

GENERAL NOTES

SPECIFICATIONS

DESIGN
AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES 1996 WITH 1998 INTERIM REVISIONS.

CONTRACT
STATE OF MAINE, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, HIGHWAYS AND BRIDGES, REVISION OF APRIL 1995.

DESIGN LOADING

LIVE LOAD
HS 25, 2,000,000 CYCLES

DESIGN METHOD
SERVICE LOAD DESIGN

MATERIALS

CONCRETE
SUPERSTRUCTURE SLAB, PARAPETS AND END POSTS (ABOVE CONST. JT.) CONCRETE SHALL BE CLASS AAA, $f'_c = 4,500$ P.S.I.
ALL OTHER SUBSTRUCTURE CONCRETE SHALL BE CLASS A, $f'_c = 4,000$ P.S.I.

REINFORCING STEEL
AASHTO M31 GRADE 60. (EPOXY-COATED AND UNCOATED BARS).

STRUCTURAL STEEL
WELDED GIRDERS: FLANGES, WEBS, SPLICE PLATES AND BEARING PEDESTALS SHALL BE AASHTO M270, GRADE 50.
BEARING STIFFENERS, CONNECTION PLATES, DIAPHRAGMS AND CROSS-FRAMES SHALL BE AASHTO M270, GRADE 36.
HIGH STRENGTH BOLTS SHALL BE AASHTO M164.

BASIC ALLOWABLE STRESSES

CONCRETE
 $f'_c = 1,800$ P.S.I. (SUPERSTRUCTURE)
 $f'_c = 1,600$ P.S.I. (ALL OTHER)

REINFORCING STEEL
 $f_s = 24,000$ P.S.I.

STRUCTURAL STEEL
AASHTO M270 GRADE 50 $f_s = 27,000$ P.S.I.
AASHTO M270 GRADE 36 $f_s = 20,000$ P.S.I.

- NOTES**
- COPIES OF AS-BUILT PLANS ARE ON FILE AT THE MAINE TURNPIKE AUTHORITY. A PORTION OF THESE PLANS ARE INCLUDED IN THIS CONTRACT FOR THE CONTRACTOR'S CONVENIENCE. THE COMPLETENESS AND ACCURACY OF THESE PLANS IS NOT GUARANTEED.
 - ALL PROPOSED ELEVATIONS REFERENCE THE NORTH AMERICAN VERTICAL DATUM (NAVD) 1988. THE ELEVATIONS REFERENCED ON THE AS-BUILT PLANS MAY DIFFER.
 - FOR BORING PLAN AND LOCATION REFER TO DRAWINGS FROM CONTRACT 93.7 (INCLUDED).
 - THE EXISTING PROFILE IS TAKEN FROM THE CONTRACT 93.7 DRAWINGS AND HAS BEEN ADJUSTED FOR THE NORTH AMERICAN VERTICAL DATUM. EXISTING ELEVATIONS ARE NOT GUARANTEED AND MAY VARY.
 - FOR EXISTING UTILITIES, SEE CIVIL PLANS.
 - FOR ADDITIONAL DETAILS REFERENCED IN THESE DRAWINGS, SEE THE STATE OF MAINE, DEPARTMENT OF TRANSPORTATION, STANDARD DETAILS, HIGHWAY AND BRIDGES, APRIL 1997.

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Scale: AS NOTED		Designed by:		 HNTB ARCHITECTS ENGINEERS PLANNERS		HNTB CORPORATION 2 Thomas Drive Westbrook, ME 04092 TEL (207) 774-5155 FAX (207) 772-7410		MAINE TURNPIKE AUTHORITY MODERNIZATION AND WIDENING PROJECT 		MAINLINE BRIDGE WIDENING ROUTE 109 OVERPASS GENERAL PLAN & ELEVATION																									
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SUMMARY OF BRIDGE QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITY
201.1223	REMOVING EXISTING SUPERSTRUCTURE CONCRETE-RTE 109 (15 C.Y.)*	L.S.	1
202.12	REMOVING EXISTING STRUCTURAL CONCRETE	C.Y.	115
206.082	STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES	C.Y.	430
206.092	STRUCTURAL ROCK EXCAVATION - MAJOR STRUCTURES	C.Y.	80
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	C.Y.	610
403.081	HOT BITUMINOUS PAVEMENT, TURNPIKE GRADING C	TON	39
502.21	STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS	C.Y.	310
502.2633	STRUCTURAL CONCRETE ROADWAY AND END POSTS ON STEEL BRIDGES - RTE 109 (50 C.Y.)*	L.S.	1
502.2643	STRUCTURAL CONCRETE PARAPETS - RTE 109 (11 C.Y.)*	L.S.	1
502.313	STRUCTURAL CONCRETE APPROACH SLAB - RTE 109 (13 C.Y.)*	L.S.	1
503.12	REINFORCING STEEL, FABRICATED AND DELIVERED	LB.	31,400
503.13	REINFORCING STEEL, PLACING	LB.	31,400
503.14	EPOXY-COATED REINFORCING STEEL, FABRICATED AND DELIVERED	LB.	22,000
503.15	EPOXY-COATED REINFORCING STEEL, PLACING	LB.	22,000
504.7023	STRUCTURAL STEEL FABRICATED AND DELIVERED - RTE 109 (3,350 LBS. GRADE 36, 49,000 LBS. GRADE 50)*	L.S.	1
504.713	STRUCTURAL STEEL ERECTION - RTE 109 (52,350 LB.)*	L.S.	1
505.083	STUD WELDED SHEAR CONNECTORS - RTE 109 (582 EA.)*	L.S.	1
506.303	SHOP COATING OF STRUCTURAL STEEL - RTE 109 (52,350 LB.)*	L.S.	1
506.313	FIELD REPAIR OF DAMAGED COATING - RTE 109	L.S.	1
507.0913	ALUMINUM BRIDGE RAILING, 1 BAR - RTE 109 (380 LF.)*	L.S.	1
508.133	MEMBRANE WATERPROOFING - RTE 109 (215 S.Y.)*	L.S.	1
511.093	TEMPORARY EARTH SUPPORT SYSTEM - RTE 109	L.S.	1
512.0813	FRENCH DRAINS - RTE 109 (75 LF.)*	L.S.	1
514.06	CURING BOX FOR CONCRETE CYLINDERS - RTE 109	EACH	1
515.202	CLEAR PROTECTIVE COATING FOR CONCRETE SURFACE	S.Y.	270
520.2213	EXPANSION DEVICE - LOCKING COMPRESSION SEAL W/STEEL EDGE BEAMS - RTE 109 (17 L.F.)*	EACH	1
524.40	PROTECTIVE SHIELD	S.Y.	242
609.15	SLOPED CURB TYPE 1	L.F.	122

* QUANTITIES FOR ESTIMATING PURPOSES ONLY

INDEX OF DRAWINGS

SHEET NO.	TITLE
WS-S1	GENERAL PLAN & ELEVATION
WS-S2	INDEX & QUANTITIES
WS-S3	DECK CONSTRUCTION SEQUENCE
WS-S4	NORTH ABUTMENT DEMOLITION
WS-S5	SOUTH ABUTMENT DEMOLITION
WS-S6	FOUNDATION PLAN
WS-S7	NORTH ABUTMENT
WS-S8	NORTH ABUTMENT REINFORCING
WS-S9	SOUTH ABUTMENT
WS-S10	SOUTH ABUTMENT REINFORCING
WS-S11	ABUTMENT CROSS SECTIONS AND DETAILS
WS-S12	WINGWALL DETAILS
WS-S13	SUBSTRUCTURE DETAILS
WS-S14	FRAMING PLAN & DETAILS
WS-S15	DECK PLAN & SECTION
WS-S16	SUPERSTRUCTURE DETAILS I
WS-S17	PARAPET DETAILS
WS-S18	ENDPOST DETAILS I NORTH ABUTMENT
WS-S19	ENDPOST DETAILS II SOUTH ABUTMENT
WS-S20	SOUTH ABUTMENT EXPANSION JOINT DETAILS I
WS-S21	SOUTH ABUTMENT EXPANSION JOINT DETAILS II
WS-S22	ALUMINUM BRIDGE RAIL DETAILS
WS-S23	REINFORCING STEEL SCHEDULE I
WS-S24	REINFORCING STEEL SCHEDULE II

CONTRACT NO. 93.7 PLANS



SHEET NO.	TITLE
WS-S1	GENERAL PLAN & ELEVATION
WS-S3	BORING PLAN & LOGS
WS-S4	BORING LOGS
WS-S5	FOUNDATION PLAN
WS-S7	NORTH ABUTMENT II
WS-S8	SOUTH ABUTMENT I
WS-S12	ABUTMENT CROSS SECTIONS & DETAILS
WS-S13	WINGWALL ELEVATIONS AND CROSS SECTIONS
WS-S14	CORNER DETAILS
WS-S16	FRAMING PLAN
WS-S18	DECK PLAN
WS-S19	DECK CROSS SECTION
WS-S20	EXPANSION JOINT DETAILS
BD 101-89	BEARING PEDESTALS
BD 112-89	DIAPHRAGMS & CROSS-FRAMES

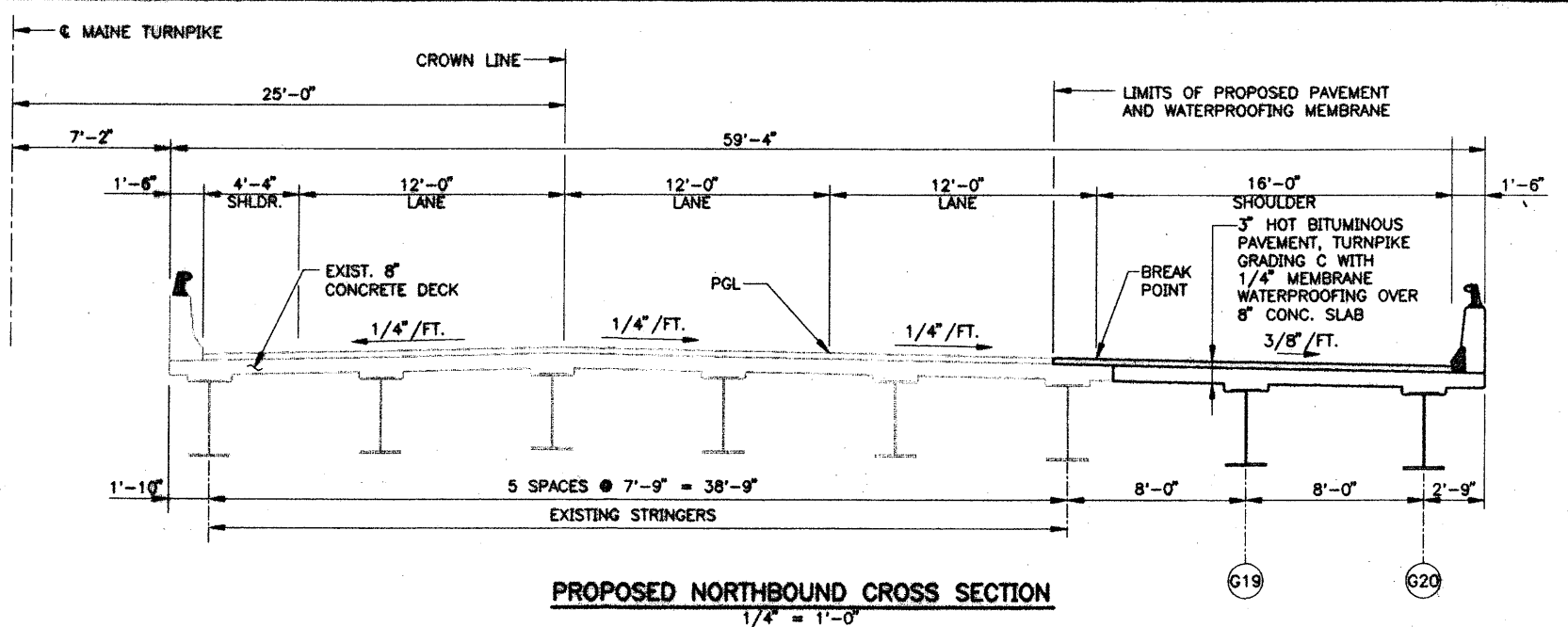
SEE CONTRACT SHEETS 150 TO 162 AND 176 TO 178

ABBREVIATIONS

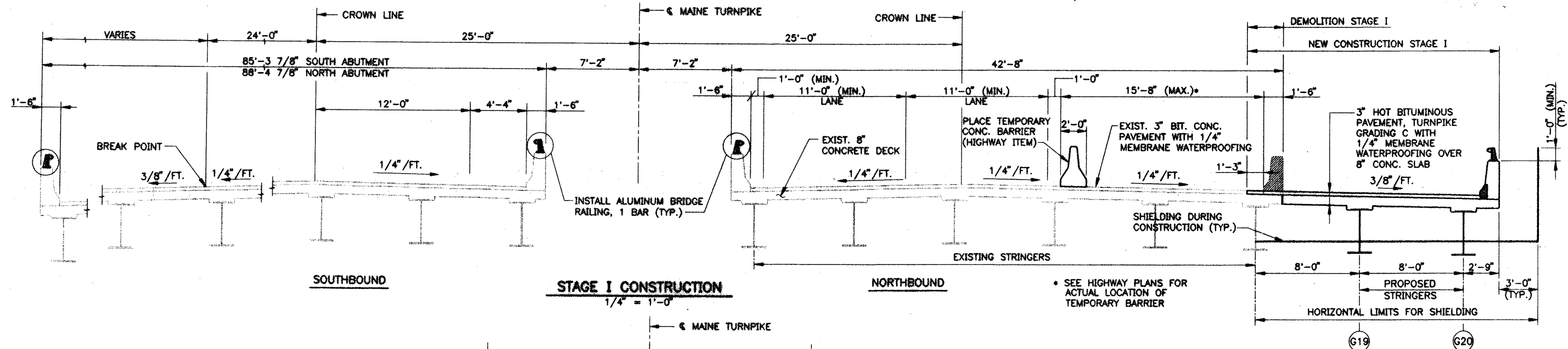
S.B.	SOUTHBOUND
N.B.	NORTHBOUND
N.F.	NEAR FACE
F.F.	FAR FACE
E.F.	EACH FACE

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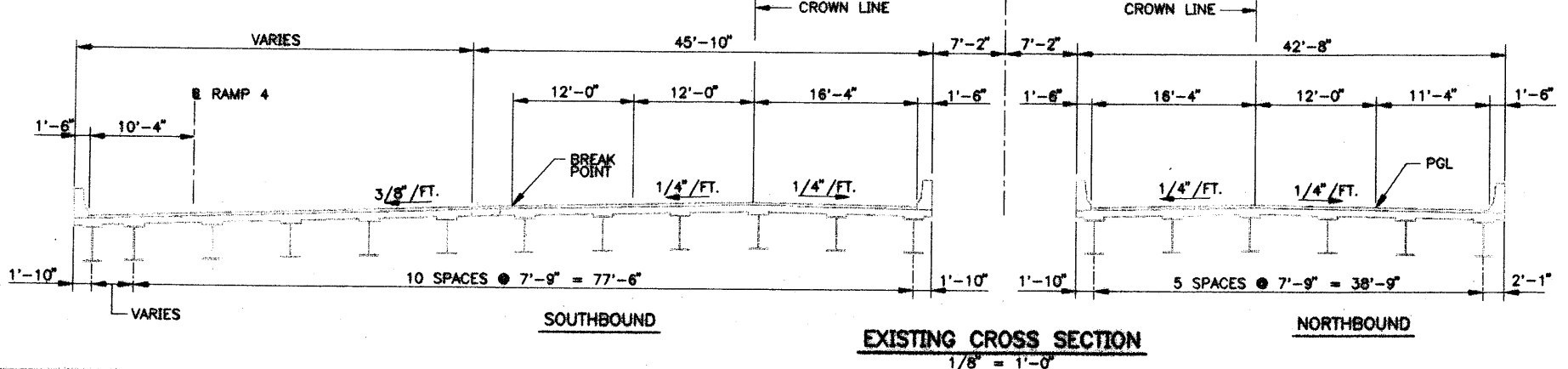
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PROPOSED NORTHBOUND CROSS SECTION
1/4" = 1'-0"



STAGE I CONSTRUCTION
1/4" = 1'-0"



EXISTING CROSS SECTION
1/8" = 1'-0"

NOTE:
1. NORTHBOUND MEDIAN BRIDGE RAIL SHALL NOT BE INSTALLED WHILE TEMPORARY CONCRETE BARRIER AND TRAFFIC SHIFT IS IN PLACE.

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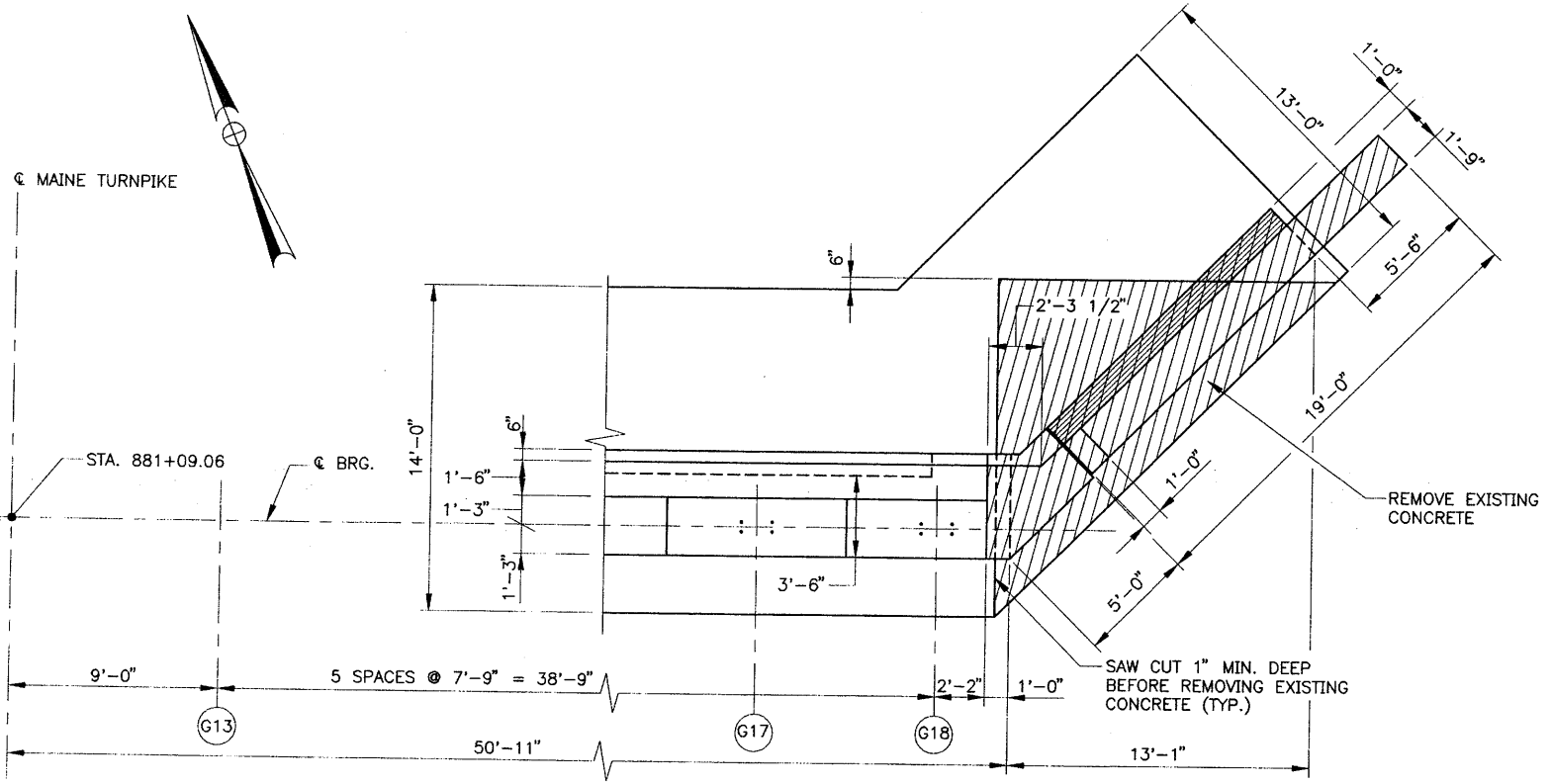
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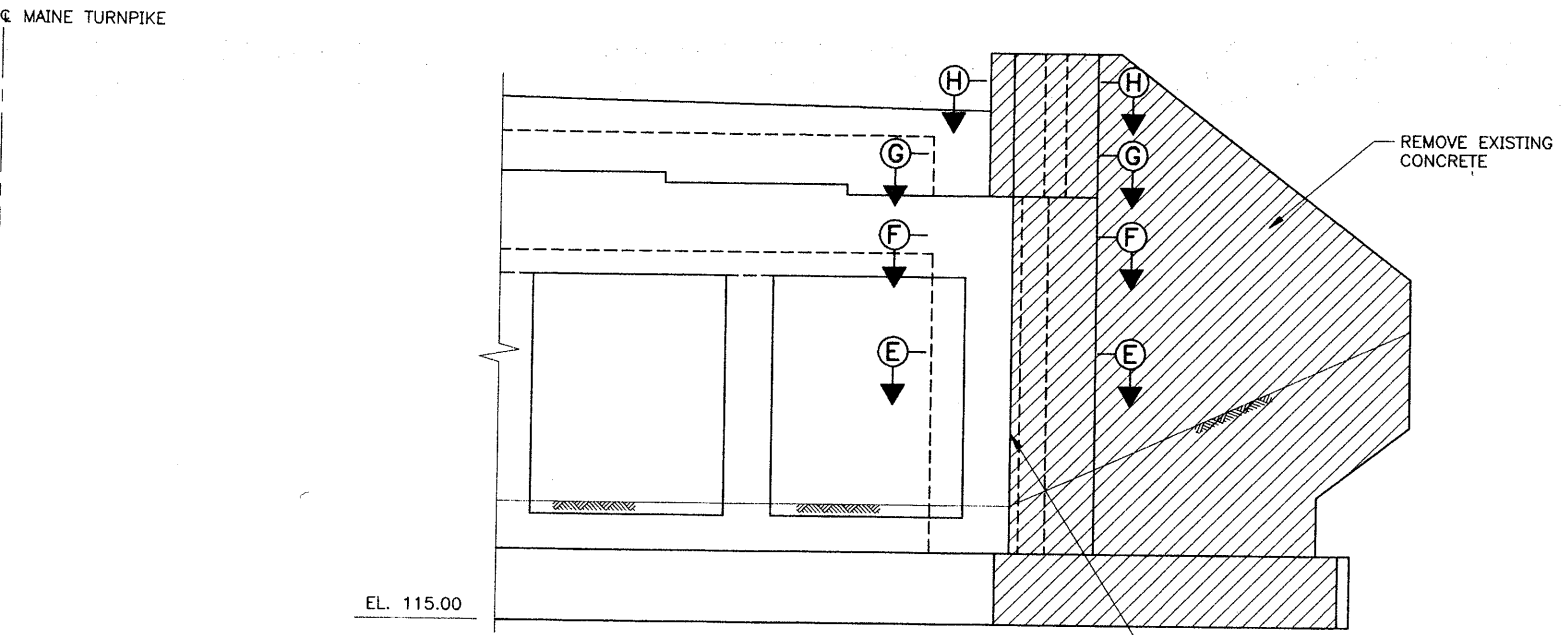
**MAINE TURNPIKE AUTHORITY
MODERNIZATION AND WIDENING PROJECT**

**MAINLINE BRIDGE WIDENING
ROUTE 109 OVERPASS
DECK CONSTRUCTION SEQUENCE**

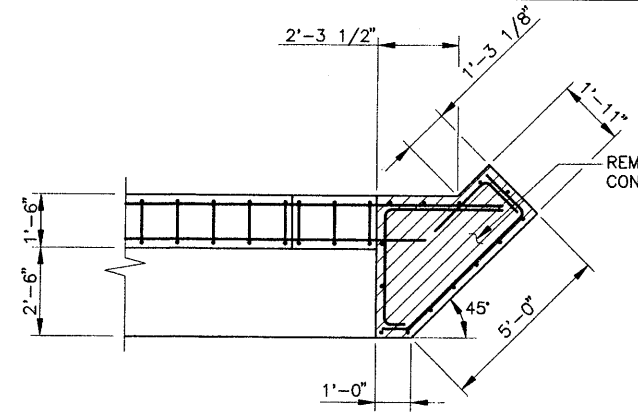
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CONTRACT: 2000.03
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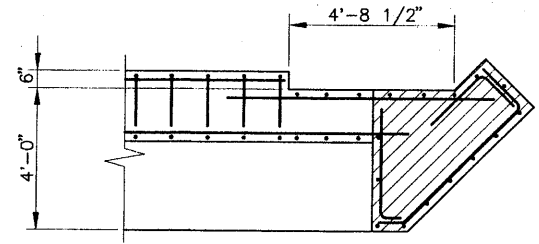
NORTH ABUTMENT
1/4" = 1'-0"



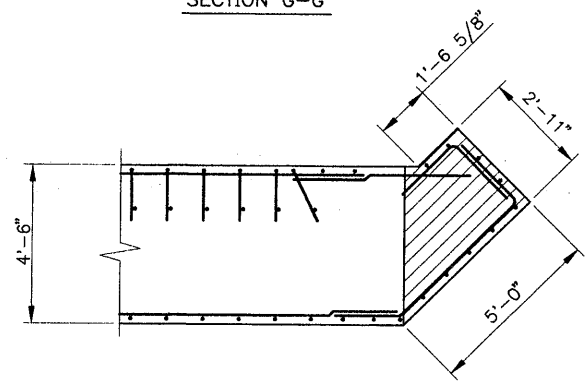
ELEVATION
1/4" = 1'-0"



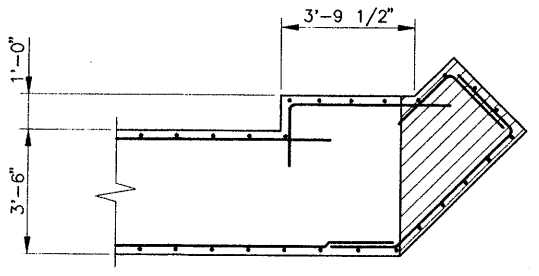
SECTION H-H



SECTION G-G



SECTION F-F



SECTION E-E

EXISTING NORTHEAST CORNER
3/8" = 1'-0"

ABUTMENT NOTES

- N.F. DENOTES NEAR FACE, F.F. DENOTES FAR FACE, E.F. DENOTES EACH FACE.
- REINFORCING STEEL SHALL HAVE 2" MINIMUM COVER UNLESS OTHERWISE NOTED.
- PLACE REINFORCING STEEL TO CLEAR ANCHOR BOLTS.
- EXISTING REINFORCING STEEL THAT IS EXPOSED AFTER REMOVAL OF EXISTING CONCRETE SHALL NOT BE CUT, EXCEPT AS NOTED, BUT SHALL BE CLEANED AND EXTENDED INTO NEW CONCRETE AS FAR AS PRACTICAL. PAYMENT FOR CLEANING SHALL BE INCIDENTAL TO ITEM 202.12.
- ANY EXISTING REINFORCING STEEL, INTENDED FOR RE-USE IN THE PROPOSED CONSTRUCTION, THAT IS DAMAGED OR BROKEN DURING THE REMOVAL OF EXISTING CONCRETE SHALL BE REPLACED IN DRILLED HOLES AND SECURED BY GROUTING. PAYMENT TO BE INCIDENTAL TO ITEM 202.12.
- PAYMENT FOR DRILLING HOLES AND GROUTING DOWELS AND ANCHOR BOLTS TO BE INCIDENTAL TO ITEM 503.13 AND 503.15. ALL DOWELS TO BE GROUTED WITH NON-SHRINK GROUT.
- CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4".
- STEPS IN BRIDGE SEAT TO BE SPACED SO THEY OCCUR APPROXIMATELY MID-WAY BETWEEN STRINGERS.
- DRESS BEARING PAD AREAS 1" LARGER ALL AROUND THE MASONRY PLATES TO EXACT ELEVATIONS SHOWN.
- TOP PORTION OF SOUTH ABUTMENT BACKWALL SHALL NOT BE PLACED UNTIL AFTER EXPANSION JOINT ASSEMBLY IS PLACED AND ADJUSTED.
- COVER HORIZONTAL & VERTICAL CONSTRUCTION JOINTS ON THE BACK WITH TWO LAYERS OF HEAVY ROOFING FELT. SEE MDOT STANDARD DETAIL SHEET 502 (1).
- WATERSTOPS ARE NOT REQUIRED IN HORIZONTAL CONSTRUCTION JOINTS IN ABUTMENT BACKWALLS.
- REMOVAL LIMITS OF EXISTING CONCRETE THAT DO NOT FALL AT AN EXISTING CONSTRUCTION JOINT AND THAT WILL BE EXPOSED IN THE COMPLETED STRUCTURE SHALL BE CUT ALONG THESE LIMITS WITH A MASONRY SAW TO A MINIMUM DEPTH OF 1" FROM THE SURFACE. THE CONCRETE SHALL THAN BE REMOVED IN A MANNER THAT WILL LEAVE THE SAW CUT EDGES UNDAMAGED.
- CLEAR PROTECTIVE COATING FOR CONCRETE SURFACES SHALL BE APPLIED TO THE TOP OF ABUTMENT BACKWALLS AND ONE (1) FOOT BELOW TOP OF BACKWALL ON THE BACKFACE, AS WELL AS ALL EXPOSED NEW ABUTMENT AND WINGWALL CONCRETE.
- FOR DETAILS OF CONSTRUCTION AND CONTRACTION JOINTS. SEE MDOT STANDARD DETAIL SHEET 502 (1).
- FOR BEARING PEDESTALS AND ANCHOR BOLT DETAILS, SEE SHEET BD 101-89 (CONTRACT 93.7). BEARING PEDESTALS SHALL BE PLACED NORMAL TO STRINGERS.
- THE EXISTING BACKWALL SURFACE, AT THE INTERFACE OF THE BACKWALL AND BRIDGE SEAT, SHALL BE CLEAN AND FREE OF BOND INHIBITING MATERIALS. THE SURFACE SHALL BE ROUGHENED AND THEN A BONDING AGENT, APPROVED BY THE ENGINEER, SHALL BE APPLIED PRIOR TO THE NEW CONCRETE ABUTMENT PLACEMENT. PAYMENT TO BE INCIDENTAL TO ITEM 502.21.
- REMOVAL OF THE EXISTING ARMOR JOINT AT THE TOP OF THE SOUTH ABUTMENT BACKWALL SHALL BE INCIDENTAL TO ITEM 202.12.
- DIMENSIONS AND ELEVATIONS SHOWN ARE TAKEN FROM PREVIOUS CONTRACT DRAWINGS AND ARE NOT GUARANTEED TO BE CORRECT.

