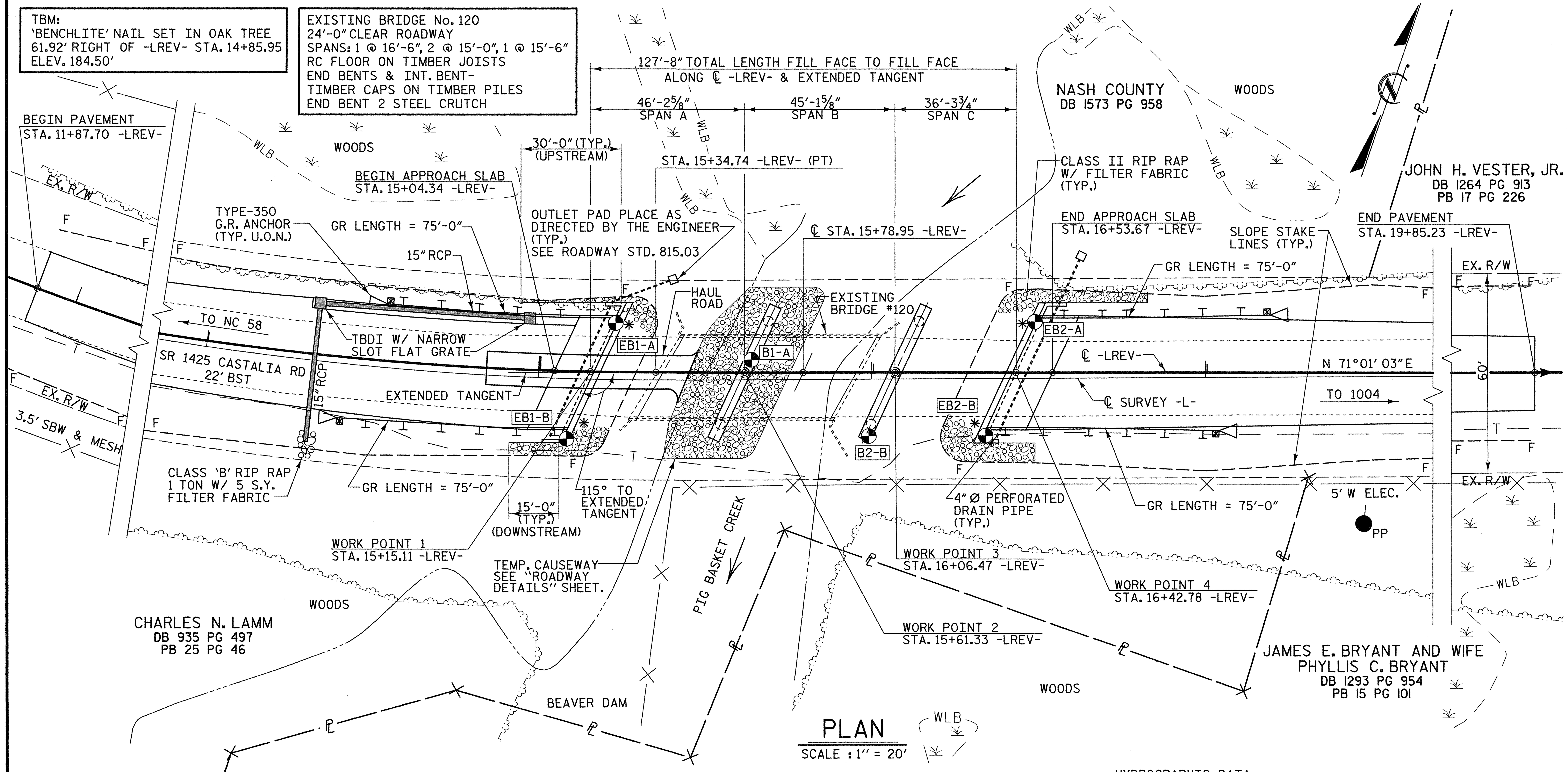


PLAN
SCALE : 1" = 20'

(-) 1.3429%	(+) 0.0636%	(+) 0.3000%	(-) 0.3564%	(+) 0.2596%
STA. 11+87.70 ELEV. 190.81	STA. 13+40.00 ELEV. 188.77	STA. 14+94.00 ELEV. 188.87	STA. 16+63.00 ELEV. 189.37	STA. 18+25.00 ELEV. 188.80
STA. 19+85.23 ELEV. 189.21				

GRADE DATA
-LREV- (SR 1425)

⊕ DENOTES GEO-TECH BORE HOLE LOCATIONS.

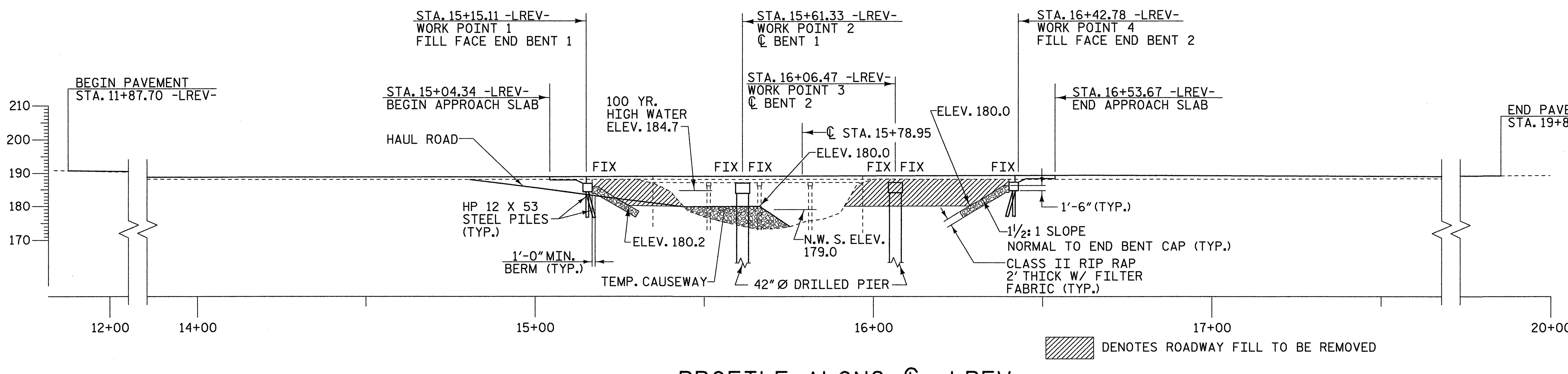
* DENOTES B-77 GUARDRAIL CONNECTION REQ'D. SEE "GUARDRAIL ANCHORAGE FOR BARRIER RAIL" SHEET.

NOTE: GUARDRAIL LENGTHS AS SHOWN INCLUDE ANCHOR UNITS.

U.O.N. - UNLESS OTHERWISE NOTED

HYDROGRAPHIC DATA:

DESIGN DISCHARGE -	1700 CFS
FREQUENCY OF DESIGN FLOOD -	25 YEAR
DESIGN HIGH WATER ELEVATION -	183.2
DRAINAGE AREA -	6.9 SQ. MI.
BASIC DISCHARGE (Q 100) -	2500 CFS
BASIC HIGH WATER ELEVATION -	184.7



▨ DENOTES ROADWAY FILL TO BE REMOVED

PROFILE ALONG ℄ -LREV-
SCALE : 1" = 20'

NOTES

ALL SPANS HAVE BEEN DESIGNED FOR TOP DOWN CONSTRUCTION.

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR THE DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", MAY 2001.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC CATEGORY A.

FOR DRILLED PIERS, SEE DRILLED PIERS SPECIAL PROVISION.

DRILLED PIERS AT BENTS NO. 1 AND 2 ARE DESIGNED FOR BOTH SKIN FRICTION AND END BEARING. CHECK FIELD CONDITIONS FOR THE REQUIRED END BEARING CAPACITY OF 30 TSF FOR BENTS NO. 1 AND 2.

DRILLED PIERS AT BENT NO. 1 ARE DESIGNED FOR APPLIED LOAD OF 280 TONS EACH AT THE TOP OF THE COLUMN.

DRILLED PIERS AT BENT NO. 2 ARE DESIGNED FOR APPLIED LOAD OF 265 TONS EACH AT THE TOP OF THE COLUMN.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT NO. 1. DO NOT EXTEND CASING BELOW ELEVATION 163 FT. WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

PERMANENT STEEL CASING MAY BE REQUIRED FOR DRILLED PIERS AT BENT NO. 2. IF REQUIRED, DO NOT EXTEND CASING BELOW ELEVATION 168 FT. WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE ENGINEER WILL DETERMINE THE NEED FOR PERMANENT STEEL CASING.

INSTALL DRILLED PIERS AT BENT NO. 1 THAT EXTEND TO AN ELEVATION NO HIGHER THAN 121 FT., SATISFY THE REQUIRED END BEARING CAPACITY, AND HAVE MIMIMUM PENETRATIONS OF 14 FT INTO ROCK AS DEFINED BY THE DRILLED PIERS PROVISION.

INSTALL DRILLED PIERS AT BENT NO. 2 THAT EXTEND TO AN ELEVATION NO HIGHER THAN 140 FT., SATISFY THE REQUIRED END BEARING CAPACITY, AND HAVE MIMIMUM PENETRATIONS OF 14 FT INTO ROCK AS DEFINED BY THE DRILLED PIERS PROVISION.

THE SCOUR CRITICAL ELEVATIONS FOR BENTS NO. 1 AND 2 ARE ELEVATIONS 159 FT. AND 163 FT., RESPECTIVELY. THE SCOUR CRITICAL ELEVATIONS ARE FOR USE BY MAINTENANCE FORCES TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

SID INSPECTIONS MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTIONS. SEE DRILLED PIERS SPECIAL PROVISION.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. SEE CROSSHOLE SONIC LOGGING SPECIAL PROVISON.

DRIVE PILES FOR END BENTS NO. 1 AND 2 TO A REQUIRED BEARING CAPACITY OF 90 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENTS NO. 1 AND 2 IS 45 TONS.

FOR ADDITIONAL NOTES, SEE "ROADWAY DETAILS" SHEET.

PROJECT NO. 42558
NASH COUNTY
STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE ON SR 1425 OVER PIG BASKET CREEK BETWEEN NC 58 & SR 1004

32'-10" CLEAR ROADWAY - 115° SKEW

NORTH CAROLINA PROFESSIONAL ENGINEER 19661 L. KEVIN AUSTIN 8/11/10

PLANS PREPARED BY:
MULKEY ENGINEERS & CONSULTANTS
PO Box 33127
RALEIGH, N.C. 27636
(919) 851-1912
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1			3					TOTAL SHEETS
2			4					32

DRAWN BY :	W. B. ALLEN	DATE :	7/09
CHECKED BY :	L. K. AUSTIN	DATE :	4/10

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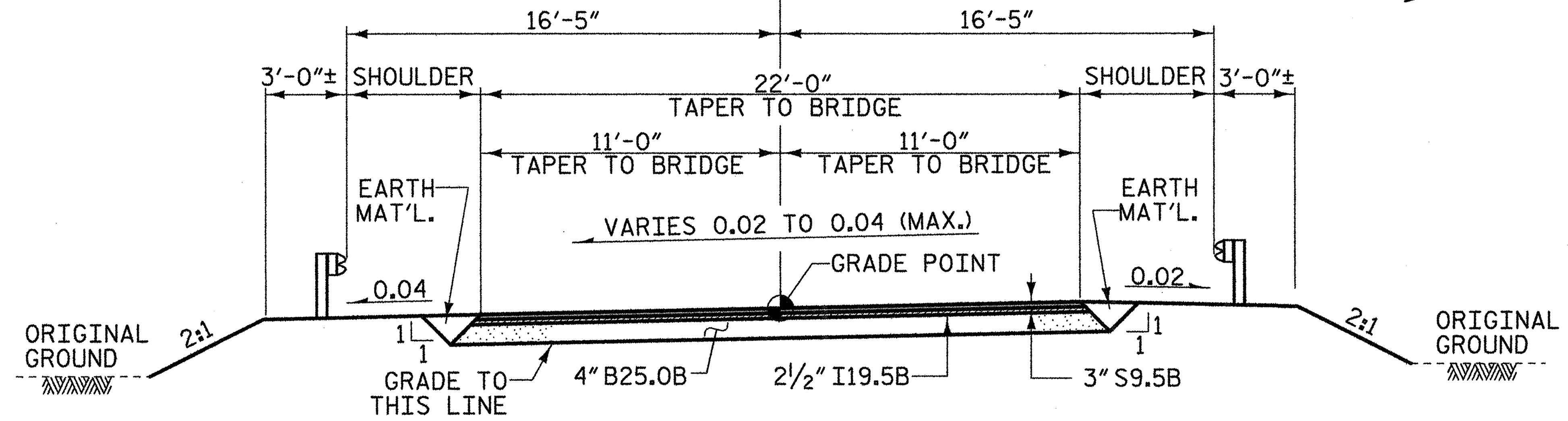
JAMES E. BRYANT AND WIFE
PHYLLIS C. BRYANT
DB 1293 PG 954
PB 15 PG 101

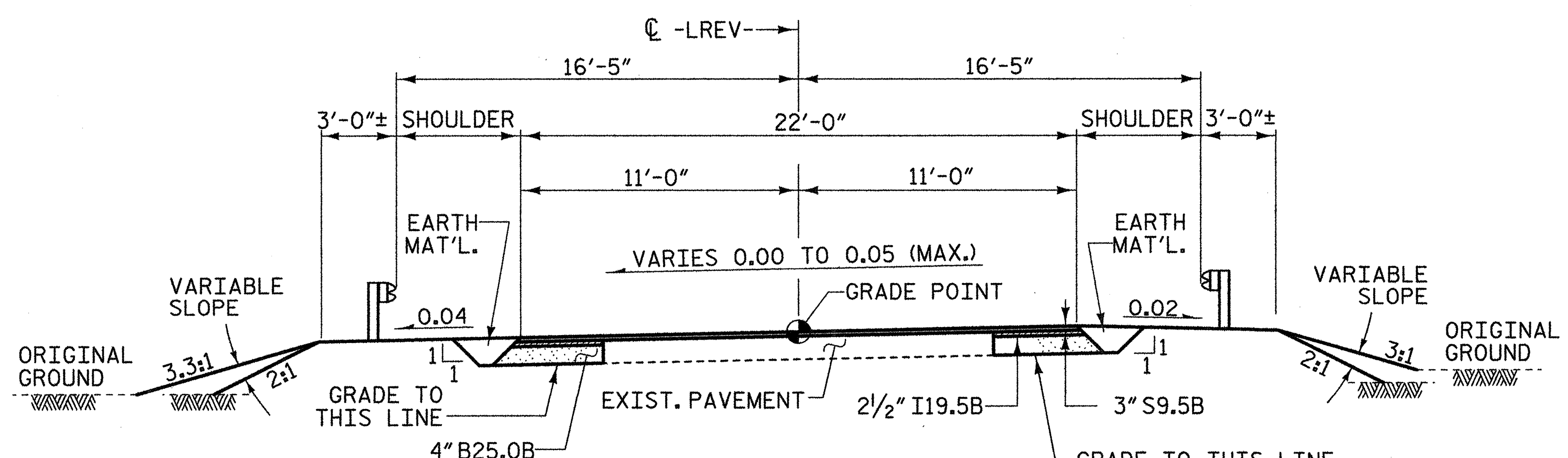
PAVEMENT LAYOUT DETAILS

SCALE : 1" = 30'



FULL DEPTH PAVEMENT

FROM -L- STA. 14+00 TO BEGIN BRIDGE
FROM END BRIDGE TO -L- STA. 17+50



WIDENING PAVEMENT

FROM -L- STA. 11+87.70 TO -L- STA. 14+00
FROM -L- STA. 17+50 TO -L- STA. 19+85.23

TYPICAL ROADWAY SECTION

(WITHIN CONSTRUCTION LIMITS)

NOTES

ADT = 1600 FOR YEAR 2001

ROADWAY APPROACH EMBANKMENT SHALL BE WIDENED AS NECESSARY FOR GUARDRAIL INSTALLATION.

FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS, SEE SPECIAL PROVISIONS.

ALL GRADING REQUIRED FOR ACCESS TO THE TEMPORARY ACCESS SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR "CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS."

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIPRAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR "CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS."

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

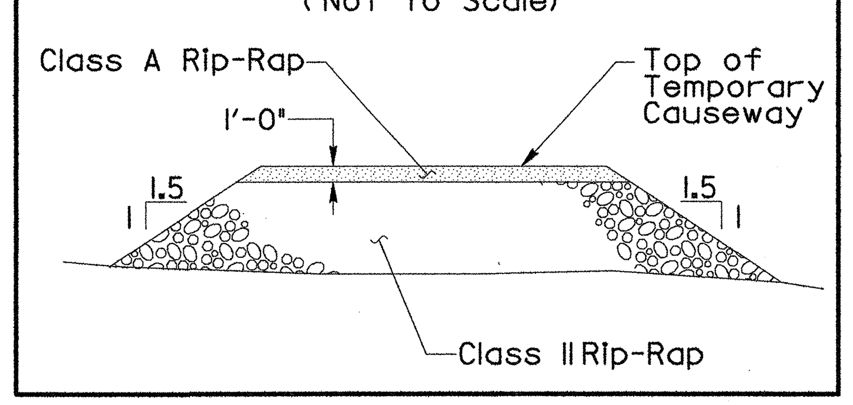
FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

THE QUANTITY OF RIP RAP TO BE PAID FOR WILL BE THE ACTUAL NUMBER OF TONS OF EACH CLASS OF RIP RAP WHICH HAS BEEN INCORPORATED INTO THE COMPLETED AND ACCEPTED WORK. THE RIP RAP WILL BE MEASURED BY BEING WEIGHED IN TRUCKS ON CERTIFIED PLATFORM SCALES OR OTHER CERTIFIED WEIGHING DEVICES. THE QUANTITY OF RIP RAP WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER TON:

PLAIN RIP RAP CLASS II (2'-0" THICK)

END BENT No. 1	85 TONS
END BENT No. 2	110 TONS
TOTAL	195 TONS

DETAIL A
TEMPORARY CAUSEWAY
(Not to Scale)



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "MA4107B-1"
WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 838370.269(ft) EASTING: 2296241.737(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99996490
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "MA4107B-1" TO -LREV- STATION 10+00.00 IS S 76°35'56" W 1161.82'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

PROJECT NO. 42558
NASH COUNTY
STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ROADWAY DETAILS

32'-10" CLEAR ROADWAY - 115° SKEW

REVISIONS								SHEET NO.
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1			3					TOTAL SHEETS
2			4					32

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19661 L. KEVIN AUSTIN 8/11/10

PLANS PREPARED BY:
MULKEY ENGINEERS & CONSULTANTS
PO Box 33127 RALEIGH, N.C. 27636
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(919) 851-1918 (FAX)
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DRAWN BY : W. B. ALLEN DATE : 7/09
CHECKED BY : L. K. AUSTIN DATE : 4/10

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PROJ. REFERENCE NO.
BK-5107
SHEET NO.
4
0 2.5 5
8/23/99
W.L.B.
EXIST. R/W
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0.040
0.040
2:1
2:1
188.03
EOP
EOP
S.S.186.42
S.S.186.55
14+00.00
W.L.B.
EXIST. R/W
188.775
0.040
0.040
3:1
2.3:1
188.31
EOP
EOP
S.S.186.52
S.S.184.96
13+50.00
W.L.B.
EXIST. R/W
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0.040
0.040
3:1
3:1
188.85
EOP
EOP
S.S.187.21
S.S.186.11
13+00.00
-LREV-
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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
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BK-5107	8

PROJ. REFERENCE NO.	SHEET NO.
BK-5107	9

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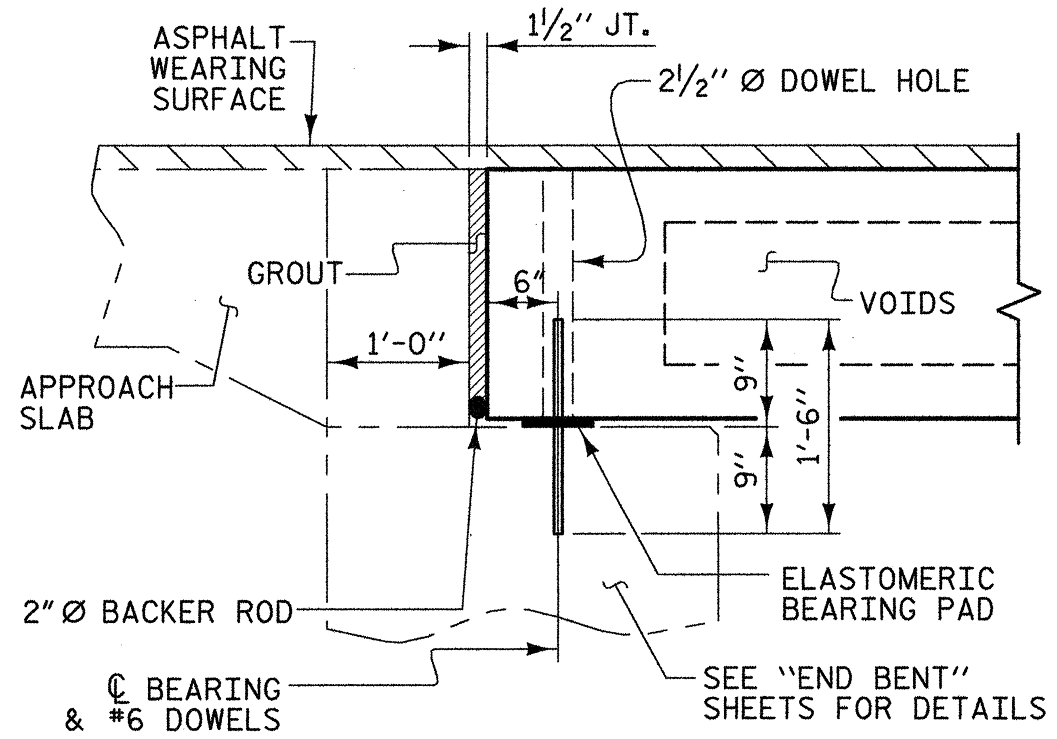
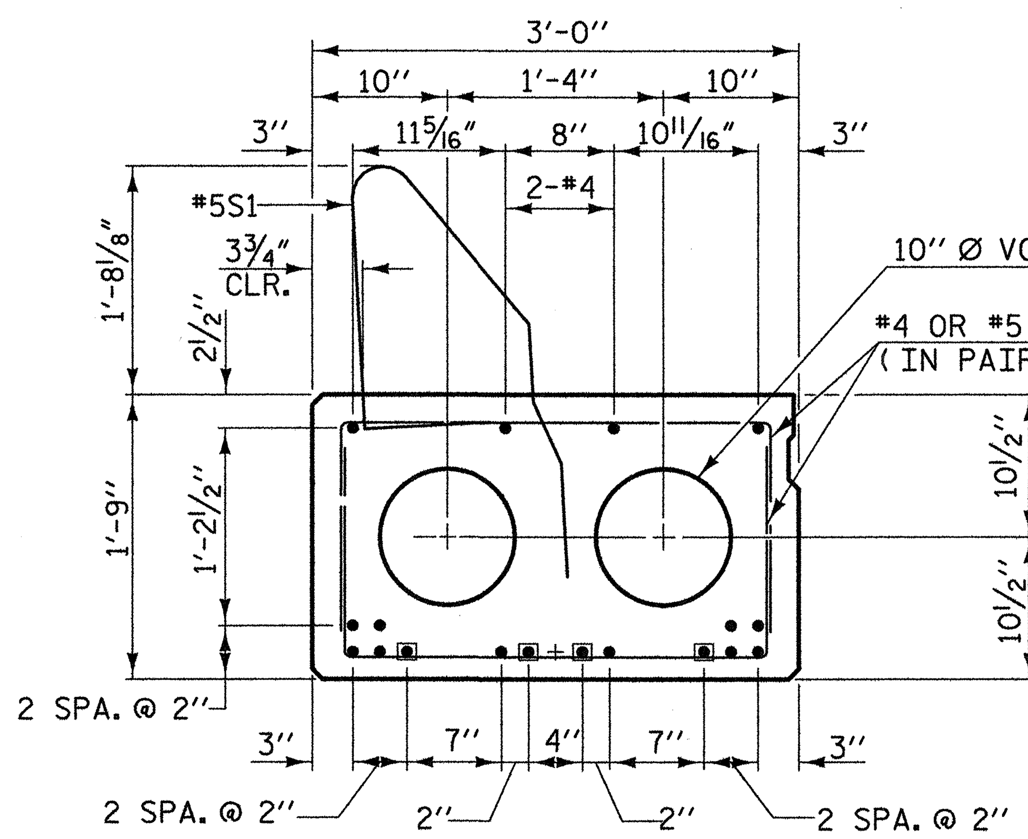
FIXED END

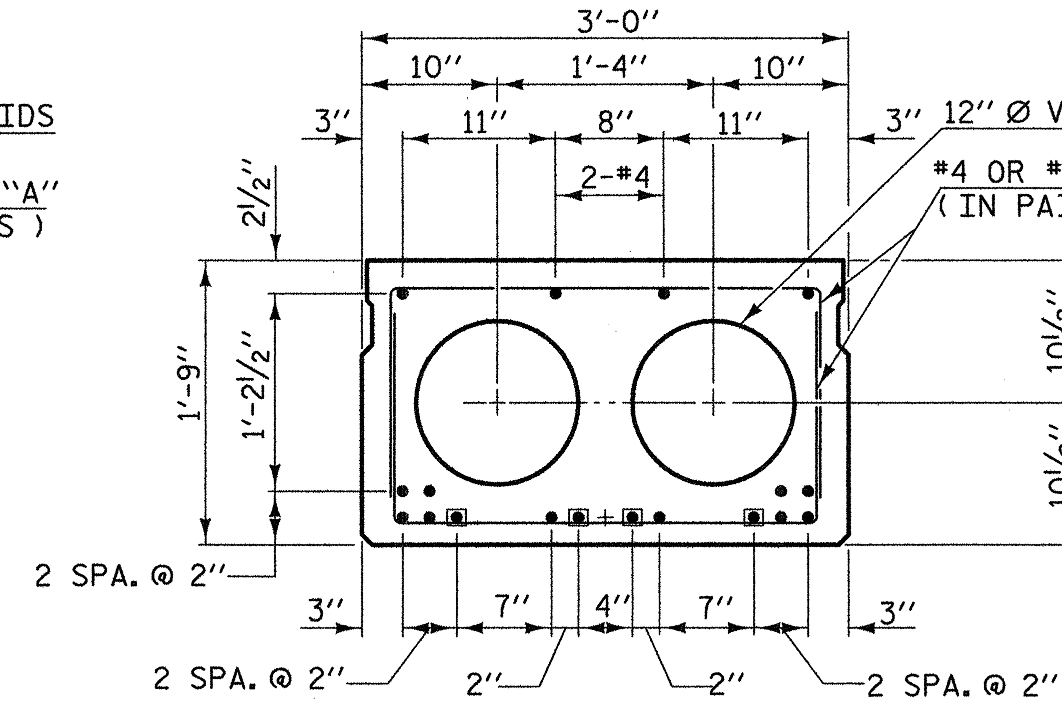


SECTION AT END BENT



45' SPAN

16 - 0.6" Ø L.R. STRANDS
EXTERIOR SLAB SECTIONS

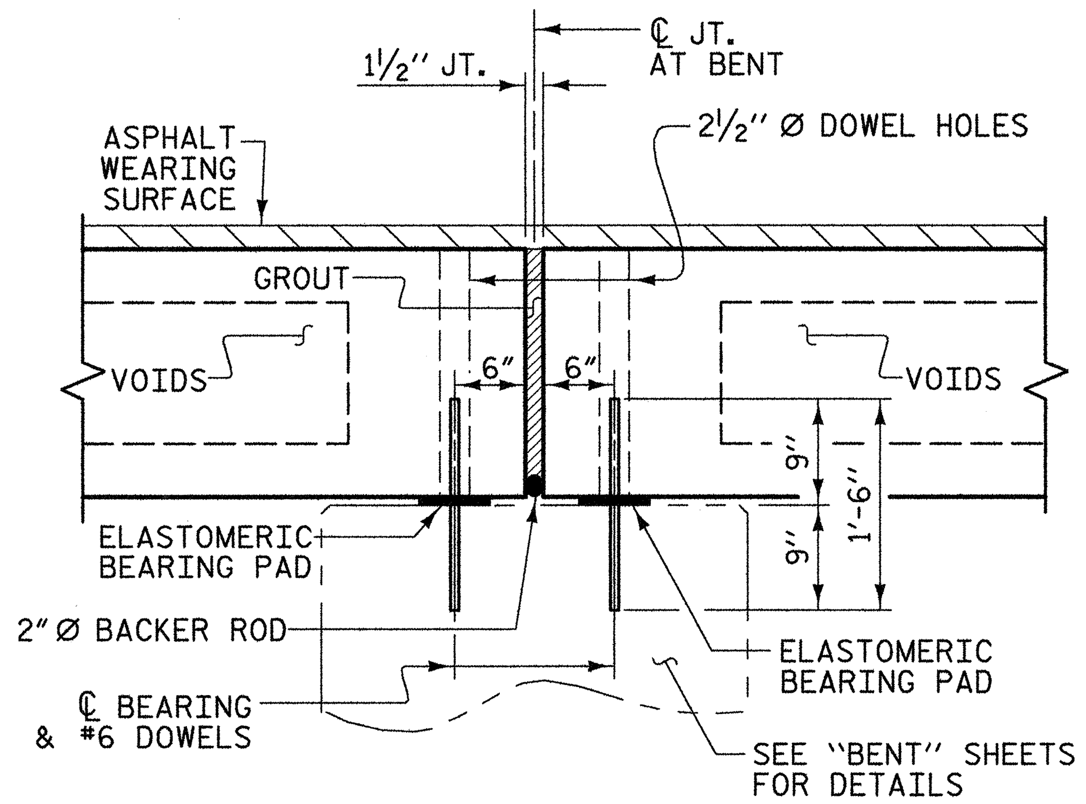


45' SPAN

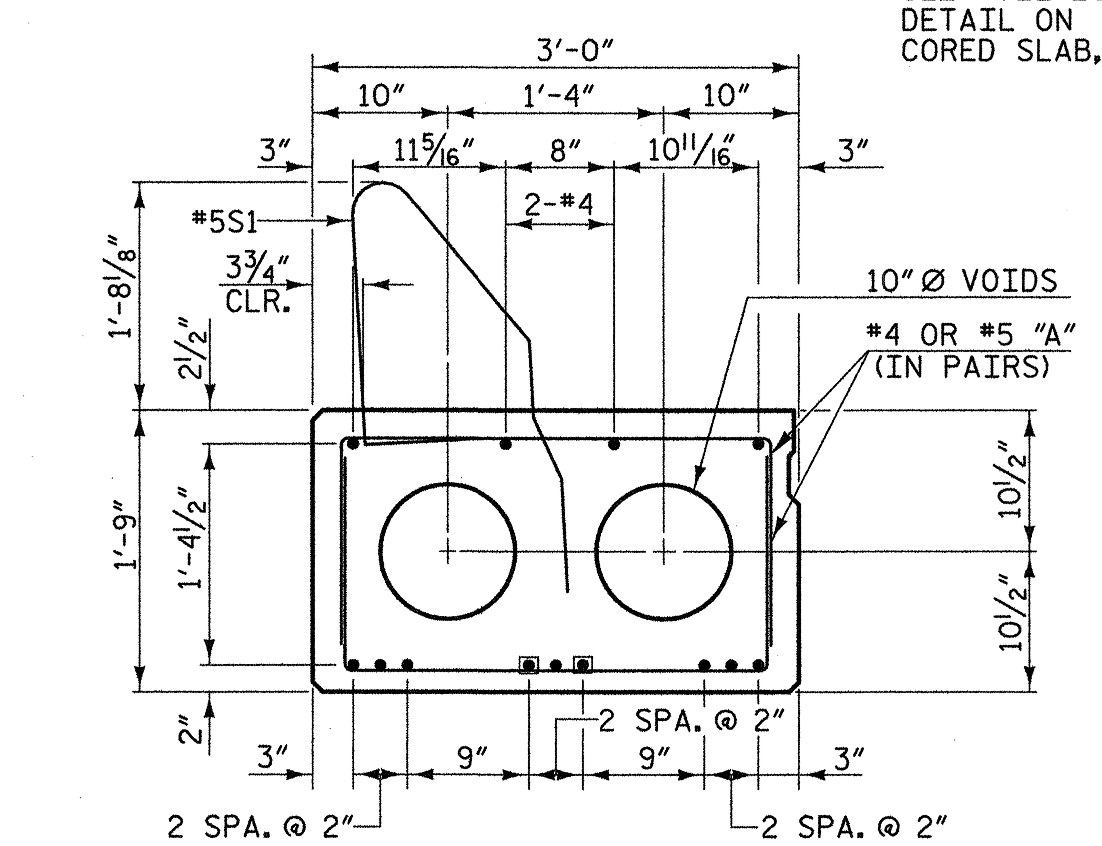
16 - 0.6" Ø L.R. STRANDS
INTERIOR SLAB SECTIONS

NOTE:
FOR LOCATION OF #5S1
SEE "TIE LOCATION FOR #5S1"
DETAIL ON "PRESTRESSED
CORED SLAB, 35' SPAN" SHEET.

FIXED END   FIXED END

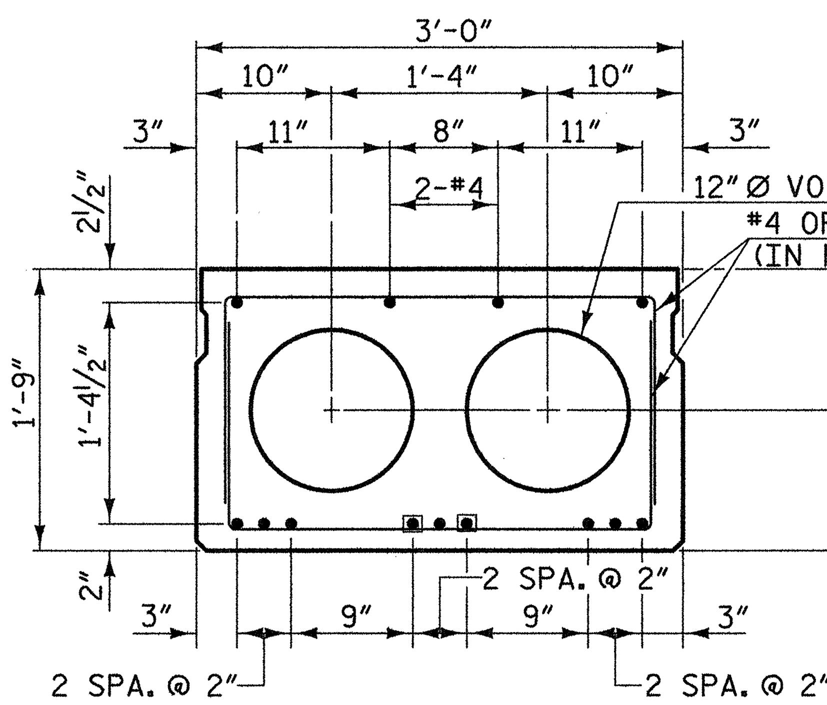


SECTION AT BENT



35' SPAN

11 - 0.6" Ø L.R. STRANDS
EXTERIOR SLAB SECTIONS



35' SPAN

11- 0.6" Ø L.R. STRANDS
INTERIOR SLAB SECTIONS

▣ DENOTES SHEATHED STRAND
(SEE SHEATH CHART)

GENERAL NOTES

ASSUMED LIVE LOAD = HS20 OR ALTERNATE LOADING, EXCEPT THAT ALL CORED SLAB UNITS HAVE BEEN DESIGNED FOR HS 25.

CONCRETE = f'c - 6000psi 45' SPAN ONLY. (MIN. COMP. STRENGTH @ 28 DAYS).
f'ci - 4500psi 45' SPAN ONLY (MIN. COMP. STRENGTH @ TRANSFER OF STRESSING FORCE).

CONCRETE = f'c - 5000psi 35' SPAN ONLY. (MIN. COMP. STRENGTH @ 28 DAYS).
f'ci - 4000psi 35' SPAN ONLY (MIN. COMP. STRENGTH @ TRANSFER OF STRESSING FORCE).

SIZE	TYPE	AREA	ULTIMATE STR.	APPLIED FORCE
0.6" Ø	LOW RELAX.	0.217 SQ. IN. PER CABLE	58,600 LBS.	43,950 LBS. PER CABLE

STRUCTURAL STEEL ITEMS SHALL BE OF A GRADE CONFORMING TO EITHER ASTM A36 OR A373, EXCEPT HIGH STRENGTH BOLTS. HIGH STRENGTH BOLTS SHALL BE ASTM A325. ALL STRUCTURAL STEEL SHALL BE GALVANIZED AS PER THE SPECIFICATION.

ALL MATERIAL AND WORKMANSHIP SHALL COMPLY WITH THE APPLICABLE REQUIREMEMNTS OF THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OF THE NC DEPARTMENT OF TRANSPORTATION DATED JULY 2006 AND WITH THE SPECIAL PROVISIONS.

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF SUPERSTRUCTURE.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER . SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS. THE JOINT SHALL BE FILLED WITH GROUT.

WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

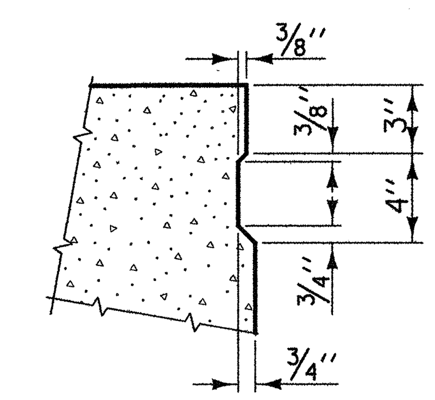
UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED ¾".

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR DEFLECTION TABLE, SEE "PRESTRESSED CORED SLAB, 35' SPAN" SHEET.

NO DECK DRAINS ALLOWED.



