

INDEX OF SHEETS

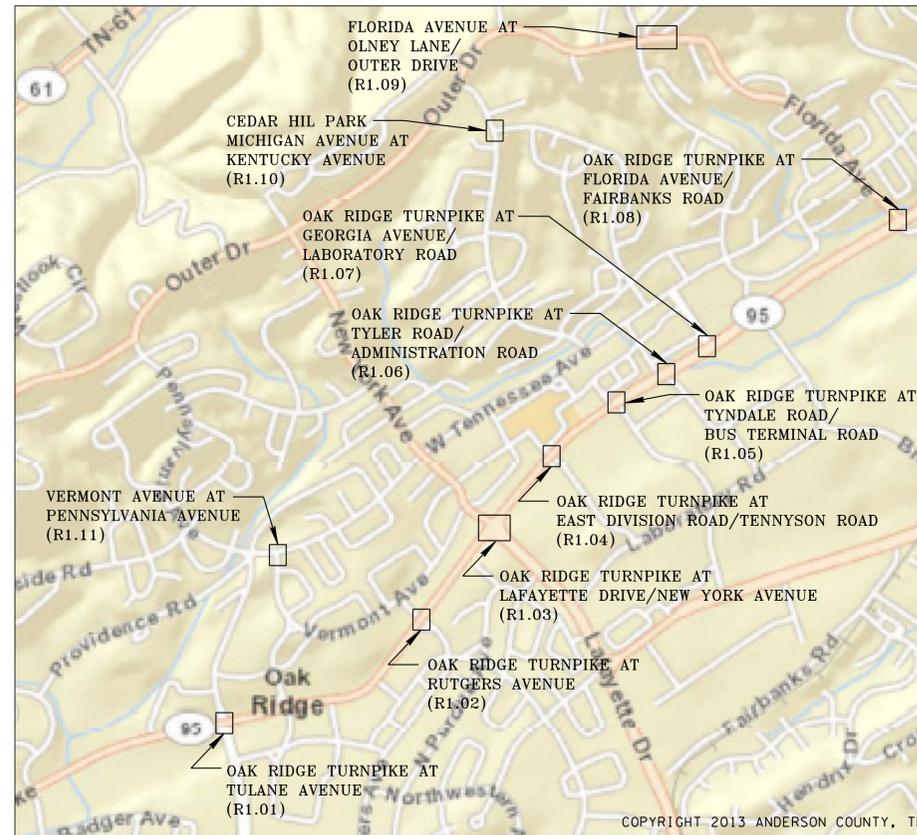
SHEET NAME	SHEET NO.
TITLE SHEET	RO.00
TYPICAL SECTIONS, DETAILS & ESTIMATED CONSTRUCTION QUANTITIES	RO.01
GENERAL NOTES	RO.02
PRESENT AND PROPOSED LAYOUT SHEETS:	
OAK RIDGE TURNPIKE AT TULANE AVENUE	R1.01
OAK RIDGE TURNPIKE AT RUTGERS AVENUE	R1.02
OAK RIDGE TURNPIKE AT LAFAYETTE DRIVE / NEW YORK AVENUE	R1.03
OAK RIDGE TURNPIKE AT EAST DIVISION ROAD / TENNYSON ROAD	R1.04
OAK RIDGE TURNPIKE AT TYNDALE ROAD / BUS TERMINAL ROAD	R1.05
OAK RIDGE TURNPIKE AT TYLER ROAD / ADMINISTRATION ROAD	R1.06
OAK RIDGE TURNPIKE AT GEORGIA AVENUE / LABORATORY ROAD	R1.07
OAK RIDGE TURNPIKE AT FLORIDA AVENUE / FAIRBANKS ROAD	R1.08
FLORIDA AVENUE AT OLNEY LANE / OUTER DRIVE	R1.09
CEDAR HILL PARK	R1.10
VERMONT AVENUE AT PENNSYLVANIA AVENUE	R1.11



OAK RIDGE PEDESTRIAN IMPROVEMENTS PROJECT

TDOT STANDARD ROADWAY AND STRUCTURE DRAWINGS

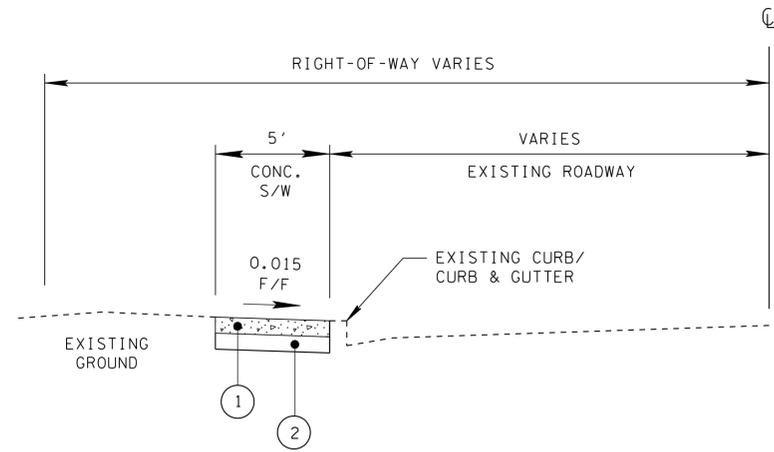
DRAWING NO.	CURRENT REV. DATE	TITLE
<u>ROADWAY DESIGN STANDARDS</u>		
RD-A-1	12-18-99	STANDARD ABBREVIATIONS
RD-L-1	10-26-94	STANDARD LEGEND
RD-L-3	04-15-04	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING
RD-L-4	04-15-04	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING
<u>ROADWAY AND PAVEMENT APPURTENANCES</u>		
RP-NMC-10	07-29-03	STANDARD VERTICAL (NONMOUNTABLE) CONCRETE CURBS AND GUTTERS
RP-NMC-11	02-28-02	STANDARD VERTICAL (NONMOUNTABLE) CONCRETE CURBS AND GUTTERS
RP-H-3	05-08-13	CURB RAMP AND TRUNCATED DOME SURFACE DETAIL
RP-H-4	01-15-13	PERPENDICULAR CURB RAMP
RP-H-5	01-15-13	PARALLEL CURB RAMP
RP-H-6	04-13-11	MEDIAN CROSSING
RP-H-7	05-08-13	PERPENDICULAR CURB RAMP 20' THRU 75' RADIUS
RP-H-8	05-08-13	PERPENDICULAR CURB RAMP 20' THRU 60' RADIUS
RP-H-9	05-08-13	PARALLEL CURB RAMP FOR 20' THRU 60' RADIUS
RP-S-7	05-07-13	DETAILS FOR STANDARD CONCRETE SIDEWALKS
<u>TRAFFIC CONTROL APPURTENANCES</u>		
T-M-3	09-19-91	MARKING STANDARDS FOR TRAFFIC ISLANDS, MEDIANS AND PAVED SHOULDERS ON CONVENTIONAL ROADS
T-M-4	11-01-11	STANDARD INTERSECTION PAVEMENT MARKINGS
T-S-10	04-04-12	STANDARD MOUNTING DETAILS, FLAT SHEET SIGNS ALUMINUM-STEEL DESIGN
T-S-16	11-01-11	GROUND MOUNTED ROADSIDE SIGN AND DETAILS
T-S-17	10-26-96	STANDARD GROUND MOUNTED SIGN USING PERFORATED/KNOCKOUT SQUARE TUBE
T-S-19	07-29-91	STANDARD MEMBERS BENDAWAY SIGN SUPPORTS STEEL DESIGN
T-S-20	11-01-11	SIGN DETAILS
T-S-23C		BREAKAWAY U-POST SIGN SUPPORTS
T-SG-2	07-29-04	LOOP LEAD-INS, CONDUIT AND PULL BOXES
T-SG-3A		ALTERNATE DETECTION DETAILS
T-SG-5	07-29-04	CONTROLLER CABINET DETAILS
T-SG-7	11-01-11	SIGNAL HEAD ASSEMBLIES AND PEDESTRIAN PUSH BUTTON SIGNS
T-SG-9	11-16-07	DETAILS OF CANTILEVER SIGNAL SUPPORT
T-SG-9A		MISCELLANEOUS SIGNAL DETAILS
T-SG-10	05-06-13	MAST ARM POLE AND STRAIN POLES FOUNDATION DETAILS
T-SG-12	11-01-11	TYPICAL WIRING FOR SIGNAL HEADS AND DETECTION LOOPS
T-FAB-1	05-27-97	FLASHING YELLOW ARROW BOARD
T-WZ-10	04-02-12	ADVANCE ROAD WORK SIGNING ON HIGHWAYS AND FREEWAYS
T-WZ-11	03-13-09	ONE LANE CLOSURE DETAIL ON DIVIDED HIGHWAYS
T-WZ-40	04-02-12	RIGHT LANE CLOSURE AT NEAR SIDE OF INTERSECTIONS
T-L-1SA	07-29-04	STANDARD LIGHTING DETAILS FOR SINGLE ARM SUPPORTS
T-L-4	05-25-11	STANDARD LIGHTING DETAILS CONDUIT, CABLE INSTALLATION
<u>EROSION PREVENTION AND SEDIMENT CONTROL</u>		
EL-W-2	05-27-01	STANDARD GRAVITY-TYPE RETAINING WALLS



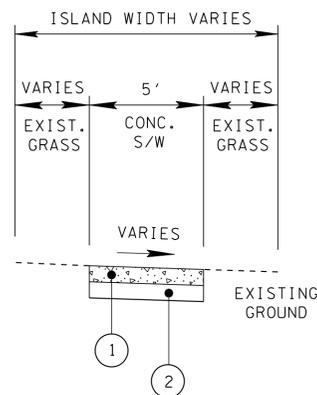
TOM BEEHAN - MAYOR
MARK S. WATSON - CITY MANAGER

CITY OF OAK RIDGE PUBLIC WORKS DEPARTMENT
100 WOODBURY LANE
OAK RIDGE, TENNESSEE 37830

REVISIONS		DATE
Cannon & Cannon, Inc. Consulting Engineers • Field Surveyors 8550 Kingston Pike Knoxville, Tennessee 37919 Telephone: (865) 670-8555 • Fax: (865) 670-8866 www.cannon-cannon.com		
CLIENT: CITY OF OAK RIDGE		
PROJECT: OAK RIDGE PEDESTRIAN IMPROVEMENTS PROJECT		
TITLE SHEET		
	CCI PROJECT NO.	368-0017
	DATE	08-07-13
	P.M.	JCE
	DRAWN	TRANSPORTATION
	O.C.	JCE
R0.00		



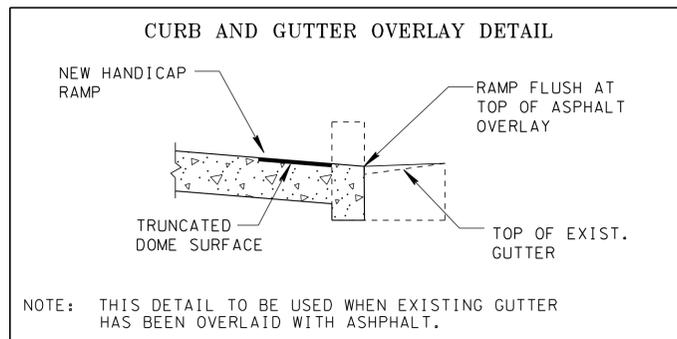
TYPICAL SECTION NO. 1
SIDEWALK BEHIND EXISTING CURB



TYPICAL SECTION NO. 2
SIDEWALK IN GRASS ISLAND

PAVEMENT SCHEDULE

- ① 4" CONCRETE SIDEWALK
TDOT SPEC. SECTION 501 - PORTLAND CEMENT CONCRETE PAVEMENT
- ② MINERAL AGGREGATE BASE @ 4" DEPTH
TDOT SPEC. SECTION 303 - MINERAL AGGREGATE BASE, TYPE A, GRADING D



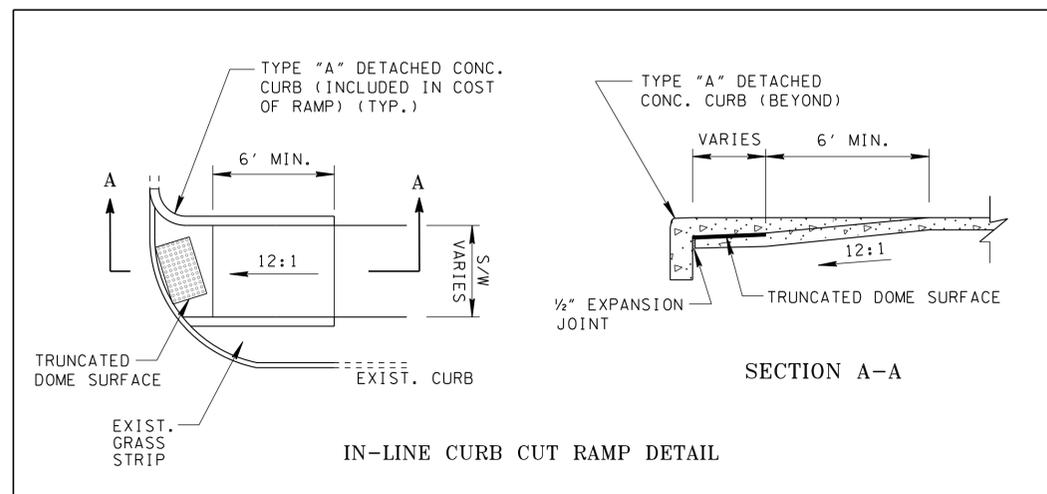
PEDESTRIAN SIGNAL HEAD ASSEMBLY

MIN. 10" SYMBOLS MIN. 8" COUNTDOWN DISPLAY

ALL PEDESTRIAN SIGNAL HEADS SHALL HAVE BLACK COLOR HOUSINGS AND LED TYPE DISPLAYS CONFORMING TO CURRENT ITE STANDARDS, WITH WALK/DON'T WALK SYMBOLS DISPLAYED IN THE SAME FACE WITH COUNTDOWN TIMER. THE SYMBOLS SHALL BE FULLY POPULATED, GE BRAND. PED HEAD MOUNTING ON NEW STRAIN POLES SHALL UTILIZE DRILLED ATTACHMENT (BAND MOUNTING NOT ALLOWED).

R10-3e(R) R10-3e(L)

PEDESTRIAN SIGNAL HEAD ASSEMBLY INCLUDES PUSHBUTTON AND R10-3e SIGN PANEL. PUSHBUTTON SHALL BE CAMPBELL COMPANY MODEL 4 EVR TA.



ESTIMATED CONSTRUCTION QUANTITIES

ITEM NO.	DESCRIPTION	QTY.	UNIT
(1) 105-01	CONSTRUCTION STAKES, LINES AND GRADES	1	LS
201-01	CLEARING AND GRUBBING	1	LS
(2) 202-01	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	1	LS
209-01.10	EROSION AND SILTATION CONTROL	1	LS
303-01	MINERAL AGGREGATE, TYPE ABASE, GRADING D	80	TON
407-02.15	ASPHALT PAVEMENT REPAIR	1	LS
(3) 604-07.01	RETAINING WALL (CONCRETE GRAVITY)	36	SF
701-01.01	CONCRETE SIDEWALK (4')	530	SF
(4) 701-02.03	CONCRETE HANDICAP RAMP	2400	SF
(4) 702-04	CONCRETE COMBINED CURB & GUTTER (MATCH EXISTING)	200	LF
(4) 702-05	CONCRETE CURB (MATCH EXISTING)	350	LF
(5) 712-01	TRAFFIC CONTROL	1	LS
(6) 713-15	REMOVAL OF SIGNS, POSTS AND FOOTINGS	1	LS
713-15.02	REMOVAL & RELOCATION OF SIGN & SUPPORT	1	EACH
(7) 713-16.20	SIGNS (R1-5)	3	EACH
(7) 713-16.21	SIGNS (W11-2 W/W16-7P)	6	EACH
(7) 713-16.22	SIGNS (W11-2 W/W16-9P)	5	EACH
(7) 713-16.23	SIGNS (W15-1 W/W13-1P)	1	EACH
(7) 713-16.24	SIGNS (W15-1 W/W13-1P - SIGN PANEL ONLY)	1	EACH
(9) 714-01.36	ROADWAY LIGHTING	1	LS
716-02.05	PLASTIC PAVEMENT MARKING (STOP LINE)	210	LF
716-02.08	PLASTIC PAVEMENT MARKING (8" DOTTED LINE)	130	LF
716-02.23	PLASTIC PAVEMENT MARKING (12IN BARRIER LINE)	100	LF
716-02.35	PLASTIC PAVEMENT MARKING (7' LONGITUDINAL CROSS WALK)	320	LF
716-02.36	PLASTIC PAVEMENT MARKING (8' LONGITUDINAL CROSS WALK)	1350	LF
716-04.12	PLASTIC PAVEMENT MARKING (YIELD LINE)	54	SF
716-08.01	REMOVAL OF PAVEMENT MARKING (LINE)	200	LF
716-08.05	REMOVAL OF PAVEMENT MARKING (STOP LINE)	110	LF
716-10.30	TRUNCATED DOME DETECTABLE WARNING MAT - NEW RAMP	200	SF
(10) 716-10.31	TRUNCATED DOME DETECTABLE WARNING MAT - EXIST. RAMP	232	SF
717-01	MOBILIZATION	1	LS
(11) 730-01.02	REMOVAL OF SIGNAL EQUIPMENT	1	LS
730-02.09	SIGNAL HEAD ASSEMBLY (130 WITH BACKPLATE)	15	EACH
(12) 730-02.17	SIGNAL HEAD ASSEMBLY (150A2H WITH BACKPLATE)	6	EACH
730-03.21	INSTALL PULL BOX (TYPE B)	13	EACH
730-08.01	SIGNAL CABLE-3 CONDUCTOR	1300	LF
730-08.02	SIGNAL CABLE-5 CONDUCTOR	3300	LF
730-08.03	SIGNAL CABLE-7 CONDUCTOR	5000	LF
730-08.04	SIGNAL CABLE-9 CONDUCTOR	500	LF
730-12.02	CONDUIT 3" DIAMETER (PVC)	355	LF
730-12.03	CONDUIT 3" DIAMETER (PVC)	190	LF
730-12.13	CONDUIT 2" DIAMETER (JACK AND BORE)	2230	LF
(13) 730-13.08	VEHICLE DETECTOR (INTERSECTION RADAR DETECTION)	2	EACH
730-14.01	SHIELDED DETECTOR CABLE	1000	LF
730-15.11	MODIFY CABINET (MODIFY FOR PED. SIGNALS)	5	EACH
(14) 730-23.30	PEDESTAL POLE (PEDESTRIAN - NEW)	5	EACH
(15) 730-23.31	PEDESTAL POLE (PEDESTRIAN - REPLACE EXISTING)	8	EACH
(16) 730-23.96	CANTILEVER SIGNAL SUPPORT (1 ARM @ 50')	1	EACH
(14) 730-26.06	PEDESTRIAN PUSHBUTTON POST	1	EACH
730-26.05	COUNTDOWN PEDESTRIAN SIGNAL	44	EACH
730-26.09	PEDESTRIAN PUSHBUTTON WITH 15IN SIGN	46	EACH
(17) 801-01	SEEDING (WITH STRAW MULCH)	2000	SY

