Index Of Sheets

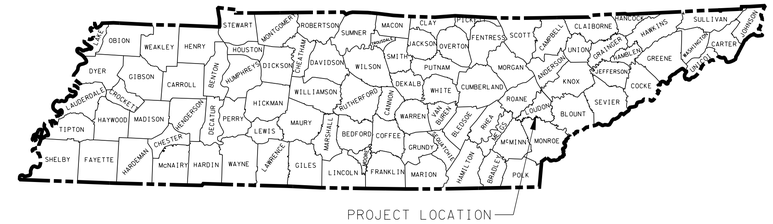
SEE SHEET IA FOR INDEX

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING

TENN.	YEAR	SHEET NO.
	2014	1
FED. AID PROJ. NO.	PHSIP/NH-SIP-33(107)	
STATE PROJ. NO.	53005-3214-94	

LOUDON COUNTY

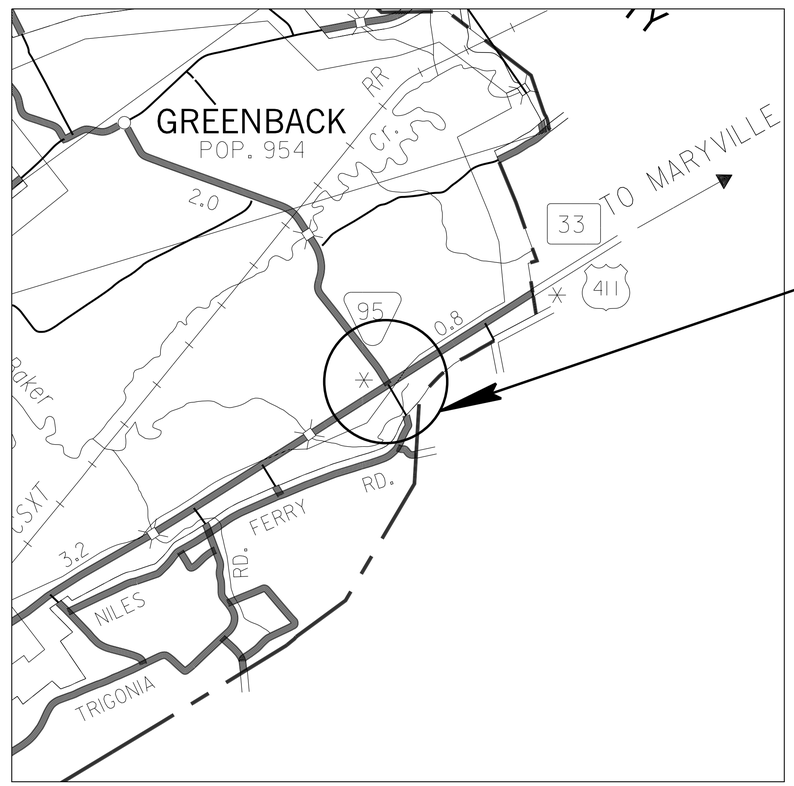
SR-33, INTERSECTION WITH SR-95 AND OLD NILES FERRY ROAD



CONSTRUCTION

STATE HIGHWAY NO. 33 & 95 F.A.H.S. NO. 33 & 95

NO EXCLUSIONS
NO EQUATIONS



SCALE: 1"= 2000 FEET

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SR-33, INTERSECTION WITH SR-95
AND OLD NILES FERRY ROAD
PHSIP/NH-SIP-33(107)
53005-3214-94

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APPROVED: Paul D. Degges
CHIEF ENGINEER

DATE:

APPROVED:
JOHN SCHROER, COMMISSIONER

SPECIAL NOTES

PROPOSALS MAY BE REJECTED BY THE COMMISSIONER 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 MARCH 1, 2006 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

TDOT C.E. MANAGER 1 PETE FALKENBERG, P.E.

DESIGNED BY BOOKER ENGINEERING, INC.

DESIGNER BEATRICE ROSSMAN, PE CHECKED BY BRENDA K. BOOKER, PE

P.E. NO. 53005-0214-94

PIN NO. 118432.00

ROADWAY LENGTH	0.000 MILES
BRIDGE LENGTH	0.000 MILES
BOX BRIDGE LENGTH	0.000 MILES
PROJECT LENGTH	0.000 MILES

TRAFFIC DATA	
ADT (2014)	14,430
ADT (2019)	17,340
DHV (2019)	1,636
D	55 - 45
T (ADT)	8 %
T (DHV)	5 %
V	50 MPH

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

8/20/2014 9:20:13 AM C:\Users\BE-Bea\Desktop\Booker\01_ACTIVE\TDOT\E1616\LOUDON\01_SR 33, US 411 AT SR 95 MAST ARM SIGNAL\04B_FINAL CONST ZIP FILE TO TDOT\001.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	PHSIP/NH-SIP-33(107)	1A

INDEX STANDARD ROADWAY DRAWINGS

SHEET NAME	SHEET NO.
TITLE SHEET	1
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ESTIMATED ROADWAY QUANTITIES	2
GENERAL NOTES AND SPECIAL NOTES	2A
PRESENT LAYOUT SHEETS	3 - 4
PROPOSED LAYOUT SHEETS	3A - 4A
PHASING, TIMING, AND DETECTOR ASSIGNMENT	5
UTILITIES INDEX, UTILITY OWNERS, AND UTILITY SHEETS	U1-1

ROADWAY DESIGN STANDARDS

DWG. NO	REV.	DESCRIPTION
RD-A-1	12-18-99	STANDARD ABBREVIATIONS
RD-L-1	10-26-94	STANDARD LEGEND
RD-L-2	09-05-01	STANDARD LEGEND FOR UTILITY INSTALLATIONS
RD-L-3	04-15-04	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING
RD-L-4	04-15-04	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING
RD-L-5	05-01-08	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL
RD-L-6	03-30-10	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL
RD-L-7	05-24-12	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL

TRAFFIC CONTROL APPURTENANCES

DWG. NO	REV.	DESCRIPTION
T-FAB-1	05-27-97	FLASHING YELLOW ARROW BOARD
T-M-1	11-01-11	DETAILS OF PAVEMENT MARKINGS FOR CONVENTIONAL ROADS AND MARKING ABBREVIATIONS
T-M-4	11-01-11	STANDARD INTERSECTION PAVEMENT MARKINGS
T-SG-2	07-29-04	LOOP LEAD-INS, CONDUIT AND PULL BOXES
T-SG-3	11-11-04	STANDARD NOTES AND DETAILS OF INDUCTIVE LOOPS
T-SG-5	12-04-13	CONTROLLER CABINET DETAILS
T-SG-7	11-01-11	SIGNAL HEAD ASSEMBLIES AND PEDESTRIAN PUSH BUTTON SIGNS
T-SG-7A	11-01-11	TYPICAL SIGNAL HEAD PLACEMENT
T-SG-8	12-04-13	STRAIN POLE DETAILS FOR SPAN MOUNTED SIGNALS
T-SG-9	12-04-13	DETAILS OF CANTILEVER SIGNAL SUPPORT
T-SG-9A	12-04-13	MISCELLANEOUS SIGNAL DETAILS
T-SG-10	12-04-13	MAST ARM POLE AND STRAIN POLES FOUNDATION DETAILS
T-SG-12	11-01-11	TYPICAL WIRING FOR SIGNAL HEADS AND DETECTION LOOPS
T-SG-13	06-01-09	FLASHING BEACON DETAIL
T-WZ-10	04-02-12	ADVANCE ROAD WORK SIGNING ON HIGHWAYS AND FREEWAYS
T-WZ-40	04-02-12	RIGHT LANE CLOSURES AT NEAR SIDE OF INTERSECTIONS
T-WZ-41	04-02-12	LEFT LANE CLOSURES AT NEAR SIDE OF INTERSECTIONS
T-WZ-51	04-02-12	TRAFFIC CONTROL FOR SIGNALS ONLY PROJECTS ON 4 OR 5 LANE MAJOR ROUTES