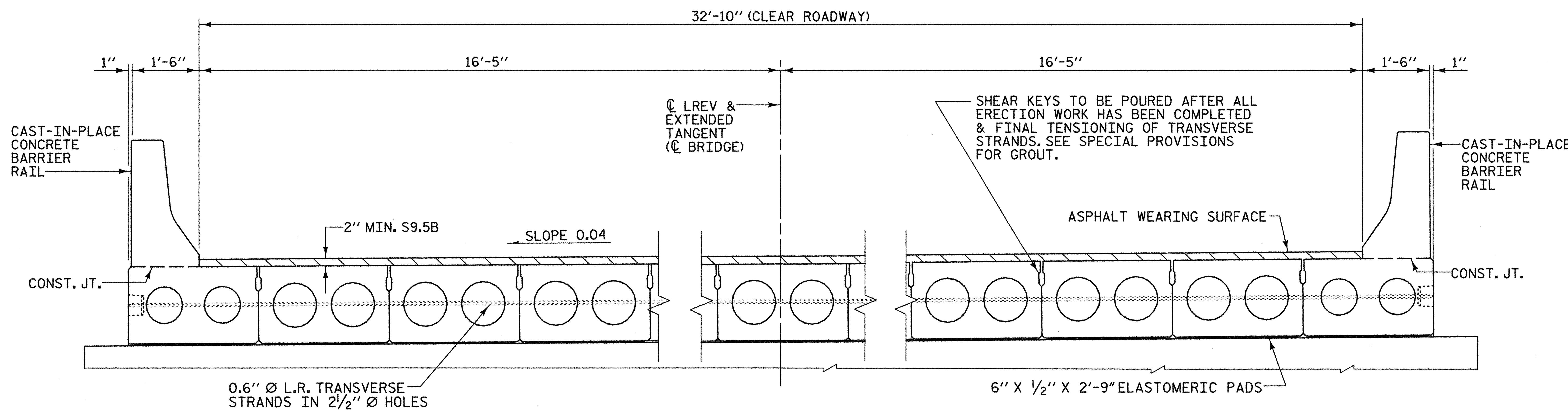
SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE OF EXTERIOR CORED SLAB

SHEATH CHART

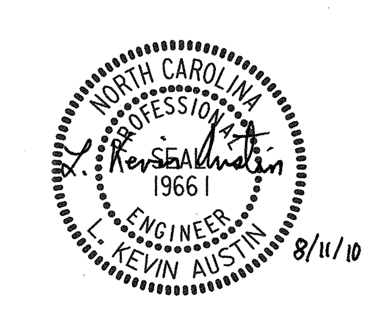
SPAN LENGTH	NUMBER OF SHEATHED STRANDS PER EXTERIOR SLAB SECTIONS	NUMBER OF SHEATHED STRANDS PER INTERIOR SLAB SECTIONS
45'	4	4
35'	2	2

BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 4'-0" FROM END OF SLAB



TYPICAL SECTION

PROJECT NO. 42558
NASH COUNTY
STATION: 15+78.95 -LREV-
REPLACES BRIDGE NO. 120



PLANS PREPARED BY:
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WWW.MULKEYINC.COM

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

PRESTRESSED CORED SLAB 25' & 45' SPANS

32'-10" CLEAR ROADWAY - 115° SKEW

REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.	10
1			3			TOTAL SHEETS	32
2			4				

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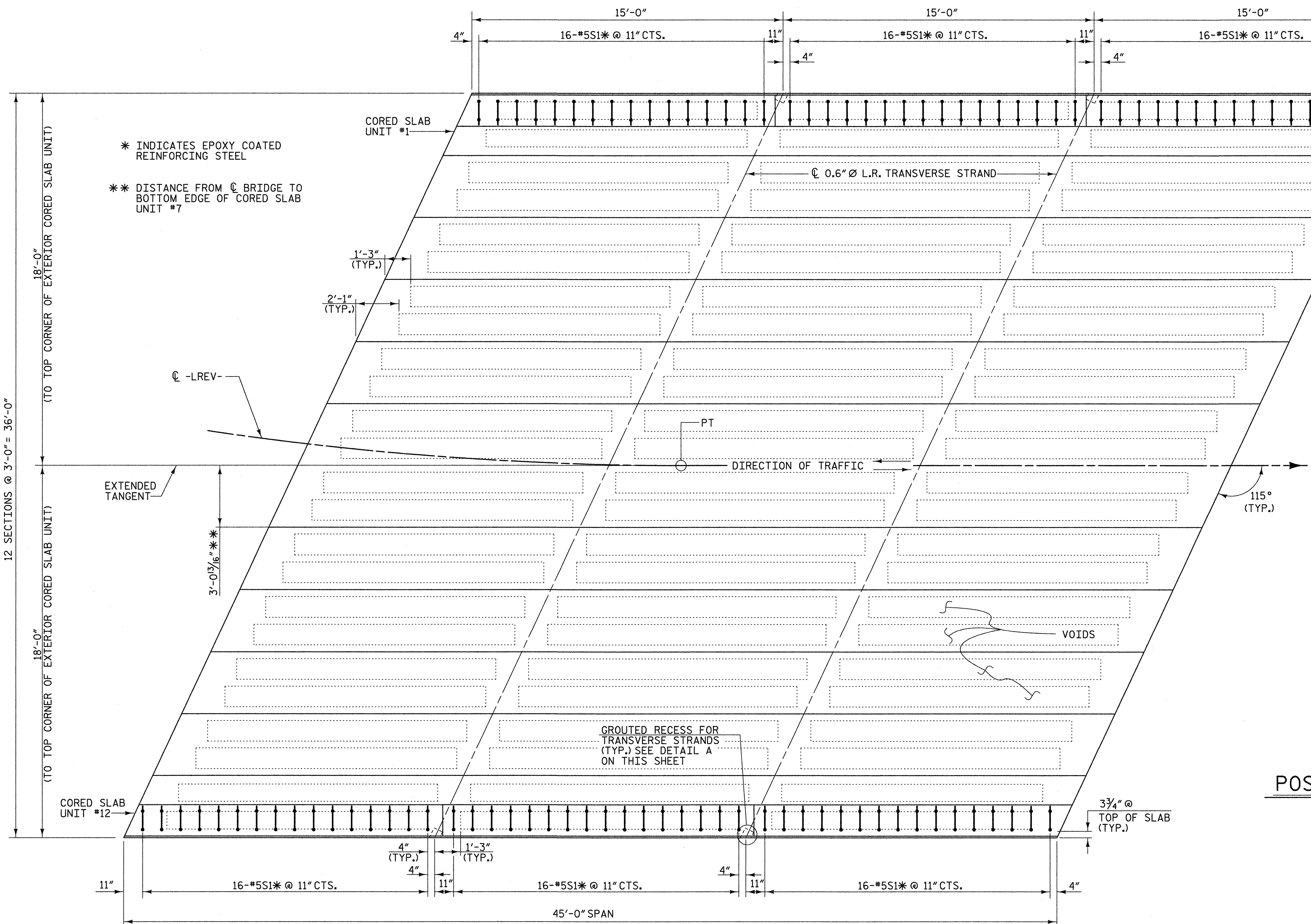
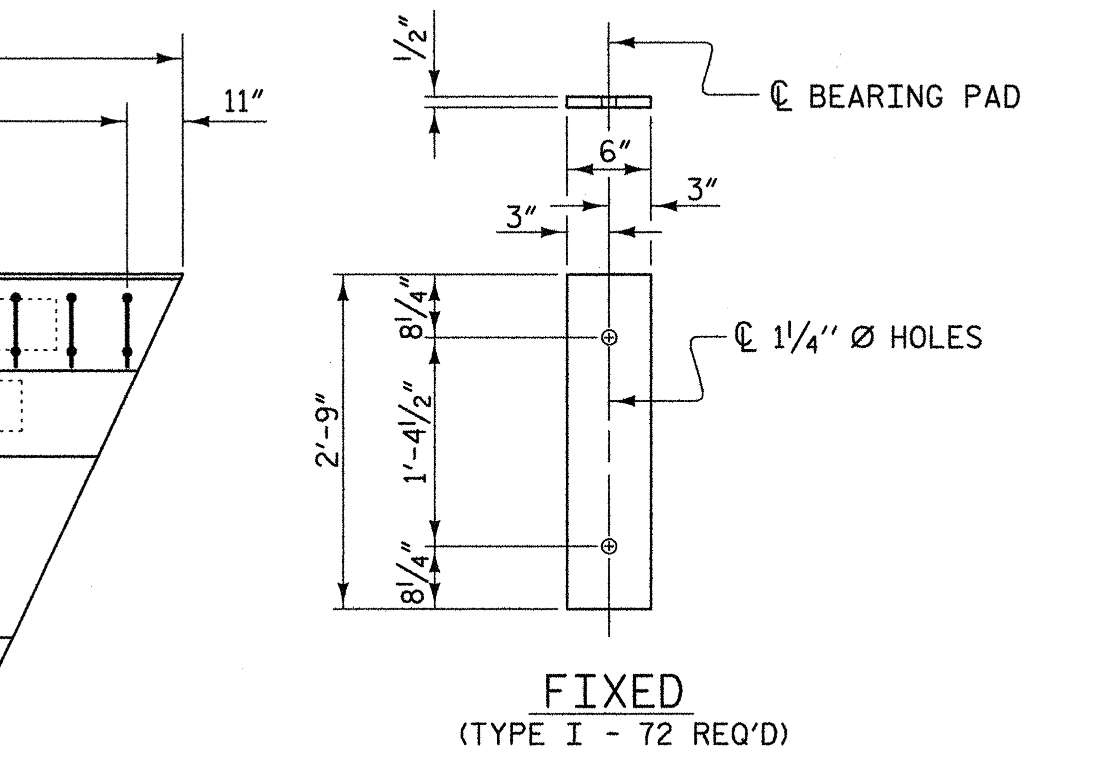
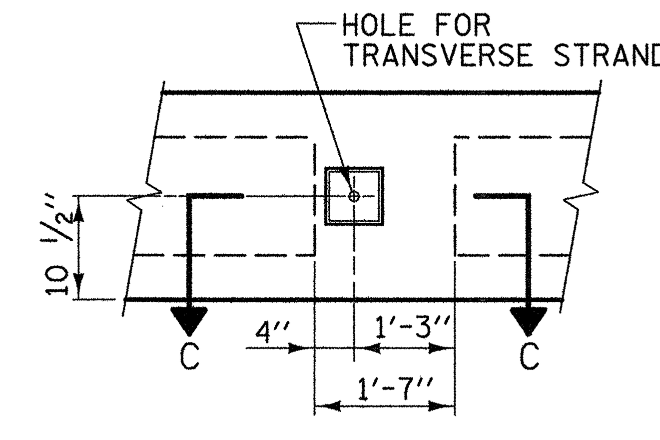


PLAN OF SPAN
(SPAN 'A' SHOWN, SPAN 'B' SIMILAR)

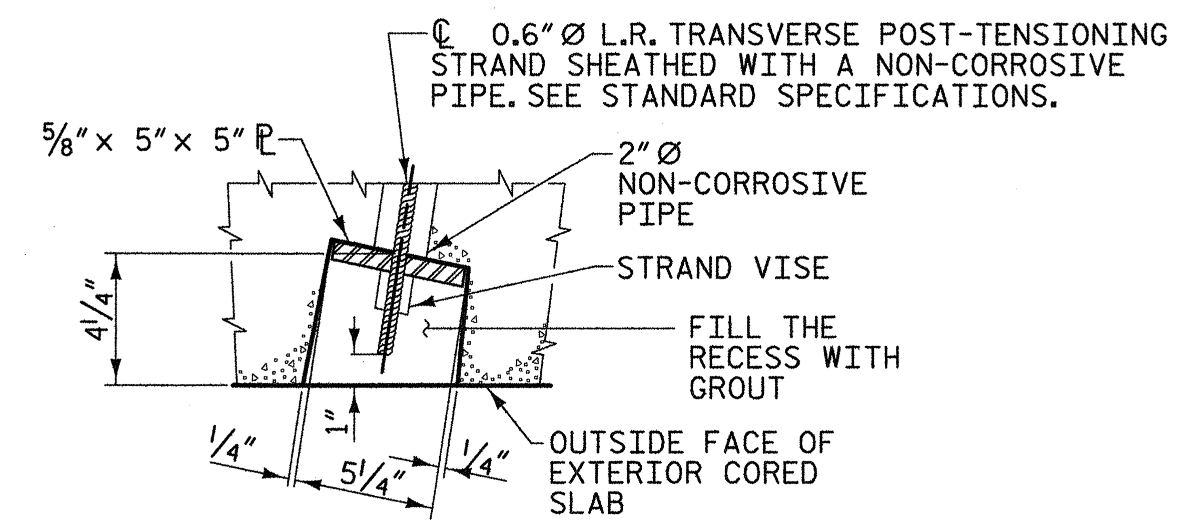


FIXED
(TYPE I - 72 REQ'D)

ELASTOMERIC BEARING DETAILS
NOTE: ELASTOMER HARDNESS SHALL BE 50 DUROMETERS.

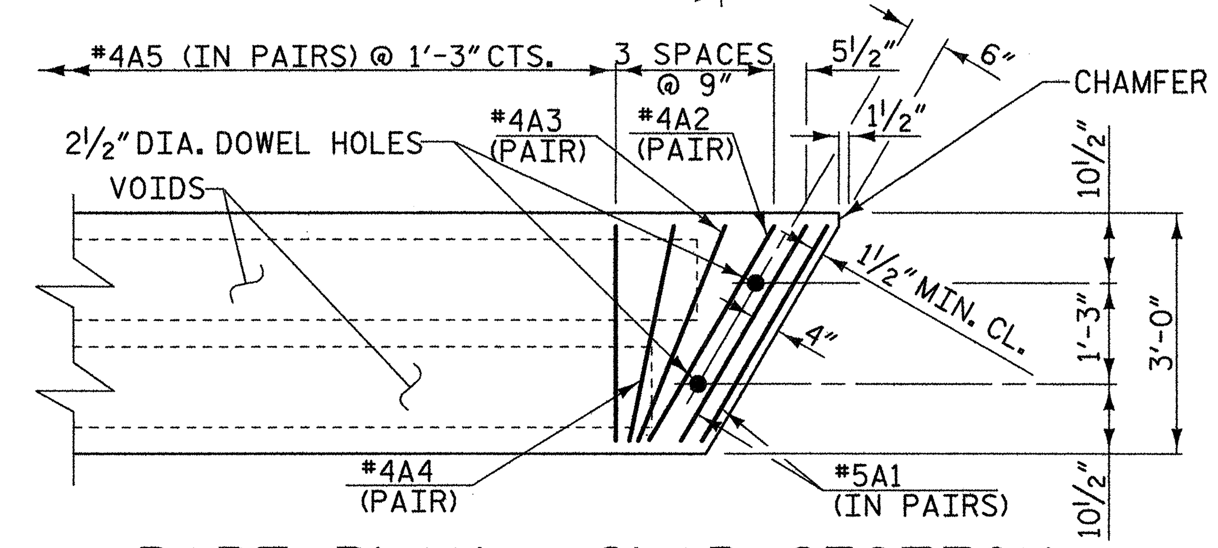


ELEVATION



SECTION C-C

DETAIL A
GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLAB



PART PLAN - SLAB SECTION

PROJECT NO. 42558

NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

PRESTRESSED CORED SLAB 45' SPAN

32'-10" CLEAR ROADWAY - 115° SKEW

NORTH CAROLINA PROFESSIONAL ENGINEER 19661 L. KEVIN AUSTIN 8/11/10

PLANS PREPARED BY:

MULKEY ENGINEERS & CONSULTANTS
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NO.	BY:	DATE:		NO.	BY:	DATE:		11
1				3				TOTAL SHEETS
2				4				32

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CHECKED BY :	L. K. AUSTIN	DATE :	7/10

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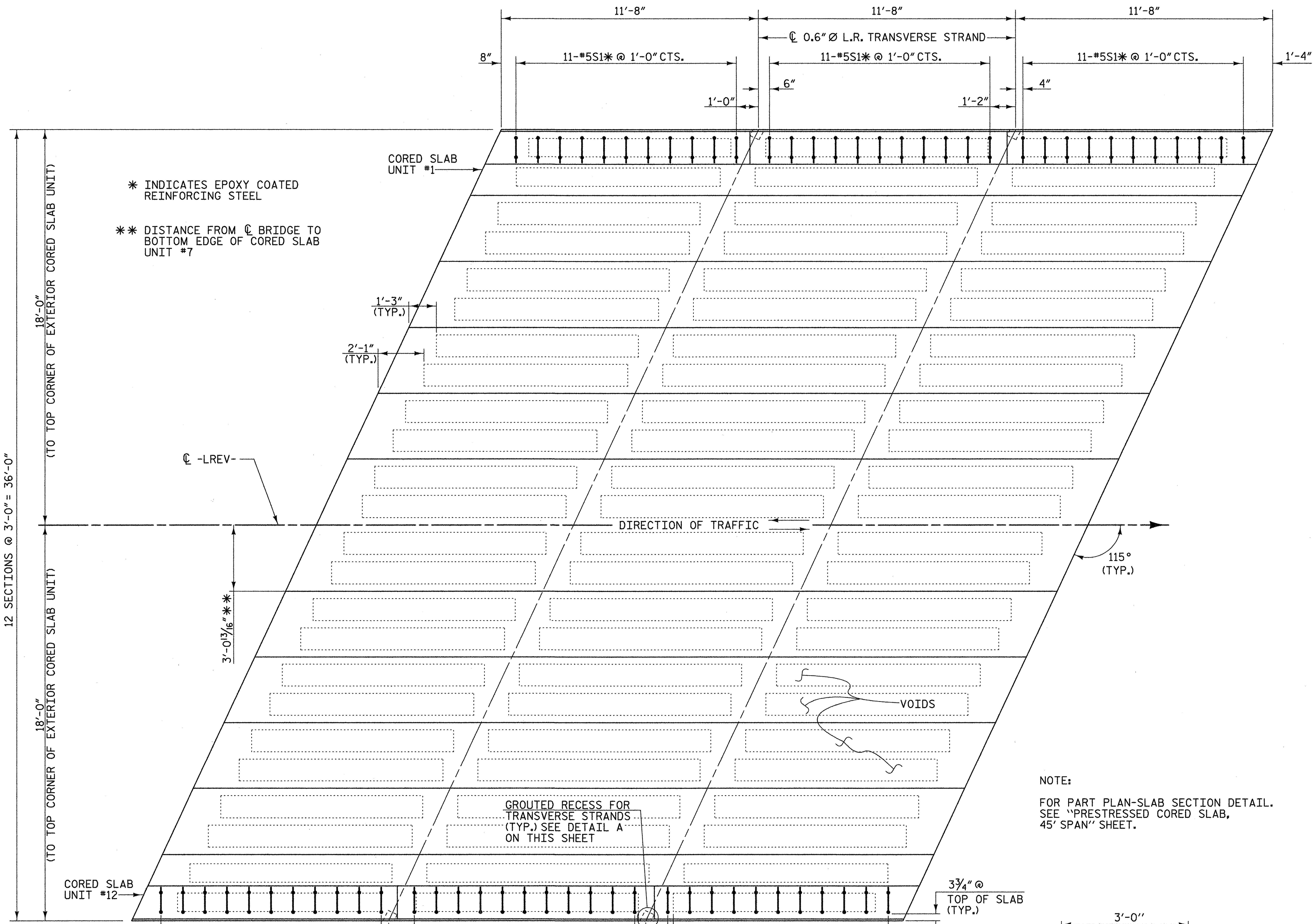
EXTERIOR SLAB UNIT	45′ SPAN	35′ SPAN
CAMBER (SLAB UNIT ALONE IN PLACE)	1¾″ (UP)	¾″ (UP)
DEFLECTION (SUPERIMPOSED DEAD LOAD)	✱ 3/16″ (DOWN)	✱ 1/16″ (DOWN)
FINAL DEFLECTION	1 9/16″ (UP)	11/16″ (UP)

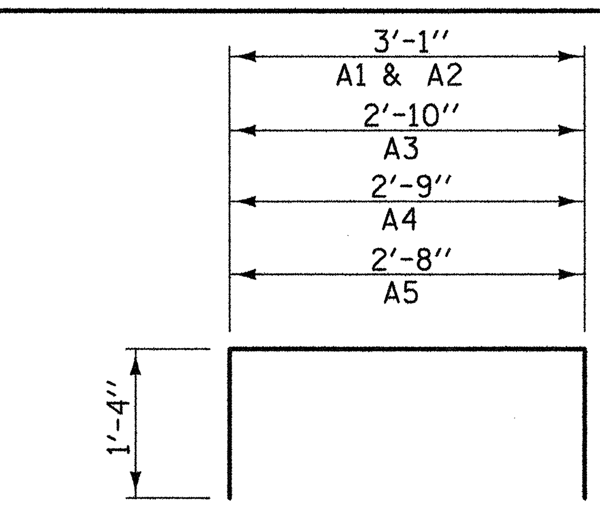
✱ INCLUDES FUTURE WEARING SURFACE

INTERIOR SLAB UNIT	45′ SPAN	35′ SPAN
CAMBER (SLAB UNIT ALONE IN PLACE)	1 15/16″ (UP)	13/16″ (UP)
DEFLECTION (SUPERIMPOSED DEAD LOAD)	✱ 3/16″ (DOWN)	✱ 1/16″ (DOWN)
FINAL DEFLECTION	1¾″ (UP)	¾″ (UP)

✱ INCLUDES FUTURE WEARING SURFACE



PLAN OF SPAN

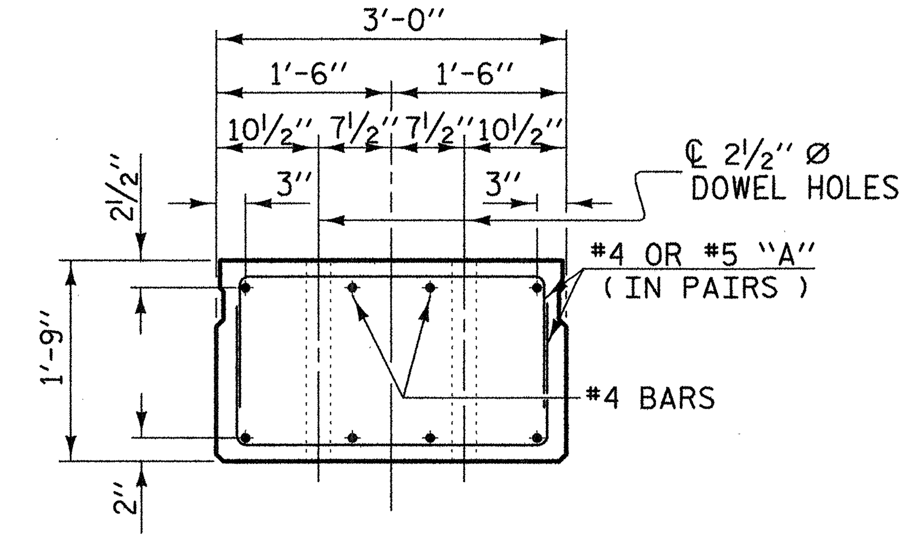


REINFORCING BAR TYPES

BAR DIMENSIONS ARE OUT TO OUT

NOTE:

FOR PART PLAN-SLAB SECTION DETAIL. SEE "PRESTRESSED CORED SLAB, 45′ SPAN" SHEET.



SLAB END ELEVATION

THE 2½″ Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT, SEE SPECIAL PROVISIONS.

PROJECT NO. 42558

NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120

NORTH CAROLINA PROFESSIONAL ENGINEER 19661 L. KEVIN AUSTIN 8/11/10

PLANS PREPARED BY:

MULKEY ENGINEERS & CONSULTANTS
PO BOX 33127 RALEIGH, N.C. 27636 (919) 851-1912 (919) 851-1918 (FAX) WWW.MULKEYINC.COM

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

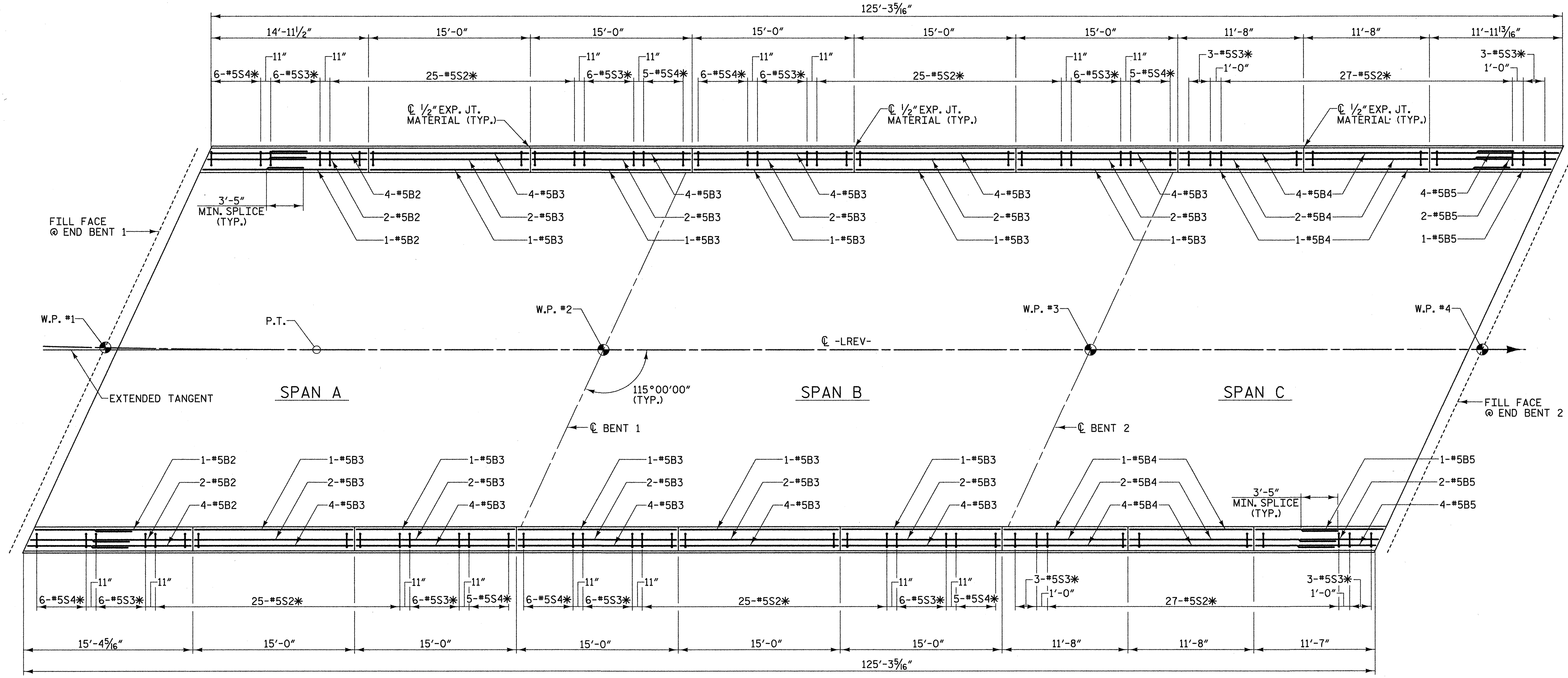
PRESTRESSED CORED SLAB 35′ SPAN

32′-10″ CLEAR ROADWAY - 115° SKEW

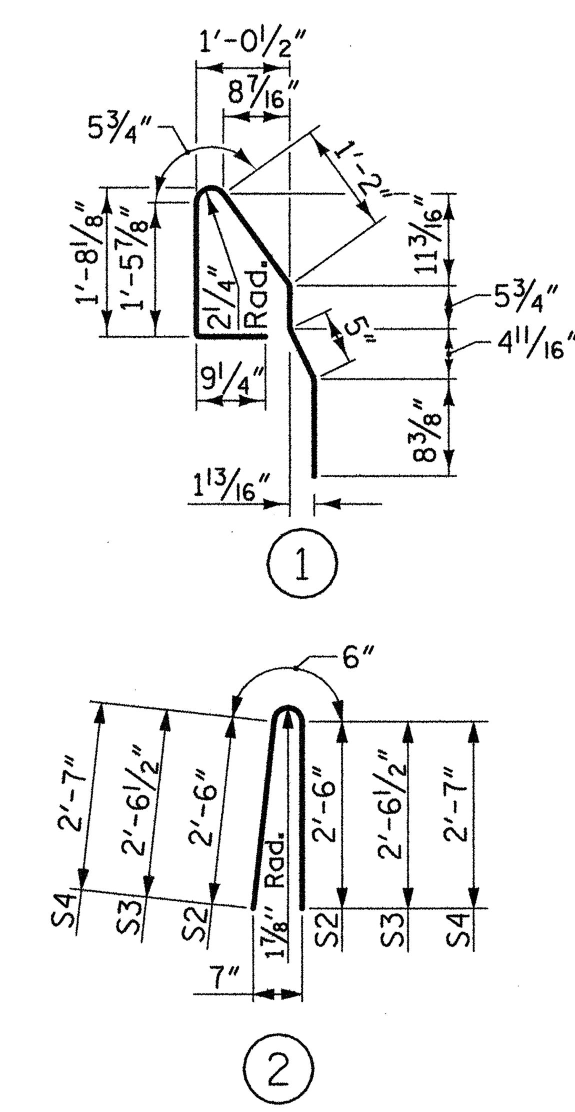
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	12
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : W. B. ALLEN DATE : 7/09
CHECKED BY : L. K. AUSTIN DATE : 7/10

8/10/2010 9:08:39 AM R:\Structures\BK5017_SD_CS_02.dgn



PLAN



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱B2	28	#5	STR	9'-3"	270
✱B3	70	#5	STR	14'-7"	1065
✱B4	28	#5	STR	11'-3"	329
✱B5	28	#5	STR	7'-7"	221
✱S1	258	#5	1	5'-6"	1480
✱S2	154	#5	2	5'-6"	883
✱S3	60	#5	2	5'-7"	349
✱S4	44	#5	2	5'-8"	260
✱EPOXY COATED REINFORCING STEEL LBS. =					4857
CLASS AA CONCRETE CU. YDS. =					28.4

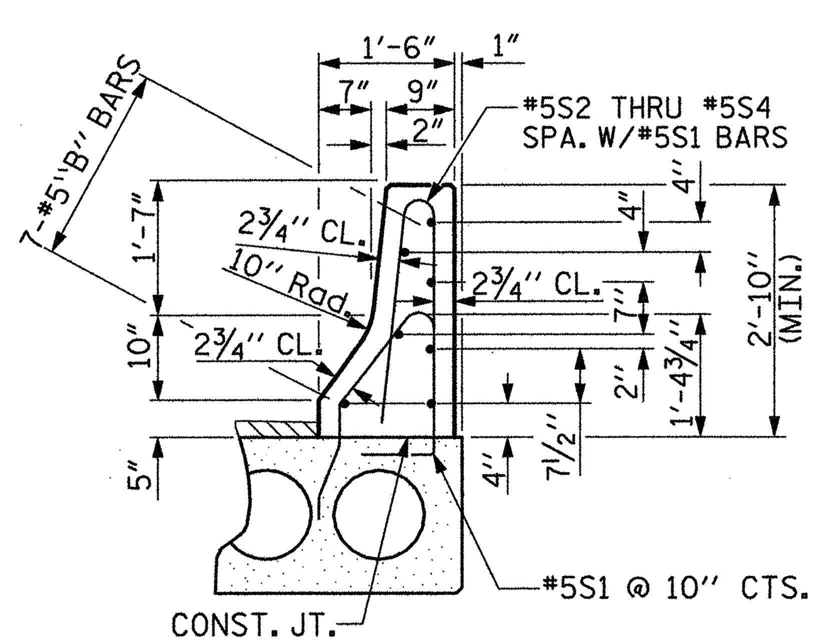
BAR TYPES

✱ INDICATES EPOXY COATED REINFORCING STEEL.

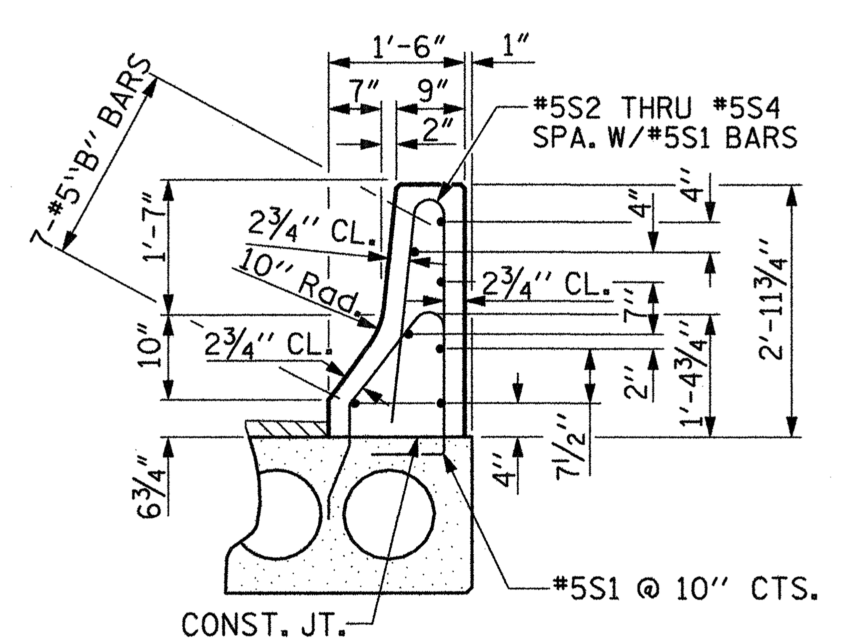
FOR SPACING AND LOCATION OF THE #5S1 BARS SEE "CORED SLAB SHEETS", NOS. 11 & 12.

#5 "S" BARS MAY BE SHIFTED SLIGHTLY IN ORDER TO MAINTAIN A 2" MINIMUM CLEARANCE TO THE ½" EXPANSION JOINT MATERIAL IN THE BARRIER RAIL AND GROUTED RECESS FOR TRANSVERSE STRANDS IN THE CORED SLABS.

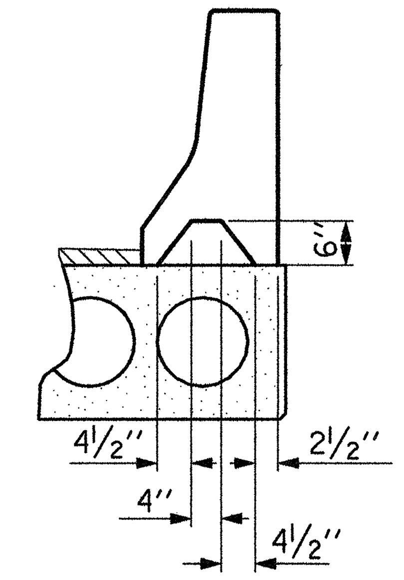
THE HEIGHT OF THE BARRIER RAIL VARIES THE TOP OF THE RAIL IS TO FOLLOW THE PROFILE OF THE GUTTER LINE.



