

GENERAL NOTES

1. THE CONTRACTOR SHALL CONTACT THE ENGINEER, IN CONJUNCTION WITH MANATEE COUNTY'S PROJECT MANAGEMENT DIVISION BEFORE STARTING WORK.

2. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, IN CONJUNCTION WITH MANATEE COUNTY'S TRAFFIC ENGINEERING DIVISION (941-749-3502 EXT. 7817), AT LEAST TWO WEEKS, BEFORE ANY CABINET MODIFICATIONS ARE TO BE PERFORMED. THE ENGINEER, IN CONJUNCTION WITH MANATEE COUNTY ENGINEERING DIVISION PERSONNEL WILL REVIEW, ASSIST AND PROVIDE TECHNICAL SUPPORT RELEVANT TO ANY FIELD MODIFICATIONS THAT ARE NECESSARY.

3. AT LEAST TWO (2) FULL BUSINESS DAYS PRIOR TO BEGINNING THE TRAFFIC SIGNAL INSTALLATION, PERMITTEE TO CONTACT THE TRAFFIC SIGNAL INSPECTOR/LIASON:  
  
MANATEE COUNTY PROJECT MANAGEMENT DIVISION  
ANTHONY BENITEZ  
1026 26TH AVENUE EAST  
BRADENTON, FLORIDA 34208  
PHONE: 941-708-7450 EXT. 7331

4. ONE WEEK PRIOR TO THE BEGINNING OF THE TRAFFIC SIGNAL INSTALLATION OR TURN ON OF A NEW SIGNAL, THE CONTRACTOR SHALL NOTIFY THE ENGINEER:  
  
MANATEE COUNTY PROJECT MANAGEMENT DIVISION  
ANTHONY BENITEZ  
1026 26TH AVENUE EAST  
BRADENTON, FLORIDA 34208  
PHONE: 941-708-7450 EXT. 7331

MANATEE COUNTY TRAFFIC ENGINEERING DIVISION  
VISHAL KAKKAD  
2101 47TH TERRACE EAST  
BRADENTON, FLORIDA 34203  
PHONE: 941-749-3500 EXT. 7812

5. THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR THE SIGNAL MAINTENANCE, TIMING AND OPERATION OF ALL SIGNALS AND SIGNS FROM THE COMMENCEMENT OF WORK TO FINAL ACCEPTANCE OF THE PROJECT (I.E. EXISTING LOOPS CUT, SYSTEM COMMUNICATION TERMINATED, LANE OR PAVEMENT MODIFICATIONS, PEDESTRIAN MODIFICATIONS). THE CONTRACTOR SHALL MAINTAIN VEHICLE DETECTION THROUGHOUT THE DURATION OF THE PROJECT. MANATEE COUNTY WILL ASSIST IN PROVIDING EXISTING SYSTEM TIMING WHEN POSSIBLE.

6. THE CONTRACTOR SHALL HAVE AN I.M.S.A. CERTIFIED LEVEL II (ELECTRONICS OR ELECTRICAL TECHNICIAN) ON THE JOB SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. ALL SIGNAL INSTALLATION TECHNICIANS SHALL HAVE A MINIMUM OF I.M.S.A. LEVEL I CERTIFICATION (ELECTRONICS OR ELECTRICAL TECHNICIAN.) CERTIFICATIONS OF ALL TECHNICIANS SHALL BE PROVIDED TO THE ENGINEER PRIOR TO BEGINNING WORK.  
  
UPON PROJECT COMMENCEMENT THE SIGNAL CONTRACTOR SHALL BE AVAILABLE TO RESPOND TO ALL SIGNAL RELATED MALFUNCTIONS AND POWER OUTAGES. THE CONTRACTOR SHALL MAINTAIN A ADEQUATE REPAIR INVENTORY, EQUIPMENT AND NEARBY PERSONNEL TO RESPOND AND CORRECT TRAFFIC SIGNAL MALFUNCTIONS AND MOT RELATED PHASING AND TIMING ISSUES FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL PROVIDE A QUALIFIED SIGNAL TECHNICIAN WHO CAN RESPOND WITHIN A MINIMUM OF TWO HOURS, 24 HOURS A DAY, 7 DAYS A WEEK.  
  
FAILURE TO MEET THE TIME REQUIREMENTS SHALL GIVE THE ENGINEER, AT HIS DISCRETION, THE RIGHT TO REQUEST ASSISTANCE FROM THE MANATEE COUNTY SHERIFF'S DEPARTMENT TO CONTROL TRAFFIC FOR THE PERIOD OF TIME UNTIL THE CONTRACTOR RESPONDS AND MAKES THE NEEDED REPAIRS. THE COST FOR THE MANATEE COUNTY SHERIFF'S OFFICE SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

7. PRIOR TO ORDERING MATERIALS, THE SIGNAL CONTRACTOR SHALL CONTACT THE TRAFFIC OPERATIONS DIVISION THROUGH THE PROJECT MANAGEMENT DIVISION AND VERIFY CURRENT COLOR CODES TO BE USED FOR SIGNAL CABLE. ALL MATERIAL SUBMITTALS ARE TO BE APPROVED PRIOR TO ORDERING.

8. WHEN THE CONTRACTOR IS WORKING ON A SIGNAL IN AN INTERSECTION (INSTALLING CONDUIT IN THE STREET, REMOVING EXISTING SIGNAL EQUIPMENT, INSTALLING SIGNAL EQUIPMENT, REMOVING OR INSTALLING LOOPS, HOMERUNS OR TURNING ON OF NEW SIGNAL) WHERE A LANE IS CLOSED, THE ENGINEER MAY REQUIRE AN OFF DUTY LAW ENFORCEMENT OFFICER TO DIRECT TRAFFIC. PAYMENT OF ALL DIRECT AND INDIRECT COSTS FOR A TRAFFIC CONTROL OFFICER ARE PAID UNDER BID ITEM 102-14.

9. DELIVER THREE SETS OF RECORD DRAWINGS, TWO SETS OF IMSA INSPECTION FORMS AND ONE COMPACT DISC OF RECORD DRAWINGS TO MR. VISHAL KAKKAD, THE MANATEE COUNTY TRAFFIC ENGINEERING DIVISION MANAGER AT 2101 47TH TERRACE EAST BRADENTON, FL 34203. RECORD DRAWINGS MUST BE DELIVERED TO THE COUNTY 48 HOURS PRIOR TO SCHEDULING THE FINAL INSPECTION.

10. THE CONTRACTOR IS RESPONSIBLE TO RETIME THE TRAFFIC SIGNALS WITHIN THE PROJECT LIMITS THAT ARE AFFECTED DURING VARIOUS PHASES OF CONSTRUCTION. COORDINATE ALL SIGNAL TIMING EFFORTS WITH VISHAL KAKKAD, P.E., PTOE, COUNTY TRAFFIC ENGINEER AT 941-749-3500 EXT. 7812

11. UPON PASSING THE FINAL INSPECTION THE CONTRACTOR SHALL SEND A WRITTEN REQUEST TO THE PROJECT MANAGEMENT DIVISION AND THE TRANSPORTATION DIVISION TO TRANSFER MAINTENANCE FROM THE CONTRACTOR TO MANATEE COUNTY. MANATEE COUNTY WILL RESPOND WITHIN 5 WORKING DAYS TO ESTABLISH A TIME TABLE FOR THE TRANSFER OF MAINTENANCE RESPONSIBILITY.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE LOCAL POWER COMPANY PROVIDING ELECTRICAL POWER TO DETERMINE IF A SERVICE PROCESSING FEE IS REQUIRED. ANY FEE SHALL BE INCLUDED AS PART OF PAYMENT FOR THE ELECTRICAL POWER SERVICE ASSEMBLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS OF THE ELECTRICAL SERVICE. THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION, INSPECTION AND ENERGIZING OF THE NEW POWER SERVICE IN A TIMELY MANNER IN ORDER TO PROMOTE PROJECT COMPLETION WITHIN CONTRACT TIME.
13. THE LOCATION OF UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR, VIA SUNSHINE STATE ONE CALL OF FLORIDA, INC AT 811 OR 1-800-432-4770, IN COORDINATION WITH UNDERGROUND AND OVERHEAD UTILITY OWNERS. THE CONTRACTOR SHALL NOTIFY UTILITY OWNERS/AGENCIES LISTED WITHIN OR IMPACTED BY THESE PLANS, NOT LESS THAN TWO (2) FULL BUSINESS DAYS IN ADVANCE OF BEGGING CONSTRUCTION.
14. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS IN ADVANCE OF POLE SETTING OPERATIONS WHERE CONFLICT WITH OVERHEAD ELECTRICAL CONDUCTORS IS EXPECTED AND IN ALL CASES WHERE JOINT USE POLES ARE CALLED FOR.

THE CONTRACTOR SHALL CONTACT THE LOCAL POWER COMPANY FOR THEIR ASSISTANCE IN PERFORMING ALL NECESSARY WORK UNDER POWER LINES AT SIGNAL POLES SUCH AS THE INSTALLATION OF SIGNAL CABLE, FIBERGLASS INSULATORS, AND SIGNAL POLES.

AT LOCATIONS WHERE THE REQUIRED VERTICAL CLEARANCE TO THE POWER LINES CANNOT BE MAINTAINED, A QUALIFIED REPRESENTATIVE FROM THE POWER COMPANY SHALL BE PRESENT DURING ALL WORK UNDER POWER LINES. ANY COST ASSOCIATED WITH THIS SHALL BE INCLUDED IN THE RELATED PAY ITEMS.

15. THE CONTRACTOR SHALL HAND DIG THE FIRST 48 INCHES OF THE HOLE FOR THE POLE FOUNDATION OR CONDUIT RUN WHERE UTILITIES ARE IN CLOSE PROXIMITY.
16. THE CONTRACTOR IS TO DE-WATER THE POLE FOUNDATION EXCAVATION IF THE ELEVATION OF WATER IS HIGHER THAN THE ELEVATION OF THE FOUNDATION BASE.
17. ALL MATERIALS, EQUIPMENT, AND OTHER CONTRACTOR SUPPLIED ITEMS SHALL BE INSTALLED AND MAINTAINED ACCORDING TO THE MANUFACTURERS RECOMMENDATIONS, UNLESS SPECIFICALLY DIRECTED OTHERWISE BY THE ENGINEER.
18. #14 XHHW PULL WIRE SHALL BE INSTALLED IN ALL CONDUITS. AT LEAST 2 FEET OF PULL WIRE SHALL BE ACCESSIBLE AT EACH CONDUIT TERMINATION AND SECURED IN THE PULL BOX OR PLACE OF TERMINATION.
19. UNLESS OTHERWISE NOTED ALL REMOVED EQUIPMENT EXCEPT CONCRETE POLES SHALL BE TURNED OVER TO MANATEE COUNTY AND DELIVERED TO THE TRAFFIC OPERATIONS DIVISION LOCATED AT 2904 12TH STREET COURT EAST, BRADENTON, FLORIDA 34208, AS DIRECTED BY THE ENGINEER. CONCRETE POLES SHALL BE DISPOSED OF BY THE SIGNAL CONTRACTOR IN AREAS PROVIDED BY THE CONTRACTOR.
20. ALL ELECTRICAL WIRING SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE PUBLISHED BY THE NATIONAL FIRE PROTECTION ASSOCIATION.
21. GROUNDING: ALL COSTS FOR GROUNDING SHALL BE INCLUDED IN THE COST OF THE ITEM BEING GROUNDED. ALL GROUND ROD ASSEMBLIES FOR POLES, SERVICES, CABINETS, AND OTHER RELATED EQUIPMENT SHALL BE BONDED TOGETHER TO FORM AN INTEGRATED GROUNDING SYSTEM USING #6 AWG THHN COPPER WIRE. THE UPPER END OF ALL GROUND RODS SHALL BE 18 INCHES BELOW GROUND ELEVATION. MARK GROUND ROD LOCATION WITH PERMANENT MARKER SUCH AS AN EPOXIED STICKER LOCATED ON THE NEAREST CURB, AND PROVIDED AS-BUILT DRAWINGS WITH THE LOCATION OF GROUND RODS MARKED. GROUNDING CONDUCTOR MUST BE #6 OR LARGER INSULATED COPPER.

CONNECTING DEVICES SHALL BE NON-CORROSIVE SPLIT BOLTS, CLAMPS, PRESSURE CONNECTORS, OR OTHER APPROVED MEANS TO ENSURE A POSITIVE CONNECTION.

GROUND RESISTANCE TESTER, OR OTHER APPROVED MEANS SHALL BE USED TO ACQUIRE THE GROUND ROD RESISTANCE. THE ENGINEER, OR A REPRESENTATIVE OF THE ENGINEER FROM THE TRAFFIC OPERATIONS DIVISION STAFF SHALL BE PRESENT DURING THE TEST.

21. ELEVATION OF THE TOP OF THE MAST ARM FOUNDATION SHALL BE SIX INCHES ABOVE EXISTING GRADE, UNLESS LOCATED DIRECTLY AT BACK OF SIDEWALK. IF LOCATED AT BACK OF SIDEWALK, THE FOUNDATION ELEVATION SHALL MATCH SIDEWALK GRADE. SEE FOUNDATION OUT OF GROUND (#) ON "MAST ARM TABULATION" SHEET.

23. IT SHOULD BE NOTED THAT NO TEST BORINGS WERE MADE WHERE CONDUIT RUNS ARE TO BE INSTALLED BY JACKING OR BORING.
24. CONTRACTOR SHALL SUPPLY ALL MATERIAL SUBMITTALS TO THE ENGINEER PRIOR TO CONSTRUCTION FOR APPROVAL.
25. THE TYPE OF EQUIPMENT USED IN THE INSTALLATION OF MAST ARMS/ FOUNDATIONS SHALL MEET THE FOLLOWING REQUIREMENTS: 1) OVERHEAD LINES SHALL STAY IN PLACE BOTH VERTICALLY AND HORIZONTALLY; AND 2) CONTRACTOR SHALL MEET ALL APPLICABLE OSHA REQUIREMENTS. ANY COST ASSOCIATED WITH THE TYPE OF EQUIPMENT REQUIRED FOR THIS INSTALLATION SHALL BE INCLUDED IN THE RELATED PAY ITEMS.
26. CONTRACTOR SHALL UTILIZE FDOT STANDARD INDEX 600, 615, 616, 617 AND 660 AS APPLICABLE DURING MAINTAINANCE OF TRAFFIC OPERATIONS.
27. EXISTING SPEED LIMITS ARE AS FOLLOWS:  
50 MPH ON 53RD AVE WEST  
40 MPH ON 66TH STREET WEST  
35 MPH ON 51ST STREET WEST
28. UNDER SUPERVISION OF THE COUNTY, THE CONTRACTOR SHALL PERFORM AN INITIAL OPERATION TEST TO ENSURE THE CCTV ASSEMBLY HAS BEEN INSTALLED CORRECTLY AS A COMPLETE AND FUNCTIONALLY ACCEPTABLE INSTALLATION.
29. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW FOR ALL EQUIPMENT AND MATERIALS FURNISHED AND INSTALLED. THE CONTRACTOR SHALL FURNISH COPIES OF ALL DRAWINGS, SCHEDULES AND COMPLETE DESCRIPTIVE AND TECHNICAL DATA ON ALL ITEMS TO THE PROJECT MANAGER.
30. THE ACCEPTANCE OF ANY SUBMITTED DATA FOR MATERIALS, EQUIPMENT, APPARATUS, DEVICES, ARRANGEMENTS AND/OR LAYOUTS SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF PLACING SAME AND PROPER DIMENSIONS, CAPACITIES, SIZES, QUANTITY AND INSTALLATIONS DETAILS TO EFFICIENTLY PERFORM THE REQUIREMENTS AND INTENT OF THE CONTRACT. SUCH ACCEPTANCE SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS OF ANY SORT ON THE SUBMITTAL DATA.
31. PROPOSED CCTV EQUIPMENT SHALL MEET CURRENT COUNTY ATMS STANDARDS. A VICON CAMERA WITH VICON PROTOCOL IS REQUIRED TO WORK IN CONJUNCTION WITH AN IMPATH 5110-E ENCODER AND AN ALPHA UPS IN THE CCTV CABINET.

CONDUIT NOTES

1. ALL HDPE CONDUIT CONNECTIONS SHALL BE JOINED WITH A FUSION COUPLER OR FUSION SPLICE.
2. THE CONTRACTOR SHALL ADJUST THE CONDUIT RUNS, DEVICE POLES, BORES AND SERVICE POLE PLACEMENTS TO AVOID ANY UTILITY CONFLICT IDENTIFY BY THE LOCATES. ANY SIGNIFICANT CHANGE SHALL BE APPROVED BY THE ENGINEER.
3. THE CONDUITS TO BE INSTALLED ARE TO BE PLACED SO AS TO TOTALLY AVOID ANY CONFLICTS WITH EXISTING UTILITIES ALONG THE ROUTE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE NECESSARY INFORMATION REQUIRED TO PLAN THE WORK AHEAD FOR THE INSTALLATION OF THE REQUIRED CONDUITS WITHIN DESIGN OR SPECIFIED PARAMETERS, AND HIS TIME FRAME. THE CONTRACTOR SHALL ADJUST CONDUIT VERTICALLY OR HORIZONTALLY TO AVOID CONFLICT WITH UNDERGROUND UTILITIES. THE CONTRACTOR SHALL USE HAND EXCAVATION METHODS WHEN EXCAVATING NEAR EXISTING UTILITIES, NO SEPARATE PAYMENT SHALL BE MADE FOR THIS WORK. EXTREME CAUTION SHALL BE USED BY THE CONTRACTOR WHEN EXCAVATING, INSTALLING, BACK FILLING AND COMPACTING AROUND EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY UTILITY.
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD LOCATE ALL ABOVEGROUND AND UNDERGROUND CONFLICTS IN ADVANCE OF THE PLACEMENT OF ANY CONDUIT OR OTHER FACILITIES. THE CONTRACTOR SHALL FIELD MARK THE PROPOSED ALIGNMENT FOR REVIEW AND CONCURRENCE BY THE ENGINEER PRIOR TO TRENCHING AND/OR PLACEMENT. NO PULL BOXES ALL BE LOCATED IN DRAINAGE SWALES, OR PAVED SHOULDERS.
5. WHEN TRENCHING FOR INSTALLATION, THE CONTRACTOR MAY RUN COMMUNICATIONS AND POWER SERVICE IN THE SAME TRENCH. THE POWER SERVICE SHALL HAVE SEPARATE PULL BOXES FOR ACCESS. THE CONTRACTOR SHALL NOT INSTALL COMMUNICATIONS AND POWER SERVICE IN THE SAME CONDUIT, PULL BOX OR MANHOLE.
6. THE CONTRACTOR SHALL PLACE ALL CONDUITS IN A MANNER THAT MINIMIZES DEFLECTION BOTH HORIZONTALLY AND VERTICALLY, THUS MINIMIZING STRESS ON CABLES DURING CABLE INSTALLATION. CONDUIT FOR FIBER OPTIC CABLE IN TRENCHES SHALL NOT DEFLECT MORE THAN 1-INCH PER FOOT VERTICALLY OR HORIZONTALLY. BENDS SHALL NOT BE PERMITTED EXCEPT AS SPECIFIED ON THE PLANS.
7. THE CONDUIT DETAILS GIVEN ARE MEANT TO BE SCHEMATIC IN NATURE. DUE TO ACTUAL FIELD CONDITIONS AND/OR NEEDS, DEVIATIONS MAY BE NECESSARY. DIMENSIONAL DISTANCES FOR CONDUIT LOCATIONS ARE PROVIDED TO ASSIST THE CONTRACTOR WITH CONDUIT PLACEMENT. THE CONTRACTOR SHALL TAKE THIS INTO ACCOUNT WHEN PLACING CONDUIT. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING CONDUIT AROUND EXISTING UTILITIES AND OBSTRUCTIONS.
8. ALL CONDUIT TRENCHES SHALL BE BACKFILLED COMPLETELY TO PROVIDE SAFE CROSSING BY THE END OF THE WORKING DAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE. DO NOT OPEN ANY AREA THAT CANNOT BE BACKFILLED IN THE SAME DAY/ NIGHT OPERATION.
9. ALL NEW CONDUIT SHALL BE PLACED AT A MINIMUM DEPTH OF 30" UNLESS PLACED IN AN AREA OF NEW FILL, IN WHICH CASE THE CONDUIT SHALL BE 48". DIRECTIONALLY BORED CONDUIT SHALL BE AT A MINIMUM DEPTH OF 48".
- BRACKETS AND SPACERS WHICH ARE REQUIRED TO OFFSET THE RIGID METAL CONDUIT FROM THE MOUNTING, SHALL BE OF SIMILAR MATERIALS TO PREVENT CATHODIC REACTION.

|     |           |  |  |             |          |  |                                                                                                                                       |             |           |                                                                                       |                                |                 |                  |  |              |
|-----|-----------|--|--|-------------|----------|--|---------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|---------------------------------------------------------------------------------------|--------------------------------|-----------------|------------------|--|--------------|
|     |           |  |  | SCALE       | AS NOTED |  | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34233-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE        | 11/7/2014 |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER | BIJAN<br>BEHZADI |  | SHEET<br>NO. |
|     |           |  |  | DESIGNED BY | EL       |  |                                                                                                                                       | PROJECT NO. | 6082960   |                                                                                       |                                | FL. LICENSE NO. |                  |  |              |
|     |           |  |  | DRAWN BY    | EL       |  |                                                                                                                                       |             |           |                                                                                       |                                | 43868           |                  |  |              |
|     |           |  |  | CHECKED BY  | BB       |  |                                                                                                                                       |             |           |                                                                                       |                                |                 |                  |  |              |
| No. | REVISIONS |  |  | DATE        | BY       |  |                                                                                                                                       |             |           |                                                                                       |                                |                 |                  |  | T-3          |

PAY ITEM NOTES

1. 102-99:  
PAY ITEM SHALL INCLUDE THE COST OF FURNISHING FOUR (4) VARIABLE MESSAGE SIGNS (VMS.) THE CONTRACTOR SHALL PROVIDE AND MAINTAIN THE PORTABLE 4' x 8' VMS FOR A PERIOD OF TWO WEEKS. THE VMS WILL BE LOCATED AT AN APPROPRIATE DISTANCE IN ADVANCE OF THE WORK ZONE ON ALL APPROACHES TO THE UPGRADED SIGNALIZED INTERSECTION AS SPECIFIED BY THE MAINTAINING AGENCY'S ENGINEER. THE VMS WILL BE PROVIDED ONE (1) WEEK PRIOR TO THE SCHEDULED ACTIVATION TO FULL COLOR OPERATION FOR THE SIGNALS AND SHALL REMAIN IN PLACE FOR ONE (1) WEEK FOLLOWING ACTIVATION.
2. 630-2-11 & 630-2-12:  
CONDUITS INSTALLED WITH THE DIRECTIONAL BORE METHOD SHALL BE HDPE WITH A MINIMUM SIZE OF 2" UNLESS OTHERWISE NOTED IN THE PLANS. COST OF PULL WIRE SHALL BE INCLUDED UNDER THIS PAY ITEM.

#14 XHHW PULL WIRE SHALL BE INSTALLED IN ALL CONDUITS. AT LEAST 2 FEET OF PULL WIRE SHALL BE ACCESSIBLE.

ALL CONDUIT RUNS SHOWN ON THE PLANS ARE SCHEMATIC AND FIELD ADJUSTMENTS MAY BE NECESSARY. WITH THE EXCEPTION OF ELECTRICAL POWER SERVICE DUCTS, JACK & BORE SLEEVES, AND DIRECTIONAL BORE CONDUITS, ALL UNDERGROUND AND UNDER PAVEMENT CONDUITS SHALL BE SCHEDULE 40 PVC WITH A MINIMUM SIZE OF 2" UNLESS OTHERWISE SPECIFIED IN THE PLANS. COST OF PULL WIRE SHALL BE INCLUDED UNDER THIS PAY ITEM.

TWO SEPARATE UNDERGROUND CONDUIT RUNS LOCATED 180 DEGREES APART ARE REQUIRED FOR ALL MAST ARMS. THE SPARE CONDUIT SHALL BE CAPPED IN THE NEAREST PULL BOX. THERE SHALL BE A MINIMUM OF TWO RUNS OF 2" CONDUIT BETWEEN THE LAST LOW VOLTAGE PULL BOX LOCATED NEAR THE CONTROLLER CABINET & THE CONTROLLER CABINET, ITSELF.

USE A MINIMUM OF 3" DIAMETER CONDUIT FOR FIBER OPTIC INTERCONNECT CABLE.

3. 632-7-1:  
USE A MINIMUM OF 7 CONDUCTOR SIGNAL CABLES FOR SIGNAL HEADS AND PEDESTRIAN HEADS.

EACH PHASE/MOVEMENT SHALL BE WIRED FROM THE SIGNAL DISPLAY TO THE CONTROLLER AS A SEPARATE PHASE/MOVEMENT. THIS INCLUDES THE LEFT TURN MOVEMENT WHICH SHALL HAVE CONDUCTORS AVAILABLE FOR EITHER PROTECTED OR PERMISSIVE MOVEMENTS. THE CONTRACTOR SHALL VERIFY COLOR CODES FOR SIGNAL CABLE AND INTERCONNECT CABLE WITH THE MANATEE COUNTY BEFORE ORDERING, AND WIRE THE SIGNAL IN ACCORDANCE WITH THAT COLOR CODE AND F.D.O.T. SPECIFICATIONS. THERE SHALL BE ONE NEUTRAL PER APPROACH. THIS PAY ITEM INCLUDES FURNISHING AND INSTALLING THE REQUIRED CABLING FOR THE PROPOSED PEDESTRIAN SIGNAL ASSEMBLIES. ALL PEDESTRIAN DETECTORS SHALL BE WIRED USING SEPARATE CABLE UTILIZING LOW VOLTAGE CONDUIT AND PULL BOXES.

4. 635-2-11, 635-2-12 & 635-2-13:  
PULL BOXES SHALL BE TRAFFIC BEARING, ALL POLYMER CONSTRUCTION (NOT CONCRETE),  
PULL BOXES AND LIDS. (QUAZITE OR ANOTHER EQUIVALENT FDOT APPROVED  
MANUFACTURER). PULL BOXES ARE TO BE PLACED BEHIND CURB AND GUTTER. IF THERE  
IS NO CURB AND GUTTER, PULL BOXES SHALL BE PLACED A MINIMUM OF 7' FROM THE  
EDGE OF PAVEMENT.

STANDARD PULL BOX DIMENSIONS SHALL BE 17" x 30" x 12" AND THE LID SHALL BE STAMPED "MANATEE COUNTY TRAFFIC SIGNAL" ON THE COVER. FIBER OPTIC PULL BOX DIMENSIONS SHALL BE 24" x 36" x 36" AND FIBER OPTIC SPLICE BOX DIMENSIONS SHALL BE 30" x 60" x 48". FIBER OPTIC PULL AND SPLICE BOX LIDS SHALL BE STAMPED "MANATEE COUNTY FIBEROPTIC SYSTEM" ON THE COVER.

5. 639-1-122:  
THIS PAY ITEM SHALL INCLUDE THE COST OF ALL SPECIAL IMPACT CONNECTION FEES CHARGED BY LOCAL POWER COMPANIES FOR ELECTRICAL SERVICE CONNECTION . ANY CHARGES BY FPL (FLORIDA POWER AND LIGHT) TO BE ON SITE TO DE-ENERGIZE ELECTRIC SERVICE LINES AND MONITOR WORK WHILE LINES ARE REROUTED ON THE NEW SERVICE POLE WILL BE INCLUDED UNDER THIS PAYMENT ITEM.

IT SHALL ALSO INCLUDE THE COST OF INSTALLING SERVICE RISER ON PRECO SERVICE POLE. THE SERVICE RISER MUST HAVE A WEATHERHEAD TERMINATING AT A POINT 40" MINIMUM BELOW THE BOTTOM OF PRECO TRANSFORMER.

THIS PAY ITEM INCLUDES METER BASE AND SERVICE DISCONNECT.

ELECTRICAL SERVICE DISCONNECT SHALL BE COMPRISED OF SIX (6) CIRCUIT DISCONNECT BOX WITH THREE CIRCUIT BREAKERS - ONE 15 AMP FOR INTERNALLY ILLUMINATED STREET NAME SIGNS, ONE 15 AMP FOR FUTURE USE AND ONE 60 AMP FOR CONTROLLER CABINET MAIN BREAKER. ONE 15 AMP BREAKER FOR INTERNALLY ILLUMINATED SIGNS MAY ALSO NEED STREET LIGHTING AS WELL AND BE APPROPRIATELY SIZED. ONE LIGHTING BREAKER, ONE SIGNAL BREAKER AND SURGE SUPPRESSION BREAKER (FUTURE USE) SHOULD BE INSTALLED.

6. 639-4-6:  
THE CONTRACTOR SHALL COORDINATE WITH MANATEE COUNTY FOR PICK UP / DELIVERY OF THE HOUSING TO THE PROJECT SITE. CONTRACTOR SHALL INSTALL HOUSING AND FOUNDATION / PAD. THE COST OF THE FOUNDATION / PAD IS INCLUDED IN THE COST OF THE HOUSING PAY ITEM. CONTRACTOR IS TO COORDINATE WITH MANATEE COUNTY TO OBTAIN HOUSING DIMENSIONS.

7. 649-31-202, 649-31-203, & 649-31-217:  
THE CONTRACTOR SHALL FIELD VERIFY ALL CRITICAL ELEVATIONS PRIOR TO ORDERING MAST  
ARM ASSEMBLIES.

USE THREE 2" AND ONE 3/4" CONDUIT STUBBED OUT THROUGH THE MAST ARM POLE FOUNDATION AND TEMPORARILY SEALED.

THE CONTRACTOR SHALL CONTACT THE LOCAL POWER COMPANY FOR THEIR ASSISTANCE IN PERFORMING ALL NECESSARY WORK UNDER POWER LINES AT SIGNAL POLES. SUCH WORK SHALL INCLUDE, BUT IS NOT LIMITED TO THE INSTALLATION OF SIGNAL CABLE, INSTALLATION OF MAST ARM FOUNDATIONS OR POLES, AND INSTALLATION OF FIBERGLASS INSULATORS.

8. 650-1-311:  
USE SIGNAL HEAD SUPPORTING HANGER THAT IS CAPABLE OF ADJUSTING VERTICALLY A  
MINIMUM OF 1.5'.

ALL SIGNAL HEADS SHALL HAVE ALUMINUM LOUVERED BACK PLATES INSTALLED. BACKPLATES SHALL BE MANUFACTURED FOR THE SIGNAL HEADS USED & INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS. THE BACK PLATE SHALL HAVE A 2" YELLOW REFLECTORIZED (TYPE III REFLECTIVITY) OUTER EDGE BORDER UNLESS SPECIFIED OTHERWISE IN THE PLANS.

