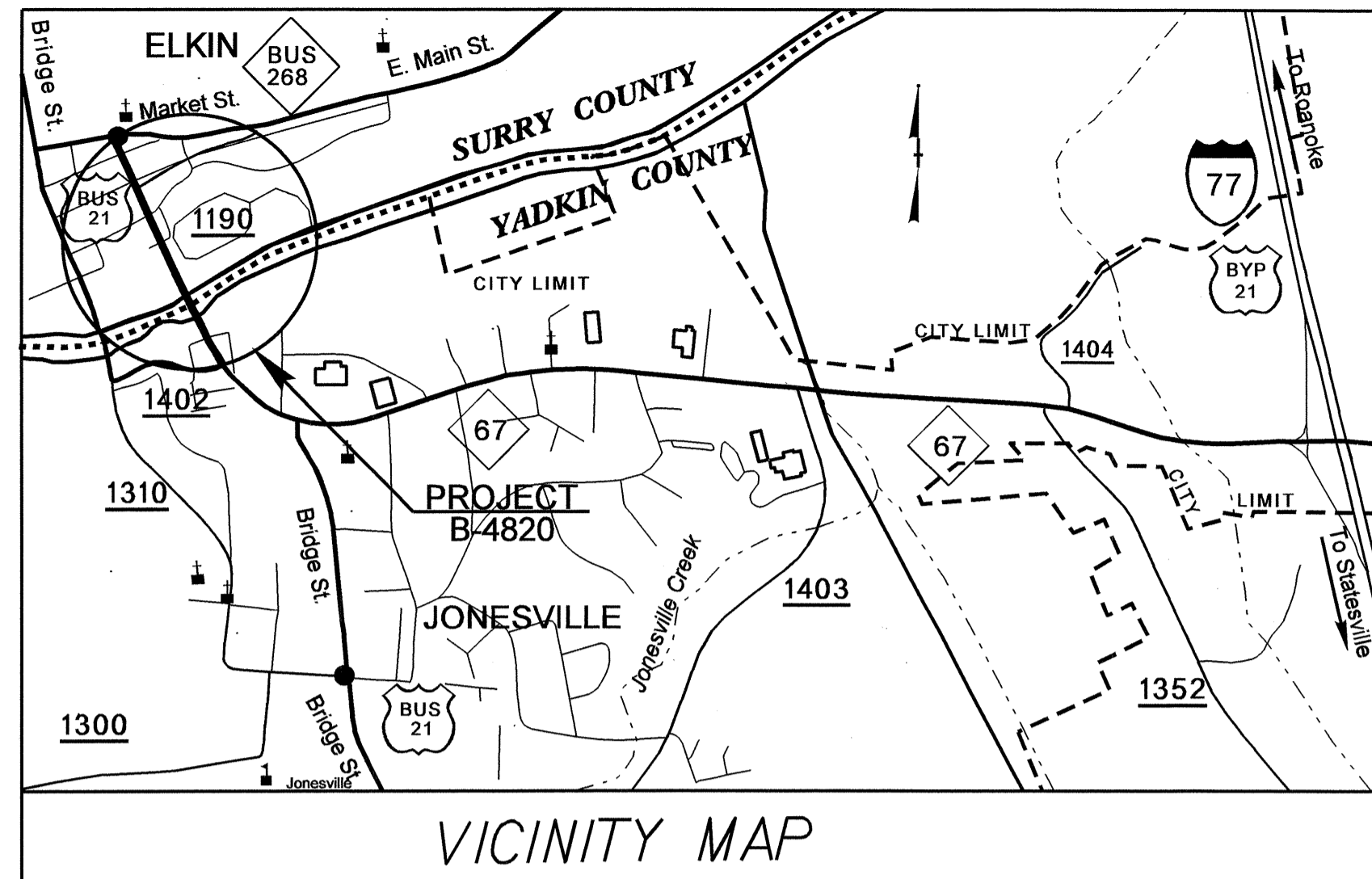


CONTRACT: C202127 TIP PROJECT: B-4820

STRUCTURE



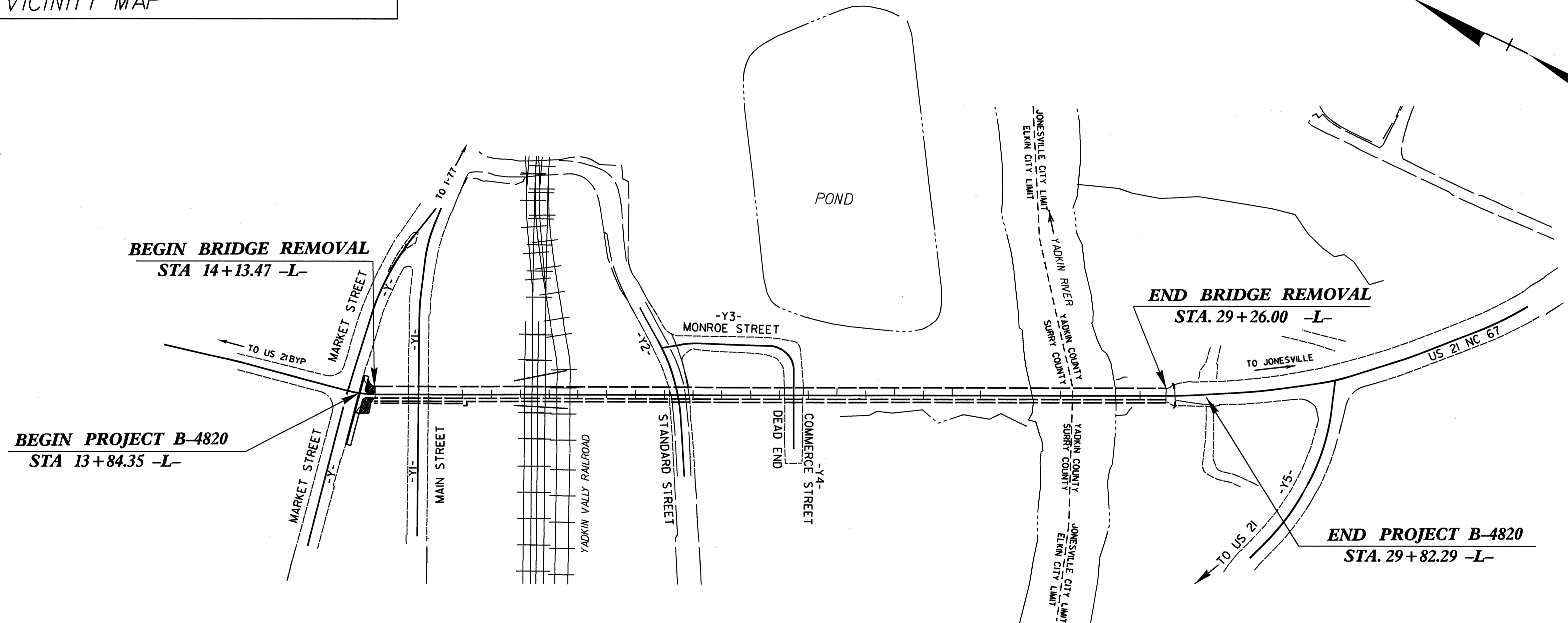
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

YADKIN /SURRY COUNTIES

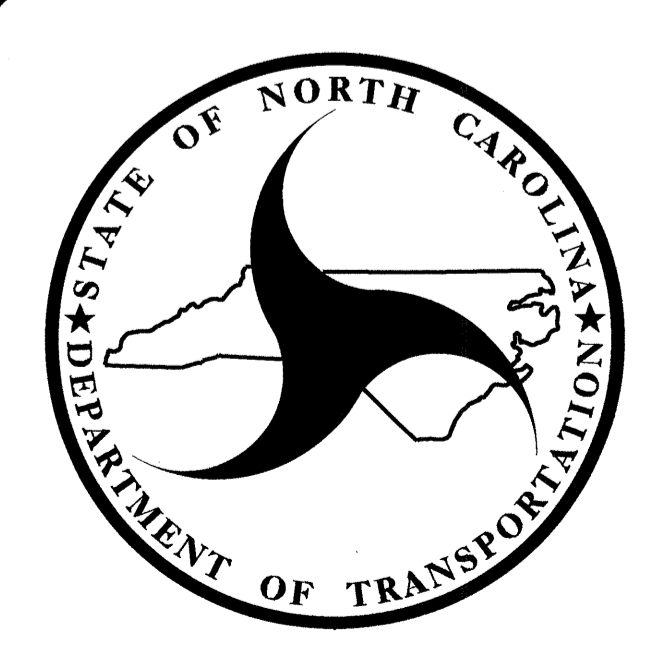
LOCATION: BRIDGE No. 338 OVER YADKIN RIVER ON SR 1190

TYPE OF WORK: BRIDGE REMOVAL

STATE	STATE PROJECT REFERENCE NO.	
N.C.	B-4820	
WB PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
38590.1.1	BRZ-1190(2)	P.E.
38590.2.2	N/A	R/W, UTL.
38590.3.1	BRZ-1190(2)	CONST.



PROJECT IS WITHIN MUNICIPAL BOUNDARIES OF ELKIN AND JONESVILLE



DESIGN DATA

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4820 =	0.016 MI
LENGTH STRUCTURE TIP PROJECT B-4820 =	0.287 MI
TOTAL LENGTH TIP PROJECT B-4820 =	0.303 MI

2006 STANDARDS SPECIFICATION

LETTING DATE:
JUNE 15, 2010

Prepared In the Office of:
**DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**
1000 Birch Ridge Drive Raleigh, N.C. 27610

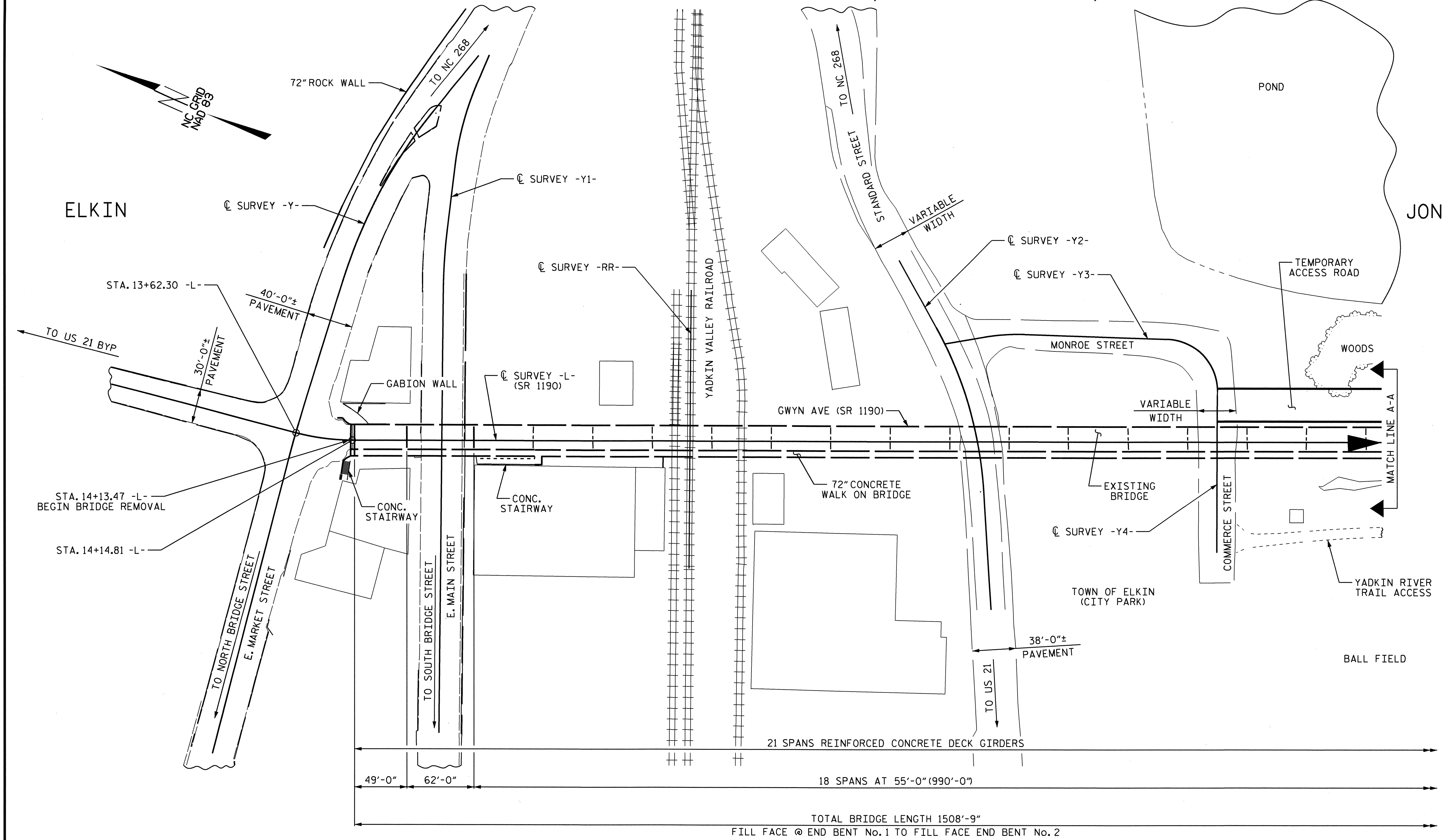
B.S. COX, P.E.
PROJECT ENGINEER

T.J. BEACH, P.E.
PROJECT DESIGN ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY ENGINEER - DESIGN
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED FOR
DIVISION ADMINISTRATOR DATE



PLAN SHOWING EXISTING BRIDGE

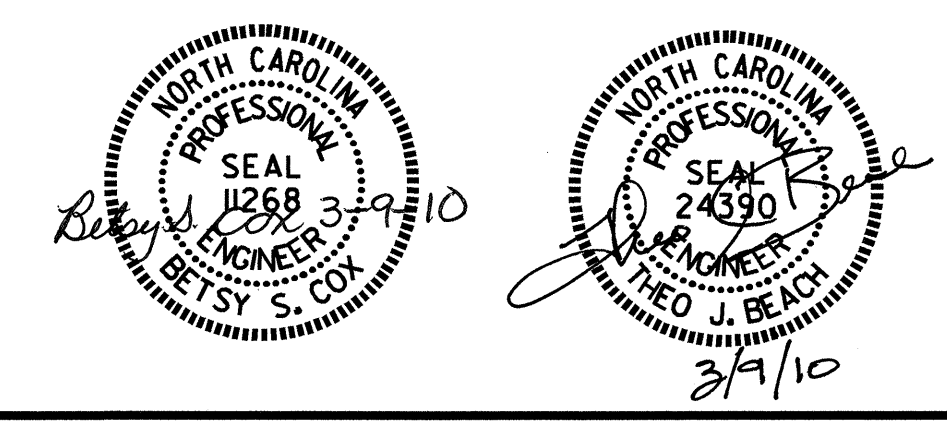
PROJECT NO. B-4820
YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-
 SHEET 1 OF 3 REMOVE BRIDGE #338

NOTES:

- FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.
- FOR STAIRWAY AND TERRACE LOCATION AND DETAILS, SEE SHEETS S-4 THRU S-13.
- FOR RETAINING WALLS, SEE SHEETS W-1 THRU W-9.
- FOR ADDITIONAL NOTES, SEE SHEET S-3.

DRAWN BY : T. BANKOVICH DATE : 4-2009
 CHECKED BY : T. BEACH DATE : 1-2010

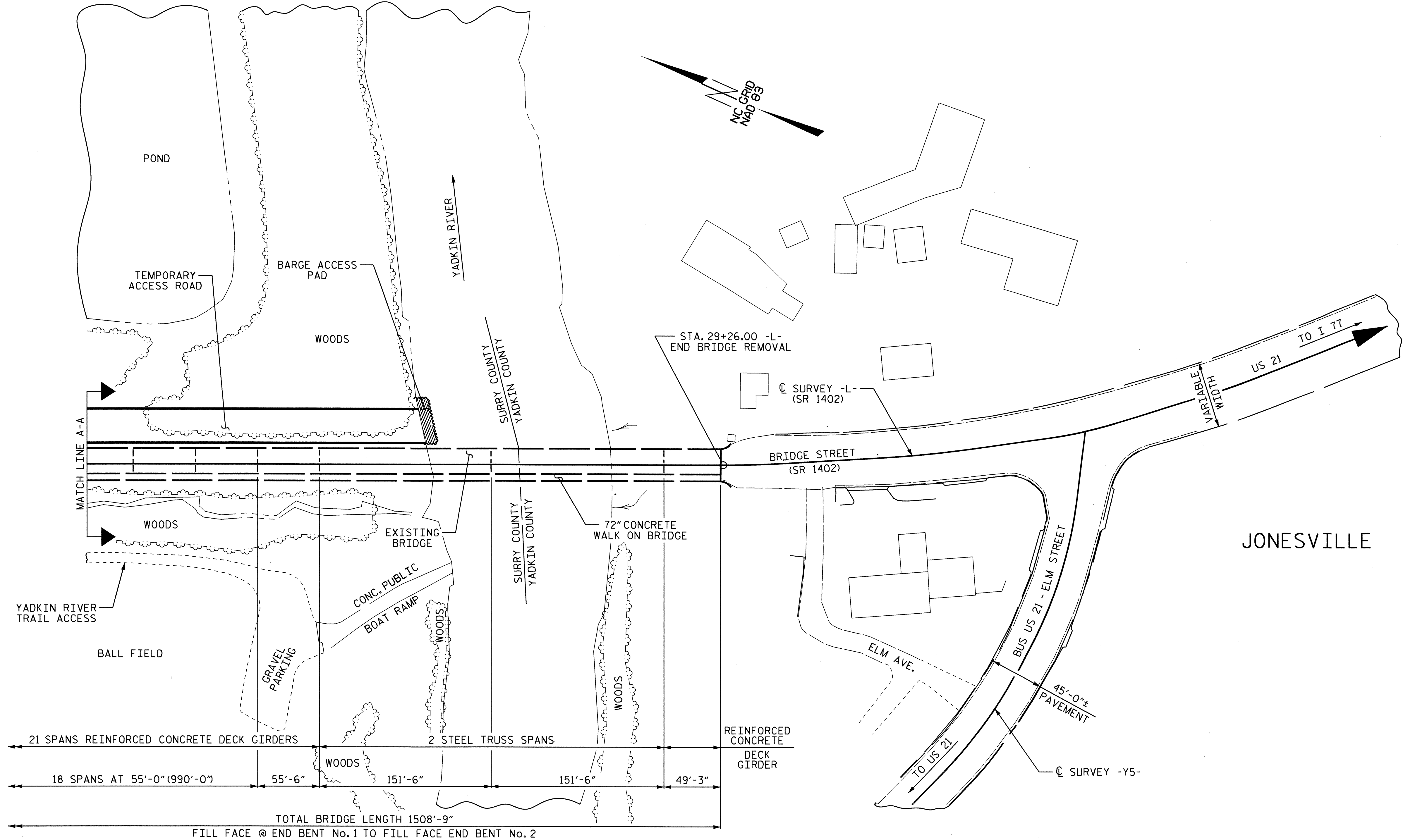
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 tjbankovich



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 REMOVAL OF EXISTING BRIDGE ON
 SR 1190/1402 OVER E. MAIN
 ST., YADKIN VALLEY RR., STANDARD
 ST., COMMERCE ST., AND THE YADKIN
 RIVER BETWEEN E. MARKET ST.
 AND ELM ST.

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

BM # 2: CHISELED SQUARE ON SE CORNER OF CONE SIGN BASE, 81' RT OF STA. 30+15, EL. 911.74



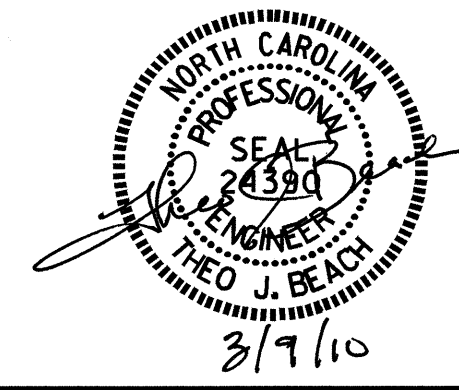
21 SPANS REINFORCED CONCRETE DECK GIRDERS
 18 SPANS AT 55'-0" (990'-0")
 55'-6"
 151'-6"
 2 STEEL TRUSS SPANS
 151'-6"
 49'-3"
 REINFORCED CONCRETE DECK GIRDER
 TOTAL BRIDGE LENGTH 1508'-9"
 FILL FACE @ END BENT No. 1 TO FILL FACE END BENT No. 2

PLAN SHOWING EXISTING BRIDGE

PROJECT NO. B-4820
YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-

SHEET 2 OF 3 REMOVE BRIDGE #338

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 REMOVAL OF EXISTING BRIDGE ON
 SR 1190/1402 OVER E. MAIN
 ST., YADKIN VALLEY RR., STANDARD
 ST., COMMERCE ST., AND THE YADKIN
 RIVER BETWEEN E. MARKET ST.
 AND ELM ST.



DRAWN BY : T. BANKOVICH DATE : 4-2009
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			19

NOTES

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR CONTROL OF VIBRATION, SEE SPECIAL PROVISIONS.

FOR BUILDING SURVEYS, SEE SPECIAL PROVISIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

FOR SECURING OF VESSELS, SEE SPECIAL PROVISIONS.

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

THE EXISTING STAIRS AND THE EXISTING STRUCTURE WITH SPANS OF 1 @ 49'-3", 2 @ 151'-6", 1 @ 55'-6", 18 @ 55'-0", 1 @ 62'-0" AND 1 @ 49'-0" WITH A CLEAR ROADWAY WIDTH OF 20', WITH A REINFORCED CONCRETE DECK ON DECK GIRDERS OR STEEL THROUGH TRUSS (OVER YADKIN RIVER) ON REINFORCED CONCRETE POST AND BEAM PIERS AND REINFORCED CONCRETE WEB PIERS (AT THE YADKIN RIVER) AND REINFORCED CONCRETE END BENTS SHALL BE REMOVED EXCEPT WHERE NOTED IN THE 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 DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OR THE STANDARD SPECIFICATIONS EXCEPT AS NOTED.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT EXTREME CAUTION SHALL BE USED WHEN REMOVING THE EXISTING BRIDGE AND STAIRS IN AREAS ADJACENT TO EXISTING BUILDINGS.

RETAIN THE EXISTING ABUTMENT ADJACENT TO EAST MARKET STREET AT THE NORTH END OF THE BRIDGE AND STABILIZE WITH SOLDIER PILE RETAINING WALLS. SOLDIER PILE RETAINING WALL No. 2 SHALL EXTEND UP TO BUT NOT BEHIND THE PROPOSED STAIRWAY. SEE RETAINING WALL SHEETS W-1 THROUGH W-9.

REMOVE THE EXISTING CONCRETE RAILS AND ABUTMENT AT THE SOUTH (JONESVILLE) END OF THE BRIDGE TO AN ELEVATION APPROXIMATELY ONE FOOT BELOW THE EXISTING ROADWAY SURFACE AS DIRECTED BY THE ENGINEER.

REMOVE THE EXISTING BENTS ADJACENT TO THE YADKIN VALLEY RAILROAD TO A DEPTH OF THREE FEET BELOW THE TOP OF RAIL ELEVATION.

PROTECT THE YADKIN VALLEY RAILROAD TRACKS FROM ANY OVERHEAD FALLING DEBRIS DURING REMOVAL OF THE EXISTING BRIDGE. THE CONTRACTOR SHALL INCLUDE DETAILS FOR PROTECTING THE TRACKS IN HIS DEMOLITION PLAN SUBMITTAL. SEE SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTEREST.

THE SUBSTRUCTURE DIMENSIONS AND ELEVATIONS OF THE EXISTING BRIDGE INDICATED ON THE PLANS ARE 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 CONST INCURRED BASED ON DIFFERENCE BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

EXISTING COBBLESTONES LOCATED WEST OF THE EXISTING BRIDGE BETWEEN MAIN STREET AND EAST MARKET STREET SHALL BE PRESERVED IN PLACE EXCEPT IN THOSE AREAS NEEDED TO CONSTRUCT THE PROPOSED STAIRWAY, TERRACE, AND RETAINING WALLS. COBBLESTONES REMOVED DURING CONSTRUCTION SHALL BE STOCKPILED AND RESET AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR STAIRWAY LIGHTING, SEE SPECIAL PROVISIONS.

STAIRWAY CONSTRUCTION SHALL NOT BE STARTED UNTIL THE EXISTING ABUTMENT HAS BEEN STABILIZED AS SHOWN IN THE RETAINING WALL PLANS AND THE END SPAN OF THE EXISTING BRIDGE HAS BEEN REMOVED. THE CONTRACTOR SHALL VERIFY THE ELEVATIONS AND DIMENSIONS AT THE TOP AND BOTTOM OF THE STAIRWAY TO DETERMINE IF THE FIELD CONDITIONS AND ELEVATIONS MATCH THE PLANS PROVIDED. MATERIALS REQUIRED FOR CONSTRUCTION OF THE STAIRWAY, TERRACE AND TOP OF ABUTMENT RAILS SHALL NOT BE ORDERED UNTIL THESE DIMENSIONS AND ELEVATIONS ARE VERIFIED BY THE CONTRACTOR. ANY MODIFICATIONS TO THE PLANS SHALL BE MADE AS DIRECTED BY THE ENGINEER.

STAIRWAY AND TERRACE HAVE BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS. STAIRWAY GEOMETRY HAS BEEN DETAILED IN ACCORDANCE WITH THE NORTH CAROLINA STATE BUILDING CODE.

COMPUTED FOUNDATION LOAD FOR THE STAIRWAY AND TERRACE FOOTINGS EQUALS 2 TONS PER SQUARE FOOT.

THE STAIRWAY WALLS, TERRACE WALLS, LIGHTING PEDESTAL No. 1 AND MSE RETAINING WALLS No. 3 AND No. 4 SHALL HAVE AN ARCHITECTURAL CONCRETE SURFACE TREATMENT ON THE EXTERIOR FACES AS SHOWN IN THE PLANS.

FOR ARCHITECTURAL CONCRETE SURFACE TREATMENT, SEE SPECIAL PROVISIONS.

AFTER THE STAIRWAY AND TERRACE FOOTINGS AND WALLS HAVE BEEN CONSTRUCTED, BACKFILL THE OPENING WITH #57 STONE FROM THE TOP OF FOOTING TO TOP OF WALLS PRIOR TO CONSTRUCTION OF THE STAIRS OR TERRACE FLOOR. USE ONLY HAND OPERATED COMPACTION EQUIPMENT AS DIRECTED BY THE ENGINEER.

THE #57 STONE BACKFILL MATERIAL PLACED WITHIN THE STAIRWAY AND TERRACE WALLS SHALL BE WASHED CRUSHED STONE AND SHALL CONFORM TO SECTION 1005 OF THE STANDARD SPECIFICATIONS.

FOR #57 STONE, SEE SPECIAL PROVISIONS.

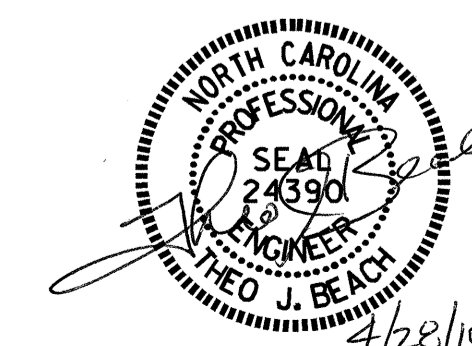
TOTAL STRUCTURE QUANTITIES

	QUANTITIES
#57 STONE	61 CU. YDS.
CONSTRUCTION, MAINTENANCE, AND REMOVAL OF TEMPORARY ACCESS	LUMP SUM
REMOVAL OF EXISTING STRUCTURE	LUMP SUM
UNCLASSIFIED STRUCTURE EXCAVATION	LUMP SUM
CLASS A CONCRETE	71.0 CU. YDS.
REINFORCING STEEL	8,616 LBS.
METAL HANDRAIL	180.8 LIN. FT.
ARCHITECTURAL CONCRETE SURFACE TREATMENT	LUMP SUM
INSTALL POST TOP LIGHT	4 EACH
POST TOP LIGHT STANDARD FOUNDATION (TYPE RIS)	2 EACH
2 #8 W/G FEEDER CIRCUIT IN 1/2" CONDUIT	80 EACH
ELECTRICAL JUNCTION BOXES (TYPE SW)	3 EACH
ELECTRICAL JUNCTION BOXES (TYPE PC18)	1 EACH
VIBRATION MONITORING	LUMP SUM
BUILDING SURVEYS	LUMP SUM

PROJECT NO. B-4820
YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 REMOVAL OF EXISTING BRIDGE ON
 SR 1190/1402 OVER E. MAIN
 ST., YADKIN VALLEY RR., STANDARD
 ST., COMMERCE ST., AND THE YADKIN
 RIVER BETWEEN E. MARKET ST.
 AND ELM ST.

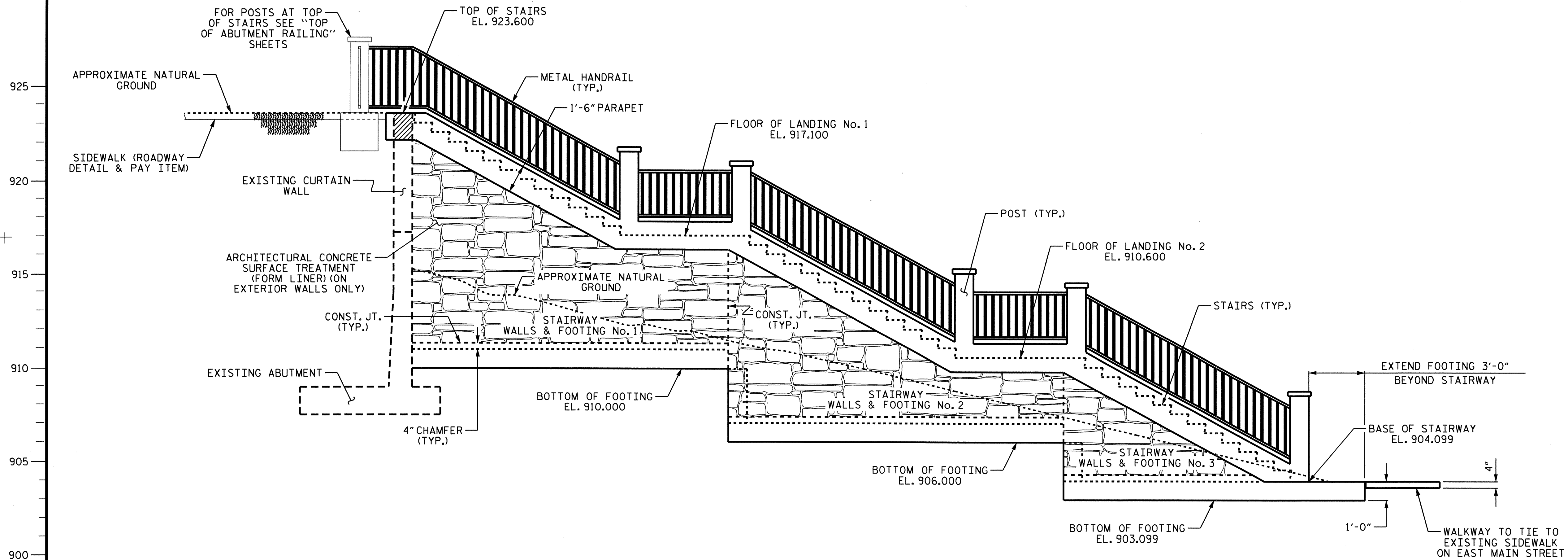


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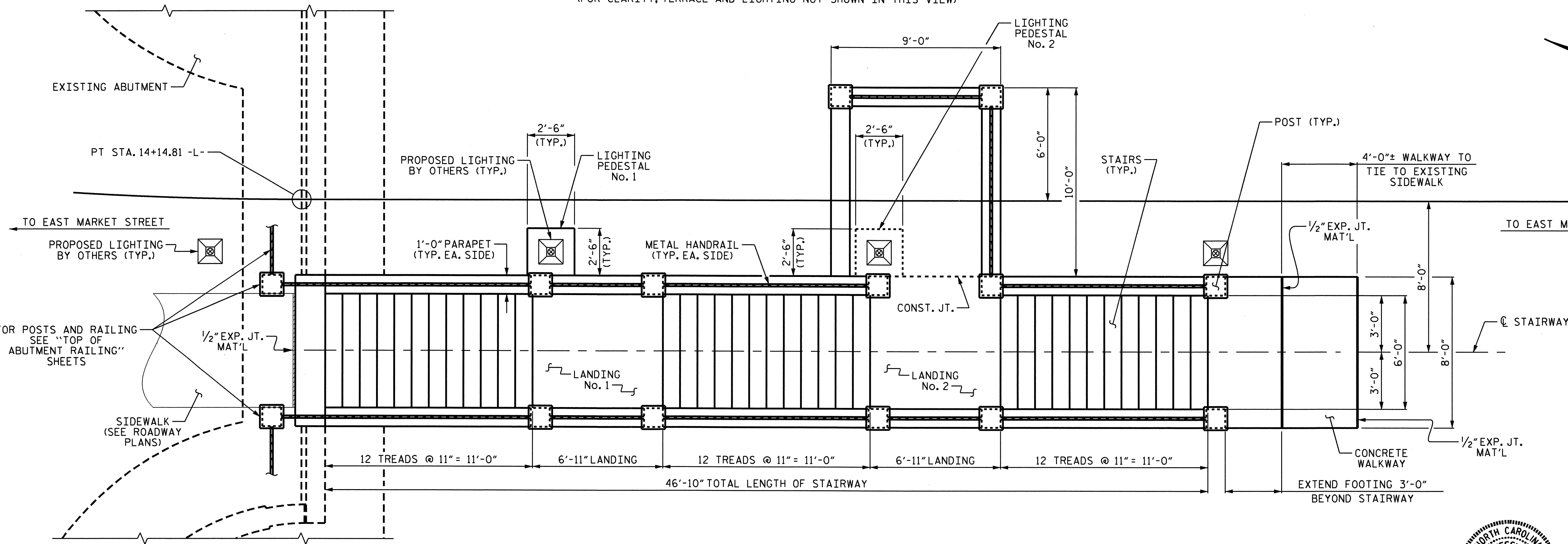
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

S-3
TOTAL SHEETS
19



NOTE:
FOR LOCATION OF LIGHTING PEDESTALS, SEE "WALLS AND FOOTING" SHEETS

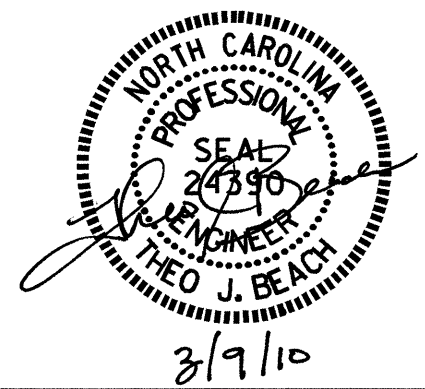
ELEVATION
(FOR CLARITY, TERRACE AND LIGHTING NOT SHOWN IN THIS VIEW)



PLAN

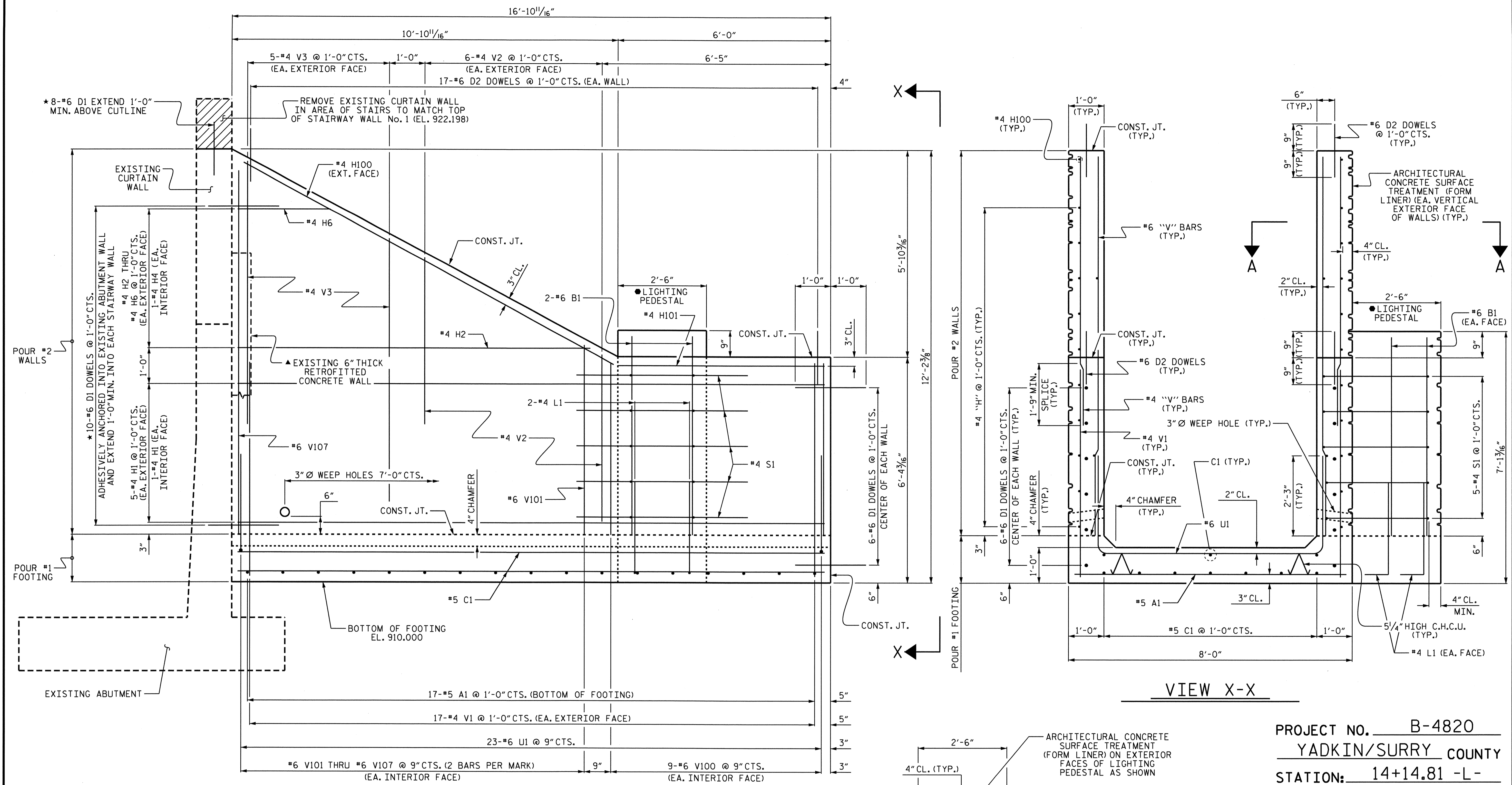
PROJECT NO. B-4820
YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-
 SHEET 1 OF 11