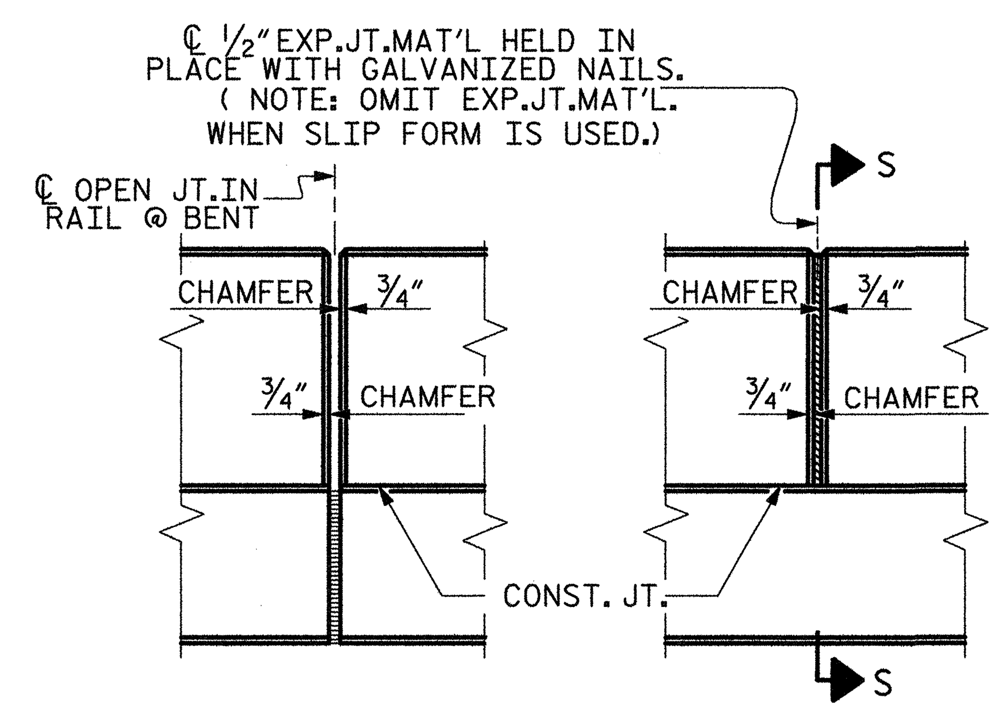
SECTION THRU RAIL @ MID-SPAN
(SPAN A & B ONLY)



SECTION THRU RAIL @ ℄ BEARING



SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS

BARRIER RAIL DETAILS

PROJECT NO. 42558
NASH COUNTY
STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE
BARRIER RAIL

32'-10" CLEAR ROADWAY - 115° SKEW

NORTH CAROLINA PROFESSIONAL ENGINEER 19661 L. KEVIN AUSTIN 8/11/10

PLANS PREPARED BY:
MULKEY ENGINEERS & CONSULTANTS
PO Box 33127
Raleigh, N.C. 27636
(919) 851-1912
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REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			13
1			3					TOTAL SHEETS
2			4					32

DRAWN BY : W. B. ALLEN DATE : 7/09
CHECKED BY : L. K. AUSTIN DATE : 7/10

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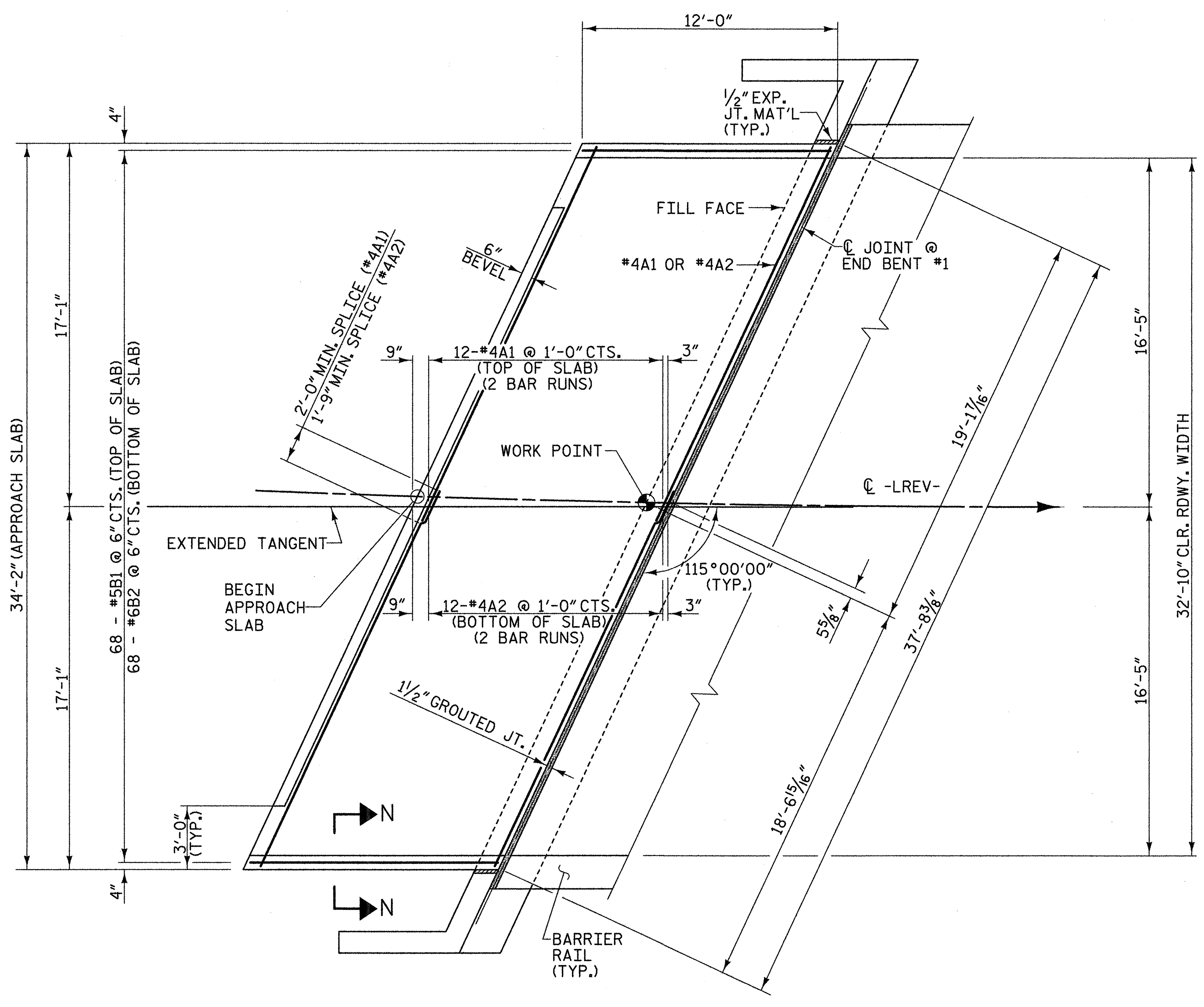
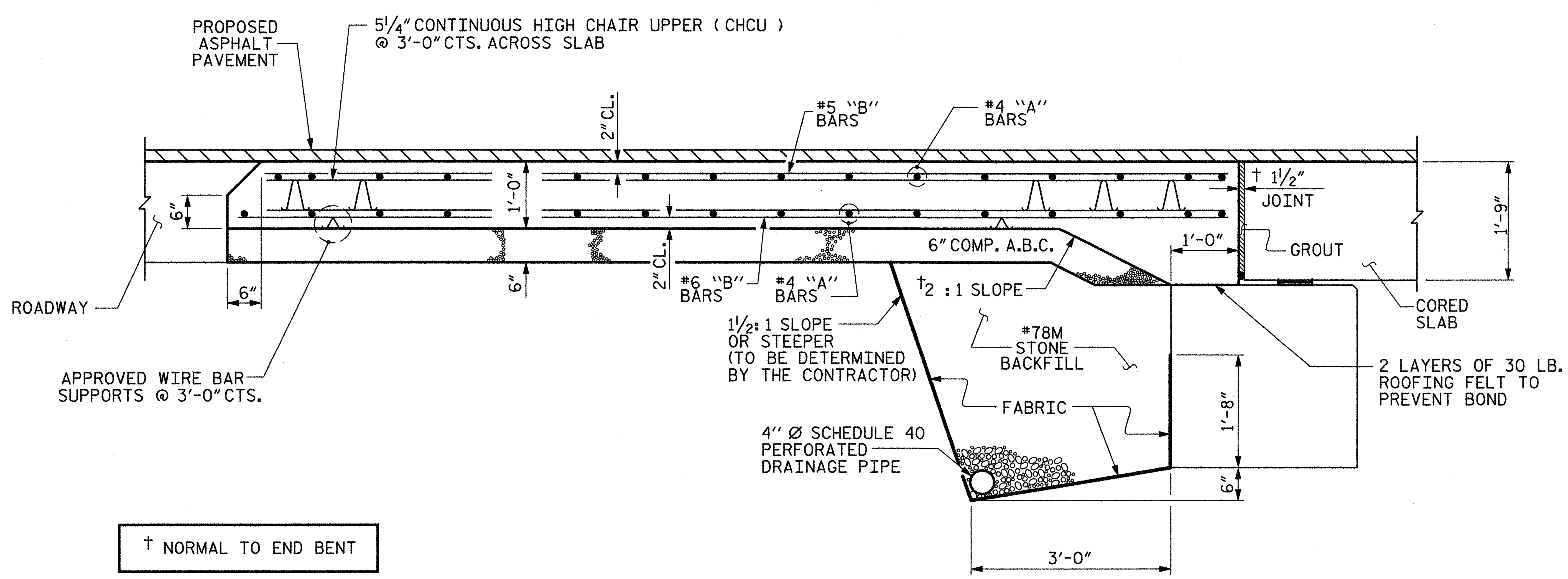


PLAN OF APPROACH SLAB

END BENT 1 APPROACH SLAB SHOWN
END BENT 2 APPROACH SLAB SIMILAR



† NORMAL TO END BENT

SECTION THRU SLAB

NOTES

FOR BRIDGE APPROACH FILL INCLUDING FABRIC, 4" Ø DRAINAGE PIPE, AND #78M STONE BACKFILL, SEE ROADWAY PLANS.

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.

FABRIC SHALL BE TYPE 1 ENGINEERING FABRIC IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

#78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

#78M STONE BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

THE 6" COMP. A.B.C. SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB AND SHALL EXTEND 1'-0" OUTSIDE OF EACH EDGE OF THE APPROACH SLAB.

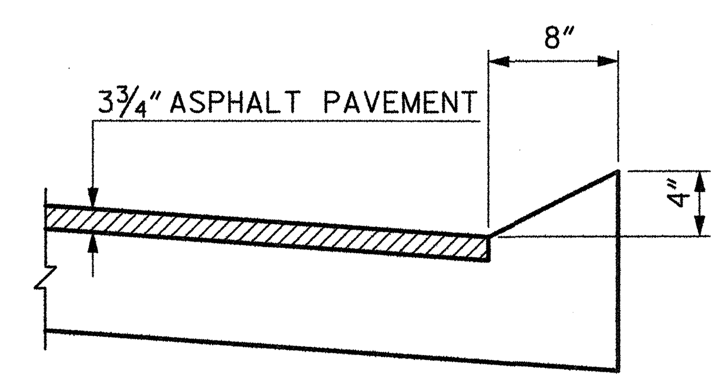
THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

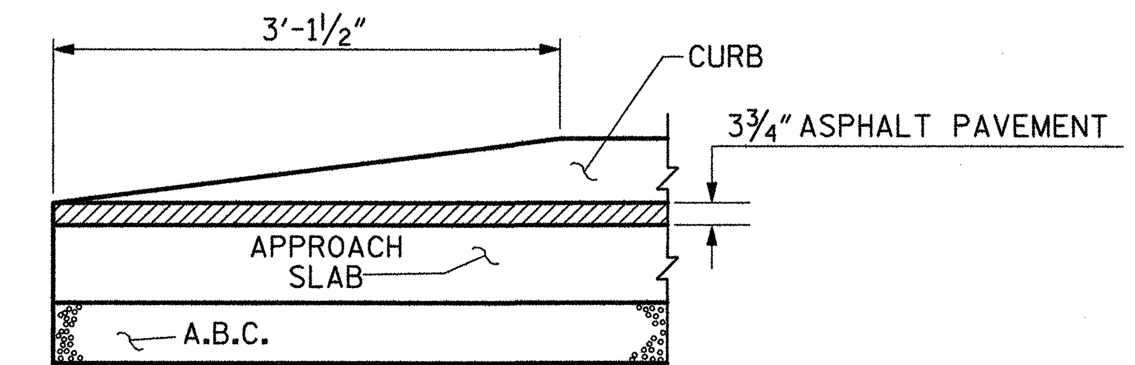
FOR JOINT DETAILS, SEE "PRESTRESSED CONCRETE CORED SLAB, 35' & 45' SPANS".

THE JOINT AT THE END BENT SHALL BE GROUTED AS SOON AS PRACTICAL AFTER THE CONSTRUCTION OF THE APPROACH SLABS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

BILL OF MATERIAL

APPROACH SLAB AT EB #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	24	#4	STR	19'-8"	315
A2	24	#4	STR	19'-7"	314
* B1	68	#5	STR	11'-2"	792
B2	68	#6	STR	11'-7"	1183
REINFORCING STEEL				LBS.	1497
* EPOXY COATED REINFORCING STEEL				LBS.	1107
CLASS AA CONCRETE				C. Y.	18.6

APPROACH SLAB AT EB #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	24	#4	STR	19'-8"	315
A2	24	#4	STR	19'-7"	314
* B1	68	#5	STR	11'-2"	792
B2	68	#6	STR	11'-7"	1183
REINFORCING STEEL				LBS.	1497
* EPOXY COATED REINFORCING STEEL				LBS.	1107
CLASS AA CONCRETE				C. Y.	18.6

PROJECT NO. 42558
NASH COUNTY
STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120

THIS STANDARD DRAWING REVIEWED & ADOPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED:

NORTH CAROLINA PROFESSIONAL ENGINEER 19661 L. KEVIN AUSTIN 8/11/10

PLANS PREPARED BY:
MULKEY ENGINEERS & CONSULTANTS
PO Box 33127 RALEIGH, N.C. 27636
(919) 851-1912
(919) 851-1918 (FAX)
WWW.MULKEYINC.COM

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB UNIT
(SUB-REGIONAL TIER)
STD. NO. BAS13

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	14
1			3			TOTAL SHEETS
2			4			32

ASSEMBLED BY : W. B. ALLEN DATE : 1/10
CHECKED BY : L. K. AUSTIN DATE : 7/10
DRAWN BY : KMM 3-08
CHECKED BY : GM 3-08

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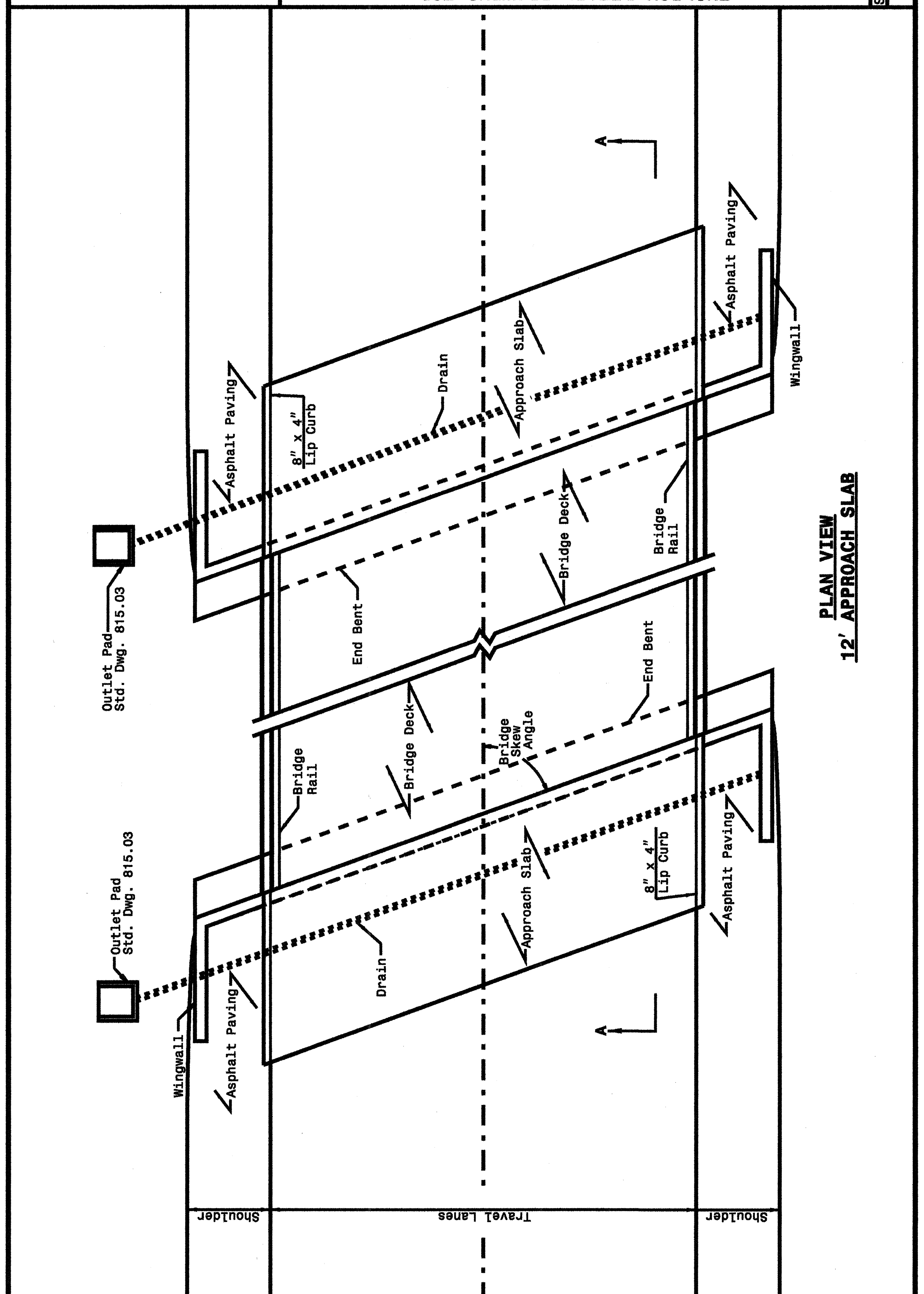
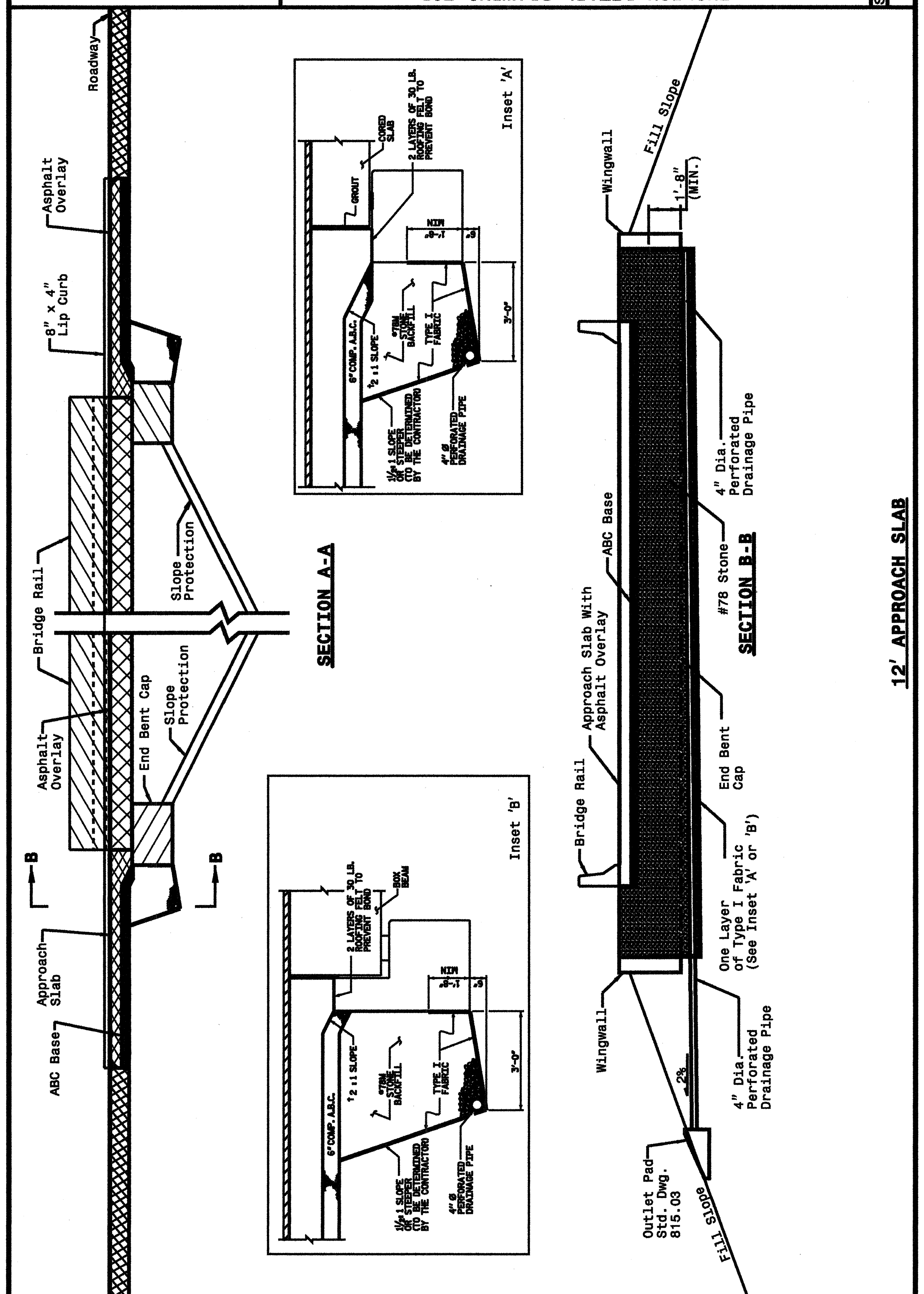
PROJECT REFERENCE NO.	SHEET NO.
BK-5107	15



STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

SHEET 1 OF 2
422D11



STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

SHEET 2 OF 2
422D11

PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

ORIGINAL BY: K. A. Kempf DATE: 6-10-08
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: kkempf\english\bridge approach fills.dgn

01-JUN-2009 14:15
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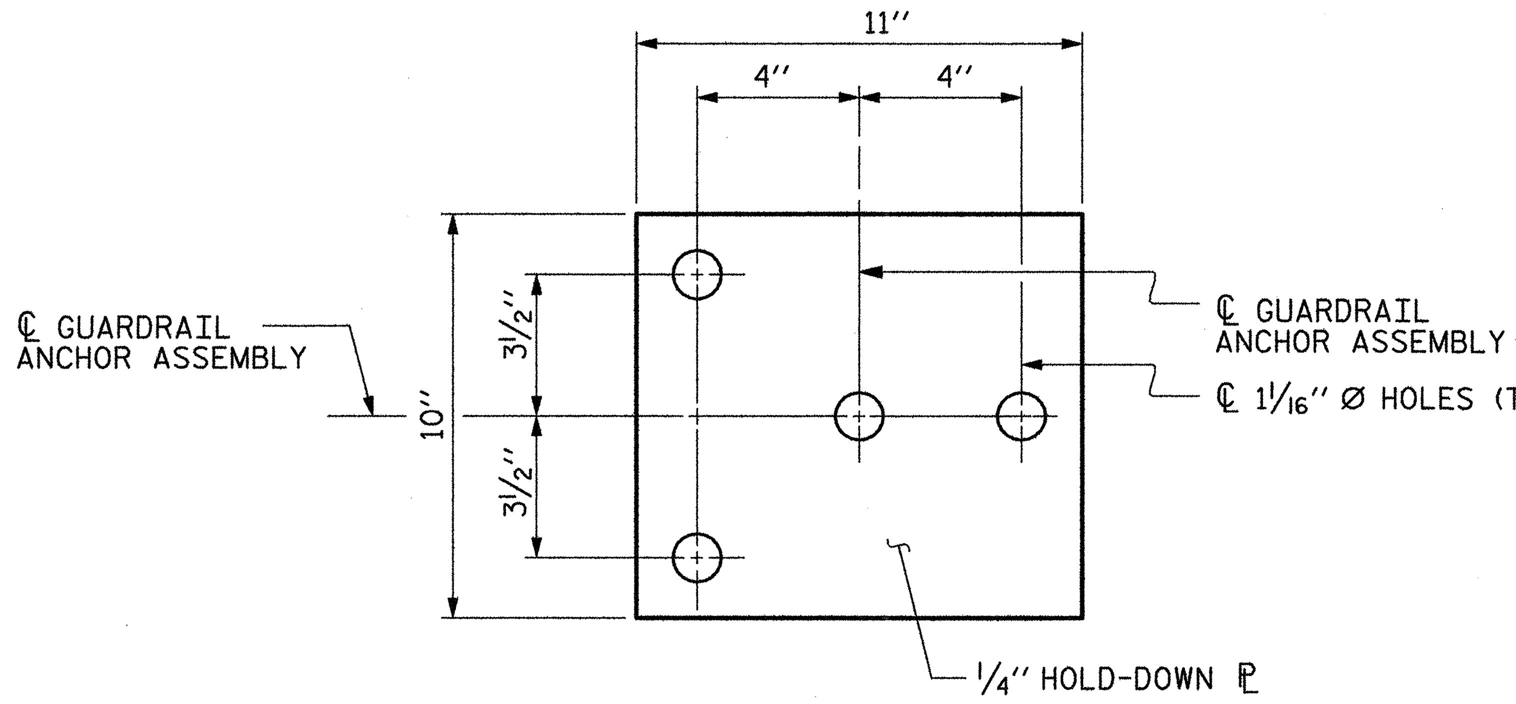
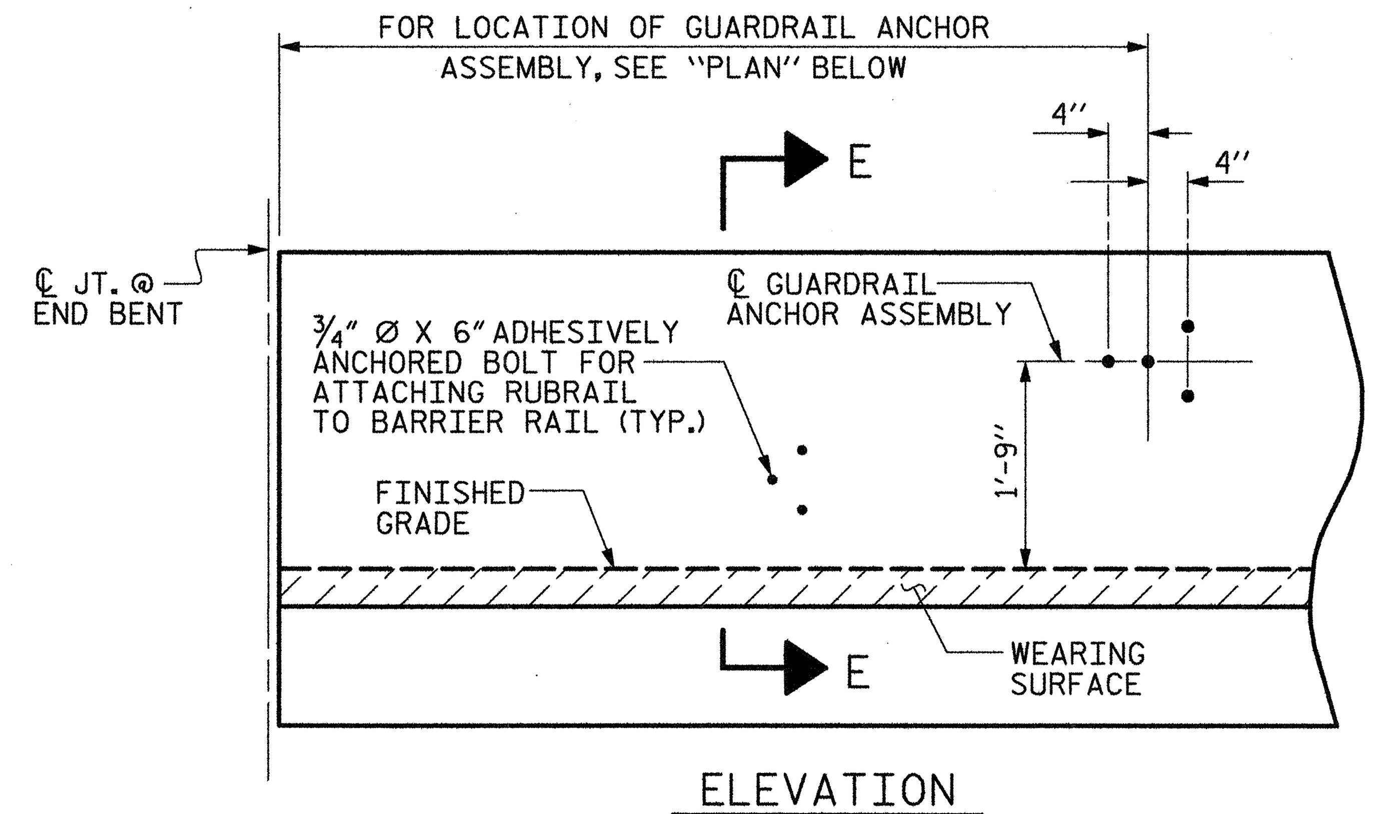
j.howerton AT PS237501



PLAN



ELEVATION

FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 4 - 7/8" Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

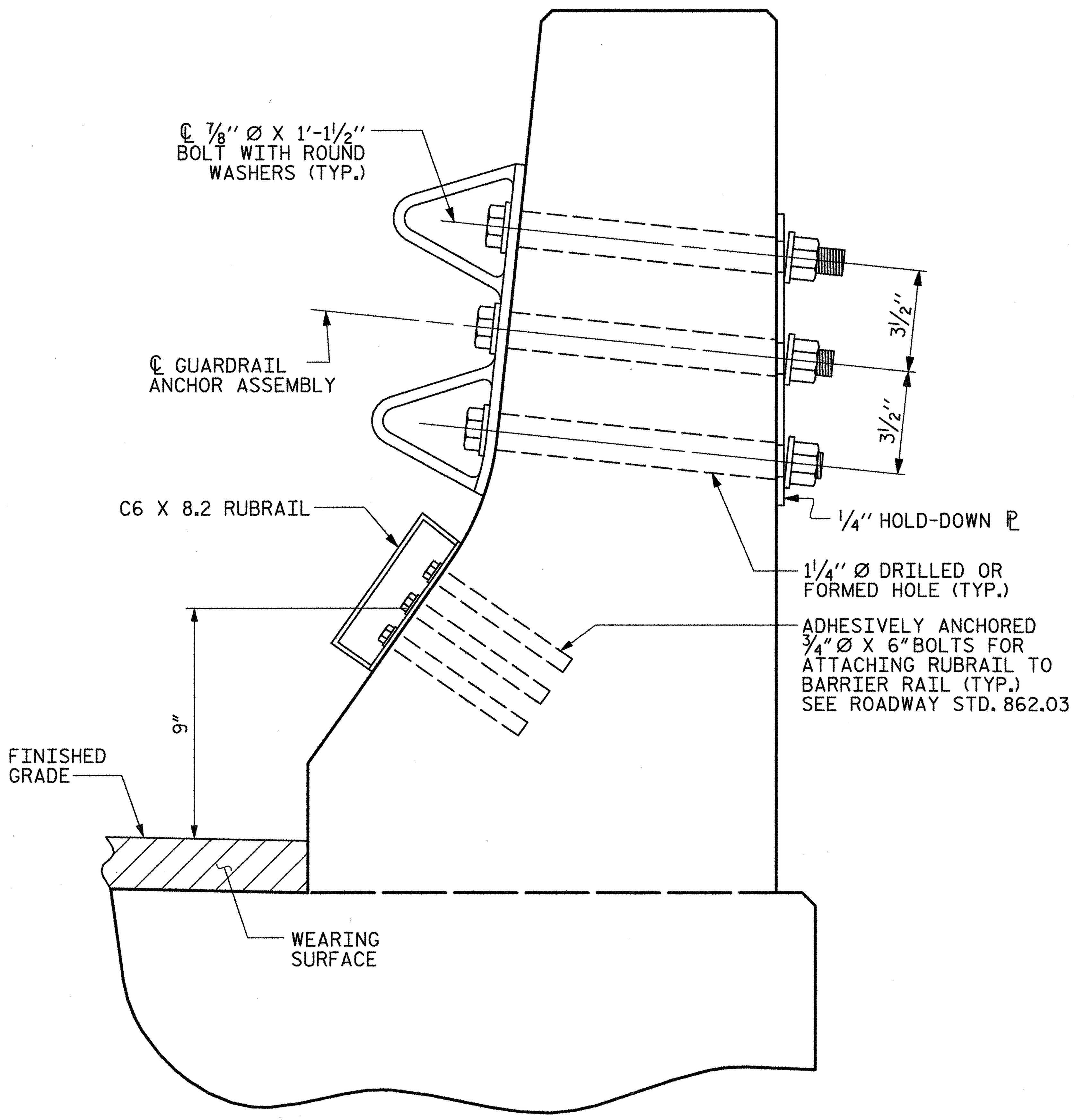
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

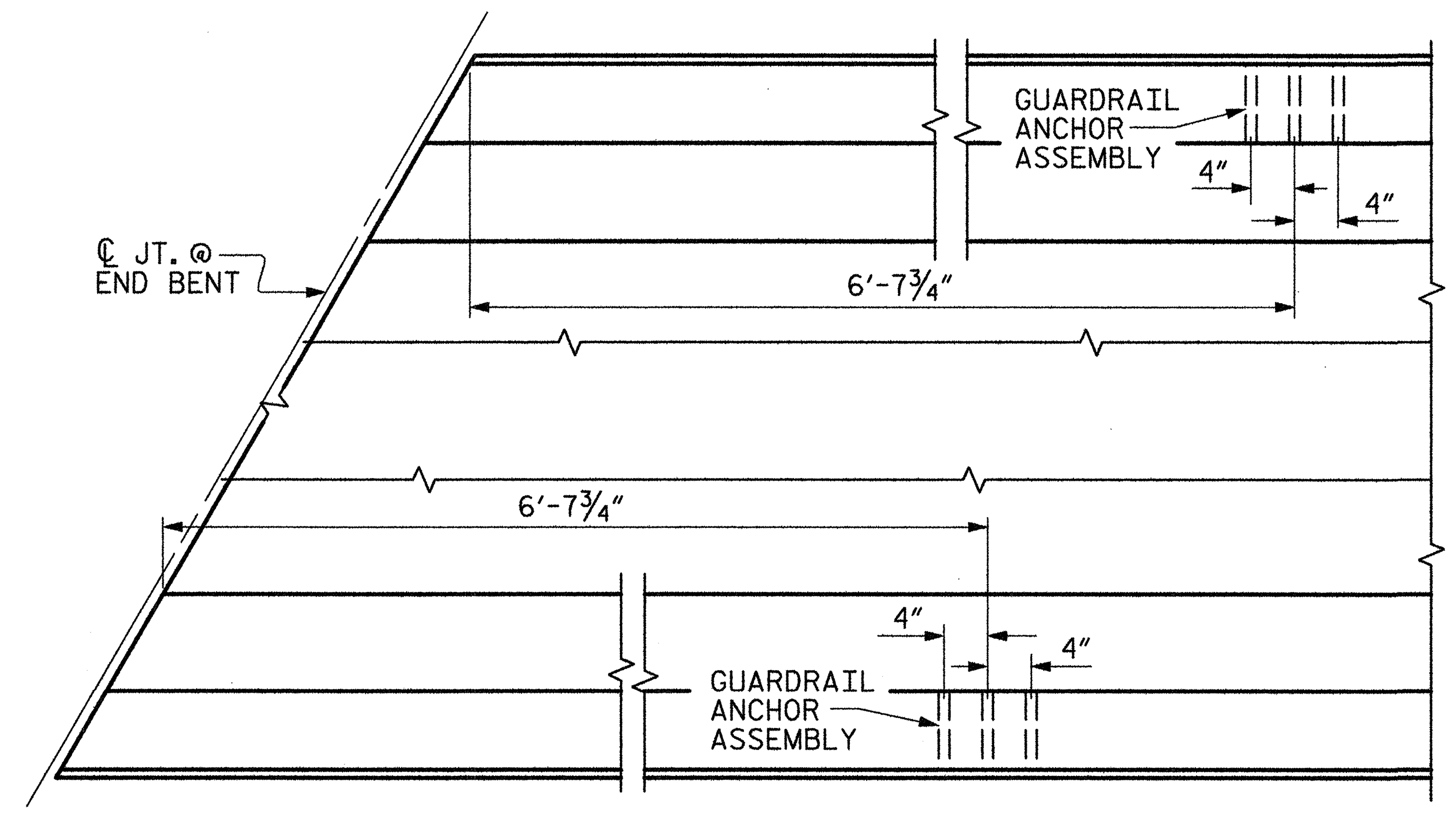
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



SECTION E-E

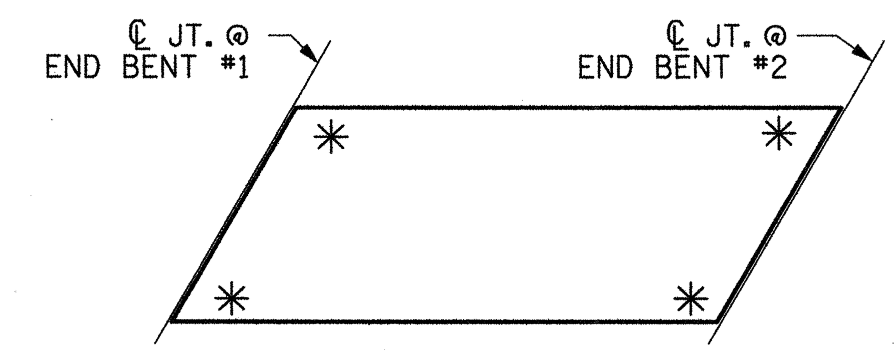
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENTS

✳ DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 42558

NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

GUARDRAIL ANCHORAGE FOR BARRIER RAIL

STD. NO. GRA2

THIS STANDARD DRAWING REVIEWED & ADOPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED:

NORTH CAROLINA PROFESSIONAL SEAL 19661 ENGINEER KEVIN AUSTIN 8/11/10

PLANS PREPARED BY:
MULKEY ENGINEERS & CONSULTANTS
PO BOX 33127 RALEIGH, N.C. 27636 (919) 851-1912 (919) 851-1918 (FAX) WWW.MULKEYINC.COM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	16
1			3			TOTAL SHEETS
2			4			32

ASSEMBLED BY : W. B. ALLEN	DATE : 12/09
CHECKED BY : L. K. AUSTIN	DATE : 7/10
DRAWN BY : TLA 5/06 CHECKED BY : GM 5/06	ADDED 5/1/06R KMM/GM

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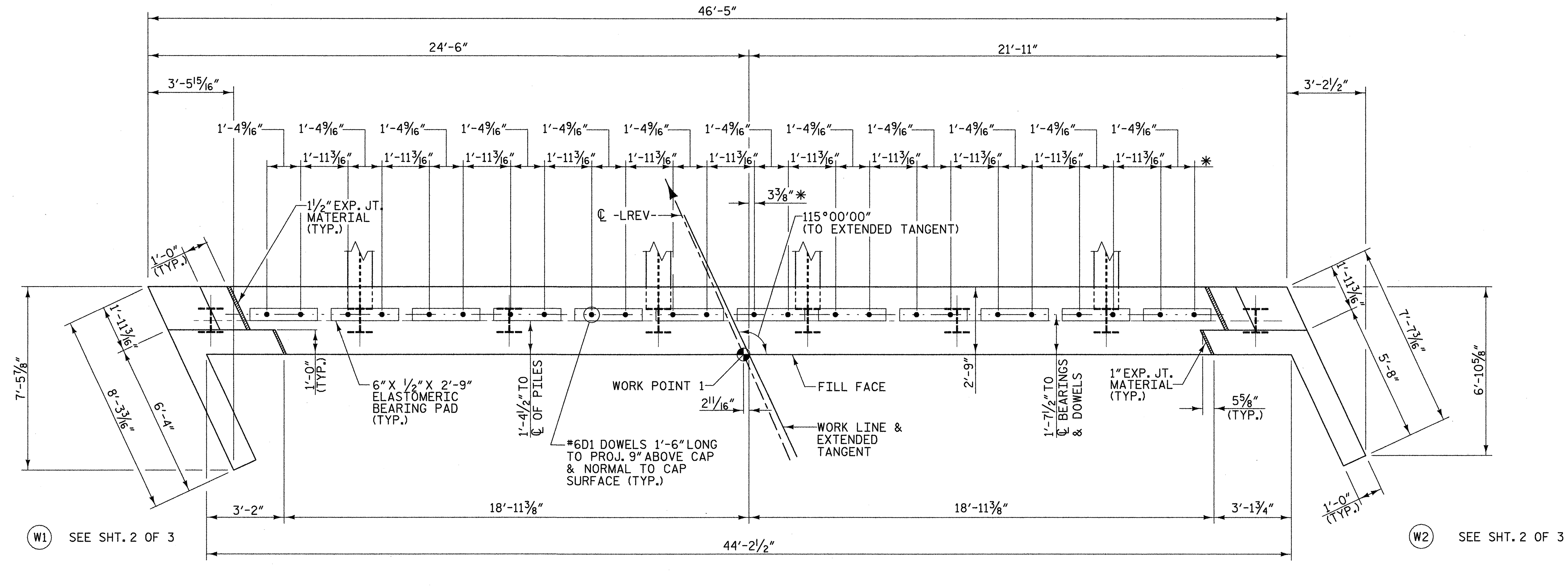


PLAN

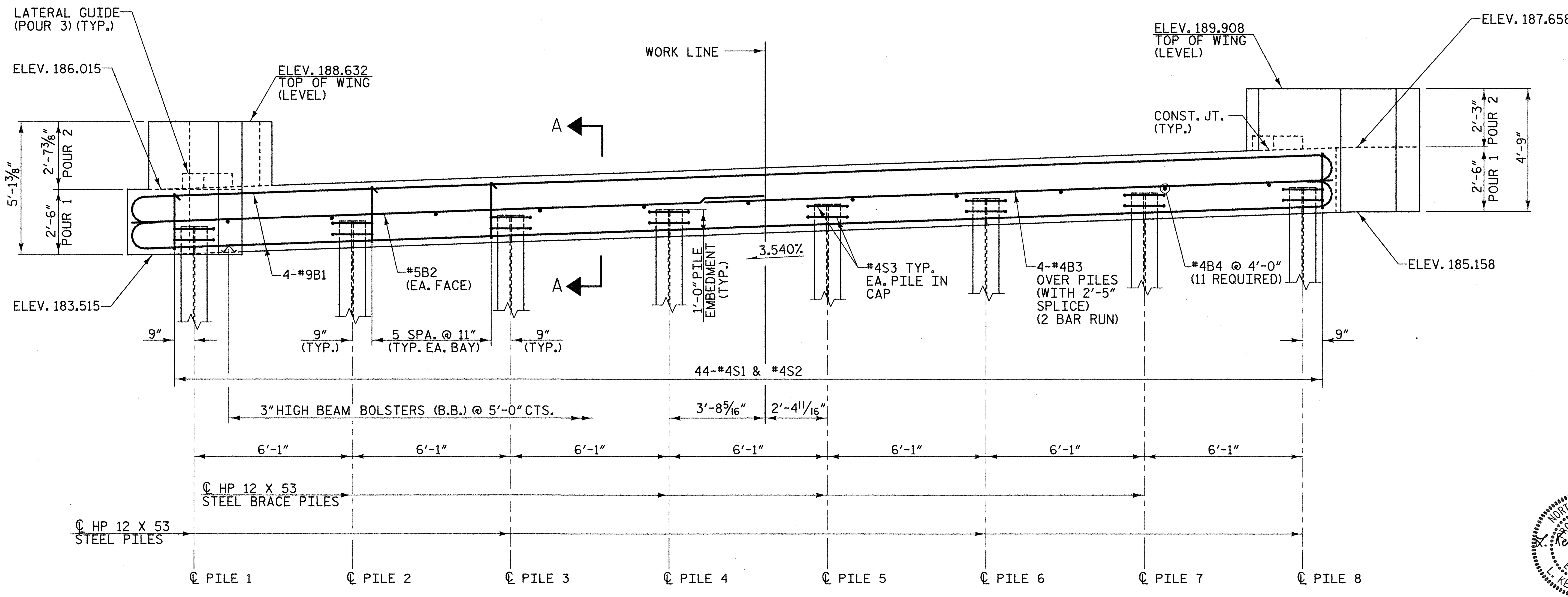
* MEASURED ALONG SURFACE OF CAP

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6D1 DOWELS.

