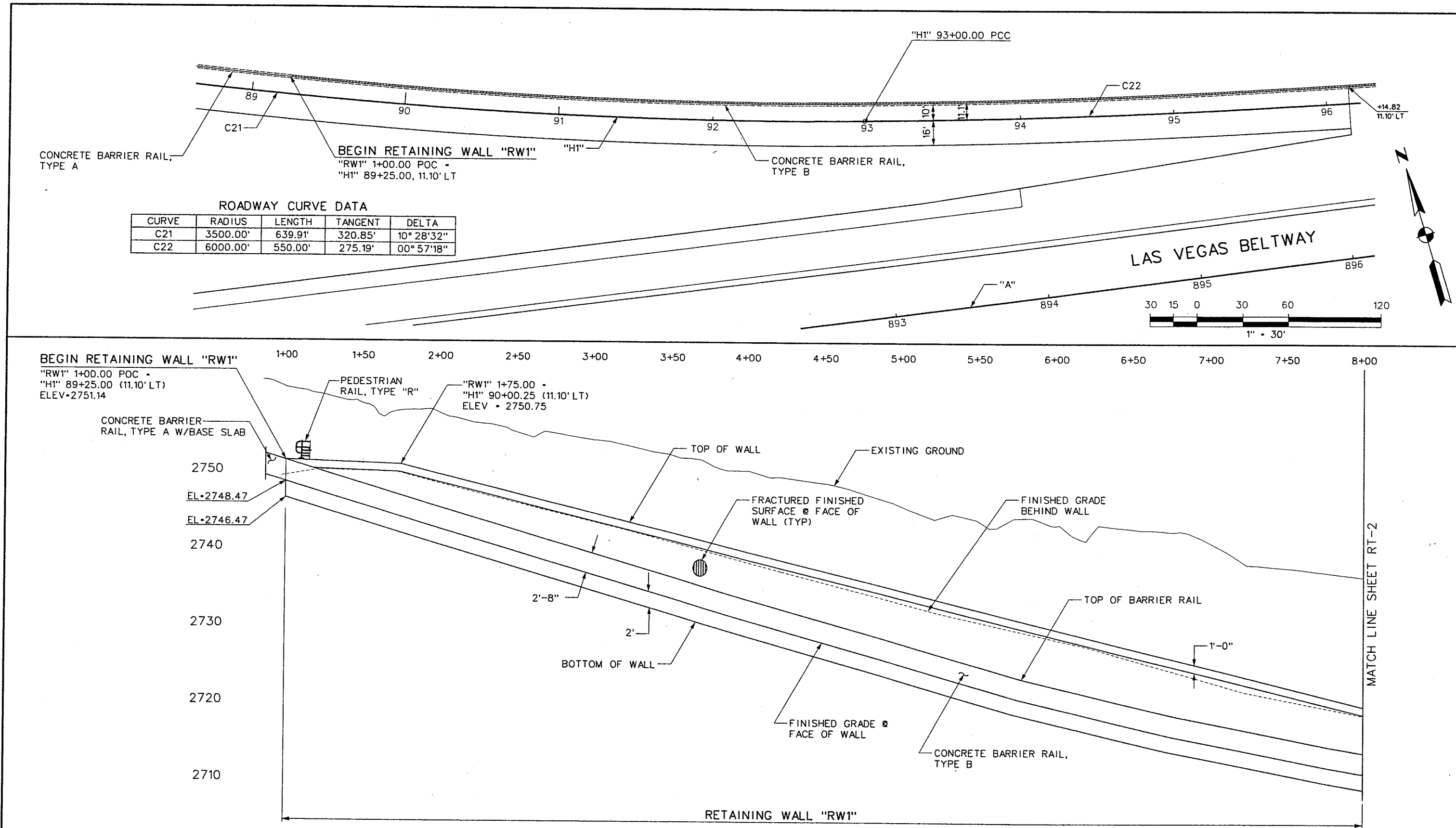


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FILE NAME: V:\851 Ann Rd to El Capitan\interm\PROF\ILES\851-1-RT01.dgn - 4/12/2002 - 9:22:30 WSH



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
RETAINING WALL "RW1"
PLAN AND ELEVATION
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

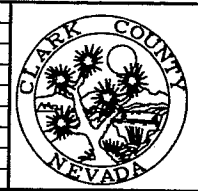
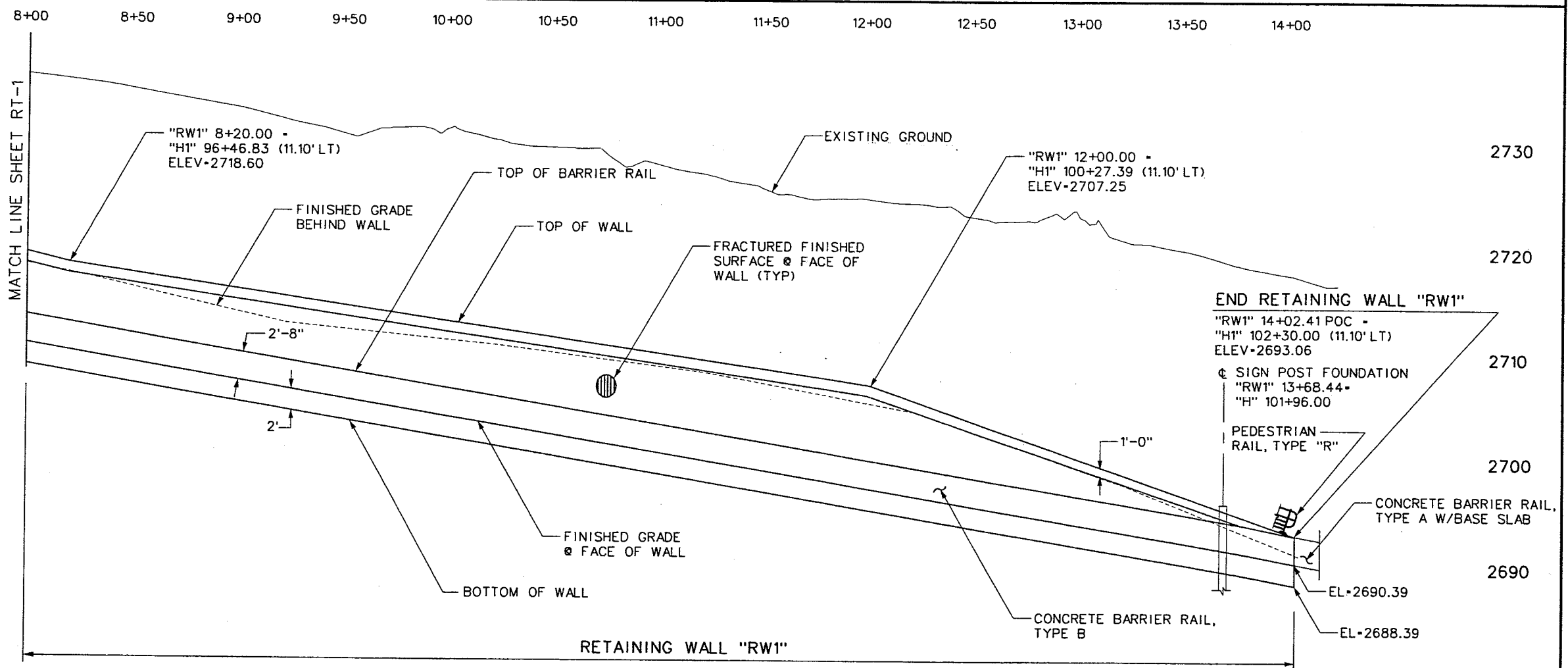
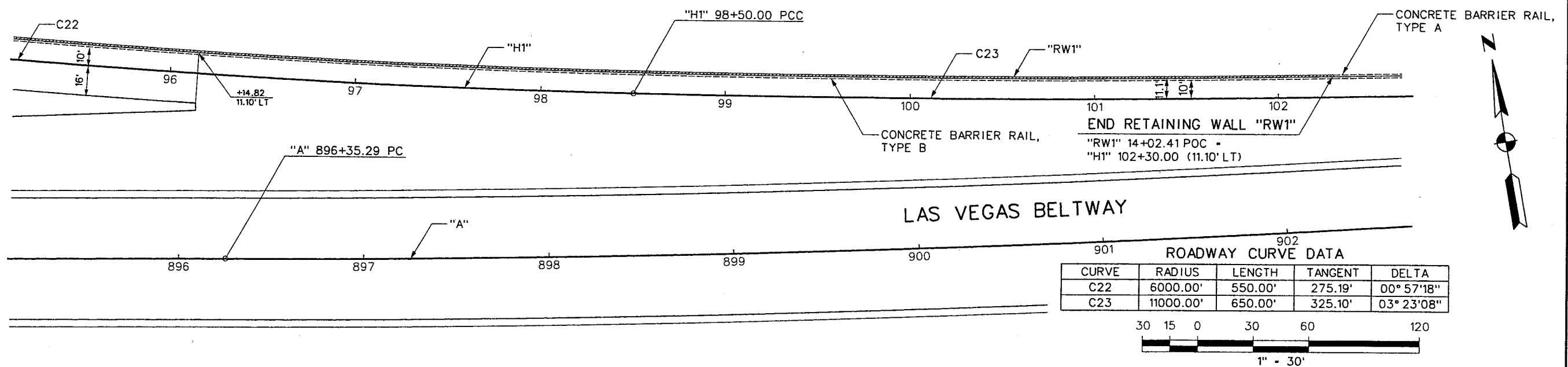
**90%
PRELIMINARY
4-12-02**

PROJECT NO: 851 DRAWN BY: WSH
DESIGNED BY: TAS CHECKED BY: MJP
APPROVED BY: TDL
**THE LOUIS BERGER
GROUP, INC.**
LAS VEGAS, NEVADA

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

DRAWING NO.
RT-1
OF
L-1695

REFERENCE FILES: B51 - Jer.mst - B51-INT-GEO.mst - B51-INTERNAL-IGN.mst - B51-stamp.mst
FILE NAME: V:\B51 Ann Rd to El Capitan\interm\PROFILES\B51-1-RT02.dgn - 4/16/2002 - 9:27:27 WSH



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
RETAINING WALL "RW1"
PLAN AND ELEVATION
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
4-12-02

PROJECT NO: B51 DRAWN BY: WSH
DESIGNED BY: TAS CHECKED BY: MJP
APPROVED BY: TDL
THE LOUIS BERGER GROUP, INC.
LAS VEGAS, NEVADA

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

DRAWING NO.
RT-2
OF
L-1695

GENERAL NOTES AND SOIL NAIL WALL DESIGN PARAMETERS

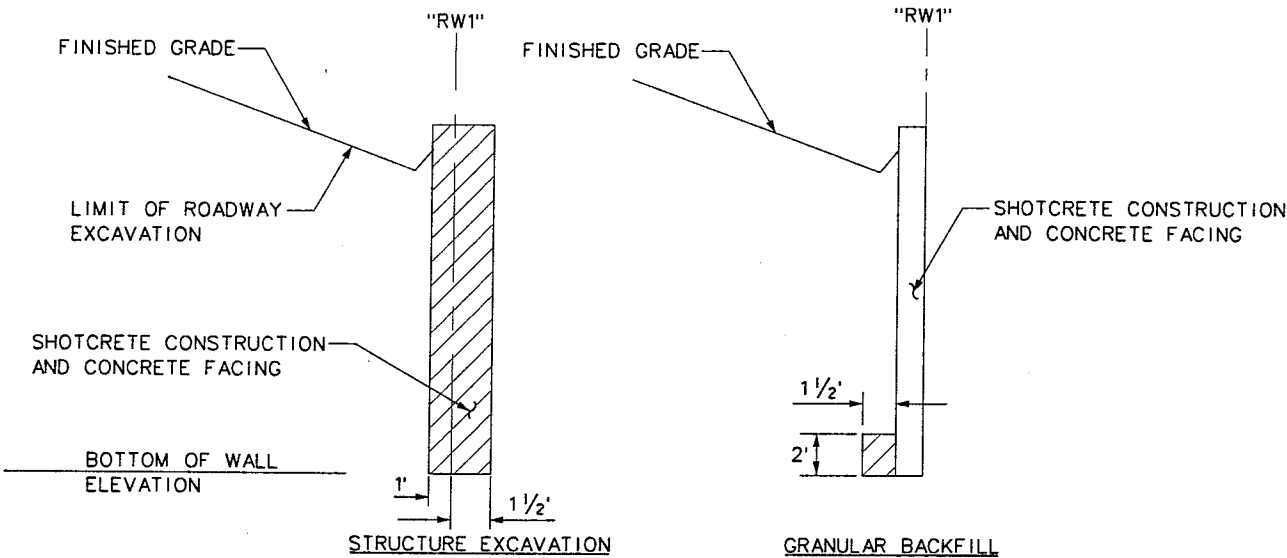
1. ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATE OF NEVADA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, DATED 2001 AS AMENDED AND THE PROJECT SPECIAL PROVISIONS.
2. THE SOIL NAIL STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE WITH THE SLD (SERVICE LOAD DESIGN) PROCEDURES CONTAINED IN THE FHWA "MANUAL FOR DESIGN AND CONSTRUCTION MONITORING OF SOIL NAIL WALLS". REPORT No. FHWA-SA-96-069. STRUCTURAL DESIGN OF INDIVIDUAL WALL ELEMENTS NOT COVERED IN THE FHWA MANUAL DESIGNED IN ACCORDANCE WITH THE 1996 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES AND CURRENT INTERM SPECIFICATIONS INCLUDING THE GUIDE SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES. A SEISMIC ACCELERATION OF 0.15g WAS USED IN THE DESIGN.
3. REINFORCED CONCRETE AND SHOTCRETE: $f_y = 60 \text{ ksi}$
 $f'_c = 4,000 \text{ psi}$
NAIL GROUT $f'_c = 3,000 \text{ psi}$
4. STRUCTURAL STEEL: AASHTO M183 GRADE 36
5. UNLESS OTHERWISE NOTED ON THE PLANS, MINIMUM CONCRETE/SHOTCRETE COVER MEASURED FROM THE FACE OF CONCRETE/SHOTCRETE TO THE FACE OF ANY REINFORCING BAR SHALL BE AS FOLLOWS:
- FRONT SIDE OF PERMANENT FACINGS EXPOSED TO THE WEATHER: 2"
PERMANENT SHOTCRETE FACINGS EXPOSED TO SOIL: 3"
PERMANENT CIP FACINGS CAST AGAINST TEMPORARY SHOTCRETE: 1.5"
6. UNLESS OTHERWISE SHOWN ON PLANS, ALL EXTERIOR CORNERS AND EDGES SHALL HAVE A $\frac{3}{4}$ " CHAMFER AND ALL INTERIOR CORNERS SHALL HAVE A $\frac{3}{4}$ " FILLET.
7. DESIGN SOIL PARAMETERS:

SOIL/ROCK TYPE TYPE	FRICTION ANGLE (DEGREES)	COHESION (psf)	UNIT WEIGHT (pcf)	ULTIMATE BOND STRESS (psi)
SAND AND GRAVEL	34	0	130	13

8. ALL NAIL DRILLED LENGTHS SHALL BE 20.0 FT WITH #9 BAR NAILS.
9. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING ALL UTILITIES, AND EXISTING FOUNDATIONS.
10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING STABLE SLOPES ABOVE AND BELOW THE SOIL NAIL WALLS.
11. NO GENERAL EXCAVATION OPEN CUTS STEEPER THAN 1H:1V SHALL BE MADE WITHIN 15 FEET IN FRONT OF THE SOIL NAIL WITHOUT THE APPROVAL OF THE ENGINEER.
12. AT THE CONTRACTORS OPTION, NAIL MAY BE DRILLED AND INSTALLED THROUGH A TEMPORARY STABILIZING BERM. SEE SHEET RT-5.
13. STRUCTURE EXCAVATION OF THE WALL FACE REQUIRES SPECIAL CARE AND EFFORT. SEE GEOTECHNICAL REPORT AND NOTES THIS SHEET.
14. A GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY KLIENFELDER, REPORT No. 31-183636-001, DATED 4/02/02 ENTITLED:
"GEOTECHNICAL EXPLORATION
I-215 BELTWAY (INTERIM)
ANN ROAD TO EL CAPITAN WAY
LAS VEGAS, NEVADA"

TYPICAL CONSTRUCTION SEQUENCE

1. WALLS SHALL BE BUILT FROM THE TOP DOWN IN ACCORDANCE WITH THE STAGED EXCAVATION LIFTS SHOWN ON SHEETS RT-4 & RT-6, THE INSTRUCTIONS PROVIDED IN THE GEOTECHNICAL REPORT, AND THE PROJECT SPECIFICATIONS. SEE SPECIFICATIONS FOR TESTING INSTRUCTIONS.
2. THE FOLLOWING WALL CONSTRUCTION SEQUENCE FOR EACH EXCAVATION LIFT SHALL BE COMPLETE PRIOR TO INITIATING WORK ON THE NEXT EXCAVATION LIFT UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- 2.1. INSTALL AND TEST PRE-PRODUCTION VERIFICATION TEST NAILS (2 EACH), SEE SHEET RT-6 FOR LOCATIONS.
- 2.2. EXCAVATE TO STAGE 1 ROUGH GRADE.
- 2.3. TRIM TO FINAL WALL FACE EXCAVATION LINE OR TO STABILIZING BERM (IF USED).
- 2.4. DRILL, INSTALL AND GROUT NAILS. TRIM STABILIZATION BERM (IF USED) TO FINAL WALL FACE EXCAVATION LINE.
- 2.5. INSTALL GEOCOMPOSITE DRAINAGE STRIP.
- 2.6. PLACE REINFORCING AND APPLY SHOTCRETE. NO EXCAVATION WHICH HAS EXPOSED WALL FACE SHALL BE LEFT UNSTABILIZED BY SHOTCRETE AT THE END OF THE WORK DAY UNLESS APPROVED BY THE ENGINEER.
- 2.7. PERFORM PROOF-NAIL TESTS PER SPECIFICATIONS AFTER SHOTCRETE AND NAIL GROUT HAVE ATTAINED THEIR SPECIFIED STRENGTHS. SEE SHEET RT-6 FOR PROOF-NAIL LOCATIONS.
3. INSTALL PVC CONNECTOR PIPES DURING CONSTRUCTION OF THE FINAL SHOTCRETE LIFT TO PROVIDE DRAINAGE OF THE GEOCOMPOSITE DRAINAGE STRIPS INTO THE FOOTING DRAIN OR WALL BASE AS SHOWN ON SHEETS RT-4 & RT-5.
4. PLACE CAST-IN-PLACE CONCRETE FACING WALL AFTER STEPS 2 AND 3 HAVE BEEN COMPLETED.



ESTIMATED QUANTITIES:

SPEC SECTIONS	ITEM DESCRIPTION	UNIT	QUANTITY
	STRUCTURE EXCAVATION	YD	1335
	GRANULAR BACKFILL	YD	145
	CLASS AA CONCRETE	YD	315
	REINFORCING STEEL	LB	27000
	PAINTING	SF	11000
	SOIL NAIL ASSEMBLY	EA	860
	VERIFICATION TEST NAIL	EA	2
	PROOF TEST NAIL	EA	43
	PNEUMATICALLY PLACED CONCRETE MORTAR	SF	13625

REFERENCE FILES: rder.mst - 851-stamp.mst
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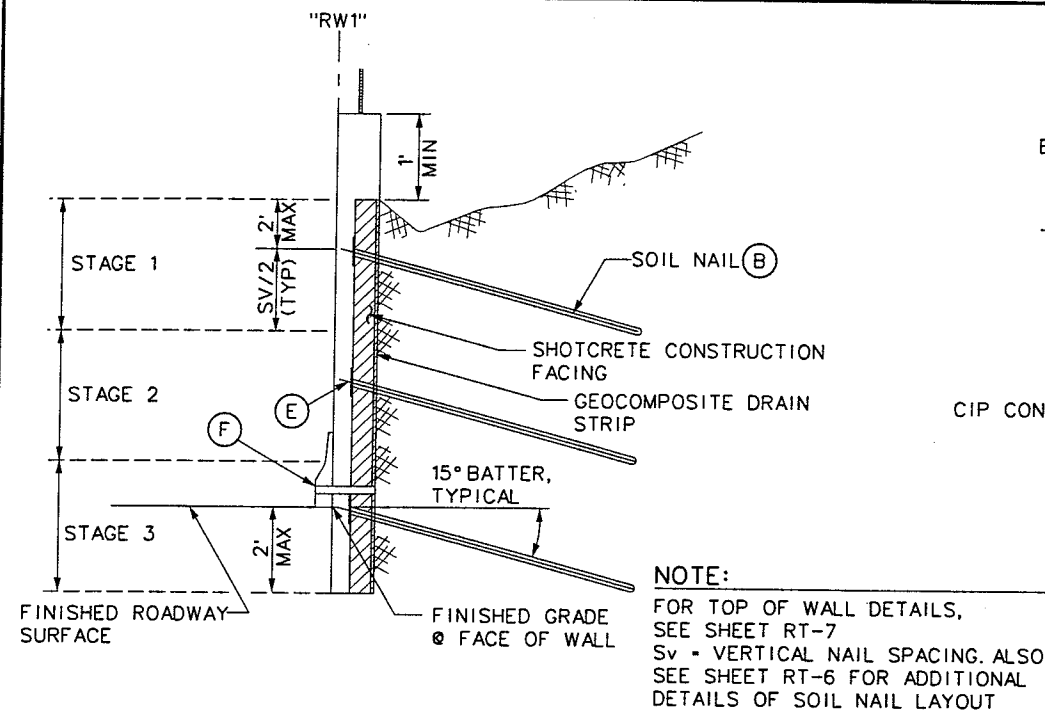


WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
SOIL NAIL WALL NOTES
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

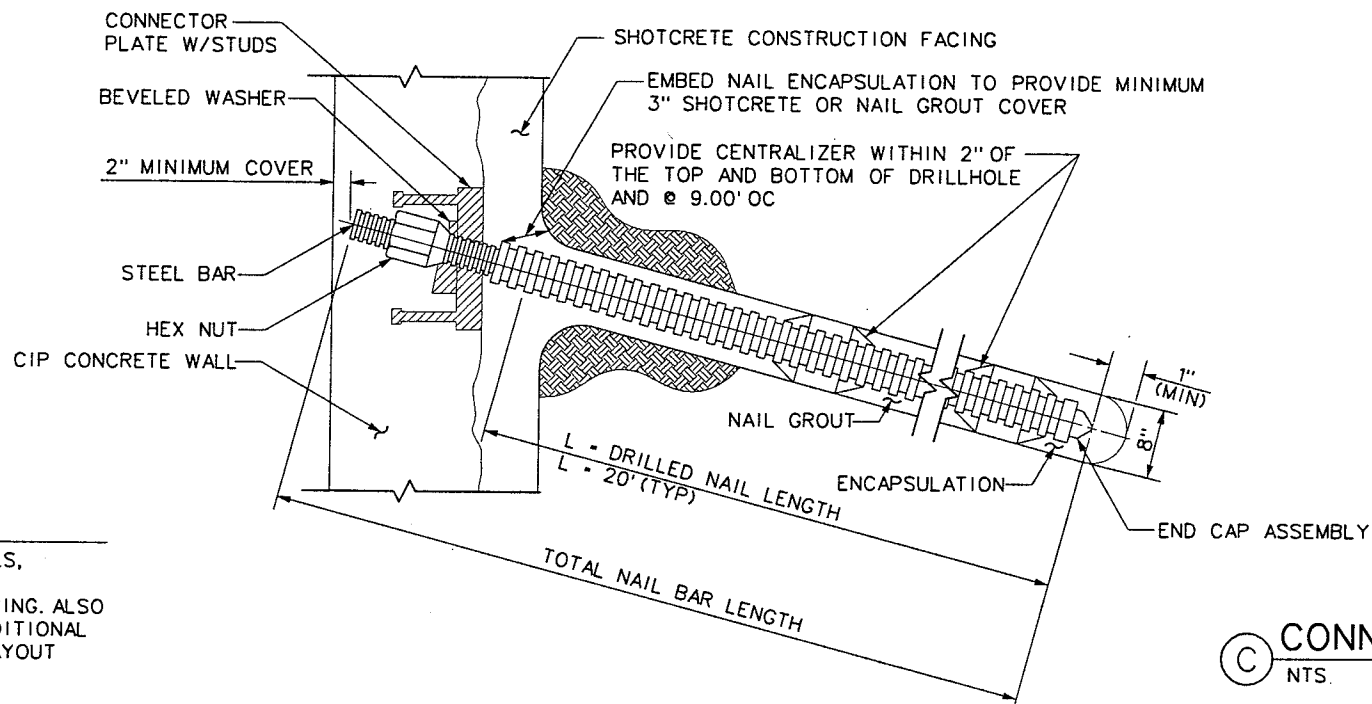
90%
PRELIMINARY
4-12-02

PROJECT NO: 851 DRAWN BY: WSH
DESIGNED BY: TAS CHECKED BY: GAG
APPROVED BY: TDL
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

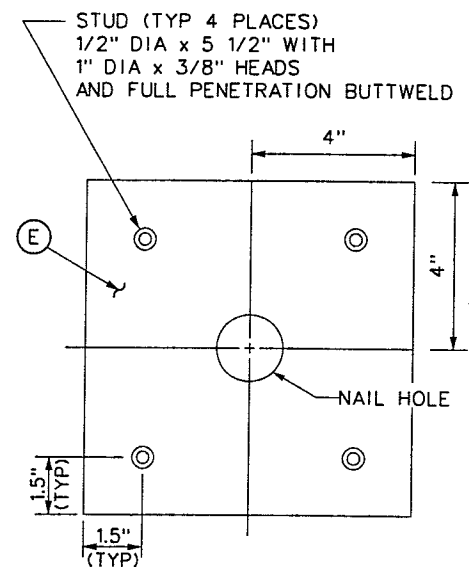
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VERT: NONE
FIELD BOOK
DRAWING NO.
RT-3
OF
L-1695



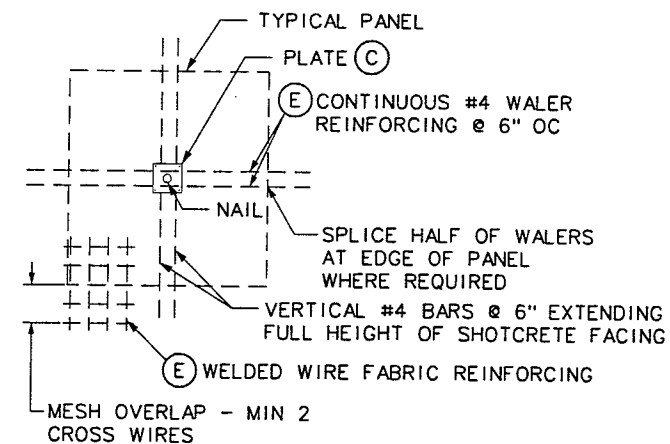
(A) TYPICAL WALL SECTION
NTS



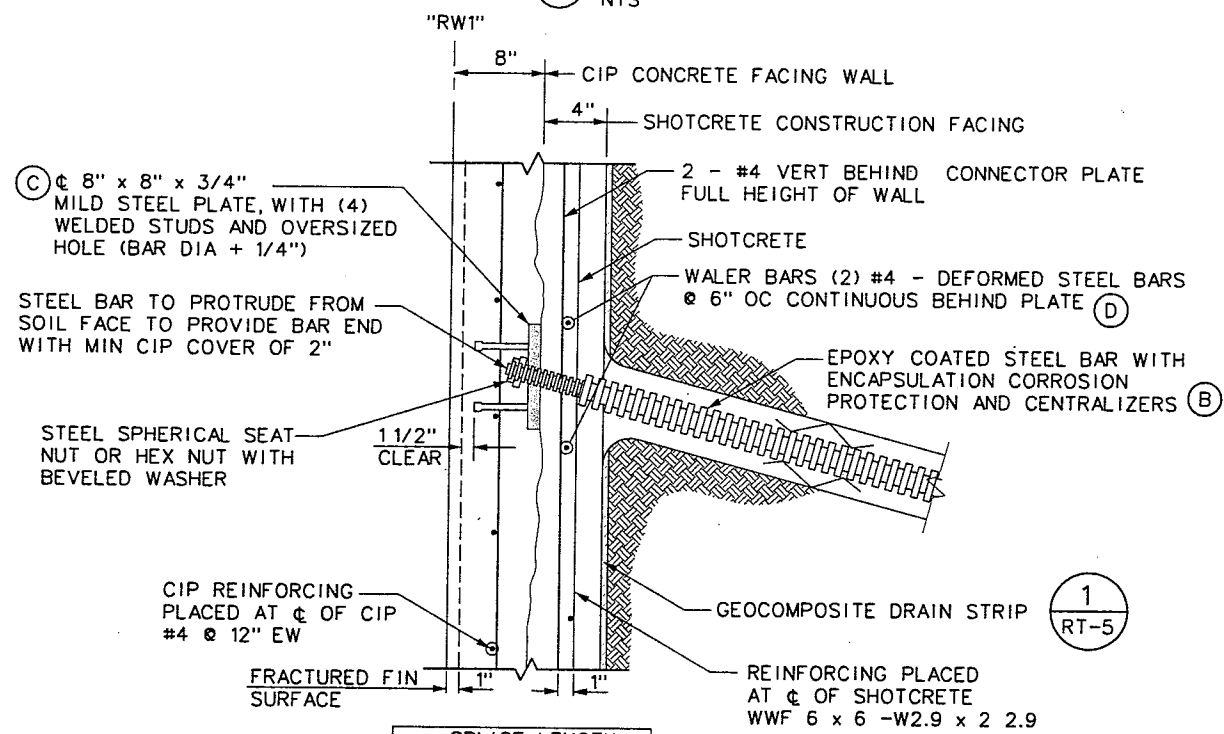
(B) ENCAPSULATED PRODUCTION SOIL NAIL
NTS



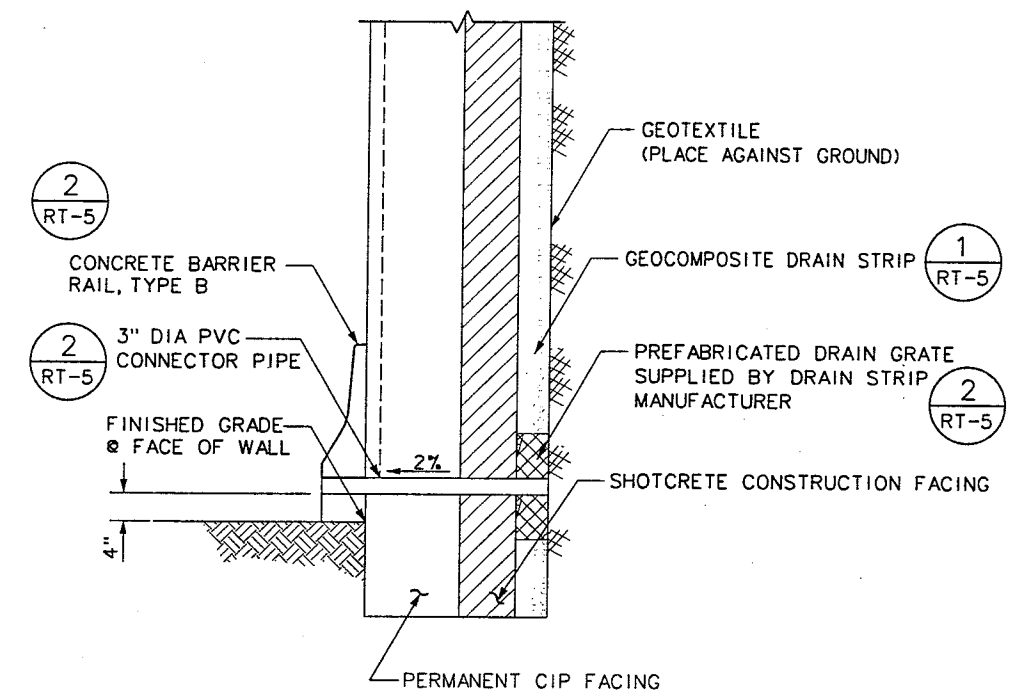
(C) CONNECTOR PLATE WITH STUD DETAIL
NTS



(D) TYPICAL SHOTCRETE PANEL STEEL
NTS



(E) FINISHED WALL SECTION
NTS



(F) TYPICAL WALL BASE DRAIN
NTS

SPLICE LENGTH	
BAR SIZE	#4
SPLICE LENGTH	24"

REFERENCE FILES: order.mst
 FILE NAME: V:\851 Ann Rd to El Capitan\Intern\details\B51-SNAL02.dgn - 4/16/2002 - 17:14:00 WSH

REV. NO.	DATE	DESCRIPTION	APPROVED



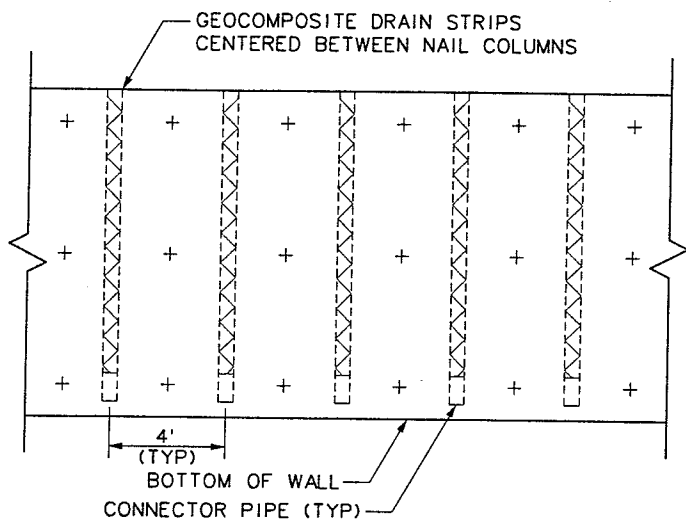
WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
SOIL NAIL WALL DETAILS
 CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
 PRELIMINARY
 4-12-02

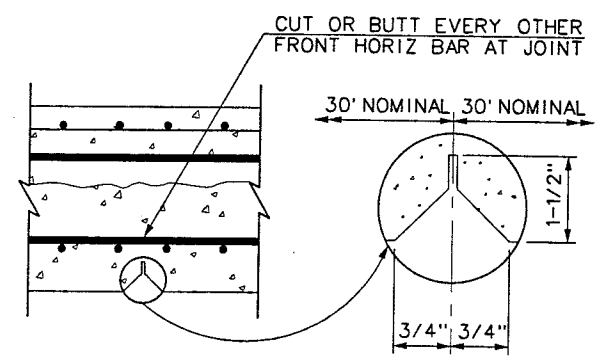
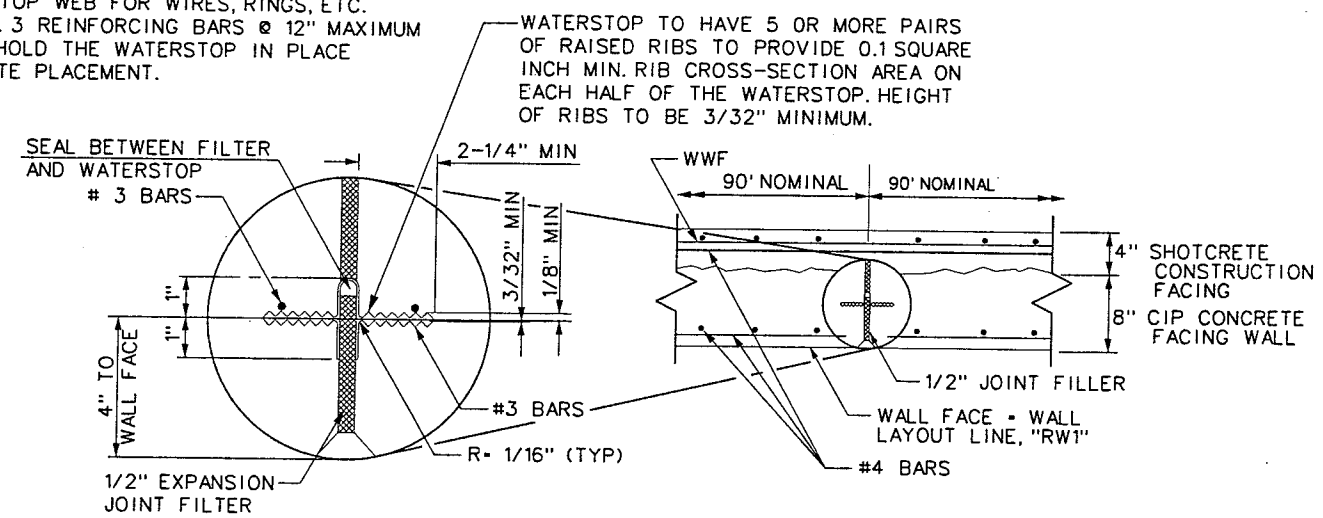
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DESIGNED BY: TAS	CHECKED BY: GAG	HORIZ: NONE	OF
APPROVED BY: TDL		VERT: NONE	
		FIELD BOOK	
			L-1695

BERGER/ABAM
 ENGINEERS INC.
 LAS VEGAS, NV

WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY

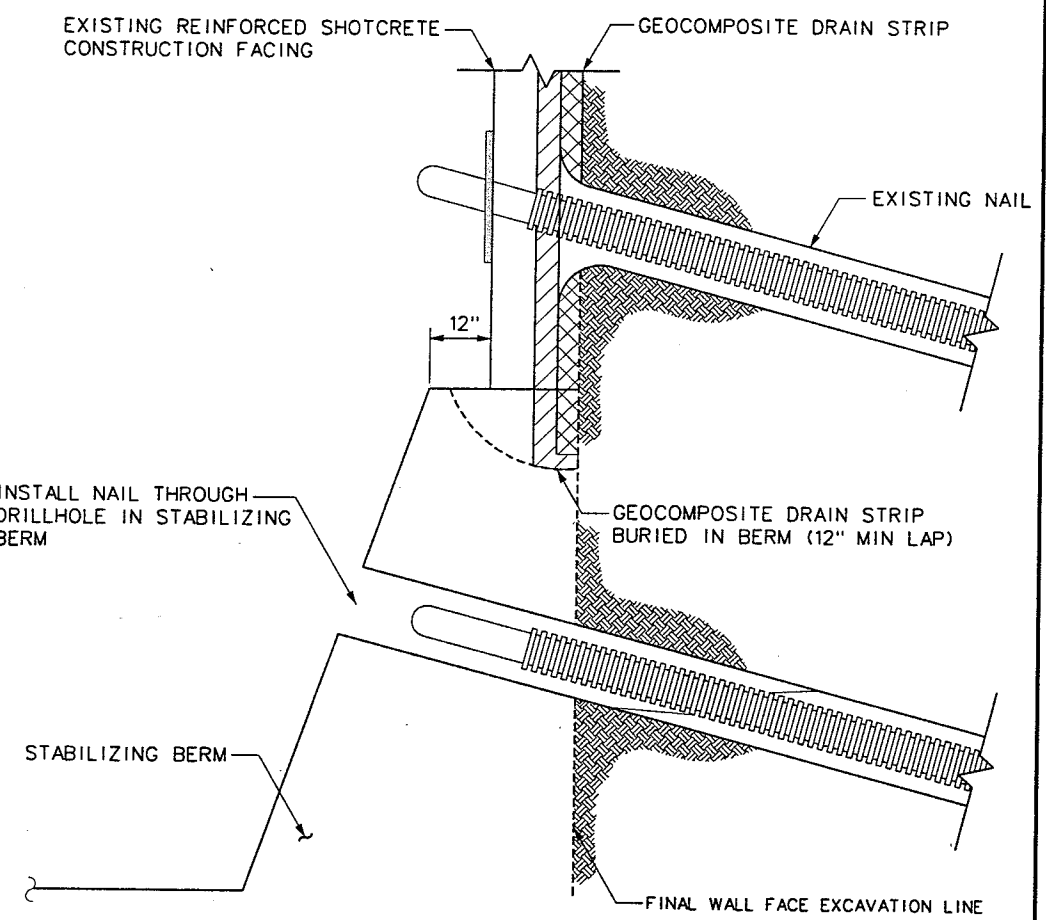
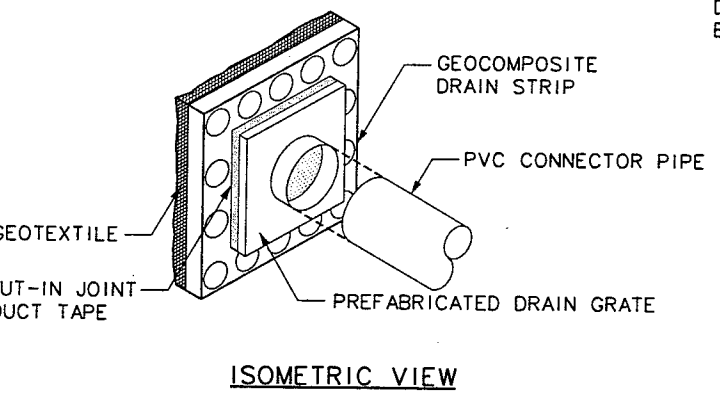
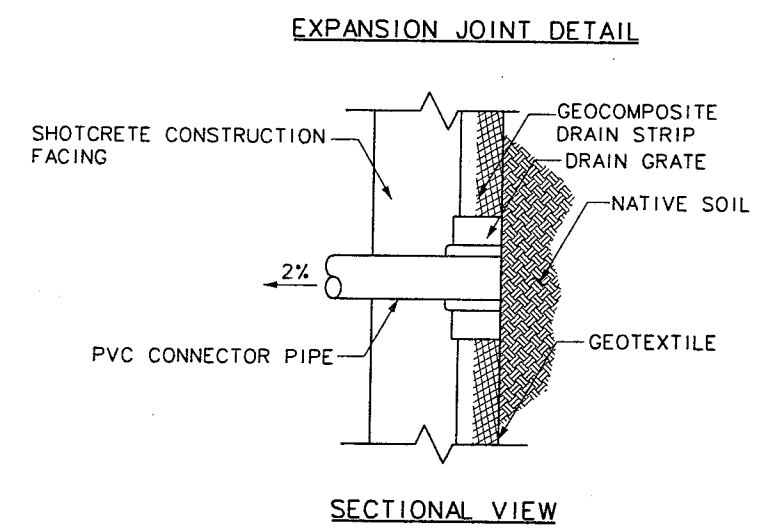
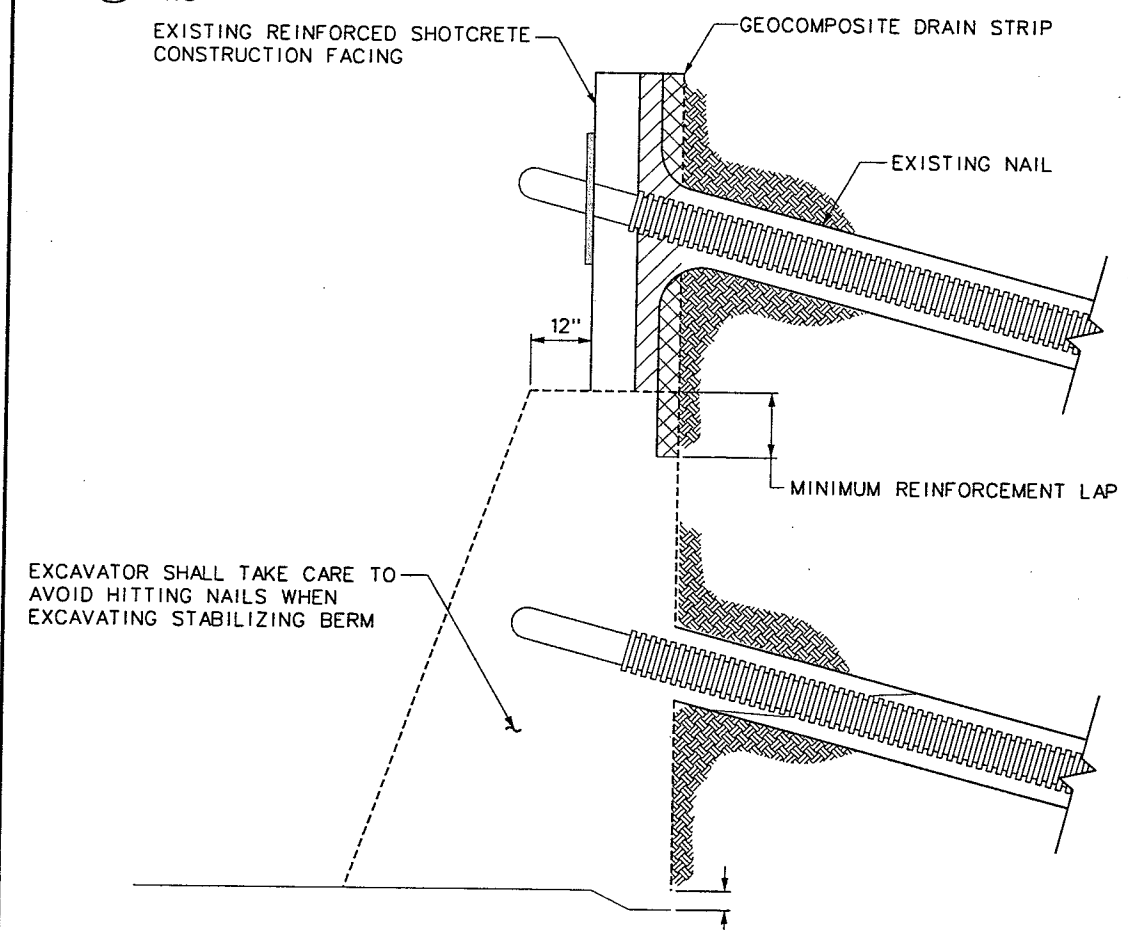


NOTE:
HOLES WILL BE PERMITTED IN THE OUTER 1/2" OF THE WATERSTOP WEB FOR WIRES, RINGS, ETC. TIE WEB TO No. 3 REINFORCING BARS @ 12" MAXIMUM INTERVALS TO HOLD THE WATERSTOP IN PLACE DURING CONCRETE PLACEMENT.