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STAIRWAY GENERAL LAYOUT					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-4					TOTAL SHEETS 19



DRAWN BY: T. BANKOVICH DATE: 3-2009
 CHECKED BY: T. BEACH DATE: 1-2010

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ELEVATION

VIEW X-X

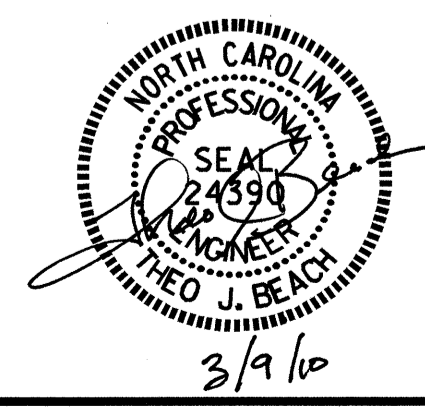
SECTION A-A

NOTES:

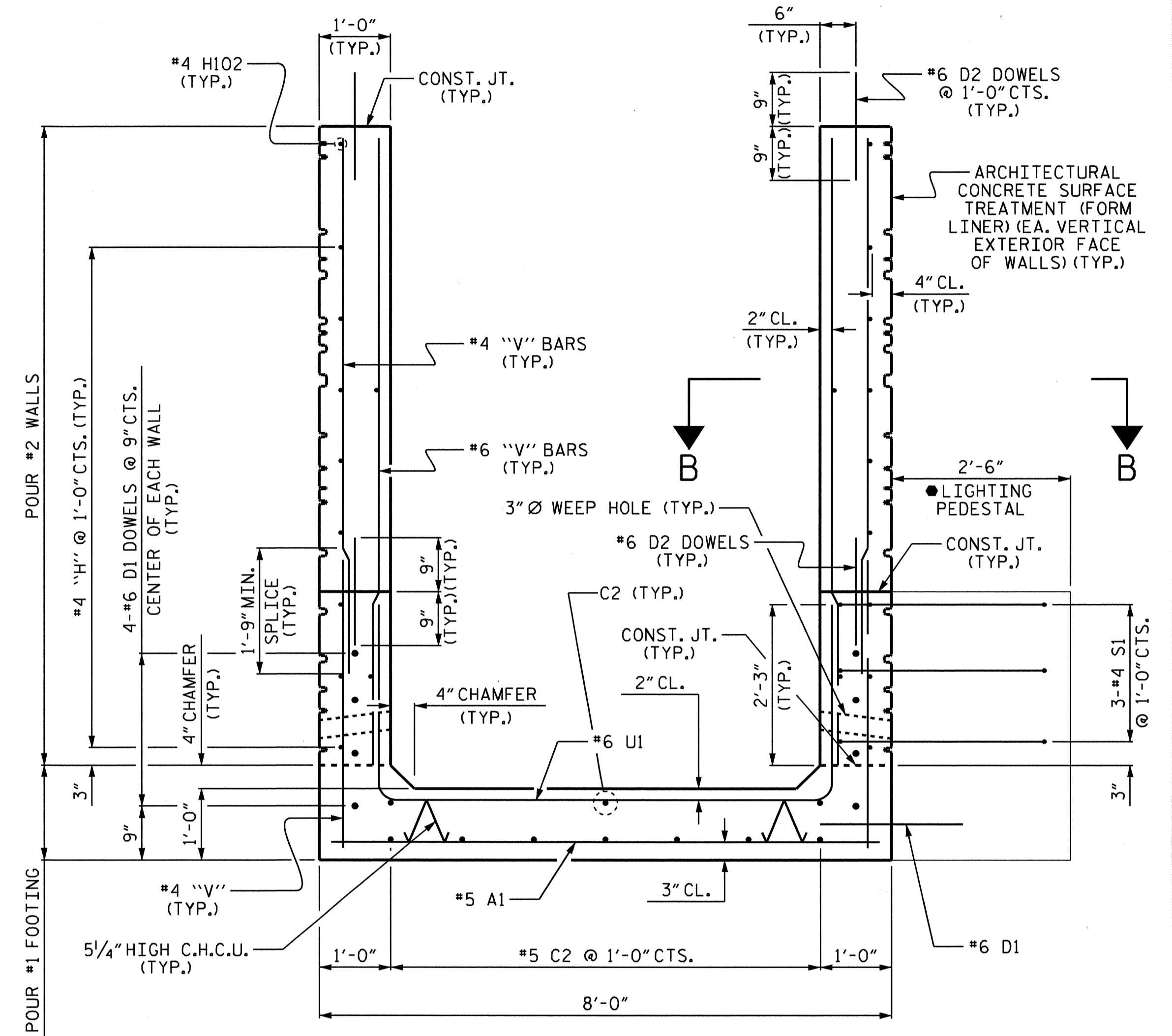
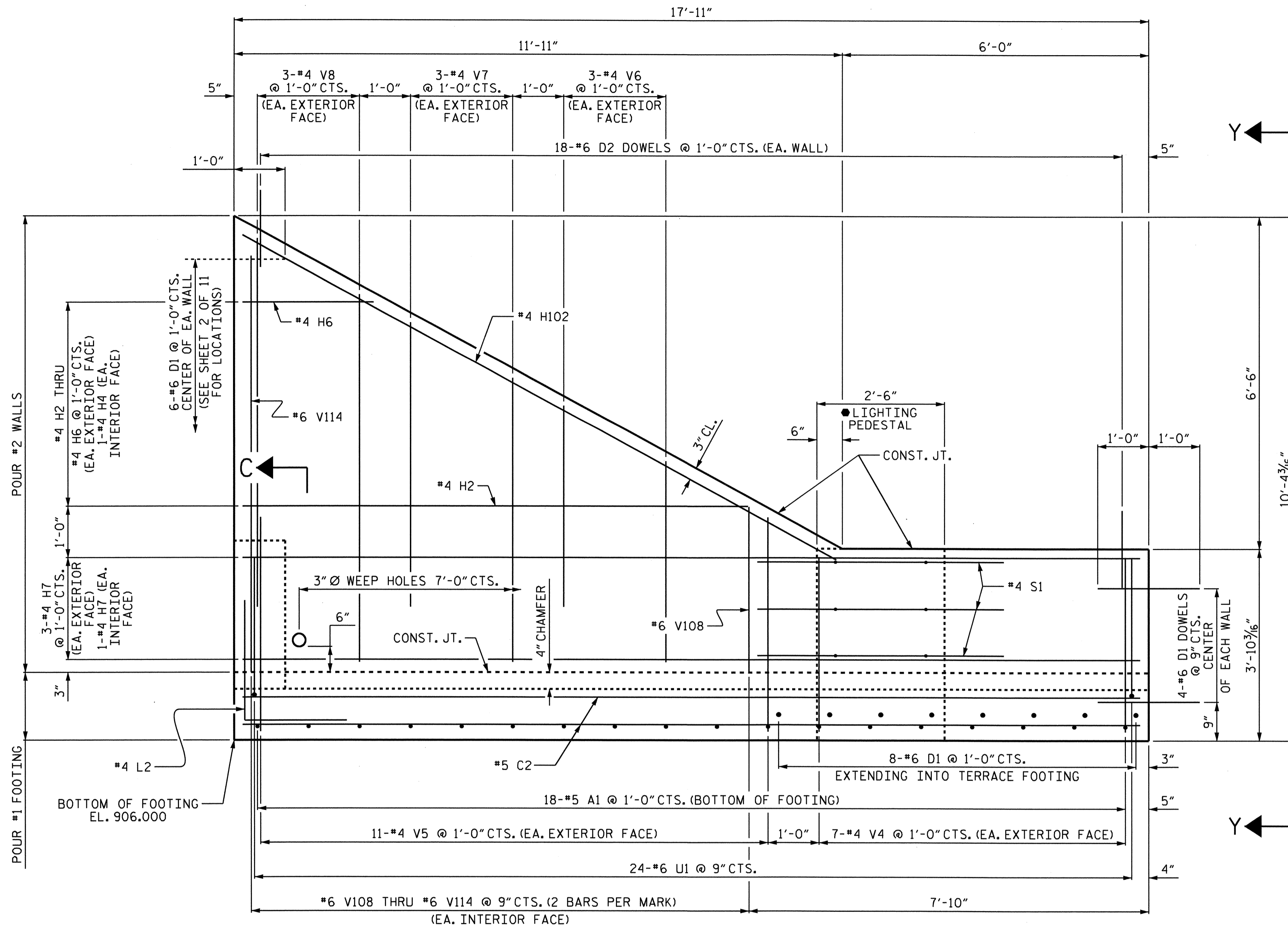
- * 4 V2 AND 4 V3 IN EXTERIOR FACE OF WALLS SHALL BE PLACED 2" FROM TOP OF WALLS.
- * EMBEDMENT DEPTH OF #6 D1 DOWELS INTO EXISTING ABUTMENT TO BE DETERMINED BY THE MANUFACTURER OF THE ADHESIVELY ANCHORED ANCHOR SYSTEM.
- ▲ PARTIALLY REMOVE THE EXISTING 6" THICK RETROFITTED CONCRETE WALL AS REQUIRED TO CONSTRUCT THE STAIRWAY AS DIRECTED BY THE ENGINEER.
- ANCHOR BOLTS TO BE CAST IN LIGHTING PEDESTAL ARE NOT SHOWN. SEE "STAIRWAY LIGHT POLE ANCHORAGE" SHEET FOR DETAILS.

PROJECT NO. B-4820
 YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-
 SHEET 2 OF 11

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STAIRWAY WALLS & FOOTING No. 1					
SHEET NO. S-5					
TOTAL SHEETS 19					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

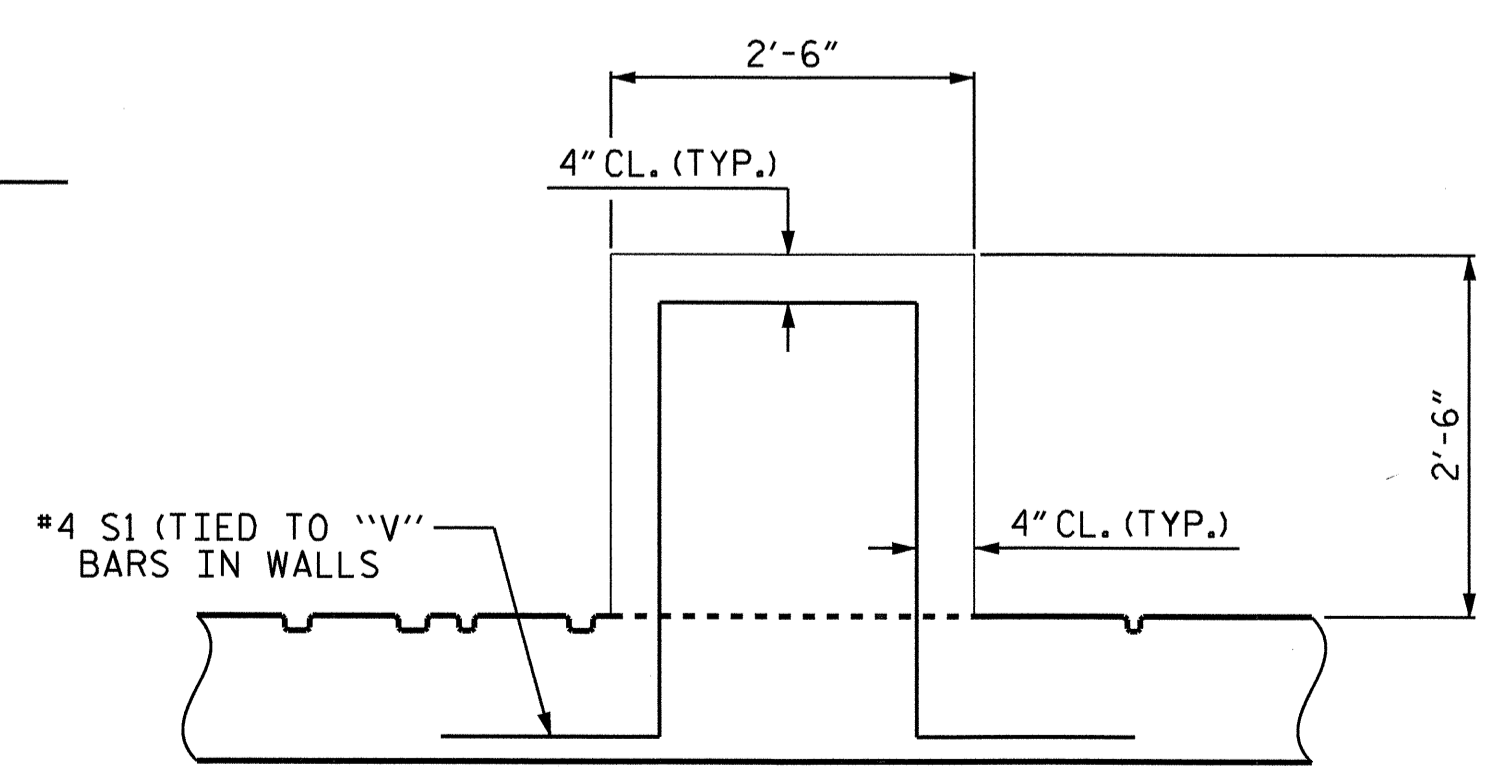


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 CHECKED BY: T. BEACH DATE: 1-2010



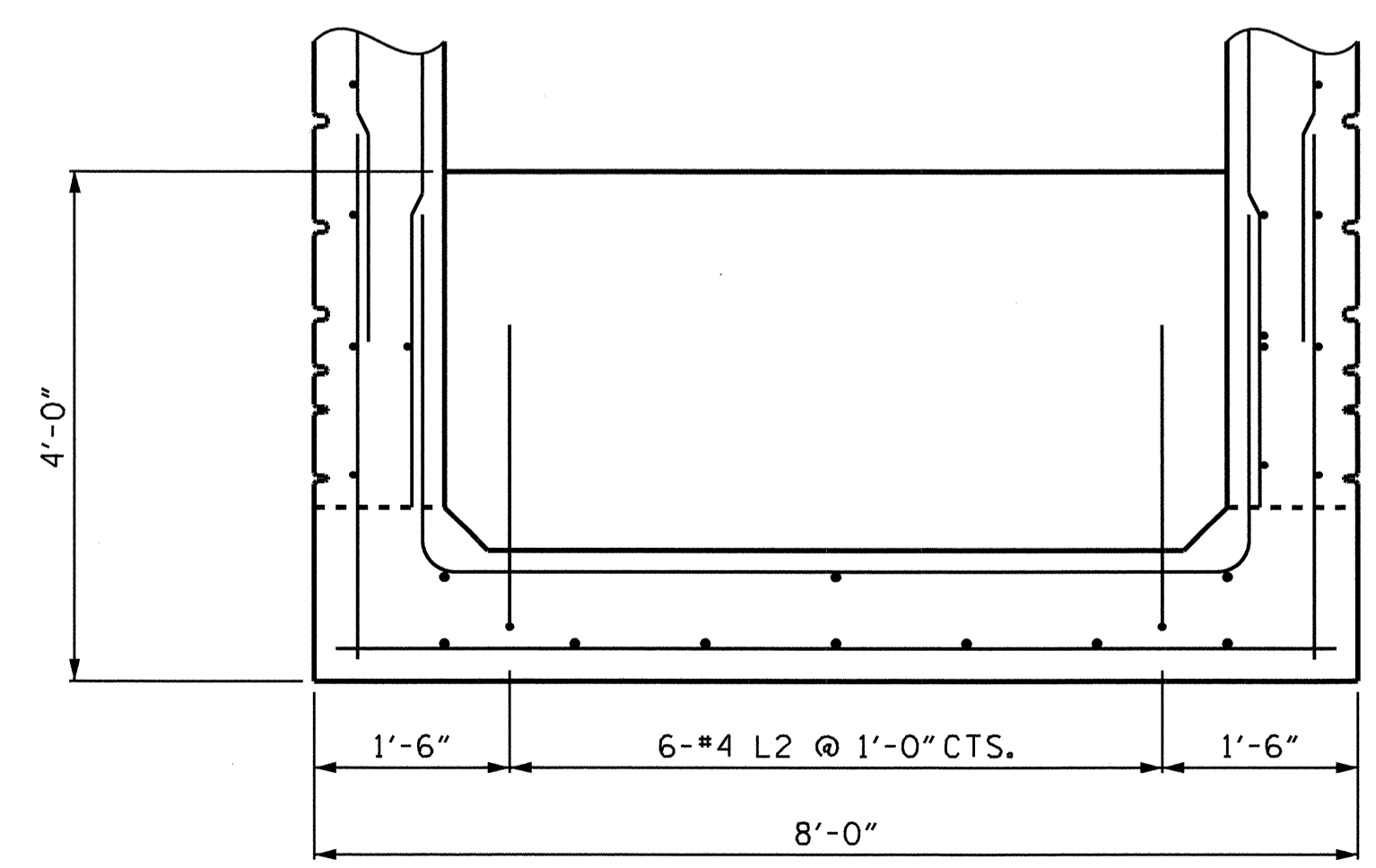
VIEW Y-Y

ELEVATION



SECTION B-B

(SEE SHEET 8 OF 11 FOR ADDITIONAL LIGHTING PEDESTAL DETAILS)



SECTION C-C

NOTES:

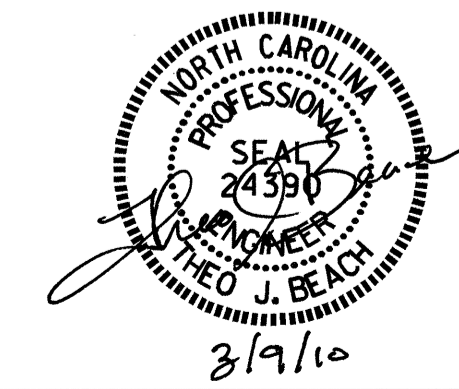
- #4 V6, #4 V7, AND #4 V8 IN EXTERIOR FACE OF WALLS SHALL BE PLACED 2" FROM TOP OF WALLS.
- ANCHOR BOLTS TO BE CAST IN LIGHTING PEDESTAL ARE NOT SHOWN. SEE "STAIRWAY LIGHT POLE ANCHORAGE" SHEET FOR DETAILS.

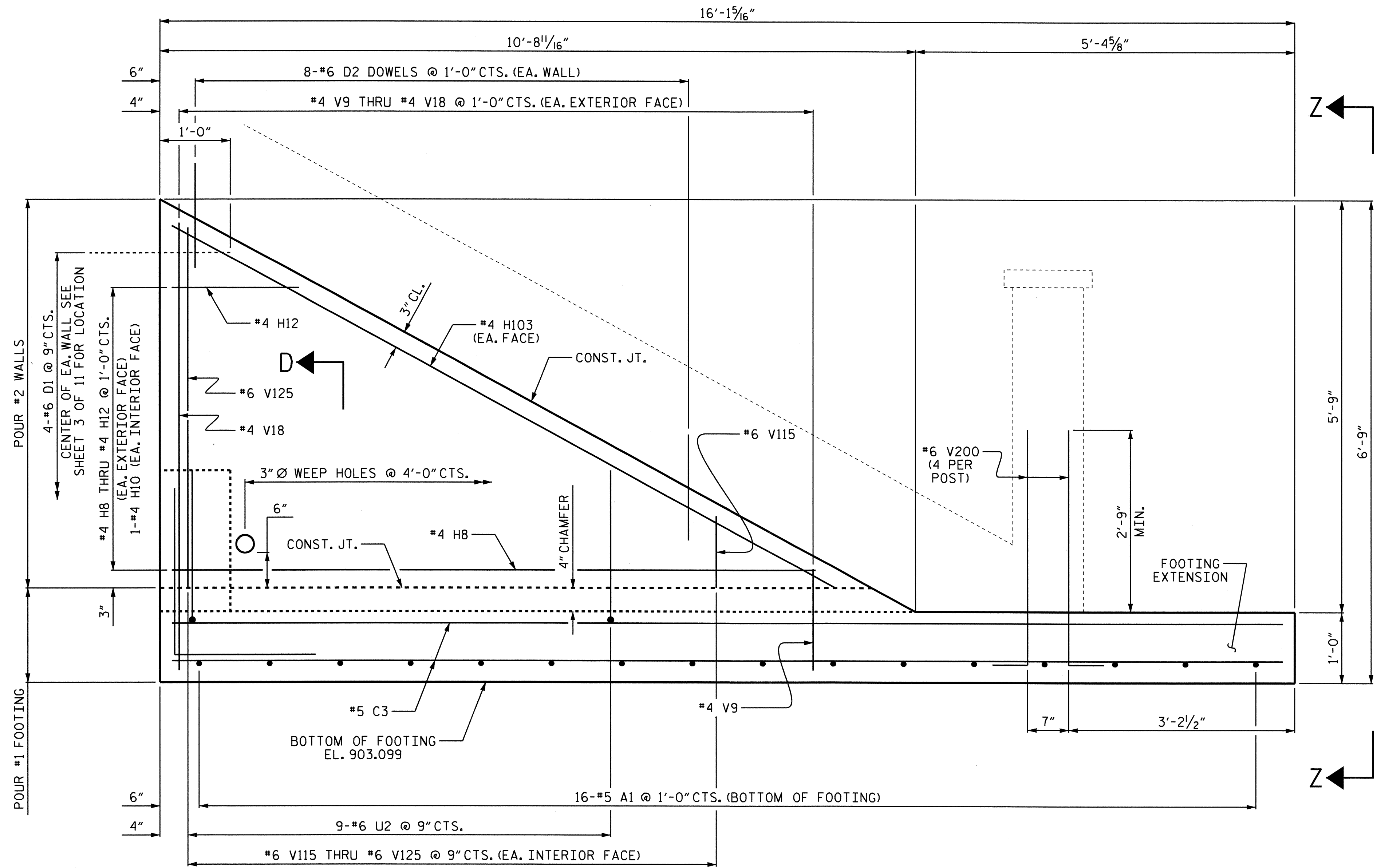
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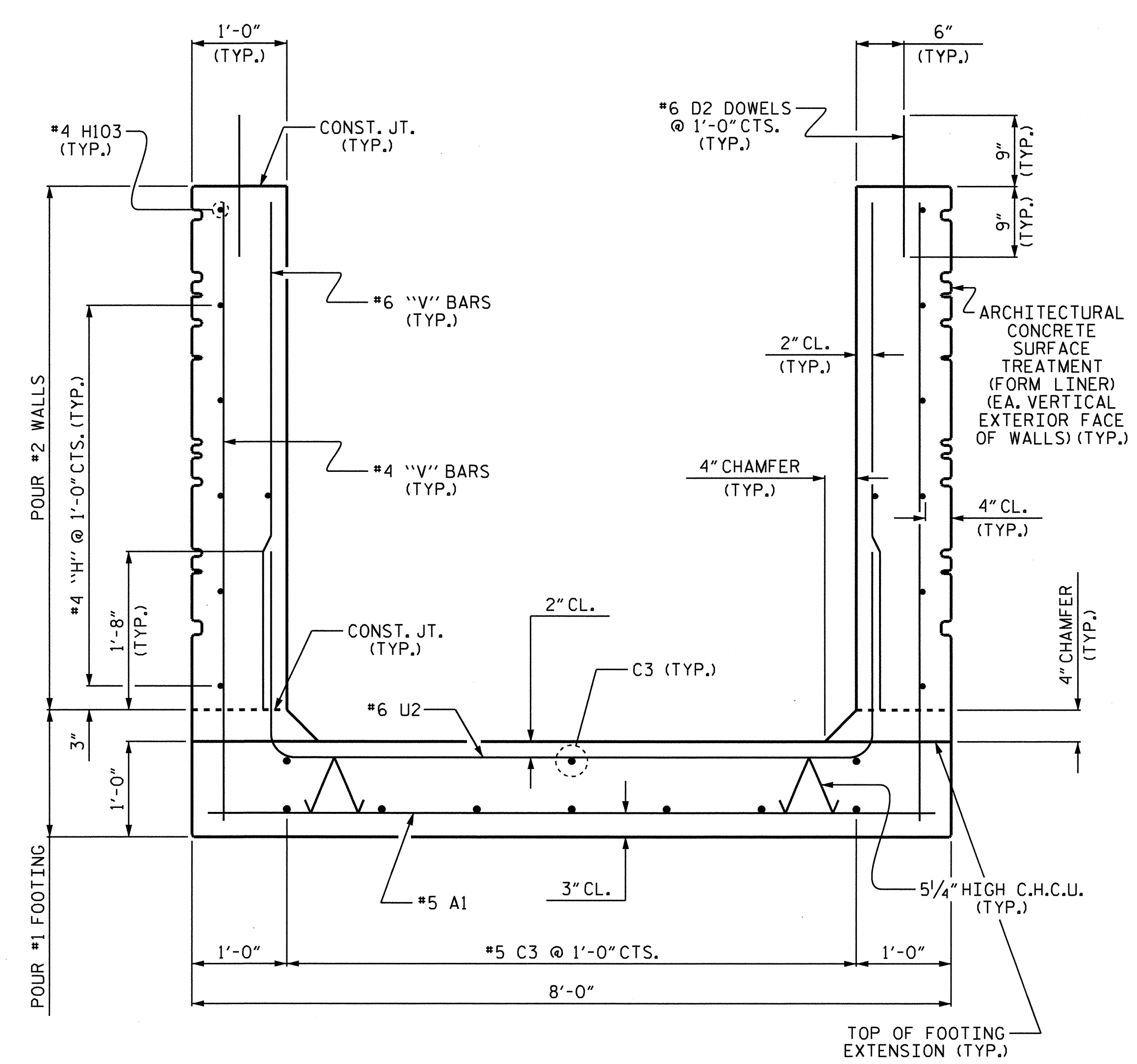
PROJECT NO. B-4820
 YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-
 SHEET 3 OF 11

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STAIRWAY WALLS & FOOTING No. 2					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					19

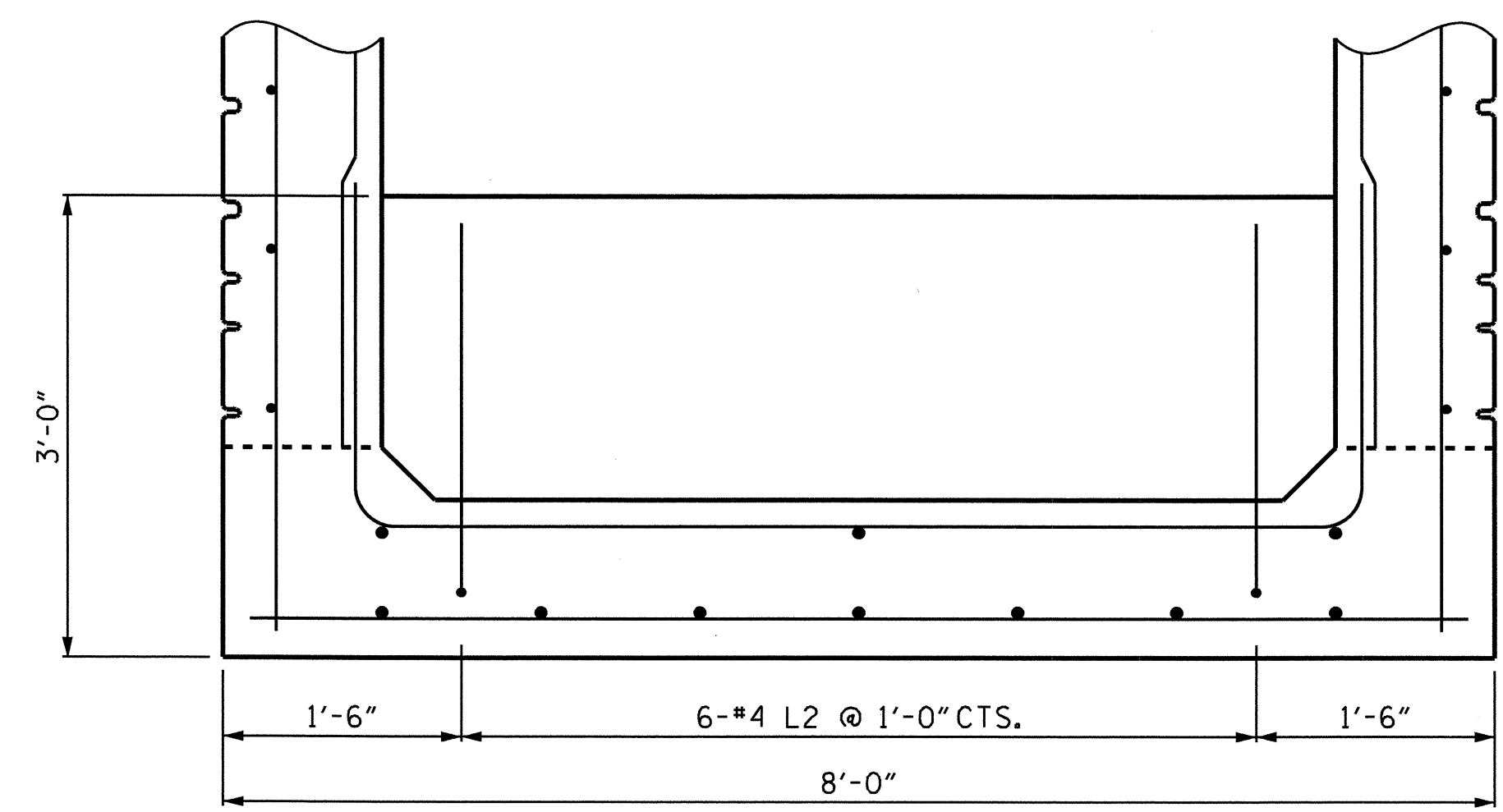




ELEVATION



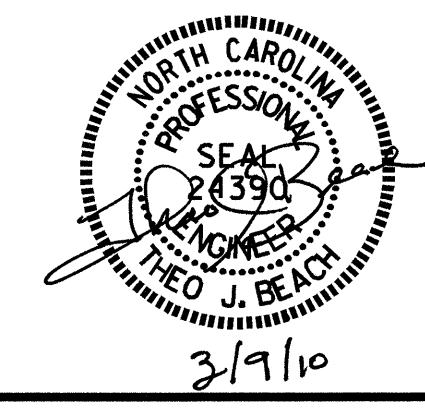
VIEW Z-Z



SECTION D-D

DRAWN BY : I. BANKOVICH DATE : 3-2009
 CHECKED BY : T. BEACH DATE : 1-2010

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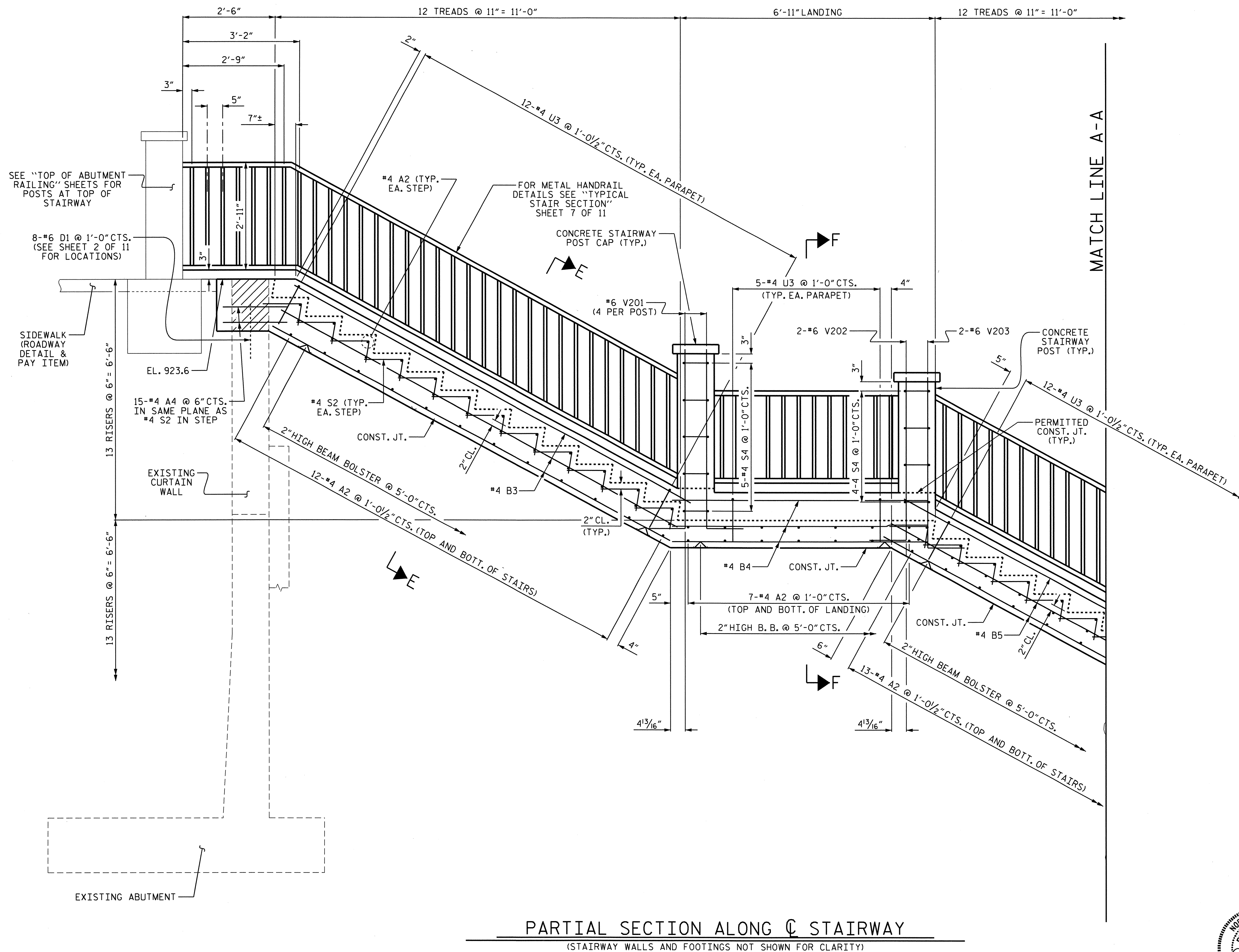


PROJECT NO. B-4820
YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-
 SHEET 4 OF 11

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STAIRWAY WALLS & FOOTING No. 3					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					19

NOTES:

- FOR SECTION E-E, SEE SHEET 7 OF 11.
- FOR SECTION F-F, SEE SHEET 7 OF 11.
- FOR SECTION THRU STAIRWAY RAIL POST AND CAP, SEE SHEET 7 OF 11.
- FOR TYPICAL STAIR DETAIL, SEE SHEET 7 OF 11.
- THE #6 "V" BARS IN CONCRETE STAIRWAY POSTS SHALL BE PLACED 2" FROM TOP OF CONCRETE POST CAP.



SEE "TOP OF ABUTMENT RAILING" SHEETS FOR POSTS AT TOP OF STAIRWAY

8-#6 D1 @ 1'-0" CTS. (SEE SHEET 2 OF 11 FOR LOCATIONS)

SIDEWALK (ROADWAY DETAIL & PAY ITEM)

EL. 923.6

15-#4 A4 @ 6" CTS. IN SAME PLANE AS #4 S2 IN STEP

EXISTING CURTAIN WALL

#4 S2 (TYP. EA. STEP)

CONST. JT.

2" HIGH BEAM BOLSTER @ 5'-0" CTS.

12-#4 A2 @ 1'-0 1/2" CTS. (TOP AND BOT. OF STAIRS)

LE

12-#4 U3 @ 1'-0 1/2" CTS. (TYP. EA. PARAPET)

FOR METAL HANDRAIL DETAILS SEE "TYPICAL STAIR SECTION" SHEET 7 OF 11

CONCRETE STAIRWAY POST CAP (TYP.)

E

#6 V201 (4 PER POST)

5-#4 U3 @ 1'-0" CTS. (TYP. EA. PARAPET)

2-#6 V202

2-#6 V203

CONCRETE STAIRWAY POST (TYP.)

12-#4 U3 @ 1'-0 1/2" CTS. (TYP. EA. PARAPET)

PERMITTED CONST. JT. (TYP.)

2" CL. (TYP.)

#4 B4

CONST. JT.

7-#4 A2 @ 1'-0" CTS. (TOP AND BOT. OF LANDING)

2" HIGH B. B. @ 5'-0" CTS.

CONST. JT.

#4 B5

F

13-#4 A2 @ 1'-0 1/2" CTS. (TOP AND BOT. OF STAIRS)

2" HIGH BEAM BOLSTER @ 5'-0" CTS.

2" CL.

