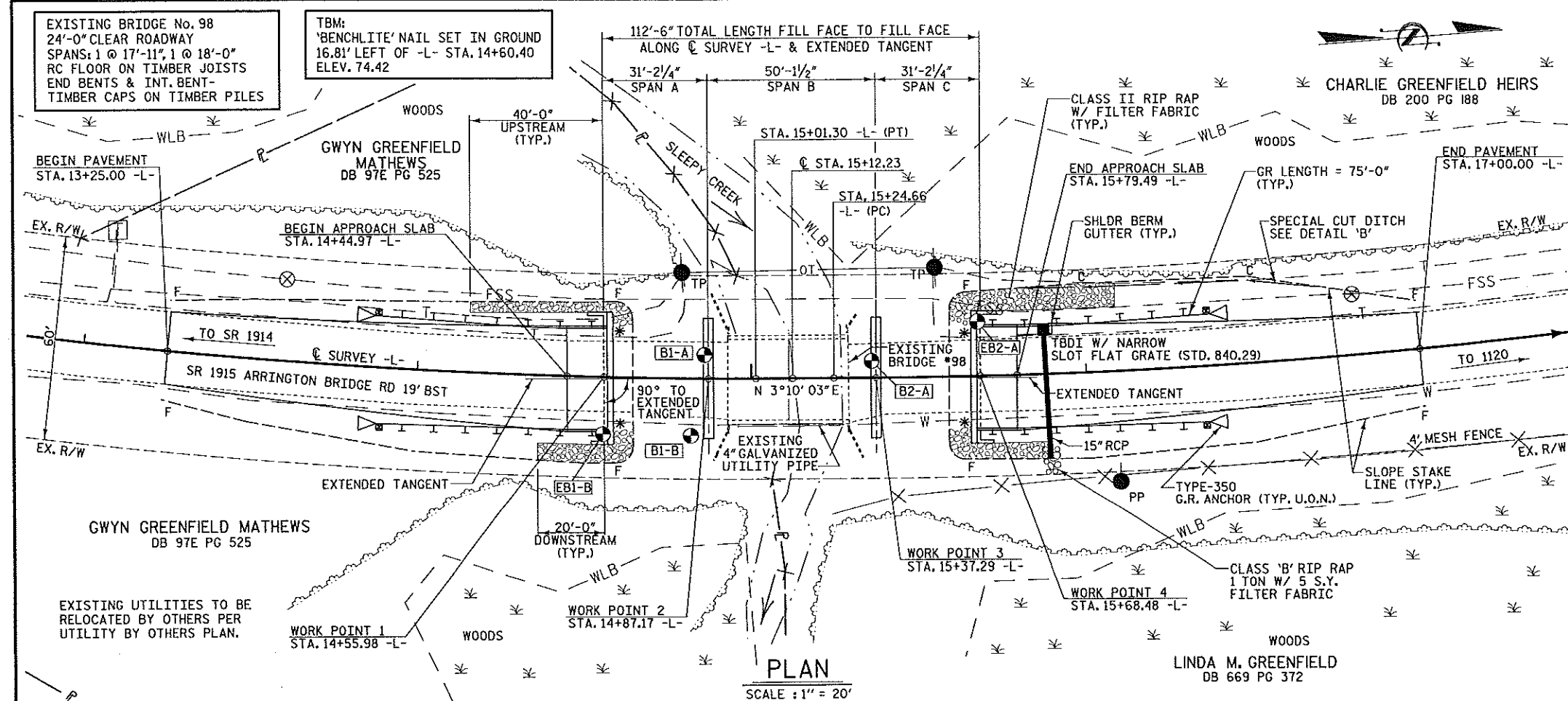


CONTRACT # DO00044 WAYNE #98 B-5104



NOTES

SPAN 'A' & SPAN 'C' 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 DIFFERENCES 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.

DRIVE PILES AT 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 PER PILE.

GALVANIZED STEEL PILES ARE REQUIRED AT END BENTS NO.1 AND 2 IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

DRIVE PILES AT BENTS NO.1 AND 2 TO A REQUIRED BEARING CAPACITY OF 135 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO PLUS ANY ADDITIONAL CAPACITY TO ACCOUNT FOR SCOUR.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT BENT NO.1 IS 50 TONS.

STEEL PILE TIPS ARE REQUIRED FOR 16" PRESTRESSED CONCRETE PILES AT BENTS NO. 1 AND 2. SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

DRIVE PILES AT BENTS NO.1 AND 2 TO A TIP ELEVATION NO HIGHER THAN 36 FEET, THE SCOUR CRITICAL ELEVATION FOR BENTS NO.1 AND 2 IS ELEVATION 59 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

ADT = 1200 FOR YEAR 2005

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

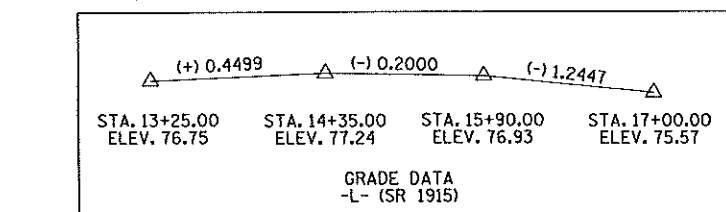
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

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	80 TONS
END BENT No. 2	100 TONS
TOTAL	180 TONS

 DENOTES GEO-TECH BORE HOLE LOCATIONS.

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

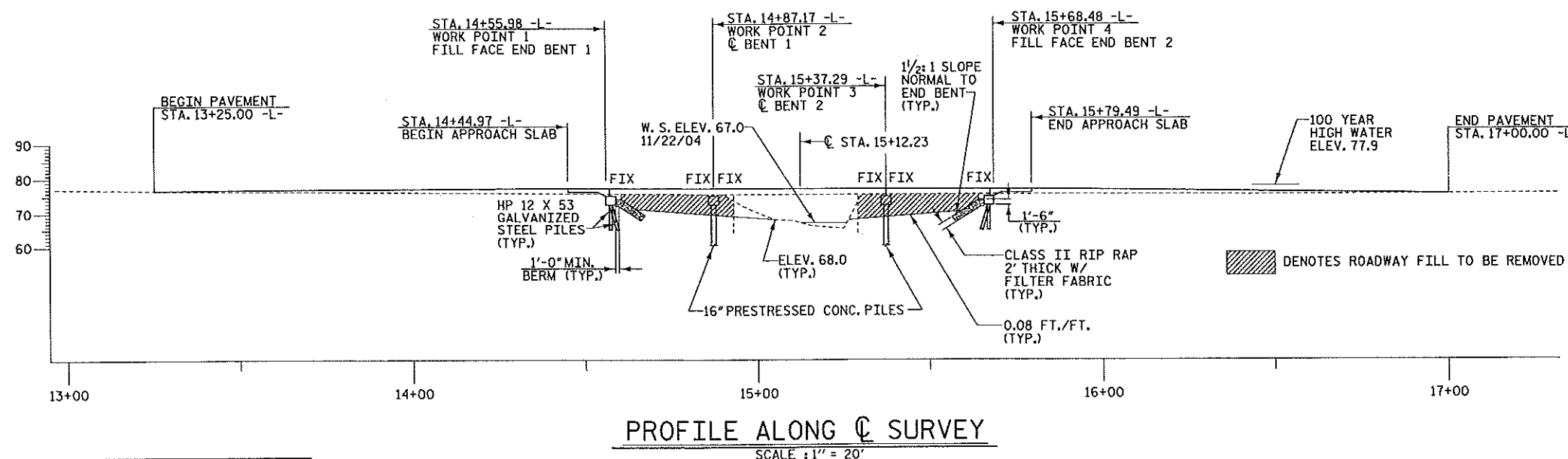
NOTE: GUARDRAIL LENGTHS AS SHOWN INCLUDE ANCHOR UNITS.

U.O.N. - UNLESS OTHERWISE NOTED

FOR PAVEMENT LAYOUT, SEE "ROADWAY DETAILS" SHEET.

HYDROGRAPHIC DATA:

DESIGN DISCHARGE -	2500 CFS
FREQUENCY OF DESIGN FLOOD -	25 YEAR
DESIGN HIGH WATER ELEVATION -	76.5
DRAINAGE AREA -	10.1 SQ. MI.
BASIC DISCHARGE (Q 100) -	3400 CFS
BASIC HIGH WATER ELEVATION -	77.9



PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

REPLACES BRIDGE NO. 98

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BRIDGE ON SR 1915
OVER SLEEPY CREEK
BETWEEN SR 1914 &
SR 1120

30' CLEAR ROADWAY - 90°SKEW

REVISIONS						SHEET NO. 1
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 29
2			4			



PLANS PREPARED BY:



DRAWN BY : W. B. ALLEN DATE : 11/09
CHECKED BY : L. K. AUSTIN DATE : 1/10

3/15/06
2:22:20 C:\p00\p00a\B004.SYMB SHEET.dgn
B12/15 AM

Note: Not to Scale
***S.U.E. = Subsurface Utility Engineering**

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-5104	1-A

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	_____
County Line	_____
Township Line	_____
City Line	_____
Reservation Line	_____
Property Line	_____
Existing Iron Pin	○ EP
Property Corner	_____
Property Monument	□ ECM
Parcel/Sequence Number	(23)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	-o-o-o-
Proposed Chain Link Fence	-□-□-□-
Proposed Barbed Wire Fence	-◇-◇-◇-
Existing Wetland Boundary	-W.B.-
Proposed Wetland Boundary	-W.B.-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or UG Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□ +
Building	□
School	□ +
Church	□ +
Dam	□ +

HYDROLOGY:

Stream or Body of Water	_____
Hydro, Pool or Reservoir	□
Jurisdictional Stream	-JS-
Buffer Zone 1	-BZ 1-
Buffer Zone 2	-BZ 2-
Flow Arrow	→
Disappearing Stream	→
Spring	○ S
Wetland	✕
Proposed Lateral, Tail, Head Ditch	→
False Sump	□

RAILROADS:

Standard Gauge	_____
RR Signal Milepost	○ WILEPOST 35
Switch	□ SWITCH
RR Abandoned	_____
RR Dismantled	_____

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	_____
Proposed Right of Way Line	_____
Proposed Right of Way Line with Iron Pin and Cap Marker	_____
Proposed Right of Way Line with Concrete or Granite Marker	_____
Existing Control of Access	_____
Proposed Control of Access	_____
Existing Easement Line	-E-
Proposed Temporary Construction Easement	-E-
Proposed Temporary Drainage Easement	-TDE-
Proposed Permanent Drainage Easement	-PDE-
Proposed Permanent Utility Easement	-PUE-

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____
Existing Curb	_____
Proposed Slope Stakes Cut	-C-
Proposed Slope Stakes Fill	-F-
Proposed Wheel Chair Ramp	WCR
Existing Metal Guardrail	_____
Proposed Guardrail	_____
Existing Cable Guiderail	_____
Proposed Cable Guiderail	_____
Equality Symbol	⊕
Pavement Removal	XXXX

VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	_____
Woods Line	_____
Orchard	○
Vineyard	□ Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	_____
Bridge Wing Wall, Head Wall and End Wall	_____
MINOR:	
Head and End Wall	_____
Pipe Culvert	_____
Footbridge	_____
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	_____
Storm Sewer Manhole	○ S
Storm Sewer	_____

UTILITIES:

POWER:	
Existing Power Pole	○
Proposed Power Pole	○
Existing Joint Use Pole	○
Proposed Joint Use Pole	○
Power Manhole	○ P
Power Line Tower	□
Power Transformer	□
UG Power Cable Hand Hole	□
H-Frame Pole	○
Recorded UG Power Line	_____
Designated UG Power Line (S.U.E.*)	_____

TELEPHONE:

Existing Telephone Pole	○
Proposed Telephone Pole	○
Telephone Manhole	○ T
Telephone Booth	□
Telephone Pedestal	□
Telephone Cell Tower	□
UG Telephone Cable Hand Hole	□
Recorded UG Telephone Cable	_____
Designated UG Telephone Cable (S.U.E.*)	_____
Recorded UG Telephone Conduit	_____
Designated UG Telephone Conduit (S.U.E.*)	_____
Recorded UG Fiber Optics Cable	_____
Designated UG Fiber Optics Cable (S.U.E.*)	_____

WATER:

Water Manhole	○ W
Water Meter	○
Water Valve	○
Water Hydrant	○
Recorded UG Water Line	_____
Designated UG Water Line (S.U.E.*)	_____
Above Ground Water Line	_____

TV:

TV Satellite Dish	○
TV Pedestal	□
TV Tower	○
UG TV Cable Hand Hole	□
Recorded UG TV Cable	_____
Designated UG TV Cable (S.U.E.*)	_____
Recorded UG Fiber Optic Cable	_____
Designated UG Fiber Optic Cable (S.U.E.*)	_____

GAS:

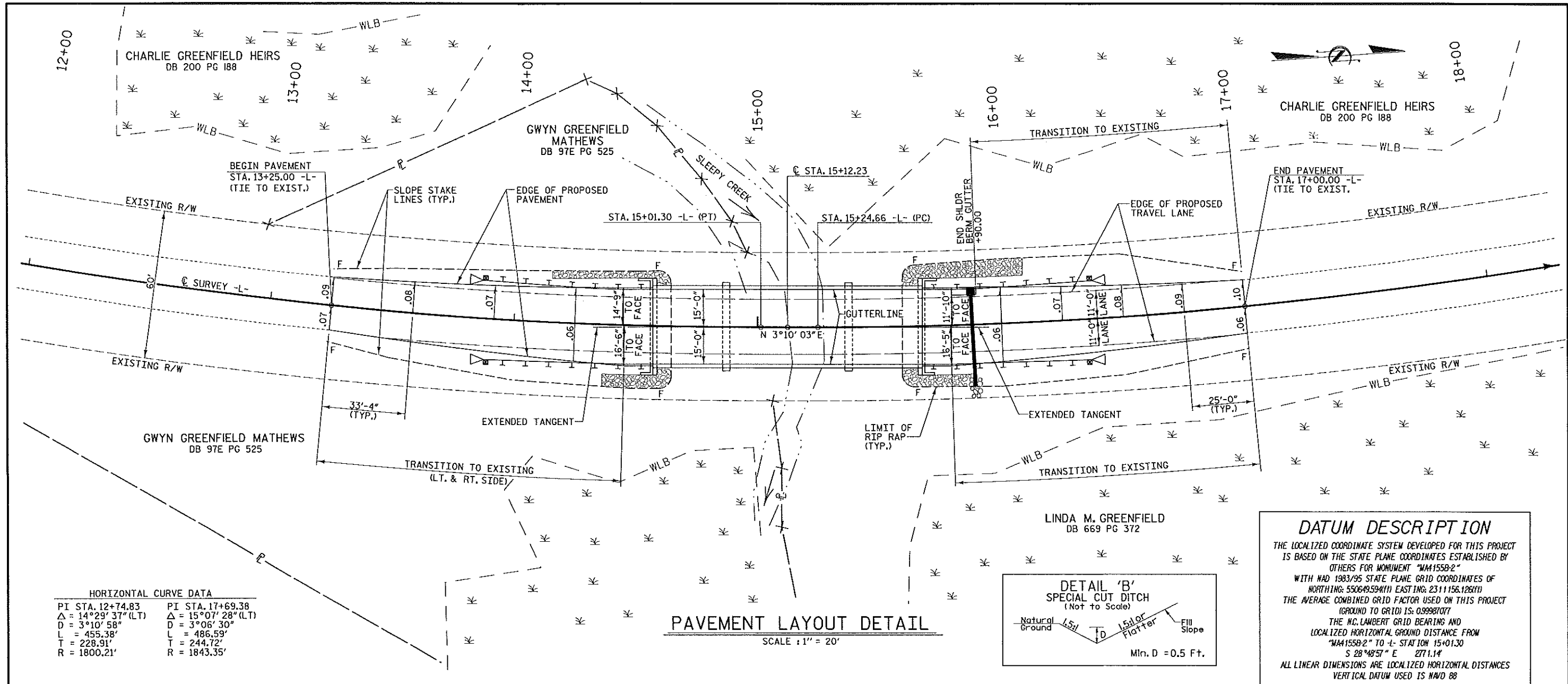
Gas Valve	○
Gas Meter	○
Recorded UG Gas Line	_____
Designated UG Gas Line (S.U.E.*)	_____
Above Ground Gas Line	_____

SANITARY SEWER:

Sanitary Sewer Manhole	○ SS
Sanitary Sewer Cleanout	○
UG Sanitary Sewer Line	_____
Above Ground Sanitary Sewer	_____
Recorded SS Forced Main Line	_____
Designated SS Forced Main Line (S.U.E.*)	_____

MISCELLANEOUS:

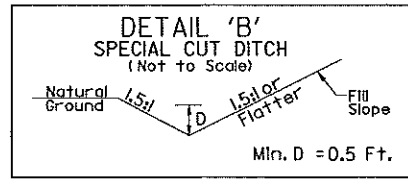
Utility Pole	○
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown UG Line	_____
UG Tank; Water, Gas, Oil	□
AG Tank; Water, Gas, Oil	□
UG Test Hole (S.U.E.*)	○
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.



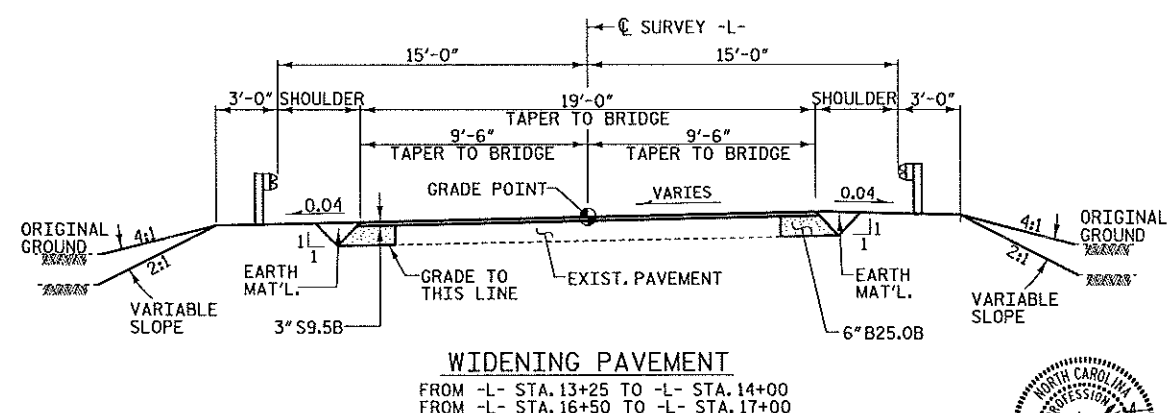
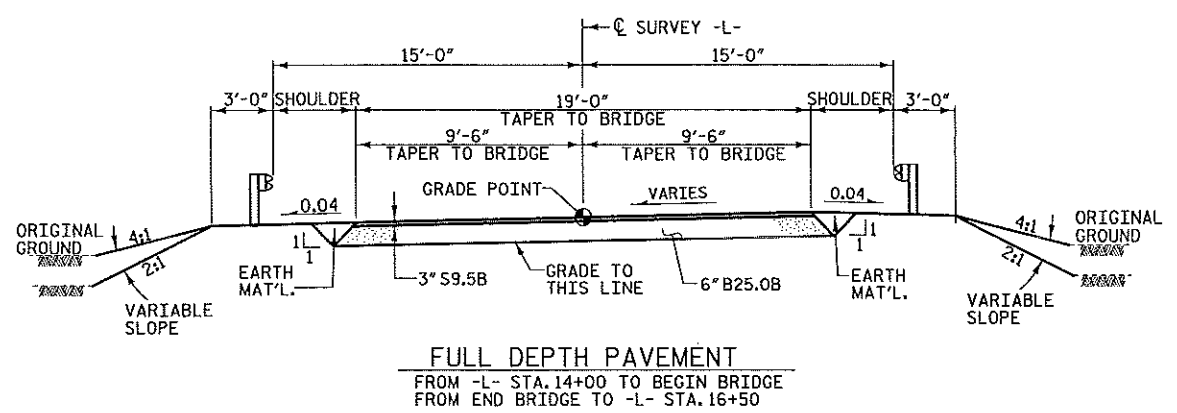
HORIZONTAL CURVE DATA

PI STA. 12+74.83	PI STA. 17+69.38
$\Delta = 14^\circ 29' 37''$ (LT)	$\Delta = 15^\circ 07' 28''$ (LT)
$D = 3^\circ 10' 58''$	$D = 3^\circ 06' 30''$
$L = 455.38'$	$L = 486.59'$
$T = 228.91'$	$T = 244.72'$
$R = 1800.21'$	$R = 1843.35'$

PAVEMENT LAYOUT DETAIL
SCALE: 1" = 20'



DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "M1155B-2" WITH HAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 550649.594(11) EASTING: 2311156.126(11) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99987077 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "M1155B-2" TO L- STATION 15+01.30 S 28°48'57" E 2771.14' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88



TYPICAL ROADWAY SECTION
WITHIN CONSTRUCTION LIMITS

PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

REPLACES BRIDGE NO. 98

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ROADWAY DETAILS

30' CLEAR ROADWAY - 90° SKEW

REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

TOTAL SHEETS: 29

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DRAWN BY: W.B. ALLEN DATE: 11/09
CHECKED BY: L.K. AUSTIN DATE: 1/10

MULKEY
ENGINEERS & CONSULTANTS
10000 N. 100th St., Suite 100
Charlotte, NC 28217
(704) 581-1111
WWW.MULKEYENGINEERS.COM