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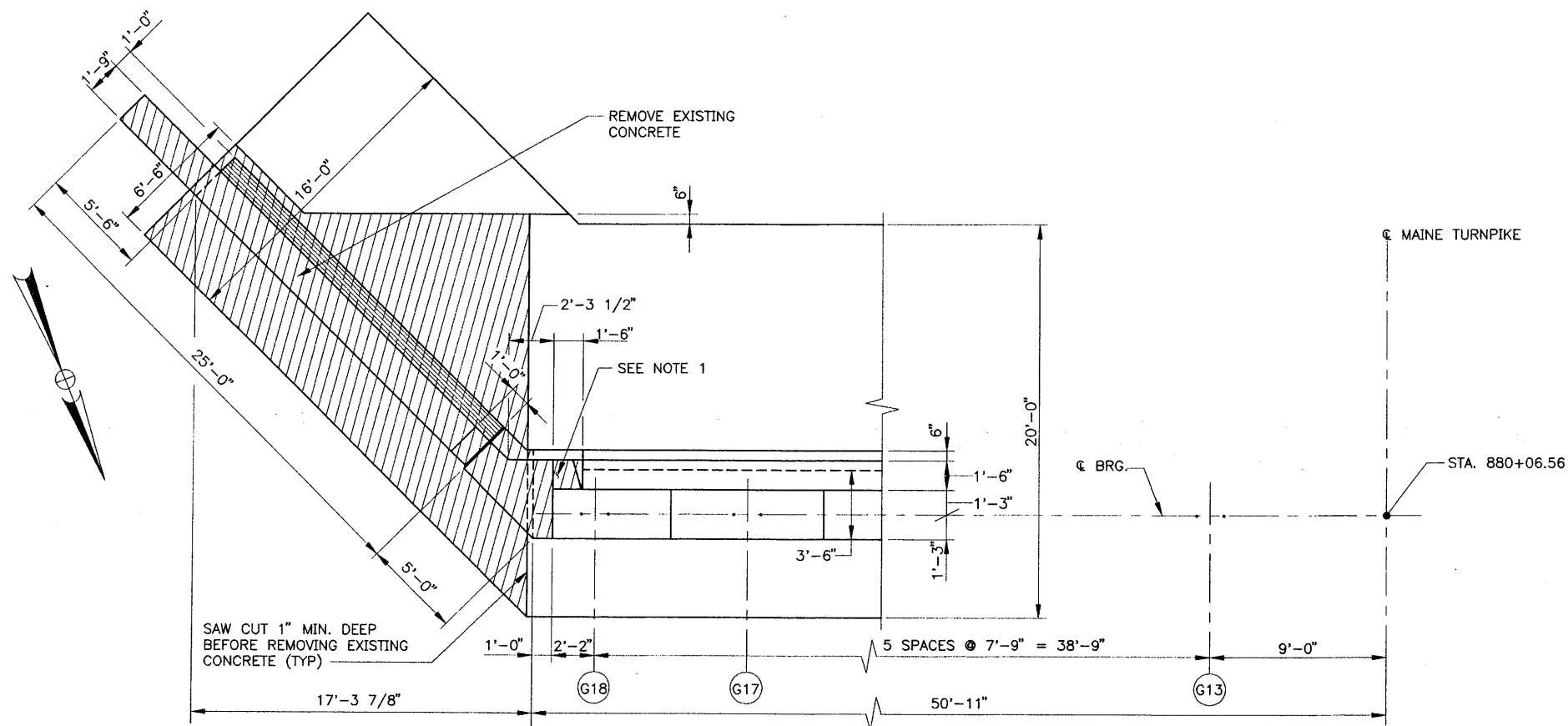
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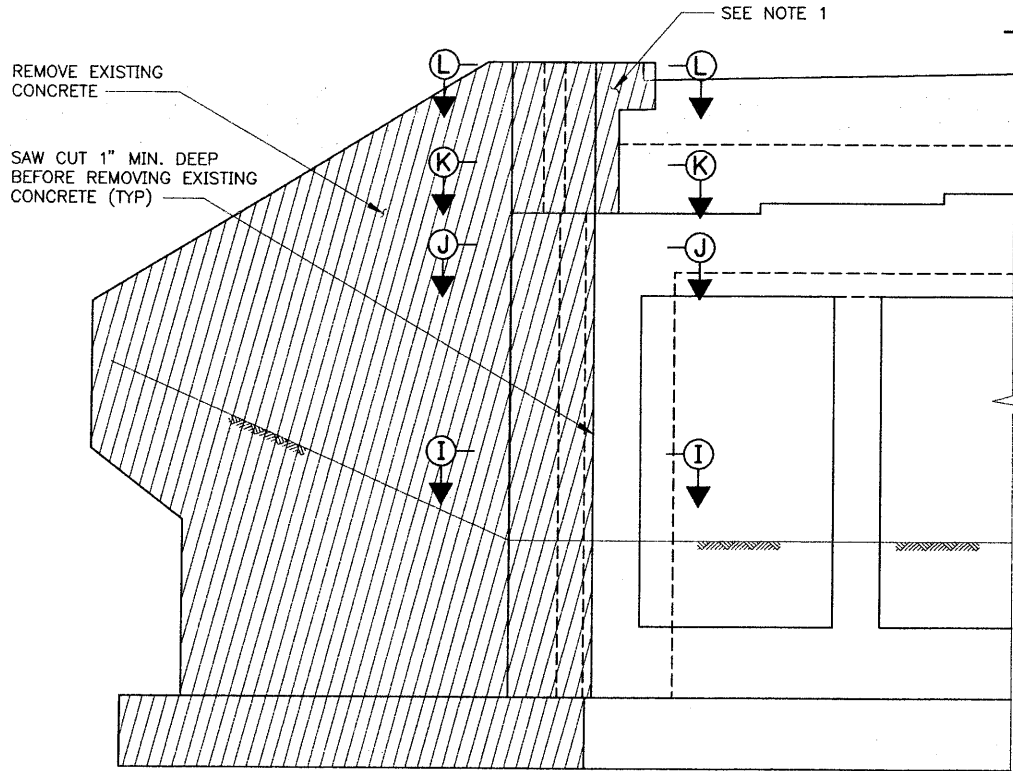
**MAINE TURNPIKE AUTHORITY
MODERNIZATION AND WIDENING PROJECT**

**MAINLINE BRIDGE WIDENING
ROUTE 109 OVERPASS
NORTH ABUTMENT DEMOLITION**

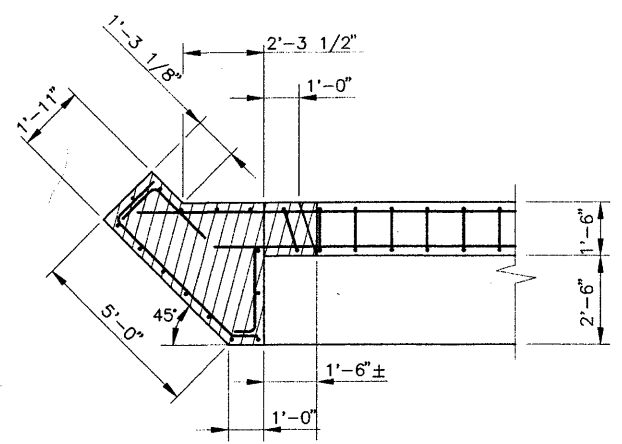
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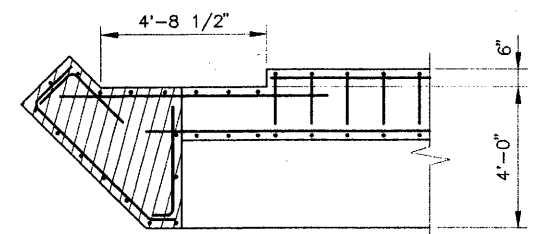
SOUTH ABUTMENT
1/4" = 1'-0"



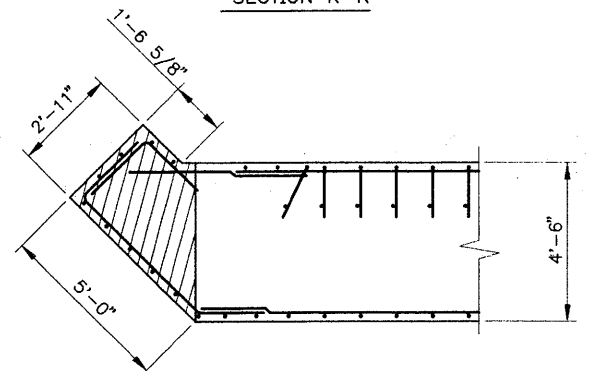
ELEVATION
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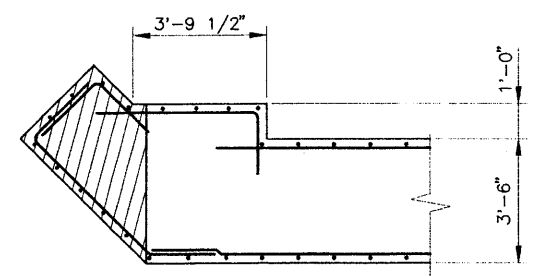
SECTION L-L



SECTION K-K



SECTION J-J



SECTION I-I

EXISTING SOUTHEAST CORNER
3/8" = 1'-0"

NOTES

- HAND REMOVE EXISTING CURB AND BACKWALL TO EXPOSE EXPANSION JOINT ANGLE AS PER DIRECTION OF ENGINEER. CARE SHOULD BE TAKEN TO AVOID DAMAGE TO ANGLE AND JOINT.
- DIMENSIONS AND ELEVATIONS SHOWN ARE TAKEN FROM PREVIOUS CONTRACT DRAWINGS AND ARE NOT GUARANTEED TO BE CORRECT.
- FOR ADDITIONAL NOTES, SEE SHEET WS-S4.

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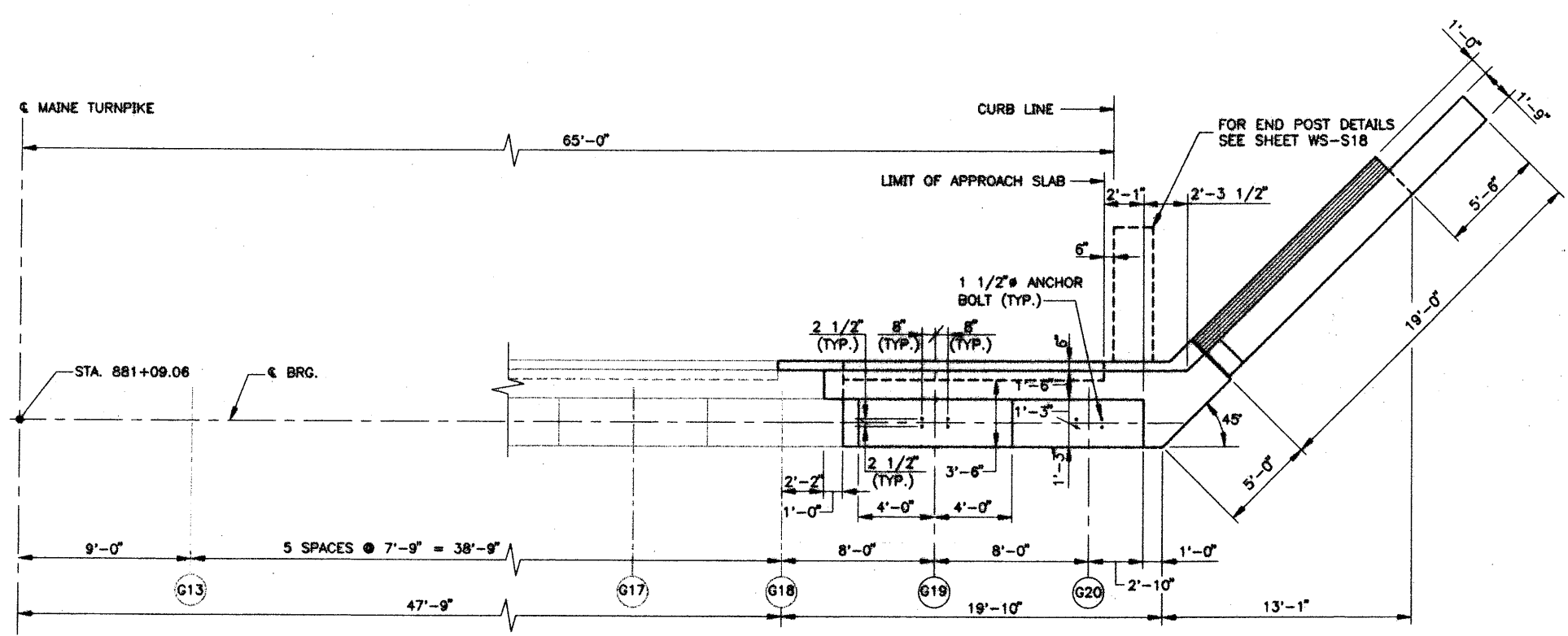
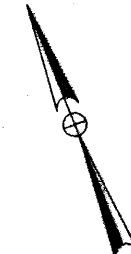
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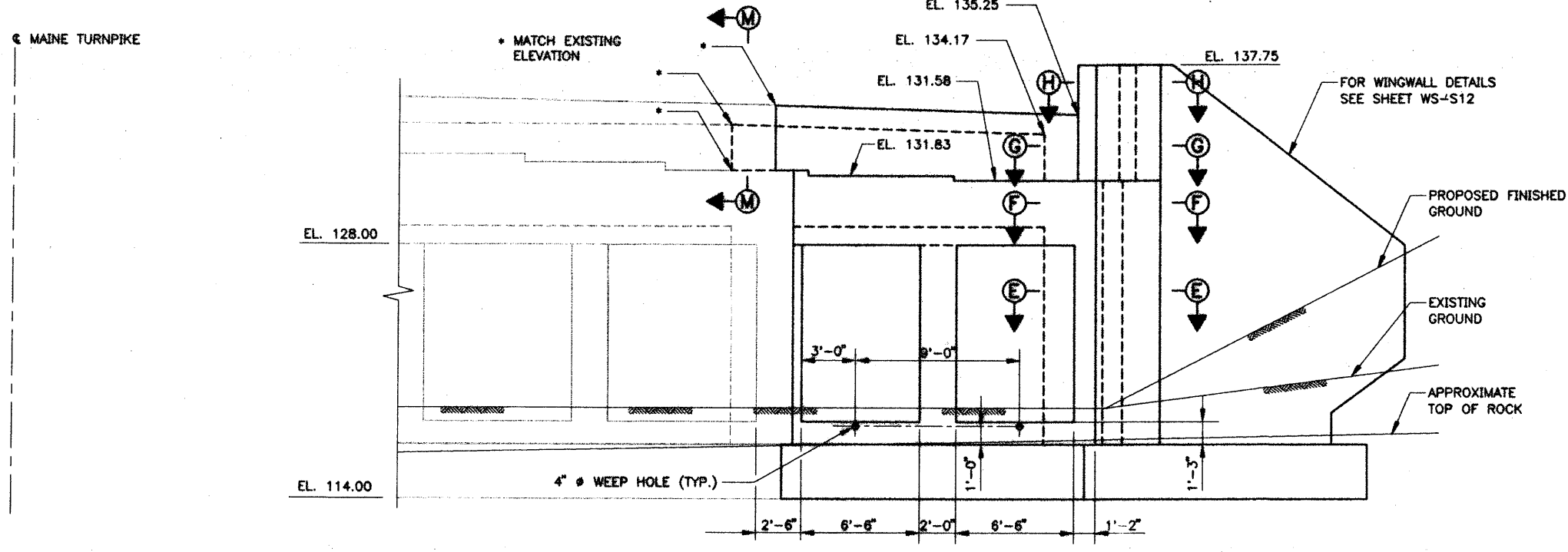
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**MAINLINE BRIDGE WIDENING
ROUTE 109 OVERPASS
SOUTH ABUTMENT DEMOLITION**

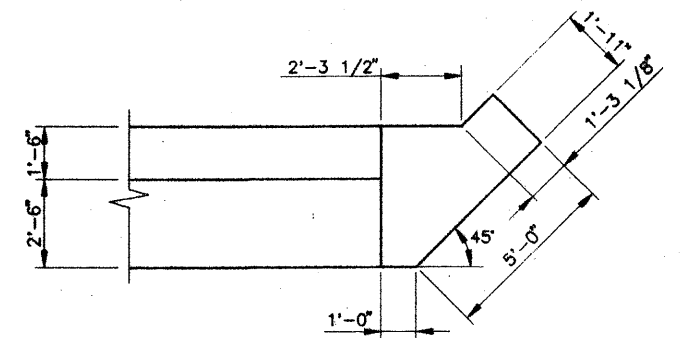
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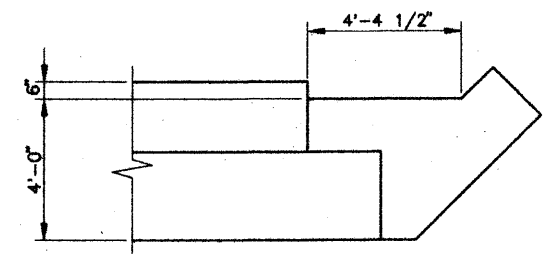
NORTH ABUTMENT
1/4" = 1'-0"



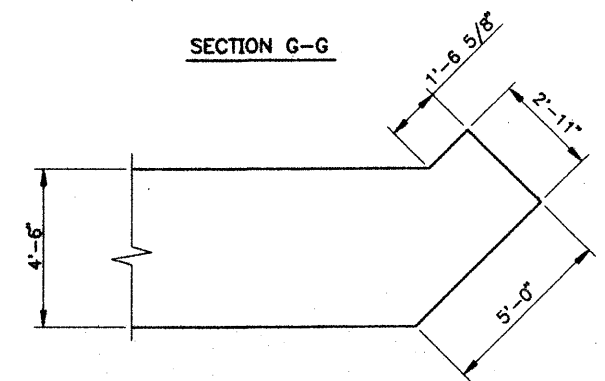
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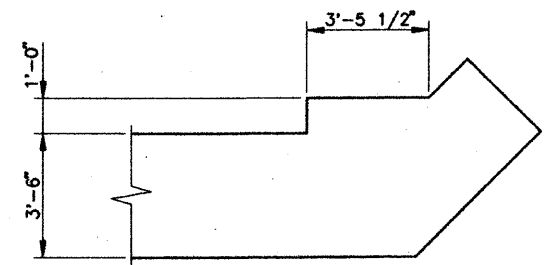
SECTION H-H



SECTION G-G



SECTION F-F



SECTION E-E

NORTHEAST CORNER
3/8" = 1'-0"

NOTES:

1. FOR ADDITIONAL NOTES SEE SHEET WS-S4.
2. FOR REINFORCING DETAILS SEE SHEETS WS-S8 AND WS-S11.
3. FOR SECTION M-M SEE SHEET WS-S11.

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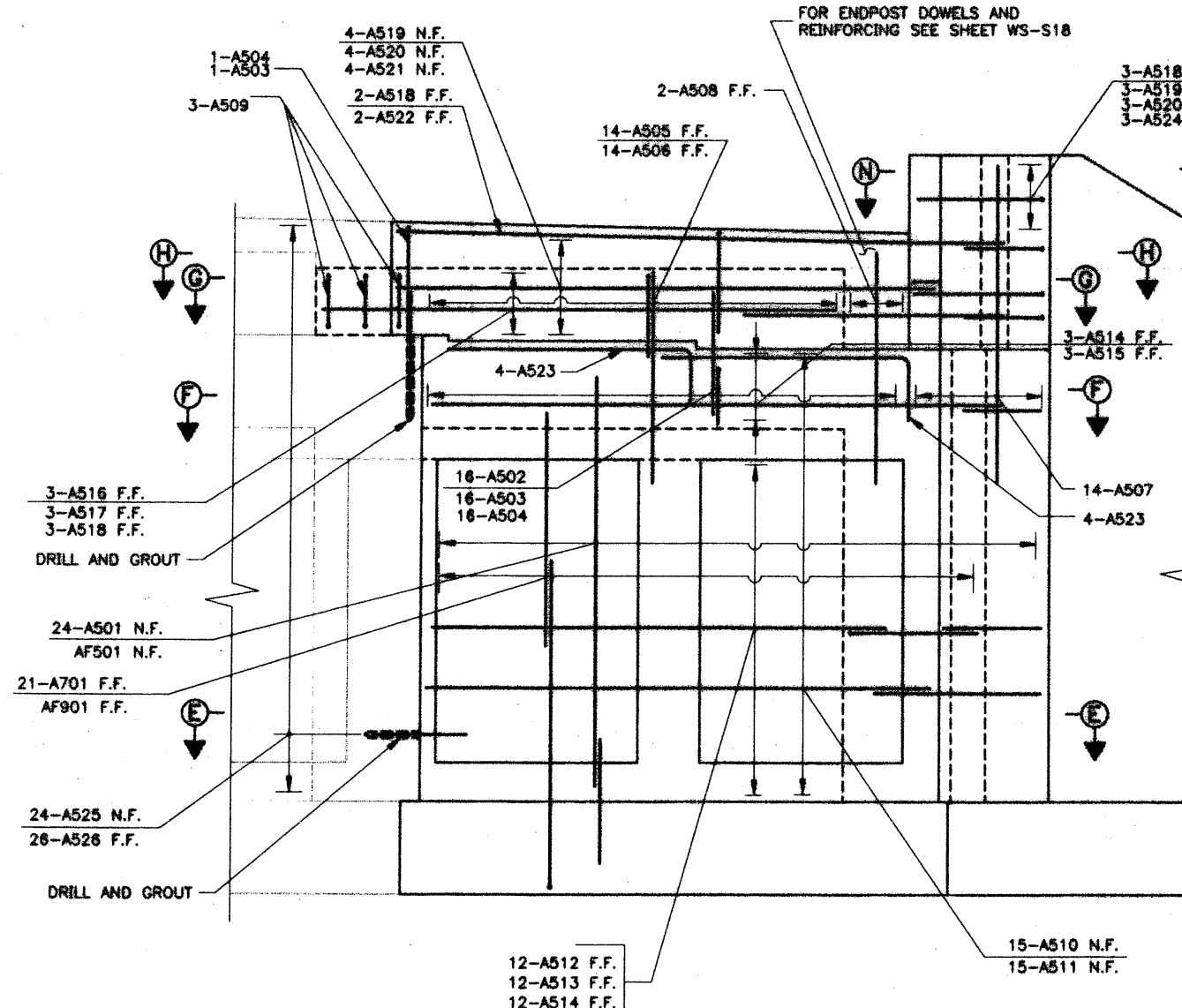
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MODERNIZATION AND WIDENING PROJECT**

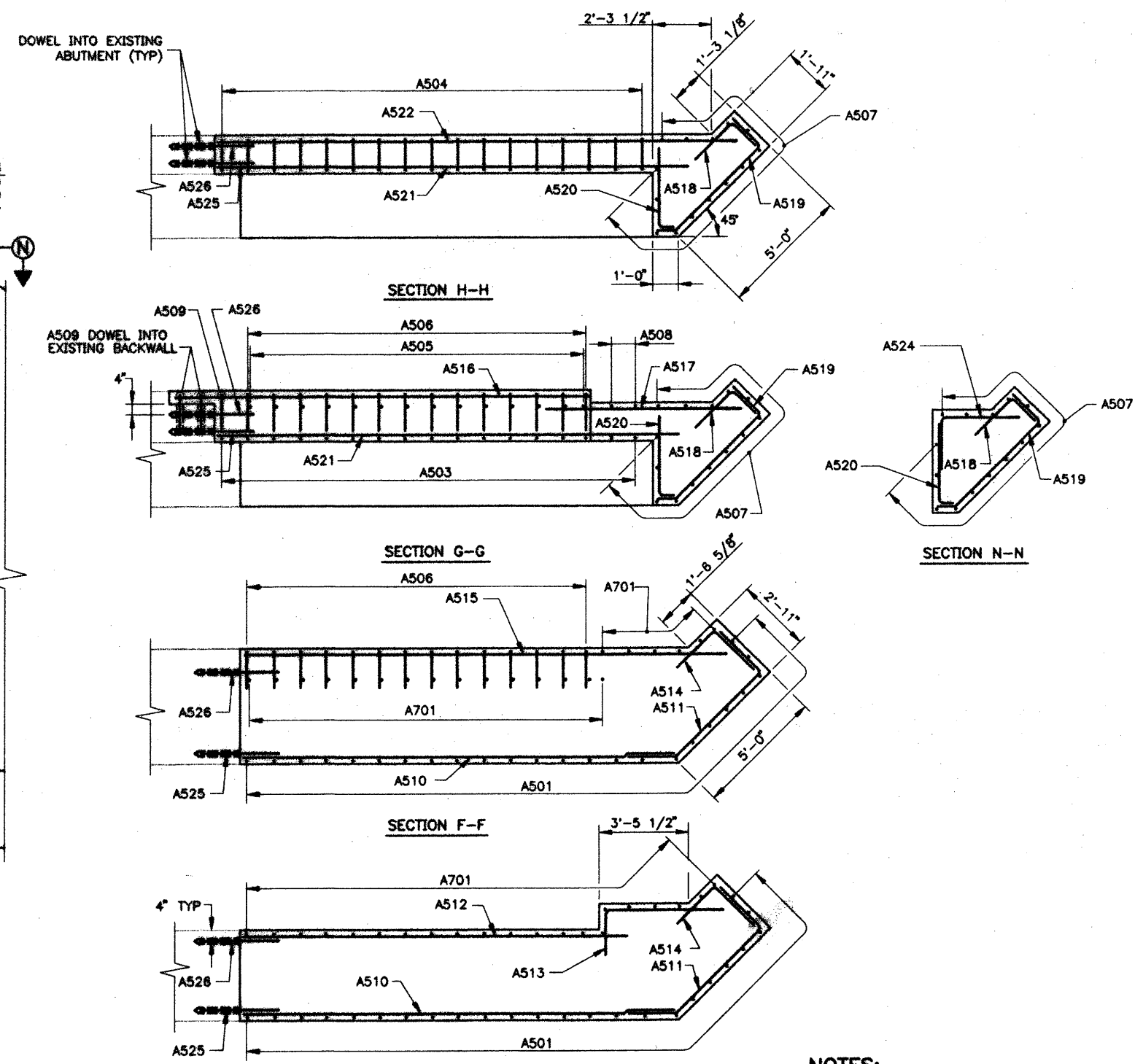
**MAINLINE BRIDGE WIDENING
ROUTE 109 OVERPASS
NORTH ABUTMENT**

SHEET NUMBER: **WS-S7**
CONTRACT: **2000.03**
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NORTH ABUTMENT REINFORCEMENT
3/8" = 1'-0"



NORTHEAST CORNER REINFORCEMENT
3/8" = 1'-0"

- NOTES:**
1. EPOXY COATED REINFORCING IS DESIGNATED IN THE REINFORCING SCHEDULES.
 2. FOR ADDITIONAL DETAILS SEE SHEETS WS-S7 AND WS-S11.

