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dibeard

T.I.P.: R-2248H

CONTRACT: C202278

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

SIGNING PLAN
MECKLENBURG COUNTY

LOCATION: PAVING OF RAMPS AT I-485 /GARRISON ROAD (SR 1148)
INTERCHANGE

TIP NO. R-2248H	SHEET NO. SIGN-1
APPROVED: <i>[Signature]</i>	
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ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JULY 2006 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
901.10	TYPE 'A' SIGNS
901.20	TYPE 'B' SIGNS
901.30	VHB TAPE CONSTRUCTION - FOR TYPE 'A' SIGNS
901.40	VHB TAPE CONSTRUCTION - FOR TYPE 'B' SIGNS
901.50	ARROWS AND SHIELDS
901.70	SIGN STRINGERS AND SUPPORT SPACING
903.10	GROUND MOUNTED SIGN SUPPORTS
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.20	SECONDARY SIGN MOUNTING
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS

GENERAL NOTES

- . SIGNS FURNISHED BY STATE
- . ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.
- . IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.
- . SIGNING PLANS DO NOT INCLUDE TEMPORARY CONSTRUCTION SIGNING OR PAVEMENT MARKINGS. SEE TRAFFIC CONTROL PLANS.
- . WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER
- . ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- . WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
- . THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.
- . THE CONTRACTOR SHALL USE LUMINAIRE RETRIEVAL SYSTEM ON ALL OVERHEAD STRUCTURES. WALKWAY AND HANDRAIL IS NOT REQUIRED.
- . INSTALLATION OF LUMINAIRE RETRIEVAL SYSTEM SHALL ALLOW LUMINAIRE MAINTENACE FROM THE SHOULDER WITHOUT THE NEED FOR LANE CLOSURE. THE DRIVE HANDLE OF THE LUMINAIRE RETRIEVAL SYSTEM SHALL BE LOCATED A MINIMUM OF 0.92M (3 ') FROM THE RIGHT EDGE OF THE SHOULDER AWAY FROM THE ROADWAY TRAFFIC.
- . DO NOT BEGIN FABRICATION FOR TYPES A & B SIGNS MOUNTED ON OVERHEAD STRUCTURES OR STEEL SUPPORTS UNTIL "S" DIMENSIONS HAVE BEEN FIELD VERIFIED.
- . SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

INDEX

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET
SIGN-2	SUMMARY OF QUANTITIES
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SIGN-8	E SHEETS
SIGN-9	F SHEETS
SIGN-10-19	SIGN DESIGN AND OVERHEADS SHEETS
SIGN-20-23	SIGN DETAIL SHEETS

PLAN PREPARED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

Ayman Alqudwah, P.E. SIGNING & DELINEATION REGIONAL ENGINEER

Derrick Beard SIGNING & DELINEATION PROJECT DESIGN ENGINEER/TECHNICIAN

TIP NO. R-2248H	SHEET NO. SIGN-3
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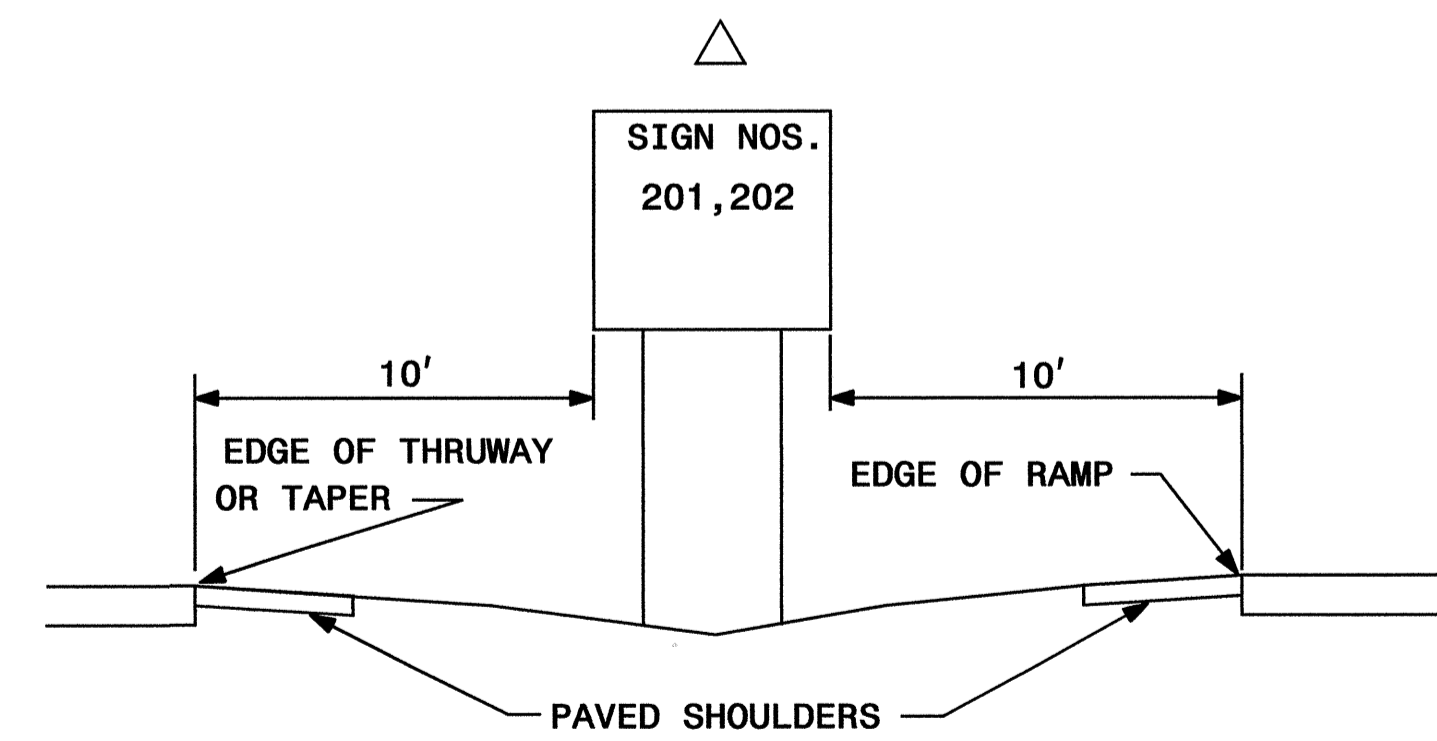
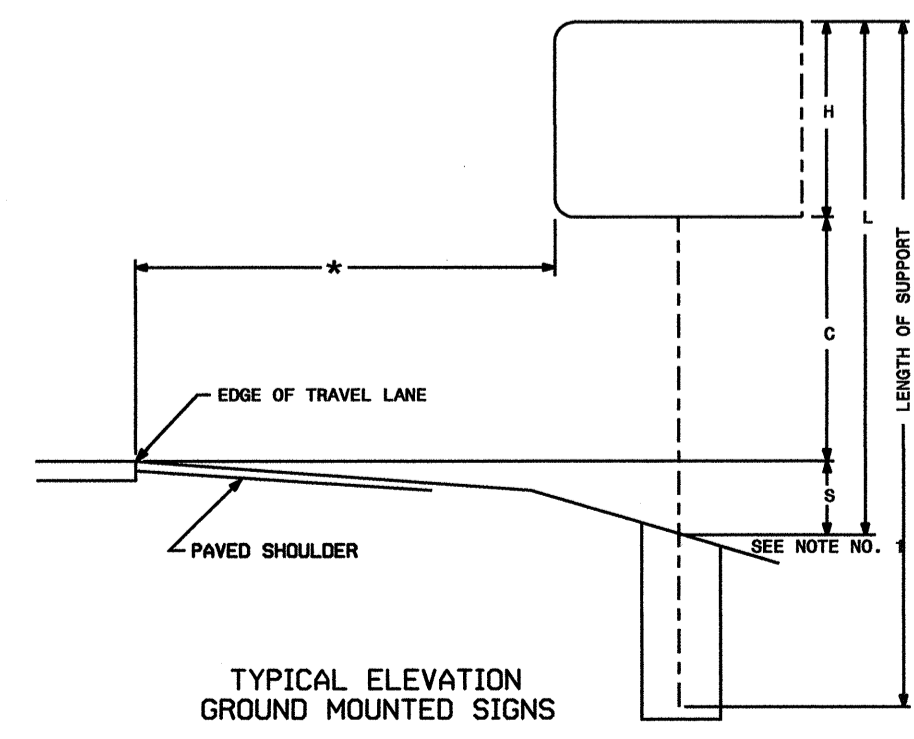
SUPPORT CHART FOR "A" AND "B" SIGNS

SIGN NO.	SIGN TYPE	SIGN SIZE (in.)			ROADWAY STATION	NO. OF SUP.	BEAM SECTION	SUPPORT TYPE	ATTACH METHOD	MOUNTING METHOD	LENGTH (ft)				LEFT SUPPORT (ft)			CENTER SUPPORT (ft)			RIGHT SUPPORT (ft)			FOOTING DIAMETER (ft.)	FOOTING DEPTH (ft.)	B/A SUPPORT WEIGHTS (lbs.)	SIMPLE SUPPORT WEIGHTS (lbs.)	REINF. FTGS. (c.y.)	PLAIN FTGS. (c.y.)	FIELD VERIFIED SEE NOTE 2 (mm/dd/yy)
		w	x	h							HORIZ. CLR. (ft.)	SNS HT	MTG HT	EMBED-MENT	S	L	TOTAL LENGTH	S	L	TOTAL LENGTH	S	L	TOTAL LENGTH							
101	A	132	X84		330+70	2	W6x9	S	N/A	N/A	30.00	7.00	7.00	4.5	1.70	15.70	20.20	0.00	0.00	0.00	0.19	14.19	18.69	1.5	5	0.00	350.01	0.65	0.00	
102	A	132	X84		401+11	2	W6x9	S	N/A	N/A	18.00	7.00	7.00	4.5	0.05	14.05	18.55	0.00	0.00	0.00	3.30	17.30	21.80	1.5	5	0.00	363.16	0.65	0.00	
201	A	60	X60		347+40	2	S3x5.7	BA	N/A	N/A	△	5.00	7.00		3	0.50	12.50	15.50	0.00	0.00	0.00	0.50	12.50	15.50	1	3.5	212.23	0.00	0.00	0.20
202	A	60	X60		372+42	2	S3x5.7	BA	N/A	N/A	△	5.00	7.00		3	0.50	12.50	15.50	0.00	0.00	0.00	0.50	12.50	15.50	1	3.5	212.23	0.00	0.00	0.20

TOTAL
 424.47 TOTAL
 713.17 TOTAL
 1.31 TOTAL
 0.41
 USE: 425 714 2 1

NOTES

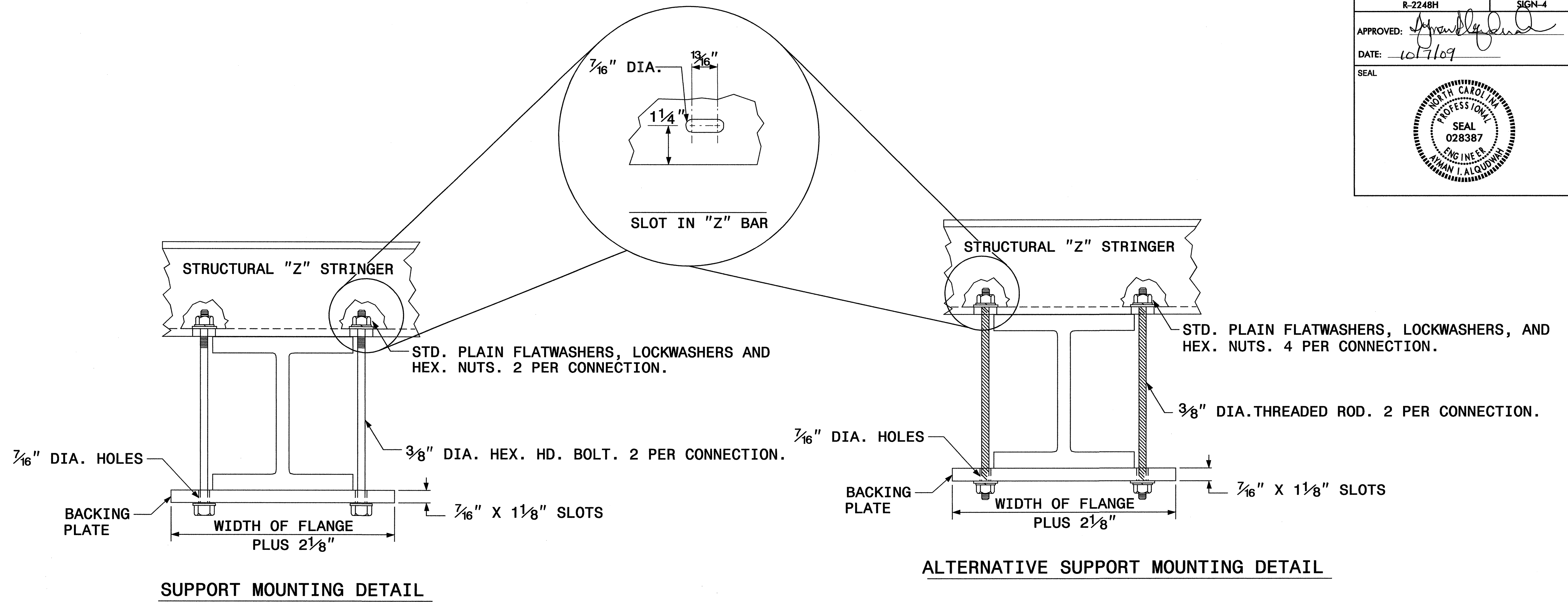
- DIMENSION "S" REPRESENTS AN INCREASE (+), OR A DECREASE (-) IN POLE LENGTH, RELATIVE TO THE ELEVATION OF THE EDGE OF PAVEMENT.
- FIELD VERIFICATIONS SHALL BE REQUIRED FOR ALL SUPPORTS, SEE (*) ARTICLE 903-3. FABRICATORS SHALL BE AISC CERTIFIED IN CATEGORY 1, SEE (*) ARTICLE 1072-1. (*) = N.C.D.O.T. STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES
- PLAN LOCATIONS FOR EXISTING UTILITIES ARE BASED ON THE BEST AVAILABLE INFORMATION AND, THEREFORE MAY NOT BE PRECISELY ACCURATE. THEREFORE, IT IS INCUMBENT UPON THE CONTRACTOR TO DETERMINE THE EXACT LOCATION OF UTILITIES BEFORE BEGINNING WORK IN A LOCATION.



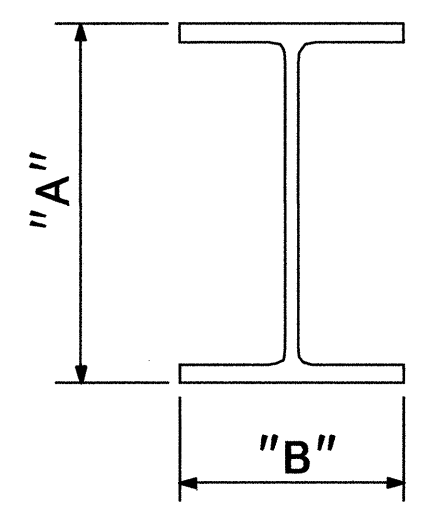
**TYPE "A" AND TYPE "B"
GROUND MOUNTED SIGNS**

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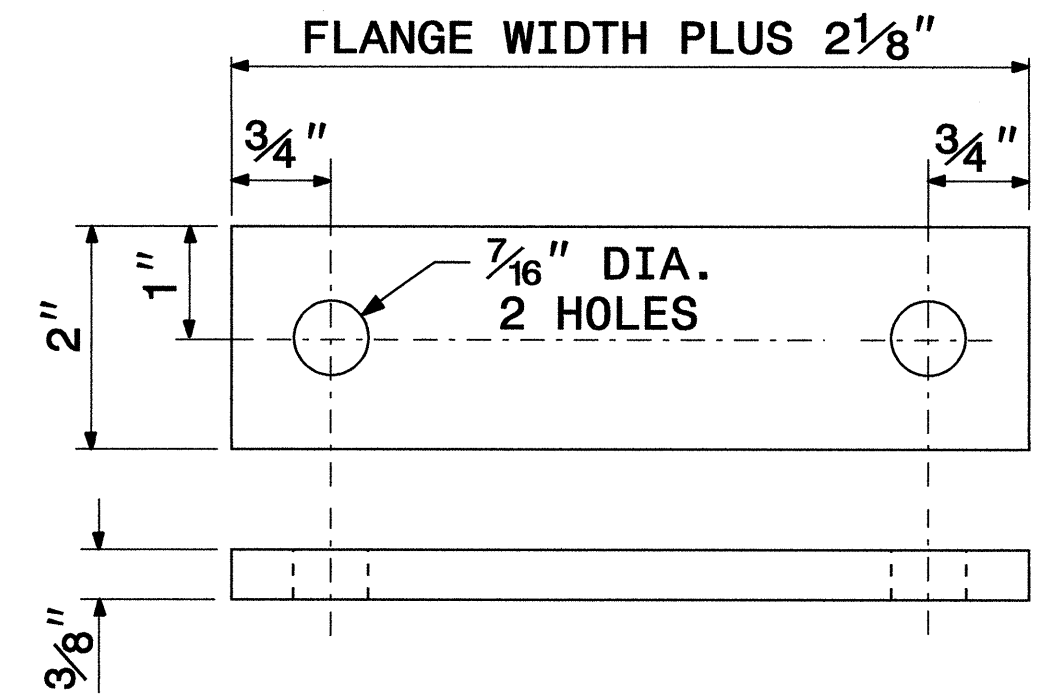