4 13/16"

4 13/16"

EXISTING ABUTMENT

PARTIAL SECTION ALONG C STAIRWAY
(STAIRWAY WALLS AND FOOTINGS NOT SHOWN FOR CLARITY)

DRAWN BY : T. BANKOVICH DATE : 3-2009
CHECKED BY : T. BEACH DATE : 1-2010

03-MAR-2010 13:33
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PROJECT NO. B-4820
YADKIN/SURRY COUNTY
STATION: 14+14.81 -L-

SHEET 5 OF 11

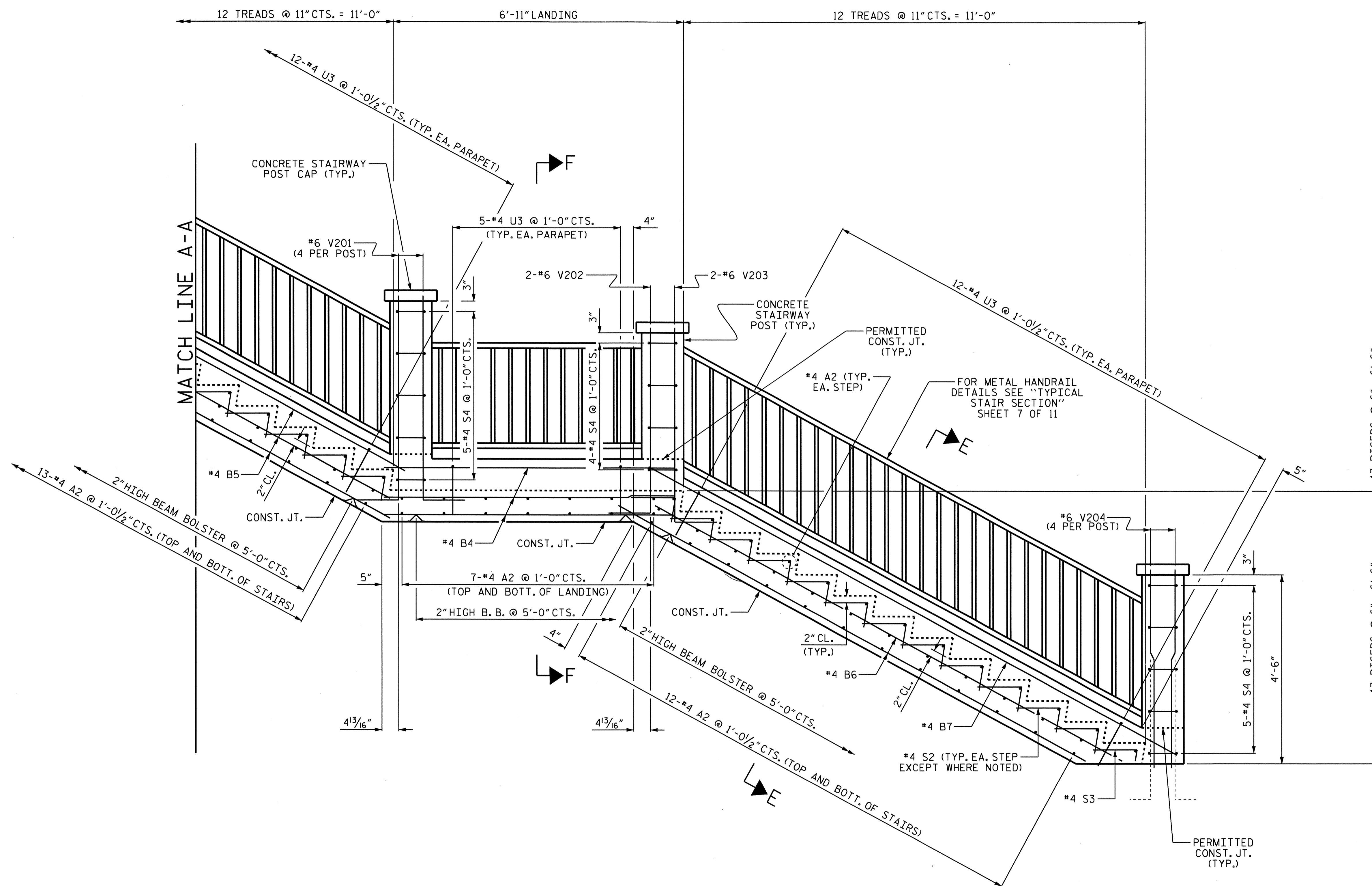
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STAIRWAY STAIRS, PARAPETS, AND POSTS

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

NOTES:

- FOR SECTION E-E, SEE SHEET 7 OF 11.
- FOR SECTION F-F, SEE SHEET 7 OF 11.
- FOR SECTION THRU STAIRWAY RAIL POST AND CAP, SEE SHEET 7 OF 11.
- FOR TYPICAL STAIR DETAIL, SEE SHEET 7 OF 11.
- THE #6 "V" BARS IN CONCRETE STAIRWAY POSTS SHALL BE PLACED 2" FROM TOP OF CONCRETE POST CAP.



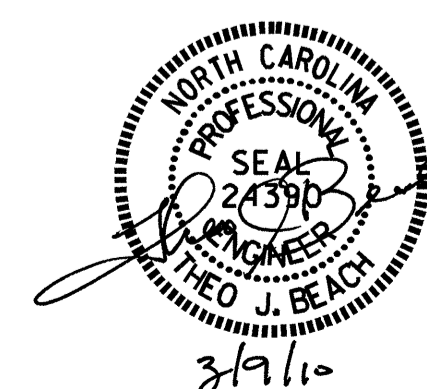
PARTIAL SECTION ALONG Q STAIRWAY
 (STAIRWAY WALLS AND FOOTINGS NOT SHOWN FOR CLARITY)

PROJECT NO. B-4820
YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-

SHEET 6 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**STAIRWAY
 STAIRS, PARAPETS,
 AND POSTS**



DRAWN BY: T. BANKOVICH DATE: 3-2009
 CHECKED BY: T. BEACH DATE: 1-2010

03-MAR-2010 13:33
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 tbankovich

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

TOTAL SHEETS
19

NOTES:

ALL 1/2" & 1" SQUARE GALVANIZED STEEL TUBING USED IN THE METAL RAILING SHALL BE ASTM A-36 AND PAINTED IN ACCORDANCE WITH SYSTEM 1 OF ARTICLE 442-7 OF THE STANDARD SPECIFICATIONS, EXCEPT ALL COATS SHALL BE SHOP APPLIED AND THE FINAL COAT COLOR SHALL MATCH THE COLOR ON THE LIGHT POLES AND BENCHES AS PROVIDED BY THE CITY OF ELKIN.

CERTIFIED MILL REPORTS ARE REQUIRED FOR THE STRUCTURAL TUBING. SHOP INSPECTION IS NOT REQUIRED.

THE 1" AND 1/2" SQUARE GALVANIZED STEEL TUBING SHALL HAVE A MINIMUM WALL THICKNESS OF 0.12 INCHES.

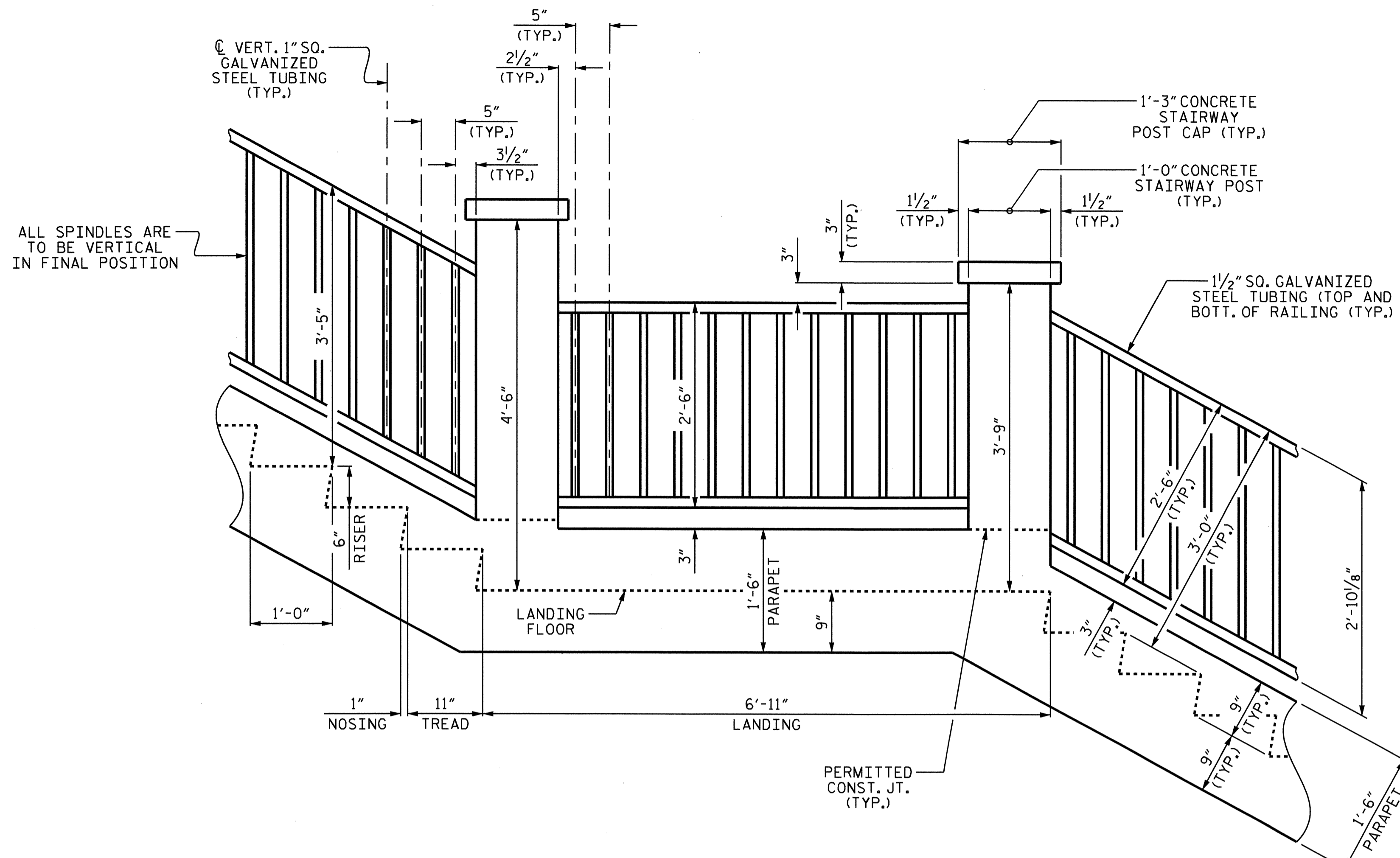
ALL EDGES OF THE 1/2" SQUARE GALVANIZED STEEL TUBING USED IN THE METAL RAILING ARE REQUIRED TO HAVE A MINIMUM RADIUS OF 1/8".

ALL IN PLACE VERTICAL 1" STEEL TUBING USED IN THE METAL RAILING IS TO BE PLUMB.

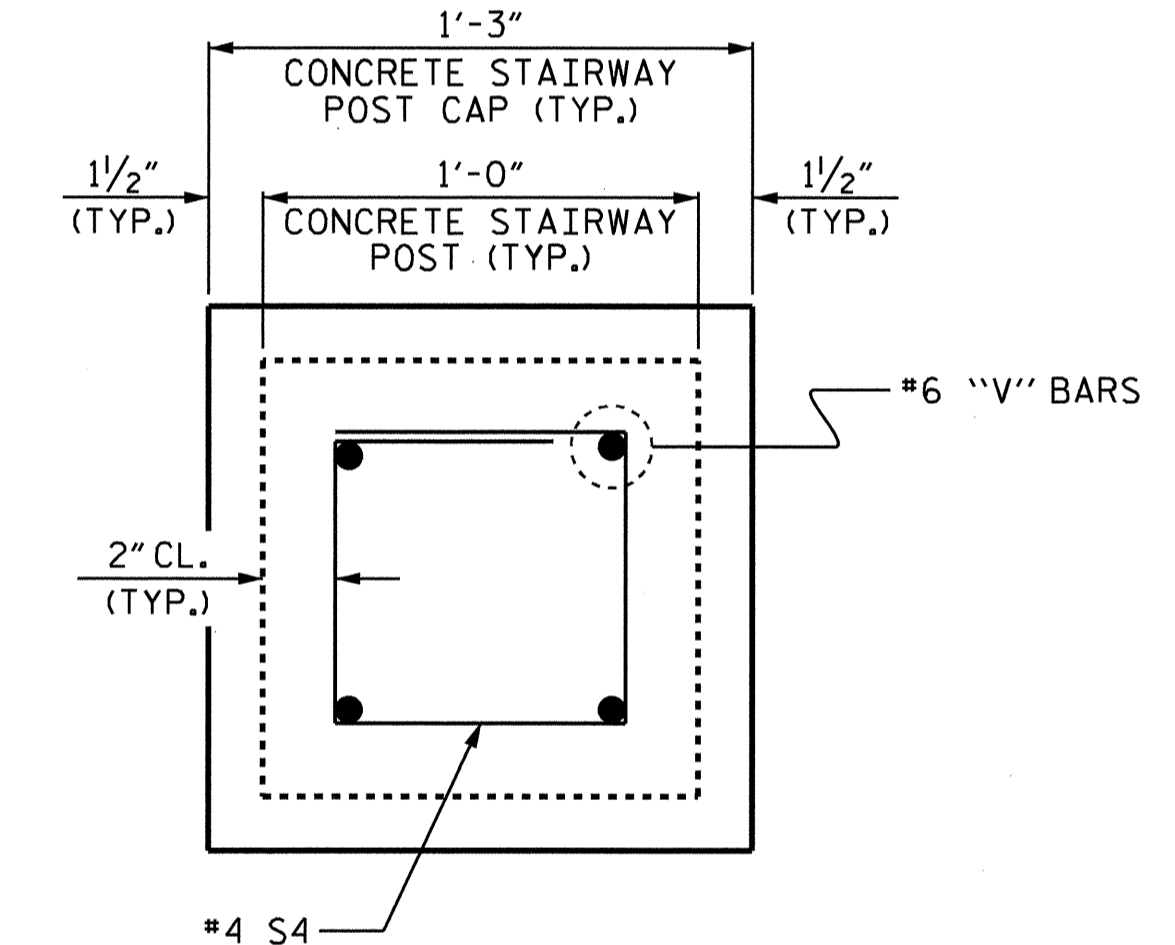
METAL RAILING SHALL BE CONTINUOUS BETWEEN CONCRETE STAIRWAY POSTS AND TOP OF ABUTMENT WALL CONCRETE POSTS AS DETAILED ON THE PLANS.

AFTER THE METAL RAILING IS IN PLACE, ALL ABRADED OR DAMAGED AREAS SHALL BE REPAIRED BY THOROUGHLY WIRE BRUSHING THE DAMAGED AREAS AND REMOVING ALL LOOSE AND CRACKED ZINC COATING. THE CLEANED AREAS SHALL BE SPOT PAINTED WITH TWO FIELD COATS OF ZINC RICH PAINT FOLLOWED BY TWO COATS OF AN EXTERIOR ACRYLIC PAINT THAT MATCHES THE SHOP APPLIED TOP COAT PAINT COLOR.

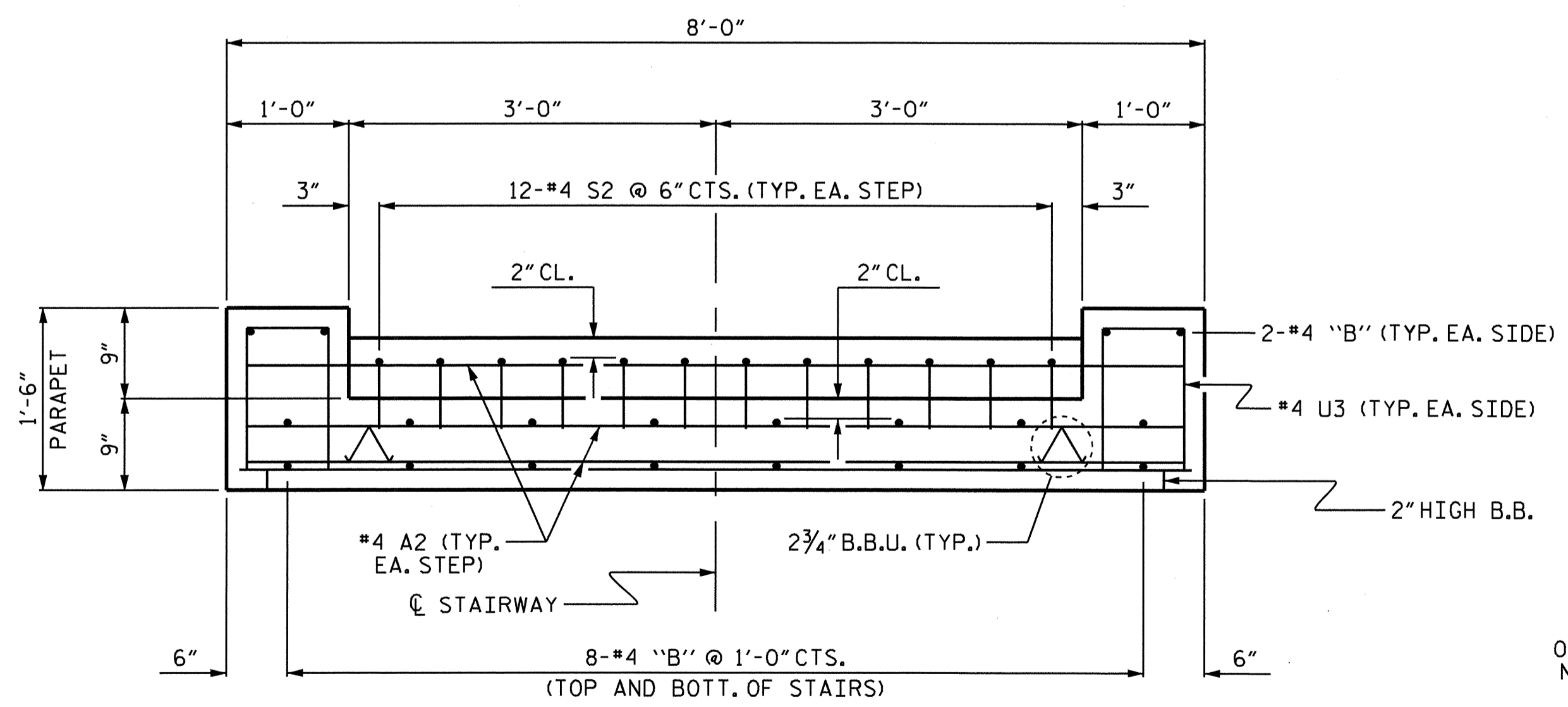
THE ATTACHMENT OF THE METAL RAILING TO THE CONCRETE STAIRWAY POSTS, CONCRETE TERRACE POSTS AND TOP OF ABUTMENT CONCRETE POSTS SHALL MEET THE LOADING REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL WORKING DRAWINGS FOR THE ATTACHMENTS SEALED BY A PROFESSIONAL ENGINEER.



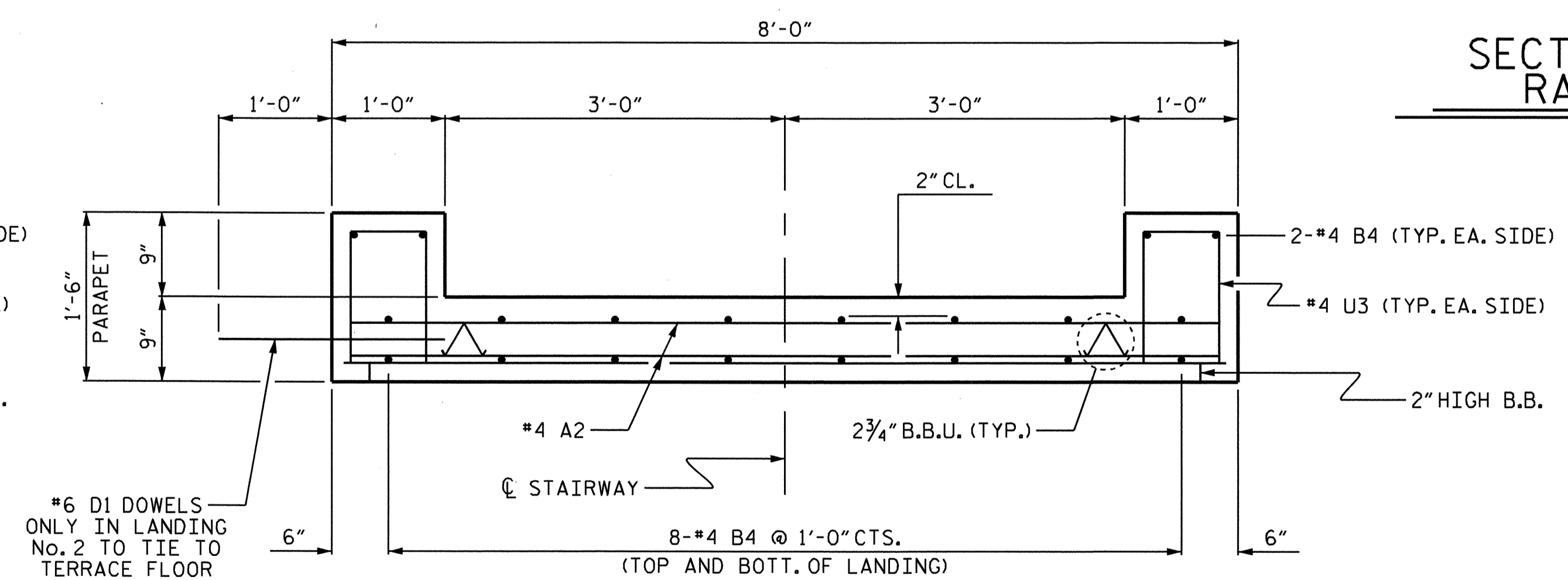
TYPICAL STAIR SECTION



SECTION THRU STAIRWAY RAIL POST AND CAP



SECTION E-E
(TYP. EA. STEP)

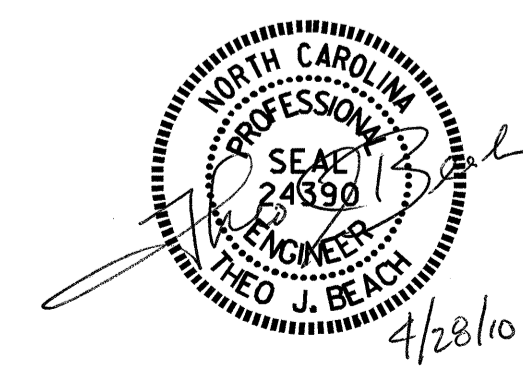


SECTION F-F
(TYP. EA. LANDING, EXCEPT WHERE NOTED)

PROJECT NO. B-4820
YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-
 SHEET 7 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STAIRWAY STAIRS, PARAPETS, AND POSTS

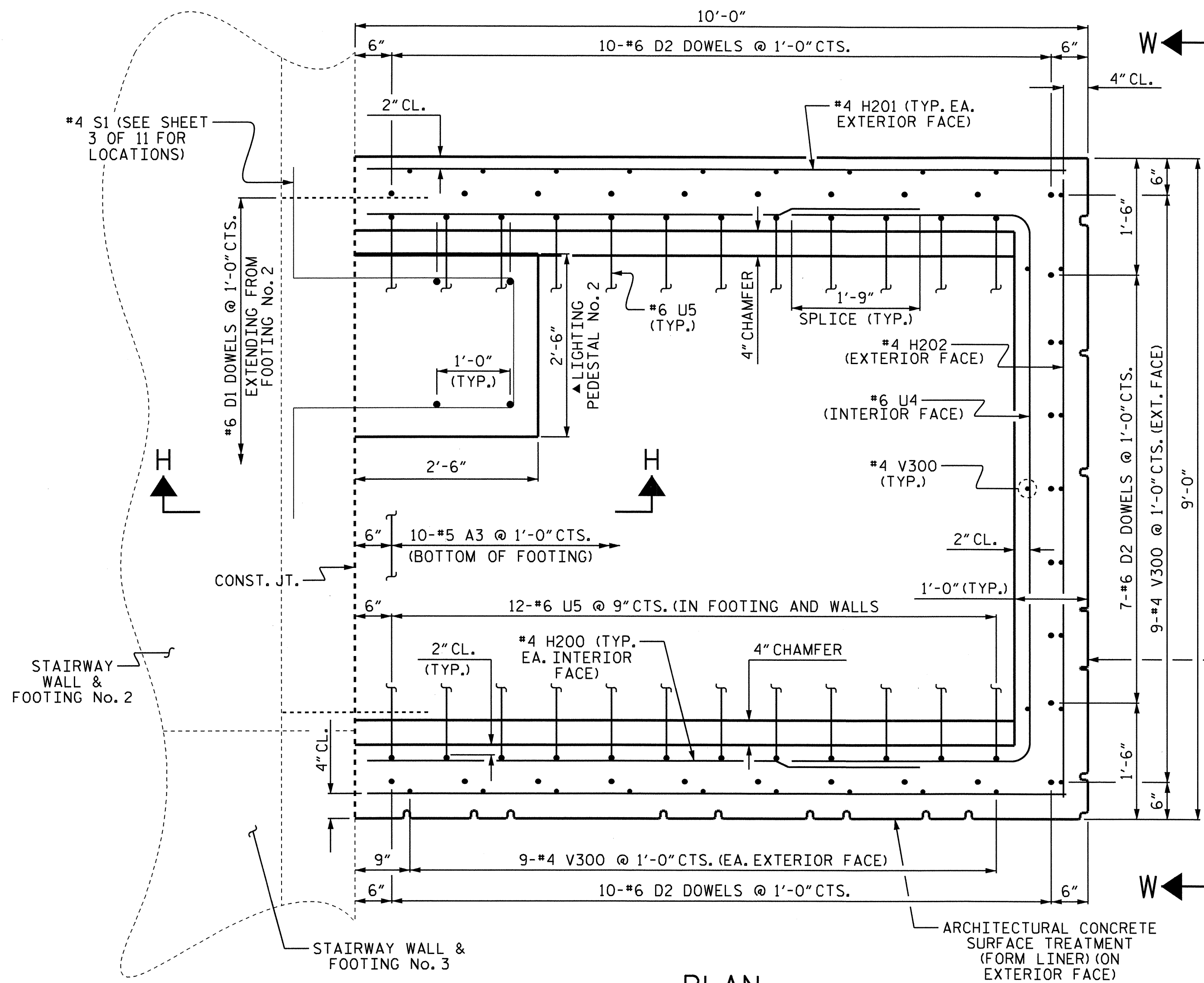


REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

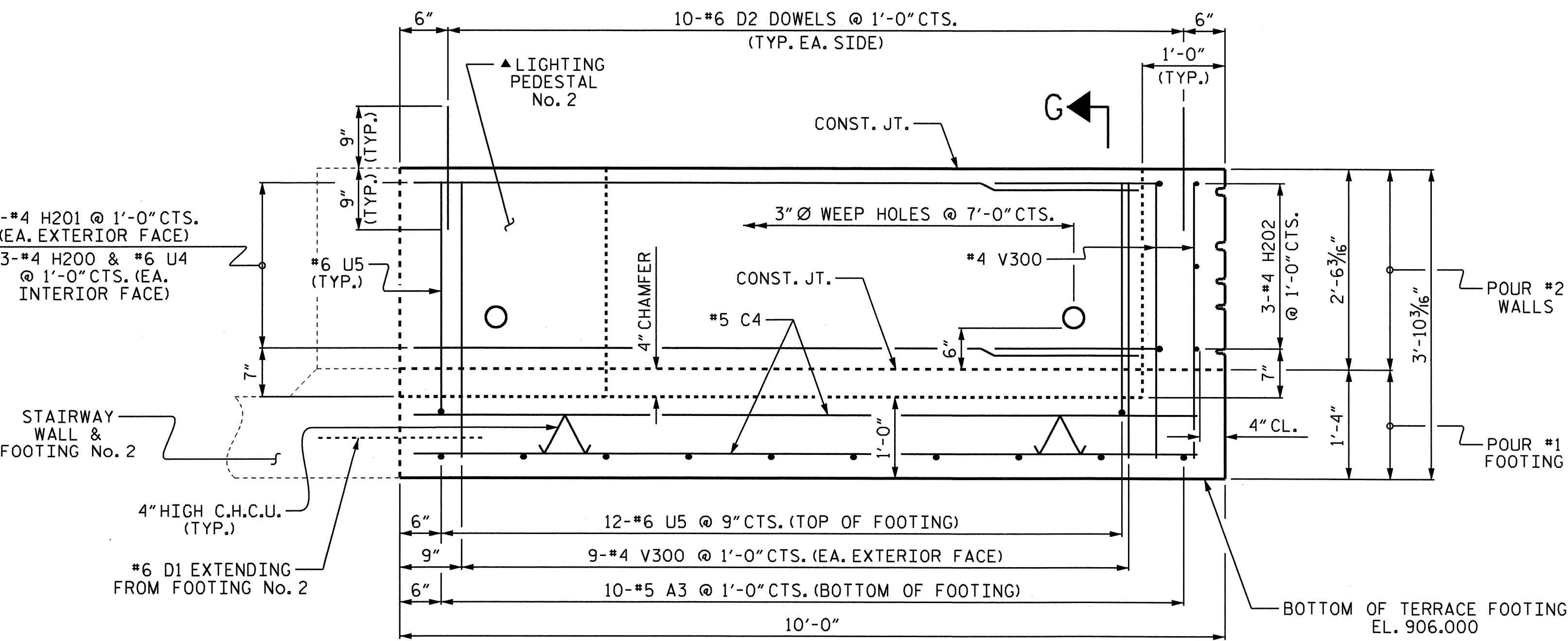
S-10
TOTAL SHEETS
19

DRAWN BY : T. BANKOVICH DATE : 3-2009
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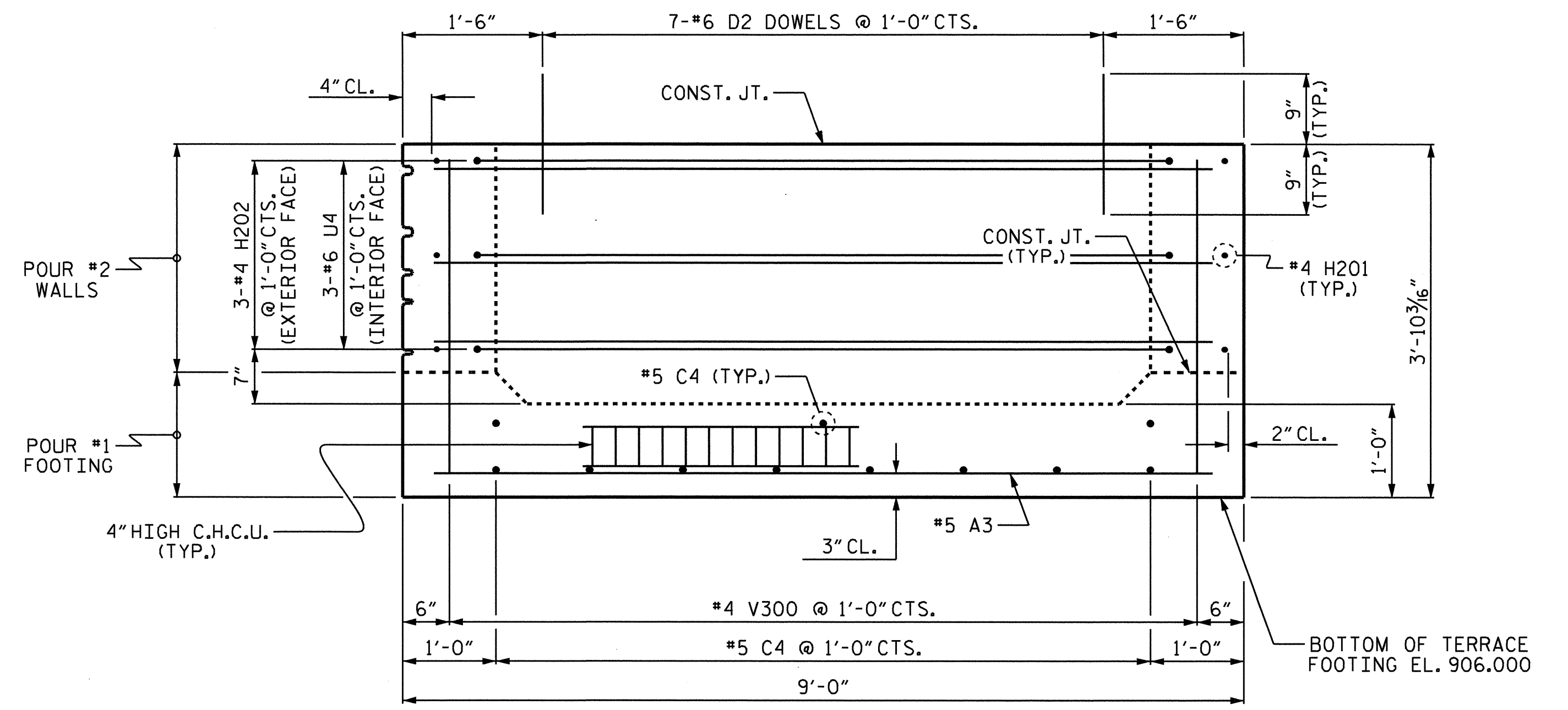
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 tjbankovich



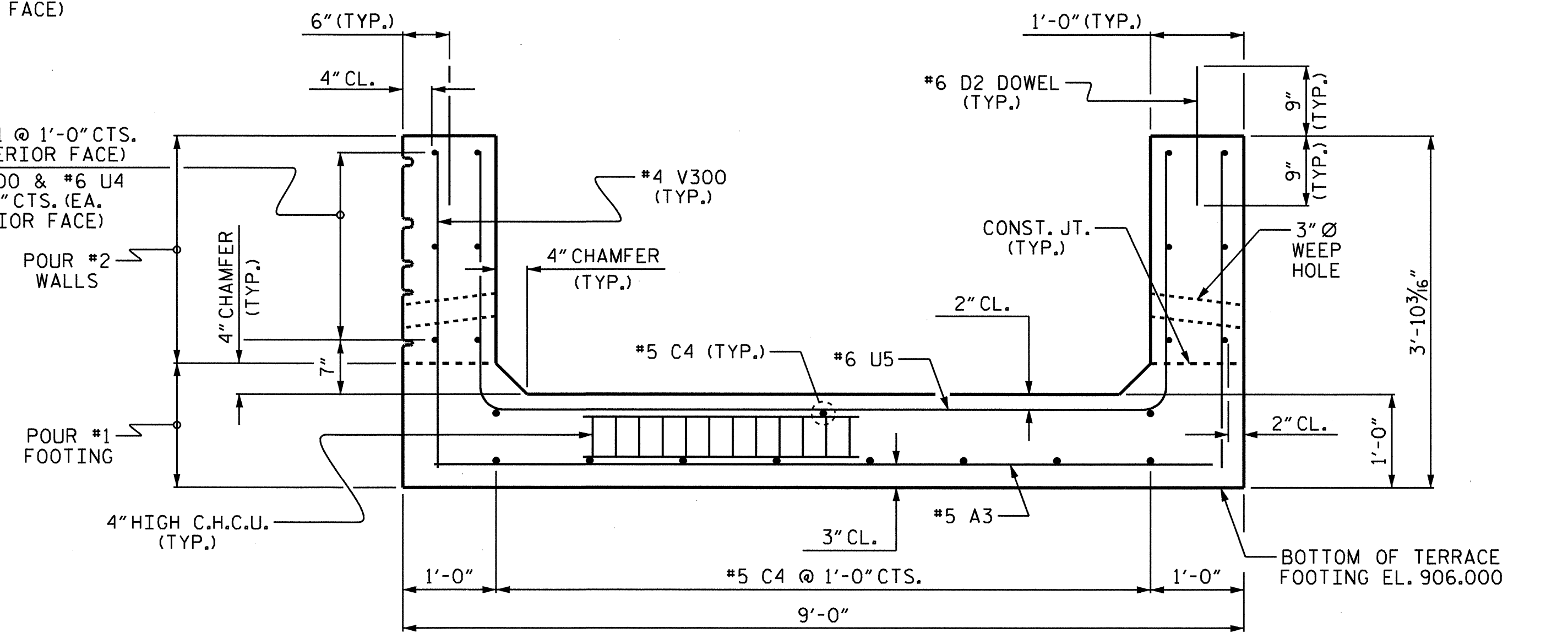
PLAN



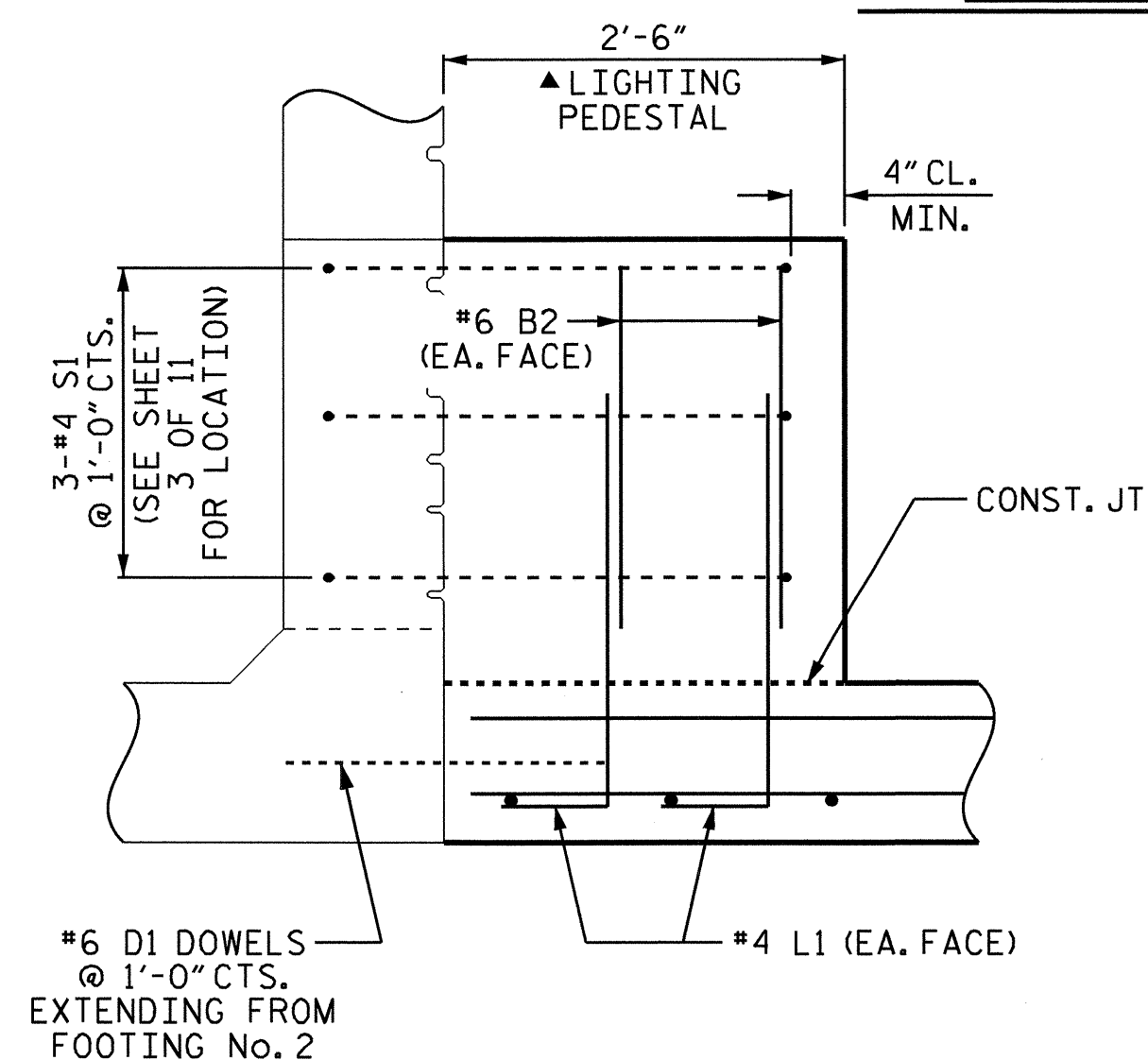
ELEVATION



VIEW W-W



SECTION G-G



VIEW H-H

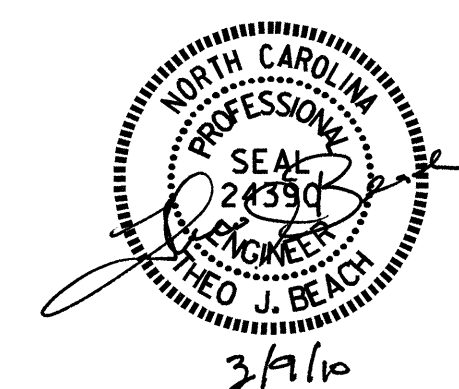
NOTE:
 ▲ ANCHOR BOLTS TO BE CAST INTO LIGHTING PEDESTAL ARE NOT SHOWN. SEE "STAIRWAY LIGHT POLE ANCHORAGE" SHEET FOR DETAILS.