THE EXTERNAL COLOR OF SIGNAL HOUSING SHALL BE BLACK. ALL TRAFFIC SIGNAL HEAD INDICATIONS SHALL BE 12" LED. ALL SIGNAL HEADS SHALL HAVE TUNNEL VISORS. THE COST FOR THE TUNNEL VISORS SHALL BE INCLUDED UNDER THIS PAY ITEM.

9. 653-191:  
PEDESTRIAN SIGNAL HEADS TO BE 16" INTERNATIONAL SYMBOL, LED COUNTDOWN TYPE. USE  
LOCKING COLLARS FOR MOUNTING PEDESTRIAN SIGNAL HEADS TO PEDESTRIAN PEDESTALS.  
USE BREAKAWAY ALUMINUM SQUARE BASE WITH ALUMINUM DOORS FOR PEDESTRIAN PEDESTALS.

10. 660-4-11 & 660-4-12.  
THE CONTRACTOR SHALL INSTALL A VIDEO DETECTION SYSTEM IN STRICT ACCORDANCE WITH THE GUIDANCE CONTAINED IN THE VIDEO DETECTION SYSTEM'S INSTALLATION MANUALS. THE CONTRACTOR SHALL ONLY USE MANUFACTURER APPROVED CABLING CONNECTORS AND COMPONENTS TO COMPLETE THE INSTALLATION OF THE VIDEO DETECTION SYSTEM. THE CONTRACTOR SHALL INSTALL A RACK MOUNT LCD MONITOR DRAWER IN THE CABINET. THE SIGNAL CONTRACTOR SHALL CONSULT WITH THE TECHNICAL REPRESENTATIVES PRIOR TO ORDERING THE SYSTEM COMPONENTS AND TO OBTAIN OPTIMUM CAMERA PLACEMENT AND MOUNTING HEIGHT FOR EACH CAMERA PRIOR TO INSTALLATION. AFTER THE SYSTEM INSTALLATION IS COMPLETE THE CONTRACTOR SHALL REQUEST A SYSTEM CRITIQUE FROM THE VIDEO DETECTION EQUIPMENT SUPPLY MANUFACTURER. THE RESULTS OF THE SYSTEM CRITIQUE SHALL BE PROVIDED, IN WRITING, TO MANATEE COUNTY PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL SYSTEM.

SEE PLAN SHEETS FOR THE NUMBER OF VIDEO CAMERAS INCLUDED IN THE VIDEO DETECTION ASSEMBLY.

THE VIDEO DETECTION CAMERA SHALL BE ITERIS VANTAGE RZ4 ADVANCED WIDE  
DYNAMIC RANGE COLOR CAMERA MOUNTED ON PELCO MAST ARM CAMERA BRACKET.

ITERIS VANTAGE EDGE 2 PROCESSOR  
ITERIS EDGE CONNECT MODULE  
ITERIS VANTAGE EDGE2 TS2 I/O MODULE

THE COST OF THIS ITEM SHALL ALSO INCLUDE A FACTORY CERTIFIED REPRESENTATIVE FROM THE SUPPLIER TO BE ON-SITE DURING INSTALLATION & SETUP.

11. 665-1-11:  
SHALL INCLUDE ADDITIONAL COST OF LABOR AND MATERIALS REQUIRED FOR  
INSTALLATION OF PEDESTRIAN SIGNAL SIGN FTP-68B-06. THIS SIGN SHALL BE  
MOUNTED ABOVE EACH PEDESTRIAN DETECTOR. ALL PEDESTRIAN PUSH BUTTONS  
SHALL BE A.D.A. COMPLIANT. STREET NAMES SHALL BE IN ACCORDANCE WITH THE  
STREET NAMES ON THE PLAN SHEETS.

12. 670-5-112:  
USE A NEMA TS2 TYPE 1 AS DESCRIBED IN THE 2003 NEMA STANDARD TS2 PUBLICATION.  
THE CONTROLLER SUPPLIED WITH THE CABINET SHALL BE A NAZTEC 980 TS2 TYPE 1.  
THE NAZTEC 980 CONTROLLER SHALL COME EQUIPPED WITH 4 SERIAL PORTS AND ONE  
ETHERNET PORT. ALL CABINETS SHALL BE A TYPE V CABINET. THE CABINETS SHALL BE TYPE V,  
AND FULLY COMPATIBLE WITH MANATEE COUNTIES ATMS (NAZTEC'S ATMS.NOW). THE CABINETS  
SHALL COME EQUIPPED WITH A RUGGEDCOM SWITCH MODEL NUMBER RS900 HI-D-C2-C2-00  
AND ALL THE NECESSARY SYSTEM COMPONENTS FOR INTEGRATION INTO AN ETHERNET  
BASED FIBER OPTIC NETWORK.

TRAFFIC SIGNAL CONTROLLER BASE:

THE CABINET BASE WHEN SECURED TO THE CONCRETE SLAB WITH CONTROLLER CABINET ATTACHED MUST WITHSTAND A MINIMUM WIND LOAD OF 130 MPH OR A 850 LB FORCE APPLIED AT 49" ABOVE THE BOTTOM OF THE BASE WITHOUT CAUSING THE BASE OR CABINET TO COME OUT OF THEIR ANCHORED POSITION OR CAUSE ANY PERMANENT DEFORMATION.

INSTALL A PVC SLEEVE TO PREVENT THE GROUND ROD FROM DIRECT EMBEDMENT IN THE SLAB. EXTEND CONDUITS FOR FUTURE USE AT LEAST 18-INCHES FROM THE EDGE OF THE SLAB. TERMINATE UNDERGROUND WITH A COUPLING AND CAP AND SEAL SO THAT THE SEAL CAN BE REMOVED WITHOUT DAMAGING THE COUPLING. ANCHOR THE CONTROLLER CABINET TO THE BASE USING FOUR STAINLESS STEEL 1/2"-13 NC BOLTS.

13. 685-106:  
SHALL INCLUDE AN UNINTERRUPTED POWER SUPPLY UNIT (UPS) MODEL NO. ALPHA FXM 1100 EQUIPPED WITH AN ETHERNET PORT. ALL UNINTERRUPTABLE POWER SUPPLIES SHALL SUPPORT SNMP (PROTOCOL) FOR REMOTE MONITORING AND MANAGEMENT. THE UPS SHALL BE SIZED TO ACCOMMODATE THE MAXIMUM CONNECTED LOAD. THE BATTERY BANK SHALL BE SIZED TO PROVIDE A MINIMUM 8 HOURS RUN TIME UNDER FULL LOAD.

14. 690-34-1:  
WHEN REMOVING EXISTING POLES, CONTRACTOR SHALL NOT DAMAGE ANY ADJACENT UTILITY LINES OR ROADWAY FEATURES. ANY DAMAGE TO ADJACENT FEATURES CAUSED DURING EXISTING POLE REMOVAL SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE MAINTAINING AGENCY. BACKFILL RESULTING HOLES WITH MATERIAL EQUIVALENT TO THE SURROUNDING MATERIAL OR WITH A MATERIAL APPROVED BY THE ENGINEER. FINISH AND BLEND THE SURFACE AREA TO THE ADJACENT SURFACE AREA.

15. 690-80:  
SHALL INCLUDE THE REMOVAL OF EXISTING SIGNS SUPPORTED BY  
SPAN WIRE.

16. 690-90:  
SHALL INCLUDE THE COST OF REMOVING ALL EXISTING UNUSED  
CONDUCTORS AND CONDUITS.

17. 690-100:  
SHALL INCLUDE THE REMOVAL EXISTING PULL BOXES.

18. 700-5-22:  
ALL INTERNALLY ILLUMINATED STREET NAME SIGNS SHALL BE EDGE LIT LED TYPE AND SHALL BE LISTED IN THE FDOT APPROVED PRODUCT LIST. THE COST OF THIS ITEM SHALL INCLUDE PROPERLY DESIGNED AND SIZED ADJUSTABLE HANGERS, BRACKETS, CLAMPS, AND ALL MISCELLANEOUS HARDWARE NECESSARY TO RIGID MOUNT THE SIGNS AS SHOWN IN THE PLANS. THE SIGNS SHALL BE POWERED USING IMSA 50-2 CABLE. THIS ITEM SHALL ALSO INCLUDE INSTALLATION OF THE PHOTOCCELL ON THE SERVICE POLE OR INSIDE SIGNAL CABINET.

INTERNALLY ILLUMINATED STREET NAME SIGNS SHALL HAVE 120 VOLT LED BULBS. BULB TUBES LESS THAN 8 FEET SHALL HAVE 28.5 WATTS POWER CONSUMPTION AT 1900 LUMENS AND TUBES 8 FOOT OR GREATER SHALL HAVE 38 WATTS POWER CONSUMPTION AT 2600 LUMENS.

### CONSTRUCTION NOTES

- THE CONTRACTOR SHALL SCHEDULE THE INSTALLATION OF MAST ARM 1-2 TO ENSURE THAT NO CONFLICTS OCCUR WITH THE EXISTING STRAIN POLE AND OVERHEAD LINES IN THE SOUTHWEST CORNER OF THE INTERSECTION 53RD AVE AND 66TH ST.

THE PROPOSED MAST ARM UPRIGHT SHOULD BE ERECTED, FOLLOWED BY RELOCATION OF THE OVERHEAD ELECTRICAL SERVICE POLES AND THEN ATTACH THE HORIZONTAL MAST ARM ATTACHED TO THE UPRIGHT.

2. THE CONTRACTOR SHALL COORDINATE WITH FLORIDA POWER AND LIGHT TO SCHEDULE WHEN THE OVERHEAD LINES AT THE INTERSECTION OF 51ST ST AND 53RD AVE WILL BE DE ENERGIZED FOR THE ERECTION OF MAST ARM 2-3.

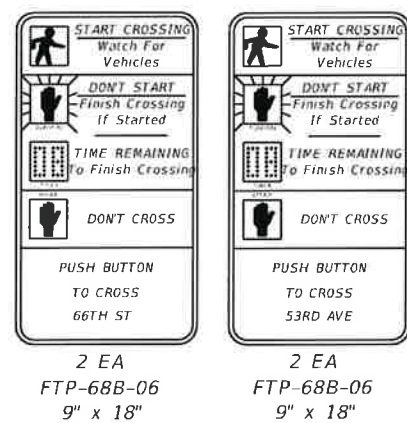
3. THE CONTRACTOR SHALL COORDINATE WITH FLORIDA POWER AND LIGHT TO VERIFY THAT POWER SERVICE DROPS ARE PROVIDED AS NOTED BELOW:

- STA. 75+40, 75' RT. UNDERGROUND SERVICE RISER WITH WEATHERHEAD ON PROPOSED FPL POLE.

- STA. 128+06, 63' LT. HANDHOLE SERVICE POINT INSTALLED AT THE BASE OF EXISTING POLE.

|     |           |      |    |             |          |                                                                                                                                                                                                                             |          |           |                                                                                                                      |                 |                  |                |                 |       |     |
|-----|-----------|------|----|-------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------|----------------------------------------------------------------------------------------------------------------------|-----------------|------------------|----------------|-----------------|-------|-----|
|     |           |      |    | SCALE       | AS NOTED |  HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE     | 11/7/2014 |  MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER | BIJAN<br>BEHZADI | PAY ITEM NOTES | SHEET<br>NO.    |       |     |
|     |           |      |    | DESIGNED BY | EL       |                                                                                                                                                                                                                             | DRAWN BY | EL        |                                                                                                                      | PROJECT NO.     | 6082960          |                | FL. LICENSE NO. | 43868 | T-4 |
|     |           |      |    | CHECKED BY  | BB       |                                                                                                                                                                                                                             |          |           |                                                                                                                      |                 |                  |                |                 |       |     |
| No. | REVISIONS | DATE | BY |             |          |                                                                                                                                                                                                                             |          |           |                                                                                                                      |                 |                  |                |                 |       |     |

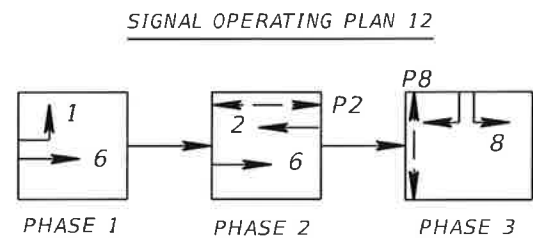
PEDESTRIAN  
DETECTOR SIGN



**LEGEND**

|                                                                                    |                                                                            |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
|   | DETECTION ZONE (VIRTUAL LOOPS) (40' x 6')<br>POSITIONED 2' BEYOND STOP BAR |
|   | DETECTION ZONE (VIRTUAL LOOPS) (20' x 6')<br>POSITIONED 2' BEYOND STOP BAR |
|  | VIDEO VEHICLE DETECTOR                                                     |

| REMOVAL ITEMS |      |
|---------------|------|
| 690-10        | 6 EA |
| 690-34-1      | 2 EA |
| 690-50        | 1 EA |
| 690-80        | 1 EA |
| 690-90        | 1 PI |
| 690-100       | 1 PI |



**66th St W**  
**5200**

**66th St W**  
**5200**

**53rd Ave W**  
**6500                  6600**

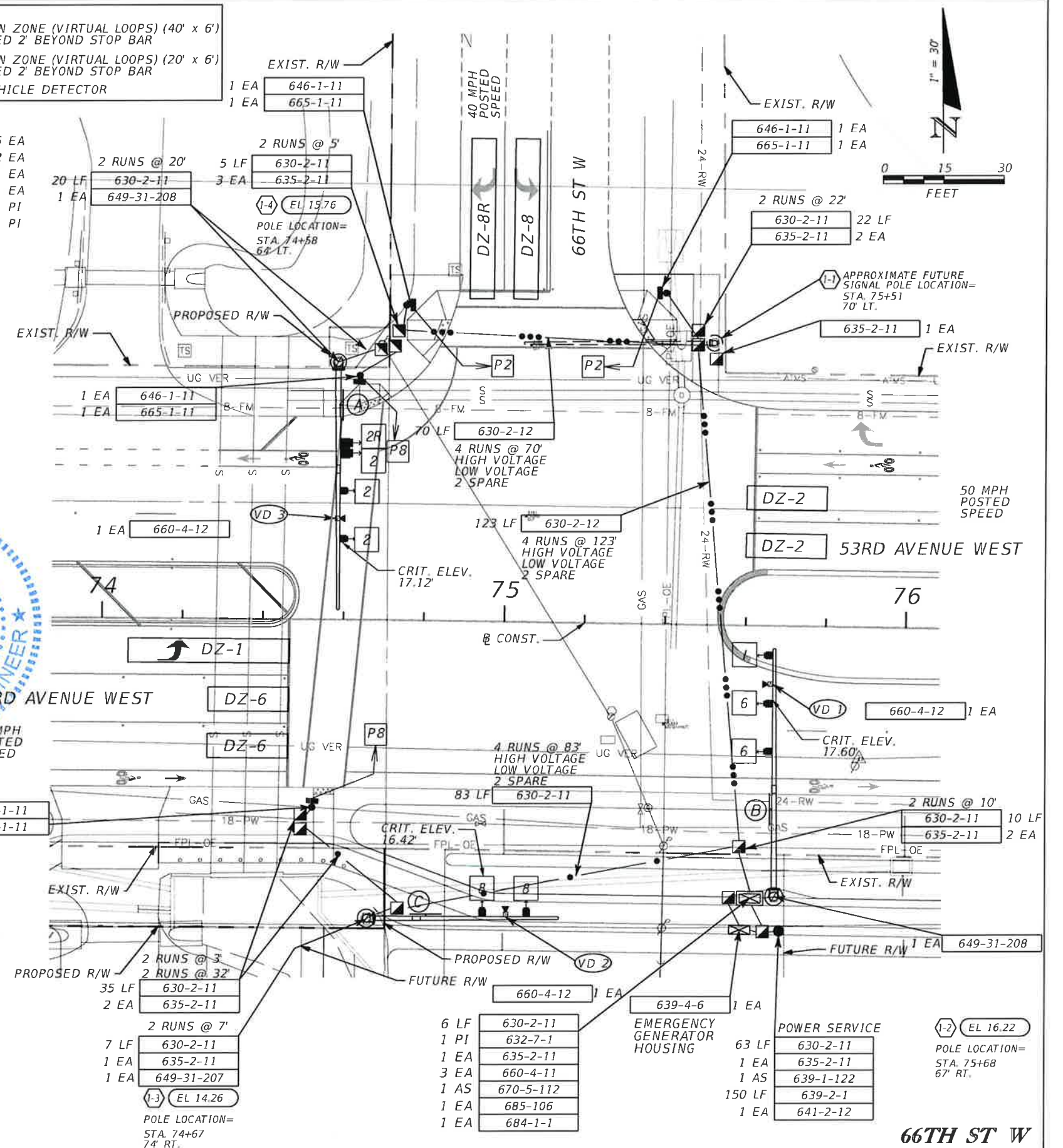
1. ALL STATIONS AND OFFSETS ARE BASED ON B CONSTRUCTION OF 53rd AVE W.
2. SEE GUIDE SIGN WORKSHEETS FOR STREET NAME SIGN DETAILS.
3. POWER SERVICE METER BASE AND DISCONNECT SHALL BE INSTALLED ON THE CONCRETE SERVICE POLE AS SHOWN ON THE PLANS AND PER INDEX NUMBERS 17504 AND 17736.
4. TIMINGS ARE INITIAL AND MAY REQUIRE ADJUSTMENTS AS DIRECTED BY THE ENGINEER.

1. MAJOR STREET IS 53rd AVE W. (MOVEMENTS 2 AND 6) AND MINOR STREET IS 66th ST W. (MOVEMENT 8). 1 E
2. WHILE IN FLASH MODE, MOVEMENTS 2 & 6 SHALL FLASH YELLOW. ALL OTHER MOVEMENTS SHALL FLASH RED.
3. CONTROLLER CABINET SHALL BE WIRED FOR S.O.P 10. CONTROLLER SHALL OPERATE WITH S.O.P 12 (AS SHOWN.)

| CONTROLLER TIMINGS |                  |     |     |   |   |   |     |   |     |
|--------------------|------------------|-----|-----|---|---|---|-----|---|-----|
| TIMING FUNCTION    |                  |     |     |   |   |   |     |   |     |
| MOVEMENT NUMBER    |                  | 1   | 2   | 3 | 4 | 5 | 6   | 7 | 8   |
| TIMING FUNCTION    | MINIMUM GREEN    | 7   | 20  | — | — | — | 20  | — | 7   |
|                    | EXTENSION        | 3   | 3   | — | — | — | 3   | — | 3   |
|                    | MAXIMUM GREEN 1  | 20  | 50  | — | — | — | 50  | — | 30  |
|                    | MAXIMUM GREEN 2  |     |     | — | — | — |     | — |     |
|                    | YELLOW CLEARANCE | 5.1 | 5.1 | — | — | — | 5.1 | — | 4.4 |
|                    | ALL RED          | 2   | 2   | — | — | — | 2   | — | 2   |
|                    | PEDESTRIAN WALK  | —   | 7   | — | — | — |     | — | 7   |
|                    | PED. CLEARANCE   | —   | 14  | — |   | — |     | — | 28  |
|                    | RECALL           | —   | MIN | — | — | — | MIN | — | —   |

| VIDEO VEHICLE DETECTION ASSIGNMENTS |                   |                       |
|-------------------------------------|-------------------|-----------------------|
| VIDEO<br>DETECTION                  | DETECTION<br>ZONE | DELAY TIME<br>(SECS.) |
| VD 1                                | DZ-1, DZ-6        |                       |
| VD 2                                | DZ-8              | 8                     |
| VD 3                                | DZ-2              |                       |

DELAY TIME IS INITIAL AND MAY REQUIRE FIELD  
ADJUSTING AS DIRECTED BY THE ENGINEER.



|     |           |  |  |             |          |
|-----|-----------|--|--|-------------|----------|
|     |           |  |  | SCALE       | AS NOTED |
|     |           |  |  | DESIGNED BY | EL       |
|     |           |  |  | DRAWN BY    | EL       |
|     |           |  |  | CHECKED BY  | BB       |
| No. | REVISIONS |  |  | DATE        | BY       |

H2R

HDR Engineering, Inc.  
2601 Cattlemen Road  
Suite 400  
Sarasota, FL 34232-6233  
FBPR Certificate of  
Authorization No. 4213

DATE  
11/7/2014

PROJECT NO.  
6082960



MANATEE COUNTY  
PUBLIC WORKS

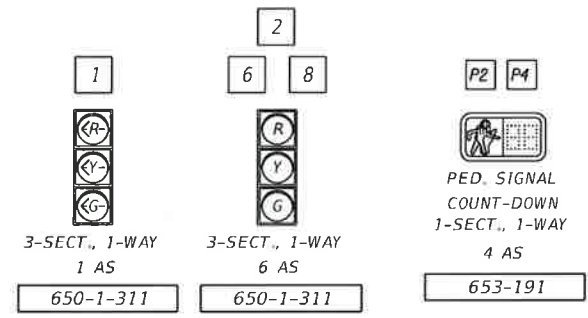
|   |                  |
|---|------------------|
| ✓ | DESIGN ENGINEER  |
|   | BIJAN<br>BEHZADI |
|   | FL. LICENSE NO.  |
|   | 43868            |

## SIGNALIZATION PLAN

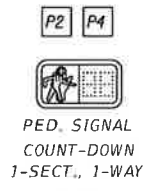
SHEET  
NO.

T-5

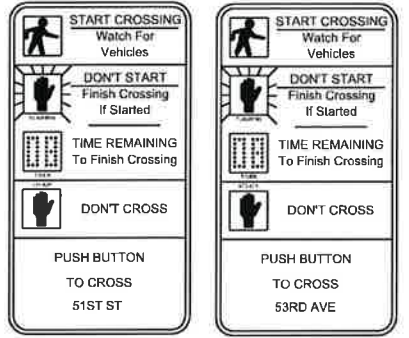
SIGNAL HEAD DETAILS



PEDESTRIAN SIGNAL HEAD DETAILS



PEDESTRIAN DETECTOR SIGN

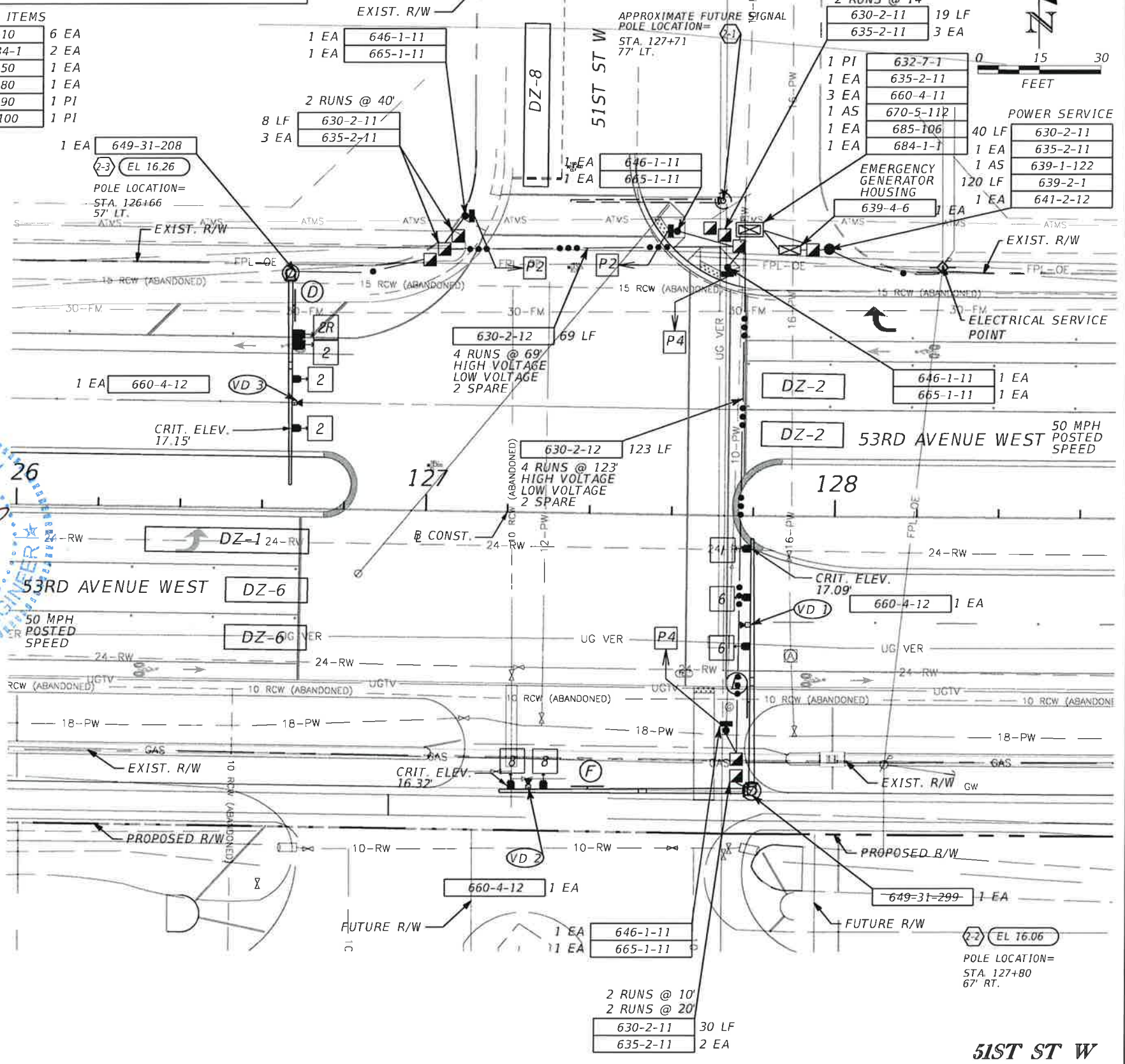


LEGEND

- DZ-X DETECTION ZONE (VIRTUAL LOOPS) (40' x 6') POSITIONED 2' BEYOND STOP BAR
- DZ-X DETECTION ZONE (VIRTUAL LOOPS) (20' x 6') POSITIONED 2' BEYOND STOP BAR
- VIDEO VEHICLE DETECTOR

REMOVAL ITEMS

|          |      |
|----------|------|
| 690-10   | 6 EA |
| 690-34-1 | 2 EA |
| 690-50   | 1 EA |
| 690-80   | 1 EA |
| 690-90   | 1 PI |
| 690-100  | 1 PI |



SIGNALIZATION NOTES:

- ALL STATIONS AND OFFSETS ARE BASED ON CONSTRUCTION OF 53rd AVE W.
- SEE GUIDE SIGN WORKSHEETS FOR STREET NAME SIGN DETAILS.
- POWER SERVICE METER BASE AND DISCONNECT SHALL BE INSTALLED ON THE CONCRETE SERVICE POLE AS SHOWN ON THE PLANS AND PER INDEX NUMBERS 17504 AND 17736.
- TIMINGS ARE INITIAL AND MAY REQUIRE ADJUSTMENTS AS DIRECTED BY THE ENGINEER.

