THE CITY OF DAYTONA BEACH

DR. MARTIN LUTHER KING, JR. BOULEVARD ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

COMPONENTS OF THE
ROADWAY CONTRACT PLAN SET

PART A-ROADWAY & PEDESTRIAN CONSTRUCTION PLANS

PART B-LIGHTING PLANS

PROJECT NO. 2015-085

PART A

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LOCATION MAP

LENGTH OF PROJECT - 0.269 MILES

Derrick L. Henry-Mayor
Ruth Trager, Commissioner - Zone 1
Aaron Delgado, Commissioner - Zone 2
Kelly White, Commissioner - Zone 3
Robert A. Gilliland - Zone 4
Dannette Henry, Commissioner - Zone 5
Paula R. Reed, Commissioner - Zone 6
James V. Chisholm - City Manager
David Waller, Deputy Public Works Director
Frank VanPelt, Technical Services Director
Jim Nelson, PE, City Engineer
Jo Ann J. Macrina, PE, Deputy Director of Utilities
Michelle Martin, Technical Services Project Manager

REISSUED FOR BIDDING
JANUARY 2019

THE CITY OF DAYTONA BEACH
PUBLIC WORKS
TECHNICAL SERVICES DIVISION

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GOVERNING STANDARDS AND SPECIFICATIONS:

CITY OF DAYTONA BEACH UTILITIES DEPARTMENT STANDARD DETAILS, LATEST EDITION

FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2017 EDITION

MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS, LATEST EDITION

FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS, 2017 EDITION

AMERICAN WATER WORKS ASSOCIATION

AMERICAN NATIONAL STANDARDS INSTITUTE

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (A.A.S.H.T.O.)

SCOTT R. SPOONER, P.E.
No. 23273

DR. MLK, JR. BLVD ROADWAY & PED. IMPROVEMENTS PROJECT

0996-0161

CITY OF DAYTONA BEACH

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SYMBOL LEGEND

- BOLLARD (BO)
- BUSH
- CONCRETE MONUMENT FOUND
- ELECTRIC CABINET (E)
- ELECTRIC FLAG (ELEC)
- ELECTRIC MARKER
- ELECTRIC METER (EM)
- ELECTRIC VAULT (VLT)
- ELM TREE
- FIBER OPTIC MARKER
- FIRE HYDRANT
- GAS BLOW OFF (BLOW-OFF)
- GAS FLAG (GAS)
- GAS MARKER
- GAS VENT (VENT)
- GUY WIRE
- IRON PIPE FOUND
- IRON ROD FOUND
- LEFT TURN ARROW
- METAL LIGHT POLE
- MONITORING WELL
- NAIL AND DISK FOUND
- NAIL AND DISK SET
- OAK TREE
- PALM TREE
- POST
- RECLAIM FLAG (RECL)
- RECLAIM MANHOLE (R)
- SANITARY SEWER FLAG (SAN)
- SANITARY SEWER MANHOLE (S)
- SANITARY SEWER CLEAN OUT (CO)
- SIGN
- SIGN NO PARKING
- SYCAMORE TREE
- TELECOM FLAG (TEL)
- TELECOM VAULT (VLT)
- TRAFFIC MAST ARM
- TRAFFIC SIGNAL BOX (SIG)
- VENT (VENT)
- WATER FLAG
- WATER METER (WM)
- WATER VALVE (WV)
- WOOD LIGHT POLE
- WOOD UTILITY POLE
- WOOD UTILITY POLE W/TRANSFORMER

COMMON SYMBOLS AND ABBREVIATIONS

Δ	DELTA ANGLE	E		LS	LAND SURVEYOR	PE	PROFESSIONAL ENGINEER	SLY	SOUTHERLY
°	DEGREE(S)	E:	EASTING	LT	LEFT	PG/PGS	PAGE/PAGES	SUB	SUBDIVISION
'	MINUTES	E	EAST	LAT	LATITUDE	PI	POINT OF INTERSECTION	STA	STATION
"	SECONDS	EA	EDGE OF ASPHALT	LFT	LINEAR FEET	PL	PLACE	STM	STORM
±	PLUS OR MINUS	EC	EDGE OF CONCRETE	LONG	LONGITUDE	PT	POINT OF TANGENCY	STY	STORY
℄	BOUNDARY LINE	EG	EDGE OF GRAVEL			PAR	PARALLEL	SELY	SOUTHEASTERLY
℄	CENTER LINE	EL	ELEVATION	M		PCC	POINT OF COMPOUND CURVE	SWLY	SOUTHWESTERLY
℄	PROPERTY LINE	ELY	EASTERLY	(M)	MEASURED	PCP	PERMANENT CONTROL POINT		
℄	FLOW LINE	ELEC	ELECTRIC	MB	MAP BOOK	PER	PERPENDICULAR	T	
		ERCL	EROSION CONTROL LINE	MAX	MAXIMUM	PKG	PARKING	T	TANGENT
A		ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE	MER	MERIDIAN	PKY	PARKWAY	TB	TANGENT BEARING
A	ARC LENGTH	ESMT	EASEMENT	MES	MITERED END SECTION	PLS	PROFESSIONAL LAND SURVEYOR	TBM	TEMPORARY BENCHMARK
AC	ACRES			MHW	MEAN HIGH WATER			TEL	TELECOMMUNICATIONS
ASB	AS-BUILT	F		MIN	MINIMUM	POB	POINT OF BEGINNING	TER	TERRACE
ASP	ASPHALT	(F)	FIELD MEASURED	MLW	MEAN LOW WATER	POC	POINT OF COMMENCEMENT	TOB	TOP OF BANK
AVE	AVENUE	FL	FLORIDA	MOL	MORE OR LESS	POL	POINT ON LINE	TOP	TOP OF PIPE
AVG	AVERAGE	FM	FORCE MAIN	MHHW	MEAN HIGHER HIGH WATER	PRC	POINT OF REVERSE CURVE	TON	TOP OPERATING NUT
		FO	FIBER OPTIC	MLLW	MEAN LOWER LOW WATER	PRM	PERMANENT REFERENCE MONUMENT	TRL	TRAIL
B		FT	FEET					TWP	TOWNSHIP
BFE	BASE FLOOD ELEVATION	FAC	FLORIDA ADMINISTRATIVE CODE	N		PSM	PROFESSIONAL SURVEYOR AND MAPPER	TYP	TYPICAL
BFP	BACK FLOW PREVENTER	FFE	FINISHED FLOOR ELEVATION	N:	NORTHING	PVC	POLYVINYL CHLORIDE PIPE	U	
BOB	BOTTOM OF BANK	FND	FOUND	(NR)	NON-RADIAL			UND	UNDERGROUND
BLVD	BOULEVARD	FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION	N	NORTH	R		UTIL	UTILITY/UTILITIES
				NE	NORTHEAST	(R)	RADIAL		
C		G		NO	NUMBER	R/W	RIGHT OF WAY	V	
(C)	CALCULATED	GAS	NATURAL GAS	NW	NORTHWEST	RD	ROAD	VAR	VARIES
C	CURVE	GOV	GOVERNMENT	NGS	NATIONAL GEODETIC SURVEY	RR	RAILROAD	VCP	VITRIFIED CLAY PIPE
CB	CHORD BEARING	GRAV	GRAVEL	NLY	NORTHERLY	RT	RIGHT	VERT	VERTICAL
CH	CHORD DISTANCE			NTS	NOT TO SCALE	RAD	RADIUS		
CR	COUNTY ROAD	H		NAVD	NORTH AMERICAN VERTICAL DATUM 1988	RCP	REINFORCED CONCRETE PIPE	W	
CT	COURT	HP	HIGH POINT	NELY	NORTHEASTERLY	REC	RECORD/RECORDED	W	WEST
CIR	CIRCLE	HGT	HEIGHT	NGVD	NATIONAL GEODETIC VERTICAL DATUM 1929	REG	REGISTERED	WC	WITNESS CORNER
CMP	CORRUGATED METAL PIPE	HOR	HORIZONTAL	NOAA	NATIONAL OCEANIC AND ATMOSPHERIC ASSOCIATION	RNG	RANGE	WD	WOOD
COL	COLUMN	HWY	HIGHWAY	NWLY	NORTHWESTERLY	RTE	ROUTE	WAT	WATER
CPP	CORRUGATED PLASTIC PIPE	HDWD	HARDWOOD			RVR	RIVER	WLY	WESTERLY
		HDWL	HEAD WALL			RCLM	RECLAIMED WATER	WSP	WOOD STAVE PIPE
CRK	CREEK	I		O				WTP	WATER TREATMENT PLANT
CCCL	COASTAL CONSTRUCTION CONTROL LINE	INT	INTERSTATE	O/S	OFFSET	S		WWTP	WASTE WATER TREATMENT PLANT
CONC	CONCRETE	INV	INVERT	OR	OFFICIAL RECORD	S	SOUTH		
		IRR	IRRIGATION	OHE	OVERHEAD ELECTRIC	S/W	SIDEWALK	Z	
D		ICWW	INTRACOASTAL WATER WAY	OHW	ORDINARY HIGH WATER	SB	SETBACK	Z:	ELEVATION
(D)	DEED/DESCRIPTION			OIL	PETROLEUM	SE	SOUTHEAST		
DB	DEED BOOK	L		ORB	OFFICIAL RECORD BOOK	SQ	SQUARE		
DR	DRIVE	LB	LICENSED BUSINESS			SR	STATE ROAD		
DIA	DIAMETER	LK	LAKE	P		ST	STREET		
DIP	DUCTILE IRON PIPE	LP	LOW POINT	(P)	PLAT	SW	SOUTHWEST		
DWY	DRIVEWAY			PB	PLAT BOOK	SAN	SANITARY		
				PC	POINT OF CURVATURE	SEC	SECTION		
						SHW	SEASONAL HIGH WATER		

SURVEYORS NOTES:

1. THIS IS A TOPOGRAPHIC SURVEY, NOT A BOUNDARY SURVEY. THE PURPOSE OF THIS SURVEY IS TO SHOW EXISTING SITE CONDITIONS AS REQUESTED BY THE CLIENT FOR THE FUTURE ENGINEERING DESIGN OF SITE IMPROVEMENTS.
2. THE LANDS SHOWN HEREON ARE CONSIDERED URBAN/HIGH RISK. THE CALCULATED ERROR OF CLOSURE MEETS OR EXCEEDS THE MINIMUM STANDARD REQUIREMENTS.
3. EASEMENTS SHOWN HEREON ARE PER THE RECORDED PLAT, INSTRUMENTS OF RECORD PROVIDED TO THE SURVEYOR, OR INFORMATION OBTAINED BY A CURSORY SEARCH OF THE PUBLIC RECORDS OF THIS COUNTY.
4. THERE MAY BE ADDITIONAL COVENANTS, EASEMENTS, RESERVATIONS AND/OR, RESTRICTIONS NOT SHOWN ON THIS SURVEY THAT MAY BE RECORDED IN THE PUBLIC RECORDS OF THIS COUNTY.
5. THE BASIS OF BEARINGS FOR THIS SURVEY ARE NOTED ALONG THE SURVEY BASELINE FOR MARTIN LUTHER KING, JR BOULEVARD AND ARE REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983/1990 (NAD 83/1990) AND WERE ESTABLISHED USING RTK GPS OBSERVATIONS.
6. THIS SURVEY MAKES NO CLAIMS REGARDING OWNERSHIP OR RIGHTS OF POSSESSION.
7. ALL DIMENSIONS SHOWN HEREON ARE STATED IN U.S. SURVEY FEET AND DECIMALS THEREOF. FOOT TO METER CONVERSION FORMULA IS 1 US FT = 0.304800609601 M.
8. ALL STREETS AND RIGHTS OF WAY ARE OPEN AND ACCESSIBLE UNLESS NOTED OTHERWISE.
9. ALL ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 1988) BENCHMARK RMR-80. HAVING A PUBLISHED ELEVATION OF 8.634 FEET (9.81 FEET NGVD 1929).
10. THE VERTICAL ERROR OF CLOSURE FOR THIS SURVEY IS LESS THAN OR EQUAL TO .05' TIMES THE SQUARE ROOT OF THE BENCH LOOP IN MILES.
11. UNDERGROUND FOUNDATIONS, IF ANY, WERE NOT LOCATED.
12. ANY REFERENCE TO UTILITIES THAT MAY APPEAR ON THIS MAP, HAVE BEEN LOCATED FROM VISIBLE SURFACE EVIDENCE THAT EXISTED AT OR ABOVE THE SURFACE OF THE EARTH AT THE TIME OF THIS SURVEY.
13. ANY REFERENCE TO UNDER GROUND UTILITIES ROUTES AND SIZES THAT MAY APPEAR ON THIS MAP, HAVE BEEN LOCATED FROM THE BEST AVAILABLE EVIDENCE THAT EXISTED AT THE TIME OF THIS SURVEY OR MAY HAVE BEEN EXTRAPOLATED FROM INFORMATION PROVIDED BY THE CITY OF DAYTONA BEACH UTILITY DEPARTMENT; THEREFORE, THE DEPICTED LOCATION AND SIZE OF ANY UNDERGROUND UTILITIES MUST BE CONSIDERED TO BE AN APPROXIMATE LOCATION AND SIZE OF ANY SUCH UTILITIES.
14. NO SOFT DIG OF UNDERGROUND UTILITIES WAS PERFORMED. PRIOR TO RELYING ON THE INFORMATION SHOWN FOR UNDERGROUND UTILITIES ON THIS MAP FOR THE PURPOSE OF CONSTRUCTION, CONNECTION OR EXTENSION, THE UTILITY MUST BE EXPOSED BY THE CONTRACTOR AND THE INFORMATION VERIFIED.
15. THIS PROPERTY LIES WITHIN FLOOD ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED, AND ZONE "X" SHADED NO BASE FLOOD ELEVATION, AND ZONE "X" NO BASE FLOOD ELEVATION PER THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS, (NFIP FIRM) MAP NO. 12127C0359H WITH AN EFFECTIVE DATE OF FEBRUARY 19, 2014.
16. THIS SURVEY WAS PERFORMED FOR THE SOLE AND EXCLUSIVE BENEFIT OF THE FOLLOWING PARTY(IES): McKIM AND CREED, INC. AND THE CITY OF DAYTONA BEACH AND IS NON-TRANSFERABLE TO ANY OTHER PARTY(IES). THIS SURVEY SHALL NOT BE RELIED UPON BY ANY OTHER ENTITY OR INDIVIDUAL. ANY RE-USE OF THIS SURVEY FOR ANY PURPOSE OTHER THAN WHICH IT WAS ORIGINALLY INTENDED, WITHOUT THE WRITTEN PERMISSION OF THE UNDERSIGNED SURVEYOR AND MAPPER, WILL BE DONE SO AT THE RISK OF THE RE-USING PARTY AND WITHOUT ANY LIABILITY TO THE UNDERSIGNED SURVEYOR AND MAPPER.
17. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING SURVEYOR IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF THE SIGNING SURVEYOR.
18. THIS SURVEY WAS CONDUCTED IN COMPLIANCE WITH THE "STANDARDS OF PRACTICE" ESTABLISHED IN CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027 FLORIDA STATUES, UNDER THE RESPONSIBLE CHARGE OF THE SIGNING SURVEYOR NAMED BELOW.
19. THIS SURVEY IS NOT VALID UNLESS SIGNED BY THE PROFESSIONAL SURVEYOR AND MAPPER NOTED, AND EMBOSSED WITH THE SURVEYOR'S SEAL.
20. THIS SURVEY MAP WAS PREPARED AT A SCALE OF 1 INCH EQUALS 100 FEET, ON SHEET 1 AND 1 INCH EQUALS 20 FEET ON SHEETS 2 AND 3, ON 24 INCH BY 36 INCH MEDIA. THIS SURVEY MAY HAVE BEEN REDUCED OR ENLARGED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED INFORMATION.
21. FIELD WORK FOR THIS SURVEY WAS PERFORMED ON NOVEMBER 13, 2015 THROUGH NOVEMBER 21, 2015.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

SEAL

SEAL

SCOTT R. SPOONER, P.E.
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THE CITY OF DAYTONA BEACH, FLORIDA

PROJECT NO. 2015-085

DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

SURVEYOR'S LEGEND, SYMBOLS, ABBREVIATIONS AND NOTES

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=4'

M&C FILE NUMBER: GN002-09960161
DRAWING NUMBER: G-2

STATUS: REISSUED FOR BIDDING
REVISION

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GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL SAFETY REGULATIONS. SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. THE CONTRACTOR SHALL PROVIDE PROPER WARNING SIGNS, BARRICADES, TEMPORARY FENCING AND OTHER APPROPRIATE SAFETY DEVICES DURING THE EXECUTION OF THE WORK TO PROVIDE PUBLIC PROTECTION AND SAFETY.
3. STATION OFFSET WITH POSITIVE VALUE (XX') MEANS RIGHT OF BASE LINE, (–XX') MEANS LEFT OF BASE LINE UNLESS OFFSET IS SPECIFICALLY SPECIFIED LT OR RT OF BASELINE.
4. LOCATIONS OF EXISTING UNDERGROUND UTILITIES WERE PREPARED FROM THE MOST RELIABLE INFORMATION AVAILABLE. VERIFY THE LOCATION AND DEPTH OF ALL PERTINENT UTILITIES PRIOR TO CONSTRUCTION. ALL LOCATIONS, ELEVATION AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN IN ACCORDANCE WITH THE BEST INFORMATION AVAILABLE AT THE TIME OF THE PLAN PREPARATION. THE CONTRACTOR IS CAUTIONED THAT THERE MAY BE OTHER UTILITIES AND/OR IMPROVEMENTS NOT SHOWN ON THE DRAWINGS WHICH MAY IMPACT THE WORK REPRESENTED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE, THEREFORE, FOR VERIFYING, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES (WHETHER SHOWN OR NOT OF THE PLANS) WHICH COULD AFFECT THE CONTRACTOR'S WORK. THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THERE MAY BE SOME UTILITY CONFLICTS INHERENT IN THE PROJECT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ANY AND ALL EXISTING UTILITIES FROM ACCIDENTAL DAMAGE.
5. THE INFORMATION SHOWN IN THESE PLANS IS PROVIDED SOLELY FOR THE PURPOSE OF ASSISTING THE CONTRACTOR IN ASSESSING THE PHYSICAL CONDITIONS UNDER WHICH THE PROJECT IS TO BE BID AND CONSTRUCTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EVALUATING THE CONSTRUCTABILITY OF THE PROJECT AND CONDUCTING HIS OWN INVESTIGATION INTO THE PHYSICAL CHARACTERISTICS OF THE PROJECT, INCLUDING THE EXISTENCE AND IMPACT OF ANY STRUCTURES, UTILITIES, OR OTHER SITE FEATURES (WHETHER SHOWN OR NOT SHOWN) PRIOR TO PREPARING AND SUBMITTING A SEALED BID.
6. FIELD CONDITIONS MAY NECESSITATE ALIGNMENT AND GRADE DEVIATIONS OF THE PROPOSED UTILITIES TO AVOID OBSTACLES. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS ON THE PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN WRITTEN CLARIFICATION BEFORE COMMENCING WITH CONSTRUCTION.
7. THE CONTRACTOR SHALL ENDEAVOR TO PROTECT PRIVATE PROPERTY. ANY DAMAGE CAUSED BY THE CONTRACTOR IN THE PERFORMANCE OF HIS WORK SHALL BE CORRECT TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE. PAYMENT WILL NOT BE MADE FOR THIS WORK.
8. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST APPLICABLE FEDERAL, STATE, AND LOCAL AGENCY'S STANDARDS.
9. CONNECTIONS TO EXISTING FACILITIES SHALL BE ACCOMPLISHED IN A NEAT AND WORKMANLIKE MANNER AND COORDINATE WITH THE UTILITY OWNER IN ADVANCE WHEN FIELD CONDITIONS INDICATE ANY VARIANCE FROM DETAILED METHODS, THE CONTRACTOR SHALL PROVIDE COMPREHENSIVE AND DETAILED DRAWINGS (FOR OWNER APPROVAL) OF METHODS AND MATERIALS PROPOSED.
10. WHEN IT IS NECESSARY TO DEFLECT THE PIPE HORIZONTALLY OR VERTICALLY, PIPE JOINT DEFLECTION SHALL NOT EXCEED 75% OF THE MANUFACTURER'S RECOMMENDED DEFLECTION.
11. ALL FITTINGS SHALL BE DUCTILE IRON AND RESTRAINED.
12. ALL BRANCH PRESSURIZED MAINS SHALL BE RESTRAINED ALONG THEIR ENTIRE LENGTHS. OTHER RESTRAINED LENGTHS ARE INDICATED ON THE PROFILE AND SHALL NOT BE LESS THAN THAT INDICATED IN THE RESTRAINT JOINT TABLE.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL APPLICABLE PERMITS NOT ALREADY OBTAINED BY THE CITY.
14. CONTRACTOR SHALL PREPARE AND SUBMIT A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT IN ACCORDANCE WITH FDEP CRITERIA FOR AN NPDES CONSTRUCTION ACTIVITIES PERMIT. CONTRACTOR SHALL OBTAIN A FDEP GENERIC PERMIT FOR THE DISCHARGE OF PRODUCED GROUNDWATER. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO DISTURBANCE AND MAINTAINED THROUGH PROJECT COMPLETION.
15. ALL UNDERGROUND PIPING SHALL BE PUSH–ON OR MECHANICAL JOINT; ABOVE GROUND PIPING SHALL BE FLANGED.
16. CONCRETE ENCASE THE PROPOSED SANITARY SEWER AND ITS LATERALS WHEN THE VERTICAL CLEARANCE UNDER THE PROPOSED STORM DRAIN PIPING AND STRUCTURES IS LESS THAN 12".
17. PRECAST CONCRETE THRUST BLOCKS SHALL BE INSTALLED AS NECESSARY TO PREVENT MOVEMENT OF EXISTING UNRESTRAINED PRESSURIZED PIPE AT ALL TIE–IN LOCATIONS WHETHER SPECIFICALLY IDENTIFIED ON THE PLANS OR NOT.
18. CONTRACTOR SHALL MAINTAIN A SET OF PLANS WITH CURRENT FIELD CHANGES MARKED THEREON AND SHALL DELIVER THESE PLANS TO THE ENGINEER WITH EACH PAY REQUEST, TO SUPPORT PARTIAL CERTIFICATION TO PLACE UTILITIES INTO SERVICE AND UPON COMPLETION OF CONSTRUCTION. NO PAYMENT SHALL BE MADE UNTIL THIS REQUIREMENT IS SATISFIED.
19. CONTRACTOR SHALL SUBMIT A DEWATERING PLAN PRIOR TO BEGINNING CONSTRUCTION.
20. STATIONING FOR ALL VALVES, AIR RELEASES, BLOW–OFFS AND FIRE HYDRANTS ARE APPROXIMATE. ADJUSTMENT IN THE FIELD SHALL BE COORDINATED WITH THE FIELD INSPECTOR AND NOTED ON THE RECORD DRAWINGS.
21. THE CONTRACTOR SHALL INCLUDE IN HIS BID; BY–PASS PUMPING FACILITIES, PUMPS, FITTINGS, TEMPORARY HOLDING TANKS, LABOR, ETC, AS NECESSARY, BASED ON THE CONTRACTORS SELECTED METHOD AND SEQUENCE OF CONSTRUCTION TO COMPLETE ALL WORK WHILE MAINTAINING UTILITY SERVICE.
22. ALL PROPERTY LINE MARKERS (IRON PINS, CONCRETE MONUMENTS, ETC.) DESTROYED DURING CONSTRUCTION SHALL BE REPLACED IN–KIND BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA TO RESET PROPERTY MARKERS.
23. THE CONTRACTOR SHALL GIVE WRITTEN NOTICE TO ALL AFFECTED CITY WATER AND SEWER CUSTOMERS A MINIMUM OF 3 DAYS IN ADVANCE OF ANY AND ALL WORK REQUIRING DISRUPTION OF ACCESS, INTENDED WATER, OR SANITARY SEWER SERVICES INTERRUPTION. DISRUPTION IN SERVICE TO ANY CUSTOMERS SHALL NOT EXCEED 2 HOURS FOR WATER AND 4 HOURS FOR SANITARY SEWER SERVICE. ACCESS TO PROPERTY SHALL BE MAINTAINED AT ALL TIMES.
24. THE OPENING AND / OR CLOSING OF EXISTING VALVES OR NEW VALVES THAT HAVE BEEN PLACED INTO SERVICE SHALL BE DONE BY THE CITY AND COORDINATED WITH ENGINEER.
25. CONTRACTOR SHALL PROTECT ALL TREES WITHIN THE CONSTRUCTION LIMITS.

28 CONTRACTOR SHALL MAINTAIN AT LEAST ONE ACCESS ENTRANCE TO COMMERCIAL AND INDUSTRIAL PROPERTIES AT ALL TIMES AND ACCESS TO RESIDENTIAL PROPERTIES AT ALL TIMES.

29. CONTRACTOR SHALL PROVIDE TEMPORARY DRIVABLE ROAD BASE MATERIAL UNTIL PERMANENT ASPHALT OR CONCRETE HAS BEEN INSTALLED; DIRT IS NOT ACCEPTABLE.
30. THE LOCATION OF AIR RELEASE VALVES ON THE PLANS ARE APPROXIMATE ONLY. FINAL LOCATION WILL BE DETERMINED IN THE FIELD WITH THE APPROVAL OF THE ENGINEER.
31. WHERE THERE ARE DISCREPANCIES BETWEEN THE INDICATED RESTRAINED LENGTHS ON THE PLANS AND RESTRAINED JOINT TABLE, THE LONGER RESTRAINED JOINT LENGTH SHALL APPLY.
32. THE CONTRACTOR SHALL REFER TO THE UNDERGROUNDING UTILITY PLANS FOR THE FRANCHISE UTILITY PLAN IMPROVEMENT LOCATIONS.

WATER GENERAL NOTES

1. EXISTING WATER MAINS SHOWN TO BE REMOVED OR ABANDONED IN PLACE SHALL REMAIN ACTIVE DURING CONSTRUCTION. CONTRACTOR SHALL TRANSFER WATER SERVICE CONNECTIONS TO THE NEW WATER MAIN AFTER TESTING, BACTERIOLOGICAL CLEANING AND ACCEPTANCE BY THE CITY AND HEALTH DEPARTMENT.
2. ALL EXISTING WATER SERVICES AND ASSOCIATED METER BOXES SHALL BE REPLACED AND CONNECTED TO THE NEW WATER MAIN AS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL ASSUME ALL ADJACENT PROPERTIES HAVE ONE SERVICE CONNECTION. VACANT PROPERTIES WITHOUT AN EXISTING SERVICE SHALL HAVE A NEW SERVICE INSTALLED. ALL WATER SERVICES SHALL BE 1" UNLESS NOTED OTHERWISE.
3. ALL WATER SERVICE TIE–INS FOR BUSINESSES ARE TO BE PERFORMED WHEN THE BUSINESS IS CLOSED.
4. WATER SERVICES CROSSING UNDER PAVEMENT TO HAVE SCH 40 PVC SLEEVE PER CITY STANDARD INCLUDING IRRIGATION SERVICE LINES.
5. ALL IRRIGATION CONNECTIONS TO BE PER CITY STANDARD AND INCLUDE REDUCED PRESSURE BACKFLOW PREVENTER AND METER.

SEWER GENERAL NOTES

1. ALL EXISTING SANITARY SEWER SERVICE LATERALS ARE TO BE REPLACED AND TIED INTO THE NEW PIPE.
2. THE LOCATION OF HOUSE LATERALS BY SYMBOLS ON THE PLANS ARE APPROXIMATE ONLY AND THE ACTUAL LOCATION AND SLOPES WILL BE DETERMINED IN THE FIELD BY THE CONTRACTOR WITH THE APPROVAL OF THE ENGINEER.
3. THE MINIMUM CLEARANCE BETWEEN HOUSE SEWER LATERALS AND WATER LINES SHALL BE 6" UNDER ALL CIRCUMSTANCES. IF THE HOUSE LATERAL IS BELOW A WATER LINE AND HAS BETWEEN 6" AND 18" OF CLEARANCE OR IF THE LATERAL IS ABOVE THE WATER LINE REGARDLESS OF CLEARANCE, THEN A NOMINAL 20' LENGTH OF GREEN AWWA CLASS 150 C900 PVC PIPE SHALL BE CENTERED OVER/UNDER THE WATER LINE.
4. IF A HOUSE SEWER LATERAL MUST PASS UNDER ANY UTILITY OTHER THAN A WATER LINE WITH LESS THAN 18" CLEARANCE, THE LATERAL SHALL REMAIN SDR 35 PVC PIPE UNLESS THE UTILITY POSES A STRUCTURAL LOAD THAT IS TOO GREAT FOR THE PVC LATERAL. IF THE UTILITY POSES SUCH A STRUCTURAL LOAD AS DETERMINED BY THE ENGINEER, EACH CONFLICT WILL BE REVIEWED ON A CASE BY CASE BASIS.
5. THE EXISTING 10" CLAY SANITARY PIPE, AS REFLECTED IN THE SURVEY, HAS BEEN REVISED TO A 12" CLAY SANITARY PIPE, PER CITY AS–BUILT DRAWINGS.

SOIL AND EROSION AND SEDIMENT CONTROL PLAN NOTES

1. ALL CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION WILL BE MINIMIZED. ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS SHALL BE COMPLIED WITH AT ALL TIMES.
2. CARE SHALL BE EXERCISED TO PREVENT DISTURBANCE TO THE NATURAL VEGETATION IN AREAS NOT PROPOSED FOR IMMEDIATE CONSTRUCTION.
3. ALL SOIL AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE START OF CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL WORK IS COMPLETE.
4. CONTRACTOR SHALL FOLLOW BEST MANAGEMENT PRACTICES THROUGHOUT CONSTRUCTION.
5. CONTRACTOR SHALL PREPARE AND SUBMIT A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR REVIEW AND APPROVAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.
6. CONTRACTOR SHALL PREPARE AND SUBMIT A DEWATERING PLAN SHOWING APPLICABLE BEST MANAGEMENT PRACTICES FOR REVIEW AND APPROVAL PRIOR TO ANY DEWATERING ACTIVITIES.
7. THE CONTRACTOR WILL NEED TO OBTAIN THE NECESSARY INDUSTRIAL WASTE (IW) APPROVAL (INCLUDING ANY REQUIRED TESTING) PRIOR TO ANY GROUNDWATER DISCHARGE. ONCE THE APPROPRIATE IW APPROVAL(S) HAVE BEEN OBTAINED, THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN DEWATERING EQUIPMENT AND DISCHARGE TO THE APPROPRIATE BMP SUCH AS GRAVITY BAG FILTER, SEDIMENT TRAP OR DEWATERING TANK.
8. THE CONTRACTOR SHALL MAINTAIN EROSION CONTROL BALES, SILT FENCE AND OTHER EROSION CONTROL MEASURES AND INSPECT DAILY.
9. THE CONTRACTOR SHALL PERFORM DAILY INSPECTIONS OF THE DEWATERING EQUIPMENT, DISCHARGE HOSE, HOSE OUTLET AND DRAINAGE SWALES FOR SIGNS OF EROSION, SILTATION, OR OTHER DAMAGE. SHOULD EROSION BE OBSERVED, THE CONTRACTOR SHALL IMMEDIATELY MAKE ADJUSTMENTS TO DEWATERING ACTIVITIES AS NEEDED TO PREVENT FURTHER DAMAGE AND SHALL REPAIR ANY DAMAGE WITHIN 24 HOURS OF OBSERVATION.
10. BYPASS PIPING, TEMPORARY HOLDING TANKS, OR OTHER APPROVED MEASURES SHALL BE IMPLEMENTED BY THE CONTRACTOR TO MAINTAIN SERVICE DURING CONSTRUCTION. WHEN SHUT DOWN OF SERVICE IS REQUIRED AND CANNOT BE AVOIDED, THE DURATION OF SHUT DOWN SHALL BE MINIMIZED AND COORDINATED WITH THE PROPERTY OWNER/RESIDENT AND COMMUNICATED TO THE CITY 48 HOURS PRIOR TO THE SERVICE DISRUPTION.
11. THE CONTRACTOR SHALL PROVIDE AND IMPLEMENT SITE SPECIFIC EROSION AND SEDIMENT CONTROL PROCEDURES SUCH AS SILT SCREENS, TURBIDITY BARRIERS, OR OTHER APPROVED METHODS AS REQUIRED, TO PREVENT THE TRANSPORT OF SEDIMENT DOWNSTREAM INTO STREETS, STORM SEWERS, DITCHES, PONDS, ETC.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION AND WATER POLLUTION RESTORATION EFFORTS.
13. THE CONTRACTOR SHALL MAINTAIN SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE NPDES PERMIT, PLANS AND SPECIFICATIONS.
14. CONTRACTOR SHALL PROVIDE DUST CONTROL AND PROTECT ADJACENT PROPERTIES FROM THE ACCUMULATION OF SOIL, DEBRIS AND GARBAGE.

DEMOLITION NOTES:

1. DRAWINGS USED TO INDICATE DEMOLITION ARE BASED ON RECORD DRAWINGS AND SURVEYED DATA. CONTRACTOR SHALL CONDUCT A COMPREHENSIVE SURVEY AT THE SITE TO VERIFY CORRECTNESS AND EXACTNESS OF THE DRAWING.
2. THE INTENT OF THE PIPES IDENTIFIED ON THE DEMOLITION PLANS ARE FOR THEIR COMPLETE REMOVAL UNLESS OTHERWISE INDICATED ON THE PLANS. IF IT CAN BE SHOWN THAT THE EXISTING PIPE IDENTIFIED FOR REMOVAL DOES NOT INTERFERE WITH ANY OF THE PROPOSED IMPROVEMENTS IDENTIFIED IN THE CONTRACT DOCUMENTS, IT MAY BE ABANDONED IN PLACE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL PIPES PROPOSED TO BE ABANDONED IN PLACE FOR CONSIDERATION. IF THE EXISTING PIPE IDENTIFIED TO BE ABANDONED IN PLACE IS FOUND TO INTERFERE WITH ANY OF THE PROPOSED IMPROVEMENTS IDENTIFIED IN THE CONTRACT DOCUMENTS, IT SHALL BE REMOVED AT NO ADDITIONAL COST TO THE OWNER. PIPE IDENTIFIED OR OTHERWISE APPROVED TO BE ABANDONED IN PLACE SHALL BE CAPPED TO PROVIDE A POSITIVE SEAL AND GROUT FILLED AS PROVIDED IN THE SPECIFICATIONS.
3. REMOVE ALL EXISTING FIRE HYDRANT ASSEMBLIES. REPLACE WITH NEW FIRE HYDRANT ASSEMBLIES AS IDENTIFIED ON THE PLANS. FINAL LOCATION TO BE DETERMINED IN THE FIELD.

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REV.NO.	DESCRIPTIONS	DATE
B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

REVISIONS

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THE CITY OF DAYTONA BEACH, FLORIDA

PROJECT NO. 2015–085

DR. MARTIN LUTHER KING, JR. BOULEVARD–ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

GENERAL NOTES

DATE:	APRIL 2017
MCE PROJ. #	0996–0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

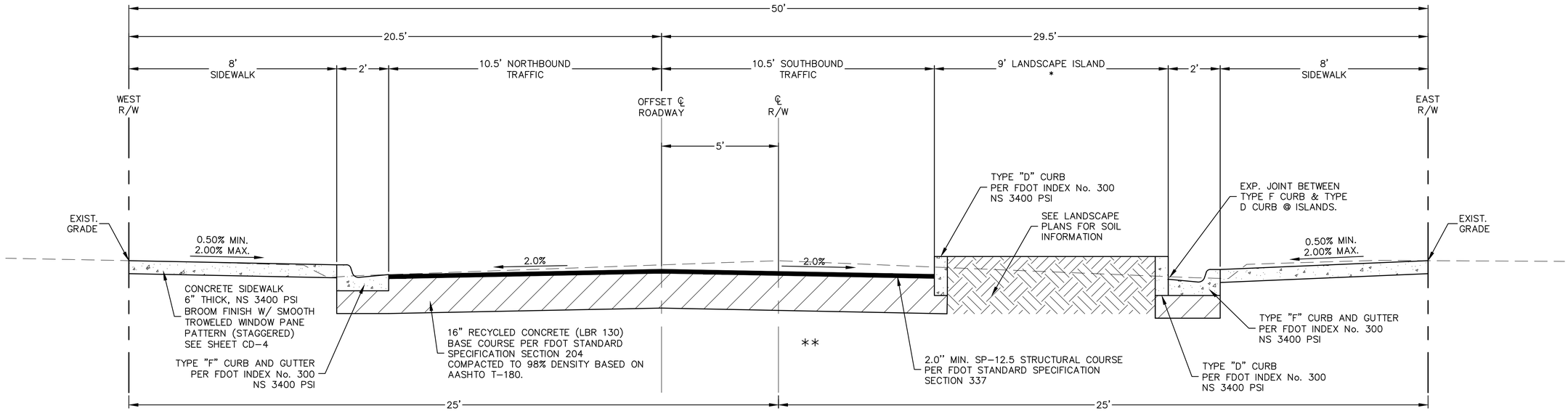
SCALE
HORIZONTAL: NA
VERTICAL: NA

M&C FILE NUMBER GN002–09960161

DRAWING NUMBER G-3

STATUS: REISSUED FOR BIDDING

REVISION



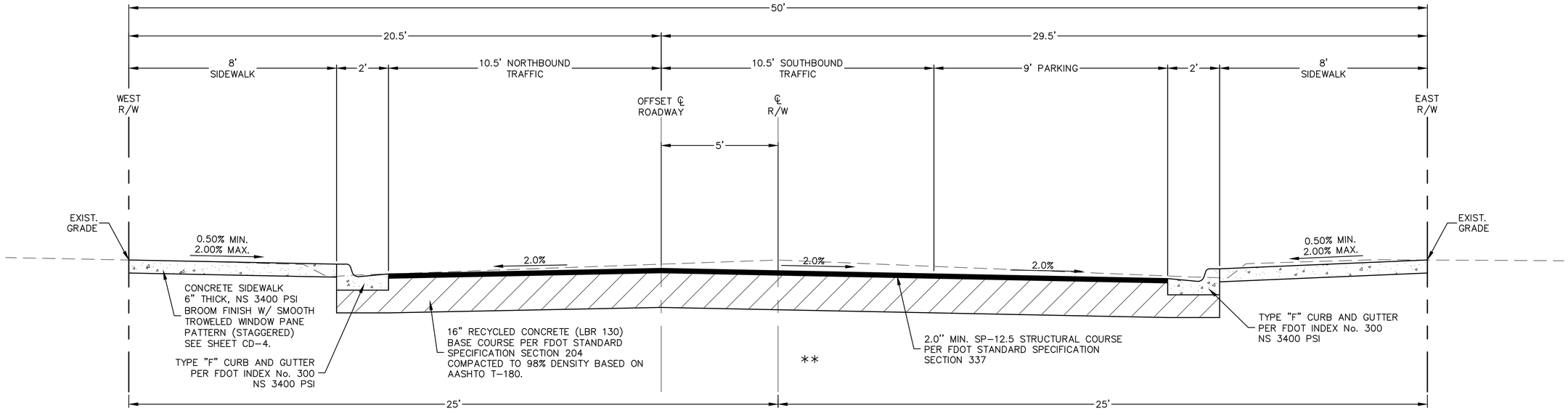
DR. MARTIN LUTHER KING, JR. BOULEVARD PROPOSED CROSS SECTION @ LANDSCAPE ISLAND

SCALE: NTS

STA. 105+27 TO STA. 105+66
STA. 107+70 TO STA. 108+22
STA. 108+72 TO STA. 109+16
STA. 111+82 TO STA. 112+03
STA. 112+56 TO STA. 112+96

*ISLAND TAPERS ADJACENT TO INTERSECTIONS. SEE DETAIL SHEET C-3

**STATIC COMPACTION ONLY



DR. MARTIN LUTHER KING, JR. BOULEVARD PROPOSED CROSS SECTION

SCALE: NTS

TYPICAL STA. 101+65 TO 115+40

NOTES:
1. SUPERPAVE TRAFFIC LEVEL IS "C".
2. CPF ADJUSTMENTS WILL NOT APPLY.
3. ALL CONCRETE SHALL BE 3400 PSI.

PROJECT NO. 2015-085

REV.NO.	DESCRIPTIONS	DATE
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THE CITY OF DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

TYPICAL SECTIONS

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: NA
VERTICAL: NA

M&C FILE NUMBER GN003-09960161
DRAWING NUMBER G-4

STATUS: REISSUED FOR BIDDING
REVISION

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Line Table: Alignments						
Line #	Length	Direction	Start Point	Start Sta.	End Point	End Sta.
L1	1700.00'	N25° 03' 14.27"W	N: 1770650.03 E: 647759.35	100+00.00	N: 1772190.08 E: 647039.45	117+00.00

Description – B.M.			
Point #	Elevation	Description	Location
1	8.63	CONCRETE MONUMENT RMR–80	N: 1770678.98 E: 647707.19

Description – T.B.M.			
Point #	Elevation	Description	Location
2	7.84	NAIL & DISK LB7900	N: 1770959.99 E: 647631.25
3	8.76	NAIL & DISK LB7900	N: 1771200.02 E: 647477.24
4	8.33	NAIL & DISK LB7900	N: 1771444.19 E: 647410.63
5	7.41	NAIL & DISK LB7900	N: 1771772.67 E: 647211.28

NORTH

100' 0 100' 200'

SCALE: 1"=100' (Horiz.)

INTERNATIONAL SPEEDWAY BLVD

C – 3

50' 50'

END PROJECT STA. 115+60
OFFSET, STA. 115+60, 50 L,
OFFSET, STA. 115+60, 100 L

FOOTE CT

MAGNOLIA AVE

FEC RAILROAD

S SEAGRAVE ST

5

STA: 112+49.10
OFF: 21.09'L

C – 2

DR. MARTIN LUTHER KING, JR. BLVD

STA: 108+67.25
OFF: 20.27'R

4

50' 50'

MAGNOLIA AVE

MID PROJECT STA. 108+50
OFFSET, STA. 108+50, 50 L,
OFFSET, STA. 108+50, 100 L

3

STA: 103+35.05
OFF: 15.21'R

ELDORADO ST

STA: 106+17.68
OFF: 22.65'L

BEGIN PROJECT STA. 101+30
OFFSET, STA. 101+30, 50 L,
OFFSET, STA. 100+30, 100 L

2

C – 1

S. LINCOLN ST

CHERRY ST

ORANGE AVENUE

HAVNES ST

50' 50'

1

STA: 100+48.31
OFF: 34.98'L

PROJECT NO. 2015–085

REV.NO.	DESCRIPTIONS	DATE
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THE CITY OF DAYTONA BEACH, FLORIDA

THE CITY OF DAYTONA BEACH INCORPORATED JULY 1876

DR. MARTIN LUTHER KING, JR. BOULEVARD–ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

KEY SHEET AND HORIZONTAL CONTROL PLAN

DATE:	APRIL 2017
MCE PROJ. #	0996–0161
DRAWN	BFN
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1" = 100'
VERTICAL: NA

M&C FILE NUMBER: GN004–09960161

DRAWING NUMBER: G-5

STATUS: REISSUED FOR BIDDING

REVISION

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BID SCHEDULE - ITB NO. 0318-3380
DR. MARTIN LUTHER KING, JR. BOULEVARD ROADWAY & PEDESTRIAN IMPROVEMENTS PROJECT
CITY PROJECT 2015-085

ITEM NO.	DESCRIPTION	QTY	UNIT	UNIT COST	AMOUNT
GENERAL BID					
1	General Conditions:				
	a. Mobilization and Demobilization	1	LS	$	$
	b. Provide Dewatering Equipment	1	LS	$	$
	c. Furnish & Install Temporary Striping of Road	1	LS	$	$
	d. Submit Certified "As-Built" Drawings	1	LS	$	$
2	Maintenance of Traffic	1	LS	$	$
3	Erosion and Sediment Control	1	LS	$	$
	TOTAL GENERAL BID				$
WATER MAIN CONSTRUCTION					
4	Remove Existing Pipe:				
	a. 14-inch	90	LF	$	$
	b. 10-inch	1,415	LF	$	$
	c. 2-inch	137	LF	$	$
5	Remove Existing Fire Hydrant Assemblies	3	EA	$	$
6	Remove Existing Water Main Service Pipe	21	EA	$	$
7	Furnish & Install Restrained Joint DIP Pipe:				
	a. 16-inch	145	LF	$	$
	b. 14"-inch	50	LF	$	$
	c. 10-inch	1,417	LF	$	$
	d. 6-inch	230	LF	$	$
	e. 2-inch	36	LF	$	$
8	Furnish & Install Compact Ductile Iron Fittings:				
	a. 6-inch 45° Bend	15	EA	$	$
	b. 10-inch 45° Bend	1	EA	$	$
	c. 16-inch 45° Bend	2	EA	$	$
	d. 10" x 2" Tee	6	EA	$	$
	e. 10" x 6" Tee	9	EA	$	$
	f. 16" Tee	2	EA	$	$
	g. 10" x 6" Reducer	2	EA	$	$
	h. 16" x 10" Reducer	2	EA	$	$
	i. 16" x 14" Reducer	2	EA	$	$
9	Furnish & Install Valves and Valve Boxes:				
	a. 16-inch Gate	2	EA	$	$
	b. 10-inch Gate	7	EA	$	$
	c. 6-inch Gate	4	EA	$	$
10	Furnish & Install Fire Hydrant Assemblies	5	EA	$	$
11	Cut-ins and Connections to Existing Mains:				
	a. 14-inch Cut-in	2	EA	$	$
	b. 10-inch Cut-in	2	EA	$	$
	c. 6-inch Cut-in	1	EA	$	$
	d. 2-inch Cut-in	3	EA	$	$
12	Furnish & Install Service Pipe & Meter:				
	a. 1-inch HDPE Water	607	LF	$	$
13	Cleaning and Pigging of Mains	1	LS	$	$
14	Bacteriological Clearance	1	LS	$	$
	TOTAL WATER MAIN CONSTRUCTION				$
RECLAIMED WATER MAIN CONSTRUCTION					
15	Remove Existing Pipe:				
	a. 6" Pipe	126	LF	$	$
	b. 30" PCCP with 24" Sleeve	90	LF	$	$
16	Furnish & Install Restrained Joint PVC Pipe:				
	a. 6-Inch	82	LF	$	$
	b. 24-inch	81	LF	$	$
17	Furnish & Install Compact Ductile Iron Fittings:				
	a. 6-inch 45° Bend	4	EA	$	$
	b. 24-inch 45° Bend	4	EA	$	$
18	Cut-ins and Connections to Existing Mains:				
	a. 24-inch Connection	2	EA	$	$
	b. 6-inch Cut-in	2	EA	$	$
19	Cleaning and Pigging of Mains	1	LS	$	$
	TOTAL RECLAIMED WATER MAIN CONSTRUCTION				$
SANITARY SEWER CONSTRUCTION					
20	Remove Existing Sanitary Pipe:				
	a. Remove Existing 12" Clay Sanitary Pipe	1,438	LF	$	$
	b. Remove Existing 10" Clay Sanitary Pipe	44	LF	$	$
	c. Remove Existing 8" Clay Sanitary Pipe	65	LF	$	$
	d. Remove Existing 8" PVC Sanitary Pipe	17	LF	$	$
21	Remove Existing Sanitary Sewer Manholes	4	EA	$	$
22	Remove Existing Service Laterals	38	EA	$	$
23	Provide Temporary Sewage Bypassing Equipment	1	LS	$	$
24	Furnish & Install 8-inch SDR-26 PVC Gravity Sewer Main:				
	a. 8'-10' Deep	155	LF	$	$

BID SCHEDULE - ITB NO. 0318-3380
DR. MARTIN LUTHER KING, JR. BOULEVARD ROADWAY & PEDESTRIAN IMPROVEMENTS PROJECT
CITY PROJECT 2015-085

ITEM NO.	DESCRIPTION	QTY	UNIT	UNIT COST	AMOUNT
25	Furnish & Install 15-inch SDR-26 PVC Gravity Sewer Main:				
	a. 6'-8' Deep	424	LF	$	$
	b. 8'-10' Deep	980	LF	$	$
26	Furnish & Install Manholes:				
	a. 4-foot Diameter Standard	6	EA	$	$
	b. Additional Depth over 4 Feet	37	VLF	$	$
27	Connect to Existing Sewer Main:				
	a. 8-inch	4	EA	$	$
28	Furnish & Install 6-inch PVC Service Pipe	950	LF	$	$
29	Furnish & Install Service Wye Units:				
	a. 15" x 6"	38	EA	$	$
30	Furnish & Install Sewer Cleanout	38	EA	$	$
	SANITARY SEWER CONSTRUCTION				$
DRAINAGE AND ROADWAY					
31	Furnish & Install Storm Drain Pipe:				
	a. 12" RCP	189	LF	$	$
32	Furnish & Install Storm Drain Inlets:				
	a. Type 9	2	EA	$	$
33	Connect New Pipe to Existing Structure	1	EA	$	$
34	Roadway Removal:				
	a. Mill Existing Asphalt	5,562	SY	$	$
	b. Remove Existing Concrete Sidewalk & Driveway	2,268	SY	$	$
	c. Remove Existing Curb and Gutter	3,018	LF	$	$
35	Roadway Construction:				
	a. Construct 16" Roadway Base/Leveling Course	6,233	SY	$	$
	b. Construct 2.0" Asphalt Structural Course (and overlay)	5,562	SY	$	$
36	Coordinate with FPL to Remove or Relocate Existing Power Poles During Road and Utility Construction	23	EA	$	$
37	Stabilize Existing Power Poles During Roadway and Utility Construction	7	EA	$	$
38	Furnish & Install Single Post Sign Less Than 12 SF	9	EA	$	$
39	Furnish & Install Thermoplastic, Std., White, Solid, 6"	1,694	LF	$	$
40	Furnish & Install Thermoplastic, Std., White, Solid, 12"	453	LF	$	$
41	Furnish & Install Thermoplastic, Std., White, Solid, 18"	27	LF	$	$
42	Furnish & Install Thermoplastic, Std., White, Solid, 24"	170	LF	$	$
43	Furnish & Install Thermoplastic, Std., Yellow, Solid, 6"	1,770	LF	$	$
44	Furnish & Install Thermoplastic, Std., Dbl Yellow, Solid, 6"	1,690	LF	$	$
45	Furnish & Install Painted Curbing, Std., Yellow, Solid	1,770	LF	$	$
46	Furnish & Install Thermoplastic Std., White, Solid, Pavement Markings	2	EA	$	$
	DRAINAGE AND ROADWAY				$
CURBING					
47	Curb Construction - 2,500 psi Concrete:				
	a. Construct Type D Curb	426	LF	$	$
	b. Construct Type F Curb and Gutter	3,020	LF	$	$
	TOTAL CURBING				$
SIDEWALKS AND DRIVEWAYS					
48	Sidewalk Construction - 2,500 psi Concrete:				
	a. Construct Concrete Sidewalk (Decorative Pattern) and Sidewalks	2,605	SY	$	$
	b. Construct ADA Detectable Warnings	12	EA	$	$
	TOTAL SIDEWALKS AND DRIVEWAYS				$
LANDSCAPE & IRRIGATION					
49	Irrigation System Complete:				
	a. 2-inch irrigation	1	LS	$	$
50	Parking Area Landscaping Complete	1	LS	$	$
	TOTAL LANDSCAPE & IRRIGATION				$
LIGHTING SYSTEM					
51	Lighting:				
	a. Conduit, Open Trench	2458	LF	$	$
	b. Conduit, Above Ground	50	LF	$	$
	c. Pull & Splice Box, 13"x24" Cover Size	17	EA	$	$
	d. Electrical Power Service, Underground Meter Purchased by Contractor	1	AS	$	$
	e. Electrical Service Wire	142	LF	$	$
	f. Electrical Service Disconnect, Pole Mount	1	EA	$	$
	g. Prestressed Concrte Pole, Type P-II 12 FT	1	EA	$	$
	h. Lighting Conductors, Insulated, No. 8 - 6	8908	LF	$	$
	i. Load Center, Secondary Voltage	1	EA	$	$
	j. Pole Cable Distribution System, Conventional	14	EA	$	$
	k. Light Pole Complete - Special Design, Double Arm Shoulder Mount, Aluminum 28'	14	EA	$	$
	TOTAL LIGHTING SYSTEM				$

PAY ITEM NOTES

1. BID ITEM #1B: THE DEWATERING EQUIPMENT SHALL INCLUDE ALL MATERIALS, INCLUDING PUMP(S), HEADER PIPE, DROP PIPE, SOUND ATTENUATION, HOSES AND ALL OTHER INCIDENTALS REQUIRED FOR A COMPLETE SYSTEM. THE EQUIPMENT SHALL BE USED FOR AS LONG AS NECESSARY IN ORDER TO ACHIEVE A DRY TRENCH FOR MATERIAL INSTALLATION.
2. BID ITEM #2: MOT SHALL INCLUDE ALL TEMPORARY PAINT STRIPING, SIGNAGE, ETC. TO ALL FOR CONTINUED SAFE ACCESS.
3. BID ITEM #6: PAYMENT OF THE APPLICABLE UNIT PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL PLANT, LABOR, MATERIALS AND EQUIPMENT NECESSARY TO REMOVE THE SERVICE PIPE FROM THE MAIN TO THE METER, INCLUDING THE CURB STOP AT THE METER, AND ANY CASING PIPE USED TO SLEEVE THE SERVICE PIPE UNDER THE ROADWAY.
4. BID ITEM #7, #12 AND #16: NO SEPARATE PAYMENT WILL BE MADE FOR MARKER TAPES OR MARKER WIRE REQUIRED TO BE INSTALLED WITH BURIED PVC PIPES.
5. BID ITEM #9: THE COST TO CONSTRUCT THE CONCRETE PAD AROUND THE VALVE BOX SHALL BE INCLUDED WITHIN THIS PAY ITEM.
6. BID ITEM #12: FURNISH AND INSTALL SERVICE PIPE AND SHALL INCLUDE A CORPORATION STOP, DOUBLE STRAP SERVICE SADDLE ON THE MAIN, WET TAP OF THE EXISTING MAIN, THREE FEET OF LOOPED SERVICE PIPE AT THE METER BOX, NEW CURB STOP AT THE END OF THE SERVICE PIPE, TRACER WIRE, PIPE EXCAVATION AND BACKFILL TO GRADE AS SHOWN ON THE DETAIL DRAWINGS.
7. BID ITEM #23: AS A MINIMUM, THE SYSTEM SHALL CONTAIN PUMPS, PIPING, CONTROL SYSTEM AND AUTO-DIALER CONNECTED TO CONTRACTOR PERSONNEL FOR NOTIFICATION PURPOSES. ONCE THE NEW SANITARY SEWER SYSTEM HAS BEEN SATISFACTORILY COMPLETED, THE TEMPORARY SYSTEM SHALL BE DISMANTLED AND REMOVED. THIS SYSTEM SHALL BE SOUND ATTENUATED.
8. BID ITEM #33: SUCH PAYMENT SHALL INCLUDE CORE DRILLING AND SEALING, CONCRETE COLLARS AND INCIDENTALS NECESSARY TO MAKE A COMPLETE CONNECTION.
9. BID ITEM #35: INCLUDED IN THIS BID ITEM SHALL BE THE COST FOR ALL MATERIAL TESTING OF ANY ASPHALT AND ALL TESTING REQUIRED FOR BASE CONSTRUCTION.
10. BID ITEM #36 AND #37: COORDINATION WITH THE POWER COMPANY IS MANDATORY.
11. BID ITEMS #38-#46: FURNISHING ALL PLANT, LABOR, MATERIALS AND EQUIPMENT INCLUDING RPM'S NECESSARY TO FURNISH AND INSTALL THE STRIPING, MESSAGES AND ARROWS AT THE LOCATIONS SHOWN AND ACCORDING TO THE ASSOCIATED FDOT STANDARD SPECIFICATIONS.
12. BID ITEM #47: INCLUDED IN THIS BID ITEM SHALL BE THE COST TO PERFORM ANY CONCRETE TESTING, INCLUDING SLUMP, COLLECTION OF TEST CYLINDERS, COMPRESSION TESTING OF CYLINDERS AND ANY OTHER REQUIRED CONCRETE TESTING.
13. BID ITEM #48: INCLUDES THE COST FOR CAST IN PLACE DETECTABLE WARNINGS AND FURTHER INCLUDED IN THIS BID ITEM SHALL BE THE COST TO PERFORM ANY CONCRETE TESTING, INCLUDING SLUMP, COLLECTION OF TEST CYLINDERS, COMPRESSION TESTING OF CYLINDERS AND ANY OTHER REQUIRED CONCRETE TESTING.
14. BID ITEM #49 AND #50: SYSTEM SHALL BE FULLY OPERATIONAL AND ACCEPTED BY THE CITY AS WELL AS THE PLANTINGS AND LANDSCAPE MATERIAL SHALL BE ACCEPTED BY THE LANDSCAPE ARCHITECT AND THE CITY.
15. BID ITEM #51: SYSTEM SHALL BE FULLY OPERATIONAL AND ACCEPTED BY THE CITY AS WELL AS ENGINEER PRIOR TO FINAL ACCEPTANCE.

