

VERRA MOBILITY STANDARD DETAILS FOR FLORIDA SITES

SPEED DETECTION SYSTEM
HALO 3 SYSTEM ONLY (2 COMPONENTS)
4.5" O.D. ALUMINUM REAR POLE
170 MPH DESIGN WIND SPEED

SHEET INDEX

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
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3	GENERAL NOTES & SIGNS
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6	ALUMINUM REAR POLE DETAILS
7	REINFORCED CONCRETE DRILLED SHAFT FOUNDATION
8	SPREAD FOOTING DETAILS - 1
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10	SPREAD FOOTING DETAILS - 3

GOVERNING STANDARD PLANS:

FY 2025-26 STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION
AND APPLICABLE INTERIM REVISIONS (IRS)

AVAILABLE AT THE FOLLOWING WEBSITE:

[HTTPS://WWW.FDOT.GOV/DESIGN/STANDARDPLANS/2024/24.SHTM](https://www.fdot.gov/design/standardplans/2024/24.shtm)

GOVERNING STANDARD SPECIFICATIONS:

STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION FY 2025-26

AVAILABLE AT THE FOLLOWING WEBSITE:

[HTTPS://WWW.FDOT.GOV/PROGRAMMANAGEMENT/IMPLEMENTED/SPECBOOKS/DEFAULT.SHTM](https://www.fdot.gov/programmanagement/implemented/specbooks/default.shtm)

G.C.:



1150 N. ALMA SCHOOL RD
MESA, AZ 85201 USA
TEL: (480)443-7000 FAX: (480)607-0901
WWW.ATSOL.COM

ENGINEER OF RECORD:
JOHN ASCHENBRENNER, P.E.
REG. 99822

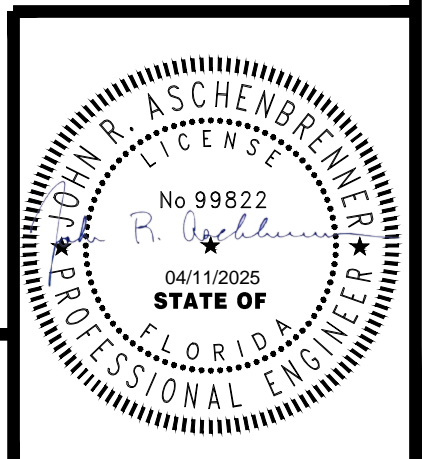
COVER SHEET

VERRA MOBILITY
STANDARD DETAILS FOR FLORIDA SITES

REV.	DATE	DESCRIPTION	PREP. BY	REV. BY	APP. BY	REMARKS
0	3/28/2025	FIRST PERMITTING SUBMITTAL	OW	OW	JA	SYSTEM STANDARD SET

JOB NUMBER
VARIES
SITE ID(S)
VARIES

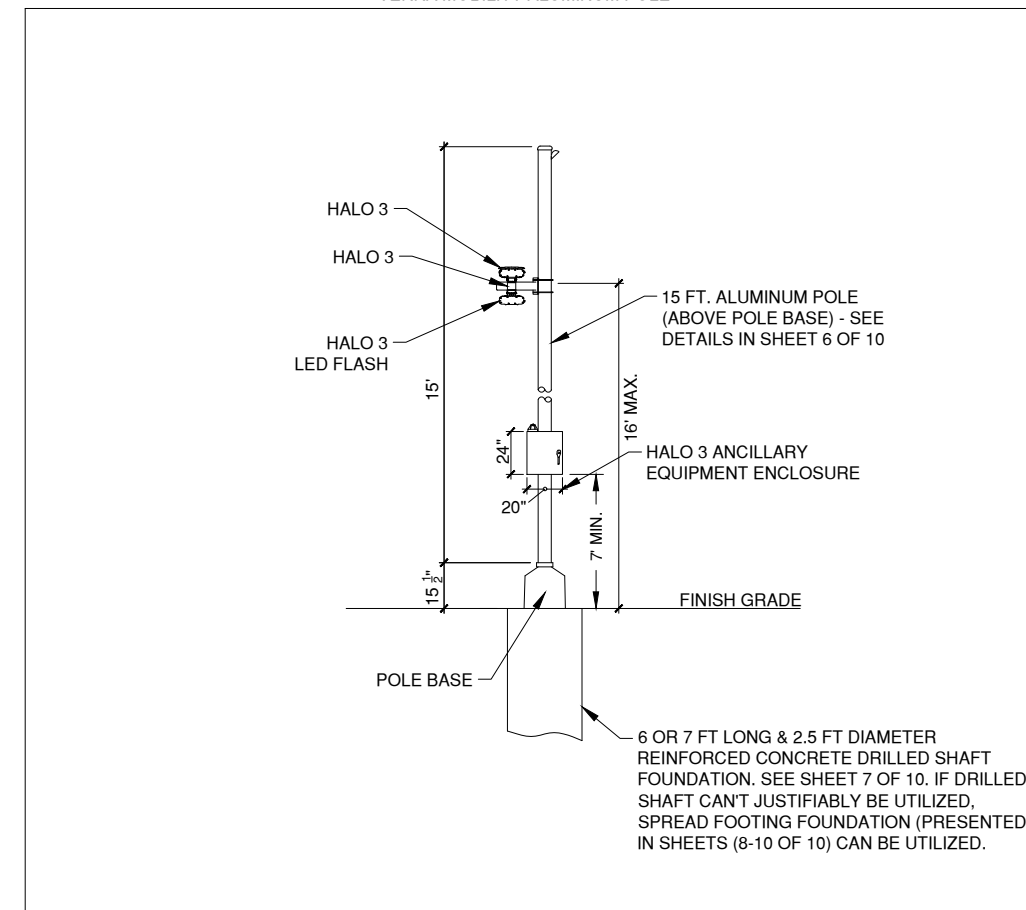
SHEET
NUMBER
1
OF 10 SHEETS



GENERAL NOTES (AS NEEDED AND APPLICABLE):

1. ALL WORK AND MATERIAL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF FDOT STANDARD PLANS FOR DIRECTIONAL BORE.
2. MAINTENANCE OF TRAFFIC SHALL BE PER THE LATEST EDITION OF FDOT STANDARD PLANS.
3. ALL WORK REQUIRING INTERRUPTION OF TRAFFIC SIGNAL OPERATION SHALL BE COMPLETED BETWEEN THE HOURS OF 12:00 AM AND 5:00 AM. A TRAFFIC CONTROL OFFICER MUST BE PRESENT WHEN TRAFFIC SIGNAL IS NOT IN FULL OPERATION.
4. CONTRACTOR SHALL CONTACT THE SIGNAL MAINTAINING AGENCY SUPERVISOR 2 BUSINESS DAYS IN ADVANCE TO COORDINATE WORK AT THE SIGNAL.
5. ALL SIDEWALK CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF FDOT STANDARD PLANS.
6. ALL SIGN INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF FDOT STANDARD PLANS
7. EARTH TO GROUND RESISTANCE NEEDS TO BE 25 OHMS OR ADDITIONAL GROUNDING RODS MAY BE NEEDED.
8. THE RIGHTS OF WAY SHALL BE RESTORED TO EQUAL OR BETTER CONDITION.
9. CAMERA TO BE FIELD ADJUSTED AS NECESSARY TO AVOID OVERHEAD LINES IN FIELD OF VIEW.
10. THE CONTRACTOR SHALL NOTIFY THE RELEVANT CITY / COUNTY AND FDOT AT LEAST 2 BUSINESS DAYS IN ADVANCE OF INSTALLING GROUND RODS, UNDERGROUND CONDUIT, POLE FOUNDATIONS OR SETTING POLES SO THAT THESE OPERATIONS MAY BE OBSERVED.
11. WORK ZONE TRAFFIC CONTROL SHALL BE MAINTAINED IN ACCORDANCE WITH THE LATEST EDITION OF FDOT STANDARD PLANS. PEDESTRIAN CONTROL FOR SIDEWALK CLOSURES, SHALL BE MAINTAINED IN ACCORDANCE WITH THE LATEST EDITION OF FDOT STANDARD PLANS.
12. PULL BOXES SHALL BE PLACED NO LESS THAN 10 FEET FROM THE EDGE OF PAVEMENT WHERE CURBING IS NOT PRESENT. IF A PULL BOX IS INSTALLED IN AN EXISTING SIDEWALK, THE ENTIRE SIDEWALK SLAB SHALL BE REPLACED FROM COMPRESSION JOINT TO COMPRESSION JOINT.
13. ALL CONDUIT DEPTH TO BE A MINIMUM OF 36 INCHES DEEP AND IN ACCORDANCE WITH THE LATEST EDITION OF FDOT STANDARD PLANS.
14. THE CONTRACTOR SHALL HAND DIG THE FIRST 4 FEET AT EACH POLE LOCATION, AND THE FIRST 2 FEET AT EACH PEDESTAL LOCATION TO VERIFY NO UTILITY CONFLICTS.
15. THE CONTRACTOR SHALL NOT PLACE SIGNS IN LOCATIONS THAT OBSTRUCT MOTORIST'S VIEW OF EXISTING SIGNS. SIGNS SHALL NOT BE PLACED LESS THAN 100 FEET FROM EXISTING SIGNS.
16. IF UTILITIES ARE DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY OWNER IMMEDIATELY AND THEN THE ENGINEER OF RECORD.
17. THE CONTRACTOR SHALL BE PREPARED TO USE A LOW PROFILE DRILL RIG WHERE OVERHEAD UTILITIES ARE PRESENT.
18. OVERHEAD PHOTO ENFORCED SIGN SHALL MAINTAIN VERTICAL CLEARANCE OF NOT LESS THAN 7 FEET ABOVE SIDEWALK.
19. ALL PROPOSED DIRECTIONAL BORES SHALL MAINTAIN AT LEAST 1 FT, UNLESS SPECIFIED OTHERWISE BY LOCAL AUTHORITIES REQUIREMENTS, CLEARANCE FROM EXISTING UTILITIES. NO DIRECTIONAL BORES ARE ALLOWED UNDER INLETS.
20. CONTRACTOR IS TO ATTACH A COPY OF THE DOOR HANGER THAT WILL BE PLACED ON EACH RESIDENCE OR BUSINESS THAT WILL BE AFFECTED BY THE RIGHT-OF-WAY WORK. THE DOOR HANGER MUST PROVIDE THE NAME AND PHONE NUMBER OF A CONTACT PERSON AS WELL AS THE LENGTH OF TIME THE WORK WILL BE DONE AND THE STREET NAME OF STREET (S) WHERE WORK IS OCCURRING. CONTRACTOR (S) ARE RESPONSIBLE FOR ANY DAMAGE TO THE RESIDENCE OR BUSINESS OWNER'S PROPERTY LOCATED WITHIN THE RIGHT-OF-WAY-.
21. SUBCONTRACTOR/S SHALL VERIFY THE LOCATION OF ALL CONFLICTING UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION OR DIRECTIONAL DRILL AND MAINTAIN THE MINIMUM REQUIRED (BY CODES AND AUTHORITIES) CLEARANCE.
22. CONTRACTOR SHALL NOTIFY THE UTILITY OWNER AT LEAST 48 HOURS IN ADVANCE OF CONSTRUCTION.
23. CONTRACTOR SHALL SOFT DIG TO VERTICALLY AND HORIZONTALLY LOCATE ALL UTILITIES PRIOR TO COMMENCEMENT OF THE DIRECTIONAL BORE.
24. CONTRACTOR SHALL RESTORE ALL AFFECTED AND DISTURBED AREAS IN ACCORDANCE WITH THE LATEST EDITION OF FDOT STANDARD PLANS
25. AS APPLICABLE, DISTANCE BETWEEN ANY ENCOUNTERED UTILITIES AND THE BOTTOM OR SIDES OF THE FOUNDATION SHOULD FULLY MEET FDOT AND OTHER RELEVANT AGENCY REQUIREMENTS AND REGULATIONS IN ALL ASPECTS TO ASSUME THE DUE PROTECTION AND SAFETY OF ANY UTILITIES TO BE ENCOUNTERED / IN CONFLICT IN THE FOOTPRINT OF THE PROPOSED FOUNDATION.
26. THE CONTRACTOR IS FULLY RESPONSIBLE FOR DULY AND PROPERLY CLEARING ALL UTILITIES PRIOR TO STARTING ANY EXCAVATION / DIGGING.
27. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL RELEVANT ELECTRICAL RELATED INFO/DETAILS/SECTIONS/PLANS/EXISTING CONDUITS/WIRING/ETC. AND, IF IT SEEMS DISCREPANCIES, ASSURE UTILIZING THE UPDATED LOCAL APPLICABLE CODE IN THE PROJECT JURISDICTION ALONG WITH MEETING THE MINIMUM REQUIREMENTS OF THE UPDATED NATIONAL ELECTRIC CODE (NEC).