1 **GEOCOMPOSITE DRAINAGE STRIP DETAIL**
NTS

CONTRACTION JOINT



3 **EXCAVATION OF TEMPORARY STABILIZING BERM FOR SHOTCRETE PLACEMENT (CONTRACTOR OPTION)**
NTS

2 **DRAIN GRATE DETAILS**
NTS

4 **NAIL INSTALLATION THROUGH TEMPORARY STABILIZING BERM (CONTRACTOR OPTION)**
NTS

REFERENCE FILES: order.mst - 851-SNAL02.dgn - 851-stamp.mst
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REV. NO.	DATE	DESCRIPTION	APPROVED



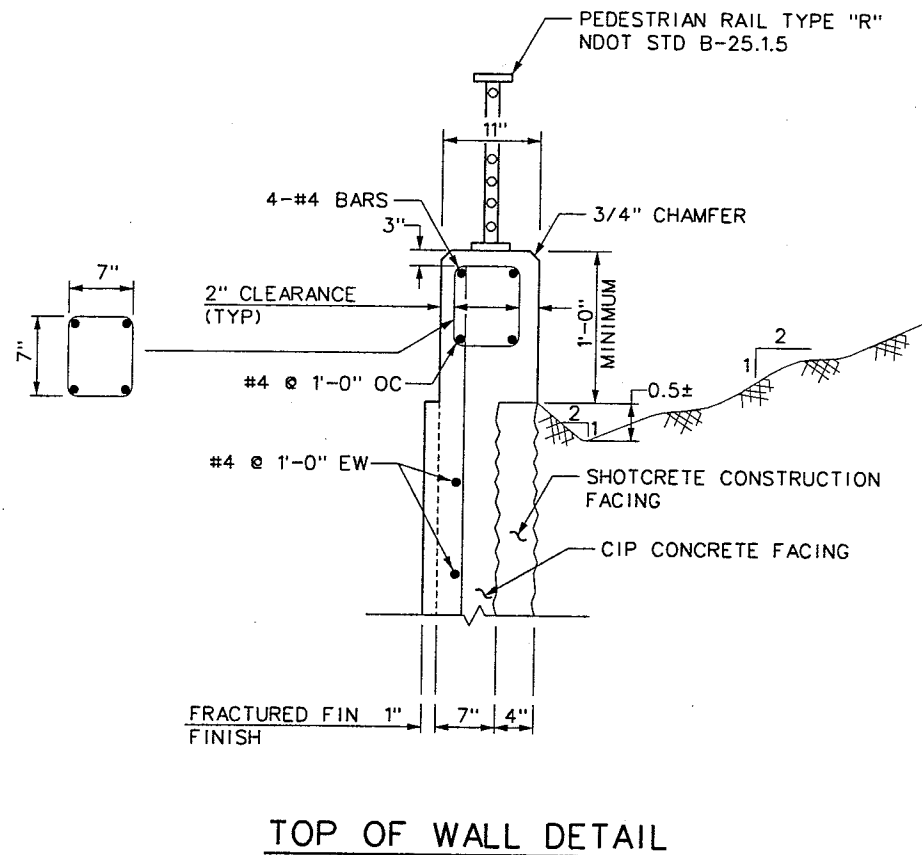
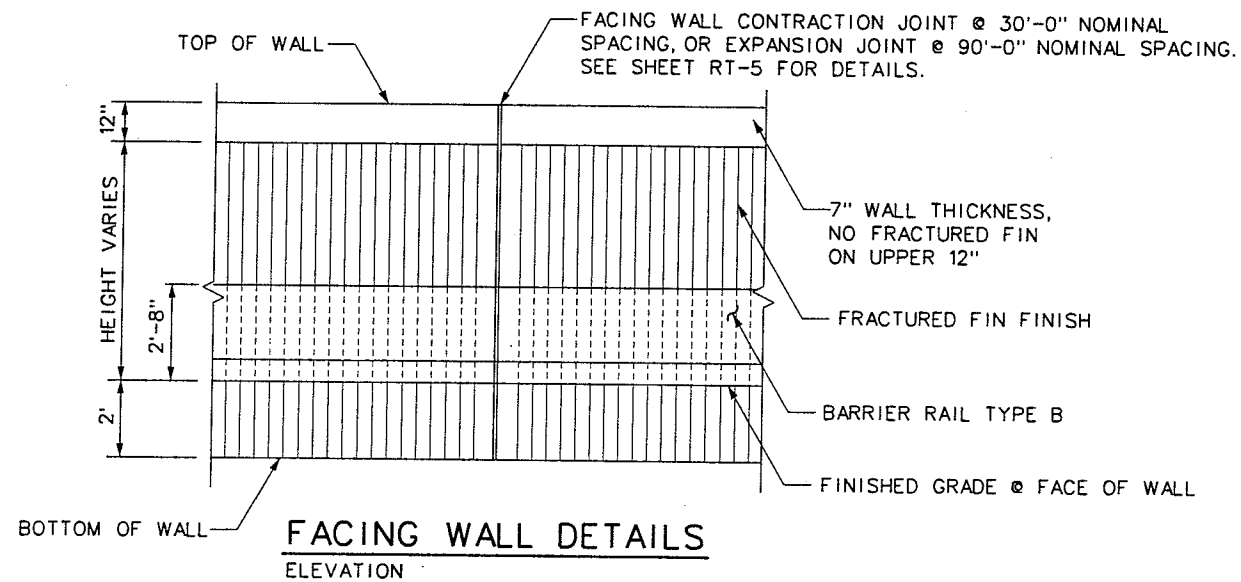
WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
SOIL NAIL WALL DETAILS
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
4-12-02

PROJECT NO: 851 DRAWN BY: WSH
DESIGNED BY: TAS CHECKED BY: GAG
APPROVED BY: TDL
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: NONE
VERT: NONE
FIELD BOOK

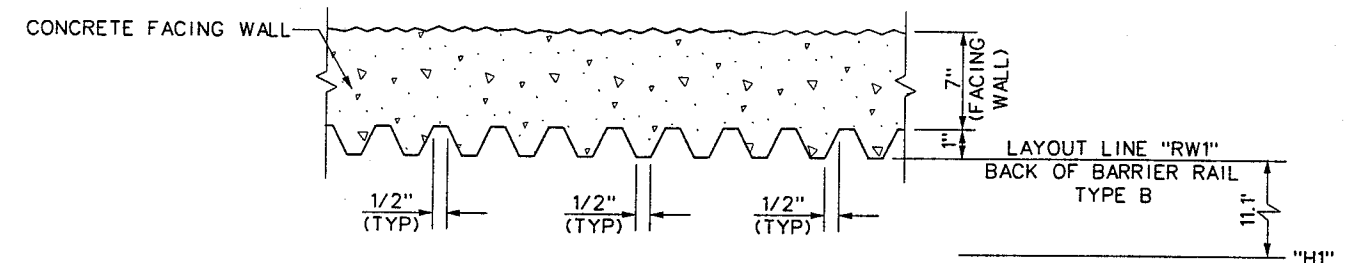
DRAWING NO.
RT-5
OF
L-1695



SOIL NAIL LOCATIONS

NAIL LINE	POINT	"RW1" STATION	ELEVATION	NO EQUAL 4.0' SPACES
1-A	A	1+02.00	2747.88	5
	B	1+22.00	2748.27	
	C	1+25.96	2748.31	
1-B	D	1+73.96	2747.76	12
	E	1+77.65	2747.62	
1-C	F	3+21.65	2740.43	36
	G	3+24.96	2740.27	
1-D	H	5+72.96	2727.62	62
	I	5+76.58	2727.45	
1-E	J	6+20.58	2725.53	11
	K	6+23.44	2725.40	
1-F	L	7+23.44	2719.49	25
	M	7+25.68	2719.41	
1-G	N	8+17.68	2715.69	23
	O	8+21.35	2715.56	
1-H	P	11+21.35	2706.44	75
	Q	11+24.64	2706.33	
1-I	R	12+20.64	2702.73	24
	S	12+24.54	2702.51	
1-J	T	13+20.54	2695.84	24
	U	13+22.28	2695.71	
1-K	V	13+66.28	2692.66	11
	W	13+70.60	2692.39	
1-L	X	13+78.60	2691.92	2
	EE	3+36.49	2737.63	
2-A	FF	5+72.49	2724.06	59

NAIL LINE	POINT	"RW1" STATION	ELEVATION	NO EQUAL 4.0' SPACES
2-B	GG	5+74.49	2724.00	37
	HH	7+22.49	2716.61	
	II	7+24.97	2716.51	
2-C	JJ	12+20.97	2699.63	124
	KK	12+22.92	2699.55	
2-D	LL	12+82.92	2696.45	15
	Y	1+11.96	2746.92	
3-A	Z	1+23.96	2746.67	3
	AA	1+25.96	2746.59	
3-B	BB	1+73.96	2744.02	12
	CC	1+77.65	2743.83	
3-C	DD	3+21.65	2736.60	36
	MM	3+24.96	2736.43	
3-D	NN	5+72.96	2720.56	62
	OO	5+76.58	2720.35	
3-E	PP	6+20.58	2718.15	11
	QQ	6+23.44	2718.00	
3-F	RR	7+23.44	2713.62	25
	SS	7+25.68	2713.55	
3-G	TT	8+21.68	2710.06	24
	UU	8+23.25	2710.01	
3-H	VV	13+19.25	2693.21	124
	WW	13+22.28	2693.11	
3-I	XX	13+66.28	2691.14	11
	YY	13+70.60	2690.93	
3-J	ZZ	14+00.60	2689.91	8 @ 3.75



FRACTURED FIN FINISH DETAIL PLAN SECTION



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY

SOIL NAIL WALL DETAILS

CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
4-12-02

PROJECT NO: B51 DRAWN BY: WSH
DESIGNED BY: TAS CHECKED BY: GAG
APPROVED BY: TDL

BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: NONE
VERT: NONE
FIELD BOOK

DRAWING NO.
RT-7
OF
L-1695

REV. NO.	DATE	DESCRIPTION	APPROVED

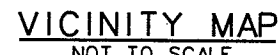
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WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY

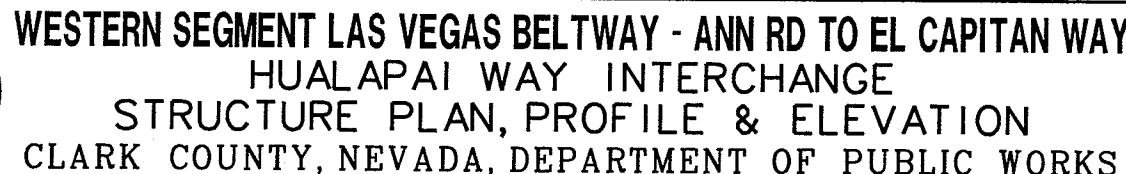


NOTES:

-



1-2407



90%
PRELIMINARY
04-12-02

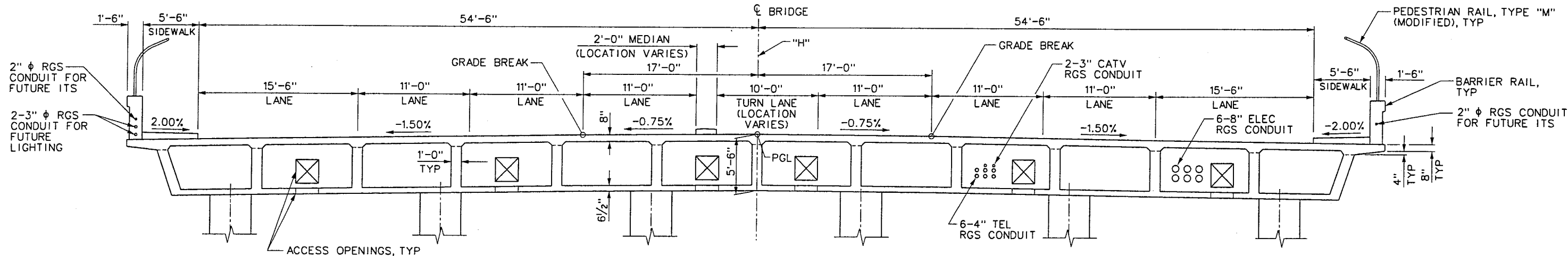
PROJECT NO: A02700 DRAWN BY: JR/WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW

BERGER/ABAM
ENGINEERS | INC.
LAS VEGAS, NV

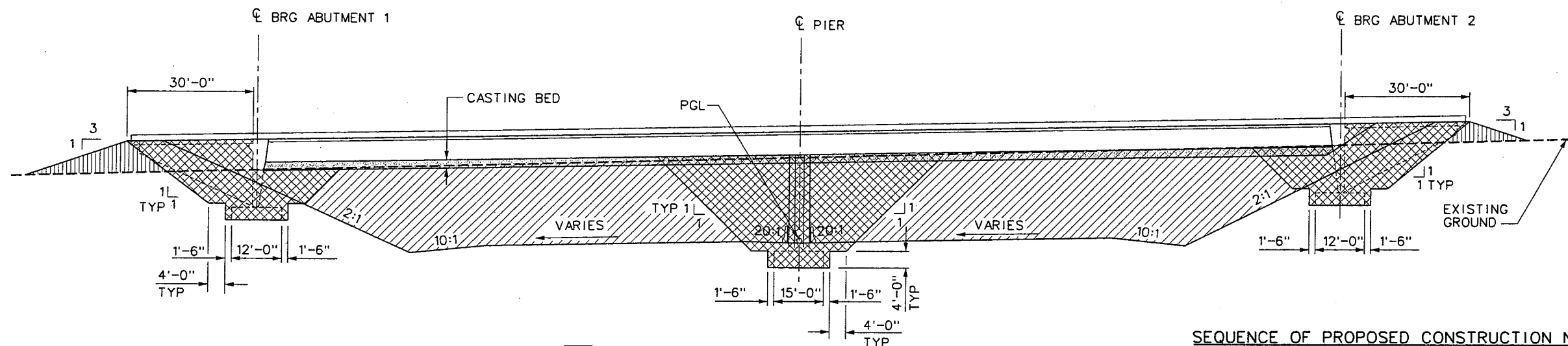
SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

DRAWING NO.
B-1
OF
1-1695

REFERENCE FILES: 1-1-AbamBorder.mst - 851-s-lamp-Abam.mst - 851-1-1-AB002.dgn - 851-1-1-AB003.dgn
FILE NAME: V:\851 Am Rd to El Capitan\Interm\bridge\851-1-1-AB003.dgn - 4/16/2002 - 9:14:43 WFD



TYPICAL SECTION - ULTIMATE LANE CONFIGURATION
(SEE SHEET B-2 FOR INITIAL LANE CONFIGURATION)



NOTES:

1. ALL EXCAVATION STRICTLY REQUIRED FOR CONSTRUCTION OF THE BRIDGE WILL BE PAID UNDER THE PAY ITEM STRUCTURE EXCAVATION. ALL OTHER EXCAVATION WILL BE PAID FOR UNDER PAY ITEM ROADWAY EXCAVATION.
2. AS AN ALTERNATE METHOD OF CONSTRUCTION, THE CONTRACTOR MAY EXCAVATE TO THE TOP OF FUTURE ROADWAY AND BUILD THE SUPERSTRUCTURE ON FALSEWORK.
3. FOR GRANULAR BACKFILL AND OTHER DETAILS NOT SHOWN, SEE STANDARD PLAN R-1.1.3 (206, 207)

- CASTING BED
- LIMITS OF STRUCTURE EXCAVATION
- LIMITS OF ROADWAY EXCAVATION
- ZONE OF SELECTED BORROW PER NDOT STANDARD PLAN R-1.1.4 (206, 207) COMPACT TO AT LEAST 95% OF MAXIMUM LABORATORY DRY DENSITY

PROPOSED CONSTRUCTION METHOD
(ROADWAY AND SLOPE GRADING BELOW BRIDGE
DIMENSIONED NORMAL TO "A")

SEQUENCE OF PROPOSED CONSTRUCTION NOTES:

1. EXCAVATE AND/OR PLACE BACKFILL FROM EXISTING GROUND LINE TO A DEPTH BELOW GIRDER SOFFIT TO ALLOW FOR CONSTRUCTION OF CASTING BED.
2. EXCAVATE FOR CONSTRUCTION OF ABUTMENTS AND PIERS.
3. CONSTRUCT ABUTMENTS AND PIERS.
4. TEMPORARY BACKFILL ABUTMENTS AND PIER COLUMNS.
5. CONSTRUCT A SUITABLE CASTING BED.
6. CONSTRUCT GIRDERS.
7. STRESS BRIDGE.
8. EXCAVATE UNDER BRIDGE.

1-2407

REV. NO.	DATE	DESCRIPTION	APPROVED

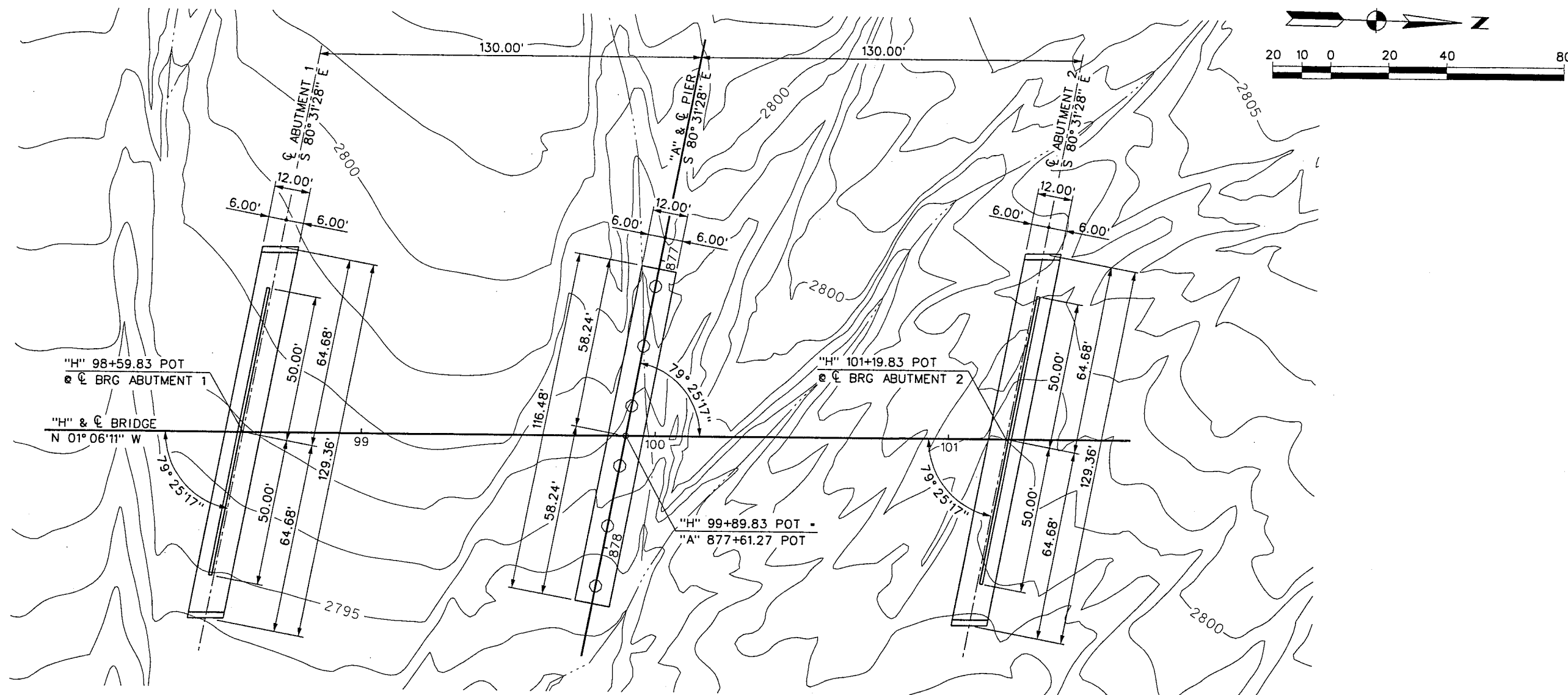


WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HUALAPAI WAY INTERCHANGE
BRIDGE FALSEWORK & EXCAVATION DETAILS
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

PROJECT NO: A02700	DRAWN BY: JR	SCALE	DRAWING NO.
DESIGNED BY: MLT/LJS	CHECKED BY: GG	HORIZ: NONE	B-3
APPROVED BY: WEW		VERT: AS SHOWN	OF
		FIELD BOOK	
			L-1695

REFERENCE FILES: .\TERMAL\IGN.mst - 851-INT-GEO.mst - 851-1-1-AbomBorder.mst - 851-stamp-Abom.mst - 851-contours.mst - 851-1-1-AB001.dgn
FILE NAME: V:\851 Ann Rd to El Capitan\Interm\bridge\851-1-1-AB004.dgn - 4/5/2002 - 16:22:30 WHW



NOTE:
CONTOURS SHOWN ARE FOR EXISTING GROUND ONLY.

GEOMETRICS

DRAWING LIST

- | | | | |
|------|---|------|---|
| B-1 | PLAN, PROFILE & ELEVATION | B-13 | DECK SECTION |
| B-2 | TYPICAL SECTION & GENERAL NOTES | B-14 | BOTTOM SLAB REINFORCEMENT |
| B-3 | BRIDGE FALSEWORK AND EXCAVATION DETAILS | B-15 | GIRDER & INTERMEDIATE DIAPHRAGM REINFORCEMENT |
| B-4 | GEOMETRICS & DRAWING LIST | B-16 | UTILITY DETAILS |
| B-5 | ABUTMENT FOOTINGS | B-17 | TOP SLAB REINFORCEMENT |
| B-6 | ABUTMENT 1 PLAN & ELEVATION | B-18 | PRESTRESSING, CAMBER & CONCRETE PLACEMENT |
| B-7 | ABUTMENT 2 PLAN & ELEVATION | B-19 | APPROACH SLAB |
| B-8 | ABUTMENT SECTIONS & DETAILS | B-20 | STRIP SEAL EXPANSION JOINT - SHEET 1 |
| B-9 | ABUTMENT 1 WINGWALLS | B-21 | STRIP SEAL EXPANSION JOINT - SHEET 2 |
| B-10 | ABUTMENT 2 WINGWALLS | B-22 | BARRIER RAIL |
| B-11 | PIER COLUMN & FOOTING | B-23 | PEDESTRIAN RAIL TYPE "V" |
| B-12 | PIER CAP | | |

I-2407



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HUALAPAI WAY INTERCHANGE
GEOMETRICS & DRAWING LIST
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

PROJECT NO: A02700 DRAWN BY: JR/WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW

BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: NONE
FIELD BOOK

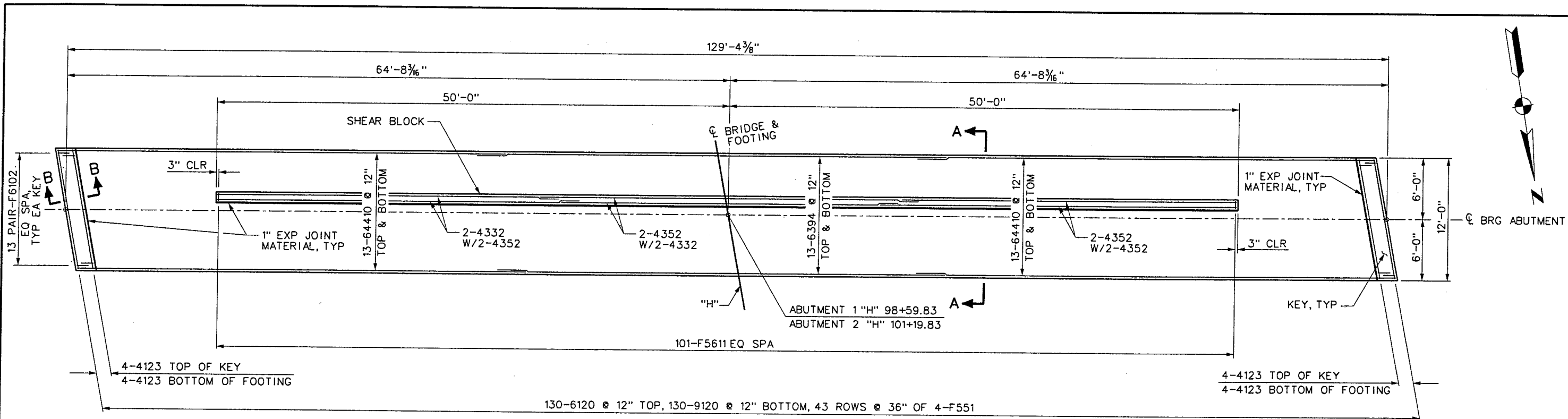
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B-4

OF

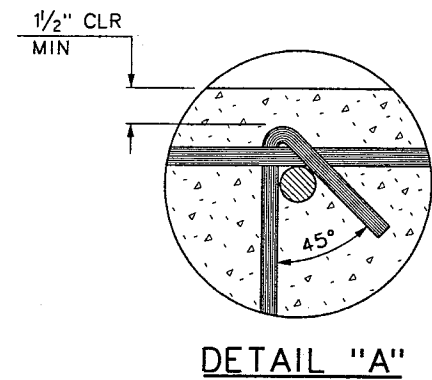
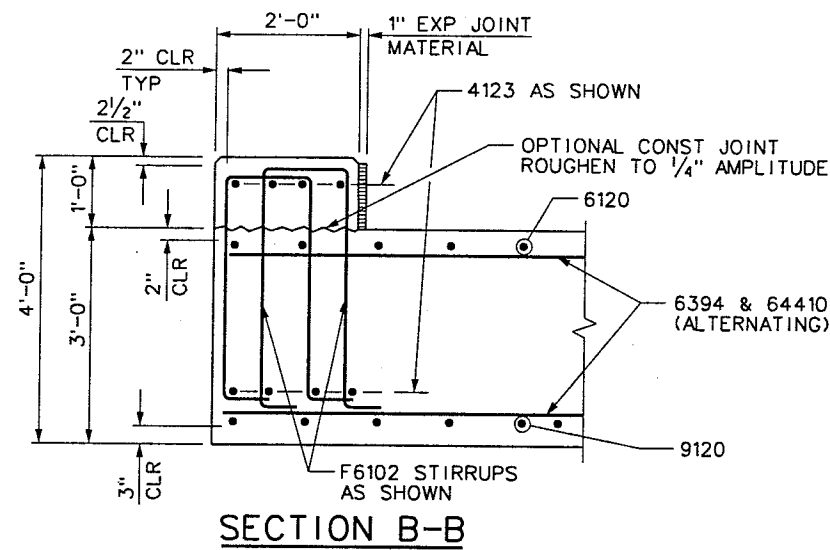
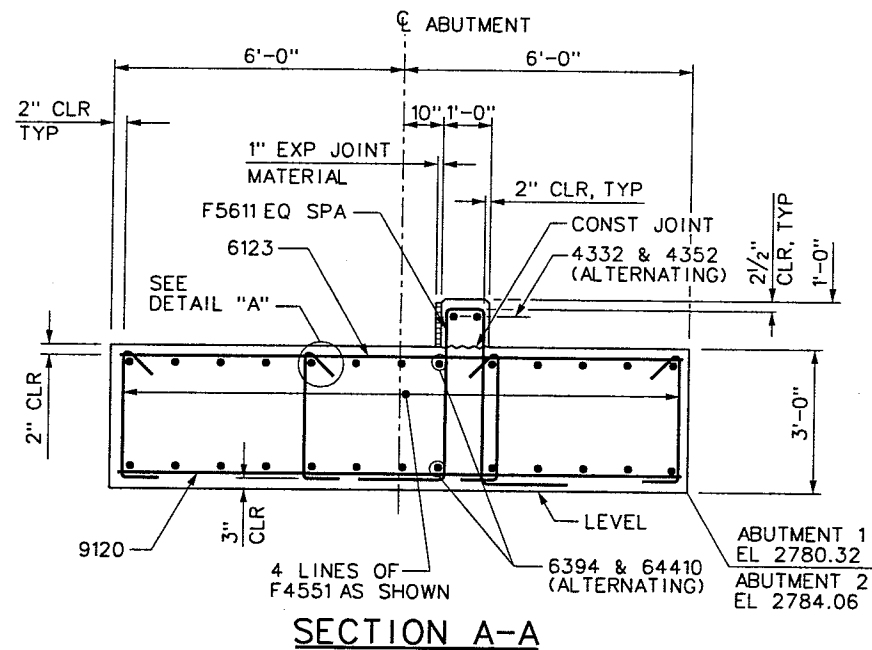
L-1695

REFERENCE FILES: -INTERNAL\IGN.mst - 851-1-AB004.dgn - 851-1-AB004-Abutment.mst - 851-1-AB004-Abutment.mst - 851-1-AB004-Abutment.mst - 851-1-AB004-Abutment.mst - 851-1-AB004-Abutment.mst
FILE NAME: V:\851 Ann Rd to El Capitan\Intern\bridge\851-1-AB006.dgn - 4/15/2002 - 15:38:56 WFD



FOOTING PLAN - ABUTMENT 1
ABUTMENT 2 OPPOSITE HAND

NOTE:
DO NOT PLACE SHEAR BLOCKS UNTIL AFTER
POST-TENSIONING HAS BEEN COMPLETED.



LAP SPLICE TABLE

BAR SIZE	LAP
#4	2'-0"
#5	2'-4"
#6	2'-9"
#7	3'-6"
#8	4'-7"
#9	5'-10"
#10	7'-4"

NOTE:
STAGGER ADJACENT LAP
SPLICES A MINIMUM OF 2'-0"

I-2407

REV. NO.	DATE	DESCRIPTION	APPROVED



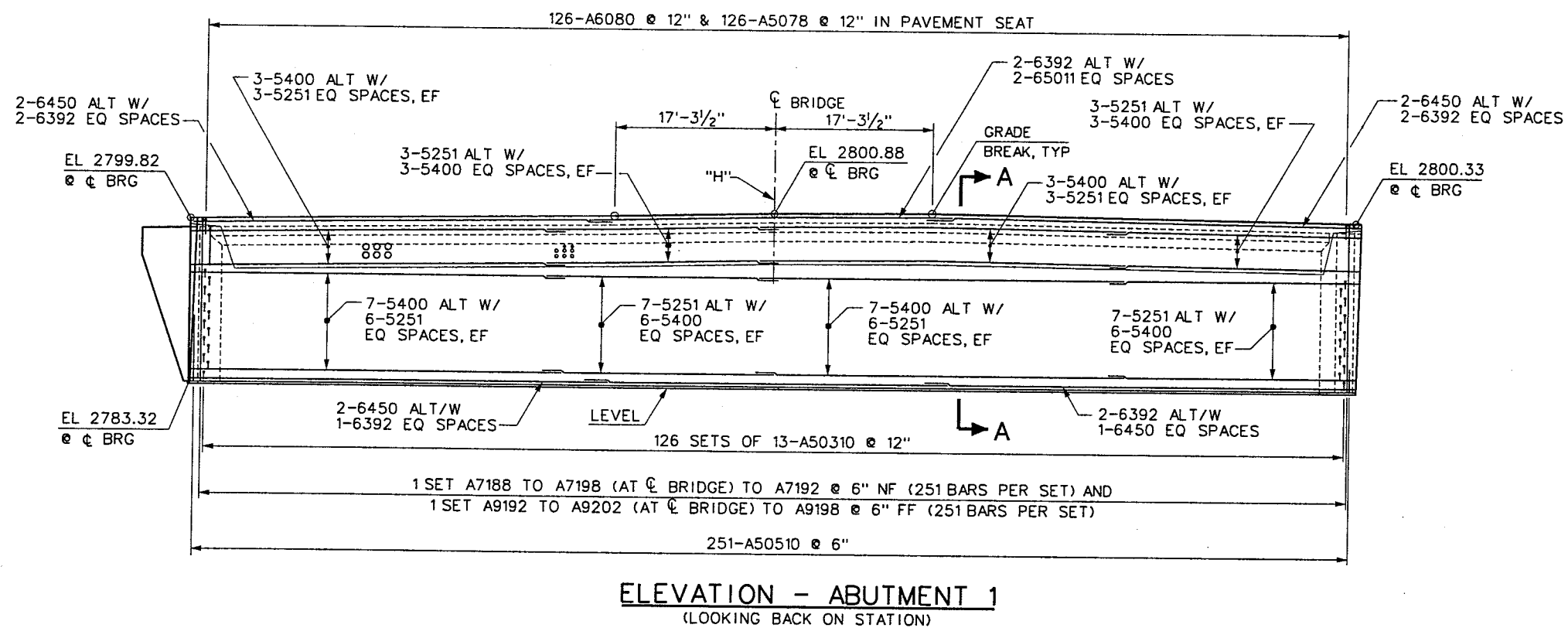
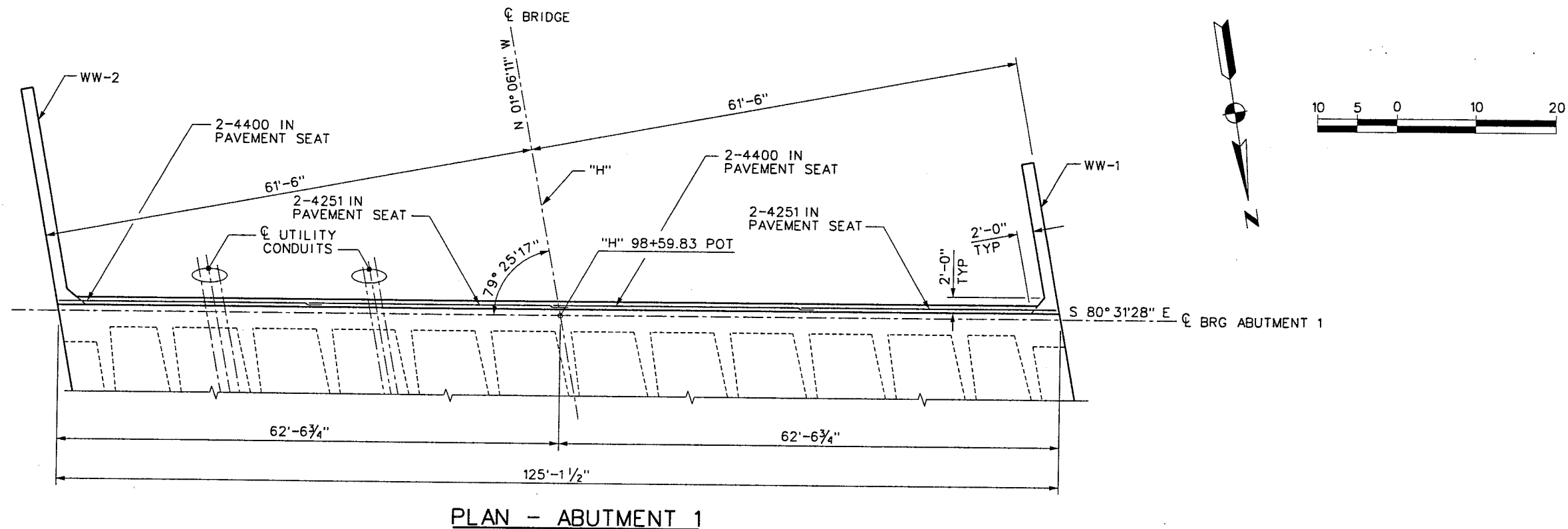
WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HUALAPAI WAY INTERCHANGE
ABUTMENT FOOTINGS
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

PROJECT NO: A02700 DRAWN BY: JR/WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

DRAWING NO.
B-5
OF
L-1695

LAP SPLICE TABLE

BAR SIZE	LAP
#4	2'-0"
#5	2'-4"
#6	2'-9"
#7	3'-6"
#8	4'-7"
#9	5'-10"
#10	7'-4"

NOTE:
STAGGER ADJACENT LAP
SPLICES A MINIMUM OF 2'-0"

NOTES:

1. FOR SECTION A-A AND DETAILS, SEE SHEET B-8.
2. SEE SHEETS B-9 AND B-10 FOR ADDITIONAL REINFORCEMENT AND SHEETS B-20 & B-21 FOR EXPANSION JOINT ANCHORAGE TO BE CAST INTO ABUTMENTS.
3. SEE SHEET B-16 FOR PLACEMENT OF UTILITY PIPE SLEEVES AND SHEETS B-20 & B-21 FOR EXPANSION JOINT ANCHORAGE.
4. DECK AND GIRDER REINFORCEMENT NOT SHOWN FOR CLARITY.

1-2407

[illegible]

**WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HUALAPAI WAY INTERCHANGE
ABUTMENT 1 PLAN & ELEVATION
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS**

90%
PRELIMINARY
04-12-03

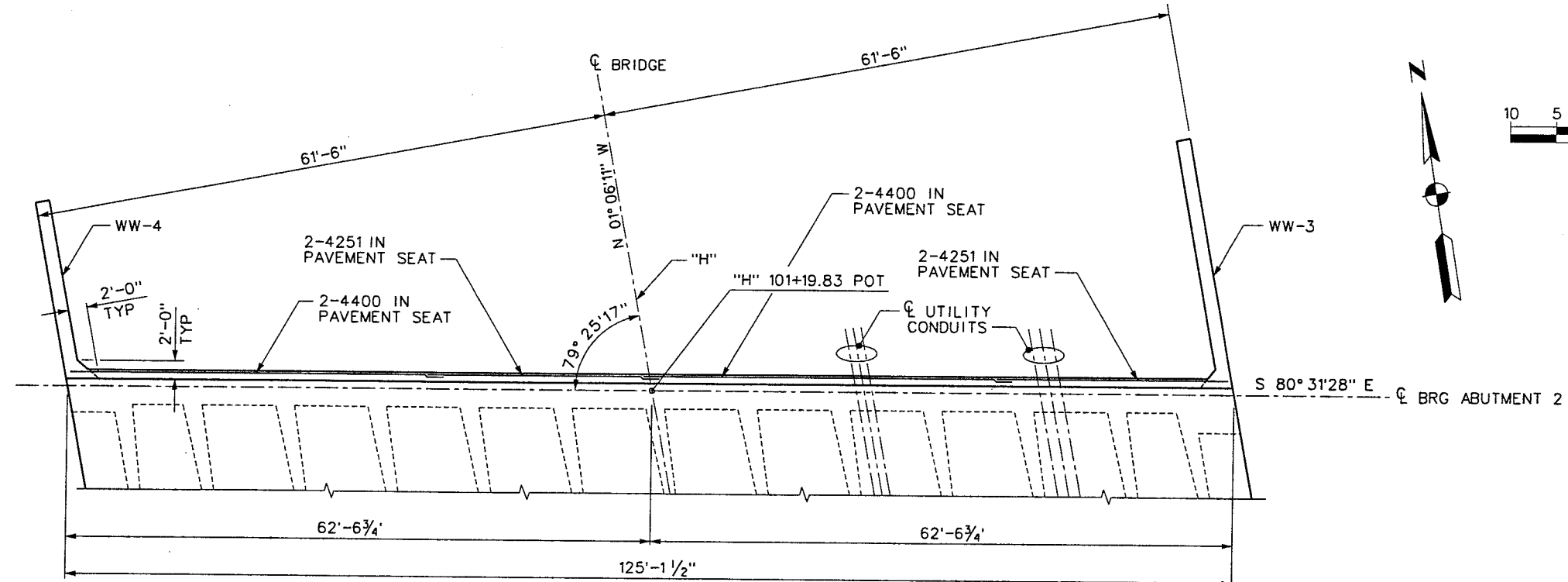
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DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW

BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

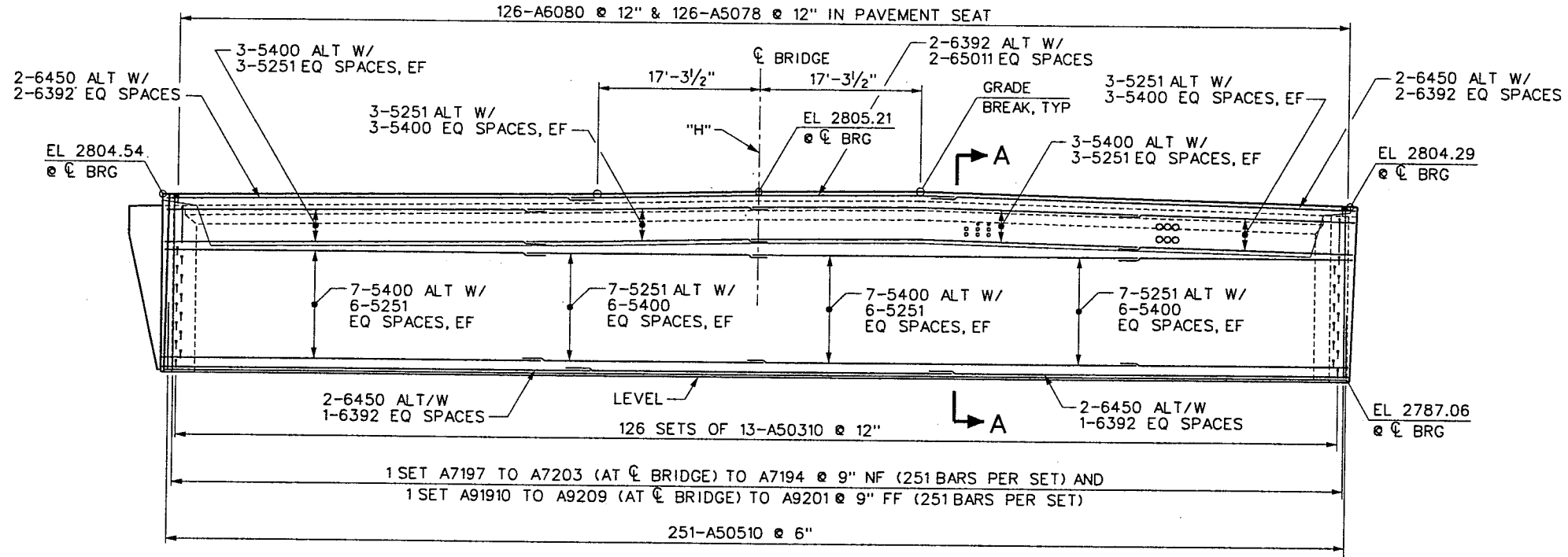
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DRAWING NO.
B-6
OF
L-1695

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FILE NAME: V:\851 Ann Rd to El Capitan\Interm\bridge\851-1-AB008.dgn - 4/12/2002 - 9:44:44 WHW



PLAN - ABUTMENT 2



ELEVATION - ABUTMENT 2

LAP SPLICE TABLE

BAR SIZE	LAP
#4	2'-0"
#5	2'-4"
#6	2'-9"
#7	3'-6"
#8	4'-7"
#9	5'-10"
#10	7'-4"

NOTE:
STAGGER ADJACENT LAP
SPLICES A MINIMUM OF 2'-0"

NOTES:

1. FOR SECTION A-A AND DETAILS, SEE SHEET B-8.
2. SEE SHEETS B-9 AND B-10 FOR ADDITIONAL REINFORCEMENT AND SHEETS B-20 & B-21 FOR EXPANSION JOINT ANCHORAGE TO BE CAST INTO ABUTMENTS.
3. SEE SHEET B-16 FOR PLACEMENT OF UTILITY PIPE SLEEVES AND SHEETS B-20 & B-21 FOR EXPANSION JOINT ANCHORAGE.
4. DECK AND GIRDER REINFORCEMENT NOT SHOWN FOR CLARITY.

I-2407



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HUALAPAI WAY INTERCHANGE
ABUTMENT 2 PLAN & ELEVATION
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

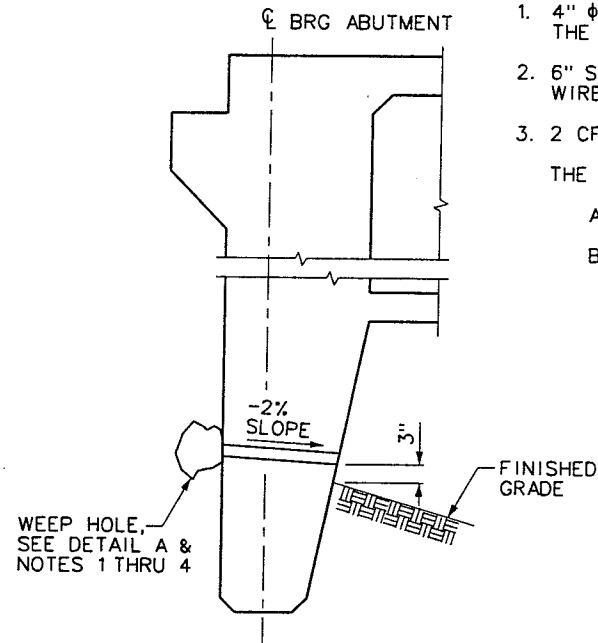
90%
PRELIMINARY
04-12-02

PROJECT NO: A02700 DRAWN BY: WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

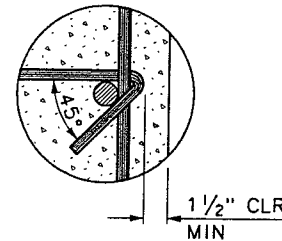
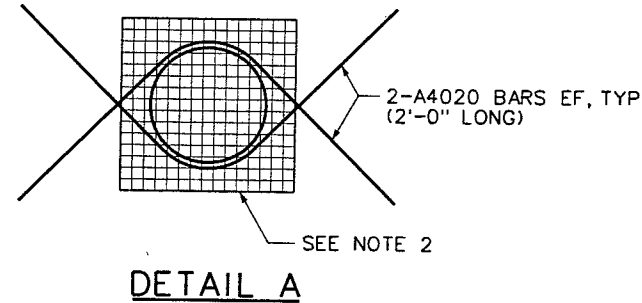
DRAWING NO.
B-7
OF
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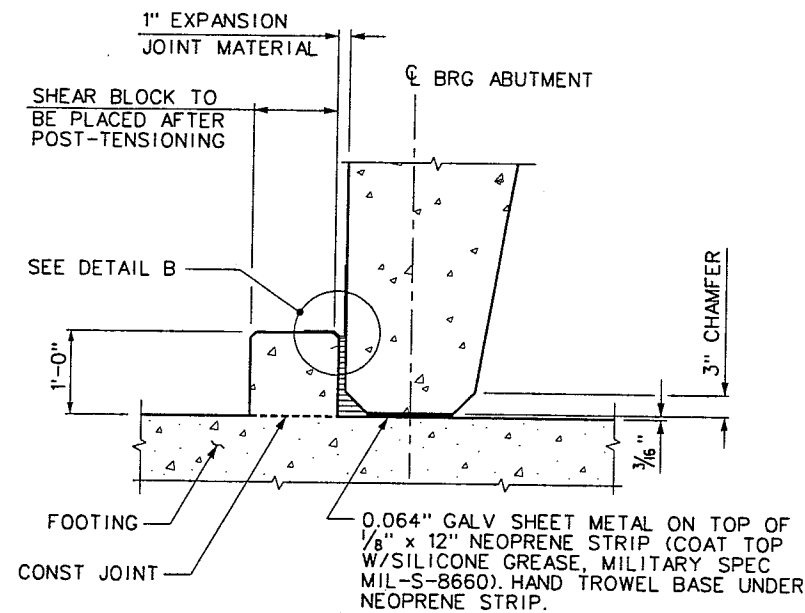


ABUTMENT WEEPHOLE DETAILS

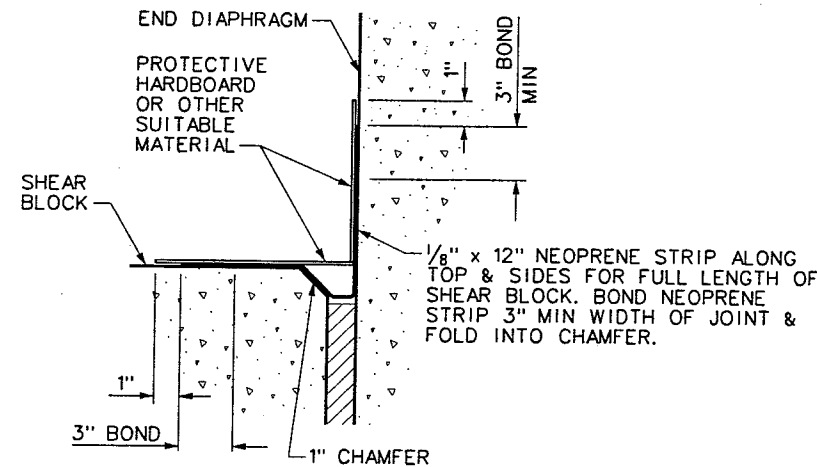
- NOTES:**
- 4" ϕ DRAINS WITH HORIZONTAL SPACING OF 15'± CENTER TO CENTER. LOCATE 3"± ABOVE WALL FOOTING. THE BOTTOM ROW MUST BE LOCATED 3" ABOVE FINISHED GRADE.
 - 6" SQUARE ALUMINUM OR GALVANIZED STEEL WIRE MESH HARDWARE CLOTH WITH MINIMUM WIRE DIAMETER OF 0.03".
 - 2 CF OF TYPE 1 OR 2 DRAIN BACKFILL ENCAPSULATED IN A GEOTEXTILE FABRIC, SECURELY TIED. THE GEOTEXTILE FABRIC MUST:
 - HAVE AN AVERAGE OPENING SIZE NO GREATER THAN U.S. SIEVE NO. 40, AND
 - HAVE A MINIMUM PERMITTIVITY OF 0.5 PER SECOND.



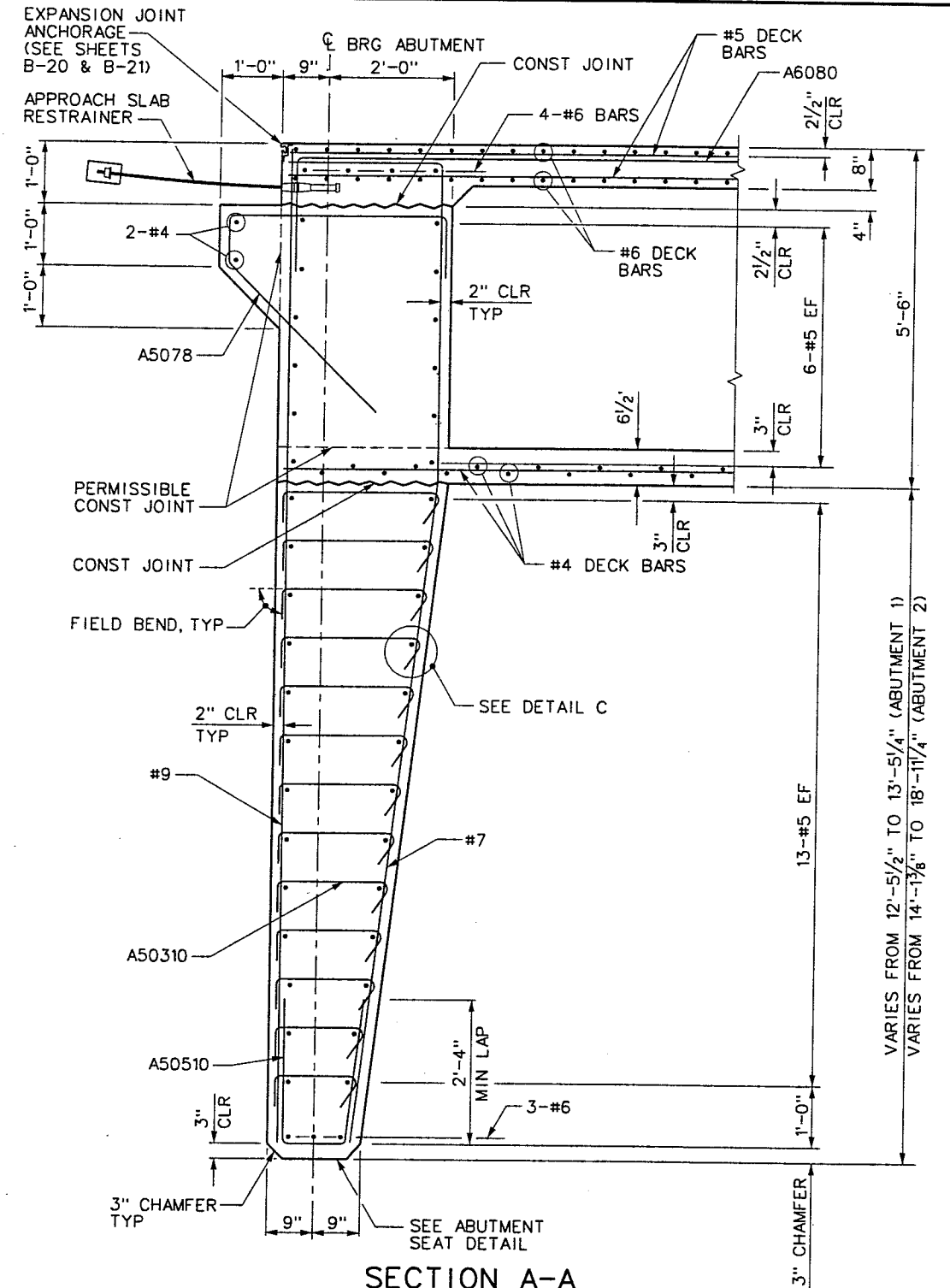
DETAIL C



ABUTMENT SEAT DETAIL



DETAIL B



SECTION A-A

- NOTES:**
- FOR ABUTMENT PLANS AND ELEVATIONS, SEE SHEETS B-6 AND B-7.
 - BUNDLE VERTICAL ABUTMENT STEM BARS AT GIRDER WEB LOCATIONS AS REQUIRED TO CLEAR PRESTRESSING ANCHORS.
 - GIRDER REINFORCEMENT NOT SHOWN FOR CLARITY.