FOOTNOTES:

- (1) ITEM INCLUDES STRIPPING AND STOCKPILING OF TOPSOIL. CITY WILL PROVIDE A SITE FOR STOCKPILING TOPSOIL.
- (2) ITEM INCLUDES NECESSARY REMOVAL AND DISPOSAL OF ASPHALT AND CONCRETE PAVEMENTS.
- (3) ITEM INCLUDES ALL CONCRETE, BACKFILL, PIPE, AND INCIDENTALS NECESSARY FOR COMPLETE INSTALLATION OF CONCRETE GRAVITY RETAINING WALL. QUANTITIES FOR SURFACE AREA OF FACE OF WALL ABOVE THE GROUND LINE.
- (4) ITEM INCLUDES ANY SAWCUTTING AND GRADING (CUT/FILL) REQUIRED.
- (5) ITEM INCLUDES ALL TRAFFIC CONTROL REQUIRED FOR COMPLIANCE WITH MUTCD FOR VEHICULAR AND PEDESTRIAN TRAFFIC.
- (6) ITEM INCLUDES TWO YIELD SIGNS AND TWO PEDESTRIAN WARNING SIGNS AND PLAQUES.
- (7) ITEM INCLUDES SIGN PANELS, "U" SECTION STEEL POSTS, AND INCIDENTALS NECESSARY FOR COMPLETE INSTALLATION.
- (8) ITEM INCLUDES REMOVAL OF EXISTING SIGN PANELS AND INSTALLATION OF NEW SIGN PANELS.
- (9) ITEM INCLUDES REMOVAL OF EXISTING STREET LIGHT AND INSTALLATION OF NEW STREET LIGHT AT TURNPIKE/TURNPIKE INTERSECTION AND ALL WIRING, CONDUIT, AND INCIDENTALS NECESSARY FOR FULLY FUNCTIONAL LUMINAIRE ON NEW SIGNAL POLE.
- (10) ITEM INCLUDES PREPARATION OF CONCRETE SURFACE AND ADHESIVE APPLICATION AND ANY CAULKING AS REQUIRED BY THE CITY.
- (11) ITEM INCLUDES REMOVAL OF ALL MAST ARMS, VEHICULAR SIGNAL HEADS, PEDESTRIAN PEDESTAL POLES, PEDESTRIAN SIGNAL HEADS, PEDESTRIAN PUSHBUTTONS, PEDESTRIAN PUSHBUTTON SIGNS, AND ASSOCIATED CONTENTS AS SHOWN ON THE PLANS.
- (12) BOXES SHALL BE QUARTZITE WITH "TRAFFIC SIGNAL" STAMPED ON LID.
- (13) RADAR DETECTOR SHALL BE WAVETRONIX BRAND. ITEM INCLUDES ALL DETECTOR UNITS, WIRING, AND INCIDENTALS REQUIRED FOR FULLY FUNCTIONAL INTERSECTION DETECTION AS SHOWN IN THE PLANS.
- (14) ITEM INCLUDES PEDESTAL POLE AND FOUNDATION.
- (15) ITEM INCLUDES NEW PEDESTAL POLE TO BE PLACED ON EXISTING FOUNDATION.
- (16) ITEM INCLUDES CANTILEVER SIGNAL SUPPORT, FOUNDATION AND POLE EXTENSION NEEDED FOR LUMINAIRE ARM ATTACHMENT.
- (17) ITEM INCLUDES TOPSOIL, FERTILIZER, AND WATER AS REQUIRED.

* QUANTITIES MAY BE INCREASED OR DECREASED AS DIRECTED BY THE ENGINEER.

MODIFIED PEDESTRIAN SIGNAL DETAIL AND QUANTITIES		09-11-13
REVISIONS		DATE
Cannon & Cannon, Inc. Consulting Engineers • Field Surveyors 8550 Kingston Pike Knoxville, Tennessee 37919 Telephone: (865) 670-8555 • Fax: (865) 670-8866 www.cannon-cannon.com		
CLIENT: CITY OF OAK RIDGE		
PROJECT: OAK RIDGE PEDESTRIAN IMPROVEMENTS PROJECT		
TYPICAL SECTIONS, DETAILS & ESTIMATED CONSTRUCTION QUANTITIES		
	CCI PROJECT NO.	368-0017
	DATE	08-07-13
	P.M.	JCE
	DRAWN	TRANSPORTATION
	O.C.	JCE
R0.01		

GRADING

THE SITE SHALL BE CLEARED AND GRUBBED WITHIN THE LIMITS OF EXCAVATION. COMPLETELY DISPOSE OF ALL MATERIALS RESULTING FROM CLEARING AND GRUBBING OFF-SITE.

ALL TREE STUMPS, BOULDERS, AND OTHER OBSTRUCTIONS SHALL BE REMOVED TO A DEPTH OF 2 FT BELOW THE SUBGRADE. ROCK SHALL BE SCARIFIED TO A DEPTH OF 1 FT BELOW SUBGRADE.

STRIP TOPSOIL TO A MINIMUM DEPTH OF 6 INCHES AND TEMPORARILY STOCKPILE EXCAVATED MATERIALS. INSTALL SILT FENCE OR OTHER APPROPRIATE EROSION CONTROL STRUCTURES ON THE DOWN HILL SIDE OF THE STOCKPILE.

PROOF ROLL ALL AREAS TO RECEIVE FILL. PROOF ROLL WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK USING A CRISS-CROSS PATTERN (4 PASSES MIN.). AREAS FAILING THE PROOF ROLLING SHALL BE UNDERCUT AND BACKFILLED USING AN ENGINEERED FILL OR STABILIZED BY A METHOD APPROVED BY THE PROJECT ENGINEER.

AREAS THAT EXHIBIT WEAK SOIL OR OTHERWISE UNSUITABLE CONDITIONS SHALL BE UNDERCUT TO A FIRM LEVEL OF SOIL FOLLOWED BY BACKFILLING THE UNDERCUT AREAS USING AN ENGINEERED FILL OR APPROVED STONE.

FILL MATERIAL SHALL BE SATISFACTORY MATERIAL FREE FROM ROOTS AND OTHER ORGANIC MATERIAL, FROZEN MATERIAL, AND TRASH. FILL MATERIAL SHALL ALSO BE FREE OF STONES OR OTHER MATERIAL LARGER THAN 6 IN. AND LARGER THAN 4 IN. IN THE TOP 6 IN. OF AN EMBANKMENT.

UNSATISFACTORY SOILS INCLUDE MATERIALS THAT ARE TOO WET OR TOO SOFT, EXPANSIVE SOILS (PLASTICITY INDEX GREATER THAN OR EQUAL TO 30), AND SOILS CLASSIFIED AS PT, OH, AND OL.

FILL MATERIAL SHALL BE PLACED IN LOOSE, HORIZONTAL LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS. COMPACT EACH LAYER TO AT LEAST 95% MAXIMUM DRY DENSITY. COMPACT THE UPPER 6 IN. OF FILL BENEATH PAVEMENTS AND THE UPPER 12 INCHES BENEATH BUILDING SLABS TO 100% MAXIMUM DRY DENSITY. MAINTAIN THE MOISTURE CONTENT TO WITHIN -1 TO +3 PERCENT OF THE OPTIMUM MOISTURE CONTENT.

DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS OR POND ON-SITE. PROVIDE NECESSARY MEASURES TO KEEP THE SITE FREE-DRAINING.

ANY AREA THAT IS DISTURBED OUTSIDE LIMITS OF CONSTRUCTION DURING THE LIFE OF THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

ANY DISTURBED AREA DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION OR AS ACCEPTABLE BY THE CITY OF OAK RIDGE.

EROSION PREVENTION AND SEDIMENT CONTROL

EROSION CONTROL DEVICES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE TENNESSEE EROSION AND SEDIMENT CONTROL HANDBOOK AND THE TDEC STORMWATER POLLUTION PREVENTION PLAN REQUIREMENTS.

PRE-CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED (I.E. CLEARING AND GRUBBING INITIATED) MORE THAN 10 CALENDAR DAYS PRIOR TO GRADING OR EARTH MOVING ACTIVITIES UNLESS THE AREA IS SEEDED AND/OR MULCHED OR OTHER TEMPORARY COVER IS INSTALLED.

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED CONCURRENT WITH CLEARING OPERATIONS, AND SHALL BE FUNCTIONAL PRIOR TO ANY EARTH MOVING OPERATIONS.

EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) INSPECTION, REPAIR, AND MAINTENANCE OF STRUCTURES IS TO BE PERFORMED ON A REGULAR BASIS AND SEDIMENT SHALL BE REMOVED FROM SEDIMENT CONTROL STRUCTURES WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT (50%). DURING SEDIMENT REMOVAL, THE CONTRACTOR SHALL TAKE CARE TO ENSURE THAT STRUCTURAL COMPONENTS OF EROSION PREVENTION AND SEDIMENT CONTROL STRUCTURES ARE NOT DAMAGED AND THUS MADE INEFFECTIVE. IF DAMAGE DOES OCCUR, THE CONTRACTOR SHALL REPAIR THE STRUCTURES AT THE CONTRACTOR'S OWN EXPENSE.

THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN A PROACTIVE METHOD TO PREVENT THE OFF-SITE MIGRATION OR DEPOSIT OF SEDIMENT ON ROADWAYS USED BY THE GENERAL PUBLIC. IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT THAT HAVE NOT REACHED A STREAM MUST BE REMOVED AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS (E.G., FUGITIVE SEDIMENT THAT HAS ESCAPED THE CONSTRUCTION SITE AND HAS COLLECTED IN A STREET MUST BE REMOVED SO THAT IT IS NOT SUBSEQUENTLY WASHED INTO STORM SEWERS AND STREAMS BY THE NEXT RAIN AND/OR SO THAT IT DOES NOT POSE A SAFETY HAZARD TO USERS OF PUBLIC STREETS). ARRANGEMENTS CONCERNING REMOVAL OF SEDIMENT ON ADJOINING PROPERTY MUST BE SETTLED WITH THE ADJOINING PROPERTY OWNER BEFORE REMOVAL OF SEDIMENT.

SOIL MATERIALS MUST BE PREVENTED FROM ENTERING WATERS OF THE STATE/U.S. EROSION PREVENTION AND SEDIMENT CONTROL MEASURES TO PROTECT WATER QUALITY MUST BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.

INSPECTION OF EROSION PREVENTION AND SEDIMENT CONTROL MEASURES SHALL BE DONE BEFORE ANTICIPATED STORM EVENTS (OR SERIES OF STORM EVENTS SUCH AS INTERMITTENT SHOWERS OVER ONE OR MORE DAYS), DURING OR WITHIN TWENTY-FOUR (24) HOURS AFTER THE END OF A STORM EVENT OF 0.5 INCH OR GREATER, AND AT LEAST TWICE PER CALENDAR WEEK AT LEAST 72 HOURS APART. A CALENDAR WEEK IS DEFINED AS SUNDAY THROUGH SATURDAY. AN ANTICIPATED STORM EVENT IS DEFINED AS A 50% OR GREATER CHANCE OF RAINFALL ACCORDING TO A DOCUMENTED LOCAL OR NATIONAL SOURCE (I.E., NOAA, WEATHER.COM, LOCAL NEWSPAPER).

OUTFALL POINTS SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO SURROUNDING WATERS. WHERE DISCHARGE LOCATIONS ARE INACCESSIBLE, NEARBY DOWNSTREAM LOCATIONS SHALL BE INSPECTED. LOCATIONS WHERE VEHICLES ENTER AND EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFF-SITE ROADWAY SEDIMENT TRACKING.

UPON CONCLUSION OF THE INSPECTIONS, EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES FOUND TO BE INEFFECTIVE SHALL BE REPAIRED, REPLACED, OR MODIFIED BEFORE THE NEXT RAIN EVENT, IF POSSIBLE, BUT IN NO CASE MORE THAN 24 HOURS AFTER THE INSPECTION OR WHEN THE CONDITION IS IDENTIFIED. IF THE REPAIR, REPLACEMENT OR MODIFICATION IS NOT PRACTICAL WITHIN THE TIMEFRAME, WRITTEN DOCUMENTATION MUST BE PROVIDED IN THE FIELD BOOK AND AN ESTIMATED REPAIR, REPLACEMENT OR MODIFICATION SCHEDULE SHALL BE DOCUMENTED WITHIN 24 HOURS AFTER IDENTIFICATION.

THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN A PROACTIVE METHOD TO PREVENT LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION WASTES FROM ENTERING WATERS OF THE STATE/ U.S.

THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO ENSURE THAT PETROLEUM PRODUCTS OR OTHER CHEMICAL POLLUTANTS ARE PREVENTED FROM ENTERING WATERS OF THE STATE/U.S. ALL EQUIPMENT REFUELING, SERVICING, AND STAGING AREAS SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL LAWS, RULES, REGULATIONS, AND ORDINANCES, INCLUDING THOSE OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA). APPROPRIATE CONTAINMENT MEASURES FOR THESE AREAS SHALL BE USED. ALL SPILLS MUST BE REPORTED TO THE APPROPRIATE AGENCY, AND MEASURES SHALL BE TAKEN IMMEDIATELY TO PREVENT THE POLLUTION OF WATERS OF THE STATE/U.S., INCLUDING GROUNDWATER, SHOULD A SPILL OCCUR.

SEEDING

APPLY TEMPORARY SEEDING WHENEVER GRADING OPERATIONS ARE HALTED FOR OVER 14 DAYS AND FINAL GRADING OF EXPOSED SURFACE IS TO BE COMPLETED WITHIN ONE YEAR. APPLY TEMPORARY SEEDING TO ALL SOIL STOCKPILES.

SEEDING SHALL BE DROUGHT TOLERANT, HYBRID KENTUCKY 31 (JAGUAR, LANCER, REBEL II, FALCON II, ETC.). SEED AT A RATE OF 6-8 LBS./1000 S.F. USE A SLOW RELEASE STARTER FERTILIZER WITH 1 LBS/1000 S.F. NITROGEN. IF GRADING IS PERFORMED DURING THE WINTER MONTHS, SEED MIXTURE SHALL BE SUPPLEMENTED WITH A WINTER RYE OR OTHER APPROPRIATE MIXTURE TO ASSURE STABILIZATION DURING THE WINTER SEASON.

A 3-INCH LAYER OF TOPSOIL SHALL BE PLACED OVER THE AREAS TO BE SEEDED.

UTILITIES

THE LOCATIONS OF UTILITIES AND UNDERGROUND STRUCTURES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY AND NOT ALL HAVE BEEN SHOWN. THE INSTALLER SHALL COORDINATE WITH UTILITY AND PROPERTY OWNERS AS REQUIRED TO IDENTIFY, RELOCATE, AND PROTECT FEATURES AS NECESSARY PRIOR TO EQUIPMENT INSTALLATION. SOME UTILITIES CAN BE LOCATED BY CALLING THE TENNESSEE ONE CALL SYSTEM, INC. 1-800-351-1111.

THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER AND AROUND THE UTILITIES, THE CONTRACTOR SHALL BE REQUIRED TO FURNISH SUCH EQUIPMENT. THE COST OF PROTECTING UTILITIES FROM DAMAGE AND FURNISHING SPECIAL EQUIPMENT SHALL BE INCLUDED IN THE PRICE BID. THE COST OF ANY DAMAGE TO UTILITY FACILITIES SHALL BE BORNE BY THE INSTALLER.

PRIOR TO SUBMITTING HIS BID, THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR CONTACTING OWNERS OF ALL AFFECTED UTILITIES IN ORDER TO DETERMINE THE EXTENT TO WHICH UTILITY RELOCATIONS AND/OR ADJUSTMENTS WILL HAVE UPON THE SCHEDULE OF WORK FOR THE PROJECT, WHILE SOME WORK MAY BE REQUIRED AROUND UTILITY FACILITIES THAT WILL REMAIN IN PLACE, OTHER UTILITY FACILITIES MAY NEED TO BE ADJUSTED CONCURRENTLY WITH THE CONTRACTOR'S OPERATIONS. ADVANCE CLEAR CUTTING MAY BE REQUIRED BY THE ENGINEER AT ANY LOCATION WHERE CLEARING IS CALLED FOR IN THE SPECIFICATIONS AND CLEAR CUTTING IS NECESSARY FOR A UTILITY RELOCATION. ANY ADDITIONAL COST WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE CLEARING ITEM SPECIFIED IN THE PLANS.

THE CONTRACTOR SHALL NOTIFY EACH INDIVIDUAL UTILITY OWNER OF THEIR PLAN OF OPERATION IN THE AREA OF THE UTILITIES. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL CONTACT THE UTILITY OWNERS AND REQUEST THEM TO PROPERLY LOCATE THEIR RESPECTIVE UTILITY ON THE GROUND. THIS NOTIFICATION SHALL BE GIVEN AT LEAST THREE (3) BUSINESS DAYS PRIOR TO COMMENCEMENT OF OPERATIONS AROUND THE UTILITY IN ACCORDANCE WITH TCA 65-31-106.

THE CITY OF OAK RIDGE PUBLIC WORKS DEPARTMENT WILL COORDINATE WITH THE CONTRACTOR TO MAKE NECESSARY ADJUSTMENTS TO CITY-OWNED UTILITY VALVES AND METERS. CONTRACTOR IS NOT RESPONSIBLE FOR ADJUSTMENTS.

CONSTRUCTION AREA TRAFFIC CONTROL

NO LANE CLOSURES WILL BE PERMITTED ON WEEKDAYS DURING THE PEAK TRAFFIC HOURS OF 6AM-9AM AND 3PM-6PM. CONTACT THE CITY OF OAK RIDGE PUBLIC WORKS DEPARTMENT TO SCHEDULE LANE CLOSURES. NO ROAD CLOSURES WILL BE PERMITTED.

AT THE END OF EACH WORK DAY THE CONTRACTOR SHALL RESTORE THE ROADWAY TO SAFE DRIVEABLE CONDITIONS AND EITHER ELIMINATE ANY DIFFERENCE IN ELEVATION BETWEEN THE TRAVELED WAY AND THE CONSTRUCTION AREA OR PROTECT THE DROP-OFFS WITH TEMPORARY CONCRETE BARRIER WALL OR OTHER APPROVED DEVICES.

ADVANCED WARNING SIGNS SHALL NOT BE DISPLAYED MORE THAN FORTY-EIGHT (48) HOURS BEFORE PHYSICAL CONSTRUCTION BEGINS. SIGNS MAY BE ERECTED UP TO ONE WEEK BEFORE NEEDED, IF THE SIGN FACE IS FULLY COVERED.

IF THE CONTRACTOR MOVES OFF THE PROJECT, HE SHALL COVER OR REMOVE ALL UNNEEDED SIGNS AS DIRECTED BY THE ENGINEER. COSTS OF REMOVAL, COVERING, AND REINSTALLING SIGNS SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT ALL COSTS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR CONSTRUCTION AREA TRAFFIC CONTROL.

TRAFFIC CONTROL DEVICES SHALL NOT BE DISPLAYED OR ERECTED UNLESS RELATED CONDITIONS ARE PRESENT NECESSITATING WARNING. WHEN DEVICE USAGE IS SPORADIC, THE DEVICES SHALL BE REMOVED OR FULLY COVERED WHEN CONDITIONS NECESSITATING THEIR USE ARE NOT PRESENT.

ALL TRAFFIC CONTROL DEVICES, SIGNS, AND ACTIVITIES SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND THE TDOT STANDARD SPECIFICATIONS.

ACCESS SHALL BE MAINTAINED TO ALL PROPERTIES AT ALL TIMES FOR THE DURATION OF THE PROJECT.

TEMPORARY TRAFFIC CONTROL DEVICES AND MEASURES SHALL BE PROVIDED DURING CONSTRUCTION IN FULL COMPLIANCE WITH THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

TRAFFIC CONTROL DEVICES SHALL NOT BE DISPLAYED OR ERECTED UNLESS RELATED CONDITIONS ARE PRESENT NECESSITATING WARNING.

THE CONTRACTOR SHALL PERFORM ALL TRAFFIC SIGNAL RELATED CONSTRUCTION ACTIVITIES BETWEEN THE HOURS OF 7:30 A.M. TO 4:00 P.M. ON NON-HOLIDAY WEEKDAYS. AFTER HOUR WORK WILL BE PERMITTED ONLY WITH CITY APPROVAL.

PAVEMENT MARKING & SIGNING

ALL PAVEMENT MARKINGS ARE TO BE THERMOPLASTIC AND SHALL COMPLY WITH APPLICABLE PROVISIONS OF THE TDOT STANDARD SPECIFICATIONS SECTIONS 716 AND 918.

ALL SIGN FACES SHALL BE PRISMATIC SHEETING GRADE. ALL SIGN MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 713 OF THE TDOT STANDARD SPECIFICATIONS.

THE TOP OF THE SIGN FOOTINGS SHALL BE PLACED LEVEL WITH THE GROUND LINE.

THE EXISTING FOOTINGS ARE TO BE REMOVED 6 INCHES BELOW THE GROUND LINE.

SIGNALIZATION

EQUIPMENT AND INSTALLATION OF TRAFFIC SIGNALS SHALL COMPLY WITH THE APPLICABLE SECTIONS OF THE TDOT STANDARD SPECIFICATIONS SECTION 730, TDOT STANDARD ROADWAY AND STRUCTURE DRAWINGS (SHEETS T-SG-1 THRU T-SG-13), AND THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

THE CONTRACTOR SHALL HAVE AN IMSA LEVEL II CERTIFIED TECHNICIAN ON-SITE DURING ALL TRAFFIC SIGNAL RELATED CONSTRUCTION ACTIVITIES.

SIGNAL HEADS, WHEN VISIBLE TO DRIVERS BUT NOT OPERATIONAL, SHALL BE COMPLETELY COVERED.

POLES/PEDESTALS/POSTS SHALL BE PLACED IN ACCORDANCE WITH THE DIMENSIONS/LOCATIONS INDICATED ON PLAN. IF ANY OF THESE REQUIRE RELOCATION, CONTRACTOR SHALL COORDINATE WITH ENGINEER TO ESTABLISH LOCATIONS OF ADDITIONAL SIDEWALK OR PUSHBUTTON POSTS TO MAINTAIN ADA ACCESSIBILITY TO PUSH BUTTONS.

ALL TRAFFIC SIGNAL EQUIPMENT SHALL BE INSTALLED WITHIN THE RIGHT-OF-WAY. NO EXCEPTIONS WILL BE PERMITTED WITHOUT WRITTEN APPROVAL FROM THE CITY OF OAK RIDGE.

ALL EQUIPMENT SHALL MEET ALL NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION STANDARDS.

CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO THE CITY OF OAK RIDGE FOR APPROVAL PRIOR TO ORDERING ALL MATERIALS (INCLUDING BUT NOT LIMITED TO CONDUIT, PULLBOXES, CABLE, SIGNAL HEADS, BACKPLATES, POLES, CONTROLLER, SIGNAL MONITOR, VEHICLE DETECTORS, CONTROLLER CABINET, QUICK DISCONNECTS, SIGNAL BRACKETS, AND CONCRETE).

CONTRACTOR SHALL STAKE THE LOCATION OF POLES AND PULLBOXES PRIOR TO INSTALLATION AND SHALL CONTACT THE CITY OF OAK RIDGE FOR APPROVAL. ANY FIELD ADJUSTMENTS SHALL REQUIRE APPROVAL BY THE CITY OF OAK RIDGE.

CONTRACTOR SHALL CONTACT THE CITY OF OAK RIDGE ONE DAY PRIOR TO CONCRETE PLACEMENT AND CONDUIT PLACEMENT TO SCHEDULE INSPECTOR.

EACH POLE FOUNDATION SHALL INCLUDE AT LEAST ONE SPARE 2-INCH CONDUIT.

ALL NEW TRAFFIC SIGNAL HEADS SHALL MATCH EXISTING AND SHALL POSSESS 5-INCH LOUVERED BLACK ALUMINUM BACKPLATES AND 12-POSITION QUICK-DISCONNECT HANGERS. ALL DISPLAYS SHALL HAVE 12-INCH LENSES AND SHALL BE L.E.D. (LIGHT-EMITTING DIODE) TYPE MEETING THE CURRENT MINIMUM STANDARDS PUBLISHED BY THE INSTITUTE OF TRANSPORTATION ENGINEERS. INCANDESCENT OR SCREW-IN MODULES ARE NOT ACCEPTABLE AND COMPATIBILITY WITH CONFLICT MONITORS AND LOAD SWITCHES SHALL BE TESTED AND CONFIRMED. MANUFACTURER SHALL PROVIDE A MINIMUM FIVE YEAR WARRANTY FOR OPERATION OF THE UNIT.

ALL SIGNAL CABLE SHALL BE INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION (IMSA) APPROVED CABLE AND SHALL COMPLY WITH T.D.O.T. STANDARD SPECIFICATIONS.

PEDESTRIAN PUSHBUTTONS SHALL BE CAMPBELL COMPANY MODEL 4 EVR TA.

SALVAGEABLE EQUIPMENT SHALL BECOME THE PROPERTY OF THE CITY OF OAK RIDGE.

THE DESIGN OF TRAFFIC SIGNAL SUPPORT POLES, MAST ARMS, STRAIN POLES, ETC. SHALL BE IN CONFORMANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, CURRENT EDITION. OVERHEAD CANTILEVERED TRAFFIC SIGNAL STRUCTURES SHALL BE DESIGNED FOR FATIGUE CATEGORY 1.

PEDESTRIAN INDICATIONS SHALL MEET "ITE PTCSI PART 2".

CONDUIT UNDER EXISTING ROADWAY PAVEMENT AND PAVED DRIVEWAYS SHALL BE JACKED AND BORED INSTALLATION.

VEHICLE AND PEDESTRIAN SIGNAL DISPALYS SHALL BE DIALIGHT OR GE BRAND.

MISCELLANEOUS

THE CONTRACTOR SHALL BE REQUIRED TO REMOVE AND RESET MAILBOXES WHERE AND AS DIRECTED BY THE ENGINEER. THIS COST SHALL BE ABSORBED IN OTHER PAY ITEMS.

NOTHING IN THE GENERAL NOTES OR SPECIAL PROVISIONS SHALL RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITIES TOWARD THE SAFETY AND CONVENIENCE OF THE GENERAL PUBLIC AND THE RESIDENTS ALONG THE PROPOSED CONSTRUCTION AREA.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF EXISTING TREES WITHIN THE PROJECT LIMITS FROM DAMAGE DURING CONSTRUCTION. THIS MAY BE ACCOMPLISHED WITH HIGH VISIBILITY CONSTRUCTION FENCING OR OTHER SUITABLE MEANS.

COORDINATES ARE NAD/83 (1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00009 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

REVISIONS	DATE
 Cannon & Cannon, Inc. Consulting Engineers • Field Surveyors 8550 Kingston Pike Knoxville, Tennessee 37919 Telephone: (865) 670-8555 • Fax: (865) 670-8866 www.cannon-cannon.com	
CLIENT:	CITY OF OAK RIDGE
PROJECT:	OAK RIDGE PEDESTRIAN IMPROVEMENTS PROJECT
GENERAL NOTES	
	CCI PROJECT NO. 368-0017
	DATE 08-07-13
	P.M. JCE
	DRAWN TRANSPORTATION
	O.C. JCE
R0.02	

INTERSECTION IMPROVEMENTS SUMMARY

- INSTALL TWO PERPENDICULAR CURB CUT RAMPS AND TWO INLINE CURB CUT RAMPS.
- INSTALL FOURTEEN TRUNCATED DOME SURFACES.
- INSTALL APPROXIMATELY 50 LF OF LOWERED CONCRETE CURB AT RAMPS.
- INSTALL APPROXIMATELY 50 SF OF CONCRETE SIDEWALK IN NORTHWEST ISLAND TO CONNECT RAMP TO EXISTING SIDEWALK.
- INSTALL NINE LONGITUDINAL CROSSWALKS. WHERE CROSSWALKS EXIST, NEW CROSSWALK WIDTH SHALL MEASURE FROM OUTSIDE OF EXISTING CROSSWALK LINES. WHERE CROSSWALKS DO NOT EXIST, CROSSWALK WIDTH SHALL BE 8'.
- INSTALL YIELD BARS ON CHANNELIZED LANES IN ADVANCE OF CROSSWALKS.
- INSTALL TWO R1-5 SIGNS.
- REMOVE TWO EXISTING YIELD SIGNS AND POSTS.
- REMOVE ONE MAST ARM AND ASSOCIATED SIGNAL CONTENTS.
- REMOVE ONE LUMINAIRE ARM. CUT SIGNAL SUPPORT POLE 1' ABOVE MAST ARM AND CAP.
- INSTALL ONE SIGNAL SUPPORT, MAST ARM, AND LUMINAIRE.
- REMOVE TWO PEDESTRIAN PEDESTAL POLES AND ASSOCIATED CONTENTS.
- INSTALL TWO PEDESTRIAN PEDESTAL POLES.
- INSTALL ONE PEDESTRIAN PUSHBUTTON POST.
- REPLACE TEN VEHICULAR SIGNAL HEADS.
- INSTALL SEVEN COUNTDOWN PEDESTRIAN SIGNAL HEADS.
- REPLACE ONE PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN PEDESTRIAN SIGNAL HEAD.
- INSTALL NINE PEDESTRIAN PUSHBUTTONS WITH R10-3E SIGNS.
- REPLACE ONE PEDESTRIAN PUSHBUTTON AND SIGN WITH NEW PEDESTRIAN PUSHBUTTON AND R10-3E SIGN.
- INSTALL FIVE NEW TYPE B PULL BOXES.
- INSTALL NEW CONDUIT AND ABANDON OLD CONDUIT AS NECESSARY. SEE WIRING AND CONDUIT DIAGRAM.
- INSTALL, REMOVE, AND SPLICE SIGNAL WIRING AS NECESSARY. SEE WIRING AND CONDUIT DIAGRAM.

INSTALL PUSHBUTTON AND R10-3E SIGN ON EXISTING SIGNAL SUPPORT POLE. REMOVE LUMINAIRE ARM, MAST ARM CROSSING OAK RIDGE TURNPIKE AND ASSOCIATED SIGNAL HEADS. CUT EXCESS POLE HEIGHT AND CAP TOP OF POLE.

INSTALL SIGNAL SUPPORT POLE WITH 50' MAST ARM, LUMINAIRE ARM, POLE EXTENSION, SIGNAL HEADS, TWO COUNTDOWN PEDESTRIAN SIGNALS, TWO PUSHBUTTONS AND TWO R10-3E SIGNS

INSTALL HANDICAP RAMP WITH TRUNCATED DOME SURFACE (TYP.)

REMOVE PEDESTAL POLE

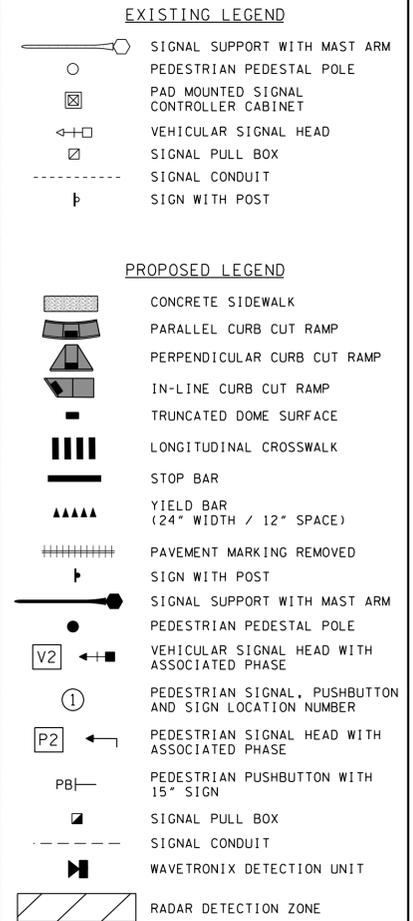
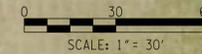
INSTALL PEDESTRIAN PEDESTAL POLE WITH TWO COUNTDOWN PEDESTRIAN SIGNALS, PUSHBUTTONS AND R10-3E SIGNS

INSTALL YIELD BARS (24" WIDTH WITH 12" SPACE) (TYP.)

