CITY OF FRANKLIN

MURFREESBORO ROAD, FROM EDDY LANE TO ARNO ROAD
SIGNAL IMPROVEMENTS

WILLIAMSON COUNTY, TENNESSEE

CONSTRUCTION

INDEX OF SHEETS

LOCATION OF PROJECT
WILLIAMSON COUNTY

FEDERAL PROJECT # CM-NH-96(59)
STATE PROJECT # 94LPLM-F1-109

NO EXCLUSIONS

LOCALLY MANAGED PROJECT

LOCALLY LET PROJECT

NO R.O.W. ACQUISITION NEEDED

NOTE:
This document is for information only; interested parties must purchase an official set of Bid Documents from the City of Franklin Engineering Department in order to submit a Bid.

Official Bid Documents are tentatively scheduled to be available for purchase beginning at 9:00 AM on Monday, October 3, 2022. *To purchase official Bid Documents*, please contact Robyn Freeman, Engineering Associate, by email at Robyn.Freeman@franklintn.gov or by phone at (615) 550-6748.

***For more information about this project*, please contact Adam Moser, City Traffic Engineer, by email at Adam.Moser@franklintn.gov or by phone at (615) 550-6663.**

BEGIN PROJECT NO. CM-NH-96(59)
STA. 13+00.00
N 686194.8153 E 1869632.2130

END PROJECT NO. CM-NH-96(59)
STA. 198+00.00
N 572727.9871 E 1731578.8502

SCALE: 1"= 3/4 MILE

TOTAL PROJECT LENGTH= 3.50 MILES

SEALED BY

Paul P Holzen

DATE: PAUL HOLZEN, P.E.
CITY ENGINEER

SPECIAL NOTES

PROPOSALS MAY BE REJECTED BY THE CITY'S STREETS DEPARTMENT DIRECTOR IF ANY OF THE UNIT PRICES CONTAINED THEREIN ARE OBVIOUSLY UNBALANCED, EITHER EXCESSIVE OR BELOW THE REASONABLE COST ANALYSIS VALUE.

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION DATED JANUARY 1, 2021 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

PIN NO. 127913.00

TRAFFIC DATA	
ADT (2019)	22269
POSTED SPEED	40 MPH

Gresham Smith
222 SECOND AVENUE SOUTH, SUITE 1400
NASHVILLE, TENNESSEE 37201
(615)770-8100 TELEPHONE
(866)539-7192 FAX
CONTACT: MEREDITH CEBELAK, PhD, P.E. (TN)

APPROVED BY: _____

P.I.N.: 127913.00

TDOT STANDARD TRAFFIC OPERATIONS DRAWINGS		
DWG. NO	REVISION DATE	STANDARD TITLE
SIGNS		
T-S-16	7/2/15	GROUND MOUNTED ROADSIDE SIGN PLACEMENT DETAILS
T-S-16A	7/2/15	GROUND MOUNTED ROADSIDE SIGN PLACEMENT DETAILS
SIGNALS		
T-SG-1	6/27/16	WOOD POLE DETAILS FOR SPAN MOUNTED SIGNALS
T-SG-2	6/27/16	LOOP LEAD-INS, CONDUIT AND PULL BOXES
T-SG-5	6/27/16	CONTROLLER CABINET DETAILS
T-SG-7	10/21/19	SIGNAL HEAD ASSEMBLIES
T-SG-7C		TYPICAL SIGNAL HEAD PLACEMENT ONE-LANE AND TWO-LANE APPROACHES
T-SG-7D	10/21/19	TYPICAL SIGNAL HEAD PLACEMENT TWO-LANE APPROACHES
T-SG-7H	10/21/19	TYPICAL SIGNAL HEAD PLACEMENT THREE-LANE AND FOUR-LANE APPROACHES
T-SG-7K	11/17/20	TYPICAL SIGNAL HEAD PLACEMENT FOUR-LANE APPROACHES
T-SG-7L	10/21/19	TYPICAL SIGNAL HEAD PLACEMENT FOUR-LANE APPROACHES
T-SG-7P		TYPICAL SIGNAL HEAD PLACEMENT FIVE-LANE APPROACHES
T-SG-8	6/27/16	STRAIN POLE DETAILS FOR SPAN MOUNTED SIGNALS
T-SG-9A	7/12/17	MISCELLANEOUS SIGNAL DETAILS
T-SG-10	7/11/17	MAST ARM POLE AND STRAIN POLES FOUNDATION DETAILS
T-SG-11	7/12/17	MAINTENANCE OF EXISTING SIGNALS DURING HIGHWAY CONSTRUCTION
T-SG-12	12/20/19	TYPICAL WIRING FOR SIGNAL HEADS AND DETECTION LOOPS

TDOT STANDARD ROADWAY DRAWINGS		
DWG.NO	REVISION DATE	STANDARD TITLE
ROADWAY DESIGN STANDARDS		
RD-A-1	2/20/20	STANDARD ABBREVIATIONS A THROUGH L
RD-A-2		STANDARD ABBREVIATIONS M THROUGH Z
RD-L-1	2/20/20	STANDARD LEGEND
RD-L-1A		STANDARD LEGEND
RD-L-2	2/20/20	STANDARD LEGEND FOR UTILITY INSTALLATIONS
RD-L-4	2/20/20	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING
MULTIMODAL		
MM-CR-8		MONO-DIRECTIONAL SINGLE CROSSWALK CURB RAMP DETAILS
SAFETY DESIGN AND GUARDRAILS		
S-CZ-1	6/28/2019	CLEAR ZONE CRITERIA
DESIGN - TRAFFIC CONTROL		
T-M-4	7/17/20	STANDARD INTERSECTION PAVEMENT MARKINGS
T-WZ-FAB1		FLASHING YELLOW ARROW BOARD
T-WZ-10	4/2/12	ADVANCE ROAD WORK SIGNING ON HIGHWAYS AND FREEWAYS
T-WZ-11	3/4/21	ONE LANE CLOSURE DETAIL ON DIVIDED HIGHWAYS
T-WZ-18	3/4/21	SHOULDER CLOSURE DETAIL FOR FREEWAYS AND DIVIDED HIGHWAYS
T-WZ-40	3/5/17	RIGHT LANE CLOSURES AT NEAR SIDE OF INTERSECTIONS
T-WZ-41	3/5/17	LEFT LANE CLOSURES AT NEAR SIDE OF INTERSECTIONS
T-WZ-42	3/5/17	CENTER LANE CLOSURES AT NEAR SIDE OF INTERSECTIONS
T-WZ-50	4/2/12	TRAFFIC CONTROL FOR SIGNALS ONLY PROJECTS ON 2 OR 3 LANE MAJOR ROUTES
T-WZ-51	4/2/12	TRAFFIC CONTROL FOR SIGNALS ONLY PROJECTS ON 4 OR 5 LANE MAJOR ROUTES
T-WZ-52	4/2/12	TRAFFIC CONTROL FOR SIGNALS ONLY PROJECTS ON 4 OR 5 LANE MAJOR AND MINOR ROUTES
T-WZ-53	4/2/12	TRAFFIC CONTROL FOR SIGNALS ONLY PROJECTS ON 4 OR MORE LANE DIVIDED MAJOR ROUTES
T-WZ-55	10/29/21	SIDEWALK TRAFFIC CONTROL

ABBREVIATIONS

ATT	ATTACH
CCTV	CLOSED CIRCUIT TELEVISION
COMM.	COMMUNICATIONS
DWG.	DRAWING
ELECT.	ELECTRICAL
E.O.P.	EDGE OF PAVEMENT
EXIST.	EXISTING
F	OVERHEAD FIBER OPTIC CABLE
F (UG)	UNDERGROUND FIBER OPTIC CABLE
F.O.	FIBER OPTIC
ITS	INTELLIGENT TRANSPORTATION SYSTEM
MAX.	MAXIMUM
MIN.	MINIMUM
MTEMC	MIDDLE TENNESSEE ELECTRIC MEMBERSHIP CORPORATION
P	POWER
PB	PULL BOX
PTZ	PAN TILT AND ZOOM
PVC	POLYVINYL CHLORIDE CONDUIT
RD	RADAR DETECTOR
R.O.W.	RIGHT OF WAY
STA.	STATION
STD.	STANDARD
SM	SINGLE MODE
TDOT	TENNESSEE DEPARTMENT OF TRANSPORTATION
TMC	TRAFFIC MANAGEMENT CENTER
VD	VIDEO DETECTION

KNOWN UTILITIES

AT&T
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KK4096@ATT.COM
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FRANKLIN, TN 37067-6226

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MICHAEL_LEE3@COMCAST.COM
1701 JOHN F. KENNEDY BLVD.
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1805 29TH STREET, SUITE 2050
BOULDER, CO 80301

LEGEND

- EXISTING TRAFFIC CONTROL CABINET
- PROPOSED TRAFFIC CONTROL CABINET
- EXISTING CONDUIT
- PROPOSED CONDUIT
- EXISTING SPAN WIRE
- PROPOSED CCTV
- EXISTING SIGNAL HEAD
- PROPOSED SIGNAL HEAD
- PROPOSED RADAR DETECTOR
- EXISTING RADAR DETECTOR
- PROPOSED 360 VIDEO CAMERA
- ZH-H VEHICLE DETECTION ZONE

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Genuine Ingenuity

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Richmond
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Tampa

GRESHAM SMITH
222 2ND AVENUE SOUTH
Nashville, Tennessee 37201
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WWW.GRESHAMSMITH.COM

CITY OF FRANKLIN SR96
TRAFFIC SIGNAL IMPROVEMENTS
FRANKLIN, TENNESSEE

MEREDITH K. CEBEAK
REGISTERED ENGINEER
AGRICULTURE
NO. 119881
STATE OF TENNESSEE
1/31/2022

REVISION		
No.	Date	Revision

STANDARD DRAWINGS
AND ABBREVIATIONS

1A

SCALE: N.T.S.
PROJECT: 44415.00
DATE: 2022

SCOPE OF WORK

THE GOAL OF THIS PROJECT IS TO IMPROVE THE TRAFFIC OPERATIONS OF 13 SIGNALIZED INTERSECTIONS ALONG SR 96 BETWEEN EDDY LANE AND ARNO ROAD. DESIGN ELEMENTS OF THIS PROJECT ALSO INCLUDE ENHANCED VEHICLE DETECTION, FLASHING YELLOW ARROWS (FYA), AND UPGRADING EXISTING TRAFFIC SIGNAL CABINETS ALONG WITH CONNECTED VEHICLE COMPONENTS.

GENERAL NOTES

(1) EQUIPMENT AND INSTALLATION SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE FOLLOWING CITY OF FRANKLIN AND TENNESSEE DEPARTMENT OF TRANSPORTATION PUBLICATIONS:

- "SPECIAL PROVISIONS" SECTION 730 FR - TRAFFIC SIGNALS.
- "SPECIAL SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (JANUARY 1, 2021)
- "STANDARD ROADWAY TRAFFIC OPERATIONS AND STRUCTURE DRAWINGS"

GRADING

(2) ANY AREA THAT IS DISTURBED OUTSIDE LIMITS OF CONSTRUCTION DURING THE LIFE OF THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

(3) THE CONTRACTOR SHALL NOT DISPOSE OF ANY MATERIAL EITHER ON OR OFF STATE-OWNED R.O.W. IN A REGULATORY FLOOD WAY AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) WITHOUT APPROVAL BY FEMA. ALL MATERIAL SHALL BE DISPOSED OF IN UPLAND (NON-WETLAND) AREAS AND ABOVE ORDINARY HIGH WATER OF ANY ADJACENT WATERCOURSE. THIS DOES NOT ELIMINATE THE NEED TO OBTAIN ANY OTHER LICENSES OR PERMITS THAT MAY BE REQUIRED BY ANY OTHER FEDERAL, STATE OR LOCAL AGENCY.

UTILITIES

(4) THE LOCATIONS OF UTILITIES SHOWN WITHIN THESE PLANS ARE APPROXIMATE ONLY. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. ABOVE GRADE AND UNDERGROUND UTILITIES SHOWN WERE TAKEN FROM VISIBLE APPURTENANCES AT THE SITE, PUBLIC RECORDS, AND/OR MAPS PREPARED BY OTHERS. THEREFORE, RELIANCE UPON THE TYPE, SIZE, AND LOCATION OF UTILITIES SHOWN SHOULD BE DONE SO WITH THIS CIRCUMSTANCE CONSIDERED. DETAILED VERIFICATION OF EXISTENCE, LOCATION, AND DEPTH SHOULD ALSO BE MADE PRIOR TO ANY DECISION RELATIVE THERETO IS MADE. AVAILABILITY AND COST OF SERVICE SHOULD BE CONFIRMED WITH THE APPROPRIATE UTILITY COMPANY. IN TENNESSEE, IT IS A REQUIREMENT, PER "THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT", THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOWN UNDERGROUND UTILITY OWNERS, NO LESS THAN THREE (3) OR NOT MORE THAN TEN (10) WORKING DAYS PRIOR TO THE DATE OF THEIR INTENT TO EXCAVATE AND ALSO TO AVOID ANY POSSIBLE HAZARD OR CONFLICT. NOTIFICATION BY CALLING THE TENNESSEE ONE CALL SYSTEM, INC., AT 1-800-351-1111 AS REQUIRED BY TCA 65-31-106 WILL BE REQUIRED.

(5) CONTRACTOR TO AVOID EXISTING UNDERGROUND UTILITIES BY MAINTAINING A MINIMUM CLEARANCE OF ONE FOOT, OR AS REQUIRED BY THE UTILITY. AERIAL CONFLICTS WILL BE ADDRESSED BY POLE ATTACHMENT PERMIT.

(6) UNLESS OTHERWISE NOTED, ALL UTILITY ADJUSTMENTS WILL BE PERFORMED BY THE UTILITY OR ITS REPRESENTATIVE. THE CONTRACTOR AND UTILITY OWNERS WILL BE REQUIRED TO COOPERATE WITH EACH OTHER IN ORDER TO EXPEDITE THE WORK REQUIRED BY THIS CONTRACT. ON CONTRACTS WHERE CONSTRUCTION STAKES, LINES, AND GRADES ARE CONTRACT ITEMS, THE CONTRACTOR WILL BE REQUIRED TO PROVIDE RIGHT-OF-WAY OR SLOPE STAKES, DITCH OR STREAM BED GRADES, OR OTHER ESSENTIAL SURVEY STAKING TO PREVENT CONFLICTS WITH THE HIGHWAY CONSTRUCTION. FREQUENTLY, THIS WILL BE REQUIRED AS THE FIRST ITEM OF WORK AND AT ANY LOCATION ON THE PROJECT DIRECTED BY THE ENGINEER.

(7) THE CONTRACTOR WILL 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 FOR OTHER ITEMS OF CONSTRUCTION.

(8) 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.

(9) THE CONTRACTOR SHALL NOTIFY EACH INDIVIDUAL UTILITY OWNER OF HIS 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. NOTIFICATION BY CALLING THE TENNESSEE ONE CALL SYSTEM, INC AT 1-800-351-1111 WILL BE REQUIRED.

TESTING

(10) EACH CABINET ASSEMBLY SHALL BE TESTED UNDER SIGNAL LOAD FOR A MINIMUM OF 48 HOURS. EACH CABINET ASSEMBLY SHALL BE DELIVERED WITH A SIGNED DOCUMENT DETAILING THE CABINET FINAL TESTS PERFORMED.

(11) THE CABINET ASSEMBLY AND ALL OTHER COMPONENTS SHALL BE WARRANTED FOR A PERIOD OF ONE YEAR FROM DATE OF SHIPMENT. WHERE SUPPLIED, THIS INCLUDES THE MMU AND CONTROLLER UNIT. ANY DEFECTS SHALL BE CORRECTED BY THE MANUFACTURER OR SUPPLIER AT NO COST TO THE OWNER.

PULL BOXES

(12) ALL PULL BOXES SHALL MEET THE SPECIFICATIONS REFERENCED IN THESE PLANS AND TDOT STANDARD DRAWING T-SG-2 AND HAVE A "CITY OF FRANKLIN TRAFFIC" LOGO ON COVER.

(13) PULL BOXES SHALL NOT BE LOCATED IN DRAINAGE SWALES, DITCHES, DRIVEWAYS, SURFACE WATER, PAVED SHOULDERS, OR PEDESTRIAN RAMPS.

(14) INSTALL PULL BOX COVERS FLUSH WITH SURROUNDING GRADE, TO THE EXTENT EXISTING CONDITIONS ALLOW.

(15) THE PROPOSED LOCATION OF CONDUIT AND PULL/JUNCTION BOXES SHOWN ON THESE PLANS MAY BE ADJUSTED TO CLEAR EXISTING TREES, SIGNS, LIGHTING, UTILITIES, STRUCTURES, DRAINAGE SWALES, DITCHES, WETLANDS, SURFACE WATER PAVED SHOULDERS, CURB RAMPS OR OTHER FIELD OBSTRUCTIONS. SIGNIFICANT ADJUSTMENTS SHALL BE APPROVED BY THE ENGINEER. SIGNIFICANT ADJUSTMENTS SHALL BE DEFINED AS DEVIATION FROM PROPOSED ROUTES GREATER THAN 5 FEET IN OFFSET.

CONDUIT

(16) ALL CONDUIT SHALL BE SCHEDULED 40 PVC UNLESS NOTED OTHERWISE. CONDUIT SHALL BE LAID AT A MINIMUM DEPTH OF 24 INCHES BELOW FINISHED GRADE AND SHALL COMPLY WITH THE CITY OF FRANKLIN'S TRENCHING DETAILS AND CONDUIT PLACEMENT PER CITY OF FRANKLIN STANDARD DETAILS ITS-03 AND ITS-02. THE CONTRACTOR IS ALLOWED TO JACK AND BORE THE CONDUIT AT NO ADDITIONAL COST.