HALO 3 SYSTEMS MOUNTED ON 15 FT VERRA MOBILITY ALUMINUM POLE




POLE ELEVATION (N.T.S.) (TYP.)

PARTICULAR NOTES:

1. THE POLE AND FOUNDATION STRUCTURAL STABILITY HAS BEEN PERFORMED BASED ON HALO 3'S TWO (ONLY) COMPONENTS (TO BE MOUNTED ON THE POLE) CONFIGURATION PRESENTED IN THE BELOW TABLE:

COMPONENT NO.	COMPONENT DESCRIPTION	SYSTEM (HALO 3)	APPROX. CONSIDERED WEIGHT (LB)	MAXIMUM EXPECTED MOUNTING HEIGHT ABOVE GROUND (FT)	APPROXIMATE DIMENSIONS (L x B x D) (IN.)
1	ANCILLARY ENCLOSURE	HALO 3	51	5	AS SHOWN IN SHEET 5 - EPA FACTOR = 1
2	HALO 3 (INCLUDING RADAR AND LED FLASH) - MOUNT ON A SHORT ARM	HALO 3	40	16	AS SHOWN IN SHEET 4

2. IT IS ASSUMED THAT ONLY HALO 3'S COMPONENTS (NO. 1 AND 2 IN THE ABOVE TABLE) WILL BE INSTALLED ON THE SPECIFIED ALUMINUM POLE.
3. AS PROVIDED BY HALO 3, THE MINIMUM HEIGHT FROM GROUND OF THE BOTTOM OF THE ANCILLARY ENCLOSURE IS 40 INCHES
4. REFER TO SHEETS 4 AND 5 OF 10 FOR HALO 3'S PROVIDED COMPONENTS DETAILS
5. HALO 3'S INSTALLATION TEAMS ARE FULLY RESPONSIBLE OF PROVIDING AND IMPLEMENTING ALL PROPER/SAFE APPROVED DETAILS FOR THEIR COMPONENTS CONNECTIONS WITH VM ALUMINUM POLE.

G.C.:  **VERRA MOBILITY**
 PHOTO ENFORCEMENT PROGRAM

1150 N. ALMA SCHOOL RD
 MESA, AZ 85201 USA
 TEL: (480)443-7000 FAX: (480)607-0901
 WWW.ATSOL.COM

ENGINEER OF RECORD:
 JOHN ASCHENBRENNER, P.E.
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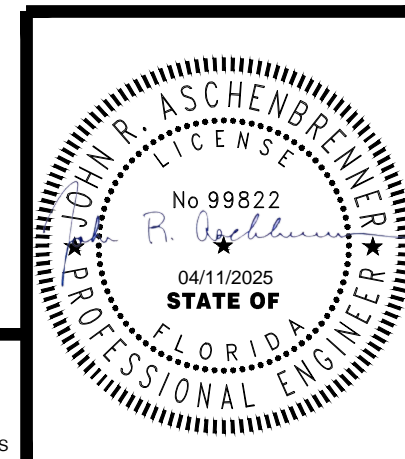
TYPICAL CONFIGURATION

VERRA MOBILITY
 STANDARD DETAILS FOR FLORIDA SITES

REV.	DATE	DESCRIPTION	PREP. BY	REV. BY	APP. BY	REMARKS
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JOB NUMBER
 VARIES
 SITE ID(S)
 VARIES

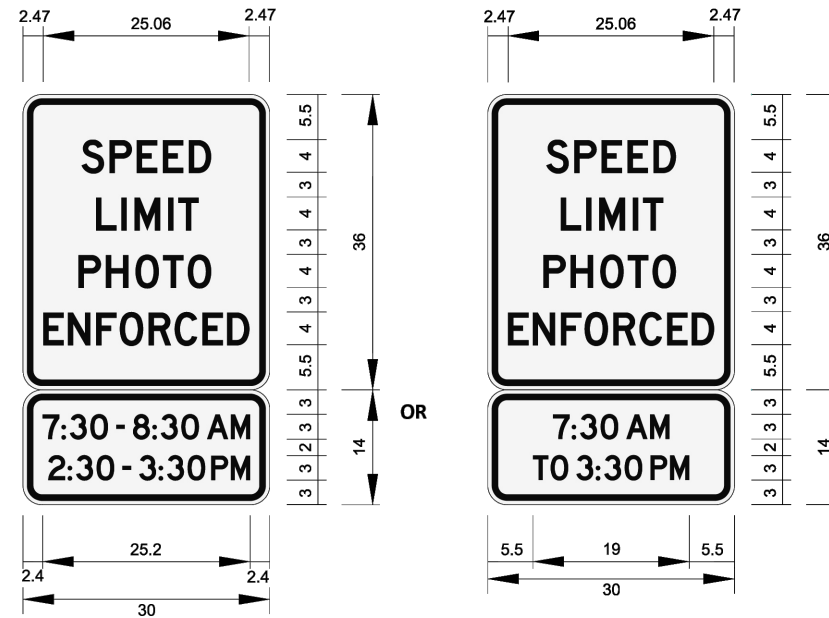
SHEET NUMBER
2
 OF 10 SHEETS



GENERAL & CONSTRUCTION NOTES (AS NEEDED & APPLICABLE)

- CONTRACTOR SHALL BE RESPONSIBLE TO APPLY AND OBTAIN AN APPROVED TRAFFIC CONTROL PLAN IN ACCORDANCE WITH MUTCD AND LATEST LOCAL STANDARDS AS REQUIRED.
- CONTRACTOR SHALL BE RESPONSIBLE TO RESTORE ALL DISTURBED AREAS TO ORIGINAL CONDITION TO AGENCY SATISFACTION AT NO ADDITIONAL COMPENSATION.
- CONTRACTOR SHALL TERMINATE ALL POWER CIRCUITS INTO VM CABINET(S).
- INSTALL INLINE 30 AMP FUSE INSIDE HAND HOLE ON VM CAMERA POLES.
- ALL PULL / JUNCTION BOX AND CONDUITS SHALL CONFORM TO THE LATEST EDITION OF FDOT STANDARD PLANS.
- FOR ALL ELECTRICAL WORKS, THE CONTRACTOR SHALL HAVE A LEVEL II IMSA CERTIFIED TECHNICIAN/ELECTRICIAN ON-SITE AT ALL TIMES DURING CONSTRUCTION. CONDUCTOR SPLICES AND TERMINATIONS SHALL BE MADE BY A QUALIFIED JOURNEYMAN ELECTRICIAN, WHO HAS SUCCESSFULLY COMPLETED A RECOGNIZED FOUR (4) YEAR APPRENTICESHIP PROGRAM OR EQUIVALENT TRAINING, OR BY A PERSON ENROLLED IN A RECOGNIZED FOUR (4) YEAR APPRENTICESHIP PROGRAM UNDER THE DIRECT SUPERVISION OF A JOURNEYMAN ELECTRICIAN.
- ADVANCE SIGNS SHALL BE PER FDOT ADOPTED "SCHOOL ZONE SPEED DETECTION SYSTEM PLACEMENT AND INSTALLATION SPECIFICATIONS". SIGNS SHALL NOT BLOCK VIEW OF ANY REGULATORY, GUIDE OR WARNING SIGNS.
- ALL WORK SHALL CONFORM TO ALL APPLICABLE ELECTRICAL CODES EXCEPT WHEN FDOT OR MAINTAINING AGENCY STANDARDS SUPERSEDE.
- CONTRACTOR SHALL TRIM EXISTING TREES TO IMPROVE LINE OF SIGHT AS NEEDED, AS PER RELEVANT AUTHORITIES REGULATIONS AND REQUIREMENTS. CONTRACTOR SHALL NOTIFY THE AGENCIES AND OBTAIN APPROVAL PRIOR TO TRIMMING.
- AT LOCATIONS WHERE EXISTING ENFORCEMENT EQUIPMENT MAY EXIST, CONTRACTOR SHALL COORDINATE WITH THE OWNER AND VM PROJECT MANAGER FOR REMOVAL & SALVAGE.
- CONTRACTOR SHALL COORDINATE WITH FDOT AND MAINTAINING AGENCY'S ENFORCEMENT TO HAVE AN OFFICER PRESENT WHEN TRAFFIC SIGNAL POWER IS TURNED OFF FOR CONNECTION TO POWER PEDESTAL.
- CONNECT POLE TO SOLID BARE BOND GROUND & GROUNDING ROD (OR COIL 25' OF NO. 6 BARE COPPER) IN POLE FOUNDATION & TO SYSTEM GROUND BONDED BACK TO VM CABINET.
- CONTRACTOR TO LABEL EACH END OF ALL CABLE RUNS.
- CONTRACTOR TO INSTALL AND LEAVE IN PLACE NYLON DRAW STRING IN ALL CONDUIT RUNS.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF FDOT STANDARD PLANS UNLESS SPECIFICALLY STATED OR SHOWN OTHERWISE HEREIN.
- SIGN POST, HARDWARE AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF FDOT STANDARD PLANS

Speed Limit Photo Enforced Sign Assembly for Roadways with Posted Speed Limit 45mph or above



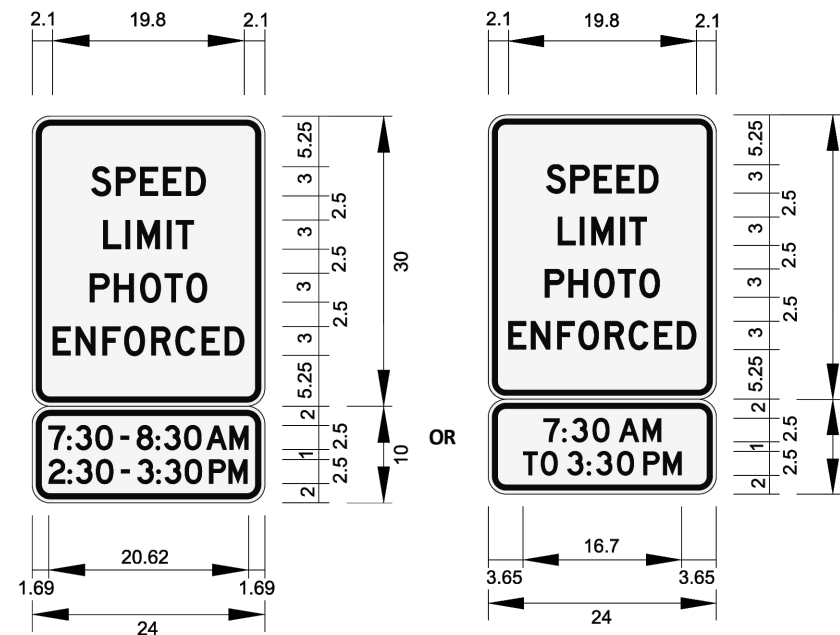
FTP - MINIMUM, SPEED LIMIT PHOTO ENFORCED;
 1.875" Radius, 0.787" Border, 0.475" Indent, Black on White;
 "SPEED" D 2K;
 "LIMIT" D 2K;
 "PHOTO" D 2K;
 "ENFORCED" D 2K 75% Letter Spacing

AUX PANEL, FTP MINIMUM;
 1.875" Radius, 0.787" Border, 0.475" Indent, Black on White;
 "7:30 - 8:30 AM" D 2K 75% Letter Spacing;
 "2:30-3:30 PM" D 2K 75% Letter Spacing

FTP - MINIMUM, SPEED LIMIT PHOTO ENFORCED;
 1.875" Radius, 0.787" Border, 0.475" Indent, Black on White;
 "SPEED" D 2K;
 "LIMIT" D 2K;
 "PHOTO" D 2K;
 "ENFORCED" D 2K 75% Letter Spacing

AUX PANEL, FTP MINIMUM;
 1.875" Radius, 0.787" Border, 0.475" Indent, Black on White;
 "7:30 AM" D 2K 75% Letter Spacing;
 "TO 3:30 PM" D 2K 75% Letter Spacing

Speed Limit Photo Enforced Sign Assembly for Roadways with Posted Speed Limit 40 mph or less



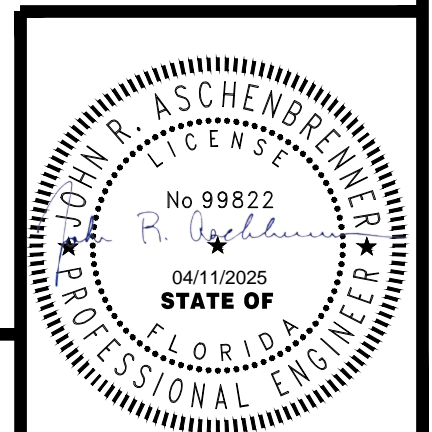
FTP - MINIMUM, SPEED LIMIT PHOTO ENFORCED;
 1.5" Radius, 0.63" Border, 0.38" Indent, Black on White;
 "SPEED" D 2K;
 "LIMIT" D 2K;
 "PHOTO" D 2K;
 "ENFORCED" D 2K;