EROSION PREVENTION AND SEDIMENT CONTROL

DWG. NO	REV.	DESCRIPTION
EC-STR-3B	08-01-12	SILT FENCE
EC-STR-3E	04-01-08	SILT FENCE FABRIC JOINING DETAILS

*** NO PROJECT COMMITMENTS SHEET INCLUDED IN THIS SET OF PLANS ***

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

INDEX AND STANDARD DRAWINGS

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	PHSIP/NH-SIP-33(107)	2

ESTIMATED ROADWAY QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
	209-08.03	TEMPORARY SILT FENCE (WITHOUT BACKING)	L.F.	800
(1)	701-01.01	CONCRETE SIDEWALK (4 ")	S.F.	225
(2)	712-01	TRAFFIC CONTROL	LS	1
	712-06	SIGNS (CONSTRUCTION)	S.F.	281
	712-08.03	ARROW BOARD (TYPE C)	EACH	1
(3)	713-15.07	SUSPENDED FLAT SHEET ALUMINUM SIGN (0.080" THICK)	EACH	2
(4)	713-15.36	REMOVE SIGN, SUPPORT & FOOTING	EACH	2
(5)	716-02.05	PLASTIC PAVEMENT MARKING (STOP LINE)	L.F.	138
(5)	716-02.06	PLASTIC PAVEMENT MARKING (TURN LANE ARROW)	EACH	4
(5)	716-04.01	PLASTIC PAVEMENT MARKING (STRAIGHT-TURN ARROW)	EACH	2
(6)	716-08.01	REMOVAL OF PAVEMENT MARKING (LINE)	L.F.	405
(5)	716-13.06	SPRAY THERMO PVMT MRKNG (40 mil) (4IN LINE)	L.M.	0.9
	717-01	MOBILIZATION	LS	1
	730-02.09	SIGNAL HEAD ASSEMBLY (130 WITH BACKPLATE)	EACH	6
	730-02.17	SIGNAL HEAD ASSEMBLY (150 A2H WITH BACKPLATE)	EACH	2
(7)	730-02.36	SGNL AHD SGN W/FLSHNG LGHTS (GRND MNTD)	EACH	2
	730-03.20	INSTALL PULL BOX (TYPE A)	EACH	2
	730-03.21	INSTALL PULL BOX (TYPE B)	EACH	10
(8)	730-05.01	ELECTRICAL SERVICE CONNECTION	EACH	1
	730-08.03	SIGNAL CABLE - 7 CONDUCTOR	L.F.	955
(9)	730-08.10	SIGNAL CABLE - (1/C # 6 AWG)	L.F.	3610
(10)	730-08.11	SIGNAL CABLE - (#6 COPPER SOFT DRAWN BARE SOLID) (GROUND)	L.F.	1805
(11)	730-08.12	SIGNAL CABLE - (#6 SOLID COPPER SOFT DRAWN) (GROUND)	L.F.	295
(12)	730-12.01	CONDUIT 1" DIAMETER (PVC)	L.F.	730
(12)	730-12.02	CONDUIT 2" DIAMETER (PVC)	L.F.	1560
(13)	730-12.13	CONDUIT 2" DIAMETER (JACK AND BORE)	L.F.	265
	730-13.01	VEHICLE LOOP DETECTOR (SHELF MOUNT)	EACH	14
	730-14.01	SHIELDED DETECTOR CABLE	L.F.	5300
	730-14.02	SAW SLOT	L.F.	1490
	730-14.03	LOOP WIRE	L.F.	3380
	730-15.32	CABINET (EIGHT PHASE BASE MOUNTED)	EACH	1
	730-16.02	EIGHT PHASE ACTUATED CONTROLLER	EACH	1
	730-16.03	CONTROLLER (FLASHING BEACON)	EACH	1
(14)	730-23.96	CANTILEVER SIGNAL SUPPORT (2 @ 55' & 70')	EACH	1
(14)	730-23.97	CANTILEVER SIGNAL SUPPORT (2 @ 55' & 60')	EACH	1
(15)	801-03	WATER (SEEDING & SODDING)	M.G.	0.1
	803-01	SODDING (NEW SOD)	S.Y.	87

PAY ITEM FOOTNOTES:

(1) INCLUDED FOR PAYMENT OF THE CONCRETE PADS.

(2) CONES MAY BE USED FOR SHORT TERM, DAYTIME ONLY LANE CLOSURES.

(3) SHALL BE LEFT TURN YIELD ON GREEN, R10-12 (30" X 36").

(4) INCLUDED FOR REMOVAL OF ONE (1) STOP SIGN, WITH POST AND FOUNDATION AND ONE (1) STOP SIGN FACE.

(5) THE CONTRACTOR MAY ELECT TO SUBSTITUTE PREFORMED PLASTIC FOR THERMOPLASTIC. PREFORMED PLASTIC SHALL BE PAID FOR AT THE SAME UNIT PRICE AS BID FOR THERMOPLASTIC.

(6) INCLUDED FOR REMOVAL OF EXISTING PAVEMENT MARKINGS UP TO THE PROPOSED STOP BAR ON SR 33.

(7) INCLUDES TWO (2) 12' PEDESTAL POLES, FOUNDATIONS, FLASHING BEACONS, SIGNAL AHEAD SIGNS (36" X 36") AND ALL APPURTENANCES REQUIRED FOR COMPLETE INSTALLATION PER TDOT STD. DWG T-SG-13.

(8) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE LOCAL UTILITY TO OBTAIN THE ESTIMATE FOR PROVIDING ELECTRICAL SERVICE TO THE SIGNAL. CHARGES SHALL BE INCLUDED IN THE BID FOR THIS ITEM. INCLUDES THE COST OF THE STEEL CONDUIT RISER ASSEMBLIES AND PROPOSED POWER CABLE OVERHEAD AS REQUIRED. ALSO, INCLUDES THE 20 AMP DISCONNECTS, METER, AND ALL APPURTENANCES FOR CONNECTING THE FLASHING BEACONS.

(9) INCLUDES TWO (2) WIRES FOR SERVICE TO FLASHING WARNING BEACONS. ALSO, INCLUDES 265 L.F. GROUND TO BE RUN IN JACK AND BORED CONDUIT TO FLASHING WARNING BEACONS.

(10) SHALL BE RUN IN SAME TRENCH AS CONDUIT TO FLASHING WARNING BEACONS.

(11) INCLUDED FOR GROUNDING WITHIN STRUCTURES (JACK AND BORE LOCATIONS).

(12) SHALL BE SCHEDULE 40.

(13) INCLUDES 2-CONDUITS AT THE 85' CROSSING AND ONE OF THE 45' CROSSINGS, AND 3-CONDUITS AT THE 90' CROSSING AND THE OTHER 45' CROSSING.

(14) INCLUDES CLASS 'A' CONCRETE FOUNDATION. FOUNDATION SHALL BE 3 FT. DIAMETER WITH MIN. 15'-00" DEEP FOOTING, REFER TO TDOT STD. DWG T-SG-10.

(15) TO BE USED IN ALL DISTURBED AREAS AS DIRECTED BY THE ENGINEER.