(17) THE CONTRACTOR SHALL SEAL ALL CONDUIT ENTRANCE HOLES, WITH OR WITHOUT CABLES, WITH CONDUIT DUCT SEAL PUTTY. WHERE CABLES ENTER CONDUIT, THE SEALANT SHALL BE APPLIED AFTER INSTALLING THE CABLE. THESE LOCATIONS SHALL CONSIST OF CONDUIT ENDS AND PULL BOXES, CABINET BASES AND WEATHER HEADS.

(18) FIBER OPTIC CONDUIT SHALL BE ORANGE IN COLOR TO DISTINGUISH IT FROM ELECTRICAL CONDUIT BEING INSTALLED.

(19) ALL EMPTY CONDUIT INSTALLED ON PROJECT SHALL HAVE PULL TAPE INSTALLED FOR FUTURE USE.

(20) AT THE CONTRACTORS DISCRETION, DIRECTIONAL BORING METHOD MAY BE USED FOR CONDUIT INSTALLATION; HOWEVER, PAYMENT SHALL BE BASED ON PLAN DESCRIPTION AND QUANTITIES. PROPOSED CONDUIT ROUTES ARE AERIAL BASED. FIELD VERIFICATION OF MECHANICAL VERSUS HAND TRENCHING REQUIREMENTS OF THE PROPOSED ROUTES HAVE NOT BEEN EVALUATED. CONTRACTOR ASSUMES ALL RISKS ASSOCIATED WITH THE PROPOSED ROUTES.

(21) ALL EMPTY CONDUITS SHALL BE PLUGGED WITH AN APPROVED DUCT PLUG WITH RING ATTACHED TO THE PULL STRING. ALL NEW UNDERGROUND CONDUIT SHALL BE SEALED AT BOTH ENDS WITHIN 24-HOURS OF INSTALLATION TO PREVENT THE ENTRY OF DUST, DIRT OR MOISTURE AFTER COMPLETION OF PRESSURIZATION TEST. ANY EXISTING PLUGGED CONDUITS THAT WERE OPENED BY THE CONTRACTOR MUST BE RE-PLUGGED.

(22) ALL CONDUIT TRENCHES AND BORE PITS SHALL BE BACK FILLED 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 COMPLETED AND BACK FILLED IN THE SAME WORK OPERATION, OR THE END OF THE WORKDAY, WHICHEVER IS LESS.

(23) CONDUITS RESERVED FOR SIGNAL COMMUNICATION (FIBER OPTIC CABLES) SHALL HAVE ONLY "LONG SWEEP" ELBOWS, WITH NOT MORE THAN TWO 90 DEGREE ELBOWS BETWEEN ANY TWO PULLING POINTS (CONDUIT ENDS AND PULL BOXES). UNUSED CONDUITS SHALL BE SEALED WITH A DUCT PLUG DESIGNED FOR TEMPORARY SEALING. TAPE OR FOAM ARE NOT ACCEPTABLE.

SIGNAL HEADS

(24) ALL CIRCULAR AND ARROW INDICATIONS WITHIN ALL VEHICULAR SIGNAL HEADS PROPOSED FOR THIS PROJECT SHALL CONSIST OF AN LED (LIGHT EMITTING DIODE) SIGNAL MODULE UNLESS OTHERWISE NOTED IN THE PLANS.

(25) CIRCULAR INDICATIONS SHALL MEET "ITE VTCSH-LED CIRCULAR SIGNAL SUPPLEMENT" FOR EXPANDED/EXTENDED VIEW. ARROW INDICATIONS SHALL MEET "ITE VTCSH-3 LED ARROW SPECIFICATION" FOR EXPANDED/EXTENDED VIEW.

(26) INCANDESCENT OR SCREW-IN MODULES ARE NOT ACCEPTABLE.

(27) COMPATIBILITY WITH CONFLICT MONITORS AND LOAD SWITCHES SHALL BE TESTED AND CONFIRMED.

(28) MANUFACTURER SHALL PROVIDE A MINIMUM FIVE-YEAR WARRANTY FOR OPERATION OF THE UNIT.

(29) ALL SIGNAL HEADS WITH LED LENSES SHALL INCLUDE SWIVEL BALANCE ADJUSTERS TO MAINTAIN THE PROPER VISIBILITY. COSTS OF ADJUSTERS TO BE INCLUDED IN COSTS OF SIGNAL HEADS.

(30) THE ATTACHMENT OF THE TETHER WIRE TO THE POLE SHALL BE LOCATED BELOW THE LOWEST ELEVATION OF THE SIGNAL HEADS.

(31) SIGNAL HEADS SHALL INCLUDE LOUVERED BACKPLATES WITH A 1" MINIMUM, 3" MAXIMUM YELLOW RETRO REFLECTIVE BORDER AROUND THE PERIMETER OF THE FACE OF THE BACKPLATE. THE RETRO REFLECTIVE BORDER IS TO BE MADE OF A TYPE III PRISMATIC OR BETTER MATERIAL.

SIGNAL TIMING

(32) THE CONTRACTOR SHALL CONTACT ADAM MOSER 615-550-6663 WITH THE CITY OF FRANKLIN A MINIMUM OF THIRTY (30) DAYS PRIOR TO ACTIVATION OF THE SIGNAL TO OBTAIN THE INITIAL SIGNAL TIMINGS.

(33) THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE SIGNAL TIMING, INCLUDING COORDINATION AND TIME-BASE PROGRAMMING, IN THE TRAFFIC SIGNAL CONTROLLER.

ELECTRICAL

(34) THE CONTRACTOR SHALL NOTIFY ELECTRICAL UTILITY AT LEAST 48 HOURS PRIOR TO ANY INSTALLATION THAT IS WITHIN 10 FEET OF ENERGIZED ELECTRICAL CONDUCTORS. THE ELECTRICAL UTILITY, AT ITS OPTION, SHALL ASSIST THE CONTRACTOR AT INSTALLATION SITE IN TAKING PRECAUTIONS AS NECESSARY. EXTREME CAUTION SHALL BE EXERCISED AT ALL TIMES IN PERFORMANCE OF WORK AROUND THE HIGH VOLTAGE COMPONENTS.

(35) UNDER NO CIRCUMSTANCES SHALL ENERGIZED CABLE BE PLACED IN THE SAME CONDUIT OR PULL BOX AS FIBER OPTIC CABLE.

(36) THE CONTRACTOR SHALL OBTAIN ANY ELECTRICAL PERMITS REQUIRED BY THE CITY AND/OR POWER SERVICE PROVIDER PRIOR TO BEGINNING CONSTRUCTION.

(37) THE CONTRACTOR SHALL KEEP ANY EXISTING ROADWAY LIGHTING SYSTEMS ACTIVE WHILE POWER IS DISCONNECTED DURING CABINET REPLACEMENT, IF PRESENT.

WIRING

(38) THE CONTRACTOR SHALL LABEL ALL NEW CABLES IN THE CABINET AND PULL BOXES. EACH WIRE SHALL BE IDENTIFIED BY A CIRCULAR PLASTIC TAG 1 IN DIAMETER WITH PRE-PRINTED LETTERING.

COMMUNICATIONS

(39) CONTRACTOR SHALL ASSUME ALL RISK IN USE OF EXISTING INFRASTRUCTURE.

SUBMITTALS

(40) ALL EQUIPMENT CUT SHEETS SHALL BE SUBMITTED TO THE CITY OF FRANKLIN FOR REVIEW AND ACCEPTANCE PRIOR TO INSTALLATION.

WARRANTY

(41) ALL EQUIPMENT, EXCEPT PED SIGNAL HEADS SHALL BE WARRANTED FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR THREE (3) YEARS FROM DATE DELIVERED. SIGNAL HEADS SHALL BE WARRANTED FOR FIVE (5) YEARS.

Gresham Smith
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CITY OF FRANKLIN SR96
TRAFFIC SIGNAL
IMPROVEMENTS
FRANKLIN, TENNESSEE

MEREDITH K. CEBRIAN
REGISTERED ENGINEER
AGRICULTURE
NO. 119691
STATE OF TENNESSEE
1/31/2022

REVISION		
No.	Date	Revision

SCOPE OF WORK,
GENERAL NOTES,
AND SPECIAL NOTES

1B

SCALE: N.T.S.
PROJECT: 44415.00
DATE: 2022

CONSTRUCTION WORK ZONE AND TRAFFIC CONTROL

(44) THE CONTRACTOR SHALL SUBMIT A MATERIAL LIST TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO START OF CONSTRUCTION.

(45) THESE PLANS REFLECT CONDITIONS KNOWN DURING THEIR DEVELOPMENT. ALL SCALES ARE APPROXIMATE. ACTUAL PHYSICAL FIELD CONDITIONS SHALL PROVIDE THE BASIS FOR THE APPLICATION OF WORK SHOWN IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ALL WORK SHOWN IN THE PLANS.

(46) CENTERLINE OF CONSTRUCTION SHOWN IN THE PLANS IS AN APPROXIMATE REPRESENTATION AND IS FOR REFERENCE ONLY.

(47) ALL CONSTRUCTION ACTIVITIES SHALL BE COMPLETED IN FULL COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) AND ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD, FEDERAL REGISTER 36 CFR PARTS 1190 AND 1191.

(48) WHEN THE INSTALLATION OF THE PROPOSED TRAFFIC SIGNAL EQUIPMENT REQUIRES THE REMOVAL OF EXISTING PAVEMENT, CURB & GUTTER, AND SIDEWALKS OR WHERE SUCH IMPROVEMENTS ARE DAMAGED IN THE COURSE OF INSTALLATION, THE CONTRACTOR SHALL MAKE REPAIRS OR REPLACE IN KIND OR EQUAL AS DIRECTED BY THE CITY OF FRANKLIN. ALL COSTS OF SUCH REPLACEMENTS AND REPAIRS SHALL BE INCLUDED IN THE PRICE BID FOR RELATED ITEMS OF CONSTRUCTION.

(49) ANY CONCRETE REPLACEMENT SHALL BE PERFORMED TO THE NEXT JOINT.

(50) ADVANCE 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.

(51) 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 ORIGINAL UNIT PRICE BID FOR ITEM NO 712-06. SIGNS (CONSTRUCTION) PER SQUARE FOOT.

(52) A LONG TERM BUT SPORADIC USE WARNING SIGN, SUCH AS A FLAGGER SIGN, MAY REMAIN IN PLACE WHEN NOT REQUIRED PROVIDED THE SIGN FACE IS FULLY COVERED.

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

(54) USE OF BARRICADES, PORTABLE BARRIER RAILS, BARRIER RAIL DELINEATORS, AND DRUMS SHALL BE LIMITED TO THE IMMEDIATE AREAS OF CONSTRUCTION WHERE A HAZARD IS PRESENT. THESE DEVICES SHALL NOT BE STORED ALONG THE ROADWAY WITHIN THIRTY (30) FEET OF THE EDGE OF THE TRAVELED WAY BEFORE OR AFTER USE UNLESS PROTECTED BY GUARDRAIL, BRIDGE RAIL AND/OR BARRIERS INSTALLED FOR OTHER PURPOSES. THESE DEVICES SHALL BE REMOVED FROM THE CONSTRUCTION WORK ZONE WHEN THE ENGINEER DETERMINES THEY ARE NO LONGER NEEDED. WHERE THERE IS INSUFFICIENT RIGHT OF WAY TO PROVIDE FOR THIS 30-FOOT SETBACK. THE CONTRACTOR SHALL DETERMINE THE ALTERNATE LOCATIONS AND REQUIRES THE ENGINEER'S APPROVAL TO USE THEM.

(55) THE CONTRACTOR SHALL NOT BE PERMITTED TO PARK ANY VEHICLES OR CONSTRUCTION EQUIPMENT DURING PERIODS OF INACTIVITY, WITHIN THIRTY (30) FEET OF THE EDGE OF PAVEMENT WHEN THE LANE IS OPEN TO TRAFFIC. UNLESS PROTECTED BY GUARDRAIL, BRIDGE RAIL AND/OR BARRIERS INSTALLED FOR OTHER PURPOSES. PRIVATELY OWNED VEHICLES SHALL NOT BE ALLOWED TO PARK WITHIN THIRTY (30) FEET OF AN OPEN TRAFFIC LANE AT ANY TIME UNLESS PROTECTED AS DESCRIBED ABOVE. WHERE THERE IS INSUFFICIENT RIGHT OF WAY TO PROVIDE FOR THIS 30-FOOT SETBACK, THE CONTRACTOR SHALL DETERMINE THE ALTERNATE LOCATIONS AND REQUEST THE ENGINEER'S APPROVAL TO USE THEM.

(56) THE CONTRACTOR SHALL SUBMIT A FINAL TRAFFIC CONTROL PLAN TO THE ENGINEER PRIOR TO BEGINNING WORK. THE TRAFFIC CONTROL PLAN SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.

(57) THE TRAFFIC CONTROL PLAN SHALL CONSIDER THE IMPACTS OF CONSTRUCTION ACTIVITIES ON EXISTING PEDESTRIAN MOVEMENTS AND FACILITIES. THE CONTRACTOR SHALL INCLUDE MEASURES TO FACILITATE PEDESTRIAN MOVEMENTS THROUGH THE WORK ZONE AS REQUIRED BY THE ENGINEER AND IN STRICT ACCORDANCE WITH THE M.U.T.C.D. THE TRAFFIC CONTROL PLAN IS TO BE COORDINATED WITH THE TRAFFIC CONTROL SIGNING OF THE ASSOCIATED ROADWAY CONSTRUCTION ACTIVITIES.

(58) ALL DETOUR AND CONSTRUCTION SIGNING SHALL BE IN STRICT ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

(59) 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.

SPECIAL NOTES

(60) FOR ANY AERIAL FIBER CONNECTIONS, THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH LOCAL UTILITY COMPANY FOR ATTACHMENT AND ANY "MAKE READY" REQUIRED TO MTEMC POLES. ALL LOCATIONS WHERE MAKE READY OR INSTALLATION WORK OCCURS WITHIN 10' OF HIGH VOLTAGE LINES, MTEMC MUST BE NOTIFIED TO WRAP THE BLANKET LINES. THE CONTRACTOR SHALL CONTACT THE CITY OF FRANKLIN BEFORE ANY FIBER WORK IS STARTED.

(61) ALL BASELINES SHOWN ON PLANS ARE FOR GRAPHICAL INFORMATION PURPOSES ONLY AND ARE NOT STAKED IN THE FIELD.

(62) THE LOCATION OF ALL PROPOSED CONDUIT FOR FIBER AND WIRING TO BE INSTALLED SHALL BE CONSIDERED TO BE APPROXIMATE. ADJUSTMENTS IN THE FIELD MAY BECOME NECESSARY. VARIATIONS FROM THE PROPOSED LOCATIONS MUST BE APPROVED BY THE ENGINEER.

(63) THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS IN PDF FORMAT (BOTH ELECTRONIC AND HARD COPY) OF ALL EQUIPMENT PLACED AS PART OF THIS CONTRACT.

(64) FOR ALL UNPAVED AREAS WHICH ARE DISTURBED DUE TO CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL PROVIDE TOPSOIL AND SOD TO BE INCLUDED IN COST OF ITEMS THAT THE CONTRACTOR IS WORKING ON AT THE TIME.

(65) ALL REMOVED EQUIPMENT OR MATERIALS SHALL BE DISPOSED OF BY THE CONTRACTOR. COST OF DISPOSAL SHALL BE INCLUDED IN THE COST OF OTHER ITEMS.

(66) THE CONTRACTOR SHALL NOT BE ALLOWED TO STOCKPILE CONSTRUCTION MATERIALS OR EQUIPMENT WITHIN THE CLEAR ZONE UNLESS SHIELDED BY BARRIER.

(67) NOTE THAT NO SURVEY WAS CONDUCTED AND NONE IS SHOWN. CONTRACTOR IS RESPONSIBLE FOR VERIFYING R.O.W PRIOR TO CONSTRUCTION.

(68) ALL TRAFFIC SIGNAL, SIGN, PAVEMENT MARKINGS AND TEMPORARY TRAFFIC CONTROL APPARATUS INSTALLATION, MAINTENANCE PROCEDURES, AND EQUIPMENT SHALL MEET THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.).

(69) ANY EXISTING SIGNAL THAT IS PART OF A ROADWAY PROJECT OR INCLUDED AS A SIGNAL UPGRADE SHALL BE OPERATED AND MAINTAINED BY THE CONTRACTOR ONCE WORK HAS BEGUN. ONCE THE SIGNAL HAS BEEN MODIFIED OR MADE NOT TO FUNCTION AS PER EXISTING CONDITIONS (I.E. DETECTION REMOVED/RELOCATED), THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR THE OPERATION AND MAINTENANCE OF THE TRAFFIC SIGNAL UNTIL FINAL ACCEPTANCE.

(70) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE CITY OF FRANKLIN WITHIN TWO HOURS OF THE CITY NOTIFYING THE CONTRACTOR OF AN IDENTIFIED ISSUE WITH SIGNAL OPERATIONS FOR SIGNALS UNDER CONTRACTOR OPERATION AND MAINTENANCE. THE TRAFFIC SIGNAL SHALL BE MADE OPERATIONAL WITHIN 4 HOURS OF ORIGINAL CITY NOTIFICATION, OR A SCHEDULE SHALL BE SUBMITTED AND APPROVED BY THE CITY FOR FULL REPAIR.

(71) THE CONTRACTOR SHALL CONSTRUCT THE CONTROLLER CABINET AND FOUNDATION IN ACCORDANCE WITH THE TDOT 16-PHASE BASED MOUNTED CONTROLLER CABINET, THE CITY OF FRANKLIN STREET STANDARD DRAWINGS ITS-3, ITS-4, AND ITS-5, AND 730FR SPECIFICATION.