INSTALL R1-5 SIGN (TYP.)

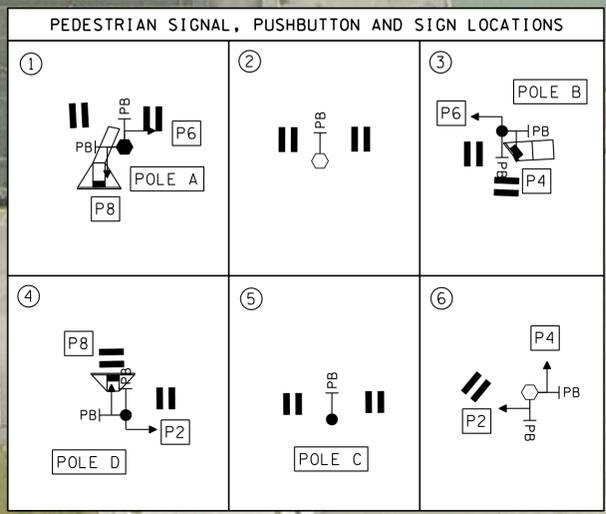
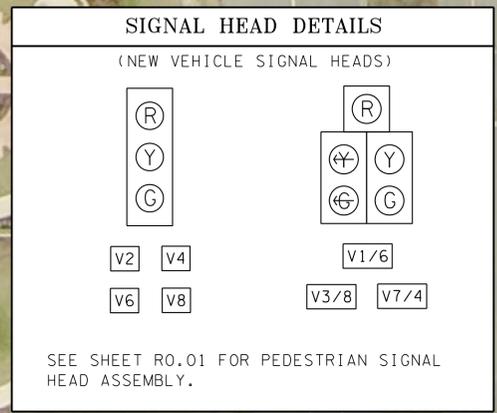
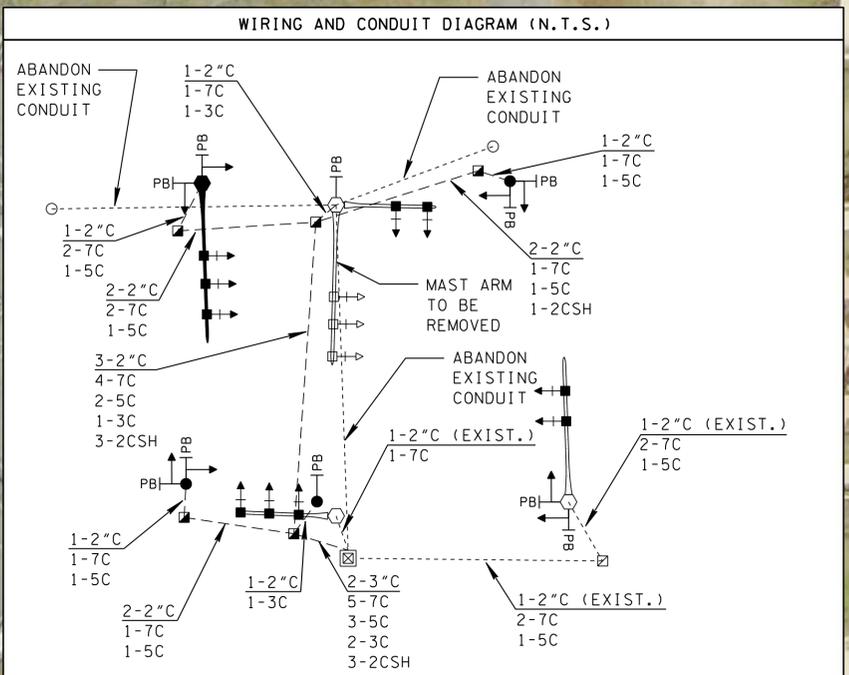
NEW POLE/POST SCHEDULE		
POLE/POST #	TYPE	FOUNDATION SIZE
A	SIGNAL SUPPORT	3 FT. DIA./12 FT. DEPTH
B	PEDESTAL POLE	2 FT. DIA./3 FT. DEPTH
C	PUSHBUTTON POST	2 FT. DIA./2 FT. DEPTH
D	PEDESTAL POLE	2 FT. DIA./3 FT. DEPTH

NOTES:
 1. SEE TDOT STD. DRAWING SHEETS T-SG-9A AND T-SG-10 FOR DETAILS OF PUSHBUTTON POST, PEDESTAL MOUNTING AND FOUNDATIONS.
 2. FOUNDATION DEPTH IS MINIMUM DEPTH BELOW SURFACE OF GROUND.
 3. SEE "PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATIONS" BOX BELOW FOR PLACEMENT DETAILS.



PEDESTRIAN SIGNAL TIMING TABLE				
PHASE	2	4	6	8
MOVEMENT	EASTBOUND	NORTHBOUND	WESTBOUND	SOUTHBOUND
WALK	7	7	7	7
FDW	31	30	28	19

NOTES:
 1. PEDESTRIAN OVERRIDE FEATURE SHALL BE ACTIVE.



MODIFIED WIRING AND CONDUIT DIAGRAM	09-11-13
REVISIONS	DATE

Cannon & Cannon, Inc.
 Consulting Engineers • Field Surveyors
 8550 Kingston Pike
 Knoxville, Tennessee 37919
 Telephone: (865) 670-8555 • Fax: (865) 670-8866
 www.cannon-cannon.com

CLIENT:
 CITY OF OAK RIDGE

PROJECT:
 OAK RIDGE PEDESTRIAN IMPROVEMENTS PROJECT

PRESENT AND PROPOSED LAYOUT
 OAK RIDGE TURNPIKE AT
 TULANE AVENUE

CCI PROJECT NO.	368-0017
DATE	08-07-13
P.M.	JCE
DRAWN	TRANSPORTATION
O.C.	JCE



R1.01

INTERSECTION IMPROVEMENTS SUMMARY

- INSTALL THREE PARALLEL CURB CUT RAMPS AND ONE PERPENDICULAR CURB CUT RAMP.
- INSTALL FIVE TRUNCATED DOME SURFACES.
- INSTALL APPROXIMATELY 60 LF OF LOWERED CONCRETE CURB AT RAMPS.
- INSTALL APPROXIMATELY 30 LF OF LOWERED COMBINED CONCRETE CURB AND GUTTER AT RAMPS.
- INSTALL APPROXIMATELY 120 SF OF CONCRETE SIDEWALK IN SOUTHWEST ISLAND.
- INSTALL FOUR LONGITUDINAL CROSSWALKS, WHERE CROSSWALKS EXIST, NEW CROSSWALK WIDTH SHALL MEASURE FROM OUTSIDE OF EXISTING CROSSWALK LINES, WHERE CROSSWALKS DO NOT EXIST, CROSSWALK WIDTH SHALL BE 8'.
- REPLACE ELEVEN VEHICULAR SIGNAL HEADS.
- INSTALL FOUR COUNTDOWN PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, AND R10-3E SIGNS.
- REPLACE FOUR PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, AND SIGNS WITH NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, AND R10-3E SIGNS.
- INSTALL NEW CONDUIT AND ABANDON OLD CONDUIT AS NECESSARY. SEE WIRING AND CONDUIT DIAGRAM.
- INSTALL, REMOVE, AND SPLICE SIGNAL WIRING AS NECESSARY. SEE WIRING AND CONDUIT DIAGRAM.

NEW POLE/POST SCHEDULE		
POLE/POST #	TYPE	FOUNDATION SIZE
A	PEDESTAL POLE	EXISTING

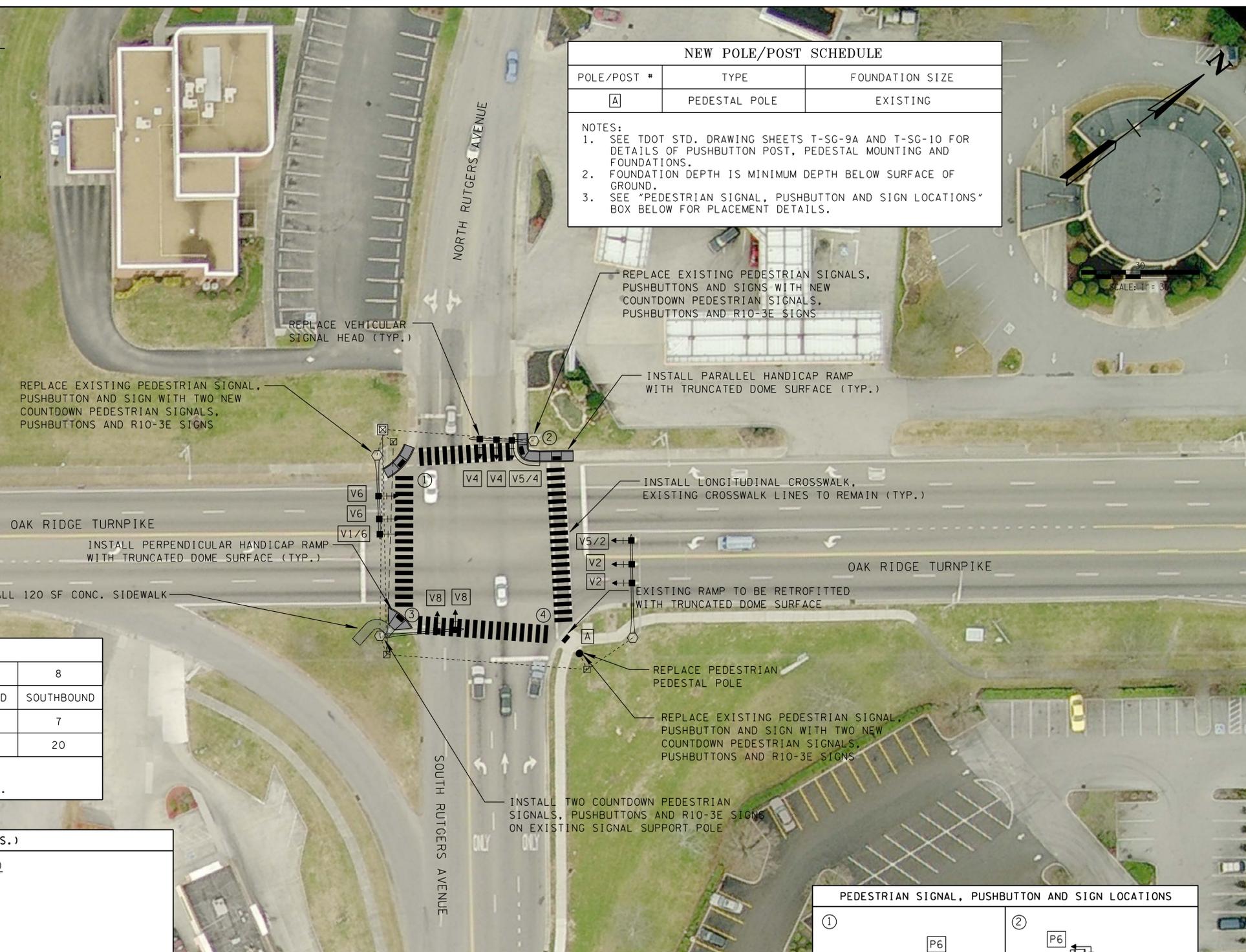
NOTES:
 1. SEE TDOT STD. DRAWING SHEETS T-SG-9A AND T-SG-10 FOR DETAILS OF PUSHBUTTON POST, PEDESTAL MOUNTING AND FOUNDATIONS.
 2. FOUNDATION DEPTH IS MINIMUM DEPTH BELOW SURFACE OF GROUND.
 3. SEE "PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATIONS" BOX BELOW FOR PLACEMENT DETAILS.

EXISTING LEGEND

- SIGNAL SUPPORT WITH MAST ARM
- PEDESTRIAN PEDESTAL POLE
- ⊠ PAD MOUNTED SIGNAL CONTROLLER CABINET
- ⊠ VEHICULAR SIGNAL HEAD
- ⊠ SIGNAL PULL BOX
- SIGNAL CONDUIT
- ⊠ SIGN WITH POST

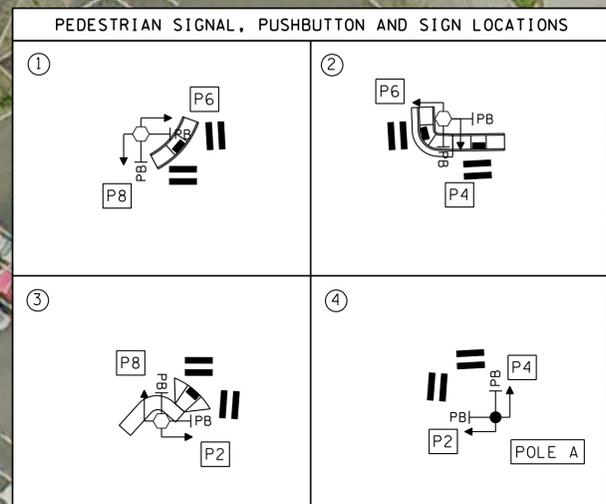
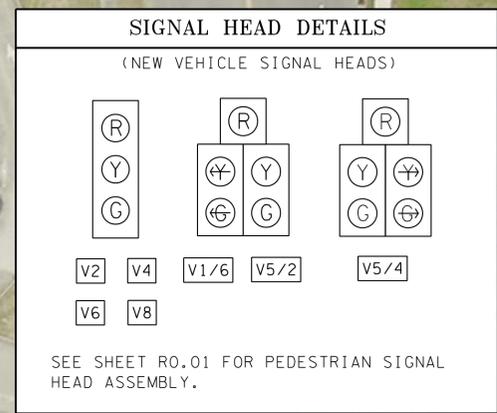
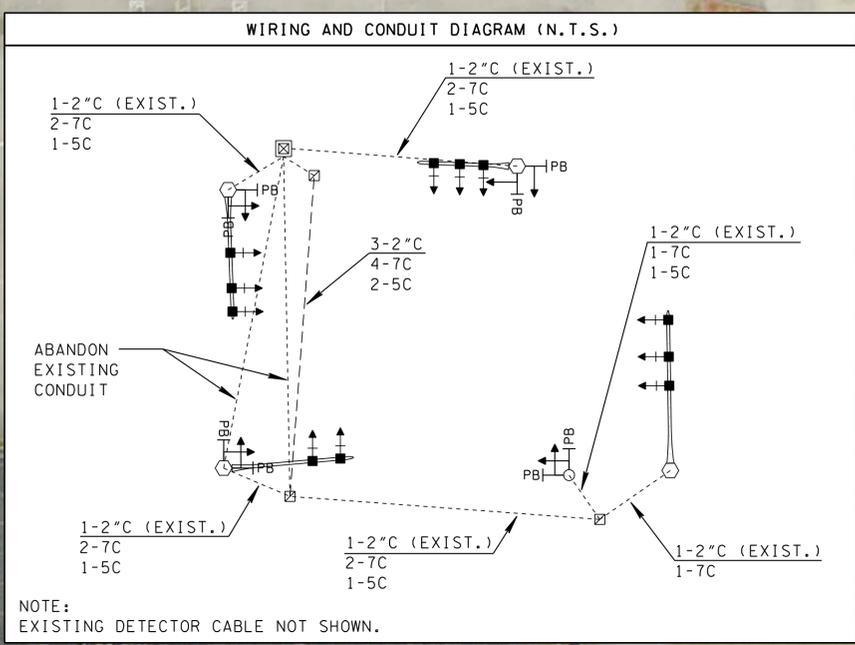
PROPOSED LEGEND

- ▨ CONCRETE SIDEWALK
- ▨ PARALLEL CURB CUT RAMP
- ▨ PERPENDICULAR CURB CUT RAMP
- ▨ IN-LINE CURB CUT RAMP
- ▨ TRUNCATED DOME SURFACE
- ▨ LONGITUDINAL CROSSWALK
- ▨ STOP BAR
- ▨ YIELD BAR (24" WIDTH / 12" SPACE)
- ▨ PAVEMENT MARKING REMOVED
- ⊠ SIGN WITH POST
- SIGNAL SUPPORT WITH MAST ARM
- PEDESTRIAN PEDESTAL POLE
- ⊠ V2 VEHICULAR SIGNAL HEAD WITH ASSOCIATED PHASE
- ① PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATION NUMBER
- ⊠ P2 PEDESTRIAN SIGNAL HEAD WITH ASSOCIATED PHASE
- ⊠ PB PEDESTRIAN PUSHBUTTON WITH 15" SIGN
- ⊠ SIGNAL PULL BOX
- SIGNAL CONDUIT
- ▨ WAVETRONIX DETECTION UNIT
- ▨ RADAR DETECTION ZONE



PHASE	2	4	6	8
MOVEMENT	EASTBOUND	NORTHBOUND	WESTBOUND	SOUTHBOUND
WALK	7	7	7	7
FDW	23	25	16	20

NOTES:
 1. PEDESTRIAN OVERRIDE FEATURE SHALL BE ACTIVE.