SUMMARY OF QUANTITIES
ITEM NO. 712-06

M.U.T.C.D. NO.	DESCRIPTION	SIZE (INCHES)	QTY.	AREA (S.F.)
G20-2A	END ROAD WORK	36 X 18	4	18
R3-8M	LANE MOVEMENT ARROW	30 X 30	1	7
W4-2L	LEFT LANE MERGE SYMBOL	48 X 48	1	16
W4-2R	RIGHT LANE MERGE SYMBOL	48 X 48	1	16
W20-1	ROAD WORK AHEAD	48 X 48	2	32
W20-1	ROAD WORK 500 FT	48 X 48	2	32
W20-1	ROAD WORK 1000 FT	48 X 48	2	32
W20-1	ROAD WORK 1500 FT	48 X 48	2	32
W20-1	ROAD WORK 1/2 MILE	48 X 48	2	32
W20-5R	RIGHT LANE CLOSED 1000 FT	48 X 48	1	16
W20-5L	LEFT LANE CLOSED 1000 FT	48 X 48	1	16
W20-7A	FLAGGER AHEAD SYMBOL	48 X 48	2	32
			TOTAL QUANTITY	281

ITEM 712-06, SIGNS (CONSTRUCTION), INCLUDES SIGNS SHOWN WHICH ARE CONSIDERED A MINIMUM. ADDITIONAL SIGNS MAY BE REQUIRED BY THE ENGINEER AND WILL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM 712-06.

SIGNS SHALL BE LOCATED BY THE CONTRACTOR WITH THE APPROVAL OF THE ENGINEER.

CONSTRUCTION SIGNING AND TRAFFIC CONTROL SHALL CONFORM TO PART VI OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND SECTION 712 OF THE TENNESSEE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".

CONTRACTOR IS NOT RELIEVED OF ANY RESPONSIBILITY TO PROVIDE ADEQUATE AND SAFE TRAFFIC CONTROL MEASURES BY THE ABOVE.

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ESTIMATED ROADWAY QUANTITIES

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	PHSIP/NH-SIP-33(107)	2A

GENERAL NOTES

GRADING

(1) ANY AREA THAT IS DISTURBED OUTSIDE LIMITS OF CONSTRUCTION DURING THE LIFE 0F THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

(2) 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 WITHOUT APPROVAL BY SAME. 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

(3) THE LOCATIONS OF UTILITIES SHOWN WITHIN THESE PLANS ARE APPROXIMATE ONLY. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CONTACTING THE UTILITY COMPANIES INVOLVED. NOTIFICATION BY CALLING THE TENNESSEE ONE CALL SYSTEM, INC., AT 1-800-351-1111 AS REQUIRED BY TCA 65-31-106 WILL BE REQUIRED.

(4) 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.

(5) 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 WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT. THE COST OF PROTECTING UTILITIES FROM DAMAGE AND FURNISHING SPECIAL EQUIPMENT WILL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF CONSTRUCTION.

(6) 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.

(7) 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.

MISCELLANEOUS

(8) 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

SIGNALIZATION

(9) EQUIPMENT AND INSTALLATION OF TRAFFIC SIGNALS SHALL COMPLY WITH TDOT STANDARD SPECIFICATIONS, SECTION 730.

(10) SALVAGEABLE EQUIPMENT SHALL BECOME THE PROPERTY OF THE (CITY OR COUNTY) AND SHALL BE STOCKPILED AT A LOCATION DESIGNATED BY THE ENGINEER FOR PICKUP BY THE (CITY OR COUNTY).

(11) ANY SIGNAL HEADS, WHEN VISIBLE TO DRIVERS BUT NOT OPERATIONAL, SHALL BE COMPLETELY COVERED.

(12) SIGNAL HEADS SHALL FLASH A MINIMUM OF SEVEN (7) DAYS PRIOR TO ACTIVATION OF THE SIGNAL.

(13) THE PROJECT ENGINEER SHALL BE RESPONSIBLE FOR SUPPLYING THE CONTRACTOR WITH AS BUILT SIGNAL PLANS AT THE PRE-CONSTRUCTION CONFERENCE. THESE PLANS WILL PROVIDE THE CONTRACTOR WITH THE DESIRED LOCATION FOR DETECTOR LOOP REPLACEMENT.

(14) LOOP REPLACEMENT SHALL BE IN ACCORDANCE WITH SECTION 730 OF THE STANDARD SPECIFICATIONS.

CONSTRUCTION WORK ZONE & TRAFFIC CONTROL NOTES

(15) 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.

(16) 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.

(17) 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.

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

(19) USE OF BARRICADES, PORTABLE BARRIER RAILS, VERTICAL PANELS, 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 FOR ROADWAYS WITH CURRENT ADT'S LESS THAN 1500 AND DESIGN SPEED OF LESS THAN 60 MPH. THIS DISTANCE SHALL INCREASE TO FORTY-FIVE (45) FEET FOR ROADWAYS WITH CURRENT ADT'S OF 1500 OR GREATER AND DESIGN SPEED OF 60 MPH OR GREATER OR ON THE OUTSIDE OF A HORIZONTAL CURVE. 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 REQUIRED SETBACK, THE CONTRACTOR SHALL DETERMINE THE ALTERNATE LOCATIONS AND REQUEST THE ENGINEER'S APPROVAL TO USE THEM.

(20) 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 FOR ROADWAYS WITH CURRENT ADT'S LESS THAN 1500 AND DESIGN SPEED OF LESS THAN 60 MPH. THIS DISTANCE SHALL BE INCREASED TO FORTY-FIVE (45) FEET FOR ROADWAYS WITH CURRENT ADT'S OF 1500 OR GREATER AND DESIGN SPEED OF 60 MPH OR GREATER OR ON THE OUTSIDE OF A HORIZONTAL CURVE. PRIVATELY OWNED VEHICLES SHALL NOT BE ALLOWED TO PARK WITHIN THIRTY (30) FEET OF A OPEN TRAFFIC LANE AT ANY TIME UNLESS PROTECTED AS DESCRIBED ABOVE FOR ROADWAYS WITH CURRENT ADT'S LESS THAN 1500 AND DESIGN SPEED OF LESS THAN 60 MPH. THIS DISTANCE SHALL BE INCREASED TO FORTY-FIVE (45) FEET FOR ROADWAYS WITH CURRENT ADT'S OF 1500 OR GREATER AND DESIGN SPEED OF 60 MPH OR GREATER OR ON THE OUTSIDE OF A HORIZONTAL CURVE.. WHERE THERE IS INSUFFICIENT RIGHT-OF-WAY TO PROVIDE FOR THIS REQUIRED SETBACK, THE CONTRACTOR SHALL DETERMINE THE ALTERNATE LOCATIONS AND REQUEST THE ENGINEER'S APPROVAL TO USE THEM.

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

SPECIAL NOTES

SIGNALIZATION

(22) 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.

LIGHT EMITTING DIODES (LED)

(23) 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 ON PLANS.

(24) ALL LED'S SHALL MEET THE MINIMUM STANDARDS AS OUTLINED IN CHAPTER 2A AND INCLUDING PROVISIONS OF TECHNICAL NOTES IN THE CHAPTER APPENDIX OF THE PUBLICATION EQUIPMENT AND MATERIAL STANDARDS OF THE INSTITUTE OF TRANSPORTATION ENGINEERS, PUBLISHED BY ITE, NOVEMBER 1997.

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

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

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

(28) ALL VEHICULAR SIGNAL HEADS SHALL BE FABRICATED FROM ALUMINUM AND SHALL BE PAINTED YELLOW.

(29) CONTRACTOR SHALL INSTALL A 50 AMP TWO POLE WEATHERPROOFED EXTERNAL DISCONNECT ON THE POLE WITH THE AC SERVICE CONNECTION. THE ENCLOSURE SHALL BE METALLIC WITH A 50 AMP SINGLE POLE CIRCUIT BREAKER.

SIGNAL (OR LIGHTING) EROSION PREVENTION AND SEDIMENT CONTROL SPECIAL NOTES

(30) IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT FROM EROSION ANY EXPOSED EARTH RESULTING FROM TRENCHING AND EXCAVATION, AND TO PROVIDE FOR CONTAINMENT OF SEDIMENT THAT MAY RESULT FROM THIS WORK. PRIOR TO BEGINNING WORK, ADEQUATE MEASURES MUST BE IN PLACE TO TRAP ANY SEDIMENT THAT MAY TRAVEL OFF-SITE IN THE EVENT OF RAIN. DURING THE PROGRESSION OF THE WORK, EXPOSED EARTH AREAS SHALL BE STABILIZED AS SOON AS POSSIBLE TO PREVENT EROSION. AT NO TIME SHALL EXPOSED EARTH RESULTING FROM THESE OPERATIONS HAVE UNPROTECTED ACCESS TO FLOWING OFF-SITE AND ENTERING WATERS OF THE STATE/U.S.