(72) ANY NON-OPERATIONAL SIGNAL HEADS, WHEN VISIBLE TO DRIVERS, SHALL BE COMPLETELY COVERED WITH CITY OF FRANKLIN APPROVED COVERING MATERIALS AND MAINTAINED BY THE CONTRACTOR.

(73) ALL SIGNAL HEADS SHALL BE FABRICATED FROM ALUMINUM. THE SIGNAL FACE SHALL BE BLACK, WHILE REMAINDER OF SIGNAL HEAD SHALL BE FEDERAL YELLOW IN COLOR. ALL SIGNAL HEADS SHALL BE LED TYPE IN ACCORDANCE WITH STANDARDS AND SPECIFICATION 730FR.

(74) CONTRACTOR SHALL COORDINATE WITH THE CITY OF FRANKLIN FOR REMOVAL OF THE EXISTING TRAFFIC CONTROL FACILITIES UPON ACTIVATION OF THE NEW SIGNAL SYSTEM. ALL DETECTION SHALL BE IN PLACE AND WORKING PRIOR TO REMOVAL OF EXISTING DETECTION. CONTRACTOR SHALL KEEP DETECTION WORKING AT ALL TIMES DURING CONSTRUCTION.

(75) THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ELECTRICAL SERVICE TO THE SITE. THE CONTRACTOR SHALL OBTAIN ADDRESSING AND AN ELECTRICAL PERMIT FROM THE CITY OF FRANKLIN BUILDING AND NEIGHBORHOOD SERVICES DEPARTMENT PRIOR TO CONSTRUCTION.

(76) THE CONTRACTOR SHALL LABEL ALL NEW AND EXISTING CABLES IN THE CABINET, POLE/PEDESTAL BASES AND PULL BOXES USING THE CONVENTION OF DRAWING T-SG-12. EACH WIRE SHALL BE IDENTIFIED USING COLORED MARKING TAPE WITH PHASES CLEARLY IDENTIFIED. DETECTION WIRE SHALL ALSO BE IDENTIFIED WITH PHASES/LOCATION, AS NECESSARY. MARKING SHALL INDICATE "GRD" FOR ALL GROUND AND GROUNDED NEUTRAL CONDUCTORS. COMPANION CIRCUIT CONDUCTORS SHALL BE MARKED "CKT" FOLLOWED BY THE DESIGNATED CHARACTERS AS SHOWN ON THE PLANS.

(77) THE CONTRACTOR SHALL SEAL ALL OPEN CONDUIT ENTRANCE HOLES, WITH OR WITHOUT CABLES, WITH CONDUIT DUCT SEAL PUTTY. WHERE CABLES ENTER THE CONDUIT, THE SEALANT SHALL BE APPLIED AFTER INSTALLING THE CABLE. THESE LOCATIONS SHALL CONSIST OF CONDUIT ENDS IN PULL BOXES, CABINET BASES AND WEATHERHEADS.

(78) THE TRAFFIC SIGNAL CONTROLLER CABINET SHALL BE A TS2 TYPE 1 CABINET AND PROVIDE FOR A MINIMUM OF 16 SIGNAL CIRCUITS AND LOAD BAY POSITIONS.

(79) THE CONTRACTOR SHALL SUPPLY ALL APPURTENANCES REQUIRED TO HAVE A COMPLETE AND OPERATING INTERCONNECTED TRAFFIC SIGNAL SYSTEM AS REQUIRED.

(80) THE CONTRACTOR SHALL RELOCATE EXISTING OPTICOM GPS EQUIPMENT TO NEW SIGNAL CABINETS, AS NECESSARY. PRIORITY CONTROL SHALL BE PROVIDED ON THE DESIGNATED APPROACHES OF THE INTERSECTION AS INDICATED ON THE PLANS. INTERSECTION DETECTION EQUIPMENT WILL CONSIST OF A CABINET-MOUNTED GPS RECEIVER AND RADIO TRANSCEIVER ALL CONNECTED TO A MULTIMODE PHASE SELECTOR LOCATED IN THE INTERSECTION CONTROL CABINET. AN AUXILIARY INTERFACE PANEL DESIGN SPECIFICALLY FOR THE PHASE SELECTOR BEING SUPPLIED SHALL BE PROVIDED AND WIRED IN THE CABINET.

(81) ATC CONTROLLER TO BE PROCURED AS PART OF THE BEST VALUE TECHNICAL CONTRACT, THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF FRANKLIN ENGINEERING DEPARTMENT AT (615) 791-3218, AND THE BEST VALUE TECHNICAL VENDOR FOR THE OPERATIONAL TESTING OF ALL FIELD AND CABINET WIRING. THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE AND OPERATIONAL TESTING OF THE PROJECT. UPON SUCCESSFUL COMPLETION OF THE OPERATIONAL TESTING THE CONTRACTOR WILL BE PROVIDED WITH THE APPROPRIATE TIMING PLAN BY THE CITY AND THE VENDOR TO BE PROGRAMMED INTO THE CONTROLLER, AS DETERMINED BY THE ENGINEERING DEPARTMENT. THESE TESTS SHALL OCCUR PRIOR TO THE FINAL ACCEPTANCE ON THE PROJECT.

(82) THE CONTRACTOR IS REQUIRED TO ATTEND A PRE-CONSTRUCTION MEETING WITH THE CITY OF FRANKLIN ENGINEERING AND STREETS DEPARTMENTS PRIOR TO THE COMMENCEMENT OF THE PROJECT. CALL (615) 791-3218 FOR MEETING SCHEDULE.

(83) INSPECTIONS OF ALL ASPECTS OF THE TRAFFIC SIGNAL INSTALLATION AND OF THE INTELLIGENT TRANSPORTATION SYSTEMS (ITS) WILL BE PERFORMED TO THE SATISFACTION OF THE CITY. THIS INSPECTION SHALL INCLUDE REVIEW OF THE FULL INSTALLATION OF ALL SIDEWALK RAMPS, PEDESTRIAN FEATURES, VEHICLE DETECTION AND SIGNAL HEADS, PAVEMENT MARKINGS, AND ANY DEVICE OR FEATURE NECESSARY FOR A FULLY FUNCTIONING SIGNALIZED INTERSECTION.

(84) CABINET REPLACEMENT SHALL BE DONE AS NIGHT WORK BETWEEN THE HOURS OF 7PM AND 6AM. OFF DUTY POLICE OFFICER(S) ARE REQUIRED DURING THE DURATION OF THE REPLACEMENTS.

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CITY OF FRANKLIN SR96
TRAFFIC SIGNAL IMPROVEMENTS
FRANKLIN, TENNESSEE

MEREDITH K. CEBERIO
AGRICULTURE
REGISTERED
LANDSCAPE
ARCHITECT
NO. 111988
STATE OF TENNESSEE

1/31/2022

REVISION		
No.	Date	Revision

SCOPE OF WORK, GENERAL NOTES, AND SPECIAL NOTES

1C

SCALE: N.T.S.
PROJECT: 44415.00
DATE: 2022

ESTIMATED QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	TOTAL
13	604-10.07	CONCRETE REMOVAL	LS	1
	701-02.03	CONCRETE CURB RAMP	S.F.	1218
	702-01.02	CONCRETE CURB	L.F.	80
	712-01	TRAFFIC CONTROL	LS	1
	712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH	260
	712-05.01	WARNING LIGHTS (TYPE A)	EACH	6
7	712-06	SIGNS (CONSTRUCTION)	S.F.	648
7	712-07.02	TEMPORARY BARRICADES (TYPE II)	L.F.	24
9	712-08.01	UNIFORMED POLICE OFFICER	DOLL	1
	712-08.03	ARROW BOARD (TYPE C)	EACH	2
15	713-15.07	SUSPENDED FLAT SHEET ALUMINUM SIGN (0.080" THICK)	EACH	12
8	713-16.50	REMOVE AND REPLACE SIGN (TN-69B)	EACH	1
	716-02.03	PLASTIC PAVEMENT MARKING (CROSS-WALK)	L.F.	151
	716-04.12	PLASTIC PAVEMENT MARKING (YIELD LINE)	S.F.	66
	716-08.01	REMOVAL OF PAVEMENT MARKING (LINE)	L.F.	187
	717-01	MOBILIZATION	LS	1
12	725-20.91	CCTV CAMERA SYSTEM (PAN TILT & ZOOM)	EACH	4
	725-24.41	BURN-IN PERIOD	LS	1
	725-24.55	AS-BUILT PLANS	LS	1
3	730-01.02	REMOVAL OF SIGNAL EQUIPMENT	EACH	10
6	730-01.03	MODIFICATION OF EXISTING TRAFFIC SIGNAL EQUIPMENT	LS	1
	730-02.09	SIGNAL HEAD ASSEMBLY (130 WITH BACKPLATE)	EACH	4
	730-02.17	SIGNAL HEAD ASSEMBLY (150 A2H WITH BACKPLATE)	EACH	2
	730-02.30	SIGNAL HEAD ASSEMBLY (140 A4F LEFT WITH BACKPLATE)	EACH	12
	730-02.31	SIGNAL HEAD ASSEMBLY (140 A4F RIGHT WITH BACKPLATE)	EACH	3
4	730-02.41	SIGNAL HEAD MODIFICATION (BACKPLATE)	EACH	3
	730-03.21	INSTALL PULL BOX (TYPE B)	EACH	10
	730-08.02	SIGNAL CABLE - 5 CONDUCTOR	L.F.	2881
	730-08.03	SIGNAL CABLE - 7 CONDUCTOR	L.F.	3552
10	730-12.02	CONDUIT 2" DIAMETER (PVC)	L.F.	585
2,14	730-13.13	VEHICLE DETECTOR (RADAR)	EACH	21
14	730-13.14	VEHICLE DETECTOR (360-DEGREE CAMERA)	EACH	2
11,14	730-13.15	VEHICLE DETECTOR (TWO 360-DEGREE CAMERA)	EACH	3
	730-15.07	CABINET (SIXTEEN PHASE BASE MOUNTED)	EACH	9
5	730-15.11	MODIFY CABINET (NEW DEVICES)	EACH	7
	730-21.02	WOOD POLE (SIGNAL SUPPORT) CLASS 3, 40' LENGTH	EACH	2
	730-22.02	GUYING DEVICE (ANGLE ANCHOR)	EACH	3
	730-23.30	PEDESTAL POLE (10' PEDESTRIAN)	EACH	8
	730-26.10	PEDESTRIAN SIGNAL HEAD W/PUSHBUTTON & 15IN SIGN	EACH	9
1	801-02	SEEDING (WITHOUT MULCH)	UNIT	1
1	801-03	WATER (SEEDING AND SODDING)	M.G	1

FOOTNOTES

1 TO BE USED AS NECESSARY ON DISTURBED AREAS.

2 RADAR DETECTOR TO BE WAVETRONIX.

3 REMOVAL OF SIGNAL EQUIPMENT TO OCCUR PER INTERSECTION AT MACK C HATCHER MEMORIAL PKWY, SOUTHWINDS BLVD, CENTER POINT PL, ROYAL OAKS BLVD, I-65 NB RAMP, EDWARD CURD LN, CAROTHERS PKWY, CLOVERCROFT RD, AND ARNO RD. SEE INDIVIDUAL LAYOUT SHEETS FOR EQUIPMENT REMOVAL SUMMARY

4 INSTALL NEW BACKPLATE ON EXISTING SIGNAL HEAD FOR PHASES 1 & 4 ON SHEET 7

5 RELOCATION OF EXISTING OPTICOM DEVICES TO OCCUR AT MACK C HATCHER MEMORIAL PKWY, SOUTHWINDS BLVD, CENTER POINT PL, ROYAL OAKS BLVD, I-65 SB RAMP, I-65 NB RAMP, AND CAROTHERS PKWY

6 MODIFICATION OF SPAN WIRE ASSEMBLY TO OCCUR ON SHEET 8, SHEET 9. SPAN WIRE CLEARANCE TO BE INCREASED BY 2.5 FEET FOR THE EAST SEGMENT, AND 0.5 FEET FOR THE WEST SEGMENT ON SHEET 8. SPAN WIRE CLEARANCE TO BE INCREASED BY 2.5 FEET FOR THE EAST AND WEST SEGMENT ON SHEET 9.

7 IT IS ANTICIPATED THAT THE CONTRACTOR RELOCATE/REUSE SIGNS & BARRICADES AT MULTIPLE LOCATIONS FOR SIDEWALK CLOSURE. FOR RELOCATED SIGNS THE COST OF RELOCATION SHALL BE INCLUDED IN THE UNIT PRICE OF ITEM 712-06. FOR RELOCATED BARRICADES THE COST OF RELOCATION SHALL BE INCLUDED IN THE UNIT 712-07.02.

8 TO BE USED AT SR.96 AND ROYAL OAKS BLVD.

9 TO BE USED AS DIRECTED BY THE ENGINEER FOR NIGHT TIME CABINET WORK.

10 100 L.F. TO BE USED AS DIRECTED BY THE ENGINEER FOR REPLACEMENT OF BROKEN CONDUIT.

11 TO BE USED FOR INTERSECTIONS WITH TWO 360-DEGREE DETECTION CAMERAS. PAY ITEM TO INCLUDE TWO DETECTION CAMERAS PER EACH.

12 PAY ITEM TO INCLUDE ETHERNET OVER COAX KIT: 1-120W SINGLE OUTPUT INDUSTRIAL DIN RAIL NDR-120 SERIES, 1-Vi2401A MAXICOPPER HIGH-SPEED ETHERNET EXTENDER OVER COAX, 1-Vi3202 24VAC COAX ETHERNET EXTENDER W/60W POE

13 CURB RAMP REMOVAL TO OCCUR AT CENTER POINT PLACE.

14 MUST COMPLY WITH THE CITY OF FRANKLIN'S 730FR SPECIFICATION, INCLUDING 10 FEET POLE ADAPTER AND MOUNTING HARDWARE.

15 SIGN TYPE TN-69A

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CITY OF FRANKLIN SR96 TRAFFIC SIGNAL IMPROVEMENTS
FRANKLIN, TENNESSEE

MEREDITH K. CEBELAK
REGISTERED PROFESSIONAL ENGINEER
AGRICULTURE & BIOSYSTEMS ENGINEERING
NO. 119691
STATE OF TENNESSEE

9/22/2022

REVISION

No.	Date	Revision

ESTIMATED QUANTITIES

2

SCALE: N.T.S.
PROJECT: 44415.00
DATE: 2022

TABULATED QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	SHEET 4	SHEET 5	SHEET 6	SHEET 7	SHEET 8	SHEET 9	SHEET 10	SHEET 11	SHEET 12	SHEET 13	SHEET 14	SHEET 15	SHEET 16	TOTAL 4-16
604-10.07	CONCRETE REMOVAL	LS														1
701-02.03	CONCRETE CURB RAMP	S.F.				722		496								1218
702-01.02	CONCRETE CURB	L.F.						80								80
712-01	TRAFFIC CONTROL	LS														1
712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH														260
712-05.01	WARNING LIGHTS (TYPE A)	EACH														6
712-06	SIGNS (CONSTRUCTION)	S.F.														648
712-07.02	TEMPORARY BARRICADES (TYPE II)	L.F.														24
712-08.01	UNIFORMED POLICE OFFICER	DOLL														1
712-08.03	ARROW BOARD (TYPE C)	EACH														2
713-15.07	SUSPENDED FLAT SHEET ALUMINUM SIGN (0.080" THICK)	EACH					3	4				3		1	1	12
713-16.50	REMOVE AND REPLACE SIGN (TN-69B)	EACH							1							1
716-02.03	PLASTIC PAVEMENT MARKING (CROSS-WALK)	L.F.						151								151
716-04.12	PLASTIC PAVEMENT MARKING (YIELD LINE)	S.F.			66											66
716-08.01	REMOVAL OF PAVEMENT MARKING (LINE)	L.F.						187								187
717-01	MOBILIZATION	LS														1
725-20.91	CCTV CAMERA SYSTEM (PAN TILT & ZOOM)	EACH			1			1			1		1			4
725-24.41	BURN-IN PERIOD	LS														1
725-24.55	AS-BUILT PLANS	LS														1
730-01.02	REMOVAL OF SIGNAL EQUIPMENT	EACH			1	1	1	1	1		1	1	1	1	1	10
730-01.03	MODIFICATION OF EXISTING TRAFFIC SIGNAL EQUIPMENT	LS														1
730-02.09	SIGNAL HEAD ASSEMBLY (130 WITH BACKPLATE)	EACH					1					3				4
730-02.17	SIGNAL HEAD ASSEMBLY (150 A2H WITH BACKPLATE)	EACH							2							2
730-02.30	SIGNAL HEAD ASSEMBLY (140 A4F LEFT WITH BACKPLATE)	EACH					3	4				3		1	1	12
730-02.31	SIGNAL HEAD ASSEMBLY (140 A4F RIGHT WITH BACKPLATE)	EACH							3							3
730-02.41	SIGNAL HEAD MODIFICATION (BACKPLATE)	EACH				3										3
730-03.21	INSTALL PULL BOX (TYPE B)	EACH				5		5								10
730-08.02	SIGNAL CABLE - 5 CONDUCTOR	L.F.				1084		942				855				2881
730-08.03	SIGNAL CABLE - 7 CONDUCTOR	L.F.	173	73		240	364	1095	786			570		182	69	3552
730-12.02	CONDUIT 2" DIAMETER (PVC)	L.F.	15	15	25	170	12	66	112	15	12		13	15	15	585
730-13.13	VEHICLE DETECTOR (RADAR)	EACH	4	3		3	4	4						3		21
730-13.14	VEHICLE DETECTOR (360-DEGREE CAMERA)	EACH								1	1					2
730-13.15	VEHICLE DETECTOR (TWO 360-DEGREE CAMERA)	EACH			1				1				1			3
730-15.07	CABINET (SIXTEEN PHASE BASE MOUNTED)	EACH			1		1	1	1	1	1		1	1	1	9
730-15.11	MODIFY CABINET (NEW DEVICES)	EACH			1		1	1	1	1	1		1			7
730-21.02	WOOD POLE (SIGNAL SUPPORT) CLASS 3, 40' LENGTH	EACH						2								2
730-22.02	GUYING DEVICE (ANGLE ANCHOR)	EACH						3								3
730-23.30	PEDESTAL POLE (10' PEDESTRIAN)	EACH				5		3								8
730-26.10	PEDESTRIAN SIGNAL HEAD W/PUSHBUTTON & 15IN SIGN	EACH				5		4								9
801-02	SEEDING (WITHOUT MULCH)	UNIT														1
801-03	WATER (SEEDING AND SODDING)	M.G														1