SIGN SUPPORTS SECTION DIMENSIONS




SECTION	A	B
S3 X 5.7	3"	2 3/8"
S4 X 7.7	4"	2 5/8"
W6 X 9	6"	4"
W6 X 12	6"	4"
W6 X 16	6 1/4"	4"
W8 X 18	8 1/8"	5 1/4"
W8 X 21	8 1/4"	5 1/4"
W10 X 22	10 1/8"	5 3/4"
W10 X 26	10 3/8"	5 3/4"
W12 X 26	12 1/4"	6 1/2"
W14 X 30	13 7/8"	6 3/4"
W16 X 31	15 7/8"	5 1/2"
W18 X 35	17 3/4"	6"
W18 X 40	17 7/8"	6"
W21 X 44	20 5/8"	6 1/2"

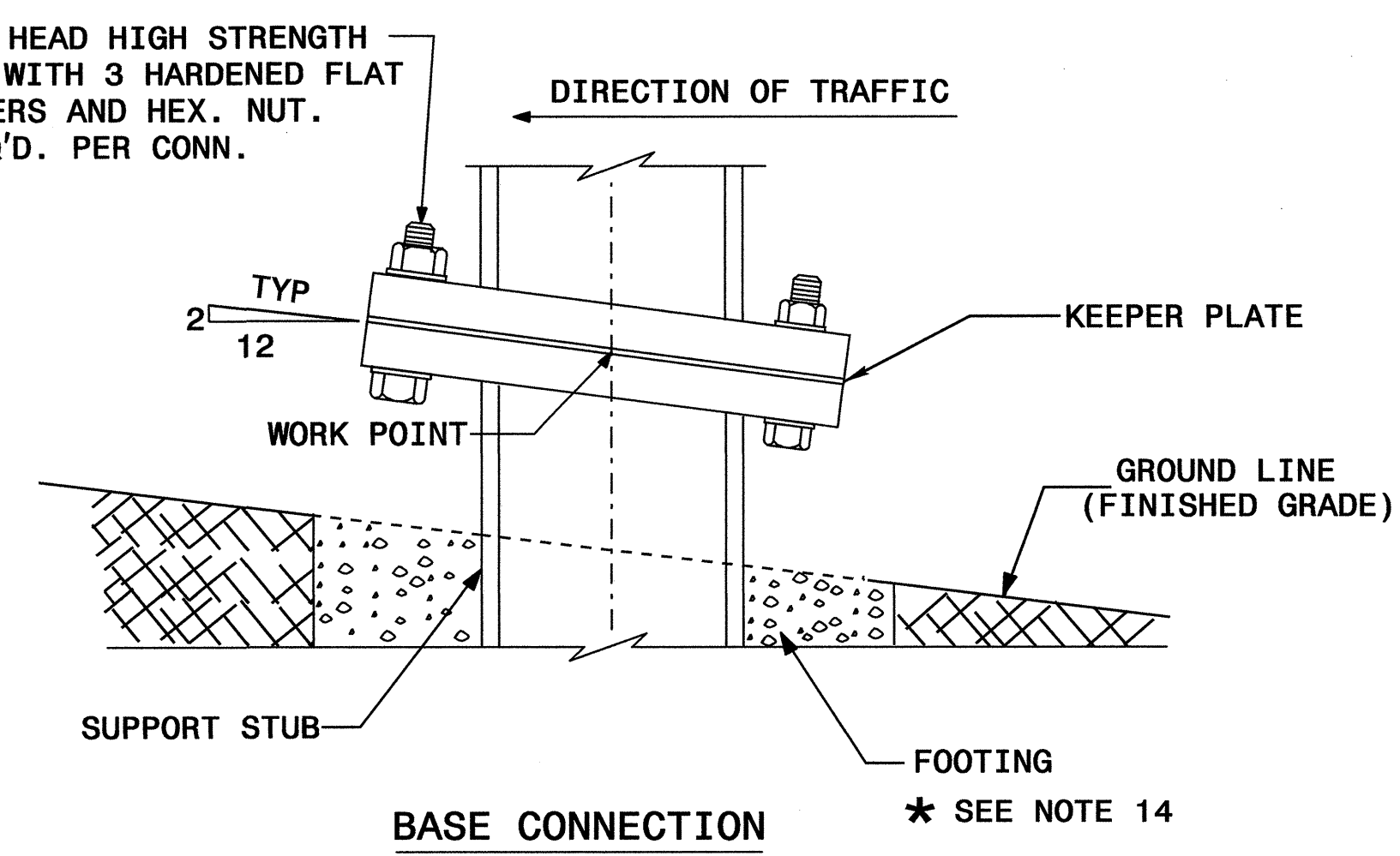
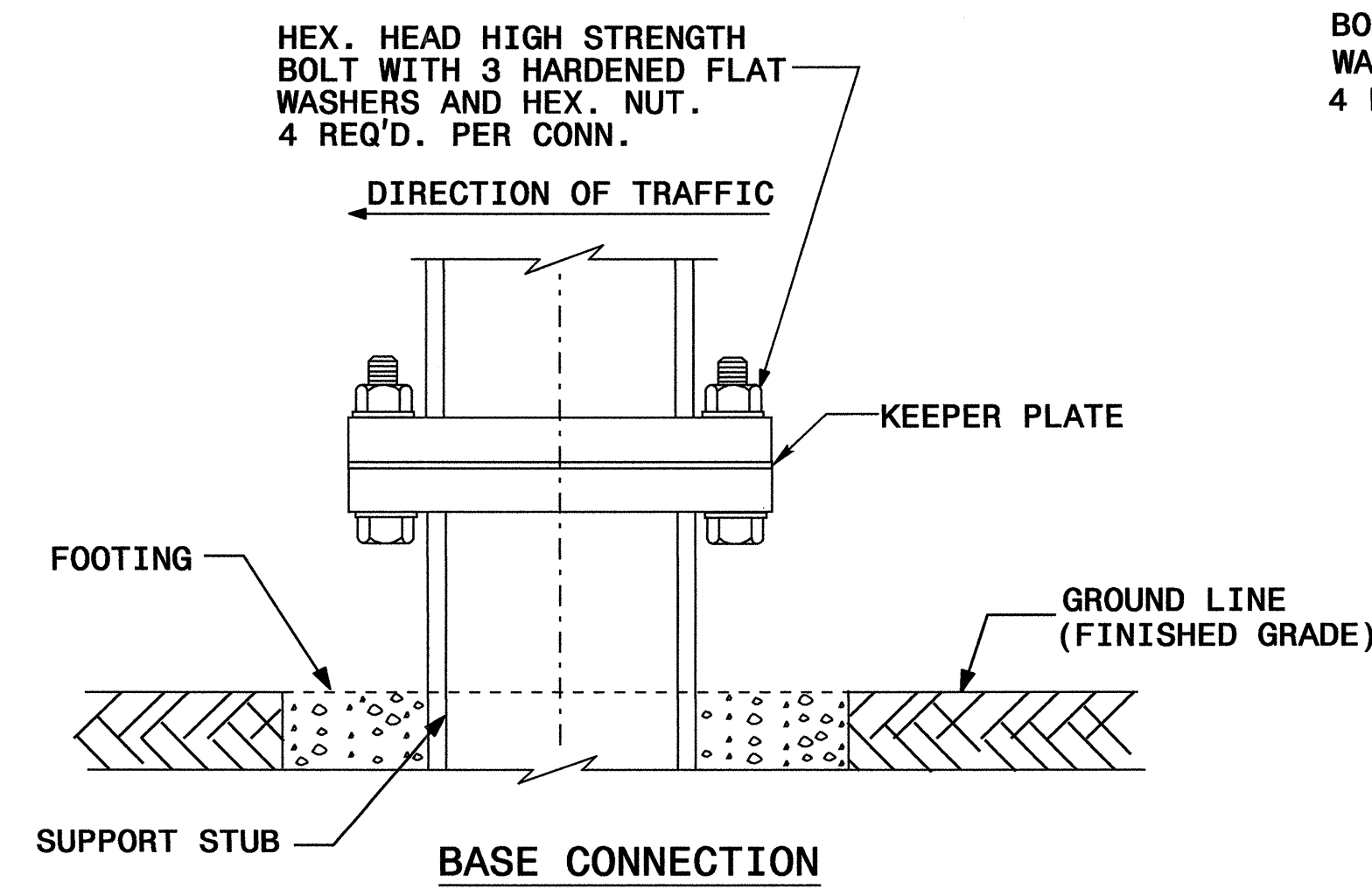
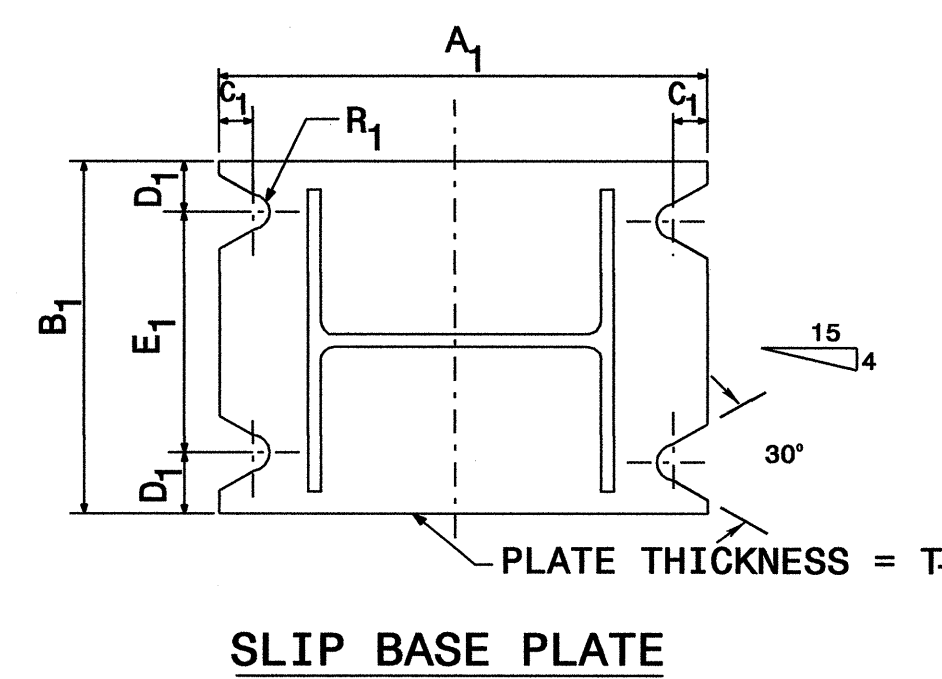
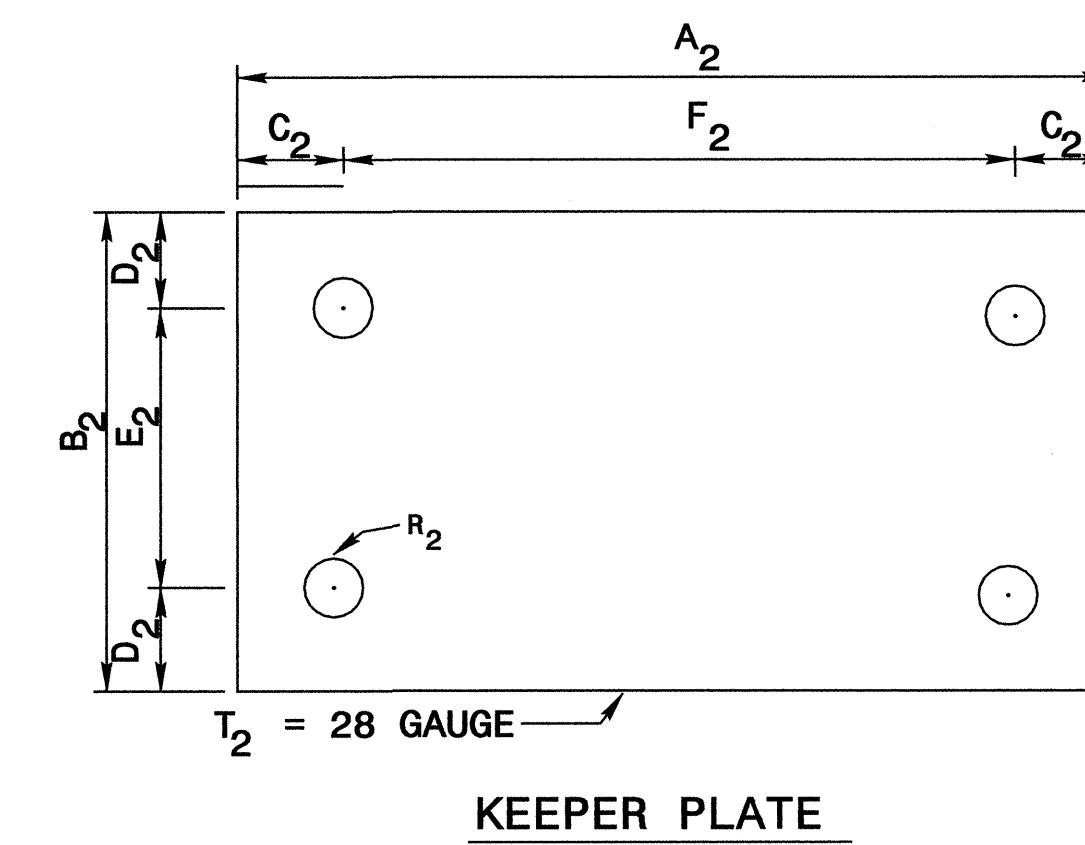
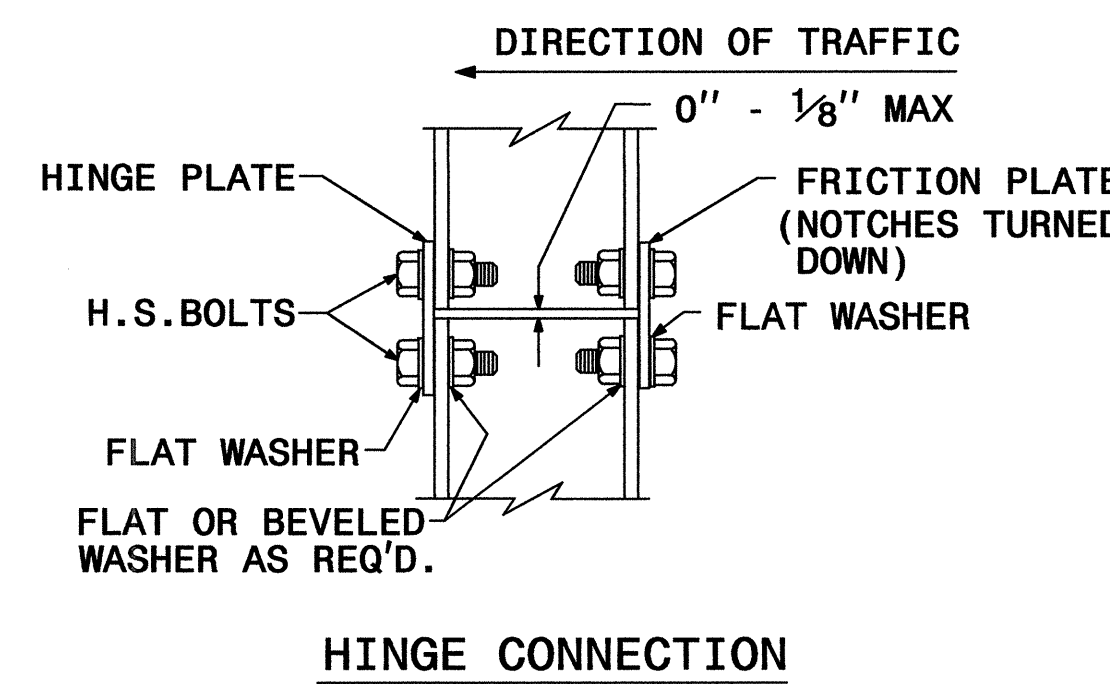
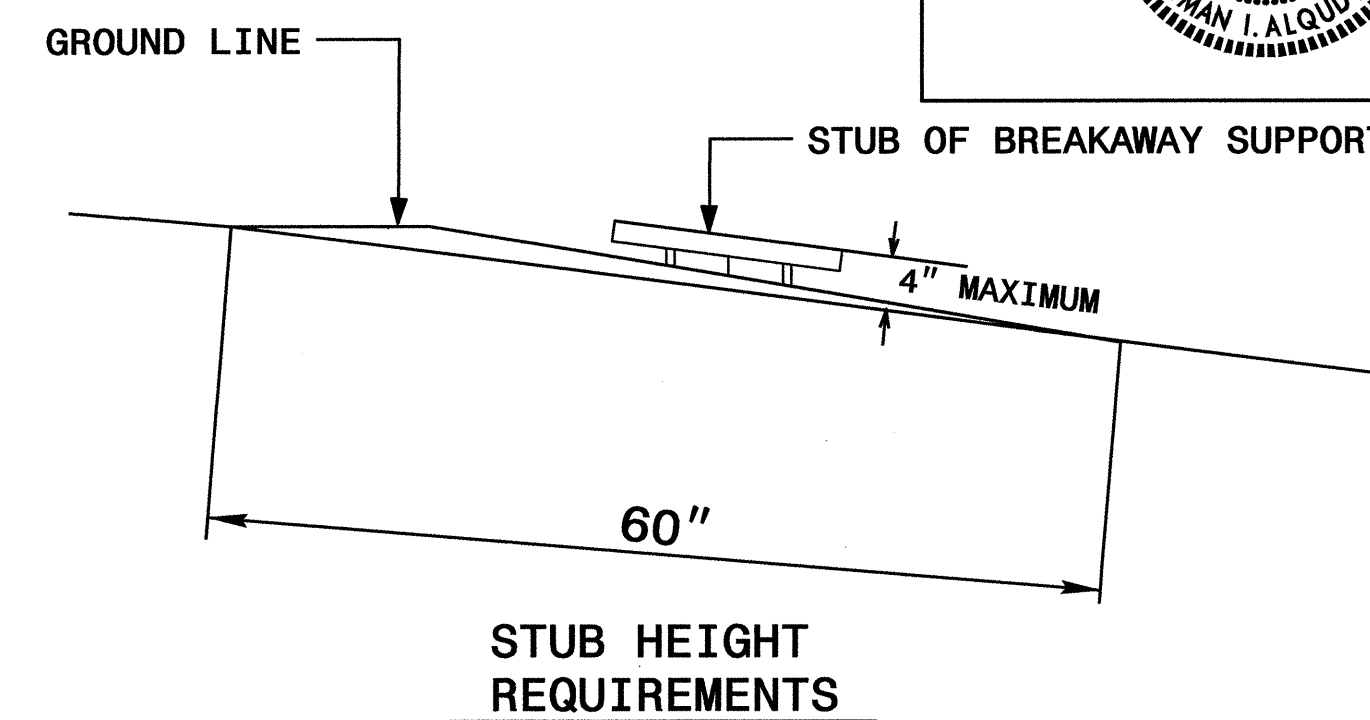
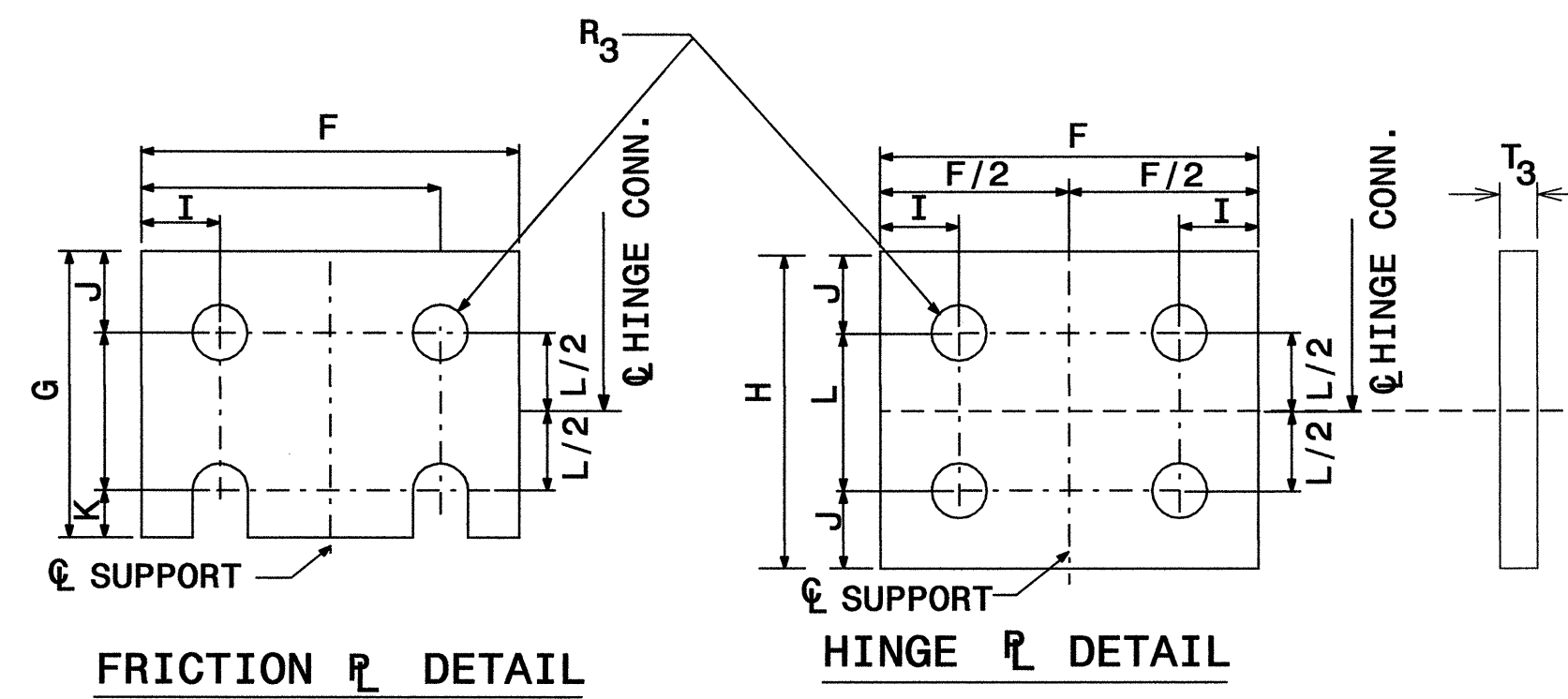
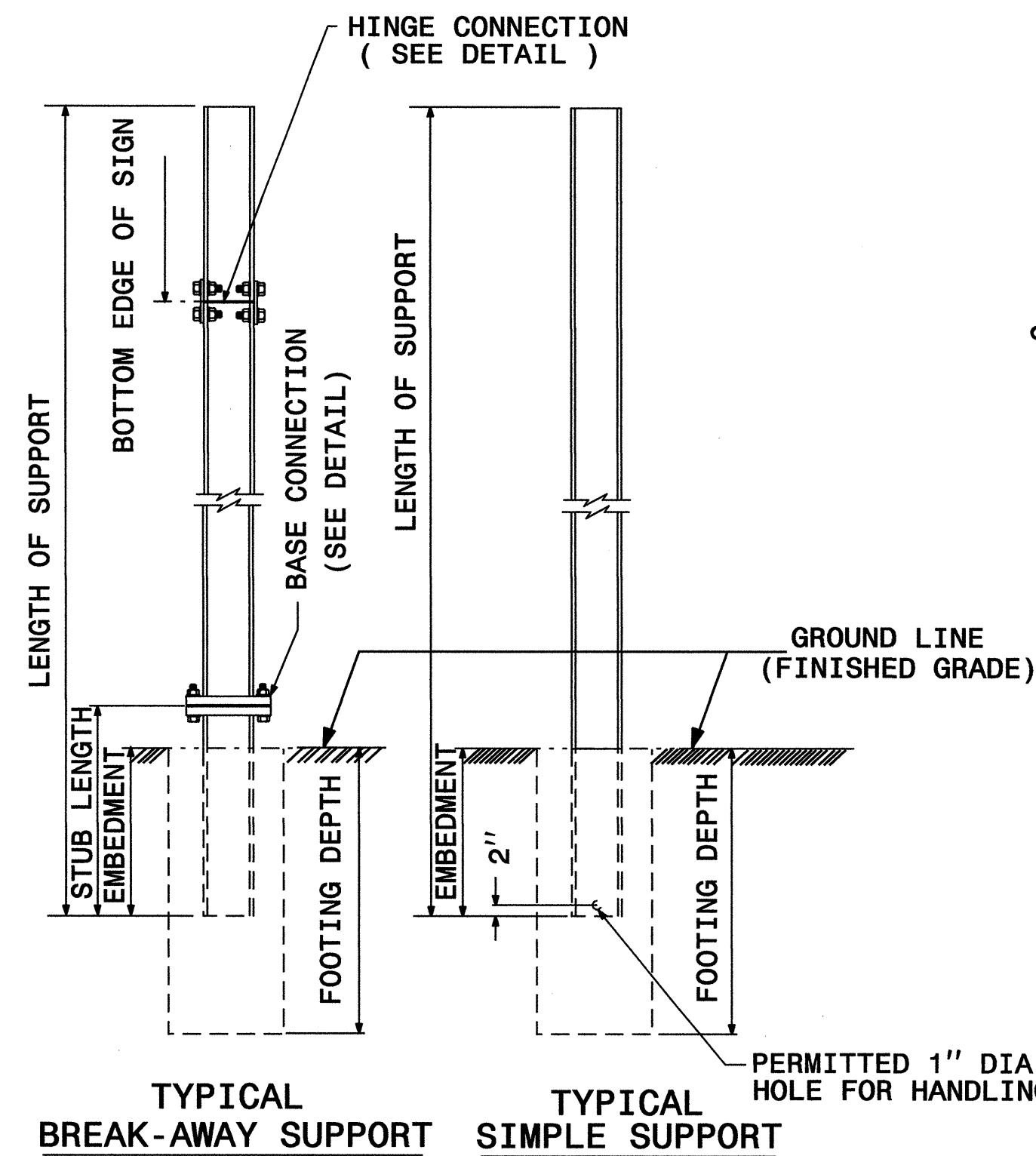
BACKING PLATE DETAIL