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No.	Revision	By	Date

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HNTB
ARCHITECTS ENGINEERS PLANNERS

	By	Date		By	Date
Designed	JFW	11/99	Checked	SJC	11/99
Drawn	LS	10/99	In Charge of	RAL	11/99

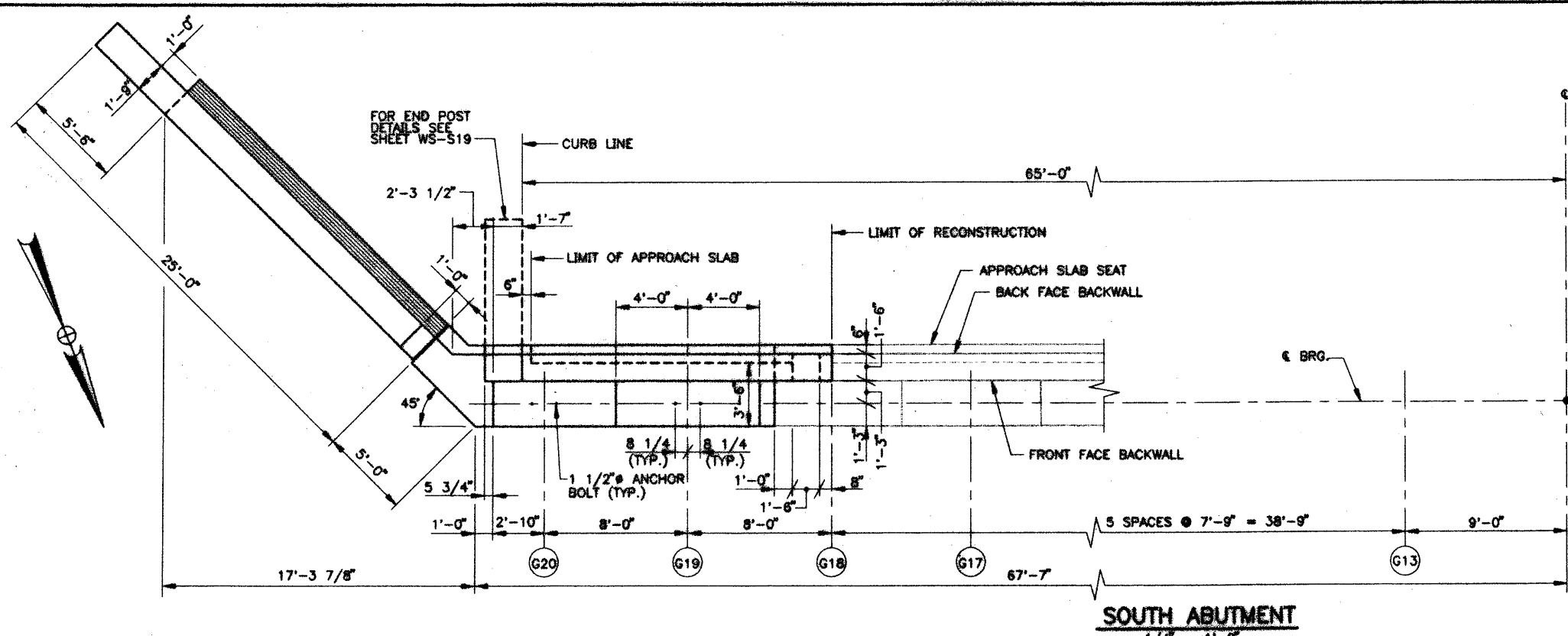
HNTB CORPORATION
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Westbrook, ME 04092
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**MAINE TURNPIKE AUTHORITY
MODERNIZATION AND WIDENING PROJECT**

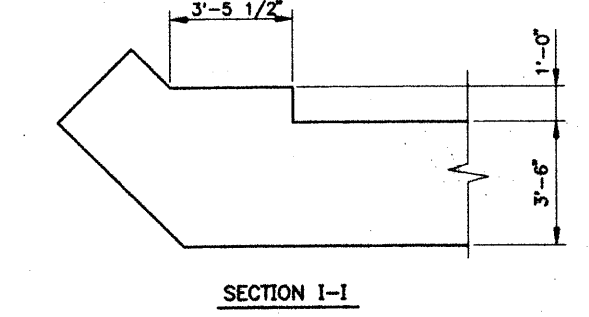
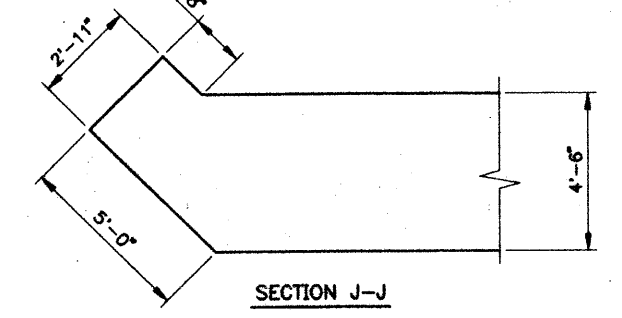
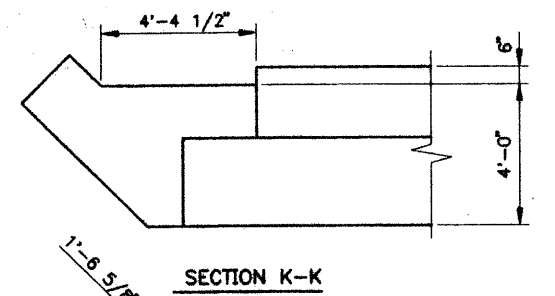
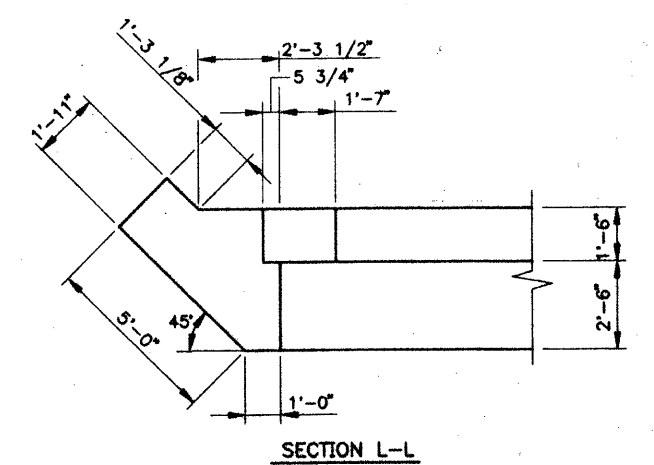
Transpass

**MAINLINE BRIDGE WIDENING
ROUTE 109 OVERPASS
NORTH ABUTMENT REINFORCING**

SHEET NUMBER: **WS-S8**
CONTRACT: **2000.03**
101 OF 178



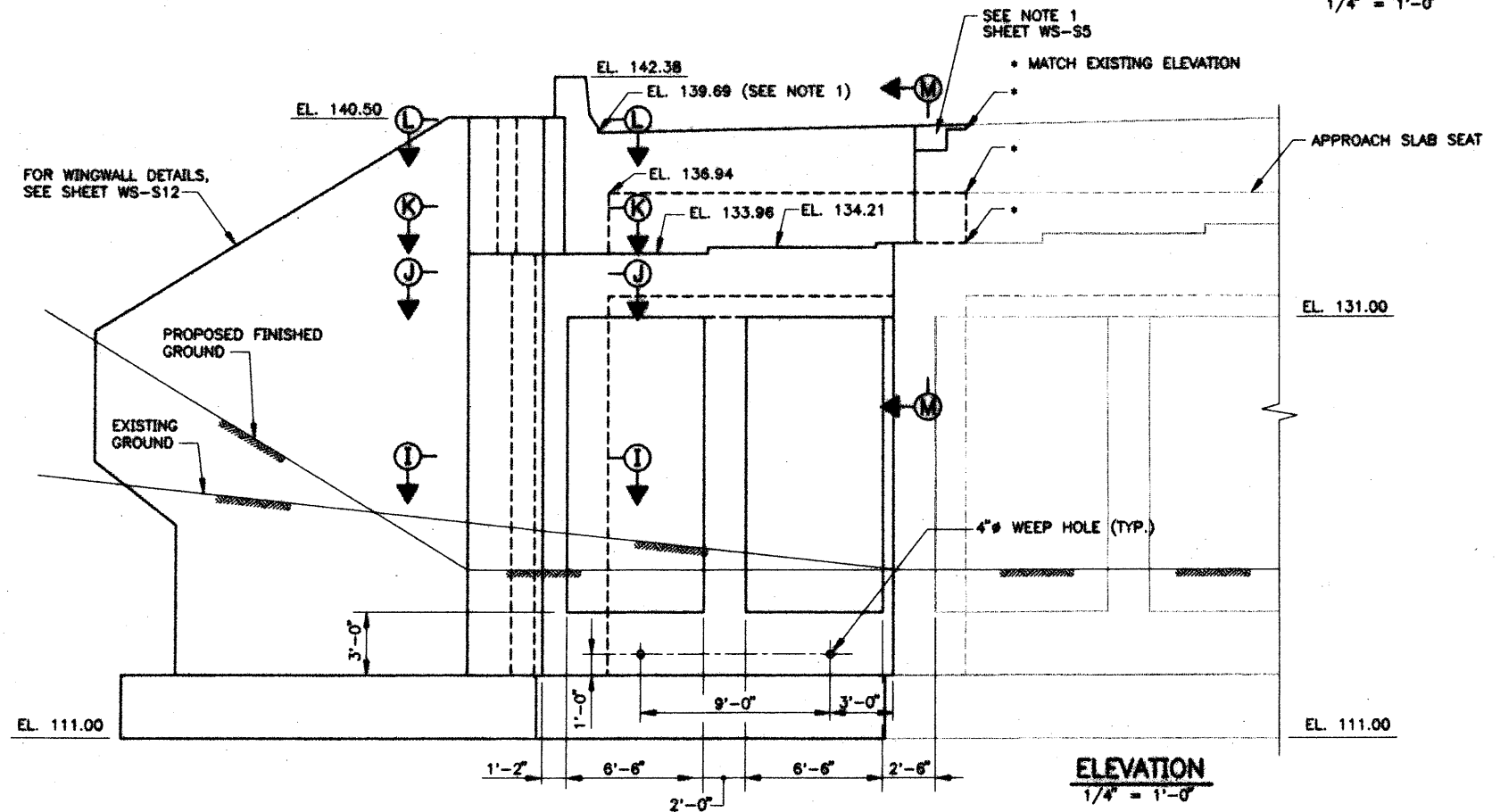
SOUTH ABUTMENT
1/4" = 1'-0"



SOUTHEAST CORNER
3/8" = 1'-0"

NOTES

- ELEVATION IS GIVEN AT THE FRONT FACE OF BACKWALL AT THE TOP OF THE STEEL ANGLE, SEE SECTION A-A SHEET WS-S21.
- FOR ADDITIONAL NOTES SEE SHEET WS-S4.
- FOR REINFORCING DETAILS SEE SHEET WS-S10 AND WS-S11.
- FOR SECTION M-M SEE SHEET WS-S11.



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	LS	10/99		RAL	11/99

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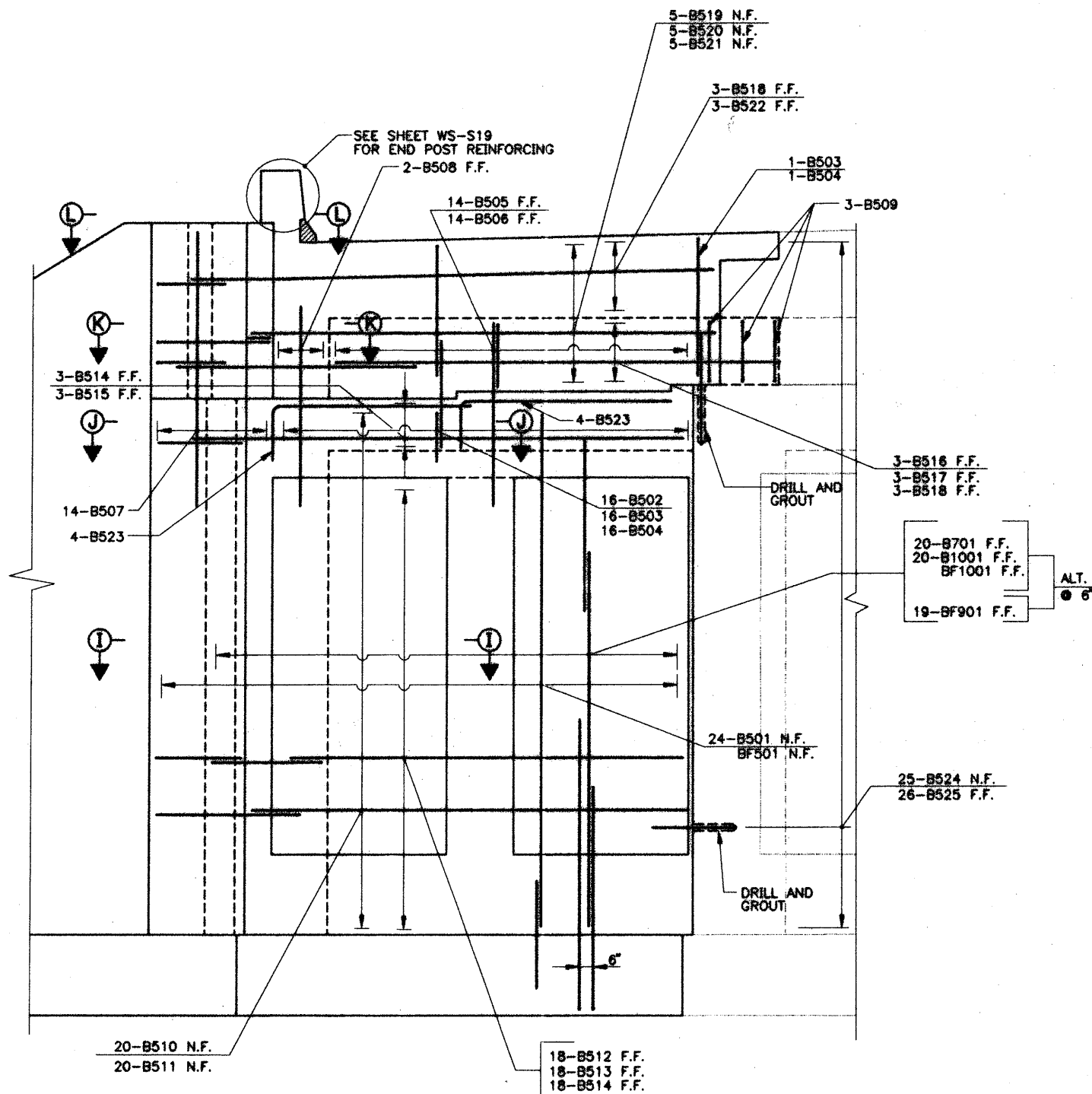
**MAINE TURNPIKE AUTHORITY
MODERNIZATION AND WIDENING PROJECT**

**MAINLINE BRIDGE WIDENING
ROUTE 109 OVERPASS
SOUTH ABUTMENT**

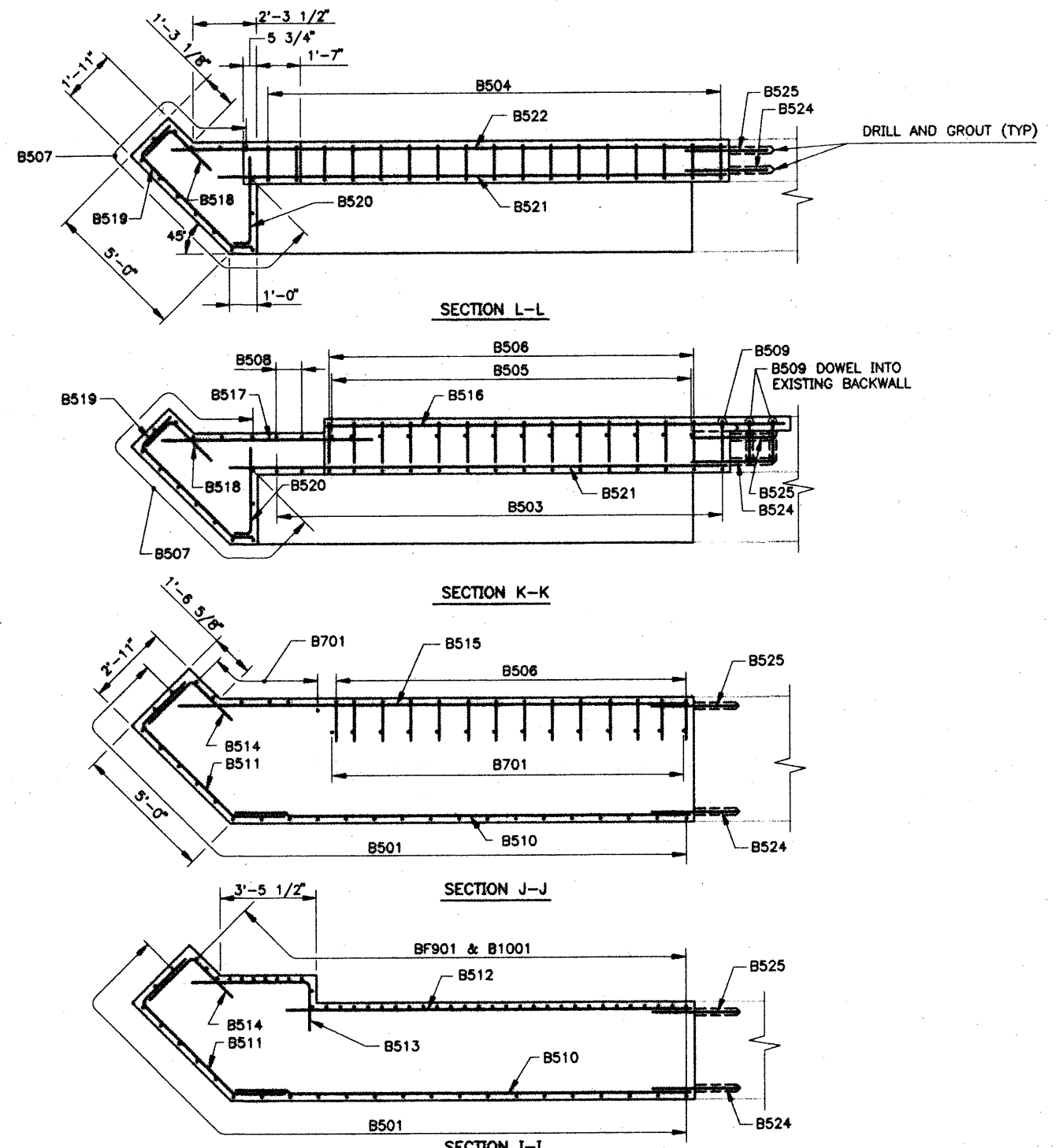
CONTRACT: 2000.03

SHEET NUMBER: WS-S9

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SOUTH ABUTMENT REINFORCEMENT
3/8" = 1'-0"



SOUTHEAST CORNER REINFORCEMENT
3/8" = 1'-0"

NOTES

1. EPOXY COATED REINFORCING IS DESIGNATED IN THE REINFORCING SCHEDULES.
2. FOR ADDITIONAL DETAILS SEE SHEETS WS-S9 AND WS-S11.

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Designed	By	Date	Checked	By	Date
Drawn	LS	10/99	In Charge of	RAJ	11/99

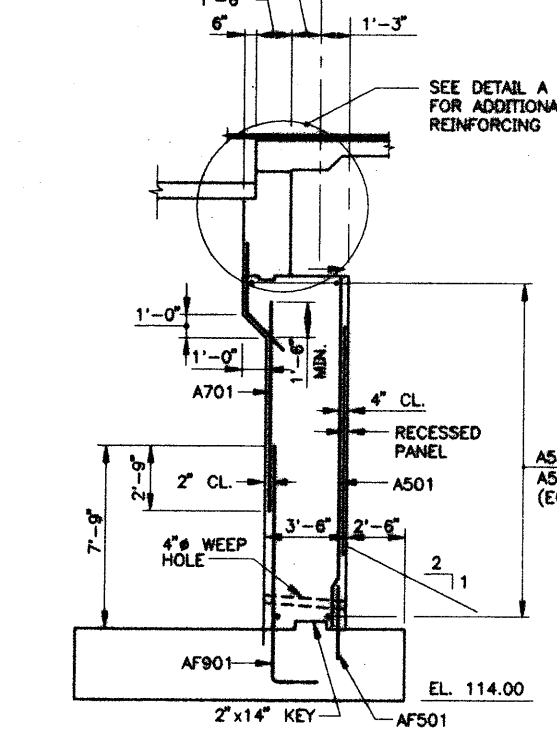
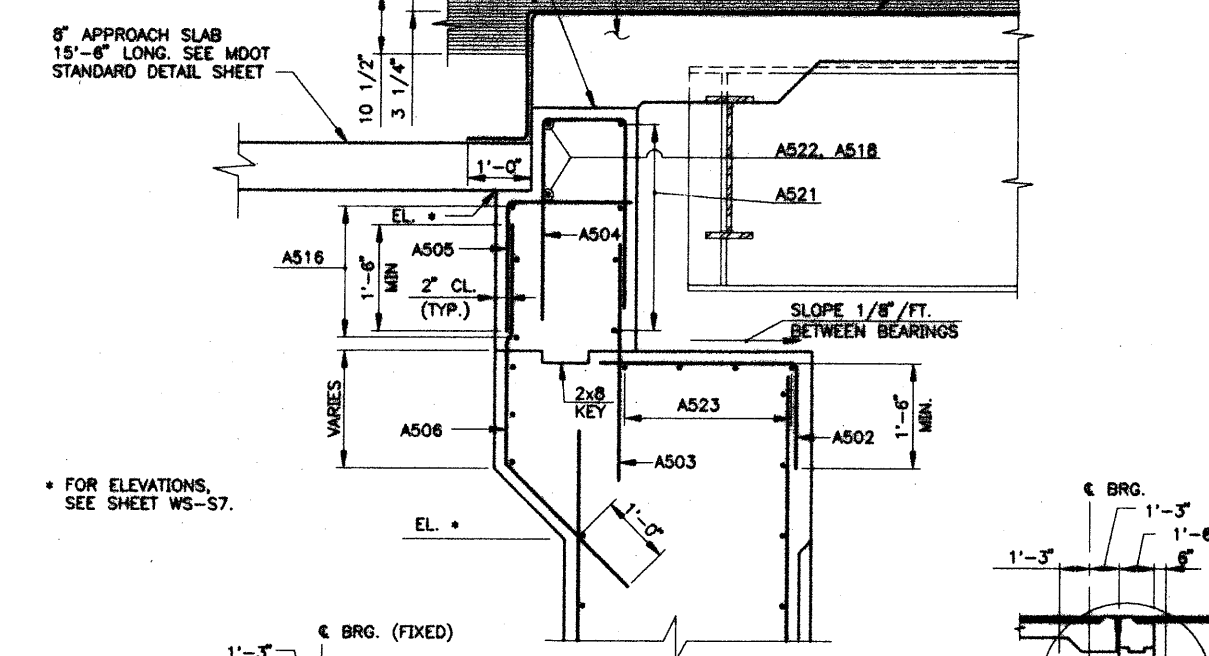
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**MAINE TURNPIKE AUTHORITY
MODERNIZATION AND WIDENING PROJECT**

**MAINLINE BRIDGE WIDENING
ROUTE 109 OVERPASS
SOUTH ABUTMENT REINFORCING**

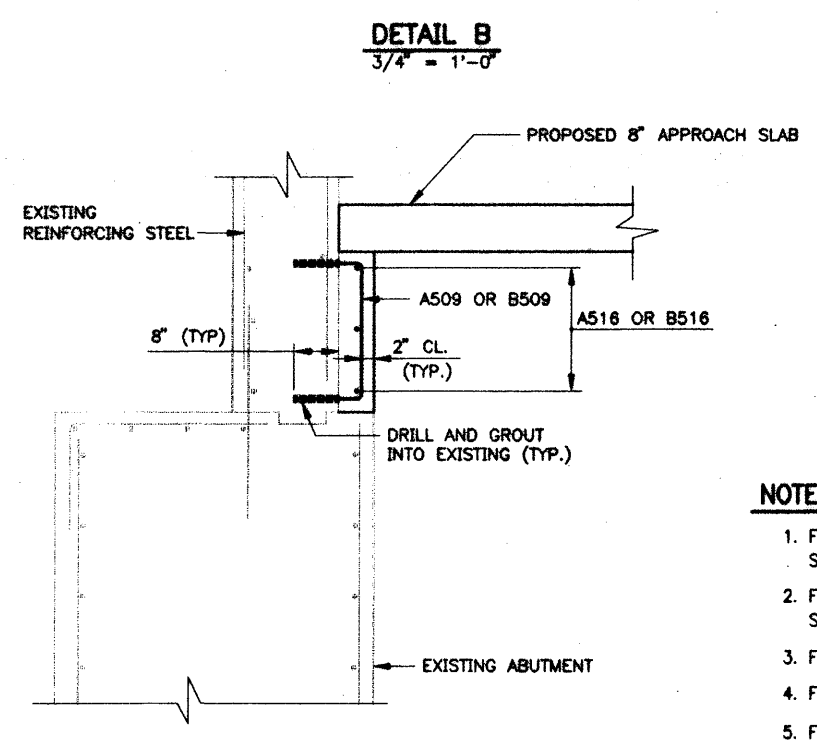
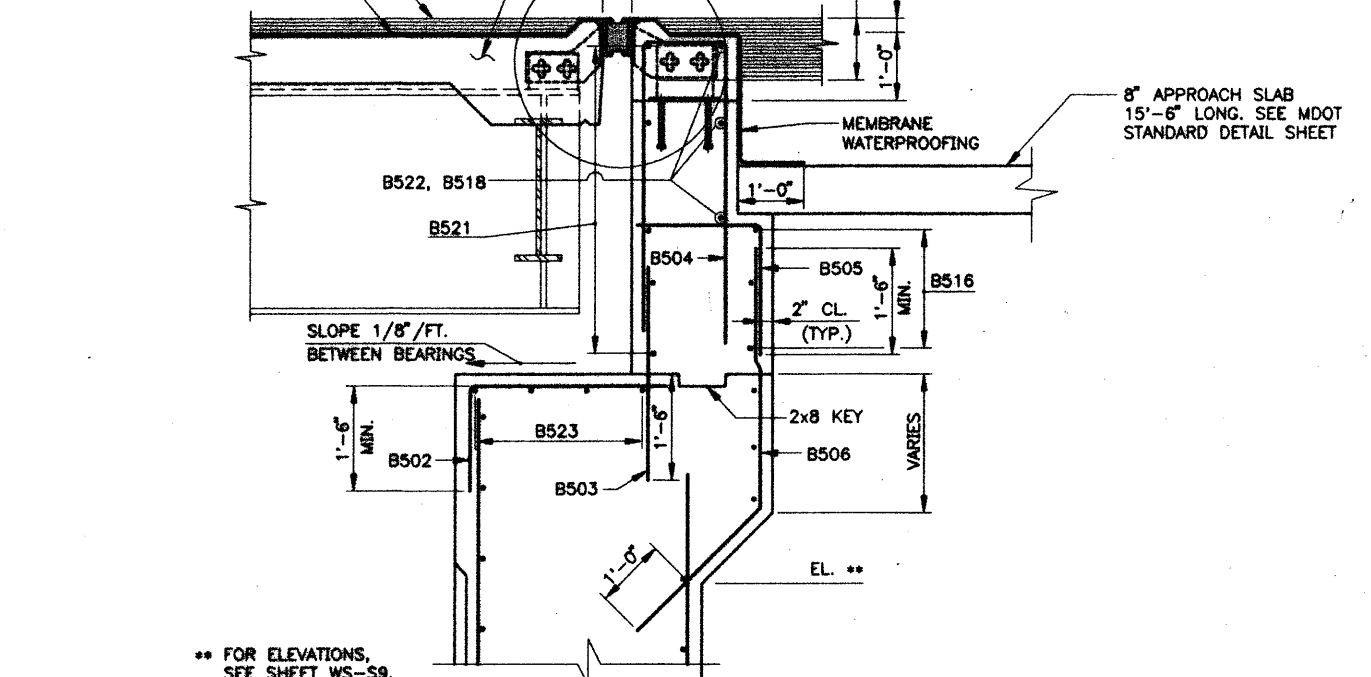
SHEET NUMBER: **WS-S10**
CONTRACT: **2000.03**
103 OF 178

TROWEL TO SMOOTH FINISH & PLACE 2 LAYERS OF ROOFING FELT
 3/8" X 1/2" DEEP JOINT SAWED AND SEALED WITH BITUMINOUS CONCRETE JOINT SEALANT
 FOR DECK REINFORCING, SEE SECTION B-B ON SHEET WS-S15
 BITUMINOUS CONCRETE SURFACE
 MEMBRANE WATERPROOFING

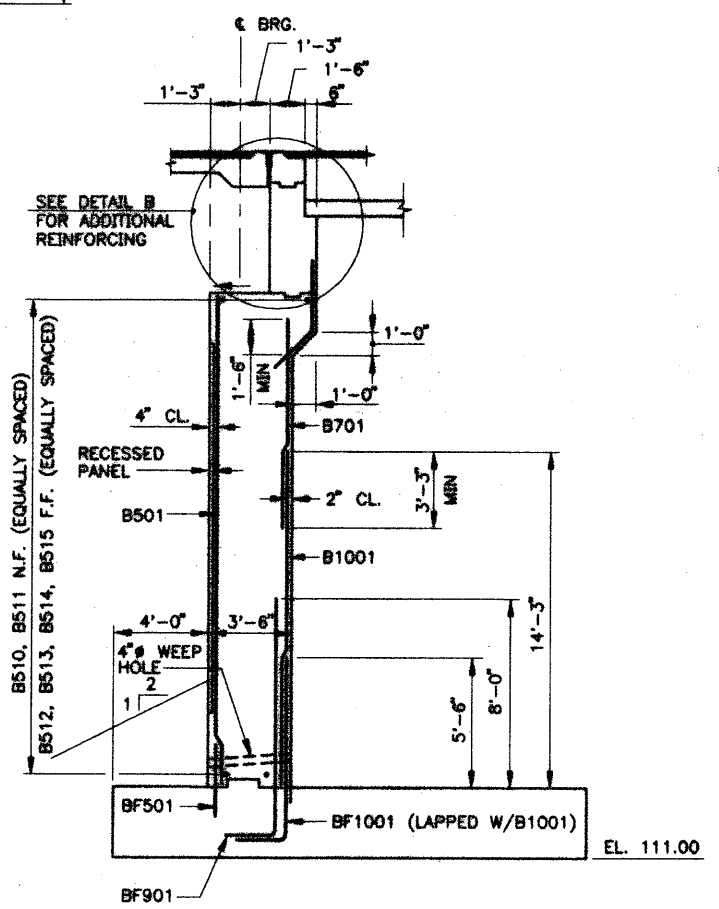


TYPICAL NORTH ABUTMENT SECTION
 1/4" = 1'-0"

FOR DECK REINFORCING, SEE SECTION A-A ON SHEET WS-S21
 BITUMINOUS CONCRETE SURFACE
 MEMBRANE WATERPROOFING
 DIM "A" SEE SHEET WS-S21
 SEE SHEET WS-S21 FOR EXPANSION JT. DETAILS
 8" APPROACH SLAB 15'-6" LONG. SEE MDOOT STANDARD DETAIL SHEET



SECTION M-M
 3/4" = 1'-0"



TYPICAL SOUTH ABUTMENT SECTION
 1/4" = 1'-0"

- NOTES:**
1. FOR ABUTMENT ELEVATIONS SHOWING REINFORCING STEEL, SEE SHEETS WS-S8 & WS-S10.
 2. FOR FOOTING DIMENSIONS AND REINFORCING STEEL, SEE SHEET WS-S6.
 3. FOR RECESSED PANEL DETAILS, SEE SHEET WS-S13.
 4. FOR ADDITIONAL NOTES, SEE SHEET WS-S4.
 5. FOR FRENCH DRAIN DETAILS, SEE SHEET WS-S13.
 6. FOR LOCATION OF SECTIONS, SEE SHEETS WS-S7 AND WS-S9.

