Index Of Sheets

SEE SHEET NO. 1A FOR INDEX

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING

TENN.	YEAR	SHEET NO.
	2014	1
FED. AID PROJ. NO.	STP/PHSIP-10(24)	
STATE PROJ. NO.	56001-3226-94	

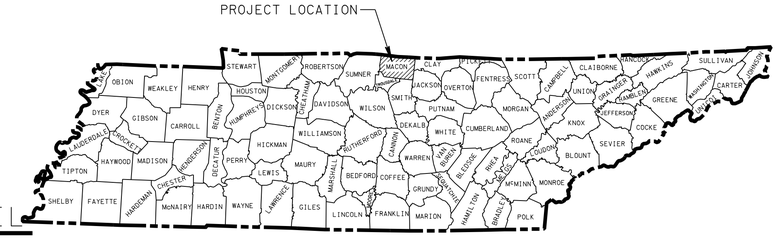
MACON COUNTY

STATE ROUTE 10
FROM: SOUTH OF GOOSE CREEK
TO: STATE ROUTE 52
L.M. 5.06 TO L.M. 6.86

GRADE, DRAIN, BASE, PAVE, SIGNS, SIGNALS & GUARDRAIL

STATE HIGHWAY NO. 10 F.A.H.S. NO. 10

PROJECT LOCATION



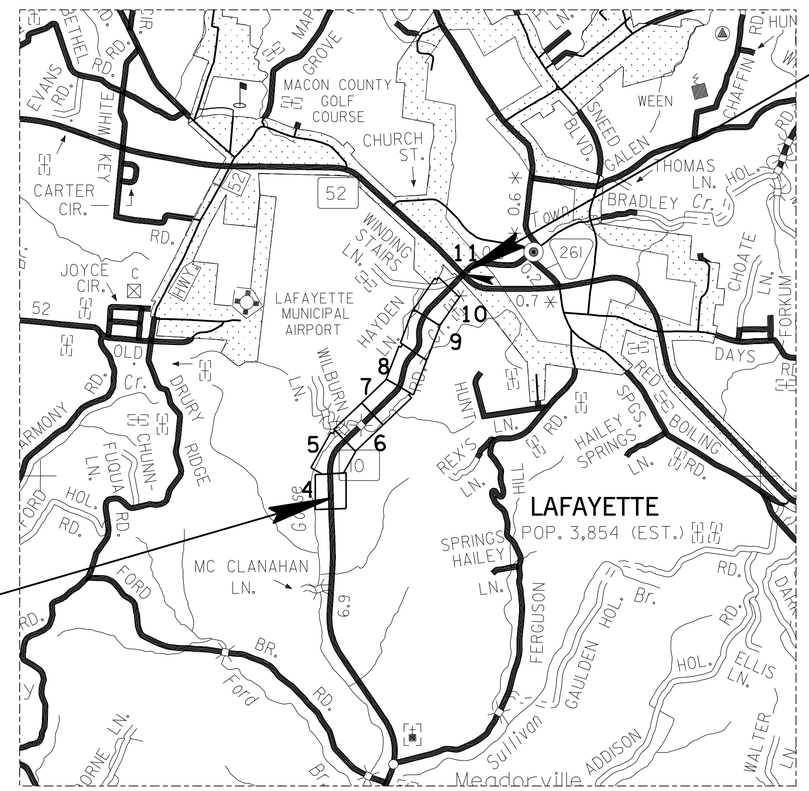
NO EXCLUSIONS

103773.02
56001-3226-94
END PROJ. NO. STP/PHSIP-10(24)(CONST.)
STA. 196+03.29 STATE ROUTE 10
LOG MILE 6.82

SURVEY DATE: 8/04/2006

N

103773.02
56001-3226-94
BEG. PROJ. NO. STP/PHSIP-10(24)(CONST.)
STA. 104+62.61 STATE ROUTE 10
LOG MILE 5.08



SCALE: 1"= 1/2 MILE

EQUATION	
DESCRIPTION	NET EFFECT ON ENUMERATION
STA. 125+22.76 (BK) = STA. 125+05.77 (AH)	+16.99'
TOTAL	+16.99'

UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY

APPROVED: Paul D. Degges
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 MOOSA POURALI, P.E.
DESIGNED BY PARSONS BRINCKERHOFF, INC.
DESIGNER DAVID A. RAST, P.E. CHECKED BY BRIAN REYNOLDS, P.E.
P.E. NO. 56001-1218-14
PIN NO. 103773.02

ROADWAY LENGTH = 1.682 MILES
BRIDGE LENGTH = 0.049 MILES
BOX BRIDGE LENGTH = 0.000 MILES
PROJECT LENGTH = 1.734 MILES

TRAFFIC DATA	
ADT (2014)	5495
ADT (2034)	6804
DHV (2034)	654
D	-
T (ADT)	7 %
T (DHV)	5 %
V	50 MPH

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

14-MAR-2014 14:32
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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	1A

INDEX STANDARD ROADWAY DRAWINGS

SHEET NAME	SHEET NO.
TITLE SHEET	1
ROADWAY INDEX, BRIDGE INDEX, STANDARD DRAWINGS INDEX	1A – 1B
ESTIMATED ROADWAY & BRIDGE QUANTITIES	2 – 2A
ESTIMATED SIGNAL QUANTITIES AND SPECIAL NOTES	2B
TYPICAL SECTIONS AND PAVING SCHEDULE	2C – 2F
GENERAL NOTES AND SPECIAL NOTES	2G – 2J
TABULATED QUANTITIES	2K – 2O
RETAINING WALL GEOTECHNICAL DESIGN DRAWINGS	2P – 2Wd
PROPERTY MAPS AND RIGHT-OF-WAY ACQUISITION TABLES	3, 3A – 3B
PRESENT LAYOUTS	4 – 11
ROW DETAILS	4A – 11A
PROPOSED LAYOUTS	4B – 11B
PROPOSED PROFILES	4C – 11C
PUBLIC SIDE ROADS AND RAMP PROFILES	12 – 13
PRIVATE DRIVE AND FIELD RAMP PROFILES	14 – 20
DRAINAGE MAPS	21 – 22
CULVERT SECTIONS	23 – 36
EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PLANS	37 – 78
TRAFFIC CONTROL PLANS WITH CONSTRUCTION PHASING NOTES	79 – 79R
SIGNING AND PAVEMENT MARKING PLANS	80, 80A – 80G
SIGN SCHEDULE SHEETS	81 – 81A
SIGNAL LAYOUT	82 – 82A
SOILS SHEETS	83, 83A – 83AQ
ROADWAY CROSS SECTIONS	84 – 211
SIDE ROAD CROSS SECTIONS	212 – 217
UTILITY SHEETS	U1-1 – U1-9
NORTH CENTRAL TELEPHONE	U2-1 – U2-10

STANDARD BRIDGE DRAWINGS

DWG. NO.	REV.	DESCRIPTION
BRIDGE APPURTENANCES ENGLISH (NEW STRUCTURES)		
STD-1-1SS	6-01-11	BRIDGE RAILING SINGLE SLOPE CONCRETE PARAPET
BRIDGE APPURTENANCES ENGLISH (BOX CULVERTS)		
STD-15-1	11-06-08	INDEX OF DRAWINGS AND TERMINOLOGY
STD-15-2	03-28-08	GENERAL NOTES
STD-15-3	02-28-03	DESIGN SECTION LIMITS
STD-15-4	12-07-01	TYPICAL SECTION AND DETAILS
STD-15-5	02-28-03	TYPICAL ELEVATION
STD-15-8	12-07-01	INTERIOR WALL END TREATMENTS
STD-15-9	02-28-03	TYPICAL WINGWALL DETAILS AND NOTES
STD-15-10	11-06-08	WINGWALL DIMENSIONS AND QUANTITIES
STD-15-11		WINGWALL DIMENSIONS AND QUANTITIES
STD-15-121	03-28-08	SLAB BRIDGE, 2 BARRELS AT 12', CLEAR HTS. 8' - 12', 0 - 60' FILL

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-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
RD-UD-3	09-05-96	UNDERDRAIN DETAILS
RD-UD-4	05-27-01	UNDERDRAIN LATERAL DETAILS
RD-UD-9	12-18-94	LATERAL UNDERDRAIN ENDWALL DETAIL FOR 6:1 SLOPES
RD01-S-11	04-04-03	DESIGN AND CONSTRUCTION DETAILS FOR ROADSIDE SLOPE DEVELOPMENT
RD01-S-11A	10-15-02	ROADSIDE DITCH DETAILS FOR DESIGN AND CONSTRUCTION
RD01-S-11B	10-15-02	DESIGN AND CONSTRUCTION DETAILS FOR ROCK CUT SLOPE AND CATCHMENT
S-CZ-1		CLEAR ZONE CRITERIA
RD01-SD-1		INTERSECTION SIGHT DISTANCE DESIGN AND GENERAL NOTES
RD01-SD-2		INTERSECTION SIGHT DISTANCE LANDSCAPE AND OBSTRUCTION
RD01-SD-3		INTERSECTION SIGHT DISTANCE 2-LANE ROADWAYS
RD01-SE-3	10-15-02	RURAL SUPERELEVATION DETAILS
RD01-TS-1	10-15-02	DESIGN STANDARDS FOR LOCAL ROADS AND STREETS
RD01-TS-1A		DESIGN STANDARDS FOR LOW-VOLUME LOCAL ROADS (ADT<=400)
RD01-TS-2	10-15-02	DESIGN STANDARDS FOR COLLECTOR ROADS AND STREETS
RD01-TS-3	10-15-02	DESIGN STANDARD FOR 2-LANE ARTERIAL HIGHWAYS
RD01-TS-6A	07-31-13	TYPICAL CURB AND GUTTER SECTIONS WITHOUT SHOULDER

DRAINAGE - CULVERTS AND ENDWALL

DWG. NO	REV.	DESCRIPTION
D-PB-1	01-02-13	STANDARD DETAILS CLASS "B" BEDDING AND CULVERT EXCAVATION
D-PE-4	01-15-13	STRAIGHT CONCRETE ENDWALL
D-PE-5	05-27-01	STANDARD WINGWALLS HORIZONTAL OVAL CONCRETE PIPES
D-PE-8	01-19-97	DETAIL OF STANDARD PIPE AND PIPE-ARCH CULVERT WITH BEVELED ENDS AND RIP-RAP
D-PE-9	04-25-90	CONCRETE ENDWALLS TYPE "B" (FOR ROUND & SIDE TAPERED INLETS, PIPE SIZES 15" TO 78", ALL SKEWS, 2:1 AND 4:1 SLOPES)
D-PE-9A	10-25-82	GENERAL DIMENSION QUANTITIES ROUND PIPE CONCRETE ENDWALLS TYPE "B" (PIPE SIZES 15" TO 78", ALL SKEWS, 2:1 AND 4:1 SLOPES)
D-PE-9B		GEN. DIMENSIONS AND QUANTITIES, SIDE TAPER INLETS CONCRETE ENDWALLS - TYPE "B" (PIPE SIZES 15" TO 78" ALL SKEWS 2:1 & 4:1 SLOPES)
D-PE-9C		BILL OF STEEL (SHEET 1 OF 4) CONCRETE ENDWALLS TYPE "B" (FOR CONCRETE ROUND AND SIDE TAPERED INLET, PIPE SIZE 15" - 78", ALL SKEW, 2:1 SLOPE)
D-PE-9D		BILL OF STEEL (SHEET 2 OF 4) CONCRETE ENDWALLS TYPE "B" (FOR CONCRETE ROUND AND SIDE TAPERED INLET, PIPE SIZES 15" - 78", ALL SKEWS, 4:1 SLOPE)
D-PE-18A	06-14-13	18" CONCRETE ENDWALL CROSS DRAIN
D-PE-18B		18" CONCRETE ENDWALL CROSS DRAIN
D-PE-24A	06-14-13	24" CONCRETE ENDWALL CROSS DRAIN
D-PE-24B		24" CONCRETE ENDWALL CROSS DRAIN
D-PE-30A	06-14-13	30" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE
D-PE-30B		30" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE
D-PE-99		PIPE GRATE & SKEWED CONNECTION DETAILS FOR "U" ENDWALLS CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE
D-PO-1	05-27-01	STANDARD OVAL & FLAT BASE CONCRETE CULVERT PIPE
D-SEW-1A	01-10-13	SIDE DRAIN CONCRETE ENDWALL WITH STEEL PIPE GRATE
D-SEW-12D	06-14-13	CONCRETE ENDWALL TYPE "SD" WITH STEEL PIPE GRATE (FOR 15" AND 18" PIPES - 12:1 SLOPE)

DRAINAGE-CATCH BASINS AND MANHOLES

DWG. NO	REV.	DESCRIPTION
D-CB-12B	09-24-12	STANDARD RECTANGULAR BRICK NO. 12 CATCH BASIN
D-CB-12LP	08-01-12	LOW PROFILE 32" X 32" SQUARE CONCRETE NO. 12LP CATCH BASIN
D-CB-12P	09-24-12	STANDARD PRECAST RECTANGULAR CONCRETE NO. 12 CATCH BASIN
D-CB-12RA	09-24-12	STANDARD PRECAST 48" CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-12RB	09-24-12	STANDARD PRECAST 60" AND 72" CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-12RC	09-24-12	STANDARD PRECAST 84" THRU 120" CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-12S	09-24-12	STANDARD RECTANGULAR CONCRETE NO. 12 CATCH BASIN
D-CB-12SB	09-24-12	STANDARD 4' X 4' SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-12SC	09-24-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-12SD	09-24-12	STANDARD 7' X 7' SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-12SE	08-01-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 12 CATCH D-CB-51SC 09-24-12 STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 51 CATCH BASIN (FOR USE IN FRONT OF CONCRETE RETAINING WALL)

NOTE:
NO PROJECT COMMITMENTS SHEET INCLUDED IN THIS SET OF PLANS.

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INDEX AND STANDARD DRAWINGS

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D-CB-51SC	09-24-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 51 CATCH BASIN (FOR USE IN FRONT OF CONCRETE RETAINING WALL)
D-CB-51SD	09-24-12	STANDARD 7' X 7' SQUARE CONCRETE NO. 51 CATCH BASIN (FOR USE IN FRONT OF CONCRETE RETAINING WALL)
D-CB-51SE	08-01-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 51 CATCH BASIN
D-CB-99	06-07-13	MISCELLANEOUS DETAILS FOR RECTANGULAR STRUCTURES
D-CB-99R	09-24-12	MISCELLANEOUS DETAILS FOR ROUND STRUCTURES
D-CB-99RA	08-05-13	BILL OF STEEL FOR ROUND CATCH BASIN LIDS
D-CB-99RB		ROUND JUNCTION BOX AND SPRING DRAIN BOX
D-CBB-12A	05-27-01	TYPE "B" CAST IRON FRAME, GRATE & NONMOUNTABLE INLET DETAILS FOR NOS. 10, 12, 14, 16, & 17 TYPE CATCH BASINS
D-CBB-12B	05-27-01	TYPE "B" CAST IRON FRAME, GRATE & 6" MOUNTABLE INLET DETAILS FOR NOS. 25, 26 & 27 TYPE CATCH BASINS
D-CBB-12C	05-27-01	TYPE "B" CAST IRON FRAME, GRATE & 4" MOUNTABLE INLET DETAILS FOR NOS. 28 & 29 TYPE CATCH BASINS
D-CBB-31	05-27-01	TYPE "B" CAST IRON FRAME, GRATE & INLET DETAILS FOR NOS. 31, 41, 45, 46, & 51 TYPE CATCH BASINS

ROADWAY AND PAVEMENT APPURTENANCES

RP-H-7	06-04-13	PERPENDICULAR CURB RAMP TYPE 1
RP-MC-2	02-28-02	STANDARD 6" SLOPING (MOUNTABLE) CONCRETE CURBS AND CONCRETE CURBS AND GUTTERS
RP-NMC-10	07-29-03	STANDARD VERTICAL (NONMOUNTABLE) CONCRETE CURBS AND CONCRETE CURBS AND GUTTERS
RP-NMC-11	02-28-02	STANDARD VERTICAL (NONMOUNTABLE) CONCRETE CURBS AND CONCRETE CURBS AND GUTTERS

SAFETY APPURTENANCES AND FENCE

S-CC-1		CRASH CUSHION
S-F-1	05-24-12	HIGH VISIBILITY FENCE
S-F-10	06-01-09	STANDARD RIGHT-OF-WAY STOCK FENCE
S-F-10C	05-14-10	RIGHT-OF-WAY FENCE AT BRIDGES AND BOX CULVERTS
S-FG-11	05-14-10	STANDARD STOCK FENCE GATE
S-GRC-1		GUARDRAIL CONNECTION TO BRIDGE ENDS OR BARRIER WALL
S-GRS-2		SPECIAL CASE: GUARDRAIL ATTACHMENT TO CONCRETE DECKS
S-GRS-3		SPECIAL CASE: GUARDRAIL FOOTING
S-GRT-2		TYPE 38 GUARDRAIL TERMINAL
S-GRT-2P		EARTH PAD FOR TYPE 38 TERMINAL
S-GRT-2R		EARTH PAD FOR TYPE 38 TERMINAL (RETROFIT)
S-PL-1		SAFETY PLAN AT ROADSIDE HAZARDS
S-PL-2		SAFETY PLAN AT SIDE ROADS OR PRIVATE DRIVES
S-PL-3		SAFETY PLAN: MINIMUM INSTALLATION AT BRIDGE ENDS
S-RP-2	01-19-99	STANDARD CONCRETE RIGHT-OF-WAY MARKERS
S-SSMB-1	08-19-13	32" SINGLE SLOPE CONCRETE BARRIER WALL

TRAFFIC CONTROL APPURTENANCES

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-2	01-15-13	DETAILS OF PAVEMENT MARKINGS FOR CONVENTIONAL ROADS
T-M-3	09-19-91	MARKING STANDARDS FOR TRAFFIC ISLANDS, MEDIANS & PAVED SHOULDERS ON CONVENTIONAL ROADS
T-M-4	11-01-11	STANDARD INTERSECTION PAVEMENT MARKINGS
T-M-15A	11-01-11	ASPHALT SHOULDER RUMBLE STRIP INSTALLATION DETAILS FOR NON-ACCESS CONTROLLED ROUTES
T-M-16	11-01-11	ASPHALT SHOULDER RUMBLE STRIPE INSTALLATION
T-PBR-2	11-01-11	DETAIL FOR VERTICAL PANELS AND FLEXIBLE DELINEATORS
T-S-6	02-12-91	STANDARD MOUNTING DETAILS - BOLTED EXTRUDED PANELS
T-S-8	07-15-91	HIGHWAY SHIELDS USED ON STATE NUMBERED ROUTES AND ARROWS
T-S-9	11-01-11	STANDARD LAYOUT GROUND MOUNTED SIGNS
T-S-10	04-04-12	STANDARD MOUNTING DETAILS FLAT SHEET SIGNS ALUMINUM-STEEL DESIGN
T-S-11	06-06-11	DELINEATOR AND MILEPOST DETAILS
T-S-12	05-27-03	STANDARD STEEL GROUND MOUNTED SIGNS, BREAK-AWAY TYPE POST FOOTING DETAILS, SQUARE TUBES
T-S-16	11-01-11	GROUND MOUNTED ROADSIDE SIGN AND DETAILS
T-S-16A	11-01-11	GROUND MOUNTED ROADSIDE SIGN PLACEMENT DETAILS
T-S-17	07-19-13	STANDARD GROUND MOUNTED SIGN USING PERFORATED/KNOCKOUT SQUARE TUBE
T-S-18	05-27-01	END OF ROADWAY AND DEAD END SIGNS, METAL BARRICADES (TYPE III) & WORK ZONE SPEED SIGNS
T-S-19	07-19-13	STANDARD MEMBERS BENDAWAY SIGN SUPPORTS STEEL DESIGN
T-S-20	11-01-11	SIGN DETAILS
T-S-21	02-28-13	DETAILS FOR SIGNS MOUNTS ON CONCRETE MEDIAN BARRIERS
T-S-23A	07-19-13	MULTI-DIRECTIONAL SLIP BASE BREAKAWAY SQUARE TUBE SIGN SUPPORT
T-S-23B	07-19-13	MULTI-DIRECTIONAL SLIP BASE BREAKAWAY STRUCTURAL PIPE SIGN SUPPORT
T-S-23C	07-19-13	BREAKAWAY U-POST SIGN SUPPORTS
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	07-29-04	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-9	11-16-07	DETAILS OF CANTILEVER SIGNAL SUPPORT
T-SG-9A		MISCELLANEOUS SIGNAL DETAILS
T-SG-10	05-06-13	MAST ARM POLE AND STRAIN POLES FOUNDATION DETAILS
T-SG-12	11-01-11	TYPICAL WIRING FOR SIGNAL HEADS AND DETECTION LOOPS
T-WZ-20	12-18-99	GEOMETRIC MEDIAN CROSS-OVER DETAIL ON DIVIDED HIGHWAYS
T-WZ-31	09-01-05	TRAFFIC CONTROL 2-LANE, 2-WAY DIVERSION (GREATER THAN 40 MPH)
T-WZ-36	04-02-12	LANE CLOSURE ON LOW-VOLUME 2-LANE HIGHWAY
T-WZ-55		SIDEWALK TRAFFIC CONTROL