REV.NO.	DESCRIPTIONS REVISIONS	DATE
B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

SEAL

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THE CITY OF DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

TABULATION OF QUANTITIES

PROJECT NO. 2015-085

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: NA
VERTICAL: NA

M&C FILE NUMBER: GN002-09960161
DRAWING NUMBER: G-6

STATUS: REISSUED FOR BIDDING
REVISION

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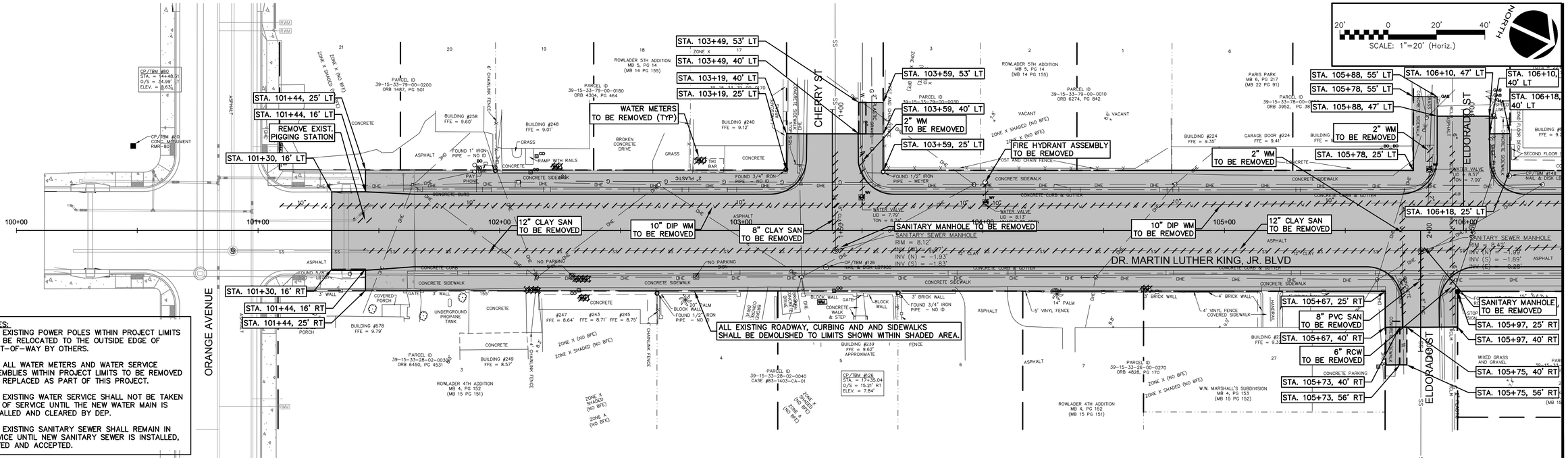

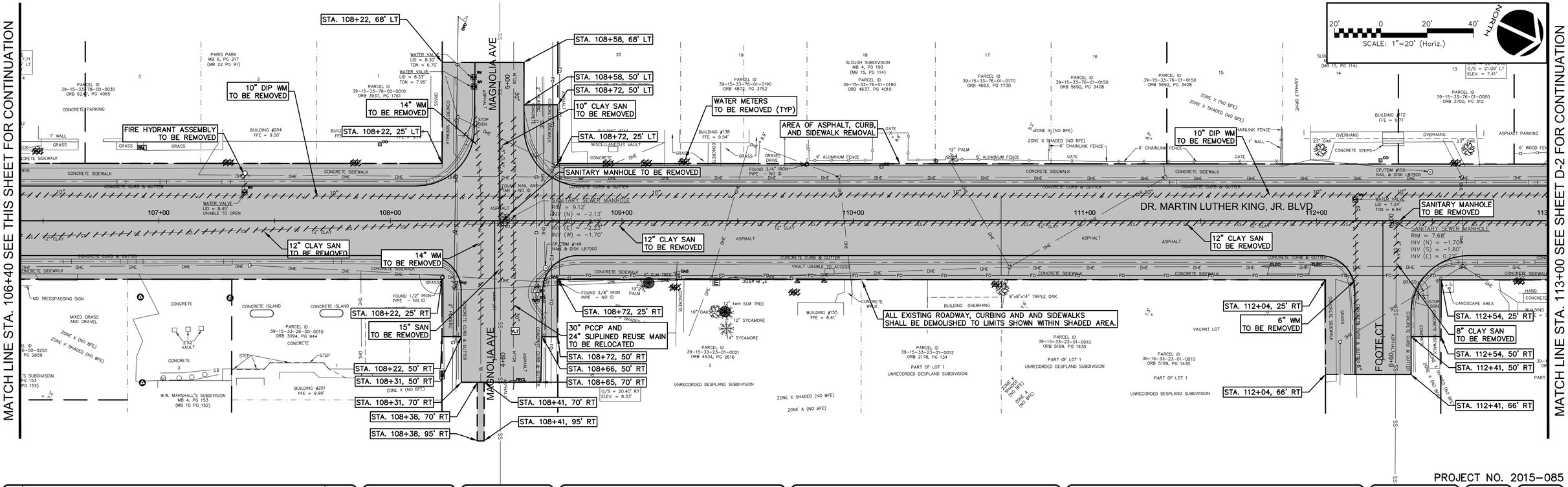

REV.NO.	DESCRIPTIONS	DATE
B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

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SCOTT R. SPOONER, P.E. No. 23273

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THE CITY OF DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

DEMOLITION PLAN 1 OF 2

PROJECT NO. 2015-085

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	BFN
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE: HORIZONTAL: 1"=20' VERTICAL: 1"=2'

M&C FILE NUMBER: CD101-09960161

DRAWING NUMBER: D-1

STATUS: REISSUED FOR BIDDING

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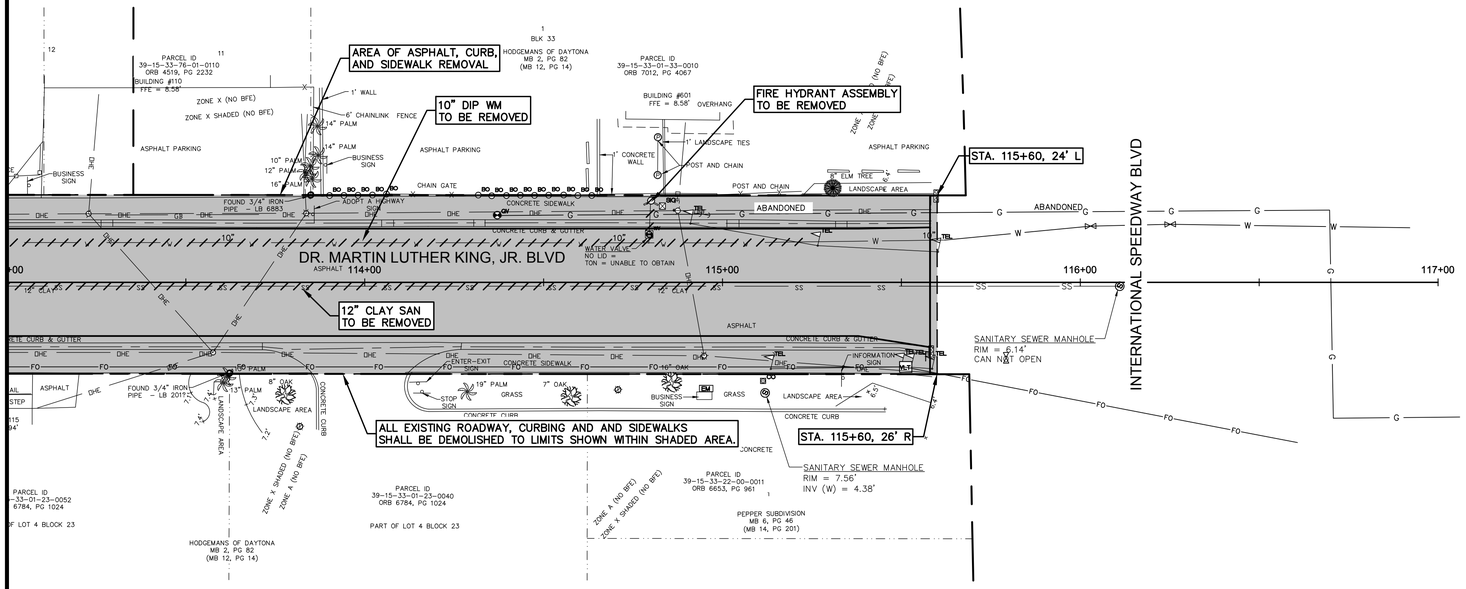
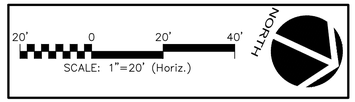
MATCH LINE STA. 113+00 SEE SHEET D-1 FOR CONTINUATION





NOTES:
1. EXISTING POWER POLES WITHIN PROJECT LIMITS WILL BE RELOCATED TO THE OUTSIDE EDGE OF RIGHT-OF-WAY BY OTHERS.
2. ALL WATER METERS AND WATER SERVICE ASSEMBLIES WITHIN PROJECT LIMITS TO BE REMOVED AND REPLACED AS PART OF THIS PROJECT.
3. EXISTING WATER SERVICE SHALL NOT BE TAKEN OUT OF SERVICE UNTIL THE NEW WATER MAIN IS INSTALLED AND CLEARED BY VOLUSIA COUNTY HEALTH DEPARTMENT.
4. EXISTING SANITARY SEWER SHALL REMAIN IN SERVICE UNTIL NEW SANITARY SEWER IS INSTALLED, TESTED AND ACCEPTED.

REV.NO.	DESCRIPTIONS	DATE
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A	ISSUE FOR BIDDING	AUGUST 2018

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THE CITY OF DAYTONA BEACH, FLORIDA

PROJECT NO. 2015-085

DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

DEMOLITION PLAN 2 OF 2

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	BFN
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

M&C FILE NUMBER CD101-09960161

DRAWING NUMBER D-2

STATUS: REISSUED FOR BIDDING

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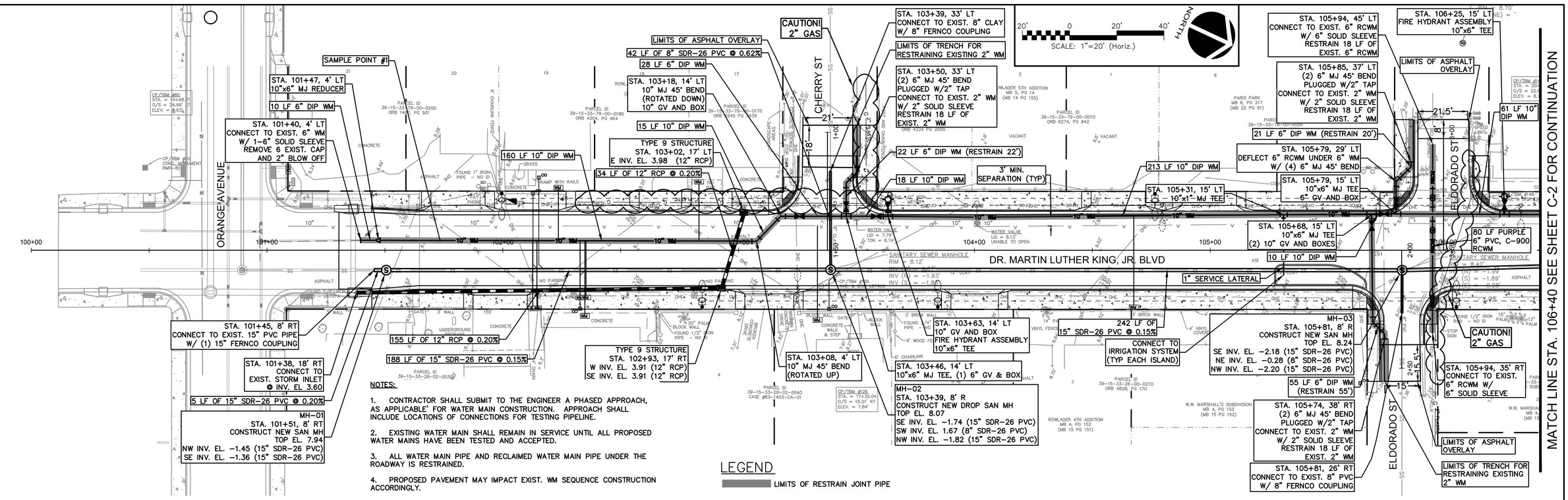

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A	ISSUE FOR BIDDING	AUGUST 2018

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THE CITY OF DAYTONA BEACH, FLORIDA

PROJECT NO. 2015-085

DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

PLAN AND PROFILE 100+00 TO 106+40

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

M&C FILE NUMBER CU101-09960161

DRAWING NUMBER C-1

STATUS: REISSUED FOR BIDDING
REVISION

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MATCH LINE STA. 106+40 SEE SHEET C-1 FOR CONTINUATION

MATCH LINE STA. 113+00 SEE SHEET C-3 FOR CONTINUATION

SCALE: 1"=20' (Horiz.)

NORTH

STA. 108+37, 37' LT
CONNECT TO EXIST. 14" WM
W/ 16"x14" MJ REDUCER
(2) 16" MJ 45° BENDS
RESTRAIN 27 LF OF
EXIST. 14" WM FROM
16"X14" REDUCER

STA. 108+47, 43' LT
CONNECT TO EXIST. 8" CLAY
W/ 8" FERNCO COUPLING

STA. 108+53, 45' LT
GROUT FILL RELOCATED 30" PCCP TO
SEAL AROUND THE END OF EXPOSED 24" RCWM & CONNECT
EXIST. 24" PVC RCWM TO NEW 24" PVC PIPE
W/ 2-24" 45° BENDS
SEE RCWM ENLARGEMENT PLAN ON SHEET C-3

THRUST BLOCK (TYP 2) SEE DETAIL SHEET CD-9

45 LF OF 8" SDR-26 PVC @ 0.28%

25 LF 16" DIP WM
(RESTRAIN 25')

STA. 107+73, 15' LT
10"x1" MJ TEE

191 LF 10" DIP WM

STA. 108+31, 15' LT
(2) 16"X10" REDUCERS
(2) 16" TEES
(2) 10" GV & BOXES
(2) 16" GV & BOXES

STA. 108+62, 15' LT
10"x1" MJ TEE

60 LF 10" DIP WM

STA. 108+91, 15' LT
FIRE HYDRANT ASSEMBLY
10"x6" TEE

STA. 109+11, 15' LT
10"x1" MJ TEE

3' MIN.
SEPARATION (TYP)

331 LF 10" DIP WM

STA. 111+85, 15' LT
10"x1" MJ TEE

STA. 112+22, 15' LT
10" GV AND BOX
10"x6" MJ TEE
6" GV AND BOX

MH-05
STA. 112+34, 1' R
CONSTRUCT NEW DROP SAN MH
TOP EL. 7.13
NW INV. EL. -1.98 (15" SDR-26 PVC)
SE INV. EL. -2.08 (15" SDR-26 PVC)
NE INV. EL. 0.22 (8" SDR-26 PVC)

78 LF 10" DIP WM

STA. 112+56, 15' LT
FIRE HYDRANT ASSEMBLY
10"x6" TEE

STA. 112+89, 15' LT
10"x1" MJ TEE

1" SERVICE LAYERAL

DR. MARTIN LUTHER KING, JR. BLVD

387 LF OF 15" SDR-26 PVC @ 0.15%

1" SERVICE LAYERAL

1" SERVICE LAYERAL

90 LF PURPLE 24" PVC

CONNECT TO
IRRIGATION SYSTEM
(TYP EACH ISLAND)

266 LF OF 15" SDR-26 PVC @ 0.15%

62 LF 16" DIP WM

STA. 108+37, 38' RT
CONNECT TO EXIST. 14" WM
W/ 16"x14" MJ REDUCER
(2) 16" MJ 45° BENDS
RESTRAIN 50 LF OF
EXIST. 14" WM FROM 16"x14" REDUCER

MH-04
STA. 108+48, 1' R
CONSTRUCT NEW SAN MH
TOP EL. 9.12
NW INV. EL. -2.66 (15" SDR-26 PVC)
SE INV. EL. -2.60 (15" SDR-26 PVC)
NE INV. EL. -2.68 (15" SDR-26 PVC)
SW INV. EL. -1.70 (8" SDR-26 PVC)

STA. 108+55, 30' RT
2-24" 45° BENDS

25 LF OF 15" SDR-26 PVC @ 1.70%

STA. 108+53, 34' RT
CONNECT TO EXIST. 30" PCCP
LINED WITH 24" RCWM, SEE NOTE 1.

STA. 108+48, 26' RT
CONNECT TO EXIST. 15" SAN
W/ 15" FERNCO COUPLING

1" SERVICE LAYERAL
25 LF OF " 8" SDR-26 PVC @ 0.00%

62 LF 6" DIP WM
(RESTRAIN 62')

STA. 112+17, 45' RT
(2) 6" MJ 45° BEND
CONNECT TO EXIST. 6" WM
W/ 6" SOLID SLEEVE
RESTRAIN 18 LF OF
EXIST. 6" WM FROM 6" 45° BEND

8" SDR-26 PVC SHALL
BE CONNECTED
TO MH-05 VIA
DROP CONNECTION

STA. 112+34, 26' RT
CONNECT TO EXIST. 8" CLAY
W/ 8" FERNCO COUPLING

CAUTION!
2" GAS

LIMITS OF TRENCH FOR
RESTRAINING EXISTING 14" WM

LIMITS OF ASPHALT OVERLAY

34'

25'

MAGNOLIA AVE

FOOTE CT

LEGEND

LIMITS OF RESTRAIN JOINT PIPE

NOTES:

1. SEE RCWM ENLARGEMENT PLAN ON SHEET C-3

2. CONTRACTOR SHALL SUBMIT TO THE ENGINEER A PHASED APPROACH, AS APPLICABLE FOR WATER MAIN CONSTRUCTION. APPROACH SHALL INCLUDE LOCATIONS OF CONNECTIONS FOR TESTING PIPELINE.

3. EXISTING WATER MAIN SHALL REMAIN IN SERVICE UNTIL ALL PROPOSED WATER MAINS HAVE BEEN TESTED AND ACCEPTED.

4. THE CONTRACTOR IS TO DETERMINE THE EXISTING INVERT ELEVATIONS AT THE MANHOLE LOCATED AT THE INTERSECTION OF DR. MARTIN LUTHER KING BLVD. AND MAGNOLIA AVENUE (MH-04) PRIOR TO ANY CONSTRUCTION BEGINNING ON THE PROPOSED GRAVITY SEWER SYSTEM. INFORMATION MUST BE PROVIDED AND DISCUSSED WITH THE ENGINEER OF RECORD PRIOR TO BEGINNING CONSTRUCTION ON THE PROPOSED GRAVITY SEWER SYSTEM.

5. ALL WATER MAIN PIPE AND RECLAIM WATER MAIN PIPE UNDER THE ROADWAY IS RESTRAINED.

STA: 107+00.00
EL. 8.32

STA: 108+47.54
EL. 9.12

STA. 108+48
EL. 9.12

EXIST GRADE

0.54%

0.60%

STA: 111+00.00
EL. 7.60

-0.35%

STA. 112+34
EL. 7.13

STA: 113+00.00
Elev 6.91

EXIST. 2" GAS

191 LF 10" DIP WM

10" X 6" TEE
(BEHIND)

331 LF 10" DIP WM

78 LF 10" DIP WM

10" x 6" TEE

10" X 6" TEE
(BEHIND)

EXIST. 30" PCCP
W/ 24" RCWM TO BE REMOVED

RELOCATED 24" DIP
MATCH EXIST. ELEVATION

INV. EL. 0.22

INV. EL. -1.70

266 LF OF 15" 15" SDR-26 PVC @ 0.15%

387 LF OF 15" 15" SDR-26 PVC @ 0.15%

EXIST. 12" CLAY PIPE
TO BE REMOVED

EXIST. 12" CLAY PIPE
TO BE REMOVED

INV. EL. -2.60

EXIST. SAN MH
TO BE REMOVED

MH-04

INV. EL. -2.66

INV. EL. -2.68

INV. EL. -2.08

EXIST. SAN MH
TO BE REMOVED

MH-05

INV. EL. -1.98

12
10
6
4
2
0
-2
-4

8.28 8.29 8.79 8.31 8.78 8.32 8.77 8.43 8.77 8.54 8.80 8.64 8.85 8.75 8.90 8.86 8.94 8.97 8.95 9.08 8.95 9.04 8.91 8.92 8.83 8.80 8.75 8.68 8.67 8.56 8.58 8.44 8.54 8.32 8.49 8.20 8.43 8.08 8.35 7.96 8.27 7.84 8.19 7.72 8.10 7.60 8.02 7.53 7.94 7.46 7.87 7.39 7.80 7.32 7.72 7.25 7.65 7.18 7.58 7.11 7.50 7.04 7.44 6.98 7.36 6.91

+40 106+60 106+80 107+00 107+20 107+40 107+60 107+80 108+00 108+20 108+40 108+60 108+80 109+00 109+20 109+40 109+60 109+80 110+00 110+20 110+40 110+60 110+80 111+00 111+20 111+40 111+60 111+80 112+00 112+20 112+40 112+60 112+80 113+00

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THE CITY OF DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR. BOULEVARD–ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

PLAN AND PROFILE 106+40 TO 113+00

PROJECT NO. 2015-085

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

M&C FILE NUMBER: CU101-09960161
DRAWING NUMBER: C-2

STATUS: REISSUED FOR BIDDING
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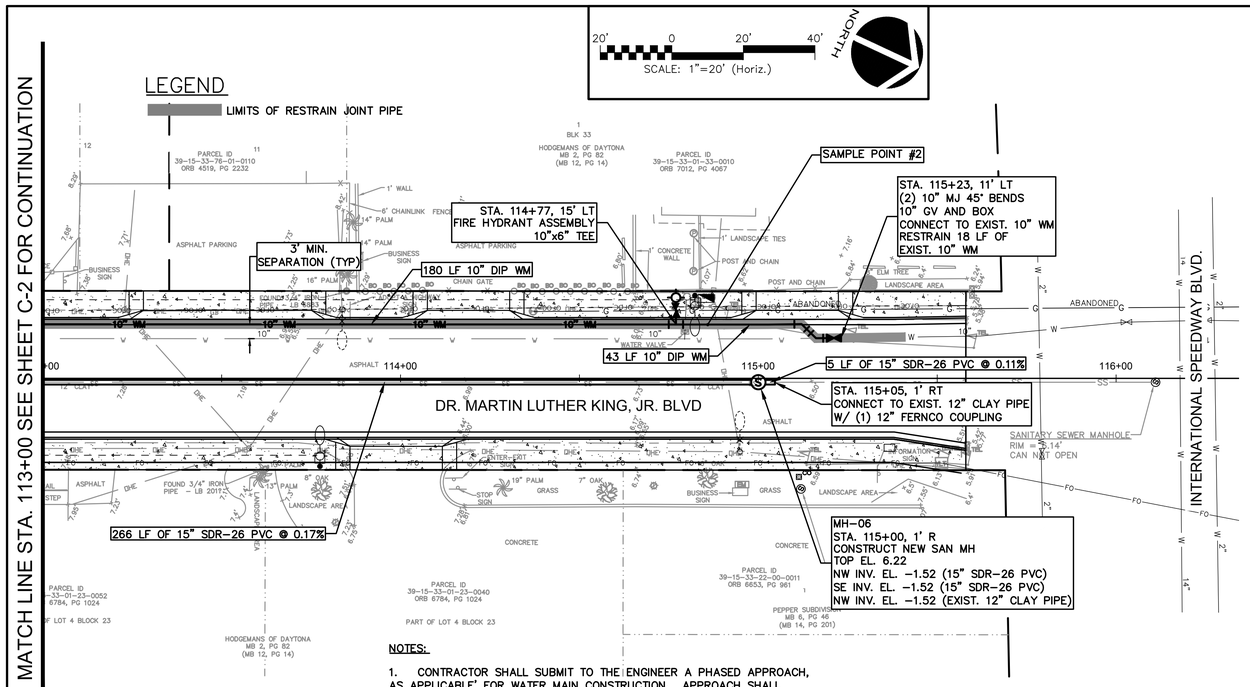
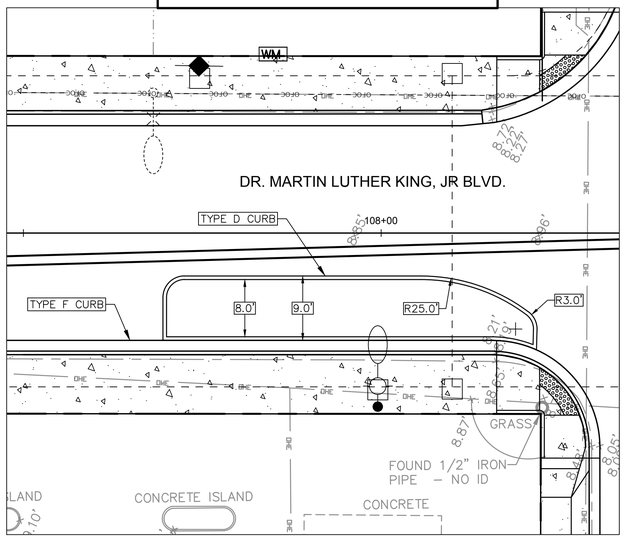
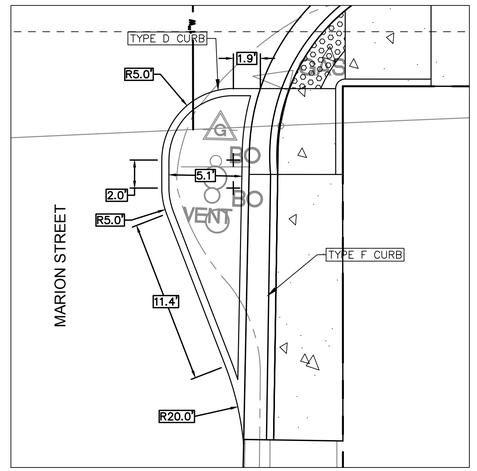
MATCH LINE STA. 113+00 SEE SHEET C-2 FOR CONTINUATION

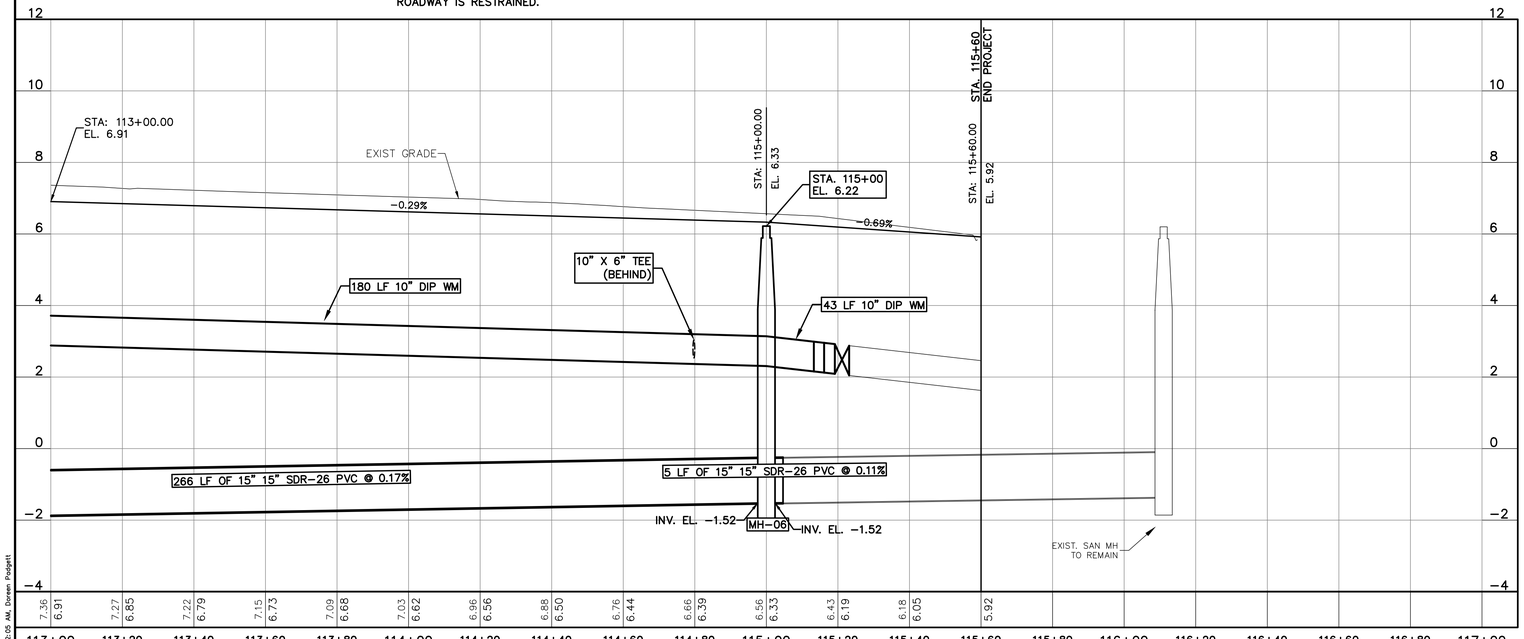


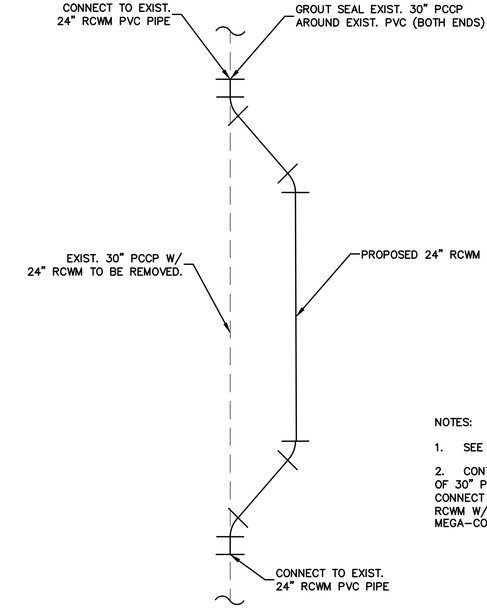


TYPICAL BUMP-OUT DETAIL
SCALE 1"=10'



MAGNOLIA AVE. STA. 4+30 ± BUMP-OUT DETAIL
SCALE 1"=5'





24" RCWM RELOCATION DETAIL

NOTES:

1. SEE SHEET C-2 (STA. 108+53, 45' LT)

2. CONTRACTOR SHALL CUT AWAY 5-FEET OF 30" PCCP TO EXPOSE EXISTING 24" RCWM. CONNECT EXIST. 24" RCWM TO PROPOSED 24" RCWM W/ RESTRAINED COUPLING SUCH AS MEGA-COUPLING OR EQUAL.

NOTES:

1. CONTRACTOR SHALL SUBMIT TO THE ENGINEER A PHASED APPROACH, AS APPLICABLE FOR WATER MAIN CONSTRUCTION. APPROACH SHALL INCLUDE LOCATIONS OF CONNECTIONS FOR TESTING PIPELINE.

2. EXISTING WATER MAIN SHALL REMAIN IN SERVICE UNTIL ALL PROPOSED WATER MAINS HAVE BEEN TESTED AND ACCEPTED.

3. ALL WATER MAIN PIPE AND RECLAIMED WATER PIPE UNDER THE ROADWAY IS RESTRAINED.

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A	ISSUE FOR BIDDING	AUGUST 2015

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DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

PLAN AND PROFILE 113+00 TO 117+00

PROJECT NO. 2015-085

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

M&C FILE NUMBER CU101-09960161

DRAWING NUMBER C-3

STATUS: REISSUED FOR BIDDING
REVISION

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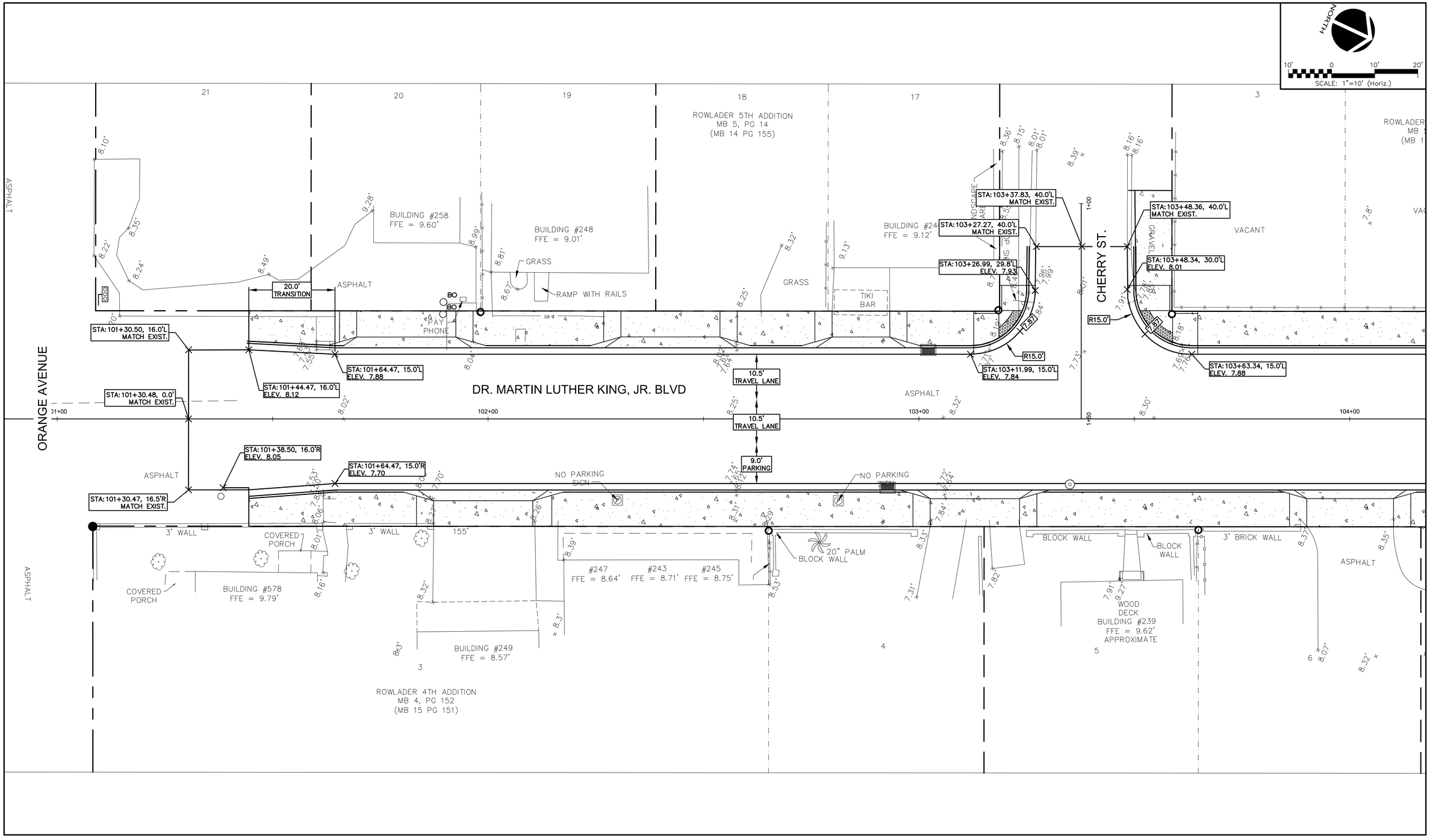

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THE CITY OF DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

INTERSECTION PLAN 1 OF 3

PROJECT NO. 2015-085

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	BFN
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

M&C FILE NUMBER
CU401-09960161

DRAWING NUMBER
C-4

STATUS: REISSUED FOR BIDDING
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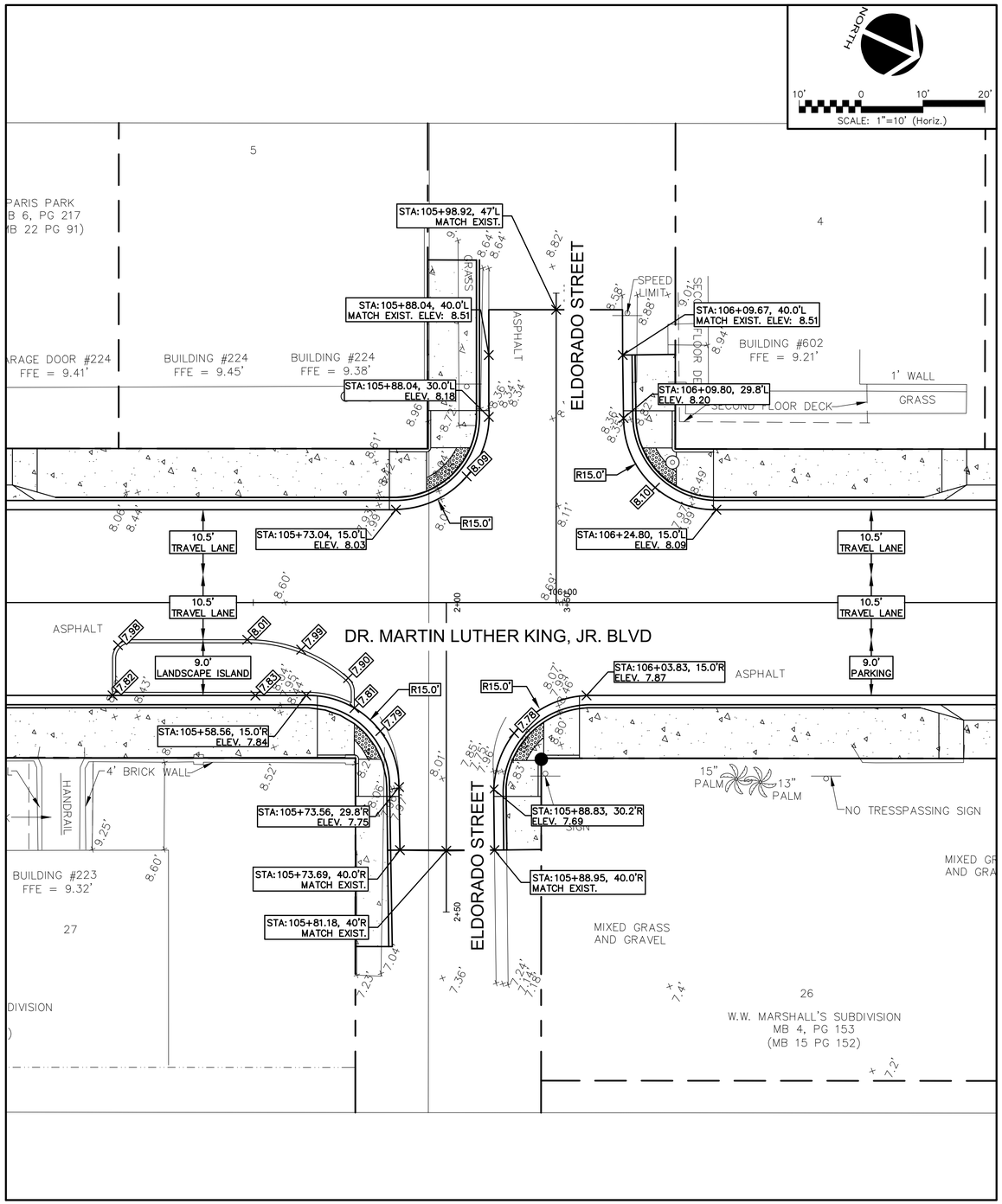

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THE CITY OF DAYTONA BEACH, FLORIDA

PROJECT NO. 2015-085

DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

INTERSECTION PLAN 2 OF 3

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	BFN
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

M&C FILE NUMBER
CU401-09960161

DRAWING NUMBER
C-5

STATUS: REISSUED FOR BIDDING
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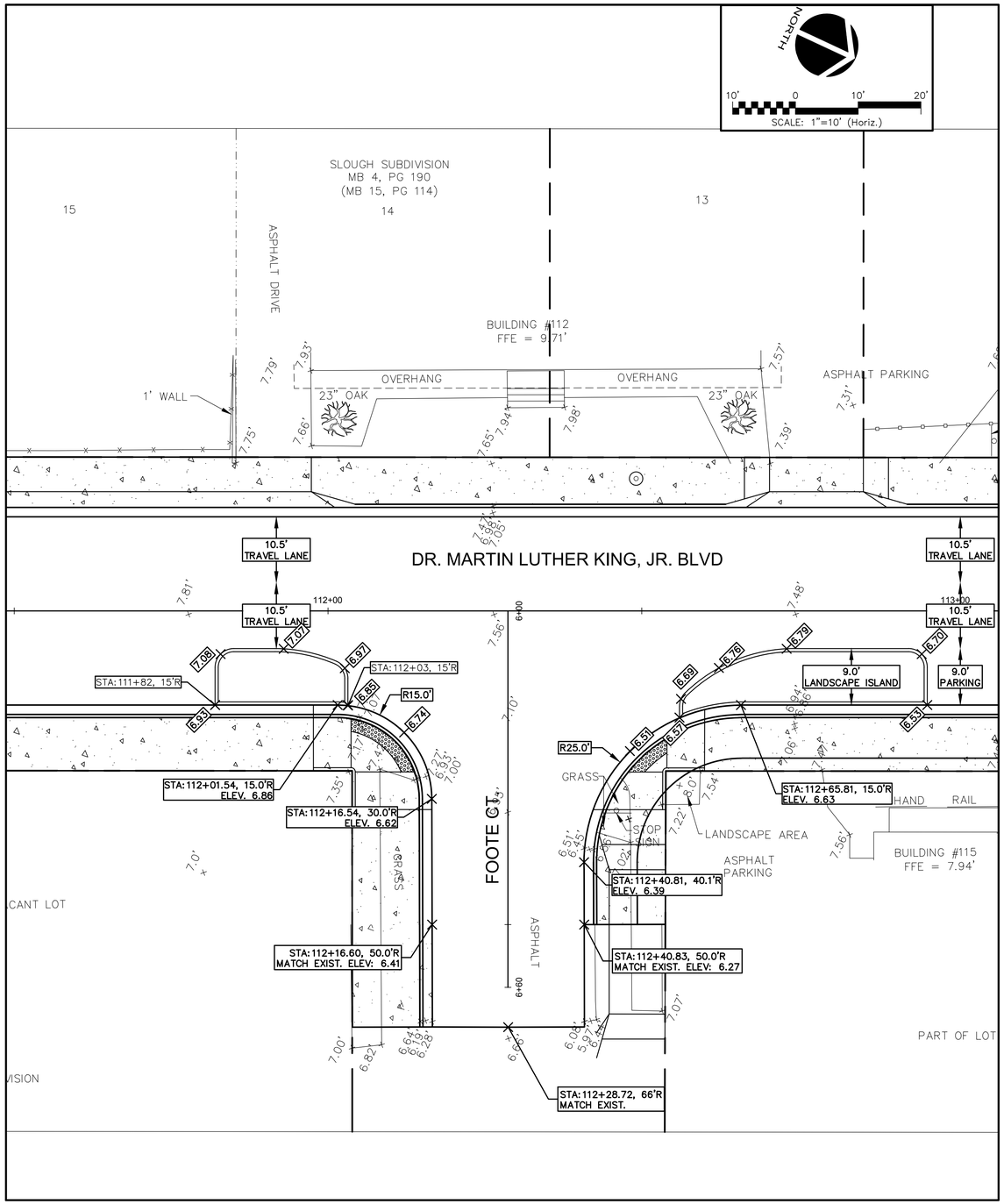

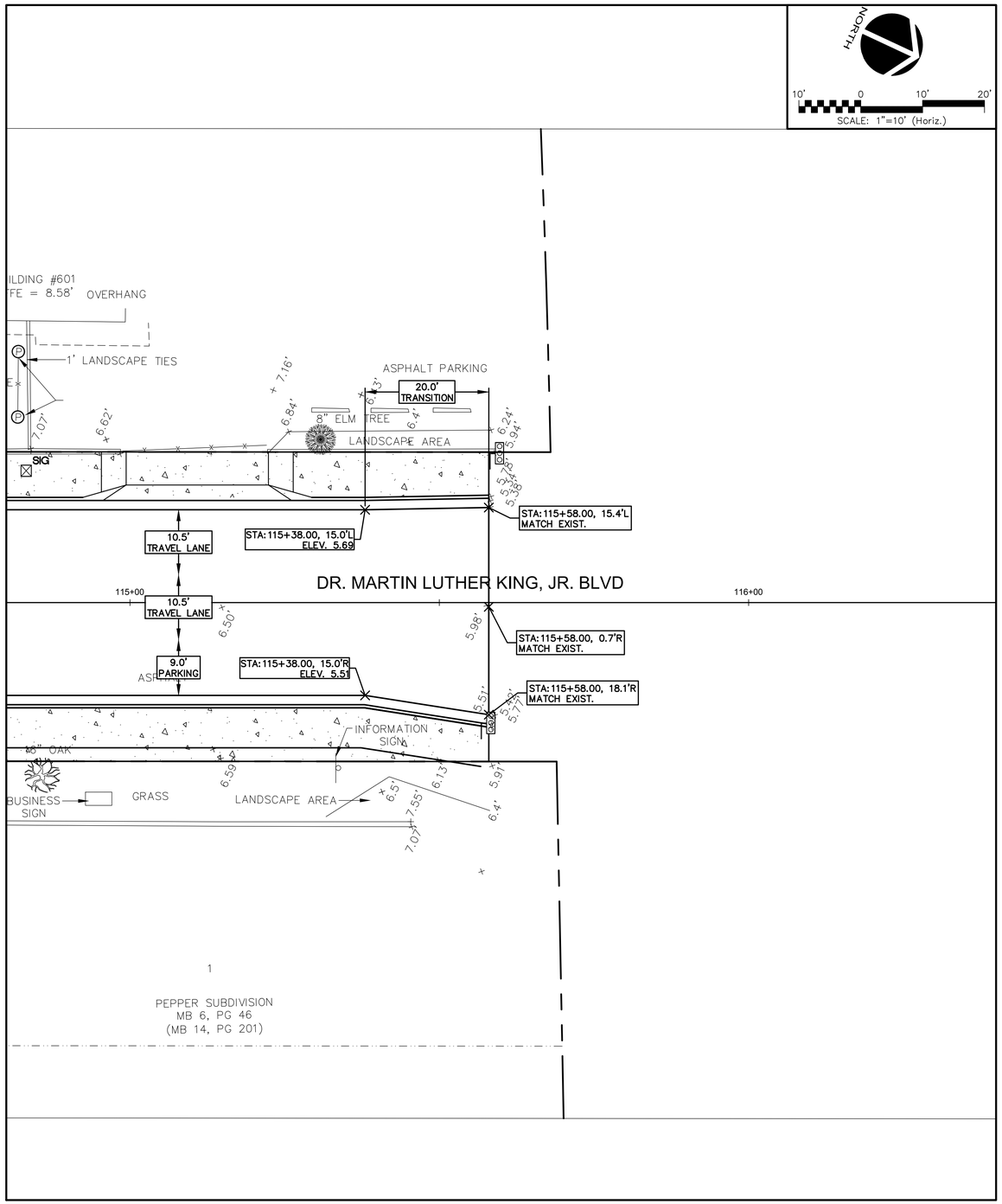

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THE CITY OF DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR. BOULEVARD–ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

INTERSECTION PLAN 3 OF 3

PROJECT NO. 2015-085

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	BFN
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