1. THE SUPPORT MOUNTING DETAIL SHOWS A "W" OR "S" BEAM. THIS DETAIL IS ALSO USED FOR MOUNTING SIGNS TO WOOD OR SQUARE TUBE SUPPORTS.
2. USE GALVANIZED STEEL FOR BACKING PLATES AND MOUNTING BOLTS IN ACCORDANCE WITH ASTM A123.
3. SEE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES FOR TYPE OF MATERIAL TO BE USED FOR SIGN HANGER ASSEMBLIES AND SUPPORTS.
4. USE GALVANIZED STEEL FOR MOUNTING BOLTS AND THREADED RODS IN COMPLIANCE WITH ASTM A307 AND ASTM A153.

SIGN MOUNTING DETAILS

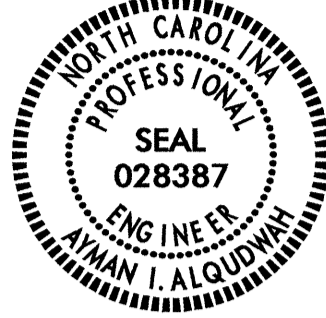
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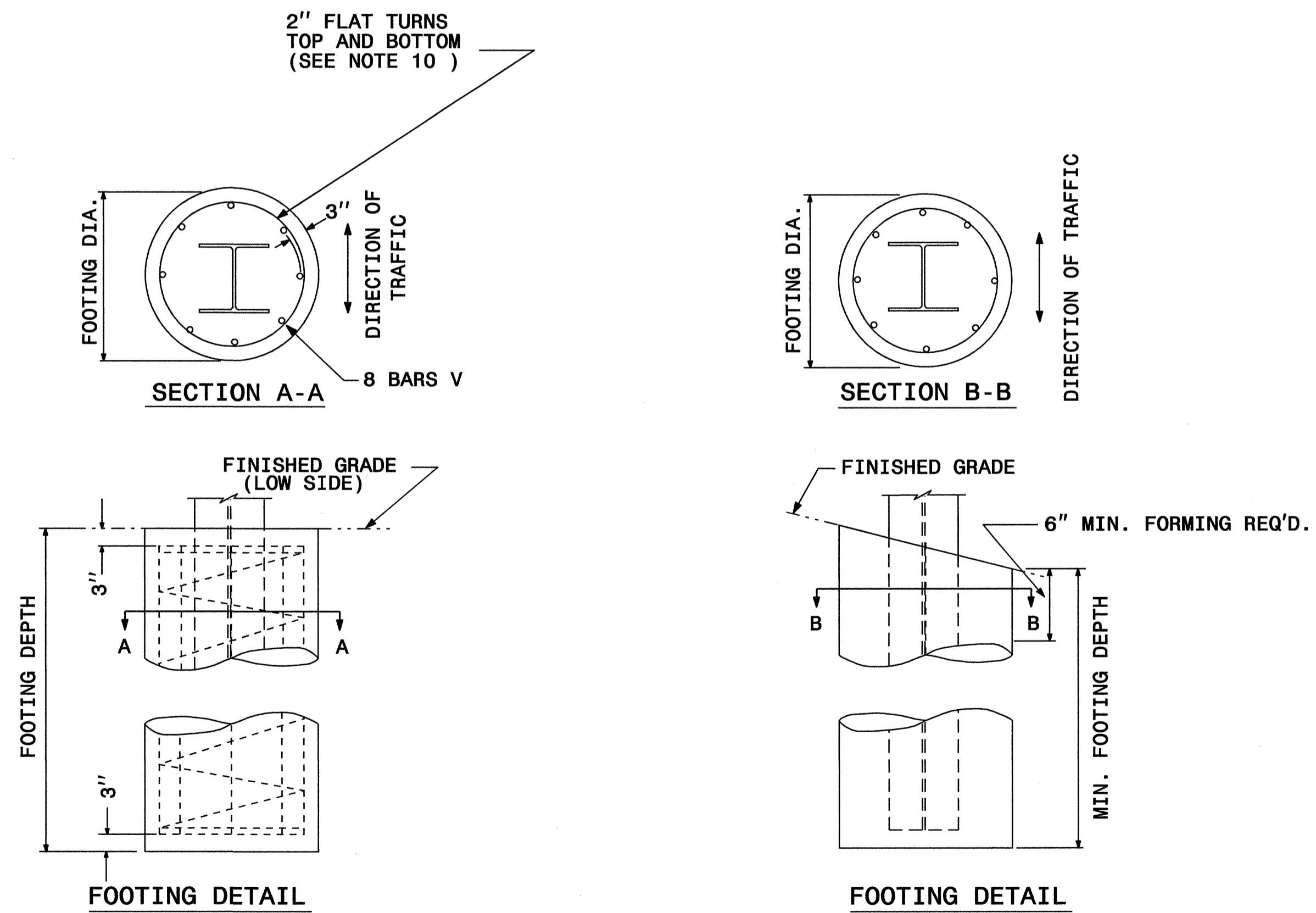
SEE SHEET SIGN-6 FOR DIMENSIONS.
SEE SHEET SIGN-7 FOR NOTES.

GROUND MOUNTED SIGN SUPPORT

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TIP NO. R-2248H	SHEET NO. SIGN-6
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BEAM SHAPE	SLIP BASE PLATE DATA								KEEPER PLATE DATA							HINGE CONNECTION DATA							BREAK AWAY SUPPORT WEIGHT CONSTANT LBS.			
	BOLT SIZE	A ₁	B ₁	C ₁	D ₁	E ₁	T ₁	R ₁	A ₂	B ₂	C ₂	D ₂	E ₂	R ₂	T ₂	BOLT SIZE	F	G	H	I	J	K		L	R ₃	T ₃
S3X5.7	1/2"DIA. X 3"	7"	4"	1"	3/4"	2 1/2"	1"	9/32"	7"	4"	1"	3/4"	2 1/2"	9/32"	28 GAUGE	1/2"DIA. X 1 1/4"	2 1/4"	3 1/2"	4"	1 1/2"	1"	1 1/2"	2"	9/32"	3/8"	18
S4X7.7	1/2"DIA. X 3"	8"	4"	1"	3/4"	2 1/2"	1"	9/32"	8"	4"	1"	3/4"	2 1/2"	9/32"	28 GAUGE	1/2"DIA. X 1 1/4"	2 5/8"	3 1/2"	4"	1 1/2"	1"	1 1/2"	2"	9/32"	3/8"	20
W6X9	1/2"DIA. X 3"	10"	5"	1"	3/4"	3 1/2"	1"	9/32"	10"	5"	1"	3/4"	3 1/2"	9/32"	28 GAUGE	1/2"DIA. X 1 1/4"	4"	3 1/2"	4"	3/4"	1"	1 1/2"	2"	9/32"	3/8"	32
W6X12	5/8"DIA. X 3 3/4"	11"	5"	1 1/4"	7/8"	3 1/4"	1 1/4"	1 1/32"	11"	5"	1 1/4"	7/8"	3 1/4"	1 1/32"	28 GAUGE	5/8"DIA. X 2 1/4"	4"	4"	4 1/2"	3/4"	1 1/8"	5/8"	2 1/4"	1 1/32"	3/8"	39
W6X16	5/8"DIA. X 3 3/4"	12"	6"	1 1/4"	7/8"	4 1/4"	1 1/2"	1 1/32"	12"	6"	1 1/4"	7/8"	4 1/4"	1 1/32"	28 GAUGE	5/8"DIA. X 2 1/2"	4"	4"	4 1/2"	3/4"	1 1/8"	5/8"	2 1/4"	1 1/32"	1/2"	47
W8X18	5/8"DIA. X 4 1/4"	13 1/2"	6 1/2"	1 1/4"	7/8"	4 3/4"	1 1/2"	1 1/32"	13 1/2"	6 1/2"	1 1/4"	7/8"	4 3/4"	1 1/32"	28 GAUGE	5/8"DIA. X 2 1/2"	5 1/4"	4"	4 1/2"	1"	1 1/8"	5/8"	2 1/4"	1 1/32"	1/2"	70
W8X21	3/4"DIA. X 4 1/4"	14"	7"	1 1/2"	1"	5"	1 1/2"	1 3/32"	14"	7"	1 1/2"	1"	5"	1 3/32"	28 GAUGE	3/4"DIA. X 2 3/4"	5 1/4"	6"	7"	1"	1 3/4"	3/4"	3 1/2"	1 3/32"	1/2"	73
W10X22	3/4"DIA. X 4 1/4"	16"	8"	1 1/2"	1"	6"	1 1/2"	1 3/32"	16"	8"	1 1/2"	1"	6"	1 3/32"	28 GAUGE	3/4"DIA. X 2 3/4"	5 3/4"	6"	7"	1"	1 3/4"	3/4"	3 1/2"	1 3/32"	1/2"	119
W10X26	3/4"DIA. X 4 3/4"	16 1/2"	8"	1 1/2"	1"	6"	1 3/4"	1 3/32"	16 1/2"	8"	1 1/2"	1"	6"	1 3/32"	28 GAUGE	3/4"DIA. X 2 3/4"	5 3/4"	6"	7"	1"	1 3/4"	3/4"	3 1/2"	1 3/32"	5/8"	140
W12X26	3/4"DIA. X 4 3/4"	18 1/2"	9"	1 1/2"	1"	7"	1 3/4"	1 3/32"	18 1/2"	9"	1 1/2"	1"	7"	1 3/32"	28 GAUGE	3/4"DIA. X 2 3/4"	6 1/2"	6"	7"	1"	1 3/4"	3/4"	3 1/2"	1 3/32"	5/8"	176
W14X30	1"DIA. X 5"	22"	9"	2"	1 1/2"	6"	2"	1 7/32"	22"	9"	2"	1 1/2"	6"	1 7/32"	28 GAUGE	1"DIA. X 3"	6 3/4"	7"	8"	1 1/4"	2"	1"	4"	1 7/32"	5/8"	205
W16X31	1"DIA. X 5"	24"	9"	2"	1 1/2"	6"	2"	1 7/32"	24"	9"	2"	1 1/2"	6"	1 7/32"	28 GAUGE	1"DIA. X 3 1/4"	5 1/2"	7"	8"	1 1/4"	2"	1"	4"	1 7/32"	3/4"	223
W18X35	1"DIA. X 5"	25"	9"	2"	1 1/2"	6"	2"	1 7/32"	25"	9"	2"	1 1/2"	6"	1 7/32"	28 GAUGE	1"DIA. X 3 1/4"	6"	7"	8"	1 1/4"	2"	1"	4"	1 7/32"	3/4"	243
W18X40	1"DIA. X 5 1/2"	26"	9"	2"	1 1/2"	6"	2 1/4"	1 7/32"	26"	9"	2"	1 1/2"	6"	1 7/32"	28 GAUGE	1"DIA. X 3 3/4"	6"	7"	8"	1 1/4"	2"	1"	4"	1 7/32"	7/8"	278
W21X44	1"DIA. X 5 1/2"	29"	9"	2"	1 1/2"	6"	2 1/2"	1 7/32"	29"	9"	2"	1 1/2"	6"	1 7/32"	28 GAUGE	1"DIA. X 3 3/4"	6 1/2"	7"	8"	1 1/4"	2"	1"	4"	1 7/32"	7/8"	310



FOUNDATION DATA *		
FOOTING DIAMETER	REINFORCEMENT	SPIRAL BAR
1' 6"	8 # 6 BARS	#3 BAR, 3" PITCH
2'	8 # 7 BARS	#3 BAR, 3" PITCH
2' 6"	8 # 9 BARS	#3 BAR, 3" PITCH
3'	8 # 11 BARS	#3 BAR, 3" PITCH
3' 6"	8 # 12 BARS	#3 BAR, 3" PITCH
4'	8 # 14 BARS	#3 BAR, 3" PITCH

* FOUNDATION DIMENSIONS ARE SHOWN IN PLANS
SEE SHEET SIGN-7 FOR NOTES.