EROSION PREVENTION AND SEDIMENT CONTROL

EC-STR-2	08-01-12	SEDIMENT FILTER BAG
EC-STR-3B	08-01-12	SILT FENCE
EC-STR-3C	08-01-12	SILT FENCE WITH WIRE BACKING
EC-STR-3E	04-01-08	SILT FENCE FABRIC JOINING DETAILS
EC-STR-6A	08-01-12	ENHANCED ROCK CHECK DAM
EC-STR-11	08-01-12	CULVERT PROCTECTION TYPE 1
EC-STR-11A	08-01-12	CULVERT PROCTECTION TYPE 2
EC-STR-19	04-01-08	CATCH BASIN PROTECTION
EC-STR-25	08-01-12	TEMPORARY CULVERT CROSSING, CONSTRUCTION EXIT, CONSTRUCTION FORD
EC-STR-27	08-01-12	TEMPORARY SLOPE DRAIN AND BERM
EC-STR-30A		INSTREAM DIVERSION (WITH TRAFFIC)
EC-STR-32	08-01-12	TEMPORARY DIVERSION CULVERTS
EC-STR-37	08-01-12	SEDIMENT TUBE
EC-STR-39A	08-01-12	CURB INLET PROTECTION TYPE 3 & 4

NOTES:
NO PROJECT COMMITMENTS SHEET INCLUDED IN THIS SET OF PLANS.
NO ENVIRONMENTAL COMMITMENT ON THIS PROJECT.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	1B

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DEPARTMENT OF TRANSPORTATION

INDEX AND STANDARD DRAWINGS

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	2

ESTIMATED ROADWAY QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
	105-01	CONSTRUCTION STAKES, LINES AND GRADES	LS	1
	201-01	CLEARING AND GRUBBING	LS	1
23	202-01.02	REMOVAL OF ASBESTOS	LS	1
26	202-04.50	REMOVAL OF STRUCTURES (SLAB BRIDGE, STA. 130+27.05)	LS	1
	202-04.51	REMOVAL OF STRUCTURES (BOX CULVERT, STA. 112+03.00)	LS	1
	202-04.52	REMOVAL OF STRUCTURES (BOX CULVERT, STA. 127+45.21)	LS	1
	202-04.53	REMOVAL OF STRUCTURES (BOX CULVERT, STA. 161+78.87)	LS	1
5 24	202-06.01	REMOVAL OF BUILDINGS (TRACT NO. 5)	LS	1
	202-06.02	REMOVAL OF BUILDINGS (TRACT NO. 6)	LS	1
	202-06.03	REMOVAL OF BUILDINGS (TRACT NO. 13)	LS	1
	202-06.04	REMOVAL OF BUILDINGS (TRACT NO. 14)	LS	1
	202-06.05	REMOVAL OF BUILDINGS (TRACT NO. 16)	LS	1
	202-06.06	REMOVAL OF BUILDINGS (TRACT NO. 24)	LS	1
9 4	203-01	ROAD AND DRAINAGE EXCAVATION (UNCLASSIFIED)	C.Y.	335,576
25	203-01.07	RD & DRNG EXCV (ACID PRODUCING- OFF SITE DISPOSAL)	C.Y.	34,325
9	203-02.01	BORROW EXCAVATION (GRADED SOLID ROCK)	TON	70,361
	203-04	PLACING AND SPREADING TOPSOIL	C.Y.	10,415
	203-06	WATER	M.G.	382
17	203-40.05	DRILLING	L.F.	3,100
4	204-08	FOUNDATION FILL MATERIAL	C.Y.	53
	209-02.07	18" TEMPORARY SLOPE DRAIN	L.F.	2,183
	209-05	SEDIMENT REMOVAL	C.Y.	580
	209-08.02	TEMPORARY SILT FENCE (WITH BACKING)	L.F.	10,828
	209-08.03	TEMPORARY SILT FENCE (WITHOUT BACKING)	L.F.	8,997
	209-08.08	ENHANCED ROCK CHECK DAM	EACH	22
4 10	209-09.01	SAND BAGS	BAG	14,208
	209-09.04	SEDIMENT FILTER BAG(15' X 10')	EACH	24
	209-09.43	CURB INLET PROTECTION (TYPE 4)	EACH	10
	209-20.03	POLYETHYLENE SHEETING (6 MIL. MIN.)	SY	168
	209-40.34	CATCH BASIN PROTECTION (TYPE E)	EACH	14
	209-40.44	CATCH BASIN FILTER ASSEMBLY(TYPE 4)	EACH	3
10	209-65.04	TEMPORARY IN STREAM DIVERSION	L.F.	100
20	303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	42,414
4	303-01.01	GRANULAR BACKFILL (ROADWAY)	TON	6,903
	303-10.01	MINERAL AGGREGATE (SIZE 57)	TON	914
	307-01.01	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADING A	TON	5,729
21	307-01.08	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADING B-M2	TON	4,417
	402-01	BITUMINOUS MATERIAL FOR PRIME COAT (PC)	TON	81
	403-01	BITUMINOUS MATERIAL FOR TACK COAT (TC)	TON	6
	411-01.07	ACS MIX (PG64-22) GRADING E SHOULDER	TON	1,055
22 11	411-01.10	ACS MIX(PG64-22) GRADING D	TON	3,591
	411-12.03	SCORING FOR RUMBLE STRIPE (NON-CONTINUOUS) (8IN WIDTH)	L.M.	3.3
	415-01.02	COLD PLANING BITUMINOUS PAVEMENT	S.Y.	10,322
	604-07.01	RETAINING WALL (WALL NO. 1)	S.F.	13,148
	604-07.02	RETAINING WALL (WALL NO. 2)	S.F.	3,800
	604-07.03	RETAINING WALL (WALL NO. 3)	S.F.	5,445
	604-07.04	RETAINING WALL (WALL NO. 4)	S.F.	3,292
	604-07.05	RETAINING WALL (WALL NO. 5)	S.F.	1,526
	604-07.06	RETAINING WALL (WALL NO. 6)	S.F.	5,871
19 6	606-24.13	TEMPORARY SHEET PILES	LS	1

ESTIMATED ROADWAY QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
2	607-03.02	18" CONCRETE PIPE CULVERT (CLASS III)	L.F.	1,853
2 3	607-05.02	24" CONCRETE PIPE CULVERT (CLASS III)	L.F.	931
2	607-06.02	30" CONCRETE PIPE CULVERT (CLASS III)	L.F.	69
	607-39.02	18" PIPE CULVERT (SIDE DRAIN)	L.F.	316
	607-39.03	24" PIPE CULVERT (SIDE DRAIN)	L.F.	24
1	607-39.04	30" PIPE CULVERT (SIDE DRAIN)	L.F.	56
2 3	611-07.01	CLASS A CONCRETE (PIPE ENDWALLS)	C.Y.	48
2 3	611-07.02	STEEL BAR REINFORCEMENT (PIPE ENDWALLS)	LB.	1,836
1	611-07.03	STRUCTURAL STEEL (PIPE ENDWALLS)	LB.	137
	611-12.02	CATCH BASINS, TYPE 12, > 4' - 8' DEPTH	EACH	7
	611-51.02	CATCH BASINS, TYPE 51, > 4' - 8' DEPTH	EACH	9
	611-51.03	CATCH BASINS, TYPE 51, > 8' - 12' DEPTH	EACH	4
	620-05.01	CONC PARAPET SINGLE SLOPE (STD-1-1SS)	L.F.	1,450
	621-03.02	18" TEMPORARY DRAINAGE PIPE	L.F.	205
	621-03.03	24" TEMPORARY DRAINAGE PIPE	L.F.	998
4 10	621-03.04	30" TEMPORARY DRAINAGE PIPE	L.F.	204
	621-03.06	42" TEMPORARY DRAINAGE PIPE	L.F.	102
	621-03.11	72" TEMPORARY DRAINAGE PIPE	L.F.	204
	702-03	CONCRETE COMBINED CURB & GUTTER	C.Y.	62
	705-01.01	GUARDRAIL AT BRIDGE ENDS	L.F.	269
2	705-02.02	SINGLE GUARDRAIL (TYPE 2)	L.F.	3,220
	705-04.07	TAN ENERGY ABSORBING TERM (NCHRP 350, TL3)	EACH	16
16	705-04.25	GUARDRAIL & BARRIER DELINEATOR	EACH	40
6 12	705-08.51	PORTABLE IMPACT ATTENUATOR NCHRP350 TL-3	EACH	8
	707-08.11	HIGH-VISIBILITY CONSTRUCTION FENCE	L.F.	2,242
4	708-02.01	MARKERS (CONCRETE R.O.W. POSTS)	EACH	111
4	709-05.05	MACHINED RIP-RAP (CLASS A-3)	TON	50
4	709-05.06	MACHINED RIP-RAP (CLASS A-1)	TON	2,615
3	709-05.08	MACHINED RIP-RAP (CLASS B)	TON	1,230
3 15	709-05.09	MACHINED RIP-RAP (CLASS C)	TON	716
	710-02	AGGREGATE UNDERDRAINS (WITH PIPE)	L.F.	13,275
	710-05	LATERAL UNDERDRAIN	L.F.	2,925
	710-06.15	LATERAL UNDERDRAIN ENDWALL (6:1)	EACH	66
	711-05.81	32IN HALF SIZE SINGLE SLOPE CONCRETE BARRIER WALL	L.F.	1,275
	712-01	TRAFFIC CONTROL	LS	1
	712-02.02	INTERCONNECTED PORTABLE BARRIER RAIL	L.F.	17,250
	712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH	110
6	712-05.01	WARNING LIGHTS (TYPE A)	EACH	115
	712-06	SIGNS (CONSTRUCTION)	S.F.	340
	712-07.03	TEMPORARY BARRICADES (TYPE III)	L.F.	45
	713-01.10	SIGNING	LS	1
	713-11.01	"U" SECTION STEEL POSTS	LB.	98
	713-11.02	PERFORATED/KNOCKOUT SQUARE TUBE POST	LB.	906
	713-11.21	P POST SLIP BASE	EACH	3
	713-13.02	FLAT SHEET ALUMINUM SIGNS (0.080" THICK)	S.F.	102

L1 LETTING REV: 04-21-14 ADDED ITEM NUMBERS 202-01.02, 202-06.01 - 202-06.06 AND 203-01.07. ADJ. ITEM NUMBER 203-01.29.

L2 LETTING REV: 05-19-14 REMOVED ITEM NUMBERS 203-01.29, 203-03 AND 712-02.36. ADJ. ITEM NUMBERS 203-01, 203-06, 604-07.01 - 604-07.06 AND 712-02.02. ADDED ITEM NUMBERS 202-04.51 - 202-04.53, 209-09.01 AND 209-20.03.

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ESTIMATED QUANTITIES

SHEET 1 OF 2

19-MAY-2014 17:00
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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	2A

L1 LETTING REV: 04-21-14 ADDED FOOTNOTE NUMBERS 23, 24 AND 25.

L2 LETTING REV: 05-19-14 ADDED FOOTNOTE NUMBER 26. ADJUSTED ITEM NO. 604-02.01 AND 604-02.02.

ESTIMATED ROADWAY QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
	713-13.03	FLAT SHEET ALUMINUM SIGNS (0.100" THICK)	S.F.	184
18	713-15	REMOVAL OF SIGNS, POSTS AND FOOTINGS	LS	1
6	716-01.07	TEMPORARY RAISED PAVEMENT MARKER,YELLOW	EACH	260
	716-01.21	Snwplwble Pvmt Mrkrs (Bi-Dir)(1 Color)	EACH	230
	716-02.04	PLASTIC PAVEMENT MARKING (CHANNELIZATION STRIPING)	S.Y.	6
	716-02.05	PLASTIC PAVEMENT MARKING (STOP LINE)	L.F.	187
13 7	716-02.06	PLASTIC PAVEMENT MARKING (TURN LANE ARROW)	EACH	5
	716-02.07	PLASTIC PAVEMENT MARKING (24" BARRIER LINE)	L.F.	480
	716-02.08	PLASTIC PAVEMENT MARKING (8" DOTTED LINE)	L.F.	100
13	716-03.01	PLASTIC WORD PAVEMENT MARKING (ONLY)	EACH	1
13	716-04.05	PLASTIC PAVEMENT MARKING (STRAIGHT ARROW)	EACH	2
6	716-05.01	PAINTED PAVEMENT MARKING (4" LINE)	L.M.	13.5
6	716-05.05	PAINTED PAVEMENT MARKING (STOP LINE)	L.F.	66
	716-13.01	SPRAY THERMO PVMT MRKNG (60 mil) (4IN LINE)	L.M.	8.2
	716-13.03	SPRAY THERMO PVMT MRKNG (60 mil) (8IN BARRIER LINE)	L.F.	185
	717-01	MOBILIZATION	LS	1
4	740-10.03	GEOTEXTILE (TYPE III)(EROSION CONTROL)	S.Y.	2,382
10	740-10.04	GEOTEXTILE (TYPE IV)(STABILIZATION)	S.Y.	18,729
4	740-11.03	TEMPORARY SEDIMENT TUBE 18IN (EPSC)	L.F.	4,773
	801-01	SEEDING (WITH MULCH)	UNIT	546
	801-01.02	CROWN VETCH MIXTURE (WITH MULCH)	UNIT	289
	801-01.07	TEMPORARY SEEDING (WITH MULCH)	UNIT	1,459
4	801-01.30	COVER CROP SEED MIX (RIPZN/FLPL) W/MULCH	UNIT	1,459
	801-03	WATER (SEEDING & SODDING)	M.G.	146
	802-11.04	ACER SACCHARUM (SUGAR MAPLE 2-5FT CNTNR GRWN)	EACH	14
	802-11.18	LIQUIDAMBER STYRACIFLUA (SWEETGUM 2-5FT CNTNR GRWN)	EACH	13
	802-11.26	PLATANUS OCCIDENTALIS (SYCAMORE 2-5FT CNTNR GRWN)	EACH	30
	802-11.31	QUERCUS FALCATA (SOUTHERN RED OAK 2-5FT CNTNR GRWN)	EACH	5
	802-11.09	CARYA OVATA (SHAGBARK HICKORY 2-5FT CNTNR GRWN)	EACH	8
	802-12.18	LIQUIDAMBER STYRACIFLUA (SWEETGUM SEEDLNG B.R.)	EACH	17
	802-12.01	ACER NEGUNDO (BOX ELDER SEEDLNG B.R.)	EACH	31
	802-12.40	SALIX NIGRA (BLACK WILLOW SEEDLNG B.R.)	EACH	18
	802-13.55	HAMAMELIS VIRGINIANA (WITCH HAZEL SDLNG BARE ROOT)	EACH	16
	802-13.56	HYDRANGEA QUERCIFOLIA (OAKLF HYDRANGEA SDLNG BARE ROOT)	EACH	9
	802-12.12	CORNUS FLORIDA (FLOWERING DOGWOOD SEEDLNG B.R.)	EACH	12
	802-13.52	CALYCANTHUS FLORIDUS (SWEETSHRUB SDLNG BARE ROOT)	EACH	9
	802-12.57	VIBURNUM RUFIDULUM (RUSTY BLACKHAW SDLNG B.R.)	EACH	9

SLAB BRIDGE QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
4	604-02.01	CLASS A CONCRETE (BOX BRIDGES)	C.Y.	203
	604-02.02	STEEL BAR REINFORCEMENT (BOX BRIDGES)	LB.	42,778
	604-03.01	CLASS A CONCRETE (BRIDGES)	C.Y.	493
	604-03.02	STEEL BAR REINFORCEMENT (BRIDGES)	LB.	107,038

FOOTNOTES

1. TABULATED ON SUMMARY SHEET 2K.
2. TABULATED ON SUMMARY SHEET 2L.
3. TABULATED ON SUMMARY SHEET 2M.
4. TABULATED ON SUMMARY SHEET 2N.
5. TABULATED ON SUMMARY SHEET 2O.
6. TABULATED ON TRAFFIC CONTROL SHEET 79B.
7. 5 LEFT TURNS.
8. SEE SHEET U1-1 FOR INDEX OF UTILITY SHEETS. APPLICABLE FOOTNOTES FOR ESTIMATED UTILITIES QUANTITIES WILL BE ON THE UTILITY TABULATION BLOCKS." (RESPONSIBLE OFFICE: DESIGN)
9. REFER TO SPECIAL NOTES
10. SEE SUBSECTION 209.07 OF THE STANDARD SPECIFICATIONS FOR MAINTENANCE REPLACEMENT.
11. THE CONTRACTOR HAS THE OPTION OF USING THE PERFORMANCE GRADE MIX OR REGULAR ASPHALT ON THE PAVING OF DRIVEWAYS AND BUSINESS ENTRANCES.
12. THIS ITEM SHALL BE A PORTABLE ENERGY ABSORBING TERMINAL MEETING THE REQUIREMENTS OF NCHRP 350 FOR TEST LEVEL 3. EXAMPLES WOULD BE A QUAD-GUARD, A REACT 350 OR A TRACC. THE PAY ITEM WILL INCLUDE FURNISHING AND INSTALLING ALL COMPONENTS AS SHOWN ON THE MANUFACTURER'S DRAWING.
13. 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.
14. CULVERT EXCAVATION FOR CONCRETE BOX OR SLAB TYPE CULVERTS OR BRIDGES WILL NOT BE MEASURED AND PAID FOR DIRECTLY, BUT THE COST WILL BE INCLUDED IN THE COST OF OTHER ITEMS.
15. THOSE MACHINED RIP RAP QUANTITIES (LARGE SLAB BRIDGE ONLY @ STA. 130+27.05) SUPPLIED BY THE TDOT STRUCTURES DIVISION SHALL BE ADDED TO THIS LINE ITEM.
16. REFERENCE STD. DRAWING S-PL-3 FOR DELINEATOR PLACEMENT & SPACING ALONG GUARDRAIL.
17. FOR CONFIRMATION OF ADEQUATE SOLDIER PILE LENGTHS PRIOR TO RETAINING WALL INSTALLATION. AIR TRACK PERCUSSION DRILLING IS ADEQUATE FOR VERFICATION PURPOSES.
18. REMOVE SIGN & SUPPORT (NO FOOTINGS ON THESE SIGNS) ON APPROXIMATELY TWENTY FIVE SIGNS WITHIN THE GRADING LIMITS OR AS DIRECTED BY THE ENGINEER.
19. INCLUDES APPROX. 166 LF OF TEMPORARY SHEET PILE.
20. INCLUDES 1920.4 TONS FOR TEMPORARY PAVEMENT CALLED OUT IN THE TRAFFIC CONTROL PLANS.
21. INCLUDES 384.8 TONS FOR TEMPORARY PAVEMENT CALLED OUT IN THE TRAFFIC CONTROL PLANS.
22. INCLUDES 225.6 TONS FOR TEMPORARY PAVEMENT CALLED OUT IN THE TRAFFIC CONTROL PLANS.
23. TO BE USED FOR THE REMOVAL OF ASBESTOS FOR THE BUILDINGS ON TRACTS 5, 13, 14, 16 AND 24.
24. BID PRICE INCLUDES ALL SALVAGE VALUE OF MATERIAL. ACM ABATEMENT SHOULD BE COMPLETED PRIOR TO ANY DEMOLITION ACTIVITIES. ABATEMENT SHOULD BE ACCOMPLISHED PER SP202ACM SPECIAL PROVISION REGARDING REMOVAL OF ASBESTOS-CONTAINING MATERIALS. STATE OF TENNESSEE ASBESTOS ACCREDITATION REQUIREMENTS (TCA 1200-01-20) MANDATE THAT ACM ABATEMENT WORK BE PERFORMED BY AN ACCREDITED FIRM (CONTRACTOR) USING ACCREDITED ABATEMENT WORKERS AND SUPERVISORS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A NOTICE TO THE TDEC, DIVISION OF AIR POLLUTION CONTROL TEN (10) DAYS IN ADVANCE OF ANY ACM ABATEMENT ACTIVITIES. TEN DAY ADVANCE NOTICE TO THE TDEC, DIVISION OF AIR POLLUTION CONTROL WILL BE REQUIRED PRIOR TO COMMENCEMENT OF ANY BUILDING DEMOLITION ACTIVITIES.
25. CONTRACTOR SHALL PROVIDE AN OFF SITE DISPOSAL SITE MEETING THE REQUIREMENTS OF SPECIAL PROVISION 107L. ALL COSTS ASSOCIATED IN THIS WORK SHALL BE PAID FOR PER SPECIAL PROVISION 107L. FOR MORE INFORMATION, PLEASE SEE THE GEOTECHNICAL REPORT.
26. THE SALVAGE SHALL BECOME PROPERTY OF THE CONTRACTOR.