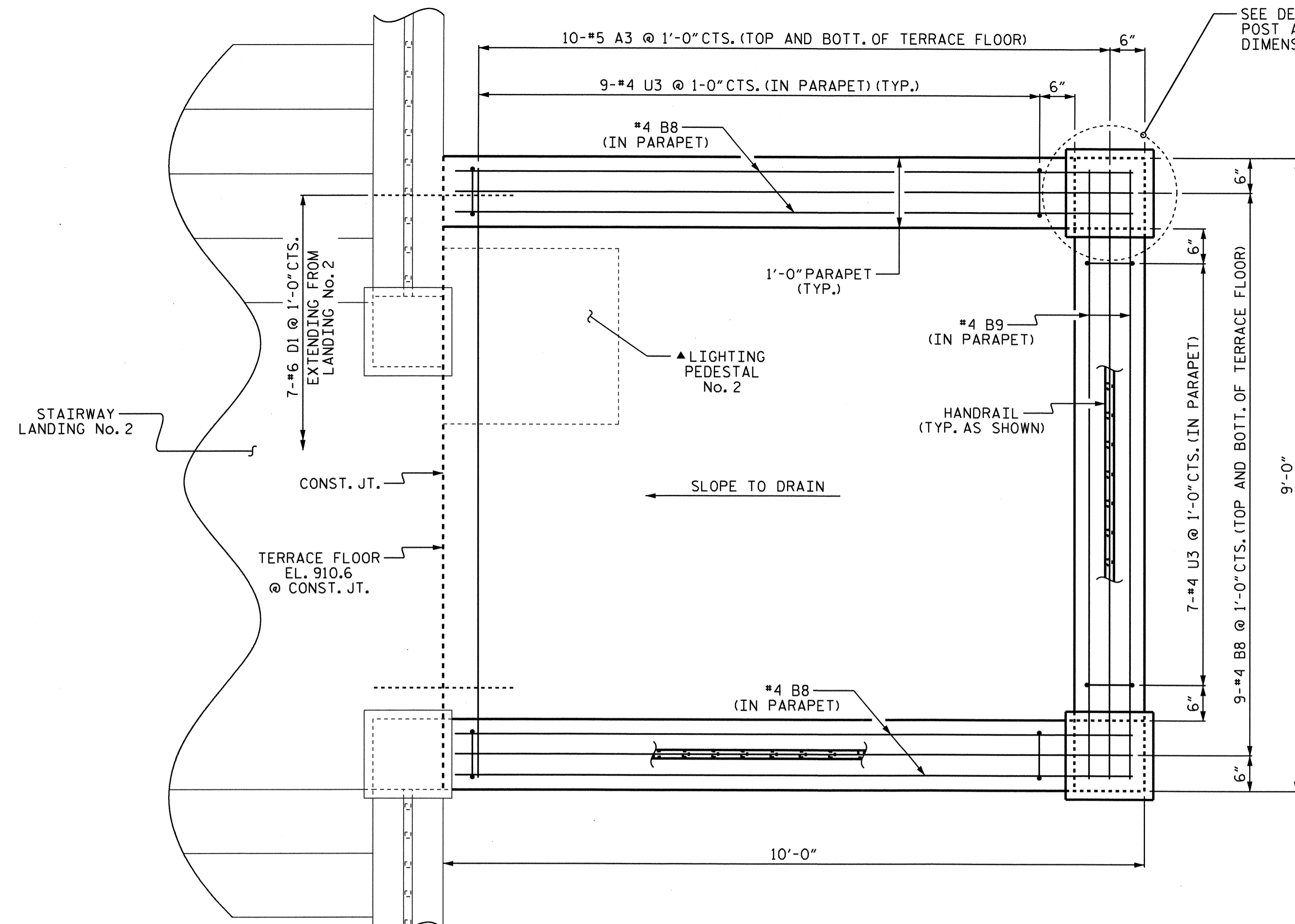
PROJECT NO. B-4820
 YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-
 SHEET 8 OF 11

STATE OF NORTH CAROLINA		DEPARTMENT OF TRANSPORTATION		RALEIGH	
STAIRWAY TERRACE WALLS & FOOTING					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-11
TOTAL SHEETS					19

DRAWN BY: T. BANKOVICH DATE: 4-2009
 CHECKED BY: T. BEACH DATE: 1-2010

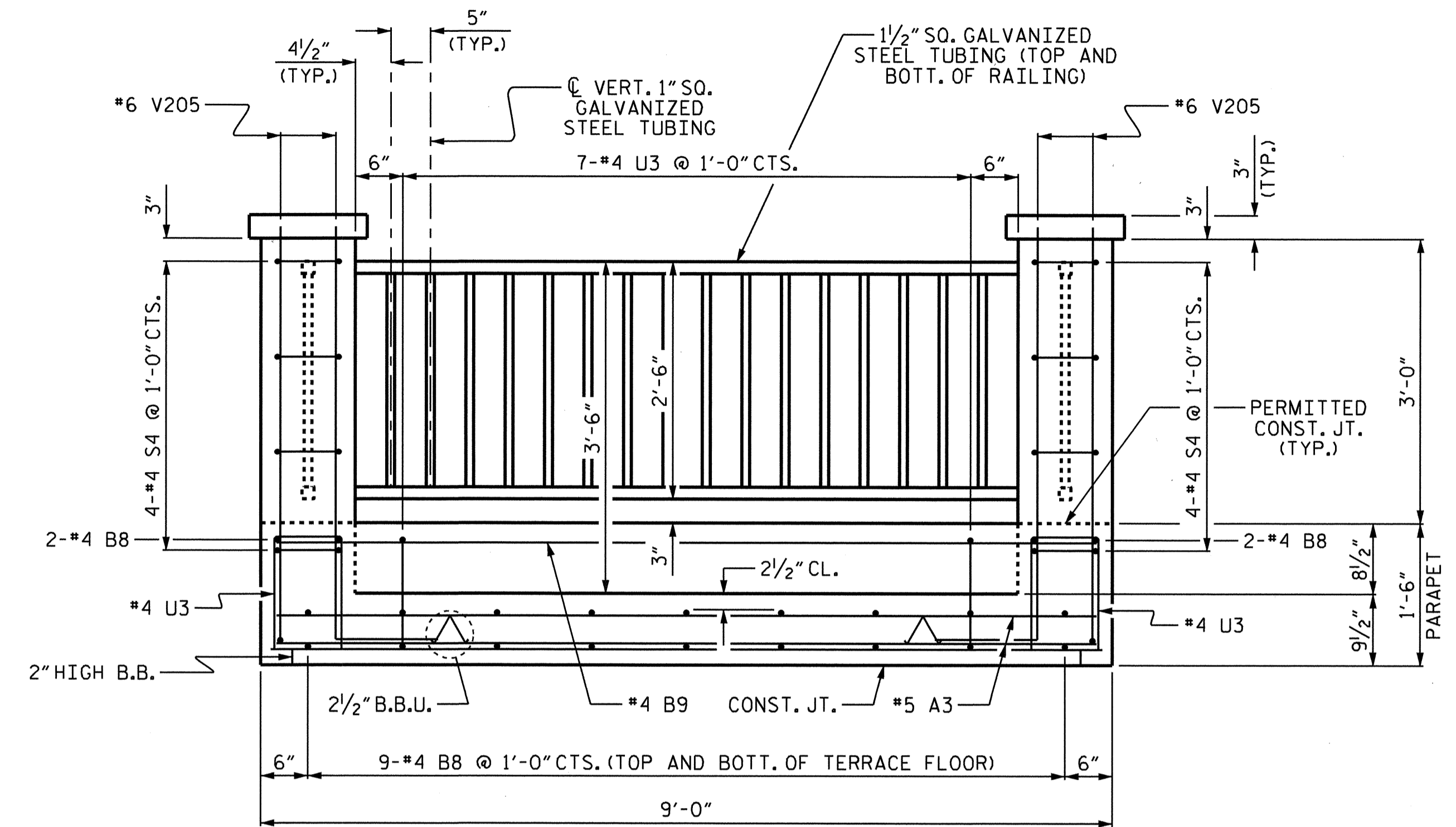
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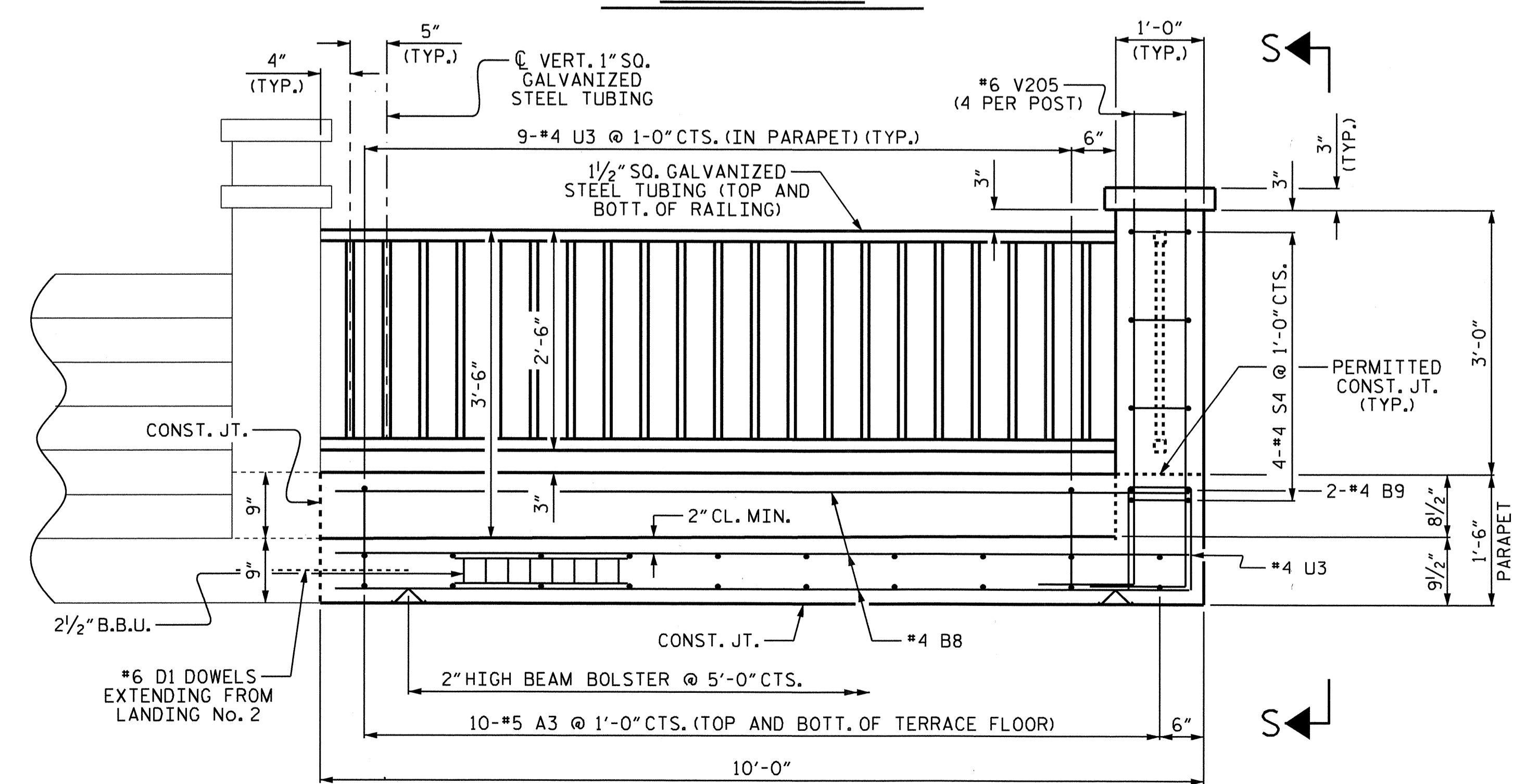


PLAN

SEE DETAIL "A" FOR CONCRETE POST AND CONCRETE POST CAP DIMENSIONS AND REINFORCING STEEL (TYP.)

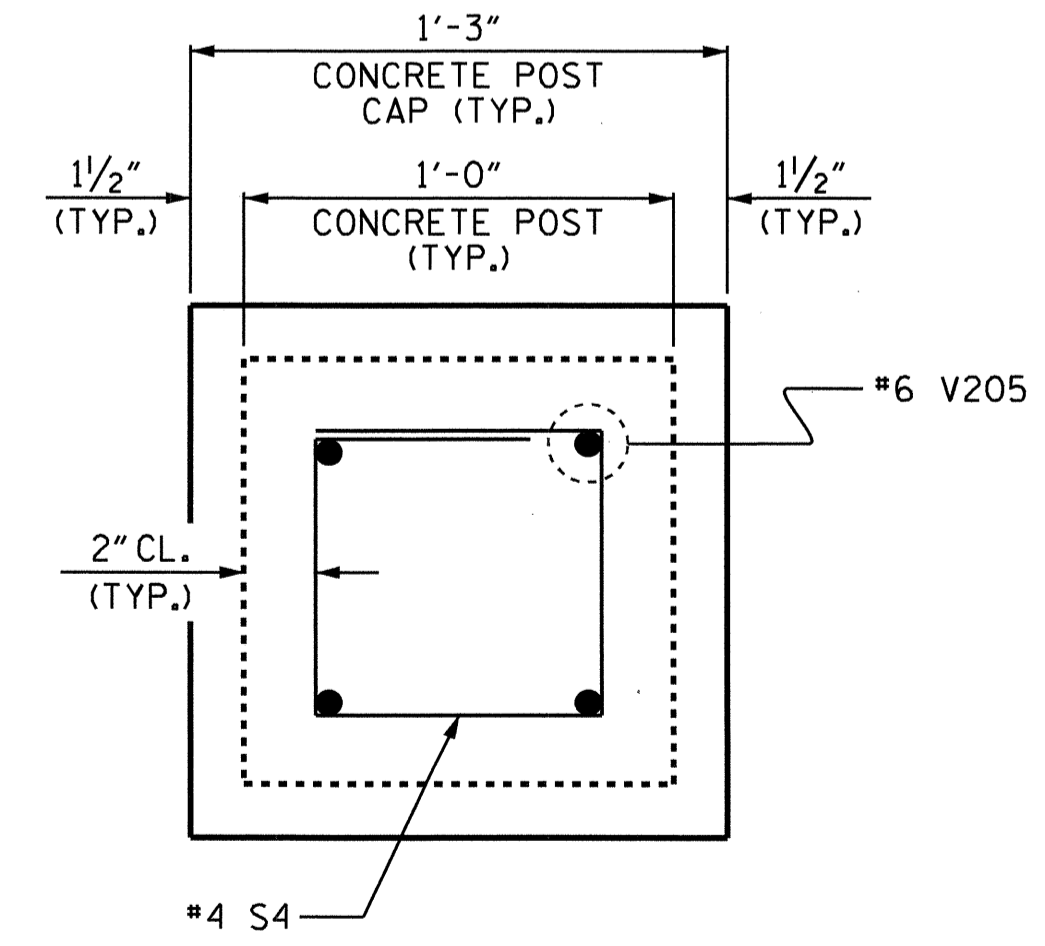


VIEW S-S



ELEVATION

NOTE:
 ▲ ANCHOR BOLTS NOT SHOWN FOR CLARITY. SEE "STAIRWAY LIGHT POLE ANCHORAGE" SHEET FOR DETAILS.



DETAIL "A"

PROJECT NO. B-4820
YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-
 SHEET 9 OF 11

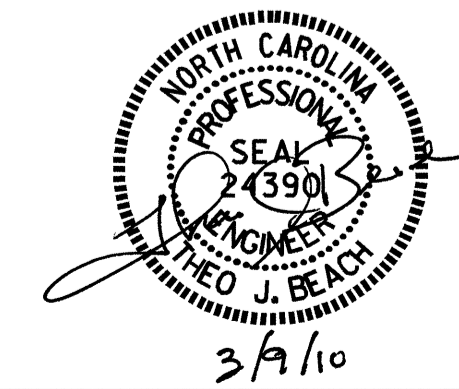
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STAIRWAY TERRACE
 FLOOR, PARAPET
 AND POSTS

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

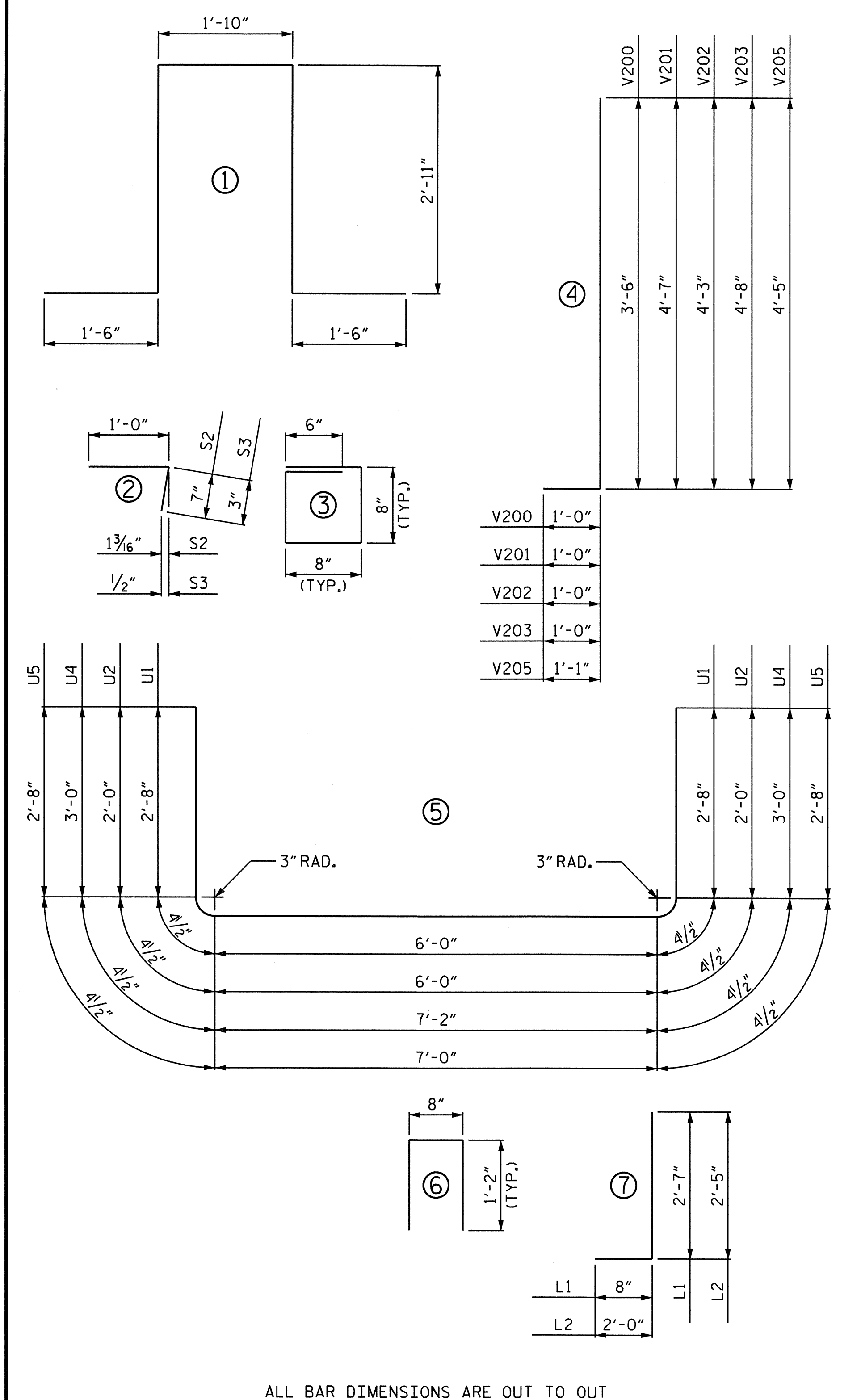
TOTAL SHEETS 19

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 CHECKED BY: T. BEACH DATE: 1-2010

03-MAR-2010 13:33
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BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

STAIRWAY BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	51	#5	STR	7'-8"	408	S1	8	#4	1	10'-8"	57	V109	4	#6	STR	4'-0"	24
A2	139	#4	STR	7'-8"	712	S2	444	#4	2	1'-7"	470	V110	4	#6	STR	4'-10"	29
A3	30	#5	STR	8'-6"	266	S3	12	#4	2	1'-3"	10	V111	4	#6	STR	5'-8"	34
A4	30	#4	STR	2'-0"	40	S4	54	#4	3	3'-2"	114	V112	4	#6	STR	6'-5"	39
B1	4	#6	STR	5'-7"	34	U1	47	#6	5	12'-1"	853	V113	4	#6	STR	7'-3"	44
B2	4	#6	STR	2'-4"	14	U2	9	#6	5	10'-9"	145	V114	4	#6	STR	8'-0"	48
B3	20	#4	STR	12'-2"	163	U3	117	#4	6	3'-0"	234	V115	2	#6	STR	1'-0"	3
B4	40	#4	STR	6'-11"	185	U4	3	#6	5	13'-11"	63	V116	2	#6	STR	1'-5"	4
B5	20	#4	STR	14'-0"	187	U5	12	#6	5	13'-1"	236	V117	2	#6	STR	1'-10"	6
B6	16	#4	STR	12'-8"	135	V1	34	#4	STR	6'-0"	136	V118	2	#6	STR	2'-2"	7
B7	4	#4	STR	14'-4"	38	V2	12	#4	STR	4'-8"	37	V119	2	#6	STR	2'-7"	8
B8	22	#4	STR	9'-8"	142	V3	10	#4	STR	7'-5"	50	V120	2	#6	STR	3'-0"	9
B9	2	#4	STR	8'-8"	12	V4	14	#4	STR	3'-5"	32	V121	2	#6	STR	3'-5"	10
C1	10	#5	STR	16'-6"	172	V5	22	#4	STR	4'-2"	61	V122	2	#6	STR	3'-10"	12
C2	10	#5	STR	17'-7"	183	V6	6	#4	STR	3'-11"	16	V123	2	#6	STR	4'-3"	13
C3	10	#5	STR	15'-9"	164	V7	6	#4	STR	5'-6"	22	V124	2	#6	STR	4'-7"	14
C4	11	#5	STR	9'-6"	109	V8	6	#4	STR	7'-2"	29	V125	2	#6	STR	5'-0"	15
D1	63	#6	STR	2'-0"	189	V9	2	#4	STR	1'-5"	2	V200	8	#6	4	4'-6"	54
D2	113	#6	STR	1'-6"	255	V10	2	#4	STR	1'-11"	3	V201	16	#6	4	5'-7"	134
H1	12	#4	STR	16'-6"	132	V11	2	#4	STR	2'-6"	3	V202	8	#6	4	5'-3"	63
H2	4	#4	STR	9'-10"	26	V12	2	#4	STR	3'-0"	4	V203	8	#6	4	5'-8"	68
H3	4	#4	STR	8'-0"	21	V13	2	#4	STR	3'-7"	5	V204	8	#6	STR	4'-7"	55
H4	8	#4	STR	6'-2"	33	V14	2	#4	STR	4'-1"	5	V205	8	#6	4	5'-6"	66
H5	4	#4	STR	4'-3"	11	V15	2	#4	STR	4'-7"	7	V300	30	#4	STR	3'-5"	68
H6	4	#4	STR	2'-4"	6	V16	2	#4	STR	5'-2"	8	REINFORCING STEEL 7,888 LBS.					
H7	8	#4	STR	17'-7"	94	V17	2	#4	STR	5'-8"	8	CLASS A CONCRETE BREAKDOWN					
H8	2	#4	STR	9'-1"	12	V18	2	#4	STR	6'-3"	8	STAIRWAY WALLS & FOOTING No. 1					
H9	2	#4	STR	7'-3"	10	V100	18	#6	STR	4'-10"	131	POUR #1 (FOOTING) 5.8 C.Y.					
H10	4	#4	STR	5'-5"	14	V101	4	#6	STR	5'-4"	32	POUR #2 (WALLS) 10.0 C.Y.					
H11	2	#4	STR	3'-7"	5	V102	4	#6	STR	6'-1"	37	STAIRWAY WALLS & FOOTING No. 2					
H12	2	#4	STR	1'-9"	2	V103	4	#6	STR	6'-11"	42	POUR #1 (FOOTING) 5.8 C.Y.					
H100	2	#4	STR	11'-10"	16	V104	4	#6	STR	7'-9"	47	POUR #2 (WALLS) 6.8 C.Y.					
H101	2	#4	STR	5'-10"	8	V105	4	#6	STR	8'-7"	52	STAIRWAY WALLS & FOOTING No. 3					
H102	2	#4	STR	13'-3"	18	V106	4	#6	STR	9'-4"	56	POUR #1 (FOOTING) 5.1 C.Y.					
H103	2	#4	STR	10'-8"	14	V107	4	#6	STR	10'-2"	61	POUR #2 (WALLS) 2.4 C.Y.					
H200	6	#4	STR	7'-10"	31	V108	4	#6	STR	3'-2"	19	STAIRS, PARAPET, & POSTS 18.0 C.Y.					
H201	6	#4	STR	9'-6"	38	L1	8	#4	7	3'-3"	17	TERRACE WALLS & FOOTING					
H202	3	#4	STR	8'-6"	17	L2	12	#4	STR	4'-5"	35	POUR #1 (FOOTING) 3.6 C.Y.					
												POUR #2 (WALLS) 3.1 C.Y.					
												TERRACE FLOOR, PARAPET & POSTS 3.4 C.Y.					
												WALKWAY 0.4 C.Y.					
												STAIRWAY TOTAL = 64.4 C.Y.					
												METAL HANDRAIL (STAIRWAY & TERRACE) 110.3 LIN. FT.					
												#57 STONE 61 C.Y.					

PROJECT NO. B-4820
YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-

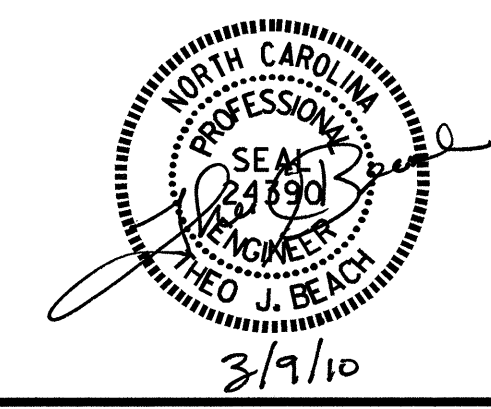
SHEET 10 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STAIRWAY
 BILL OF MATERIAL

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

TOTAL SHEETS 19



DRAWN BY : T. BANKOVICH DATE : 4-2009
 CHECKED BY : T. BEACH DATE : 1-2010

NOTES:

ALL DETAILS SHOWN ARE FOR INFORMATION PURPOSES ONLY. OBTAIN ACTUAL DETAILS AND DIMENSIONS FOR LIGHT POLE AND ANCHOR BOLTS PRIOR TO BEGINNING CONSTRUCTION OF LIGHT PEDESTALS.

LIGHT POLE AND ANCHOR BOLTS TO BE PROVIDED BY OTHERS.

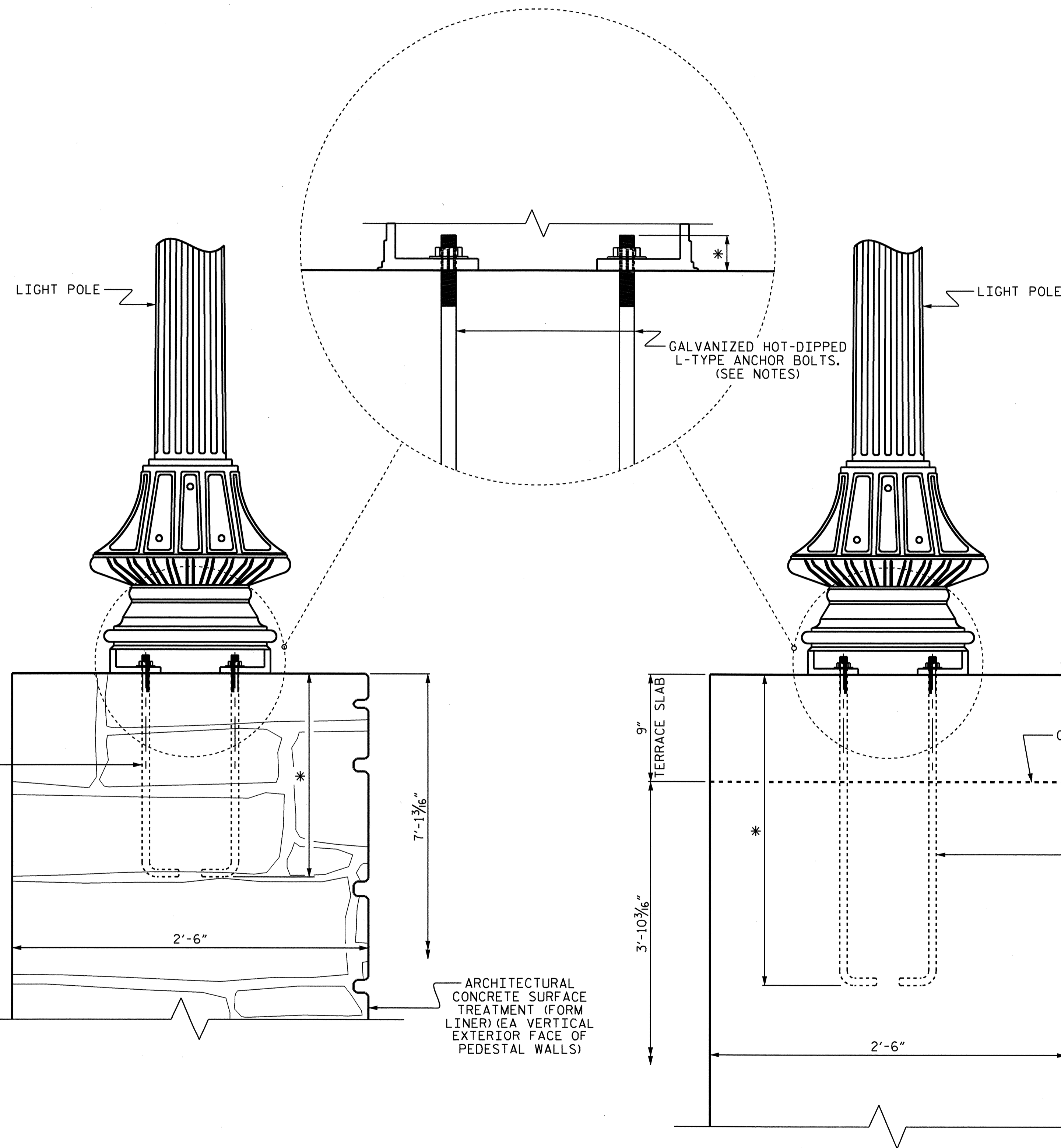
FOR FEEDER CIRCUIT TO BE PLACED IN LIGHTING PEDESTALS, SEE "STAIRWAY LIGHTING LAYOUT" SHEET.

* INSTALL ANCHOR BOLTS ACCORDING TO MANUFACTURER SPECIFICATION.

FOR ADDITIONAL LIGHTING POSITIONS SEE "STAIRWAY LIGHTING LAYOUT" SHEET.

CENTER ANCHOR BOLT PATTERN ABOUT LIGHTING PEDESTAL.

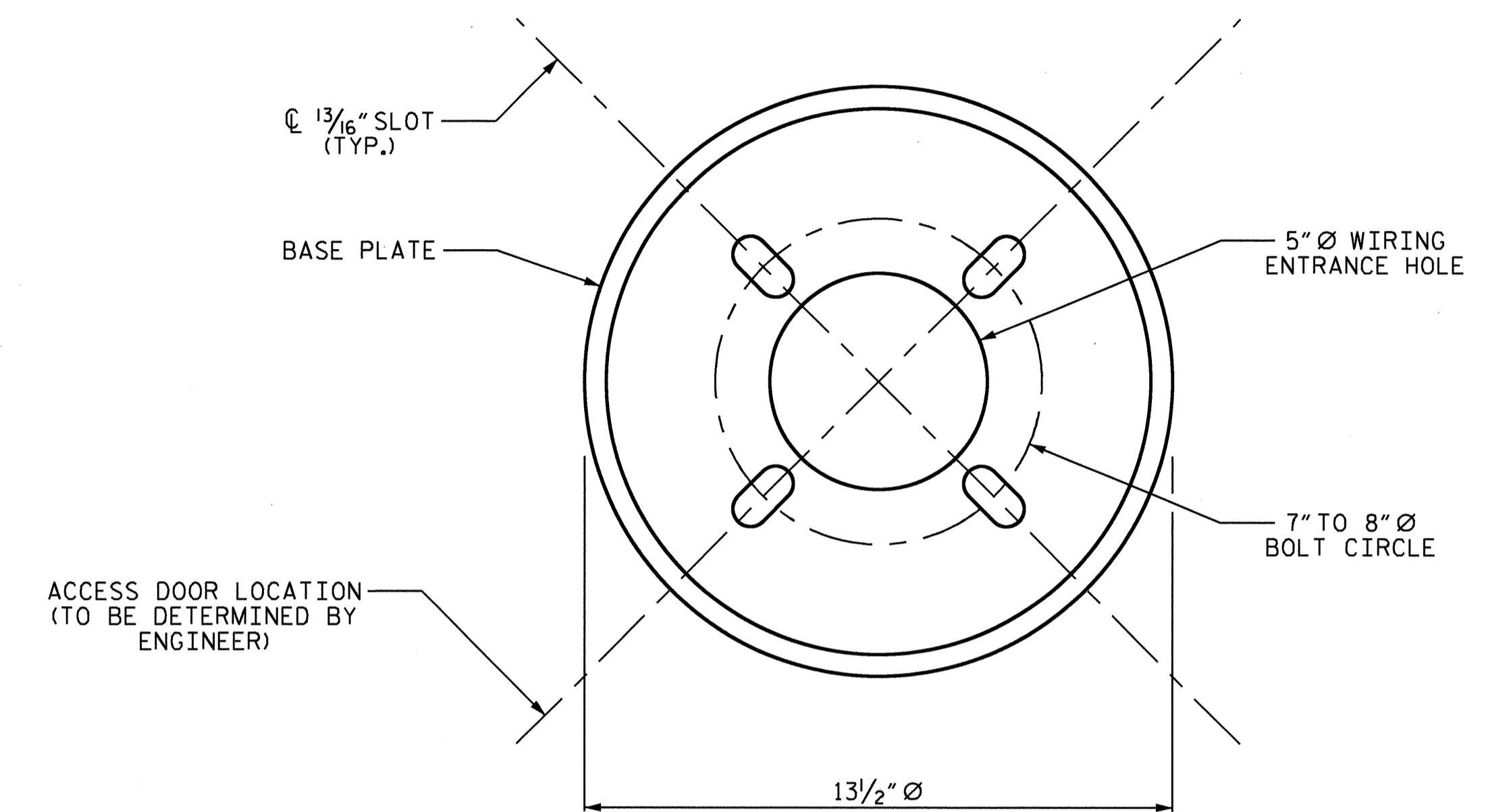
ANCHOR BOLT PROJECTION FOR LIGHTING PEDESTAL No. 2 TO INCLUDE 9" FOR TERRACE FLOOR PLUS REQUIRED BOLT PROJECTION.