GROUND MOUNTED SIGN SUPPORT

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NOTES:


- DESIGN CONFORMS WITH THE SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS - A.A.S.H.T.O.
- USE MATERIALS, FABRICATE AND ERECT SIGNS AND SUPPORTS THAT CONFORM TO THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- USE HIGH STRENGTH BOLTS, NUTS AND WASHERS THAT CONFORM TO A.S.T.M. A-325 AND THAT ARE GALVANIZED IN ACCORDANCE WITH A.S.T.M. A-153.
- USE BACKING PLATES, SLIP BASE PLATES, FRICTION PLATES, AND HINGE PLATES THAT CONFORM TO A.S.T.M. A-36 AND THAT ARE GALVANIZED IN ACCORDANCE WITH A.S.T.M. A-123 PRIOR TO GALVANIZING, GRIND SMOOTH ANY METAL PROJECTION BEYOND THE PLATE FACE. KEEPER PLATES SHALL BE MANUFACTURED FROM 28 GAUGE SHEET STEEL THAT CONFORMS TO A.S.T.M. A-36 AND IS GALVANIZED IN ACCORDANCE WITH A.S.T.M. A-123
- ASSEMBLE HINGE CONNECTIONS IN THE SHOP. SHOP TIGHTEN BOLTS BY USE OF EITHER A CALIBRATED POWER WRENCH OR A MANUAL TORQUE WRENCH. TIGHTEN EACH HINGE CONNECTION BOLT TO 1/3 PAST SNUG.
- BASE PLATES DETAILS ARE FOR INSTALLATIONS ON THE RIGHT SHOULDER AND IN GORE AREAS.
- ASSEMBLE UPPER SUPPORT TO STUB AS SHOWN IN DETAIL. SLIP BASE PLATES SHALL BE FILLET WELDED ONTO POSTS ALL AROUND THE STRUCTURAL SHAPE SO AS TO INSURE NO LOSS OF STRENGTH. ASSEMBLE IN EITHER SHOP OR FIELD. 28 GAUGE KEEPER PLATE IS PLACED BETWEEN SLIP BASE PLATES TO PREVENT BOLT SLIPPING. TIGHTEN BOLTS TO THE FOLLOWING PRESCRIBED TORQUE:

BOLT DIAMETER	TORQUE (LB. FT.)
1/2"	9
5/8"	22
3/8"	37
1"	48

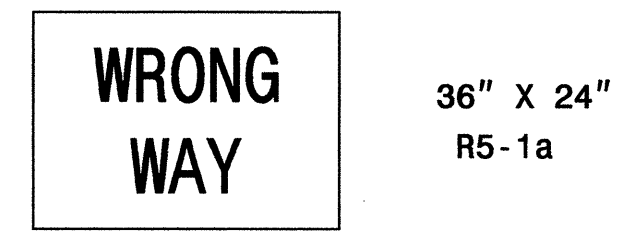
COMPLETELY ASSEMBLE B/A POSTS PRIOR TO ERECTION. B/A POST TO BE SET IN ONE PIECE. AFTER SUPPORT HAS BEEN ERECTED AND THE CONCRETE FOOTINGS HAS CURED AT LEAST 48 HRS., CLEAN CONCRETE FROM BASE CONNECTION BOLTS THEN LOOSEN AND RETIGHTEN EACH BOLT IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE. DO NOT OVERTIGHTEN. BURR ALL BOLT THREADS OF BASE CONNECTIONS TO PREVENT LOOSENING.

- USE REINFORCED FOOTINGS WITH DIMENSIONS AS SHOWN IN PLANS. WHERE SOLID ROCK IS ENCOUNTERED, THE ENGINEER DIRECTS WHETHER TO PLACE THE FOOTING AT THE PRESCRIBED DEPTH OR EXTEND IT AT LEAST TWO FEET INTO THE ROCK. CONSTRUCT ALL FOOTINGS OF CLASS A CONCRETE.
- FORM TOP 6" OF FOOTINGS. ENGINEER APPROVES THE METHOD USED.
- THE FINAL FLAT TURN OF SPIRAL OR HOOPS NO. 3 OR LARGER PLACED 3" FROM TOP AND BOTTOM OF FOOTING MAY BE WELDED TO VERTICAL REINFORCING BARS. NO OTHER WELDING WILL BE PERMITTED.
- ELIMINATE HINGE CONNECTION FOR ALL SINGLE SUPPORT SIGNS.
- DETAIL IS FOR ONE DIRECTION BREAKAWAY. WHEN PLANS REQUIRE A TWO DIRECTION BREAKAWAY, TWO FRICTION PLATES SHALL BE USED IN LIEU OF ONE FRICTION PLATE AND ONE HINGE PLATE.
- SHAPE THE TOPS OF THE FOOTINGS TO CONFORM WITH FINISHED GROUND ELEVATIONS SUCH THAT WATER WILL NOT COLLECT AGAINST THE SUPPORTS.
- IF THE GROUNDWATER IS ENCOUNTERED AT AN DEPTH SHALLOWER THAN 7 FEET, THE SIGN FOUNDATION MUST BE REDESIGNED BASED UPON THE ACTUAL FIELD CONDITIONS. THE FOUNDATION DESIGN DOES NOT APPLY TO VERY SOFT OR LOOSE SOIL, MUCK, WEATHERED ROCK, OR HARD ROCK.

GROUND MOUNTED SIGN SUPPORT

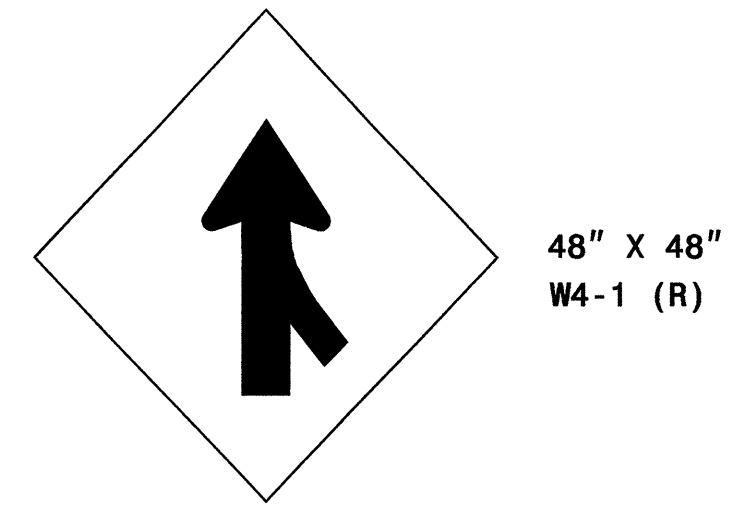
TIP NO. R-2248H	SHEET NO. SIGN-8
APPROVED: <i>[Signature]</i>	
DATE: 10/7/09	
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401 QUANTITY REQ'D 4



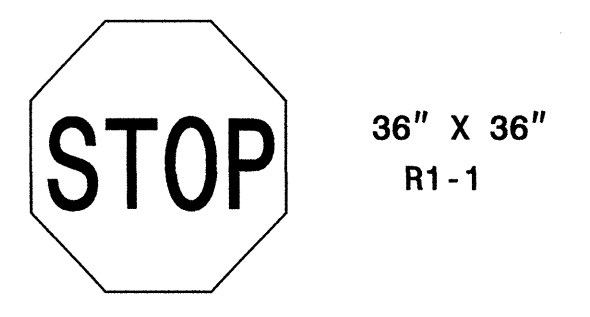
ONE "U" POST PER SIGN

406 QUANTITY REQ'D 2



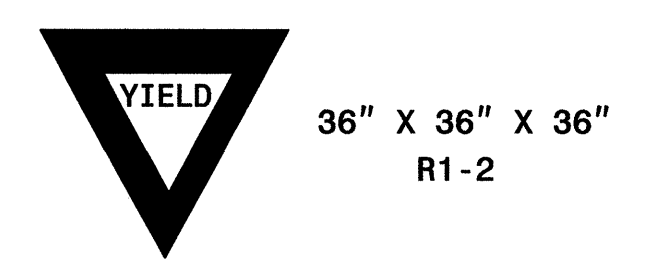
TWO "U" POSTS PER SIGN

402 QUANTITY REQ'D 4



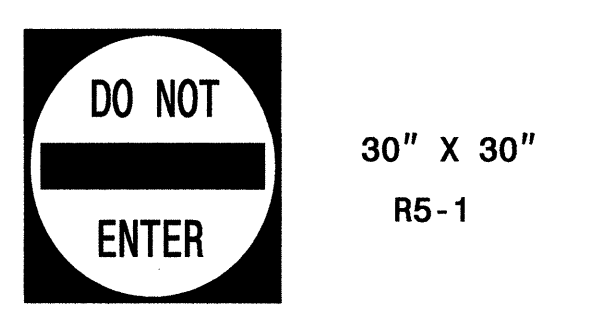
ONE "U" POST PER SIGN

407 QUANTITY REQ'D 1



ONE "U" POST PER SIGN

403 QUANTITY REQ'D 4



MOUNT BACK TO BACK WITH SIGN 402
IN 4 INSTALLATIONS

404 QUANTITY REQ'D 2



TWO "U" POSTS PER SIGN

405 QUANTITY REQ'D 2

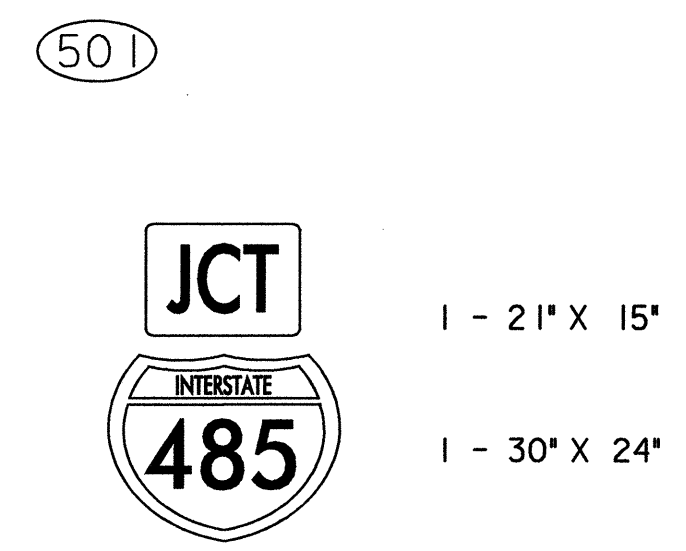
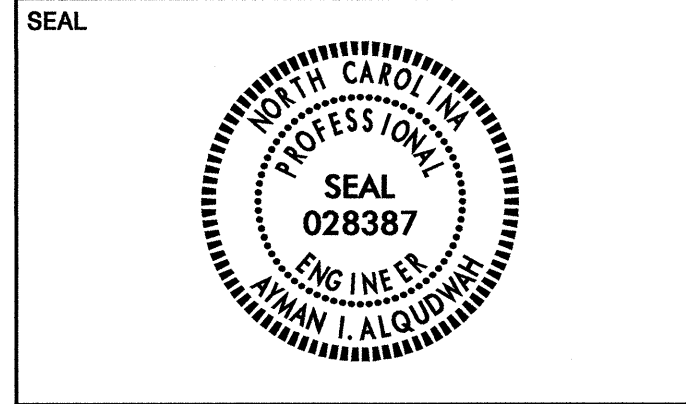


MOUNT BACK TO BACK WITH SIGN 404
IN 2 INSTALLATIONS

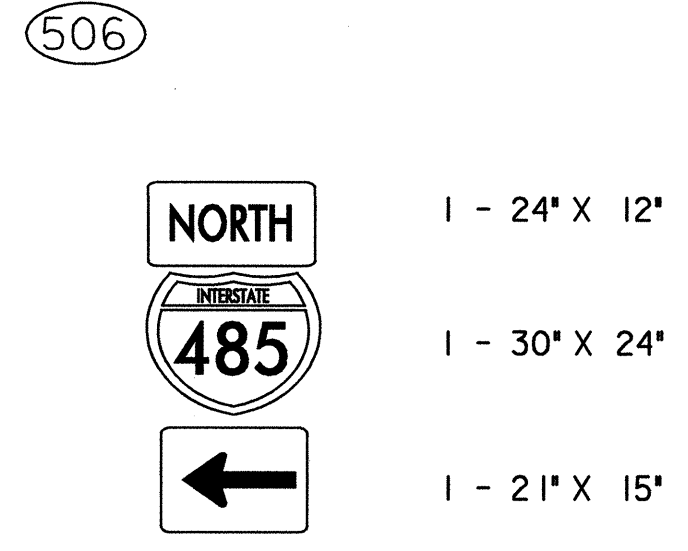
TYPE "E" SIGNS

07-OCT-2009 08:30
 p:\app\projects\2248h\Traffic\Signing\CADD\Signing Layout Plans\R-2248H_Sign_SGN_LEesign.dgn
 Walter Johnson AT TE24751B

