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CONTRACT: C203647 TIP PROJECT: W-5206AG

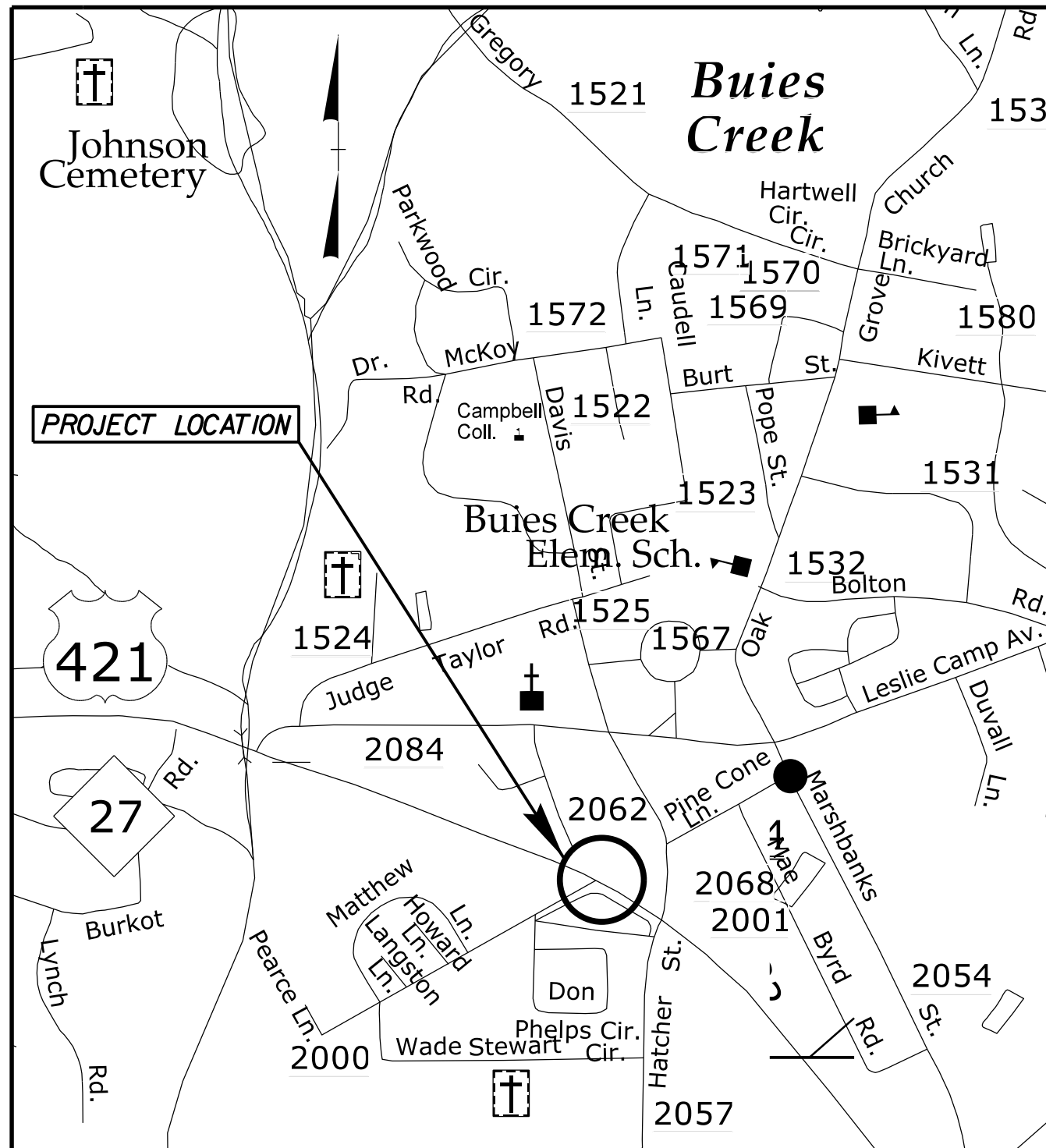
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HARNETT COUNTY

**LOCATION: CAMPBELL UNIVERSITY PEDESTRIAN TUNNEL
UNDER US 421/NC 27 IN BUIES CREEK**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, EXISTING SIGNAL FLASHER
REMOVAL, RETAINING WALLS AND CULVERT.**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5206AG		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45336.1.FR33	HSIP-0421(79)	P.E.	
45336.2.FR33	HSIP-0421(79)	R.O.W./UTILITY	
45336.3.FR33	HSIP-0421(79)	CONSTR.	

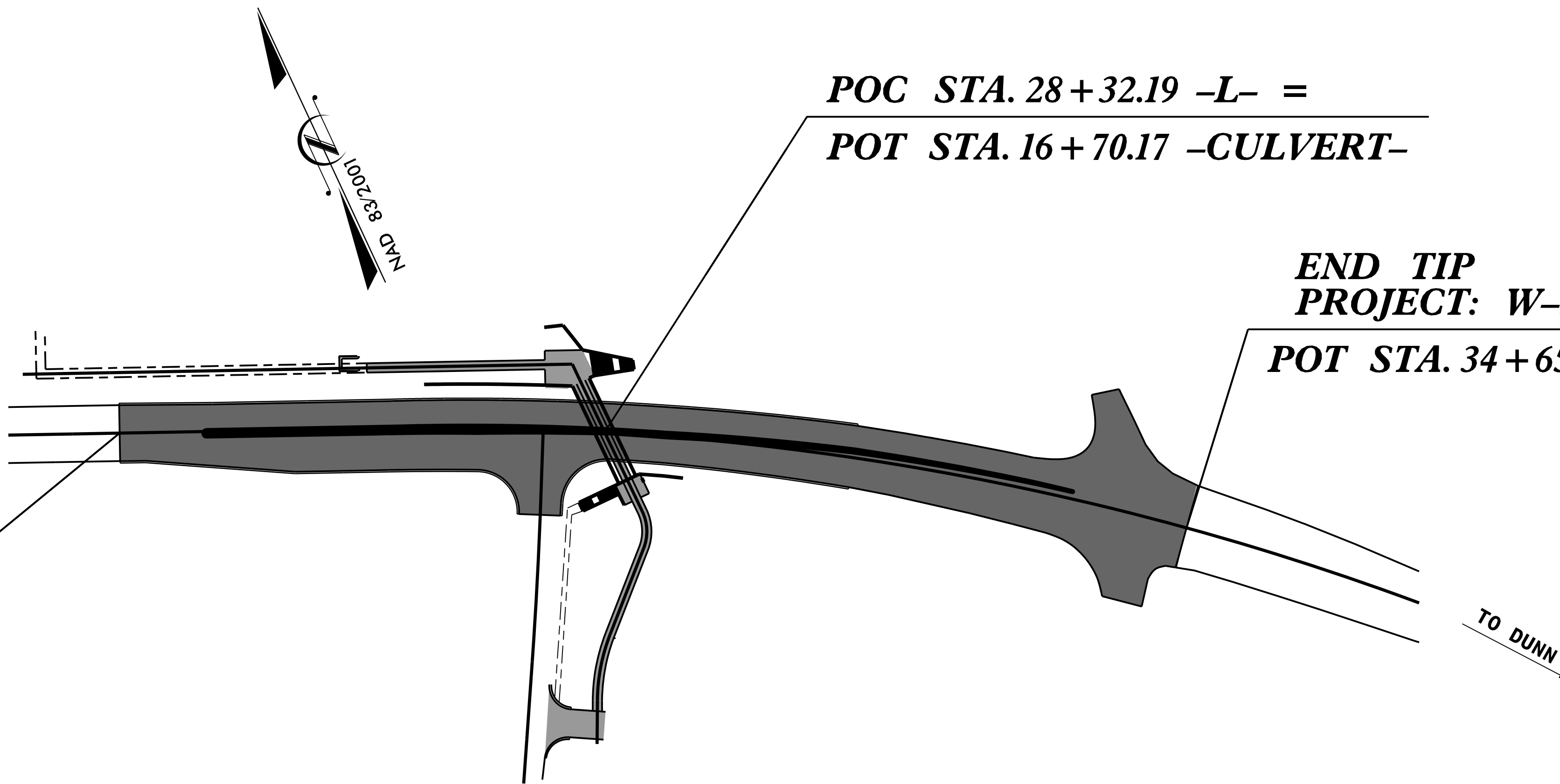


VICINITY MAP (NOT TO SCALE)

STRUCTURE

**BEGIN TIP
PROJECT: W-5206AG
POT STA. 23+12.00 -L-**

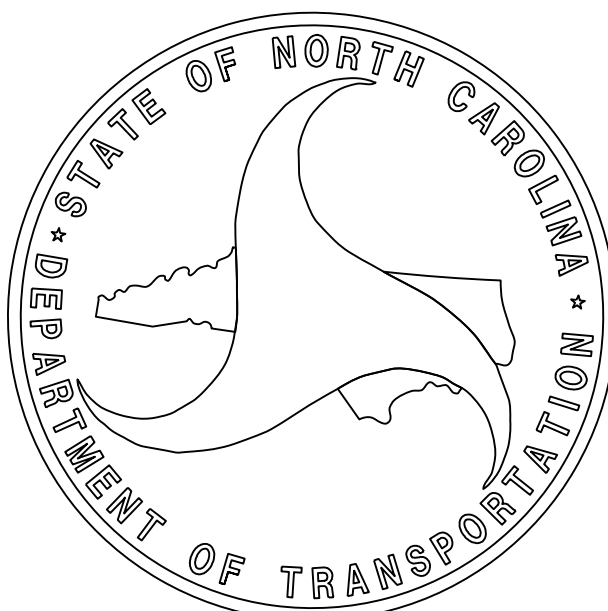
TO LILLINGTON



**POC STA. 28+32.19 -L- =
POT STA. 16+70.17 -CULVERT-**

**END TIP
PROJECT: W-5206AG
POT STA. 34+65.71 -L-**

TO DUNN



DESIGN DATA
AADT 2012 = 18,000
V = 50 MPH
FUNC CLASS = RURAL ARTERIAL

REGIONAL TIER

PROJECT LENGTH
LENGTH ROADWAY TIP PROJECT: W-5206AG = 0.491 MILES

TOTAL LENGTH OF TIP PROJECT: W-5206AG = 0.491 MILES

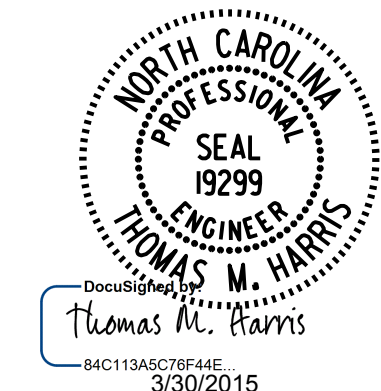
PLANS PREPARED BY:
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