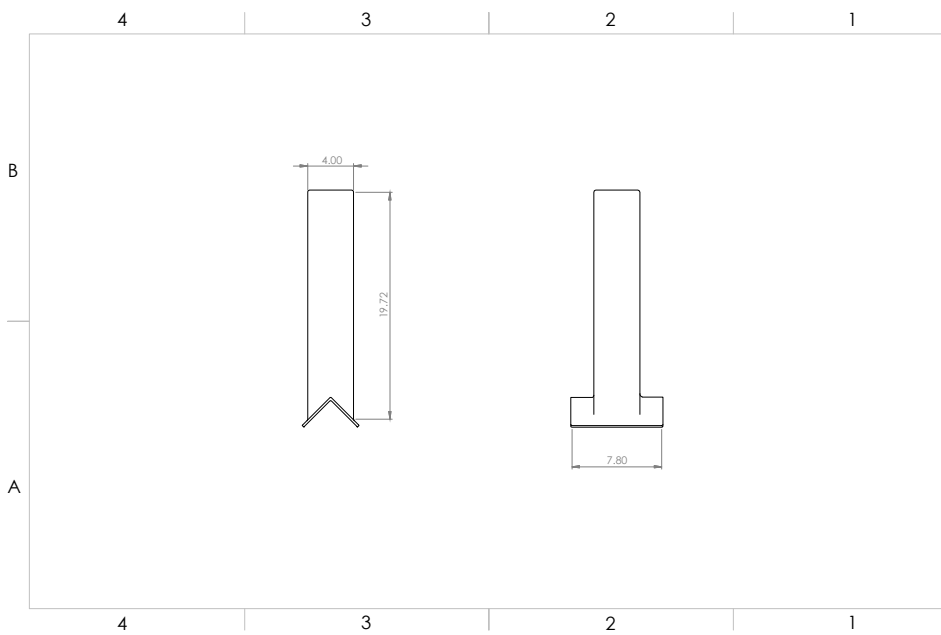
AUX PANEL, FTP MINIMUM;
 1.5" Radius, 0.63" Border, 0.38" Indent, Black on White;
 "7:30 - 8:30 AM" D 2K 75% Letter Spacing;
 "2:30-3:30 PM" D 2K 75% Letter Spacing

FTP - MINIMUM, SPEED LIMIT PHOTO ENFORCED;
 1.5" Radius, 0.63" Border, 0.38" Indent, Black on White;
 "SPEED" D 2K;
 "LIMIT" D 2K;
 "PHOTO" D 2K;
 "ENFORCED" D 2K;

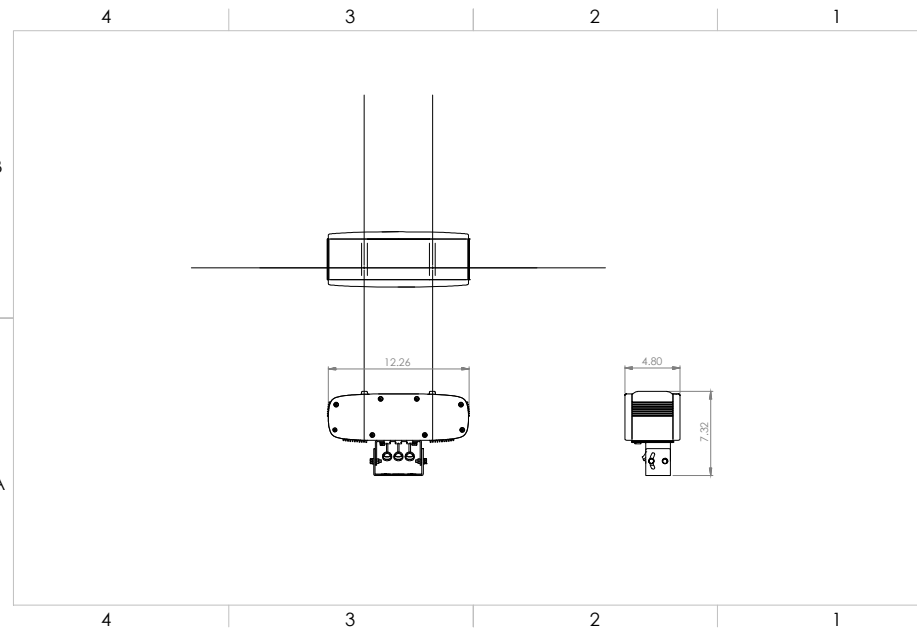
AUX PANEL, FTP MINIMUM;
 1.5" Radius, 0.63" Border, 0.38" Indent, Black on White;
 "7:30 AM" D 2K 75% Letter Spacing;
 "TO 3:30 PM" D 2K 75% Letter Spacing

REV.	DATE	DESCRIPTION	PREP. BY	REV. BY	APP. BY	REMARKS
0	3/28/2025	FIRST PERMITTING SUBMITTAL	OW	OW	JA	SYSTEM STANDARD SET