NOTE:
SEE SHEET 2 FOR FOOTNOTES

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CITY OF FRANKLIN SR96
TRAFFIC SIGNAL IMPROVEMENTS
FRANKLIN, TENNESSEE

MEREDITH K. CEBULAK
NO. 119681
STATE OF TENNESSEE
REGISTERED LANDSCAPE ARCHITECT
1/31/2022

REVISION		
No.	Date	Revision

TABULATED QUANTITIES

2A

SCALE: N.T.S.
PROJECT: 44415.00
DATE: 2022

CABINET EQUIPMENT TABLE

SHEET NO.	LOCATION	CCTV CAMERA	NEW CABINET	COMMENTS
4	EDDY LN. AND STRUBRIDGE DR. AT SR 96			
5	RALSTON LN. AT SR 96			
6	MACK C. HATCHER MEMORIAL HWY. AT SR 96	1	1	
7	SUGARTREE LN. AT SR 96			
8	WILLIAMSON SQUARE AND SOUTHWINDS BLVD. AT SR 96		1	
9	CENTER POINT PL. AT SR 96	1	1	
10	N. ROYAL OAKS BLVD. AND S. ROYAL OAKS BLVD. AT SR 96		1	
11	I-65 SB RAMP AT SR 96		1	
12	I-65 NB RAMP AT SR 96	1	1	
13	EDWARD CURD LN. AT SR 96			
14	CAROTHERS PKWY. AT SR 96	1	1	
15	CLOVERCROFT RD. AT SR 96		1	
16	ARNO RD. AT SR 96		1	
	TOTALS:	4	9	

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CITY OF FRANKLIN SR96
TRAFFIC SIGNAL IMPROVEMENTS
FRANKLIN, TENNESSEE

MEREDITH K. CEBULAK
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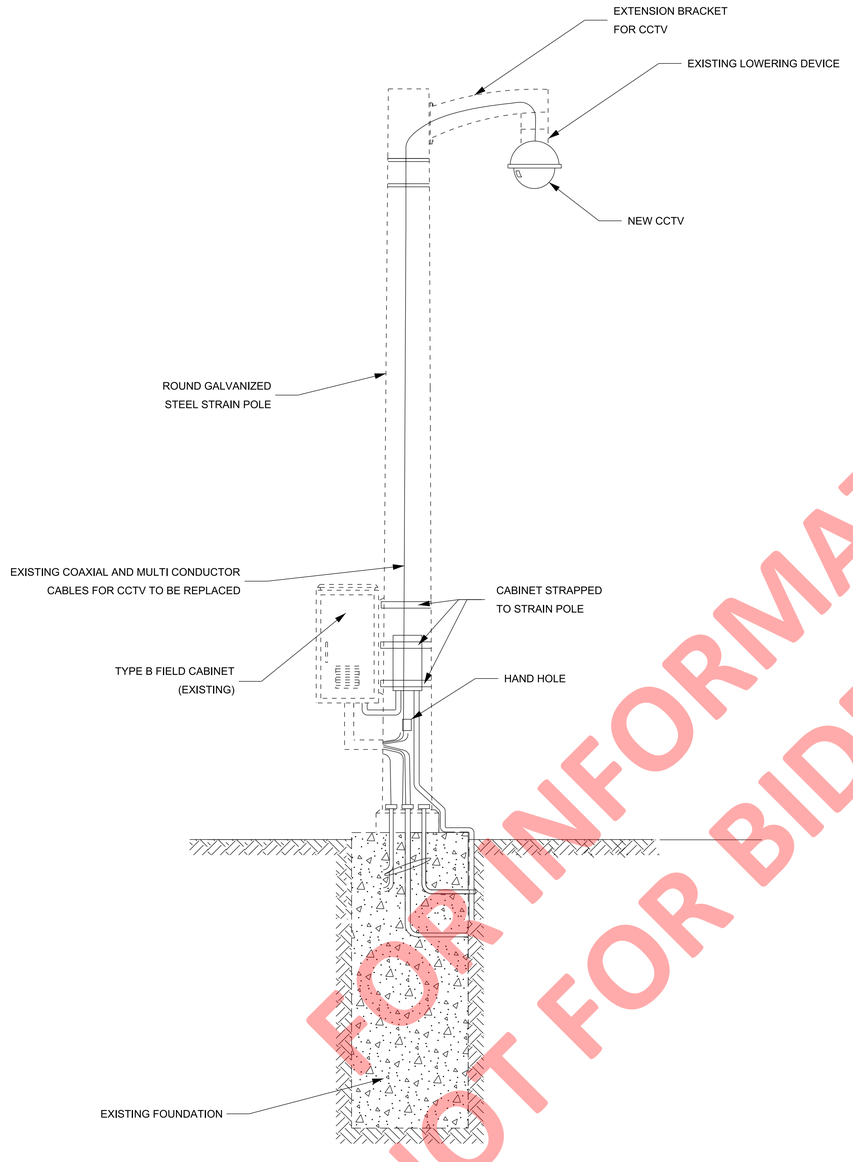
LICENSED PROFESSIONAL ENGINEER
AGRICULTURE
1/31/2022

REVISION		
No.	Date	Revision

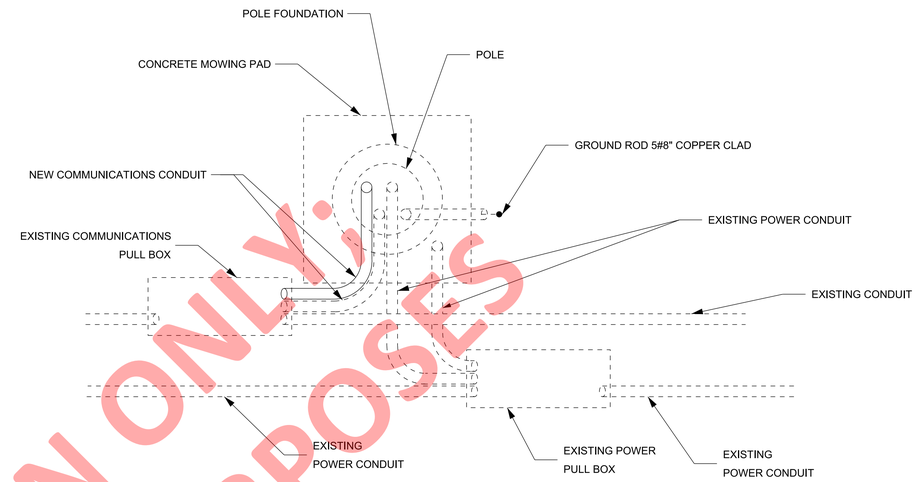
CABINET EQUIPMENT TABLE

2B

SCALE: N.T.S.
PROJECT: 44415.00
DATE: 2022



TYPICAL NEW CCTV ON
EXISTING STRAIN POLE
N.T.S.



TYPICAL CONDUIT AT EXISTING POLE FOUNDATIONS
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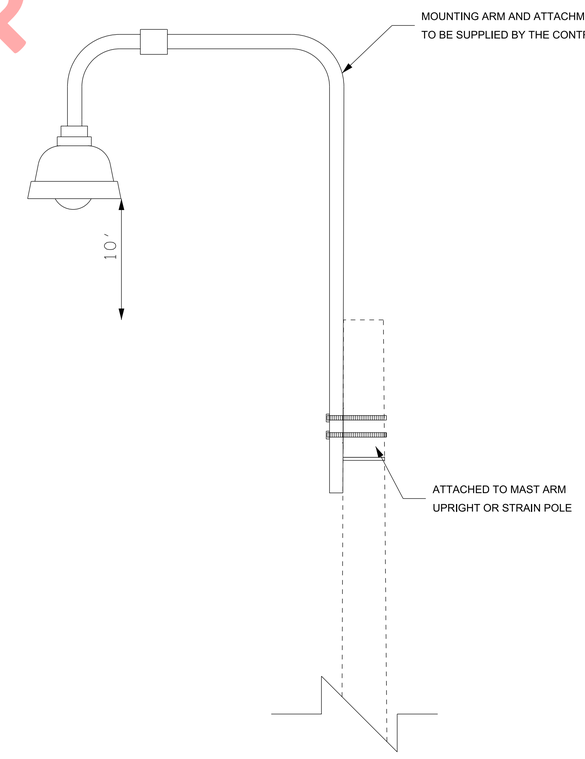

TYPICAL 360 DEGREE
DETECTION MOUNTING DETAIL
N.T.S.

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CITY OF FRANKLIN SR96 TRAFFIC SIGNAL IMPROVEMENTS
FRANKLIN, TENNESSEE

MEREDITH K. CEBULA
LICENSED PROFESSIONAL ENGINEER
AGRICULTURE
ENGINEER
NO. 119695
STATE OF TENNESSEE
9/22/2022

REVISION		
No.	Date	Revision

TYPICAL CCTV DETAIL

2C

SCALE: N.T.S.
PROJECT: 44415.00
DATE: 2022

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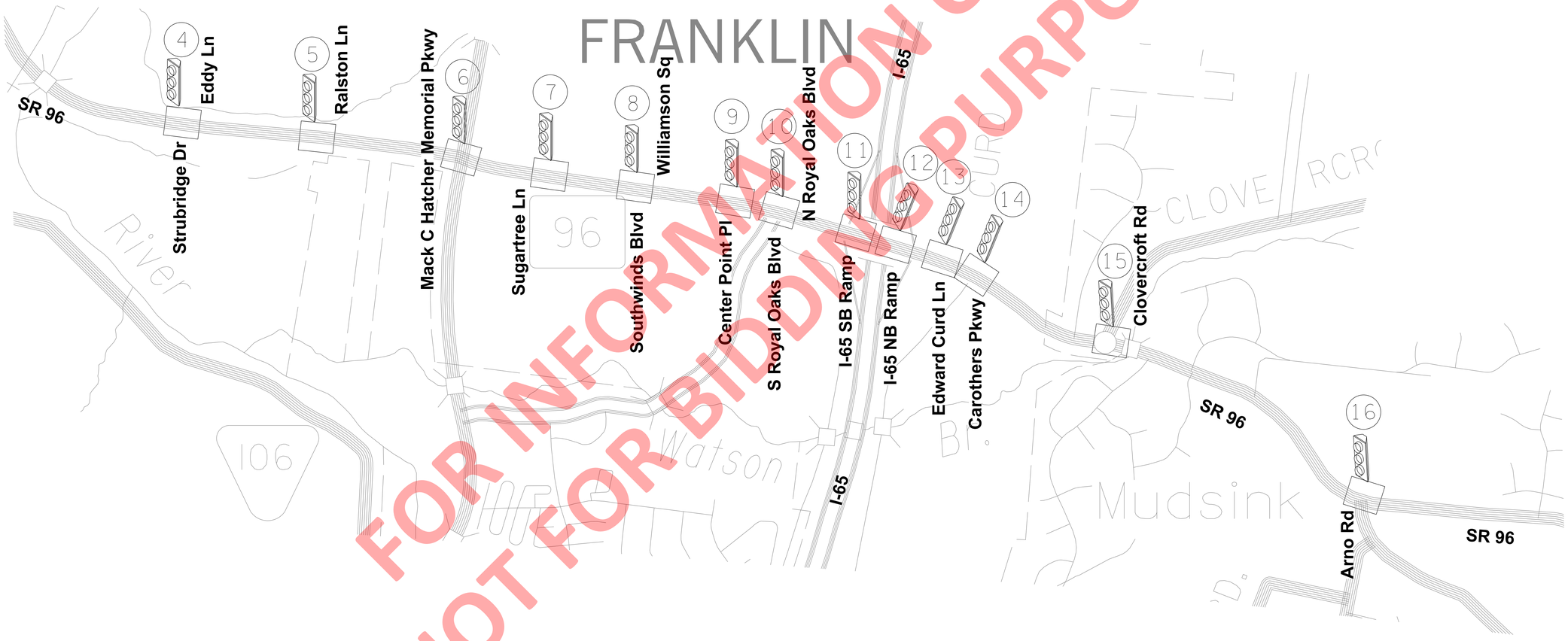
LEGEND

INTERSECTION WITH SIGNAL WORK

1 SHEET NUMBER

SHEET CLIP



N

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FRANKLIN, TENNESSEE

MEREDITH K. CEBELAK
ARCHITECTURE
No. 119691
STATE OF TENNESSEE

1/31/2022

REVISION		
No.	Date	Revision

ITS LAYOUT SHEET

3

SCALE: NOT TO SCALE
PROJECT: 44415.00
DATE: 2022

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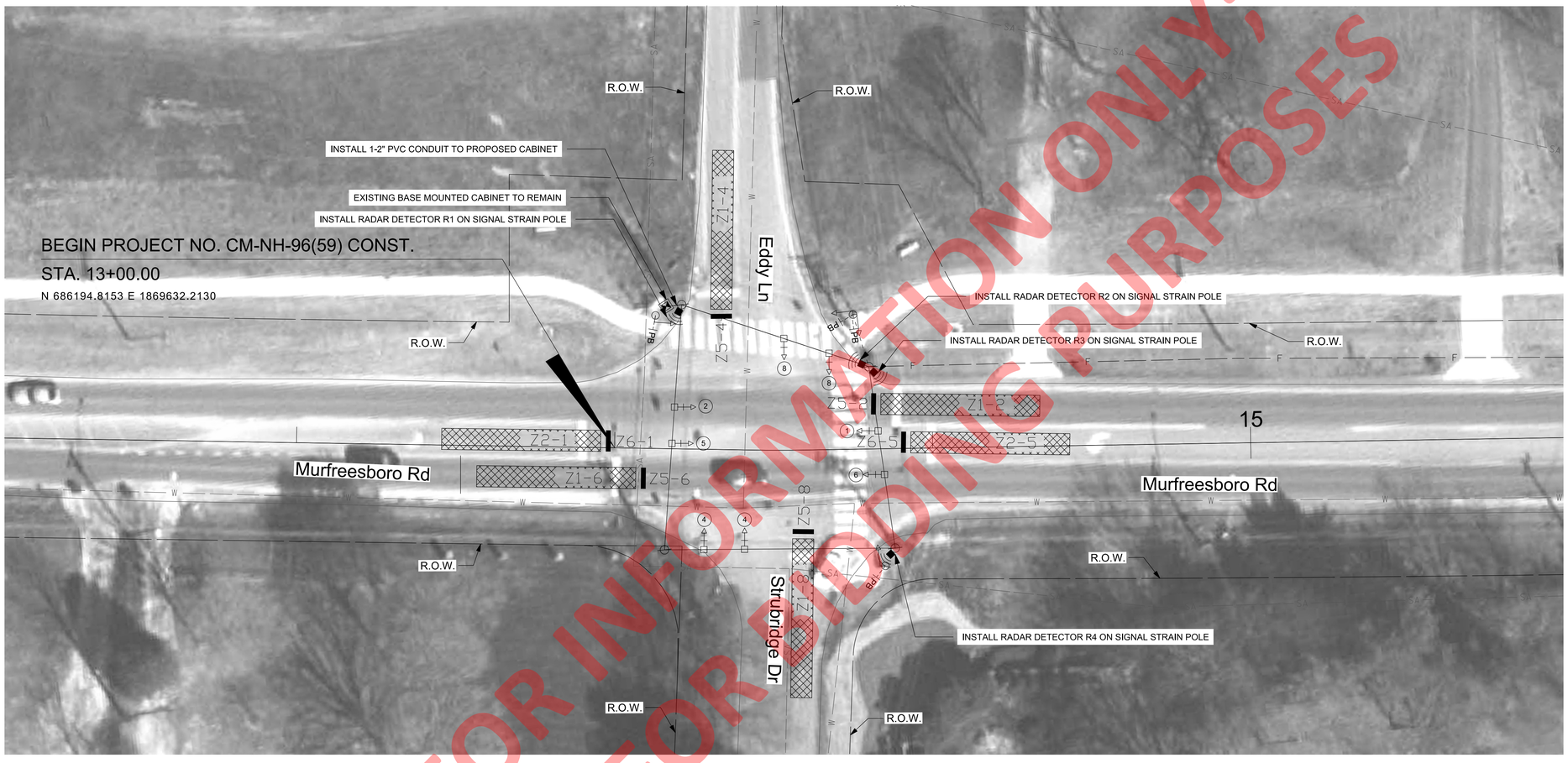


SIGNAL DISPLAYS

ALL SIGNAL HEADS ARE 12" LED

(TYPE 130)

EXISTING SIGNAL HEAD
2,4,6,8

(TYPE 150A2)

