BOARD OF COUNTY COMMISSIONERS
ESCAMBIA COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
ENGINEERING / INFRASTRUCTURE DIVISION

PLANS PROPOSED FOR

NAS GUIDE SIGN PROJECT

VICINITY MAP

INDEX OF PLANS

ATKINS

FBPE CERTIFICATE OF AUTHORIZATION NO. 24
2114 AIRPORT BOULEVARD, SUITE 1450
PENSACOLA, FLORIDA 32504

FINAL SUBMITTAL
NOVEMBER 2017

PROJECT MANAGER: ALAN THEDFORD

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH THE LATEST ESCAMBIA COUNTY TECHNICAL SPECIFICATIONS, THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED JANUARY 2017, AND BY THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS DATED 2017.

ANY REFERENCE TO FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, DIVISION I, GENERAL REQUIREMENTS AND COVENANTS, SHALL BE EXCLUDED AND NOT APPLICAPABLE TO ANY SPECIFICATION REFERED HEREIN OR OTHERWISE LISTED IN THESE PLANS OR RELATED DOCUMENTS OR THE ESCAMBIA COUNTY TECHNICAL SPECIFICATIONS.

COMMISSIONERS

DISTRICT ONE	JEFF BERGOSH (VICE CHAIRMAN)
DISTRICT TWO	DOUG UNDERHILL (CHAIRMAN)
DISTRICT THREE	LUMAN MAY
DISTRICT FOUR	GROVER ROBINSON, IV
DISTRICT FIVE	STEVEN BARRY

KEVIN M. MORGAN LICENSE No. 71350 STATE OF FLORIDA PROFESSIONAL ENGINEER 11/14/17

PROJECT MANAGER: ALAN THEDFORD	
SECTION / TOWNSHIP / RANGE: 51 / 2S / 30W	DISTRICT: 3
PROJECT ENGINEER: KEVIN M. MORGAN	REG. PLA ENG NO: FL# 71350
SIGNATURE:	DATE:

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GENERAL NOTES:

1. THE CONTRACTORS SHALL NOTIFY THE COUNTY DESIGN ENGINEER OR DESIGNEE 48 HOURS PRIOR TO CONSTRUCTION.
2. ALL CONDITIONS AND STIPULATIONS OF THE CONSTRUCTION PERMITS AND THE APPROVALS ISSUED BY THE ESCAMBIA COUNTY ENGINEER SHALL BE COMPLIED WITH IN EVERY DETAIL.
3. ALL ROADS DAMAGED BY CONSTRUCTION OPERATIONS ARE TO BE PATCHED OR RECONSTRUCTED AS DIRECTED BY THE COUNTY ENGINEER OR DESIGNEE.
4. THE CONTRACTOR SHALL TAKE STEPS NECESSARY TO PREVENT EROSION AND ANY OFF SITE SEDIMENT TRANSPORT RESULTING FROM INCREASED RUNOFF DURING CONSTRUCTION BY PROVIDING SILT FENCE AND/OR STAKED HAY BALES AS REQUIRED BY FDOT INDEX 104, THE FLORIDA STORMWATER, EROSION, AND SEDIMENT CONTROL INSPECTOR'S MANUAL, 2000 EDITION, OR AS INDICATED ON THE PLANS. ALL EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL ASSOCIATED DISTURBED AREAS ARE STABILIZED AS TO REDUCE SEDIMENT RUNOFF, UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR DESIGNEE.
5. ESCAMBIA COUNTY OR ITS DESIGNEE WILL OBTAIN THE FDOT GUIDE SIGN PERMIT. ANY OTHER NECESSARY PERMITS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
6. THE CONTRACTOR IS CAUTIONED TO VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE PROJECT PRIOR TO BIDDING AND/OR CONSTRUCTION.
7. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PRESERVE OR RELOCATE ALL BENCHMARKS (VERTICAL CONTROL) AS NEEDED DURING CONSTRUCTION. ALL PUBLIC OR PRIVATE CORNER MONUMENTATION SHALL BE PROTECTED. IF A PUBLIC OR PRIVATE CORNER MONUMENTATION IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR DESIGNEE IMMEDIATELY. ANY ESCAMBIA COUNTY HARN/GPS NETWORK MONUMENTS OR BUREAU OF SURVEY AND MAPPING GPS NETWORK MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED. IF A HARN/GPS NETWORK MONUMENTS OR BUREAU OF SURVEY AND MAPPING GPS NETWORK MONUMENTS ARE DISTURBED OR DESTROYED THE CONTRACTOR SHALL BE RESPONSIBLE FOR RELACEMENT OF THE MONUMENTS AND HAVE THE MONUMENTS POSITION DETERMINED BY A FLORIDA LICENSED PROFESSIONAL SURVEYOR AND MAPPER USING GUIDELINES AS ESTABLISHED BY NATIONAL GEODETIC SURVEY FOR BLUE BOOKING AND APPROVAL.
8. EXISTING DRAINAGE FEATURES WITHIN CONSTRUCTION LIMITS SHALL REMAIN UNLESS OTHERWISE NOTED.
9. THE CONTRACTOR SHALL MATCH EXISTING CONDITIONS AT THE BEGINNING AND END OF CONSTRUCTION AS DIRECTED BY THE COUNTY ENGINEER OR DESIGNEE.
10. EXISTING STREETS AND DRIVES SHALL BE MAINTAINED TO LOCAL TRAFFIC AND PROPERTY OWNERS.
11. ALL ROADWAY CONSTRUCTION SHALL COMPLY WITH THE ESCAMBIA COUNTY TECHNICAL SPECIFICATIONS, LATEST EDITION.
12. ALL MATERIALS, TESTING AND CONSTRUCTION METHODS SHALL CONFORM TO THE ESCAMBIA COUNTY TECHNICAL SPECIFICATIONS, LATEST EDITION.
13. ANY REFERENCE TO FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, DIVISION 1, GENERAL REQUIREMENTS AND COVENANTS, SHALL BE EXCLUDED AND NOT APPLICABLE TO ANY SPECIFICATION REFERRED HEREIN OR OTHERWISE LISTED IN THESE PLANS OR RELATED DOCUMENTS OR THE ESCAMBIA COUNTY TECHNICAL SPECIFICATIONS.
14. EXISTING STREET AND ROAD NAME SIGNS ON THE PROJECT SHALL BE KEPT VISIBLE AT ALL TIMES FOR THE FACILITATION OF ACCESS BY EMERGENCY VEHICLES. ALL OTHER EXISTING SIGNS THAT CONFLICT WITH CONSTRUCTION OPERATIONS SHALL BE TAKEN DOWN AND STOCKPILED WITHIN THE R/W LIMITS BY THE CONTRACTOR AS DIRECTED BY THE COUNTY ENGINEER OR DESIGNEE. ANY EXISTING SIGNS THAT ARE TO BE RELOCATED AND ARE DAMAGED BEYOND USE BY THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE.
15. THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE 10' OPEN LANE AT ALL TIMES. NO OPEN EXCAVATION SHALL REMAIN OVER NIGHT.
16. CONTRACTOR SHALL COMPLY WITH ALL F.D.E.P. AND ARMY CORP. OF ENGINEERS REQUIREMENTS.
17. IN THE EVENT THAT SURVEY MONUMENTATION OR REFERENCE POINTS ARE MISSING OR HAVE BEEN DESTROYED, PLEASE CONTACT:

ESCAMBIA COUNTY SURVEYOR
3363 WEST PARK PLACE
PENSACOLA, FLORIDA 32505 PH (850) 595-3427

THOMAS MEAD
SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
1130 HIGHWAY 90
CHIPLEY, FLORIDA 32428 PH (850) 638-0790

18. VEGETATION ON R/W AND EASEMENTS SHALL BE RESTORED TO ORIGINAL CONDITION UNLESS OTHERWISE NOTED ON THE PLAN SHEETS. COST OF SAID RESTORATION SHALL BE CONSIDERED INCIDENTAL TO OTHER PAY ITEMS.
19. ALL COMPACTED FILL SHALL BE PLACED IN 4" LIFTS FOR HAND POWERED TAMPERS AND 8" LIFTS FOR HEAVY EQUIPMENT OPERATED TAMPERS.
20. MAINTENANCE OF TRAFFIC AS PER FDOT INDEX 600.
21. IF ARCHAEOLOGICAL MATERIAL/PREHISTORIC ARTIFACTS SUCH AS POTTERY OR CERAMICS, STONE TOOLS OR METAL IMPLEMENTS, OR ANY OTHER PHYSICAL REMAINS THAT COULD BE ASSOCIATED WITH NATIVE AMERICAN CULTURES, OR EARLY COLONIAL OR AMERICAN SETTLEMENT ARE ENCOUNTERED AT ANY TIME, THE PROJECT SHOULD CEASE ALL ACTIVITIES INVOLVING SUBSURFACE DISTURBANCE IN THE IMMEDIATE VICINITY OF SUCH DISCOVERIES. THE APPLICANT/RECIPIENT, OR OTHER DESIGNEE, SHOULD CONTACT THE FLORIDA DEPARTMENT OF STATE, DIVISION OF HISTORICAL RESOURCES, THE STATE HISTORIC PRESERVATION OFFICER (SHPO) AND THE DSH/FEMA REGION IV ENVIRONMENTAL OFFICER AND FDEM STATE ENVIRONMENTAL LIAISON OFFICER FOR FURTHER GUIDANCE. PROJECT ACTIVITIES SHOULD NOT RESUME WITHOUT VERBAL AND/OR WRITTEN AUTHORIZATION FROM THE DIVISION OF HISTORICAL RESOURCES.
30. IN THE EVENT THAT UNMARKED HUMAN REMAINS ARE ENCOUNTERED DURING PERMITTED ACTIVITIES, ALL WORK MUST STOP IMMEDIATELY AND THE PROPER AUTHORITIES NOTIFIED IN ACCORDANCE WITH F.S. 872.05.
31. THE CONTRACTOR SHALL PROVIDE INSPECTION AND SETTLEMENT MONITORING IN ACCORDANCE WITH THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, JANUARY 2017 SECTION 108 FOR THE STRUCTURES LISTED IN THE TABLE BELOW:

SUMMARY OF MONITOR EXISTING STRUCTURES

SITE NO.	ADDRESS	STRUCTURE USAGE	INSPECTION & SETTLEMENT MONITORING (FDOT SPEC. 108)	DESIGN NOTES	CONSTRUCTION REMARKS
1	4060 BARRANCAS AVE, PENSACOLA, FL 32507	INSURANCE COMPANY	X	CANTILEVER SIGN INSTALLATION	

UTILITY NOTES:

1. THE LOCATION SHOWN FOR EXISTING UNDERGROUND UTILITIES IS APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK IN EACH AREA. THE CONTRACTOR AGREES TO BE COMPLETELY RESPONSIBLE FOR ALL DAMAGES WHICH MIGHT OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UTILITIES.
2. UTILITY OWNERS SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION SO THAT THE UTILITY OWNER CAN SPOT VERIFY AND/OR EXPOSE THEIR UTILITIES.
3. KNOWN UTILITIES OWNERS INCLUDE:

AT&T FLORIDA	JONATHAN BLANKINCHIP	850-436-1489	JB966P@ATT.COM
COX SOUTHEAST	TROY YOUNG	850-232-5044	TROY.YOUNG@COX.COM
EMERALD COAST UTILITIES AUTHORITY	BRANDON KNIGHT	850-969-6650	BRANDON.KNIGHT@ECUA.FL.GOV
GULF POWER COMPANY	CHAD SWAILS	850-429-2446	CESWAILS@SOUTHERNCO.COM
MEDIACOM	TOMMY GREEN	850-934-2564	TGREEN@MEDIACOMCC.COM
PENSACOLA ENERGY	DIANE MOORE	850-474-5319	DMOORE@CITYOFPENSACOLA.COM
PEOPLE'S WATER SERVICE	MARK CROSS	850-455-8552	MARKCROSS@PEOPLESWATERSERVICE.COM
UNITI FIBER (FORMERLY SOUTHERN LIGHT)	ANDRU BRAMBLETT	251-662-1170	ANDRU.BRAMBLETT@UNITI.COM

4. AT&T FLORIDA WILL COMPLETE ALL WORK DURING THE HOURS OF 7:30 AM - 4:30 PM, MONDAY THRU FRIDAY. NO NIGHT OR WEEKEND WORK.
5. ALL CABLE DAMAGE MUST BE REPORTED TO THE ATT FLORIDA REPAIR SERVICE DEPARTMENT AT 611 FROM A LAND LINE OR 877-737-2478 IF USING A CELL PHONE.
6. CONTRACTOR IS TO USE CAUTION WHEN WORKING IN OR AROUND AREAS OF OVERHEAD TRANSMISSION LINES AND UNDERGROUND UTILITIES.
7. UTILITIES TO REMAIN AND BE PROTECTED DURING CONSTRUCTION. NECESSARY REPAIRS SHALL BE CONSIDERED INCIDENTAL TO OTHER PAY ITEMS AND SHALL BE TO THE SATISFACTION OF UTILITY OWNERS.

PAY ITEM NOTES:

1. COST FOP ANY CONCRETE OR ASPHALT TO RESTORE SURFACE TO EXISTING CONDITIONS SHALL BE INCLUDED IN THE COST OF THE SIGN OR OVERHEAD STRUCTURE.
2. COST FOP ANY SOD TO RESTORE SURFACE TO EXISTING CONDITIONS SHALL BE INCLUDED IN THE COST OF THE SIGN OR OVERHEAD STRUCTURE.
3. EROSION CONTROL SHALL INCLUDE ALL ITEMS NECESSARY TO MAINTAIN SEDIMENT WITHIN THE LIMITS OF CONSTRUCTION.
4. REMOVAL OF CONCRETE SHALL INCLUDE ONLY THE REMOVAL OF CONCRETE NEEDED TO CONSTRUCT A SIGN OR OVERHEAD STRUCTURE.
5. MAINTENANCE OF TRAFFIC SHALL INCLUDE ALL ITEMS NECESSARY TO CONSTRUCT SIGNAGE INCLUDING TRAFFIC SHIFTS, FLAGGERS, ETC FOR THE OVERHEAD STRUCTURE.

NUMBER | REVISIONS | DATE | APPROVED BY

NAS GUIDE SIGN PROJECT

GENERAL NOTES

ATKINS
2114 AIRPORT BLVD., SUITE 1450
PENSACOLA, FLORIDA 32504
PHONE NO. 850 478 9844
CERTIFICATE OF AUTHORIZATION NO. 24

KEVIN M. MORGAN LICENSE NO. 71450 STATE OF FLORIDA PROFESSIONAL ENGINEER
ENGINEER OF RECORD
KEVIN MORGAN LIC. # 71450

DRAWN BY:	IRB
DESIGNED BY:	IRB
CHECKED BY:	KMM
APPROVED BY:	GSA
PROJECT NUMBER	0203792520
DRAWING NUMBER	002

NUMBER	REVISIONS	DATE	APPROVED BY

NAS GUIDE SIGN PROJECT

OVERALL PROJECT LAYOUT

ATKINS

2114 AIRPORT BLVD., SUITE 1450
PENSACOLA, FLORIDA 32504
PHONE NO. 850.478.9844
CERTIFICATE OF AUTHORIZATION NO. 24

KEVIN M. MORGAN LICENSE No. 71350 STATE OF FLORIDA PROFESSIONAL ENGINEER

ENGINEER OF RECORD
11/14/17
KEVIN M. MORGAN
P.E.# 71350

DRAWN BY:	JPB
DESIGNED BY:	JPB
CHECKED BY:	KMM
APPROVED BY:	GSA
PROJECT NUMBER	0203792520
DRAWING NUMBER	003

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NUMBER	REVISIONS	DATE	APPROVED BY

NAS GUIDE SIGN PROJECT

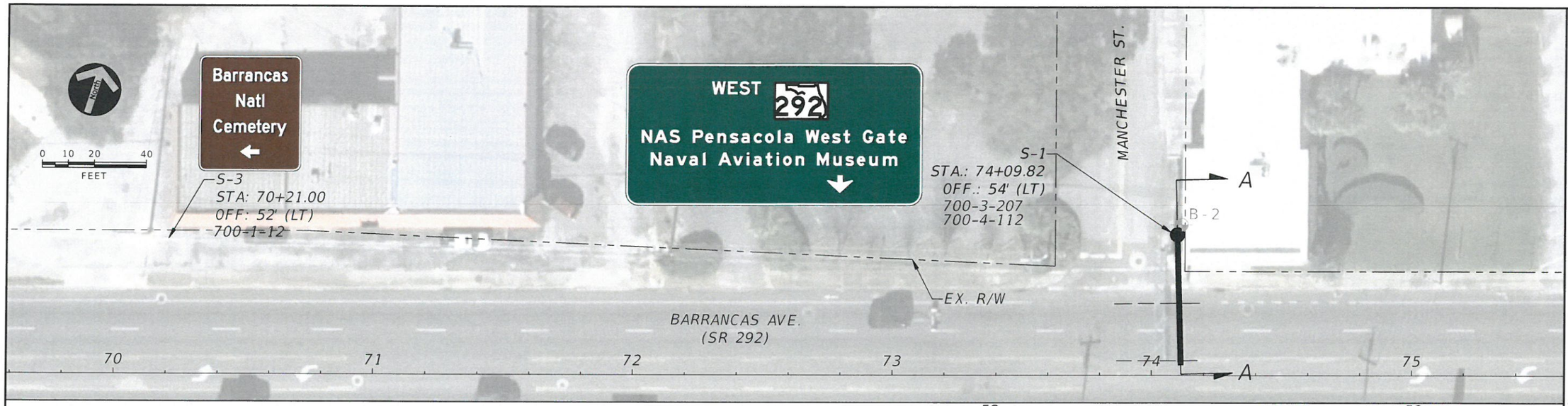
PROJECT CONTROL

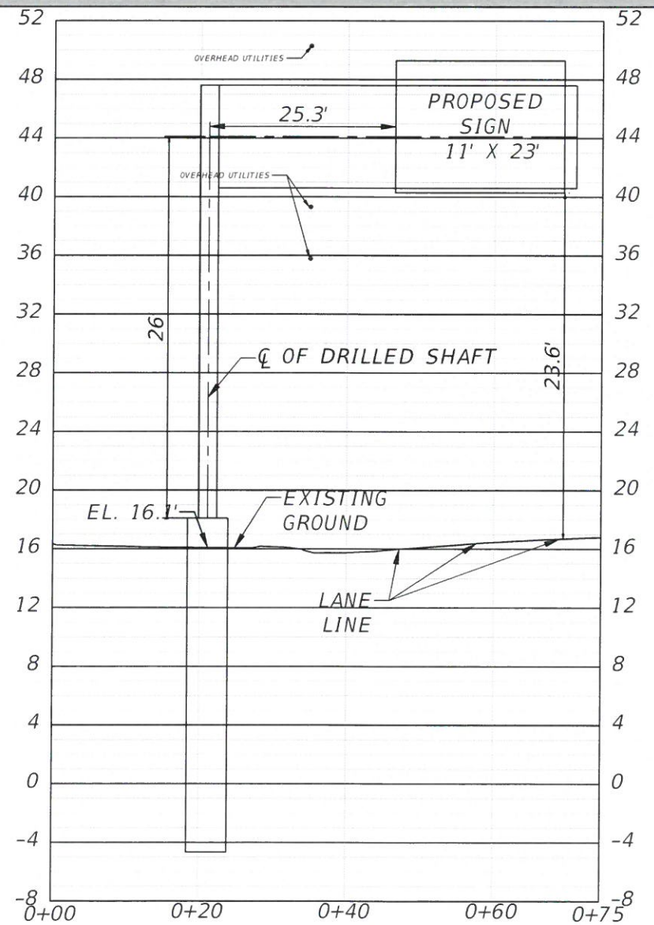
ATKINS
2114 AIRPORT BLVD., SUITE 1450
PENSACOLA, FLORIDA 32504
PHONE NO. 850.478.9844
CERTIFICATE OF AUTHORIZATION NO. 24

KEVIN M. MORGAN LICENSE No. 71350 STATE OF FLORIDA PROFESSIONAL ENGINEER

ENGINEER OF RECORD
KEVIN M. MORGAN
FL# 71350
11/14/17

DRAWN BY:	JPB
DESIGNED BY:	JPB
CHECKED BY:	KMM
APPROVED BY:	GSA
PROJECT NUMBER	0203792520
DRAWING NUMBER	004





SECTION A-A

NAS GUIDE SIGN PROJECT

SIGNAGE LAYOUT

ATKINS
2114 AIRPORT BLVD., SUITE 1450
PENSACOLA, FLORIDA 32504
PHONE NO. 850.478.9844
CERTIFICATE OF AUTHORIZATION NO. 24

KEVIN M. MORGAN
LICENSE
No. 71350
ENGINEER OF RECORD
KEVIN M. MORGAN
FL# 71350
PROFESSIONAL ENGINEER

DRAWN BY:	JPB
DESIGNED BY:	JPB
CHECKED BY:	KMM
APPROVED BY:	GSA
PROJECT NUMBER	0203792520
DRAWING NUMBER	005

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North

0 20 40 80
FEET

Naval Aviation Museum
Pensacola Lighthouse
Fort Barrancas

S-5
STA.: 69+36.00
OFF: 51.0' (LT)
700-2-13

EX. R/W

N. NAVY BLVD.
(SR 295)

66 67 68 69 70 71 72 73 74 75 76 77

PC STA. 70+44.96

N. NAVY BLVD.
(SR 295)

N.A.S. Pensacola
Barrancas Natl Cemetery
NEXT SIGNAL

S-4
STA.: 73+56.24
OFF.: 51.15' (LT)
700-2-13

B-1

North

0 20 40 80
FEET

Naval Aviation Museum
Pensacola Lighthouse
Fort Barrancas

S-6
700-2-13

500'

SR 292 (GULF BEACH HWY)

DOG TRACK RD.

SR 292A
(GULF BEACH HWY)

NAS GUIDE SIGN PROJECT

SIGNAGE LAYOUT

ATKINS
2114 AIRPORT BLVD., SUITE 1450
PENSACOLA, FLORIDA 32504
PHONE NO. 850.478.9844
CERTIFICATE OF AUTHORIZATION NO. 24

KEVIN M. MORGAN
LICENSE
NO. 71350
STATE OF FLORIDA
PROFESSIONAL ENGINEER

ENGINEER OF RECORD
11/01/17
KEVIN M. MORGAN
FLA. LICENSE NO. 71350

DRAWN BY:	JPB
DESIGNED BY:	JPB
CHECKED BY:	KMM
APPROVED BY:	GSA
PROJECT NUMBER	0203792520
DRAWING NUMBER	006

NUMBER	REVISIONS	DATE	APPROVED BY

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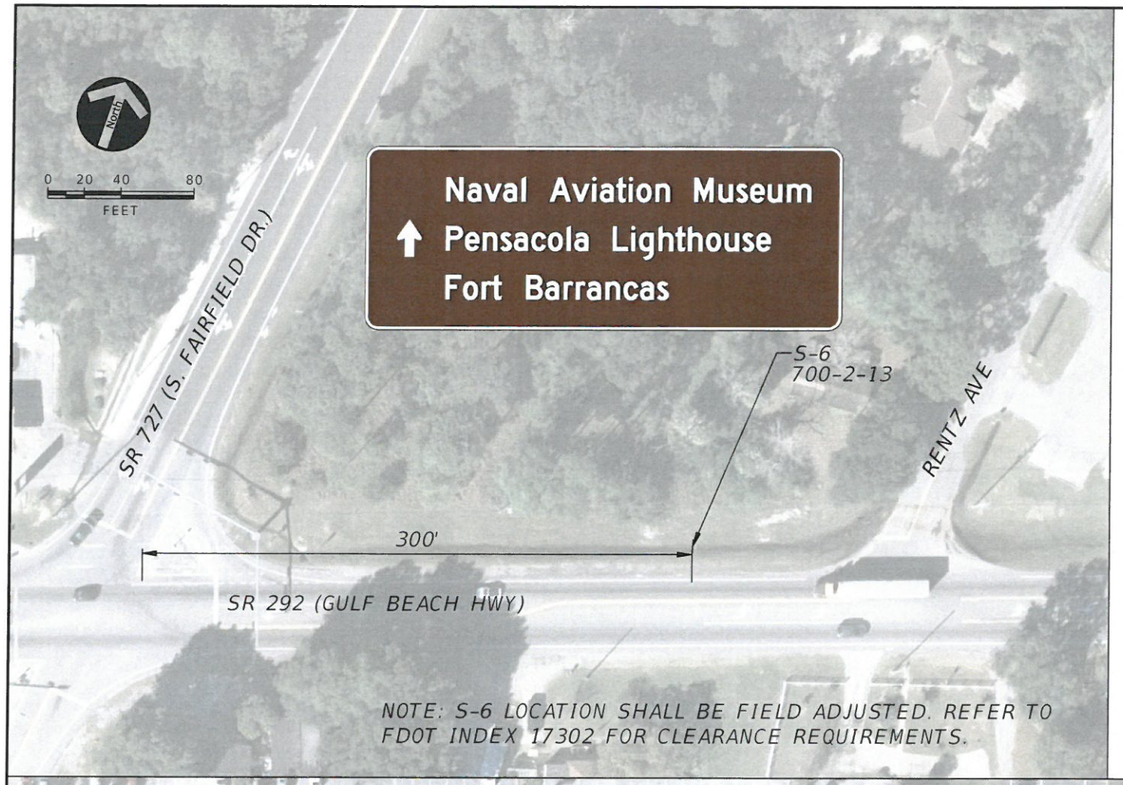

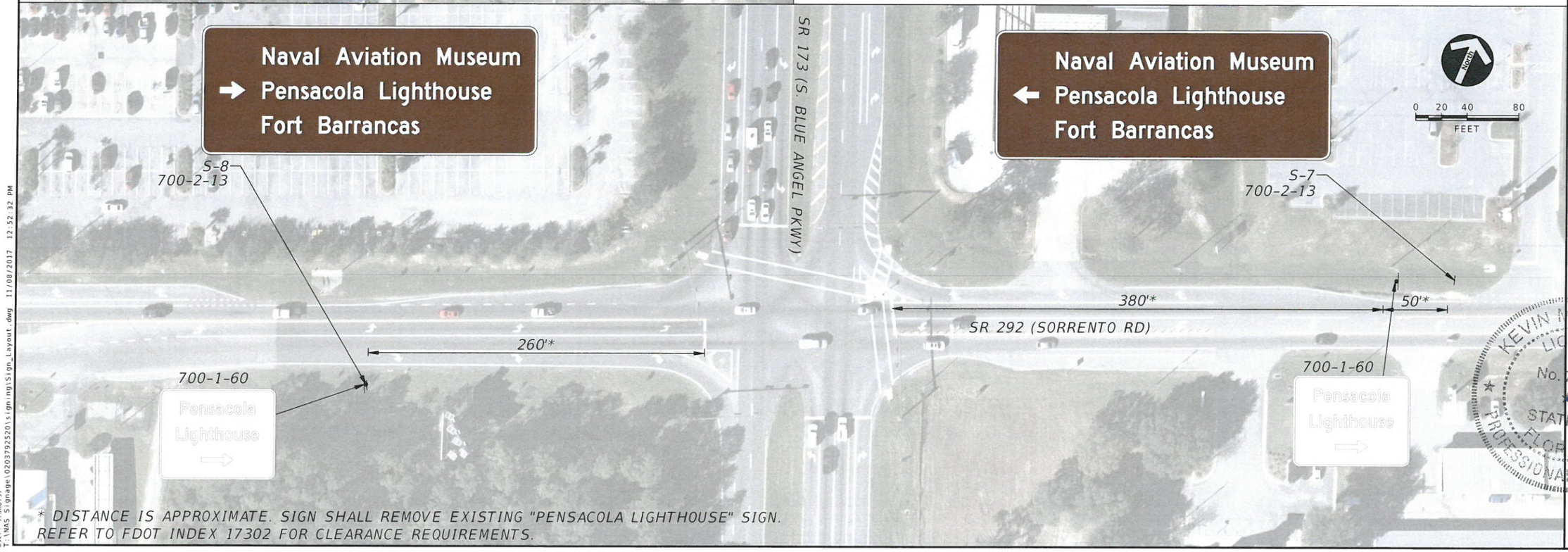

NAS GUIDE SIGN PROJECT

SIGNAGE LAYOUT

ATKINS
2114 AIRPORT BLVD., SUITE 1450
PENSACOLA, FLORIDA 32504
PHONE NO. 850.478.9844
CERTIFICATE OF AUTHORIZATION NO. 24

KEVIN M. MORGAN
LICENSE
No. 71250
STATE OF FLORIDA
PROFESSIONAL ENGINEER
ENGINEER OF RECORD
KEVIN M. MORGAN
FL# 71250
11/6/17

DRAWN BY:	JPB
DESIGNED BY:	JPB
CHECKED BY:	KMM
APPROVED BY:	GSA
PROJECT NUMBER	0203792520
DRAWING NUMBER	007

NUMBER | REVISIONS | DATE | APPROVED BY

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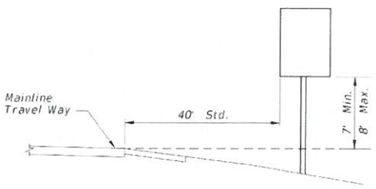
CASE I

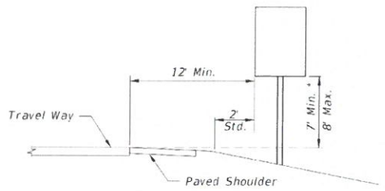
For Use On Freeway And Expressway Systems For Signs On Mainline.



