403

SALT LAKE COUNTY
DWG.NO. 1.1R-342-3.2
SHT. 2 OF 2
REF.

SOUND WALL

LICENSED PROFESSIONAL ENGINEER
No. 178901
SCOTT J. LUCAS
11-1997
STATE OF UTAH

Active File Levels:[1-64]
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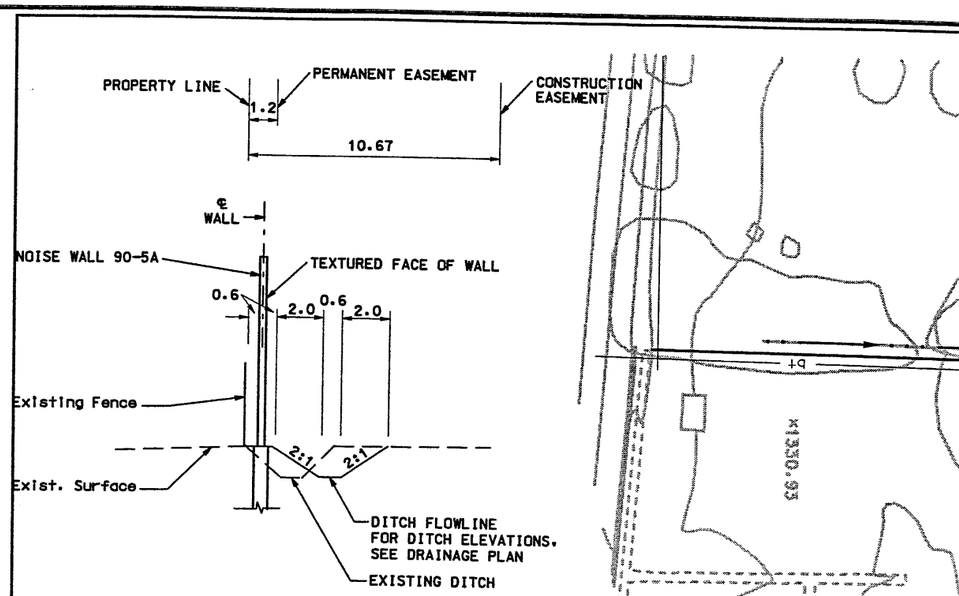
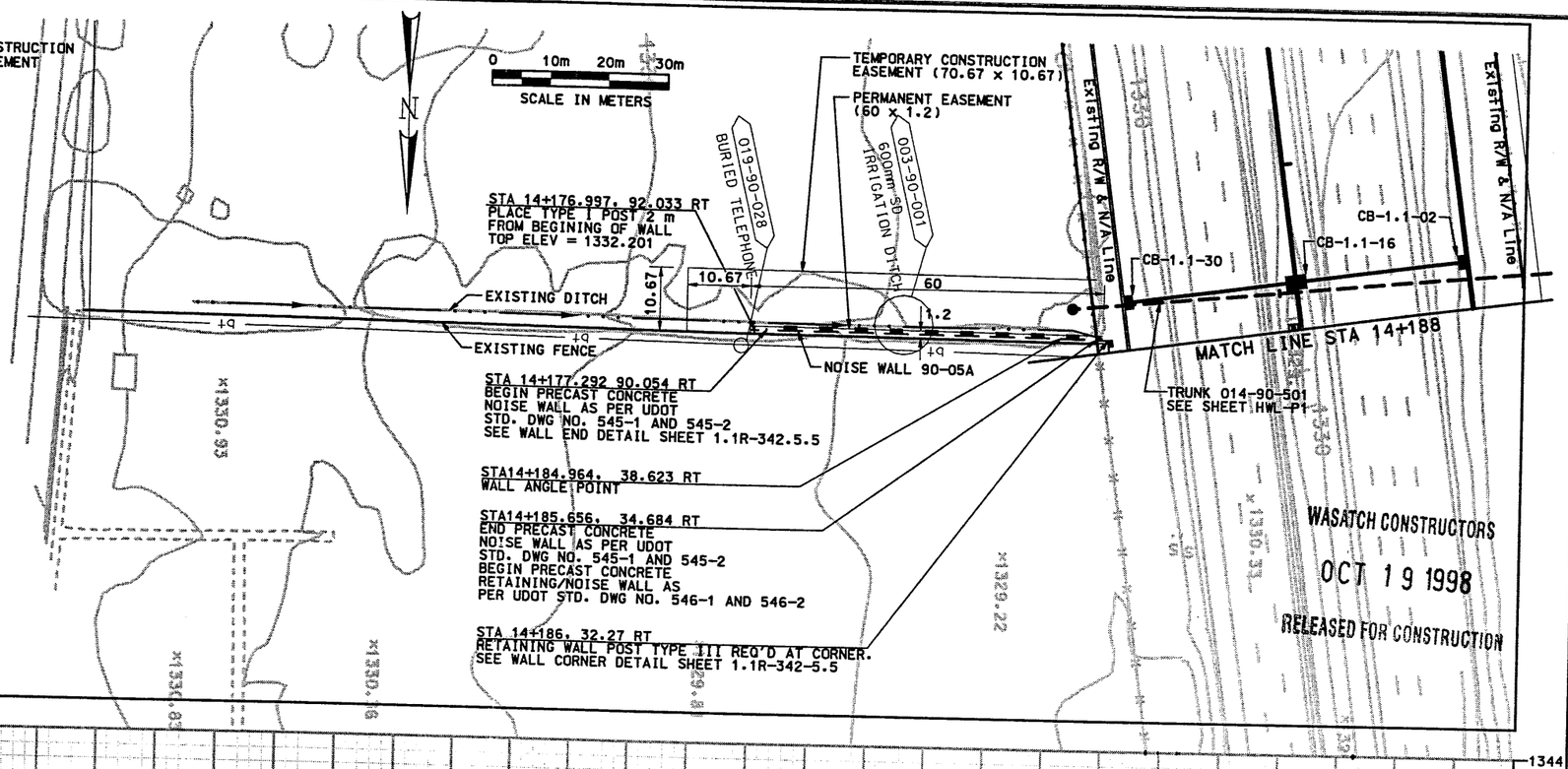
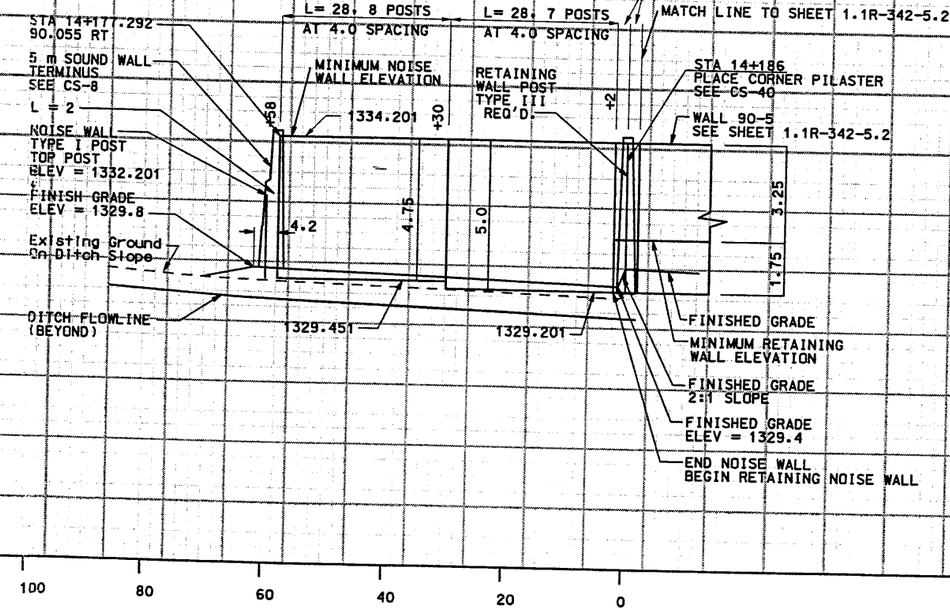


NOISE WALL 90-5A DETAIL



NOTE:

1. CONTRACTOR MAY USE VARIOUS PANEL HEIGHT COMBINATIONS PROVIDED THE MINIMUM ELEVATIONS OF NOISE AND RETAINING WALL ARE MET.
2. GROUND WATER MAY BE ENCOUNTERED DURING POST DRILLING. CONTRACTOR TO ADJUST ACCORDINGLY.
3. SEE SHEETS CS-5 AND CS-6 FOR AESTHETIC DETAILS.



LICENSED PROFESSIONAL ENGINEER
No. 178001
SCOTT J. LUCAS
10/9/98
STATE OF UTAH

WASATCH CONSTRUCTORS
OCT 19 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
4	10/12/98	ADDED AESTHETICS, DRAINAGE, EASMENTS AND UPDATED UTILITIES - ENTIRE SHEET REVISED.
		100% FULL ROADWAY

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER
SVERDRUP/DE LEUW

DESIGN	SJL	6/97	
DRAWN	BJL	6/97	
QUANT.		N/A	
CHECK			
CHECK	BDV	6/97	
CHECK	BDV	6/97	

APPROVAL RECOMM. 6/97 SCOTT J. LUCAS — PROJECT DESIGN ENGINEER — DATE
APPROVED 6/97 BRUCE D. VANA — PROJECT MANAGER — DATE

I-15 CORRIDOR RECONSTRUCTION
RETAINING/SOUND WALL PLAN/PROFILE
SECTION 1.1
PROJECT NUMBER *SP-15-7(135)296
1180100
SALT LAKE COUNTY
DWG. NO. 1.1R-342-5.1
SHT. 1 OF 5
REF.

Filename: d:\dgn\I15_coda\90_97\sheet_files\structures\90_retwall_55f.dgn

Date: 07-OCT-1998 Time: 16:31 Username: figueroa

MATCH LINE STA 14+188

003-90-001
600mm SD
IRRIGATION DITCH

019-90-028
BURIED TELEPHONE

MH 1.1-01
MH 1.1-02
MH 1.1-03

CB 1.1-03
CB 1.1-04
CB 1.1-05
CB 1.1-06
CB 1.1-07
CB 1.1-17
CB 1.1-18
CB 1.1-19
CB 1.1-20
CB 1.1-21
CB 1.1-31
CB 1.1-32
CB 1.1-33
CB 1.1-34
CB 1.1-35

100-90-8.00
600mm SD

003-90-002
1200mm SD

14+200
14+300
14+400
14+500

I-15 CENTERLINE
N8°04'03"W
I-15 SOUTHBOUND
I-15 NORTHBOUND

STA 14+227
STA 14+314
32.71

42 m TYPE A PLANTER
SEE CS-142

STA. 14+235.891, 32.71 RT
CONCRETE CAP REQ'D
SEE CONCRETE CAP UNDER
RETAINING WALL DETAIL
SHEET 1.1-4-DD1

I-15 STA 14+412, 32.71m RT
END RETAINING/NOISE WALL (90-5)
AS PER UDOT STD. DWG. NO. 546-1 AND 546-2
BEGIN NOISE WALL (90-5)
AS PER UDOT STD. DWG. NO. 545-1 AND 545-2

SEE DRAINAGE
SHEET 1.1-DR16

STA 14+511
42 m TYPE B
PLANTER
SEE CS-142

MATCH LINE STA 14+536

019-90-027
OVERHEAD TELEPHONE

002-90-007
CABLE TV

020-90-041
OVERHEAD POWER

OVERHEAD POWER
CABLE TV, AND TELEPHONE
TO BE RELOCATED FOR
VERTICAL CLEARANCE TO WALL

900mm SD

50mm GAS

0 10m 20m 30m
SCALE IN METERS

LICENSED PROFESSIONAL ENGINEER
No. 179901
SCOTT J. LUCAS
12/9/97
STATE OF UTAH

L = 4, 1 POSTS AT 4.0 SPACING
(USE POST HEIGHT FOR H=5.0)

L = 4 (TYP.), 1 POST EACH AT 4.0 SPACING

L=48, 12 POSTS AT 4.0 SPACING

L=128, 13 POSTS AT 4.0 SPACING

L = 44
12 POSTS
AT 4.0 SPACING

L = 28
7 POSTS
AT 4.0 SPACING

L=44, 11 POSTS
AT 4.0 SPACING

L = 84, 21 POSTS
AT 4.0 SPACING

STA. 14+300
REQ'D. NOISE WALL
TOP EL=1333.5

STA. 14+440
REQ'D. NOISE WALL
TOP EL=1333.2 (CAHD)
TOP EL=1334.1 (BCK)

STA 14+440
END 4m NOISE WALL REQ'D
BEGIN 3m NOISE WALL
REQ'D

STA 14+496
PLACE PILASTER
SEE CS-39

1334.201
1333.868
1333.867
1333.533
1333.200
1333.200
1329.201
1329.451
1328.868
1328.951
1329.201
1329.117
1329.283
1329.200
1329.450

+236
+240
+368
+440
+444
+448
+492

3.25
3.5
1.75
3.25
1.75
3.50
5.0
1.75
4.75
4.25
4.00
3.75

ULTIMATE GRADE AT
RETAINING WALL

STA 14+256
PLACE PILASTER
SEE CS-39

STA 14+320
PLACE PILASTER
SEE CS-39

STA 14+380
PLACE PILASTER
SEE CS-39

STA 14+436
PLACE
PILASTER
SEE CS-39

42 m TYPE A PLANTER
SEE CS-142

42 m TYPE B
PLANTER
SEE CS-142

STA. 14+238.891
600mm STORM DRAIN
FL EL 1328.57

MINIMUM RETAINING
PANEL ELEVATION

EXISTING PROFILE AT
RETAINING/NOISE WALL

EXISTING PROFILE
AT FENCE

MINIMUM NOISE
WALL ELEVATION

I-15 STA 14+412
END RETAINING/NOISE WALL (90-5)
BEGIN NOISE WALL (90-5)

STA. 14+437.420
1200 mm STORM DRAIN
FL EL=1327.1

WASATCH CONSTRUCTORS
OCT 19 1998
RELEASED FOR CONSTRUCTION

NOTE:

1. CONTRACTOR MAY USE VARIOUS PANEL HEIGHT COMBINATIONS PROVIDED THE MINIMUM ELEVATIONS OF NOISE AND RETAINING WALL ARE MET.
2. GROUND WATER MAY BE ENCOUNTERED DURING POST DRILLING. CONTRACTOR TO ADJUST ACCORDINGLY.

14+200 14+220 14+240 14+260 14+280 14+300 14+320 14+340 14+360 14+380 14+400 14+420 14+440 14+460 14+480 14+500 14+520

1338 1336 1334 1332 1330 1328 1326 1324 1322 1320

RETAINING WALL

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
2	10/12/98	ADDED AESTHETICS, DRAINAGE AND PLANTERS - ENTIRE SHEET REVISED, 100% FULL ROADWAY

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER, INC.
SVERDRUP/DE LEUW

DESIGN	SJL 6/97	CHECK	BDV 6/97
DRAWN	BJL 6/97	CHECK	BDV 6/97
QUANT.	N/A	CHECK	N/A

SCOTT J. LUCAS — PROJECT DESIGN ENGINEER — APPROVAL RECOMM. 6/97 DATE
BRUCE D. VANA — PROJECT MANAGER — APPROVED 6/97 DATE

I-15 CORRIDOR RECONSTRUCTION
RETAINING/SOUND WALL PLAN/PROFILE
SECTION 1.1
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.1R-342-5.2
SHT. 2 OF 5
REF.

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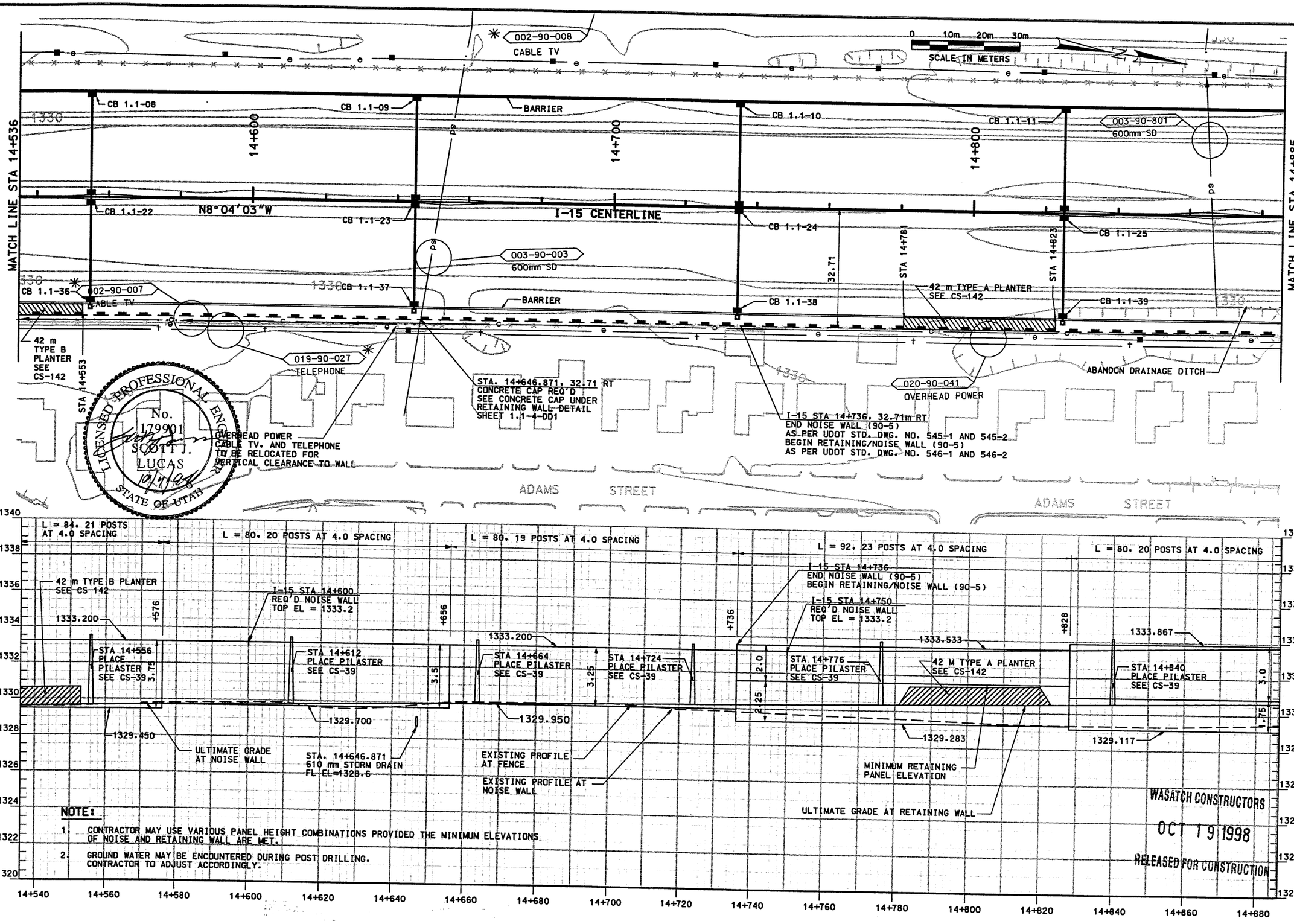

NOTE:

1. CONTRACTOR MAY USE VARIDUS PANEL HEIGHT COMBINATIONS PROVIDED THE MINIMUM ELEVATIONS OF NOISE AND RETAINING WALL ARE MET.
2. GROUND WATER MAY BE ENCOUNTERED DURING POST DRILLING. CONTRACTOR TO ADJUST ACCORDINGLY.

LICENSED PROFESSIONAL ENGINEER
No. 179901
SCOTT J. LUCAS
10/7/98
STATE OF UTAH

WASATCH CONSTRUCTORS
OCT 19 1998
RELEASED FOR CONSTRUCTION

RETAINING WALL

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
2	10/12/98	ADDED AESTHETICS, DRAINAGE, PLANTERS AND TOPOGRAPHY, SHEET NUMBER CHANGED FROM 1.1-WA905.3 - ENTIRE SHEET REVISED.
		100% FULL ROADWAY

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER, INC.
SVERDRUP/DE LEUW

DESIGN	SJL	6/97	CHECK BDV 6/97
DRAWN	BJL	6/97	CHECK BDV 6/97
QUANT.			CHECK N/A

SCOTT J. LUCAS — PROJECT DESIGN ENGINEER
BRUCE D. VANA — PROJECT MANAGER

APPROVAL RECOMM. 6/97 DATE
APPROVED 6/97 DATE

I-15 CORRIDOR RECONSTRUCTION
RETAINING/SOUND WALL PLAN/PROFILE
SECTION 1.1
PROJECT NUMBER *SP-15-7(135)296
SALT LAKE COUNTY
DWG. NO. 1.1R-342-5.3
SHT. 3 OF 5
REF.

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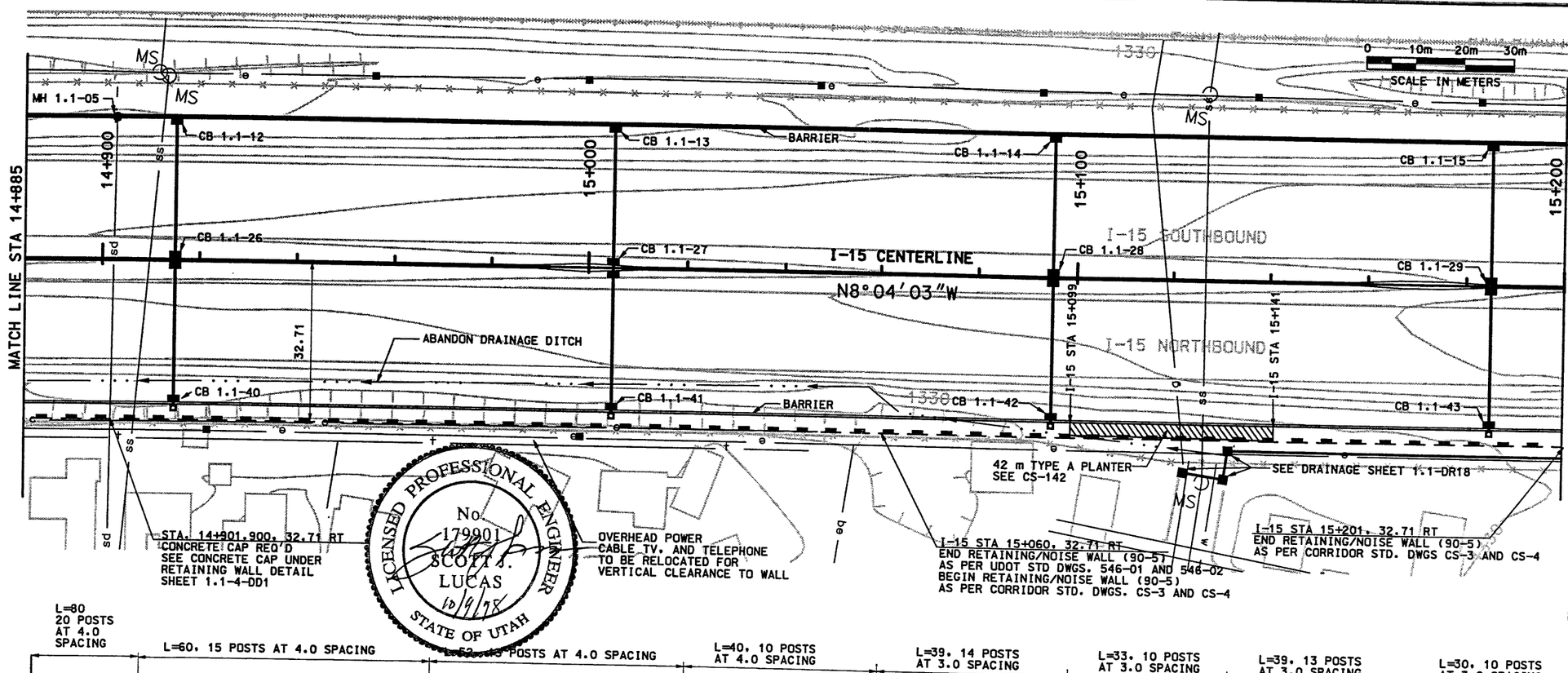
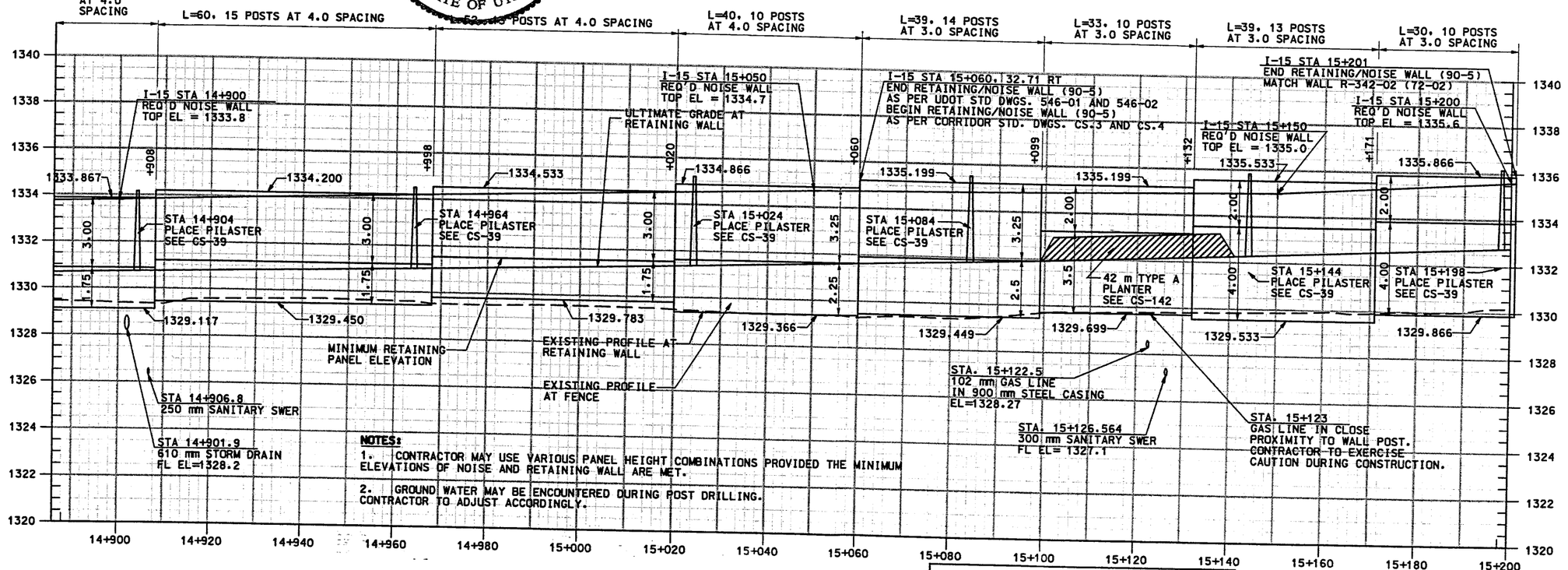


LICENSED PROFESSIONAL ENGINEER
No. 179901
SCOTT J. LUCAS
10/9/98
STATE OF UTAH

WASATCH CONSTRUCTORS

OCT 19 1998

RELEASED FOR CONSTRUCTION



NOTES:

1. CONTRACTOR MAY USE VARIOUS PANEL HEIGHT COMBINATIONS PROVIDED THE MINIMUM ELEVATIONS OF NOISE AND RETAINING WALL ARE MET.
2. GROUND WATER MAY BE ENCOUNTERED DURING POST DRILLING. CONTRACTOR TO ADJUST ACCORDINGLY.

WALL DEFORMATION TABLE	
WALL HEIGHT	ESTAMATED DEFLECTION
2.25 TO 2.60	0.013 TO 0.025

RETAINING WALL

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
4	10/12/98	ADDED AESTHETICS, DRAINAGE AND PLANTERS.
		SHEET NUMBER CHANGED FROM 1.1WA905.4 -
		ENTIRE SHEET REVISED, 100% FULL ROADWAY

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER, INC.
SVERDRUP/DE LEUW

DESIGN	SJL	6/97	CHECK
DRAWN	BJL	6/97	CHECK
QUANT.	N/A		CHECK

SCOTT J. LUCAS — PROJECT DESIGN ENGINEER — APPROVAL RECOM. 6/97 DATE
BRUCE D. VANA — PROJECT MANAGER — APPROVED 6/97 DATE

I-15 CORRIDOR RECONSTRUCTION
RETAINING/SOUND WALL PLAN/PROFILE
SECTION 1.1
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
DWG.NO. 1.1R-342-5.4
SHT. 4 OF 5
REF.

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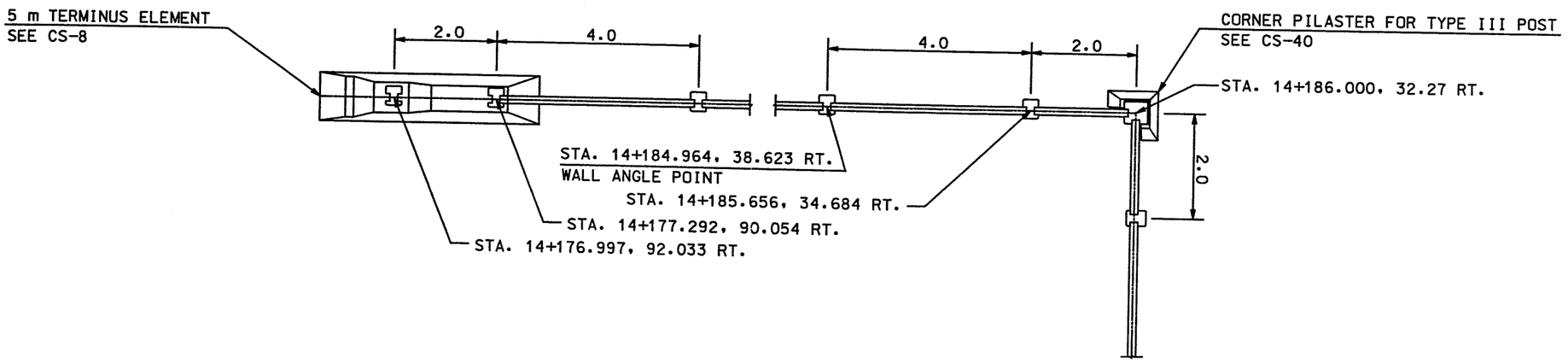


WALL TERMINUS DETAIL

STA. 14+177.292, 90.055 RT.

WALL CORNER DETAIL

STA. 14+186.000, 32.27 RT.

LICENSED PROFESSIONAL ENGINEER
No. 17990
SCOTT J. LUCAS
10/14/98
STATE OF UTAH

WASATCH CONSTRUCTORS

OCT 19 1998

RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	10/02/97	ORIGINAL RELEASE
2	10/14/98	ADDED CORNER PILASTER AND TERMINUS ELEMENT. 100% FULL ROADWAY/ENTIRE SHEET REVISED

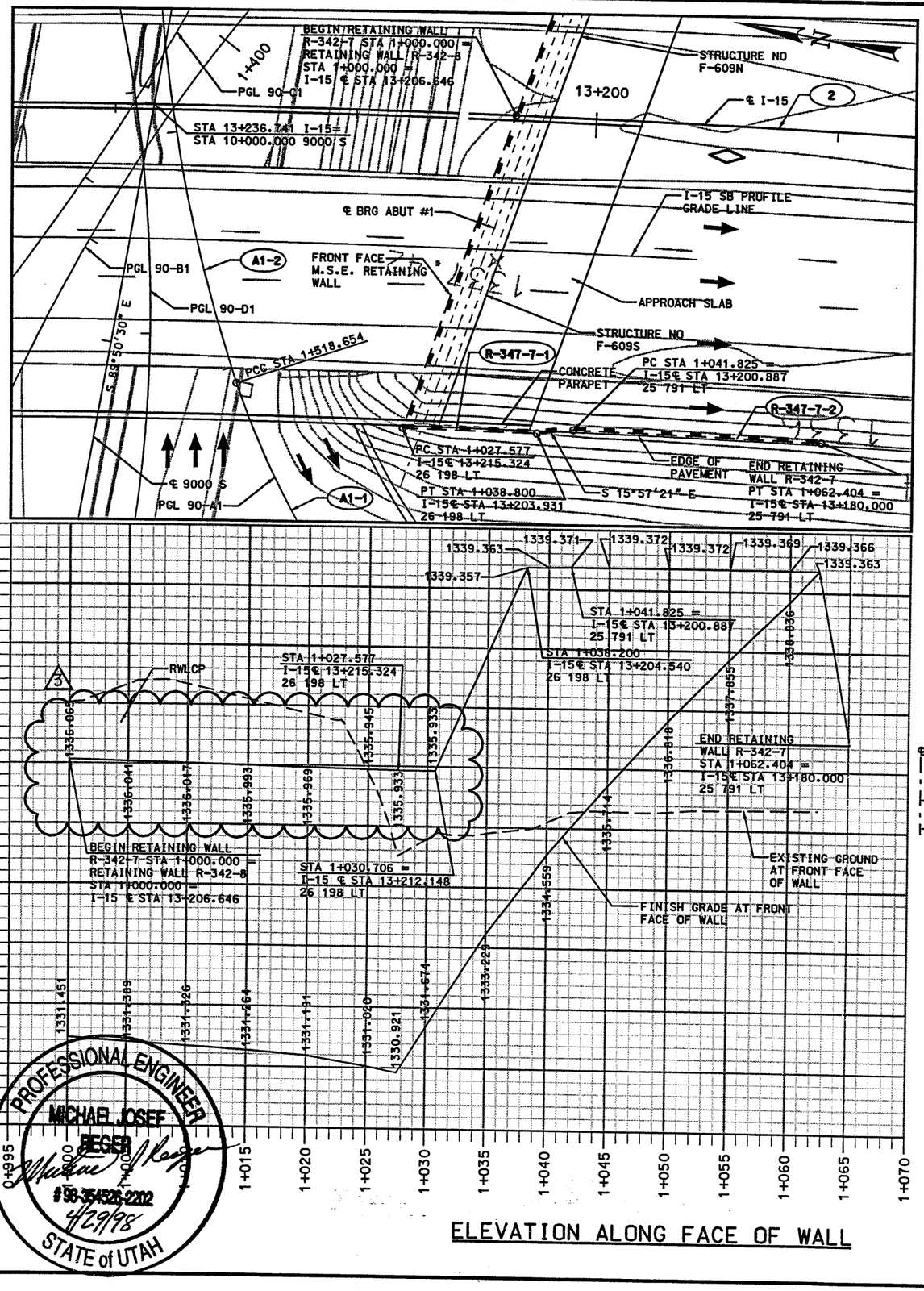
UTAH DEPARTMENT OF TRANSPORTATION
H.W. LOCHNER, INC.
SVERDRUP/DE LEUW

DESIGN SJL 9/97 | CHECK BDV 9/97
DRAWN SJL 9/97 | CHECK BDV 9/97
QUANT. ____ | CHECK ____

APPROVAL RECOMM. 9/97 DATE — SCOTT LUCAS, PROJECT DESIGN ENGINEER
APPROVED 9/97 DATE — BRUCE VANA, SECTION MANAGER

I-15 CORRIDOR RECONSTRUCTION
WALL DETAILS
SEGMENT 1.1
PROJECT NUMBER *SP-15-7(135)296
1112100

SALT LAKE COUNTY
DWG. NO. 1.1R-342-5.5
SHT. 5 OF 5



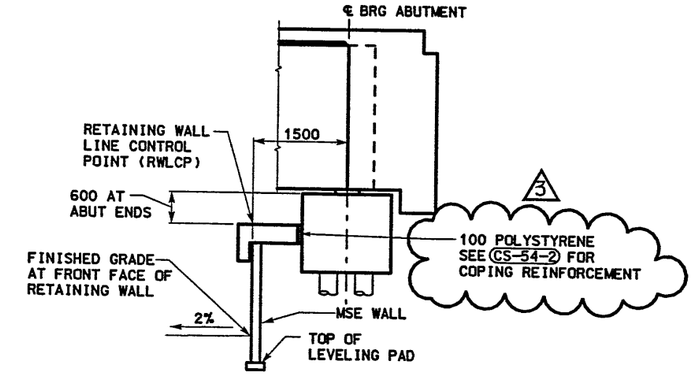
ELEVATION ALONG FACE OF WALL

0 4m 8m 12m
SCALE IN METERS

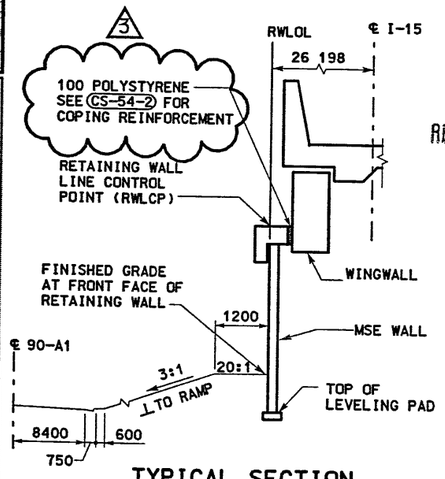
I-15
2
Δ = 21°16'32"
R = 1745.000
L = 647.972
T = 327.761
PI STA 13+254.636
PC STA 12+926.875
PT STA 13+574.848