EXISTING SIGNAL HEAD
1,5

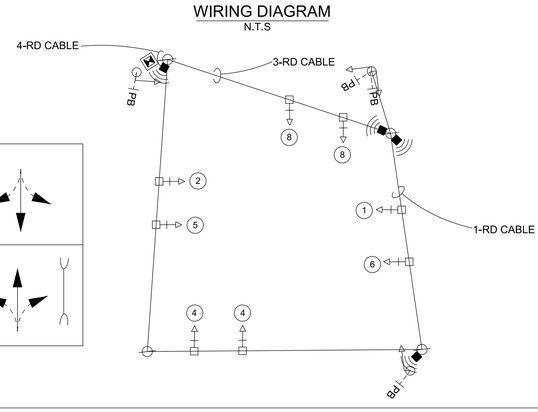
RADAR DETECTION ASSIGNMENTS				
ZONE ASSIGNMENT	SIZE	RADAR	MODE	DISTANCE FROM STOP LINE
Z2-1	6'X50'	R1	PRESENCE	-4'
Z1-2	6'X50'	R3	PRESENCE	-4'
Z1-4	6'X50'	R2	PRESENCE	-4'
Z2-5	6'X50'	R3	PRESENCE	-4'
Z1-6	6'X50'	R1	PRESENCE	-4'
Z1-8	6'X50'	R4	PRESENCE	-4'

PHASING DIAGRAM

Ø1	Ø2	Ø3 NOT USED	Ø4
Ø5	Ø6	Ø7 NOT USED	Ø8

WIRING DIAGRAM

N.T.S



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CITY OF FRANKLIN SR96 TRAFFIC SIGNAL IMPROVEMENTS

FRANKLIN, TENNESSEE

MEREDITH K. CEBELAK
NO. 119868
STATE OF TENNESSEE
REGISTERED PROFESSIONAL ENGINEER IN AGRICULTURE
REGISTERED PROFESSIONAL ENGINEER IN COMMERCE

1/31/2022

REVISION		
No.	Date	Revision

PROPOSED LAYOUT & SIGNAL DETAILS

4

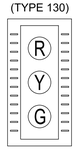
SCALE: 1"=20'
PROJECT: 44415.00
DATE: 2022

N

SIGNAL DISPLAYS

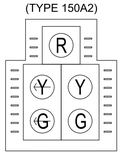
ALL SIGNAL HEADS ARE 12" LED

(TYPE 130)



EXISTING SIGNAL HEAD
2,3,6,8

(TYPE 150A2)



EXISTING SIGNAL HEAD
1

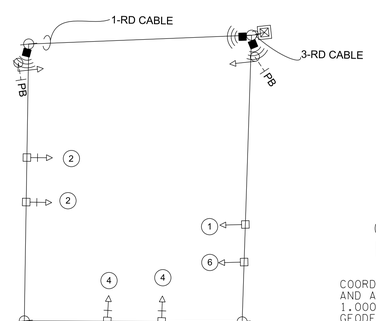
RADAR DETECTION ASSIGNMENTS				
ZONE ASSIGNMENT	SIZE	RADAR	MODE	DISTANCE FROM STOP LINE
Z2-1	6'X50'	R1	PRESENCE	-4'
Z1-2	6'X50'	R3	PRESENCE	-4'
Z2-3	6'X50'	R2	PRESENCE	-4'
Z1-6	6'X50'	R1	PRESENCE	-4'
Z1-8	6'X50'	R2	PRESENCE	-4'

PHASING DIAGRAM

Ø1	Ø2	Ø3 NOT USED	Ø4
Ø5 NOT USED	Ø6	Ø7 NOT USED	Ø8 NOT USED

WIRING DIAGRAM

N.T.S



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COORDINATE VALUES ARE NAD/83 (2011), AND ARE DATUM ADJUSTED BY THE FACTOR OF 1.0000729, AND ARE TIED TO THE TENNESSEE GEODETIC REFERENCE NETWORK. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

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TRAFFIC SIGNAL IMPROVEMENTS
FRANKLIN, TENNESSEE

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AGRICULTURE & BIOSYSTEMS ENGINEERING
NO. 119601
STATE OF TENNESSEE

1/31/2022

REVISION		
No.	Date	Revision

PROPOSED LAYOUT & SIGNAL DETAILS

5

SCALE: 1"=20'
PROJECT: 44415.00
DATE: 2022

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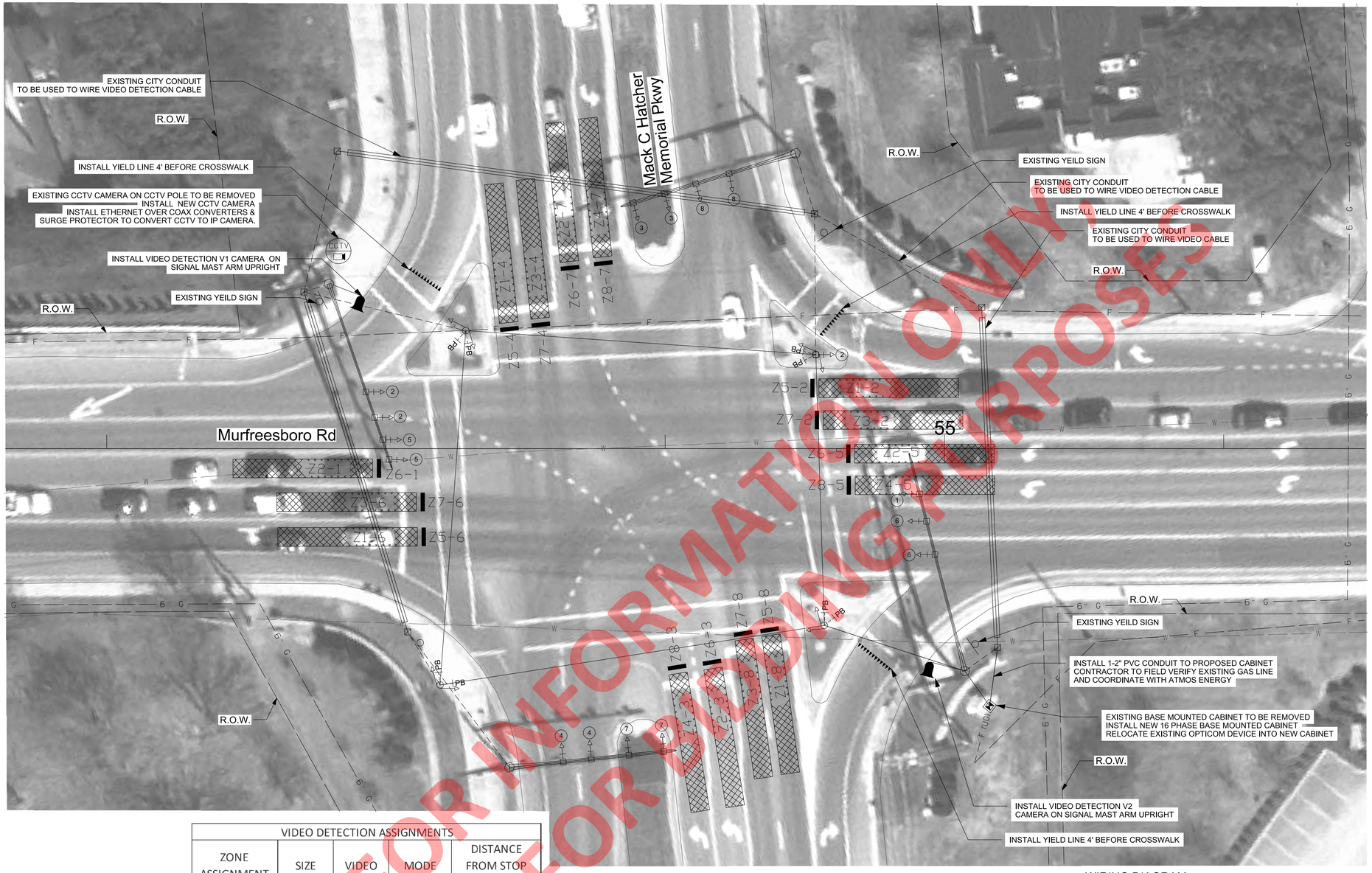
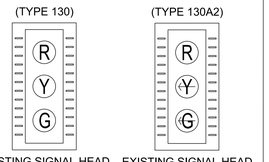


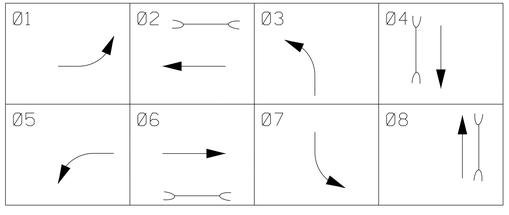
VIDEO DETECTION ASSIGNMENTS				
ZONE ASSIGNMENT	SIZE	VIDEO	MODE	DISTANCE FROM STOP LINE
Z2-1	6'X50'	V1	PRESENCE	-4'
Z1-2	6'X50'	V2	PRESENCE	-4'
Z2-3	6'X50'	V1	PRESENCE	-4'
Z4-3	6'X50'	V1	PRESENCE	-4'
Z1-4	6'X50'	V2	PRESENCE	-4'
Z3-4	6'X50'	V2	PRESENCE	-4'
Z2-5	6'X50'	V2	PRESENCE	-4'
Z4-5	6'X50'	V2	PRESENCE	-4'
Z1-6	6'X50'	V1	PRESENCE	-4'
Z3-6	6'X50'	V1	PRESENCE	-4'
Z2-7	6'X50'	V2	PRESENCE	-4'
Z4-7	6'X50'	V2	PRESENCE	-4'
Z1-8	6'X50'	V1	PRESENCE	-4'
Z3-8	6'X50'	V1	PRESENCE	-4'

SIGNAL DISPLAYS

ALL SIGNAL HEADS ARE 12" LED

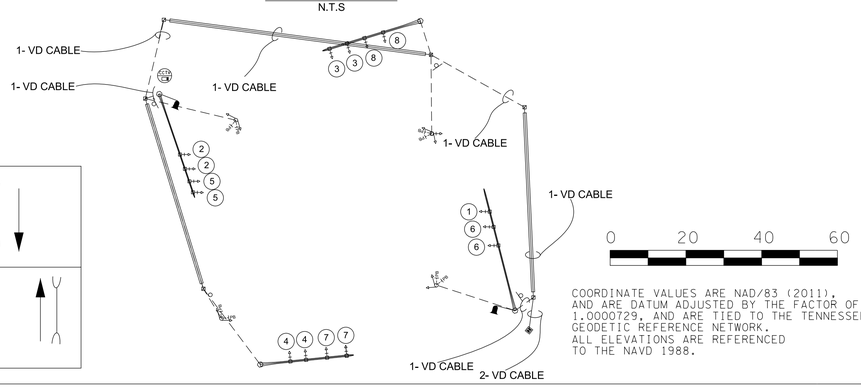


PHASING DIAGRAM



WIRING DIAGRAM

N.T.S



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PROPOSED LAYOUT & SIGNAL DETAILS

6

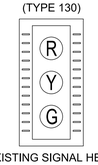
SCALE: 1"=20'
PROJECT: 44415.00
DATE: 2022

N

SIGNAL DISPLAYS

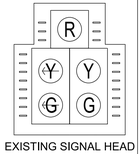
ALL SIGNAL HEADS ARE 12" LED

(TYPE 130)



EXISTING SIGNAL HEAD
2,4,6,8

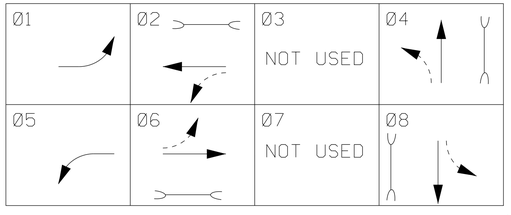
(TYPE 150 A2)



EXISTING SIGNAL HEAD
1,5

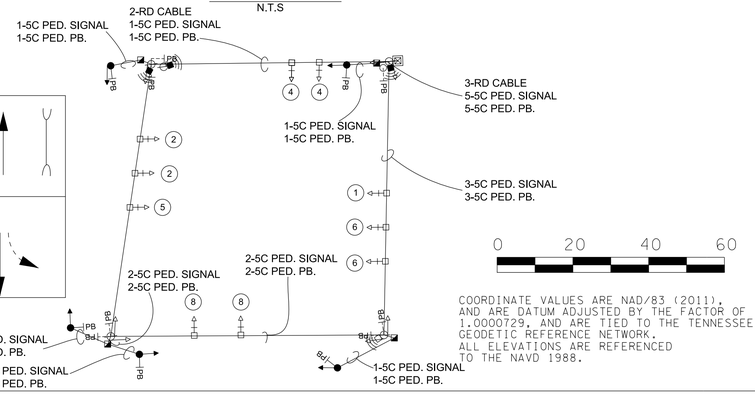
RADAR DETECTION ASSIGNMENTS				
ZONE ASSIGNMENT	SIZE	RADAR	MODE	DISTANCE FROM STOP LINE
Z2-1	6'X50'	R1	PRESENCE	-4'
Z1-2	6'X50'	R3	PRESENCE	-4'
Z3-2	6'X50'	R3	PRESENCE	-4'
Z1-4	6'X50'	R4	PRESENCE	-4'
Z2-4	6'X50'	R4	PRESENCE	-4'
Z2-5	6'X50'	R3	PRESENCE	-4'
Z1-6	6'X50'	R1	PRESENCE	-4'
Z3-6	6'X50'	R1	PRESENCE	-4'
Z1-8	6'X50'	R2	PRESENCE	-4'
Z2-8	6'X50'	R2	PRESENCE	-4'

PHASING DIAGRAM



WIRING DIAGRAM

N.T.S



0 20 40 60

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MEREDITH K. CEBELAK
REGISTERED PROFESSIONAL ENGINEER
AGRICULTURE
STATE OF TENNESSEE

1/31/2022

REVISION		
No.	Date	Revision

PROPOSED LAYOUT & SIGNAL LAYOUT

7

SCALE: 1"=20'
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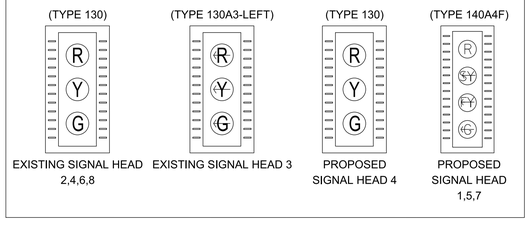
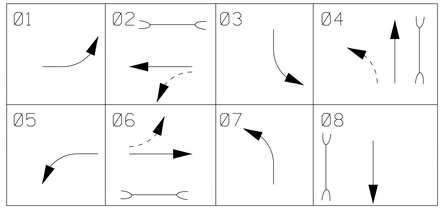
SIGNAL DISPLAYS

ALL SIGNAL HEADS ARE 12" LED



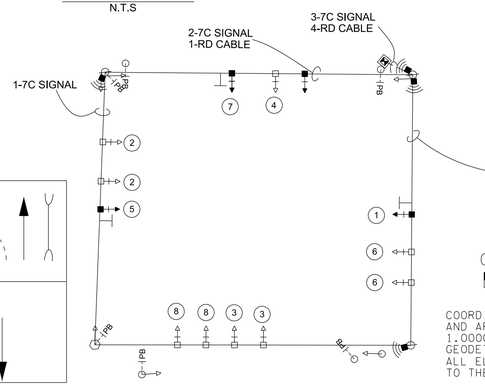
RADAR DETECTION ASSIGNMENTS				
ZONE ASSIGNMENT	SIZE	RADAR	MODE	DISTANCE FROM STOP LINE
Z2-1	6'X50'	R1	PRESENCE	-4'
Z1-2	6'X50'	R3	PRESENCE	-4'
Z3-2	6'X50'	R3	PRESENCE	-4'
Z2-3	6'X50'	R2	PRESENCE	-4'
Z3-3	6'X50'	R2	PRESENCE	-4'
Z1-4	6'X50'	R4	PRESENCE	-4'
Z2-5	6'X50'	R3	PRESENCE	-4'
Z1-6	6'X50'	R1	PRESENCE	-4'
Z3-6	6'X50'	R1	PRESENCE	-4'
Z2-7	6'X50'	R4	PRESENCE	-4'
Z1-8	6'X50'	R2	PRESENCE	-4'

PHASING DIAGRAM



WIRING DIAGRAM

N.T.S



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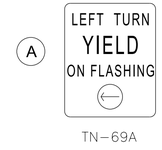