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ESTIMATED QUANTITIES

SHEET 2 OF 2

19-MAY-2014 17:00
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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	2B

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

ESTIMATED SIGNAL QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
(1)	713-15.40	SIGN INSTALLATION (STREET NAME SIGNS)	LS	1
	730-02.09	SIGNAL HEAD ASSEMBLY (130 WITH BACKPLATE)	EACH	5
	730-02.17	SIGNAL HEAD ASSEMBLY (150 A2H WITH BACKPLATE)	EACH	3
	730-03.20	INSTALL PULL BOX (TYPE A)	EACH	5
	730-03.21	INSTALL PULL BOX (TYPE B)	EACH	7
(2)	730-05.01	ELECTRICAL SERVICE CONNECTION	EACH	1
	730-08.03	SIGNAL CABLE - 7 CONDUCTOR	L.F.	694
	730-12.01	CONDUIT 1" DIAMETER (PVC)	L.F.	748
	730-12.08	CONDUIT 2" DIAMETER (RGS)	L.F.	547
	730-12.09	CONDUIT 3" DIAMETER (RGS)	L.F.	74
	730-13.03	VEHICLE DETECTOR (4 - CHANNEL, RACK MOUNT)	EACH	3
	730-14.01	SHIELDED DETECTOR CABLE	L.F.	1929
	730-14.02	SAW SLOT	L.F.	1497
	730-14.03	LOOP WIRE	L.F.	3986
	730-15.32	CABINET (EIGHT PHASE BASE MOUNTED)	EACH	1
	730-16.02	EIGHT PHASE ACTUATED CONTROLLER	EACH	1
(3)	730-23.36	CANTILEVER SIGNAL SUPPORT (2 @ 60' & 50')	EACH	1
(3)	730-23.37	CANTILEVER SIGNAL SUPPORT (2 @ 60' & 48')	EACH	1

FOOTNOTES

(1) TO INCLUDE 4 STREET NAME SIGNS AND ALL NECESSARY HARDWARE. SEE SHEET 81A FOR SIGN DETAILS. SEE SIGNAL LAYOUT ON SHEET 82 FOR PLACEMENT.

(2) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE LOCAL UTILITY TO OBTAIN THE ESTIMATE FOR ANY CHARGES BY THE UTILITY FOR PROVIDING ELECTRICAL SERVICE TO THE SIGNAL CONTROLLER. THESE CHARGES SHALL BE INCLUDED IN THE PRICE BID FOR THIS ITEM FOR PAYMENT BY THE CONTRACTOR.

(3) FOR ALL POLES, USE A DRILLED SHAFT FOUNDATION 3'-0" IN DIAMETER WITH A 15'-0" DEEP SOIL SOCKET. IF SOUND BEDROCK IS ENCOUNTERED PRIOR TO ATTAINING THE REQUIRED 15'-0" DEPTH, SOCKET INTO THE ROCK TO A DEPTH OF 6'-0".

SPECIAL NOTES REGARDING SIGNAL HEADS

(1) 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.

(2) CIRCULAR INDICATIONS SHALL MEET “ITE VTCSH-LED CIRCULAR SIGNAL SUPPLEMENT” FOR EXPANDED/EXTENDED VIEW.
ARROW INDICATIONS SHALL MEET “ITE VTCSH-3 LED ARROW SPECIFICATON” FOR EXPANDED/EXTENDED VIEW.

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

(4) COMPATABILITY WITH CONFLICT MONITORS AND LOAD SWITCHES SHALL BE TESTED AND CONFIRMED.

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

(6) 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.

(7) SIGNAL HEADS SHALL INCLUDE LOUVERED BACKPLATES WITH A 1” MINIMUM 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.

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ESTIMATED SIGNAL QUANTITIES AND SPECIAL NOTES

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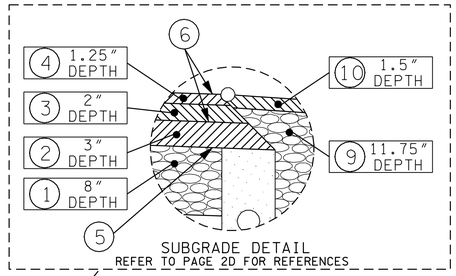
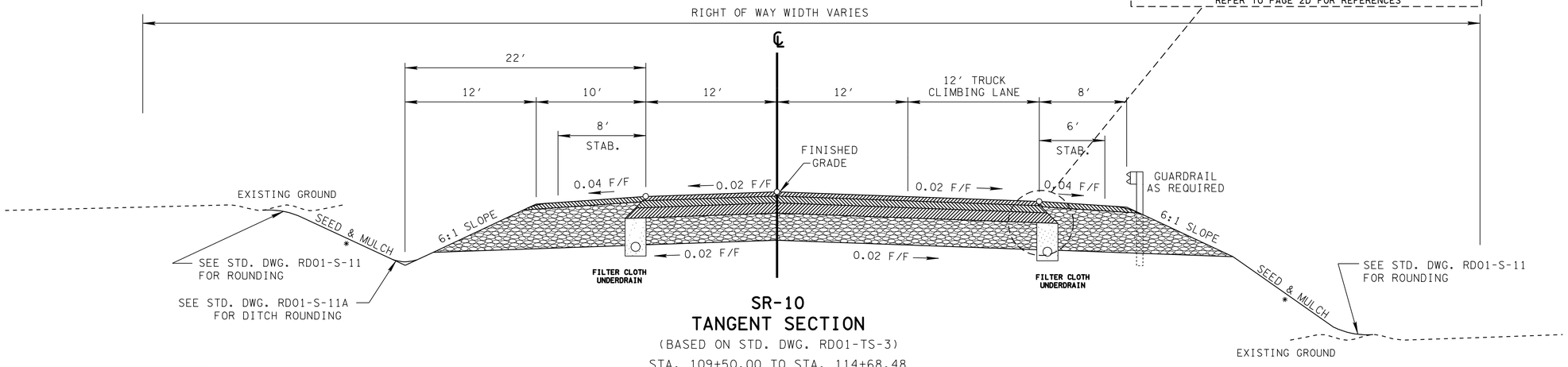
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	2
CONST.	2014	STP/PHSIP-10(24)	2C





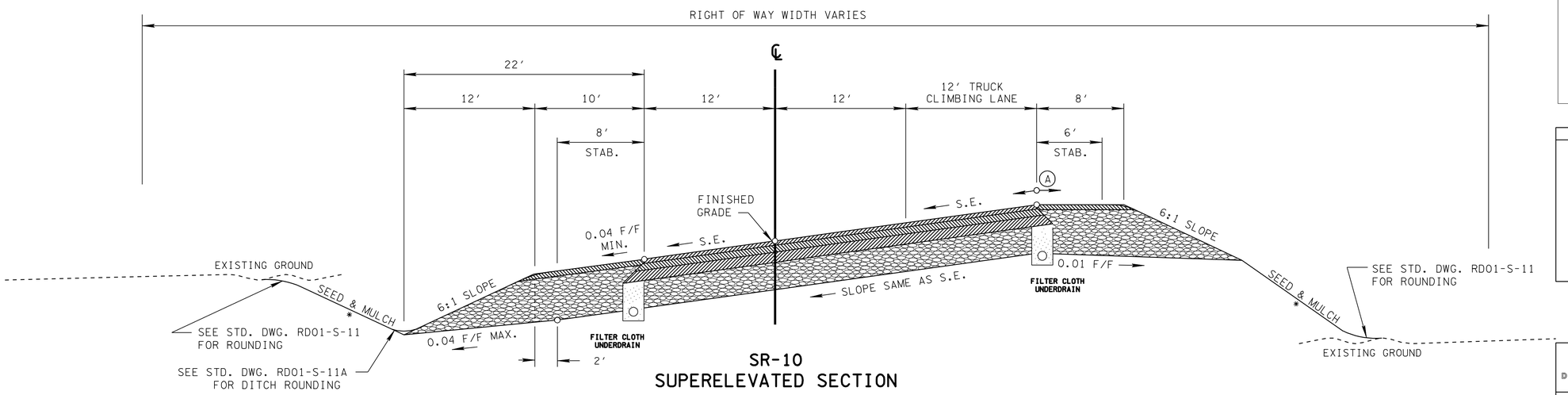
SR-10
TANGENT SECTION

(BASED ON STD. DWG. RD01-TS-3)

STA. 109+50.00 TO STA. 114+68.48
STA. 124+09.99 TO STA. 149+33.34
STA. 155+82.23 TO STA. 158+35.41
STA. 163+22.87 TO STA. 165+27.45
STA. 171+34.59 TO STA. 173+68.19
STA. 181+28.53 TO STA. 189+50.00

* AS SHOWN ON THE CROSS-SECTIONS

EQUATION	
DESCRIPTION	NET EFFECT ON ENUMERATION
STA. 125+22.76 (BK) = STA. 125+05.77 (AH)	+16.99
TOTAL	+16.99



SR-10
SUPERELEVATED SECTION

(BASED ON STD. DWG. RD01-TS-3)

STA. 114+68.48 TO STA. 124+09.99
STA. 149+33.34 TO STA. 155+82.23
STA. 158+35.41 TO STA. 163+22.87
STA. 165+27.45 TO STA. 171+34.59
STA. 173+68.19 TO STA. 181+28.53

* AS SHOWN ON THE CROSS-SECTIONS

(A) THE SLOPES OF THE SHOULDER AND ROADWAY PAVEMENT SHALL NOT EXCEED AN ALGEBRAIC DIFFERENCE OF 0.07.

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TYPICAL SECTIONS (N.T.S.)

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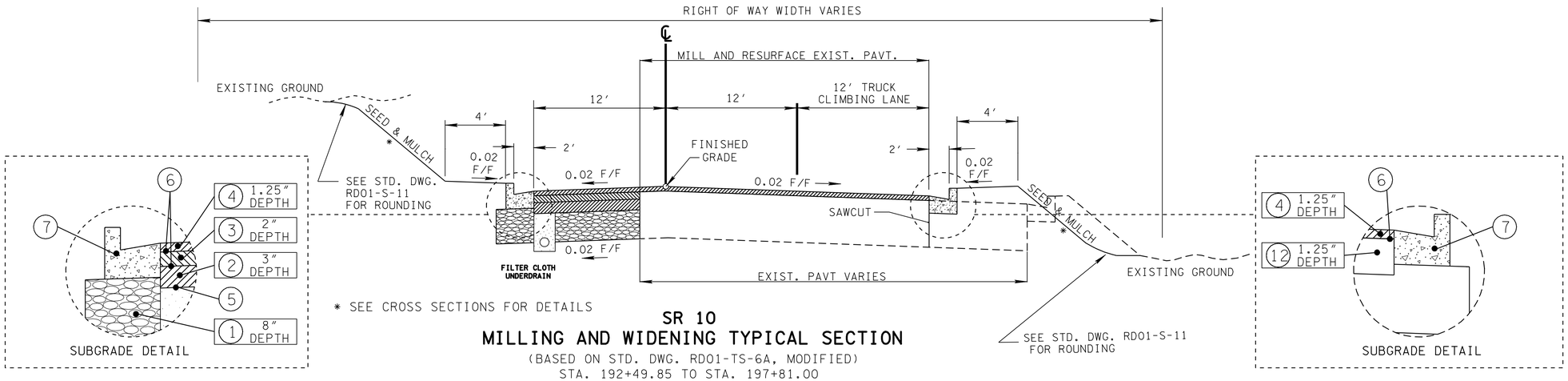
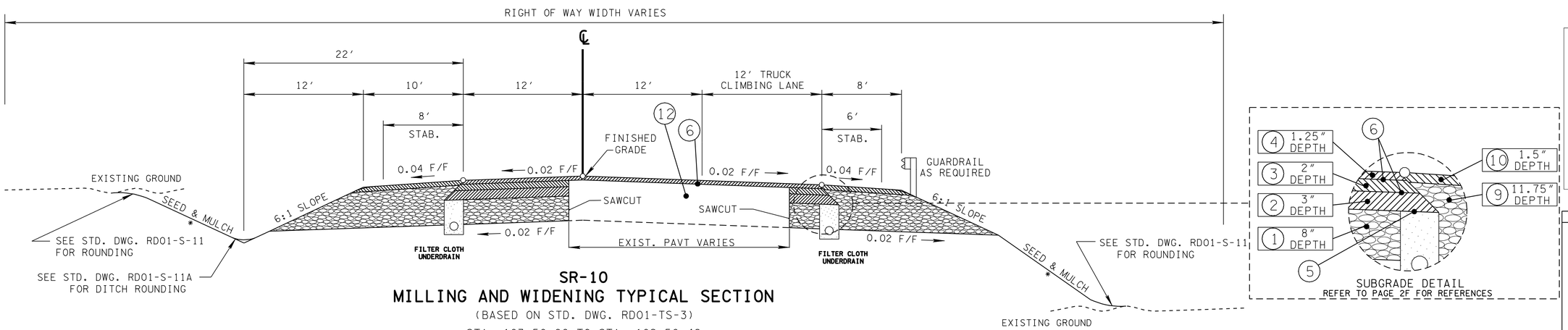
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	2A
CONST.	2014	STP/PHSIP-10(24)	2D



* SEE CROSS SECTIONS FOR DETAILS

SR 10
MILLING AND WIDENING TYPICAL SECTION

(BASED ON STD. DWG. RD01-TS-6A, MODIFIED)
STA. 192+49.85 TO STA. 197+81.00



SR-10
MILLING AND WIDENING TYPICAL SECTION

(BASED ON STD. DWG. RD01-TS-3)
STA. 103+50.00 TO STA. 109+50.48
STA. 189+50.00 TO STA. 192+50.00

* AS SHOWN ON THE CROSS-SECTIONS

UNOFFICIAL SET
NOT FOR BIDDING

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DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS (N.T.S)

(A) THE SLOPES OF THE SHOULDER AND ROADWAY PAVEMENT SHALL NOT EXCEED AN ALGEBRAIC DIFFERENCE OF 0.07.

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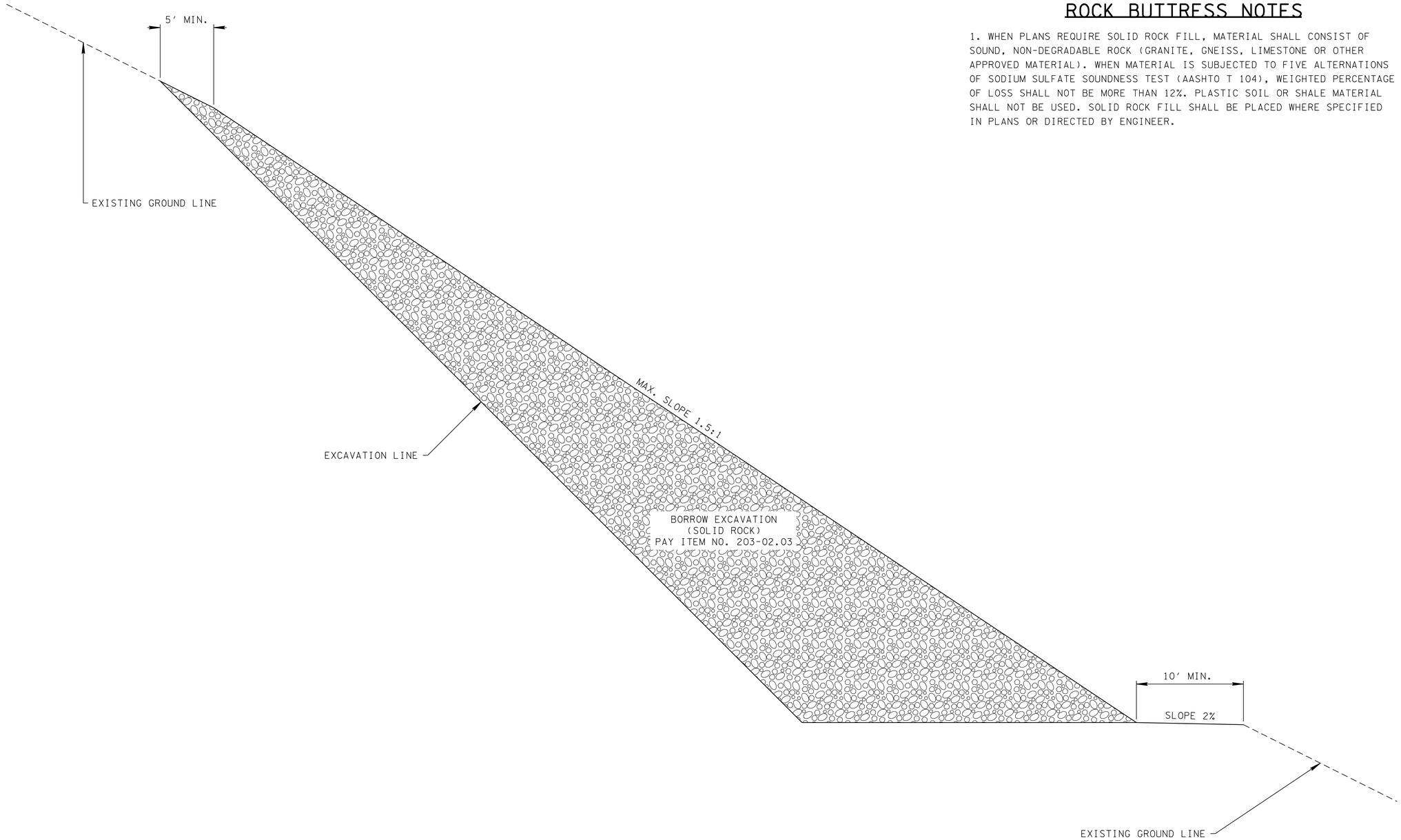
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	2E

ROCK BUTTRESS NOTES

1. WHEN PLANS REQUIRE SOLID ROCK FILL, MATERIAL SHALL CONSIST OF SOUND, NON-DEGRADABLE ROCK (GRANITE, GNEISS, LIMESTONE OR OTHER APPROVED MATERIAL). WHEN MATERIAL IS SUBJECTED TO FIVE ALTERNATIONS OF SODIUM SULFATE SOUNDNESS TEST (AASHTO T 104), WEIGHTED PERCENTAGE OF LOSS SHALL NOT BE MORE THAN 12%. PLASTIC SOIL OR SHALE MATERIAL SHALL NOT BE USED. SOLID ROCK FILL SHALL BE PLACED WHERE SPECIFIED IN PLANS OR DIRECTED BY ENGINEER.



ROCK BUTTRESS TYPICAL SECTION (NOT TO SCALE)

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ROCK BUTTRESS DETAIL

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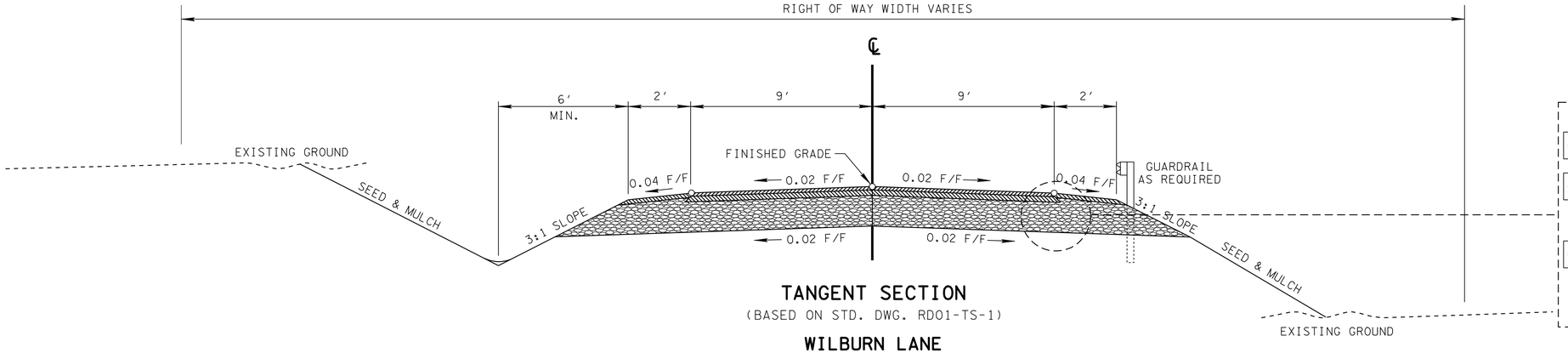
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	2B
CONST.	2014	STP/PHSIP-10(24)	2F



TANGENT SECTION

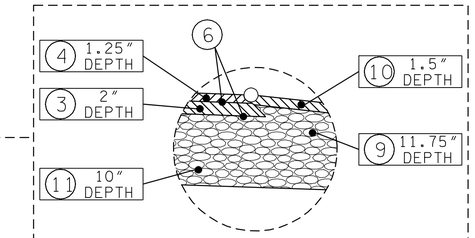
(BASED ON STD. DWG. RD01-TS-1)

WILBURN LANE

STA. 300+47.13 TO STA. 303+30.00

WINDING STAIRS LANE

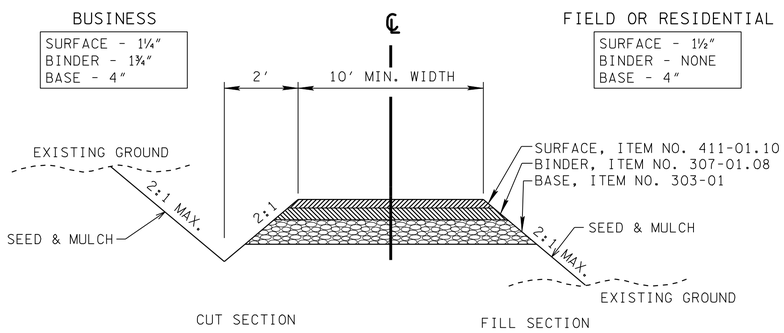
STA. 299+49.00 TO STA. 304+42.77



SUBGRADE DETAIL

REFER TO BOTTOM OF THIS SHEET FOR REFERENCES

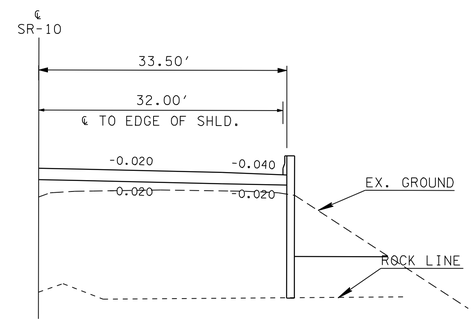
(A) THE SLOPES OF THE SHOULDER AND ROADWAY PAVEMENT SHALL NOT EXCEED AN ALGEBRAIC DIFFERENCE OF 0.07.