For Median Installation:
If Median Width Does Not Allow Std. Offset From Both Roadways, Center Sign In Median.

CASE II

For Use In All Rural Roads And On Freeway And Expressway Ramps.

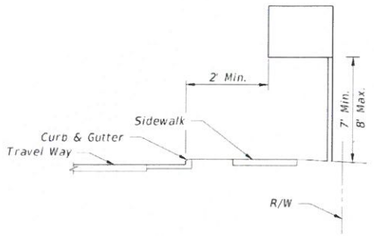


14' Horizontal Clearance Standard On All Freeway And Expressway Ramps.

* 4' For Wrong Way Signs On Interstate Exit Ramps

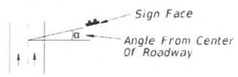
CASE III

For Use On All Roads With Signs Mounted Behind Sidewalk.



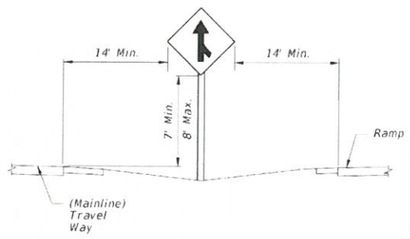
GENERAL NOTES:

1. The typical sections shown hereon serve as a guide for locating the traffic signs required under various roadside conditions. For size and details of sign construction and footing, refer to the appropriate standard index drawing for roadside sign.
2. It shall be the CONTRACTORS responsibility to verify the length of sign supports in the field prior to fabrication.
3. Ground signs shall be installed at an angle of 1 to 4 degrees away from the traffic flow (see illustration). Shoulder mounted signs shall be rotated counterclockwise and median mounted signs rotated clockwise. Signs on curves shall be mounted as noted above from the perpendicular to the motorist line of sight.



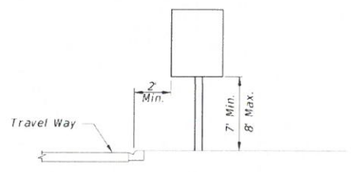
CASE IV (MERGE SIGN)

For Use On All Rural, Freeway And Expressway Systems.



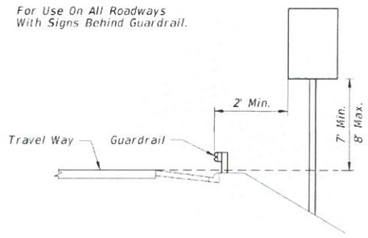
CASE V

For Use In Business Or Residential Areas Only.



CASE VI

For Use On All Roadways With Signs Behind Guardrail.



4. The setback for stop and yield signs may be reduced to 3' minimum from the driving lane if required for visibility in business or residential sections with no curb and speeds of 30 MPH or less.
5. The mounting heights are measured from the bottom of the sign panel to a horizontal line extended from the edge of the driving lane. If the standard heights cannot be met, the minimum heights are as follows:

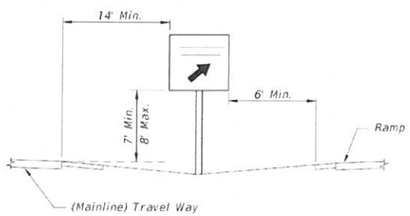
Expressway & Freeway Systems	7'
Other Roadway Systems	
Rural	5'
Urban (including residential with parking and /or pedestrian activity)	7'

If a secondary sign is mounted below the major sign, the major sign shall be at least 8' and the secondary sign at least 5' for expressway & freeway systems and for other systems the height to the secondary sign shall be at least 5' for rural and 7' for urban sections.

6. Sign supports should never be placed in the bottom of ditches where erosion might affect the proper operation of the breakaway feature.
7. Sign supports shall not reduce the accessible route /continuous passage to less than 4' min. clear width as required by the Americans with Disabilities Act (ADA) Accessibility Guidelines.

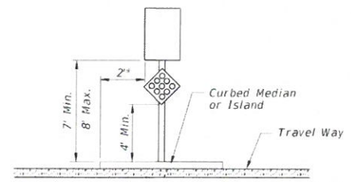
CASE VII (REST AREA & EXIT GORE SIGNS)

For Use On All Freeway And Expressway Systems



CASE VIII

Sign On Island or Curbed Median

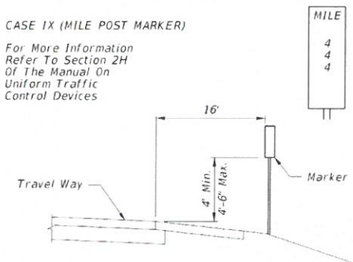


* For Separators < 6', Center The Sign Within The Separator.

Center Sign Column On Island

CASE IX (MILE POST MARKER)

For More Information Refer To Section 2H Of The Manual On Uniform Traffic Control Devices



LAST REVISION	REVISION	DESCRIPTION:
11/01/16		

FDOT FY 2017-18 DESIGN STANDARDS

TYPICAL SECTIONS FOR PLACEMENT OF SINGLE & MULTI-COLUMN SIGNS

INDEX NO.	SHEET NO.
17302	1 of 1

NOTES:

1. CAUTION SHOULD BE EXERCISED IN THE INSTALLATION OF POST MOUNTED ROADSIDE SIGNS IN ORDER TO PREVENT DAMAGE TO BURIED UTILITIES.
2. PERMANENT SODDING SHALL BE INITIATED AS SOON AS POSSIBLE, BUT NO LATER THAN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS PERMANENTLY CEASED.
3. ALL EROSION CONTROL MATERIALS SHALL BE REMOVED AT THE COMPLETION OF THE PROJECT TO INCLUDE THE REMOVAL OF SYNTHETIC BALES, STAKES, AND SILT FENCE.
4. THE EROSION CONTROL MEASURES SET FORTH IN THESE PLANS ARE INTENDED AS MINIMUM STANDARDS. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF ALL EXPOSED AREAS, COST OF WHICH SHALL BE INCIDENTAL TO THE PROJECT.
5. EROSION CONTROL ITEMS ARE ESTIMATED FOR PREVENTION, CONTROL, AND ABATEMENT OF EROSION, SEDIMENTATION, AND WATER POLLUTION. THESE ITEMS ARE TO BE USED AT THE LOCATIONS DESCRIBED IN THE EROSION CONTROL PLAN OR AS DIRECTED BY THE PROJECT ENGINEER TO COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS. SILT FENCE PLACED PERPENDICULAR TO THE ROADWAY SHALL NOT BE PLACED WITHIN 50 FEET OF PUBLIC OR PRIVATE DRIVEWAYS OR SIDE STREETS.

NUMBER | REVISIONS | DATE | APPROVED BY

NAS GUIDE SIGN PROJECT

GROUND MOUNT SIGN DETAILS

ATKINS
2114 AIRPORT BLVD., SUITE 1450
PENSACOLA, FLORIDA 32504
PHONE NO.: 850.478.9844
CERTIFICATE OF AUTHORIZATION NO. 24

KEVIN M. MORGAN LICENSE NO. 71250 STATE OF FLORIDA PROFESSIONAL ENGINEER
ENGINEER OF RECORD
11/1/2017
KEVIN M. MORGAN P.E. # 71250

DRAWN BY:	JPB
DESIGNED BY:	JPB
CHECKED BY:	KMM
APPROVED BY:	GSA
PROJECT NUMBER	0203792520
DRAWING NUMBER	008

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User: STUHG797
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CANTILEVER SIGN STRUCTURES DATA TABLE

SIGN NO.	STATION/OFFSET	DIMENSIONS				PANELS	MEMBER SIZES			BACKRAKE
		A	B		C	N	D (CHORD)	E (WEB)	F (UPRIGHT)	G
		ft	ft	in	in	#	O.D. x Wall Thk. (in)	Angle (in)	O.D. x Wall Thk. (in)	in
SR 292	74+10 / 54.0' (LT)	26.0	8	4	84	6	5.56 X 0.375	3-1/2 X 3-1/2 X 3/8	30.00 X 0.625	4.9084

NOTES:
1. Work with INDEX 113102.
2. Design Wind Speed = 150 mph

FOUNDATION NOTES:
1. Design based on Borings taken July 2017 by NOVA Engineering and Environmental, LLC sealed by William L. Lawrence, FL# 60147
2. Assumptions and Values used in Design:
   Soil Type = Silty Sands
   Soil Layer Thickness = 30 ft
   Soil Friction Angle = 32 deg.
   Soil Weight = 43 pcf
   Design Water Table is 3 ft. below surface

CANTILEVER SIGN STRUCTURES DATA TABLE (CONT.)

SIGN NO.	GUSSET PLATES																TRUSS CONNECTION									SPLICE			
	GA	GB	GC		GD		GE		GF		GG		GH		GJ	GK	TA	TB	TC	TD	TE	TF	TG	TH	TJ	SA	SB	SC	SD
	in	ft	ft	in	ft	in	ft		ft	in	ft	in	ft	in	ft	in	in	in	#	#	in	in	in	in	in	in	Angle (in)	#	in	#
SR 292	3/8	7/8	1	2-3/4		7-1/2	1	1/2		6-1/2		10-3/4		7-1/4		9-3/4	3/16	7/8	10	6	3/4	1/2	3/8	1/4	3/16	3/16	5 X 5 X 1/2	6	7/8	3

CANTILEVER SIGN STRUCTURES DATA TABLE (CONT.)

SIGN NO.	BASE CONNECTION										ANCHOR		FOOTING - DRILLED SHAFT (USE #6 STIRRUPS)								
	BA	BB	BC	BD	BE		BF	BG	BH	BJ	BK		FA		FB		FC	FD	FE	FF	FG
	in	#	in	in	ft	in	in	in	in	in	ft	in	ft	in	ft	in	# / Size	#	in	#	in
SR 292	2-1/2	10	2	1/2	2	10-1/2	5/16	5/16	5/16	1/4	4	2	28	9	5	6	22 / 11	21	4	37	6

NAS GUIDE SIGN PROJECT

CANTILEVER SIGN STRUCTURE DATA TABLE

ATKINS
2114 AIRPORT BLVD., SUITE 1450
PENSACOLA, FLORIDA 32504
PHONE NO. 850.478.9844
CERTIFICATE OF AUTHORIZATION NO. 24

ENGINEER OF RECORD
MATTHEW T. PAYNE LICENSE No. 79977 STATE OF FLORIDA PROFESSIONAL ENGINEER
11/8/17
MATTHEW T. PAYNE
FL# 79977

DRAWN BY:	JPB
DESIGNED BY:	MP
CHECKED BY:	KMM
APPROVED BY:	GSA
PROJECT NUMBER	0203792520
DRAWING NUMBER	009

SIGN NAME	S-1			QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER				_____	none
WIDTH	23'-Ø"	WIDTH	2"			_____	
HEIGHT	11'-Ø"	RADII	12"			_____	
LEGEND	White	COLOR	White			_____	
COLOR	Green					_____	

SYMBOL(S)	ANGLE	X	Y	WID	HT
F28_3	0	137.2	79.3	51.6	36
ARDOWN	0	187.8	11.9	24	16.5	

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH
_____					
_____					
_____					
_____					
_____					

NO. OF LIGHT FIXTURES ___ FIXTURE SPACING _____ PHOTOMETRIC CURVE _____ WATT ____ VOLTAGE ____

COPY	X	W	E	S	T	X	292																
SPACE	79.7	14.8	10.7	11	9	150.8	45.5																
COPY	X	N	A	S	X	P	e	n	s	a	c	o	l	a	X	W	e	s	t	X	G	a	t	e	X
SPACE	14.5	11.9	13.9	9.7	12	11.5	11.6	11.4	10.6	11.6	10.6	11.9	6.1	7.9	12	14.5	10.3	10.4	6.2	12	12.2	11.5	9	7.9	14.5
COPY	X	N	a	v	a	l	X	A	v	i	a	t	i	o	n	X	M	u	s	e	u	m	X		
SPACE	23.2	12.7	11.4	11.6	12.7	2.4	12	13.7	12.7	6.1	11.5	10.1	6.1	11.9	7.9	12	15.2	11.4	10.6	11.6	12.7	13.2	23.2		
COPY																									
SPACE																									
COPY																									
SPACE																									
COPY																									
SPACE																									

NAS GUIDE SIGN PROJECT

GUIDE SIGN WORKSHEET

ATKINS
2114 AIRPORT BLVD., SUITE 1450
PENSACOLA, FLORIDA 32504
PHONE NO. 850.478.9844
CERTIFICATE OF AUTHORIZATION NO. 24

KEVIN M. MORGAN
LICENSED
No. 71359
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

ENGINEER OF RECORD
11/14/17
KEVIN M. MORGAN
FL#71359

DRAWN BY:	JPB
DESIGNED BY:	JPB
CHECKED BY:	KMM
APPROVED BY:	GSA
PROJECT NUMBER	0203792520
DRAWING NUMBER	010

SIGN NAME		QTY		SIGN NUMBER	STATION(S)
PANEL		BORDER			
WIDTH		WIDTH			
HEIGHT		RADII			
LEGEND		COLOR			
COLOR					

SYMBOL(S)	ANGLE	X	Y	WID	HT

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH

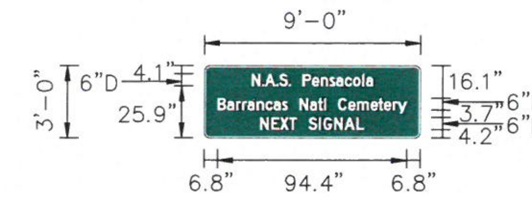
NO. OF LIGHT FIXTURES ___ FIXTURE SPACING _____ PHOTOMETRIC CURVE ___ WATT ___ VOLTAGE

COPY	
SPACE	
COPY	
SPACE	
COPY	
SPACE	
COPY	
SPACE	
COPY	
SPACE	
COPY	
SPACE	

SIGN NAME	S-4	QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER		___	none
WIDTH	9'-0"	WIDTH	0.75"	___	
HEIGHT	3'-0"	RADII	2.75"	___	
LEGEND	White	COLOR	White	___	
COLOR	Green			___	

SYMBOL(S)	ANGLE	X	Y	WID	HT

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH
S-4	2	12	W6X12		11



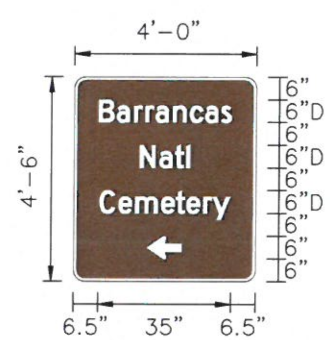
NO. OF LIGHT FIXTURES ___ FIXTURE SPACING _____ PHOTOMETRIC CURVE ___________ WATT ____ VOLTAGE

COPY	X	N	.	A	.	S	.		P	e	n	s	a	c	o	l	a		L							
SPACE	23.9	5	1.5	5.5	1.6	4.6	1.1	6	4.6	4.4	4.3	3.3	4.3	4.1	4.6	1.9	3.4	23.8	60.3							
COPY	X	B	a	r	r	a	n	c	a	s		N	a	t	l		C	e	m	e	t	e	r	y		L
SPACE	6.8	4.7	4.6	3	2.7	4.6	4.4	4	4.2	2.8	6	5.1	4	3.1	1	6	5	4.4	6.8	3.8	2.8	4.4	2.5	4.5	6.8	94.4
COPY	X	N	E	X	T		S	I	G	N	A	L		L												
SPACE	28.2	5.5	4.3	4.6	3.7	6	5.1	2.3	5.4	5	6	3.7	28.2	51.6												
COPY																										
SPACE																										
COPY																										
SPACE																										
COPY																										
SPACE																										

SIGN NAME	S-3	QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER		___	70+21.00
WIDTH	4'-0"	WIDTH	0.75"	___	
HEIGHT	4'-6"	RADII	3"	___	
LEGEND	White	COLOR	White	___	
COLOR	Brown			___	

SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	90	19.5	6	6	9

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH
S-3	1	12	4" OD		12.5



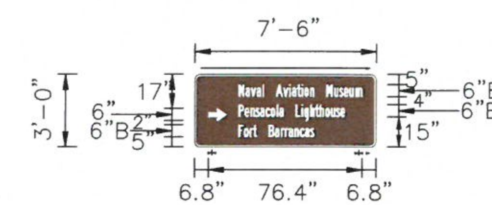
NO. OF LIGHT FIXTURES ___ FIXTURE SPACING _____ PHOTOMETRIC CURVE ___ WATT ___ VOLTAGE

COPY		B	a	r	r	a	n	c	a	s	
SPACE	6.5	4.7	4.6	3	2.7	4.6	4.4	4	4.2	2.8	6.5
COPY		N	a	t	l						
SPACE	17.4	5.1	4	3.1	1	17.4					
COPY		C	e	m	e	t	e	r	y		
SPACE	6.8	5	4.4	6.8	3.8	2.8	4.4	2.5	4.5	6.8	
COPY											
SPACE											
COPY											
SPACE											
COPY											
SPACE											

SIGN NAME	S-5	QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER		___	none
WIDTH	7'-6"	WIDTH	0.75"	___	
HEIGHT	3'-0"	RADII	2.75"	___	
LEGEND	White	COLOR	White	___	
COLOR	Green			___	

SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	270	6.8	13	6	9

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH
S-5	2	12	S3X5.7		11



NO. OF LIGHT FIXTURES ___ FIXTURE SPACING _____ PHOTOMETRIC CURVE ___________ WATT ____ VOLTAGE

COPY	N	a	v	a	l		A	v	i	a	t	i	o	n		M	u	s	e	u	m		L
SPACE	21.8	25.1	27.7	30.5	33.5	34.3	40.3	43.7	46.8	48.1	50.7	52.9	54.3	57.1	59.3	65.3	69.1	71.8	74	76.7	79.6		81.4
COPY	P	e	n	s	a	c	o	l	a		L	i	g	h	t	h	o	u	s	e		L	
SPACE	21.8	24.8	27.5	30.2	32.3	35.1	37.7	40.5	41.8	44.1	50.1	52.9	54.3	57.3	59.8	61.9	64.7	67.5	70.2	72.4		52.8	
COPY	F	o	r	t		B	a	r	r	a	n	c	a	s		L							
SPACE	21.8	24.5	27.3	29	30.8	36.8	39.8	42.7	44.7	46.5	49.5	52.2	54.7	57.4		37.5							
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							

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NUMBER	REVISIONS	DATE	APPROVED BY

NAS GUIDE SIGN PROJECT

GUIDE SIGN WORKSHEET

ATKINS
2114 AIRPORT BLVD., SUITE 1450
PENSACOLA, FLORIDA 32504
PHONE NO. 850.478.9844
CERTIFICATE OF AUTHORIZATION NO. 24

KEVIN M. MORGAN LICENSE No. 71350 STATE OF FLORIDA PROFESSIONAL ENGINEER

ENGINEER OF RECORD
11/14/17
KEVIN M. MORGAN
FL# 71350

DRAWN BY:	JPB
DESIGNED BY:	JPB
CHECKED BY:	KMM
APPROVED BY:	GSA
PROJECT NUMBER	0203792520
DRAWING NUMBER	011

SIGN NAME	S-6	QTY	2	SIGN NUMBER	STATION(S)
PANEL		BORDER			none
WIDTH	7'-6"	WIDTH	Ø.75"		
HEIGHT	3'-6"	RADII	3"		
LEGEND	White	COLOR	White		
COLOR	Green				

SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	0	7.3	16.5	6	9

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH
S-6	2	12	W6X12		11.5

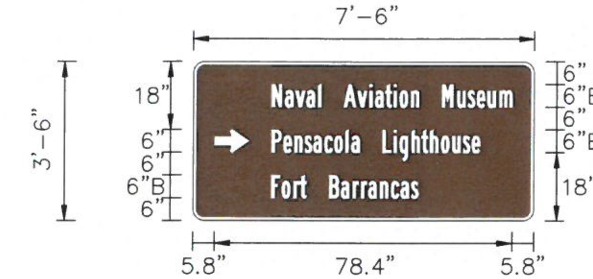
NO. OF LIGHT FIXTURES ___ FIXTURE SPACING ___ PHOTOMETRIC CURVE ___ WATT ___ VOLTAGE ___

COPY		N	a	v	a	l		A	v	i	a	t	i	o	n		M	u	s	e	u	m	
SPACE	19.3	3.4	2.8	2.9	3.1	0.8	6	3.5	3.2	1.4	2.6	2.3	1.6	3	2.2	6	4	2.8	2.3	2.8	3.1	3.5	7.3
COPY		P	e	n	s	a	c	o	l	a		L	i	g	h	t	h	o	u	s	e		
SPACE	19.3	3.1	2.9	2.8	2.2	2.9	2.6	3	1.4	2.2	6	2.9	1.6	3.2	2.6	2.3	2.9	2.9	2.8	2.3	2.2	15.8	
COPY		F	o	r	t		B	a	r	r	a	n	c	a	s								
SPACE	19.3	2.8	3	1.7	1.8	6	3.1	3.1	2.2	1.9	3.1	2.9	2.5	2.8	1.9	32							
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							

SIGN NAME	S-8	QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER			none
WIDTH	7'-6"	WIDTH	Ø.75"		
HEIGHT	3'-6"	RADII	3"		
LEGEND	White	COLOR	White		
COLOR	Brown				

SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	270	5.8	18	6	9

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH
S-8	2	12	W6X12		11.5



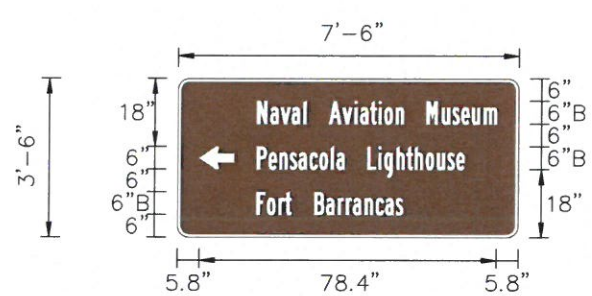
NO. OF LIGHT FIXTURES ___ FIXTURE SPACING ___ PHOTOMETRIC CURVE ___ WATT ___ VOLTAGE ___

COPY		N	a	v	a	l		A	v	i	a	t	i	o	n		M	u	s	e	u	m	
SPACE	20.8	3.4	2.8	2.9	3.1	0.8	6	3.5	3.2	1.4	2.6	2.3	1.6	3	2.2	6	4	2.8	2.3	2.8	3.1	3.5	5.8
COPY		P	e	n	s	a	c	o	l	a		L	i	g	h	t	h	o	u	s	e		
SPACE	20.8	3.1	2.9	2.8	2.2	2.9	2.6	3	1.4	2.2	6	2.9	1.6	3.2	2.6	2.3	2.9	2.9	2.8	2.3	2.2	14.3	
COPY		F	o	r	t		B	a	r	r	a	n	c	a	s								
SPACE	20.8	2.8	3	1.7	1.8	6	3.1	3.1	2.2	1.9	3.1	2.9	2.5	2.8	1.9	30.5							
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							

SIGN NAME	S-7	QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER			none
WIDTH	7'-6"	WIDTH	Ø.75"		
HEIGHT	3'-6"	RADII	3"		
LEGEND	White	COLOR	White		
COLOR	Green				

SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	90	5.8	18	6	9

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH
S-7	2	12	W6X12		11.5



NO. OF LIGHT FIXTURES ___ FIXTURE SPACING ___ PHOTOMETRIC CURVE ___ WATT ___ VOLTAGE ___

COPY		N	a	v	a	l		A	v	i	a	t	i	o	n		M	u	s	e	u	m	
SPACE	20.8	3.4	2.8	2.9	3.1	0.8	6	3.5	3.2	1.4	2.6	2.3	1.6	3	2.2	6	4	2.8	2.3	2.8	3.1	3.5	5.8
COPY		P	e	n	s	a	c	o	l	a		L	i	g	h	t	h	o	u	s	e		
SPACE	20.8	3.1	2.9	2.8	2.2	2.9	2.6	3	1.4	2.2	6	2.9	1.6	3.2	2.6	2.3	2.9	2.9	2.8	2.3	2.2	14.3	
COPY		F	o	r	t		B	a	r	r	a	n	c	a	s								
SPACE	20.8	2.8	3	1.7	1.8	6	3.1	3.1	2.2	1.9	3.1	2.9	2.5	2.8	1.9	30.5							
COPY																							
SPACE																							
COPY																							
SPACE																							
COPY																							
SPACE																							

SIGN NAME		QTY	1	SIGN NUMBER	STATION(S)
PANEL		BORDER			
WIDTH		WIDTH			
HEIGHT		RADII			
LEGEND		COLOR			
COLOR					

SYMBOL(S)	ANGLE	X	Y	WID	HT

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH

NO. OF LIGHT FIXTURES ___ FIXTURE SPACING ___ PHOTOMETRIC CURVE ___ WATT ___ VOLTAGE ___

COPY	
SPACE	
COPY	
SPACE	
COPY	
SPACE	
COPY	
SPACE	
COPY	
SPACE	
COPY	
SPACE	

NUMBER	REVISIONS	DATE	APPROVED BY

NAS GUIDE SIGN PROJECT

GUIDE SIGN WORKSHEET

ATKINS
2114 AIRPORT BLVD., SUITE 1450
PENSACOLA, FLORIDA 32504
PHONE NO. 850.478.9844
CERTIFICATE OF AUTHORIZATION NO. 24

ENGINEER OF RECORD: [signature] 11/14/17
KEVIN M. MORGAN
FL# 71350

KEVIN M. MORGAN LICENSE No. 71350 STATE OF FLORIDA PROFESSIONAL ENGINEER

DRAWN BY:	JPB
DESIGNED BY:	JPB
CHECKED BY:	KMM
APPROVED BY:	GSA
PROJECT NUMBER	0203792520
DRAWING NUMBER	012

User: STUH6797
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GENERAL NOTES

1. THE TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE FDOT "DESIGN STANDARDS" INDEX SERIES 600, SPECIFICALLY INDEX 600, 611, 613, 625, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

2. THE CONTRACTOR SHALL INSTALL ADVANCE CONSTRUCTION SIGNING PRIOR TO COMMENCEMENT OF ALL CONSTRUCTION OPERATIONS AND MAINTAIN SIGNING THROUGHOUT THE DURATION OF CONSTRUCTION.

3. VARIABLE MESSAGE SIGNS ARE TO BE PLACED AND RUNNING AT LEAST 7 DAYS PRIOR TO LANE CLOSURE.

4. ARROWS DENOTE DIRECTION OF TRAFFIC ONLY AND DO NOT REFLECT PAVEMENT MARKINGS, UNLESS OTHERWISE NOTED.

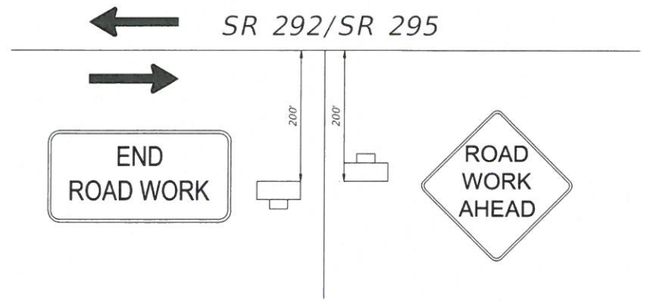
5. PER FDOT SPECIFICATION 8-6.4, SUSPENSION OF CONTRACTOR'S OPERATIONS - HOLIDAYS AND SPECIAL EVENTS DAYS FOR THIS PROJECT INCLUDE:
   BLUE ANGELS AIR SHOW AT N.A.S. PENSACOLA

6. ALL LANES ON SR 292 AND SR 295 MUST BE REOPENED TO NORMAL TRAFFIC WITHIN 12 HOURS DURING AN EVACUATION NOTICE OF A HURRICANE OR ANY OTHER EMERGENCY EVENT AND SHALL REMAIN OPEN FOR THE DURATION OF THE EVACUATION OR EVENT AS DIRECTED BY THE PROJECT ENGINEER.

7. EXISTING STREET AND ROAD NAME SIGNS ON THE PROJECT ARE TO BE TEMPORARILY RELOCATED DURING CONSTRUCTION AND KEPT VISIBLE AT ALL TIMES FOR THE FACILITATION OF ACCESS BY EMERGENCY VEHICLE TRAFFIC.

8. THE DEPARTMENT WILL REVIEW ALL LANE/SIDEWALK, DETOUR, AND LANE SHIFT REQUESTS SEPARATELY FROM THE PERMIT PROCESS. FDOT APPROVAL IS REQUIRED BEFORE COMMENCEMENT OF WORK INVOLVING THE CLOSURE, DETOUR, OR LANE SHIFT FOR WORK ALONG THE STATE HIGHWAY SYSTEM. IF A LANE CLOSURE IS NEEDED, SUBMIT A WRITTEN REQUEST WITH PROPOSED DATES/TIMES/MOT INDICES OR PLAN. ALLOW AT LEAST 2 WEEKS IN YOUR SCHEDULING FOR THIS SPECIAL REVIEW.

9. PERFORM CANTILEVER SIGN STRUCTURE CONSTRUCTION PER INDEX 625 AT 3:00 AM OR AS DIRECTED BY THE ENGINEER.



TYPICAL SIDE STREET SIGNING

RAYMOND ST.
MANCHESTER ST.