MODIFIED WIRING AND CONDUIT DIAGRAM 09-11-13
 REVISIONS DATE

Cannon & Cannon, Inc.
 Consulting Engineers • Field Surveyors
 8550 Kingston Pike
 Knoxville, Tennessee 37919
 Telephone: (865) 670-8555 • Fax: (865) 670-8866
 www.cannon-cannon.com

CLIENT: CITY OF OAK RIDGE

PROJECT: OAK RIDGE PEDESTRIAN IMPROVEMENTS PROJECT

PRESENT AND PROPOSED LAYOUT
 OAK RIDGE TURNPIKE AT
 RUTGERS AVENUE

CCJ PROJECT NO. 368-0017
 DATE 08-07-13
 P.M. JCE
 DRAWN TRANSPORTATION
 O.C. JCE

R1.02

INTERSECTION IMPROVEMENTS SUMMARY

- INSTALL ONE PARALLEL CURB CUT RAMP AND ONE PERPENDICULAR CURB CUT RAMP.
- INSTALL FIVE TRUNCATED DOME SURFACES.
- INSTALL APPROXIMATELY 45 LF OF LOWERED CONCRETE CURB AT RAMPS.
- INSTALL APPROXIMATELY 90 SF OF CONCRETE SIDEWALK TO CONNECT RAMPS TO PUSHBUTTONS IN NORWEST CORNER AND SOUTHWEST ISLAND.
- REPAIR APPROXIMATELY 50 SF OF CONCRETE SIDEWALK IN NORTHEAST CORNER.
- INSTALL ONE LONGITUDINAL CROSSWALK, MATCH EXISTING WIDTH. EXISTING CROSSWALK LINES TO REMAIN.
- INSTALL YIELD BARS IN ADVANCE OF CROSSWALK IN CHANNELIZED LANE IN SOUTHWEST CORNER.
- INSTALL FOUR COUNTDOWN PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, AND R10-3E SIGNS.
- INSTALL TWO NEW TYPE B PULL BOXES.
- INSTALL NEW CONDUIT AND ABANDON OLD CONDUIT AS NECESSARY. SEE WIRING AND CONDUIT DIAGRAM.
- INSTALL, REMOVE, AND SPlice SIGNAL WIRING AS NECESSARY. SEE WIRING AND CONDUIT DIAGRAM.
- INSTALL WAVETRONIX SMARTSENSOR MATRIX RADAR DETECTION ON ALL APPROACHES.

INSTALL TWO COUNTDOWN PEDESTRIAN SIGNALS, PUSHBUTTONS AND R10-3E SIGNS ON EXISTING SIGNAL SUPPORT POLE

RADAR DETECTION ZONE 3 (18' X 80')

RADAR DETECTION ZONE 8 (10' X 80')

INSTALL COUNTDOWN PEDESTRIAN SIGNAL PUSHBUTTON AND R10-3E SIGN ON EXISTING SIGNAL SUPPORT POLE

REPAIR 50 SF OF CONC. SIDEWALK

RADAR DETECTION ZONE 6 (32' X 100')

RADAR DETECTION ZONE 1 (10' X 100')

INSTALL 60 SF CONC. LANDING FROM RAMP TO SIGNAL POLE

INSTALL PARALLEL HANDICAP RAMP WITH TRUNCATED DOME SURFACE

INSTALL PERPENDICULAR HANDICAP RAMP WITH TRUNCATED DOME SURFACE

INSTALL WAVETRONIX SMARTSENSOR MATRIX (TYP.)

RADAR DETECTION ZONE 5 (10' X 100')

RADAR DETECTION ZONE 2 (20' X 100')

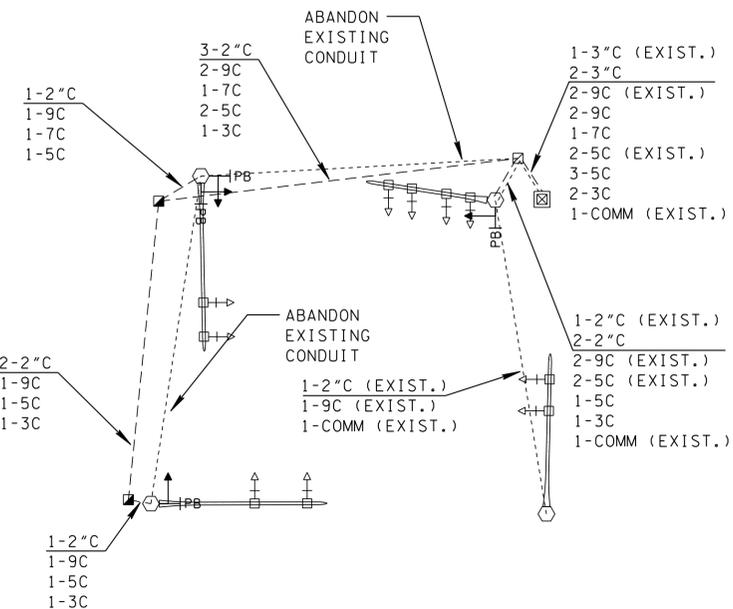
INSTALL COUNTDOWN PEDESTRIAN SIGNAL PUSHBUTTON AND R10-3E SIGN ON EXISTING SIGNAL SUPPORT POLE

INSTALL 30 SF CONC. LANDING FROM RAMP TO SIGNAL POLE

RADAR DETECTION ZONE 7 (20' X 100')

RADAR DETECTION ZONE 4 (10' X 100')

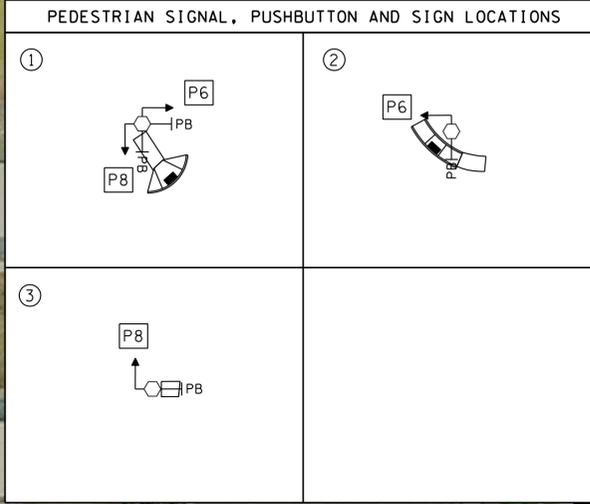
WIRING AND CONDUIT DIAGRAM (N.T.S.)



PEDESTRIAN SIGNAL TIMING TABLE

PHASE	2	4	6	8
MOVEMENT	EASTBOUND	NORTHBOUND	WESTBOUND	SOUTHBOUND
WALK	-	-	7	7
FDW	-	-	21	23

NOTES:
 1. PEDESTRIAN OVERRIDE FEATURE SHALL BE ACTIVE.
 2. PHASE NUMBERS ARE NOT FIELD CONFIRMED. PEDESTRIAN TIMING SHALL COINCIDE WITH MOVEMENT.



- EXISTING LEGEND**
- SIGNAL SUPPORT WITH MAST ARM
 - PEDESTRIAN PEDESTAL POLE
 - ⊠ PAD MOUNTED SIGNAL CONTROLLER CABINET
 - ◁+□ VEHICULAR SIGNAL HEAD
 - ⊠ SIGNAL PULL BOX
 - - - SIGNAL CONDUIT
 - ⊢ SIGN WITH POST
- PROPOSED LEGEND**
- ▨ CONCRETE SIDEWALK
 - ▨ PARALLEL CURB CUT RAMP
 - ▨ PERPENDICULAR CURB CUT RAMP
 - ▨ IN-LINE CURB CUT RAMP
 - ▨ TRUNCATED DOME SURFACE
 - ▨ LONGITUDINAL CROSSWALK
 - ▨ STOP BAR
 - ▨ YIELD BAR (24" WIDTH / 12" SPACE)
 - ▨ PAVEMENT MARKING REMOVED
 - ⊢ SIGN WITH POST
 - SIGNAL SUPPORT WITH MAST ARM
 - PEDESTRIAN PEDESTAL POLE
 - ⊠ VEHICULAR SIGNAL HEAD WITH ASSOCIATED PHASE
 - ① PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATION NUMBER
 - ⊠ P2 VEHICULAR SIGNAL HEAD WITH ASSOCIATED PHASE
 - PB1 PEDESTRIAN PUSHBUTTON WITH 15" SIGN
 - ⊠ SIGNAL PULL BOX
 - - - SIGNAL CONDUIT
 - ▨ WAVETRONIX DETECTION UNIT
 - ▨ RADAR DETECTION ZONE

MODIFIED WIRING AND CONDUIT DIAGRAM 09-11-13
 REVISIONS DATE

Cannon & Cannon, Inc.
 Consulting Engineers • Field Surveyors
 8550 Kingston Pike
 Knoxville, Tennessee 37919
 Telephone: (865) 670-8555 • Fax: (865) 670-8866
 www.cannon-cannon.com

CLIENT: CITY OF OAK RIDGE

PROJECT: OAK RIDGE PEDESTRIAN IMPROVEMENTS PROJECT

PRESENT AND PROPOSED LAYOUT
 OAK RIDGE TURNPIKE AT
 LAFAYETTE DRIVE / NEW YORK AVENUE

CCI PROJECT NO.	368-0017
DATE	08-07-13
P.M.	JCE
DRAWN	TRANSPORTATION
O.C.	JCE



R1.03

INTERSECTION IMPROVEMENTS SUMMARY

- INSTALL TWO PARALLEL CURB CUT RAMPS.
- INSTALL ONE PERPENDICULAR CURB CUT RAMP.
- INSTALL FIVE TRUNCATED DOME SURFACES.
- INSTALL APPROXIMATELY 50 LF OF LOWERED CONCRETE CURB AT RAMPS.
- INSTALL FOUR LONGITUDINAL CROSSWALKS. WHERE CROSSWALKS EXIST, NEW CROSSWALK WIDTH SHALL MEASURE FROM OUTSIDE OF EXISTING CROSSWALK LINES. WHERE CROSSWALKS DO NOT EXIST, CROSSWALK WIDTH SHALL BE 8'.
- REMOVE AND RELOCATE STOP BAR ON NORTH LEG 4' MINIMUM BEHIND CROSSWALK.
- RESTRIPE STOP BAR ON SOUTH LEG.
- REPLACE ONE EXISTING PEDESTRIAN PEDESTAL POLE WITH NEW PEDESTRIAN PEDESTAL POLE, AND INSTALL ONE NEW PEDESTRIAN PEDESTAL POLE.
- REPLACE FOUR PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, AND SIGNS WITH NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, AND R10-3E SIGNS. INSTALL FOUR NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, AND R10-3E SIGNS.
- INSTALL FOUR NEW TYPE B PULL BOXES.
- INSTALL NEW CONDUIT AND ABANDON OLD CONDUIT AS NECESSARY. SEE WIRING AND CONDUIT DIAGRAM.
- INSTALL, REMOVE, AND SPLICE SIGNAL WIRING AS NECESSARY. SEE WIRING AND CONDUIT DIAGRAM.
- INSTALL WAVETRONIX SMARTSENSOR MATRIX RADAR DETECTION ON ALL APPROACHES.

NEW POLE/POST SCHEDULE		
POLE/POST #	TYPE	FOUNDATION SIZE
A	PEDESTAL POLE	EXISTING
B	PEDESTAL POLE	2 FT. DIA./3 FT. DEPTH

NOTES:
 1. SEE TDOT STD. DRAWING SHEETS T-SG-9A AND T-SG-10 FOR DETAILS OF PUSHBUTTON POST, PEDESTAL MOUNTING AND FOUNDATIONS.
 2. FOUNDATION DEPTH IS MINIMUM DEPTH BELOW SURFACE OF GROUND.
 3. SEE "PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATIONS" BOX BELOW FOR PLACEMENT DETAILS.

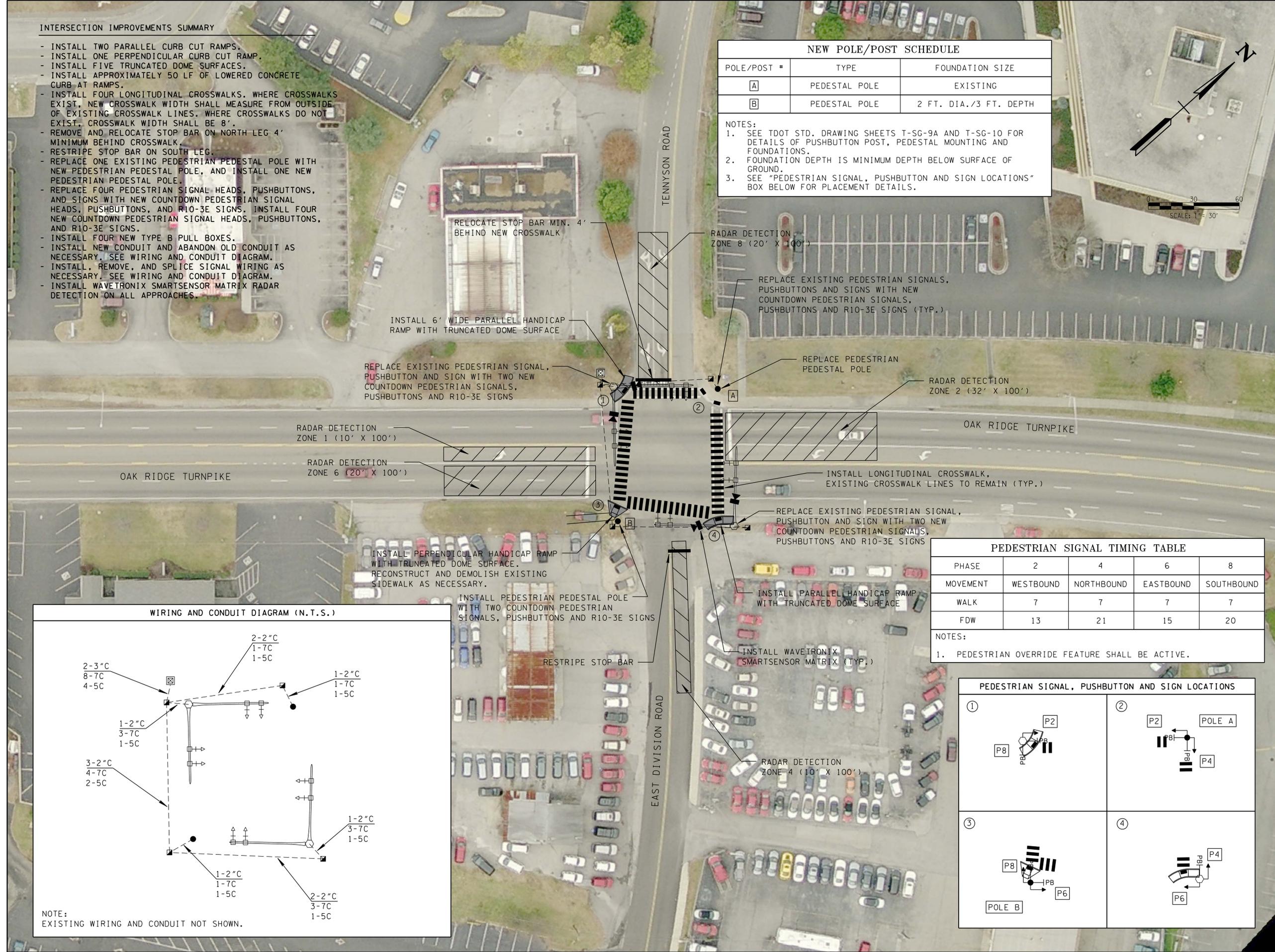


EXISTING LEGEND

- SIGNAL SUPPORT WITH MAST ARM
- PEDESTRIAN PEDESTAL POLE
- ⊠ PAD MOUNTED SIGNAL CONTROLLER CABINET
- ◀+⊠ VEHICULAR SIGNAL HEAD
- ⊠ SIGNAL PULL BOX
- SIGNAL CONDUIT
- ⊠ SIGN WITH POST