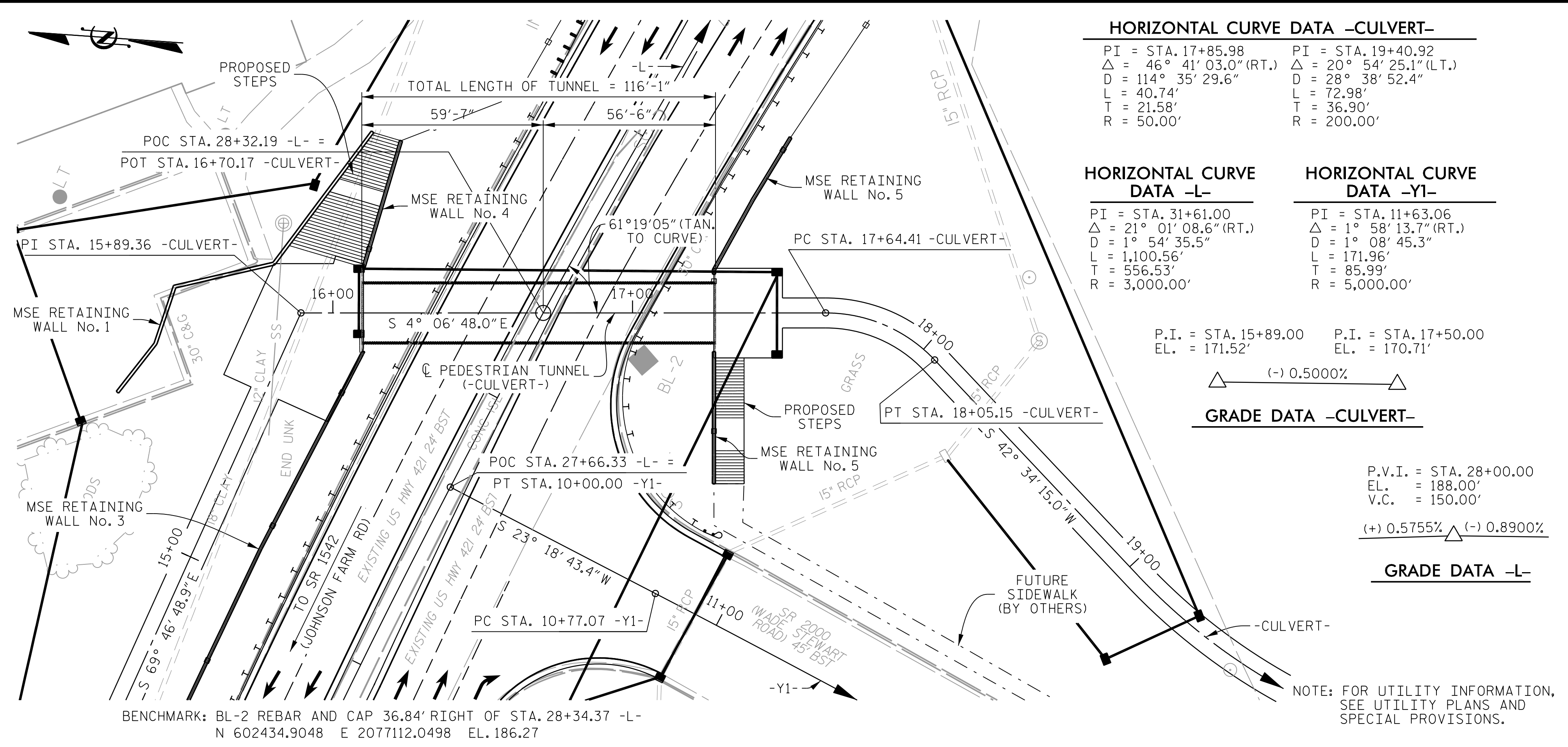
2012 STANDARD SPECIFICATIONS

LETTING DATE:
MAY 19, 2015

TOM M. HARRIS, P.E.
PROJECT ENGINEER

ANUPAM D. SHAH, P.E.
PROJECT DESIGN ENGINEER

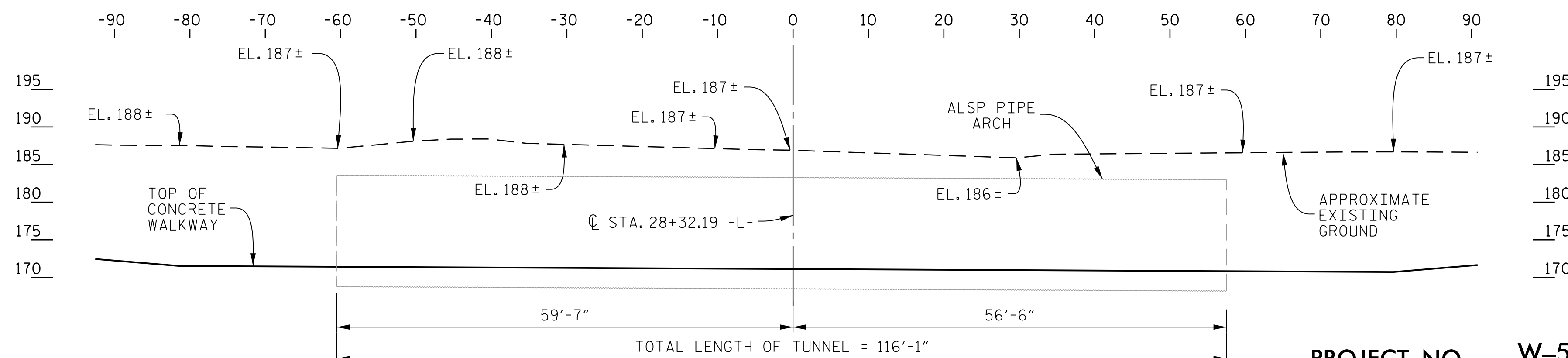




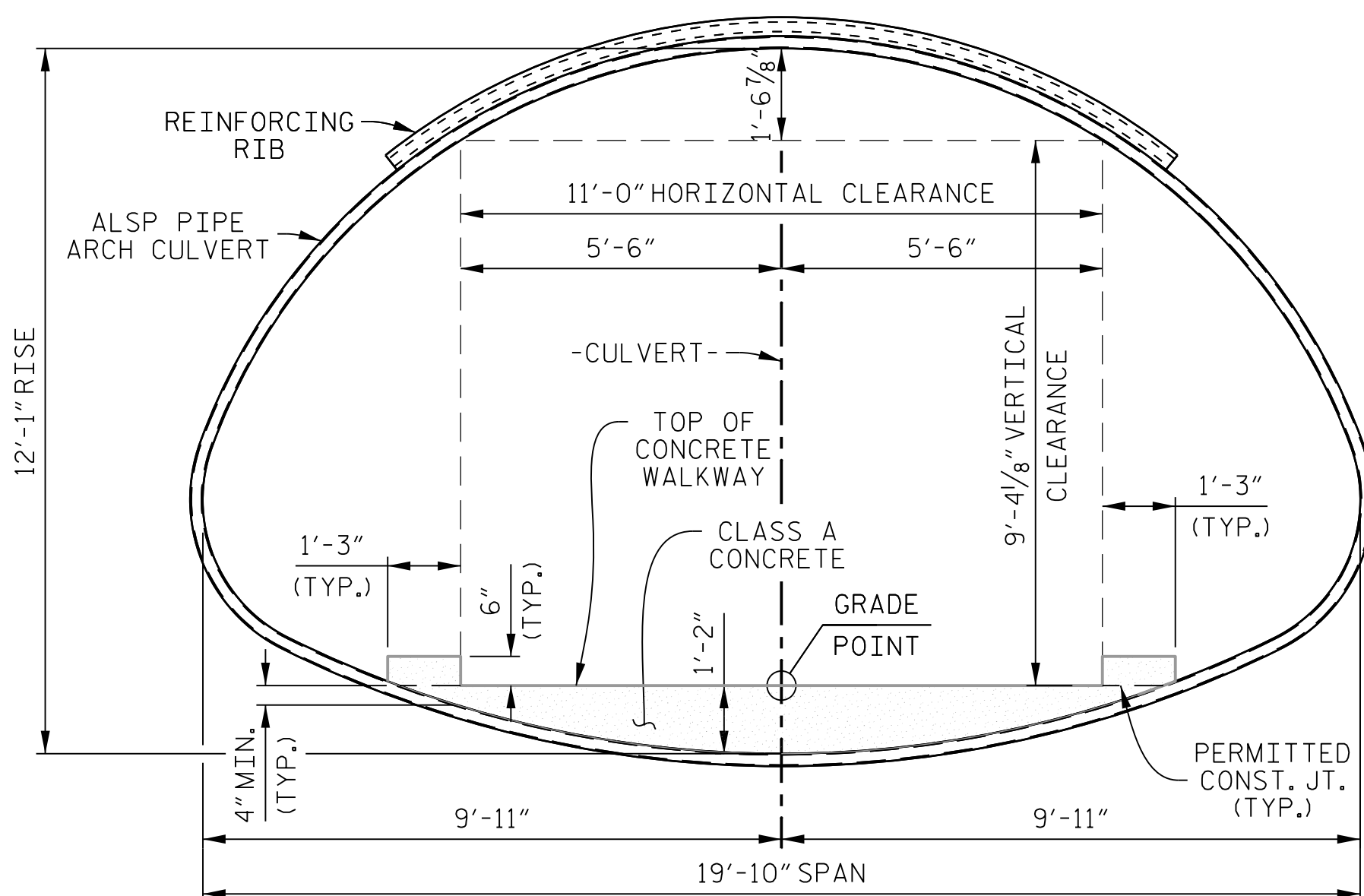
NOTES

- ASSUMED LIVE LOAD.....HL-93 OR ALTERNATE LOADING.
- DESIGN FILL IS MEASURED FROM FINISHED GRADE TO TOP OF ALSP PIPE ARCH AT -CULVERT-.
- MAXIMUM DESIGN FILL..... 7.0 FEET
- MINIMUM DESIGN FILL..... 4.2 FEET
- THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF TUNNEL BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.
- FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTES SHEET.
- FOR ALUMINUM STRUCTURAL PLATE PIPE ARCH CULVERT, SEE SPECIAL PROVISIONS.
- ALSP DENOTES ALUMINUM STRUCTURAL PLATE.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR #57 STONE, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
- FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.
- FOR PIPE CULVERTS, SEE SECTION 300 OF THE STANDARD SPECIFICATIONS.
- MAXIMUM FACTORED VERTICAL STRESS ON FOUNDATION MATERIAL IS 2,000 LBS./SF.
- DEWATERING WILL BE REQUIRED DURING CONSTRUCTION.
- NO WORK SHALL BE DONE ON THE PIPE CULVERT AT STA. 28+32.19 -L- UNTIL THE AREA OF THE PIPE CULVERT HAS BEEN UNDERCUT AND UNSUITABLE MATERIAL REPLACED WITH SUITABLE MATERIAL, PROPERLY COMPACTED TO THE ELEVATION OF THE BOTTOM OF THE PROPOSED FLOOR SLAB. THE LIMITS OF THIS UNDERCUT EXCAVATION SHALL BE AT LEAST 2'-0" OUTSIDE THE PIPE CULVERT. NO SEPARATE PAYMENT WILL BE MADE FOR ANY TEMPORARY SHEETING, UNDERCUT, OR UNSUITABLE MATERIAL REPLACEMENT AS REQUIRED TO CONSTRUCT THE PROPOSED CULVERT. PAYMENT IS INCLUDED IN THE LUMP SUM PRICE FOR CULVERT EXCAVATION.