M&C FILE NUMBER
CU401-09960161

DRAWING NUMBER
C-6

STATUS: REISSUED FOR BIDDING
REVISION

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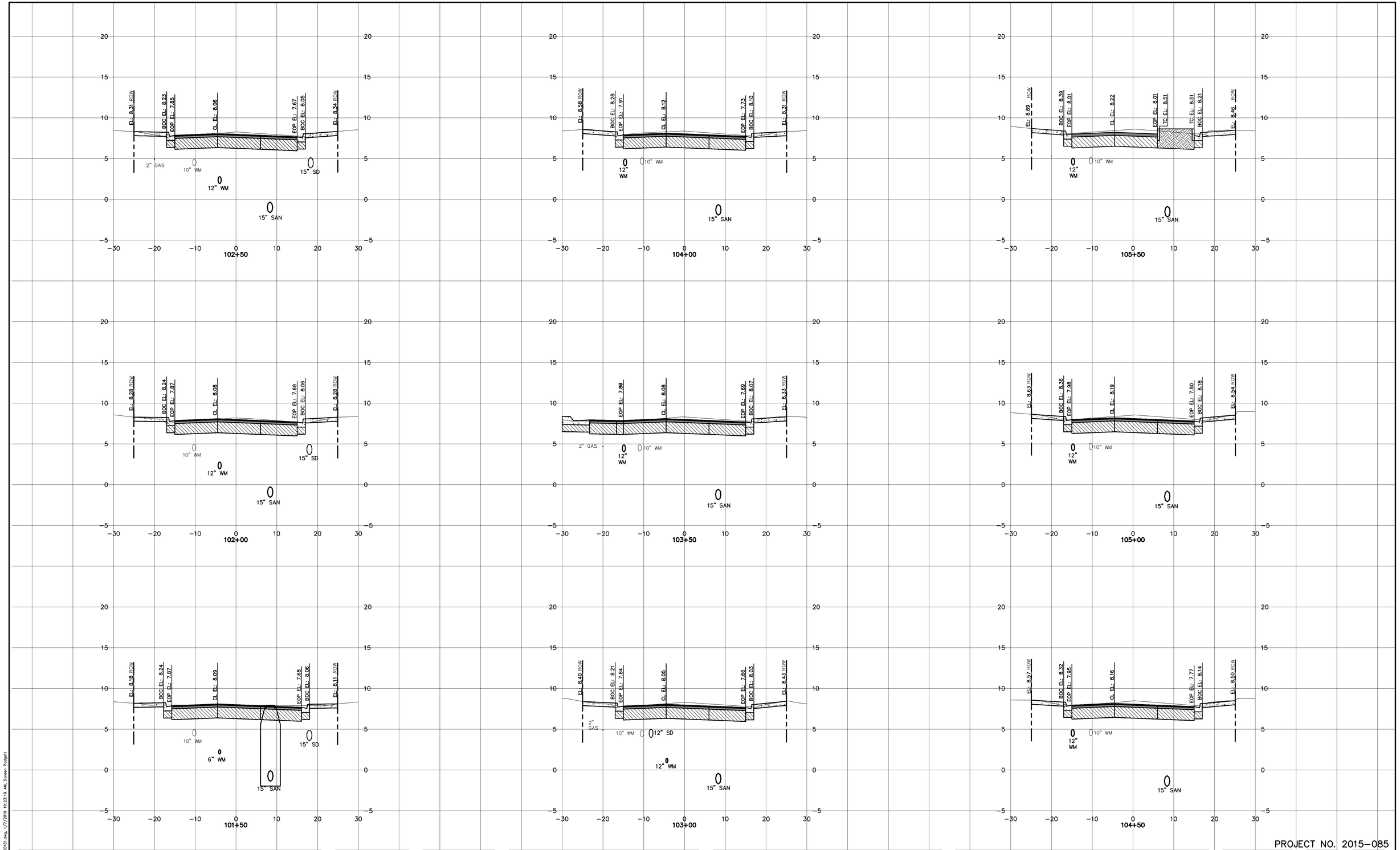

PROJECT NO. 2015-085

REV.NO.	DESCRIPTIONS	DATE
B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

REVISIONS

SEAL

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THE CITY OF DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR.
BOULEVARD-ROADWAY AND PEDESTRIAN
IMPROVEMENTS PROJECT

ROADWAY SECTIONS
1 OF 4

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	BFN
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=10'
VERTICAL: 1"=5'

M&C FILE NUMBER
CU801-09960161
DRAWING NUMBER
C-7

STATUS: REISSUED FOR BIDDING
REVISION

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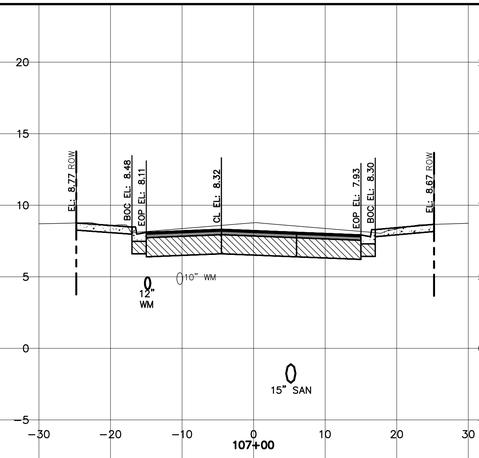

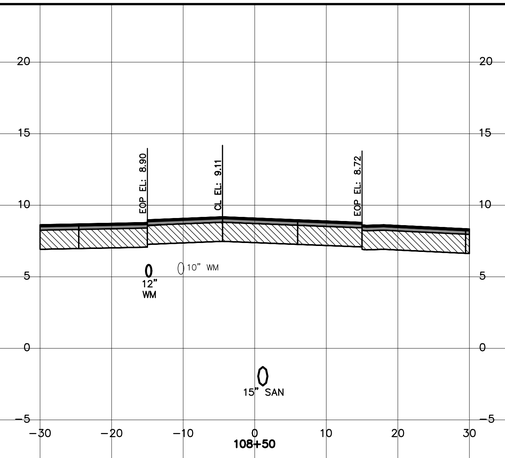

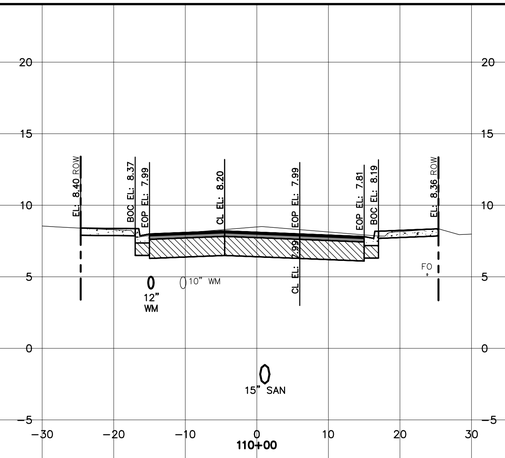

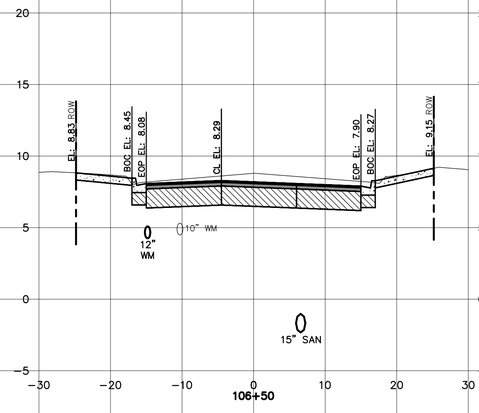

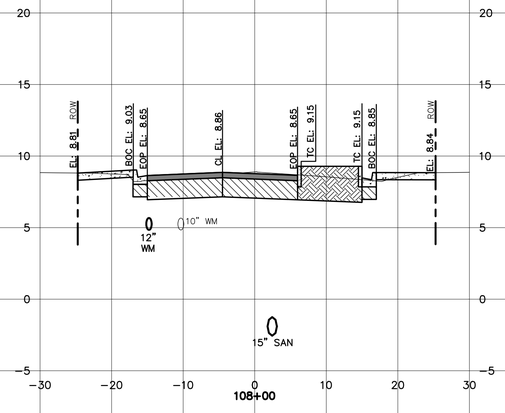

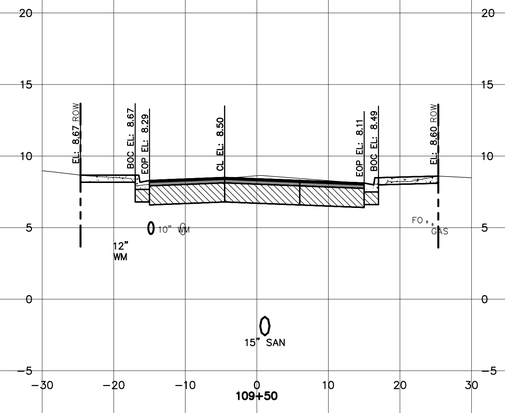

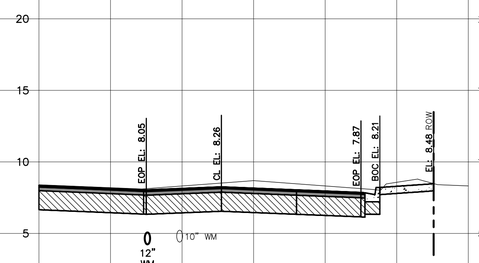

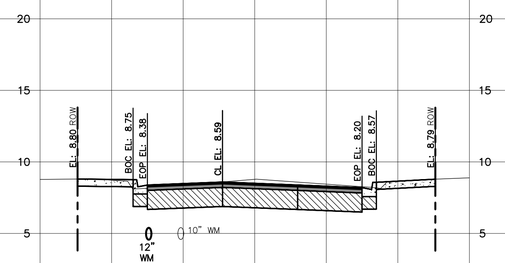

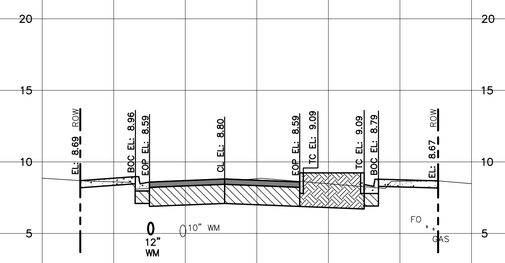

REV.NO.	DESCRIPTIONS	DATE
B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

REVISIONS

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THE CITY OF DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR. BOULEVARD–ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

ROADWAY SECTIONS 2 OF 4

PROJECT NO. 2015-085

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	BFN
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=10'
VERTICAL: 1"=5'

M&C FILE NUMBER
CU801-09960161

DRAWING NUMBER
C-8

STATUS: REISSUED FOR BIDDING
REVISION

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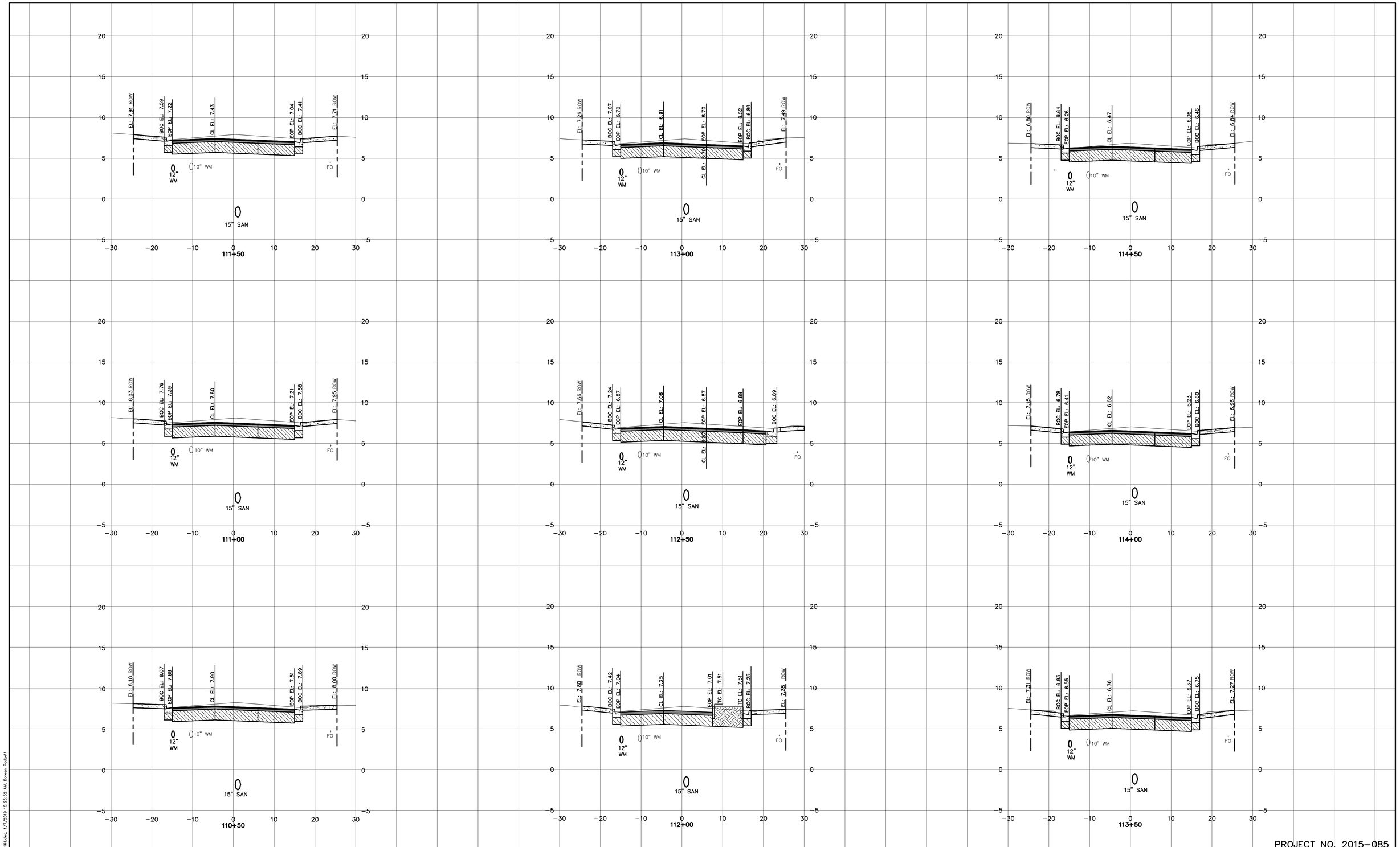

PROJECT NO. 2015-085

REV.NO.	DESCRIPTIONS	DATE
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A	ISSUE FOR BIDDING	AUGUST 2018

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THE CITY OF DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR.
BOULEVARD-ROADWAY AND PEDESTRIAN
IMPROVEMENTS PROJECT

ROADWAY SECTIONS
3 OF 4

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	BFN
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=10'
VERTICAL: 1"=5'

M&C FILE NUMBER: CU801-09960161
DRAWING NUMBER: C-9

STATUS: REISSUED FOR BIDDING
REVISION

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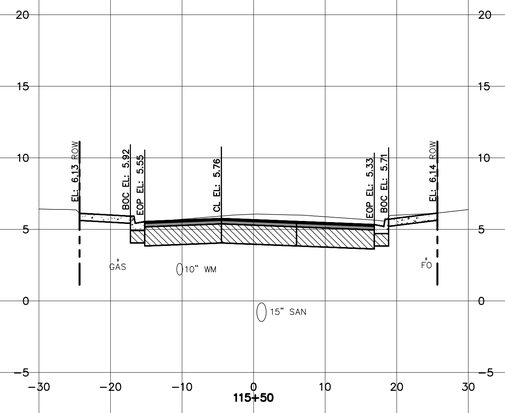
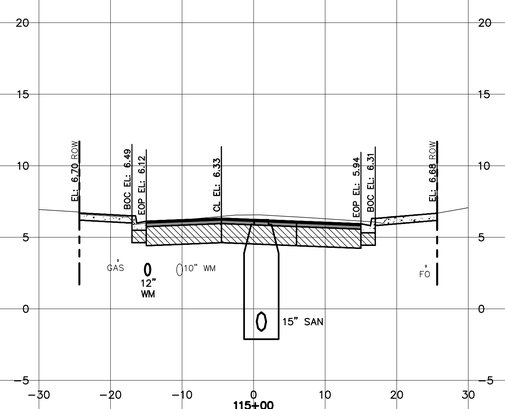


115+50



115+00

REV.NO.	DESCRIPTIONS	DATE
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A	ISSUE FOR BIDDING	AUGUST 2018

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THE CITY OF DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR. BOULEVARD–ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

ROADWAY SECTIONS 4 OF 4

PROJECT NO. 2015-085

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	BFN
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=10'
VERTICAL: 1"=5'

M&C FILE NUMBER CU801-09960161

DRAWING NUMBER C-10

STATUS: REISSUED FOR BIDDING

REVISION

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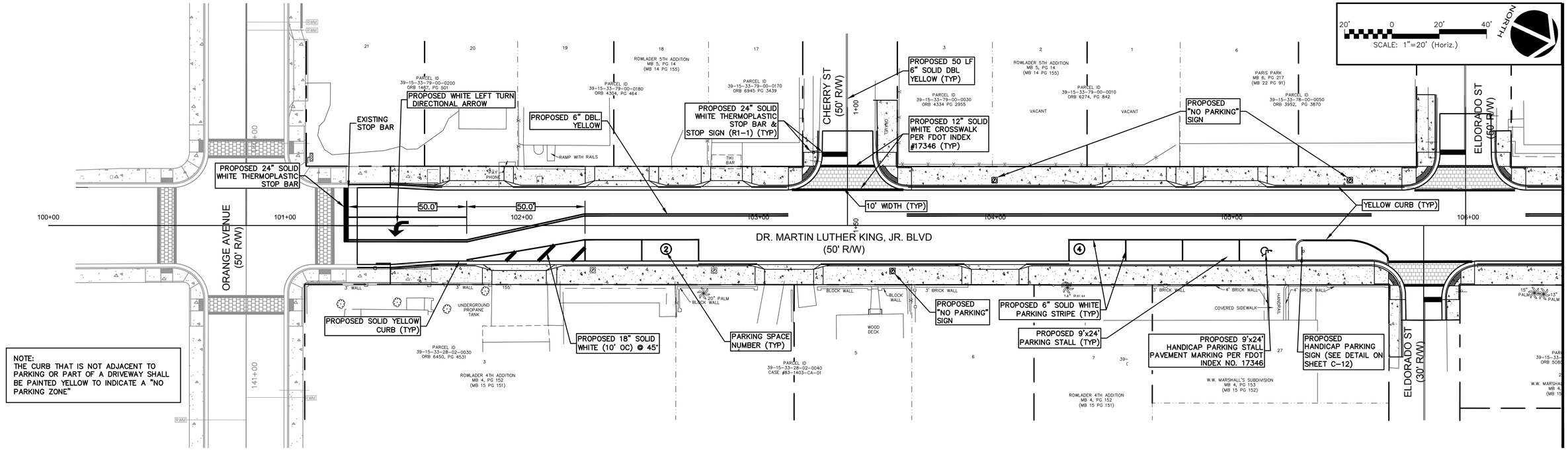

PROJECT NO. 2015-085

REV.NO.	DESCRIPTIONS	DATE
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THE CITY OF DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR.
BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

SIGNING & MARKING PLAN
1 OF 2

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	BFN
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

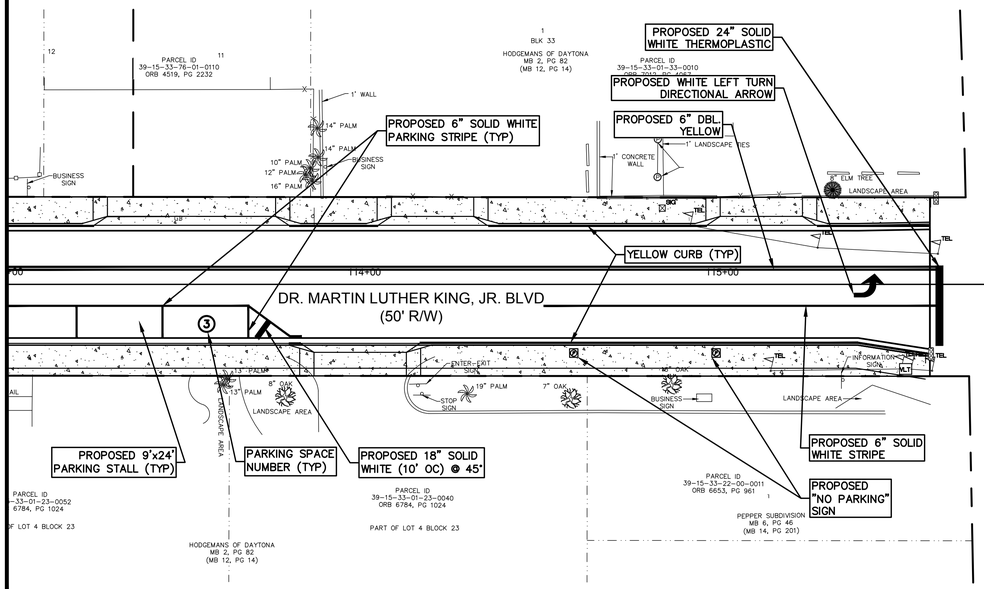
SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

M&C FILE NUMBER CP101-09960161
DRAWING NUMBER C-11

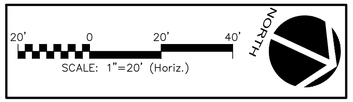
STATUS: REISSUED FOR BIDDING
REVISION

S:\0996\0161\80-Drawings\Civil\CP101-09960161.dwg, 1/7/2019 10:25:45 AM, Doreen Padgett

MATCH LINE STA. 113+00 SEE SHEET C-11 FOR CONTINUATION

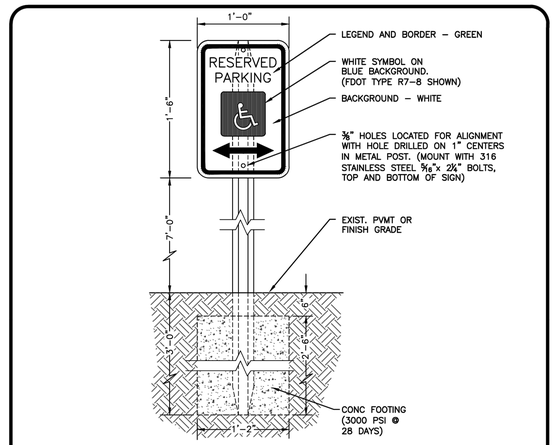


W. INTERNATIONAL SPEEDWAY BLVD
(R/W VARIES)



NOTE:

1. RPM'S ARE TO BE INCLUDED WITHIN CENTERLINE STRIPING COST.



NTS

NOTES:

1. HANDICAP PARKING SIGN SHALL CONFORM WITH CURRENT FEDERAL, STATE LOCAL & ADA CODES & REGULATIONS, LATEST EDITION.
2. SIGNS WILL BE FABRICATED BY USING A REFLECTING COATING IN THE SYMBOL, MESSAGE AND BORDERS APPLIED TO A SHEET ALUMINUM BACKING (12"x18"x0.80").
3. MESSAGE LETTERING SHALL BE UPPER CASE (SERIES B) 2" HIGH IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
4. THE SYMBOL IS COMPOSED OF TWO ELEMENTS, A WHITE WHEEL-CHAIR FIGURE (WHICH SHOULD ALWAYS FACE RIGHT) ON A SQUARE BACKGROUND, INTERNATIONAL BLUE IN COLOR (FED. STD. 595a, COLOR #15180).
5. METAL SIGN POSTS TO BE GALVANIZED U-IRON. ALL BOLTS, NUTS, WASHERS AND SCREWS MUST BE 316 STAINLESS STEEL.
6. CONCRETE FOOTING SHALL BE OF PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I.
7. SIGN POST SHALL BE MINIMUM 2'-0" CLEAR FROM BACK OF CURB OR WHEEL STOP.
8. SIGN POST SHALL BE DESIGNED TO WITHSTAND 120 M.P.H. WIND LOAD.

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION

HANDICAP PARKING SIGN DETAIL (FDOT TYPE R7-8)
T-3

Drawing Date:	12/2003
Drawn By:	FFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	67-3

REV.NO.	DESCRIPTIONS	DATE
B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

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THE CITY OF
DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

SIGNING & MARKING PLAN
2 OF 2

PROJECT NO. 2015-085

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	BFN
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

M&C FILE NUMBER
CP101-09960161

DRAWING NUMBER
C-12

STATUS: REVISION
REISSUED FOR BIDDING

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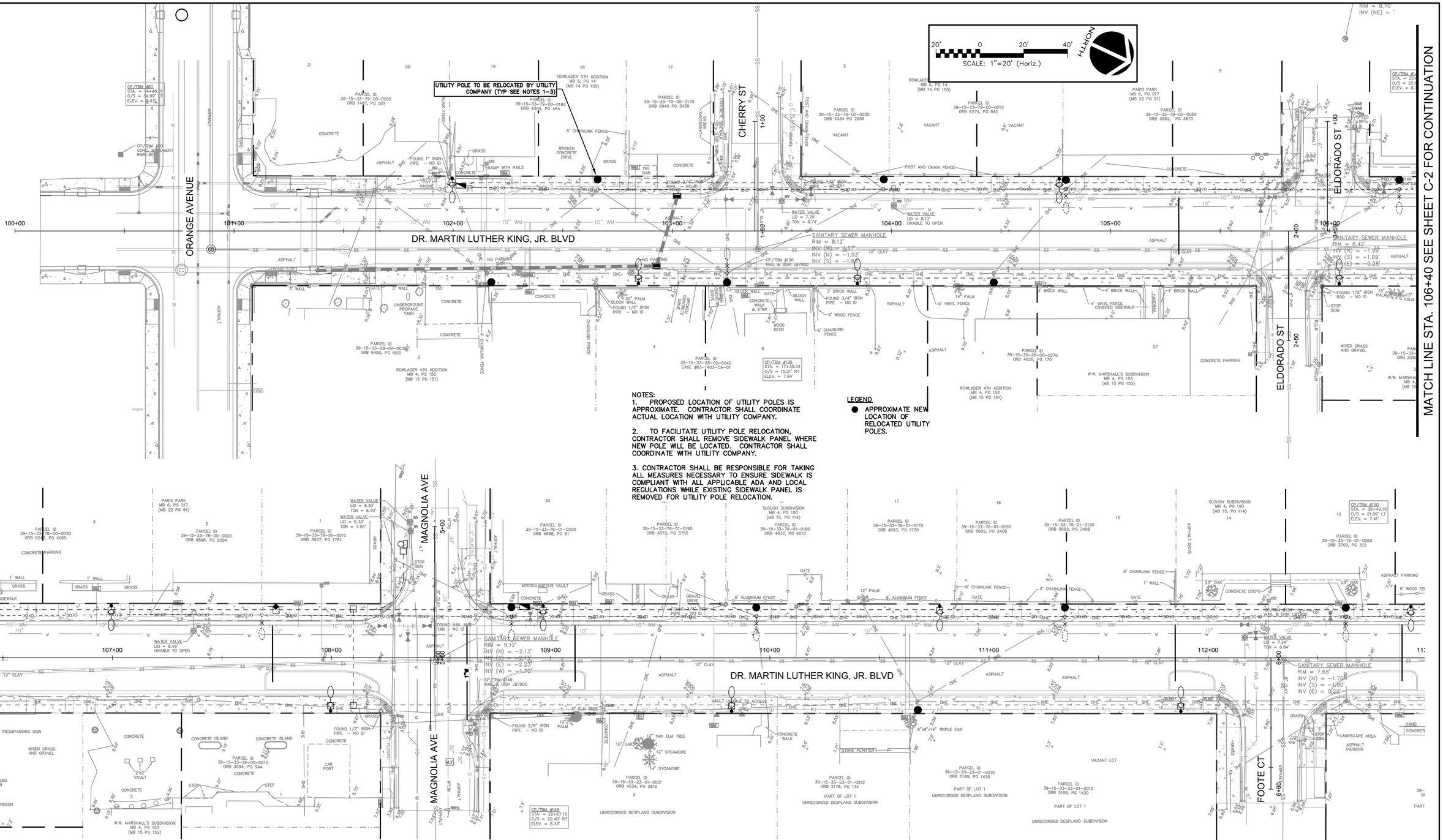

MATCH LINE STA. 106+40 SEE SHEET C-2 FOR CONTINUATION

NOTES:

1. PROPOSED LOCATION OF UTILITY POLES IS APPROXIMATE. CONTRACTOR SHALL COORDINATE ACTUAL LOCATION WITH UTILITY COMPANY.
2. TO FACILITATE UTILITY POLE RELOCATION, CONTRACTOR SHALL REMOVE SIDEWALK PANEL WHERE NEW POLE WILL BE LOCATED. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING ALL MEASURES NECESSARY TO ENSURE SIDEWALK IS COMPLIANT WITH ALL APPLICABLE ADA AND LOCAL REGULATIONS WHILE EXISTING SIDEWALK PANEL IS REMOVED FOR UTILITY POLE RELOCATION.

LEGEND

● APPROXIMATE NEW LOCATION OF RELOCATED UTILITY POLES.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
A	ISSUE FOR BIDDING	AUGUST 2018
B	REISSUED FOR BIDDING	JANUARY 2019

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THE CITY OF DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR. BOULEVARD–ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

PRIVATE UTILITY RELOCATION PLAN 1 OF 2

PROJECT NO. 2015–085

DATE:	APRIL 2017
MCE PROJ. #	0996–0161
DRAWN	BFN
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

M&C FILE NUMBER: CU103–09960161
DRAWING NUMBER: C-13

STATUS: REISSUED FOR BIDDING
REVISION

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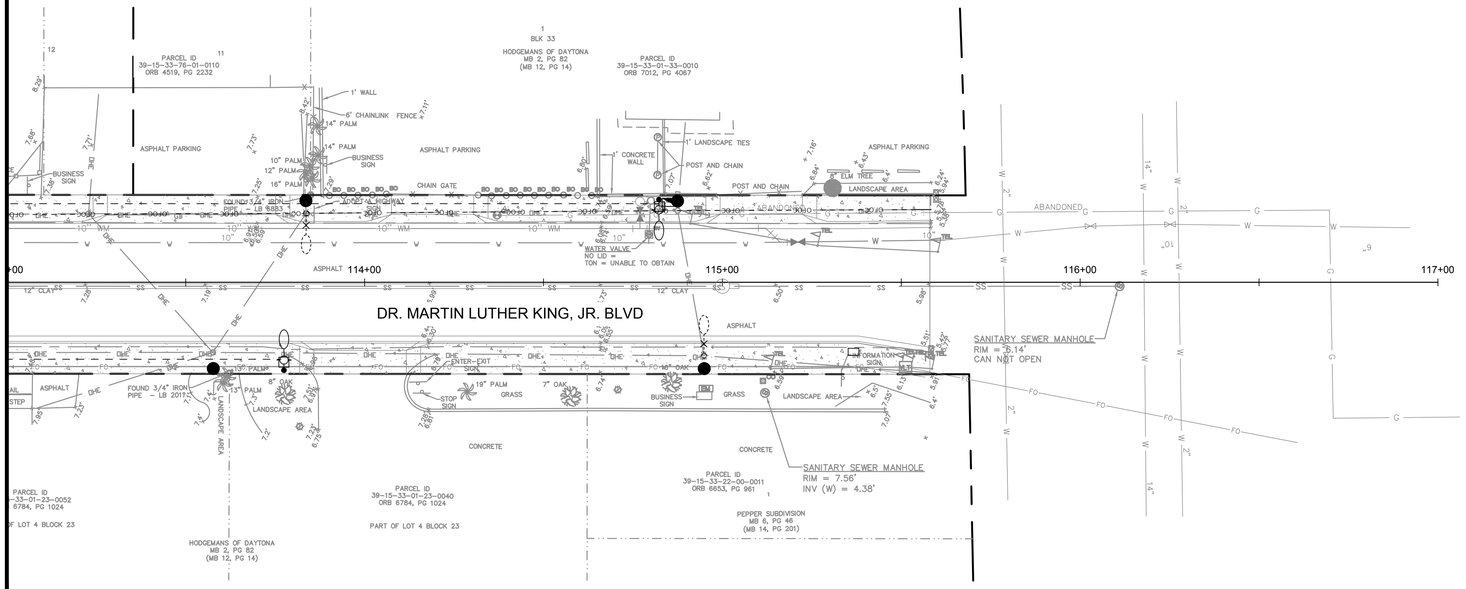
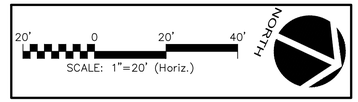
MATCH LINE STA. 113+00 SEE SHEET C-2 FOR CONTINUATION





LEGEND

● APPROXIMATE NEW LOCATION OF RELOCATED UTILITY POLES.

NOTES:

1. PROPOSED LOCATION OF UTILITY POLES IS APPROXIMATE. CONTRACTOR SHALL COORDINATE ACTUAL LOCATION WITH UTILITY COMPANY.

2. TO FACILITATE UTILITY POLE RELOCATION, CONTRACTOR SHALL REMOVE SIDEWALK PANEL WHERE NEW POLE WILL BE LOCATED. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING ALL MEASURES NECESSARY TO ENSURE SIDEWALK IS COMPLIANT WITH ALL APPLICABLE ADA AND LOCAL REGULATIONS WHILE EXISTING SIDEWALK PANEL IS REMOVED FOR UTILITY POLE RELOCATION.

REV.NO.	DESCRIPTIONS	DATE
B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

REVISIONS

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THE CITY OF DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

PRIVATE UTILITY RELOCATION PLAN 2 OF 2

PROJECT NO. 2015-085

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	BFN
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

M&C FILE NUMBER
CU103-09960161

DRAWING NUMBER
C-14

STATUS: REISSUED FOR BIDDING
REVISION

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POTABLE WATER CONSTRUCTION & DESIGN STANDARDS

1. THE CITY'S UTILITIES DEPARTMENT SHALL BE GIVEN A MINIMUM OF 3 BUSINESS DAYS ADVANCE NOTICE (NOT INCLUDING HOLIDAYS OR WEEKENDS) PRIOR TO BEGINNING ANY POTABLE WATER SYSTEM CONSTRUCTION.
2. ALL DEWATERING ACTIVITIES EITHER DIRECTLY DISCHARGED OR THAT SUBSEQUENTLY USE THE CITY'S STORMWATER SYSTEM TO CONVEY GROUND OR SURFACE WATER FROM A SITE SHALL REQUIRE A STANDARD OR GENERAL USE PERMIT AS PER ARTICLE 7 SECTION 7 OF THE LAND DEVELOPMENT CODE. A PERMIT SHALL BE REQUIRED PRIOR TO ENGAGING IN ANY DEWATERING ACTIVITIES, OR IN ANY CONSTRUCTION ACTIVITIES. DEWATERING ACTIVITIES INCLUDE THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED VAULT, COFFERDAM, OR TRENCHES ALLOWING CONSTRUCTION OR MAINTENANCE TO BE DONE IN THE DRY, OR ANY ACTIVITY WHICH CHANGES THE IMPERVIOUS AREA OF LAND. SITE SPECIFIC PERMITS SHALL REQUIRE THE PAYMENT OF A PER ACRE FEE BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE THE PAYMSTEPD OF AN ANNUAL FEE BASED ON ROUTINE SCHEDULE OF MAINTENANCE ACTIVITIES DISCHARGING DIRECTLY OR SUBSEQUENTLY INTO THE CITY'S MS4. DEWATERING PERMIT APPLICATIONS MAY BE FOUND AT **http://www.codb.us/index.aspx?NID=282.** FEES ARE SUBJECT TO ARTICLE 20 SECTION 3.1 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITY DEPARTMENT AT 125 BASIN STREET SUITE 100, DAYTONA BEACH FL 32114 BEFORE ANY USE OF THE MS4 WILL BE ALLOWED. FAILURE TO COMPLY WILL RESULT IN THE TERMINATION OF ACCESS TO THE CITY'S MS4 SYSTEM.
3. ALL WORK PERFORMED UPON POTABLE WATER FACILITIES OWNED OR PROPOSED TO BE OWNED BY THE CITY SHALL BE CONSTRUCTED BY AN UNDERGROUND UTILITY CONTRACTOR OR GENERAL CONTRACTOR LICENSED IN THE STATE OF FLORIDA AND REGISTERED WITH THE CITY.
4. UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE SYSTEM IS PROPERLY CERTIFIED AND ACCEPTED BY THE DEPARTMENT OF HEALTH, AND THAT AS-BUILTS DRAWINGS (MARKING THE CITY'S AS-BUILT DRAWING REQUIREMENTS) ARE PROVIDED TO THE CITY PRIOR TO ANY USE OF THIS SYSTEM.
5. WATER DISTRIBUTION SYSTEM SHALL BE DESIGNED TO COMPLY WITH THE CITY'S FIRE (WATER) FLOW CODE.
6. ALL WATER SERVICE ENDINGS SHALL BE MARKED WITH A 2" X 4" LUMBER (PRESSURE TREATED) EXTENDING 4 FEET ABOVE GRADE, INFRONT OF THE METER BOX WITH 2' OF ENDOTRACE COILED AND CAPPED WITH AN ELSTER HYDROSERT CAP INSIDE OF THE METER BOX.
7. ALL WATER SERVICES SHALL BE MARKED WITH AN "/\" SAW CUT INTO THE CURB.
8. ALL WATER VALVES SHALL BE MARKED WITH AN "X" SAW CUT INTO THE CURB.
9. ALL TAPPING OF MAINS SHALL BE PERFORMED WITH A UTILITY REPRESENTATIVE PRESENT. SCHEDULING OF THESE CONNECTIONS SHALL BE REQUIRE A MINIMUM OF 3 (THREE BUSINESS DAYS FOR NOTIFICATION AND SHALL BE COORDINATED WITH THE WATER DISTRIBUTION DIVISION (386) 671–8815.
10. FOR CONSTRUCTION PURPOSES, THE PLANS SHALL DIMENSION STATIONING & OFFSETS FROM THE CENTER LINE OF CONSTRUCTION AND RIGHT–OF–WAY LINES THE PROPOSED LOCATIONS OF ALL WATER MAINS.
11. DEWATERING SHALL BE PROVIDED TO KEEP GROUNDWATER ELEVATION A MINIMUM OF 6 INCHES BELOW MAIN BEING LAID.
12. ALL WATER MAINS SHALL BE LAID ON A FIRM UNYIELDING FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
13. TRENCHES SHALL BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE CITY WITH A MINIMUM COMPACTION OF 98% IN PAVED AREAS AND 95% IN UNPAVED AREAS IN ACCORDANCE WITH AASHTO T–180 MODIFIED PROCTOR TEST.
14. ON PROJECTS THAT ARE NOT INITIATED BY THE CITY IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TESTS BE PROVIDED AT POINTS 12 INCHES ABOVE THE PIPE AND AT 12 INCH VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT | WATER CONSTRUCTION & DESIGN STANDARDS (PAGE 1 OF 4) W–1

FY–15/16 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 05/13 | File Name: Water Notes W–1 | Page 5

POTABLE WATER CONSTRUCTION & DESIGN STANDARDS (CONT'D)

15. WHERE POTABLE WATER AND SANITARY SEWER MAINS CROSS WITH LESS THAN TWELVE (12) INCHES OF VERTICAL CLEARANCE OR WHERE THE SEWER MAIN IS ABOVE THE WATER MAIN, THE SEWER MAIN SHALL BE ENCASED WITH CONCRETE, OR UPGRADED TO C–900 PVC PIPE FOR A MINIMUM LENGTH OF TWENTY (20) FEET, CENTERED ON THE POINT OF CROSSING. A MINIMUM HORIZONTAL SEPARATION OF SIX (6) FEET (SIDE TO SIDE) BETWEEN POTABLE WATER MAINS AND SEWER MAINS SHALL BE MAINTAINED WHEN AT ALL POSSIBLE. WHEN THE SIX (6) FOOT HORIZONTAL SEPARATION CANNOT BE MAINTAINED, THE WATER MAIN SHALL BE INSTALLED IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF AT LEAST 18" ABOVE THE SEWAGE MAIN. ALTERNATIVELY, THE SEWER MAIN SHALL BE ENCASED WITH CONCRETE OR ENCLOSED IN A WATER TIGHT CARRIER PIPE, OR UPGRADED TO PRESSURE RATED PVC PIPE (MEETING THE AWWA C–900 OR C–905 SPECIFICATION) AND PRESSURE TESTED. **SEE PIPE SEPARATION DETAIL (W–5) AND UTILITY PIPE ENCASEMENT DETAIL (W–9).
16. WATER MAINS ARE TO BE CONSTRUCTED A MINIMUM OF FOUR FEET MEASURED FROM THE OUTSIDE WALL OF THE WATER MAIN, BEHIND THE BACK OF CURB OR OUTSIDE OF THE ROADWAY PAVEMENT, WHICHEVER IS GREATER.
17. A THREE INCH WIDE METALIZED LOCATOR TAPE SHALL BE USED FOR ALL PRESURIZED MAINS INSTALLED. THE LOCATOR TAPE SHALL BE NON–CORRODIBLE CONSISTING OF POLYETHYLEN FILM WITH METALLIC FILM AND SHALL BE CONTINUOUSLY MARKED TO IDENTIFY THE REFERENCED PIPELINE. THE TAPE SHALL BE INSTALLED EIGHTEEN INCHES DIRECTLY ABOVE THE PIPE.
18. ALL NON–METALLIC WATERLINES SHALL HAVE #12 SINGLE STRAND UF RATED INSULATED COPPER WIRE ATTACHED. THE ENDS NEED TO BE SEALED WITH LIQUID TAPE.
19. SINGLE RESIDENTIAL WATER SERVICES SHALL BE A COPPER 1" MINIMUM, OR ENDOT, ENDOTRACE POLY–TUBE (MEETS THE SPECIFICATIONS OF NSF–14, AND AWWA C901.)
20. ALL WATER MAINS SHALL BE NSF–APPROVED FOR POTABLE WATER USE, AND SHALL HAVE A MINIMUM COVER OF 36 INCHES.
21. WATER MAINS SHALL BE DUCTILE IRON PIPE (D.I.P.), CLASS 350, CEMENT LINED UNLESS OTHER–WISE APPROVED BY THE CITY, ALL NON DUCTILE IRON PIPE HORIZONTAL DIRECTIONAL DRILL WATER MAINS SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 160 PSI. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING DEPENDENT ON SITE CONDITIONS.
22. ALL POTABLE WATER MAINS SHALL USE A THRUST RESTRAINT JOINT METHOD IN COMPLIANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) GUIDELINES.
23. MEGALUGS, BOLTLESS RESTRAINED JOINTS, GRIPPER GASKETS, OR STAR GRIPS SHALL BE USED ON ALL RESTRAINED JOINT INSTALLATIONS. MINIMUM DEPTH OF BURY ON PIPES NOT MEETING REQUIRED COVER REQUIREMENTS SHALL FOLLOW THE MOST RECENT DIPRA THRUST RESTRAINT DESIGN GUIDELINES.
24. GRIPPER RING GASKETS SHALL BE USED AS APPROPRIATE FOR RESTRAINING PRESSURE PIPE TO FITTINGS, VALVES, ETC.
25. WATER VALVES SHALL BE PLACED AT ALL STREET INTERSECTIONS AND AT MAXIMUM SPACING OF 750 FEET. SPACING OF VALVES ON PRIMARY TRANSMISSION MAINS WILL BE DETERMINED BY THE CITY.
26. AT ALL WATER MAIN TEES AND VALVES SHALL BE INSTALLED ON ALL LEGS EXCEPT ONE.
27. APPROVED WATER VALVE TYPES ARE THE FOLLOWING:
    A. RESILIENT SEAT GATE VALVES (AWWA C–509)
    B. TAPPING VALVES WITH MECHANICAL TAPPING SLEEVE.
28. ALL WATER VALVES, INCLUDING CONCRETE COLLAR (WITH DEBRIS CAP), SHALL BE ADJUSTED TO FINISHED GRADE AND THE VALVE BOX I.D. PRIMED PAINTED BLUE TO MAKE THEM PLAINLY VISIBLE.
29. UPON FINAL ACCEPTANCE OF NEW WATER SYSTEMS, WATER VALVES SHALL BE COMPLETELY OPENED BY PUBLIC UTILITIES PERSONNEL. AT NO TIME SHALL CONTRACTOR OPERATE ANY EXISTING VALVES WITHOUT A CITY INSPECTOR PRESENT.
30. ALL VALVES 2" AND SMALLER SHALL BE CURB STOPS. VALVES LARGER THAN 2" SHALL BE GATE VALVES.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT | WATER CONSTRUCTION & DESIGN STANDARDS (PAGE 2 OF 4) W–2

FY: 15/16 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 01/2014 | File Name: Water Notes W–2 | Page 6

POTABLE WATER CONSTRUCTION & DESIGN STANDARDS (CONT'D)

31. TYPICALLY, A MINIMUM OF ONE FIRE HYDRANT SHALL BE LOCATED AT EVERY INTERSECTION. OTHER FIRE HYDRANTS SHALL BE LOCATED SO AS TO PRODUCE A MAXIMUM 500 FOOT RADIUS OF COVERAGE. ALL FIRE HYDRANTS SHALL BE CONSTRUCTED TO MAKE THEM EASILY ACCESSIBLE TO FIRE PERSONNEL. THE PRIMARY HYDRANT PORT IS TO FACE THE STREET.
32. IN AREAS WHERE RECLAIMED WATER IS NOT AVAILABLE THE CONTRACTOR SHALL BE REQUIRED TO TRANSFER THE WATER FROM THE POTABLE WATER LINES WITH NECESSARY BACKFLOW PREVENTION DEVICES TO THE NON–POTABLE WATER LINES FOR UTILIZATION IN THEIR PRESSURE TEST.
33. THE CONTRACTOR SHALL BE REQUIRED TO PIG ALL POTABLE MAINS 6" OR GREATER IN DIAMETER. LAUNCHING AND EXTRACTION POINTS SHALL BE DETERMINED BY THE CONTRACTOR.
34. WITH RESPECT, TO FLUSHING, PIGGING, TESTING, AND TIE–IN CONNECTIONS, THE CITY RESERVES THE RIGHT TO REQUIRE WORK TO BE PERFORMED DURING PERIODS OF LOW FLOW (MIDNIGHT TO 6:00 A.M.) IN ORDER TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS.
35. THE CITY RESERVES THE RIGHT TO PERFORM THE SAMPLING AND ANALYSIS FOR BACTERIOLOGICAL CLEARANCE OF THE WATER MAIN. ANY RETESTING WILL BE AT THE CONTRACTORS EXPENSE.
36. POTABLE WATER SYSTEM EXTENSIONS MAY NOT BE USED PRIOR TO FINAL TESTING, UNTIL CLEARANCE IS ACCEPTED BY THE CITY OF DAYTONA BEACH AND THE VOLUSIA COUNTY HEALTH DEPARTMENT.
37. A BACK FLOW PREVENTER (BFP) SHALL BE PLACED ON ALL POTABLE AND FIRELINES SERVING COMMERCIAL PROPERTIES AND RESIDENTIAL WHERE ALTERNATIVE WATER IS AVAILABLE. THE TYPE OF BACKFLOW PREVENTERS REQUIRED ARE AS FOLLOWS:

    POTABLE WATER SERVICE: REDUCED PRESSURE ZONE BFP
    FIRELINE SERVICING A FIRE SPRINKLER SYSTEM AND/OR PRIVATE FIRE HYDRANT; DOUBLE CHECK VALVE SYSTEM
    FIRELINE; DOUBLE CHECK VALVE SYSTEM

    IN CASES WHERE A WATER LINE SERVES BOTH DOMESTIC AND FIRE SERVICES, A REDUCED PRESSURE ZONE BFP SHALL BE REQUIRED.
38. ALL JACK & BORES REQUIRED WITH COMMERCIAL DEVELOPMENTS SHALL BE AT THE SOLE COST OF THE OWNER \ DEVELOPER.
39. ALL C–900 PVC PIPE REQUIREMENTS ARE REFERENCED TO THE C–900–97 STANDARDS. DR UPGRADES FOR BURST PROTECTION MAY BE REQUIRED WHEN USING THE C–900–07 STANDARDS.
40. CHLORINATED WATER MUST BE DE–CHLORINATED PRIOR TO DISCHARGE INTO ANY JURISDICTIONAL WETLAND OR WATER BODY AS PER AWWA STANDARD, ANSI/AWWA C655–09.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT | WATER CONSTRUCTION & DESIGN STANDARDS (PAGE 3 OF 4) W–3

FY–15/16 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 01/2014 | File Name: Water Notes W–3 | Page 7

POTABLE WATER CONSTRUCTION & DESIGN STANDARDS

TESTING REQUIREMENTS:

1. ON ALL PROJECTS OTHER THAN THOSE INITIATED BY THE CITY THE CONTRACTOR SHALL EMPLOY AN INDEPENDENT TESTING LABORATORY AT HIS OWN EXPENSE TO INSURE THAT COMPACTION OF ALL FILL MATERIAL IS COMPLETED PROPERLY; HOWEVER, ON ALL CITY PROJECTS THE TESTING WILL BE DONE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. TESTS SHALL BE DONE ONE FOOT ABOVE THE PIPE AND THEN AT ONE FOOT VERTICAL INTERVALS UNTIL FINAL GRADE IS REACHED. INDENTIFICATION OF TEST LOCATIONS SHALL BE CLEARLY INDICATED ON TEST REPORTS. TEST RESULTS SHALL BE FORWARDED PROMPTLY TO THE CITY'S DESIGNATED SITE INSPECTOR.
2. ALL POTABLE WATER MAINS SHALL BE FLUSHED, DISINFECTED, PRESSURE TESTED AND BAC–TERIOLOGICALLY CLEARED FOR SERVICE WHEN APPROPRIATE IN ACCORDANCE WITH THE LATEST AWWA STANDARDS AND THE FLORIDA DEPARTMENT OF ENVIROMENTAL PROTECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CITY'S DESIGNATED INSPECTOR WHO SHALL COORDINATE WITH CITY PERSONNEL AT THE WATER TREATMENT PLANT AT LEAST 3 (THREE) BUSINESS DAYS PRIOR TO BEGINNING FLUSH OF THE MAINS PRIOR TO THE COMMENCEMENT OF PRESSURE TESTING. NO HOSE OR FIRE HYDRANT SHALL BE USED IN THE COLLECTION OF BACTERIOLOGICAL SAMPLES. THE SAMPLING TAP MUST BE DEDICATED AND CLEAN, AND DISINFECTED AND FLUSHED PRIOR TO SAMPLING. SAMPLING TAP SHALL BE SMOOTH, UNTHREADED 1/2" HOSE BIB. DISINFECTION & SAMPLING SHALL BE SCHEDULED AT THE CITY'S CONVENIENCE.
3. PRESSURE TEST FOR TAPPING SADDLES AND VALVES. (MINIMUM OF 30 MINUTES AT 150 PSI OR 30 MINUTES AT MANUFACTURERS LABILED TESTING PRESSURE).
4. WATERMAINS SHALL BE PRESSURE TESTED TO 150 PSI FOR 4 HOURS. TESTING SHALL BE IN ACCORDANCE WITH AWWA C–600 AND AWWA C–605 AS APPLICABLE, WITH ALLOWABLE LEAKAGE TO BE X GAL/HR PER X" DIA. OF PIPE, PER X" OF MAIN TO BE TESTED.