PLANS PREPARED BY:
KEVIN AUSTIN
1966

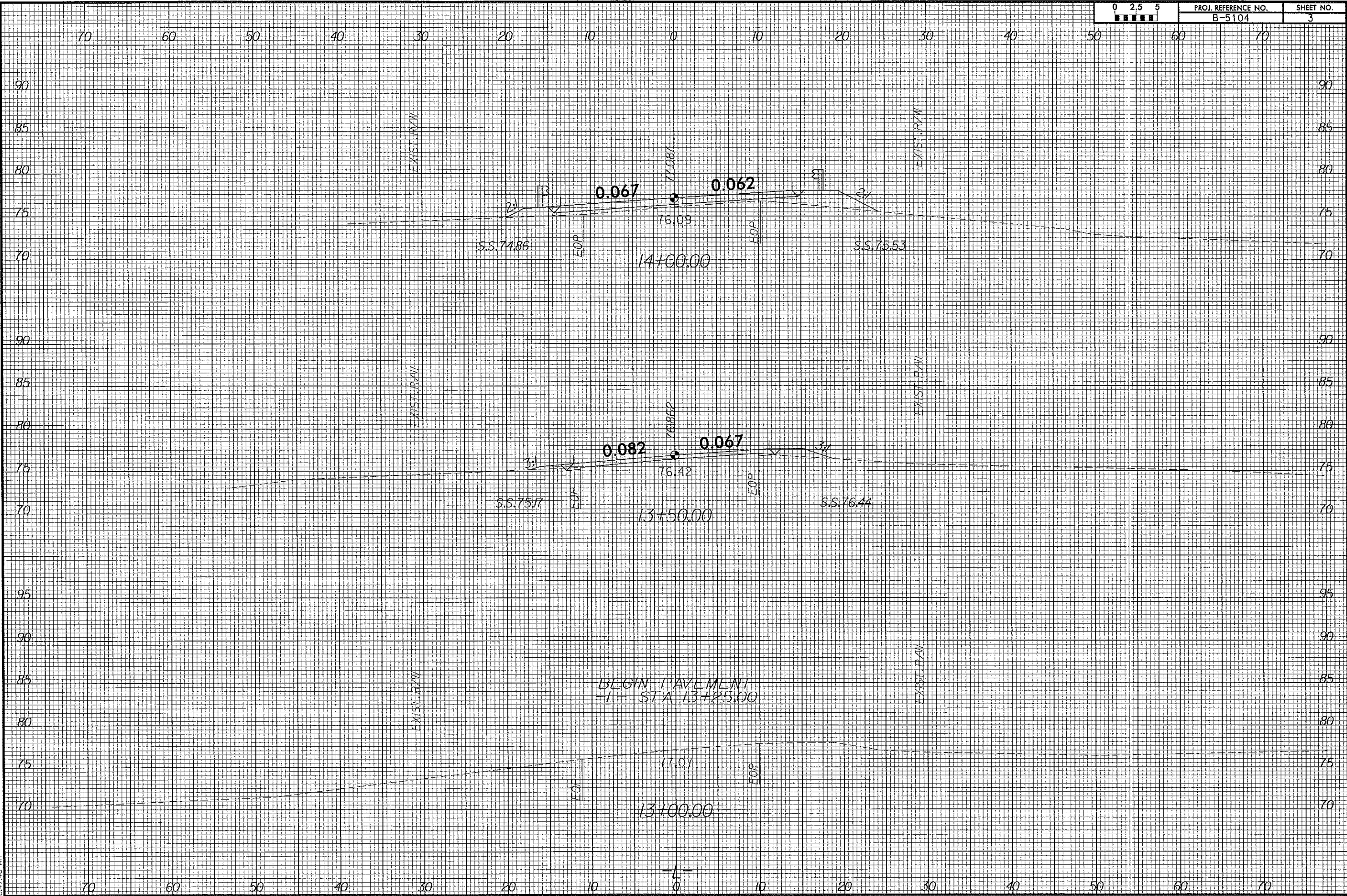
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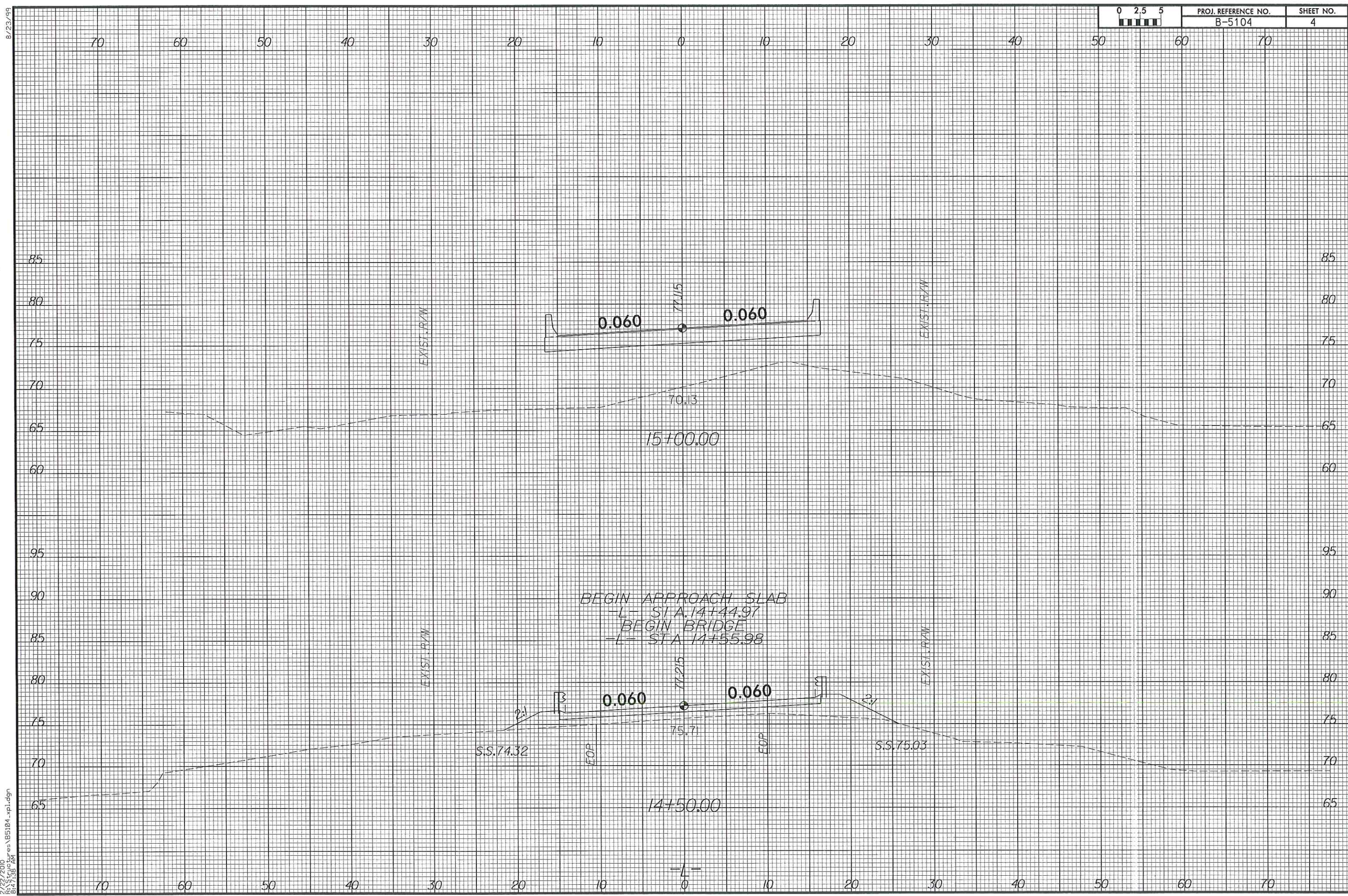


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B-5104

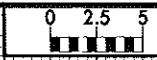
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3



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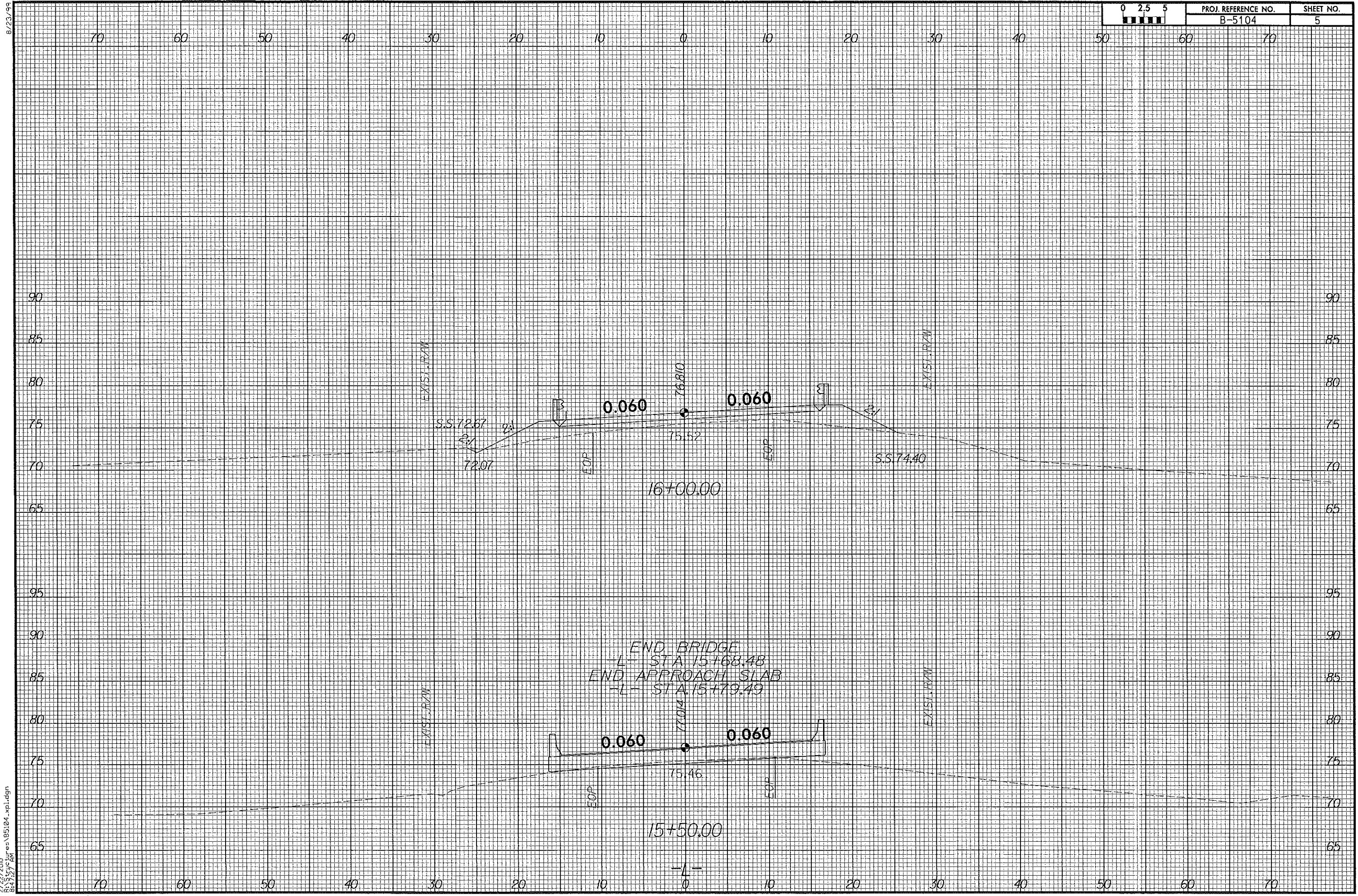


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PROJ. REFERENCE NO.
B-5104

SHEET NO.
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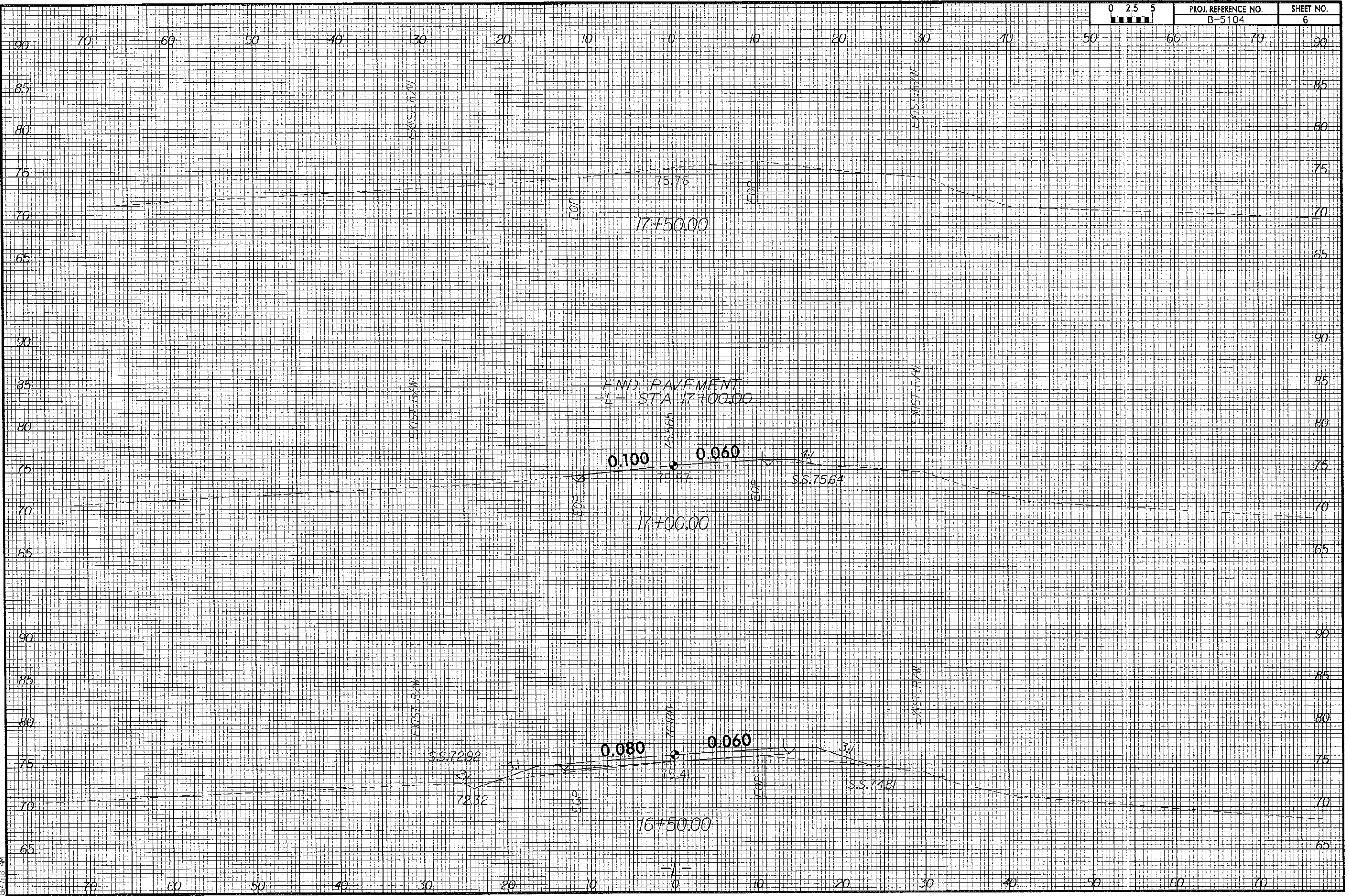
END BRIDGE
L- STA 15+68.48
END APPROACH SLAB
-L- STA 15+79.49

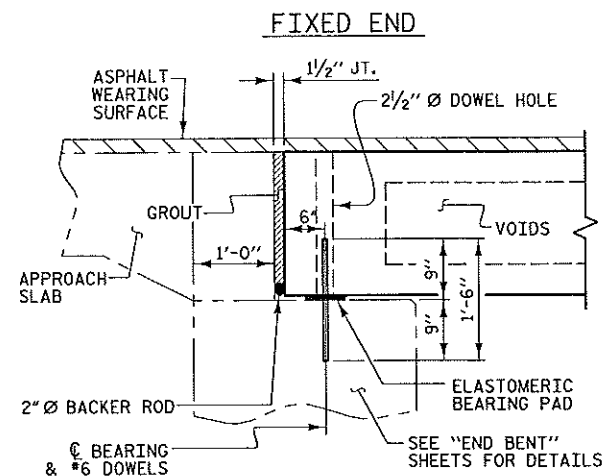
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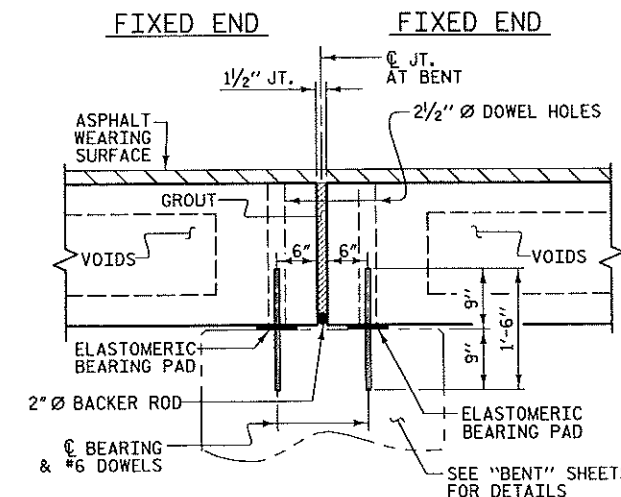
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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-5104	6

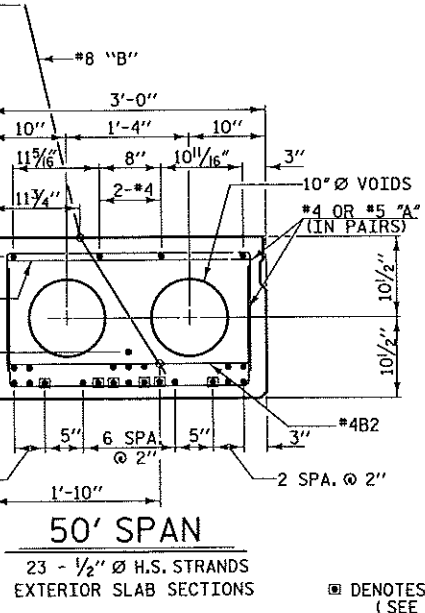
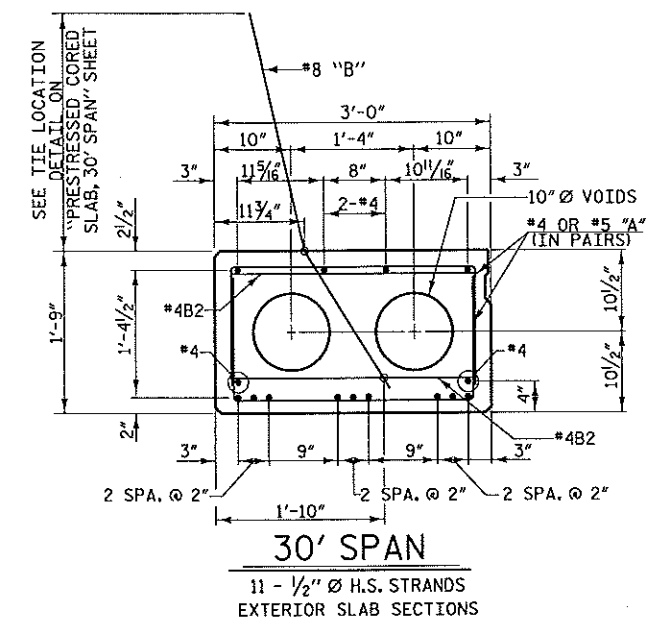




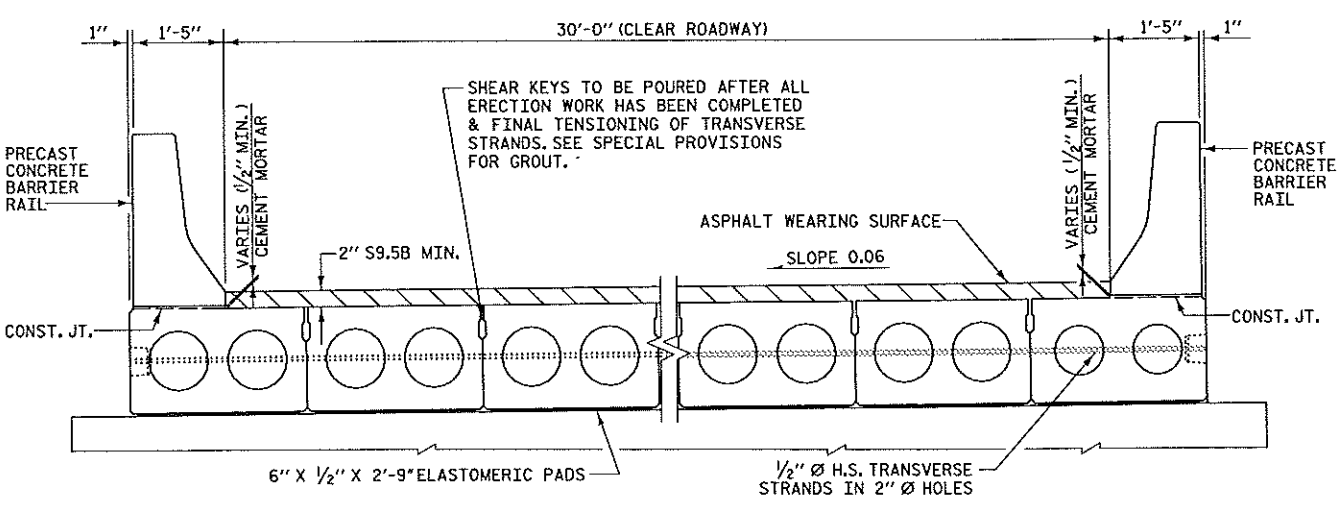
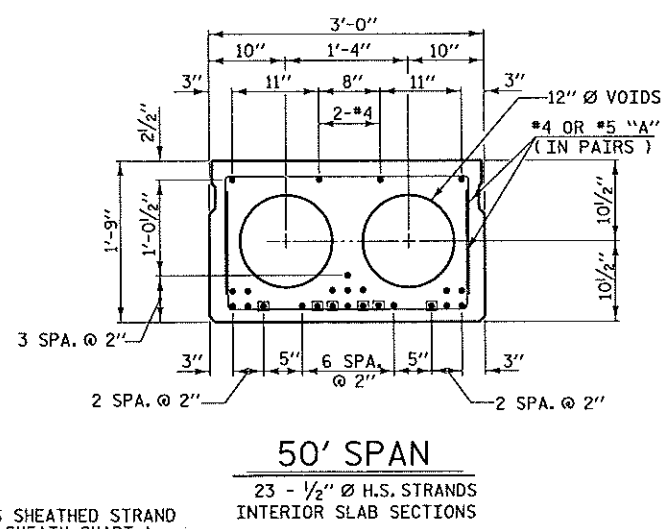
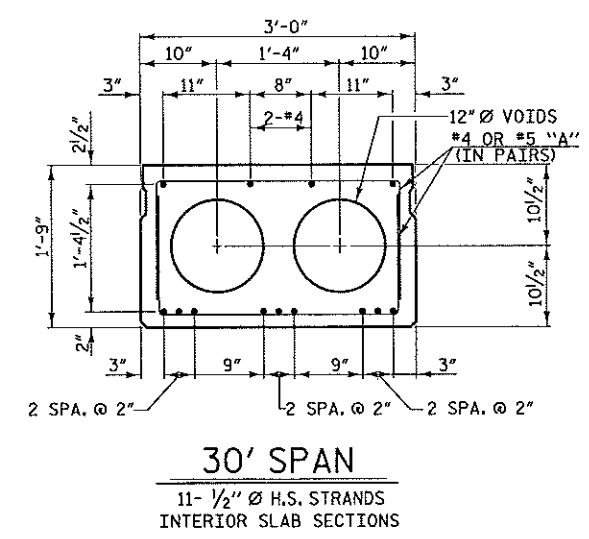
SECTION AT END BENT



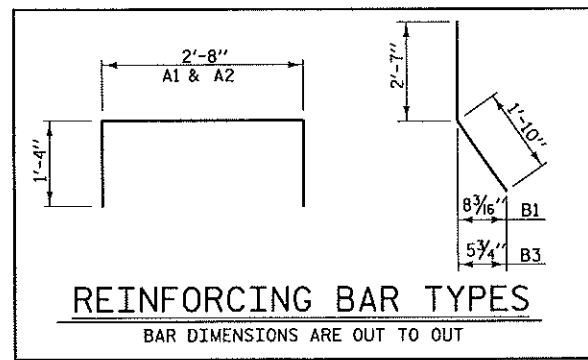
SECTION AT BENT



□ DENOTES SHEATHED STRAND (SEE SHEATH CHART)



TYPICAL SECTION



SHEATH CHART		
SPAN LENGTH	NUMBER OF SHEATHED STRANDS PER EXTERIOR SLAB SECTIONS	NUMBER OF SHEATHED STRANDS PER INTERIOR SLAB SECTIONS
30'	0	0
50'	6	6

BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 5'-0" FROM END OF SLAB

GENERAL NOTES

ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING, EXCEPT THAT CORED SLAB UNITS IN SPANS A AND C HAVE BEEN DESIGNED FOR HS 25. CORED SLAB UNITS IN SPAN B HAVE BEEN DESIGNED FOR HS 20.