(31) SILT FENCE OR OTHER BARRIERS OF THE SPECIFIED TYPE SHALL BE INSTALLED ON THE DOWNHILL SIDE OF STOCKPILED SOIL. POLYETHYLENE SHEETING MAY BE USED TO COVER SPOILS FROM EXCAVATION. NO SEPARATE PAYMENT FOR POLYETHYLENE SHEETING.

(32) TRENCHING ACROSS WET WEATHER CONVEYANCES SHALL BE DONE DURING NO FLOW CONDITIONS AND STABILIZED BY THE END OF THE WORK DAY.

(33) THE CONTRACTOR SHALL RESTORE ALL AFFECTED WET WEATHER CONVEYANCES TO THE EXISTING TOPOGRAPHIC CONDITIONS (AS INDICATED BY THE APPROVED EROSION PREVENTION AND SEDIMENT CONTROL PLAN OR THE TDOT PROJECT ENGINEER).

(34) FOR THE INSTALLATION OF CONDUITS AND CABLES, TRENCHES SHALL BE BACKFILLED DAILY AS CONSTRUCTION PROCEEDS. BACKFILLED TRENCHES SHALL BE SEEDED AND MULCHED OR SODDED DAILY IF POSSIBLE, BUT NO LATER THAN SEVEN DAYS AFTER BEING BACKFILLED, OR IMMEDIATELY AFTER ANY INSPECTION. ANY TEMPORARY SPOIL OF EXCAVATED EARTH SHALL BE LOCATED WITHIN TDOT EROSION PREVENTION AND SEDIMENT CONTROL MEASURES. IF TRENCHES ARE NOT BACKFILLED OVERNIGHT, APPROPRIATE EPSC MEASURES WILL BE INSTALLED BY THE CONTRACTOR UNTIL SUCH TIME AS THE TRENCH IS BACKFILLED.

(35) RAIN WATER WHICH COLLECTS IN THE OPEN EXCAVATIONS (TRENCHES OR FOUNDATION EXCAVATIONS) SHALL BE PUMPED INTO A DEWATERING STRUCTURE OR SEDIMENT FILTER BAG AND MAINTAINED. NO SEPARATE PAYMENT FOR THIS REQUIREMENT.

(36) SPOILS FROM FOUNDATION EXCAVATIONS SHALL BE PICKED UP AS BORING PROGRESSES, OR CONTAINED WITHIN APPROPRIATE EPSC MEASURES.

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES AND SPECIAL NOTES

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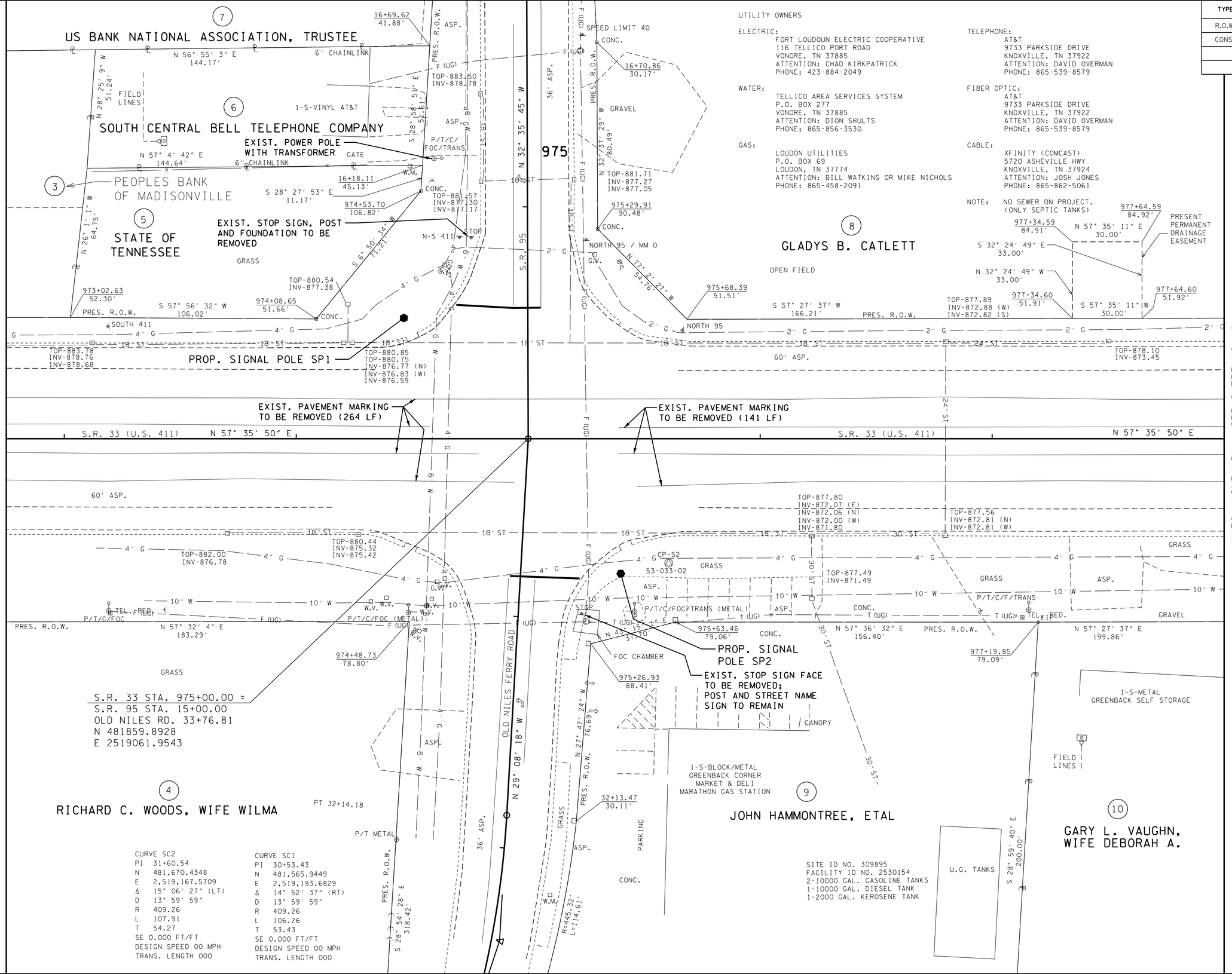
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2013	NH-SIP-33(107)	2
CONST.	2014	PHSIP/NH-SIP-33(107)	3



CURVE SC2
PI 31+60.54
N 481,670.4348
E 2,519,167.5709
Δ 15° 06′ 27″ (LT)
D 13° 59′ 59″
R 409.26
L 107.91
T 54.27
SE 0.000 FT/FT
DESIGN SPEED 00 MPH
TRANS. LENGTH 000

CURVE SC1
PI 30+53.43
N 481,565.9449
E 2,519,193.6829
Δ 14° 52′ 37″ (RT)
D 13° 59′ 59″
R 409.26
L 106.26
T 53.43
SE 0.000 FT/FT
DESIGN SPEED 00 MPH
TRANS. LENGTH 000

SITE ID NO. 309895
FACILITY ID NO. 2530154
2-10000 GAL. GASOLINE TANKS
1-10000 GAL. DIESEL TANK
1-2000 GAL. KEROSENE TANK

UTILITY OWNERS

ELECTRIC:
FORT LOUDOUN ELECTRIC COOPERATIVE
116 TELLICO PORT ROAD
VONORE, TN 37885
ATTENTION: CHAD KIRKPATRICK
PHONE: 423-884-2049