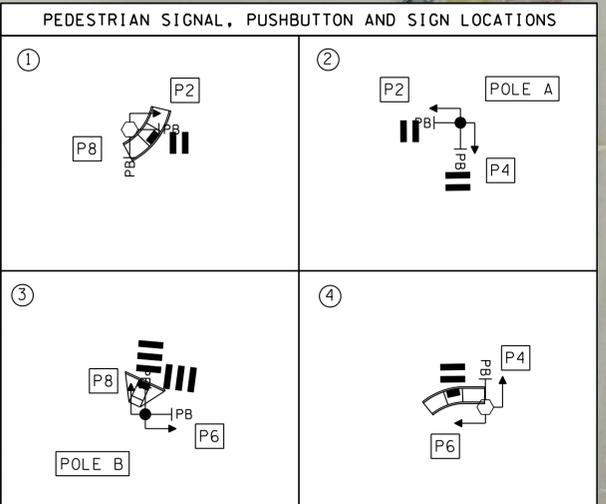
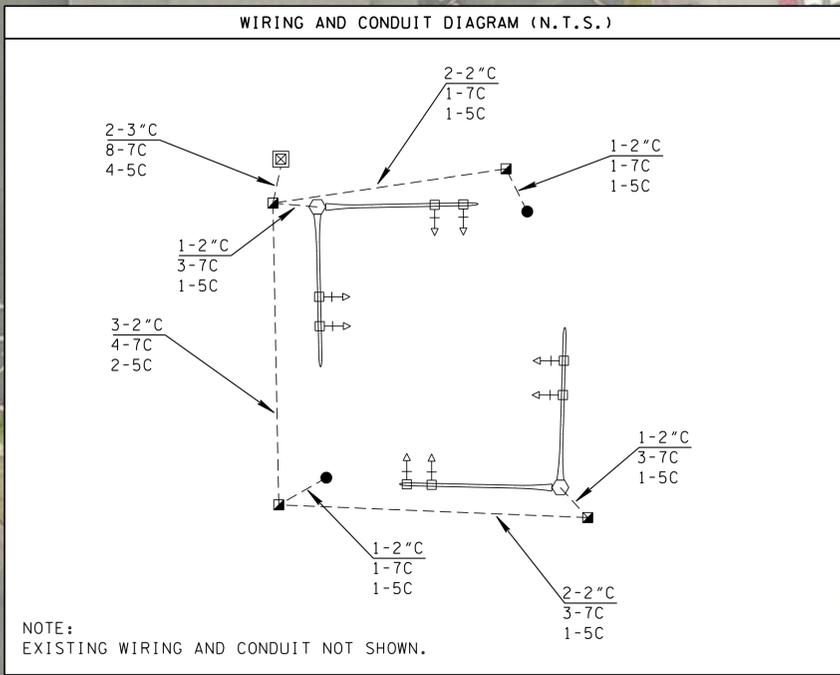
PROPOSED LEGEND

- ▨ CONCRETE SIDEWALK
- ▨ PARALLEL CURB CUT RAMP
- ▨ PERPENDICULAR CURB CUT RAMP
- ▨ IN-LINE CURB CUT RAMP
- ▨ TRUNCATED DOME SURFACE
- ▨ LONGITUDINAL CROSSWALK
- ▨ STOP BAR
- ▨ YIELD BAR (24" WIDTH / 12" SPACE)
- ▨ PAVEMENT MARKING REMOVED
- ⊠ SIGN WITH POST
- ⊠ SIGNAL SUPPORT WITH MAST ARM
- PEDESTRIAN PEDESTAL POLE
- ⊠ V2 VEHICULAR SIGNAL HEAD WITH ASSOCIATED PHASE
- ① PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATION NUMBER
- ⊠ P2 PEDESTRIAN SIGNAL HEAD WITH ASSOCIATED PHASE
- ⊠ PB PEDESTRIAN PUSHBUTTON WITH 15" SIGN
- ⊠ SIGNAL PULL BOX
- SIGNAL CONDUIT
- ▨ WAVETRONIX DETECTION UNIT
- ▨ RADAR DETECTION ZONE



PEDESTRIAN SIGNAL TIMING TABLE				
PHASE	2	4	6	8
MOVEMENT	WESTBOUND	NORTHBOUND	EASTBOUND	SOUTHBOUND
WALK	7	7	7	7
FDW	13	21	15	20

NOTES:
 1. PEDESTRIAN OVERRIDE FEATURE SHALL BE ACTIVE.



MODIFIED WIRING AND CONDUIT DIAGRAM	09-11-13
REVISIONS	DATE

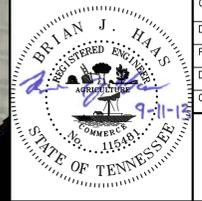
Cannon & Cannon, Inc.
 Consulting Engineers & Field Surveyors
 8550 Kingston Pike
 Knoxville, Tennessee 37919
 Telephone: (865) 670-8555 • Fax: (865) 670-8866
 www.cannon-cannon.com

CLIENT:
 CITY OF OAK RIDGE

PROJECT:
 OAK RIDGE PEDESTRIAN IMPROVEMENTS PROJECT

PRESENT AND PROPOSED LAYOUT
 OAK RIDGE TURNPIKE AT
 EAST DIVISION ROAD / TENNYSON ROAD

CCI PROJECT NO.	368-0017
DATE	08-07-13
P.M.	JCE
DRAWN	TRANSPORTATION
O.C.	JCE



R1.04

INTERSECTION IMPROVEMENTS SUMMARY

- INSTALL ONE PARALLEL CURB CUT RAMP.
- INSTALL FIVE TRUNCATED DOME SURFACES.
- INSTALL APPROXIMATELY 25 LF OF LOWERED COMBINED CONCRETE CURB AND GUTTER AT RAMP.
- INSTALL THREE LONGITUDINAL CROSSWALKS. CROSSWALK WIDTH SHALL MEASURE FROM OUTSIDE OF EXISTING CROSSWALK LINES.
- REMOVE AND RELOCATE STOP BAR ON NORTH LEG 4' MINIMUM BEHIND CROSSWALK.
- REPLACE THREE EXISTING PEDESTRIAN PEDESTAL POLES WITH NEW PEDESTRIAN PEDESTAL POLES.
- REPLACE SIX PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, AND SIGNS WITH NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, AND R10-3E SIGNS.

NEW POLE/POST SCHEDULE		
POLE/POST #	TYPE	FOUNDATION SIZE
A	PEDESTAL POLE	EXISTING
B	PEDESTAL POLE	EXISTING
C	PEDESTAL POLE	EXISTING

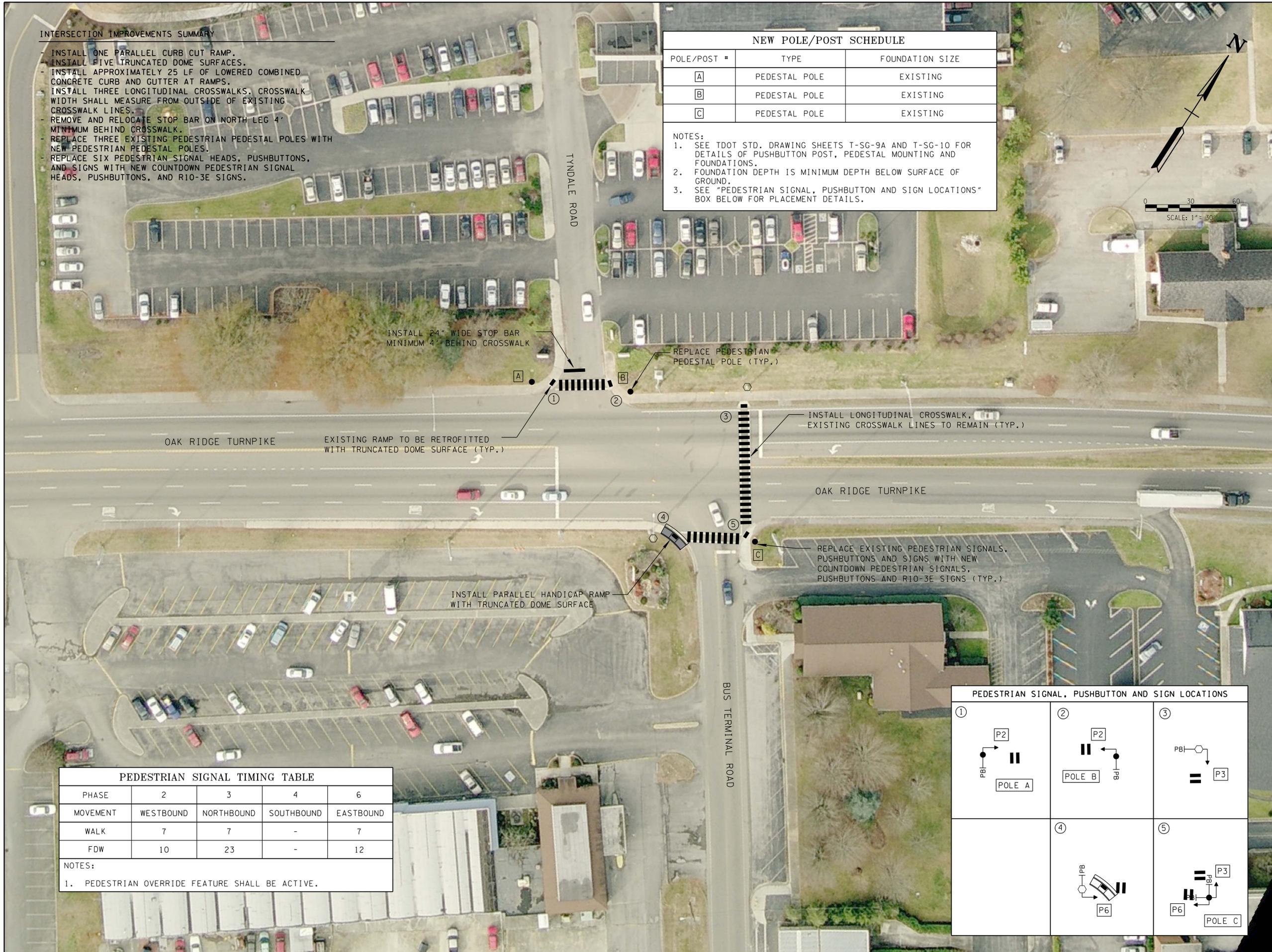
NOTES:
 1. SEE TDOT STD. DRAWING SHEETS T-SG-9A AND T-SG-10 FOR DETAILS OF PUSHBUTTON POST, PEDESTAL MOUNTING AND FOUNDATIONS.
 2. FOUNDATION DEPTH IS MINIMUM DEPTH BELOW SURFACE OF GROUND.
 3. SEE "PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATIONS" BOX BELOW FOR PLACEMENT DETAILS.

EXISTING LEGEND

	SIGNAL SUPPORT WITH MAST ARM
	PEDESTRIAN PEDESTAL POLE
	PAD MOUNTED SIGNAL CONTROLLER CABINET
	VEHICULAR SIGNAL HEAD
	SIGNAL PULL BOX
	SIGNAL CONDUIT
	SIGN WITH POST

PROPOSED LEGEND

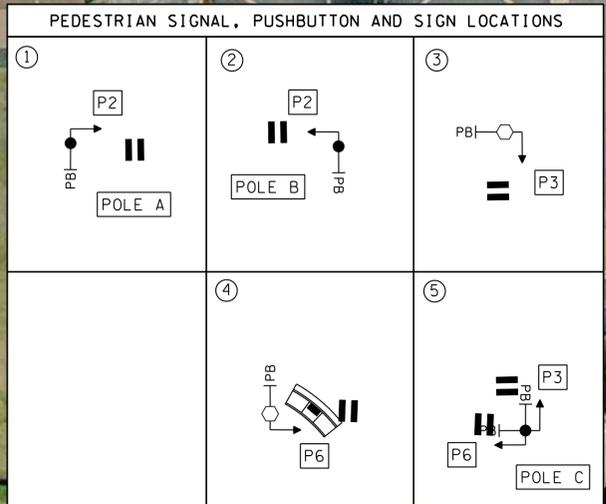
	CONCRETE SIDEWALK
	PARALLEL CURB CUT RAMP
	PERPENDICULAR CURB CUT RAMP
	IN-LINE CURB CUT RAMP
	TRUNCATED DOME SURFACE
	LONGITUDINAL CROSSWALK
	STOP BAR
	YIELD BAR (24" WIDTH / 12" SPACE)
	PAVEMENT MARKING REMOVED
	SIGN WITH POST
	SIGNAL SUPPORT WITH MAST ARM
	PEDESTRIAN PEDESTAL POLE
	VEHICULAR SIGNAL HEAD WITH ASSOCIATED PHASE
	PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATION NUMBER
	PEDESTRIAN SIGNAL HEAD WITH ASSOCIATED PHASE
	PEDESTRIAN PUSHBUTTON WITH 15" SIGN
	SIGNAL PULL BOX
	SIGNAL CONDUIT
	WAVETRONIX DETECTION UNIT
	RADAR DETECTION ZONE



PEDESTRIAN SIGNAL TIMING TABLE

PHASE	2	3	4	6
MOVEMENT	WESTBOUND	NORTHBOUND	SOUTHBOUND	EASTBOUND
WALK	7	7	-	7
FDW	10	23	-	12

NOTES:
 1. PEDESTRIAN OVERRIDE FEATURE SHALL BE ACTIVE.



REVISIONS	DATE

Cannon & Cannon, Inc.
 Consulting Engineers • Field Surveyors
 8550 Kingston Pike
 Knoxville, Tennessee 37919
 Telephone: (865) 670-8555 • Fax: (865) 670-8866
 www.cannon-cannon.com

CLIENT: CITY OF OAK RIDGE
 PROJECT: OAK RIDGE PEDESTRIAN IMPROVEMENTS PROJECT

**PRESENT AND PROPOSED LAYOUT
 OAK RIDGE TURNPIKE AT
 TYNDALE ROAD / BUS TERMINAL ROAD**

CCI PROJECT NO.	368-0017
DATE	08-07-13
P.M.	JCE
DRAWN	TRANSPORTATION
O.C.	JCE



R1.05

INTERSECTION IMPROVEMENTS SUMMARY

- INSTALL TWO PARALLEL CURB CUT RAMPS AND ONE PERPENDICULAR CURB CUT RAMP.
- INSTALL THREE TRUNCATED DOME SURFACES.
- INSTALL APPROXIMATELY 60 LF OF LOWERED CONCRETE CURB AT RAMPS.
- REPAIR APPROXIMATELY 140 SF OF CONCRETE SIDEWALK IN NORTHEAST CORNER.
- REPLACE EXISTING RAMP IN SOUTHWEST CORNER WITH APPROXIMATELY 80 SF OF CONCRETE SIDEWALK AND 20 LF OF CONCRETE CURB.
- INSTALL TWO LONGITUDINAL CROSSWALKS, 8' WIDTH.
- REMOVE AND RELOCATE STOP BAR ON NORTH LEG 4' MINIMUM BEHIND CROSSWALK.
- INSTALL FOUR COUNTDOWN PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, AND R10-3E SIGNS.
- INSTALL TWO NEW TYPE B PULL BOXES.
- INSTALL NEW CONDUIT AS NECESSARY. SEE WIRING AND CONDUIT DIAGRAM.
- INSTALL NEW WIRING AS NECESSARY. SEE WIRING AND CONDUIT DIAGRAM.

NEW POLE/POST SCHEDULE		
POLE/POST #	TYPE	FOUNDATION SIZE
A	PEDESTAL POLE	2 FT. DIA./3 FT. DEPTH
B	PEDESTAL POLE	2 FT. DIA./3 FT. DEPTH

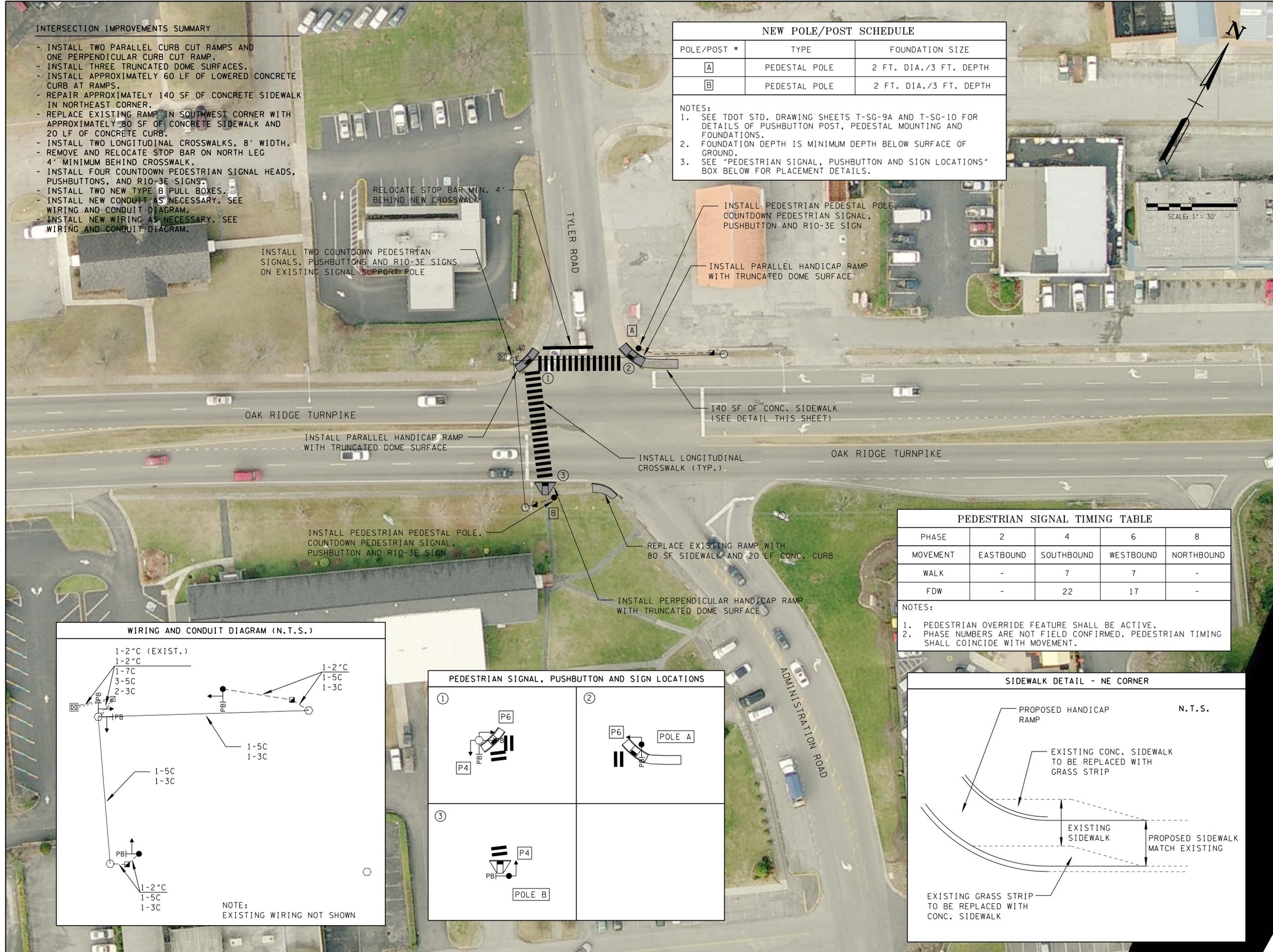
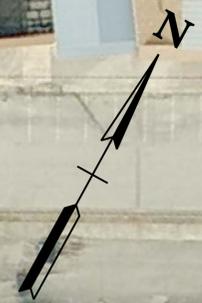
NOTES:
 1. SEE TDOT STD. DRAWING SHEETS T-SG-9A AND T-SG-10 FOR DETAILS OF PUSHBUTTON POST, PEDESTAL MOUNTING AND FOUNDATIONS.
 2. FOUNDATION DEPTH IS MINIMUM DEPTH BELOW SURFACE OF GROUND.
 3. SEE "PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATIONS" BOX BELOW FOR PLACEMENT DETAILS.