CONCRETE = f'c - 5000psi 30' SPAN ONLY. (MIN. COMP. STRENGTH @ 28 DAYS).
f'cl - 4000psi 30' SPAN ONLY (MIN. COMP. STRENGTH @ TRANSFER OF STRESSING FORCE).

CONCRETE = f'c - 7000psi 50' SPAN ONLY. (MIN. COMP. STRENGTH @ 28 DAYS).
f'cl - 5000psi 50' SPAN ONLY (MIN. COMP. STRENGTH @ TRANSFER OF STRESSING FORCE).

SIZE	TYPE	AREA	ULTIMATE STR.	APPLIED FORCE
1/2" Ø	HIGH STR.	0.153 SQ. IN. PER CABLE	41,300 LBS.	30,980 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 REQUIREMENTS 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.

#8 "B" BARS SHALL BE EPOXY COATED.
PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

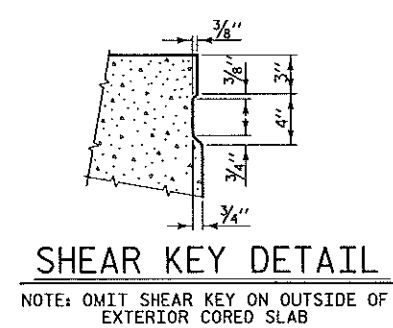
APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4".

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR DEFLECTION TABLE, SEE "PRECAST CONCRETE BARRIER RAIL SECTIONS 30' & 50' SPANS" SHEET.

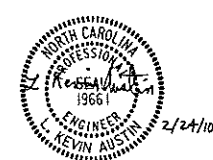


PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

REPLACES BRIDGE NO. 98

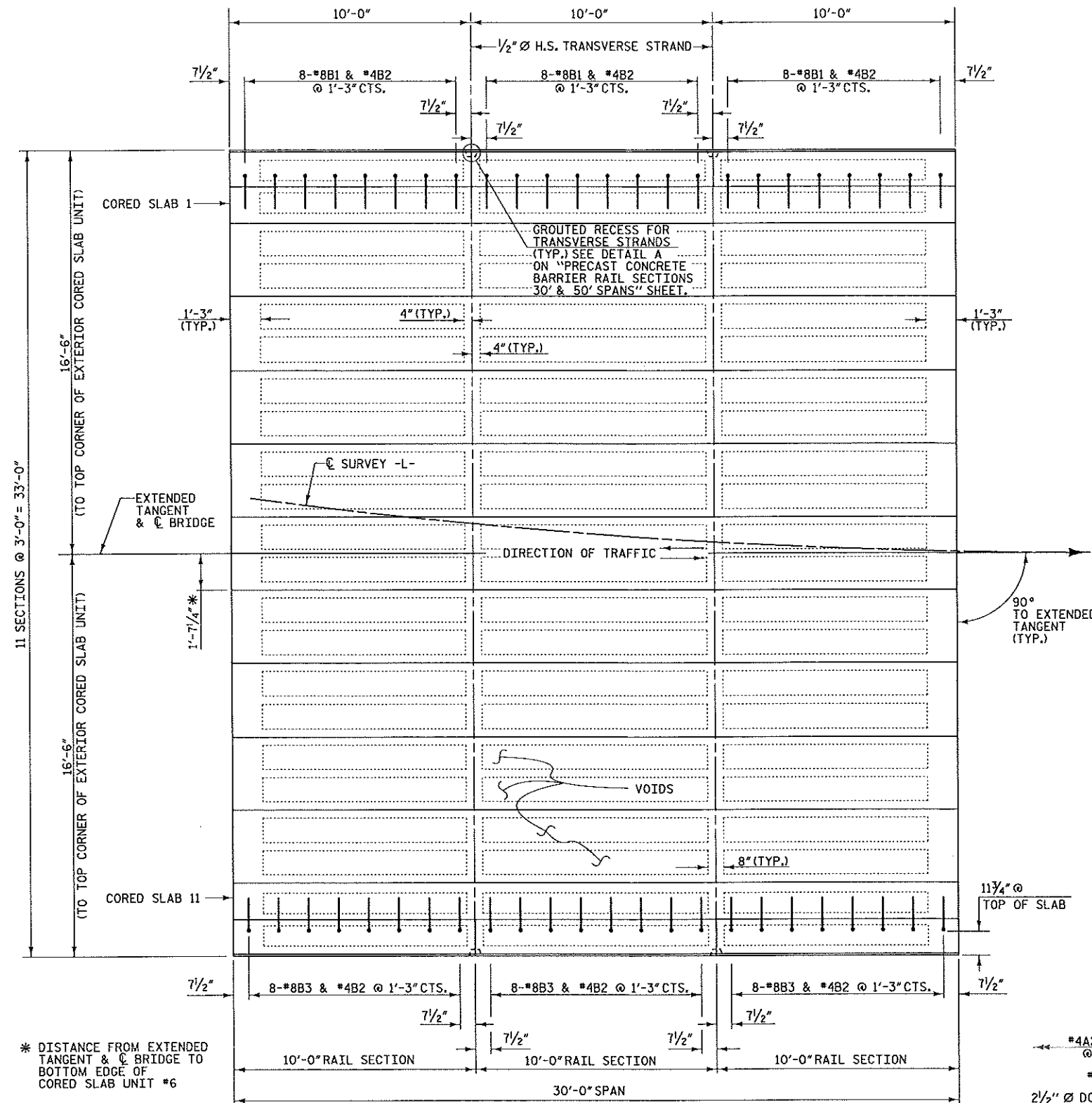
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
PRESTRESSED CORED SLAB
30' & 50' SPANS
30' CLEAR ROADWAY - 90° SKEW

REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					7
					TOTAL SHEETS 29

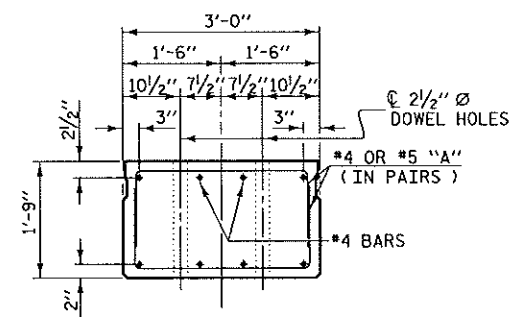


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CHECKED BY: L. K. AUSTIN DATE: 1/10

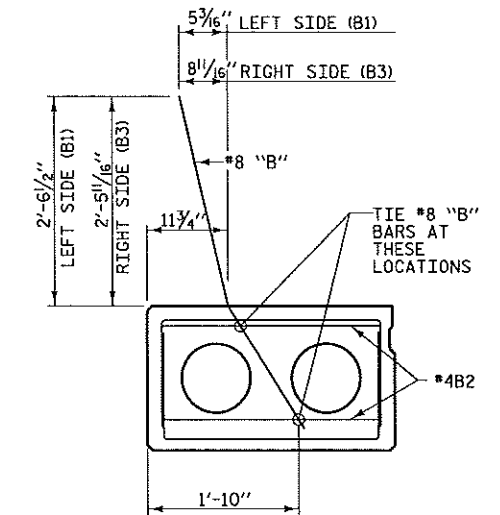


PLAN OF SPAN
(SPAN 'A' SHOWN, SPAN 'C' SIMILAR)

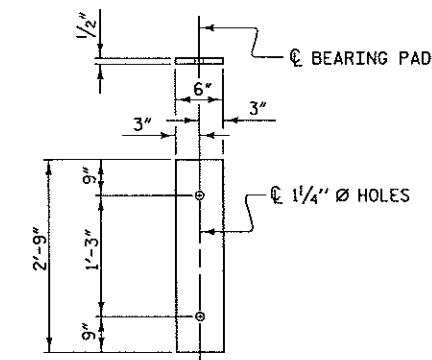


SLAB END ELEVATION

THE 2 1/2" DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT, SEE SPECIAL PROVISIONS.

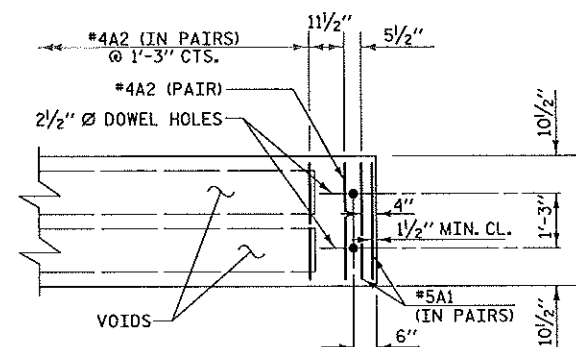


TIE LOCATION FOR #8 "B"



FIXED
(TYPE I - 66 REQ'D)
ELASTOMERIC BEARING DETAILS

NOTE: ELASTOMER HARDNESS SHALL BE 50 DUROMETERS.



PART PLAN - SLAB SECTION

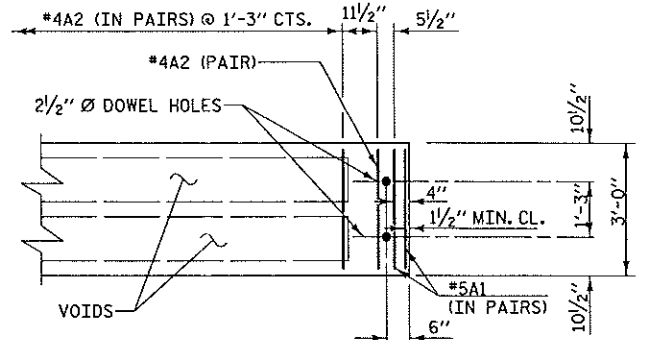
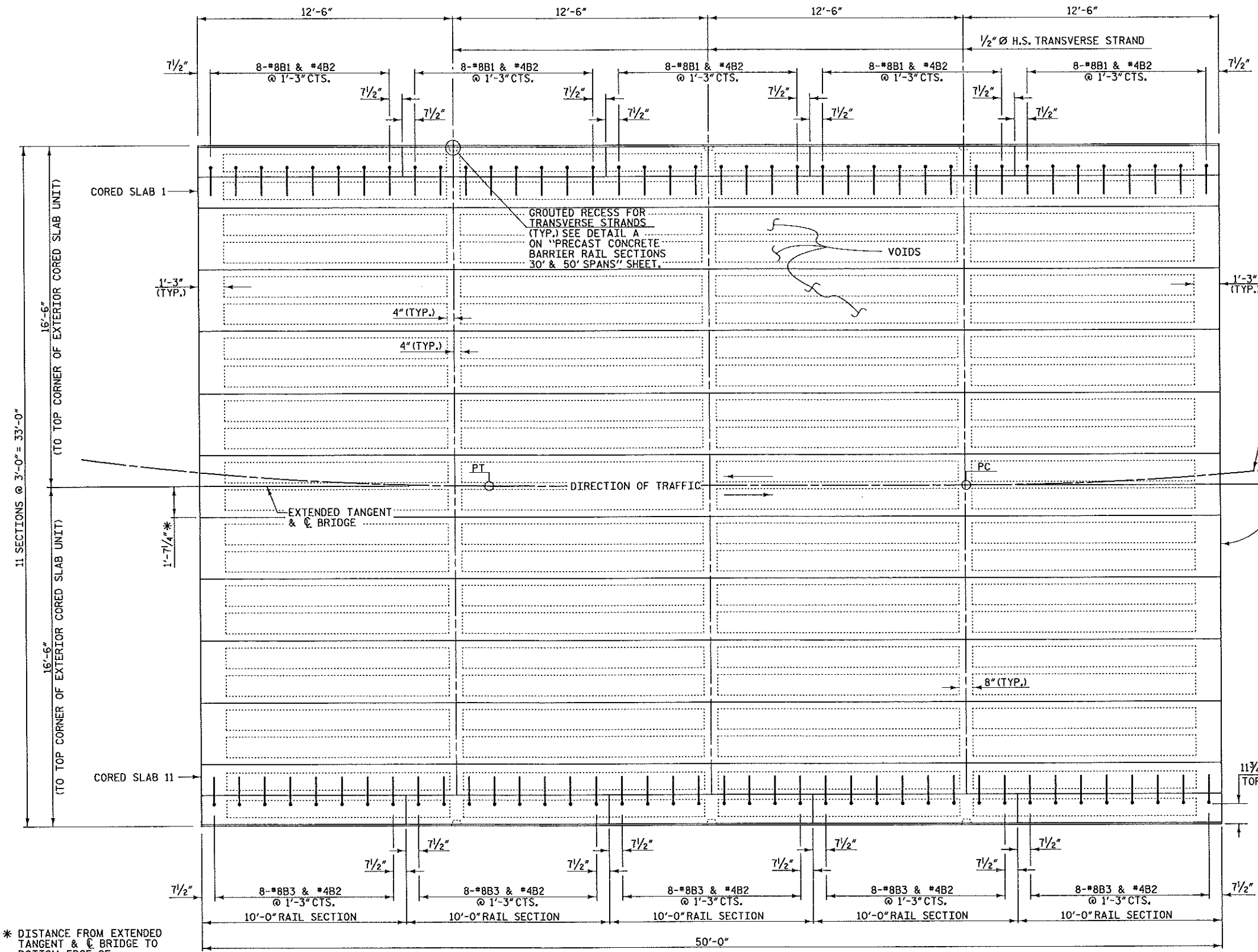
PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

REPLACES BRIDGE NO. 98



REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			8
2			4			29

DRAWN BY: W. B. ALLEN DATE: 11/09
CHECKED BY: L. K. AUSTIN DATE: 1/10



PART PLAN - SLAB SECTION

PLAN OF SPAN

PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

REPLACES BRIDGE NO. 98

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
PRESTRESSED CORED SLAB
50' SPAN
30' CLEAR ROADWAY - 90° SKEW

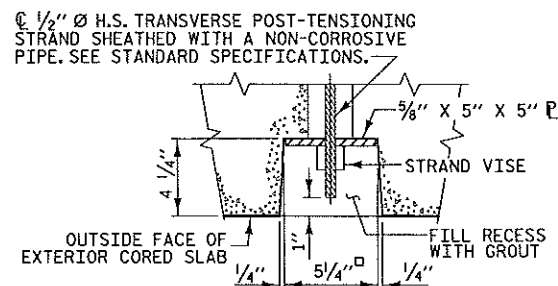


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			9
2			4			TOTAL SHEETS 29

* DISTANCE FROM EXTENDED TANGENT & C BRIDGE TO BOTTOM EDGE OF CORED SLAB UNIT #6

DRAWN BY: W. B. ALLEN DATE: 11/09
CHECKED BY: L. K. AUSTIN DATE: 1/10

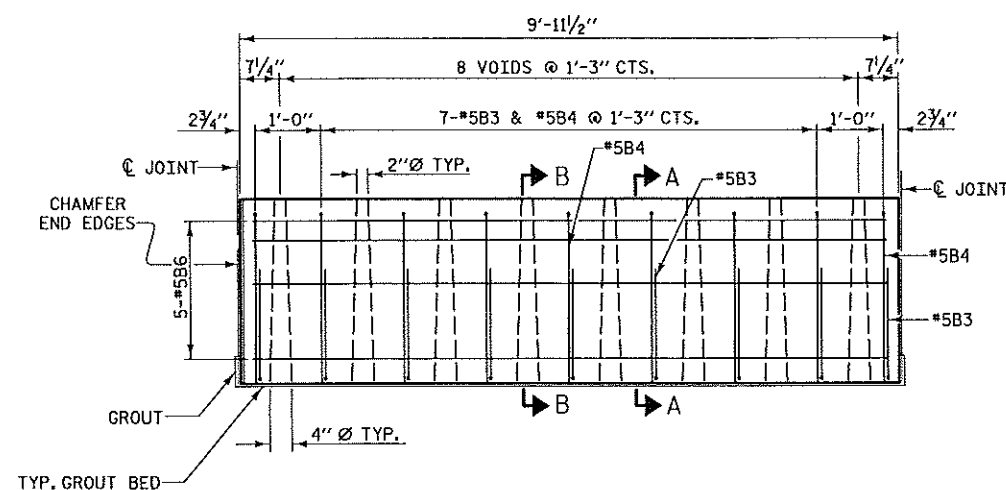
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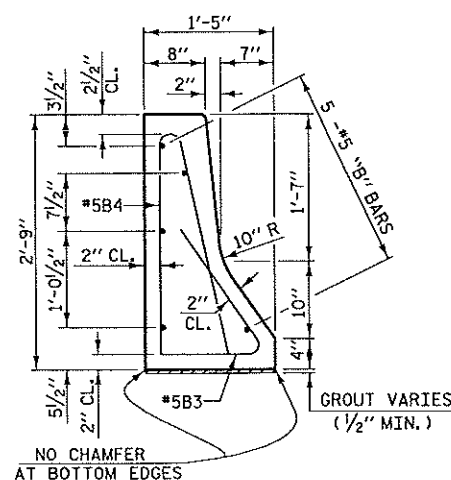
SECTION C-C

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

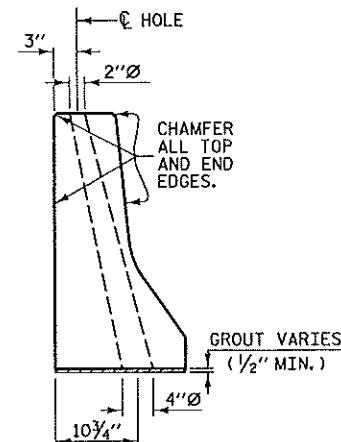
INTERIOR SLAB UNIT	30'	50'
CAMBER (SLAB UNIT ALONE IN PLACE)	$\frac{7}{16}''$ (UP)	$2\frac{3}{16}''$ (UP)
DEFLECTION (SUPERIMPOSED DEAD LOAD)	* $\frac{1}{16}''$ (DOWN)	* $\frac{1}{4}''$ (DOWN)
FINAL DEFLECTION	$\frac{3}{8}''$ (UP)	$1\frac{5}{16}''$ (UP)
* INCLUDES FUTURE WEARING SURFACE		



TYPICAL 10'-0" PRECAST UNIT



SECTION A-A

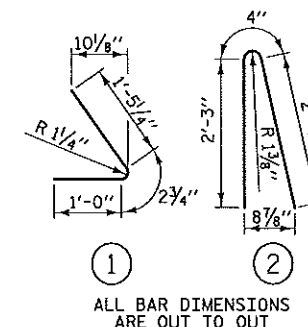


SECTION B-B

DECK DRAINS ARE NOT PERMITTED.

BILL OF MATERIAL FOR ONE 10'-0" RAIL SECTION					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	9	#5	1	2'-8"	2
B4	9	#5	2	4'-11"	4
B6	5	#5	STR.	9'-7"	5
REINFORCING STEEL LBS. =					12
CLASS AA CONCRETE CU. YDS. =					1.1

BAR TYPES



PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

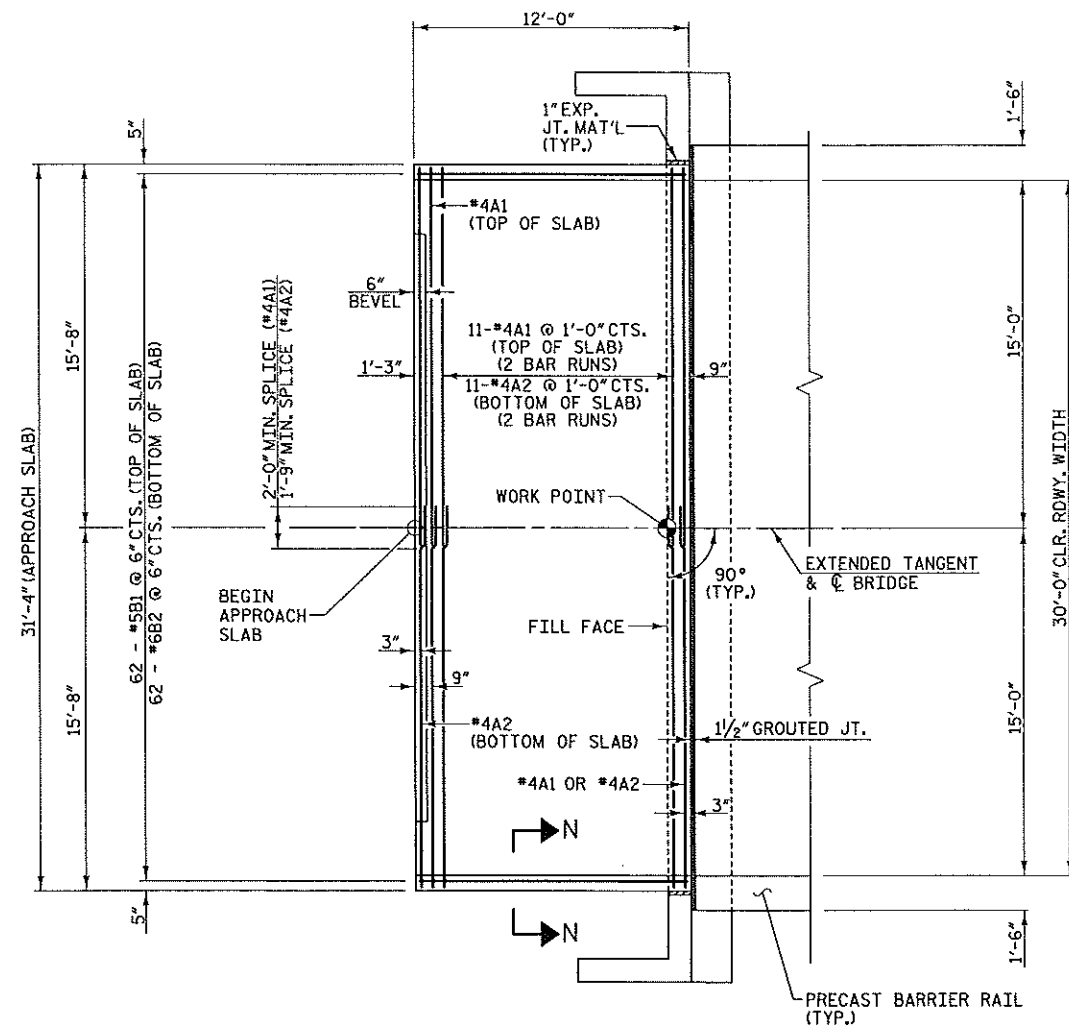
REPLACES BRIDGE NO. 98

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
PRECAST CONCRETE
BARRIER RAIL SECTIONS
30' & 50' SPANS
30' CLEAR ROADWAY - 90°SKEW