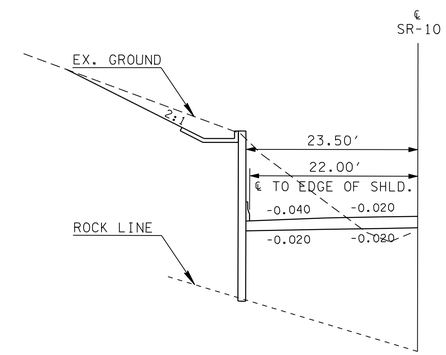
TYPICAL SECTION

PRIVATE DRIVE TO BUSINESS, FIELD, OR RESIDENTIAL PROPERTY

NOTE: DITCH TO BE CONSTRUCTED WHERE DIRECTED BY THE ENGINEER



RETAINING WALL TYPICAL FILL CROSS-SECTION
N.T.S.



RETAINING WALL CUT TYPICAL CROSS-SECTION
N.T.S.

L1 LETTING REV: 04-21-14 REVISED PAVING SCHEDULE NUMBER 4 TO BE 132.5 LBS/SY.

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS AND PAVEMENT SCHEDULE

PROPOSED PAVING SCHEDULE

(1) MINERAL AGG. BASE (UNDER ROADWAY) @ 8.00" THICK 303-01 MINERAL AGGREGATE, TYPE A BASE, GRADING D	(5) PRIME COAT 402-01 BITUMINOUS MATERIAL FOR PRIME COAT (PC) @ 0.30 GAL TO 0.35 GAL PER SY 402-02 AGGREGATE FOR COVER MATERIAL (PC)	(9) MINERAL AGG. BASE (SHOULDER) @ 11.75" THICK 303-01 MINERAL AGGREGATE, TYPE A BASE, GRADING D
(2) ASPHALT CEMENT (ROADWAY) @ 3.00" THICK 307-01.01 ASPHALT CONCRETE MIX (PG64-22) GRADING A 345.0 LBS/SY	(6) TACK COAT 403-01 BITUMINOUS MATERIAL FOR TACK COAT (TC) @ 0.02 GAL PER SY	(10) ASPHALT CEMENT (SHOULDER) @ 1.50" THICK 411-01.07 ASPHALT CEMENT MIX (PG64-22) GRADING E 154.5 LBS/SY
(3) ASPHALT CEMENT (ROADWAY) @ 2.00" THICK 307-01.08 ASPHALT CONCRETE MIX (PG64-22) GRADING B-M2 226.0 LBS/SY	(7) CONCRETE COMBINED CURB & GUTTER (DEPTH 8") 702-03 CONCRETE COMBINED CURB & GUTTER	(11) MINERAL AGG. BASE (UNDER ROADWAY) @ 10.00" THICK 303-01 MINERAL AGGREGATE, TYPE A BASE, GRADING D
(4) ASPHALT CEMENT (ROADWAY) @ 1.25" THICK 411-01.10 ACS MIX (PG64-22) GRADING D 132.5 LBS/SY	(8) FILTER CLOTH UNDERDRAIN WITH PIPE SEE STD. DWG. RD-UD-3 710-04 FILTER CLOTH UNDERDRAIN (WITH PIPE)	(12) MILLING - 1.25" DEPTH (ROADWAY) 415-01.01 - COLD PLANING BITUMINOUS PAVEMENT

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	2G

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.

SEEDING AND SODDING

(3) ALL EXISTING ROADS WITHIN THE RIGHT-OF-WAY AND NOT IN THE GRADED AREA THAT ARE TO BE ABANDONED SHALL BE SCARIFIED, OBLITERATED, TOPSOILED AND SEEDED. SCARIFYING AND OBLITERATING THE PAVEMENT WILL NOT BE MEASURED AND PAID FOR DIRECTLY, BUT THE COST WILL BE INCLUDED IN THE COST OF OTHER ITEMS. TOPSOIL, IN ACCORDANCE WITH SECTION 203 OF THE STANDARD SPECIFICATIONS, WILL BE MEASURED AND PAID FOR UNDER ITEMS 203-04 AND/OR 203-07. SEEDING, IN ACCORDANCE WITH SECTION 801 OF THE STANDARD SPECIFICATIONS, WILL BE MEASURED AND PAID FOR UNDER ITEM 801-01.

(4) SOD SHALL BE PLACED AT LOCATIONS SHOWN ON THE PLANS TO PREVENT DAMAGE TO ADJACENT FACILITIES AND PROPERTY DUE TO EROSION ON ALL NEWLY GRADED CUT AND FILL SLOPES AS WORK PROGRESSES.

(5) ITEM NO. 801-01, SEEDING (WITH MULCH), SHALL BE USED WHERE EROSION CONTROL BLANKET OR SOD ARE NOT APPLIED.

GUARDRAIL

(6) THE CONTRACTOR SHALL NOT REMOVE ANY SECTIONS OF EXISTING GUARDRAIL TO REWORK SHOULDERS OR FLATTEN SLOPES UNTIL THE ENGINEER CONCURS IN THE NECESSITY OF REMOVAL DUE TO CONSTRUCTION REQUIREMENTS AND THE APPROPRIATE WARNING DEVICES ARE INSTALLED.

(7) THE PROPOSED GUARDRAIL, INCLUDING ANY ANCHOR SYSTEM, SHALL BE INSTALLED QUICKLY TO MINIMIZE TRAFFIC EXPOSURE TO ANY HAZARD. NO PAYMENT WILL BE MADE FOR A SECTION OF PROPOSED GUARDRAIL, INCLUDING ANCHORS, UNTIL IT IS COMPLETE IN PLACE.

(8) IF ANY APPROACH END OF A SECTION OF GUARDRAIL OR BRIDGE RAIL MUST TEMPORARILY BE LEFT INCOMPLETE AND EXPOSED TO TRAFFIC, THE CONTRACTOR SHALL USE TWO (2) TEMPORARY BARRICADES OR DRUMS WITH TYPE A LIGHTS AND ROUNDED END ELEMENTS AS MINIMUM MEASURES TO PROTECT TRAFFIC FROM THE HAZARD OF AN EXPOSED END. ALL COST OF FURNISHING AND INSTALLING A TEMPORARY ROUNDED END ELEMENT SHALL BE INCLUDED IN THE COST OF THE PROPOSED GUARDRAIL.

(9) GUARDRAIL IS TO BE COMPLETE IN PLACE BEFORE THE MAINLINE ROADWAY IS OPENED TO TRAFFIC.

DRAINAGE

(10) THE CONTRACTOR SHALL SHAPE DITCHES TO THE SPECIFIED DESIGN. THIS WORK WILL NOT BE MEASURED AND PAID FOR DIRECTLY, BUT THE COST WILL BE INCLUDED IN THE COST OF OTHER ITEMS.

(11) EXCAVATION FOR PIPE CULVERTS AND ENDWALLS WILL NOT BE MEASURED AND PAID FOR DIRECTLY, BUT WILL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF PIPE (PIPE CULVERTS, STORM SEWERS, CONDUITS, ALL OTHER CULVERTS AND MINOR STRUCTURES).

(12) CULVERT EXCAVATION FOR CONCRETE BOX OR SLAB TYPE CULVERTS OR BRIDGES WILL NOT BE MEASURED AND PAID FOR DIRECTLY, BUT THE COST WILL BE INCLUDED IN THE COST OF OTHER ITEMS.

(13) THE CUTTING OF INLET AND OUTLET DITCHES WHERE SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER WILL BE MEASURED AND PAID FOR AS ITEM NO. 203-01 ROAD AND DRAINAGE EXCAVATION (UNCLASSIFIED).

(14) WHERE A CULVERT (PIPE, SLAB OR BOX) IS MOVED TO A NEW LOCATION OTHER THAN THAT SHOWN ON THE PLANS, INCREASING OR DECREASING THE AMOUNT OF CULVERT EXCAVATION, NO INCREASE OR DECREASE IN THE AMOUNT OF PAYMENT WILL BE MADE DUE TO SUCH CHANGE.

(15) DURING CONSTRUCTION OF DRAINAGE STRUCTURES ALL COST ASSOCIATED WITH MAINTAINING THE FLOW OF WATER AND TRAFFIC, AT THESE STRUCTURES, DURING THE PHASED CONSTRUCTION OF THIS PROJECT ARE TO BE INCLUDED IN THE UNIT PRICE OF THE DRAINAGE STRUCTURES AND TRAFFIC CONTROL ITEMS.

UTILITIES

(16) 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.

(17) UNLESS OTHERWISE NOTED, ALL UTILITY ADJUSTMENTS WILL BE PERFORMED BY THE UTILITY OR IT'S 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.

(18) 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.

(19) 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.

(20) 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

(21) THE CONTRACTOR SHALL BE REQUIRED TO REMOVE AND RESET MAILBOXES WHERE AND AS DIRECTED BY THE ENGINEER.

(22) 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

ROAD CLOSURE

(23) NO LESS THAN SEVEN (7) DAYS PRIOR TO THE CLOSURE OF THE ROAD, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING INDIVIDUALS OR AGENCIES COMPLETELY DESCRIBING THE AFFECTED ROADS AND THE APPROXIMATE DURATION OF THE CONSTRUCTION: THESE PARTIES INCLUDE, BUT ARE NOT LIMITED TO: (1) LOCAL LAW ENFORCEMENT OFFICE, (2) LOCAL FIRE DEPARTMENT, (3) AMBULANCE SERVICE, (4) LOCAL SCHOOL SUPERINTENDENT, (5) UNITED STATES POSTAL SERVICE, AND (6) LOCAL ROAD SUPERINTENDENT.

RIGHT - OF – WAY

(24) IT IS INTENDED THAT ALL BUILDINGS AND/OR PORTIONS OF BUILDINGS THAT ARE WITHIN THE PROPOSED RIGHT-OF-WAY AND/OR EASEMENT LINES FOR THE PROJECT BE REMOVED THERE FROM IN THE PROCESS OF RIGHT-OF-WAY ACQUISITION. IF ANY SUCH BUILDINGS OR IMPROVEMENTS ARE NOT REMOVED IN THE COURSE OF RIGHT-OF-WAY ACQUISITION, THE CIVIL ENGINEERING MANAGER 2, ROADWAY DESIGN DIVISION IS TO BE NOTIFIED IN SUFFICIENT TIME TO PERMIT HAVING SUCH REMOVALS DESIGNATED AS A PART OF THE CONSTRUCTION CONTRACT.

(25) EXISTING PAVED DRIVEWAY PER TRACT REMAINDER WILL BE REPLACED IN KIND TO A TOUCHDOWN POINT.

(26) WHERE THE EXISTING DRIVEWAY IS UNPAVED AND THE PROPOSED DRIVEWAY EXCEEDS 7 PERCENT IN GRADE, EACH DRIVEWAY WILL BE PAVED TO A TOUCHDOWN POINT OR UNTIL THE GRADE IS LESS THAN 7 PERCENT.

(27) WHERE THE EXISTING DRIVEWAY IS UNPAVED AND THE PROPOSED DRIVEWAY IS LESS THAN 7 PERCENT IN GRADE, EACH DRIVEWAY WILL BE PAVED A SHOULDER WIDTH FROM THE EDGE OF PAVEMENT AND THE REMAINDER OF THAT DRIVEWAY REPLACED IN KIND TO A TOUCHDOWN POINT.

(28) ANY NECESSARY PAVING OF DRIVEWAYS WILL BE DONE DURING PAVING OPERATIONS ON THE MAIN ROADWAY.

(29) NEW DRIVEWAYS PROVIDED IN THE PLANS WILL BE PAVED BASED ON THE 7 PERCENT CRITERIA. THOSE 7 PERCENT OR STEEPER IN GRADE WILL BE PAVED AND THOSE FLATTER THAN 7 PERCENT WILL BE COVERED WITH BASE STONE.

(30) ON PROJECTS WITHOUT CURB AND GUTTER THAT ARE ON STATE ROUTES, IT WILL BE THE RESPONSIBILITY OF THE OWNER TO SECURE A PERMIT AND TO CONSTRUCT ADDITIONAL DRIVEWAYS AND FIELD ENTRANCES OTHER THAN THOSE PROVIDED IN THE PLANS.

(31) ON PROJECTS WITH CURB AND GUTTER THAT ARE ON STATE ROUTES, IT WILL BE THE RESPONSIBILITY OF THE OWNER TO SECURE A PERMIT. AFTER THE PERMIT HAS BEEN GRANTED, THE DEPARTMENT WILL CONSTRUCT THE DRIVEWAY OR FIELD ENTRANCE THROUGH THE CURB AND SIDEWALK, PROVIDED THE CURB AND SIDEWALK HAVE NOT BEEN CONSTRUCTED. IT WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER TO CONSTRUCT THE DRIVEWAY OR FIELD ENTRANCE FROM BACK OF SIDEWALK TO TOUCHDOWN POINT FOR ANY ADDITIONAL DRIVEWAYS OR FIELD ENTRANCES OTHER THAN THOSE PROVIDED IN THE PLANS.

PAVEMENT MARKINGS

TEMPORARY PAVEMENT MARKING ON INTERMEDIATE LAYERS

(32) TEMPORARY PAVEMENT LINE MARKINGS ON INTERMEDIATE LAYERS OF PAVEMENT SHALL BE REFLECTIVE TAPE OR REFLECTORIZED PAINT INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAYS WORK. SHORT, UNMARKED SECTIONS SHALL NOT BE ALLOWED. THESE MARKINGS WILL BE MEASURED AND PAID FOR UNDER ITEM NO. 716-05.01, PAINTED PAVEMENT MARKING (4" LINE), L.M.

FINAL PAVEMENT MARKING IF 4" SPRAY THERMOPLASTIC (60 mil) IS USED

(33) PERMANENT PAVEMENT LINE MARKINGS SHALL BE 4" SPRAY THERMOPLASTIC (60 mil) INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAY'S WORK. SHORT UNMARKED SECTIONS SHALL NOT BE ALLOWED. PAVEMENT MARKINGS WILL BE MEASURED AND PAID FOR UNDER ITEM NO. 716-13.01, SPRAY THERMO PVMT MRKNG (60 mil) (4IN LINE), L.M. THE CONTRACTOR SHALL HAVE THE OPTION OF USING REFLECTORIZED PAINT INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAY'S WORK AND THEN INSTALLING THE PERMANENT MARKINGS AFTER THE PAVING OPERATION IS COMPLETED. THE TEMPORARY MARKINGS FOR THE FINAL SURFACE WILL NOT BE MEASURED AND PAID FOR DIRECTLY, BUT THE COSTS ARE TO BE INCLUDED IN THE PRICE BID FOR THE PERMANENT MARKINGS.

FINAL PAVEMENT MARKING IF 8" SPRAY THERMOPLASTIC (60 mil) IS USED

(34) PERMANENT PAVEMENT LINE MARKINGS SHALL BE 8" SPRAY THERMOPLASTIC (60 mil) INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAY'S WORK. SHORT UNMARKED SECTIONS SHALL NOT BE ALLOWED. PAVEMENT MARKINGS WILL BE MEASURED AND PAID FOR UNDER ITEM NO. 716-13.03, SPRAY THERMO PVMT MRKNG (60 mil) (8IN BARRIER LINE), L.F. THE CONTRACTOR SHALL HAVE THE OPTION OF USING REFLECTORIZED PAINT INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAY'S WORK AND THEN INSTALLING THE PERMANENT MARKINGS AFTER THE PAVING OPERATION IS COMPLETED. THE TEMPORARY MARKINGS FOR THE FINAL SURFACE WILL NOT BE MEASURED AND PAID FOR DIRECTLY, BUT THE COSTS ARE TO BE INCLUDED IN THE PRICE BID FOR THE PERMANENT MARKINGS.

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	2H

DETOURS, LANE SHIFTS AND MEDIAN CROSS-OVERS

(35) THE PAVEMENT MARKING ON THE PHASE 1B DETOUR AND PHASE 3 DIVERSION FOR CENTER LINES AND EDGE LINES WILL BE INSTALLED AND MAINTAINED TO THE SAME STANDARDS AS FOR PERMANENT MARKINGS ON THE MAIN ROADWAY. THESE MARKINGS SHALL BE IN PLACE PRIOR TO ALLOWING TRAFFIC ONTO THE PAVEMENT. THESE PAVEMENT MARKINGS WILL BE MEASURED AND PAID FOR UNDER ITEM NO. 716-05.01, PAINTED PAVEMENT MARKING (4" LINE), L.M.

PAVEMENT

PAVING

(36) THE CONTRACTOR SHALL BE REQUIRED TO PAVE IN THE DIRECTION OF TRAFFIC.

(37) THE CONTRACTOR SHALL BE REQUIRED TO COLD PLANE AND PAVE IN THE DIRECTION OF TRAFFIC.

(38) THE CONTRACTOR SHALL ATTACH A DEVICE TO THE SCREED OF THE PAVER SUCH THAT MATERIAL IS CONFINED AT THE END GATE AND EXTRUDES THE ASPHALT MATERIAL IN SUCH A WAY THAT RESULTS IN A CONSOLIDATED WEDGE-SHAPE PAVEMENT EDGE OF APPROXIMATELY 25 TO 30 DEGREES AS IT LEAVES THE PAVER (MEASURED FROM A LINE PARALLEL TO THE PAVEMENT SURFACE.) THE DEVICE SHALL MEET THE REQUIREMENTS THAT ARE CURRENTLY SET FORTH IN SPECIAL PROVISION 407SE.

RESURFACING

(39) WHERE DIRECTED BY THE TDOT ENGINEER, THE CONTRACTOR SHALL BE REQUIRED TO SHAPE PUBLIC SIDE ROADS, BUSINESS ENTRANCES, AND PRIVATE DRIVES, AS WELL AS CLEANING OF EXISTING DRAINS BEFORE PLACING MATERIALS. ALL COSTS ARE TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF CONSTRUCTION.

(40) ALL PUBLIC SIDE ROADS SHALL BE PAVED ONE PAVER WIDTH THROUGH THE INTERSECTION AS A MINIMUM. A SATISFACTORY TRANSITION FROM THE NEW PAVEMENT TO THE EXISTING GRADE OF THE INTERSECTING PUBLIC ROAD OR BUSINESS ENTRANCE SHALL BE PROVIDED. SHOULD THE PAVEMENT OF THE INTERSECTING PUBLIC ROAD BE DISTRESSED, THE RESURFACING WIDTH MAY BE INCREASED TO THE NORMAL RIGHT OF WAY LINE.

(41) PRIVATE DRIVEWAYS, FIELD ENTRANCES, AND BUSINESS ENTRANCES WILL BE RESURFACED A PAVER WIDTH (LANE WIDTH) AS A MINIMUM. A PAVEMENT TAPER TO TRANSITION THE NEW PAVEMENT SHALL BE REQUIRED, IT SHALL BE BASED ON AN ADDITIONAL ONE FOOT OF WIDTH PER ONE INCH DEPTH OF PAVEMENT. IF THE SHOULDER IS NARROW ENOUGH THAT THE SUM OF THE SHOULDER AND THE TRANSITION ARE LESS THAN A PAVER WIDTH, THE TRANSITION SHALL OCCUR WITHIN THE PAVER WIDTH. IF THE SUM OF THE SHOULDER AND THE TRANSITION IS GREATER THAN A PAVER WIDTH (LANE WIDTH), THE TRANSITION SHALL OCCUR OUTSIDE OF THE PAVER WIDTH.