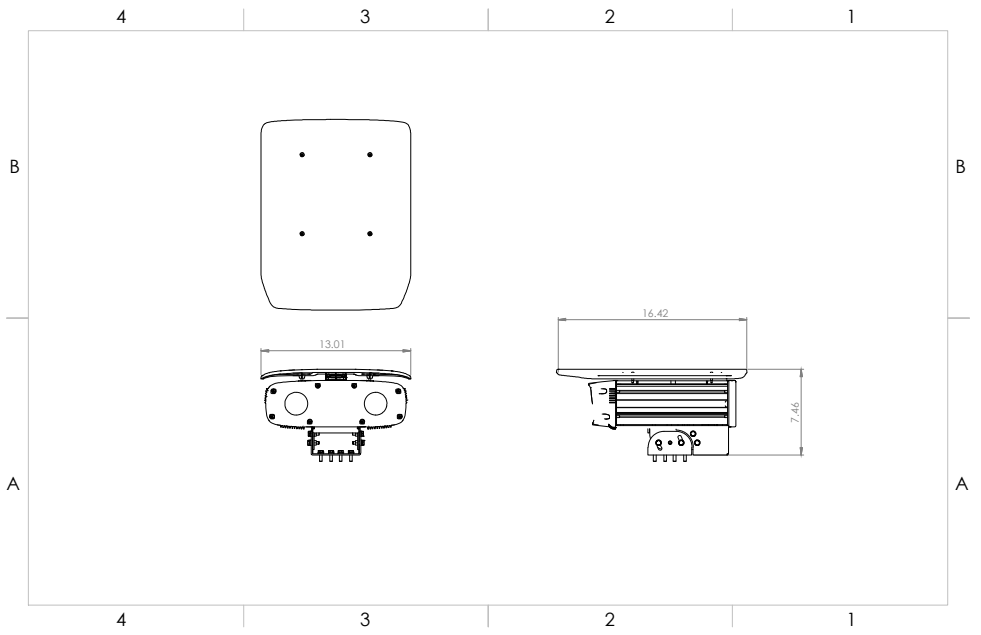




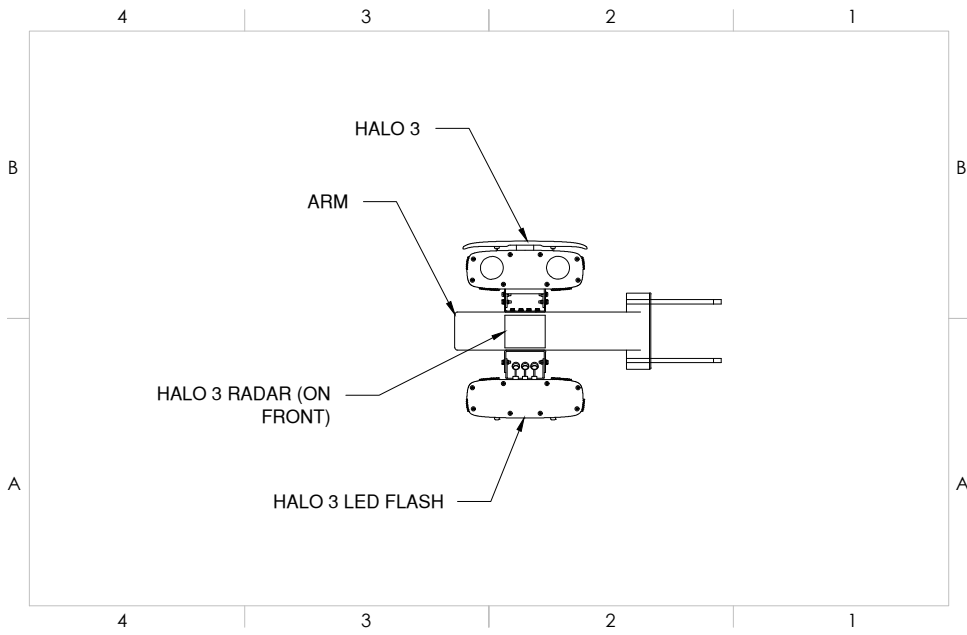
HALO 3 LED FLASH-ARM 1



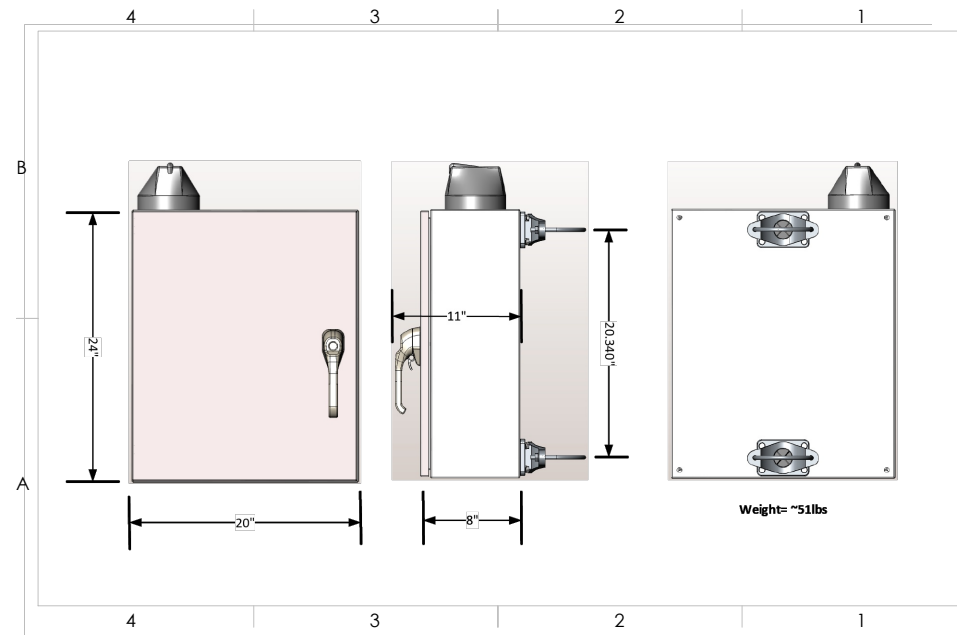
HALO 3-IR-FLASH BOX



HALO 3 RADAR



HALO 3-EQUIPMENT COMBINED



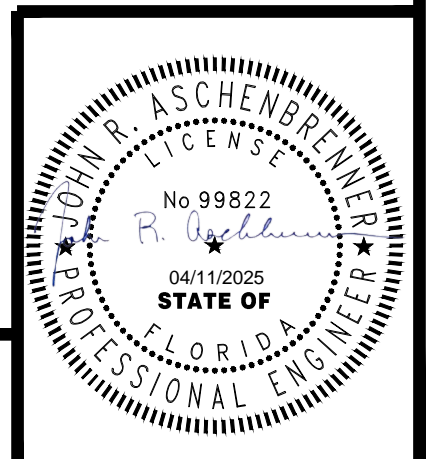
CABINET

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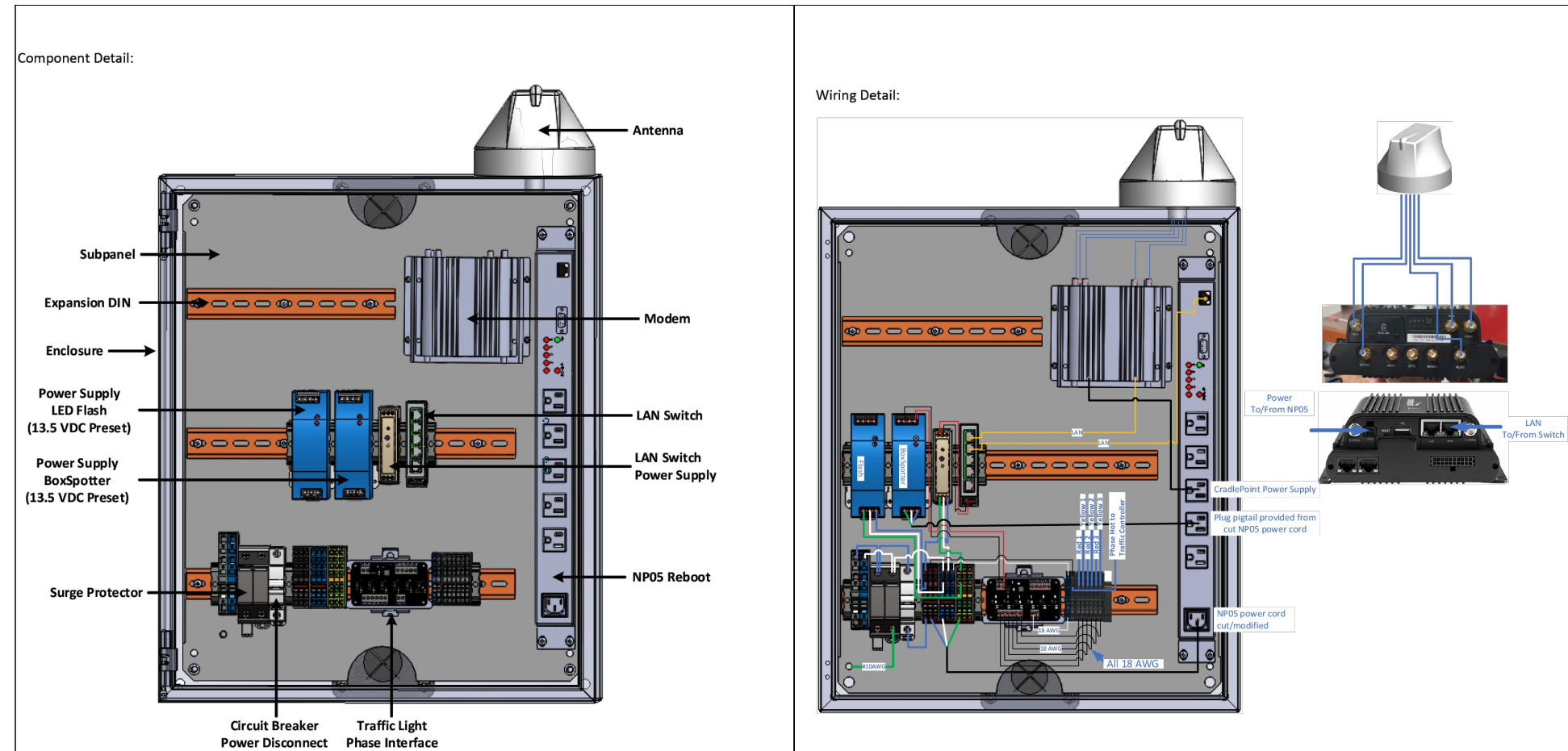
UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL
 ANGULAR: MACH BEND
 TWO PLACE DECIMAL
 THREE PLACE DECIMAL
 DO NOT SCALE DRAWING

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0	3/28/2025	FIRST PERMITTING SUBMITTAL	OW	OW	JA	SYSTEM STANDARD SET



HALO 3 ANCILLARY ENCLOSURE



COMPONENT DETAIL
DETAIL "A"

WIRING DETAIL
DETAIL "B"

G.C.:



1150 N. ALMA SCHOOL RD
MESA, AZ 85201 USA
TEL: (480)443-7000 FAX: (480)607-0901
WWW.ATSOL.COM

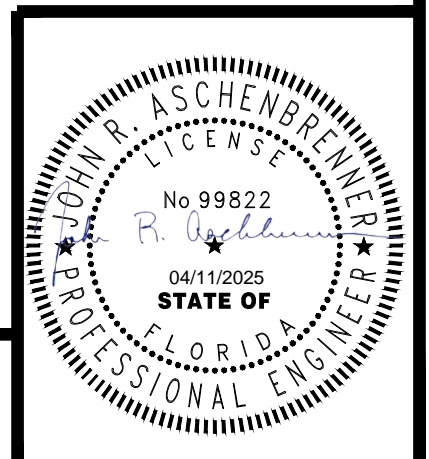
ENGINEER OF RECORD:
JOHN ASCHENBRENNER, P.E.
REG. 99822

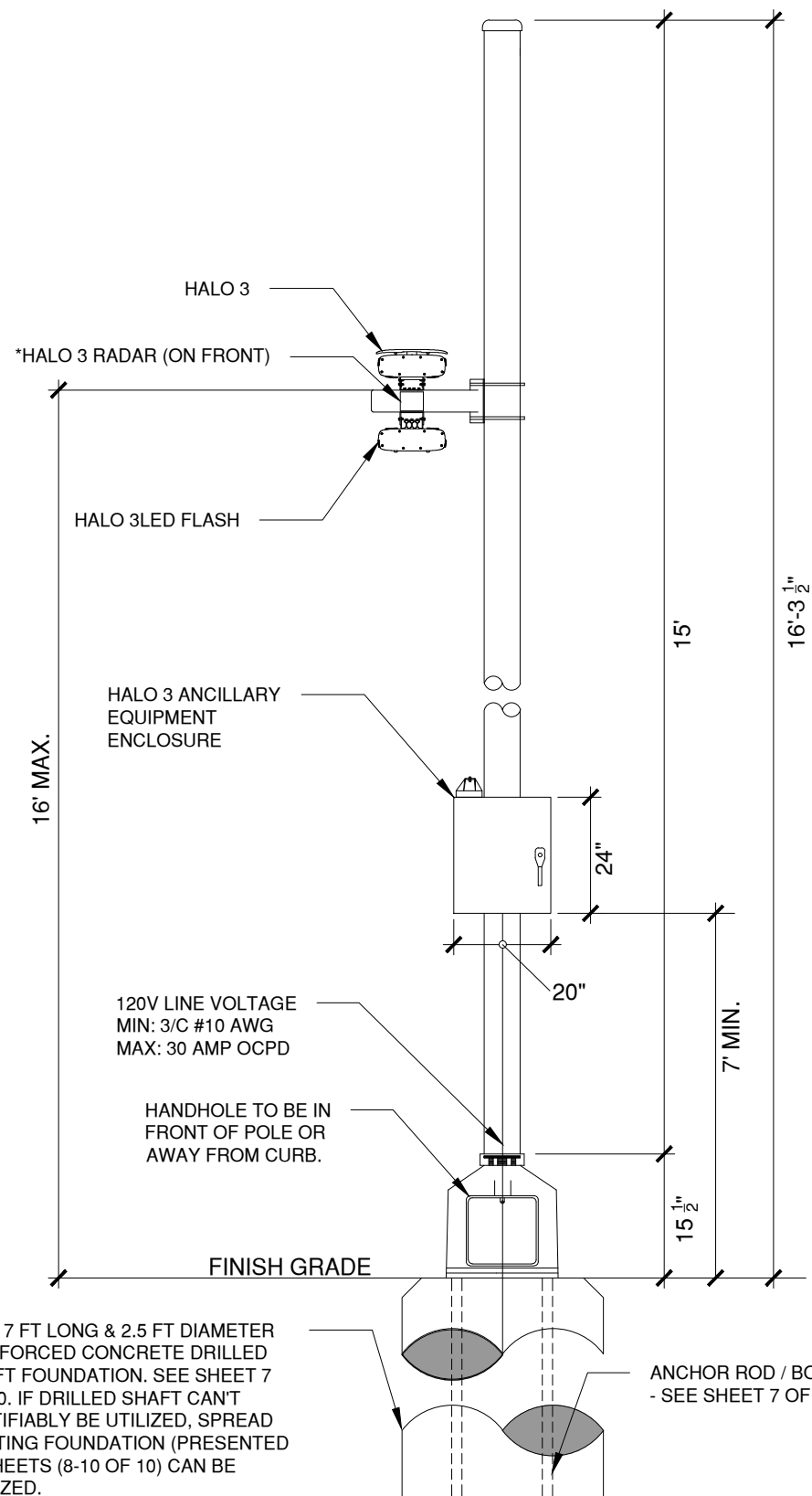
**STANDARD & PRODUCT
DETAILS-2**
VERRA MOBILITY
STANDARD DETAILS FOR FLORIDA SITES

REV.	DATE	DESCRIPTION	PREP. BY	REV. BY	APP. BY	REMARKS
0	3/28/2025	FIRST PERMITTING SUBMITTAL	OW	OW	JA	SYSTEM STANDARD SET

JOB NUMBER
VARIES
SITE ID(S)
VARIES

SHEET
NUMBER
5
OF 10 SHEETS



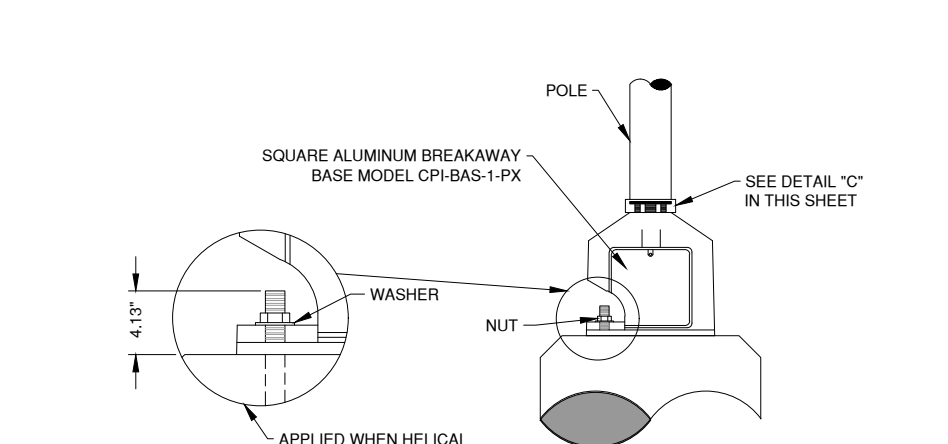


6 OR 7 FT LONG & 2.5 FT DIAMETER REINFORCED CONCRETE DRILLED SHAFT FOUNDATION. SEE SHEET 7 OF 10. IF DRILLED SHAFT CAN'T JUSTIFIABLY BE UTILIZED, SPREAD FOOTING FOUNDATION (PRESENTED IN SHEETS (8-10 OF 10) CAN BE UTILIZED.

DETAIL "A"
REAR CAMERA POLE

(SITE SPECIFIC ARRANGEMENT MAY VARY FROM ONE SITE TO ANOTHER)

15' - 4.5" O.D. SCHEDULE 80
(6061 T6 ALUMINUM)



NOTE:
DRILL SHAFT FOUNDATION SHOWN. ATTACHMENT TO SPREAD FOOTING (NOT SHOWN) SIMILAR. SEE SHEETS 8-10 OF 10.

THE PRIMARY REINFORCED CONCRETE DRILLED SHAFT FOUNDATION IS SHOWN HERE. SEE DETAIL "A"

DETAIL "B"
POLE BASE DETAIL

ALUMINUM POLE DESIGN NOTES:

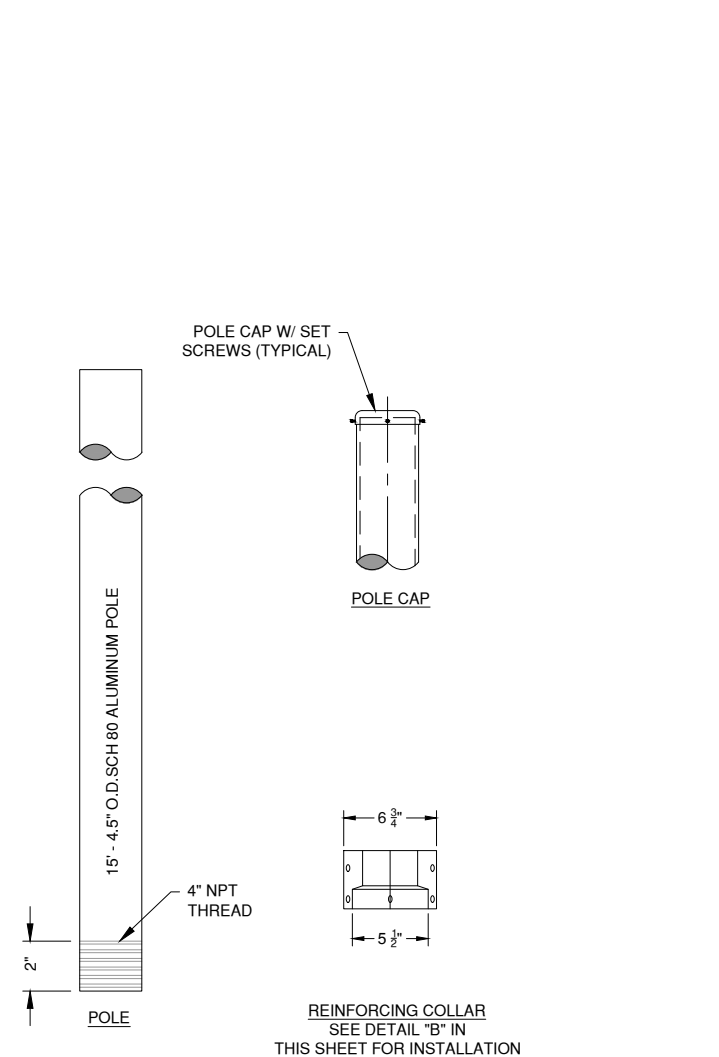
- DESIGN CRITERIA:
LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (LRFDLTS-1) AND FDOT STRUCTURES MANUAL (CURRENT EDITION).
- DESIGN WIND SPEED: 170 MPH
- SEE SHEETS 4 AND 5 OF 10 FOR EQUIPMENT DATA.