- FOR MSE RETAINING WALL DETAILS, SEE SHEETS C-3 TO C-6.

LOCATION SKETCH



PROFILE ALONG -CULVERT-



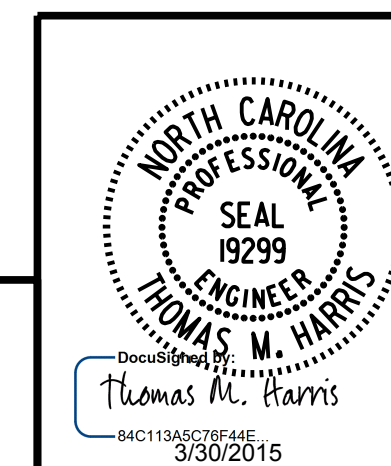
RIGHT ANGLE SECTION OF TUNNEL
(WALKWAY REINFORCING NOT SHOWN)

STRUCTURE QUANTITIES	
FOUNDATION CONDITIONING MATERIAL	550 TONS
CULVERT EXCAVATION	LUMP SUM
CLASS A CONCRETE	54.3 CU. YDS.
ALSP PIPE ARCH CULVERT (19'-10" x 12'-1")	LUMP SUM
#57 STONE	2000 TONS

FOR MSE RETAINING WALL QUANTITIES, SEE SHEETS C-3 TO C-6.

DRAWN BY : K. E. LOFTON DATE : 12-14
 CHECKED BY : T. M. HARRIS DATE : 1-15
 DESIGN ENGINEER : T. M. HARRIS DATE : 1-15

PLANS PREPARED BY :
PARSONS
 5540 Centerview Drive, Suite 217
 Raleigh, NC 27606-3386
 NC LICENSE No. F-0246
 FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION



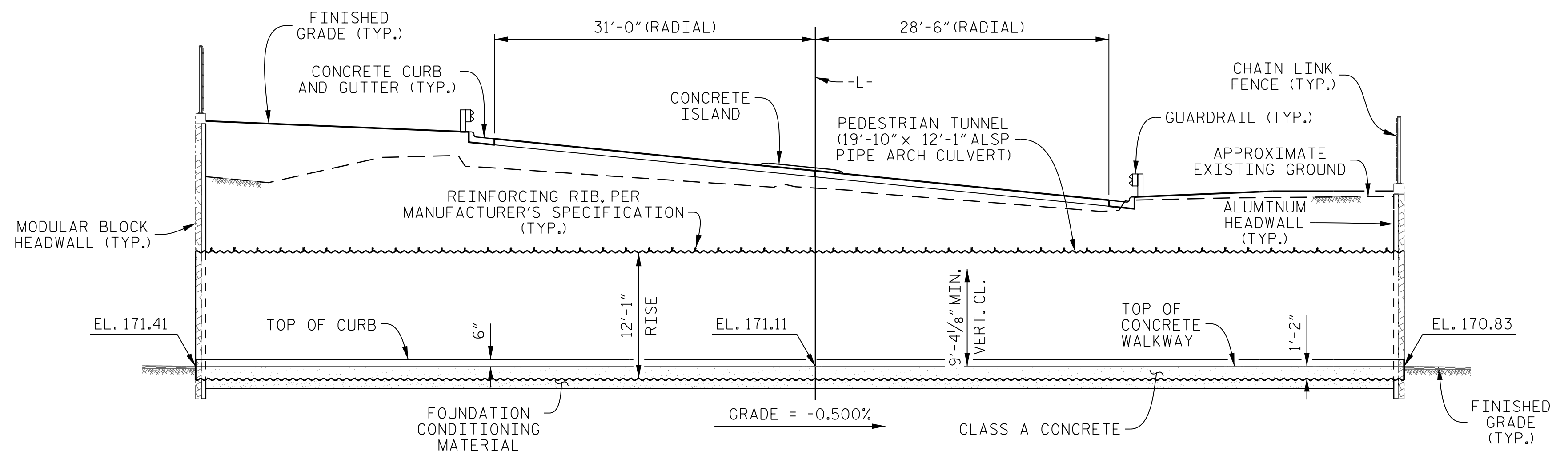
PROJECT NO. **W-5206AG**
HARNETT COUNTY
 STATION: **28+32.19 -L-**

SHEET 1 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**PEDESTRIAN TUNNEL UNDER
 US 421/NC 27 (-L-) BETWEEN
 SR 2000 (WADE STEWART ROAD)
 AND SR 2057 (HATCHER STREET)**

REVISIONS						SHEET No.
No.	BY	DATE	No.	BY	DATE	C-1
1			3			TOTAL SHEETS
2			4			6



SECTION THRU PEDESTRIAN TUNNEL - NORMAL TO ROADWAY

NOTES

TOP OF CONCRETE WALKWAY SHALL RECEIVE A SIDEWALK FINISH AS DEFINED IN SECTION 825 OF THE STANDARD SPECIFICATIONS.

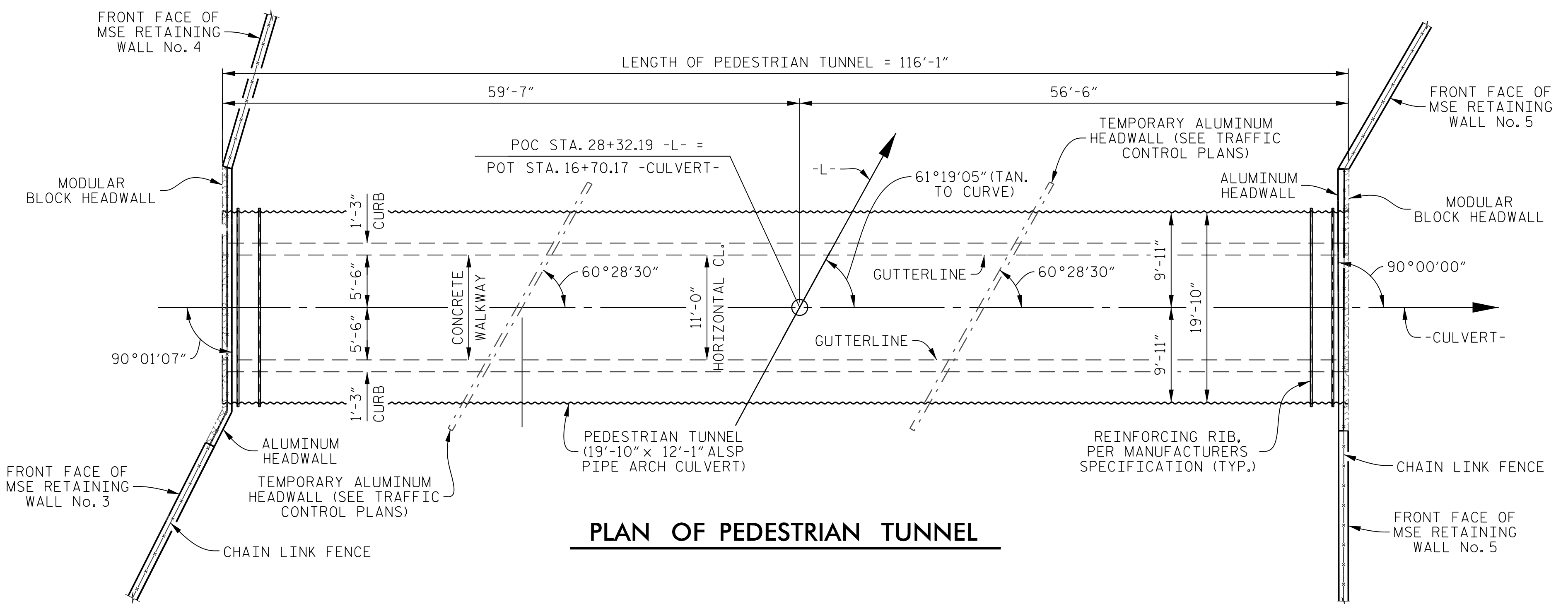
GROOVED CONTRACTION JOINTS 1/2" IN DEPTH SHALL BE TOOLED IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS.

MODULAR BLOCK TO BE USED FOR HEADWALL SHALL BE COORDINATED WITH SRW UNITS IN RETAINING WALLS AND SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER AND CAMPBELL UNIVERSITY BEFORE PURCHASING AND INSTALLING MODULAR BLOCK HEADWALL.