REVISIONS						SHEET 1 10 TOTAL SHEETS 29
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

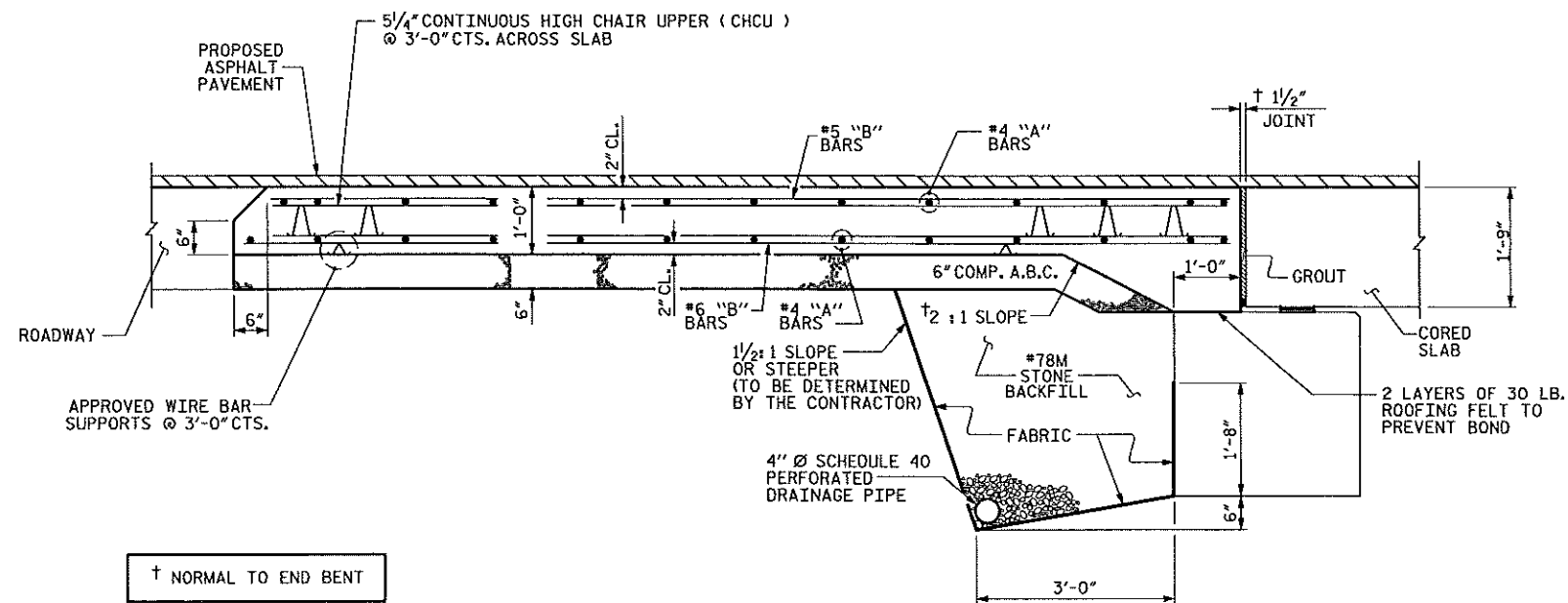
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DRAWN BY : W. B. ALLEN DATE : 11/09
CHECKED BY : L. K. AUSTIN DATE : 1/10



PLAN OF APPROACH SLAB

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



SECTION THRU SLAB

NOTES

REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE GEOMEMBRANE, 4"Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SHALL BE INCLUDED IN THE LUMP SUM CONTRACT BID PRICE FOR BRIDGE APPROACH SLABS.

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.

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.

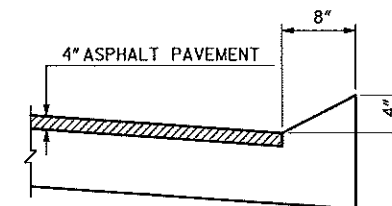
THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

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.

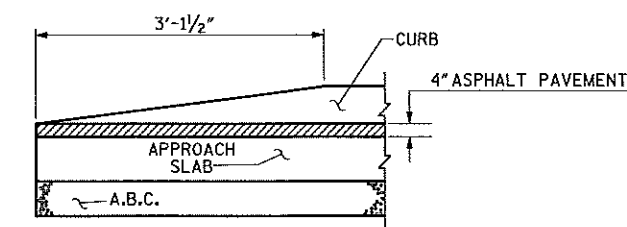
FOR JOINT DETAILS, SEE "PRESTRESSED CORED SLAB 30' & 50' SPANS" SHEET.

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	26	#4	STR	16'-6"	287
A2	26	#4	STR	16'-5"	285
*B1	62	#5	STR	11'-3"	727
B2	62	#6	STR	11'-8"	1349
REINFORCING STEEL				LBS.	1634
*EPOXY COATED REINFORCING STEEL				LBS.	1014
CLASS AA CONCRETE				C. Y.	14.9
APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	26	#4	STR	16'-5"	287
A2	26	#4	STR	16'-5"	285
*B1	62	#5	STR	11'-3"	727
B2	62	#6	STR	11'-8"	1349
REINFORCING STEEL				LBS.	1634
*EPOXY COATED REINFORCING STEEL				LBS.	1014
CLASS AA CONCRETE				C. Y.	14.9

PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB UNIT
(SUB-REGIONAL TIER)
STD. NO. BAS13

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

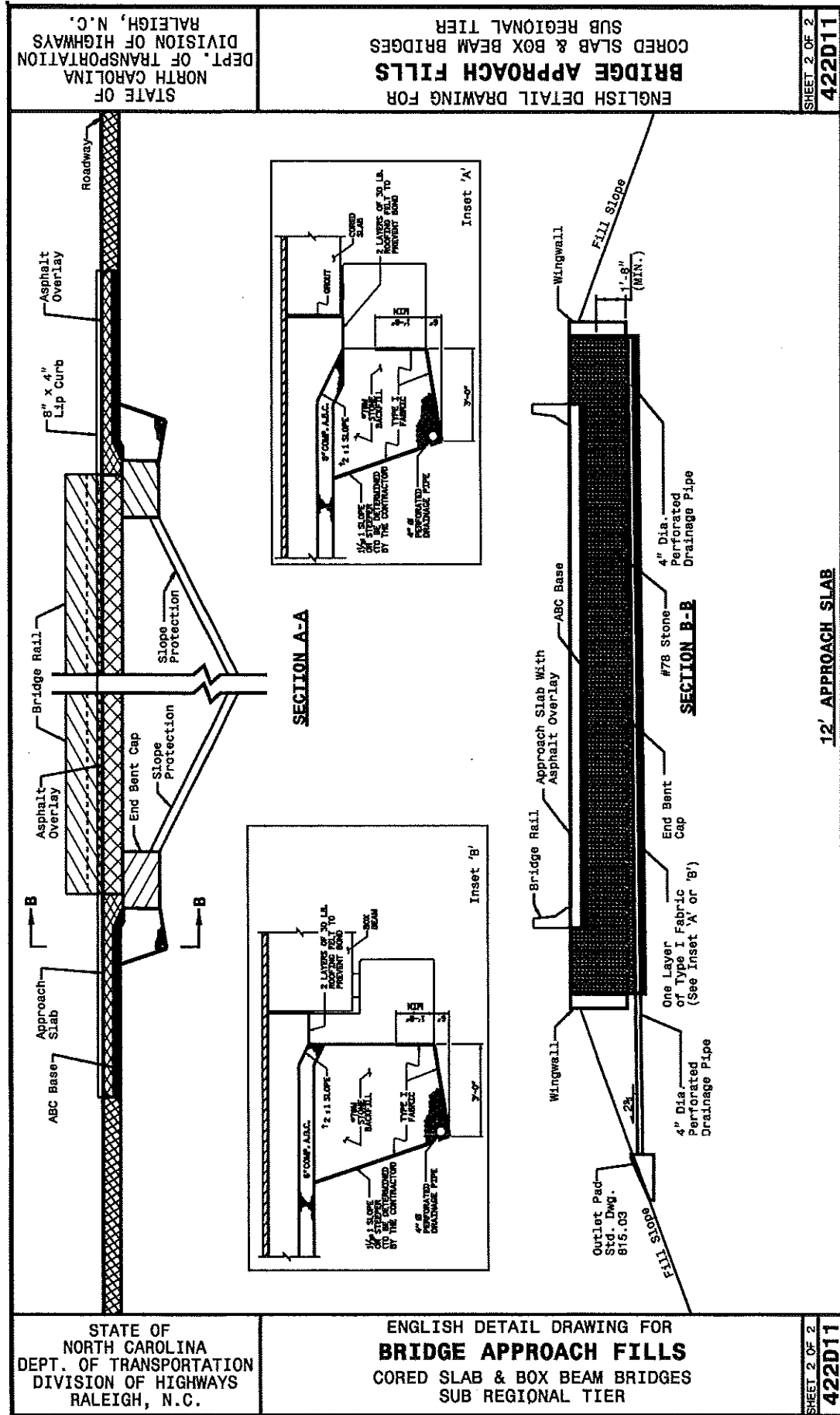
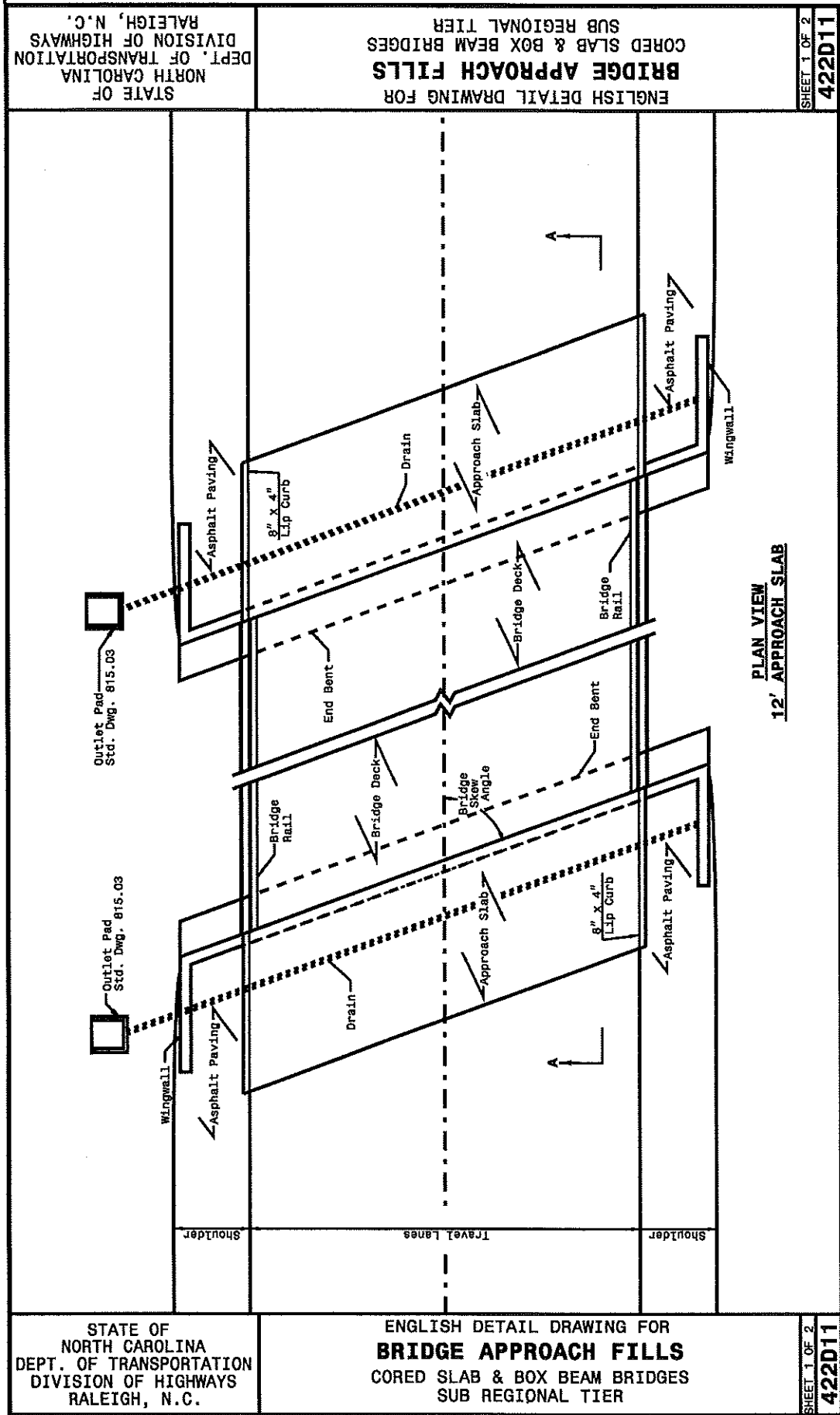


ASSEMBLED BY: W.B. ALLEN DATE: 12/09
CHECKED BY: L.K. AUSTIN DATE: 1/10
DRAWN BY: KVM 3-08
CHECKED BY: GM 3-08

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.
11
TOTAL
SHEETS
29

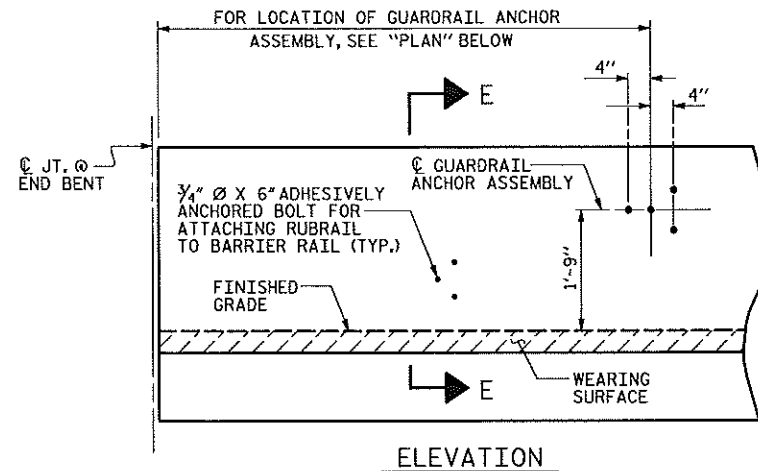
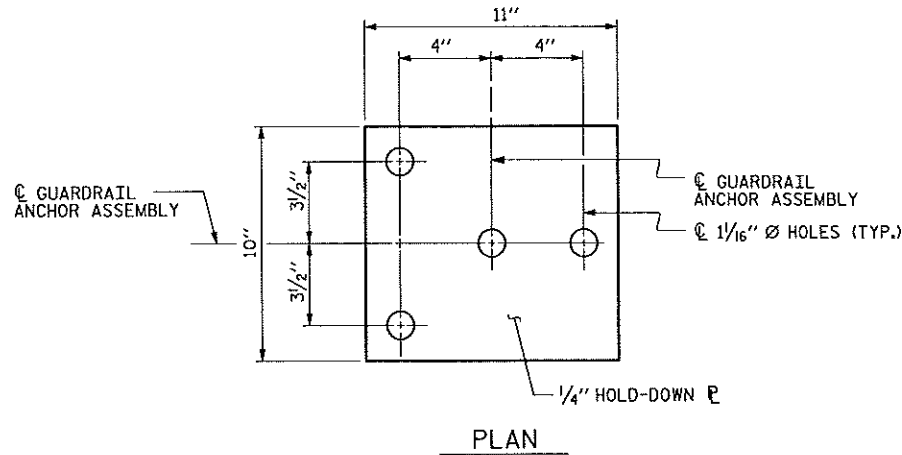
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stateofnc\projects\special details\reviewer\stds\B5\stds to special details\42211\bridge approach fill sub reg tier.dgn
_jloverton



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.: k Kempf\english\bridge approach fills.dgn



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.)

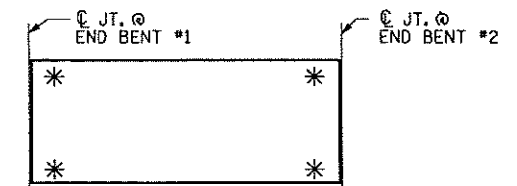
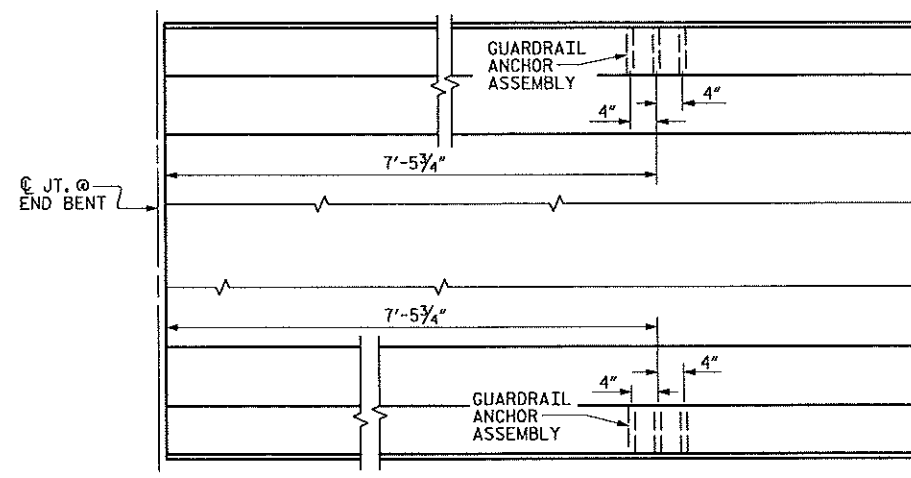
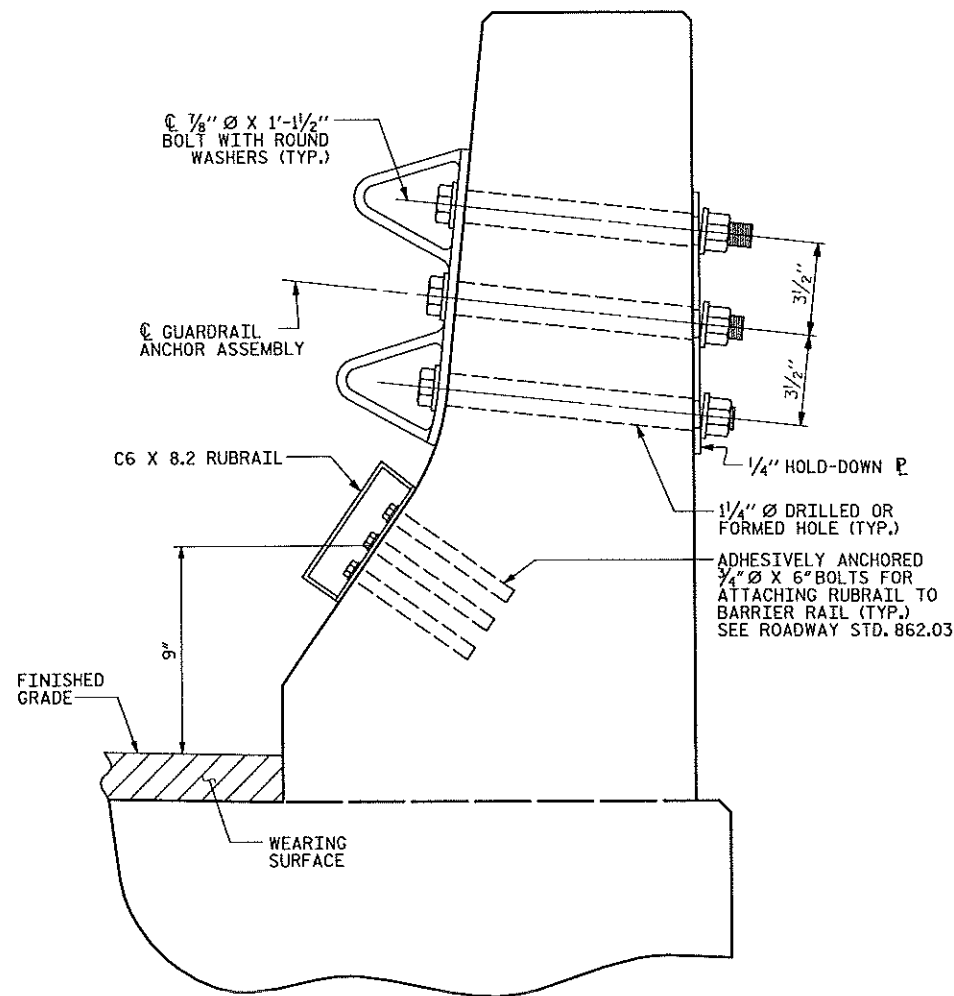
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL, FOR POINTS OF ATTACHMENT, SEE SKETCH.

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 LUMP SUM BID PRICE FOR STEEL BEAM GUARDRAIL.