1-2407



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HUALAPAI WAY INTERCHANGE
ABUTMENT SECTIONS & DETAILS
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

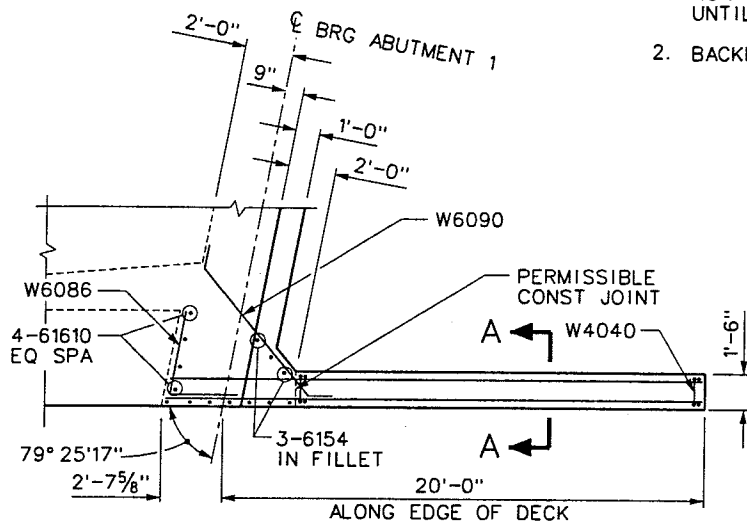
90%
PRELIMINARY
04-12-02

PROJECT NO: A02700 DRAWN BY: JR/WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

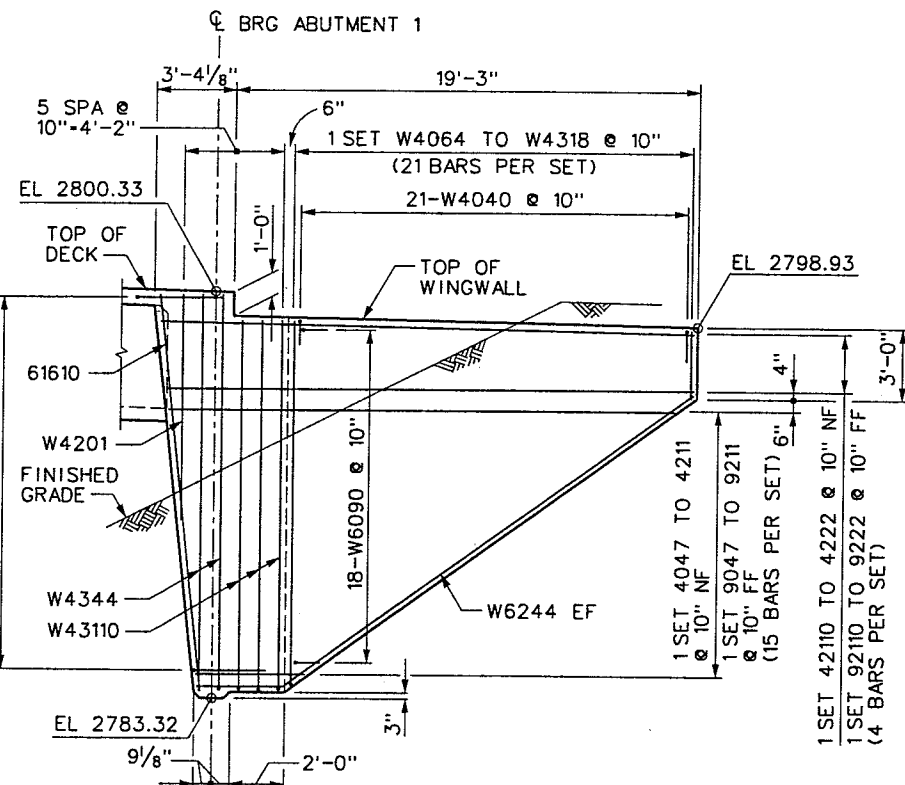
SCALE
HORIZ: NONE
VERT: AS SHOWN
FIELD BOOK

DRAWING NO.
B-8
OF
L-1695

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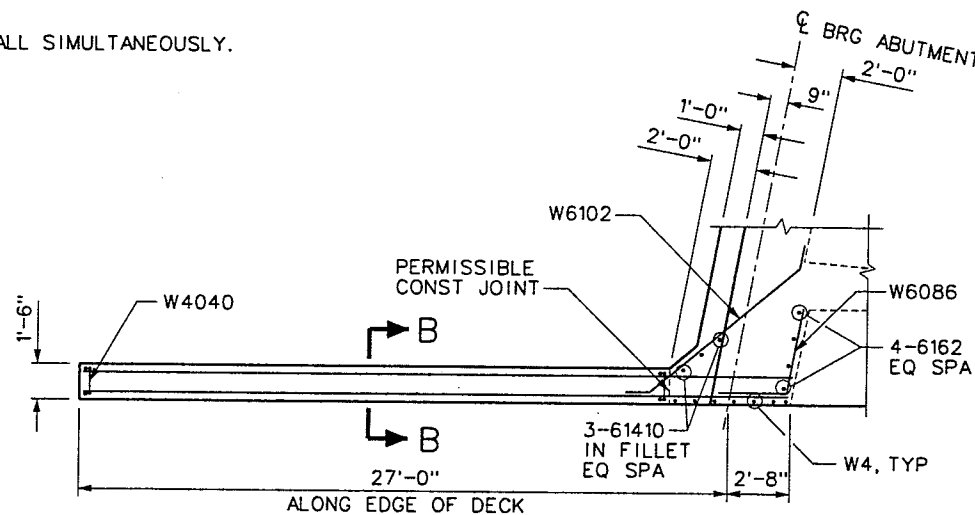
PLAN - WW-1



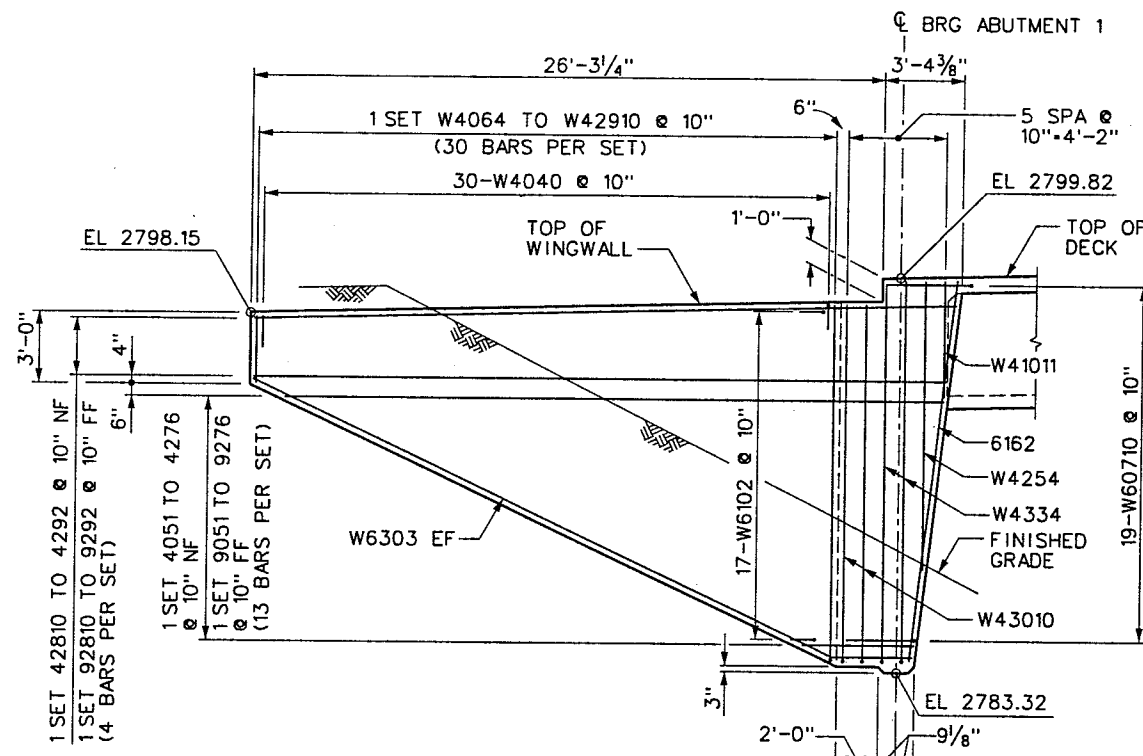
ELEVATION - WW-1

NOTES:

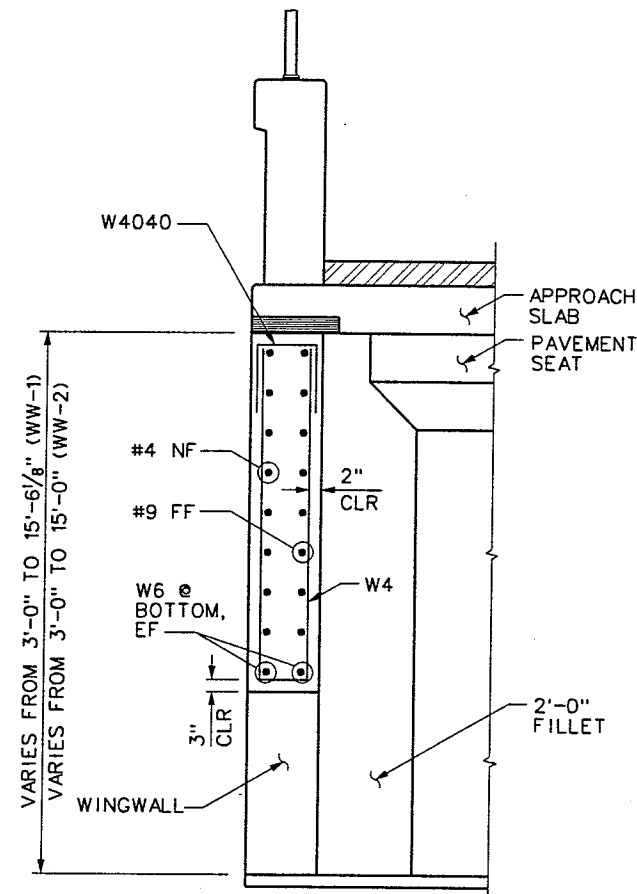
1. THE WINGWALL STEEL EXTENDING INTO THE ABUTMENT STEM SHALL BE PLACED PRIOR TO THE ABUTMENT STEM POUR. PARTS OF THE WINGWALLS WILL TYPICALLY BE PLACED IN AT LEAST TWO SEPARATE POURS WITH ALL REINFORCEMENT CONTINUOUS THROUGH MULTIPLE POURS. WINGWALL STEEL TO BE INSTALLED AS DETAILED. NO CUTTING AND SPLICING NOR DRILLING OR GROUTING WILL BE PERMITTED. DO NOT PLACE WINGWALLS UNTIL POST-TENSIONING IS COMPLETED.
2. BACKFILL INSIDE AND OUTSIDE OF WINGWALL SIMULTANEOUSLY.



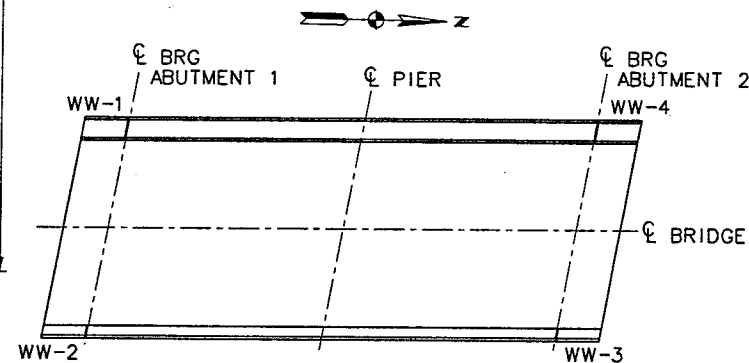
PLAN - WW-2



ELEVATION - WW-2



SECTION A-A
(SECTION B-B OPPOSITE HAND)



WINGWALL KEY PLAN

I-2407



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HUALAPAI WAY INTERCHANGE
ABUTMENT 1 WINGWALLS
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

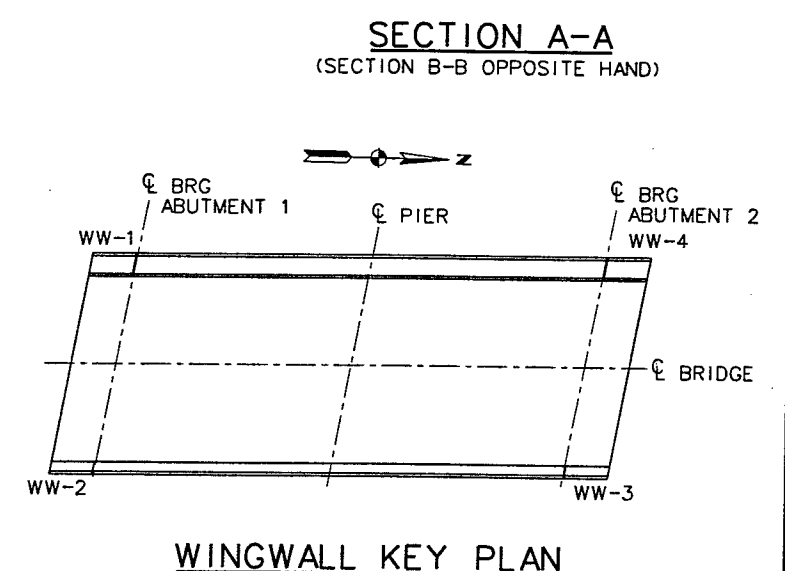
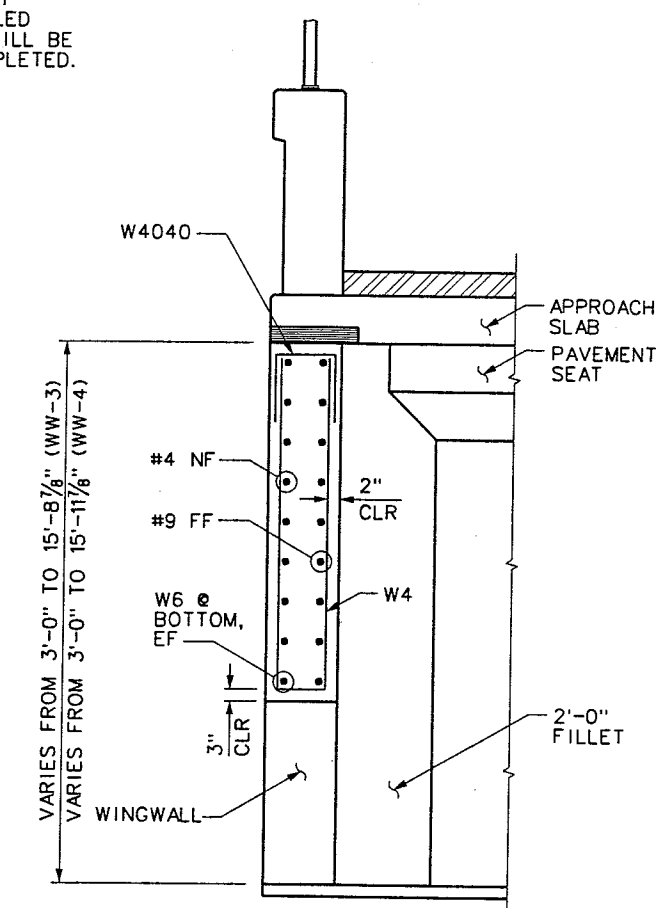
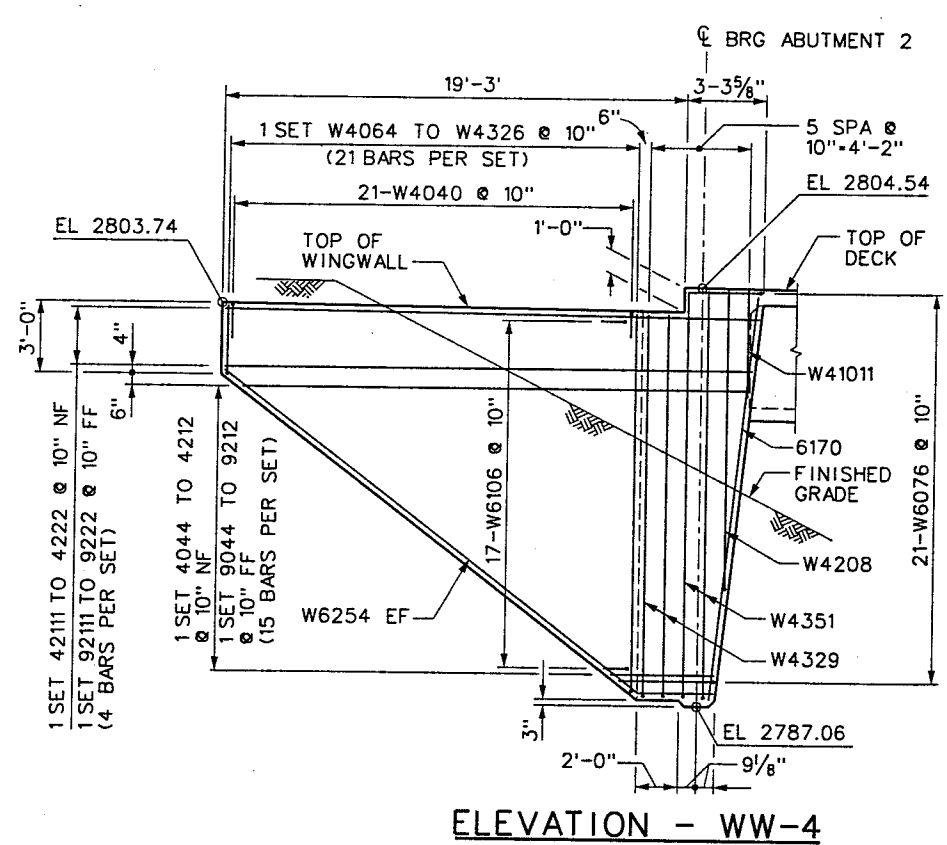
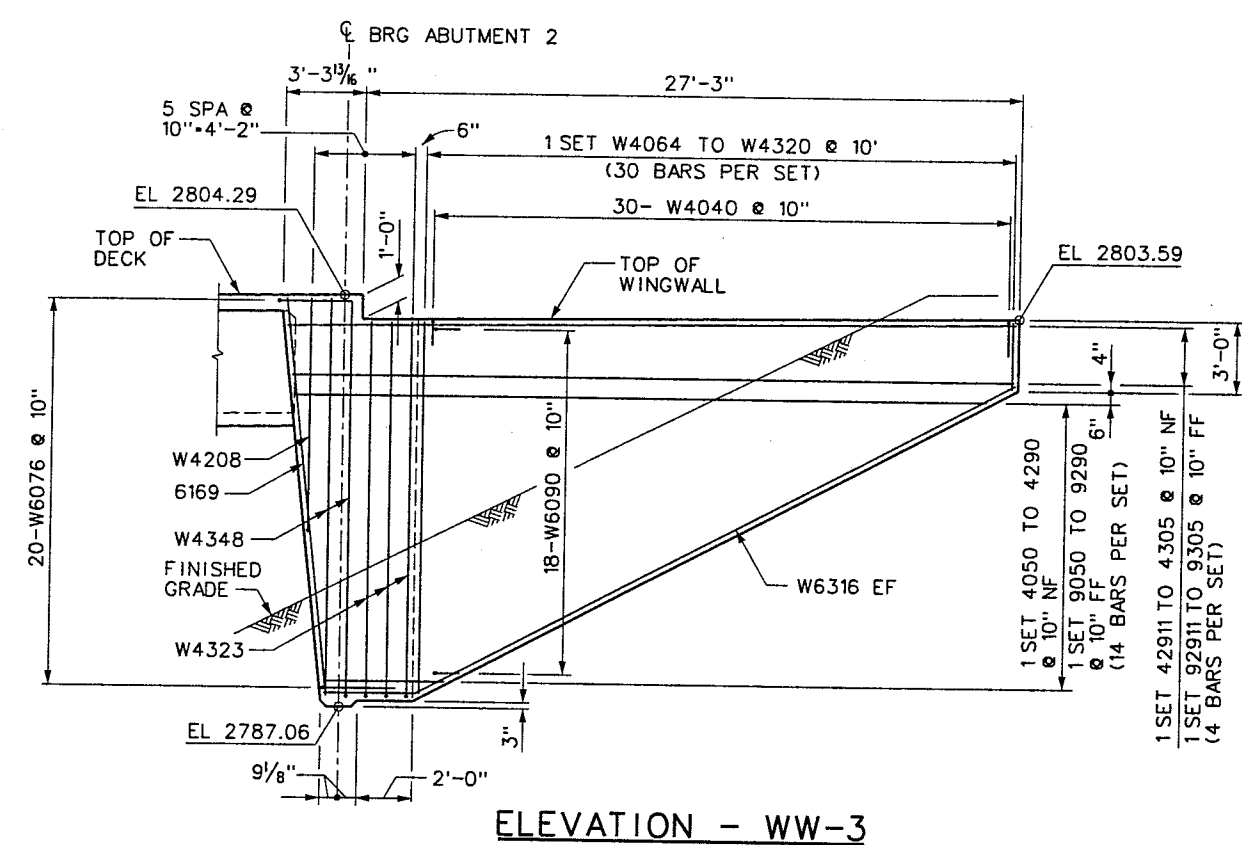
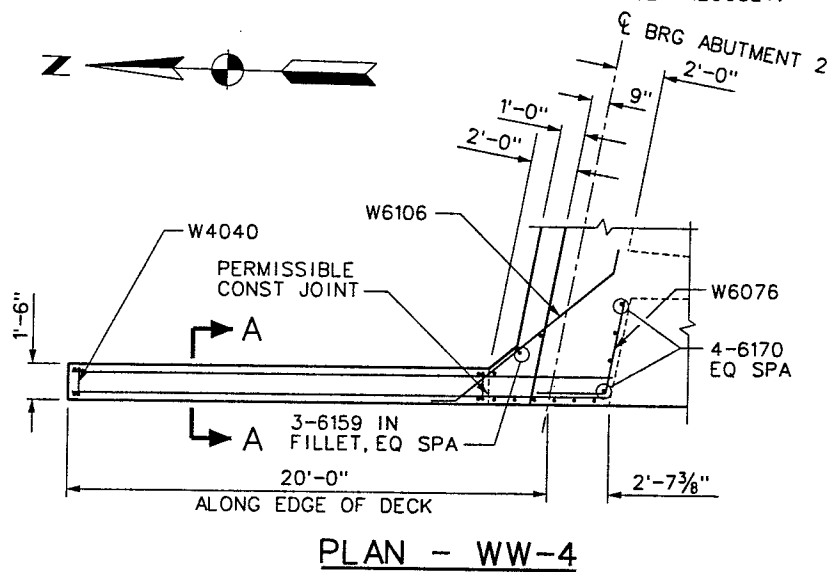
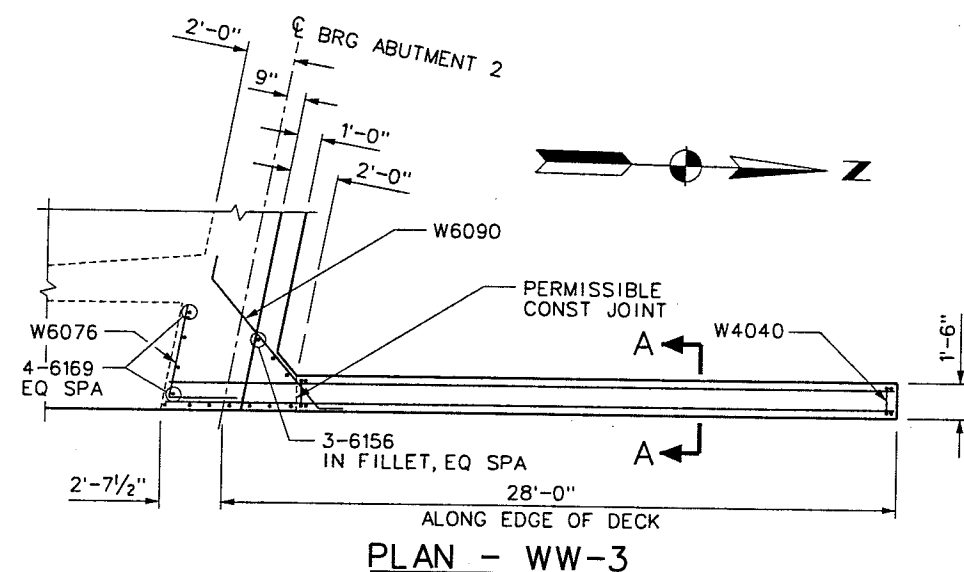
PROJECT NO: A02700 DRAWN BY: WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

DRAWING NO.
B-9
OF
L-1695

NOTES:

1. THE WINGWALL STEEL EXTENDING INTO THE ABUTMENT STEM SHALL BE PLACED PRIOR TO THE ABUTMENT STEM POUR. PARTS OF THE WINGWALLS WILL TYPICALLY BE PLACED IN AT LEAST TWO SEPARATE POURS WITH ALL REINFORCEMENT CONTINUOUS THROUGH MULTIPLE POURS. WINGWALL STEEL TO BE INSTALLED AS DETAILED. NO CUTTING OR SPLICING NOR DRILLING AND GROUTING WILL BE PERMITTED. DO NOT PLACE WINGWALLS UNTIL POST-TENSIONING IS COMPLETED.
2. BACKFILL INSIDE AND OUTSIDE OF WINGWALL SIMULTANEOUSLY.



REFERENCE FILES: FILE NAME: V:\851 Ann Rd to El Capitan\Interm\bridge\851-1-AB011.dgn - 4/12/2002 - 10:41:09 WHW

REV. NO.	DATE	DESCRIPTION	APPROVED

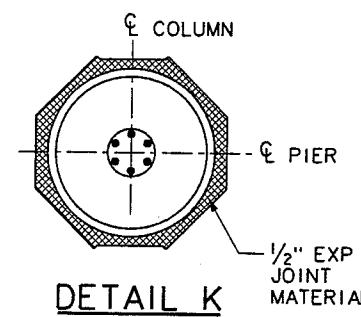


WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HUALAPAI WAY INTERCHANGE
ABUTMENT 2 WINGWALLS
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

PROJECT NO: A02700	DRAWN BY: WHW	SCALE: HORIZ: AS SHOWN	DRAWING NO. B-10
DESIGNED BY: MLT/LJS	CHECKED BY: GG	VERT: AS SHOWN	OF
APPROVED BY: WEW		FIELD BOOK	L-1695
BERGER/ABAM ENGINEERS INC. LAS VEGAS, NV			

WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY



DETAIL A

*INCLUDES 1 1/2 EXTRA TURNS OF SPIRAL AT EACH END OF COLUMN AND AT EACH END OF PERMISSIBLE BREAK AT PIER CAP

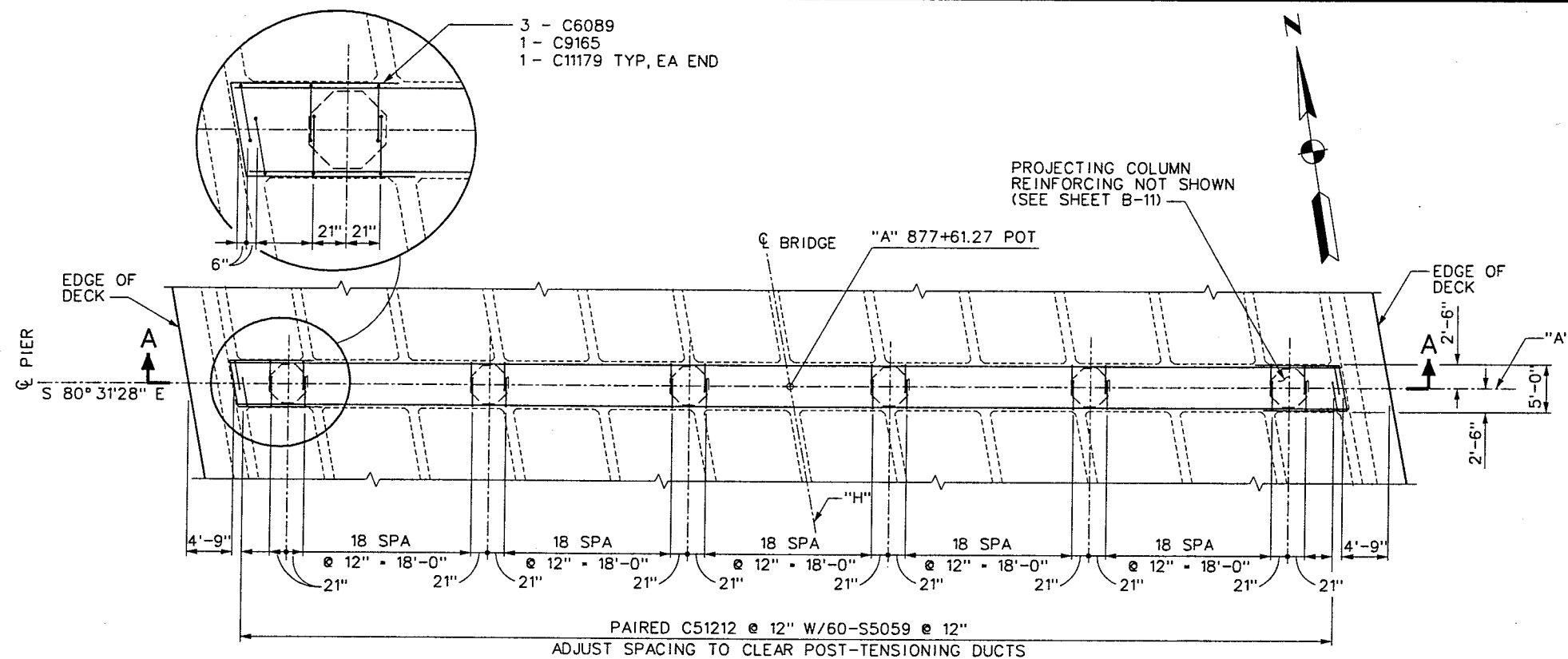
2. PROVIDE $1\frac{1}{2}$ EXTRA TURNS AT EACH END OF PERMISSIBLE BREAK IN SPIRAL AT PIER CAP AND ONE TURN MINIMUM FOR LAP SPLICES. ANCHOR EACH END OF SPIRAL AND SPLICE WITH A 135° HOOK AROUND A VERTICAL BAR. ADD A FULL LAP WELD AT PERMISSIBLE BREAK AT PIER CAP. WELD SPLICE SHALL DEVELOP AT LEAST 125% OF SPECIFIED YIELD STRENGTH OF REINFORCEMENT.

90%
PRELIMINARY
04-12-02

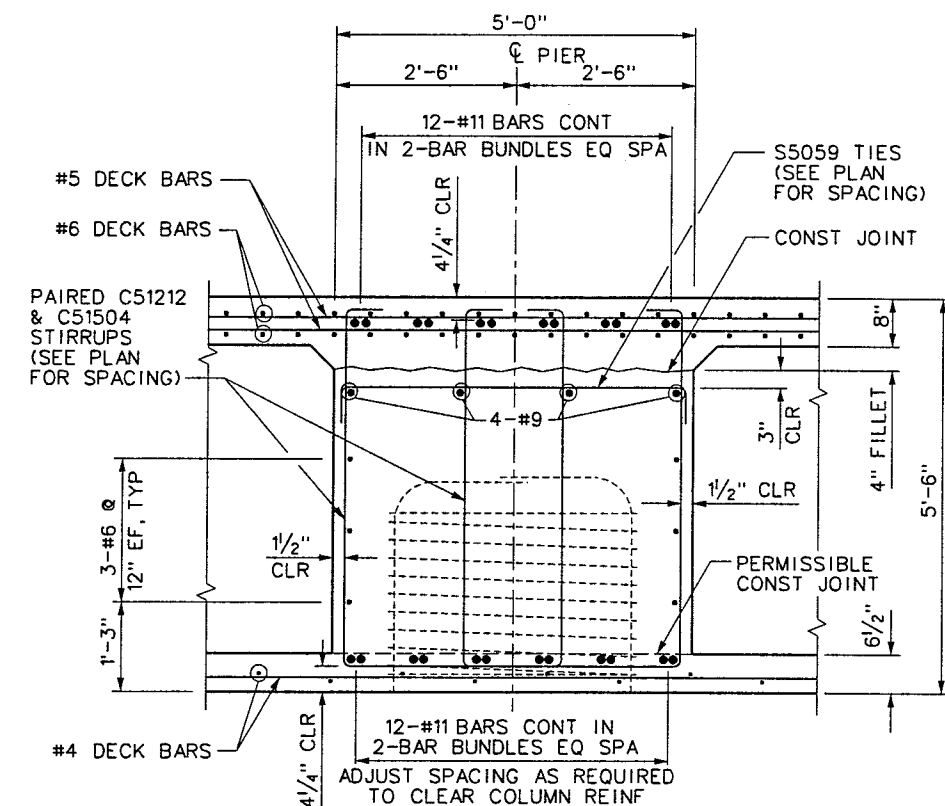
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

DRAWING NO.
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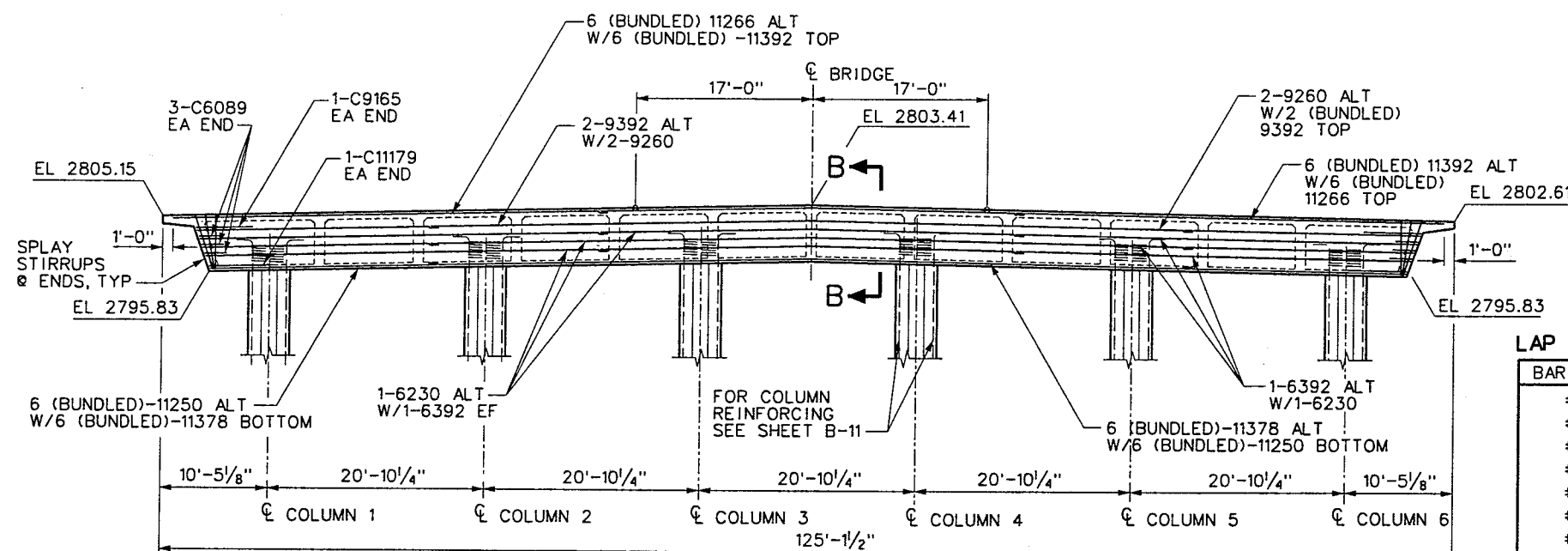
-1695



PLAN



SECTION B-B

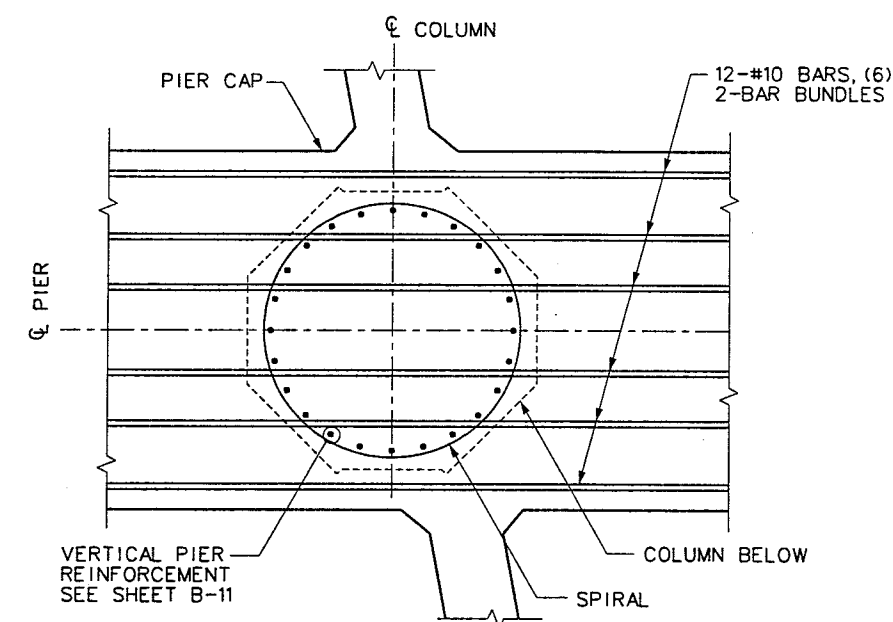


SECTION A-A

BAR SIZE	LAP
#4	2'-0"
#5	2'-4"
#6	2'-9"
#7	3'-6"
#8	4'-7"
#9	5'-10"
#10	7'-4"
#11	9'-0"

NOTE:
SLAB & WEB REINFORCING
NOT SHOWN FOR CLARITY

NOTE:
STAGGER ADJACENT LAP
SPICES A MINIMUM OF 2'-0"



CAP THREADING DETAIL

1-2407



**WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HUALAPAI WAY INTERCHANGE**

CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-03

PROJECT NO: A02700 DRAWN BY: JR/WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW

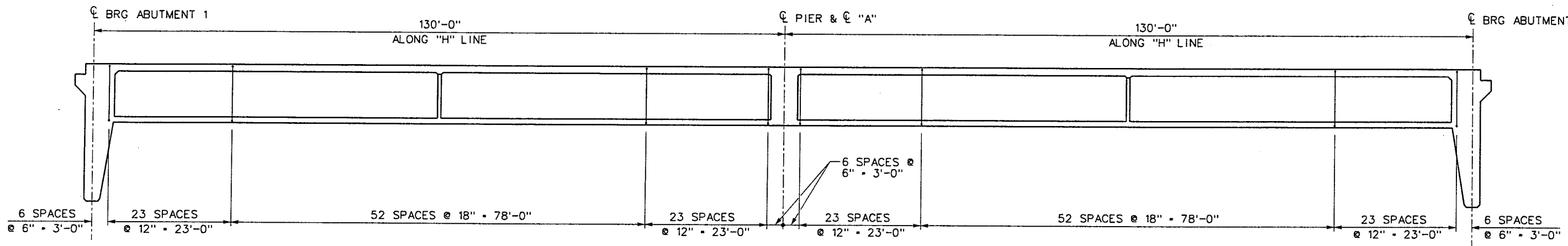
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

DRAWING NO.
B-12
OF

L-1695

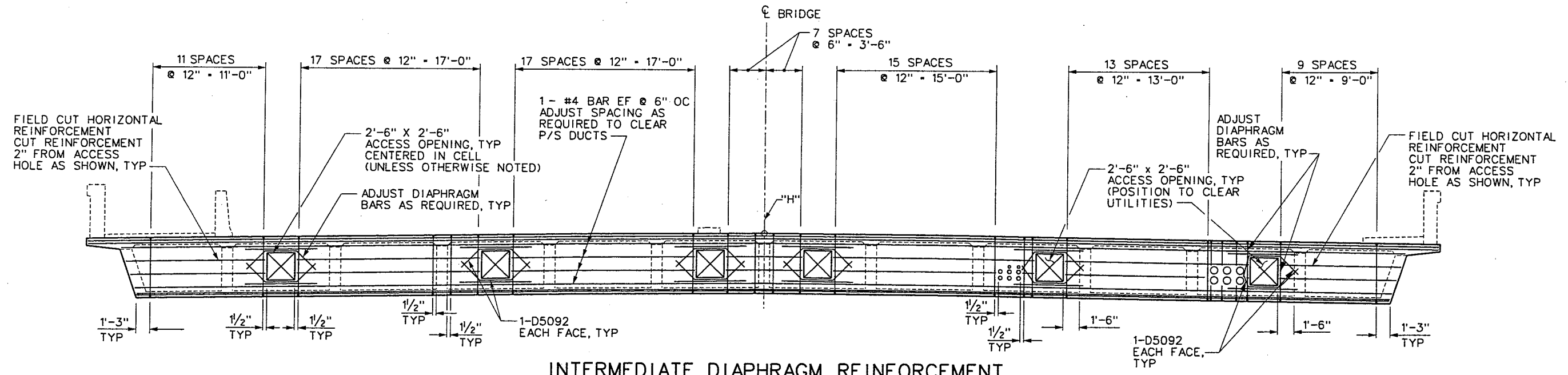
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GIRDER REINFORCEMENT

NOTE:
BAR REINFORCEMENT INTERFERING WITH THE PRESTRESSING TENDON ALIGNMENT SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER.

STIRRUPS REQUIRED:
221 - S50511 EACH FACE, EACH INTERIOR GIRDER
221 - S50511 INSIDE FACE, EACH EXTERIOR GIRDER
221 - S50511 OUTSIDE FACE, EACH EXTERIOR GIRDER



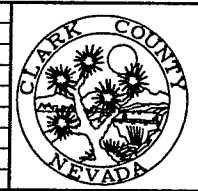
INTERMEDIATE DIAPHRAGM REINFORCEMENT

NOTE: SEE SHEET B-14 FOR ACTUAL DIAPHRAGM ARRANGEMENT AND SECTION

STIRRUPS REQUIRED:
107 - S50511 EACH FACE, EACH DIAPHRAGM

I-2407

REV. NO.	DATE	DESCRIPTION	APPROVED



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HUALAPAI WAY INTERCHANGE
GIRDER & INTERMEDIATE DIAPHRAGM REINF
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

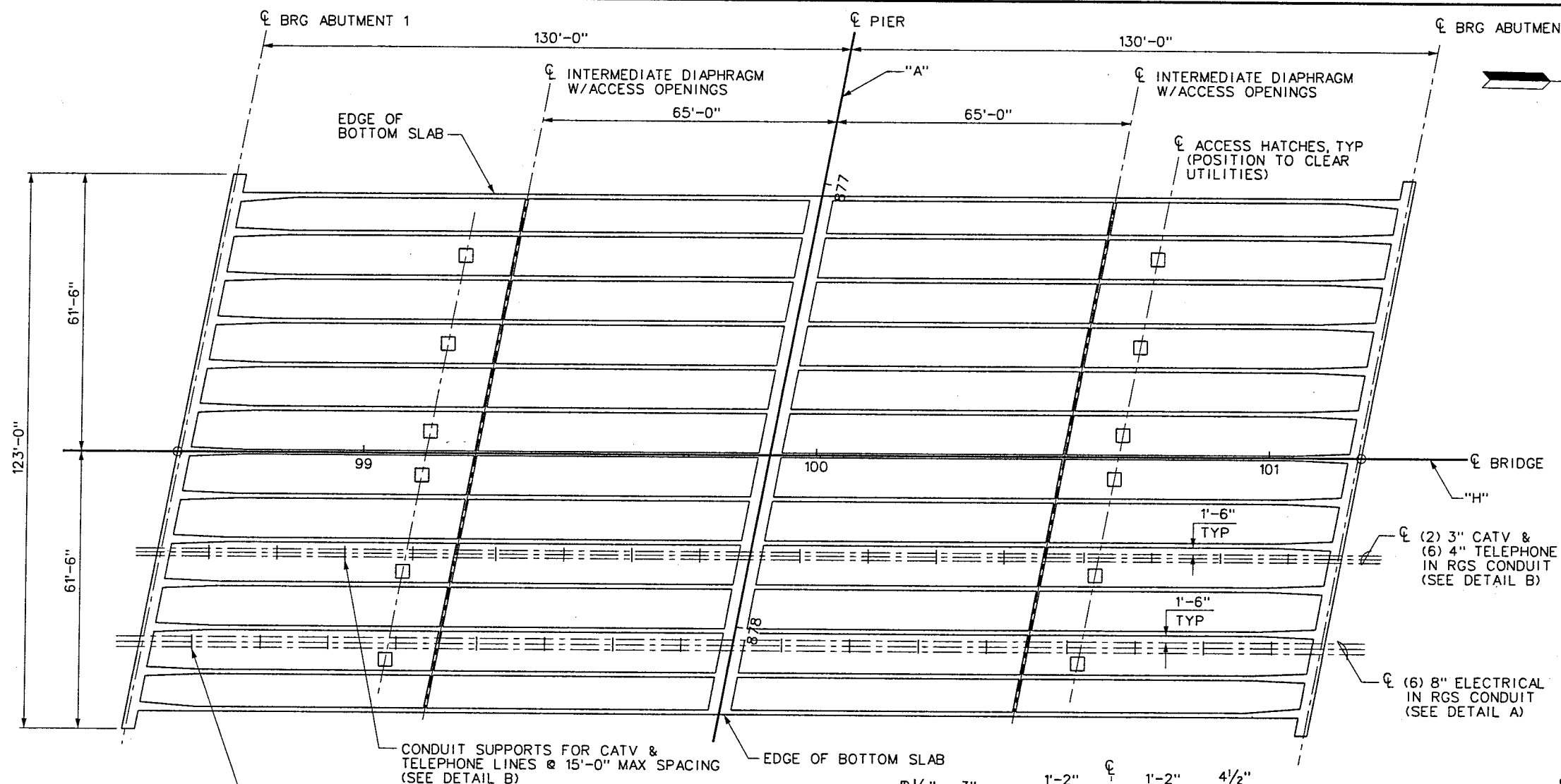
90%
PRELIMINARY
04-12-02

PROJECT NO: A02700 DRAWN BY: JR/WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: NONE
VERT: AS SHOWN
FIELD BOOK

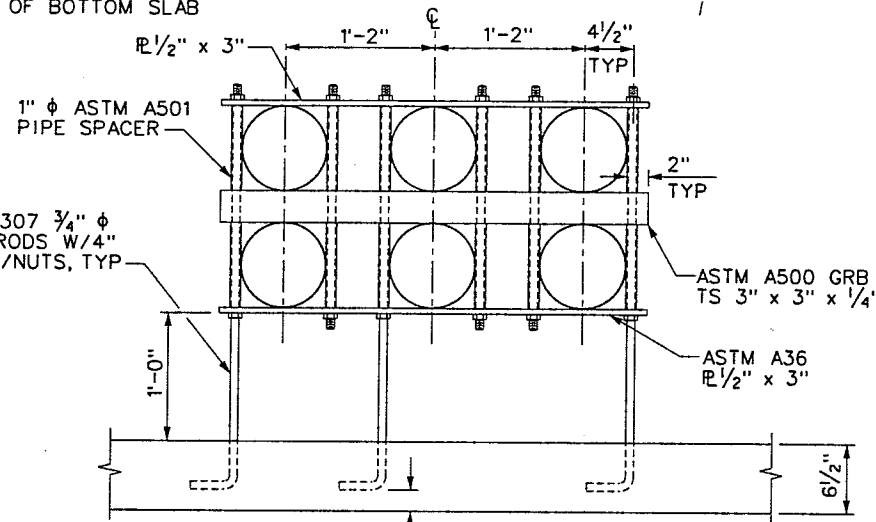
DRAWING NO.
B-15
OF
L-1695

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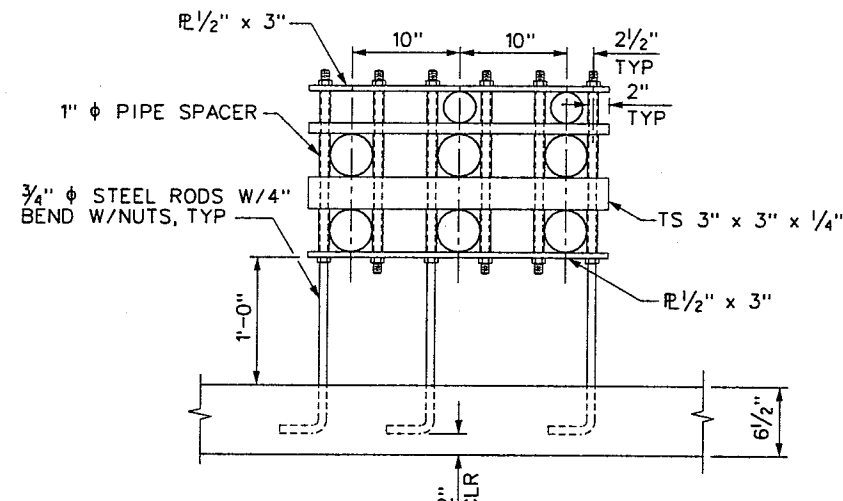


NOTE:
 ALL CONDUIT AND CONDUIT SUPPORT
 COMPONENTS TO BE GALVANIZED.