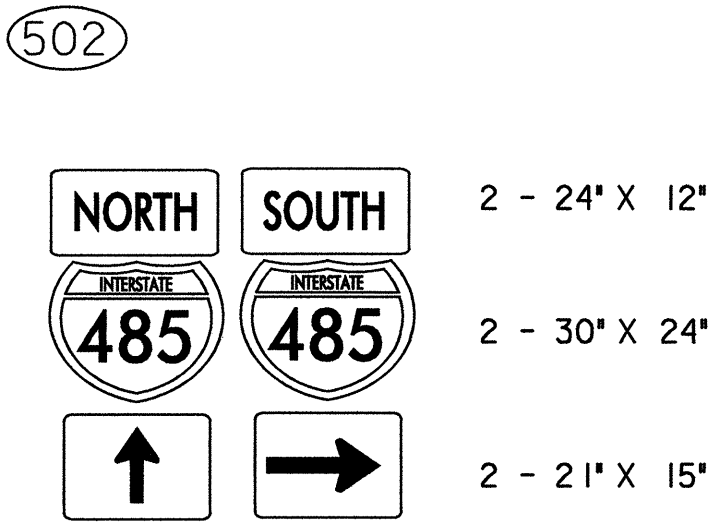
APPROVED: *[Signature]*
DATE: 10/7/09



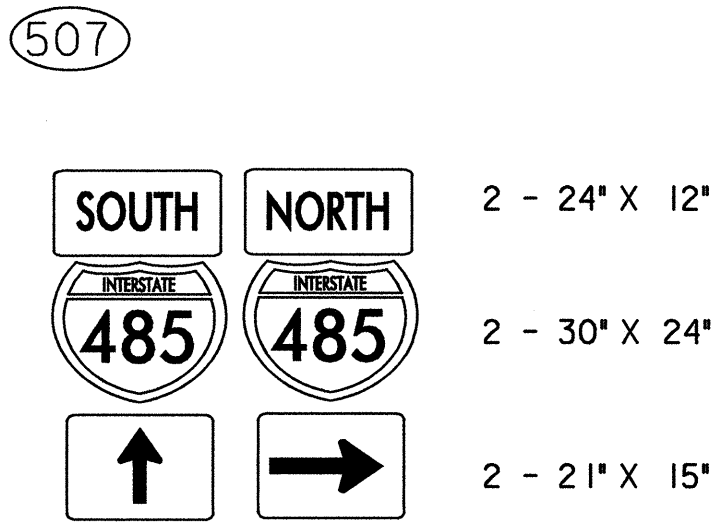
ONE "U" POST



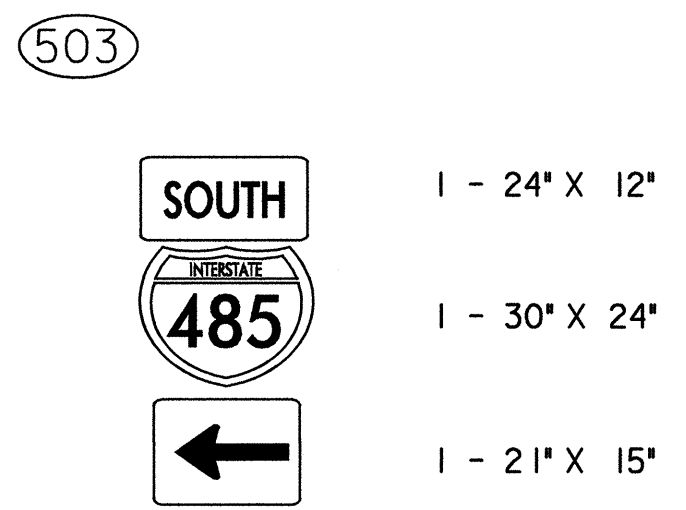
ONE "U" POST



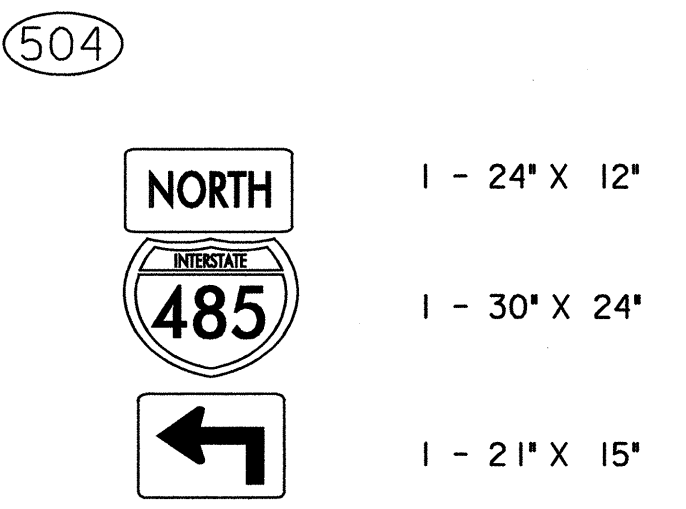
TWO "U" POSTS



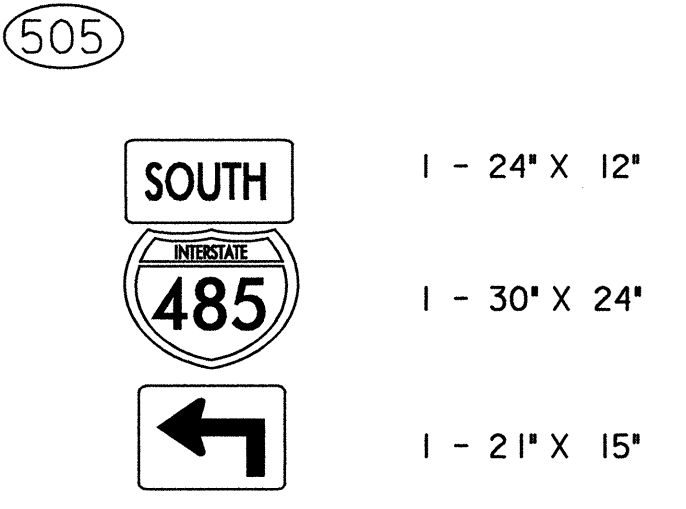
TWO "U" POSTS



ONE "U" POST



ONE "U" POST



ONE "U" POST

TYPE "F" SIGNS

07-OCT-2009 08:32
 p:\upper\projects\2248h\Tieoff\cadd\signing\Layout\Plans\VR-2248H-Sgn-SGN-F.sgn.dgn
 Walter Johnson AT 10/24/09



SIGN NUMBER: 101, 102 TYPE: A QUANTITY: 2 SIGN WIDTH: 11'-0" HEIGHT: 7'-0" TOTAL AREA: 77.0 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 2" RADII: 12" NO. Z BARS: 0 LENGTH: 124.0	BACKG COLOR: Green COPY COLOR: White SYMBOL X Y WID HT MAT'L: 0.125" (3.2 mm) ALUMINUM	DESIGN BY: DHB PROJECT ID: R-2248H CHECKED BY: DIV: 10 DATE: Sep 22, 2009
--	---	---

USE NOTES: 1,2

- Legend and border shall be direct applied Grade B sheeting.
- Background shall be Grade C reflective sheeting.
- Shields shall be on 0.032" (0.8mm) aluminum and demountable.
- Shields shall be Grade B sheeting.

Letter locations are panel edge to lower left corner												Series/Size
A	I	R	C	A	R	G	O					Text Length
14.6	31.3	39.3	45.9	59.3	72.6	86.7	95.4	108.3				EM 2000
											102.8	
C	E	N	T	E	R						EM 2000	
31.7	45	57.9	70.7	80.7	93.7						68.6	
E	X	I	T	6							E 2000	
42.9	50	58.6	61.4	79.4							46.2	

FILENAME: R-2248H_Sgn_GM signs NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 201, 202 TYPE: A QUANTITY: 2 SIGN WIDTH: 5'-0" HEIGHT: 5'-0" TOTAL AREA: 25.0 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 1.5" RADII: 8" NO. Z BARS: 2 LENGTH: 52.0	BACKG COLOR: Green COPY COLOR: White SYMBOL X Y WID HT ARMED 31 6 18.8 29.6 MAT'L: 0.125" (3.2 mm) ALUMINUM	DESIGN BY: DHB PROJECT ID: R-2248H CHECKED BY: DIV: 10 DATE: Sep 22, 2009
---	---	---

USE NOTES: 1,2,3

- Legend and border shall be direct applied Grade B sheeting.
- Background shall be Grade C reflective sheeting.
- Shields shall be on 0.032" (0.8mm) aluminum and demountable.
- Shields shall be Grade B sheeting.

Letter locations are panel edge to lower left corner												Series/Size
E	X	I	T									Text Length
12.8	23.4	36.4	40.9									EM 2000
											37	
6											D 2000	
12.8											10.2	

FILENAME: R-2248H_Sgn_GM signs NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 301 TYPE: D QUANTITY: 1 SIGN WIDTH: 6'-0" HEIGHT: 2'-0" TOTAL AREA: 12.0 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 0.75" RADII: 3" NO. Z BARS: LENGTH:	BACKG COLOR: Green COPY COLOR: White SYMBOL X Y WID HT ARUP 56.4 9 6 9 MAT'L: 0.125" (3.2 mm) ALUMINUM	DESIGN BY: DHB PROJECT ID: R-2248H CHECKED BY: DIV: 10 DATE: Sep 22, 2009
--	--	---

USE NOTES: 1,2

- Legend and border shall be direct applied Grade C sheeting.
- Background shall be Grade C reflective sheeting.

Letter locations are panel edge to lower left corner												Series/Size
A	I	R	C	A	R	G	O					Text Length
6.6	12.6	15	19	25	29.9	35.9	40.9	46.2				D 2000
											43.9	
C	E	N	T	E	R						D 2000	
14.2	19.6	24.4	29.3	34	38.7						28.6	

FILENAME: R-2248H_Sgn_GM signs NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 302 TYPE: D QUANTITY: 1 SIGN WIDTH: 6'-0" HEIGHT: 2'-0" TOTAL AREA: 12.0 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 0.75" RADII: 3" NO. Z BARS: LENGTH:	BACKG COLOR: Green COPY COLOR: White SYMBOL X Y WID HT ARUP 6.6 9 6 9 MAT'L: 0.125" (3.2 mm) ALUMINUM	DESIGN BY: DHB PROJECT ID: R-2248H CHECKED BY: DIV: 10 DATE: Sep 22, 2009
--	---	---

USE NOTES: 1,2

- Legend and border shall be direct applied Grade C sheeting.
- Background shall be Grade C reflective sheeting.

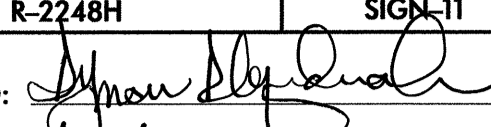

Letter locations are panel edge to lower left corner												Series/Size
A	I	R	C	A	R	G	O					Text Length
21.6	27.6	30	34.1	40.1	44.9	50.9	55.9	61.2				D 2000
											43.9	
C	E	N	T	E	R						D 2000	
29.2	34.6	39.4	44.3	49	53.7						28.6	

FILENAME: R-2248H_Sgn_GM signs NORTH CAROLINA D.O.T. SIGN DETAIL

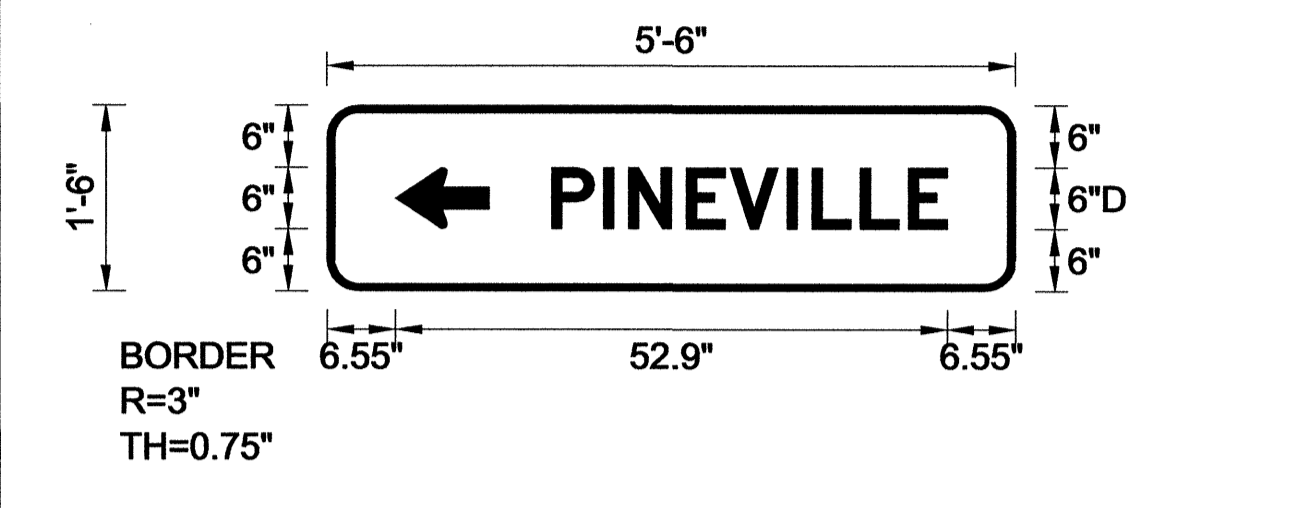
SIGN DESIGNS

07-OCT-2009 08:28
 p:\upproj\projects\R-2248H\Sign_Designs\CA00\Sign_Designs\R-2248H_Sgn_GM_signs.dgn
 walterjohnson AT 10/17/09

waj 3 way check 10/06/09

TIP NO. R-2248H	SHEET NO. SIGN-11
APPROVED: 	
DATE: 10/17/09	
SEAL	
	

SIGN NUMBER: 303 TYPE: D QUANTITY: 1 SIGN WIDTH: 5'-6" HEIGHT: 1'-6" TOTAL AREA: 8.3 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 0.75" RADIUS: 3" NO. Z BARS: LENGTH:	BACKG COLOR: Green COPY COLOR: White SYMBOL X Y WID HT ARUP 6.5 6 6 9	DESIGN BY: DHB PROJECT ID: R-2248H CHECKED BY: DIV: 10 DATE: Sep 23, 2009
--	--	---



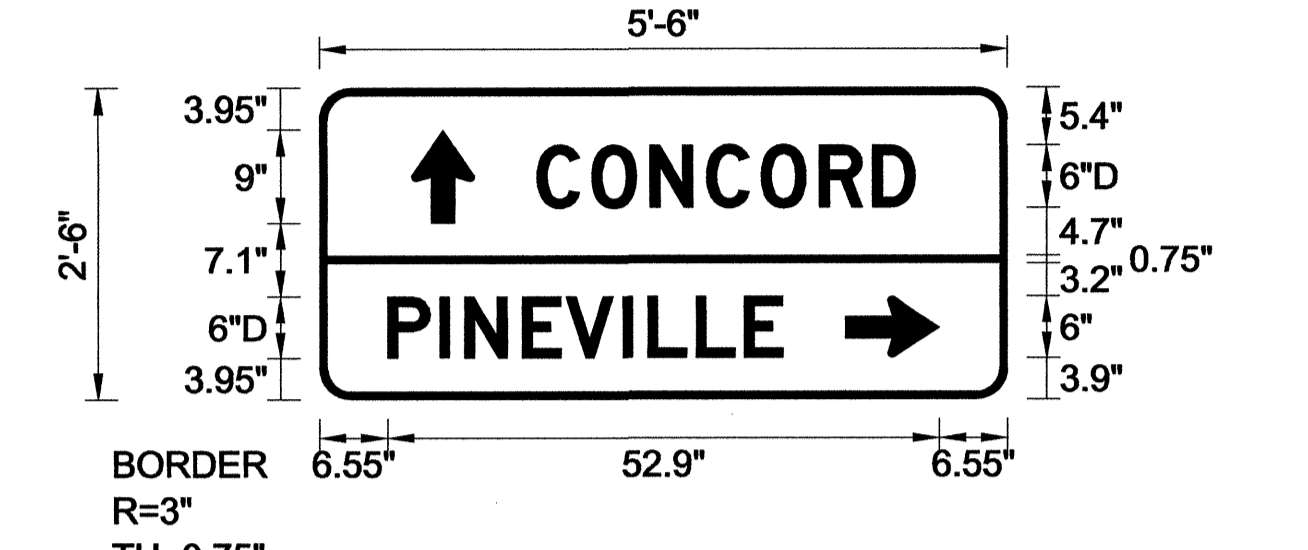
BORDER R=3" TH=0.75"

Spacing Factor is 1 unless specified otherwise

Letter locations are panel edge to lower left corner											Series/Size Text Length
P	I	N	E	V	I	L	L	E			D 2000 37.9
21.5	26.5	28.9	34.4	38.6	44.1	46.5	51.1	55.7			

FILENAME: r-2248h_sgn_gm signs NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 304 TYPE: D QUANTITY: 1 SIGN WIDTH: 5'-6" HEIGHT: 2'-6" TOTAL AREA: 13.8 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 0.75" RADIUS: 3" NO. Z BARS: LENGTH:	BACKG COLOR Green/Green COPY COLOR: White SYMBOL X Y WID HT ARUP 8.9 17.1 6 9 ARUP 50.5 3.9 6 9	DESIGN BY: DHB PROJECT ID: R-2248H CHECKED BY: DIV: 10 DATE: Sep 23, 2009
---	---	---



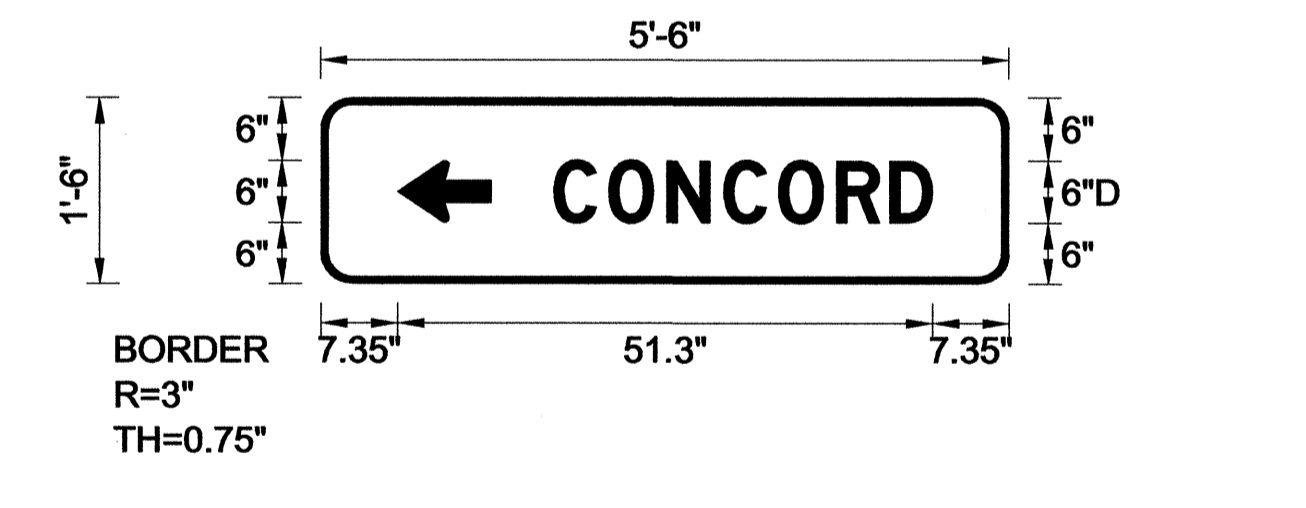
BORDER R=3" TH=0.75"

Spacing Factor is 1 unless specified otherwise

Letter locations are panel edge to lower left corner											Series/Size Text Length
C	O	N	C	O	R	D					D 2000 36.3
20.9	26.1	31.7	37.1	42.4	48	53.1					
P	I	N	E	V	I	L	L	E			D 2000 37.9
6.5	11.5	13.9	19.4	23.6	29.1	31.5	36.1	40.7			

FILENAME: r-2248h_sgn_gm signs NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 305 TYPE: D QUANTITY: 1 SIGN WIDTH: 5'-6" HEIGHT: 1'-6" TOTAL AREA: 8.3 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 0.75" RADIUS: 3" NO. Z BARS: LENGTH:	BACKG COLOR: Green COPY COLOR: White SYMBOL X Y WID HT ARUP 7.3 6 6 9	DESIGN BY: DHB PROJECT ID: R-2248H CHECKED BY: DIV: 10 DATE: Sep 23, 2009
--	--	---