R-347-7-1
Δ = 0°22'27" RT
R = 1718.802
L = 11.223
T = 5.611
PC STA 1+027.577
PT STA 1+038.800

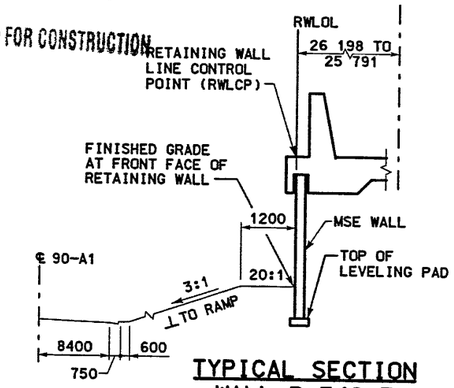
R-347-7-2
Δ = 0°41'09" RT
R = 1719.209
L = 20.579
T = 10.290
PC STA 1+041.825
PT STA 1+062.404



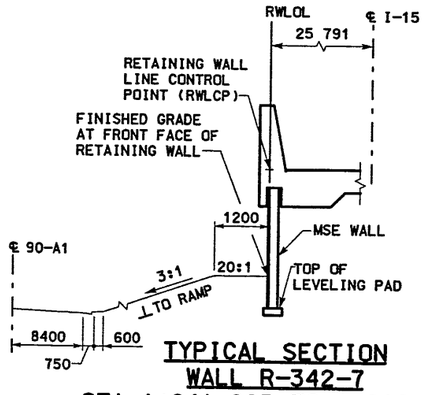
TYPICAL SECTION WALL R-342-7 STA 1+000.000 TO 1+027.577



TYPICAL SECTION WALL R-342-7 STA 1+027.577 TO 1+038.800



TYPICAL SECTION WALL R-342-7 STA 1+038.800 TO 1+041.825



TYPICAL SECTION WALL R-342-7 STA 1+041.825 TO 1+062.404

NOTES:

1. ELEVATIONS ARE IN METERS DIMENSIONS ARE IN MILLIMETERS
2. SEE BRIDGE PLANS FOR ABUTMENT DETAILS
3. SEE CS-28 FOR COPING AND MOMENT SLAB DETAILS
4. LOCATE RETRIEVABLE SAMPLE AT WALL STA. 1+015.000

PROFESSIONAL ENGINEER
MICHAEL JOSEF BEGER
#90-354528-2202
4/29/98
STATE of UTAH

WASATCH CONSTRUCTORS
MAY 04 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	2/12/98	INTIAL RELEASE
2	2/25/98	COPING / ABUT DETAIL
3	4/28/98	ELEV., COPING / CS NUMBER

UTAH DEPARTMENT OF TRANSPORTATION
SVERDRUP/DE LEUW

DESIGN JHM 11/97	CHECK SL 11/97	TRACKING NO.	1120200
DRAWN EDC 11/97	CHECK JHM 12/97		
QUANT.	CHECK		

APPROVAL RECOMM. 1/98 DATE — JOHN MILLER, PROJECT DESIGN ENGINEER
APPROVED 1/98 DATE — BRUCE VANA, PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
SITUATION & LAYOUT RET WALL R-342-7
SECTION 1:1
PROJECT NUMBER *SP-15-7(135)296
SALT LAKE COUNTY
DWG. NO. 1.1R-342-7.1
SHT. 1 OF 9
REF. 90_STR_R-342-7LY1

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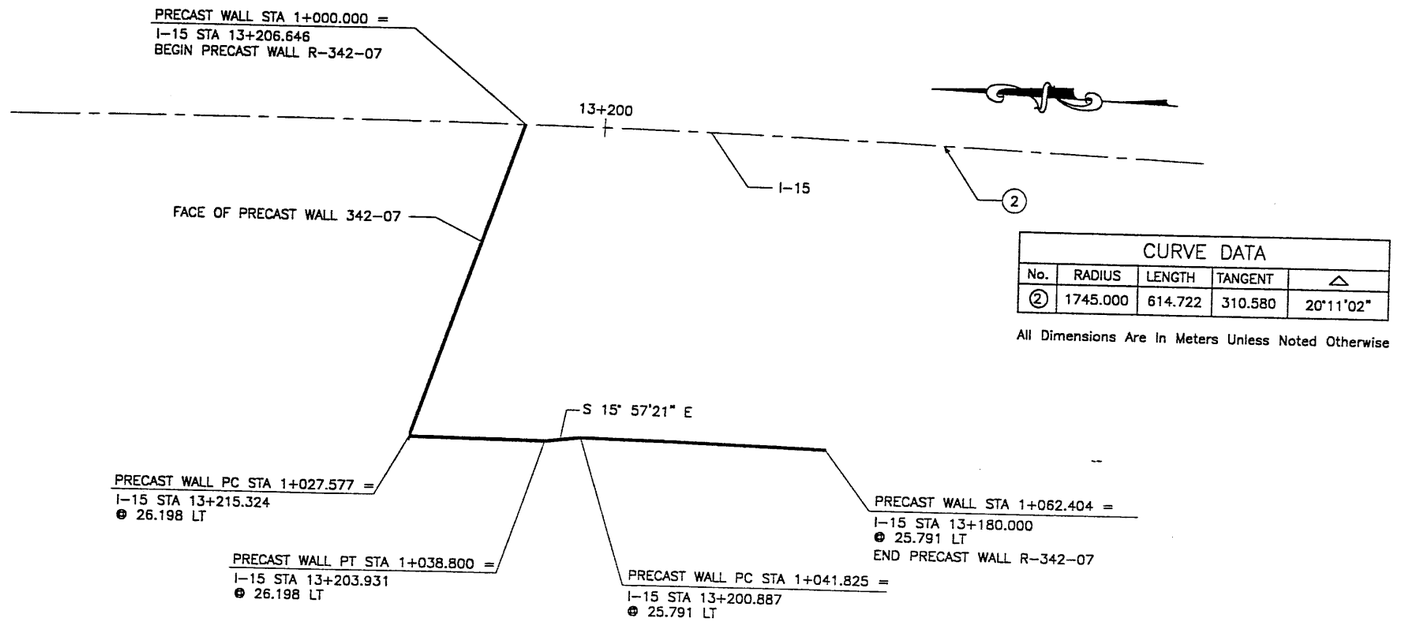
FINAL PLOT 02-17-98



PLAN VIEW WALL "R-342-7"

SCALE: 1=200 (FULL SIZE)
SCALE: 1=400 (HALF SIZE)

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	△
②	1745.000	614.722	310.580	20°11'02"

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 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: 4W20-6 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 6" CENTERS.
   EXAMPLE: 5W15-12 MESH HAS FIVE (4) W11 LONGITUDINAL WIRES WITH W15 CROSSBARS AT 12" CENTERS.
   EXAMPLE: 5W20-24 MESH HAS FIVE (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 24" CENTERS.
   EXAMPLE: 4W15-6 MESH HAS FOUR (4) W11 LONGITUDINAL WIRES WITH W15 CROSSBARS AT 6" 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 VSL STANDARD SHEET STD-7 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. = 0.12g (TYP)
SEISMIC ACCELERATION COFF. = 0.32g (AT BRIDGE ABUTMENTS)

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

RETAINED EARTH INDEX	
RE-1	PLAN PRECAST FACE WALL R-342-07, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTION
RE-3	TYPICAL CROSS SECTIONS
RE-4	TYPICAL CROSS SECTIONS
RE-5	ELEVATION PRECAST WALL "R-342-07"
RE-6	SPECIAL PANEL DETAILS
RE-7	SPECIAL PANEL DETAILS
RE-8	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.

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
2/19/98
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY	CHK
1	02-17-98	RELEASE FOR CONSTRUCTION		

WASATCH CONSTRUCTORS
FEB 24 1998
RELEASED FOR CONSTRUCTION

DES. JL 01-15-98
DRN. LOP 01-15-98
CHK. JL 01-15-98
RETAINED EARTH™

NO. | DATE | REVISION | BY | CHK

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
PLAN VIEW PRECAST WALL "R-342-07"
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO.
1.1R-342-7.2
JOB NO:
239-0007
SHT. NO. RE-1

XREFERENCE (X-UTAH.DWG)
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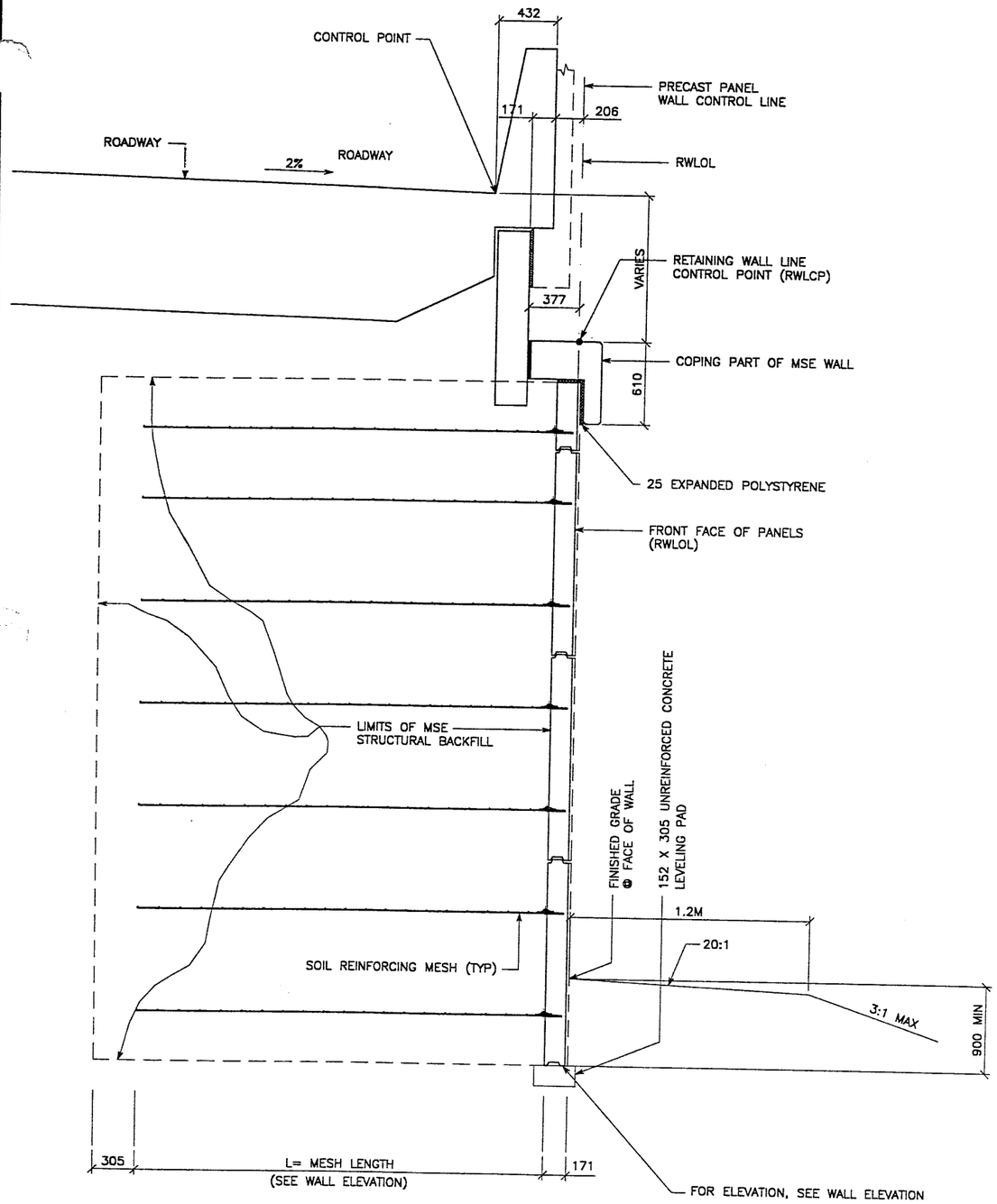
FINAL PLOT 02-17-98

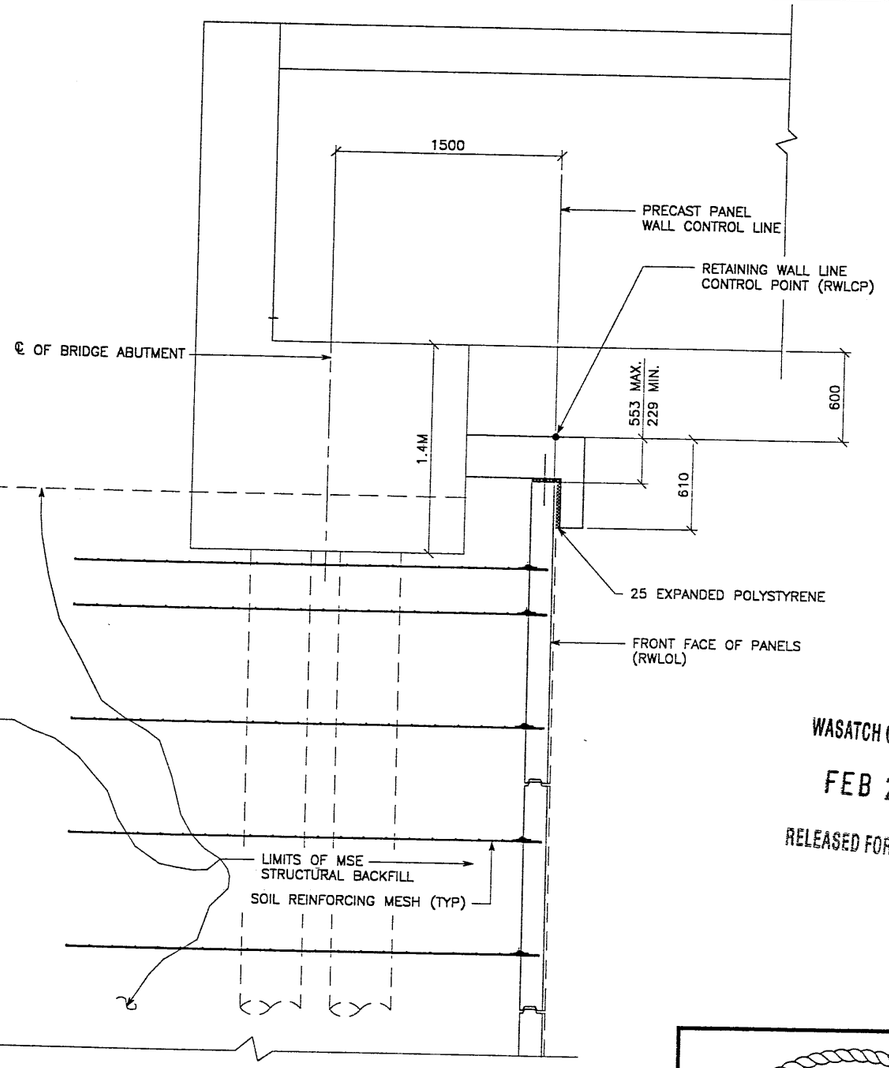


TYPICAL CROSS SECTION – STA 1+027.577 TO 1+038.800

(SEE DWG. NO. 2.1R-342-7.01 FOR ADDITIONAL INFORMATION)

SCALE: 1:20 (FULL SIZE)

SCALE: 1:40 (HALF SIZE)



TYPICAL CROSS SECTION – STA 1+000.000 TO 1+027.577

(SEE DWG. NO. 2.1R-342.7.01 FOR ADDITIONAL INFORMATION)

SCALE: 1:20 (FULL SIZE)

SCALE: 1:40 (HALF SIZE)

METRIC

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APPROVED FOR CONSTRUCTION			
NO.	DATE	DESCRIPTION	CHK
1	02-17-98	RELEASE FOR CONSTRUCTION	SW

NO.	DATE	REVISION	BY	CHK

DES. 01-15-98 JL
DRN. 01-15-98 LOP
CHK. 01-15-98 JL

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-4959

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

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WASATCH CONSTRUCTORS

FEB 24 1998

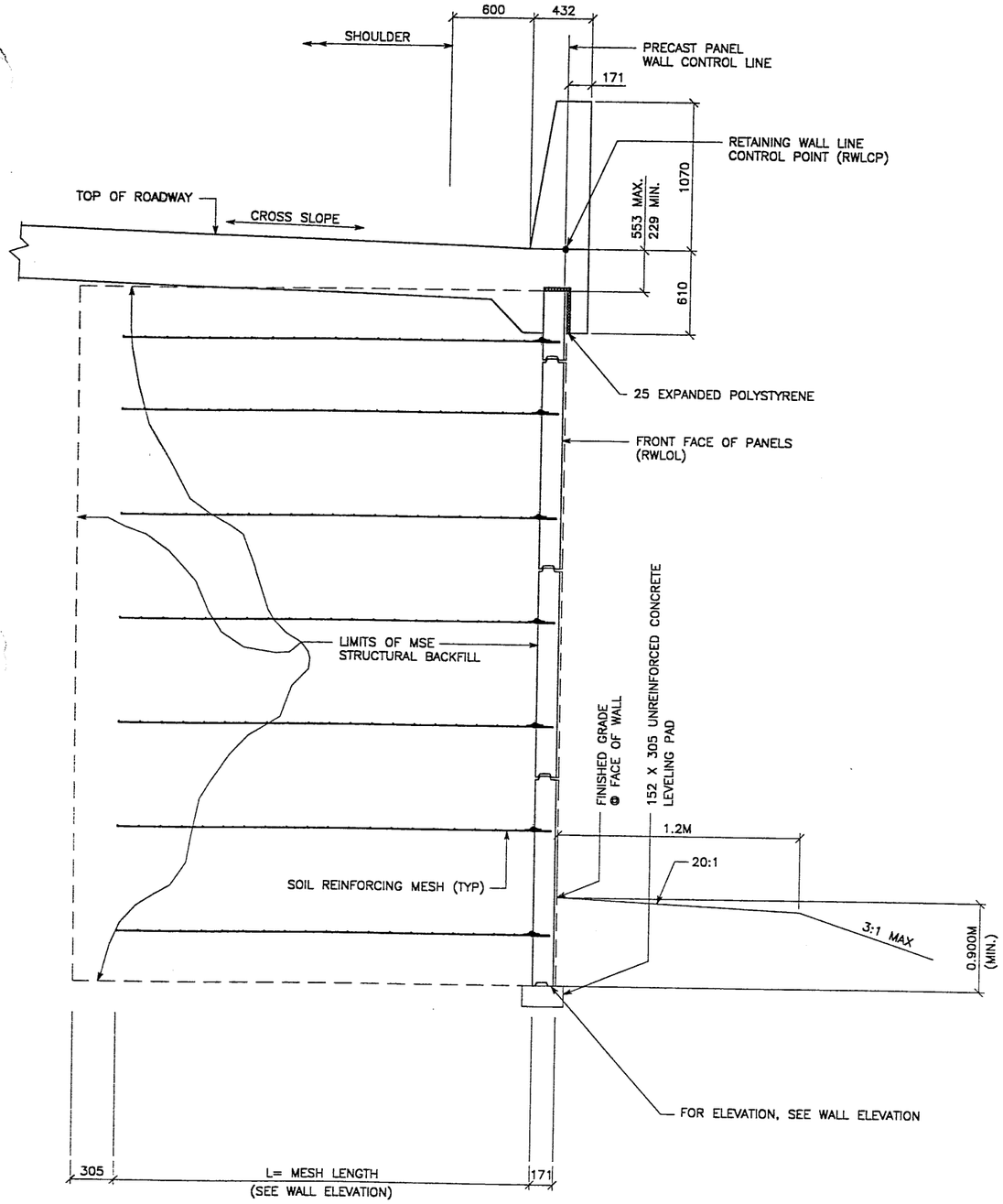
RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
WIRE FACED WALL "R-342-09"
TYPICAL CROSS SECTION

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

DWG. NO. 1.1R-342-7.3
JOB NO: 239-0007
SHT. NO. RE-2

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
2/19/98
STATE OF UTAH



TYPICAL CROSS SECTION – STA 1+041.825 TO 1+062.404

(SEE DWG. NO. 2.1R-342-7.01 FOR ADDITIONAL INFORMATION)

SCALE: 1:20 (FULL SIZE)

SCALE: 1:40 (HALF SIZE)

APPROVED FOR CONSTRUCTION			
NO.	DATE	DESCRIPTION	
1	02-17-98	RELEASE FOR CONSTRUCTION	OK

NO.	DATE	REVISION	BY	CHK

DES. 01-15-98 JL
DRN. 01-15-98 LOP
CHK. 01-15-98 JL

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

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WASATCH CONSTRUCTORS

FEB 24 1998

RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
2/19/98
STATE OF UTAH

METRIC

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RETAINED EARTH™ WALLS
WIRE FACED WALL "R-342-7"
TYPICAL CROSS SECTION

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

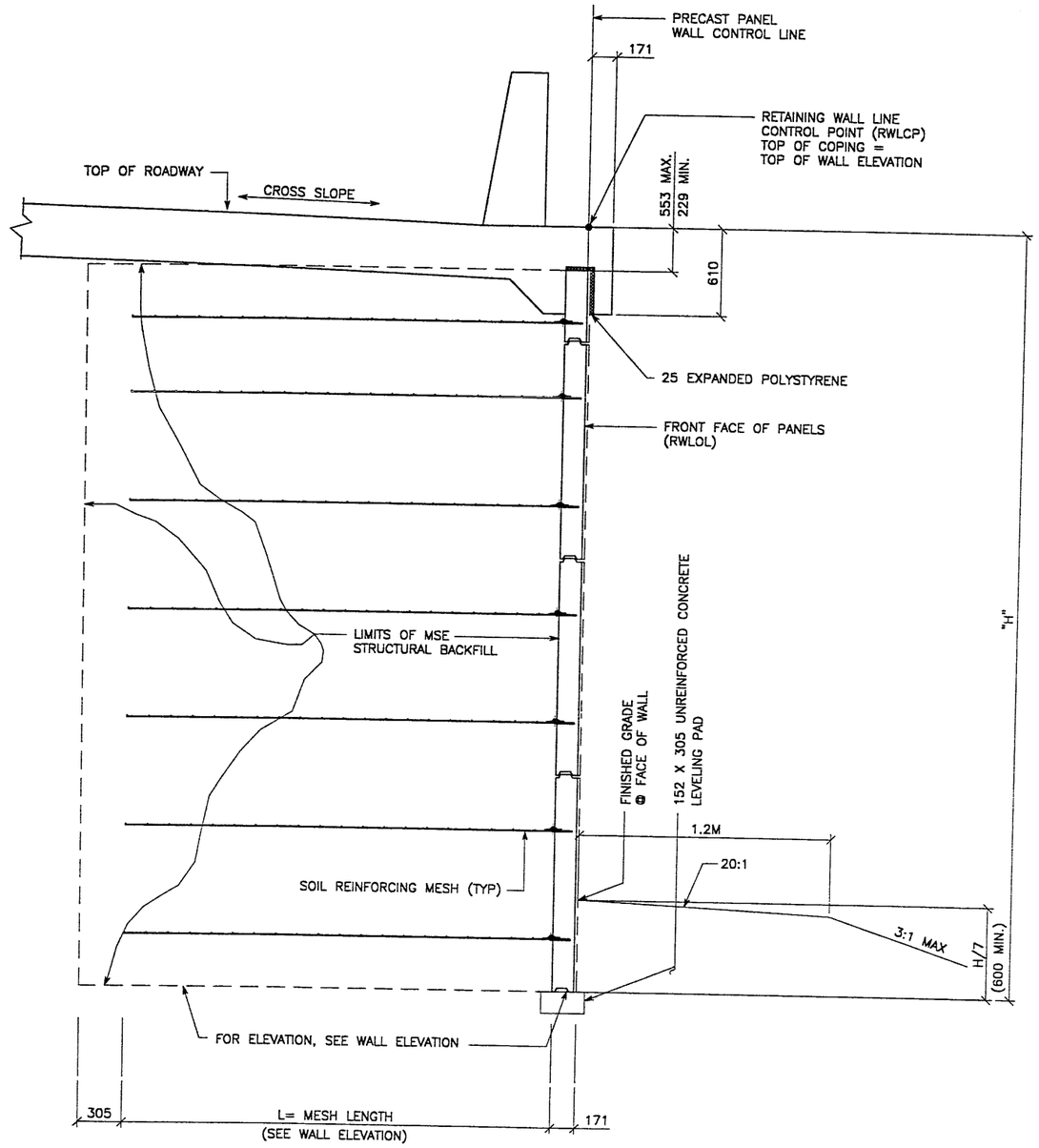
DWG. NO. 1.1R-342-7.4
JOB NO: 239-0007
SHT. NO. RE-3

4 OF 9

XREFERENCE (X-UTAH.DWG)
H:\RE_EARTH\PROJECT\239-0007\1998\90SERIES\90-07\SUBMTL-2\RE-3
FINAL PLOT 02-17-98

XREFERENCE (X-UTAH.DWG)
H:\RE_EARTH\PROJECT\239-0007\1998\90SERIES\90-07\SUBMTL-2\RE-4
FINAL PLOT 02-17-98

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	02-17-98	RELEASE FOR CONSTRUCTION

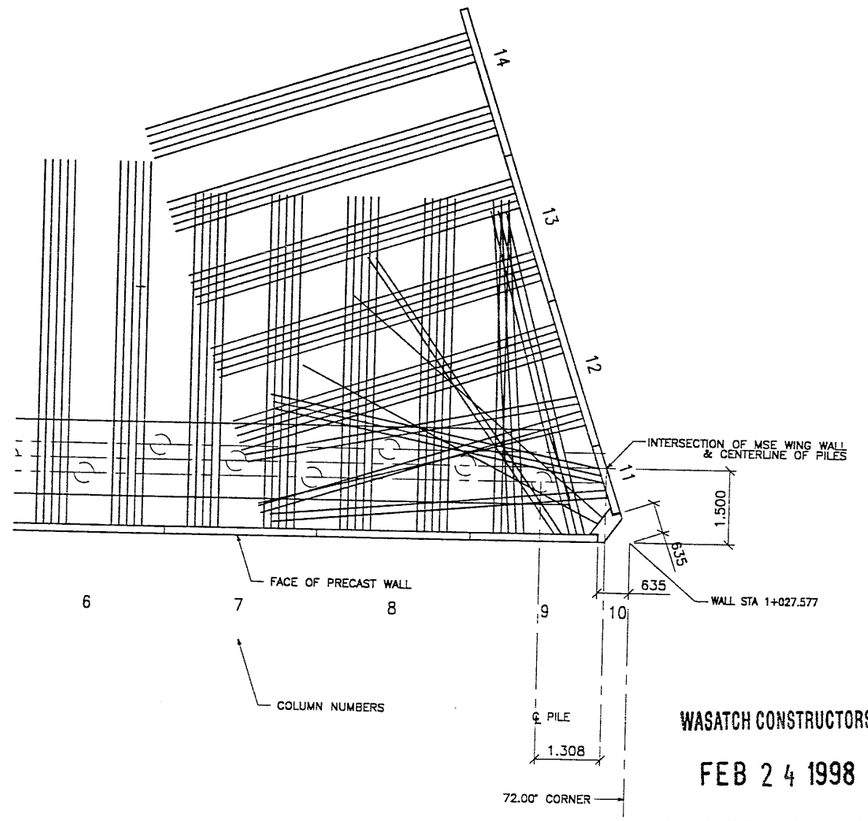


TYPICAL CROSS SECTION – STA 1+038.800 TO 1+041.825

(SEE DWG. NO. 1.2R-342-7.01 FOR ADDITIONAL INFORMATION)

SCALE: 1:20 (FULL SIZE)

SCALE: 1:40 (HALF SIZE)



WASATCH CONSTRUCTORS

FEB 2 4 1998

RELEASED FOR CONSTRUCTION

ENLARGED DETAIL AT WALL CORNER

SCALE: 1:50 (FULL SIZE)

SCALE: 1:100 (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.

LICENSED PROFESSIONAL ENGINEER
No. 1341706
JOHN A. NICHOLSON, JR.
2/19/98
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK

DES. 01-15-98 JL
DRN. 01-15-98 LOP
CHK. 01-15-98 JL
RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-8272
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
WIRE FACED WALL "R-342-07"
TYPICAL CROSS SECTIONS

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

DWG. NO.
1.1R-342-7.5

JOB NO:
239-0007

SHT. NO. RE-4

5 of 9

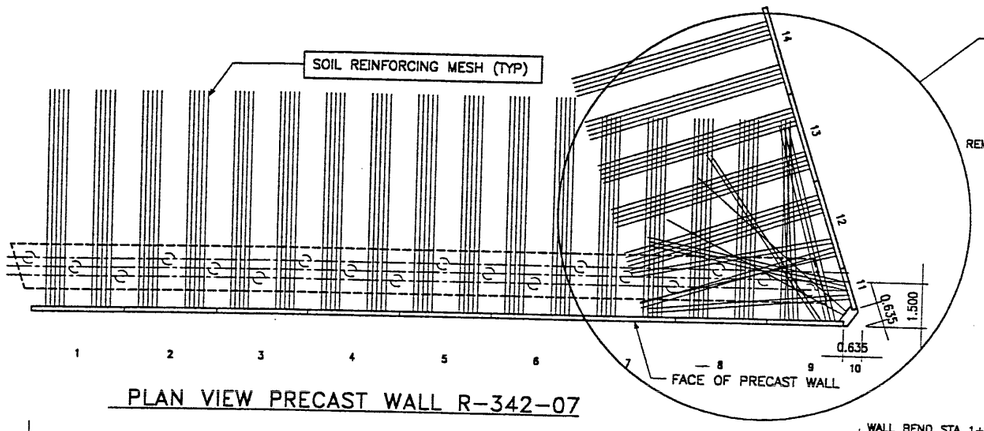
RENGE: (X-UTAH.DWG)

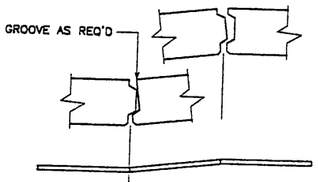
APPROVED FOR CONSTRUCTION			
NO.	DATE	DESCRIPTION	BY CHK
1	02-17-98	RELEASE FOR CONSTRUCTION	
2	04-30-98	ABUTMENT ELEVS. CHANGED	

WASATCH CONSTRUCTORS

JUN 2 2 1998

RELEASED FOR CONSTRUCTION





PLAN VIEW PRECAST WALL R-342-07

BEGIN WALL R-342-07
WALL STA 1+000.000 =
I-15 STA 13+206.646
NOMINAL PANEL FACE (RWLOL)

WALL BEND STA 1+027.577 =
I-15 STA 13+215.324
● 26.198 LT

WALL PT STA 1+038.800 =
I-15 STA 13+203.931
● 26.198 LT

WALL PC STA 1+041.825 =
I-15 STA 13+200.887
● 25.791 LT

BEND WALL R-342-07
WALL STA 1+062.400 =
I-15 STA 13+180.000
● 25.791 LT
NOMINAL PANEL FACE (RWLOL)

TOP OF COPING (TYP)
TOP OF COPING
BOTTOM OF COPING
℄ ABUTMENT STA 13+213.651
BEGIN WALL
END WALL
FINISHED GRADE
LEVELING PAD
2 PANELS TOTAL
1 SET OF INSPECTION WIRES (SEE VSL STD DWGS)
2W20-12 MESH FOR COL #10

	STA 1+000.000 EL 1336.065	STA 1+005.000 EL 1336.041	STA 1+010.000 EL 1336.017	STA 1+015.000 EL 1335.993	STA 1+020.000 EL 1335.969	STA 1+025.000 EL 1335.945	STA 1+027.580 EL 1335.933	STA 1+038.708 EL 1335.883	STA 1+038.200 EL 1339.357	STA 1+040.000 EL 1339.363	STA 1+041.825 EL 1339.371	STA 1+045.000 EL 1339.372	STA 1+050.000 EL 1339.372	STA 1+055.000 EL 1339.369	STA 1+060.000 EL 1339.366	STA 1+062.400 EL 1339.363
MESH DEPTH	7.315M						6.706M				4.572M		3.658M		3.048M	
MAXIMUM BEARING PRESSURE (SEE NOTE BELOW)	262.67 KPa						253.09 KPa				181.42 KPa		138.61 KPa		92.31 KPa	
PIN SPACING	26.942						1.270	7.540	3.048	3.048	3.048	3.048	3.048	3.048	8.366	

	EL. 1330.077	EL. 1331.601	EL. 1333.125	EL. 1333.887	EL. 1334.649	EL. 1335.411	EL. 1338.173	EL. 1336.935
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

ELEVATION PRECAST WALL R-342-07

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 306.21 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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LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
6/10/98
STATE OF UTAH

REVISION	NO.	DATE	BY	CHK

DES.	JL	01-15-98	
DRN.	LOP	01-15-98	
CHK.	JL	01-15-98	

RETAINED EARTH™

VSL CORPORATION
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RETAINED EARTH™ WALLS
PRECAST WALL "R-342-07"

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

DWG. NO.	1.1R-342-7.6
JOB NO:	239-0007
SHT. NO.	RE-5

6 of 9

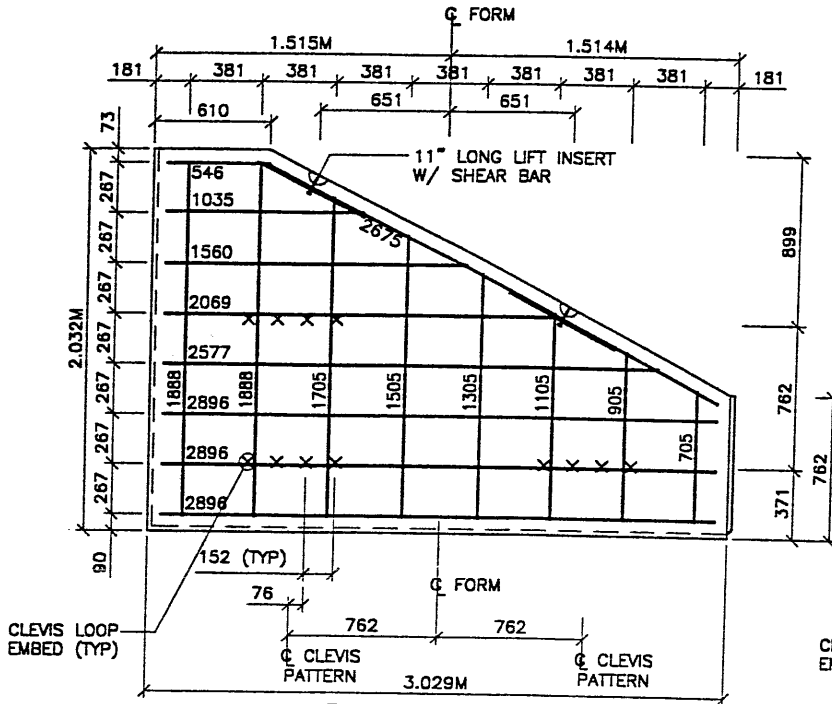
PLOT 04-30-98
H:\RE_EARTH\PROJECT\239-0007\1998\905

H:\RE_EARTH\APROJECT\239-0007\199... S\90-07\REV-1\SPECIALS ...ENCE (X-UTAH.DWG)

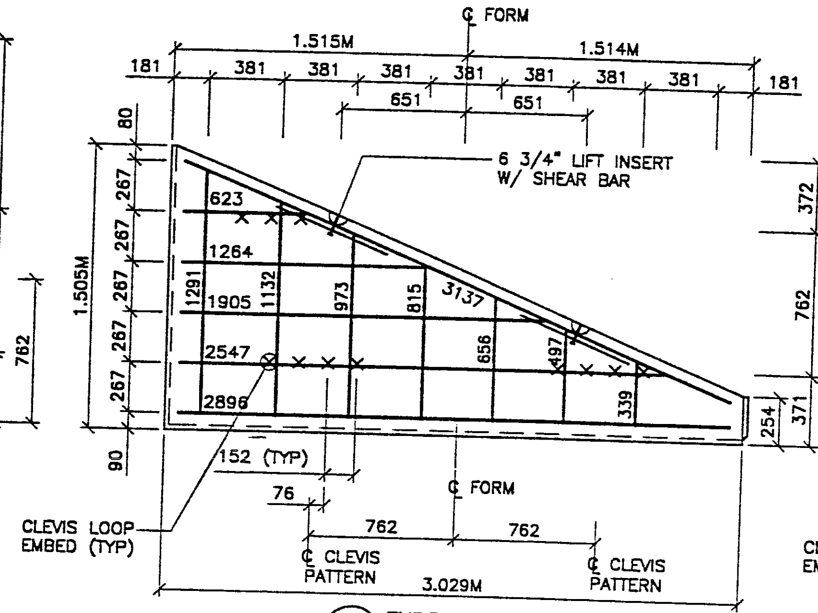
...T 05-01-98

FIL...