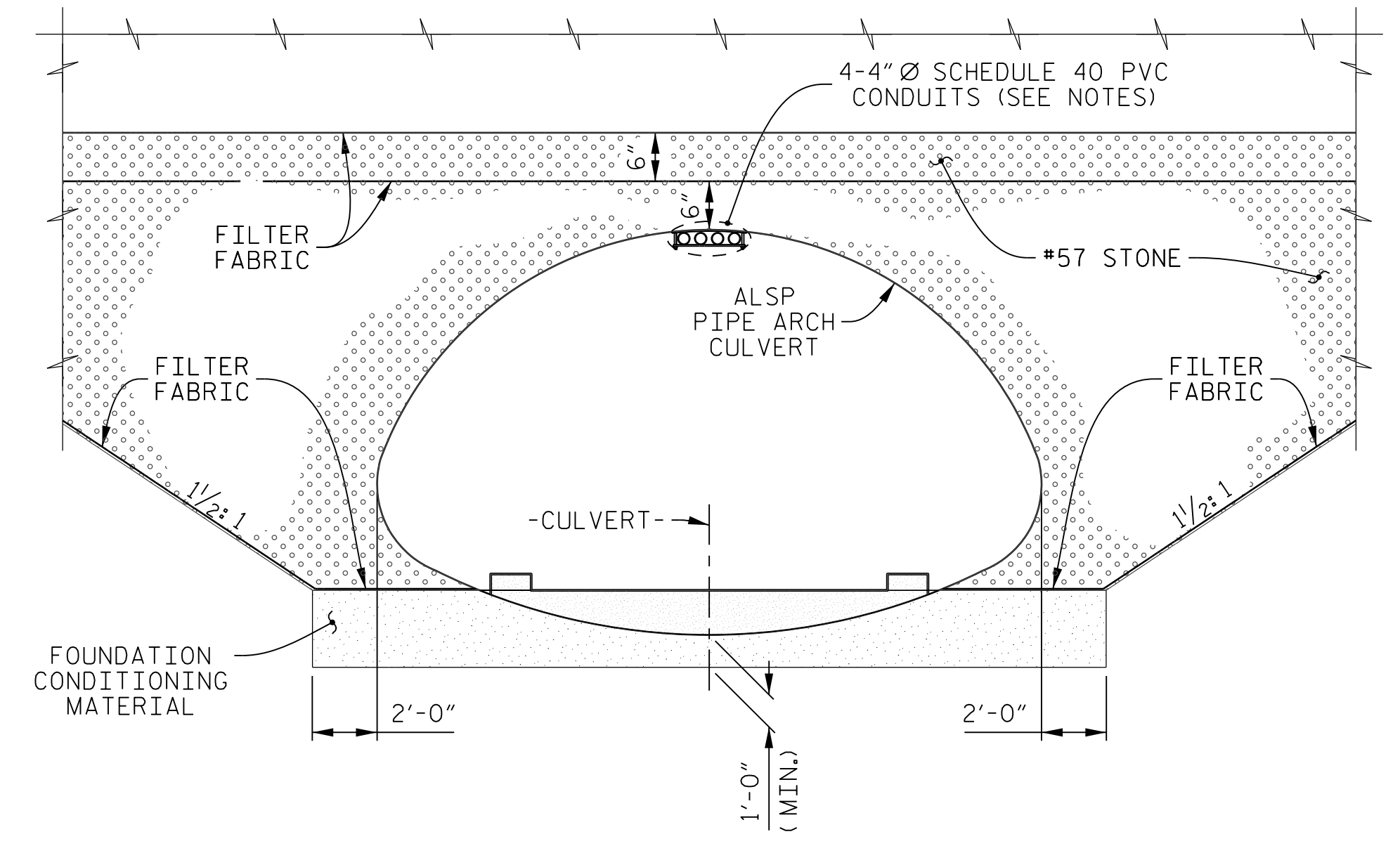
CONTRACTOR SHALL FURNISH AND INSTALL FOUR (4) 4" DIAMETER SCHEDULE 40 PVC CONDUITS IN THE TOP OF THE CULVERT. CONDUITS SHALL BE INSTALLED WITHOUT DRILLING INTO THE PIPE CULVERT. THE COST TO FURNISH AND INSTALL THE CONDUITS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR ALSP PIPE ARCH CULVERT.

FOR RETAINING WALL LAYOUT, SEE SHEET 3 OF 6.

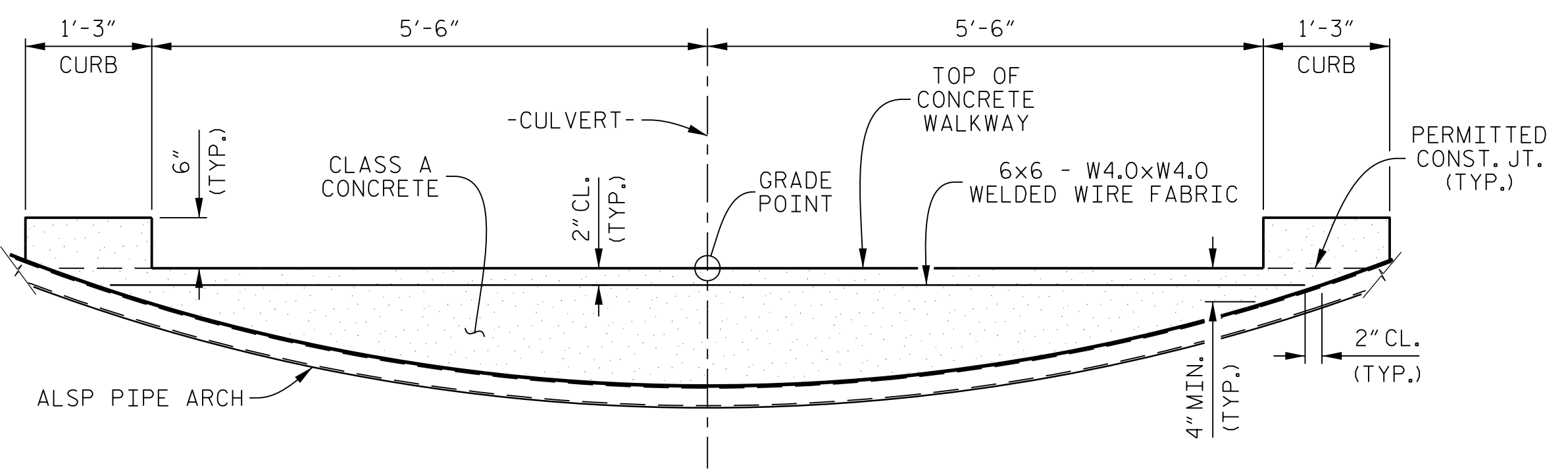
FOR RETAINING WALL NOTES, SEE SHEET 6 OF 6.



PLAN OF PEDESTRIAN TUNNEL



RIGHT ANGLE TO PEDESTRIAN TUNNEL

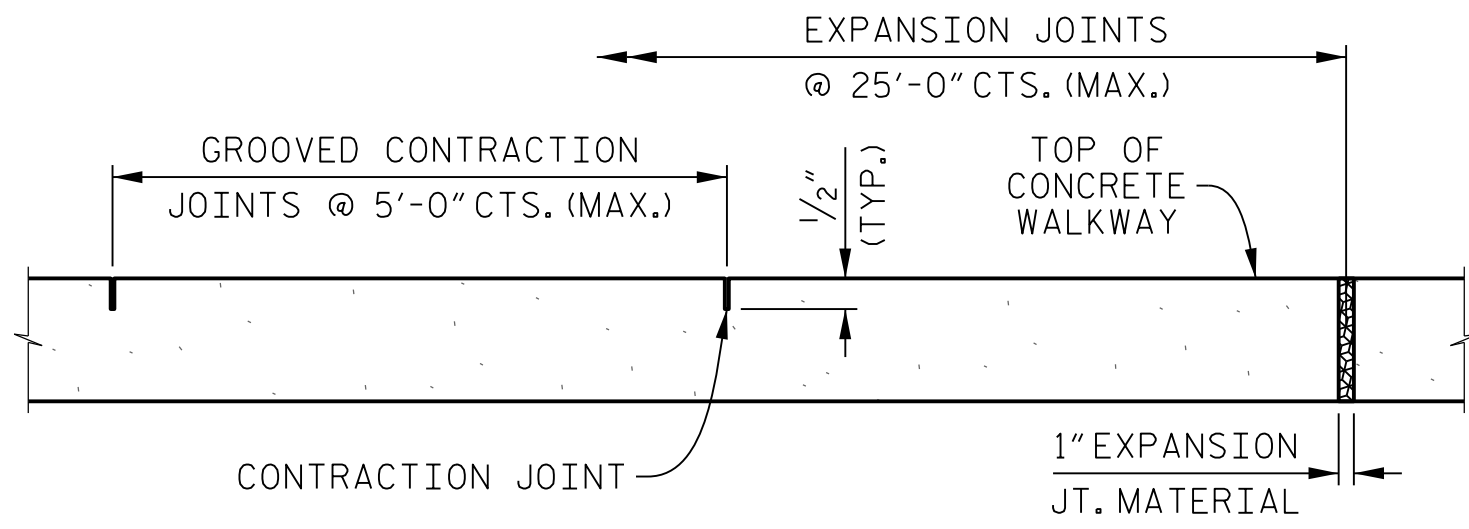


REINFORCING DETAIL - CONCRETE WALKWAY

ADJACENT RUNS OF WELDED WIRE FABRIC SHALL LAP AT LEAST 6".

THE COST OF THE WELDED WIRE FABRIC SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER CUBIC YARD FOR CLASS A CONCRETE.

WELDED WIRE FABRIC = APPROXIMATELY 350 LINEAR FEET, BASED ON 60" WIDE SHEETS.