THE 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

LOCATION OF ANCHORS FOR GUARDRAIL

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

PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

REPLACES BRIDGE NO. 98

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

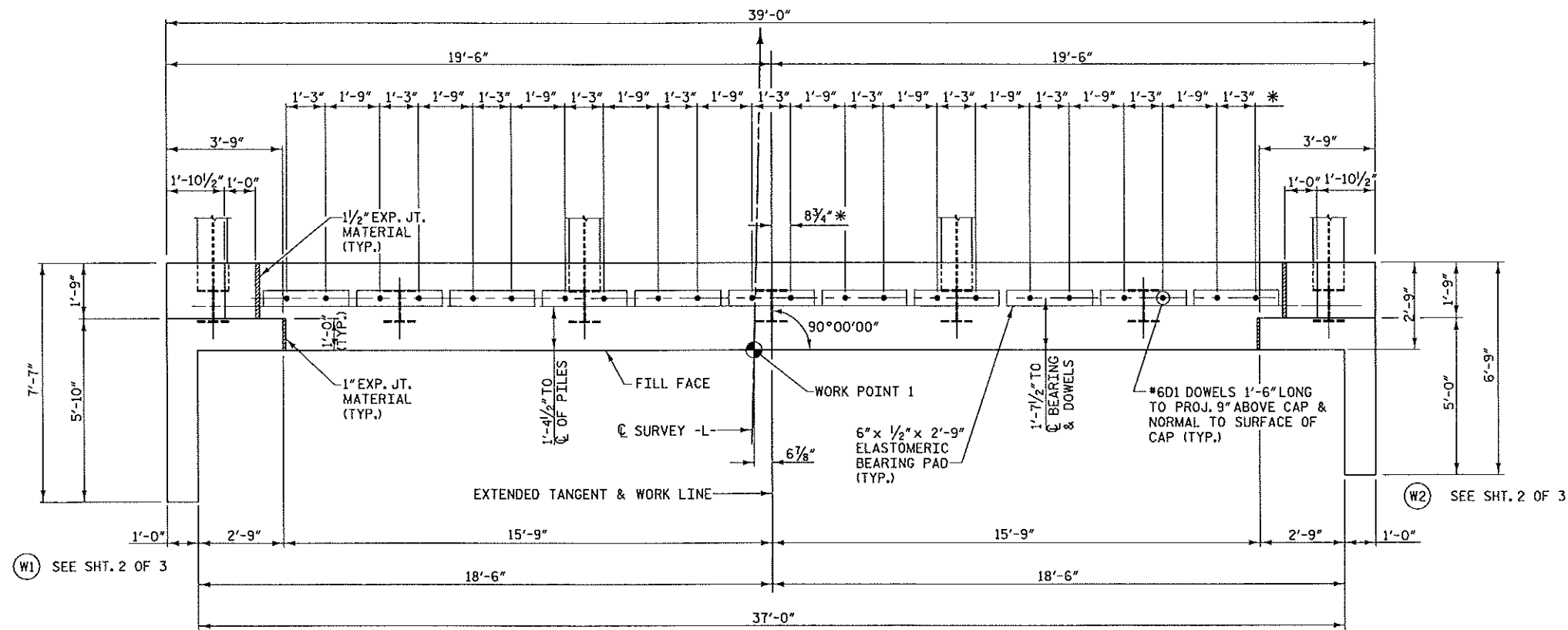
GUARDRAIL ANCHORAGE
FOR BARRIER RAIL

STD. NO. GRA2

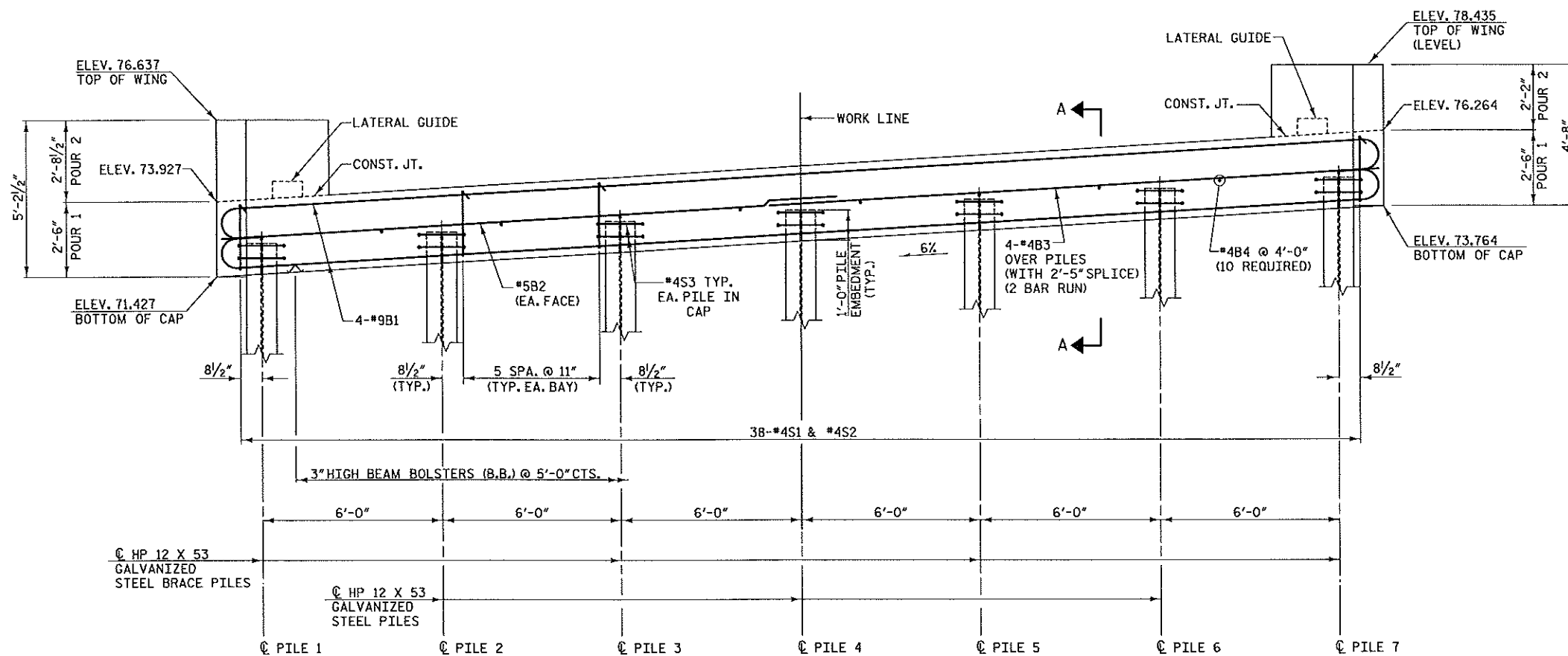
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			13
2			4			TOTAL SHEETS 29

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





PLAN



ELEVATION

NOTES

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

FOR DOWEL DETAIL, SEE SHEET 3 OF 3.

* MEASURED ALONG SURFACE OF CAP

PILE CUT OFF ELEVATIONS	
PILE	ELEVATION
1	72.547
2	72.906
3	73.266
4	73.625
5	73.985
6	74.345
7	74.704

PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

REPLACES BRIDGE NO. 98 SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

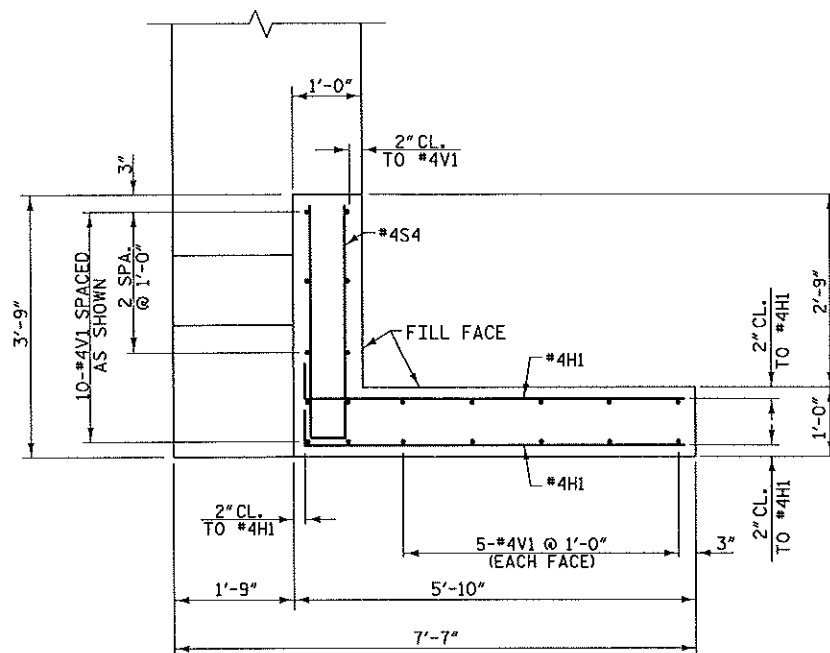
SUBSTRUCTURE
END BENT 1

30' CLEAR ROADWAY - 90° SKEW

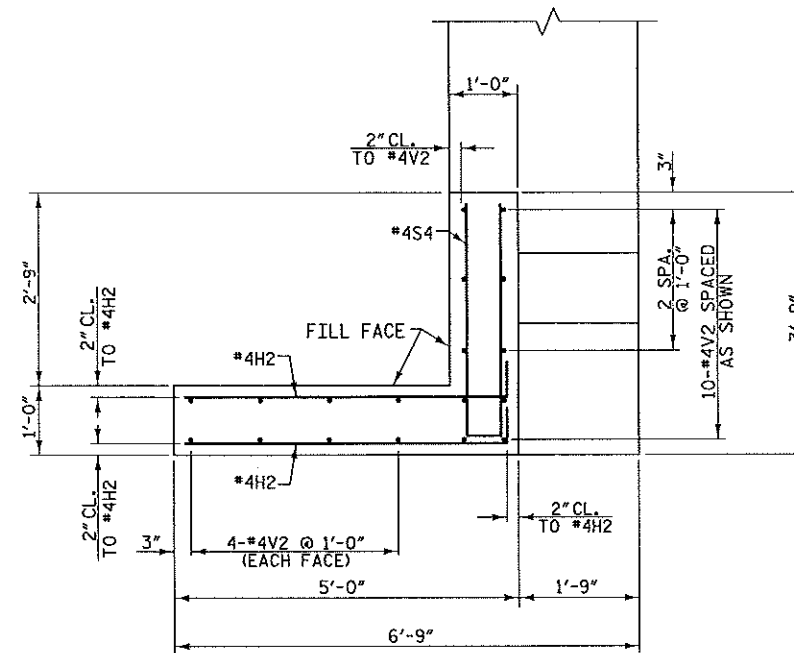


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NO.	BY	DATE	NO.	BY	DATE	
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2			4			29

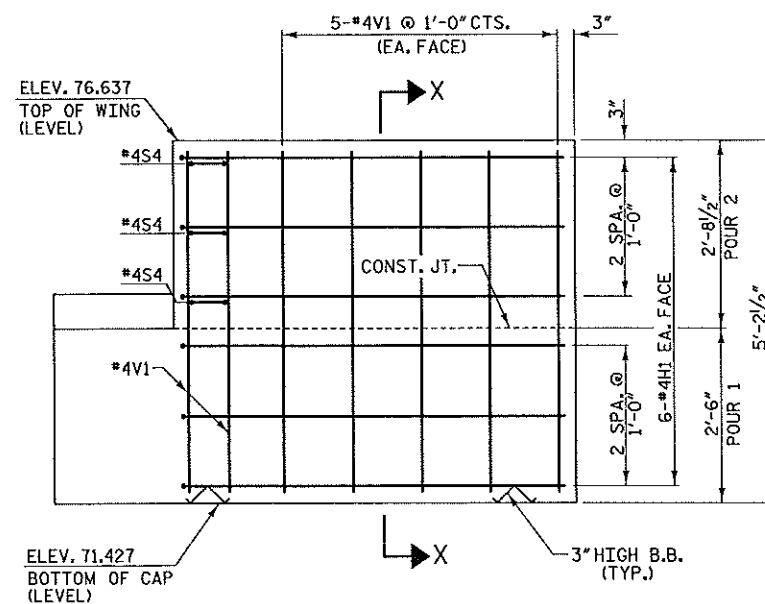
DRAWN BY: W.B. ALLEN DATE: 12/09
CHECKED BY: L.K. AUSTIN DATE: 1/10



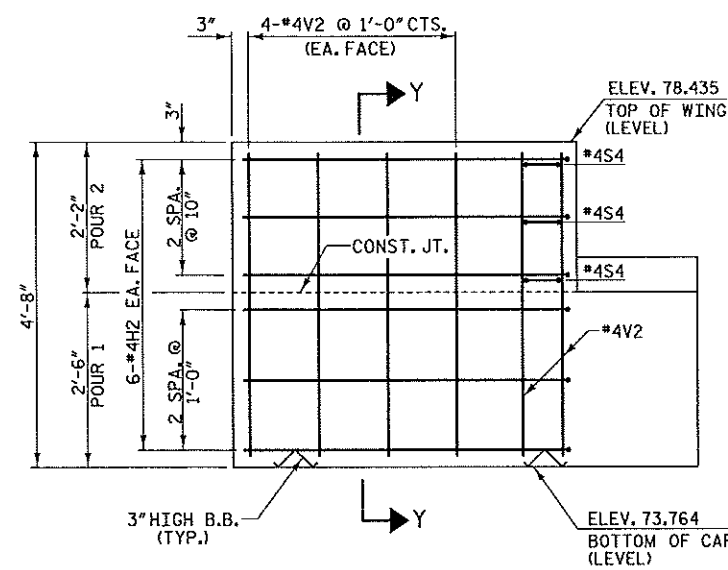
W1 PLAN OF LEFT WING



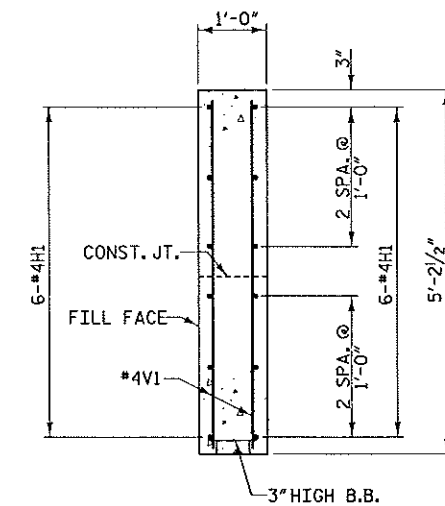
W2 PLAN OF RIGHT WING



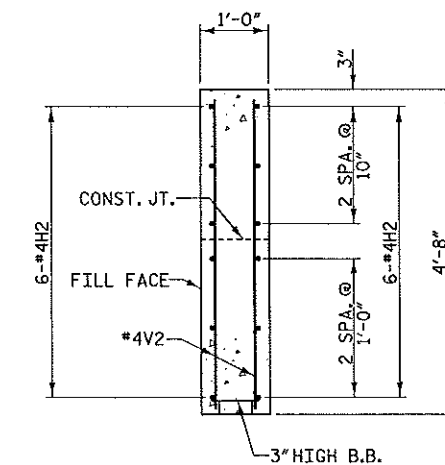
W1 ELEVATION OF LEFT WING



W2 ELEVATION OF RIGHT WING



SECTION X-X



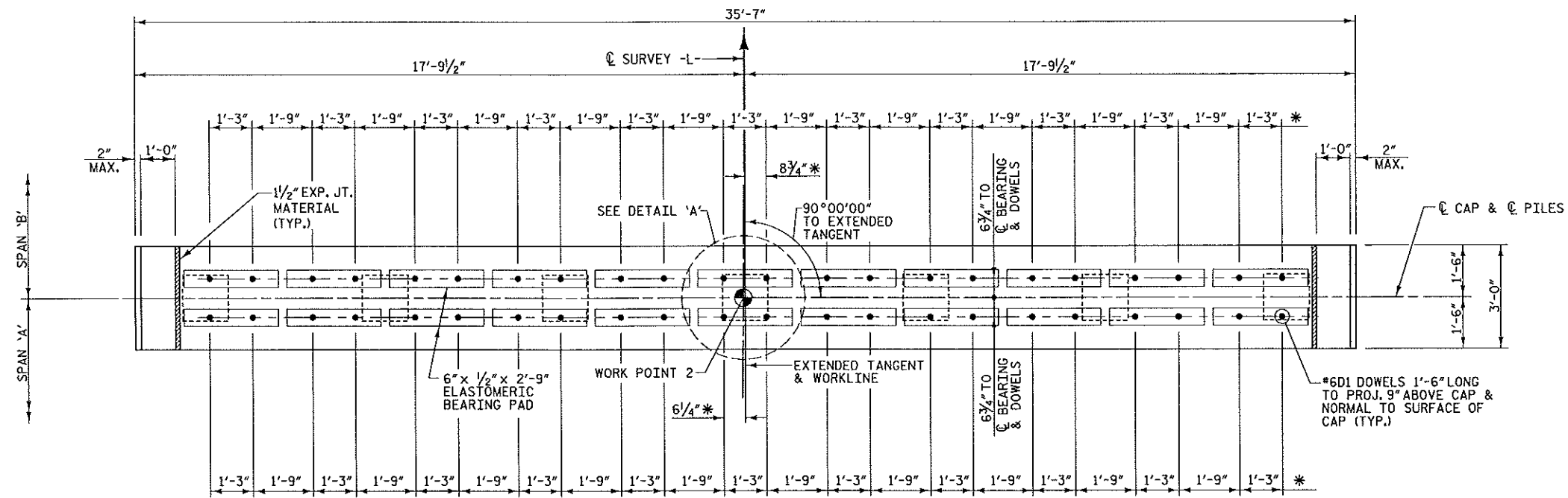
SECTION Y-Y

PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

REPLACES BRIDGE NO. 98 SHEET 2 OF 3



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 1					
30' CLEAR ROADWAY - 90° SKEW					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
SHEET NO. 15					TOTAL SHEETS 29



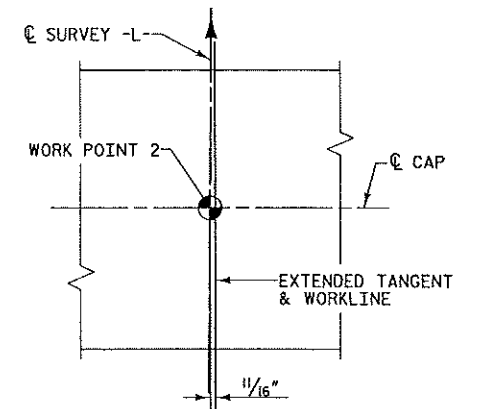
PLAN

NOTES

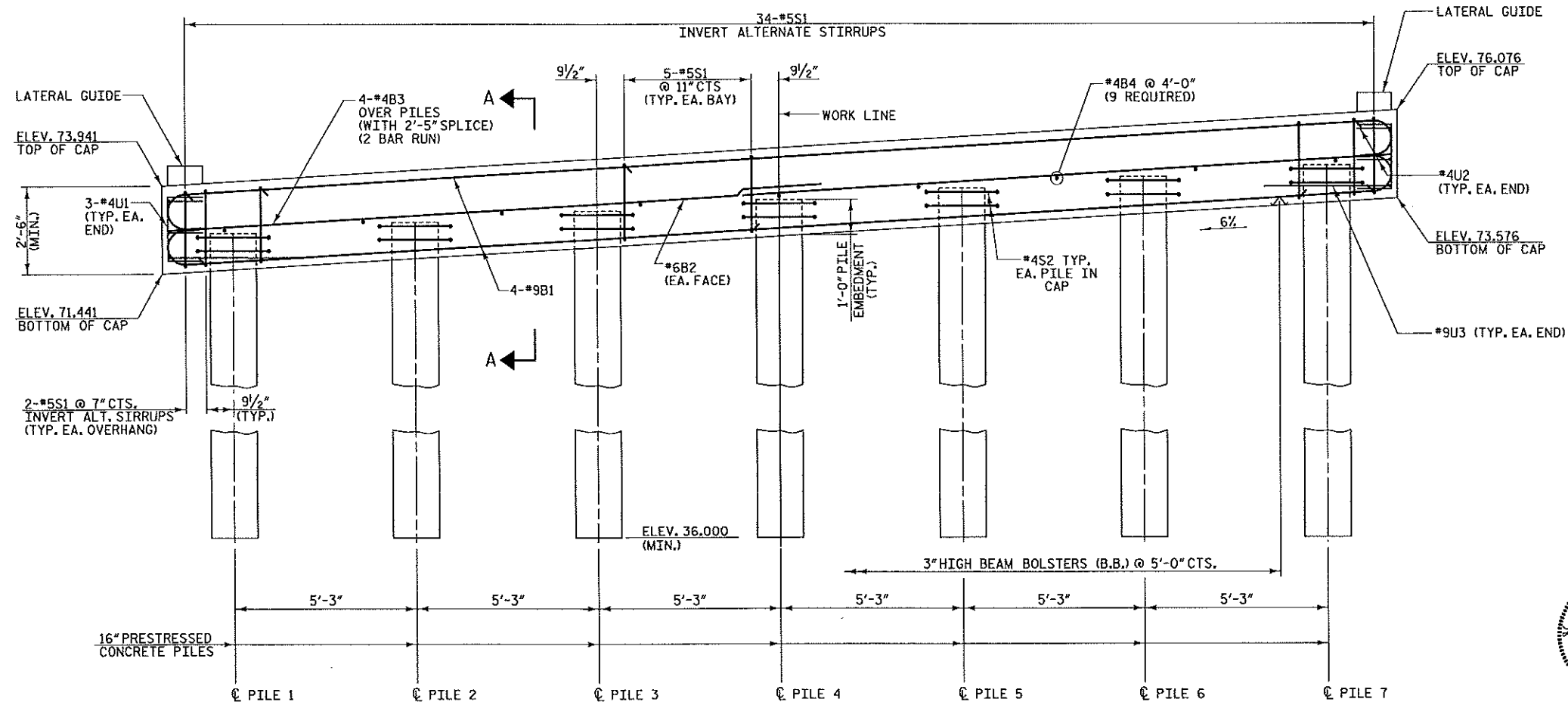
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR *6D1 DOWELS.