CONTROLLER OPERATIONS:

- MAJOR STREET IS 53rd AVE W. (MOVEMENTS 2 AND 6) AND MINOR STREET IS 51st ST W. (MOVEMENT 8).
- WHILE IN FLASH MODE, MOVEMENTS 2 & 6 SHALL FLASH YELLOW. ALL OTHER MOVEMENTS SHALL FLASH RED.
- CONTROLLER CABINET SHALL BE WIRED FOR S.O.P 10. CONTROLLER SHALL OPERATE WITH S.O.P 12 (AS SHOWN.)

| CONTROLLER TIMINGS |     |     |   |    |   |     |   |    |
|--------------------|-----|-----|---|----|---|-----|---|----|
| TIMING FUNCTION    | 1   | 2   | 3 | 4  | 5 | 6   | 7 | 8  |
| MOVEMENT NUMBER    | 1   | 2   | 3 | 4  | 5 | 6   | 7 | 8  |
| MINIMUM GREEN      | 7   | 20  | — | —  | — | 20  | — | 7  |
| EXTENSION          | 3   | 3   | — | —  | — | 3   | — | 3  |
| MAXIMUM GREEN 1    | 20  | 50  | — | —  | — | 50  | — | 30 |
| MAXIMUM GREEN 2    | —   | —   | — | —  | — | —   | — | —  |
| YELLOW CLEARANCE   | 5.1 | 5.1 | — | —  | — | 5.1 | — | 4  |
| ALL RED            | 2   | 2   | — | —  | — | 2   | — | 2  |
| PEDESTRIAN WALK    | —   | 8   | — | 8  | — | —   | — | —  |
| PED. CLEARANCE     | —   | 12  | — | 29 | — | —   | — | —  |
| RECALL             | —   | MIN | — | —  | — | MIN | — | —  |

| VIDEO VEHICLE DETECTION ASSIGNMENTS |                |                    |
|-------------------------------------|----------------|--------------------|
| VIDEO DETECTION                     | DETECTION ZONE | DELAY TIME (SECS.) |
| VD 1                                | DZ-1, DZ-6     | —                  |
| VD 2                                | DZ-8           | 8                  |
| VD 3                                | DZ-2           | —                  |

DELAY TIME IS INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY THE ENGINEER.

| REVISIONS |           |      |    |
|-----------|-----------|------|----|
| No.       | REVISIONS | DATE | BY |
|           |           |      |    |
|           |           |      |    |
|           |           |      |    |



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MANATEE COUNTY  
PUBLIC WORKS

DESIGN ENGINEER  
BIJAN BEHZADI  
FL. LICENSE NO.  
43868

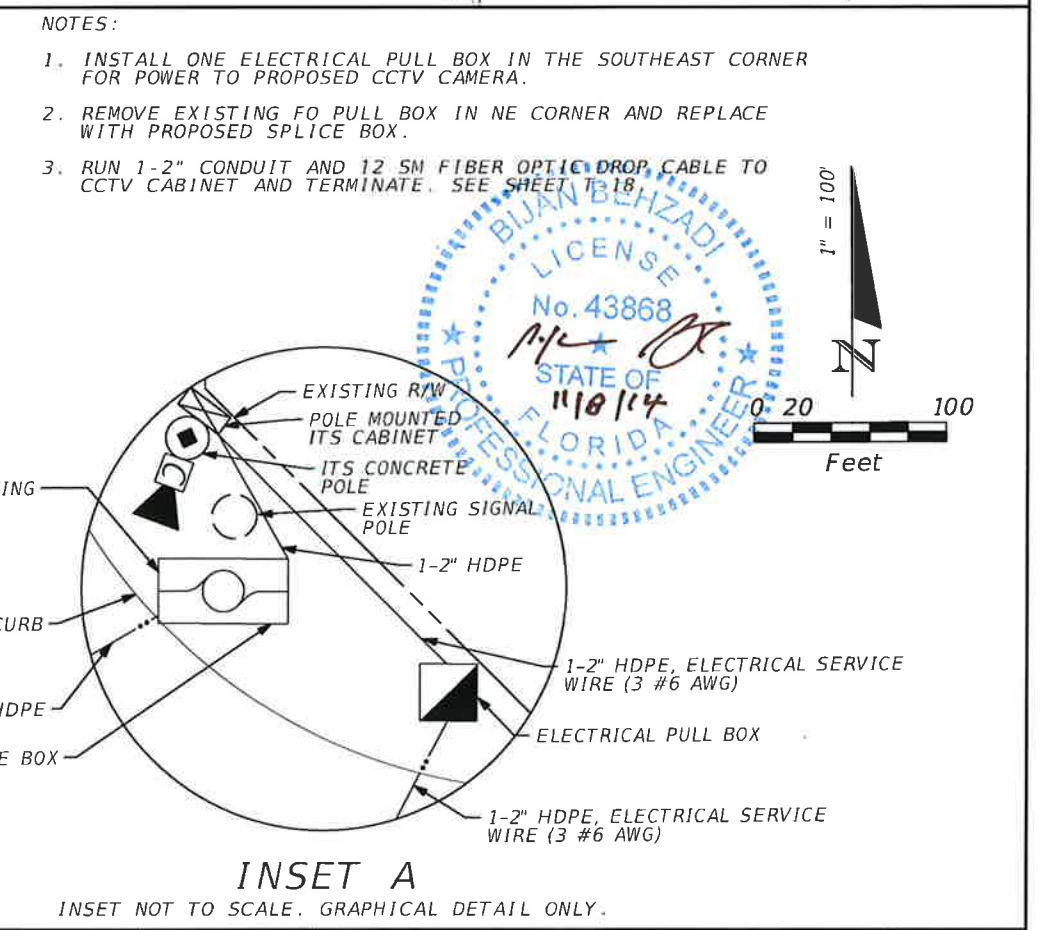
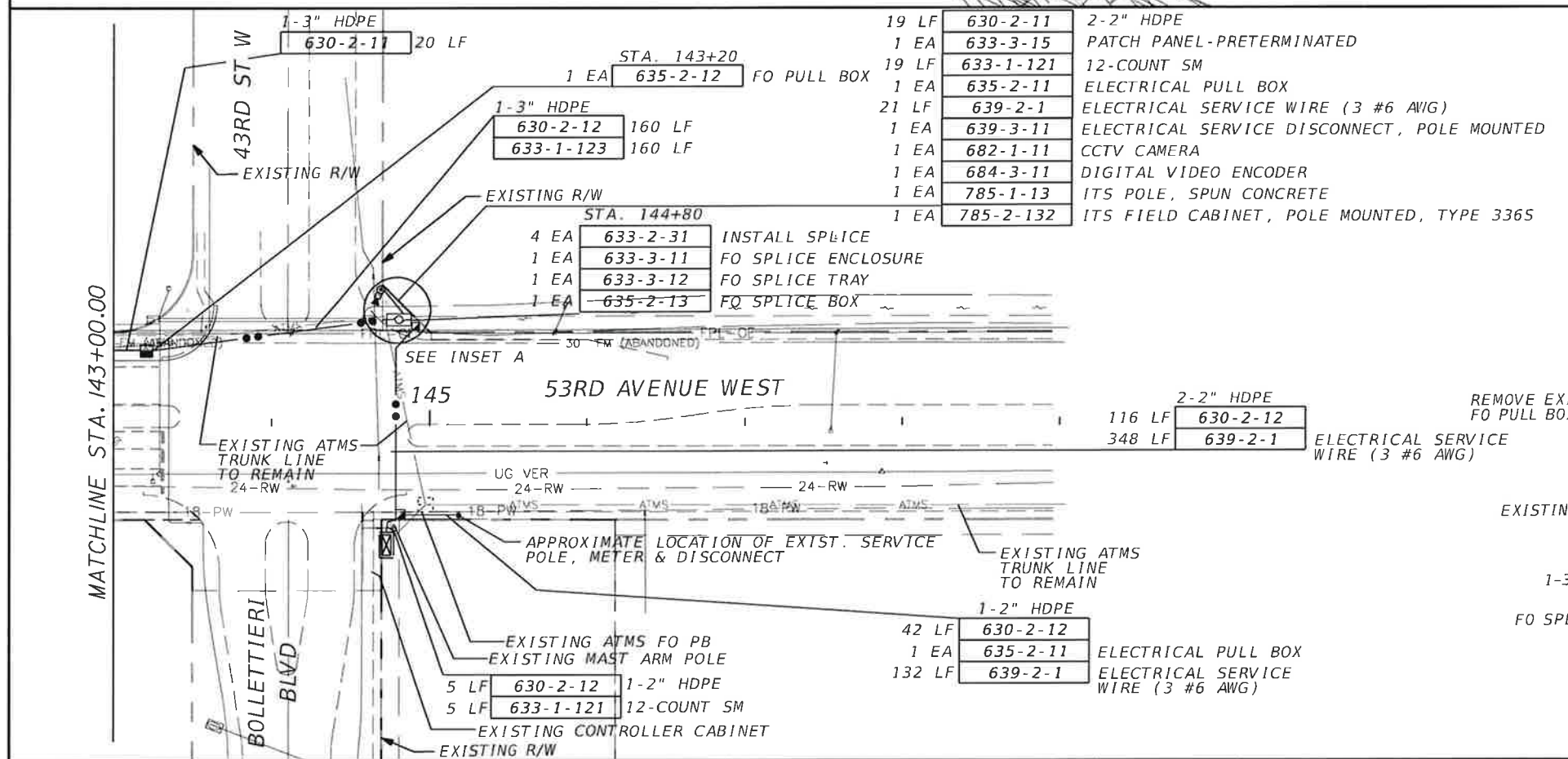
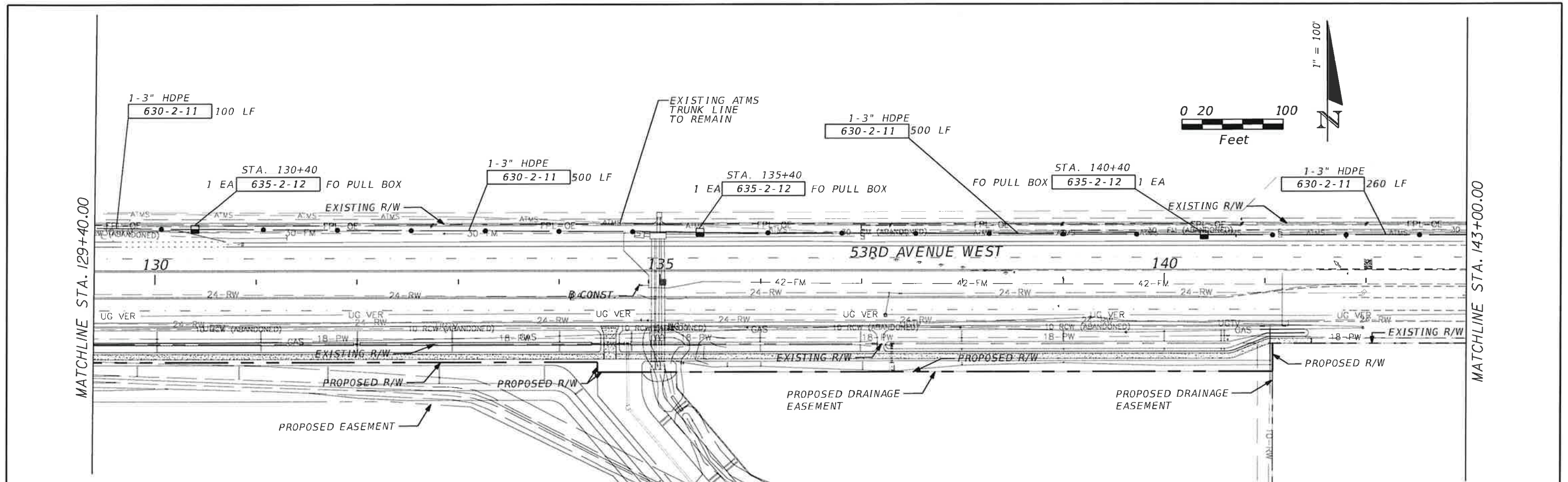
SIGNALIZATION PLAN

SHEET NO.  
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Diagram of a rectangular street sign for "66th St W 5200". The sign is 6'-0" wide and 2'-6" high. It features a black border and a white background. The text "66th St W" is in a large, bold, black sans-serif font, and "5200" is in a smaller, bold, black sans-serif font below it. Dimension lines indicate the overall size and the placement of the text. The sign is mounted on a post, and the mounting hardware is shown. The sign is oriented horizontally.

[illegible]

Diagram of a rectangular street sign for "53rd Ave W". The sign is white with a black border and contains the text "53rd Ave W" in large black letters, with "6500" and "6600" in smaller black letters below it. The sign is mounted on a post. Dimensions and mounting specifications are indicated by dimension lines and text:

- Overall width: 7'-0"
- Overall height: 2'-6"
- Mounting arm length (left): 5.05"
- Mounting arm length (right): 5.05"
- Sign width (inner): 73.9"
- Sign height (inner): 5.5"
- Mounting bracket height (left): 8" EM
- Mounting bracket height (right): 5.3"
- Mounting bracket height (bottom left): 6" EM
- Mounting bracket height (bottom right): 5.2"

[illegible]

BIJAN BEHZADI  
LICENSE  
No. 43868  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER  
11/18/14



Manatee  
County  
FLORIDA

Diagram of a rectangular street sign for "51st St W 5200". The sign is 6'-0" wide and 2'-6" high. It features a black border and a white background. The text "51st St W" is in a large, bold, sans-serif font, and "5200" is in a smaller, bold, sans-serif font below it. Dimensions are indicated by arrows and text: 6'-0" for the width, 2'-6" for the height, 7.8" for the side margins, 56.5" for the text area width, and 5.5", 8" EM, 5.3", 6" EM, and 5.2" for the vertical margins.

[illegible]

Diagram of a rectangular street sign for 53rd Ave W. The sign is 7'-0" wide and 2'-6" high. It features the text "53rd Ave W" in large bold letters, with "5000" on the left and "5100" on the right. Mounting dimensions are indicated: 4.05" from the left and right edges to the mounting holes, and 5.5" from the top edge to the mounting holes. The sign is mounted on a wall with a 5.5" offset from the top edge, a 5.3" offset from the bottom edge, and a 6" offset from the right edge. The sign is also 5.8" from the bottom edge.

| NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE |
|-----------------------|-----------------|-------------------|------|---------|
|                       |                 |                   |      |         |

[illegible]

|                                                                                       |                                                                                                                                       |                                         |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
|  | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE                                    |
|                                                                                       |                                                                                                                                       | 11/7/2014<br><br>PROJECT NO.<br>6082960 |

Diagram of a rectangular sign with the following dimensions and mounting details:

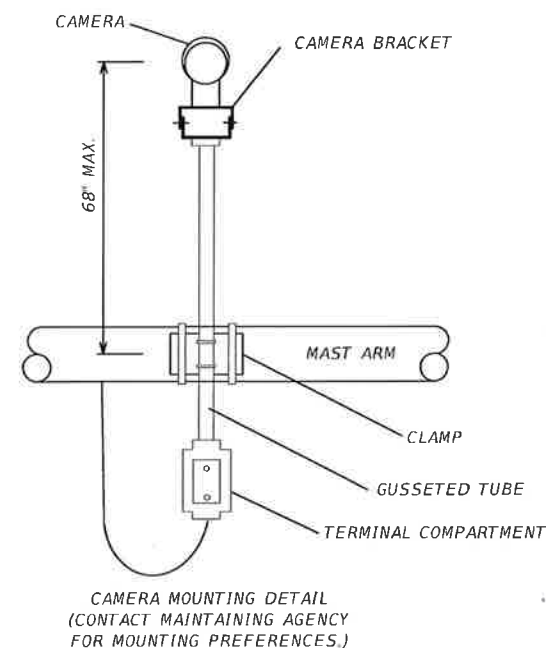
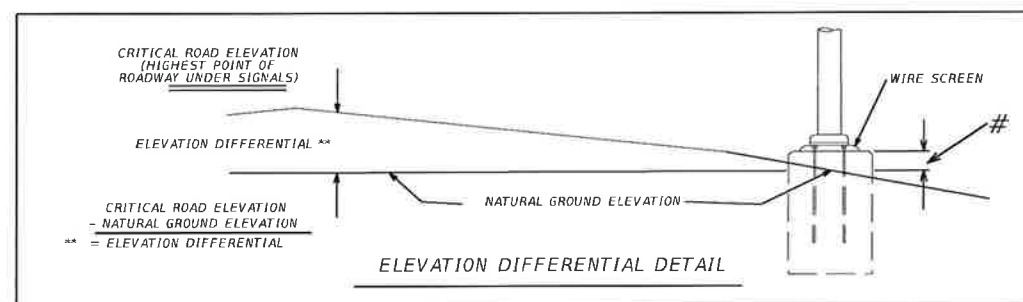
- Sign Dimensions: 6'-0" wide by 16.5" high.
- Text on Sign: 51st St W, 5200
- Mounting Dimensions:
  - Top: 5.5" from top edge to sign top.
  - Bottom: 5.5" from sign bottom to bottom edge.
  - Left: 7.8" from left edge to sign left.
  - Right: 7.8" from sign right to right edge.
- Sign Spacing: 56.5" between signs.
- Sign Height: 18.8" (including mounting).
- Sign Width: 5.2" (including mounting).
- Sign Mounting: 6" EM (End Mount).

[illegible][illegible]

T-12

SEE APPROPRIATE PLAN SHEET FOR PROPOSED SIGNAL HEAD  
ALIGNMENTS AND SIGN CONFIGURATION/LOCATION.

- A. ANCHOR BOLT COVERS (ORNAMENTAL, NON-ORNAMENTAL, AND/OR PAINTED) SHALL BE GALVANIZED STEEL OR CAST ALUMINUM AND SHALL BE SECURED BY A MINIMUM OF TWO (2) THREADED FASTENERS. THE BOLT COVERS SHALL BE OF SUFFICIENT SIZE SO THAT THERE IS NO GAP BETWEEN ITSELF AND THE POLE SHAFT.
- B. ALL MAST ARM POLES ARE TO BE GALVANIZED, NON-PAINTED.
- C. ALL MAST ARMS SHALL INCLUDE LUMINAIRES. MAST ARM POLES 1-1, 1-2 AND 1-3 SHALL INCLUDE 250W HIGH PRESSURE SODIUM LUMINAIRES DESIGNED FOR TYPE III, MEDIUM, FULL CUTOFF DISTRIBUTION (DESIGN IS BASED ON PHOTOMETRIC CURVE NO. GE 451002) AND POLES 2-2 AND 2-3 SHALL INCLUDE 400W HIGH PRESSURE SODIUM LUMINAIRES DESIGNED FOR TYPE IV, MEDIUM, FULL CUTOFF DISTRIBUTION (DESIGN IS BASED ON PHOTOMETRIC CURVE NO. GE 450830).

[illegible]

\*\*\*\* LUMINAIRE ANGLE MEASURED COUNTER CLOCKWISE FROM ARM A

[illegible]

‡FUTURE CONDITIONS ONLY

|     |           |  |             |          |                                                                                                                                                                                                                                             |             |                                                                                                                                  |                 |                                                  |                     |           |
|-----|-----------|--|-------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------|---------------------|-----------|
|     |           |  | SCALE       | AS NOTED |  <div>HDR Engineering, Inc.<br/>2601 Cattlemen Road<br/>Suite 400<br/>Sarasota, FL 34232-6233<br/>FBPR Certificate of<br/>Authorization No. 4213</div> | DATE        |  <div>MANATEE COUNTY<br/>PUBLIC WORKS</div> | DESIGN ENGINEER | BIJAN<br>BEHZADI<br><br>FL. LICENSE NO.<br>43868 | MAST ARM TABULATION | SHEET NO. |
|     |           |  | DESIGNED BY | EL       |                                                                                                                                                                                                                                             | 11/7/2014   |                                                                                                                                  |                 |                                                  |                     |           |
|     |           |  | DRAWN BY    | EL       |                                                                                                                                                                                                                                             | PROJECT NO. |                                                                                                                                  |                 |                                                  |                     |           |
|     |           |  | CHECKED BY  | BB       |                                                                                                                                                                                                                                             | 6082960     |                                                                                                                                  |                 |                                                  |                     |           |
| No. | REVISIONS |  | DATE        | BY       |                                                                                                                                                                                                                                             |             |                                                                                                                                  |                 |                                                  |                     | T-13      |

| STANDARD MAST ARM ASSEMBLIES DATA TABLE |                                    |             |                             |                             |             |                             |                             |             |             |              |                             |             |                             |                                      |             |    |    | Table Date 01-01-12 |             |
|-----------------------------------------|------------------------------------|-------------|-----------------------------|-----------------------------|-------------|-----------------------------|-----------------------------|-------------|-------------|--------------|-----------------------------|-------------|-----------------------------|--------------------------------------|-------------|----|----|---------------------|-------------|
| STRUCTURE<br>ID<br>NUMBERS              | ASSEMBLY<br>NUMBERS <sup>(1)</sup> | FIRST ARM   |                             |                             | SECOND ARM  |                             |                             | UF<br>(deg) | LL<br>(deg) | POLE         |                             |             |                             | SPECIAL DRILLED SHAFT <sup>(4)</sup> |             |    |    |                     |             |
|                                         |                                    | ARM<br>TYPE | FAA <sup>(2)</sup><br>(ft.) | FBA <sup>(2)</sup><br>(in.) | ARM<br>TYPE | FAA <sup>(2)</sup><br>(ft.) | FBA <sup>(2)</sup><br>(in.) |             |             | POLE<br>TYPE | UAA <sup>(3)</sup><br>(ft.) | UB<br>(ft.) | UCA <sup>(3)</sup><br>(in.) | DA<br>(ft.)                          | DB<br>(ft.) | RA | RB | RC                  | RD<br>(in.) |
| POLE 2-3                                | E5-T23 LUM                         | E5          | 24.8                        | 7.53                        |             |                             |                             |             | 35          | T23 LUM      |                             | 21.0        |                             | 19.5                                 | 4.5         | 11 | 16 | 9                   | 12          |
|                                         |                                    |             |                             |                             |             |                             |                             |             |             |              |                             |             |                             |                                      |             |    |    |                     |             |
|                                         |                                    |             |                             |                             |             |                             |                             |             |             |              |                             |             |                             |                                      |             |    |    |                     |             |
|                                         |                                    |             |                             |                             |             |                             |                             |             |             |              |                             |             |                             |                                      |             |    |    |                     |             |
|                                         |                                    |             |                             |                             |             |                             |                             |             |             |              |                             |             |                             |                                      |             |    |    |                     |             |
|                                         |                                    |             |                             |                             |             |                             |                             |             |             |              |                             |             |                             |                                      |             |    |    |                     |             |
|                                         |                                    |             |                             |                             |             |                             |                             |             |             |              |                             |             |                             |                                      |             |    |    |                     |             |
|                                         |                                    |             |                             |                             |             |                             |                             |             |             |              |                             |             |                             |                                      |             |    |    |                     |             |
|                                         |                                    |             |                             |                             |             |                             |                             |             |             |              |                             |             |                             |                                      |             |    |    |                     |             |

TABLE NOTES:

1. Assembly Number Legend

Single Arm:

Arm Type - Pole Type = D# - S#  
= E# - T#

Double Arm:

First Arm Type - Second Arm Type - Pole Type = D# - D# - S#  
= E# - E# - T#

2. If an entry appears in columns "FAA" and "FBA", a shorter arm is required. This is obtained by removing length from the arm tip. For these cases the mast arm length shall be shortened from "FA" to "FAA" and the tip diameter shall be increased from "FB" to "FBA".
3. If an entry appears in columns "UAA" and "UCA", a shorter pole is required. This is obtained by removing length from the pole tip. For these cases the pole height shall be shortened from "UA" to "UAA" and the pole tip diameter shall be increased from "UC" to "UCA".
4. The foundations for Standard Mast Arm Assemblies are pre-designed and are based upon the following conservative soil criteria which covers the great majority of soil types found in Florida. Only complete the "Special Drilled Shaft" data information if site conditions dictate drilled shafts with additional foundation capacity.

Classification = Cohesionless (Fine Sand)  
Friction Angle = 30 Degrees (30°)  
Unit Weight = 50 lbs. / cu. ft. (assumed saturated)

GENERAL NOTES:

1. Work this sheet with the Signal Designer's "Mast Arm Tabulation". See "Mast Arm Tabulation" for special instructions that include non-standard Handhole location, paint color, terminal compartment requirement, and pedestrian features.
2. Work with Index Nos. 17743 and 17745.



|     |  |           |  |             |  |     |  |                                                                                       |                                                                                                                                       |             |  |                                                                                       |                                |                 |  |                                                        |           |  |
|-----|--|-----------|--|-------------|--|-----|--|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------|--|---------------------------------------------------------------------------------------|--------------------------------|-----------------|--|--------------------------------------------------------|-----------|--|
|     |  |           |  | SCALE       |  | NTS |  |  | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE        |  |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER |  | <i>STANDARD<br/>MAST ARM ASSEMBLIES<br/>DATA TABLE</i> | SHEET NO. |  |
|     |  |           |  | DESIGNED BY |  | NS  |  |                                                                                       |                                                                                                                                       | 11/7/14     |  |                                                                                       |                                | SHINJI KONNO    |  |                                                        |           |  |
|     |  |           |  | DRAWN BY    |  | RHH |  |                                                                                       |                                                                                                                                       | PROJECT NO. |  |                                                                                       |                                | FL. LICENSE NO. |  |                                                        |           |  |
|     |  |           |  | CHECKED BY  |  | KHB |  |                                                                                       |                                                                                                                                       | 6082960     |  |                                                                                       |                                | 39536           |  |                                                        | T-14      |  |
| No. |  | REVISIONS |  | DATE        |  | BY  |  |                                                                                       |                                                                                                                                       |             |  |                                                                                       |                                |                 |  |                                                        |           |  |

| SPECIAL MAST ARM ASSEMBLIES DATA TABLE |                  |           |        |        |        |                     |        |        |        |            |        |        |        |                      |        |        |        |        |        |        |        |        | Table Date 01-01-12 |        |  |
|----------------------------------------|------------------|-----------|--------|--------|--------|---------------------|--------|--------|--------|------------|--------|--------|--------|----------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------------------|--------|--|
| NUMBER OF LOCATIONS                    | STRUCTURE NUMBER | FIRST ARM |        |        |        | FIRST ARM EXTENSION |        |        |        | SECOND ARM |        |        |        | SECOND ARM EXTENSION |        |        |        | POLE   |        |        |        |        |                     |        |  |
|                                        |                  | FA(ft)    | FB(in) | FC(in) | FD(in) | FE(ft)              | FF(in) | FG(in) | FH(in) | SA(ft)     | SB(in) | SC(in) | SD(in) | SE(ft)               | SF(in) | SG(in) | SH(in) | UA(ft) | UB(ft) | UC(in) | UD(in) | UE(in) | UF(deg)             | UG(ft) |  |
|                                        | POLE 1-2         | 34.8      | 6.13   | 11     | 0.25   | 27.2                | 10.22  | 14     | 0.375  | 0          | 0      | 0      | 0      | 0                    | 0      | 0      | 0      | 34     | 21     | 14.24  | 19     | 0.375  | 0                   | 32.5   |  |
|                                        | POLE 1-3         | 29.1      | 7.9    | 12     | 0.25   | 12.9                | 11.22  | 13     | 0.313  | 0          | 0      | 0      | 0      | 0                    | 0      | 0      | 0      | 34     | 22     | 11.24  | 16     | 0.375  | 0                   | 32.5   |  |
|                                        | POLE 1-4         | 34.8      | 6.13   | 11     | 0.25   | 27.2                | 10.22  | 14     | 0.375  | 0          | 0      | 0      | 0      | 0                    | 0      | 0      | 0      | 34     | 21.5   | 14.24  | 19     | 0.375  | 0                   | 32.5   |  |
|                                        | POLE 2-2         | 34.8      | 6.13   | 11     | 0.25   | 27.2                | 10.22  | 14     | 0.375  | 34.8       | 6.13   | 11     | 0.25   | 27.2                 | 10.22  | 14     | 0.375  | 39     | 20.5   | 16.54  | 22     | 0.375  | 90                  | 37.5   |  |
|                                        |                  |           |        |        |        |                     |        |        |        |            |        |        |        |                      |        |        |        |        |        |        |        |        |                     |        |  |
|                                        |                  |           |        |        |        |                     |        |        |        |            |        |        |        |                      |        |        |        |        |        |        |        |        |                     |        |  |

| SPECIAL MAST ARM ASSEMBLIES DATA TABLE (CONT.) |                                                              |    |    |      |      |       |      |      |      |      |       |                                                                |    |    |      |      |       |      |      |    |      | Table Date 01-01-12 |
|------------------------------------------------|--------------------------------------------------------------|----|----|------|------|-------|------|------|------|------|-------|----------------------------------------------------------------|----|----|------|------|-------|------|------|----|------|---------------------|
| STRUCTURE NUMBER                               | FIRST ARM CONNECTION (in) First Arm Camber Angle = 2 Degrees |    |    |      |      |       |      |      |      |      |       | SECOND ARM CONNECTION (in) Second Arm Camber Angle = 2 Degrees |    |    |      |      |       |      |      |    |      |                     |
|                                                | #Bolts                                                       | HT | FJ | FK   | FL   | FN    | FO   | FP   | FR   | FS   | FT    | #Bolts                                                         | HT | SJ | SK   | SL   | SN    | SO   | SP   | SR | SS   | ST                  |
| POLE 1-2                                       | 6                                                            | 30 | 32 | 2.75 | 0.75 | 0.375 | 13   | 1.25 | 2.25 | 12.5 | 0.375 | 0                                                              | 0  | 0  | 0    | 0    | 0     | 0    | 0    | 0  | 0    | 0                   |
| POLE 1-3                                       | 6                                                            | 22 | 23 | 2    | 0.5  | 0.375 | 11   | 1    | 2    | 9    | 0.375 | 0                                                              | 0  | 0  | 0    | 0    | 0     | 0    | 0    | 0  | 0    | 0                   |
| POLE 1-4                                       | 6                                                            | 30 | 32 | 2.75 | 0.75 | 0.375 | 13   | 1.25 | 2.25 | 12.5 | 0.375 | 0                                                              | 0  | 0  | 0    | 0    | 0     | 0    | 0    | 0  | 0    | 0                   |
| POLE 2-2                                       | 6                                                            | 30 | 32 | 2.75 | 0.75 | 0.375 | 19.5 | 1.25 | 2    | 12.5 | 0.375 | 6                                                              | 30 | 32 | 2.75 | 0.75 | 0.375 | 19.5 | 1.25 | 2  | 12.5 | 0.375               |
|                                                |                                                              |    |    |      |      |       |      |      |      |      |       |                                                                |    |    |      |      |       |      |      |    |      |                     |
|                                                |                                                              |    |    |      |      |       |      |      |      |      |       |                                                                |    |    |      |      |       |      |      |    |      |                     |



| SPECIAL MAST ARM ASSEMBLIES DATA TABLE (CONT.) |                           |    |     |      |    |                  |        |    |    |    |        |                                    |        |        |        |     |        |        |        |        |        | Table Date 01-01-12 |
|------------------------------------------------|---------------------------|----|-----|------|----|------------------|--------|----|----|----|--------|------------------------------------|--------|--------|--------|-----|--------|--------|--------|--------|--------|---------------------|
| STRUCTURE NUMBER                               | POLE BASE CONNECTION (in) |    |     |      |    | SHAFT AND REINF. |        |    |    |    |        | LUMINAIRE AND LUMINAIRE CONNECTION |        |        |        |     |        |        |        |        |        |                     |
|                                                | #Bolts                    | BA | BB  | BC   | BF | DA(ft)           | DB(ft) | RA | RB | RC | RD(in) | LA(ft)                             | LB(ft) | LC(in) | LD(in) | LE  | LF(ft) | LG(in) | LH(in) | LJ(in) | LK(in) | LL(deg)             |
| POLE 1-2                                       | 6                         | 35 | 2.5 | 2    | 40 | 12.5             | 4.5    | 11 | 16 | 9  | 12     | 35                                 | 10     | 3      | 0.125  | 0.5 | 8      | 0.5    | 0.75   | 0.25   | 0.25   | 42                  |
| POLE 1-3                                       | 6                         | 30 | 2.5 | 1.75 | 40 | 12.0             | 4.0    | 11 | 14 | 9  | 12     | 35                                 | 10     | 3      | 0.125  | 0.5 | 8      | 0.5    | 0.75   | 0.25   | 0.25   | 90                  |
| POLE 1-4                                       | 6                         | 35 | 2.5 | 2    | 40 | 13.5             | 4.5    | 11 | 16 | 9  | 12     | 35                                 | 10     | 3      | 0.125  | 0.5 | 8      | 0.5    | 0.75   | 0.25   | 0.25   | 25                  |
| POLE 2-2                                       | 6                         | 38 | 2.5 | 2    | 40 | 16.5             | 4.5    | 11 | 16 | 15 | 8      | 40                                 | 10     | 3      | 0.125  | 0.5 | 8      | 0.5    | 0.75   | 0.25   | 0.25   | 42                  |
|                                                |                           |    |     |      |    |                  |        |    |    |    |        |                                    |        |        |        |     |        |        |        |        |        |                     |
|                                                |                           |    |     |      |    |                  |        |    |    |    |        |                                    |        |        |        |     |        |        |        |        |        |                     |

- NOTES:
1. Work with Index 17745.
  2. Design Wind Speed = 130 mph
  3. Contractor shall coordinate anchor bolt requirements with fabricator.
  4. Contractor shall identify Structures Numbers and submit detailed shop drawings.