JOINT DETAIL - CONCRETE WALKWAY

PROJECT NO. W-5206AG
HARNETT COUNTY
 STATION: 28+32.19 -L-
 SHEET 2 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**PEDESTRIAN TUNNEL UNDER
 US 421/NC 27 (-L-) BETWEEN
 SR 2000 (WADE STEWART ROAD)
 AND SR 2057 (HATCHER STREET)**

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DRAWN BY: K. E. LOFTON DATE: 12-14
 CHECKED BY: T. M. HARRIS DATE: 1-15
 DESIGN ENGINEER: T. M. HARRIS DATE: 1-15

PLANS PREPARED BY:
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 FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

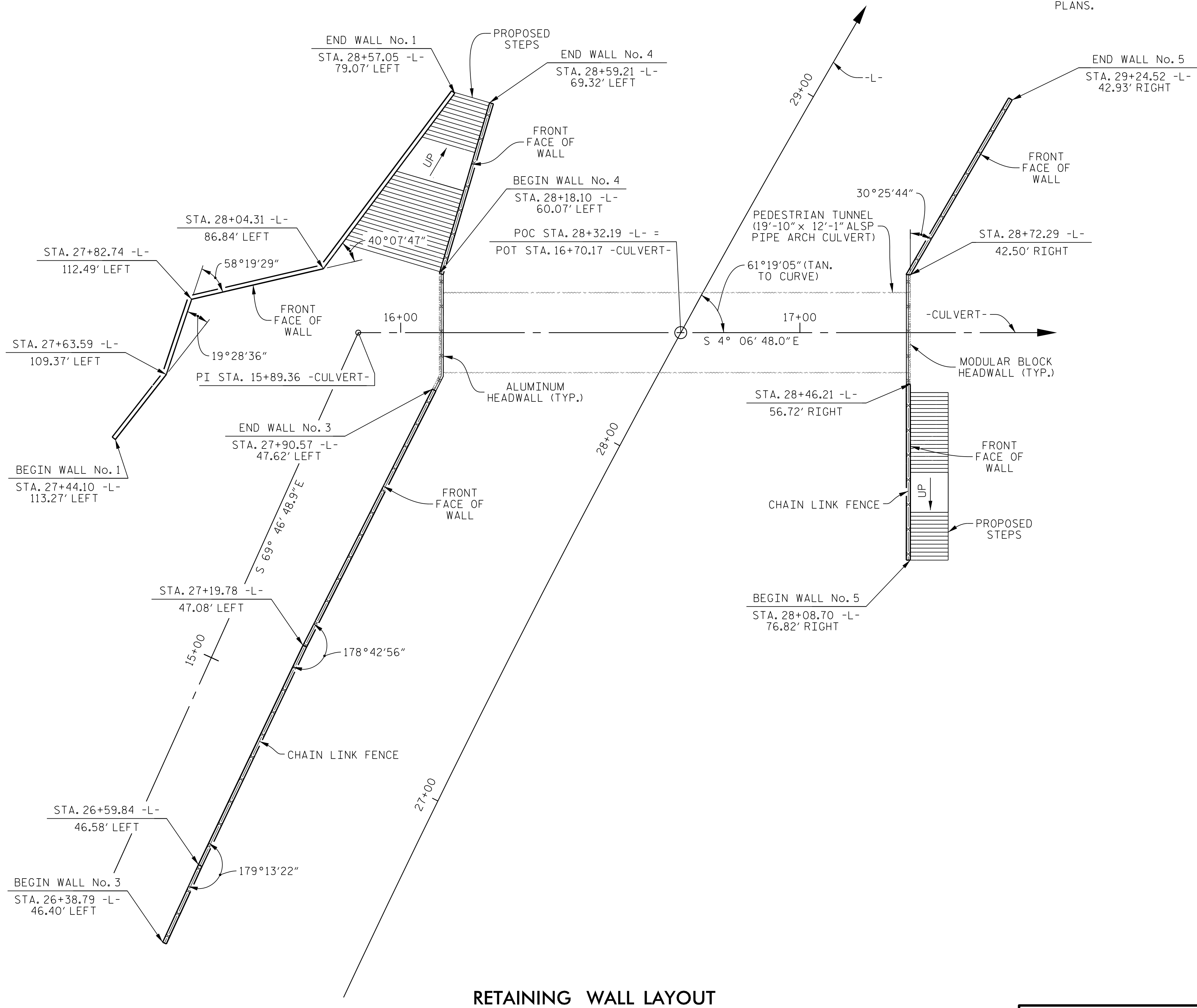
**NORTH CAROLINA
 PROFESSIONAL
 SEAL
 19299
 ENGINEER
 THOMAS M. HARRIS**

THOMAS M. HARRIS
 84C11346C78744E
 3/30/2015

REVISIONS						SHEET No. C-2 TOTAL SHEETS 6
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			
2			4			

NOTES

- FOR HORIZONTAL CURVE DATA, SEE SHEET 1 OF 6.
- FOR RETAINING WALL NOTES, SEE SHEET 6 OF 6.
- RETAINING WALL STATIONS AND OFFSET ARE TO FRONT FACE OF WALL.
- WALL No. 2 HAS BEEN ELIMINATED.
- FOR CHAIN LINK FENCE LOCATIONS, SEE ROADWAY PLANS.



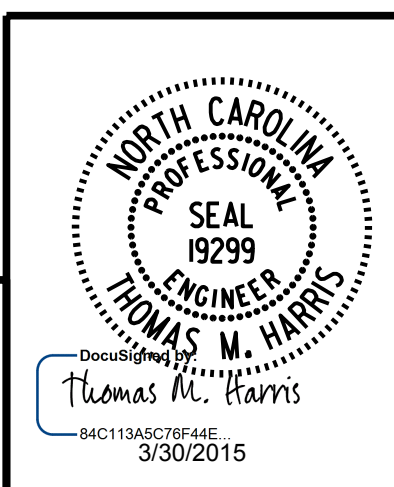
RETAINING WALL LAYOUT

PROJECT NO. W-5206AG
HARNETT COUNTY
 STATION: 28+32.19 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**PEDESTRIAN TUNNEL UNDER
 US 421/NC 27 (-L-) BETWEEN
 SR 2000 (WADE STEWART ROAD)
 AND SR 2057 (HATCHER STREET)**



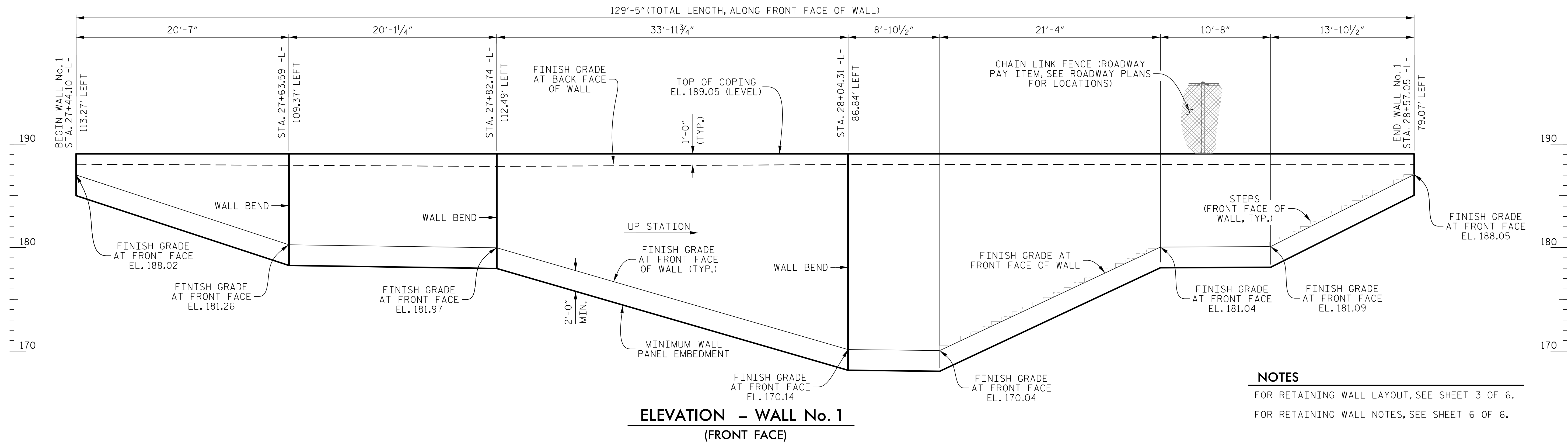
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DRAWN BY :	K. E. LOFTON	DATE :	12-14
CHECKED BY :	T. M. HARRIS	DATE :	1-15
DESIGN ENGINEER :	T. M. HARRIS	DATE :	1-15

REVISIONS				SHEET No.	
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		

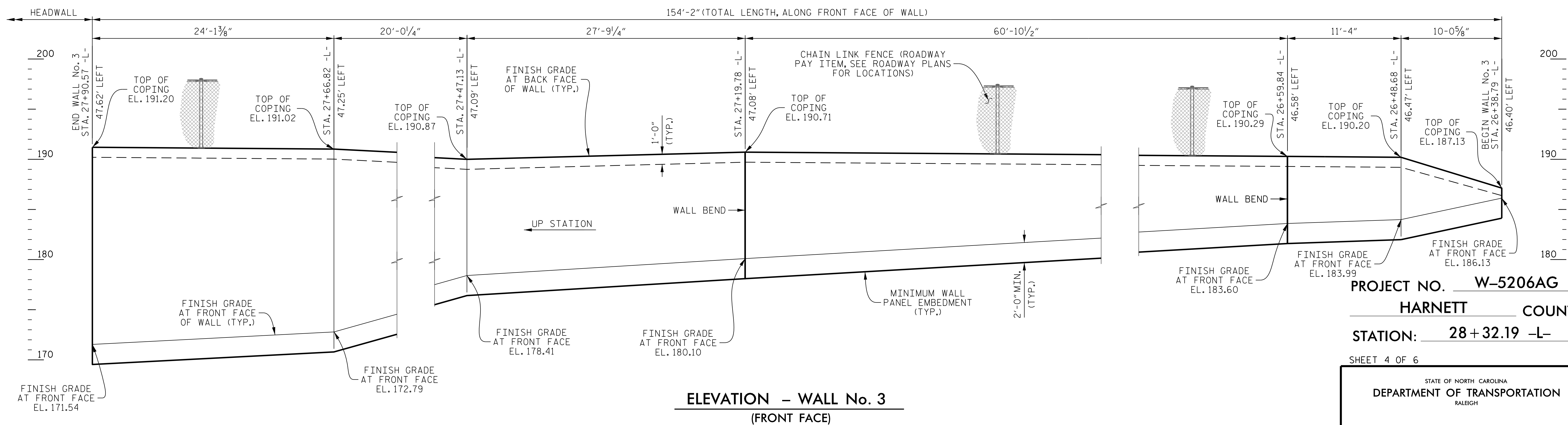
TOTAL SHEETS	6
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ELEVATION – WALL No. 1
(FRONT FACE)

NOTES
FOR RETAINING WALL LAYOUT, SEE SHEET 3 OF 6.
FOR RETAINING WALL NOTES, SEE SHEET 6 OF 6.