FOR DOWEL DETAIL SEE SHEET 3 OF 3.

FOR LATERAL GUIDE DETAIL SEE SHEET 3 OF 3.



ELEVATION

PILE CUT-OFF ELEVATIONS	
PILE NO.	ELEV.
1	184.601
2	184.816
3	185.031
4	185.247
5	185.462
6	185.677
7	185.892
8	186.108

PROJECT NO. 42558

NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120 SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE END BENT 1

32'-10" CLEAR ROADWAY - 115° SKEW

NORTH CAROLINA PROFESSIONAL ENGINEER 19661 L. KEVIN AUSTIN 8/11/10

PLANS PREPARED BY:
MULKEY ENGINEERS & CONSULTANTS
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1			3				TOTAL SHEETS
2			4				32

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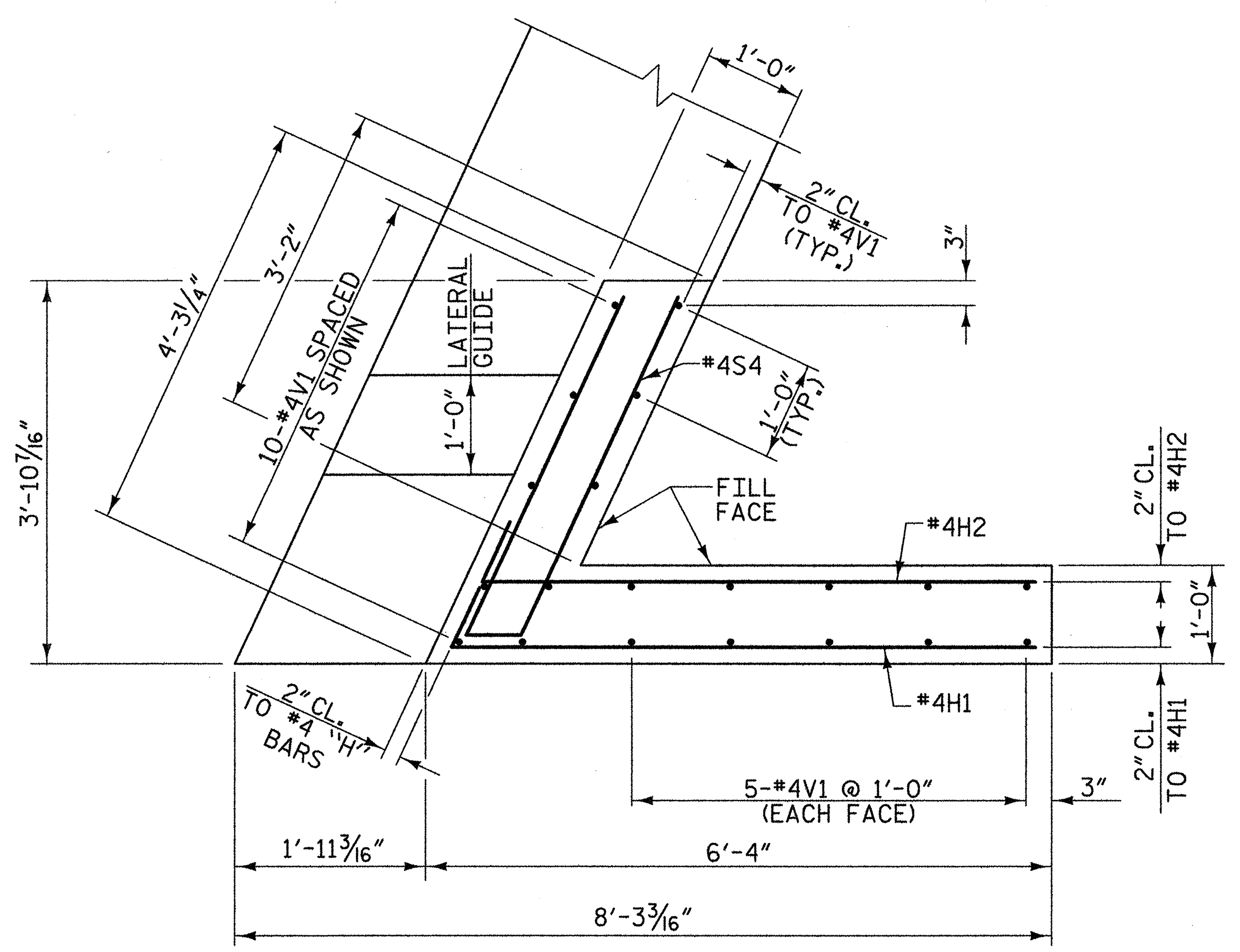
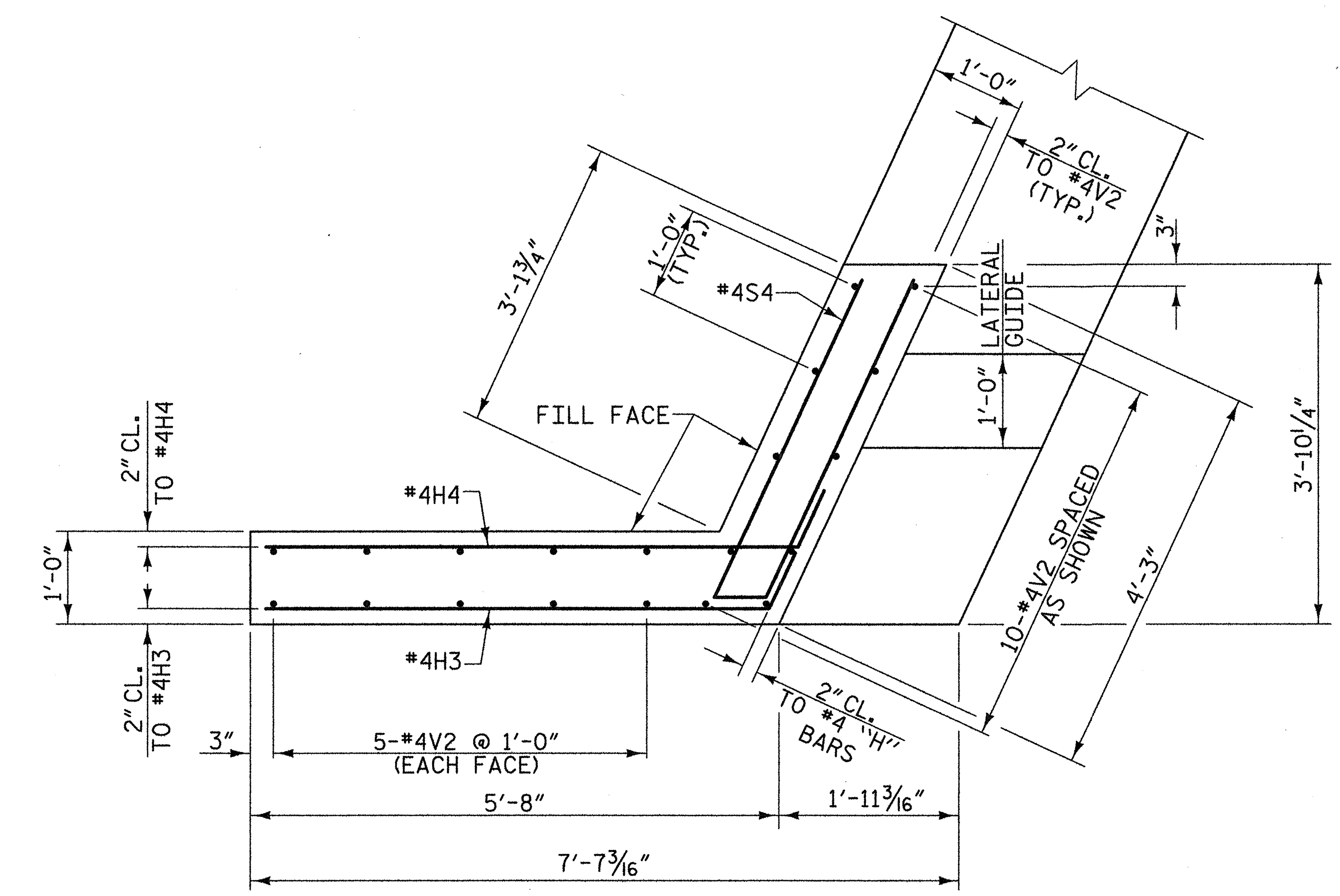
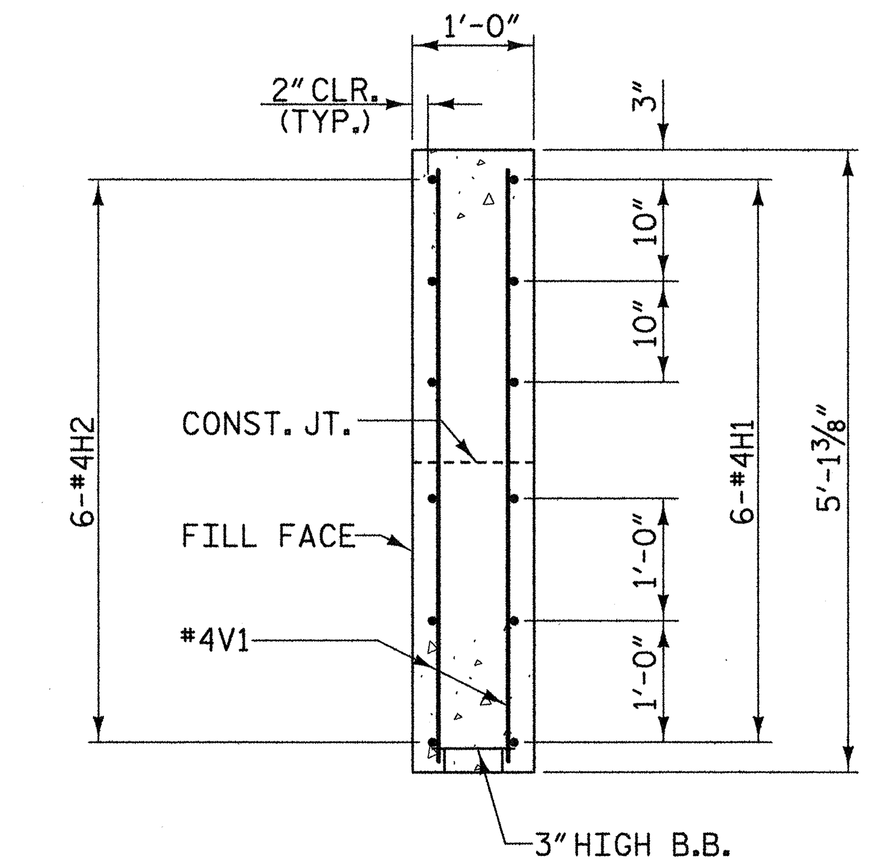


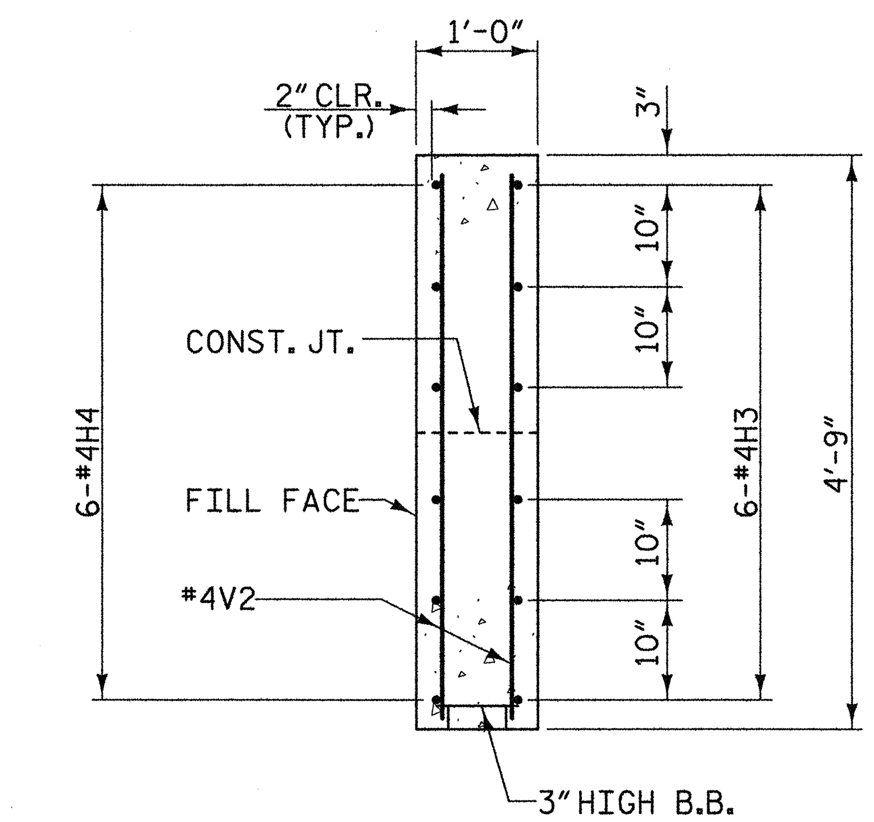
W1 PLAN OF LEFT WING



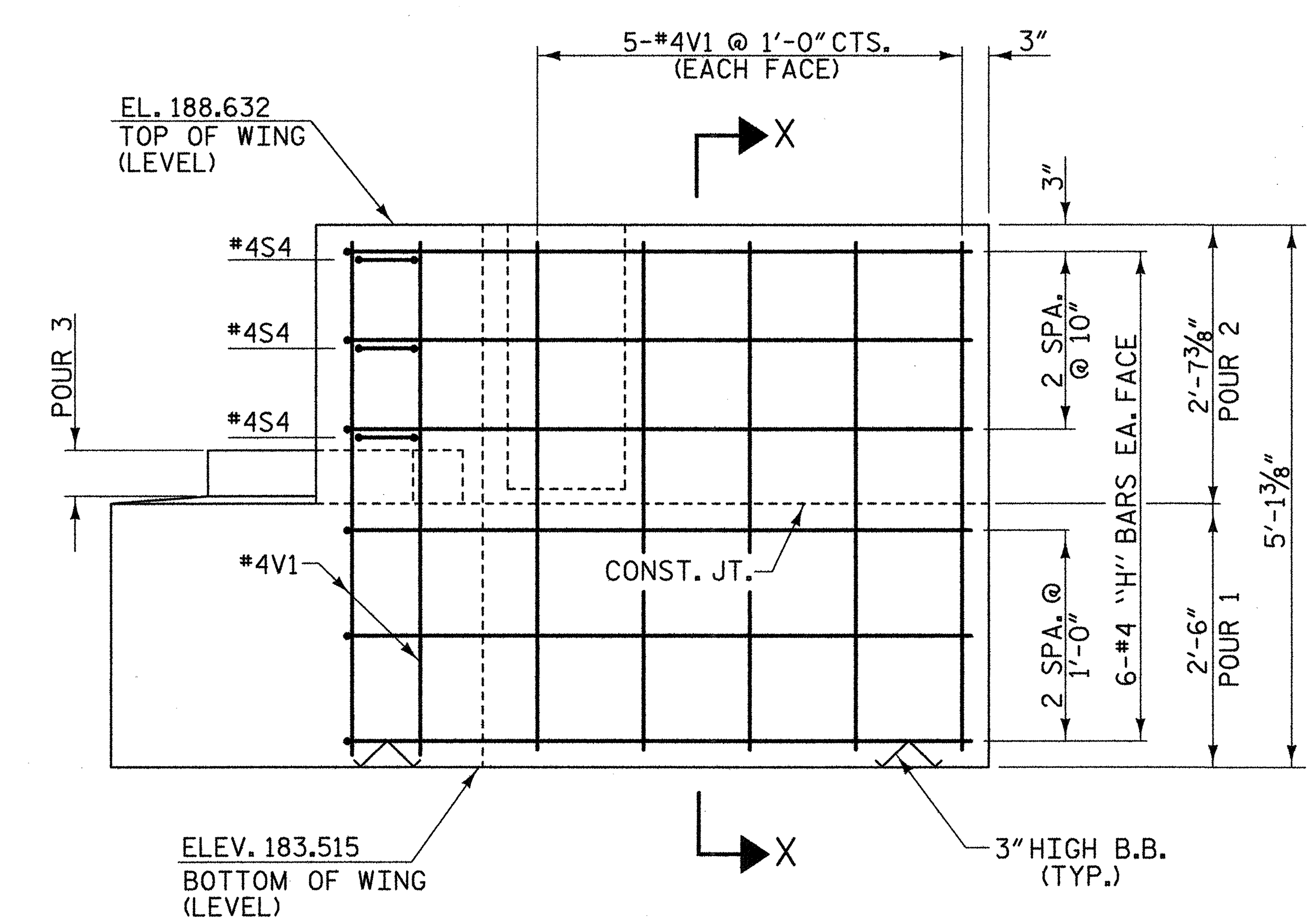
W2 PLAN OF RIGHT WING



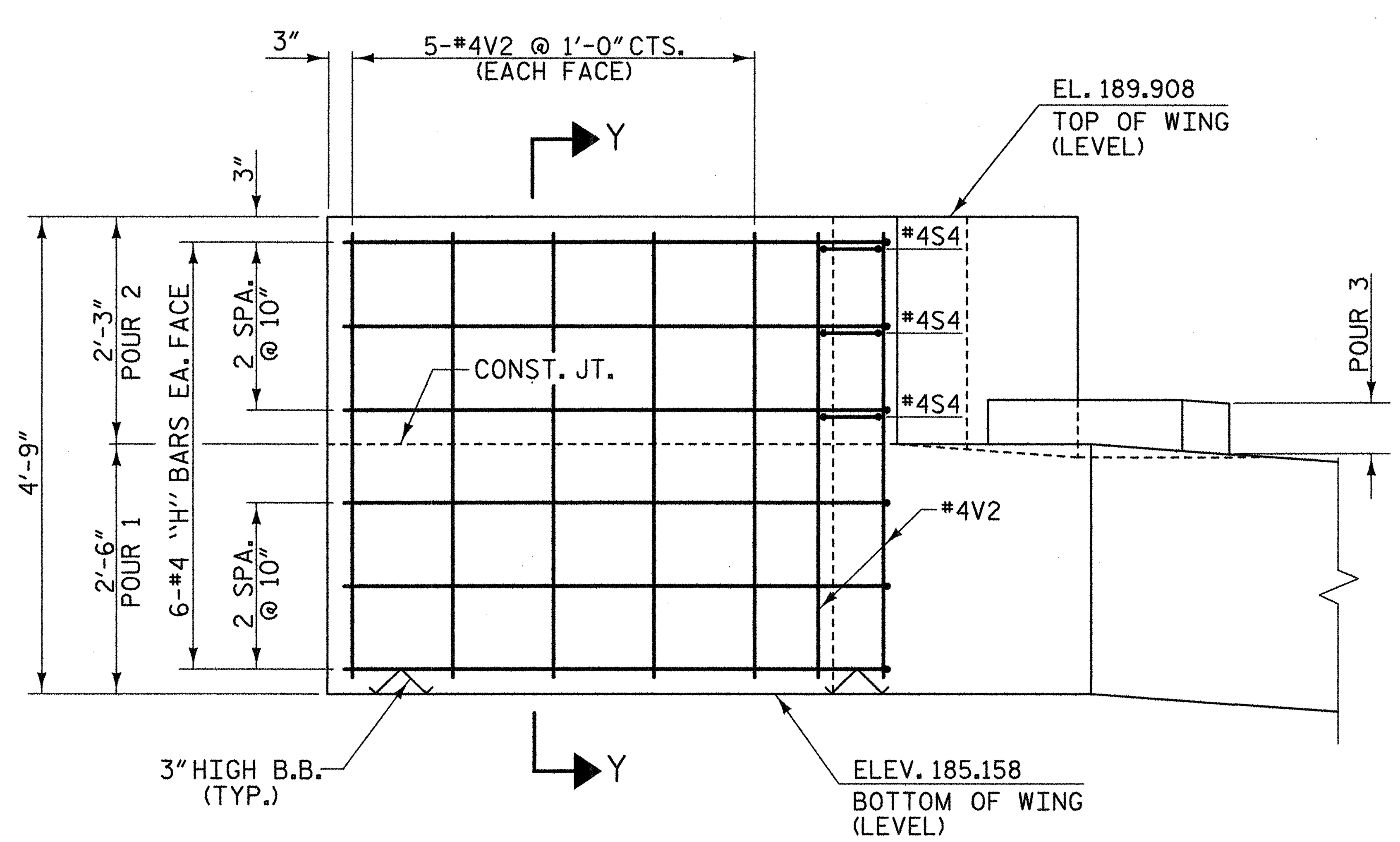
SECTION X-X



SECTION Y-Y



W1 ELEVATION OF LEFT WING



W2 ELEVATION OF RIGHT WING

PROJECT NO. 42558

NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120 SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1

32'-10" CLEAR ROADWAY - 115° SKEW

NORTH CAROLINA PROFESSIONAL SEAL 19661 ENGINEER L. KEVIN AUSTIN 8/10/10

PLANS PREPARED BY:
MULKEY ENGINEERS & CONSULTANTS
PO Box 33127
RALEIGH, N.C. 27636
(919) 851-1912
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WWW.MULKEYINC.COM

REVISIONS							SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:		18
1			3				TOTAL SHEETS
2			4				32

DRAWN BY : W. B. ALLEN DATE : 8/09
CHECKED BY : L. K. AUSTIN DATE : 7/10

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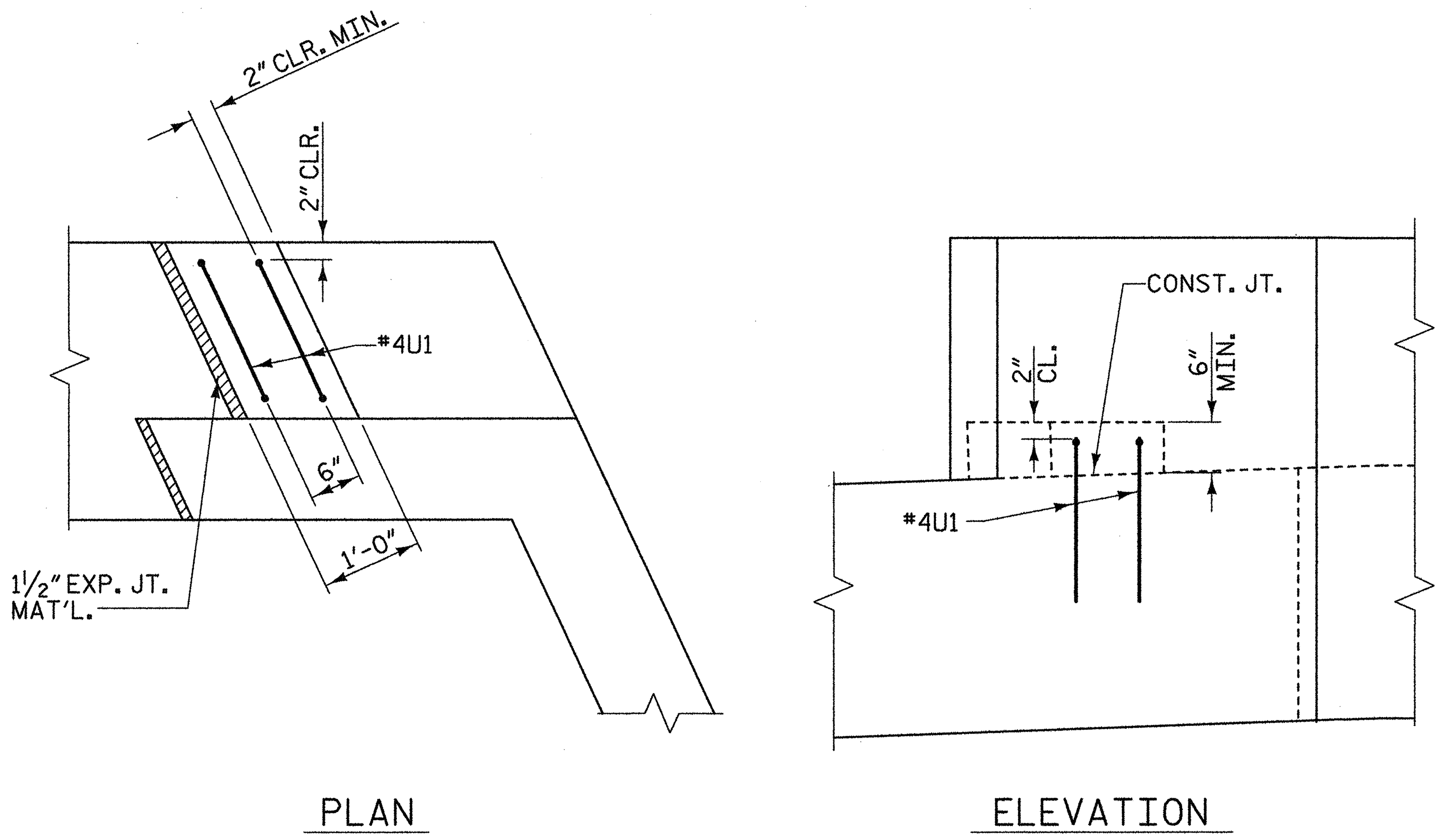
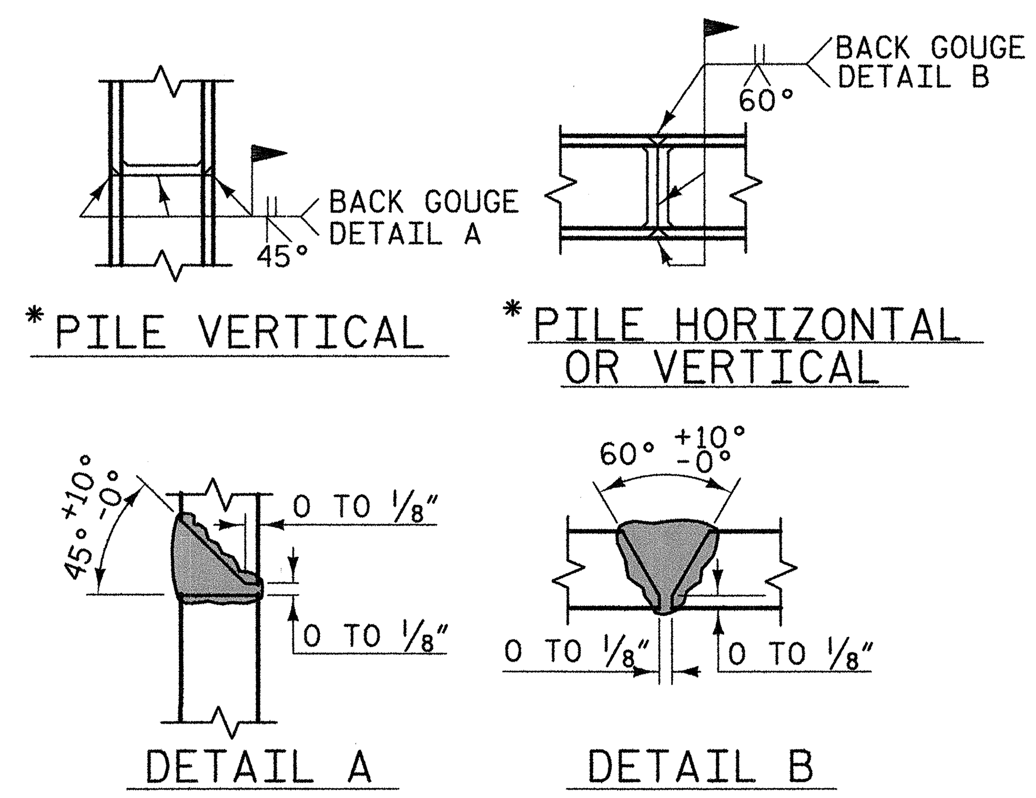


LATERAL GUIDE DETAIL

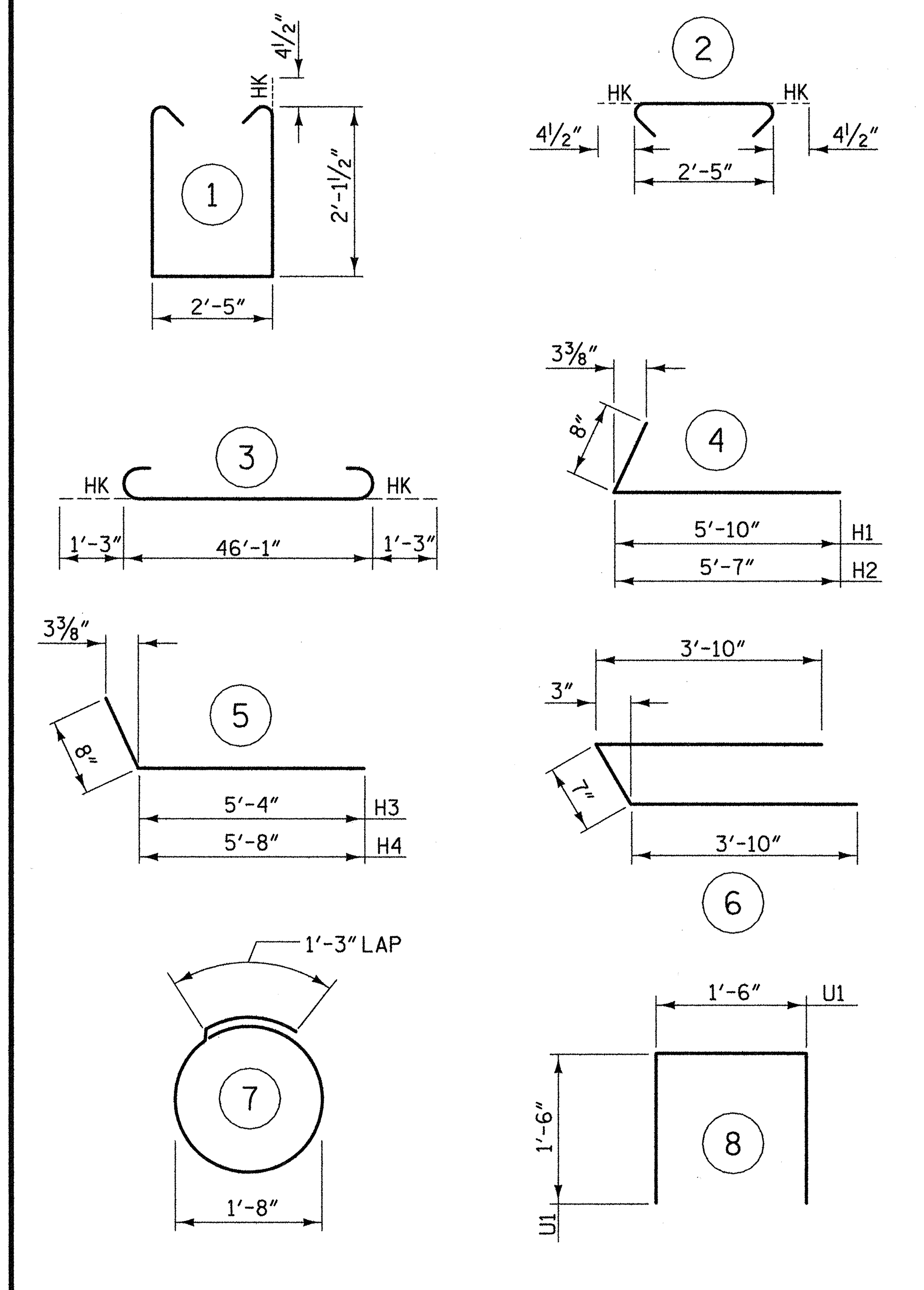
NOTE: LATERAL GUIDES ARE NOT TO BE POURED UNTIL ALL CORED SLAB UNITS ARE IN PLACE AND TRANSVERSE STRANDS ARE TENSIONED.



PILE SPLICE DETAILS

* POSITION OF PILE DURING WELDING.