ALLOWABLE LEAKAGE PER 1000 FT. OF PIPELINE * –GPH

AVERAGE PRESSURE TEST (PSI)	NOMINAL PIPE DIAMETER – INCHES 3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	54	60	64	AVERAGE TEST PRESSURE (PSI)
450	0.48	0.64	0.95	1.27	1.59	1.91	2.23	2.55	2.87	3.18	3.82	4.78	5.73	6.69	7.64	8.60	9.56	10.19	450
400	0.45	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70	3.00	3.60	4.50	5.41	6.31	7.21	8.11	9.01	9.61	400
350	0.42	0.56	0.84	1.12	1.40	1.69	1.97	2.25	2.53	2.81	3.37	4.21	5.06	5.90	6.74	7.58	8.43	8.99	350
300	0.39	0.52	0.78	1.04	1.30	1.56	1.82	2.08	2.34	2.60	3.12	3.90	4.68	5.46	6.24	7.02	7.80	8.32	300
275	0.37	0.50	0.75	1.00	1.24	1.49	1.74	1.99	2.24	2.49	2.99	3.73	4.48	5.23	5.98	6.72	7.47	7.97	275
250	0.36	0.47	0.71	0.95	1.19	1.42	1.66	1.90	2.14	2.37	2.85	3.56	4.27	4.99	5.70	6.41	7.12	7.60	250
225	0.34	0.45	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.25	2.70	3.38	4.05	4.73	5.41	6.03	6.76	7.21	225
200	0.32	0.43	0.64	0.85	1.06	1.28	1.48	1.70	1.91	2.12	2.55	3.19	3.82	4.46	5.09	5.73	6.37	6.80	200
175	0.30	0.40	0.59	0.80	0.99	1.19	1.39	1.59	1.79	1.98	2.38	2.98	3.58	4.17	4.77	5.36	5.96	6.36	175
150	0.28	0.37	0.55	0.74	0.92	1.10	1.29	1.47	1.66	1.84	2.21	2.76	3.31	3.86	4.41	4.97	5.52	5.88	150
125	0.25	0.34	0.50	0.67	0.84	1.01	1.18	1.34	1.51	1.68	2.01	2.52	3.02	3.53	4.03	4.53	5.04	5.37	125
100	0.23	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	1.50	1.80	2.25	2.70	3.15	3.60	4.05	4.50	4.80	100

** IF THE PIPELINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE ALLOWABLE LEAKAGE WILL BE THE SUM OF THE COMPUTED LEAKAGE FOR EACH SIZE.*

$$L = \frac{SD\sqrt{P}}{133,200}$$

WHERE:
L = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR
S = LENGTH OF PIPE TESTED, IN FEET
D = NOMINAL DIAMETER OF PIPE, IN INCHES
P = AVERAGE TEST PRESSURE DURING THE LEAKAGE TEST, IN POUNDS PER SQUARE INCH (GAUGE)

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT | WATER CONSTRUCTION & DESIGN STANDARDS (PAGE 4 OF 4) W–4

FY–15/16 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: | File Name: Water Notes W–4 | Page 8

Guidelines for the Acceptance of New Water Mains from Contractors

Contact the Utilities Department at 386-671-8871 or 386-671-8827 a min. of 5 business days prior to beginning any potable water system contruction. Utilities Inspector will coordinate with the City's Water Distribution Division to schedule the tap of the main. DOH Permit to be forwarded to the Water/Wastewater (W/WW) Inspector with the Regulatory Compliance Division.

↓

Contractor to install tapping saddle/sleeve and disinfected valve on the existing water main under inspection of the Utilities Department. All materials must be swabbed with a 5% chlorine solution.

↓

Pressure test the tapping saddle/sleeve and valve. (Min. 30 minutes at manufacturer recommended pressure.)

↓

City's Water Distribution Department will tap the existing main.

↓

All mains 6" and larger (greater than 100 LF) must be **pigged** and **flushed** by the contractor under inspection of the water/wastewater inspectors. Contact Bob Terpstra between 07:30 - 14:00 hrs. Monday - Thursday excluding holidays at 386-671-8809 or 386-717-7839 to schedule.

↓

Contractor must pressure test the new main under inspection of the W/WW Inspector. (Minimum 4 hrs at 150 psi) Refer to CODB Standard Details

↓

Pressure Test **Passed** | Pressure Test **Failed** → Repair leaks

↓

Submit Preliminary As-Builts to Utilities Engineering. (1 AutoCAD CD and 1 Paper Copy in State Plane Coordinates NAD 83). Once preliminary as-builts are acceptable, W/WW Inspector will schedule the chlorination. **(Chlorination is scheduled Mon. thru Wed. with 48 hrs advance notice required.)**

↓

Contractor will super chlorinate the new main in accordance with AWWA C651-05 (or most recent version). The chlorine solution must be greater than 25 mg/L (50 mg/L preferred) and must remain in the water main for at least 24 hrs with a final residual of 10 mg/L. The chlorination **must** be monitored by the W/WW Inspector. An alternative method of "slug" chlorination can be utilized. Initial chlorine dose of 100 mg/L in contact for 3 hours with a final residual of 50 mg/L.

↓

Flush main and reduce the chlorine residual to proper level (1-3 mg/L typical, not to exceed ambient chlorine residual from the WTP). Any water discharged to receiving water bodies shall be dechlorinated per AWWA standards.

Re-chlorination is required if the 2nd consecutive sample fails.

↓

W/WW Inspector/CODB Lab will collect and test samples for 2 consecutive days per FDEP requirements.

↓

Bacteriological test **passed** for 2 consecutive days | Bacteriological test **failed**.

↓

Submit Final As-built Drawings (1 Mylar & 2 Paper Copies, 1 CD with CAD drawings and pdf's), Bacteriological Test Results and FDEP Clearance Application to the Utilities Engineering Division.

↓

Utilities Engineering signs and delivers the FDEP clearance app. to the Health Department.*

↓

FDEP Letter of Clearance Received.

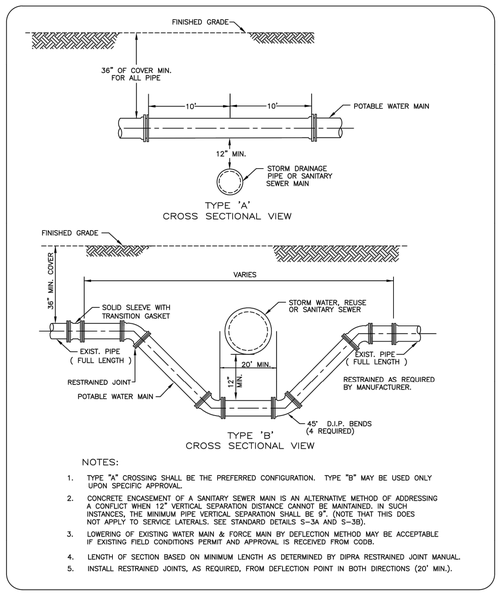
↓

Water Distribution Division will open valve and place water main into service.

*Should the bacteriological samples expire prior to DOH submittal re-chlorination and re-sampling will be required at the contractor's cost using the City personnel and laboratory.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT | GUIDELINES FOR THE ACCEPTANCE OF NEW WATER MAINS FROM CONTRACTORS W–5

FY: 15/16 | Drawing Date: 03/15 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: | File Name: AS–BUILT | Page 9



NOTES:

1. TYPE "A" CROSSING SHALL BE THE PREFERRED CONFIGURATION. TYPE "B" MAY BE USED ONLY UPON SPECIFIC APPROVAL.
2. CONCRETE ENCASEMENT OF A SANITARY SEWER MAIN IS AN ALTERNATIVE METHOD OF ADDRESSING A CONFLICT WHEN 12" VERTICAL SEPARATION DISTANCE CANNOT BE MAINTAINED. IN SUCH INSTANCES, THE MINIMUM PIPE VERTICAL SEPARATION SHALL BE 9". (NOTE THAT THIS DOES NOT APPLY TO SERVICE LATERALS. SEE STANDARD DETAILS S–3A AND S–3B).
3. LOWERING OF EXISTING WATER MAIN & FORCE MAIN BY DEFLECTION METHOD MAY BE ACCEPTABLE IF EXISTING FIELD CONDITIONS PERMIT AND APPROVAL IS RECEIVED FROM CODB.
4. LENGTH OF SECTION BASED ON MINIMUM LENGTH AS DETERMINED BY DIPRA RESTRAINED JOINT MANUAL.
5. INSTALL RESTRAINED JOINTS, AS REQUIRED, FROM DEFLECTION POINT IN BOTH DIRECTIONS (20' MIN.).

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT | TYPICAL PIPE CROSSING DETAIL W–8

FY: 15/16 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 12/12 | File Name: Pipe Crossing W–8 | Page 12

LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

Other Pipe	Horizontal Separation	Crossings (1)	Joint Spacing @ Crossings (Full Joint Centered)
Storm Sewer, Stormwater Force Main, Reclaimed Water (3)	3 ft. minimum	12 inches is preferred minimum, except for storm sewer, then 6 inches is the minimum and 12 inches is preferred	Alternate 3 ft. minimum
Vacuum Sanitary Sewer	10 ft. preferred 3 ft. minimum	12 inches is preferred 6 inches minimum	Alternate 3 ft. minimum
Gravity or Pressure Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (3)	10 ft. preferred 6 ft. minimum (3)	12 inches is the minimum, except for gravity sewer, then 12 inches is preferred	Alternate 3 ft. minimum
On-Site Sewage Treatment & Disposal System (2)	10 ft. minimum	...	...

Water Main

(1) Water mains should cross above other pipe. Where water main must be below other pipe, the minimum separation is 12 inches.
(2) Reclaimed water regulated under Part III of Chapter 62-610, F.A.C.
(3) Reclaimed water may be used for irrigation purposes if it is held at least 6 inches above the top of the gravity sanitary sewer.
(4) Reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.

Disclaimer – This document is provided for your convenience only. Those refer to F.A.C. Rule 62-555.314 for additional construction requirements.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT | WATER MAIN SEPARATION CHART W–9

FY–15/16 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: | File Name: Water Main Separation Chart W–9 | Page 13

SCHEDULE OF LENGTHS OF RESTRAINED DIP (FT.)					
FITTING	90° BEND	45° BEND	22.5° BEND	11.25° BEND	TEE OR DEAD END
PIPE SIZE (IN.) :					
4"	21 (26)	18 (18)	18 (18)	18 (18)	37 (55)
6"	30 (36)	18 (18)	18 (18)	18 (18)	52 (78)
8"	38 (45)	18 (18)	18 (18)	18 (18)	67 (100)
10"	45 (54)	18 (22)	18 (18)	18 (18)	81 (122)
12"	52 (63)	22 (26)	18 (18)	18 (18)	94 (141)
14"	60 (72)	25 (30)	18 (18)	18 (18)	107 (160)
16"	66 (80)	27 (33)	18 (18)	18 (18)	120 (180)
18"	74 (87)	31 (36)	18 (18)	18 (18)	132 (198)
20"	80 (94)	33 (39)	18 (18)	18 (18)	144 (216)
24"	92 (108)	38 (45)	18 (22)	18 (18)	167 (250)
30"	106 (128)	44 (53)	21 (25)	18 (18)	199 (298)
36" *	69 (82)	28 (34)	18 (18)	18 (18)	170 (204)
42" *	76 (92)	31 (37)	18 (18)	18 (18)	191 (229)
48" *	90 (106)	40 (46)	18 (18)	18 (18)	212 (254)

LENGTHS BETWEEN HEAVY LINES INDICATE ONE FULL LENGTH (18' MIN.) OF PIPE TO BE RESTRAINED.

TABLE SHOWS MINIMUM LENGTH OF PIPE EACH WAY FROM FITTING FOR WHICH RESTRAINT IS REQUIRED.

TABLE APPLIES TO DUCTILE IRON PIPE FOR THE FOLLOWING CONDITIONS:

TEST PRESSURE: 150 PSIG
SOIL TYPE: SP
COVER DEPTH: 3 FEET (MIN.)
SAFETY FACTOR: 1.5
TRENCH TYPE: 2

VALUES IN PARENTHESIS (X) ARE FOR PIPE ENCASED IN POLYETHYLENE.

* VALUES APPLY TO DUCTILE IRON PIPE AT 50 PSI TEST PRESSURE.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT | DIP RESTRAINED JOINT TABLE W–10

FY: 15/16 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: | File Name: Restrained Joint W–10 | Page 14

S:\DRMK\GIS\Utilities\Water\Standards\Water Main Separation Chart W-9.dwg, 1/7/2019 10:21:58 AM, Doreen Padgett

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

SEAL

SEAL

SCOTT R. SPOONER, P.E. No. 23273

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THE CITY OF DAYTONA BEACH, FLORIDA

PROJECT NO. 2015–085

DR. MARTIN LUTHER KING, JR. BOULEVARD–ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

WATER DETAILS 1

DATE:	APRIL 2017
MCE PROJ. #	0996–0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

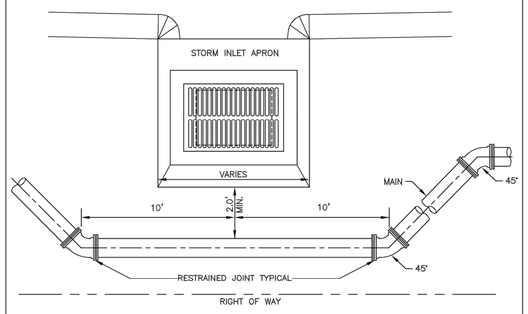
SCALE: HORIZONTAL: 1"=20' VERTICAL: 1"=4'

M&C FILE NUMBER: 0001–09960161

DRAWING NUMBER: CD-1

STATUS: REISSUED FOR BIDDING

REVISION



PLAN VIEW

NTS

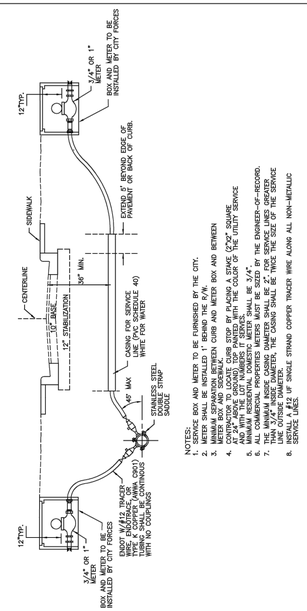
NOTES:

1. MAIN MAY PASS OVER STORM LINE IF 36" OF COVER IS PROVIDED OVER WATER MAIN.
2. PIPE MAY BE DEFLECTED AROUND DRAINAGE INLET IN ACCORDANCE WITH THE RESTRAINED JOINT GUIDELINES OF THE DIPRA.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

WATERMAIN INSTALLATION BETWEEN STORM INLET AND R.O.W. DETAIL
W-13

FY-15/16	
Drawing Date:	01/08
Drawn By:	KLH
Checked By:	JMP
Scale:	NTS
Revision Date:	12/12
File Name: Watermain by Storm Inlet W-13	
Page	17

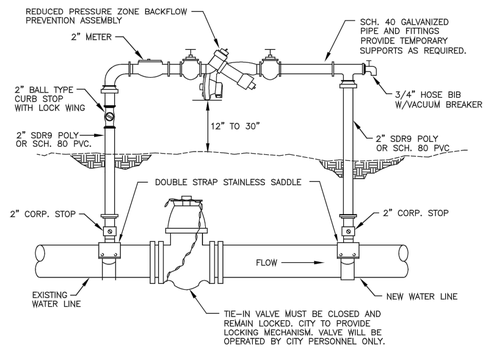


NOTES:
1. SERVICE BOX AND METER TO BE FURNISHED BY THE CITY.
2. METER SHALL BE INSTALLED BEHIND SIDEWALK OR R.O.W. AS SHOWN.
3. MINIMUM SEPARATION BETWEEN CURB AND METER BOX AND BETWEEN METER BOXES IS 18".
4. CONTRACTOR TO LOCATE CURB STOP BY PLACING A STAKE (2"x2" SQUARE FLAT TOP) ON THE CENTERLINE OF THE ROAD OPPOSITE THE CURB STOP AND WITH THE LOT NUMBERS OF SERVICE.
5. FIRE HYDRANT METERS ARE NOT PERMITTED ON THIS SYSTEM.
6. ALL COMMERCIAL PROPERTIES METERS MUST BE SIZED BY THE ENGINEER-OF-RECORD.
7. THE MINIMUM ASSE CASING DIAMETER SHALL BE 2" FOR SERVICE LINES DEPTHS UP TO 8' AND 3" FOR SERVICE LINES DEPTHS UP TO 12'. THE MINIMUM CASING MATERIAL SHALL BE SCHEDULE 40 PVC.
8. #12 UF SINGLE STRAND COPPER TRACER WIRE ALONG ALL NON-METALLIC SERVICE LINES.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

WATER SERVICE CONNECTION (UNDER ROAD)
(PAGE 2 OF 2)
W-21

FY-15/16	
Drawing Date:	01/08
Drawn By:	KLH
Checked By:	JMP
Scale:	NTS
Revision Date:	04/13
File Name: Water Service Connect Under Road W-21	
Page	25



PROFILE VIEW

NTS

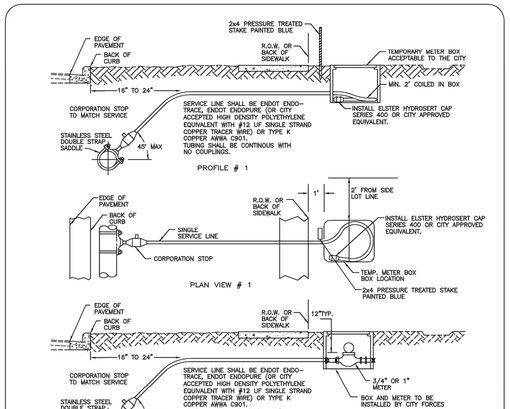
NOTES:

1. OPTION TWO IF FIRE HYDRANT IS UNAVAILABLE.
2. PROVIDE SUPPORT, HIGH VISIBILITY CONSTRUCTION FENCING AND/OR PROTECTIVE MEASURES TO PREVENT ABOVE GROUND PIPE BEING BROKEN.
3. REMOVE TEMPORARY BY-PASS PRIOR TO PLACING LINE IN SERVICE.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

TEMPORARY FILL CONNECTION DETAIL
W-22

FY-15/16	
Drawing Date:	01/08
Drawn By:	KLH
Checked By:	JMP
Scale:	NTS
Revision Date:	12/12
File Name: Temp Fill Connect W-22	
Page	26



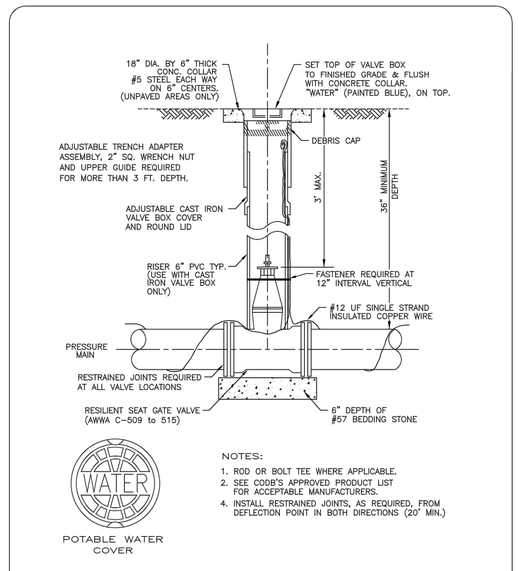
NOTES:

1. METER AND METER BOX SHALL BE FURNISHED BY CITY FORCES, AFTER WATER SERVICE CONNECTION HAS BEEN REQUESTED AND FEE'S HAVE BEEN PAID.
2. METER SHALL BE INSTALLED BEHIND SIDEWALK OR R.O.W. AS SHOWN.
3. BACKFLOW PREVENTION DEVICES (REDUCED PRESSURE ZONE) MAY BE REQUIRED ON WATER CONNECTIONS. THEY ARE TO BE SUPPLIED AND INSTALLED BY THE DEVELOPER/BUILDER, AT NO COST TO THE CITY. TO BE INSTALLED ON THE CUSTOMER'S SIDE OF THE METER.
4. IRRIGATION METERS REQUIRE AN APPROVED BACKFLOW PREVENTER.
5. ACCEPTABLE MANUFACTURERS: SEE CODB'S APPROVED PRODUCT LIST.
6. SERVICE SADDLES SHALL BE STAINLESS STEEL STRAPS-EPOXY COATED. ACCEPTABLE MANUFACTURERS INCLUDE: SMITH BLAIR (ROCKWELL), JCM, FORD OR APPROVED EQUAL.
7. ALL METER LOCATIONS ON COMMERCIAL SITES SHALL BE LOCATED AS SHOWN ON THE CITY APPROVED SITE PLAN AND FIELD VERIFIED HORIZONTALLY & VERTICALLY BY THE OWNER OR OWNER'S REPRESENTATIVE.
8. CONTRACTOR IS TO SUPPLY METER BOXES AS SHOWN IN PROFILE #1 AND PLAN VIEW #1 WHEN BUILDING A SUBDIVISION TYPE DEVELOPMENT, WHERE THERE WILL BE A SERVICE OR SERVICES THAT WILL NOT REQUIRE A WATER CONNECTION AS SOON AS THE WATER LINE HAS BEEN INSTALLED, PRESSURED TESTED, CHLORINATED AND CLEARED FOR USE.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

WATER SERVICE CONNECTION
(PAGE 1 OF 2)
W-20

FY-15/16	
Drawing Date:	01/08
Drawn By:	KLH
Checked By:	JMP
Scale:	NTS
Revision Date:	12/13
File Name: Service Connect W-20	
Page	24



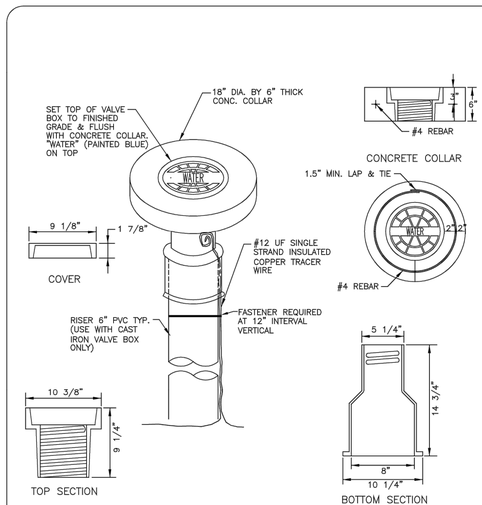
NOTES:

1. ROD OR BOLT TEE WHERE APPLICABLE.
2. SEE CODB'S APPROVED PRODUCT LIST FOR ACCEPTABLE MANUFACTURERS.
4. INSTALL RESTRAINED JOINTS, AS REQUIRED, FROM DEFLECTION POINT IN BOTH DIRECTIONS (20' MIN.)

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

WATER VALVE AND VALVE BOX DETAIL
W-16

FY-15/16	
Drawing Date:	01/08
Drawn By:	KLH
Checked By:	JMP
Scale:	NTS
Revision Date:	12/12
File Name: Water Valve W-16	
Page	20



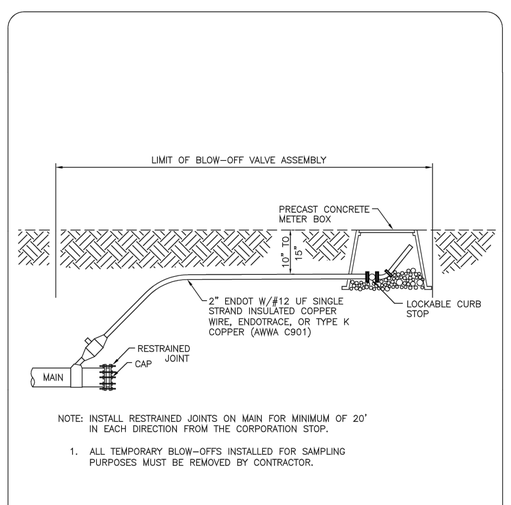
NOTE:

1. WATER MAIN VALVE BOX AND COVER SHALL BE ADJUSTABLE SCREW TYPE.
2. TRACER WIRE TO BE INSTALLED ON ALL NON-METALLIC MAINS

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

MAIN VALVE BOX DETAIL
W-17

FY-15/16	
Drawing Date:	11/10
Drawn By:	KLH
Checked By:	JMP
Scale:	NTS
Revision Date:	12/12
File Name: Main Valve Box W-17	
Page	21



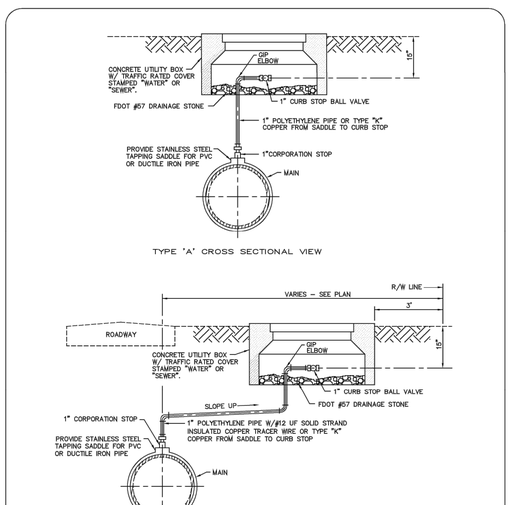
NOTE: INSTALL RESTRAINED JOINTS ON MAIN FOR MINIMUM OF 20' IN EACH DIRECTION FROM THE CORPORATION STOP.

1. ALL TEMPORARY BLOW-OFFS INSTALLED FOR SAMPLING PURPOSES MUST BE REMOVED BY CONTRACTOR.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

STANDARD 2" BLOW-OFF VALVE ASSEMBLY DETAIL
W-30

FY-15/16	
Drawing Date:	01/08
Drawn By:	KLH
Checked By:	JMP
Scale:	NTS
Revision Date:	12/12
File Name: 2 Inch Blow Off Valve W-30	
Page	34



NOTES:

ACCEPTABLE MANUFACTURERS: (SEE CODB'S APPROVED PRODUCT LIST)

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

MANUAL AIR RELEASE VALVE DETAIL
W-24

FY-15/16	
Drawing Date:	01/08
Drawn By:	KLH
Checked By:	JMP
Scale:	NTS
Revision Date:	12/12
File Name: Manual Air Release Valve W-24	
Page	28

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

SEAL

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SCOTT R. SPOONER, P.E.
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www.mckimcreed.com

THE CITY OF DAYTONA BEACH, FLORIDA

PROJECT NO. 2015-085

DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

WATER DETAILS 2

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=4'

M&C FILE NUMBER
D001-09960161

DRAWING NUMBER
CD-2

STATUS: REISSUED FOR BIDDING

REVISION

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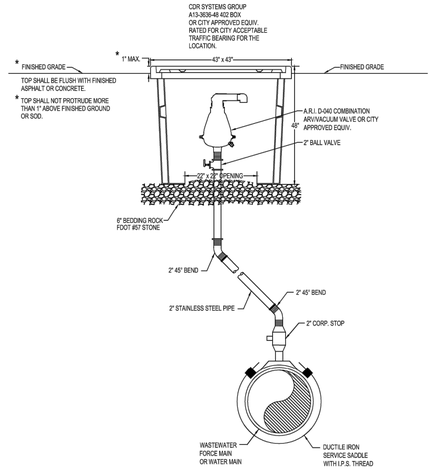


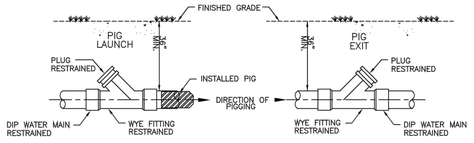
NOTES:

1. VALVES SHALL BE CENTERED IN THE BOX
2. ROCK SHALL BE COMPACTED TO A FIRM AND UNYIELDING CONDITION
3. PIPING BETWEEN THE VALVE AND MAIN SHALL BE CONFIGURED TO BEST FIT FOR THE SITE CONDITION AS APPROVED BY THE CITY
4. TOP OF BOX ON SANITARY FORCE MAIN SHALL BE CLEARLY PERMANENTLY LABELED AS SANITARY FM.
5. TOP OF ALL BOXES SHALL BE CLEARLY AND PERMANANTLY LABELED AS TO VALVE TYPE (AIR RELEASE, VACUUM, OR AIR/VAC COMBINATION).

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

AUTOMATIC ARV/VACUUM
VALVE
DETAIL
W-25

FY-15/16
Drawing Date: 12/10
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date: 12/12
File Name: Auto Vacuum Valve W-25
Page 29



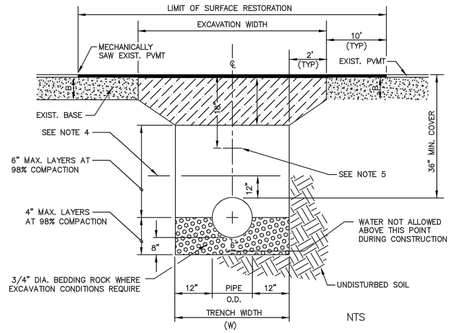
PROFILE VIEWS
NTS

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

PIG LAUNCH
AND RECEIVING
DETAIL
W-31

FY: 15/16
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date:
File Name: Pig Launch W-31
Page 35

NOTE: TO DETERMINE THE MOST CURRENT REQUIREMENTS FOR STABILIZATION MATERIAL, BASE MATERIAL, AND ASPHALT MATERIAL PATCH AND THE REPLACEMENT DIMENSIONS CONTACT CITY ENGINEER IN THE PUBLIC WORKS DEPT AT 386-671-8810.



NTS

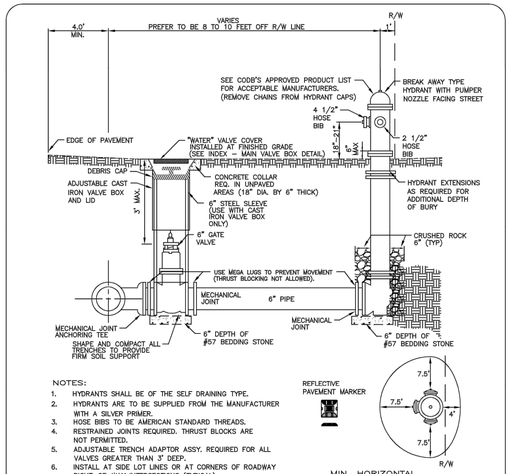
NOTES:

1. WHERE SOIL CONDITIONS CAN NOT BE MAINTAINED AS SHOWN ABOVE, PROVIDE APPROVED METHOD OF CONSTRUCTION.
2. SHEETING WILL BE REQUIRED AS DETERMINED IN THE FIELD.
3. COMPACTION PERCENTAGES SHOWN REFER TO A.A.S.H.T.O. T-180. PROVIDE COMPACTION TEST REPORTS TO CITY INSPECTOR.
4. MECHANICAL COMPACTION NOT ALLOWED BELOW THIS LEVEL.
5. FOR PVC PIPE ONLY - INSTALL METALLIC TAPE AND UF #12 INSULATED SINGLE STRAND COPPER WIRE OVER FULL LENGTH OF PIPE.
6. THE CONTRACTOR SHALL, UNLESS OTHERWISE NOTED, RESTORE ALL STRIPING, PAVEMENT MARKINGS, DELINEATORS, SIGNAGE AND TRAFFIC SIGNAL SYSTEM COMPONENTS DISTURBED DURING CONSTRUCTION ACTIVITIES. COST OF ALL WORK AND MATERIALS WILL BE CONSIDERED INCIDENTAL TO PATCH MATERIAL ITEMS.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

PAVEMENT CUT
AND PATCH
DETAIL
W-15

FY-15/16
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date: 05/13
File Name/Pavement Cut & Patch W-15
Page 19



PLAN VIEW OF HYDRANT LOCATION

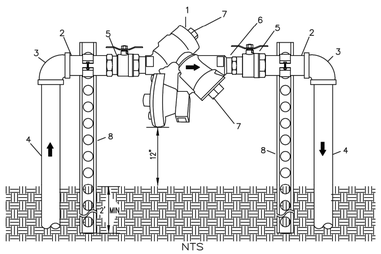
NOTES:

1. HYDRANTS SHALL BE OF THE SELF DRAINING TYPE.
2. HYDRANTS ARE TO BE SUPPLIED FROM THE MANUFACTURER WITH A SILVER PRIMER.
3. HOSE BIBS TO BE AMERICAN STANDARD THREADS.
4. RESTRAINED JOINTS REQUIRED. THRUST BLOCKS ARE NOT PERMITTED.
5. ADJUSTABLE TRENCH ADAPTOR ASSY. REQUIRED FOR ALL VALVES GREATER THAN 3' DEEP.
6. INSTALL AT SIDE LOT LINES OR AT CORNERS OF ROADWAY RIGHT-OF-WAY INTERSECTIONS (TYPICAL).
7. INSTALL AT 500' RADIUS OF COVERAGE.
8. REFLECTIVE PAVEMENT MARKER INSTALLED 3' INTO PAVEMENT (TYPICAL).
9. FIRE HYDRANT TESTING SHALL BE FLOWED THRU THE 2 1/2" OPENINGS. TEST RESULTS SHALL BE ACTUAL, NOT ESTIMATED. FLOW TESTING SHALL BE SUBMITTED TO THE CITY AS LISTED.
   ACTUAL GPM ____
   STATIC ____ PSI
   RESIDUAL ____ PSI
   THE CITY WILL DETERMINE THE COLOR OF THE BONNET.
10. FIRE HYDRANT BODY SHALL BE PAINTED COLOR 151 OSHA YELLOW PRIOR TO ACCEPTANCE BY THE CITY.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

FIRE HYDRANT
ASSEMBLY
DETAIL
W-18

FY-15/16
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date:
File Name: Fire Hydrant Assem W-18
Page 22



NTS

MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	1	BACKFLOW PREVENTER ASSEMBLY
2	2	NOM. NIPPLES - BRASS
3	2	90° ELBOWS - GALV. OR PVC (SCH 80)
4	2	VARIES RISER - GALV.
5	2	BALL VALVE
6	1	UNION
7	*	TEST PORTS (SEE NOTES)
8	2	SS BRACKETS W/SS CLAMPS

NOTES:

1. ACCEPTABLE MANUFACTURERS: (SEE CODB'S ACCEPTABLE PRODUCT LIST)
2. FIELD ADJUST AND CUT ITEM 4 TO THE PROPER LENGTH.
3. THE RISER & ELBOW TO BE PAINTED 136 OSHA RED FOR COMMERCIAL FIRE SERVICE, 137 OSHA BLUE FOR COMMERCIAL DOMESTIC SERVICE.
4. TEST PORTS (QUANTITY/LOCATIONS DEPENDING ON MANUFACTURER)
5. PVC PIPE REQUIRES SS BRACKETS W/SS CLAMPS

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

REDUCED PRESSURE ZONE BACKFLOW
PREVENTER, SINGLE SERVICE
3/4",1",1-1/2" or 2"
(PAGE 1 OF 3)
W-26

FY-15/16
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date: 07/10
File Name: Backflow Preventer Detail W-26
Page 30

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REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

SEAL

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THE CITY OF DAYTONA BEACH, FLORIDA
INCORPORATED JULY 1876

THE CITY OF
DAYTONA BEACH, FLORIDA

PROJECT NO. 2015-085

DR. MARTIN LUTHER KING, JR.
BOULEVARD-ROADWAY AND PEDESTRIAN
IMPROVEMENTS PROJECT

WATER DETAILS 3

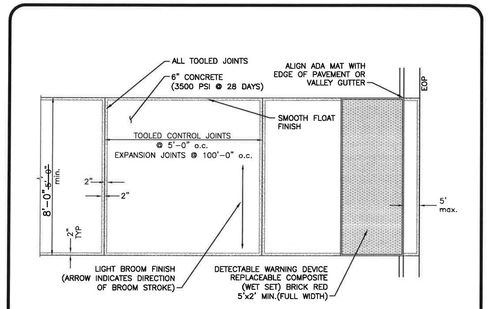
DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL:
1"=20'
VERTICAL:
1"=4'

M&C FILE NUMBER
D001-09960161

DRAWING NUMBER
CD-3

STATUS: REVISION
REISSUED FOR BIDDING



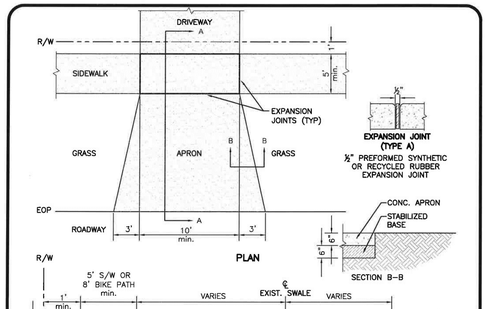
NTS

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION	SIDEWALK CONSTRUCTION DETAIL C-1	Drawing Date: 11/2000 Drawn By: RT Checked By: Scale: NTS Revision Date: 08/2015 File Name: dc-1

NOTES:

1. SIDEWALKS, BIKE PATHS, RAMPS AND DRIVEWAY APRONS SHALL BE CONSTRUCTED OF PLAIN PORTLAND CEMENT CONCRETE WITH A MAXIMUM SLUMP OF 3", A MINIMUM DEVELOPED COMPRESSIVE STRENGTH OF 3500 P.S.I. IN 28 DAYS AND A MINIMUM UNIFORM THICKNESS OF 6".
2. SIDEWALKS AND BIKE PATHS SHALL BE PLACED PARALLEL TO, AND ONE FOOT WITHIN THE RIGHT-OF-WAY LINE EXCEPT THAT THE CITY MAY APPROVE DEVIATIONS TO SAVE SPECIMEN TREES PROVIDED THAT THE SIDEWALK REMAINS WITHIN THE RIGHT-OF-WAY OR AN APPROVED SIDEWALK EASEMENT ABUTTING THE RIGHT OF WAY. SIDEWALKS AND BIKE PATHS SHOULD BE LOCATED A MINIMUM OF 4'-0" FROM THE EDGE OF THE STREET PAVEMENT UNLESS OTHERWISE APPROVED BY THE CITY.
3. ALL CURB CUTS AND HANDICAP RAMPS SHALL BE ADA COMPLIANT AND TO BE CONSTRUCTED IN ACCORDANCE WITH FDOT DESIGN STANDARDS AND FLORIDA BUILDING CODE ACCESSIBILITY, LATEST EDITIONS.
4. THE TOP OF THE CONCRETE SHALL BE AT AN ELEVATION NO LOWER THAN THE CROWN OF THE ADJACENT ROADWAY, AND NO HIGHER THAN 6" ABOVE THE CROWN UNLESS APPROVED BY THE CITY TO MAKE A MORE NATURAL TRANSITION WITH THE ADJACENT LAND.
5. EXPANSION AND ISOLATION JOINTS (TYPE A JOINTS) SHALL BE PROVIDED BETWEEN EXISTING SLABS OR STRUCTURES AND FINISH CONCRETE, TO SEPARATE PEDESTRIAN SECTIONS FROM SECTIONS WHICH WILL ENCOUNTER VEHICLE TRAFFIC, TO SEPARATE FRESH PLACEMENT OF CONCRETE WHICH HAS SET FOR MORE THAN 60 MINUTES, AND NO FARTHER APART THAN ONE HUNDRED FEET (100') IN SIDEWALKS AND THIRTY FEET (30') IN BIKE PATHS.
6. PREFORMED ½" EXPANSION JOINT MATERIAL SHALL BE AS SPECIFIED IN FDOT STANDARDS AND SPECIFICATIONS, LATEST EDITION, AND SHALL BE SYNTHETIC, RECYCLED RUBBER OR OTHER PRE-APPROVED NON-BIODEGRADABLE ELASTOMERIC MATERIAL. WOOD AND DECCA-DRAIN STYLE POOL DRAINS ARE STRICTLY PROHIBITED IN ACCORDANCE WITH CHAPTER 8.1.2 OF THE FDOT SOILS AND FOUNDATIONS HANDBOOK, LATEST EDITION.
7. CONTROL JOINTS (TYPE B JOINTS) SHALL BE TOOLED INTO THE FRESH CONCRETE OR SAW CUT INTO CURED CONCRETE TO A DEPTH EQUAL TO 25% THE SLAB THICKNESS AND SPACED APART A DISTANCE EQUAL TO THE WIDTH OF THE SLAB OR 5' WHICHEVER IS LESS.
8. THE SLAB SURFACE SHALL BE BROOM FINISHED TO BE SLIP RESISTANT, AND SHALL MATCH AS CLOSELY AS POSSIBLE THE FINISH OF EXISTING ADJACENT SLABS AND ALL EDGES SHALL BE TOOLED TO ELIMINATE SHARP CORNERS.
9. THE BEARING SUBSURFACE SHALL HAVE ALL ORGANIC, LOOSE, AND DELETERIOUS MATTER REMOVED, AND THE REMAINING CLEAN SOIL SHALL BE SMOOTH, SOUND, AND SOLID. ANY FILL MATERIAL SHALL BE COMPACTED WITH A VIBRATORY OR IMPACT COMPACTION MACHINE IN MAXIMUM 12" LIFTS OR COMPACTED WITH A HAND TAMPER IN MAXIMUM 4" LIFTS THE CITY SHALL REQUIRE A COMPACTION TEST FOR EACH LIFT IF THE TOTAL FILLED SECTION IS MORE THAN 12" DEEP OR IF THE SUBSURFACE HAS BEEN DISTURBED MORE THAN 12" DEEP. WHERE SUCH TEST IS REQUIRED, THE SIDEWALK BASE SHALL BE COMPACTED AND TESTED TO 95% WITH MINIMUM L.B.R. BASED ON AASHTO T-180 MODIFIED PROCTOR TEST. MOISTURE SHALL BE APPLIED TO DRY FILL MATERIAL TO ACHIEVE DENSITY REQUIREMENTS.
10. ALL CONCRETE WORK IN THE RIGHT-OF-WAY SHALL BE INSPECTED BY THE CITY AFTER THE SUBSOIL IS PREPARED AND THE FORMS ARE SET, BUT BEFORE THE CONCRETE PLACEMENT BEGINS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE FINISHED SLAB FROM ALL DAMAGE AND VANDALISM UNTIL THE CITY ACCEPTS OR APPROVES THE SLAB, AFTER WHICH TIME THE OWNER OF THE ABUTTING LAND SHALL BE RESPONSIBLE FOR THE SLAB IN ACCORDANCE WITH THE CITY CODE. ANY SLAB SECTION DAMAGED OR VANDALIZED PRIOR TO ACCEPTANCE OR APPROVAL SHALL BE CUT OUT BETWEEN JOINTS AND REPLACED AT NO ADDITIONAL COST TO THE OWNER. REPAIRS ARE NOT ACCEPTABLE.
12. ALL FORMS SHALL BE REMOVED PRIOR TO ACCEPTANCE OR APPROVAL AND THE DISTURBED GROUND SHALL BE BACKFILLED, RE-GRADED, AND SODDED SO THAT THE WEAR SURFACE OF THE CONCRETE IS REASONABLY FLUSH WITH THE ADJACENT GRADE.
13. DETECTABLE WARNING DEVICES SHALL EXTEND THE FULL WIDTH OF THE SIDEWALK AND TO A DEPTH OF 2' min.
14. SEE FDOT DESIGN STANDARDS INDEX 304, LATEST EDITION, FOR REFERENCE.

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION	SIDEWALK/BIKE TRAIL CONSTRUCTION NOTES C-3	Drawing Date: 09/2003 Drawn By: RT Checked By: Scale: NTS Revision Date: 12/2013 File Name: dc-3



NTS

NOTES:

1. DRIVEWAY APRON SHALL BE CONSTRUCTED OF PLAIN PORTLAND CEMENT CONCRETE WITH A MAXIMUM SLUMP OF 3". A MINIMUM DEVELOPMENT COMPRESSIVE STRENGTH OF 3500 P.S.I. @ 28 DAY.
2. CONCRETE DRIVEWAY APRON WITHIN CITY RIGHT OF WAY SHALL BE MINIMUM UNIFORM THICKNESS OF 6".
3. DRIVEWAY APRON BASE SHALL BE COMPACTED AND TESTED TO 98% DENSITY WITH MINIMUM L.B.R. 40 BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.
4. NO PAVER BRICK TO BE USED WITHIN CITY RIGHT OF WAY.
5. CONCRETE APRON TO HAVE LIGHT BROOM FINISH.

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION	CONCRETE DRIVEWAY APRON DETAIL C-8	Drawing Date: 05/2003 Drawn By: RT Checked By: Scale: NTS Revision Date: 02/2014 File Name: dc-8

SITE CLEARING AND GRADING NOTES

THE FOLLOWING REPRESENTS MINIMUM STANDARDS TO BE ADHERED TO BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION OF A PROJECT. THE CITY RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO BE EMPLOYED WHEN WARRANTED BY EXTREME CONDITIONS AND/OR THE FAILURE OF THE CONTRACTOR TO EMPLOY THE APPROPRIATE EROSION CONTROL BEST MANAGEMENT PRACTICES. FAILURE TO COMPLY WITH THESE PROVISIONS SHALL RESULT IN THE ISSUANCE OF A "STOP WORK ORDER".

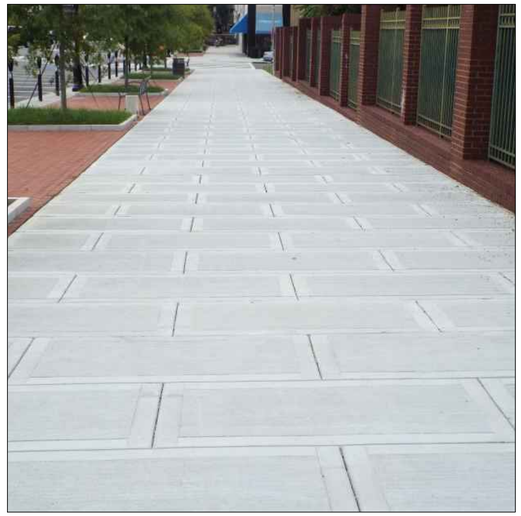
1. NO DISTURBANCE OF EXISTING OR PROPOSED CONSERVATION EASEMENTS, NATURAL BUFFERS, OR WATER BODIES IS PERMITTED WITHOUT PRIOR APPROVAL FROM THE CITY ENGINEER OR DESIGNEE. THE CONTRACTOR SHALL LOCATE THESE AREAS ON SITE AND BARRICADE THEM TO AVOID ANY UNAUTHORIZED CLEARING. BARRICADES AND OTHER PROTECTIVE FENCING ARE TO BE LOCATED AT THE DRIP LINE OF EXISTING NATIVE TREES OR AT THE EDGE OF THE NATIVE UNDER-STORY HABITAT, WHICHEVER IS NEAREST TO THE CONSTRUCTION ACTIVITY.
2. SPECIMEN AND HISTORIC TREES, CONSERVATION EASEMENTS, NATURAL VEGETATION BUFFERS, AND SIMILAR AREAS MUST BE PROTECTED BY BARRICADES OR FENCING PRIOR TO CLEARING. BARRICADES ARE TO BE SET AT THE DRIP LINE OF THE TREES AND MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. BARBED WIRE IS NOT PERMITTED AS A PROTECTIVE BARRIER.
3. WHERE A CHANGE OF GRADE OCCURS AT THE DRIP LINE OF A SPECIMEN TREE, SILT FENCE WILL BE REQUIRED DURING CONSTRUCTION AND RETAINING WALLS MUST BE INSTALLED PRIOR TO FINAL ACCEPTANCE BY THE CITY.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL PROTECTIVE VEGETATION BARRICADES AND EROSION CONTROL STRUCTURES AND MEASURES IN PLACE PRIOR TO THE COMMENCEMENT OF ANY EARTHWORK, INCLUDING PRELIMINARY GRUBBING. THESE MEASURES INCLUDE, BUT ARE NOT LIMITED TO, TEMPORARY CONSTRUCTION FENCES, SYNTHETIC JUTE BALES, SILT FENCES, AND FLOATING TURBIDITY BARRIERS. FURTHER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL EROSION CONTROL DEVICES THROUGHOUT THE DURATION OF THE ENTIRE PROJECT. MAINTENANCE SHALL INCLUDE PERIODIC INSPECTION AND REMOVAL OF DEBRIS ABUTTING EROSION CONTROL DEVICES IN ACCORDANCE WITH THE CITY'S UTILITY DEPARTMENT STANDARDS.
5. PRIOR TO THE INSTALLATION OF ANY FILL MATERIAL ON SUBJECT SITE, SILT FENCE SHALL BE INSTALLED:
   a. ALONG SUBJECT SITE BOUNDARY AND PROPERTY LINES,
   b. AT THE EDGE OF CONSERVATION EASEMENTS AND WETLANDS,
   c. ADJACENT TO NATURAL LANDSCAPE BUFFERS,
   d. AROUND THE PERIMETER OF EXISTING STORM WATER TREATMENT FACILITIES.
   e. AT ANY ADDITIONAL AREAS THAT THE CITY DEEMS NECESSARY TO BE PROTECTED FROM POTENTIAL EROSION IMPACTS DURING CONSTRUCTION. THESE CONDITIONS SHALL APPLY IN ALL INSTANCES WHERE FILL MATERIAL IS BEING INSTALLED WITHIN 25 FEET OF ANY OF THE AFOREMENTIONED LOCATIONS. WHILE THESE ITEMS REPRESENT THE MINIMUM REQUIREMENTS, THE CITY RESERVES THE RIGHT TO IMPOSE ADDITIONAL PROTECTIVE MEASURES, AS DETERMINED DURING ACTUAL SITE VISITS CONDUCTED AS PART OF THE STANDARD REVIEW OF THE SITE-SPECIFIC CLEARING PERMIT AND THROUGHOUT PROJECT CONSTRUCTION.
6. WHERE FILL MATERIAL IS INTENDED TO BE INSTALLED ADJACENT TO EXISTING VEGETATION WHICH IS INTENDED TO REMAIN NATURAL, THE CONTRACTOR MAY INSTALL SILT FENCING AS A TREE PROTECTION MEASURE, IN LIEU OF INSTALLING EITHER WOOD BRACING OR ORANGE MESH FENCING. THIS PRACTICE IS ENCOURAGED BY THE CITY, IF THE SILT FENCE FAILS TO PROVIDE ADEQUATE PROTECTION FROM IMPACT DUE TO CONSTRUCTION, THEN ADDITIONAL CONSTRUCTION FENCING OR WOOD BRACING SHALL BE REQUIRED.
7. AT A MINIMUM, THE CONTRACTOR SHALL SEED AND MULCH ALL DISTURBED AREAS. GRASS COVERAGE IS TO BE ESTABLISHED WITHIN THIRTY DAYS.
8. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR THROUGH SCHEDULING, TO MINIMIZE THE DISTURBANCE OF SITE AREAS THAT HAVE BEEN BROUGHT TO THEIR PROPOSED FINAL GRADE. WITHIN TWENTY DAYS OF BRINGING A SUBJECT AREA TO ITS FINAL GRADE, THE CONTRACTOR SHALL INSTALL SEED AND MULCH OR SOD AND WATERING, AS REQUIRED.
9. FOR INDIVIDUAL CONSTRUCTION PROJECTS INVOLVING MULTIPLE PHASES, UPON COMPLETION OF EACH PHASE OF THE PROJECT, SEEDING AND MULCHING AND OR/ SODDING IS TO BE PERFORMED PRIOR TO COMMENCING THE NEXT PHASE OF CONSTRUCTION.