LIGHTING PEDESTAL No. 1

LIGHTING PEDESTAL No. 2

ADJACENT STAIRWAY NOT SHOWN FOR CLARITY



ANCHOR BOLT PATTERN DETAIL

DRAWN BY : T. BANKOVICH DATE : 4-2009
 CHECKED BY : T. BEACH DATE : 1-2010

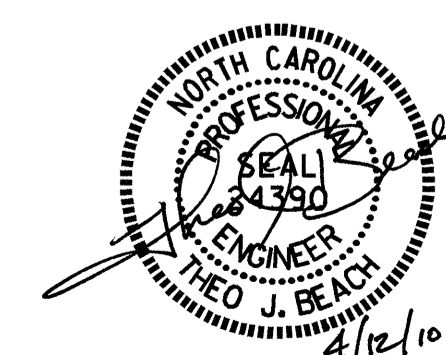
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 tbeach

PROJECT NO. B-4820
YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-

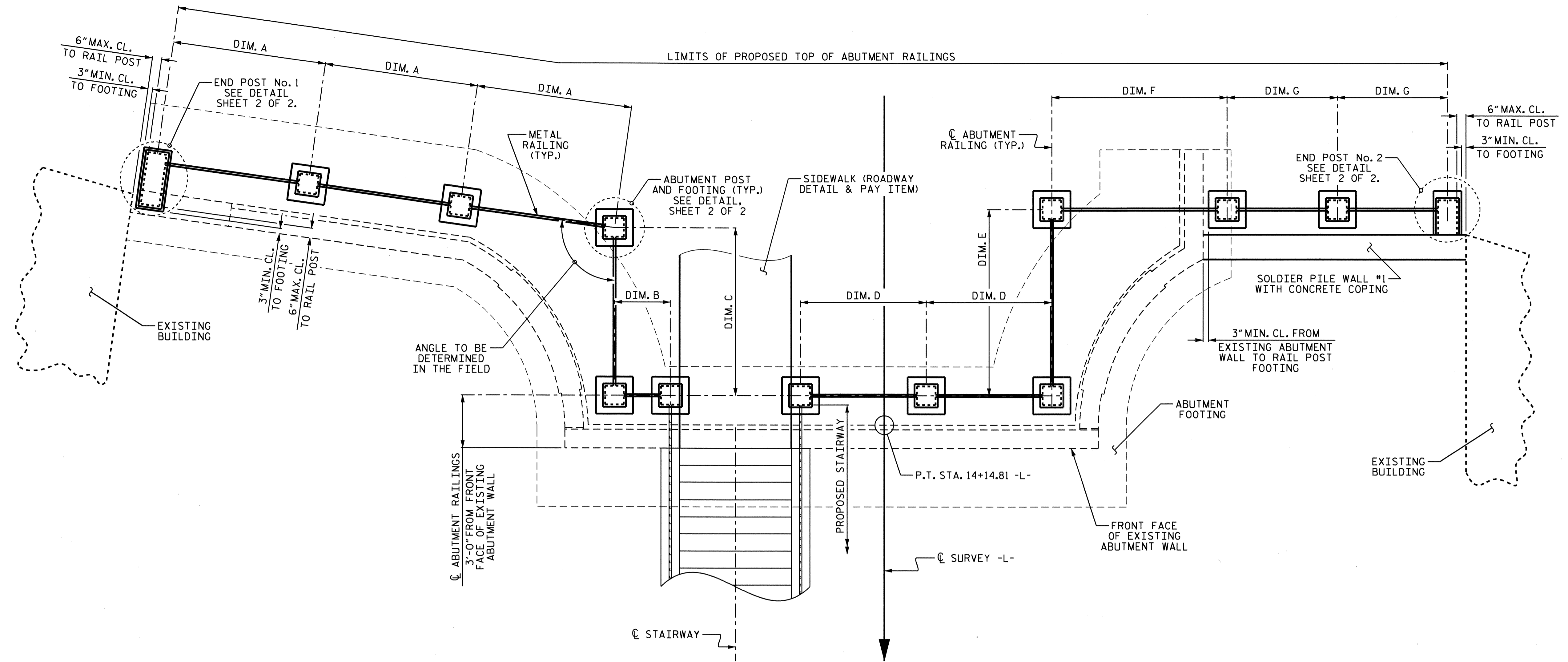
SHEET 11 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**STAIRWAY
 LIGHT POLE
 ANCHORAGE**



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			19



PLAN

DIMENSIONS ARE MEASURED FROM CENTERLINE OF POST TO CENTERLINE OF POST. SEE ABUTMENT RAILING TABLE, SHEET 2 OF 2.

NOTES:

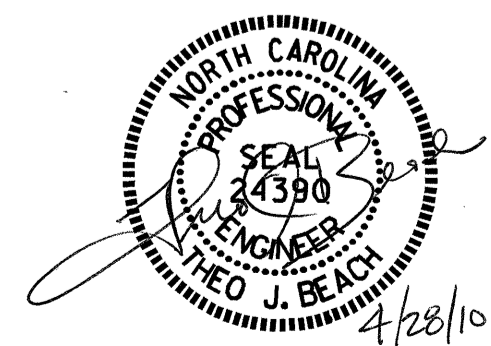
- TOP OF ABUTMENT RAILING DIMENSIONS SHOWN SHALL BE FIELD MEASURED BEFORE ANY MATERIALS ARE ORDERED. POST AND RAIL SPACINGS ARE APPROXIMATE DIMENSIONS AND SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MATCH SITE CONDITIONS.
- DETAILS FOR TOP OF ABUTMENT RAILING SHALL MATCH THE DETAILS FOR STAIRWAY POSTS AND RAILING.
- CARE SHOULD BE TAKEN TO AVOID THE EXISTING ABUTMENT WALL, PROPOSED SOLDIER PILE WALL #1 AND ANY EXISTING FOUNDATIONS OF THE ADJACENT BUILDINGS WITH THE POST FOOTINGS.
- END POST No. 1 & No. 2 SHALL BE LOCATED AS TO BLOCK PEDESTRIAN TRAFFIC. THE OPENING BETWEEN THE END POSTS AND EXISTING BUILDINGS SHALL BE KEPT TO A 6" MAXIMUM.
- SOLDIER PILE WALL #2 NOT SHOWN FOR CLARITY.

PROJECT NO. B-4820
YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

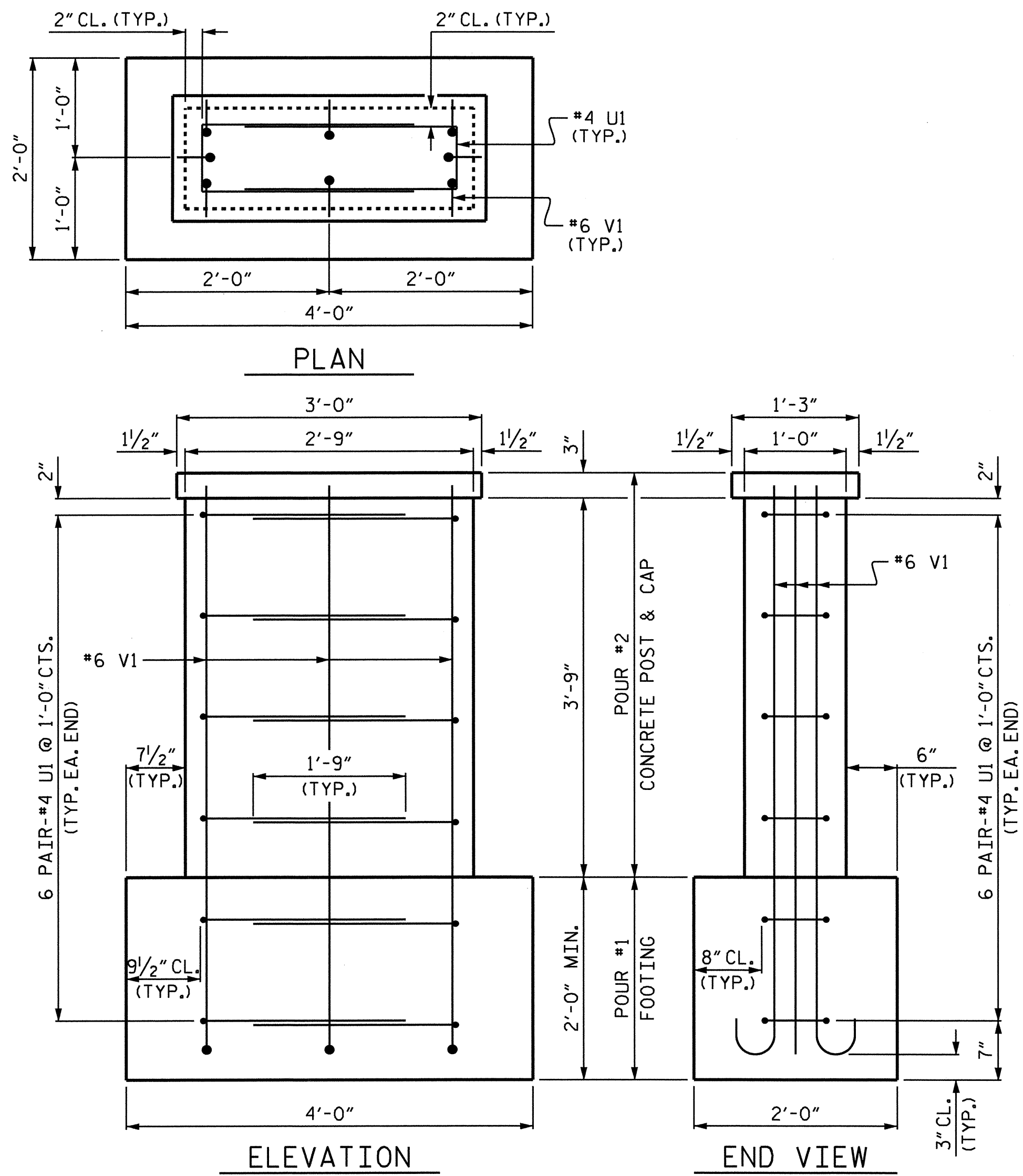
TOP OF ABUTMENT RAILING



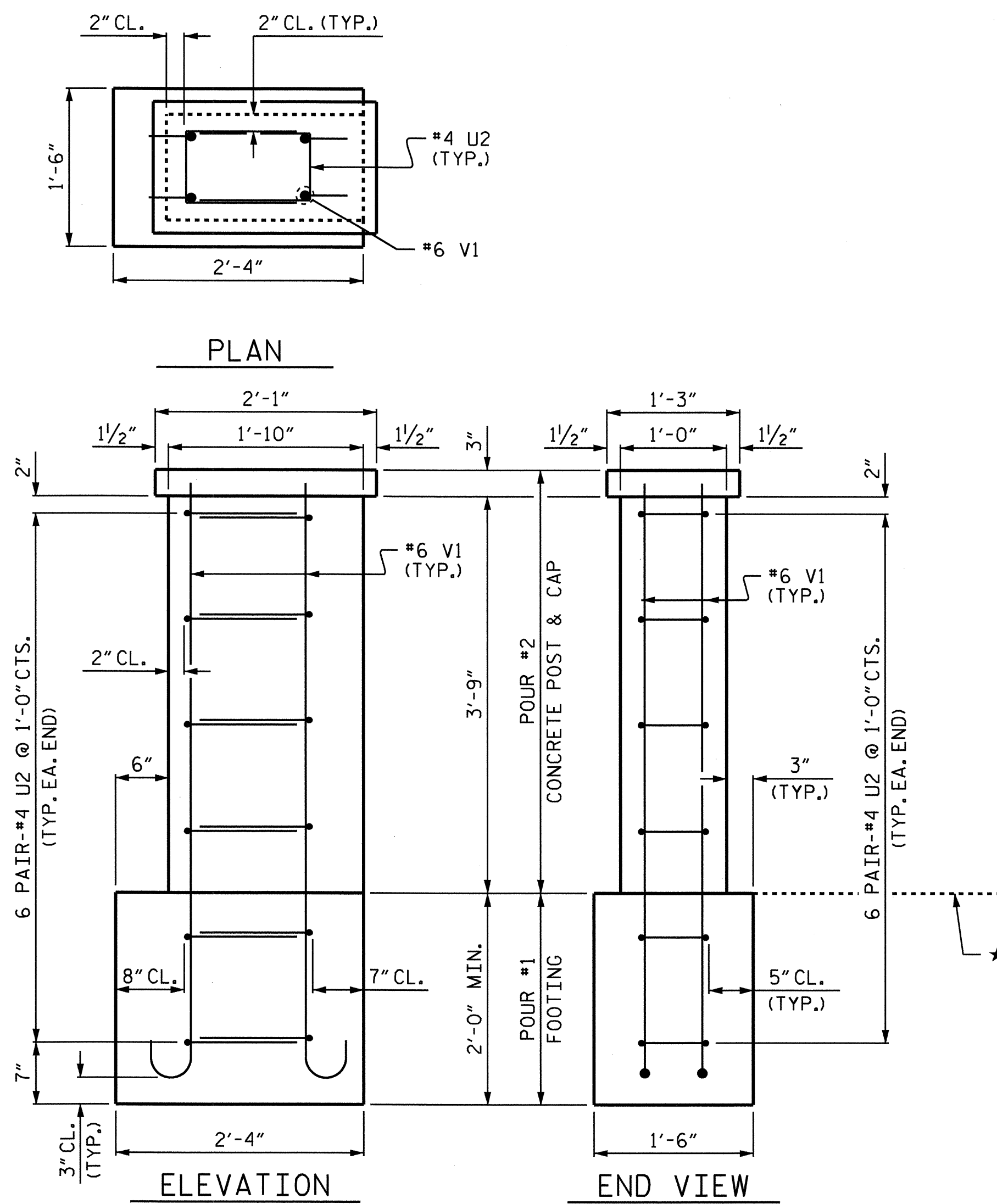
DRAWN BY: T. BANKOVICH DATE: 12-2009
 CHECKED BY: T. BEACH DATE: 1-2010

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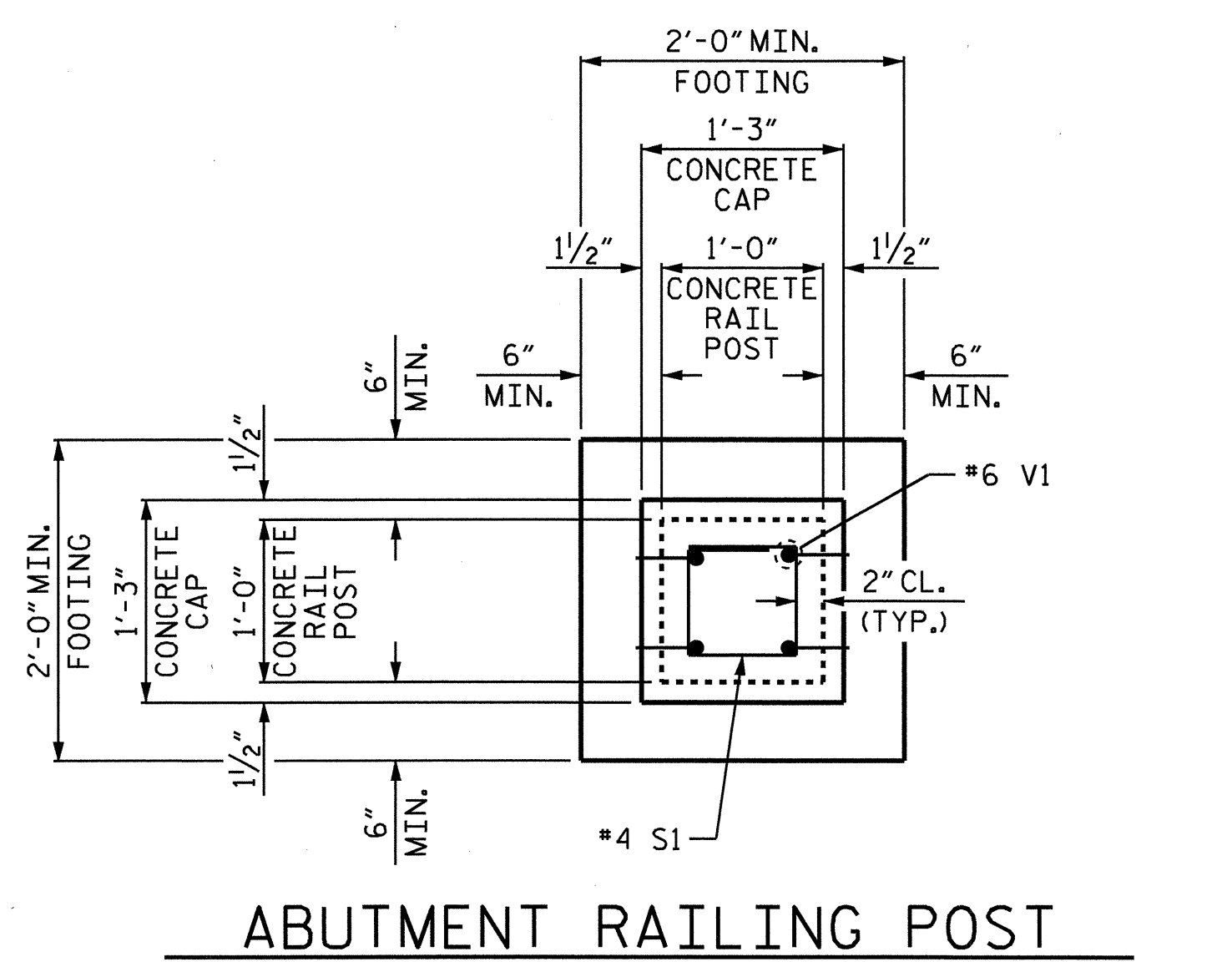
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			19



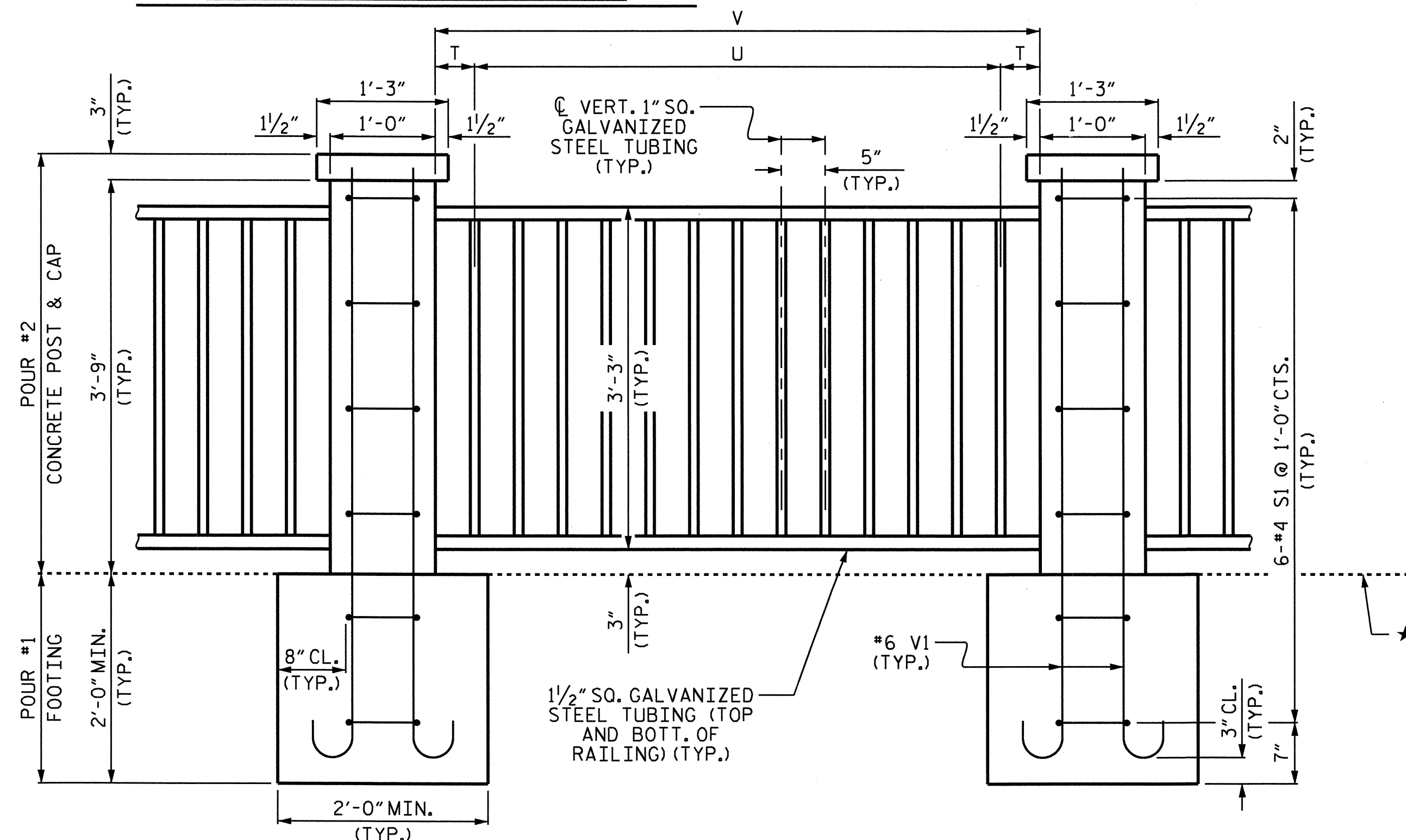
END POST No. 1



END POST No. 2

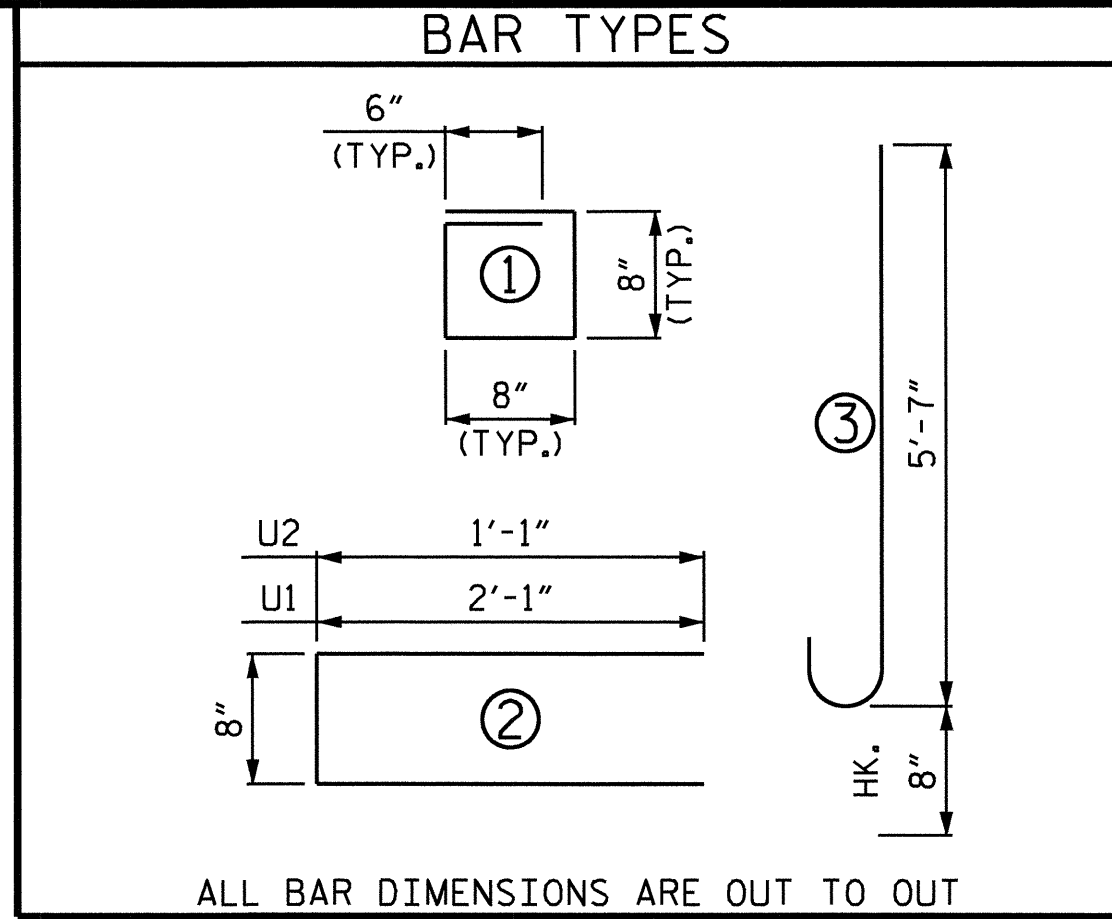


ABUTMENT RAILING POST



TYPICAL RAILING SECTION

EXCEPT END POSTS



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL					
ABUTMENT WALL RAILING					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	66	#4	1	3'-2"	140
U1	12	#4	2	4'-10"	39
U2	12	#4	2	2'-10"	23
V1	56	#6	3	6'-3"	526
REINFORCING STEEL					728 LBS
CLASS A CONCRETE BREAKDOWN					
END POST No. 1					
POUR #1 (FOOTING)					0.6 C.Y.
POUR #2 (CONCRETE POST & CAP)					0.4 C.Y.
END POST No. 2					
POUR #1 (FOOTING)					0.3 C.Y.
POUR #2 (CONCRETE POST & CAP)					0.3 C.Y.
TYPICAL RAIL POSTS					
POUR #1 (FOOTINGS)					3.3 C.Y.
POUR #2 (CONCRETE POSTS & CAPS)					1.7 C.Y.
TOTAL					6.6 C.Y.
METAL HANDRAIL FOR ABUTMENT WALL					70.5 LIN. FT.

NOTES:

- FOR METAL RAILING NOTES AND ATTACHMENT NOTE, SEE "STAIRS, PARAPETS AND POSTS" SHEET 7 OF 11.
- ★ TOP OF FOOTING ELEVATION TO BE DETERMINED IN THE FIELD BASED ON FINAL GROUND ELEVATION AND TO MAINTAIN UNIFORM APPEARANCE FOR CONCRETE POSTS AND TOP OF METAL RAIL.
- THE HEIGHT OF THE CONCRETE POSTS MAY BE INCREASED SLIGHTLY AS DIRECTED BY THE ENGINEER TO MAINTAIN A UNIFORM APPEARANCE FOR TOP OF METAL RAILS.

ABUTMENT RAILING TABLE				
	T	U	V	
DIM. A	8'-3"	3 1/2"	16 SPA. @ 5"CTS.	7'-3"
DIM. B	3'-0"	4 1/2"	3 SPA. @ 5"CTS.	2'-0"
DIM. C	9'-0"	3"	18 SPA. @ 5"CTS.	8'-0"
DIM. D	6'-9"	4 1/2"	12 SPA. @ 5"CTS.	5'-9"
DIM. E	10'-0"	4"	20 SPA. @ 5"CTS.	9'-0"
DIM. F	9'-5"	3"	19 SPA. @ 5"CTS.	8'-5"
DIM. G	5'-11"	4 1/2"	10 SPA. @ 5"CTS.	4'-11"

FOR LOCATION OF DIMENSIONS A-F SEE SHEET 1 OF 2

PROJECT NO. B-4820
YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-
 SHEET 2 OF 2

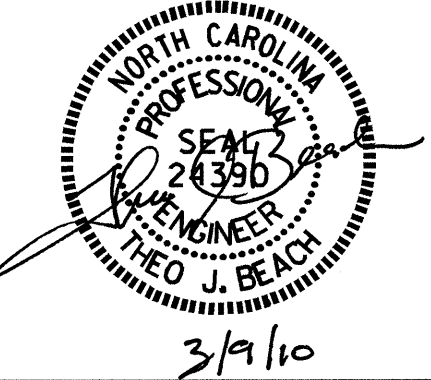
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

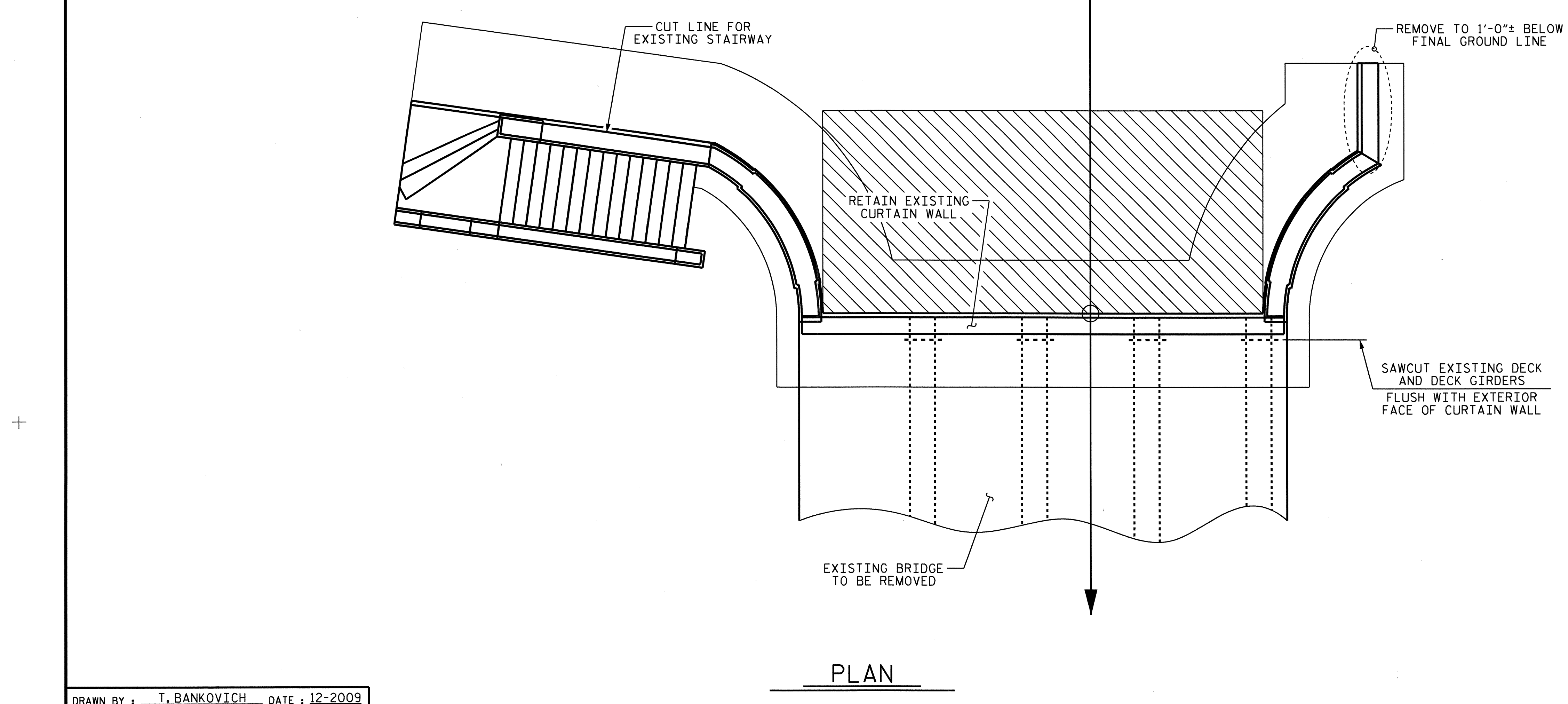
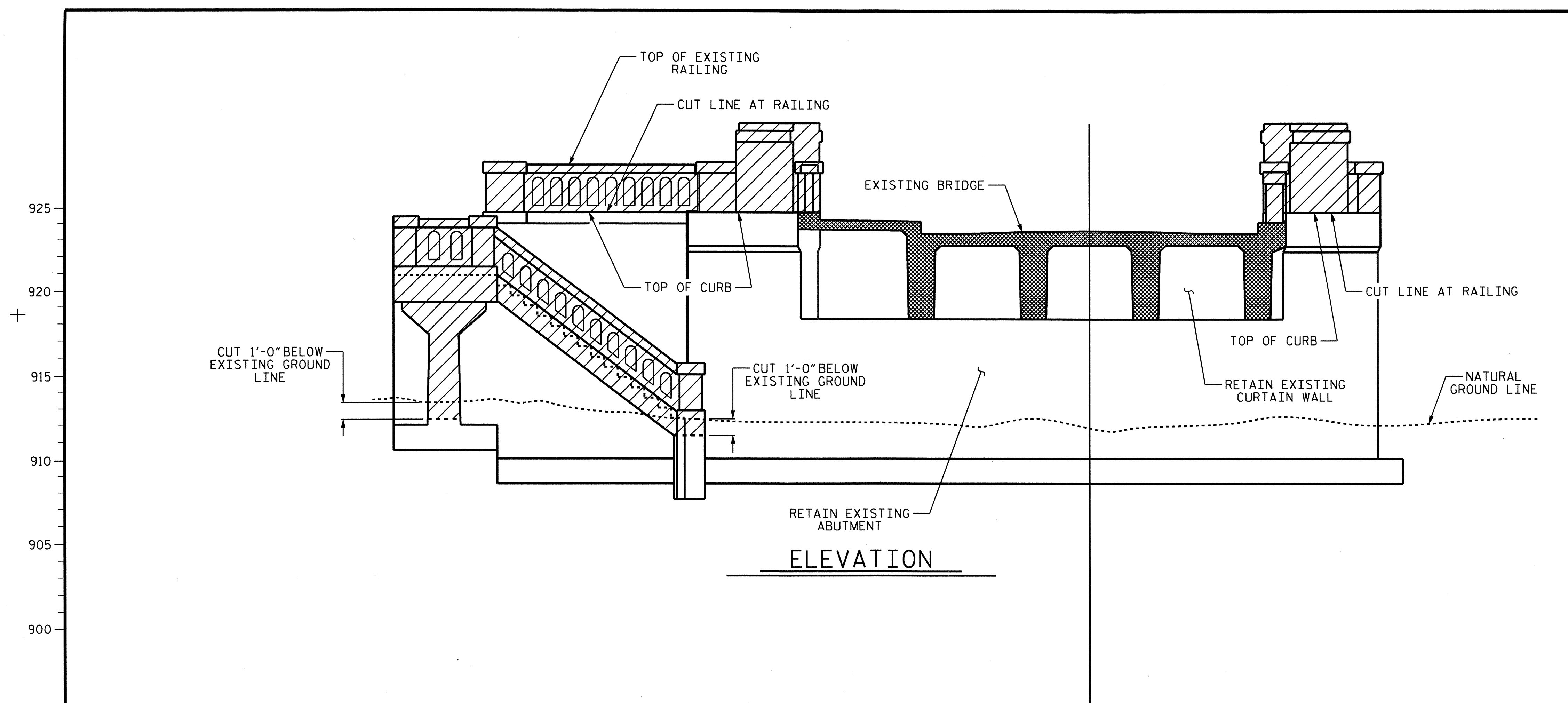
TOP OF ABUTMENT RAILING

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			19

DRAWN BY: T. BANKOVICH DATE: 12-2009
 CHECKED BY: T. BEACH DATE: 1-2010

03-MAR-2010 13:32
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 tbankovich





NOTES:

THE CONSTRUCTION OF THE SOLDIER PILE WALL IN FRONT OF THE EXISTING ABUTMENT WALL SHALL BE COMPLETED AS SHOWN ON THE SOLDIER PILE RETAINING WALL PLAN SHEETS, W-1 THROUGH W-5

1. PRIOR TO REMOVING EXISTING END SPAN SUPERSTRUCTURE, EXCAVATE BEHIND THE EXISTING CURTAIN WALL AS DIRECTED BY THE ENGINEER TO MINIMIZE EARTH PRESSURE ON THE EXISTING CURTAIN WALL/ABUTMENT WALL.
2. CUT THE EXISTING BRIDGE DECK AND DECK GIRDERS FLUSH WITH THE EXISTING NORTH ABUTMENT CURTAIN WALL, CARE SHOULD BE TAKEN TO NOT DAMAGE THE CURTAIN WALL/ABUTMENT WALL ANY MORE THAN IS NECESSARY TO REMOVE THE EXISTING BRIDGE SUPERSTRUCTURE.
3. REMOVE THE EXISTING STAIRS THAT PROVIDE ACCESS FROM EAST MARKET STREET TO EAST MAIN STREET TO THE LIMITS SHOWN IN THE PLANS. CARE SHOULD BE TAKEN TO NOT DAMAGE THE ADJACENT BUILDING AND TO PRESERVE THE EXISTING NORTH ABUTMENT WALL CAST WITH THE STAIRS. THE EXISTING PEDESTAL COLUMN UNDER THE STAIR LANDING SHALL BE REMOVED TO ONE FOOT BELOW THE EXISTING GROUND LINE.
4. REMOVE THE EXISTING CONCRETE RAILING ADJACENT TO EAST MARKET STREET TO THE LIMITS SHOWN IN THE PLANS.
5. CONSTRUCT CAST-IN-PLACE REINFORCED CONCRETE FACE FOR SOLDIER PILE RETAINING WALL #1 AND #2 WITH SMOOTH FACE AS SHOWN ON SOLDIER PILE RETAINING WALL PLANS, SHEETS W-1 THROUGH W-5.
6. BACKFILL EXCAVATED AREA BEHIND THE CURTAIN WALL WITH #57 STONE TO ELEVATION AS DIRECTED BY THE ENGINEER. THE TOP ELEVATION OF #57 STONE BACKFILL SHALL ALLOW FOR BACKFILL MATERIAL FOR LANDSCAPE PLANTINGS BEHIND CURTAIN WALL. PROVIDE SEPARATION MATERIAL BETWEEN #57 STONE AND OVERLAYING BACKFILL MATERIAL. THE COST OF THE SEPARATION MATERIAL AND OVERLAYING BACKFILL MATERIAL TO BE INCIDENTAL TO THE VARIOUS PAY ITEMS.
7. CAST-IN-PLACE CONCRETE COPING IS REQUIRED FOR SOLDIER PILE RETAINING WALL #1 AND #2 AND EXISTING ABUTMENT WALL. SEE DETAILS ON SHEET S-18 AND RETAINING WALL SHEETS. COST FOR CONCRETE COPING FOR RETAINING WALLS TO BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR SOLDIER PILE RETAINING WALLS.