TN-69A

0 20 40 60

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FRANKLIN, TENNESSEE

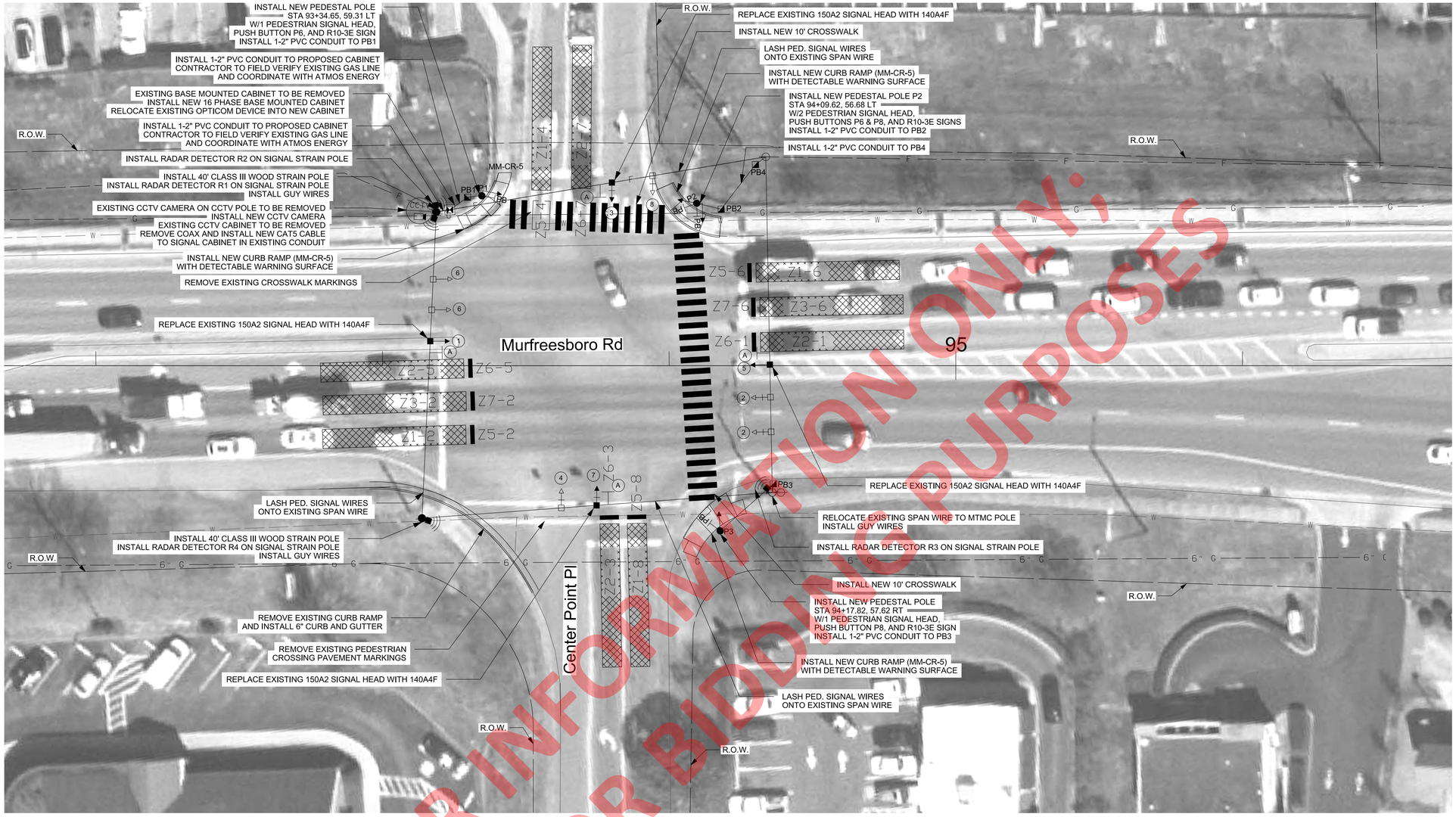
MEREDITH K. CEBULAK
STATE OF TENNESSEE
1/31/2022

REVISION		
No.	Date	Revision

PROPOSED LAYOUT & SIGNAL DETAILS

8

SCALE: 1"=20'
PROJECT: 44415.00
DATE: 2022



SIGNAL DISPLAYS

ALL SIGNAL HEADS ARE 12" LED

(TYPE 130) — EXISTING SIGNAL HEAD 4,6,8

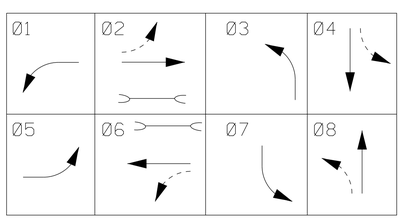
(TYPE 130 W/O BACKPLATE) — EXISTING SIGNAL HEAD 2

(TYPE 140A4F) — PROPOSED SIGNAL HEAD 1,3,5,7

RADAR DETECTION ASSIGNMENTS

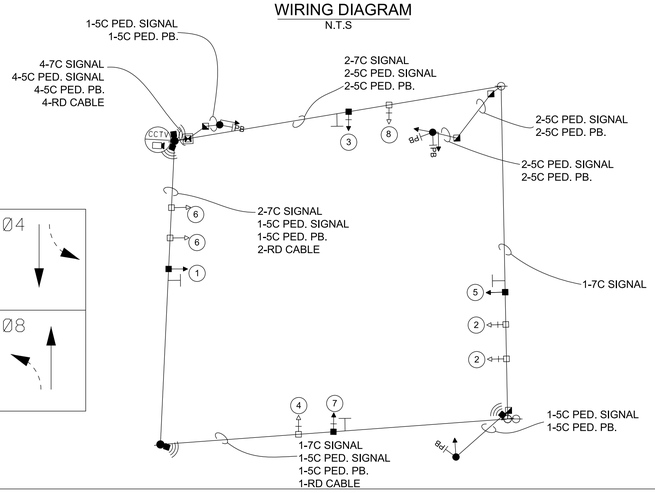
ZONE ASSIGNMENT	SIZE	RADAR	MODE	DISTANCE FROM STOP LINE
Z2-1	6'X50'	R3	PRESENCE	-4'
Z1-2	6'X50'	R1	PRESENCE	-4'
Z3-2	6'X50'	R1	PRESENCE	-4'
Z2-3	6'X50'	R4	PRESENCE	-4'
Z1-4	6'X50'	R2	PRESENCE	-4'
Z2-5	6'X50'	R1	PRESENCE	-4'
Z1-6	6'X50'	R3	PRESENCE	-4'
Z3-6	6'X50'	R3	PRESENCE	-4'
Z2-7	6'X50'	R2	PRESENCE	-4'
Z1-8	6'X50'	R4	PRESENCE	-4'

PHASING DIAGRAM



WIRING DIAGRAM

N.T.S



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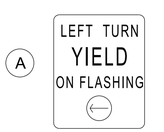

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0 20 40 60

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CITY OF FRANKLIN SR96 TRAFFIC SIGNAL IMPROVEMENTS

FRANKLIN, TENNESSEE

MEREDITH K. CEBELAK
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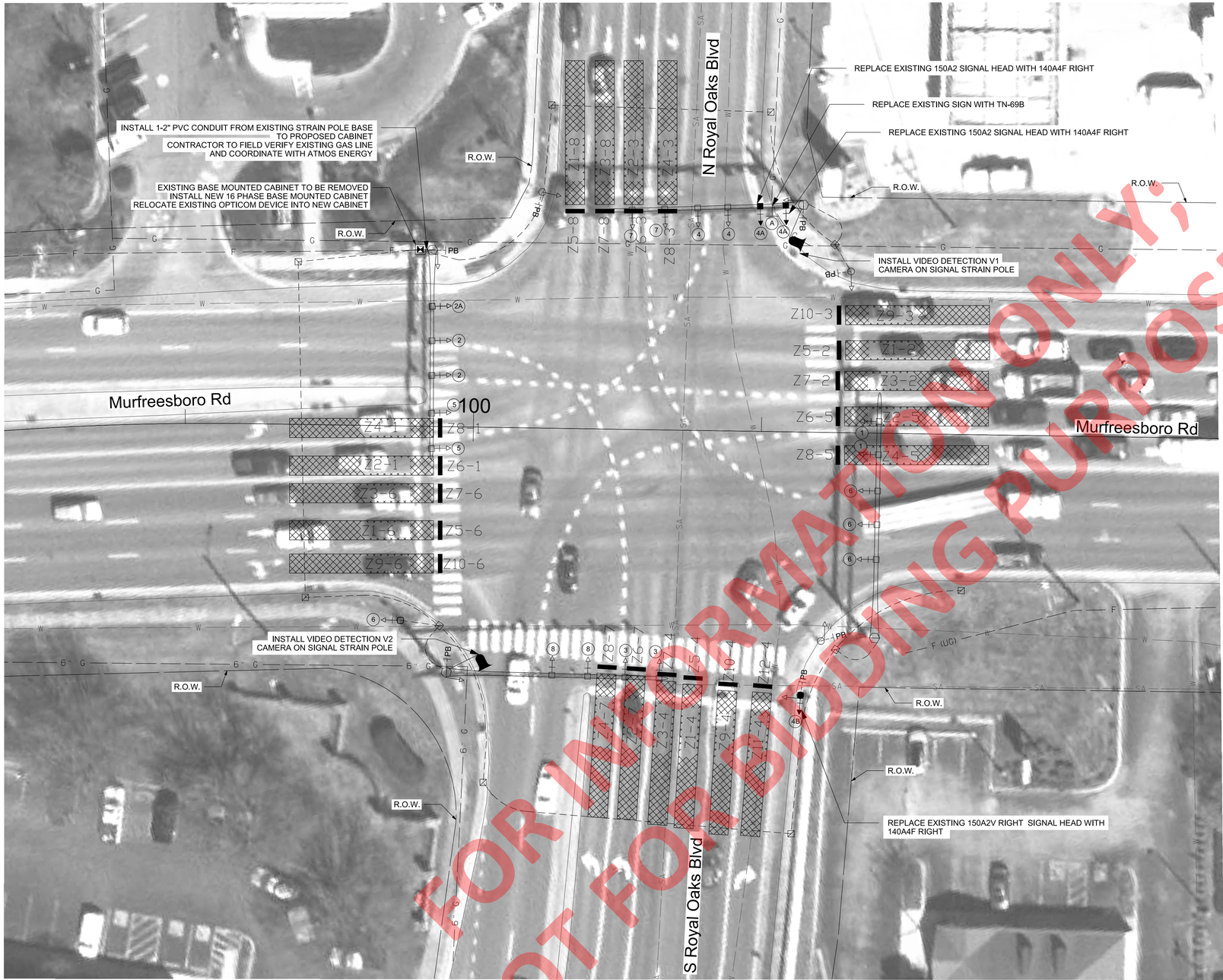
NO. 119681
STATE OF TENNESSEE
1/31/2022

REVISION		
No.	Date	Revision

PROPOSED LAYOUT & SIGNAL DETAILS

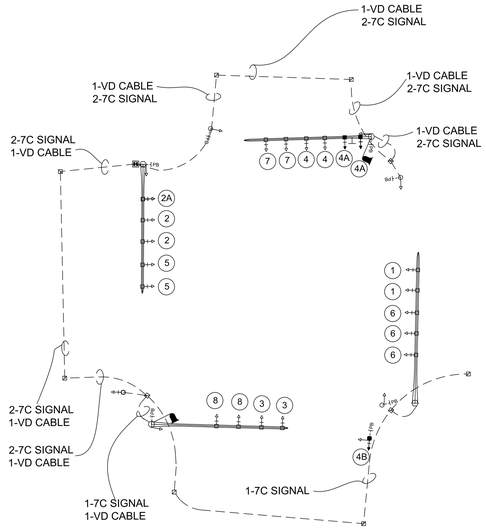
9

SCALE: 1"=20'
PROJECT: 44415.00
DATE: 2022



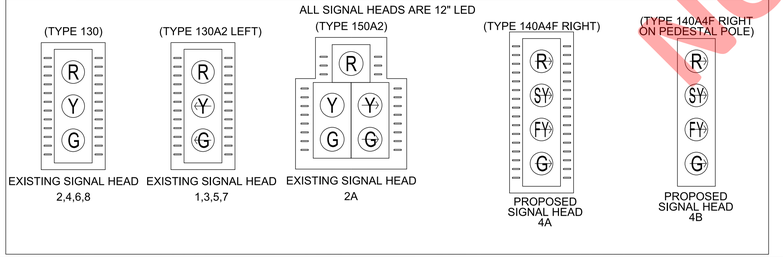
VIDEO DETECTION ASSIGNMENTS				
ZONE ASSIGNMENT	SIZE	VIDEO	MODE	DISTANCE FROM STOP LINE
Z2-1	6'X50'	V2	PRESENCE	-4'
Z4-1	6'X50'	V2	PRESENCE	-4'
Z1-2	6'X50'	V1	PRESENCE	-4'
Z3-2	6'X50'	V1	PRESENCE	-4'
Z2-3	6'X50'	V1	PRESENCE	-4'
Z4-3	6'X50'	V1	PRESENCE	-4'
Z9-3	6'X50'	V1	PRESENCE	-4'
Z1-4	6'X50'	V2	PRESENCE	-4'
Z3-4	6'X50'	V2	PRESENCE	-4'
Z9-4	6'X50'	V2	PRESENCE	-4'
Z11-4	6'X50'	V2	PRESENCE	-4'
Z2-5	6'X50'	V1	PRESENCE	-4'
Z4-5	6'X50'	V1	PRESENCE	-4'
Z1-6	6'X50'	V2	PRESENCE	-4'
Z3-6	6'X50'	V2	PRESENCE	-4'
Z9-6	6'X50'	V2	PRESENCE	-4'
Z2-7	6'X50'	V2	PRESENCE	-4'
Z4-7	6'X50'	V2	PRESENCE	-4'
Z1-8	6'X50'	V1	PRESENCE	-4'
Z3-8	6'X50'	V1	PRESENCE	-4'

WIRING DIAGRAM
N.T.S

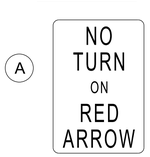


SIGNAL DISPLAYS

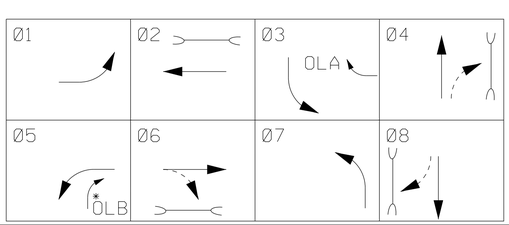
ALL SIGNAL HEADS ARE 12" LED



SIGN DETAIL



PHASING DIAGRAM



NOTE:
*OLB
OVERLAPS SHALL NOT BE TIED TO COMPATIBLE LEFT TURN PHASES BUT SHOULD BE WIRED TO SHOW GREEN DURING COMPATIBLE LEFTS AND COMPATIBLE THRUS WHEN WALK PHASE IS NOT ACTIVE, FLASHING YELLOW ARROW WITH COMPATIBLE THRU WHEN WALK PHASE IS ACTIVE, AND RED OTHERWISE.

0 20 40 60

COORDINATE VALUES ARE NAD/83 (2011), AND ARE DATUM ADJUSTED BY THE FACTOR OF 1.0000729, AND ARE TIED TO THE TENNESSEE GEODETIC REFERENCE NETWORK. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

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CITY OF FRANKLIN SR96
TRAFFIC SIGNAL IMPROVEMENTS
FRANKLIN, TENNESSEE

1/31/2022

REVISION		
No.	Date	Revision

PROPOSED LAYOUT & SIGNAL DESIGN

10

SCALE: 1"=20'
PROJECT: 44415.00
DATE: 2022

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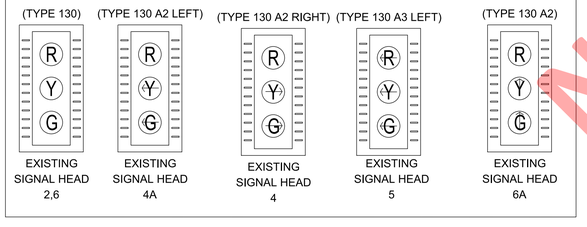
VIDEO DETECTION ASSIGNMENTS				
ZONE ASSIGNMENT	SIZE	VIDEO	MODE	DISTANCE FROM STOP LINE
Z1-2	6'X50'	V1	PRESENCE	-4'
Z3-2	6'X50'	V1	PRESENCE	-4'
Z1-4	6'X50'	V1	PRESENCE	-4'
Z2-4	6'X50'	V1	PRESENCE	-4'
Z3-4	6'X50'	V1	PRESENCE	-4'
Z4-4	6'X50'	V1	PRESENCE	-4'
Z2-5	6'X50'	V1	PRESENCE	-4'
Z1-6	6'X50'	V1	PRESENCE	-4'
Z2-6	6'X50'	V1	PRESENCE	-4'
Z3-6	6'X50'	V1	PRESENCE	-4'
Z4-6	6'X50'	V1	PRESENCE	-4'

SIGNAL DISPLAYS

ALL SIGNAL HEADS ARE 12" LED

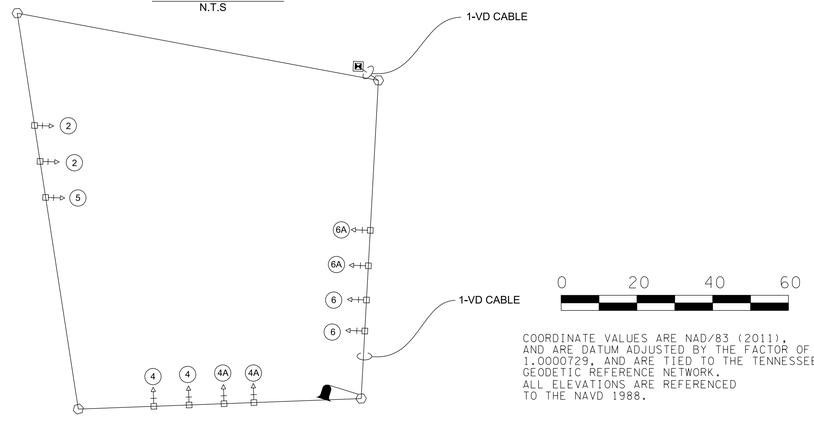


PHASING DIAGRAM

Ø1 NOT USED	Ø2	Ø3 NOT USED	Ø4
Ø5	Ø6	Ø7 NOT USED	Ø8 NOT USED

WIRING DIAGRAM

N.T.S



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FRANKLIN, TENNESSEE

MEREDITH K. CEBELAK
LICENSED PROFESSIONAL ENGINEER
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COMMERCE
NO. 119681
STATE OF TENNESSEE

1/31/2022

REVISION		
No.	Date	Revision

PROPOSED LAYOUT & SIGNAL DETAILS

11

SCALE: 1"=20'
PROJECT: 44415.00
DATE: 2022

1/28/2022 11:12:46 AM
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VIDEO DETECTION ASSIGNMENTS				
ZONE ASSIGNMENT	SIZE	VIDEO	MODE	DISTANCE FROM STOP LINE
Z2-1	6'X50'	V1	PRESENCE	-4'
Z4-1	6'X50'	V1	PRESENCE	-4'
Z1-2	6'X50'	V1	PRESENCE	-4'
Z3-2	6'X50'	V1	PRESENCE	-4'
Z9-2	6'X50'	V1	PRESENCE	-4'
Z11-2	6'X50'	V1	PRESENCE	-4'
Z1-6	6'X50'	V1	PRESENCE	-4'
Z3-6	6'X50'	V1	PRESENCE	-4'
Z2-7	6'X50'	V1	PRESENCE	-4'
Z4-7	6'X50'	V1	PRESENCE	-4'