BORDER R=3" TH=0.75"

Spacing Factor is 1 unless specified otherwise

Letter locations are panel edge to lower left corner											Series/Size Text Length
C	O	N	C	O	R	D					D 2000 36.3
22.4	27.6	33.2	38.6	43.9	49.5	54.6					

FILENAME: r-2248h_sgn_gm signs NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN DESIGNS

07 OCT 2009 08:23 C:\Users\wjohnson\Documents\Sign Designs\R-2248H-Sgn-GM signs.dgn

wrg sway check 10/16/09

TIP NO. R-2248H	SHEET NO. SIGN-12
APPROVED: <i>[Signature]</i>	
DATE: 10/12/09	
SEAL	

SIGN NUMBER: 801A, 802A, 803A TYPE: B QUANTITY: 6 SIGN WIDTH: 6'-10" HEIGHT: 2'-6" TOTAL AREA: 17.1 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 0" RADII: 0" NO. Z BARS: 2 LENGTH: 148.0 USE NOTES: 1. Legend and border shall be direct applied Grade A sheeting. 2. Background shall be Grade C reflective sheeting.	BACKG COLOR: Green COPY COLOR: White SYMBOL X Y WID HT MAT'L: 0.125" (3.2 mm) ALUMINUM	DESIGN BY: DHB PROJECT ID: R-2248H CHECKED BY: DIV: 10 DATE: Oct 07, 2009
--	---	--

BORDER R=6" TH=2" Spacing Factor is 1 unless specified otherwise

Letter locations are panel edge to lower left corner						Series/Size
E	X	I	T	6		Text Length
12.1	21	31.7	35.2	57.7		E 2000 57.8

FILENAME: r-2248h_sgn_0h signs NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 802B TYPE: A QUANTITY: 1 SIGN WIDTH: 13'-0" HEIGHT: 5'-0" TOTAL AREA: 65.0 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 2" RADII: 9" NO. Z BARS: 2 LENGTH: 148.0 USE NOTES: 1,2 1. Legend and border shall be direct applied Grade A sheeting. 2. Background shall be Grade C reflective sheeting. 3. Shields shall be on 0.032" (0.8mm) aluminum and demountable. 4. Shields shall be Grade A sheeting. 5. Bottom panel shall be yellow Grade C sheeting. Legend shall be direct applied black non-reflective sheeting. Yellow panel is:	BACKG COLOR: Green COPY COLOR: White SYMBOL X Y WID HT MAT'L: 0.125" (3.2 mm) ALUMINUM	DESIGN BY: DHB PROJECT ID: R-2248H CHECKED BY: DIV: 10 DATE: Oct 07, 2009
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BORDER R=9" TH=2" Spacing Factor is 1 unless specified otherwise

Letter locations are panel edge to lower left corner											Series/Size
W	e	s	t	B	l	v	d				Text Length
16.6	36	49.8	63.7	72	88	105.4	113.3	128.8			EM 2000 122.7
1/2	M	I	L	E							E 2000 70.1
43	79.9	91.9	96.3	105.5							

FILENAME: r-2248h_sgn_0h signs NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 801B TYPE: A QUANTITY: 1 SIGN WIDTH: 13'-0" HEIGHT: 5'-6" TOTAL AREA: 71.5 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 2" RADII: 9" NO. Z BARS: 2 LENGTH: 148.0 USE NOTES: 1,2 1. Legend and border shall be direct applied Grade A sheeting. 2. Background shall be Grade C reflective sheeting. 3. Shields shall be on 0.032" (0.8mm) aluminum and demountable. 4. Shields shall be Grade A sheeting. 5. Bottom panel shall be yellow Grade C sheeting. Legend shall be direct applied black non-reflective sheeting. Yellow panel is:	BACKG COLOR: Green COPY COLOR: White SYMBOL X Y WID HT MAT'L: 0.125" (3.2 mm) ALUMINUM	DESIGN BY: DHB PROJECT ID: R-2248H CHECKED BY: DIV: 10 DATE: Oct 07, 2009
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BORDER R=9" TH=2" Spacing Factor is 1 unless specified otherwise

Letter locations are panel edge to lower left corner											Series/Size
W	e	s	t	B	l	v	d				Text Length
16.6	36	49.8	63.7	72	88	105.4	113.3	128.8			EM 2000 122.7
1	3/4	M	I	L	E	S					E 2000 94.6
30.7	42.7	62.7	94.7	99.1	108.3	117.2					

FILENAME: r-2248h_sgn_0h signs NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 803B, 808B TYPE: A QUANTITY: 2 SIGN WIDTH: 16'-0" HEIGHT: 3'-6" TOTAL AREA: 56.0 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 2" RADII: 6" NO. Z BARS: 2 LENGTH: 184.0 USE NOTES: 1,2 1. Legend and border shall be direct applied Grade A sheeting. 2. Background shall be Grade C reflective sheeting. 3. Shields shall be on 0.032" (0.8mm) aluminum and demountable. 4. Shields shall be Grade A sheeting. 5. Bottom panel shall be yellow Grade C sheeting. Legend shall be direct applied black non-reflective sheeting. Yellow panel is:	BACKG COLOR: Green COPY COLOR: White SYMBOL X Y WID HT ANSHRT 155.3 10.9 22.4 25.2 MAT'L: 0.125" (3.2 mm) ALUMINUM	DESIGN BY: DHB PROJECT ID: R-2248H CHECKED BY: DIV: 10 DATE: Oct 06, 2009
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BORDER R=6" TH=2" Spacing Factor is 1 unless specified otherwise

Letter locations are panel edge to lower left corner											Series/Size
W	e	s	t	B	l	v	d				Text Length
16.6	35.9	49.7	63.6	71.9	87.9	105.4	113.2	128.7			EM 2000 122.7

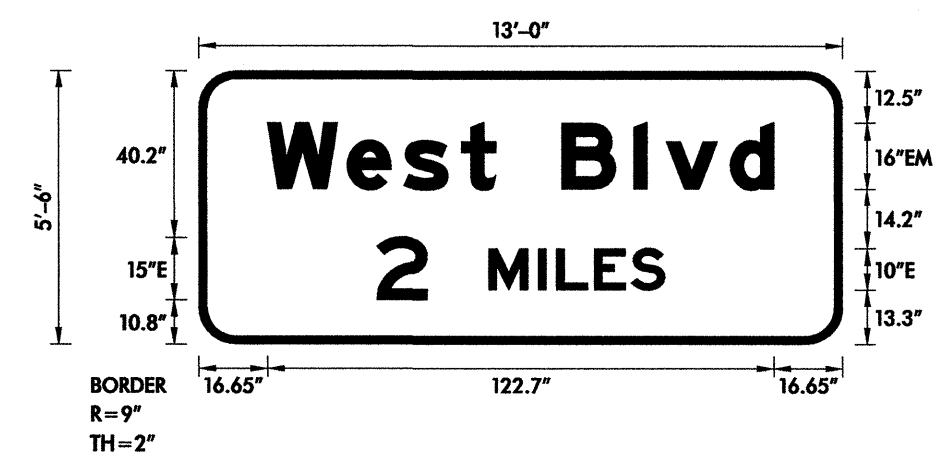
FILENAME: r-2248h_sgn_0h signs NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN DESIGN

12-OCT-2009 08:33
 r:\pref\signing\cadd\signing Layout Plans\Engineer.dgn
 dibeard

TIP NO. R-2248H	SHEET NO. SIGN-13
APPROVED: <i>[Signature]</i>	
DATE: 10/8/09	
SEAL	
	

SIGN NUMBER: 8048 TYPE: A QUANTITY: 1 SIGN WIDTH: 13'-0" HEIGHT: 5'-6" TOTAL AREA: 71.5 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 2" RADII: 9" NO. Z BARS: 2 LENGTH: 148.0	BACKG COLOR: Green COPY COLOR: White SYMBO: [Table with columns X, Y, WID, HT]	DESIGN BY: DHB PROJECT ID: R-2248H CHECKED BY: DIV: 10 DATE: Oct 07, 2009
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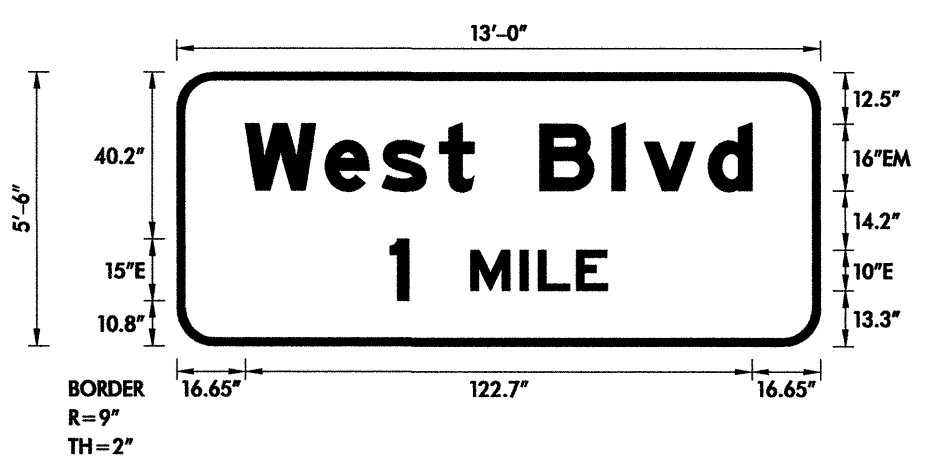


Spacing Factor is 1 unless specified otherwise

Letter locations are panel edge to lower left corner												Series/Size
W	e	s	t	B	i	v	d					Text Length
16.6	36	49.8	63.7	72	88	105.4	113.3	128.8				EM 2000
												122.7
2	M	I	L	E	S						E 2000	
43.1	70.3	82.3	86.7	88.9	104.8						69.8	

FILENAME: r-2248h_sgn_08.sigs NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 8058 TYPE: A QUANTITY: 1 SIGN WIDTH: 13'-0" HEIGHT: 5'-6" TOTAL AREA: 71.5 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0" WIDTH: 2" RADII: 9" NO. Z BARS: 2 LENGTH: 148.0	BACKG COLOR: Green COPY COLOR: White SYMBO: [Table with columns X, Y, WID, HT]	DESIGN BY: DHB PROJECT ID: R-2248H CHECKED BY: DIV: 10 DATE: Oct 07, 2009
---	--	--



Spacing Factor is 1 unless specified otherwise

Letter locations are panel edge to lower left corner												Series/Size
W	e	s	t	B	i	v	d					Text Length
16.6	36	49.8	63.7	72	88	105.4	113.3	128.8				EM 2000
												122.7
1	M	I	L	E	S						E 2000	
61.7	71.2	83.2	87.6	89.8						52.6		

FILENAME: r-2248h_sgn_09.sigs NORTH CAROLINA D.O.T. SIGN DETAIL

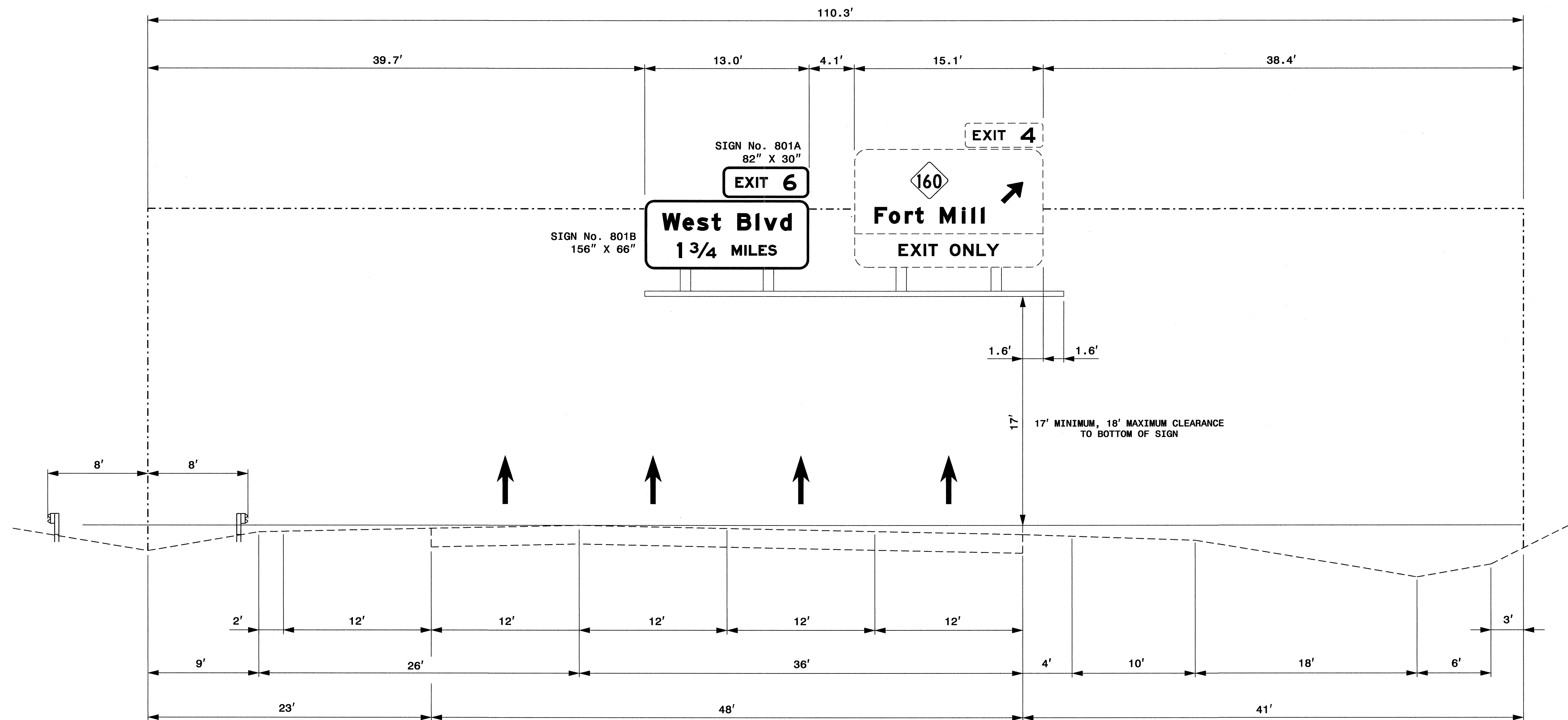
08 OCT 2009 09:47
 C:\Users\jbeard\Documents\Signing Layout Plans\Engseed.dgn
 jbeard

SIGN DESIGN

STATE	PROJECT NO.	SHEET NO.	TOTAL SHTS.
N.C.	R-2248H	SIGN-14	
APPROVED: <i>[Signature]</i>			
DATE: 10/8/09			
SEAL			

NOTES:

1. THE BOTTOM EDGE OF ALL SIGNS IN EACH ASSEMBLY SHOULD BE LOCATED ON A HORIZONTAL PLANE.
2. SIGN HANGERS AND ATTACHMENT HARDWARE SHALL BE PROVIDED AND INSTALLED ON THE ASSEMBLY TO ACCOMMODATE ALL SIGNS SHOWN IN THIS PLAN SHEET.



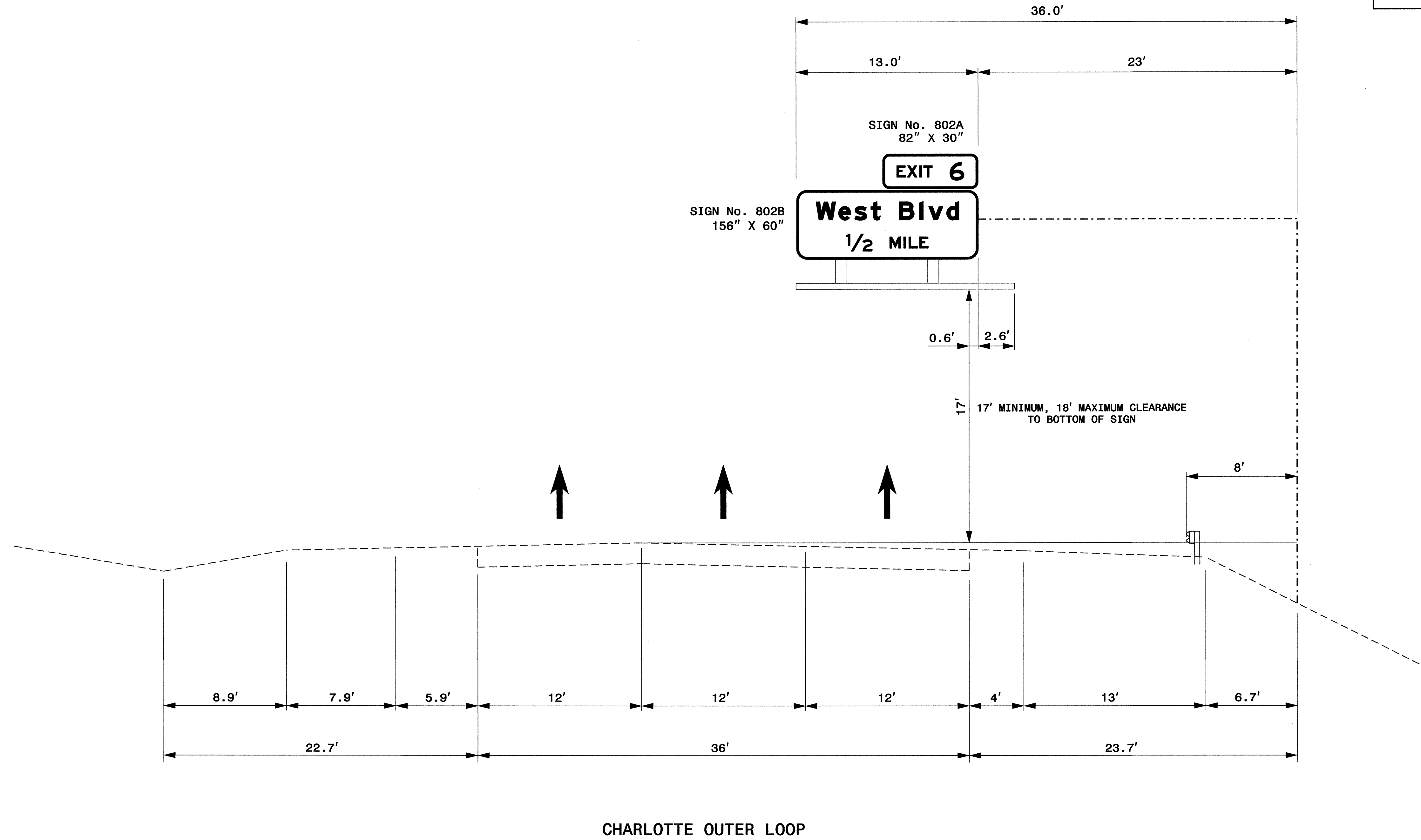
CHARLOTTE OUTER LOOP

EXISTING OVERHEAD SIGN ASSEMBLY 'AA'
 APPROXIMATELY 7480' FROM
 EXISTING OVERHEAD SIGN ASSEMBLY 'BB'

STATE	PROJECT NO.	SHEET NO.	TOTAL SHTS.
N.C.	R-2248H	SIGN-15	
APPROVED: <i>[Signature]</i>			
DATE: 10/8/09			
SEAL			

NOTES:

1. THE BOTTOM EDGE OF ALL SIGNS IN EACH ASSEMBLY SHOULD BE LOCATED ON A HORIZONTAL PLANE.
2. SIGN HANGERS AND ATTACHMENT HARDWARE SHALL BE PROVIDED AND INSTALLED ON THE ASSEMBLY TO ACCOMMODATE ALL SIGNS SHOWN IN THIS PLAN SHEET.