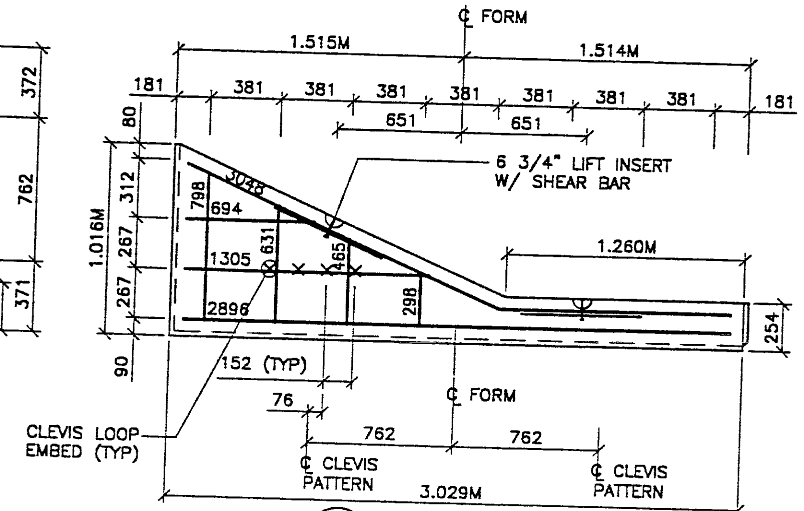
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	02-17-98	RELEASE FOR CONSTRUCTION
2	05-01-98	REVISE PANEL DETAILS



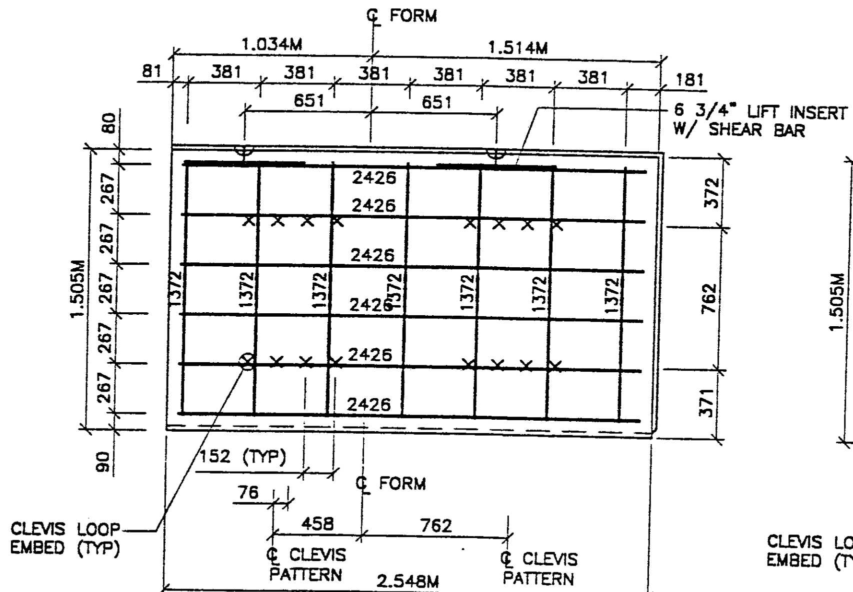
S1 TYPE S1 REBAR
(AREA = 4.65 SQ.M)



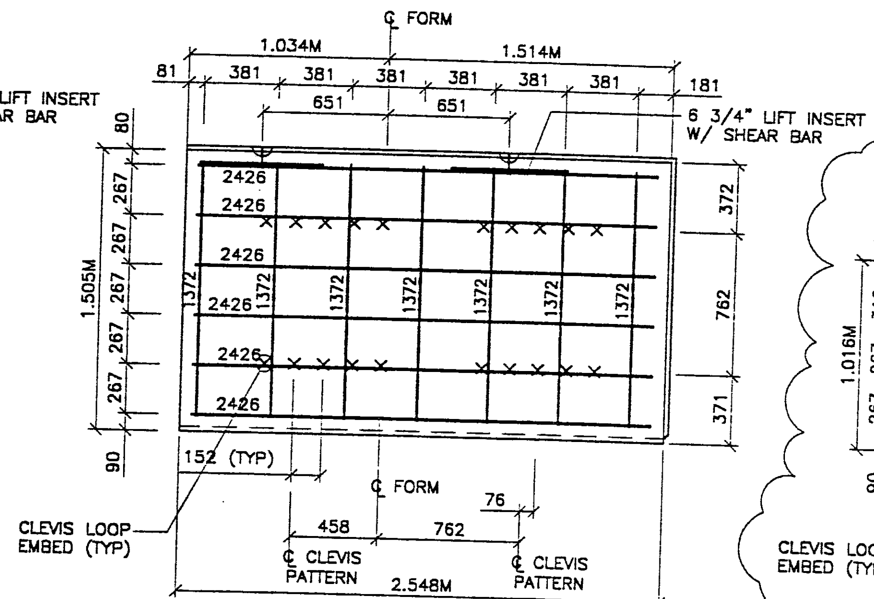
S2 TYPE S2 REBAR
(AREA = 2.71 SQ.M)



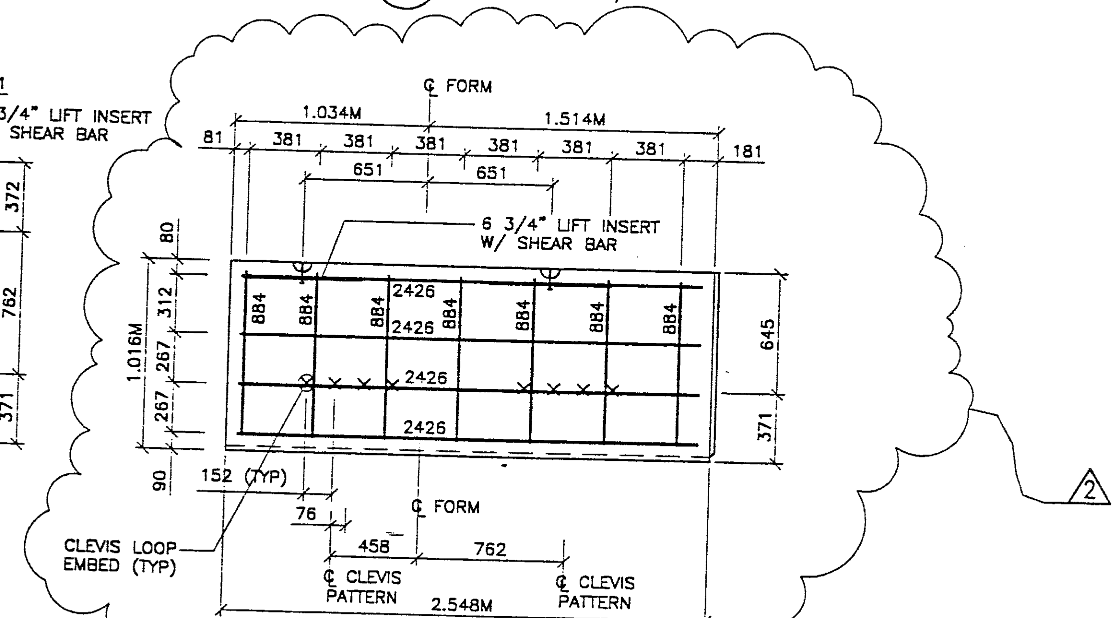
S3 TYPE S3 REBAR
(AREA = 1.44 SQ.M)



YAR TYPE YAR2.558 REBAR
(AREA = 3.90 SQ.M)



YAR TYPE 5YAR2.558 REBAR
(AREA = 3.90 SQ.M)



YD2R TYPE YD2R2.558T REBAR
(AREA = 2.60 SQ.M)

WASATCH CONSTRUCTORS
JUN 22 1998
RELEASED FOR CONSTRUCTION

PANEL REINFORCEMENT NOTES:
1. PANELS ARE SHOWN BACK FACE.
2. HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
3. ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
4. ALL REINFORCING BARS ARE #13 METRIC. LABELS ON EACH BAR INDICATE LENGTH. EXAMPLE: 1345 IS A #13 BAR 1345 mm LONG.
5. PANEL REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT CONFORMING TO THE SPECIFICATIONS OF ASTM DESIGNATION A615, GRADE 60.
6. ALL REINFORCING STEEL TO BE GALVANIZED IN ACCORDANCE WITH ASTM 767 CLASS I.
7. CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 27,500 KPa.
8. EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
9. ALL PANELS TO USE 9.5mmø CLEVIS LOOPS.
10. VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.
11. LIFT INSERTS ARE 6 3/4" LONG IN ALL PANELS LESS THAN 1.524M TALL. PANELS TALLER THAN 1.524M SHALL HAVE 11" LONG LIFT ANCHORS.

METRIC

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.
6/18/98
STATE OF UTAH

REVISION	DATE	NO.	BY	CHK

DES.	01-20-98	JL
DRN.	01-20-98	LOP
CHK.	01-20-98	JL

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

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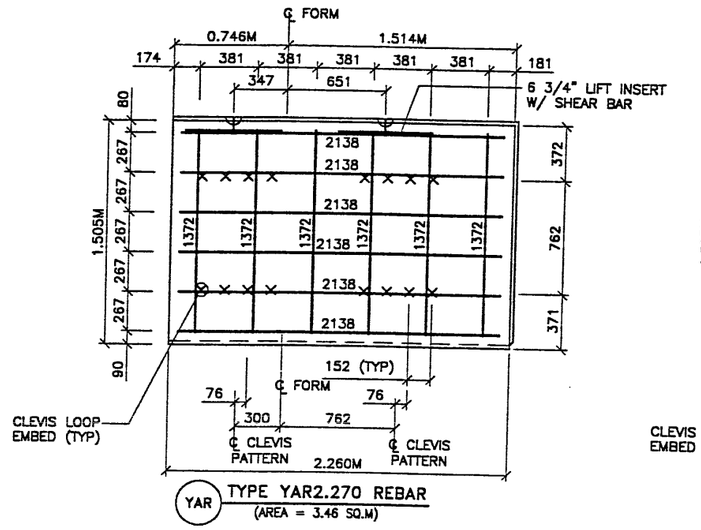
RETAINED EARTH™ WALLS
PRECAST WALL R-342-7
SPECIAL PANEL DETAILS

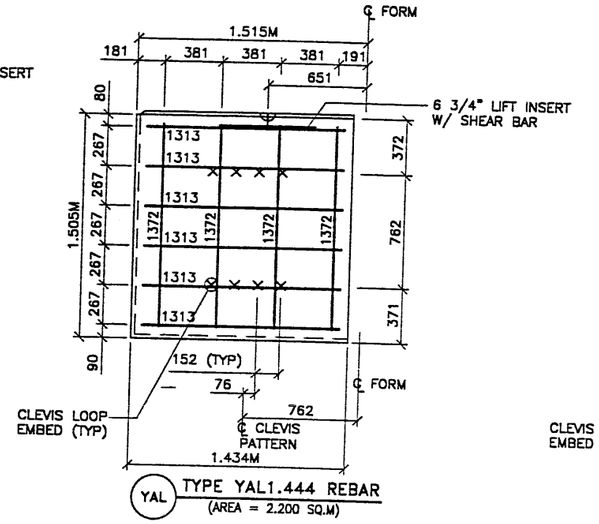
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO. 1.1R-342-7.7
JOB NO: 239-0007
SHT. NO. RE-6

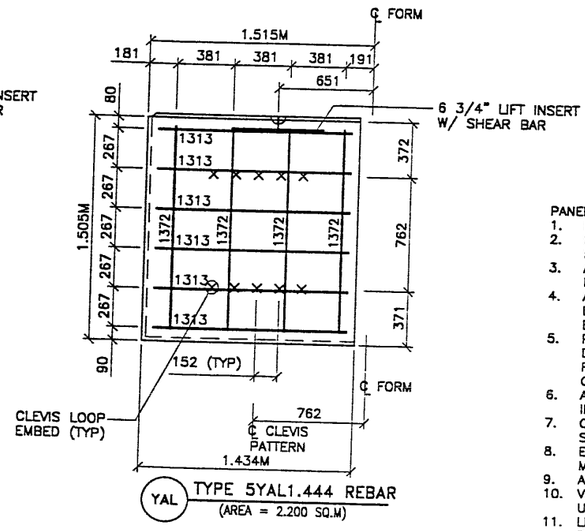
7 of 9



YAR TYPE YAR2.270 REBAR
(AREA = 3.46 SQ.M)



YAL TYPE YAL1.444 REBAR
(AREA = 2.200 SQ.M)



YAL TYPE 5YAL1.444 REBAR
(AREA = 2.200 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.
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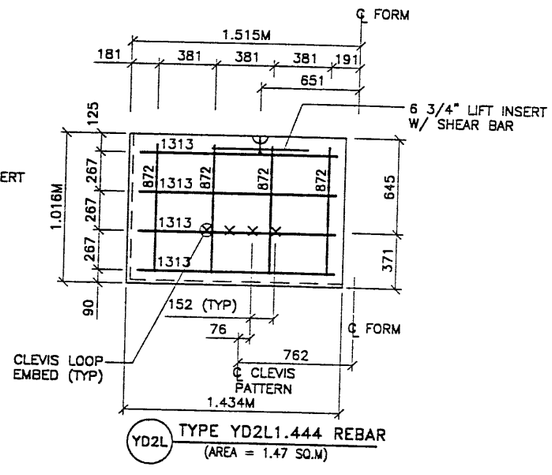
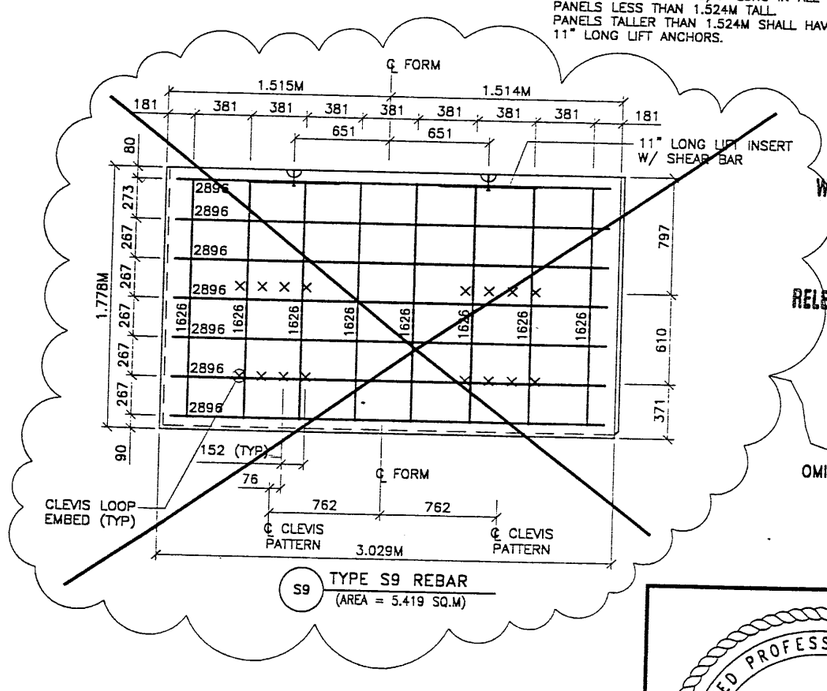
8. EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
9. ALL PANELS TO USE 9.5mmø CLEVIS LOOPS.
10. VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.
11. LIFT INSERTS ARE 6 3/4" LONG IN ALL PANELS LESS THAN 1.524M TALL. PANELS TALLER THAN 1.524M SHALL HAVE 11" LONG LIFT ANCHORS.

YD4R TYPE YD4R2.270 REBAR
(AREA = 1.15 SQ.M)



YD2L TYPE YD2L1.444 REBAR
(AREA = 1.47 SQ.M)



S9 TYPE S9 REBAR
(AREA = 5.419 SQ.M)

2 OMIT DETAIL

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	02-17-98	RELEASE FOR CONSTRUCTION
2	05-01-98	OMIT PANEL S9

WASATCH CONSTRUCTORS
JUN 2 2 1998
RELEASED FOR CONSTRUCTION

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
6/10/98
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK

DES. JL 01-20-98
DRN. LOP 01-20-98
CHK. JL 01-20-98

RETAINED EARTH™

VSL CORPORATION
2810 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone (919) 781-6272
Fax (919) 781 4569

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

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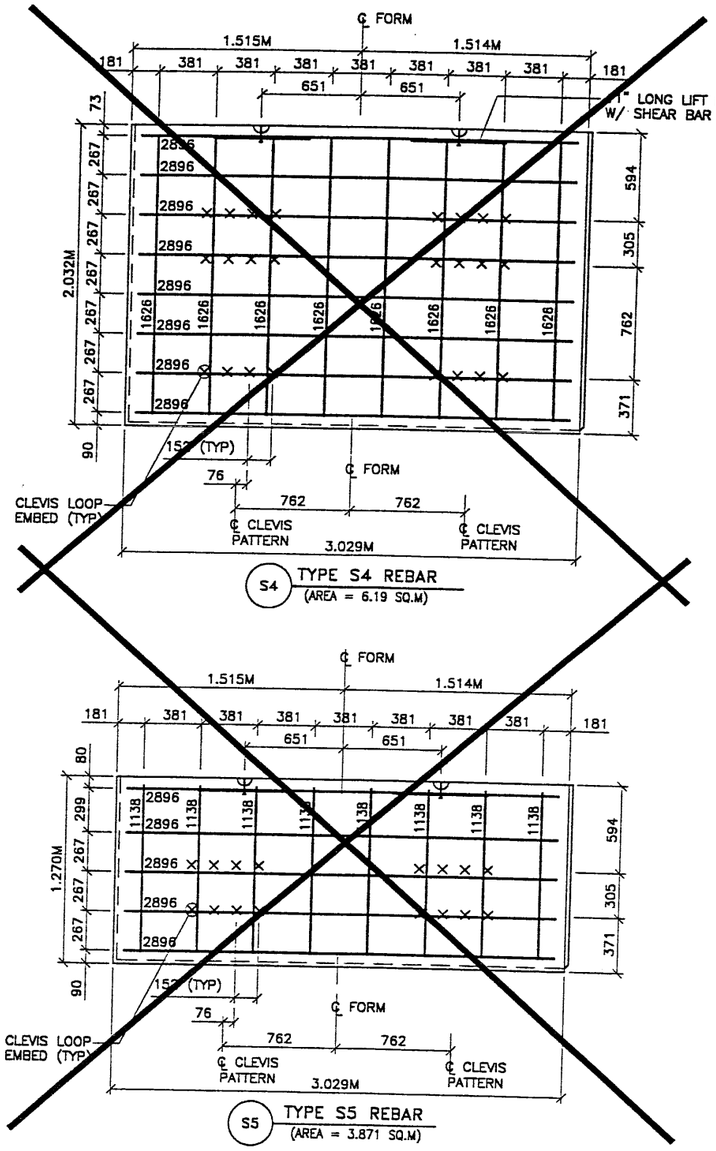
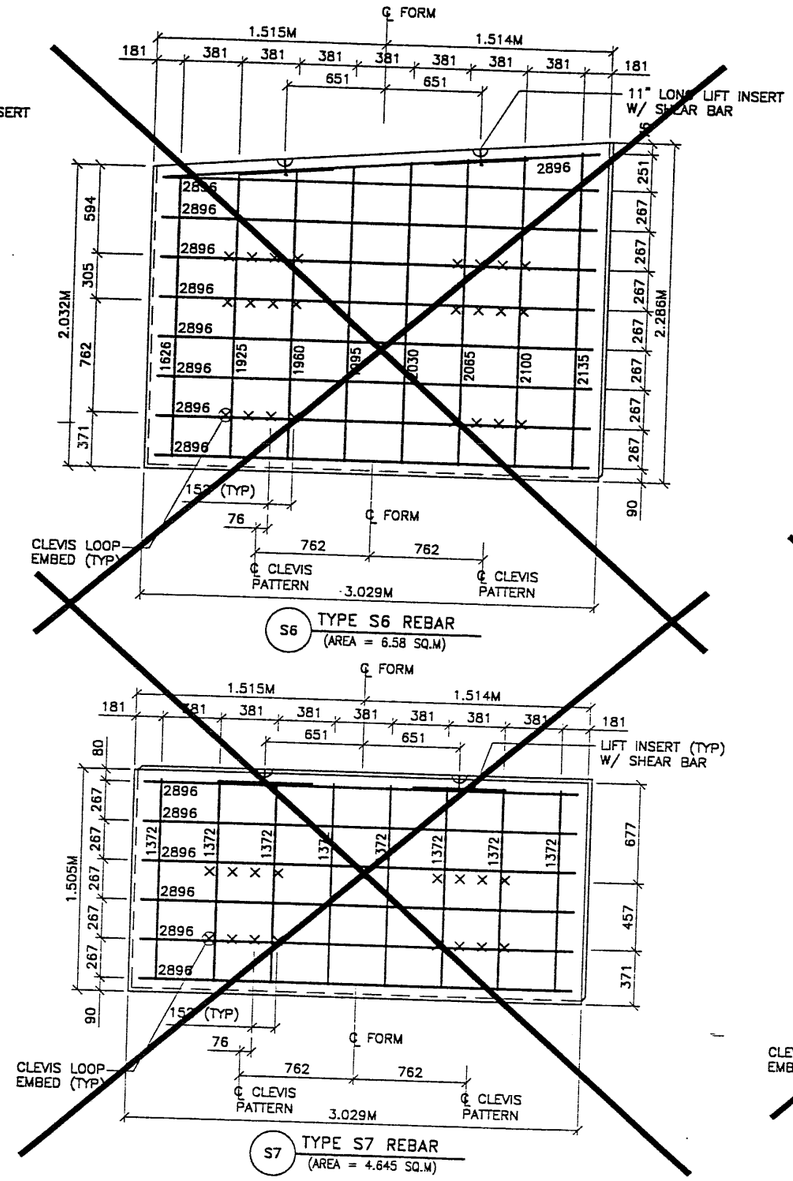
RETAINED EARTH™ WALLS
PRECAST WALL R-342-07
SPECIAL PANEL DETAILS

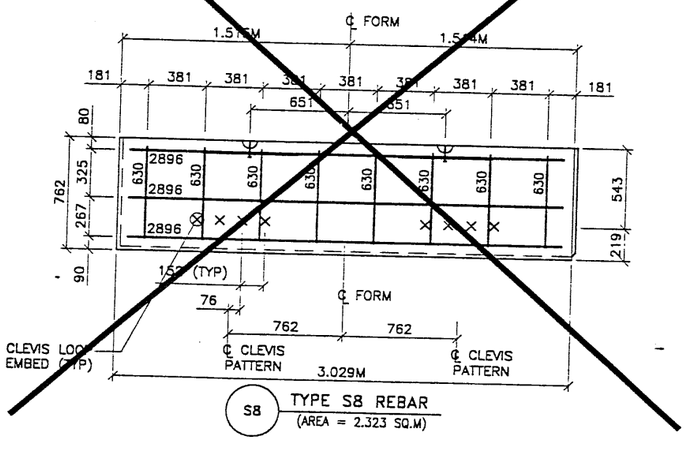
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO. 1.1R-342-7.8
JOB NO: 239-0007
SHT. NO. RE-7

H:\RE_EARTH\APROJECT\239-0007\REV-1\SPECIALS\RENCE (X-UTAH.DWG)
PLOT 05-01-98







2

OMIT DETAILS THIS SHEET

METRIC

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WASATCH CONSTRUCTORS

JUN 2 2 1998

RELEASED 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.
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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.

NO.	DATE	DESCRIPTION	BY	CHK
		APPROVED FOR CONSTRUCTION		
1	02-17-98	RELEASE FOR CONSTRUCTION		
2	05-01-98	OMIT ALL DETAILS THIS SHEET		

REVISION | DATE | NO.

DES. JL 01-20-98
DRN. LOP 01-20-98
CHK. JL 01-20-98

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

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RETAINED EARTH™ WALLS
PRECAST WALL R-342-07
SPECIAL PANEL DETAILS

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

DWG. NO. 1.1R-342-7.9
JOB NO: 239-0007
SHT. NO RE-8

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
6/10/98
STATE OF UTAH

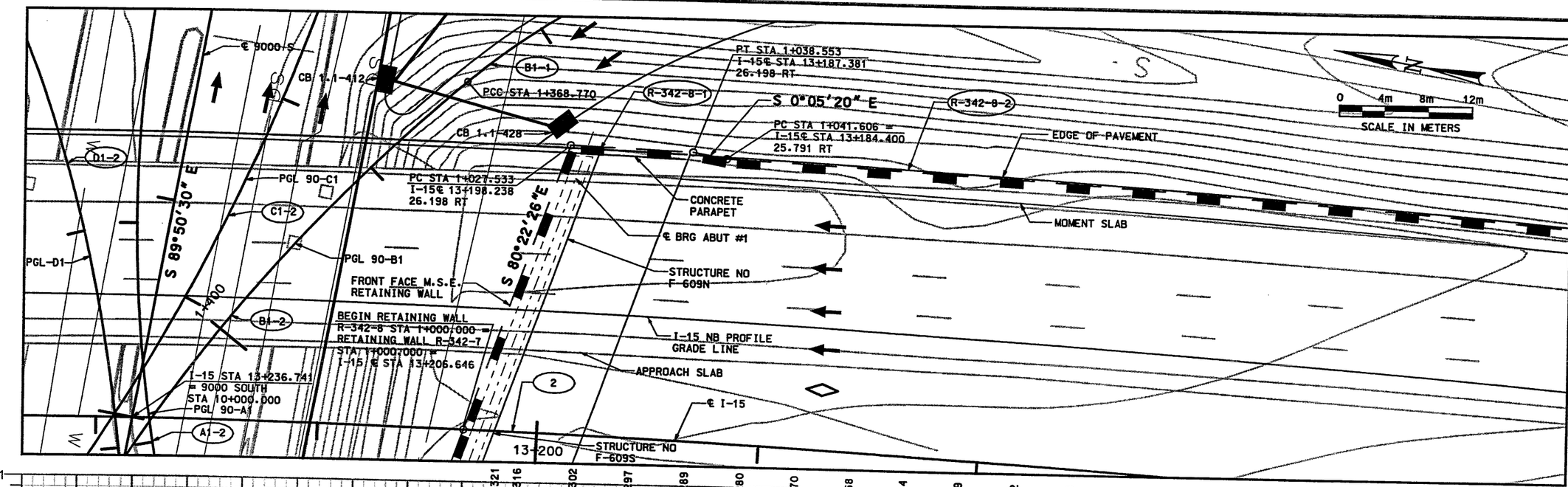
9009

F:\...OT 05-01-98

H:\RE_EARTH\APROJECT\239-0007\199...IES\90-07\REV-1\SPECIALS

...REFERENCE (X-UTAH.DWG)

Date:13-JUL-1998 Time:13:49 Username:GASTERJN



ELEVATION ALONG BACK FACE OF WALL

LICENSED PROFESSIONAL ENGINEER
No. 179901
SCOTT J. LUCAS
7/13/98
STATE OF UTAH

WASATCH CONSTRUCTORS
SEP 10 1998
RELEASED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	7/13/98	ORIGINAL RELEASE

APPROVED FOR CONSTRUCTION

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER
SVERDRUP/DE LEUW

DESIGN SJL 7/98 | CHECK BDV 7/98
DRAWN JHG 7/98 | CHECK BDV 7/98
QUANT. | CHECK

APPROVAL RECOM. 7/98 SCOTT J. LUCAS PROJECT DESIGN ENGINEER DATE
APPROVED 7/98 BRUCE D. VANA PROJECT MANAGER DATE

I-15 CORRIDOR RECONSTRUCTION
SITUATION & LAYOUT RET WALL R-342-8
SECTION 1.1
PROJECT NUMBER *SP-15-7(135)296
1113413
SALT LAKE COUNTY
1.1R-342-8.1 DWG. NO.
SHT. 1 OF 3
90_STR_R-342-8-1LY REF.

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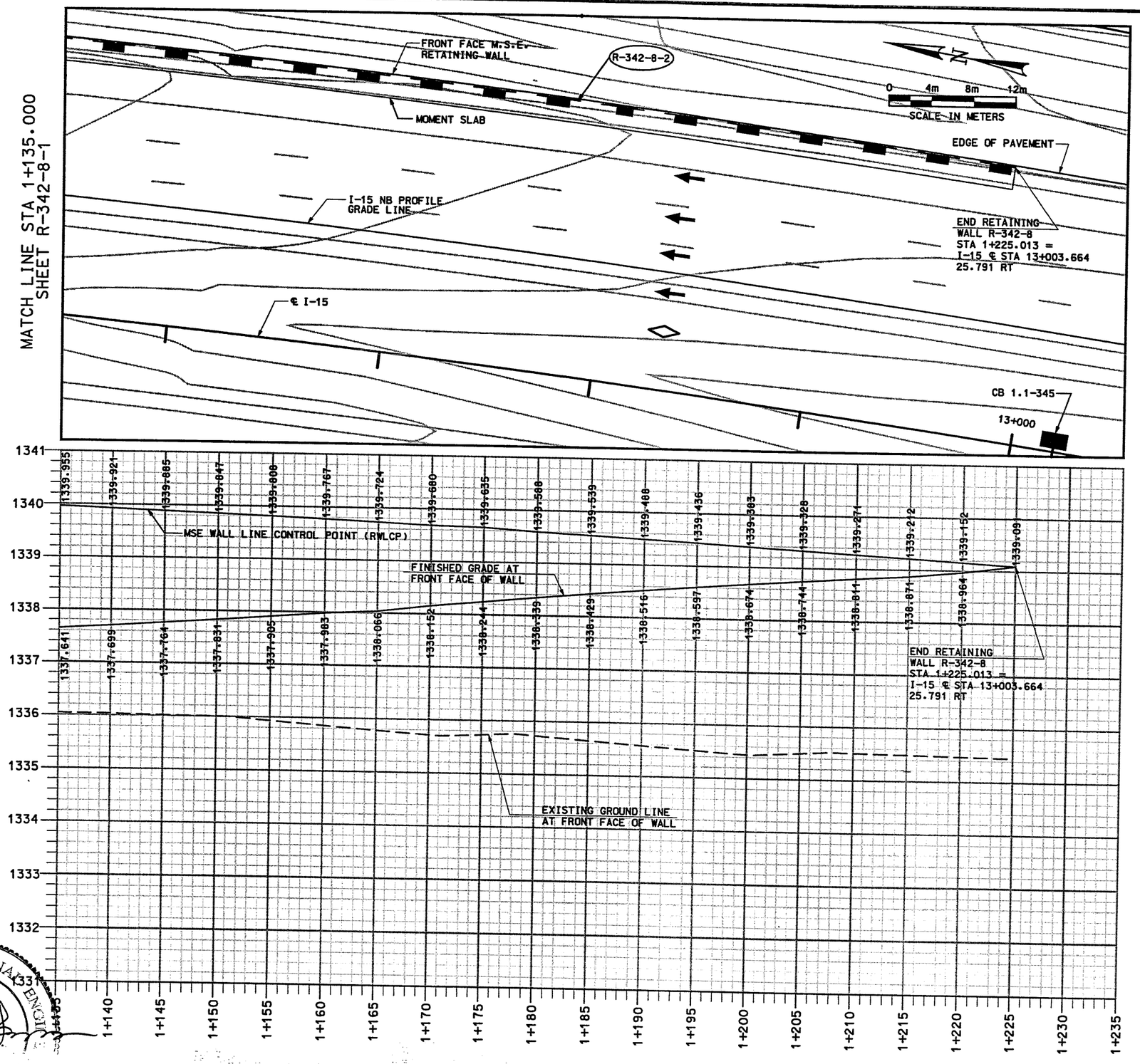

ELEVATION ALONG BACK FACE OF WALL

LICENSED PROFESSIONAL ENGINEER
No. 179901
SCOTT J. LUCAS
7/13/98
STATE OF UTAH

WASATCH CONSTRUCTORS
SEP 10 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	7/13/98	ORIGINAL RELEASE

UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER
SVERDRUP/DE LEUW

DESIGN SJL 7/98 CHECK BDV 7/98
DRAWN JHG 7/98 CHECK BDV 7/98
QUANT. CHECK
1113413

APPROVAL RECOMM. 7/98 DATE SCOTT J. LUCAS PROJECT DESIGN ENGINEER
APPROVED 7/98 DATE BRUCE D. VANA PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
SITUATION & LAYOUT RET WALL R-342-8
SECTION 1.1
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
1.1R-342-8.2
DWG. NO.
SHT. 2 OF 3
90_STR_R-342-8-2LY
REF.

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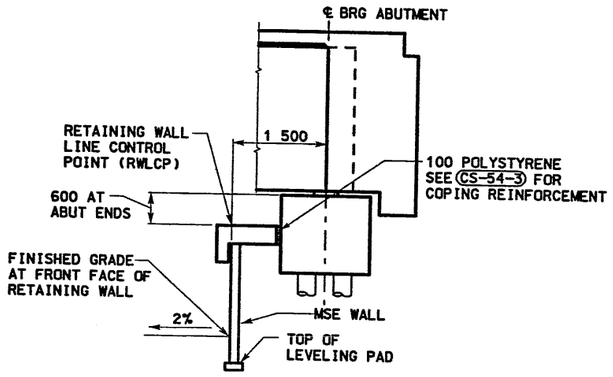
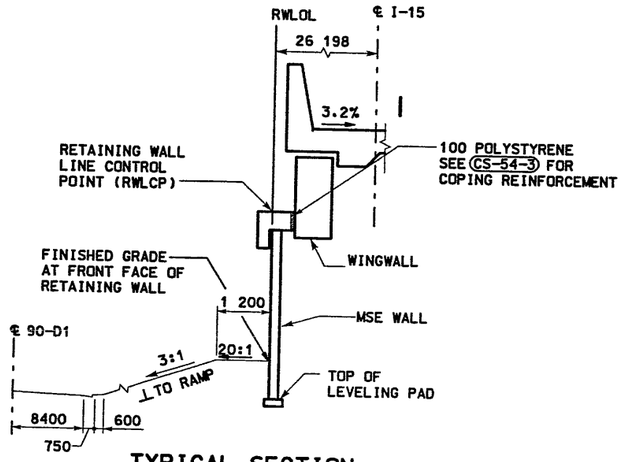


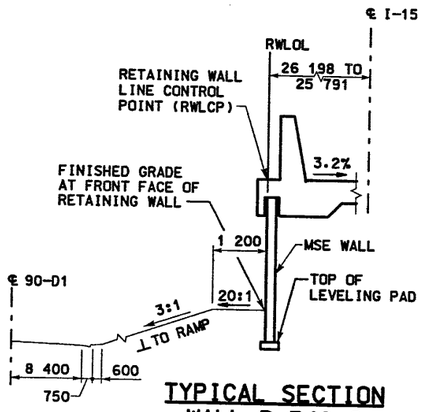
TYPICAL SECTION
WALL R-342-8
STA 1+000.000 TO 1+027.533



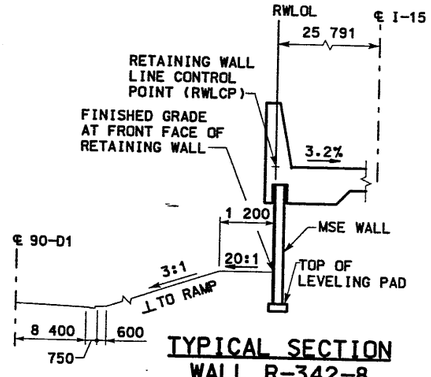
TYPICAL SECTION
WALL R-342-8
STA 1+027.533 TO 1+038.553

2	
Δ	= 21°16'32" LT
R	= 1745.000
L	= 647.972
T	= 327.761
PI STA	13+254.636
PC STA	12+926.875
PT STA	13+574.848
R-342-8-1	
Δ	= 0°21'23"
R	= 1771.198
L	= 11.020
T	= 5.570
PC STA	1+027.533
PT STA	1+038.553
R-342-8-2	
Δ	= 5°56'04"
R	= 1770.791
L	= 183.407
T	= 91.786
PC STA	1+041.606
PT STA	1+225.013

CURVE DATA IN METERS



TYPICAL SECTION
WALL R-342-8
STA 1+038.553 TO 1+041.606



TYPICAL SECTION
WALL R-342-8
STA 1+041.606 TO 1+225.013

NOTES:

1. ALL TYPICAL SECTION DIMENSIONS ARE IN MILLIMETERS EXCPT AS NOTED.
2. ALL ALL PLAN AND PROFILE DIMENSIONS ARE IN METERS EXCPT AS NOTED.
3. SEE CS-224 AND CS-227 FOR APPROACH SLAB DETAILS.
4. SEE BRIDGE PLANS FOR ABUTMENT DETAILS.
5. SEE CS-28 FOR COPING AND MOMENT SLAB DETAILS.

LICENSED PROFESSIONAL ENGINEER
No. 179901
SCOTT J. LUCAS
7/13/98
STATE OF UTAH

WASATCH CONSTRUCTORS

SEP 10 1998

RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
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UTAH DEPARTMENT OF TRANSPORTATION
H. W. LOCHNER
SVERDRUP/DE LEUW

DESIGN SJL 7/98 CHECK BDV 7/98
DRAWN JHG 7/98 CHECK BDV 7/98
QUANT. CHECK

SCOTT J. LUCAS PROJECT DESIGN ENGINEER
BRUCE D. VANA PROJECT MANAGER

APPROVAL RECOM. 7/98 DATE
APPROVED 7/98 DATE

I-15 CORRIDOR RECONSTRUCTION
SITUATION & LAYOUT RET WALL R-342-8
SECTION 1.1
PROJECT NUMBER *SP-15-7(135)296
1113413

SALT LAKE COUNTY
1.1R-342-8.3 DWG. NO.
SHT. 3 OF 13
90_STR_R-342-8LY3 REF.