ALUMINUM POLE NOTES:

- POLE SHALL BE ALUMINUM ASSOCIATION ALLOY 6061-T6.
- ALUMINUM WELDING RODS SHALL MEET THE REQUIREMENTS OF ALUMINUM ASSOCIATION ALLOY NO. 5556 FILLER WIRE.
- WELDING SHALL BE IN ACCORDANCE WITH THE AWS STRUCTURAL WELDING CODE - ALUMINUM.
- LOCATE HANDHOLE ON SIDEWALK SIDE OF POLE UNLESS OTHERWISE DIRECTED.
- CAPS: ASTM B209
- STAINLESS STEEL SCREWS: AISI TYPE 316

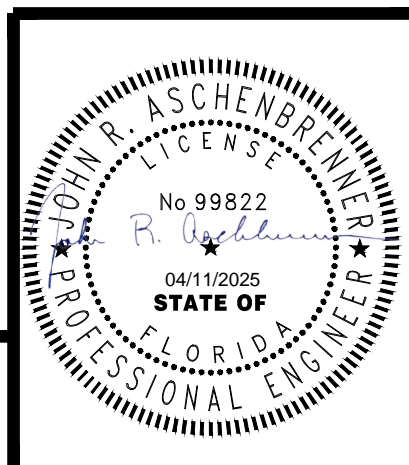
POLE DATA

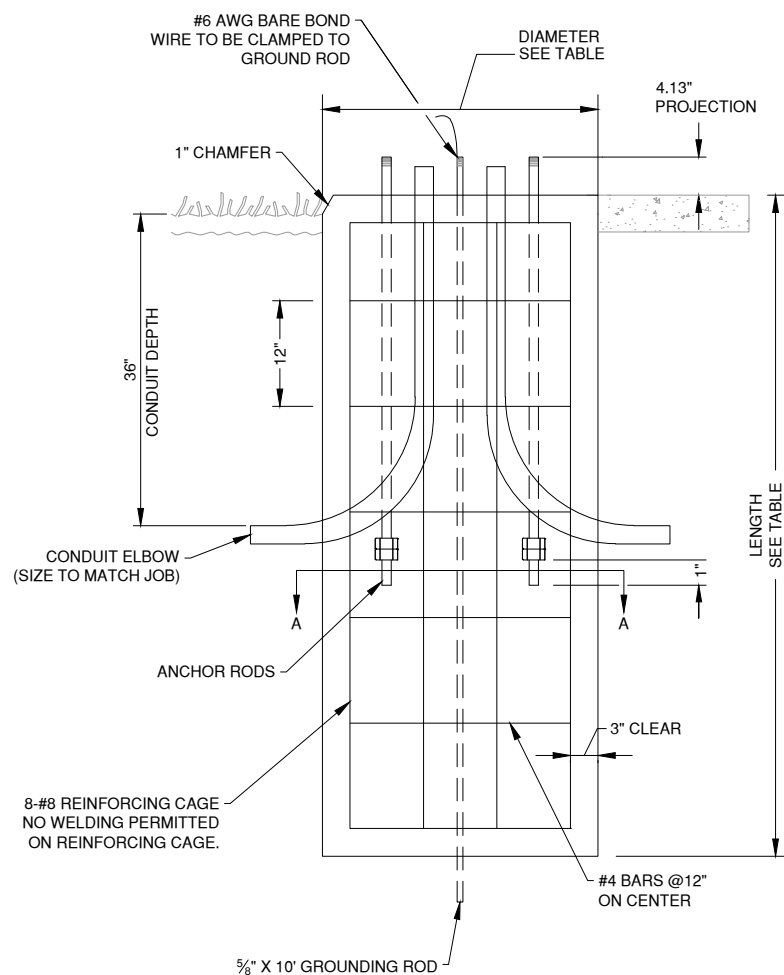
POLE TUBE			POLE BASE			ANCHOR BOLT		
POLE O.D.	LENGTH (ABOVE BASE)	WALL THK	SQUARE	BOLT CIRCLE	THK	DIA	LENGTH	THREAD LENGTH
4 1/2"	15'	43" / 128"	13 3/4"	14 3/16"	5" / 8"	1"	5 1/8"	5 1/8"



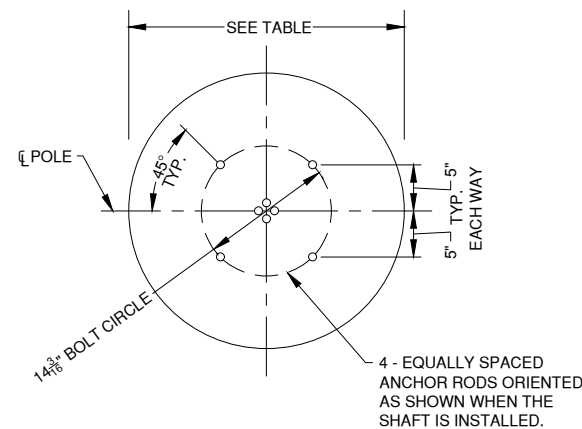
DETAIL "C"
POLE DETAIL

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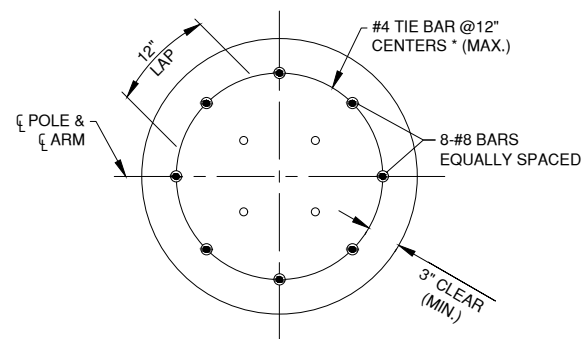




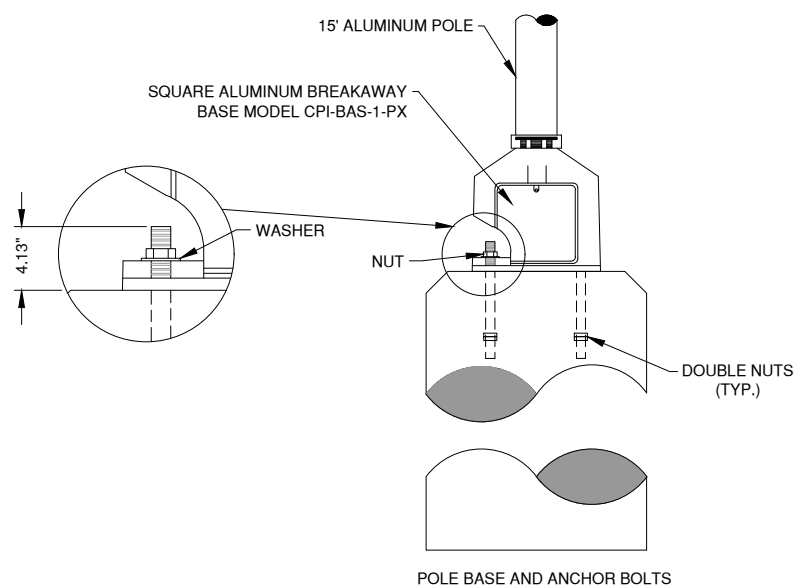
DETAIL "A"
DRILLED SHAFT FOUNDATION DETAIL



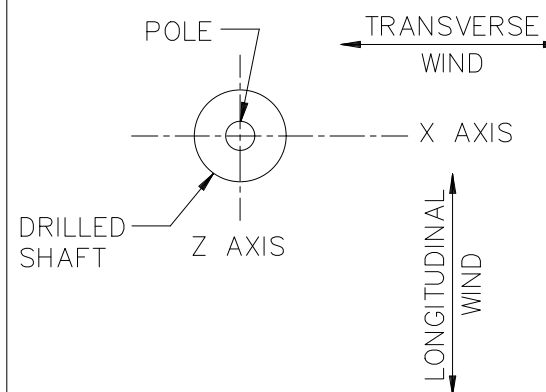
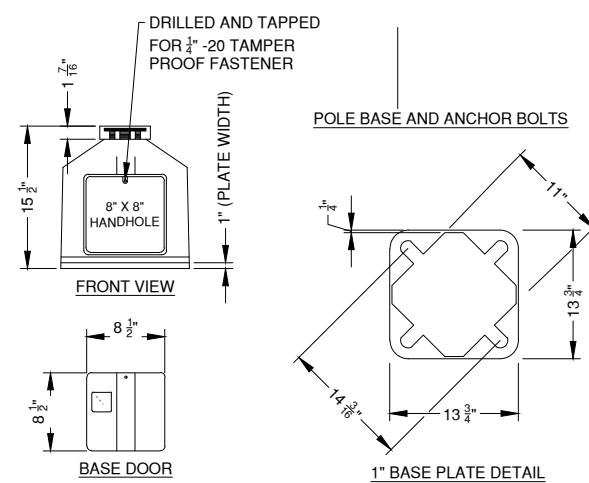
TOP VIEW



SECTION A-A



DETAIL "B"
POLE BASE DETAIL



LOADING DIAGRAM

FOUNDATION DESIGN NOTES:

- DESIGN CRITERIA:
 - LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (LRFDLTS-1) AND FDOT STRUCTURES MANUAL (CURRENT EDITION).
 - DESIGN WIND SPEED: 170 MPH
 - THE FOLLOWING SOIL PROPERTIES WERE ASSUMED FOR THE FOUNDATION DESIGN. IF THE ENCOUNTERED SOIL CONDITIONS DO NOT MEET THESE ASSUMED SOIL PARAMETERS, THEN THE EOR SHOULD BE CONSULTED AND A SPECIAL FOUNDATION MAY NEED TO BE DESIGNED.

A. SOIL TYPE:	COHESIONLESS
B. GROUNDWATER TABLE:	AT GROUND SURFACE OR LOWER
C. SOIL EFFECTIVE UNIT WEIGHT:	50 PCF MINIMUM
D. INTERNAL ANGLE OF FRICTION:	30 DEGREES MINIMUM
E. N _{SPT} (BLOW COUNTS):	≥ 15

FOUNDATION NOTES:

- CONCRETE: FDOT CLASS I WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
- REINFORCING STEEL: ASTM A615, GRADE 60.
- ANCHOR RODS:
 - RODS: ASTM F1554, GRADE 55
 - NUTS: ASTM A563
 - WASHERS: ASTM F436
 - GALVANIZE ALL ITEMS IN ACCORDANCE WITH ASTM F2329.
- FOR PRECAST CONCRETE FOUNDATIONS, FILL THE VOID AROUND THE FOUNDATION WITH FLOWABLE FILL OR CLEAN SANDS USING HYDRAULIC METHODS TO A LEVEL 6 INCHES BELOW GRADE.
- AFTER THE POLE IS SET IN FINAL POSITION AND ALIGNMENT, APPLY A COAT OF ZINC-RICH PAINT TO THE ANCHOR ROD THREADS AND NUTS TO SEAL THE JOINT BETWEEN THE NUT AND ANCHOR ROD.
- WHERE FOUNDATION ABUTS THE SIDEWALK, THE TOP OF THE FOUNDATION SHALL BE LEVEL WITH THE SIDEWALK. FOR ALL OTHER CASES, THE TOP OF THE FOUNDATION SHALL NOT BE MORE THAN 3 INCHES ABOVE GRADE.