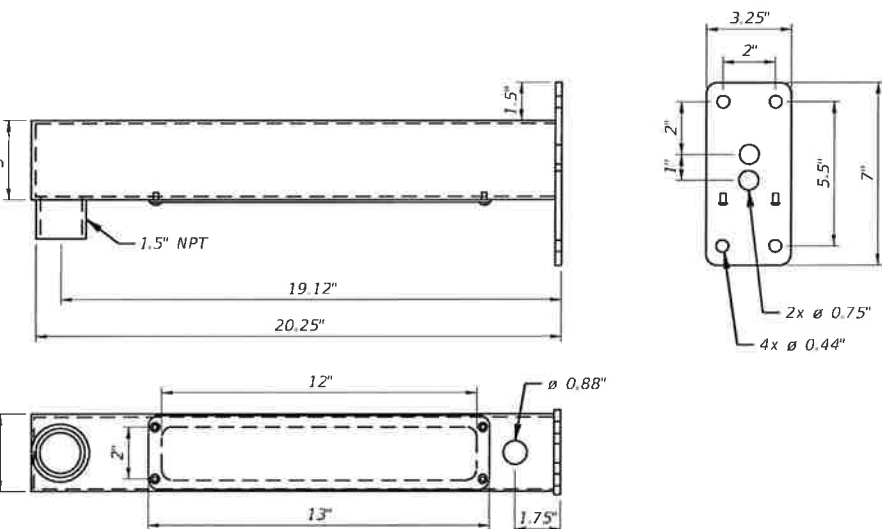
- FOUNDATION NOTES:
1. Design based on Borings taken sealed by Universal Engineering Sciences In May, 2014
  2. Assumptions and Values used in design:  
Soil Type Sand  
Soil Layer Thickness = 12 ft.  
Soil Friction Angle = 29 deg.  
Soil Weight = 43.67 pcf  
Design Water Table is 0 ft. below surface

|     |           |      |    |             |     |                                                                                       |                                                                                                                                       |                            |                              |                                                                                       |                                |                 |                 |                                                       |                          |
|-----|-----------|------|----|-------------|-----|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------|---------------------------------------------------------------------------------------|--------------------------------|-----------------|-----------------|-------------------------------------------------------|--------------------------|
|     |           |      |    | SCALE       | NTS |  | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE                       | 11/7/14                      |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER | SHINJI<br>KONNO | <b>SPECIAL<br/>MAST ARM ASSEMBLIES<br/>DATA TABLE</b> | SHEET<br>NO.<br><br>T-15 |
|     |           |      |    | DESIGNED BY | NS  |                                                                                       |                                                                                                                                       | PROJECT NO.<br><br>6082960 | FL. LICENSE NO.<br><br>39536 |                                                                                       |                                |                 |                 |                                                       |                          |
|     |           |      |    | DRAWN BY    | RHH |                                                                                       |                                                                                                                                       |                            |                              |                                                                                       |                                |                 |                 |                                                       |                          |
|     |           |      |    | CHECKED BY  | KHB |                                                                                       |                                                                                                                                       |                            |                              |                                                                                       |                                |                 |                 |                                                       |                          |
| No. | REVISIONS | DATE | BY |             |     |                                                                                       |                                                                                                                                       |                            |                              |                                                                                       |                                |                 |                 |                                                       |                          |

GROUNDING NOTES:

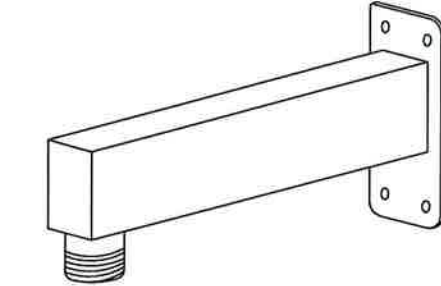
1. USE EXOTHERMIC WELD MOLDS RECOMMENDED BY THE MANUFACTURER SPECIFIC TO EACH WELD APPLICATION. MOLDS SHALL BE APPROVED BY THE MANUFACTURER FOR #2 AWG TIN-PLATED SOLID CONDUCTOR WIRE.
2. THE STRUCTURE SHALL BE CONNECTED TO THE GROUNDING ARRAY.
3. GROUND WIRE LEADS SHALL BE BONDED TO EQUIPMENT CABINETS WITH A COPPER GROUND BAR. BOND SHALL BE LOCATED ON THE INSIDE OF THE CABINET WITH THE EARTH WIRE TERMINATED IN A CABLE LUG, BOLTED TO THE GROUND BAR AND PROTECTED WITH NO-OX COMPOUND.
4. THE GROUNDING SYSTEM SHALL MEET THE REQUIREMENT OF 5 OHMS OR LESS AS MEASURED FROM THE SIGN STRUCTURE USING THE THREE-POINT GROUND MEASUREMENT TECHNIQUE. REFER TO STANDARD SPEC. 785-2.3 FOR MORE DETAILS ON GROUNDING INSTALLATION REQUIREMENTS.
5. GROUNDING CONDUCTOR SHALL BE BONDED AT TOP AND BOTTOM OF RIGID GALVANIZED CONDUIT PER N.E.C.
6. ALL GROUNDING MATERIALS SHALL MEET THE REQUIREMENTS OF SECTION 785 OF THE FDOT SPECIFICATIONS UNLESS OTHERWISE NOTED.
7. 5/8" x 24" ZINC ANODE ROD. INSTALL A COMPRESSION FITTING TO ZINC ANODE ROD TO DIRECTLY CONNECT # 2 AWG TIN-PLATED BARE COPPER WIRE TO MAIN GROUND ROD.
8. INSTALL GROUND ENHANCEMENT MATERIALS PER MANUFACTURER'S RECOMMENDATION AT GROUNDING ARRAYS.

| CONCRETE SPUN POLE DATA   |             |                       |                         |
|---------------------------|-------------|-----------------------|-------------------------|
| EXPOSED POLE LENGTH (FT.) | GRADE SLOPE | EMBEDMENT DEPTH (FT.) | TOTAL POLE LENGTH (FT.) |
| 39                        | 1:4         | 12                    | 51                      |

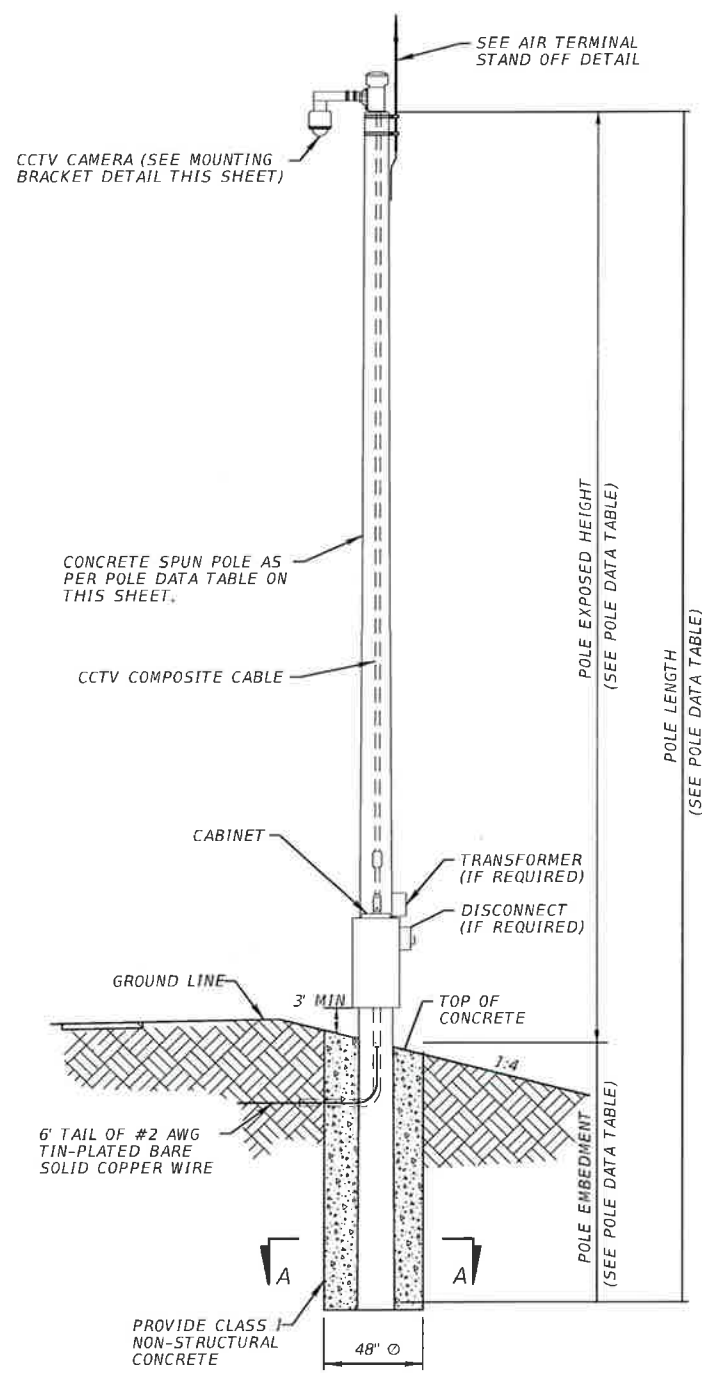


CONSTRUCTION NOTES:

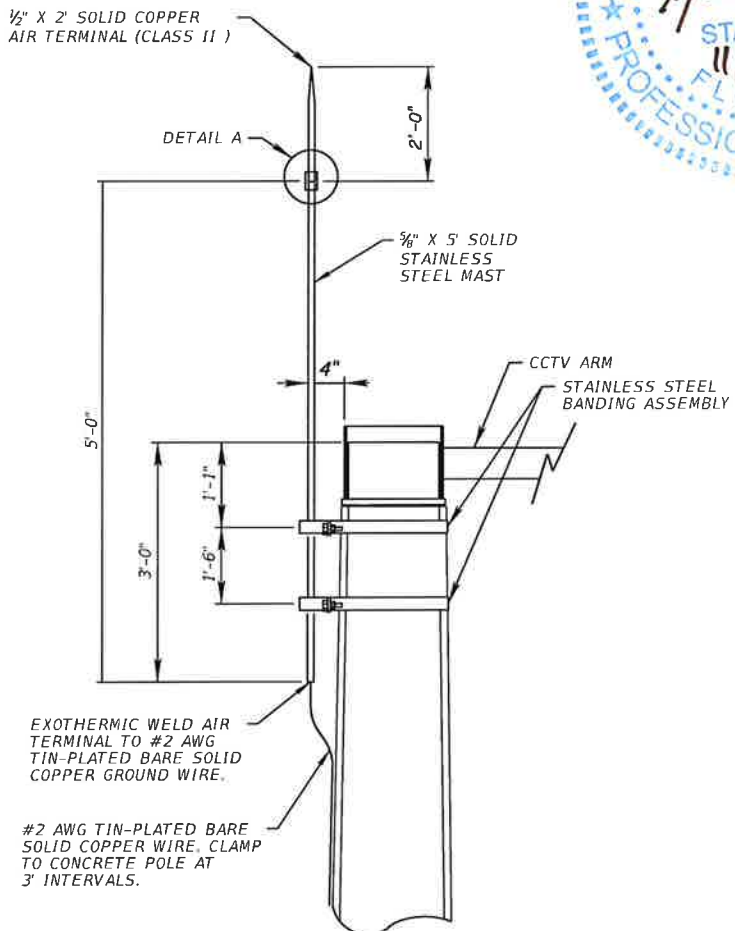
1. DURABLE OFF-WHITE POLYURETHANE POWDER COAT FINISH, CORROSION RESISTANT IN ACCORDANCE WITH MIL-STD-810E.
2. ALL ALUMINUM CONSTRUCTION.
3. 1 1/2" PIPE THREAD ON END FOR QUICK AND EASY DOME MOUNTING.
4. 60 LB LOAD RATING.
5. 2 RAIN-TIGHT CABLE ENTRANCES ON BASE OF BRACKET, WITH NON-METALLIC CABLE GROMMETS.
6. 1 RAIN-TIGHT CABLE ENTRANCE ON UNDERSIDE OF BRACKET, WITH A NON-METALLIC CABLE GROMMET.
7. ACCESS OPENING (2" x 12") WITH COVER LOCATED ON BOTTOM SIDE OF ARM.
8. WEIGHT 4 LBS.



POLE MOUNTED BRACKET  
ARM FOR CCTV  
WITHOUT CLD

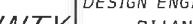


CONCRETE SPUN POLE FOR CCTV  
NTS

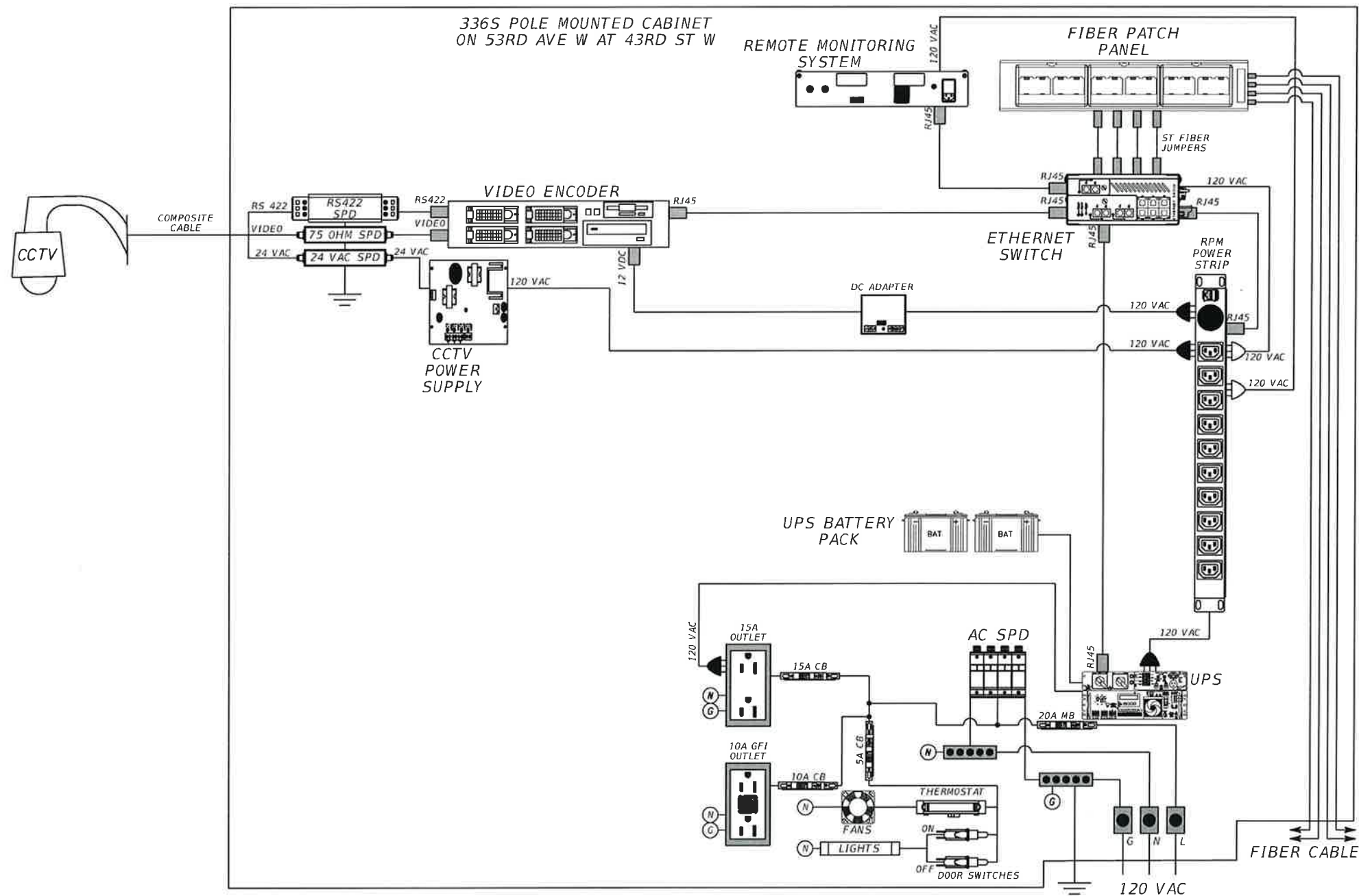


AIR TERMINAL STAND OFF DETAIL  
NTS



|     |           |  |  |                |    |                                                                                       |                                                                                                                                       |                        |                          |                                                                                       |                                |                                     |                                  |              |
|-----|-----------|--|--|----------------|----|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------|---------------------------------------------------------------------------------------|--------------------------------|-------------------------------------|----------------------------------|--------------|
|     |           |  |  | SCALE AS NOTED |    |  | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE<br>11/7/2014      |                          |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER<br>BIJAN<br>BEHZADI | CCTV CONCRETE<br>POLE DATA SHEET | SHEET<br>NO. |
|     |           |  |  | DESIGNED BY EL |    |                                                                                       |                                                                                                                                       | PROJECT NO.<br>6082960 | FL. LICENSE NO.<br>43868 |                                                                                       |                                | T-16                                |                                  |              |
|     |           |  |  | DRAWN BY EL    |    |                                                                                       |                                                                                                                                       |                        |                          |                                                                                       |                                |                                     |                                  |              |
|     |           |  |  | CHECKED BY BB  |    |                                                                                       |                                                                                                                                       |                        |                          |                                                                                       |                                |                                     |                                  |              |
| No. | REVISIONS |  |  | DATE           | BY |                                                                                       |                                                                                                                                       |                        |                          |                                                                                       |                                |                                     |                                  |              |

**PROPOSED CCTV CONNECTION DIAGRAM**



**NOTE:**

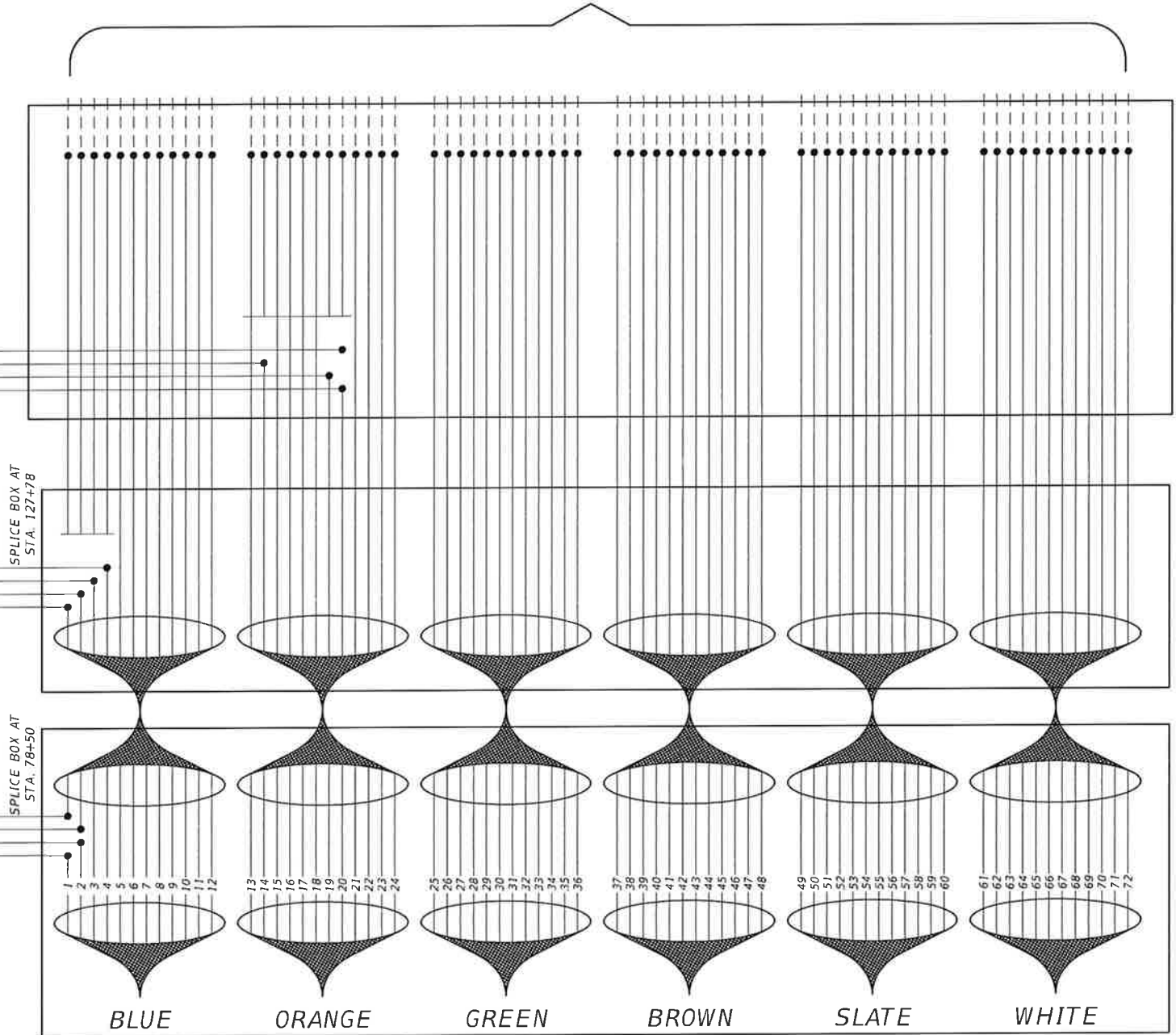
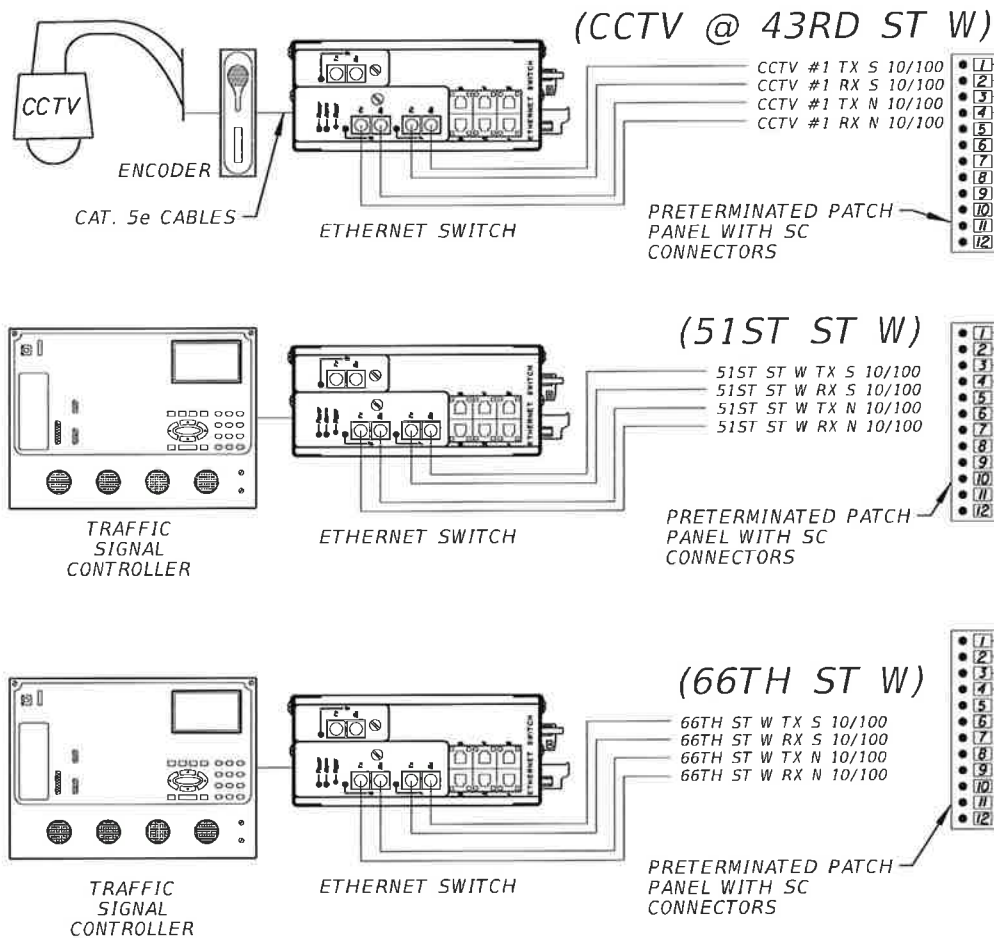
THE VIDEO ENCODER MAY BE INTEGRAL TO THE CCTV DOME ENCLOSURE.



|     |           |  |  |             |          |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                |                  |                                                 |                          |
|-----|-----------|--|--|-------------|----------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------|--------------------------------|------------------|-------------------------------------------------|--------------------------|
|     |           |  |  | SCALE       | AS NOTED |  | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE<br>11/7/2014 |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER  | <i><b>BLOCK DIAGRAM FOR<br/>CCTV CAMERA</b></i> | SHEET<br>NO.<br><br>T-17 |
|     |           |  |  | DESIGNED BY | EL       |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                | BIJAN<br>BEHZADI |                                                 |                          |
|     |           |  |  | DRAWN BY    | EL       |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                | FL. LICENSE NO.  |                                                 |                          |
|     |           |  |  | CHECKED BY  | BB       |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                | 43868            |                                                 |                          |
| No. | REVISIONS |  |  | DATE        | BY       |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                |                  |                                                 |                          |

TO MANATEE COUNTY TMC

PROPOSED ITS SPLICE BOX  
ON 53RD AVE W @ 43RD ST W  
ON THE NORTH SIDE



72-SM UNDERGROUND

NOTES:

- UNUSED FIBERS SHALL BE LEFT COILED, CAPPED, AND STORED IN SPLICE BOX.
- UNUSED BUFFER TUBES SHALL BE LEFT COILED AND STORED IN SPLICE TRAY.

COLOR CODE  
TIA/EIA 598A

- |            |             |
|------------|-------------|
| (1) BLUE   | (7) RED     |
| (2) ORANGE | (8) BLACK   |
| (3) GREEN  | (9) YELLOW  |
| (4) BROWN  | (10) VIOLET |
| (5) SLATE  | (11) ROSE   |
| (6) WHITE  | (12) AQUA   |

NOTES TO CONTRACTOR:

- THIS SPLICING DIAGRAM IS FOR INFORMATION ONLY.
- THE CONTRACTOR SHALL CONFIRM WITH MANATEE COUNTY TRAFFIC OPERATIONS DIVISION FOR THE PROPER BUFFER TUBE TO BE USED FOR THE CCTV AND TRAFFIC SIGNAL CABINET PRIOR TO PERFORMING ANY SPLICING.



| No. | REVISIONS | DATE | BY | CHECKED BY |
|-----|-----------|------|----|------------|
|     |           |      |    | BB         |

SCALE AS NOTED

DESIGNED BY EL

DRAWN BY EL

CHECKED BY BB



HDR Engineering, Inc.  
2601 Cattlemen Road  
Suite 400  
Sarasota, FL 34232-6233  
FBPR Certificate of  
Authorization No. 4213

DATE  
11/7/2014

PROJECT NO.  
6082960



MANATEE COUNTY  
PUBLIC WORKS

DESIGN ENGINEER  
BIJAN BEHZADI

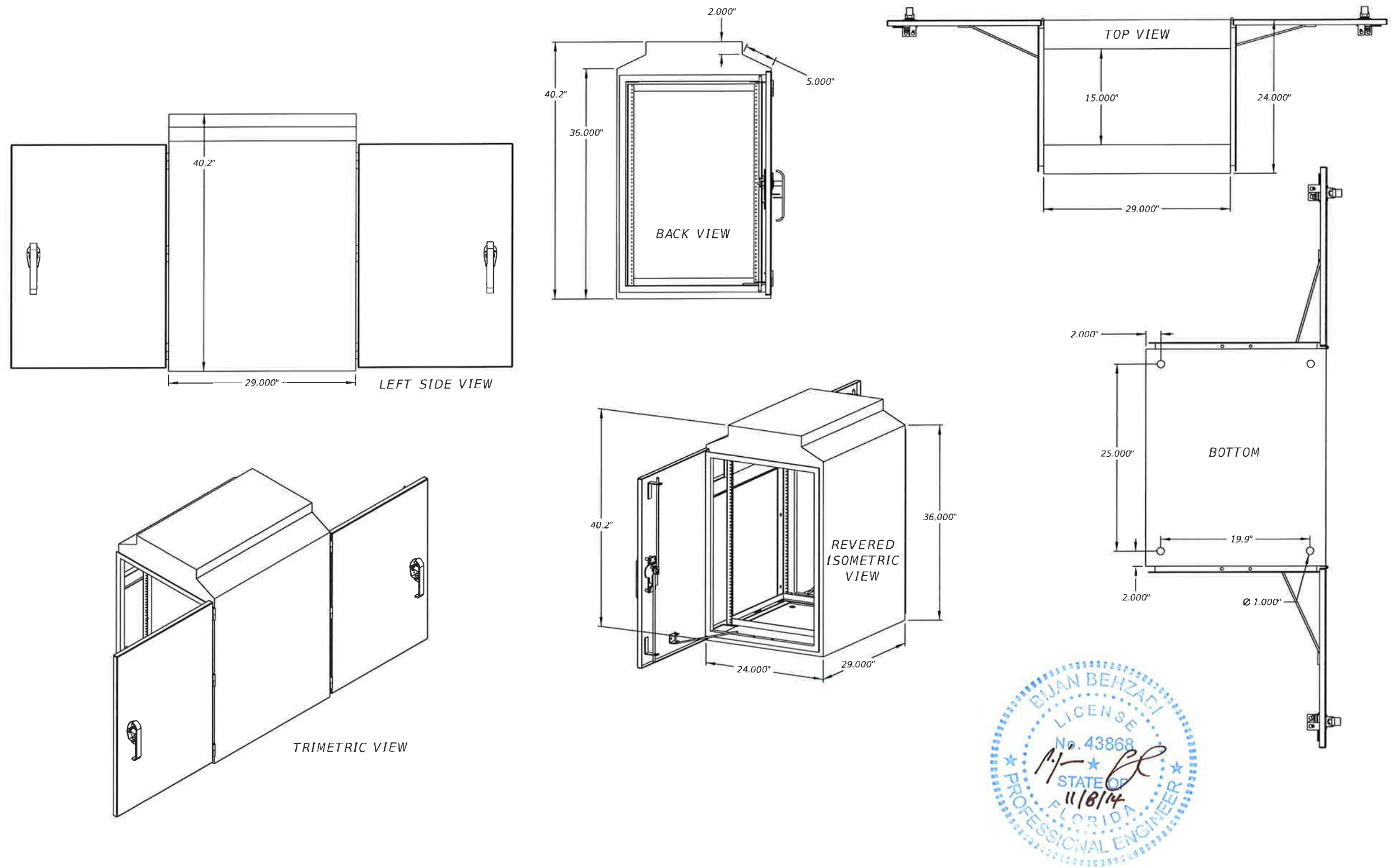
FL. LICENSE NO.  
43868

SPLICE DIAGRAM

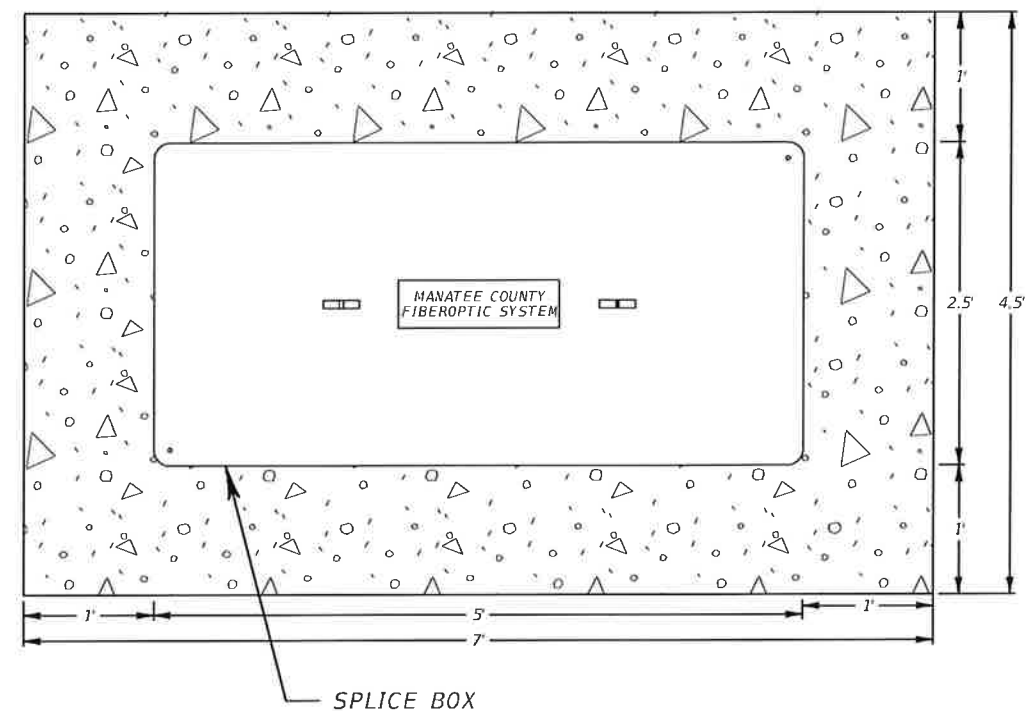
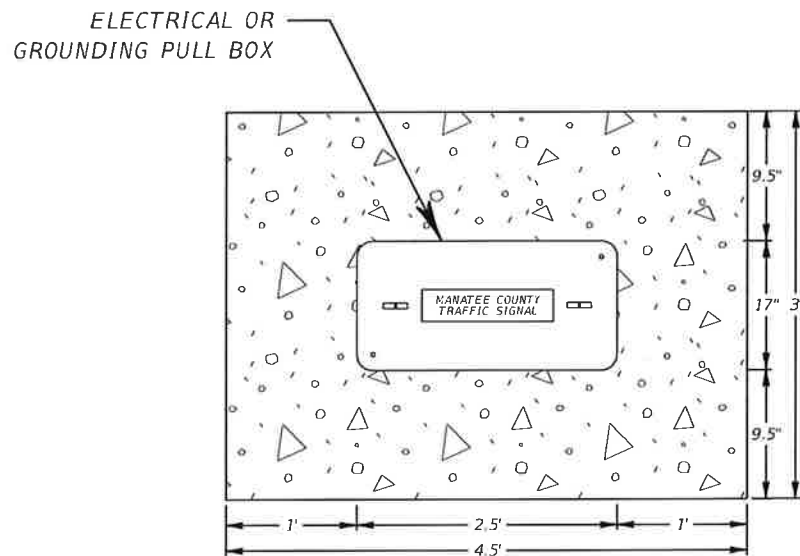
SHEET  
NO.