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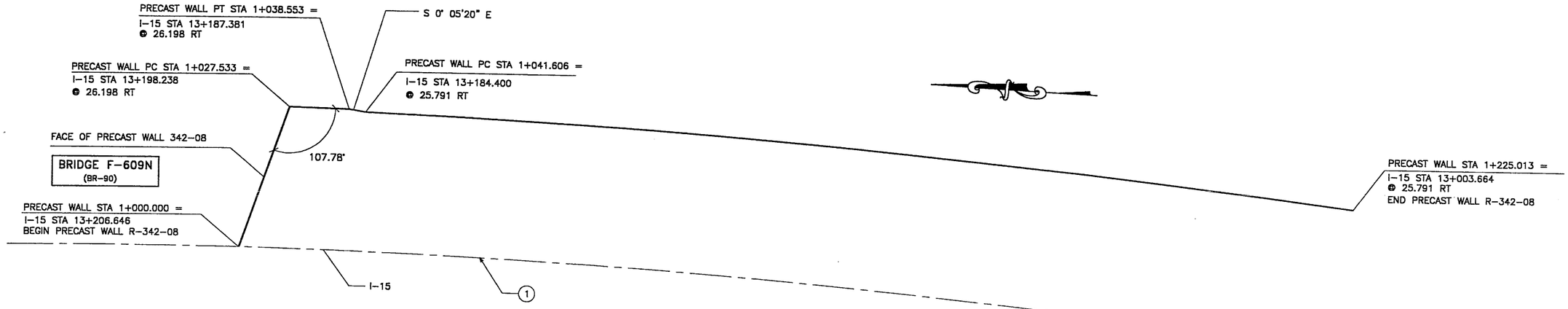

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT	△
①	1745.000	614.722	310.580	20°11'02"

All Dimensions Are In Meters Unless Noted Otherwise

PLAN VIEW WALL "R-342-8"

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

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	08-10-98	RELEASE FOR CONSTRUCTION

RETAINED EARTH INDEX	
RE-1	PLAN PRECAST FACE WALL R-342-08, NOTES & DESIGN CRITERIA
RE-2	TYPICAL CROSS SECTION
RE-3	TYPICAL CROSS SECTIONS
RE-4	TYPICAL CROSS SECTIONS
RE-5	ELEVATION PRECAST WALL "R-342-08"
RE-6	ELEVATION PRECAST WALL "R-342-08"
RE-7	ELEVATION PRECAST WALL "R-342-08"
RE-8	ELEVATION PRECAST WALL "R-342-08"
RE-9	SPECIAL PANEL DETAILS
RE-10	SPECIAL PANEL DETAILS

WASATCH CONSTRUCTORS

SEP 10 1998

RELEASED FOR CONSTRUCTION

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: 4W20-6 MESH HAS FOUR (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 6" CENTERS.
   EXAMPLE: 5W15-12 MESH HAS FIVE (4) W11 LONGITUDINAL WIRES WITH W15 CROSSBARS AT 12" CENTERS.
   EXAMPLE: 5W20-24 MESH HAS FIVE (4) W20 LONGITUDINAL WIRES WITH W20 CROSSBARS AT 24" CENTERS.
   EXAMPLE: 4W15-6 MESH HAS FOUR (4) W11 LONGITUDINAL WIRES WITH W15 CROSSBARS AT 6" 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 VSL STANDARD SHEET STD-7 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. = 0.12g (TYP)
SEISMIC ACCELERATION COFF. = 0.28g (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

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.
8/31/98
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK

DES.	06-10-98	JL
DRN.	06-10-98	RSW
CHK.	06-10-98	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)
MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

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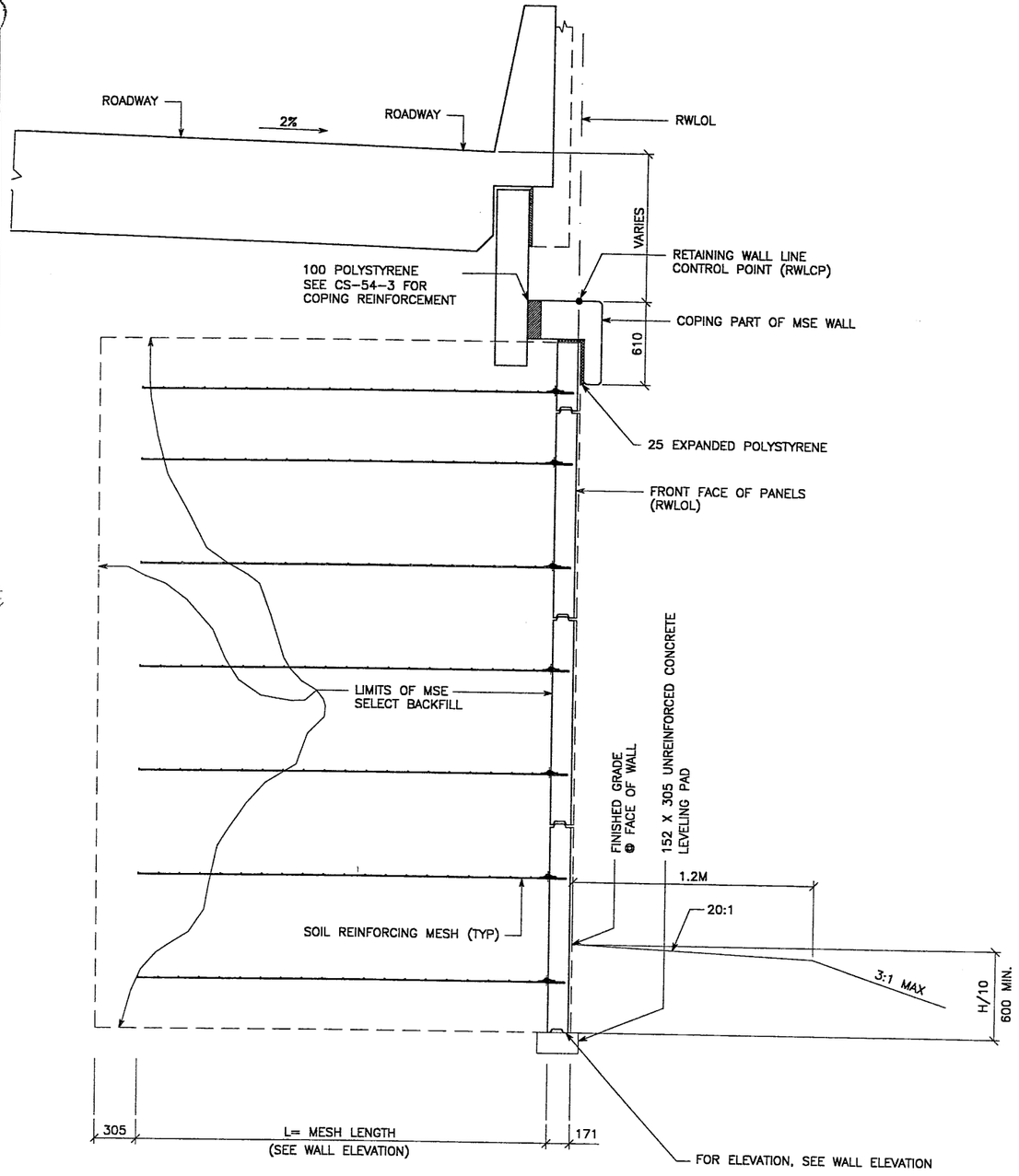
RETAINED EARTH™ WALLS
PLAN VIEW PRECAST WALL "R-342-08"

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

DWG. NO. 1.1R-342-8.4
JOB NO: 239-0007
SHT. NO. RE-1

40F15

H:\RE_EARTH\APROJECT\239-0007\1998\
06-10-98
FINAL
DGN (X-UTAH.DWG)

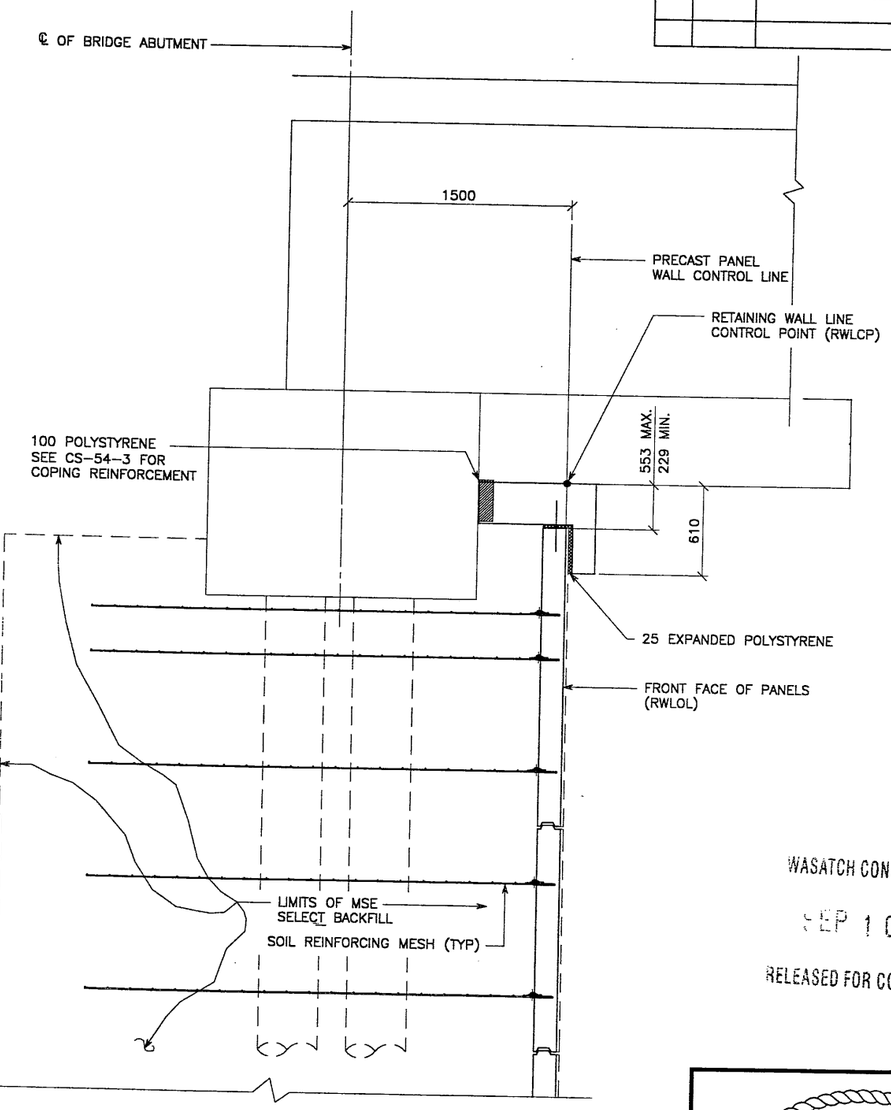


TYPICAL CROSS SECTION – STA 1+027.533 TO 1+039.533

(SEE DWG. NO. 1.1R-342-10.X FOR ADDITIONAL INFORMATION)

SCALE: 1:20 (FULL SIZE)

SCALE: 1:40 (HALF SIZE)



TYPICAL CROSS SECTION – STA 1+000.000 TO 1+027.533

(SEE DWG. NO. 2.1R-342.9.01 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	08-10-98	RELEASE FOR CONSTRUCTION		

NO.	DATE	REVISION	BY	CHK

DES. 06-10-98 JL
DRN. 06-10-98 RSW
CHK. 06-10-98 JL

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone (919) 781-6272
Fax (919) 781-4169

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WASATCH CONSTRUCTORS

SEP 10 1998

RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
PRECAST WALL "R-342-08"
TYPICAL CROSS SECTION

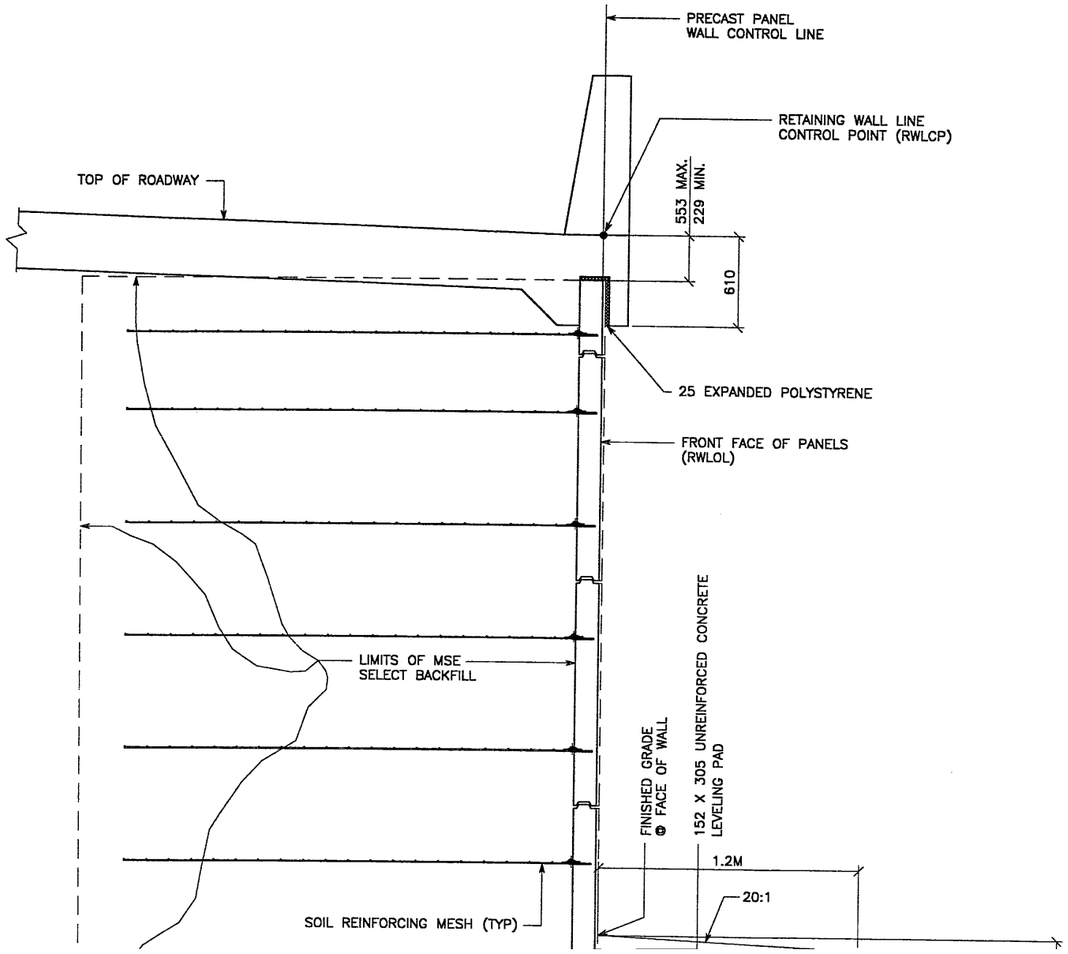
UTAH I-15 RECONSTRUCTION
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

DWG. NO. 1.1R-342-08.5
JOB NO: 239-0007
SHT. NO. RE-2

LICENSED PROFESSIONAL ENGINEER
No. 341786
JOHN A. NICHOLSON, JR.
STATE OF UTAH

5 of 13

H:\RE_EARTH\APROJECT\239-0007\1998\RE-2 (X-UTAH.DWG)
06-10-98
FINAL



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NO.	DATE	DESCRIPTION
1	08-10-98	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES.	06-10-98	JL
DRN.	06-10-98	RSW
CHK.	06-10-98	JL

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Fax: (919) 781-4969

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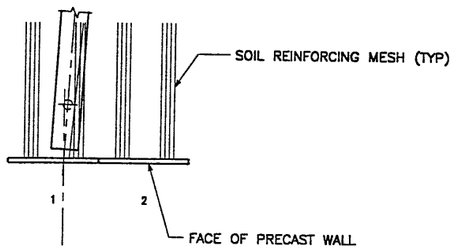
...E (X-UTAH.DWG)

...30-08\RE-3

...PROJECT\239-0007\1998\...

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	05-07-98	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
MAY 19 1998
RELEASED FOR CONSTRUCTION



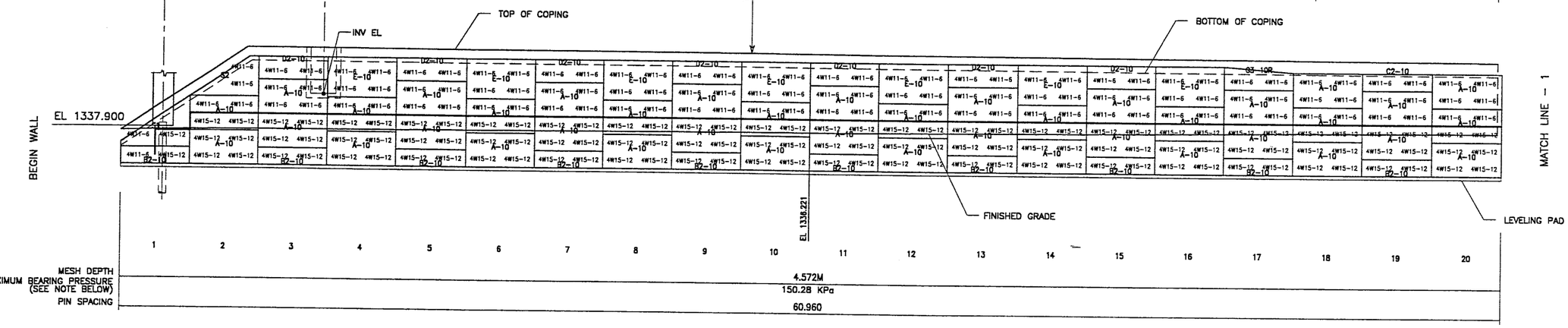
℄ ABUTMENT
WALL STA 11+219.103 =
"I-15" STA 11+219.108 (25.791 RT)
BRIDGE

PLAN VIEW PRECAST WALL R-342-14

BEGIN WALL R-342-14
WALL POC STA 11+217.233 =
"I-15" STA 11+217.233
● 25.791 RT
NOMINAL PANEL FACE (RWLOL)

WALL STA 11+226.194
"I-15" STA 11+226.214
DRAIN INLET TYPE V-1710
INV EL

STA 11+217.233 EL 1337.745
STA 11+222.834 EL 1341.479
STA 11+230.000 EL 1341.466
STA 11+240.000 EL 1341.443
1.75M SURCHARGE TEMPORARY VERTICAL GEOTEXTILE WALL (NOT BY VSL)
STA 11+250.000 EL 1341.413
STA 11+260.000 EL 1341.377
STA 11+270.000 EL 1341.334
STA 11+278.006 EL 1341.284



ELEVATION PRECAST WALL R-342-14

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 744.83 SM)

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

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

METRIC

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LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
5/14/98
STATE OF UTAH

					NO.	DATE	REVISION	BY	CHK
DES.	04-21-98	JL							
DRN.	04-21-98	DDL							
CHK.	04-21-98	JL							

RETAINED EARTH™

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RETAINED EARTH™ WALLS
PRECAST WALL "R-342-14"

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

DWG. NO.
1.1R-342-14.5
JOB NO:
239-0007
SHT. NO. RE-4

5 OF 8

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FINAL T 05-07-98

H:\RE_EARTH\APROJECT\1998\100-SERS\100-14\SUBMTL-2\100W-14
05-07-98
FINAL

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
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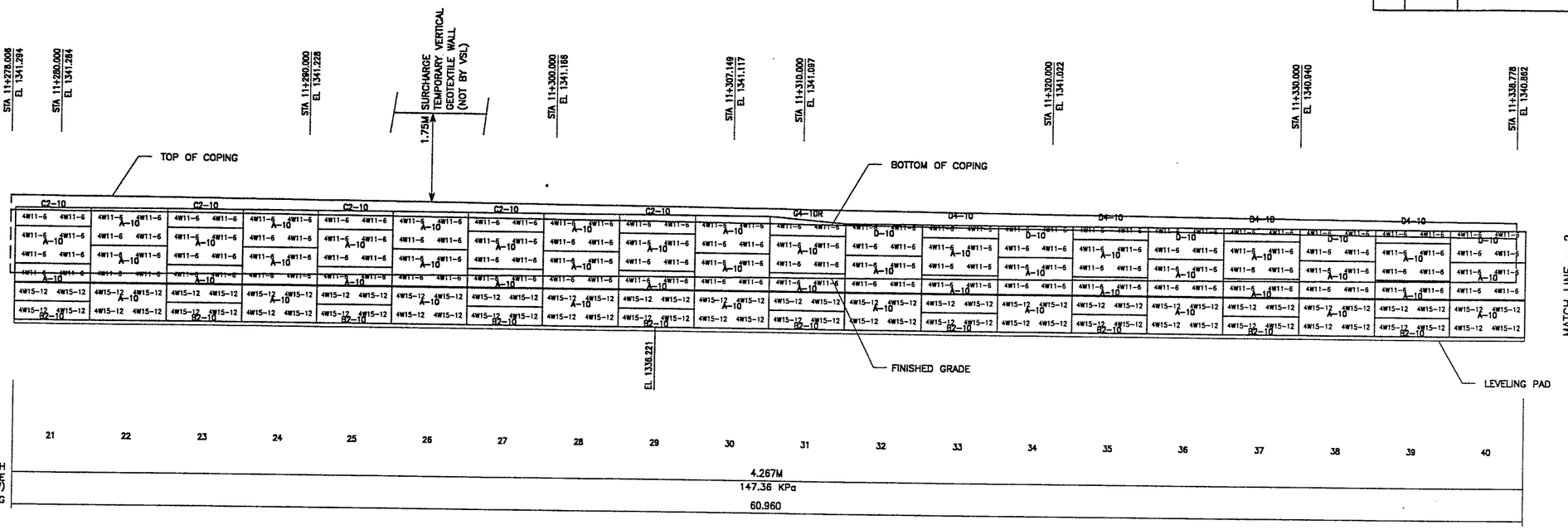

ELEVATION PRECAST WALL R-342-14

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 744.83 SM)

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

WASATCH CONSTRUCTORS

MAY 19 1998

RELEASED FOR CONSTRUCTION

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

METRIC

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LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
5/14/98
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK

DES. 04-21-98 JL
DRN. 04-21-98 DDL
CHK. 04-21-98 JL

RETAINED EARTH™

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RETAINED EARTH™ WALLS
PRECAST WALL "R-342-14"

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

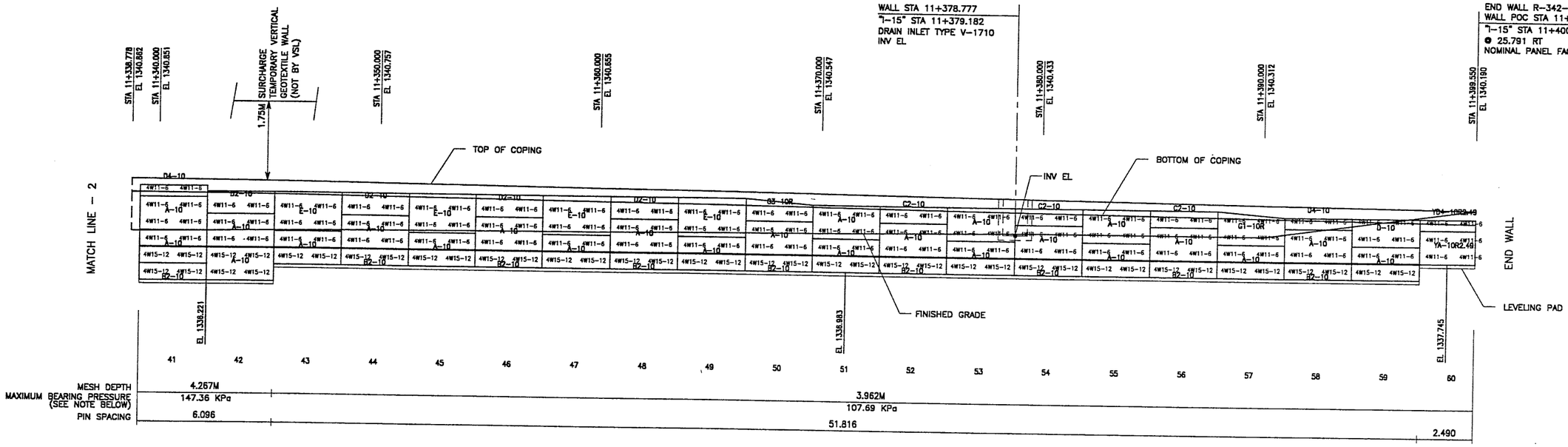
DWG. NO.
1.1R-342-14.6

JOB NO:
239-0007

SHT. NO.
RE-5

6 OF 8

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	05-07-98	RELEASE FOR CONSTRUCTION



ELEVATION PRECAST WALL R-342-14

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 744.83 SM)

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

WASATCH CONSTRUCTORS

MAY 19 1998

RELEASED FOR CONSTRUCTION

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

METRIC

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

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
5/14/98
STATE OF UTAH

	BY	CHK
NO.	DATE	REVISION
DES.	04-21-98	JL
DRN.	04-21-98	DDL
CHK.	04-21-98	JL

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-9969

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-342-14"

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

DWG. NO.
1.1R-342-14.7

JOB NO:
239-0007

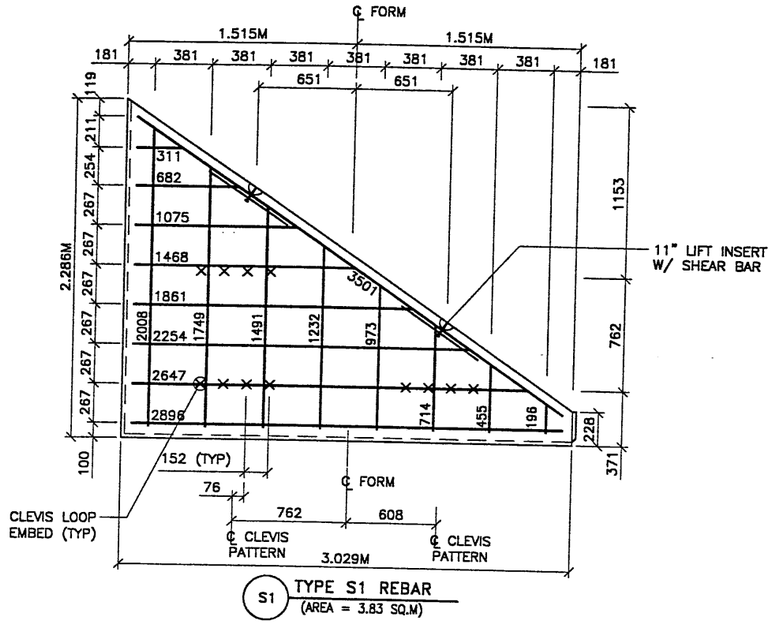
SHT. NO. RE-6

7 OF 8

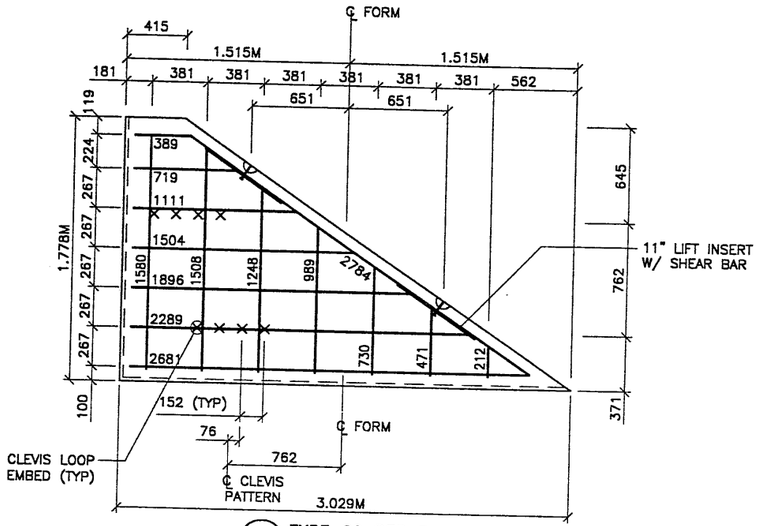
H:\RE_EARTH\APROJECT\1998\100-SERS\100-14\SUBMTL-2\100W-14

05-07-98

FIN



S1 TYPE S1 REBAR
(AREA = 3.83 SQ.M)



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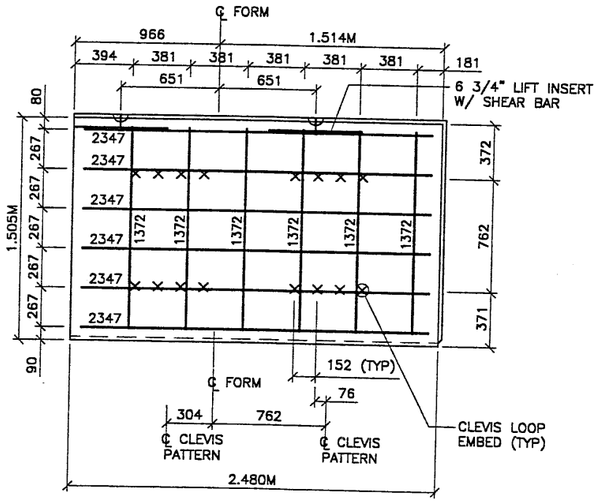
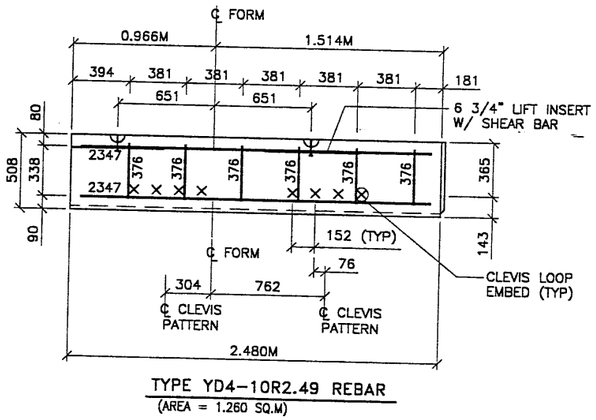
(AREA = 3.08 SQ.M)



TYPE YA-10R2.49 REBAR
(AREA = 3.790 SQ.M)



TYPE YD4-10R2.49 REBAR
(AREA = 1.260 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.

APPROVED FOR CONSTRUCTION			
NO.	DATE	DESCRIPTION	CHK
1	05-07-98	RELEASE FOR CONSTRUCTION	BY

NO.	DATE	REVISION

DES. JL 04-21-98
DRN. DDL 04-21-98
CHK. JL 04-21-98

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place Suite 200
Raleigh, NC 27612
Telephone: (919) 781-0272
Fax: (919) 781-4969

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

MAY 19 1998

RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
PRECAST WALL "R-342-14"
SPECIAL PANEL DETAILS

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

DWG. NO.
1.1R-342-14.8

JOB NO:
239-0007

SHT. NO. RE-7

METRIC

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LICENSED PROFESSIONAL ENGINEER
No. 341786
JOHN A. NICHOLSON, JR.
STATE OF UTAH

6 OF 8

H:\RE_EARTH\APRO... T 05-07-98 FIN... 19-0007\1998\100-SERS\100-14\SUBMTL-2\SPECIALS ...NCE (X-UTAH.DWG)

Date:09 JAN 98Time:15:55:18 Username:$$Username$$

BEGIN RETAINING WALL R-342-15
PC STA 1+375.000
= "106-A1" STA 1+375.000 (9.261RT)

RETAINING WALL R-342-15
PT STA 1+384.037
= "106-A1" STA 1+384.785 (9.261 RT)

APPROACH SLAB DRAIN STA 1+387.065

RETAINING WALL R-342-15
PC STA 1+387.065
= "106-A1" STA 1+388.056 (9.638 RT)

SEE "DETAIL A"
(NOT RELEASED FOR CONSTRUCTION AT MOUNTAIN SIGN AREA)

RETAINING WALL R-342-15 POC STA 1+396.291
= ℄ RETRIEVABLE SAMPLE STATION

RETAINING WALL R-342-15 PT STA 1+398.296 Bk
= RETAINING WALL R-342-15 PT STA 9+981.134 Ahd
= "I-15" STA 9+981.134 (26.006 LT)
= "106-A1" STA 1+400.268 (9.638 RT)

BRG ABUT#1
= "106 SOUTH STREET" STA 38+553.538
= "I-15" STA 10+005.050 (27.491 LT)

℄ 10600 SOUTH ST

R=110.739

R=110.362

℄ RAMP 106-D1

℄ BRG ABUT #1

℄ RAMP 106-A1

℄ RAMP 106-B1

℄ RAMP 106-C1

℄ I-15

I-15 SOUTH BOUND

RETAINING WALL R-342-15 PT STA 10+004.957
="106 SOUTH STREET" STA 38+555.063
="I-15" STA 10+004.786 (25.991 LT)

APPROACH SLAB DRAIN
STA 1+123.438

R=140.739

R=140.362

RETAINING WALL R-342-15
PC STA 1+126.466
= "106-C1" STA 1+127.477 (9.261 RT)

RETAINING WALL R-342-15
PT STA 1+123.438
= "106-C1" STA 1+124.270 (9.638 RT)

SEE "DETAIL B"
(NOT RELEASED FOR CONSTRUCTION AT MOUNTAIN SIGN AREA)

RETAINING WALL R-342-15 POC STA 1+113.281
= ℄ RETRIEVABLE SAMPLE STATION

RETAINING WALL R-342-15 PT STA 10+039.770 Bk
= RETAINING WALL R-342-15 PC STA 1+111.321 Ahd
= "106-C1" STA 1+111.321 (9.638 RT)
= "I-15" STA 10+039.624 (26.065 LT)

END RETAINING WALL R-342-15
PT STA 1+152.288
= "106-C1" STA 1+155.000 (9.261 RT)

CURVE NO.	Δ	R	L	T
1	49°57'17"	120.000	104.625	55.899
2	10°46'05"	10 480.000	1969.615	987.717
3	90°46'33"	150.000	237.650	152.045

5m 0 5m 15m 25m
SCALE IN METERS

WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION.

NO.	DATE	DESCRIPTION
1	1/7/98	INITIAL RELEASE FOR CONSTRUCTION

BEGIN RETAINING WALL R-342-15 STA 1+375.00

RETAINING WALL LINE CONTROL POINT (RWLCP). TYP

FINISHED GRADE AT FRONT FACE OF RETAINING WALL. TYP

EXISTING GRADE AT RWLCP. TYP

END RETAINING WALL R-342-15 STA 1+152.288

TEMPORARY 600 MM DIA ± STORM DRAIN

TEMPORARY 600 MM DIA ± STORM DRAIN

TELEPHONE LINE

900 MM DIA ± SANITARY SEWER

POWER LINE TO BE REMOVED ACROSS THE FREEWAY

TEMPORARY 600 MM DIA ± STORM DRAIN

MATCH LINE #1

MATCH LINE #1

MATCH LINE #2

MATCH LINE #2

ELEVATION VIEW FROM FRONT OF WALL

UTAH DEPARTMENT OF TRANSPORTATION
SVERDRUP/DE LEUW

DESIGN	CHECK
DRAWN	CHECK
QUANT.	CHECK

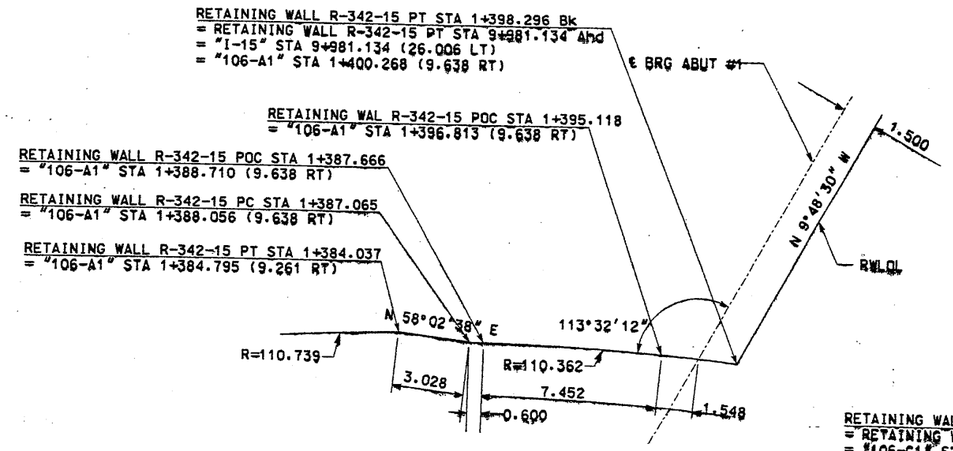
APPROVAL RECOMM. DATE — PROJECT DESIGN ENGINEER
APPROVED DATE — PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
SITUATION & LAYOUT RET WALL R-342-15
SECTION 1.1
PROJECT NUMBER *SP-15-7(135)296

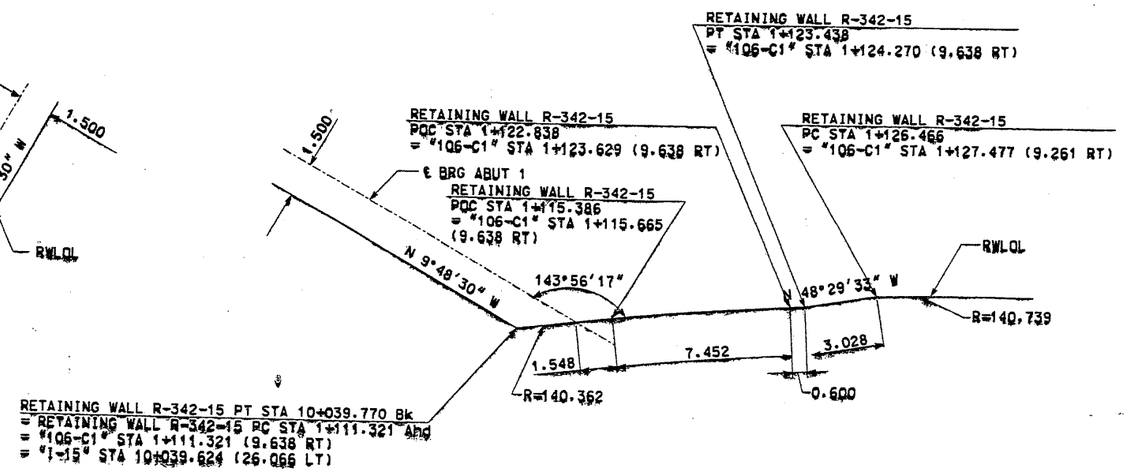
SALT LAKE COUNTY
DWG. NO. 1.1R-342-15.01 (~~1-342-15.01~~)
SHT. 1 OF 13
REF.