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

* MEASURED ALONG SURFACE OF CAP



DETAIL 'A'



ELEVATION

PILE CUT-OFF ELEVATIONS

PILE NO.	ELEV.
1	72.604
2	72.919
3	73.234
4	73.549
5	73.864
6	74.179
7	74.494

PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

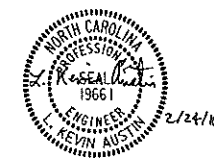
REPLACES BRIDGE NO. 98 SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

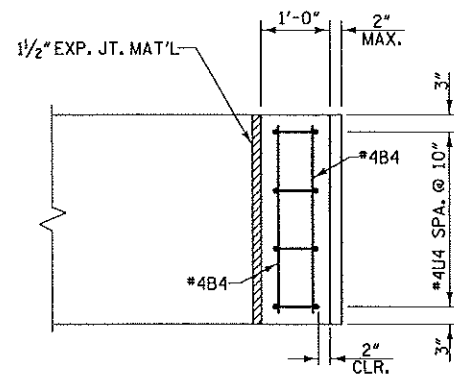
SUBSTRUCTURE
BENT 1

30' CLEAR ROADWAY - 90° SKEW

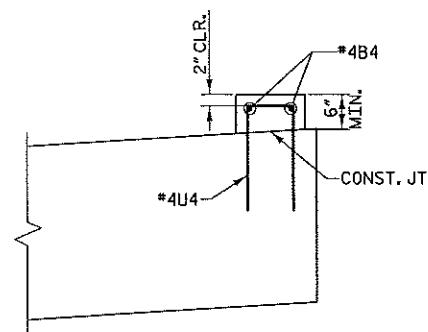
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NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			



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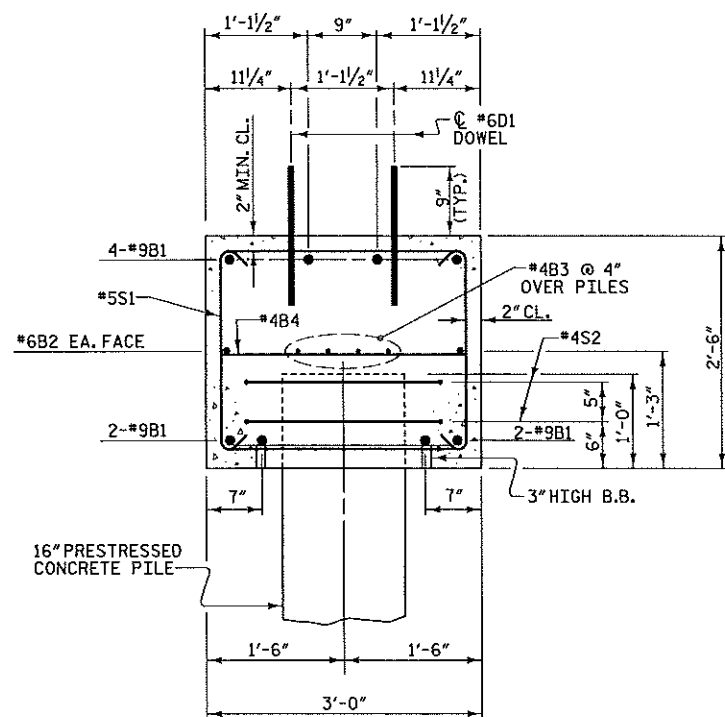


PLAN

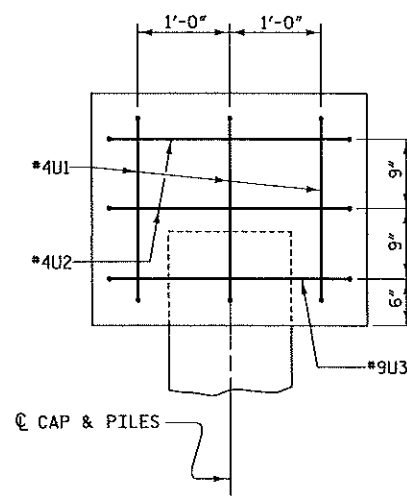


ELEVATION

LATERAL GUIDE DETAIL



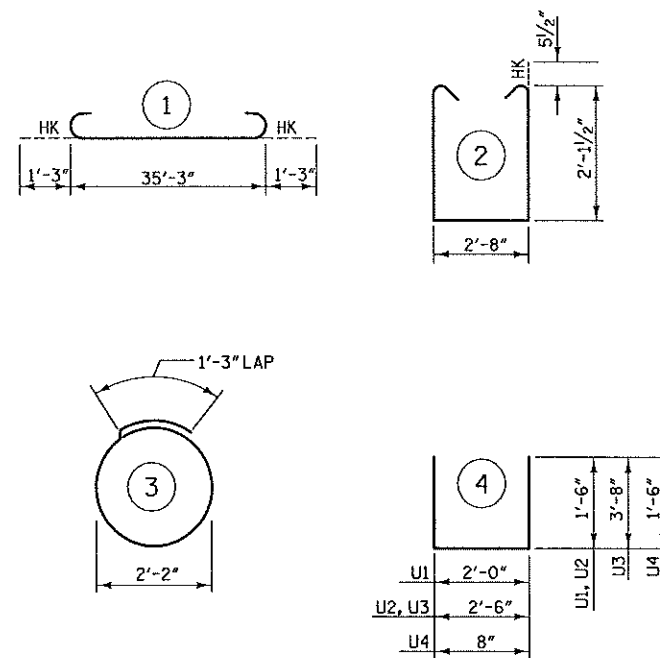
SECTION A-A



END VIEW

(TYPICAL BOTH ENDS)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	37'-9"	1027
B2	2	#6	STR	35'-3"	106
B3	8	#4	STR	18'-10"	101
B4	13	#4	STR	2'-8"	23
D1	44	#6	STR	1'-6"	99
S1	34	#5	2	7'-10"	278
S2	14	#4	3	8'-1"	76
U1	6	#4	4	5'-0"	20
U2	4	#4	4	5'-6"	15
U3	2	#9	4	9'-10"	67
U4	8	#4	4	3'-8"	20

TOTAL EPOXY COATED REINFORCING STEEL =	1832 lbs.
CLASS "A" CONCRETE - CU. YARDS	9.5
16" PRESTRESSED CONC. PILES	
7 PILES REQUIRED - LIN. FEET	350

PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

REPLACES BRIDGE NO. 98 SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE BENT 1

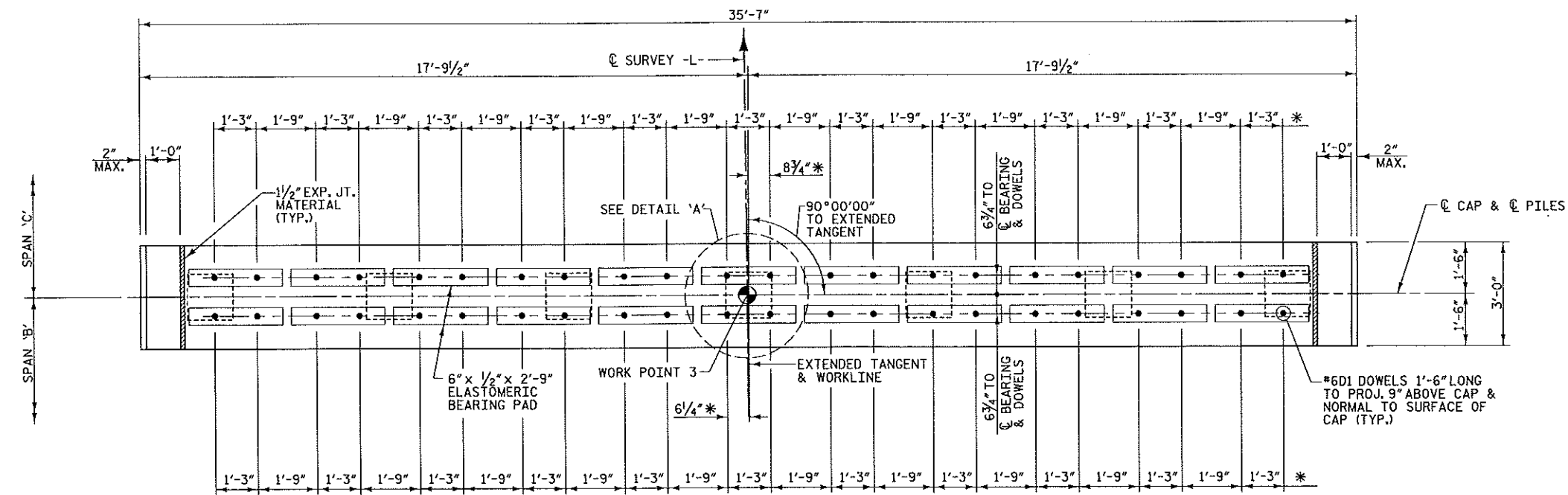
30' CLEAR ROADWAY - 90° SKEW

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			18
2			4			TOTAL SHEETS 29



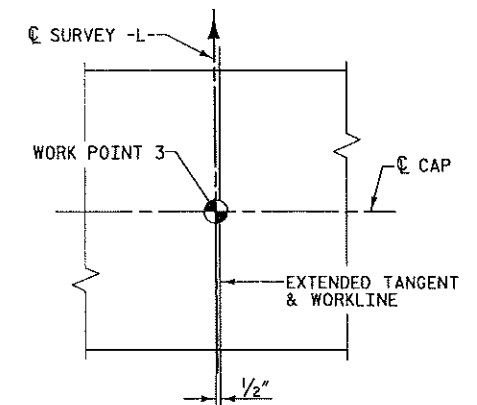
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DRAWN BY : W. B. ALLEN DATE : 12/09
CHECKED BY : L. K. AUSTIN DATE : 1/10

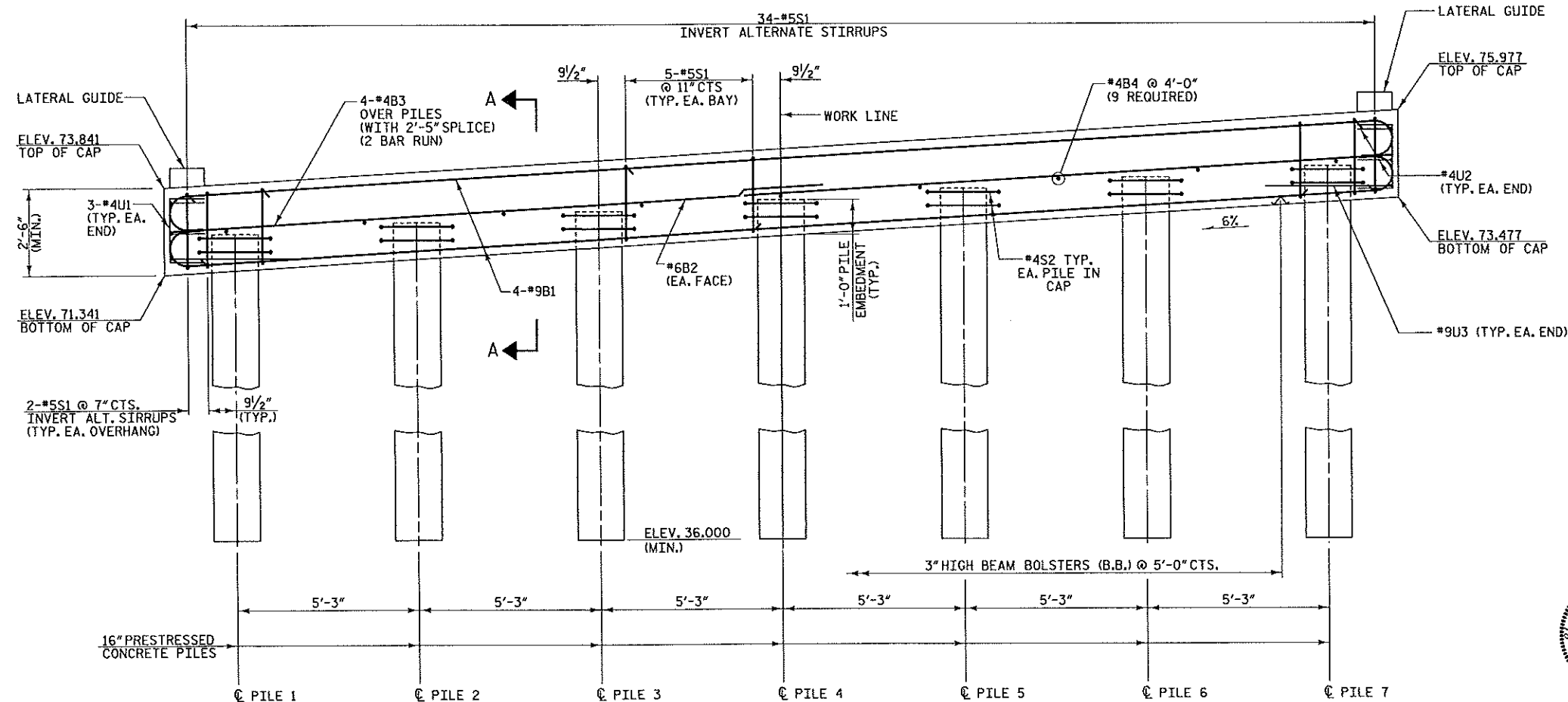


PLAN

NOTES
 STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6D1 DOWELS.
 FOR DOWEL DETAIL, SEE END BENT 1, SHEET 3 OF 3.
 * MEASURED ALONG SURFACE OF CAP



DETAIL 'A'



ELEVATION

PILE CUT-OFF ELEVATIONS	
PILE NO.	ELEV.
1	72.504
2	72.819
3	73.134
4	73.449
5	73.764
6	74.079
7	74.394

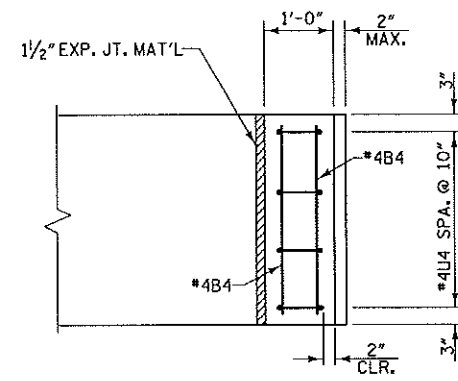
PROJECT NO. 42239
 WAYNE COUNTY
 STATION: 15+12.23 -L-

REPLACES BRIDGE NO. 98 SHEET 1 OF 2

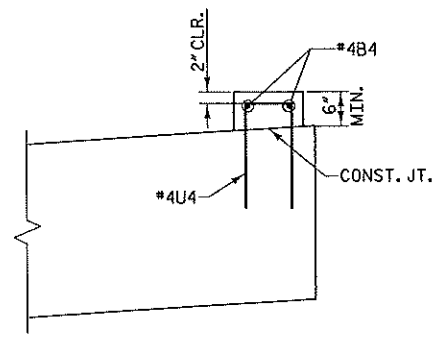


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT 2					
30' CLEAR ROADWAY - 90°SKEW					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					19
					29

DRAWN BY: W.B. ALLEN DATE: 12/09
 CHECKED BY: L.K. AUSTIN DATE: 1/10

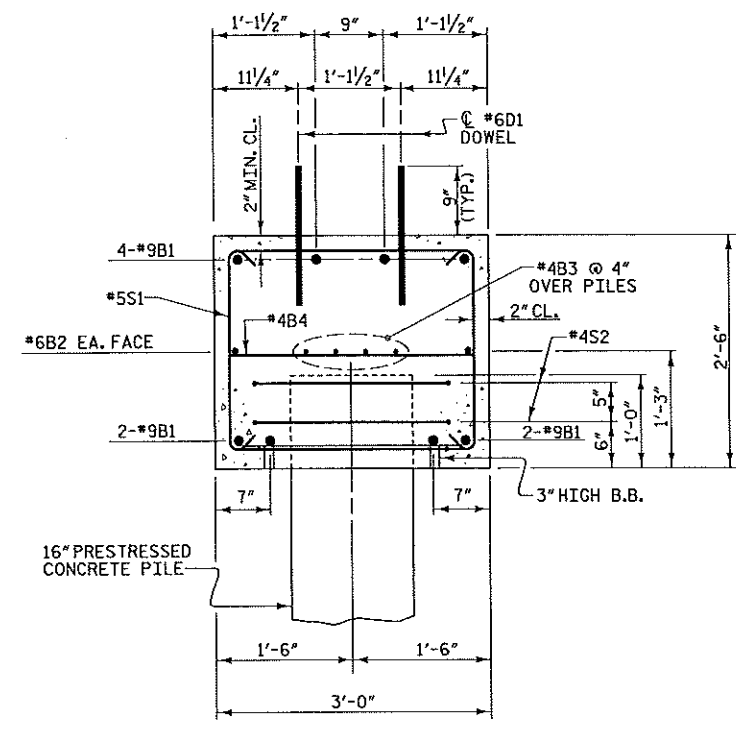


PLAN

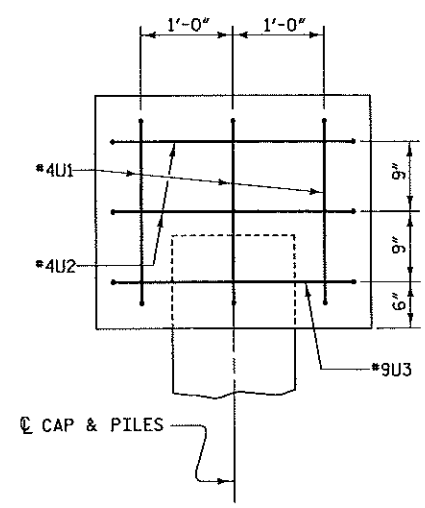


ELEVATION

LATERAL GUIDE DETAIL



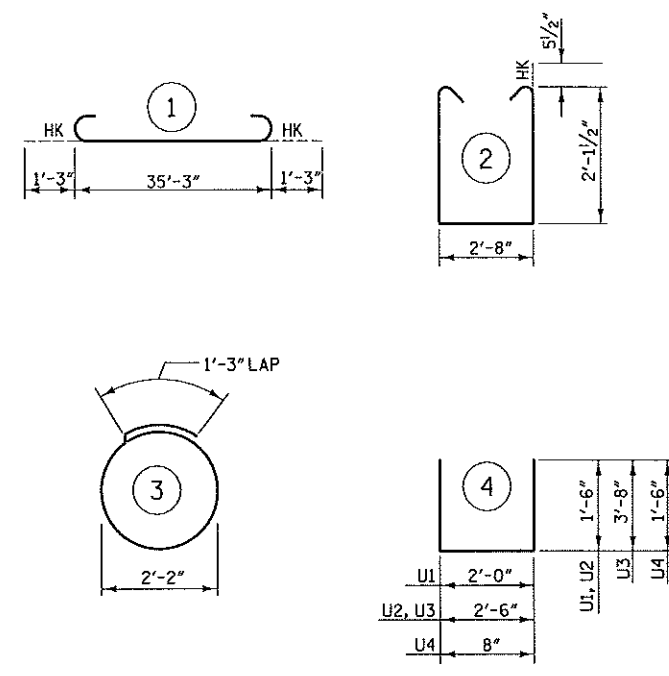
SECTION A-A



END VIEW

(TYPICAL BOTH ENDS)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	37'-9"	1027
B2	2	#6	STR	35'-3"	106
B3	8	#4	STR	18'-10"	101
B4	13	#4	STR	2'-8"	23
D1	44	#6	STR	1'-6"	99
S1	34	#5	2	7'-10"	278
S2	14	#4	3	8'-1"	76
U1	6	#4	4	5'-0"	20
U2	4	#4	4	5'-6"	15
U3	2	#9	4	9'-10"	67
U4	8	#4	4	3'-8"	20

TOTAL EPOXY COATED REINFORCING STEEL =		1832 lbs.
CLASS "A" CONCRETE - CU. YARDS		9.5
16" PRESTRESSED CONC. PILES		
7 PILES REQUIRED - LIN. FEET		350

PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

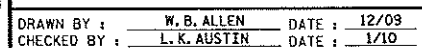
REPLACES BRIDGE NO. 98 SHEET 2 OF 2

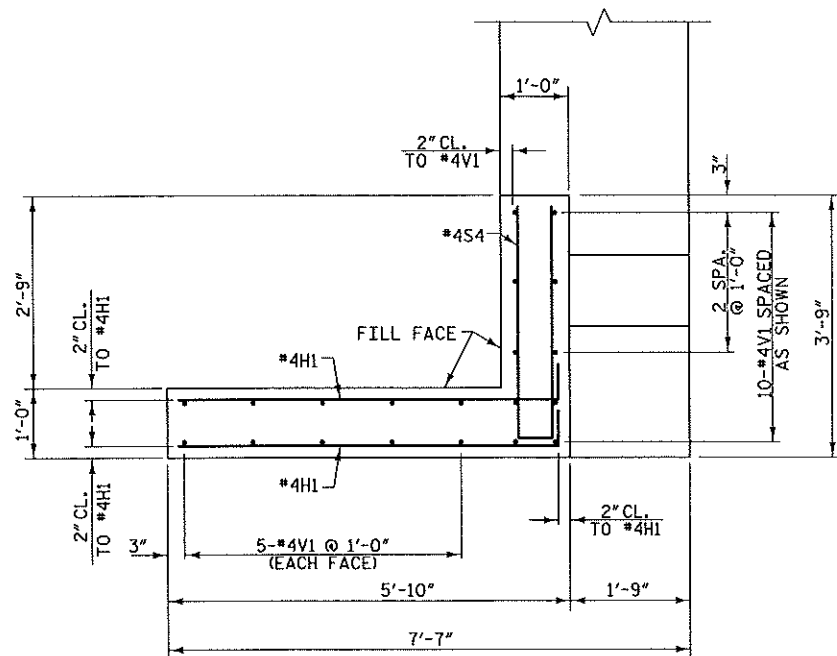


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT 2					
30' CLEAR ROADWAY - 90° SKEW					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 29

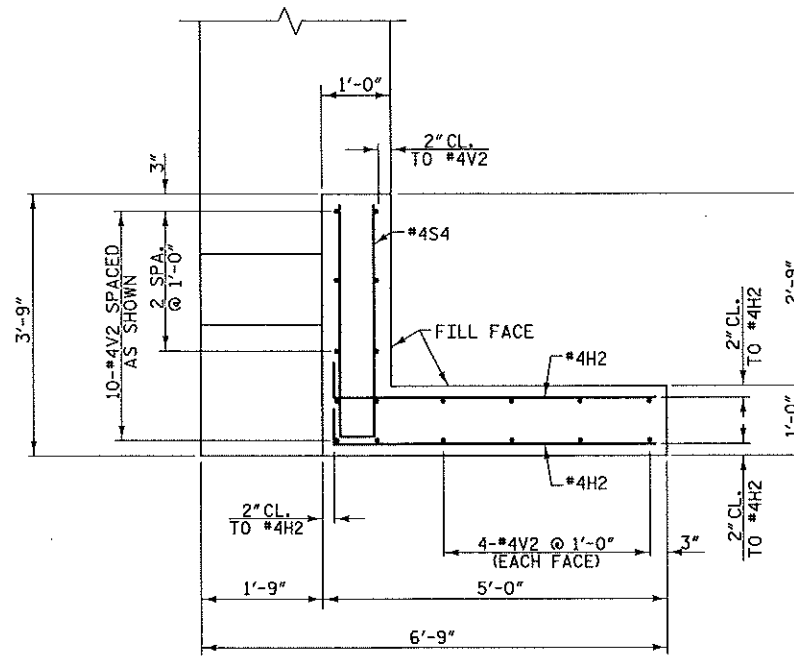
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DRAWN BY: W. B. ALLEN DATE: 12/09
CHECKED BY: L. K. AUSTIN DATE: 1/10