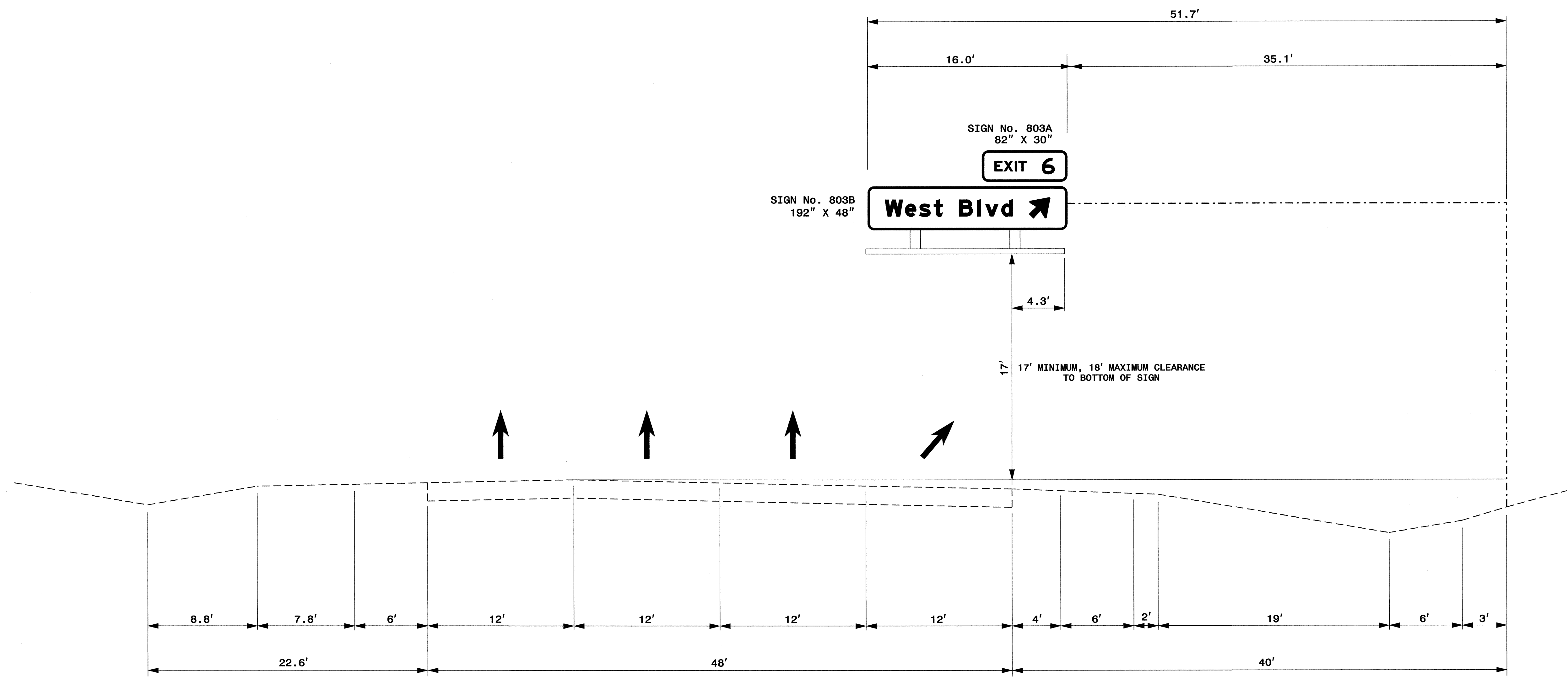
EXISTING OVERHEAD SIGN ASSEMBLY 'BB'
AT -L- STA. 318+90 +/-

STATE	PROJECT NO.	SHEET NO.	TOTAL SHTS.
N.C.	R-2248H	SIGN-16	
APPROVED: <i>[Signature]</i>			
DATE: 10/12/09			
SEAL			




NOTES:

1. THE BOTTOM EDGE OF ALL SIGNS IN EACH ASSEMBLY SHOULD BE LOCATED ON A HORIZONTAL PLANE.
2. SIGN HANGERS AND ATTACHMENT HARDWARE SHALL BE PROVIDED AND INSTALLED ON THE ASSEMBLY TO ACCOMMODATE ALL SIGNS SHOWN IN THIS PLAN SHEET.



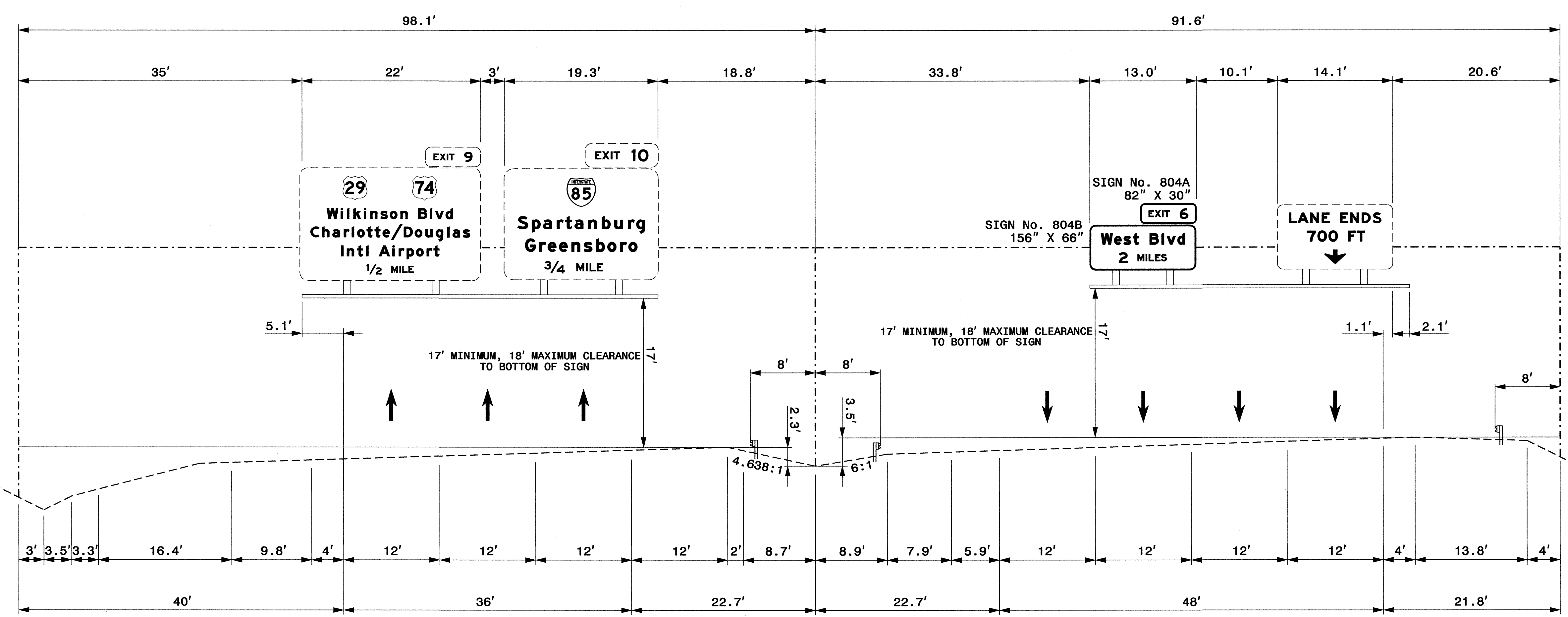
CHARLOTTE OUTER LOOP

EXISTING OVERHEAD SIGN ASSEMBLY 'CC'
AT -L- STA. 343+17 +/-

STATE	PROJECT NO.	SHEET NO.	TOTAL SHTS.
N.C.	R-2248H	SIGN-17	
APPROVED: <i>[Signature]</i>			
DATE: 10/8/09			
SEAL			
			

NOTES:

1. THE BOTTOM EDGE OF ALL SIGNS IN EACH ASSEMBLY SHOULD BE LOCATED ON A HORIZONTAL PLANE.
2. SIGN HANGERS AND ATTACHMENT HARDWARE SHALL BE PROVIDED AND INSTALLED ON THE ASSEMBLY TO ACCOMMODATE ALL SIGNS SHOWN IN THIS PLAN SHEET.



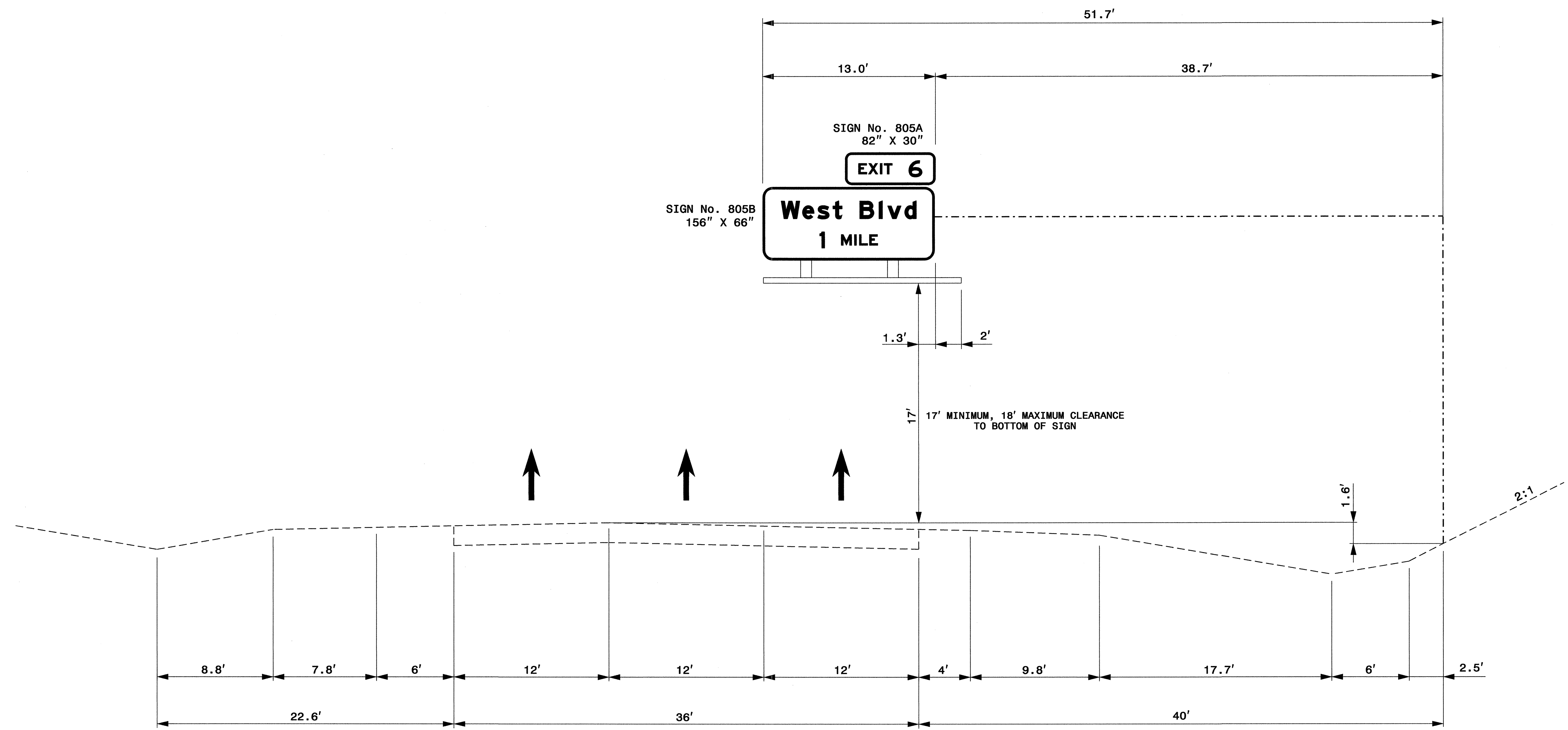
CHARLOTTE OUTER LOOP

EXISTING OVERHEAD SIGN ASSEMBLY 'DD'
 APPROXIMATELY 5446' FROM
 EXISTING OVERHEAD SIGN ASSEMBLY 'EE'

STATE	PROJECT NO.	SHEET NO.	TOTAL SHTS.
N.C.	R-2248H	SIGN-18	
APPROVED: <i>[Signature]</i>			
DATE: 10/8/09			
SEAL			

NOTES:

1. THE BOTTOM EDGE OF ALL SIGNS IN EACH ASSEMBLY SHOULD BE LOCATED ON A HORIZONTAL PLANE.
2. SIGN HANGERS AND ATTACHMENT HARDWARE SHALL BE PROVIDED AND INSTALLED ON THE ASSEMBLY TO ACCOMMODATE ALL SIGNS SHOWN IN THIS PLAN SHEET.



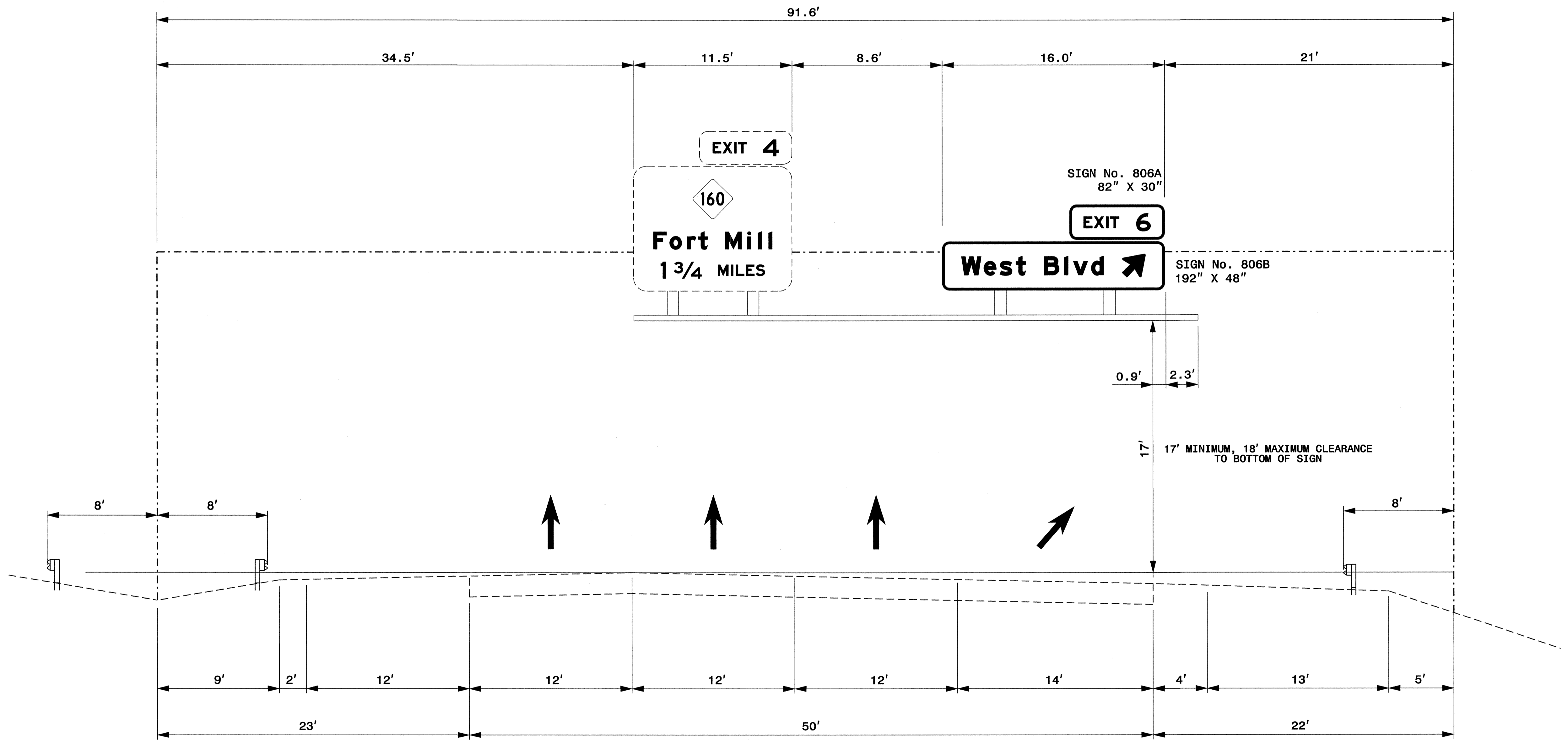
CHARLOTTE OUTER LOOP

EXISTING OVERHEAD SIGN ASSEMBLY 'EE'
 APPROXIMATELY 5280' FROM
 EXISTING OVERHEAD SIGN ASSEMBLY 'FF'

STATE	PROJECT NO.	SHEET NO.	TOTAL SHTS.
N.C.	R-2248H	SIGN-19	
APPROVED: <i>John Depledge</i>			
DATE: 10/12/09			
SEAL			

NOTES:

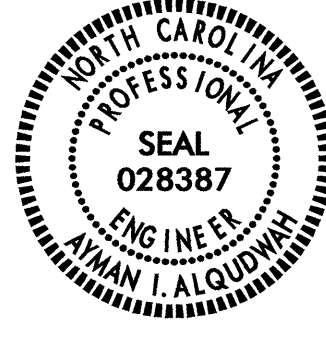
1. THE BOTTOM EDGE OF ALL SIGNS IN EACH ASSEMBLY SHOULD BE LOCATED ON A HORIZONTAL PLANE.
2. SIGN HANGERS AND ATTACHMENT HARDWARE SHALL BE PROVIDED AND INSTALLED ON THE ASSEMBLY TO ACCOMMODATE ALL SIGNS SHOWN IN THIS PLAN SHEET.