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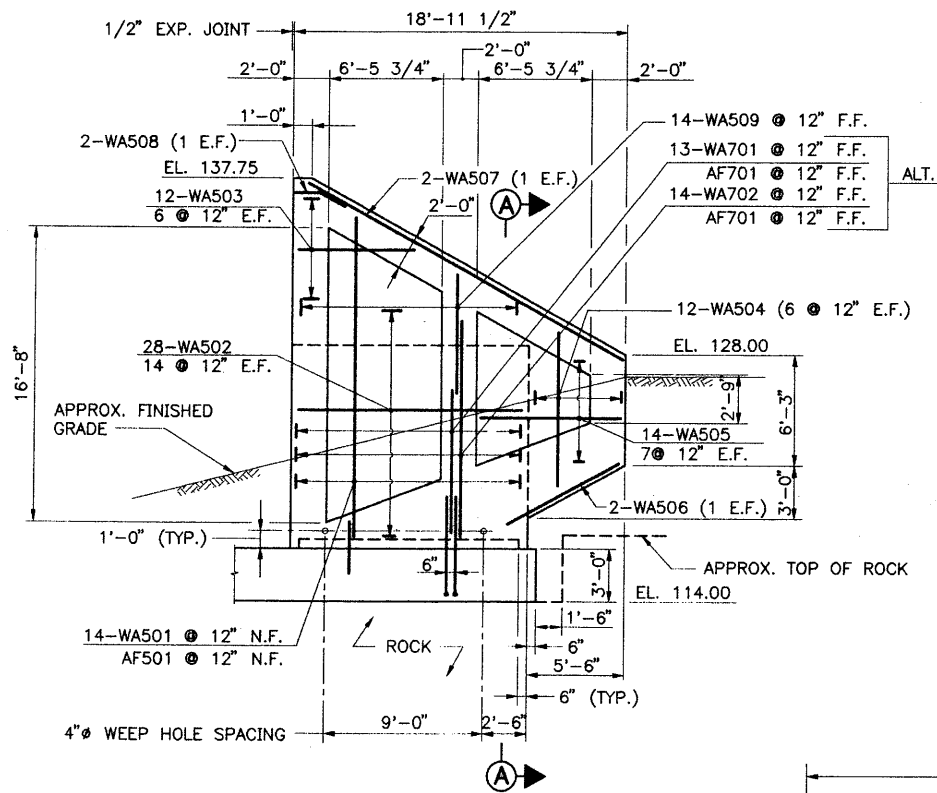
By	Date	By	Date
Designed KAC	7/99	Checked JFW	11/99
Drawn LS	7/99	In Charge of RAL	11/99

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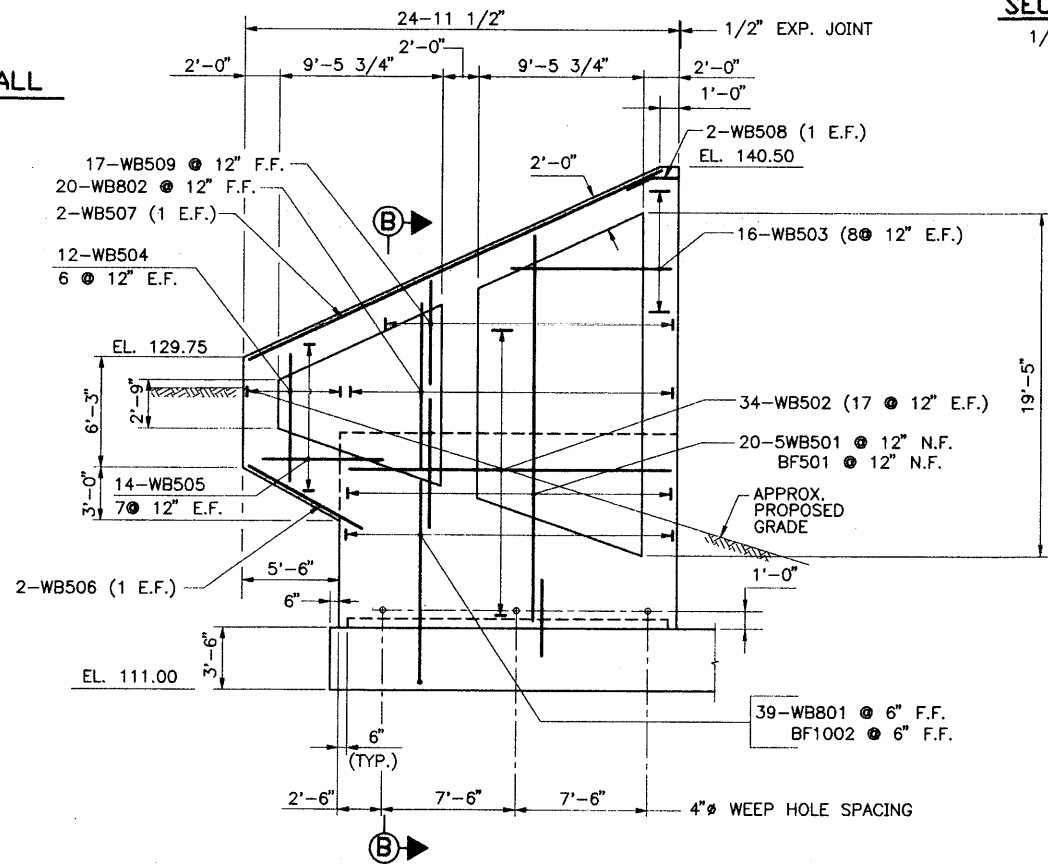
**MAINE TURNPIKE AUTHORITY
 MODERNIZATION AND WIDENING PROJECT**

**MAINLINE BRIDGE WIDENING
 ROUTE 109 OVERPASS
 ABUTMENT CROSS SECTIONS AND DETAILS**

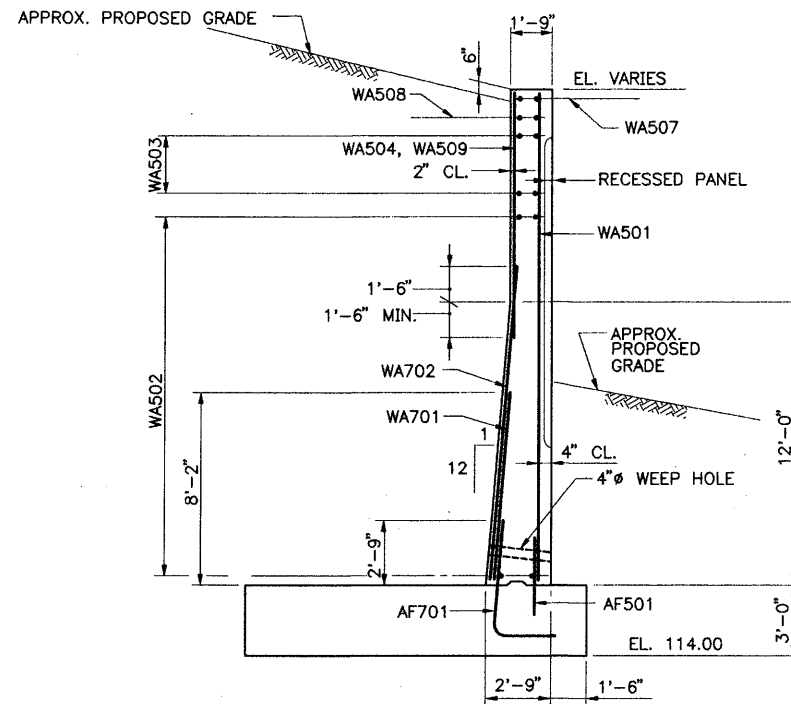
SHEET NUMBER: **WS-S11**
 CONTRACT: 2000.03
 104 OF 178



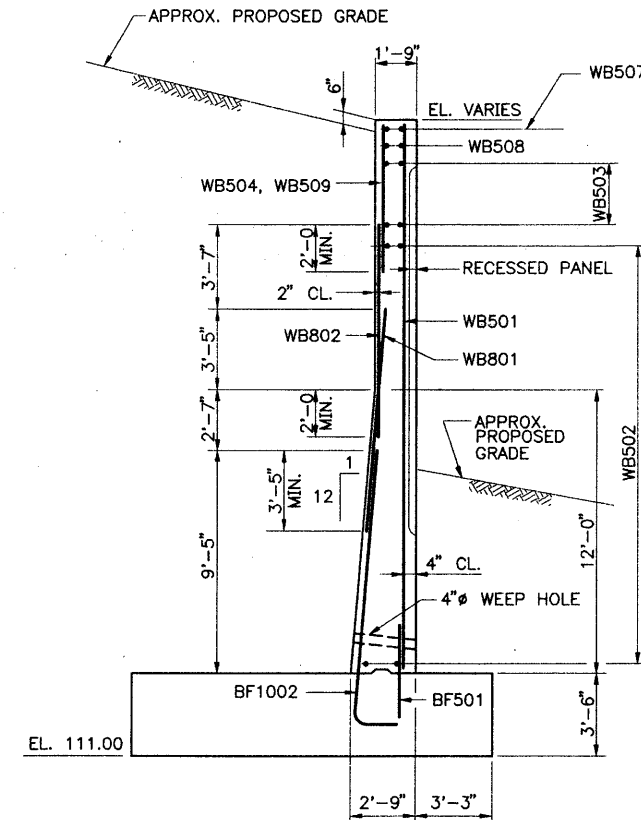
ELEVATION OF N.E. WINGWALL
3/16" = 1'-0"



ELEVATION OF S.E. WINGWALL
3/16" = 1'-0"



SECTION A-A
1/4" = 1'-0"



SECTION B-B
1/4" = 1'-0"

NOTES:

1. FOR RECESSED PANEL DETAILS, SEE SHEET WS-S13.
2. FOR FOOTING DIMENSIONS AND REINFORCING, SEE SHEET WS-S6.
3. FOR ADDITIONAL NOTES, SEE SHEET WS-S7.
4. FOR FRENCH DRAIN, SEE SHEET WS-S13.

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No.	Revision	By	Date

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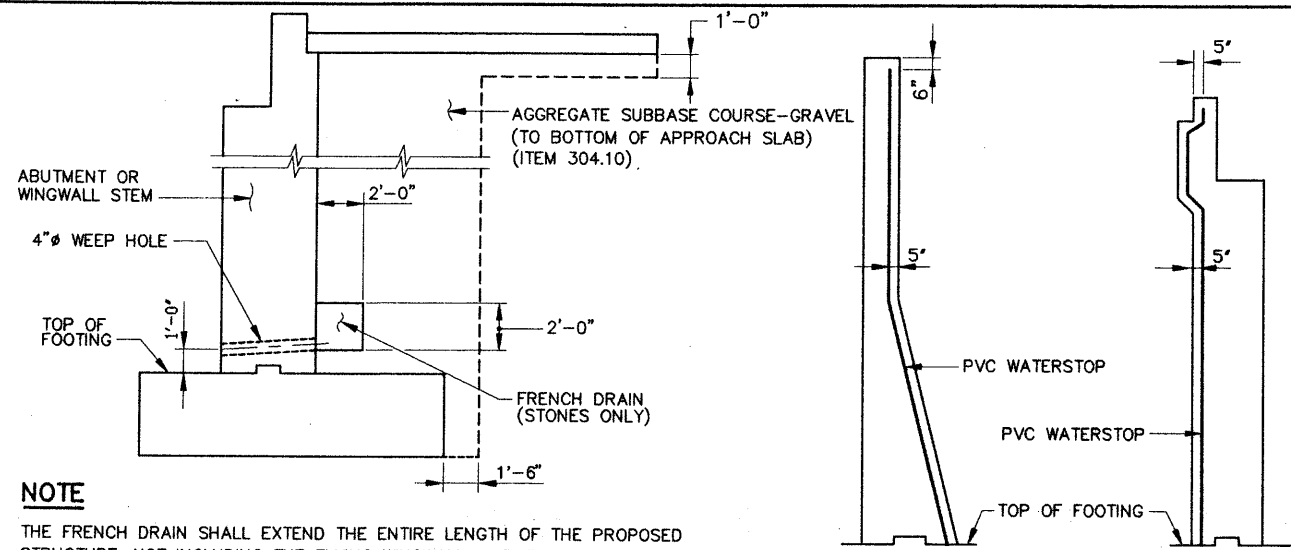
By	Date	By	Date
Designed JFW	11/99	Checked SJC	11/99
Drawn LS	11/99	In Charge of RAL	11/99

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**MAINE TURNPIKE AUTHORITY
MODERNIZATION AND WIDENING PROJECT**

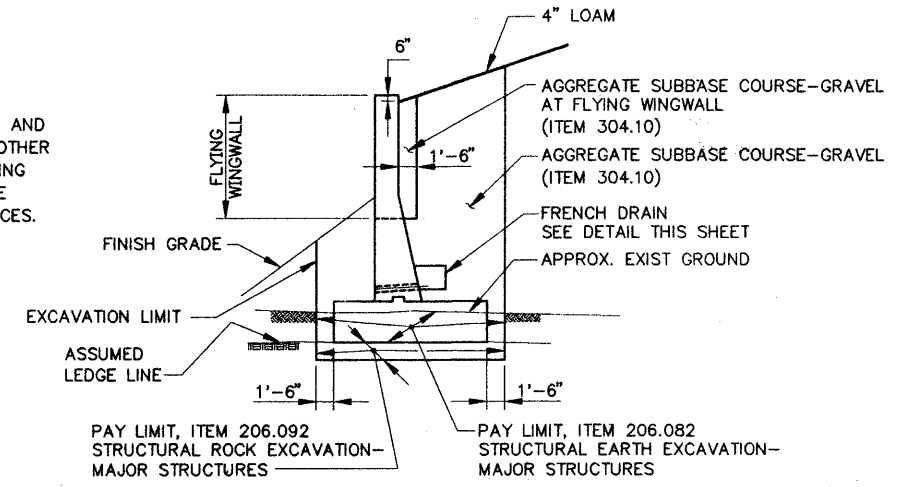
**MAINLINE BRIDGE WIDENING
ROUTE 109 OVERPASS
WINGWALL DETAILS**

SHEET NUMBER: **WS-S12**
CONTRACT: 2000.03
105 OF 178



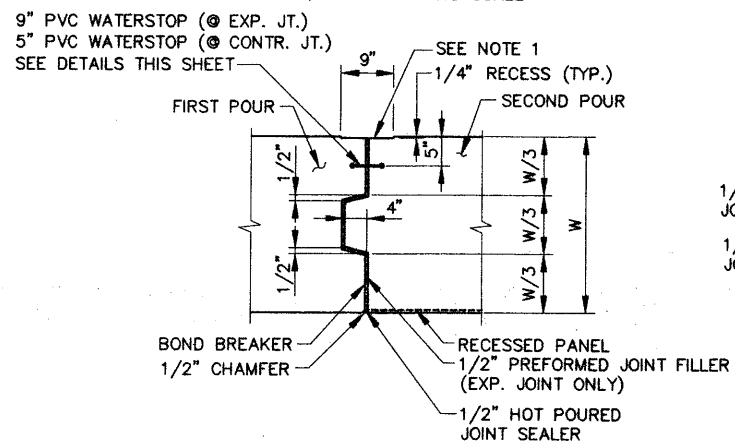
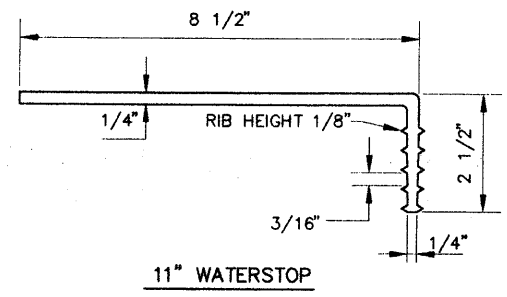
NOTE
 THE FRENCH DRAIN SHALL EXTEND THE ENTIRE LENGTH OF THE PROPOSED STRUCTURE, NOT INCLUDING THE FLYING WINGWALL. A POROUS GEOTEXTILE WICK MATERIAL SHALL BE INSTALLED OVER THE WEEP HOLES ALONG THE BACKFACE OF THE ABUTMENT OR WINGWALL STEM PRIOR TO CONSTRUCTING THE FRENCH DRAIN. A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED AROUND THE FRENCH DRAIN STONES, SEPARATING THEM FROM THE AGGREGATE SUBBASE COURSE-GRAVEL.

NOTE FOR RECESSED PANEL
 RECESSED PANEL FORMS SHALL BE SUFFICIENTLY RIGID, SECURELY BRACED, STRUTTED AND TIED TO PREVENT MOTION AND DISTORTION DUE TO THE PRESSURE OF THE CONCRETE AND OTHER LOADS INCIDENT TO THE CONSTRUCTION OPERATIONS, INCLUDING VIBRATION, AND SHALL BE SO CONSTRUCTED AS TO PRODUCE MORTAR-TIGHT JOINTS AND SMOOTH, EVEN CONCRETE SURFACES.



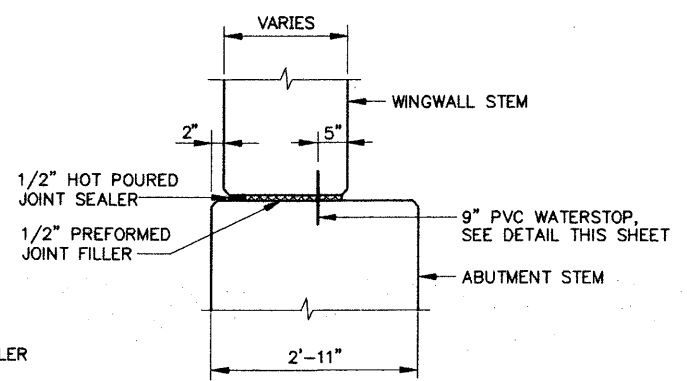
PAY LIMITS - WINGWALL
 NO SCALE

FRENCH DRAIN DETAIL
 NO SCALE

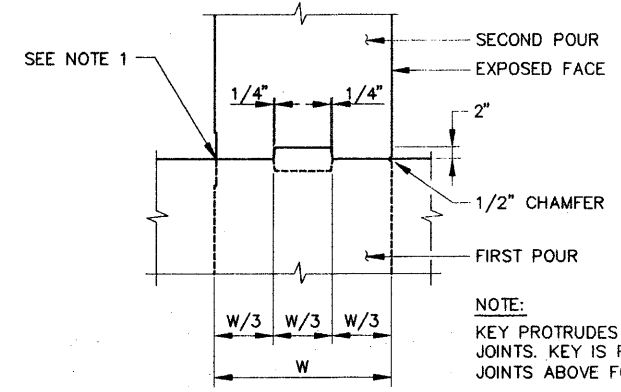


ABUTMENT CONTRACTION & EXPANSION JOINTS

RECESSED PANEL DETAIL
 3/16" = 1'-0"



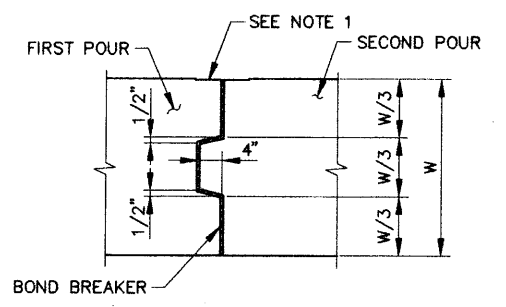
WINGWALL EXPANSION JOINT



HORIZONTAL CONSTRUCTION JOINT
 NO SCALE

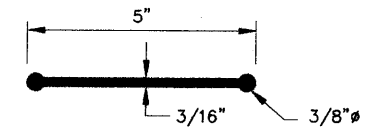
NOTE:
 1. APPLY TWO LAYERS OF HEAVY ROOFING FELT. COAT THE CONCRETE AND EACH LAYER WITH PLASTIC ROOFING CEMENT. (TYPICAL AT HORIZONTAL AND VERTICAL CONTRACTION, CONSTRUCTION AND EXPANSION JOINTS.)

VERTICAL JOINT DETAILS - WALLS
 NO SCALE

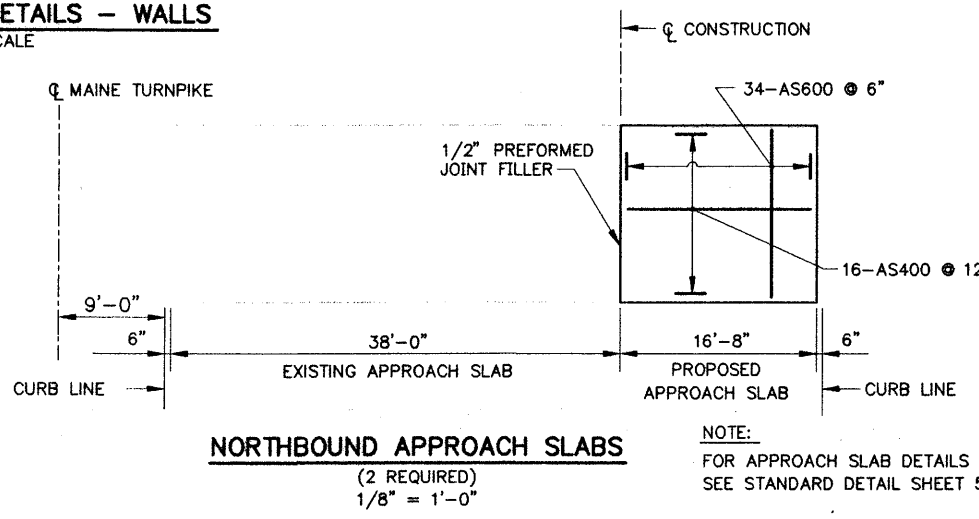


CONSTRUCTION JOINT DETAILS - FOOTINGS
 NO SCALE

9" WATERSTOP



WATERSTOP DETAILS
 NO SCALE



NOTE:
 FOR APPROACH SLAB DETAILS NOT SHOWN, SEE STANDARD DETAIL SHEET 502 (4)

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No.	Revision	By	Date

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Designed	By	Date	Checked	By	Date
Drawn	KAC	9/99	JFW	11/99	
	LS	9/99	In Charge of	RAL	11/99

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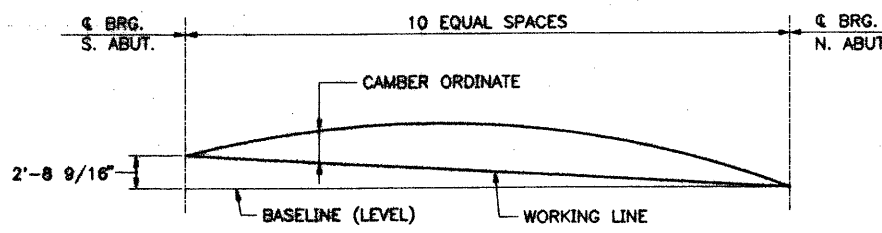
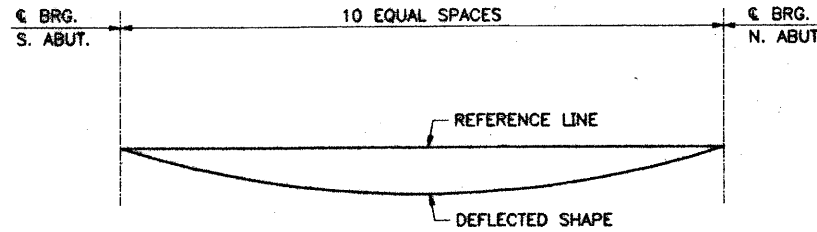
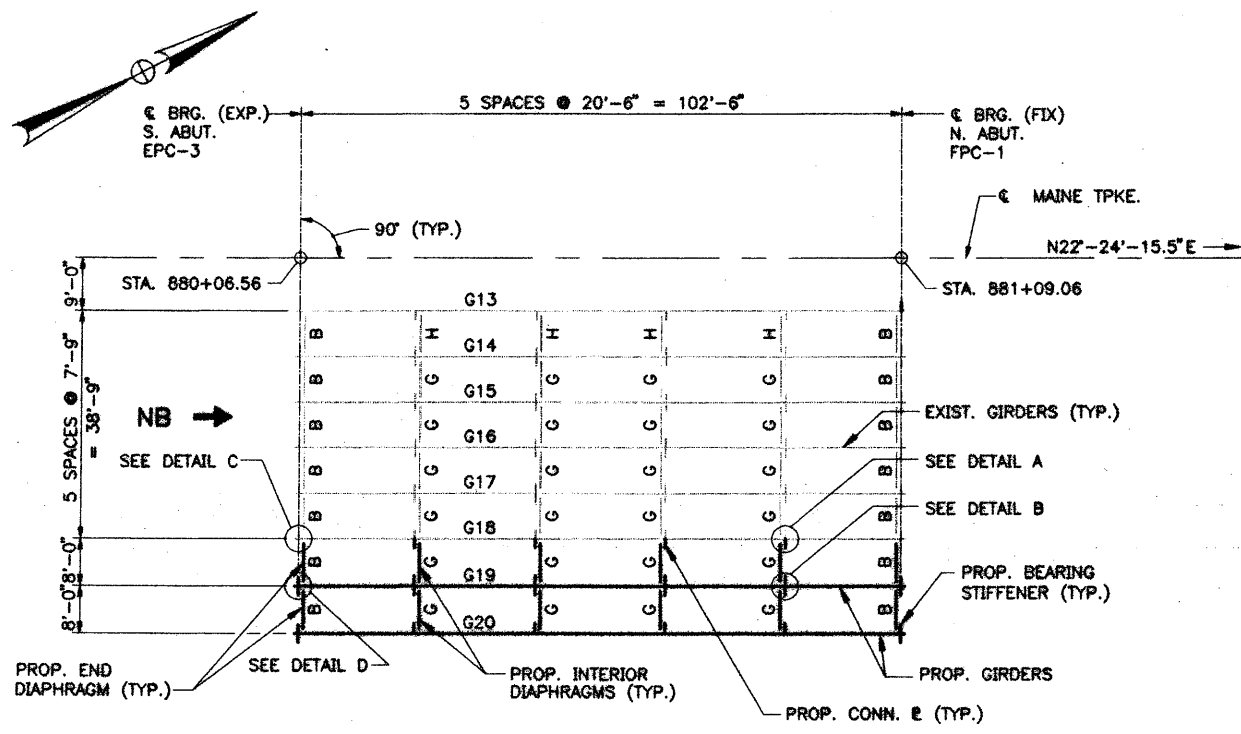
**MAINE TURNPIKE AUTHORITY
 MODERNIZATION AND WIDENING PROJECT**

**MAINLINE BRIDGE WIDENING
 ROUTE 109 OVERPASS
 SUBSTRUCTURE DETAILS**

SHEET NUMBER: **WS-S13**

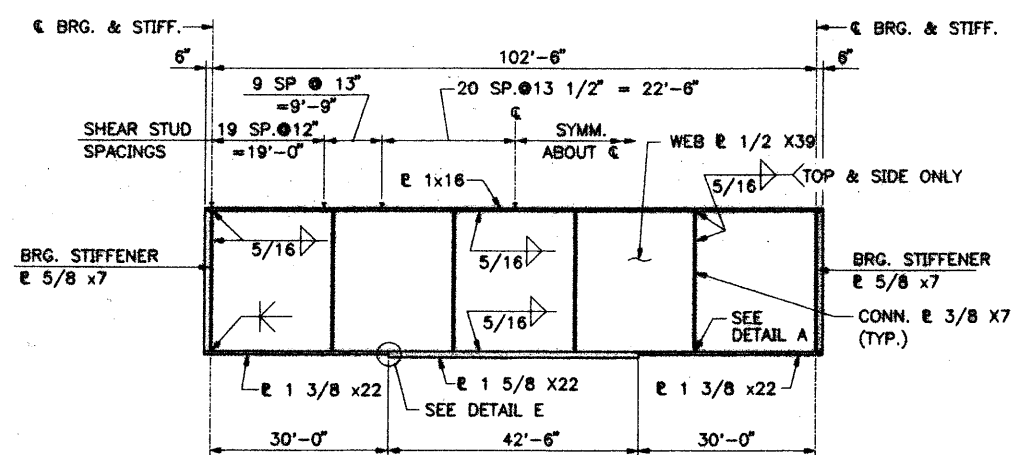
CONTRACT: **2000.03**

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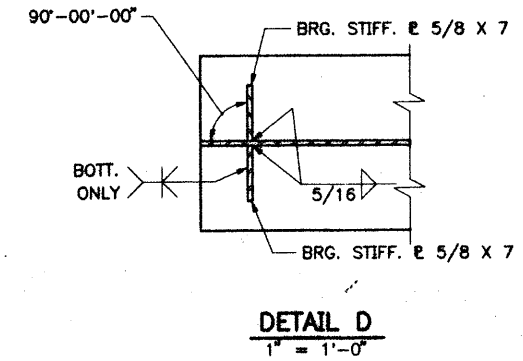
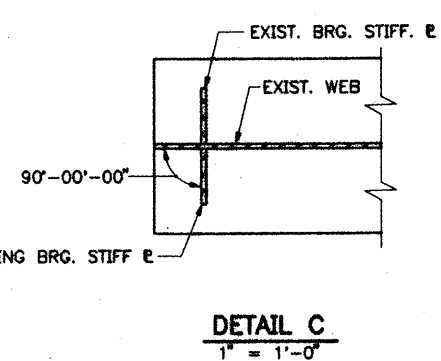
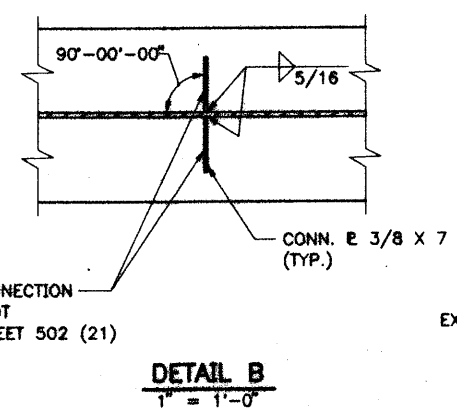
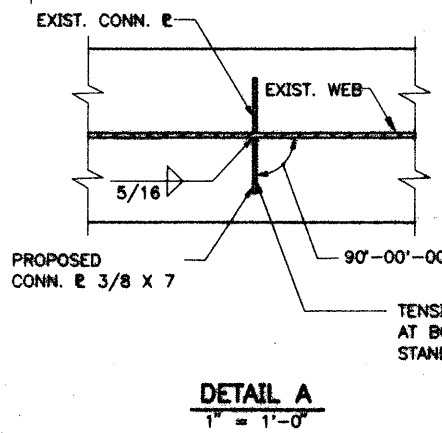
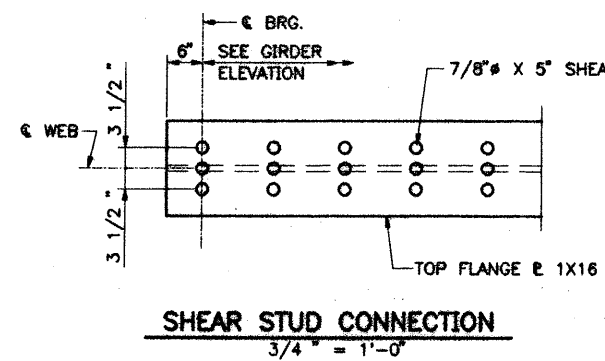
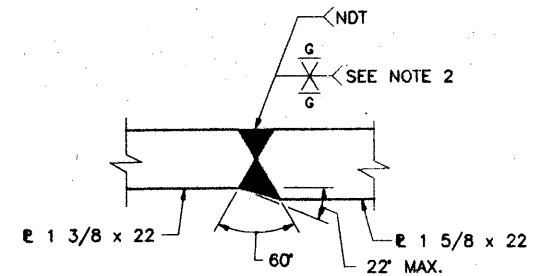