REINFORCED CONCRETE DRILLED SHAFT DATA

POLE TYPE	HEIGHT ABOVE GROUND	DIAMETER	DEPTH	BOLT CIRCLE (B.C.)	FOUNDATION REINFORCEMENT		ANCHOR RODS			REMARKS
					VERTICAL	HORIZONTAL	DIA	LENGTH	THREAD LENGTH (TOP)	
REAR POLE ASSEMBLY	16'-3 1/2"	2'-6"	7'-0"	14 3/16"	8 - NO.8	NO. 4 @ 12" C-C	1.00"	42.00"	6"	> 150 MPH DESIGN WIND SPEED
REAR POLE ASSEMBLY	16'-3 1/2"	2'-6"	6'-0"	14 3/16"	8 - NO.8	NO. 4 @ 12" C-C	1.00"	30.00"	6"	≤ 150 MPH DESIGN WIND SPEED

- REFER TO SHEETS 4 - 6 OF 10 FOR THE POLE DETAILS AND EQUIPMENT

TECHNICAL CONSIDERATIONS:

- THE R.C. DRILLED SHAFT FOUNDATION TYPE DESIGN PRESENTED IN THE PLANS HAVE BEEN DESIGNED, BY A PROFESSIONAL ENGINEER UNDER A SEPARATE AGREEMENT, BASED ON TENTATIVE CONSIDERATIONS/CRITERIA OF STRUCTURAL LOADING CONDITIONS ON THE POLE (170 MPH DESIGN WIND SPEED) AND GEOTECHNICAL / SHEAR STRENGTH PARAMETERS (SATURATED SAND $\phi=30$ DEGREES & $N_{spt} \geq 15$ BLOWS) FOR THE SUBSURFACE CONDITIONS UNDERLYING THE PROPOSED SITE.
- IT IS THE FULL RESPONSIBILITY OF THE CONSTRUCTION SUBCONTRACTOR/VENDOR TO TAKE ANY NECESSARY ACTIONS / MEASURES, PRIOR TO OR/DURING CONSTRUCTION TO TECHNICALLY VERIFY OR MODIFY THE DESIGN PRESENTED IN THE PLANS AND SUBMIT A PROFESSIONAL VERIFICATION REPORT/DOCUMENTATION TO VM/EOR REPRESENTATIVE FOR REVIEW AND RECORD.
- ANY EXISTING UNCONTROLLED FILL, DEBRIS, BOULDERS, HIGHLY PLASTIC SOILS, BRICKS, TOP SOILS, ORGANIC/CONTAMINATED MATERIALS OR SIMILAR, IF ENCOUNTERED IN THE ZONES OF INFLUENCES, ARE GENERALLY CONSIDERED UNSUITABLE FOR SUBGRADE MATERIALS FOR THE FOUNDATIONS PRESENTED IN THE PLANS, UNLESS TECHNICALLY VERIFIED AND DOCUMENTED OTHERWISE, AND REPORTED TO VM/EOR REPRESENTATIVE FOR REVIEW AND RECORD.

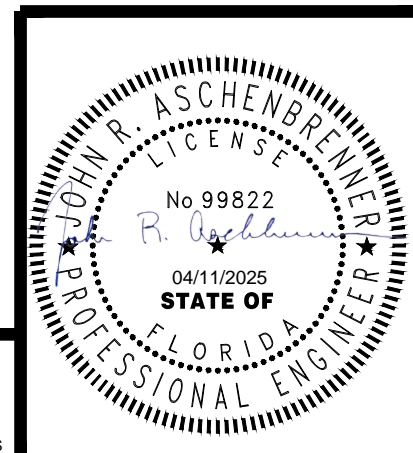
DESIGN LOADING

FORCES/MOMENTS	CASE 1	CASE 2
	LONGITUDINAL UNIAIXIAL	BIAXIAL (75% TRANSVERSE, 75% LONGITUDINAL)
POLE/EQUIPMENT AXIAL (COMP.)	193	193
WIND SHEAR	651	799
WIND MOMENT	5,159	6,089
TORSION	138	271

AXIAL AND SHEAR FORCES ARE IN LBS.
MOMENTS ARE IN FOOT*LBS

REV.	DATE	DESCRIPTION	PREP. BY	REV. BY	APP. BY	REMARKS
0	3/28/2025	FIRST PERMITTING SUBMITTAL	OW	OW	JA	SYSTEM STANDARD SET

JOB NUMBER	SHEET NUMBER
VARIES	7
SITE ID(S)	OF 10 SHEETS
VARIES	



GENERAL NOTES

1. CONSTRUCTION SHALL COMPLY WITH THE FDOT *STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION* (CURRENT EDITION) AND THE FDOT DESIGN STANDARDS (CURRENT EDITION).
2. COMPACT SOIL BELOW FOUNDATION AND NEW SIDEWALKS TO ACHIEVE A NOMINAL BEARING RESISTANCE OF 3000 PSF. EXERCISE CAUTION TO AVOID DAMAGE TO EXISTING UTILITIES.
3. PROTECT ADJACENT STRUCTURES AND FACILITIES. RESTORE ALL DAMAGED ITEMS (INCLUDING GRASSED AREAS) TO ORIGINAL CONDITION.
4. TOP OF FOUNDATION SHALL MATCH THE ADJACENT EXISTING SIDEWALK ELEVATION AND SHALL MATCH THE LONGITUDINAL GRADE & TRANSVERSE CROSS-SLOPE OF THE EXISTING SIDEWALK.
5. NEW SIDEWALKS SHALL MATCH EXISTING GRADE, CROSS-SLOPE, & ELEVATION OF EXISTING SIDEWALKS.
6. PROVIDE A BROOM FINISH ON TOP OF THE FOUNDATION AND NEW SIDEWALKS. ENSURE THAT SURFACE VARIATIONS DO NOT EXCEED 1/4" UNDER A 10 FOOT STRAIGHTEDGE OR 1/8" UNDER A 5 FOOT TRANSVERSE SECTION. FINISH EDGES WITH AN EDGING TOOL HAVING A 1/2 INCH RADIUS.
7. VERIFY UTILITIES (TYPE, LOCATION, & CONDITION) BEFORE STARTING CONSTRUCTION.
8. REFER TO SHEETS 4 TO 6 OF 10 FOR POLE AND EQUIPMENT DETAILS.
9. THE SPREAD FOOTING FOUNDATION (AS AN ALTERNATIVE) CAN BE UTILIZED IN CASE THE REINFORCED CONCRETE DRILLED SHAFT FOUNDATION CANNOT JUSTIFIABLY BE UTILIZED.

DESIGN CRITERIA

1. THE SPREAD FOUNDATIONS ARE DESIGNED TO SUPPORT ALUMINUM POLES WITH NEW GENERATION EQUIPMENT SHOWN.
2. DESIGN CONFORMS TO THE AASHTO *LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS* (CURRENT EDITION) AND THE FDOT *STRUCTURES DESIGN GUIDELINES* (CURRENT EDITION).
3. DESIGN WIND SPEED: 170 MPH
4. WIND LOAD CASES IN ORTHOGONAL DIRECTION ARE CONSIDERED PER LRFDLTS-1.
5. NOMINAL BEARING RESISTANCE = 3000 PSF, BEARING RESISTANCE FACTOR = 0.45
6. FOUNDATIONS ARE DESIGNED TO LIMIT UPLIFT TO A MAXIMUM OF ONE CORNER AND TO LIMIT THE TENSION AREA TO LESS THAN 25% OF FOUNDATION AREA.

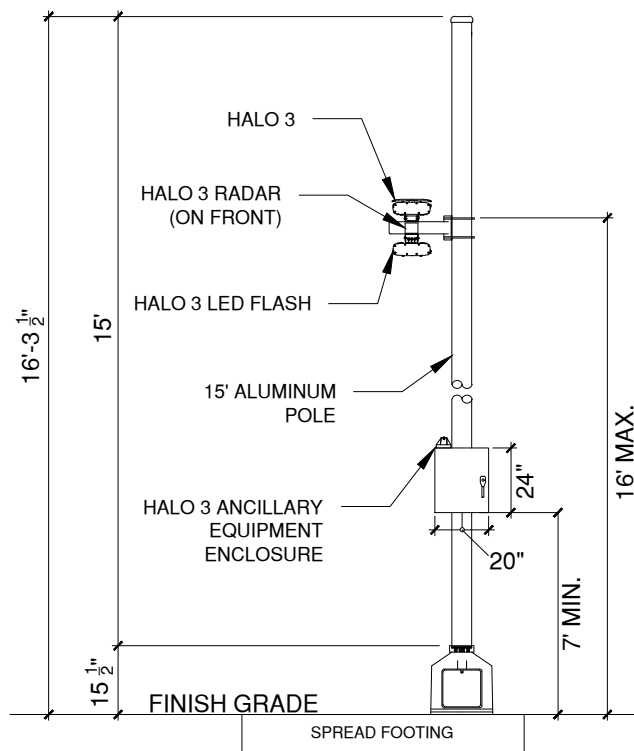
TECHNICAL CONSIDERATIONS

1. THE SPREAD FOOTING FOUNDATION TYPE DESIGN PRESENTED IN THE PLANS HAVE BEEN DESIGNED, BY A PROFESSIONAL ENGINEER UNDER A SEPARATE AGREEMENT, BASED ON TENTATIVE CONSIDERATIONS/CRITERIA OF STRUCTURAL LOADING CONDITIONS ON THE POLE (170 MPH DESIGN WIND SPEED) AND GEOTECHNICAL / SHEAR STRENGTH PARAMETERS (SATURATED SAND $\Phi=30$ DEGREES & MIN. ALLOWANCE B/C = 1,500 PSF & MAX. ALLOWABLE SETTLEMENT = 1.0 IN.) FOR THE SUBSURFACE CONDITIONS UNDERLYING THE PROPOSED SITE.
2. UNLESS AGREED WITH THE EOR, OTHERWISE, IT IS THE FULL RESPONSIBILITY OF THE CONSTRUCTION SUBCONTRACTOR/VENDOR TO TAKE ANY NECESSARY ACTIONS/MEASURES, PRIOR TO OR/DURING CONSTRUCTION TO TECHNICALLY VERIFY OR MODIFY THE DESIGN PARAMETERS/CRITERIA PRESENTED IN THE PLANS AND SUBMIT A PROFESSIONAL VERIFICATION REPORT/DOCUMENTATION TO VM/EOR REPRESENTATIVE FOR REVIEW AND RECORD.
3. ANY EXISTING UNCONTROLLED FILL, DEBRIS, BOULDERS, HIGHLY PLASTIC SOILS, BRICKS, TOP SOILS, ORGANIC/CONTAMINATED MATERIALS OR SIMILAR, IF ENCOUNTERED IN THE ZONES OF INFLUENCES, ARE GENERALLY CONSIDERED UNSUITABLE FOR SUBGRADE MATERIALS FOR THE FOUNDATIONS PRESENTED IN THE PLANS, UNLESS TECHNICALLY VERIFIED AND DOCUMENTED OTHERWISE, AND REPORTED TO VM/EOR REPRESENTATIVE FOR REVIEW AND RECORD.

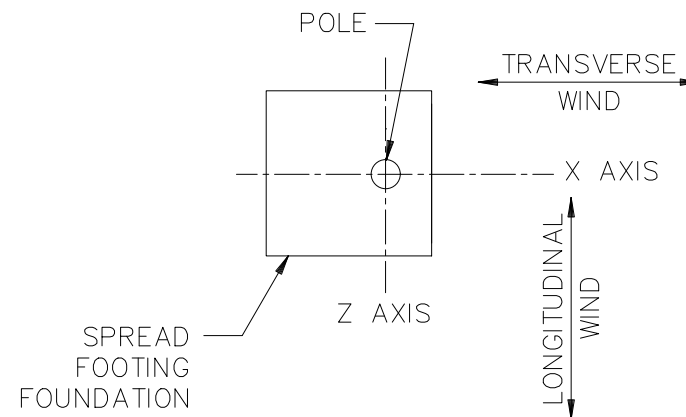
DESIGN LOADING

FORCES/MOMENTS	CASE 1	CASE 2
	LONGITUDINAL UNIAXIAL	BIAXIAL (75% TRANSVERSE, 75% LONGITUDINAL)
POLE/EQUIPMENT AXIAL (COMP.)	193	193
WIND SHEAR	651	799
WIND MOMENT	5,159	6,089
TORSION	138	271

AXIAL AND SHEAR FORCES ARE IN LBS.
MOMENTS ARE IN FOOT*LBS



ALUMINUM POLE ELEVATION WITH EKin'S SYSTEM COMPONENTS



LOADING DIAGRAM

THESE SPREAD FOUNDATIONS SHALL NOT BE USED OVER:

- 1) GAS, PROPANE, LNG, OR OTHER FLAMMABLE UTILITIES;
- 2) CONCRETE ENCASED DUCTBANK;
- 3) CONDUITS OTHER THAN PVC CONDUITS OR
- 4) MULTIPLE UTILITIES

WITHOUT THE PRIOR REVIEW AND SIGNED & SEALED WRITTEN APPROVAL OF A FLORIDA REGISTERED PROFESSIONAL ENGINEER IN FLORIDA.