BAR TYPES



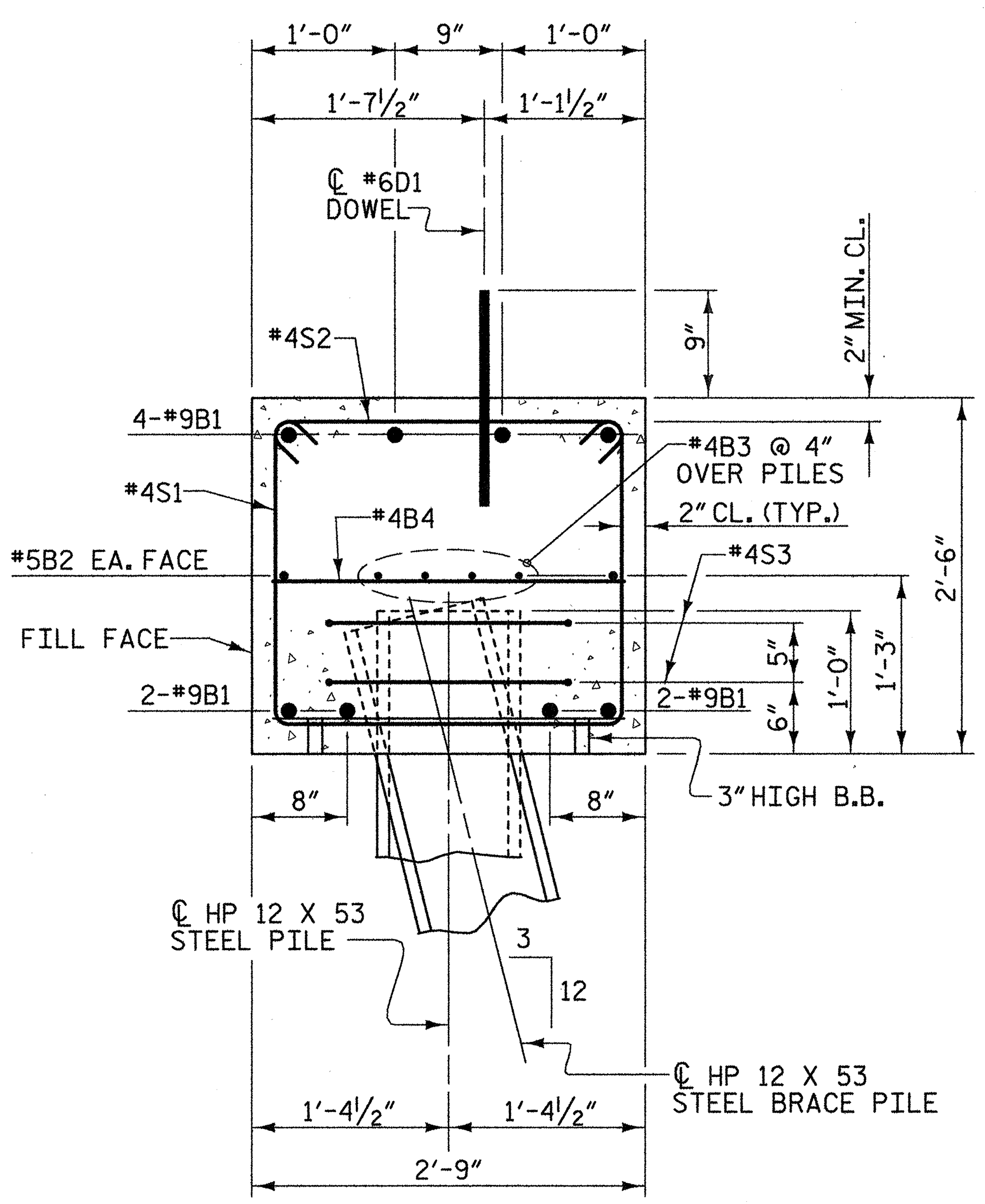
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

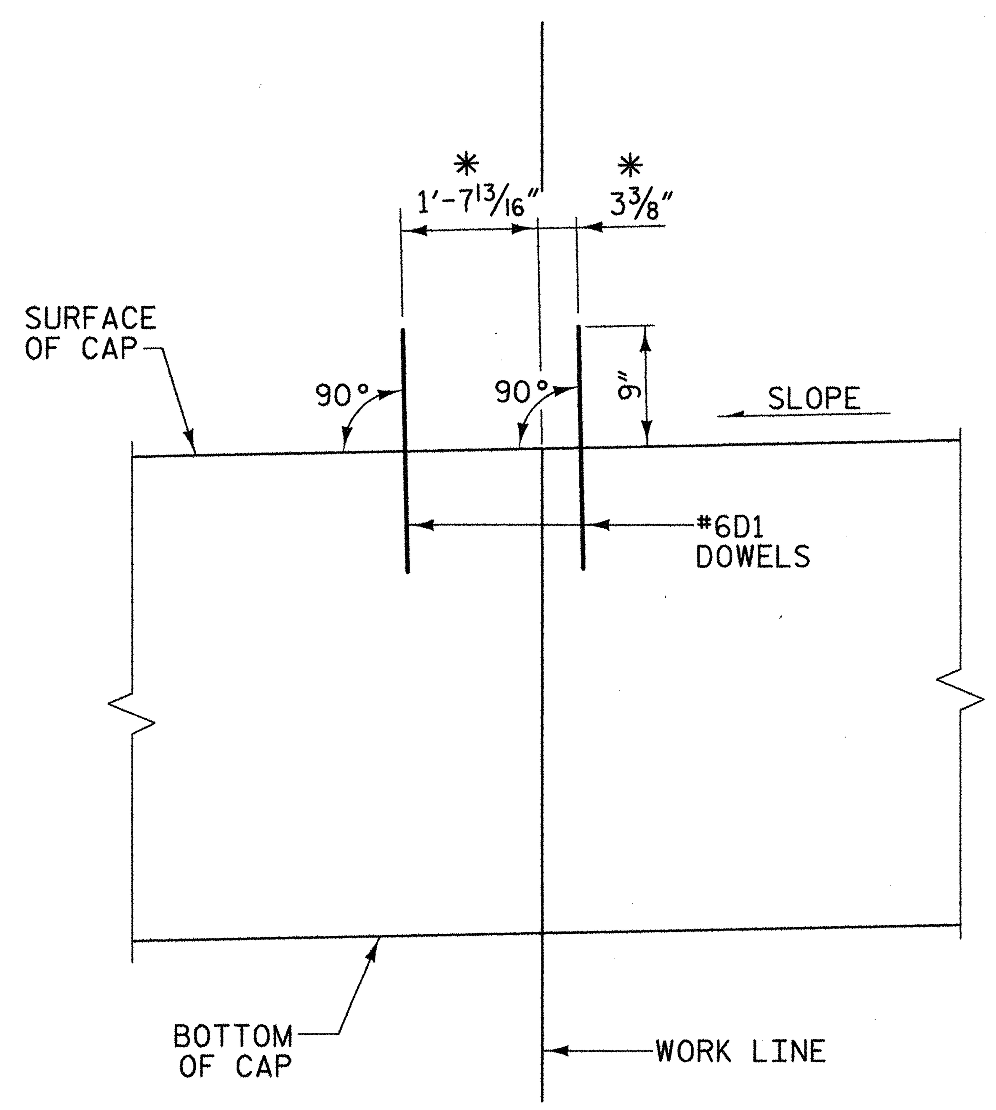
FOR END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	3	48'-7"	1321
B2	2	#5	STR	46'-1"	96
B3	8	#4	STR	24'-3"	130
B4	11	#4	STR	2'-5"	18
D1	24	#6	STR	1'-6"	54
H1	6	#4	4	6'-6"	26
H2	6	#4	4	6'-3"	25
H3	6	#4	5	6'-0"	24
H4	6	#4	5	6'-3"	25
S1	44	#4	1	7'-5"	218
S2	44	#4	2	3'-2"	93
S3	16	#4	7	6'-6"	69
S4	6	#4	6	8'-3"	33
U1	4	#4	8	4'-6"	12
V1	20	#4	STR	4'-9"	63
V2	20	#4	STR	4'-3"	57

TOTAL REINFORCING STEEL =	2264 lbs.
CLASS "A" CONCRETE - CU. YARDS	
POUR 1	12.7 cu. yds.
POUR 2	1.7 cu. yds.
POUR 3	0.1 cu. yds.
TOTAL	14.5 cu. yds.
8 PILES REQUIRED - LIN. FEET	
HP 12 X 53 STEEL PILES	120



SECTION A-A



DOWEL DETAIL

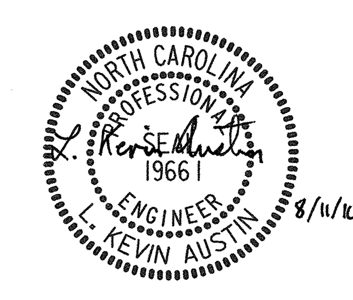
* MEASURED ALONG SURFACE OF CAP

PROJECT NO. 42558

NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120



PLANS PREPARED BY:

MULKEY ENGINEERS & CONSULTANTS

PO Box 33127
RALEIGH, N.C. 27636
(919) 851-1912
(919) 851-1918 (FAX)
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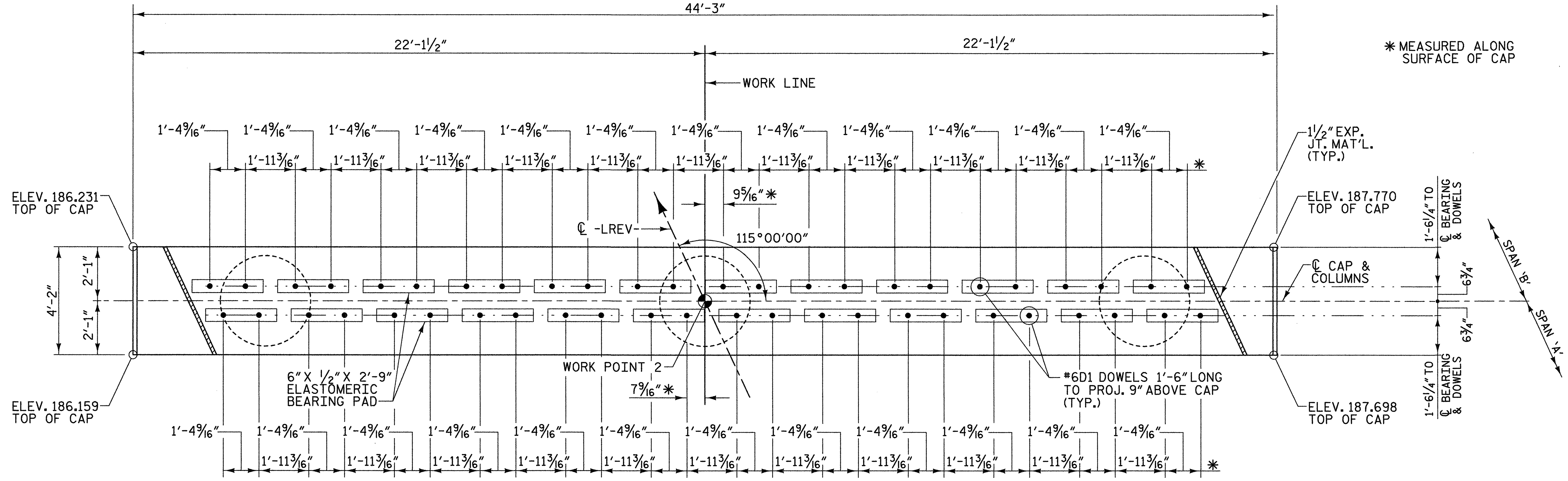
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE END BENT 1

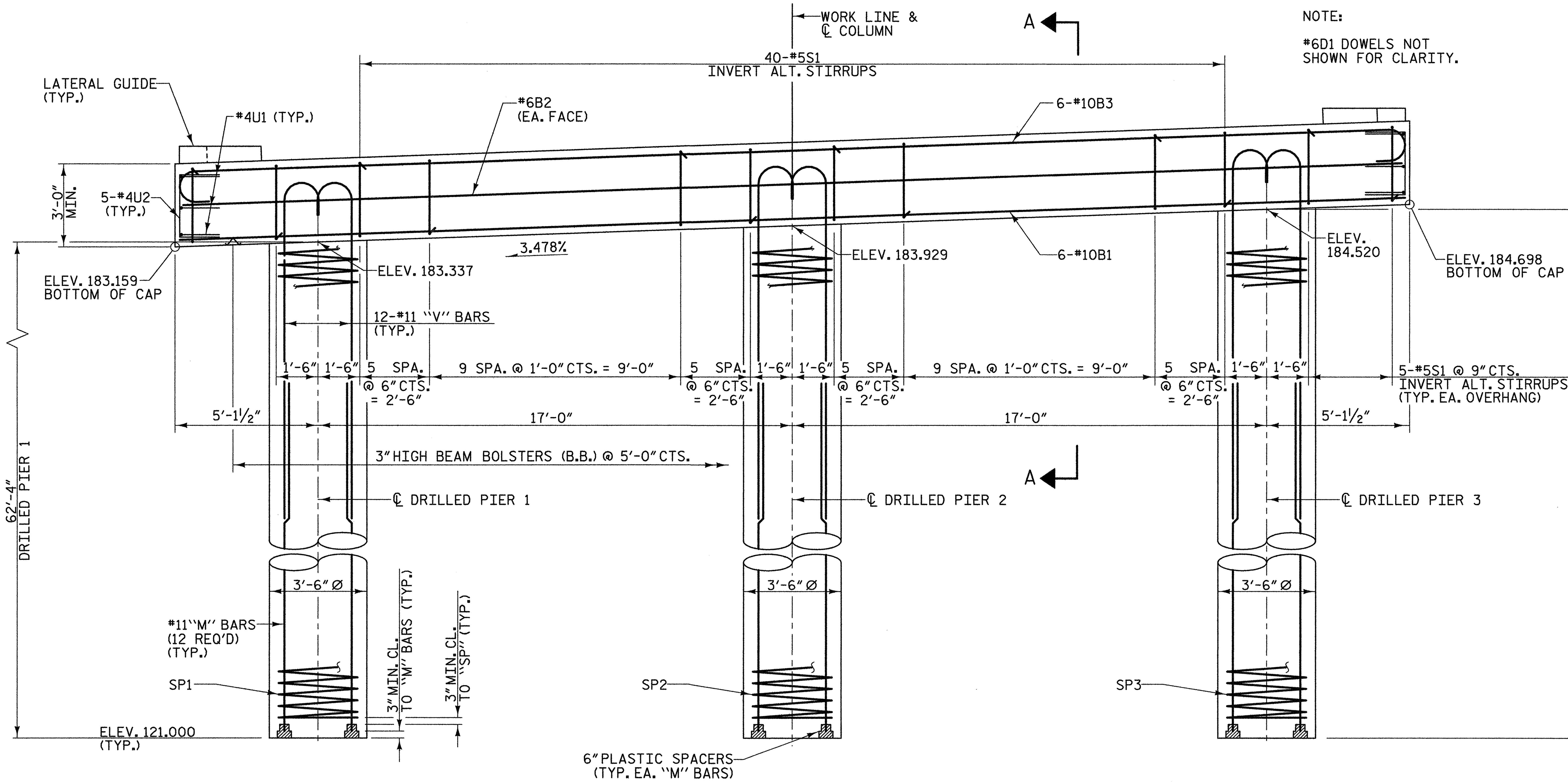
32'-10" CLEAR ROADWAY - 115° SKEW

REVISIONS							SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:		19
1			3				TOTAL SHEETS
2			4				32

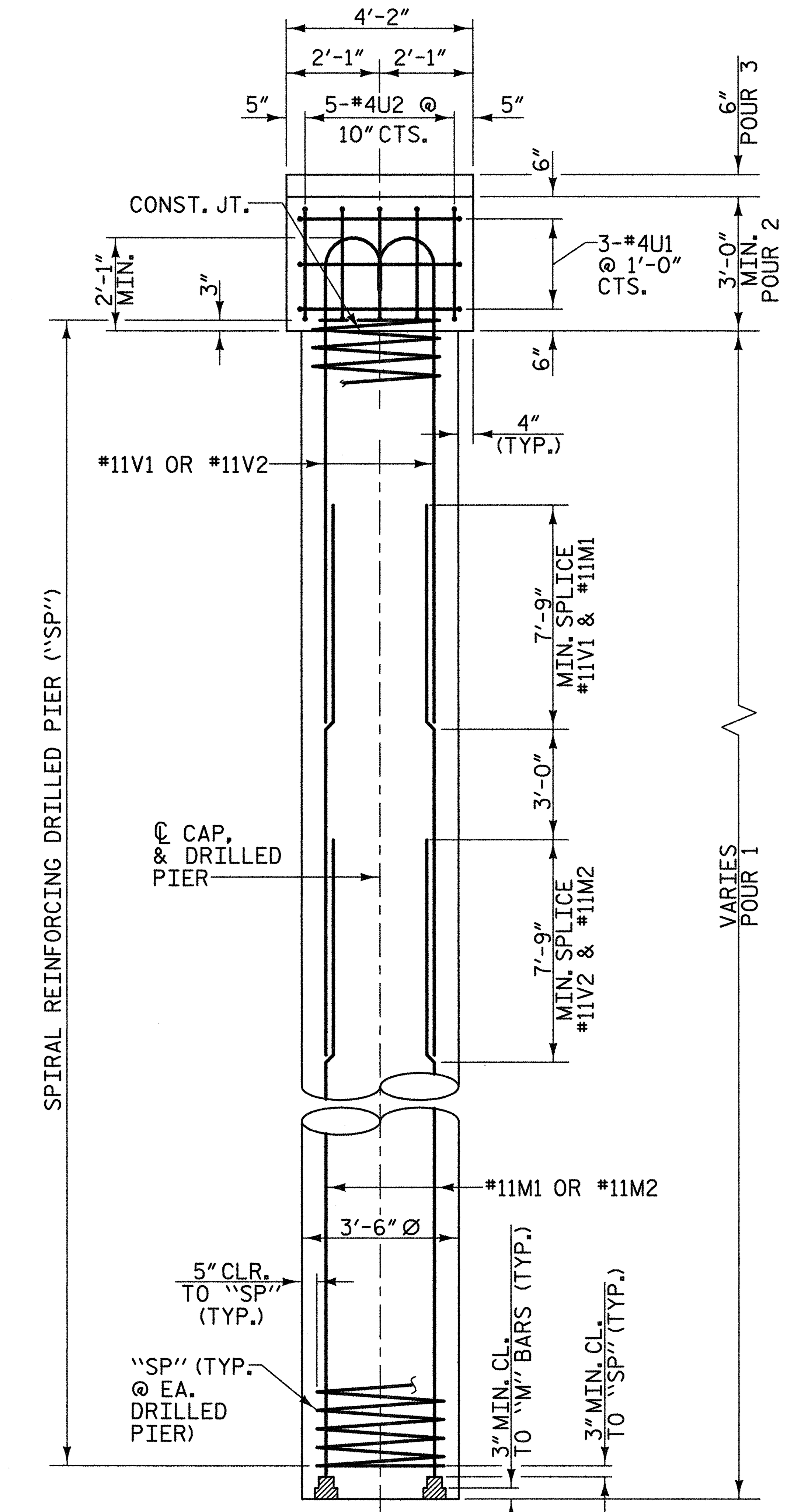
DRAWN BY :	W. B. ALLEN	DATE :	8/09
CHECKED BY :	L. K. AUSTIN	DATE :	7/10



PLAN



ELEVATION



END ELEVATION

PROJECT NO. 42558

NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120 SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 1

32'-10" CLEAR ROADWAY - 115° SKEW

NORTH CAROLINA PROFESSIONAL SEAL 19661 ENGINEER L. KEVIN AUSTIN 8/11/10

PLANS PREPARED BY:
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	20
1			3			TOTAL SHEETS
2			4			32

DRAWN BY :	W. B. ALLEN	DATE :	1/10
CHECKED BY :	L. K. AUSTIN	DATE :	7/10

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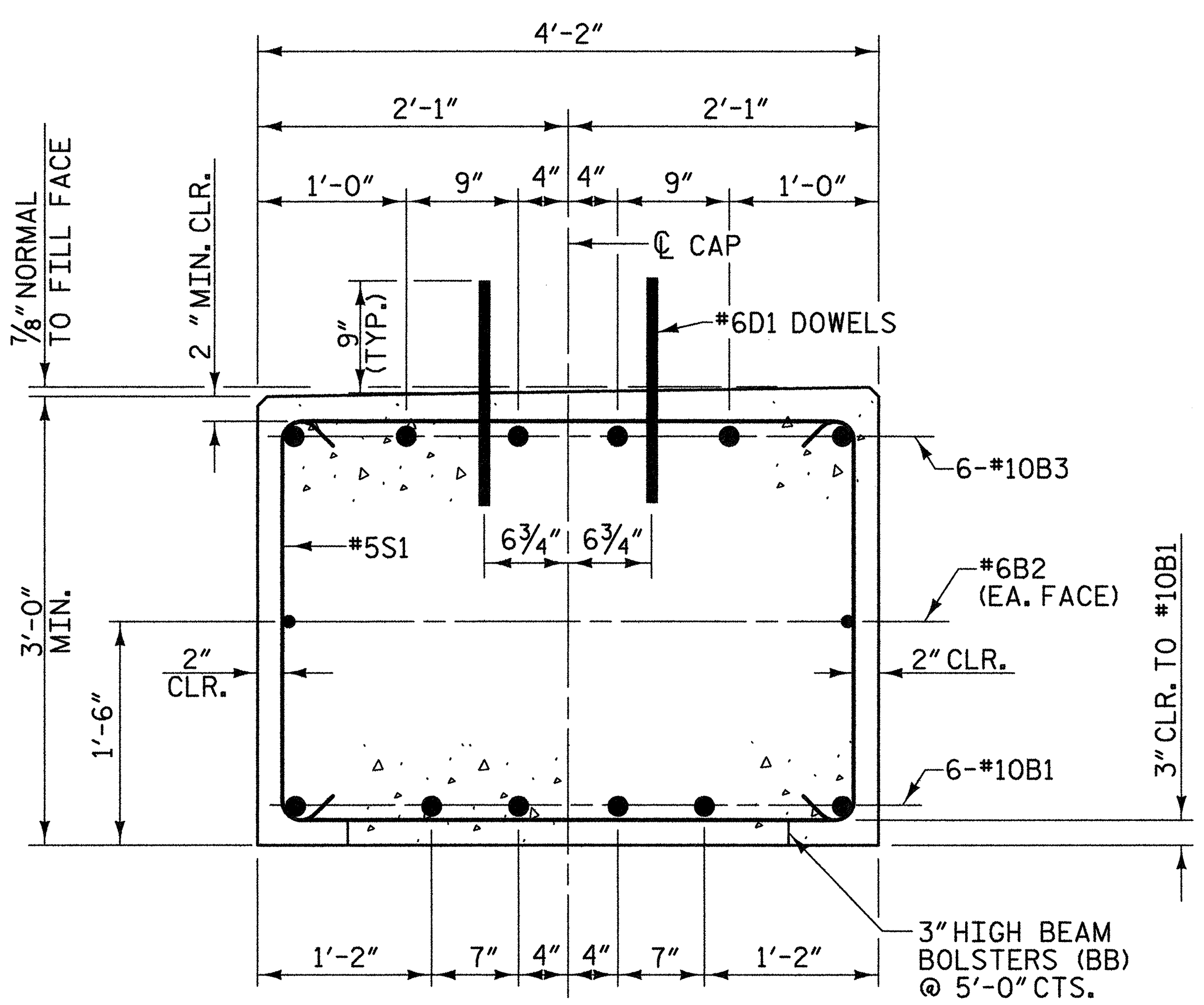
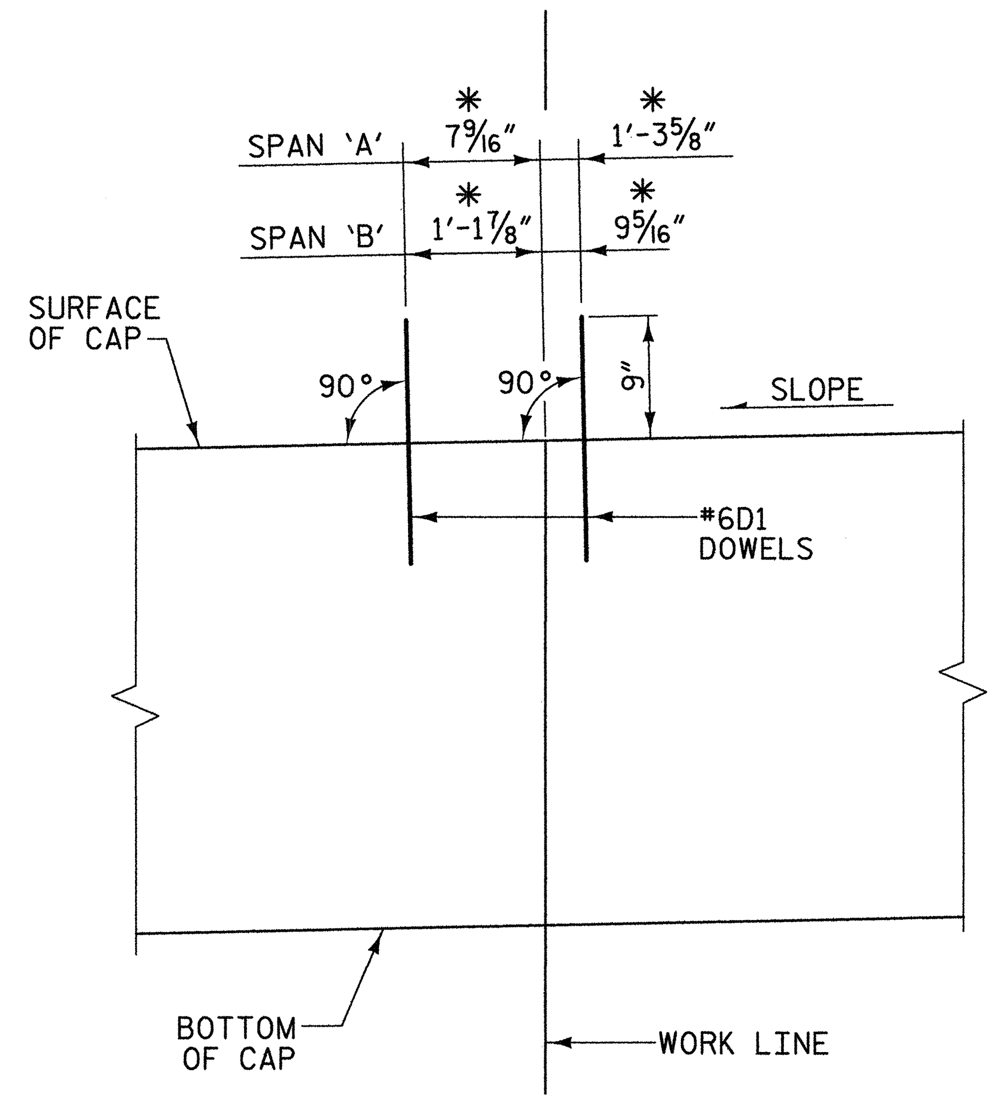
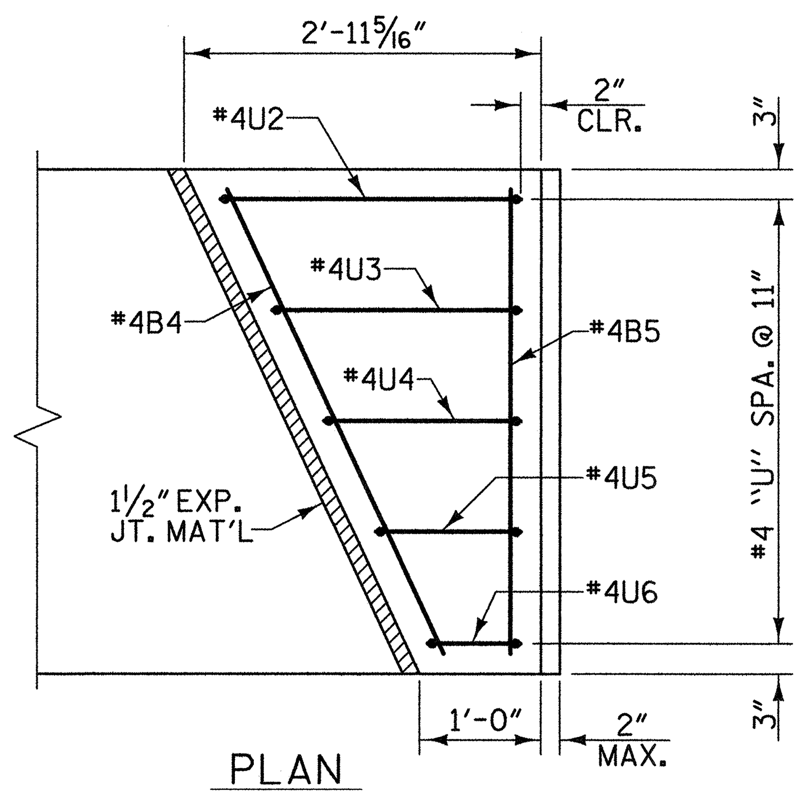


SECTION A-A

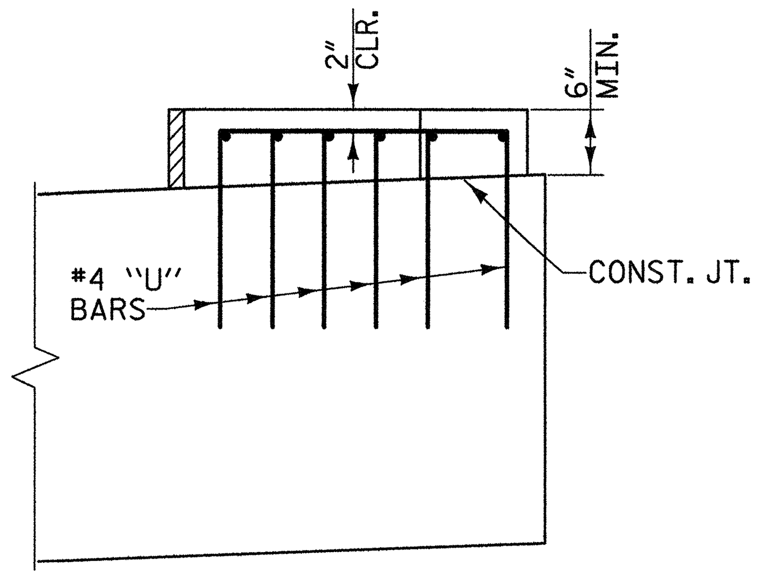


DOWEL DETAIL

* MEASURED ALONG SURFACE OF CAP



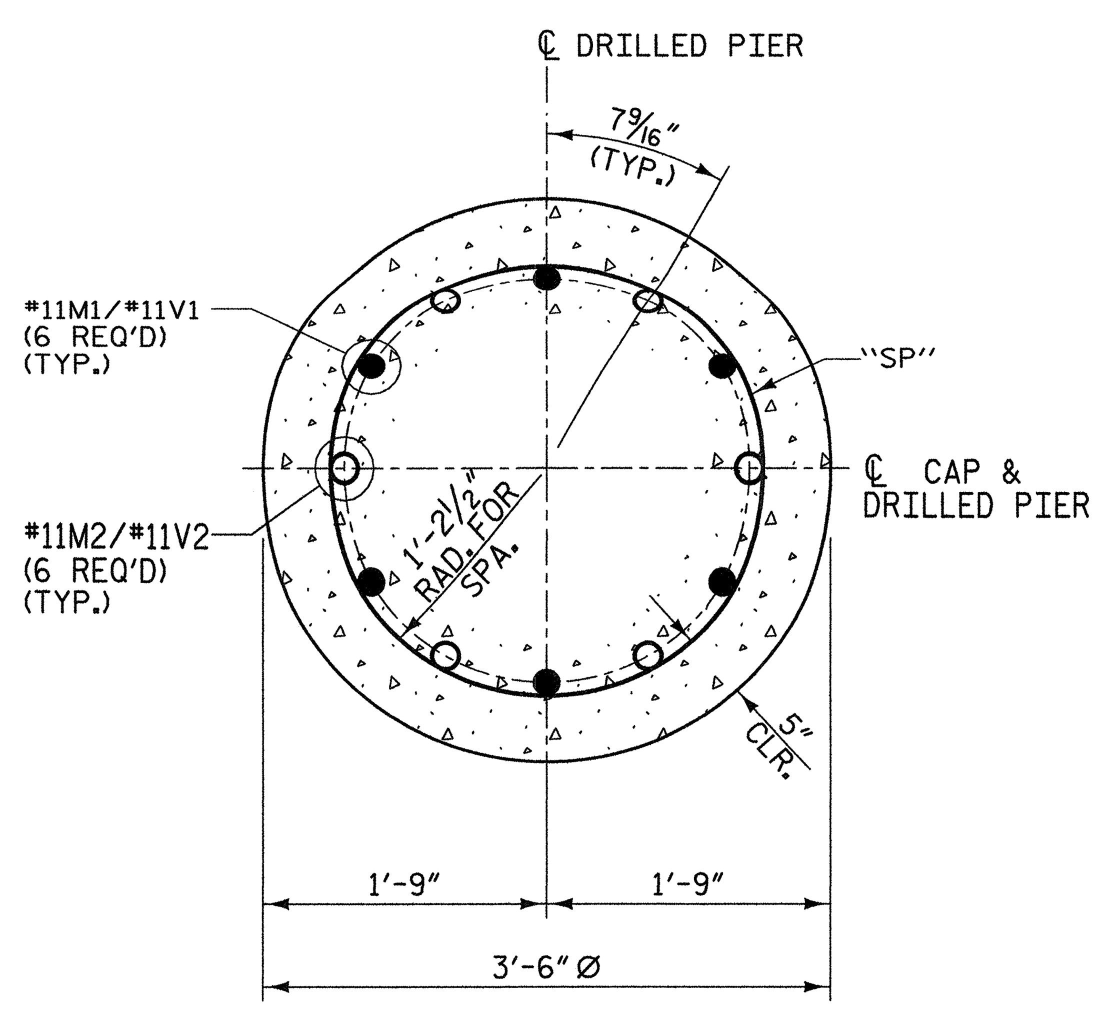
PLAN



ELEVATION

LATERAL GUIDE DETAIL

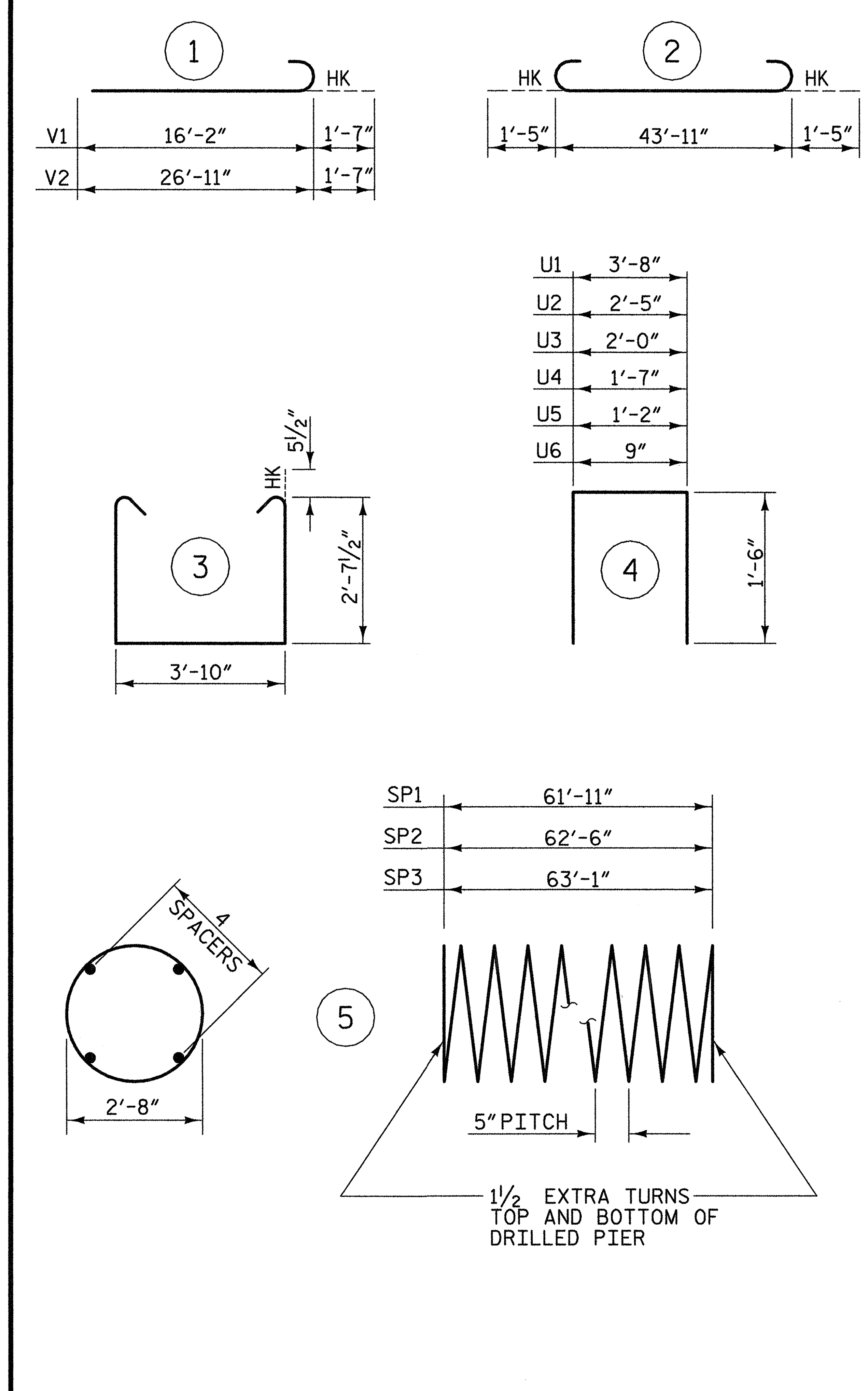
NOTE: LATERAL GUIDES ARE NOT TO BE POURED UNTIL ALL CORED SLAB UNITS ARE IN PLACE AND TRANSVERSE STRANDS ARE TENSIONED.



SECTION THRU DRILLED PIER

SPLICE #11V1 W/ #11M1 AND SPLICE #11V2 W/ #11M2. ALTERNATE BAR RUNS IN THE DRILLED PIER IN ORDER TO STAGGER THE LOCATION OF THE SPLICES.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	STR	43'-11"	1134
B2	2	#6	STR	43'-11"	132
B3	6	#10	2	46'-9"	1207
B4	2	#4	STR	4'-2"	6
B5	2	#4	STR	3'-10"	5
D1	48	#6	STR	1'-6"	108
M1	18	#11	STR	60'-0"	5738
M2	18	#11	STR	49'-3"	4710
S1	50	#5	3	10'-0"	522
U1	6	#4	4	6'-8"	27
U2	12	#4	4	5'-5"	43
U3	2	#4	4	5'-0"	7
U4	2	#4	4	4'-7"	6
U5	2	#4	4	4'-2"	6
U6	2	#4	4	3'-9"	5
V1	18	#11	1	17'-9"	1698
V2	18	#11	1	28'-6"	2726
TOTAL REINFORCING STEEL =					18080 lbs.
SP1	1	*	5	1250'-2"	9564
SP2	1	*	5	1258'-5"	9627
SP3	1	*	5	1274'-10"	9752
SPIRAL COLUMN REINFORCING STEEL =					28943 lbs.

CLASS "A" CONCRETE - CU. YARDS	
POUR 2 (CAP)	20.5 cu. yds.
POUR 3 (LATERAL GUIDE)	0.3 cu. yds.
TOTAL	20.8 cu. yds.
42" DIA. DRILLED PIERS	(3 REQ'D)
42" DIA. DRILLED PIERS, NOT IN SOIL	42 L.F.
42" DIA. DRILLED PIERS, IN SOIL	146.8 L.F
PERMANENT STEEL CASING FOR 42" DIA. DRILLED PIERS	62.8 L.F.
DRILLED PIER CONCRETE - CU. YARDS	
POUR 1 (FOR INFORMATION ONLY)	67.3
CSL TUBES - LIN. FT.	785

NOTES:

STIRRUPS IN THE CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6D1 DOWELS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE "M" BARS IN THE DRILLED PIERS ARE DETAILED WITH 3'-0" OF EXTRA LENGTH.

* THE "SP" SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL AND SPIRAL COLUMN REINFORCING STEEL.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.

FOR PERMANENT STEEL CASING, SEE SPECIAL PROVISION FOR DRILLED PIERS.