PORTABLE CHANGEABLE VARIABLE MESSAGE SIGN (PCMS) DISPLAY

	A	B*
7 DAYS PRIOR TO ROAD CLOSURE	SR (**) ROAD WORK	(DATE) (MONTH)
DURING ROAD CLOSURE	FLAGGER AHEAD	PREPARE TO STOP

* INFORMATION IN () TO BE ADDED PER CONSTRUCTION SCHEDULE
** REPLACE WITH SR 292 OR SR 295

NAS GUIDE SIGN PROJECT

TRAFFIC CONTROL PLAN

ATKINS
2114 AIRPORT BLVD., SUITE 1450
PENSACOLA, FLORIDA 32504
PHONE NO. 850 478 9844
CERTIFICATE OF AUTHORIZATION NO. 24

KEVIN M. MORGAN
LICENSE
No. 71250
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

ENGINEER OF RECORD
KEVIN M. MORGAN
FL # 71250
DATE: 11/14/17

DRAWN BY:	JPB
DESIGNED BY:	JPB
CHECKED BY:	KMM
APPROVED BY:	GSA
PROJECT NUMBER	0203792520
DRAWING NUMBER	013

SUMMARY OF VERIFIED UTILITIES

V_{vh} #	UTILITY DESCRIPTION (Owner, Type)	SIZE	MATERIALS	℄ and/or ℄			EXISTING GROUND ELEVATION	TOP ELEVATION	COMMENTS
				STATION	OFFSET	LT/RT			
TH-1	UNKNOWN, UNKNOWN	6-1/2"	METALLIC	73+59.41(AL2)	51.68'	LT.	20.88'	18.18'	UTILITY NOT MARKED BY OWNER. UTILITY FOUND WITH GPR.
MA1-TH1	UNKNOWN, COMMUNICATION	2"	DIRECT BURIED CABLE	74+06.90(AL3)	54.29'	LT.	15.97'	14.22'	
MA1-TH2	UNKNOWN, UNKNOWN	2-1/2"	NON-METALLIC	74+11.29(AL3)	54.28'	LT.	15.87'	14.57'	TRACED UTILITY TO TERMINATION. UTILITY IS DISCONNECTED AND OUT OF SERVICE. ALSO FOUND 2" OD UNKNOWN UTILITY TYPE, NON-METALLIC, DEPTH AT -2.10'. THIS UTILITY WAS ALSO TRACED TO TERMINATION. UTILITY IS DISCONNECTED AND OUT OF SERVICE. SECOND UTILITY IS DIRECTLY BELOW FIRST UTILITY.

LEGEND:
TH = TEST HOLE
MA = MAST ARM
AL2 = CENTERLINE SR 295/NAVY BLVD.
AL3 = CENTERLINE SR 292/BARRANCAS AVE.

APPROVED BY
DATE
REVISIONS
NUMBER

NAS GUIDE SIGN PROJECT

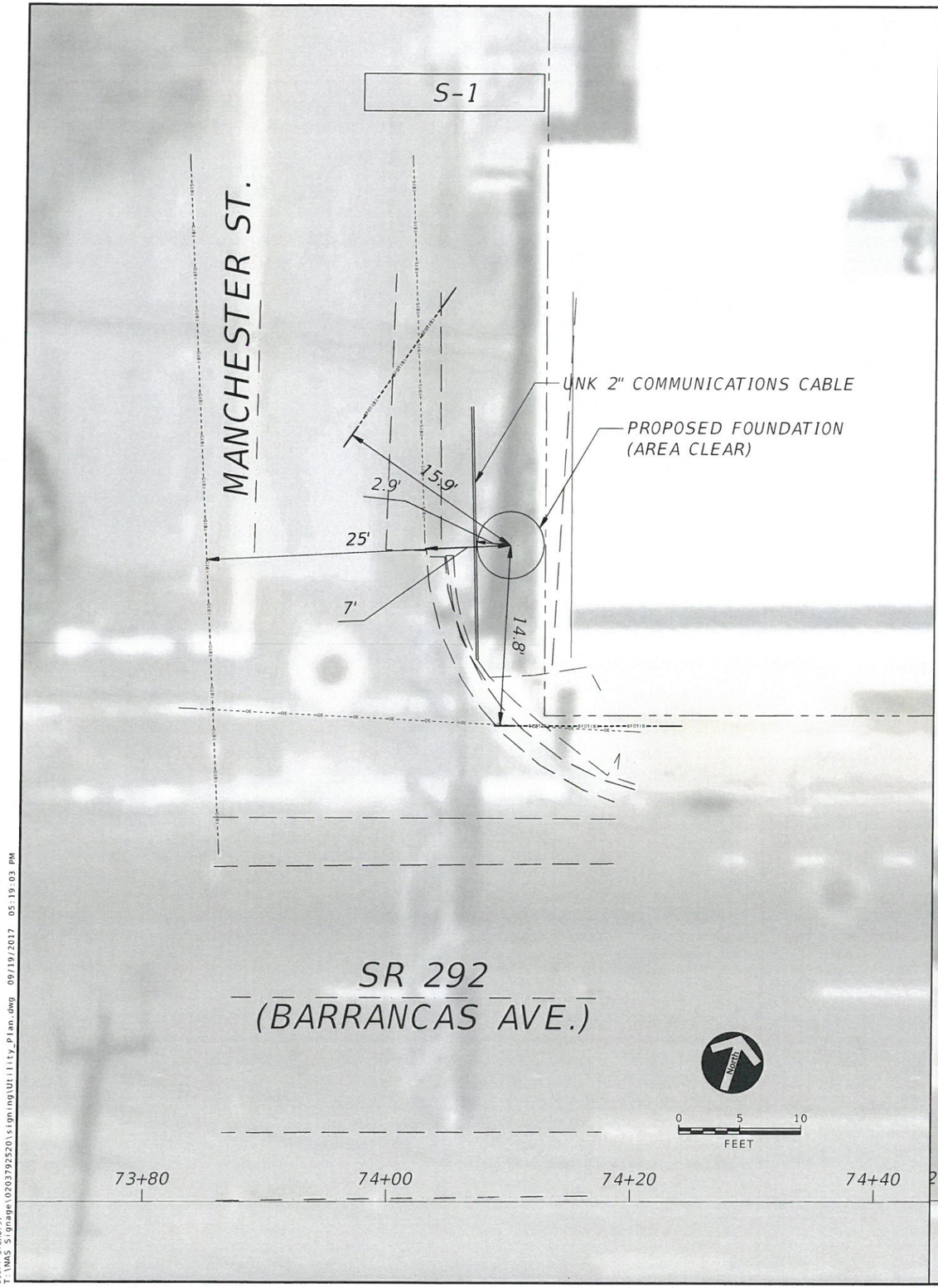
SUMMARY OF VERIFIED UTILITIES

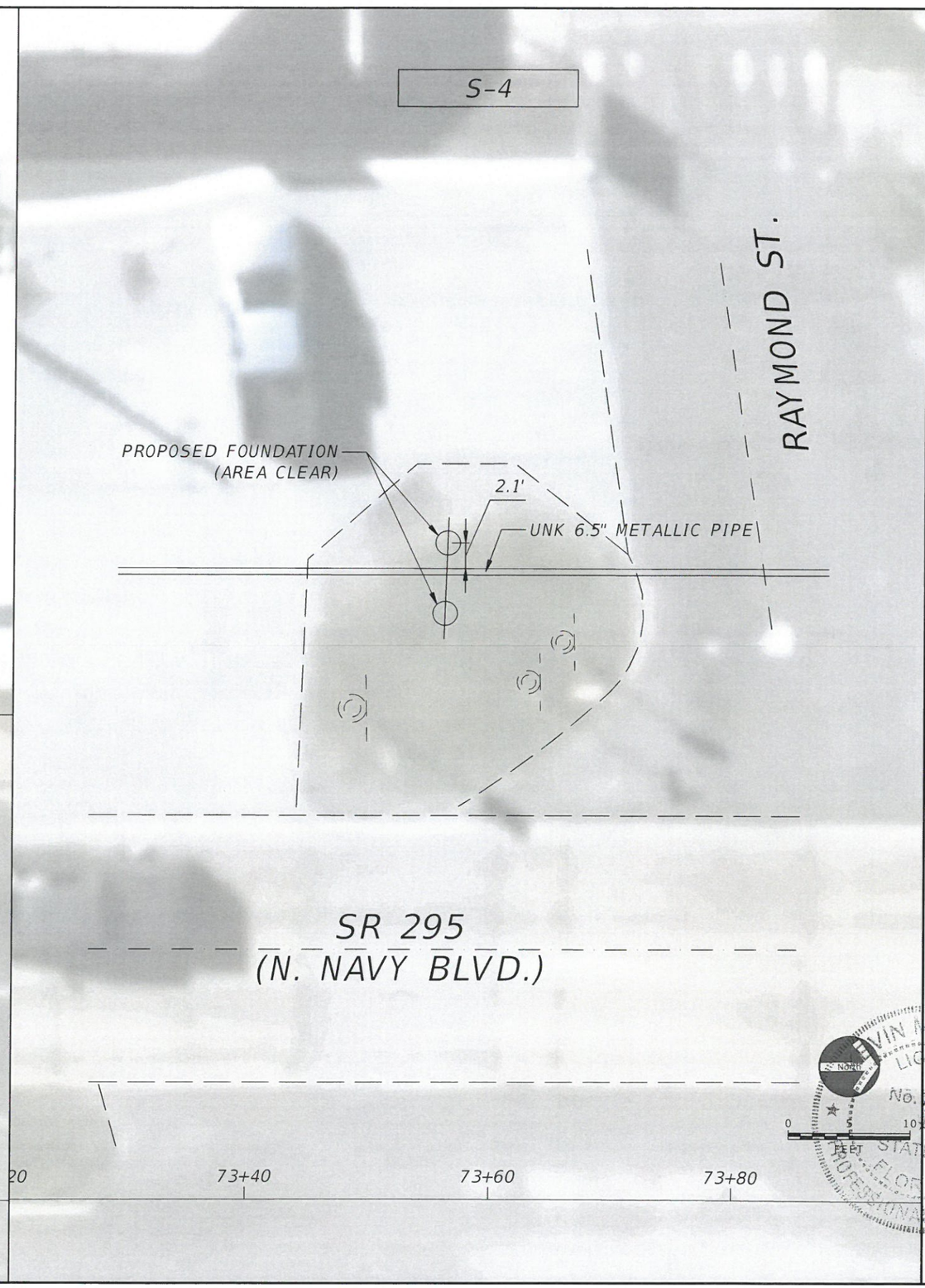
SOUTHEASTERN SURVEYING AND MAPPING CORPORATION, L.B.M. NO. 2108
THOMAS K. MEAD, P.S.M. NO. 5624
CHIPLEY, FLORIDA 32428
PHONE: (850) 638-0790

KEVIN M. MORGAN LICENSE NO. 71350 STATE OF FLORIDA PROFESSIONAL ENGINEER

ENGINEER OF RECORD:
11/21/17
KEVIN M. MORGAN FL# 71350

DRAWN BY:	JPB
DESIGNED BY:	JPB
CHECKED BY:	KMM
APPROVED BY:	GSA
PROJECT NUMBER	0203792520
DRAWING NUMBER	014





NUMBER	REVISIONS	DATE	APPROVED BY

NAS GUIDE SIGN PROJECT

UTILITY PLAN

ATKINS
2114 AIRPORT BLVD., SUITE 1450
PENSACOLA, FLORIDA 32504
PHONE NO. 850.478.9844
CERTIFICATE OF AUTHORIZATION NO. 24

ENGINEER OF RECORD
KEVIN M. MORGAN
FL# 73596
11/14/17

DRAWN BY:	JPB
DESIGNED BY:	JPB
CHECKED BY:	KMM
APPROVED BY:	GSA
PROJECT NUMBER	0203792520
DRAWING NUMBER	015

User: STM6797
T:\NAS_Signage\0203792520\SigningUtility_Plan.dwg 09/19/2017 05:19:03 PM

DATE OF SURVEY: SEPTEMBER 28, 2017
SURVEY MADE BY: J. FINDLING, E.I
SUBMITTED BY: W. LAWRENCE, P.E

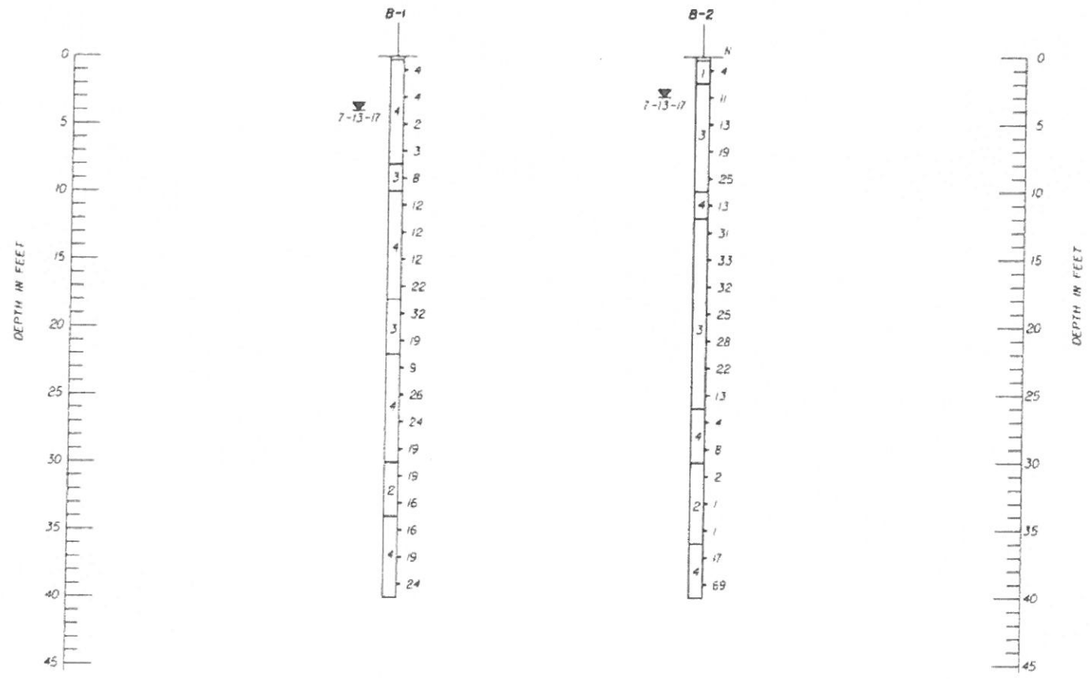
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
MATERIALS AND RESEARCH

DISTRICT: THREE
ROAD NO.:
COUNTY: ESCAMBIA

PROJECT NAME: PNAS OVERHEAD SIGNS

NOVA PROJECT NUMBER: 8217106

	ORGANIC/MOISTURE CONTENT			SIEVE ANALYSIS RESULTS % PASS						ATTERBERG LIMITS (%)					CORROSION TEST RESULTS				
STRATUM NO.	NO. OF TESTS	% ORGANIC	MOISTURE CONTENT	NO. OF TESTS	10 MESH	40 MESH	60 MESH	100 MESH	200 MESH	NO. OF TESTS	LIQUID LIMIT	PLASTIC INDEX	AASHTO GROUP	DESCRIPTION	NO. OF TESTS	RESISTIVITY ohms-cm	CHLORIDE ppm	SULFATES ppm	pH
1	--	--	--	--	--	--	--	--	--	--	--	--	A-2-4	BROWN FINE-GRAINED SILTY SAND (SM)	--	--	--	--	--
2	1	--	32	1	--	--	--	--	20	--	--	--	A-2-6	GREY FINE-GRAINED CLAYEY SAND (SC)	--	--	--	--	--
3	2	--	21-22	2	--	--	--	--	1-2	--	--	--	A-3	GREY AND OFF-WHITE FINE-GRAINED SAND (SP)	1	2300	9	7	6.4
5	1	--	20	1	--	--	--	--	6	--	--	--	A-3	BROWN, LIGHT BROWN, AND GREY FINE-GRAINED SAND WITH SILT (SP-SM)	1	1600	4	9	6.1



GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FT.)
VERY LOOSE	LESS THAN 4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	GREATER THAN 50

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1 3/8 IN.
SPOON OUTSIDE DIA.	2 IN.
AUTO HAMMER - 90% EFFECIENCY (ROPE-CATHEAD)	
AVG. HAMMER DROP	30 IN.
HAMMER WEIGHT	140 LBS.

9/29/17
WILLIAM L. LAWRENCE, P.E.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

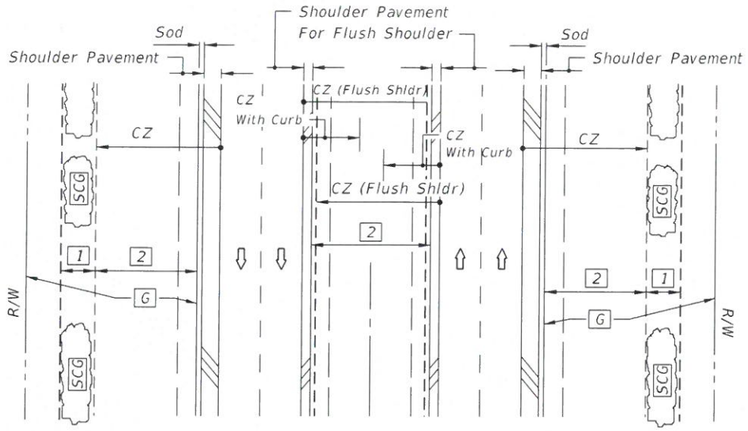
WILLIAM L. LAWRENCE, P.E.
P.E. LICENSE NUMBER 60147
NOVA ENGINEERING AND ENVIRONMENTAL LLC
140-A LURTON STREET
PENSACOLA, FLORIDA 32526

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

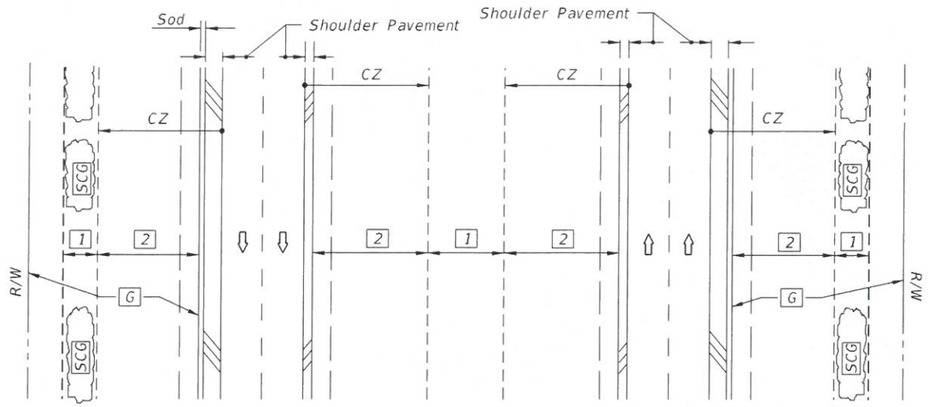
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	ESCAMBIA	

ROADWAY SOIL SURVEY

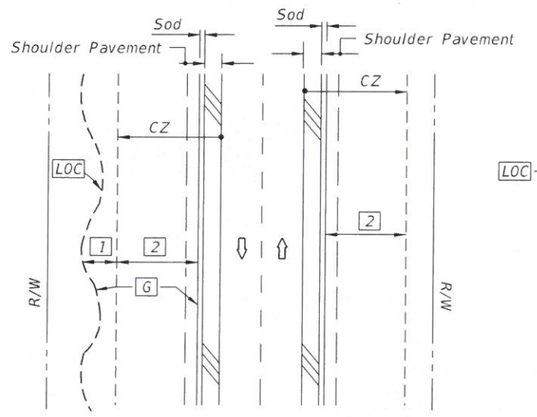
SHEET NO. 16



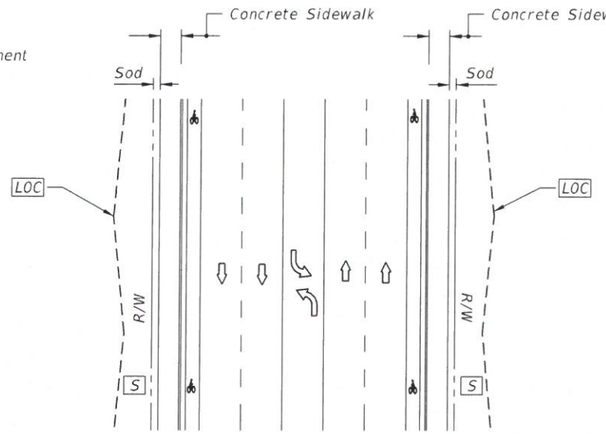
DIVIDED NARROW MEDIAN WITH OR WITHOUT CURBED MEDIAN



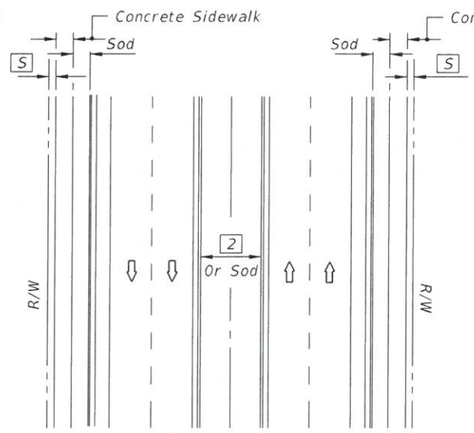
DIVIDED WIDE MEDIAN WITH OR WITHOUT CURBED MEDIAN



UNDIVIDED FLUSH SHOULDER



UNDIVIDED CURBED



DIVIDED CURBED

LEGEND

1	Wildflower Group #1
2	Wildflower Group #2
G	Turf (To Limit of Construction)
SCG	Selective Clearing And Grubbing
LOC	Limits Of Construction
S	Turf

WILDFLOWER SEEDING RATES

Common Name (Botanical Name)	lbs/ac
#1 Group	
Black-Eyed Susan (Rudbeckia hirta)	2
Lance-Leaf Tickseed (Coreopsis lanceolata)	10
Goldenmane Tickseed (Coreopsis basalis)	10
Leavenworth's Tickseed (Coreopsis leavenworthii)	10
Fire Wheel (Gaillardia pulchella)	10
Softhair Coneflower (Rudbeckia mollis)	2
Crimson Clover (Trifolium incarnatum)	15
#2 Group	
Annual Phlox (Phlox drummondii)	10
Moss Verbena (Verbena tenuisecta)	6
Leavenworth's Tickseed (Coreopsis leavenworthii)	10
Fire Wheel (Gaillardia pulchella)	10
Crimson Clover (Trifolium incarnatum)	15

Note: Wildflower seeding rates are for restoring impacted wildflower areas.

GENERAL NOTES

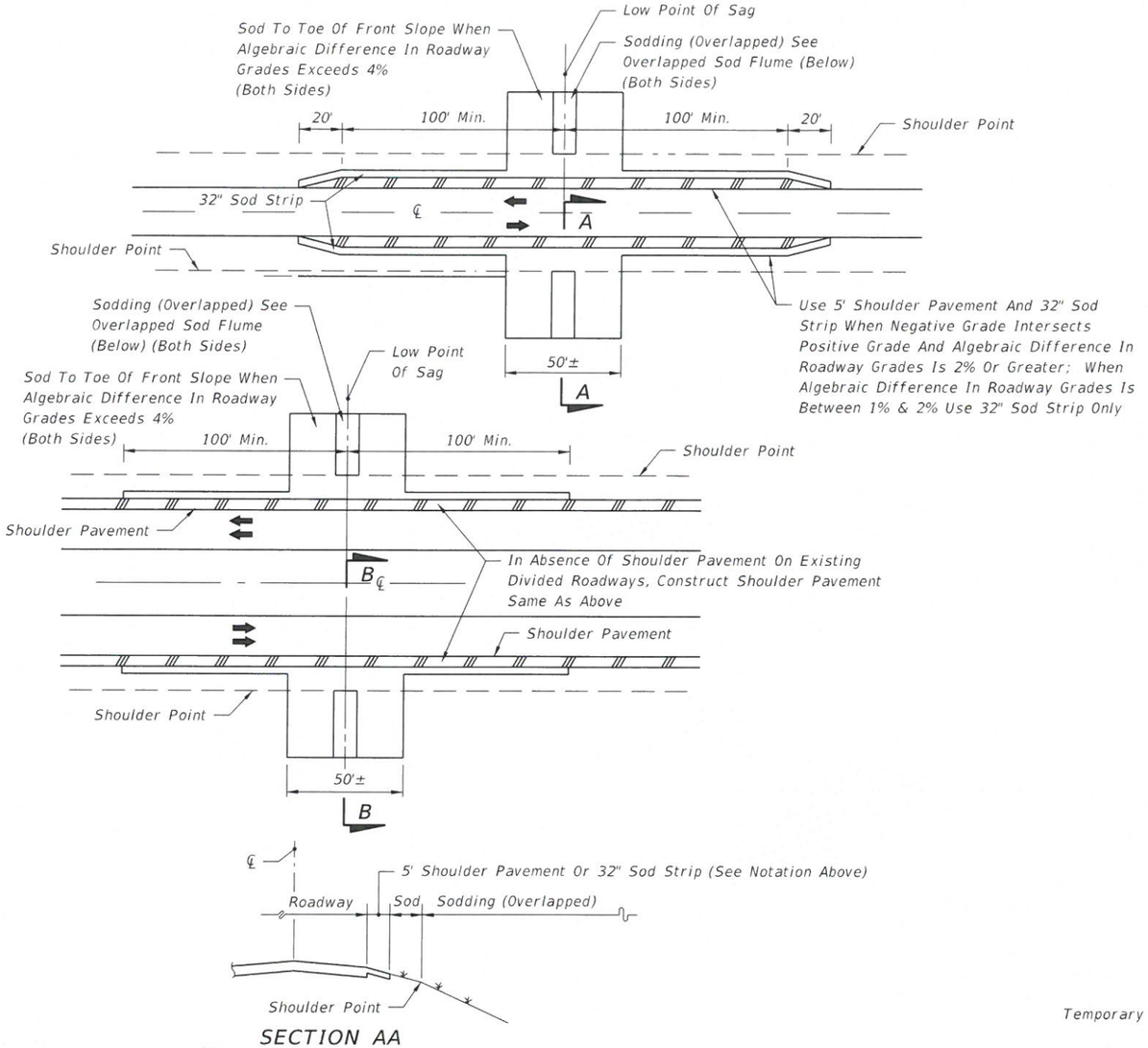
1. All turf establishment shall be performed meeting the requirements of Section 570 of the Standard Specifications.
2. Activities such as clearing, grading, and excavating that will disturb one or more acres of land require coverage under the Generic Permit for Stormwater Discharge from Large and Small Construction Activities from the Florida Department of Environmental Protection, and implementation of appropriate pollution prevention measures to minimize erosion and sedimentation and properly manage stormwater.
3. Confirm compatibility of wildflower with Seeding Zones.

SEEDING ZONES

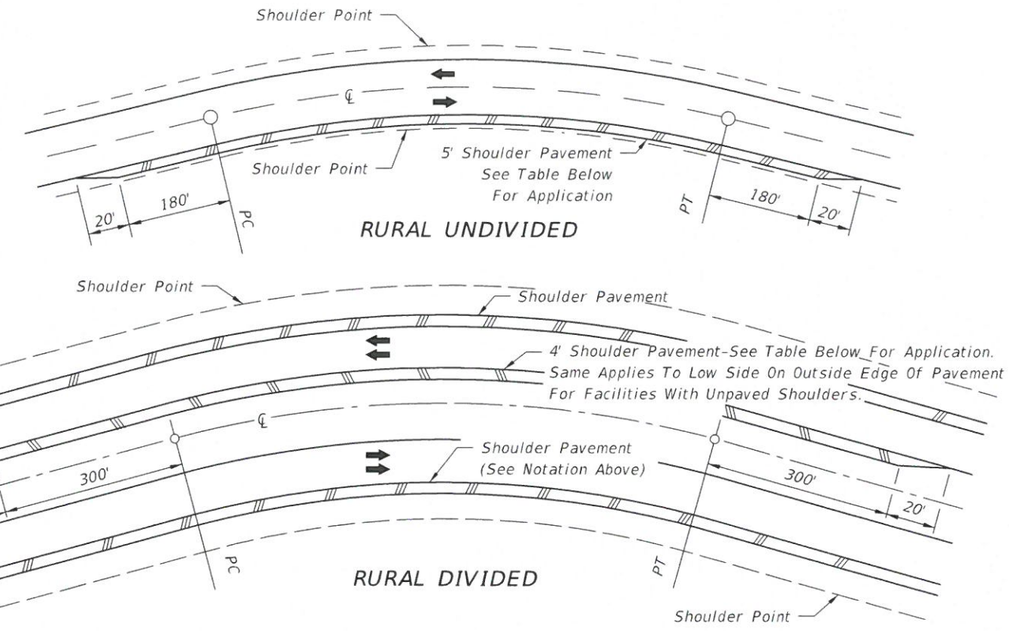
SHEET NO. 17

10/11/2016 9:50:52 AM

LAST REVISION	REVISION	DESCRIPTION:			
07/01/07			FY 2017-18 DESIGN STANDARDS	PERMANENT EROSION CONTROL	INDEX NO. 104 / SHEET NO. 1 of 2



SHOULDER AND SLOPE TREATMENT IN SAG VERTICAL CURVES



CRITERIA FOR PAVING SHOULDER ON DIVIDED AND UNDIVIDED FACILITIES		
Design Speed (mph)	Degree Of Curve	Note: Shoulder Pavement is required on all curves meeting the criteria tabulated. For curves not meeting the criteria, shoulders are to be paved where erosion of the shoulder is evident or anticipated.
30	7° Or Greater	
40	5° Or Greater	
50	4° Or Greater	
60	3° Or Greater	
65	3° Or Greater	
70	2° Or Greater	

SHOULDER AND SLOPE TREATMENT FOR SUPERELEVATED ROADWAYS

KEVIN M. MORGAN LICENSED No. 71650 STATE OF FLORIDA PROFESSIONAL ENGINEER 11/14/17

NOTES

1. These treatments are applicable to new construction, reconstruction and RRR projects. Project requirements for shoulder pavement and sodding that exceed the limits of this standard take precedence.
2. For sodding adjacent to ditches and at headwalls, see Index No. 281.
3. All front slopes steeper than 1:3 are to be sodded.