UTILITY PLAN



DETAIL A - RGS CONDUIT SUPPORT
 (6) 8" ELECTRICAL POWER LINES



DETAIL B - RGS CONDUIT SUPPORT
 TELEPHONE & CATV SUPPORTS

I-2407

REV. NO.	DATE	DESCRIPTION	APPROVED



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HUALAPAI WAY INTERCHANGE
UTILITY DETAILS
 CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
 PRELIMINARY
 04-12-02

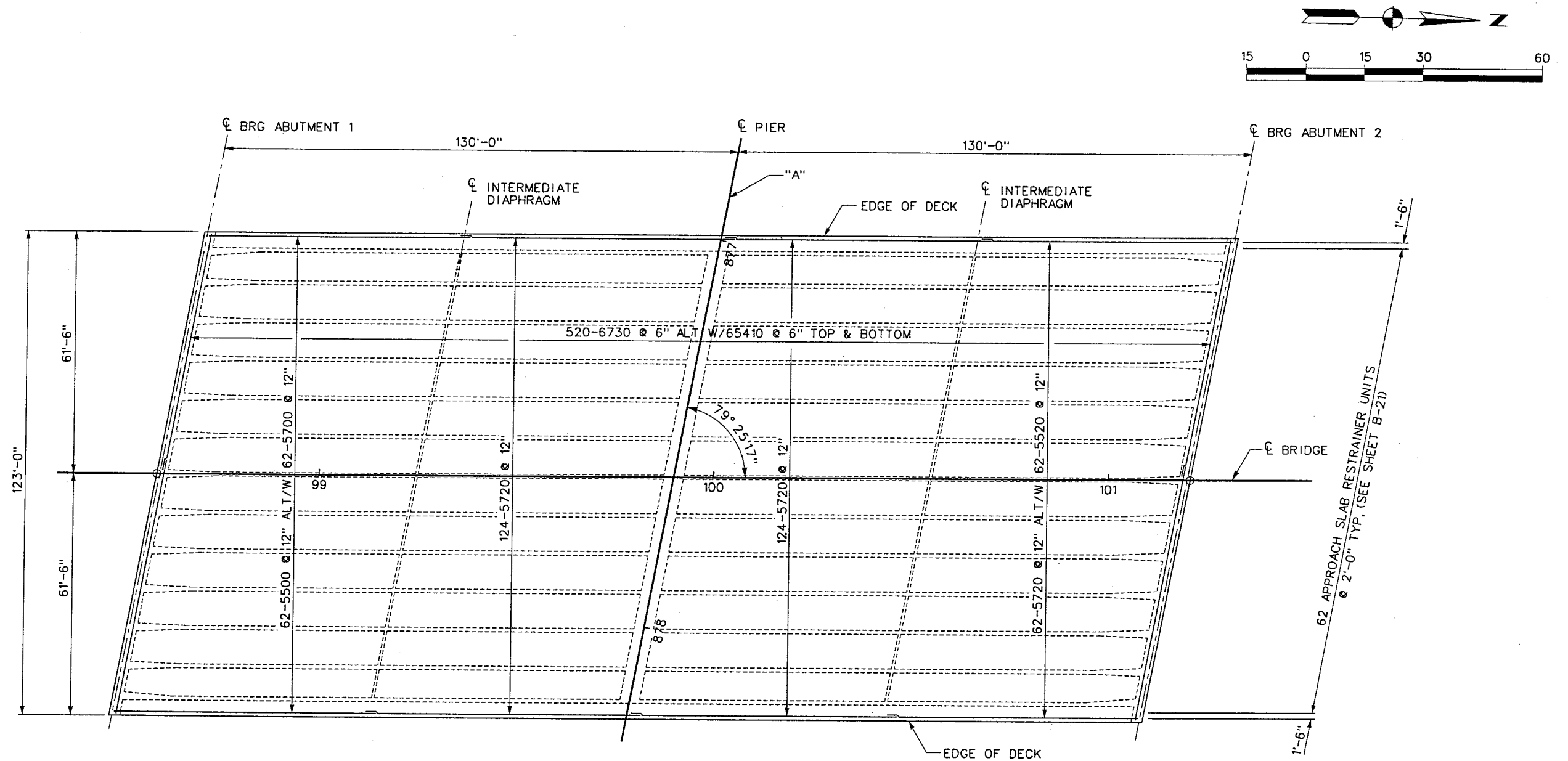
PROJECT NO: A02700 DRAWN BY: JR/WHW
 DESIGNED BY: MLT/LJS CHECKED BY: GG
 APPROVED BY: WEW
BERGER/ABAM
 ENGINEERS INC.
 LAS VEGAS, NV

SCALE
 HORIZ: NONE
 VERT: NONE
 FIELD BOOK

DRAWING NO.
B-16
 OF
 L-1695

WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY

REFERENCE FILES: INTERNAL\GN.mst - 851-I-AbomBorder.mst - 851-I-AB001.dgn - 851-stamp-Abom.mst
FILE NAME: V:\851 Ann Rd to El Capitan\intern\bridge\851-I-AB018.dgn - 4/5/2002 - 15:42:13 WFD



TOP SLAB REINFORCEMENT PLAN

LAP SPLICE TABLE

BAR SIZE	LAP
#4	2'-0"
#5	2'-4"
#6	2'-9"
#7	3'-6"
#8	4'-7"
#9	5'-10"
#10	7'-4"

NOTE:

STAGGER ADJACENT LAP SPLICES A MINIMUM OF 2'-0"

I-2407



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HUALAPAI WAY INTERCHANGE
TOP SLAB REINFORCEMENT
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

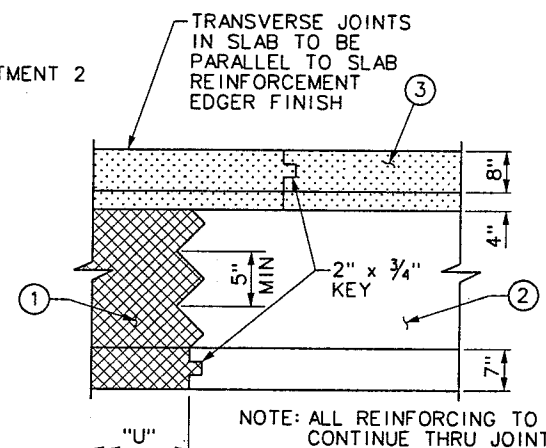
PROJECT NO: A02700 DRAWN BY: JR/WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: NONE
FIELD BOOK

DRAWING NO.
B-17
OF
L-1695

1. POST-TENSIONING SHALL BE COMPLETED BY JACKING ALL TENDONS FROM ABUTMENT 1.
2. THE REQUIRED JACKING FORCE "P_{jack}" SHALL BE:
LOW RELAXATION STRAND
P_{jack} = 23,400 KIPS.
3. CONCRETE COMPRESSIVE STRENGTHS SHALL BE:
f'_c = 4,000 PSI @ 28 DAYS
f'_{ci} = 3,000 PSI @ TIME OF STRESSING
4. DESIGN IS BASED ON $\mu = 0.20/\text{RAD}$ AND $K = 0.0002/\text{FT}$, P_{jack} SPECIFIED AT THE JACKING ENDS INCLUDE FRICTION LOSSES AND PROVISIONS FOR LOSS OF STRESS IN THE PRESTRESSING STEEL DUE TO CREEP AND SHRINKAGE OF CONCRETE, ELASTIC SHORTENING, AND RELAXATION OF PRESTRESSING STEEL AND STRESSING SEQUENCE.
LOW RELAXATION STRAND LOSS = 26,000 PSI
5. DESIGN IS BASED ON 1/2" ϕ , 7 WIRE, LOW RELAXATION, PRESTRESSING STRAND. TENDONS SHALL BE JACKED TO 0.75 f'_s AND ANCHORED TO AN EQUIVALENT ANCHOR SET = 3/8".
6. CONTRACTOR SHALL SUBMIT ELONGATION AND JACKING CALCULATIONS FOR THE INTENDED POST-TENSIONED SYSTEM FOR APPROVAL.
7. METALLIC ENCLOSURES SHALL BE GALVANIZED RIGID DUCT. ENCLOSURES TO BE VENTED THROUGH THE DECK SLAB WITHIN 3" OF THE HIGH POINT OF THE CABLE PATH.
8. DURING STRESSING OPERATIONS, THE ELONGATION SHALL BE CONTINUOUSLY MEASURED AND COMPARED TO CHECK FOR DUCT BLOCKAGE AND EXCESSIVE FRICTION.
9. BAR REINFORCEMENT INTERFERING WITH THE PRESTRESSING TENDON ALIGNMENT SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER.
10. NO MORE THAN 1/2 OF THE PRESTRESSING FORCE IN ANY GIRDER MAY BE STRESSED BEFORE AN EQUAL FORCE IS STRESSED IN THE ADJACENT GIRDERS. THE EXTERIOR 1/4 OF THE STRUCTURE SHALL NOT BE STRESSED UNTIL AT LEAST 1/10 OF THE TOTAL PRESTRESSING FORCE HAS BEEN STRESSED IN THE MIDDLE 1/2 OF THE STRUCTURE. AT NO TIME WILL MORE THAN 1/6 OF THE TOTAL PRESTRESSING FORCE BE APPLIED ECCENTRICALLY ABOUT THE CENTERLINE OF THE STRUCTURE.
11. FOR CAST-IN-PLACE PRESTRESSED GIRDER DETAILS NOT SHOWN, SEE STANDARD PLAN SHEET B-28.1.1-(503) OF THE 2001 STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION.
12. THE CONTRACTOR SHALL DESIGN AND PROVIDE WORKING DRAWINGS AND DESIGN CALCULATIONS FOR THE LOCAL ANCHORAGE ZONE, INCLUDING BLOCKOUT DIMENSIONS AND ALL RECESS ANCHORAGE AND CONFINING REINFORCING STEEL TO PREVENT SPLITTING, BURSTING, OR BLOWOUT OF STRAND (TENDON) AND ANCHORS. DETAILS AND CALCULATIONS MUST BE APPROVED BY THE ENGINEER OF RECORD. ANY LOCAL ZONE CONFINING REINFORCEMENT IS AN ADDITION TO THE REINFORCEMENT SHOWN ON NDOT STANDARD PLANS B-28.1.1-(503). SHOP DRAWINGS AND CALCULATIONS SHALL BE SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEVADA.

- NOTES:**
1. CAMBER DIAGRAMS SHOW DEAD LOAD PLUS POST-TENSIONED CAMBER INCLUDING LONG-TERM EFFECTS OF CREEP AND SHRINKAGE AND SHOULD BE MODIFIED BY THE AMOUNT OF TAKE UP ANTICIPATED IN THE FALSEWORK.
 2. ELEVATIONS SHOWN ON THE SUPERSTRUCTURE ARE FINAL GRADES AND ARE TO BE ADJUSTED BY THE VALUES SHOWN ON THE CAMBER DIAGRAM.

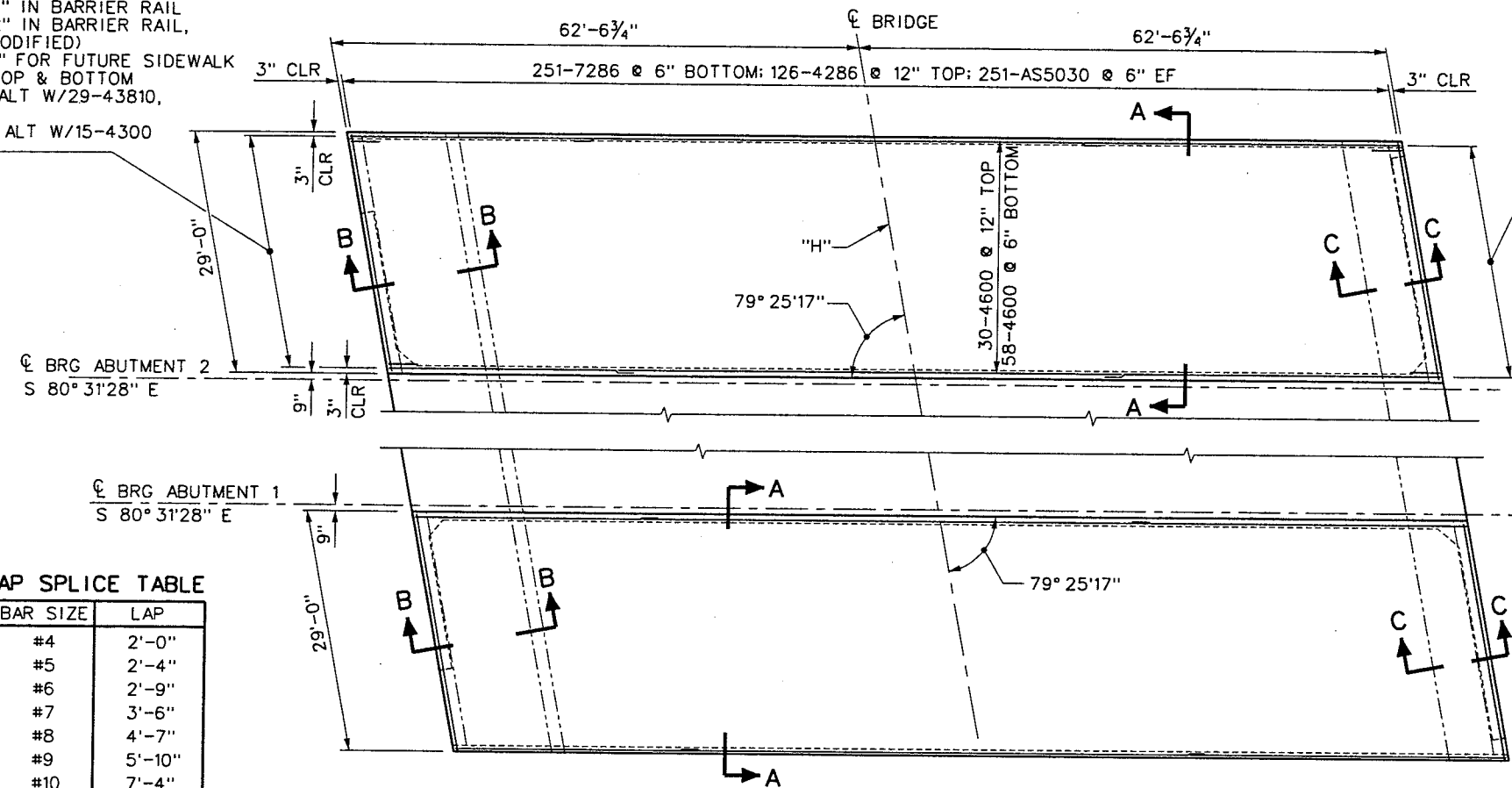


- A. ① AND ② INDICATE SEQUENCE OF PLACING BOTTOM SLAB AND GIRDER WEB CONCRETE.
- B. BOTTOM SLAB CONCRETE MAY BE PLACED SEPARATELY.
- C. ① AND ② MAY BE POURED TOGETHER AT THE OPTION OF THE CONTRACTOR PROVIDED THE ENGINEER AGREES THAT FORM SETTLEMENT WILL BE SLIGHT.
- D. TOP SLAB CONCRETE ③ SHALL BE PLACED SEPARATELY WITH TRANSVERSE CONSTRUCTION JOINTS AS DESIRED, EXCEPT CONSTRUCTION JOINTS SHALL NOT BE USED IN AREA "U".
- E. DO NOT PLACE ABUTMENT FOOTING SHEAR BLOCKS AND WINGWALLS UNTIL STRESSING IS COMPLETE.
- F. DO NOT PLACE BARRIER RAILS, SIDEWALK OR MULTI-USE PATH UNTIL STRESSING IS COMPLETE AND THE FALSEWORK IS RELEASED.

- ☐ POST-TENSIONED CONCRETE CLASS A
f'c = 4000 PSI @ 28 DAYS MODIFIED (MAJOR) CONCRETE
- ☒ f'c = 4000 PSI @ 28 DAYS CLASS A MODIFIED (MAJOR) CONCRETE



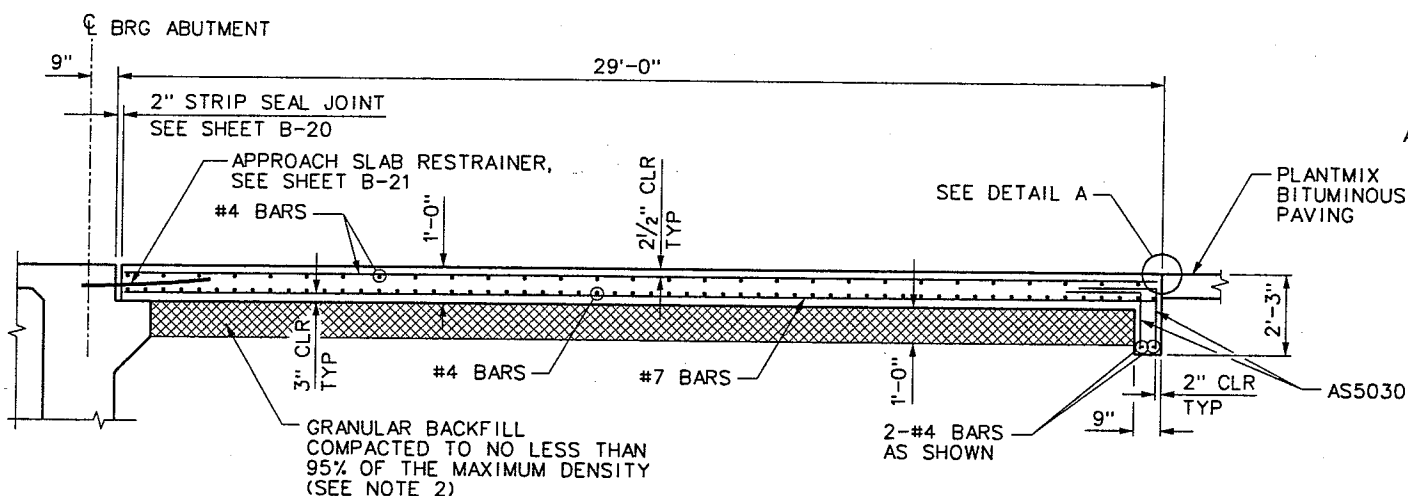
30-AS5099 @ 12" IN BARRIER RAIL
30-AS5060 @ 12" IN BARRIER RAIL,
TYPE "FB", (MODIFIED)
20-AS4012 @ 18" FOR FUTURE SIDEWALK
58-5036 @ 6" TOP & BOTTOM
29-4300 @ 12" ALT W/29-43810,
@ 12" BOTTOM
15-43810 @ 24" ALT W/15-4300
@ 24" TOP



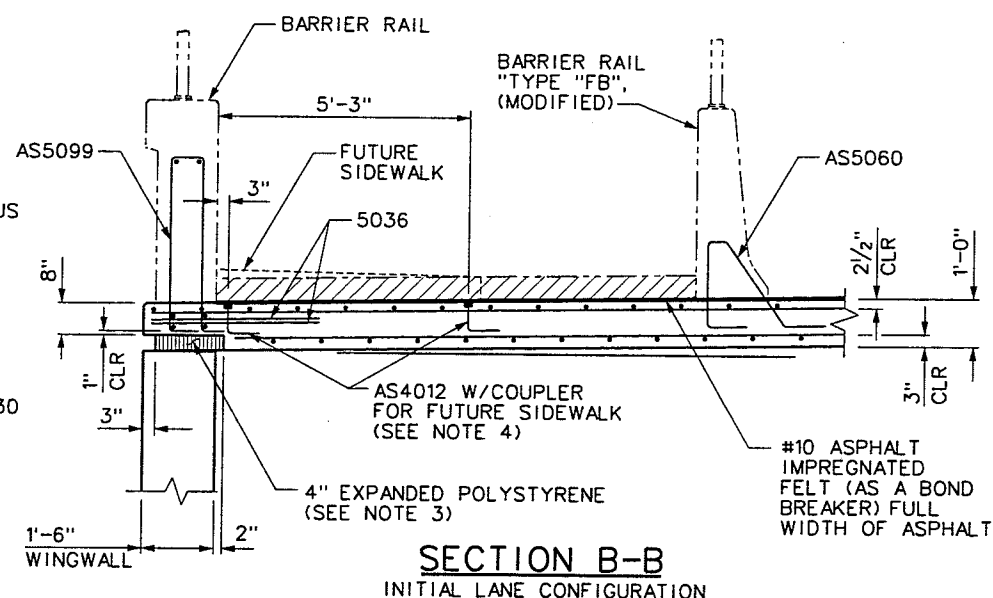
BAR SIZE	LAP
#4	2'-0"
#5	2'-4"
#6	2'-9"
#7	3'-6"
#8	4'-7"
#9	5'-10"
#10	7'-4"

NOTE:
STAGGER ADJACENT LAP
SPLICES A MINIMUM OF 2'-0"

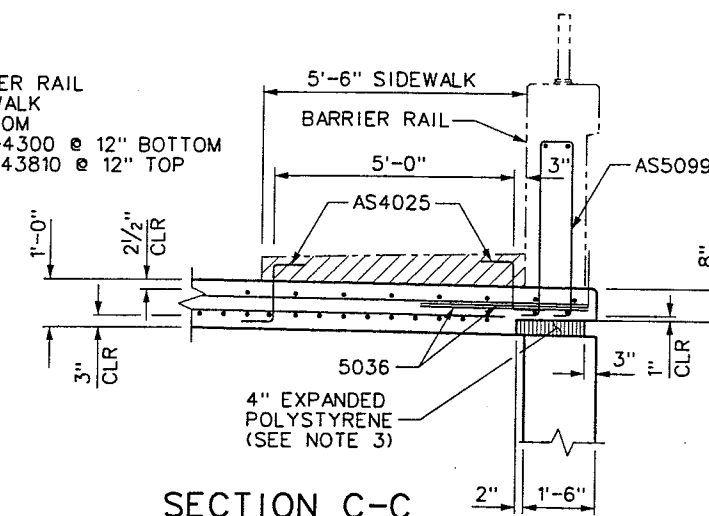
NOTE:
REFER TO NORTH APPROACH SLAB PLAN FOR
REINFORCEMENT, CALLOUTS & DIMENSIONS NOT
SHOWN ON SOUTH APPROACH SLAB PLAN.



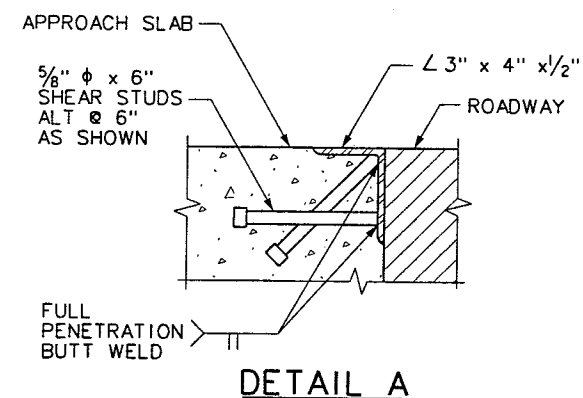
SECTION A-A



SECTION B-B
INITIAL LANE CONFIGURATION



SECTION C-C



DETAIL A

NOTES:

1. SEE NDOT STANDARD PLAN SHEET B-29.1.1 FOR GENERAL NOTES AND TYPICAL DETAILS.
2. MATERIAL UNDER APPROACH SLAB SHALL BE COMPACTED AS STRUCTURAL BACKFILL IN ACCORDANCE WITH SECTION 203.03.17 OF THE SPECIFICATIONS AND/OR THE SPECIAL PROVISIONS.
3. EXTEND THE EXPANDED POLYSTYRENE 2" BEYOND THE WINGWALL ENDS. ADJUST THE APPROACH SLAB TO ITS FULL DEPTH.
4. PLUG COUPLER W/EXPANDED POLYSTYRENE PRIOR TO POURING DECK CONCRETE.
(EXPANDED POLYSTYRENE TO REMAIN IN PLACE.)
5. LONGITUDINAL CONSTRUCTION JOINTS IN THE APPROACH SLAB SHALL BE LOCATED ALONG LANE LINES FOR THE ULTIMATE LANE CONFIGURATION, BUT SHALL NOT BE WITHIN THE TRAVELED WAY OF THE LANES FOR THE INITIAL LANE CONFIGURATION.

1-2407

[illegible]

**WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HUALAPAI WAY INTERCHANGE
APPROACH SLAB
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS**

90%
PRELIMINARY
04-12-03

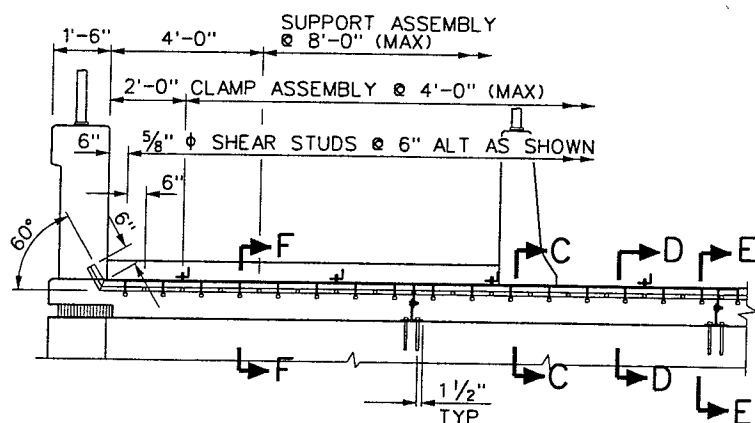
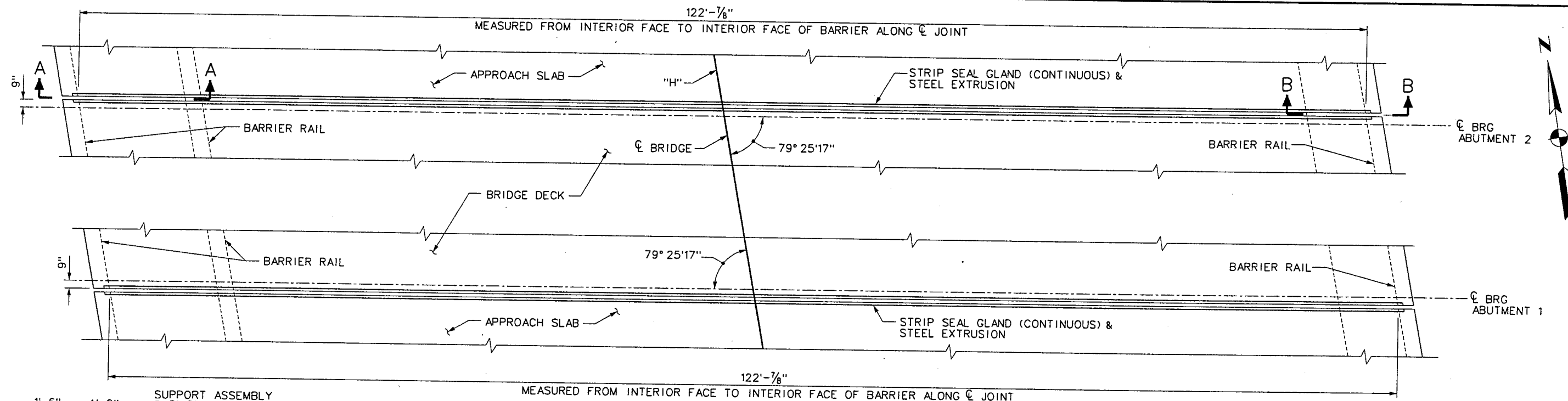
PROJECT NO: A02700 DRAWN BY: WHW/JR
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW

BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

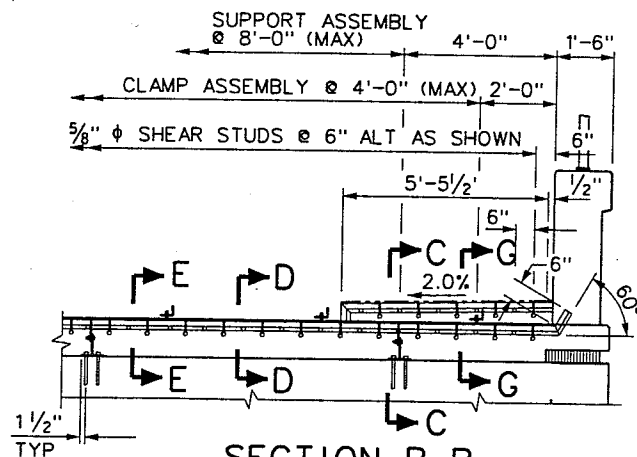
SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

DRAWING NO.
B-19
OF
1-1625

REFERENCE FILES: -INTERNAL IGM.mst - 851-1-AB001.dgn - 851-1-AB001.dgn - 851-1-AB021.dgn - 851-stamp-Abom.
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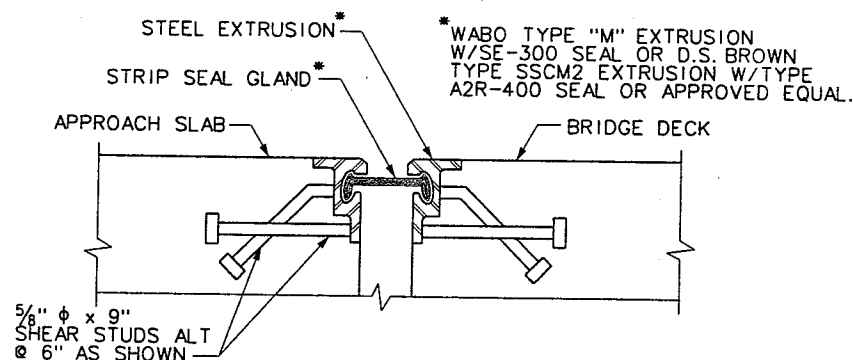
SECTION A-A
ABUTMENT 1 SIMILAR



SECTION B-B
ABUTMENT 1 SIMILAR

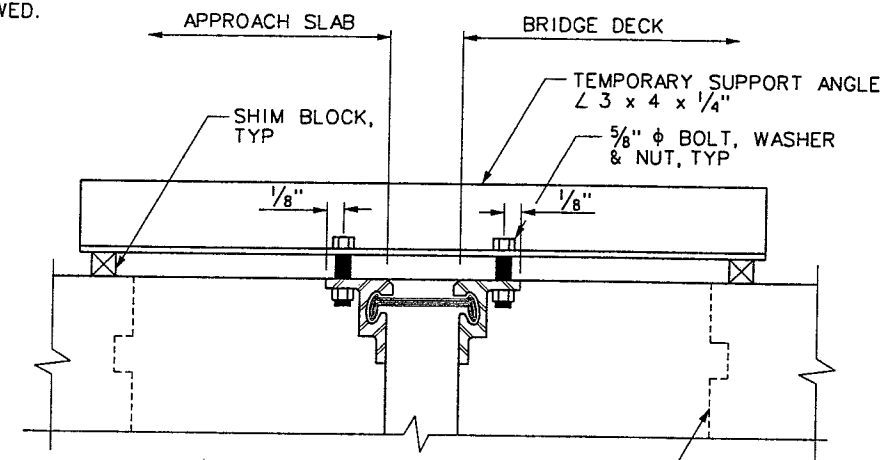
NOTES:

1. SEE SHEET B-21 FOR SECTIONS E-E, F-F AND G-G AND APPROACH SLAB RESTRAINER DETAIL.
2. ALL STRUCTURAL STEEL TO BE ASTM A36 (GALVANIZED) OR ASTM A588.
3. ALL BOLTS TO BE ASTM A-307.
4. INSTALL THE STRIP SEAL ASSEMBLY AFTER THE DECK SLAB & APPROACH SLAB HAVE BEEN POURED AND PROFILE GRINDING HAS BEEN COMPLETED. TIE STUDS TO AVAILABLE REINFORCING IN THE RECESSED AREA TO ENSURE PROPER JOINT PLACEMENT. MAKE FINAL ADJUSTMENTS OF THE JOINT WIDTH & ELEVATION BEFORE THE RECESSED PORTION OF THE DECK SLAB & APPROACH SLAB ARE POURED.
5. AFTER THE CONCRETE HAS CURED, THE TEMPORARY CLAMPS AND THREADED BOLTS SHALL BE REMOVED AND THE HOLES FILLED WITH GROUT.
6. THE STRIP SEAL MANUFACTURER'S INSTALLATION INSTRUCTIONS MUST BE FOLLOWED.
7. FULL PENETRATION BUTT WELD ON ALL STUDS.



SECTION C-C
SHEAR STUD LAYOUT

8. THE JOINT ASSEMBLY MAY BE MANUFACTURED IN 20 FOOT MINIMUM LENGTHS AND FIELD WELDED USING FULL PENETRATION BUTT WELDS.
9. STRIP SEAL EXTRUSIONS SHALL BE ASTM A36 (GALVANIZED) OR ASTM A588 STEEL. EXTRUSIONS W/STUDS AND ALL OTHER HARDWARE TO REMAIN SHALL BE GALVANIZED AFTER FABRICATION. ALL STEEL COMPONENTS OF THE APPROACH SLAB RESTRAINER ASSEMBLY SHALL BE GALVANIZED. ANY GALVANIZING DAMAGED DURING INSTALLATION SHALL BE METALIZED IN ACCORDANCE WITH SECTION 715 OF THE STANDARD SPECIFICATIONS.
10. THE STRIP SEAL GLAND SHALL BE INSTALLED AS A SINGLE, CONTINUOUS UNIT. NO FIELD SPLICING SHALL BE PERMITTED.
11. ALL HARDWARE AND STRUCTURAL STEEL TO BE INCLUDED IN THE COST OF STRIP SEAL EXPANSION JOINT.



SECTION D-D
CLAMP ASSEMBLY

I-2407



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HUALAPAI WAY INTERCHANGE
STRIP SEAL EXPANSION JOINT - SHEET 1
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

PROJECT NO: A02700 DRAWN BY: WHW
DESIGNED BY: MLT/LJS CHECKED BY: CG
APPROVED BY: WEW
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

DRAWING NO.
B-20
OF
L-1695

TABLE A

TEMPERATURE	INSTALLATION GAP
40° F	2 $\frac{3}{16}$ "
50° F	2 $\frac{1}{8}$ "
60° F	2 $\frac{1}{16}$ "
70° F	2"
80° F	1 $\frac{5}{16}$ "
90° F	1 $\frac{7}{8}$ "
100° F	1 $\frac{3}{4}$ "

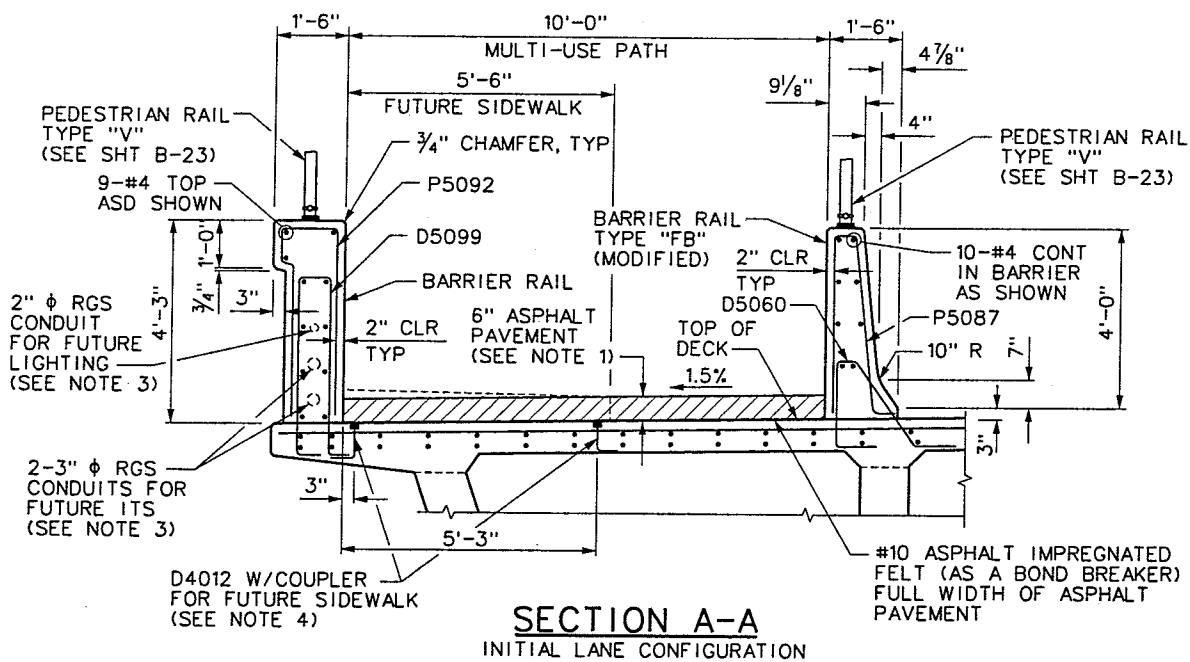
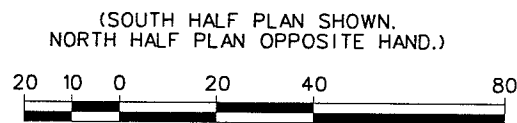
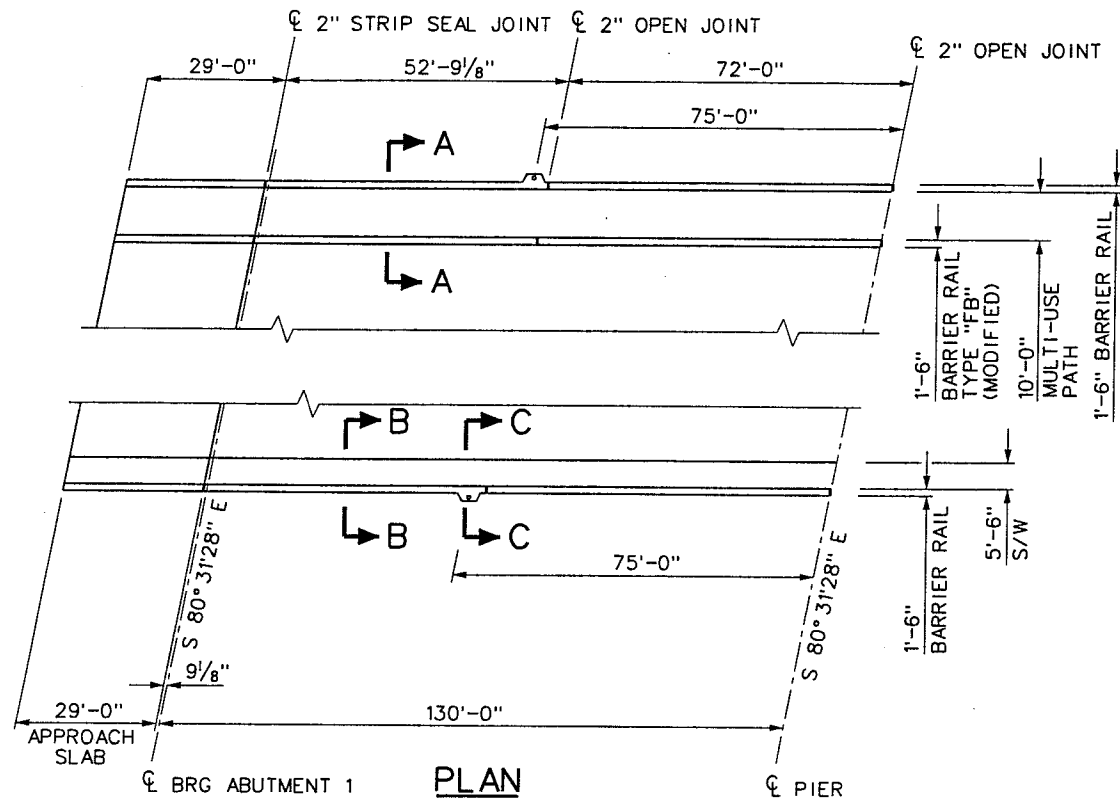
SECTION E-E
SUPPORT ASSEMBLY

SECTION F-F
MULTI-USE PATH JOINT

SECTION G-G
SIDEWALK SLIP PLATE ASSEMBLY

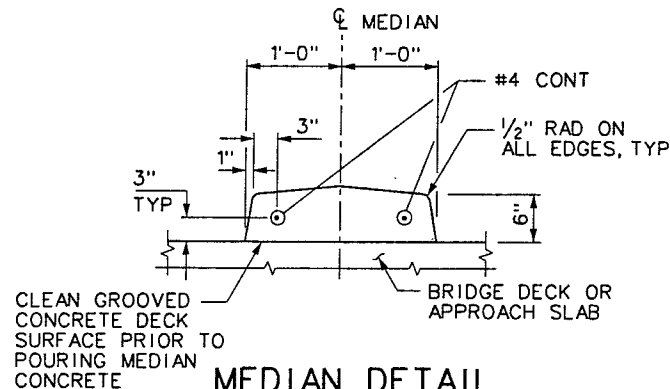
APPROACH SLAB RESTRAINER DETAIL

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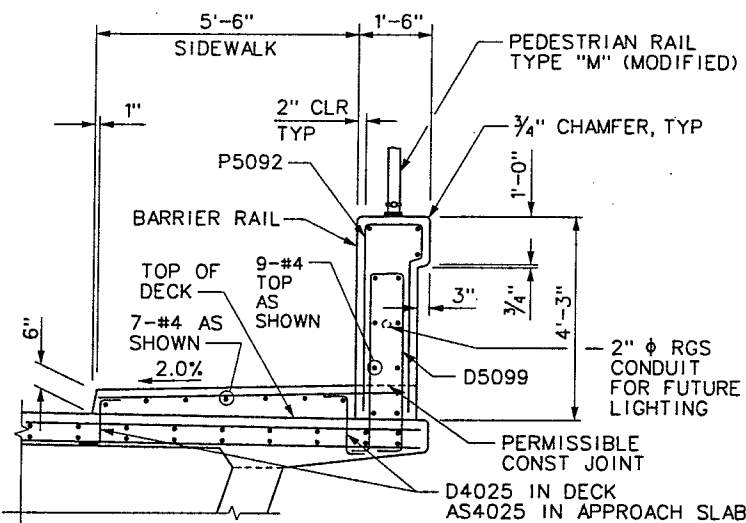
NOTES:

1. ASPHALT PAVEMENT AND BARRIER RAIL TYPE "FB" (MODIFIED) TO BE REMOVED IN FUTURE, AND 5'-6" FUTURE SIDEWALK INSTALLED.
2. SEE NDOT STANDARD PLAN B-25.1.4 FOR PEDESTRIAN RAIL TYPE "M" (MODIFIED).
3. FOR FUTURE ITS AND FUTURE LIGHTING, SEE "T" SHEETS FOR ELECTRICAL CONDUIT, JUNCTION BOXES, LIGHTING AND SIGNALIZATION DETAILS.
4. TOP OF COUPLER SHALL BE FLUSH WITH TOP OF BRIDGE DECK. PLUG COUPLER WITH EXPANDED POLYSTYRENE AND SECURE WITH ADHESIVE TAPE PRIOR TO POURING DECK CONCRETE. (EXPANDED POLYSTYRENE TO REMAIN IN PLACE).

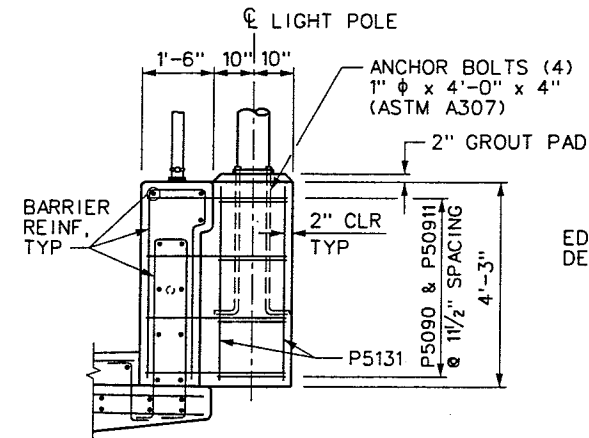


MEDIAN DETAIL

- NOTES: SEE NDOT SPECS 502.03.16 FOR GROOVED CONCRETE DECK SLAB
SEE ROADWAY PLANS FOR LOCATION

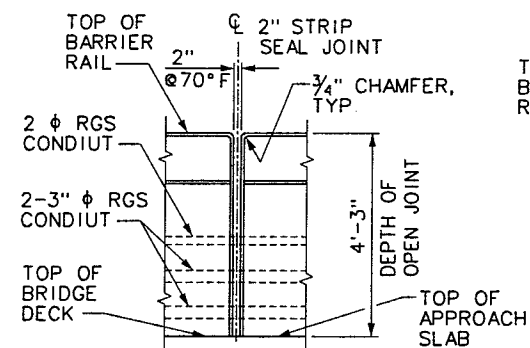


SECTION B-B



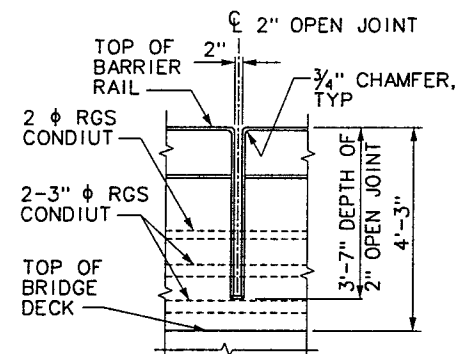
SECTION C-C

LIGHT PEDESTAL SECTION AT BARRIER RAIL



- NOTES: 1. STRIP SEAL JOINT IS PARALLEL TO ABUTMENT CENTERLINES
2. SEE SHEETS B-20 & B-21 FOR DETAILS OF STRIP SEAL ASSEMBLY IN BARRIER RAIL

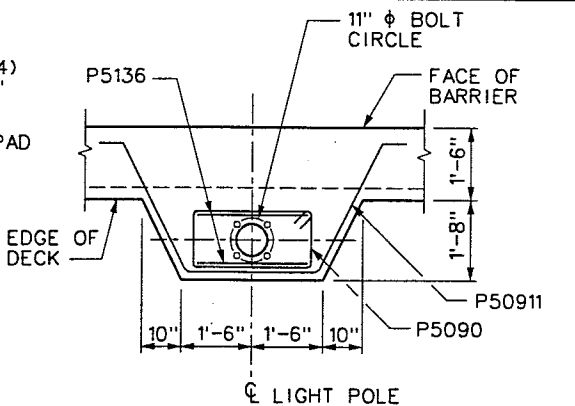
2" STRIP SEAL JOINT DETAIL



- NOTE: OPEN JOINT IS PERPENDICULAR TO RAIL
2" OPEN JOINT DETAIL FOR BARRIER RAIL

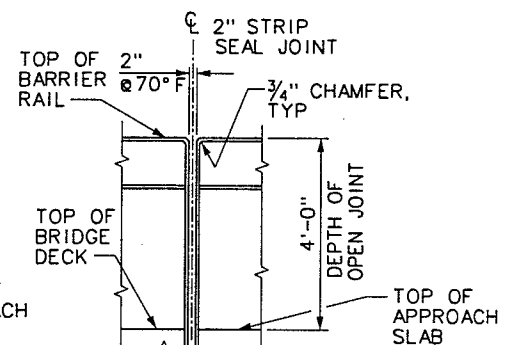
2" OPEN JOINT DETAIL FOR BARRIER RAIL TYPE "FB" (MODIFIED)

I-2407



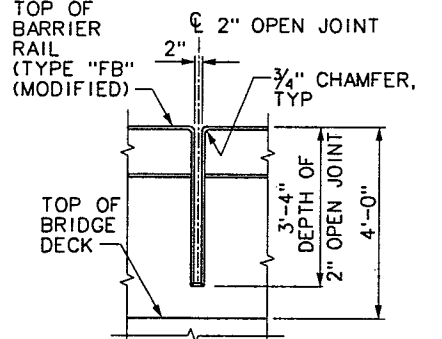
LIGHT PEDESTAL PLAN

AT BARRIER RAIL



- NOTES: 1. STRIP SEAL JOINT IS PARALLEL TO ABUTMENT CENTERLINES
2. SEE SHEETS B-20 & B-21 FOR DETAILS OF STRIP SEAL ASSEMBLY IN BARRIER RAIL

2" STRIP SEAL JOINT DETAIL



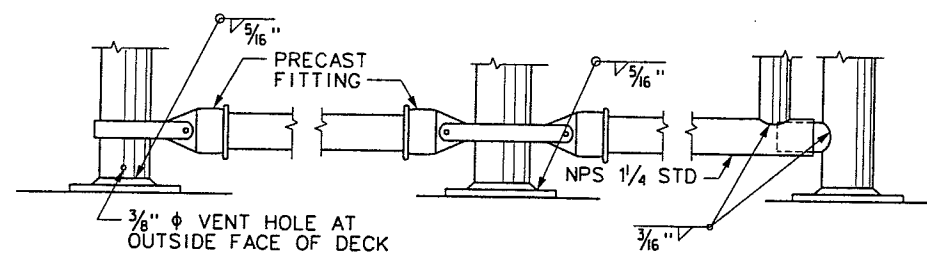
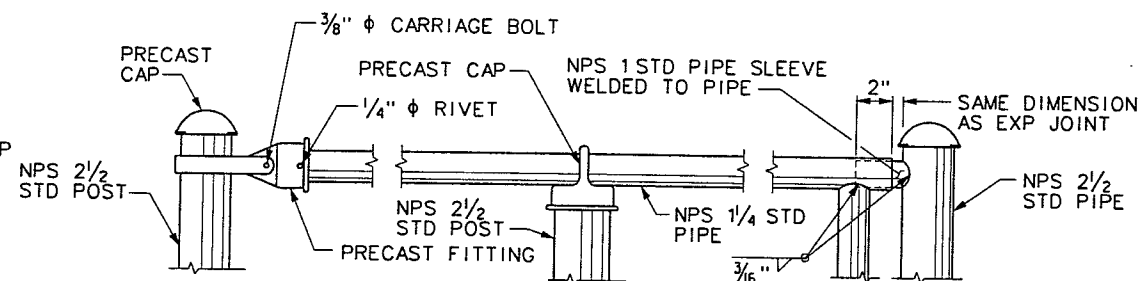
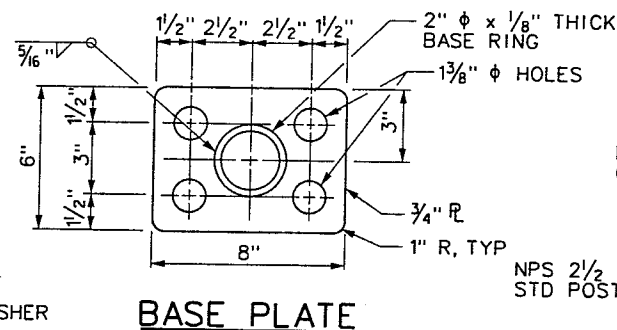
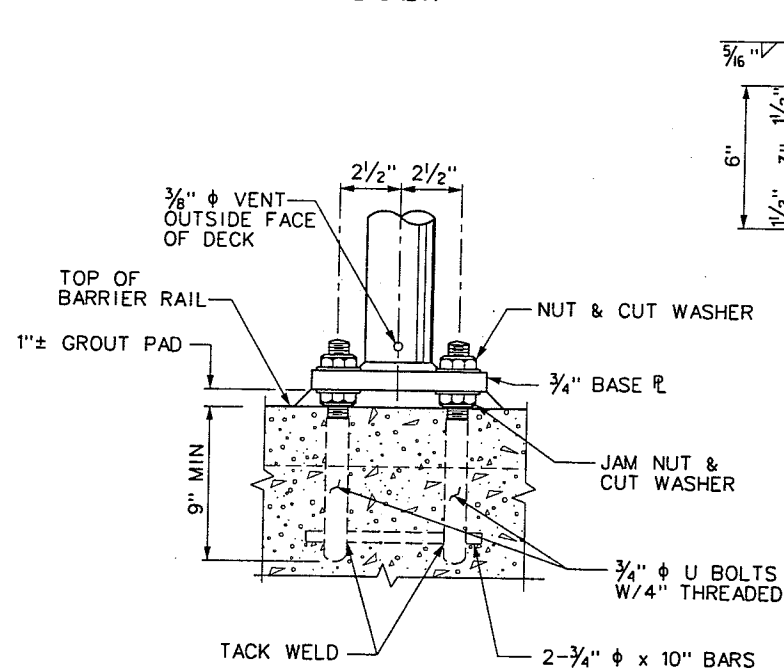
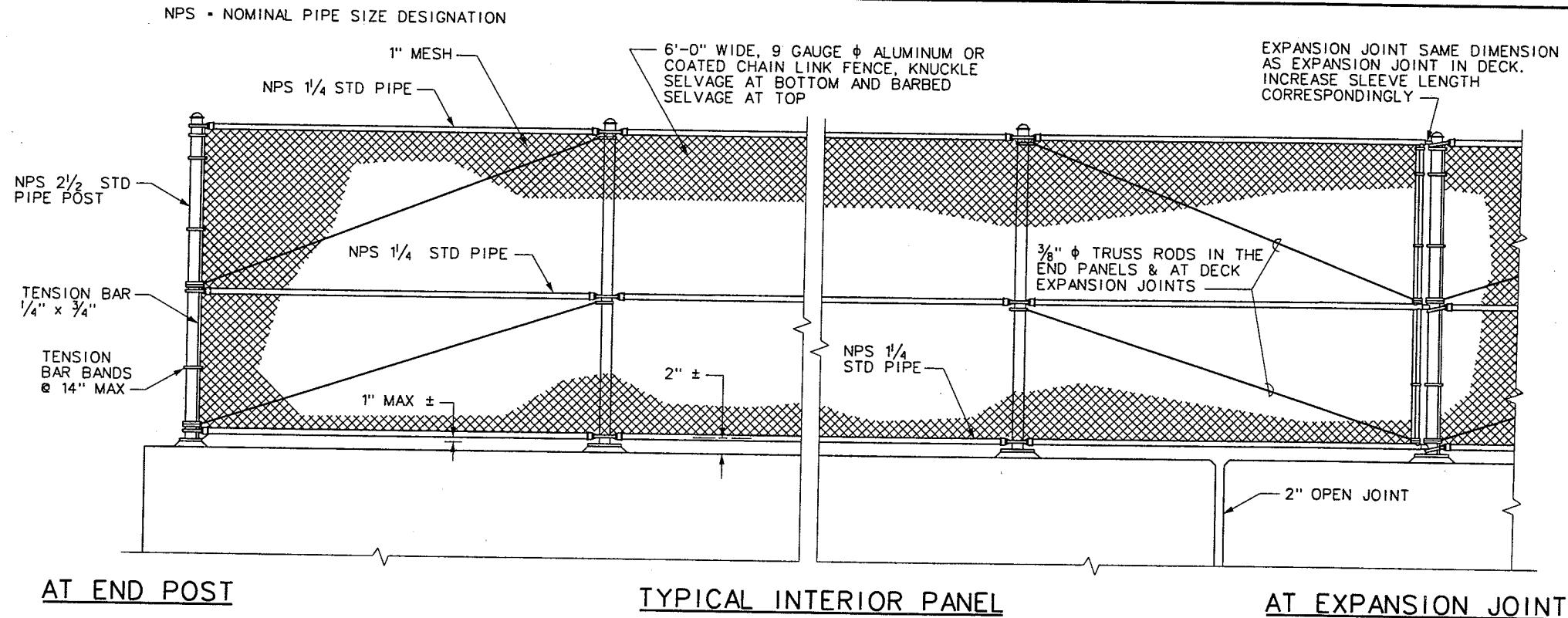
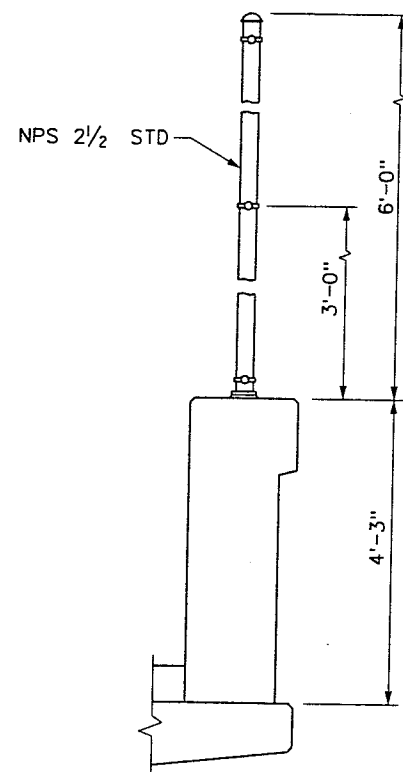
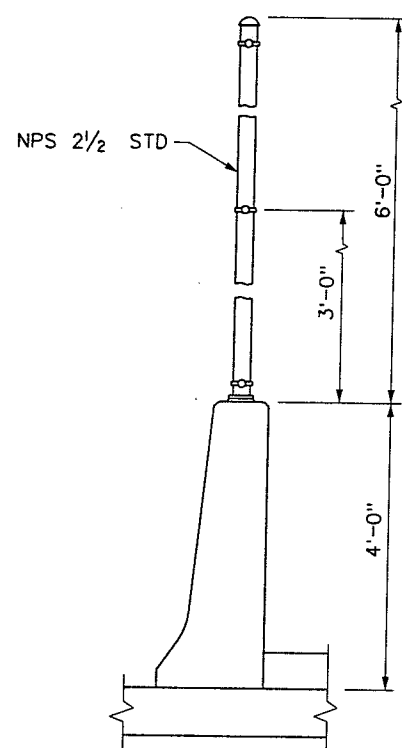
- NOTE: OPEN JOINT IS PERPENDICULAR TO RAIL
2" OPEN JOINT DETAIL FOR BARRIER RAIL TYPE "FB" (MODIFIED)



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HUALAPAI WAY INTERCHANGE
BARRIER RAIL
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

PROJECT NO: A02700	DRAWN BY: WHW	SCALE	DRAWING NO.
DESIGNED BY: MLT/LJS	CHECKED BY: GG	HORIZ: AS SHOWN	B-22
APPROVED BY: WEW		VERT: AS SHOWN	OF
		FIELD BOOK	
			L-1695



- GENERAL NOTES:

1. RAILING ASSEMBLY EXCEPT CHAIN LINK FABRIC TO BE GALVANIZED AFTER FABRICATION.
2. RAILING SHALL CONFORM TO HORIZONTAL AND VERTICAL ALIGNMENTS. POSTS SHALL BE VERTICAL. TOP, INTERMEDIATE AND BOTTOM PIPES SHALL BE BENT IF THE RADIUS IS 150' OR LESS; MAY BE ON 8' CHORDS IF RADIUS IS OVER 150'.
3. ALL EXPOSED CORNERS TO BE SMOOTH.
4. PEEN ALL $\frac{3}{8}$ " BOLTS.
5. WHEN FENCE IS ON SLOPE THE 6'-0" FABRIC SHALL BE PLACED PARALLEL TO THE SLOPE.
6. ALTERNATIVE DETAILS MAY BE SUBMITTED BY THE CONTRACTOR FOR THE ENGINEERS APPROVAL.
7. STEEL BASE PLATES SHALL BE GRADE ASTM A36 STEEL.
8. SEE NDOT STANDARD PLAN B-25.1.4 FOR PEDESTRIAN RAIL TYPE "M" (MODIFIED) FOR BARRIER RAIL AT EAST EDGE OF DECK.