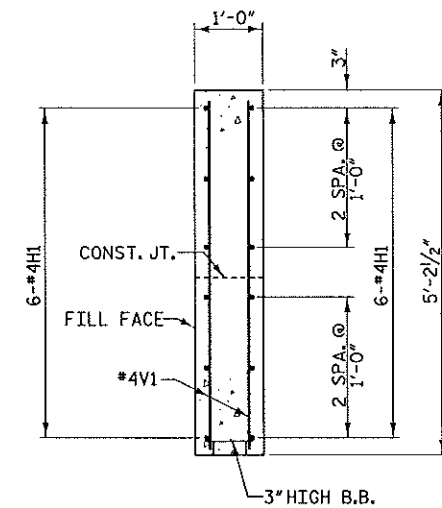




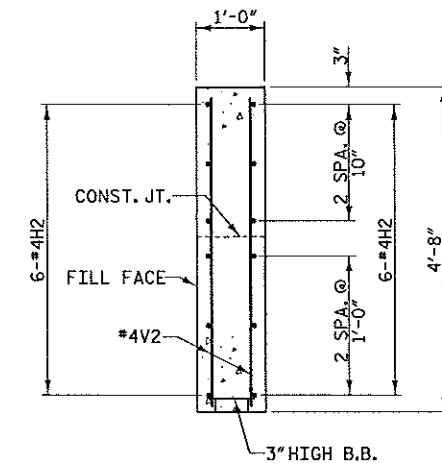
W1 PLAN OF LEFT WING



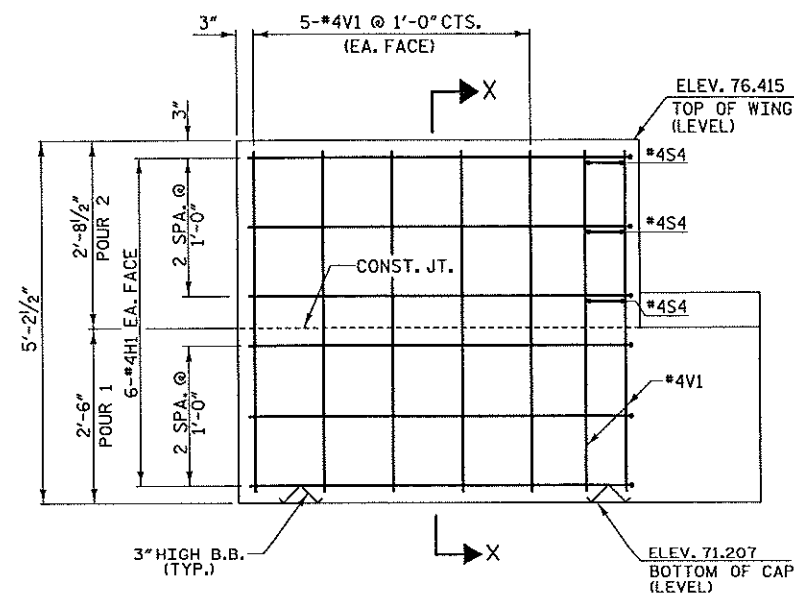
W2 PLAN OF RIGHT WING



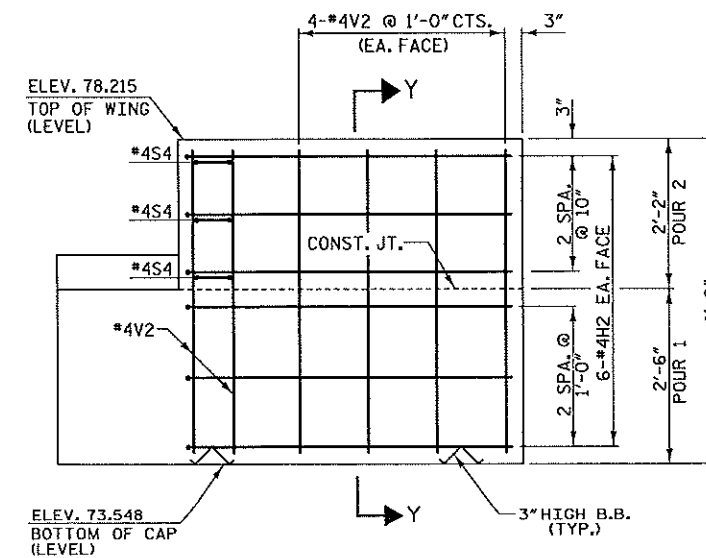
SECTION X-X



SECTION Y-Y



W1 ELEVATION OF LEFT WING



W2 ELEVATION OF RIGHT WING

PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

REPLACES BRIDGE NO. 98 SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

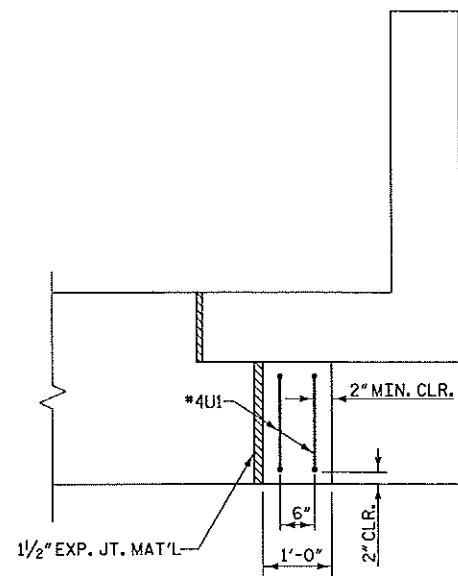
SUBSTRUCTURE
END BENT 2

30' CLEAR ROADWAY - 90° SKEW

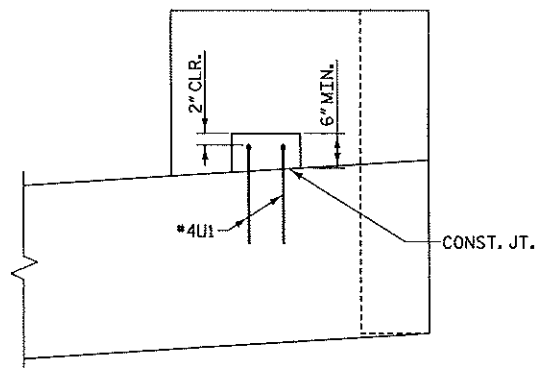


PLANS PREPARED BY
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ENGINEERS & CONSULTANTS
PO BOX 9317
RALEIGH, NC 27609
(919) 871-1918 FAX
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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			22
2			4			TOTAL SHEETS 29

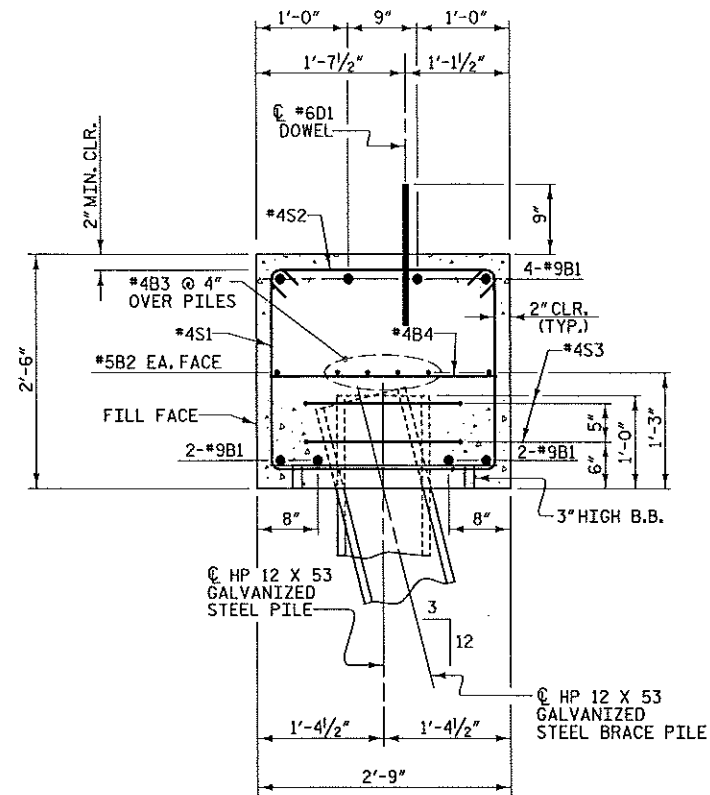


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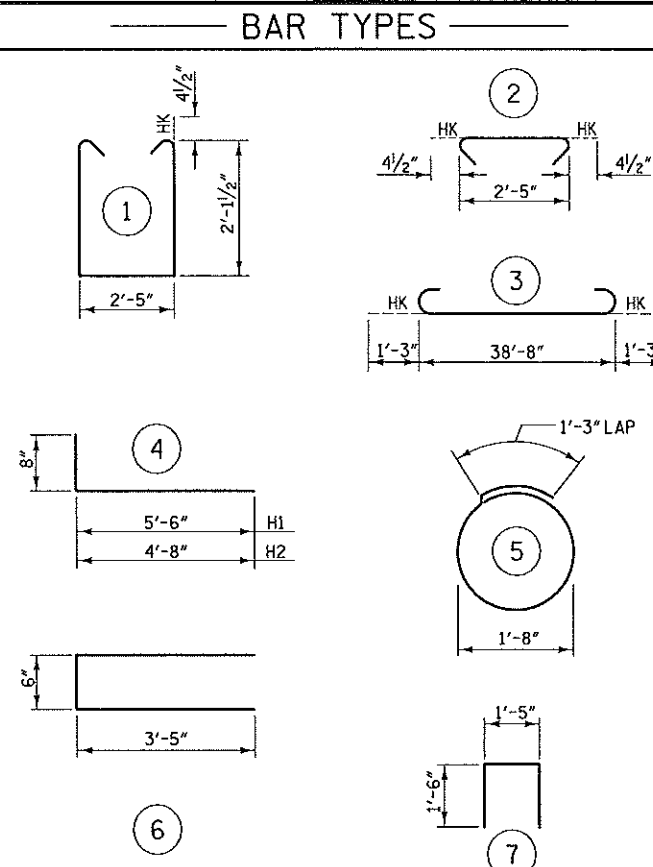


ELEVATION

LATERAL GUIDE DETAIL



SECTION A-A



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	3	41'-2"	1120
B2	2	#5	STR	38'-8"	81
B3	8	#4	STR	20'-7"	110
B4	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	12	#4	4	6'-2"	49
H2	12	#4	4	5'-4"	43
S1	38	#4	1	7'-5"	188
S2	38	#4	2	3'-2"	80
S3	14	#4	5	6'-6"	61
S4	6	#4	6	7'-4"	29
U1	4	#4	7	4'-5"	12
V1	20	#4	STR	4'-10"	65
V2	18	#4	STR	4'-4"	52

TOTAL REINFORCING STEEL =	1956 lbs.
CLASS "A" CONCRETE - CU. YARDS	
POUR 1	10.7 cu. yds.
POUR 2	1.6 cu. yds.
TOTAL	12.3 cu. yds.
HP 12 X 53 GALVANIZED STEEL PILES	
7 PILES REQUIRED - LIN. FEET	455

PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

REPLACES BRIDGE NO. 98 SHEET 3 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

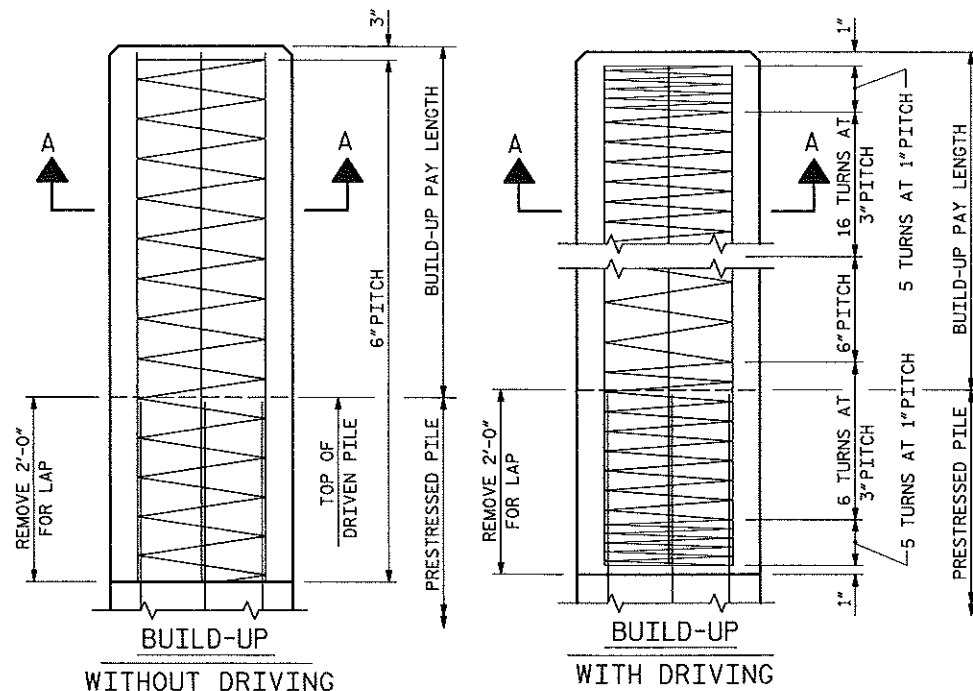
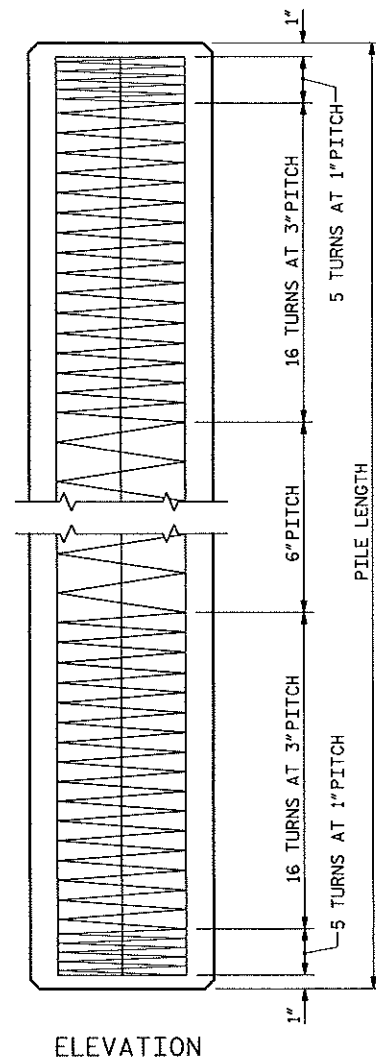
SUBSTRUCTURE
END BENT 2

30' CLEAR ROADWAY - 90° SKEW

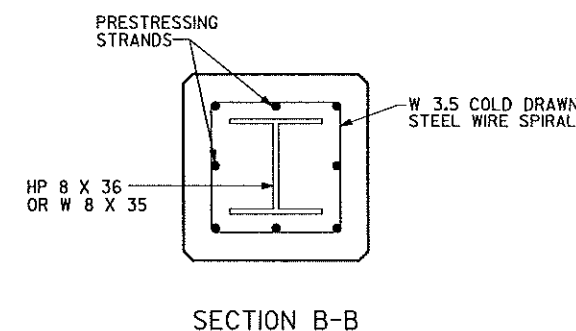
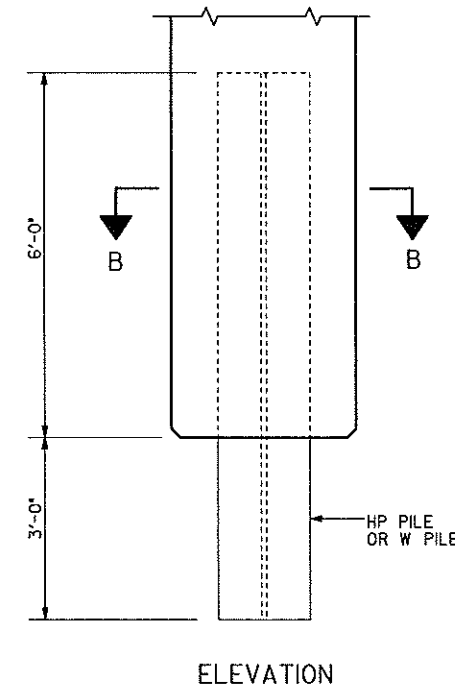
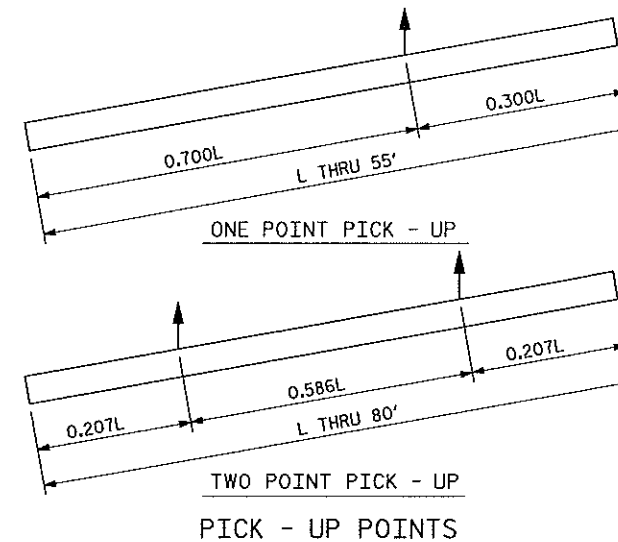
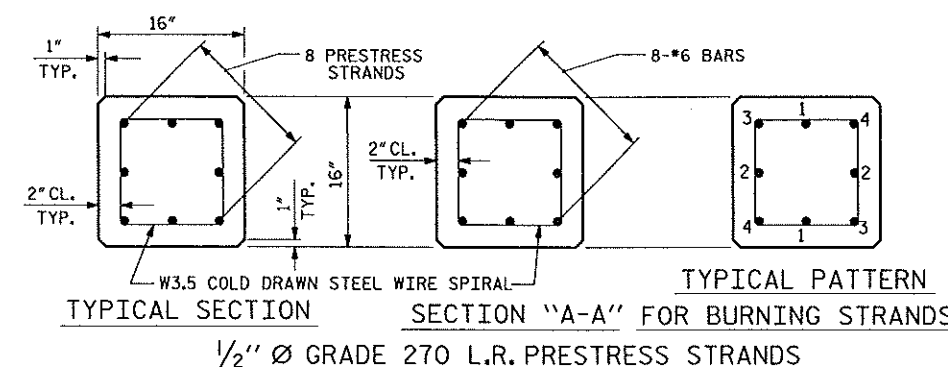
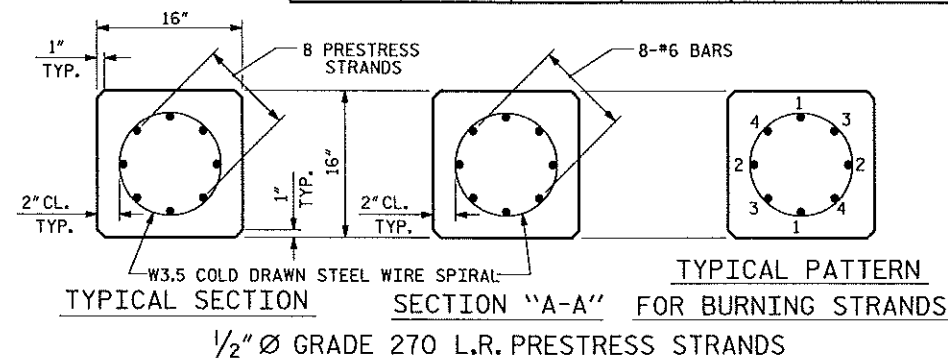
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	23
1			3			TOTAL SHEETS
2			4			29

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DRAWN BY: W. B. ALLEN DATE: 12/09
CHECKED BY: L. K. AUSTIN DATE: 1/10



QUANTITIES FOR ONE 16" PRESTRESSED PILE						
LENGTH	CONCRETE CU. YDS.	PILE WT. TONS	ONE POINT PICK-UP		TWO POINT PICK-UP	
			0.300L	0.700L	0.207L	0.586L
25'-0"	1.63	3.31	7'-6"	17'-6"	5'-2"	14'-8"
30'-0"	1.96	3.97	9'-0"	21'-0"	6'-2 1/2"	17'-7"
35'-0"	2.29	4.63	10'-6"	24'-6"	7'-3"	20'-6"
40'-0"	2.61	5.29	12'-0"	28'-0"	8'-3 1/2"	23'-5"
45'-0"	2.94	5.95	13'-6"	31'-6"	9'-4"	26'-4"
50'-0"	3.27	6.61	15'-0"	35'-0"	10'-4"	29'-4"
55'-0"	3.59	7.28	16'-6"	38'-6"	11'-4 1/2"	32'-3"
60'-0"	3.92	7.94			12'-5"	35'-2"
65'-0"	4.25	8.60			13'-5 1/2"	38'-1"
70'-0"	4.57	9.26			14'-6"	41'-0"
75'-0"	4.90	9.92			15'-6 1/2"	43'-11"
80'-0"	5.23	10.58			16'-7"	46'-10"



PILE TIP DETAILS

NOTES

CONCRETE DESIGN DATA : $f'_c = 5,000$ PSI ; $f_c = 2,000$ PSI

IMPACT IN HANDLING = 50%

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE PILE SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 3,500 PSI.

IN DRIVING PILES, A METHOD APPROVED BY THE ENGINEER SHALL BE USED, WHEREBY THE HEAD OF THE PILE IS NOT DAMAGED.

PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

WHERE CAST - IN - PLACE LIFTING DEVICES ARE NOT USED, PICK-UP POINTS TO BE INDICATED WITH A BLACK MARK 2" WIDE.

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 STANDARD SPECIFICATIONS.

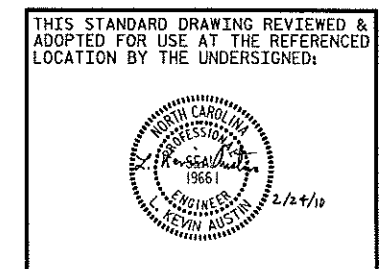
THE CONTRACTOR SHALL USE THE FOLLOWING STRAND TYPE:

SIZE	GRADE	NUMBER OF STRANDS	AREA SQ. IN.	ULTIMATE STRENGTH LBS.	APPLIED PRESTRESS FORCE LBS.
1/2"	270 L.R.	8	0.153	41,300 PER STRAND	30,980 PER STRAND

THE SLIP-FORM METHOD OF CASTING PILES WILL NOT BE PERMITTED.

IF STRAND STRESS IS RELIEVED BY BURNING, THE STRANDS SHALL BE BURNED IN OPPOSITE PAIRS AS INDICATED IN THE TYPICAL PATTERN SHOWN. FOR ANY NUMBER OF STRANDS BURN IN OPPOSITE PAIRS AND SYMMETRICAL ABOUT BOTH VERTICAL AND HORIZONTAL AXES. STRANDS 1-1 SHALL BE BURNED BEFORE 2-2, ETC. NOT MORE THAN 4 STRANDS, SAY 3-3 AND 4-4, MAY BE BURNED AT ANY ONE SECTION BEFORE THESE SAME PAIRS OF STRANDS ARE BURNED AT BOTH ENDS OF THE BED AND BETWEEN EACH PAIR OF PILES IN THE BED.

BUILD-UPS SHALL BE 'CLASS A' CONCRETE WITH 20% ADDITIONAL CEMENT. NO DRIVING OF THE BUILT-UP PILE WILL BE PERMITTED UNTIL THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 3,000 PSI AND UNTIL A PERIOD OF SEVEN DAYS HAS ELAPSED SINCE CASTING OF THE BUILD-UP.