SIGNAL DISPLAYS

ALL SIGNAL HEADS ARE 12" LED

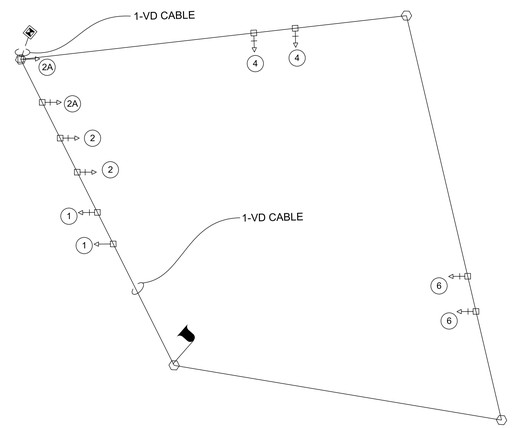
(TYPE 130)	(TYPE 130)	(TYPE 130A2 W/O BACKPLATE)
R Y G	R Y G	R Y G
EXISTING SIGNAL HEAD 2,6	EXISTING SIGNAL HEAD 1,4	EXISTING SIGNAL HEAD 2A

PHASING DIAGRAM

Ø1	Ø2	Ø3 NOT USED	Ø4
Ø5 NOT USED	Ø6	Ø7 NOT USED	Ø8 NOT USED

WIRING DIAGRAM

N.T.S



0 20 40 60

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FRANKLIN, TENNESSEE

MEREDITH K. CEREJA
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NO. 119681

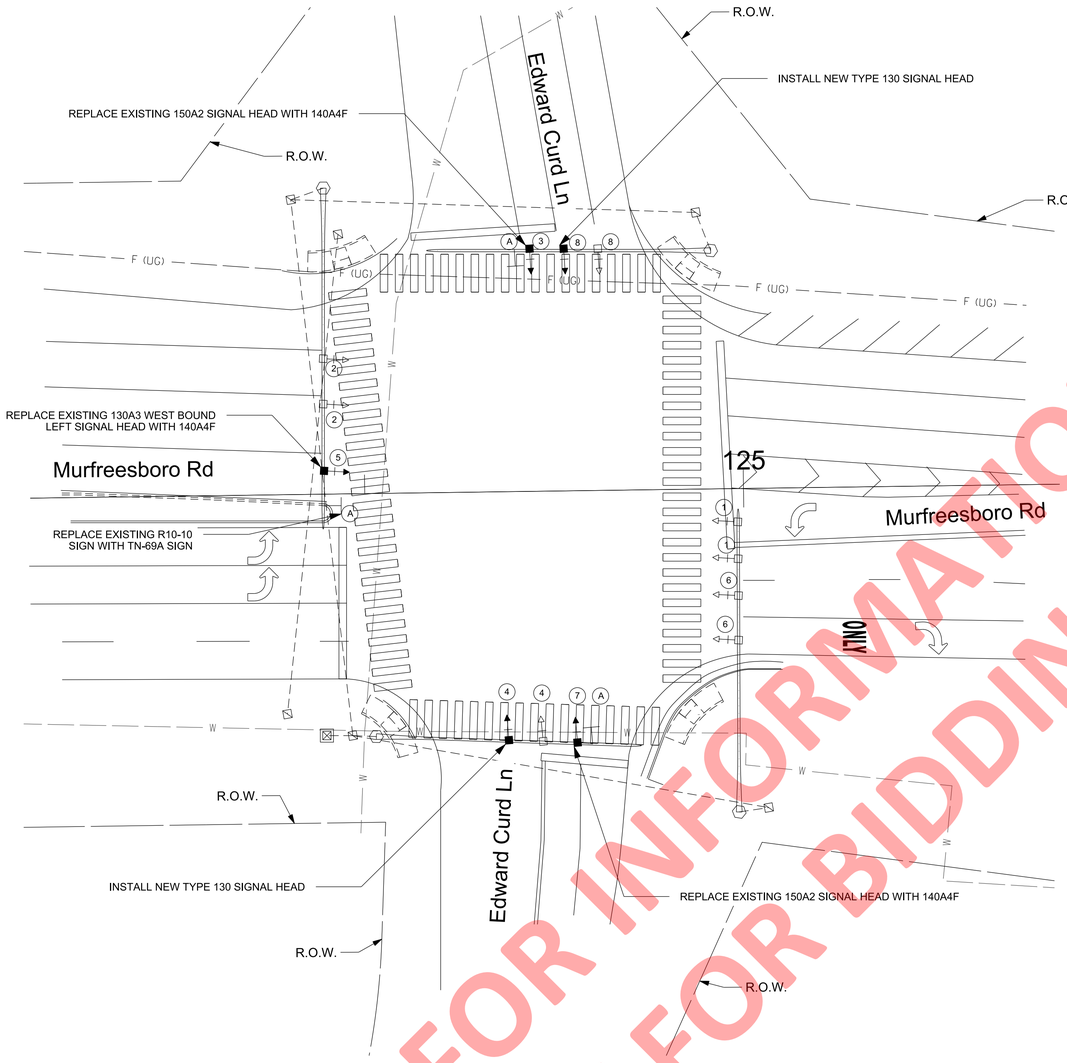
1/31/2022

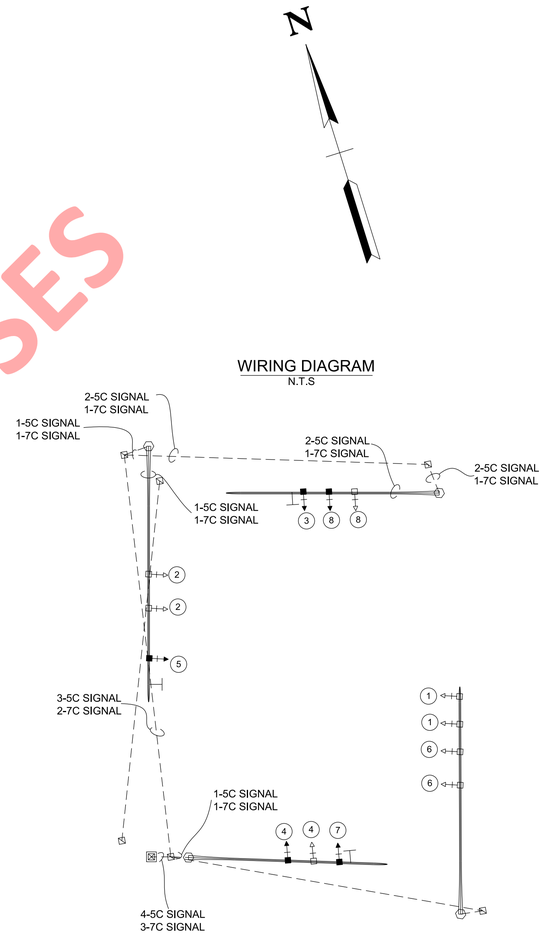
REVISION		
No.	Date	Revision

PROPOSED LAYOUT & SIGNAL DETAILS

12

SCALE: 1"=20'
PROJECT: 44415.00
DATE: 2022

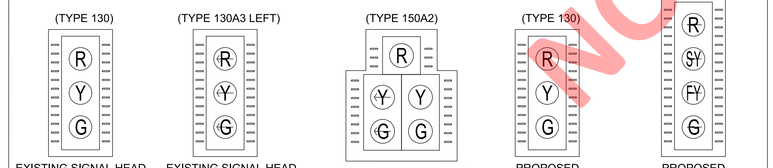




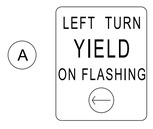
NOTE:
EDWARD CURD INTERSECTION HAS BEEN RECENTLY REDESIGNED. LAYOUT SHOWS UPDATED DESIGN FROM PROJECT: COF# 6761

SIGNAL DISPLAYS

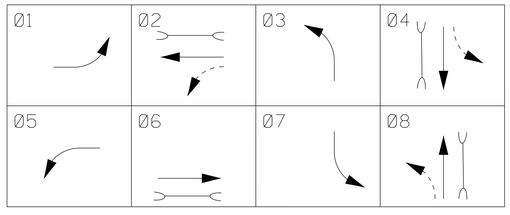
ALL SIGNAL HEADS ARE 12" LED



SIGN DETAIL



PHASING DIAGRAM



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FRANKLIN, TENNESSEE

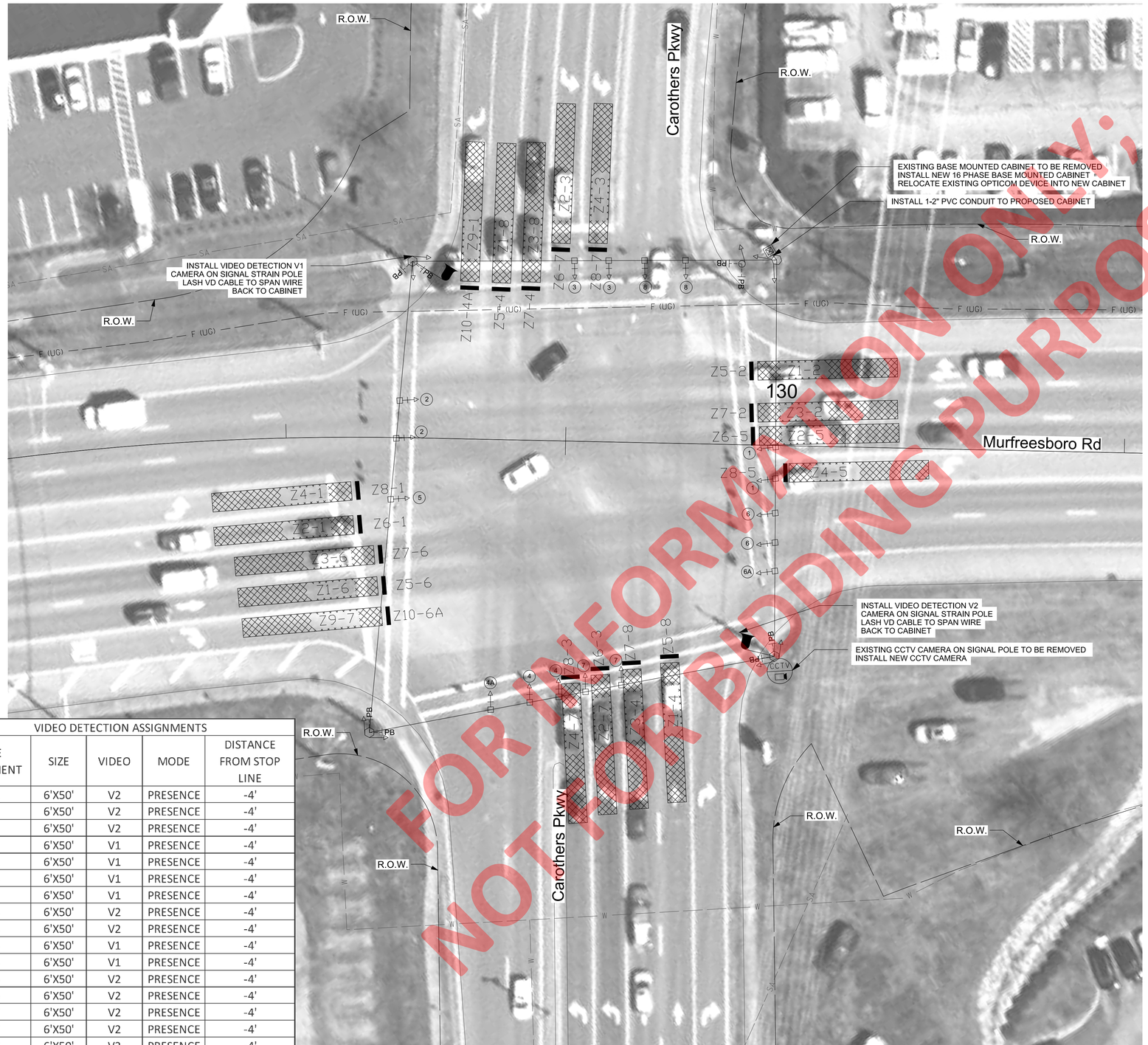
1/31/2022

REVISION		
No.	Date	Revision

PROPOSED LAYOUT & SIGNAL DETAILS

13

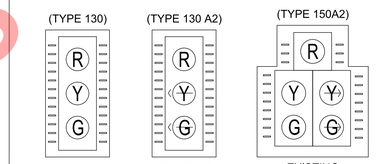
SCALE: 1"=20'
PROJECT: 44415.00
DATE: 2022



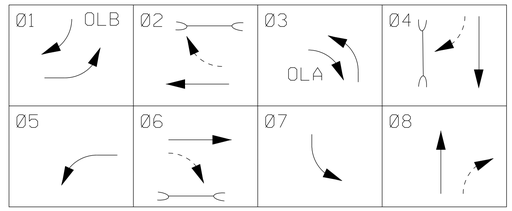
VIDEO DETECTION ASSIGNMENTS				
ZONE ASSIGNMENT	SIZE	VIDEO	MODE	DISTANCE FROM STOP LINE
Z2-1	6'X50'	V2	PRESENCE	-4'
Z4-1	6'X50'	V2	PRESENCE	-4'
Z9-1	6'X50'	V2	PRESENCE	-4'
Z1-2	6'X50'	V1	PRESENCE	-4'
Z3-2	6'X50'	V1	PRESENCE	-4'
Z2-3	6'X50'	V1	PRESENCE	-4'
Z4-3	6'X50'	V1	PRESENCE	-4'
Z1-4	6'X50'	V2	PRESENCE	-4'
Z3-4	6'X50'	V2	PRESENCE	-4'
Z2-5	6'X50'	V1	PRESENCE	-4'
Z4-5	6'X50'	V1	PRESENCE	-4'
Z1-6	6'X50'	V2	PRESENCE	-4'
Z3-6	6'X50'	V2	PRESENCE	-4'
Z2-7	6'X50'	V2	PRESENCE	-4'
Z4-7	6'X50'	V2	PRESENCE	-4'
Z9-7	6'X50'	V2	PRESENCE	-4'
Z1-8	6'X50'	V1	PRESENCE	-4'
Z3-8	6'X50'	V1	PRESENCE	-4'