[illegible]

**WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
HAULAPAI WAY INTERCHANGE
PEDESTRIAN RAIL TYPE "V"
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS**

90%
PRELIMINARY
04-12-02

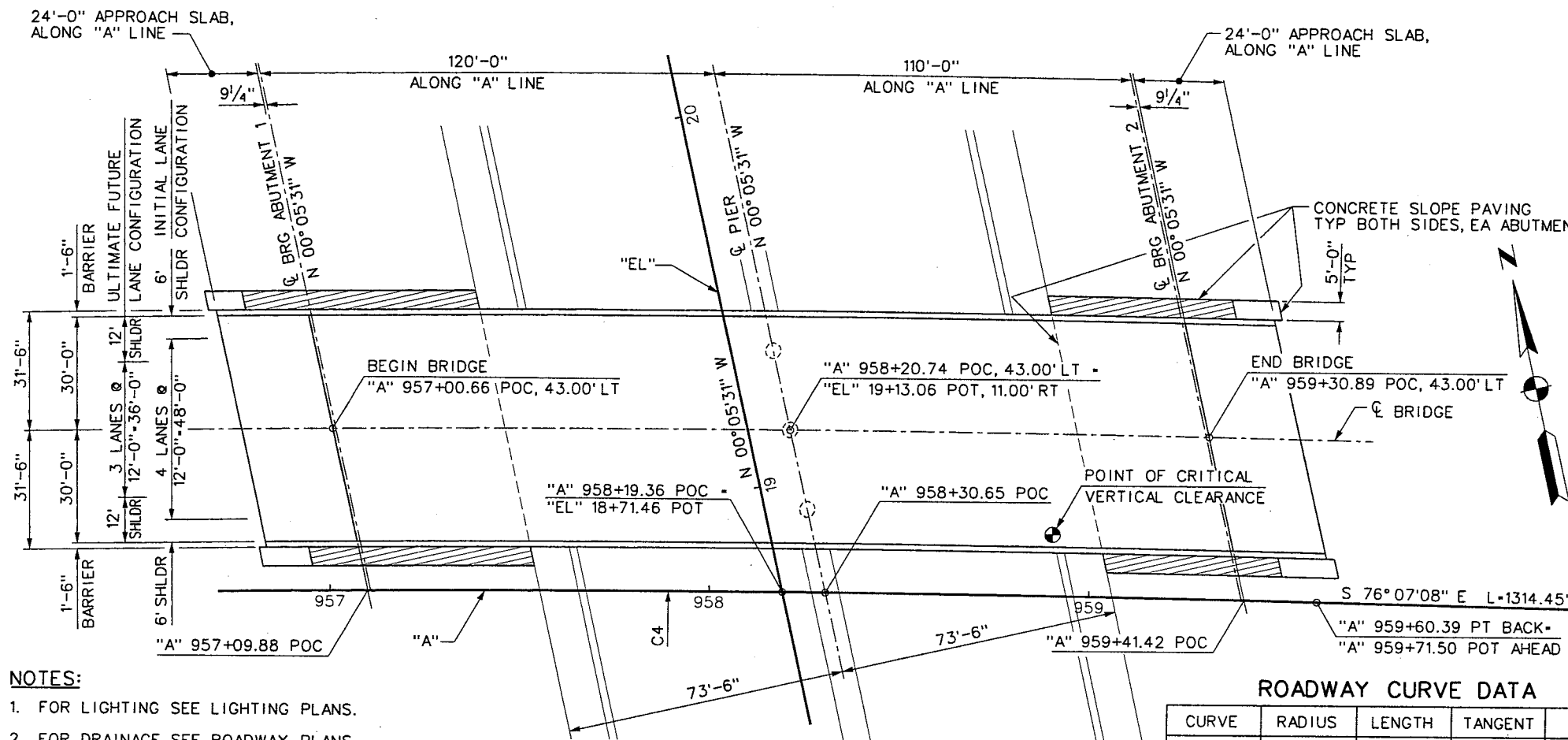
PROJECT NO: A02700 DRAWN BY: WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW

BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

DRAWING NO.
B-23
OF
1-1695

WESTERN SEGMENT I AS VEGAS BELTWAY

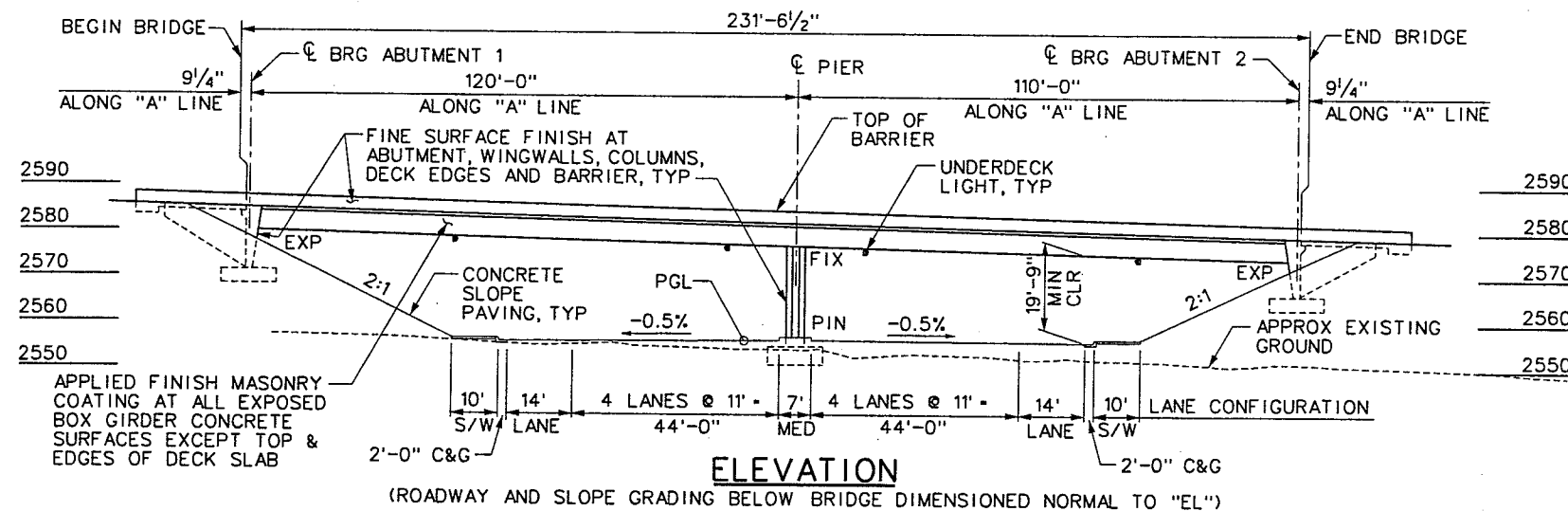
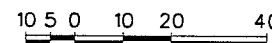


- NOTES:**
1. FOR LIGHTING SEE LIGHTING PLANS.
 2. FOR DRAINAGE SEE ROADWAY PLANS.
 3. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES (SHOWN OR OTHERWISE) IN WORK AREA AND PROVIDING PROTECTION FOR SAME PRIOR TO PROCEEDING WITH THE WORK. SEE UTILITY DRAWINGS FOR UTILITY REQUIREMENTS.
 4. SEE ROADWAY PLANS FOR IMPACT PROTECTION OF CONCRETE COLUMNS AT "EL".

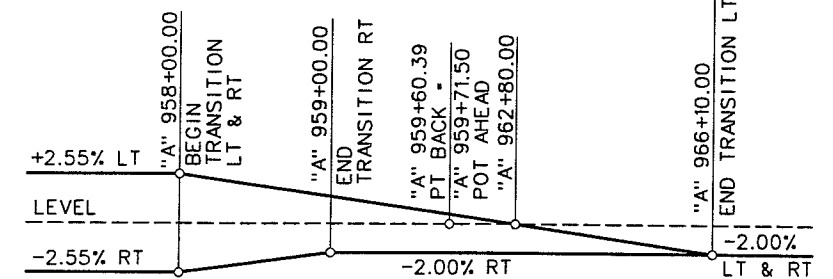
PLAN

ROADWAY CURVE DATA

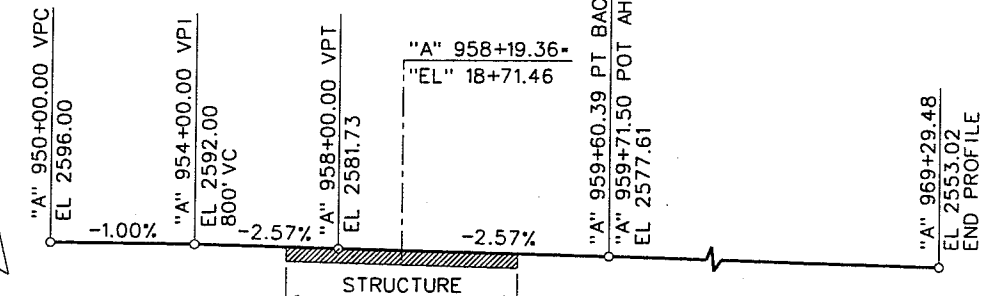
CURVE	RADIUS	LENGTH	TANGENT	DELTA
C4	8000.00'	1979.06'	994.61'	14° 10' 26"



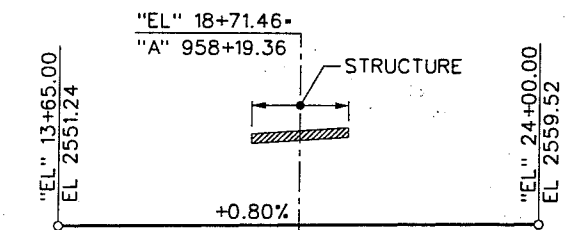
ELEVATION



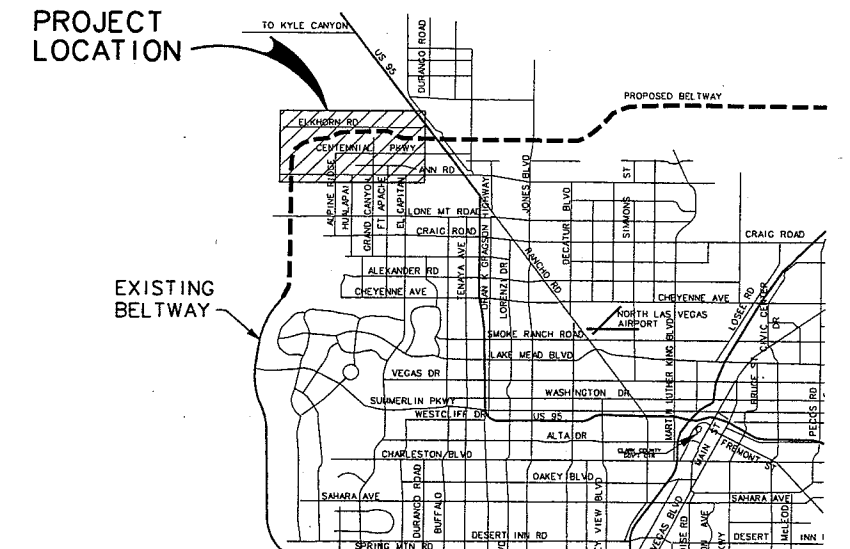
SUPERELEVATION "A" ROADWAY



PROFILE LINE "A" ROADWAY



PROFILE LINE "EL" ROADWAY



VICINITY MAP

NOT TO SCALE

I-2484

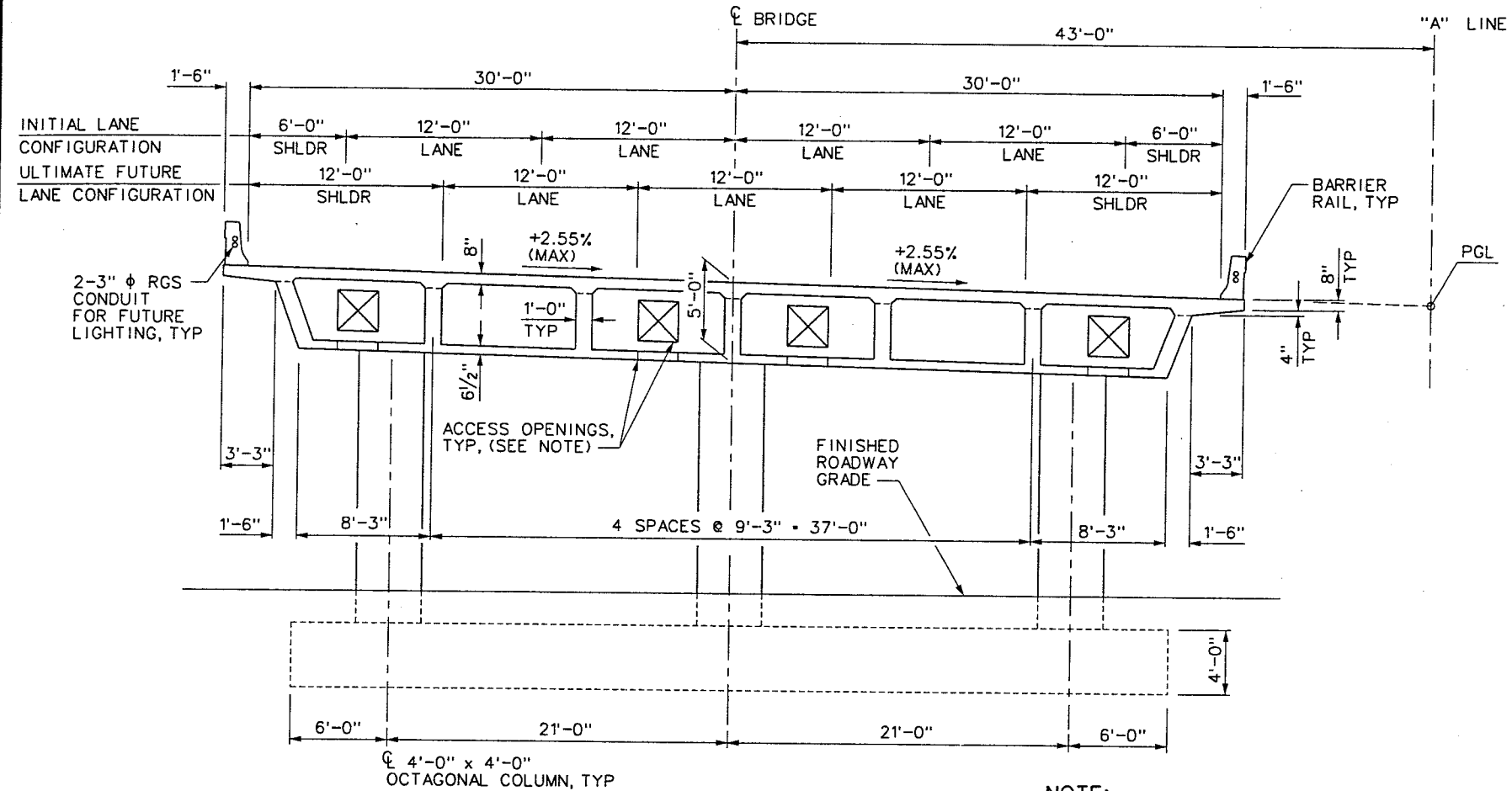


WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
PLAN, PROFILE & ELEVATION
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

PROJECT NO: A02700	DRAWN BY: WHW	SCALE	DRAWING NO.
DESIGNED BY: MLT/LJS	CHECKED BY: GG	HORIZ: AS SHOWN	B-101
APPROVED BY: WEW		VERT: AS SHOWN	OF
		FIELD BOOK	
			L-1695

REFERENCE FILES:
FILE NAME:
-f-AbomBorder.mst - 851-INT-CEO.mst - 851-topo.mst - 851-contours.mst - 851-INTERNAL IGM.mst - stamp.mst
V:\851 Ann Rd to El Capitan\Intern\bridge\851-1-AB102.dgn - 4/16/2002 - 13:00:34 WHW



TYPICAL SECTION

NOTE:
☒ INDICATES CELLS WITH ACCESS OPENINGS IN MIDSPAN DIAPHRAGMS AND ACCESS HATCHES IN BOTTOM SLAB AT LOCATIONS SHOWN ON BOTTOM SLAB REINFORCEMENT PLANS.

GENERAL NOTES:

- DESIGN SPECIFICATIONS: "AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES," 1996 AND INTERIMS THRU 2000. LOAD FACTOR DESIGN METHOD USED.
- CONTRACT SPECIFICATIONS: STATE OF NEVADA, DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2001" EXCEPT AS NOTED BELOW AND IN THE SPECIAL PROVISIONS FOR THIS CONTRACT.
- LIVE LOAD: STANDARD HS25-44 OR ALTERNATE FHWA MILITARY LOADING. OVERLOAD DESIGN BASED ON CALIFORNIA "STANDARD PERMIT DESIGN VEHICLES." (MAX ALLOWABLE OVERLOAD: "P13" TRUCK.)
- SEISMIC LOAD: ACCELERATION COEFFICIENT 0.15G. ATC-6 RESPONSE SPECTRA WITH TYPE II SOIL. DETAILED TO SEISMIC PERFORMANCE CATEGORY "C" REQUIREMENTS.
- FUTURE OVERLAY OF 3" AT 150 PCF ASSUMED.
- CONCRETE: ALL CONCRETE SHALL BE CLASS "A" MODIFIED (MAJOR). TYPE V CEMENT SHALL BE USED FOR CONCRETE IN CONTACT WITH SOIL. SEE PRESTRESSING NOTES AND CONCRETE CLASSIFICATION DIAGRAM FOR ULTIMATE COMPRESSIVE CONCRETE STRENGTHS, AND PLACEMENT LOCATIONS AND SEQUENCE.
- REINFORCING STEEL: ALL REINFORCING STEEL SHALL BE AASHTO A706. DIMENSIONS RELATING TO BAR SPACING ARE CENTER TO CENTER. BENDING DIMENSIONS ARE FROM OUT TO OUT OF THE BARS. BAR SIZES THREE (3) TO NINE (9) ARE INDICATED BY THE FIRST NUMBER IN THE MARK SIZE AND TEN (10) OR LARGER BY THE FIRST TWO NUMBERS. THE LENGTH OF BAR FOR SIZES FOUR (4) AND FIVE (5), WHEN CONSIDERED AS BARS TO CONTROL TEMPERATURE, SHRINKAGE, AND DISTRIBUTION STRESSES BY THE BRIDGE ENGINEER, MAY BE ADJUSTED BY THE CONTRACTOR UPON CONCURRENCE AND APPROVAL OF THE BRIDGE ENGINEER.
- CAMBER: THE CAMBER SHALL BE AS SHOWN ON THE PLANS.
- FOUNDATIONS: ABUTMENT FOOTINGS SHALL BE PLACED ON ABUTMENT FILL WITH AN ALLOWABLE BEARING PRESSURE OF 2 TONS PER SQ FT. PIER FOOTINGS SHALL BE PLACED ON UNDISTURBED NATURAL SOILS WITH AN ALLOWABLE BEARING PRESSURE OF 3.5 TONS PER SQ FT. THE ULTIMATE LOAD BEARING PRESSURES ARE 6 TONS PER SQ FT ON STRUCTURAL FILL AND 10.5 PER SQ FT ON UNDISTURBED NATIVE SOILS. BEARING VALUES BASED ON GEOTECHNICAL REPORT.
- CONSTRUCTION TYPE CODE: X281
- CONDUIT: SEE LIGHTING PLANS FOR LOCATIONS AND QUANTITIES OF CONDUIT FOR UTILITIES. CONTRACTOR TO INSTALL CONDUITS FOR UTILITIES AS SHOWN ON THE PLANS. ALL CONDUIT SHALL EXTEND 3'-0" BEYOND THE LIMITS OF THE APPROACH SLABS.
- FINE SURFACE FINISH: ALL EXPOSED CONCRETE SURFACES OF THE ABUTMENTS, WINGWALLS, COLUMNS, BARRIER RAILS AND VERTICAL EDGES OF THE DECK SLAB SHALL BE FINE SURFACE FINISHED. ALL FINE SURFACE FINISH SHALL BE A BONDED GROUT FINISH CONFORMING TO TYPE B BROWN (FEDERAL COLOR No. 30324) EXCEPT FOR THE ROAD SIDE FACES OF THE BARRIER RAIL, WHICH SHALL BE TYPE A WHITE (CONFORMING TO FEDERAL COLOR No. 37875). ALL CONCRETE SURFACES SHALL BE FINISHED TO A POINT 1'-0" BELOW THE FINISHED GROUND LINE.
- APPLIED FINISH MASONRY COATING: ALL EXPOSED CONCRETE SURFACES OF THE BOX GIRDER SHALL BE FINISHED WITH APPLIED FINISH MASONRY COATING EXCEPT THE TOP AND VERTICAL EDGES OF THE DECK SLAB.
- EARTH-FILL OR EXISTING GROUND MAY BE USED IN LIEU OF FALSEWORK FOR TEMPORARY SUPPORT OF THE SUPERSTRUCTURE AT THE OPTION OF THE CONTRACTOR, PROVIDED THERE IS NO ADDITIONAL COST TO THE OWNER. THE EARTH FILL SHALL BE COMPACTED SUFFICIENTLY TO AVOID EXCESSIVE SETTLEMENT. ANY DAMAGE TO THE STRUCTURE DUE TO THE SETTLEMENT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- GEOTECHNICAL REPORT IS AVAILABLE FOR CONTRACTOR'S STUDY IN THE DESIGN OFFICE OF CLARK COUNTY PUBLIC WORKS. KLEINFELDER PROJECT No. 31-183636-001 DATED 2 APRIL, 2002.
- BRIDGE LOAD AND INVENTORY RATING IS XXXX.

APPROXIMATE QUANTITIES:

(FOR CONTRACTOR'S INFORMATION ONLY. CONTRACTOR TO VERIFY.)

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
206	STRUCTURE EXCAVATION	CY	1,700
207	GRANULAR BACKFILL	CY	1,900
502	CLASS A CONCRETE, MODIFIED (MAJOR)	CY	2.050
502	FINE SURFACE FINISH (TYPES A & B)	SY	760
502	APPLIED FINISH MASONRY COATING	SY	1,760
502	CLASS A CONCRETE SLOPE PAVEMENT	CY	65
502	STRIP SEAL EXPANSION JOINT (3-INCH MOVEMENT)	LF	125
502	GROOVE CONCRETE DECK SLAB	SY	1,650
502	BRIDGE DECK CURING COMPOUND	GALLON	100
503	PRESTRESSING CAST-IN-PLACE CONCRETE	LS	1
506	REINFORCING STEEL	POUND	270,000
506	APPROACH SLAB RESTRAINER UNIT	EA	32
506	ACCESS HATCH	EA	6
506	MISC STEEL FOR UTILITY SUPPORTS, ETC PER PLANS	LS	1
502-002	BRIDGE STRUCTURE 1-2484	LS	

1-2484

REV. NO.	DATE	DESCRIPTION	APPROVED



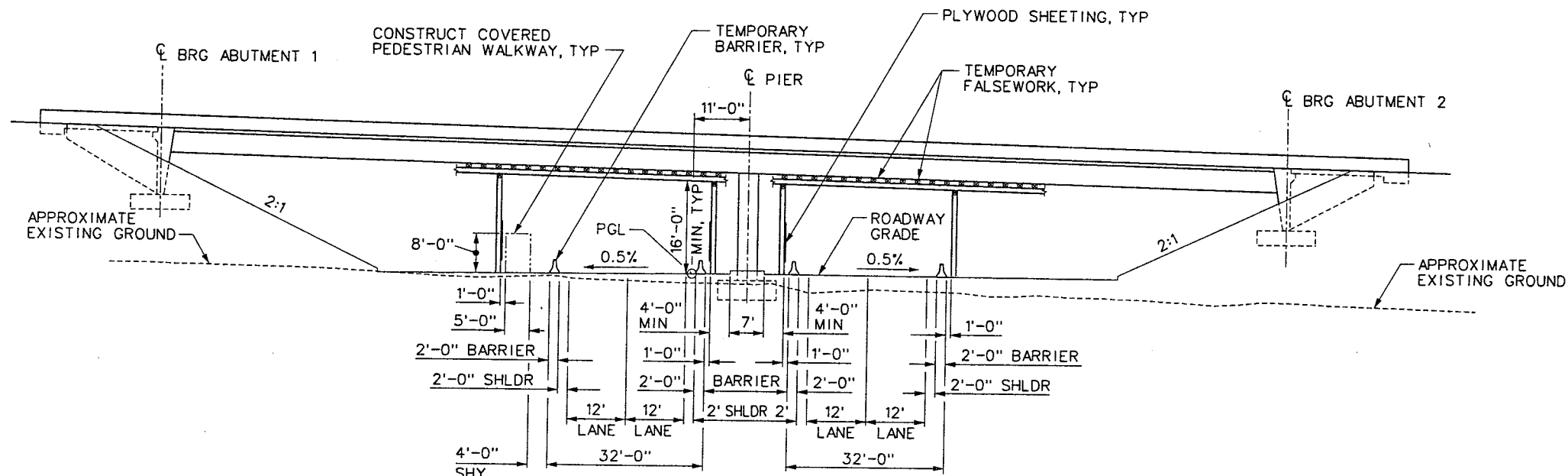
WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
TYPICAL SECTION, GENERAL NOTES & QUANTITIES
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

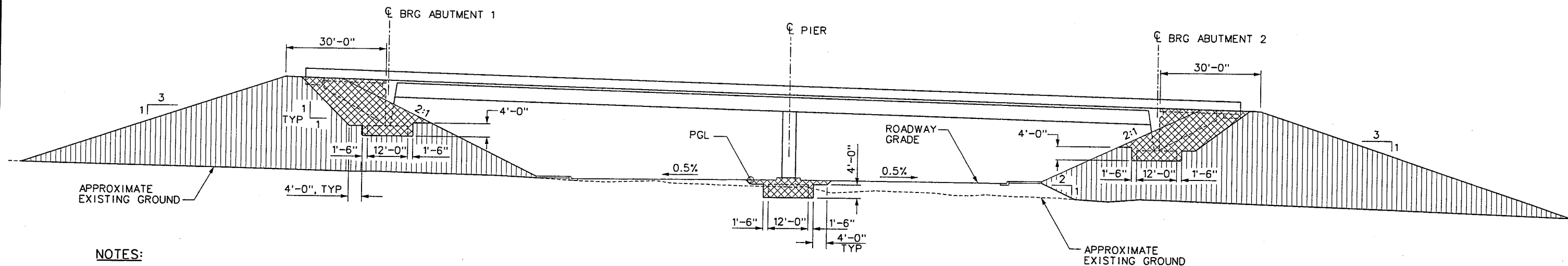
PROJECT NO: A02700	DRAWN BY: WHW	SCALE	DRAWING NO.
DESIGNED BY: MLT/LJS	CHECKED BY: GG	HORIZ: NONE	B-102
APPROVED BY: WEW		VERT: AS SHOWN	OF
		FIELD BOOK	
			L-1695

BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

REFERENCE FILES: V:\851 Ann Rd to El Capitan\Interm\bridge\851-1-AB103.dgn - 4/16/2002 - 9:29:00 WFD



FALSEWORK DETAIL
(ROADWAY AND SLOPE GRADING BELOW BRIDGE
DIMENSIONED NORMAL TO "EL")



PROPOSED CONSTRUCTION METHOD
(ROADWAY AND SLOPE GRADING BELOW BRIDGE
DIMENSIONED NORMAL TO "EL")

NOTES:

1. LUMP-SUM BRIDGE COST IS BASED ON CONSTRUCTION OF THE BRIDGE ON FALSEWORK WITH QUANTITIES OF STRUCTURAL EXCAVATION CALCULATED AS SHOWN IN PROPOSED CONSTRUCTION METHOD.
2. FOR GRANULAR BACKFILL SEE NDOT STANDARD PLAN R-1.1.3 (206, 207)

LIMITS OF STRUCTURAL EXCAVATION

ZONE OF SELECTED BORROW PER NDOT STANDARD PLAN R-1.1.4 (206, 207)
COMPACT TO AT LEAST 95% OF MAXIMUM LABORATORY DRY DENSITY.

I-2484



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
BRIDGE FALSEWORK AND EXCAVATION DETAILS
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

PROJECT NO: A02700 DRAWN BY: WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW

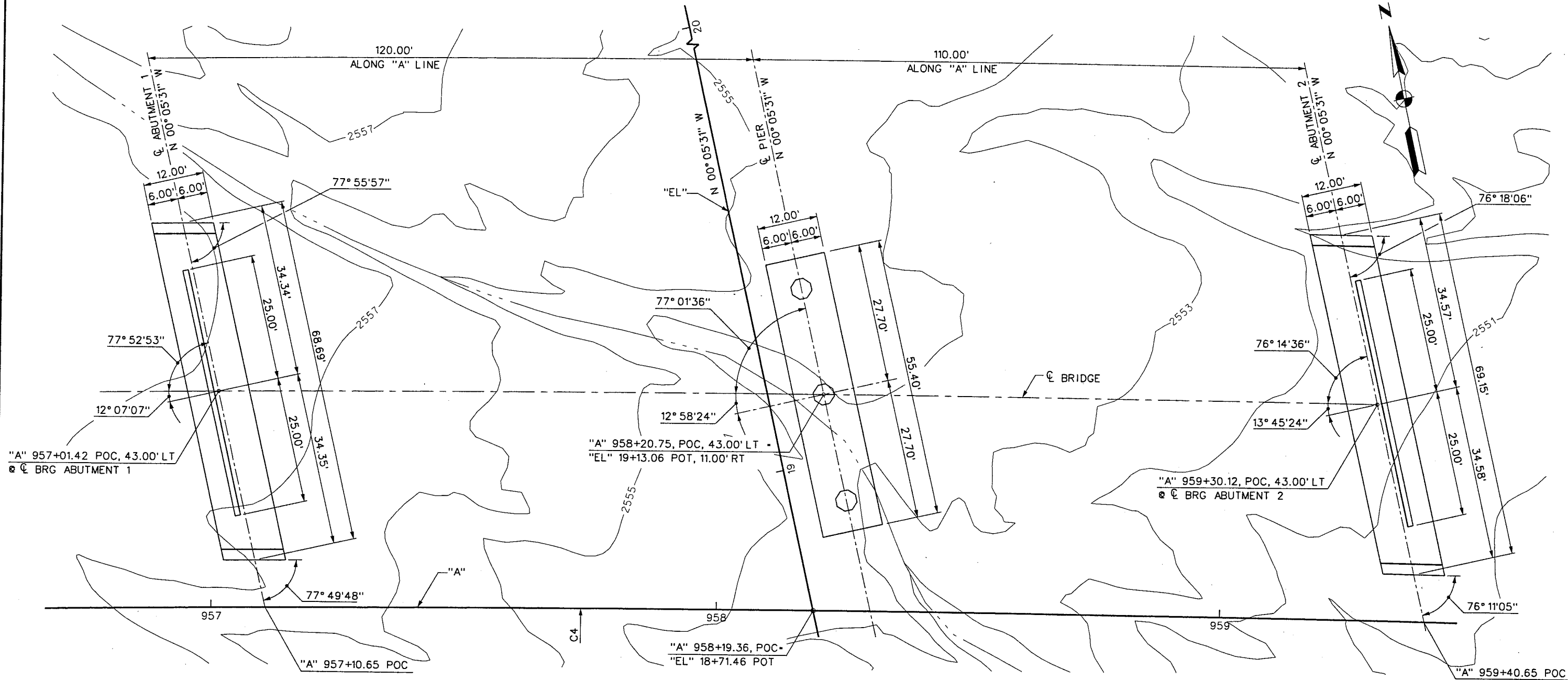
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: NONE
VERT: AS SHOWN
FIELD BOOK

DRAWING NO.
B-103
OF

L-1695

REFERENCE FILES: INTERNAL\GN.mst - 851-1-AbomBorder.mst - 851-stamp-Abom.mst - obomcontours.mst - 851-1-AB101...
FILE NAME: V:\851 Ann Rd to El Capitan\Interm\Bridge\851-1-AB104.dgn - 3/29/2002 - 14:27:43 WHW



GEOMETRIC PLAN

DRAWING LIST

ROADWAY CURVE DATA

CURVE	RADIUS	LENGTH	TANGENT	DELTA
C4	8000.00'	1979.06'	994.61'	14° 10' 26"

NOTES:

1. CONTOURS SHOWN FOR EXISTING GROUND.
2. SKEW ANGLES SHOWN ARE INSTANTANEOUS AT INTERSECTION OF REFERENCED LINES ONLY.



- | | | | |
|-------|---|-------|---|
| B-101 | PLAN, PROFILE & ELEVATION | B-112 | PIER CAP |
| B-102 | TYPICAL SECTION & GENERAL NOTES | B-113 | DECK SECTION |
| B-103 | BRIDGE FALSEWORK AND EXCAVATION DETAILS | B-114 | BOTTOM SLAB REINFORCEMENT |
| B-104 | GEOMETRICS & DRAWING LIST | B-115 | GIRDER & INTERMEDIATE DIAPHRAGM REINFORCEMENT |
| B-105 | ABUTMENT FOOTINGS | B-116 | TOP SLAB REINFORCEMENT |
| B-106 | ABUTMENT 1 PLAN & ELEVATION | B-117 | PRESTRESSING, CAMBER & CONCRETE PLACEMENT |
| B-107 | ABUTMENT 2 PLAN & ELEVATION | B-118 | APPROACH SLAB |
| B-108 | ABUTMENT SECTIONS & DETAILS | B-119 | STRIP SEAL EXPANSION JOINT |
| B-109 | ABUTMENT 1 WINGWALLS | B-120 | BARRIER RAIL |
| B-110 | ABUTMENT 2 WINGWALLS | | |
| B-111 | PIER COLUMN & FOOTING | | |

I-2484

REV. NO.	DATE	DESCRIPTION	APPROVED



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
GEOMETRICS & DRAWING LIST
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

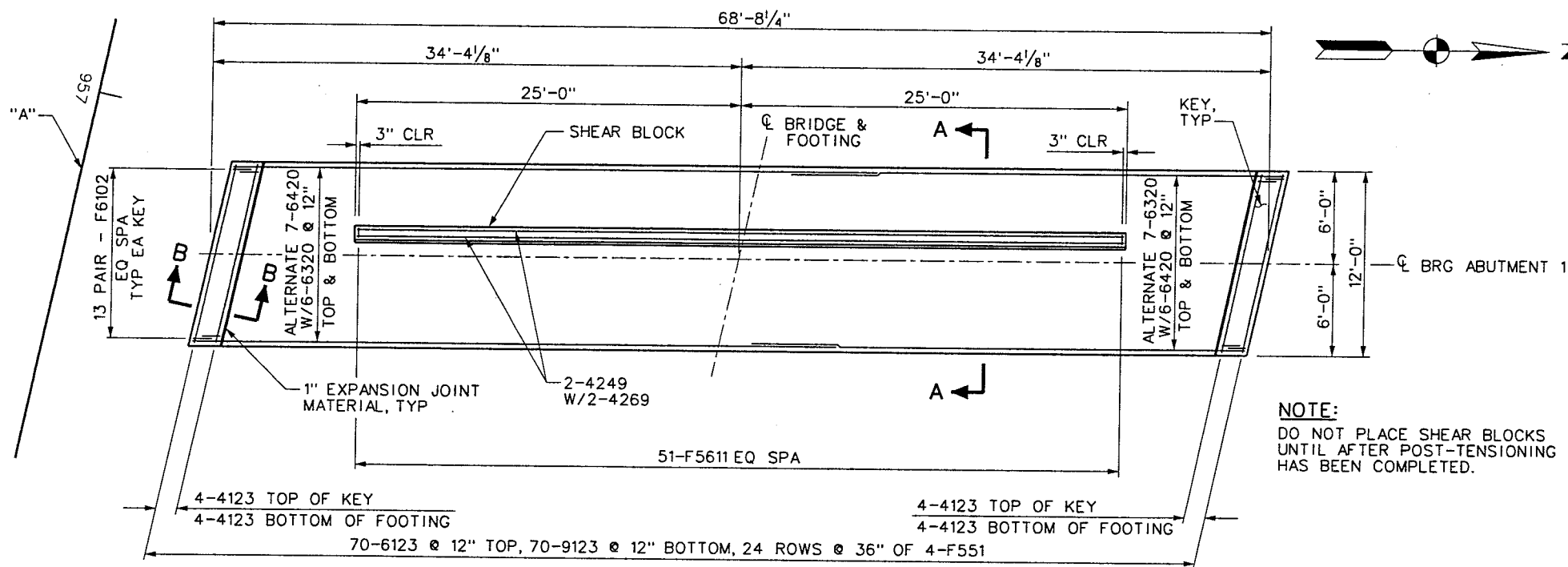
90%
PRELIMINARY
04-12-02

PROJECT NO: A02700 DRAWN BY: WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: NONE
FIELD BOOK

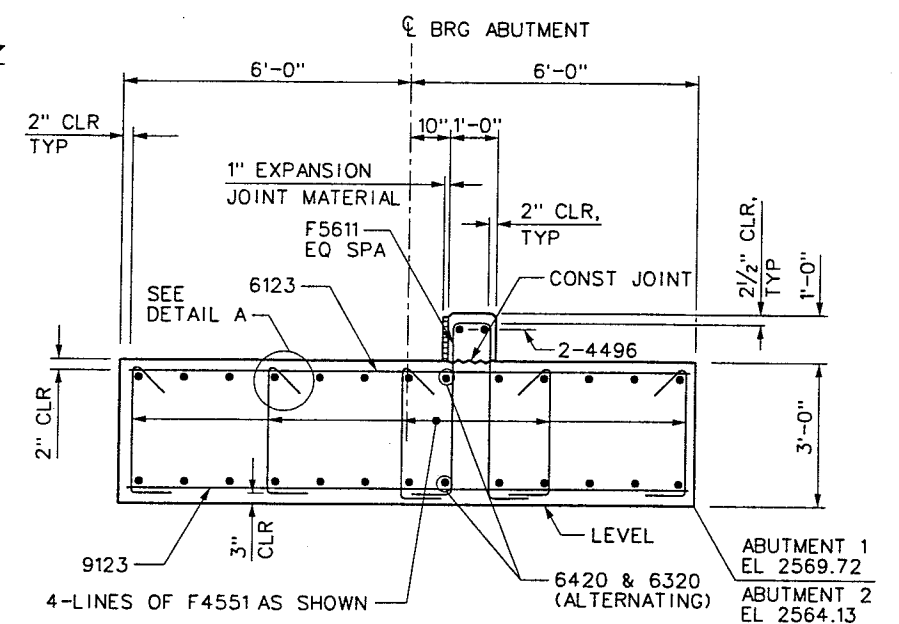
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B-104
OF
L-1695

REFERENCE FILES: I:\AbmBorder.mst - 851-stamp-Abm.mst - 851-INTERNAL IGI.mst - 851-I-AB104.dgn - 851-I-AB101.dgn - 851-I-AB106.dgn - 851-I-AB106.dgn
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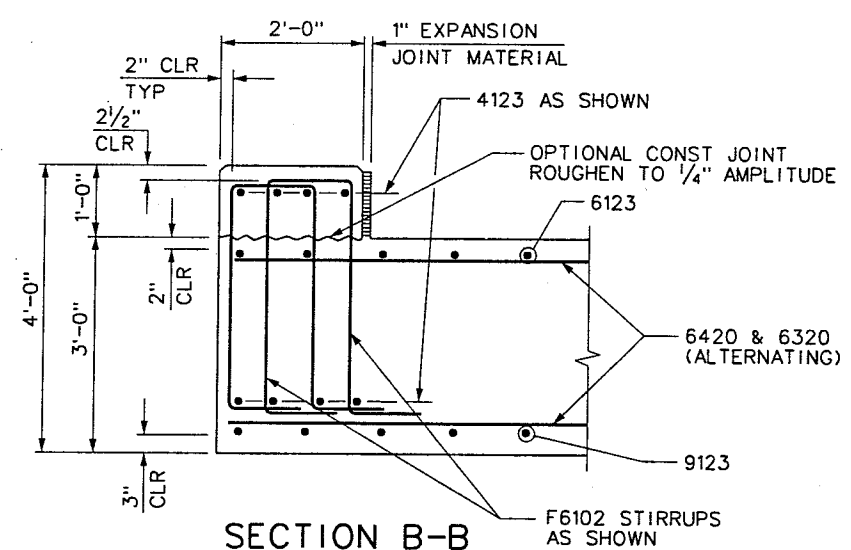


FOOTING PLAN - ABUTMENT 1
LOOKING BACK ON STATION

NOTE:
DO NOT PLACE SHEAR BLOCKS
UNTIL AFTER POST-TENSIONING
HAS BEEN COMPLETED.



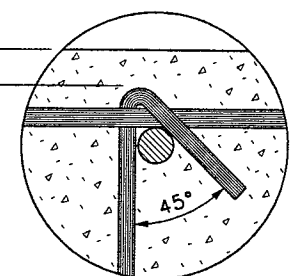
SECTION A-A



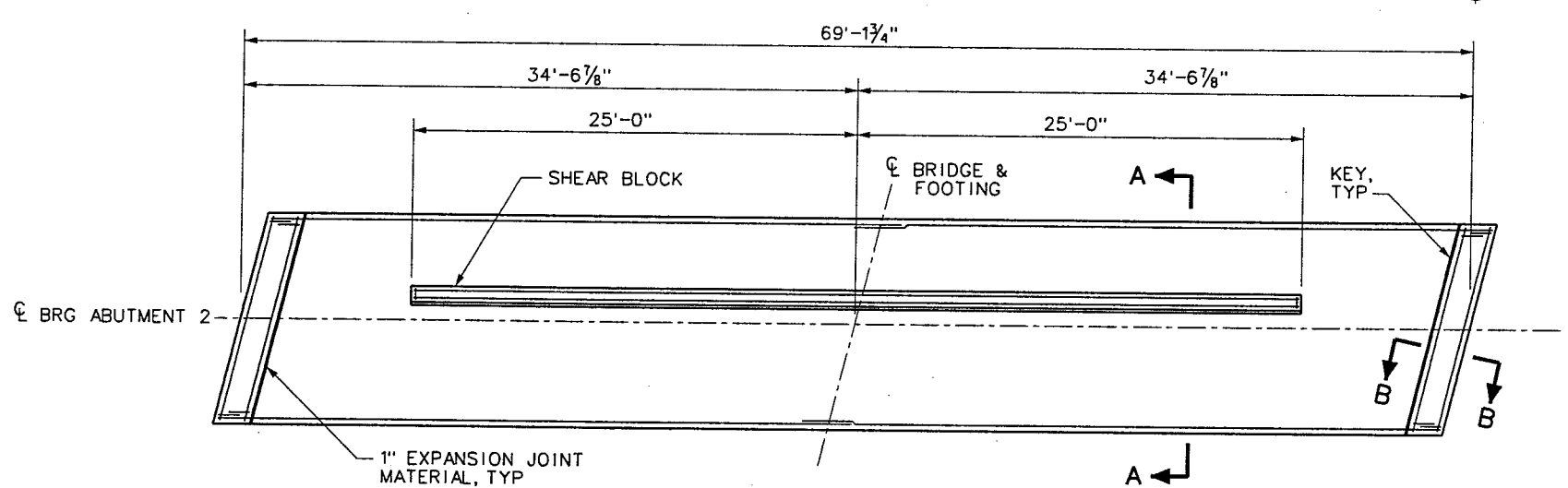
SECTION B-B

LAP SPLICE TABLE	
BAR SIZE	LAP
#4	2'-0"
#5	2'-4"
#6	2'-9"
#7	3'-6"
#8	4'-7"
#9	5'-10"
#10	7'-4"

NOTE:
STAGGER ADJACENT LAP
SPLICES A MINIMUM OF 2'-0"



DETAIL A



FOOTING PLAN - ABUTMENT 2
(FOR DIMENSIONS & REINFORCING CALLOUTS
NOT SHOWN, SEE ABUTMENT 1 FOOTING PLAN)



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
ABUTMENT FOOTINGS
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

PROJECT NO: A02700 DRAWN BY: WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

DRAWING NO.
B-105
OF
L-1695

I-2484



(LOOKING BACK ON STATION)

BAR SIZE	LAP
#4	2'-0"
#5	2'-4"
#6	2'-9"
#7	3'-6"
#8	4'-7"
#9	5'-10"
#10	7'-4"

1. FOR SECTION A-A AND DETAILS, SEE SHEET B-108.
2. SEE SHEETS B-109 AND B-110 FOR ADDITIONAL REINFORCEMENT AND SHEET B-119 FOR EXPANSION JOINT ANCHORAGE TO BE CAST INTO ABUTMENTS.
3. DECK AND GIRDER REINFORCEMENT NOT SHOWN FOR CLARITY.