- STRUCTURAL STEEL NOTES:**
- CAMBER ORDINATES AS SHOWN ARE COMPUTED TO COMPENSATE FOR ALL DEAD LOAD DEFLECTIONS AND THE EFFECT OF VERTICAL CURVATURE.
 - ALL BUTT WELDS USED TO FABRICATE GIRDER WEBS AND FLANGES SHALL BE FULL PENETRATION DOUBLE V-GROOVE WELDS WITH WELD PROFILES GROUND SMOOTH. ALL FULL PENETRATION WELDS SHALL BE TESTED ACCORDING TO SPECIFICATIONS.
 - BUTT-WELD SPLICES IN FLANGES SHALL NOT BE LESS THAN THREE FEET FROM TRANSVERSE BUTT-WELDS IN THE WEB PLATE.
 - BEARING STIFFENERS SHALL BE PLUMB AFTER ERECTION AND DEAD LOADING OF THE STRUCTURE.
 - CROSS-FRAME OR DIAPHRAGM CONNECTION PLATES MAY BE EITHER PLUMB OR NORMAL TO THE TOP FLANGE.
 - FOR SHEAR CONNECTOR DETAILS, SEE THIS SHEET AND MDOT STANDARD DETAIL SHEET 505 (1).
 - FOR DETAILS OF DIAPHRAGM TYPES B, G & H SEE MDOT STANDARD STANDARD SHEETS 502 (15-22).
 - FOR BEARING PEDESTAL DETAILS SEE STANDARD DETAIL SHEET BD101-89 (CONTRACT 93.7). 2-EPC-3 REQUIRED, 2-FPC-1 REQUIRED.
 - ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A709 IN THE APPROPRIATE GRADES AS FOLLOWS:

GIRDER WEBS & FLANGES	GRADE 50
BEARING PEDESTALS	GRADE 50
CONNECTION 'S' & BEARING STIFFENERS	GRADE 36
END DIAPHRAGMS	GRADE 36
CROSS FRAMES	GRADE 36

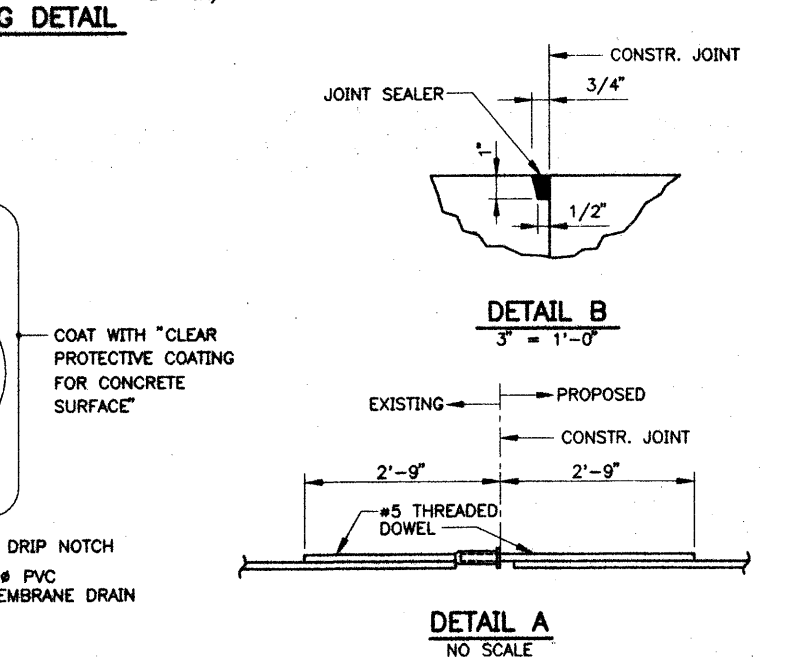
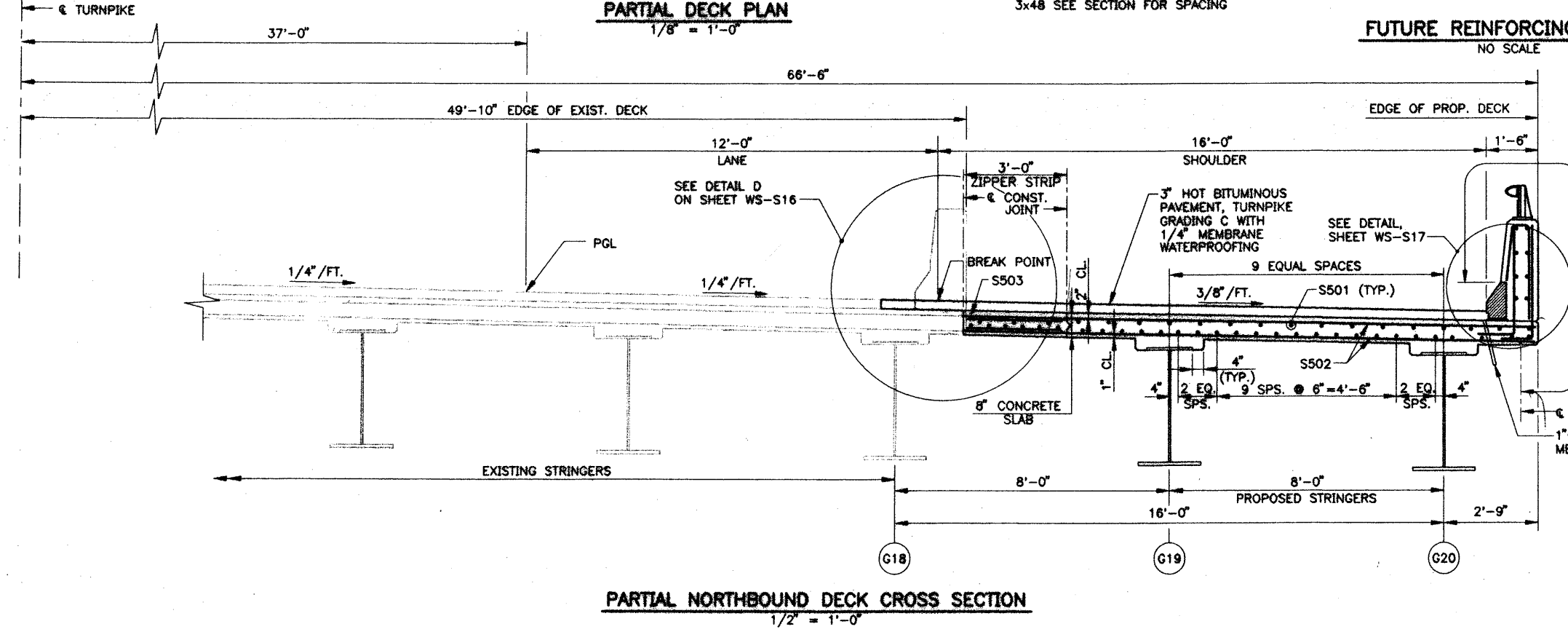
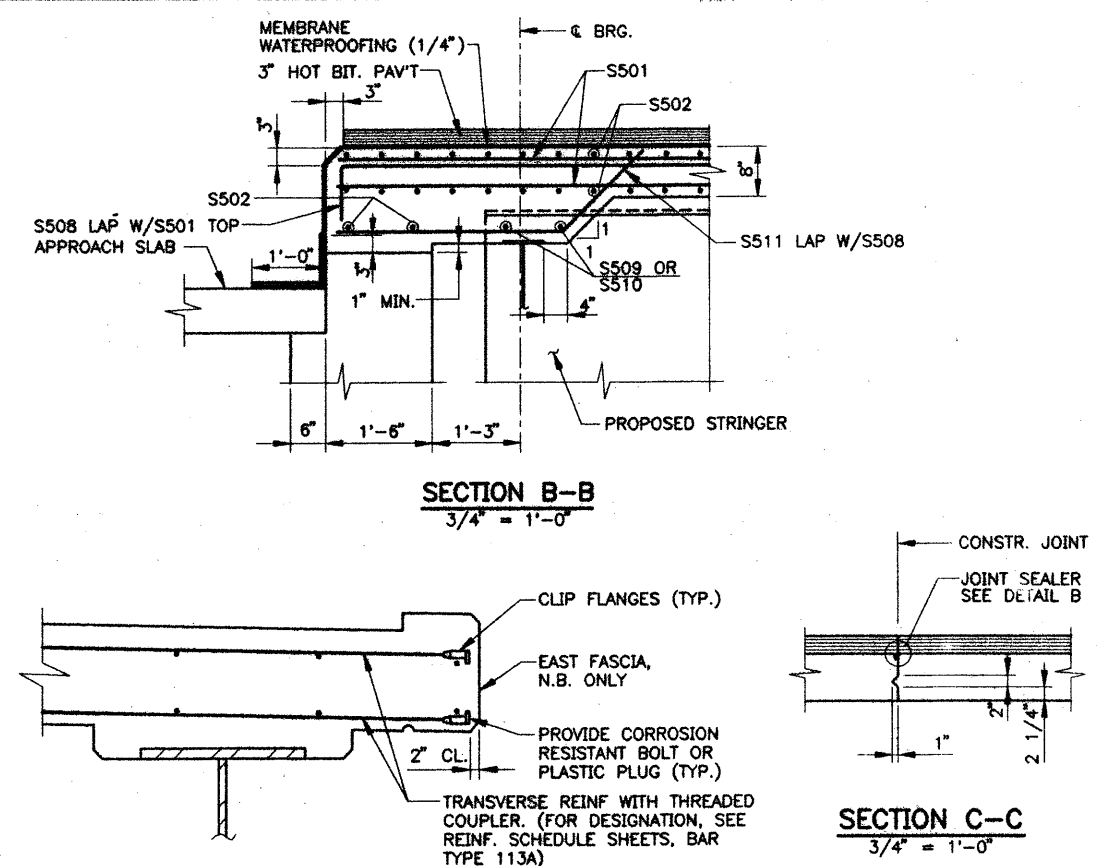
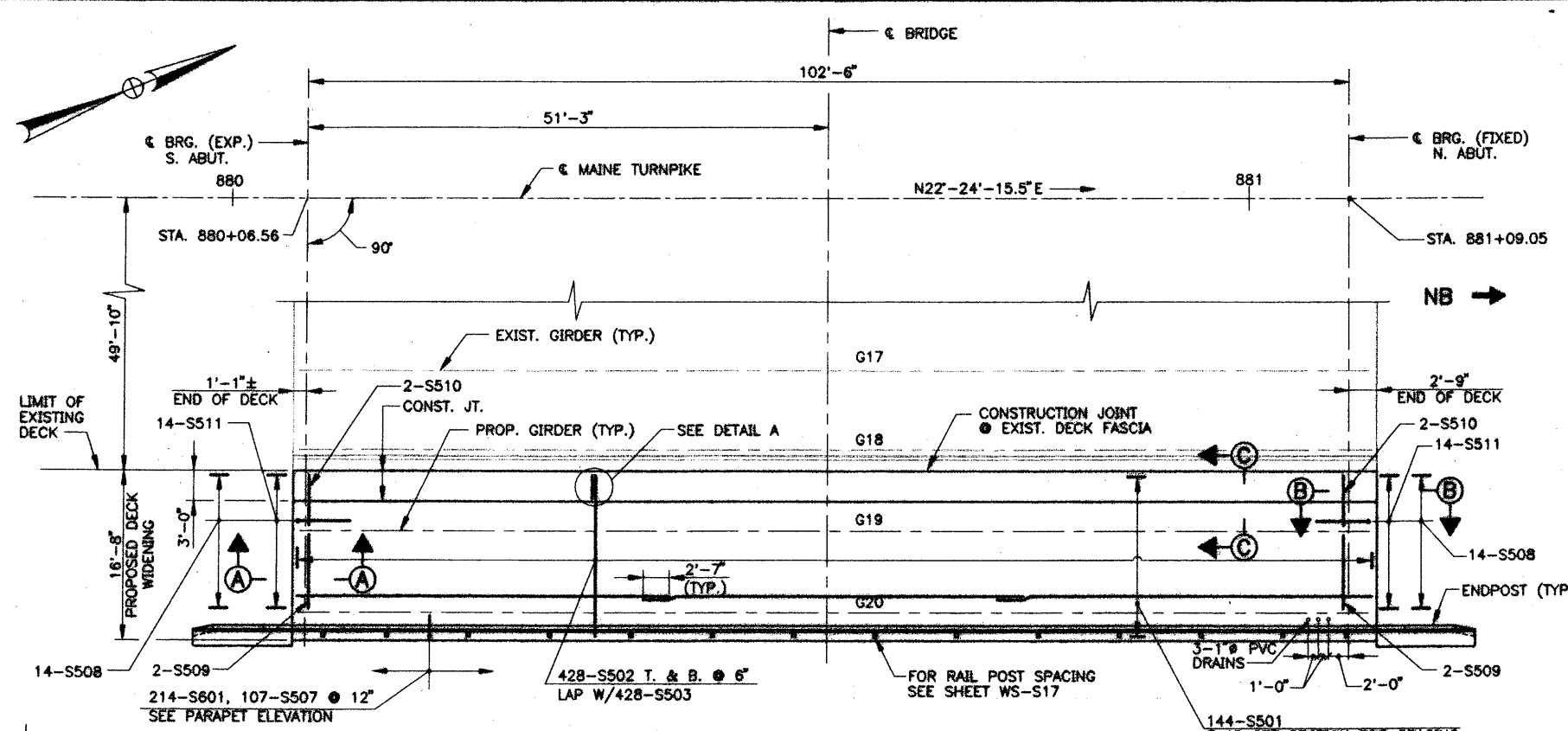


GIRDER		DEAD LOAD DEFLECTION (INCHES)										
		0	.10	.20	.30	.40	.50	.60	.70	.80	.90	0
G19	STEEL	0	5/16	5/8	13/16	15/16	1	15/16	13/16	5/8	5/16	0
	ALL OTHER	0	1 5/16	2 1/2	3 7/16	4	4 3/16	4	3 7/16	2 1/2	1 5/16	0
	TOTAL	0	1 5/8	3 1/8	4 1/4	4 15/16	5 3/16	4 15/16	4 1/4	3 1/8	1 5/8	0
G20	STEEL	0	5/16	9/16	13/16	15/16	1	15/16	13/16	9/16	5/16	0
	ALL OTHER	0	1 3/16	2 1/4	3 1/16	3 9/16	3 3/4	3 9/16	3 1/16	2 1/4	1 3/16	0
	TOTAL	0	1 1/2	2 13/16	3 7/8	4 1/2	4 3/4	4 1/2	3 7/8	2 13/16	1 1/2	0



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Scale: AS NOTED	Designed by: HNTB ARCHITECTS ENGINEERS PLANNERS	HNTB CORPORATION 2 Thomas Drive Westbrook, ME 04092 TEL (207) 774-5155 FAX (207) 772-7410	MAINE TURNPIKE AUTHORITY MODERNIZATION AND WIDENING PROJECT 	MAINLINE BRIDGE WIDENING ROUTE 109 OVERPASS FRAMING PLAN & DETAILS																															
<table border="1" style="width: 100%;"> <thead> <tr> <th>No.</th> <th>Revision</th> <th>By</th> <th>Date</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	No.	Revision	By	Date													<table border="1" style="width: 100%;"> <thead> <tr> <th>By</th> <th>Date</th> <th>Checked</th> <th>By</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>Designed KAC</td> <td>7/99</td> <td>Checked JFW</td> <td>JFW</td> <td>11/99</td> </tr> <tr> <td>Drawn LS</td> <td>7/99</td> <td>In Charge of RAL</td> <td>RAL</td> <td>11/99</td> </tr> </tbody> </table>	By	Date	Checked	By	Date	Designed KAC	7/99	Checked JFW	JFW	11/99	Drawn LS	7/99	In Charge of RAL	RAL	11/99			SHEET NUMBER: WS-S14 CONTRACT: 2000.03 107 OF 178
No.	Revision	By	Date																																
By	Date	Checked	By	Date																															
Designed KAC	7/99	Checked JFW	JFW	11/99																															
Drawn LS	7/99	In Charge of RAL	RAL	11/99																															



- NOTES**
1. FOR SUPERSTRUCTURE NOTES, SEE SHEET WS-S16.
 2. FOR SECTION A-A, SEE SHEET WS-S21.
 3. FOR PARAPET DETAILS, SEE SHEET WS-S17.

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No.	Revision	By	Date

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	By	Date	Checked	By	Date
Designed	JFW	10/99		AAD	11/99
Drawn	LS	10/99	In Charge of	RAL	11/99

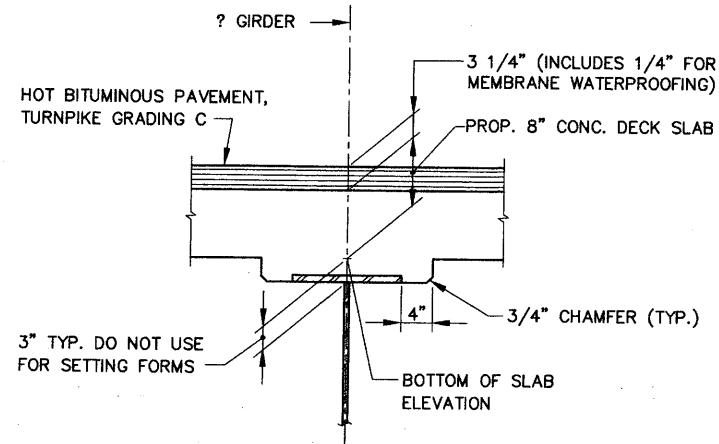
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**MAINE TURNPIKE AUTHORITY
MODERNIZATION AND WIDENING PROJECT**

**MAINLINE BRIDGE WIDENING
ROUTE 109 OVERPASS
DECK PLAN & SECTION**

CONTRACT: 2000.03

SHEET NUMBER: **WS-S15**
108 OF 178



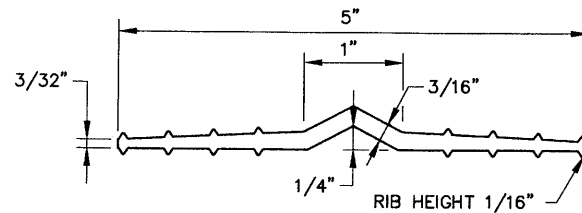
BLOCKING POINT DETAIL
NOT TO SCALE

NOTE

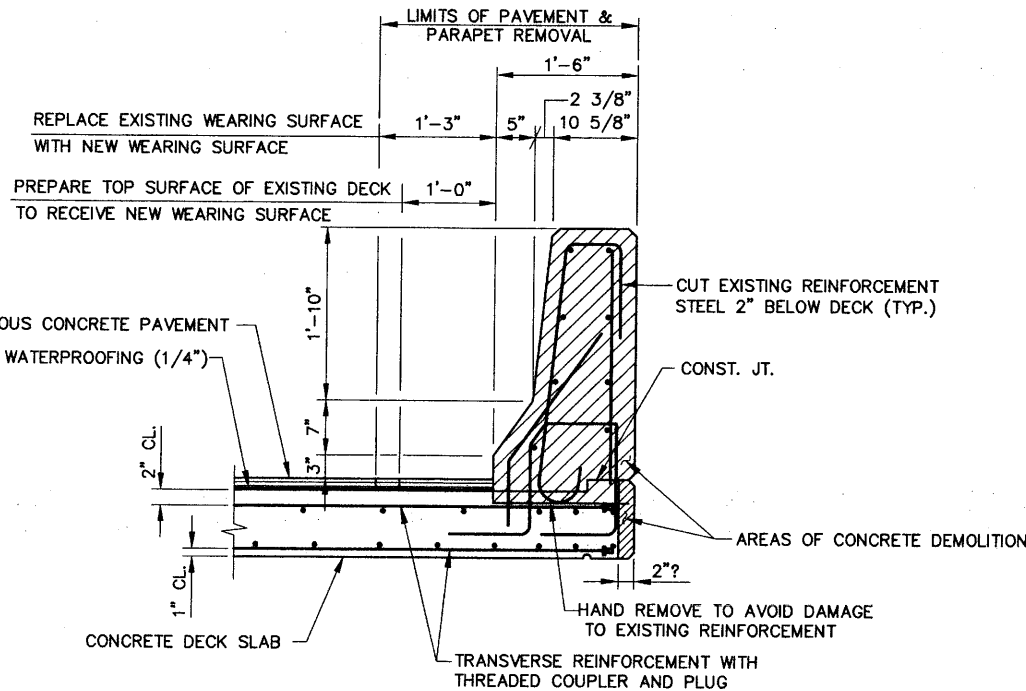
TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, AS WELL AS POSSIBLE IRREGULARITIES IN GIRDERS, SET THE BOTTOM OF SLAB ELEVATIONS AT THE POINTS INDICATED BEFORE ANY OF THE SLAB FORMWORK IS STARTED. SEE SUBSECTION 502.10(a) OF THE STANDARD SPECIFICATIONS. REVISION OF APRIL 1995.

BOTTOM OF SLAB ELEVATIONS AT BLOCKING POINTS

GIRDER NO.	? BRG. S. ABUT.	.1L ₁	.2L ₁	.3L ₁	.4L ₁	.5L ₁	.6L ₁	.7L ₁	.8L ₁	.9L ₁	? BRG. N. ABUT.
G19	139.00	138.61	138.24	137.90	137.58	137.29	137.13	136.81	136.61	136.44	136.29
G20	138.75	138.38	138.02	137.68	137.36	137.08	136.82	136.59	136.39	136.20	136.04



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DETAIL D

1" = 1'-0"

NOTE

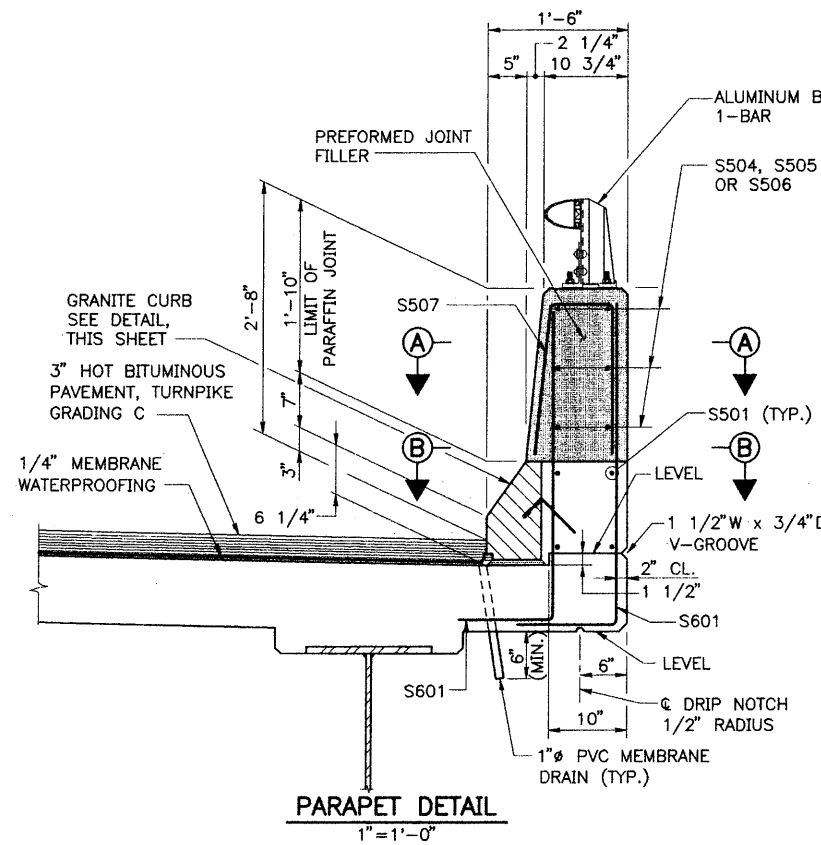
ALL CUT REINFORCING STEEL SHALL BE COATED WITH EPOXY PAINT AND CONCRETE SURFACE AREAS, AT DEMOLITION LOCATIONS, SHALL BE COATED WITH A BONDING AGENT PRIOR TO NEW CONCRETE PLACEMENT.

SUPERSTRUCTURE NOTES

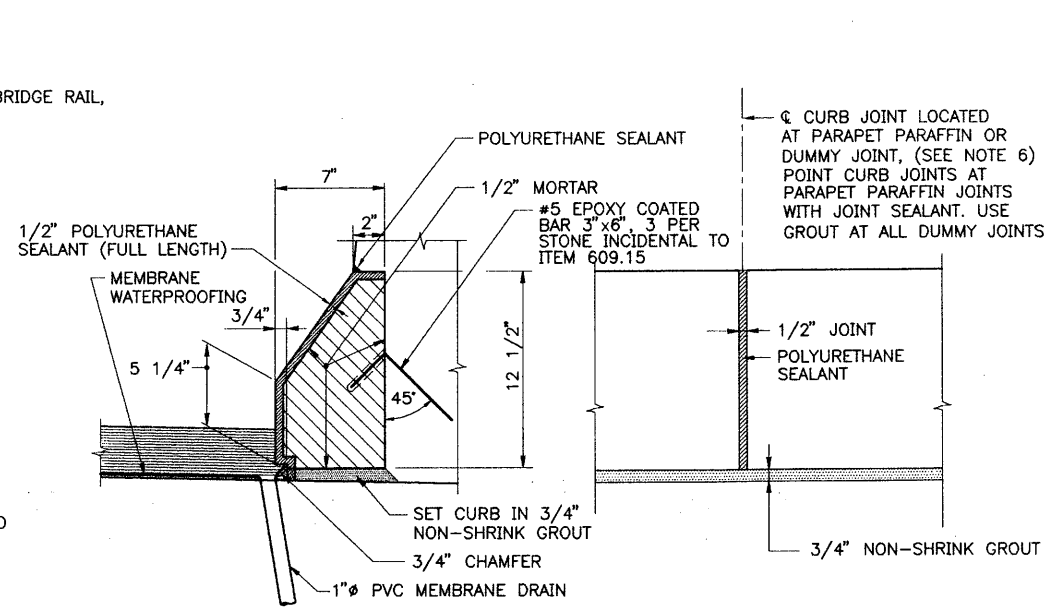
1. CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4", UNLESS OTHERWISE NOTED.
2. REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 2", UNLESS OTHERWISE NOTED.
3. MORTAR FOR BEDDING AND FOR JOINTS IN THE GRANITE CURB SHALL CONTAIN A NON-SHRINK ADDITIVE.
4. CURB JOINTS SHALL LINE UP WITH PARAFFIN AND DUMMY JOINTS.
5. THE CONCRETE DECK SHALL BE GIVEN A SMOOTH BULL FLOAT OR WOOD FLOAT FINISH.
6. THE SLAB SHALL BE PLACED IN ONE CONTINUOUS OPERATION WITH NO TRANSVERSE CONSTRUCTION JOINTS. THE ZIPPER STRIP WILL BE PLACED SEPARATELY IN ONE CONTINUOUS OPERATION AFTER STAGE I CONSTRUCTION.
7. CLEAR PROTECTIVE COATING FOR CONCRETE SURFACE SHALL BE APPLIED TO THE FOLLOWING AREAS: PARAPET SURFACES, FASCIA DOWN TO DRIP NOTCH AND ALL EXPOSED CONCRETE SURFACES ON THE END POSTS.
8. ALL BRIDGE PARAPET CONCRETE, INCLUDING INSIDE FACE, TOP AND OUTSIDE FACE, END POSTS AND DECK FASCIA SHALL HAVE A RUBBED FINISH PRIOR TO THE APPLICATION OF THE CLEAR PROTECTIVE COATING FOR CONCRETE SURFACE.
9. THE AUTHORITY'S PERSONNEL SHALL PROFILE THE TOP OF ALL GIRDERS BEFORE THE FORMWORK IS STARTED AND SHALL SUPPLY THE CONTRACTOR WITH FINAL BOTTOM OF SLAB ELEVATIONS. TEN (10) DAYS SHALL BE ALLOWED FOR THE BLOCKING POINT TURN AROUND TIME.
10. FOR 1-BAR ALUMINUM BRIDGE RAIL DETAILS, SEE SHEET WS-S22.
11. PAVEMENT PLACEMENT SHALL BE DONE WITH TWO (2) 1 1/2 INCH "LIFTS".
12. FOR SLAB DETAILS, SEE SHEET NO. WS-S15.
13. FOR ROADWAY EXPANSION JOINT DETAILS, SEE SHEET NOS. WS-S20 AND WS-S21.
14. FOR RAIL POST SPACING, SEE SHEET NO. WS-S17.
15. FOR PVC DRAIN DETAILS, SEE MDOT STANDARD SHEET 502 (3).
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS TO ASSURE LOCATION AND ORIENTATION OF EXISTING ANCHOR BOLTS AND PROVIDE ON SHOP DRAWINGS PRIOR TO FABRICATION OF RAIL. COST OF STRAIGHTENING BENT BOLTS SHALL BE CONSIDERED INCIDENTAL TO ITEM 507.0913.
17. CONTRACTOR SHALL HAVE THE OPTION OF USING PRECAST CONCRETE DECK PANELS AS AN ALTERNATIVE FROM THE CONCRETE SLAB DETAILS SHOWN ON THE CONTRACT PLANS. THE REQUIREMENTS SHOWN ON PAGES 502(7)-502(12) OF THE MDOT STANDARD DETAILS SHALL APPLY. ALSO, THE DESIGN MUST MEET THE SATISFACTION OF THE ENGINEER AND THE RESPECTIVE SHOP DRAWINGS MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