T-18



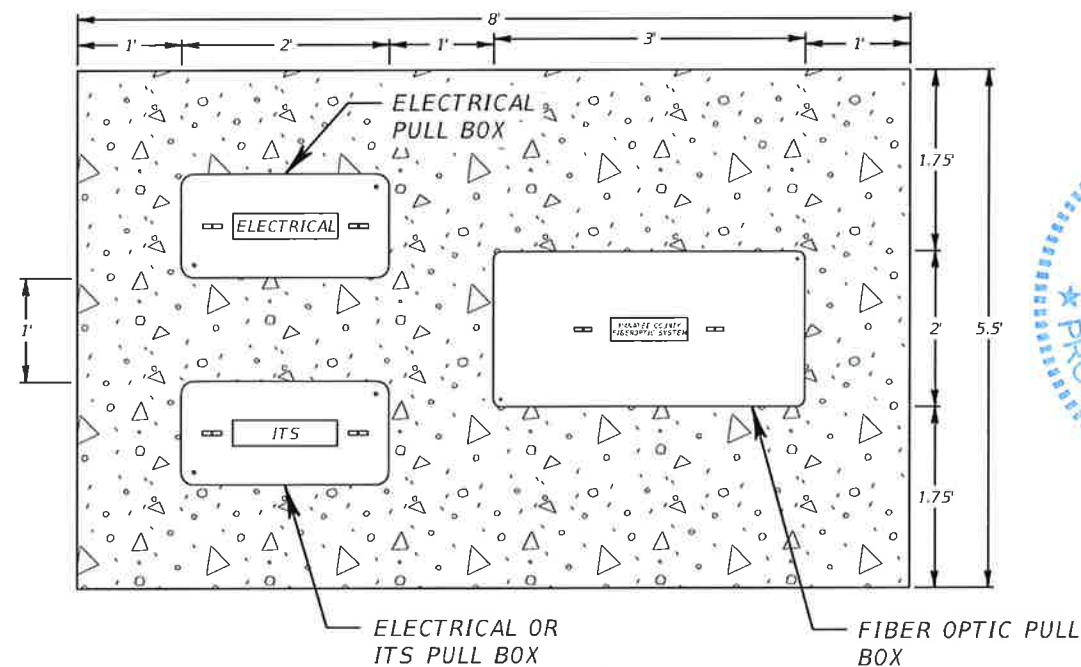
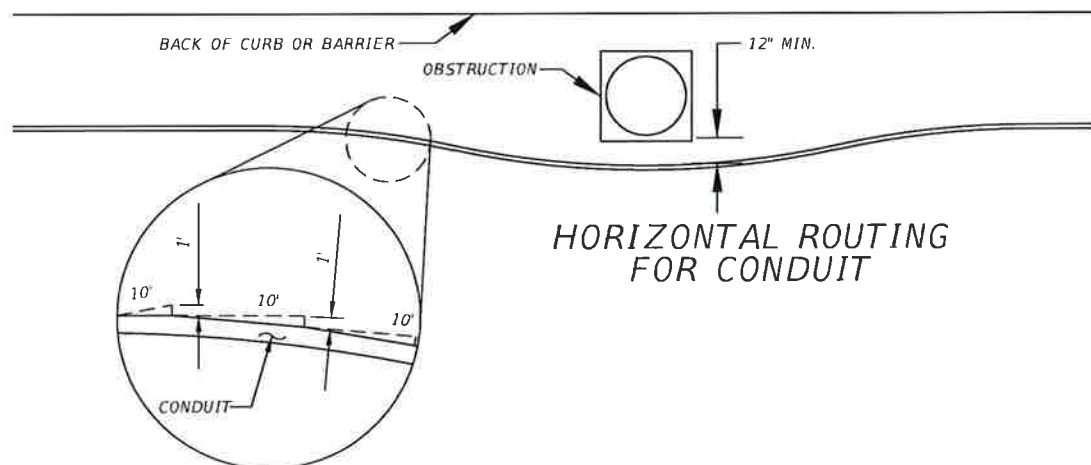


|     |           |  |  |             |          |                                                                                       |                                                                                                                                       |                        |                 |                                                                                       |                                |                 |                  |                           |              |
|-----|-----------|--|--|-------------|----------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------|---------------------------------------------------------------------------------------|--------------------------------|-----------------|------------------|---------------------------|--------------|
|     |           |  |  | SCALE       | AS NOTED |  | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE                   | 11/7/2014       |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER | BIJAN<br>BEHZADI | TYPE 336S CABINET DETAILS | SHEET<br>NO. |
|     |           |  |  | DESIGNED BY | EL       |                                                                                       |                                                                                                                                       | PROJECT NO.<br>6082960 | FL. LICENSE NO. |                                                                                       |                                | 43868           | T-20             |                           |              |
|     |           |  |  | DRAWN BY    | EL       |                                                                                       |                                                                                                                                       |                        |                 |                                                                                       |                                |                 |                  |                           |              |
|     |           |  |  | CHECKED BY  | BB       |                                                                                       |                                                                                                                                       |                        |                 |                                                                                       |                                |                 |                  |                           |              |
| No. | REVISIONS |  |  | DATE        | BY       |                                                                                       |                                                                                                                                       |                        |                 |                                                                                       |                                |                 |                  |                           |              |



NOTES:

1. CONCRETE REINFORCEMENT AND INSTALLATION REQUIREMENTS TO BE PER INDEX 17500.
2. WHEN MULTIPLE CONFIGURATIONS OF PULL BOXES ARE ADJACENT TO ONE ANOTHER, THEY SHALL BE FORMED TOGETHER WITH AN EXPANSION JOINT BETWEEN THE APRONS UTILIZED TO AVOID CRACKING.
3. THE ORIENTATION OF CONCRETE APRONS WITH MULTIPLE PULL & JUNCTION BOXES SHALL BE DETERMINED IN THE FIELD.



|     |           |      |    |                                                                              |                                                                                                                                                                                                                                         |                                             |                                                                                                                              |                                                              |                           |                      |
|-----|-----------|------|----|------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------|
| No. | REVISIONS | DATE | BY | SCALE<br>AS NOTED<br>DESIGNED BY<br>EL<br>DRAWN BY<br>EL<br>CHECKED BY<br>BB |  <p>HDR Engineering, Inc.<br/>2601 Cattlemen Road<br/>Suite 400<br/>Sarasota, FL 34232-6233<br/>FBPR Certificate of<br/>Authorization No. 4213</p> | DATE<br>11/7/2014<br>PROJECT NO.<br>6082960 |  <p>MANATEE COUNTY<br/>PUBLIC WORKS</p> | DESIGN ENGINEER<br>BIJAN BEHZADI<br>FL. LICENSE NO.<br>43868 | CONCRETE APRON<br>DETAILS | SHEET<br>NO.<br>T-21 |
|-----|-----------|------|----|------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------|

MANATEE COUNTY  
PUBLIC WORKS DEPARTMENT

CONTRACT PLANS

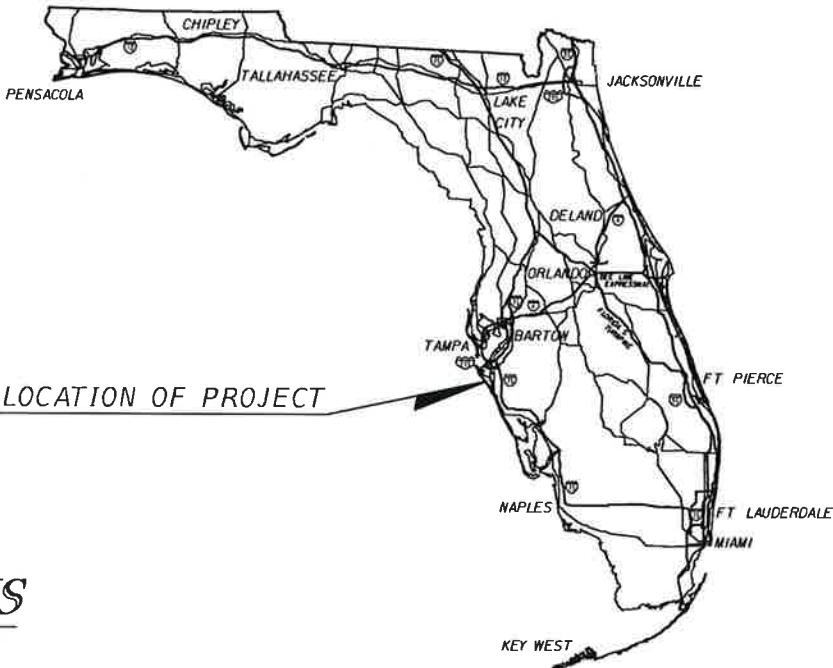
MANATEE COUNTY (13160)  
COUNTY PROJECT 6082960

53RD AVENUE WEST FROM EAST OF 75TH STREET WEST  
TO WEST OF 43RD STREET WEST

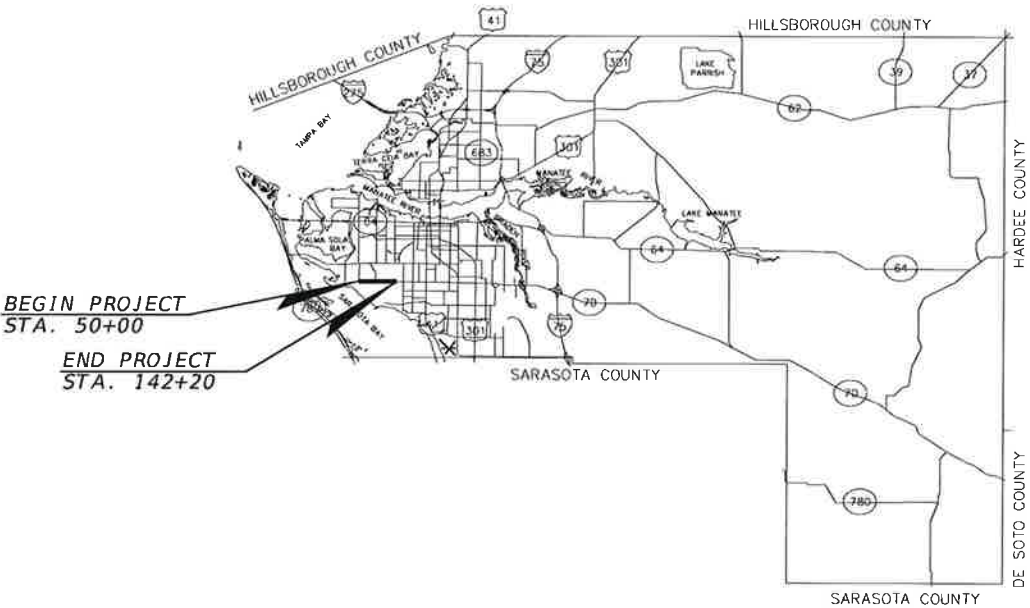
SIGNING AND PAVEMENT MARKING PLANS

INDEX OF SIGNING AND  
PAVEMENT MARKING PLANS

| SHEET NO.   | SHEET DESCRIPTION                 |
|-------------|-----------------------------------|
| S-1         | KEY SHEET                         |
| S-2 TO S-3  | TABULATION OF QUANTITIES          |
| S-4         | GENERAL NOTES                     |
| S-5 TO S-21 | SIGNING AND PAVEMENT MARKING PLAN |
| S-22        | GUIDE SIGN WORKSHEET              |
| S-23 - S-24 | SIGN CROSS SECTIONS               |



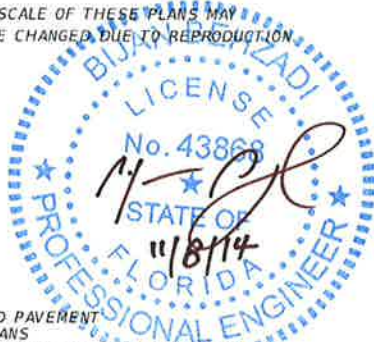
LOCATION OF PROJECT



SIGNING AND PAVEMENT MARKING SHOP DRAWINGS  
TO BE SUBMITTED TO:  
BIJAN BEHZADI, PE  
HDR ENGINEERING, INC.  
5426 BAY CENTER DRIVE, STE. 400  
TAMPA, FLORIDA 33609-3444  
PHONE NO. (813) 282-2300

PLANS PREPARED BY:  
HDR ENGINEERING, INC.  
2601 CATTLEMEN ROAD., STE. 400  
SARASOTA, FLORIDA 34232-6233  
PHONE NO. (941) 342-2700  
FAX (941) 342-6589  
CONTRACT NO. 12348  
VENDOR NO. VF-470680568  
CERTIFICATE OF AUTHORIZATION No. 4213

NOTE: THE SCALE OF THESE PLANS MAY  
HAVE CHANGED DUE TO REPRODUCTION



SIGNING AND PAVEMENT  
MARKING PLANS  
ENGINEER OF RECORD: BIJAN BEHZADI, PE

P.E. NO.: 43868

| KEY SHEET REVISIONS |    |             |
|---------------------|----|-------------|
| DATE                | BY | DESCRIPTION |
|                     |    |             |

| FISCAL<br>YEAR | SHEET<br>NO. |
|----------------|--------------|
| 14             | S-1          |

GOVERNING STANDARDS AND SPECIFICATIONS:  
Florida Department of Transportation 2014 Design Standards and  
revised Index Drawings, as appended herein, and applicable Articles  
and Subarticles of Division I and all of Divisions II & III of the 2014  
Standard Specifications for Road and Bridge Construction, as amended  
by Contract Documents.

For Design Standards click on the "Design Standards" link at the  
following web site: <http://www.dot.state.fl.us/rddesign/>

For the Standard Specifications for Road and Bridge Construction  
click on the "Specifications" link at the following web site:  
<http://www.dot.state.fl.us/specificationsoffice/>

MANATEE COUNTY PROJECT MANAGER: ANTHONY BENITEZ, PE

### TABULATION OF QUANTITIES

| PAY<br>ITEM<br>NO. | DESCRIPTION                                     | UNIT | SHEET NUMBERS |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | TOTAL<br>THIS<br>SHEET |       | GRAND<br>TOTAL |       | REF.<br>SHEET |
|--------------------|-------------------------------------------------|------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------------------|-------|----------------|-------|---------------|
|                    |                                                 |      | S-5           |       | S-6   |       | S-7   |       | S-8   |       | S-9   |       | S-10  |       | S-11  |       | S-12  |       | S-13  |       | S-14  |       |                        |       |                |       |               |
|                    |                                                 |      | PLAN          | FINAL | PLAN  | FINAL | PLAN  | FINAL | PLAN  | FINAL | PLAN  | FINAL | PLAN  | FINAL | PLAN  | FINAL | PLAN  | FINAL | PLAN  | FINAL | PLAN  | FINAL | PLAN                   | FINAL | PLAN           | FINAL | PLAN          |
| 700-1-11           | SINGLE POST SIGN (F&I GRND MOUNT) (UP TO 12 SF) | AS   |               |       |       |       | 2     |       | 1     |       | 3     |       | 2     |       | 3     |       | 1     |       |       |       | 3     |       | 15                     |       |                |       |               |
| 700-1-12           | SINGLE POST SIGN (F&I GRND MOUNT) (12-20 SF)    | AS   | 3             |       | 3     |       |       |       | 1     |       |       |       | 2     |       | 2     |       |       |       |       |       | 1     |       | 11                     |       |                |       |               |
| 700-1-13           | SINGLE POST SIGN (F&I GRND MOUNT) (21-30 SF)    | AS   |               |       |       |       |       |       |       |       |       |       | 1     |       |       |       |       |       |       |       |       | 1     |                        | 1     |                |       |               |
| 700-1-50           | SINGLE POST SIGN (RELOCATE)                     | AS   |               |       |       |       |       |       |       |       |       |       |       |       | 2     |       |       |       |       |       | 2     |       | 4                      |       |                |       |               |
| 700-1-60           | SINGLE POST SIGN (REMOVE)                       | AS   | 5             |       | 1     |       | 2     |       |       |       | 1     |       |       |       |       |       | 1     |       |       |       |       |       | 10                     |       |                |       |               |
| 700-2-13           | MULTI-POST SIGN (F&I GRND MOUNT 31-30 SF)       | AS   |               |       |       |       | 1     |       |       |       |       |       |       |       | 1     |       |       |       |       |       |       |       | 2                      |       |                |       |               |
| 700-2-15           | MULTI-POST SIGN (F&I GRND MOUNT 51-100 SF)      | AS   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
| 700-3-601          | SIGN PANEL (REMOVE) (UP TO 12 SF)               | EA   | 1             |       |       |       |       |       |       |       |       |       |       |       | 1     |       |       |       |       |       |       |       | 2                      |       |                |       |               |
| 705-10-1           | OBJECT MARKER (TYPE 1)                          | EA   |               |       |       |       |       |       |       |       | 3     |       |       |       |       |       |       |       |       |       | 3     |       | 6                      |       |                |       |               |
| 705-11-1           | DELINEATOR (FLEXIBLE TUBULAR)                   | EA   |               |       |       |       | 2     |       | 1     |       | 1     |       |       |       |       |       |       |       |       |       | 2     |       | 6                      |       |                |       |               |
| 706-3              | RETRO-REFLECTIVE PAVEMENT MARKERS               | EA   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    | W/R                                             |      | 10            |       | 27    |       | 28    |       | 32    |       | 68    |       | 32    |       | 46    |       | 38    |       | 28    |       | 28    |       | 337                    |       |                |       |               |
|                    | Y/Y                                             |      |               |       |       |       |       |       |       |       | 11    |       |       |       |       |       |       |       |       |       |       |       | 11                     |       |                |       |               |
| 710-11-290         | PAINTED PAVEMENT MARKINGS (STANDARD)            | SF   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    | (YELLOW) (ISLAND NOSE)                          |      |               |       |       |       | 13    |       |       |       | 13    |       |       |       | 13    |       |       |       |       |       | 13    |       | 50                     |       |                |       |               |
| 711-11-123         | THERMOPLASTIC (STANDARD) (WHITE) (SOLID) (12")  | LF   |               |       |       |       |       |       |       |       | 285   |       |       |       |       |       |       |       |       |       |       |       | 285                    |       |                |       |               |
| 711-11-124         | THERMOPLASTIC (STANDARD) (WHITE) (SOLID) (18")  | LF   |               |       |       |       |       |       |       |       | 61    |       | 21    |       |       |       |       |       |       |       |       |       | 82                     |       |                |       |               |
| 711-11-125         | THERMOPLASTIC (STANDARD) (WHITE) (SOLID) (24")  | LF   |               |       |       |       |       |       |       |       | 343   |       |       |       |       |       |       |       |       |       |       |       | 343                    |       |                |       |               |
| 711-11-151         | THERMOPLASTIC (STANDARD) (WHITE) (6")           | LF   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    | 6'-10' SKIP                                     |      |               |       |       |       |       |       | 42    |       |       |       |       |       | 78    |       |       |       |       |       |       |       | 120                    |       |                |       |               |
|                    | 2'-4' SKIP                                      |      |               |       |       |       |       |       |       |       | 72    |       | 68    |       |       |       | 68    |       |       |       |       |       | 208                    |       |                |       |               |
| 711-11-160         | THERMOPLASTIC (STANDARD) (WHITE) (MESSAGE)      | EA   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    | ONLY                                            |      | 1             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1                      |       |                |       |               |
| 711-11-170         | THERMOPLASTIC (STANDARD) (WHITE) (ARROW)        | EA   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    | LEFT                                            |      |               |       |       |       |       |       | 1     |       | 4     |       |       |       | 3     |       |       |       |       |       |       |       | 8                      |       |                |       |               |
|                    | RIGHT                                           |      | 1             |       |       |       |       |       |       |       | 3     |       | 1     |       | 1     |       | 2     |       |       |       |       |       | 8                      |       |                |       |               |
| 711-11-224         | THERMOPLASTIC (STANDARD) (YELLOW) (SOLID) (18") | LF   |               |       |       |       |       |       |       |       | 66    |       |       |       |       |       |       |       |       |       |       |       | 66                     |       |                |       |               |
| 711-11-251         | THERMOPLASTIC (STANDARD) (YELLOW) (6")          | LF   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    | 6'-10' SKIP                                     |      |               |       |       |       | 36    |       |       |       |       |       |       |       | 84    |       |       |       |       |       | 96    |       | 216                    |       |                |       |               |
| 711-14-160         | THERMOPLASTIC (PREFORMED) (WHITE) (MESSAGE)     | EA   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    | BIKE SYMBOL                                     |      |               |       |       |       |       |       |       |       | 4     |       | 1     |       | 2     |       | 1     |       |       |       |       |       | 8                      |       |                |       |               |
| 711-14-170         | THERMOPLASTIC (PREFORMED) (WHITE) (ARROWS)      | EA   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    | BIKE THRU ARROW                                 |      |               |       |       |       |       |       |       |       | 4     |       | 1     |       | 2     |       | 1     |       |       |       |       |       | 8                      |       |                |       |               |
| 711-16-111         | THERMOPLASTIC (STANDARD-OTHER SURFACES)         | NM   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    | (WHITE) (SOLID) (6")                            |      | 0.065         |       | 0.212 |       | 0.221 |       | 0.226 |       | 0.339 |       | 0.222 |       | 0.238 |       | 0.229 |       | 0.212 |       | 0.212 |       | 2.176                  |       |                |       |               |
| 711-16-112         | THERMOPLASTIC (STANDARD-OTHER SURFACES)         | NM   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    | (WHITE) (SOLID) (8")                            |      | 0.020         |       | 0.060 |       |       |       |       |       | 0.031 |       |       |       | 0.026 |       | 0.016 |       |       |       |       |       | 0.153                  |       |                |       |               |
| 711-16-131         | THERMOPLASTIC (STANDARD-OTHER SURFACES)         | GM   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    | (WHITE) (SKIP) (6") (10'-30' SKIP)              |      | 0.087         |       | 0.215 |       | 0.223 |       | 0.223 |       | 0.102 |       | 0.224 |       | 0.224 |       | 0.224 |       | 0.223 |       | 0.224 |       | 1.969                  |       |                |       |               |
| 711-16-211         | THERMOPLASTIC (STANDARD-OTHER SURFACES)         | NM   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    | (YELLOW) (SOLID) (6")                           |      | 0.065         |       | 0.212 |       | 0.194 |       | 0.211 |       | 0.227 |       | 0.212 |       | 0.238 |       | 0.212 |       | 0.212 |       | 0.164 |       | 1.947                  |       |                |       |               |
| 711-17             | THERMOPLASTIC (REMOVE EXISTING THERMOPLASTIC    | SF   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    | PAVEMENT MARKINGS)                              |      | 92            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 92    |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |
|                    |                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                        |       |                |       |               |

|     |           |      |    |             |          |                                                                                                                                                                                                                                             |             |           |                                                                                                                                  |                 |                  |                                 |              |
|-----|-----------|------|----|-------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|----------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------|---------------------------------|--------------|
|     |           |      |    | SCALE       | AS NOTED |  <div>HDR Engineering, Inc.<br/>2601 Cattlemen Road<br/>Suite 400<br/>Sarasota, FL 34232-6233<br/>FBPR Certificate of<br/>Authorization No. 4213</div> | DATE        | 11/7/2014 |  <div>MANATEE COUNTY<br/>PUBLIC WORKS</div> | DESIGN ENGINEER | BIJAN<br>BEHZADI | TABULATION OF<br><br>QUANTITIES | SHEET<br>NO. |
|     |           |      |    | DESIGNED BY | EL       |                                                                                                                                                                                                                                             | PROJECT NO. | 6082960   |                                                                                                                                  | FL. LICENSE NO. | 43868            |                                 |              |
|     |           |      |    | DRAWN BY    | EL       |                                                                                                                                                                                                                                             |             |           |                                                                                                                                  |                 |                  |                                 |              |
|     |           |      |    | CHECKED BY  | BB       |                                                                                                                                                                                                                                             |             |           |                                                                                                                                  |                 |                  |                                 |              |
| No. | REVISIONS | DATE | BY |             |          |                                                                                                                                                                                                                                             |             |           |                                                                                                                                  |                 |                  | S-2                             |              |