L-1695



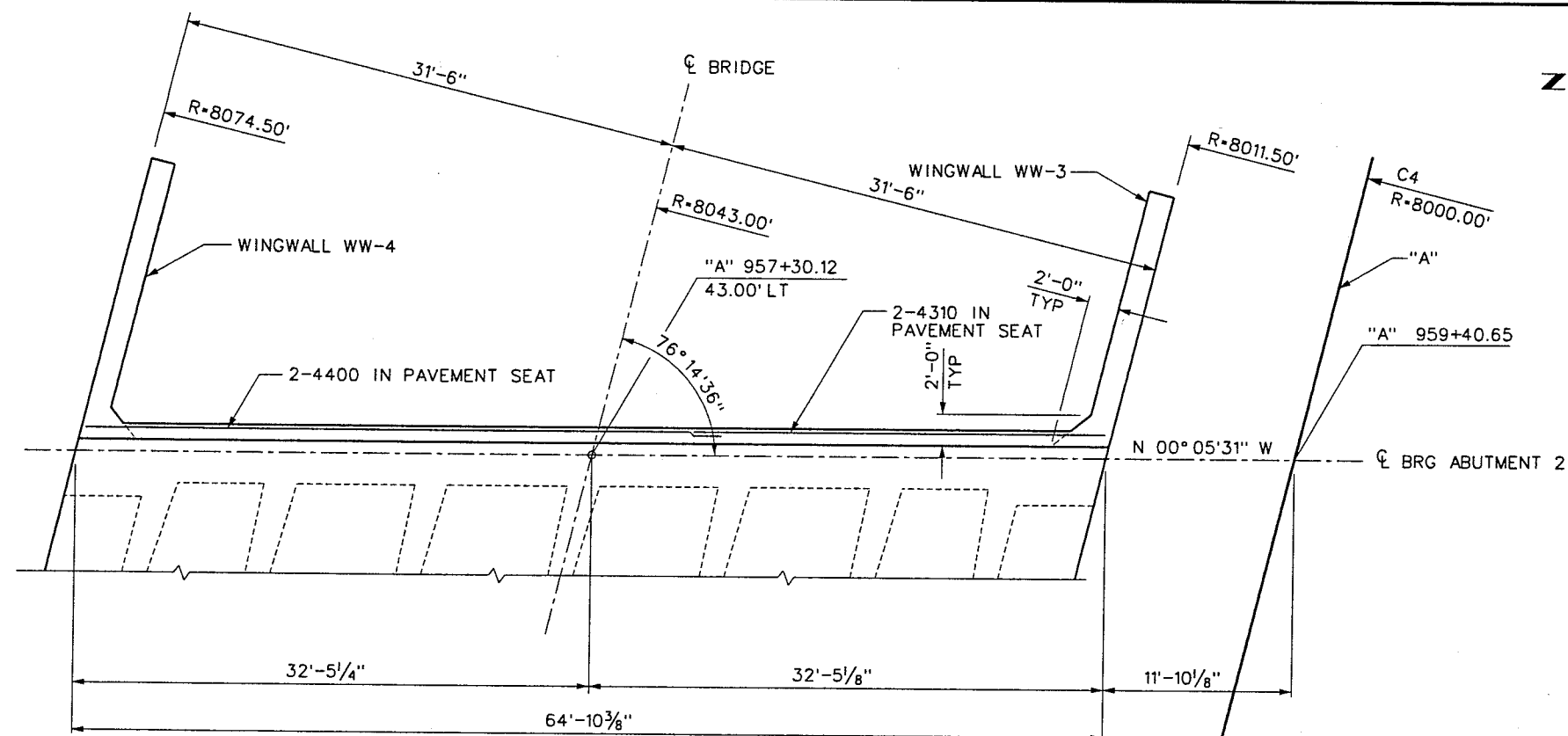
**WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
ABUTMENT 1 PLAN & ELEVATION
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS**

90%
PRELIMINARY
04-12-02

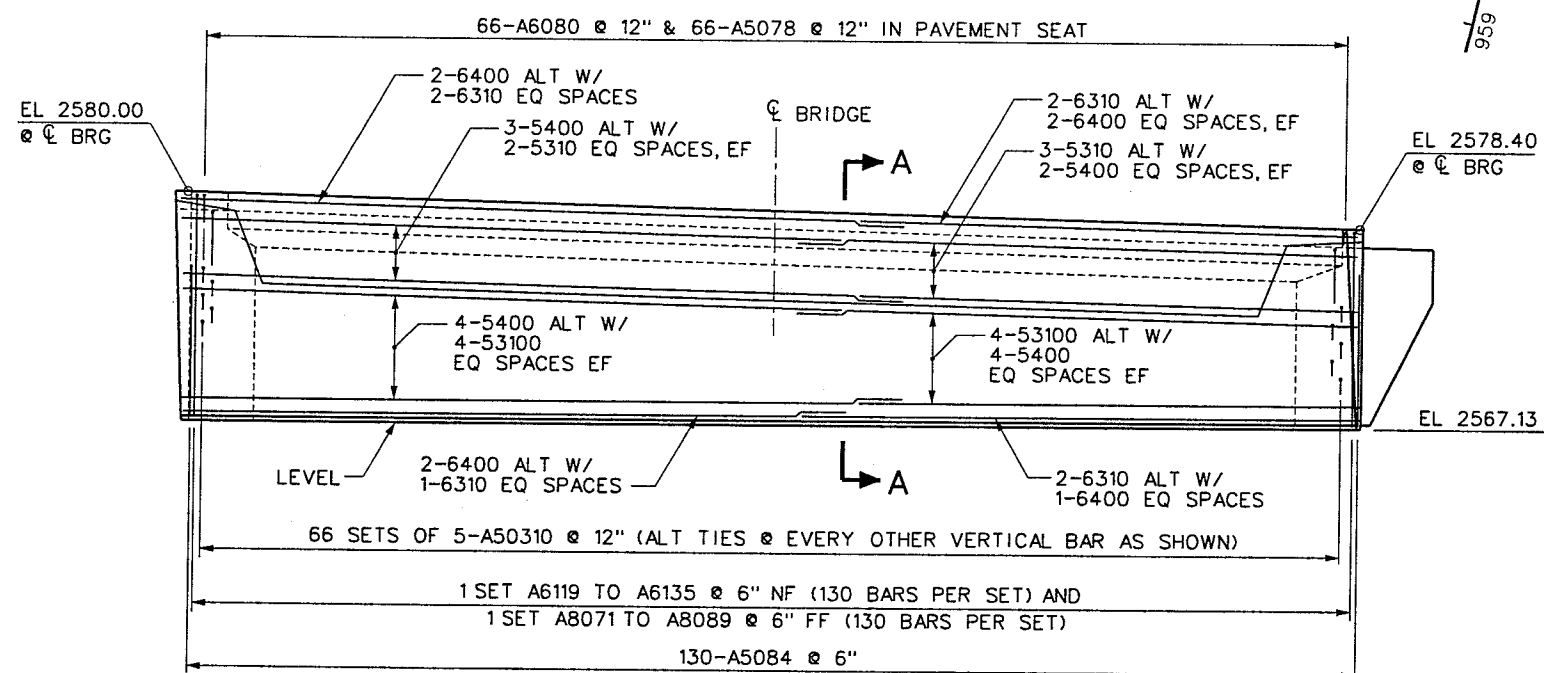
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

[illegible]



PLAN - ABUTMENT 2



ELEVATION - ABUTMENT 2

LAP SPLICE TABLE

BAR SIZE	LAP
#4	2'-0"
#5	2'-4"
#6	2'-9"
#7	3'-6"
#8	4'-7"
#9	5'-10"
#10	7'-4"

NOTE:
STAGGER ADJACENT LAP
SPLICES A MINIMUM OF 2'-0"

NOTES:

1. FOR SECTION A-A AND DETAILS, SEE SHEET B-108.
2. SEE SHEETS B-109 AND B-110 FOR ADDITIONAL REINFORCEMENT AND SHEET B-119 FOR EXPANSION JOINT ANCHORAGE TO BE CAST INTO ABUTMENTS.
3. DECK AND GIRDER REINFORCEMENT NOT SHOWN FOR CLARITY.

1-2484



**WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
ABUTMENT 2 PLAN & ELEVATION
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS**

90%
PRELIMINARY
04-12-03

PROJECT NO: A02700 DRAWN BY: JR/WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW

BERGER/ABAN
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

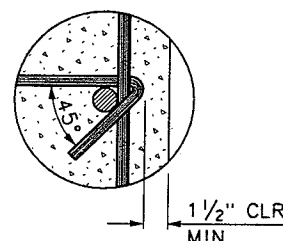
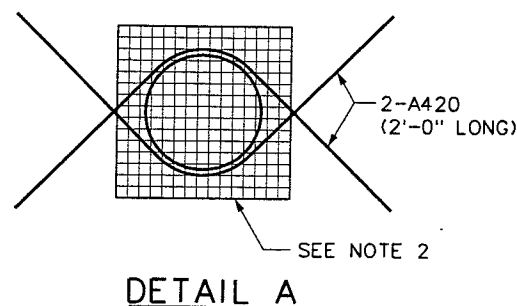
DRAWING NO.
B-107
OF

L-1695

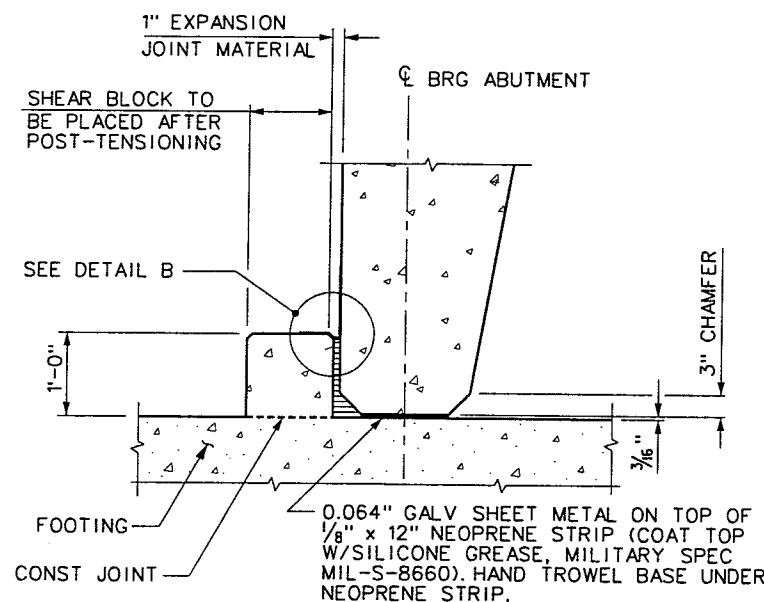
[illegible]

1. 4" ϕ DRAINS WITH HORIZONTAL SPACING OF 15" $\pm$ CENTER TO CENTER. LOCATE 3" $\pm$ ABOVE WALL FOOTING. THE BOTTOM ROW MUST BE LOCATED 3" ABOVE FINISHED GRADE.
2. 6" SQUARE ALUMINUM OR GALVANIZED STEEL WIRE MESH HARDWARE CLOTH WITH MINIMUM WIRE DIAMETER OF 0.03".
3. 2 CF OF NDOT TYPE 1 OR 2 DRAIN BACKFILL ENCAPSULATED IN A GEOTEXTILE FABRIC, SECURELY TIED.

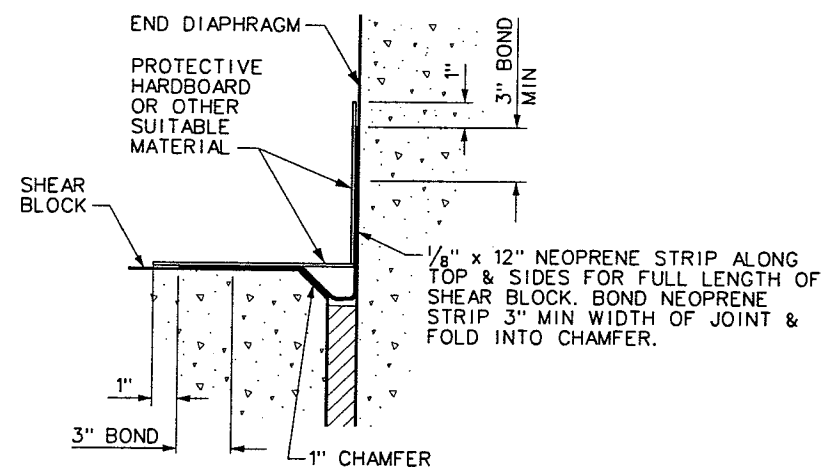
A. HAVE AN AVERAGE OPENING SIZE NO GREATER THAN U.S. SIEVE NO. 40, AND
B. HAVE A MINIMUM PERMITTIVITY OF 0.5 PER SECOND.



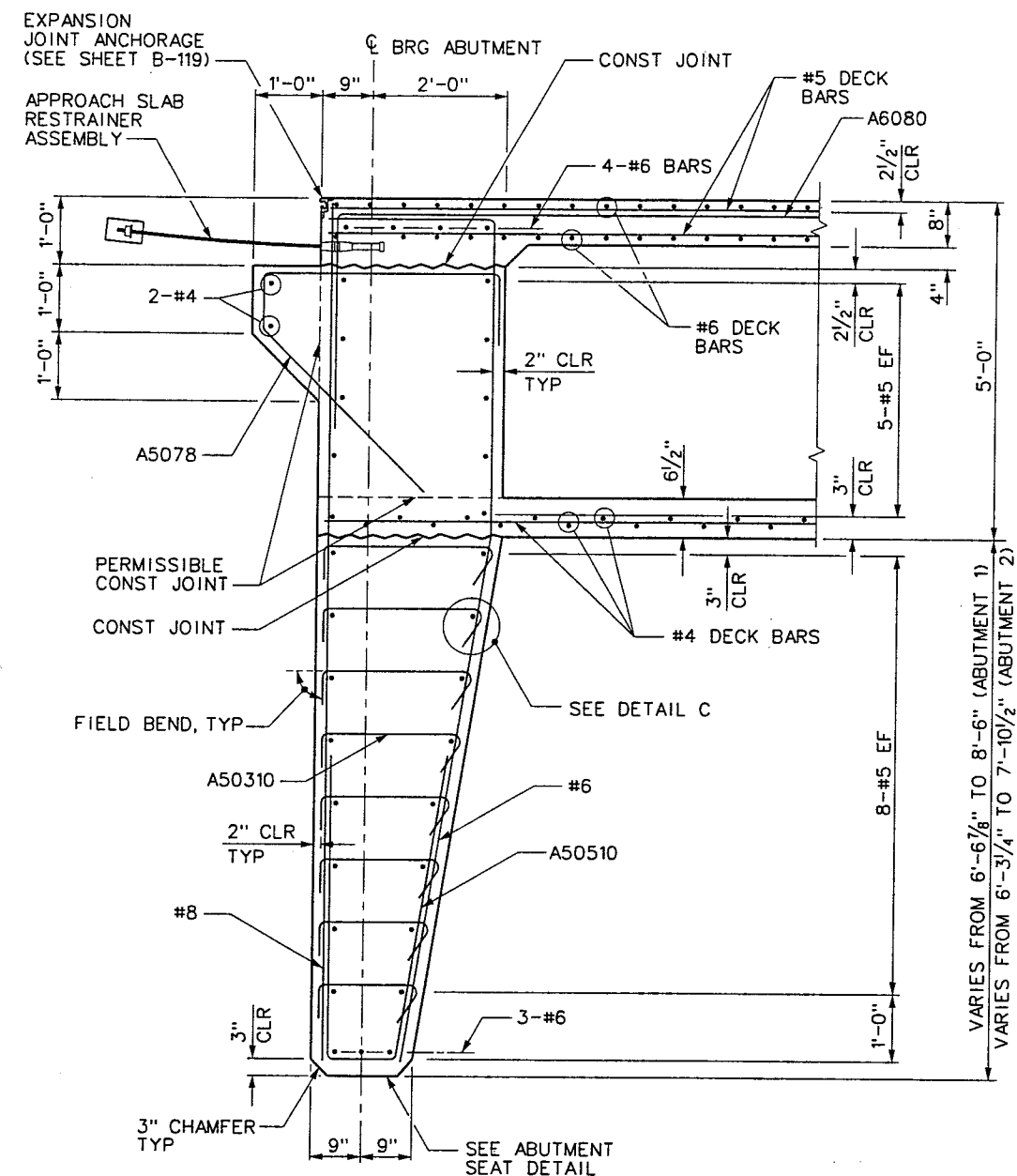
DETAIL C



ABUTMENT SEAT DETAIL



DETAIL B



SECTION A-A

1. FOR ABUTMENT PLANS AND ELEVATIONS, SEE SHEETS B-106 AND B-107.
2. BUNDLE VERTICAL ABUTMENT STEM BARS AT GIRDER WEB LOCATIONS AS REQUIRED TO CLEAR PRESTRESSING ANCHORS.
3. GIRDER REINFORCEMENT NOT SHOWN FOR CLARITY.

DRAWING NO.

B-108

OF

L-1695

[illegible]

**WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
ABUTMENT SECTIONS & DETAILS
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS**

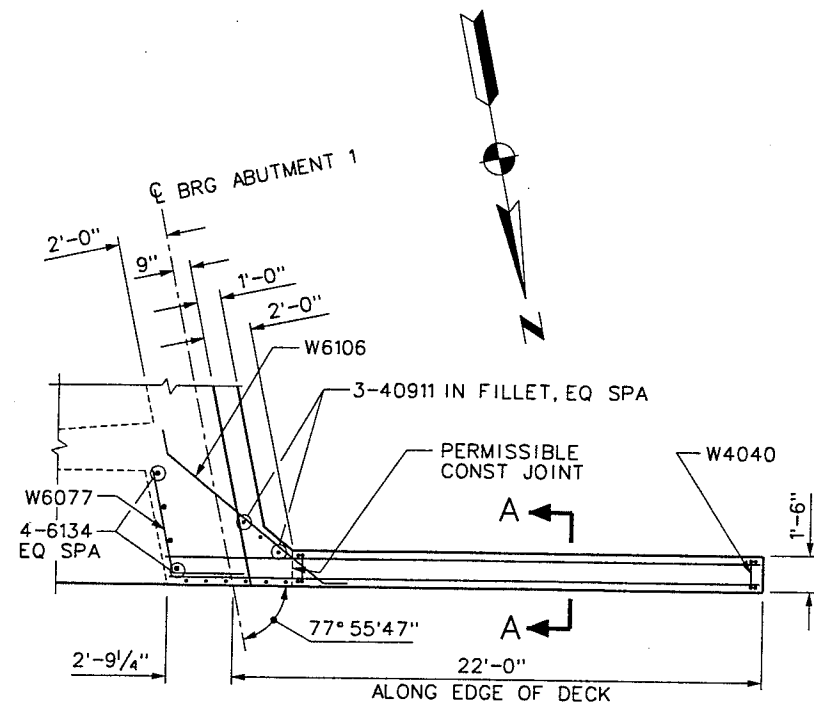
90%
PRELIMINARY
04-12-03

PROJECT NO: A02700 DRAWN BY: WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW

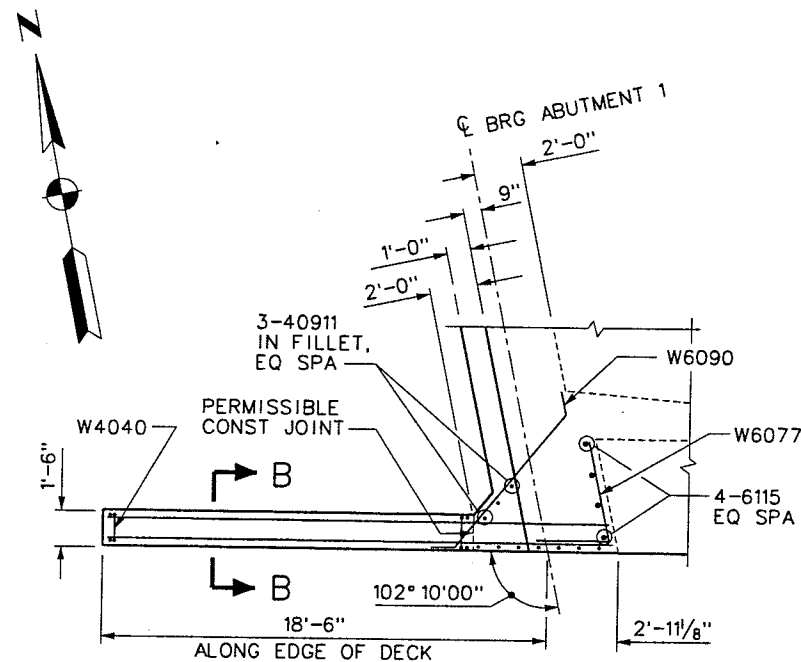
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

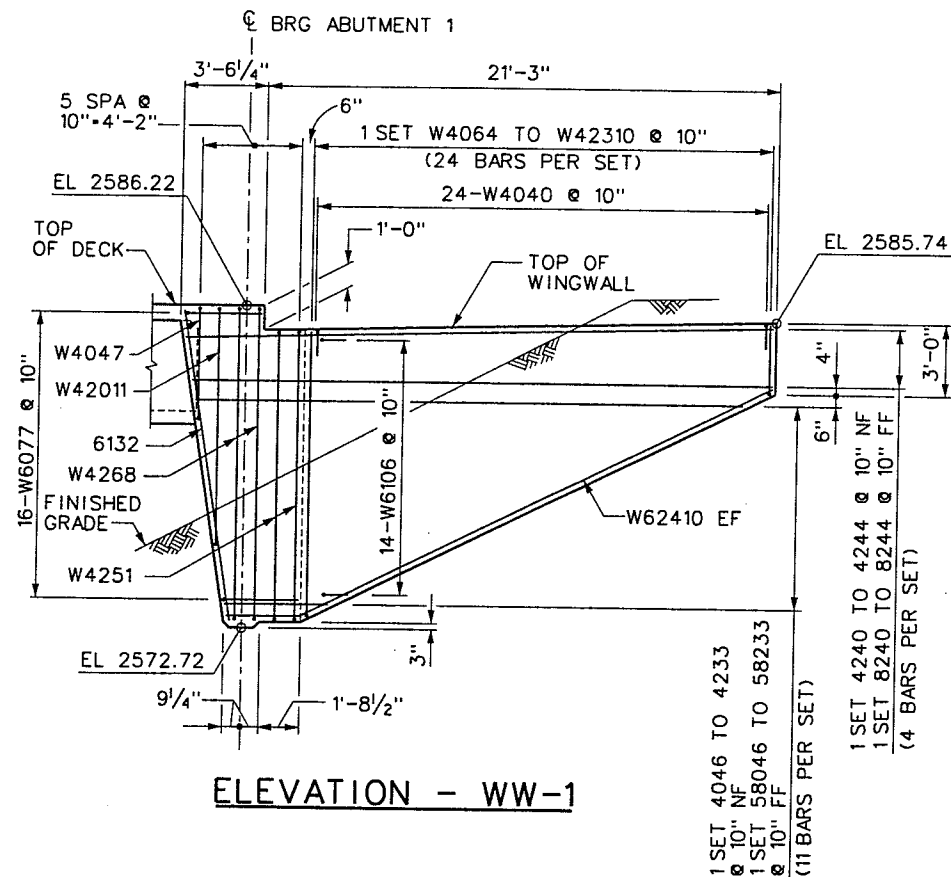
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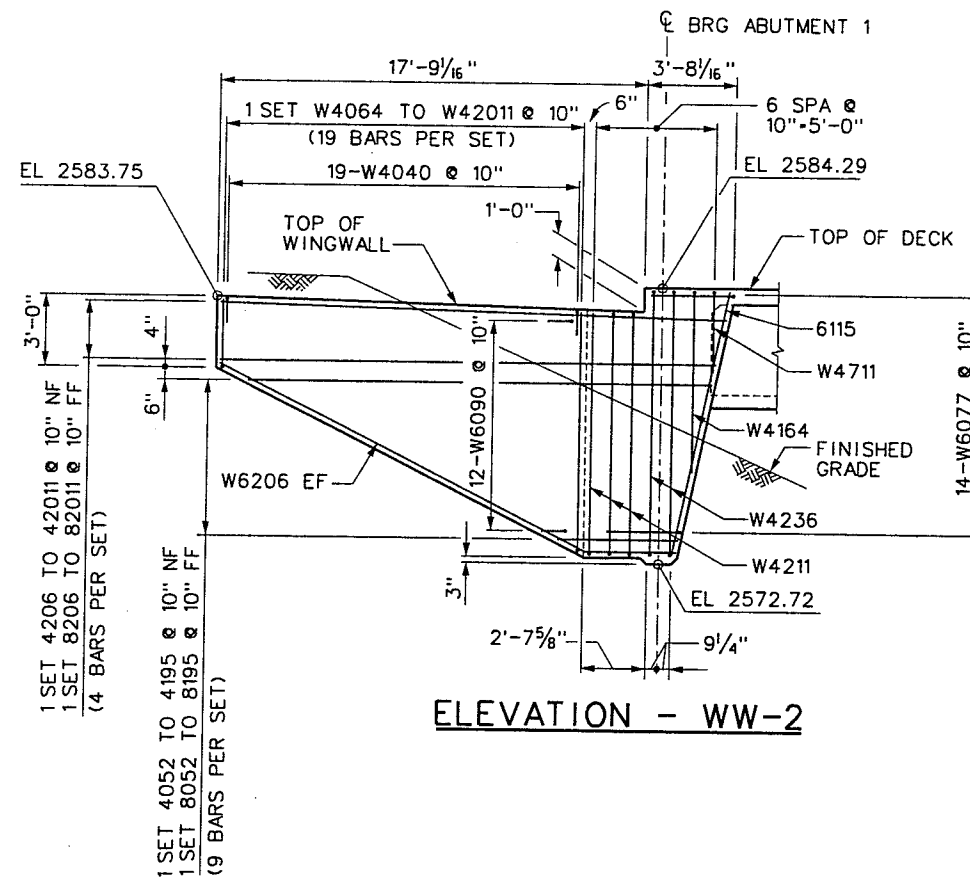
PLAN - WW-1



PLAN - WW-2



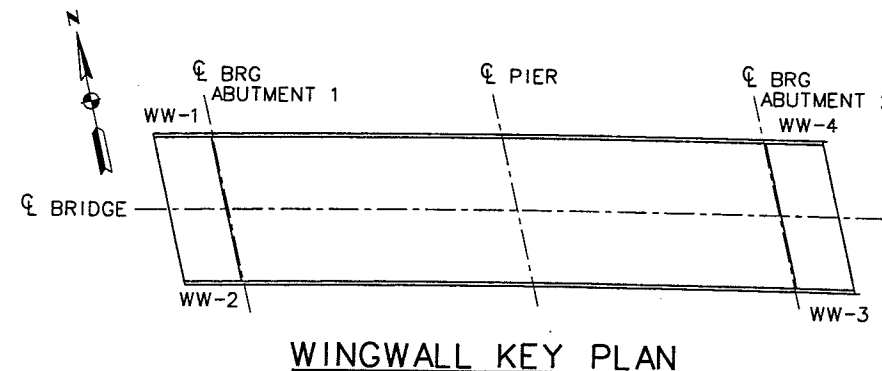
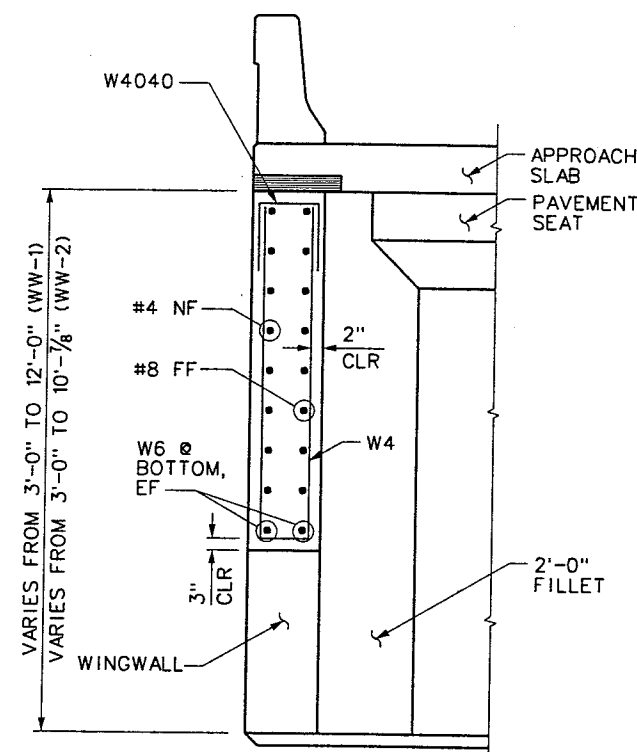
ELEVATION - WW-1



ELEVATION - WW-2

NOTES:

1. THE WINGWALL STEEL EXTENDING INTO THE ABUTMENT STEM SHALL BE PLACED PRIOR TO THE ABUTMENT STEM POUR. PARTS OF THE WINGWALLS WILL TYPICALLY BE PLACED IN AT LEAST TWO SEPARATE POURS WITH ALL REINFORCEMENT CONTINUOUS THROUGH MULTIPLE POURS. WINGWALL STEEL TO BE INSTALLED AS DETAILED. NO CUTTING OR SPLICING NOR DRILLING AND GROUTING WILL BE PERMITTED. DO NOT PLACE WINGWALLS UNTIL POST-TENSIONING IS COMPLETED.
2. BACKFILL INSIDE AND OUTSIDE OF WINGWALL SIMULTANEOUSLY.
3. SKEW ANGLES SHOWN ARE INSTANTANEOUS AT INTERSECTION OF REFERENCED LINES ONLY.



I-2484



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
ABUTMENT 1 WINGWALLS
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

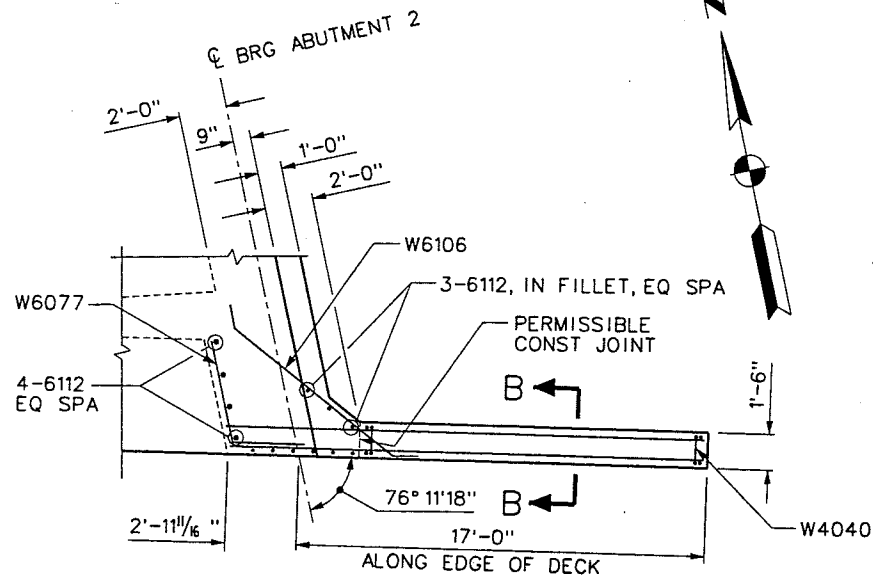
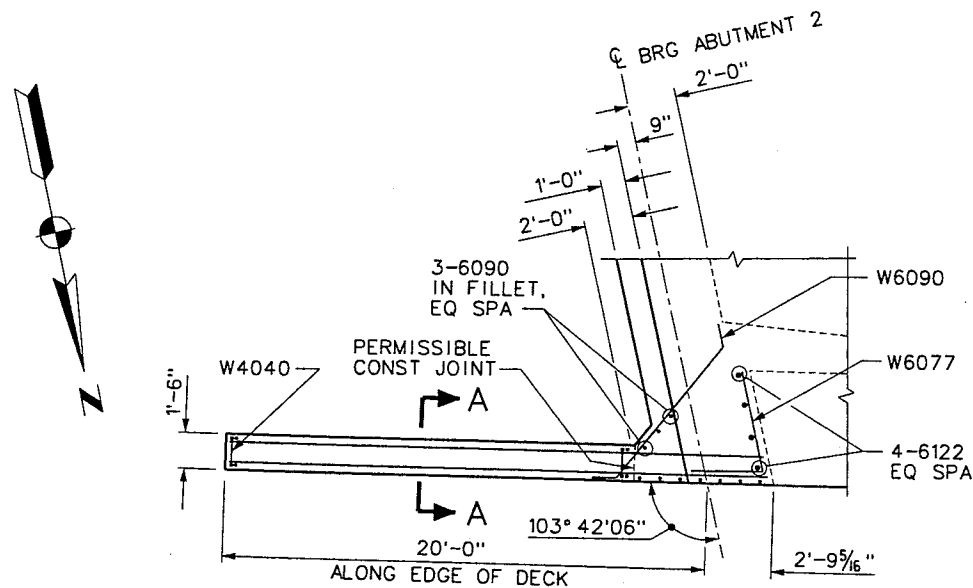
90%
PRELIMINARY
04-12-02

PROJECT NO: A02700 DRAWN BY: WHW
DESIGNED BY: MLT/LJS CHECKED BY: GC
APPROVED BY: WEW
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

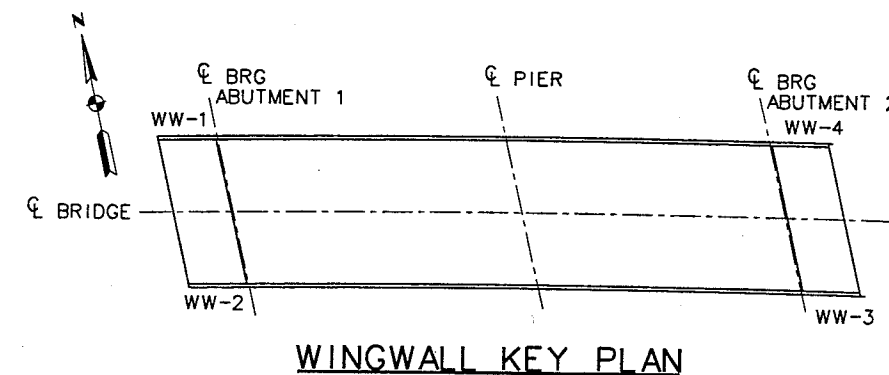
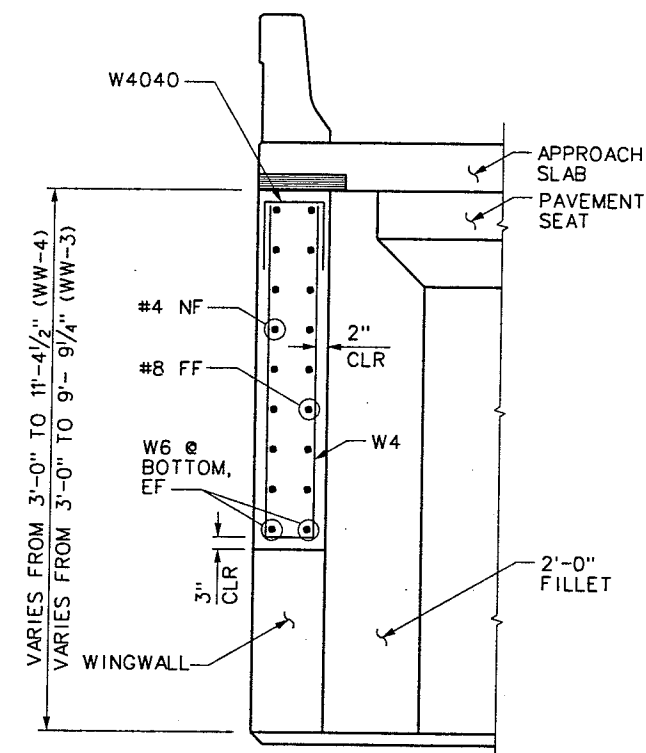
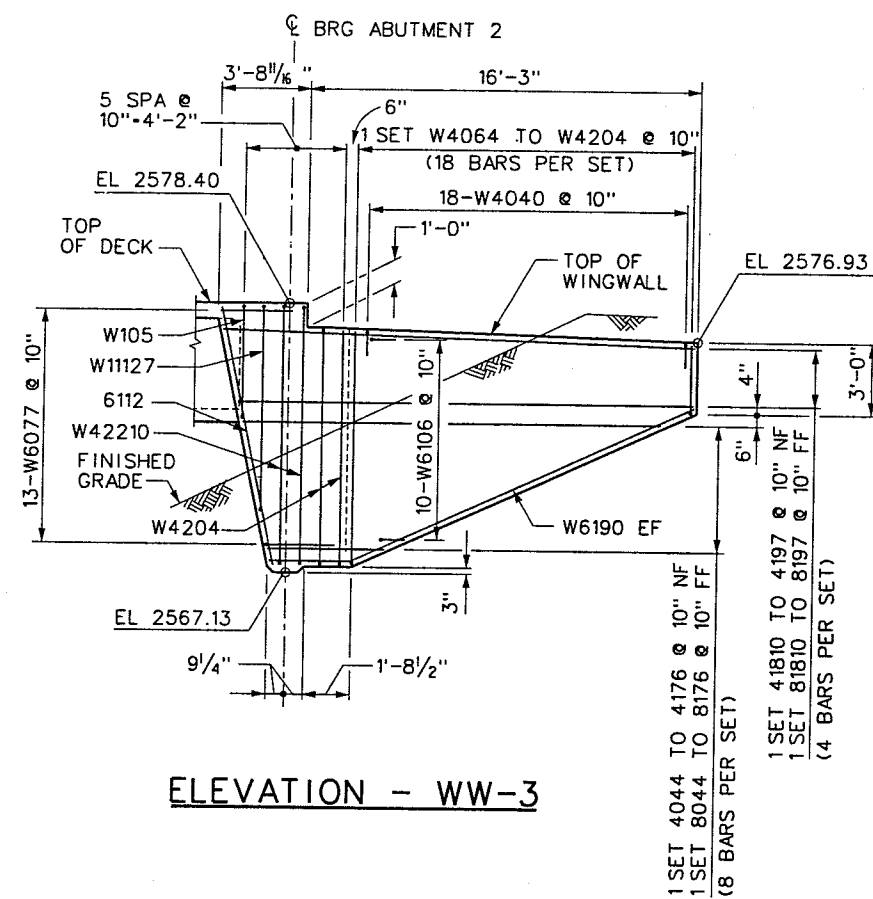
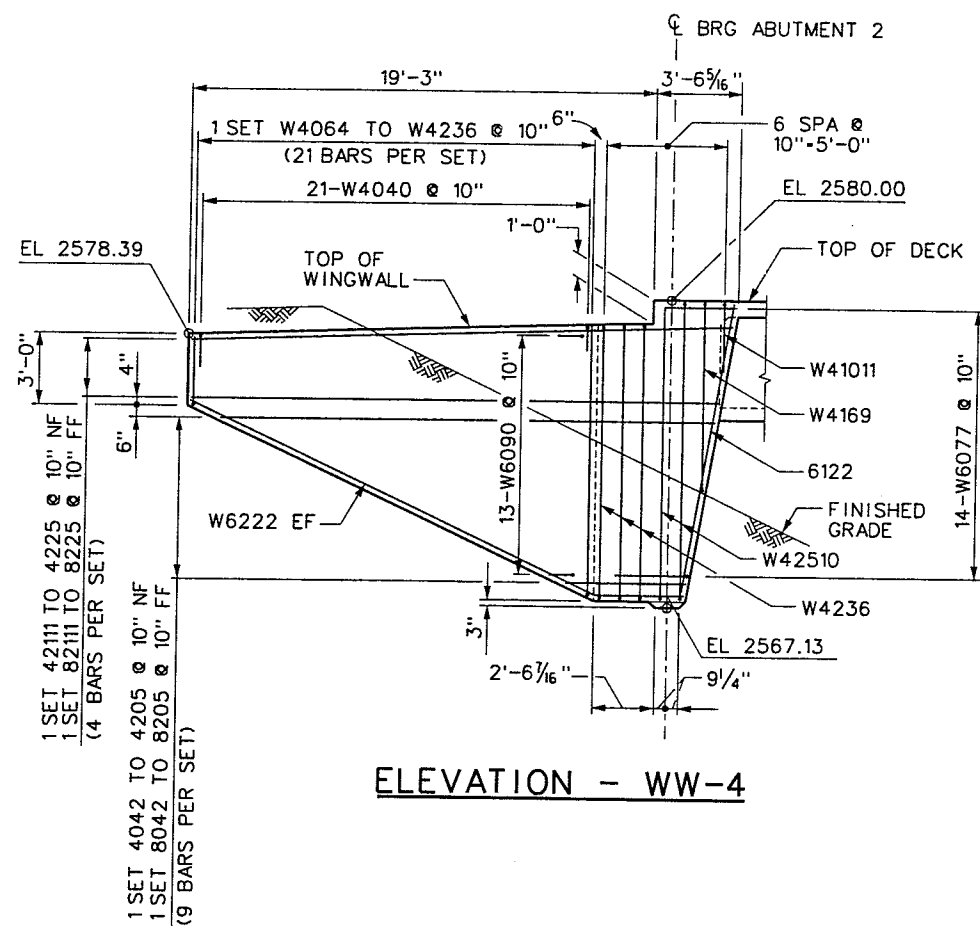
DRAWING NO.
B-109
OF
L-1695

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NOTES:

1. THE WINGWALL STEEL EXTENDING INTO THE ABUTMENT STEM SHALL BE PLACED PRIOR TO THE ABUTMENT STEM POUR. PARTS OF THE WINGWALLS WILL TYPICALLY BE PLACED IN AT LEAST TWO SEPARATE POURS WITH ALL REINFORCEMENT CONTINUOUS THROUGH MULTIPLE POURS. WINGWALL STEEL TO BE INSTALLED AS DETAILED. NO CUTTING OR SPLICING NOR DRILLING AND GROUTING WILL BE PERMITTED. DO NOT PLACE WINGWALLS UNTIL POST-TENSIONING IS COMPLETE.
2. BACKFILL INSIDE AND OUTSIDE OF WINGWALL SIMULTANEOUSLY.
3. SKEW ANGLES SHOWN ARE INSTANTANEOUS AT INTERSECTION OF REFERENCED LINES ONLY.



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
ABUTMENT 2 WINGWALLS
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

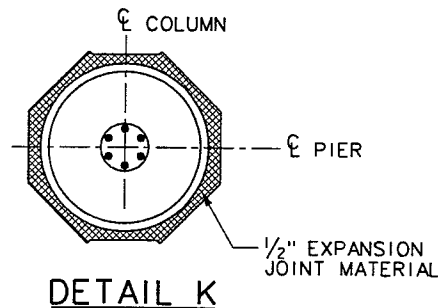
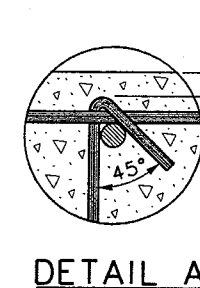
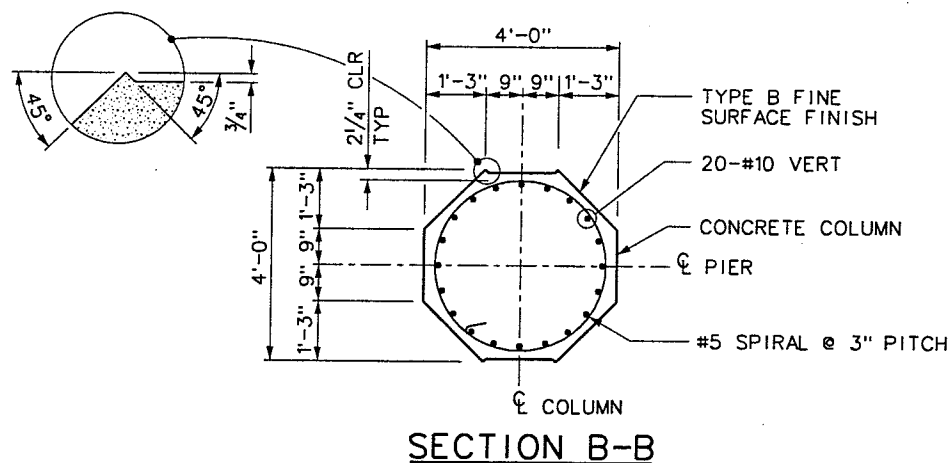
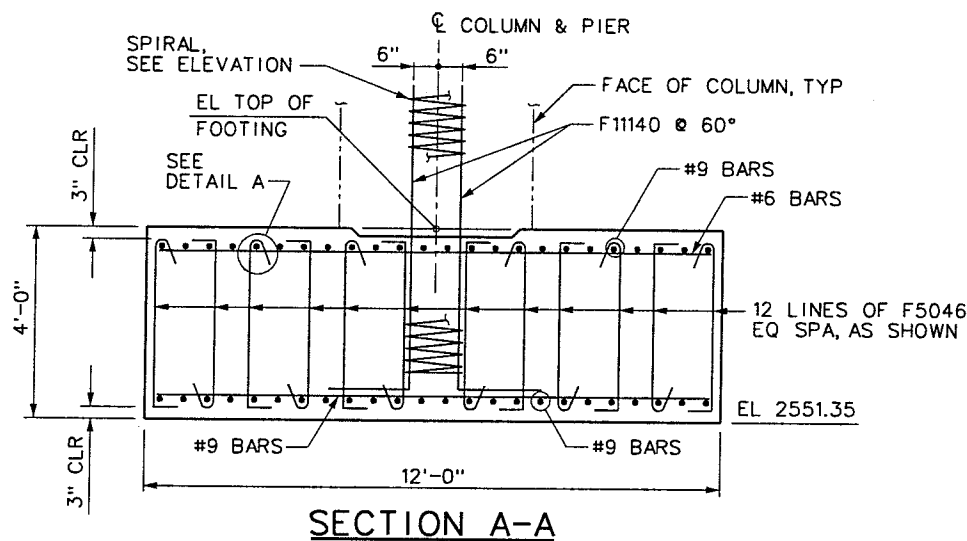
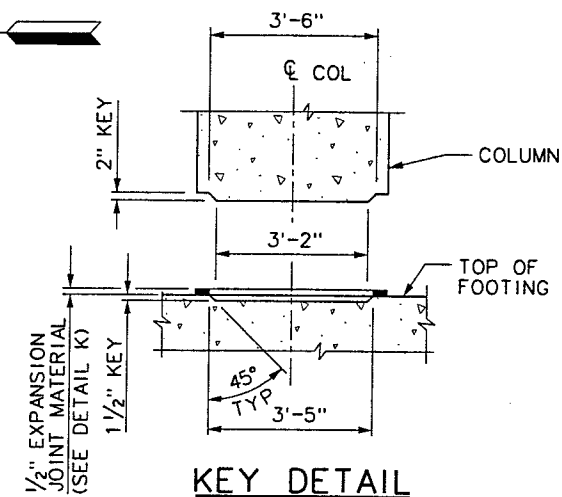
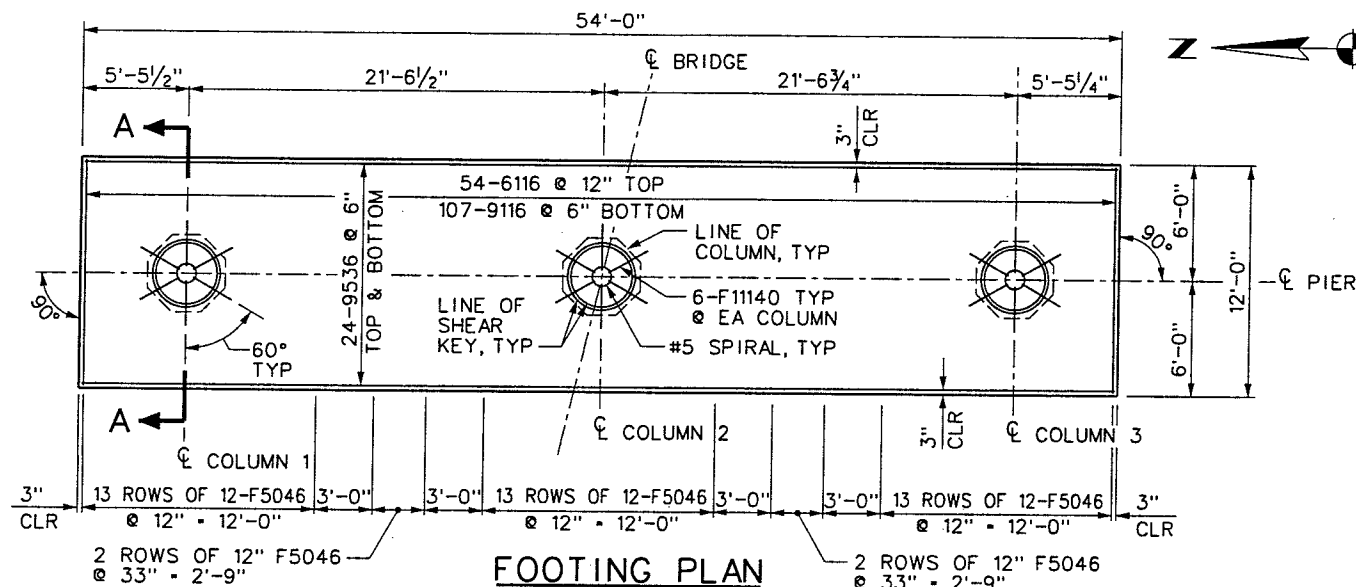
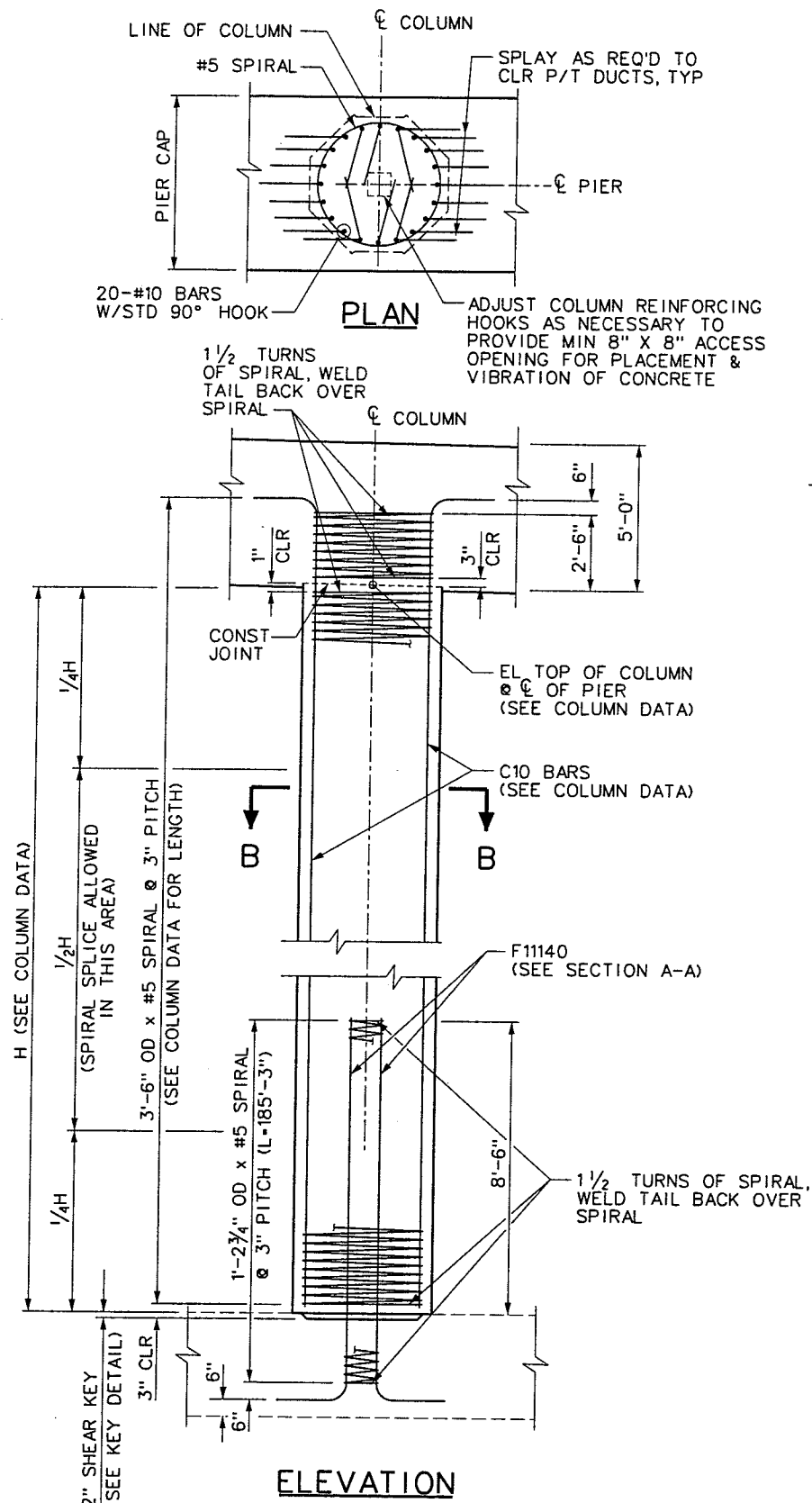
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DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

DRAWING NO.
B-110
OF
L-1695

I-2484

REFERENCE FILES: I:\Abam\Border.mst - 851-s\comp-Abam.mst - 851-l-AB112.dgn - 851-l-AB112.dgn - 851-l-AB104.dgn - 851-l-AB101.dgn
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COLUMN DATA				
COLUMN NUMBER	EL TOP OF COLUMN	COLUMN HEIGHT (H)	SPIRAL LENGTH*	VERTICAL BARS
1	2577.88	22.53'	1127'	C10272
2	2577.25	21.90'	1105'	C10266
3	2576.62	21.27'	1073'	C102511

*INCLUDES 1 1/2 EXTRA TURNS OF SPIRAL AT EACH END OF COLUMN AND AT EACH END OF PERMISSIBLE BREAK AT PIER CAP

NOTES:

- SPIRALS MAY BE DISCONTINUOUS AT FOOTING AND PIER CAP TO ALLOW FOR PLACING OF FOOTING AND PIER CAP REINFORCING.
- PROVIDE 1 1/2 EXTRA TURNS AT EACH END OF PERMISSIBLE BREAK IN SPIRAL AT PIER CAP AND ONE TURN MINIMUM FOR LAP SPLICES. ANCHOR EACH END OF SPIRAL AND SPLICE WITH A 135° HOOK AROUND A VERTICAL BAR. ADD A FULL LAP WELD AT PERMISSIBLE BREAK AT PIER CAP. WELD SPLICE SHALL DEVELOP AT LEAST 125% OF SPECIFIED YIELD STRENGTH OF REINFORCEMENT.