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION	SITE CLEARING & GRADING NOTES C-15A	Drawing Date: 05/2003 Drawn By: RT Checked By: Scale: NTS Revision Date: 10/2011 File Name: dc-15

SITE CLEARING AND GRADING NOTES
(CON'T)

10. ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED, INCLUDING WATERING AND TRIMMING BY THE CONTRACTOR TO ALLOW THE GRASS TO BECOME ESTABLISHED.
11. ANY BURNING OF CLEARED MATERIALS MUST BE INSPECTED AND PERMITTED ON A DAILY BASIS. CONTACT THE PERMITS AND LICENSING DIVISION PRIOR TO EACH DAY OF DESIRED BURNING.
12. ABSOLUTELY NO BURYING OF CLEARED & GRUBBED MATERIALS IS PERMITTED.
13. THE REMOVAL OF ALL VEGETATION AND TOPSOIL ON THE FUTURE ROADWAY, PARKING AND BUILDING LOT AREAS IS REQUIRED TO BE COMPLETED PRIOR TO THE PLACEMENT OF FILL ON THOSE AREAS. THE TOPSOIL MAY BE TEMPORARILY STOCKPILED AND USED AS TOPSOIL OVER PROPOSED GREEN AREAS SUCH AS PLANT BEDS, SODDED AREAS, AND WHERE TREES ARE TO BE INSTALLED OR RELOCATED. TEMPORARY STOCKPILE SLOPES SHALL NOT EXCEED 4:1 (H:V).
14. A SIGNED, DATED, AND SEALED LETTER FROM A SOILS ENGINEER OR THE ENGINEER OF RECORD CERTIFYING THAT THE AREAS TO BE FILLED HAVE BEEN STRIPPED OF ORGANIC MATERIALS, MUST BE SUBMITTED TO THE CITY PRIOR TO FILLING.
15. FILL MATERIAL IS TO BE PLACED IN ONE FOOT LIFTS AND COMPACTED TO THE APPROPRIATE DENSITY (98% FOR PAVED AREAS AND 95% FOR BUILDING PADS AND ALL OTHER AREAS AS PER MODIFIED AASHTO T-180).
16. DURING SUBDIVISION DEVELOPMENT WHEN FUTURE BUILDING LOTS ARE FILLED AS PART OF THE OVERALL SUBDIVISION IMPROVEMENTS, COMPACTION TEST REPORTS MUST BE PERFORMED ON THESE LOTS AT 300' INTERVALS. THESE TESTS ARE TO BE PERFORMED IN 1' VERTICAL INCREMENTS. THE RESULTS OF THESE TESTS ARE TO BE SUBMITTED TO THE CITY UPON COMPLETION OF THE TESTS.
17. IF ANY MUCK OR ANY UNSUITABLE MATERIAL IS DISCOVERED, IT SHALL BE REMOVED AND REPLACED WITH A SUITABLE MATERIAL THAT IS PROPERLY BACKFILLED, COMPACTED AND TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.
18. STOCKPILING IS NOT GENERALLY PERMITTED BY THE CITY. WHEN ALLOWED, STOCKPILES SHALL NOT EXCEED SIX FEET IN HEIGHT MEASURED FROM THE ORIGINAL GRADE. AT A MINIMUM, STOCK PILES THAT WILL REMAIN IN PLACE IN EXCESS OF FIVE DAYS SHALL BE COVERED OR WATERED TO MINIMIZE THE ADVERSE IMPACT ON ADJACENT PROPERTY OWNERS AT NO ADDITIONAL COST TO THE CITY OR OWNER. SEED AND MULCH IMMEDIATELY UPON PLACEMENT OF THE FINAL LIFT.
19. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES. ADEQUATE WATERING METHODS SHOULD BE EMPLOYED TO ALLOW DAILY COVERAGE OF THE ENTIRE LIMITS OF ALL AREAS THAT DO NOT HAVE AN ESTABLISHED VEGETATIVE COVER. METHODS TO BE EMPLOYED INCLUDE, BUT ARE NOT LIMITED TO, WATER TRUCKS, PERMANENT IRRIGATION SYSTEMS, TEMPORARY SPRINKLER SYSTEMS OPERATED BY PUMPING UNITS CONNECTED TO WET RETENTION PONDS, WATER CANNONS, TEMPORARY IRRIGATION SYSTEMS MOUNTED ATOP STOCKPILE AREAS, AND OTHER METHODS AS DEEMED NECESSARY BY THE CITY.
20. ALL FILL MATERIALS LOCATED BENEATH STRUCTURES AND PAVEMENT SHALL CONSIST OF CLEAN GRANULAR SAND FREE FROM ORGANICS AND SIMILAR MATERIAL THAT COULD DECOMPOSE.
21. ALL FILL TO BE PLACED IN LANDSCAPED AREAS SHALL HAVE A Ph RANGE BETWEEN 5.5 AND 7.5, BE ORGANIC IN NATURE, FREE OF ROCKS AND DEBRIS, OR MATCH NATIVE EXISTING SOILS.

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION	SITE CLEARING & GRADING NOTES C-15B	Drawing Date: 05/2003 Drawn By: RT Checked By: Scale: NTS Revision Date: 10/2011 File Name: dc-15



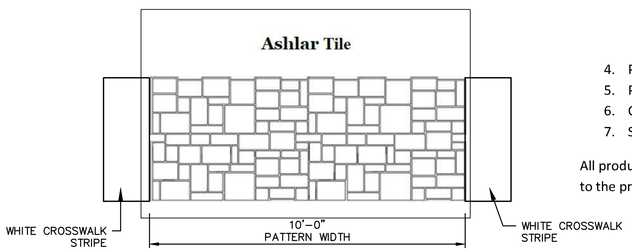
TYPICAL SIDEWALK PATTERN & DETAIL

NOT TO SCALE

NOTE: SIDEWALK TO DEVIATE FROM CITY STANDARD BY PROVIDING THE FOLLOWING:

1.) SMOOTH TROWEL FINISH

2.) WINDOW PATTERN (STAGGERED) (SEE PHOTO)



STAMPED ASPHALT CROSSWALK

NOT TO SCALE

STAMPED ASPHALT CROSSWALK NOTES:

1. Installation is to take place on a fully cured substrate. The asphalt surface is to have a full cure of 14 days, minimum.
2. Product is to be as follows"
   a. Florida Department of Transportation (FDOT)
   b. Section 523: S523, Patterned – Textured Pavement
   c. Approved Product List (APL) Certification No.: 523-000-003
3. Paveway Systems, Inc.;
   a. 114 Indian Lakes Lane, Florahome, Florida 32140
   b. Phone:386/659-1316
   c. www.pavewaysystems.com
4. Proposed Color shall be Amber B-20 for all crosswalks
5. Proposed Pattern Shall be Ashlar Tile
6. Crosswalks are to match the color and style of the existing crosswalks on Orange Avenue
7. Shop Drawing submittal is required.

All product and installation shall be in accordance with Paveway Systems, Inc. or equal and shall adhere to the produce specifications provided by the manufacture.

REV.NO.	DESCRIPTIONS	DATE
B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

REVISIONS

SEAL

SEAL

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THE CITY OF DAYTONA BEACH, FLORIDA

PROJECT NO. 2015-085

DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

CIVIL DETAILS

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=4'

M&C FILE NUMBER
D001-09960161

DRAWING NUMBER
CD-4

STATUS: REISSUED FOR BIDDING
REVISION

S:\0996\D161\90-Drawings\General\D001-09960161.DWG, 1/7/2019 10:28:59 AM, Doreen Padgett

SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS

1. THE CITY'S UTILITIES DEPARTMENT SHALL BE GIVEN A MINIMUM OF 2 BUSINESS DAYS ADVANCE NOTICE (NOT INCLUDING HOLIDAYS) PRIOR TO BEGINNING ANY SANITARY SEWER CONSTRUCTION.
2. ALL DEWATERING ACTIVITIES EITHER DIRECTLY DISCHARGED OR THAT SUBSEQUENTLY USE THE CITY'S STORMWATER SYSTEM TO CONVEY GROUND OR SURFACE WATER FROM A SITE SHALL REQUIRE A STANDARD OR GENERAL USE PERMIT AS PER ARTICLE 7 SECTION 7 OF THE LAND DEVELOPMENT CODE. A PERMIT SHALL BE REQUIRED PRIOR TO ENGAGING IN ANY DEWATERING ACTIVITIES, OR IN ANY CON-STRUCTION ACTIVITIES. DEWATERING ACTIVITIES INCLUDE THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED VAULT, COFFERDAM, OR TRENCHES ALLOWING CONSTRUCTION OR MAIN-TENANCE TO BE DONE IN THE DRY, OR ANY ACTIVITY WHICH CHANGES THE IMPERVIOUS AREA OF LAND. SITE SPECIFIC PERMITS SHALL REQUIRE THE PAYMENT OF A PER ACRE FEE BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE THE PAYMENT OF AN ANNUAL FEE BASED ON ROUTINE SCHEDULE OF MAINTENANCE ACTIVITIES DISCHARGING DIRECTLY OR SUBSEQUENTLY INTO THE CITY'S MS4. DEWATERING PERMIT APPLICATIONS MAY BE FOUND AT **http://www.cob.us/index.aspx?NID=285.** FEES ARE SUBJECT TO ARTICLE 20 SECTION 3.1 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITY DEPARTMENT AT 125 BASIN STREET SUITE 100, DAYTONA BEACH FL 32114 BEFORE ANY USE OF THE MS4 WILL BE ALLOWED. FAILURE TO COMPLY WILL RESULT IN THE TERMINATION OF ACCESS TO THE CITY'S MS4 SYSTEM.
3. UPON COMPLETION, THE CONTRACTOR SHALL PROVIDE THE CITY UTILITIES DEPARTMENT WITH A CCTV INSPECTION LOG ON DVD AND A PRINTED REPORT FOR ALL GRAVITY MAINS AND LATERALS CONSTRUCTED. ALL WORK, WITH THE EXCEPTION OF FINAL GRADE ADJUSTMENT TO THE MANHOLES, SHALL BE COMPLETED PRIOR TO COMMENCING THE CCTV INSPECTION. THE CONTRACTOR SHALL COORDINATE THE CCTV INSPECTION TIME WITH THE CITY UTILITY INSPECTOR PRIOR TO INITIATING THE WORK. FINAL PAVING SHALL NOT COMMENCE UNTIL APPROVAL HAS BEEN RECEIVED FROM THE CITY UTILITY INSPECTOR.
4. SEWER LATERALS LOCATIONS SHALL BE MARKED ALONG THE OUTSIDE OF THE CURB WITH A SAW CUT "V", OR BY A METAL TAB SET INTO THE PAVEMENT.
5. THE CONTRACTOR SHALL BE REQUIRED TO PIG ALL FORCE MAINS EQUAL TO OR GREATER THAN 6" IN DIAMETER AND PRIMARY TRANSMISSION MAINS LOCATED ON COLLECTOR AND ARTERIAL ROADWAYS. LAUNCHING AND EXTRACTION POINTS SHALL BE DETERMINED BY THE CITY.
6. WITH RESPECT TO TIE-IN CONNECTIONS AND CORING OPERATIONS, THE CITY RESERVES THE RIGHT TO REQUIRE CONNECTIONS TO BE PERFORMED DURING PERIODS OF LOW FLOW (MIDNIGHT TO 6:00 A.M.) IN ORDER TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS.
7. ALL WORK PERFORMED UPON SANITARY SEWER FACILITIES OWNED OR PROPOSED TO BE OWNED BY THE CITY SHALL BE CONSTRUCTED BY A LICENSED UNDERGROUND UTILITY CONTRACTOR OR LICENSED GENERAL CONTRACTOR, WHO IS LICENSED IN THE STATE OF FLORIDA AND REGISTERED WITH THE CITY.
8. UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE SYSTEM IS PROPERLY CERTIFIED AND ACCEPTED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AND AS-BUILTS ARE PROVIDED TO THE CITY'S UTILITIES DEPARTMENT PRIOR TO ANY USE OF THE SYSTEM.
9. FOR CONSTRUCTION PURPOSES, THE PLANS SHALL DIMENSION THE LOCATION OF ALL FORCE MAINS, VALVES, MANHOLES & LATERALS FROM THE BASELINE CONSTRUCTION AND FROM RIGHT-OF-WAY LINE.
10. LANDSCAPE PLANS SHALL CLEARLY DEPICT THE DESIGN LOCATION OF PLANTINGS RELATIVE TO THE LOCATION OF PUBLIC UTILITIES AND STORM WATER INFRASTRUCTURE IN ORDER TO EVALUATE POTENTIAL CONFLICTS.
11. ALL SANITARY STANDARD DETAILS SHALL APPLY TO ALL CONSTRUCTION WORK PERFORMED IN THE CITY OF DAYTONA BEACH BY REFERENCE IN THESE NOTES (S-1 TO S-16).
12. ALL PLUG VALVES SHALL BE IDENTIFIED AS SUCH WITH AN ENGRAVED BRASS 2" x 6" NAME PLATE EMBEDDED IN SURFACE OF CONCRETE COLLAR.
13. FOR AS-BUILTS INFORMATION SEE THE CITY'S AS-BUILT DRAWING REQUIREMENTS ATTACHED TO THE BACK OF THE UTILITIES DEPARTMENT'S STANDARD DETAILS.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS (PAGE 1 OF 4) S-1

FY- 15/16 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 06/10 | File Name: Sanitary Sewer Notes P1 | Page 69

SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS (CONT'D)

14. ALL LIFT STATION WETWELL FASTENERS AND THROUGH-TOP CONNECTORS THAT CONTACT THE WETWELL (SUCH AS NIPPLES) SHALL BE 316 SS FASTENERS.
15. ALL GRAVITY SANITARY SEWER MAIN LINES SHALL BE 8" DIAMETER MINIMUM. COMMERCIAL SERVICE LATERALS ALL SHALL BE GREEN 6" DIA. OR LARGER. ALL SINGLE FAMILY RESIDENTIAL SERVICE LATERALS SHALL BE 6" – SINGLE SERVICES WITH CLEAN OUTS INSTALLED AT PROPERTY LINE.
16. ALL GRAVITY SANITARY SEWER MAIN LINES SHALL BE GREEN PVC SDR-26, ASTM D-3034, OR C-900 DR-25 MINIMUM PRESSURE CLASS 100. IN PLACES WHERE A MINIMUM COVER OF 4.0' CANNOT BE MAINTAINED OR IN DEPTHS OF TEN (10) FEET OR GREATER C-900 OR C-905 GREEN PVC DR-25, MINIMUM PRESSURE CLASS 100 SHALL BE USED.
17. FOR SINGLE FAMILY HOMES, SINGLE SIX INCH SEWER SERVICES LATERALS SHALL BE CONSTRUCTED AT EACH LOT OR UNIT AND STUBS IN THE DOWNSTREAM SIDE OF THE LOT LINE. AT THE END OF THESE SERVICES SHALL BE EXTENDED 4 FEET ABOVE GROUND AT THE PROPERTY LINE WITH A PVC RISER AND PLUG BEING EASILY VISIBLE FROM THE ROAD. RUBBER SEAL FITTINGS SHALL BE USED ON ALL LINES. NO GLUED JOINTS ARE PERMITTED ON LATERALS.
18. FOR MULTI-FAMILY AND COMMERCIAL SITES, SIX INCH MINIMUM SEWER SERVICES AND CLEANOUTS SHALL BE PROVIDED AS APPROVED BY THE CITY.
19. ALL SANITARY SEWER FORCE MAINS, INCLUDING FITTINGS, SHALL BE DUCTILE IRON PIPE (D.I.P.), EPOXY LINED, CLASS 350. FORCE MAIN MINIMUM DEPTH OF COVER SHALL BE 36". ALL FORCE MAINS SHALL BE DISTINCTLY MARKED BY [SUGGEST THESE OR EQUIVALENT] ALL NON DIP HORIZONTAL DIRECTIONAL DRILL FORCE MAINS SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 160 PSI. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING DEPENDENT ON SITE CONDITIONS.
20. ALL SANITARY SEWER FORCE MAINS SHALL USE A THRUST RESTRAINT JOINT METHOD IN COM-PLIANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION GUIDELINES. IN NO INSTANCE SHALL THRUST BLOCKS BE PERMITTED.
21. AS A GENERAL RULE, THE NUMBER OF JOINTS SHALL BE LIMITED WHENEVER POSSIBLE. IN SPECIAL CASES WHERE A POINT REPAIR TO AN 8" TO 12" PVC SEWER MAIN IS REQUIRED, THE PROPER RIGID WRAP AROUND SLEEVE MAY BE ALLOWED BY SPECIAL APPROVAL BY THE CITY.
22. ALL IN-LINE SANITARY SEWER FORCE MAIN VALVES SHALL BE RESILIENT SEAT GATE VALVES UNLESS OTHERWISE NOTED. VALVES SHALL BE SPACED A MAXIMUM OF 1000 FEET APART
23. ALL C-900 PVC PIPE REQUIREMENTS ARE REFERENCED TO THE C-900-97 STANDARDS. ANY UPGRADES FOR BURST PROTECTION MAY BE REQUIRED WHEN USING THE C-900-07 STANDARDS.
24. MINIMUM GRAVITY SANITARY SEWER SLOPES ARE AS FOLLOWS:

8" PIPE	0.40%
10" PIPE	0.28%
12" PIPE	0.22%
15" PIPE	0.15%

OR OTHERWISE NOTED BY THE UTILITIES DEPARTMENT.

25. GRAVITY SANITARY SEWER LINES SHALL BE INSTALLED WHENEVER POSSIBLE UNDER PAVED AREAS WITHIN PUBLIC RIGHT-OF-WAYS. UTILITY EASEMENTS SHALL BE PROVIDED WHEN-JOINT SEALS PRIOR TO BACKFILLING OPERATIONS. JOINT SEALS PRIOR TO BACKFILLING OPERATIONS. LINES ARE CONSTRUCTED OUTSIDE OF PUBLIC RIGHT-OF-WAY.
26. GRAVITY SANITARY SEWER LINE CONSTRUCTION SHALL BE ACCOMPLISHED BY THE USE OF A LASER INSTRUMENT UNLESS ANOTHER METHOD IS PREVIOUSLY APPROVED BY THE CITY.
27. THE CONTRACTOR SHALL AT ALL TIMES, DURING PIPE LAYING OPERATIONS, DEWATER THE TRENCH SUFFICIENTLY TO KEEP THE GROUNDWATER ELEVATION A MINIMUM OF 6" BELOW THE PIPE BEING LAID WITHIN THE AREA OF THE TRENCH.
28. ALL PIPES SHALL BE LAID ON A FIRM FOUNDATION. SOFT OR SPONGY BEDDING FOR PIPES IS NOT ACCEPTABLE. ANY UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH A DRY, COMPACTED, GRANULAR MATERIAL SATISFACTORY TO THE CITY.
29. ON ALL EXCAVATION AND BACKFILLING THE CONTRACTOR SHALL PROVIDE ADEQUATE SHEETING AND BRACING IN ORDER TO PROVIDE FOR THE SAFETY OF WORKERS, AS WELL AS REPRESENTATIVES OF THE CITY, THE DESIGN ENGINEER, AND THE DEVELOPER.
30. ALL TRENCHES SHALL BE BACKFILLED WITH ACCEPTABLE MATERIAL AND COMPACTED TO THE SPECIFIED MINIMUM COMPACTION (95% IN UNPAVED AREAS AND 98% IN PAVED AREAS) OF THE OPTIMUM DENSITY OF THAT MATERIAL BASED ON THE AASHTO T-180 MODIFIED PROCTOR TEST.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS (CONT'D) (PAGE 2 OF 4) S-2

FY- 15/16 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 06/10 | File Name: Sanitary Sewer Notes P2 | Page 68

SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS (CONT'D)

31. THE CONTRACTOR SHALL INSTALL A #12 UF SINGLE STRAND COPPER WIRE, OR SIMILAR DEVICE AS MAY BE APPROVED BY THE CITY FOR THE FULL LENGTH OF ALL NON-METALLIC SEWAGE FORCE MAINS. THIS PIPE LOCATOR AID SHALL BE INSTALLED BETWEEN 15" AND 24" BELOW FINISHED GRADE OR AS DIRECTED BY THE MANUFACTURER. TAPE SHALL BE COLOR CODED GREEN FOR SANITARY SEWER AND FORCE MAIN. LOCATER WIRE/DEVICE SHALL TERMINATE AT A LOCATION AND IN A MANNER CONVENIENT FOR CITY LOCATER STAFF.
32. ALL SEWER LINES WHICH ARE CONSTRUCTED OUTSIDE OF PUBLIC RIGHT-OF-WAYS WITHIN SIDE YARDS, BACKYARDS, AND OTHER POORLY ACCESSIBLE AREAS SHALL BE CONSTRUCTED OF GREEN C-900 PVC. ABSOLUTELY NO USE OF PLASTIC STYRENE FITTINGS SHALL BE ALLOWED.
33. ALL LOCAL COLLECTION SANITARY SEWER MANHOLES SHALL BE PRECAST WITH A MINIMUM INSIDE DIAMETER OF 4 FEET. MANHOLES WITH A FLOW LINE CENTER LINE DEPTH IN DEPTH SHALL HAVE THE BOTTOM PRE-CAST SECTION AT A MINIMUM OF FOUR FEET TALL.
34. STANDARD MANHOLES SHALL BE LOCATED AT INTERVALS NOT EXCEEDING 400 FEET.
35. ALL SEWER FITTINGS TO BE "HARCO" OR APPROVED EQUAL.
36. MANHOLE RIMS SHALL MATCH FLUSH WITH THE FINISH GRADE ELEVATION IN PAVED AREAS AND A MINIMUM OF 0.5 FEET AND MAXIMUM OF 1.0 FEET ABOVE GRADE GENERALLY IN UNPAVED AREAS.
37. THE CONTRACTOR SHALL CONSTRUCT SANITARY SEWER MANHOLES IN SUCH A WAY THAT SEWER LINES DO NOT INTERSECT SEALED JOINTS BETWEEN SECTIONS OF THE MANHOLE.
38. RUBBER BOOTS AND STAINLESS STEEL BANDS SHALL BE UTILIZED IN THE CONNECTION OF THE SEWER MAIN TO THE MANHOLES (SEE STANDARD MANHOLE AND BOOT DETAIL).
39. INDIVIDUAL SANITARY SERVICE CONNECTORS ON NEW CONSTRUCTION SHALL NOT BE CONNECTED DIRECTLY INTO MANHOLES, AND MUST BE CONNECTED TO SEWER MAIN LINES BY USE OF WYE CONNECTIONS, UNLESS OTHERWISE APPROVED BY THE CITY.
40. SANITARY SEWER DROP MANHOLES SHALL ONLY BE USED UNDER SPECIAL CONDITIONS AS APPROVED BY THE CITY. [MORE USE THAN TYPICAL MAY BE ALLOWED]
41. ALL SANITARY SEWER MANHOLE COVERS SHALL HAVE THE WORD "SANITARY" CAST INTO THEM AS SHOWN ON DETAIL S-9.
42. SANITARY SEWER MANHOLES WHICH HAVE SEWER FORCE MAINS DISCHARGING DIRECTLY INTO THEM SHALL BE FIBERGLASS OR POLY-ETHYLENE LINED. RETRO-FITTING OF MANHOLES WITH LINERS SHALL BE REQUIRED WHEN NEW CONNECTIONS SUCH AS THIS ARE MADE. FIBERGLASS SHALL BE A MINIMUM 1/2" THICKNESS UNLESS APPROVED OTHERWISE BY THE CITY. OTHER TYPES OF LINING METHODS AND MATERIALS MAY BE CONSIDERED ON A CASE BY CASE BASIS. UNDER SPECIAL CIRCUMSTANCES WHERE HYDROGEN SULFIDE IS A MAJOR CONCERN MANHOLES UPSTREAM AND/OR DOWNSTREAM OF THE FORCE MAIN TIE-IN OR WET WELL MAY ALSO BE REQUIRED TO HAVE LININGS INSTALLED.
43. ALL SANITARY PLASTIC, AS MANUFACTURED BY PRESS SEAL GASKET CORPORATION, SHALL BE USED ON THE OUTSIDE OF ALL MANHOLE AND WETWELL JOINTS. APPLY ONE LAYER OF 9" WRAP CENTERED ON EACH JOINT. A CITY INSPECTOR SHALL PERSONALLY INSPECT ALL JOINT SEALS PRIOR TO BACKFILLING OPERATIONS.
44. ANY NEW OR EXISTING ESTABLISHMENT WITH THE POTENTIAL TO DISCHARGE INDUSTRIAL OR COMMERCIAL WASTES INTO THE SEWER SYSTEM SHALL CONSTRUCT AND MAINTAIN AT HIS EXPENSE A SUITABLE CONTROL MANHOLE, OR MANHOLES, DOWNSTREAM FROM ANY TREATMENT, STORAGE, OR OTHER APPROVED WORKS, PRIOR TO THE CITY'S COLLECTION SYSTEM TO FACILITATE OBSERVATION, MEASUREMENT, AND SAMPLING OF ALL WASTES, INCLUDING ALL DOMESTIC SEWAGE FROM THE ESTABLISHMENT.
45. THE CONTROL MANHOLE OR MANHOLES SHALL BE CONSTRUCTED AT SUITABLE AND SATIS-FACTORY LOCATIONS MAKING THE MANHOLE ACCESSIBLE TO CITY PERSONNEL AT ALL TIMES FOR SAMPLING.
46. SANITARY SEWER LIFT STATIONS AND FORCE MAINS SIZE, MATERIAL, AND DESIGNS SHALL BE APPROVED BY THE CITY. LIFT STATIONS SHALL BE CONSTRUCTED WITH A MINIMUM WET WELL AS PER THE LIFT STATION DETAIL. A MINIMUM OF 6 FEET SHALL BE MAINTAINED BETWEEN LOWEST INFLUENT INVERT AND WETWELL FLOOR.
47. IT SHALL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER TO PREPARE AND SUBMIT FLOTATION CALCULATIONS TO SIZE THE BASE OF THE WET WELL, AND ANY MANHOLES AS DEEMED NECESSARY BY THE CITY.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS (CONT'D) (PAGE 3 OF 4) S-3

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SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS

TESTING REQUIREMENTS:

1. THE CONTRACTOR SHALL EMPLOY AN INDEPENDENT TESTING LABORATORY AT HIS OWN EXPENSE TO INSURE THAT COMPACTION OF ALL FILL MATERIAL IS COMPLETED PROPERLY. TESTS SHALL BE DONE ONE FOOT ABOVE THE PIPE AND THEN AT ONE FOOT VERTICAL INTERVALS UNTIL FINAL GRADE IS REACHED. TESTING SHALL BE COMPLETED AND TEST DOCUMENTS SUBMITTED TO THE CITY AT A MINIMUM FREQUENCY OF ONE SET OF TESTS PER EACH 300 FOOT OF PIPING AND ONE ADDITIONAL SET OF TESTS AT EVERY MANHOLE. IDENTIFICATION OF TEST LOCATIONS SHALL BE CLEARLY INDICATED ON TEST SUBMITTALS. TEST RESULTS SHALL BE FORWARDED PROMPTLY TO THE CITY'S DESIGNATED SITE INSPECTOR.
2. ALL TESTING REQUIRED BY THE CITY SHALL BE PAID FOR BY THE CONTRACTOR / DEVELOPER.
3. THE CITY OF DAYTONA BEACH RESERVES THE RIGHT TO REQUIRE THE DEVELOPER TO PERFORM VACUUM TESTING OF ALL SANITARY MANHOLES AND TO AIR TEST SEWER MAINS.
4. ALL PROPOSED SEWER FORCE MAINS SHALL BE FLUSHED, PRESSURE TESTED AND CLEARED FOR SERVICE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF ENVIROMENTAL PROTECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CITY'S DESIGNATED SITE INSPECTOR WHO SHALL COORDINATE WITH CITY PERSONNEL AT THE WASTEWATER TREATMENT PLANT AT LEAST (3) THREE BUSINESS DAYS PRIOR TO BEGINNING A FULL-DIAMETER FLUSH OF THE MAINS PRIOR TO THE COMMENCEMENT OF PRESSURE TESTING. (SUBJECT TO AVAILABILITY).
5. SANITARY SEWER FORCE MAINS SHALL BE PRESSURE TESTED TO 150 PSI FOR 2 HOURS. WITH ALLOWABLE LEAKAGE TO BE X GAL/HR PER X" DIA. OF PIPE, PER X' OF MAIN TO BE TESTED.

ALLOWABLE LEAKAGE PER 1000 FT. OF PIPELINE * -GPH

AVERAGE TEST PRESSURE (PSI)	NOMINAL PIPE DIAMETER – INCHES															AVERAGE TEST PRESSURE (PSI)
	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	
450	0.48	0.64	0.95	1.27	1.59	1.91	2.23	2.55	2.87	3.18	3.82	4.78	5.73	6.69	7.64	8.60	9.56	10.19	450
400	0.45	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70	3.00	3.60	4.50	5.41	6.31	7.21	8.11	9.01	9.61	400
350	0.42	0.56	0.84	1.12	1.40	1.69	1.97	2.25	2.53	2.81	3.37	4.21	5.06	5.90	6.74	7.58	8.43	8.99	350
300	0.39	0.52	0.78	1.04	1.30	1.56	1.82	2.08	2.34	2.60	3.12	3.90	4.68	5.46	6.24	7.02	7.80	8.32	300
275	0.37	0.50	0.75	1.00	1.24	1.49	1.74	1.99	2.24	2.49	2.99	3.73	4.48	5.23	5.98	6.72	7.47	7.97	275
250	0.36	0.47	0.71	0.95	1.19	1.42	1.66	1.90	2.14	2.37	2.85	3.56	4.27	4.99	5.70	6.41	7.12	7.60	250
225	0.34	0.45	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.25	2.70	3.38	4.73	5.41	6.03	6.76	7.21	225	
200	0.32	0.43	0.64	0.85	1.06	1.28	1.48	1.70	1.91	2.12	2.55	3.19	3.82	4.46	5.09	5.73	6.37	6.80	200
175	0.30	0.40	0.59	0.80	0.99	1.19	1.39	1.59	1.79	1.98	2.38	2.98	3.58	4.17	4.77	5.36	5.96	6.36	175
150	0.28	0.37	0.55	0.74	0.92	1.10	1.29	1.47	1.66	1.84	2.21	2.76	3.31	3.86	4.41	4.97	5.52	5.88	150
125	0.25	0.34	0.50	0.67	0.84	1.01	1.18	1.34	1.51	1.68	2.01	2.52	3.02	3.53	4.03	4.53	5.04	5.37	125
100	0.23	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	1.50	1.80	2.25	2.70	3.15	3.60	4.05	4.50	4.80	100

** IF THE PIPELINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE ALLOWABLE LEAKAGE WILL BE THE SUM OF THE COMPUTED LEAKAGE FOR EACH SIZE.*

$$L = \frac{SD\sqrt{P}}{133{,}200}$$

WHERE:
L = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR
S = LENGTH OF PIPE TESTED, IN FEET
D = NOMINAL DIAMETER OF PIPE, IN INCHES
P = AVERAGE TEST PRESSURE DURING THE LEAKAGE TEST, IN POUNDS PER SQUARE INCH (GAUGE)

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

SANITARY SEWER TESTING REQUIREMENTS NOTES (PAGE 4 OF 4) S-4

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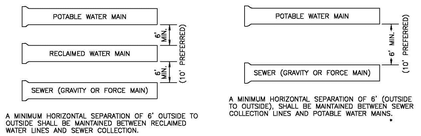
POTABLE WATER MAIN TO BE CENTERED ABOVE THE CROSSING MAIN FOR MAXIMUM JOINT SEPARATION.

SECTIONAL VIEW

A MINIMUM HORIZONTAL SEPARATION OF 6' OUTSIDE TO OUTSIDE SHALL BE MAINTAINED BETWEEN RECLAIMED WATER LINES AND POTABLE WATER MAINS.



A MINIMUM HORIZONTAL SEPARATION OF 6' OUTSIDE TO OUTSIDE SHALL BE MAINTAINED BETWEEN RECLAIMED WATER LINES AND SEWER COLLECTION.

A MINIMUM HORIZONTAL SEPARATION OF 6' (OUTSIDE TO OUTSIDE), SHALL BE MAINTAINED BETWEEN SEWER COLLECTION LINES AND POTABLE WATER MAINS.

NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORM WATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE AND CONDUIT. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

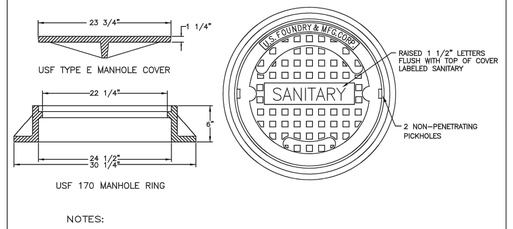
AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

NTS

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

PIPE SEPARATION DETAIL S-6

FY- 15/16 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 06/10 | File Name: Pipe Separation S-6 | Page 72



USF 170 MANHOLE RING

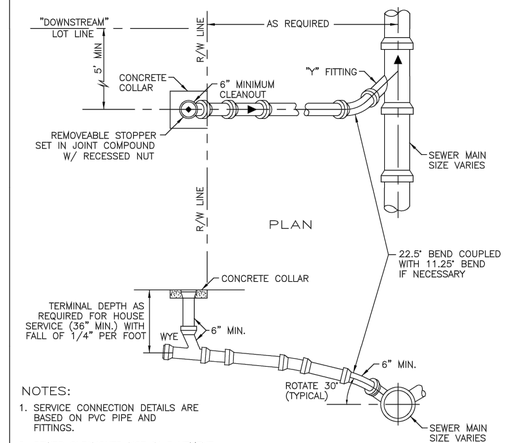
NOTES:

1. UNLESS DETAILED PLANS SHOW OTHERWISE, ALL MANHOLE RING AND COVER CASTINGS IN PAVED AREAS ARE TO BE ADJUSTED TO FINAL GRADE, SEALED AND SECURED IN PLACE WITH A CONCRETE COLLAR AFTER THE ROAD BASE IS PLACED AND JUST PRIOR TO PLACEMENT OF ASPHALT WEARING SURFACE.
2. CONCRETE COLLAR AROUND MANHOLE FRAME IS REQUIRED IN PAVED AREAS ONLY.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

SANITARY SEWER COVER DETAIL S-18

FY- 15/16 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: | File Name: Sanitary Sewer Cover S-18 | Page 86



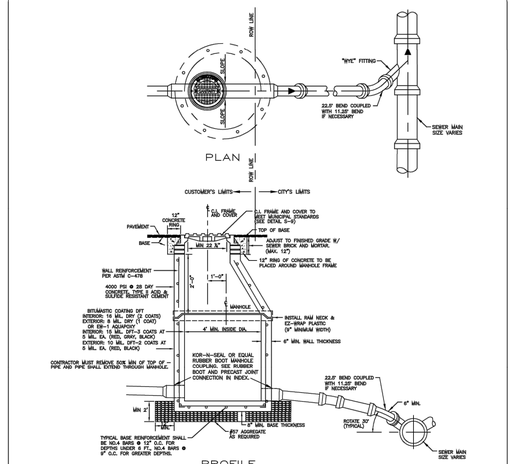
NOTES:

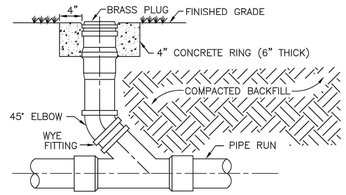
1. SERVICE CONNECTION DETAILS ARE BASED ON PVC PIPE AND FITTINGS.
2. SEWER CLEANOUTS NOT IN PAVEMENT SHALL HAVE CONCRETE COLLAR 18"x18"x6" AROUND THEIR TOPS AND MUST BE INSTALLED AND ADJUSTED TO FINISHED GRADE AT THE RIGHT-OF-WAY/PROPERTY LINE

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

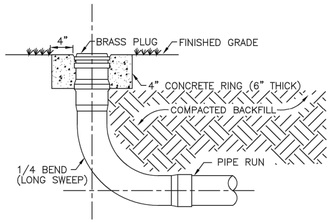
RESIDENTIAL SANITARY LATERAL DETAIL S-10

FY- 15/16 | Drawing Date: 01/08 | Drawn By: KLH | Checked By: JMP | Scale: NTS | Revision Date: 06/10 | File Name: Residential Lateral S-10 | Page 77


ROW LINE
BLOCK
"WYE" FITTING
22.5° BEND COUPLED WITH 11.25° BEND IF NECESSARY
SEWER MAIN SIZE VARIES
PLAN
CUSTOMER'S LIMITS
CITY'S LIMITS
C.I. FRAME AND COVER TO MEET MUNICIPAL STANDARDS (SEE DETAIL S-9)
12" CONCRETE RING
PAVEMENT
TOP OF BASE
BASE
MIN. 23 X
ADJUST TO FINISHED GRADE W/ SEWER BRICK AND MORTAR. (MAX. 12")
12" RING OF CONCRETE TO BE PLACED AROUND MANHOLE FRAME
WALL REINFORCEMENT PER ASTM C-478
4000 PSI @ 28 DAY CONCRETE, TYP. 2 MIN. & EXTRA RESISTANT CEMENT
1'-4"
MANHOLE
BITUMASTIC COATING OFF INTERIOR: 24 MIL. DRY (2 COATS) EXTERIOR: 8 MIL. DRY (1 COAT) OR OTHER: 16 MIL. DRY (2 COATS) OR 8 MIL. EA. (RED, GRAY, BLACK) EXTERIOR: 10 MIL. DFT=2 COATS AT 5 MIL. EA. (RED, BLACK)
4' MIN. INSIDE DIA.
INSTALL RAM NECK @ EZ-WRAP PLASTIC OR APPROVED EQUAL
6" MIN. WALL THICKNESS
#5@6"-IN-SEAL OR EQUAL RUBBER BOOT MANHOLE COUPLING. SEE RUBBER BOOT AND PRECAST JOINT CONNECTION IN INDEX.
CONTRACTOR MUST REMOVE BOTH MIN OF TOP OF PIPE AND PIPE SHALL EXTEND THROUGH MANHOLE
MIN. 2'
6" MIN. BASE THICKNESS
ANY AGGREGATE AS REQUIRED
TYPICAL BASE REINFORCEMENT SHALL BE NO.4 BARS @ 12" O.C. FOR DEPTHS UNDER 5 FT., NO.4 BARS @ 9



IN–LINE CLEANOUT



TERMINAL CLEANOUT

NOTE:
CONCRETE COLLAR REQUIRED IN UNPAVED AREAS

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

SANITARY LATERAL CLEANOUT DETAIL
S–12

FY–15/16
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date:
File Name: Sanitary Cleanout S–12
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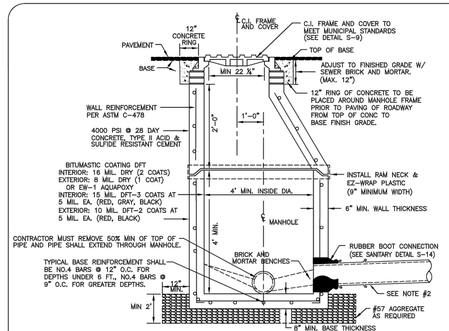

CROSS SECTIONAL VIEW NTS

NOTES:

1. ON TRANSITIONS BETWEEN LARGER DIAMETER AND SMALLER SEWER COLLECTORS, INVERTS OF SEWERS SHALL BE MATCHED.
2. LAST 60' OF F.M. 12" PIPING ENTERING SEWER MANHOLE SHALL BE P.V.C. C–900 PLACED AT A NEGATIVE GRADE. 15" AND ABOVE SHALL BE P.V.C. C–905.
3. NON–PENETRATING PICK–HOLES IN ALL CONCRETE SECTIONS.
4. DFT = DRY FILM THICKNESS
5. 0.1' – DROP ACROSS MANHOLE TYP. (MEASURED DIA. OF CONCRETE RING)
6. MANHOLES 8' DEEP OR GREATER SHALL HAVE A MIN. 4' HIGH WALL BASE.
7. ANY PIPE ENTERING MANHOLE MUST HAVE A RUBBER BOOT CONNECTION.
8. MORTAR TO CONTAIN "HYDRATITE", OR APPROVED EQUAL, TO PREVENT SHRINKAGE.
9. SUB–GRADE BENEATH MANHOLES SHALL BE UNDISTURBED GRANULAR UNSATURATED SOIL. No. 57 AGGREGATE STONE SHALL BE USED IN WET CONDITIONS AND/OR WHERE UNSUITABLE MATERIAL IS ENCOUNTERED.
10. CONTRACTOR SHALL PROVIDE THICKER MANHOLE WALLS AND BASES AS REQUIRED TO PREVENT FLOTATION BASED ON HISTORIC HIGH GROUND WATER TABLE ELEVATIONS AS DETERMINED USING ACCEPTED ENGINEERING PRACTICES AND/OR APPROVED BY UTILITIES DEPARTMENT.
11. SHOP DRAWINGS FOR ALL STRUCTURES SHALL BE SUBMITTED TO AND APPROVED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION.
12. NO BUG HOLES OR HONEYCOMB WILL BE ACCEPTED.
13. ENDS OF THE TOP AND BOTTOM SECTIONS OF THE MANHOLE SHALL FIT FLUSH TOGETHER.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

SANITARY SEWER MANHOLE AND GENERAL NOTES
S–13

FY–15/16
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date: 08/10
File Name: Sanitary Sewer Manhole S–13
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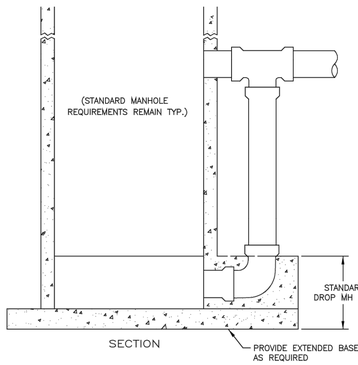
NOTE:
GENERAL NOTES ON DETAIL S–10 APPLY.



SECTION

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

OUTSIDE DROP SANITARY MANHOLE DETAIL (NEW–STANDARD)
S–14

FY–15/16
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date:
File Name: Outside Drop New S–14
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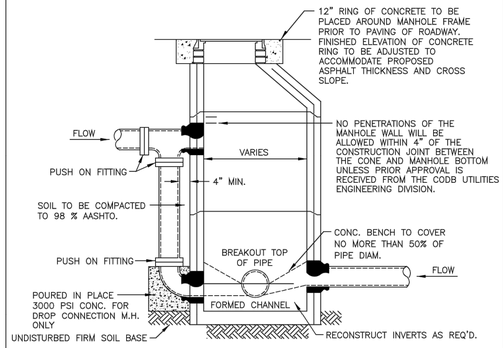

NOTE:
GENERAL NOTES ON DETAIL S–10 APPLY.

1. DROPS OF MORE THAN THREE FEET SHALL REQUIRE AN OUTSIDE DROP

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

OUTSIDE DROP SANITARY MANHOLE DETAIL (EXISTING–RETROFIT)
S–15

FY–15/16
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date: 04/16
File Name: Outside Drop Existing S–15
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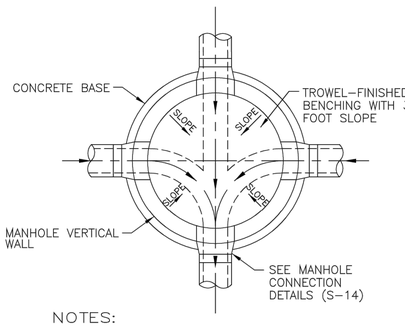

NOTES:

1. FLOW CHANNELS SHALL HAVE THE SAME SLOPES AS THE SEWERS THEY ARE CONNECTED TO. (EXCEPT THAT AT CHANGES OF DIRECTION EXCEEDING 45°, THE DROP SHALL BE 0.1' MINIMUM)
2. NO STANDING WATER WILL BE ALLOWED.
3. FORM BENCH IN MANHOLE FROM MID–LINE OF 8" PIPE TO WALL OF MANHOLE, 3/4" PER FT. OF SLOPE. FOR LARGER PIPE, CONSTRUCT FROM INSIDE CROWN OF PIPE WITH 3/4" PER FT. OF SLOPE TO WALL.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

SANITARY MANHOLE INVERT DETAIL
S–16

FY–15/16
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date: 07/10
File Name: Invert Detail S–16
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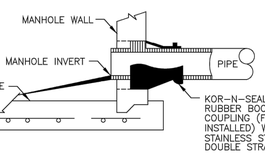
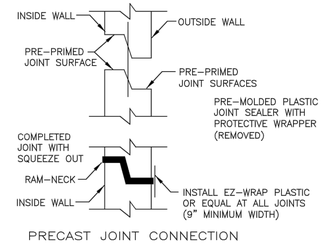


MANHOLE PIPE CONNECTION DETAIL
FOR NEW CONNECTIONS IN EXISTING MANHOLES



PRECAST JOINT CONNECTION

NOTES:

1. ALL NEW CONNECTIONS TO EXISTING SANITARY SEWER MANHOLES SHALL UTILIZE A CORING METHOD AND THE IN–FIELD INSTALLATION OF A RUBBER BOOT INTO THE MANHOLE.
2. BOOTS SHALL BE SNAPPED IN PLACE AND WATER TIGHT.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

RUBBER BOOT AND PRECAST JOINT CONNECTION DETAIL
S–17

FY–15/16
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date:
File Name: Rubber Boot and Precast Joint Connection S–17
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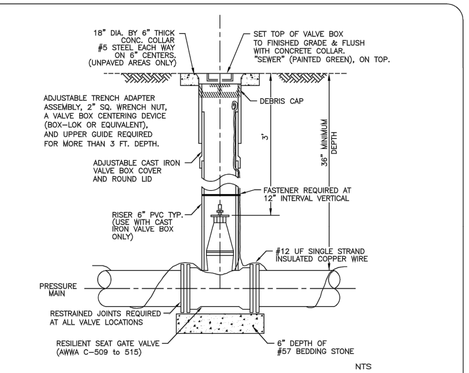

NTS

SEWER VALVE COVER

NOTES:

1. ROD OR BOLT TEE WHERE APPLICABLE.
2. FOR CONSTRUCTION PURPOSES, THE PLANS SHALL DIMENSION THE LOCATION OF ALL VALVES AND VALVE BOXES BY STATE PLANE COORDINATES WITH STATION & OFFSETS FROM CL OF R/W.
3. #12 INSULATED SOLID COPPER UF TRACER WIRE SHALL BE LAID THE ENTIRE LENGTH OF THE REUSE PIPE. ALL CONNECTION ENDS SHALL USE LIQUID TAPE AND A DIRECT BURIED SPLICE KIT (LAWSON 95313) OR EQUIVALENT.
4. ANY VALVE DEEPER THAN 36" SHALL HAVE AN EXTENSION BOLTED ON THE VALVE. THE OPERATING NUT SHALL BE 12" BELOW FINISHED GRADE.
5. WHERE PLUG VALVES ARE SPECIFIED THE CONCRETE COLLAR SURROUNDING THE TOP OF THE VALVE BOX SHALL HAVE AN ENGRAVED 2" x 6" BRASS NAME PLATE CLEARLY MARKED "PLUG VALVE" IN 1" HIGH BLOCK PRINT LETTERS.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

SANITARY VALVE AND VALVE BOX DETAIL
S–19

FY–15/16
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date: 08/10
File Name: Sanitary Valve & Box S–19
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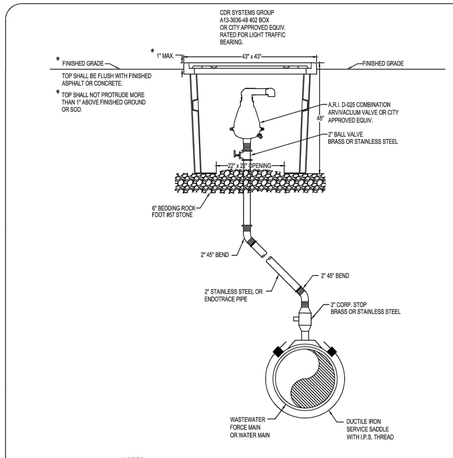

NOTES:

1. VALVES SHALL BE CENTERED IN THE BOX
2. ROCK SHALL BE COMPACTED TO A FIRM AND UNYIELDING CONDITION
3. PIPING BETWEEN THE VALVE AND MAIN SHALL BE CONFIGURED TO BEST FIT FOR THE SITE CONDITION AS APPROVED BY THE CITY
4. TOP OF BOX ON SANITARY FORCE MAIN SHALL BE CLEARLY PERMANENTLY LABELED AS SANITARY FM.
5. TOP OF ALL BOXES SHALL BE CLEARLY AND PERMANANTLY LABELED AS TO VALVE TYPE (AIR RELEASE, VACUUM, OR AIR/VAC COMBINATION).

OFFSET AIR/VAC RELEASE VALVE
NTS

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

AUTOMATIC ARV/VACUUM VALVE DETAIL (PAGE 1 OF 2)
S–20

FY–15/16
Drawing Date: 03/16
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date:
File Name: Automatic ARV Valve S–20
Page 88

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
B	REISSUED FOR BIDDING	JANUARY 2018
A	ISSUE FOR BIDDING	AUGUST 2018

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THE CITY OF DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR. BOULEVARD–ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

SANITARY SEWER DETAILS 2

PROJECT NO. 2015–085

DATE:	APRIL 2017
MCE PROJ. #	0996–0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=4'

M&C FILE NUMBER
D001–09960161

DRAWING NUMBER
CD–6

STATUS: REISSUED FOR BIDDING
REVISION

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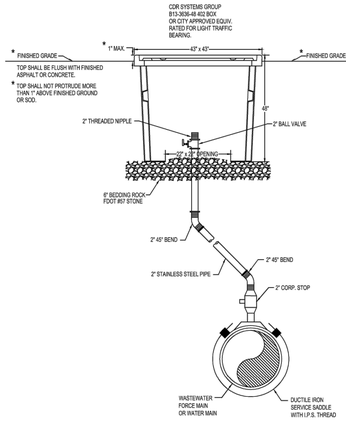


NOTES:

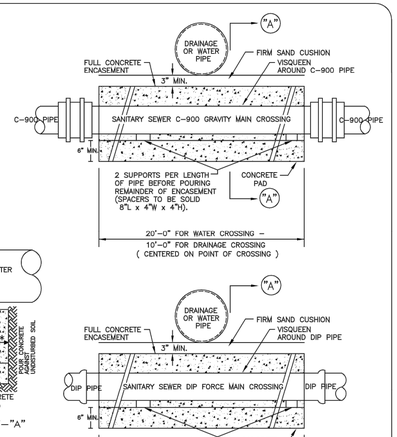
1. VALVES SHALL BE CENTERED IN THE BOX
2. ROCK SHALL BE COMPACTED TO A FIRM AND UNYIELDING CONDITION
3. PIPING BETWEEN THE VALVE AND MAIN SHALL BE CONFIGURED TO BEST FIT FOR THE SITE CONDITION AS APPROVED BY THE CITY
4. TOP OF BOX ON SANITARY FORCE MAIN SHALL BE CLEARLY PERMANENTLY LABELED AS SANITARY FM.
5. TOP OF ALL BOXES SHALL BE CLEARLY AND PERMANANTLY LABELED AS TO VALVE TYPE (AIR RELEASE, VACUUM, OR AIR/VAC COMBINATION).
6. IF BOX IS TO BE PLACED IN ROAD OR ADJACENT TO THE ROAD USE A HEAVY TRAFFIC BOX CDR SYSTEM GROUP, BOX # B14-3636-48 OR CITY APPROVED EQUIV. RATED FOR HEAVY TRAFFIC BEARING.

OFFSET AIR/VAC RELEASE VALVE
NTS

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

MANUAL AIR RELEASE
VALVE DETAIL
S-21

FY-15/16	
Drawing Dates	03/16
Drawn By	KLH
Checked By	JMP
Scale	NTS
Revision Dates	
File Name	Manual Air Valve S-21
Page	89



NOTES:

1. ALL CONCRETE SHALL BE 3000 PSI MINIMUM STRENGTH AT 28 DAYS.
2. WATER MAIN SHALL BE LOCATED ABOVE OR BELOW ENCASEMENT AS SHOWN ON PLANS OR AS DETERMINED IN THE FIELD, USE ENCASEMENT WHERE VERTICAL CLEARANCE WATER MAIN AND SEWER MAIN IS LESS THAN 12 INCHES.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

SANITARY SEWER
CONCRETE ENCASEMENT
DETAIL
S-7

FY-15/16	
Drawing Date	01/08
Drawn By	KLH
Checked By	JMP
Scale	NTS
Revision Date	
File Name	Sanitary Concrete Encasement S-7
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B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

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THE CITY OF
DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR.
BOULEVARD–ROADWAY AND PEDESTRIAN
IMPROVEMENTS PROJECT

SANITARY SEWER DETAILS 3

PROJECT NO. 2015-085

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=4'

M&C FILE NUMBER
D001-09960161

DRAWING NUMBER
CD-7

STATUS: REVISION
REISSUED FOR BIDDING

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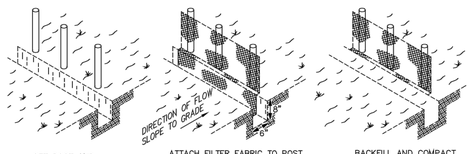
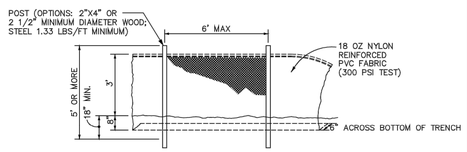


SET POST AND EXCAVATE A TRENCH

ATTACH FILTER FABRIC TO POST ALLOWING 1 FT EXTENSION INTO THE TRENCH AS SHOWN (8" DOWN TRENCH WALL AND 6" ACROSS BOTTOM).