LICENSED PROFESSIONAL ENGINEER
No. 97-341772-2202
ADAM T M WANG
STATE OF UTAH

Filename:i:\400-07\rw6\final\wall15a.dgn

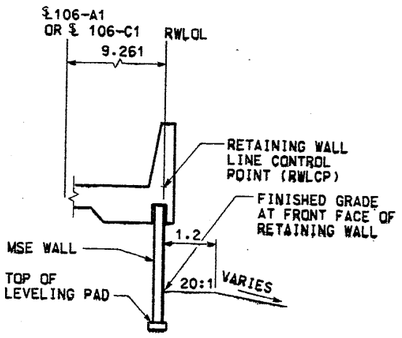


DETAIL A

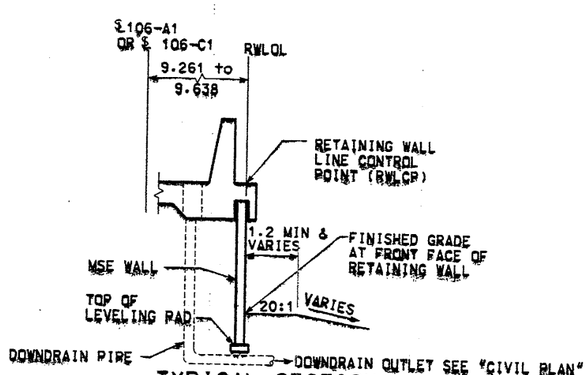


DETAIL B

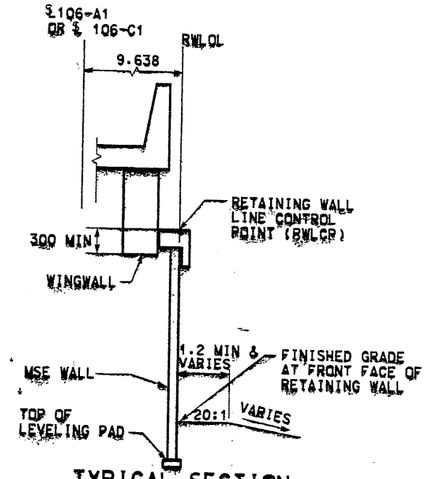
WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION



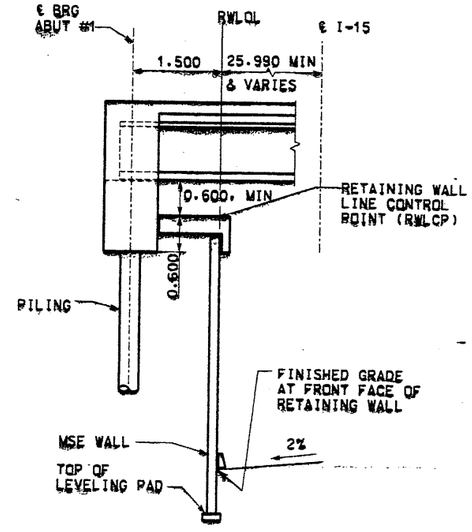
TYPICAL SECTION
WALL R-342-15
STA 1+375.000 TO STA 1+384.037
STA 1+126.466 TO STA 1+152.288



TYPICAL SECTION
WALL R-342-15
STA 1+384.037 TO STA 1+387.666
STA 1+122.838 TO STA 1+126.466



TYPICAL SECTION
WALL R-342-15
STA 1+387.666 TO STA 1+398.296
STA 1+111.321 TO STA 1+122.838



TYPICAL SECTION
WALL R-342-15
STA 9+981.134 TO 10+039.770

NOTE: FOR COPING AND MOMENT SLAB DETAILS, SEE I-15 CORRIDOR STANDARD

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	1/7/98	INITIAL RELEASE FOR CONSTRUCTION

UTAH DEPARTMENT OF TRANSPORTATION
SVERDRUP/DE LEUW

DESIGN | CHECK
DRAWN | CHECK
QUANT. | CHECK
APPROVAL RECOMM. | DATE | PROJECT DESIGN ENGINEER
APPROVED | DATE | PROJECT MANAGER

1112401

I-15 CORRIDOR RECONSTRUCTION
SITUATION & LAYOUT RET WALL R-342-15
SECTION 1.1
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE
COUNTY

DWG. NO. 1.1R-342-15.02
SHT. 2 OF 13
REF.

LICENSED PROFESSIONAL ENGINEER
No. 97-341772-2202
ADAM T M WANG
STATE OF UTAH

Date:09 JAN 98 Time:15:19:03 Username:$$username$$
Filename:1:2400-07zrw6zfinal2wall15b.dgn

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION

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. = 0.25g (TYP) SEISMIC ACCELERATION COFF. = 0.65g (AT BRIDGE ABUTMENTS)
DESIGN CRITERIA
SAFETY FACTOR (OVERTURNING) = 2.0 SAFETY FACTOR (SLIDING) = 1.5 SAFETY FACTOR (PULLOUT) = 1.5 DESIGN LIFE = 75 YEARS

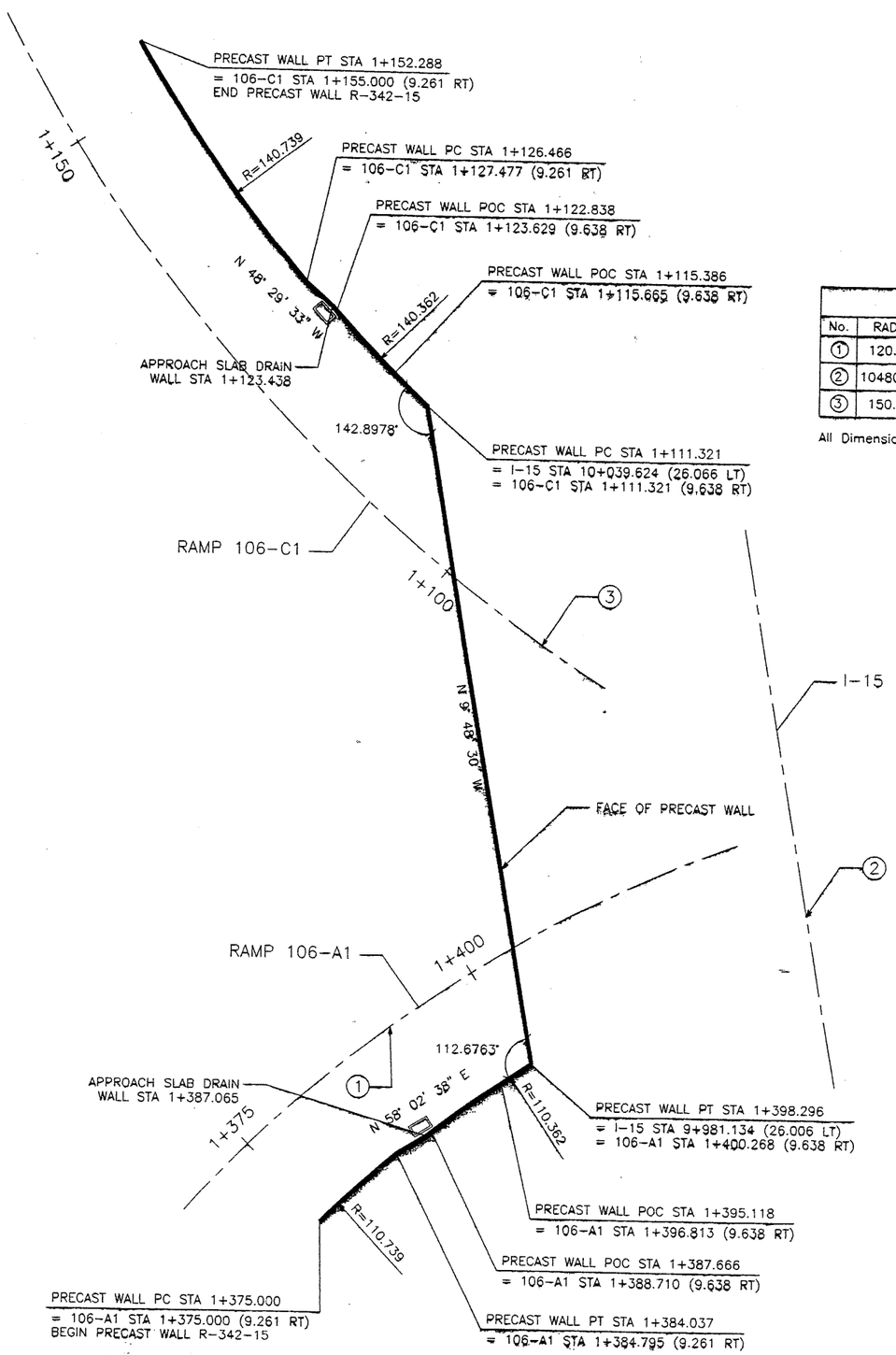
GENERAL NOTES

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	120.000	104.625	55.899	49°57'17" R
2	10480.000	1969.615	987.717	10°46'05" L
3	150.000	237.650	152.045	90°46'33" R

All Dimensions Are In Meters Unless Noted Otherwise

RETAINED EARTH INDEX	
RE-1	PLAN PRECAST FACE WALL R-342-15, NOTES & DESIGN CRITERIA
RE-2	TYPICAL DETAILS
RE-3	TYPICAL DETAILS
RE-4	TYPICAL CROSS SECTIONS
RE-5	TYPICAL CROSS SECTIONS
RE-6	TYPICAL CROSS SECTIONS
RE-7	SPECIAL DETAILS
RE-8	ELEVATION PRECAST WALL "R-342-15"
RE-9	ELEVATION PRECAST WALL "R-342-15"
RE-10	ELEVATION PRECAST WALL "R-342-15"
RE-11	SPECIAL PANEL DETAILS

WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

PLAN VIEW WALL "R-342-15"

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

METRIC

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REGISTERED PROFESSIONAL ENGINEER
No. 134796
JOHN A. NICHOLSON JR.
12/14/97
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK

DES. 11-26-97 MM
DRN. 11-26-97 DDO
CHK. 11-26-97 MM
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)
MIAMI, FL / SAN JOSE, CA / SPRINGFIELD, VA

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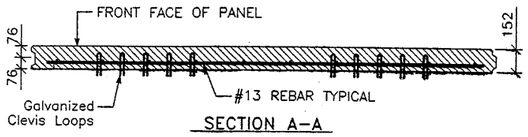
RETAINED EARTH™ WALLS
PLAN VIEW PRECAST WALL "R-342-15"

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

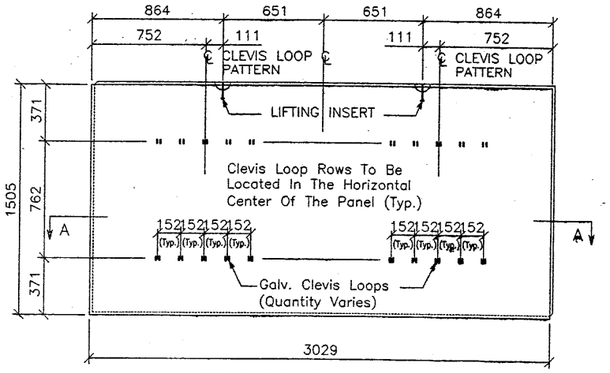
SCALE: 1.1R-342-15.3
JOB NO: 239-0007
RE-1

3 OF 13

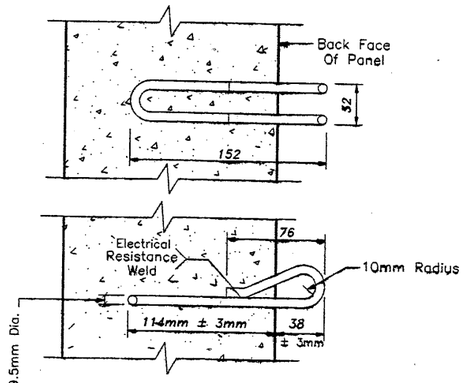
H:\RE_EARTH\APROJECT\239-0007\1998\90-15\SUBMTL-2\RE-1
FINAL PI -15-97



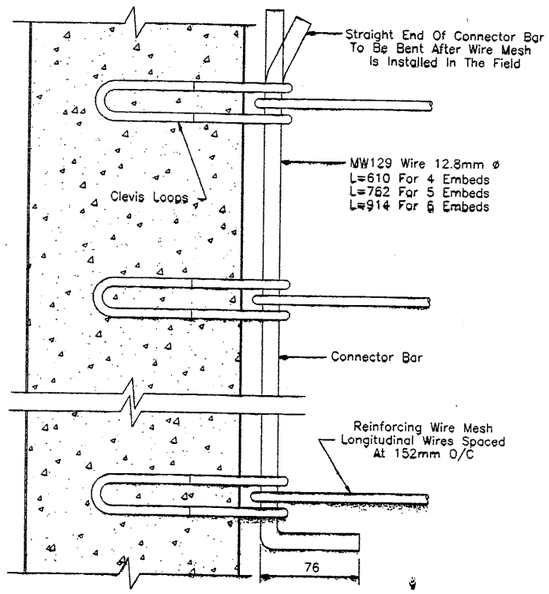
SECTION A-A



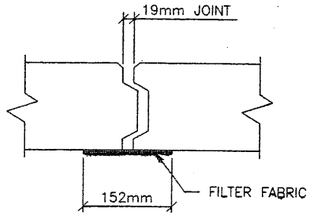
STANDARD "5A-10" PANEL
Back Face View



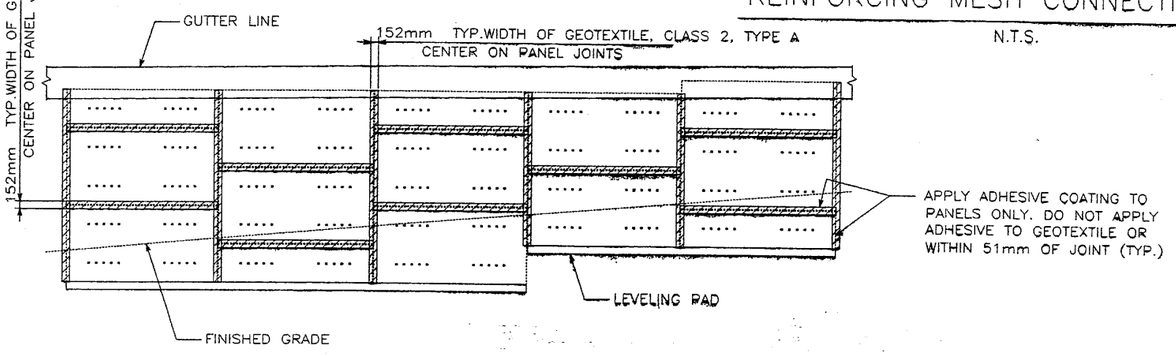
CLEVIS LOOP DETAIL
N.T.S.



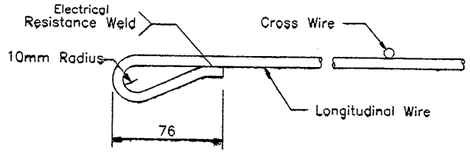
REINFORCING MESH CONNECTION DETAIL
N.T.S.



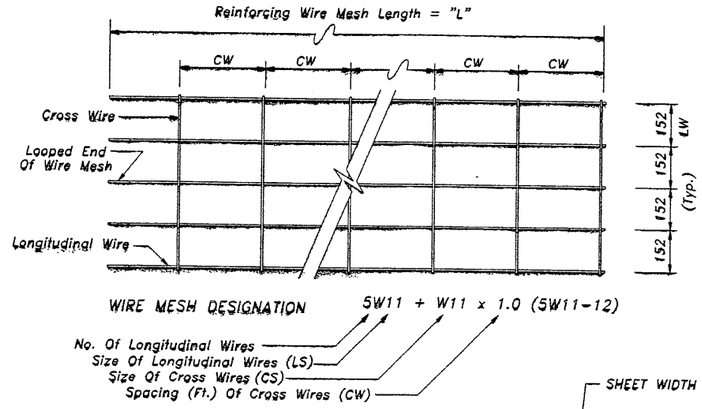
HORIZONTAL JOINT DETAIL
N.T.S.



PARTIAL WALL ELEVATION



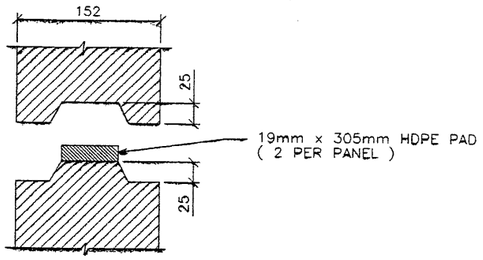
WIRE MESH LOOP DETAIL
N.T.S.



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.



PANEL JOINT DETAIL
N.T.S.

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METRIC

APPROVED FOR CONSTRUCTION			
NO.	DATE	DESCRIPTION	BY CHK
1	12-15-97	RELEASE FOR CONSTRUCTION	

NO.	DATE	REVISION

WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

DES. 11-26-97 MM
DRN. 11-26-97 DDO
CHK. 11-26-97 MM

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
Fax: (919) 781-4983

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RETAINED EARTH™ WALLS
PRECAST WALL "R-342-15"
TYPICAL DETAILS

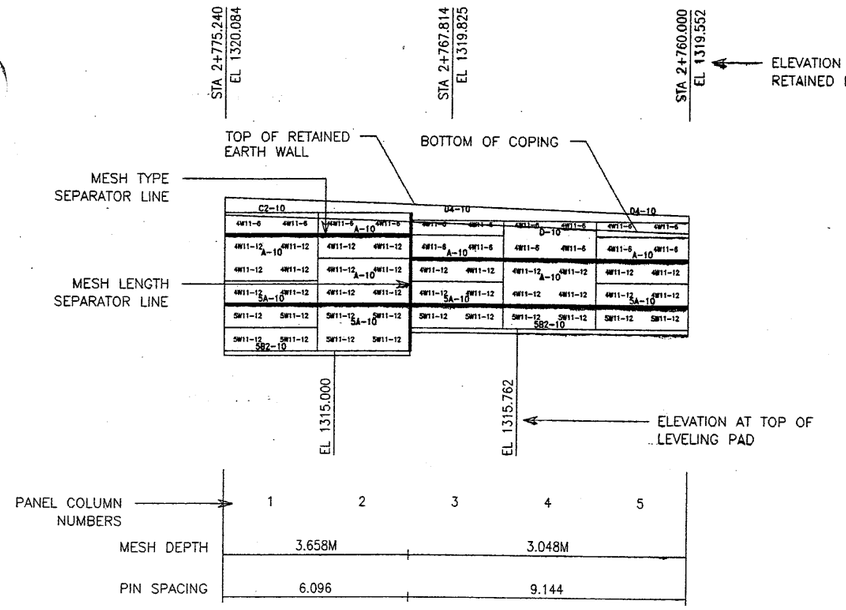
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE: 1.1R-342-15.4
JOB NO: 239-0007
RE-2

LICENSED PROFESSIONAL ENGINEER
No. 244796
JOHN A. NICHOLSON, JR.
12/14/97
STATE OF UTAH

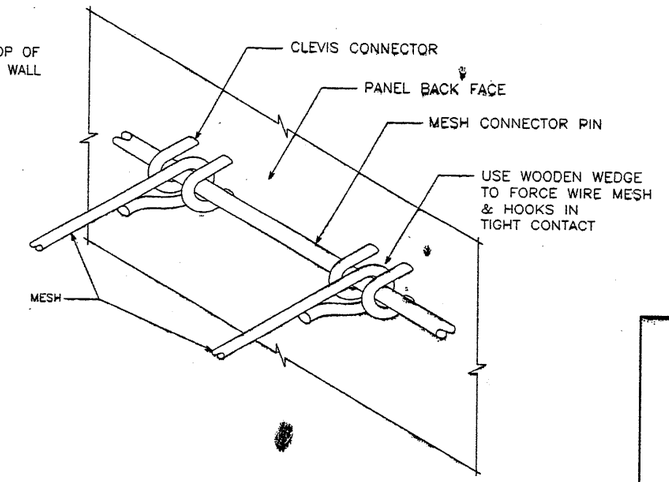
4 OF 13

H:\RE_EARTH\APROJECT\239-0007\1998\90-15\SUBMTL-2\RE-2
12-15-97
FINAL PI



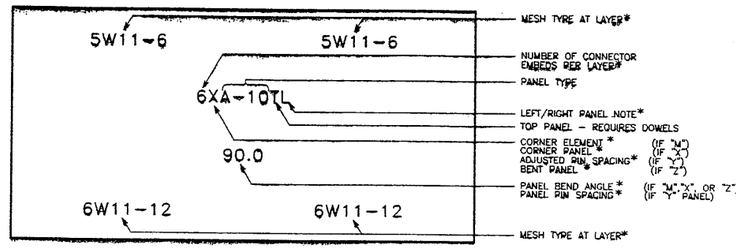
1 WALL ELEVATION KEY

(FRONT FACE SHOWN)



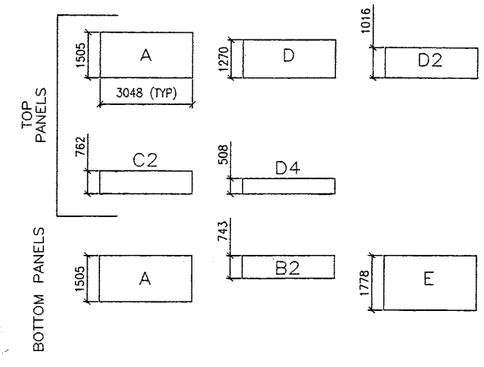
2 MESH CLEVIS CONNECTOR

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



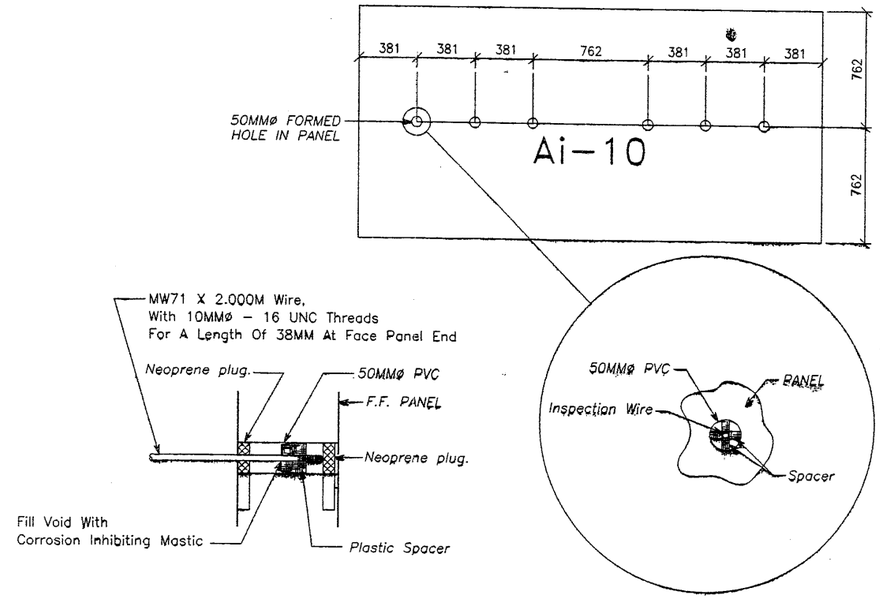
* NO LABEL INDICATES STANDARD TYPE

3 PANEL LABELS



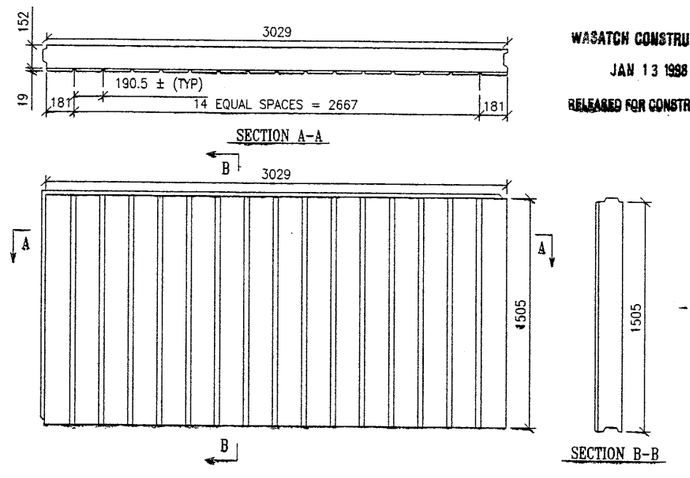
4 PANEL TYPES

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	12-15-97	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. MM 11-26-97
DRN. DDO 11-26-97
CHK. MM 11-26-97

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RETAINED EARTH™ WALLS
PRECAST WALL "R-342-15"
TYPICAL DETAILS

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

SCALE: 1:R-342-155 ~~2:R-345-4.5~~

JOB NO: 239-0007

RE-3

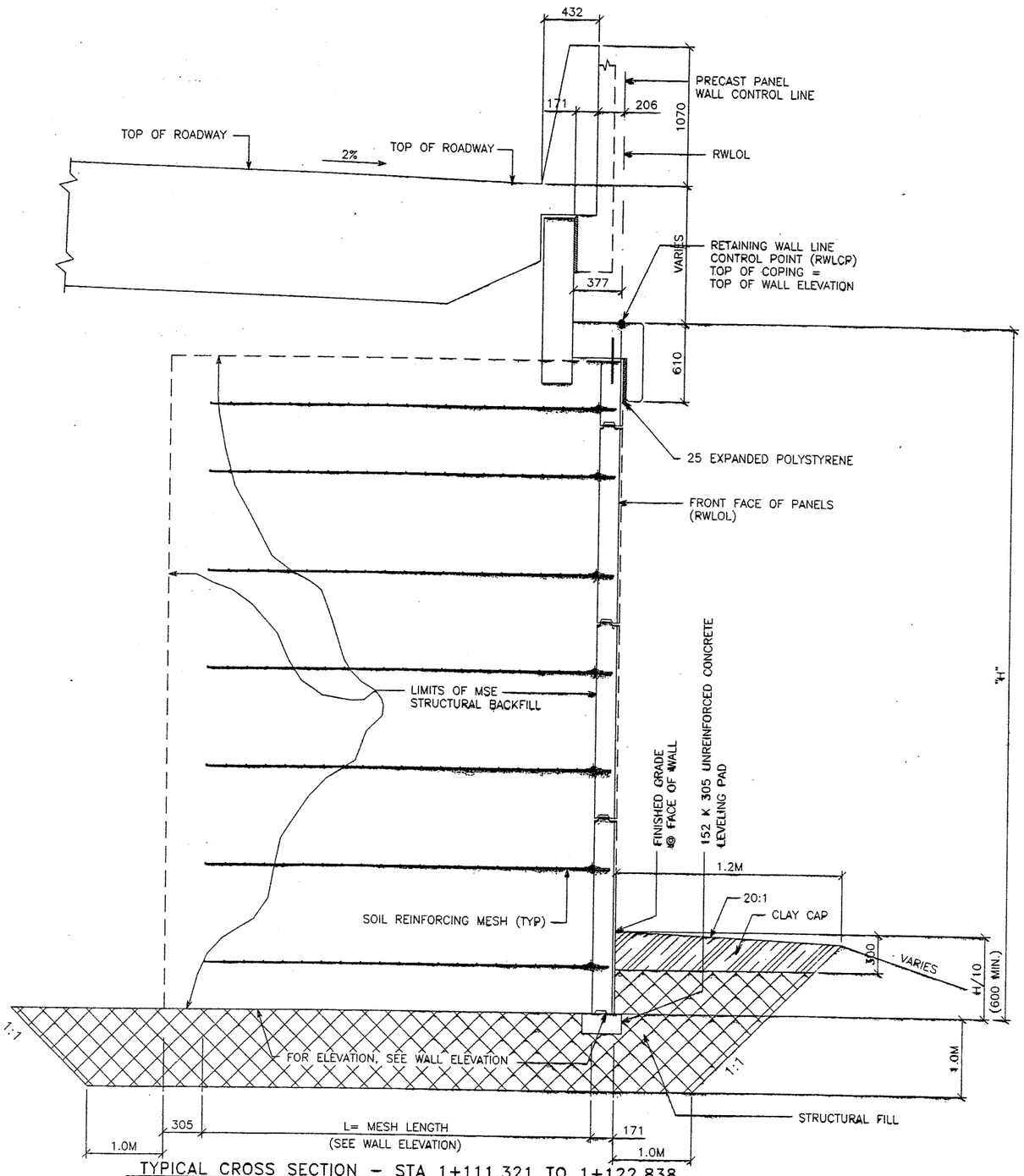
50F13

WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

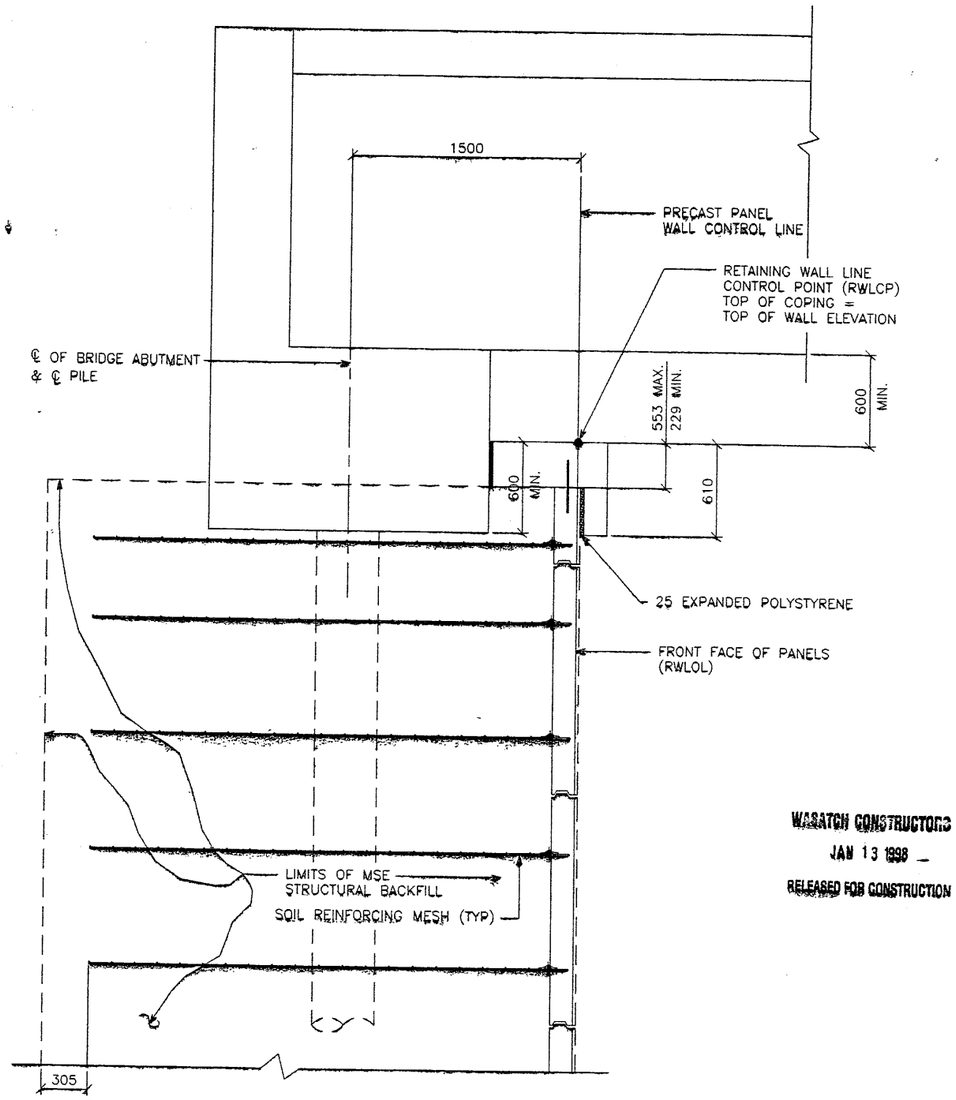
LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
12/19/97
STATE OF UTAH

H:\RE_EARTH\APROJECT\239-0007\1998\90SERIES\SUBMTL-2\RE-3

FINAL PI 12-15-97



TYPICAL CROSS SECTION - STA 1+111.321 TO 1+122.838
TYPICAL CROSS SECTION - STA 1+387.666 TO 1+398.296
(SEE DWG. NO. 1.1R-342-15.02 FOR ADDITIONAL INFORMATION)
SCALE: 1:20 (FULL SIZE)
SCALE: 1:40 (HALF SIZE)



TYPICAL CROSS SECTION - STA 1+111.321 TO 1+398.296
(SEE DWG. NO. 1.1R-342-15.02 FOR ADDITIONAL INFORMATION)
SCALE: 1:20 (FULL SIZE)
SCALE: 1:40 (HALF SIZE)

METRIC

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LICENSED PROFESSIONAL ENGINEER
No. 341798
JOHN A. NICHOLSON, JR.
12/19/97
STATE OF UTAH

WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. 11-26-97 MM
DRN. 11-26-97 DDO
CHK. 11-26-97 MM

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RETAINED EARTH™ WALLS
WIRE FACED WALL "R-342-15"
TYPICAL CROSS SECTION

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

SCALE: 1.1R-342-15.6
JOB NO: 239-0007
RE-4

6 OF 13

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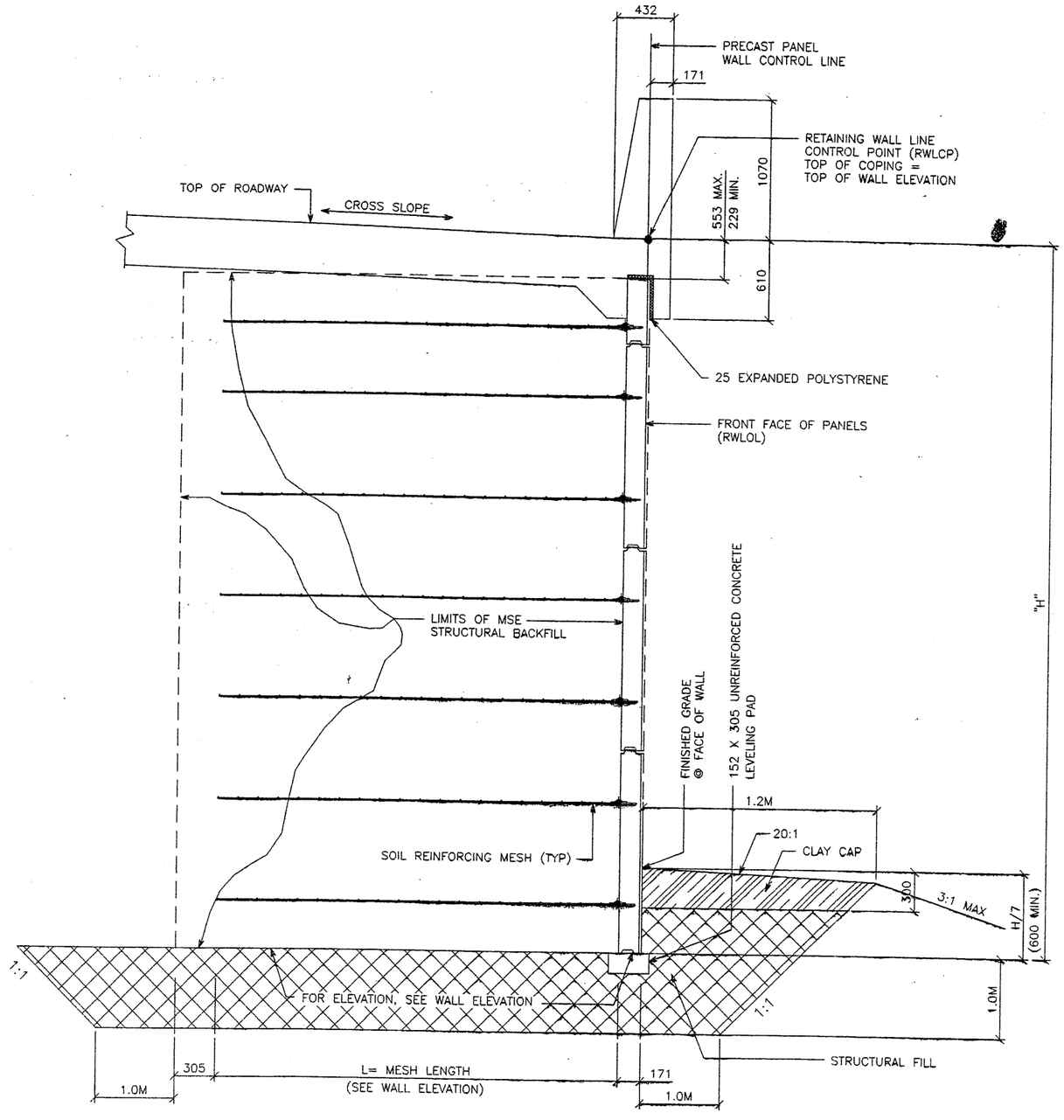
90-15\SUBMTL-2\RE-4
2-15-97
FINAL P



TYPICAL CROSS SECTION – STA 1+126.466 TO 1+152.288
TYPICAL CROSS SECTION – STA 1+375.000 TO 1+384.037
(SEE DWG. NO. 1.1R–342+15.02 FOR ADDITIONAL INFORMATION)
SCALE: 1:20 (FULL SIZE)
SCALE: 1:40 (HALF SIZE)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK.