I-2484

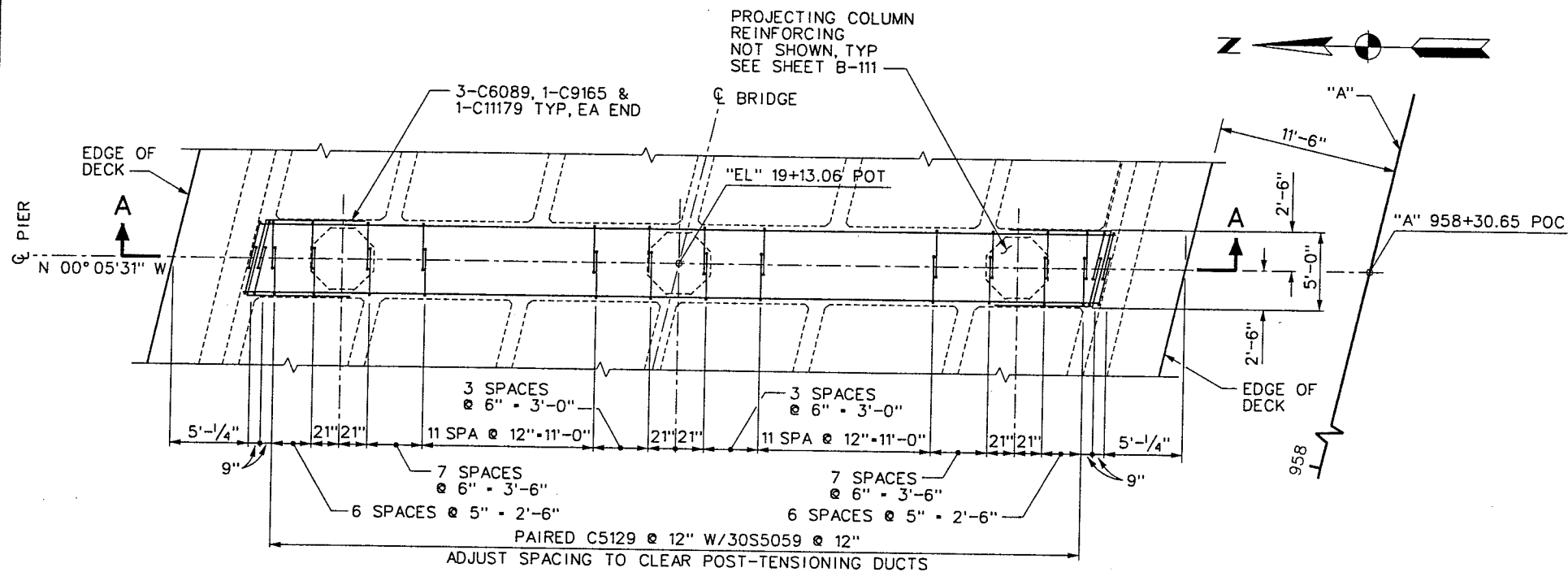


WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
PIER COLUMN & FOOTING
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

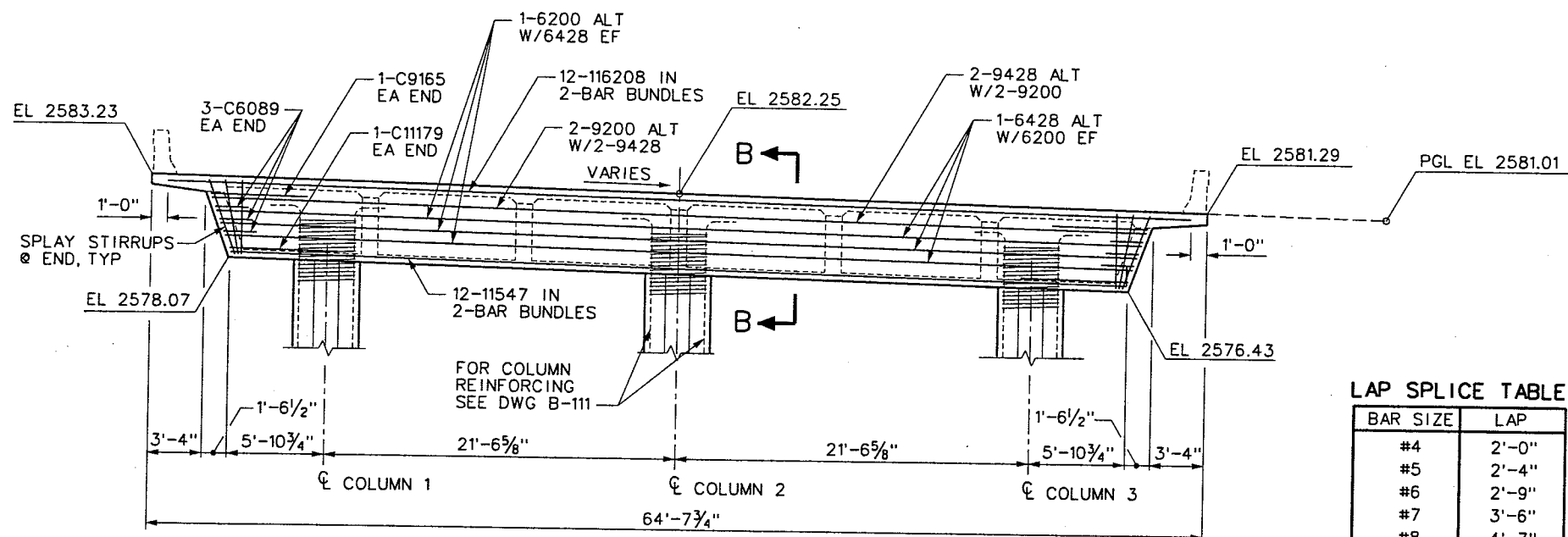
90%
PRELIMINARY
04-12-02

PROJECT NO: A02700	DRAWN BY: WHW	SCALE	DRAWING NO.
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APPROVED BY: WEW		VERT: AS SHOWN	OF
BERGER/ABAM		FIELD BOOK	
ENGINEERS INC.			L-1695
LAS VEGAS, NV			

REFERENCE FILES: I:\Abam\Border.mst - 851-1-AB113.dgn - 851-1-AB113.dgn - b14.dgn
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PLAN



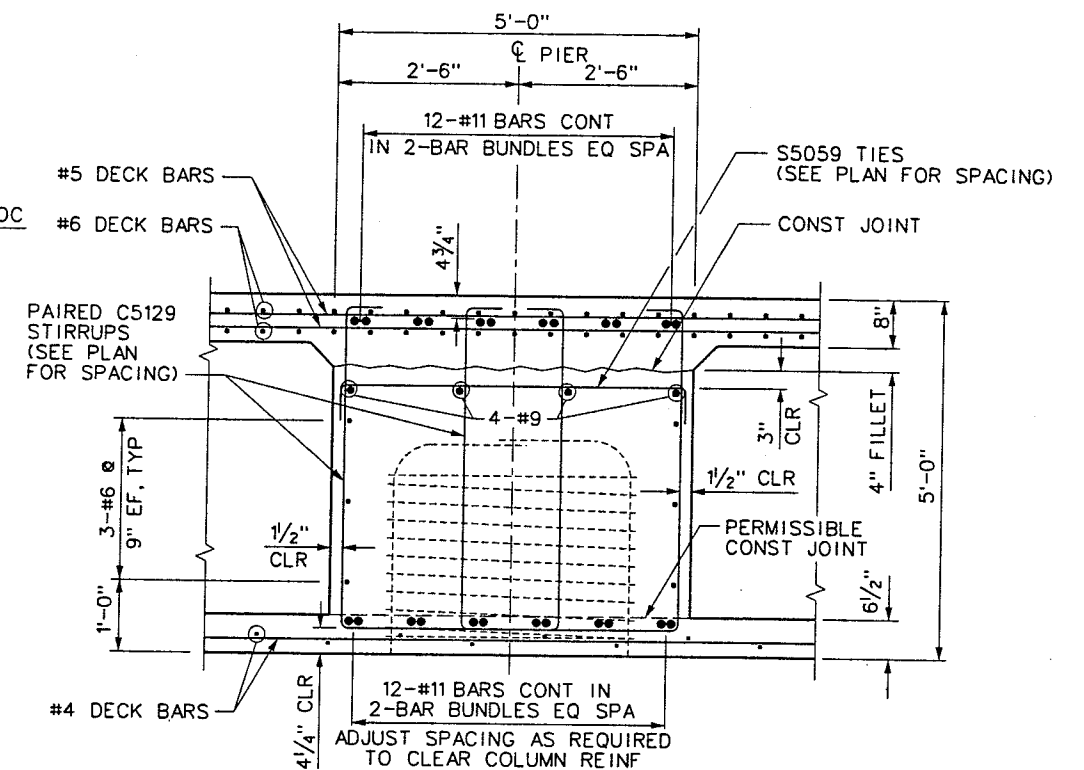
SECTION A-A

NOTE:
SLAB & WEB REINFORCING NOT SHOWN FOR CLARITY

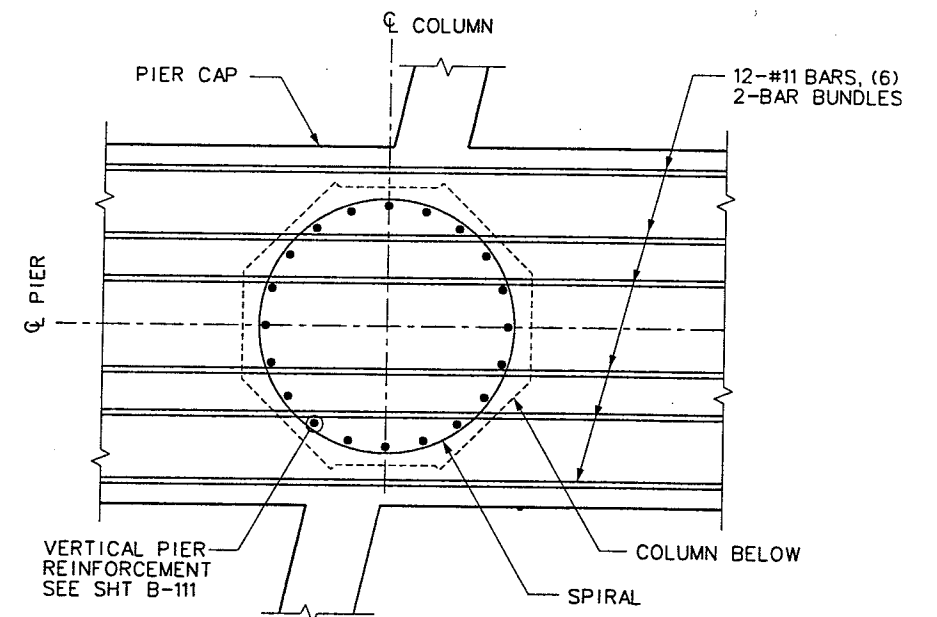
LAP SPLICE TABLE

BAR SIZE	LAP
#4	2'-0"
#5	2'-4"
#6	2'-9"
#7	3'-6"
#8	4'-7"
#9	5'-10"
#10	7'-4"
#11	9'-0"

NOTE:
STAGGER ADJACENT LAP SPLICES A MINIMUM OF 2'-0"



SECTION B-B



CAP THREADING DETAIL

I-2484



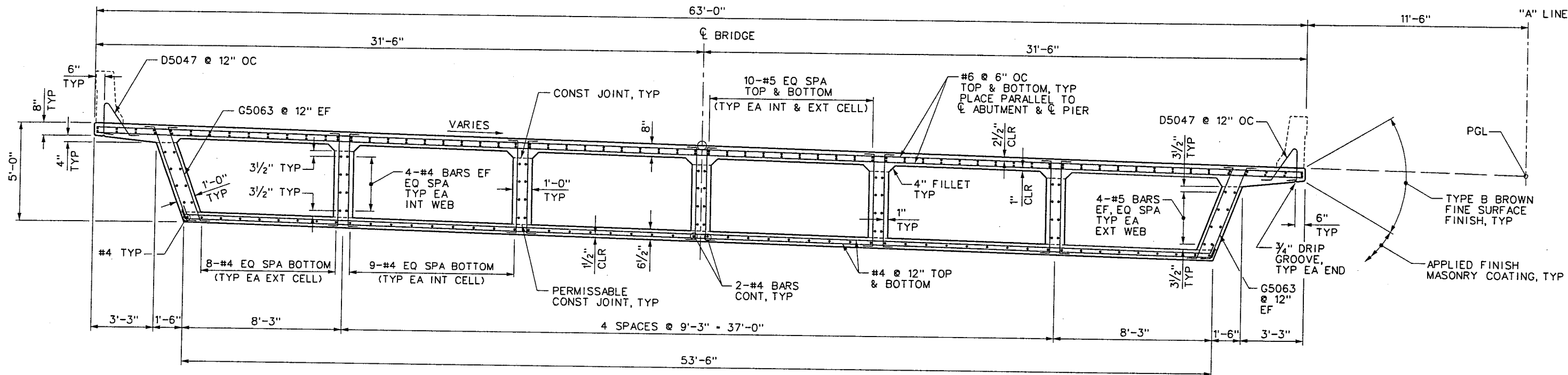
WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
PIER CAP
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

PROJECT NO: A02700 DRAWN BY: WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

DRAWING NO.
B-112
OF
L-1695

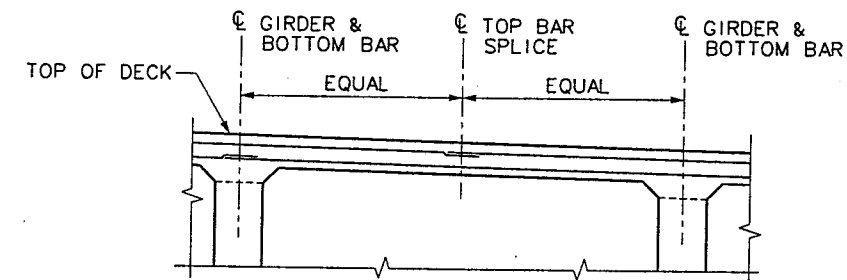


TYPICAL DECK SECTION

LAP SPLICE TABLE

BAR SIZE	LAP
#4	2'-0"
#5	2'-4"
#6	2'-9"
#7	3'-6"
#8	4'-7"
#9	5'-10"
#10	7'-4"

NOTE:
STAGGER ADJACENT LAP
SPLICES A MINIMUM OF 2'-0"



TOP DECK SPLICE LOCATION DETAIL



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
DECK SECTION
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

PROJECT NO: A02700 DRAWN BY: WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

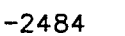
SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

DRAWING NO.
B-113
OF
L-1695

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REV. NO.	DATE	DESCRIPTION	APPROVED

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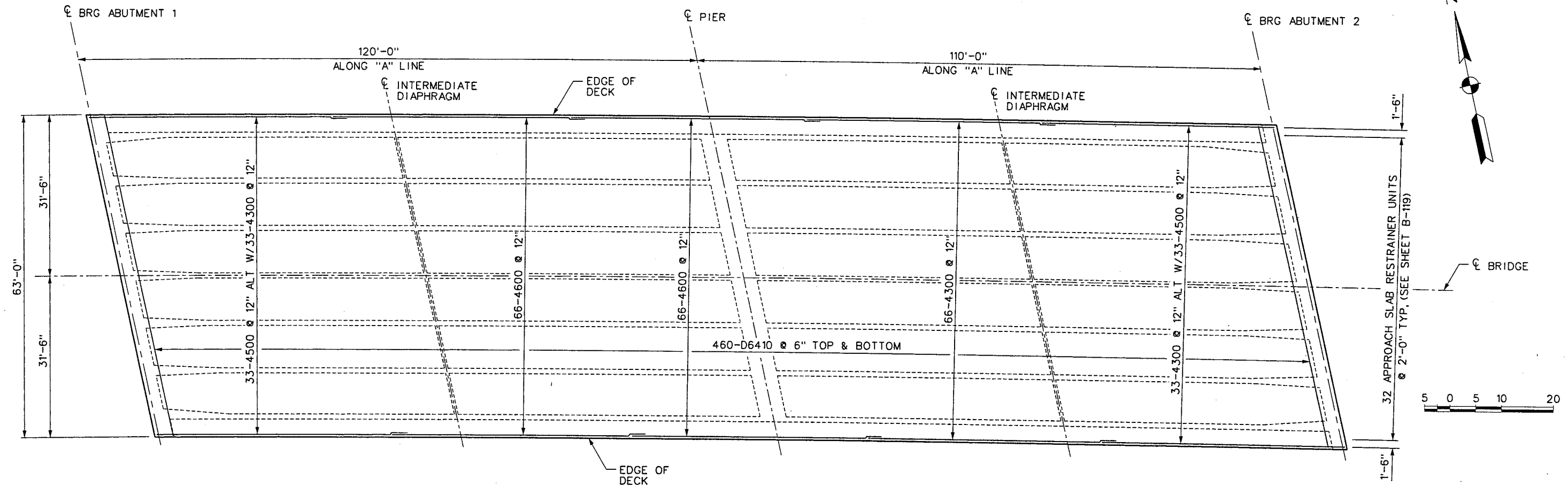


NOTE:
STAGGER ADJACENT LAP
SPICES A MINIMUM OF 2'-0"

NOTE:
STAGGER ADJACENT LAP
SPICES A MINIMUM OF 2'-0"

NOTE: DRIP GROOVE ALL AROUND
4" ϕ CELL VENT IN BOTTOM SLAB
(2 VENTS EA CELL BETWEEN GIRDERS).
ONE VENT TO BE LOCATED 1'-6" FROM
THE FACE OF ABUTMENT 1 END DIAPHRAGM.
THE OTHER VENT TO BE LOCATED 1'-6"
FROM FACE OF ABUTMENT 2 END DIAPHRAGM.

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TOP SLAB REINFORCEMENT PLAN

LAP SPLICE TABLE

BAR SIZE	LAP
#4	2'-0"
#5	2'-4"
#6	2'-9"
#7	3'-6"
#8	4'-7"
#9	5'-10"
#10	7'-4"

NOTE:
STAGGER ADJACENT LAP
SPLICES A MINIMUM OF 2'-0"

REV. NO.	DATE	DESCRIPTION	APPROVED



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
TOP SLAB REINFORCEMENT
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

PROJECT NO: A02700 DRAWN BY: WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: NONE
FIELD BOOK

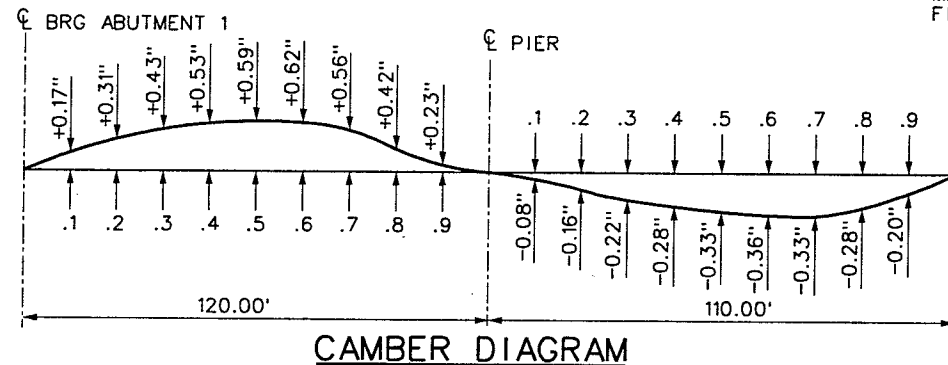
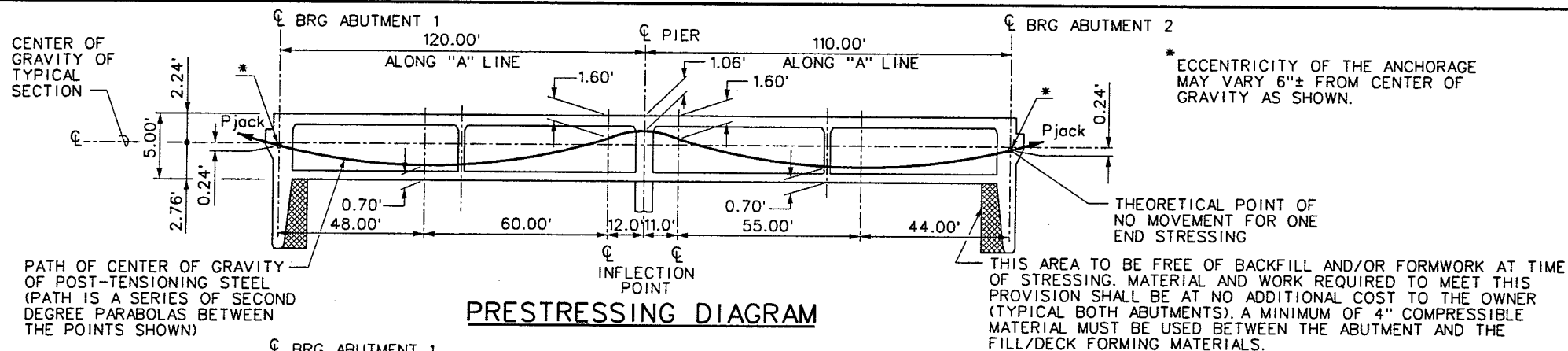
DRAWING NO.
B-116
OF
L-1695

I-2484

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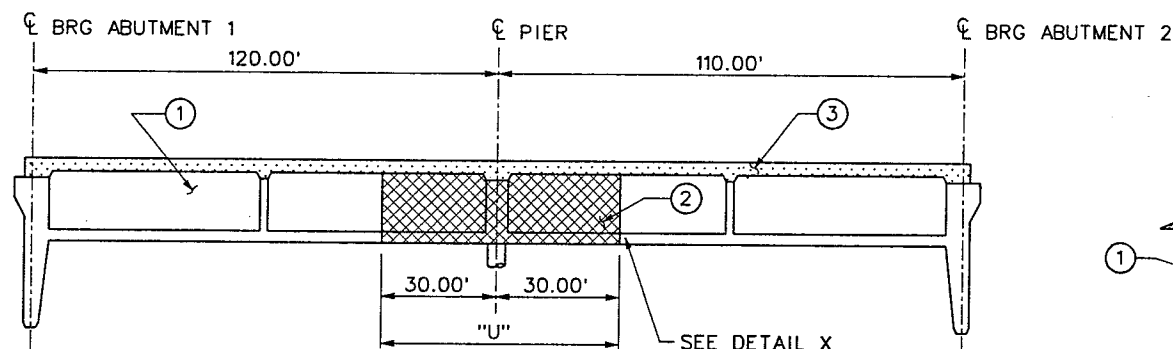
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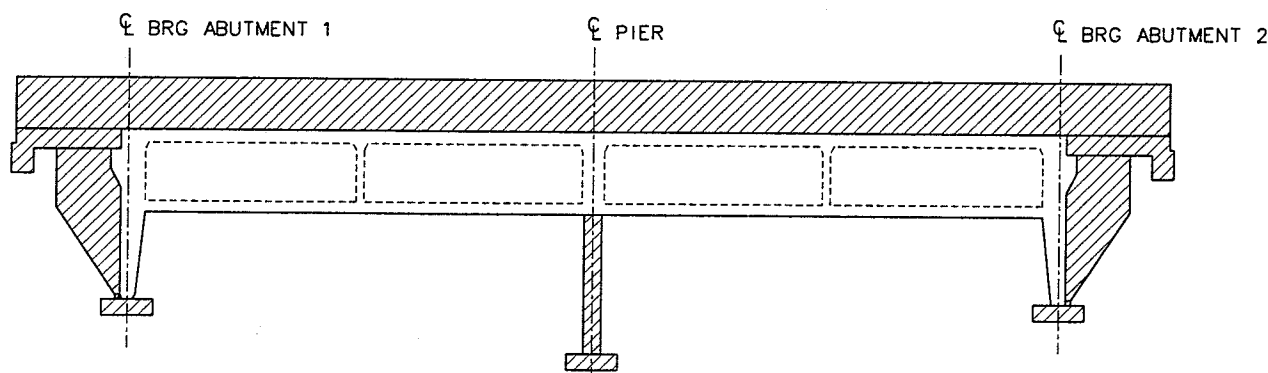
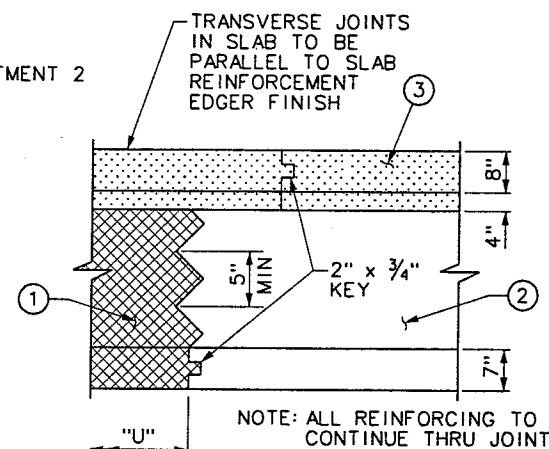


NOTES:

1. CAMBER DIAGRAMS SHOW DEAD LOAD PLUS POST-TENSIONED CAMBER INCLUDING LONG-TERM EFFECTS OF CREEP AND SHRINKAGE AND SHOULD BE MODIFIED BY THE AMOUNT OF TAKE UP ANTICIPATED IN THE FALSEWORK.
2. ELEVATIONS SHOWN ON THE SUPERSTRUCTURE ARE FINAL GRADES AND ARE TO BE ADJUSTED BY THE VALUES SHOWN ON THE CAMBER DIAGRAM.



NOTE:
SEE POURING SCHEDULE
NOTES FOR ①, ②, & ③.



- POST-TENSIONED CONCRETE CLASS A
f'c = 4000 PSI @ 28 DAYS MODIFIED (MAJOR) CONCRETE
- ▨ f'c = 4000 PSI @ 28 DAYS CLASS A MODIFIED (MAJOR) CONCRETE

PRESTRESSING NOTES:

1. POST-TENSIONING SHALL BE COMPLETED BY JACKING ALL TENDONS FROM ABUTMENT 1.
2. THE REQUIRED JACKING FORCE "Pjack" SHALL BE:
LOW RELAXATION STRAND
Pjack = 10,340 KIPS.
3. CONCRETE COMPRESSIVE STRENGTHS SHALL BE:
f'c = 4,000 PSI @ 28 DAYS
f'ci = 3,000 PSI @ TIME OF STRESSING
4. DESIGN IS BASED ON $\mu = 0.20/\text{RAD}$ AND $K = 0.0002/\text{FT}$, Pjack SPECIFIED AT THE JACKING ENDS INCLUDE FRICTION LOSSES AND PROVISIONS FOR LOSS OF STRESS IN THE PRESTRESSING STEEL DUE TO CREEP AND SHRINKAGE OF CONCRETE, ELASTIC SHORTENING, AND RELAXATION OF PRESTRESSING STEEL AND STRESSING SEQUENCE.
LOW RELAXATION STRAND LOSS = 25,000 PSI
5. DESIGN IS BASED ON 1/2" ϕ , 7 WIRE, LOW RELAXATION, PRESTRESSING STRAND. TENDONS SHALL BE JACKED TO 0.75 f's AND ANCHORED TO AN EQUIVALENT ANCHOR SET = 3/8".
6. CONTRACTOR SHALL SUBMIT ELONGATION AND JACKING CALCULATIONS FOR THE INTENDED POST-TENSIONING SYSTEM FOR APPROVAL.
7. METALLIC ENCLOSURES SHALL BE GALVANIZED RIGID DUCT. ENCLOSURES TO BE VENTED THROUGH THE DECK SLAB WITHIN 3" OF THE HIGH POINT OF THE CABLE PATH.
8. DURING STRESSING OPERATIONS, THE ELONGATION SHALL BE CONTINUOUSLY MEASURED AND COMPARED TO CHECK FOR DUCT BLOCKAGE AND EXCESSIVE FRICTION.
9. BAR REINFORCEMENT INTERFERING WITH THE PRESTRESSING TENDON ALIGNMENT SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER.
10. NO MORE THAN 1/2 OF THE PRESTRESSING FORCE IN ANY GIRDER MAY BE STRESSED BEFORE AN EQUAL FORCE IS STRESSED IN THE ADJACENT GIRDERS. THE EXTERIOR 1/4 OF THE STRUCTURE SHALL NOT BE STRESSED UNTIL AT LEAST 1/10 OF THE TOTAL PRESTRESSING FORCE HAS BEEN STRESSED IN THE MIDDLE 1/2 OF THE STRUCTURE. AT NO TIME WILL MORE THAN 1/6 OF THE TOTAL PRESTRESSING FORCE BE APPLIED ECCENTRICALLY ABOUT THE CENTERLINE OF THE STRUCTURE.
11. FOR CAST-IN-PLACE PRESTRESSED GIRDER DETAILS NOT SHOWN, SEE STANDARD PLAN SHEET B-28.1.1-(503) OF THE 2001 STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION.
12. THE CONTRACTOR SHALL DESIGN AND PROVIDE WORKING DRAWINGS AND DESIGN CALCULATIONS FOR THE LOCAL ANCHORAGE ZONE, INCLUDING BLOCKOUT DIMENSIONS AND ALL RECESS ANCHORAGE AND CONFINING REINFORCING STEEL TO PREVENT SPLITTING, BURSTING, OR BLOWOUT OF STRAND (TENDON) ANCHORS. DETAILS AND CALCULATIONS MUST BE APPROVED BY THE ENGINEER OF RECORD. ANY LOCAL ZONE CONFINING REINFORCEMENT IS AN ADDITION TO THE REINFORCEMENT SHOWN ON NDOT STANDARD PLANS B-28.1.1-(503). SHOP DRAWINGS AND CALCULATIONS SHALL BE SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEVADA.

POURING SCHEDULE NOTES:

- A. ① AND ② INDICATE SEQUENCE OF PLACING BOTTOM SLAB AND GIRDER WEB CONCRETE.
- B. BOTTOM SLAB CONCRETE MAY BE PLACED SEPARATELY.
- C. ① AND ② MAY BE POURED TOGETHER AT THE OPTION OF THE CONTRACTOR PROVIDED THE ENGINEER AGREES THAT FORM SETTLEMENT WILL BE SLIGHT.
- D. TOP SLAB CONCRETE ③ SHALL BE PLACED SEPARATELY WITH TRANSVERSE CONSTRUCTION JOINTS AS DESIRED, EXCEPT CONSTRUCTION JOINTS SHALL NOT BE USED IN AREA "U".
- E. DO NOT PLACE ABUTMENT FOOTING SHEAR BLOCKS AND WINGWALLS UNTIL STRESSING IS COMPLETE.
- F. DO NOT PLACE BARRIER RAILS UNTIL STRESSING IS COMPLETE AND THE FALSEWORK IS RELEASED.

I-2484

REV. NO.	DATE	DESCRIPTION	APPROVED



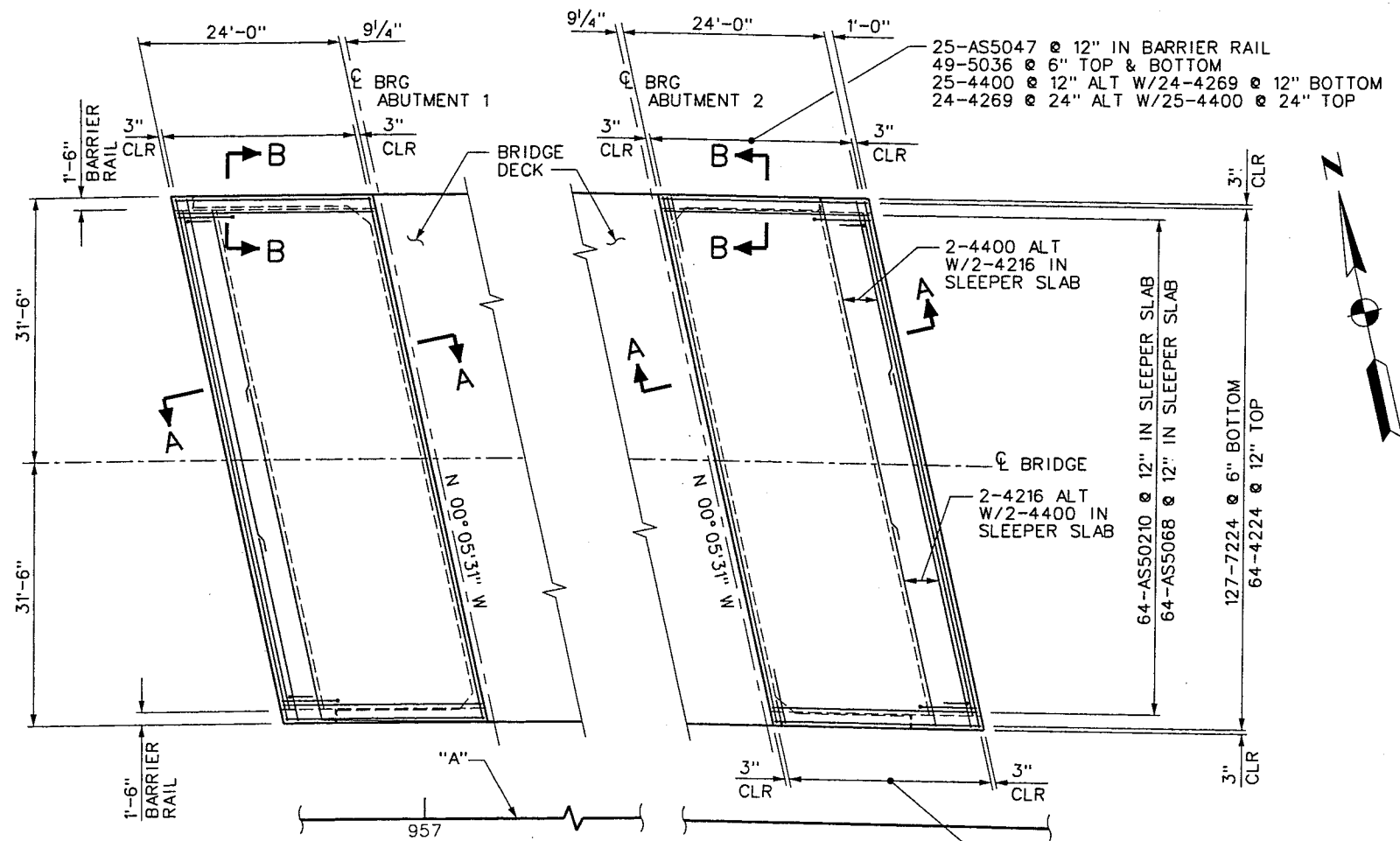
WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
PRESTRESSING, CAMBER & CONCRETE PLACEMENT
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

PROJECT NO: A02700	DRAWN BY: WHW	SCALE	DRAWING NO.
DESIGNED BY: MLT/LJS	CHECKED BY: GG	HORIZ: NONE	B-117
APPROVED BY: WEW		VERT: NONE	OF
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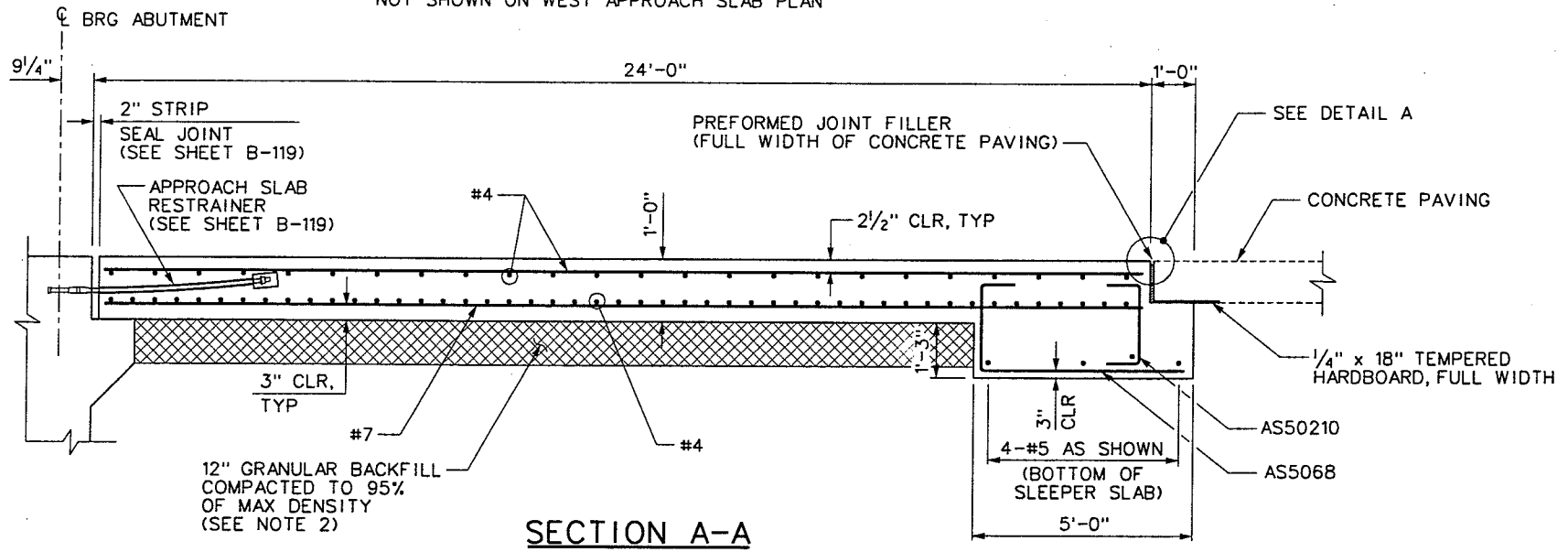
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

to El Capitan\Intern\bridge\851-1-AB119.dgn - 4/5/2002 - 9:06:37 WHW
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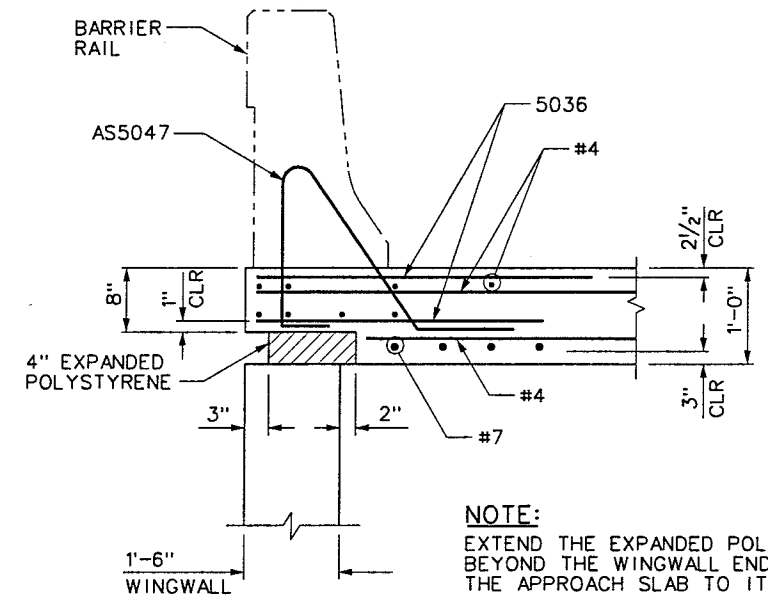


APPROACH SLAB PLAN

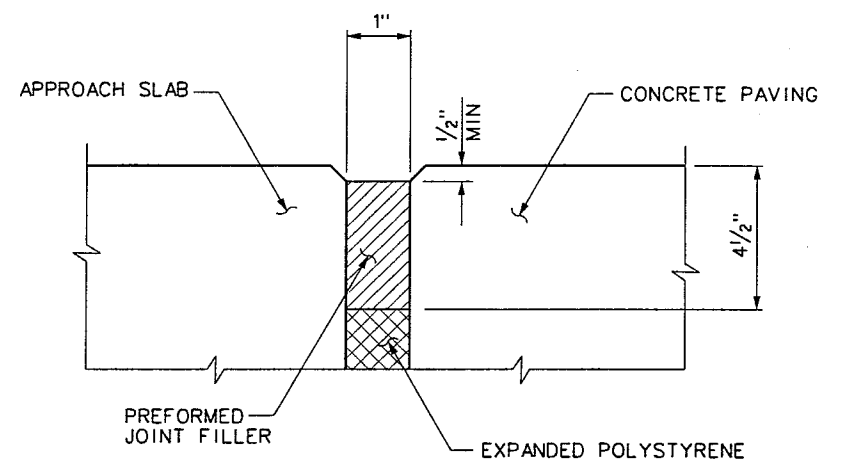
NOTE: REFER TO EAST APPROACH SLAB PLAN FOR REINFORCEMENT, CALLOUTS & DIMENSIONS NOT SHOWN ON WEST APPROACH SLAB PLAN



SECTION A-A



SECTION B-B



DETAIL A

LAP SPLICE TABLE

BAR SIZE	LAP
#4	2'-0"
#5	2'-4"
#6	2'-9"
#7	3'-6"
#8	4'-7"
#9	5'-10"
#10	7'-4"

NOTE: STAGGER ADJACENT LAP SPLICES A MINIMUM OF 2'-0"

NOTES:

- SEE NDOT STANDARD PLAN SHEET B-29.1.1 FOR GENERAL NOTES AND TYPICAL DETAILS.
- MATERIAL UNDER APPROACH SLAB SHALL BE COMPACTED AS STRUCTURAL BACKFILL IN ACCORDANCE WITH SECTION 203.03.17 OF THE STANDARD SPECIFICATIONS AND/OR THE SPECIAL PROVISIONS.

I-2484

REV. NO.	DATE	DESCRIPTION	APPROVED



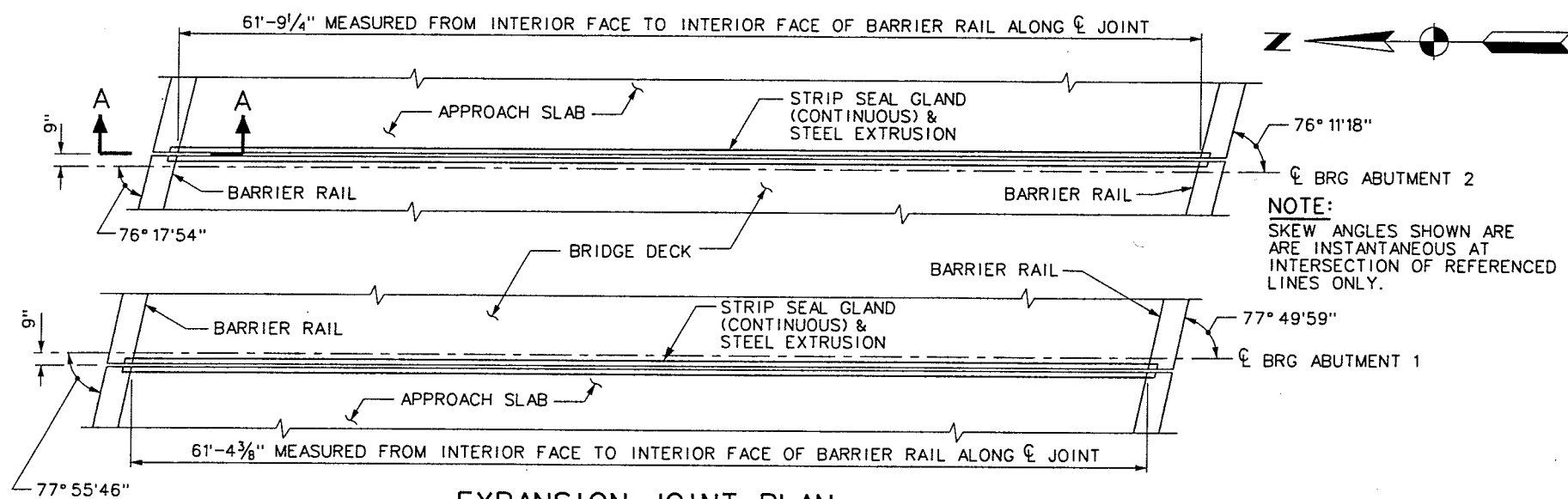
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EL CAPITAN WAY INTERCHANGE
APPROACH SLAB
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
04-12-02

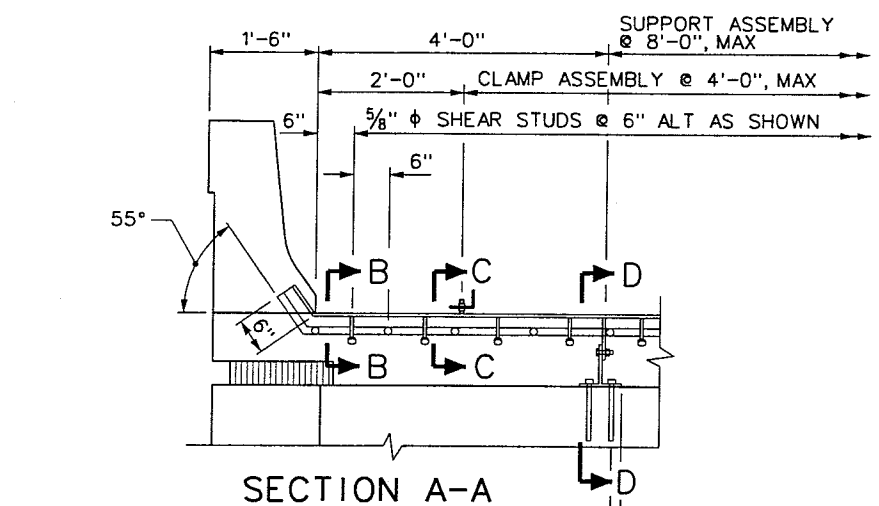
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ENGINEERS INC.
LAS VEGAS, NV

SCALE
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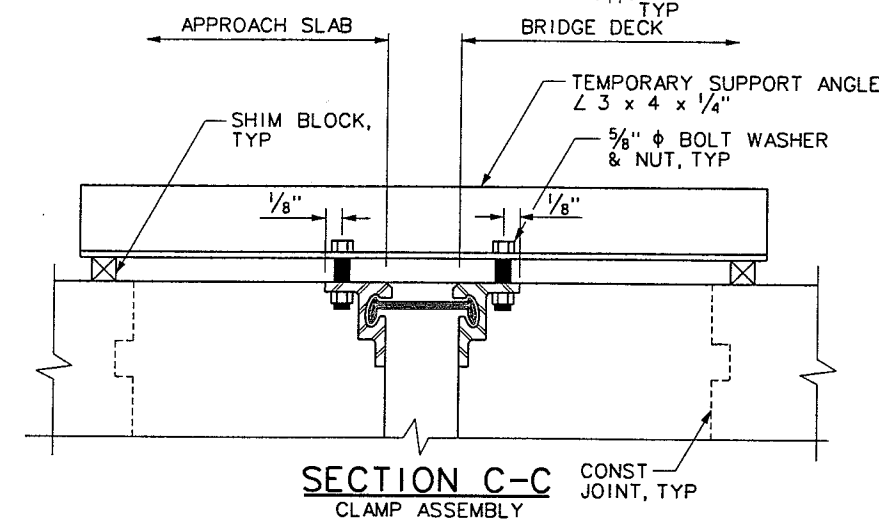
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B-118
OF
L-1695



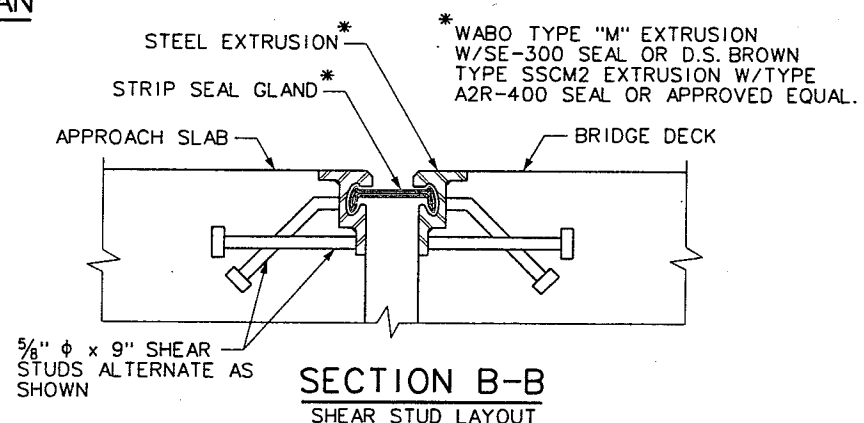
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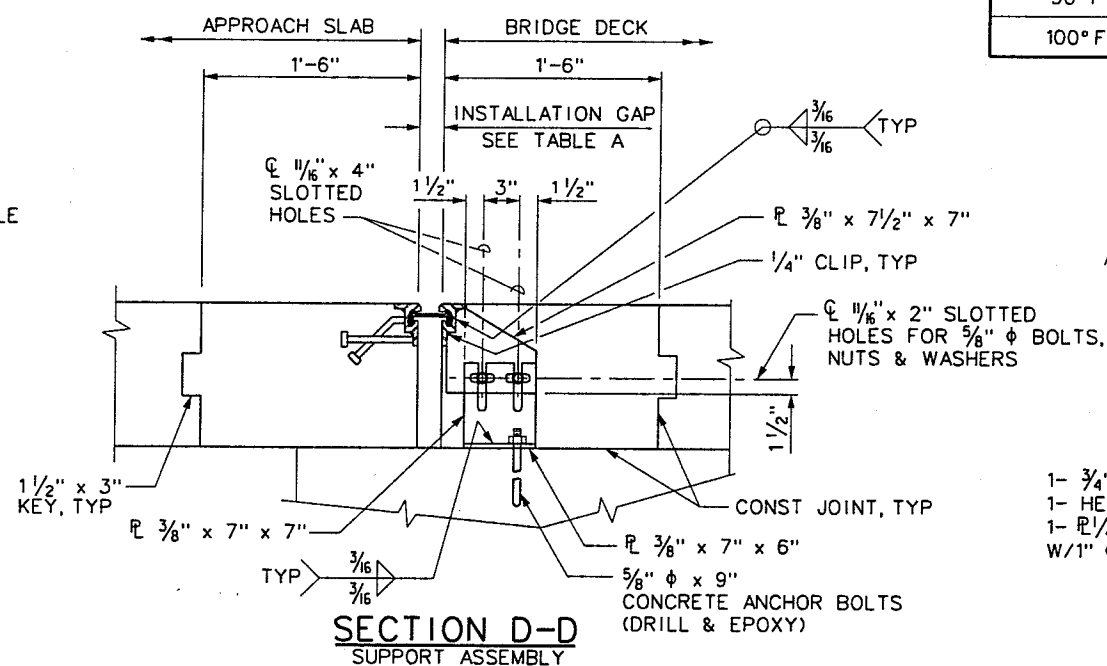
SECTION A-A



SECTION C-C
CLAMP ASSEMBLY



SECTION B-B
SHEAR STUD LAYOUT

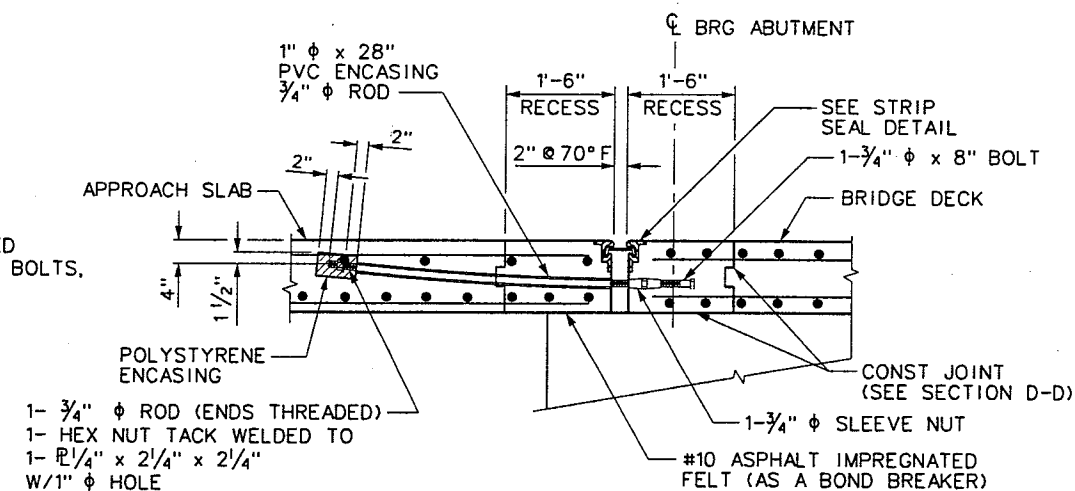


SECTION D-D
SUPPORT ASSEMBLY

- ### NOTES:
1. ALL STRUCTURAL STEEL TO BE ASTM A36 (GALVANIZED) OR ASTM A588 STEEL.
 2. ALL BOLTS TO BE ASTM A-307.
 3. INSTALL THE STRIP SEAL ASSEMBLY AFTER THE DECK SLAB & APPROACH SLAB HAVE BEEN POURED AND PROFILE GRINDING HAS BEEN COMPLETED. TIE STUDS TO AVAILABLE REINFORCING IN THE RECESSED AREA TO ENSURE PROPER JOINT PLACEMENT. MAKE FINAL ADJUSTMENTS OF THE JOINT WIDTH & ELEVATION BEFORE THE RECESSED PORTION OF THE DECK SLAB & APPROACH SLAB ARE POURED.
 4. AFTER THE CONCRETE HAS CURED, THE TEMPORARY CLAMPS AND THREADED BOLTS SHALL BE REMOVED AND THE HOLES FILLED WITH GROUT.
 5. THE STRIP SEAL MANUFACTURER'S INSTALLATION INSTRUCTIONS MUST BE FOLLOWED.
 6. FULL PENETRATION BUTT WELD ON ALL STUDS.
 7. THE JOINT ASSEMBLY MAY BE MANUFACTURED IN 20 FOOT MINIMUM LENGTHS AND FIELD WELDED USING FULL PENETRATION BUTT WELDS.
 8. STRIP SEAL EXTRUSIONS SHALL BE ASTM A36 (GALVANIZED) OR ASTM A588 STEEL. EXTRUSIONS W/STUDS AND ALL OTHER HARDWARE TO REMAIN SHALL BE GALVANIZED AFTER FABRICATION. ALL STEEL COMPONENTS OF THE APPROACH SLAB RESTRAINER ASSEMBLY SHALL BE GALVANIZED. ANY GALVANIZING DAMAGED DURING INSTALLATION SHALL BE METALIZED IN ACCORDANCE WITH SECTION 715 OF THE STANDARD SPECIFICATIONS.
 9. THE STRIP SEAL GLAND SHALL BE INSTALLED AS A SINGLE, CONTINUOUS UNIT. NO FIELD SPLICING SHALL BE PERMITTED.
 10. ALL HARDWARE AND STRUCTURAL STEEL TO BE INCLUDED IN THE COST OF STRIP SEAL EXPANSION JOINT.