BACKFILL AND COMPACT EXCAVATED SOIL



NTS

NOTES:

1. MATERIALS, CONSTRUCTION METHODS AND MAINTENANCE SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND DESIGN STANDARDS CURRENT EDITION.
2. CONTRACTOR SHALL PROVIDE SILT FENCES, TURBIDITY BARRIERS OR APPROVED BARRIERS AT ALL STORMWATER DISCHARGE POINTS FOR EROSION CONTROL AND SEDIMENT CONTROL DURING CONSTRUCTION. DEPENDING UPON FLOW VELOCITIES AND VOLUME, REDUNDANT (MULITPLE) PARALLEL FENCES MAY BE NEEDED.
3. CONTRACTOR SHALL ROUGH GRADE STORMWATER SWALES AND RETENTION AREAS VEGETATING IN COMPLIANCE WITH BEST MANAGEMENT PRACTICES PRIOR TO CONSTRUCTION OF SITE IMPROVEMENTS.
4. CONTRACTOR SHALL MEET ALL PERMIT CONDITIONS AS ESTABLISHED BY THE CITY OF DAYTONA BEACH AND ALL OTHER APPLICABLE AGENCIES, INCLUDING BUT NOT LIMITED TO COUNTY, FDOT, STATE, FEDERAL, AND THE SJRWMD.

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION

STAKED SILT FENCE DETAIL
ST-9

FY- 15/16	
Drawing Date:	01/08
Drawn By:	KLH
Checked By:	JMP
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EROSION & SEDIMENT CONTROL NOTES

1. ALL CONSTRUCTION ACTIVITIES SHALL INCORPORATE BEST MANAGEMENT PRACTICES (BMP'S) TO CONTROL EROSION, SEDIMENTATION, AND THE POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION.
2. CONTRACTOR SHALL MINIMIZE DISTURBANCE OF EXISTING VEGETATION, (PARTICULARLY AROUND THE PROJECT PERIMETER) AND ADJACENT EXISTING DRAINAGE PATTERNS TO THE MAXIMUM EXTENT PRACTICAL DURING THE CONSTRUCTION PROCESS.
3. SILT FENCES AND TURBIDITY BARRIERS SHALL BE INSTALLED ON SITE AND APPROVED BY THE CITY PRIOR TO CONSTRUCTION, AND SHALL BE INSPECTED WEEKLY BY THE CONTRACTOR AND CORRECTIVE ACTION TAKEN AS NECESSARY.
4. STORMWATER RETENTION, DETENTION, STORAGE AND CONVEYANCE SYSTEMS MUST BE EXCAVATED TO ROUGH GRADE PRIOR TO BUILDING CONSTRUCTION OR PLACEMENT OF IMPERVIOUS SURFACE WITHIN THE AREA SERVED BY THOSE SYSTEMS. ADEQUATE MEASURES MUST BE TAKEN TO PREVENT SILTATION OF THESE TREATMENT SYSTEMS AND CONTROL STRUCTURES DURING CONSTRUCTION. SILTATION MUST BE REMOVED FROM THE STORMWATER SYSTEM WHEN HALF FULL AND IMMEDIATELY PRIOR TO FINAL GRADING AND GRASSING OF THE PROJECT.
5. CONTRACTOR SHALL SOD ALL SWALES AND STORMWATER FACILITIES IN ACCORDANCE WITH TEMPORARY BMP'S WITHIN 14 DAYS AFTER CONSTRUCTION. THIS IS REQUIRED TO STABILIZE THE SLOPES AND MINIMIZE EROSION.
6. DURING ALL CONSTRUCTION OF THE PERMITTED SYSTEM INCLUDING STABILIZATION AND REVEGETATION OF DISTURBED SURFACES, CONTRACTOR IS RESPONSIBLE FOR THE SELECTION, IMPLEMENTATION, AND OPERATION OF ALL EROSION AND SEDIMENT CONTROL MEASURES REQUIRED TO RETAIN ALL SEDIMENT ONSITE AND PREVENT VIOLATIONS OF THE WATER QUALITY STANDARDS IN ACCORDANCE WITH THE FLORIDA ADMINISTRATIVE CODE AND PROJECT PERMIT REQUIREMENTS.
7. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN A PROTECTIVE COVER (VEGETATIVE OR SUITABLE ALTERNATIVE) FOR EROSION AND SEDIMENT CONTROL ON ALL LAND SURFACES EXPOSED OR DISTURBED BY CONSTRUCTION OF THE PERMITTED PROJECT, UNLESS MODIFIED BY ANOTHER CONDITION OF THE PERMIT OR OTHERWISE SPECIFIED ON A DISTRICT APPROVED EROSION AND SEDIMENT CONTROL PLAN. THE PROTECTIVE COVER MUST BE INSTALLED WITHIN FOURTEEN (14) DAYS AFTER FINAL GRADING OF THE AFFECTED LAND SURFACE. A PERMANENT VEGETATIVE COVER MUST BE ESTABLISHED WITHIN 60 DAYS OF IT'S INSTALLATION. THE PERMITTEE'S REQUIREMENT TO MAINTAIN COVER ON OFFSITE AND ONSITE SURFACES SHALL NOT BE COMPLETE UNTIL AFTER THE WATER MANAGEMENT DISTRICT RECEIVES THE PERMITTEE'S STATEMENT OF COMPLIANCE.
8. AT A MINIMUM, SILT FENCES AND TURBIDITY BARRIERS SHALL BE INSTALLED PER PLAN. ADDITIONAL BMP MEASURES MUST BE TAKEN TO MINIMIZE IMPACTS OF RECEIVING WATERS SUCH AS THE USE OF APPROVED BARRIERS AT INLETS, ADDITIONAL SILT FENCING, SOIL ANTI-TRACKING DEVICES AND SODDING.
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE PROJECT LIMITS IN COMPLIANCE WITH ALL JURISDICTIONAL PERMIT AND CITY REQUIREMENTS.
10. ANY TIME THE CONTRACTOR NEEDS TO SUBMIT A NOTICE OF INTENT TO USE A GENERAL PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES, A COPY OF THE PERMIT SHALL ALSO BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT.
11. THE CONTRACTOR SHALL AS A MINIMUM PREPARE AND IMPLEMENT AN EROSION AND SEDIMENT CONTROL PLAN IN ACCORDANCE WITH FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) GUIDELINES.
12. DEWATERING ACTIVITIES SHALL BE APPROVED BY THE UTILITIES DEPARTMENT BEFORE DISCHARGING INTO THE CITY'S MS4 SYSTEM (ST-1A NOTE 3).

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION

EROSION AND SEDIMENT CONTROL NOTES
ST-5

FY- 15/16	
Drawing Date:	01/08
Drawn By:	KLH
Checked By:	JMP
Scale:	N/A
Revision Date:	
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NOTE:

STORM PIPING TO BE INSTALLED PER CITY STANDARDS & INCLUDE LASER PROFILING & VIDEO INSPECTION PRIOR TO CITY ACCEPTANCE.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

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THE CITY OF DAYTONA BEACH, FLORIDA

PROJECT NO. 2015-085

DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

STORM WATER DETAILS

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=4'

M&C FILE NUMBER
D001-09960161

DRAWING NUMBER
CD-8

STATUS: REISSUED FOR BIDDING
REVISION

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RECLAIMED WATER CONSTRUCTION NOTES

1. THE CITY'S UTILITIES DEPARTMENT (671–8815) SHALL BE GIVEN A MINIMUM OF (2) TWO BUSINESS DAYS (NOT INCLUDING HOLIDAYS) PRIOR TO BEGINNING ANY RECLAIMED WATER SYSTEM CONSTRUCTION.
2. ALL DEWATERING ACTIVITIES EITHER DIRECTLY DISCHARGED OR THAT SUBSEQUENTLY USE THE CITY'S STORMWATER SYSTEM TO CONVEY GROUND OR SURFACE WATER FROM A SITE SHALL REQUIRE A STANDARD OR GENERAL USE PERMIT AS PER ARTICLE 7 SECTION 7 OF THE LAND DEVELOPMENT CODE. A PERMIT SHALL BE REQUIRED PRIOR TO ENGAGING IN ANY DEWATERING ACTIVITIES, OR IN ANY CONSTRUCTION ACTIVITIES. DEWATERING ACTIVITIES INCLUDE THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED VAULT, COFFERDAM, OR TRENCHES ALLOWING CONSTRUCTION OR MAINTENANCE TO BE DONE IN THE DRY, OR ANY ACTIVITY WHICH CHANGES THE IMPERVIOUS AREA OF LAND. SITE SPECIFIC PERMITS SHALL REQUIRE THE PAYMENT OF A PER ACRE FEE BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE THE PAYMENT OF AN ANNUAL FEE BASED ON ROUTINE SCHEDULE OF MAINTENANCE ACTIVITIES DISCHARGING DIRECTLY OR SUBSEQUENTLY INTO THE CITY'S MS4. DEWATERING PERMIT APPLICATIONS MAY BE FOUND AT http://codb.us/index.aspx?NID=262. FEES ARE SUBJECT TO ARTICLE 20 SECTION 3.1 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITY DEPARTMENT AT 125 BASIN STREET SUITE 130, DAYTONA BEACH FL 32114 BEFORE ANY USE OF THE MS4 WILL BE ALLOWED. FAILURE TO COMPLY WILL RESULT IN THE TERMINATION OF ACCESS TO THE CITY'S MS4 SYSTEM.
3. RECLAIMED WATER SERVICE ENDINGS SHALL BE SECURED BY WIRE TO 2" X 4" PRESSURE TREATED STAKES, APPROXIMATELY 2' ABOVE GRADE, OR MAY BE PLACED IN RECLAIMED WATER METER BOXES, PROVIDED BY THE CONTRACTOR, AT THE TIME OF FINAL SUBDIVISION INSPECTION.
4. ALL PROPOSED RECLAIMED WATER MAINS SHALL BE FLUSHED, TESTED AND CLEARED FOR SERVICE, WHEN APPROPRIATE, IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CITY'S DESIGNATED SITE INSPECTOR WHO SHALL COORDINATE WITH CITY PERSONNEL AT THE WASTEWATER PLANT AT LEAST (2) TWO BUSINESS DAYS PRIOR TO THE BEGINNING OF A FULL–DIAMETER FLUSH OF THE MAINS PRIOR TO THE COMMENCEMENT OF PRESSURE TESTING.
5. UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM BY THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SUPPLY "AS–BUILTS DRAWINGS" TO THE CITY PRIOR TO ANY USE OF THIS SYSTEM. **SEE CITY OF DAYTONA BEACH AS–BUILT REQUIREMENTS.**
6. ALL RECLAIMED WATER SERVICES SHALL BE MARKED ALONG THE OUTSIDE EDGE OF CURB WITH A "◇" OR BY METAL TABS SET INTO PAVEMENT. VALVES AND BLOW–OFFS FOR RECLAIMED WATER MAINS SHALL BE MARKED BY AN "+" SET INTO THE PAVEMENT AND PAINTED WITH PURPLE ENAMEL.
7. RECLAIMED WATER SERVICES SHALL BE LOCATED AT THE SIDE LOT LINES, ALTERNATING WITH POTABLE WATER SERVICE LOCATIONS. IN INSTANCES WHERE RECLAIMED WATER SERVICES NEED TO BE OFFSET, THESE SERVICES MAY BE OFFSET FROM THE LOT LINE A MAXIMUM DISTANCE OF 2 FEET.
8. ALL RECLAIMED WATER, HAND–OPERATED CONNECTIONS AND OUTLETS SHALL BE CONTAINED IN UNDERGROUND SERVICE VAULTS AND SHALL BE APPROPRIATELY TAGGED OR LABELED TO WARN THE PUBLIC AND EMPLOYEES THAT THE WATER IS NOT INTENDED FOR DRINKING OR SWIMMING.

NTS

9. VAULTS FOR OUTLETS SHALL BE LOCKED OR REQUIRE A SPECIAL TOOL FOR OPERATION OF OUTLETS.
10. A 75 FOOT SETBACK DISTANCE SHALL BE PROVIDED FROM PUBLIC ACCESS RECLAIMED WETTED AREAS TO ANY PUBLIC AND ANY PRIVATE POTABLE WATER SUPPLY WELLS.
11. LOW TRAJECTORY NOZZLES ARE REQUIRED WITHIN 100 FEET OF PUBLIC EATING, DRINKING OR BATHING FACILITIES.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

DESIGN AND CONSTRUCTION NOTES
PAGE 1 OF 3
RW–1

FY–15/16
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
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File Name:Reclaimed Notes RW–1
Page 45

RECLAIMED WATER CONSTRUCTION NOTES
(CONT'D)

12. ANY SIGNIFICANT IRRIGATION SITE UTILIZING RECLAIMED WATER, SUCH AS AN ATHLETIC FIELD, GOLF COURSE, PARK OR POND, IS REQUIRED TO POST A 12" x 12" RECLAIMED WATER SIGN WARNING THE PUBLIC AND EMPLOYEES ITHAT RECLAIMED WATER IS NOT INTENDED FOR DRINKING OR SWIMMING. THIS SIGN SHALL BE PLACED AT THE ENTRANCE TO THE SITE AND THE LOCATION OF THE PRIVATE REUSE SYSTEM. SEE SHEET RW–16
13. DEWATERING SHALL BE PROVIDED TO KEEP GROUND WATER ELEVATION A MINIMUM OF 6 INCHES BELOW RECLAIMED WATER MAIN BEING LAID.
14. ALL RECLAIMED WATER MAINS SHALL BE LAID ON A FIRM FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
15. TRENCHES SHALL BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE CITY WITH A MINIMUM COMPACTION OF 95% IN UNPAVED AREAS AND 98 T–180.
16. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TESTS BE PROVIDED AT POINTS 1 FOOT ABOVE THE PIPE AND AT 1 FOOT VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET.
17. MAXIMUM OBTAINABLE SEPARATION OF PUBLIC RECLAIMED WATER MAINS, STORM WATER SYSTEMS, POTABLE WATER AND SANITARY SEWER MAINS SHALL BE MAINTAINED. A MINIMUM HORIZONTAL SEPARATION OF SIX (6) FEET (EDGE TO EDGE). WHERE RECLAIMED WATER AND SANITARY SEWAGE MAINS CROSS WITH LESS THAN TWELVE (12) INCHES VERTICAL CLEARANCE, THE SANITARY SEWAGE MAIN SHALL BE TWENTY (20) FEET OF EITHER CONCRETE ENCASED PVC PIPE OR ENCASED IN A WATERTIGHT CARRIER PIPE, CENTERED ON THE POINT OF CROSSING (SEE PIPE SEPARATION CHART).
18. 3" METALIZED PIPE LOCATION TAPE SHALL BE LOCATED BETWEEN 15" AND 24" BELOW FINISHED GRADE OR AS SPECIFIED BY MANUFACTURER FOR ALL PVC LINES, AND UF#12 SINGLE STRAND INSULATED COPPER WIRE SHALL BE ATTACHED TO ALL PVC PIPE.
18A. UF#14 SINGLE STRAND INSULATED COPPER WIRE SHALL BE ATTACHED TO ALL PVC PIPE. WIRE RUNS SHALL BE CONNECTED WITH SILICONE FILLED WIRE CONNECTORS. EACH RUN SHALL TERMINATED AT EVERY VALVE. SEE RW–13 FOR INSTALLATION OF WIRE ON RISER PIPE. SERVICES SHALL BE CONNECTED TO THE MAIN CONNECTED TO THE MAIN WIRE WITH WIRE FILLED CONNECTORS. IT IS THE CONTRACTORS RESPONSIBLY TO ENSURE CONTINUITY AND TEST FOR CONTINUITY.
19. ALL SINGLE RESIDENTIAL WATER SERVICES SHALL BE 1". SERVICES SHALL BE CTS 3408 HIGH DENSITY POLYETHYLENE TUBING RATED FOR A MINIMUM OF 200 PSI WITH SODR 9 (CTS). THE TUBING SHALL HAVE A VIRGIN HIGH DENSITY POLYETHYLENE CENTER FOR WHICH THE MANUFACTURER SHALL FURNISH A CERTIFICATE OF PURITY. THE TUBING SHALL BE LAVENDER IN COLOR AND SHALL HAVE THE WORDS "RECLAIMED WATER" PERMANENTLY PRINTED ON THE OUTSIDE. THE TUBING SHALL HAVE U.V. PROTECTION AND SHALL NOT BE AFFECTED BY DIRECT SUNLIGHT. THE TUBING SHALL COMPLY WITH OR EXCEED THE APPLICABLE STANDARDS OF A.S.T.M. D1248, 03350, D2239, D2737, N.S.F.–14 AND A.W.W.A. C901 AND SHALL COME WITH A LIFETIME WARRANTY. APPROVED SIZES: 1" AND 2" DIAMETERS. SEE APPROVED PRODUCT LIST FOR ACCEPTABLE MANUFACTURERS.
20. AS STANDARD PRACTICE AND IF POSSIBLE RECLAIMED WATER MAINS SHALL BE INSTALLED 4 FEET OFF THE BACK OF THE CURB ON THE OPPOSITE SIDE OF THE ROAD OF THE POTABLE WATER LINES, (NOT UNDER PROPOSED SIDEWALK LOCATION) OR AS APPROVED BY THE CITY.
21. ALL RECLAIMED WATER MAINS SHALL HAVE A MINIMUM COVER OF 36 INCHES. IN SPECIAL CASES WHERE IT IS IMPOSSIBLE OR INAPPROPRIATE TO PROVIDE ADEQUATE COVER, DUCTILE IRON PRESSURE CLASS 350 OR CONCRETE ENCASEMENT/PROTECTIVE SLAB MAY BE USED AT THE DISCRETION OF THE UTILITIES DEPARTMENT.
22. RECLAIMED WATER MAINS SHALL BE PURPLE PVC, DR–18 AWWA CLASS C–900 OR C–905, CL 150, OR DIP PRESSURE CLASS 350, STANDARD CEMENT LINED (PAINTED PURPLE) UNLESS APPROVED OTHERWISE BY THE CITY. ALL HORIZONTAL DIRECTIONAL DRILLS USING HDPE SHALL BE DR–11 WORKING PRESSURE RATING 160 OR GREATER. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING DEPENDENT UPON SITE CONDITIONS.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

DESIGN AND CONSTRUCTION NOTES
PAGE 2 OF 3
RW–2

FY–15/16
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date: 06/10
File Name:Reclaimed Notes RW–2
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SCHEDULE OF LENGTHS OF RESTRAINED PVC PIPE (FT.)

FITTING	90° BEND	45° BEND	22.5° BEND	11.25° BEND	TEE OR DEAD END
PIPE SIZE (IN.)					
4"	20	18	18	18	45
6"	28	18	18	18	63
8"	36	18	18	18	82
10"	44	28	18	18	98
12"	51	21	18	18	116
14"	57	24	18	18	132
16"	63	26	18	18	148
18"	69	29	18	18	163
20"	75	31	18	18	179
24"	87	36	18	18	208
30"	102	42	20	18	248

LENGTHS BETWEEN HEAVY LINES INDICATE ONE FULL LENGTH (18' MIN.) OF PIPE TO BE RESTRAINED.

TABLE SHOWS MINIMUM LENGTH OF PIPE EACH WAY FROM FITTING FOR WHICH RESTRAINT IS REQUIRED.

TABLE APPLIES TO PVC PIPE FOR THE FOLLOWING CONDITIONS:
TEST PRESSURE: 150 PSIG
SOIL TYPE: SP
COVER DEPTH: 3 FEET (MIN.)
SAFETY FACTOR: 1.5
TRENCH TYPE: 2

SCHEDULE OF LENGTHS OF RESTRAINED DIP (FT.)

FITTING	90° BEND	45° BEND	22.5° BEND	11.25° BEND	TEE OR DEAD END
PIPE SIZE (IN.)					
4"	21 (26)	18 (18)	18 (18)	18 (18)	37 (55)
6"	30 (36)	18 (18)	18 (18)	18 (18)	52 (78)
8"	38 (45)	18 (18)	18 (18)	18 (18)	67 (100)
10"	45 (54)	18 (22)	18 (18)	18 (18)	81 (122)
12"	52 (63)	22 (26)	18 (18)	18 (18)	94 (141)
14"	60 (72)	25 (30)	18 (18)	18 (18)	107 (160)
16"	66 (80)	27 (33)	18 (18)	18 (18)	120 (180)
18"	74 (87)	31 (36)	18 (18)	18 (18)	132 (198)
20"	80 (94)	33 (39)	18 (18)	18 (18)	144 (216)
24"	92 (108)	38 (45)	18 (22)	18 (18)	167 (250)
30"	106 (128)	44 (53)	21 (25)	18 (18)	199 (298)
36" *	69 (82)	28 (34)	18 (18)	18 (18)	170 (204)
42" *	76 (92)	31 (37)	18 (18)	18 (18)	191 (229)
48" *	90 (106)	40 (46)	18 (18)	18 (18)	212 (254)

LENGTHS BETWEEN HEAVY LINES INDICATE ONE FULL LENGTH (18' MIN.) OF PIPE TO BE RESTRAINED.

TABLE SHOWS MINIMUM LENGTH OF PIPE EACH WAY FROM FITTING FOR WHICH RESTRAINT IS REQUIRED.

TABLE APPLIES TO DUCTILE IRON PIPE FOR THE FOLLOWING CONDITIONS:
TEST PRESSURE: 150 PSIG
SOIL TYPE: SP
COVER DEPTH: 3 FEET (MIN.)
SAFETY FACTOR: 1.5
TRENCH TYPE: 2

VALUES IN PARENTHESIS (X) ARE FOR PIPE ENCASED IN POLYETHYLENE.

* VALUES APPLY TO DUCTILE IRON PIPE AT 50 PSI TEST PRESSURE.

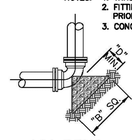
THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

PVC AND DIP RESTRAINED JOINT TABLE
RW–6

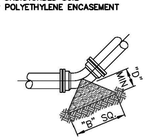
FY–15/16
Drawing Date: 01/08
Drawn By: KLH
Checked By: JMP
Scale: NTS
Revision Date:
File Name:Restrained Joint Table RW–6
Page 50

THRUST BLOCK DIMENSION (feet)												
PIPE SIZE (IN.)	90°BEND		45°BEND		22.5°BEND		11.25°BEND		DEAD END		TEE/WYE	
	B	D	B	D	B	D	B	D	B	D	B	D
4	1.5	0.5	1.0	0.5	1.0	0.5	0.5	0.5	1.0	0.5	1.0	0.5
6	2.0	0.5	1.5	0.5	1.0	0.5	1.0	0.5	2.0	0.5	2.0	0.5
8	2.5	0.5	2.0	0.5	1.5	0.5	1.0	0.5	2.0	1.0	2.0	0.5
10	3.0	0.5	2.5	1.0	2.0	0.5	1.0	0.5	3.0	1.0	3.0	0.5
12	4.0	1.0	3.0	1.0	2.0	0.5	1.5	0.5	3.0	1.0	3.0	0.5
14	4.5	1.0	3.0	1.0	2.5	0.5	2.0	0.5	4.0	1.5	4.0	1.0
16	5.0	1.5	4.0	1.0	3.0	1.0	2.0	0.5	4.5	1.5	4.5	1.0
18	5.7	1.7	4.2	1.4	3.1	1.4					6.9	1.7
24	7.7	1.7	5.6	1.4	4.1	1.4					9.1	2.1
30	9.5	2.1	7.0	1.7	5.1	1.4					11.3	2.4
36	11.5	2.4	8.4	1.8	6.0	1.7					13.6	2.5
REINFORCEMENT STEEL	SEE CHART		FOR "D"		REINFORCEMENT							
			1.0' & UNDER		#3 BAR @ 6" EACH WAY							
			1.0' TO 1.5'		#3 BAR @ 6" EACH WAY							
			1.5' TO 2.5'		#3 BAR @ 6" EACH WAY							

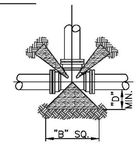
NOTES:
1. THRUST BLOCKS TO BE SET AGAINST FIRM UNDISTURBED SOIL
2. FITTINGS TO BE WRAPPED IN VISQUEEN OR POLYETHYLENE ENCASEMENT PRIOR TO POURING CONCRETE.
3. CONCRETE STRENGTH f = 3000 P.S.I.



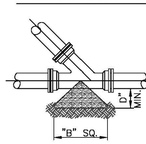
90° BEND



45° OR 22.5° BEND



TEE OR PLUGGED TEE



WYE

THRUST BLOCK DETAIL

S:\0996\Utili\Bid–Drawings\General\D001–09960161.DWG, 1/7/2019 10:28:23 AM, Doreen Padgett

PROJECT NO. 2015–085

REV.NO.	DESCRIPTIONS	DATE
B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

REVISIONS

SEAL

SEAL

SCOTT R. SPOONER, P.E.
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www.mckimcreed.com

THE CITY OF DAYTONA BEACH, FLORIDA

DR. MARTIN LUTHER KING, JR. BOULEVARD–ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

REUSE WATER DETAILS

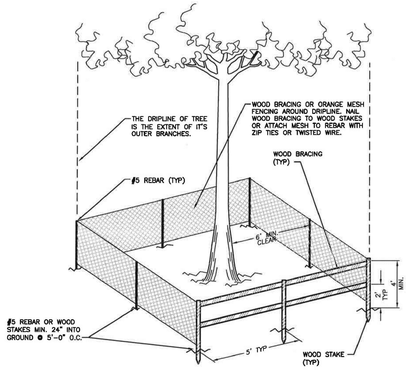
DATE:	APRIL 2017
MCE PROJ. #	0996–0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=4'

M&C FILE NUMBER
D001–09960161

DRAWING NUMBER
CD–9

STATUS: REISSUED FOR BIDDING
REVISION



NTS

NOTES:

1. PROTECT DESIGNATED EXISTING TREES SCHEDULED TO REMAIN AGAINST:
   A. UNNECESSARY CUTTING, BREAKING, OR SKINNING OF ROOTS.
   B. SKINNING AND BRUISING OF BARK.
   C. SMOTHERING OF TREES BY STOCKPILING CONSTRUCTION OR EXCAVATION MATERIALS WITHIN DRIP-LINE.
   D. FOOT OR VEHICULAR TRAFFIC.
   E. PARKING VEHICLES WITHIN DRIP-LINE.
2. ERECT TEMPORARY WOODEN BARRICADES AS SHOWN ON THIS SHEET, BEFORE COMMENCEMENT OF ANY SITE CLEARING OR GRADING. FENCE TO BE 4' HIGH MINIMUM WITH 2"x4" POSTS AND 2ea. 2"x4" RAILS AT 2' AND 4' ABOVE GRADE AND SHALL BE SET DEEP ENOUGH IN THE GROUND TO BE STABLE WITHOUT ADDITIONAL SUPPORT. ALL FENCING SHOULD BE A MINIMUM CLEAR DISTANCE OF 6' FROM THE FACE OF ANY TREES 12" DBH AND UNDER AND SHALL FULLY ENCLOSE ALL TREES SCHEDULED TO REMAIN; NOTHING SHALL BE PLACED INSIDE OF PROTECTIVE BARRICADES, INCLUDING BUT NOT LIMITED TO CONSTRUCTION MATERIAL, MACHINERY, CHEMICALS, OR TEMPORARY SOIL DEPOSITS. ON TREES LARGER THAN 12" DBH, BARRICADES SHALL BE NO CLOSER THAN 10' FROM FACE OF TREE. WHEN PAVING, EXCAVATION, OR HARDSCAPE MUST BE DONE WITHIN BARRICADES, BARRICADES SHALL BE MOVED BACK TO A SECONDARY LOCATION AT EDGE OF WORK. EXTRA CARE MUST BE TAKEN AT THIS TIME BY THE CONTRACTOR TO INSURE THAT NO DAMAGE TO THE TREE OCCURS.
3. BARBED WIRE FENCING IS NOT PERMISSIBLE.
4. PROVIDE WATER TO TREES AS REQUIRED TO MAINTAIN THEIR HEALTH DURING CONSTRUCTION.
5. NO GRADE CHANGES ARE TO BE MADE WITHIN THE BARRICADES WITHOUT PRIOR APPROVAL OF THE OWNER OR HIS DESIGNATED REPRESENTATIVE.

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION	TREE PROTECTION BARRICADE DETAIL L-6	Drawing Date: 11/2000; Drawn By: PFT; Checked By:; Scale: NTS; Revision Date: 10/2011; File Name: dai-6

SODDING, SEEDING, & MULCHING NOTES

SCOPE OF WORK:
THE WORK IN THIS SECTION CONSISTS OF FURNISHING AND COMPLETELY INSTALLING SOD, OR SEED AND MULCH OVER THE LIMITS CALLED FOR ON THE CONSTRUCTION DRAWINGS. AT A MINIMUM, ALL WORK SHALL MEET THE MINIMUM SPECIFICATIONS OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS OUTLINED IN SECTIONS 570 (GRASSING BY SEEDING) AND 575 (SODDING). IN ADDITION, ALL WORK SHALL MEET THE MINIMUM REQUIREMENTS OF THE CITY OF DAYTONA BEACH.

MATERIALS:
GRASS SEED SHALL BE A MIXTURE OF:

PENSACOLA BAHIA (USE 50% SCARIFIED SEED)	50%
HULLED BERMUDA	25%
BROWN TOP MILLET	25%

IN THE FALL AND WINTER MONTHS, AND WITH THE APPROVAL OF THE CITY, ANNUAL RYE GRASS SHALL BE SUBSTITUTED IN EQUAL AMOUNTS FOR THE BROWN TOP MILLET. SEED SHALL BE PRE-MIXED BY A SEED COMPANY TO THE PERCENTAGES DESCRIBED ABOVE, WITH CERTIFICATION FROM THE SUPPLIER PROVIDED TO THE CITY'S DESIGNATED PROJECT LANDSCAPE INSPECTOR PRIOR TO USE.
MULCH SHALL BE STRAW OR HAY CONSISTING OF OATS, RYE, OR WHEAT STRAW, OR OF PANGOLA, PEANUT, COASTAL BERMUDA, OR BAHIA GRASS HAY. MULCH SHALL BE FREE FROM WEEDS AND OTHER UNDESIRABLE GRASS.

METHODS:
GRASSING SHALL BE DONE IMMEDIATELY UPON COMPLETION OF THE FINE GRADING OPERATION. HOWEVER, NO SEEDING SHALL BE DONE WHEN THE GROUND IS UNDULY WET. THE RATE OF SPREAD FOR THE SEED MATERIAL SHALL BE ONE HUNDRED AND THIRTY (130) POUNDS PER ACRE.
APPROXIMATELY ONE INCH (1"), LOOSE THICKNESS, OF MULCH MATERIAL SHALL BE 1½ BALES PER 1000 SQUARE FEET. THE MULCH MATERIAL SHALL BE CUT INTO THE SOIL WITH A DISC HARROW OR OTHERWISE ANCHORED DOWN. UNDER PROPER CIRCUMSTANCES, CONTRACTOR MAY REQUEST AN OPTION TO INSTALL HYDRO-SEEDING, SUBJECT TO THE APPROVAL OF THE PROJECT LANDSCAPE ARCHITECT AND THE CITY OF DAYTONA BEACH.
WATER THE GROUND PRIOR TO LAYING OF SOD SUCH THAT THE TOP ½" OF SOIL IS MOIST. UNDER NO CIRCUMSTANCES SHALL SOD BE PLACED ON DRY SOIL. WATER AND MAINTAIN GRASS, INCLUDING MOWING FOR 90 DAYS OR UNTIL THE SOD IS FULLY ESTABLISHED. CONTRACTOR IS REQUIRED TO REPLACE ANY DEAD OR NON-RESPONSIVE SOD AT NO ADDITIONAL COST TO THE CITY OR OWNER.

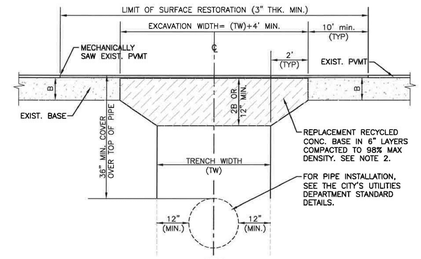
THE CITY OF DAYTONA BEACH ENGINEERING DIVISION	SODDING, SEEDING AND MULCHING NOTES L-9	Drawing Date: 11/2000; Drawn By: PFT; Checked By:; Scale: NTS; Revision Date: 10/2011; File Name: dai-9

AS-BUILT DRAWING REQUIREMENTS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL AS-BUILT DRAWINGS.

1. PAVEMENT AND CURB WIDTHS SHALL BE VERIFIED AND DIMENSIONED FOR EACH STREET AT EACH BLOCK. (FOR SUBDIVISIONS) AND AS APPROPRIATE TO CONFIRM PAVING LIMITS (ON SITE PLANS).
2. ALL RADII AT INTERSECTIONS SHALL BE VERIFIED AND DIMENSIONED. THIS INFORMATION IS TO BE CLEARLY INDICATED ON THE AS-BUILT.
3. ROADWAY ELEVATIONS SHALL BE RECORDED AT ALL GRADE CHANGES, 100' INTERVALS ALONG ROADWAY, AND OTHER INTERVALS AS NEEDED ALONG ALL STREETS. STREET CENTERLINE AND CURB INVERT ELEVATIONS SHALL BE RECORDED AS NOTED. THE AS-BUILT CENTERLINE PROFILE OF ALL STREETS SHALL ALSO BE SHOWN ON THE PLAN AND PROFILE SO IT MAY BE COMPARED TO THE DESIGN PROFILE GRADE LINES. IN THE EVENT THAT THE AS-BUILT CENTERLINE LONGITUDINAL GRADE DOES NOT MEET THE CITY MINIMUM STANDARDS, ADDITIONAL LONGITUDINAL GRADES OF THE ADJACENT CURBING AND SIMILAR ROADWAY CROSS-SECTION SURVEYS TO VERIFY THE CORRECT CROSS SLOPE, SHALL BE REQUIRED TO VERIFY THAT THE SYSTEM WILL FUNCTION AS ORIGINALLY DESIGNED.
4. ALL APPLICABLE TOPOGRAPHIC INFORMATION PERTINENT TO THE ON-SITE DRAINAGE SYSTEM, SUCH AS DITCHES, SWALES, LAKES, CANALS, ETC. THAT ARE DEEMED NECESSARY BY THE CITY TO VERIFY THE FUNCTIONAL PERFORMANCE OF THE STORM WATER SYSTEM, SHALL BE NOTED. NORMALLY, RECORDING ELEVATIONS EVERY 100 FEET AT THE TOP OF BANK AND TOE OF SLOPE WILL BE REQUIRED. MEASUREMENTS SHALL BE TAKEN AND RECORDED IN ORDER TO ACCURATELY TIE DOWN THESE FEATURES TO THE ROADWAY CENTERLINES AND TO PLAT LINES. WHENEVER POSSIBLE, CONTOUR LINES SHALL BE UTILIZED TO GRAPHICALLY DESCRIBE THESE TOPOGRAPHIC FEATURES.
5. RETENTION AREAS SHALL HAVE THEIR TOP-OF-BANK AND BOTTOM ELEVATIONS RECORDED. ACTUAL MEASUREMENTS SHALL BE TAKEN AND DIMENSIONS RECORDED OF THE SIZE OF ALL RETENTION AREAS. MEASUREMENTS SHALL BE DONE FROM TOP-OF-BANK TO TOP-OF-BANK WITH SIDE SLOPES INDICATED. SEPARATE CALCULATIONS SHALL BE SUBMITTED TO INDICATE REQUIRED AND PROVIDED RETENTION VOLUMES.
6. ACTUAL MATERIALS USED AND ELEVATIONS AND DIMENSIONS OF OVERFLOW WEIR STRUCTURES AND SKIMMERS SHALL BE NOTED ON THE AS-BUILT.
7. STORM DRAINAGE SWALE CENTERLINES SHALL BE LOCATED AND ELEVATIONS OF FLOW LINE AND TOP OF BANK SHALL BE RECORDED EVERY 100 FEET OR CHANGE IN GRADE. SIDE SLOPES SHALL ALSO BE INDICATED.
8. FOR SUBDIVISIONS, PROPOSED DESIGN FINISHED FLOOR ELEVATIONS SHALL APPEAR ON ALL SUBDIVISION LOTS ON THE APPROPRIATE PLAN AND PROFILE SHEET AS WELL AS ON THE MASTER DRAINAGE PLAN.
9. ANY SPECIAL FEATURES SUCH AS, CONCRETE FLUMES, LAKE BANKS, WALLS, FENCING, ETC., WHICH WERE A PART OF THE APPROVED CONSTRUCTION DRAWINGS SHOULD ALSO BE LOCATED AND DIMENSIONED.
10. IF AN APPROVED SUBDIVISION PLAT OR SITE PLAN SHOWS A CONSERVATION EASEMENT, THE PROJECT SURVEYOR SHOULD PROVIDE THE EXACT LOCATION OF THE SPECIMEN TREE(S) FROM THE RIGHT-OF-WAY OR PROPERTY LINES AND PROPOSED EASEMENT BOUNDARIES ON THE AS-BUILT DRAWING. THE AS-BUILT LOCATION OF THESE TREES WILL HELP VERIFY THE SUFFICIENCY OF THE CONSERVATION EASEMENT PRIOR TO PLAT RECORDING OR CERTIFICATE OF OCCUPANCY.
11. AS BUILT DRAWINGS ARE TO BE PREPARED BY A FLORIDA LICENSED SURVEYOR AND SHALL INCLUDE A SIGNED CERTIFICATION STATEMENT BY THE FLORIDA LICENSED ENGINEER OF RECORD. TWO (2) SIGNED & SEALED PAPER SETS OF AS-BUILT RECORD DRAWINGS SHALL BE PROVIDED ALONG WITH A DIGITAL COPY IN BOTH, A COMPATIBLE AutoCAD FORMAT & PDF FORMAT.

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION	AS-BUILT DRAWING REQUIREMENTS NOTES M-8	Drawing Date: 05/2003; Drawn By: PFT; Checked By:; Scale: NTS; Revision Date: 10/2011; File Name: dai-8

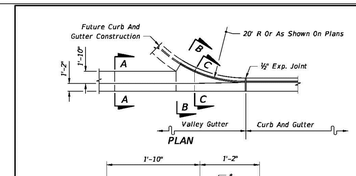


NTS

NOTES:

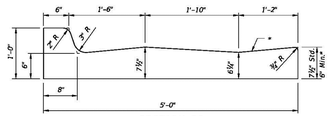
1. ALL MATERIALS ARE TO BE APPROVED BY THE CITY ENGINEER AND THE PROJECT'S LICENSED SOILS ENGINEER PRIOR TO PLACEMENT.
2. COMPACTION, STABILITY & DENSITY TESTING ARE TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROADWAY & BRIDGE CONSTRUCTION, LATEST EDITION.
3. WHERE SOIL CONDITIONS CAN NOT BE MAINTAINED AS SHOWN ABOVE, PROVIDE APPROVED METHOD OF CONSTRUCTION.
4. SHEETING WILL BE REQUIRED AS DETERMINED BY FIELD CONDITIONS.
5. NEW SURFACING MATERIALS SHALL BE CONSISTENT WITH EXISTING AND SHALL HAVE LAPPED & FEATHERED JOINTS (3" MIN. THK.).
6. CONTRACTOR MAY USE FLOWABLE FILL IN LIEU OF RECYCLED CONC. UNDER THE APPROVAL FROM THE CITY ENGINEER OR DESIGNEE.
7. TRENCH WIDTH (TW)= PIPE OD (CENTERED)+24" (MINIMUM).
8. (B)= EXISTING BASE DEPTH.
9. TEMPORARY PATCH MAY BE RECYCLED ASPHALT, FDOT APPROVED COLD PATCH OR APROVED EQUAL.
10. FINAL PATCH TO BE 3" MIN. SP 9.5
11. PATCH SHALL BE TOTAL ROADWAY WIDTH.

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION	PAVEMENT CUT & PATCH OVER PIPE TRENCH DETAIL R-7	Drawing Date: 05/2003; Drawn By: PFT; Checked By:; Scale: NTS; Revision Date: 10/2011; File Name: dai-7

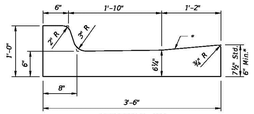


PLAN

SECTION AA

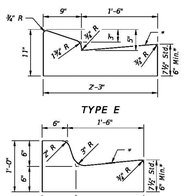


SECTION BB

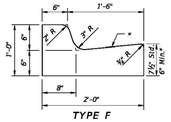


SECTION CC

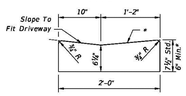
VALLEY GUTTER



TYPE E

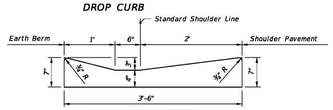


TYPE F

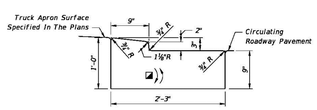


Note: To be paid for as parent curb.

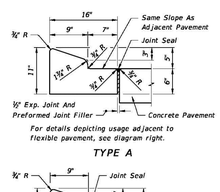
DROP CURB



SHOULDER GUTTER

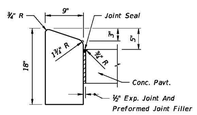


TRAFFIC BEARING SECTION FOR USE IN ROUNDABOUT CENTRAL ISLAND CONSTRUCTION
TYPE RA

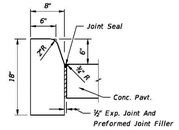


For details depicting usage adjacent to flexible pavement, see diagram right.

TYPE A



TYPE B



TYPE D

Note: For use adjacent to concrete or flexible pavement, concrete shown. Expansion joint, preformed joint filler and joint seal are required between curbs and concrete pavement only, see Sheet 2.

CONCRETE CURB

* When used on high side of roadways, the cross slope of the gutter shall match the cross slope of the adjacent pavement. The thickness of the lip shall be 6", unless otherwise shown on plans.

◪ Rotate entire section so that gutter cross slope matches slope of adjacent circulating roadway pavement.

For use adjacent to concrete or flexible pavement. For details depicting usage adjacent to flexible pavement, see Sheet 2. Expansion joint, preformed joint filler and joint seal are required between curb & gutter and concrete pavement only, see Sheet 2.

CONCRETE CURB AND GUTTER

LAST REVISION 07/01/00	REVISION	DESCRIPTION:	FDOT 2016 DESIGN STANDARDS	CURB & CURB AND GUTTER	INDEX NO. 300	SHEET NO. 1 of 2

6/8/2015 10:20:01 AM

S:\DWR\0161\Plt-Drawings\General\[0001-09960161.DWG, 1/7/2019 10:28:27 AM, Doreen Padgett

REV.NO.	DESCRIPTIONS	DATE
B	REISSUED FOR BIDDING	JANUARY 2019
A	ISSUE FOR BIDDING	AUGUST 2018

REVISIONS

SEAL

SEAL

SCOTT R. SPOONER, P.E.
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THE CITY OF DAYTONA BEACH, FLORIDA

PROJECT NO. 2015-085

DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

MISCELLANEOUS DETAILS

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

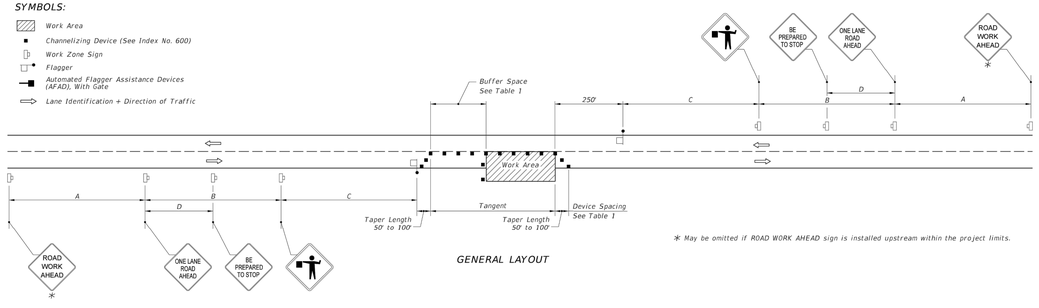
SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=4'

M&C FILE NUMBER 0001-09960161
DRAWING NUMBER CD-10

STATUS: REISSUED FOR BIDDING
REVISION

SYMBOLS:

- Work Area
- Channelizing Device (See Index No. 600)
- Work Zone Sign
- Flagger
- Automated Flagger Assistance Devices (AFAD), With Gate
- Lane Identification + Direction of Traffic



∗ May be omitted if ROAD WORK AHEAD sign is installed upstream within the project limits.

GENERAL LAYOUT

GENERAL NOTES:

1. Special Conditions may be required in accordance with these notes and the following sheets.
2. If the Work Area encroaches on the Centerline, use the Layout for Temporary Lane Shift to Shoulder on Sheet 2 only if the Existing Paved Shoulder width is sufficient to provide for an 11' lane between the Work Area and the Edge of Existing Paved Shoulder. Reduce the posted speed when appropriate.
3. Temporary Raised Rumble Strips:
   a. Use when both of the following conditions are met concurrently:
      i. Existing Posted Speed is 50 mph or greater;
      ii. Work duration is greater than 60 minutes.
   b. Use a consistent Strip color throughout the work zone.
   c. Place each Rumble Strip Set transversely across the lane at locations shown.
   d. Use Option 1 or Option 2 as shown on Sheet 2. Use only one option throughout work zone.
4. Additional one-way control may be provided by the following means:
   a. Flag-carrying vehicle;
   b. Official vehicle;
   c. Pilot vehicles;
   d. Traffic signals.

   When flaggers are the sole means of one-way control, the flaggers must be in sight of each other or in direct communication at all times.
5. When a side road intersects the highway within the TTC zone, place additional TTC devices in accordance with other applicable TCZ Indexes.
6. The two channelizing devices directly in front of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.
7. When Buffer Space cannot be attained due to geometric constraints, use the greatest attainable length, not less than 200 ft.
8. Railroad Crossings:
   a. If an active railroad crossing is located closer to the Work Area than the queue length plus 300 feet, extend the Buffer Space as shown on Sheet 2.
   b. If the queuing of vehicles across an active railroad crossing cannot be avoided, provide a uniformed traffic control officer or flagger at the highway-rail grade crossing to prevent vehicles from stopping within the highway-rail grade crossing, even if automatic train warning devices are in place.
9. ROAD WORK AHEAD and the BE PREPARED TO STOP signs may be omitted if all of the following conditions are met:
   a. Work operations are 60 minutes or less.
   b. Speed limit is 45 mph or less.
   c. There are no sight obstructions to vehicles approaching the work area for a distance equal to the Buffer Space shown in Table 1.
   d. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
   e. Volume and complexity of the roadway has been considered.
   f. If a railroad crossing is present, vehicles will not queue across rail tracks.
   g. AFADs are not in use.
10. See Index 600 for general TCZ requirements and additional information.
11. Automated Flagger Assistance Devices (AFADs) may be used in accordance with the Notes on Sheet 3.

TABLE 1

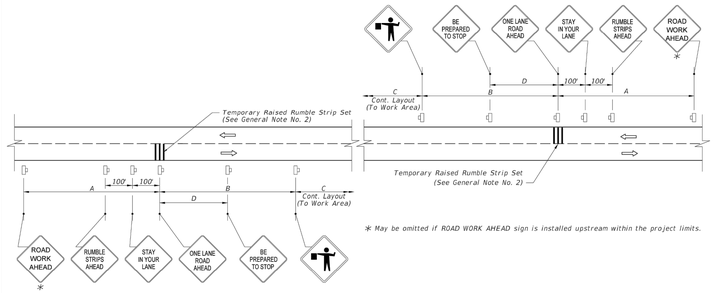
Posted Speed	DEVICE SPACING: Maximum Spacing of Cones or Tubular Markers		Maximum Spacing of Type I or Type II Barricades/Panels/Drums		Distance Between Signs			Buffer Space
	On a Taper	On a Tangent	On a Taper	On a Tangent	A	B	C	D
25	20'	50'	20'	50'	200'	200'	200'	100'	155'
30	20'	50'	20'	50'	200'	200'	200'	100'	200'
35	20'	50'	20'	50'	200'	200'	200'	100'	250'
40	20'	50'	20'	50'	200'	200'	200'	100'	305'
45	20'	50'	20'	50'	350'	350'	350'	175'	360'
50	20'	50'	20'	100'	500'	500'	500'	250'	425'
55	20'	50'	20'	100'	2640'	1500'	1000'	500'	495'
60	20'	50'	20'	100'	2640'	1500'	1000'	500'	570'
65	20'	50'	20'	100'	2640'	1500'	1000'	500'	645'
70	20'	50'	20'	100'	2640'	1500'	1000'	500'	730'

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA BETWEEN THE CENTERLINE AND A LINE 2' OUTSIDE THE EDGE OF TRAVEL WAY.

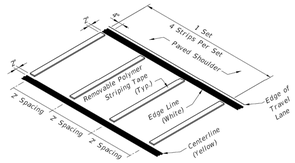
10:46:45 AM
6/16/2015

LAST REVISION	REVISION	DESCRIPTION:	FDOT 2016 DESIGN STANDARDS	TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY	INDEX NO.	SHEET NO.
07/01/15					603	1 of 3

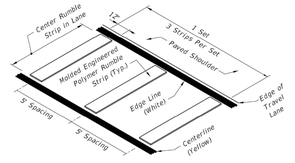


∗ May be omitted if ROAD WORK AHEAD sign is installed upstream within the project limits.

LAYOUT FOR TEMPORARY RAISED RUMBLE STRIPS WHEN REQUIRED WITH ADDITIONAL SIGNS

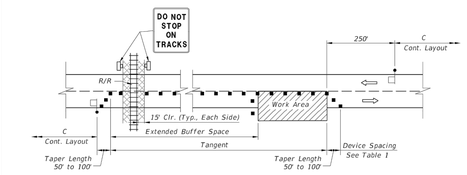


OPTION 1 - REMOVABLE POLYMER STRIPING TAPE RUMBLE STRIP SET

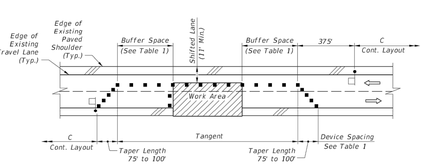


OPTION 2 - MOLDED ENGINEERED POLYMER RUMBLE STRIP SET

TEMPORARY RAISED RUMBLE STRIPS



LAYOUT FOR RAILROAD CROSSING BUFFER SPACE EXTENSION



LAYOUT FOR TEMPORARY LANE SHIFT TO SHOULDER WHEN WORK AREA ENCROACHES ON THE CENTERLINE

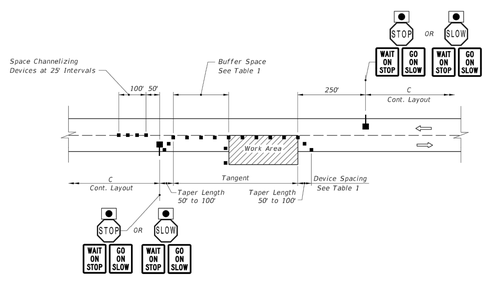
SPECIAL CONDITIONS

10:46:46 AM
6/16/2015

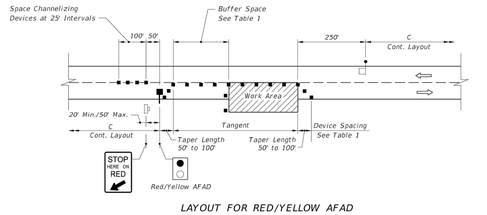
LAST REVISION	REVISION	DESCRIPTION:	FDOT 2016 DESIGN STANDARDS	TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY	INDEX NO.	SHEET NO.
07/01/15					603	2 of 3

AUTOMATED FLAGGER ASSISTANCE DEVICES NOTES:

1. Illuminate the flagging station when the AFAD is used at nighttime.
2. When the AFAD is not in use, remove or cover signs and move AFAD device outside the clear zone or shield it with a barrier or crash cushion.
3. Only qualified flaggers who have been trained in the operation of the AFAD may operate the AFAD. When in use, each AFAD must be in view of and attended at all times by the flagger operating the device. Use two flaggers and one of the following methods in the deployment of AFAD's:
   Method 1:Place an AFAD at each end of the temporary traffic control zone.
   Method 2:Place an AFAD at one end of the temporary traffic control zone and a flagger at the opposite end.
4. A single flagger may simultaneously operate two AFAD's (Method 1) or may operate a single AFAD on one end of the temporary traffic control zone while being the flagger at the opposite end of the temporary traffic control zone (Method 2) if all four of the following conditions are present:
   a. The flagger has an unobstructed view of the AFAD(s);
   b. The flagger has an unobstructed view of approaching traffic in both directions;
   c. For Method 1, the AFAD's are less than 800 ft apart. For Method 2, the AFAD and the flagger are less than 800 ft apart.
   d. Two trained flaggers are available on-site to provide normal flagging operations should an AFAD malfunction.