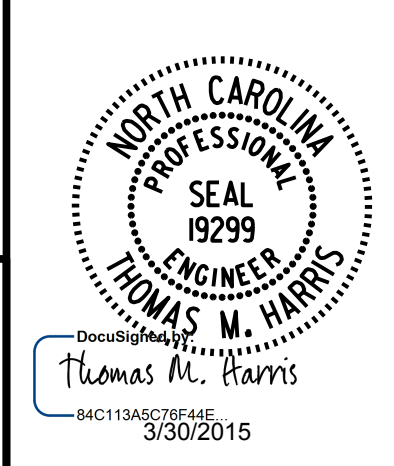
ELEVATION – WALL No. 3
(FRONT FACE)

PROJECT NO. **W-5206AG**
HARNETT COUNTY
STATION: **28+32.19 -L-**
SHEET 4 OF 6

RETAINING WALL QUANTITY	
WALL No. 1	1,545 SQ. FT.
WALL No. 3	2,010 SQ. FT.

DRAWN BY : K. E. LOFTON DATE : 12-14
CHECKED BY : T. M. HARRIS DATE : 1-15
DESIGN ENGINEER : T. M. HARRIS DATE : 1-15

PLANS PREPARED BY :
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5540 Centerview Drive, Suite 217
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NC LICENSE No. F-0246



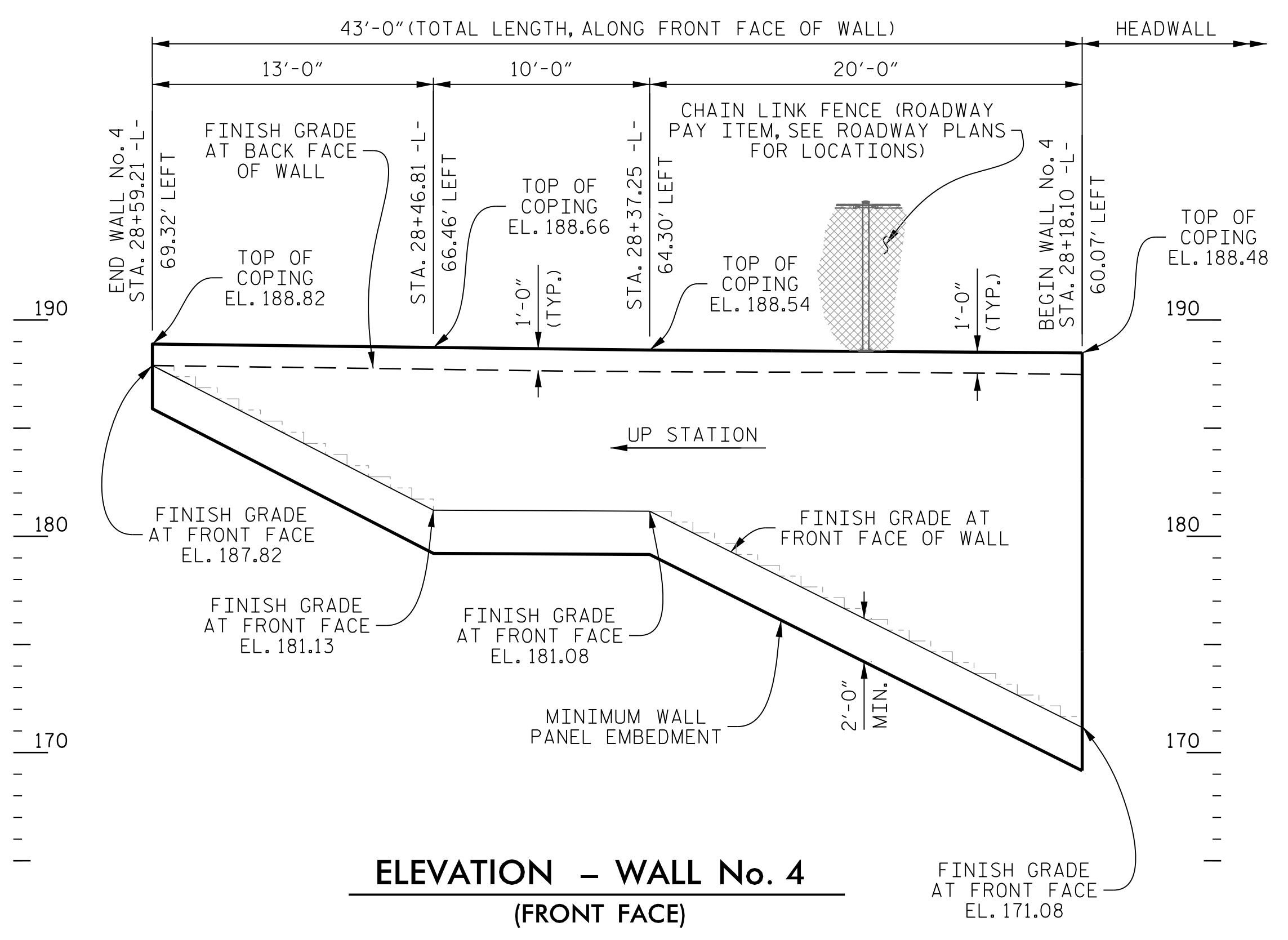
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**PEDESTRIAN TUNNEL UNDER
US 421 / NC 27 (-L-) BETWEEN
SR 2000 (WADE STEWART ROAD)
AND SR 2057 (HATCHER STREET)**

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

SHEET No. **C-4**
TOTAL SHEETS **6**

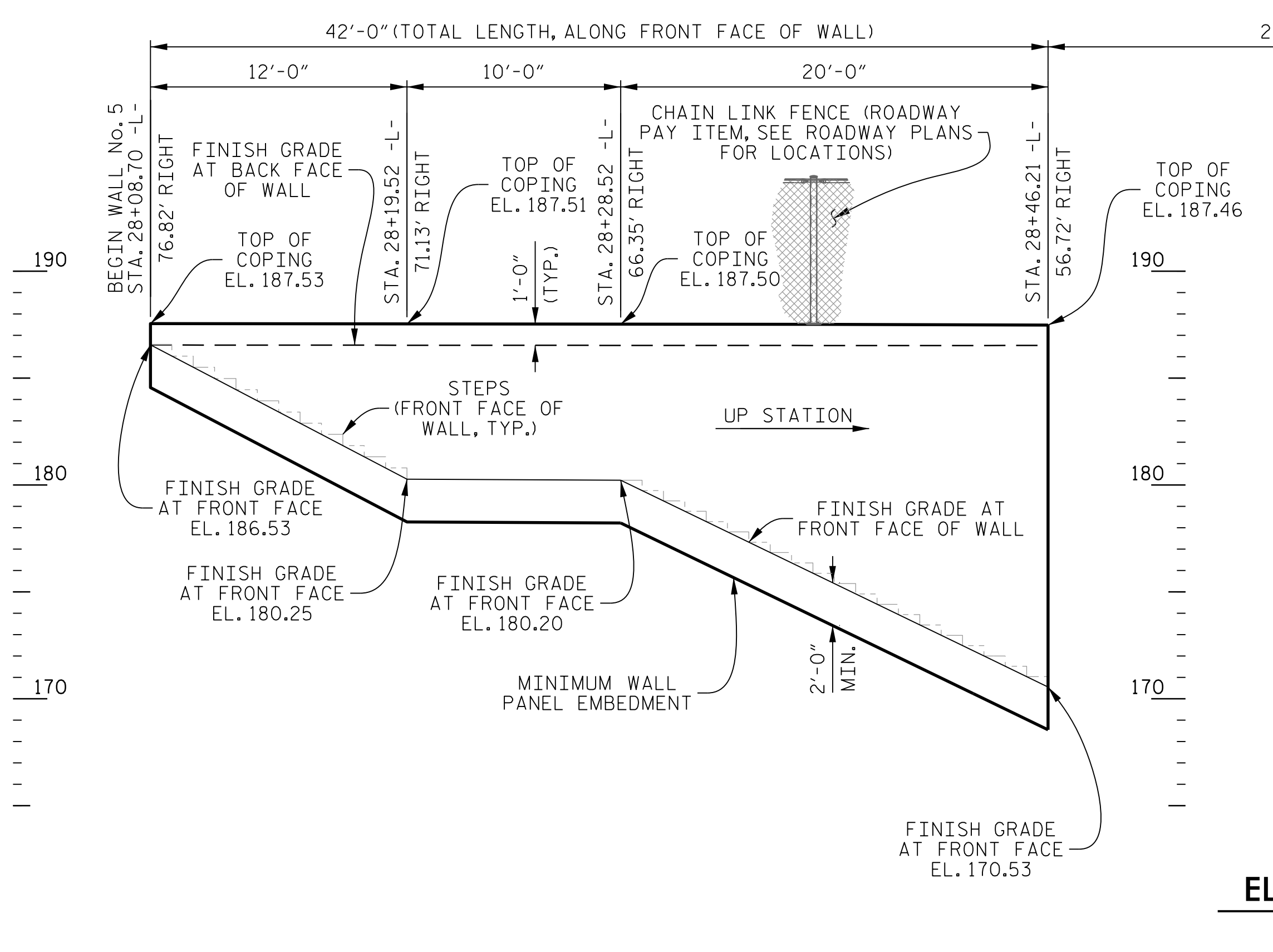
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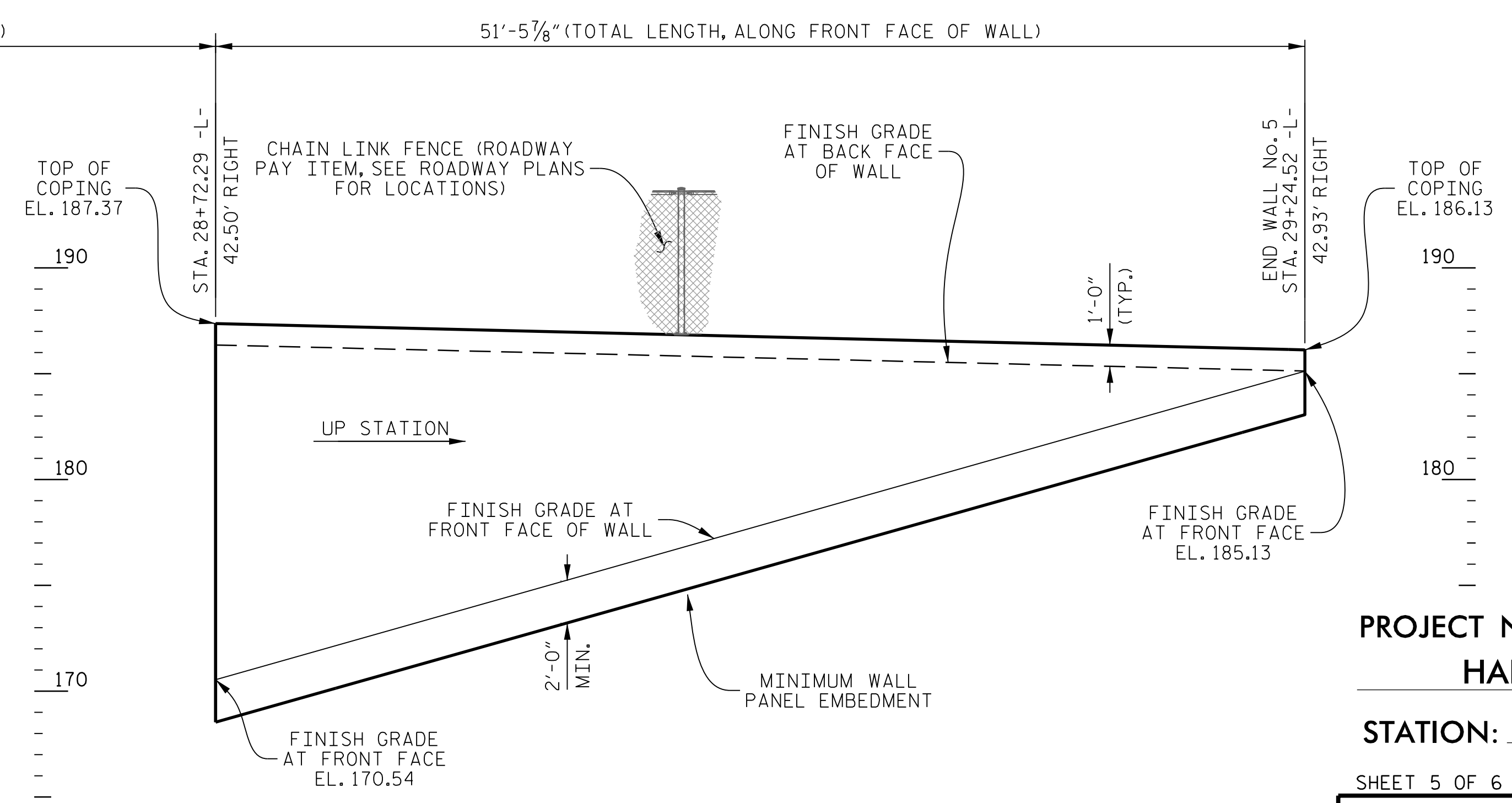
ELEVATION – WALL No. 4
(FRONT FACE)