TABLE A

TEMPERATURE	INSTALLATION GAP
40° F	2 $\frac{3}{16}$ "
50° F	2 $\frac{1}{8}$ "
60° F	2 $\frac{1}{16}$ "
70° F	2" "
80° F	1 $\frac{5}{16}$ "
90° F	1 $\frac{7}{8}$ "
100° F	1 $\frac{3}{4}$ "



APPROACH SLAB RESTRAINER DETAIL

1-2484



**WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
EL CAPITAN WAY INTERCHANGE
STRIP SEAL EXPANSION JOINT
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS**

90%
PRELIMINARY
04-12-02

PROJECT NO: A02700 DRAWN BY: WHW
DESIGNED BY: MLT/LJS CHECKED BY: GG
APPROVED BY: WEW

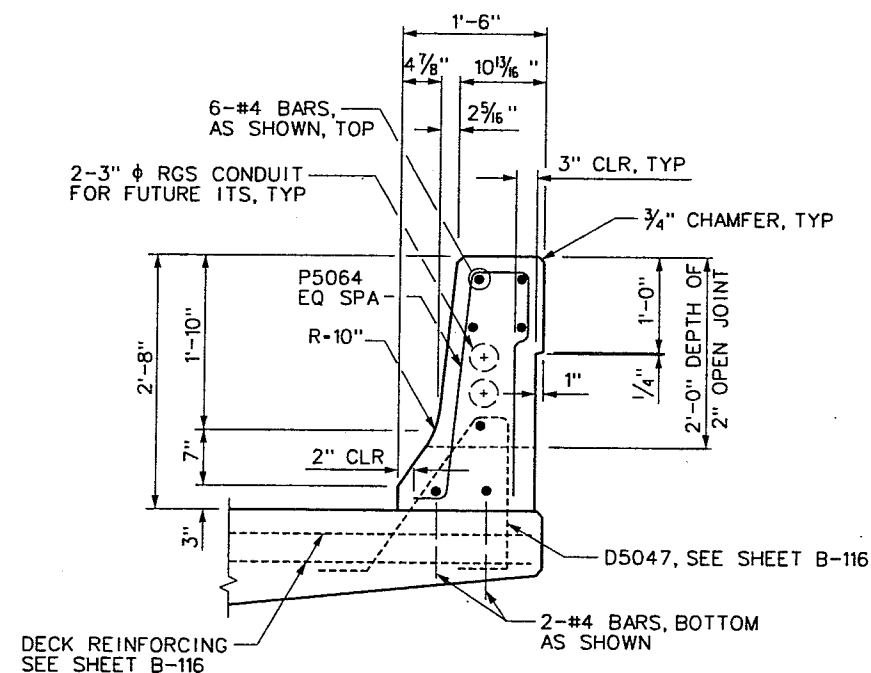
BERGER/ABAM
ENGINEERS INC.
LAS VEGAS, NV

SCALE
HORIZ: AS SHOWN
VERT: AS SHOWN
FIELD BOOK

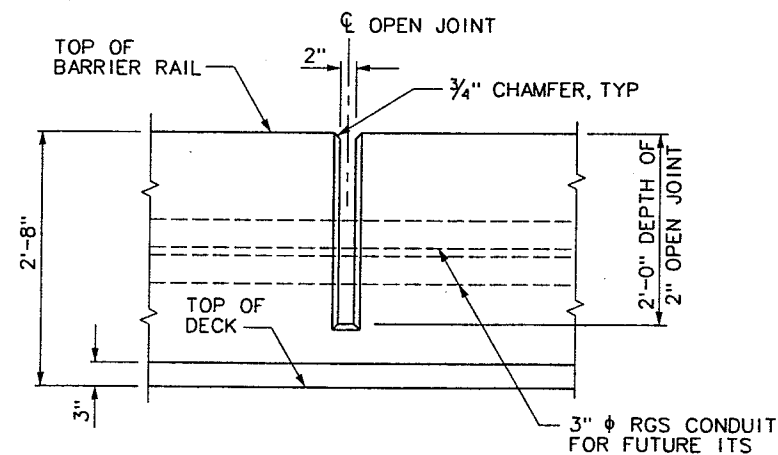
DRAWING NO.
B-119
OF
1-1695



1. BARRIER RAIL THICKNESS EXAGGERATED FOR CLARITY.
2. REFER TO SOUTH BARRIER FOR REINFORCING & DIMENSIONS NOT SHOWN ON NORTH BARRIER.

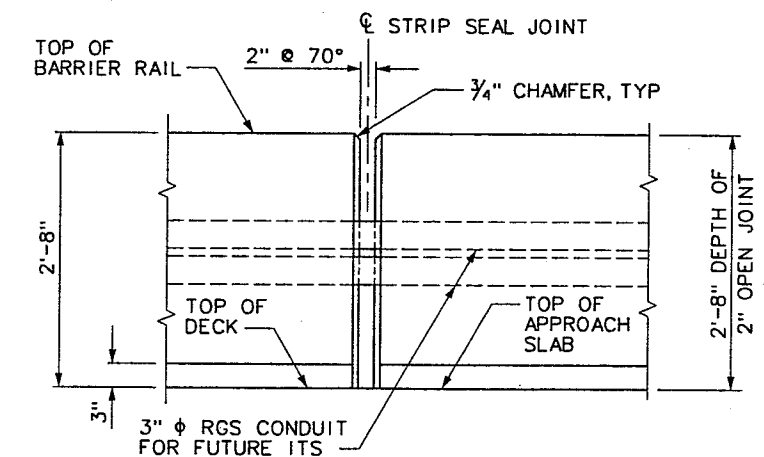


SECTION A-A
SIMILAR AT APPROACH SLAB
(SEE SHEET B-118)



2" OPEN JOINT DETAIL

NOTE:
OPEN JOINT IS PERPENDICULAR TO BARRIER



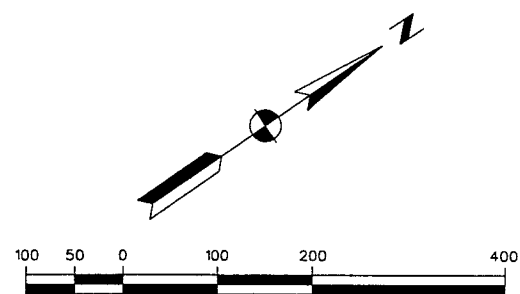
2" STRIP SEAL JOINT DETAIL

NOTES:

1. STRIP SEAL JOINT IS PARALLEL TO ABUTMENT CENTERLINE.
2. SEE SHEET B-119 FOR DETAILS OF STRIP SEAL ASSEMBLY IN BARRIER RAIL.



REFERENCE FILES:



AREA OF GRAVEL MULCH



GRAVEL MULCH KEY DETAIL



GRAVEL MULCH DETAIL

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Before You
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[illegible]

WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
GRAVEL MULCH PLAN
"A" 825+00.00 TO "A" 855+00.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

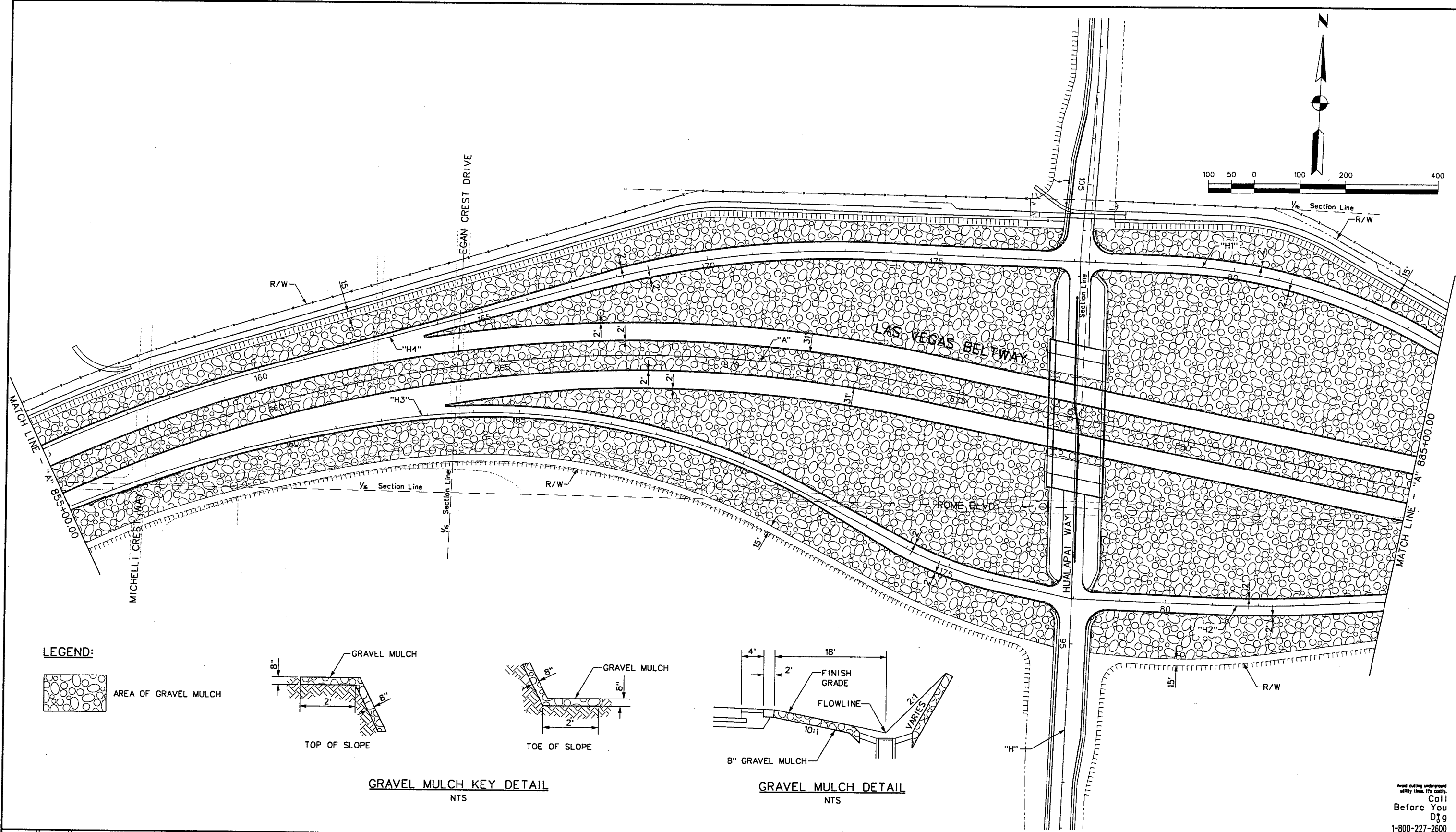
90%
PRELIMINARY
4-12-02

PROJECT NO: 851 DRAWN BY: GFV
DESIGNED BY: MJP CHECKED BY: DPW
APPROVED BY: TDL

 **THE LOUIS BERGER
GROUP, INC.**
LAS VEGAS, NEVADA

SCALE	DRAWING NO.
HORIZ: AS SHOWN	GM-1
VERT: NONE	OF
FIELD BOOK	
	1-1685

REFERENCE FILES:
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-CEOW.mst ~ 851-stamp.mst ~ 851-INTER-NBC-AL\IGN.mst



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[illegible]

WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
GRAVEL MULCH PLAN
"A" 855+00.00 TO "A" 885+00.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

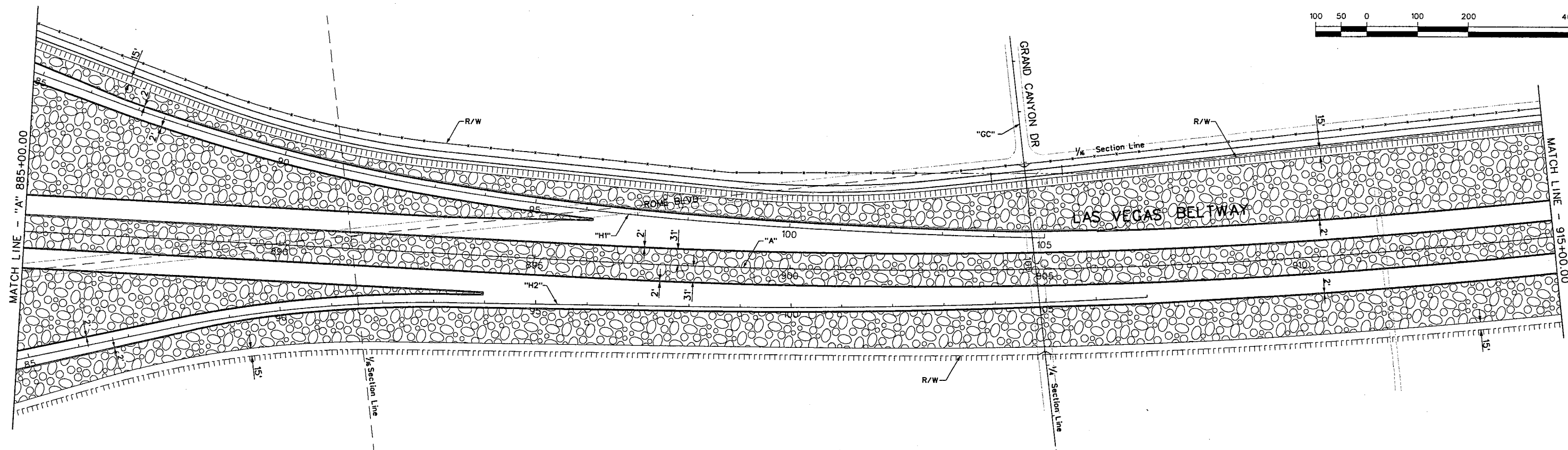
90%
PRELIMINARY
4-12-02

PROJECT NO: <u>B51</u>	DRAWN BY: <u>GFV</u>	SCALE _____ HORIZ: <u>AS SHOWN</u> VERT: <u>NONE</u> FIELD BOOK _____ _____ _____ _____	DRAWING NO.
DESIGNED BY: <u>MJP</u>	CHECKED BY: <u>DPW</u>		GM-2 OF _____ 1 - 1605
APPROVED BY: <u>TDL</u>			
 THE LOUIS BERGER GROUP, INC. LAS VEGAS, NEVADA			

REFERENCE FILES:

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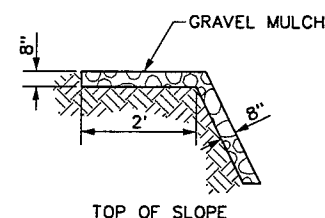
851-INTERM-NBC-CEOM.mst ~ 851-INTERM-NBC-ALIGN.mst



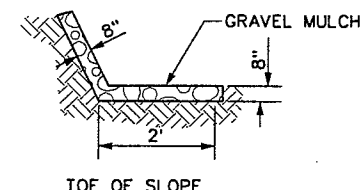
LEGEND:



AREA OF GRAVEL MULCH



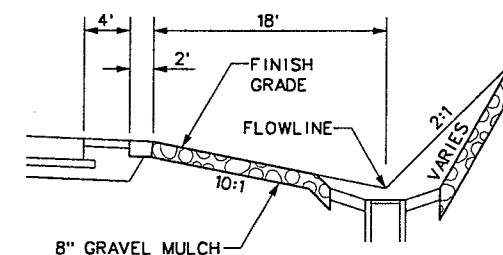
TOP OF SLOPE



TOF OF SLOPE

GRAVEL MULCH KEY DETAIL

NTS



8" GRAVEL MULCH —

GRAVEL MULCH DETAIL

NTS

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[illegible]

WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY

GRAVEL MULCH PLAN
"A" 885+00.00 TO "A" 915+00.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
4-12-02

PROJECT NO: 851 DRAWN BY: GFV
DESIGNED BY: MJP CHECKED BY: DPW
APPROVED BY: TDL



**THE LOUIS BERGER
GROUP, INC.**
LAS VEGAS, NEVADA

SCALE
HORIZ: AS SHOWN
VERT: NONE
FIELD BOOK

DRAWING NO.
GM-3
OF
1-1695

REFERENCE FILES:

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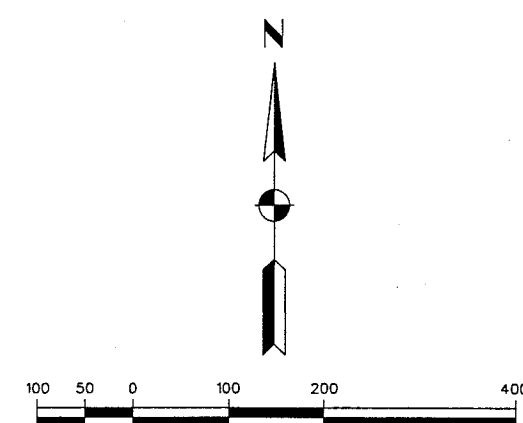


Diagram illustrating a cross-section of a gravel mulch slope. The structure consists of a horizontal top layer of gravel mulch, a gravel layer below it, and a sloped gravel layer below that. Dimensions shown include 8" for the top layer thickness, 2' for the gravel layer width, and 8" for the sloped layer thickness. The bottom boundary is labeled "TOP OF SLOPE".

TOP OF SLOPE

NTS

[illegible]

TOE OF SLOPE

A cross-sectional diagram of a mulch bed. From left to right, it shows a 4' wide area, a 2' gap, and an 18' wide mulch bed. The mulch bed is composed of a 10:1 slope of 8" gravel mulch, a 2:1 slope of finish grade, and a final 2:1 slope labeled 'VARIES'. A 'FLOWLINE' is indicated at the base of the mulch bed.

NTS

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WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
GRAVEL MULCH PLAN
"A" 915+00.00 TO "A" 945+00.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
4-12-02

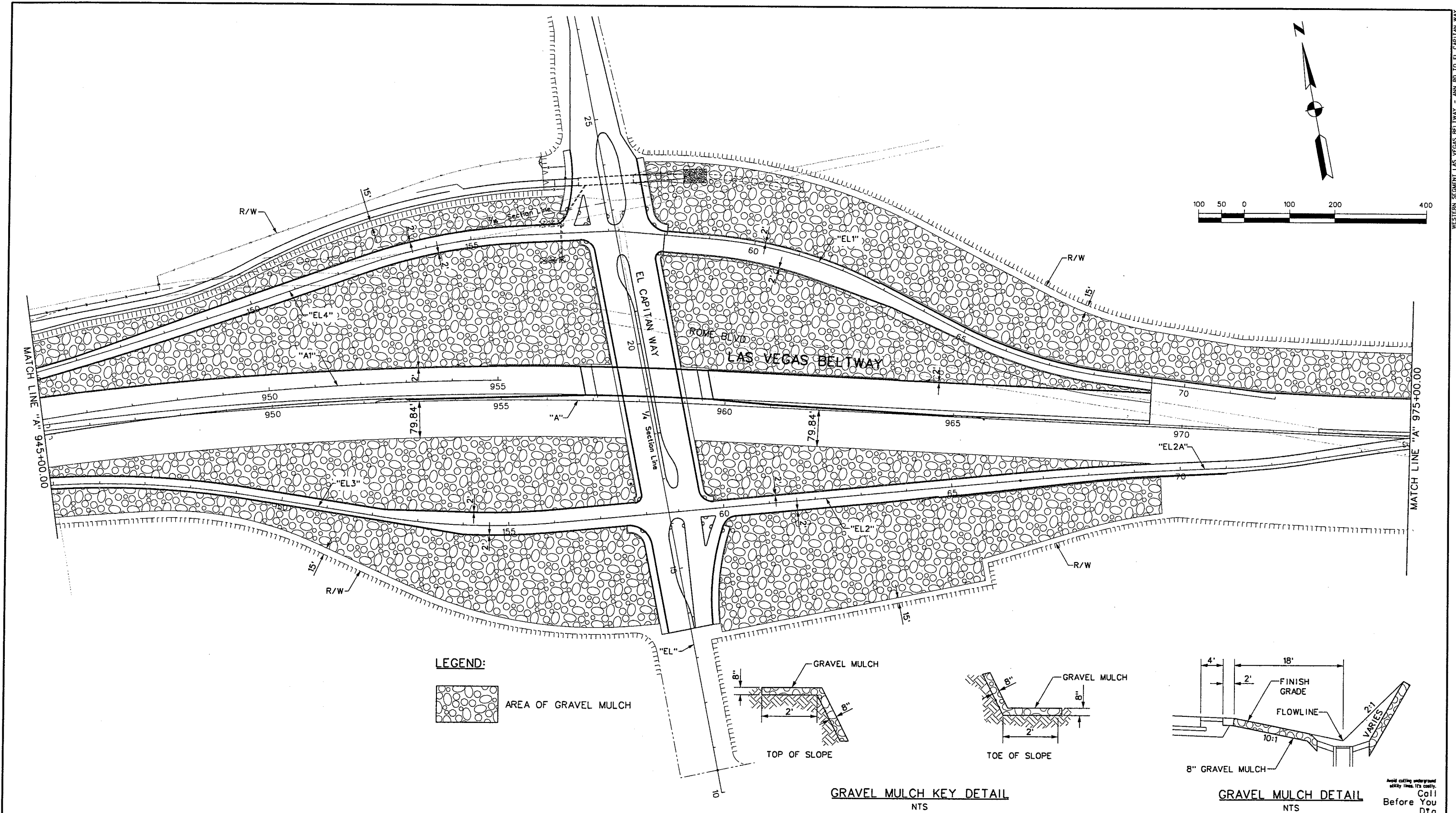
PROJECT NO: 851 DRAWN BY: GFV
DESIGNED BY: MJP CHECKED BY: DPW
APPROVED BY: TDL

 **THE LOUIS BERGER
GROUP, INC.**
LAS VEGAS, NEVADA

SCALE
HORIZ: AS SHOWN
VERT: NONE
FIELD BOOK

DRAWING NO.
GM-4
OF
1-1695

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REV. NO.	DATE	DESCRIPTION	APPROVED



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
GRAVEL MULCH PLAN
"A" 945+00.00 TO "A" 975+00.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

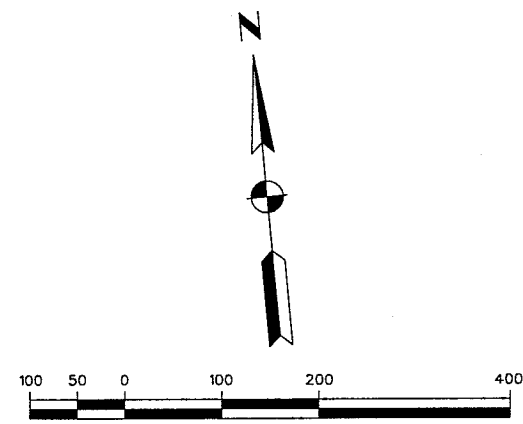
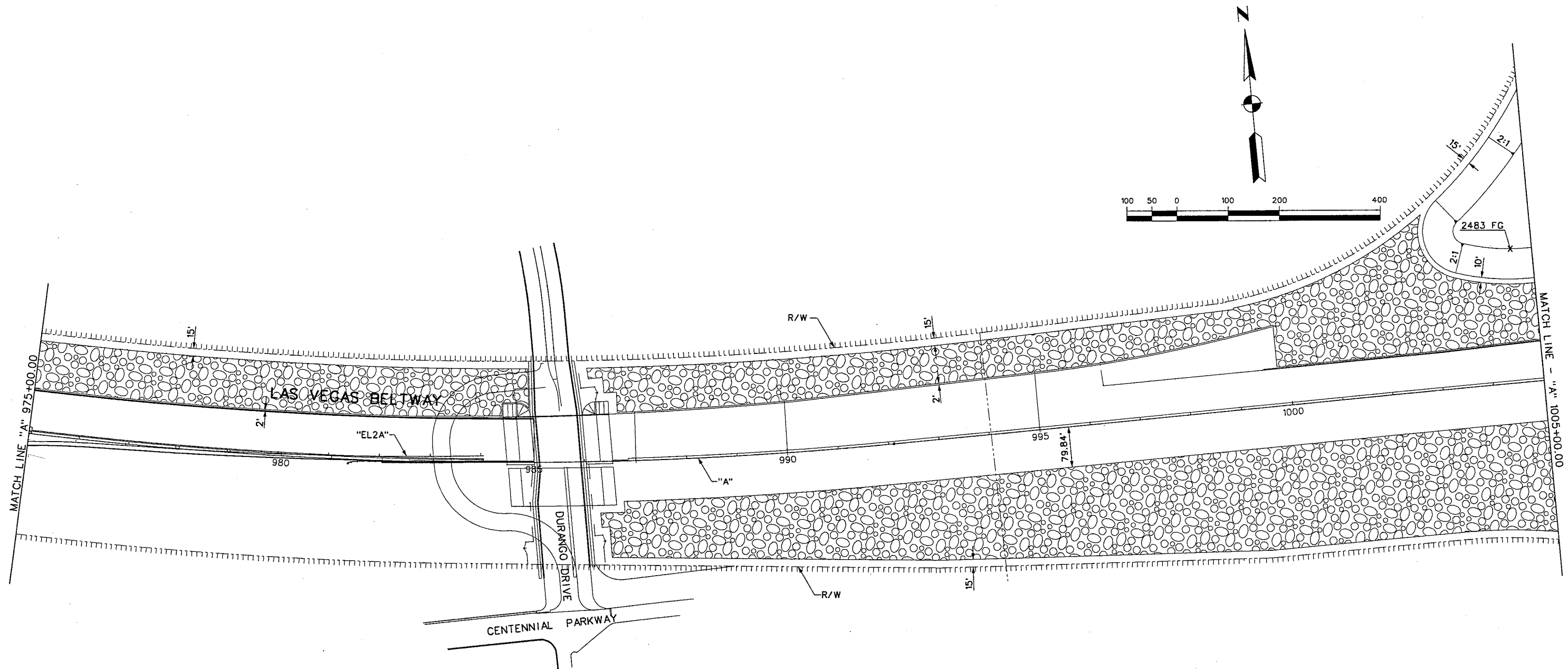
90% PRELIMINARY
4-12-02

PROJECT NO: 851	DRAWN BY: GFV
DESIGNED BY: MJP	CHECKED BY: DPW
APPROVED BY: TDL	
 THE LOUIS BERGER GROUP, INC. LAS VEGAS, NEVADA	

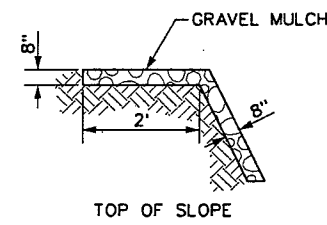
SCALE	DRAWING NO.
HORIZ: AS SHOWN	GM-5
VERT: NONE	OF
FIELD BOOK	
	L-1695

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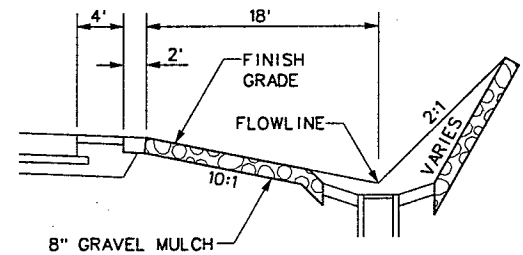
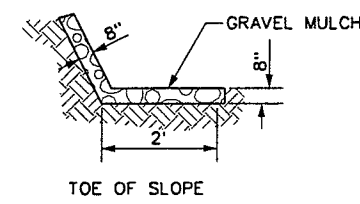
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LEGEND:



GRAVEL MULCH KEY DETAIL
NTS



GRAVEL MULCH DETAIL
NTS

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REV. NO.	DATE	DESCRIPTION	APPROVED



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
GRAVEL MULCH PLAN
"A" 975+00.00 TO "A" 1005+00.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

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PRELIMINARY
4-12-02

PROJECT NO: 851	DRAWN BY: GFV
DESIGNED BY: MJP	CHECKED BY: DPW
APPROVED BY: TDL	
 THE LOUIS BERGER GROUP, INC. LAS VEGAS, NEVADA	

SCALE
HORIZ: AS SHOWN
VERT: NONE
FIELD BOOK

DRAWING NO.
GM-6
OF
L-1695

REFERENCE FILES:

REV. NO.	DATE	DESCRIPTION	APPROVED
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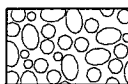
WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
GRAVEL MULCH PLAN
"A" 1005+00.00 TO "A" 1032+00.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
4-12-02

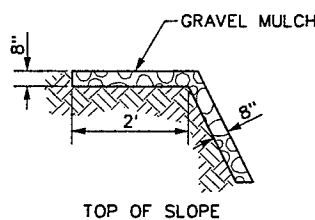
PROJECT NO: 851 DRAWN BY: GFV
DESIGNED BY: MJP CHECKED BY: DPW
APPROVED BY: TDL

 **THE LOUIS BERGER
GROUP, INC.**
LAS VEGAS, NEVADA

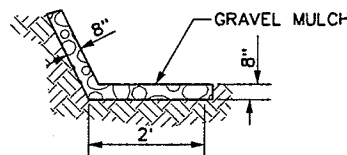
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VERT: NONE	OF
FIELD BOOK	
	L-1695



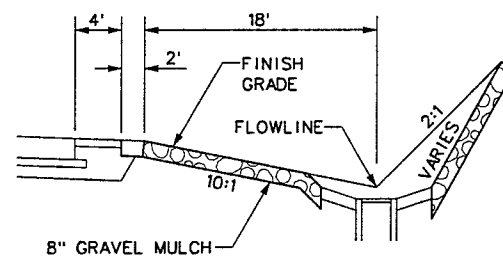
AREA OF GRAVEL MULCH



TOP OF SLOPE

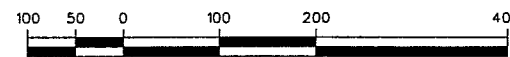


TOE OF SLOPE



8" GRAVEL MULCH

GRAVEL MULCH DETAIL



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REFERENCE FIB5\$+R,



REV. NO.	DATE	DESCRIPTION	APPROVED
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WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
GRAVEL MULCH PLAN
"A" 1005+00.00 TO "A" 1032+00.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

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PRELIMINARY
4-12-02

PROJECT NO: B51 DRAWN BY: GFV
DESIGNED BY: MJP CHECKED BY: DPW
APPROVED BY: TDL

 **THE LOUIS BERGER
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LAS VEGAS, NEVADA

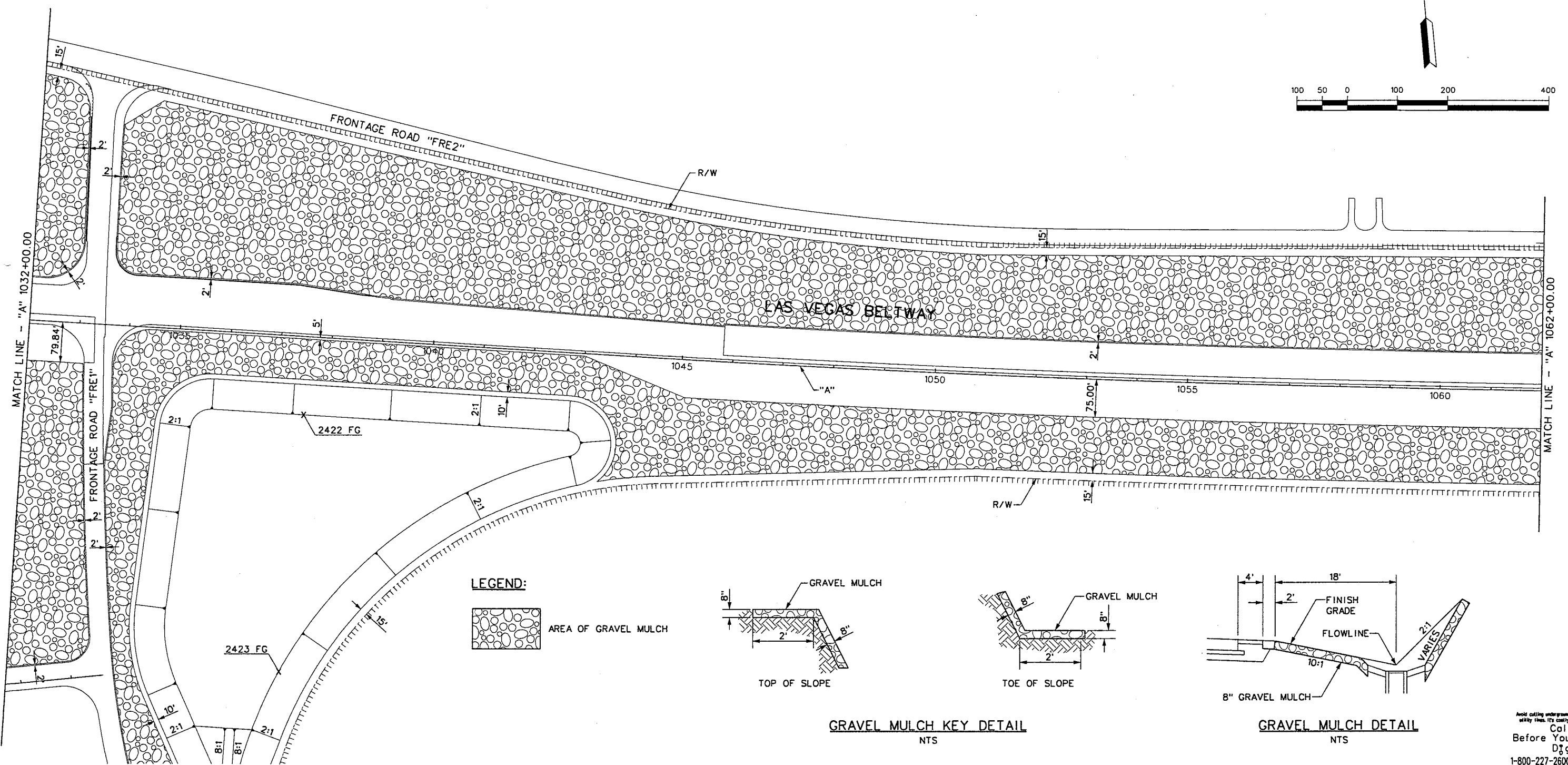
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VERT: NONE
FIELD BOOK

DRAWING NO.
GM-8
OF
L-1695

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FILE NAME: V:\X\Am Rd to El Capitan\intern\GRAVEL\851-INT-GM09.dgn ~ 4/16/2002 ~ 10:15:55 GFV

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[illegible]

WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
GRAVEL MULCH PLAN
"A" 1032+00.00 TO "A" 1062+00.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
4-12-02

PROJECT NO: 851 DRAWN BY: GFV
DESIGNED BY: MJP CHECKED BY: DPW
APPROVED BY: TDL

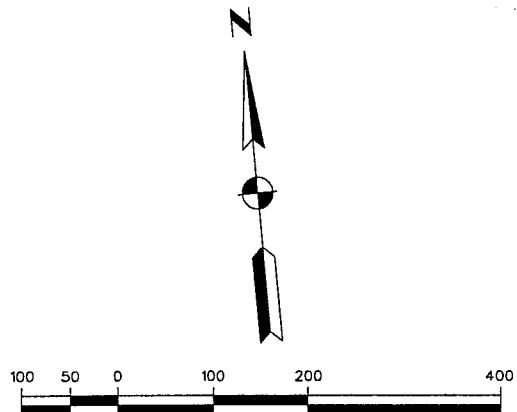
 **THE LOUIS BERGER
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LAS VEGAS, NEVADA

SCALE
HORIZ: AS SHOWN
VERT: NONE
FIELD BOOK

DRAWING NO.
GM-9
OF
L-1695

REFERENCE FILES:

FILE NAME: V:\851 Ann Rd to El Capitan\interm\GRAVEL\851-INT-GM10.dgn ~ 4/16/2002 ~ 16:50:50 GFV



A cross-sectional diagram of a gravel mulch system on a slope. The diagram shows a horizontal line at the top labeled "TOP OF SLOPE". Below this, a layer of gravel mulch is shown, with a vertical dimension of 6" indicated. The gravel layer is 2' thick horizontally. The slope itself is 8" thick. The gravel layer is shown with a hatched pattern, and the slope is shown with a solid pattern.

Diagram illustrating a gravel mulch toe of slope. The mulch layer is 8" thick and 2' wide at the toe of the slope. The slope height is 8".

A cross-sectional diagram of a swale. The top width is 18'. A 4' dimension is shown from the left edge to the start of the mulch. A 2' dimension is shown from the mulch edge to the flowline. The flowline is labeled 'FLOWLINE'. The bottom width is 10:1. The bottom layer is labeled '8" GRAVEL MULCH'. The right side slope is labeled 'VARIES' with a 2:1 slope indicator. The top surface is labeled 'FINISH GRADE'.

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[illegible]

WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
GRAVEL MULCH PLAN
"A" 1062+00.00 TO "A" 1090+00.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

90%
PRELIMINARY
4-12-02

PROJECT NO: 851 DRAWN BY: GFV
DESIGNED BY: MJP CHECKED BY: DPW
APPROVED BY: TDL

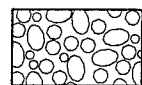
 **THE LOUIS BERGER
GROUP, INC.**
LAS VEGAS, NEVADA

SCALE
HORIZ: AS SHOWN
VERT: NONE
FIELD BOOK

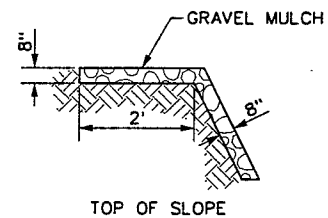
DRAWING NO.
GM-10
OF
L-1695

REFERENCE FILES: RAVEL-DET.mst ~ 851-stop.mst ~ 851-border.mst ~ 851-INT-GRAVEL.mst ~ PTG-ALIGN.mst ~ PTG-G-
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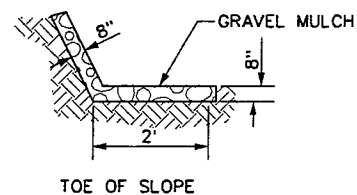
LEGEND:



AREA OF GRAVEL MULCH

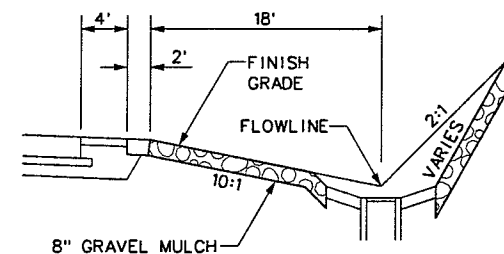


TOP OF SLOPE

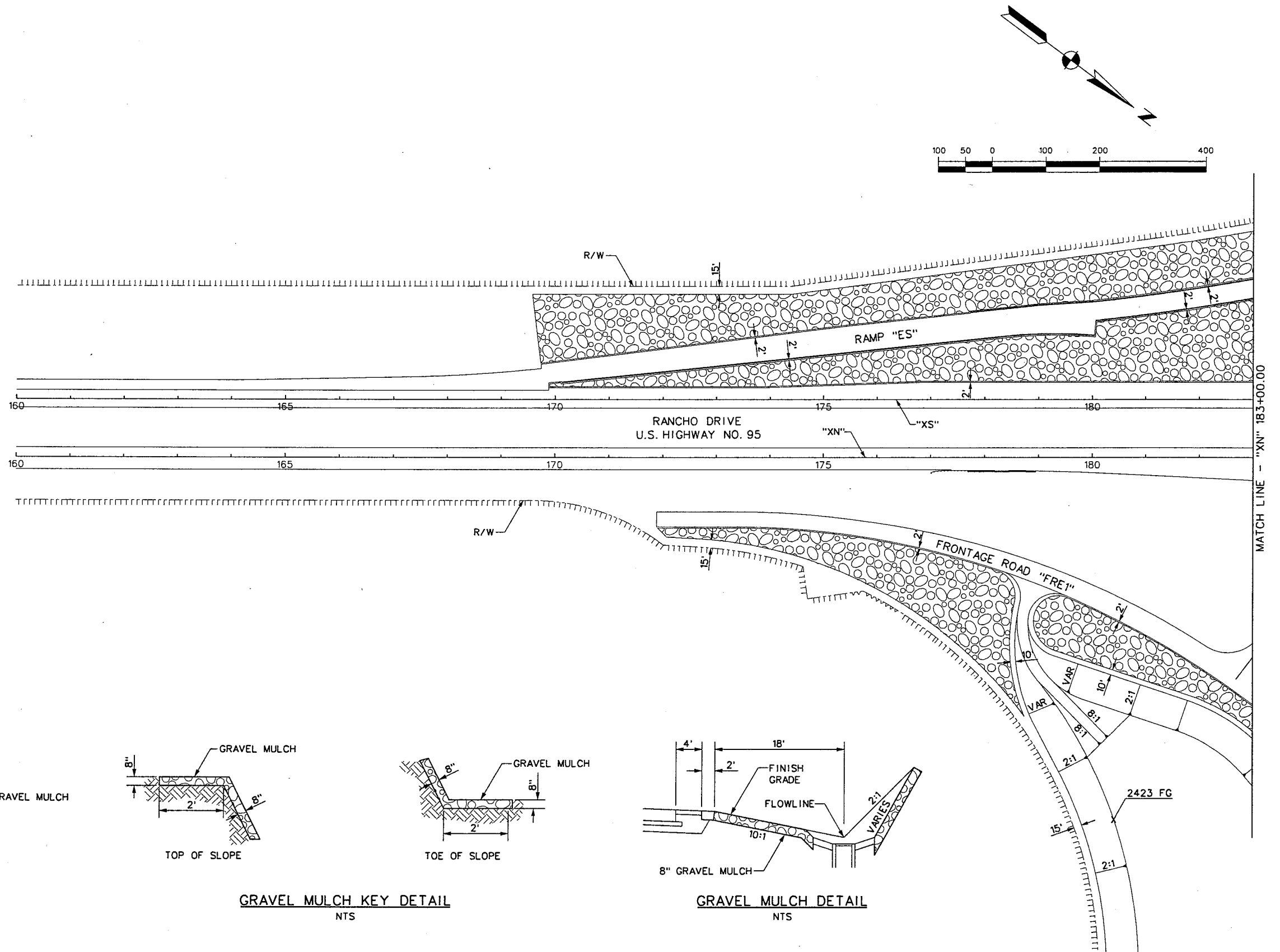


TOE OF SLOPE

GRAVEL MULCH KEY DETAIL
NTS



GRAVEL MULCH DETAIL
NTS



WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
GRAVEL MULCH PLAN
"XN" 160+00.00 TO "XN" 183+00.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

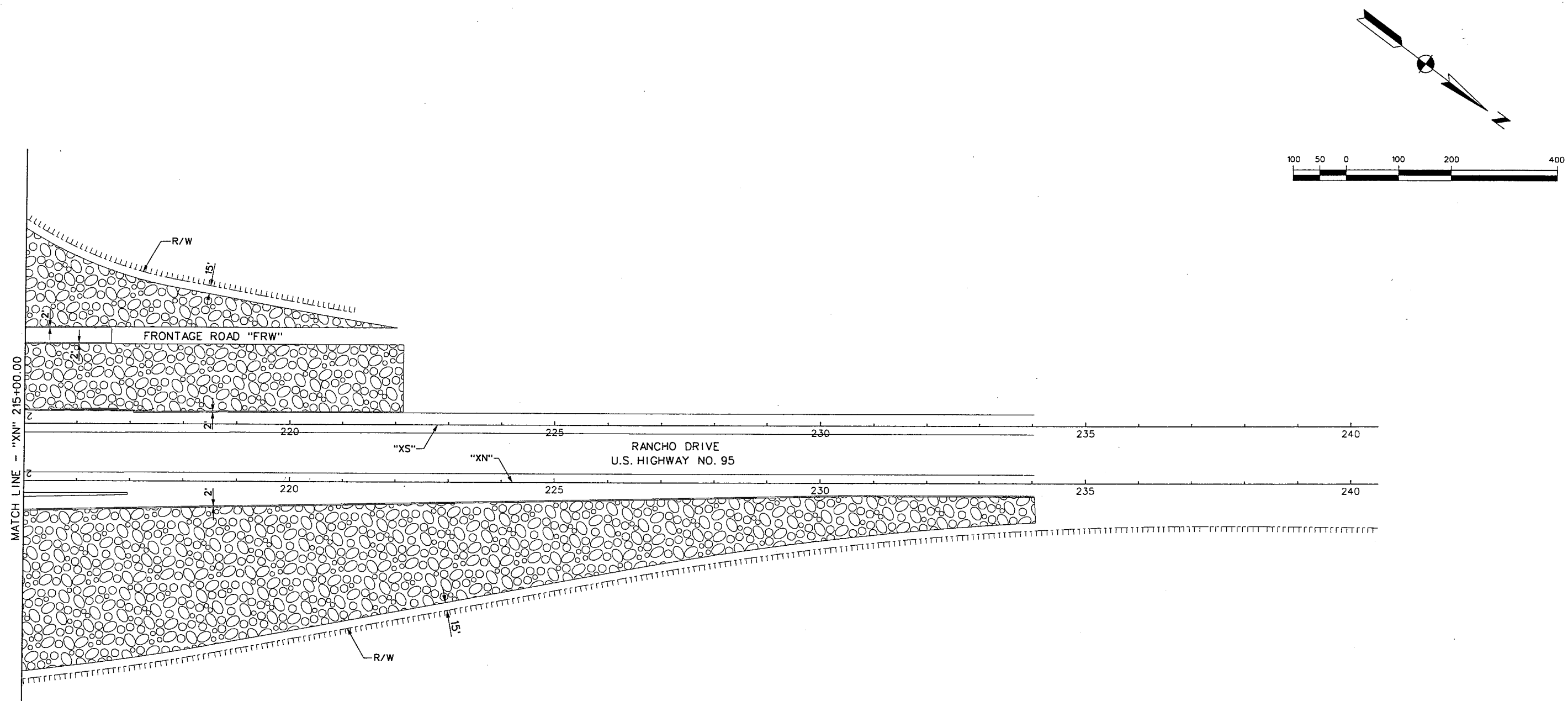
90%
PRELIMINARY
4-12-02

PROJECT NO: 851	DRAWN BY: GFV	SCALE	DRAWING NO.
DESIGNED BY: MJP	CHECKED BY: DPW	HORIZ: AS SHOWN	GM-11
APPROVED BY: TDL		VERT: NONE	OF
		FIELD BOOK	
			L-1695

THE LOUIS BERGER GROUP, INC.
LAS VEGAS, NEVADA

Public

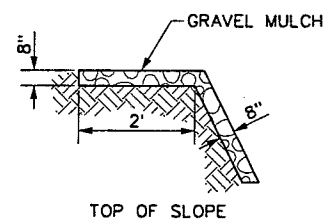
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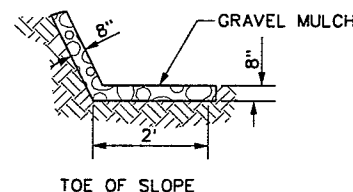
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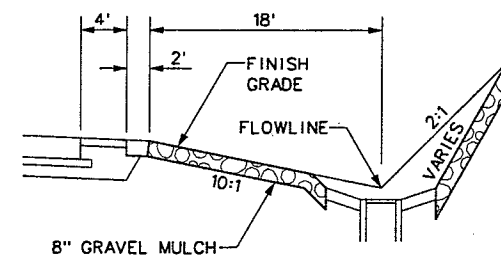
AREA OF GRAVEL MULCH



TOP OF SLOPE



TOE OF SLOPE



8" GRAVEL MULCH

NTS

90%
PRELIMINARY
4-12-02

WESTERN SEGMENT LAS VEGAS BELTWAY - ANN RD TO EL CAPITAN WAY
GRAVEL MULCH PLAN
"XN" 215+00.00 TO "XN" 240+00.00
CLARK COUNTY, NEVADA, DEPARTMENT OF PUBLIC WORKS

PROJECT NO: 851 DRAWN BY: GFV
DESIGNED BY: MJP CHECKED BY: DPW
APPROVED BY: TDL

 **THE LOUIS BERGER
GROUP, INC.**
LAS VEGAS, NEVADA

SCALE
HORIZ: AS SHOWN
VERT: NONE
FIELD BOOK

DRAWING NO.
GM-12
OF
1-1695