WATER:
TELLICO AREA SERVICES SYSTEM
P.O. BOX 277
VONORE, TN 37885
ATTENTION: DION SHULTS
PHONE: 865-856-3530

GAS:
LOUDON UTILITIES
P.O. BOX 69
LOUDON, TN 37774
ATTENTION: BILL WATKINS OR MIKE NICHOLS
PHONE: 865-458-2091

TELEPHONE:
AT&T
9733 PARKSIDE DRIVE
KNOXVILLE, TN 37922
ATTENTION: DAVID OVERMAN
PHONE: 865-539-8579

FIBER OPTIC:
AT&T
9733 PARKSIDE DRIVE
KNOXVILLE, TN 37922
ATTENTION: DAVID OVERMAN
PHONE: 865-539-8579

CABLE:
XFINITY (COMCAST)
5720 ASHEVILLE HWY
KNOXVILLE, TN 37924
ATTENTION: JOSH JONES
PHONE: 865-862-5061

NOTE: NO SEWER ON PROJECT. (ONLY SEPTIC TANKS)

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PRESENT LAYOUT

SR-33, INTERSECTION AT SR-95

SCALE: 1"= 20'

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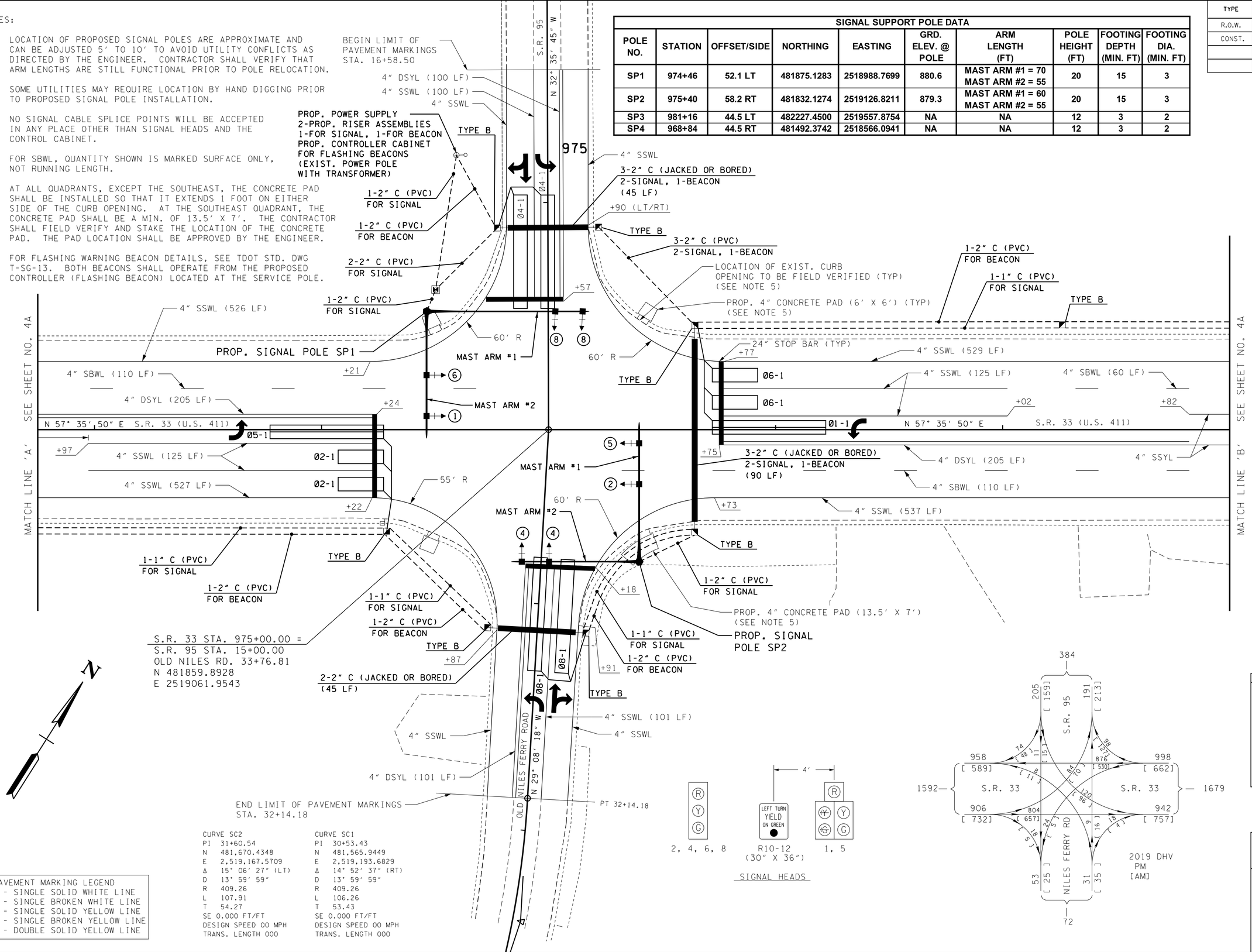
NOTES:

1. LOCATION OF PROPOSED SIGNAL POLES ARE APPROXIMATE AND CAN BE ADJUSTED 5′ TO 10′ TO AVOID UTILITY CONFLICTS AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL VERIFY THAT ARM LENGTHS ARE STILL FUNCTIONAL PRIOR TO POLE RELOCATION.
2. SOME UTILITIES MAY REQUIRE LOCATION BY HAND DIGGING PRIOR TO PROPOSED SIGNAL POLE INSTALLATION.
3. NO SIGNAL CABLE SPLICE POINTS WILL BE ACCEPTED IN ANY PLACE OTHER THAN SIGNAL HEADS AND THE CONTROL CABINET.
4. FOR SBWL, QUANTITY SHOWN IS MARKED SURFACE ONLY, NOT RUNNING LENGTH.
5. AT ALL QUADRANTS, EXCEPT THE SOUTHEAST, THE CONCRETE PAD SHALL BE INSTALLED SO THAT IT EXTENDS 1 FOOT ON EITHER SIDE OF THE CURB OPENING. AT THE SOUTHEAST QUADRANT, THE CONCRETE PAD SHALL BE A MIN. OF 13.5′ X 7′. THE CONTRACTOR SHALL FIELD VERIFY AND STAKE THE LOCATION OF THE CONCRETE PAD. THE PAD LOCATION SHALL BE APPROVED BY THE ENGINEER.
6. FOR FLASHING WARNING BEACON DETAILS, SEE TDOT STD. DWG T-SG-13. BOTH BEACONS SHALL OPERATE FROM THE PROPOSED CONTROLLER (FLASHING BEACON) LOCATED AT THE SERVICE POLE.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2013	NH-SIP-33(107)	2A
CONST.	2014	PHSIP/NH-SIP-33(107)	3A

SIGNAL SUPPORT POLE DATA

POLE NO.	STATION	OFFSET/SIDE	NORTHING	EASTING	GRD. ELEV. @ POLE	ARM LENGTH (FT)	POLE HEIGHT (FT)	FOOTING DEPTH (MIN. FT)	FOOTING DIA. (MIN. FT)
SP1	974+46	52.1 LT	481875.1283	2518988.7699	880.6	MAST ARM #1 = 70 MAST ARM #2 = 55	20	15	3
SP2	975+40	58.2 RT	481832.1274	2519126.8211	879.3	MAST ARM #1 = 60 MAST ARM #2 = 55	20	15	3
SP3	981+16	44.5 LT	482227.4500	2519557.8754	NA	NA	12	3	2
SP4	968+84	44.5 RT	481492.3742	2518566.0941	NA	NA	12	3	2



PAVEMENT MARKING LEGEND
SSWL - SINGLE SOLID WHITE LINE
SBWL - SINGLE BROKEN WHITE LINE
SSYL - SINGLE SOLID YELLOW LINE
SBYL - SINGLE BROKEN YELLOW LINE
DSYL - DOUBLE SOLID YELLOW LINE