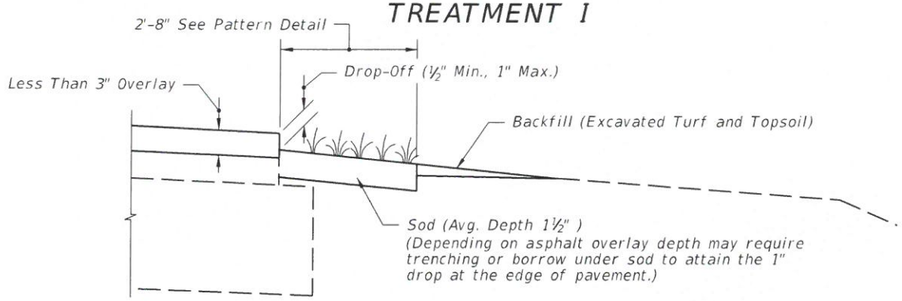
SHEET NO. 18

TREATMENTS FOR PROTECTION FROM CONCENTRATED ROADWAY RUNOFF EROSION AND SHOULDER RAVELING

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/01			FDOT	FY 2017-18 DESIGN STANDARDS	PERMANENT EROSION CONTROL	104	2 of 2

10/11/2016 9:50:54 AM

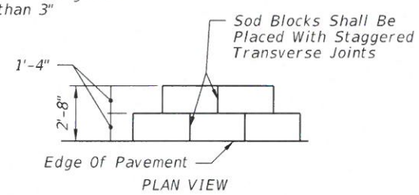
TREATMENT I



COMPLETED SHOULDER

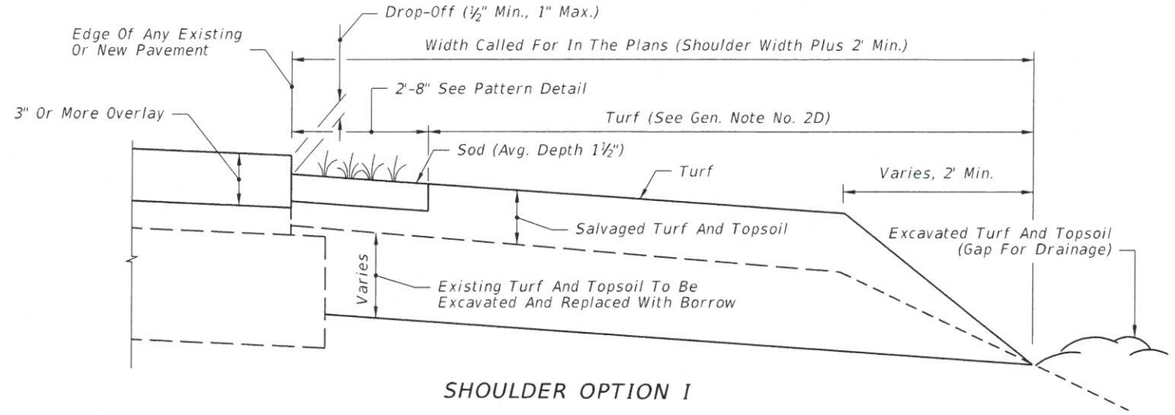
CRITERIA FOR USING TREATMENT I

Project___
- is resurfacing, widening and resurfacing or construction of shoulder pavement
- is rural or is urban without curb and gutter
- resurfacing build-up is less than 3"

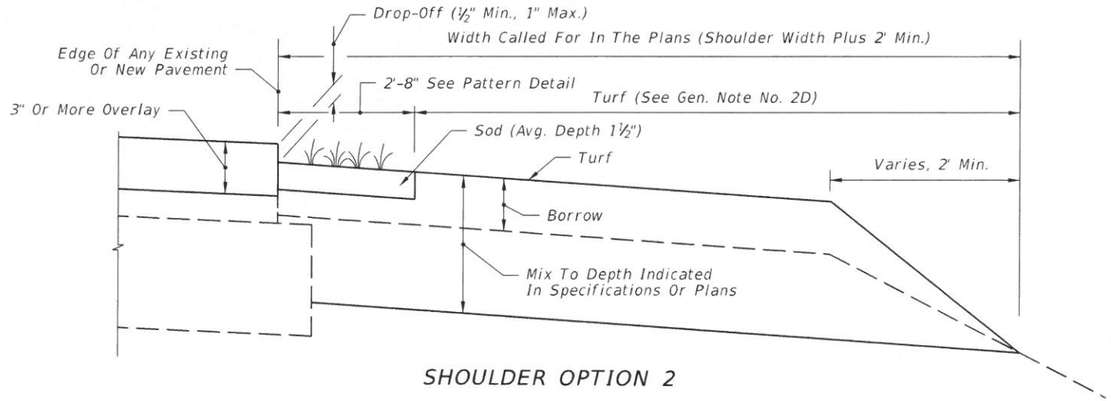


PATTERN DETAIL

TREATMENT II



SHOULDER OPTION I



SHOULDER OPTION 2

CRITERIA FOR USING TREATMENT II

Project___
- is resurfacing or construction of shoulder pavement
- is rural or is urban without curb and gutter
- resurfacing build-up is 3" or more

A SIMILAR TREATMENT MAY BE USED FOR PROJECTS THAT REQUIRE SHOULDER WIDENING. DETAILS ARE TO BE SHOWN IN THE PLANS.

GENERAL NOTES

1. Treatment I:

   A. If trenching under sod is necessary to achieve the required Drop-Off, excavated turf and topsoil are to be used for filling voids and low areas at the edge of pavement or for flushing along the edge of sod. Excess material to be uniformly distributed over the shoulder.

   B. Payment for sod, excavation of turf and topsoil and for back fill of this material under Treatment I is to be included in the contract unit price for Performance Turf, SY. Prepared Soil Layer not required.

2. Treatment II:

   A. All borrow shall meet requirements for a "Select" material in accordance with Index 505 and Section 120 of the Standard Specifications.

   B. Borrow may be used in lieu of excavated turf and topsoil when economically feasible, however the upper 6" shall meet the requirements of Section 162 "Prepared Soil Layer". There will be no additional payment for substituting borrow for excavated turf and topsoil.

   C. When existing turf and topsoil do not meet the requirements of Section 162 "Prepared Soil Layer", provide additive materials as necessary in the upper 6" to meet the requirements of Section 162. There will be no additional payment for additives.

   D. Payment for Treatment II will be under Prepared Soil Layer. Sod and other materials for turf establishment shall be paid for as Performance Turf, SY.

3. Special attention is to be directed at achieving the required Drop-Off at the edge of pavement, within the dimension range shown.

4. Activities such as clearing, grading, and excavating that will disturb one or more acres of land require coverage under the Generic Permit for Stormwater Discharge from Large and Small Construction Activities from the Florida Department of Environmental Protection, and implementation of appropriate pollution prevention measures to minimize erosion and sedimentation and properly manage stormwater.

5. Turf Establishment:

   A. Wildflowers destroyed by shoulder sodding and turf operations are to be reestablished under the seeding rates prescribed for permanent wildflower #2 Group shown by table on Index 104.

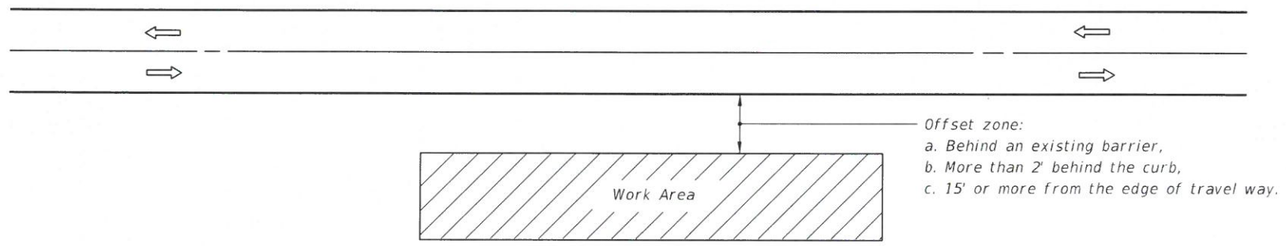
   B. All turf establishment shall be performed meeting the requirements of Section 570 of the Standard Specifications.

KEVIN M. MORGAN LICENSE No. 71350 STATE OF FLORIDA PROFESSIONAL ENGINEER

11/14/16

10/27/2016 11:20:03 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	SHOULDER SODDING AND TURF ON EXISTING FACILITIES	INDEX NO.	SHEET NO.
11/01/16					105	1 of 1



SYMBOLS

Work Area

Lane Identification + Direction of Traffic

GENERAL NOTES

1. If the work operation (excluding establishing and terminating the work area) requires that two or more work vehicles cross the offset zone in any one hour, traffic control will be in conformance with Index No. 602.
2. No special signing is required.
3. When a side road intersects the highway within the work area, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
4. When construction activities encroach on a sidewalk refer to Index No. 660.
5. For general TCZ requirements and additional information, refer to Index No. 600.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS AND THEIR ACTIVITIES ARE BEHIND AN EXISTING BARRIER, MORE THAN 2' BEHIND THE CURB, OR 15' OR MORE FROM THE EDGE OF TRAVEL WAY.

KATHERINE MORGAN LICENSE No. 71350 STATE OF FLORIDA PROFESSIONAL ENGINEER 11/14/17

10/12/2016 1:06:39 PM

LAST REVISION	REVISION	DESCRIPTION:				
07/01/05			FDOT FY 2017-18 DESIGN STANDARDS	TWO-LANE, TWO-WAY, WORK OUTSIDE SHOULDER	INDEX NO. 601	SHEET NO. 1 of 1

SHEET NO. 20

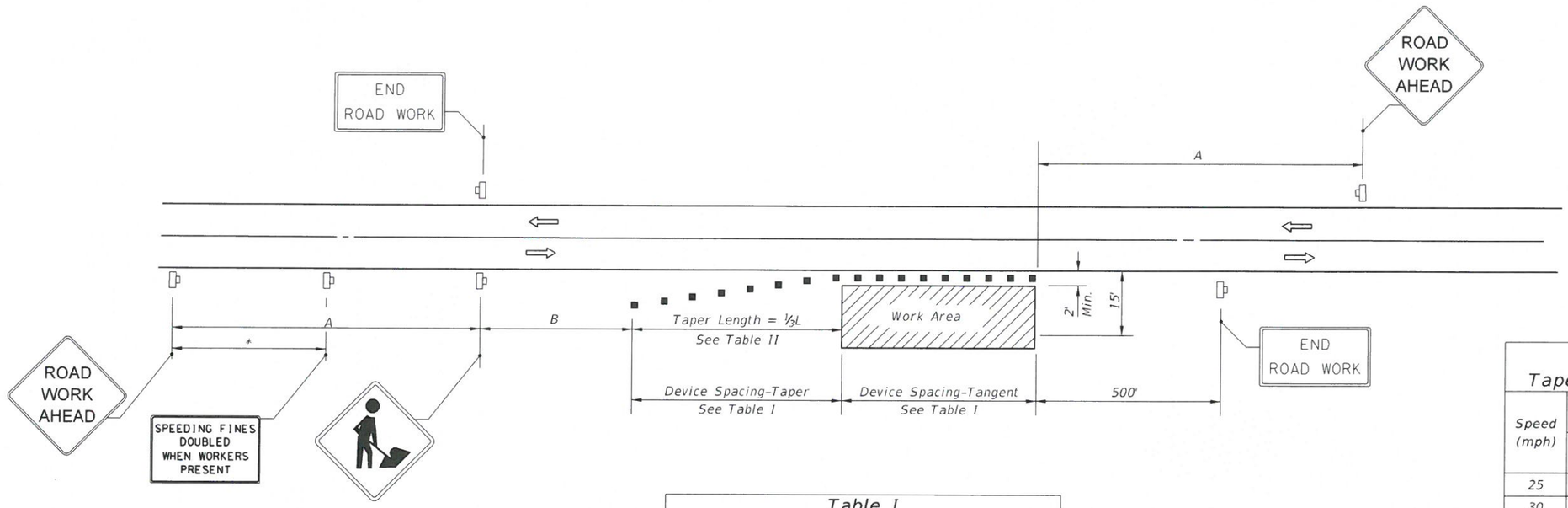


Table I
Device Spacing

Speed (mph)	Max. Distance Between Devices (ft.)			
	Cones or Tubular Markers		Type I or Type II Barricades or Vertical Panels or Drums	
	Taper	Tangent	Taper	Tangent
25	25	50	25	50
30 to 45	25	50	30	50
50 to 70	25	50	50	100

Table II
Taper Length - Shoulder

Speed (mph)	½L (ft)			Notes
	8' Shldr.	10' Shldr.	12' Shldr.	
25	28	35	42	$L=\frac{WS^2}{60}$
30	40	50	60	
35	55	68	82	
40	72	90	107	
45	120	150	180	L=WS
50	133	167	200	
55	147	183	220	
60	160	200	240	
65	173	217	260	
70	187	233	280	

8' minimum shoulder width

½L = Length of shoulder taper in feet

W = Width of total shoulder in feet (combined paved and unpaved width)

S = Posted speed limit (mph)

DISTANCE BETWEEN SIGNS

Speed	Spacing (ft.)	
	A	B
40 mph or less	200	200
45 mph	350	350
50 mph or greater	500	500

*Midway between signs.

SYMBOLS

Work Area

Channelizing Device (See Index No. 600)

Work Zone Sign

Lane Identification + Direction of Traffic

GENERAL NOTES

1. When four or more work vehicles enter the through traffic lanes in a one hour period or less (excluding establishing and terminating the work area), the advanced FLAGGER sign shall be substituted for the WORKERS sign. For location of flaggers and FLAGGER signs, see Index No. 603.
2. SHOULDER WORK sign may be used as an alternate to the WORKER symbol sign only on the side where the shoulder work is being performed.
3. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
4. For general TCZ requirements and additional information, refer to Index No. 600.

DURATION NOTES

1. Signs and channelizing devices may be omitted if all of the following conditions are met:
   a. Work operations are 60 minutes or less.
   b. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

KEVIN M. MORGAN
LICENSE
No. 73504
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

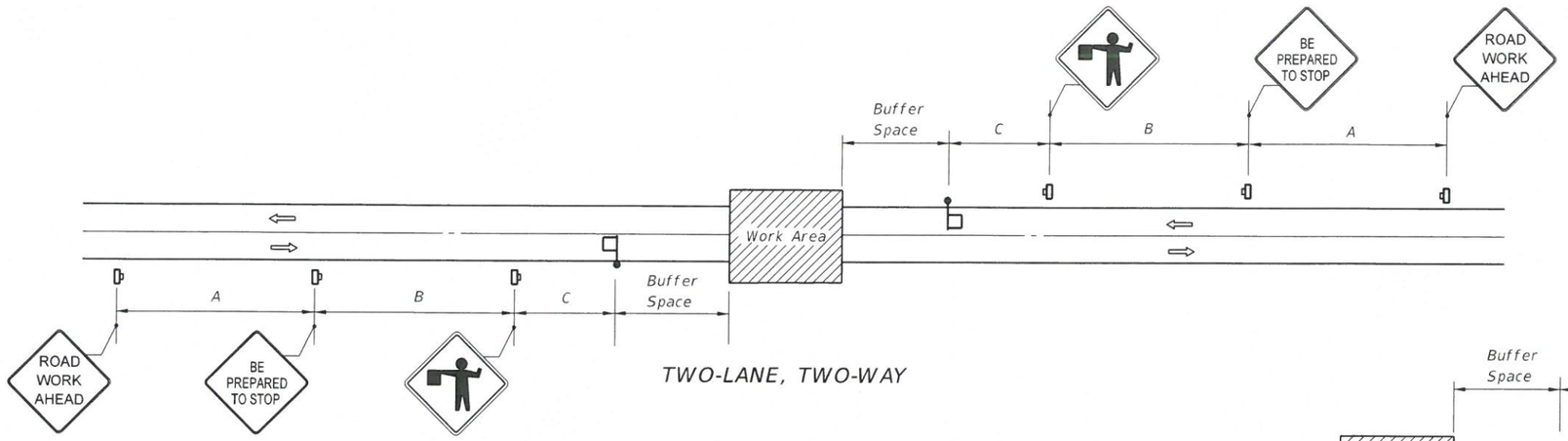
CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA CLOSER THAN 15' BUT NOT CLOSER THAN 2' TO THE EDGE OF TRAVEL WAY.

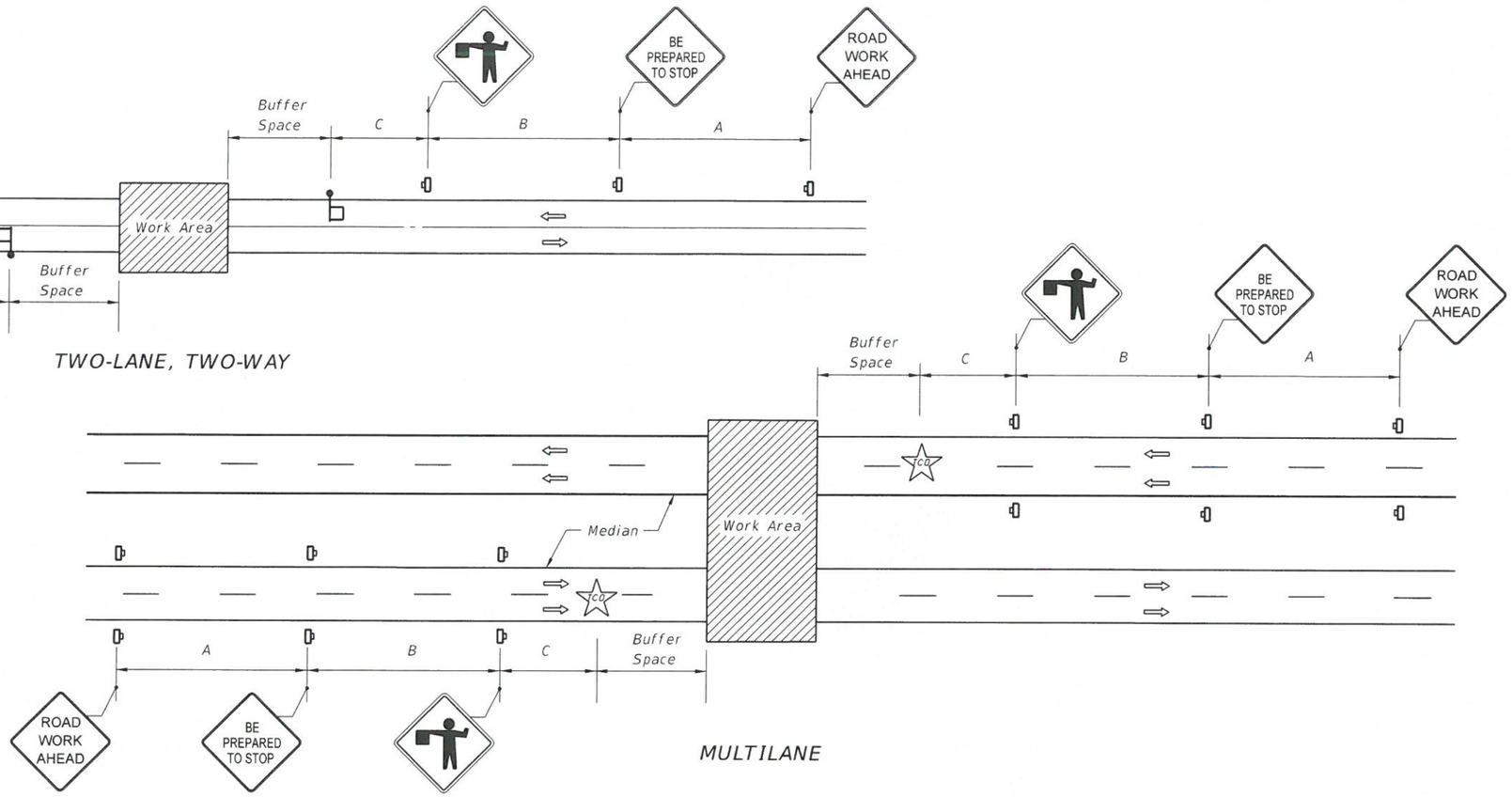
10/12/2016 1:06:55 PM

SHEET NO. 21

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/15			FY 2017-18 DESIGN STANDARDS	TWO-LANE, TWO-WAY, WORK ON SHOULDER	602	1 of 1



TWO-LANE, TWO-WAY



MULTILANE

BUFFER SPACE	
Speed (mph)	Dist. (ft.)
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

DISTANCE BETWEEN SIGNS			
Speed (mph)	Spacing (ft.)		
	A	B	C
40 or less	200	200	200
45	350	350	350
50 or greater	500	500	500

SYMBOLS

- Work Area
- Work Zone Sign
- Flagger
- Traffic Control Officer
- Lane Identification + Direction of Traffic

GENERAL NOTES

1. This Index does not apply to limited access facilities.
2. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with applicable TCZ Indexes.
3. Traffic volume or complexity of the roadway may dictate additional devices, signs, flagmen and/or a traffic control officer.
4. The buffer space may be omitted if there are no sight obstructions to vehicles approaching the Flagger/Officer for distance equal to the buffer space.
5. A Flagger may be substituted for a Traffic Control Officer and the BE PREPARED TO STOP sign may be omitted, when the following conditions are met:
   a. Speed limit is 45 mph or less.
   b. No sight obstructions to vehicles approaching the Flagger/Officer for a distance equal to the buffer space.
   c. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
6. On undivided highways the median sign as shown are to be omitted.
7. For general TCZ requirements and additional information refer to FDOT Index No. 600.

CONDITIONS

PLANNED CLOSURE NOT EXCEEDING 5 MINUTES.

10/12/2016 1:15:26 PM

LAST REVISION	REVISION	DESCRIPTION:
07/01/15		

FDOT FY 2017-18 DESIGN STANDARDS

TEMPORARY ROAD CLOSURE 5 MINUTES OR LESS

INDEX NO. 625 | SHEET NO. 1 of 1

SHEET NO. 22

GENERAL NOTES:

1. Verify Column lengths in the field prior to fabrication.

2. Shop drawings:

   A. Column/Sign Posts: Sign Support Shop drawings are not required when fabricated in accordance with this Index and support posts do not exceed the length shown in the plans by more than 2'-0".

   B. Sign Panels: Horizontal panel splices are allowed at interior wind beams for sign panels with a depth ("D") greater than 10 feet. Shop drawings required for panel splice details.

   C. When shop drawings are required; obtain approval prior to fabrication.

3. Materials:

   A. Sign Panel Mounting Materials:
      a. Aluminum Bars, and Extruded Shapes: ASTM B221, Alloy 6061-T6 or Alloy 6351-T5
      b. Aluminum Structural Shapes: ASTM B308, Alloy 6061-T6
   B. Sign Support Structure Materials:
      a. Steel Plates and Structural Shapes: ASTM A36 or ASTM A709, Grade 36
      b. Steel Weld Metal: E70XX
      c. Brass Shims: ASTM B36
   C. Aluminum Bolts, Nuts and Washers:
      a. Flat Head and Button Head Bolts: ASTM F 468, Alloy 2024-T4
      b. Hex Nuts: ASTM F467, 2024-T4
      c. Washers: ASTM B221, Alloy 7075-T6
   D. Stainless Steel Bolts, Nuts and Washers Alloy Group 2, Condition A, may be substituted for the Aluminum bolts as follows:
      a. Bolts: ASTM F593, CW1 or SH1
      b. Nuts: ASTM F594,
   E. High Strength (H.S.) Steel Bolts, Nuts and Washers:
      a. Galvanized Hex Head Bolts: ASTM F3125, Grade A325, Type 1
      b. Galvanized Nuts: ASTM A563 Hex, Grade DH
      c. Galvanized Washers: ASTM F436
   F. Concrete: Class I.
   G. Reinforcing Bars or Welded Wire Reinforcement (WWR): Specification Section 415

4. Coatings:

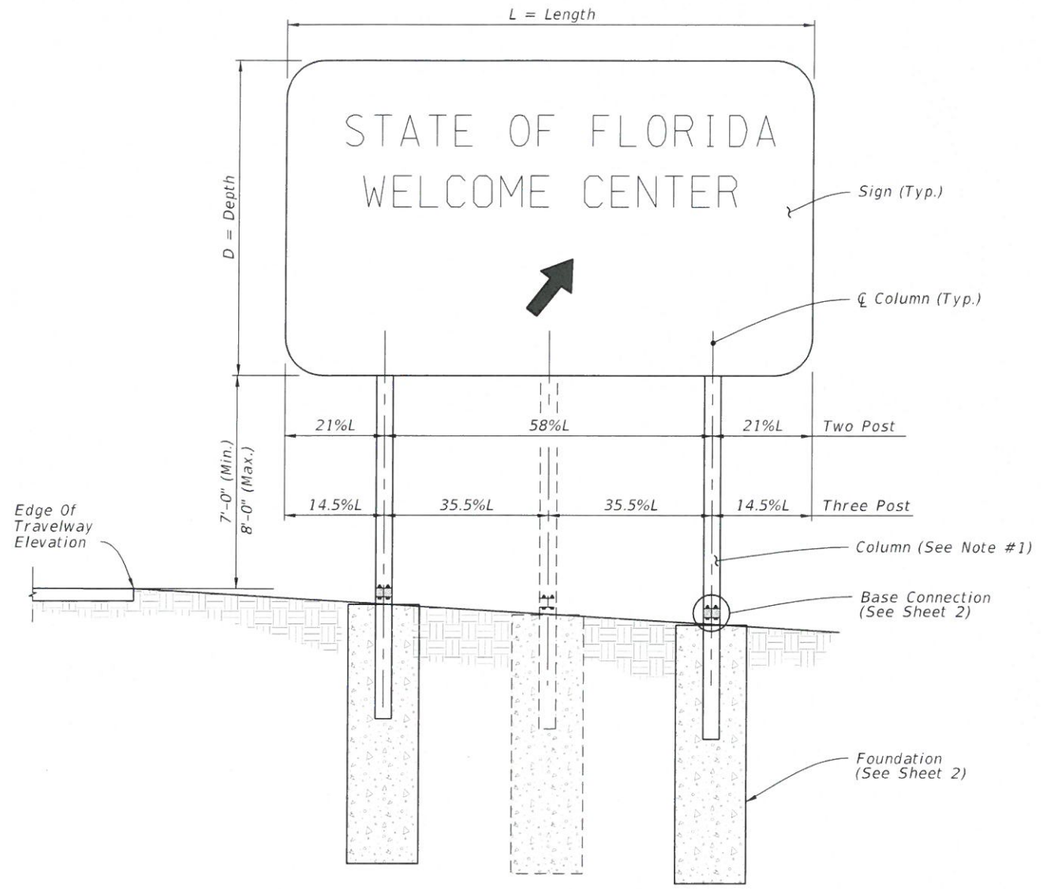
   A. Aluminum Fasteners: Anodic coating (0.0002 inches min.) and chromate sealed
   B. Galvanize High Strength Steel Bolts Nuts and Washers: ASTM F2329
   C. Galvanize all other steel items (excluding stainless steel): Hot-dip ASTM A123
   D. Treat damaged galvanizing in accordance with Specification Section 562

5. Fabrication:

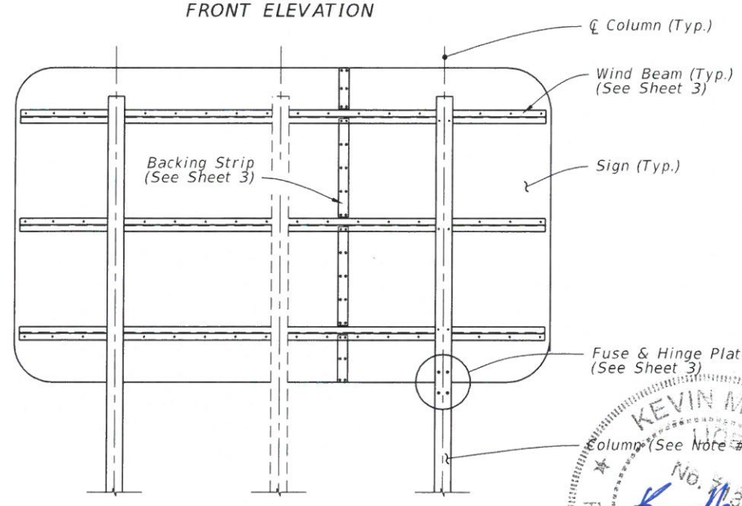
   A. All Base Connections and Stub Column materials are steel unless otherwise specified.
   B. Drill or sub-punch and ream holes in Fuse Plates and Hinge Plates
   C. Weld Base Plate to Post & Stub or if using the Alternate Connection Detail weld Base Plate and Stiffeners to Post and Stub (Sheet 2)
   D. Hot dip galvanize after fabrication; Remove all drips, runs or beads on base plate within washer contact areas (Including saw cuts)

6. Construction:

   A. Install the Sign Structure foundation in accordance with Specification Section 455. Orient Stub Post according to direction of traffic (Sheet 2)
   B. Tighten all high strength bolts except Base Bolts in accordance with Specification Section 700.
   C. Assemble Post to Stub with Base Bolts and three flat washers per bolt (See Base Connection Details, Sheet 2). Tighten Base Bolts in accordance with Instructions Notes on Sheet 2.