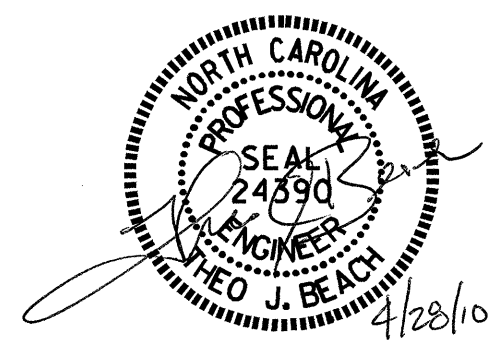
- AREAS TO BE REMOVED
- SAWCUT EXISTING DECK AND DECK GIRDERS FLUSH WITH EXTERIOR FACE OF CURTAIN WALL
- UNCLASSIFIED STRUCTURE EXCAVATION (SEE NOTES)

PROJECT NO. B-4820
YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
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**LIMITS OF EXISTING
 STAIRS & BRIDGE
 REMOVAL**

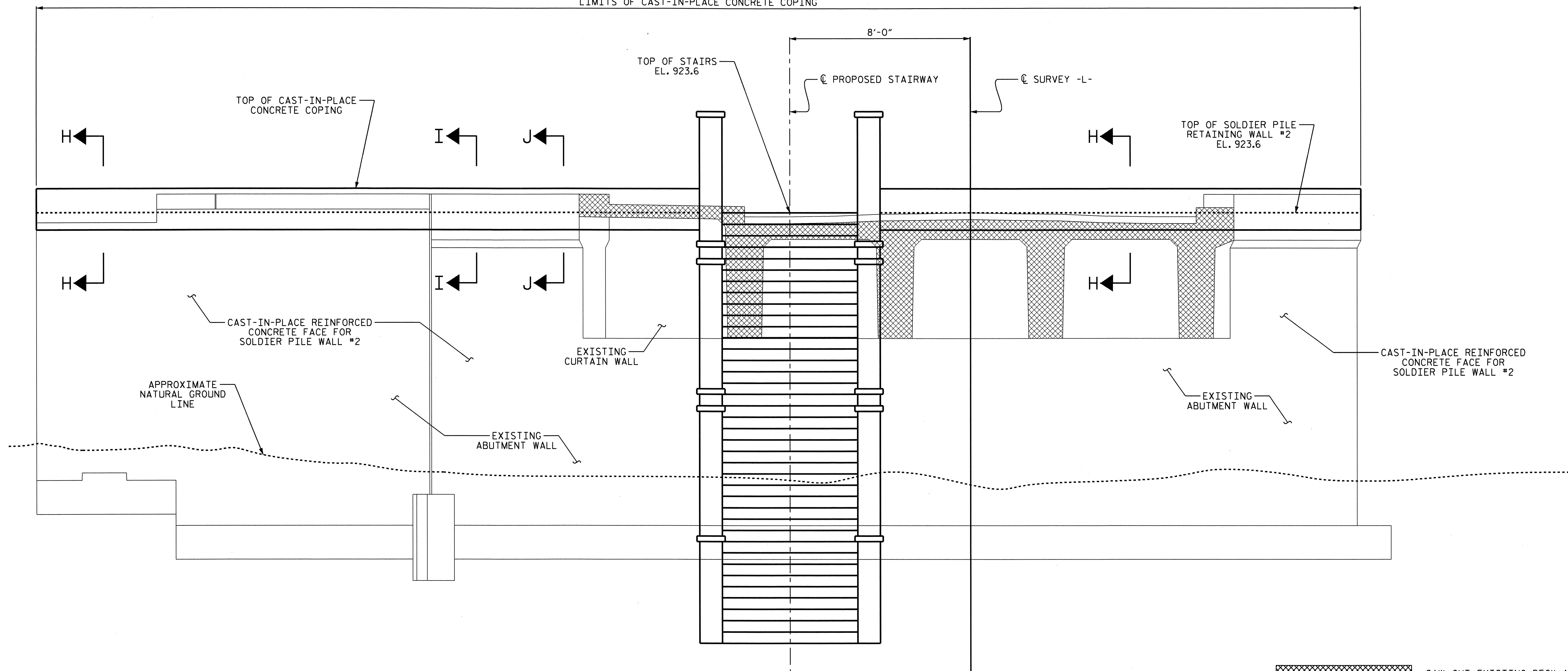
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			19



DRAWN BY : T. BANKOVICH DATE : 12-2009
 CHECKED BY : T.J. BEACH DATE : 12-2009

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 tjbankovich

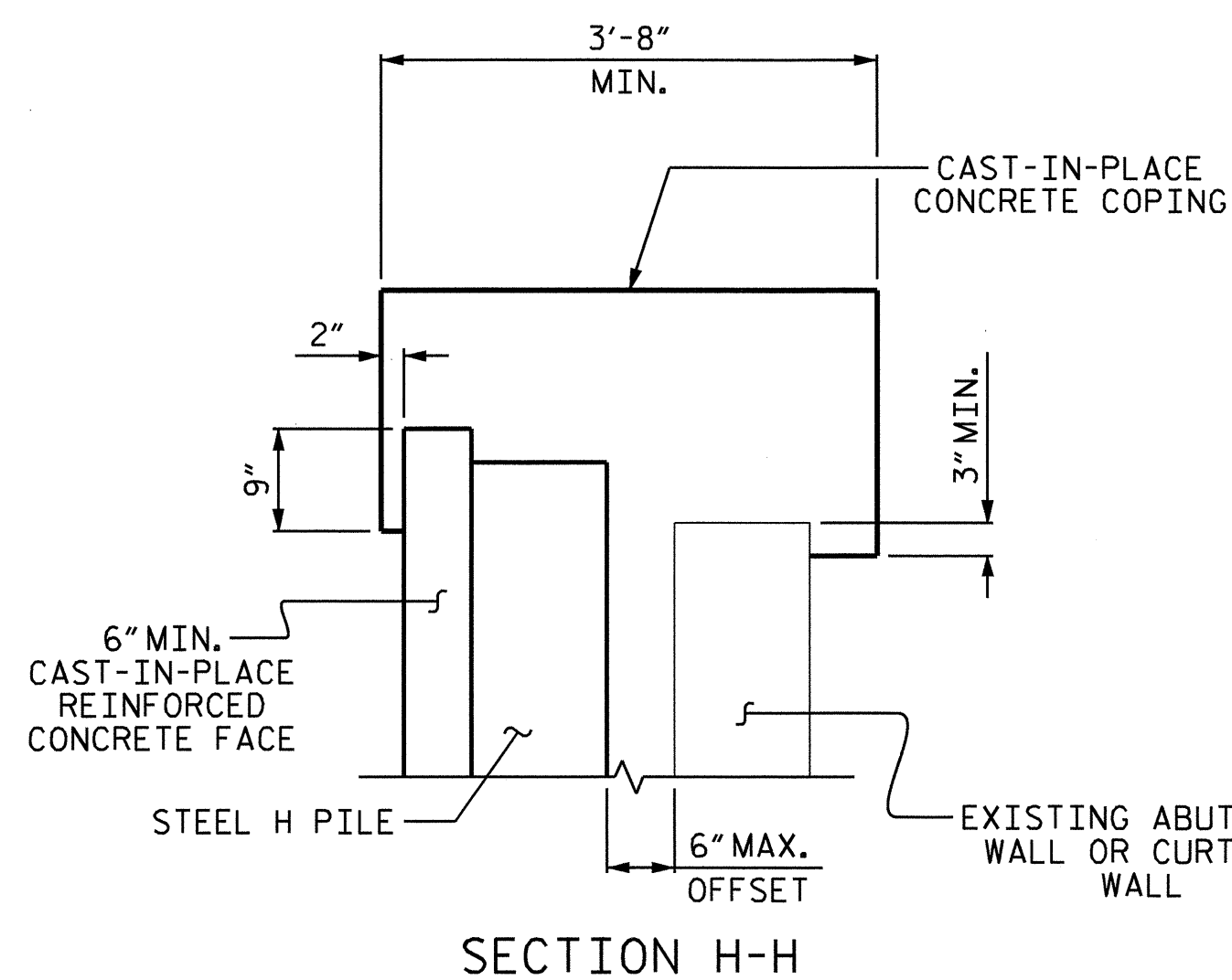
LIMITS OF CAST-IN-PLACE CONCRETE COPING



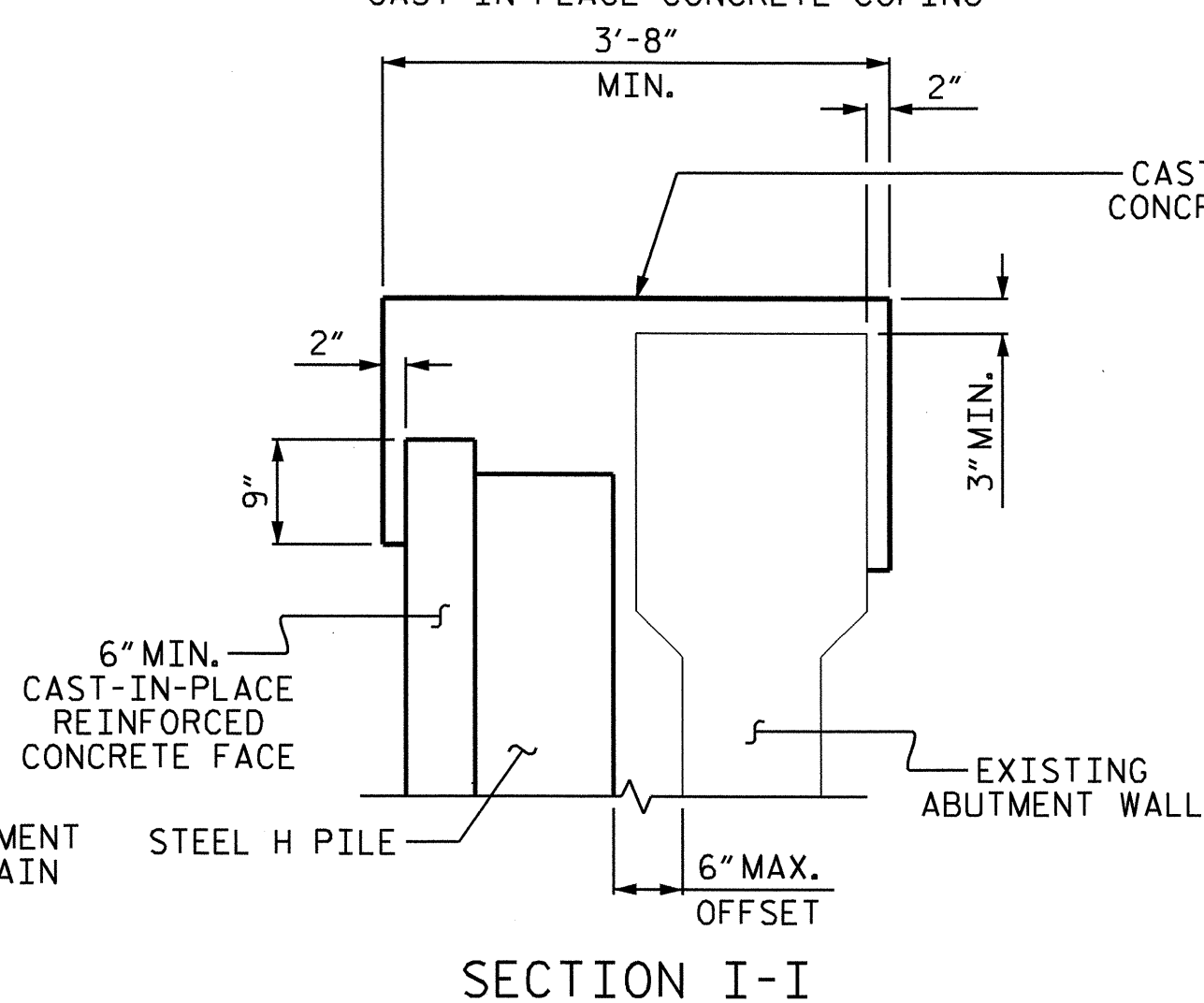
ELEVATION

MAINTAIN UNIFORM ELEVATION FOR TOP OF CAST-IN-PLACE CONCRETE COPING

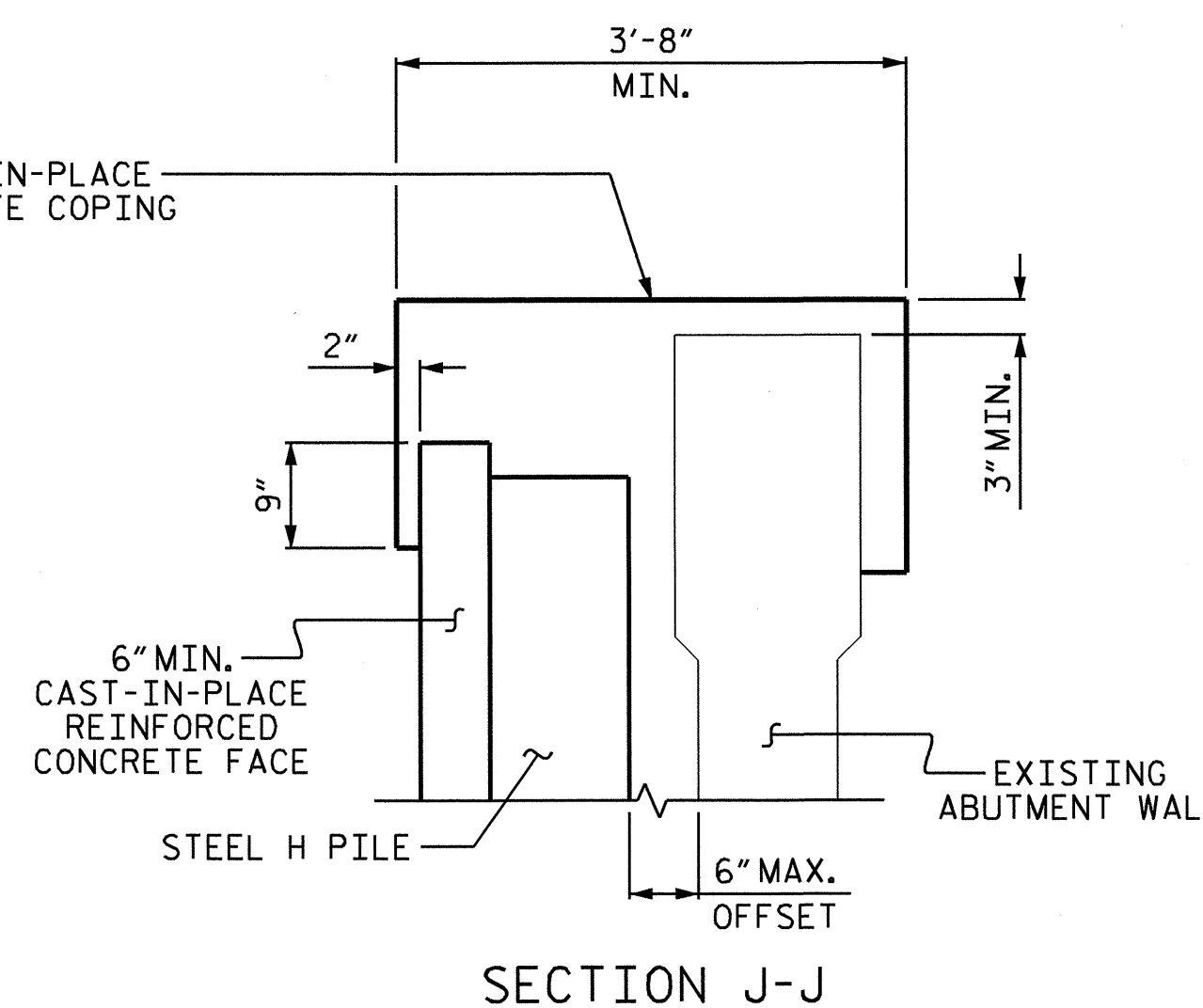
SAW CUT EXISTING DECK AND DECK GIRDERS FLUSH WITH EXTERIOR FACE OF CURTAIN WALL



SECTION H-H



SECTION I-I

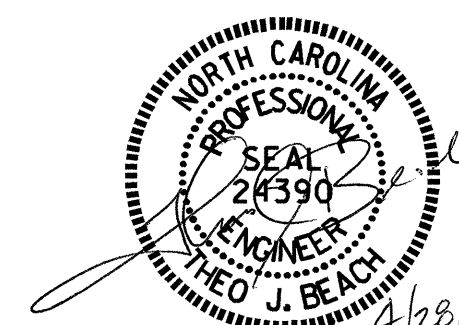


SECTION J-J

SECTIONS SHOWING CAST-IN-PLACE CONCRETE COPING, SOLDIER PILE WALL #2 AND EXISTING ABUTMENT & CURTAIN WALLS

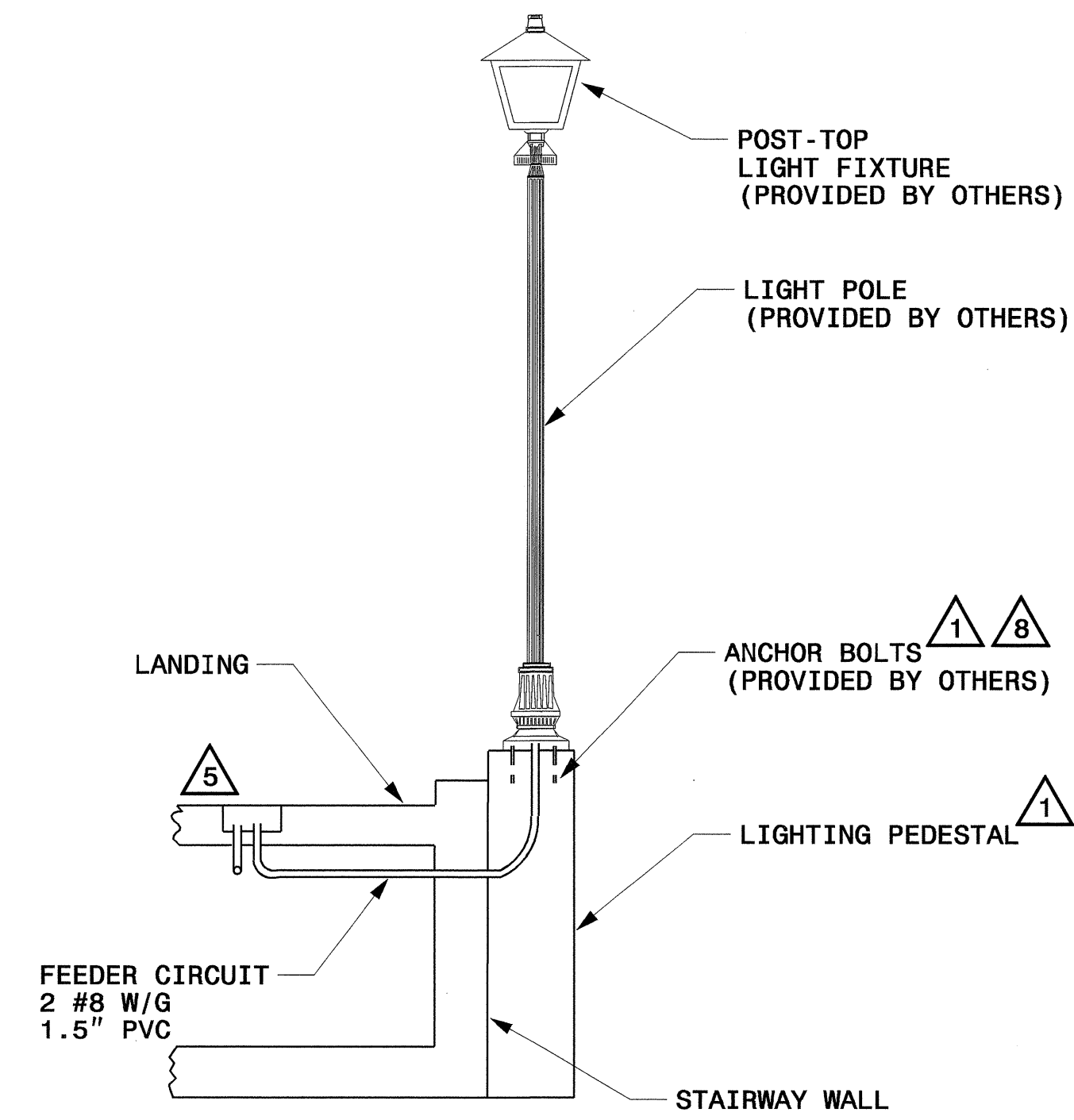
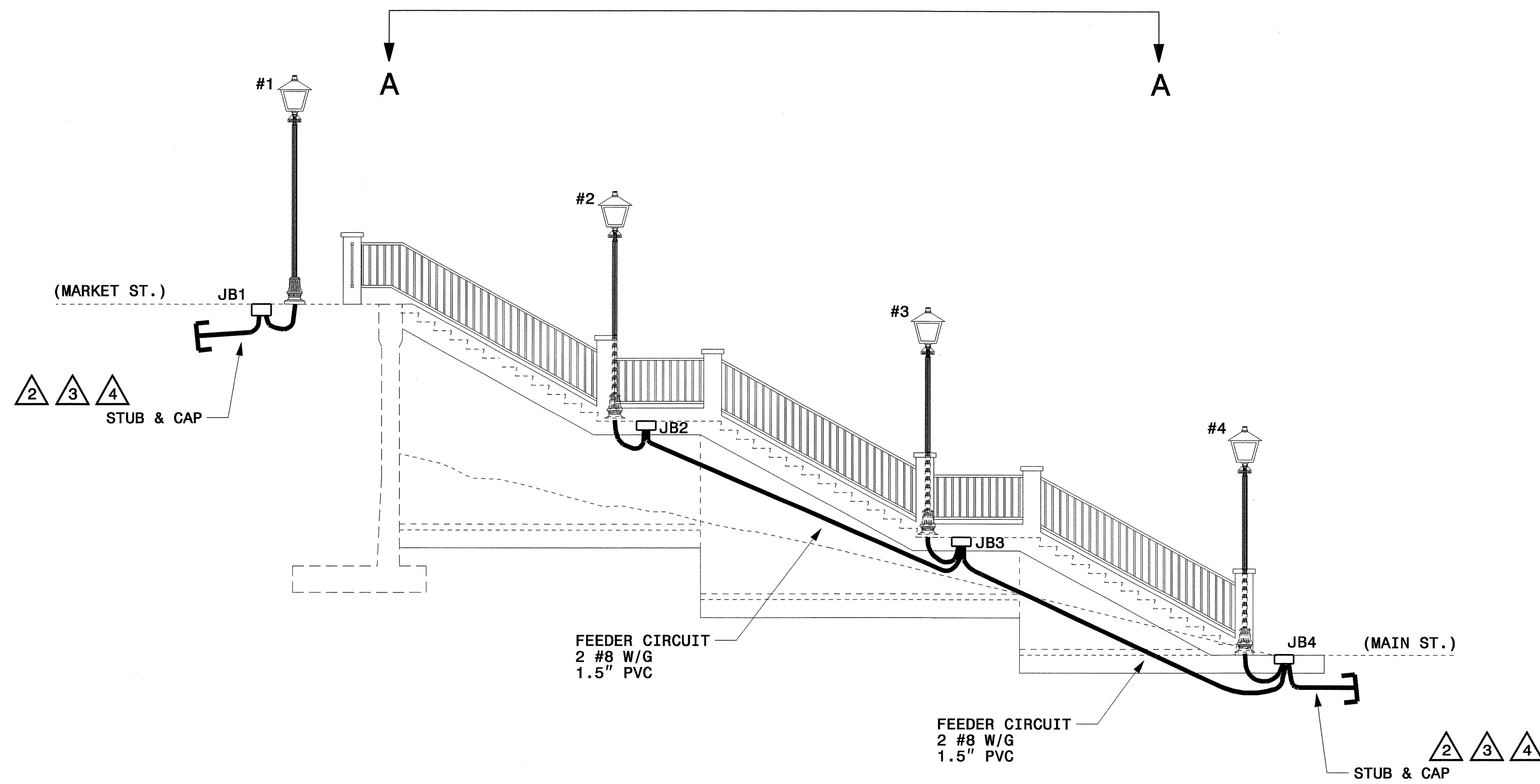
PROJECT NO. B-4820
YADKIN/SURRY COUNTY
 STATION: 14+14.81 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
LIMITS OF CONCRETE COPING FOR EXISTING ABUTMENT WALL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-18
					TOTAL SHEETS 19



DRAWN BY : T. BANKOVICH DATE : 2-2010
 CHECKED BY : T. BEACH DATE : 2-2010

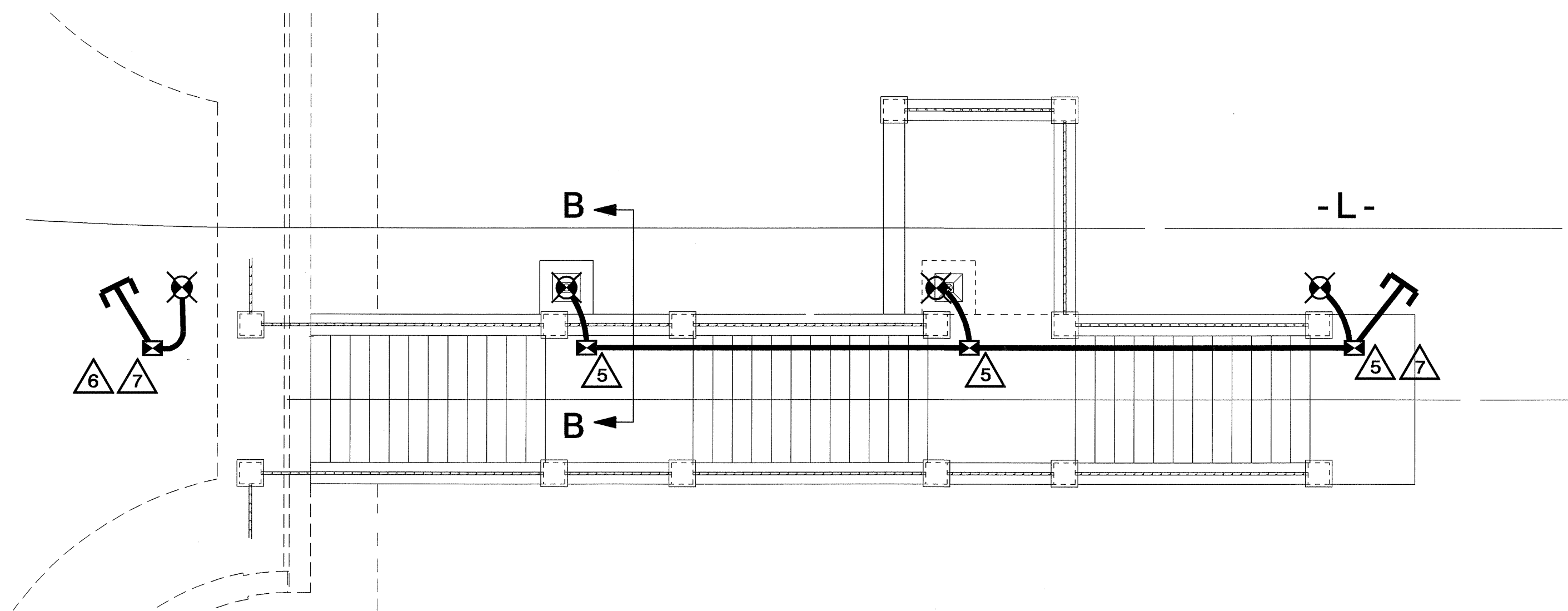
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 tjbankovich



VIEW B-B

NOTES

- 1 SEE STRUCTURE PLANS FOR LOCATIONS AND DETAILS FOR LIGHTING PEDESTALS AND ANCHOR BOLTS.
- 2 MARK LOCATION OF STUB-OUT WITH POLYETHYLENE WARNING TAPE BURIED WITH CONDUIT AND EXPOSED ON TOP OF GROUND.
- 3 FOR USE BY OTHERS TO PROVIDE POWER SERVICES TO LIGHT POLES.
- 4 STUB & CAP WITH 30" COVER
- 5 SIDE WALK JUNCTION BOX, NEMA 4, 12" X 12" X 4"
- 6 IN GROUND JUNCTION BOX, PC18, 18" X 12" X 18"
- 7 LEAVE A MINIMUM OF 24" OF CONDUCTOR IN JUNCTION BOX FOR USE BY OTHERS.
- 8 INSTALL ANCHOR BOLTS ACCORDING TO MANUFACTURER SPECIFICATION.



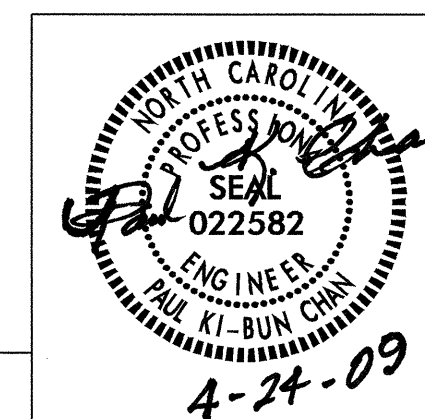
VIEW A-A

PROJECT NO. B-4820
YADKIN/SURRY COUNTY
 STATION: 14+97.76 -L-

SHEET 1 OF 1

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STAIRWAY
 LIGHTING LAYOUT

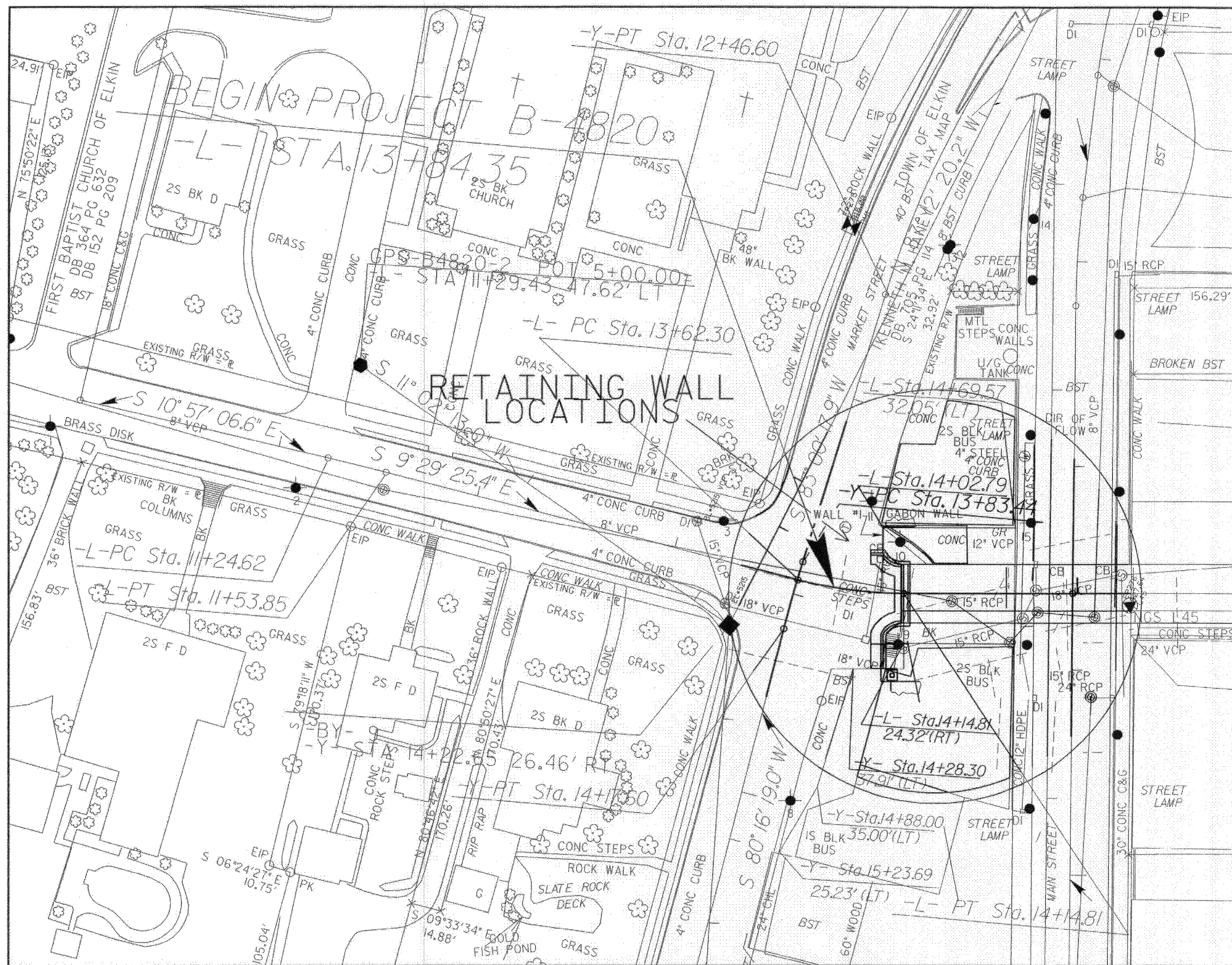


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-19
2			4			TOTAL SHEETS 19

DRAWING NOT TO SCALE

DRAWN BY: P. K. CHAN DATE: 4-21-09
 CHECKED BY: [Signature] DATE: 4-24-09

24-APR-2009 12:18
 *****DGN*****
 *****USERNAME*****



LOCATION SKETCH

GEOTECHNICAL ENGINEER

ENGINEER

Shane C. Clark 4/18/10

SIGNATURE DATE

TOTAL BILL OF MATERIAL	
SOLDIER PILE RETAINING WALL #1 AT STA. 14+03.50 -L-	201 SQ. FT.
SOLDIER PILE RETAINING WALL #2 AT STA. 14+03.50 -L-	1174 SQ. FT.
MSE RETAINING WALL #3 AT STA. 14+03.72 -L-	730 SQ. FT.
MSE RETAINING WALL #4 AT STA. 14+30.47 -L- "TERRACE WALL"	126 SQ. FT.