## TABULATION OF QUANTITIES

| PAY<br>ITEM<br>NO. | DESCRIPTION                                                     | UNIT | SHEET NUMBERS |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       | TOTAL<br>THIS<br>SHEET |       | GRAND<br>TOTAL |       | REF.<br>SHEET |
|--------------------|-----------------------------------------------------------------|------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|------|-------|------------------------|-------|----------------|-------|---------------|
|                    |                                                                 |      | S-15          |       | S-16  |       | S-17  |       | S-18  |       | S-19  |       | S-20  |       | S-21  |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      | PLAN          | FINAL | PLAN  | FINAL | PLAN  | FINAL | PLAN  | FINAL | PLAN  | FINAL | PLAN  | FINAL | PLAN  | FINAL | PLAN | FINAL | PLAN | FINAL | PLAN | FINAL | PLAN                   | FINAL | PLAN           | FINAL |               |
| 700-1-11           | SINGLE POST SIGN (F&I GRND MOUNT) (UP TO 12 SF)                 | AS   |               |       | 1     |       | 2     |       | 3     |       | 1     |       |       |       |       |       |      |       |      |       |      |       | 7                      |       | 22             |       |               |
| 700-1-12           | SINGLE POST SIGN (F&I GRND MOUNT) (12-20 SF)                    | AS   |               |       |       |       | 1     |       | 2     |       |       |       |       |       |       |       |      |       |      |       |      |       | 3                      |       | 14             |       |               |
| 700-1-13           | SINGLE POST SIGN (F&I GRND MOUNT) (21-30 SF)                    | AS   |               |       |       |       |       |       | 1     |       |       |       |       |       |       |       |      |       |      |       |      |       | 1                      |       | 2              |       |               |
| 700-1-50           | SINGLE POST SIGN (RELOCATE)                                     | AS   |               |       |       |       | 1     |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       | 1                      |       | 5              |       |               |
| 700-1-60           | SINGLE POST SIGN (REMOVE)                                       | AS   |               |       |       |       |       |       | 2     |       |       |       |       | 3     |       | 2     |      |       |      |       |      |       | 7                      |       | 17             |       |               |
| 700-2-13           | MULTI-POST SIGN (F&I GRND MOUNT 31-30 SF)                       | AS   |               |       |       |       | 1     |       |       |       |       |       |       |       |       | 1     |      |       |      |       |      |       | 2                      |       | 4              |       |               |
| 700-2-15           | MULTI-POST SIGN (F&I GRND MOUNT 51-100 SF)                      | AS   |               |       |       |       |       |       |       |       |       |       |       | 1     |       |       |      |       |      |       |      |       | 1                      |       | 1              |       |               |
| 700-3-601          | SIGN PANEL (REMOVE) (UP TO 12 SF)                               | EA   |               |       |       |       | 1     |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       | 1                      |       | 3              |       |               |
| 705-10-1           | OBJECT MARKER (TYPE 1)                                          | EA   |               |       |       |       | 3     |       | 3     |       |       |       |       |       |       |       |      |       |      |       |      |       | 6                      |       | 12             |       |               |
| 705-11-1           | DELINEATOR (FLEXIBLE TUBULAR)                                   | EA   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       | 6              |       |               |
| 706-3              | RETRO-REFLECTIVE PAVEMENT MARKERS                               | EA   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    | W/R                                                             |      | 28            |       | 28    |       | 42    |       | 42    |       | 50    |       | 28    |       | 9     |       |      |       |      |       |      |       | 227                    |       | 564            |       |               |
|                    | Y/Y                                                             |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       | 11             |       |               |
| 710-11-290         | PAINTED PAVEMENT MARKINGS (STANDARD)                            | SF   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    | (YELLOW) (ISLAND NOSE)                                          |      |               |       | 13    |       | 13    |       | 13    |       |       |       |       |       |       |       |      |       |      |       |      |       | 38                     |       | 88             |       |               |
| 711-11-123         | THERMOPLASTIC (STANDARD) (WHITE) (SOLID) (12")                  | LF   |               |       |       |       |       |       | 280   |       |       |       |       |       |       |       |      |       |      |       |      |       | 280                    |       | 564            |       |               |
| 711-11-124         | THERMOPLASTIC (STANDARD) (WHITE) (SOLID) (18")                  | LF   |               |       |       |       |       |       | 37    |       |       |       |       |       |       |       |      |       |      |       |      |       | 37                     |       | 119            |       |               |
| 711-11-125         | THERMOPLASTIC (STANDARD) (WHITE) (SOLID) (24")                  | LF   |               |       |       |       |       |       | 310   |       |       |       |       |       |       |       |      |       |      |       |      |       | 310                    |       | 654            |       |               |
| 711-11-151         | THERMOPLASTIC (STANDARD) (WHITE) (6")                           | LF   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    | 6'-10' SKIP                                                     |      |               |       | 42    |       |       |       | 42    |       |       |       |       |       |       |       |      |       |      |       |      |       | 84                     |       | 204            |       |               |
|                    | 2'-4' SKIP                                                      |      |               |       |       |       | 72    |       |       |       | 68    |       |       |       |       |       |      |       |      |       |      |       | 140                    |       | 348            |       |               |
| 711-11-160         | THERMOPLASTIC (STANDARD) (WHITE) (MESSAGE)                      | EA   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    | ONLY                                                            |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       | 1              |       |               |
| 711-11-170         | THERMOPLASTIC (STANDARD) (WHITE) (ARROW)                        | EA   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    | LEFT                                                            |      |               |       | 3     |       |       |       | 3     |       |       |       |       |       |       |       |      |       |      |       |      |       | 6                      |       | 14             |       |               |
|                    | RIGHT                                                           |      |               |       |       |       | 2     |       |       |       | 3     |       |       |       |       |       |      |       |      |       |      |       | 5                      |       | 13             |       |               |
| 711-11-224         | THERMOPLASTIC (STANDARD) (YELLOW) (SOLID) (18")                 | LF   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       | 66             |       |               |
| 711-11-251         | THERMOPLASTIC (STANDARD) (YELLOW) (6")                          | LF   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    | 6'-10' SKIP                                                     |      |               |       | 46    |       | 74    |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       | 120                    |       | 336            |       |               |
| 711-14-160         | THERMOPLASTIC (PREFORMED) (WHITE) (MESSAGE)                     | EA   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    | BIKE SYMBOL                                                     |      |               |       | 1     |       | 2     |       | 3     |       | 2     |       |       |       |       |       |      |       |      |       |      |       | 8                      |       | 16             |       |               |
| 711-14-170         | THERMOPLASTIC (PREFORMED) (WHITE) (ARROWS)                      | EA   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    | BIKE THRU ARROW                                                 |      |               |       | 1     |       | 2     |       | 2     |       | 3     |       |       |       |       |       |      |       |      |       |      |       | 8                      |       | 16             |       |               |
| 711-16-111         | THERMOPLASTIC (STANDARD-OTHER SURFACES)                         | NM   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    | (WHITE) (SOLID) (6")                                            |      | 0.212         |       | 0.246 |       | 0.258 |       | 0.258 |       | 0.302 |       | 0.212 |       | 0.080 |       |      |       |      |       |      |       | 1.568                  |       | 3.744          |       |               |
| 711-16-112         | THERMOPLASTIC (STANDARD-OTHER SURFACES)                         | NM   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    | (WHITE) (SOLID) (8")                                            |      |               |       |       |       |       |       | 0.033 |       |       |       |       |       |       |       |      |       |      |       |      |       | 0.033                  |       | 0.186          |       |               |
| 711-16-131         | THERMOPLASTIC (STANDARD-OTHER SURFACES)                         | GM   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    | (WHITE) (SKIP) (6") (10'-30' SKIP)                              |      | 0.224         |       | 0.224 |       | 0.224 |       | 0.161 |       | 0.192 |       | 0.224 |       | 0.080 |       |      |       |      |       |      |       | 1.329                  |       | 3.298          |       |               |
| 711-16-211         | THERMOPLASTIC (STANDARD-OTHER SURFACES)                         | NM   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    | (YELLOW) (SOLID) (6")                                           |      | 0.212         |       | 0.210 |       | 0.179 |       | 0.184 |       | 0.212 |       | 0.212 |       | 0.064 |       |      |       |      |       |      |       | 1.273                  |       | 3.220          |       |               |
| 711-17             | THERMOPLASTIC (REMOVE EXISTING THERMOPLASTIC PAVEMENT MARKINGS) | SF   |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       | 92             |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |
|                    |                                                                 |      |               |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |                        |       |                |       |               |

|     |           |      |    |             |          |                                                                                                                                                                                                                                             |          |           |                                                                                                                                  |                 |                  |                             |                 |       |     |
|-----|-----------|------|----|-------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------|----------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------|-----------------------------|-----------------|-------|-----|
|     |           |      |    | SCALE       | AS NOTED |  <div>HDR Engineering, Inc.<br/>2601 Cattlemen Road<br/>Suite 400<br/>Sarasota, FL 34232-6233<br/>FBPR Certificate of<br/>Authorization No. 4213</div> | DATE     | 11/7/2014 |  <div>MANATEE COUNTY<br/>PUBLIC WORKS</div> | DESIGN ENGINEER | BIJAN<br>BEHZADI | TABULATION OF<br>QUANTITIES | SHEET<br>NO.    |       |     |
|     |           |      |    | DESIGNED BY | EL       |                                                                                                                                                                                                                                             | DRAWN BY | EL        |                                                                                                                                  | PROJECT NO.     | 6082960          |                             | FL. LICENSE NO. | 43868 | S-3 |
|     |           |      |    | CHECKED BY  | BB       |                                                                                                                                                                                                                                             |          |           |                                                                                                                                  |                 |                  |                             |                 |       |     |
| No. | REVISIONS | DATE | BY |             |          |                                                                                                                                                                                                                                             |          |           |                                                                                                                                  |                 |                  |                             |                 |       |     |

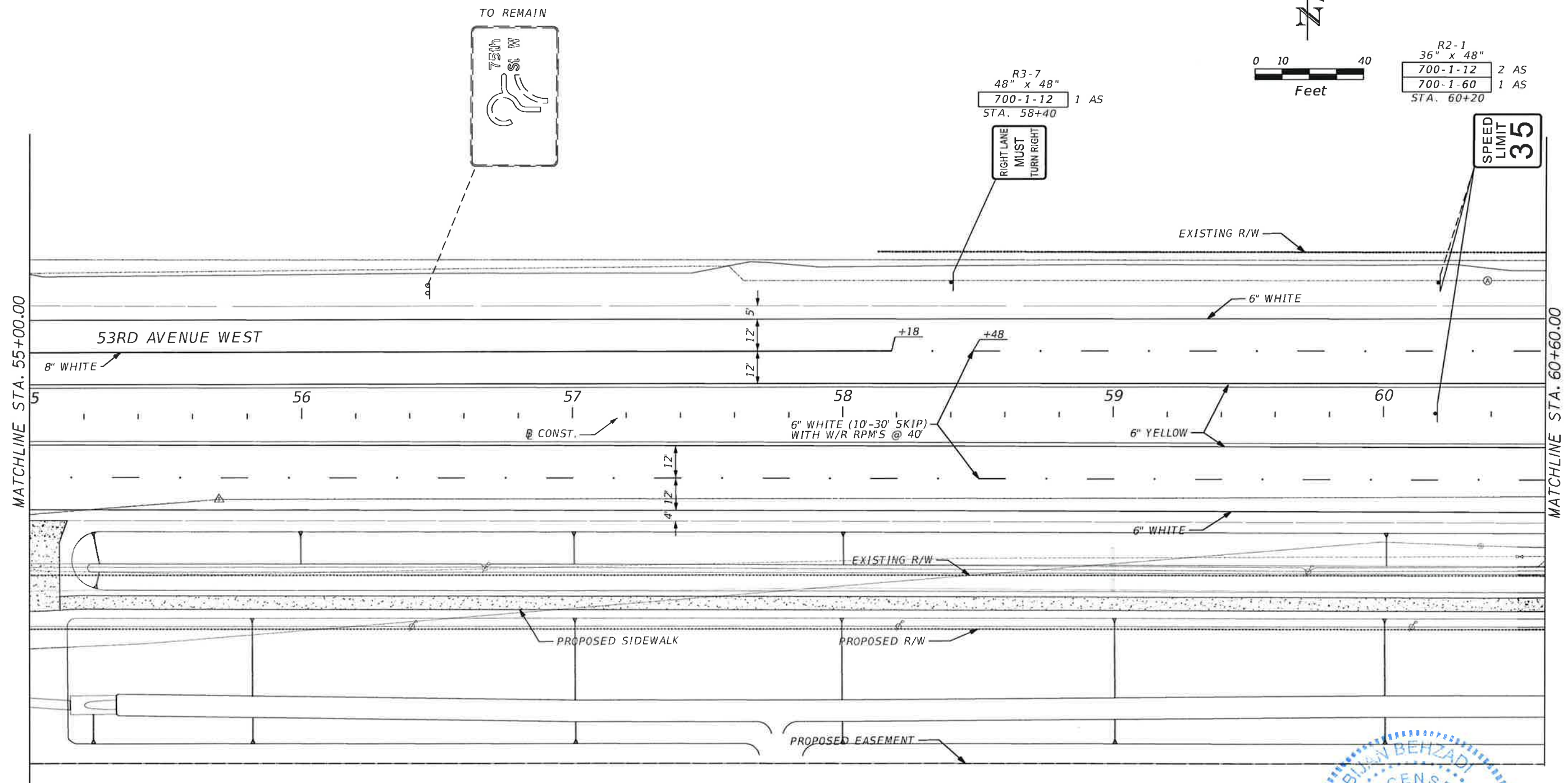
SIGNING AND PAVEMENT MARKING GENERAL NOTES:

- 1. ALL PAVEMENT MARKINGS WITHIN THE MANATEE COUNTY RIGHT-OF-WAY SHALL BE THERMOPLASTIC.
- 2. ALL FLORIDA ROUTE MARKERS MUST CONFORM TO F.D.O.T. DESIGN STANDARDS INDEX NO. 17355.
- 3. PAVEMENT MARKINGS SHALL BE PLACED AS SHOWN IN THE PLANS AND THE APPROPRIATE F.D.O.T. DESIGN STANDARDS INDEX.
- 4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LENGTH OF COLUMN SUPPORTS IN THE FIELD PRIOR TO FABRICATION.
- 5. REFER TO F.D.O.T. DESIGN STANDARDS INDEX NO. 17352 FOR RETRO-REFLECTIVE PAVEMENT MARKER PLACEMENT DETAILS.
- 6. CAUTION SHALL BE EXERCISED WHILE RELOCATING EXISTING SIGNS SO AS TO PREVENT DAMAGE TO THE SIGNS. IF THE SIGNS ARE DAMAGED BEYOND USE, AS DETERMINED BY THE ENGINEER, THEY SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE.
- 7. THE SIGN LOCATIONS ARE APPROXIMATE AND MAY REQUIRE FIELD ADJUSTMENT AS DIRECTED BY THE ENGINEER.
- 8. ANY EXISTING SIGN TO REMAIN THAT IS DISTURBED DURING CONSTRUCTION OR RELOCATED SHALL BE RESET TO CURRENT STANDARDS FOR HEIGHT, OFFSET, AND METHOD OF INSTALLATION. COST OF THIS WORK SHALL BE REFLECTED IN THE PAY ITEM NO. 102-1 IN THE SUMMARY OF ROADWAY PAY ITEMS.
- 9. CONTRACTOR SHALL USE W-SHAPE STEEL POSTS FOR MUTLI-POST SIGNS. ALL COLUMNS (POSTS) FOR SINGLE COLUMN SIGNS SHALL BE ALUMINUM ROUND TUBE, UNLESS OTHERWISE INDICATED IN THE PLANS.
- 10. ANY EXISTING MULTI-POST AND OVERHEAD SIGNS WITHIN THE PROJECT LIMITS SHALL REMAIN UNLESS OTHERWISE NOTED IN THE PLANS.
- 11. ALL SINGLE COLUMN SIGNS WITHIN THE LIMITS OF CLEARING AND GRUBBING SHALL BE REMOVED UNLESS OTHERWISE NOTED IN THE PLANS. PAYMENT SHALL BE REFLECTED IN THE PAY ITEM NO. 110-1-1 IN THE SUMMARY OF ROADWAY PAY ITEMS.
- 12. AT LOCATIONS WHERE UNDERGROUND UTILITIES ARE IN CLOSE PROXIMITY TO SIGN FOUNDATIONS AS DETERMINED BY THE CONTRACTOR, THE CONTRACTOR SHALL HAND DIG THE FIRST FOUR FEET OF THE HOLE FOR THE MULTI POST FOUNDATIONS.
- 13. UNLESS OTHERWISE NOTED ON PLAN SHEETS, ALL CROSSWALKS ACROSS MAJOR STREETS SHALL BE TEN FEET (10') IN WIDTH. MEASUREMENTS SHALL BE FROM INSIDE TO INSIDE OF 12" STRIPES.
- 14. FLEXIBLE DELINEATOR POSTS SHALL BE INSTALLED AT ALL MEDIAN NOSES AS SHOWN IN INDEX NO. 17346.
- 15. ALL TURN LANE MARKINGS SHALL BE PLACED AS SHOWN IN INDEX NO. 17346, SHEET NO. 11.



|     |           |      |    |                   |                                                                                                                                                                                                                                             |                        |                                                                                                                                  |                                     |               |              |
|-----|-----------|------|----|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------|--------------|
|     |           |      |    | SCALE<br>AS NOTED |  <div>HDR Engineering, Inc.<br/>2601 Cattlemen Road<br/>Suite 400<br/>Sarasota, FL 34232-6233<br/>FBPR Certificate of<br/>Authorization No. 4213</div> | DATE<br>11/7/2014      |  <div>MANATEE COUNTY<br/>PUBLIC WORKS</div> | DESIGN ENGINEER<br>BIJAN<br>BEHZADI | GENERAL NOTES | SHEET<br>NO. |
|     |           |      |    | DESIGNED BY<br>EL |                                                                                                                                                                                                                                             |                        |                                                                                                                                  | FL. LICENSE NO.                     |               |              |
|     |           |      |    | DRAWN BY<br>EL    |                                                                                                                                                                                                                                             | PROJECT NO.<br>6082960 |                                                                                                                                  | 43868                               |               | S-4          |
| No. | REVISIONS | DATE | BY | CHECKED BY<br>BB  |                                                                                                                                                                                                                                             |                        |                                                                                                                                  |                                     |               |              |





1" = 40'

0 10 40  
Feet

R2-1  
36" x 48"

|          |      |
|----------|------|
| 700-1-12 | 2 AS |
| 700-1-60 | 1 AS |

STA. 60+20

TO REMAIN

R3-7  
48" x 48"

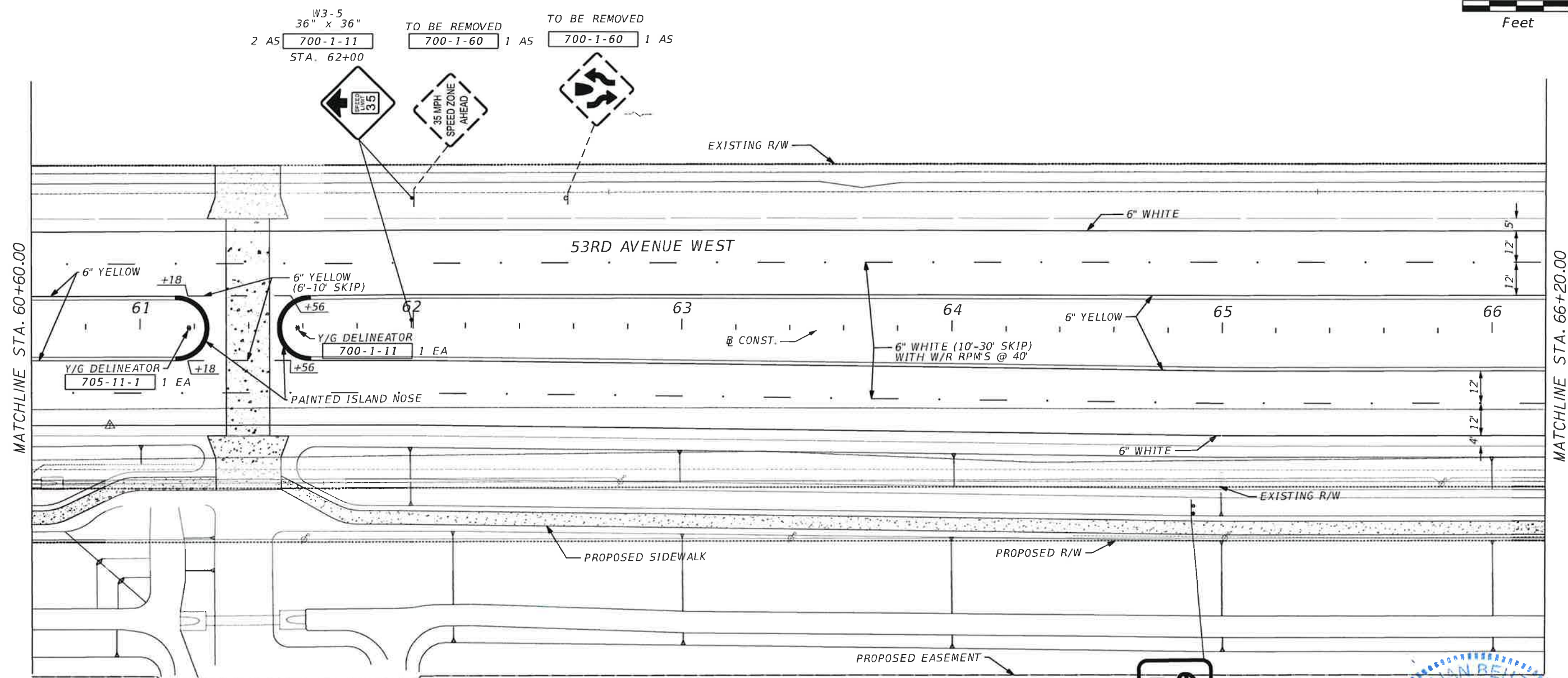
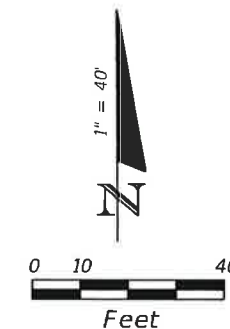
700-1-12

1 AS  
STA. 58+40

RIGHT LANE  
MUST  
TURN RIGHT

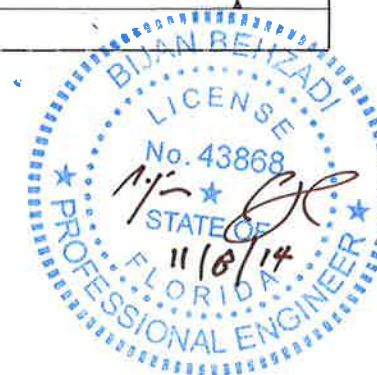
SPEED  
LIMIT  
35

|     |           |      |    |                   |                                                                                                                                                                                                                                            |                        |                                                                                                                                  |                                     |                                                      |              |
|-----|-----------|------|----|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------------------------|--------------|
|     |           |      |    | SCALE<br>AS NOTED |  <div>HDR Engineering, Inc.<br/>2601 Cattlemen Road<br/>Suite 400<br/>Sarasota, FL 34232-6233<br/>FBPR Certificate of<br/>Authorization No. 4213</div> | DATE<br>11/7/2014      |  <div>MANATEE COUNTY<br/>PUBLIC WORKS</div> | DESIGN ENGINEER<br>BIJAN<br>BEHZADI | <div>SIGNING AND PAVEMENT<br/>MARKING PLAN (2)</div> | SHEET<br>NO. |
|     |           |      |    | DESIGNED BY<br>EL |                                                                                                                                                                                                                                            |                        |                                                                                                                                  | FL. LICENSE NO.                     |                                                      |              |
|     |           |      |    | DRAWN BY<br>EL    |                                                                                                                                                                                                                                            | PROJECT NO.<br>6082960 |                                                                                                                                  | 43868                               |                                                      |              |
|     |           |      |    | CHECKED BY<br>BB  |                                                                                                                                                                                                                                            |                        |                                                                                                                                  |                                     |                                                      | S-6          |
| No. | REVISIONS | DATE | BY |                   |                                                                                                                                                                                                                                            |                        |                                                                                                                                  |                                     |                                                      |              |

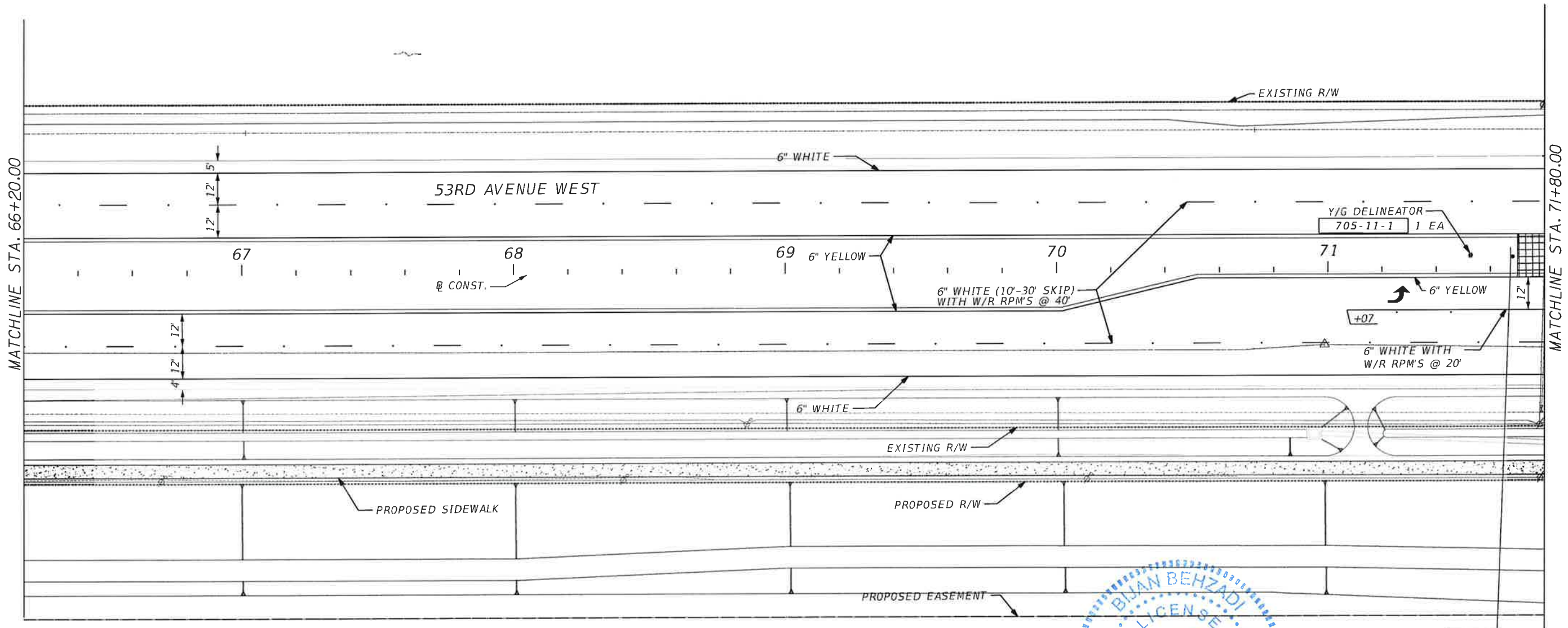
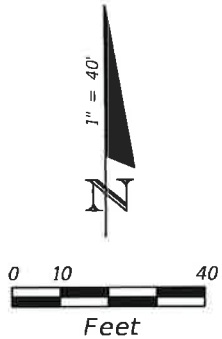


66th St W  
NEXT SIGNAL

SIGN A  
8'6" x 3'6"  
700-2-13 1 AS  
STA. 64+90



|     |           |      |    |                   |                                                                                       |                                                                                                                                       |                        |                                                                                       |                                |                                                                 |                                          |                     |
|-----|-----------|------|----|-------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------|------------------------------------------|---------------------|
|     |           |      |    | SCALE<br>AS NOTED |  | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE<br>11/7/2014      |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER<br>BIJAN<br>BEHZADI<br>FL. LICENSE NO.<br>43868 | SIGNING AND PAVEMENT<br>MARKING PLAN (3) | SHEET<br>NO.<br>S-7 |
|     |           |      |    | DESIGNED BY<br>EL |                                                                                       |                                                                                                                                       |                        |                                                                                       |                                |                                                                 |                                          |                     |
|     |           |      |    | DRAWN BY<br>EL    |                                                                                       |                                                                                                                                       |                        |                                                                                       |                                |                                                                 |                                          |                     |
|     |           |      |    | CHECKED BY<br>BB  |                                                                                       |                                                                                                                                       |                        |                                                                                       |                                |                                                                 |                                          |                     |
| No. | REVISIONS | DATE | BY |                   |                                                                                       |                                                                                                                                       | PROJECT NO.<br>6082960 |                                                                                       |                                |                                                                 |                                          |                     |

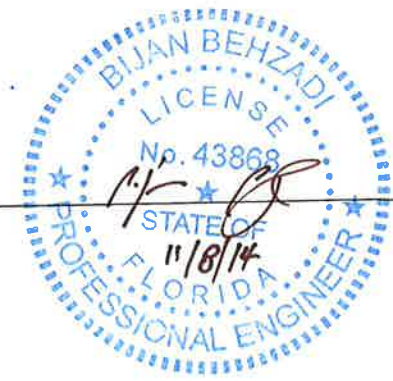
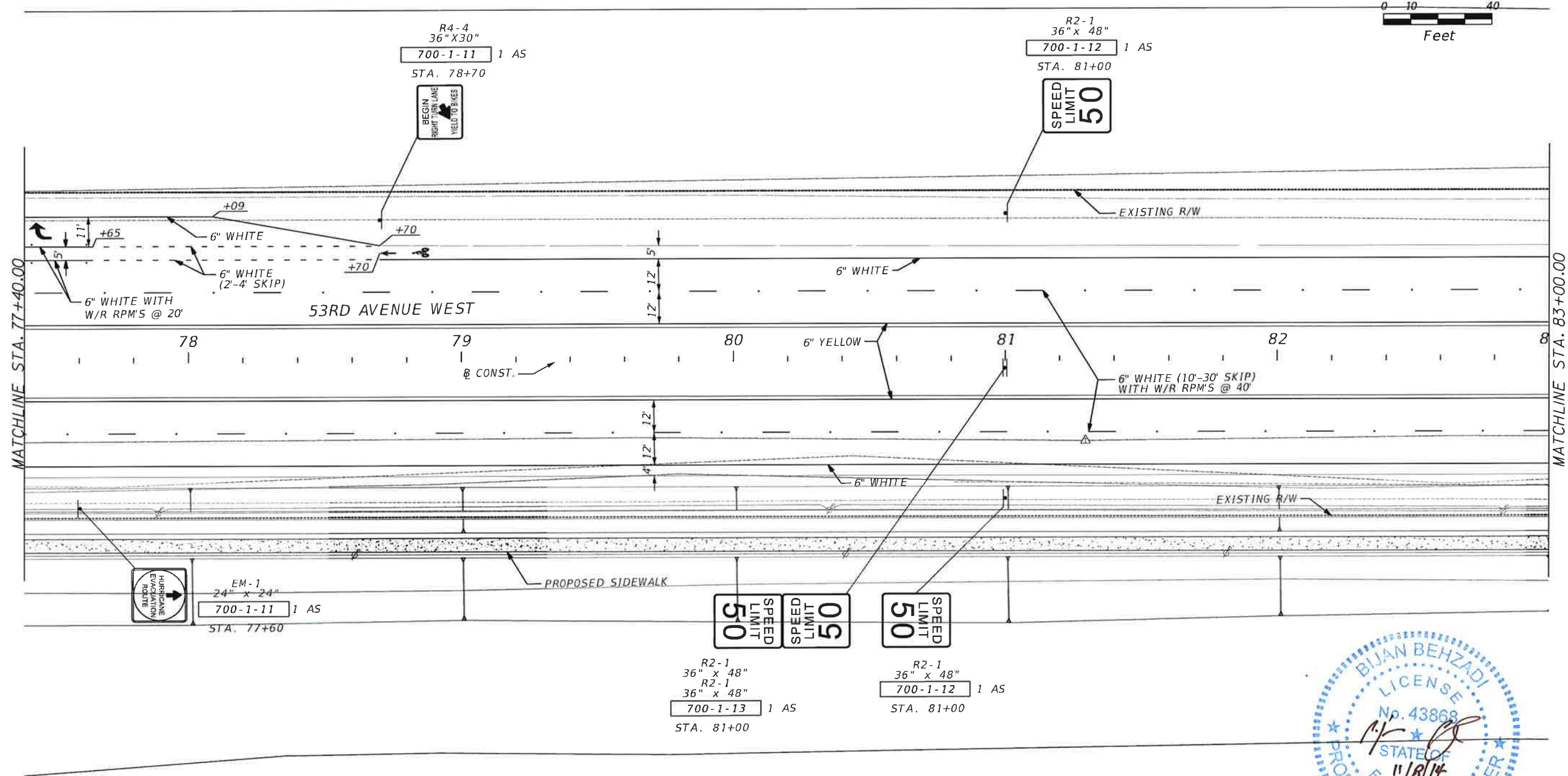
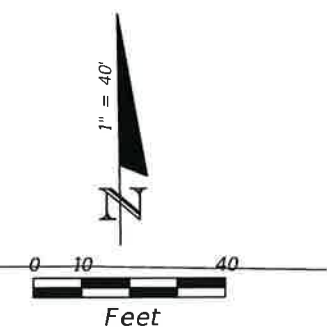