FRONT ELEVATION



BACK ELEVATION

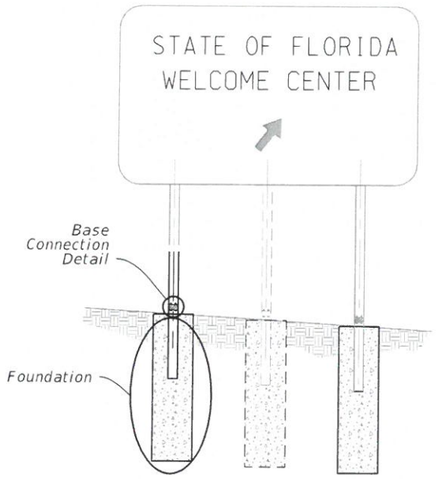
MULTI-COLUMN SIGN ASSEMBLY

KEVIN M. MORGAN LICENSED No. 36[illegible] STATE OF FLORIDA PROFESSIONAL ENGINEER
11/14/17

SHEET NO. 23

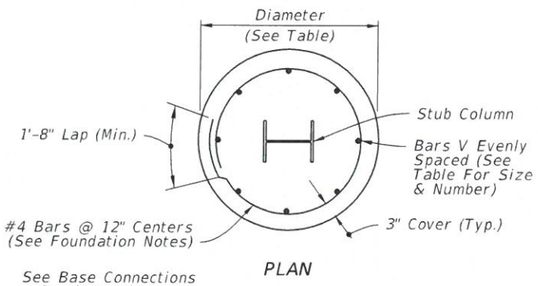
4/17/2017 9:20:28 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	MULTI-COLUMN GROUND SIGN	INDEX NO.	SHEET NO.
11/01/16					11200	1 of 3

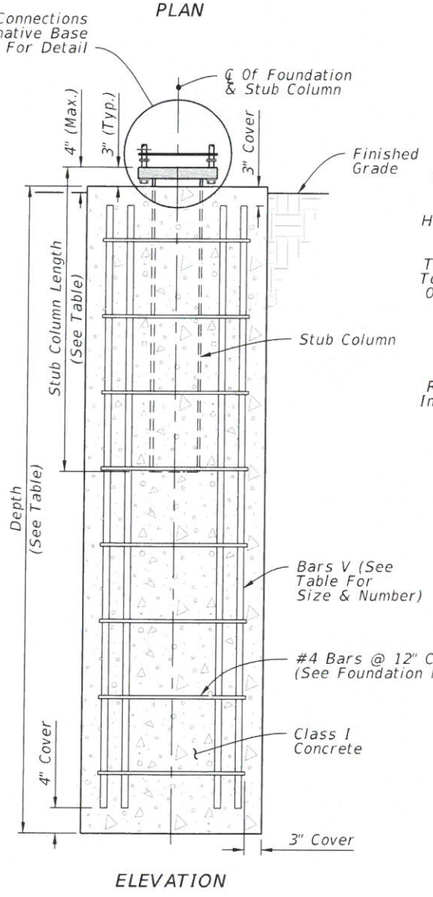


MULTI-COLUMN SIGN ASSEMBLY

FOUNDATION DATA				
Post & Stub Section*	Dia.	Depth	Stub Column Length	Reinf. Bars V
S 3x5.7	2'-0"	4'-0"	3'-0"	10-#6
W 6x12	2'-0"	6'-0"	3'-0"	10-#6
W 8x18	2'-4"	7'-6"	4'-0"	8-#8
W 8x24	2'-4"	8'-6"	4'-0"	8-#8
W 10x33	2'-4"	10'-3"	4'-0"	8-#8
W 12x45	2'-8"	11'-3"	5'-0"	10-#8



PLAN



ELEVATION

FOUNDATION NOTES:

The Contractor may use Welded Wire Reinforcement (WWR) for foundation reinforcing.

At the Contractors option, the #4 tie bars at 12" o.c. may be replaced by D10 Spiral Wire @ 6" pitch, with three flat turns at the top and one flat turn at the bottom in accordance with Specification Section 415.

INSTRUCTIONS NOTES:

1. Assembly of Base Instructions:

   A. Place one washer on each Base Bolt between the Bottom Base Plate and the head of high strength Base Bolt; place the next washer between the Bottom Base Plate and the Bolt Keeper Plate; add the Top Base Plate section and place the third washer between the Top Base Plate and the Nut.

   B. Shim as required to plumb column. Provide 2-0.0149" thick (28 gauge) and 2-0.0329" thick (21 gauge) brass shims per column.

2. H.S. Base Bolt L_2 Tightening Instructions:

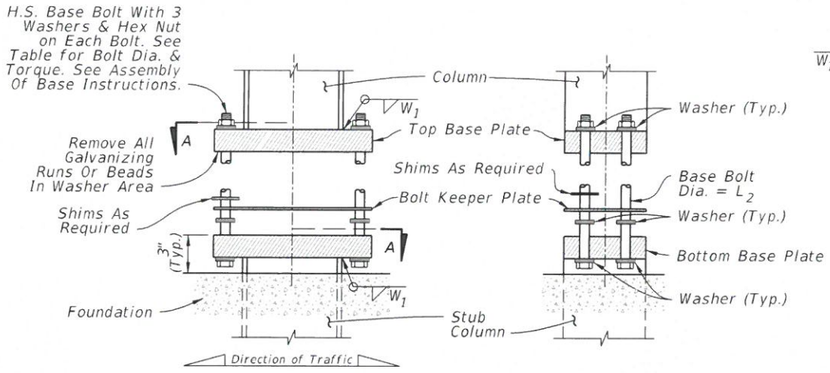
   A. Tighten Base Bolts to the maximum possible with a 12" to 15" wrench (this will bed the washers and shims and clear the bolt threads).

   B. Loosen each Base Bolt one turn.

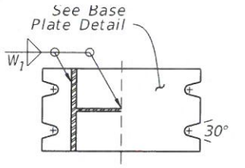
   C. Under the supervision of the Engineer, use a calibrated wrench to tighten bolts to the torque prescribed in the Table. Over tightened Base Bolts will not be permitted.

   D. Burr threads at junction with nut to prevent nut loosening. Treat damaged galvanizing.

FOUNDATION



SIDE ELEVATION FRONT ELEVATION



SECTION A-A

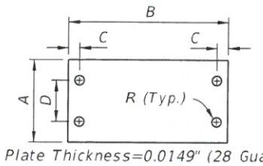
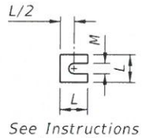
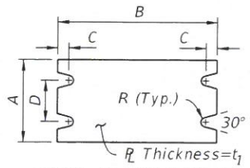


Plate Thickness=0.0149" (28 Guage)

BOLT KEEPER PLATE DETAIL



SHIM DETAIL (Brass)

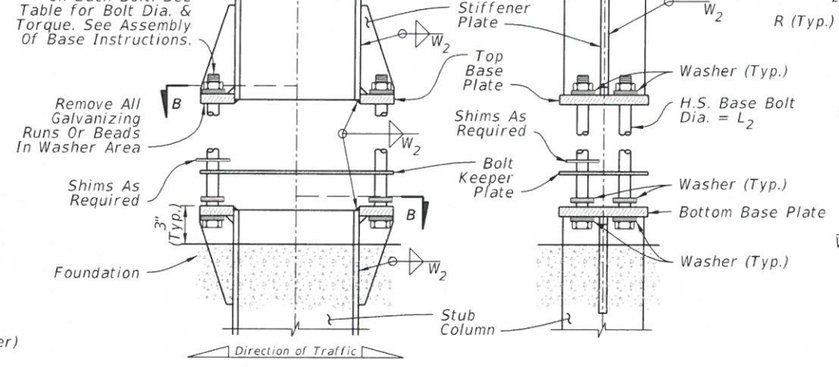


BASE PLATE DETAIL

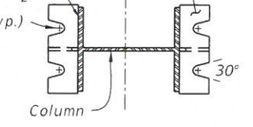
BASE CONNECTION DATA										SHIM	
Post & Stub Section*	A	B	C	D	R	t_1	L_2	W_1	Torque (lbf*in)	L	M
S 3x5.7	4"	7"	3/4"	2"	5/16"	1"	1/2"	1/4"	90 ± 20	1-1/4"	9/16"
W 6x12	4"	10"	3/4"	2"	3/8"	1-5/8"	5/8"	1/4"	270 ± 45	1-3/8"	11/16"
W 8x18	5-1/4"	12-1/2"	7/8"	2-3/4"	7/16"	1-3/4"	3/4"	3/8"	445 ± 75	1-3/4"	13/16"
W 8x24	6-1/2"	12-1/2"	7/8"	3-1/4"	7/16"	1-3/4"	3/4"	3/8"	445 ± 75	2-1/8"	13/16"
W 10x33	8"	16"	1-1/4"	4-3/4"	9/16"	2"	1"	1/2"	580 ± 90	2-3/8"	1-1/16"
W 12x45	10"	18"	1-1/4"	6"	9/16"	2"	1"	1/2"	580 ± 90	2-3/4"	1-1/16"

* Designations: (Normal Depth in inches) x (weight in pounds per linear foot).

BASE CONNECTION



SIDE ELEVATION FRONT ELEVATION



SECTION B-B

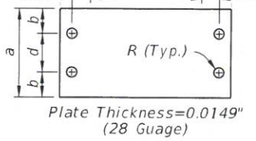
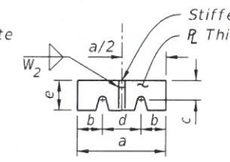
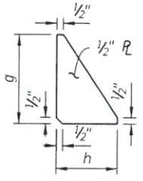


Plate Thickness=0.0149" (28 Guage)

BOLT KEEPER PLATE DETAIL



BASE PLATE DETAIL



STIFFENER PLATE DETAIL

ALTERNATIVE BASE CONNECTION DATA												
Section*	a	b	c	d	e	t_2	L_2	R	Torque (lbf*in)	g	h	W_2
W 6x12	4-3/4"	1-1/8"	1-3/16"	2-1/2"	2"	1/2"	5/8"	3/8"	270±45	5-1/8"	2"	1/4"
W 8x18	5-3/4"	1-1/2"	1-3/8"	2-3/4"	2-3/16"	5/8"	3/4"	7/16"	445±75	6-1/4"	2-3/16"	1/4"
W 8x24	7"	1-3/4"	1-3/8"	3-1/2"	2-3/8"	3/4"	3/4"	7/16"	445±75	8"	2-3/8"	5/16"
W 10x33	8"	2"	1-9/16"	4"	2-3/4"	3/4"	1"	9/16"	580±90	8"	2-3/4"	5/16"
W 12x45	8"	2"	1-9/16"	4"	3"	3/4"	1"	9/16"	580±90	8"	3"	5/16"

* Designations: (Normal Depth in inches) x (weight in pounds per linear foot).

ALTERNATIVE BASE CONNECTION

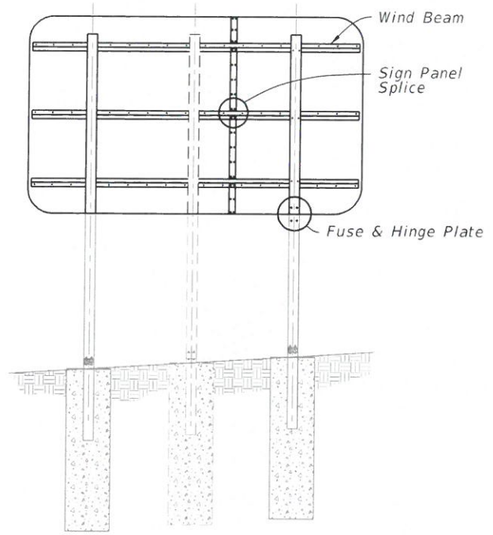
KEVIN M. MORGAN LICENSE No. 71350 STATE OF FLORIDA PROFESSIONAL ENGINEER

SHEET NO. 24

FOUNDATION AND BASE CONNECTION DETAILS

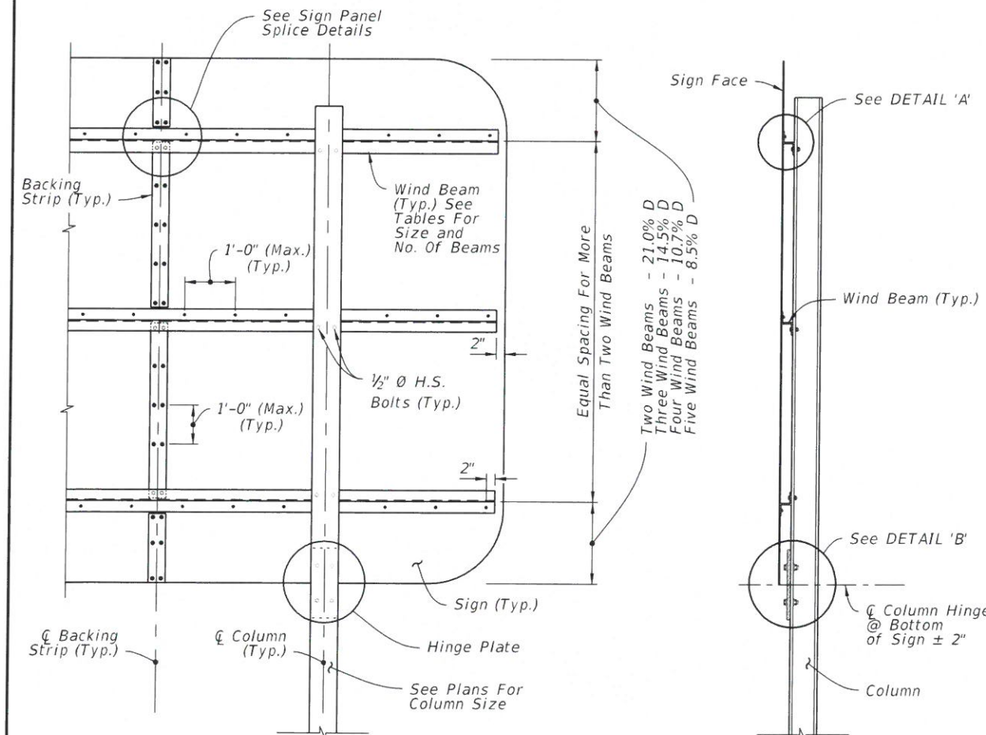
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
11/01/16			FDOT FY 2017-18 DESIGN STANDARDS	MULTI-COLUMN GROUND SIGN	11200	2 of 3

10/14/2016 7:55:02 AM



BACK ELEVATION

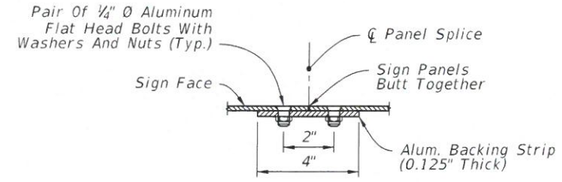
MULTI-COLUMN SIGN ASSEMBLY



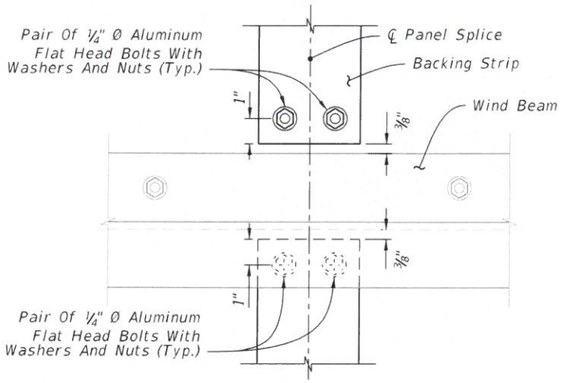
BACK ELEVATION

SIDE ELEVATION

MULTI-COLUMN SIGN BACK PANEL



PLAN VIEW



ELEVATION

SIGN PANEL SPLICE

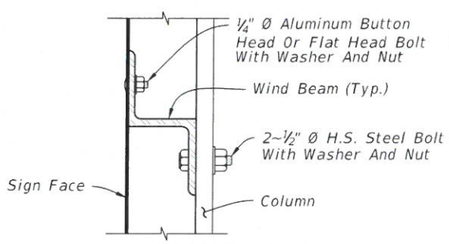
NUMBER OF WIND BEAMS FOR GIVEN DEPTH

No. Beams	Max. Depth
2	7'-0"
3	12'-0"
4	16'-4"
5	20'-8"

SIZE OF WIND BEAMS

Size Of Zee**	Length Of Sign (Feet)	
	2 Posts	3 Posts
Zee 1¾" x 1¾" x 1.09	0 to 11'-0"	0 to 17'-4"
Zee 3 x 2 1/16" x 2.33	11'-1" to 19'-0"	17'-5" to 29'-6"
Zee 3 x 2 11/16" x 3.38	19'-1" to 31'-0"	29'-7" to 40'-0"

** Zee Beams are aluminum. No steel equivalent available
Designation gives (Member Depth) x (Flange Width) x (lb/ft)

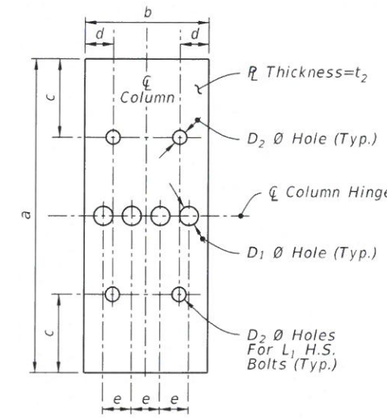


DETAIL 'A'

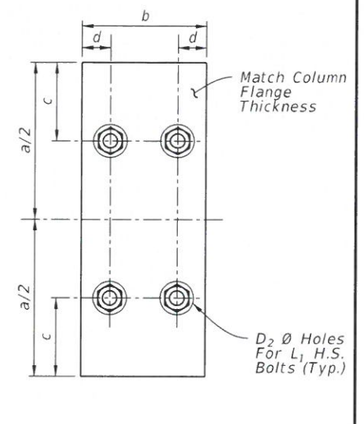
FUSE (HINGE) PLATE DATA

Section*	a	b	c	d	e	t_2	D_1	D_2	L_1
S 3x5.7	7-1/4"	2-3/8"	1-1/4"	1/2"	9/16"	3/8"	7/16"	9/16"	1/2"
W 6x12	7-1/4"	4"	1-1/4"	7/8"	15/16"	3/8"	13/16"	11/16"	5/8"
W 8x18	8-1/4"	5-1/4"	1-3/8"	1-1/8"	1-1/4"	3/8"	1"	13/16"	3/4"
W 8x24	8-1/4"	6-1/2"	1-3/8"	1-1/2"	1-1/2"	1/2"	1"	13/16"	3/4"
W 10x33	9-1/4"	8"	2"	1-3/4"	1-3/4"	5/8"	1-1/8"	1-1/16"	1"
W 12x45	11"	8"	2"	1-3/4"	1-3/4"	3/4"	1-5/16"	1-1/16"	1"

* Designations: Normal Depth in inches.

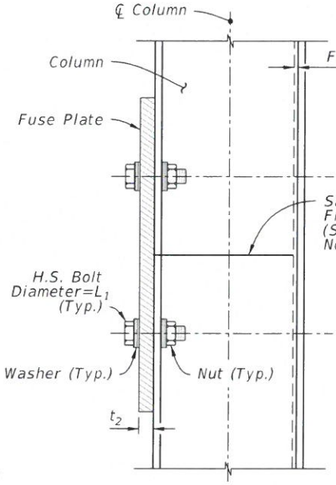


FUSE PLATE

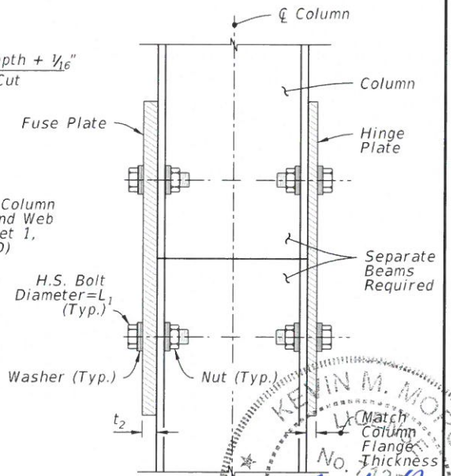


HINGE PLATE

FUSE & HINGE PLATE



Side Elevation
TYPICAL HINGE



Side Elevation
OPTIONAL HINGE

(See Fabrication Notes on Sheet 1)

DETAIL 'B'

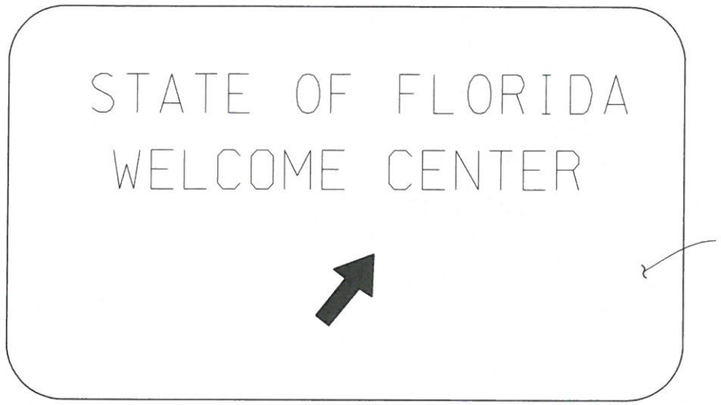
KEVIN M. MORGAN
No. 73350
STATE OF FLORIDA
PROFESSIONAL ENGINEER
11/01/16

SHEET NO. 25

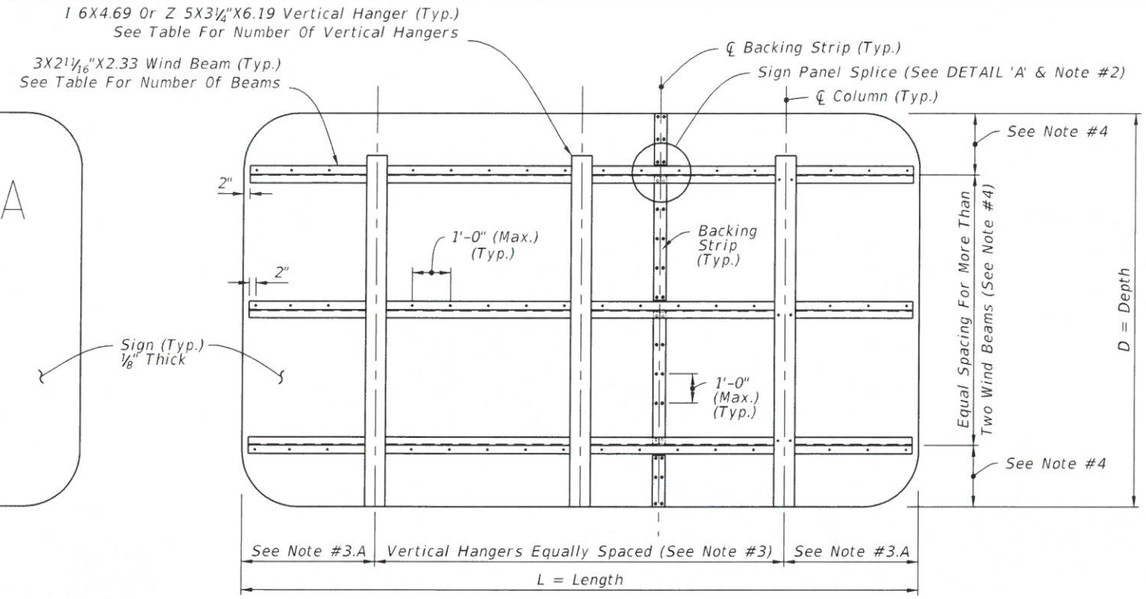
WIND BEAM, BACKING STRIP & FUSE/HINGE PLATE DETAILS

9:20:29 AM
4/17/2017

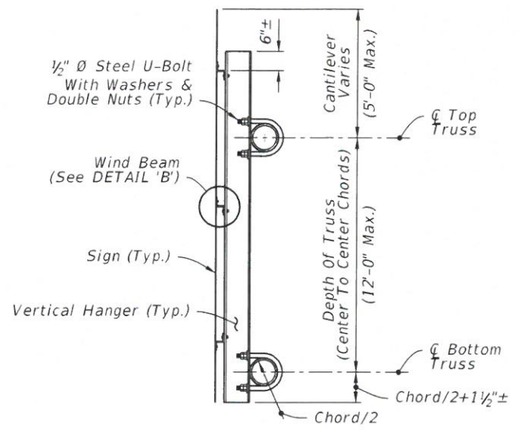
LAST REVISION	REVISION	DESCRIPTION:			
11/01/16			FY 2017-18 DESIGN STANDARDS	MULTI-COLUMN GROUND SIGN	INDEX NO. 11200 / SHEET NO. 3 of 3



FRONT ELEVATION

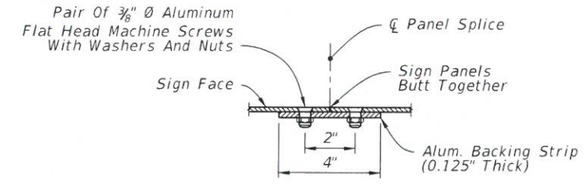


BACK ELEVATION

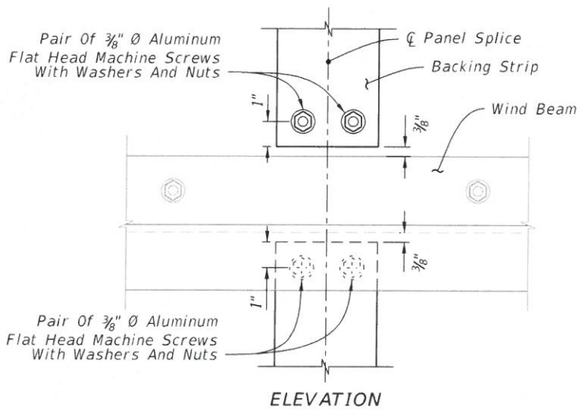


SIDE ELEVATION

TYPICAL SIGN FOR OVERHEAD TRUSS



PLAN VIEW



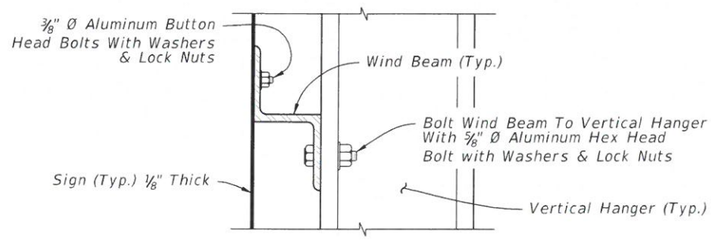
ELEVATION

SIGN PANEL SPLICE

DETAIL 'A'

WIND BEAMS AND VERTICAL HANGERS

Number Of Z 3x2 11/16 x2.33 Horiz. Wind Beams For Sign Depth And Wind			Number Of I6x4.69 or Z 5x3¼x6.19 Vertical Hanger Beams For Sign Length				
Wind M.P.H.	No. Beams	Max. Depth	2 Hangers Max Length	3 Hangers Max Length	4 Hangers Max Length	5 Hangers Max Length	6 Hangers Max Length
170	2	5'	20'	30'	40'	45'	X
170	3	9'	20'	30'	40'	45'	X
170	4	12'	15'	22'	30'	38'	45'
170	5	15'	15'	22'	30'	38'	45'
170	6	18'	15'	22'	30'	38'	45'
150	2	5'	25'	38'	45'	X	X
150	3	9'	25'	38'	45'	X	X
150	4	12'	20'	25'	38'	45'	X
150	5	15'	20'	25'	38'	45'	X
150	6	18'	20'	25'	38'	45'	X
130	2	5'	35'	45'	X	X	X
130	3	9'	35'	45'	X	X	X
130	4	12'	25'	35'	45'	X	X
130	5	15'	25'	35'	45'	X	X
130	6	18'	25'	35'	45'	X	X



DETAIL 'B'

GENERAL NOTES

1. Work this Index with Index 11310 and 11320.
2. The number and location of the Panel Splices are determined by the Sign Face supplier.
3. Spacing of Vertical Hangers:
   A. Two Vertical Hanger = 21.0% L
      Three Vertical Hanger = 14.5% L
      Four Vertical Hanger = 10.7% L
      Five Vertical Hanger = 8.5% L
      Six Vertical Hanger = 7.0% L
   B. Spacing of vertical hanges may be varied slightly as necessary to clear the truss struts and diagonals at panel points
4. Spacing of Wind Beams:
   Two Wind Beams = 21.0% D
   Three Wind Beams = 14.5% D
   Four Wind Beams = 10.7% D
   Five Wind Beams = 8.5% D
   Six Wind Beems = 7.0% D
5. Shop Drawings:
   A. Required for Sign Panels deeper than 10'-0" with a horizontal panel splice.
   B. Splice must be located in between interior Zee Supports and only allowed on signs greater than 10'-0".
6. Materials:
   A. Aluminum:
      a. Bars, and Extruded Shapes: ASTM B 221, Alloy 6061-T6 or Alloy 6351-T5
      b. Structural Shapes: ASTM B308, Alloy 6061-T6
      c. Flat Head and Hex Head Machine Bolts: ASTM F468, Alloy 2024-T4
      d. Hex Nuts: ASTM F467, Alloy 6061-T6 or Alloy 6262-T9
      e. Lock Washers: ASTM B221, Alclad 2024-T4
   B. Steel Materials:
      a. U-Bolts: ASTM A449 or ASTM A193 B7
      b. Nuts: ASTM F563, 2 per leg
      c. Washers: ASTM F436, (Flat Washers)
7. Coatings:
   A. Aluminum Bolts, Nuts and Washers: Anodic (0.0002 inches min) and chromate sealed.
   B. Galvanized Steel Bolts, Nuts and Washers: ASTM F3329

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NOTES:

1. Work this Index in conjunction with CANTILEVER SIGN STRUCTURE DATA TABLES in the Plans and Index 11300.

2. Handholes are required at pole base for DMS Structures. Refer to Index 18300 for Handhole Details.

3. Shop Drawings are required.

   Obtain Shop Drawing approval prior to fabrication. Include the following:
   A. Upright Pipe height ('A') and Foundation elevations: Verify dimension in the field prior to submittal to ensure minimum vertical clearances of the sign panel over the roadway.
   B. Height of the foundation above adjacent ground.
   C. Anchor bolt orientation with respect to centerline of truss and the direction of traffic.
   D. Chord Splices
   E. Handholes at pole base (when required).