DES. 11-26-97 MM
DRN. 11-26-97 DDO
CHK. 11-26-97 MM

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Telephone: (919) 781-6272
Fax: (919) 781-4969

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WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
WIRE FACED WALL "R-342-15"
TYPICAL CROSS SECTION

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

METRIC

SCALE: 1.1R-342-15.7
JOB NO: 239-0007
RE-5

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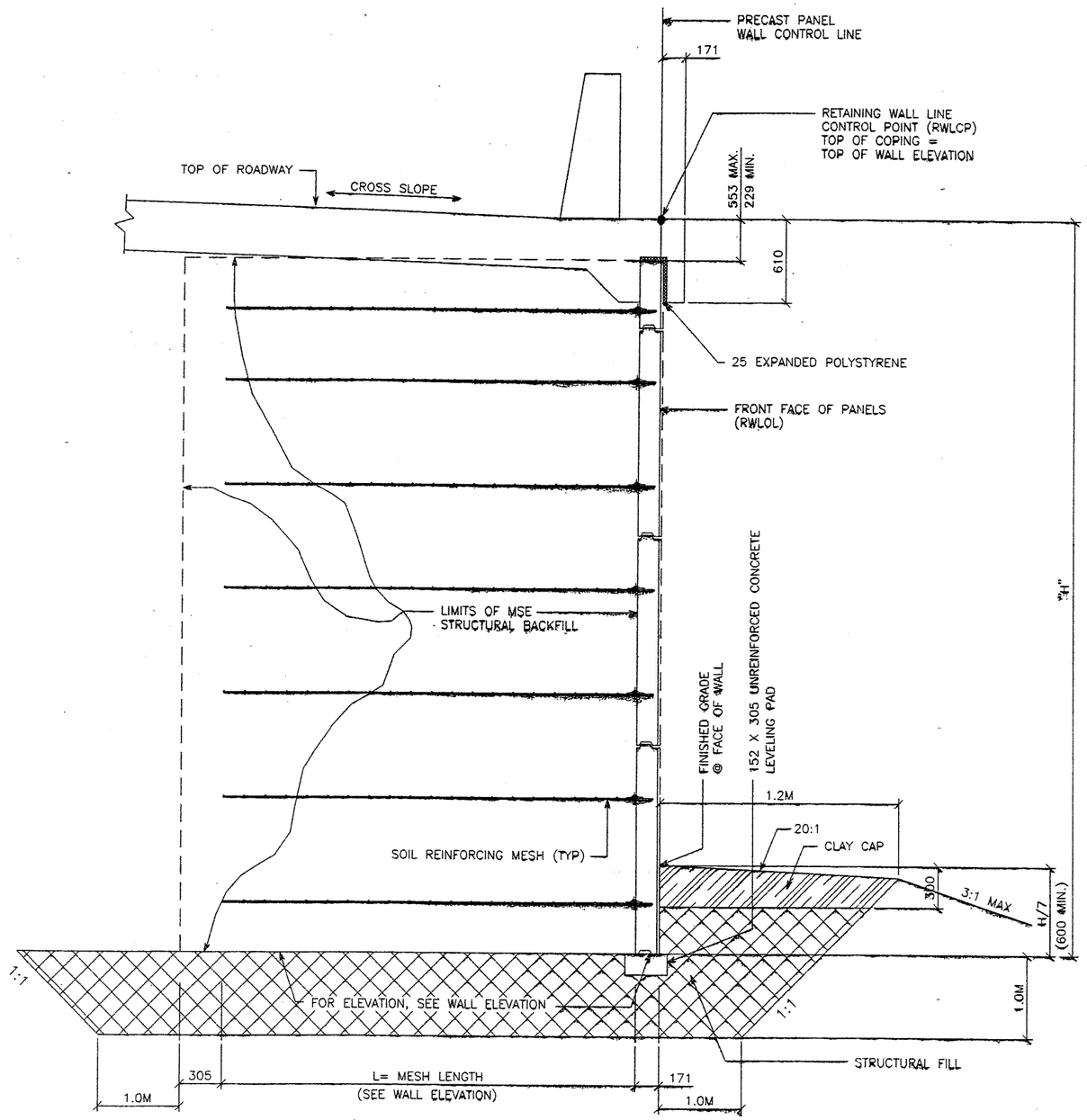
REGISTERED PROFESSIONAL ENGINEER
No. 144796
JOHN A. NICHOLSON, JR.
12/17/97
STATE OF UTAH

H:\RE_EARTH\APROJECT\239-0007\1998\90-15\SUBMTL-2\RE-5

FINAL PU -15-97



TYPICAL CROSS SECTION - STA 1+122.838 TO 1+126.466
TYPICAL CROSS SECTION - STA 1+384.037 TO 1+387.666
(SEE DWG. NO. 1.1R-342+15.02 FOR ADDITIONAL INFORMATION)
SCALE: 1:20 (FULL SIZE)
SCALE: 1:40 (HALF SIZE)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

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DRN. 11-26-97 DDO
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RETAINED EARTH™ WALLS
WIRE FACED WALL "R-342-15"
TYPICAL CROSS SECTION

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

WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

METRIC

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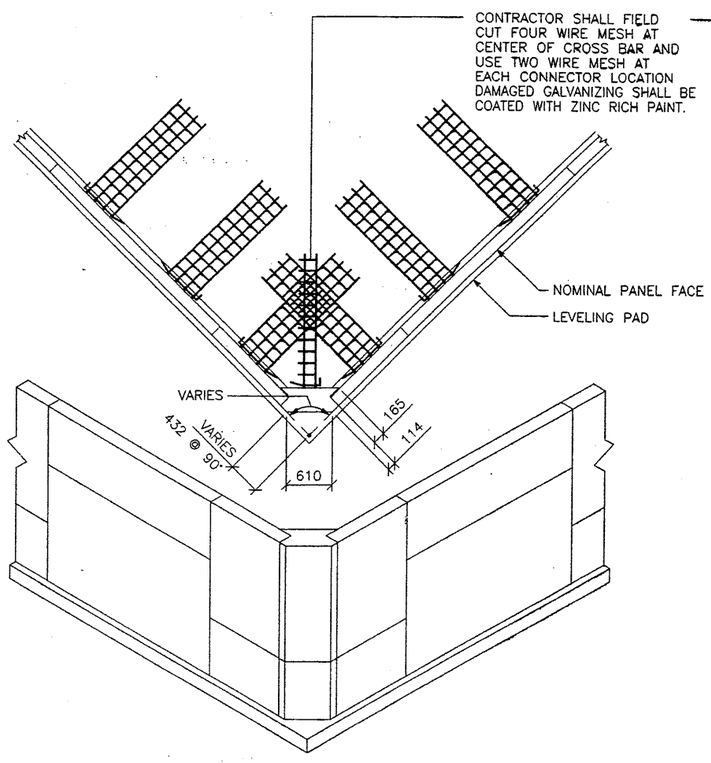
REGISTERED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
12/11/97
STATE OF UTAH

SCALE: 1.1R-342-15.8
JOB NO: 239-0007
RE-6

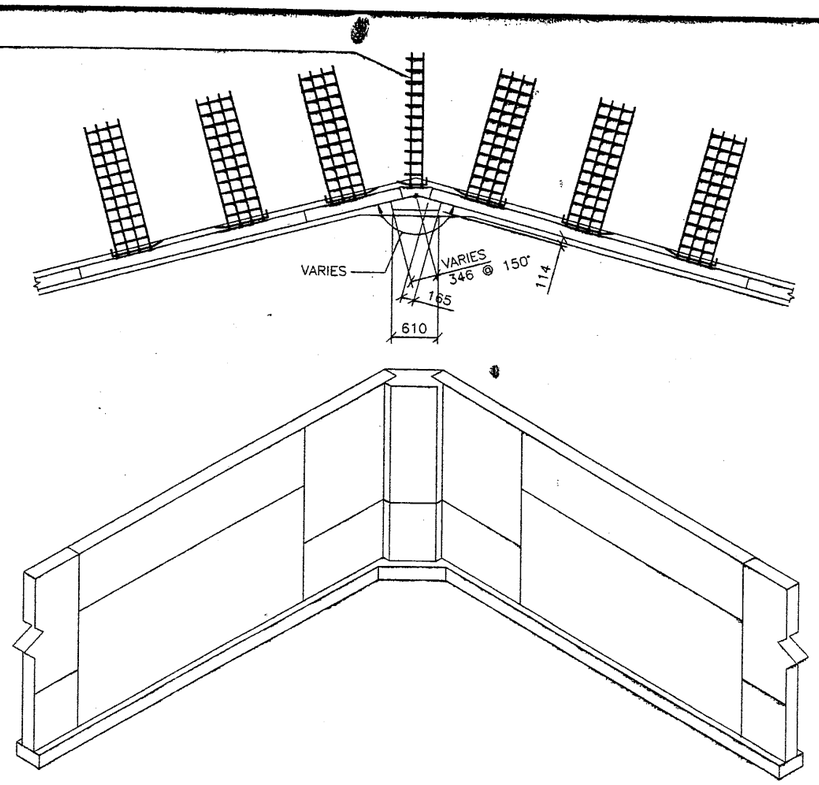
6 OF 13

H:\RE_EARTH\APROJECT\239-0007\1998\90-15\SUBMTL-2\RE-6

FINAL PLOT 12-15-97



80 OUTSIDE CORNER ELEMENT
PLAN VIEW / ISOMETRIC



80 INSIDE CORNER ELEMENT
PLAN VIEW / ISOMETRIC

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. 11-26-97 MM
DRN. 11-26-97 DDO
CHK. 11-26-97 MM

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Raleigh, NC 27612
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WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

RETAINED EARTH™ WALLS
PRECAST WALL "R-342-15"
SPECIAL DETAILS

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

METRIC

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REGISTERED PROFESSIONAL ENGINEER
No. 341786
JOHN A. NICHOLSON, JR.
12/19/97
STATE OF UTAH

SCALE: 1.1R-342-15.9
JOB NO: 239-0007
RE-7

9 of 13

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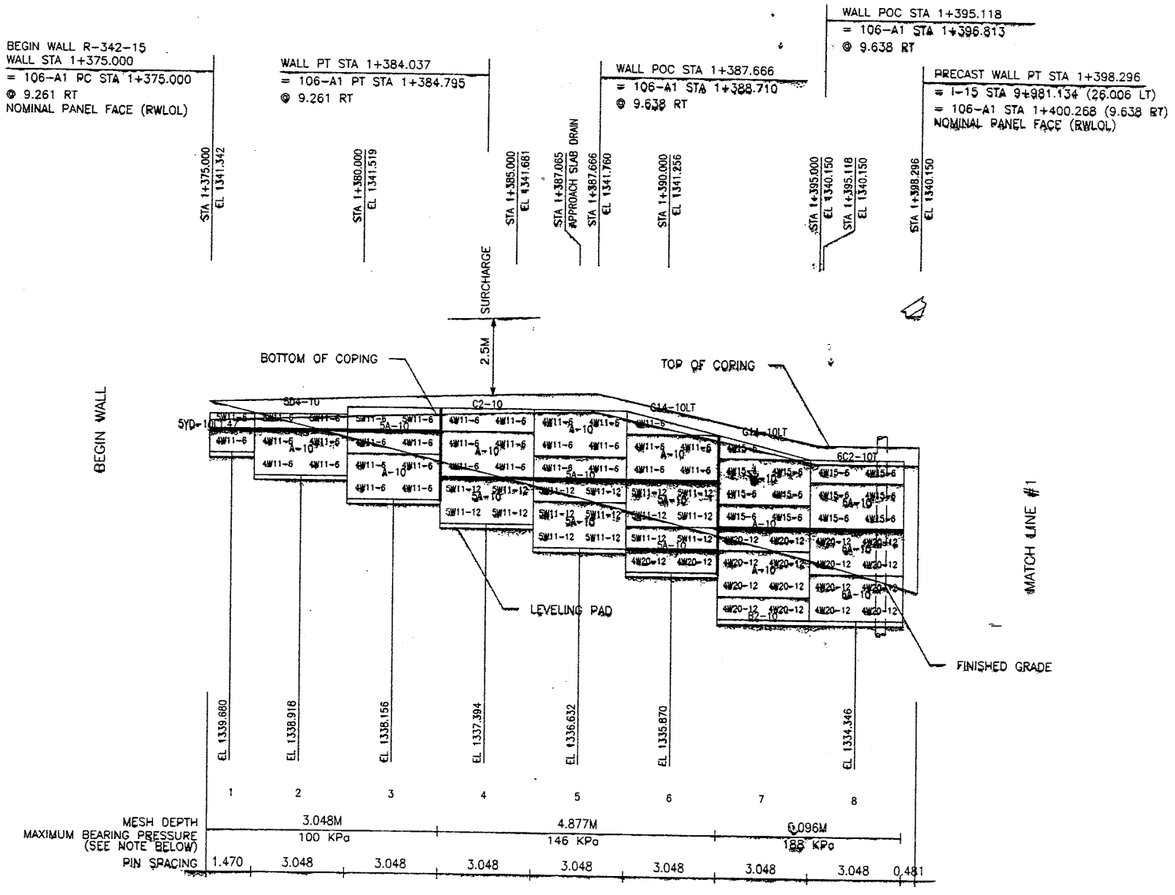
12-15-97
FINAL



ELEVATION PRECAST WALL R-342-15

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 572.21 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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WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

METRIC

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
12/17/97
STATE OF UTAH

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. 11-26-97 MM
DRN. 11-26-97 DDO
CHK. 11-26-97 MM

RETAINED EARTH™

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

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RETAINED EARTH™ WALLS
PRECAST WALL "R-342-15"

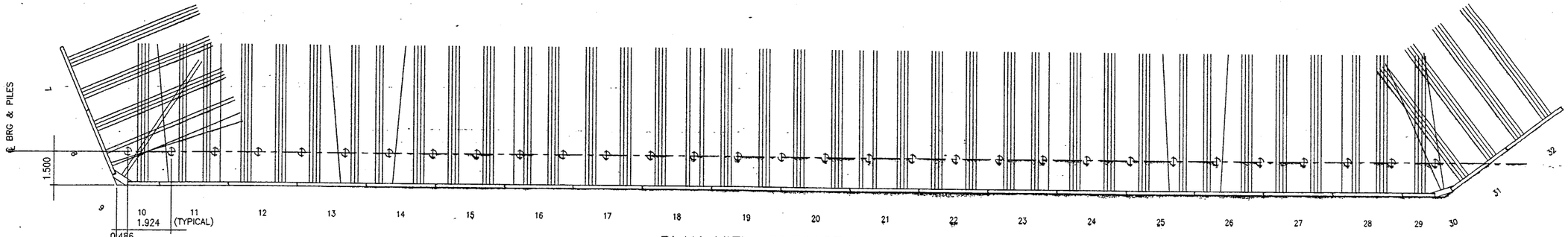
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE: 1.1R-342-15.10
JOB NO: 239-0007
RE-8

10 OF 13

FINAL R 12-15-97 H:\RE_EARTH\APROJECT\239-0007\1998\90SERIES\SUBMTL-2\342-15

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION



PLAN VIEW PRECAST WALL R-342-15

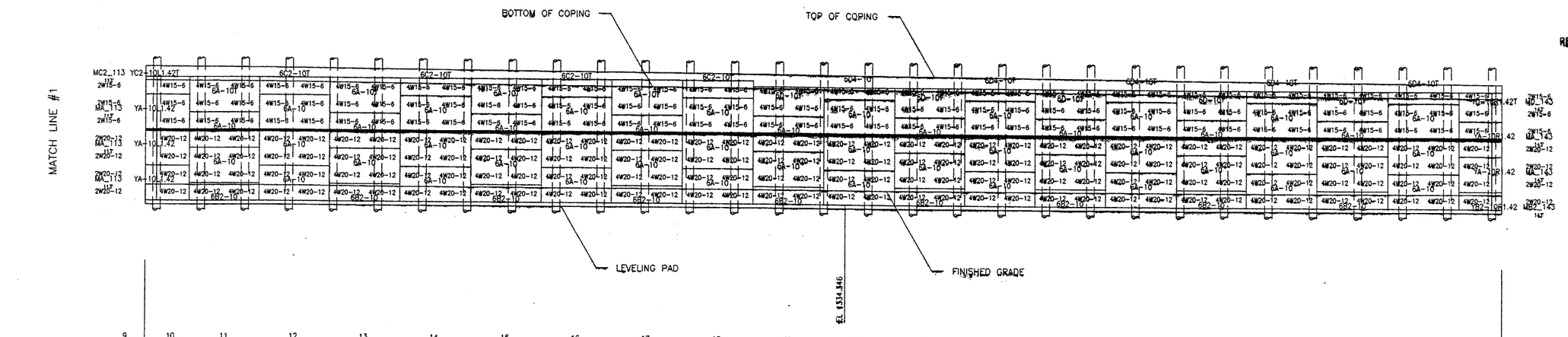
0.486

PRECAST WALL PT STA 1+398.296
= I-15 STA 9+981.134 (26.006 LT)
= 106-A1 STA 1+400.268 (9.638 RT)
NOMINAL PANEL FACE (RWLOL)

PRECAST WALL PT STA 1+111.321
= I-15 STA 10+039.624 (26.006 LT)
= 106-A1 STA 1+111.321 (9.638 RT)
NOMINAL PANEL FACE (RWLOL)

STA 9+981.134 EL 1340.150
STA 9+985.000 EL 1340.124
STA 9+990.000 EL 1340.080
STA 9+995.000 EL 1340.055
STA 10+000.000 EL 1340.021
STA 10+005.000 EL 1339.987
STA 10+010.000 EL 1339.953
STA 10+015.000 EL 1339.919
STA 10+020.000 EL 1339.885
STA 10+025.000 EL 1339.851
STA 10+030.000 EL 1339.817
STA 10+035.000 EL 1339.783
STA 10+039.770 EL 1339.750

WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION



ELEVATION PRECAST WALL R-342-15

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 572.21 SM)

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

METRIC

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

CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. 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
JOHN A. NICHOLSON JR.
12/17/97
STATE OF UTAH

	NO.	DATE	REVISION	BY	CHK
DES. 11-26-97 MM					
DRN. 11-26-97 DDO					
CHK. 11-26-97 MM					

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone (919) 781-6272
Fax (919) 781-4983

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-342-15"

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

SCALE: 1.1R-342-15.11

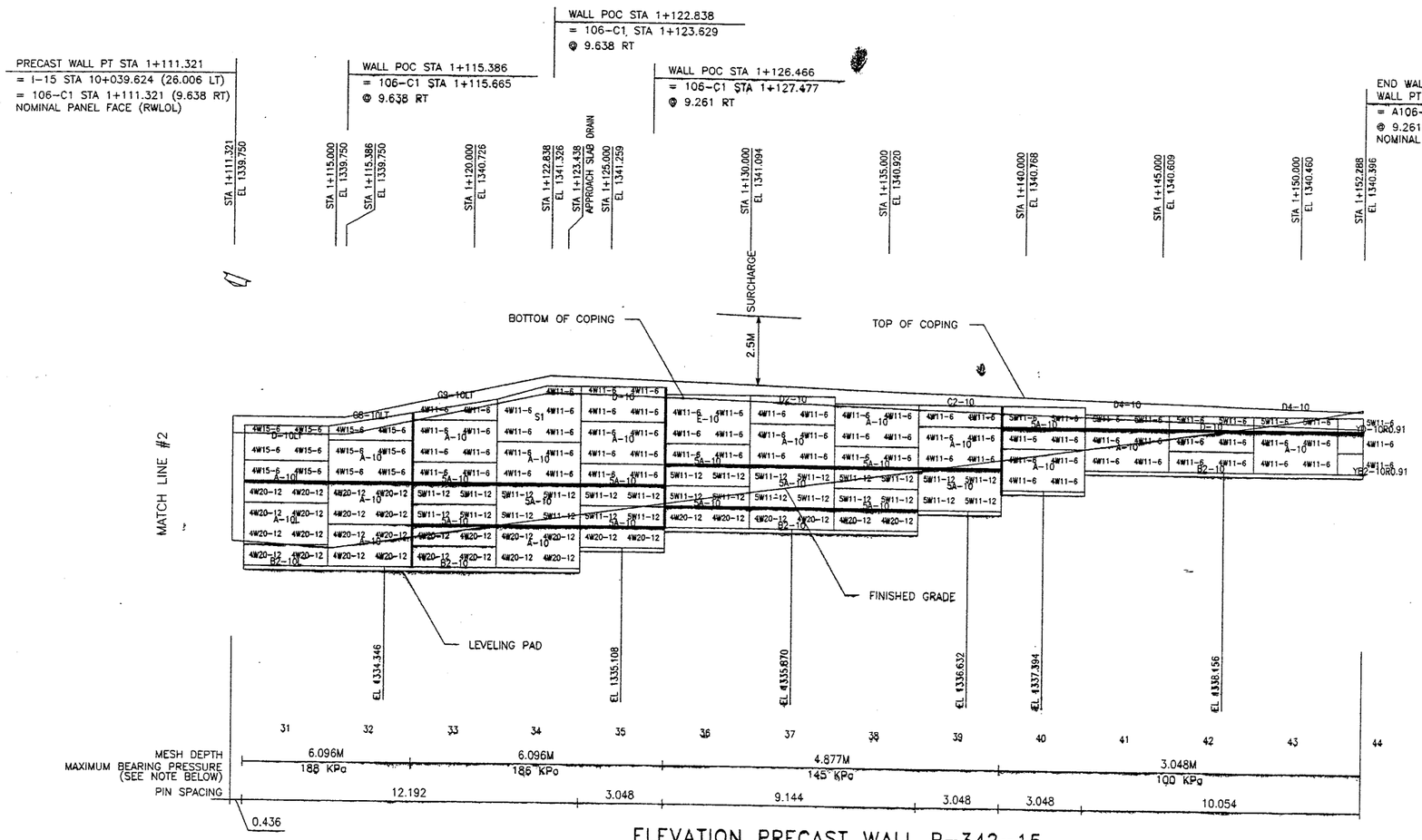
JOB NO: 239-0007

RE-9

11 OF 13

H:\RE_EARTH\APROJECT\239-0007\1998\90SERIES\SUBMTL-2\342-15
FINAL P 12-15-97

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION



ELEVATION PRECAST WALL R-342-15

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 572.21 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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WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

METRIC

LICENSED PROFESSIONAL ENGINEER
06/141796
JOHN A. NICHOLSON, JR.
12/17/97
STATE OF UTAH

NO.	DATE	REVISION	BY	CHK

DES. 11-26-97 MM
DRN. 11-26-97 DDO
CHK. 11-26-97 MM

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
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RETAINED EARTH™ WALLS
PRECAST WALL "R-342-15"

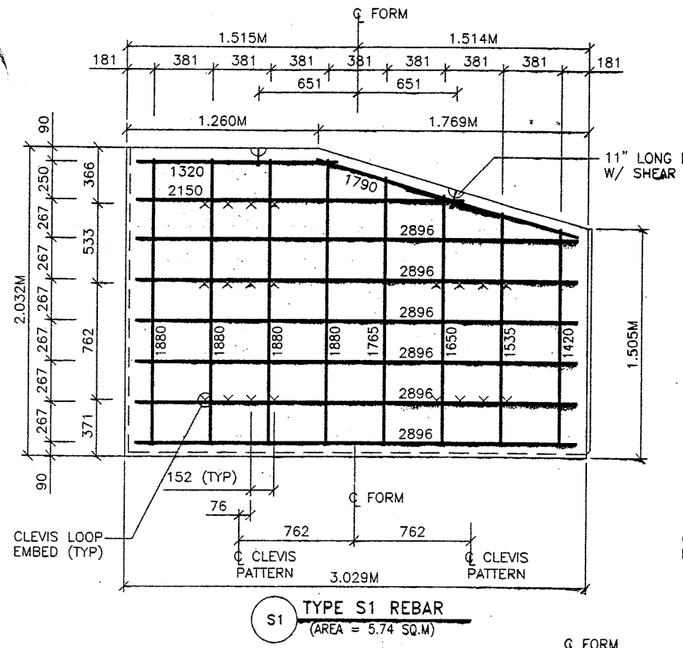
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

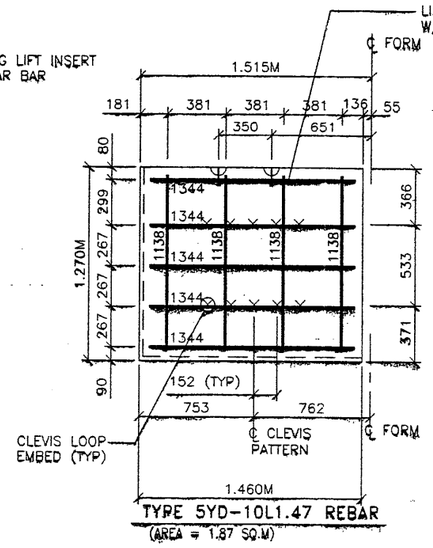
SCALE: 1.1R-342-15.12
JOB NO: 239-0007
RE-10

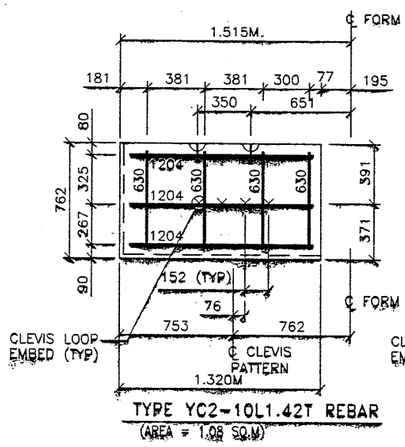
12 OF 13

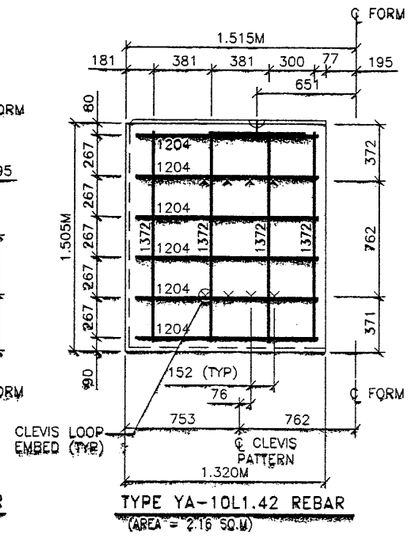
H:\RE_EARTH\APROJECT\239-0007\1998\900SERIES\SUBMTL-2\342-15
FINAL P 12-15-97

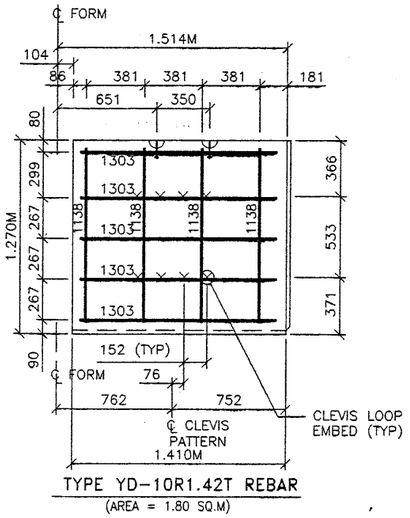
APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION

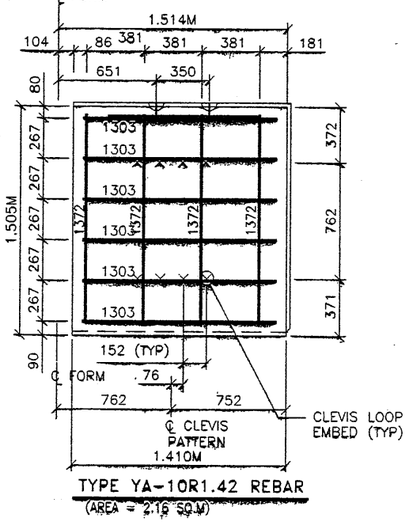


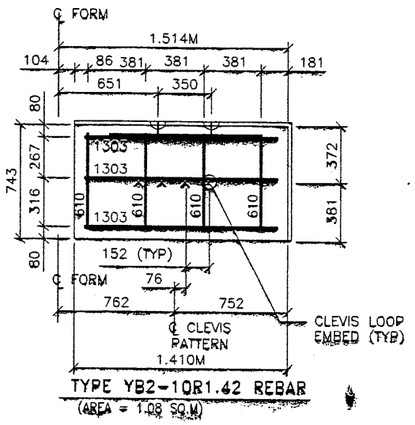


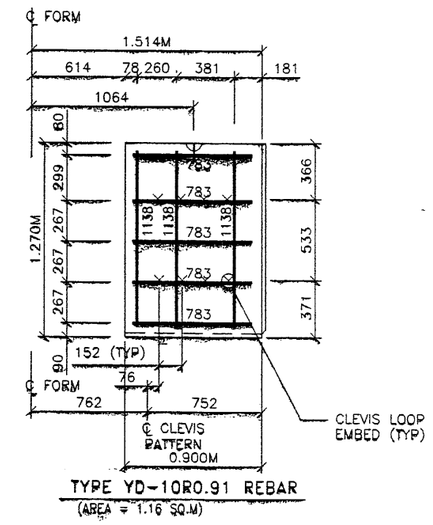


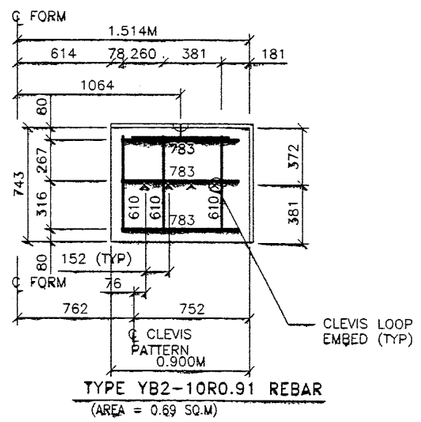












PANEL REINFORCEMENT NOTES:

1. PANELS ARE SHOWN BACK FACE.
2. HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
3. ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
4. ALL REINFORCING BARS ARE #13 METRIC. LABELS ON EACH BAR INDICATE LENGTH. EXAMPLE: 1345 IS A #13 BAR 1345 mm LONG.
5. PANEL REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT CONFORMING TO THE SPECIFICATIONS OF ASTM DESIGNATION A615, GRADE 60.
6. ALL REINFORCING STEEL TO BE GALVANIZED IN ACCORDANCE WITH ASTM 767 CLASS I.
7. CONCRETE PANELS TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 27,500 KPa.
8. EQUIVALENT WELDED WIRE FABRIC MAY BE USED.
9. ALL PANELS TO USE 9.5mmø CLEVIS LOOPS.
10. VSL RETAINED EARTH™ IS PROTECTED UNDER PATENT 4,725,170.
11. SEE SHT NO. STD-1 FOR CLEVIS LOOP AND LIFT INSERT DETAILS.
12. 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
JAN 13 1998
RELEASED FOR CONSTRUCTION

METRIC

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REGISTERED PROFESSIONAL ENGINEER
No. 3417786
JOHN A. NICHOLSON JR.
12/17/97
STATE OF UTAH

	BY	CHK
REVISION		
NO. DATE		
DES. 11-26-97	MM	
DRN. 11-26-97	DDO	
CHK. 11-26-97	MM	

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
Raleigh, NC 27612
Telephone: (919) 781-6272
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RETAINED EARTH™ WALLS
SPECIAL PANEL DETAILS

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

SCALE: 1.1R-342-15.13

JOB NO: 239-0007

RE-11

13 OF 13

H:\RE_EARTH\APROJECT\239-0007\1998\90-15\SUBMTL-2\SPECIALS

FINAL PL 12-15-97

Date: 09 JAN 98 Time: 15:56:00 Username: $username

CURVE NO.	Δ	R	L	T
①	90°13'48"	150.000	236.221	150.603
②	35°18'30"	120.000	73.950	38.191
③	79°17'14"	80.000	110.706	66.284
④	10°46'15"	10 480.000	1969.615	987.717

I-15 NORTH BOUND

℄ I-15

RETAINING WALL R-342-16 PT STA 1+320.445 Bk
= RETAINING WALL R-342-16 PT STA 9+959.337 Ahd
= "I-15" STA 9+959.337 (25.993 RT)
= "106-B1" STA 1+323.449 (9.638 LT)

RETAINING WALL R-342-16 POC STA 1+318.441
= ℄ RETRIEVABLE SAMPLE STATION

RETAINING WALL R-342-16 PC STA 1+308.324
= "106-B1" STA 1+310.496 (9.638 LT)

RETAINING WALL R-342-16 PT STA 1+305.297
= "106-B1" STA 1+307.291 (9.261 LT)

R=140.362

℄ BRG ABUT # 3

RETAINING WALL R-342-16 STA 9+995.165
= "I-15" STA 9+995.244 (26.069 RT)
= "106 SOUTH STREET" STA 38+607.990

SEE "DETAIL A" (NOT RELEASED FOR CONSTRUCTION AT MOUNTAIN SIGN AREA)

℄ 10600 SOUTH STREET

℄ BRG ABUT # 3
= "106 SOUTH STREET" STA 38+609.515
= "I-15" STA 9+994.968 (27.569 RT)

38+600

SEE "DETAIL B" (NOT RELEASED FOR CONSTRUCTION AT MOUNTAIN SIGN AREA)

RETAINING WALL R-342-16 PC STA 10+018.114 Bk
= RETAINING WALL R-342-16 PC STA 1+069.375 Ahd
= "I-15" STA 10+018.252 (26.054 RT)
= "106-D1" STA 1+069.375 (9.638 LT)

RETAINING WALL R-342-16 POC STA 1+071.334
= ℄ RETRIEVABLE SAMPLE STATION

R=110.362

RETAINING WALL R-342-16 PCC STA 1+073.582

R=70.362

RETAINING WALL R-342-16 PT STA 1+080.607
="106-D1" STA 1+081.937 (9.638 LT)

RETAINING WALL R-342-16 PC STA 1+083.638
="106-D1" STA 1+085.347 (9.261 LT)

R=70.739

END RETAINING WALL R-342-16 PT STA 1+101.020
="106-D1" STA 1+105.000 (9.261 LT)

R=140.739

BEGIN RETAINING WALL R-342-16 PC STA 1+275.000
= "106-B1" STA 1+275.000 (9.261 LT)

℄ RAMP 106-B1

1+300

APPROACH SLAB DRAIN STA 1+308.324

℄ RAMP 106-C1

℄ RAMP 106-A1

PCC STA 1+073.950

APPROACH SLAB DRAIN STA 1+080.607

1+080

℄ RAMP 106-D1

WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

5m 0 5m 15m 25m
SCALE IN METERS

1+308.925
1341.883

1+275.000 1340.820
1340.974
1341.142
1341.305
1341.471
1341.628
1341.771
1341.626
1+316.377 1340.100
1340.429
1+320.445 Bk 1340.100
1+959.337 Ahd 1340.100
1340.129
1340.154
1340.180
1340.205
1340.231
1340.257
1340.282
1340.308
1340.333
1340.359
1340.384
10+018.114 Bk 1340.400
1+069.375 Ahd 1340.400
1+072.555 1340.400
1340.960
1+080.007 1342.107
1342.107
1341.896
1341.862
1341.722
1341.603
1+101.020 1341.576

1340.214
1339.630
1339.033
1338.452
1337.854
1337.247
1336.619
1335.965
1335.397
1335.397
1335.368
1335.343
1335.321
1335.299
1335.281
1335.263
1335.251
1335.238
1335.230
1335.222
1335.218
1335.217
1335.217
1335.207
1336.226
1337.272
1338.298
1339.318
1340.332

RETAINING WALL LINE CONTROL POINT (RWLCP), TYP

MATCH LINE #1
MATCH LINE #1
MATCH LINE #2
MATCH LINE #2

FINISHED GRADE AT FRONT FACE OF RETAINING WALL, TYP

EXISTING GRADE AT FRONT FACE OF RETAINING WALL, TYP

BEGIN RETAINING WALL R-342-16 STA 1+275.000

END RETAINING WALL R-342-16 STA 1+101.020

TEMPORARY 300 MM DIA ∓ STORM DRAIN

TEMPORARY 900 MM DIA ∓ STORM DRAIN

900 MM DIA ∓ SANITARY SEWER

1342
1341
1340
1339
1338
1337
1336
1335
1334

1+275 1+280 1+285 1+290 1+295 1+300 1+305 1+310 1+315 1+320 9+960 9+965 9+970 9+975 9+980 9+985 9+990 9+995 10+000 10+005 10+010 10+015 1+070 1+075 1+080 1+085 1+090 1+095 1+100

DEVELOPED ELEVATION VIEW FROM BACK OF WALL

LICENSED PROFESSIONAL ENGINEER No. 97-341772-2202 ADAM T M WANG STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	1/7/98	INITIAL RELEASE FOR CONSTRUCTION

UTAH DEPARTMENT OF TRANSPORTATION

SVERDRUP/DE LEUW

DESIGN	JL	10/97	CHECK VT 10/97
DRAWN	JL	10/97	CHECK VT 10/97
QUANT.			CHECK

PROJECT DESIGN ENGINEER — DATE
PROJECT MANAGER — DATE
APPROVAL RECOMM. — DATE
APPROVED — DATE

I-15 CORRIDOR RECONSTRUCTION

SITUATION & LAYOUT RET WALL R-342-16

SECTION 1.1

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

SALT LAKE COUNTY

DWG. NO. 1.12-342-16.01 ~~1-1-342-16-01~~

SHT. 1 OF 13

REF.