(42) ON CURB AND GUTTER SECTIONS, PUBLIC ROAD INTERSECTIONS SHALL BE RESURFACED TO THE END OF RADIUS. A SATISFACTORY TRANSITION FROM THE NEW PAVEMENT TO THE EXISTING GRADE OF THE INTERSECTING PUBLIC ROAD SHALL BE PROVIDED.

(43) IN ALL CASES, THE LENGTH OF THE PAVEMENT TRANSITION, THE THICKNESS AND WIDTH OF THE RESURFACING AND ANY ADDITIONAL PAVEMENT MATERIALS SHALL BE AS DIRECTED BY THE TDOT ENGINEER.

GRADED SOLID ROCK

(44) THE ROCK FILL (GRADED SOLID ROCK) MATERIAL SHALL CONSIST OF SOUND, NON-DEGRADABLE LIMESTONE OR SANDSTONE WITH A MAXIMUM SIZE OF 3'-0". AT LEAST 50% (BY WEIGHT) OF THE ROCK SHALL BE UNIFORMLY DISTRIBUTED BETWEEN 1'-0" AND 3'-0" IN DIAMETER, AND NO GREATER THAN 10% (BY WEIGHT) SHALL BE LESS THAN 2" IN DIAMETER. THE MATERIAL SHALL BE ROUGHLY EQUIDIMENSIONAL; THIN, SLABBY MATERIALS WILL NOT BE ACCEPTED. THE CONTRACTOR SHALL BE REQUIRED TO PROCESS THE MATERIAL WITH AN ACCEPTABLE MECHANICAL MEANS (A SCREENING PROCESS CAPABLE OF PRODUCING THE REQUIRED GRADATION). THE ROCK SHALL BE APPROVED BY A REPRESENTATIVE OF THE DIVISION OF MATERIALS AND TESTS BEFORE USE.

(45) THIS GRADED SOLID ROCK MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING FIVE FEET IN DEPTH.

RIPRAP

(46) MACHINED RIPRAP SHALL BE IN ACCORDANCE WITH SECTION 709 OF THE STANDARD SPECIFICATIONS.

(47) RIPRAP SHALL CONSIST OF FURNISHING AND PLACING EITHER RUBBLE STONES BY HAND OR MACHINED. RUBBLE STONE SHALL MEET THE REQUIREMENTS OF SECTION 709 OF THE STANDARD SPECIFICATIONS AND SHALL BE CLEAN (FREE FROM ORGANIC MATTER), DURABLE, ANGULAR WITH FRACTURED FACES, NEARLY RECTANGULAR IN SHAPE WITH A BREADTH OR THICKNESS AT LEAST ONE-THIRD ITS LENGTH.

SIGNING

(48) AFTER THE SIGN LOCATIONS HAVE BEEN STAKED, BUT PRIOR TO ORDERING ANY MATERIAL FOR THE SUPPORTS, THERE SHALL BE A FIELD INSPECTION AND APPROVAL BY THE REGIONAL CONSTRUCTION OFFICE.

(49) ALL SIGNS MARKED "TO BE REMOVED" ARE TO BE REMOVED BY THE CONTRACTOR AND PAID FOR UNDER ITEM 713-15 AND BECOME THE PROPERTY OF THE CONTRACTOR.

(50) THE LETTERS, DIGITS, ARROWS, BORDERS, AND ALPHABET ACCESSORIES ON ALL FLAT SHEET SIGNS SHALL BE APPLIED BY SILK SCREENING PROCESS, EXCEPT THAT CUT-OUT DIRECT APPLIED COPY SHALL BE USED ON ALL FLAT SHEET SIGNS WITH A GREEN BACKGROUND, OR BROWN BACKGROUND.

(51) THE LENGTHS OF ALL SIGN SUPPORTS SHOWN ON THE SIGN SCHEDULE ARE APPROXIMATE AND ARE FOR ESTIMATING PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY ALL SUPPORT LENGTHS AT THE SITE PRIOR TO ERECTION.

TRAFFIC CONTROL DIRECTIONAL SIGNING

(52) ALL EXISTING "EMERGENCY REFERENCE MARKERS" AND "HOSPITAL SIGNS" SHALL BE MAINTAINED WITHIN FULL VIEW OF THE MOTORING PUBLIC THROUGHOUT ALL PHASES OF CONSTRUCTION. ALL WORK IN MOVING AND TEMPORARY SUPPORTS SHALL BE PAID FOR UNDER ITEM NO. 713-15.02, REMOVAL & RELOCATION OF SIGN & SUPPORT, EACH.

SIGNALIZATION

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

(54) IF RESURFACING IS INCLUDED IN THE PROJECT, SIGNAL DETECTION LOOPS SHALL BE INSTALLED BEFORE THE FINAL SURFACE IS APPLIED.

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

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

(57) LOOPS SHALL BE INSTALLED IN THE LEVELING COURSE IF A LEVELING COURSE IS PROVIDED.

CONSTRUCTION WORK ZONE & TRAFFIC CONTROL

(58) 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.

(59) 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.

(60) 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.

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

(62) 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.

(63) 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.

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

(65) ALL DETOURS SHALL BE PAVED, STRIPED, SIGNED AND THE VERTICAL PANELS ARE TO BE IN PLACE BEFORE IT IS OPENED TO TRAFFIC.

EROSION PREVENTION AND SEDIMENT CONTROL

DISTURBED AREA

(66) AREAS TO BE UNDISTURBED SHALL BE CLEARLY MARKED IN THE FIELD BEFORE CONSTRUCTION ACTIVITIES BEGIN.

(67) PRE-CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED (I.E. CLEARING AND GRUBBING INITIATED) MORE THAN 15 CALENDAR DAYS PRIOR TO GRADING OR EARTH MOVING ACTIVITIES UNLESS THE AREA IS MULCHED, SEEDED WITH MULCH, OR OTHER TEMPORARY COVER IS INSTALLED.

(68) CLEARING, GRUBBING, AND OTHER DISTURBANCE TO RIPARIAN VEGETATION SHALL BE LIMITED TO THE MINIMUM NECESSARY FOR SLOPE CONSTRUCTION AND EQUIPMENT OPERATIONS. EXISTING VEGETATION SHOULD BE PRESERVED TO THE MAXIMUM EXTENT POSSIBLE. UNNECESSARY VEGETATION REMOVAL IS PROHIBITED.

(69) ALL DISTURBED AREAS SHALL BE PROPERLY STABILIZED AS SOON AS PRACTICABLE. PRIORITY SHALL BE GIVEN TO FINISHING OPERATIONS AND PERMANENT EPSC MEASURES OVER TEMPORARY EPSC MEASURES ON ALL PROJECTS.

(70) CONSTRUCTION SHALL BE SEQUENCED AND STAGED TO MINIMIZE THE EXPOSURE TIME OF GRADED OR DENUDED SOIL AREAS, PRESERVE TOPSOIL, AND MINIMIZE SOIL COMPACTION.

(71) NO MORE THAN 50 ACRES OF ACTIVE SOIL DISTURBANCE IS ALLOWED AT ANY TIME DURING THE CONSTRUCTION OF THE PROJECT. OFF-SITE BORROW OR WASTE AREAS ARE TO BE INCLUDED IN THE TOTAL DISTURBED AREA IF THE BORROW OR WASTE AREA IS EXCLUSIVE TO THE PROJECT PER TDOT'S WASTE AND BORROW MANUAL.

SEDIMENT CONTROL

(72) EPSC MEASURES SHALL BE INSTALLED AND FUNCTIONAL PRIOR TO ANY EARTH MOVING OPERATIONS, AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.

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

(74) WATER PUMPED FROM WORK AREAS AND EXCAVATION MUST BE HELD IN SETTLING BASINS OR TREATED BY FILTRATION OR CHEMICAL TREATMENT

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GENERAL NOTES

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	21

PRIOR TO ITS DISCHARGE INTO SURFACE WATERS. ALL PHYSICAL AND/OR CHEMICAL TREATMENT WILL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES AND FULLY DESCRIBED IN THE EPSC PLANS. WATER MUST BE HELD IN SETTLING BASINS UNTIL AT LEAST AS CLEAR AS THE RECEIVING WATERS. SETTLING BASINS SHALL NOT BE LOCATED CLOSER THAN 20 FEET FROM THE TOP BANK OF A STREAM. SETTLING BASINS AND SEDIMENT TRAPS SHALL BE PROPERLY DESIGNED ACCORDING TO THE SIZE OF THE DRAINAGE AREAS OR VOLUME OF WATER TO BE TREATED. TREATED WATER MUST BE DISCHARGED THROUGH A PIPE OR WELL- VEGETATED OR LINED CHANNEL, SO THAT THE DISCHARGE DOES NOT CAUSE EROSION OR SEDIMENT TRANSPORT. DISCHARGES FROM BASINS AND IMPOUNDMENTS SHALL UTILIZE OUTLET STRUCTURES THAT ONLY WITHDRAW WATER FROM NEAR THE SURFACE OF THE BASIN OR IMPOUNDMENT. DISCHARGES MUST NOT CAUSE AN OBJECTIONABLE COLOR CONTRAST WITH THE RECEIVING STREAM.

(75) CHECK DAMS SHALL BE USED WHERE RUNOFF IS CONCENTRATED. CLEAN ROCK, BRUSH, GABION, OR SANDBAG CHECK DAMS SHALL BE PROPERLY CONSTRUCTED TO REDUCE VELOCITY AND CONTROL EROSION.

(76) FOR AN OUTFALL IN A DRAINAGE AREA OF 10 ACRES OR MORE, A TEMPORARY (OR PERMANENT) SEDIMENT BASIN OR EQUIVALENT CONTROL MEASURES THAT PROVIDES STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A MINIMUM 2-YEAR/ 24-HOUR STORM EVENT, SHALL BE PROVIDED UNTIL FINAL STABILIZATION OF THE SITE. THE ENVIRONMENTAL AND ROOADWAY DESIGN DIVISIONS MAY BE CONTACTED TO REVIEW AND CONCUR WITH ANY REVISION OF THE SWPPP BEFORE DISTURBANCE OF THE OUTFALL PROCEEDS.

(77) IF PERMANENT OR TEMPORARY VEGETATION IS TO BE USED AS AN EPSC MEASURE, THEN THE TIMING OF PLANTING OF VEGETATION SHALL BE SHOWN IN THE SWPPP. DELAYING PLANTING OF COVER VEGETATION UNTIL WINTER MONTHS OR DRY MONTHS SHOULD BE AVOIDED, IF POSSIBLE.

(78) OFFSITE VEHICLE TRACKING OF SEDIMENTS AND THE GENERATION OF DUST SHALL BE MINIMIZED. A STABILIZED CONSTRUCTION ACCESS (A POINT OF ENTRANCE/EXIT TO THE CONSTRUCTION PROJECT) SHALL BE PROVIDED, AS NEEDED, TO REDUCE THE TRACKING OF MUD AND DIRT ONTO PUBLIC ROADS BY CONSTRUCTION VEHICLES.

(79) TEMPORARY EPSC MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORKDAY, BUT MUST BE REPLACED AT THE END OF THE WORKDAY.

STREAM/WETLAND

(80) SOIL MATERIALS MUST BE PREVENTED FROM ENTERING WATERS OF THE STATE/U.S. EPSC MEASURES TO PROTECT WATER QUALITY MUST BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. APPROPRIATE EPSC MEASURES MUST BE INSTALLED ALONG THE BASE OF ALL FILLS AND CUTS, ON THE DOWNHILL SIDE OF STOCKPILED SOIL, AND ALONG STREAM BANKS IN CLEARED AREAS TO PREVENT SEDIMENT MIGRATION INTO STREAMS IN ACCORDANCE WITH TDOT STANDARDS. THEY MUST BE INSTALLED ON THE CONTOUR, ENTRENCHED AND STAKED, AND EXTEND THE WIDTH OF THE AREA TO BE CLEARED.

(81) NEW CHANNEL CONSTRUCTION SHALL BE COMPLETED IN THE DRY AND STABILIZED FOR AT LEAST 72 HOURS PRIOR TO DIVERTING WATER FROM THE EXISTING AND/OR TEMPORARY CHANNEL.

(82) INSTREAM EPSC DEVICES REQUIRE THE ENVIRONMENTAL DIVISION'S PERMITS SECTION REVIEW AND MUST BE PROCESSED BY THE PERMITS SECTION TO OBTAIN TDEC, USACE, AND TVA PERMITS.

(83) THE OPERATION OF EQUIPMENT IN WATERS OF THE STATE/U.S., INCLUDING WETLANDS, SHALL BE ONLY AS SHOWN ON THE PROJECT PLANS AND/OR AS SO SPECIFIED IN THE ARAP/401, SECTION 404 PERMIT(S) AND/OR TVA26(A), IF APPLICABLE. ANY ADDITIONAL PERMITS REQUIRED BY THE CONTRACTOR'S METHOD OF OPERATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN, AFTER RECEIVING THE APPROVAL OF TDOT ENVIRONMENTAL DIVISION.

(84) STREAM BEDS SHALL NOT BE USED AS TRANSPORTATION ROUTES FOR CONSTRUCTION EQUIPMENT. TEMPORARY CROSSINGS MUST BE LIMITED TO ONE POINT PER STREAM AND EPSC MEASURES MUST BE USED WHERE THE STREAM BANKS ARE DISTURBED. WHERE THE STREAMBED IS NOT COMPOSED OF BEDROCK, A PAD OF CLEAN ROCK MUST BE USED AT THE CROSSING POINT AND CULVERTED TO PREVENT THE IMPOUNDMENT OF WATER FLOW. CLEAN ROCK IS ROCK OF VARIOUS TYPE AND SIZE, DEPENDING UPON APPLICATION, WHICH CONTAINS NO FINES, SOILS, OR OTHER WASTES OR CONTAMINANTS. OTHER MATERIALS USED FOR ALL TEMPORARY FILLS MUST BE COMPLETELY REMOVED IN THEIR ENTIRETY AFTER THE WORK IS COMPLETED AND THE AFFECTED AREAS RETURNED TO THEIR PREEXISTING ELEVATION. ALL TEMPORARY CROSSINGS MUST BE CONSTRUCTED IN ACCORDANCE WITH STD. DWG. EC-STR-25 UNLESS SPECIFICALLY ADDRESSED IN THE EPSC PLANS. ALTERNATIVELY, PLACING A TEMPORARY BRIDGE (BAILEY BRIDGE OR EQUIVALENT, TIMBERS, ETC.) FROM TOP OF BANK TO TOP OF BANK OR THE APPROPRIATE USE OF BARGES AT THE CROSSING TO AVOID DISTURBANCE OF THE STREAMBED IS AN ACCEPTABLE OPTION.

SPECIES

(85) NO ACTIVITY MAY SUBSTANTIALLY DISRUPT THE MOVEMENT OF THOSE SPECIES OF AQUATIC LIFE INDIGENOUS TO THE WATER BODY, INCLUDING THOSE SPECIES THAT NORMALLY MIGRATE THROUGH THE AREA. THE SWPPP SHALL BE MODIFIED TO INCLUDE EPSC MEASURES TO PREVENT NEGATIVE IMPACTS TO LEGALLY PROTECTED STATE OR FEDERAL FAUNA OR FLORA OR AS INDICATED IN THE ECOLOGICAL STUDIES OR ON THE PERMIT(S).

INSPECTION, MAINTENANCE, REPAIR

(86) EPSC CONTROLS WILL BE MAINTAINED IN ACCORDANCE WITH TDOT STANDARD DRAWINGS AND GOOD ENGINEERING PRACTICES.

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

(88) SEDIMENT REMOVED FROM SEDIMENT CONTROL STRUCTURES SHALL BE PLACED AND BE TREATED IN A MANNER SO THAT THE SEDIMENT IS CONTAINED WITHIN THE PROJECT LIMITS AND DOES NOT MIGRATE INTO WATERS OF THE STATE/U.S. COST FOR THIS TREATMENT IS TO BE INCLUDED IN PRICE BID FOR ITEM NO. 209-05 SEDIMENT REMOVAL, C.Y.

(89) THE CONTRACTOR SHALL INSTALL A RAIN GAUGE EVERY LINEAR MILE AT ALL SITES WHERE CLEARING, GRUBBING, EXCAVATION, GRADING CUTTING OR FILLING IS BEING ACTIVELY PERFORMED, OR EXPOSED SOIL HAS NOT YET BEEN PERMANENTLY STABILIZED. IF THE PROJECT LENGTH IS LESS THAN ONE LINEAR MILE, ONE RAIN GAUGE SHALL BE INSTALLED AT THE CENTER OF THE PROJECT OR AS INDICATED BY THE TDOT EPSC INSPECTOR. THE CONTRACTOR SHALL ENSURE THAT EACH GAUGE IS MAINTAINED IN GOOD WORKING CONDITION. TDOT AND/OR THE CONTRACTOR SHALL RECORD DAILY PRECIPITATION AND FORECASTED PERCENTAGE OF PRECIPITATION IN DETAILED RECORDS OF RAINFALL EVENTS INCLUDING DATES, AMOUNTS OF RAINFALL PER GAUGE, THE ESTIMATED DURATION (OR STARTING AND ENDING TIMES), AND FORECASTED PERCENTAGE OF PRECIPITATION FOR THE PROJECT. THIS INFORMATION SHALL BE PROVIDED TO THE ENGINEER ON A MONTHLY BASIS. THE COST FOR THE RAIN GAUGES IS TO BE INCLUDED IN THE UNIT BID PRICES FOR OTHER ITEMS. RAIN GAUGES SHALL BE AS SPECIFIED IN THE APPROVED TDOT RAINFALL MONITORING PLAN.

(90) INSPECTION OF EPSC MEASURES SHALL BE DONE AT LEAST TWICE PER CALENDAR WEEK AT LEAST 72 HOURS APART. A CALENDAR WEEK IS DEFINED AS SUNDAY THROUGH SATURDAY. QUALITY ASSURANCE/QUALITY CONTROL SITE ASSESSMENT OF EPSC SHALL BE PERFORMED PER THE TDOT ENVIRONMENTAL DIVISION'S COMPREHENSIVE INSPECTION OFFICE GUIDELINES.

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

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

(93) THE TDOT PROJECT SUPERVISOR (OR THEIR DESIGNEE) AND THE CONTRACTOR'S SITE SUPERINTENDENT ARE RESPONSIBLE FOR INSPECTIONS. MAINTENANCE AND REPAIR ACTIVITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE TDOT PROJECT SUPERVISOR OR THEIR DESIGNEE WILL COMPLETE THE INSPECTION REPORTS AND DISTRIBUTE COPIES PER THE CONTRACT.

MATERIALS

(94) WASTE AND BORROW AREAS SHALL BE LOCATED IN NON-WETLAND AREAS AND ABOVE THE 100-YEAR, FEDERAL EMERGENCY MANAGEMENT AGENCY FLOODPLAIN. BORROW AND WASTE DISPOSAL AREAS SHALL NOT AFFECT ANY WATERS OF THE STATE/U.S. UNLESS THESE AREAS ARE SPECIFICALLY COVERED BY AN ARAP, 404, OR NPDES PERMIT, OBTAINED SOLELY BY THE CONTRACTOR.

SWPPP, PERMITS, PLANS, RECORDS

(95) THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND OBTAIN ANY NECESSARY ENVIRONMENTAL PERMITS OR APPROVALS, INCLUDING BUT NOT LIMITED TO TDEC ARAP/401, USACE SECTION 404, TVA SECTION 26A, AND TDEC NPDES PERMITS, FROM FEDERAL, STATE AND/OR LOCAL AGENCIES REGARDING THE OPERATION OF ANY PROJECT-DEDICATED ASPHALT AND/OR CONCRETE PLANTS.

(96) ANY DISAGREEMENT BETWEEN THE PROJECT PLANS, THE PROJECT AS CONSTRUCTED, AND THE PERMIT(S) ISSUED FOR THE PROJECT, SHALL BE BROUGHT TO THE ATTENTION OF THE TDOT PROJECT ENGINEER. THE ENVIRONMENTAL DIVISION, ROADWAY DESIGN DIVISION, AND HEADQUARTERS CONSTRUCTION OFFICE SHALL BE CONTACTED IN THESE INSTANCES AND DECIDE WHICH HAS PRECEDENCE AND WHETHER PERMIT OR PLANS REVISIONS ARE NEEDED. IN GENERAL, PERMIT CONDITIONS WILL PREVAIL.