PROJECT NO. 42558

NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120 SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL ENGINEER 19661 L. KEVIN AUSTIN 6/11/10

PLANS PREPARED BY:

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE BENT 1

32'-10" CLEAR ROADWAY - 115° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	21
1			3			TOTAL SHEETS
2			4			32

DRAWN BY :	W. B. ALLEN	DATE :	1/10
CHECKED BY :	L. K. AUSTIN	DATE :	7/10

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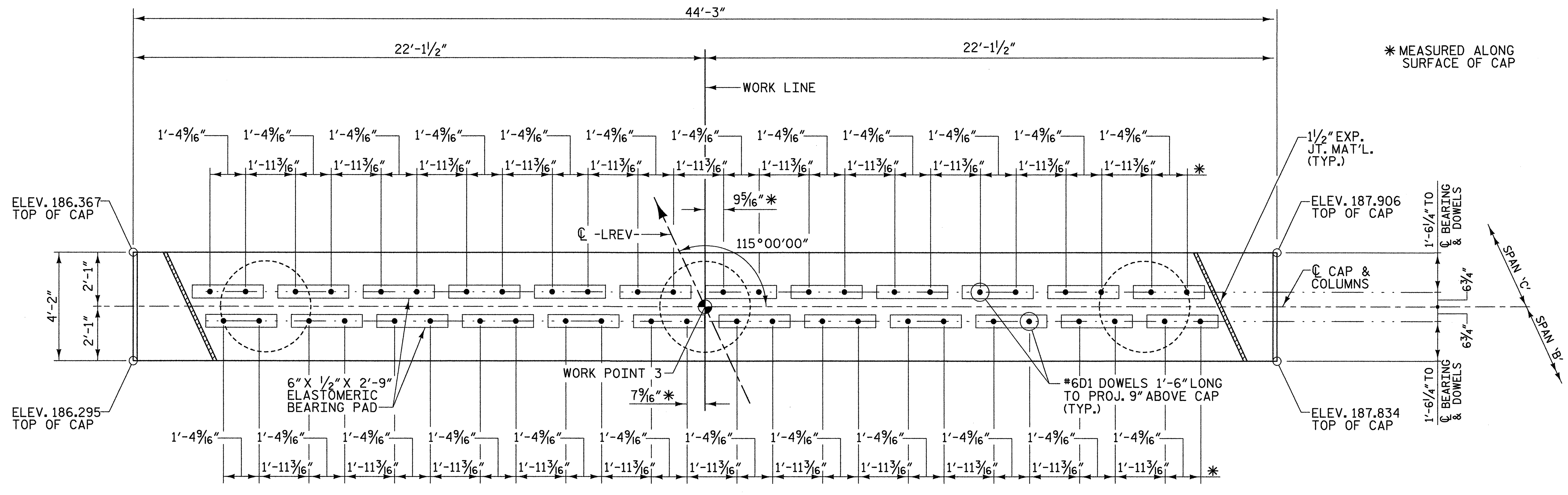
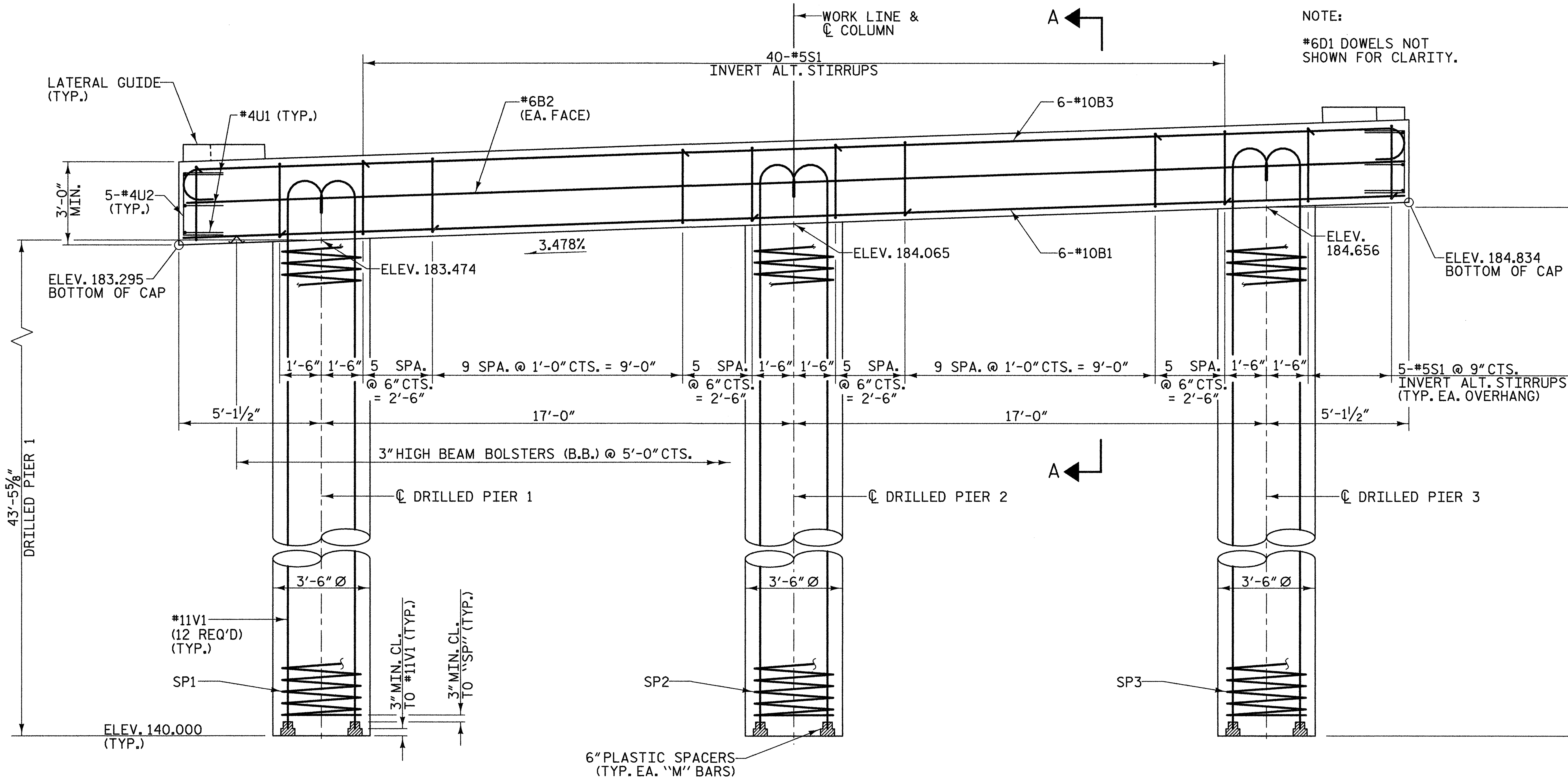
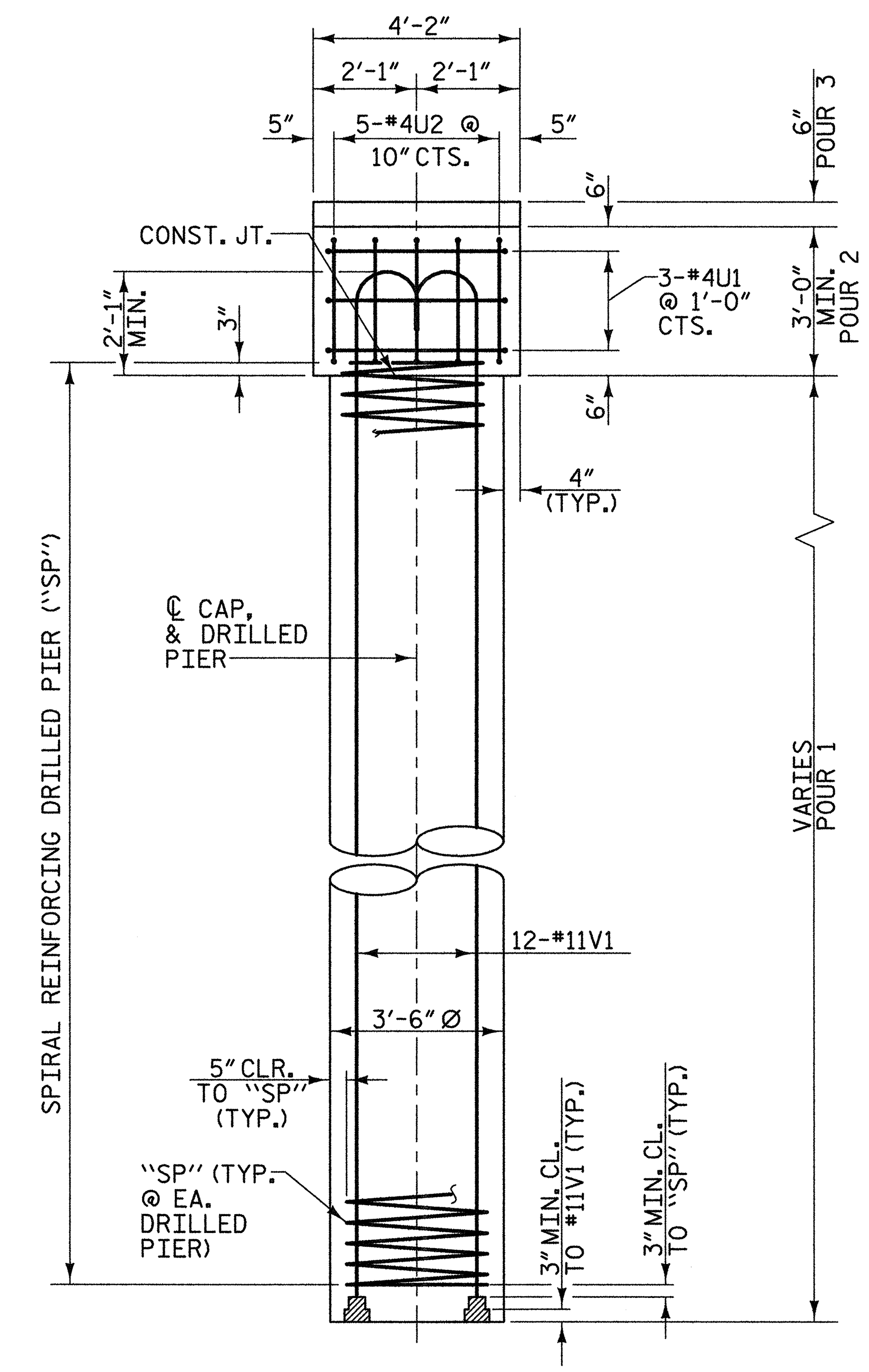


PLAN



ELEVATION



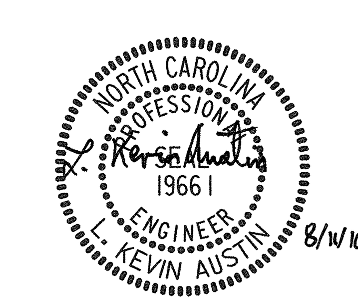
END ELEVATION

PROJECT NO. 42558

NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120 SHEET 1 OF 2



PLANS PREPARED BY:

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

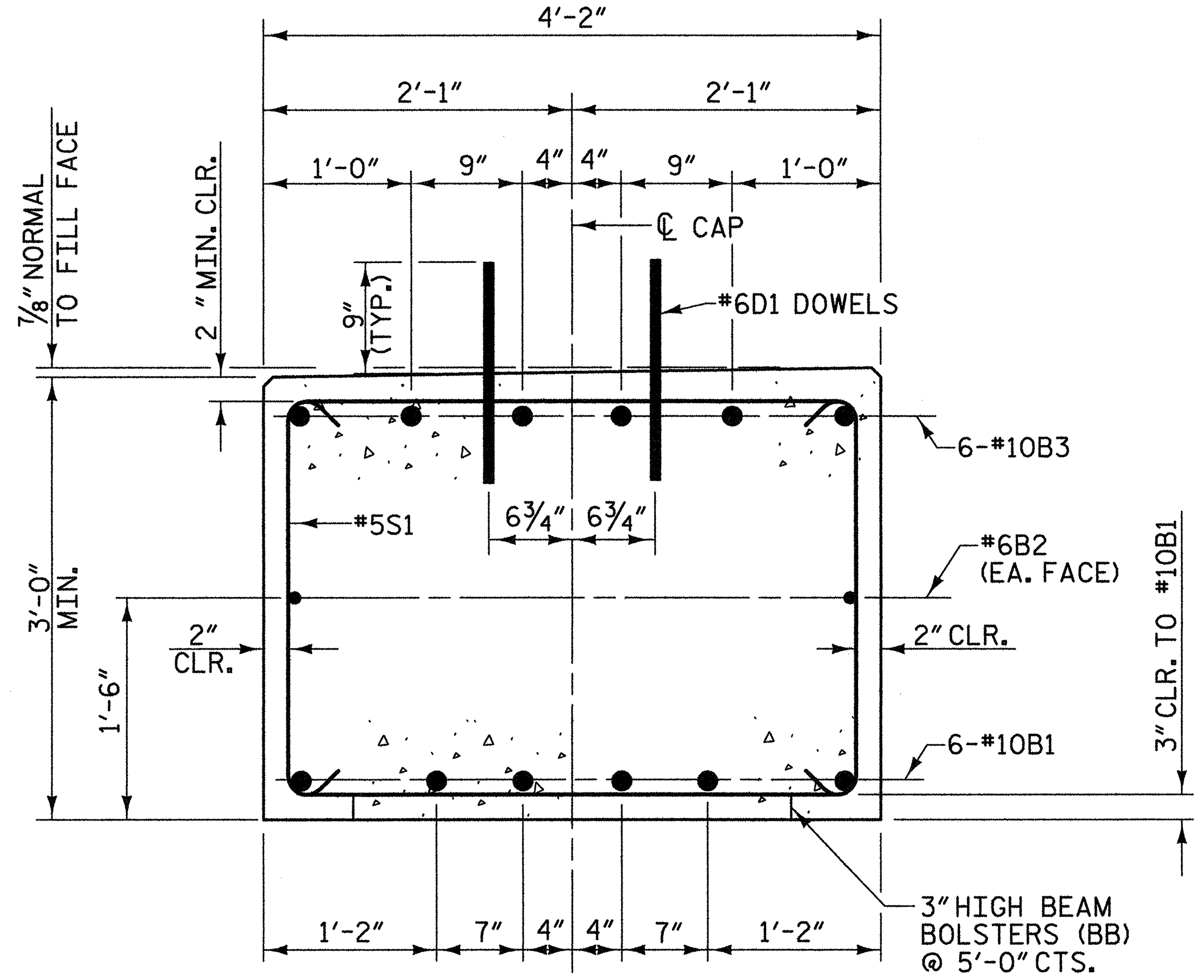
SUBSTRUCTURE BENT 2

32'-10" CLEAR ROADWAY - 115° SKEW

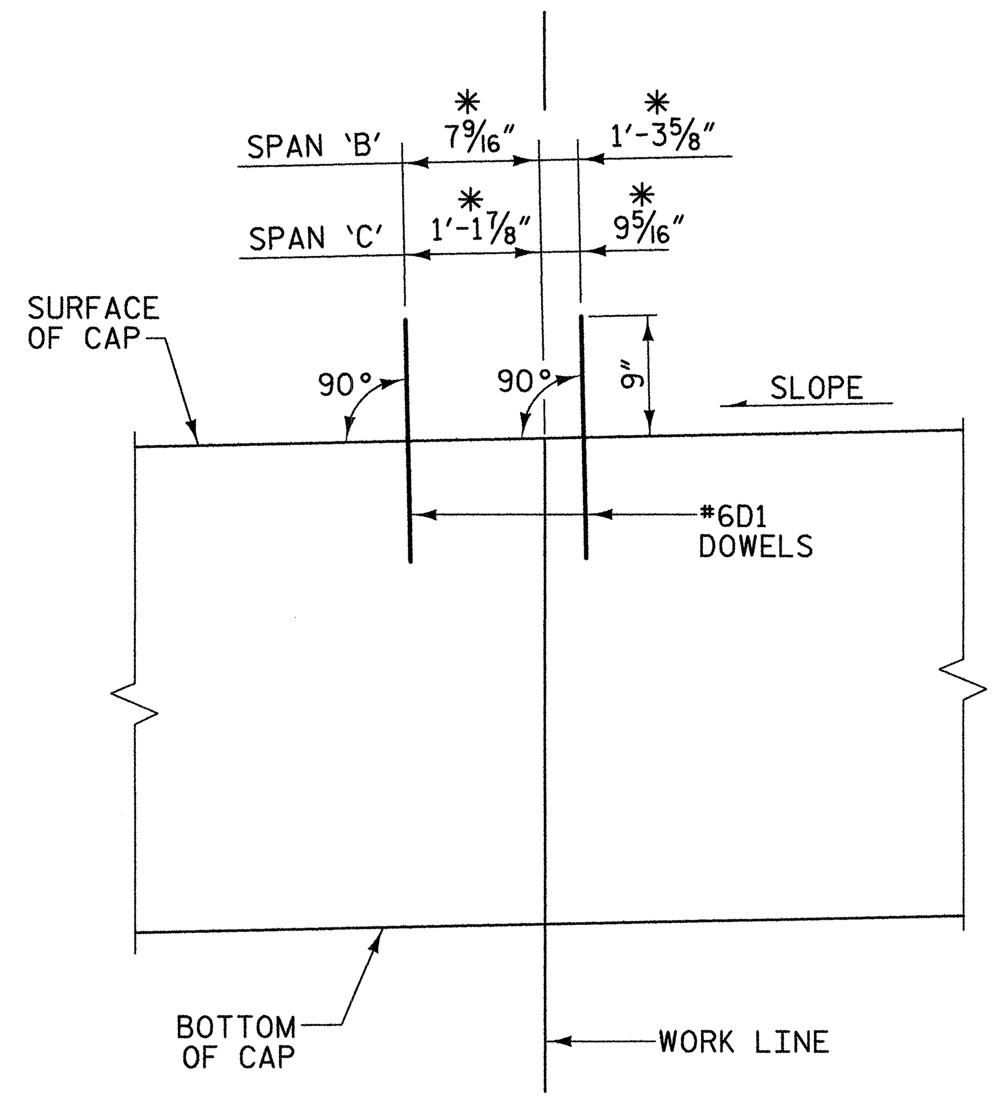
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	22
1			3			TOTAL SHEETS
2			4			32

DRAWN BY :	W. B. ALLEN	DATE :	1/10
CHECKED BY :	L. K. AUSTIN	DATE :	7/10

8/11/2010

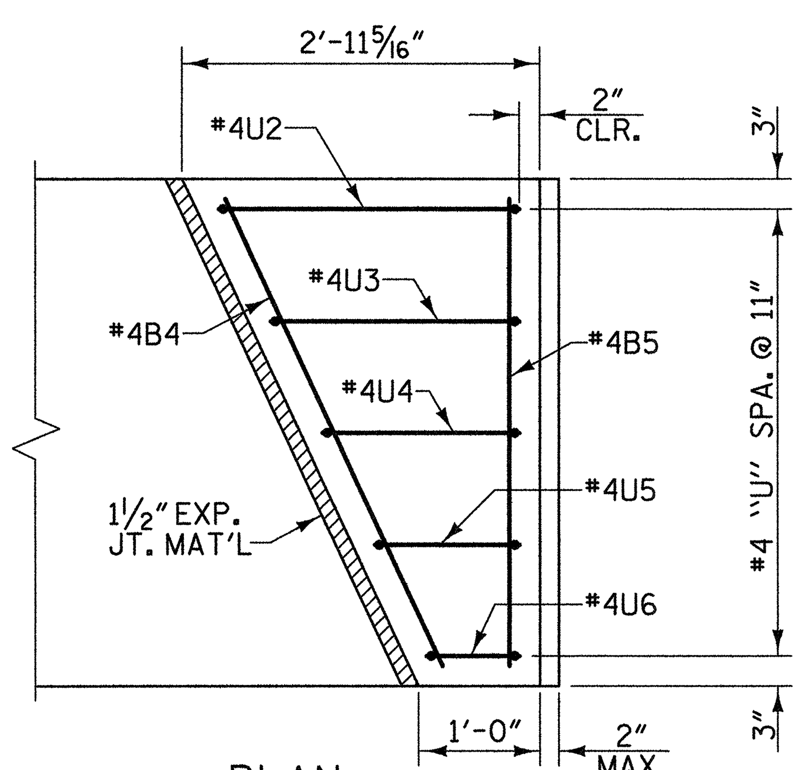


SECTION A-A

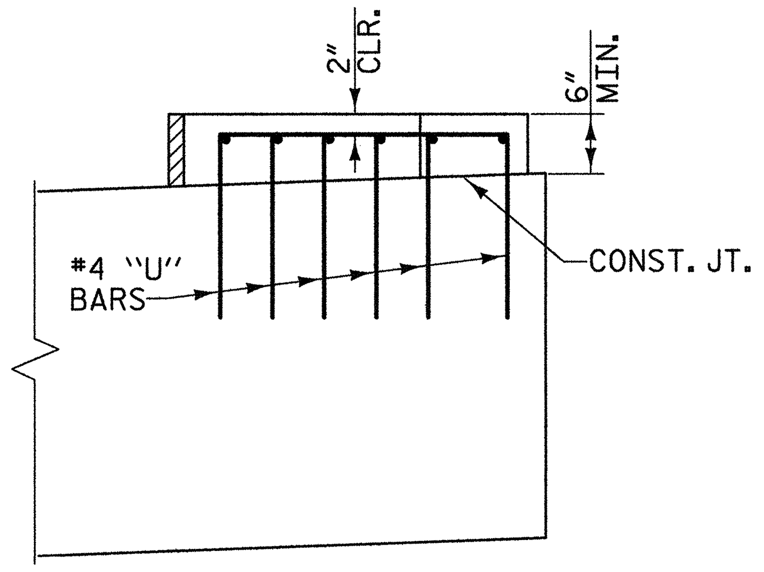


DOWEL DETAIL

* MEASURED ALONG SURFACE OF CAP



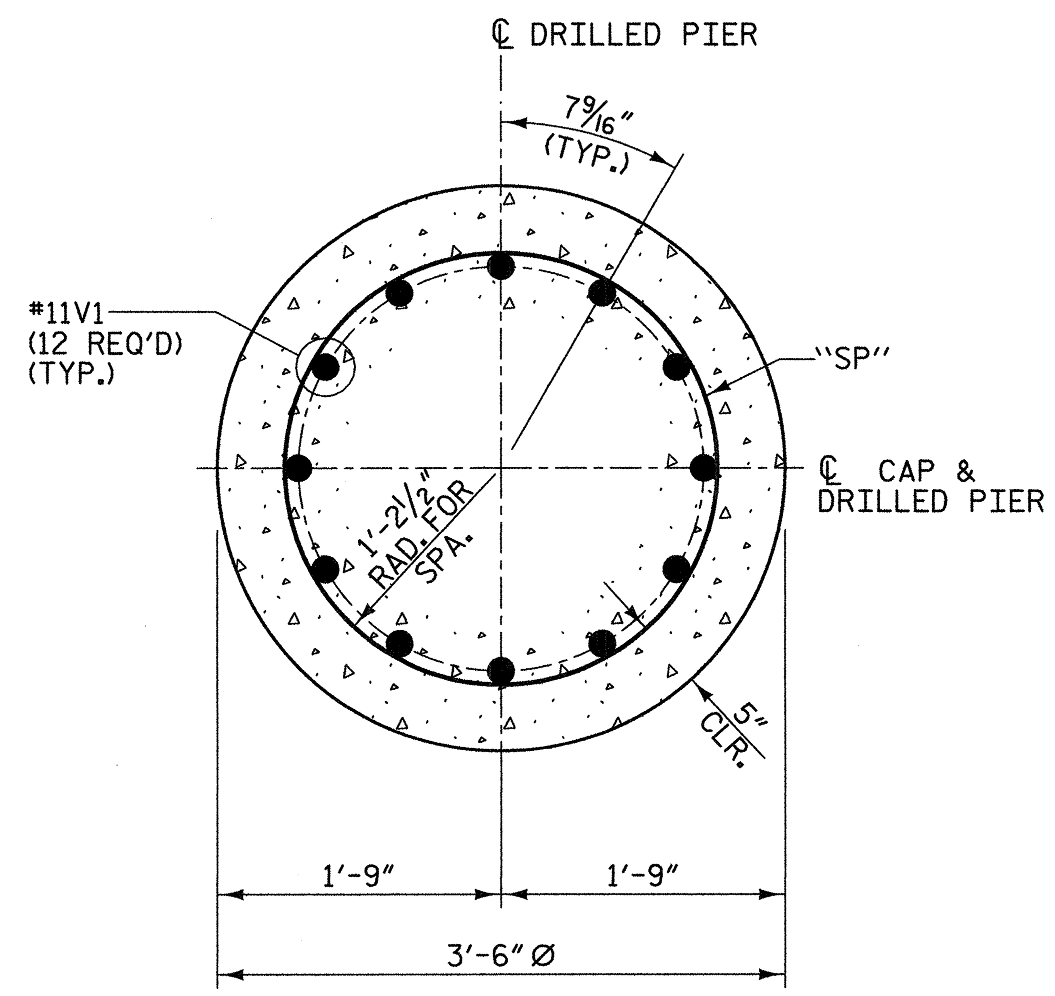
PLAN



ELEVATION

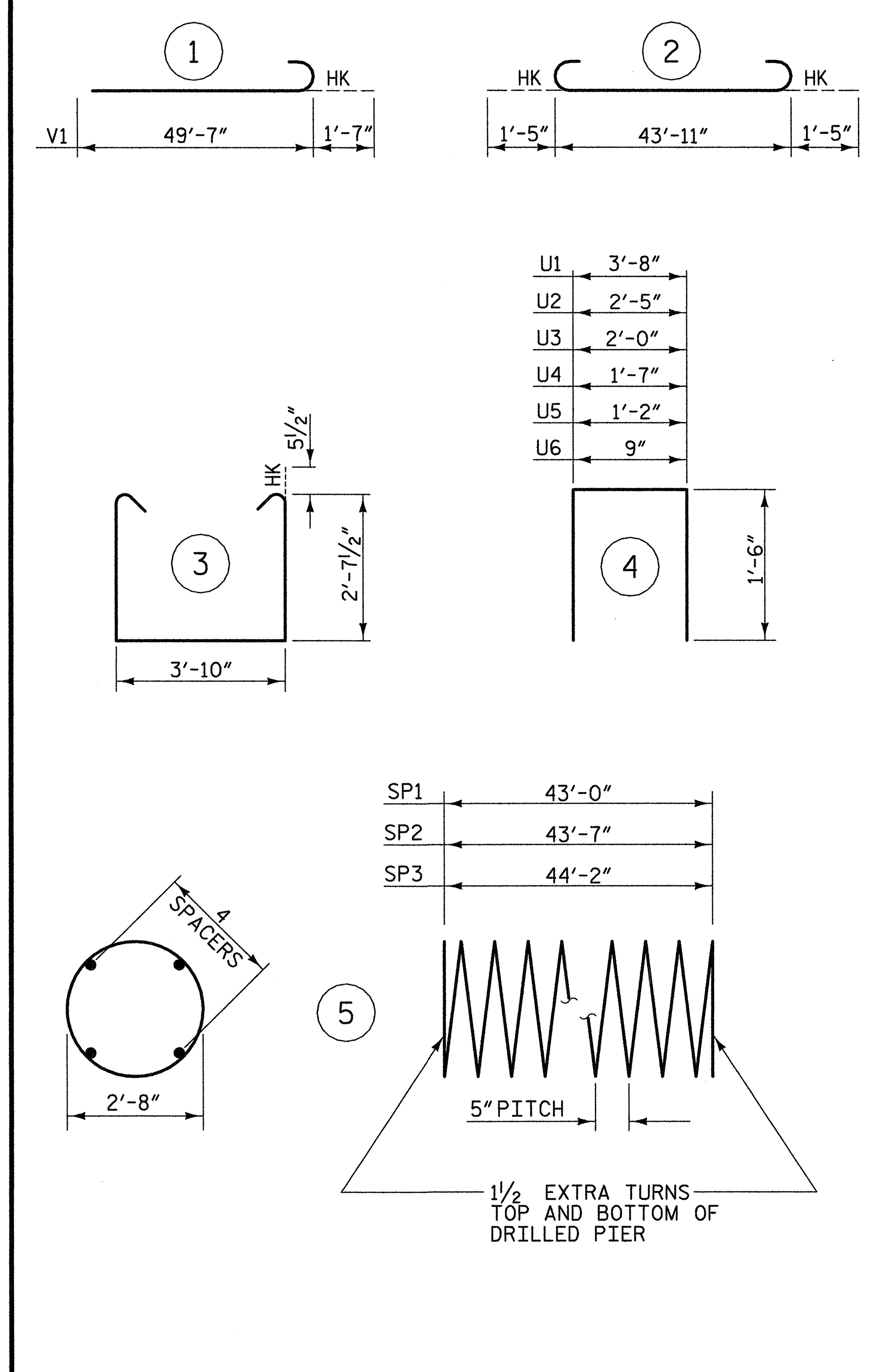
LATERAL GUIDE DETAIL

NOTE: LATERAL GUIDES ARE NOT TO BE POURED UNTIL ALL CORED SLAB UNITS ARE IN PLACE AND TRANSVERSE STRANDS ARE TENSIONED.



SECTION THRU DRILLED PIER

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	STR	43'-11"	1134
B2	2	#6	STR	43'-11"	132
B3	6	#10	2	46'-9"	1207
B4	2	#4	STR	4'-2"	6
B5	2	#4	STR	3'-10"	5
D1	48	#6	STR	1'-6"	108
S1	50	#5	3	10'-0"	522
U1	6	#4	4	6'-8"	27
U2	12	#4	4	5'-5"	43
U3	2	#4	4	5'-0"	7
U4	2	#4	4	4'-7"	6
U5	2	#4	4	4'-2"	6
U6	2	#4	4	3'-9"	5
V1	36	#11	1	51'-2"	9787
TOTAL REINFORCING STEEL =					12995 lbs.
SP1	1	*	5	880'-1"	6733
SP2	1	*	5	888'-3"	6795
SP3	1	*	5	896'-6"	6858
SPIRAL COLUMN REINFORCING STEEL =					20386 lbs.

CLASS "A" CONCRETE - CU. YARDS	
POUR 2 (CAP)	20.5 cu. yds.
POUR 3 (LATERAL GUIDE)	0.3 cu. yds.
TOTAL	20.8 cu. yds.
42" DIA. DRILLED PIERS	(3 REQ'D)
42" DIA. DRILLED PIERS, NOT IN SOIL	42 L.F.
42" DIA. DRILLED PIERS, IN SOIL	90.2 L.F
PERMANENT STEEL CASING FOR 42" DIA. DRILLED PIERS	48.2 L.F.
DRILLED PIER CONCRETE - CU. YARDS	
POUR 1 (FOR INFORMATION ONLY)	47.1
CSL TUBES - LIN. FT.	559

NOTES:

STIRRUPS IN THE CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6D1 DOWELS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE "V" BARS IN THE DRILLED PIERS ARE DETAILED WITH 3'-0" OF EXTRA LENGTH.

* THE "SP" SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR REINFORCING STEEL AND SPIRAL COLUMN REINFORCING STEEL.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.

FOR PERMANENT STEEL CASING, SEE SPECIAL PROVISION FOR DRILLED PIERS.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19661 L. KEVIN AUSTIN 8/11/10

PLANS PREPARED BY:

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RALEIGH, N.C. 27636
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PROJECT NO. 42558

NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120 — SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 2

32'-10" CLEAR ROADWAY - 115° SKEW

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			23
1			3					TOTAL SHEETS
2			4					32

DRAWN BY : W. B. ALLEN DATE : 1/10
CHECKED BY : L. K. AUSTIN DATE : 7/10

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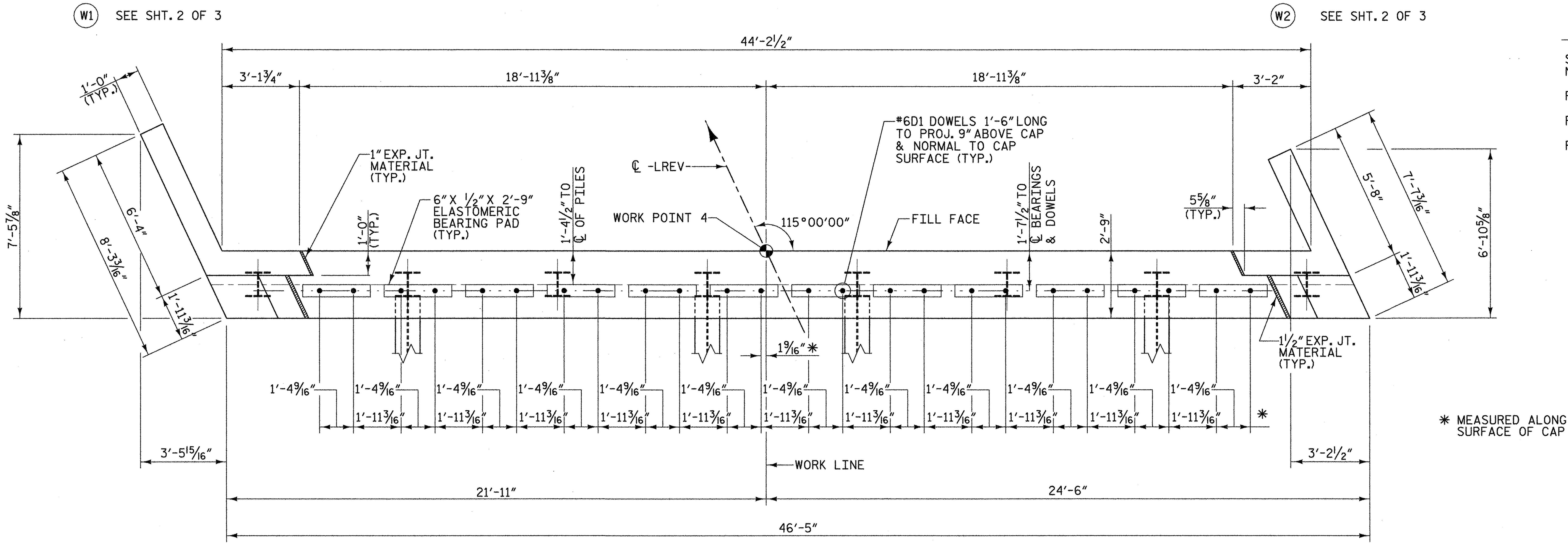


PLAN

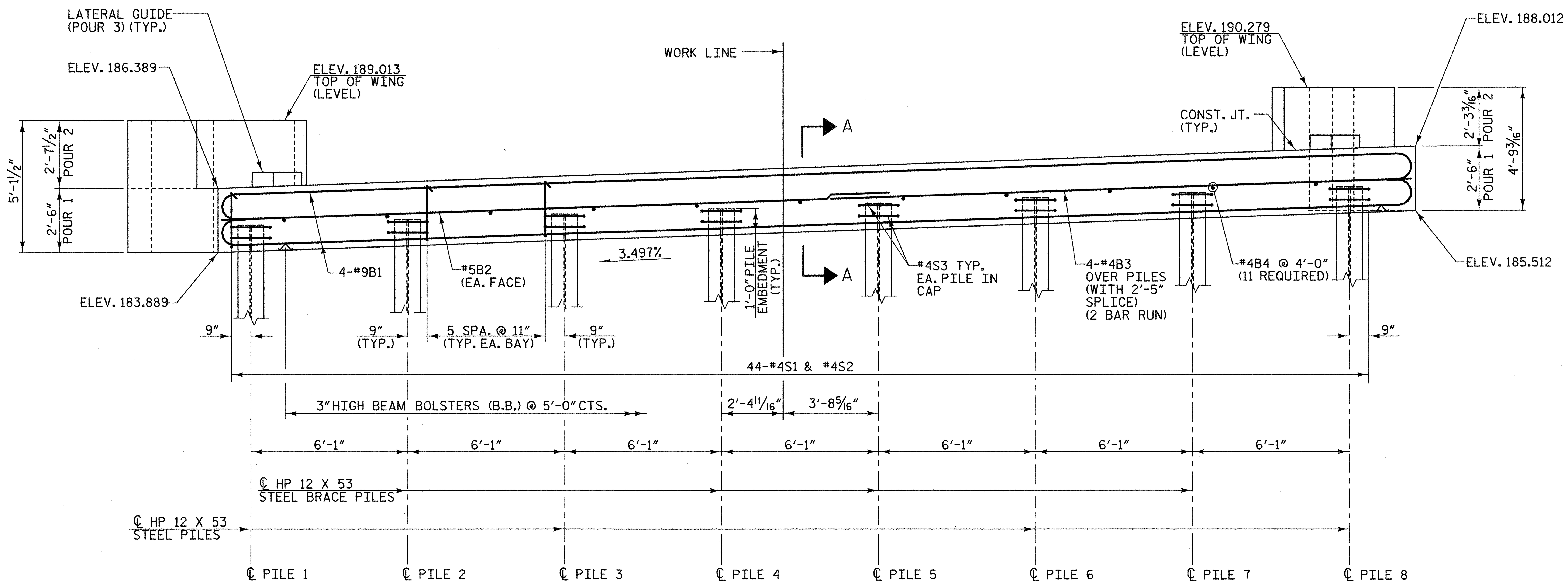
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6D1 DOWELS.

FOR DOWEL DETAIL SEE END BENT 1 SHEET 3 OF 3.

FOR LATERAL GUIDE DETAIL SEE END BENT 1 SHEET 3 OF 3.

FOR PILE SPLICE DETAILS SEE END BENT 1 SHEET 3 OF 3.