4. Materials:

   A. Sign Structure:
      a. Upright and Chords (Steel Pipe): API-5L-X42, 42 ksi yield or ASTM A500, Grade B (Min.)
      b. Steel Angles and Structural Plates and Bars: ASTM A709 Grade 36
      c. Weld Material: E70XX
   B. Bolts, Nuts and Washers:
      a. High Strength Bolts: ASTM F3125, Grade A325 Type 1
      b. Nuts: ASTM A563 Grade DH Heavy-Hex
      c. Washers: ASTM F436 Type 1, one under turned element
   C. Anchor Bolts, Nuts and Washers
      a. Anchor Bolts: ASTM F1554 Grade 55
      b. Nuts: ASTM A563 Grade A Heavy-Hex (5 per bolt)
      c. Plate Washers: ASTM A36 (2 per bolt)
   D. Concrete:
      a. Spread Footing Concrete: Class IV
      b. Drilled Shaft concrete: Class IV (Drilled Shaft)
   E. Reinforcing Steel: Specification Section 415

5. Fabrication:

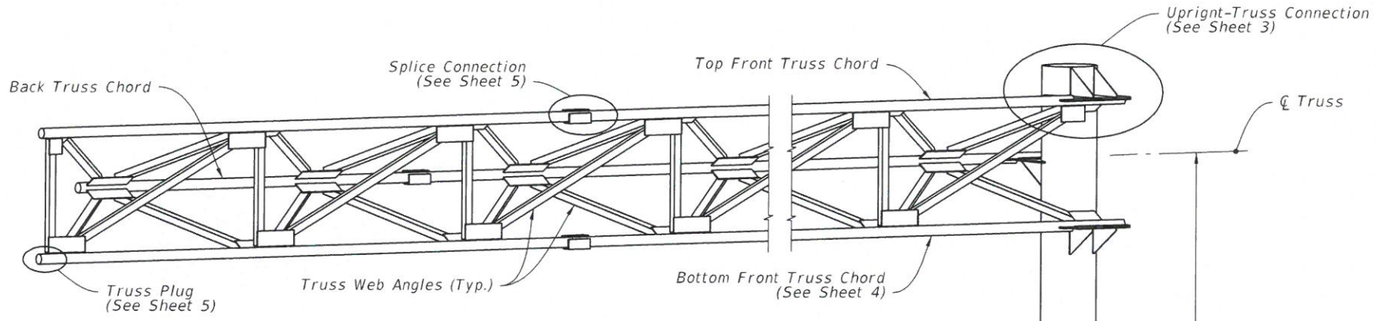
   A. Welding: Specification Section 460-6.4
   B. Chord Splices: "SD" Panel from upright is the closest panel in which a chord splice may be used. See Plans for CANTILEVER SIGN STRUCTURE DATA TABLE. Minimum splice spacing is two truss panel lengths apart.
   C. Upright splices: Not allowed
   D. Structural bolt hole diameters: Bolt diameter plus 1/16"
   E. Anchor bolt hole diameters: Bolt diameter plus 1/2"
   F. Hot Dip Galvanize after fabrication.
   G. Shop assemble the entire structure after galvanizing to validate/document alignment and clearance for bolted connections as well as contact between connecting plates. Take remedial action, if necessary, prior to shipment.
   H. Disassemble, as necessary, and secure components for shipment.

6. Coatings:

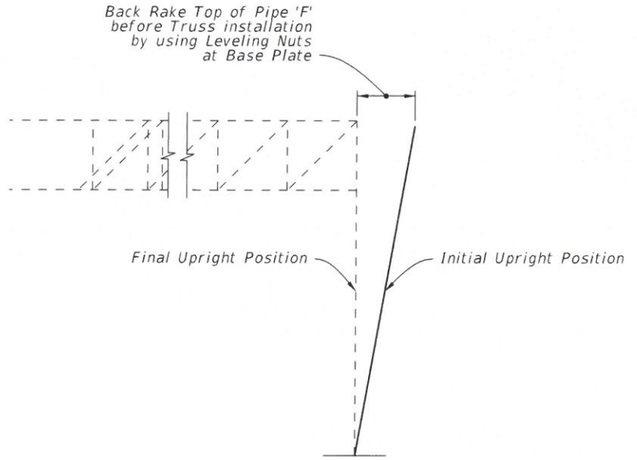
   A. Bolts, Nuts and Washers: ASTM F2329
   B. All other steel, including Plate Washers, hot dip galvanize: ASTM A123

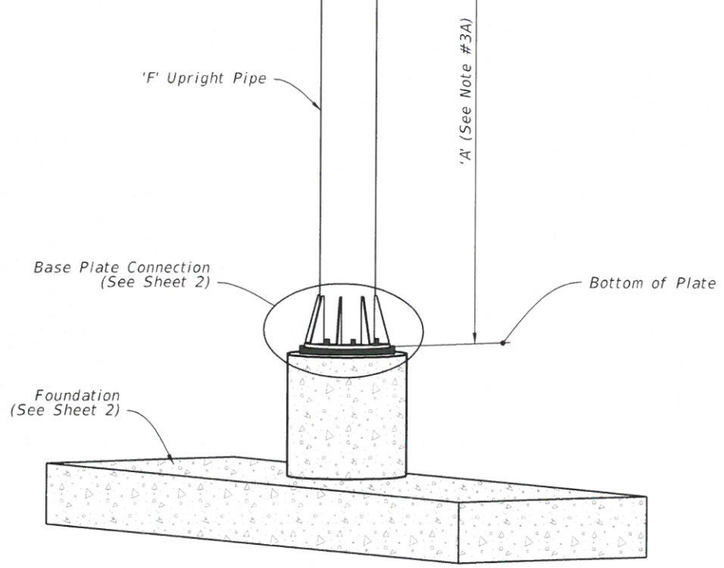
7. Construction:

   A. Construct foundation in accordance with Specification Section 455, except payment is included in the cost of the structure.
   B. Prior to erection, record the as-built anchor locations and submit to the Engineer.
   C. Place backfill above spread footings prior to installation of the sign panels. Do not remove or reduce backfill without prior approval of the Engineer.
   D. Tighten nuts and bolts in accordance with Specification Section 700. Split-Lock Washers are not permitted.
   E. Install Aluminum Sign Panels as shown in Production Plans.
   F. Place structural grout pad with drain between top of foundation and bottom of baseplate in accordance with Specification Section 649-7.



CAMBER DIAGRAM





ISOMETRIC VIEW

CANTILEVER SIGN ASSEMBLY

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11/14/17

SHEET NO. 27

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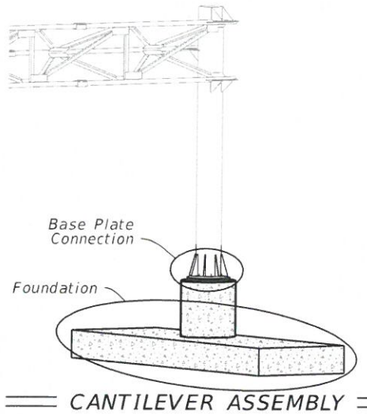
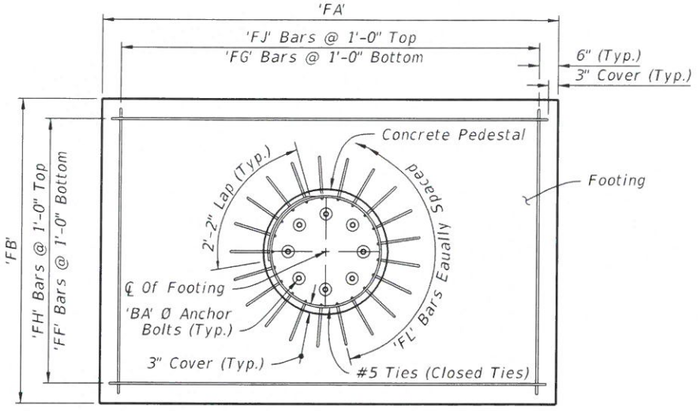
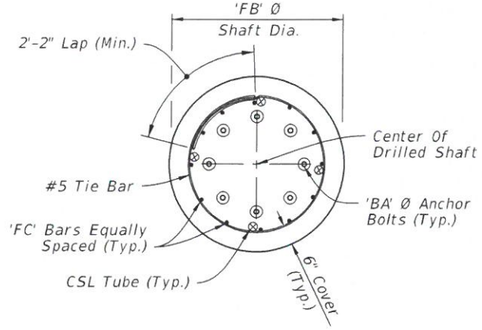


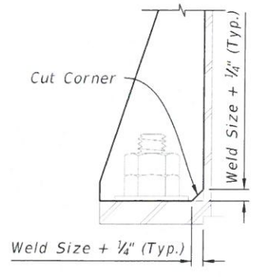
CANTILEVER ASSEMBLY



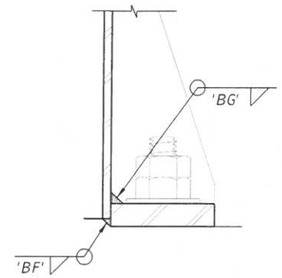
PLAN



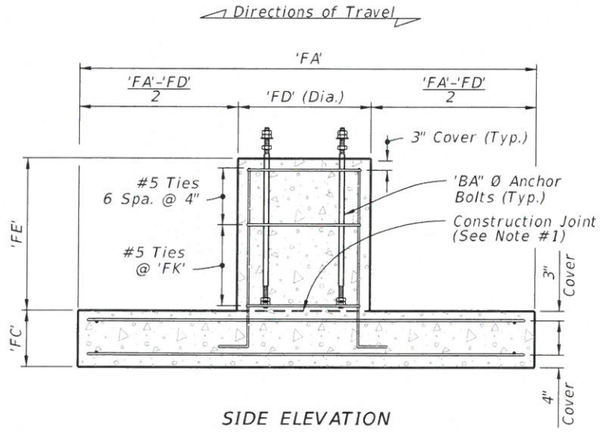
PLAN



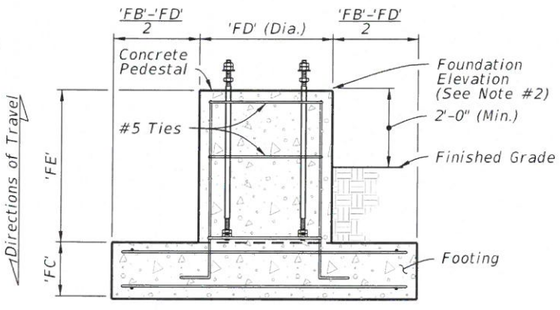
DETAIL 'A'



DETAIL 'B'

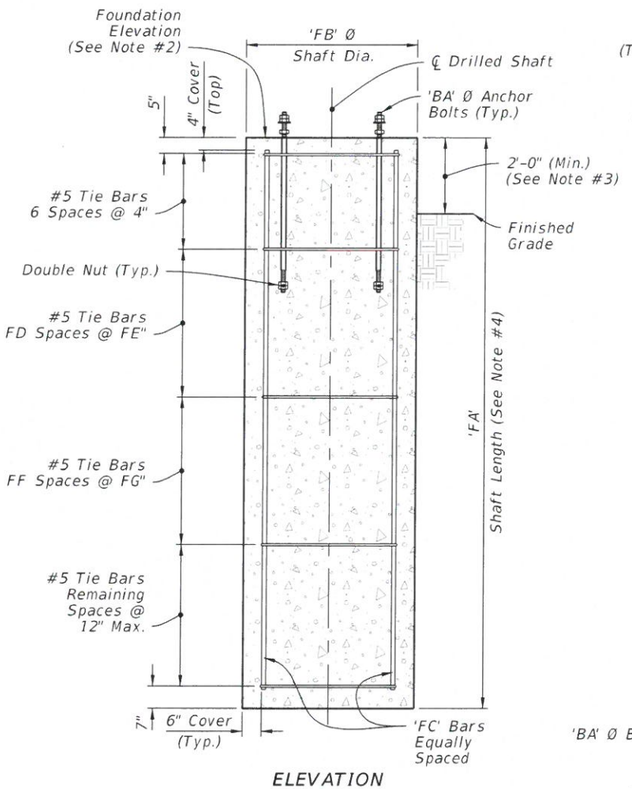


SIDE ELEVATION



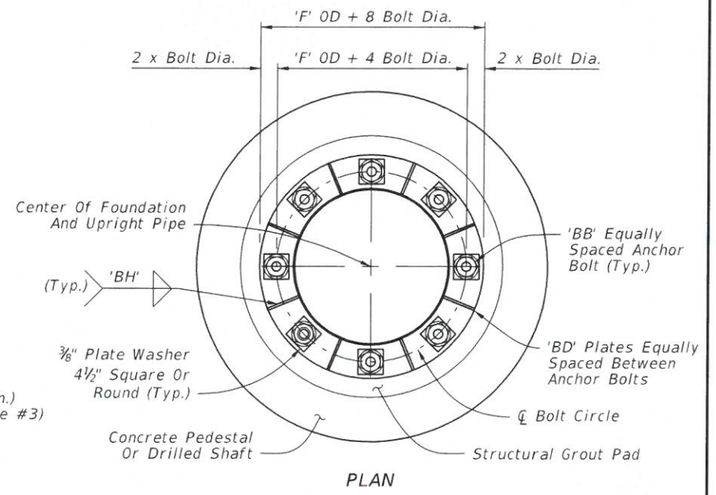
FRONT ELEVATION

FOOTING AND PEDESTAL



ELEVATION

DRILLED SHAFT
(Alternate Foundation)



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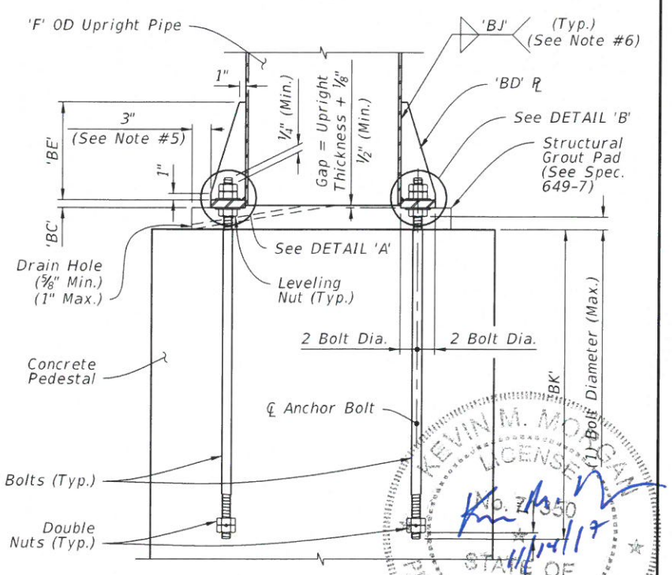

ELEVATION

NOTES:

1. Construction joint allowed, roughen surface to ¼" minimum amplitude prior to pour.
2. See Traffic Plans for elevation at top of Foundation.
3. Install Drilled Shaft with a 2'-0" minimum from top elevation of the drill shaft to the finished grade, unless specified otherwise in the plans.
4. The shaft length is based on 2'-0" height above finished grade.
5. Structural Grout Pad dimension may be modified to be less than 3" where the footprint of the Structural Grout Pad does not provide adequate clearance for accessibility considerations.
6. Wrap fillet weld around the stiffner termination on the tube wall.

FOUNDATION

BASE PLATE CONNECTION

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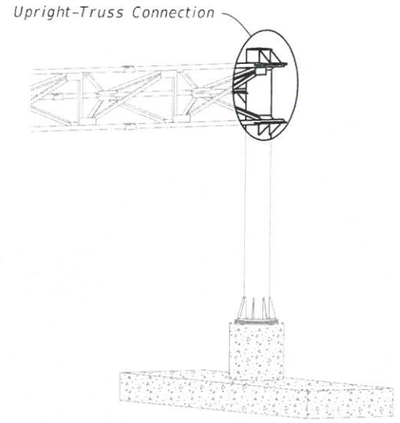
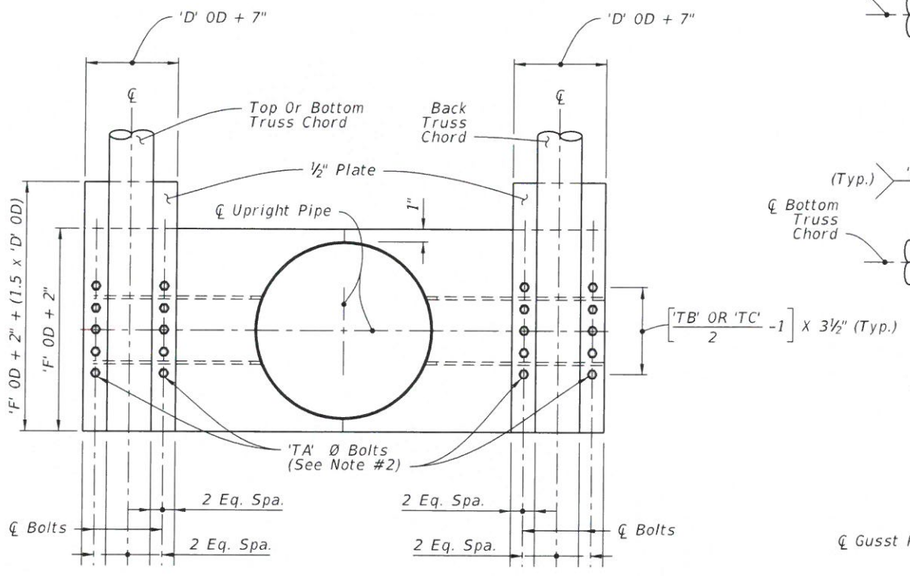
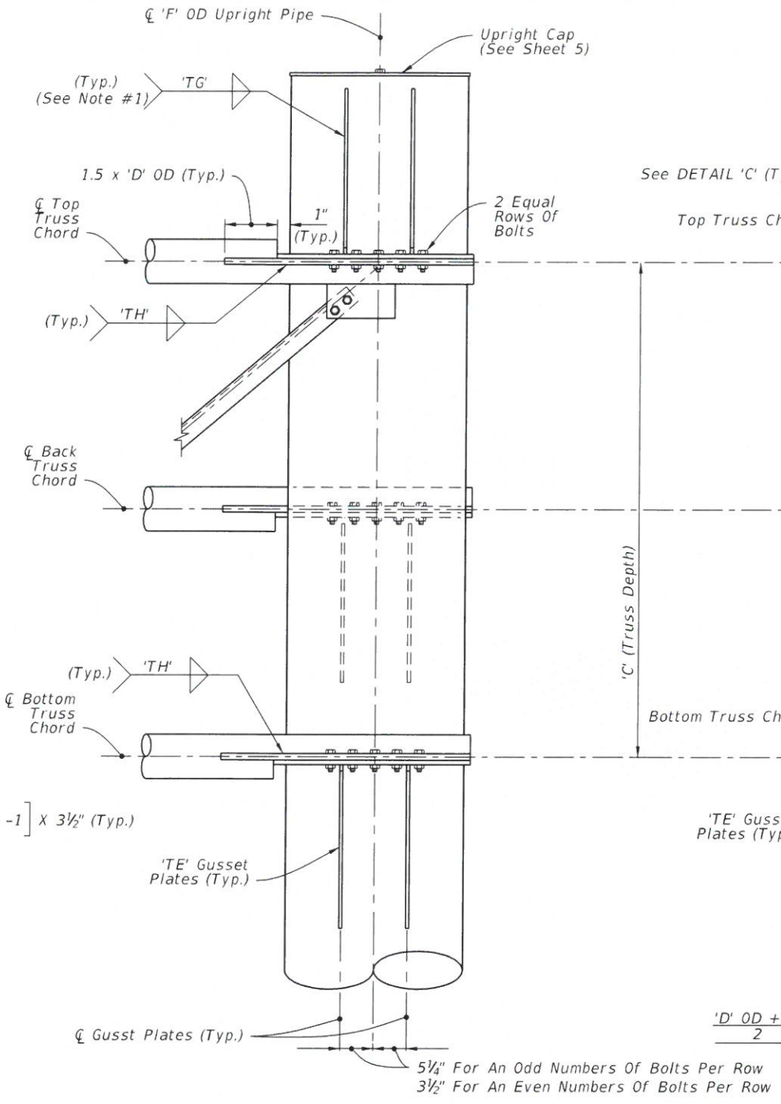
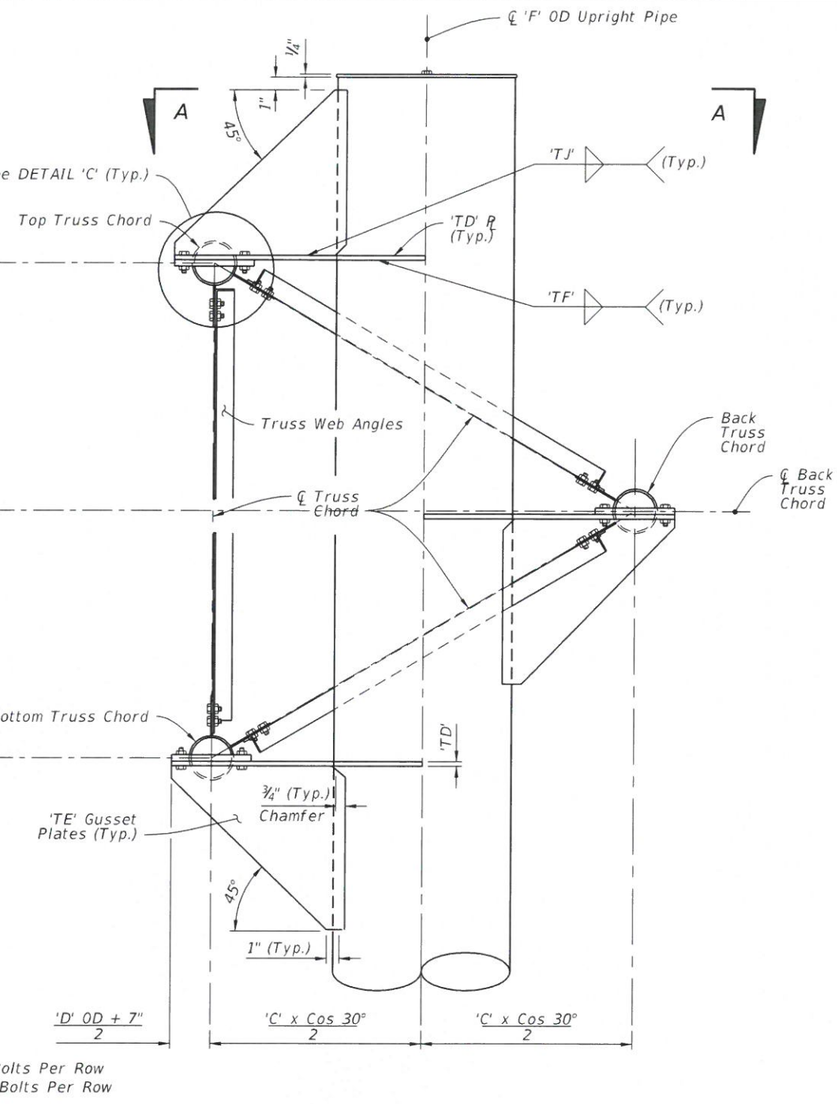


CANTILEVER ASSEMBLY





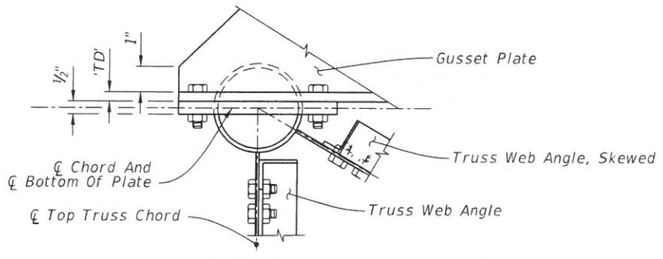
FRONT ELEVATION



SIDE ELEVATION

SECTION A-A

(With Gusset Plates And Web Angles Omitted For Clarity)



DETAIL 'C'

UPRIGHT-TRUSS CONNECTION DETAIL

(Web Members From Back Truss Chord Omitted For Clarity)

NOTE:

1. Wrap fillet weld around the stiffner termination on the tube wall.
2. Truss Chord Bolts:
   A. Top and Bottom: Install 'TC' hex head bolts.
   B. Back: Install 'TB' hex head bolts.

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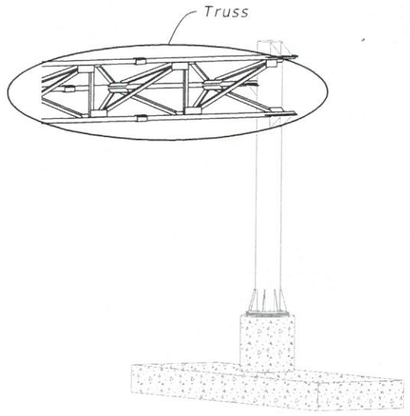
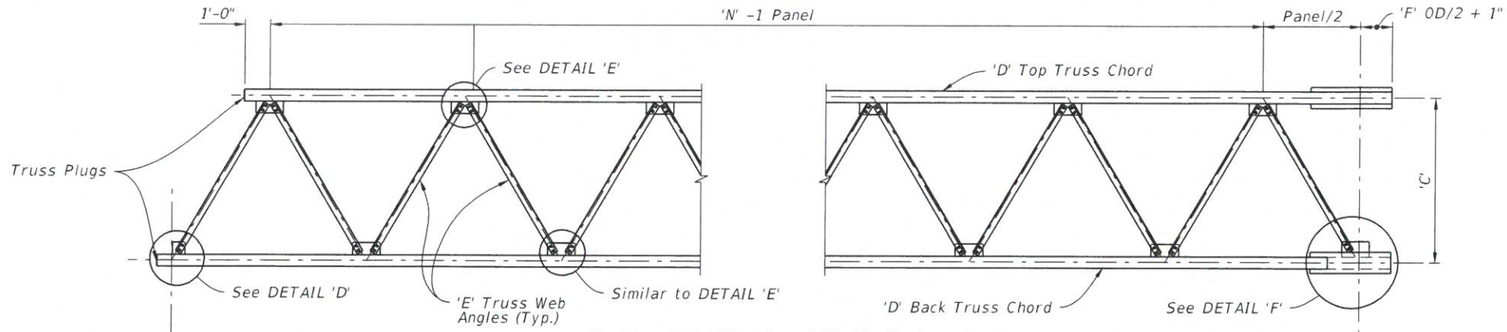
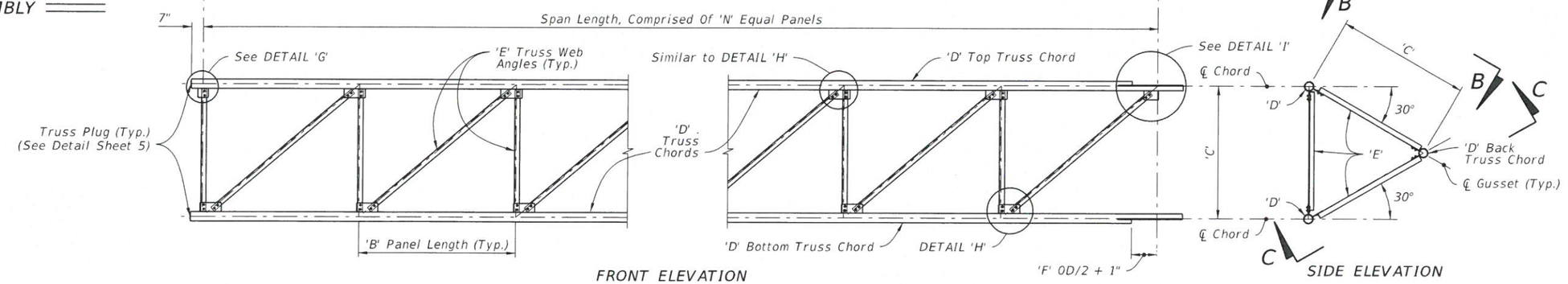
11/01/16					11310	3 of 5



CANTILEVER ASSEMBLY



Section B-B (Section C-C Similar)
(See Note #1 & 3)



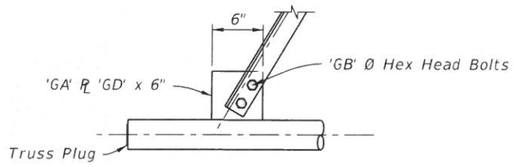
FRONT ELEVATION
(See Note #1 & 3)

SIDE ELEVATION

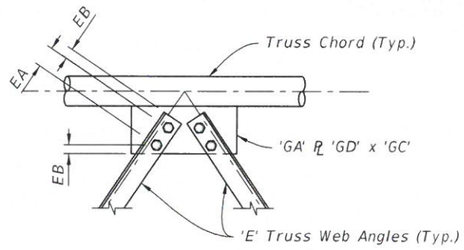
TRUSS

TRUSS NOTES:

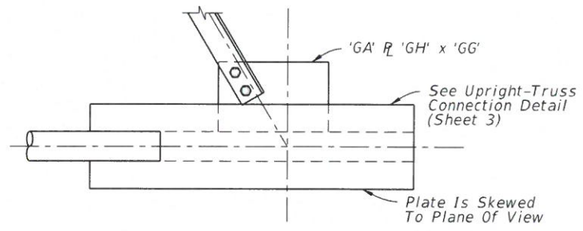
1. Out-of-plane members are not shown for clarity.
2. Wrap fillet weld around plate termination on the tube wall.
3. Chord Splices not shown.