CURVE SC2		CURVE SC1	
PI	31+60.54	PI	30+53.43
N	481,670.4348	N	481,565.9449
E	2,519,167.5709	E	2,519,193.6829
Δ	15° 06′ 27″ (LT)	Δ	14° 52′ 37″ (RT)
D	13° 59′ 59″	D	13° 59′ 59″
R	409.26	R	409.26
L	107.91	L	106.26
T	54.27	T	53.43
SE 0.000 FT/FT		SE 0.000 FT/FT	
DESIGN SPEED 00 MPH		DESIGN SPEED 00 MPH	
TRANS. LENGTH 000		TRANS. LENGTH 000	

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPOSED LAYOUT

SR-33, INTERSECTION AT SR-95

SCALE: 1″= 20′

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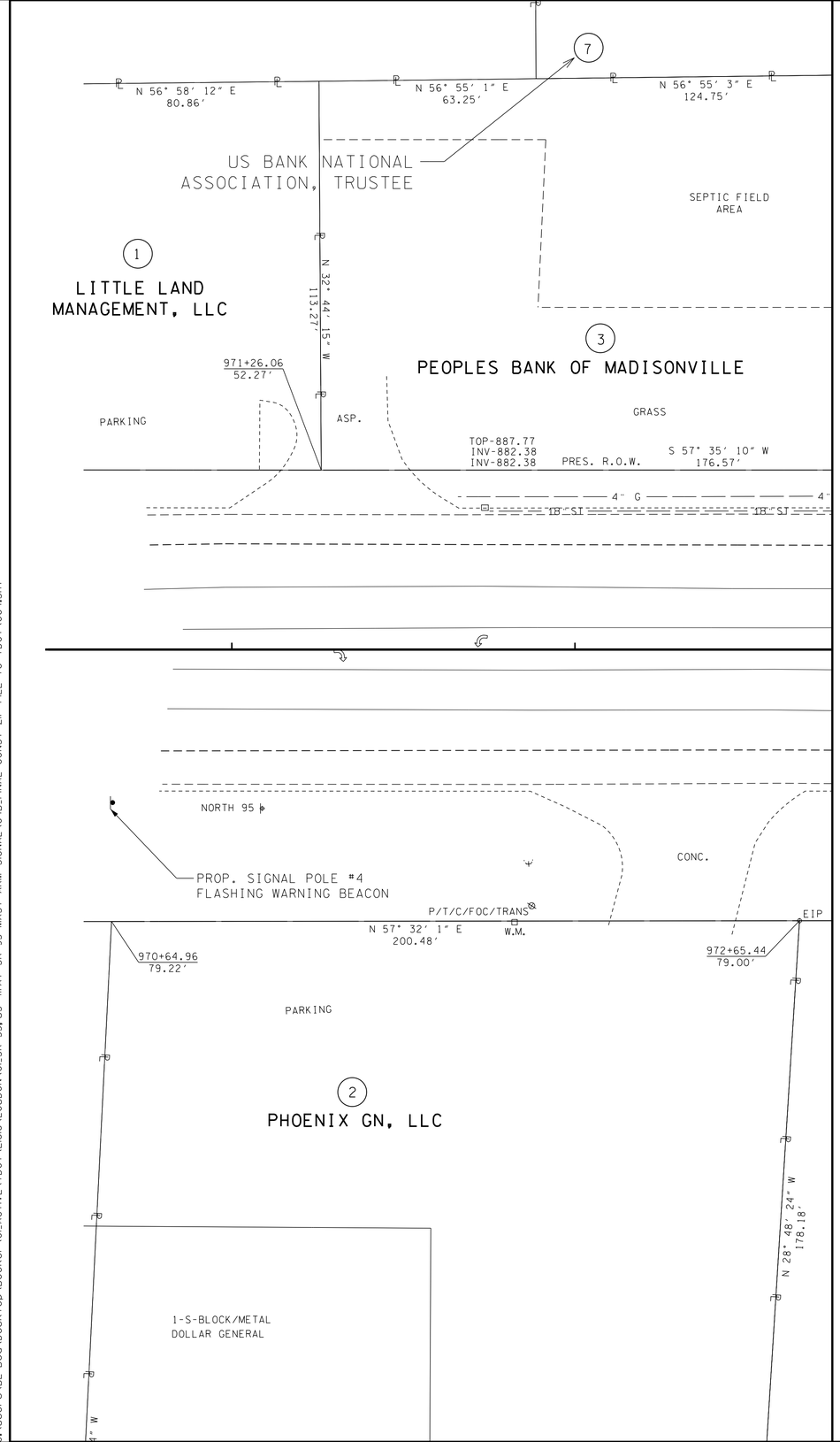
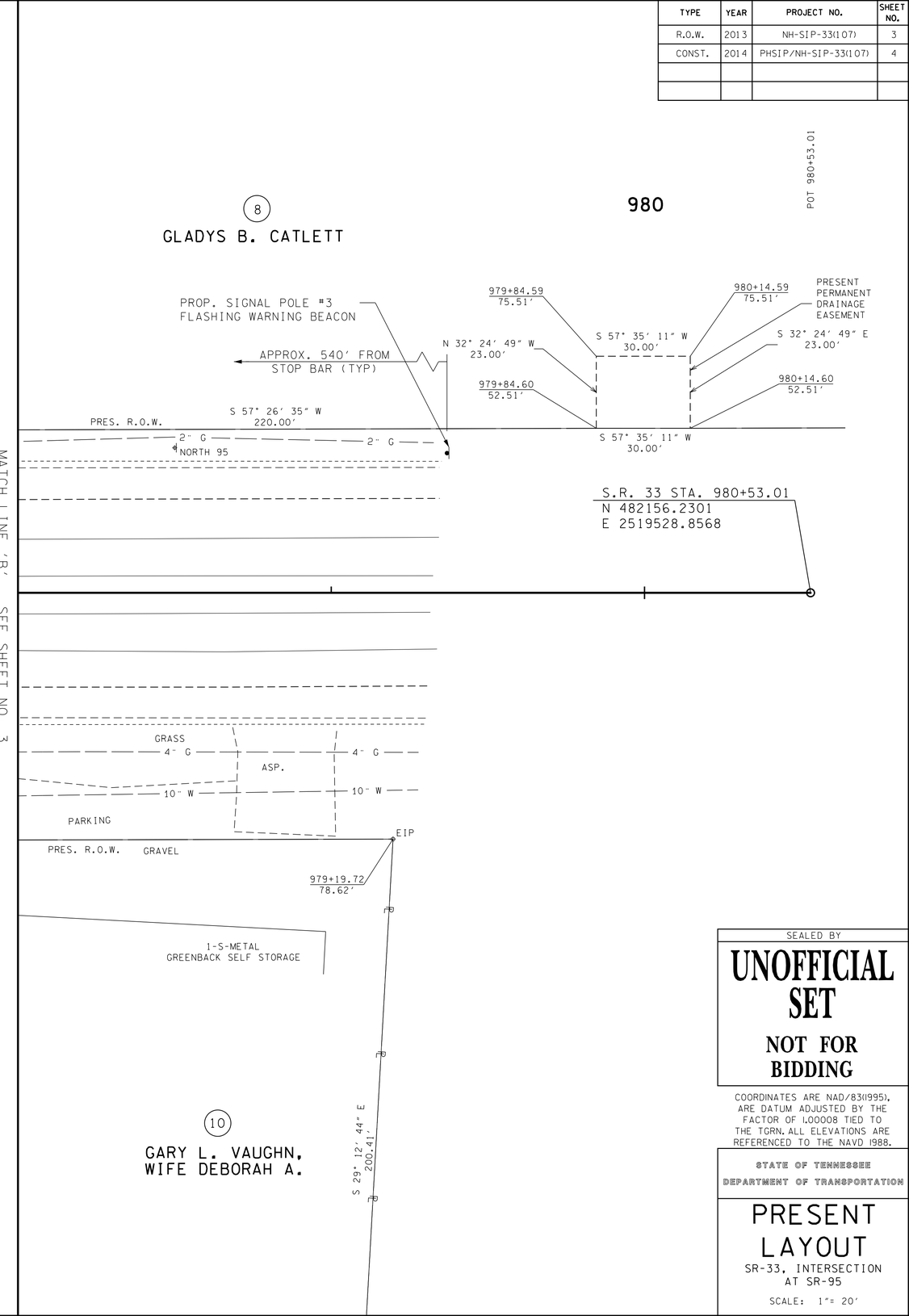
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2013	NH-SIP-33(107)	3
CONST.	2014	PHSIP/NH-SIP-33(107)	4