FTP-65-06  
36" x 18"  
700-1-11 1 AS  
STA. 71+68

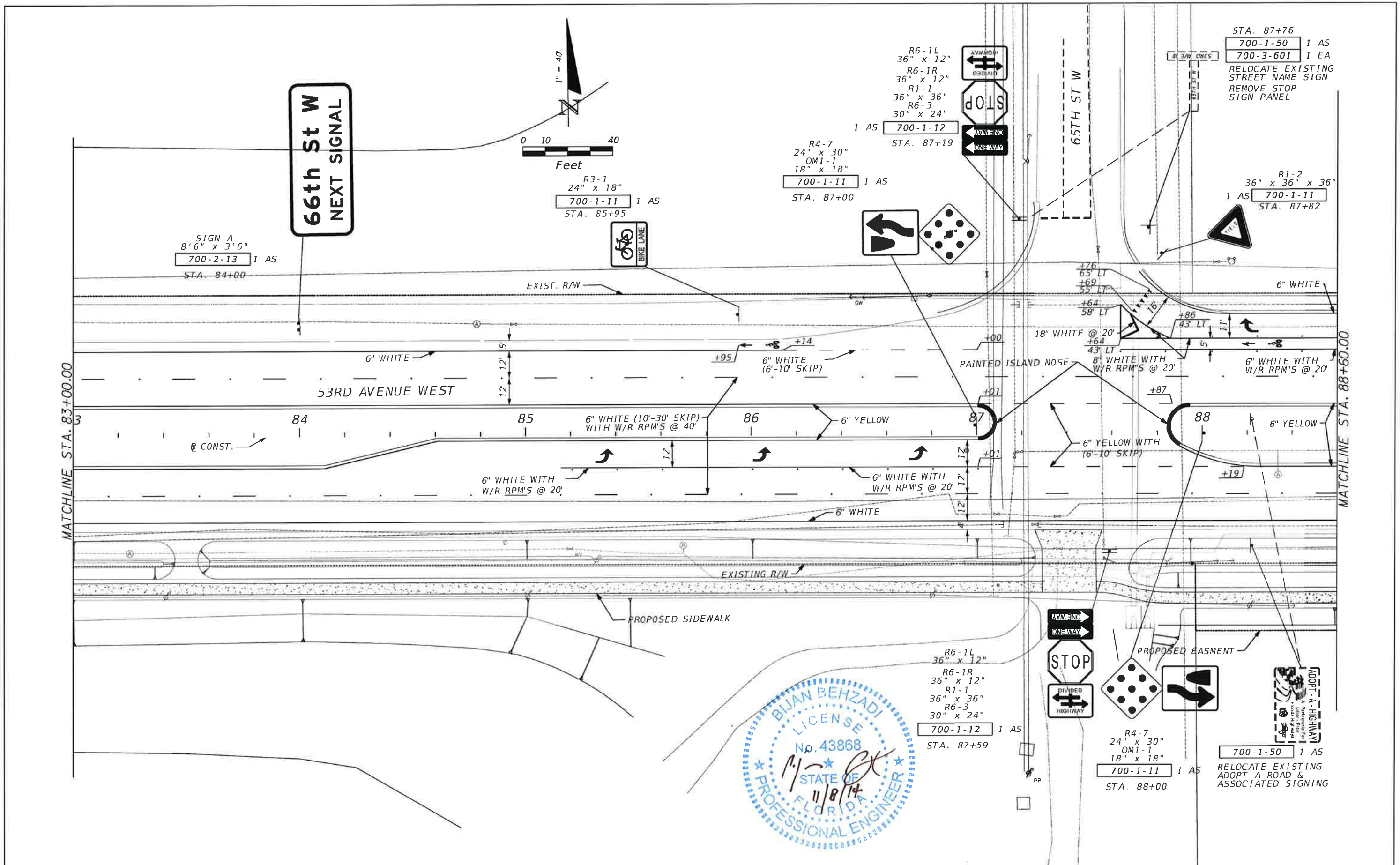
OFFICIAL  
USE ONLY

|     |           |  |      |                   |                                                                                       |                                                                                                                                       |                        |                                                                                       |                                |                                     |                                          |                     |  |  |
|-----|-----------|--|------|-------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------------|--------------------------------|-------------------------------------|------------------------------------------|---------------------|--|--|
|     |           |  |      | SCALE<br>AS NOTED |  | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE<br>11/7/2014      |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER<br>BIJAN<br>BEHZADI | SIGNING AND PAVEMENT<br>MARKING PLAN (4) | SHEET<br>NO.<br>S-8 |  |  |
|     |           |  |      | DESIGNED BY<br>EL |                                                                                       |                                                                                                                                       | PROJECT NO.<br>6082960 |                                                                                       |                                | FL. LICENSE NO.<br>43868            |                                          |                     |  |  |
|     |           |  |      | DRAWN BY<br>EL    |                                                                                       |                                                                                                                                       |                        |                                                                                       |                                |                                     |                                          |                     |  |  |
|     |           |  |      | CHECKED BY<br>BB  |                                                                                       |                                                                                                                                       |                        |                                                                                       |                                |                                     |                                          |                     |  |  |
| No. | REVISIONS |  | DATE | BY                |                                                                                       |                                                                                                                                       |                        |                                                                                       |                                |                                     |                                          |                     |  |  |

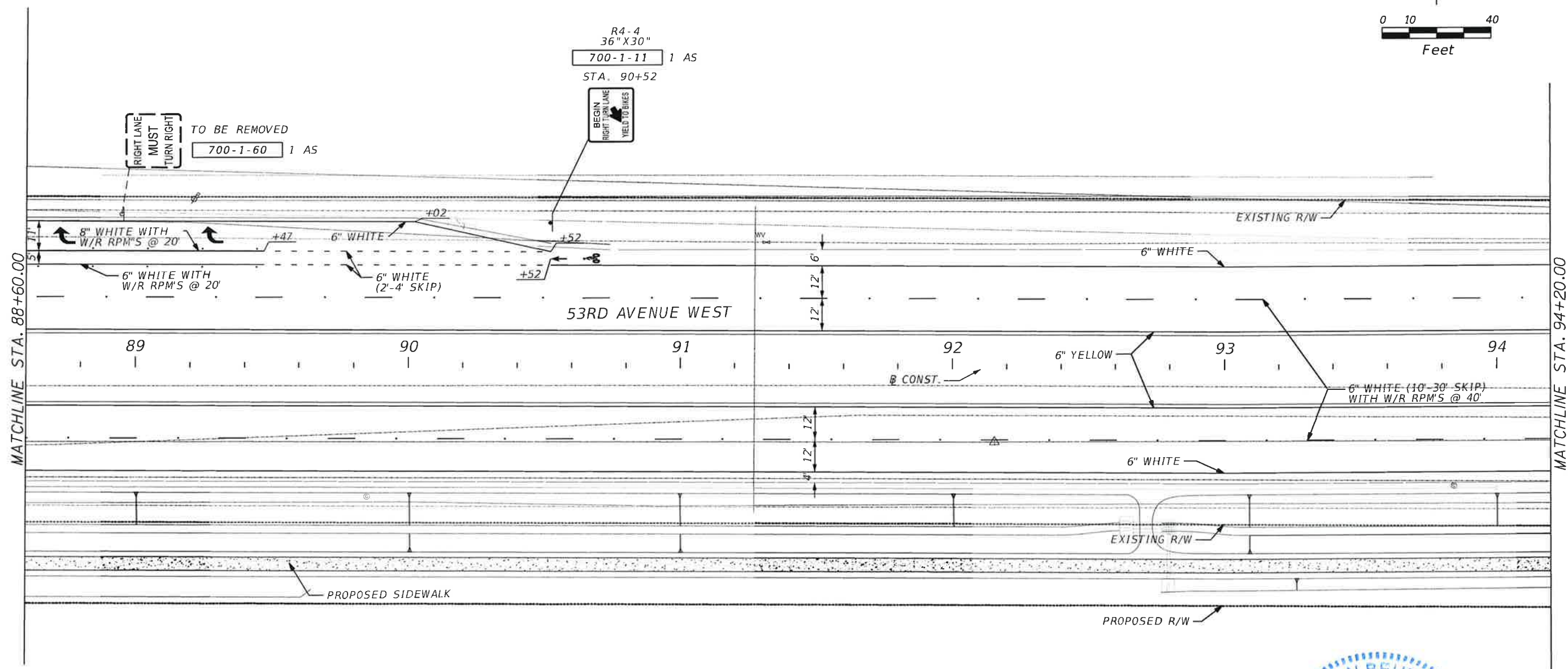
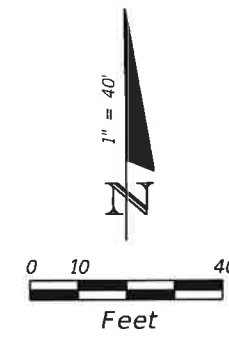




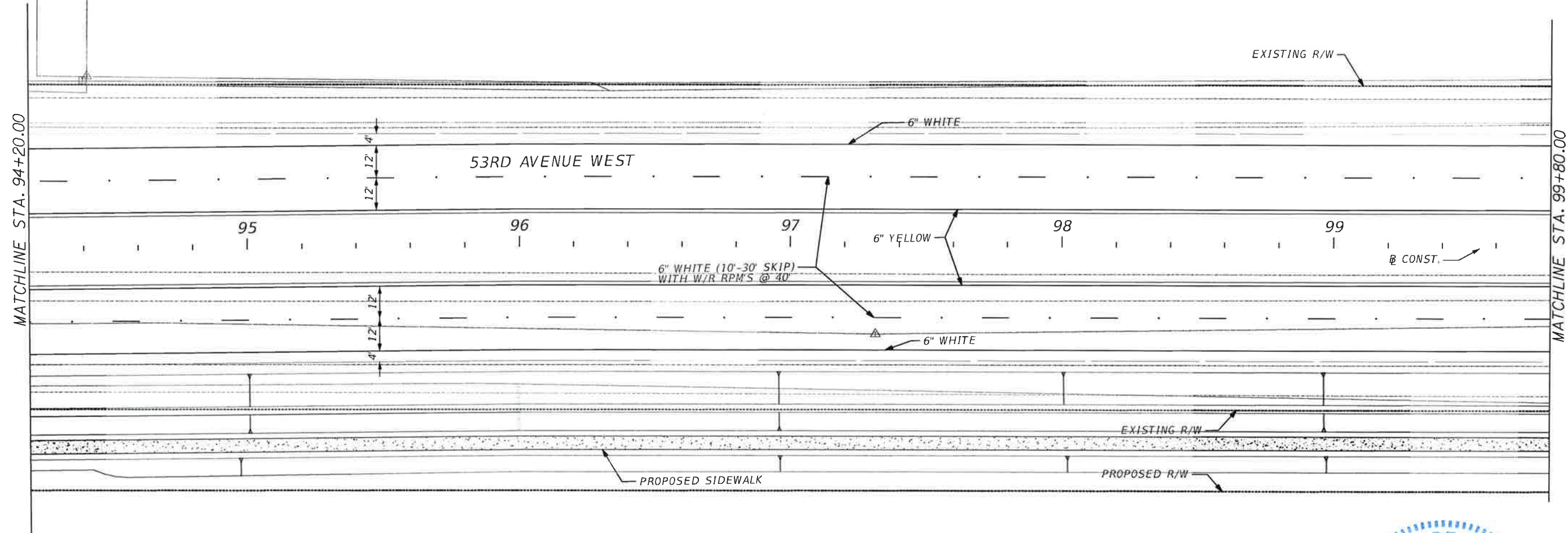
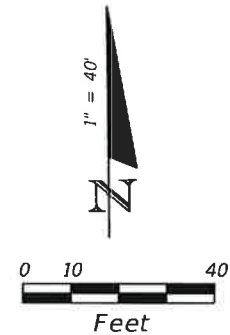
|     |           |      |    |                   |                                                                                                                                                                                                                             |                        |                                                                                                                      |                                  |                                                  |           |
|-----|-----------|------|----|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------|-----------|
|     |           |      |    | SCALE<br>AS NOTED |  HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE<br>11/7/2014      |  MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER<br>BIJAN BEHZADI | <b>SIGNING AND PAVEMENT<br/>MARKING PLAN (6)</b> | SHEET NO. |
|     |           |      |    | DESIGNED BY<br>EL |                                                                                                                                                                                                                             | PROJECT NO.<br>6082960 |                                                                                                                      | FL. LICENSE NO.<br>43868         |                                                  | S-10      |
|     |           |      |    | DRAWN BY<br>EL    |                                                                                                                                                                                                                             |                        |                                                                                                                      |                                  |                                                  |           |
|     |           |      |    | CHECKED BY<br>BB  |                                                                                                                                                                                                                             |                        |                                                                                                                      |                                  |                                                  |           |
| No. | REVISIONS | DATE | BY |                   |                                                                                                                                                                                                                             |                        |                                                                                                                      |                                  |                                                  |           |



|     |           |  |  |             |          |                                                                                       |                                                                                                                                       |             |           |                                                                                       |                                |                 |                  |                                          |              |
|-----|-----------|--|--|-------------|----------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|---------------------------------------------------------------------------------------|--------------------------------|-----------------|------------------|------------------------------------------|--------------|
|     |           |  |  | SCALE       | AS NOTED |  | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE        | 11/7/2014 |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER | BIJAN<br>BEHZADI | SIGNING AND PAVEMENT<br>MARKING PLAN (7) | SHEET<br>NO. |
|     |           |  |  | DESIGNED BY | EL       |                                                                                       |                                                                                                                                       | PROJECT NO. | 6082960   |                                                                                       |                                | FL. LICENSE NO. | 43868            |                                          | S-II         |
|     |           |  |  | DRAWN BY    | EL       |                                                                                       |                                                                                                                                       |             |           |                                                                                       |                                |                 |                  |                                          |              |
|     |           |  |  | CHECKED BY  | BB       |                                                                                       |                                                                                                                                       |             |           |                                                                                       |                                |                 |                  |                                          |              |
| No. | REVISIONS |  |  | DATE        | BY       |                                                                                       |                                                                                                                                       |             |           |                                                                                       |                                |                 |                  |                                          |              |



|     |           |  |  |             |          |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                |                  |                                          |              |      |
|-----|-----------|--|--|-------------|----------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------|--------------------------------|------------------|------------------------------------------|--------------|------|
|     |           |  |  | SCALE       | AS NOTED |  | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE<br>11/7/2014 |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER  | SIGNING AND PAVEMENT<br>MARKING PLAN (8) | SHEET<br>NO. |      |
|     |           |  |  | DESIGNED BY | EL       |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                | BIJAN<br>BEHZADI |                                          |              | S-12 |
|     |           |  |  | DRAWN BY    | EL       |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                | FL. LICENSE NO.  |                                          |              |      |
|     |           |  |  | CHECKED BY  |          |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                | 43868            |                                          |              |      |
| No. | REVISIONS |  |  | DATE        | BY       |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                |                  |                                          |              |      |



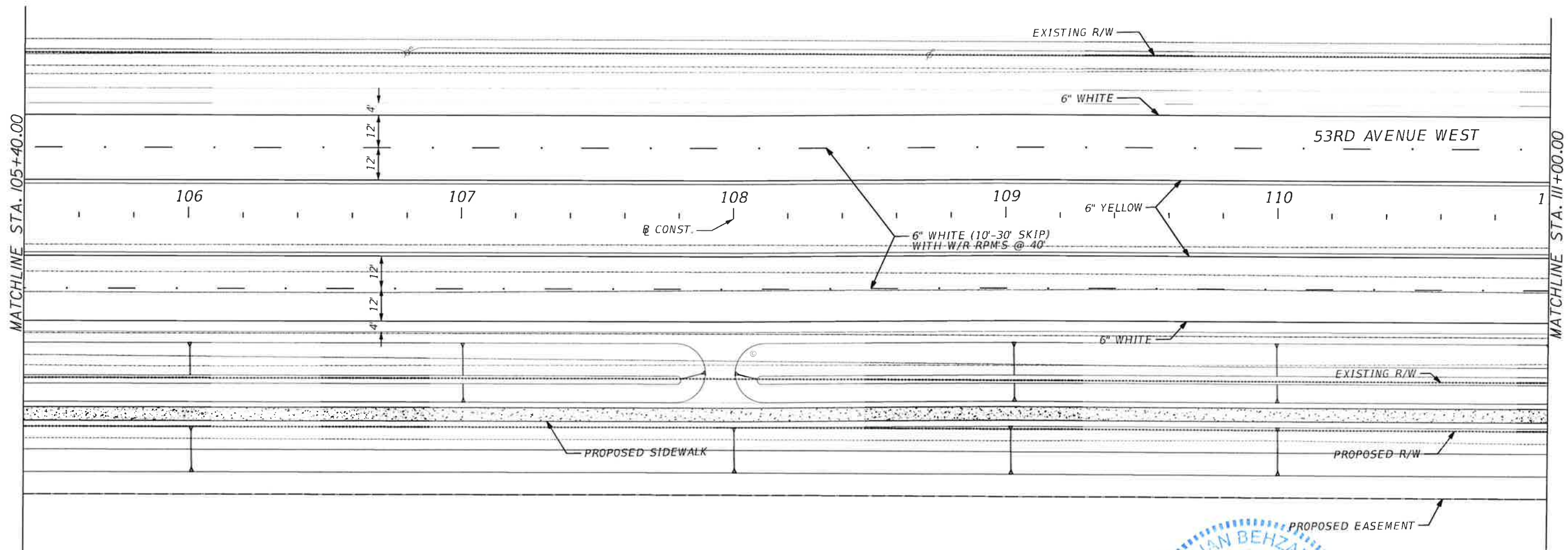
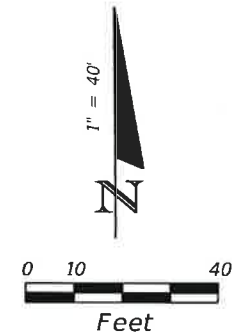
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|     |           |      |    | SCALE             |  <div>HDR Engineering, Inc.<br/>2601 Cattlemen Road<br/>Suite 400<br/>Sarasota, FL 34232-6233<br/>FBPR Certificate of<br/>Authorization No. 4213</div> | DATE                   |  <div>MANATEE COUNTY<br/>PUBLIC WORKS</div> | DESIGN ENGINEER          | <b>SIGNING AND PAVEMENT<br/>MARKING PLAN (9)</b> | SHEET<br>NO.<br><br>S-13 |
|     |           |      |    | AS NOTED          |                                                                                                                                                                                                                                             | 11/7/2014              |                                                                                                                                  | BIJAN<br>BEHZADI         |                                                  |                          |
|     |           |      |    | DESIGNED BY<br>EL |                                                                                                                                                                                                                                             | PROJECT NO.<br>6082960 |                                                                                                                                  | FL. LICENSE NO.<br>43868 |                                                  |                          |
|     |           |      |    | DRAWN BY<br>EL    |                                                                                                                                                                                                                                             |                        |                                                                                                                                  |                          |                                                  |                          |
|     |           |      |    | CHECKED BY<br>BB  |                                                                                                                                                                                                                                             |                        |                                                                                                                                  |                          |                                                  |                          |
| No. | REVISIONS | DATE | BY |                   |                                                                                                                                                                                                                                             |                        |                                                                                                                                  |                          |                                                  |                          |

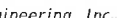
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11/7/2014

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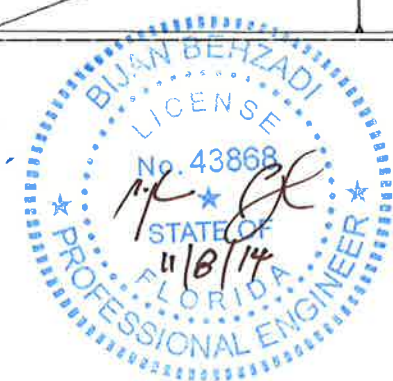
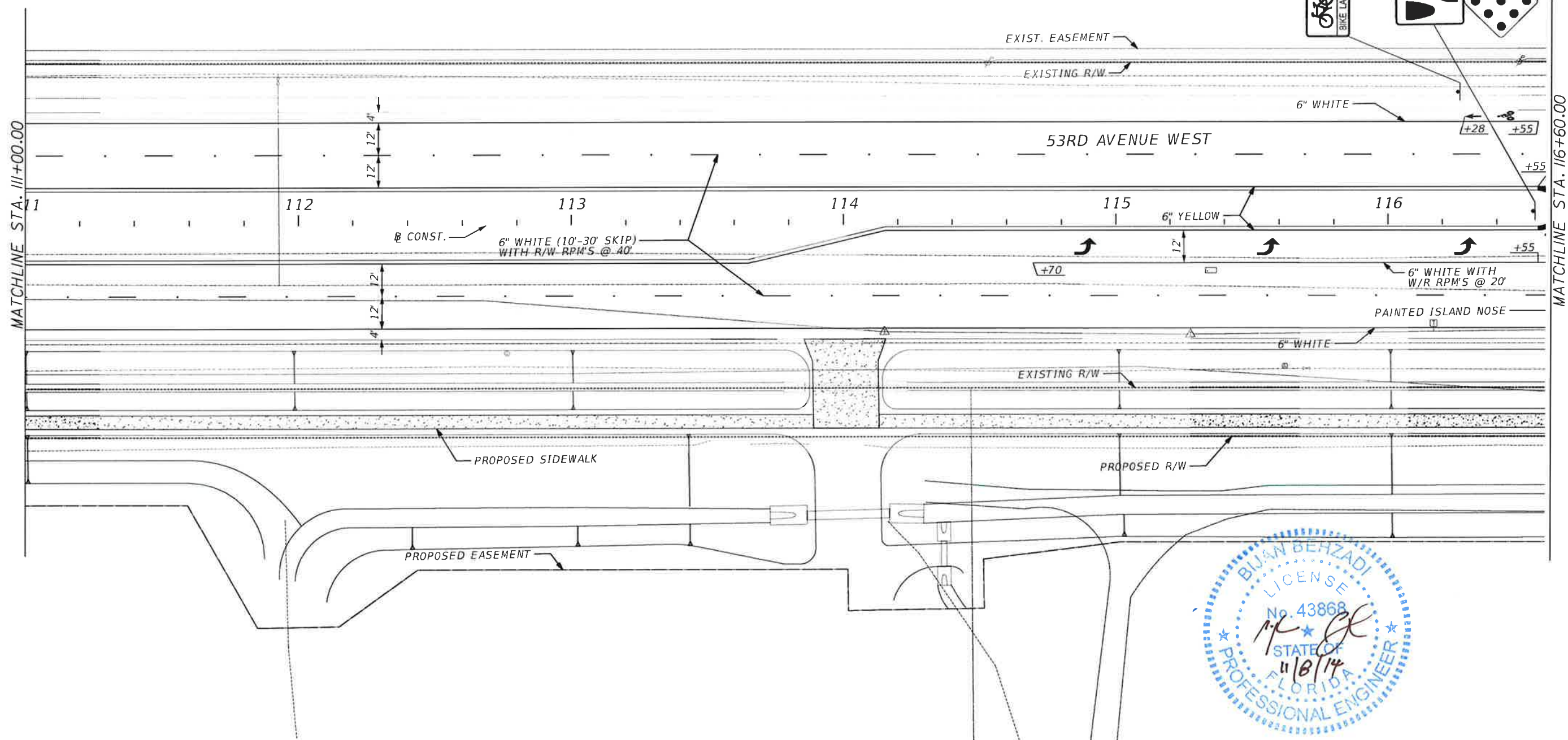


|     |           |  |  |             |          |                                                                                       |                                                                                                                                       |                        |                          |                                                                                       |                                |                 |                  |                                                   |              |
|-----|-----------|--|--|-------------|----------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------|---------------------------------------------------------------------------------------|--------------------------------|-----------------|------------------|---------------------------------------------------|--------------|
|     |           |  |  | SCALE       | AS NOTED |  | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE                   | 11/7/2014                |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER | BIJAN<br>BEHZADI | <b>SIGNING AND PAVEMENT<br/>MARKING PLAN (II)</b> | SHEET<br>NO. |
|     |           |  |  | DESIGNED BY | EL       |                                                                                       |                                                                                                                                       | PROJECT NO.<br>6082960 | FL. LICENSE NO.<br>43868 |                                                                                       |                                |                 |                  |                                                   |              |
|     |           |  |  | DRAWN BY    | EL       |                                                                                       |                                                                                                                                       |                        |                          |                                                                                       |                                |                 |                  |                                                   |              |
|     |           |  |  | CHECKED BY  | BB       |                                                                                       |                                                                                                                                       |                        |                          |                                                                                       |                                |                 |                  |                                                   |              |
| No. | REVISIONS |  |  | DATE        | BY       |                                                                                       |                                                                                                                                       |                        |                          |                                                                                       |                                |                 |                  |                                                   |              |

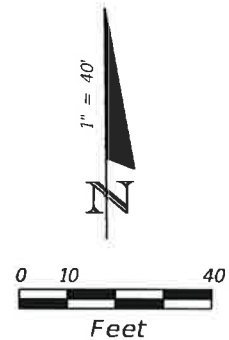
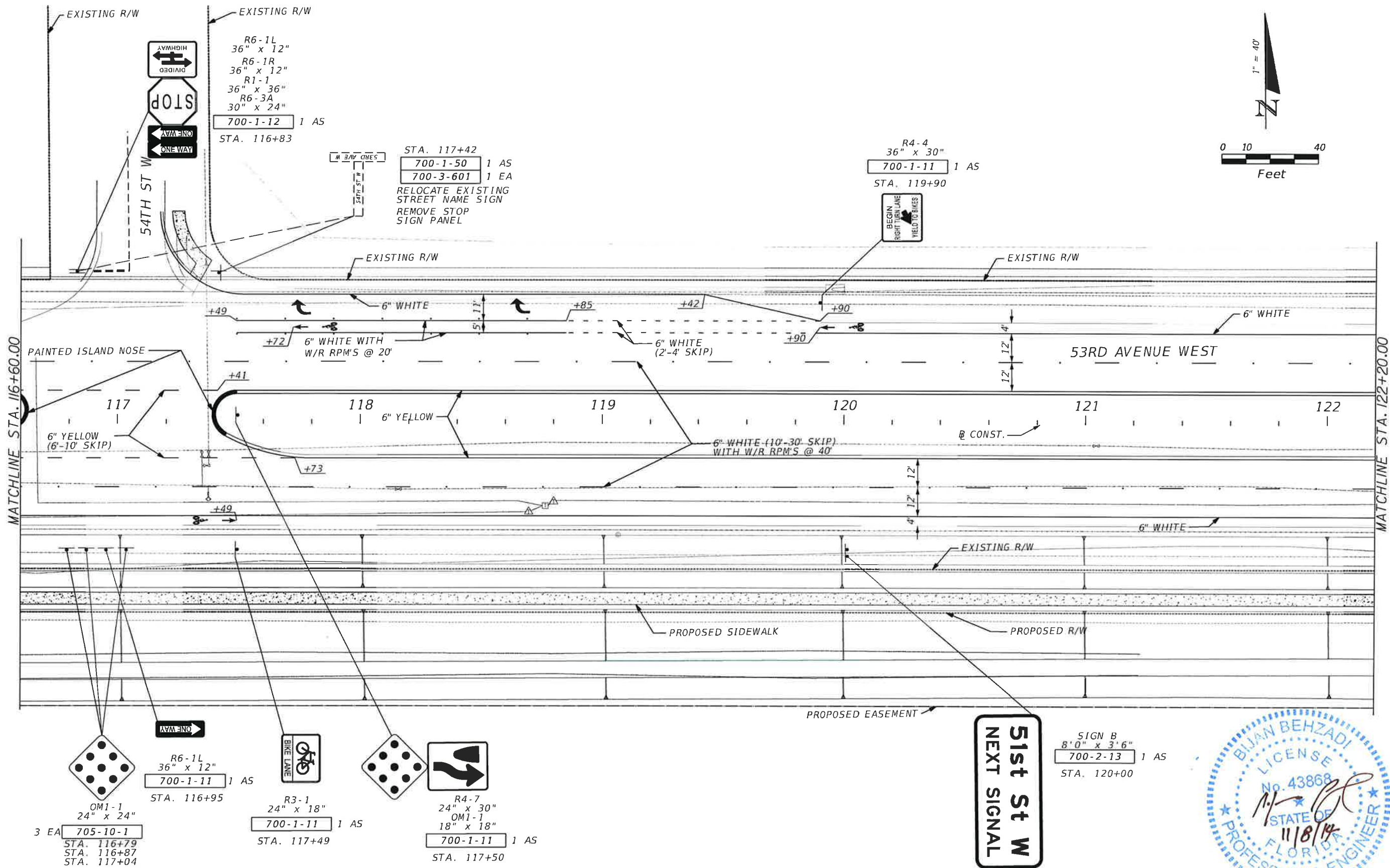


R4-7  
24" x 30"  
OM1-1  
18" x 18"  
1 AS 700-1-11  
STA. 116+53

R3-1  
24" x 18"  
700-1-11 1 AS  
STA. 116+28



|     |           |  |  |             |          |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                |                  |                          |
|-----|-----------|--|--|-------------|----------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------|--------------------------------|------------------|--------------------------|
|     |           |  |  | SCALE       | AS NOTED |  | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE<br>11/7/2014 |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER  | SHEET<br>NO.<br><br>S-16 |
|     |           |  |  | DESIGNED BY | EL       |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                | BIJAN<br>BEHZADI |                          |
|     |           |  |  | DRAWN BY    | EL       |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                | FL LICENSE NO.   |                          |
|     |           |  |  | CHECKED BY  | BB       |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                | 43868            |                          |
| No. | REVISIONS |  |  | DATE        | BY       | SIGNING AND PAVEMENT<br>MARKING PLAN (12)                                             |                                                                                                                                       |                   |                                                                                       |                                |                  |                          |