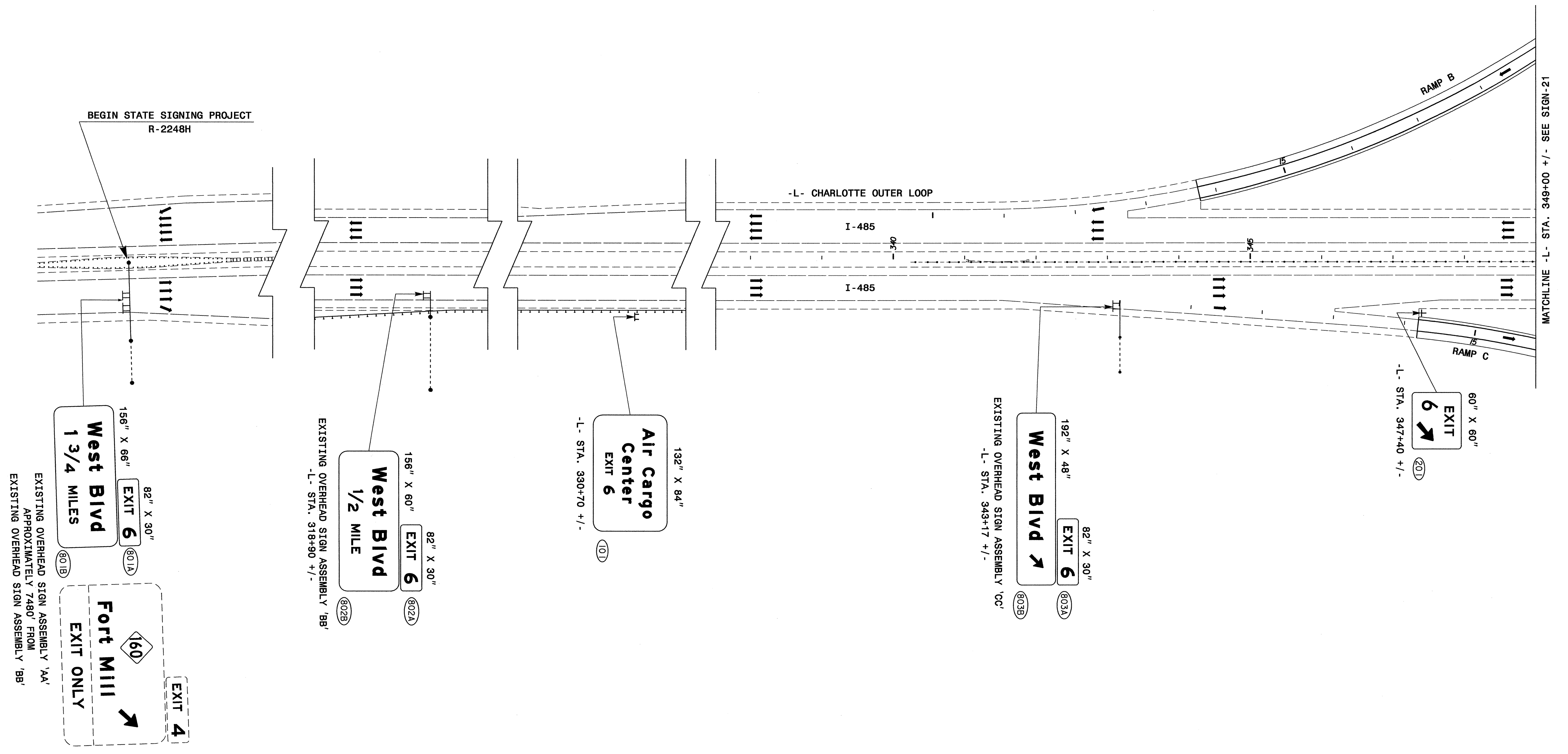
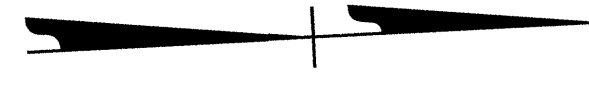


CHARLOTTE OUTER LOOP

EXISTING OVERHEAD SIGN ASSEMBLY 'FF'
AT -L- STA. 376+31 +/-


TIP NO. R-2248H	SHEET NO. SIGN-20
APPROVED: <i>[Signature]</i>	
DATE: 9/12/09	
SEAL	

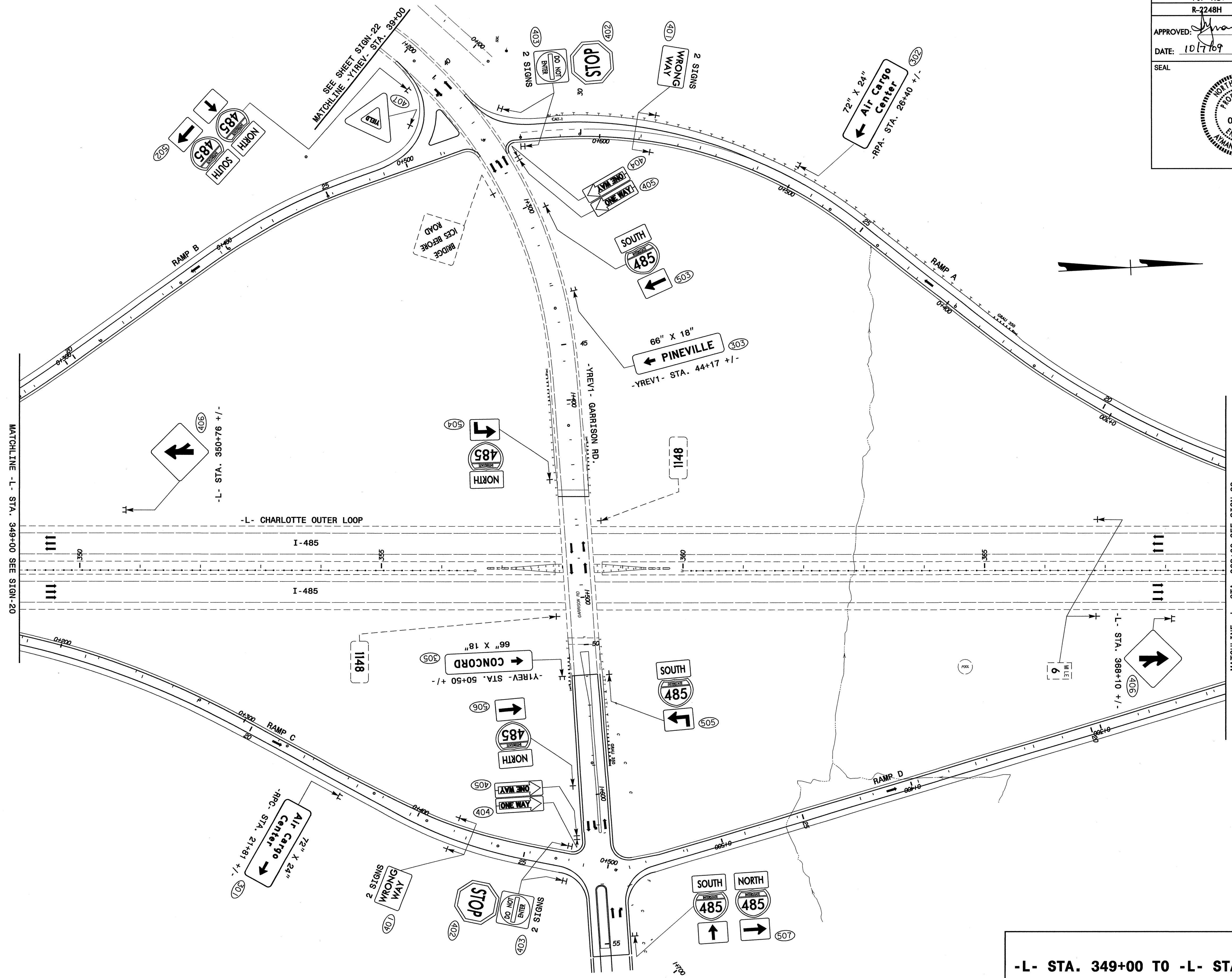




BEGIN PROJECT TO -L- STA. 349+00


12-OCT-2009 08:23
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 d:\beard

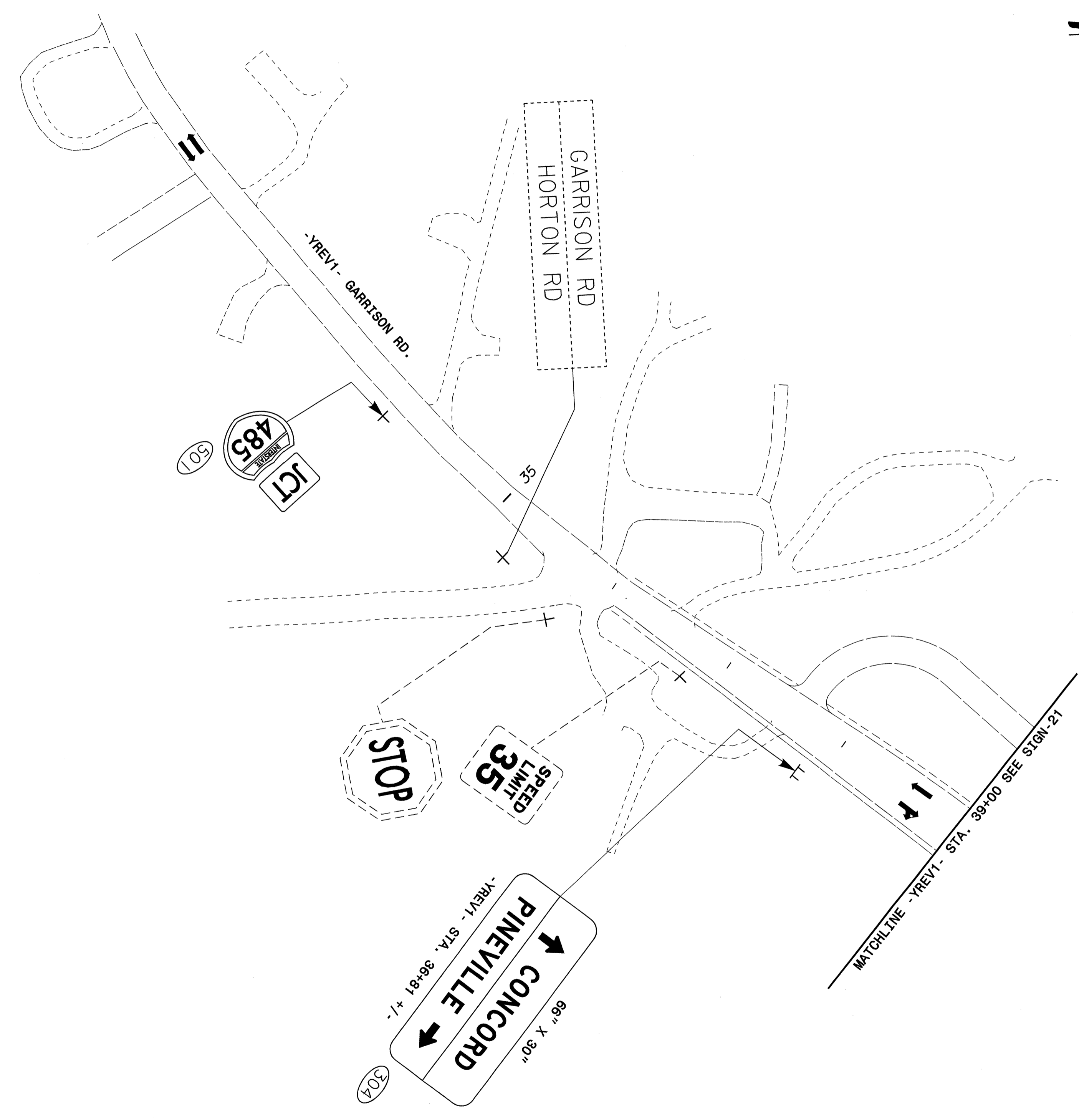
TIP NO. R-2248H	SHEET NO. SIGN-21
APPROVED: <i>[Signature]</i>	
DATE: 10/7/09	
SEAL	
	



-L- STA. 349+00 TO -L- STA. 369+00

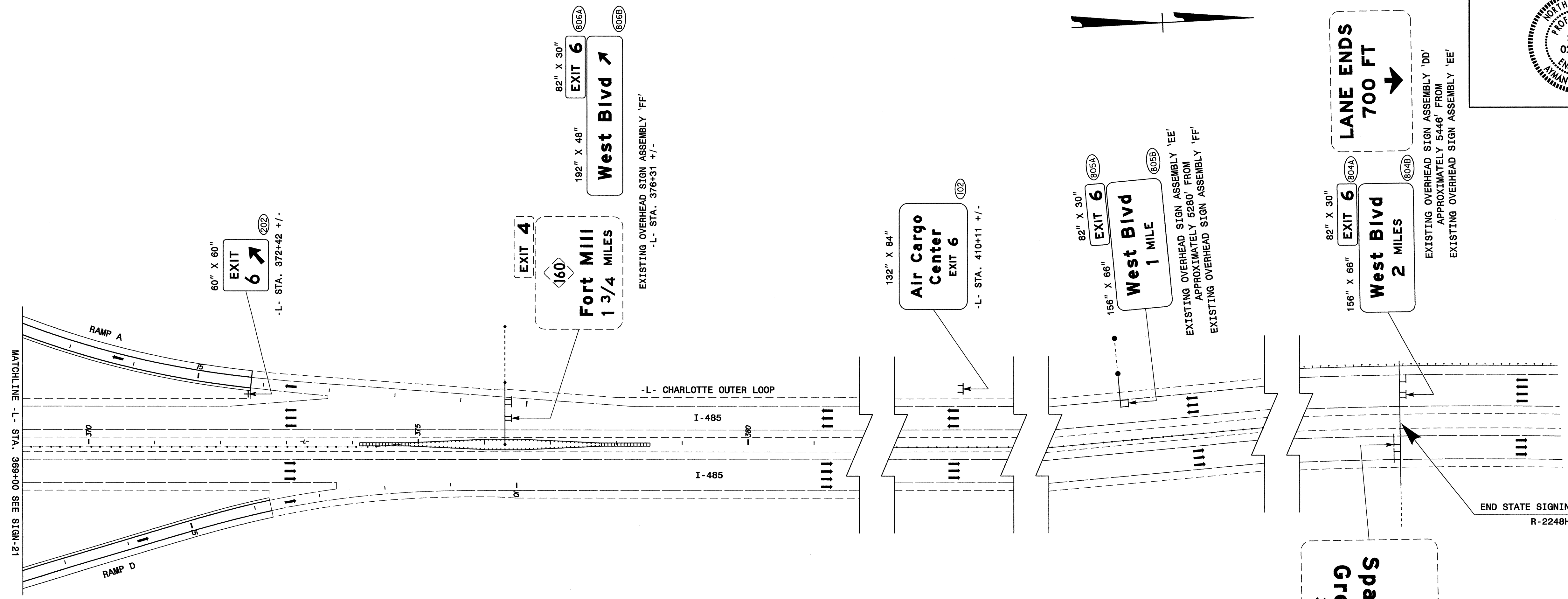
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TIP NO. R-2248H	SHEET NO. SIGN-22
APPROVED: <i>[Signature]</i>	
DATE: 10/7/09	
SEAL	
	



-YRES1- STA. 39+00

07-OCT-2009 16:31
 r:\traffic\signing\seed\signing layout plans\Y-2248h_sgn_sgn_x2.dgn
 dhbeard



EXISTING OVERHEAD SIGN ASSEMBLY 'DD'
EXISTING OVERHEAD SIGN ASSEMBLY 'EE'
EXISTING OVERHEAD SIGN ASSEMBLY 'FF'

END STATE SIGNING PROJECT
R-2248H

-L- STA. 369+00 TO END PROJECT

12-OCT-2009 08:25
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 dhbeard