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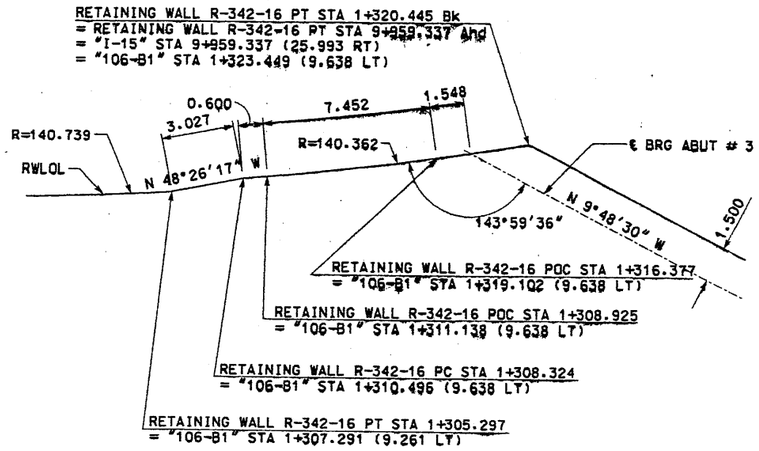
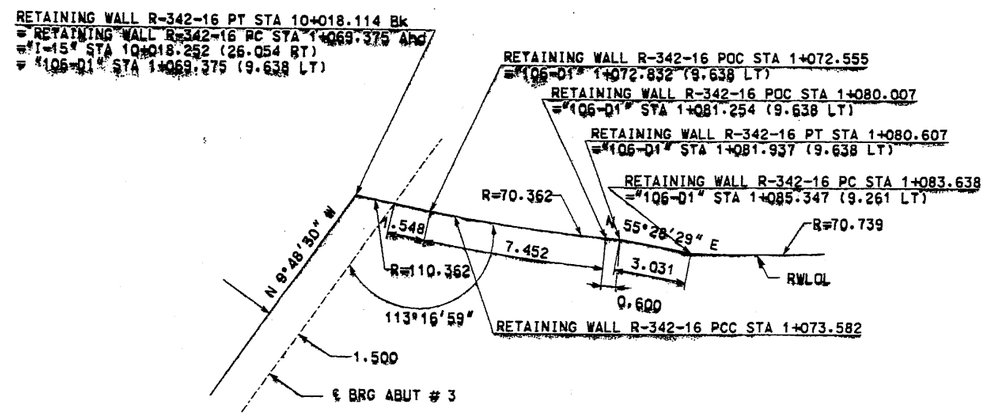
Date: 09 JAN 98 Time: 15:16:59 Username: $$username$$

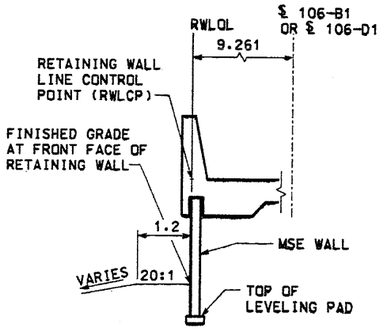


DETAIL A

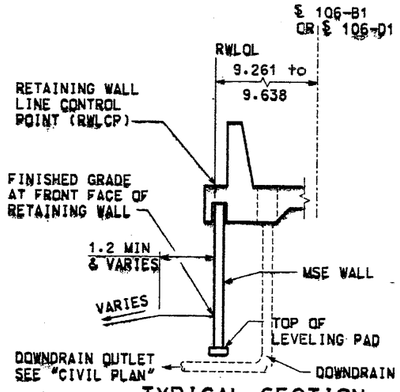


DETAIL B

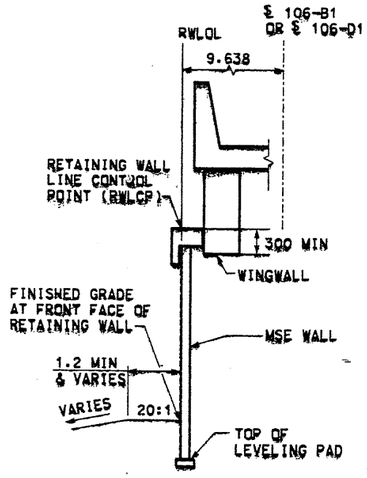
WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION



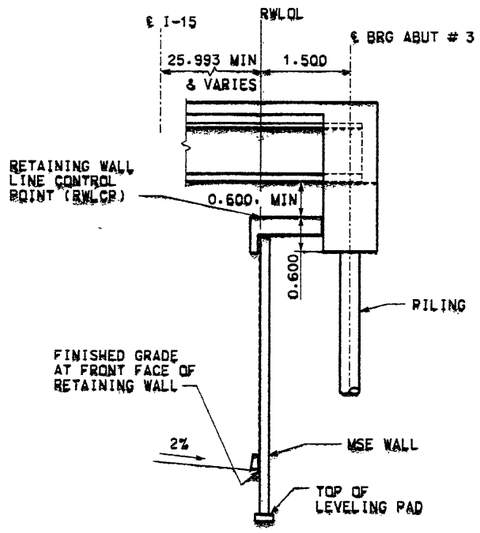
TYPICAL SECTION
WALL R-342-16
STA 1+275.000 TO STA 1+305.297
STA 1+083.638 TO STA 1+101.020



TYPICAL SECTION
WALL R-342-16
STA 1+305.297 TO STA 1+308.925
STA 1+080.007 TO STA 1+083.638



TYPICAL SECTION
WALL R-342-16
STA 1+308.925 TO STA 1+320.445
STA 1+069.375 TO STA 1+080.007



TYPICAL SECTION
WALL R-342-16
STA 9+959.337 TO 10+018.114

NOTE: FOR COPING AND MOMENT SLAB DETAILS, SEE I-15 CORRIDOR STANDARD

LICENSED PROFESSIONAL ENGINEER
No. 97-341772-2202
ADAM T M WANG
STATE OF UTAH

NO.	DATE	APPROVED FOR CONSTRUCTION
		DESCRIPTION
1	1/7/98	INITIAL RELEASE FOR CONSTRUCTION

UTAH DEPARTMENT OF TRANSPORTATION
SVERDRUP/DE LEUW

DESIGN	JL	10/97	CHECK	VT	10/97
DRAWN	JL	10/97	CHECK	VT	10/97
QUANT.			CHECK		

APPROVAL RECOMM. — DATE — PROJECT DESIGN ENGINEER
APPROVED — DATE — PROJECT MANAGER

I-15 CORRIDOR RECONSTRUCTION
SITUATION & LAYOUT RET WALL R-342-16
SECTION 1.1
PROJECT NUMBER *SP-15-7(135)296

SALT LAKE COUNTY
DWG. NO. 1.12-342-16.02 ~~1-342-16.02~~
SHT. 2 OF 13
REF.

Filename: I:\400-07\rw6\final\wall16b.dgn

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION

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. = 0.25g (TYP) SEISMIC ACCELERATION COFF. = 0.65g (AT BRIDGE ABUTMENTS)
DESIGN CRITERIA
SAFETY FACTOR (OVERTURNING) = 2.0 SAFETY FACTOR (SLIDING) = 1.5 SAFETY FACTOR (PULLOUT) = 1.5 DESIGN LIFE = 75 YEARS

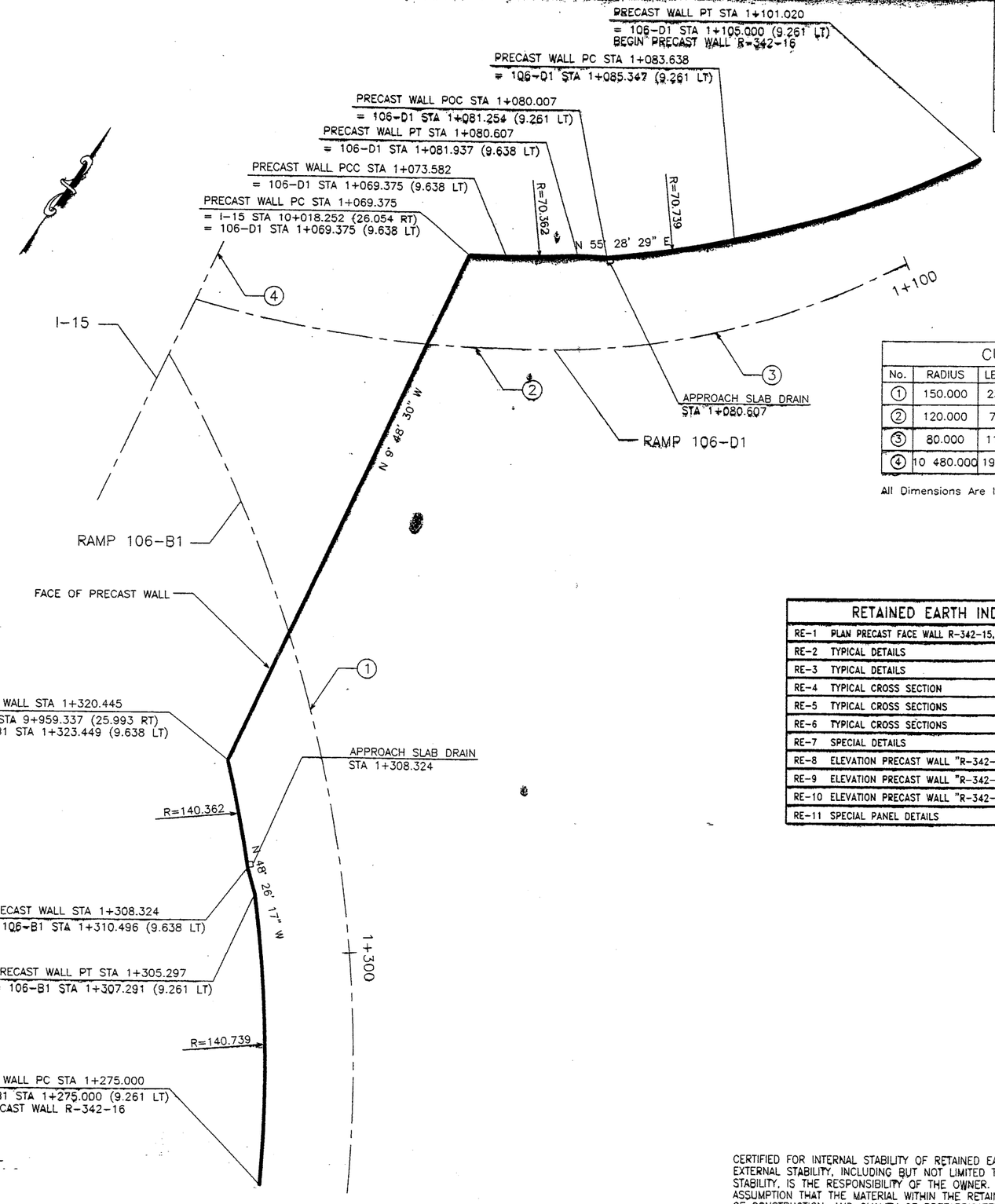
GENERAL NOTES

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.



PLAN VIEW WALL "R-342-16"

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

CURVE DATA				
No.	RADIUS	LENGTH	TANGENT.	△
1	150.000	236.221	150.603	90°13'48" R
2	120.000	73.950	38.191	35°18'30" R
3	80.000	110.706	66.284	79°17'14" R
4	10 480.000	1969.615	987.717	10°46'15" R

All Dimensions Are In Meters Unless Noted Otherwise

RETAINED EARTH INDEX	
RE-1	PLAN PRECAST FACE WALL R-342-15, NOTES & DESIGN CRITERIA
RE-2	TYPICAL DETAILS
RE-3	TYPICAL DETAILS
RE-4	TYPICAL CROSS SECTION
RE-5	TYPICAL CROSS SECTIONS
RE-6	TYPICAL CROSS SECTIONS
RE-7	SPECIAL DETAILS
RE-8	ELEVATION PRECAST WALL "R-342-16"
RE-9	ELEVATION PRECAST WALL "R-342-16"
RE-10	ELEVATION PRECAST WALL "R-342-16"
RE-11	SPECIAL PANEL DETAILS

WASATCH CONSTRUCTORS

JAN 13 1998

RELEASED FOR CONSTRUCTION

METRIC

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REGISTERED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
12-17-97
STATE OF UTAH

REVISION			
NO.	DATE	BY	CHK

DES. 11-26-97 MM
DRN. 11-26-97 LOP
CHK. 11-26-97 MM
RETAINED EARTH™

VSL CORPORATION
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Raleigh, NC 27612
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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
PLAN VIEW PRECAST WALL "R-342-16"

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

SCALE: 1.1R-342-16.3
JOB NO: 239-0007
RE-1

3 OF 13

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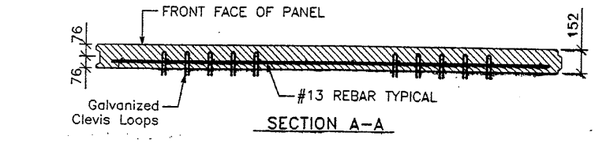
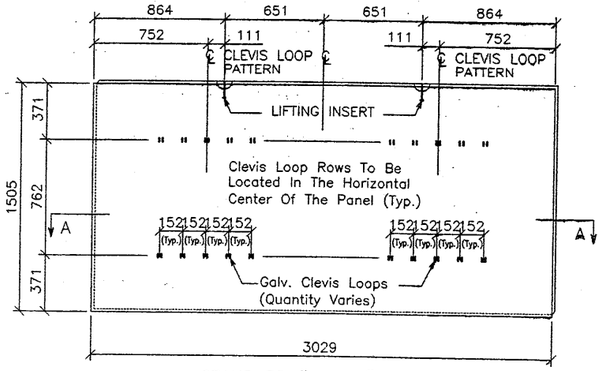
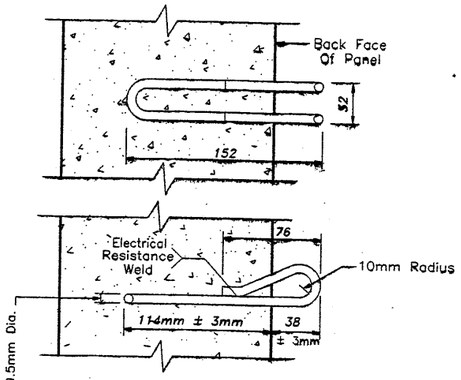
FINAL P 2-15-97



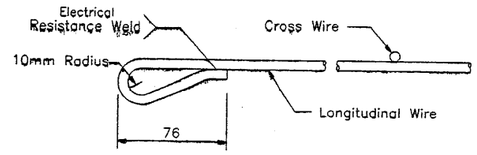
SECTION A-A



STANDARD "5A-10" PANEL
Back Face View



CLEVIS LOOP DETAIL
N.T.S.



WIRE MESH LOOP DETAIL
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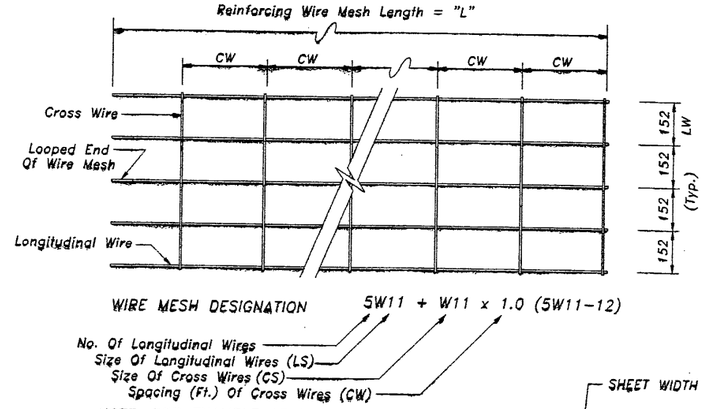

REINFORCING MESH DETAIL

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.

WASATCH CONSTRUCTORS
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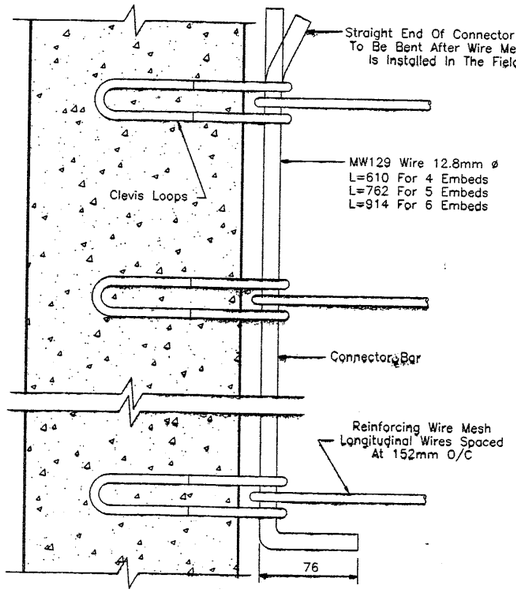
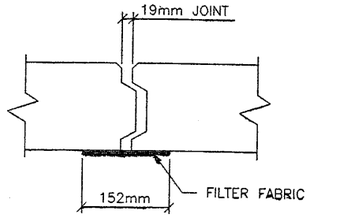
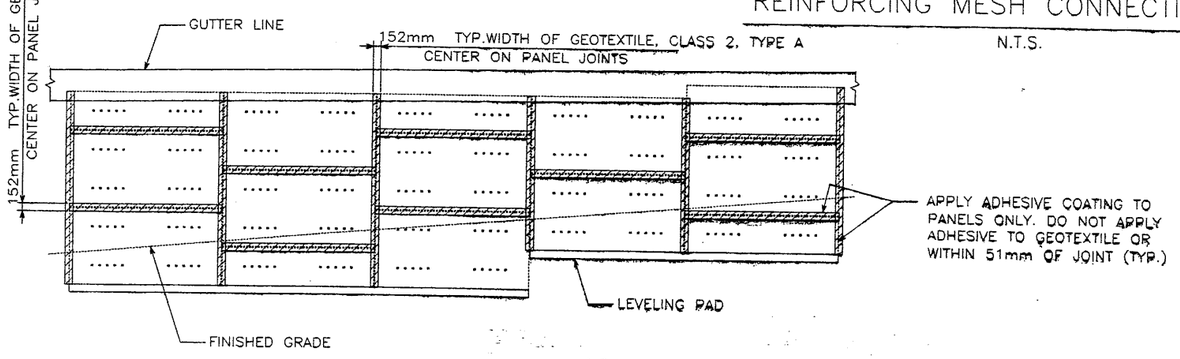
RELEASED FOR CONSTRUCTION



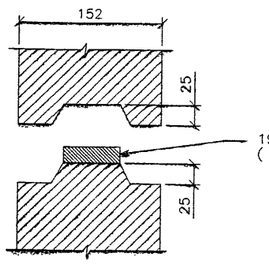
REINFORCING MESH CONNECTION DETAIL
N.T.S.



HORIZONTAL JOINT DETAIL
N.T.S.



PARTIAL WALL ELEVATION



PANEL JOINT DETAIL
N.T.S.

METRIC

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REGISTERED PROFESSIONAL ENGINEER
No. 7341736
JOHN A. NICHOLSON, JR.
12/19/97
STATE OF UTAH

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION

					BY CHK
					REVISION
					DATE
					NO.
DES.	11-26-97	MM		RETAINED EARTH™	
DRN.	11-26-97	LOP			
CHK.	11-26-97	MM			

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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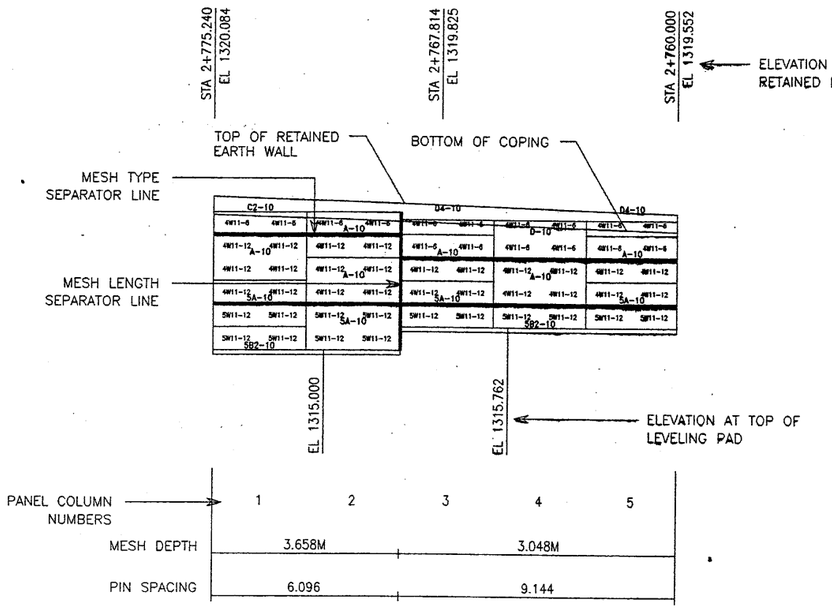
RETAINED EARTH™ WALLS
PRECAST WALL "R-342-16"
TYPICAL DETAILS

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

SCALE: 1.1R-342-16.4
JOB NO: 239-0007
RE-2

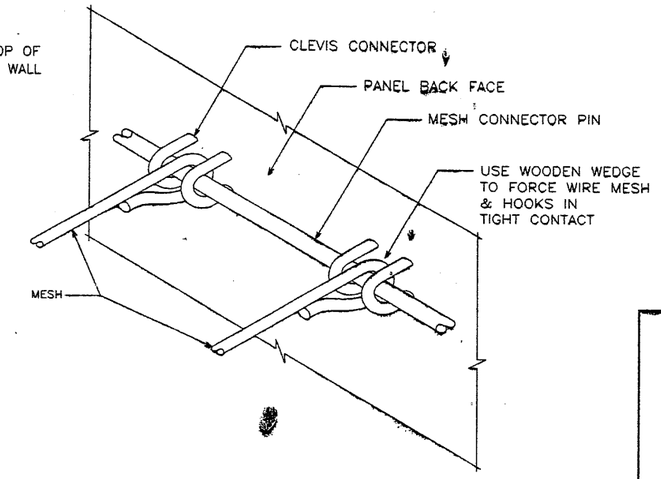
4 OF 13

H:\RE_EARTH\APROJECT\239-0007\1998\9 2-15-97 FINAL P



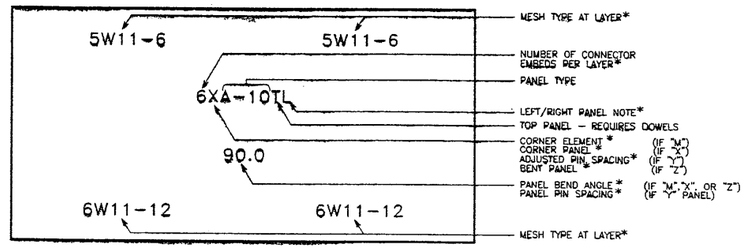
1 WALL ELEVATION KEY

(FRONT FACE SHOWN)



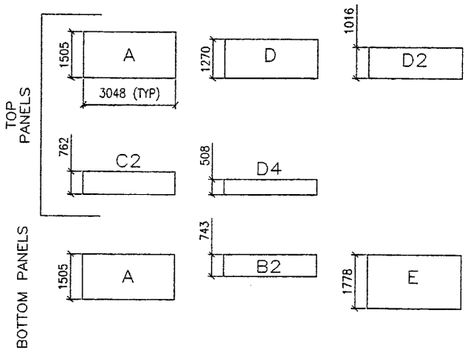
2 MESH CLEVIS CONNECTOR

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



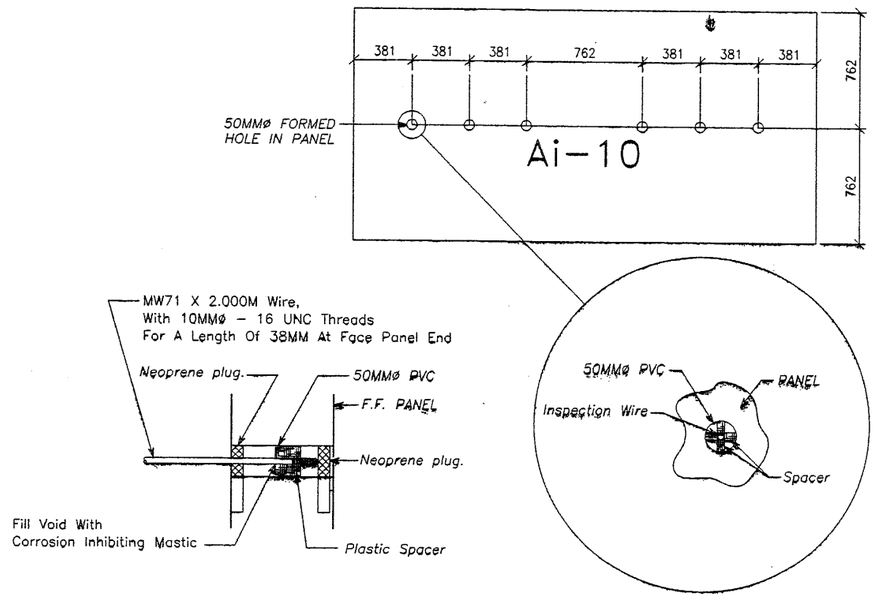
* NO LABEL INDICATES STANDARD TYPE

3 PANEL LABELS



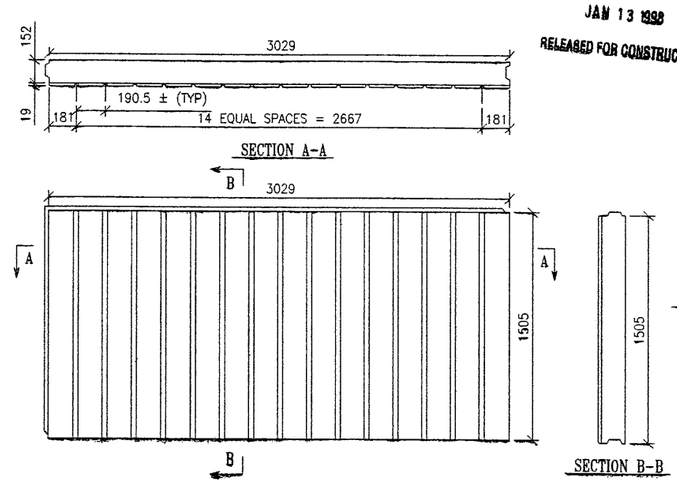
4 PANEL TYPES

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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REGISTERED PROFESSIONAL ENGINEER
No. 344796
JOHN A. NICHOLSON, JR.
12/19/97
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. 11-26-97 MM
DRN. 11-26-97 LOP
CHK. 11-26-97 MM

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
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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-342-16"
TYPICAL DETAILS

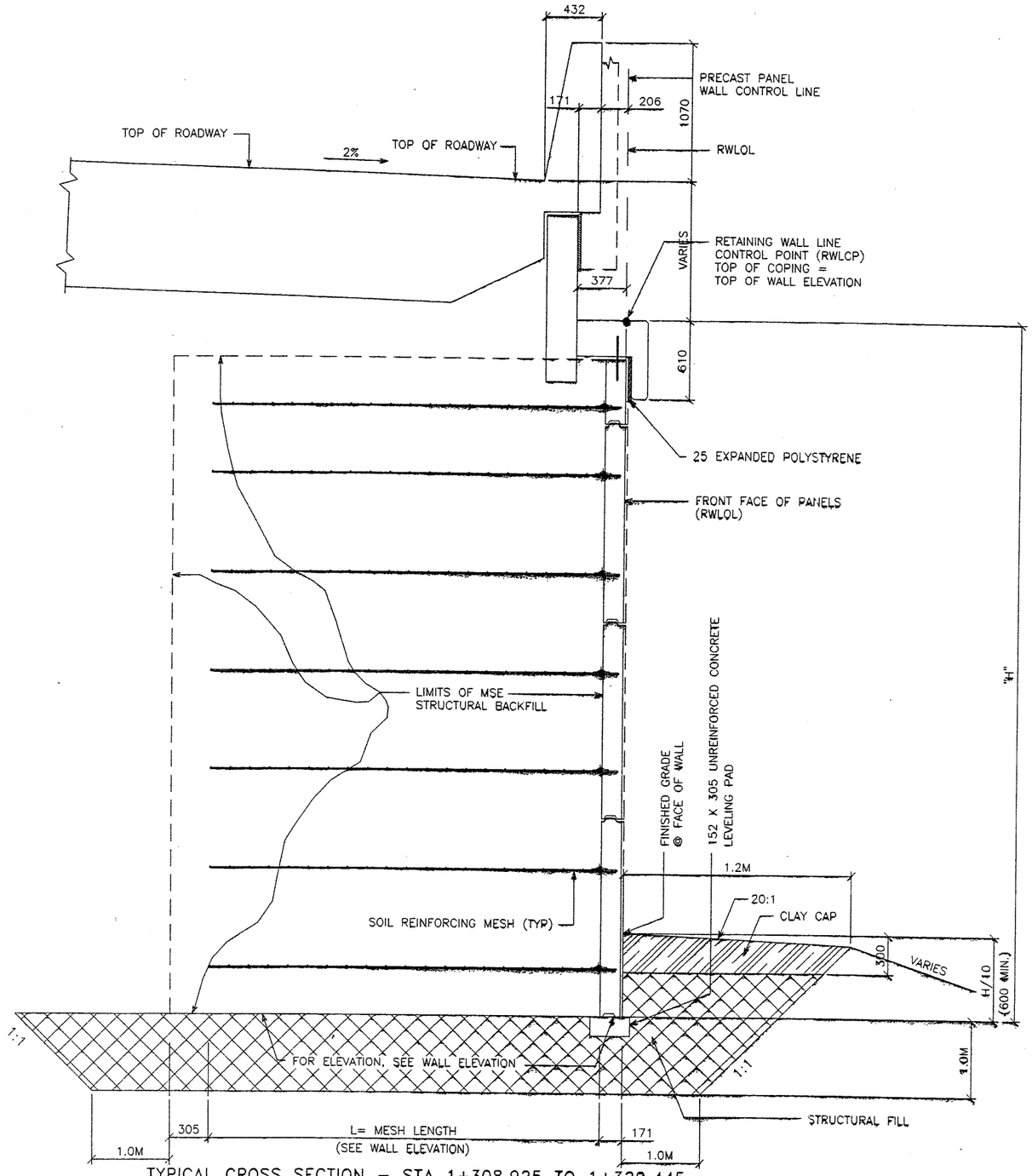
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE: 1.1R-342-16.5
JOB NO: 239-0007
RE-3

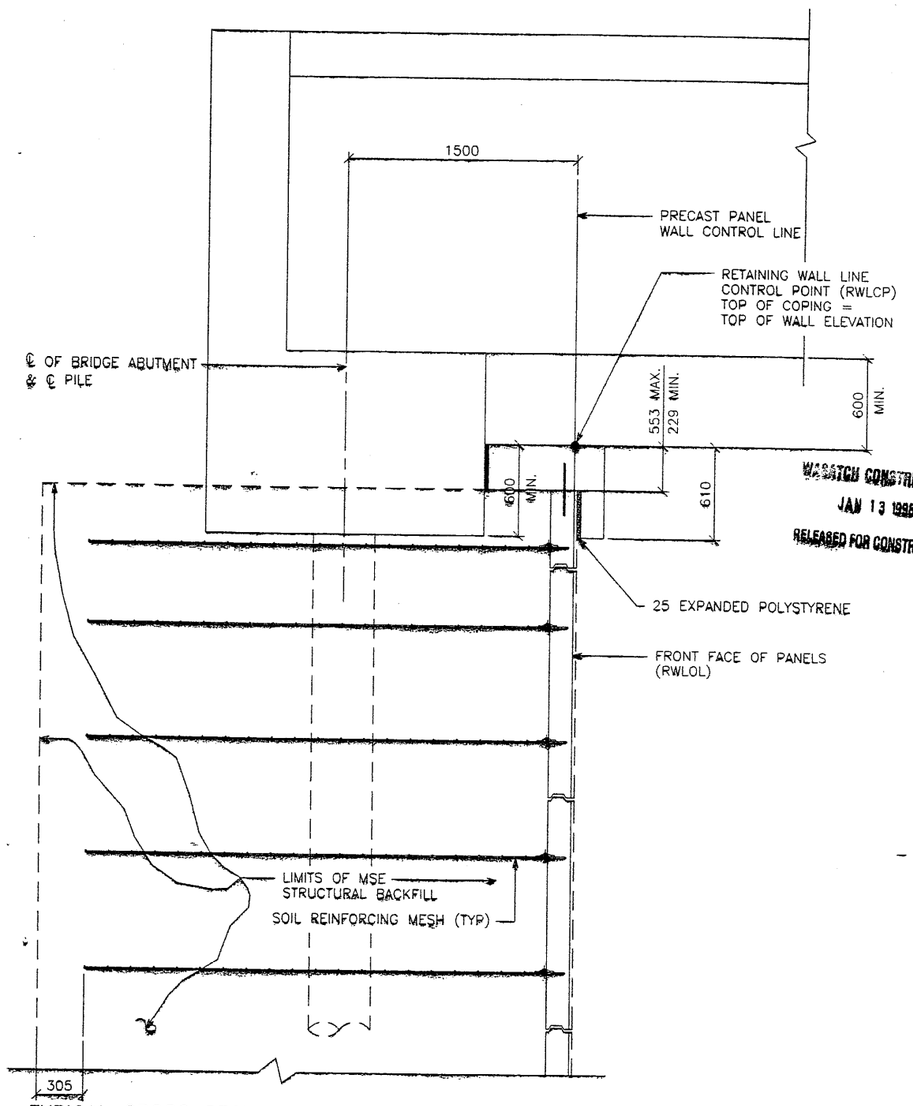
5 OF 13

H:\RE_EARTH\APROJECT\239-0007\1998\90SERIES\BMTL-2\RE-3

FINAL PL 12-15-97



TYPICAL CROSS SECTION – STA 1+308.925 TO 1+320.445
TYPICAL CROSS SECTION – STA 1+609.375 TO 1+080.007
(SEE DWG. NO. 1.1R-342-15.02 FOR ADDITIONAL INFORMATION)
SCALE: 1:20 (FULL SIZE)
SCALE: 1:40 (HALF SIZE)



TYPICAL CROSS SECTION – STA 9+959.337 TO 10+018.114
(SEE DWG. NO. 1.1R-342-15.02 FOR ADDITIONAL INFORMATION)
SCALE: 1:20 (FULL SIZE)
SCALE: 1:40 (HALF SIZE)

METRIC

WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

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LICENSED PROFESSIONAL ENGINEER
No. 7141236
JOHN A. NICHOLSON, JR.
12/19/97
STATE OF UTAH

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. 11-26-97 MM
DRN. 11-26-97 LOP
CHK. 11-26-97 MM

RETAINED EARTH™

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RETAINED EARTH™ WALLS
WIRE FACED WALL "R-342-16"
TYPICAL CROSS SECTION