PROJECT NO.: B-4820
 YADKIN /SURRY COUNTY
 STATION:
 SHEET 1 OF 9

PREPARED BY: E.J.S. DATE: 4/09
 REVIEWED BY: SCC DATE: 4/10

GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 CONTRACTS OFFICE


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

RETAINING WALLS FOR URBAN RENOVATION

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	W-1
1			3			TOTAL SHEETS
2			4			9

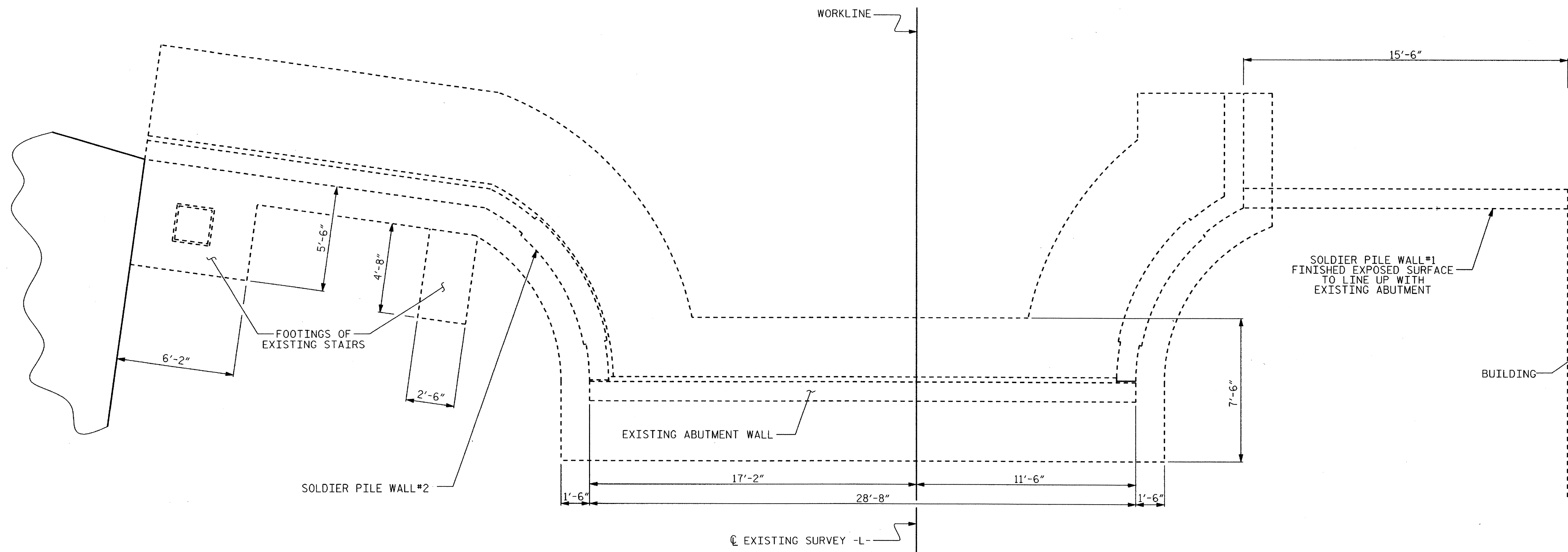
GEOTECHNICAL ENGINEER

ENGINEER

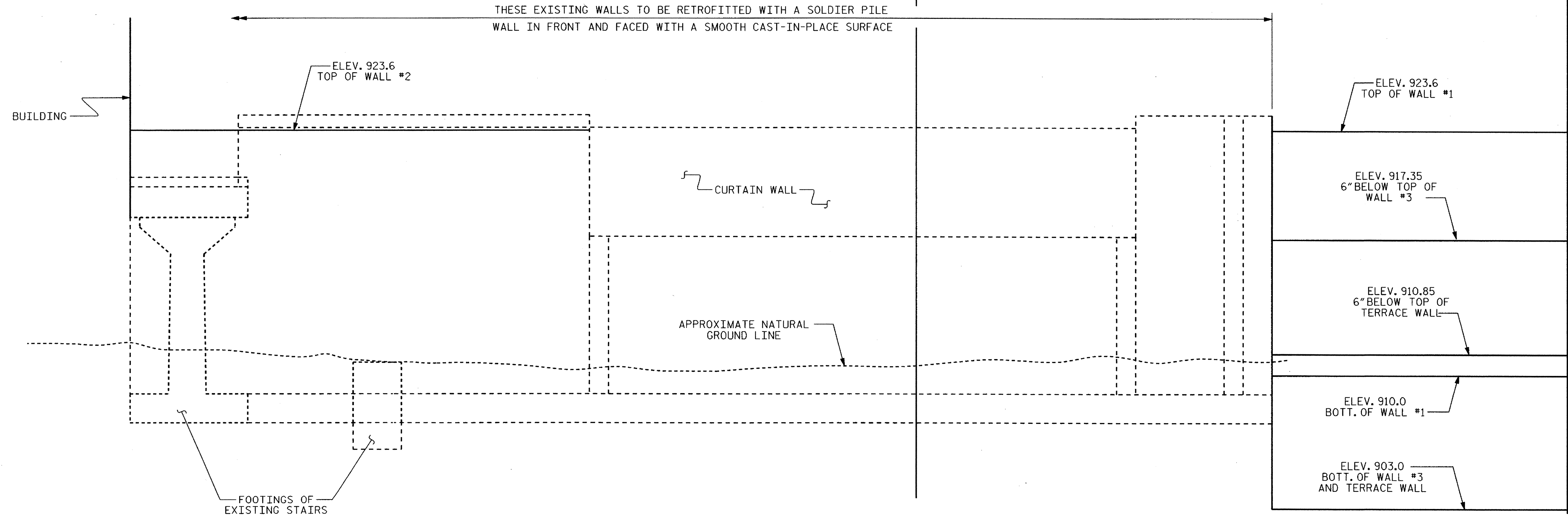


Bruce C. Clark 4/10/10
SIGNATURE DATE

SIGNATURE DATE



PLAN VIEW



ELEVATION

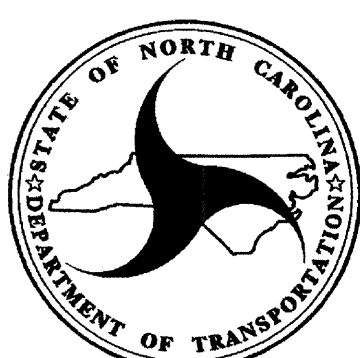
(PROPOSED STAIRS NOT SHOWN FOR CLARITY, SEE STRUCTURE PLANS)

PROJECT NO.: B-4820
YADKIN / SURRY COUNTY
STATION: _____
 SHEET 2 OF 9

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 DEPARTMENT OF TRANSPORTATION
 RALEIGH**



EXISTING ABUTMENT WALL AND MSE WALL DETAILS

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

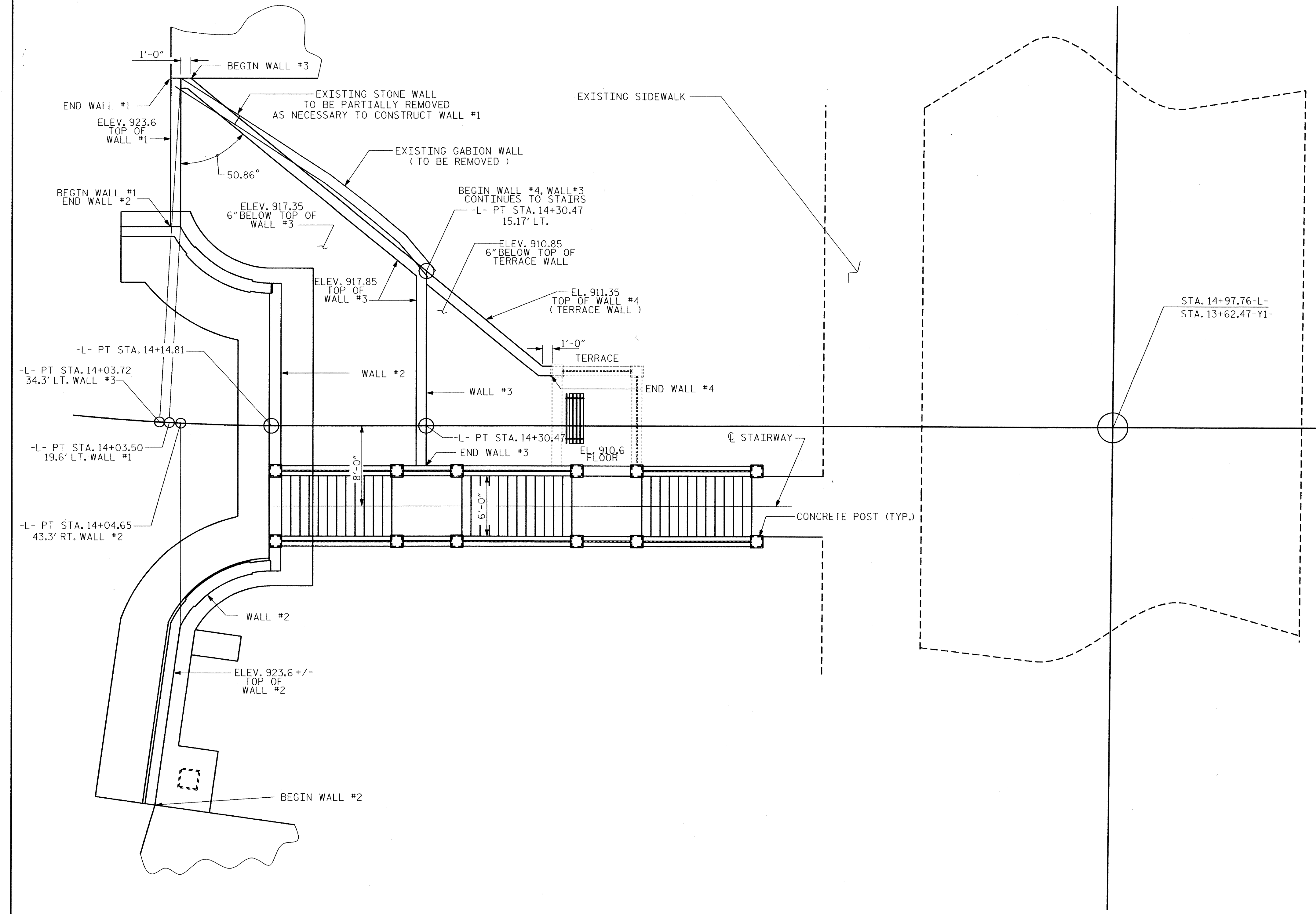
PREPARED BY: EJS DATE: 10/09
 REVIEWED BY: SCC DATE: 4/10

GEOTECHNICAL ENGINEER

ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL
 SEAL 029669
 ENGINEER
 SHANE C. CLARK

Signature: *Shane C. Clark* DATE: 4/20/10



PROJECT NO.: B-4820
 YADKIN / SURRY COUNTY
 STATION:
 SHEET 3 OF 9

PREPARED BY: EJS DATE: 10/09
 REVIEWED BY: SCC DATE: 4/10


GEOTECHNICAL ENGINEERING UNIT

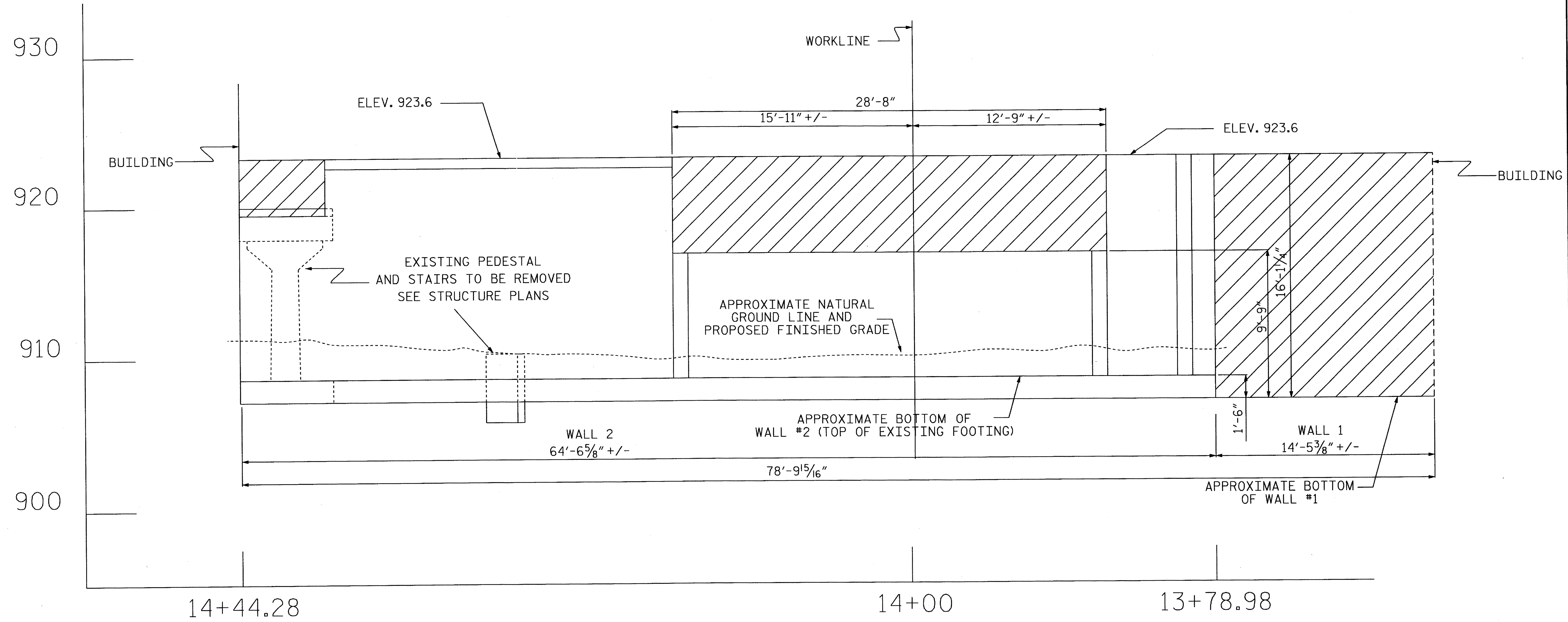
EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 CONTRACT OFFICE

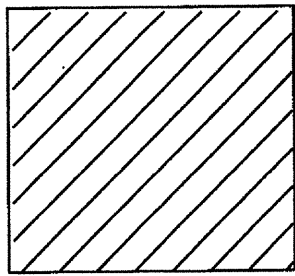
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

EXISTING ABUTMENT WALL AND PROPOSED WALL DETAILS

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

GEOTECHNICAL ENGINEER

 ENGINEER
 SIGNATURE: *James C. Clark* DATE: 4/28/10



 POSSIBLE SHORING AREAS
WALL NO. 1 AND NO. 2 ENEVELOPE
 SEE SHEET 2 OF 9 FOR PLAN VIEW

PROJECT NO.: B-4820
 YADKIN /SURRY COUNTY
 STATION:
 SHEET 4 OF 9

PREPARED BY: E.J.S. DATE: 4/09
 REVIEWED BY: SCC DATE: 4/10

GEOTECHNICAL ENGINEERING UNIT
 EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 CONTRACTS OFFICE
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

RETAINING WALLS FOR URBAN RENOVATION

REVISIONS						SHEET NO. W-4
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 9
2			4			

GEOTECHNICAL ENGINEER

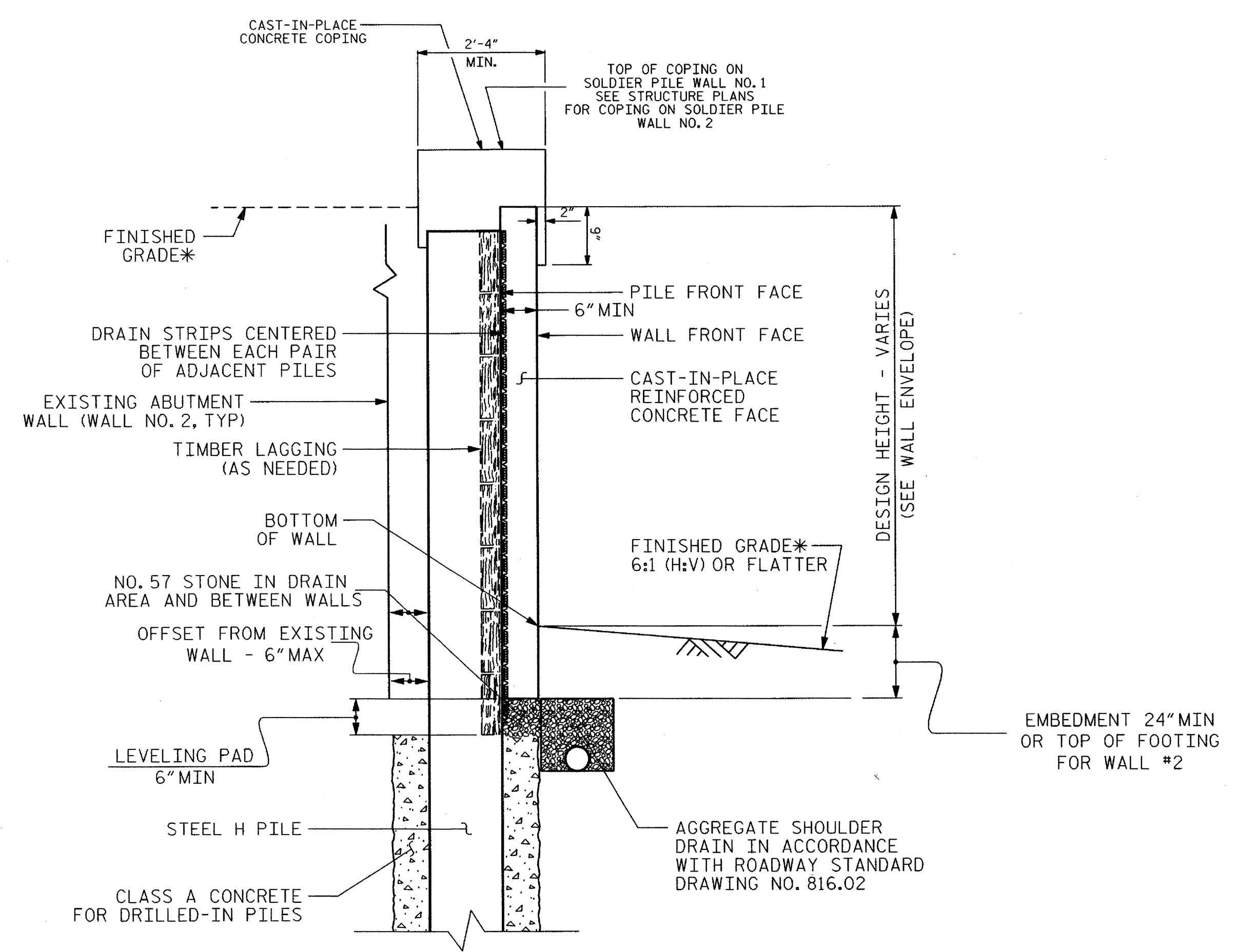
ENGINEER

Shane C. Clark 4/10/10
SIGNATURE DATE

SIGNATURE DATE

NOTES

- FOR SOLDIER PILE RETAINING WALLS, SEE SOLDIER PILE RETAINING WALLS PROVISION.
- USE A SOLDIER PILE RETAINING WALL WITH A CAST-IN-PLACE REINFORCED CONCRETE FACE FOR RETAINING WALL NO. 1 AND NO. 2.
- A SMOOTH FINISH IS REQUIRED FOR THE CAST-IN-PLACE REINFORCED CONCRETE FACE FOR RETAINING WALL NO. 1 AND NO. 2.
- DRILLED IN PILES ARE REQUIRED FOR SOLDIER PILE WALL NO. 1 AND NO. 2.
- SOLDIER PILE WALL NO. 2 SHALL EXTEND UP TO BUT NOT BEHIND PROPOSED STAIRWAY. SEE STRUCTURE PLANS FOR LIMITS OF PROPOSED STAIRWAY.
- THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE EXISTING ABUTMENT WALLS HAVE FOOTINGS THAT MAY NEED TO BE PARTIALLY REMOVED OR DRILLED THROUGH TO INSTALL PILES FOR THE SOLDIER PILE RETAINING WALLS.
- A HAND RAIL IS REQUIRED ON SIDEWALK AT TOP OF RETAINING WALL NO. 1 AND NO. 2. SEE STRUCTURE PLANS FOR HAND RAIL DETAILS.
- BEFORE BEGINNING SOLDIER PILE WALL DESIGN FOR RETAINING WALL NO. 1 AND NO. 2, SURVEY EXISTING GROUND ELEVATIONS SHOWN ON THE WALL PROFILE VIEW (WALL ENVELOPE) AND SUBMIT A REVISED WALL ENVELOPE FOR REVIEW. DO NOT START WALL DESIGN OR CONSTRUCTION UNTIL THIS ENVELOPE IS ACCEPTED.
- DESIGN RETAINING WALL NO. 1 AND 2 FOR WALL HEIGHTS EQUAL TO THE DESIGN HEIGHT (DIFFERENCE BETWEEN GRADE ELEVATION AND BOTTOM OF WALL ELEVATION) PLUS EMBEDMENT (DIFFERENCE BETWEEN BOTTOM OF WALL ELEVATION AND TOP OF LEVELING PAD ELEVATION).
- DESIGN RETAINING WALL NO. 1 AND 2 FOR THE FOLLOWING:
 - 1) MINIMUM SERVICE LIFE = 100 YEARS
 - 2) MINIMUM EMBEDMENT ELEVATION = 2 FT
 - 3) IN-SITU ASSUMED MATERIAL PARAMETERS :
 - UNIT WEIGHT, γ_{unit} = 120 PCF
 - FRICTION ANGLE, ϕ = 30 DEGREES
 - COHESION, c = 0 PSF
- DESIGN RETAINING WALL NO. 1 AND NO. 2 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.
- ALL STRUCTURE EXCAVATION FOR THE CONSTRUCTION OF THE SOLDIER PILE RETAINING WALLS WILL BE CONSIDERED INCIDENTAL TO THE COST OF THE WALLS.
- CONSTRUCTION VIBRATION AND CONDITION ASSESSMENT OF ADJACENT BUILDINGS IS REQUIRED. SEE CONTROL OF VIBRATION AND BUILDING SURVEYS SPECIAL PROVISIONS.
- CAST-IN-PLACE CONCRETE COPING IS REQUIRED FOR WALL 1 AND NO. 2. SEE STRUCTURE PLANS FOR DETAILS.
- DESIGN WALL SUCH THAT PILE LOCATIONS DO NOT INTERFERE WITH EXISTING UTILITIES. SEE HYDRAULIC/UTILITY PLANS FOR ADDITIONAL INFORMATION.



SOLDIER PILE WALL WITH CAST-IN-PLACE FACE TYPICAL SECTION

*SEE ROADWAY PLANS FOR FINISHED GRADE AND/OR DITCH DETAILS.

PROJECT NO.: B-4820
YADKIN/SURRY COUNTY
STATION: _____
 SHEET 5 OF 9

PREPARED BY: EJS DATE: 10/09
 REVIEWED BY: SCC DATE: 4/10

GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

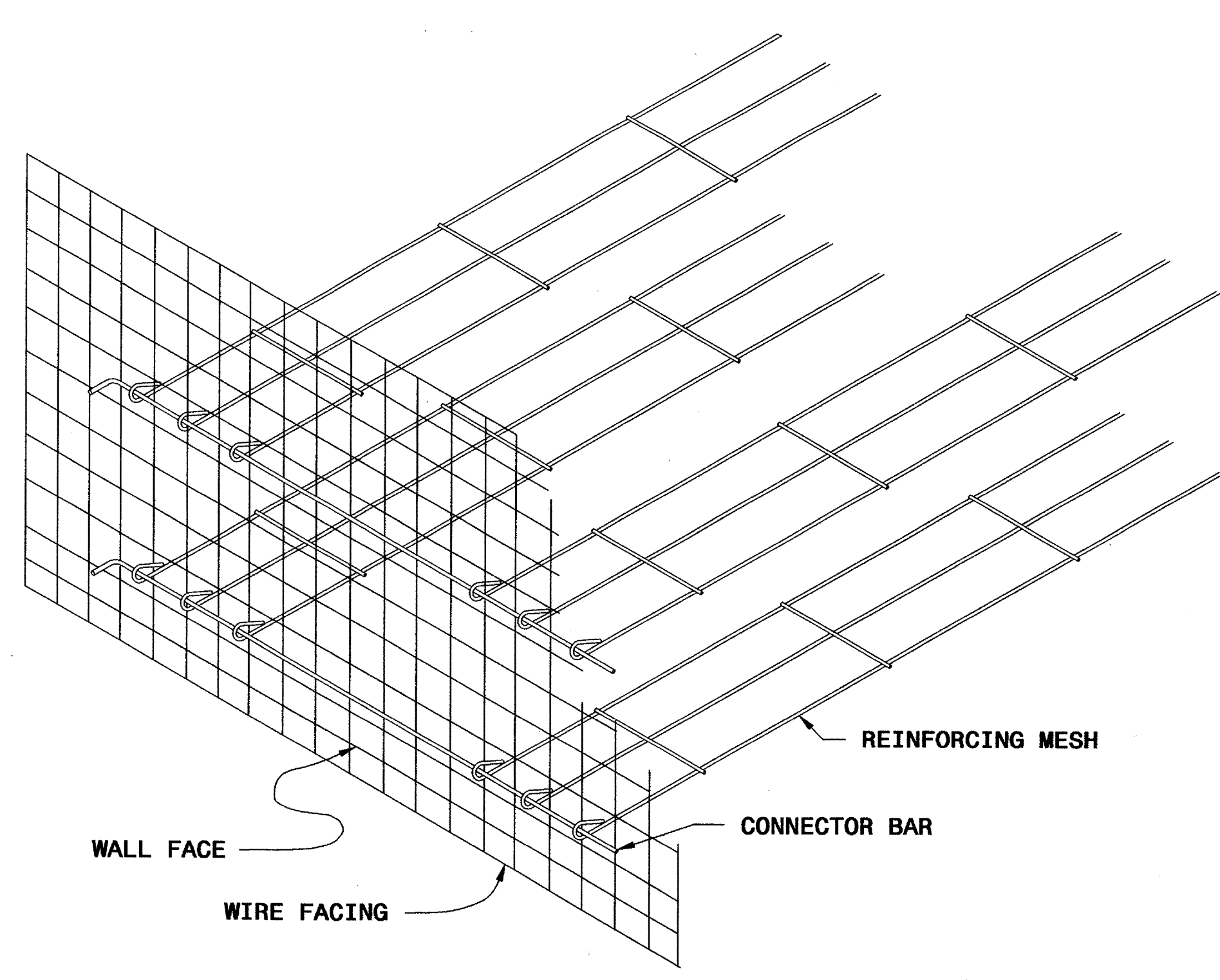
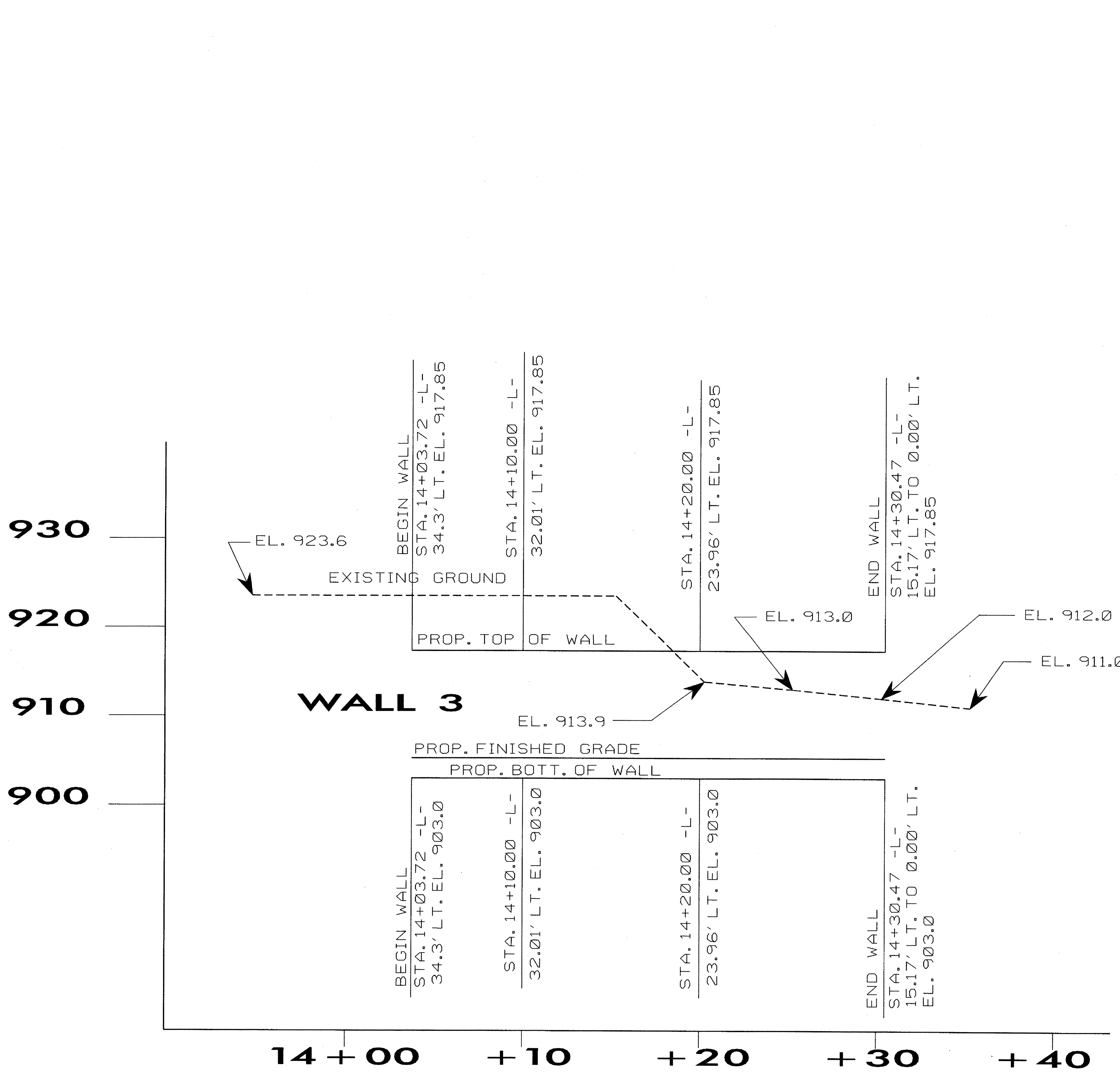
WALL NO. 1 AND WALL NO. 2 SOLDIER PILE RETAINING WALL DETAILS

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			W-5
2			4			9

NOTES:

SEE SHEET 3 FOR LOCATION OF RETAINING WALL NO. 3

GEOTECHNICAL ENGINEER  S. C. Clark 4/28/10 SIGNATURE DATE	ENGINEER SIGNATURE DATE
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PROJECT NO.: B-4820
 YADKIN /SURRY COUNTY
 STATION:
 SHEET 6 OF 9

PREPARED BY: E.J.S. DATE: 4/09
 REVIEWED BY: S.C.C. DATE: 4/10

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 RALEIGH

MSE RETAINING WALL #3 WITH A CAST-IN-PLACE FACE					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

SHEET NO. 6
 TOTAL SHEETS 9

GEOTECHNICAL ENGINEER

ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 029869 ENGINEER SHANE C. CLARK

Signature: *Sh. Clark* 9/28/10 DATE

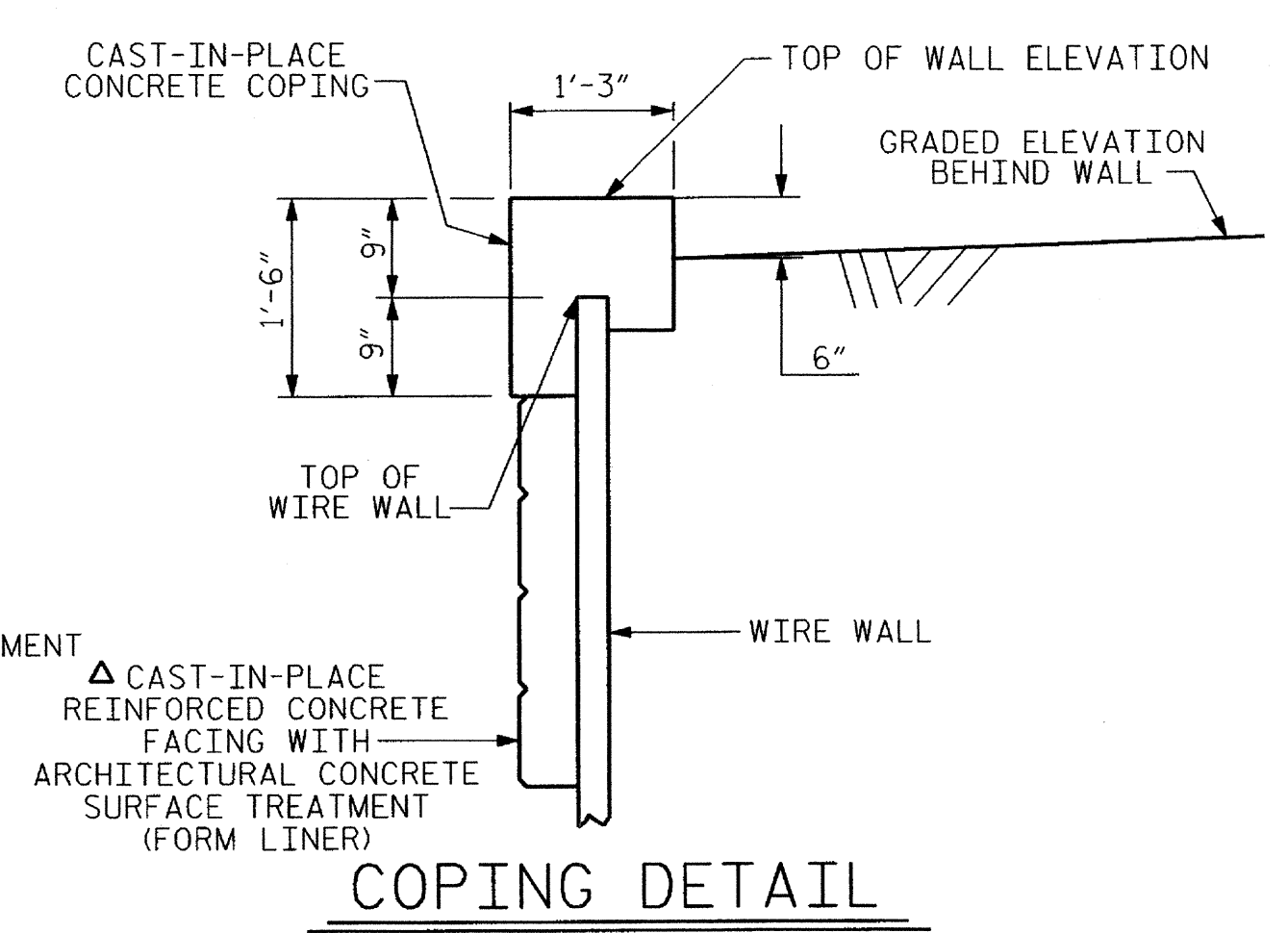
SIGNATURE DATE

NOTES

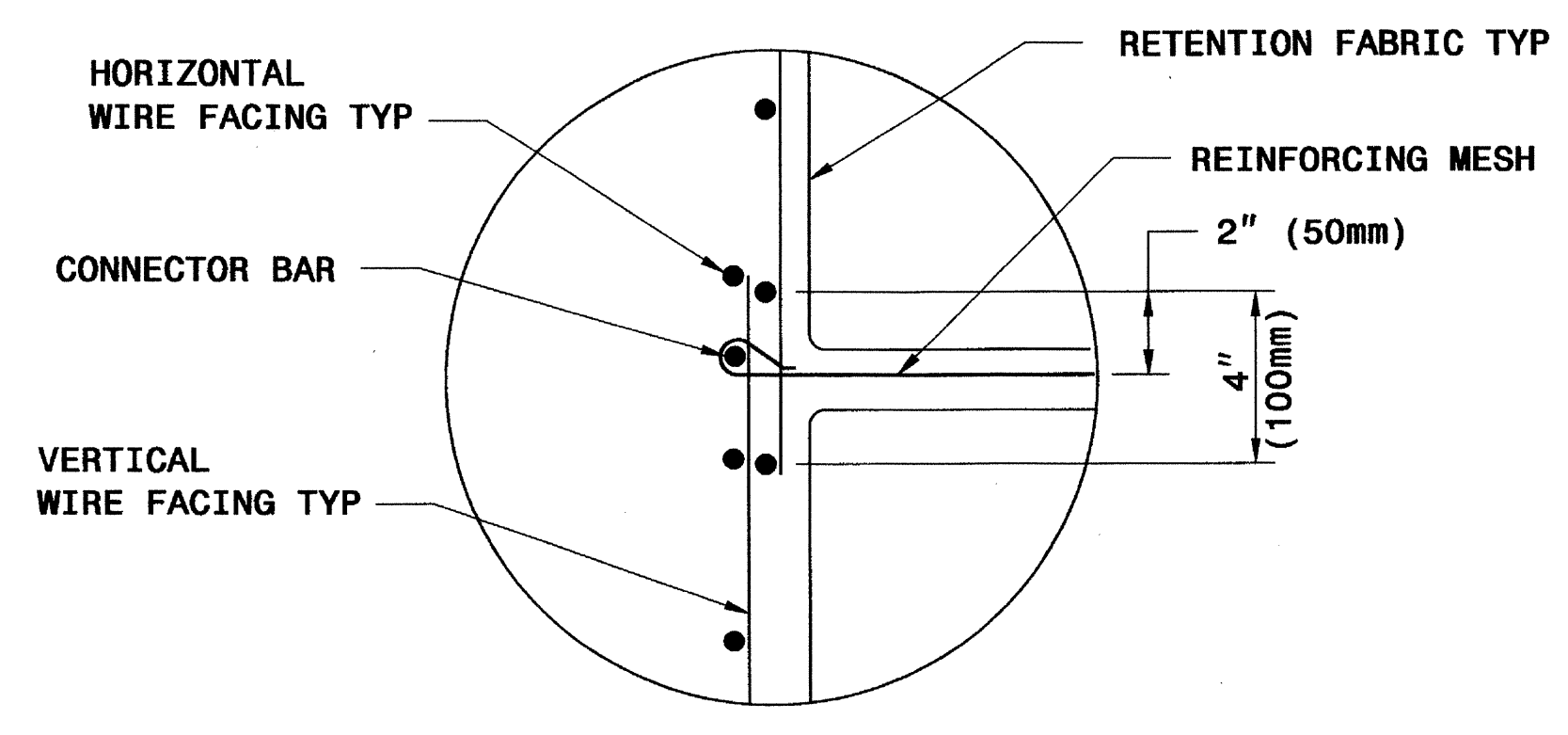
- FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS WITH A CAST-IN-PLACE FACE, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS WITH A CAST-IN-PLACE FACE PROVISION.
- DO NOT USE AN MSE WALL SYSTEM WITH SEGMENTAL RETAINING WALL UNITS FOR RETAINING WALL NO. 3.
- CAST-IN-PLACE REINFORCED CONCRETE COPING IS REQUIRED FOR RETAINING WALL NO. 3 AND WALL NO. 4 (TERRACE WALL).
- SEE STRUCTURE PLANS FOR ARCHITECTURAL CONCRETE SURFACE TREATMENT REQUIREMENTS FOR THE CAST-IN-PLACE FACING FOR RETAINING WALL NO. 3. SEE STRUCTURE PLANS AND SPECIAL PROVISIONS.
- A DRAIN IS REQUIRED FOR RETAINING WALL NO. 3.
- BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NO. 3 SURVEY EXISTING GROUND ELEVATIONS SHOWN ON THE WALL PROFILE VIEW (WALL ENVELOPE) AND SUBMIT A REVISED WALL ENVELOPE FOR REVIEW. DO NOT START WALL DESIGN OR CONSTRUCTION UNTIL THIS ENVELOPE IS ACCEPTED.
- DESIGN RETAINING WALL NO. 3 FOR WALL HEIGHTS EQUAL TO THE DESIGN HEIGHT (DIFFERENCE BETWEEN GRADE ELEVATION AND BOTTOM OF WALL ELEVATION) PLUS EMBEDMENT (DIFFERENCE BETWEEN BOTTOM OF WALL ELEVATION AND TOP OF LEVELING PAD ELEVATION).
- DESIGN RETAINING WALL NO. 3 FOR THE FOLLOWING:
 - MINIMUM SERVICE LIFE = 100 YEARS
 - ALLOWABLE BEARING CAPACITY = 2000 PSF
 - IN-SITU ASSUMED MATERIAL PARAMETERS:

MATERIAL TYPE	UNIT WEIGHT (gamma) PCF	FRICTION ANGLE (phi) DEGREES	COHESION (c) PSF
FOUNDATION	120	30	50
2S AND 2MS	125	34	0
57,67, AND 78M	110	38	0

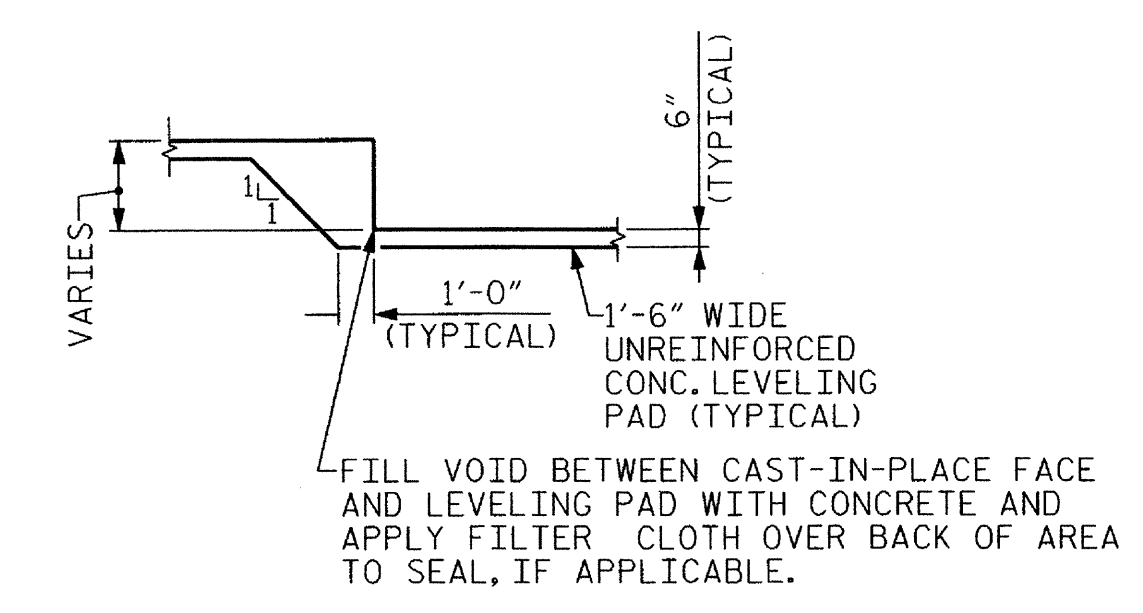
- DESIGN RETAINING WALL NO. 3 FOR A PIPE EXTENDING BELOW THE WALL AS SHOWN IN THE UTILITY PLANS. VERIFY PIPE LOCATION AND ELEVATION BEFORE BEGINNING MSE WALL DESIGN OR CONSTRUCTION.
- EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. 3.
- DO NOT PLACE LEVELING PAD CONCRETE, SELECT MATERIAL OR REINFORCEMENT FOR RETAINING WALL NO. 3 OR WALL NO. 4 (TERRACE WALL) UNTIL OBTAINING APPROVAL OF THE EXCAVATION DEPTH AND FOUNDATION MATERIAL.
- THE LEVELING PAD SHALL BE CAST-IN-PLACE AND MADE CONTINUOUS AT STEPS.
- THE MINIMUM CAST-IN-PLACE FACE EMBEDMENT IS 2'-0".
- THE TOP OF WALL ELEVATION IS THE ELEVATION AT TOP OF CAST-IN-PLACE CONCRETE COPING.
- THE TOP OF COPING, WHERE APPLICABLE, IS A MINIMUM 6" ABOVE THE GROUND LINE ELEVATION BEHIND THE WALL. CONCRETE COPING SHALL BE CAST-IN-PLACE AND HAVE A SMOOTH FINISH.
- ALL STRUCTURE EXCAVATION AND BACKFILL NECESSARY FOR THE CONSTRUCTION OF THE MSE WALLS WILL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR MSE RETAINING WALLS.