MATERIAL NOTES

1. CONCRETE: FDOT CLASS III
(28-DAY MINIMUM COMPRESSIVE STRENGTH = 5,000 PSI)
2. REINFORCING STEEL: ASTM A615, GRADE 60
3. ANCHOR RODS:
A. RODS: ASTM F1554, GRADE 55
B. NUTS: ASTM A563, GRADE A HEAVY HEX
C. GALVANIZE RODS & NUTS IN ACCORDANCE WITH ASTM F2329.
4. CONCRETE COVER: 3" TOP
3" SIDES
3" BOTTOM

APPLICABILITY

THE DETAILS HEREIN ARE FOR SPREAD FOUNDATIONS FOR USE WITH VM ALUMINUM REAR POLE WITH NEW GENERATION EQUIPMENT AS SHOWN.

THESE FOUNDATIONS ARE NOT APPLICABLE FOR USE WITH OTHER TYPES OF POLES AND/OR EQUIPMENT, UNLESS CHECKED AND JUSTIFIABLY VERIFIED IN WRITING BY THE EOR.

G.C.:



1150 N. ALMA SCHOOL RD
MESA, AZ 85201 USA
TEL: (480)443-7000 FAX: (480)607-0901
WWW.ATSOL.COM

ENGINEER OF RECORD:
JOHN ASCHENBRENNER, P.E.
REG. 99822

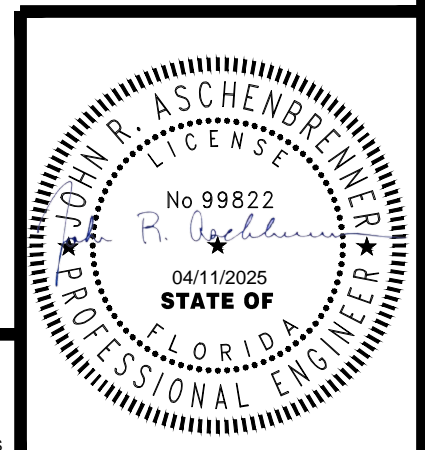
SPREAD FOOTING DETAILS - 1

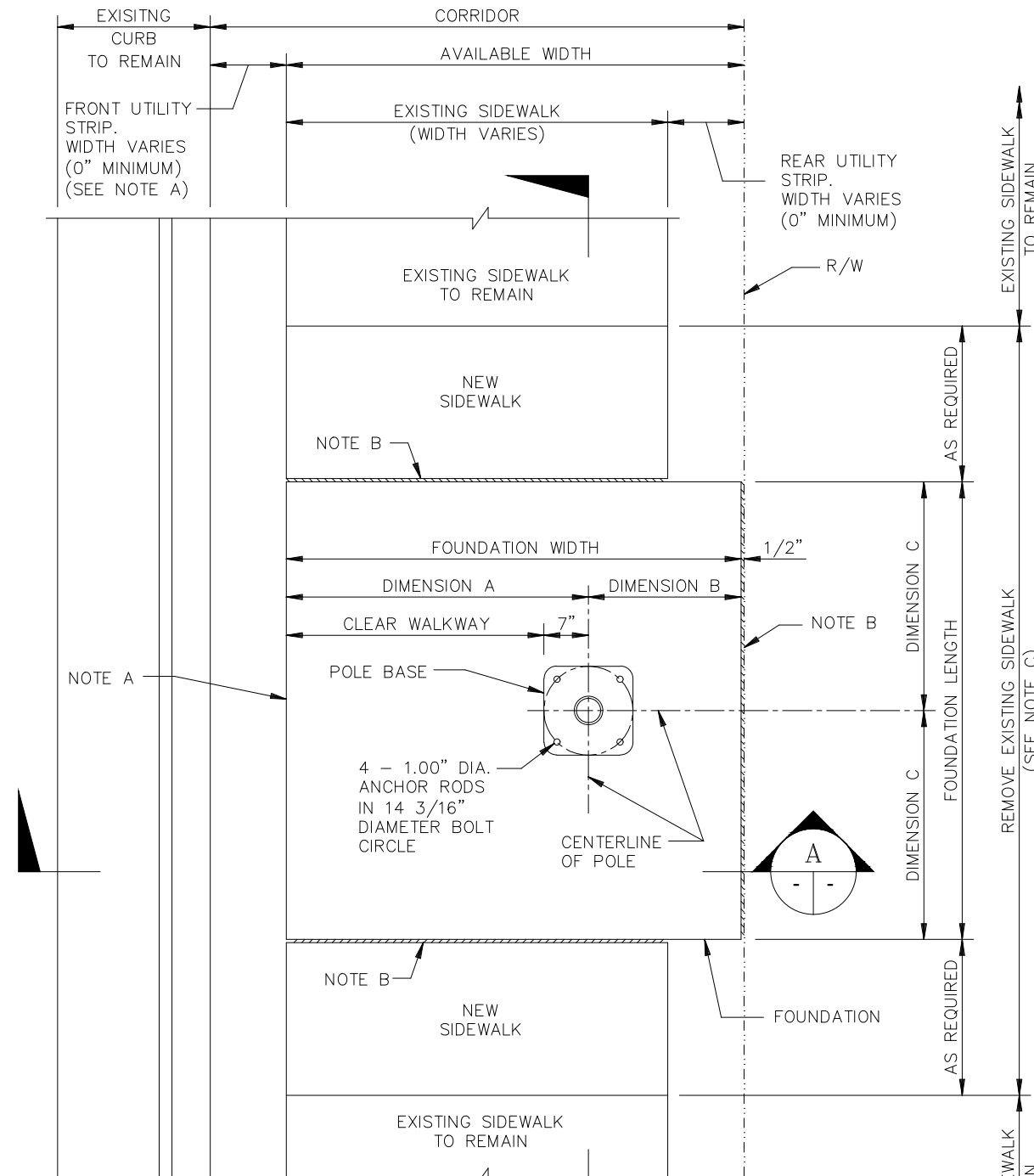
VERRA MOBILITY
STANDARD DETAILS FOR FLORIDA SITES

REV.	DATE	DESCRIPTION	PREP. BY	REV. BY	APP. BY	REMARKS
0	3/28/2025	FIRST PERMITTING SUBMITTAL	OW	OW	JA	SYSTEM STANDARD SET

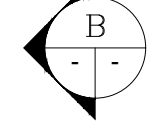
JOB NUMBER
VARIES
SITE ID(S)
VARIES

SHEET NUMBER
8
OF 10 SHEETS





NOTE A:
 WHEN CURB ABUTS FOUNDATION (FRONT UTILITY STRIP WIDTH = 0"), PROVIDE 1/2" EXPANSION JOINT MATERIAL BETWEEN FOUNDATION AND EXISTING CURB (FULL DEPTH OF CURB)



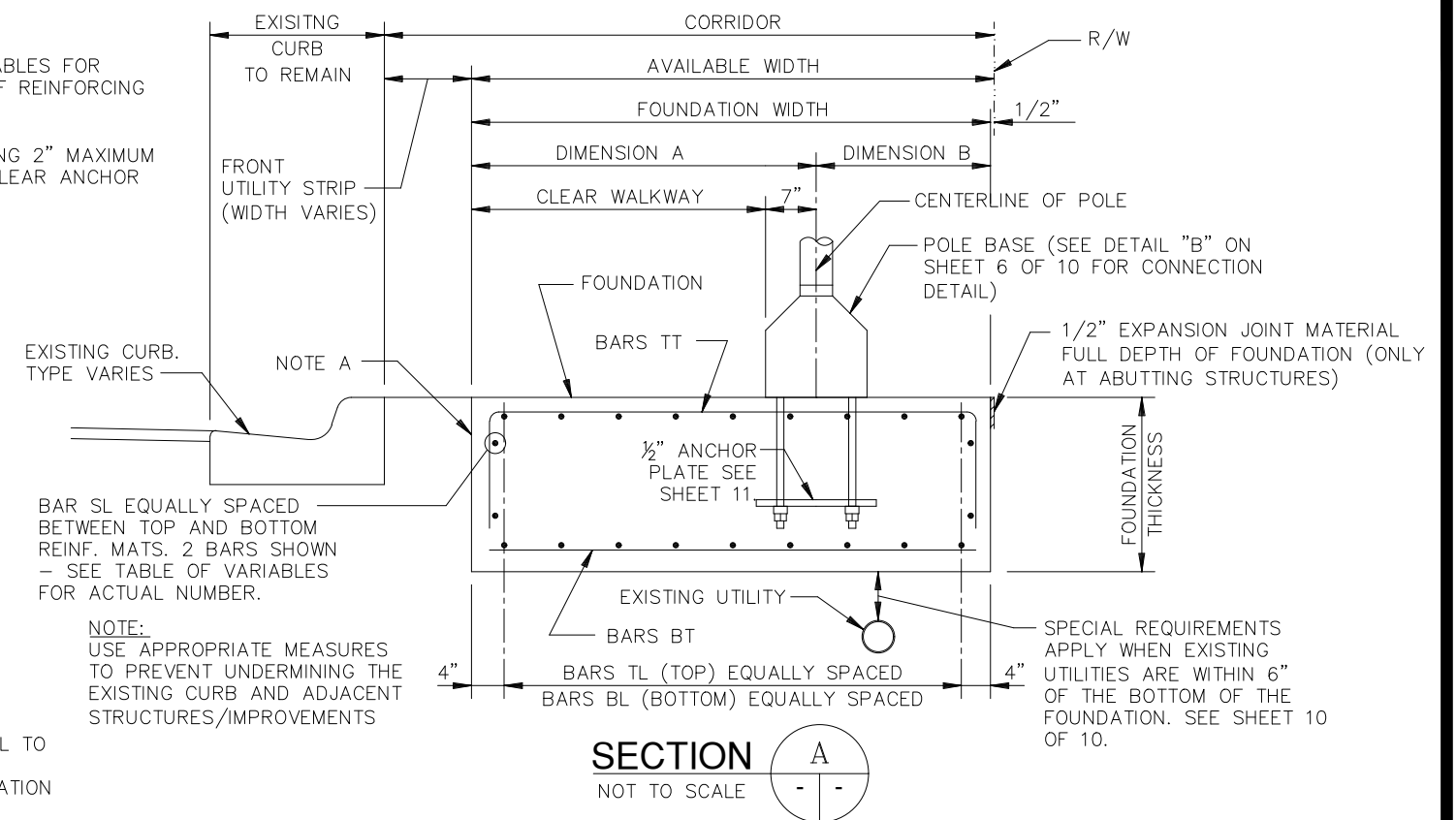
NOTE B:
 PROVIDE 1/2" EXPANSION JOINT MATERIAL BETWEEN FOUNDATION AND
 1) NEW SIDEWALK
 2) ADJACENT STRUCTURES AS APPLICABLE