RETAINING WALL QUANTITY	
WALL No. 4	470 SQ. FT.
WALL No. 5	1,060 SQ. FT.

NOTES
FOR RETAINING WALL LAYOUT, SEE SHEET 3 OF 6.
FOR RETAINING WALL NOTES, SEE SHEET 6 OF 6.

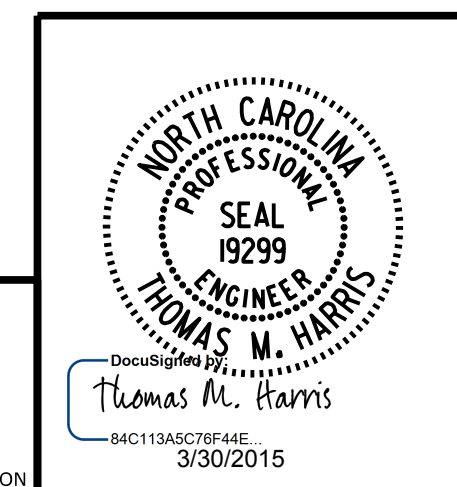


ELEVATION – WALL No. 5
(FRONT FACE)



PROJECT NO. W-5206AG
HARNETT COUNTY
STATION: 28+32.19 -L-
SHEET 5 OF 6

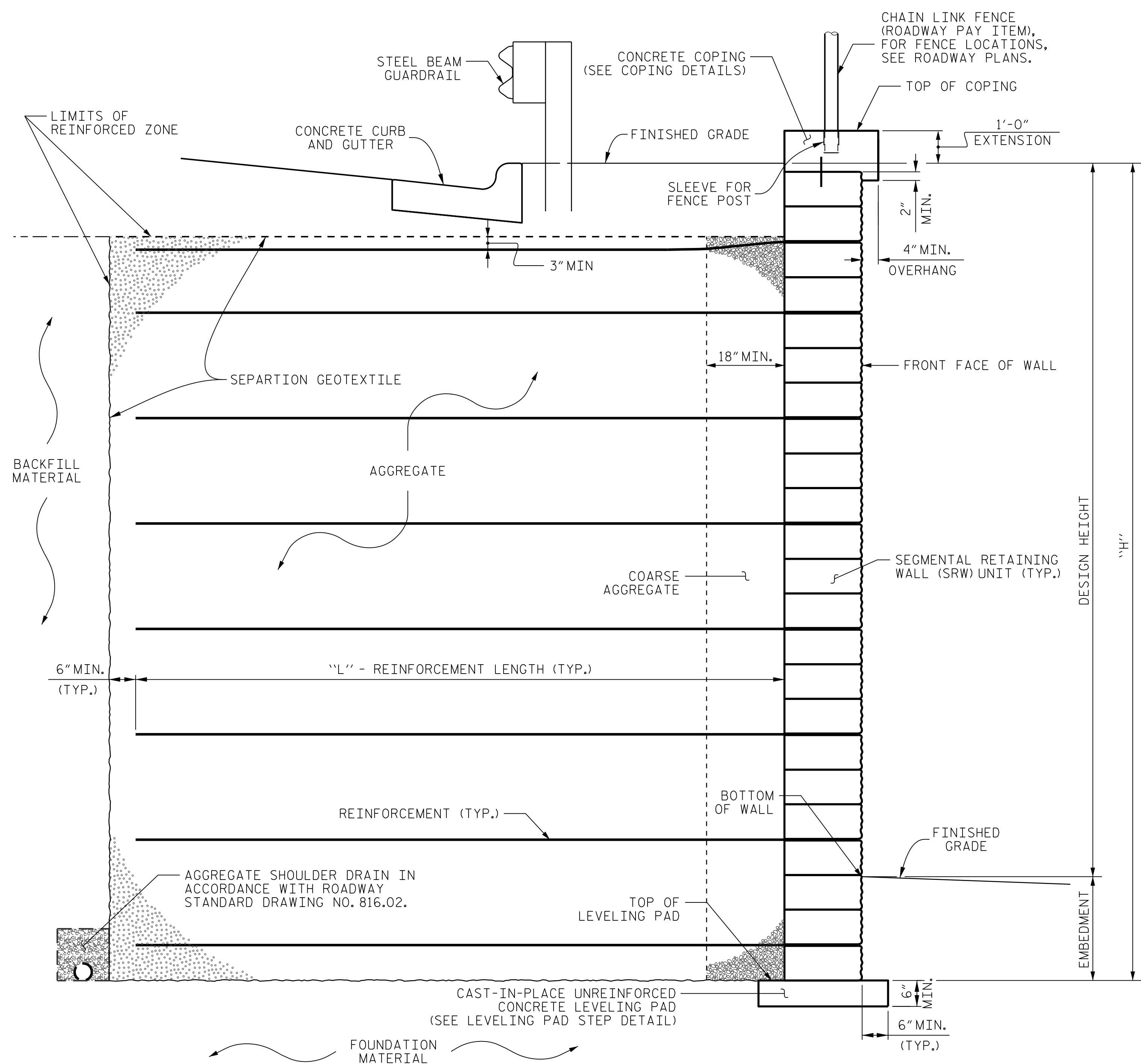
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**PEDESTRIAN TUNNEL UNDER
US 421/NC 27 (-L-) BETWEEN
SR 2000 (WADE STEWART ROAD)
AND SR 2057 (HATCHER STREET)**



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DRAWN BY : K. E. LOFTON DATE : 12-14
CHECKED BY : T. M. HARRIS DATE : 1-15
DESIGN ENGINEER : T. M. HARRIS DATE : 1-15

REVISIONS						SHEET No. C-5
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS 6
2			4			

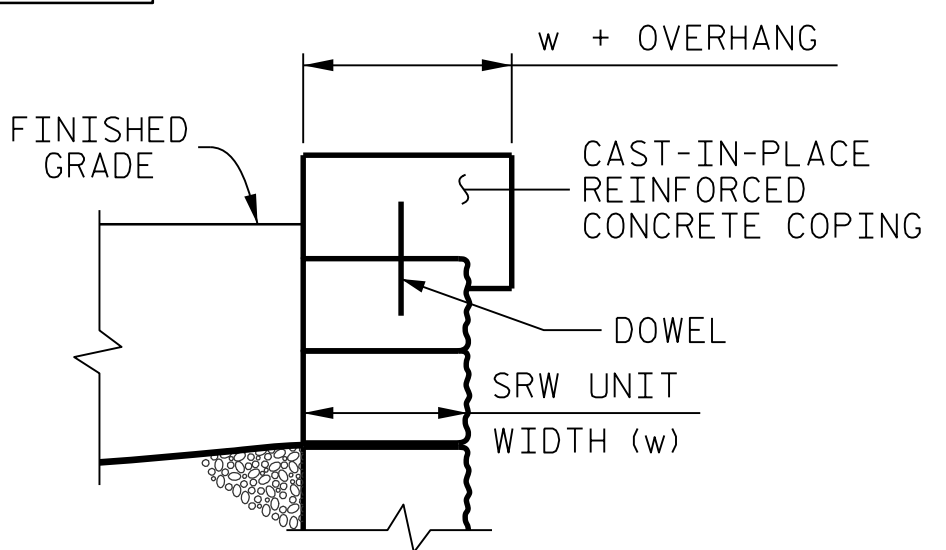


MSE WALL WITH SRW UNITS

CONTRACTOR SHALL SUBMIT A SAMPLE OF THREE (3) STANDARD SRW UNITS FROM AN APPROVED WALL COMPANY TO THE ENGINEER FOR REVIEW AND SELECTION BY CAMPBELL UNIVERSITY BEFORE BEGINNING MSE WALL DESIGN. THE WORKING DRAWING SUBMITTAL(S) FOR MSE WALLS SHALL INDICATE THE SELECTED SRW UNIT.