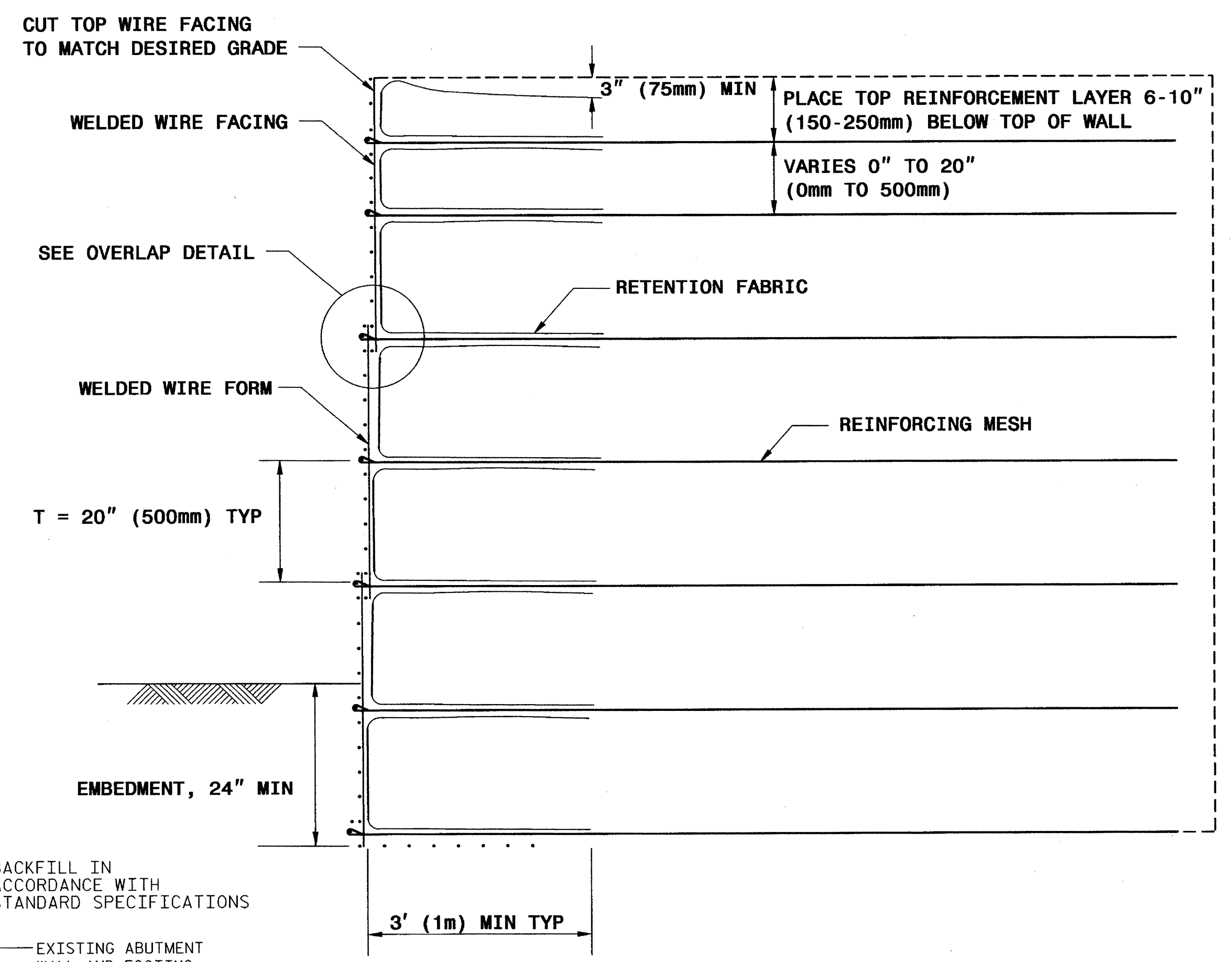
COPING DETAIL



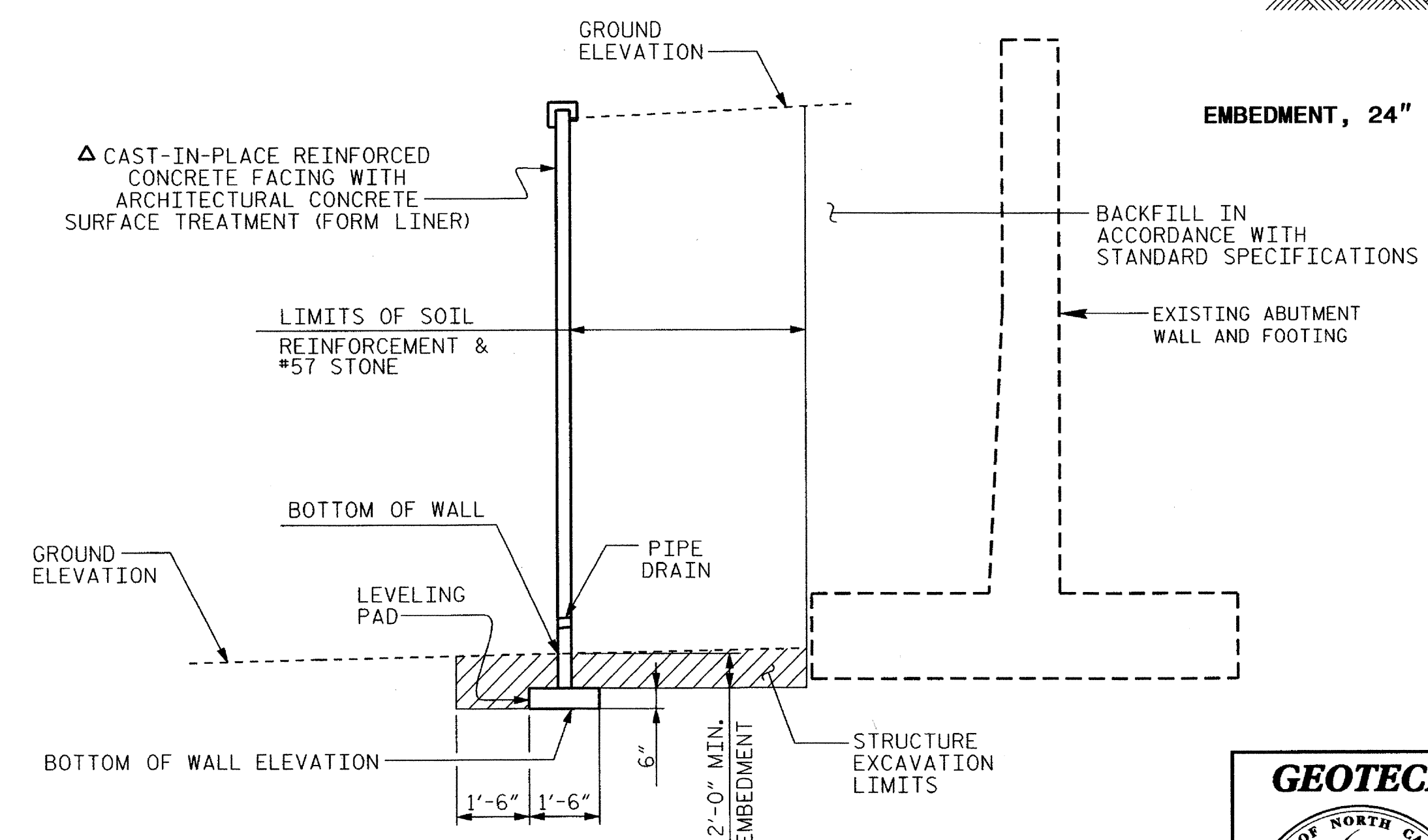
OVERLAP DETAIL



TYPICAL LEVELING PAD STEP DETAIL



TYPICAL SECTION



SECTION RUNNING PARALLEL TO END BENT

PROJECT NO.: **B-4820**
YADKIN /SURRY COUNTY
 STATION: _____
 SHEET 7 OF 9

GEOTECHNICAL ENGINEERING UNIT

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 WESTERN REGIONAL OFFICE
 CONTRACTS OFFICE


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

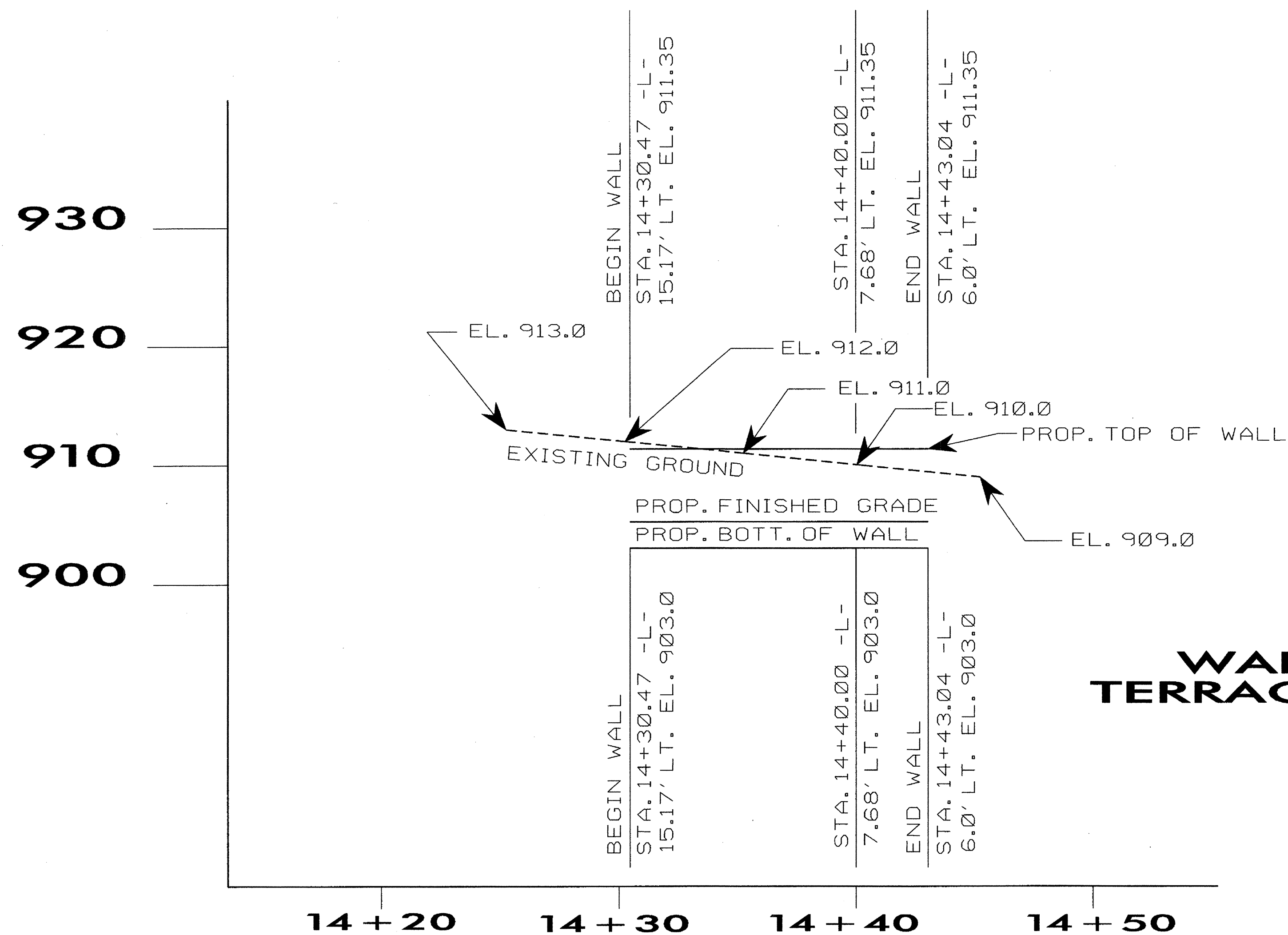
MSE RETAINING WALL #3 WITH A CAST-IN-PLACE FACE

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	W-7
1			3			TOTAL SHEETS
2			4			9

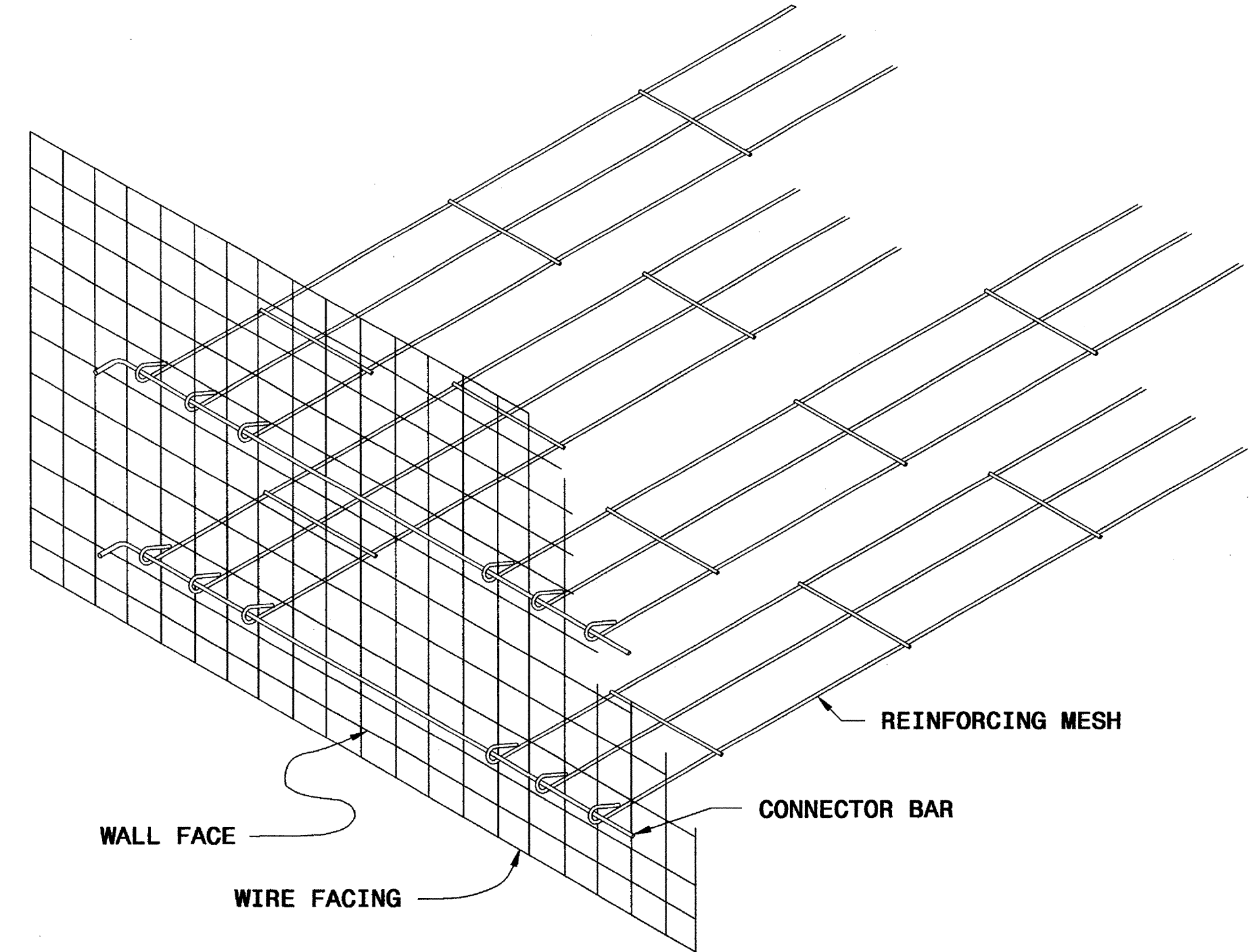
NOTES:

SEE SHEET 3 FOR LOCATION OF RETAINING WALL NO. 4 (TERRACE WALL)

GEOTECHNICAL ENGINEER  D. Clark 4/10/09 <small>SIGNATURE DATE</small>	ENGINEER <small>SIGNATURE DATE</small>
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**WALL #4
TERRACE WALL**



GENERAL ASSEMBLY DETAIL

PROJECT NO.: B-4820
YADKIN /SURRY COUNTY

STATION: _____

SHEET 8 OF 9

GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 CONTRACTS OFFICE

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**MSE RETAINING WALL #4
 WITH A CAST-IN-PLACE FACE
 "TERRACE WALL"**

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			W-8
2			4			9

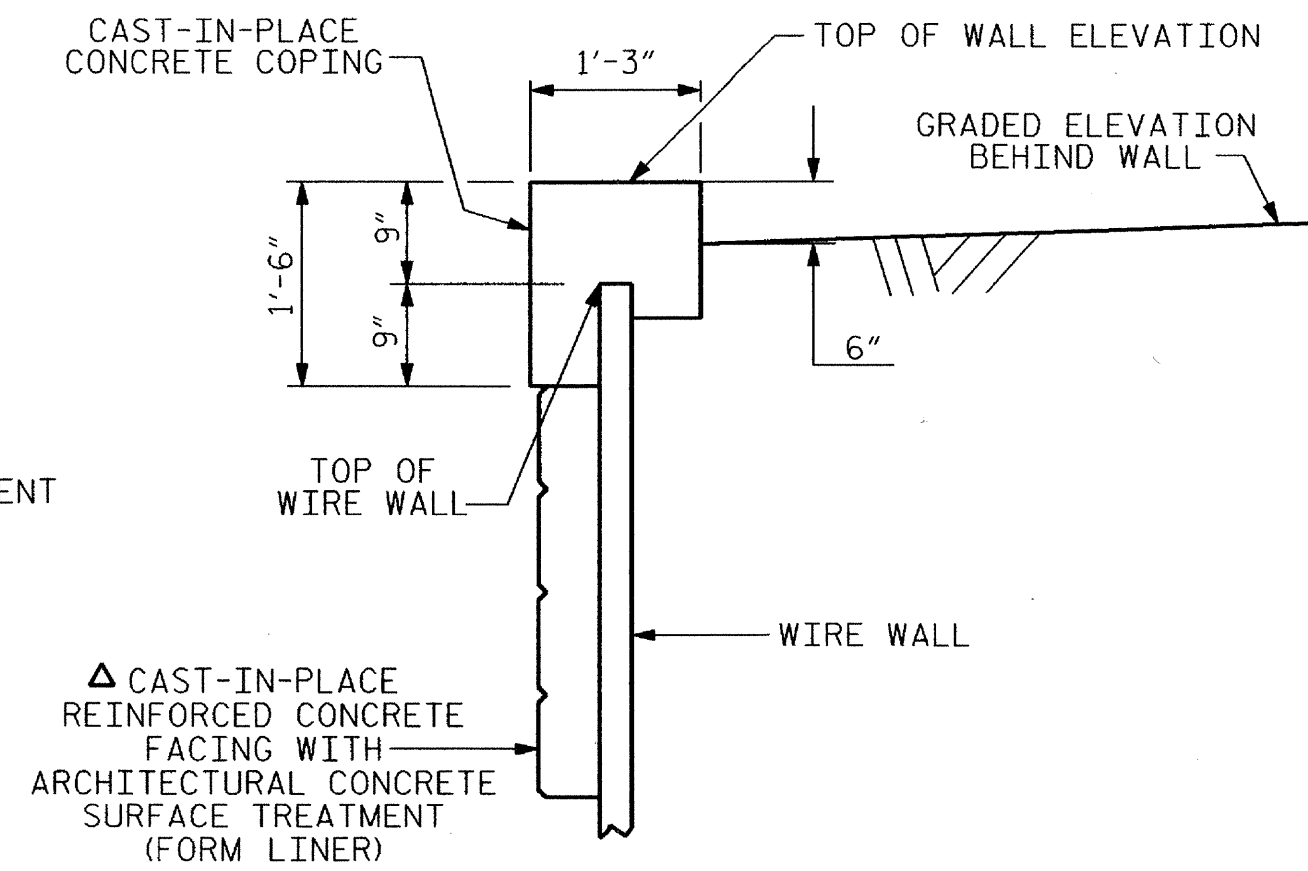
PREPARED BY: E.J.S.	DATE: 4/09
REVIEWED BY: S.C.C.	DATE: 4/10

NOTES

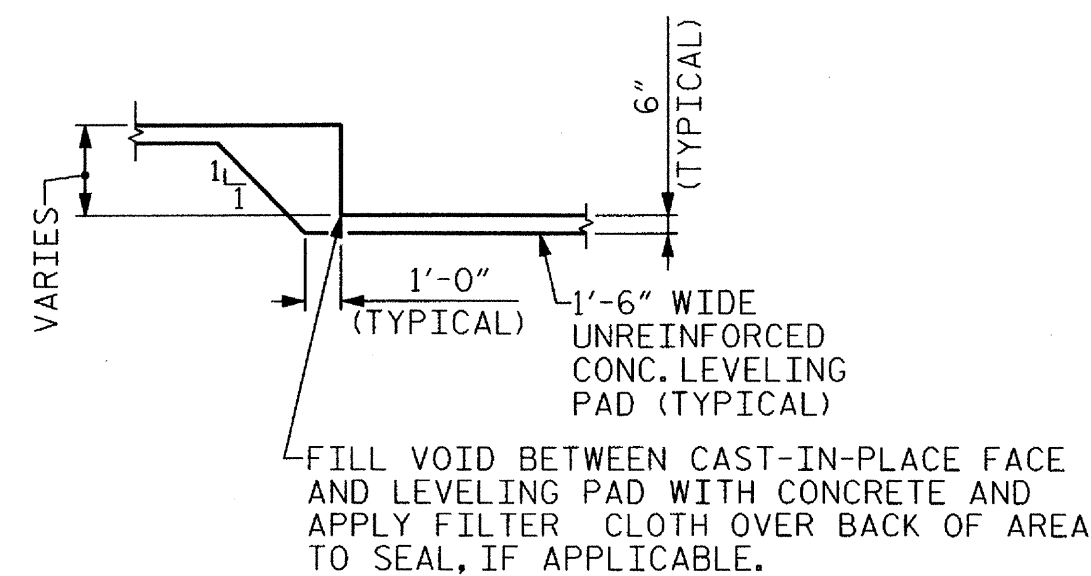
- FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS WITH A CAST-IN-PLACE FACE, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS WITH A CAST-IN-PLACE FACE PROVISION.
- DO NOT USE AN MSE WALL SYSTEM WITH SEGMENTAL RETAINING WALL UNITS FOR RETAINING WALL NO. 4 (TERRACE WALL).
- CAST-IN-PLACE REINFORCED CONCRETE COPING IS REQUIRED FOR RETAINING WALL NO. 4 (TERRACE WALL).
- SEE STRUCTURE PLANS FOR ARCHITECTURAL CONCRETE SURFACE TREATMENT REQUIREMENTS FOR THE CAST-IN-PLACE FACING FOR RETAINING WALL NO. 4 (TERRACE WALL) SEE STRUCTURE PLANS AND SPECIAL PROVISIONS.
- A DRAIN IS REQUIRED FOR RETAINING WALL NO. 4 (TERRACE WALL).
- BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NO. 4 (TERRACE WALL), SURVEY EXISTING GROUND ELEVATIONS SHOWN ON THE WALL PROFILE VIEW (WALL ENVELOPE) AND SUBMIT A REVISED WALL ENVELOPE FOR REVIEW. DO NOT START WALL DESIGN OR CONSTRUCTION UNTIL THIS ENVELOPE IS ACCEPTED.
- DESIGN RETAINING WALL NO. 4 (TERRACE WALL) FOR WALL HEIGHTS EQUAL TO THE DESIGN HEIGHT (DIFFERENCE BETWEEN GRADE ELEVATION AND BOTTOM OF WALL ELEVATION) PLUS EMBEDMENT (DIFFERENCE BETWEEN BOTTOM OF WALL ELEVATION AND TOP OF LEVELING PAD ELEVATION).
- DESIGN RETAINING WALL NO. 4 (TERRACE WALL) FOR THE FOLLOWING:
 1) MINIMUM SERVICE LIFE = 100 YEARS
 2) ALLOWABLE BEARING CAPACITY = 2000 PSF
 3) IN-SITU ASSUMED MATERIAL PARAMETERS:

MATERIAL TYPE	UNIT WEIGHT (gamma) PCF	FRICTION ANGLE (phi) DEGREES	COHESION (c) PSF
FOUNDATION	120	30	50
2S AND 2MS	125	34	0
57,67, AND 78M	110	38	0

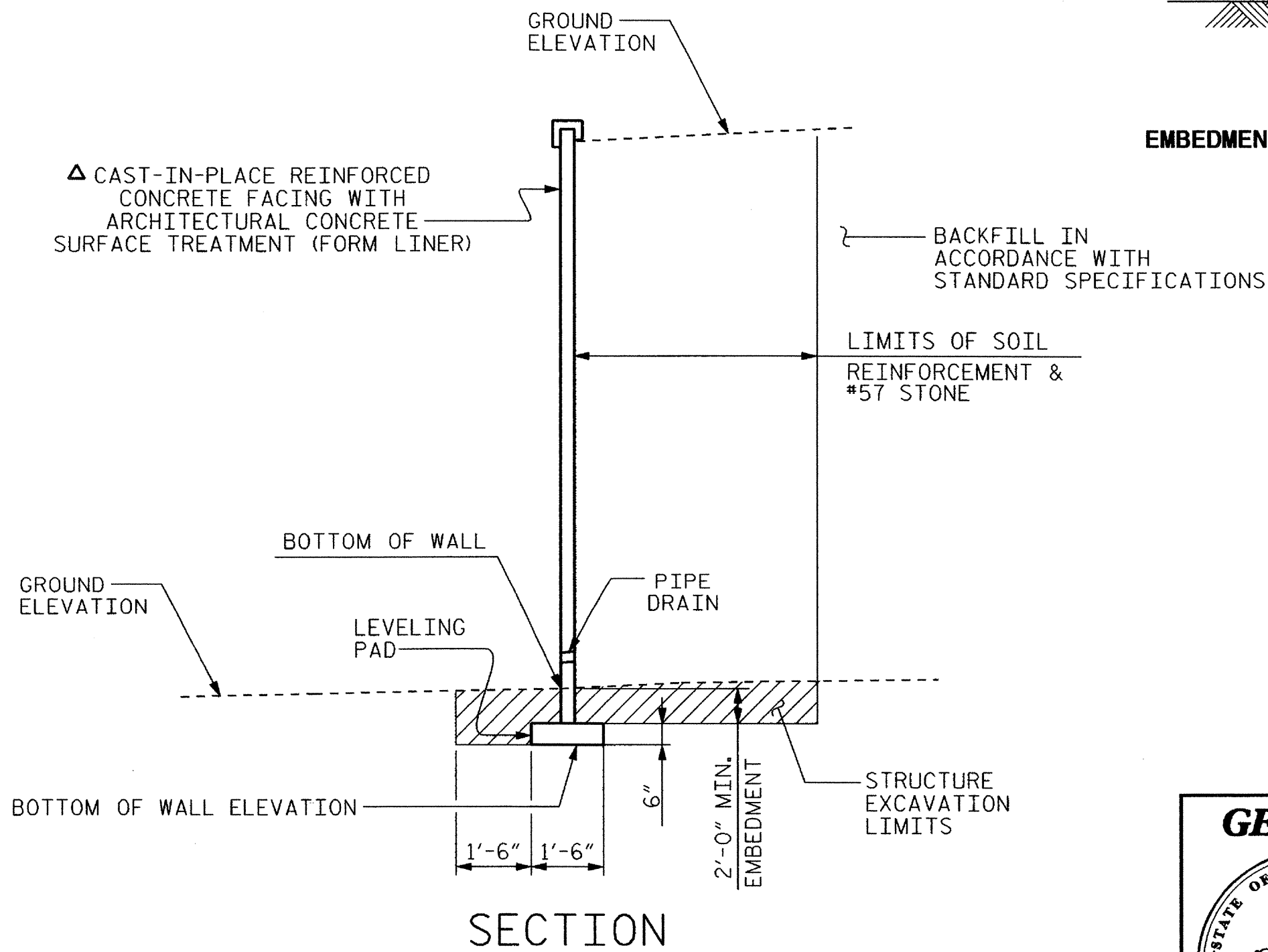
- DESIGN RETAINING WALL NO. 4 (TERRACE WALL) FOR A PIPE EXTENDING BELOW THE WALL AS SHOWN IN THE UTILITY PLANS. VERIFY PIPE LOCATION AND ELEVATION BEFORE BEGINNING MSE WALL DESIGN OR CONSTRUCTION.
- EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. 4 (TERRACE WALL).
- DO NOT PLACE LEVELING PAD CONCRETE, SELECT MATERIAL OR REINFORCEMENT FOR RETAINING WALL NO. 4 (TERRACE WALL) UNTIL OBTAINING APPROVAL OF THE EXCAVATION DEPTH AND FOUNDATION MATERIAL.
- THE LEVELING PAD SHALL BE CAST-IN-PLACE AND MADE CONTINUOUS AT STEPS.
- THE MINIMUM CAST-IN-PLACE FACE EMBEDMENT IS 2'-0".
- THE TOP OF WALL ELEVATION IS THE ELEVATION AT TOP OF CAST-IN-PLACE CONCRETE COPING
- THE TOP OF COPING, WHERE APPLICABLE, IS A MINIMUM 6" ABOVE THE GROUND LINE ELEVATION BEHIND THE WALL. CONCRETE COPING SHALL BE CAST-IN-PLACE AND HAVE A SMOOTH FINISH.
- ALL STRUCTURE EXCAVATION AND BACKFILL NECESSARY FOR THE CONSTRUCTION OF THE MSE WALLS WILL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR MSE RETAINING WALLS.



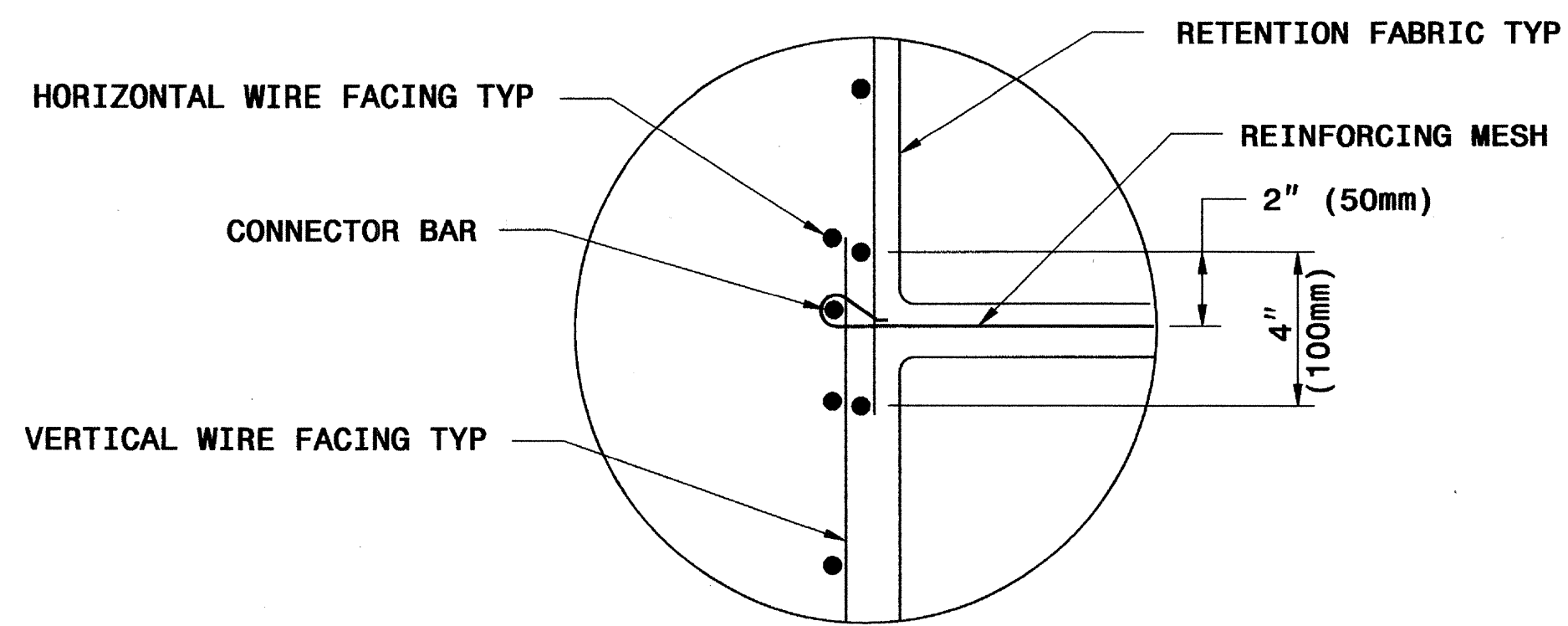
COPING DETAIL



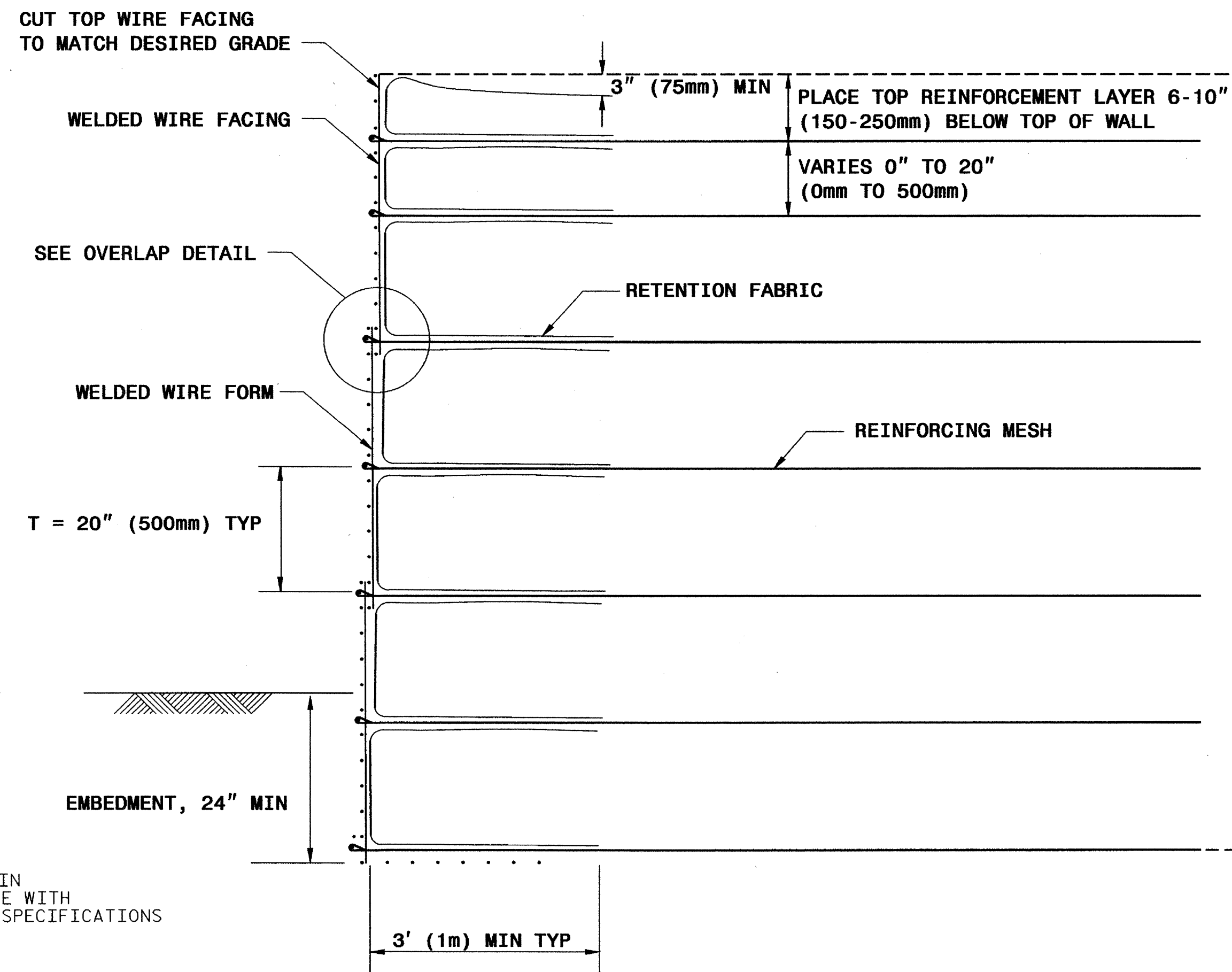
TYPICAL LEVELING PAD STEP DETAIL



SECTION



OVERLAP DETAIL



TYPICAL SECTION

GEOTECHNICAL ENGINEER

ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 029869

S. Clark 4/28/10

SIGNATURE DATE SIGNATURE DATE

PROJECT NO.: **B-4820**
YADKIN /SURRY COUNTY
 STATION: _____
 SHEET 9 OF 9

GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 CONTRACTS OFFICE

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

MSE RETAINING WALL #4 WITH A CAST-IN-PLACE FACE "TERRACE WALL"

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

PREPARED BY: E.J.S.	DATE: 4/09
REVIEWED BY: S.C.C.	DATE: 4/10

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 2006 "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