ELEVATION

PILE CUT-OFF ELEVATIONS

PILE NO.	ELEV.
1	184.974
2	185.186
3	185.399
4	185.612
5	185.824
6	186.037
7	186.250
8	186.462

PROJECT NO. 42558

NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120 SHEET 1 OF 3

NORTH CAROLINA PROFESSIONAL ENGINEER 19661 L. KEVIN AUSTIN 8/11/10

PLANS PREPARED BY:

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE END BENT 2

32'-10" CLEAR ROADWAY - 115° SKEW

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			24
1			3					TOTAL SHEETS
2			4					32

DRAWN BY : W. B. ALLEN DATE : 7/09
CHECKED BY : L. K. AUSTIN DATE : 7/10

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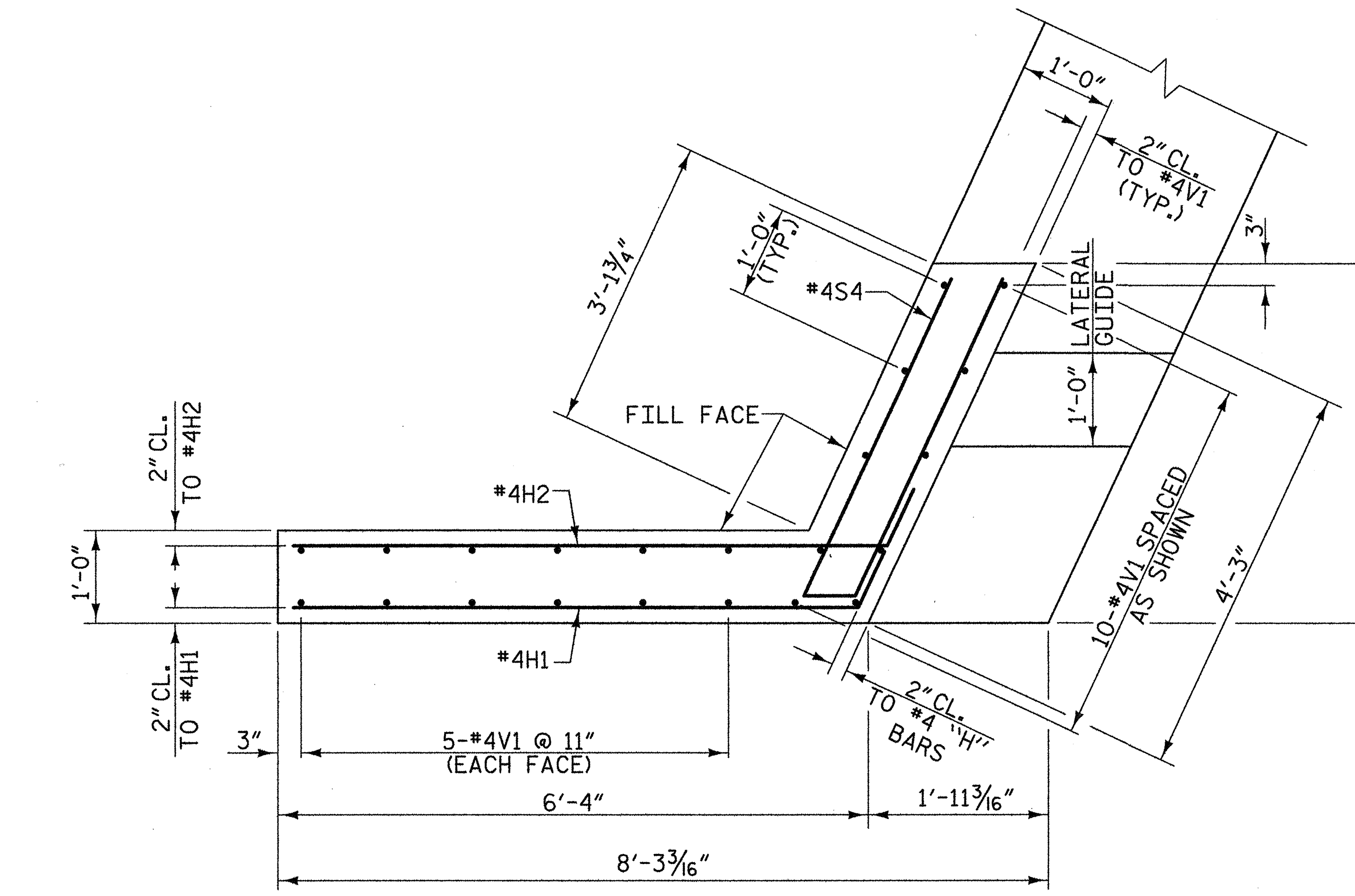
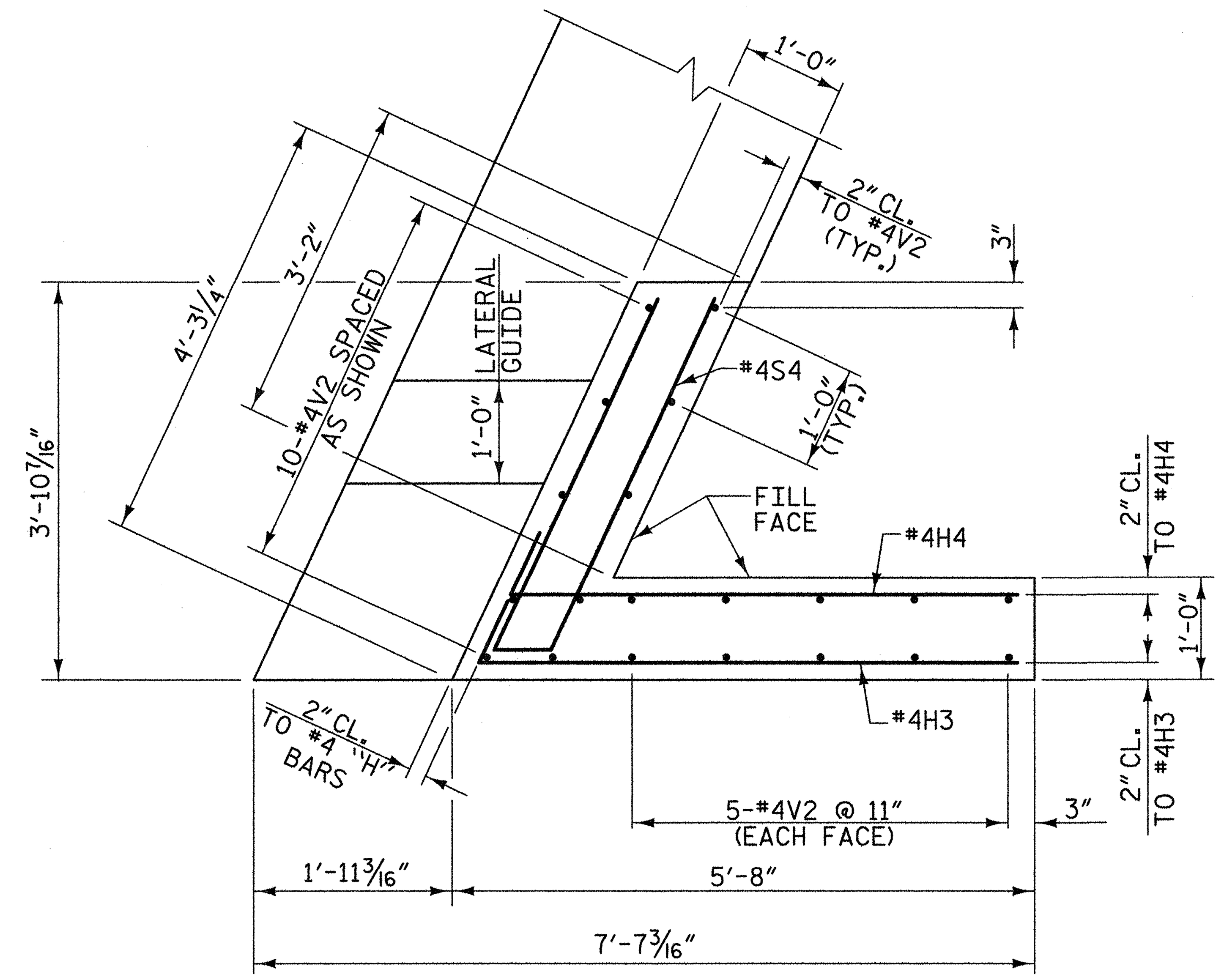
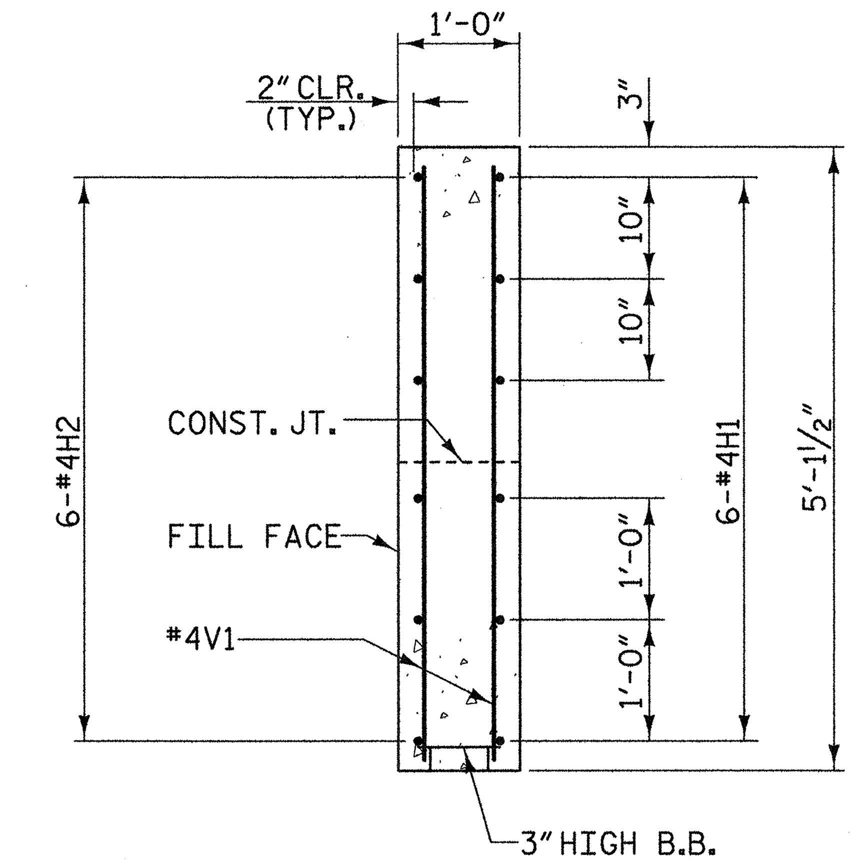


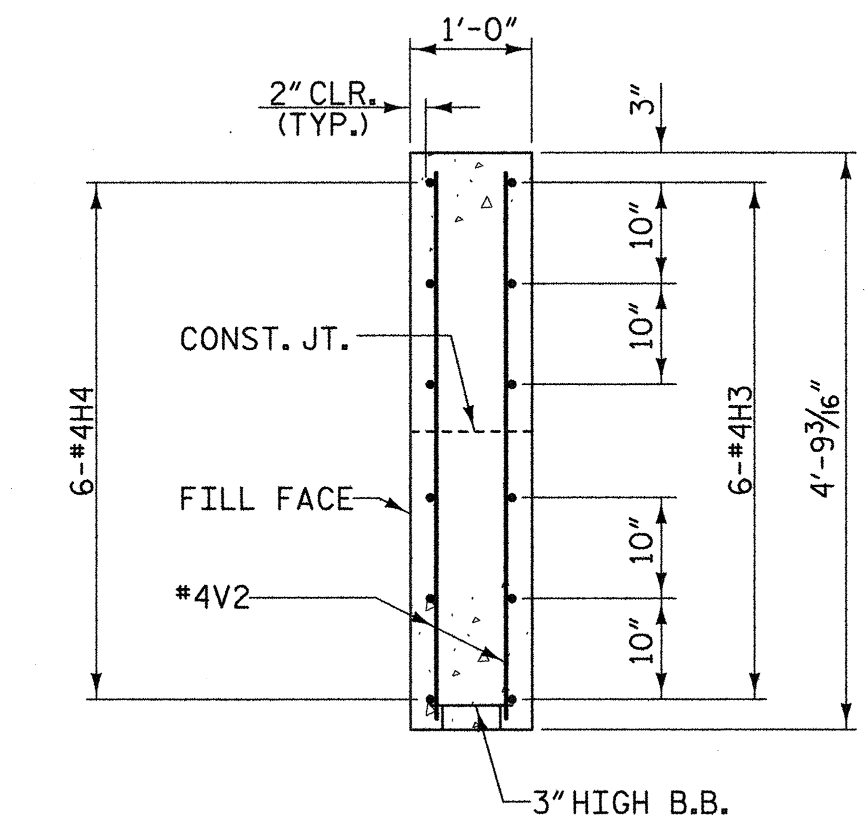
W1 PLAN OF LEFT WING



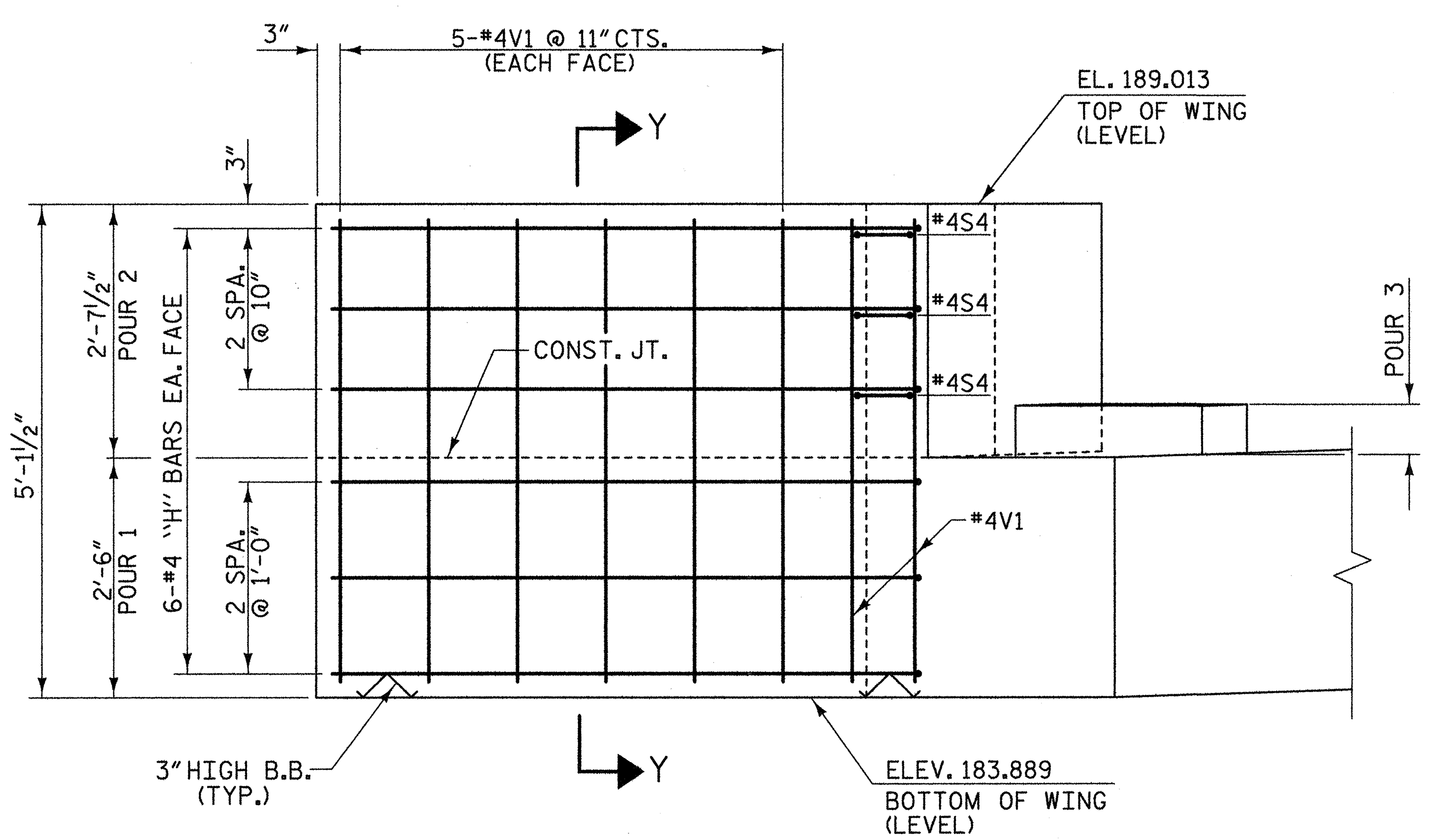
W2 PLAN OF RIGHT WING



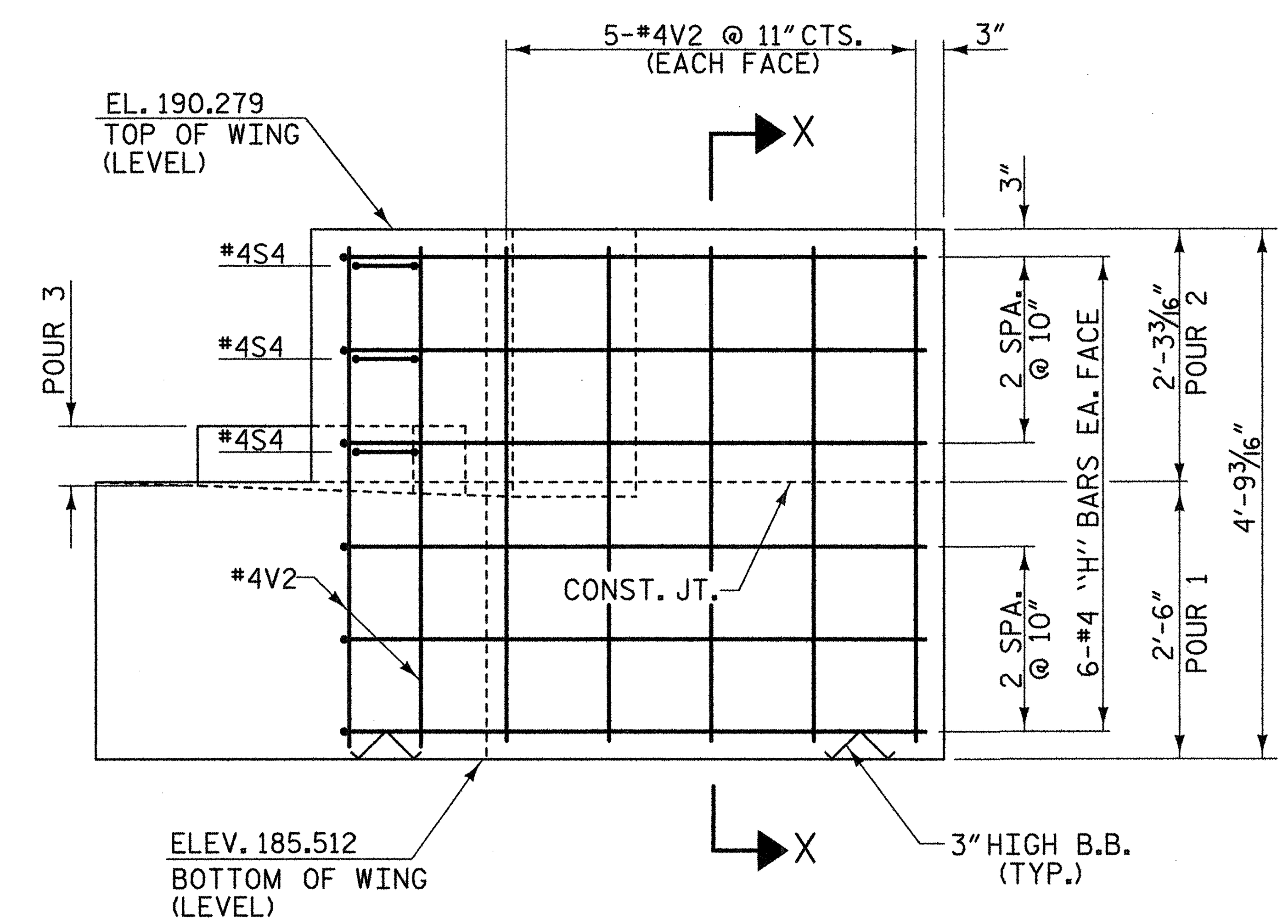
SECTION X-X



SECTION Y-Y



W1 ELEVATION OF LEFT WING



W2 ELEVATION OF RIGHT WING

PROJECT NO. 42558

NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120 SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE END BENT 2

32'-10" CLEAR ROADWAY - 115° SKEW

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19661 L. KEVIN AUSTIN 8/11/10

PLANS PREPARED BY:
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(919) 851-1912
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	25
1			3			TOTAL SHEETS
2			4			32

DRAWN BY :	W. B. ALLEN	DATE :	7/09
CHECKED BY :	L. K. AUSTIN	DATE :	7/10

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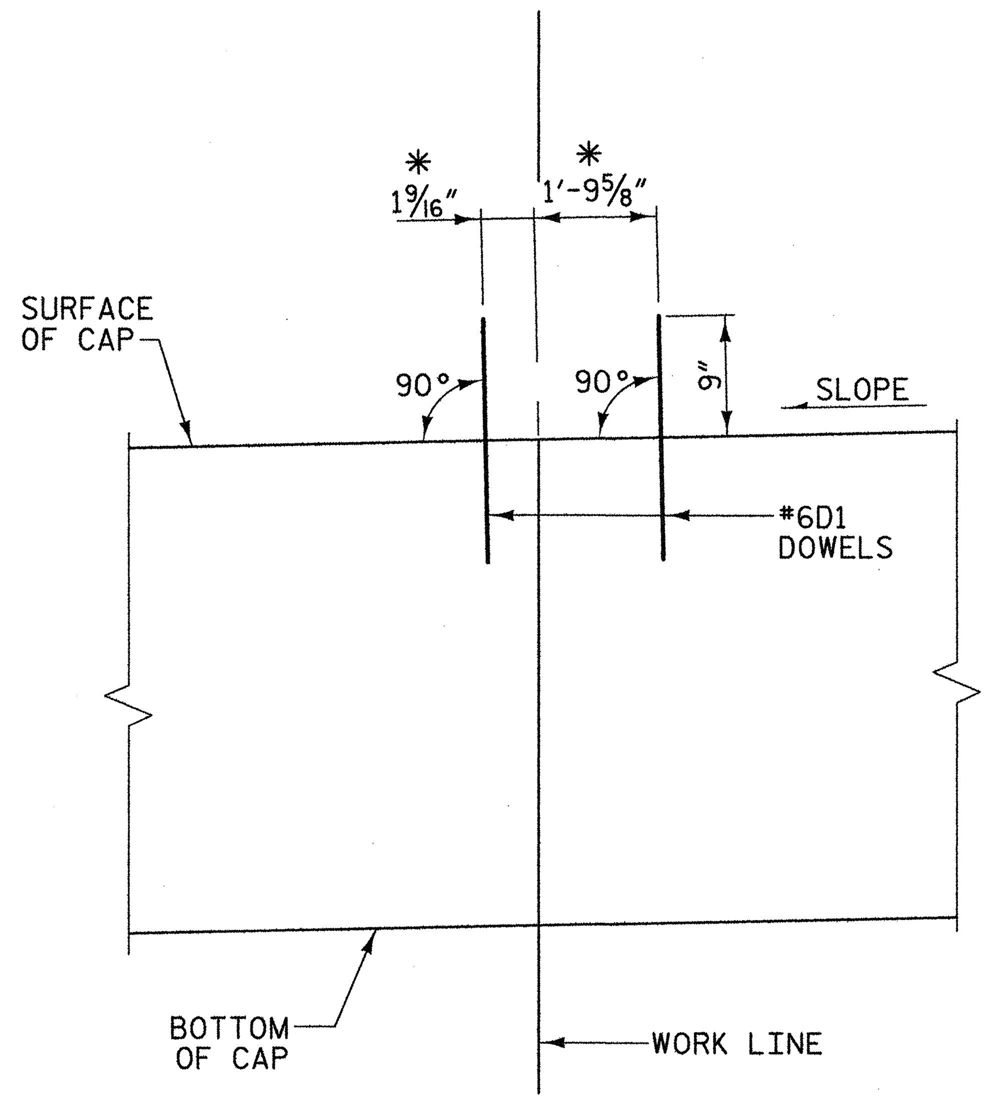
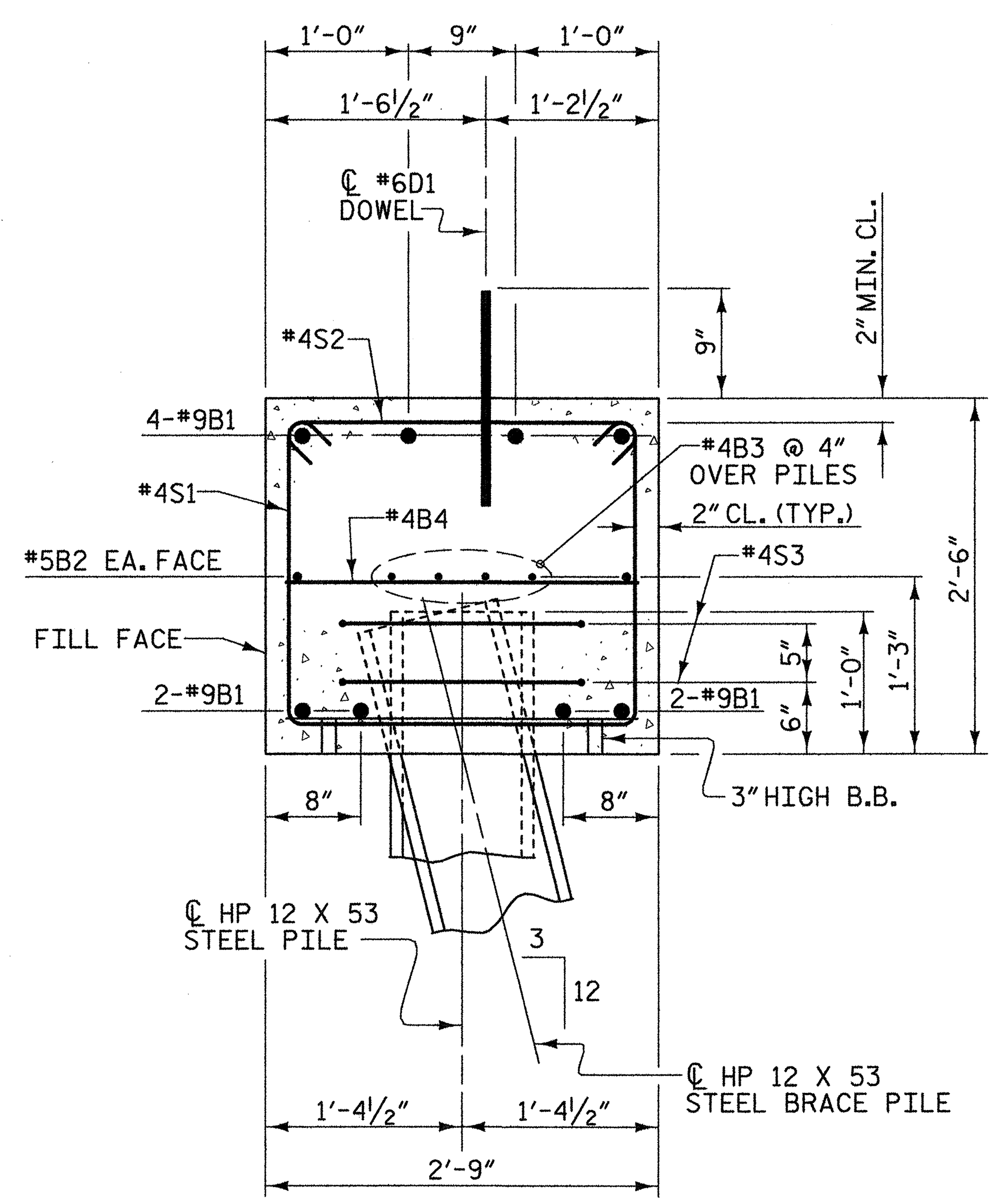


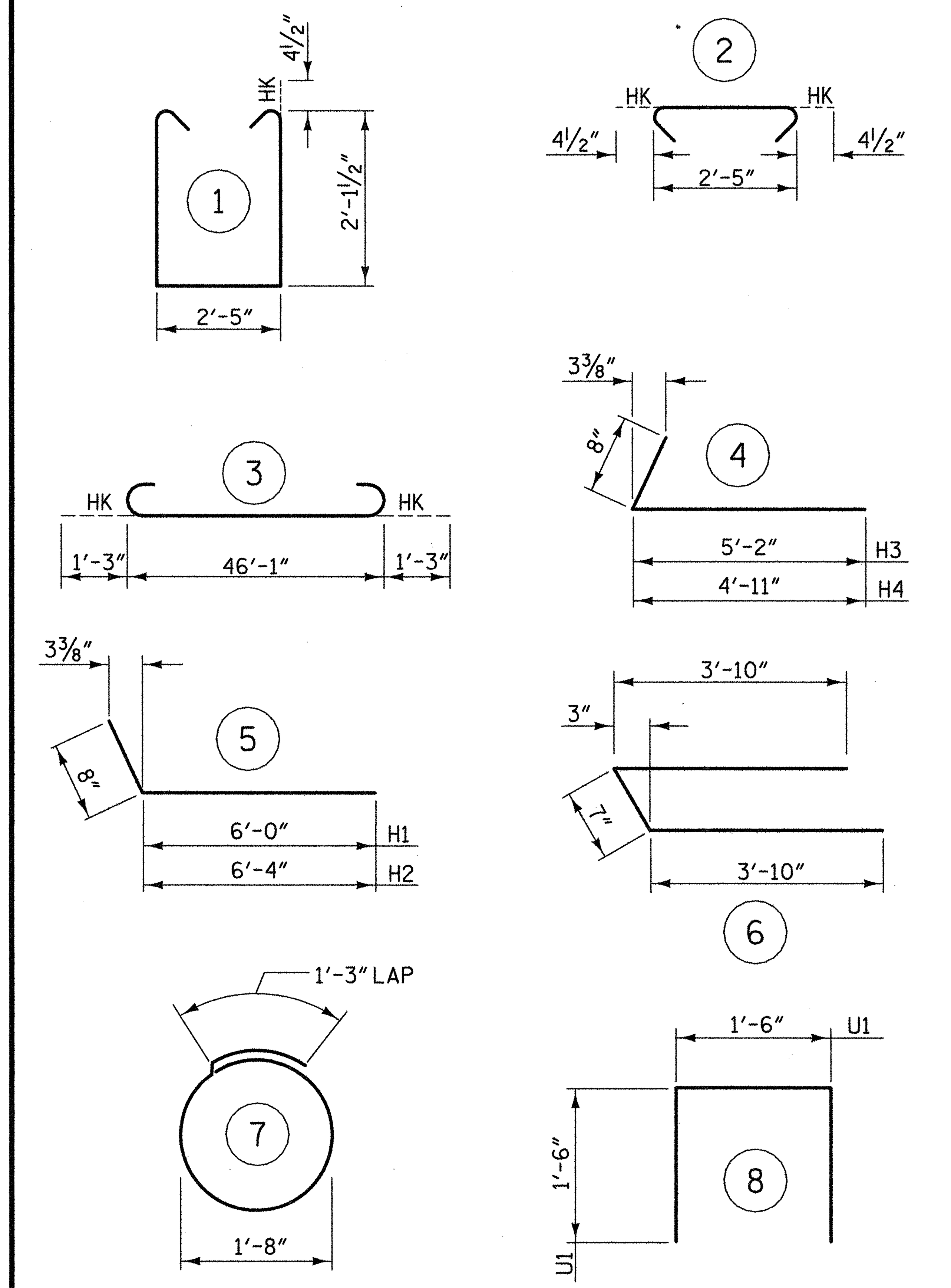
DOWEL DETAIL

* MEASURED ALONG SURFACE OF CAP



SECTION A-A

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	3	48'-7"	1321
B2	2	#5	STR	46'-1"	96
B3	8	#4	STR	24'-3"	130
B4	11	#4	STR	2'-5"	18
D1	24	#6	STR	1'-6"	54
H1	6	#4	5	6'-8"	27
H2	6	#4	5	7'-0"	28
H3	6	#4	4	5'-10"	23
H4	6	#4	4	5'-7"	22
S1	44	#4	1	7'-5"	218
S2	44	#4	2	3'-2"	93
S3	16	#4	7	6'-6"	69
S4	6	#4	6	8'-3"	33
U1	4	#4	8	4'-6"	12
V1	20	#4	STR	4'-9"	63
V2	20	#4	STR	4'-5"	59

TOTAL REINFORCING STEEL =	2266 lbs.
CLASS "A" CONCRETE - CU. YARDS	
POUR 1	12.7 cu. yds.
POUR 2	1.7 cu. yds.
POUR 3	0.1 cu. yds.
TOTAL	14.5 cu. yds.
HP 12 X 53 STEEL PILES	
8 PILES REQUIRED - LIN. FEET	200

PROJECT NO. 42558

NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120 SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE END BENT 2

32'-10" CLEAR ROADWAY - 115° SKEW

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19661 L. KEVIN AUSTIN 8/10/10

PLANS PREPARED BY:
MULKEY ENGINEERS & CONSULTANTS
PO BOX 33127 RALEIGH, N.C. 27636
(919) 851-1912
(919) 851-1918 (FAX)
WWW.MULKEYINC.COM

REVISIONS						
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1			3			
2			4			

SHEET NO. 26
TOTAL SHEETS 32

DRAWN BY :	W. B. ALLEN	DATE :	7/09
CHECKED BY :	L. K. AUSTIN	DATE :	7/10

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—T— DENOTES EXISTING TELEPHONE LINE

—OHP— DENOTES EXISTING OVERHEAD POWER LINE

NOTE: GUARDRAIL LENGTHS AS SHOWN INCLUDE ANCHOR UNITS.

U.O.N. - UNLESS OTHERWISE NOTED

PLAN

SCALE : 1" = 30'

DENOTES ROADWAY FILL TO BE REMOVED

PROFILE ALONG ℄ -LREV-

SCALE : 1" = 30'

UTILITY CONTACTS

PROGRESS ENERGY CAROLINAS, INC.
CYNTHIA ROARTY
919-481-119

CENTURYLINK, INC.
GHISLAINE M. KEATOR
52-246-1502

PROJECT NO. 42558

NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

UTILITY CONCLICT PLAN
BRIDGE ON SR 1425
OVER PIG BASKET CREEK
BETWEEN NC 58 & SR 1004

32'-10" CLEAR ROADWAY - 115° SKEW

PLANS PREPARED BY:
MULKEY ENGINEERS & CONSULTANTS
PO Box 33127
Raleigh, N.C. 27636
(919) 851-1912
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1				3				TOTAL SHEETS
2				4				32

DRAWN BY : W. B. ALLEN DATE : 2/05
CHECKED BY : L. K. AUSTIN DATE : 7/10

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EROSION CONTROL PLAN

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1607.01	Gravel Construction Entrance	
1622.01	Temporary Berms and Slope Drains	
1630.06	Special Stilling Basin	
1632.03	Rock Inlet Sediment Trap Type C	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-B	
	Wattle with Polyacrylamide (PAM)	

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2006 STANDARD SPECIFICATIONS

PROJECT NO. 42558

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE ON SR 1425
OVER PIG BASKET CREEK
BETWEEN NC 58 &
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	28
1			3			TOTAL SHEETS
2			4			32

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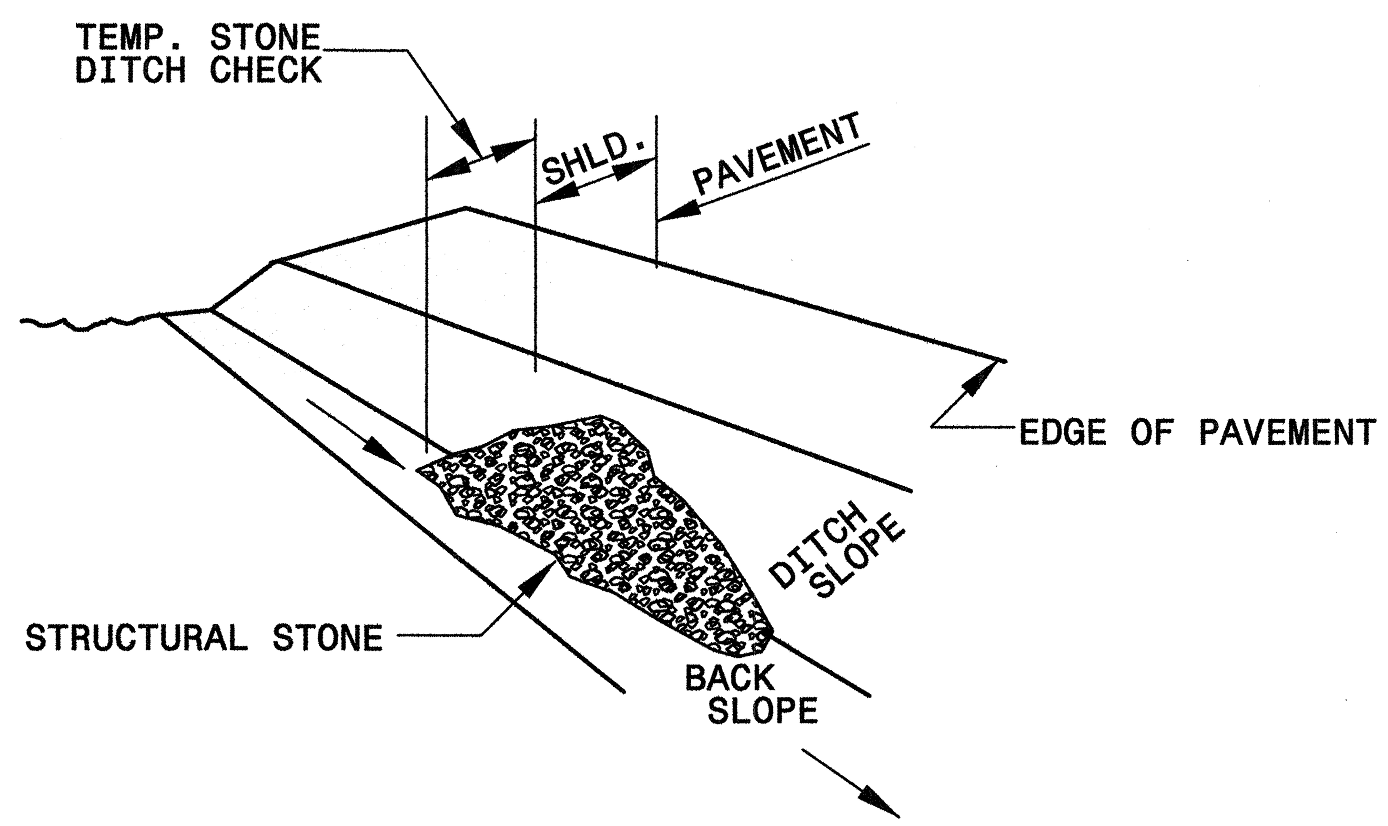
EROSION CONTROL PLAN

TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL

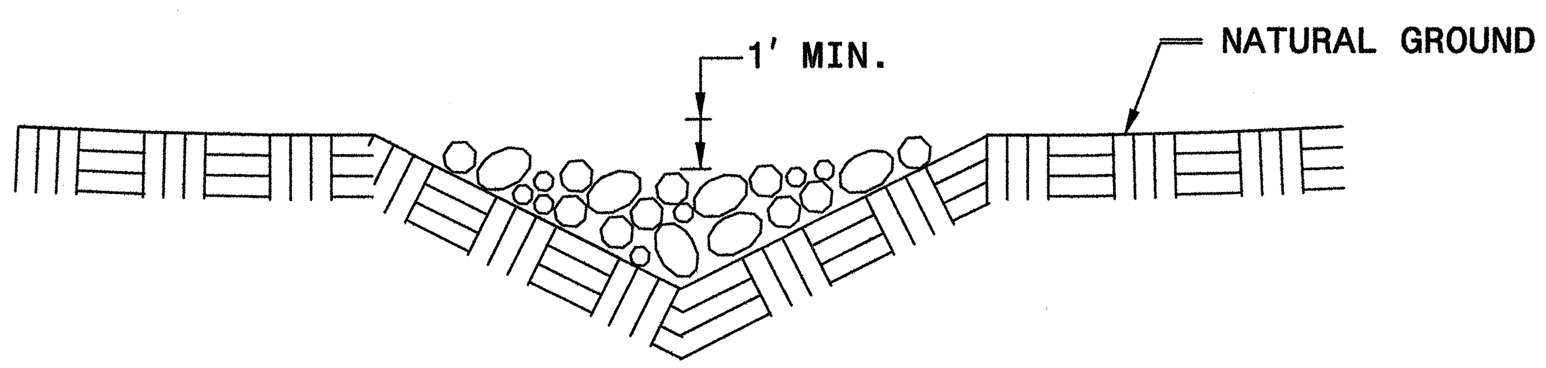


ISOMETRIC VIEW

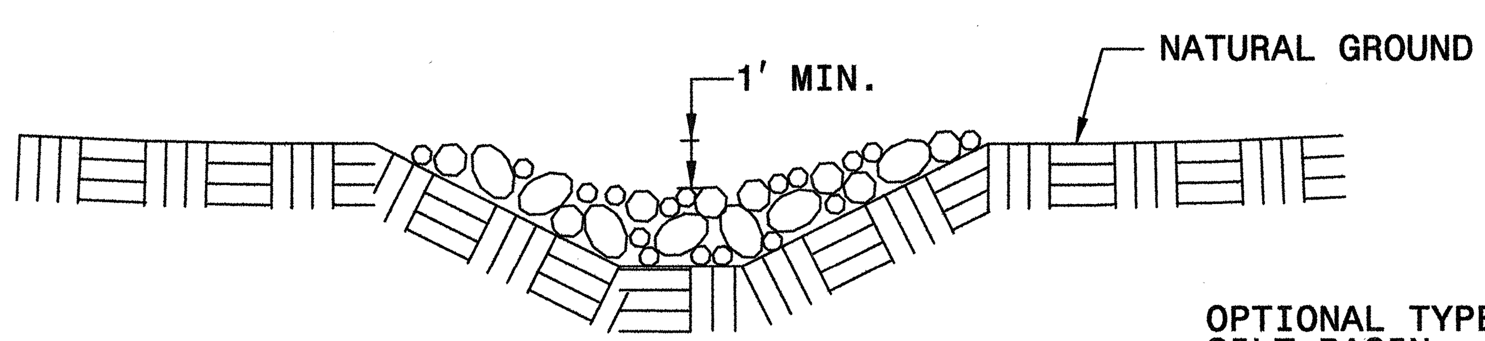
NOTES:

USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.