PLAN
 NOT TO SCALE

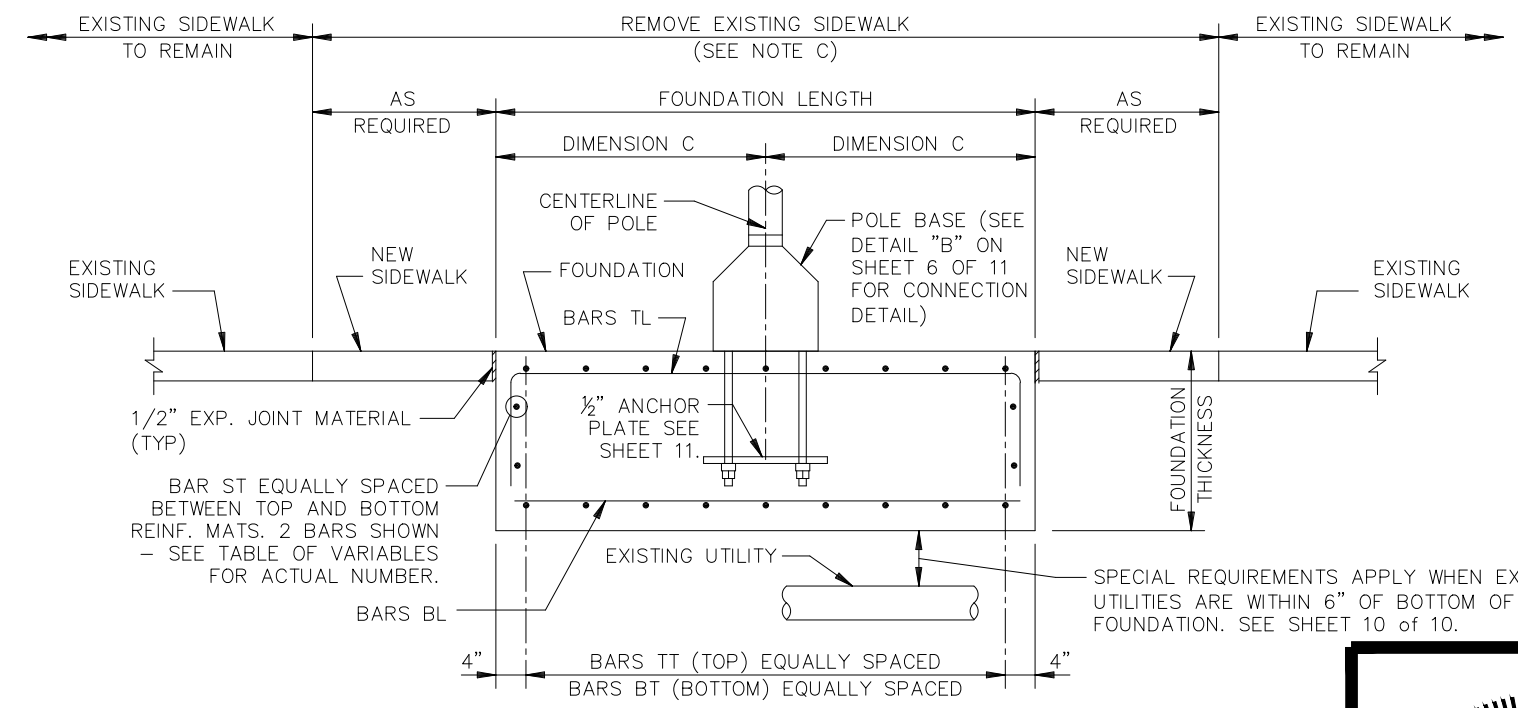
REINFORCING NOTES:

1. SEE TABLE OF VARIABLES FOR NUMBER AND SIZE OF REINFORCING BARS.
2. SHIFT TOP REINFORCING 2" MAXIMUM WHERE NEEDED TO CLEAR ANCHOR RODS.

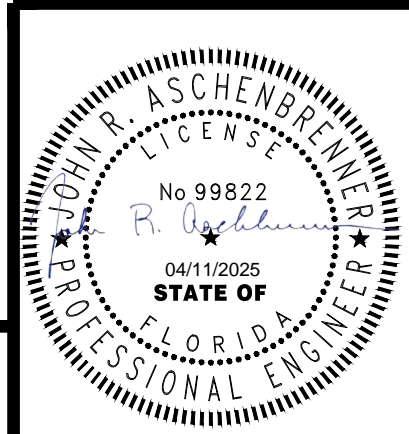
NOTE C:
 LIMIT SIDEWALK REMOVAL TO THAT NECESSARY TO CONSTRUCT THE FOUNDATION



SECTION A
 NOT TO SCALE



SECTION B
 NOT TO SCALE

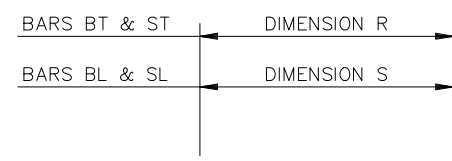
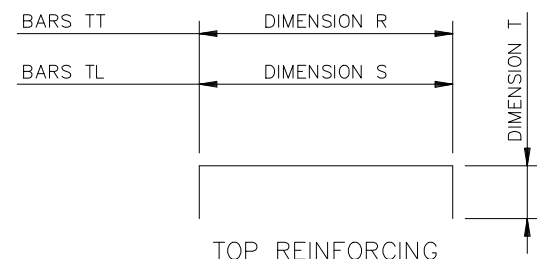


REV.	DATE	DESCRIPTION	PREP. BY	REV. BY	APP. BY	REMARKS
0	3/28/2025	FIRST PERMITTING SUBMITTAL	OW	OW	JA	SYSTEM STANDARD SET

TABLE OF VARIABLES

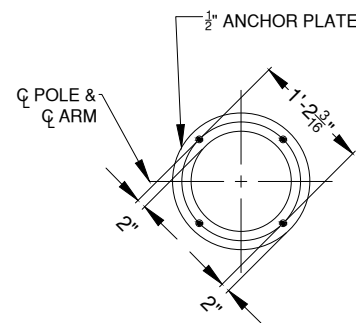
	AVAILABLE WIDTH					
	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"
FOUNDATION WIDTH ①	4'-11 1/2"	5'-5 1/2"	5'-11 1/2"	6'-5 1/2"	6'-11 1/2"	7'-5 1/2"
FOUNDATION LENGTH	8'-6"	8'-6"	8'-6"	7'-6"	5'-6"	5'-6"
FOUNDATION THICKNESS	30"	27"	20"	18"	20"	18"
REINFORCING BARS TT	17- #6	16- #6	17- #5	11- #5	9- #5	9- #5
REINFORCING BARS TL	10- #6	9- #6	12- #5	10- #5	10- #5	11- #5
REINFORCING BARS ST	2- #6	2- #6	1- #5	1- #5	1- #5	1- #5
REINFORCING BARS SL	2- #6	2- #6	1- #5	1- #5	1- #5	1- #5
REINFORCING BARS BT	17- #6	14- #6	17- #5	15- #5	11- #5	11- #5
REINFORCING BARS BL	10- #6	9- #6	12- #5	13- #5	14- #5	15- #5
CLEAR WALKWAY ①	2'-8 1/2"	2'-8 1/2"	3'-0 1/2"	3'-6 1/2"	3'-6 1/2"	3'-6 1/2"
DIMENSION A ①	3'-3 1/2"	3'-3 1/2"	3'-7 1/2"	4'-1 1/2"	4'-1 1/2"	4'-1 1/2"
DIMENSION B	1'-8"	2'-2"	2'-4"	2'-4"	2'-10"	3'-4"
DIMENSION C	4'-3"	4'-3"	4'-3"	3'-9"	2'-9"	2'-9"
DIMENSION R	4'-5"	4'-11"	5'-5"	5'-11"	6'-5"	6'-11"
DIMENSION S	8'-0"	8'-0"	8'-0"	7'-0"	5'-0"	5'-0"
DIMENSION T	2'-1"	1'-6"	0'-11"	0'-9"	0'-9"	0'-9"
DIMENSION U	2'-0"	1'-9"	1'-2"	1'-0"	1'-0"	1'-0"

① Decrease dimension by 1/2" if curb abuts front face of sidewalk

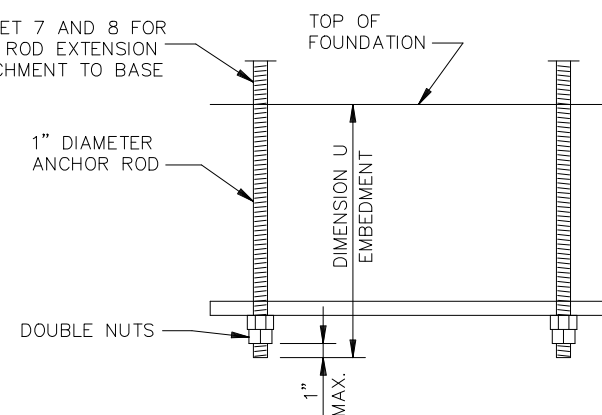


REINFORCING BARS

NOT TO SCALE

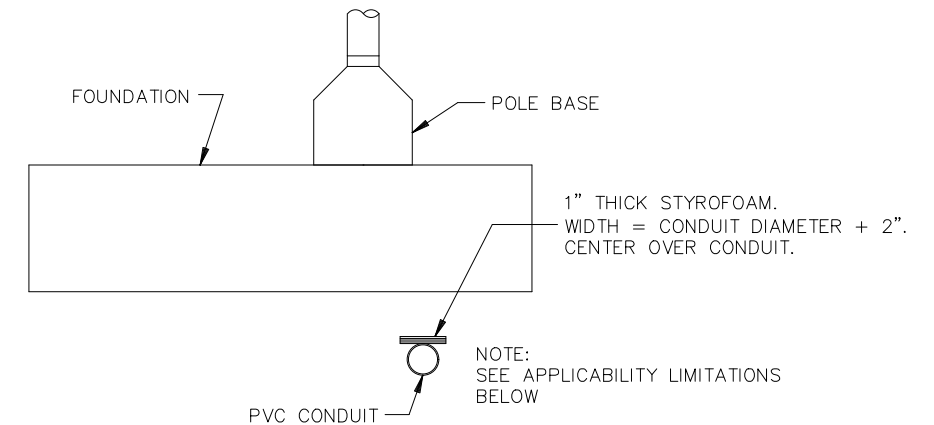


SEE SHEET 7 AND 8 FOR ANCHOR ROD EXTENSION & ATTACHMENT TO BASE

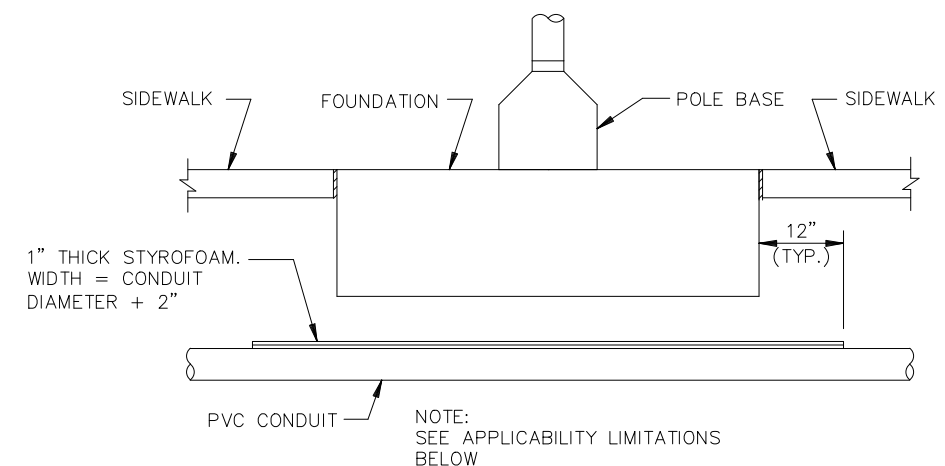


ANCHOR RODS

NOT TO SCALE



TRANSVERSE SECTION



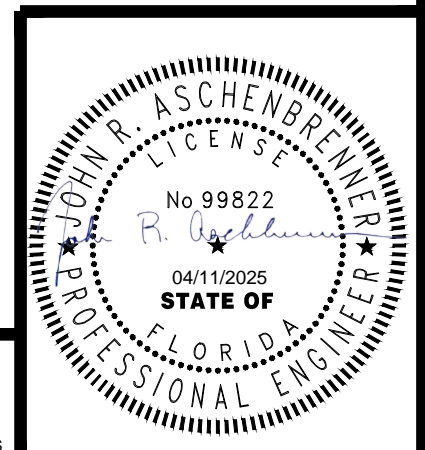
LONGITUDINAL SECTION

SPECIAL REQUIREMENTS AT UTILITIES

NOT TO SCALE

APPLICABILITY LIMITATIONS:

1. DETAILS SHOWN ARE APPLICABLE ONLY FOR A SINGLE PVC CONDUIT WITH A MINIMUM OF 1" CLEAR DISTANCE FROM THE TOP OF THE CONDUIT TO THE UNDERSIDE OF THE FOUNDATION.
2. NO MODIFICATIONS ARE NEEDED FOR A SINGLE PVC CONDUIT WITH MORE THAN 6" CLEAR DISTANCE FROM THE TOP OF THE CONDUIT TO THE UNDERSIDE OF THE FOUNDATION.
3. ALL OTHER CONDITIONS (DIFFERENT TYPE OF CONDUIT, MULTIPLE CONDUITS, ETC.) REQUIRE THE REVIEW AND APPROVAL OF A PROFESSIONAL ENGINEER.



G.C.:



1150 N. ALMA SCHOOL RD
MESA, AZ 85201 USA
TEL: (480)443-7000 FAX: (480)607-0901
WWW.ATSOL.COM

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JOHN ASCHENBRENNER, P.E.
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SPREAD FOOTING DETAILS - 3

VERRA MOBILITY
STANDARD DETAILS FOR FLORIDA SITES

REV.	DATE	DESCRIPTION	PREP. BY	REV. BY	APP. BY	REMARKS
0	3/28/2025	FIRST PERMITTING SUBMITTAL	OW	OW	JA	SYSTEM STANDARD SET

JOB NUMBER
VARIES
SITE ID(S)
VARIES

SHEET NUMBER
10
OF 10 SHEETS