MATCH LINE 'A' SEE SHEET NO. 3



MATCH LINE 'B' SEE SHEET NO. 3

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PRESENT LAYOUT

SR-33, INTERSECTION AT SR-95

SCALE: 1"= 20'

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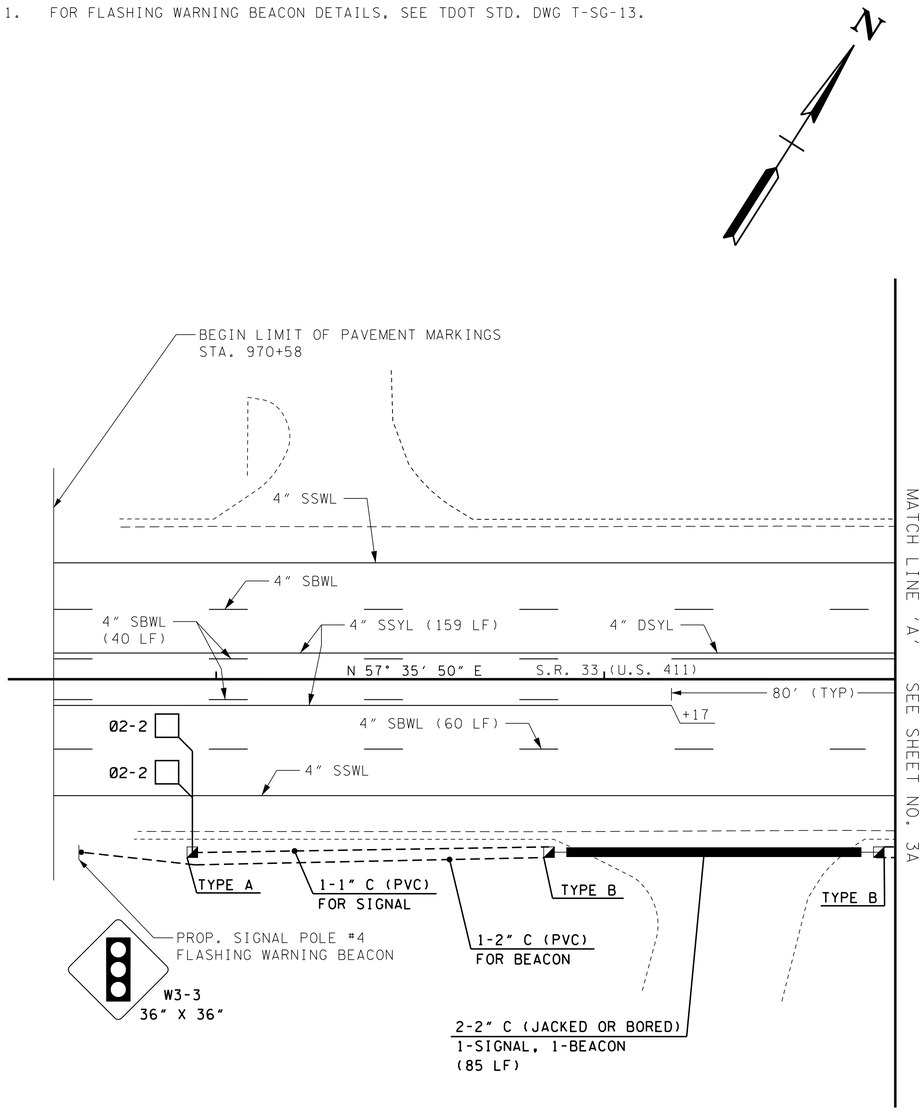
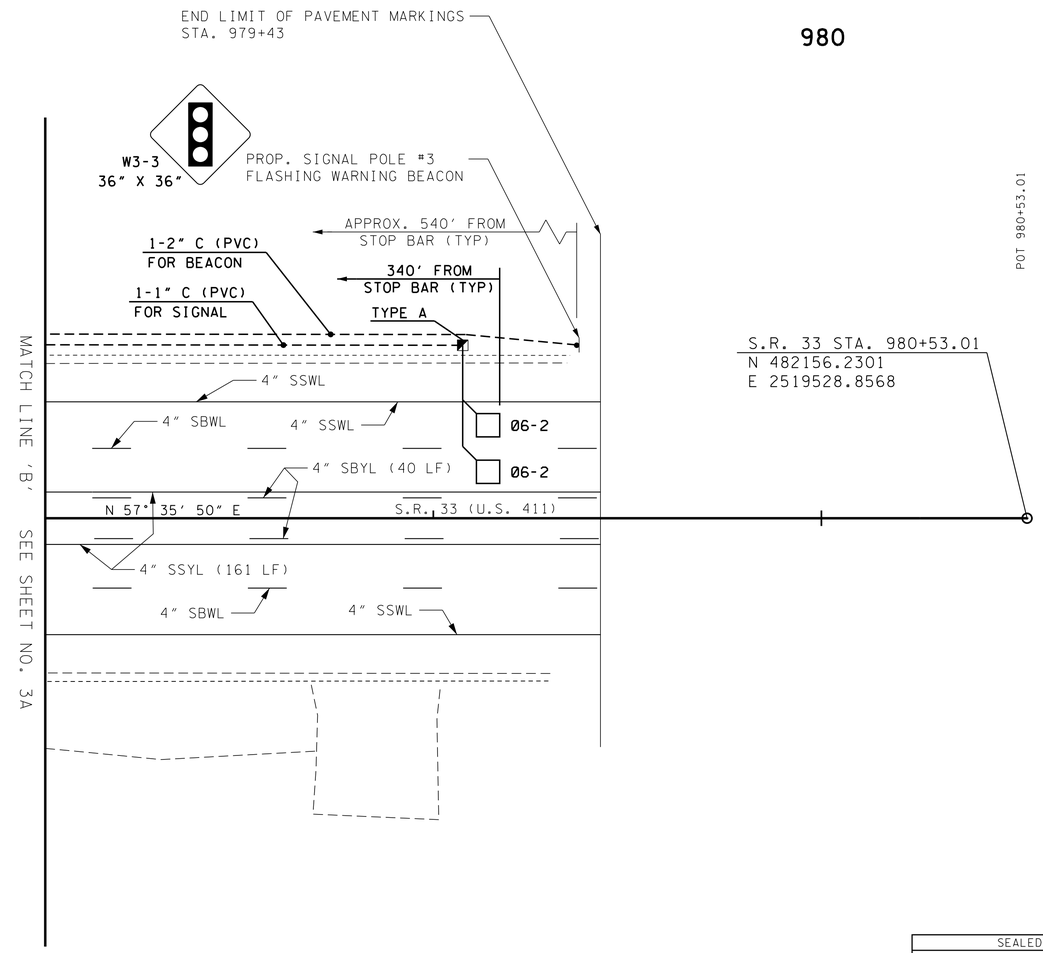
NOTE:

1. FOR FLASHING WARNING BEACON DETAILS, SEE TDOT STD. DWG T-SG-13.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2013	NH-SIP-33(107)	3A
CONST.	2014	PHSIP/NH-SIP-33(107)	4A