PROJECT NO. 42239

WAYNE COUNTY

STATION: 15+12.23 -L-

REPLACES BRIDGE NO. 98 SHEET 1 OF 1

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

16" PRESTRESSED
CONCRETE PILE

STD. NO. PCP2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			24
2			4			29

PROJECT: B-5104

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

ENVIRONMENTALLY
SENSITIVE AREA(S) EXIST
ON THIS PROJECT

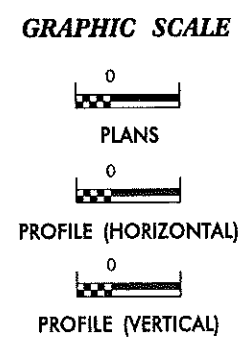
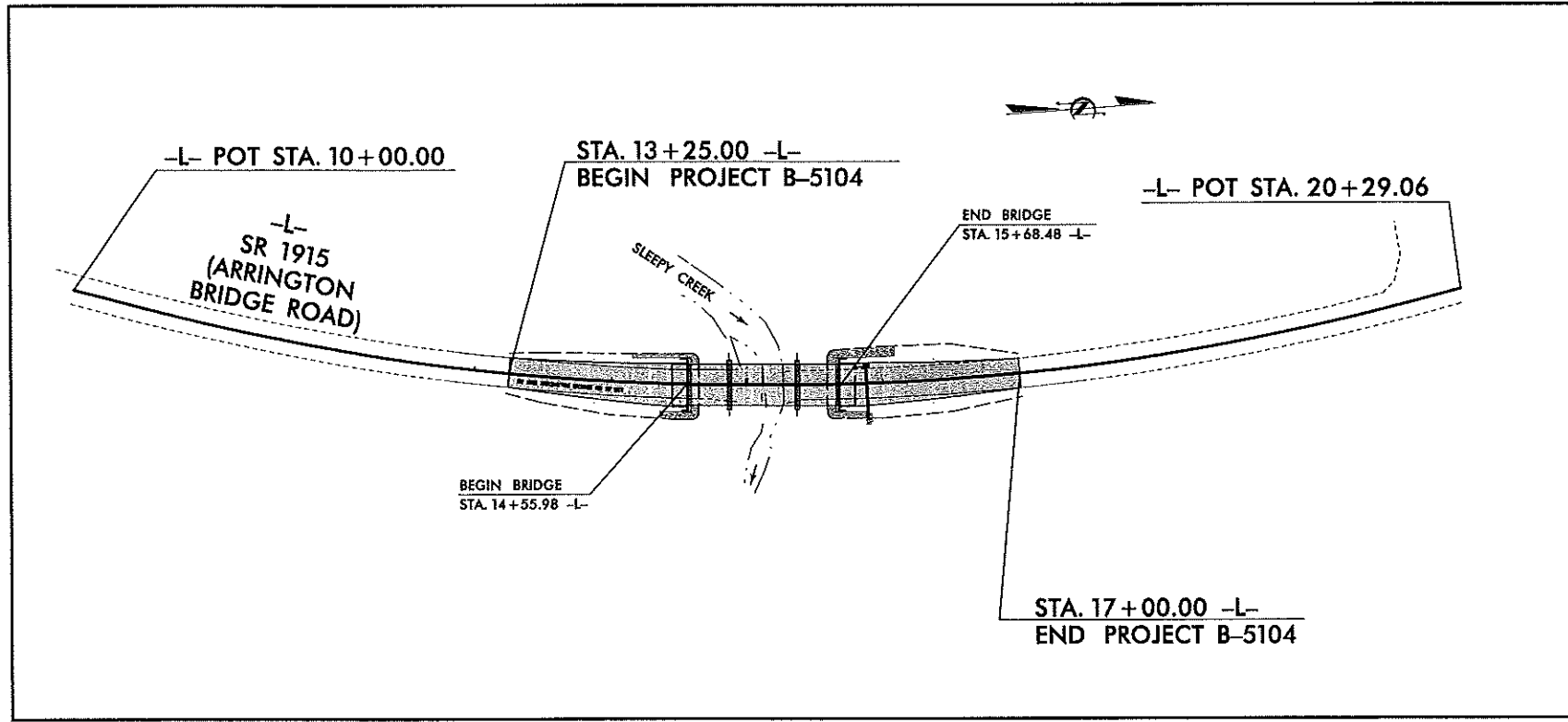
Refer To E. C. Special Provisions
for Special Considerations.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5104	25	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch.....	TD
1630.05	Temporary Diversion.....	TD
1605.01	Temporary Silt Fence.....	III III III
1606.01	Special Sediment Control Fence.....	III III III
1622.01	Temporary Berms and Slope Drains.....	III III III
	Silt Basin Type B.....	III III III
1633.01	Temporary Rock Silt Check Type-A.....	III III III
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM).....	III III III
	Temporary Rock Silt Check Type-B.....	III III III
	Wattle / Coir Fiber Wattle.....	III III III
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM).....	III III III
1634.01	Temporary Rock Sediment Dam Type-A.....	III III III
1634.02	Temporary Rock Sediment Dam Type-B.....	III III III
1635.01	Rock Pipe Inlet Sediment Trap Type-A.....	III III III
1635.02	Rock Pipe Inlet Sediment Trap Type-B.....	III III III
1630.04	Stilling Basin.....	III III III
1630.06	Special Stilling Basin.....	III III III
	Rock Inlet Sediment Trap:	III III III
1632.01	Type A.....	III III III
1632.02	Type B.....	III III III
1632.03	Type C.....	III III III
	Skimmer Basin.....	III III III
	Tiered Skimmer Basin.....	III III III
	Infiltration Basin.....	III III III

THIS PROJECT CONTAINS
EROSION CONTROL PLANS
FOR CLEARING AND
GRUBBING PHASE OF
CONSTRUCTION.



ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT LENGTH

LENGTH ROADWAY PROJECT B-5104	=	0.050 MILE
LENGTH STRUCTURE PROJECT B-5104	=	0.021 MILE
TOTAL LENGTH PROJECT B-5104	=	0.071 MILE

Prepared In the Office of:
Mulkey Engineers & Consultants
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2006 STANDARD SPECIFICATIONS

MATTHEW HARVEY
MULKEY E & C
ENGINEER

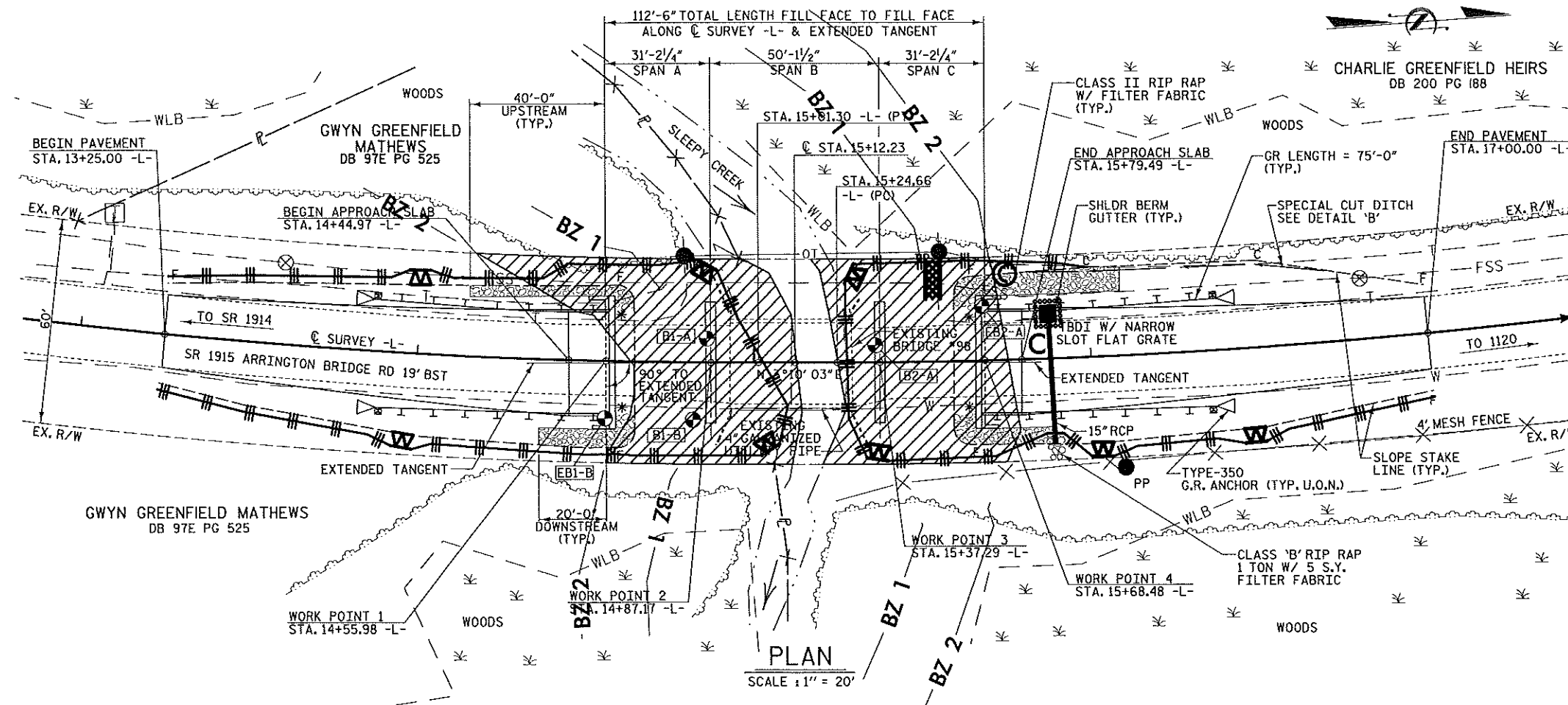
LEVEL III-A CERTIFICATION No.: 412

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated July 18, 2006 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01 Railroad Erosion Control Detail	1630.06 Special Stilling Basin
1605.01 Temporary Silt Fence	1632.01 Rock Inlet Sediment Trap Type A
1606.01 Special Sediment Control Fence	1632.02 Rock Inlet Sediment Trap Type B
1607.01 Gravel Construction Entrance	1632.03 Rock Inlet Sediment Trap Type C
1622.01 Temporary Berms and Slope Drains	1633.01 Temporary Rock Silt Check Type A
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.03 Temporary Silt Ditch	1634.02 Temporary Rock Sediment Dam Type B
1630.04 Stilling Basin	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.05 Temporary Diversion	1635.02 Rock Pipe Inlet Sediment Trap Type B

EROSION CONTROL PLANS

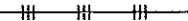


ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, NC
2006 STANDARD SPECIFICATIONS

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

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

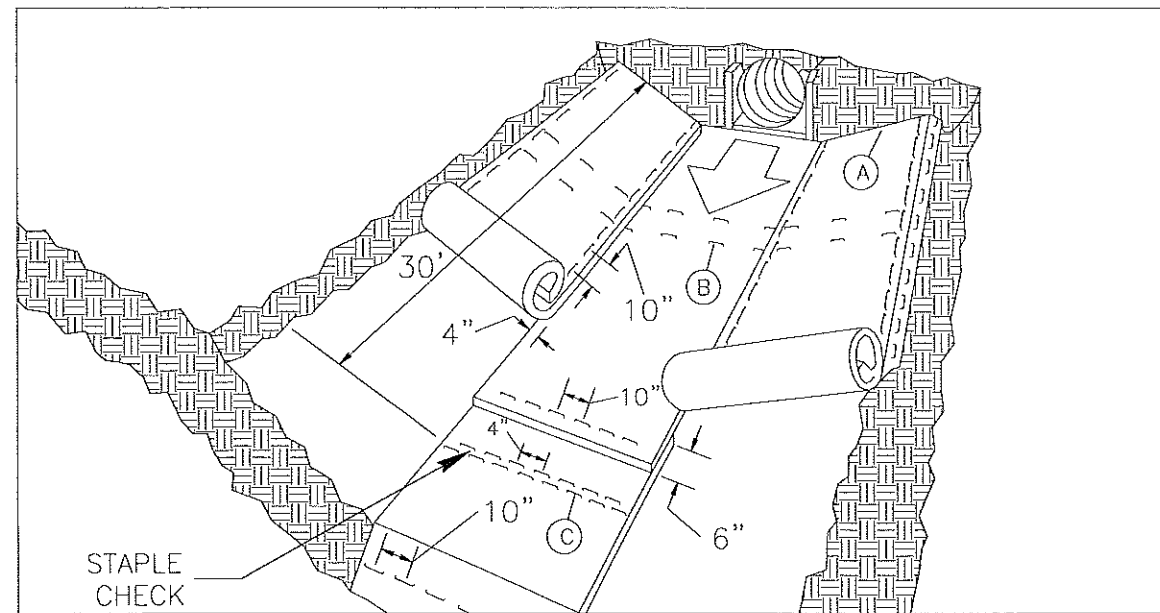
PLANS PREPARED BY:
MULKEY
ENGINEERS & CONSULTANTS
PO BOX 98187
RALEIGH, NC 27608
(919) 871-1212
(919) 871-1218 FAX
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PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

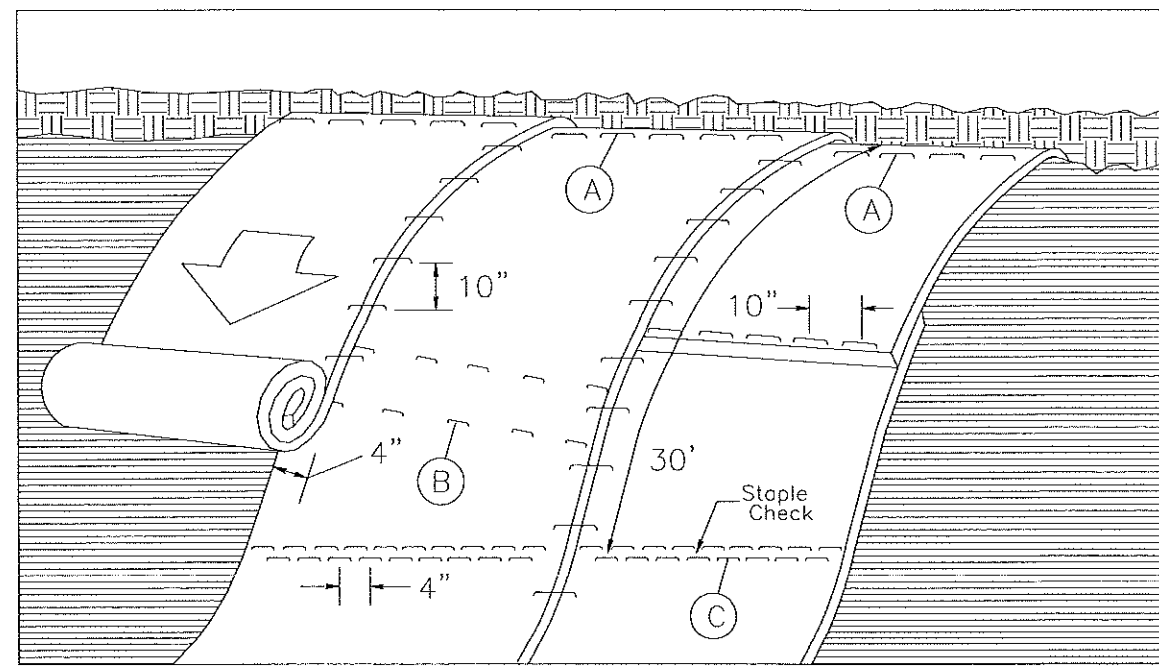
REPLACES BRIDGE NO. 98
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BRIDGE ON SR 1915
OVER SLEEPY CREEK
BETWEEN SR 1914 &
SR 1120
30' CLEAR ROADWAY - 90° SKEW

REVISIONS						SHEET NO. 26
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 29
2			4			

MATTING INSTALLATION DETAIL



MATTING IN DITCHES



MATTING ON SLOPES

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.

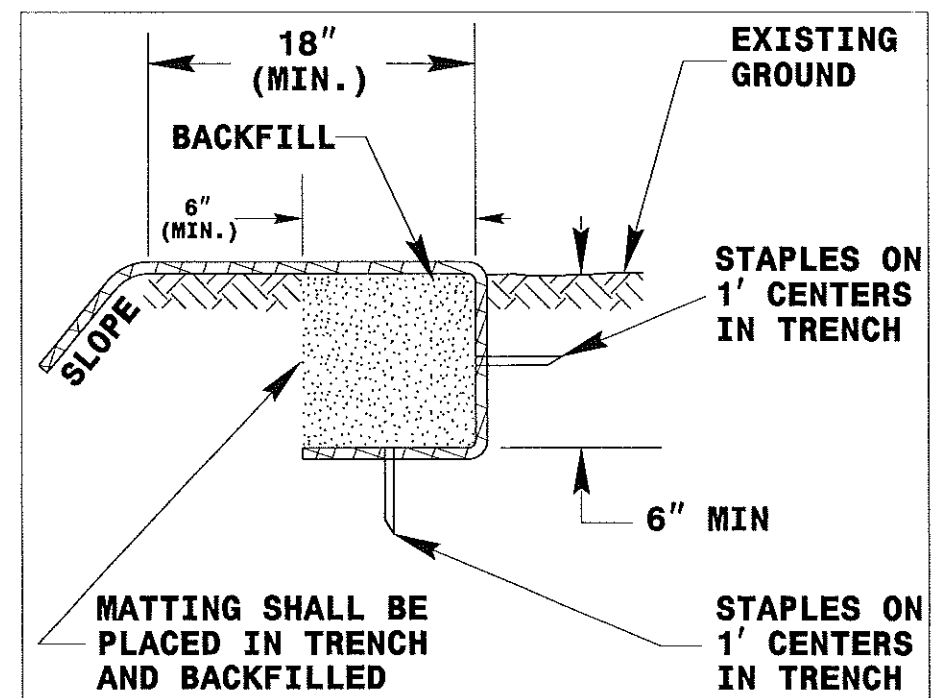


DIAGRAM (A)

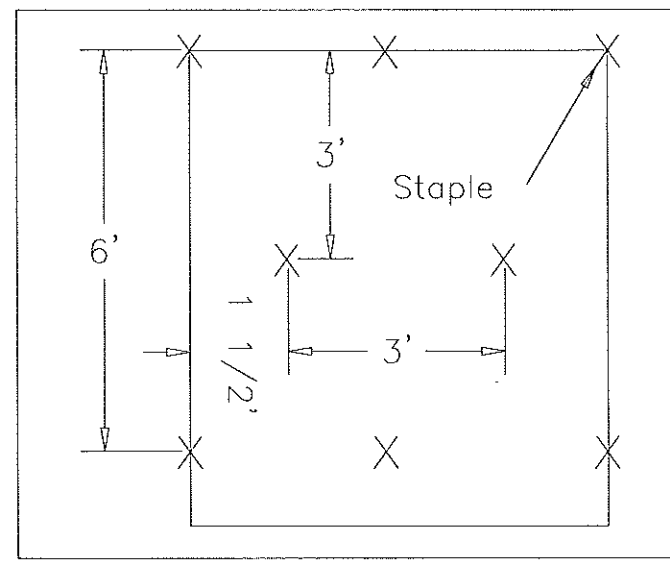


DIAGRAM (B)

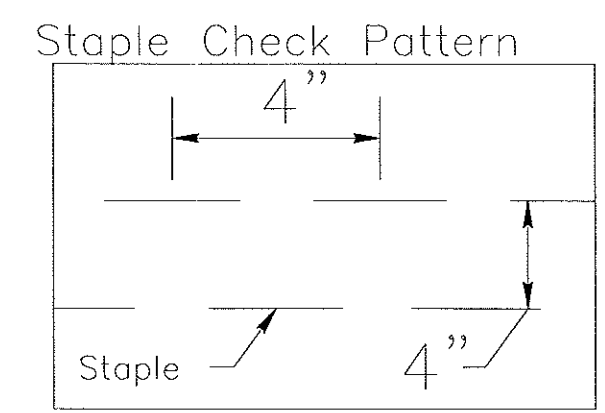


DIAGRAM (C)

NOT TO SCALE

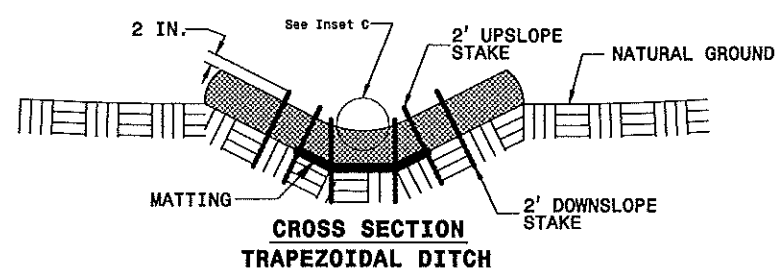
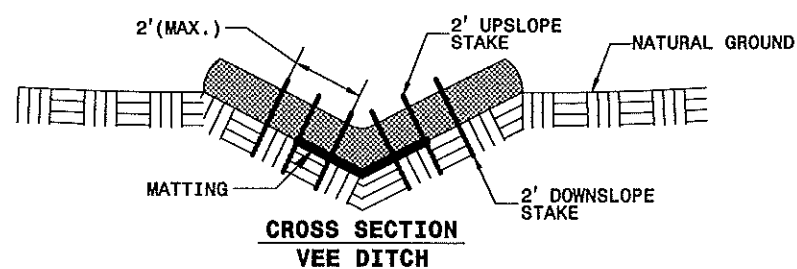
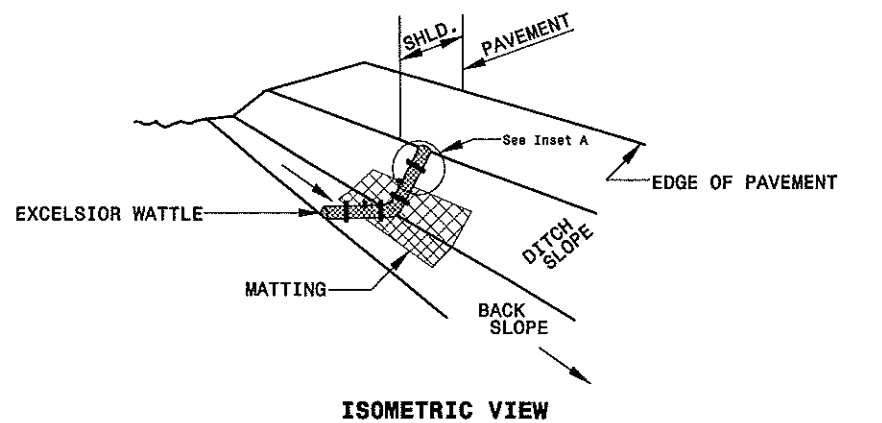
PLANS PREPARED BY:
MULKEY
 ENGINEERS & CONSULTANTS
 P.O. BOX 32187
 RALEIGH, N.C. 27638
 (919) 831-1818
 (919) 831-1819
 WWW.MULKEYINC.COM

PROJECT NO. 42239
 WAYNE COUNTY
 STATION: 15+12.23 -L-

REPLACES BRIDGE NO. 98

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BRIDGE ON SR 1915 OVER SLEEPY CREEK BETWEEN SR 1914 & SR 1120					
30' CLEAR ROADWAY - 90° SKEW					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. 27					TOTAL SHEETS 29

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



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.

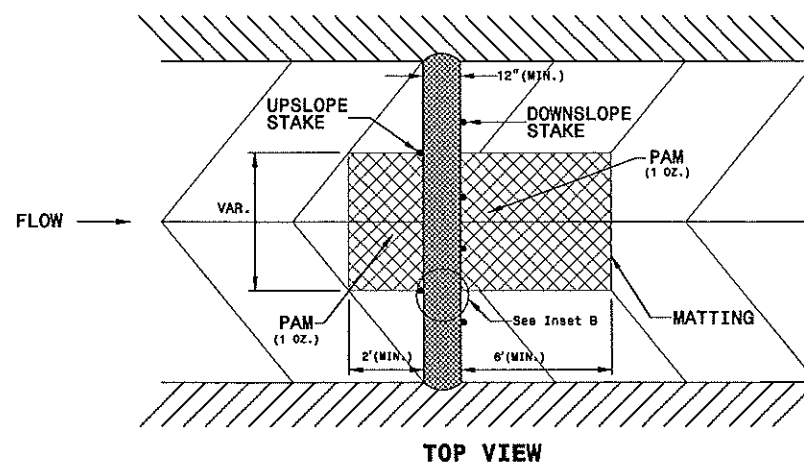
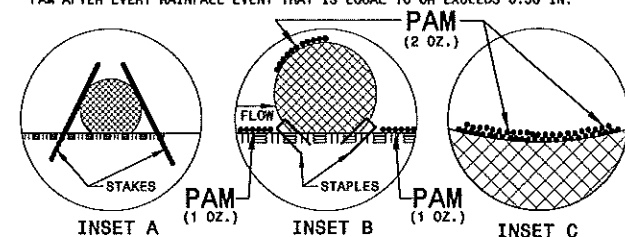
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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 0.60 IN.



PROJECT NO. 42239
WAYNE COUNTY
STATION: 15+12.23 -L-

REPLACES BRIDGE NO. 98

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE ON SR 1915
OVER SLEEPY CREEK
BETWEEN SR 1914 &
SR 1120

30' CLEAR ROADWAY - 90° SKEW



REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
				TOTAL SHEETS	28
				TOTAL SHEETS	29