EXISTING LEGEND

	SIGNAL SUPPORT WITH MAST ARM
	PEDESTRIAN PEDESTAL POLE
	PAD MOUNTED SIGNAL CONTROLLER CABINET
	VEHICULAR SIGNAL HEAD
	SIGNAL PULL BOX
	SIGNAL CONDUIT
	SIGN WITH POST

PROPOSED LEGEND

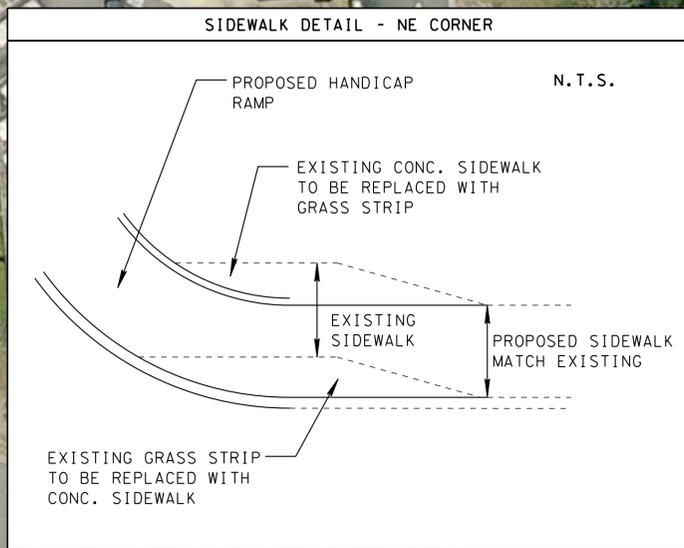
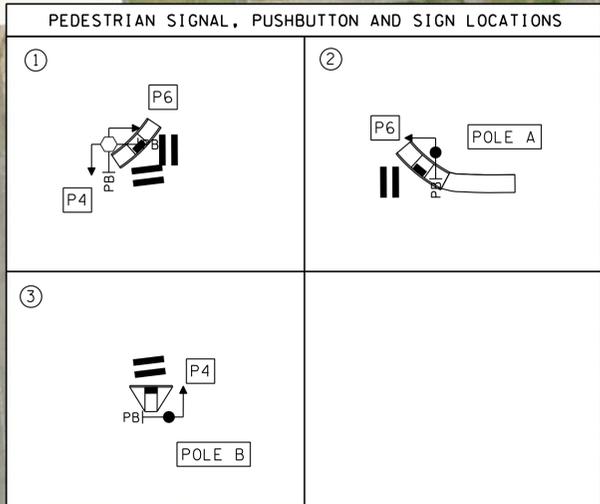
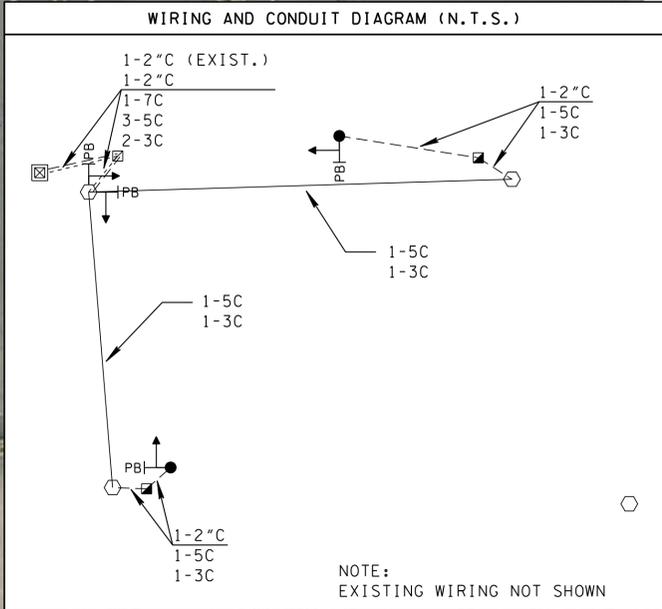
	CONCRETE SIDEWALK
	PARALLEL CURB CUT RAMP
	PERPENDICULAR CURB CUT RAMP
	IN-LINE CURB CUT RAMP
	TRUNCATED DOME SURFACE
	LONGITUDINAL CROSSWALK
	STOP BAR
	YIELD BAR (24" WIDTH / 12" SPACE)
	PAVEMENT MARKING REMOVED
	SIGN WITH POST
	SIGNAL SUPPORT WITH MAST ARM
	PEDESTRIAN PEDESTAL POLE
	VEHICULAR SIGNAL HEAD WITH ASSOCIATED PHASE
	PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATION NUMBER
	PEDESTRIAN SIGNAL HEAD WITH ASSOCIATED PHASE
	PEDESTRIAN PUSHBUTTON WITH 15" SIGN
	SIGNAL PULL BOX
	SIGNAL CONDUIT
	WAVETRONIX DETECTION UNIT
	RADAR DETECTION ZONE



PEDESTRIAN SIGNAL TIMING TABLE

PHASE	2	4	6	8
MOVEMENT	EASTBOUND	SOUTHBOUND	WESTBOUND	NORTHBOUND
WALK	-	7	7	-
FDW	-	22	17	-

NOTES:
 1. PEDESTRIAN OVERRIDE FEATURE SHALL BE ACTIVE.
 2. PHASE NUMBERS ARE NOT FIELD CONFIRMED. PEDESTRIAN TIMING SHALL COINCIDE WITH MOVEMENT.



REVISIONS	DATE

Cannon & Cannon, Inc.
 Consulting Engineers • Field Surveyors
 8550 Kingston Pike
 Knoxville, Tennessee 37919
 Telephone: (865) 670-8555 • Fax: (865) 670-8866
 www.cannon-cannon.com

CLIENT: CITY OF OAK RIDGE

PROJECT: OAK RIDGE PEDESTRIAN IMPROVEMENTS PROJECT

PRESENT AND PROPOSED LAYOUT
 OAK RIDGE TURNPIKE AT
 TYLER ROAD / ADMINISTRATION ROAD

CCI PROJECT NO.	368-0017
DATE	08-07-13
P.M.	JCE
DRAWN	TRANSPORTATION
O.C.	JCE



R1.06

INTERSECTION IMPROVEMENTS SUMMARY

- INSTALL FIVE TRUNCATED DOME SURFACES.
- INSTALL ONE LONGITUDINAL CROSSWALK, MATCH EXISTING WIDTH. EXISTING CROSSWALK LINES TO REMAIN.
- INSTALL YIELD BARS IN ADVANCE OF CROSSWALK IN CHANNELIZED LANE IN SOUTHEAST CORNER.
- INSTALL ONE R1-5 SIGN.
- REPLACE THREE EXISTING PEDESTRIAN PEDESTAL POLES WITH NEW PEDESTRIAN PEDESTAL POLES.
- REPLACE FOUR PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, AND SIGNS WITH NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, AND R10-3E SIGNS.

REPLACE EXISTING PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN WITH NEW COUNTDOWN PEDESTRIAN SIGNAL, PUSHBUTTON AND R10-3E SIGN

REPLACE EXISTING PEDESTRIAN SIGNALS, PUSHBUTTONS AND SIGNS WITH NEW COUNTDOWN PEDESTRIAN SIGNALS, PUSHBUTTONS AND R10-3E SIGNS

EXISTING RAMP TO BE RETROFITTED WITH TRUNCATED DOME SURFACE (TYP.)

REPLACE PEDESTRIAN PEDESTAL POLE (TYP.)

INSTALL LONGITUDINAL CROSSWALK, EXISTING CROSSWALK LINES TO REMAIN

REPLACE EXISTING PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN WITH NEW COUNTDOWN PEDESTRIAN SIGNAL, PUSHBUTTON AND R10-3E SIGN

INSTALL R1-5 SIGN

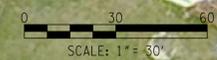
INSTALL YIELD BARS (24" WIDTH WITH 12" SPACE)

NEW POLE/POST SCHEDULE

POLE/POST #	TYPE	FOUNDATION SIZE
A	PEDESTAL POLE	EXISTING
B	PEDESTAL POLE	EXISTING
C	PEDESTAL POLE	EXISTING

NOTES:

1. SEE TDOT STD. DRAWING SHEETS T-SG-9A AND T-SG-10 FOR DETAILS OF PUSHBUTTON POST, PEDESTAL MOUNTING AND FOUNDATIONS.
2. FOUNDATION DEPTH IS MINIMUM DEPTH BELOW SURFACE OF GROUND.
3. SEE "PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATIONS" BOX BELOW FOR PLACEMENT DETAILS.



EXISTING LEGEND

- SIGNAL SUPPORT WITH MAST ARM
- ⊗ PEDESTRIAN PEDESTAL POLE
- ⊠ PAD MOUNTED SIGNAL CONTROLLER CABINET
- ◀+□ VEHICULAR SIGNAL HEAD
- ⊠ SIGNAL PULL BOX
- - - - - SIGNAL CONDUIT
- ⊥ SIGN WITH POST

PROPOSED LEGEND

- ▨ CONCRETE SIDEWALK
- ▨ PARALLEL CURB CUT RAMP
- ▨ PERPENDICULAR CURB CUT RAMP
- ▨ IN-LINE CURB CUT RAMP
- TRUNCATED DOME SURFACE
- ▨▨▨▨▨▨▨▨▨▨ LONGITUDINAL CROSSWALK
- ▨▨▨▨▨▨▨▨▨▨ STOP BAR
- ▲▲▲▲▲ YIELD BAR (24" WIDTH / 12" SPACE)
- ▨▨▨▨▨▨▨▨▨▨ PAVEMENT MARKING REMOVED
- ⊥ SIGN WITH POST
- PEDESTRIAN PEDESTAL POLE
- ⊠ V2 VEHICULAR SIGNAL HEAD WITH ASSOCIATED PHASE
- ① PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATION NUMBER
- ⊠ P2 PEDESTRIAN SIGNAL HEAD WITH ASSOCIATED PHASE
- ⊥ PBI PEDESTRIAN PUSHBUTTON WITH 15" SIGN
- ⊠ SIGNAL PULL BOX
- - - - - SIGNAL CONDUIT
- ▨▨▨▨▨▨▨▨▨▨ WAVETRONIX DETECTION UNIT
- ▨▨▨▨▨▨▨▨▨▨ RADAR DETECTION ZONE

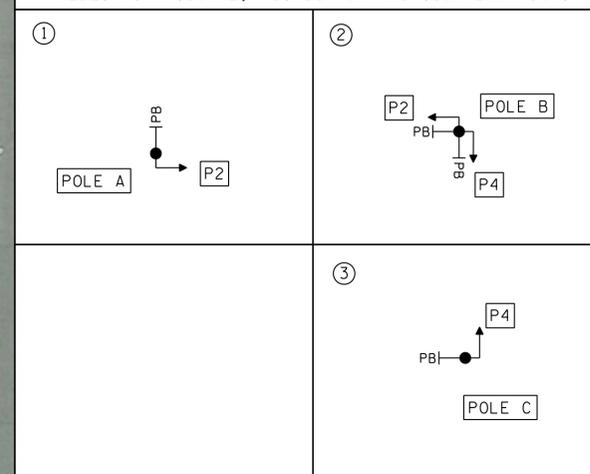
PEDESTRIAN SIGNAL TIMING TABLE

PHASE	2	4	-	-
MOVEMENT	WESTBOUND	NORTHBOUND	-	-
WALK	7	7	-	-
FDW	15	25	-	-

NOTES:

1. PEDESTRIAN OVERRIDE FEATURE SHALL BE ACTIVE.
2. PHASE NUMBERS ARE NOT FIELD CONFIRMED. PEDESTRIAN TIMING SHALL COINCIDE WITH MOVEMENT.

PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATIONS



REVISIONS	DATE

Cannon & Cannon, Inc.
 Consulting Engineers • Field Surveyors
 8550 Kingston Pike
 Knoxville, Tennessee 37919
 Telephone: (865) 670-8555 • Fax: (865) 670-8866
 www.cannon-cannon.com

CLIENT: CITY OF OAK RIDGE

PROJECT: OAK RIDGE PEDESTRIAN IMPROVEMENTS PROJECT

PRESENT AND PROPOSED LAYOUT
 OAK RIDGE TURNPIKE AT
 GEORGIA AVENUE / LABORATORY ROAD

CCI PROJECT NO.	368-0017
DATE	08-07-13
P.M.	JCE
DRAWN	TRANSPORTATION
O.C.	JCE



R1.07

INTERSECTION IMPROVEMENTS SUMMARY

- INSTALL TWO PARALLEL CURB CUT RAMPS.
- INSTALL TWO TRUNCATED DOME SURFACES.
- INSTALL APPROXIMATELY 50 LF OF LOWERED CONCRETE CURB AT RAMPS.
- RESTRIPE EXISTING CROSSWALK ON WEST LEG.
- REMOVE TWO PEDESTRIAN SIGNS, PLAQUES, AND POSTS.
- REPLACE TWO PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, AND SIGNS WITH NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, AND R10-3E SIGNS.

REPLACE EXISTING PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN WITH NEW COUNTDOWN PEDESTRIAN SIGNAL, PUSHBUTTON AND R10-3E SIGN

INSTALL PARALLEL HANDICAP RAMP WITH TRUNCATED DOME SURFACE (TYP.)

OAK RIDGE TURNPIKE

REMOVE EXISTING PEDESTRIAN WARNING SIGNS AND POSTS

OAK RIDGE TURNPIKE

RESTRIPE EXISTING CROSSWALK

REPLACE EXISTING PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN WITH NEW COUNTDOWN PEDESTRIAN SIGNAL, PUSHBUTTON AND R10-3E SIGN

PHASE	2	3	4	-
MOVEMENT	EAST/WEST	SOUTHBOUND	NORTHBOUND	-
WALK	-	7	-	-
FDW	-	20	-	-

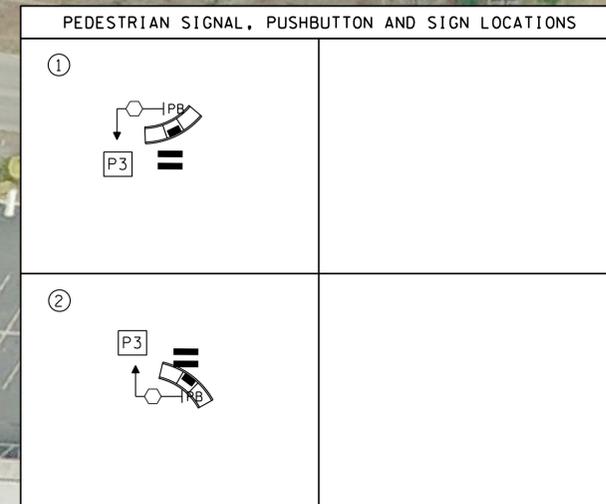
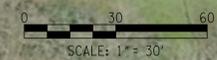
NOTES:
1. PEDESTRIAN OVERRIDE FEATURE SHALL BE ACTIVE.