(97) THE FOLLOWING INFORMATION SHALL BE MAINTAINED ON OR NEAR THE SITE: DATES THAT MAJOR GRADING ACTIVITIES OCCUR, DATES WHERE CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE, DATES WHEN STABILIZATION MEASURES ARE INITIATED, EPSC INSPECTION RECORDS, QUALITY ASSURANCE SITE ASSESSMENT RECORDS, PRECIPITATION RECORDS, SWPPP, PROJECT ENVIRONMENTAL PERMITS, AND A COPY OF THE PROJECT EPSC INSPECTOR'S TDEC LEVEL 1 CERTIFICATION.

(98) ALL WATER QUALITY AND STORM WATER PERMITS, INCLUDING A COPY OF THE NOC WITH NPDES PERMIT TRACKING NUMBER AND THE LOCATION OF THE SWPPP, SHALL BE POSTED NEAR THE MAIN ENTRANCE OF THE CONSTRUCTION SITE ACCESSIBLE TO THE PUBLIC. THE NAME, COMPANY NAME, EMAIL ADDRESS, TELEPHONE NUMBER AND ADDRESS OF THE PROJECT SITE OWNER, OPERATOR, OR A LOCAL CONTACT PERSON WITH A BREIF DESCRIPTION OF THE PROJECT SHALL ALSO BE POSTED. IF POSTING THIS INFORMATION NEAR A MAIN ENTRANCE IS INFEASIBLE, THE INFORMATION SHALL BE PLACED IN A PUBLICLY ACCESSIBLE LOCATION NEAR WHERE THE CONSTRUCTION IS ACTIVELY UNDERWAY AND MOVED AS NECESSARY. THIS LOCATION SHALL BE POSTED AT THE CONSTRUCTION SITE. ALL POSTINGS SHALL BE MAINTAINED IN LEGIBLE CONDITION.

(99) IF A CHANGE IN PROJECT SCOPE OCCURS DURING CONSTRUCTION, INCLUDING VALUE ENGINEERING, THE ENVIRONMENTAL DIVISION SHALL BE CONTACTED TO DETERMINE WHETHER PERMIT REVISIONS OR MODIFICATIONS OF THE SWPPP ARE NEEDED. THE ROOADWAY DESIGN DIVISION SHALL BE CONTACTED TO DETERMINE IF ANY PLAN REVISIONS ARE NEEDED.

(100) THE SWPPP SHALL BE UPDATED BY CONSTRUCTION WHENEVER EPSC INSPECTIONS INDICATE, OR WHERE STATE OR FEDERAL OFFICIALS DETERMINE EPSC MEASURES ARE PROVING INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANT SOURCES OR ARE OTHERWISE NOT ACHIEVING THE GENERAL OBJECTIVES OF CONTROLLING POLLUTANTS IN STORM WATER DISCHARGES ASSOCIATED WITH THE CONSTRUCTION ACTIVITY. THE ENVIRONMENTAL DIVISION SHALL BE CONTACTED WHEN MAJOR DESIGN REVISIONS ARE REQUESTED BY CONSTRUCTION. THE ENVIRONMENTAL DIVISION MAY BE CONTACTED FOR GUIDANCE ON SPECIFIC SWPPP NEEDS. A COPY OF ANY CORRESPONDENCE REGARDING

THE EFFECTIVENESS OF THE SWPPP OR EPSC CONTROLS SHALL BE RETAINED IN THE SWPPP.

(101) THE SWPPP SHALL BE UPDATED BY CONSTRUCTION WHENEVER A CHANGE IN CHEMICAL TREATMENT METHODS IS MADE INCLUDING USE OF A DIFFERENT CHEMICAL, DIFFERENT DOSAGE OR APPLICATION RATE, OR A DIFFERENT AREA OF APPLICATION.

(102) IF A TMDL IS DEVELOPED FOR THE RECEIVING WATERS FOR A POLLUTANT OF CONCERN (SILTATION AND/OR HABITAT ALTERATION) THE SWPPP SHALL BE MODIFIED OR UPDATED.

(103) PROJECT INSPECTORS AND SUPERVISORS (INCLUDING TDOT STAFF, CONSULTANTS AND CONTRACTOR STAFF) RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF EPSC PLANS SHALL SUCCESSFULLY COMPLETE THE TDEC "LEVEL 1 - FUNDAMENTALS OF EROSION PREVENTION AND SEDIMENT CONTROL FOR CONSTRUCTION SITES" COURSE AND ANY REFRESHER COURSES AS REQUIRED TO MAINTAIN CERTIFICATION. A COPY OF CERTIFICATION RECORDS FOR THE COURSES SHALL BE KEPT ON SITE AND AVAILABLE UPON REQUEST.

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GENERAL NOTES

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	2J

LITTER, DEBRIS, WASTE, PETROLEUM

(104) THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN A PROACTIVE METHOD TO PREVENT LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION WASTES FROM ENTERING WATERS OF THE STATE/U.S. THESE MATERIALS WILL BE PICKED UP AND REMOVED FROM STORMWATER EXPOSURE PRIOR TO ANTICIPATED STORM EVENTS. AFTER USE, MATERIALS USED FOR EPSC WILL BE REMOVED FROM THE SITE.

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

SPECIAL NOTES

GRADING

(1) THE GRADING TABULATIONS AND RESULTING EARTHWORK ASSOCIATED BID QUANTITIES WERE PREPARED UTILIZING AVAILABLE GEOTECHNICAL INFORMATION AND/OR REPORTS PREPARED FOR THIS PROJECT. THIS INFORMATION IS PROVIDED FOR GENERAL INFORMATION AND ESTIMATION GUIDANCE ONLY.

(2) BORING DEPICTIONS SHOWN ON THE FOUNDATION DATA SHEETS, SOILS SHEETS, PLANS, AND CROSS-SECTIONS INDICATE SOIL AND ROCK CONDITIONS AT THE SPECIFIC BORING LOCATIONS. ANY SOIL PROFILE AND/OR ROCK LINE IS INTERPRETIVE BASED ON THE JUDGMENT OF THE GEOTECHNICAL ENGINEER/GEOLOGIST. THE TRANSITION BETWEEN BORINGS AND LAYERS MAY VARY SIGNIFICANTLY DEPENDING ON THE GEOLOGIC FORMATIONS ENCOUNTERED.

(3) TO ASSIST IN BID PREPARATION FOR EARTHWORK AND FOUNDATION CONSTRUCTION, DETAIL ROCK AND SOIL DESCRIPTION AND ON SOME PROJECTS, ROCK CORE SAMPLES ARE AVAILABLE FOR INSPECTION AT THE MATERIALS AND TESTS HEADQUARTERS AT 6601 CENTENNIAL BOULEVARD, NASHVILLE, TN OR AT THE TDOT REGION 1 BUILDING IN KNOXVILLE, TN.

(4) THE CONTRACTOR SHALL UTILIZE ALL INFORMATION PROVIDED IN THE PLANS, CROSS-SECTIONS AND CONTRACT DOCUMENTS INCLUDING ANY SPECIAL PROVISIONS AS WELL AS UTILIZING HIS PAST EXPERIENCE WITH PROJECTS OF SIMILAR NATURE, SCOPE AND LOCATION IN PREPARATION OF HIS BID FOR EARTHWORK ITEMS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE AND PROVIDE EQUIPMENT AND MEANS NECESSARY TO CONDUCT THE EXCAVATION ACTIVITIES IN ACCORDANCE WITH PLANS AND SPECIFICATIONS.

(5) EARTHWORK IS PAID FOR UNDER ITEM 203-01, ROAD AND DRAINAGE EXCAVATION (UNCLASSIFIED). NO ADDITIONAL PAYMENT WILL BE MADE FOR EARTHWORK QUANTITIES BASED SOLELY ON A CLAIM THAT THE QUANTITIES SHOWN IN THE GRADING TABULATION OR ELSEWHERE IN THE PLANS ARE INACCURATE WITH RESPECT TO THE TYPE OF MATERIALS ENCOUNTERED DURING CONSTRUCTION EXCEPT AS PROVIDED FOR BY SECTION 104.02 IN THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OR AS AMENDED IN SUPPLEMENTAL SPECIFICATIONS.

PAVEMENT

RESURFACING

(6) TRAFFIC WILL BE ALLOWED TO TEMPORARILY DRIVE ON THE MILLED SURFACE OF THE ROADWAY UNDER THE FOLLOWING CONDITIONS ONLY:

A. THE MILLED SURFACE IS FINE TEXTURED. THE FINE TEXTURE SHALL BE OBTAINED BY A MILLING MACHINE UTILIZING A MILLING HEAD WITH TEETH SPACING 3/8" OR LESS OPERATING AT LESS THAN 80 FEET PER MINUTE.

B. THE SURFACE SHALL BE SWEPT AND CLEANED OF ALL LOOSE MATERIALS.

C. THE DIFFERENCE IN ELEVATION BETWEEN THE MILLED SURFACE AND THE ADJACENT LANE SHALL NOT EXCEED 1 1/2 INCHES.

D. THE MILLED SURFACE SHALL BE PAVED WITHIN 48 HOURS.

E. RAIN OR INCLEMENT WEATHER IS NOT EXPECTED OR FORECASTED WITHIN 48 HOURS AFTER MILLING.

F. ALL APPLICABLE SIGNING IS INSTALLED IN ACCORDANCE WITH THE MUTCD SIGNING SHALL INCLUDE MOTORCYCLE WARNING SIGNS (TN-64) PLACED IN ADVANCE OF ANY MILLED AREAS.

G. IF RAVELING OR DETERIORATION OF THE MILLED SURFACE IS OCCURRING WHILE TRAFFIC IS DRIVING ON THE MILLED SURFACE, THEN THIS PRACTICE WILL NOT BE ALLOWED AND PAVING SHALL BE COMPLETED IMMEDIATELY AFTER MILLING.

H. ONLY ONE LANE IN EACH DIRECTION SHALL HAVE A MILLED SURFACE AT ONE TIME.

SIGNALIZATION

(7) 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.

EROSION PREVENTION AND SEDIMENT CONTROL

NPDES

(8) REFER TO THE EROSION PREVENTION AND SEDIMENT CONTROL PLAN SHEETS FOR NOTES REGARDING SEASONAL WORK LIMITATION OR LIMITATION ON THE TOTAL AREA OF EXPOSED SOIL.

ENVIRONMENTAL

ECOLOGY

(9) STAFF FROM THE TDOT ENVIRONMENTAL DIVISION OR A DESIGNEE WILL ADVISE THE CONTRACTOR DURING THE PRE-CONSTRUCTION MEETING CONCERNING WHEN ENVIRONMENTAL DIVISION PERSONNEL OR DESIGNATED CONSULTANT WILL NEED TO BE ON-SITE FOR WORK BEING DONE WHICH COULD AFFECT THE STREAM OR SPECIES.

(10) STAFF FROM THE TDOT ENVIRONMENTAL DIVISION OR A DESIGNEE WILL ATTEND THE PRE-CONSTRUCTION MEETING FOR ALL PROJECTS WHICH HAVE THREATENED OR ENDANGERED SPECIES OR CRITICAL HABITAT PROXIMAL TO SCHEDULED BRIDGE WORK. THIS WILL PROVIDE THE OPPORTUNITY TO ENSURE THAT PERSONNEL INCLUDING THE CONTRACTOR'S PERSONNEL AND SUBCONTRACTORS ARE MADE AWARE OF THE NECESSARY PRECAUTIONS WHICH MUST BE FOLLOWED.

(11) ALL BRIDGE PROJECTS WITH THREATENED OR ENDANGERED SPECIES OR CRITICAL HABITAT IDENTIFIED MUST HAVE MEASURES IN PLACE TO CONTAIN CONCRETE DUST, CEMENT DUST AND ALL OTHER MATERIALS. THESE MATERIALS ARE NOT ALLOWED TO ENTER THE STREAM.

STREAM RELOCATION

(12) ONCE WATER IS DIVERTED INTO A NEWLY CONSTRUCTED AND STABILIZED RELOCATED STREAM / CHANNEL THE ECOLOGY SECTION MUST BE NOTIFIED. THE STREAM NAME, STREAM NUMBER, AND DATE THE WATER WAS DIVERTED INTO THE STREAM / CHANNEL IS TO BE SUPPLIED WITH THE NOTIFICATION.

SCOPE OF WORK

(13) THIS PROJECT INCLUDES THE GRADING, DRAINAGE, BASE, AND PAVEMENT FOR S.R. 10 TO LINES AND GRADES AS INDICATED ON THE TYPICAL CROSS-SECTIONS AND PLAN AND PROFILE SHEETS OR AS DIRECTED BY THE T.D.O.T. SUPERVISOR.

(14) CONSTRUCTION OF A COMPLETE DRAINAGE SYSTEM, ALL DITCHES, SLOPES, INSTALLATION OF GUARDRAIL AND OTHER DESIGN FEATURES AS INDICATED ON THE PLANS OR AS DIRECTED BY THE T.D.O.T. SUPERVISOR.

(15) INSTALLATION OF EROSION PREVENTION AND SEDIMENT CONTROL DEVICES AND TRAFFIC CONTROL DEVICES, PAVEMENT MARKINGS, SIGNS AND OTHER DESIGN FEATURES AS INDICATED ON THE PLANS OR AS DIRECTED BY THE T.D.O.T. SUPERVISOR.

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GENERAL NOTES

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	2K

SIDE DRAIN TABULATION

STATION	LOCATION		DESCRIPTION	SURFACE WIDTH	RCP CLASS III OR CMP 16 GA. OR HDPE OR PVC OR SRTRP (L.F.) FILL HEIGHT < OR = 10 FT.					RCP CLASS III OR CMP 14 GA. OR HDPE OR PVC OR SRTRP (LF) FILL HEIGHT > 10 FT. AND < OR = 16 FT.					END TREATMENT					REMARKS
	LT	RT		(L.F.)	18"	24"	30"	36"	48"	18"	24"	30"	36"	48"	TYPE	DRAWING NO.	CLASS A CONC. 611-07.01 (C.Y.)	REINF. STEEL 611-07.02 (LB.)	STRUC. STEEL 611-07.03 (LB.)	
105+98.28		X	PRIVATE DRIVE	14		24														NO ENDWALLS REQUIRED
107+26.77		X	PRIVATE DRIVE	10	16															NO ENDWALLS REQUIRED
108+26.55		X	PRIVATE DRIVE	16	24															NO ENDWALLS REQUIRED
111+07.58		X	PRIVATE DRIVE	10	16															NO ENDWALLS REQUIRED
113+31.98		X	PRIVATE DRIVE	10	16															NO ENDWALLS REQUIRED
114+08.16		X	PRIVATE DRIVE	10	16															NO ENDWALLS REQUIRED
115+35.01		X	PRIVATE DRIVE	12	16															NO ENDWALLS REQUIRED
116+07.23		X	PRIVATE DRIVE	12	16															NO ENDWALLS REQUIRED
126+85.00		X	FIELD ENTRANCE	10	16															NO ENDWALLS REQUIRED
129+39.95		X	BUSINESS ENTRANCE	40	48															NO ENDWALLS REQUIRED
129+86.22	X		SIDE ROAD (WILBURN LANE)	18			56									D-PE-30A D-PE-30B	2.32	216	137	D.S. END CONNECTS TO BOX BRIDGE
132+59.04		X	BUSINESS ENTRANCE	16	32															NO ENDWALLS REQUIRED
134+03.96		X	BUSINESS ENTRANCE	16	24															NO ENDWALLS REQUIRED
185+92.09	X		PRIVATE DRIVE	10	24															NO ENDWALLS REQUIRED
302+00.00	X		FIELD ENTRANCE	30	52															NO ENDWALLS REQUIRED
TOTALS					**316**	**24**	**56**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			**2.32**	**216**	**137**	

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TABULATED QUANTITIES

SHEET 1 OF 5

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	2L

STORM DRAINAGE PIPES

SHEET NO.	FROM CODE	FROM OUTLET ELEV.	TO CODE	TO INLET ELEV.	% GRADE	REINFORCED CONC. PIPE - CLASS III SIZE & LENGTH (L.F.) 18"	24"	30"	36"	48"
6B	2	678.12	1	671.20	-2.03%	341				
6B	3	687.19	2	678.34	-3.61%	245				
6B	4	693.79	3	687.41	-3.36%	190				
6B	6	691.47	5	690.74	-1.00%		73			
7B	8	695.88	7	691.84	-5.05%		80			
7B	10	701.20	9	700.98	-3.67%	6				
7B	11	701.40	10	701.20	-0.45%	44				
7B	12	702.19	11	701.79	-0.40%	100				
8B	14	709.80	13	709.62	-3.00%			6		
8B	15	715.20	14	713.31	-3.00%			63		
8B	16	713.13	14	712.29	-0.40%	209				
8B	17	725.86	14	716.63	-3.96%	233				
9B	19	797.17	18	796.67	-8.33%		6			
9B	20	802.33	19	798.33	-6.45%		62			
10B	22	889.09	21	888.72	-3.52%		10.5			
10B	23	896.19	22	892.18	-6.47%		62			
11B	25	939.00	24	938.74	-2.60%	10				
11B	26	939.20	25	939.00	-0.59%	34				
11B	27	949.55	26	940.05	-6.79%	140				
11B	28	955.00	27	949.72	-5.87%	90				
11B	29	961.76	28	955.74	-4.46%	135				
11B	30	962.08	29	961.93	-0.39%	38				
11B	31	955.33	28	955.17	-0.42%	38				
TOTALS						1853	293.5	69	0	0

PROPOSED GUARDRAIL

SHEET NO.	LOCATION	SIDE LT	SIDE RT	STATION FROM	STATION TO	SINGLE TYPE 2 705-02.02 (L.F.)	TYPE 38 705-04.07 (EACH)	REMARKS
5	SR-10		X	122+00.00	126+00.00	400	2	
5	SR-10	X		125+24.95			1	Curves onto Wilburn
6	WILBURN LN		X		301+62.16	562	1	
6	SR-10	X		132+75.60	133+50.00	74	1	
6/7	SR-10		X	137+35.03	140+93.26	358	2	
7	SR-10		X	141+56.30	144+50.00	294	1	
7	SR-10	X		146+25.00	146+99.40	74	1	
7	SR-10		X	148+00.00	148+74.40	74	1	
8	SR-10		X	153+75.60	154+50.00	74	1	
8	SR-10		X	161+00.00	164+50.00	350	1	
9	SR-10		X	169+50.00	171+00.00	150	1	
9	SR-10		X	174+00.00	174+74.39	74	1	
10	SR-10		X	182+50.00	186+00.00	350	1	
10/11	SR-10		X	187+50.00	194+00.00	650	1	
TOTALS						3486	16	

L1 LETTING REV: 04-21-14 REVISED GRADED SOLID ROCK UNITS TO TONS. MOVED "PROPOSED GUARDRAIL" BLOCK FROM SHT 2N TO SHT 2L. ADDED "WASTE MATERIAL" QUANTITY AND ADJ. "EXCESS EXC. "WASTE" QUANTITY.

L2 LETTING REV: 05-19-14 REVISED "EST. GRADING QTY" BLOCK.