LAYOUT FOR STOP/SLOW AFAD METHOD 1 - 2 AFAD's

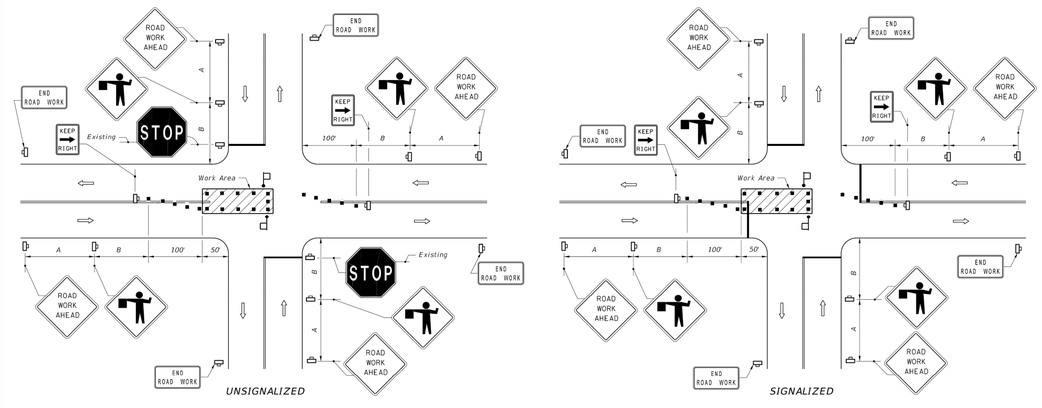


LAYOUT FOR RED/YELLOW AFAD METHOD 2 - 1 AFAD & FLAGGER

AUTOMATED FLAGGER ASSISTANCE DEVICES (AFADs)

10:46:46 AM
6/16/2015

LAST REVISION	REVISION	DESCRIPTION:	FDOT 2016 DESIGN STANDARDS	TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY	INDEX NO.	SHEET NO.
07/01/15					603	3 of 3



UNSIGNALIZED

SIGNALIZED

SYMBOLS

- Work Area
- Channelizing Device (See Index No. 600)
- Work Zone Sign
- Flagger
- Stop Bar
- Lane Identification + Direction of Traffic

GENERAL NOTES

1. The FLAGGER legend sign may be substituted for the symbol sign.
2. When vehicles in a parking zone block the line of sight to TCZ signs, the signs shall be post mounted and located in accordance with Index No. 17302.
3. If the work space extends across a crosswalk, the crosswalk should be closed using the information in Index No. 660.
4. Flaggers shall be located where they can control more than one direction of traffic.

   Flaggers shall be in sight of each other or in direct communication at all times.
5. Maximum spacing between channelizing devices shall be not greater than 20'.
6. Temporary signal phasing modifications are to be approved by the District Traffic Operations Engineer prior to the beginning of work.
7. For general TCZ requirements and additional information, refer to Index No. 600.
8. For unsignalized intersections, use Temporary Raised Rumble Strips in accordance with Index 603. Placement of Rumble Strips and additional signs should begin at FLAGGER sign location.

DURATION NOTES

1. ROAD WORK AHEAD AND END ROAD WORK sign may be omitted if all of the following conditions are met:
   a. Work operations are 60 minutes or less.
   b. Speed is 45 mph or less.
   c. No sight obstructions to vehicles approaching the work area for a distance equal to A plus B.
   d. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
   e. Volume and complexity of the roadway has been considered.

DISTANCE BETWEEN SIGNS

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

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE PAVEMENT REQUIRING THE CLOSURE OF A PORTION OF ONE OR MORE TRAFFIC LANES IN AN INTERSECTION.

10:47:03 AM
6/16/2015

LAST REVISION	REVISION	DESCRIPTION:	FDOT 2016 DESIGN STANDARDS	TWO-LANE, TWO-WAY, WORK IN INTERSECTION	INDEX NO.	SHEET NO.
07/01/15					604	1 of 1

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
B	REISSUED FOR BIDDING	JANUARY 2018
A	ISSUE FOR BIDDING	AUGUST 2016

SEAL

SEAL

SCOTT R. SPOONER, P.E.
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THE CITY OF DAYTONA BEACH, FLORIDA

PROJECT NO. 2015-085

DR. MARTIN LUTHER KING, JR. BOULEVARD-ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

MAINTENANCE OF TRAFFIC PLAN

DATE:	APRIL 2017
MCE PROJ. #	0996-0161
DRAWN	DMP
DESIGNED	PJL
CHECKED	CRB
PROJ. MGR.	SRS

SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=4'

M&C FILE NUMBER 0001-09960161

DRAWING NUMBER CD-11

STATUS: REISSUED FOR BIDDING
REVISION

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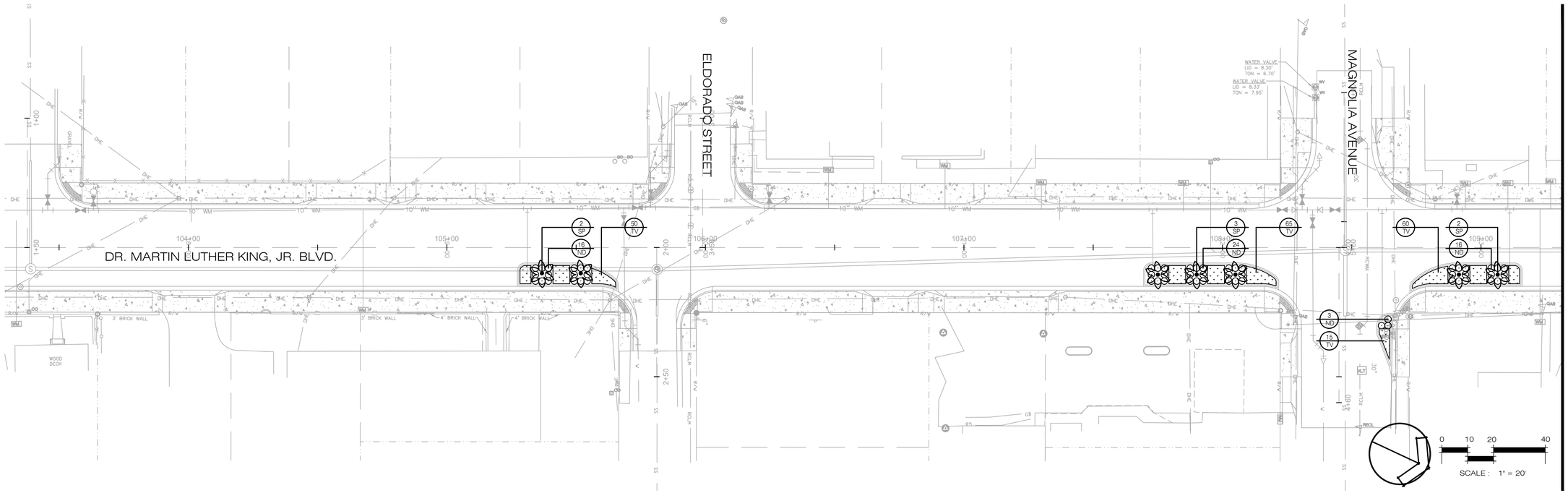

MATCHLINE SEE SHEET L-3.02 FOR CONTINUATION

PLANT LIST

SYM.	QTY.	SPECIES	COMMON NAME	SPECIFICATIONS
PALMS				
SP	10	SABAL PALMETTO	CABBAGE PALM	14' CLEAR TRUNK, SLICK
SHRUBS & GROUNDCOVER				
ND	83	NANDINA DOMESTICA 'FIREPOWER'	FIREPOWER NANDINA	3 GAL., 18" HT., 30" OC.
TV	265	TULBAGHIA VIOLACEA	SOCIETY GARLIC	1 GAL., 12" SPRD., 18" O.C.

LANDSCAPE GENERAL NOTES

1. FLORIDA #1: ALL PLANT MATERIAL SHALL BE GRADE FLORIDA NO. 1 OR BETTER IN QUALITY AS DESIGNATED IN THE MOST RECENT PUBLICATION OF "GRADES AND STANDARDS FOR NURSERY PLANTS", PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES.
2. MULCH: ALL PLANTING BEDS SHALL BE TOP DRESSED WITH 3" PINE BARK MULCH. ALL TREES NOT IN BEDS SHALL HAVE A 5' DIAMETER MULCH RING. ALL PALMS NOT IN BEDS SHALL HAVE A 3' DIAMETER MULCH RING.
3. QUANTITIES: IN THE EVENT OF A VARIATION BETWEEN THE QUANTITIES SHOWN ON THE PLANT LIST AND THE ACTUAL QUANTITY OF PLANTS SHOWN ON THE PLAN, THE PLAN SHALL CONTROL. SOD QUANTITY TAKEOFFS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
4. UNFORESEEN CONFLICTS: CONTRACTOR SHALL NOT WILLFULLY INSTALL ANY PORTION OF THE LANDSCAPE PLAN AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT UNFORESEEN OBSTRUCTIONS, GRADE DIFFERENCES, STANDING WATER, SOIL CONDITIONS OR OTHER CONFLICTS EXIST. SUCH UNFORESEEN CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNERS REPRESENTATIVE AND THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
5. SUBSTITUTIONS: NO SUBSTITUTIONS OR VARIATIONS OF ANY PLANT MATERIAL OR ITS INSTALLED LOCATION WILL BE PERMITTED WITHOUT THE PRIOR WRITTEN CONSENT AND APPROVAL FROM THE LANDSCAPE ARCHITECT.
6. CONTAINERS: IF GALLONAGE FOR PLANTS OR TREES IS SHOWN THEY SHALL BE CONTAINER GROWN AND THE SIZE SHOWN SHALL REPRESENT THE MINIMUM ALLOWABLE GALLONAGE ACCEPTED. IN ALL CASES THE PLANT SPECIFIED SIZE SHALL GOVERN OVER THE GALLONAGE INDICATED.
7. PLANTING SOIL: CONTRACTOR SHALL VERIFY THAT SOIL CONDITIONS ARE SUITABLE TO THE PLANT SPECIES SPECIFIED. IF SOIL CONDITIONS ARE DEEMED UNSUITABLE FOR PROPER PLANT HEALTH, CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT AND PROPER SUBSTITUTIONS SHALL BE SPECIFIED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. ADDITIONALLY, IF PRESENT, THE CONTRACTOR SHALL REMOVE LIME ROCK, CONCRETE AND OTHER DELETERIOUS DEBRIS FROM PLANTING BEDS. IF DEBRIS IS INTEGRATED IN THE SOIL, THE SOIL MUST BE EXCAVATED AND REPLACED WITH ACCEPTABLE SOIL. LASTLY, ALL FILL TO BE PLACED IN LANDSCAPE AREAS MUST HAVE A pH RANGE BETWEEN 5.8 AND 7.5, BE ORGANIC IN NATURE, AND BE FREE OF ROCKS AND DEBRIS.
8. TOPSOIL: TOPSOIL MATERIAL, IF REQUIRED, SHALL BE FREE FROM ALL HARD CLODS, WEEDS, STONES OVER 1" IN DIAMETER, CLAY, HARD PAN, NOXIOUS PLANTS, SOD, INSECTS, OR OTHER UNDESIRABLE PLANTS, SEEDS, OR MATERIAL WHICH MAY BE HARMFUL FOR GROWTH AND SHALL BE CERTIFIED AS STERILE.
9. WEEDS: IF PRESENT, THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE ANY WEEDS FROM PLANTING AREAS PRIOR TO THE INSTALLATION OF PROPOSED PLANT MATERIAL AND MULCH COVER. CONTRACTOR SHALL BE RESPONSIBLE TO KEEP BEDS FREE OF WEEDS FOR THE DURATION OF THE 90 DAY MAINTENANCE PERIOD.
10. GRADING: UNLESS OTHERWISE STATED ON THESE PLANS, THE LANDSCAPE CONTRACTOR SHALL FINE GRADE ALL AREAS TO BE PLANTED AND SODDED IN ORDER TO ELIMINATE BUMPS AND DEPRESSIONS. FINE GRADING SHALL BE DEFINED AS THE FINAL 2" OF GRADE TO BE ACHIEVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AND REGRADING WASHOUT AREAS CAUSED BY EROSION UNTIL FINAL ACCEPTANCE OF THE PROJECT.
11. STAKING: ALL TREES, AND PALMS ARE TO BE STAKED ACCORDING TO THE DETAILS IN THESE PLANS. IF THE CONTRACTOR PREFERS TO USE OTHER STAKING METHODS THAN SHOWN IN THE DETAILS, HE OR SHE MUST SUBMIT PROPOSED STAKING DETAILS TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION. THE LANDSCAPE CONTRACTOR SHALL STRAIGHTEN, REPAIR, AND/OR REPLACE ANY PLANTS DAMAGED BY FAILURE TO PROPERLY STAKE OR GUY ANY TREES ON SITE, AT THEIR OWN EXPENSE.
12. CURVILINEAR: CURVILINEAR LANDSCAPE BEDS ARE TO BE EDGED WITH SMOOTH FLOWING CURVES. STRAIGHT-LINE LANDSCAPE BEDS ARE TO BE EDGED IN A STRAIGHT LINE PARALLEL TO PARKING LOTS AND STRUCTURES UNLESS DESIGNED OTHERWISE.
13. FERTILIZER: OSMOCOTE SLOW RELEASE FERTILIZER OR EQUIVALENT SHALL BE APPLIED TO ALL TREE, SHRUB, AND GROUNDCOVER PLANTING AREAS AT THE RATE OF THREE (3) TABLESPOONS PER 2 S.F. OF PLANTING AREA.
14. DRAINAGE: THE LANDSCAPE CONTRACTOR SHALL ASSURE THAT THIS WORK DOES NOT INTERRUPT EXISTING OR PROPOSED DRAINAGE PATTERNS AND SHALL NOTIFY THE OWNERS REPRESENTATIVE IMMEDIATELY SHALL A CONFLICT ARISE.
15. SPECIFICATIONS: THE LANDSCAPE ARCHITECT SHALL BE PERMITTED THE RIGHT DURING INSTALLATION, TO REJECT ANY AND ALL PLANT MATERIAL AND WORKMANSHIP WHICH IN HIS OR HER OPINION DOES NOT MEET THE REQUIREMENTS OF THESE SPECIFICATIONS.
16. TURNOVER: CONTRACTOR SHALL CONTACT OWNERS REPRESENTATIVE FOR A TURNOVER DATE TO INCLUDE A WALK-THROUGH AND ACCEPTANCE OF WORK BY THE LANDSCAPE ARCHITECT. ANY WORK DEEMED UNACCEPTABLE SHALL BE CORRECTED IMMEDIATELY AND REINSPECTED AS SCHEDULED.
17. MAINTENANCE: CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE TO BEGIN AFTER EACH PLANT HAS BEEN INSTALLED AND SHALL CONTINUE 90 DAYS AFTER FINAL WRITTEN ACCEPTANCE BY THE OWNER. MAINTENANCE SHALL INCLUDE WATERING, PRUNING, WEEDING, MULCHING, MOWING, REPLACEMENT OF SICK OR DEAD PLANTS, AND ANY OTHER CARE NECESSARY IN ORDER TO MAINTAIN PROPER PLANT HEALTH AND SOIL MOISTURE CONTENT.
18. GUARANTEE: CONTRACTOR SHALL GUARANTEE ALL INSTALLED PLANT MATERIAL FOR ONE (1) CALENDAR YEAR STARTING FROM THE TURNOVER DATE SHOULD WORK BE FOUND ACCEPTABLE. ANY CORRECTED WORK SHALL HAVE A PROPORTIONAL EXTENSION OF WARRANTY ONCE APPROVED. ANY SICK OR DEAD MATERIAL SHALL BE REPLACED IMMEDIATELY. THE LANDSCAPE CONTRACTOR SHALL NOT BE RESPONSIBLE TO HONOR ANY WARRANTY FOR THE LOSS OF ANY PLANT MATERIAL CAUSED BY FLOODING, FIRE, FREEZING TEMPERATURES, WINDS OVER 50 MPH, LIGHTNING, ANY OTHER NATURAL DISASTER, OR ANY LOSS/DAMAGE CAUSED BY VANDALISM OR NEGLIGENCE ON THE PART OF THE OWNER.

IRRIGATION GENERAL NOTES

1. AN AUTOMATIC TIME CONTROLLED IRRIGATION SYSTEM WITH A RAIN SENSOR SHALL BE INSTALLED TO PROVIDE 100% HEAD TO HEAD COVERAGE OF ALL NEW PLANTINGS. SEE IRRIGATION PLAN L-4.01 - L-4.02.

REVISIONS

NO.	DATE	BY	DESCRIPTION
1.	3.31.17	JD	ISSUE FOR BIDDING
2.	5.26.17	JD	REVISED PER CLIENT REQUEST

DR. MARTIN LUTHER KING, JR. BOULEVARD ROAD RECONSTRUCTION

LANDSCAPE PLAN

DAYTONA BEACH, FLORIDA

CASTLE BAY DESIGN + STUDIO
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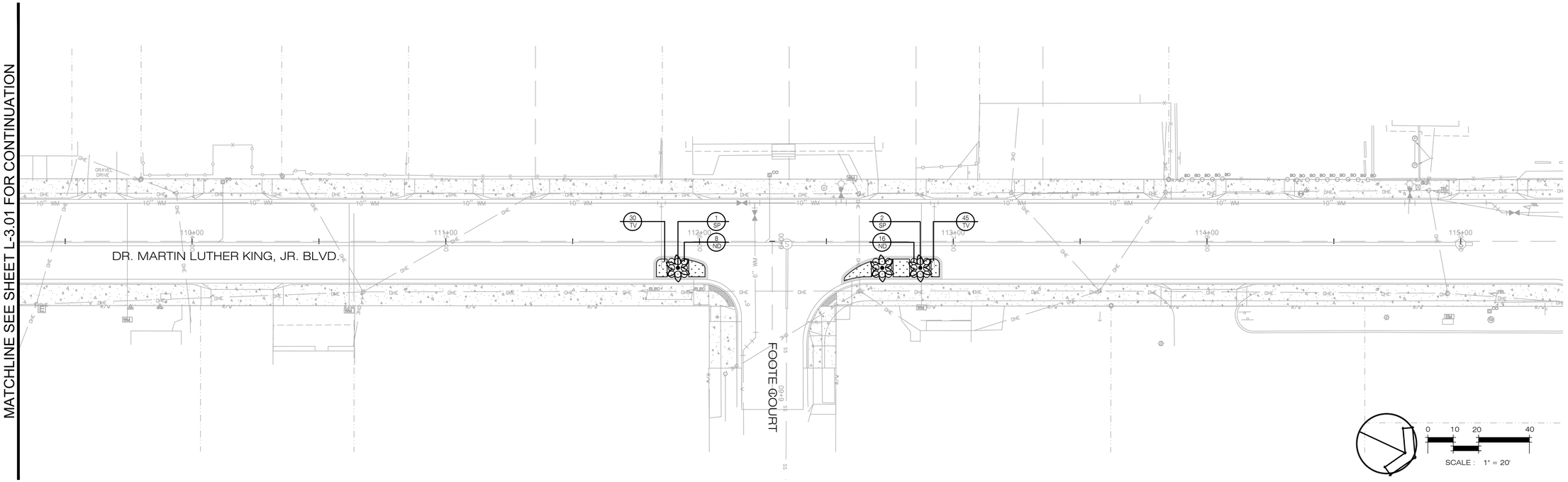
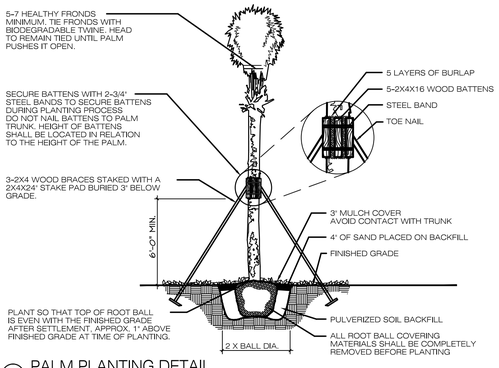
P.O. BOX 3, 81 ALDO STREET, ST. AUGUSTINE, FLORIDA 32084
386.547.0291 LC0000264

PROJECT NO: MLK BLVD.
ISSUE DATE: 3/30/2017
DRAWING FILE: MLK BLVD.
XREF'S:
DRAFTED BY: JD
DESIGNED BY: JD/SBK
CHECKED BY: SBK
SCALE: 1" = 20'

NOT VALID WITHOUT SEAL

SHEET L-3.01





1 PALM PLANTING DETAIL

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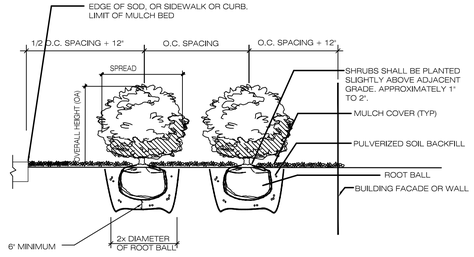

2 SHRUB PLANTING DETAIL

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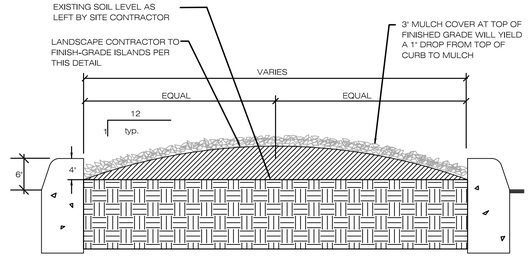

3 INTERIOR CURB ISLAND GRADING DETAIL

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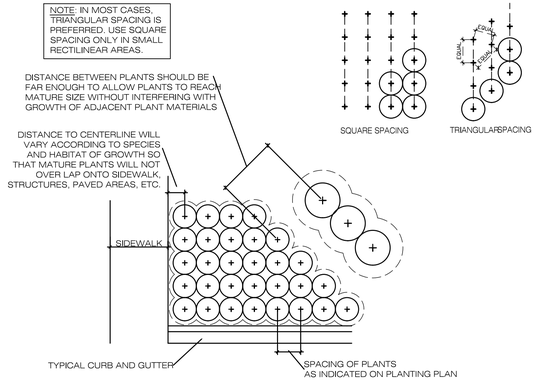

4 TYPICAL PLANT SPACING DETAIL

SCALE: N.T.S.

REVISIONS

NO.	DATE	BY	DESCRIPTION
1.	3/30/17	JD	ISSUE FOR BIDDING
2.	5/26/17	JD	REVISED PER CLIENT REQUEST

DR. MARTIN LUTHER KING, JR. BOULEVARD
ROAD RECONSTRUCTION

LANDSCAPE PLAN

DAYTONA BEACH, FLORIDA

CASTLE BAY
DESIGN + STUDIO

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7 ALDO STREET, ST. AUGUSTINE, FLORIDA 32084
386.747.1370 LC26000524

PROJECT NO: MLK BLVD.
ISSUE DATE: 3/30/2017
DRAWING FILE: MLK BLVD.
XREF'S:
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DESIGNED BY: JD/SBK
CHECKED BY: SBK
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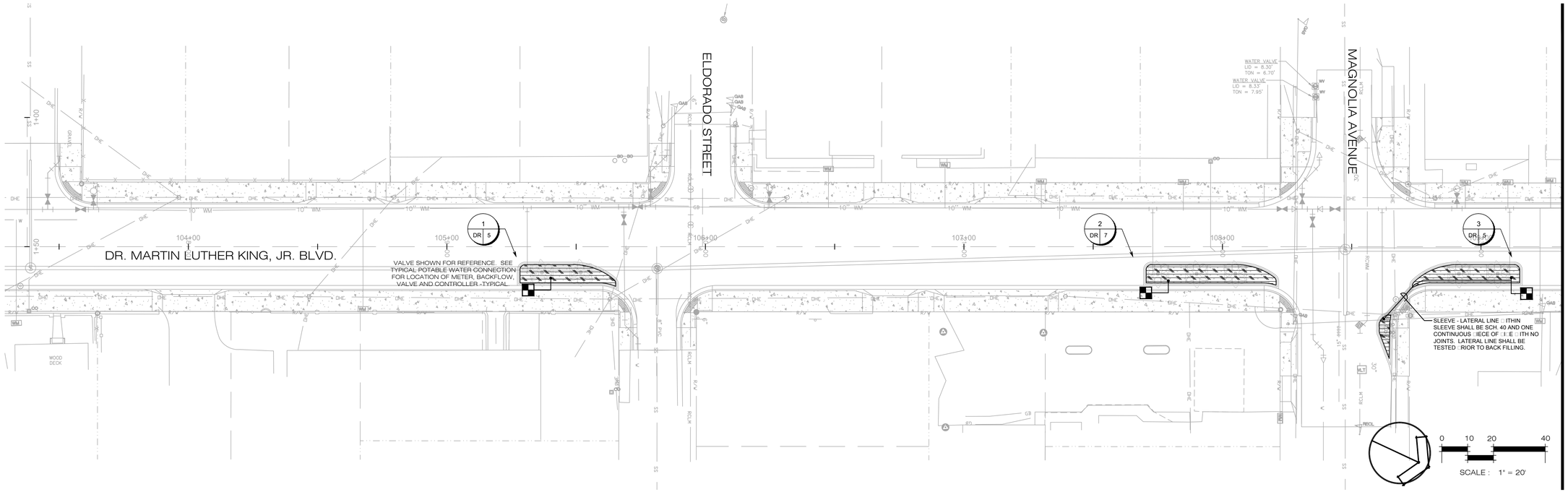
NOT VALID WITHOUT SEAL

SHEET L-3.02



MATCHLINE SEE SHEET L-4.02 FOR CONTINUATION

LEGEND

RAIN BIRD 5FS-09-12 SUB-SURFACE DRIPLINE INSTALLED AT 12" O.C. WITH EMITTERS IN A TRIANGULAR PATTERN 1" BELOW GRADE. SEE SHEET L-308 FOR TYPICAL INSTALLATION DETAILS. RAIN BIRD COMPRESSION FITTINGS AND BARBED TUBING STAKES SHALL BE USED. EACH ZONE SHALL HAVE A MIN. OF ONE FLUSH VALVE, ONE AIR RELIEF VALVE, AND ONE OPERATION INDICATOR. INSTALL ALL DRIPLINE PER RAIN BIRD SPECIFICATIONS AND DETAILS.

HUNTER INDUSTRIES ICZ-101-40 DRI CONTROL ZONE KIT WITH 40 SI REGULATOR CONTRACTOR TO INSTALL NODE-100 AND REMOVE REPLACE CONVENTIONAL SOLENOID WITH DC LATCHING SOLENOID. INSTALL VALVE IN A RAIN BIRD VB-JMB JUMBO VALVE BOX WITH LOCKING LID. VALVE LOCATION SHOWN FOR REFERENCE INSTALL ALL VALVES IN A LANDSCAPE AREA WITH A MINIMUM 24" CLEARANCE FROM SIDEWALK/CURB.

ZONE NUMBER — 5 — 1½ — 28 — VALVE SIZE DR = DRIP — GPM

ZONE TAG

SCHEDULE 40 PVC MAINLINE - 1"

1" SCHEDULE 40 PVC LATERAL LINE.

2" SCHEDULE 40 PVC SLEEVE.

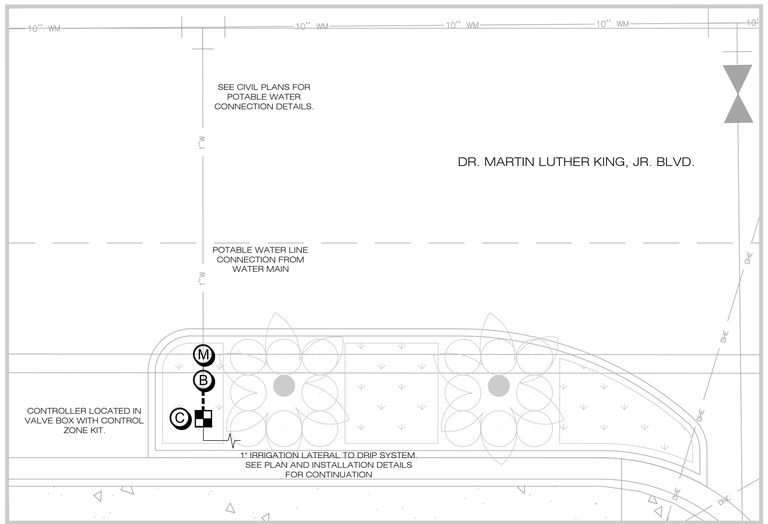
C — HUNTER INDUSTRIES NODE-100 BATTERY POWERED IRRIGATION CONTROLLER. CONTRACTOR TO REMOVE/REPLACE EXISTING CONVENTIONAL SOLENOID WITH DC LATCHING SOLENOID PROVIDED WITH NODE-100 SEE VALVE SPECIFICATION ABOVE. CONTRACTOR TO PROVIDE TWO 9-VOLT BATTERIES ALKALINE FOR EACH CONTROLLER. INSTALL CONTROLLER PER DETAIL ON SHEET L-4.02.

M — 5/8" IRRIGATION METER. INSTALL IN A LANDSCAPE AREA WITH A MINIMUM 24" CLEARANCE FROM SIDEWALK/CURB.

B — 1" REDUCED PRESSURE BACKFLOW PREVENTER. INSTALL IN A LANDSCAPE AREA WITH A MINIMUM 24" CLEARANCE FROM SIDEWALK/CURB.

GENERAL NOTES

1. IRRIGATION CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL APPLICABLE PERMITS REQUIRED TO PERFORM WORK.
2. REFER TO THE LANDSCAPE PLANS WHEN TRENCHING TO AVOID TREE AND SHRUB LOCATIONS.
3. ALL MAINLINE PIPING SHALL BE BURIED TO A MINIMUM DEPTH OF 18" OF COVER AND ALL LATERAL PIPING SHALL BE BURIED TO A MINIMUM DEPTH OF 12" OF COVER.
4.
5. PIPE SIZES SHALL CONFORM TO THOSE SHOWN ON THE DRAWINGS. THE SMALLEST LATERAL PIPE SIZE TO A SINGLE SPRAY OR ROTOR HEAD SHALL BE 3/4".
6. ALL REMOTE CONTROL VALVES, GATE VALVES AND QUICK COUPLERS SHALL BE INSTALLED IN VALVE BOXES.
7. ANY PIPING OR VALVES SHOWN OUTSIDE THE PROPERTY LINE OR OUTSIDE OF A LANDSCAPE AREA IS SHOWN THERE FOR DESIGN CLARITY ONLY. ALL PIPING AND VALVES SHALL BE INSTALLED ON THE PROPERTY AND WITHIN LANDSCAPE AREAS.
8. IT IS THE RESPONSIBILITY OF ALL SITE CONTRACTOR TO FAMILIARIZE THEMSELVES WITH, AND EXERCISE CARE SO AS TO NOT DAMAGE ANY EXISTING IRRIGATION COMPONENTS TO REMAIN;, BERMS, WALLS, STRUCTURES, PLANT MATERIALS AND UTILITIES. ANY CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REPAIR OR REPLACEMENT OF ALL ITEMS DAMAGED BY HIS WORK. HE SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS FOR THE LOCATION AND INSTALLATION OF SLEEVES AND PIPING THROUGH WALLS, UNDER ROADWAYS AND PAVING, ETC.
9. DO NOT INSTALLFULLY INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN OBSTRUCTIONS, GRADE DIFFERENCES OR DIFFERENCES IN AREA DIMENSIONS EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHOULD BE BROUGHT TO THE ATTENTION OF THE OWNERS AUTHORIZED REPRESENTATIVE. IN THE EVENT THIS NOTIFICATION IS NOT PERFORMED, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS.
10. FINAL LOCATION OF THE AUTOMATIC CONTROLLERS SHALL BE APPROVED BY THE OWNERS AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION.
11. THE IRRIGATION CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS AND VALVES TO PROVIDE OPTIMUM COVERAGE WITH MINIMAL OVERSPRAY ONTO WALKS, STREETS, WALLS, ETC. IN ORDER TO ACCOMPLISH THIS, THE CONTRACTOR MAY SUBSTITUTE VARIABLE ARC NOZZLES IN PLACE OF THE SPECIFIED FIXED ARC NOZZLES WHERE NECESSARY. PRESSURE COMPENSATING SCREENS MAY ALSO BE USED TO REDUCE SPRAY DISTANCE.
12. THE CONTRACTOR SHALL COMPLETE ALL WORK IN ACCORDANCE WITH ALL PREVAILING LAWS, CODES AND REGULATIONS.
13. ALL SPRINKLER EQUIPMENT NOT OTHERWISE DETAILED OR SPECIFIED SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.
14. THE CONTRACTOR SHALL PREPARE AN AS-BUILT DRAWING IN AUTOCAD FORMAT SHOWING ALL IRRIGATION INSTALLATION. THE AS-BUILT DRAWING SHALL LOCATE ALL MAINLINE AND VALVES BY SHOWING EXACT MEASUREMENTS FROM HARD SURFACES.
15. ALL WORK SHALL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE AGAINST ALL DEFECTS IN EQUIPMENT AND WORKMANSHIP.



1	TYPICAL POTABLE WATER CONNECTION (ONE CONNECTION PER ISLAND)
L-4.01	SCALE: NOT TO SCALE

NO	DATE	BY	DESCRIPTION
1.	3.30.17	JD	ISSUE FOR BIDDING
2.	5.26.17	JD	REVISED PER CLIENT REQUEST

DR. MARTIN LUTHER KING, JR. BOULEVARD ROAD RECONSTRUCTION

IRRIGATION PLAN

DAYTONA BEACH, FLORIDA

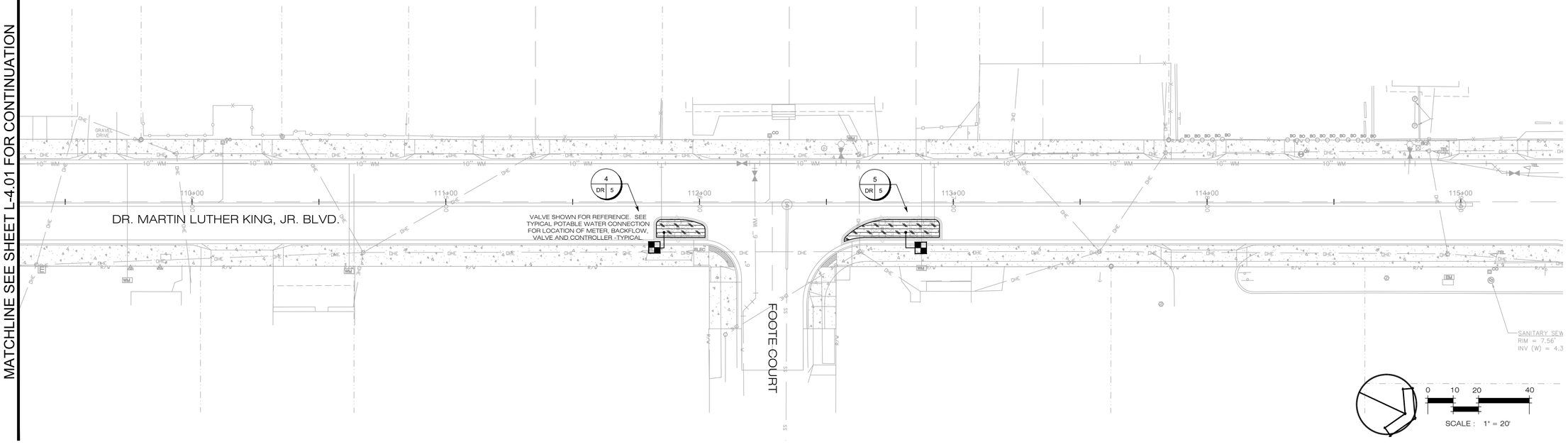
CASTLE BAY DESIGN + STUDIO
©CASTLE BAY DESIGN STUDIO, LLC 2017
7 ALDO STREET, ST. AUGUSTINE, FLORIDA 32084
386.747.1150 LC26000624

PROJECT NO:	MLK BLVD.
ISSUE DATE:	3/30/2017
DRAWING FILE/ XREFS:	MLK BLVD.
DRAFTED BY:	JD
DESIGNED BY:	JD/SBK
CHECKED BY:	SBK
SCALE:	1" = 20'

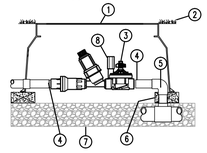
NOT VALID WITHOUT SEAL

SHEET L-4.01

MATCHLINE SEE SHEET L-4.01 FOR CONTINUATION

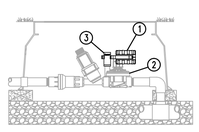


MARK ALL VALVE BO□ES □ ITH THE □ ONE NUMBER AS DIRECTED BY THE LANDSCA□E ARCHITECT.



1. JUMBO VALVE BO□
2. FINISH GRADE
3. DRIP ZONE KIT MODEL ICZ-101-40 WITH FILTER (TIP 45 DEGREES)
4. SCH 80 T.O.E. NI□□LE
5. MAIN LINE □I□E □ FITTINGS
6. BRICK SU□□ORTS 4□
7. 3/4" MINUS □ASHED GRAVEL
8. SOLENOID □TO BE RE□LACED□

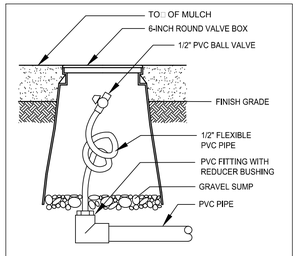
VALVE INSTALLATION DETAIL



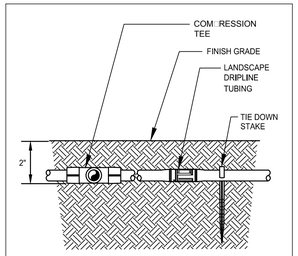
1. NODE-100
2. IRRIGATION VALVE SEE INSTALLATION DETAIL□
3. DC LATCHING SOLENOID SU□□LIED □ITH NODE-100□

NOTE□CONTRACTOR TO RE□LACE STANDARD SOLENOID □ITH DC LATCHING SOLENOID SU□□LIED □ITH NODE-100.

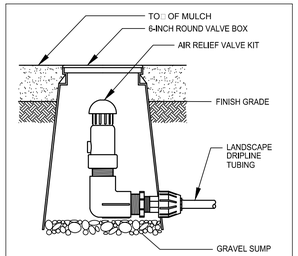
NODE INSTALLATION DETAIL



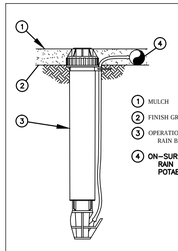
FLUSH VALVE



DRI□LINE SECTION



AIR RELIEF VALVE

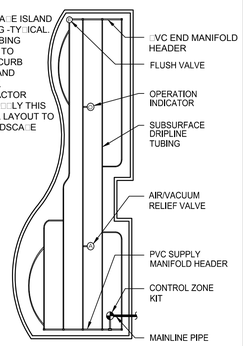


1. MULCH
2. FINISH GRADE
3. OPERATION INDICATOR RAIN BIRD MODEL: OPERIND
4. **ON-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE POTABLE: XFCV SERIES**

NOTE:
1. USE XERIMAN TOOL XM-TOOL TO INSERT BARB TRANSFER FITTING DIRECTLY INTO DRIPLINE TUBING.
2. VAN NOZZLE MAY BE SET TO CLOSED, OR IF IT IS DESIRED TO SEE SPRAY FROM THE NOZZLE, SET THE ARC TO ¼ PATTERN. THE FLOW FROM THE NOZZLE, 0.3 GPM, SHOULD BE ACCOUNTED FOR IN THE SYSTEM DESIGN.

DRI□LINE INDICATOR

NOTE□
LANDSCA□E ISLAND CURBING -TY□ICAL. DRI□ TUBING LAYOUT TO MATCH CURB SHA□E AND LAYOUT. CONTRACTOR SHALL A□□LY THIS TY□ICAL LAYOUT TO ALL LANDSCA□E AREAS.



DRI□LINE TY□ICAL LAYOUT

DRI□ IRRIGATION NOTES

1. □INSTALL ALL DRI□ TUBING 2" BELO□ GRADE. USE STAKES TO HOLD THE TUBING IN □LACE.
2. KEE□ DRI□ TUBING CLEAN AT ALL TIMES BEFORE THE FINAL CONNECTION. TA□E ALL TUBE ENDS OR USE DIRTCA□S.
3. AVOID SHAR□ BENDS IN THE TUBING. DO NOT BEND THE TUBING □ITH LESS THAN A 12" RADIUS.
4. ALL DRI□ TUBING SHALL HAVE UNIFORM S□ACING AND BURIAL DE□TH.
5. INSTALL DRI□ TUBING IN ALL AREAS THAT SHALL RECEIVE □LANT MATERIAL. REFER TO THE □LAN FOR THE E□ACT LOCATIONS.
6. S□ACE TUBING AS NOTED ON THE □LANS AND/OR DETAILS. THE □LAN DOES NOT AL□ AYS SHO□ ALL DRI□ TUBING. THE □LAN LAYOUT IS SHO□N FOR CLARITY ONLY.
7. REFER TO THE MANUFACTURER'S DRI□ INSTALLATION MANUAL FOR S□ECIFIC INSTALLATION INSTRUCTIONS AND DETAILS.
8. AL□ AYS FLUSH ALL LINES BEFORE FINAL CONNECTION.
9. REFER TO THE LANDSCA□E □LAN TO AVOID LAYOUT □HERE TREES SHALL BE INSTALLED □ITHIN LANDSCA□E BEDS.
10. INSTALL ALL AIR RELIEF AND FLUSH VALVES INSIDE A VALVE BO□.
11. □CLEARLY AND NEATLY MARK THE TO□ OF EACH VALVE BO□ □ITH THE TY□E OF E□UI□MENT THAT IT CONTAINS. □I.E. AIR RELIEF VALVE, FLUSH VALVE, ETC.□
12. □ALL VALVE BO□ES SHALL HAVE A 6" LAYER OF □EA GRAVEL IN THE BASE.

REVISIONS

NO	DATE	BY	DESCRI□TION
1.	3.3.17	JD	ISSUE FOR BIDDING
2.	5.26.17	JD	REVISED □ER CLIEN□ RE□UEST

DR. MARTIN LUTHER KING, JR. BOULEVARD ROAD RECONSTRUCTION

IRRIGATION PLAN

DAYTONA BEACH, FLORIDA

CASTLE BAY DESIGN + STUDIO
©CASTLE BAY DESIGN STUDIO, LLC 2017
71 ALDO STREET, ST. AUGUSTINE, FLORIDA 32084
352.267.1701 LC26000264

PROJECT NO:	MLK BLVD.
ISSUE DATE:	3/30/2017
DRAWING FILE: XREF'S:	MLK BLVD.
DRAFTED BY:	JD
DESIGNED BY:	JD/SBK
CHECKED BY:	SBK
SCALE:	1" = 20'

NOT VALID □ITHOUT SEAL

SHEET L-4.02

THE CITY OF DAYTONA BEACH
DR. MARTIN LUTHER KING, JR. BOULEVARD

ROADWAY AND PEDESTRIAN IMPROVEMENTS PROJECT

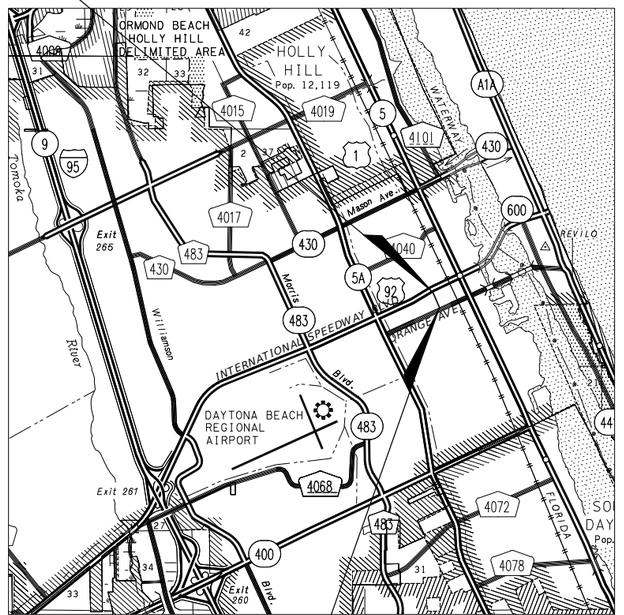
LIGHTING & ITS PLANS

PROJECT NO. 2015-085

INDEX OF ROADWAY LIGHTING & ITS PLANS

SHEET NO.	SHEET DESCRIPTION
RL-1	KEY SHEET
RL-2	SIGNATURE SHEET
RL-3	TABULATION OF QUANTITIES
RL-4	GENERAL NOTES
RL-5	LEGEND & POLE DATA
RL-6 THRU RL-11	DR. MARTIN LUTHER KING JR. BLVD.-LIGHTING & ITS PLANS
RL-12	LOAD CENTER DETAILS
RL-13	POLE & WIRING DETAILS
RL-14 THRU RL-15	SPLICE DIAGRAM

END PROJECT
STA. 115+60



BEGIN PROJECT
STA. 101+30

GOVERNING STANDARDS AND SPECIFICATIONS:

FLORIDA DEPARTMENT OF TRANSPORTATION, 2018-2019 DESIGN STANDARDS AND REVISED INDEX DRAWINGS AS APPENDED HEREIN, AND 2018 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/

THE CITY OF DAYTONA BEACH
PUBLIC WORKS

TECHNICAL SERVICES DIVISION

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RUTH TRAGER, COMMISSIONER - ZONE 1
AARON DELGADO, COMMISSIONER - ZONE 2
KELLY WHITE, COMMISSIONER - ZONE 3
ROBERT A. GILLILAND - ZONE 4
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JAMES V. CHISHOLM - CITY MANAGER
DAVID WALLER, DEPUTY PUBLIC WORKS DIRECTOR
FRANK VANPELT, TECHNICAL SERVICES DIRECTOR
JIM NELSON, PE, CITY ENGINEER
JO ANN J. MACRINA, PE, DEPUTY DIRECTOR OF UTILITIES
MICHELLE MARTIN, TECHNICAL SERVICES PROJECT MANAGER

SHOP DRAWINGS
TO BE SUBMITTED TO:

GIL RAMIREZ, P.E.
LTG, INC.
1970 DAIRY ROAD
WEST MELBOURNE FLORIDA, 32904
PH. 321.466.4679 FAX: 321.499.4680

PLANS PREPARED BY:

LTG Engineering & Planning

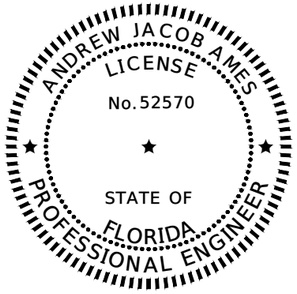
1450 WEST GRANADA BLVD. SUITE 2
ORMOND BEACH FLORIDA, 32174
PH. 386.257.2571 FAX: 386.257.6996
E-MAIL: ltg@ltg-inc.us
CERTIFICATE OF AUTHORIZATION 9227

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

LIGHTING & ITS PLANS
ENGINEER OF RECORD: _____
GIL RAMIREZ, P.E.
P.E. NO.: 62600

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
	2018	RL-1

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23-004, F.A.C.



THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY ANDREW J. AMES, P.E. ON DATE SHOWN USING A DIGITAL SIGNATURE

1450 WEST GRANADA BOULEVARD, SUITE 2
ORMOND BEACH FL. 32174
CERTIFICATE OF AUTHORIZATION NO. 9227
ANDREW J. AMES P.E. NO. 52570

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THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.003, F.A.C.

INDEX OF ROADWAY LIGHTING PLANS

SHEET NO.	SHEET DESCRIPTION
RL-1	KEY SHEET
RL-2	SIGNATURE SHEET
RL-3	TABULATION OF QUANTITIES
RL-4	GENERAL NOTES
RL-5	LEGEND & POLE DATA
RL-6 THRU RL-11	DR. MARTIN LUTHER KING JR. BLVD.-LIGHTING PLANS
RL-12	LOAD CENTER DETAILS
RL-13	POLE AND WIRING DETAILS

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23-004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LTG Engineering & Planning
ANDREW J. AMES
P.E. No. 52570
1450 W. GRANADA BLVD. SUITE 2
ORMOND BEACH, FLORIDA 32174
PH: 386.257.2571 FAX: 386.257.6996
CERTIFICATE OF AUTHORIZATION 9227

THE CITY OF DAYTONA BEACH, FLORIDA

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
MLK BLVD.	VOLUSIA	

SIGNATURE SHEET

SHEET NO. RL-2

TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS (ROADWAY LIGHTING)												TOTAL THIS SHEET		GRAND TOTAL	
			RL-6		RL-7		RL-8		RL-9		RL-10		RL-11					
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL
630-2-11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	116		520		564		596		560		102		2458		2458	
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	EA	2		2		5		3		3		1		16		16	
715-1-12	LIGHTING CONDUCTORS, F&I, INSULATED, NO.8 - 6	LF	492		1704		2218		2220		1896		378		8908		8908	
715-4-11	LIGHT POLE COMPLETE, FURNISH & INSTALL STANDARD POLE STANDARD FOUNDATION, 27.5' MOUNTING HEIGHT	EA	2		2		3		3		3		1		14		14	
715-7-11	LOAD CENTER, F&I, SECONDARY VOLTAGE	EA							1						1		1	

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23-004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LTG Engineering & Planning
ANDREW J. AMES
P.E. No. 52570
1450 W. GRANADA BLVD. SUITE 2
ORMOND BEACH, FLORIDA 32174
PH: 386.257.2571 FAX: 386.257.6996
CERTIFICATE OF AUTHORIZATION 9227

THE CITY OF DAYTONA BEACH, FLORIDA

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
MLK BLVD.	VOLUSIA	

TABULATION OF QUANTITIES

SHEET NO. RL-3

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GENERAL NOTES

1. SPARE CONDUIT AT MAINLINE AND ARTERIAL ROAD PAVEMENT CROSSINGS SHALL BE CAPPED AT THE PULL BOX.

2. PRIOR TO ANY EQUIPMENT ORDER, SUBMIT FOR APPROVAL EQUIPMENT SPECIFICATION OR DESIGN DATA FOR ALL MATERIAL PROPOSED FOR THE PROJECT. THESE MUST SPECIFICALLY INCLUDE:
   A) LUMINAIRE PHOTOMETRICS
   B) POLE STRENGTH CALCULATIONS
   C) POLE FRANGIBILITY TEST
   D) BOLT SPECIFICATIONS AND BOLT CIRCLE DIAMETER
   E) POLE SHOP DRAWINGS
   F) LOAD CENTER ELECTRICAL EQUIPMENT

3. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY ALL UTILITIES WHICH MAY BE AFFECTED BY THE WORK. THE FOLLOWING IS A PARTIAL LISTING:
   FPL: MATT SAUEY, W: (407)328-1920
   FPL FIBERNET: DANNY HASKETT W: (305)552-2939, CELL: (786)246-7827
   TECO PEOPLE GAS: JERROD CARTER (904)443-7355
   ATT: KIRBY SPENCER (386)366-4588
   LEVEL 3 COMMUNICATIONS: PATRICK PROVOST (720)888-4686

4. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE APPROXIMATE AND BASED ON THE INFORMATION FURNISHED TO THE ENGINEER BY THE UTILITY OWNERS AND ARE SHOWN AS NOTICE TO THE CONTRACTOR THAT UNDERGROUND UTILITIES EXIST. BEFORE EXCAVATING, NOTIFY THE UTILITY COMPANY OWNERS AND REQUEST THEM TO LOCATE AND STAKE THEIR UNDERGROUND FACILITIES. UTILITIES ARE TO BE ADJUSTED BY OTHERS AS DIRECTED BY THE ENGINEER.

5. PROVIDE NOTICE TO THE UTILITY OWNERS PER FLORIDA STATUTE 553.851 AND 556. THESE STATUTES REQUIRE THAT BEFORE EXCAVATION, NOTICE BE GIVEN TO THE UTILITY OWNER A MINIMUM OF TWO (2) DAYS AND A MAXIMUM OF FIVE (5) DAYS, EXCLUDING SATURDAY, SUNDAY AND LEGAL HOLIDAYS. NOT ALL UTILITY COMPANIES ARE MEMBERS OF "SUNSHINE" CALL 811 WWW.CALLSUNSHINE.COM.