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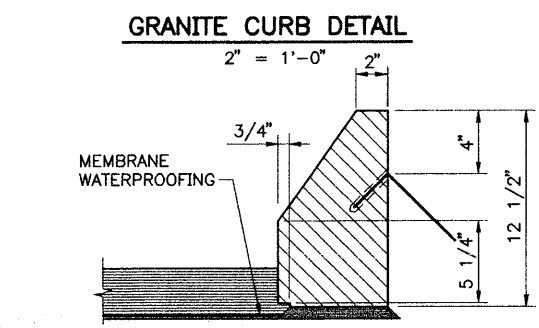
Scale AS NOTED	Designed by: HNTB ARCHITECTS ENGINEERS PLANNERS	HNTB CORPORATION 2 Thomas Drive Westbrook, ME 04092	MAINE TURNPIKE AUTHORITY MODERNIZATION AND WIDENING PROJECT 	MAINLINE BRIDGE WIDENING ROUTE 109 OVERPASS SUPERSTRUCTURE DETAILS I																																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>Revision</th> <th>By</th> <th>Date</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	No.	Revision	By	Date													<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th> </th> <th>By</th> <th>Date</th> <th> </th> <th>By</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>Designed</td> <td>KAC</td> <td>10/99</td> <td>Checked</td> <td>JFW</td> <td>11/99</td> </tr> <tr> <td>Drawn</td> <td>LS</td> <td>10/99</td> <td>In Charge of</td> <td>RAL</td> <td>11/99</td> </tr> </tbody> </table>		By	Date		By	Date	Designed	KAC	10/99	Checked	JFW	11/99	Drawn	LS	10/99	In Charge of	RAL	11/99	CONTRACT: 2000.03 SHEET NUMBER: WS-S16 109 OF 178		
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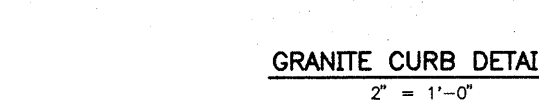
PARAPET DETAIL
1" = 1'-0"



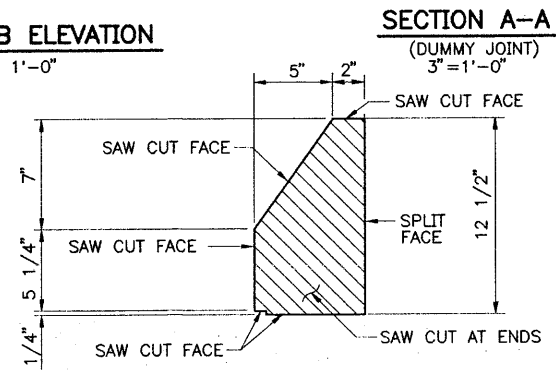
BRIDGE CURB ELEVATION
2" = 1'-0"



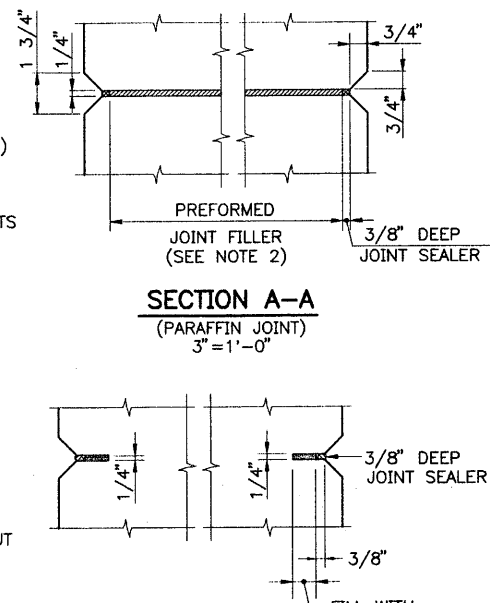
GRANITE CURB DETAIL
2" = 1'-0"



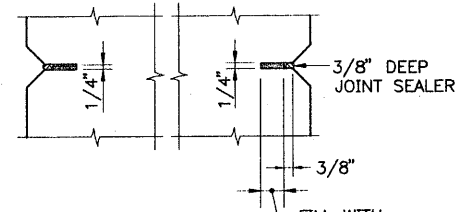
GRANITE CURB DETAIL
2" = 1'-0"



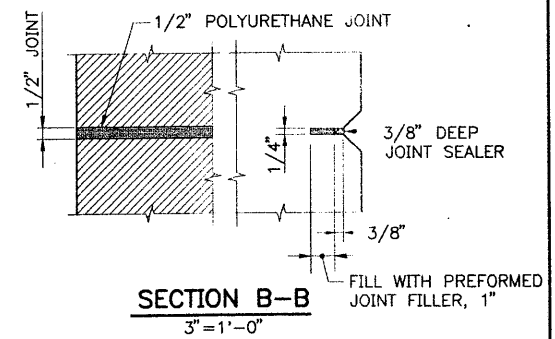
GRANITE CURB CUT DETAIL
2" = 1'-0"



SECTION A-A
(PARAFFIN JOINT)
3" = 1'-0"



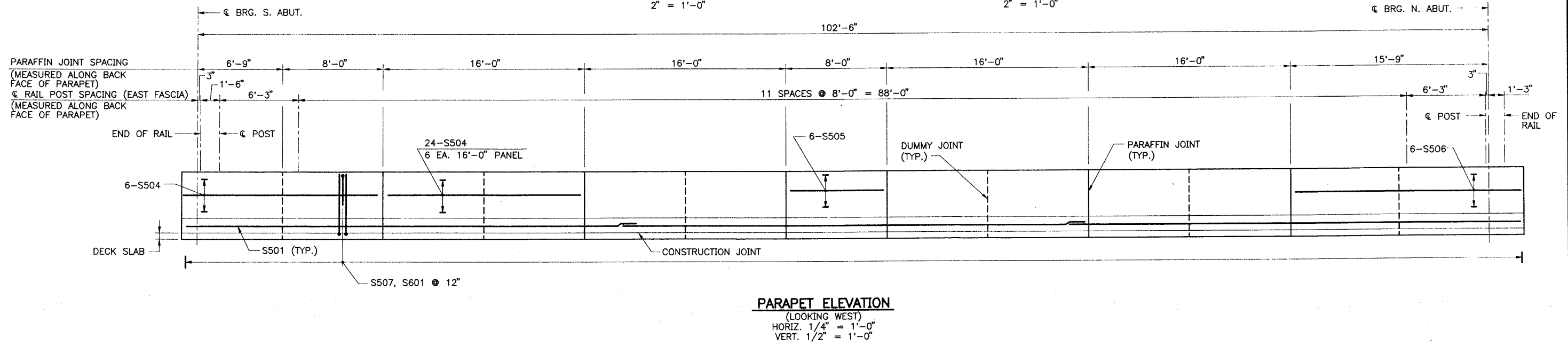
SECTION A-A
(DUMMY JOINT)
3" = 1'-0"



SECTION B-B
3" = 1'-0"

PARAFFIN AND DUMMY JOINT NOTES

1. CONCRETE SHALL BE PLACED SIMULTANEOUSLY ON BOTH SIDES OF JOINT. ASPHALT TYPE JOINT FILLER SHALL NOT BE USED. ONLY CERAMAR OR CORK TYPE SHALL BE PERMITTED.
2. PREFORMED JOINT FILLER SHALL CONFORM TO ASTM DESIGNATION D 1752 AND MAY BE SUPPORTED WITH A THIN STEEL PLATE. REMOVE PLATE CAREFULLY WHILE CONCRETE IS PLASTIC.
3. SECTION B-B APPLIES TO DUMMY AND PARAFFIN JOINT LOCATIONS.
4. JOINT SEALER SHALL BE SIKAFLEX 1A.
5. PREFORMED JOINT FILLER AND JOINT SEALER SHALL BE INCIDENTAL TO ITEM 502.2643, STRUCTURAL CONCRETE PARAPETS.
6. CURB JOINTS SHALL BE ALIGNED WITH PARAFFIN AND DUMMY JOINTS.



PARAPET ELEVATION
(LOOKING WEST)
HORIZ. 1/4" = 1'-0"
VERT. 1/2" = 1'-0"

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ARCHITECTS ENGINEERS PLANNERS

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MODERNIZATION AND WIDENING PROJECT**



**MAINLINE BRIDGE WIDENING
ROUTE 109 OVERPASS
PARAPET DETAILS**

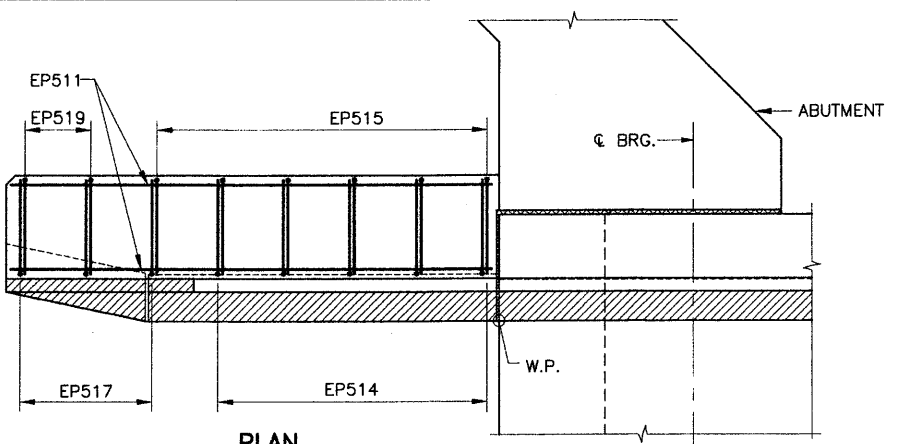
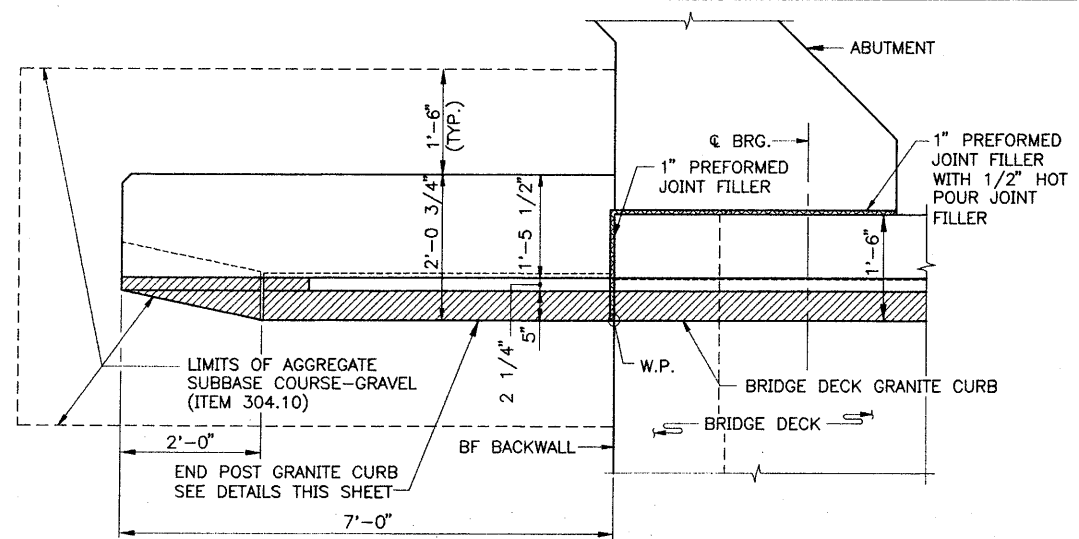
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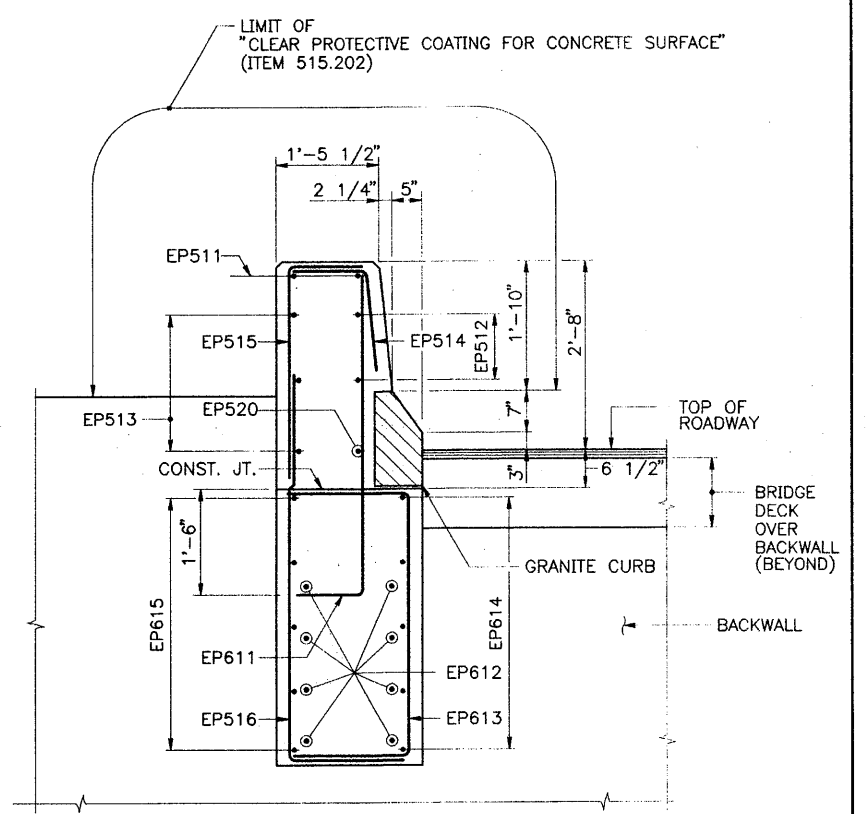
SHEET NUMBER: WS-S17

CONTRACT: 2000.03

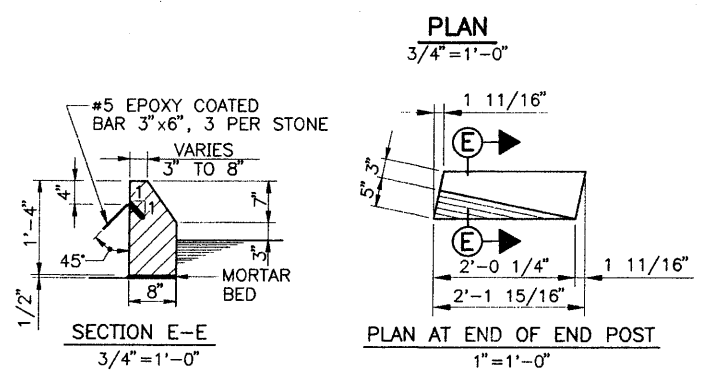
110 OF 178



PLAN REINFORCING
3/4" = 1'-0"

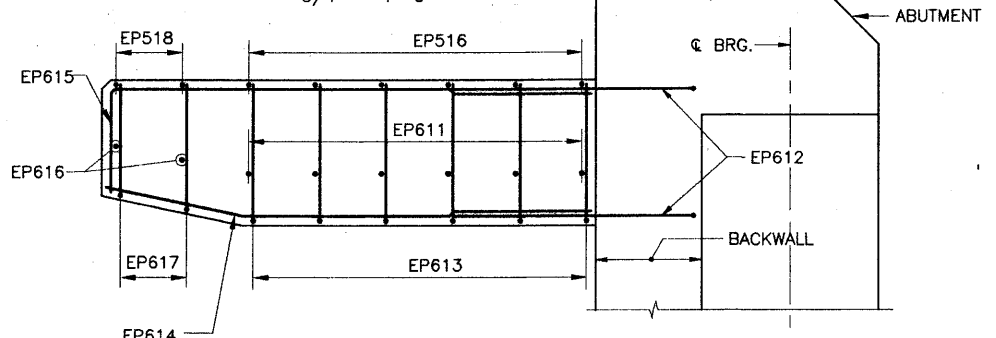


SECTION A-A
3/4" = 1'-0"



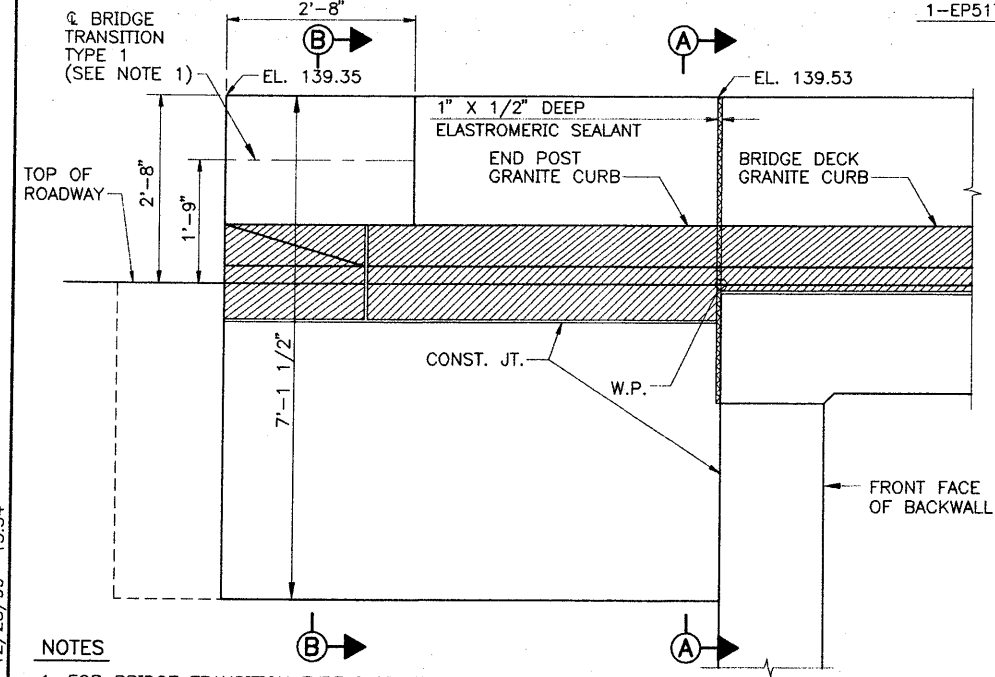
SECTION E-E
3/4" = 1'-0"

PLAN AT END OF END POST
1" = 1'-0"

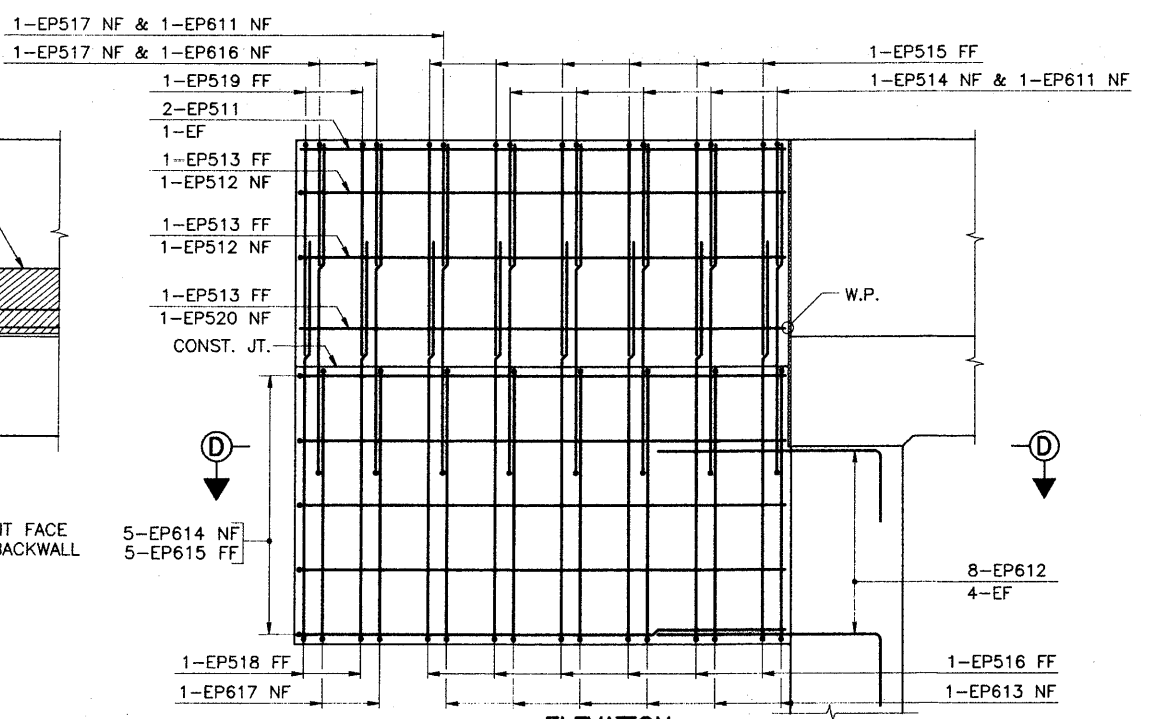


SECTION D-D
3/4" = 1'-0"

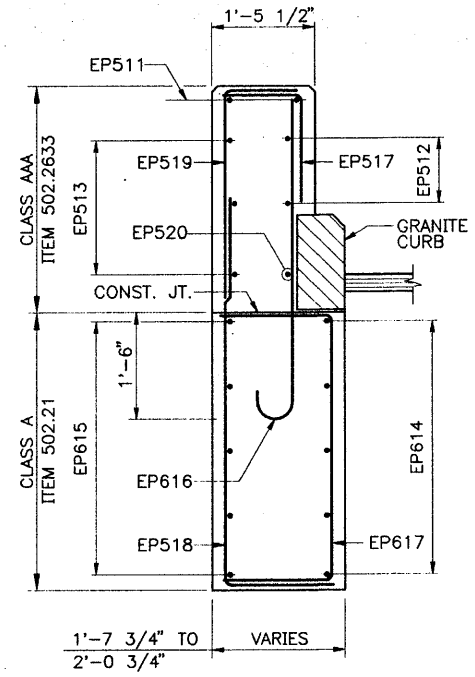
TYPICAL GRANITE CURB



ELEVATION
3/4" = 1'-0"



ELEVATION REINFORCING
3/4" = 1'-0"



SECTION B-B
3/4" = 1'-0"

NOTES
1. FOR BRIDGE TRANSITION TYPE I DETAIL, SEE CIVIL SHEET MD-C3.

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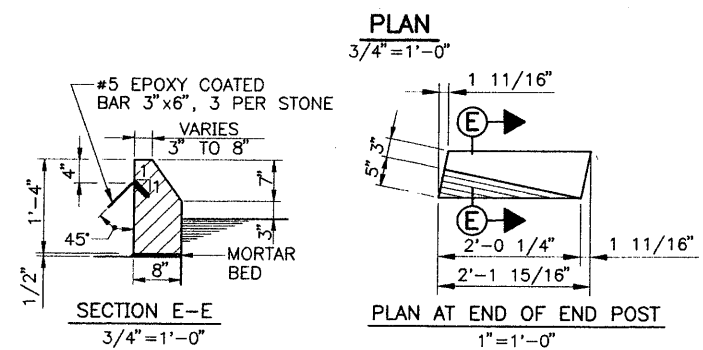
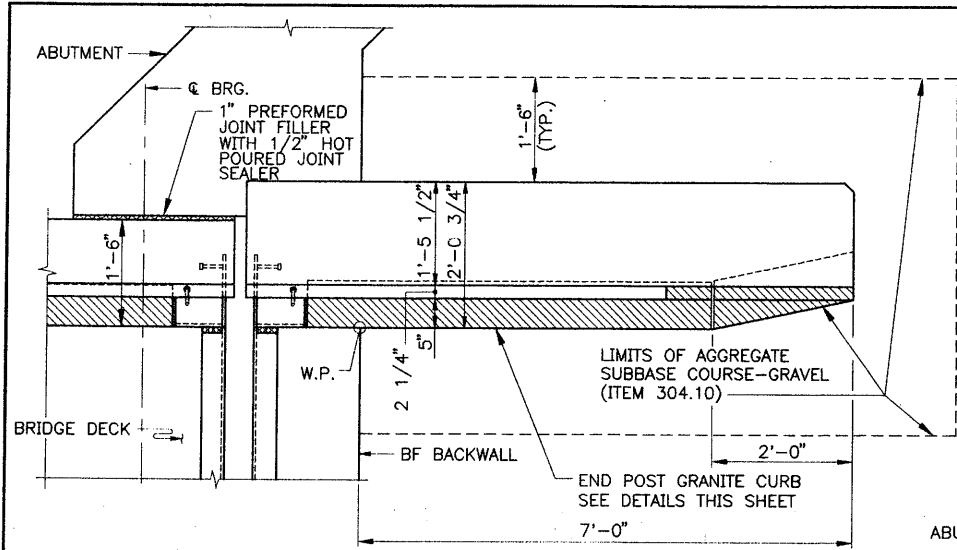
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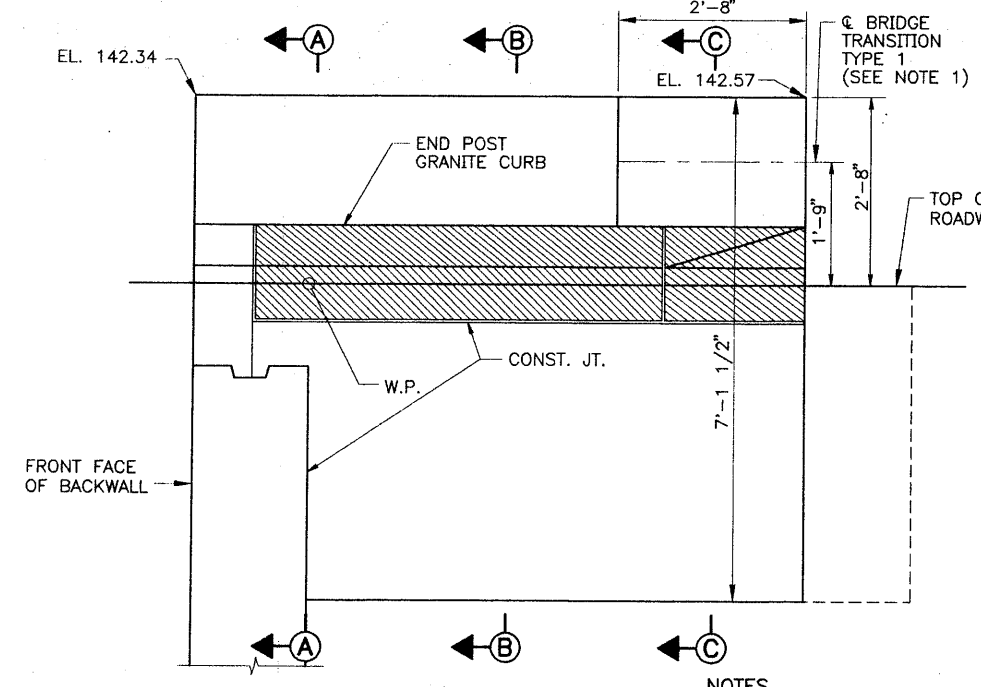
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**MAINLINE BRIDGE WIDENING
ROUTE 109 OVERPASS
END POST DETAILS I
NORTH ABUTMENT**

SHEET NUMBER: **WS-S18**
CONTRACT: **2000.03**
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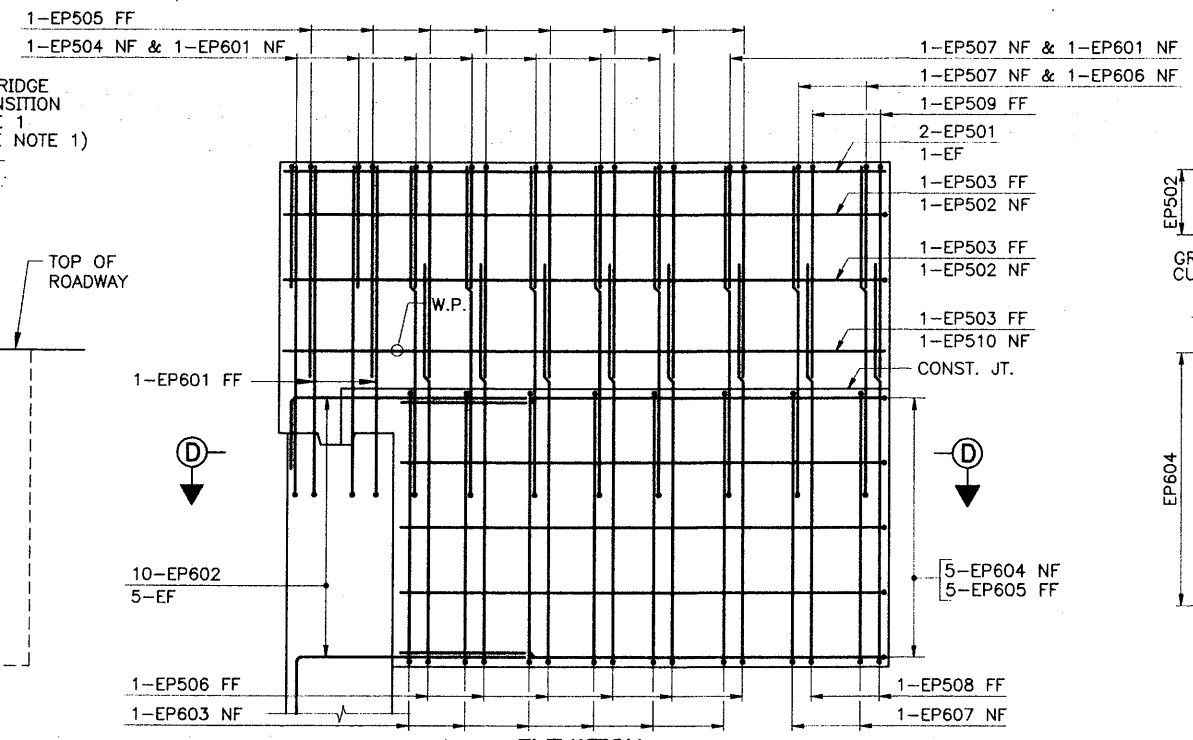
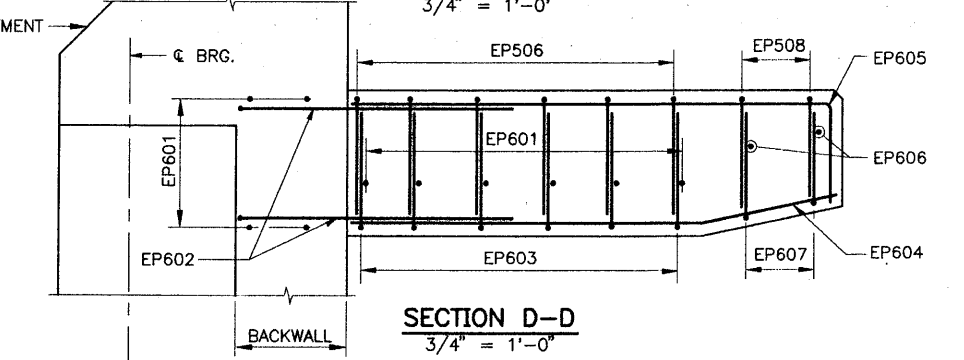
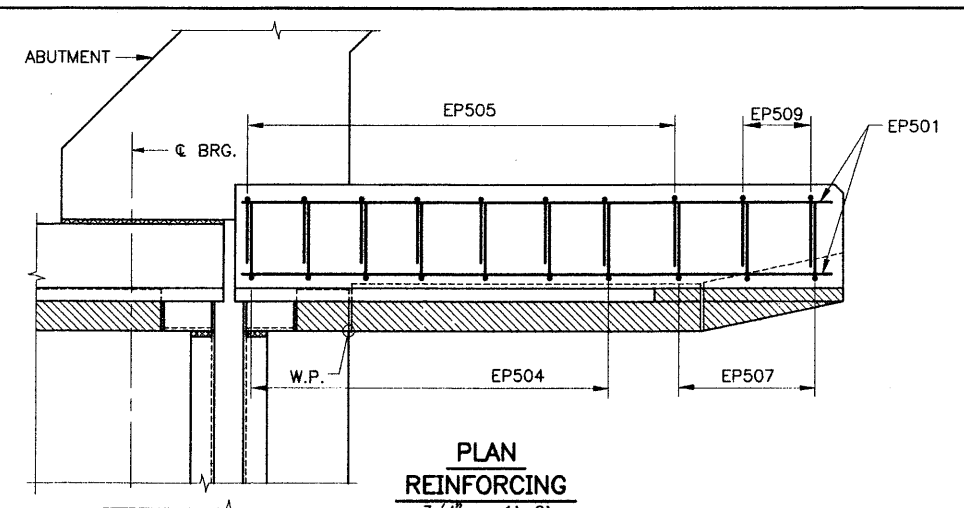