DETAIL 'D'

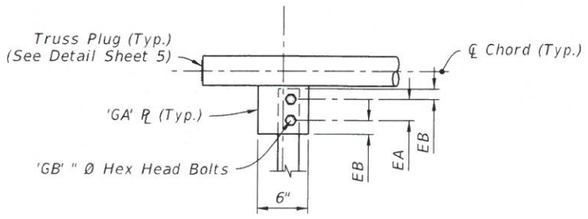


DETAIL 'E'

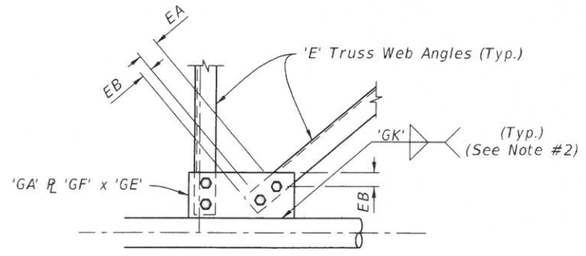


DETAIL 'F'

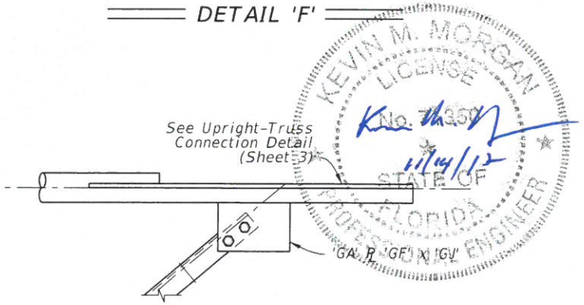
Bolt Size	Distance	
	EA	EB
1¼" Ø	4⅜"	2¼"
1" Ø	3½"	1¾"
⅞" Ø	3"	1½"
¾" Ø	2½"	1¼"
⅝" Ø	2¼"	1⅛"



DETAIL 'G'



DETAIL 'H'



DETAIL 'I'

SHEET NO. 30

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
11/01/16			FDOT FY 2017-18 DESIGN STANDARDS	CANTILEVER SIGN STRUCTURE	11310	4 of 5

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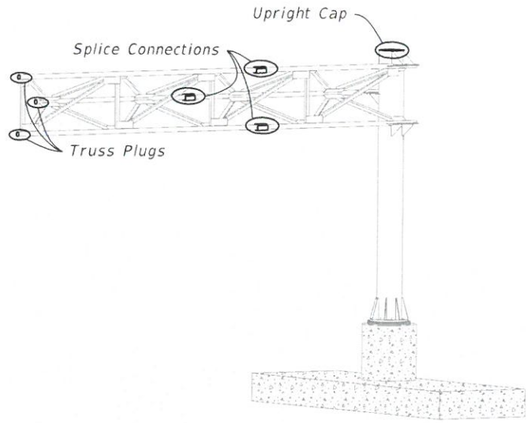
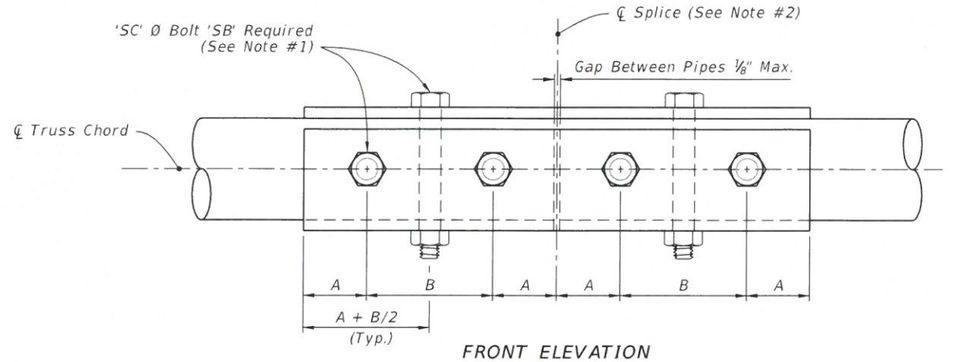
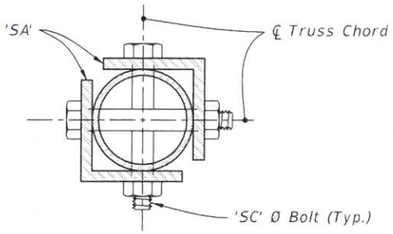


CANTILEVER ASSEMBLY

Bolt Size	Distance	
	A	B
1" Ø	1¾"	3½"
⅞" Ø	1½"	3"
¾" Ø	1¼"	2½"



FRONT ELEVATION



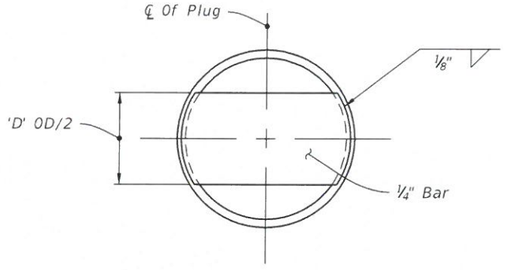
SIDE ELEVATION

SPLICE CONNECTION DETAIL

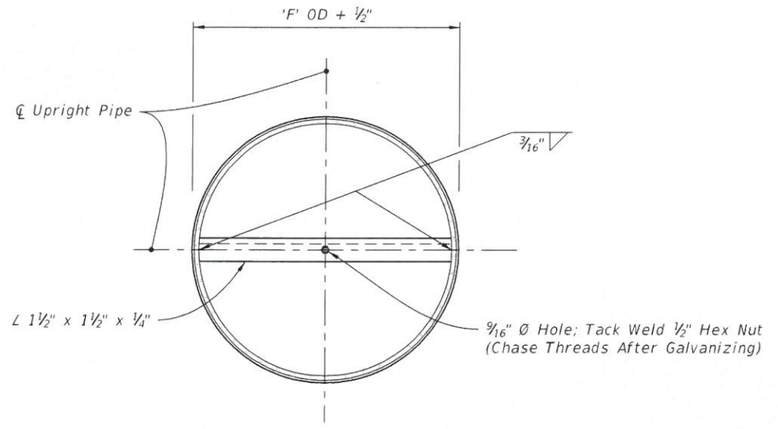
SPLICE CONNECTION NOTES:

1. Only 6 bolts are shown in detail for clarity. (One Half Each Side Of Splice)

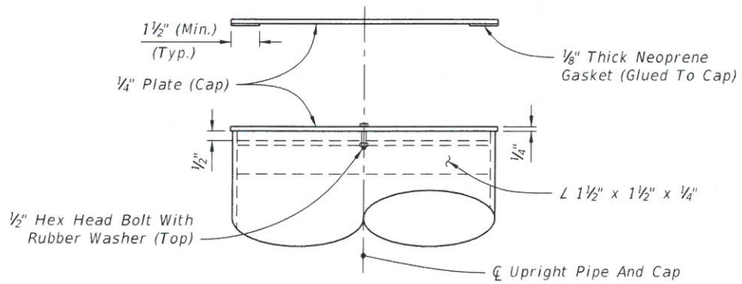
2. Splices are not permitted for truses less than or equal to 40', Splice optional for trusses greater than 40'.



TRUSS PLUG DETAIL

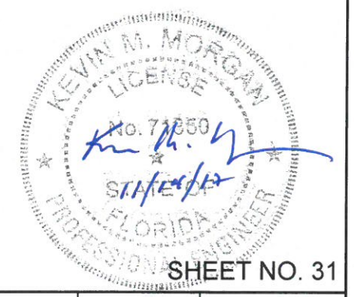


PLAN



ELEVATION

UPRIGHT CAP DETAIL



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SHEET NO. 31

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	CANTILEVER SIGN STRUCTURE	INDEX NO.	SHEET NO.
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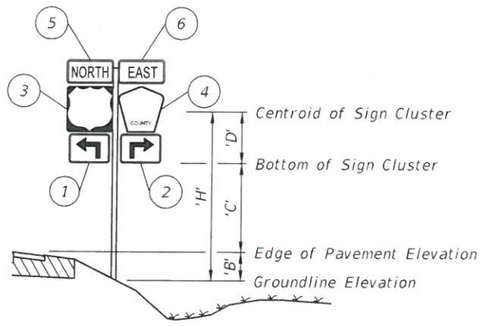
STEP 1: Calculate the area and the centroid for an individual sign or a sign cluster. Note that the centroid and areas have been calculated for frequently used signs. These are shown on Sheets 6, 7, 8 and 9.



	Size H x V	Centroid: Local $'Y_n'$	Centroid: Global $'X_n'$	Centroid: Global $'Y_n'$	$'A_n'$	$'X_n' \times 'A_n'$	$'Y_n' \times 'A_n'$
	(in. x in.)	(in.)	(in.)		(in.²)	(in.³)	(in.³)
1	21 x 15	7.5	-10.5-1.5-1.5 = -13.5	7.5	315	-4,252.5	2,362.5
2	21 x 15	7.5	10.5+1.5+1.5 = 13.5	7.5	315	+4,252.5	2,362.5
3	24 x 24	12	-12-1.5 = -13.5	15+1+12 = 28	576	-7,776	16,128
4	24 x 24	12	12+1.5 = 13.5	15+1+12 = 28	436	5,886	12,208
5	24 x 12	6	-12-1.5 = -13.5	15+1+24+1+6 = 47	288	-3,888	13,536
6	24 x 12	6	12+1.5 = 13.5	15+1+24+1+6 = 47	288	3,888	13,536
				TOTALS	2,218	-1,890	60,133

$\Sigma\ ('A_n') = 2{,}218\ in.^2 = 15.4\ ft.^2$ $\quad \Sigma\ ('X_n' \times 'A_n') = -1{,}890\ in.^3 = -1.09\ ft.^3$ $\quad \Sigma\ ('Y_n' \times 'A_n') = 60{,}133\ in.^3 = 34.8\ ft.^3$

$$'X_c' = \frac{\Sigma\ ('X_n' \times 'A_n')}{\Sigma\ 'A_n'} = -0.1\ ft. \qquad 'Y_c' = \frac{\Sigma\ ('Y_n' \times 'A_n')}{\Sigma\ 'A_n'} = 2.26\ ft.$$

STEP 2: Determine the height 'H' from groundline to the centroid of the individual sign or sign cluster.

Assume: 'B' = 1 ft., 'C' = 7 ft.

Calculated: $X_c' = -0.1$ ft., $'Y_c' =$ 'D' 2.26 ft.

Since $X_c' = -0.1 < 6''$, it is not a cantilever sign, only dark-bold lines in the table will be referenced to.

'H' = 'B' + 'C' + 'D' = 10.26 ft. ==> USE 11 ft. $\quad \Sigma\ ('A_n') = 15.4\ ft.^2$ ==> USE 16 ft.²

STEP 3: Refer to the Aluminum Column (Post) Selection Tables and find the intersection point. See Sheet 3.

ALUMINUM COLUMN (POST) SELECTION TABLE

TOTAL PANEL AREA (SF)	'H' (FT) 8 ft	9 ft	10 ft	11 ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft
3 sf	2	2.5	2.5	2.5	3	3	3	3	3.5	3.5	3.5	3.5	3.5
4 sf	2.5	2.5	3	3	3	3	3.5	3.5	3.5	3.5	3.5	3.5	3.5
5 sf	2.5	3	3	3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4	4
6 sf	3	3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4	4	4
7 sf	3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4	4	4	4	4
8 sf	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4	4	4	4	4	4
9 sf	3.5	3.5	3.5	3.5	3.5	3.5	4	4	4	4	4	4	4
10 sf	3.5	3.5	3.5	3.5	3.5	4	4	4	4	4	4	4.5	4.5
11 sf	3.5	3.5	3.5	3.5	4	4	4	4	4	4	4.5	4.5	4.5
12 sf	3.5	3.5	3.5	4	4	4	4	4	4	4	4.5	4.5	4.5
13 sf	3.5	3.5	4	4	4	4	4	4	4	4.5	4.5	4.5	5
14 sf	3.5	3.5	4	4	4	4	4	4	4.5	4.5	4.5	5	5
15 sf	3.5	4	4	4	4	4	4	4.5	4.5	4.5	5	5	5
16 sf	3.5	4	4	4	4	4	4	4.5	4.5	5	5	5	6
17 sf	4	4	4	4	4	4	4.5	4.5	4.5	5	5	6	6
18 sf	4	4	4	4	4	4.5	4.5	4.5	5	5	5	6	6
19 sf	4	4	4	4	4	4.5	4.5	4.5	5	5	6	6	6
20 sf	4	4	4	4	4.5	4.5	4.5	5	5	5	6	6	6
21 sf	4	4	4	4	4.5	4.5	5	5	5	6	6	6	6
22 sf	4	4	4	4.5	4.5	4.5	5	5	6	6	6	6	6
23 sf	4	4	4	4.5	4.5	5	5	5	6	6	6	6	6
24 sf	4	4	4.5	4.5	4.5	5	5	6	6	6	6	6	6
25 sf	4	4	4.5	4.5	5	5	5	6	6	6	6	6	8
26 sf	4	4.5	4.5	4.5	5	5	5	6	6	6	6	8	8
27 sf	4	4.5	4.5	4.5	5	5	6	6	6	6	6	8	8
28 sf	4	4.5	4.5	5	5	5	6	6	6	6	6	8	8
29 sf	4.5	4.5	4.5	5	5	6	6	6	6	6	8	8	8
30 sf	4.5	4.5	5	5	5	6	6	6	6	6	8	8	8

For 'H' = 11 ft., Area = 16 ft.²

- Refer to the Aluminum Column (Post) Selection Table, as copied from Sheet 3 and shown here.
- To determine the required post size, find the intersection of the row labeled "16 SF" and the column labeled "11 FT". For the example the intersection value is "4" (4" OD).
- In the Column (Post) and Foundation Table, the value "4" concludes that the design requires a 4.0" diameter and ¼" thick Aluminum Column (Post) and a 2.0' diameter and 3.5' deep Concrete Foundation and 3.0' Stub.

STEP 4: For sign assemblies with signs oriented in two directions, only the sign with the largest area should be analyzed to determine the Column (Post) requirements.

GUIDE TO USE THIS STANDARD

SHEET NO.	CONTENTS
1	General Notes and Example
2	Centroid and Height
3	Column and Foundation Tables
4	Slip Base and Foundation Details
5	Driven Post and Soil Plate Details
6	Connection and Wind Beam
7, 8 & 9	Frequently Used Sign Clusters

GENERAL NOTES:

1. Shop Drawings:
   This Index is considered fully detailed. Submit Shop Drawings for minor modifications not detailed in the Plans.

2. Aluminum Sign, Wind Beams and Column (Post) Materials:
   a. Aluminum Plates: ASTM B209, Alloy 6061-T6
   b. Aluminum Bars and Extruded Shapes: ASTM B221, Alloy 6061-T6
   c. Aluminum Structural Shapes: ASTM B308 Alloy 6061-T6
   d. Cast Aluminum: ASTM B26 Alloy A356-T6
   e. Aluminum Weld Material: ER 5556 or 5356

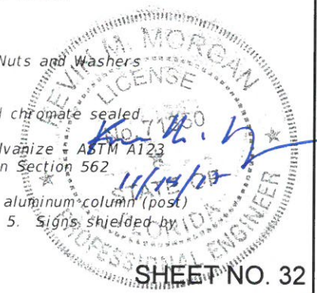
3. Sign Mounting Bolts (Screws), Nuts and Washers:
   a. Aluminum Button Head and Flat Head Bolts (Screws): ASTM F468 Alloy 2024-T4
   b. Aluminum Hex Nuts: ASTM F467 Alloy 6061-T6 or 6262-T9
   c. Aluminum Washers: ASTM B221, Alloy 7075-T6

7. Stainless Steel Bolts, Nuts and Washers may be used in lieu of the Aluminum button head bolts and flat head Screws as follows:
   a. Stainless Steel Bolts (Screws): ASTM F 593 Alloy Group 2, Condition A, CW1 or SH1
   b. Stainless Steel Nuts: ASTM F594

8. Sign Column (Post) Bolts, Nuts and Washers:
   a. Galvanized U-Bolt (Column): ASTM A449 or ASTM A193 B7 according to ASTM F2329 with nuts and washers
   b. Aluminum Bolts (Sleeve): ASTM F468, Alloy 6061-T6 or 2024-T4 with Hex Nuts F467 6061-T6 or 6262-T9 and Washers B221, Alclad 2024-T4
   c. Galvanized High Strength Hex Head Bolts (Base Bolts): ASTM F3125, Grade A325, Type 1
   d. Galvanized Hex Nuts: ASTM A563 Grade DH
   e. Galvanized Washers: ASTM F436
   f. Galvanized Bolts (Sleeve): ASTM A307 with Galvanized Hex Nuts and Washers

9. Coatings:
   a. Aluminum Fasteners: Anodic coating (0.0002 inches min.) and chromate sealed
   b. High Strength Steel Bolts Nuts and Washers: ASTM F2329
   c. All other steel items (excluding stainless steel): Hot-dip Galvanize - ASTM A123
   d. Repair damaged galvanizing in accordance with Specification Section 562

10. BREAKAWAY SUPPORTS REQUIREMENTS: Install non-frangible aluminum column (post) (larger than 3½") with breakaway supports as shown on Sheet 5. Signs shielded by barrier wall or guardrail do not require breakaway support.

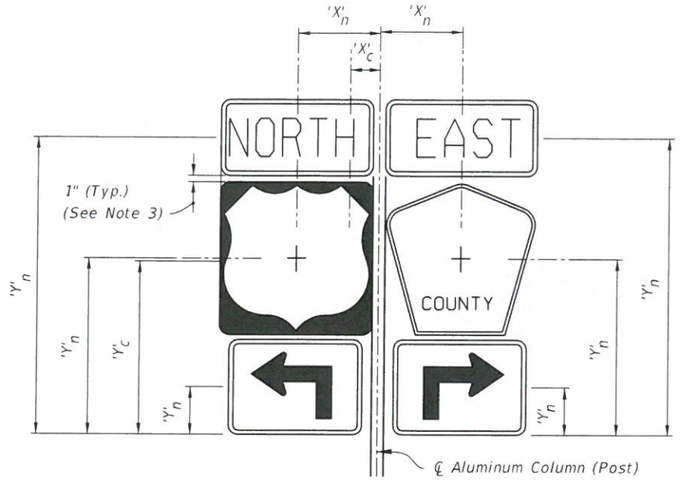


SHEET NO. 32

NOTES AND EXAMPLE

10/14/2016 7:57:43 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	SINGLE COLUMN GROUND SIGNS	INDEX NO.	SHEET NO.
11/01/16					11860	1 of 9



SIGN CLUSTER

$$'X'_c = \frac{\Sigma\,('X'_n \times 'A'_n)}{\Sigma\,'A'_n} \qquad 'C' = 'Y'_c = \frac{\Sigma\,('Y'_n \times 'A'_n)}{\Sigma\,'A'_n}$$

$'A'_n$ = Area of individual sign

'B' = Height of the edge of pavement from the mounting elevation

'C' = Height of the the bottom of the sign or cluster from the edge of pavement elevation

'D' = Height of the centroid of the sign or cluster from the bottom of the sign or cluster

h = Individual sign height

'H' = Height of sign or cluster centroid from groundline

a = Individual sign width

$'X'_c$ = Centroid horizontal location of sign or cluster from ℄ Aluminum Column (Post)

$'Y'_c$ = Centroid height of sign or cluster from bottom of sign cluster

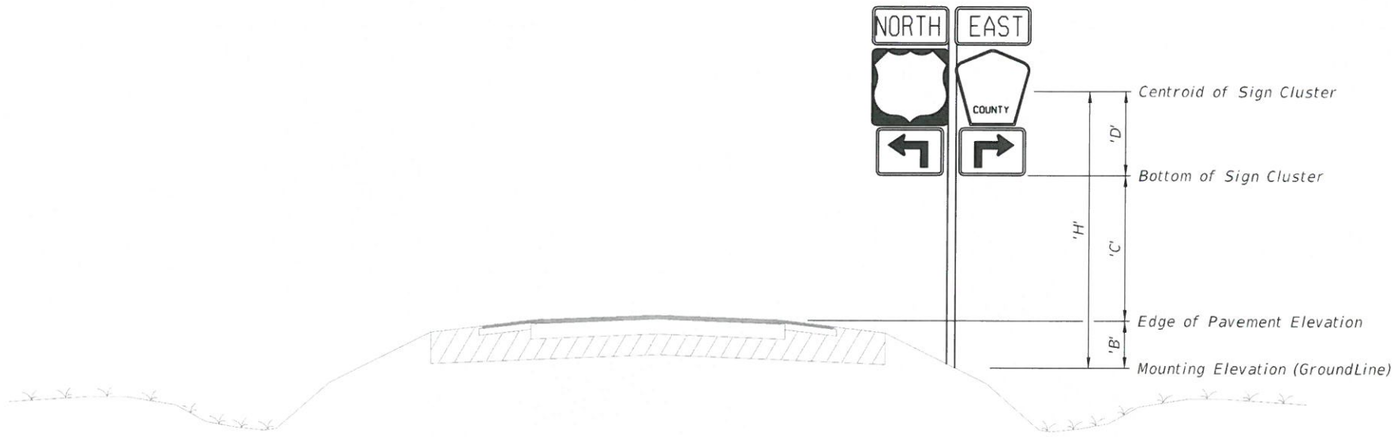
$'X'_n$ = Individual sign centroid horizontal location from ℄ Aluminum Column (Post)

$'Y'_n$ = Individual Sign centroid height from bottom of sign cluster

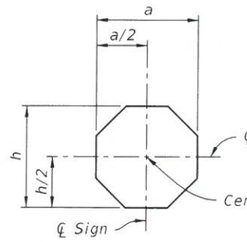
NOTES:

1. For 'B' & 'C' see Index No. 17302 and Roadway Plans.
2. Do not exceed an area of 30 SF or a width of 60 inches for a sign or a sign cluster, including rotated sign panels.
3. Vertical sign spacing (1" shown on Sign Cluster detail) also applies to rotated signs.

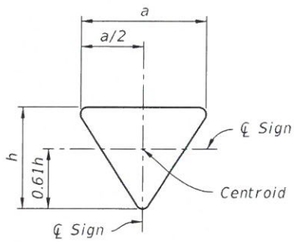
CALCULATION OF SIGN CLUSTER CENTROID



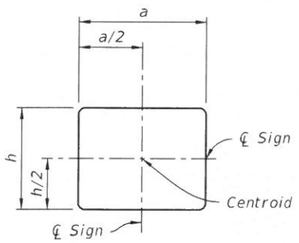
TYPICAL SECTION



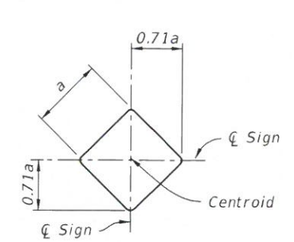
STOP



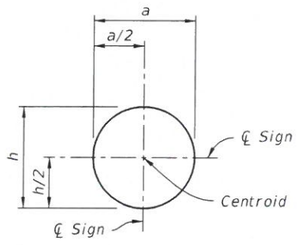
YIELD



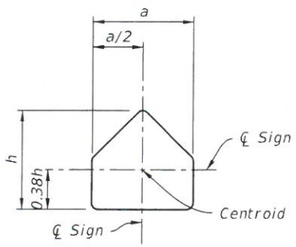
RECTANGLE



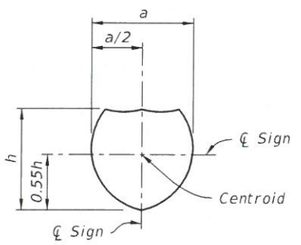
DIAMOND



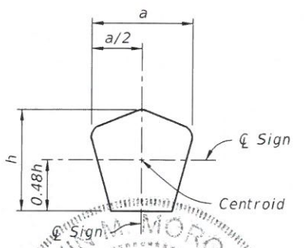
RAILROAD



SCHOOL



SHIELD



COUNTY

KEVIN A. MORGAN
No. 71960
STATE OF FLORIDA
PROFESSIONAL ENGINEER

11/1/16

SHEET NO. 33

CENTROID AND HEIGHT

10/14/2016 7:57:48 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2017-18 DESIGN STANDARDS	SINGLE COLUMN GROUND SIGNS	INDEX NO.	SHEET NO.
11/01/16						11860	2 of 9

ALUMINUM COLUMN (POST) SELECTION TABLE (O.D. in.)

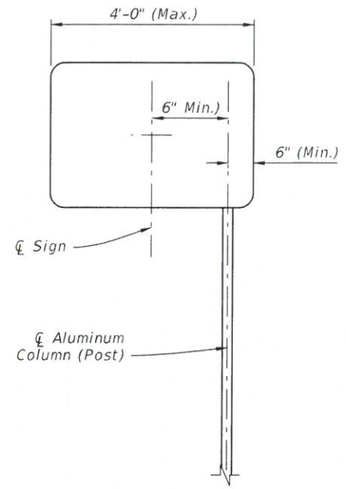
TOTAL PANEL AREA (SF)	'H' (FT)												
	8 ft	9 ft	10 ft	11 ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft
3 sf	2	2.5	2.5	2.5	3	3	3	3	3.5	3.5	3.5	3.5	3.5
4 sf	2.5	2.5	3	3	3	3	3.5	3.5	3.5	3.5	3.5	3.5	3.5
5 sf	2.5	3	3	3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4	4
6 sf	3	3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4	4	4
7 sf	3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4	4	4	4	4
8 sf	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4	4	4	4	4	4
9 sf	3.5	3.5	3.5	3.5	3.5	3.5	4	4	4	4	4	4	4
10 sf	3.5	3.5	3.5	3.5	3.5	4	4	4	4	4	4	4.5	4.5
11 sf	3.5	3.5	3.5	3.5	4	4	4	4	4	4	4.5	4.5	4.5
12 sf	3.5	3.5	3.5	4	4	4	4	4	4	4	4.5	4.5	4.5
13 sf	3.5	3.5	4	4	4	4	4	4	4	4.5	4.5	4.5	5
14 sf	3.5	3.5	4	4	4	4	4	4	4.5	4.5	4.5	5	5
15 sf	3.5	4	4	4	4	4	4	4.5	4.5	4.5	5	5	5
16 sf	3.5	4	4	4	4	4	4	4.5	4.5	5	5	5	6
17 sf	4	4	4	4	4	4	4.5	4.5	4.5	5	5	6	6
18 sf	4	4	4	4	4	4.5	4.5	4.5	5	5	5	6	6
19 sf	4	4	4	4	4	4.5	4.5	4.5	5	5	6	6	6
20 sf	4	4	4	4	4.5	4.5	4.5	5	5	5	6	6	6
21 sf	4	4	4	4	4.5	4.5	5	5	5	6	6	6	6
22 sf	4	4	4	4.5	4.5	4.5	5	5	6	6	6	6	6
23 sf	4	4	4	4.5	4.5	5	5	5	6	6	6	6	6
24 sf	4	4	4.5	4.5	4.5	5	5	6	6	6	6	6	6
25 sf	4	4	4.5	4.5	5	5	5	6	6	6	6	6	8
26 sf	4	4.5	4.5	4.5	5	5	5	6	6	6	6	8	8
27 sf	4	4.5	4.5	4.5	5	5	6	6	6	6	6	8	8
28 sf	4	4.5	4.5	5	5	5	6	6	6	6	6	8	8
29 sf	4.5	4.5	4.5	5	5	6	6	6	6	6	8	8	8
30 sf	4.5	4.5	5	5	5	6	6	6	6	6	8	8	8

COLUMN (POST) AND FOUNDATION TABLE

Column (Post) Size		Foundation Alternatives				
		Driven Post *		Concrete (Class I)		
Outside Diameter (in)	Wall Thk. (in)	Embedment Depth (ft)		Diameter (ft)	Embedment Depth (ft)	Stub Length (ft)
		without Soil Plate	with Soil Plate			
2.0	1/8	4.5	2.5	2.0	2.0	2.0
2.5	1/8	5.0	3.0	2.0	2.5	2.0
3.0	1/8	5.0	3.5	2.0	2.5	2.5
3.5	3/16	6.0	4.5	2.0	3.0	3.0
4.0	1/4	---	---	2.0	3.5	3.0
4.5	1/4	---	---	2.0	4.0	3.0
5.0	1/4	---	---	2.0	4.5	3.0
6.0	1/4	---	---	2.0	5.0	3.0
8.0	5/16	---	---	2.0	5.5	3.0

* *INSTALLING FRANGIBLE COLUMN SUPPORTS:*

Columns (posts) 3½" O.D. and less are frangible. Frangible columns may be installed by driving the post or the posts may be set in preformed holes. Backfill preformed holes with suitable material tamped in layers not thicker than 6" (to provide adequate compaction) or filled with flowable fill or bagged concrete.