PAVEMENT MARKING LEGEND
SSWL - SINGLE SOLID WHITE LINE
SBWL - SINGLE BROKEN WHITE LINE
SSYL - SINGLE SOLID YELLOW LINE
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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPOSED LAYOUT

SR-33, INTERSECTION AT SR-95

SCALE: 1"= 20'

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	PHSIP/NH-SIP-33(107)	5

*VOLUME - DENSITY TIMING (SECS)

PHASE	MIN GREEN (INITIAL INTERVAL)	MAX INITIAL	ADDED INITIAL PER ACTUATION	PASSAGE TIME	MINIMUM GAP	TIME BEFORE REDUCTION	TIME TO REDUCE	MAX I	MAX II	CLEARANCE		PEDESTRIAN		RECALL TO	MEMORY POSITION (1)
										YELLOW	ALL RED	WALK	FLASHING DON'T WALK		
2	20	30	2	4	3	17	17	50	–	4	2			–	L
6	20	30	2	4	3	17	17	50	–	4	2			–	L

* BASED ON V=50 MPH AND D=340' (D=DISTANCE OF VOLUME-DESNITY LOOP FROM STOP BAR)

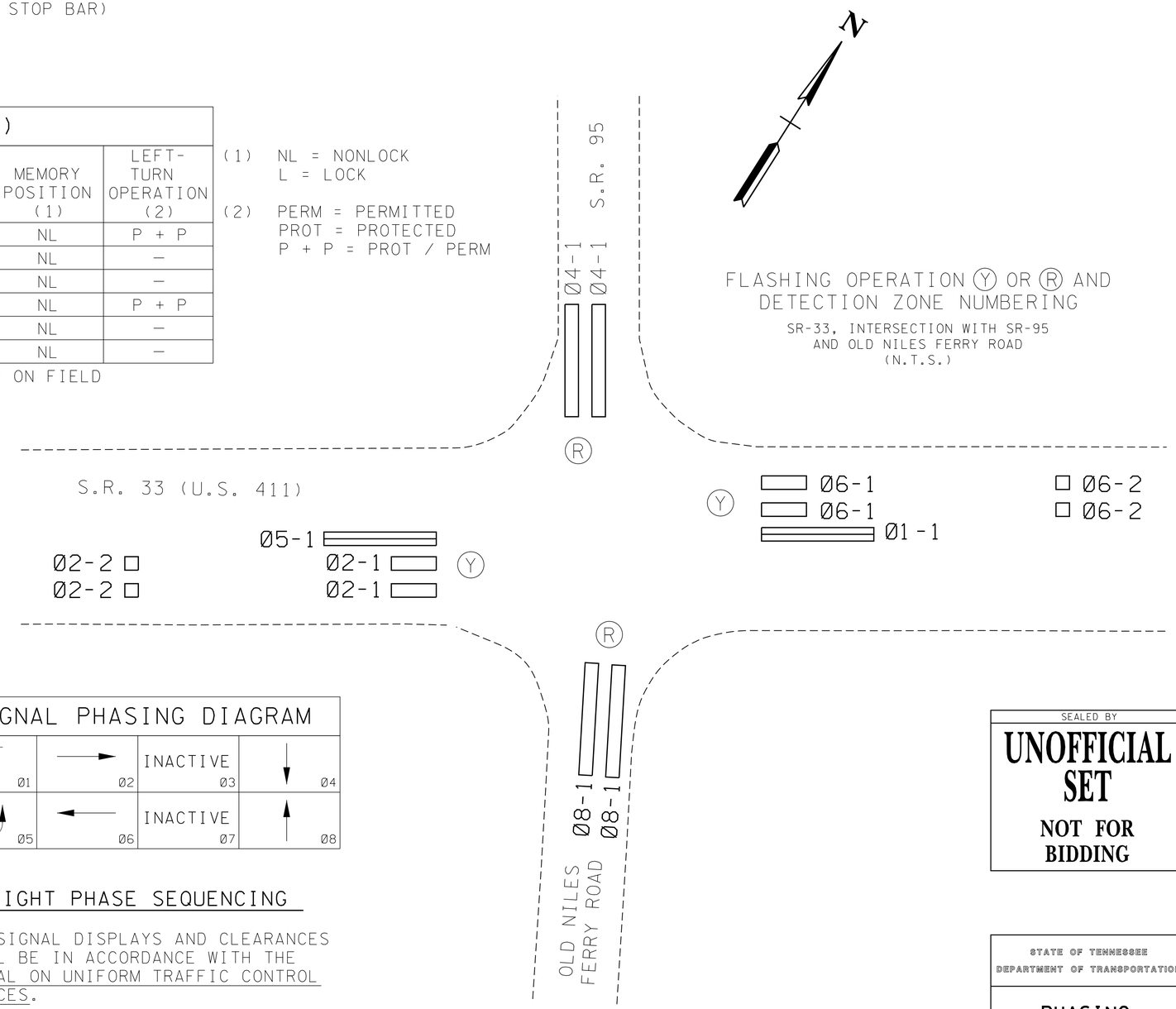
BASIC OR FULLY ACTUATED TIMINGS (SECS)

PHASE	MIN GREEN (INITIAL INTERVAL)	VEHICLE INTERVAL	MAX I	MAX II	CLEARANCE		PEDESTRIAN		RECALL TO	MEMORY POSITION (1)	LEFT-TURN OPERATION (2)
					YELLOW	ALL RED	WALK	FLASHING DON'T WALK			
1	4	2.0	24	–	3	1			–	NL	P + P
2	6	2.0	70	–	4	2			–	NL	–
4	6	2.0	70	–	4	2			–	NL	–
5	4	2.0	24	–	3	1			–	NL	P + P
6	6	2.0	70	–	4	2			–	NL	–
8	6	2.0	70	–	4	2			–	NL	–

THESE TIMINGS ARE INITIAL AND SHOULD BE ADJUSTED BY THE CONTRACTOR BASED ON FIELD OBSERVATIONS TO PROVIDE EFFICIENT OPERATION.

(1) NL = NONLOCK
L = LOCK

(2) PERM = PERMITTED
PROT = PROTECTED
P + P = PROT / PERM



FLASHING OPERATION (Y) OR (R) AND DETECTION ZONE NUMBERING

SR-33, INTERSECTION WITH SR-95 AND OLD NILES FERRY ROAD (N.T.S.)

LOOP & AMP ASSIGNMENTS

DETECTOR LOOP NO.	DETECTOR NO.	LOOP LENGTH	AMP MODE	ASSOC. PHASE
*Ø1-1	1	1 @ 50	PRES	1
Ø2-1	2	2 @ 20	PRES	2
Ø2-2	3	2 @ 6	PULSE	2
Ø4-1	4	2 @ 50	PRES	4
*Ø5-1	5	1 @ 50	PRES	5
Ø6-1	6	2 @ 20	PRES	6
Ø6-2	7	2 @ 6	PULSE	6
Ø8-1	8	2 @ 50	PRES	8

* LOOP 1 AND 5 ARE A QUADROPOLE.

ALL LOOPS ARE 6' IN WIDTH AND CENTERED IN THE TRAFFIC LANE.

LOOP WIRE CONNECTIONS SHALL BE WIRED TO PROVIDE THE APPROPRIATE INDUCTANCE AS REQUIRED BY TDOT STD. DWG. T-SG-3.

DETECTOR LOOP NUMBERS CORRESPOND WITH INPUT PHASE NUMBERS.

REFER TO TDOT STD. DWG T-SG-3 FOR NUMBER OF LOOP TURNS REQUIRED FOR EACH DETECTOR LOOP.

SIGNAL PHASING DIAGRAM

01	02	INACTIVE 03	04
05	06	INACTIVE 07	08

EIGHT PHASE SEQUENCING

ALL SIGNAL DISPLAYS AND CLEARANCES SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

FULL SKIP CAPABILITY

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PHASING, TIMING, AND DETECTOR ASSIGNMENT

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