PLACE 1" EXPANSION JOINT MATERIAL BETWEEN FRONT FACE OF WALL AND CONCRETE STEPS AT RETAINING WALLS No. 1, No. 4 AND No. 5.

THE COST TO FURNISH AND INSTALL SLEEVES FOR CHAIN LINK FENCE POST SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE FOOT FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS.



COPING DETAIL

NOTES - WALL No. 1

FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS SPECIAL PROVISION.

USE AN MSE WALL SYSTEM WITH SEGMENTAL RETAINING WALL (SRW) UNITS THAT MEET ARTICLE 1040-4 OF THE STANDARD SPECIFICATIONS FOR RETAINING WALL No. 1.

AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF THE RETAINING WALL No. 1.

A DRAIN IS REQUIRED FOR RETAINING WALL No. 1

DESIGN RETAINING WALL No. 1 FOR THE FOLLOWING:

- 1) H = DESIGN HEIGHT + EMBEDMENT
- 2) MINIMUM DESIGN LIFE = 75 YEARS
- 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 3,499 LB/SF.
- 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.80 H OR 6 FEET, WHICHEVER IS LONGER.
- 5) MINIMUM EMBEDMENT ELEVATION 2.0 FEET BELOW GRADE.
- 6) REINFORCED ZONE AGGREGATE PARAMETERS:

* AGGREGATE TYPE	UNIT WEIGHT (gamma) PCF	FRICTION ANGLE (phi) DEGREES	COHESION (c) PSF
FINE AGGREGATE	115	34	0
COARSE AGGREGATE	110	38	0

* SEE MSE RETAINING WALLS PROVISION FOR COARSE AND FINE AGGREGATE MATERIAL REQUIREMENTS.

7) IN-SITU ASSUMED MATERIAL PARAMETERS:

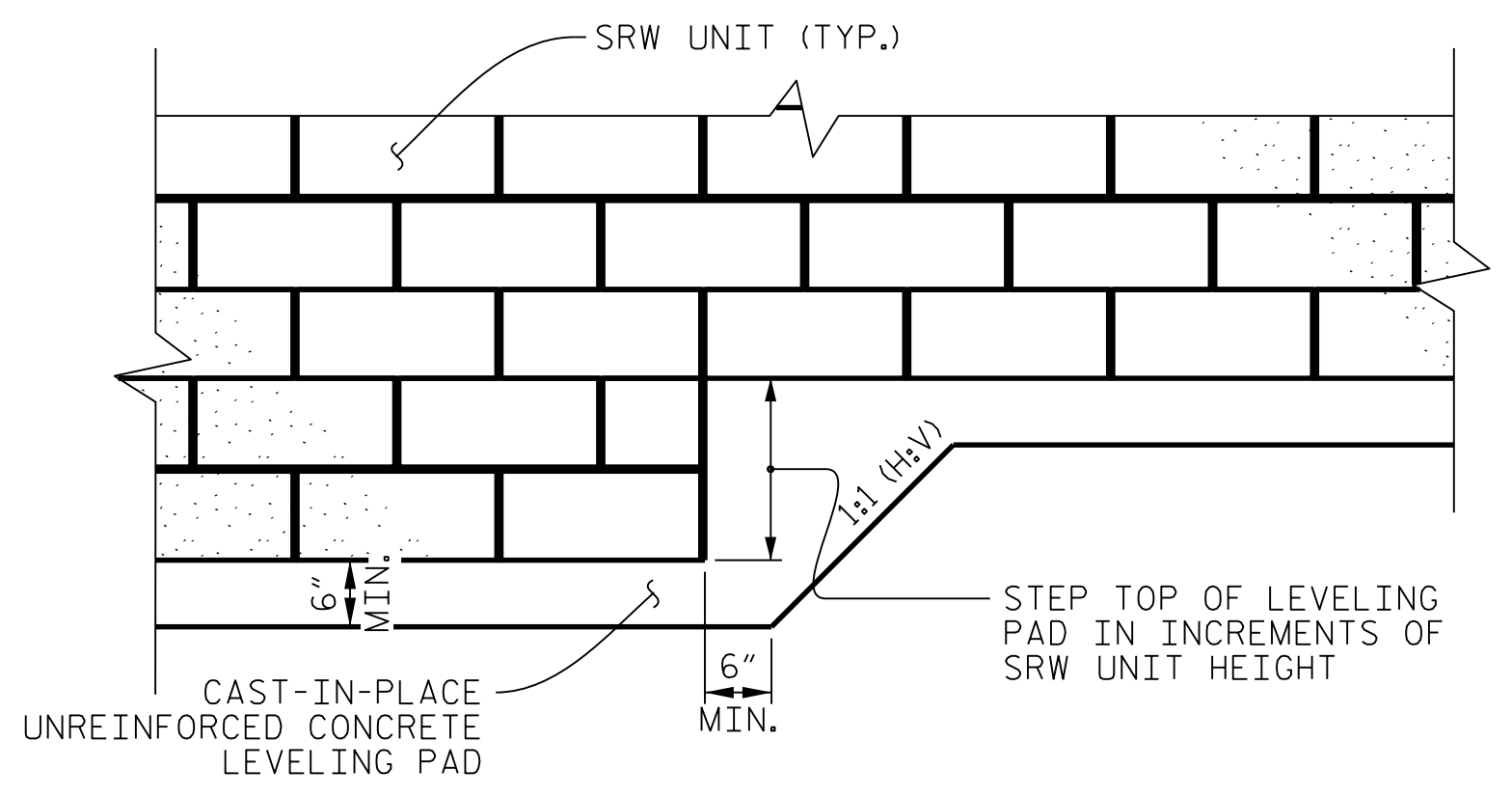
MATERIAL TYPE	UNIT WEIGHT (gamma) PCF	FRICTION ANGLE (phi) DEGREES	COHESION (c) PSF
BACKFILL	120	30	100
FOUNDATION	100	29	0

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

AT THE CONTRACTOR'S OPTION, TEMPORARY SHORING FOR WALL CONSTRUCTION MAY BE USED TO CONSTRUCT RETAINING WALL No. 1.

DESIGN RETAINING WALL No. 1 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

EXISTING OR FUTURE OBSTRUCTION FROM PIPES AND INLETS WILL INTERFERE WITH REINFORCEMENT FOR RETAINING WALL No. 1.



SEGMENTAL RETAINING WALL (SRW) UNITS

LEVELING PAD STEP DETAIL

NOTES - WALL No. 3, WALL No. 4 AND WALL No. 5

FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS SPECIAL PROVISION.

USE AN MSE WALL SYSTEM WITH SEGMENTAL RETAINING WALL (SRW) UNITS THAT MEET ARTICLE 1040-4 OF THE STANDARD SPECIFICATIONS FOR RETAINING WALLS No. 3, No. 4 AND No. 5.

AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF THE RETAINING WALLS No. 3, No. 4 AND No. 5.

A DRAIN IS REQUIRED FOR RETAINING WALLS No. 3, No. 4 AND No. 5.

DESIGN RETAINING WALLS No. 3, No. 4 AND No. 5 FOR THE FOLLOWING:

- 1) H = DESIGN HEIGHT + EMBEDMENT
- 2) MINIMUM DESIGN LIFE = 75 YEARS
- 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 3,635 LB/SF.
- 4) MINIMUM REINFORCEMENT LENGTH (L) = 0.90 H OR 6 FEET, WHICHEVER IS LONGER.
- 5) MINIMUM EMBEDMENT ELEVATION 2.0 FEET BELOW GRADE.
- 6) REINFORCED ZONE AGGREGATE PARAMETERS:

* AGGREGATE TYPE	UNIT WEIGHT (gamma) PCF	FRICTION ANGLE (phi) DEGREES	COHESION (c) PSF
FINE AGGREGATE	115	34	0
COARSE AGGREGATE	110	38	0

* SEE MSE RETAINING WALLS PROVISION FOR COARSE AND FINE AGGREGATE MATERIAL REQUIREMENTS.

7) IN-SITU ASSUMED MATERIAL PARAMETERS:

MATERIAL TYPE	UNIT WEIGHT (gamma) PCF	FRICTION ANGLE (phi) DEGREES	COHESION (c) PSF
RETAINED BACKFILL	120	30	100
FOUNDATION	100	29	0

DESIGN RETAINING WALLS No. 3, No. 4 AND No. 5 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

TEMPORARY SHORING IS REQUIRED FOR RETAINING WALLS No. 3, No. 4 AND No. 5 IN ACCORDANCE WITH THE TEMPORARY SHORING PROVISION. SEE TRAFFIC CONTROL PLANS.

VERIFY LOCATION AND ELEVATION OF ALSP PIPE ARCH CULVERT AND HEADWALLS BEFORE BEGINNING MSE WALL DESIGN OR CONSTRUCTION.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

FOR STEEL BEAM GUARDRAIL, SEE ROADWAY PLANS AND SECTION 862 OF THE STANDARD SPECIFICATION.

PROJECT NO. W-5206AG

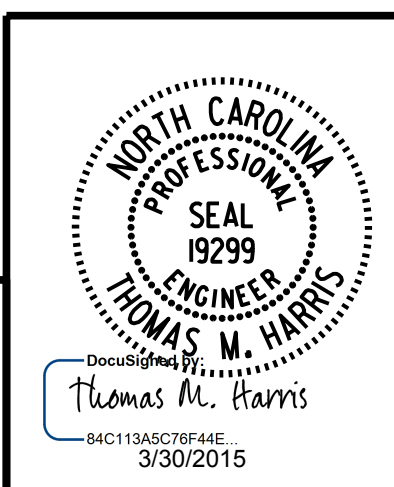
HARNETT COUNTY

STATION: 28+32.19 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PEDESTRIAN TUNNEL UNDER
US 421/NC 27 (-L-) BETWEEN
SR 2000 (WADE STEWART ROAD)
AND SR 2057 (HATCHER STREET)



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DRAWN BY : K. E. LOFTON	DATE : 12-14
CHECKED BY : T. M. HARRIS	DATE : 1-15
DESIGN ENGINEER : T. M. HARRIS	DATE : 1-15

REVISIONS						SHEET No. C-6
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS 6
2			4			

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	- - - - -	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	- - - - -	SEE PLANS
IMPACT ALLOWANCE	- - - - -	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION		
GRADE 60	- -	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	- - - - -	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	- - - - -	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	- - - - -	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	- - - -	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	- - - - -	30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE. ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER. DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS. WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0". EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED. WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB. METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990

STD. NO. SN