6. THE LOCATION OF THE POLES, CONDUCTORS, CONDUITS, JUNCTION BOXES AND SERVICE POLES ARE DIAGRAMMATIC ONLY AND MAY BE SHIFTED BY THE ENGINEER TO ACCOMMODATE LOCAL CONDITIONS AND EXISTING UTILITY LOCATIONS.

7. ALUMINUM POLES, LUMINAIRES AND BASES SHALL BE FABRICATED IN ACCORDANCE WITH AASHTO'S "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" AND SHALL HAVE BEEN TESTED BY FHWA-APPROVED METHODS. CERTIFICATION FOR TESTS SHALL BE SUBMITTED WITH THE SHOP DRAWINGS.

8. ALL ELECTRICAL WORK SHALL MEET ALL REQUIREMENTS OF THE LATEST ADOPTED EDITIONS OF THE NATIONAL ELECTRICAL CODE, THE NATIONAL ELECTRICAL SAFETY CODE, AND THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. ALL COMPONENTS SHALL BE PROPERLY GROUNDED PER N.E.C. REQUIREMENTS.

9. INSTALL SURGE PROTECTIVE DEVICES PROPERLY GROUNDED IN POWER (SECONDARY) ENTRANCES.

10. IN ACCORDANCE WITH N.E.C., IDENTIFY ALL CIRCUITS AND EQUIPMENT WITH "LAMACOID TAGS". INSTALL SIMILAR TAGS OF STAINLESS STEEL, IDENTIFYING CIRCUIT FOR EACH LUMINAIRE AT ACCESS HANDHOLE FOR EACH POLE.

11. NOTIFY FPL AT LEAST 48 HOURS PRIOR TO ANY INSTALLATION THAT IS WITHIN 10 FEET OF ENERGIZED ELECTRICAL CONDUCTORS. FPL, AT ITS OPTION, SHALL ASSIST THE FDOT CONTRACTOR TO COVER UP ENERGIZED CONDUCTORS AT INSTALLATION SITE OR TAKE OTHER SAFETY PRECAUTIONS AS NECESSARY. EXTREME CAUTION SHALL BE EXERCISED AT ALL TIMES IN PERFORMANCE OF WORK AROUND THE PRIMARY, HIGH VOLTAGE COMPONENTS.

12. PULLING INSTRUCTIONS: CONNECT PULLING DEVICES TO COPPER WIRE AND NOT TO JACKET AND MEET MANUFACTURER'S REQUIREMENTS. USE PULLING COMPOUND PER MANUFACTURER'S REQUIREMENTS. ALL BENDS SHALL NOT BE LESS THAN RECOMMENDED BY N.E.C. OR N.E.S.C. FOR CABLE USED.

13. ALL ROADWAY LIGHTING SHALL HAVE AN IDENTIFICATION TAG. TAGS SHALL HAVE BLACK LETTERS ON YELLOW BACKGROUND ATTACHED WITH APPROVED ADHESIVE (NO RIVETS OR SCREWS). COST OF TAGS SHALL BE INCLUDED IN THE BID ITEMS FOR LIGHT POLE COMPLETE. TAGS SHALL BE PLACED 5 FEET ABOVE GRADE AND FACING THE ROADWAY. BEFORE ORDERING TAGS, COORDINATE WITH THE CITY OF DAYTONA BEACH FOR PROPER NUMBERING SEQUENCE OF LOAD CENTER AND CIRCUITS.SEQUENCE OF LOAD CENTER AND CIRCUITS.

14. JACK AND BORE OPERATIONS IF USED SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION FDOT UTILITY ACCOMMODATION GUIDE.

15. AT LOCATIONS WHERE UNDERGROUND UTILITIES ARE IN CLOSE PROXIMITY TO THE LIGHTING POLE FOUNDATIONS OR CONDUIT RUN, AS DETERMINED BY THE ENGINEER, HAND DIG THE FIRST 4 FEET OF THE HOLE FOR THE POLE FOUNDATION AND CONDUIT RUN.

16. ALL CIRCUIT TRENCHES SHALL BE BACKFILLED COMPLETELY TO PROVIDE SAFE CROSSING BY THE END OF EACH WORKING DAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE. DO NOT OPEN ANY AREA THAT CANNOT BE BACKFILLED IN THE SAME DAY/NIGHT OPERATION.

17. ALL EXCESS DIRT AND DEBRIS EXCAVATED FROM POLE FOUNDATIONS SHALL BE REMOVED.

18. MAINTAIN ACCESS TO ALL SIDE STREETS, PRIVATE AND COMMERCIAL DRIVEWAYS AT ALL TIMES DURING THE CONSTRUCTION OPERATION.

19. THE LIGHTING SYSTEM WILL BE MAINTAINED BY THE CITY OF DAYTONA BEACH ACCEPTANCE.

20. ANY EXISTING SIGNALIZATION LOOPS SYSTEM DAMAGED DURING THE CONDUIT INSTALLATION SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.

21. SOIL EXPOSED DURING INSTALLATION OF LIGHTING FOUNDATIONS SHALL BE STABILIZED AS SOON AS POSSIBLE. IN NO CASE SHALL THE TIME BE GREATER THAN SEVEN (7) CALENDAR DAYS.

22. EXISTING LIGHTING EQUIPMENT SOURCES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING DEMOLITION/REMOVAL WORK.

23. ALL ROADSIDE LIGHTING PULL BOXES SHALL BE MARKED "STREET LIGHTING". ALL PULL BOX COVERS SHALL BE MARKED "STREET LIGHTING" MADE OF POLYMER MATERIAL, FLUSH WITH THE GROUND, AND SHALL BE WITH A MINIMUM ANSI TIER 22 RATING.

24. CONDUIT LOCATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. CONDUIT MUST BE PLACED WITHIN THE RIGHT-OF-WAY BUT CAN BE ADJUSTED TO FIT AROUND THE EXISTING AND PROPOSED UTILITIES. WHERE PLANNED LOCATION OF LIGHTING CONDUIT RUNNING 30" UNDER PAVEMENT IS FOUND TO CONFLICT WITH UNDERGROUND UTILITIES, THE LIGHTING CONDUIT SHALL BE ALTERED VERTICALLY OR HORIZONTALLY TO AVOID THE CONFLICT AS RECOMMENDED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. A 24" ABSOLUTE MINIMUM DEPTH SHALL BE MAINTAINED WHERE LIGHTING CONDUITS ARE RELOCATED CLOSER THAN 30" BELOW THE GROUND SURFACE AND SHALL BE PLACED IN AN ADDITIONAL 3" PVC SLEEVE OR BACKFILLED WITH A MIN. OF 4"X4" OF CONCRETE.

25. LIGHTING CONDUIT SHALL BE 2" SCHEDULE 40 PVC WITH THWN-2 CONDUCTORS INSIDE.

26. INSPECT ALIGNMENT OF EACH INDIVIDUAL POLE AND FIXTURE AS FOLLOWS:
   ALIGNMENT VIEWING FROM ADJACENT SERIES OF POLES IN BOTH DIRECTIONS.
   FIXTURE ALIGNMENT: WITHIN ONE DEGREE OF HORIZONTAL +/-, USING CALIBRATED LEVEL ALONG BOTH AXES OF CUT-OFF FIXTURE FACE, WITH LENS ONLY.

27. ALL CONDUITS SHALL BE MANDREL TESTED AND CLEANED. CONDUITS PLACED FOR FUTURE USE SHALL HAVE 3/4" POLYESTER CORD PULLED IN PLACE AND CAPPED WITH NOTATION INSIDE CONDUIT AS TO LOCATION OF OPPOSITE END. PLACE DUCT MARKER OR PULL BOXES TO MARK END OF EMPTY CONDUITS.

28. TAKE RESPONSIBILITY FOR LOCATING ANY UNDERGROUND CONDUIT FOR ROADWAY LIGHTING.

29. ALL LIGHT POLES, PULL BOXES AND LOAD CENTERS SHALL NOT BE INSTALLED WITHIN ANY DITCH AREAS THAT MAY CAUSE WATER INTRUSION.

30. AS PART OF THE 7 DAY TEST BURNING PERIOD, EACH CIRCUIT SHALL BE LABELED WITH THE LOAD AMPERAGE READING AT THE LOAD CENTER PANEL.

31. ONE CONDUIT RUN SHALL HAVE NO MORE THAN THREE LIGHTING CIRCUITS INSTALLED.

32. CONTRACTOR SHALL PREPARE ACCURATELY DIMENSIONED "AS BUILT" PLANS OF FINAL POLE, CONTROLLER, CABLE AND CONDUIT PULL BOX LOCATIONS. PLANS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER AND SUBMITTED TO THE RESIDENT ENGINEER. COST OF SUCH PREPARATION SHALL BE INCIDENTAL TO PAY ITEMS PROVIDED.

33. ALL SPLICES SHALL BE MADE IN PULL BOXES ONLY WITH COMPRESSION SLEEVES OR SPLIT BOLT CONNECTIONS, PROPERLY TAPED AND WATERPROOF.

34. SPLICES AND CONNECTIONS MADE IN PULL BOXES SHALL BE LIMITED TO THE SERVER POINT AND CONDUIT JUNCTION WITH MULTI-DIRECTIONAL CONDUITS AS INDICATE ON PLANS. THE CONNECTION MADE AT THESE POINTS SHOULD BE PROPERLY TAPED AND HEAT SHRINK TUBES OR CAPS SHALL BE USED TO WATERPROOF THESE CONNECTIONS.

35. SCREW TYPE ANCHOR FOUNDATIONS ARE NOT TO BE USED ON THIS PROJECT.

36. NECESSARY CARE SHALL BE TAKEN SUCH THAT EXISTING POLES AND LUMINAIRES TO REMAIN OR TO BE RELOCATED ARE NOT DAMAGE DURING CONSTRUCTION. DAMAGED POLES AND LUMINAIRES, AS DETERMINED BY THE RESIDENT ENGINEER, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

37. PULL BOXES AND LOAD CENTERS SHALL NOT BE PLACED IN DITCHES OR LOW LYING AREAS IN ORDER TO AVOID WATER INTRUSION.

38. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT THE POLES PRIOR TO INSTALLATION. IF OUTDOOR STORAGE, THEN THE CONTRACTOR SHALL UNPACKED AND UNCOVERED POLES IN ORDER TO AVOID DAMAGE FROM ANY PACKING MATERIAL.

ITS

1. ITS CONDUIT SHALL BE 4" SCHEDULE 40 PVC AND SHALL INCLUDE A 14 AWG LOCATE WIRE, PULL STRING AND CAP OPEN CONDUIT IN ALL VAULTS.

2. CONDUIT SHALL US LARGE RADIUS SWEEPS WHEN ENTERING PULL BOXES.

3. FIBER PULL BOXES SHALL MEASURE 24X36X24, SHALL BE HS-20 RATED, WITH THE WORDS "FIBER OPTICS" CAST INTO THE COVER.

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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GIL RAMIREZ
P.E. No. 62600
1970 DAIRY ROAD
WEST MELBOURNE FLORIDA, 32904
PH: 321.499.4679 FAX: 321.499.4680
CERTIFICATE OF AUTHORIZATION 9227

THE CITY OF DAYTONA BEACH, FLORIDA

ROAD NO.	COUNTY	PROJECT ID
MLK BLVD.	VOLUSIA	2015-085

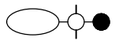
GENERAL NOTES

SHEET NO. RL-4

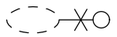
LIGHTING DESIGN CRITERIA

AVERAGE LEVEL OF ILLUMINATION	1.0 AVERAGE INITIAL HORIZONTAL FOOT-CANDLES
AVERAGE TO MINIMUM RATIO	4:1 OR LESS
MAX./MIN. RATION	10:1 OR LESS
WIND SPEED	130 MPH
VEILING LUMINANCE RATIO	0.4 OR LESS
ALLOWABLE VOLTAGE DROP	7 % OR LESS

LEGEND



NEW K803 SOLITAIRE SR. LUMINAIRE EXTERNAL LED PENDANT, 100 WATTS AND NEW K124 PARAGON LUMINAIRE, 60 WATTS.
NEW LUMINAIRE BY KING OR APPROVED EQUAL. THE LUMINAIRE SHALL BE POLE-MOUNTED ON A VERTICAL TENON, WITH VIBRATION DAMPER AND BREAKAWAY BASE.



EXISTING LUMINAIRE TO BE REMOVED

2" SCHEDULE 40 PVC CONDUIT WITH THWN-2 CONDUCTORS INSIDE PER FTE MAINTENANCE; RHW/XLP CONDUCTORS

NEW PULL BOX.

NEW LOAD CENTER.

NEW FPL POWER SOURCE.

EXISTING FPL POWER SOURCE.

POLE DATA

POLE NO.	CIRCUIT	STATION & OFFSET	ARM LENGTH (ROAD/SIDEWALK)	LUMINAIRE WATTAGE	MOUNTING HEIGHT (ROAD/SIDEWALK)	POLE SETBACK (FROM EDGE OF CURB)	TILT
1	1	102+00, 24.06' LT	8 FT / 1 FT	160	25 FT / 14 FT	7.4 FT	0
2	3	102+85, 23.99' RT	8 FT / 1 FT	160	25 FT / 14 FT	7.4 FT	0
3	3	103+84, 24.01' RT	8 FT / 1 FT	160	25 FT / 14 FT	7.4 FT	0
4	1	104+77, 23.93' LT	8 FT / 1 FT	160	25 FT / 14 FT	7.4 FT	0
5	3	106+04, 24.15' RT	8 FT / 1 FT	160	25 FT / 14 FT	7.4 FT	0
6	1	106+99, 23.77' LT	8 FT / 1 FT	160	25 FT / 14 FT	7.4 FT	0
7	3	108+00, 24.26' RT	8 FT / 1 FT	160	25 FT / 14 FT	7.4 FT	0
8	2	108+97, 23.63' LT	8 FT / 1 FT	160	25 FT / 14 FT	7.4 FT	0
9	4	109+83, 24.38' RT	8 FT / 1 FT	160	25 FT / 14 FT	7.4 FT	0
10	2	110+77, 24.56'LT	8 FT / 1 FT	160	25 FT / 14 FT	7.4 FT	0
11	4	111+88, 24.46' RT	8 FT / 1 FT	160	25 FT / 14 FT	7.4 FT	0
12	2	112+93, 23.41' LT	8 FT / 1 FT	160	25 FT / 14 FT	7.4 FT	0
13	4	113+77, 24.56' RT	8 FT / 1 FT	160	25 FT / 14 FT	7.4 FT	0
14	2	114+82, 23.13' LT	8 FT / 1 FT	160	25 FT / 14 FT	7.4 FT	0

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REVISIONS			
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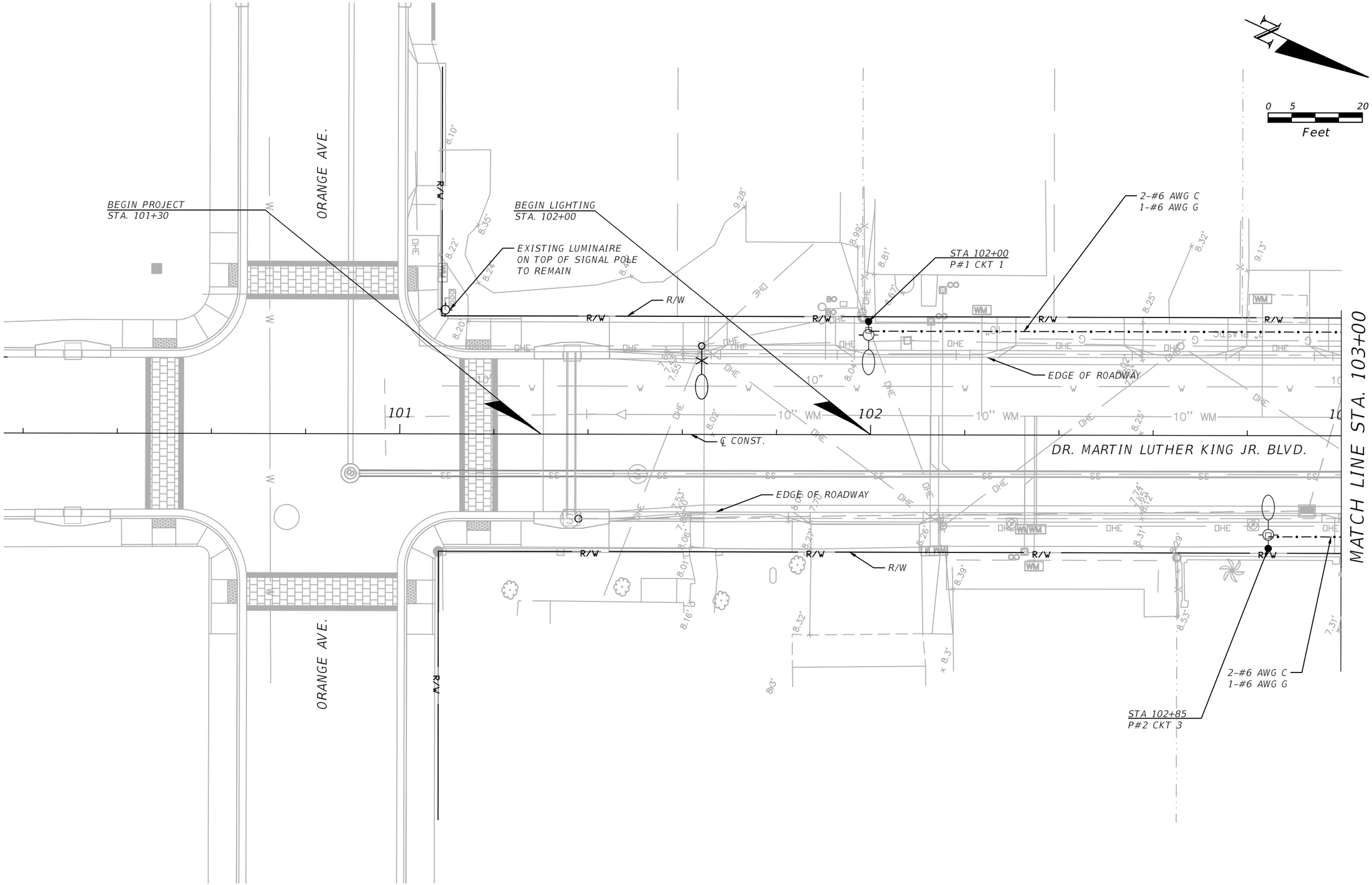
CERTIFICATE OF AUTHORIZATION 9227

THE CITY OF DAYTONA BEACH, FLORIDA

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
MLK BLVD.	VOLUSIA	

LEGEND & POLE DATA

SHEET NO. RL-5



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THE CITY OF
DAYTONA BEACH, FLORIDA

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
MLK BLVD.	VOLUSIA	

DR. MARTIN LUTHER KING, JR. BLVD.
LIGHTING PLANS

SHEET NO.
RL-6

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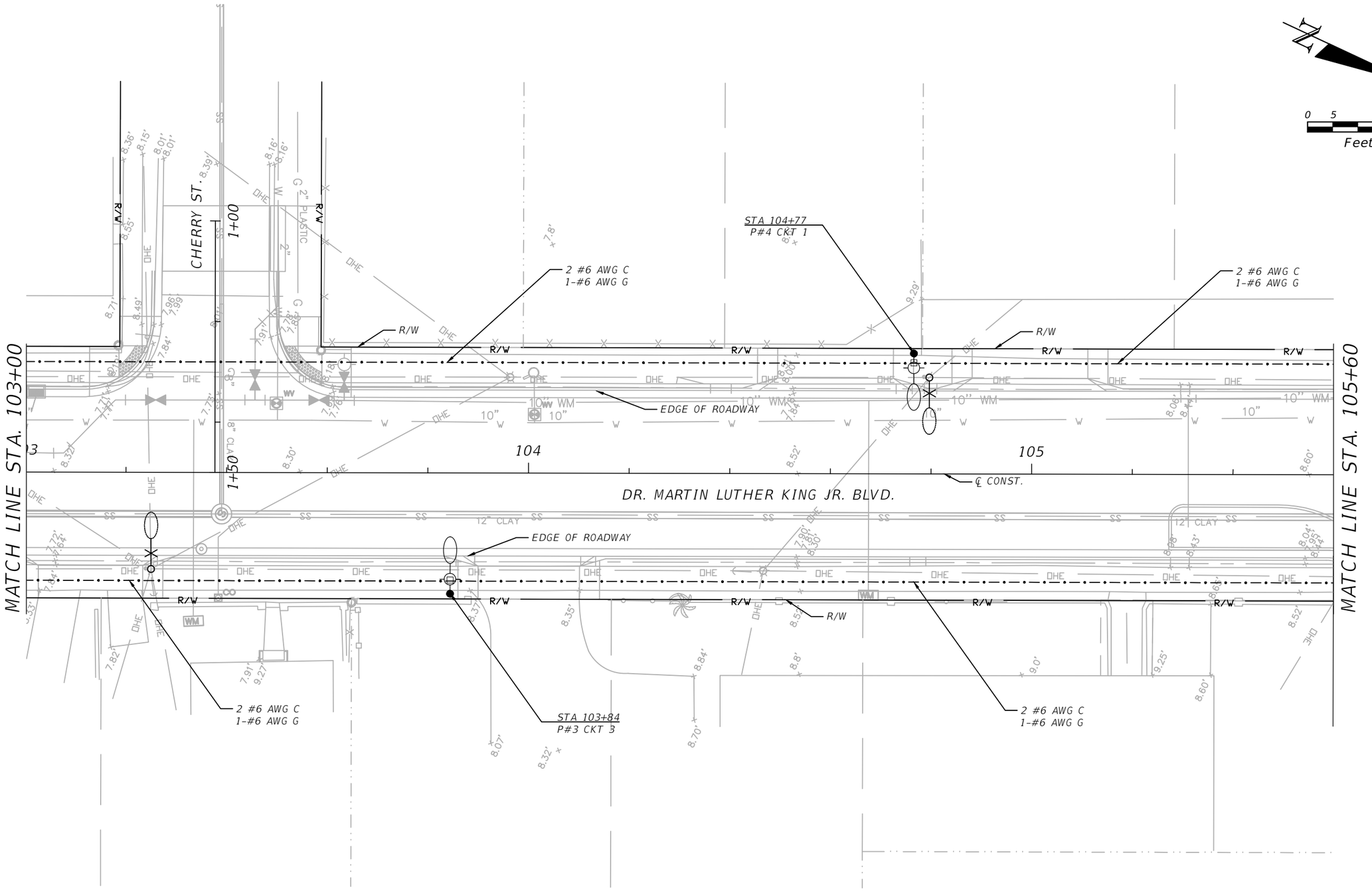

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THE CITY OF
DAYTONA BEACH, FLORIDA

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
MLK BLVD.	VOLUSIA	

DR. MARTIN LUTHER KING, JR. BLVD. LIGHTING PLANS

SHEET NO.
RL-7

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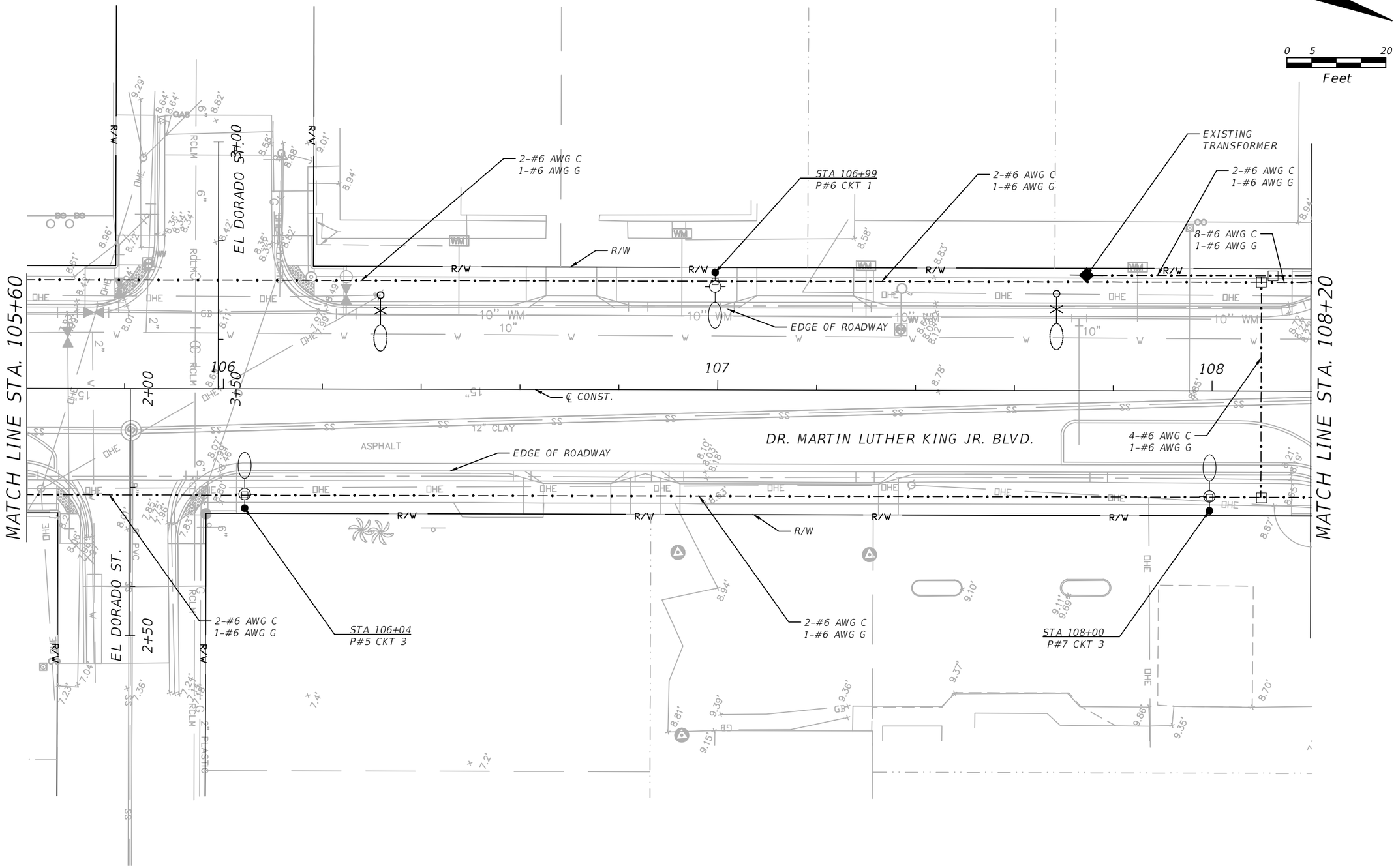

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THE CITY OF DAYTONA BEACH, FLORIDA

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
MLK BLVD.	VOLUSIA	

DR. MARTIN LUTHER KING, JR. BLVD. LIGHTING PLANS

SHEET NO. RL-8

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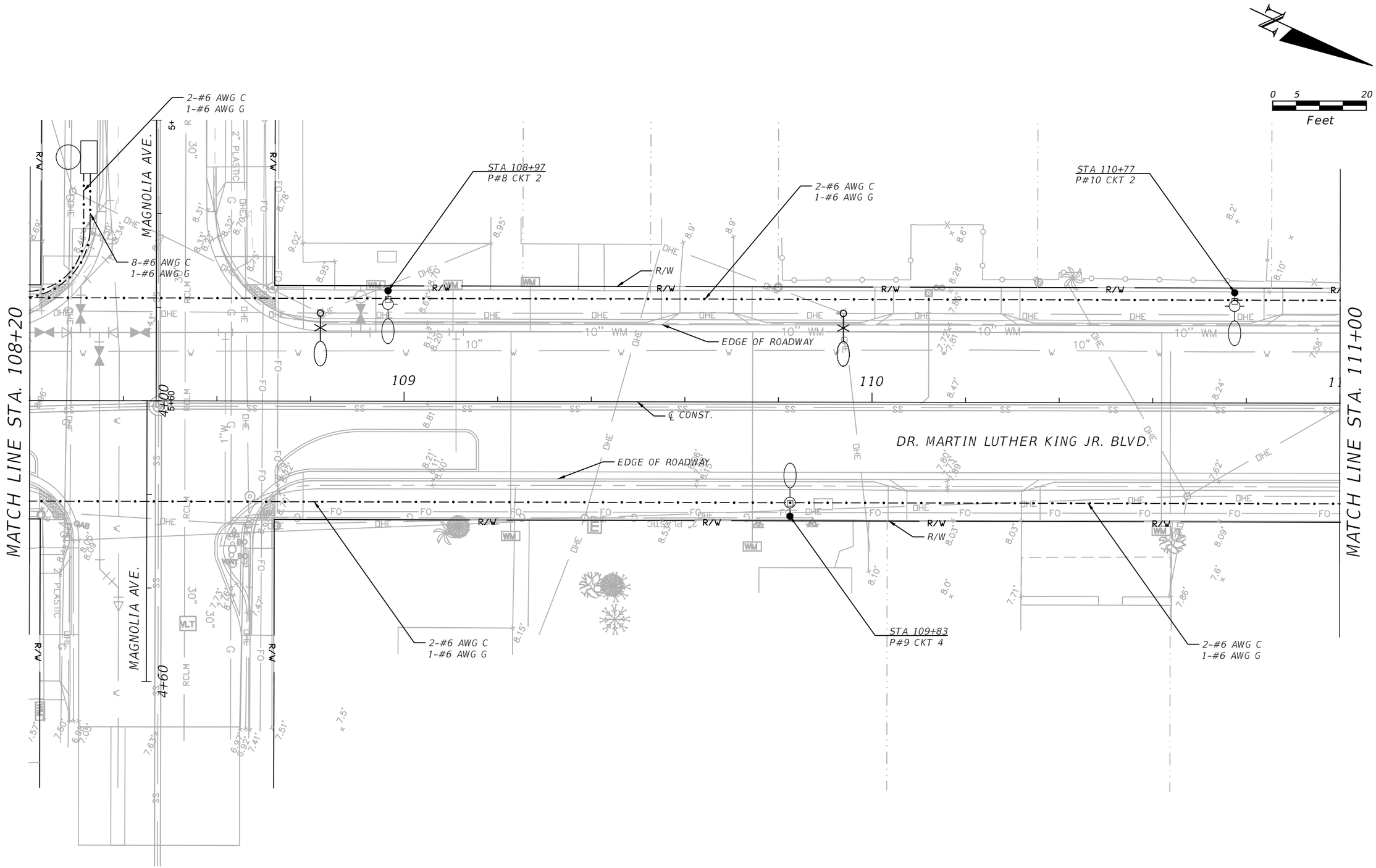

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THE CITY OF DAYTONA BEACH, FLORIDA

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
MLK BLVD.	VOLUSIA	

DR. MARTIN LUTHER KING, JR. BLVD. LIGHTING PLANS

SHEET NO. RL-9

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0 5 20
Feet

MATCH LINE STA. 111+00

MATCH LINE STA. 113+80

2-#6 AWG C
1-#6 AWG G

STA 112+93
P#12 CKT 2

2-#6 AWG C
1-#6 AWG G

R/W

EDGE OF ROADWAY

℄ CONST.

EDGE OF ROADWAY

DR. MARTIN LUTHER KING JR. BLVD.

FOOTE CT.

6+60

2-#6 AWG C
1-#6 AWG G

STA 111+88
P#11 CKT 4

2-#6 AWG C
1-#6 AWG G

STA 113+77
P#13 CKT 4

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THE CITY OF
DAYTONA BEACH, FLORIDA

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
MLK BLVD.	VOLUSIA	

DR. MARTIN LUTHER KING, JR. BLVD. LIGHTING PLANS

SHEET NO.
RL-10

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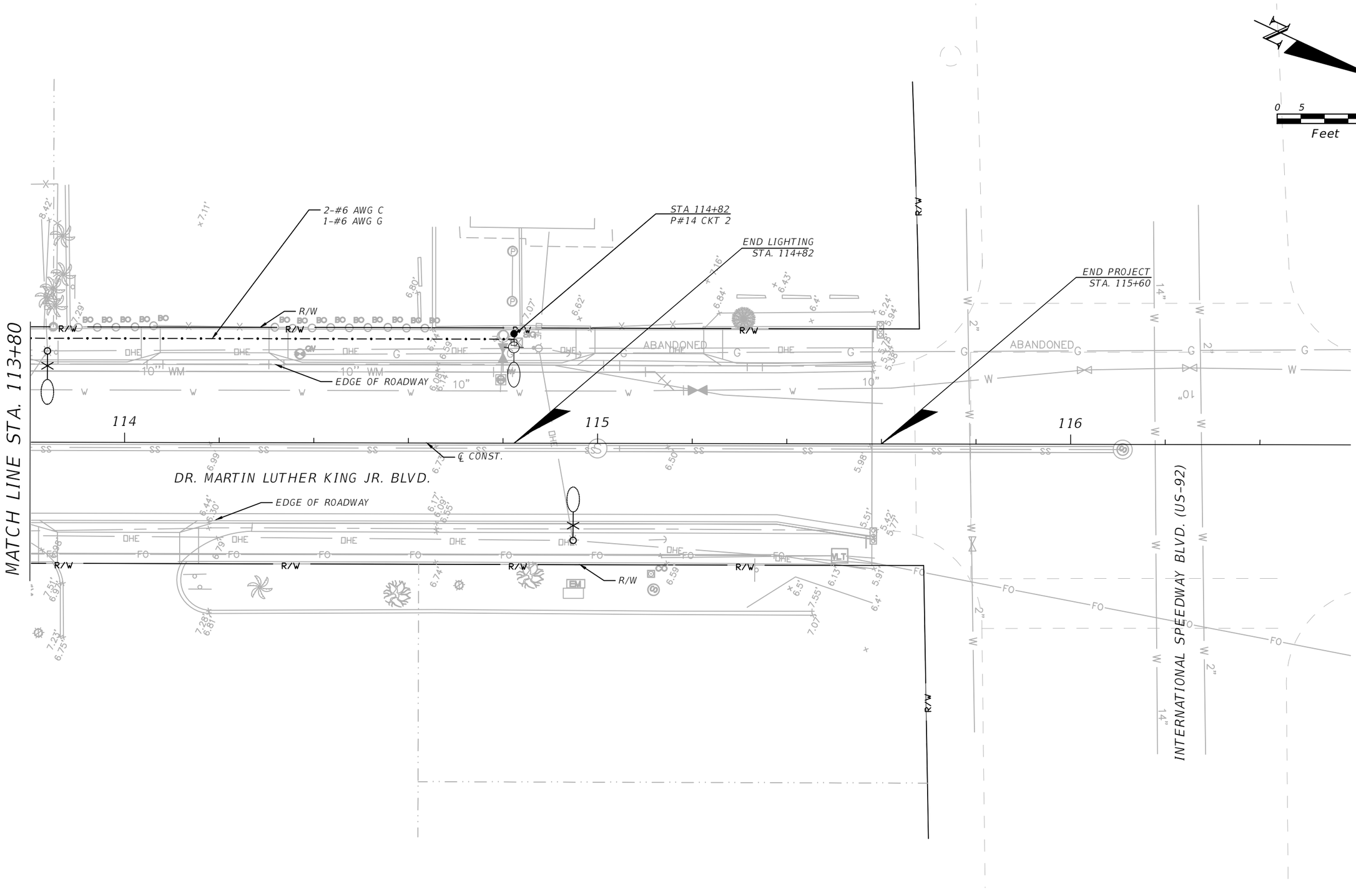

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THE CITY OF DAYTONA BEACH, FLORIDA

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
MLK BLVD.	VOLUSIA	

DR. MARTIN LUTHER KING, JR. BLVD. LIGHTING PLANS

SHEET NO. RL-11

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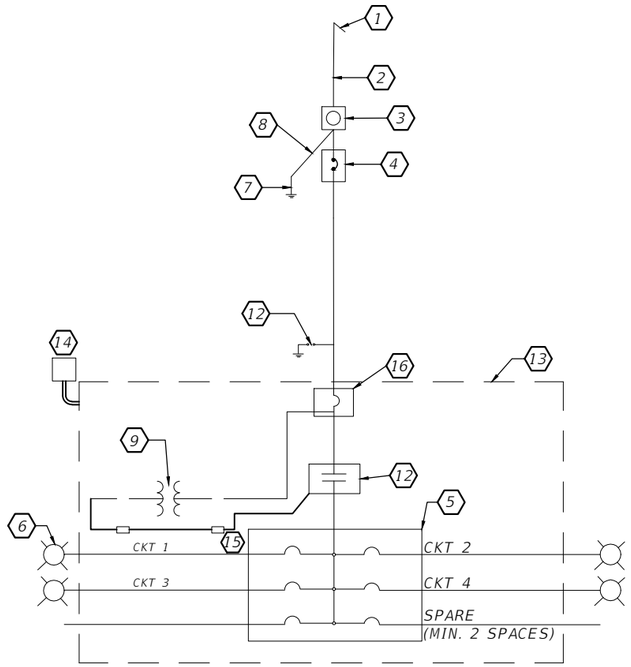
KEYED NOTES:

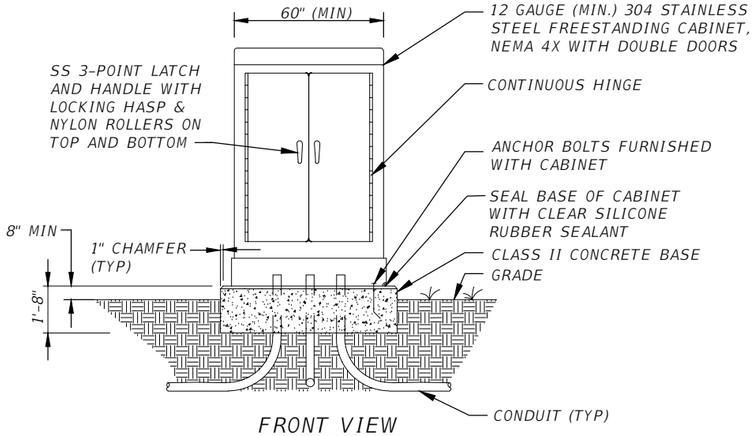
1. 120/240 V SINGLE PHASE 3-WIRE UNDERGROUND SERVICE DROP.
2. 2#3 XHHW INSULATED CONDUCTORS IN 2" CONDUIT.
3. METER CAN WITH BLANK PANEL BY CONTRACTOR.
4. 100A, 240V, 2-POLE S/N HEAVY DUTY NEMA 3R SAFETY SWITCH.
5. PANEL BOARD, 60A, 120/240V, SINGLE PHASE, 3-WIRE WITH GROUND BAR CIRCUIT BREAKERS AS INDICATED.
6. LUMINAIRE CONNECTED TO CIRCUIT (TYPICAL)
7. COPPER CLAD GROUND ROD 5/8" DIA. 40 FT LONG.
8. #4 INSULATED COPPER GROUND IN 3/4" PVC.
9. CONTROL TRANSFORMER 1 KVA SINGLE PHASE, 240V PRIMARY 120V SECONDARY.
10. LIGHTENING ARRESTER.
11. #6 INSULATED COPPER GROUND WIRE IN 3/4" RIGID GALVANIZED STEEL.
12. 60A, 2-POLE, ELECTRICAL HELD CONTACTOR.
13. FREE STANDING NEMA 4X STAINLESS STEEL ENCLOSURE WITH TWO DOORS AND BACK PANEL DIMENSIONS AS NECESSARY, AND PER NEC.
14. PHOTO ELECTRIC SWITCH INSTALL BOTTOM OF PE SWITCH ABOVE TOP CABINET.
15. HANDS-OFF AUTOMATIC SELECTOR SWITCH.
16. MAIN CIRCUIT BREAKER 60A, 2-POLE, 240V

LOAD CENTER	CKT #	AMPS	POLE
A	1	10	1
		10	4
		10	6
	2	10	8
		10	10
		10	12
		10	14
	3	10	2
		10	3
		10	5
		10	7
	4	10	9
		10	11
		10	13

CIRCUIT DETAILS



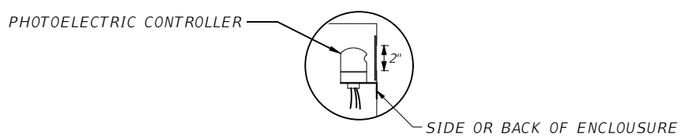
LOAD CENTER SCHEMATIC DIAGRAM
N.T.S.



FRONT VIEW
N.T.S.

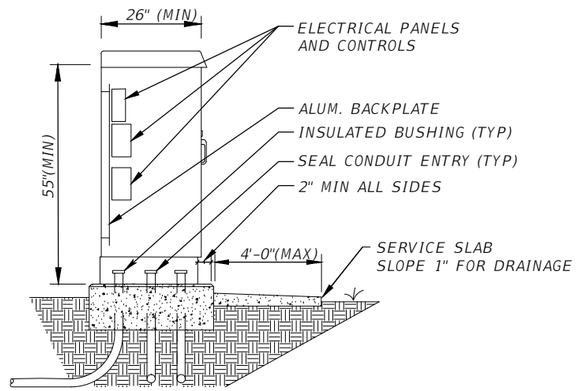
GENERAL NOTES

1. CABINET SHALL BE GROUNDED PER NEC AND FDOT STANDARDS AND DETAILED IN THE PLANS.
2. STUB-OUT ONE (1) SPARE 2" PVC CONDUIT BELOW GRADE AND BEYOND CONCRETE BASE.
   CAP ENDS AND INDICATE LOCATION OF STUB-OUT INSIDE CABINET



CUT A 2" HOLE IN THE SIDE OF THE LIGHTING CONTROL PANEL ENCLOSURE FOR THE OPERATION AND MOUNTING OF THE P.E. CONTROLLER. USE PLEXIGLASS AND A CLEAR SILICONE SEALANT TO COVER HOLE, INSTALL P.E. CONTROLLER.

PHOTO ELECTRIC CONTROLLER DETAIL
N.T.S.



SIDE VIEW

LOAD CENTER ENCLOSURE DETAIL
N.T.S.

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REVISIONS			
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CERTIFICATE OF AUTHORIZATION 9227

THE CITY OF DAYTONA BEACH, FLORIDA

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
MLK BLVD.	VOLUSIA	

LOAD CENTER DETAILS

SHEET NO. RL-12

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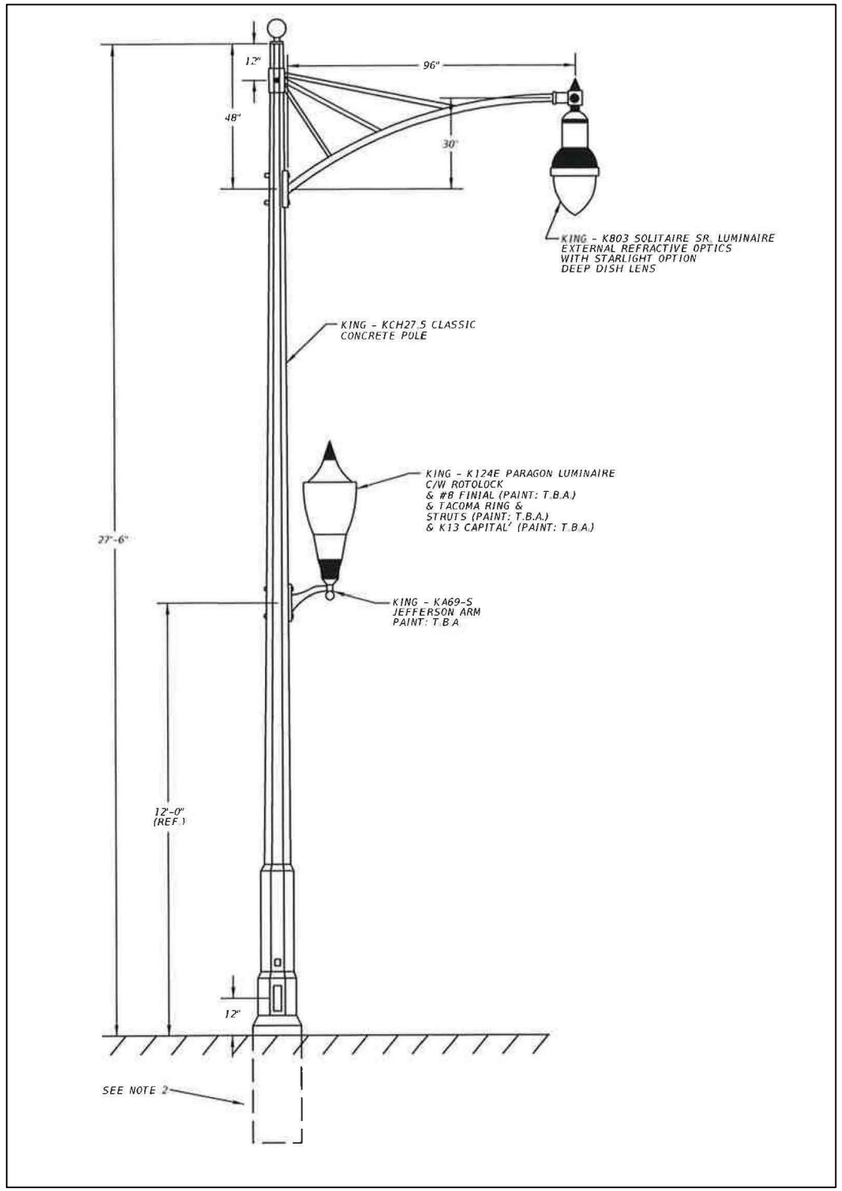
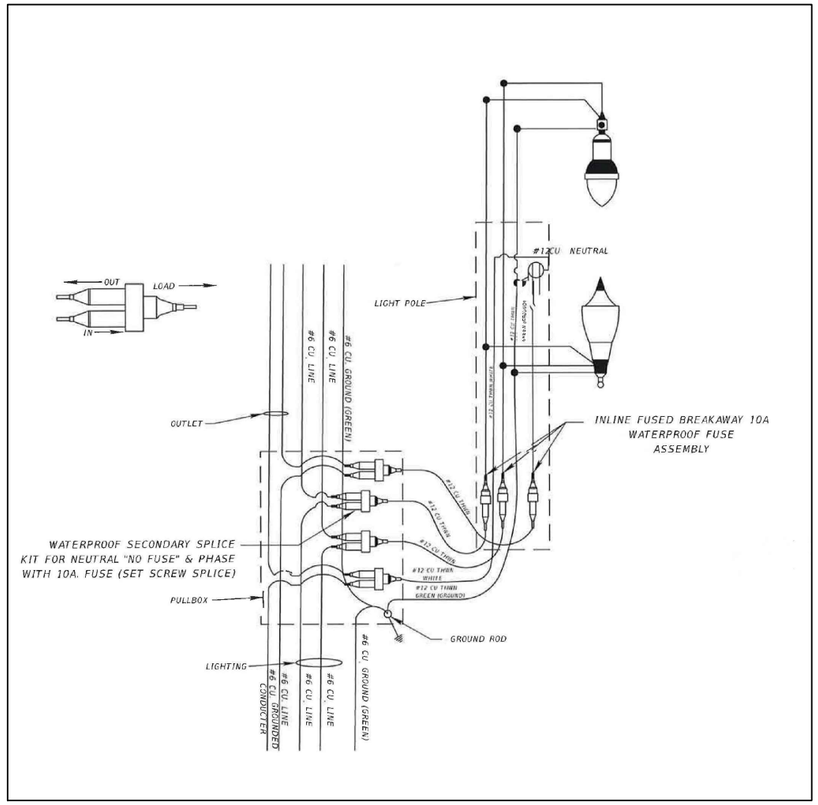


TYPICAL POLE DETAIL



TYPICAL WIRING DETAIL

NOTES:

1. ALL POLES SHALL BE SUBMITTED FOR APPROVAL BY THE CITY BEFORE ORDERING.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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ORMOND BEACH, FLORIDA 32174
PH: 386.257.2571 FAX: 386.257.6996
CERTIFICATE OF AUTHORIZATION 9227

THE CITY OF
DAYTONA BEACH, FLORIDA

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
MLK BLVD.	VOLUSIA	

POLE & WIRING DETAILS

SHEET NO.
RL-13

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23-004, F.A.C.

EXISTING FIBER OR JUMPER
PROPOSED FIBER OR JUMPER
SPLICE
UNTERMINATED FIBER
EXISTING LOOSE BUFFER TUBE
PROPOSED LOOSE BUFFER TUBE

144 SM FOC TRUNK-ORANGE AVENUE (WEST) TO KEECH STREET

EXISTING 48 SM FIBER OPTIC CABLE

EXISTING 144 SM FIBER OPTIC CABLE

PROPOSED 48 SM FIBER OPTIC CABLE

SM BLUE, SM ORANGE, SM GREEN, SM BROWN, SM SLATE, SM WHITE, SM RED, SM BLACK, SM YELLOW, SM VIOLET, SM ROSE, SM AQUA

BLUE, ORANGE, GREEN, BROWN, SLATE, WHITE, RED, BLACK, YELLOW, VIOLET, ROSE, AQUA

48 SM FOC -TO SPLICE ENCLOSURE #3

48 SM FOC -TO US 92 AT MLK JR BLVD SPLICE ENCLOSURE (SHEET RL-15)

ORANGE AVE AT MLK JR. BLVD SIGNAL CABINET

PATCH PANEL
BLUE BUFFER
SC ADAPTERS
A R V Y L R W S B G O B
Q O I L K D H L R R R L

EXISTING 12 SM FIBER OPTIC DROP CABLE

EXISTING ORANGE AVE AT MLK JR BLVD SPLICE VAULT

EXISTING 144 SM FIBER OPTIC CABLE

144 SM FOC TRUNK-ORANGE AVENUE (EAST) TO SEGREAVE STREET

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23-004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LTG Engineering & Planning
GIL RAMIREZ
P.E. No. 62600
1970 DAIRY ROAD
WEST MELBOURNE FLORIDA, 32904
PH: 321.499.4679 FAX: 321.499.4680
CERTIFICATE OF AUTHORIZATION 9227

THE CITY OF DAYTONA BEACH, FLORIDA

ROAD NO.	COUNTY	PROJECT ID
MLK BLVD.	VOLUSIA	2015-085

SPLICE DIAGRAM (1)

SHEET NO. RL-14

JONATHAN 2/4/2019 10:43:15 AM X:\jobs\4500\4522.00\cad\45220000001\Lighting\SPDTIT01.dwg

EXISTING FIBER OR JUMPER
PROPOSED FIBER OR JUMPER
SPLICE
UNTERMINATED FIBER
EXISTING LOOSE BUFFER TUBE
PROPOSED LOOSE BUFFER TUBE

72 SM FOC TRUNK- US 92 (EAST) TO LINCOLN BLVD

SM BLUE
SM ORANGE
SM GREEN
SM BROWN
SM SLATE
SM WHITE

BLUE ORANGE GREEN BROWN SLATE WHITE RED BLACK YELLOW VIOLET ROSE AQUA

EXISTING 72 SM FIBER OPTIC CABLE

EXISTING 18 SM FIBER OPTIC CABLE

PROPOSED 48 SM FIBER OPTIC CABLE

48 SM FOC -TO US 92 AT MLK JR BLVD SPLICE ENCLOSURE (SHEET RL-14)

SM BLUE
SM ORANGE
SM GREEN
SM BROWN

BLUE ORANGE GREEN BROWN SLATE WHITE RED BLACK YELLOW VIOLET ROSE AQUA

PATCH PANEL
W S B G O B
H L R R R L
BLUE BUFFER SC ADAPTERS
ORANGE BUFFER SC ADAPTERS
GREEN BUFFER SC ADAPTERS

US 92 AT MLK JR.
SIGNAL CABINET

EXISTING US 92 AT
MLK JR BLVD SPLICE VAULT

EXISTING 72 SM FIBER OPTIC CABLE

72 SM FOC TRUNK- US 92 (WEST) TO RAIL ROAD CROSSING

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23-004, F.A.C.

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

LTG Engineering & Planning
GIL RAMIREZ
P.E. No. 62600
1970 DAIRY ROAD
WEST MELBOURNE FLORIDA, 32904
PH: 321.499.4679 FAX: 321.499.4680
CERTIFICATE OF AUTHORIZATION 9227

THE CITY OF
DAYTONA BEACH, FLORIDA

ROAD NO.	COUNTY	PROJECT ID
MLK BLVD.	VOLUSIA	2015-085

SPLICE DIAGRAM (2)

SHEET NO. RL-15

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