STORM DRAINAGE ENDWALLS

SHEET NO.	LOCATION	STATION	OFFSET (FT.)	DRAINAGE CODE	STRUCTURE TYPE	STANDARD DRAWING	CLASS A CONC. 611-07.01 (C.Y.)	REINF. STEEL 611-07.02 (LB.)	STRUC. STEEL 611-07.03 (LB.)
6B	S.R. 10	138+00.00	49.00	5	STR.	D-PE-4	1.86	68	
7B	S.R. 10	142+60.00	56.00	7	STR.	D-PE-4	1.86	68	
7B	S.R. 10	144+60.00	33.00	9	STR.	D-PE-4	1.16	40	
8B	S.R. 10	156+67.06	33.00	13	STR.	D-PE-4	2.98	90	
8B	S.R. 10	156+67.06	-36.00	15	STR.	D-PE-4	2.98	90	
9B	S.R. 10	171+30.54	34.50	18	STR.	D-PE-4	1.86	68	
9B	S.R. 10	171+30.54	-36.00	20	STR.	D-PE-4	1.86	68	
10B	S.R. 10	186+42.91	38.50	21	STR.	D-PE-4	1.86	68	
10B	S.R. 10	186+42.91	-35.00	23	STR.	D-PE-4	1.86	68	
11B	S.R. 10	192+60.00	32.00	24	STR.	D-PE-4	1.16	40	
TOTALS							19.44	668	0

ESTIMATED GRADING QUANTITIES

STATION TO STATION	ROAD & DRAINAGE EXC. (UNCL.) COMMON - C.Y.	ROAD & DRAINAGE EXC. (UNCL.) S. ROCK - C.Y.	BORROW EXCAVATION UNCL. - C.Y.	BORROW EXCAVATION S. ROCK - TON	WASTE MATERIAL C.Y.	CHANNEL EXC. C.Y.	EXCESS EXC. WASTE C.Y.
SR 10 MAINLINE	113,025	209,079	0	70,361	34,325	0	-248,048
WILBURN LANE	6,200						
WINDING STAIRS LANE	5,309						
(-) TOPSOIL	-10,415						
SHRINK	15%						
SWELL		10%					
TOTALS	99,234	229,987	0	70,361	34,325	0	-248,048

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TABULATED QUANTITIES

SHEET 2 OF 5

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	2M

CROSS DRAIN TABULATION

STATION	RCP CLASS III OR CMP 10 GA. OR HDPE OR PVC (L.F.) FILL HEIGHT < OR = 16 FT.					RCP CLASS IV OR PVC (L.F.) FILL HEIGHT > 16 FT. AND < OR = 24 FT.					SKEW	END TREATMENT							REMARKS
												INLET		OUTLET		CLASS A CONC. 611-07.01 (C.Y.)	REINF. STEEL 611-07.02 (LB.)	STRUC. STEEL 611-07.03 (LB.)	
	18"	24"	30"	36"	48"	18"	24"	30"	36"	48"		TYPE	DRAWING NO.	TYPE	DRAWING NO.				
118+99.47		115									0°	STR.	D-PE-4	STR.	D-PE-4	3.72	136		
122+22.51		107									0°	STR.	D-PE-4	STR.	D-PE-4	3.72	136		
125+23.36		105									0°	STR.	D-PE-4	STR.	D-PE-4	3.72	136		
146+50.00		150									0°	STR.	D-PE-4	STR.	D-PE-4	7.44	272		2 — 24" R.C.P. @ 75'
174+00.00		68									0°	STR.	D-PE-4	STR.	D-PE-4	3.72	136		
179+32.37		92									25°	STR.	D-PE-4	STR.	D-PE-4	3.72	136		
TOTALS	**0**	**637**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**						**26.04**	**952**	**0**	

RIP-RAP APRON TABULATED QUANTITIES

LOCATION	STATION	LT./RT.	OUTLET WIDTH (D_O, FT.)	RIPRAP APRON LGTH. (L_A, FT.)	RIPRAP APRON AREA (A_A, FT.^{2})	MACHINED RIP-RAP, CLASS B (TONS)	MACHINED RIP-RAP, CLASS C (TONS)
S.R. 10	104+82.09	LT.	4.0	10.0	104.87		23.79
S.R. 10	112+03.00	LT.	3.0	23.0	383.25		86.94
S.R. 10	118+99.47	LT.	2.0	14.0	168.00		38.11
S.R. 10	122+22.51	LT.	2.0	12.0	132.00		29.94
S.R. 10	125+23.36	LT.	2.0	11.0	108.00		24.50
S.R. 10	127+45.21	LT.	6.0	25.0	517.28		117.35
S.R. 10	130+27.05	LT.	24.0	25.0	432.58		98.13
S.R. 10	138+00.00	RT.	2.0	17.0	221.50	35.89	
S.R. 10	142+60.00	RT.	2.0	16.0	208.00		47.19
S.R. 10	144+60.00	RT.	1.5	21.0	153.00	24.79	
S.R. 10	146+50.00	RT.	4.0	21.0	356.00	57.69	
S.R. 10	156+67.06	RT.	2.5	12.0	147.00	23.82	
S.R. 10	161+78.87	RT.	6.0	32.0	741.30		168.16
S.R. 10	171+30.54	RT.	2.0	12.0	132.00		29.94
S.R. 10	174+00.00	RT.	2.0	16.0	200.00		45.37
S.R. 10	179+32.37	RT.	2.0	16.0	215.20		48.82
S.R. 10	186+42.91	RT.	2.0	20.0	300.00		68.06
S.R. 10	192+60.00	RT.	1.5	11.0	101.75	16.49	
					TOTAL	**142**	**716**

RIP-RAP DITCHES

STATION FROM	STATION TO	SIDE LT	SIDE RT	WIDTH (L.F.)	RIP-RAP (CLASS B) (TONS)	SEEDING (S.Y.)	REMARKS
130+07.50	133+50.00	X		30.55	1088	0	
TOTALS					**1088**	**0**	

PAVEMENT QUANTITIES

LOCATION	PAY ITEMS 303-01 (TON)	307-01.01 (TON)	307-01.08 (TON)	402-01 (TON)	403-01 (TON)	411-01.10 (TON)	411-01.07 (TON)	415-01.02 (S.Y.)
Mainline	14982.8	5729.3	3753.1	50.3	2.9	2200.4		
Mainline - Shoulders	23297.5			20.2	1.2		1028.9	
Wilburn Lane	326.6		65.4	0.9	0.1	38.4		
Wilburn Lane - Shoulders	77.4			0.2	0.0		9.0	
Winding Stairs Lane	556.9		111.6	1.5	0.1	65.4		
Winding Stairs Lane - Shoulders	143.6			0.3	0.0		16.7	
Driveways - Private Drive / Field Ent.	875.0			5.9	0.3	308.4		
Driveways - Business Ent.	233.4		102.3	1.6	0.1	68.5		
Mainline - Resurfacing					0.5	403.8		6095.0
SR 52 - Resurfacing					0.4	280.1		4227.3
Temporary Asphalt	1920.4		384.8			225.6		
TOTALS	**42413.5**	**5729.3**	**4417.3**	**80.8**	**5.5**	**3590.6**	**1054.6**	**10322.4**

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TABULATED QUANTITIES

SHEET 3 OF 5

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	2N

BOX CULVERT TABULATION

STATION	LOCATION	SPAN	HEIGHT	LENGTH	SKEW	DRAINAGE AREA ACRES	BOX CULVERT: BOX: CLASS "A" CONC. CU. YD.	BOX: REINF. STEEL LBS.	WINGWALLS: CLASS "A" CONC. CU. YD.	WINGWALLS: STEEL BAR REINF. LBS.	DRAWING NO.	BACKFILLING ITEM 303-01.01 DWG. STD-10-1 TONS	FOUNDATION FILL MATERIAL CU. YD.
104+82.09	STATE ROUTE 10	4'	4'	20'	0°	34.82	11.2	1555	5.1	716	STD-17-26	103.7	2.59
112+03.00	STATE ROUTE 10	3'	3'	86'	0°	16.07	38.4	5920	5.1	716	STD-17-29	312.1	9.56
127+45.21	STATE ROUTE 10	6'	3'	88'	0°	18.09	46.6	10472	5.1	716	STD-15-35	202.1	14.67
161+78.87	STATE ROUTE 10	6'	3'	155'	15°	35.68	86.8	22010	4.2	673	STD-15-35	622.9	25.83
TOTALS							**183**	**39957**	**19.5**	**2821**		**1240.8**	**52.65**

L1 LETTING REV: 04-21-14 MOVED "EPSC QUANTITIES" BLOCK FROM SHT 20 TO SHT 2N. MOVED "PROPOSED GUARDRAIL" BLOCK TO SHT 2L.

L2 LETTING REV: 05-19-14 REPLACED APRON COLUMNS WITH WINGWALL QUANTITIES IN "BOX CULVERT" BLOCK. ADDED REMOVAL OF STRUCTURES QUANTITY TO "SLAB BRIDGE" BLOCK. ADDED ITEM NOS. 209-09.01 AND 209-20.03 TO "EPSC" BLOCK.

SLAB BRIDGE TABULATION

STATION	LOCATION	SPAN	HEIGHT	LENGTH	SKEW	DRAINAGE AREA ACRES	CLASS "A" CONC. CU. YD.	REINF. STEEL LBS.	DRAWING NO.	BACKFILLING ITEM 303-01.01 DWG. STD-10-1 TONS	FOUNDATION FILL MATERIAL CU. YD.	REMOVAL OF STRUCTURES LUMP SUM
130+27.05	STATE ROUTE 10	2 — 12'	10'	260	30°	846	492.8	107038	STD-15-11 STD-15-121	5662	0	1
TOTALS							**493**	**107038**		**5662**	**0**	

R.O.W. MARKERS

SHEET NO.	QUANTITIES "A"	"B"	"C"	TOTALS
4A	4	4	7	**15**
5A	5	0	0	**5**
6A	3	7	10	**20**
7A	4	3	3	**10**
8A	5	6	6	**17**
9A	4	1	2	**7**
10A	6	9	8	**23**
11A	6	3	5	**14**
TOTALS	**37**	**33**	**41**	**111**

EROSION PREVENTION AND SEDIMENT CONTROL QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	PHASE 1A	PHASE 1B	PHASE 2A	PHASE 2B	PHASE 3	TOTAL
203-01	ROAD AND DRAINAGE EXCAVATION (UNCLASSIFIED)	C.Y.		4,988		1,367		**6,355**
209-02.07	18" TEMPORARY SLOPE DRAIN	L.F.		1,605		578		**2,183**
209-05	SEDIMENT REMOVAL	C.Y.						**580**
209-08.02	TEMPORARY SILT FENCE (WITH BACKING)	L.F.	3,883	2,270	3,865	810		**10,828**
209-08.03	TEMPORARY SILT FENCE (WITHOUT BACKING)	L.F.	2,757	415	5,825			**8,997**
209-08.08	ENHANCED ROCK CHECK DAM	EACH	12	2	5	3		**22**
209-09.01	SAND BAGS	BAG		6,190		8,018		**14,208**
209-09.04	SEDIMENT FILTER BAG (15'X10')	EACH		15		9		**24**
209-09.43	CURB INLET PROTECTION (TYPE 4)	EACH	6	4				**10**
209-20.03	POLYETHYLENE SHEETING (6 MIL. MIN.)	S.Y.		82		86		**168**
209-40.34	CATCH BASIN PROTECTION TYPE (E)	EACH		6			8	**14**
209-40.44	CATCH BASIN FILTER ASSEMBLY (TYPE 4)	EACH				3		**3**
303-10.01	MINERAL AGGREGATE (SIZE 57)	TON		175	30	116		**321**
621-03.02	18" TEMPORARY DRAINAGE PIPE	L.F.		205				**205**
621-03.03	24" TEMPORARY DRAINAGE PIPE	L.F.		548		450		**998**
621-03.04	30" TEMPORARY DRAINAGE PIPE	L.F.		102		102		**204**
621-03.06	42" TEMPORARY DRAINAGE PIPE	L.F.		51		51		**102**
621-03.11	72" TEMPORARY DRAINAGE PIPE	L.F.		102		102		**204**
709-05.05	MACHINED RIP-RAP (CLASS A-3)	TON	50					**50**
709-05.06	MACHINED RIP-RAP (CLASS A-1)	TON		1,473		492	650	**2,615**
740-10.03	GEOTEXTILE (TYPE III)(EROSION CONTROL)	S.Y.	92	1,295	167	828		**2,382**
740-11.03	TEMPORARY SEDIMENT TUBE 18IN (EPSC)	L.F.		3,475	145	1,153		**4,773**
801-01.07	TEMPORARY SEEDING (WITH MULCH)	UNIT					1,459	**1,459**
801-01.30	COVER CROP SEED MIX (RIPZN/FLPL) W/MULCH	UNIT					1,459	**1,459**
801-03	WATER (SEEDING & SODDING)	M.G.					146	**146**

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TABULATED QUANTITIES

SHEET 4 OF 5

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	20

L1 LETTING REV: 04-21-14 ADDED "REMOVAL OF BLD. AND OBST. DESC. BLOCK." ADDED ASBESTOS SUMMARY TABLES. MOVED "EPSC QUANTITIES" BLOCK TO SHT 2N.

REMOVAL OF BUILDINGS AND OBSTRUCTIONS DESCRIPTION BLOCK

PAY ITEM	TRACT NO.	DESCRIPTION
202-06.01	5	Single wide mobile home
202-06.02	6	Frame house and storage building
202-06.03	13	Single family brick home with full basement
		Detached wood fram garage
202-06.04	14	Single wide mobile home
		Metal sided shop building and detached wooden carport
202-06.05	16	Single wide mobile home
202-06.06	24	Single family brick home and wooden frame shed
		Improvements not visible from road

ACM ABATEMENT SHOULD BE COMPLETED PRIOR TO ANY DEMOLITION ACTIVITIES. ABATEMENT SHOULD BE ACCOMPLISHED PER SP202ACM SPECIAL PROVISION REGARDING REMOVAL OF ASBESTOS-CONTAINING MATERIALS. STATE OF TENNESSEE ASBESTOS ACCREDITATION REQUIREMENTS (TCA 1200-01-20) MANDATE THAT ACM ABATEMENT WORK BE PERFORMED BY AN ACCREDITED FIRM (CONTRACTOR) USING ACCREDITED ABATEMENT WORKERS AND SUPERVISORS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A NOTICE TO THE TDEC, DIVISION OF AIR POLLUTION CONTROL TEN (10) DAYS IN ADVANCE OF ANY ACM ABATEMENT ACTIVITIES. TEN DAY ADVANCE NOTICE TO THE TDEC, DIVISION OF AIR POLLUTION CONTROL WILL BE REQUIRED PRIOR TO COMMENCEMENT OF ANY BUILDING DEMOLITION ACTIVITIES.

Tract 5 - Residence

HA No.	Description	Material Location	Percent/Type Asbestos	NESHAP Classification	Condition	Estimated Quantity
11	Door Caulk – gray	Exterior	ND – Clear Caulking 10%C – Tan Caulking	Category II Non-friable	Good	70 ft

Tract 13 - Residence

HA No.	Description	Material Location	Percent/Type Asbestos	NESHAP Classification	Condition	Estimated Quantity
04	Linoleum – off-white	Room 2	ND – Sheet Flooring 45%C – Fiber Backing	Category I Non-friable	Good	300 ft²
05	Linoleum – beige	Room 3	ND – Sheet Flooring 45%C – Fiber Backing	Category I Non-friable	Good	40 ft^2
08	Window Caulk – off-white	Exterior	ND – Caulking 1 2%C – Caulking 2	Category I Non-friable	Good	150 ft

Tract 14 - Metal Storage Shed

HA No.	Description	Material Location	Percent/Type Asbestos	NESHAP Classification	Condition	Estimated Quantity
05	Silver Paint	Roof	ND – Caulking 2%C – Silver Paint	Non-Friable	Fair	1,650 ft²

Tract 16 - Residence

HA No.	Description	Material Location	Percent/Type Asbestos	NESHAP Classification	Condition	Estimated Quantity
05	Linoleum – tan	Room 2, 3, and 6	ND – Sheet Flooring 45%C – Fiber Backing	Category I Non-friable	Good	270 ft²
08	Roof Cement – black and silver	Roof	5%C	Category I Non-friable	Good	50 ft^2
13	Window Caulk – black	Exterior	5%C	Category II Non-friable	Good	70 ft
14	Caulk – black	Exterior/ Siding	10%C	Category II Non-friable	Good	150 ft

Tract 24 - Residence

HA No.	Description	Material Location	Percent/Type Asbestos	NESHAP Classification	Condition	Estimated Quantity
01	Joint compound associated with gypsum wallboard	Rooms 1, 2, 3, 4, 5, 6, 6a, 7, 7a, 8, 8a	ND – Drywall material 2%C – Joint compound Point count – 0.25%C	Friable	Good	3,000 ft²
02	Joint compound associated with gypsum ceiling board	Rooms 1, 2, 3, 4, 5, 6, 6a, 7, 7a, 8, 8a	ND – Drywall material 2%C – Joint compound Point count –< 0.25%C	Friable	Good	1,500 ft^2
03	Texture – off-white, gypsum ceiling board	Rooms 1, 2, 3, 4, 5, 6, 6a, 7, 7a, 8, 8a	2%C	Friable	Good	1,500 ft^2
04	Linoleum – light brown	Rooms 2 and 3	ND – Sheet Flooring 45%C – Fiber Backing ND – Yellow Mastic	Category I Non-friable	Good	350 ft^2
07	Window Caulk – gray	Exterior	2%C – Old Caulking ND – New Caulking	Category II Non-friable	Good	250 ft
08	Window Glazing – white	Rooms 1, 2, 3, 4, 5, 6, 7, 8	5%C – Old Window Glazing ND – New Window Glazing	Category II Non-friable	Good	200 ft

C = Chrysotile asbestos
ND = No asbestos detected
Ft2 = square feet
Ft = linear feet

UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TABULATED QUANTITIES

SHEET 5 OF 5

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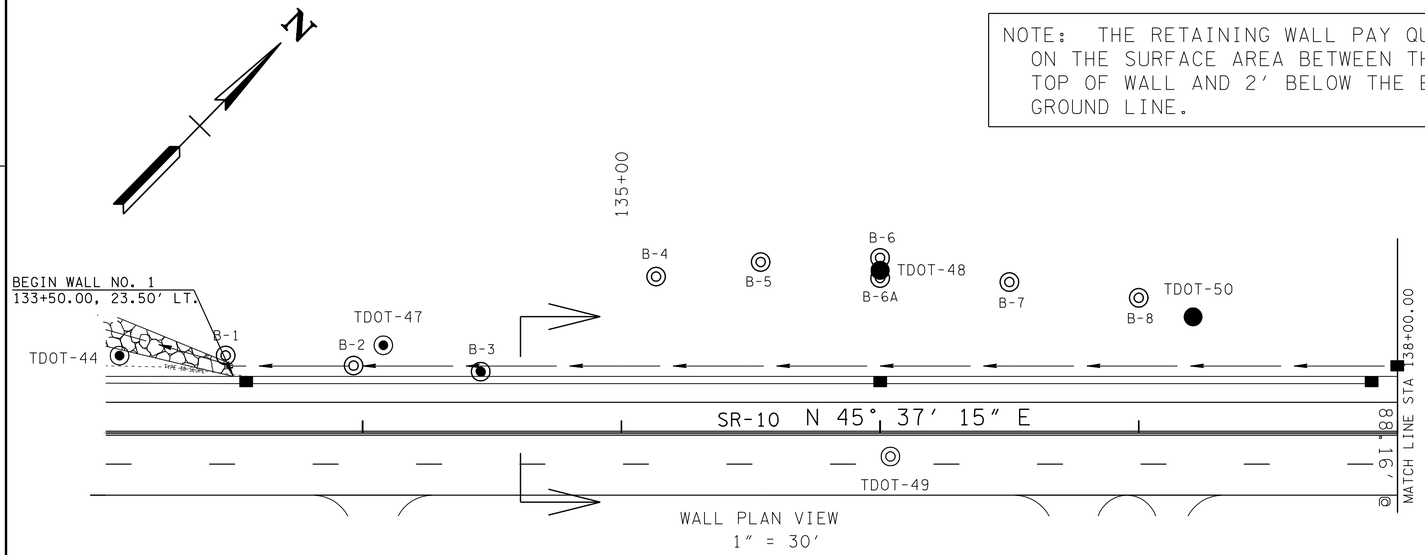
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	1
CONST.	2014	STP/HSIP-10(24)	2P

L2 LETTING REV: 05-19-14 REVISED ITEM NO. 604-07.01 QUANTITY. ADDED 2' LINE BELOW PROP. GROUND @ WALL FACE. CHANGED ITEM NO. 711-05.70 TO 711-05.81.

NOTE: THE RETAINING WALL PAY QUANTITY IS BASED ON THE SURFACE AREA BETWEEN THE APPROXIMATE TOP OF WALL AND 2' BELOW THE EXISTING/PROPOSED GROUND LINE.



WALL PLAN VIEW
1" = 30'

STANTEC BORING INFORMATION [1]

BORING NO.	STATION	OFFSET	NORTHING	EASTING	ELEVATION
B-1	133+47.02	30.04' LT	790428.50	1954842.35	685.28
B-2	133+96.48	26.13' LT	790460.31	1954880.44	687.99
B-3	134+45.63	23.81' LT	790493.02	1954917.19	692.0
B-4	135+13.41	60.55' LT	790566.69	1954939.94	714.67
B-5	135+53.85	66.19' LT	790598.99	1954964.90	722.25
B-6 [2]	136+00.00	67.8± LT	-	-	722.97
B-6A [2]	136+00.00	60'± LT	-	-	721.0
B-7 [2]	136+50.00	58.44' LT	-	-	719.66
B-8 [2]	137+00.00	52.34' LT	-	-	718.67

NOTES:
1. SURVEY INFORMATION PROVIDED BY CIVIL DESIGN GROUP.
2. APPROXIMATE BORING LOCATION AND SURFACE ELEVATIONS BASED ON FIELD OBSERVATIONS.

LEGEND:
- TDOT BORING
- TDOT SOIL SAMPLE BORING WITH ROCK CORE
- TDOT ROCK CORE BORING
- SOIL SAMPLE BORING
- SOIL SAMPLE BORING WITH ROCK CORE

NOTES:

1. THE INFORMATION FOR THE PLAN, ELEVATION AND CROSS-SECTIONS VIEWS PRESENTED ON THIS DRAWING WAS PROVIDED BY THE TENNESSSEE DEPARTMENT OF TRANSPORTATION ON APRIL 9, 2013.
2. BORINGS IDENTIFIED BY THE TDOT-### DESIGNATION WERE DRILLED AS PART OF THE ROADWAY GEOTECHNICAL EXPLORATION. THE LOCATION AND SUBSURFACE INFORMATION PRESENTED ON THIS DRAWING WAS PROVIDED BY THE TDOT GEOTECHNICAL ENGINEERING SECTION.
3. THIS DRAWING IS FOR FOUNDATION DATA ONLY AND IS NOT TO BE USED AS A LAYOUT.