TYPICAL GRANITE CURB

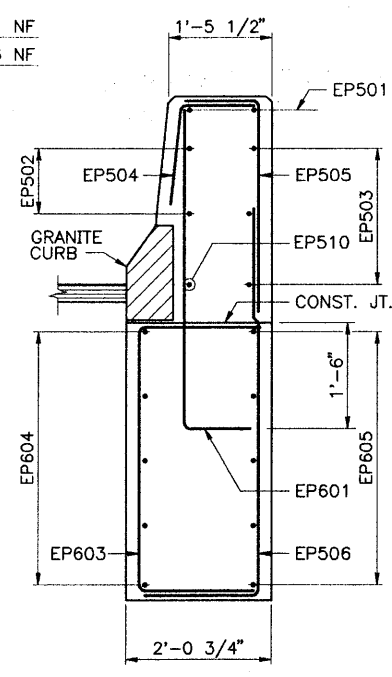
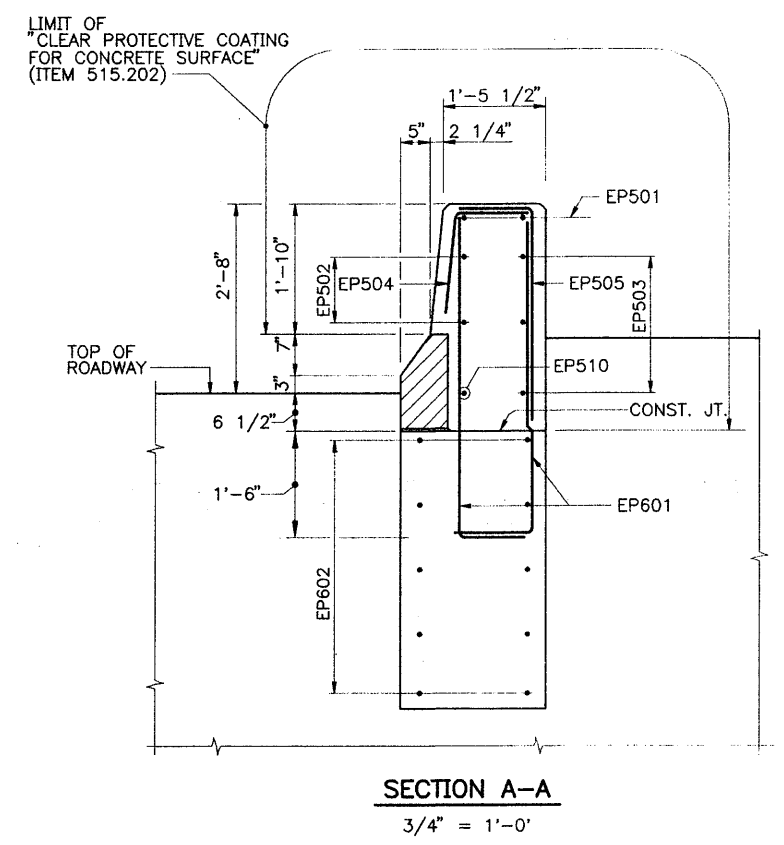


ELEVATION
3/4" = 1'-0"

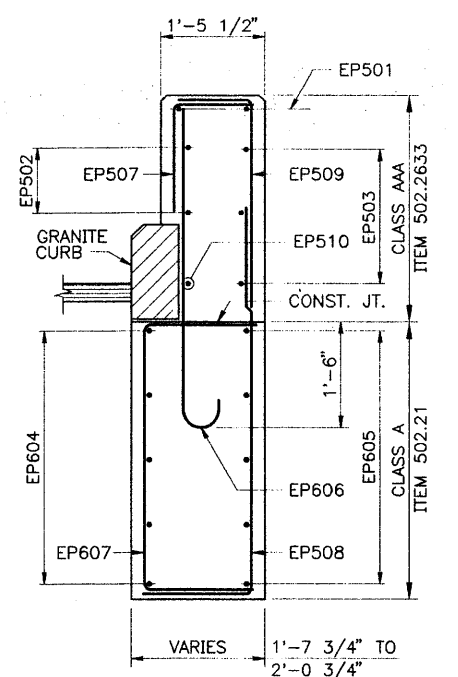
NOTES
1. FOR BRIDGE TRANSITION TYPE I DETAIL, SEE CIVIL SHEET MD-C3.



ELEVATION REINFORCING
3/4" = 1'-0"



SECTION B-B
3/4" = 1'-0"



SECTION C-C
3/4" = 1'-0"

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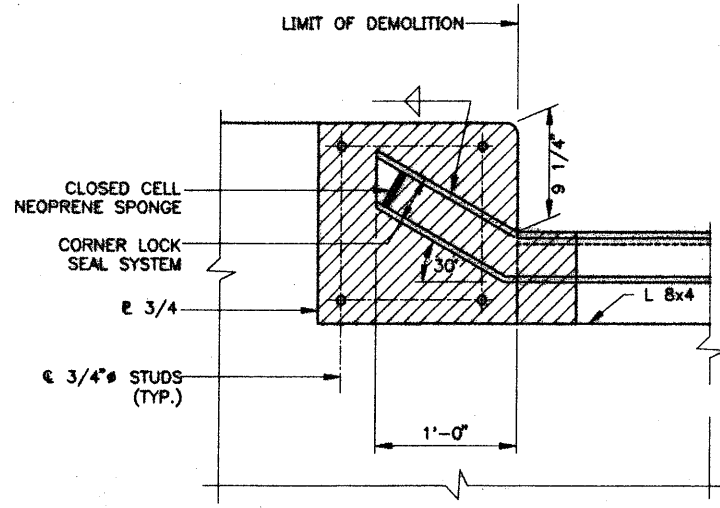
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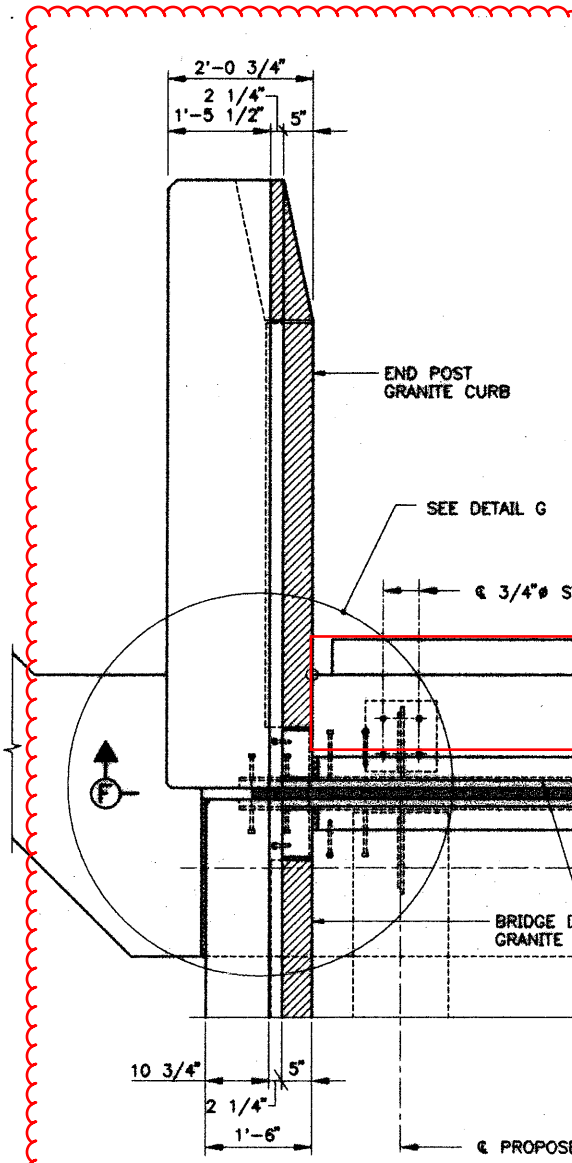
Transpass

MAINLINE BRIDGE WIDENING
ROUTE 109 OVERPASS
END POST DETAILS II
SOUTH ABUTMENT

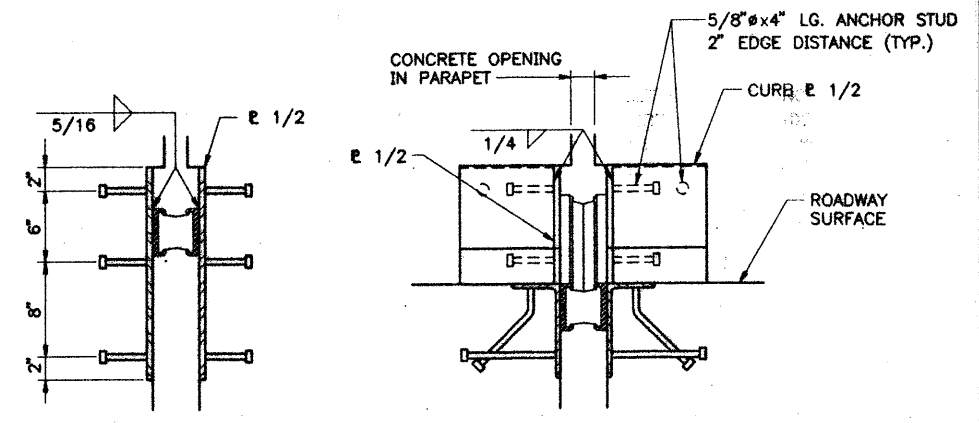
SHEET NUMBER: **WS-S19**
CONTRACT: 2000.03
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SECTION B-B
1 1/2" = 1'-0"

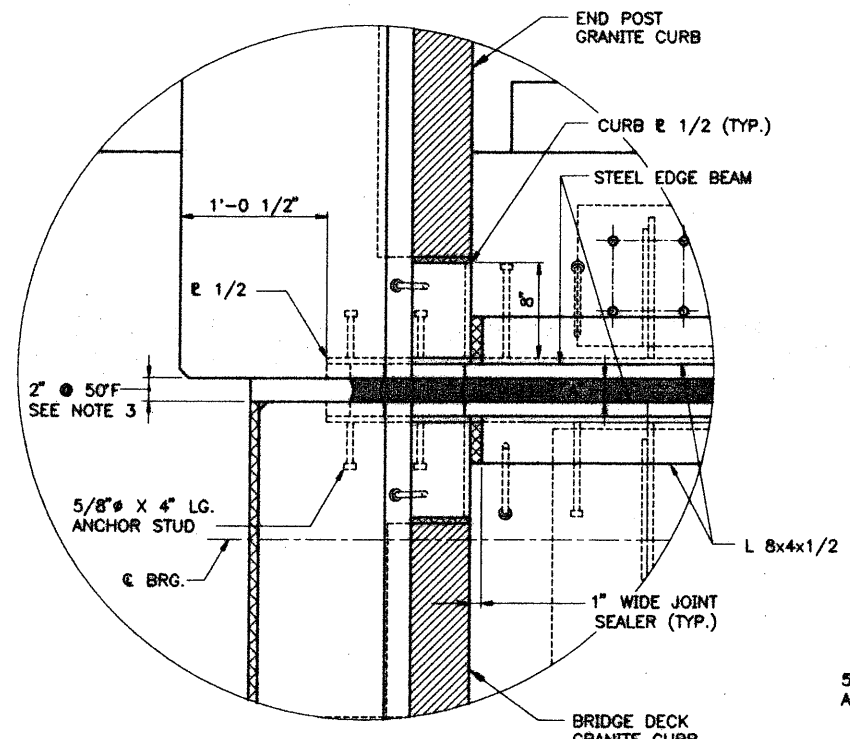


PLAN - PROPOSED NORTHBOUND ROADWAY
3/4" = 1'-0"

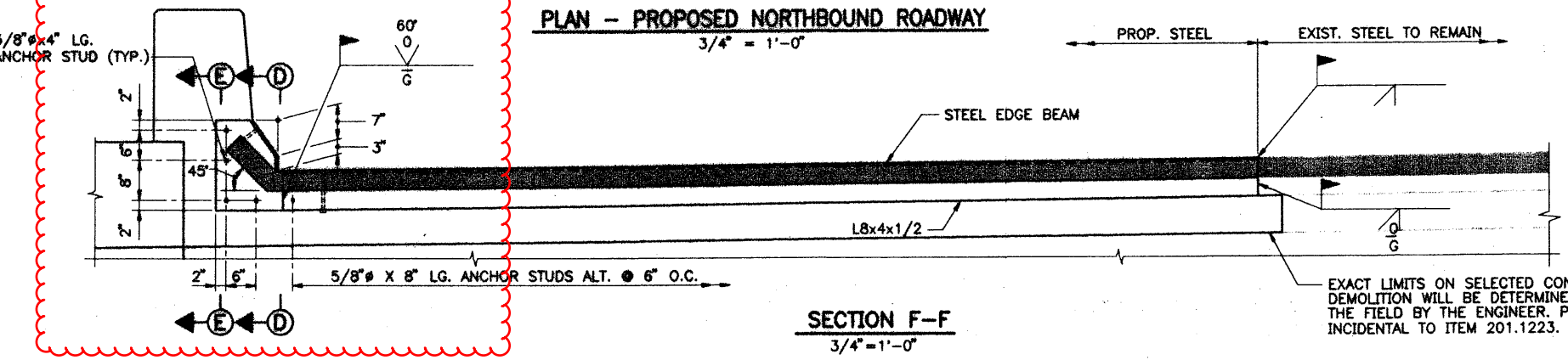


SECTION E-E
1 1/2" = 1'-0"

SECTION D-D
1 1/2" = 1'-0"



DETAIL G
1 1/2" = 1'-0"



SECTION F-F
3/4" = 1'-0"

- NOTES**
1. FOR SECTION A-A, SEE SHEET NO. WS-S21.
 2. THE ANGLES, L8X4X1/2, AND STEEL EDGE BEAMS SHALL BE FABRICATED BY CONFORMING TO THE TOP OF BACKWALL ELEVATIONS, FOR THE NORTHBOUND ROADWAY SOUTH ABUTMENT, SHOWN ON SHEET NO. WS-S9.
 3. DECREASE OPENING 1/8" FOR EACH INCREMENT OF 15' ABOVE 50' F. INCREASE OPENING 1/8" FOR EACH INCREMENT OF 15' BELOW 50' F.

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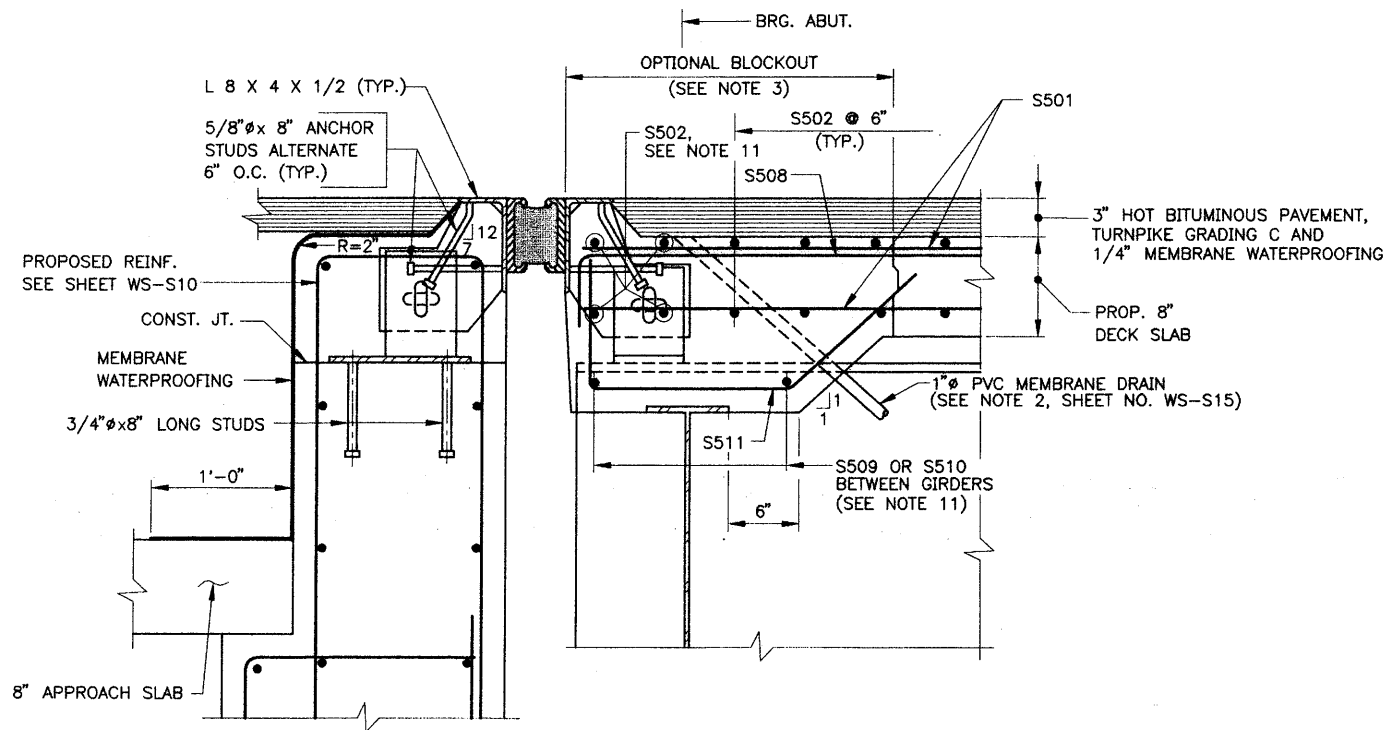
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	SHR	11/99	In Charge of	RAL	11/99

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MODERNIZATION AND WIDENING PROJECT**

**MAINLINE BRIDGE WIDENING
ROUTE 109 OVERPASS
SOUTH ABUTMENT EXPANSION JOINT DETAILS I**

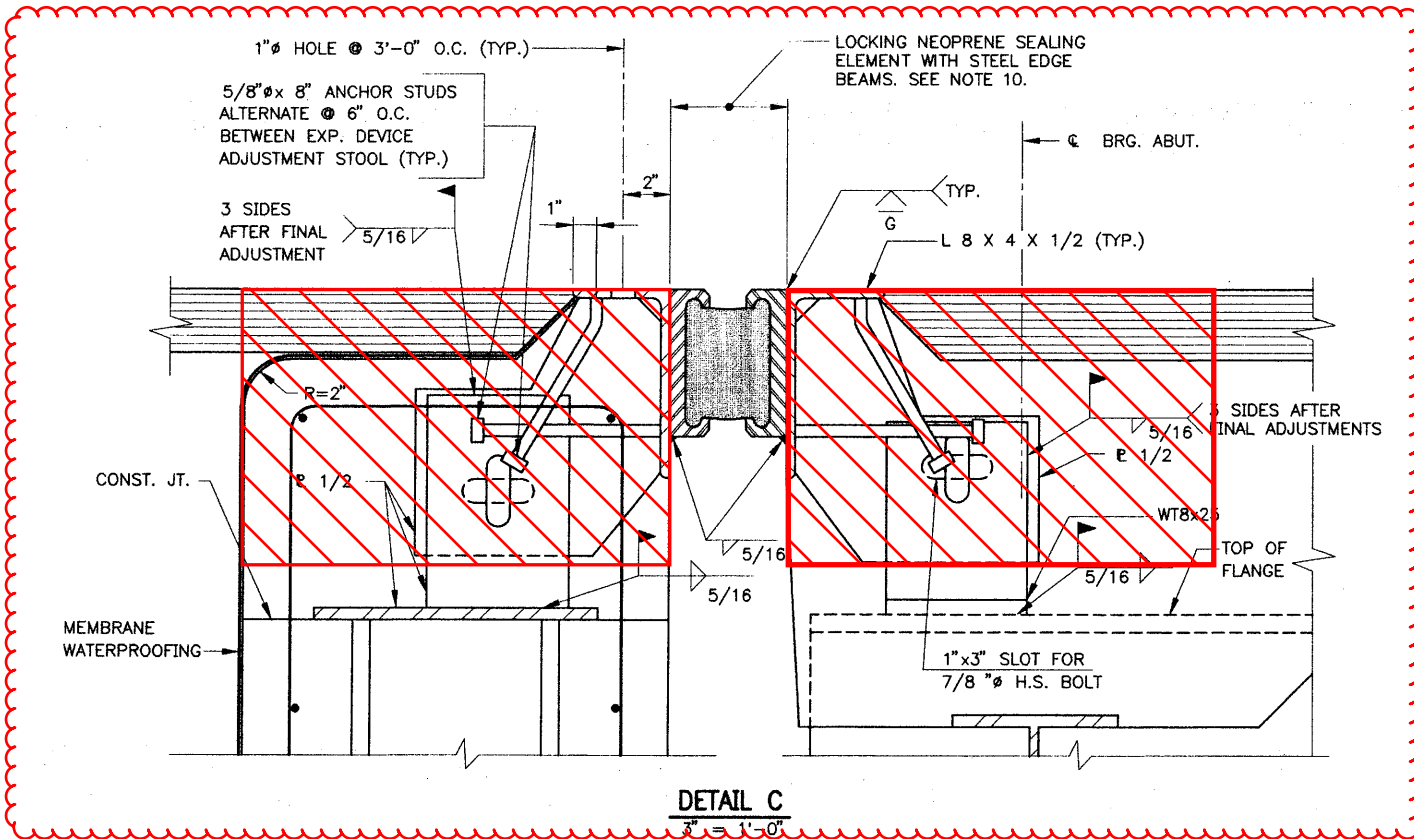
SHEET NUMBER: **WS-S20**
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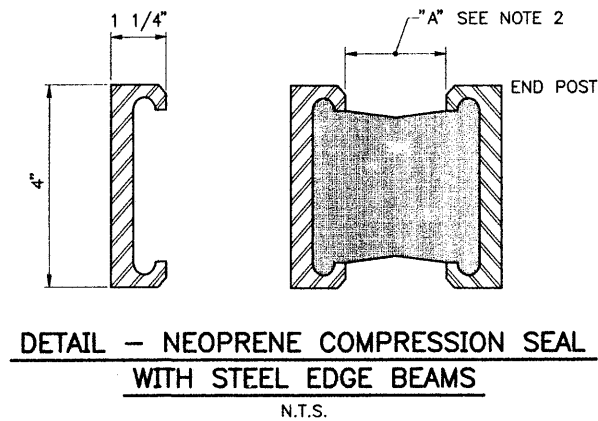
SECTION A-A
1 1/2" = 1'-0"

EXPANSION DEVICE NOTES

- SHOP DRAWINGS OF THE EXPANSION DEVICE SHALL BE SUBMITTED FOR APPROVAL BY THE ENGINEER.
- DIMENSION "A" OF THE EXPANSION DEVICE SHALL BE SET TO AN OPENING OF 2 INCHES IN THE FABRICATION SHOP AND SHALL BE SECURED TO THE GIRDER AND/OR ANCHOR BOLTS WHEN THE AMBIENT TEMPERATURE IS BETWEEN 40°F AND 80°F. THE OPENING SHALL BE ADJUSTED TO MATCH THE EXISTING OPENING AT THE TIME OF INSTALLATION.
- THE SLAB CONCRETE SHALL BE IN PLACE BEFORE THE EXPANSION DEVICE IS FIXED IN POSITION. NO ALLOWANCE FOR MOVEMENT DUE TO DEAD LOAD DEFLECTION IS NECESSARY. SEE SECTION 520.06 OF THE STANDARD SPECIFICATIONS.
- ALL EXPOSED SURFACES OF ANGLES AND STEEL EDGE BEAMS SHALL BE FIELD PAINTED.
- ALL STEEL COMPONENTS SHALL BE AASHTO M270 GRADE 36, UNLESS OTHERWISE NOTED.
- ALL WELDS ARE 5/16" CONTINUOUS FILLETS, EXCEPT AS NOTED.
- ALL STEEL SURFACES THAT WILL BE EMBEDDED IN CONCRETE SHALL BE COATED WITH AN EPOXY BONDING COMPOUND.
- FOR LOCATION OF SECTION A-A, SEE SHEET WS-S15 AND WS-S20.
- ONLY REINFORCING STEEL PARALLEL TO THE ABUTMENT ARE SHOWN. REINFORCING STEEL PERPENDICULAR TO GIRDERS ARE NOT SHOWN FOR CLARITY.
- THE NEOPRENE COMPRESSION SEALS TO BE FURNISHED SHALL HAVE A MINIMUM MOVEMENT RATING OF:
SOUTH ABUTMENT = 3 INCHES
AND BE COMPATABLE WITH THE EXISTING EDGE BEAMS AND SEALS.
- FIELD CUT REINFORCING STEEL TO FIT AND EPOXY COAT THE CUT ENDS.



DETAIL C
3" = 1'-0"



DETAIL - NEOPRENE COMPRESSION SEAL WITH STEEL EDGE BEAMS
N.T.S.

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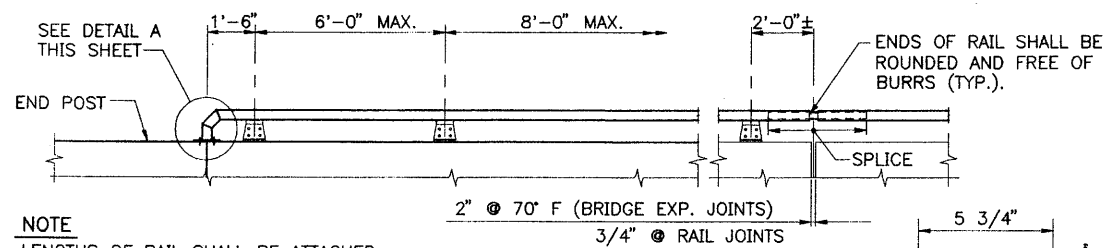
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**MAINE TURNPIKE AUTHORITY
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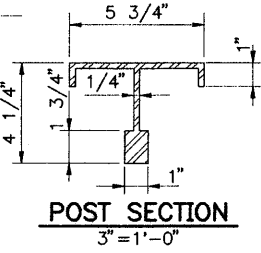
**MAINLINE BRIDGE WIDENING
ROUTE 109 OVERPASS
SOUTH ABUTMENT EXPANSION JOINT DETAILS II**

SHEET NUMBER: **WS-S21**
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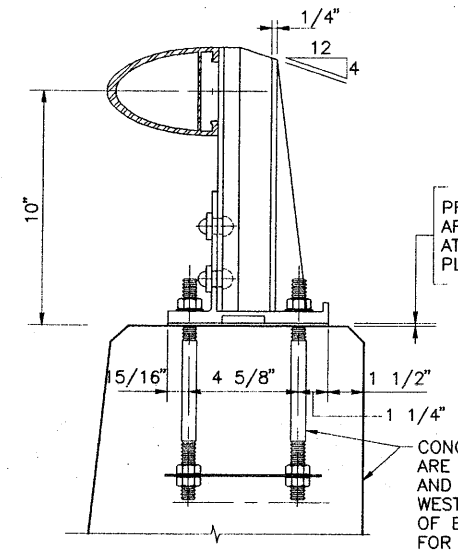
NOTE
LENGTHS OF RAIL SHALL BE ATTACHED TO A MIN. OF FOUR (4) RAIL POST WHENEVER POSSIBLE, AND IN ANY CASE NEVER LESS THAN TWO (2). RAIL POST ARE TO BE SET NORMAL TO GRADE UNLESS OTHERWISE SHOWN ON THE BRIDGE PLANS.