SIGNAL DISPLAYS

ALL SIGNAL HEADS ARE 12" LED

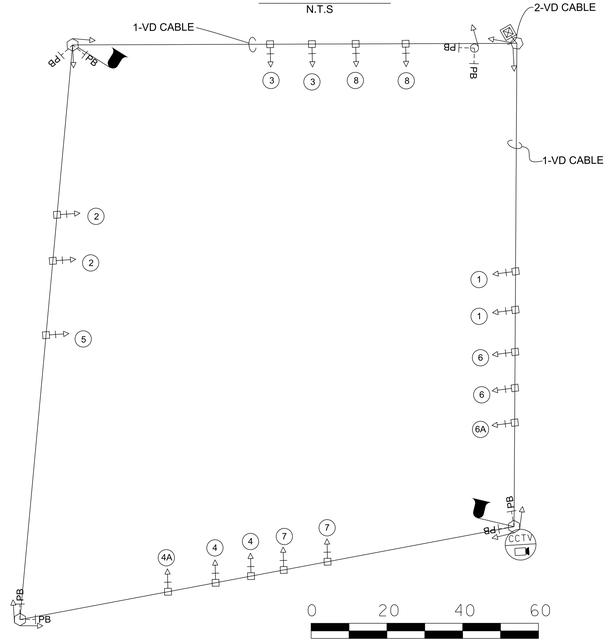


PHASING DIAGRAM



WIRING DIAGRAM

N.T.S



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FRANKLIN, TENNESSEE

MEREDITH K. CEBELAK
REGISTERED PROFESSIONAL ENGINEER
AGRICULTURE
NO. 119601
STATE OF TENNESSEE

1/31/2022

REVISION		
No.	Date	Revision

PROPOSED LAYOUT & SIGNAL DETAILS

14

SCALE: 1"=20'
PROJECT: 44415.00
DATE: 2022

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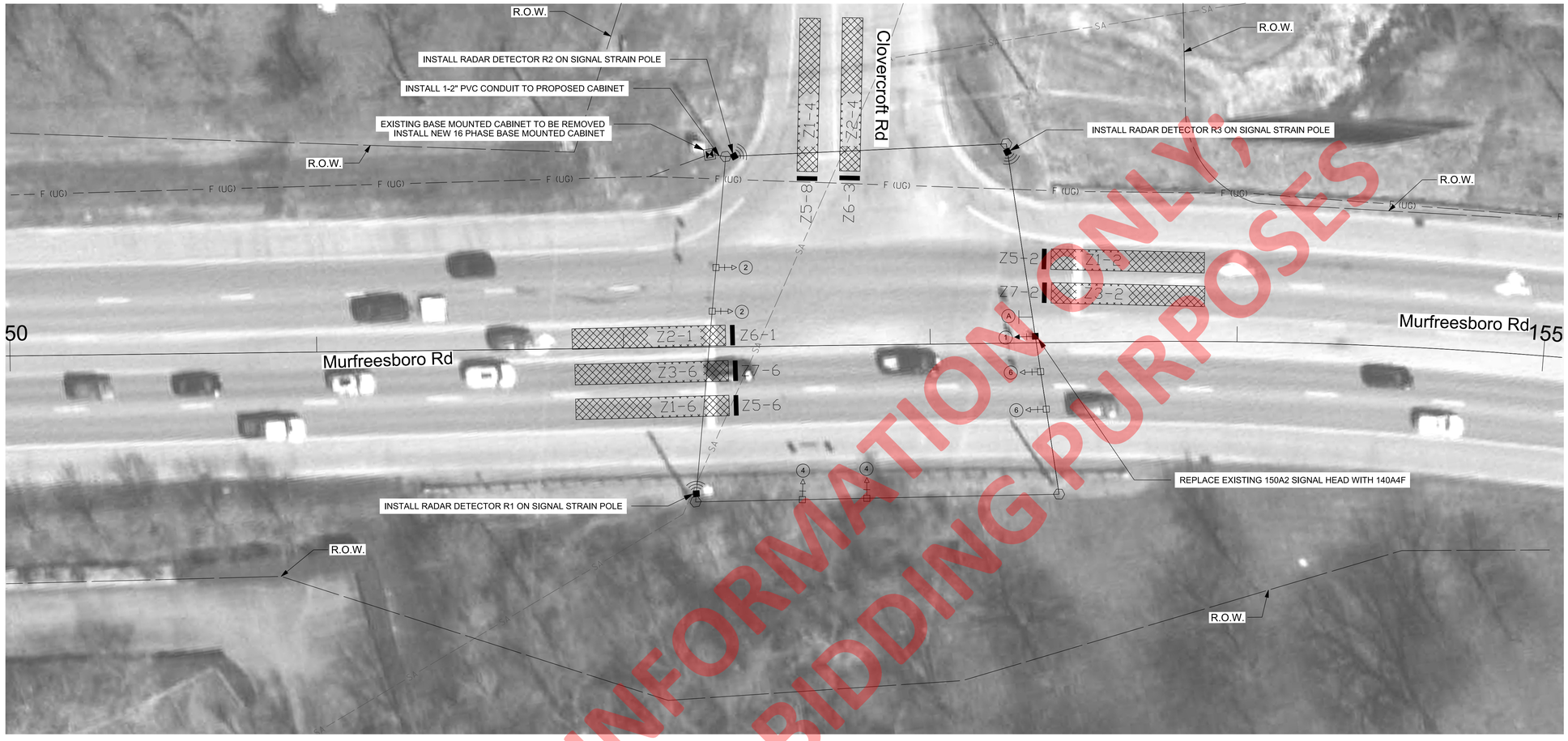
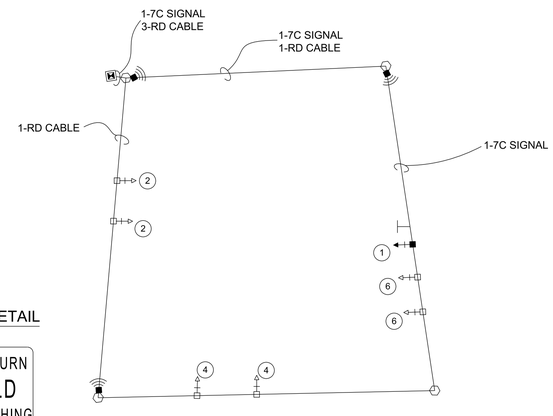


RADAR DETECTION ASSIGNMENTS				
ZONE ASSIGNMENT	SIZE	RADAR	MODE	DISTANCE FROM STOP LINE
Z2-1	6'X50'	R1	PRESENCE	-4'
Z1-2	6'X50'	R3	PRESENCE	-4'
Z3-2	6'X50'	R3	PRESENCE	-4'
Z1-4	6'X50'	R2	PRESENCE	-4'
Z2-4	6'X50'	R2	PRESENCE	-4'
Z1-6	6'X50'	R1	PRESENCE	-4'
Z3-6	6'X50'	R1	PRESENCE	-4'

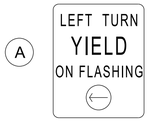
PHASING DIAGRAM

Ø1	Ø2	Ø3 NOT USED	Ø4
Ø5 NOT USED	Ø6	Ø7 NOT USED	Ø8 NOT USED

WIRING DIAGRAM
N.T.S

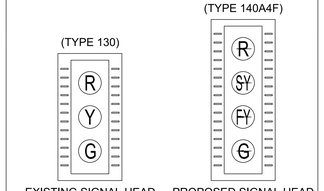


SIGN DETAIL



TN-69A

SIGNAL DISPLAYS
ALL SIGNAL HEADS ARE 12" LED



EXISTING SIGNAL HEAD
2,4,6

PROPOSED SIGNAL HEAD
1

0 20 40 60

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FRANKLIN, TENNESSEE

REVISION		
No.	Date	Revision

PROPOSED LAYOUT & SIGNAL DESIGN

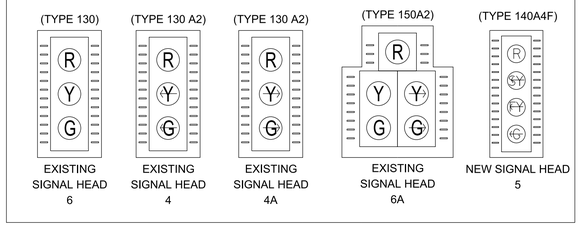
15

SCALE: 1"=20'
PROJECT: 44415.00
DATE: 2022

N

SIGNAL DISPLAYS

ALL SIGNAL HEADS ARE 12" LED

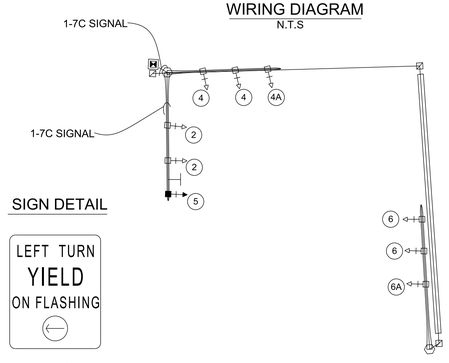


PHASING DIAGRAM

Ø1 NOT USED	Ø2	Ø3 NOT USED	Ø4 OLA
Ø5 OLB	Ø6	Ø7 NOT USED	Ø8 NOT USED

WIRING DIAGRAM

N.T.S



SIGN DETAIL

A

LEFT TURN
YIELD
ON FLASHING

TN-69A

NOTE:
EXISTING SIGNAL HEAD PLACEMENT AND RADAR DETECTION UPGRADES TO BE INCLUDED IN WILLIAMSON COUNTY HIGHWAY DEPARTMENT PROJECT: 892009802

0 20 40 60

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PROPOSED LAYOUT & SIGNAL DETAILS

16

SCALE: 1"=20'
PROJECT: 44415.00
DATE: 2022

TRAFFIC CONTROL NOTES

THE CONSTRUCTION SIGNING PLANS ARE TO SERVE AS A GUIDE ONLY, OTHER SIGNS MAY BE REQUIRED DURING VARIOUS PHASES OF CONSTRUCTION.

THIS TRAFFIC CONTROL PLAN DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF INSTALLING TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE CURRENT EDITION OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".

THE CONTRACTOR IS TO MAINTAIN ACCESS TO ALL LOCAL PROPERTY OWNERS.

THE CONTRACTOR IS TO HAVE TWO FLAGGERS ON THE PROJECT ANY TIME TRAFFIC NEEDS TO BE RESTRICTED TO ONE LANE. COST OF THE FLAGGERS IS TO BE INCLUDED IN THE COST OF ITEM NO. 712-01, TRAFFIC CONTROL (LUMP SUM).

FLAG MAN AHEAD SIGNS, SHOULDER DROP-OFF SIGNS, ONE LANE ROAD AHEAD SIGNS, LANE CLOSED AHEAD SIGNS, AND LANE ENDS SIGNS ARE TO BE USED WHEN CONSTRUCTION OPERATIONS WARRANT, TO BE LOCATED AS DIRECTED BY THE CITY OF FRANKLIN STREETS DEPARTMENT DIRECTOR. COST IS TO BE INCLUDED IN THE COST OF ITEM 712-06.

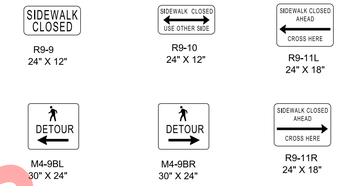
2 FLAGS ARE TO BE MOUNTED ON EACH ADVANCE WARNING SIGN. FLAGS ARE TO BE 1.5 FT. X 1.5 FT. AND FLUORESCENT RED-ORANGE IN COLOR. COST OF THE FLAGS ARE TO BE INCLUDED IN THE COST OF ITEM 712-06.

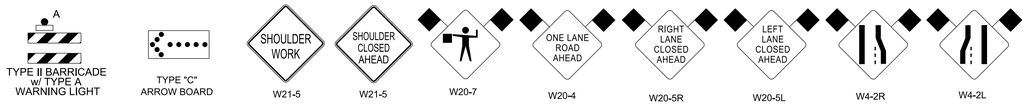
CABINET REPLACMENT SHALL BE DONE AS NIGHT WORK BETWEEN THE HOURS OF 7PM AND 6AM. OFF DUTY POLICE OFFICER(S) ARE REQUIRED DURING THE DURATION OF THE REPLACEMENTS.

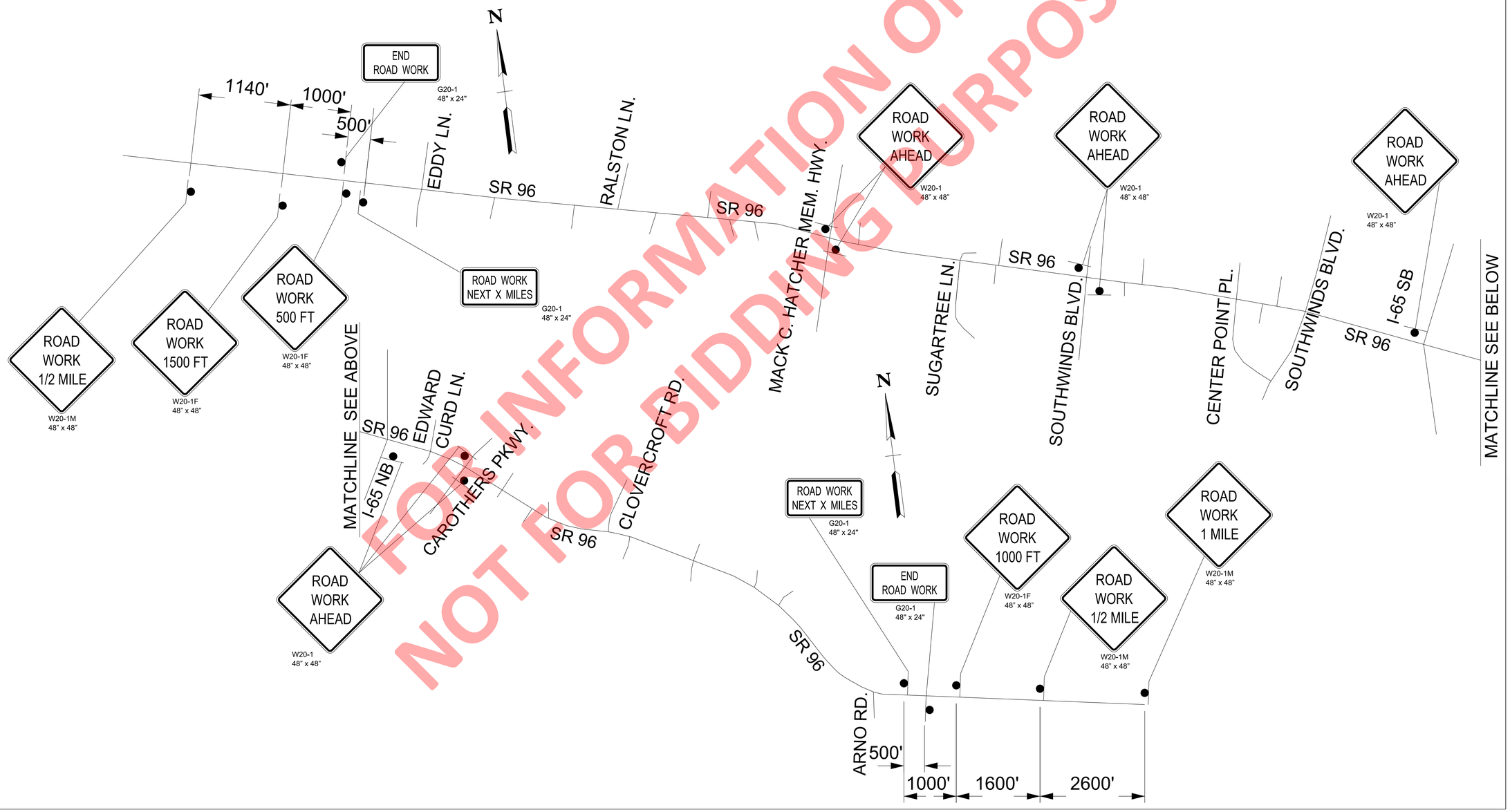
TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	FLEXIBLE DRUMS (CHANNELIZING)
	SIGN (CONSTRUCTION)

SIDEWALK TRAFFIC CONTROL

SIDEWALK CLOSED AND PEDESTRIAN DETOUR SIGNS TO BE USED WHEN WORK REQUIRES CLOSURE OF A SIDEWALK. REFER TO T.D.O.T. STD. DWG. T-WZ-55 FOR APPLICATIONS. DURATION OF SIDEWALK CLOSURES SHALL BE MINIMIZED TO THE FURTHEST EXTENT POSSIBLE.







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CITY OF FRANKLIN SR96
TRAFFIC SIGNAL IMPROVEMENTS
FRANKLIN, TENNESSEE

MEREDITH K. CEBEJAC
REGISTERED ENGINEER
AGRICULTURE
NO. 119691
STATE OF TENNESSEE
1/31/2022

REVISION		
No.	Date	Revision

TRAFFIC CONTROL PLANS

17

SCALE: N.T.S.
PROJECT: 44415.00
DATE: 2022

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ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
712-01	TRAFFIC CONTROL	LS	1
712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH	260
712-05.01	WARNING LIGHTS (TYPE A)	EACH	6
712-06	SIGNS (CONSTRUCTION)	S.F.	648
712-07.02	TEMPORARY BARRICADES (TYPE II)	L.F.	24
712-08.01	UNIFORMED POLICE OFFICER	DOLL	1
712-08.03	ARROW BOARD (TYPE C)	EACH	2
717-01	MOBILIZATION	LS	1

TRAFFIC CONTROL SIGN TABULATION

M.U.T.C.D. SIGN NO.	LEGEND	SIZE IN INCHES L	X	W	S.F.	TOTAL NO. REQUIRED	ITEM NO. 712-06 S.F.	STANDARD DRAWING NO.	REMARKS
W20-1	ROAD WORK 1 MILE	48"		48"	16	1	16.00	T-WZ-52	TO REMAIN THROUGH ALL PHASES
W20-1	ROAD WORK AHEAD	48"		48"	16	4	64.00	T-WZ-52	TO REMAIN THROUGH ALL PHASES
W20-1	ROAD WORK 1/2 MILE	48"		48"	16	2	32.00	T-WZ-52	TO REMAIN THROUGH ALL PHASES
W20-1	ROAD WORK 1000 FT	48"		48"	16	1	16.00	T-WZ-52	TO REMAIN THROUGH ALL PHASES
W20-1	ROAD WORK 1500 FT	48"		48"	16	1	16.00	T-WZ-50	TO REMAIN THROUGH ALL PHASES
W20-1	ROAD WORK 500 FT	48"		48"	16	1	16.00	T-WZ-50	TO REMAIN THROUGH ALL PHASES
W21-5	SHOULDER WORK	48"		48"	16	2	32.00		TEMPORARY TO BE RELOCATED EACH PHASE
W21-5a	SHOULDER CLOSED	48"		48"	16	2	32.00		TEMPORARY TO BE RELOCATED EACH PHASE
W20-7	FLAGGER	48"		48"	16	2	32.00		TEMPORARY TO BE RELOCATED EACH PHASE
W20-4	ONE LANE ROAD AHEAD	48"		48"	16	2	32.00		TEMPORARY TO BE RELOCATED EACH PHASE
W20-5R	RIGHT LANE CLOSED AHEAD	48"		48"	16	2	32.00		TEMPORARY TO BE RELOCATED EACH PHASE
W20-5L	LEFT LANE CLOSED AHEAD	48"		48"	16	2	32.00		TEMPORARY TO BE RELOCATED EACH PHASE
W4-2R	RIGHT LANE ENDS	48"		48"	16	2	32.00		TEMPORARY TO BE RELOCATED EACH PHASE
W4-2L	MERGE LANE ENDS	48"		48"	16	2	32.00		TEMPORARY TO BE RELOCATED EACH PHASE
G20-2	END ROAD WORK	48"		24"	8	2	16.00	T-WZ-52	TO REMAIN THROUGH ALL PHASES
G20-1	ROAD WORK NEXT XX MILES	48"		24"	8	2	16.00	T-WZ-52	TO REMAIN THROUGH ALL PHASES
R9-9	SIDEWALK CLOSED	24"		12"	8	8	64.00	T-WZ-55	TEMPORARY TO BE RELOCATED EACH PHASE
R9-10	SIDEWALK CLOSED USE OTHER SIDE	24"		12"	3	8	24.00	T-WZ-55	TEMPORARY TO BE RELOCATED EACH PHASE
R9-11R	SIDEWALK CLOSED AHEAD CROSS HERE RIGHT	24"		18"	2	8	16.00	T-WZ-55	TEMPORARY TO BE RELOCATED EACH PHASE
R9-11L	SIDEWALK CLOSED AHEAD CROSS HERE LEFT	24"		18"	2	8	16.00	T-WZ-55	TEMPORARY TO BE RELOCATED EACH PHASE
M4-9BR	PEDESTRIAN DETOUR RIGHT	30"		24"	5	8	40.00	T-WZ-55	TEMPORARY TO BE RELOCATED EACH PHASE
M4-9BL	PEDESTRIAN DETOUR LEFT	30"		24"	5	8	40.00	T-WZ-55	TEMPORARY TO BE RELOCATED EACH PHASE
						TOTAL	648	S.F.	

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