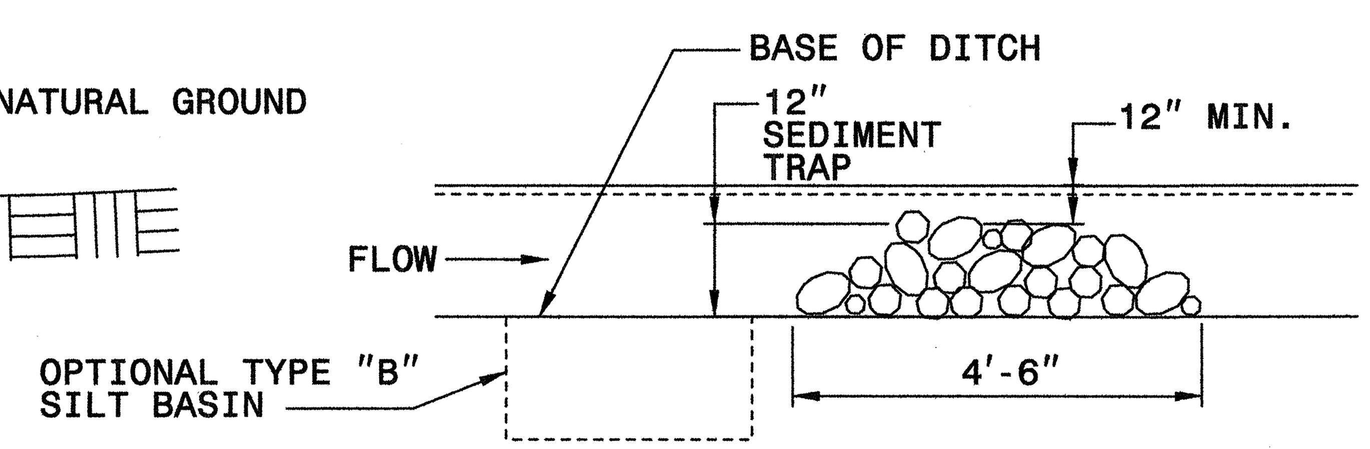
THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



CROSS SECTION
VEE DITCH



CROSS SECTION
TRAPEZOIDAL DITCH



ELEVATION VIEW

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BRIDGE ON SR 1425
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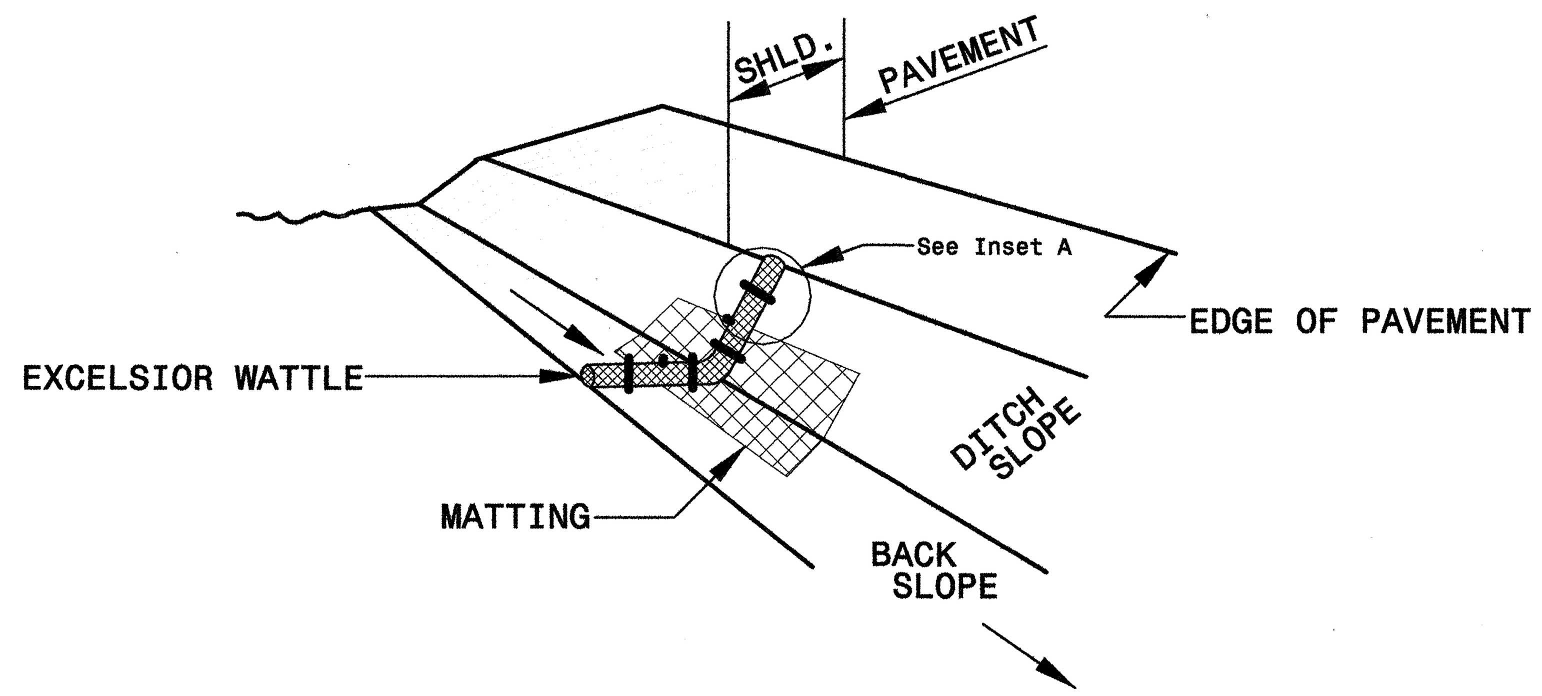
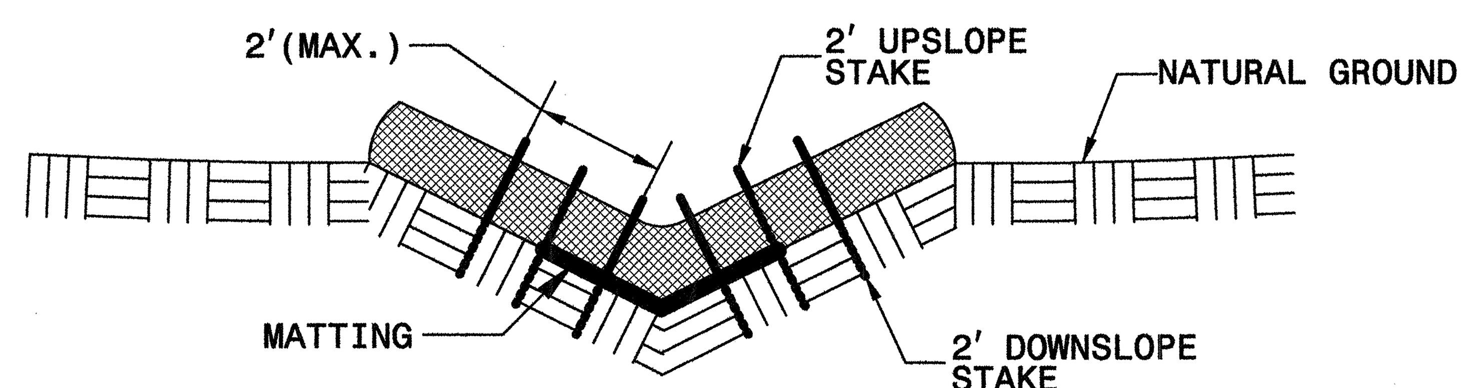
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	29
1			3			TOTAL SHEETS
2			4			32

EROSION CONTROL PLAN

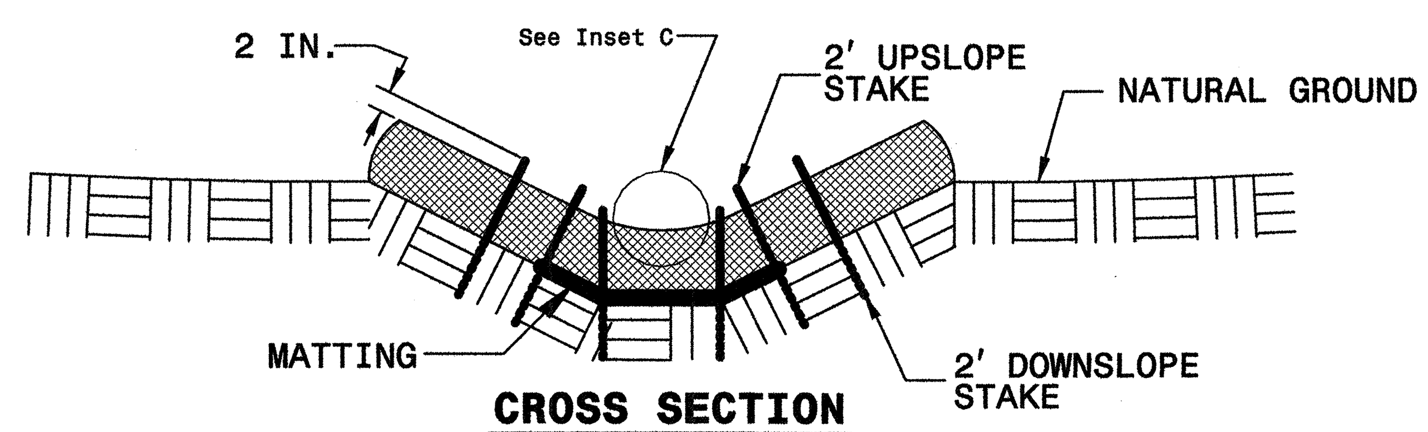
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION
VEE DITCH



CROSS SECTION
TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

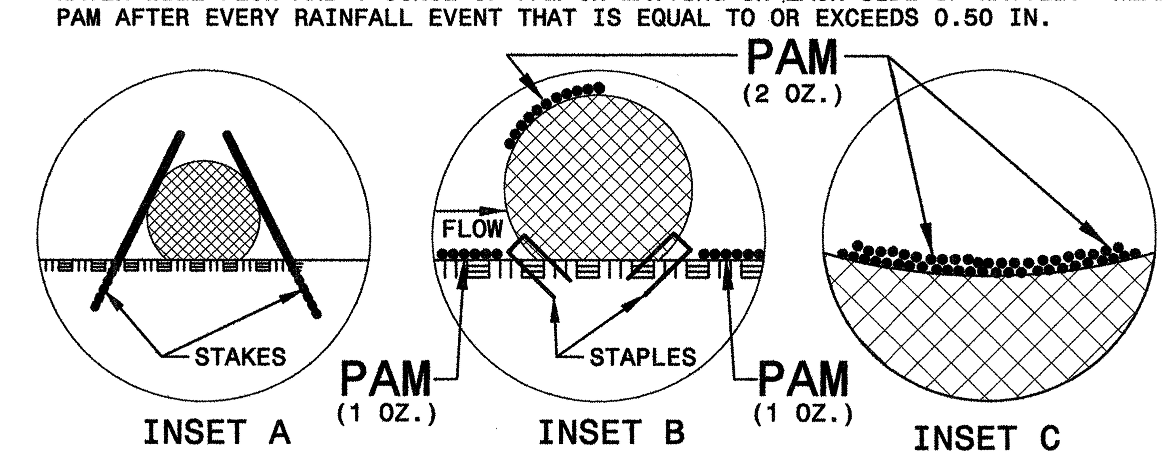
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

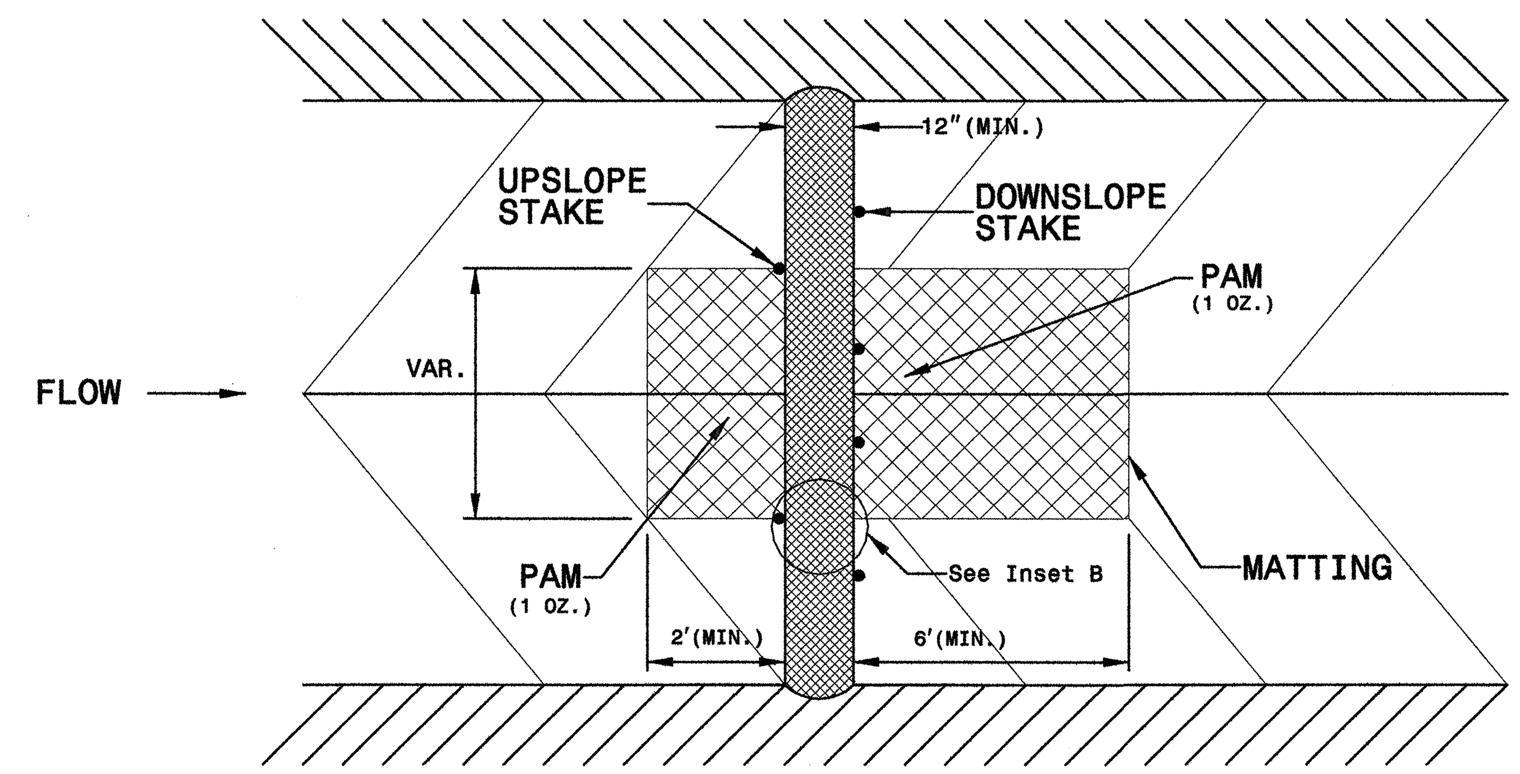
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.





TOP VIEW

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

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2006 STANDARD SPECIFICATIONS

PROJECT NO. 42558

NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120 BK-5107

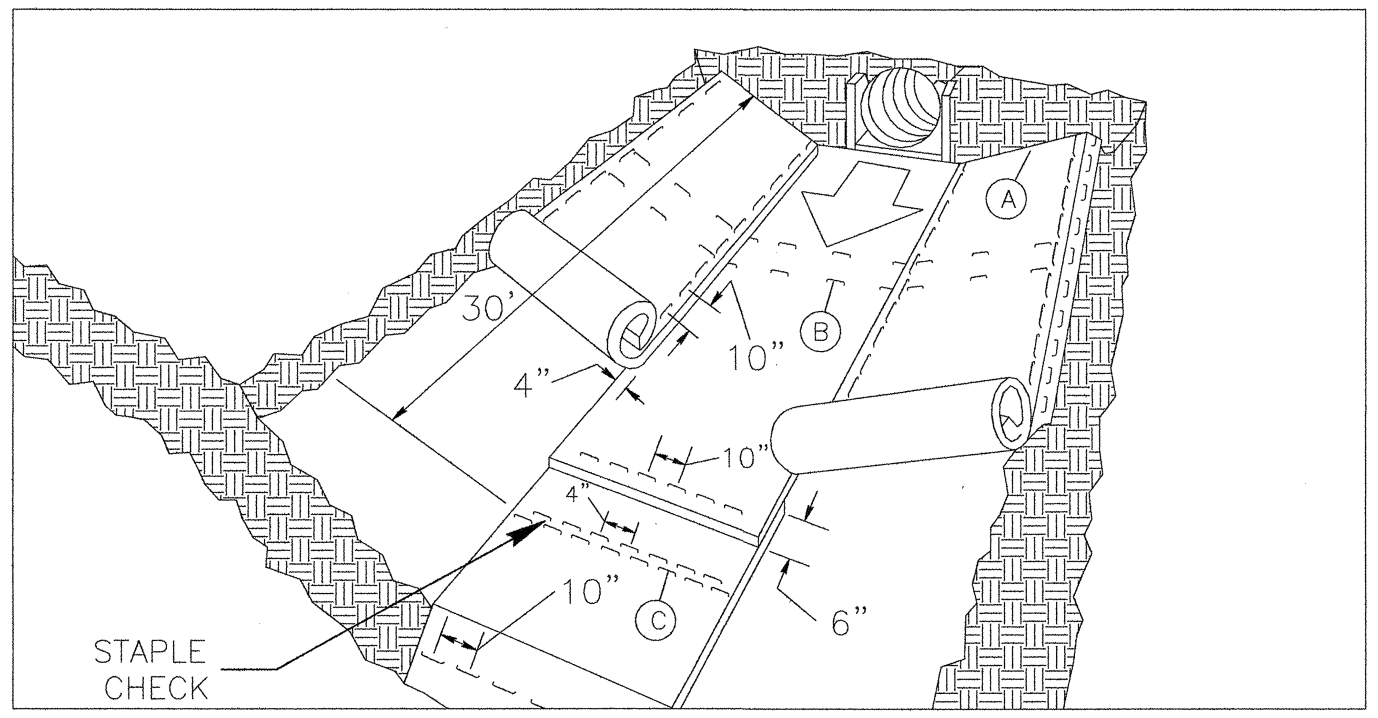
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE ON SR 1425
OVER PIG BASKET CREEK
BETWEEN NC 58 &
SR 1004

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	30
1			3			TOTAL SHEETS
2			4			32

EROSION CONTROL PLAN

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

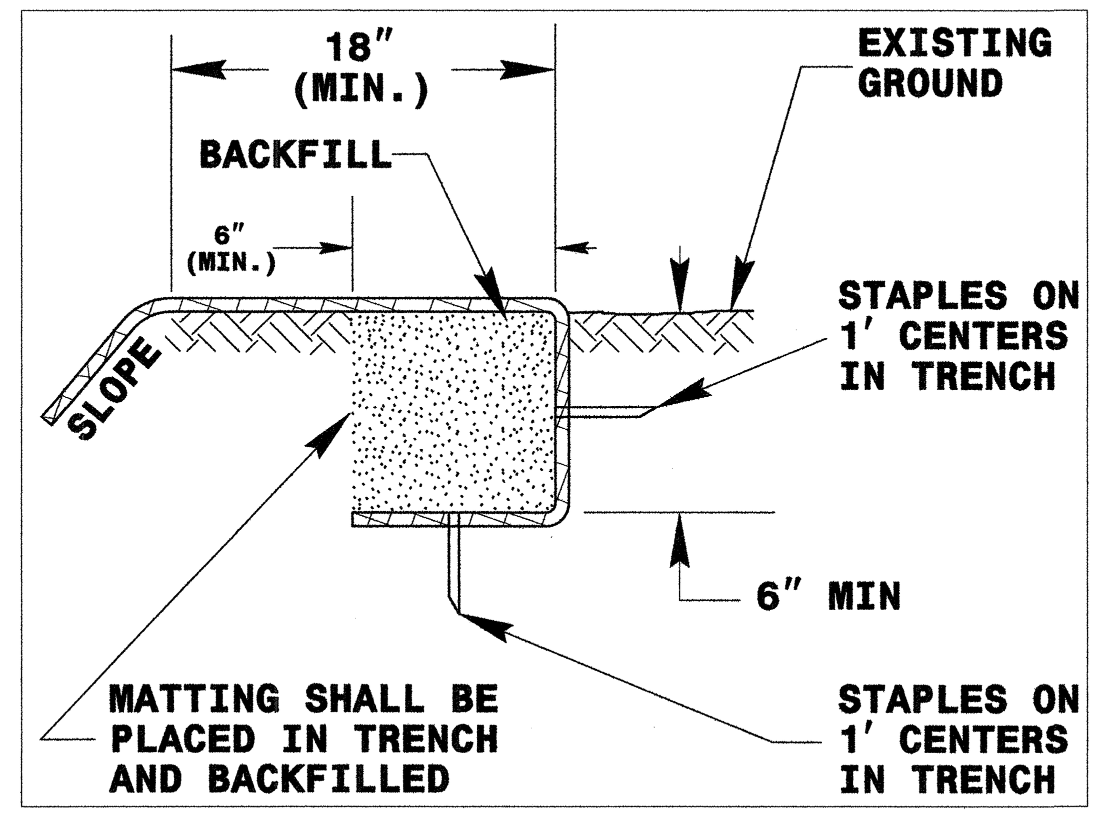
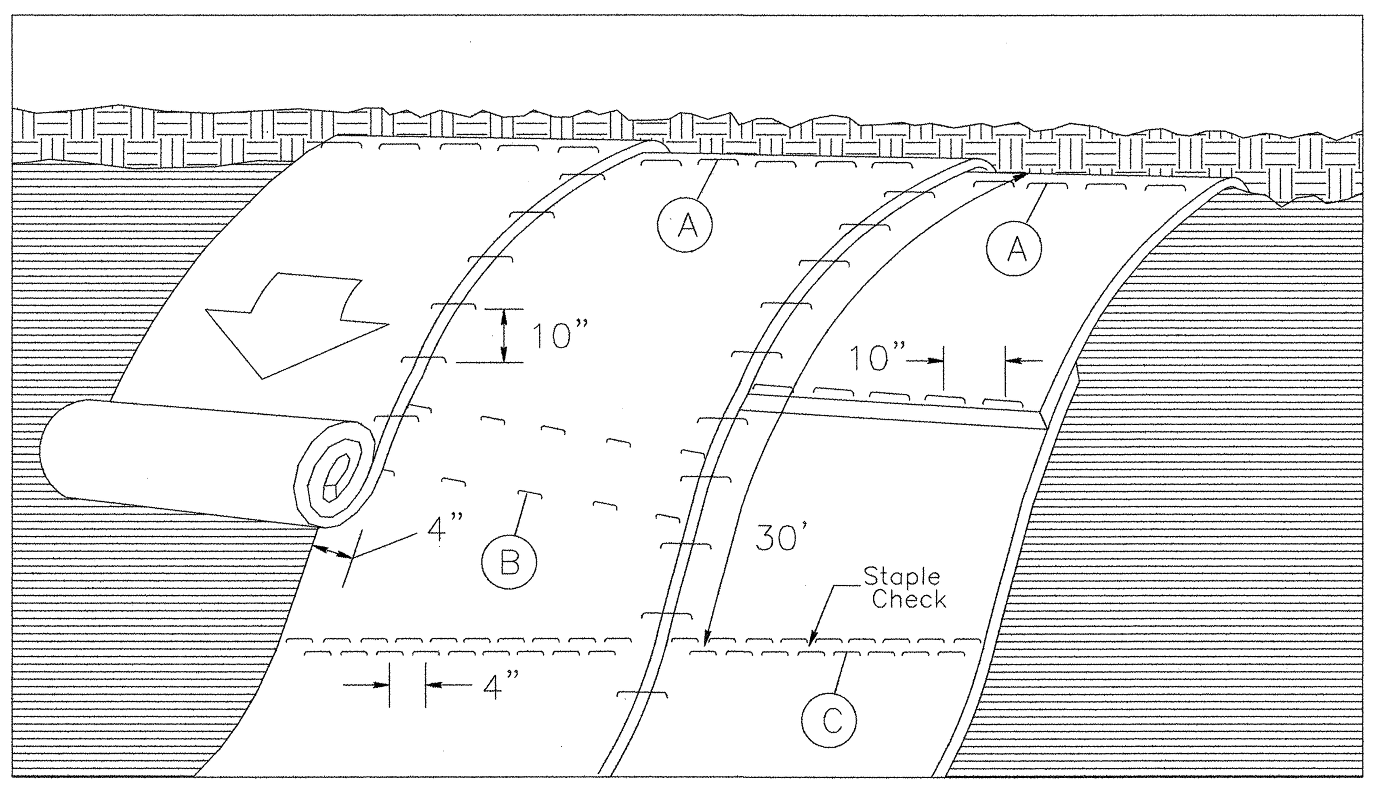


DIAGRAM (A)



MATTING ON SLOPES

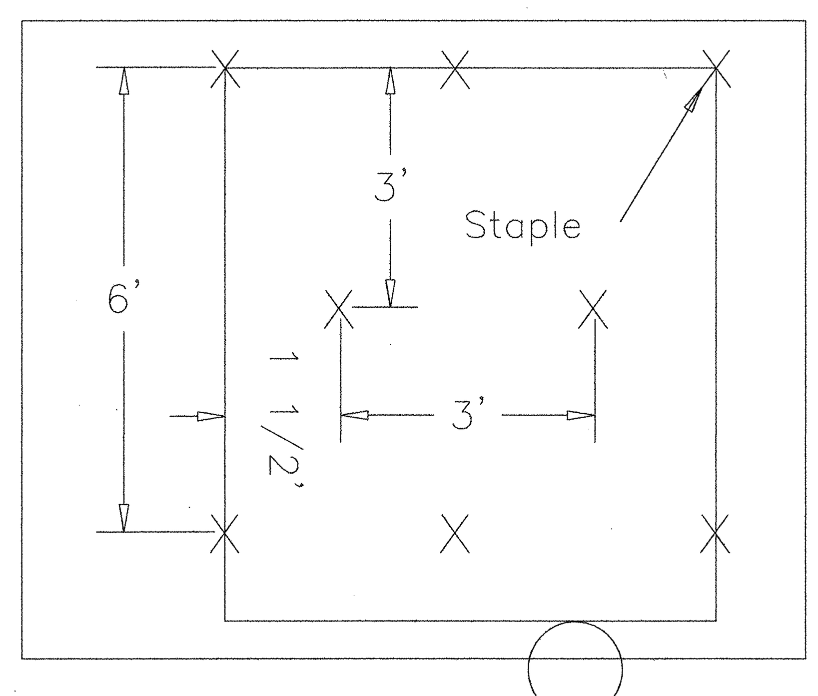


DIAGRAM B

Staple Check Pattern

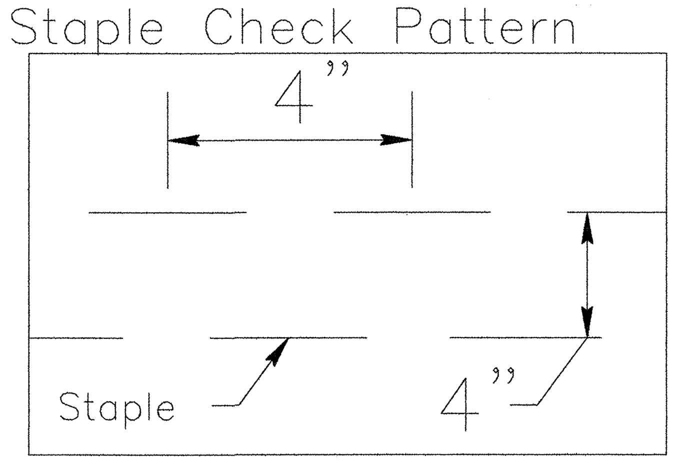


DIAGRAM (C)

NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

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2006 STANDARD SPECIFICATIONS

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NASH COUNTY

STATION: 15+78.95 -LREV-

REPLACES BRIDGE NO. 120 BK-5107

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE ON SR 1425
OVER PIG BASKET CREEK
BETWEEN NC 58 &
SR 1004

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	31
1			3			TOTAL SHEETS
2			4			32

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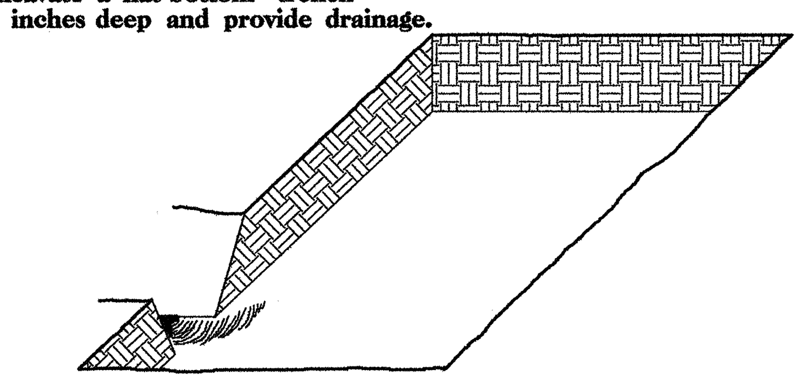
EROSION CONTROL PLAN

PLANTING DETAILS

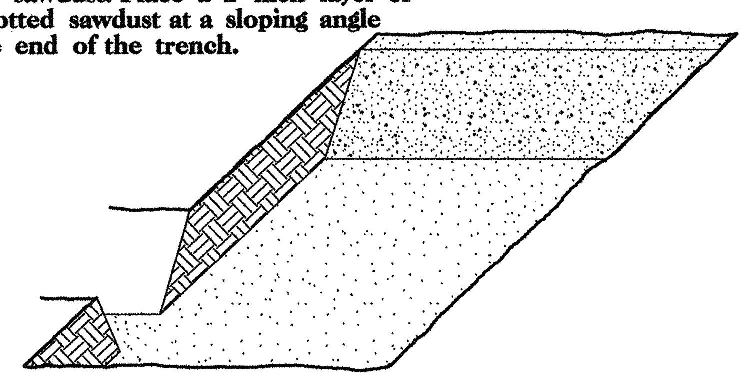
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

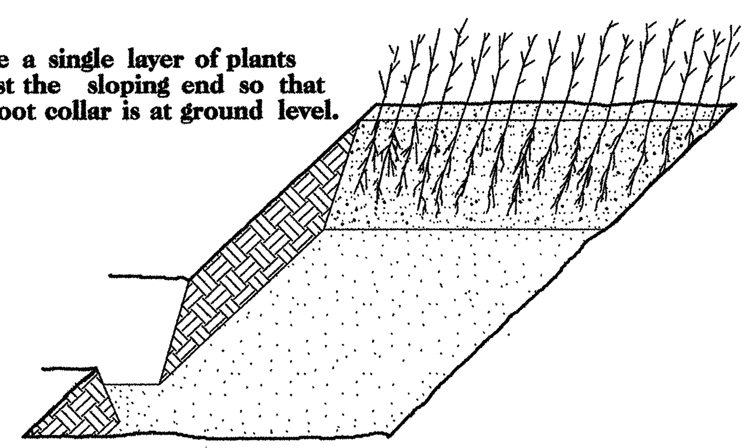
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



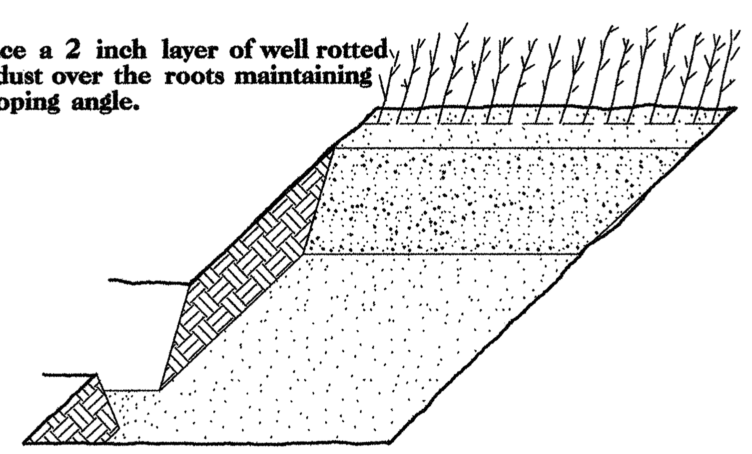
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

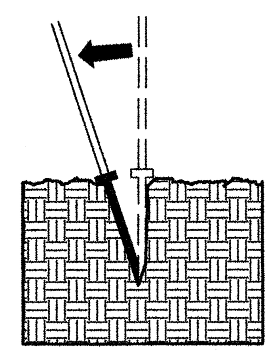


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

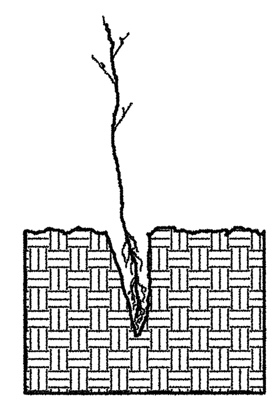


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

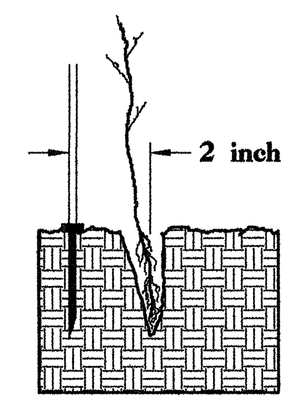
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



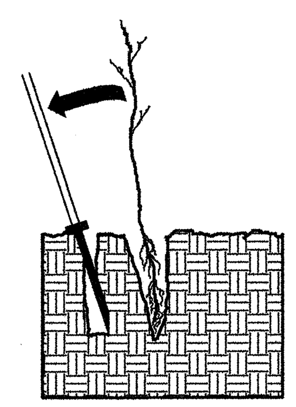
1. Insert planting bar as shown and pull handle toward planter.



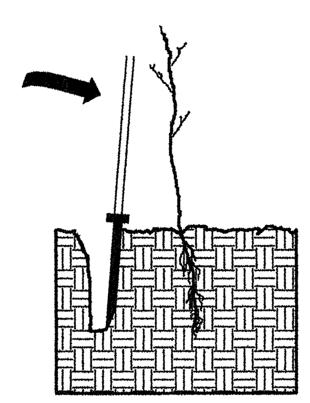
2. Remove planting bar and place seedling at correct depth.



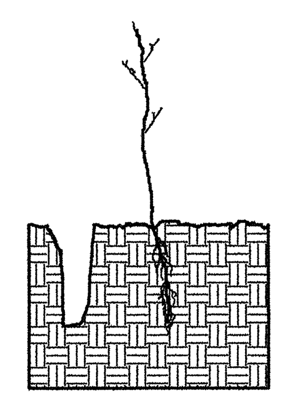
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.

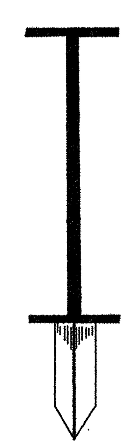


6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

☐ TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

30% PLATANUS OCCIDENTALIS	SYCAMORE	12 in - 18 in BR
40% FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in BR
30% BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

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ROADSIDE ENVIRONMENTAL UNIT
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2006 STANDARD SPECIFICATIONS

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BRIDGE ON SR 1425
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	32
1			3			TOTAL SHEETS
2			4			32