RAILING - ELEVATION
3/8" = 1'-0"

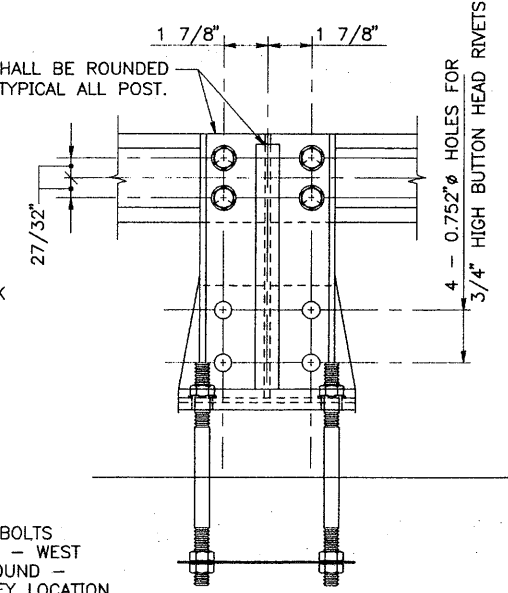


POST SECTION
3" = 1'-0"

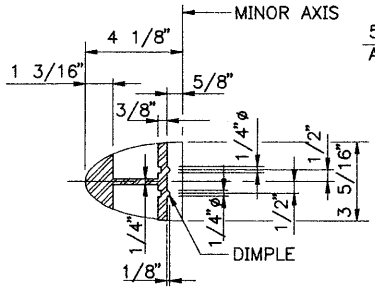
TOP EDGES OF POST SHALL BE ROUNDED AND FREE OF BURRS. TYPICAL ALL POST.



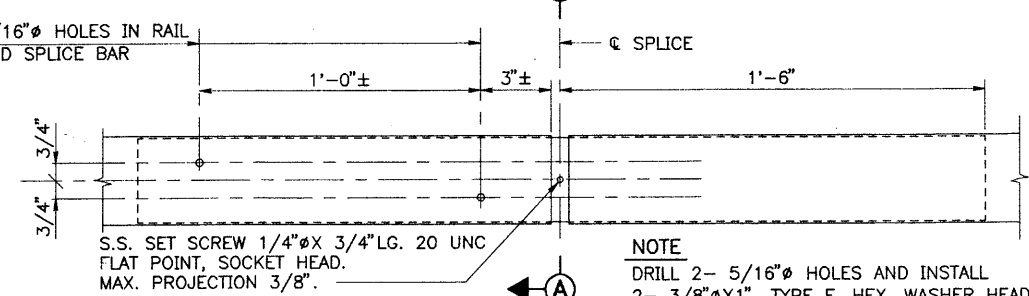
BRIDGE RAILING (ASSEMBLY)
3" = 1'-0"



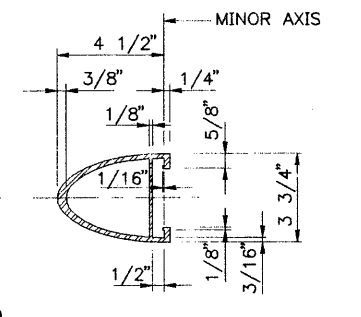
OUTSIDE ELEVATION OF POST
3" = 1'-0"



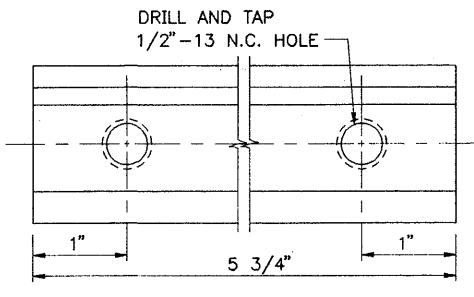
SECTION A-A
3" = 1'-0"



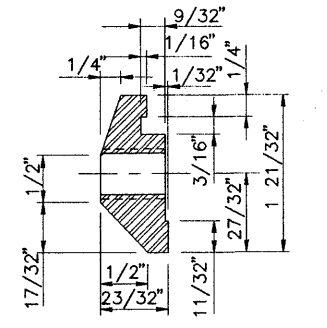
SPLICE DETAIL
3" = 1'-0"



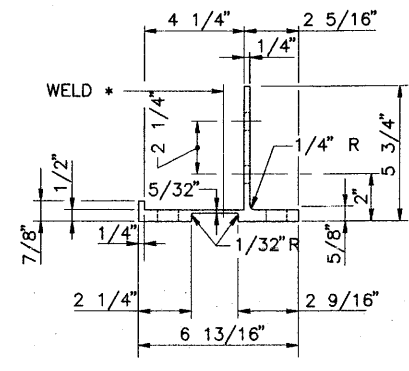
RAIL MEMBER
3" = 1'-0"



CLAMP BAR DETAILS
FULL SIZE

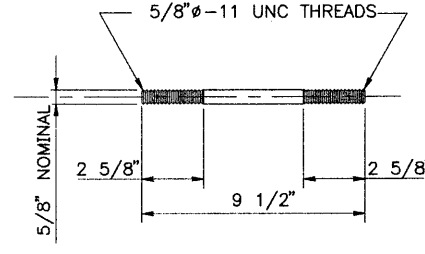


CAST ALUMINUM DRIVE FIT RAIL CAP
3" = 1'-0"



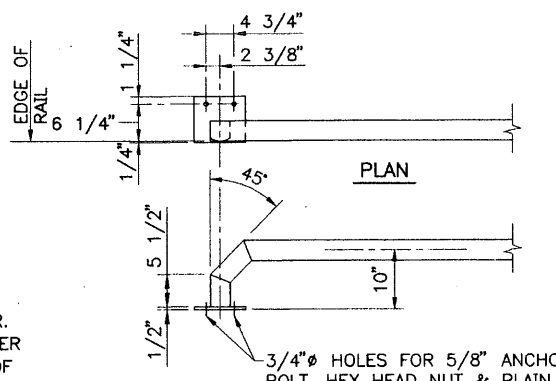
POST BASE SECTION
3" = 1'-0"

NOTE
* ONE-PIECE BASE PLATE MAY BE SUBSTITUTED, PROVIDED THAT THE REQUIRED LENGTH IS CUT FROM A ONE-PIECE EXTRUSION AND HAS THE GEOMETRIC SHAPE OF THE TWO-PIECE BASE PLATE

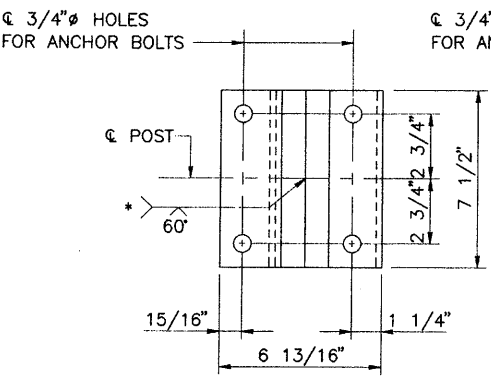


ANCHOR BOLT
3" = 1'-0"

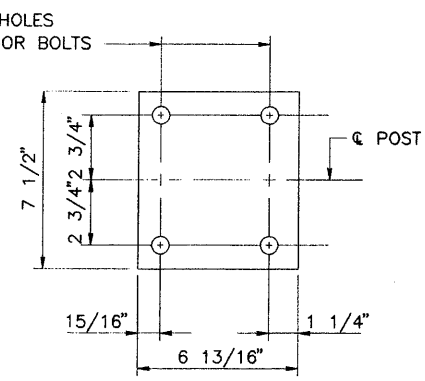
NOTE
IF CUT THREADS ARE USED, BODY DIAMETER SHALL BE NOT LESS THAN NOMINAL DIAMETER. IF ROLLED THREADS ARE USED, BODY DIAMETER SHALL BE NOT LESS THAN PITCH DIAMETER OF THE THREADS.



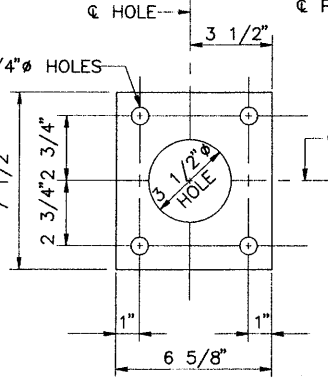
DETAIL A
3/4" = 1'-0"



POST BASE (BOTTOM VIEW)
3" = 1'-0"

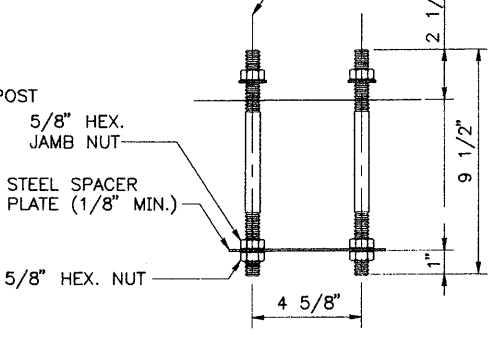


PREFORMED PAD
3" = 1'-0"



STEEL SPACER PLATE (FOR ANCHORAGE)
3" = 1'-0"

- ϕ 5/8" Ø ANCHOR BOLT
- ϕ 5/8" HEAVY HEX. NUT
- ϕ PLAIN HARDENED WASHER



RAIL POST ANCHORAGE (ASSEMBLY)
3" = 1'-0"

NOTE
FOUR(4) BOLT, NUT AND WASHER SETS ARE REQUIRED PER ASSEMBLY, ALL HARDWARE SHALL BE GALVANIZED.

M:\09009\002\118\56RL109.DWG 12/28/99 13:39

Scale: AS NOTED

No.	Revision	By	Date

Designed by:

HNTB
ARCHITECTS ENGINEERS PLANNERS

	By	Date	Checked	By	Date
Designed	KAC	9/99		JFW	11/99
Drawn	LS	9/99	In Charge of	RAL	11/99

HNTB CORPORATION
2 Thomas Drive
Westbrook, ME 04092
TEL (207) 774-5155
FAX (207) 772-7410

**MAINE TURNPIKE AUTHORITY
MODERNIZATION AND WIDENING PROJECT**

**MAINLINE BRIDGE WIDENING
ROUTE 109 OVERPASS
ALUMINUM BRIDGE RAIL DETAILS**



SHEET NUMBER: **WS-S22**
CONTRACT: 2000.03
115 OF 178

MARK	SIZE	NO	LENGTH		TYPE	A		B		C		D		INCR.	REMARKS
			FT	IN		FT	IN	FT	IN	FT	IN				
NORTH ABUTMENT AND WINGWALL FOOTING															
*AF501	5	38	4	0	STR										DOWEL - NEAR FACE
AF601	6	30	17	0	STR										LONGITUDINAL - TOP & BOTTOM
AF602	6	28	14'-9" TO 21'-3"		STR									0 - 6	LONGITUDINAL - TOP & BOTTOM
AF603	6	30	4	0	STR										EXISTING FOOTING DOWEL
AF701	7	27	8	7	111	5	5	1	2		1 1/4				DOWEL - FAR FACE
AF702	7	50	13	6	STR										TRANSVERSE - TOP & BOTTOM
AF801	8	15	12	6	STR										TRANSVERSE - BOTTOM
AF802	8	29	12	6	STR										TRANSVERSE - TOP
AF803	8	14	5'-0" TO 11'-6"		STR									0 - 6	TRANSVERSE - TOP
AF804	8	7	5'-0" TO 11'-0"		STR									1 - 0	TRANSVERSE - BOTTOM
AF901	9	21	12	9	118	11	2	1	7						DOWEL - FAR FACE
N.E. WINGWALL															
WA501	5	14	13'-3" TO 20'-4"		STR									6 1/2	VERTICAL - NEAR FACE
WA502	5	28	13	0	STR										HORIZONTAL - EACH FACE
WA503	5	12	1'-6" TO 10'-8"		STR									1 - 10	HORIZONTAL - EACH FACE
WA504	5	12	6'-0" TO 11'-5"		STR									1 - 1	VERTICAL - EACH FACE
WA505	5	14	7	6	STR										HORIZONTAL - EACH FACE
WA506	5	2	8	3	STR										DIAGONAL - EACH FACE
WA507	5	2	20	3	STR										DIAGONAL - EACH FACE
WA508	5	2	3	0	109	1	6			1	3 3/4	1	6	E=8 1/2"	HORIZONTAL - EACH FACE
WA509	5	14	4'-0" TO 10'-6"		STR									0 - 6	VERTICAL - FAR FACE
WA701	7	13	8	2	STR										VERTICAL - FAR FACE
WA702	7	14	13	6	STR										VERTICAL - FAR FACE
NORTH ABUTMENT END POST															
*EP511	5	2	6	8	STR										HORIZONTAL
*EP512	5	2	7	7	118	6	8	0	11						HORIZONTAL
*EP513	5	3	6	8	STR										HORIZONTAL
*EP514	5	5	2	6	119	1	1	1	5	0	2				TOP OF END POST
*EP515	5	6	3	11	118	2	10	1	1						VERTICAL
*EP516	5	6	7	5	118	5	9	1	8						VERTICAL
*EP517	5	3	2	7	118	1	6	1	1						TOP OF END POST
*EP518	5	2	7	0	118	5	9	1	3						VERTICAL
*EP519	5	2	3	11	118	2	10	1	1						VERTICAL
*EP520	5	1	6	7	104	4	8	1	11		5				HORIZONTAL
*EP611	6	6	5	6	118	4	6	1	0						VERTICAL
EP612	6	8	4	4	118	3	4	1	0						HORIZONTAL
EP613	6	6	6	11	102	3	7	1	8	1	8				VERTICAL
EP614	6	5	6	7	119	4	9	1	10	0	5				HORIZONTAL
EP615	6	5	7	9	118	6	8	1	1						HORIZONTAL
*EP616	6	2	5	6	108	4	6								VERTICAL (180° STD. HOOK)
EP617	6	2	6	1	102	3	7	1	3	1	3				VERTICAL

MARK	SIZE	NO	LENGTH		TYPE	A		B		C		D		INCR.	REMARKS
			FT	IN		FT	IN	FT	IN	FT	IN				
NORTH ABUTMENT STEM AND BA KWALL															
*A501	5	24	14	4	STR										ABUTMENT STEM - NEAR FACE
*A502	5	16	4	9	118	2	9	2	0						SEAT
*A503	5	17	4	6	STR										BACKWALL - NEAR FACE
*A504	5	17	7	4	101	0	10	3	3						BACKWALL - CAP
*A505	5	14	3	8	118	1	8	2	0						BACKWALL - FAR FACE
*A506	5	14	6	9	115					4	3	2	6		APPROACH SLAB SEAT
*A507	5	14	10	6	STR										CORNER VERTICAL
A508	5	2	7	0	STR										BACKWALL VERTICAL @ CORNER
*A509	5	3	3	6	101	1	6	1	0						APPROACH SLAB SEAT DOWEL
*A510	5	15	16	10	STR										HORIZONTAL - NEAR FACE
*A511	5	15	9	3	115			2	7	4	10	2	0		CORNER HORIZONTAL - NEAR FACE
A512	5	12	15	0	STR										HORIZONTAL - FAR FACE
A513	5	12	5	9	118	4	3	1	6						CORNER HORIZONTAL - FAR FACE
A514	5	15	4	0	118	2	0	2	0						CORNER HORIZONTAL - FAR FACE
A515	5	3	18	6	STR										HORIZONTAL - FAR FACE
A516	5	3	15	8	STR										APPROACH SLAB SEAT
A517	5	3	7	0	STR										CORNER HORIZONTAL - FAR FACE
A518	5	8	3	6	118	1	6	2	0						CORNER HORIZONTAL - FAR FACE
*A519	5	7	6	10	115			1	0	4	8	0	8		CORNER HORIZONTAL - NEAR FACE
*A520	5	7	3	8	118	0	8	3	0						CORNER HORIZONTAL - NEAR FACE
*A521	5	4	19	0	STR										BACKWALL - NEAR FACE
*A522	5	2	19	9	STR										BACKWALL - FAR FACE
*A523	5	8	9	6	118	8	0	1	6						ABUTMENT SEAT HORIZONTAL
*A524	5	3	5	0	118	2	0	3	0						CORNER HORIZONTAL - FAR FACE
*A525	5	24	3	0	STR										OLD/NEW FOOTING DOWEL
A526	5	26	3	0	STR										OLD/NEW FOOTING DOWEL
A701	7	21	8	9	STR										ABUTMENT STEM - FAR FACE
NORTH APPROACH SLAB															
AS400	4	16	16	4	STR										APPROACH SLAB
AS600	6	34	15	2	STR										APPROACH SLAB
DECK SLAB AND PARAPETS															
*S501	5	150	37	6	STR										DECK - LONGITUDINAL
*S502	5	428	16	6	113A										DECK - TRANSVERSE
*S503	5	428	2	9	113B			2	9						THREADED DOWEL
*S504	5	30	15	8	STR										BARRIER - LONGITUDINAL
*S505	5	6	7	8	STR										BARRIER - LONGITUDINAL
*S506	5	6	18	2	STR										BARRIER - LONGITUDINAL
*S507	5	107	3	10	124A	0	7	1	7			1	8		BARRIER - VERTICAL
*S508	5	28	5	6	118	4	6	1	0						SLAB END
*S509	5	4	7	8	STR										END BAY - TRANSVERSE
*S510	5	4	5	8	STR										END BAY - TRANSVERSE
*S511	5	28	4	3	115			3	0	1	3				SLAB END - SOUTH ABUTMENT
*S601	6	214	4	3	118	3	3	1	0						BARRIER - VERTICAL

NOTE:
* INDICATES EPOXY COATED REINFORCEMENT

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Scale:		Designed by:		 HNTB ARCHITECTS ENGINEERS PLANNERS		HNTB CORPORATION 2 Thomas Drive Westbrook, ME 04092 TEL (207) 774-5155 FAX (207) 772-7410		MAINE TURNPIKE AUTHORITY MODERNIZATION AND WIDENING PROJECT 		BRIDGE REPLACEMENT ROUTE 109 UNDERPASS REINFORCING STEEL SCHEDULE I	
No.	Revision	Rv	Date								
				Drawn	JFW	11/99	In Charge of	RAL	11/99		

SHEET NUMBER: **WS-S23**
CONTRACT: **2000.03** 116 OF 178

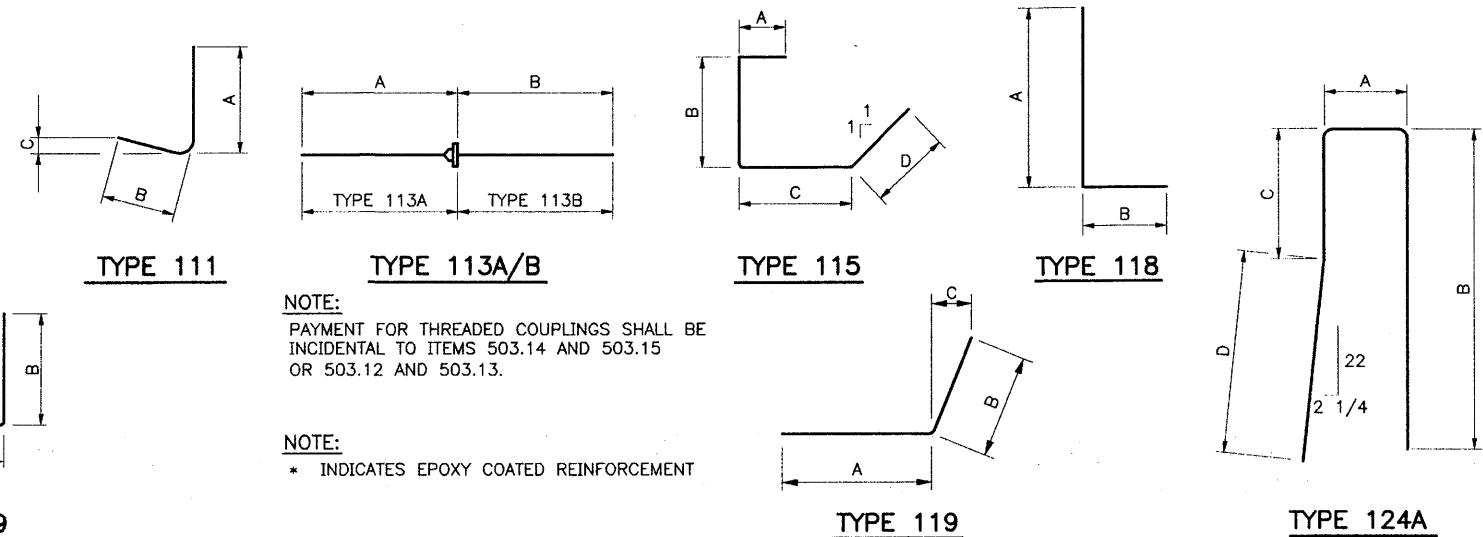
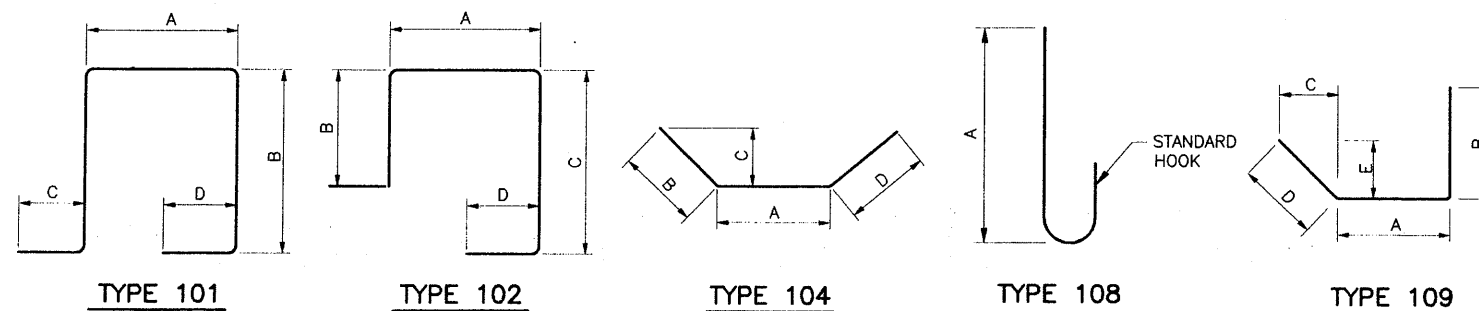
MARK	SIZE	NO	LENGTH		TYPE	A		B		C		D		INCR.	REMARKS
			FT	IN		FT	IN	FT	IN	FT	IN	FT	IN		
SOUTH ABUTMENT AND WINGWALL FOOTING															
*BF501	5	44	4	- 0	STR										DOWEL - NEAR FACE
BF601	6	42	17	- 0	STR										LONGITUDINAL - TOP & BOTTOM
BF602	6	32	15'-9"	TO 27'-0"	STR								0 - 9		LONGITUDINAL - TOP & BOTTOM
BF701	7	16	15	- 6	STR										TRANSVERSE - BOTTOM
BF702	7	12	4'-0"	TO 15'-0"	STR								1 - 0		TRANSVERSE - BOTTOM
BF901	9	19	12	- 9	118	11 - 2	1 - 7								DOWEL - FAR FACE
BF902	9	17	19	- 6	STR										TRANSVERSE - BOTTOM
BF1001	10	20	10	- 6	118	8 - 8	1 - 10								DOWEL - FAR FACE
BF1002	10	39	14	- 5	111	12 - 7	1 - 10	0	1 3/4						DOWEL - FAR FACE
BF1003	10	31	15	- 6	STR										TRANSVERSE - TOP
BF1004	10	24	4'-0"	TO 15'-6"	STR								0 - 6		TRANSVERSE - TOP
BF1101	11	33	19	- 6	STR										TRANSVERSE - TOP

S.E. WINGWALL															
MARK	SIZE	NO	LENGTH		TYPE	A		B		C		D		INCR.	REMARKS
			FT	IN		FT	IN	FT	IN	FT	IN	FT	IN		
WB501	5	20	17'-1"	TO 25'-10"	STR								0	5 1/2	VERTICAL - NEAR FACE
WB502	5	34	19	- 0	STR								2 - 3		HORIZONTAL - EACH FACE
WB503	5	16	1'-6"	TO 17'-3"	STR								1 - 0		HORIZONTAL - EACH FACE
WB504	5	12	6'-0"	TO 11'-0"	STR										VERTICAL - EACH FACE
WB505	5	14	7	- 6	STR										HORIZONTAL - EACH FACE
WB506	5	2	8	- 3	STR										DIAGONAL - EACH FACE
WB507	5	2	26	- 1	STR										DIAGONAL - EACH FACE
WB508	5	2	3	- 0	109	1 - 6		1	4 1/2	1 - 6			E = 7 1/2		HORIZONTAL - EACH FACE
WB509	5	17	3'-8"	TO 9'-0"	STR								0 - 4		VERTICAL - FAR FACE
WB801	8	39	9	- 5	STR										VERTICAL - FAR FACE
WB802	8	20	9	- 0	STR										VERTICAL - FAR FACE

SOUTH ABUTMENT END POST															
MARK	SIZE	NO	LENGTH		TYPE	A		B		C		D		INCR.	REMARKS
			FT	IN		FT	IN	FT	IN	FT	IN				
*EP501	5	2	8	- 2	STR										HORIZONTAL
*EP502	5	2	8	- 9	118	8 - 2	0 - 7								HORIZONTAL
*EP503	5	3	8	- 2	STR										HORIZONTAL
*EP504	5	7	2	- 6	119	1 - 1	1 - 5	0 - 2							TOP OF END POST
*EP505	5	8	3	- 11	118	2 - 10	1 - 1								VERTICAL
*EP506	5	6	7	- 5	118	5 - 9	1 - 8								VERTICAL
*EP507	5	3	2	- 7	118	1 - 6	1 - 1								TOP OF END POST
*EP508	5	2	7	- 0	118	5 - 9	1 - 3								VERTICAL
*EP509	5	2	3	- 11	118	2 - 10	1 - 1								VERTICAL
*EP510	5	1	8	- 2	104	6 - 3	1 - 11	0 - 5							HORIZONTAL
*EP601	6	10	5	- 6	118	4 - 6	1 - 0								VERTICAL
EP602	6	10	4	- 4	118	3 - 4	1 - 0								HORIZONTAL
EP603	6	6	6	- 11	102	3 - 7	1 - 8	1 - 8							VERTICAL
EP604	6	5	6	- 7	119	4 - 9	1 - 10	0 - 5							HORIZONTAL
EP605	6	5	8	- 3	118	6 - 8	1 - 7								HORIZONTAL
*EP606	6	2	5	- 6	108	4 - 6									VERTICAL (180° STD. HOOK)
EP607	6	2	6	- 1	102	3 - 7	1 - 3	1 - 3							VERTICAL

MARK	SIZE	NO	LENGTH		TYPE	A		B		C		D		INCR.	REMARKS
			FT	IN		FT	IN	FT	IN	FT	IN				
SOUTH ABUTMENT STEM AND BACKWALL															
*B501	5	24	19	- 7	STR										ABUTMENT STEM - NEAR FACE
*B502	5	16	4	- 9	118	2 - 9	2 - 0								SEAT
*B503	5	17	4	- 6	STR										BACKWALL - NEAR FACE
*B504	5	17	11	- 2	101	0 - 10	5 - 2								BACKWALL - CAP
*B505	5	14	3	- 8	118	1 - 8	2 - 0								BACKWALL - FAR FACE
*B506	5	14	6	- 9	115					4 - 3	2 - 6				APPROACH SLAB SEAT
*B507	5	14	10	- 6	STR										CORNER VERTICAL
B508	5	2	7	- 0	STR										BACKWALL VERTICAL @ CORNER
*B509	5	3	3	- 8	101	1 - 8	1 - 0								APPROACH SLAB SEAT DOWEL
*B510	5	20	16	- 5	STR										HORIZONTAL - NEAR FACE
*B511	5	20	9	- 3	115			2 - 7	4 - 8	2 - 0					CORNER HORIZONTAL - NEAR FACE
B512	5	18	14	- 7	STR										HORIZONTAL - FAR FACE
B513	5	18	5	- 9	118	4 - 3	1 - 6								CORNER HORIZONTAL - FAR FACE
B514	5	21	4	- 0	118	2 - 0	2 - 0								CORNER HORIZONTAL - FAR FACE
B515	5	3	18	- 6	STR										HORIZONTAL - FAR FACE
B516	5	3	16	- 3	STR										APPROACH SLAB SEAT
B517	5	3	7	- 0	STR										CORNER HORIZONTAL - FAR FACE
B518	5	6	3	- 6	118	1 - 6	2 - 0								CORNER HORIZONTAL - FAR FACE
*B519	5	5	6	- 4	115			1 - 0	4 - 8	0 - 8					CORNER HORIZONTAL - NEAR FACE
*B520	5	5	3	- 8	118		8	3 - 0							CORNER HORIZONTAL - NEAR FACE
*B521	5	5	18	- 6	STR										BACKWALL - NEAR FACE
*B522	5	3	19	- 9	STR										BACKWALL - FAR FACE
*B523	5	8	9	- 6	118	8 - 0	1 - 6								ABUTMENT SEAT HORIZONTAL
*B524	5	25	3	- 0	STR										OLDNEW ABUTMENT DOWEL
B525	5	26	3	- 0	STR										OLDNEW ABUTMENT DOWEL
B701	7	20	7	- 6	STR										ABUTMENT STEM - FAR FACE
B1001	10	20	14	- 3	STR										ABUTMENT STEM - FAR FACE

SOUTH APPROACH SLAB															
MARK	SIZE	NO	LENGTH		TYPE	A		B		C		D		INCR.	REMARKS
			FT	IN		FT	IN	FT	IN	FT	IN	FT	IN		
AS400	4	16	16	- 4	STR										APPROACH SLAB
AS600	6	34	15	- 2	STR										APPROACH SLAB



NOTE:
PAYMENT FOR THREADED COUPLINGS SHALL BE INCIDENTAL TO ITEMS 503.14 AND 503.15 OR 503.12 AND 503.13.

NOTE:
* INDICATES EPOXY COATED REINFORCEMENT

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No.	Revision	By	Date

Designed by:					
HNTB					
ARCHITECTS ENGINEERS PLANNERS					
Designed	By	Date	Checked	By	Date
Drawn	JFW	11/99	In Charge of	RAL	11/99

HNTB CORPORATION
2 Thomas Drive
Westbrook, ME 04092
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**MAINE TURNPIKE AUTHORITY
MODERNIZATION AND WIDENING PROJECT**

BRIDGE REPLACEMENT
ROUTE 109 UNDERPASS
REINFORCING STEEL SCHEDULE II

SHEET NUMBER: **WS-S24**
CONTRACT: **2000.03**
117 OF 178