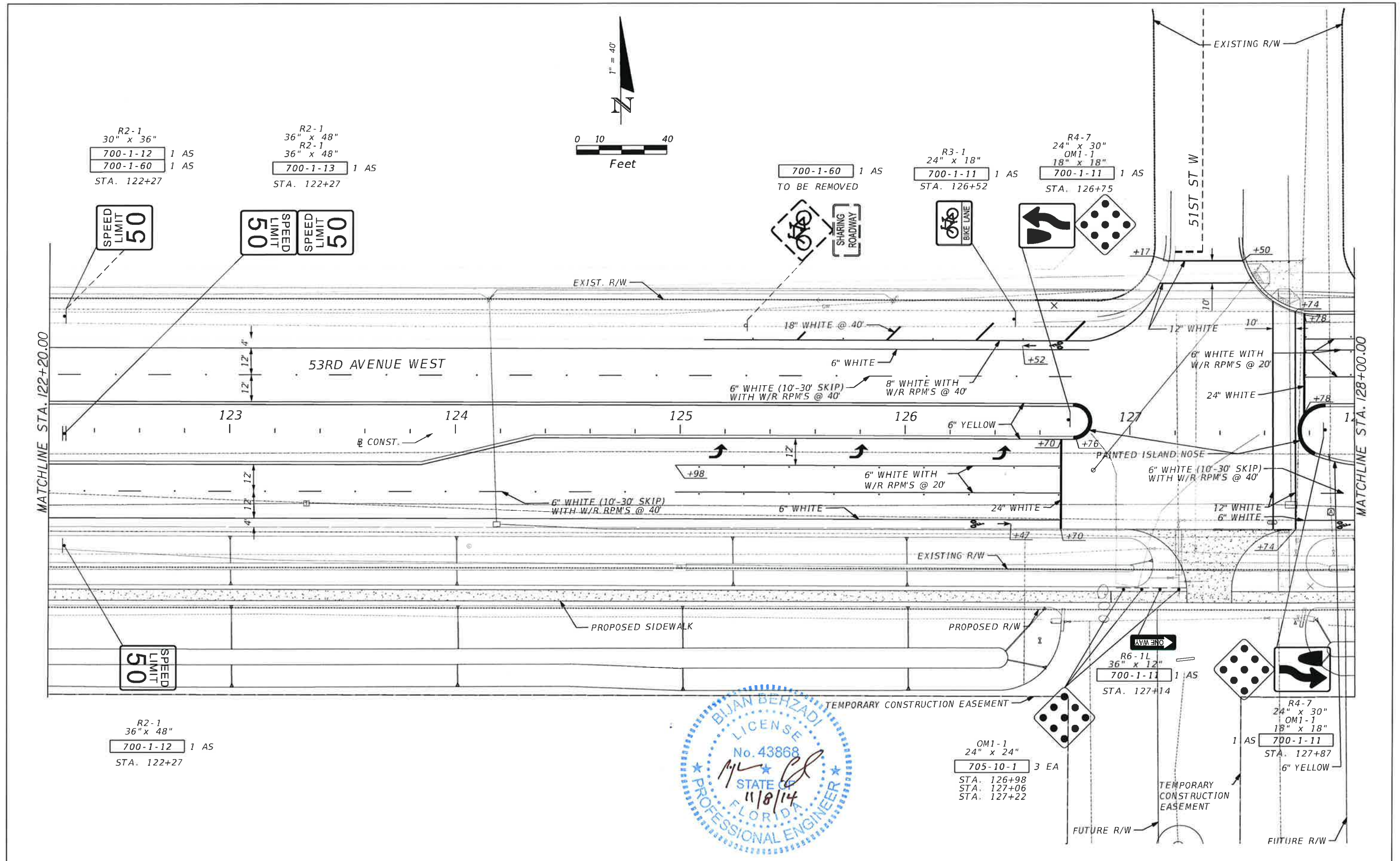
**Legend:**  
 R6-1L 36" x 12" 1 AS  
 700-1-11 STA. 116+95  
 OM1-1 24" x 24" 3 EA  
 705-10-1 STA. 116+79  
 STA. 116+87  
 STA. 117+04  
 R3-1 24" x 18" 1 AS  
 700-1-11 STA. 117+49  
 R4-7 24" x 30" 1 AS  
 OM1-1 18" x 18" 1 AS  
 700-1-11 STA. 117+50

**Sist St W**  
**NEXT SIGNAL**

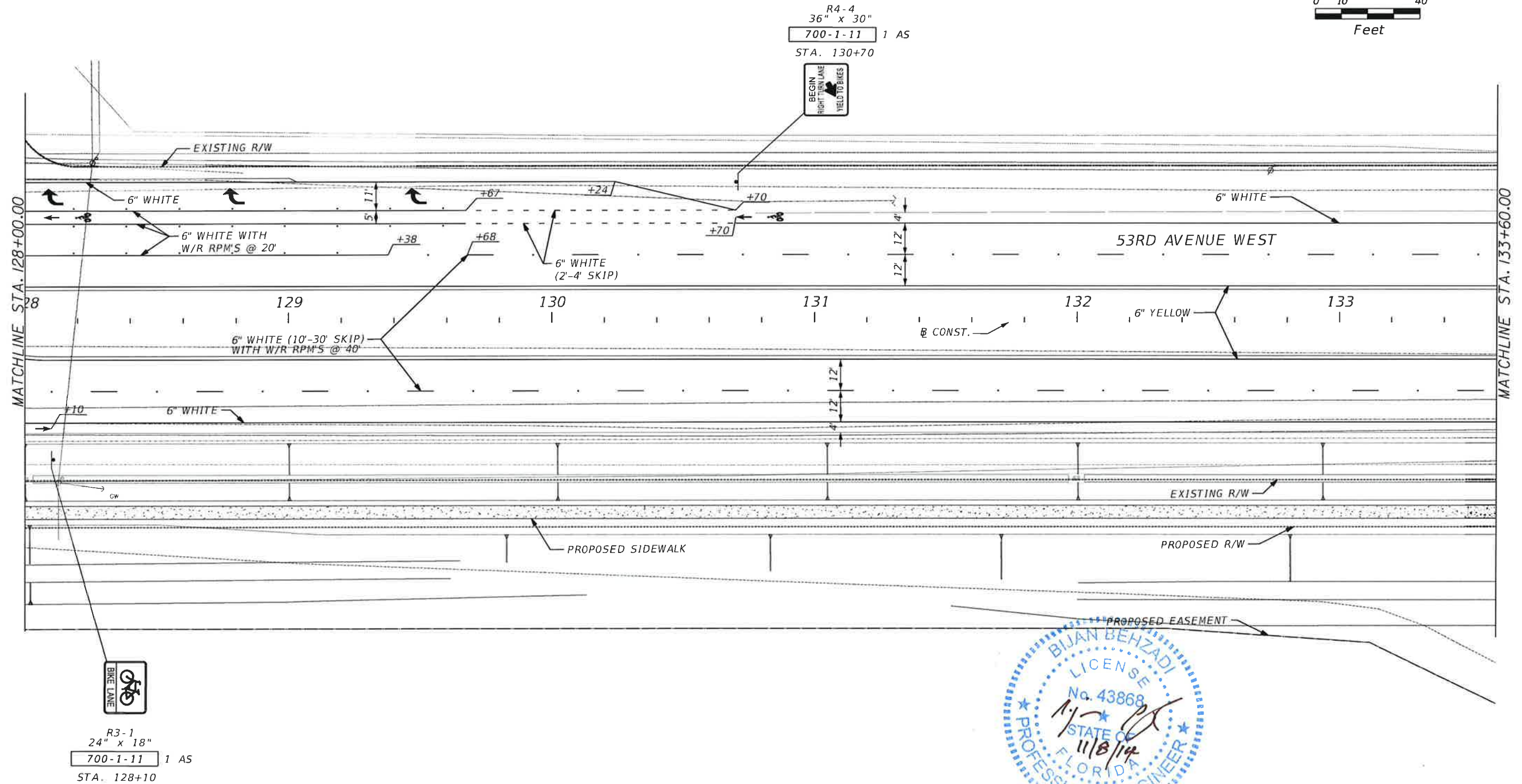
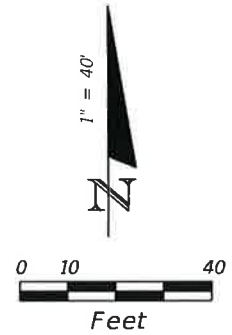
SIGN B  
 8'0" x 3'6"  
 700-2-13 1 AS  
 STA. 120+00



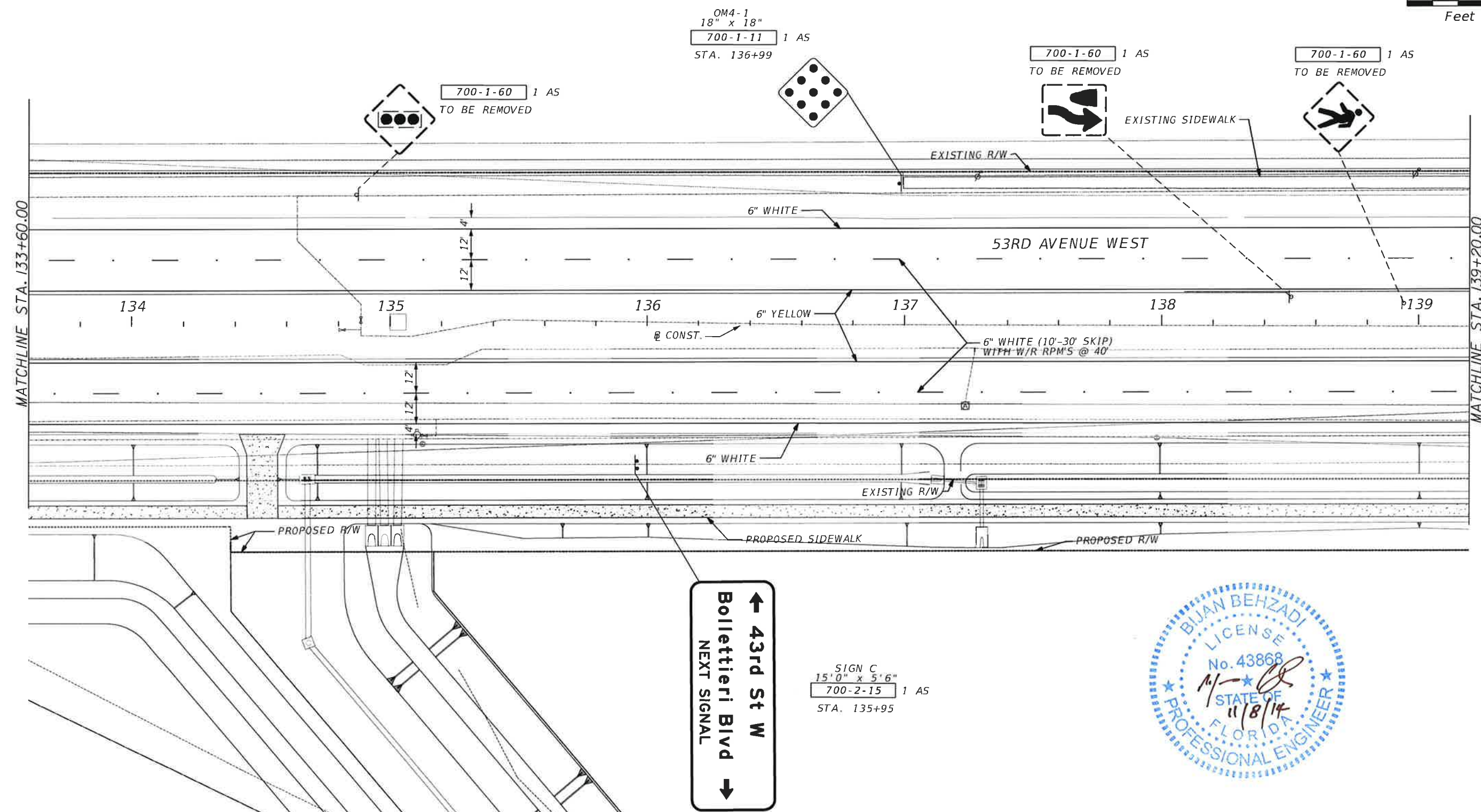
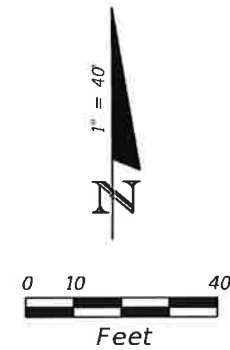
|                                                                  |           |      |    |                                                                                                                                       |  |                                             |                                    |                                                              |                                                            |                   |
|------------------------------------------------------------------|-----------|------|----|---------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------|------------------------------------|--------------------------------------------------------------|------------------------------------------------------------|-------------------|
| SCALE AS NOTED<br>DESIGNED BY EL<br>DRAWN BY EL<br>CHECKED BY BB |           |      |    | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 |  | DATE<br>11/7/2014<br>PROJECT NO.<br>6082960 | <br>MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER<br>BIJAN BEHZADI<br>FL. LICENSE NO.<br>43868 | <b>SIGNING AND PAVEMENT<br/>         MARKING PLAN (13)</b> | SHEET NO.<br>S-17 |
| No.                                                              | REVISIONS | DATE | BY |                                                                                                                                       |  |                                             |                                    |                                                              |                                                            |                   |



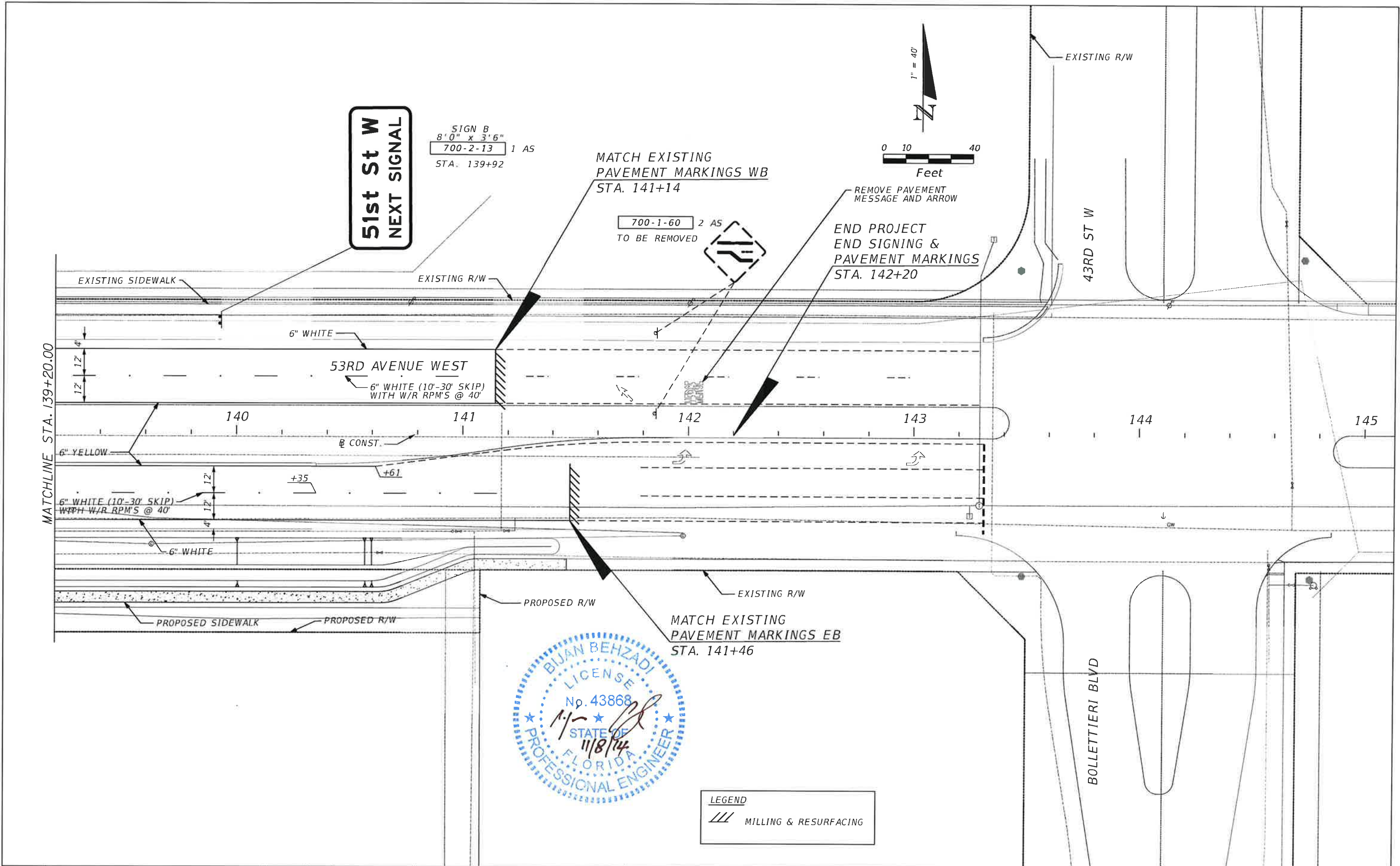
|     |           |  |  |             |          |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                |                  |                                           |                          |
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|     |           |  |  | SCALE       | AS NOTED |  | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE<br>11/7/2014 |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER  | SIGNING AND PAVEMENT<br>MARKING PLAN (14) | SHEET<br>NO.<br><br>S-18 |
|     |           |  |  | DESIGNED BY | EL       |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                | BIJAN<br>BEHZADI |                                           |                          |
|     |           |  |  | DRAWN BY    | EL       |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                | FL. LICENSE NO.  |                                           |                          |
|     |           |  |  | CHECKED BY  | BB       |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                | 43868            |                                           |                          |
| No. | REVISIONS |  |  | DATE        | BY       |                                                                                       |                                                                                                                                       |                   |                                                                                       |                                |                  |                                           |                          |



|     |           |      |    |             |          |                                                                                       |                                                                                                                                       |                 |           |                                                                                       |                                |                  |                                                          |                          |
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|     |           |      |    | SCALE       | AS NOTED |  | HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE            | 11/7/2014 |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER  | <i><b>SIGNING AND PAVEMENT<br/>MARKING PLAN (15)</b></i> | SHEET<br>NO.<br><br>S-19 |
|     |           |      |    | DESIGNED BY | EL       |                                                                                       |                                                                                                                                       |                 |           |                                                                                       |                                | BIJAN<br>BEHZADI |                                                          |                          |
|     |           |      |    | DRAWN BY    | EL       |                                                                                       |                                                                                                                                       | FL. LICENSE NO. |           |                                                                                       |                                |                  |                                                          |                          |
|     |           |      |    | CHECKED BY  | BB       |                                                                                       |                                                                                                                                       | 43868           |           |                                                                                       |                                |                  |                                                          |                          |
| No. | REVISIONS | DATE | BY |             |          |                                                                                       |                                                                                                                                       |                 |           |                                                                                       |                                |                  |                                                          |                          |



|     |           |      |    |                                                                  |                                                                                                                                                                                                                             |                                       |                                                                                       |                                |                                                           |                                           |                   |
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| No. | REVISIONS | DATE | BY | SCALE AS NOTED<br>DESIGNED BY EL<br>DRAWN BY EL<br>CHECKED BY BB |  HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE 11/7/2014<br>PROJECT NO. 6082960 |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER<br>BIJAN BEHZADI<br>FL. LICENSE NO. 43868 | SIGNING AND PAVEMENT<br>MARKING PLAN (16) | SHEET NO.<br>S-20 |
|-----|-----------|------|----|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------|-------------------------------------------|-------------------|



| LEGEND |                       |
|--------|-----------------------|
|        | MILLING & RESURFACING |

| SCALE AS NOTED |           |      |    |
|----------------|-----------|------|----|
| DESIGNED BY    | EL        |      |    |
| DRAWN BY       | EL        |      |    |
| CHECKED BY     | BB        |      |    |
| No.            | REVISIONS | DATE | BY |



HDR Engineering, Inc.  
2601 Cattlemen Road  
Suite 400  
Sarasota, FL 34232-6233  
FBPR Certificate of  
Authorization No. 4213

DATE  
11/7/2014  
PROJECT NO.  
6082960



MANATEE COUNTY  
PUBLIC WORKS

DESIGN ENGINEER  
BIJAN BEHZADI  
FL. LICENSE NO.  
43868

**SIGNING AND PAVEMENT  
MARKING PLAN (17)**

SHEET NO.  
S-21

Diagram of a rectangular traffic sign with the following dimensions and mounting offsets:

- Sign Dimensions:
  - Width: 8'-6"
  - Height: 3'-6"
- Text on Sign:
  - 66th St W
  - NEXT SIGNAL
- Mounting Offsets (from sign center to mounting points):
  - Top: 9"
  - Bottom: 7.3"
  - Left: 7.55"
  - Right: 7.55"
  - Overall Mounting Width: 86.9"
  - Overall Mounting Height: 10.7"EM

[illegible]

Technical drawing of a rectangular traffic sign with dimensions and mounting hardware. The sign is white with a black border and contains the following text: **← 43rd St W**, **Bollettieri Blvd**, and **NEXT SIGNAL** with a right-pointing arrow. The drawing includes dimensions for the sign itself and the mounting hardware.

**Sign Dimensions:**

- Overall Width: 15'-0"
- Overall Height: 33"
- Top Mounting Flange: 9"
- Bottom Mounting Flange: 9"
- Left Mounting Flange: 9"
- Right Mounting Flange: 9"
- Top Mounting Hole Spacing: 10.7" EM
- Bottom Mounting Hole Spacing: 10.7" EM
- Left Mounting Hole Spacing: 10.7" EM
- Right Mounting Hole Spacing: 10.7" EM
- Top Mounting Hole Diameter: 9.1"
- Bottom Mounting Hole Diameter: 9.1"
- Left Mounting Hole Diameter: 9.1"
- Right Mounting Hole Diameter: 9.1"

**Sign Content:**

- Top Line: **← 43rd St W**
- Middle Line: **Bollettieri Blvd**
- Bottom Line: **NEXT SIGNAL** with a right-pointing arrow.

| NO. OF LIGHT FIXTURES | FIXTURE SPACING | PHOTOMETRIC CURVE | WATT | VOLTAGE |
|-----------------------|-----------------|-------------------|------|---------|
|                       |                 |                   |      |         |

[illegible]

Diagram of a rectangular traffic sign with the following dimensions and mounting details:

- Overall width: 8'-0"
- Overall height: 3'-6"
- Sign text: **51st St W**  
**NEXT SIGNAL**
- Mounting arm length: 10.7" EM
- Sign face width: 81.1"
- Sign face height: 7'-3"
- Mounting bracket width: 7.45"
- Mounting bracket height: 9"
- Mounting bracket offset: 7"
- Mounting bracket offset: 8" E
- Mounting bracket offset: 7.3"

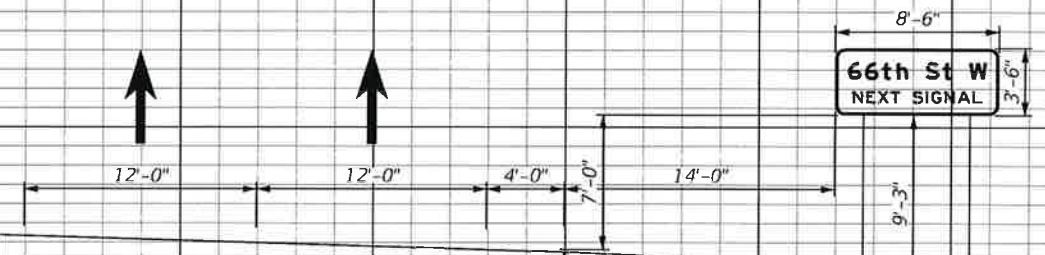
[illegible][illegible]

|     |           |      |    |                   |                                                                                                                                                                                                                             |                        |                                                                                                                      |                                  |                         |                       |
|-----|-----------|------|----|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------|-----------------------|
|     |           |      |    | SCALE<br>AS NOTED |  HDR Engineering, Inc.<br>2601 Cattlemen Road<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE<br>11/7/2014      |  MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER<br>BIJAN BEHZADI | GUIDE SIGN<br>WORKSHEET | SHEET NO.<br><br>S-22 |
|     |           |      |    | DRAWN BY<br>EL    |                                                                                                                                                                                                                             | PROJECT NO.<br>6082960 |                                                                                                                      | FL. LICENSE NO.<br>43868         |                         |                       |
|     |           |      |    | CHECKED BY<br>BB  |                                                                                                                                                                                                                             |                        |                                                                                                                      |                                  |                         |                       |
| No. | REVISIONS | DATE | BY |                   |                                                                                                                                                                                                                             |                        |                                                                                                                      |                                  |                         |                       |



MULTIPOST SIGN A  
STA. 64+90  
CONST. 53RD AVE.  
LOOKING WEST

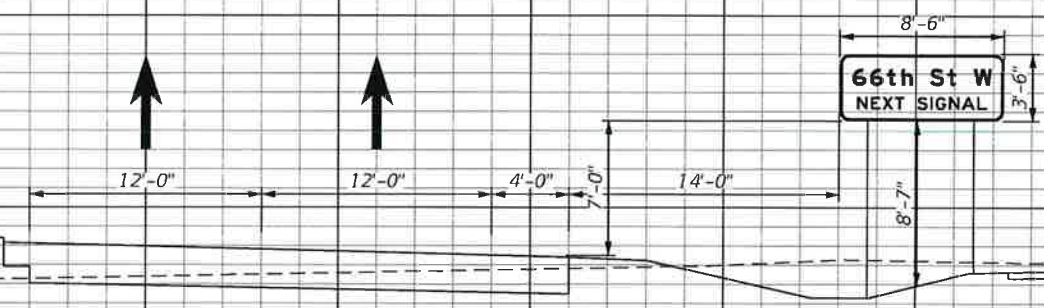
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16  
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10

MULTIPOST SIGN A  
STA. 84+00  
CONST. 53RD AVE.  
LOOKING WEST

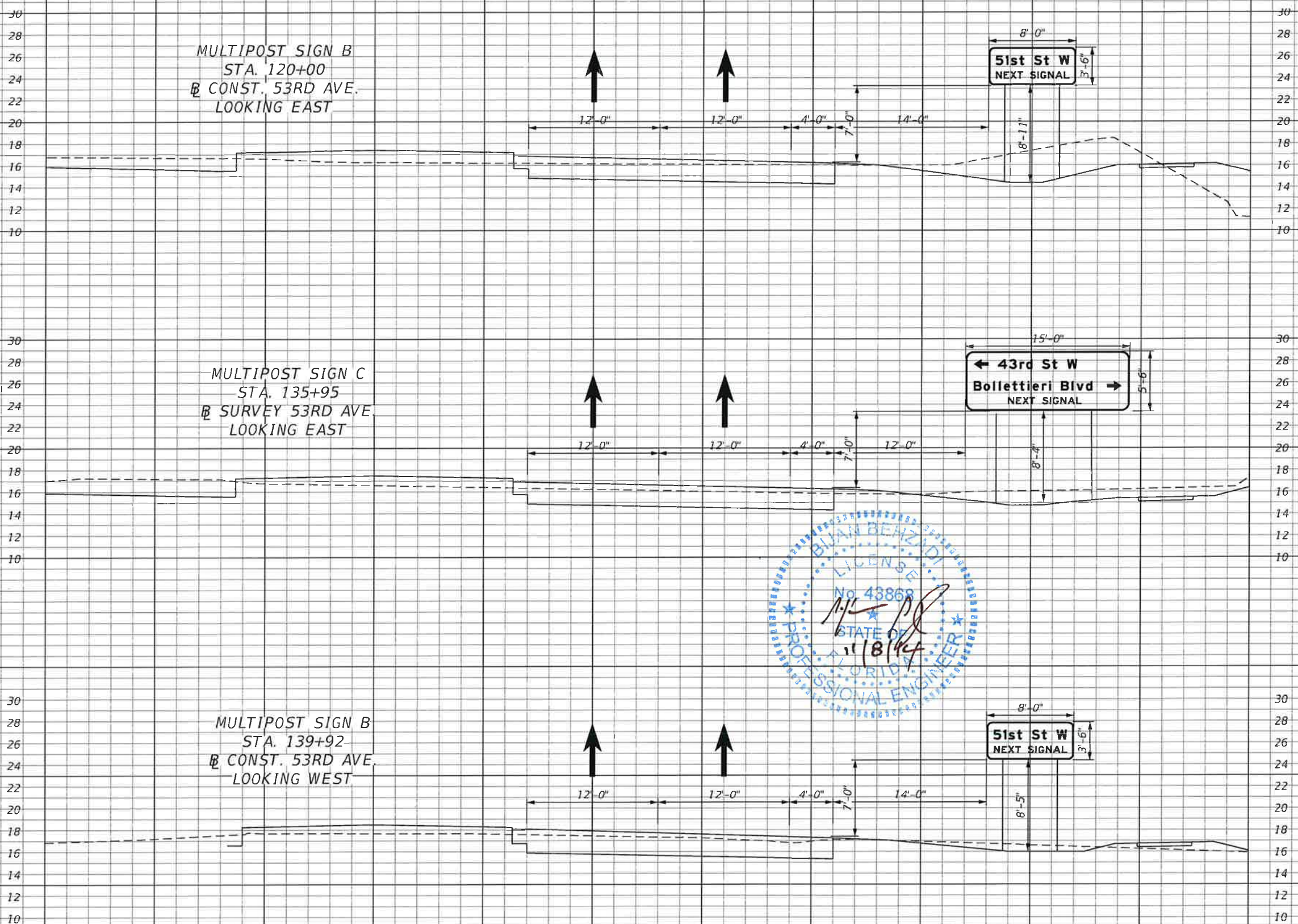
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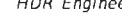
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SCALE:  
1" = 10' HORIZONTAL  
1" = 10' VERTICAL

|     |           |  |  |             |          |                                                                                       |                                                                                                                                        |             |          |                                                                                       |                                |                 |                  |                     |                          |
|-----|-----------|--|--|-------------|----------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------|----------|---------------------------------------------------------------------------------------|--------------------------------|-----------------|------------------|---------------------|--------------------------|
|     |           |  |  | SCALE       | AS NOTED |  | HDR Engineering, Inc.<br>2601 Cattlemen Road,<br>Suite 400<br>Sarasota, FL 34232-6233<br>FBPR Certificate of<br>Authorization No. 4213 | DATE        | 9/4/2014 |  | MANATEE COUNTY<br>PUBLIC WORKS | DESIGN ENGINEER | BIJAN<br>BEHZADI | SIGN CROSS SECTIONS | SHEET<br>NO.<br><br>S-23 |
|     |           |  |  | DESIGNED BY | EL       |                                                                                       |                                                                                                                                        | PROJECT NO. | 6082960  |                                                                                       |                                | FL LICENSE NO.  | 43868            |                     |                          |
|     |           |  |  | DRAWN BY    | EL       |                                                                                       |                                                                                                                                        |             |          |                                                                                       |                                |                 |                  |                     |                          |
|     |           |  |  | CHECKED BY  | BB       |                                                                                       |                                                                                                                                        |             |          |                                                                                       |                                |                 |                  |                     |                          |
| No. | REVISIONS |  |  | DATE        | BY       |                                                                                       |                                                                                                                                        |             |          |                                                                                       |                                |                 |                  |                     |                          |



SCALE:  
1" = 10' HORIZONTAL  
1" = 10' VERTICAL

|     |           |      |    |  |             |          |                                                                                                                                                                                                                                             |                        |                          |                                                                                                                                  |                 |                  |                                |              |
|-----|-----------|------|----|--|-------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------|--------------------------------|--------------|
|     |           |      |    |  | SCALE       | AS NOTED |  <div>HDR Engineering, Inc.<br/>2601 Cattlemen Road<br/>Suite 400<br/>Sarasota, FL 34232-6233<br/>FBPR Certificate of<br/>Authorization No. 4213</div> | DATE                   | 9/4/2014                 |  <div>MANATEE COUNTY<br/>PUBLIC WORKS</div> | DESIGN ENGINEER | BIJAN<br>BEHZADI | <div>SIGN CROSS SECTIONS</div> | SHEET<br>NO. |
|     |           |      |    |  | DESIGNED BY | EL       |                                                                                                                                                                                                                                             | PROJECT NO.<br>6082960 | FL. LICENSE NO.<br>43868 |                                                                                                                                  |                 | S-24             |                                |              |
|     |           |      |    |  | DRAWN BY    | EL       |                                                                                                                                                                                                                                             |                        |                          |                                                                                                                                  |                 |                  |                                |              |
|     |           |      |    |  | CHECKED BY  | BB       |                                                                                                                                                                                                                                             |                        |                          |                                                                                                                                  |                 |                  |                                |              |
| No. | REVISIONS | DATE | BY |  |             |          |                                                                                                                                                                                                                                             |                        |                          |                                                                                                                                  |                 |                  |                                |              |