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

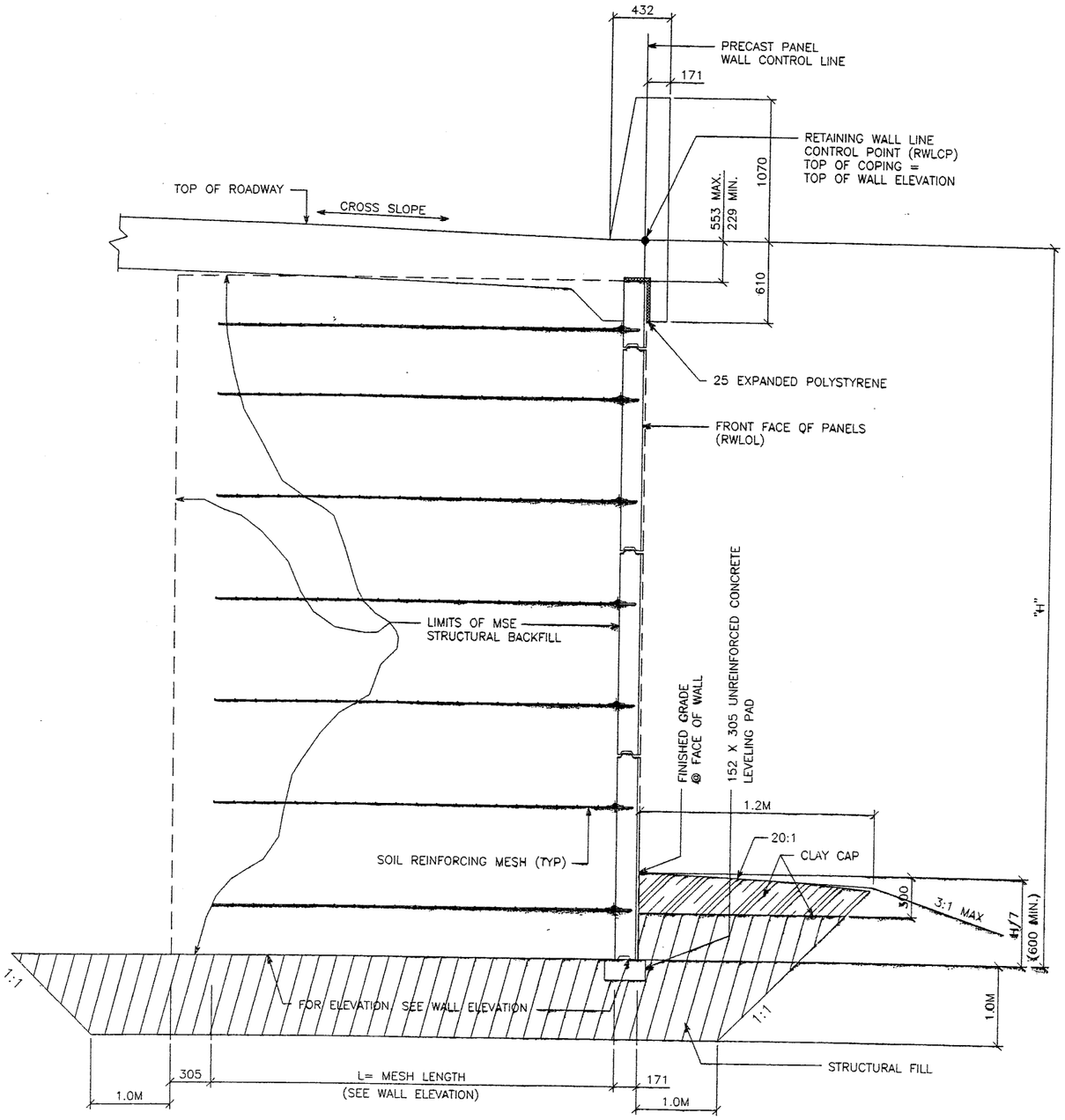
SCALE: 1.1R-342-16.6
JOB NO: 239-0007
RE-4

6 OF 13

H:\RE_EARTH\APROJECT\239-0007\1998\90-16\SUBMTL-2\RE-4

12-15-97

FINAL PL



TYPICAL CROSS SECTION – STA 1+275.000 TO 1+305.297 & STA 1+083.638 TO STA 1+101.020

(SEE DWG. NO. 1.1R-342-16.02 FOR ADDITIONAL INFORMATION)

SCALE: 1:20 (FULL SIZE)

SCALE: 1:40 (HALF SIZE)

METRIC

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REGISTERED PROFESSIONAL ENGINEER
No. 361796
JOHN A. NICHOLSON, JR.
12-15-97
STATE OF UTAH

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

					BY	CHK
				REVISION		
			NO.	DATE		
DES.	11-26-97	MM				
DRN.	11-26-97	LOP				
CHK.	11-26-97	MM				

RETAINED EARTH™

VSL CORPORATION
2840 Plaza Place, Suite 200
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Telephone: (919) 781-4272
Fax: (919) 781-4969

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RETAINED EARTH™ WALLS
WIRE FACED WALL "R-342-16"
TYPICAL CROSS SECTION

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

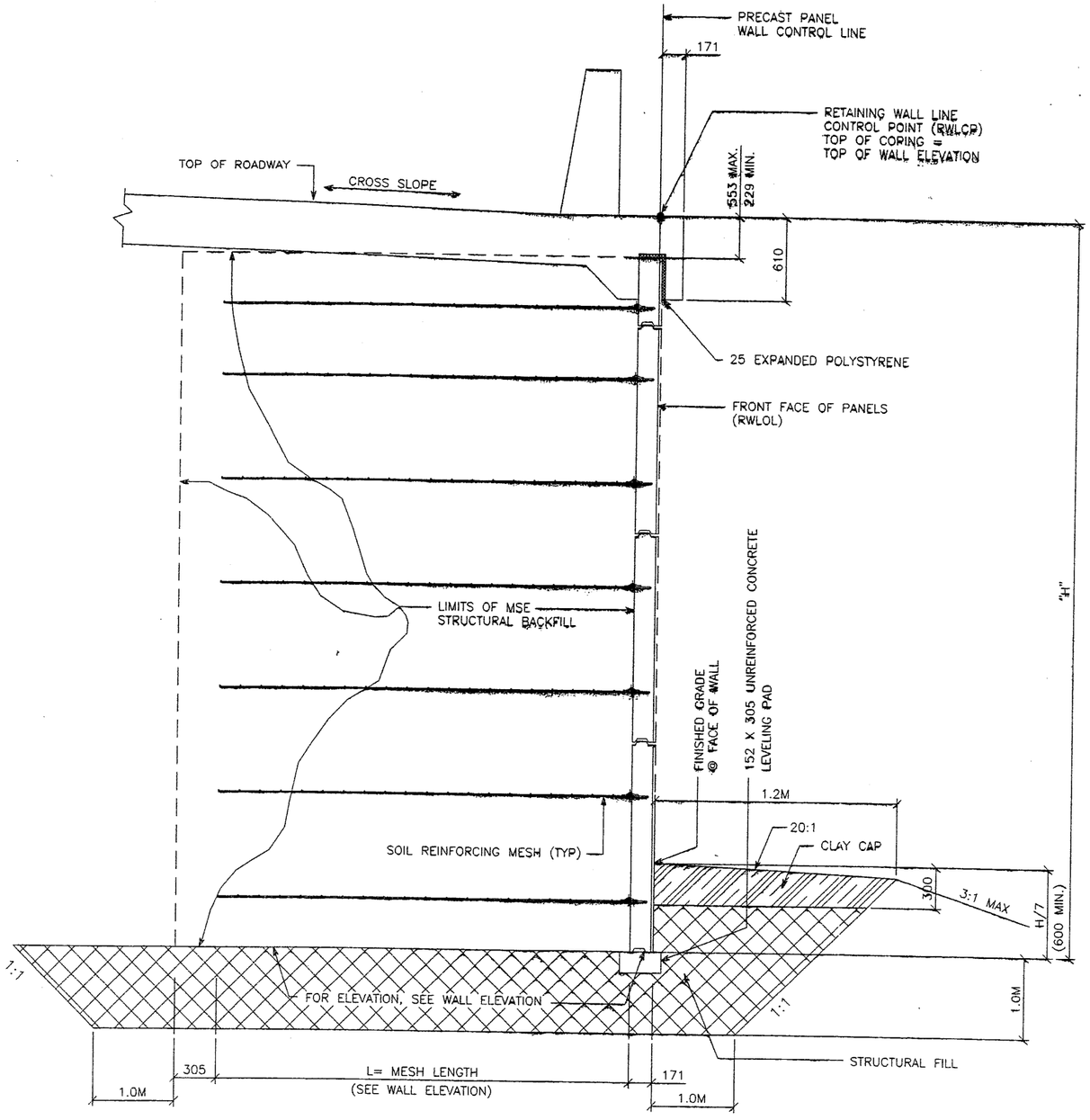
SCALE: 1.1R-342-16.7

JOB NO: 239-0007

RE-5

7 OF 13

FINAL PL 2-15-97 H:\RE_EARTH\APROJECT\239-0007\1998\90-16\SUBMTL-2\RE-5



TYPICAL CROSS SECTION – STA 1+305.297 TO 1+308.925
TYPICAL CROSS SECTION – STA 1+080.007 TO 1+083.638

(SEE DWG. NO. 1.1R-342+16.02 FOR ADDITIONAL INFORMATION)

SCALE: 1:20 (FULL SIZE)

SCALE: 1:40 (HALF SIZE)

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES.	11-26-97	MM
DRN.	11-26-97	LOP
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RETAINED EARTH™ WALLS
WIRE FACED WALL "R-342-16"
TYPICAL CROSS SECTION

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

METRIC

LICENSED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
12/19/97
STATE OF UTAH

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SCALE: 1.1R-342-16.8

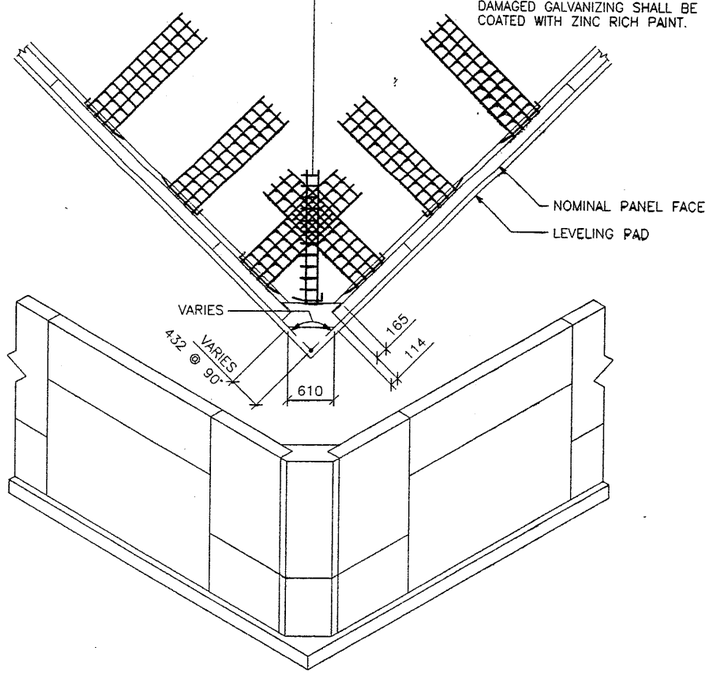
JOB NO: 239-0007

RE-6

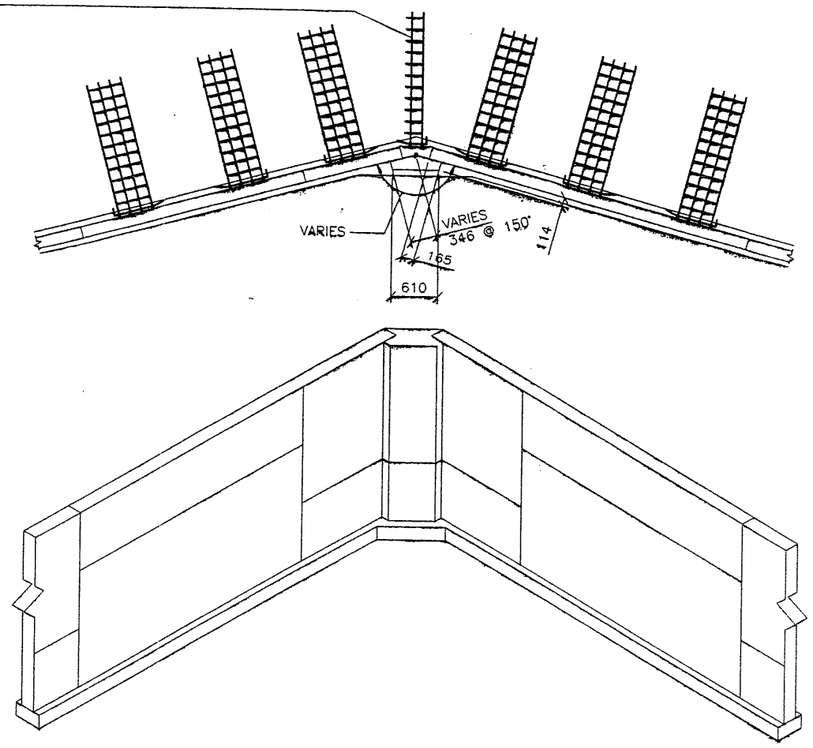
8 OF 13

FINAL P. 2-15-97 H:\RE_EARTH\APROJECT\239-0007\1998\90-16\SUBMTL-2\RE-6

CONTRACTOR SHALL FIELD CUT FOUR WIRE MESH AT CENTER OF CROSS BAR AND USE TWO WIRE MESH AT EACH CONNECTOR LOCATION DAMAGED GALVANIZING SHALL BE COATED WITH ZINC RICH PAINT.



80 OUTSIDE CORNER ELEMENT
PLAN VIEW / ISOMETRIC



80 INSIDE CORNER ELEMENT
PLAN VIEW / ISOMETRIC

APPROVED FOR CONSTRUCTION			
NO.	DATE	DESCRIPTION	BY CHK
1	12-15-97	RELEASE FOR CONSTRUCTION	

NO.	DATE	REVISION

DES.	11-26-97	MM
DRN.	11-26-97	LOP
CHK.	11-26-97	MM

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WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

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RETAINED EARTH™ WALLS
PRECAST WALL "R-342-16"
SPECIAL DETAILS

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

SCALE: 1.1R-342-16.9

JOB NO: 239-0007

RE-7

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.
12/11/97
STATE OF UTAH

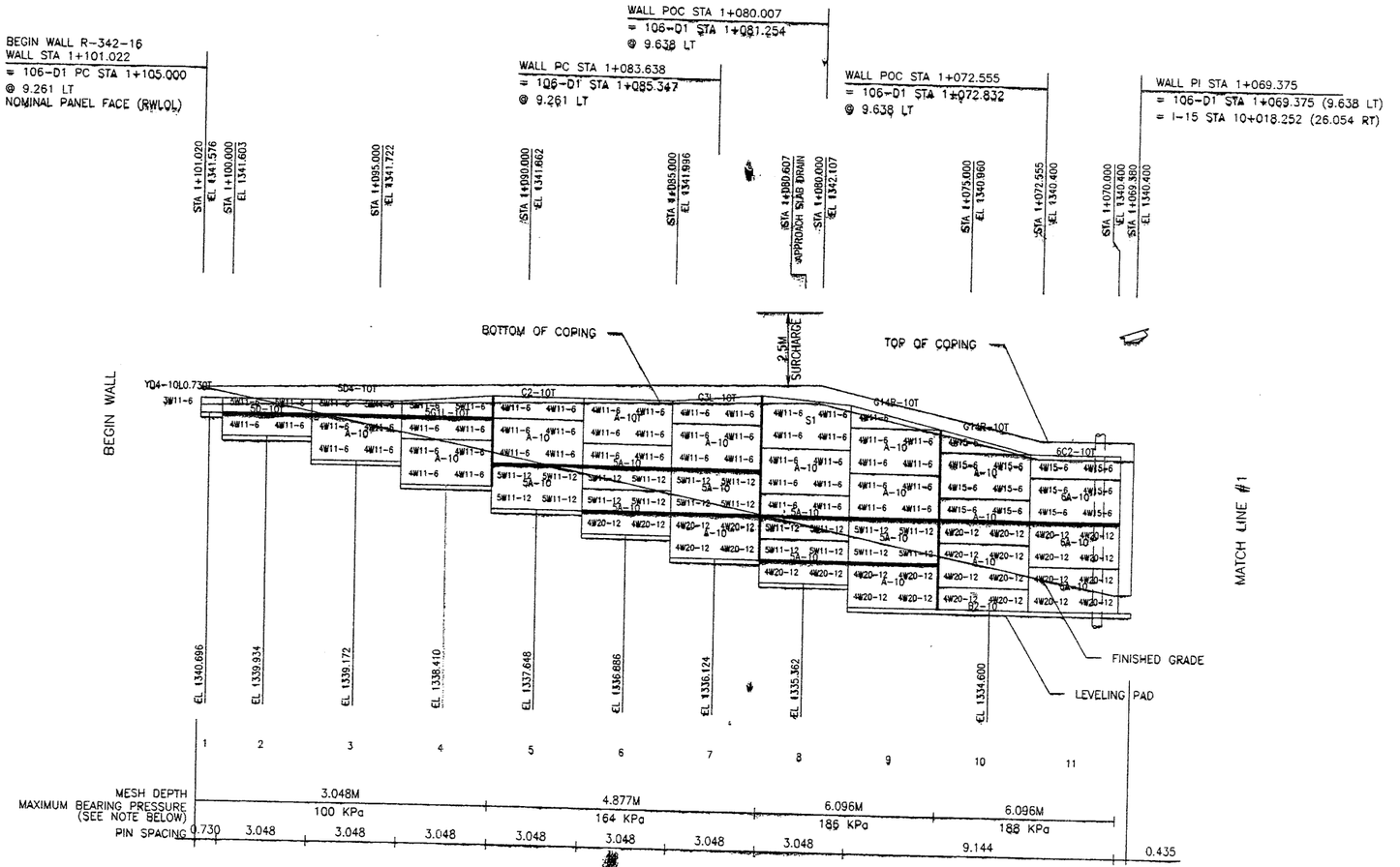
FINAL PL(-15-97 H:\RE_EARTH\APROJECT\239-0007\1998\905)0-16\SUBMTL-2\RE-7

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	CHK

DES. 11-26-97 MM
DRN. 11-26-97 LOP
CHK. 11-26-97 MM

RETAINED EARTH™



ELEVATION PRECAST WALL R-342-16

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 874.81 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.

WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

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LICENSED PROFESSIONAL ENGINEER
No. 334736
JOHN A. NICHOLSON, JR.
12/19/97
STATE OF UTAH

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MIAMI, FL / SAN JOSE, CA / SPRINGFIELD VA

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RETAINED EARTH™ WALLS
PRECAST WALL "R-342-16"

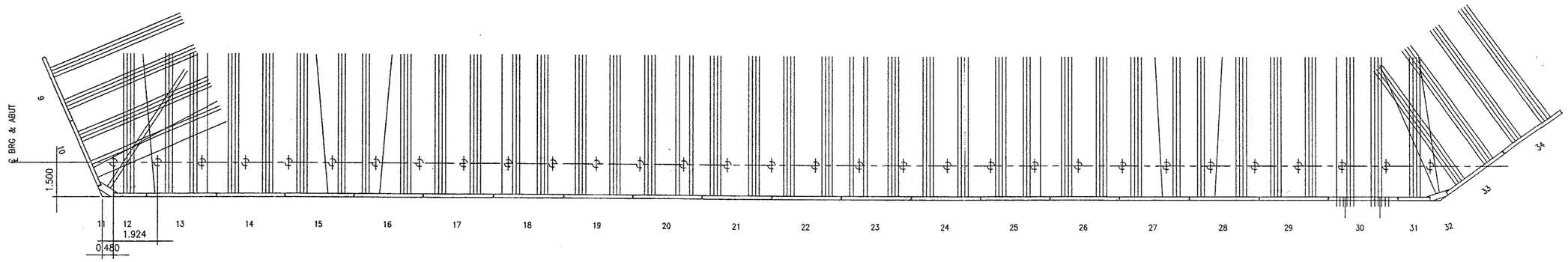
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE: 1.1R-342-16.10
JOB NO: 239-00

H:\RE_EARTH\PROJECT\239-0007\1998\90SERIES\9...BMTL-2\342-16

FINAL PL... 12-15-97

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION
2	04-28-98	REVISED CORNER PANELS & MESH LENGTH



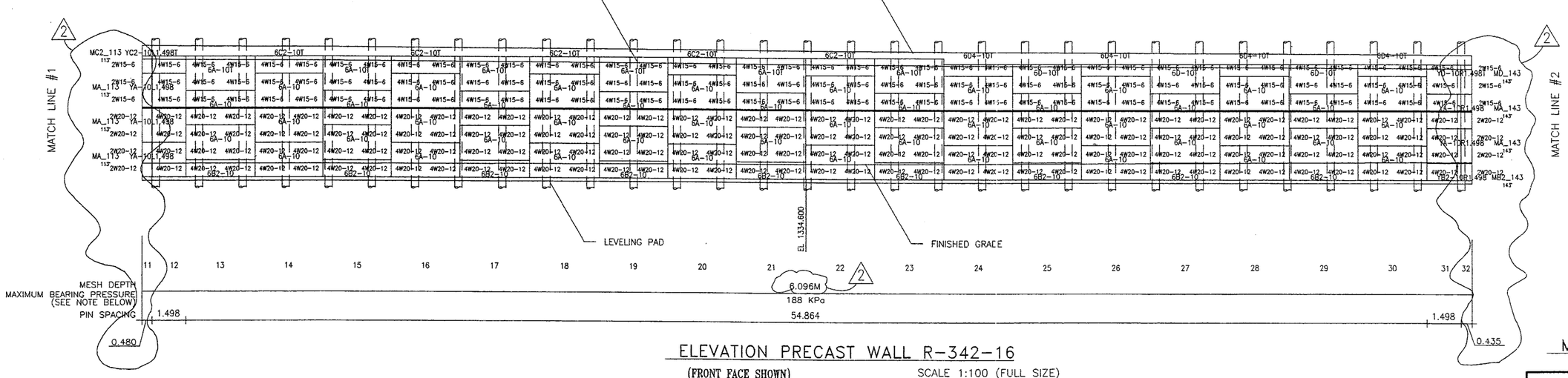
PLAN VIEW PRECAST WALL R-342-16

WALL PI STA 1+069.375
= 106-D1 STA 1+069.375 (9.638 LT)
= I-15 STA 10+018.252 (26.054 RT)

WALL PI STA 1+320.445
= 106-B1 STA 1+323.449 (9.638 LT)
= I-15 STA 9+959.337 (25.993 RT)

STA 10+018.114 EL 1340.400
STA 10+015.000 EL 1340.384
STA 10+010.000 EL 1340.359
STA 10+005.000 EL 1340.333
STA 10+000.000 EL 1340.308
STA 9+995.000 EL 1340.282
STA 9+990.000 EL 1340.257
STA 9+985.000 EL 1340.231
STA 9+980.000 EL 1340.205
STA 9+975.000 EL 1340.180
STA 9+970.000 EL 1340.154
STA 9+965.000 EL 1340.129
STA 9+959.340 EL 1340.100

WASATCH CONSTRUCTORS
APR 2 9 1998
RELEASED FOR CONSTRUCTION



ELEVATION PRECAST WALL R-342-16

(FRONT FACE SHOWN)
(TOTAL SURFACE AREA OF PANELS = 874.81 SM)

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

METRIC

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

CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. 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. 349796
JOHN A. NICHOLSON, JR.
4/28/98
STATE OF UTAH

DES.	11-26-97	MM	NO.	DATE	REVISION
DRN.	11-26-97	LOP			
CHK.	11-26-97	MM			

RETAINED EARTH™

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RETAINED EARTH™ WALLS
PRECAST WALL "R-342-16"

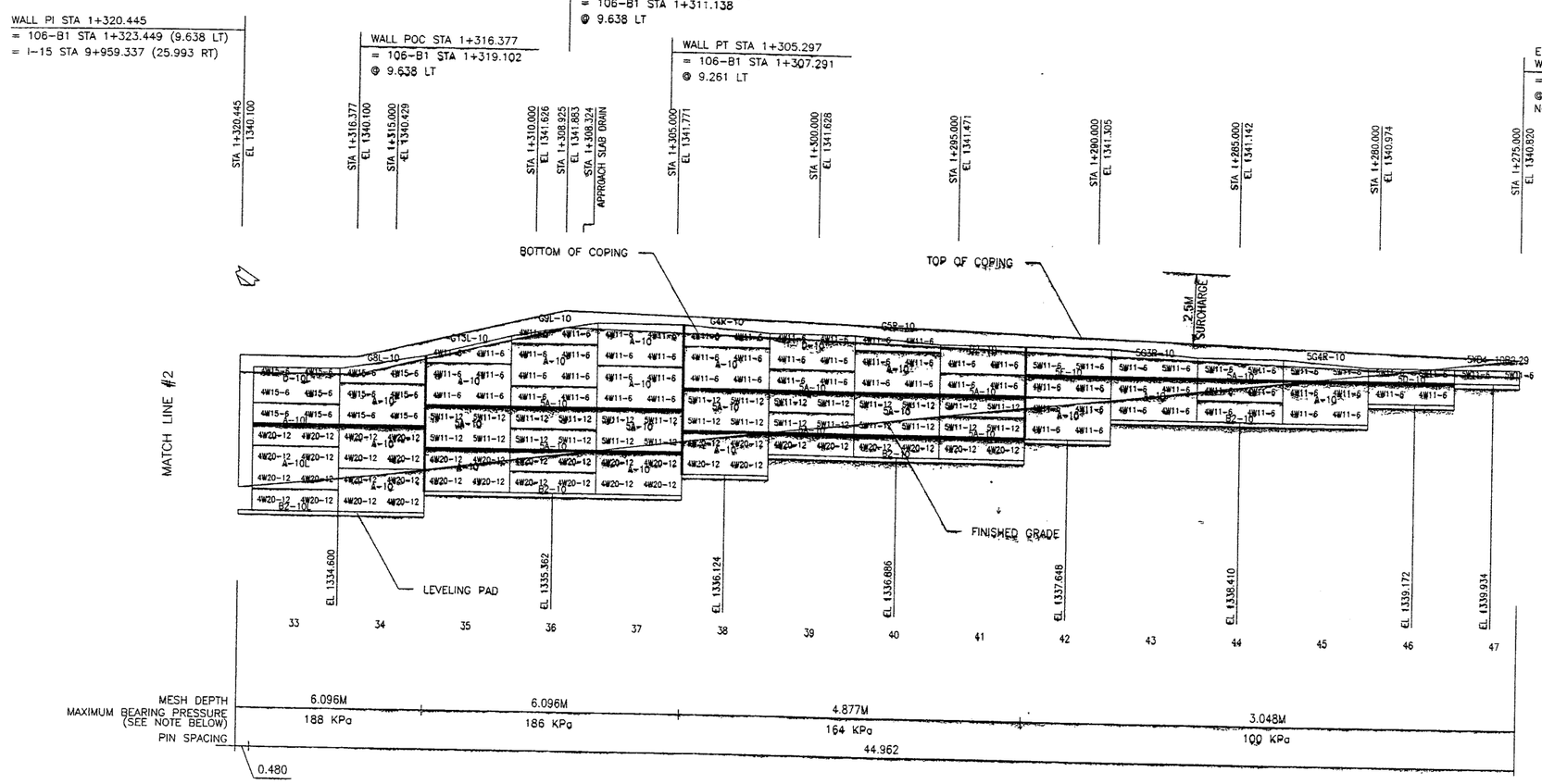
UTAH I-15 INTERCHANGE
SALT LAKE COUNTY, UTAH
UTAH DEPARTMENT OF TRANSP.

SCALE: 1.1R-342-16.11
JOB NO: 239-0007
RE-9

11 OF 13

H:\RE_EARTH\PROJECT\239-0007\1998\90SERII 6\SUBMTL-2\342-16 12-15-97 FINAL

APPROVED FOR CONSTRUCTION		
NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION



ELEVATION PRECAST WALL R-342-16

(FRONT FACE SHOWN)

(TOTAL SURFACE AREA OF PANELS = 874.81 SM)

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

APPROVER NOTE:
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WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

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METRIC

REGISTERED PROFESSIONAL ENGINEER
No. 341796
JOHN A. NICHOLSON, JR.
12/19/97
STATE OF UTAH

DES.	11-26-97	MM
DRN.	11-26-97	LOP
CHK.	11-26-97	MM

RETAINED EARTH™

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RETAINED EARTH™ WALLS
PRECAST WALL "R-342-16"

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

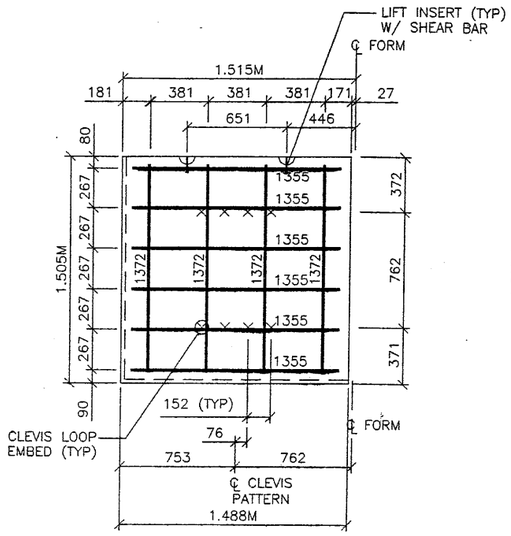
SCALE: 1.1R-342-16.12

JOB NO: 239-0007

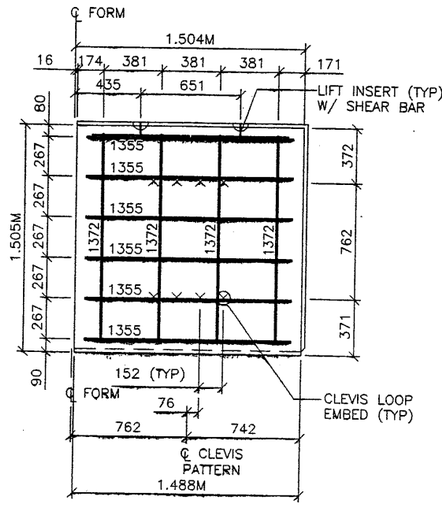
RE-10

12/8/13

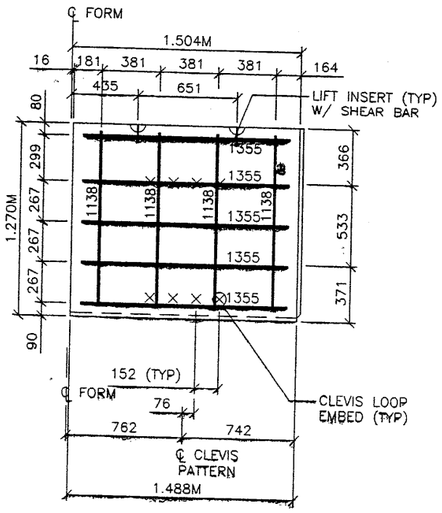
FINAL PL 12-15-97 H:\RE_EARTH\APROJECT\239-0007\1998\900SERIES\9 UBMTL-2\342-16



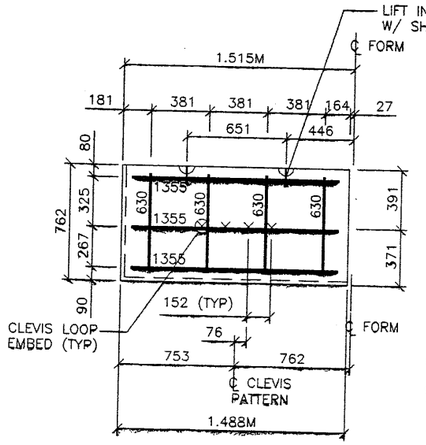
TYPE YA-10L1.498 REBAR
(AREA = 2.28 SQ.M)



TYPE YA-10R1.498 REBAR
(AREA = 2.28 SQ.M)

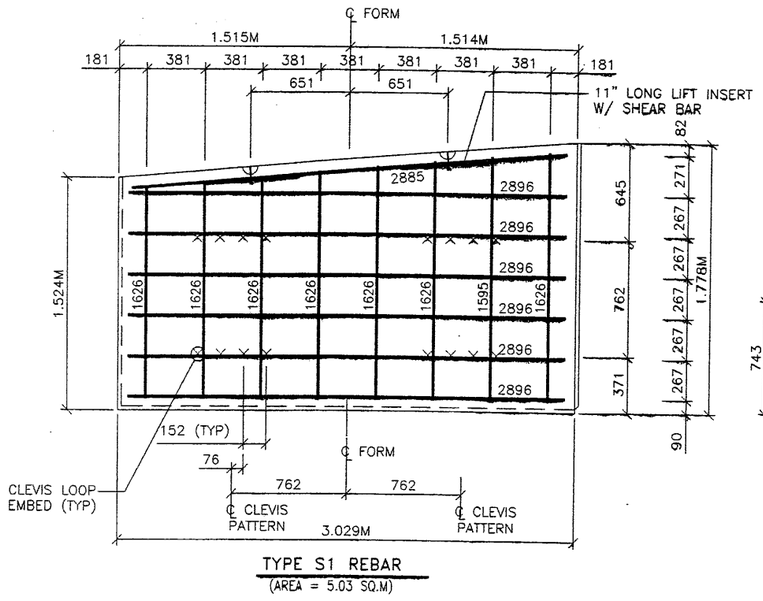


TYPE D-10R1.498T REBAR
(AREA = 1.86 SQ.M)

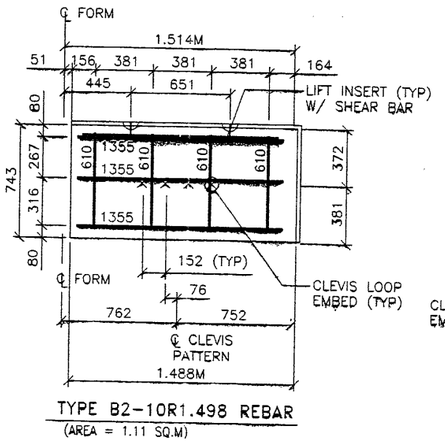


TYPE C2-10L1.498T REBAR
(AREA = 1.14 SQ.M)

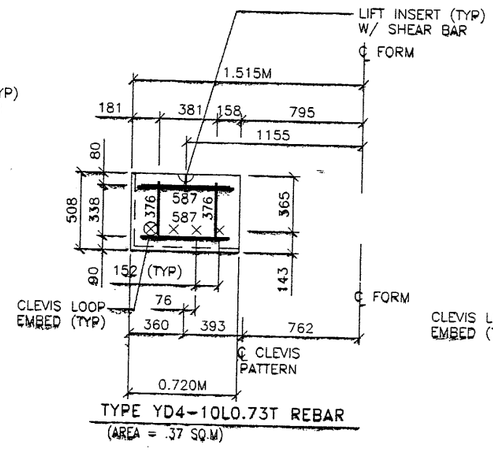
PANEL REINFORCEMENT NOTES:
1. PANELS ARE SHOWN BACK FACE.
2. HORIZONTAL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE BACK FACE.
3. ALL REINFORCEMENT SHALL HAVE 50 mm MINIMUM COVER TO THE SIDES.
4. ALL REINFORCING BARS ARE #13 METRIC. LABELS ON EACH BAR INDICATE LENGTH. EXAMPLE: 1345 IS A #13 BAR 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.



TYPE S1 REBAR
(AREA = 5.03 SQ.M)



TYPE B2-10R1.498 REBAR
(AREA = 1.11 SQ.M)



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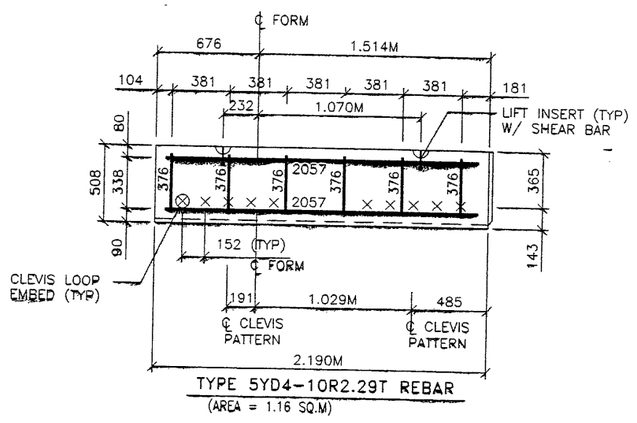
(AREA = .37 SQ.M)



TYPE 5YD4-10R2.29T REBAR
(AREA = 1.16 SQ.M)

METRIC

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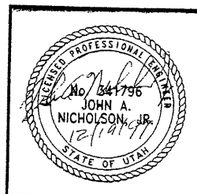

APPROVED FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
1	12-15-97	RELEASE FOR CONSTRUCTION

WASATCH CONSTRUCTORS
JAN 13 1998
RELEASED FOR CONSTRUCTION

DES. 11-26-97 MM
DRN. 11-26-97 DDL
CHK. 11-25-97 MM

RETAINED EARTH™

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RETAINED EARTH™ WALLS
SPECIAL PANEL DETAILS

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

SCALE: 1.1R-342-16.13
JOB NO: 239-0007
RE-11

13 OF 13

H:\RE_EARTH\PROJECT\239-0007\1998\90-16\SUBMTL-2\SPECIALS
FINAL PL 2-15-97