EXISTING LEGEND

- SIGNAL SUPPORT WITH MAST ARM
- PEDESTRIAN PEDESTAL POLE
- ⊠ PAD MOUNTED SIGNAL CONTROLLER CABINET
- ⊞ VEHICULAR SIGNAL HEAD
- ⊞ SIGNAL PULL BOX
- SIGNAL CONDUIT
- ⊞ SIGN WITH POST

PROPOSED LEGEND

- ▨ CONCRETE SIDEWALK
- ▨ PARALLEL CURB CUT RAMP
- ▨ PERPENDICULAR CURB CUT RAMP
- ▨ IN-LINE CURB CUT RAMP
- ▨ TRUNCATED DOME SURFACE
- ▨ LONGITUDINAL CROSSWALK
- ▨ STOP BAR
- ▨ YIELD BAR (24" WIDTH / 12" SPACE)
- ▨ PAVEMENT MARKING REMOVED
- ⊞ SIGN WITH POST
- SIGNAL SUPPORT WITH MAST ARM
- PEDESTRIAN PEDESTAL POLE
- V2 ⊞ VEHICULAR SIGNAL HEAD WITH ASSOCIATED PHASE
- ① PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATION NUMBER
- P2 ⊞ PEDESTRIAN SIGNAL HEAD WITH ASSOCIATED PHASE
- PB ⊞ PEDESTRIAN PUSHBUTTON WITH 15" SIGN
- ⊞ SIGNAL PULL BOX
- SIGNAL CONDUIT
- ▨ WAVETRONIX DETECTION UNIT
- ▨ RADAR DETECTION ZONE



REVISIONS	DATE

Cannon & Cannon, Inc.
 Consulting Engineers • Field Surveyors
 8550 Kingston Pike
 Knoxville, Tennessee 37919
 Telephone: (865) 670-8555 • Fax: (865) 670-8866
 www.cannon-cannon.com

CLIENT: CITY OF OAK RIDGE

PROJECT: OAK RIDGE PEDESTRIAN IMPROVEMENTS PROJECT

PRESENT AND PROPOSED LAYOUT
 OAK RIDGE TURNPIKE AT
 FLORIDA AVENUE / FAIRBANKS ROAD

CCI PROJECT NO.	368-0017
DATE	08-07-13
P.M.	JCE
DRAWN	TRANSPORTATION
O.C.	JCE



R1.08

INTERSECTION IMPROVEMENTS SUMMARY

- INSTALL FOUR PARALLEL CURB CUT RAMPS.
- INSTALL FOUR TRUNCATED DOME SURFACES.
- INSTALL APPROXIMATELY 80 LF OF LOWERED COMBINED CONCRETE CURB AND GUTTER AT RAMPS.
- INSTALL RETAINING WALL BEHIND RAMP IN NORTHEAST CORNER.
- INSTALL THREE LONGITUDINAL CROSSWALKS, 8' WIDTH.
- REMOVE AND RELOCATE STOP BAR ON GEORGIA AVENUE 4' MINIMUM BEHIND CROSSWALK.
- INSTALL STOP BAR ON OLNEY LANE.
- RESTRIPE TWO STOP BARS ON FLORIDA AVENUE.
- RESTRIPE ISLAND AT INTERSECTION OF FLORIDA AND OUTER.
- RESTRIPE APPROXIMATELY 150 LF OF DOTTED YELLOW LINE AND 220 LF OF DOTTED WHITE LINE.
- REMOVE CONFLICTING DOUBLE SOLID YELLOW LINES AS NECESSARY.
- REMOVE CONFLICTING PARKING STRIPING AS NECESSARY.
- INSTALL THREE W11-2 SIGNS WITH W16-9P PLAQUES.
- INSTALL FOUR W11-2 SIGNS WITH W16-7P PLAQUES.
- RELOCATE ONE STOP SIGN AND POST.



EXISTING LEGEND

- SIGNAL SUPPORT WITH MAST ARM
- PEDESTRIAN PEDESTAL POLE
- PAD MOUNTED SIGNAL CONTROLLER CABINET
- VEHICULAR SIGNAL HEAD
- SIGNAL PULL BOX
- SIGNAL CONDUIT
- SIGN WITH POST

PROPOSED LEGEND

- CONCRETE SIDEWALK
- PARALLEL CURB CUT RAMP
- PERPENDICULAR CURB CUT RAMP
- IN-LINE CURB CUT RAMP
- TRUNCATED DOME SURFACE
- LONGITUDINAL CROSSWALK
- STOP BAR
- YIELD BAR (24" WIDTH / 12" SPACE)
- PAVEMENT MARKING REMOVED
- SIGN WITH POST
- SIGNAL SUPPORT WITH MAST ARM
- PEDESTRIAN PEDESTAL POLE
- VEHICULAR SIGNAL HEAD WITH ASSOCIATED PHASE
- PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATION NUMBER
- PEDESTRIAN SIGNAL HEAD WITH ASSOCIATED PHASE
- PEDESTRIAN PUSHBUTTON WITH 15" SIGN
- SIGNAL PULL BOX
- SIGNAL CONDUIT
- WAVETRONIX DETECTION UNIT
- RADAR DETECTION ZONE

REVISIONS	DATE

Cannon & Cannon, Inc.
 Consulting Engineers • Field Surveyors
 8550 Kingston Pike
 Knoxville, Tennessee 37919
 Telephone: (865) 670-8555 • Fax: (865) 670-8866
 www.cannon-cannon.com

CLIENT:
 CITY OF OAK RIDGE

PROJECT:
 OAK RIDGE PEDESTRIAN IMPROVEMENTS PROJECT

PRESENT AND PROPOSED LAYOUT
 FLORIDA AVENUE AT
 OLNEY LANE / OUTER DRIVE

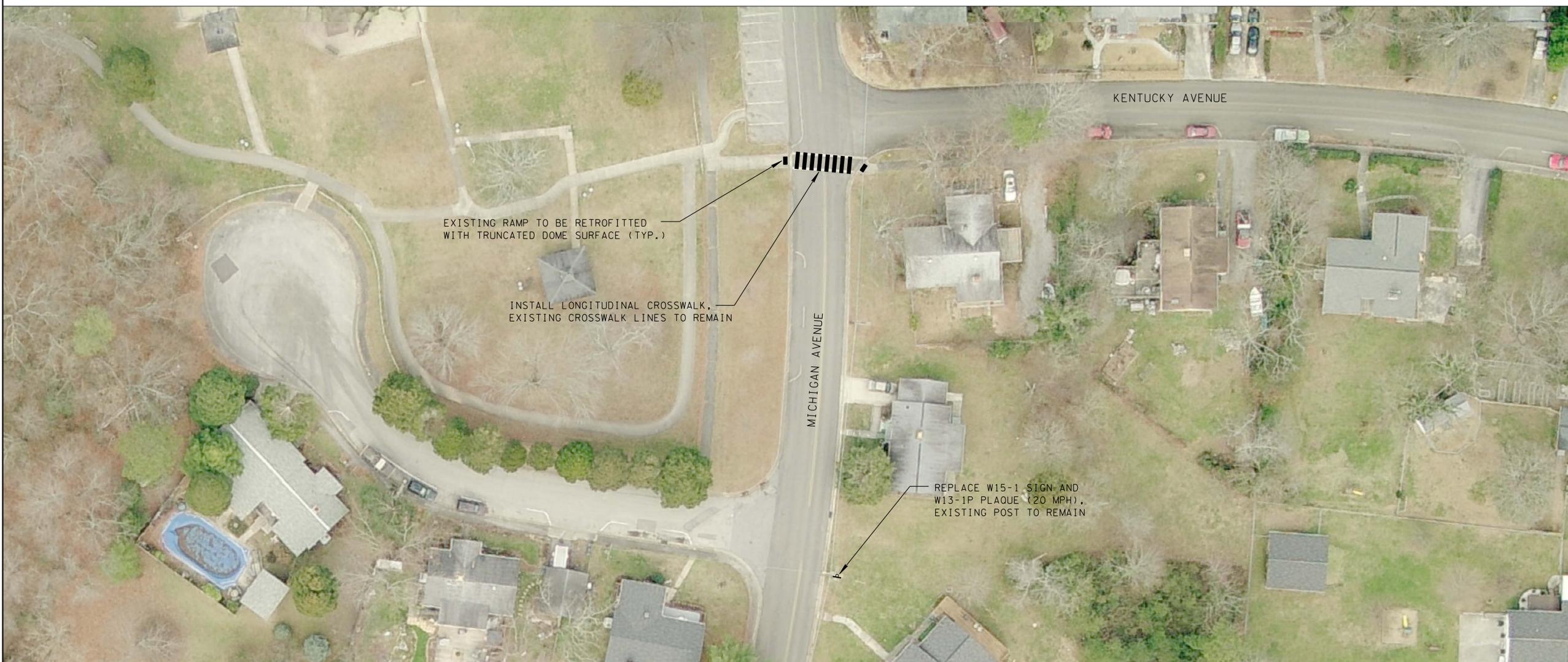
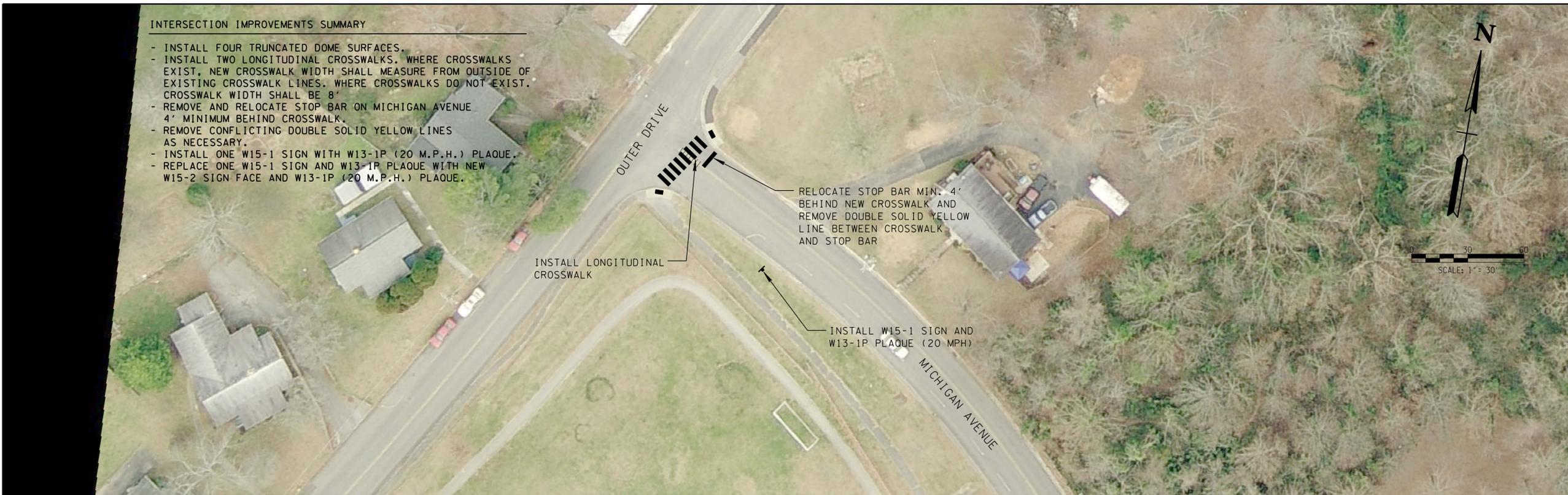
CCI PROJECT NO.	368-0017
DATE	08-07-13
P.M.	JCE
DRAWN	TRANSPORTATION
O.C.	JCE



R1.09

INTERSECTION IMPROVEMENTS SUMMARY

- INSTALL FOUR TRUNCATED DOME SURFACES.
- INSTALL TWO LONGITUDINAL CROSSWALKS. WHERE CROSSWALKS EXIST, NEW CROSSWALK WIDTH SHALL MEASURE FROM OUTSIDE OF EXISTING CROSSWALK LINES. WHERE CROSSWALKS DO NOT EXIST, CROSSWALK WIDTH SHALL BE 8'
- REMOVE AND RELOCATE STOP BAR ON MICHIGAN AVENUE 4' MINIMUM BEHIND CROSSWALK.
- REMOVE CONFLICTING DOUBLE SOLID YELLOW LINES AS NECESSARY.
- INSTALL ONE W15-1 SIGN WITH W13-1P (20 M.P.H.) PLAQUE.
- REPLACE ONE W15-1 SIGN AND W13-1P PLAQUE WITH NEW W15-2 SIGN FACE AND W13-1P (20 M.P.H.) PLAQUE.



EXISTING LEGEND

- SIGNAL SUPPORT WITH MAST ARM
- PEDESTRIAN PEDESTAL POLE
- PAD MOUNTED SIGNAL CONTROLLER CABINET
- VEHICULAR SIGNAL HEAD
- SIGNAL PULL BOX
- SIGNAL CONDUIT
- SIGN WITH POST

PROPOSED LEGEND

- CONCRETE SIDEWALK
- PARALLEL CURB CUT RAMP
- PERPENDICULAR CURB CUT RAMP
- IN-LINE CURB CUT RAMP
- TRUNCATED DOME SURFACE
- LONGITUDINAL CROSSWALK
- STOP BAR
- YIELD BAR (24" WIDTH / 12" SPACE)
- PAVEMENT MARKING REMOVED
- SIGN WITH POST
- SIGNAL SUPPORT WITH MAST ARM
- PEDESTRIAN PEDESTAL POLE
- VEHICULAR SIGNAL HEAD WITH ASSOCIATED PHASE
- PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATION NUMBER
- PEDESTRIAN SIGNAL HEAD WITH ASSOCIATED PHASE
- PEDESTRIAN PUSHBUTTON WITH 15" SIGN
- SIGNAL PULL BOX
- SIGNAL CONDUIT
- WAVETRONIX DETECTION UNIT
- RADAR DETECTION ZONE

REVISIONS	DATE

Cannon & Cannon, Inc.
 Consulting Engineers • Field Surveyors
 8550 Kingston Pike
 Knoxville, Tennessee 37919
 Telephone: (865) 670-8555 • Fax: (865) 670-8866
 www.cannon-cannon.com

CLIENT: CITY OF OAK RIDGE

PROJECT: OAK RIDGE PEDESTRIAN IMPROVEMENTS PROJECT

PRESENT AND PROPOSED LAYOUT
 CEDAR HILL PARK

CCI PROJECT NO.	368-0017
DATE	08-07-13
P.M.	JCE
DRAWN	TRANSPORTATION
O.C.	JCE



R1.10

INTERSECTION IMPROVEMENTS SUMMARY

- INSTALL TWO PARALLEL CURB CUT RAMP.
- INSTALL TWO TRUNCATED DOME SURFACES.
- INSTALL APPROXIMATELY 40 LF OF LOWERED COMBINED CONCRETE CURB AND GUTTER AT RAMPS.
- INSTALL ONE LONGITUDINAL CROSSWALK, 8' WIDTH.
- INSTALL STOP BAR ON VERMONT AVENUE.
- REMOVE CONFLICTING DOUBLE SOLID YELLOW LINES AS NECESSARY.
- REMOVE PARKING STRIPING AS NECESSARY.
- INSTALL TWO W11-2 SIGNS WITH W16-9P PLAQUES.
- INSTALL TWO W11-2 SIGNS WITH W16-7P PLAQUES.



EXISTING LEGEND

- SIGNAL SUPPORT WITH MAST ARM
- PEDESTRIAN PEDESTAL POLE
- ⊠ PAD MOUNTED SIGNAL CONTROLLER CABINET
- ⊠ VEHICULAR SIGNAL HEAD
- ⊠ SIGNAL PULL BOX
- - - SIGNAL CONDUIT
- ⊠ SIGN WITH POST

PROPOSED LEGEND

- ▨ CONCRETE SIDEWALK
- ▨ PARALLEL CURB CUT RAMP
- ▨ PERPENDICULAR CURB CUT RAMP
- ▨ IN-LINE CURB CUT RAMP
- ▨ TRUNCATED DOME SURFACE
- ▨ LONGITUDINAL CROSSWALK
- ▨ STOP BAR
- ▨ YIELD BAR (24" WIDTH / 12" SPACE)
- ▨ PAVEMENT MARKING REMOVED
- ⊠ SIGN WITH POST
- SIGNAL SUPPORT WITH MAST ARM
- PEDESTRIAN PEDESTAL POLE
- ⊠ VEHICULAR SIGNAL HEAD WITH ASSOCIATED PHASE
- ① PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN LOCATION NUMBER
- ⊠ P2 VEHICULAR SIGNAL HEAD WITH ASSOCIATED PHASE
- ⊠ PBI PEDESTRIAN SIGNAL HEAD WITH ASSOCIATED PHASE
- ⊠ PBI PEDESTRIAN PUSHBUTTON WITH 15" SIGN
- ⊠ SIGNAL PULL BOX
- - - SIGNAL CONDUIT
- ▨ WAVETRONIX DETECTION UNIT
- ▨ RADAR DETECTION ZONE

REVISIONS	DATE

Cannon & Cannon, Inc.
 Consulting Engineers • Field Surveyors
 8550 Kingston Pike
 Knoxville, Tennessee 37919
 Telephone: (865) 670-8555 • Fax: (865) 670-8866
 www.cannon-cannon.com

CLIENT: CITY OF OAK RIDGE

PROJECT: OAK RIDGE PEDESTRIAN IMPROVEMENTS PROJECT

PRESENT AND PROPOSED LAYOUT
 VERMONT AVENUE AT
 PENNSYLVANIA AVENUE

CCI PROJECT NO.	368-0017
DATE	08-07-13
P.M.	JCE
DRAWN	TRANSPORTATION
O.C.	JCE



R1.11