CANTILEVER SIGN

NOTE:

1. For cantilever sign installations see Index 17302.
2. For cantilever signs with widths greater than 4' see Index 11861.
3. Use of driven post for cantilever sign in not permitted.

KEVIN M. MORGAN LICENSE No. 71350 STATE OF FLORIDA PROFESSIONAL ENGINEER

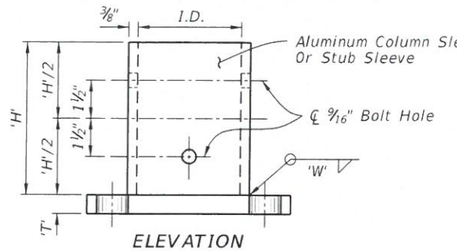
11/04/16

SHEET NO. 34

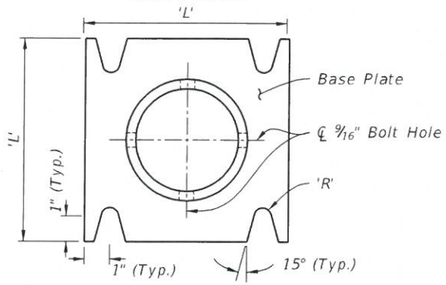
COLUMN AND FOUNDATION TABLES

10/14/2016 7:57:50 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2017-18 DESIGN STANDARDS	SINGLE COLUMN GROUND SIGNS	INDEX NO.	SHEET NO.
11/01/16						11860	3 of 9



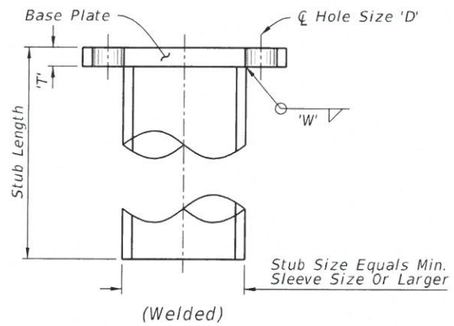
ELEVATION



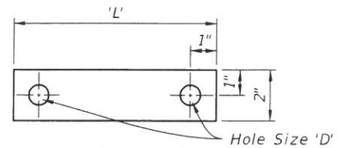
PLAN

(Welded Or Sandcast)

STUB/SLEEVE & BASE PLATE DETAILS

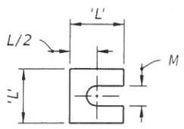


(Welded)



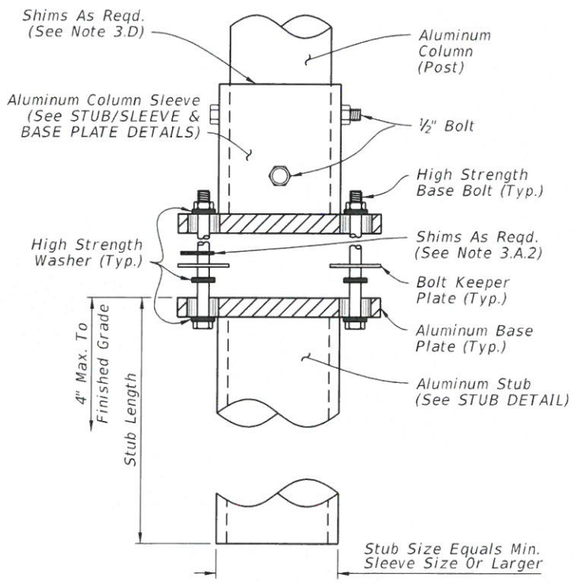
28 Ga. Thick Aluminum Strip
2 Reqd. Per Base

BOLT KEEPER PLATE DETAIL

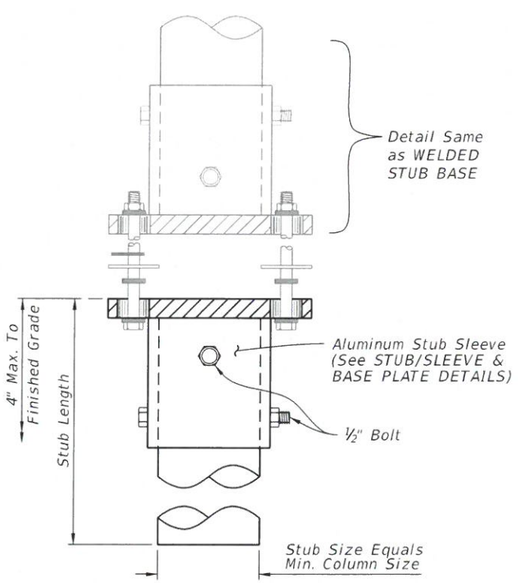


Provide 2~0.0149" Thick (28 guage)
and 2~0.0329" Thick (21 guage)
Brass Shims Per Post

SHIM DETAIL

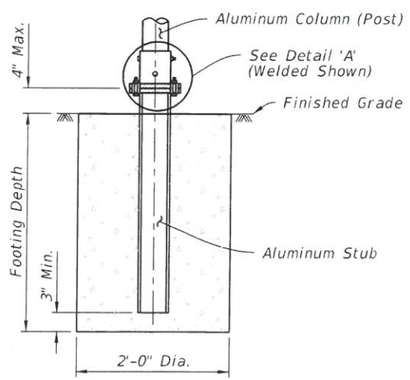


WELDED STUB BASE



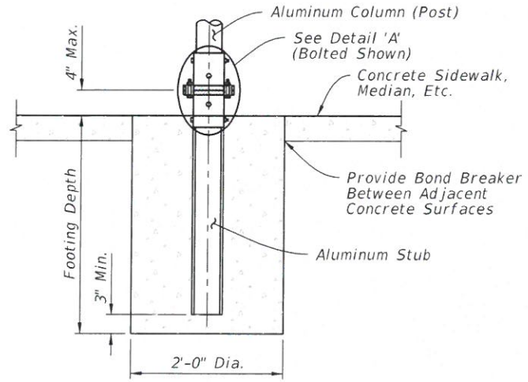
BOLTED STUB/SLEEVE BASE

STUB DETAIL



SLIP BASE AND FOUNDATION DETAIL
(Non-Frangible Column, Typ.)

DETAIL 'A'



SLIP BASE AND FOUNDATION DETAIL IN CONCRETE
(Non-Frangible Column In Crossovers, Medians & Sidewalks)

NOTES:

1. Foundation Notes for Frangible Slip Base:

   A. Place Stub into concrete to diameter and depth shown in POST AND FOUNDATION TABLE using Class I Concrete.

2. Slip Base Fabrication Notes:

   A. The difference between the O.D. of the post and I.D. of the Sleeve must be 1/16" or less.

   B. Either a Welded Stub Base or Bolted Stub/Sleeve Base may be used to fabricate the Slip Base.

   C. For cast base plates bolted to foundation stubs, use a foundation stub the same size as the sign column (Post).

3. Slip-Base Assembly Instructions:

   A. Assemble Slip Base connections in the following manner:
      1. Insert Post into Sleeve and connect using 2 ~ ½" diameter Sleeve Bolts.
      2. Assemble top base plate to bottom Base Plate using Base Bolts (High strength) with 3 washers per bolt. (See Detail 'A'):
         a. Place one washer on each Base Bolt between the bottom Base Plate and the Base Bolt head.
         b. Place the next washer between the Bottom Base Plate and the Bolt Keeper Plate.
         c. Use brass shims to plumb the post.
         d. Add the top base plate section.
         e. Place the third washer between the Top Base Plate and the Nut.

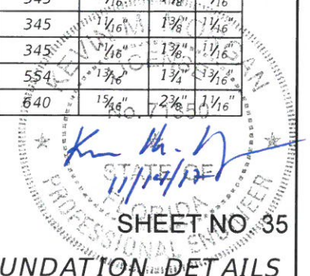
   B. Orient the Bolt Keeper Plates in the Direction of Traffic.

   C. Tighten Base Bolts as follows:
      1. Tighten Base Bolts to the maximum possible with a 12" to 15" wrench (this will bed the washers and shims and clear the bolt threads).
      2. Loosen each Base Bolt one turn.
      3. Under the supervision of the Engineer, use a calibrated wrench to tighten bolts to the torque prescribed in the SLIP BASE DETAILS Table. Over tightened Base Bolts are not permitted.
      4. Distort bolt threads at the junction with nuts to prevent loosening. Repair damaged galvanizing.

   D. Obtain a tight sleeve connection by placing 4 galvanized steel shims between the column (post) and sleeve. Space the shims evenly around the perimeter of the column (1 between each bolt hole, 4 total). Use shims that are 1" shorter than the height of the sleeve.

SLIP BASE DETAILS

Column (Post) Size													
Outside Dia.	Wall Thickness	Sleeve I.D. (Max.)	Sleeve Height 'H'	Weld 'W'	Base Plate 'L'	Base Plate 'T'	Radius 'R'	Base Bolt Size	Base Bolt Length	Base Plate Torque ft-lbs	Base Plate Torque in.-lbs	Hole Size 'D'	SHIM L	SHIM M
4"	¼"	4 1/16"	6"	5/8"	8"	¾"	1 1/32"	⅝"	3"	29	345	1 1/16"	1⅜"	1 1/16"
4½"	¼"	4 9/16"	6"	5/8"	8"	⅞"	1 1/32"	⅝"	3¼"	29	345	1 1/16"	1⅜"	1 1/16"
5"	¼"	5 1/16"	7"	5/8"	8"	⅞"	1 1/32"	⅝"	3¼"	29	345	1 1/16"	1⅜"	1 1/16"
6"	¼"	6 1/16"	8"	¾"	9"	1"	1 3/32"	¾"	3½"	46	554	1 3/16"	1¾"	1 3/16"
8"	5/16"	8 1/16"	10"	¾"	11"	1"	1 5/32"	⅞"	3¾"	53	640	1 5/16"	2⅜"	1 1/16"



SHEET NO. 35

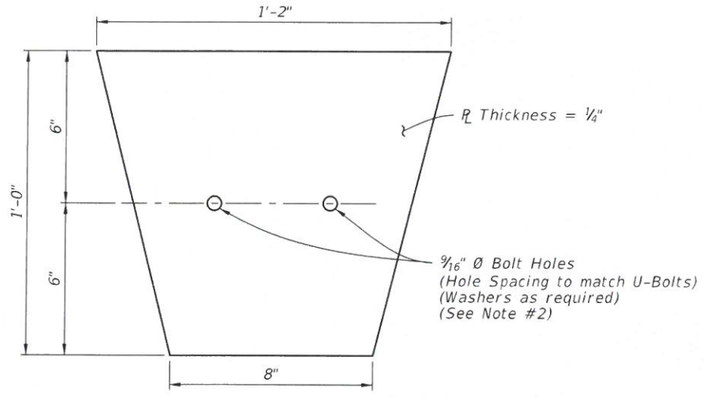
SLIP BASE AND FOUNDATION DETAILS

11:17:34 AM
4/14/2017

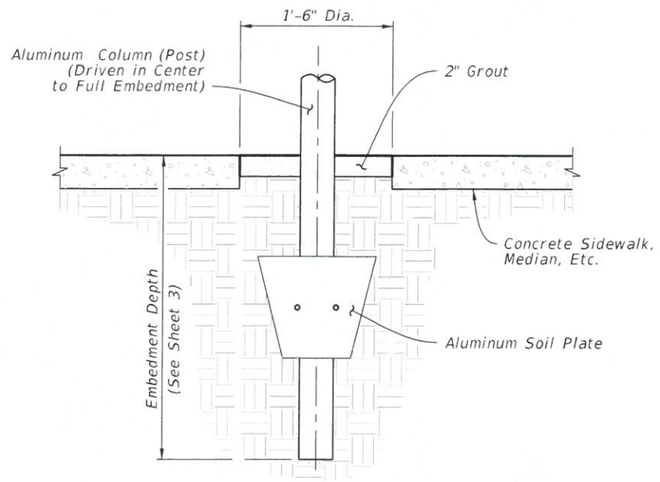
LAST REVISION	REVISION	DESCRIPTION:			
11/01/16			FY 2017-18 DESIGN STANDARDS	SINGLE COLUMN GROUND SIGNS	INDEX NO. 11860 / SHEET NO. 4 of 9

NOTES:

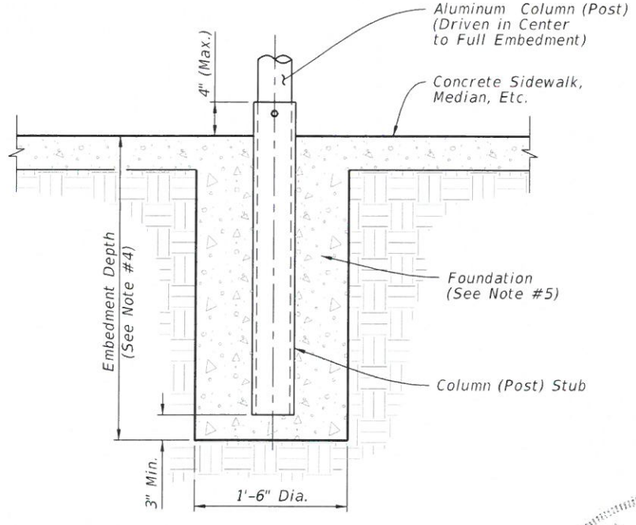
1. Align Soil Plate bottom at ⅔ of embedment depth.
2. Slot up to 1" long is allowed to accommodate various Column (Post) sizes.
3. Rectangular soil plate of size 1'-2" x 1'-0" may be used as an alternative.
4. Embedment Depth is 2'-6" for 2.0" and 2.5" Column (Post) Stubs and 3'-6" for 3.0" and 3.5" Column (Post) Stubs.
5. Concrete foundation may be Class Non Structural if poured monolithically with sidewalk or separator.



ALUMINUM SOIL PLATE DETAIL



DRIVEN POST DETAIL
(Frangible Post In Crossovers, Medians & Sidewalks)



CONCRETE/STUB DETAIL
(Frangible Post In Crossovers, Medians & Sidewalks)

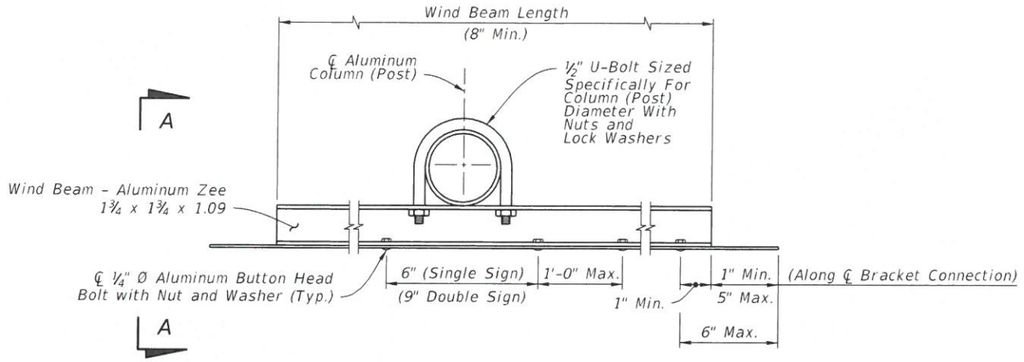
KEVIN M. MORGAN
LICENSE
No. 71220
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
11/14/16

SHEET NO. 36

DRIVEN POST AND SOIL PLATE DETAIL

10/14/2016 7:57:56 AM

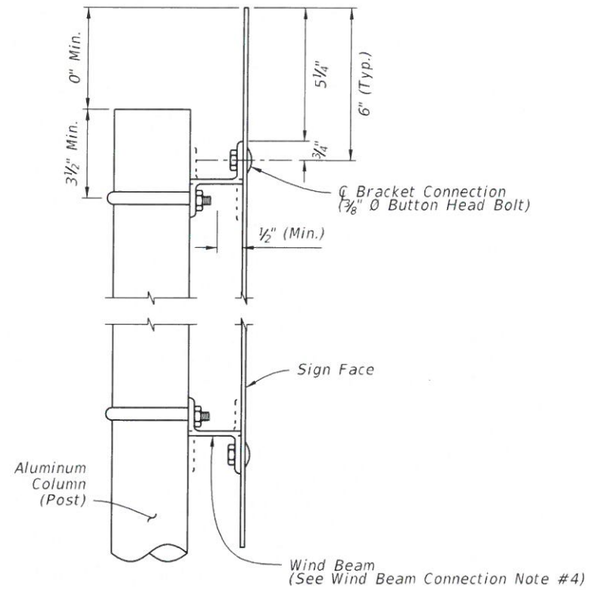
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	SINGLE COLUMN GROUND SIGNS	INDEX NO.	SHEET NO.
11/01/16					11860	5 of 9



WIND BEAM CONNECTION NOTES:

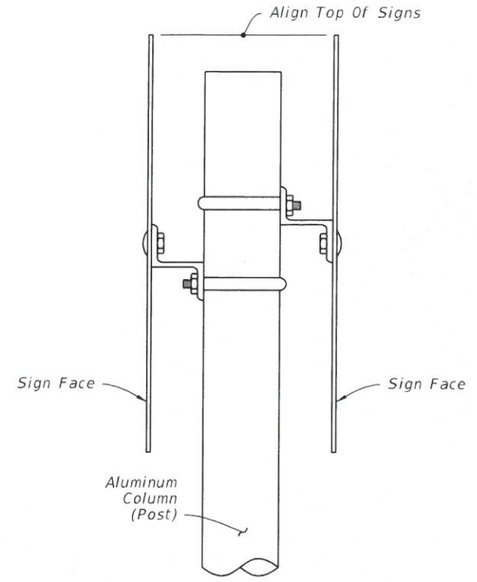
1. 5/16" Ø Stainless Steel Hex Head Bolts with Flat Washer under Head and Lockwasher under Nut may be used in lieu of ¼" Ø Aluminum Button Head Bolts.
2. Use Nylon washers (provided by the sheeting supplier) under the button bolt heads to protect sign sheeting.
3. Slots up to 2" long are allowed in wind beams to accommodate U-Bolts for varying Column (Post) diameters.
4. Wind beams may be oriented in either direction.

BRACKET DETAIL



WIND BEAM CONNECTIONS DETAILS

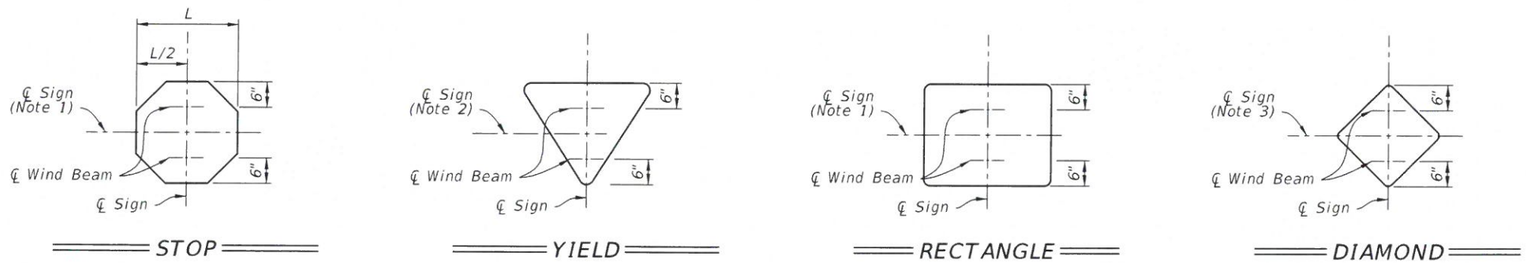
SECTION A-A



BACK-TO-BACK SIGN NOTE:

Use the area and the centroid location of the largest sign to determine aluminum column (post) size.

BACK-TO-BACK SIGN DETAIL



WIND BEAM PLACEMENT DETAILS

WIND BEAM PLACEMENT NOTES:

1. Install an additional third wind beam along the ℄ for signs with heights greater than 30" and less than 72". For rectangular signs greater than 72" maintain a maximum wind beam spacing of 2'-6", with the additional wind beams spaced evenly between the top and bottom wind beams. For rectangular signs up to 12" in height, use only one wind beam at ℄ Sign.
2. Install an additional third wind beam along the ℄ for Yield and School signs greater than 36".
3. Install an additional third wind beam along the ℄ for Diamond signs 30" or greater.

KEVIN M. MORGAN LICENSE NO. 71450 STATE OF FLORIDA PROFESSIONAL ENGINEER
11/14/17

SHEET NO. 37

CONNECTION AND WIND BEAMS

8/14/2017 11:09:54 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	SINGLE COLUMN GROUND SIGNS	INDEX	SHEET
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Size	Area	Total Area	Centroid
36x12	3.00 SF	6.31 SF	1.75 Ft.
24x24	3.31 SF		

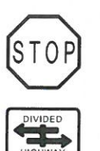
Size	Area	Total Area	Centroid
36x12	3.00 SF	8.18 SF	1.92 Ft.
30x30	5.18 SF		

Size	Area	Total Area	Centroid
36x12	3.00 SF	10.46 SF	2.10 Ft.
36x36	7.46 SF		

Size	Area	Total Area	Centroid
36x12	3.00 SF	16.25 SF	2.48 Ft.
48x48	13.25 SF		

Size	Area	Total Area	Centroid
24x24	3.31 SF	6.31 SF	1.71 Ft.
24x18	3.00 SF		

Size	Area	Total Area	Centroid
30x30	5.18 SF	10.18 SF	2.19 Ft.
30x24	5.00 SF		



Size	Area	Total Area	Centroid
36x36	7.46 SF	12.46 SF	2.55 Ft.
30x24	5.00 SF		

Size	Area	Total Area	Centroid
36x12	3.00 SF	13.18 SF	2.87 Ft.
30x30	5.18 SF		
30x24	5.00 SF		

Size	Area	Total Area	Centroid
36x12	3.00 SF	15.46 SF	3.15 Ft.
36x36	7.46 SF		
30x24	5.00 SF		

Size	Area	Total Area	Centroid
21x15	2.19 SF	6.19 SF	1.60 Ft.
24x24	4.00 SF		

Size	Area	Total Area	Centroid
21x15	2.19 SF	7.19 SF	1.52 Ft.
30x24	5.00 SF		

Size	Area	Total Area	Centroid
24x12	2.00 SF	6.00 SF	1.53 Ft.
24x24	4.00 SF		

Size	Area	Total Area	Centroid
24x12	2.00 SF	7.00 SF	1.45 Ft.
30x24	5.00 SF		

Size	Area	Total Area	Centroid
30x15	3.13 SF	8.13 SF	1.66 Ft.
30x24	5.00 SF		

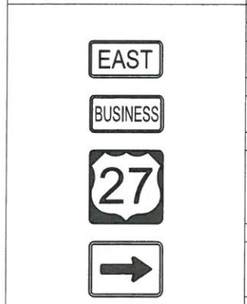
Size	Area	Total Area	Centroid
24x24	4.00 SF	6.19 SF	1.73 Ft.
21x15	2.19 SF		

Size	Area	Total Area	Centroid
30x24	5.00 SF	7.19 SF	1.81 Ft.
21x15	2.19 SF		

Size	Area	Total Area	Centroid
24x12	2.00 SF	8.19 SF	2.26 Ft.
24x24	4.00 SF		
21x15	2.19 SF		

Size	Area	Total Area	Centroid
24x12	2.00 SF	9.19 SF	2.27 Ft.
30x24	5.00 SF		
21x15	2.19 SF		

Size	Area	Total Area	Centroid
30x15	3.13 SF	10.32 SF	2.49 Ft.
30x24	5.00 SF		
21x15	2.19 SF		



Size	Area	Total Area	Centroid
24x12	2.00 SF	10.19 SF	2.80 Ft.
24x12	2.00 SF		
24x24	4.00 SF		
21x15	2.19 SF		

10/14/2016 7:58:00 AM

LAST REVISION	REVISION	DESCRIPTION:			
07/01/15			FDOT FY 2017-18 DESIGN STANDARDS	SINGLE COLUMN GROUND SIGNS	INDEX NO. 11860 / SHEET NO. 7 of 9

	Size	Area	Total Area	Centroid
EAST	24x12	2.00 SF		
BUSINESS	24x12	2.00 SF		
301	30x24	5.00 SF	11.19 SF	2.76 Ft.
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
EAST	30x15	3.13 SF		
BUSINESS	30x15	3.13 SF		
301	30x24	5.00 SF	13.45 SF	3.16 Ft.
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
JCT	21x15	2.19 SF		
LEON 56 COUNTY	18x18	1.71 SF	3.90 SF	1.57 Ft.

	Size	Area	Total Area	Centroid
JCT	21x15	2.19 SF		
LEON 56 COUNTY	24x24	3.03 SF	5.22 SF	1.72 Ft.

	Size	Area	Total Area	Centroid
JCT	21x15	2.19 SF		
LEON 56 COUNTY	30x30	4.76 SF	6.95 SF	1.87 Ft.

	Size	Area	Total Area	Centroid
LEON 56 COUNTY	18x18	1.71 SF	3.90 SF	1.26 Ft.
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
LEON 56 COUNTY	24x24	3.03 SF	5.22 SF	1.62 Ft.
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
LEON 56 COUNTY	30x30	4.76 SF	6.95 SF	1.97 Ft.
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
TO	24x12	2.00 SF		
EAST	24x12	2.00 SF		
INTERSTATE 75	24x24	3.20 SF	9.39 SF	2.87 Ft.
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
TO	24x12	2.00 SF		
EAST	24x12	2.00 SF		
INTERSTATE 295	30x24	3.99 SF	10.18 SF	2.84 Ft.
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
TO	30x15	3.13 SF		
EAST	30x15	3.13 SF		
INTERSTATE 295	30x24	3.99 SF	12.44 SF	3.26 Ft.
	21x15	2.19 SF		

	Size	Area	Total Area	Centroid
JCT INTERSTATE 75	21x15	2.19 SF	5.39 SF	1.75 Ft.
	24x24	3.20 SF		

	Size	Area	Total Area	Centroid
JCT INTERSTATE 295	21x15	2.19 SF	6.18 SF	1.67 Ft.
	30x24	3.99 SF		

	Size	Area	Total Area	Centroid
EAST INTERSTATE 75 OR TO INTERSTATE 75	24x12	2.00 SF	5.20 SF	1.67 Ft.
	24x24	3.20 SF		

	Size	Area	Total Area	Centroid
EAST INTERSTATE 295 OR TO INTERSTATE 295	24x12	2.00 SF	5.99 SF	1.60 Ft.
	30x24	3.99 SF		

	Size	Area	Total Area	Centroid
EAST INTERSTATE 295 OR TO INTERSTATE 295	30x15	3.13 SF	7.12 SF	1.81 Ft.
	30x24	3.99 SF		

	Size	Area	Total Area	Centroid
EAST INTERSTATE 75 OR TO INTERSTATE 75	30x15	3.13 SF	10.33 SF	2.27 Ft.
	36x36	7.20 SF		

KEVIN M. MORGAN
LICENSE
NO. 71350
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
11/14/17

10/14/2016 7:58:02 AM

SHEET NO. 39

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/15			FDOT FY 2017-18 DESIGN STANDARDS	SINGLE COLUMN GROUND SIGNS	11860	8 of 9

Size	Area	Total Area	Centroid
30x15	3.13 SF	12.12 SF	2.18 Ft.
45x36	8.99 SF		

Size	Area	Total Area	Centroid
24x12	2.00 SF	7.39 SF	2.30 Ft.
24x24	3.20 SF		
21x15	2.19 SF		

Size	Area	Total Area	Centroid
24x12	2.00 SF	8.18 SF	2.31 Ft.
30x24	3.99 SF		
21x15	2.19 SF		

Size	Area	Total Area	Centroid
30x15	3.13 SF	9.31 SF	2.55 Ft.
30x24	3.99 SF		
21x15	2.19 SF		

Size	Area	Total Area	Centroid
30x30	4.69 SF	6.69 SF	1.61 Ft.
24x12	2.00 SF		

Size	Area	Total Area	Centroid
30x30	4.69 SF	8.44 SF	1.77 Ft.
30x18	3.75 SF		

Size	Area	Total Area	Centroid
36x36	6.75 SF	10.50 SF	2.06 Ft.
30x18	3.75 SF		

Size	Area	Total Area	Centroid
30x30	6.25 SF	8.25 SF	2.28 Ft.
24x12	2.00 SF		

Size	Area	Total Area	Centroid
36x36	9.00 SF	12.75 SF	2.84 Ft.
30x18	3.75 SF		

Size	Area	Total Area	Centroid
30x30	6.25 SF	10.25 SF	2.74 Ft.
24x24	4.00 SF		

Size	Area	Total Area	Centroid
36x36	9.00 SF	15.25 SF	3.29 Ft.
30x30	6.25 SF		

Size	Area	Total Area	Centroid
30x30	6.25 SF	9.25 SF	2.51 Ft.
24x18	3.00 SF		

Size	Area	Total Area	Centroid
36x36	9.00 SF	14.00 SF	3.06 Ft.
30x24	5.00 SF		

10/14/2016 7:58:04 AM

SHEET NO. 40

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2017-18 DESIGN STANDARDS	SINGLE COLUMN GROUND SIGNS	INDEX NO.	SHEET NO.
07/01/15						11860	9 of 9