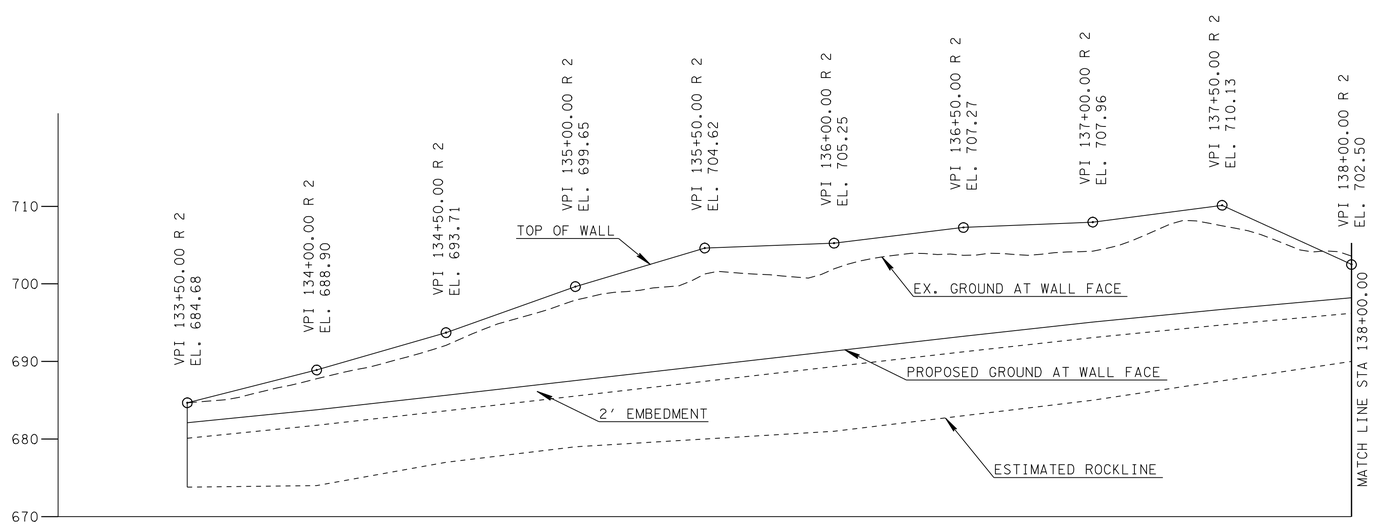
ESTIMATED QUANTITIES		
ITEM NO.	604-07.01	711-05.81
DESCRIPTION	RETAINING WALL (WALL NO. 1) SQ. FT.	32" HALF SIZE SINGLE SLOPE CONCRETE BARRIER L.F.
QUANTITY	13,148	1,275

TDOT BORING INFORMATION [1]

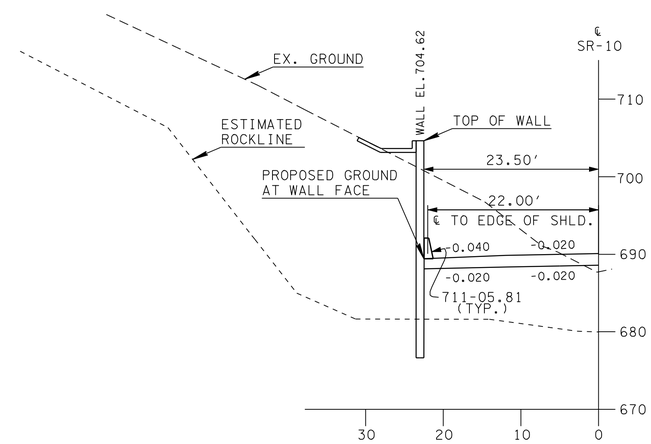
BORING NO.	STATION	OFFSET	ELEVATION
TDOT-44	133+06.00	30.00' LT	683.4
TDOT-47	134+08.00	34.00' LT	690.5
TDOT-48	136+00.00	63.00' LT	719.0
TDOT-49	136+04.00	9.00' RT	690.4
TDOT-50	137+21.00	45.00' LT	720.8

NOTE: BORING INFORMATION PROVIDED BY TDOT GEOTECHNICAL SECTION.

UNOFFICIAL SET
NOT FOR BIDDING



WALL ELEVATION VIEW
1" = 30' H
1" = 10' V



WALL TYP. CROSS-SECTION @ STA 135+50.00
1" = 10' H
1" = 10' V

SEALED BY

SR-10 SOUTHBOUND
MACON COUNTY
STA.133+50.00 TO STA.138+00.00

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 1
GEOTECHNICAL DESIGN DRAWINGS

SHEET 1 OF 6

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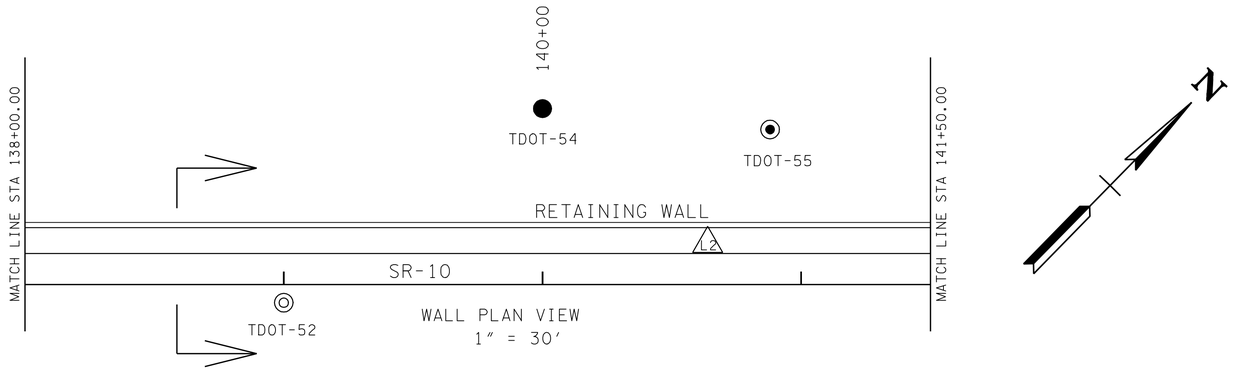
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	1Q
CONST.	2014	STP/HSIP-10(24)	2Q

L2 LETTING REV: 05-19-14 ADDED 2' LINE BELOW PROP. GROUND @ WALL FACE. CHANGED ITEM NO. 711-05.70 TO 711-05.81.



WALL PLAN VIEW
1" = 30'

LEGEND:

- TDOT BORING
- TDOT SOIL SAMPLE BORING WITH ROCK CORE
- TDOT ROCK CORE BORING

TDOT BORING INFORMATION

BORING NO.	STATION	OFFSET	ELEVATION
TDOT-52	139+00.00	7.00' RT	700.0
TDOT-54	140+00.00	68.00' LT	727.2
TDOT-55	140+88.00	60.00' LT	728.0

NOTE: BORING INFORMATION PROVIDED BY TDOT GEOTECHNICAL SECTION.

NOTES:

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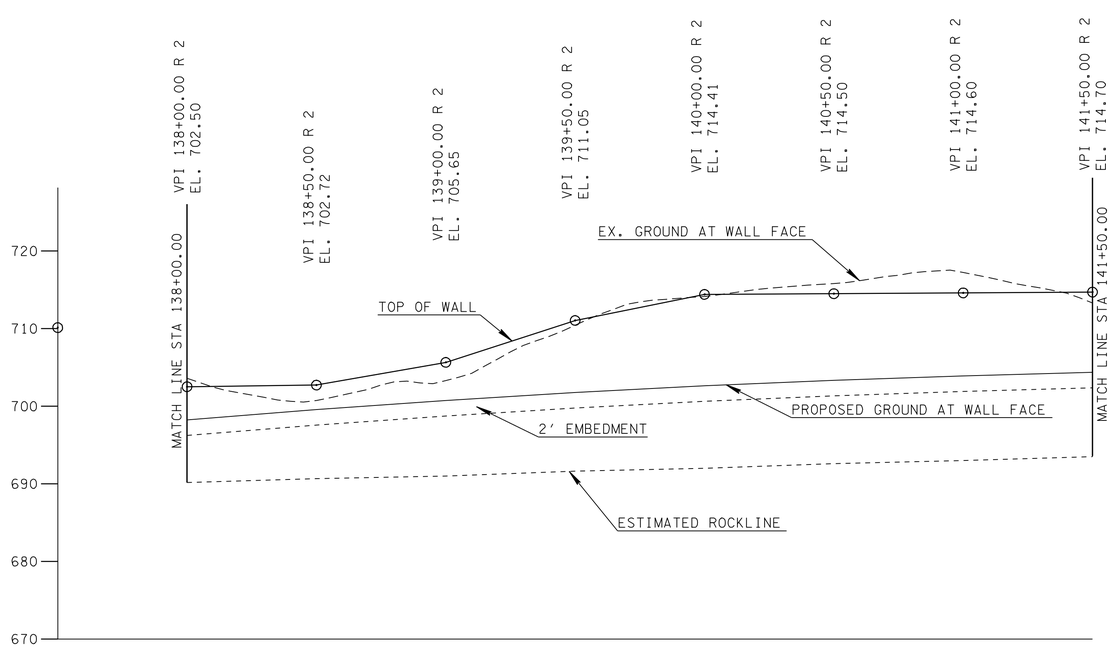


WALL ELEVATION VIEW
1" = 30' H
1" = 10' V

UNOFFICIAL SET
NOT FOR BIDDING

GENERAL NOTES FOR RETAINING WALLS 1 THRU 6

1) ALL RETAINING WALLS SHALL BE SIMILAR IN APPEARANCE.

2) USE EPOXY COATED REINFORCING STEEL FOR THE FOOTING DOWEL BARS IN BACK FACE OF WALL. COST TO BE INCLUDED IN THE UNIT PRICE OF RETAINING WALL.

3) CONTRACTOR TO VERIFY WALL LOCATION COORDINATES PRIOR TO CONSTRUCTION.

4) CONTRACTOR RESPONSIBLE FOR CHANGES TO DRAINAGE DUE TO WALL TYPE.

5) THE UNIT PRICE BID FOR RETAINING WALLS SHALL INCLUDE THE COST OF GRANULAR BACKFILL AND DRAINAGE SYSTEM PER STD-10-1. THIS UNIT PRICE SHALL INCLUDE THE COST OF ITEMS 303-01.01, 303-01.02, 303-01.03, 710-09.01 AND 710-09.02 AS SHOWN ON STD-10-1. THIS DRAINAGE SYSTEM MAY NOT BE REQUIRED FOR SOME MSE WALLS.

6) ASHLAR STONE FINISH TO BE ON ALL EXPOSED WALL FACES. COST OF ASHLAR STONE FINISH TO BE INLCLUDED IN THE UNIT PRICE BID FOR RETAINING WALL. THIS DOES NOT APPLY WHEN MODULAR BLOCK WALLS ARE USED.

7) ALL EXPOSED SURFACES OF RETAINING WALLS SHALL BE STAINED SO THAT ALL SURFACES APPEAR UNIFORM IN COLOR. THE COLOR SHALL BE BEIGE FEDERAL STANDARD 595B, COLOR NO. 33690. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR RETAINING WALL.

8) THE DESIGN LIFE OF THE RETAINING WALLS SHALL BE A MINIMUM OF 75 YEARS.

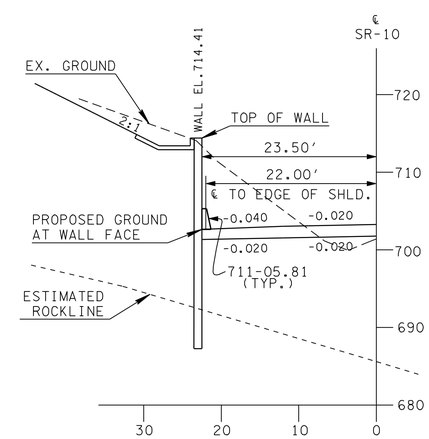
9) WHEN PARAPET ON TOP OF RETAINING WALL IS REQUIRED AND MSE WALL SYSTEM IS SELECTED, A MOMENT SLAB WILL BE REQUIRED AND PAID FOR IN THE COST OF THE RETAINING WALL. DESIGN OF THE MOMENT SLAB IS THE RESPONSIBILITY OF THE WALL SYSTEM COMPANY. MOMENT SLAB IS TO BE DESIGNED BY A TENNESSEE LICENSED ENGINEER.

10) PAYMENT FOR THE PROPOSED RETAINING WALL WILL BE BASED ON ACTUAL CONSTRUCTED WALL FACE.

11) ALL WALLS MUST FOLLOW THE GUIDELINES ESTABLISHED IN SPECIAL PROVISION 624 (REV. 8-6-12).

12) DEPENDING ON THE WALL TO BE USED, A TEMPORARY RETAINING WALL STRUCTURE MAY BE REQUIRED, COSTS FOR DESIGNING AND INSTALLING THE TEMPORARY STRUCTURE SHALL BE INCLUDED IN THE COST OF RETAINING WALL. THE TEMPORARY RETAINING STRUCTURE PLANS WILL BE SUBMITTED FOR REVIEW AT THE SAME TIME THE PERMANENT RETAINING WALL SHOP DRAWINGS ARE SUBMITTED.

13) IN THE CONSTRUCTION OF MODULAR BLOCK MSE WALLS, HARD PLASTIC SHIMS ARE PERMITTED AS AN OCCASIONAL HORIZONTAL AND VERTICAL ALIGNMENT TOOL.



WALL TYP. CROSS-SECTION @ STA 140+00.00
1" = 10' H
1" = 10' V

SEALED BY

SR-10 SOUTHBOUND
MACON COUNTY
STA.138+00.00 TO STA.141+50.00

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 1
GEOTECHNICAL DESIGN DRAWINGS

SHEET 2 OF 6

U-58-160

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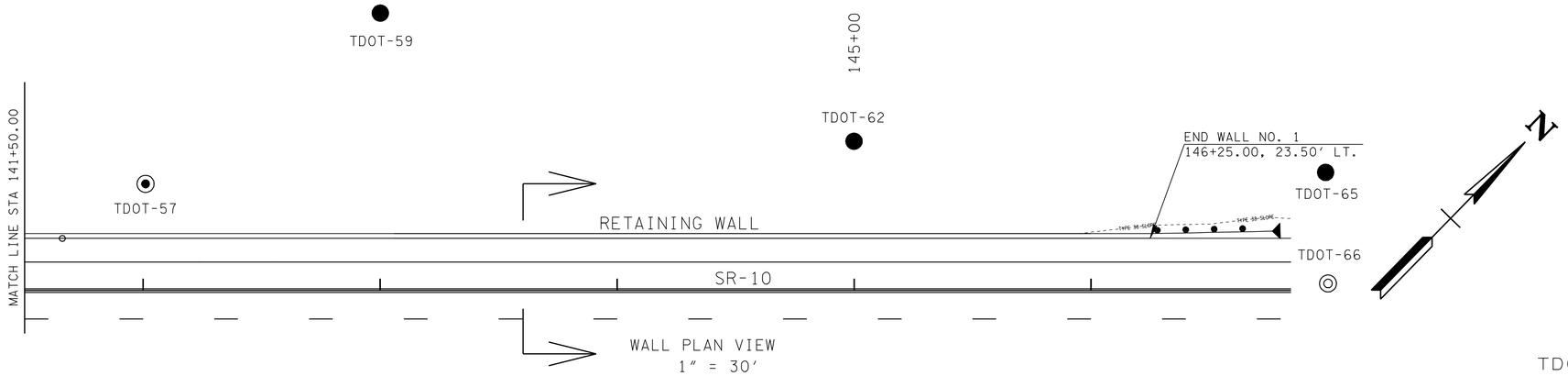
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	1b
CONST.	2014	STP/HSIP-10(24)	2R

12 LETTING REV: 05-19-14 ADDED 2' LINE BELOW PROP. GROUND @ WALL FACE. CHANGED ITEM NO. 711-05.70 TO 711-05.81.



WALL PLAN VIEW
1" = 30'

LEGEND:

- TDOT BORING
- TDOT SOIL SAMPLE BORING WITH ROCK CORE
- TDOT ROCK CORE BORING

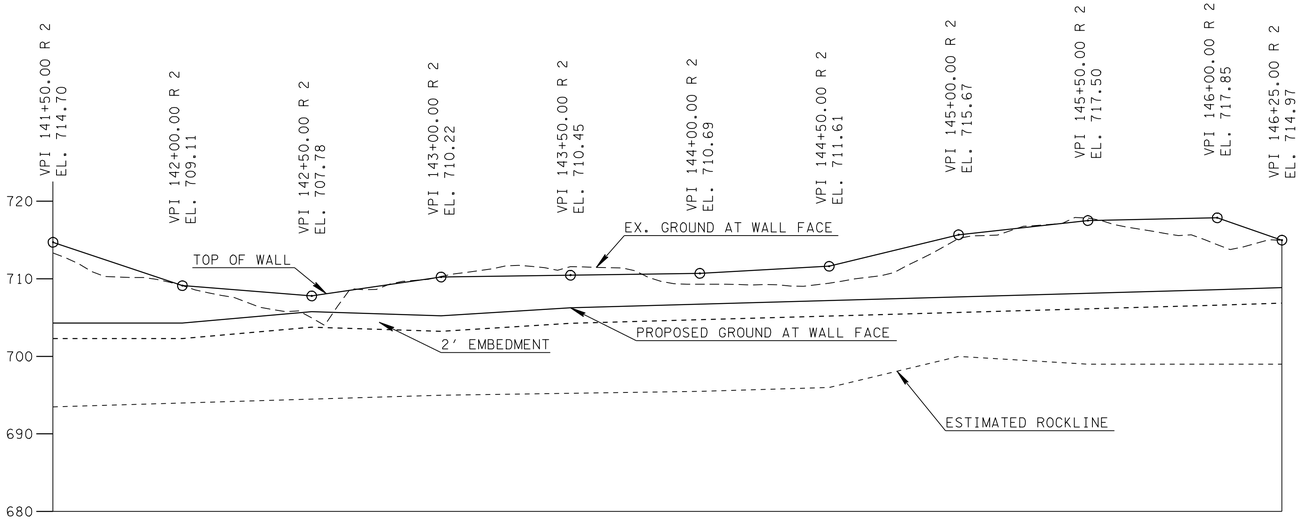
NOTES:

1. THE INFORMATION FOR THE PLAN, ELEVATION AND CROSS-SECTIONS VIEWS PRESENTED ON THIS DRAWING WAS PROVIDED BY THE TENNESSSEE DEPARTMENT OF TRANSPORTATION ON APRIL 9, 2013.
2. BORINGS IDENTIFIED BY THE TDOT-### DESIGNATION WERE DRILLED AS PART OF THE ROADWAY GEOTECHNICAL EXPLORATION. THE LOCATION AND SUBSURFACE INFORMATION PRESENTED ON THIS DRAWING WAS PROVIDED BY THE TDOT GEOTECHNICAL ENGINEERING SECTION.
3. THIS DRAWING IS FOR FOUNDATION DATA ONLY AND IS NOT TO BE USED AS A LAYOUT.

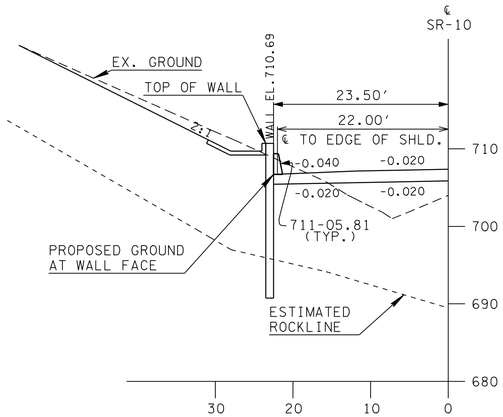
TDOT BORING INFORMATION

BORING NO.	STATION	OFFSET	ELEVATION
TDOT-57	142+01.00	45.00' LT	711.7
TDOT-59	143+00.00	117.00' LT	743.3
TDOT-62	145+00.00	63.00' LT	729.5
TDOT-65	146+99.00	50.00' LT	732.6
TDOT-66	147+00.00	3.00' LT	707.5

NOTE: BORING INFORMATION PROVIDED BY TDOT GEOTECHNICAL SECTION.



WALL ELEVATION VIEW
1" = 30' H
1" = 10' V



WALL TYP. CROSS-SECTION @ STA 144+00.00
1" = 10' H
1" = 10' V

UNOFFICIAL SET
NOT FOR BIDDING

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SR-10 SOUTHBOUND
MACON COUNTY
STA.141+0.00 TO STA.147+00.00

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 1
GEOTECHNICAL DESIGN DRAWINGS

SHEET 3 OF 6

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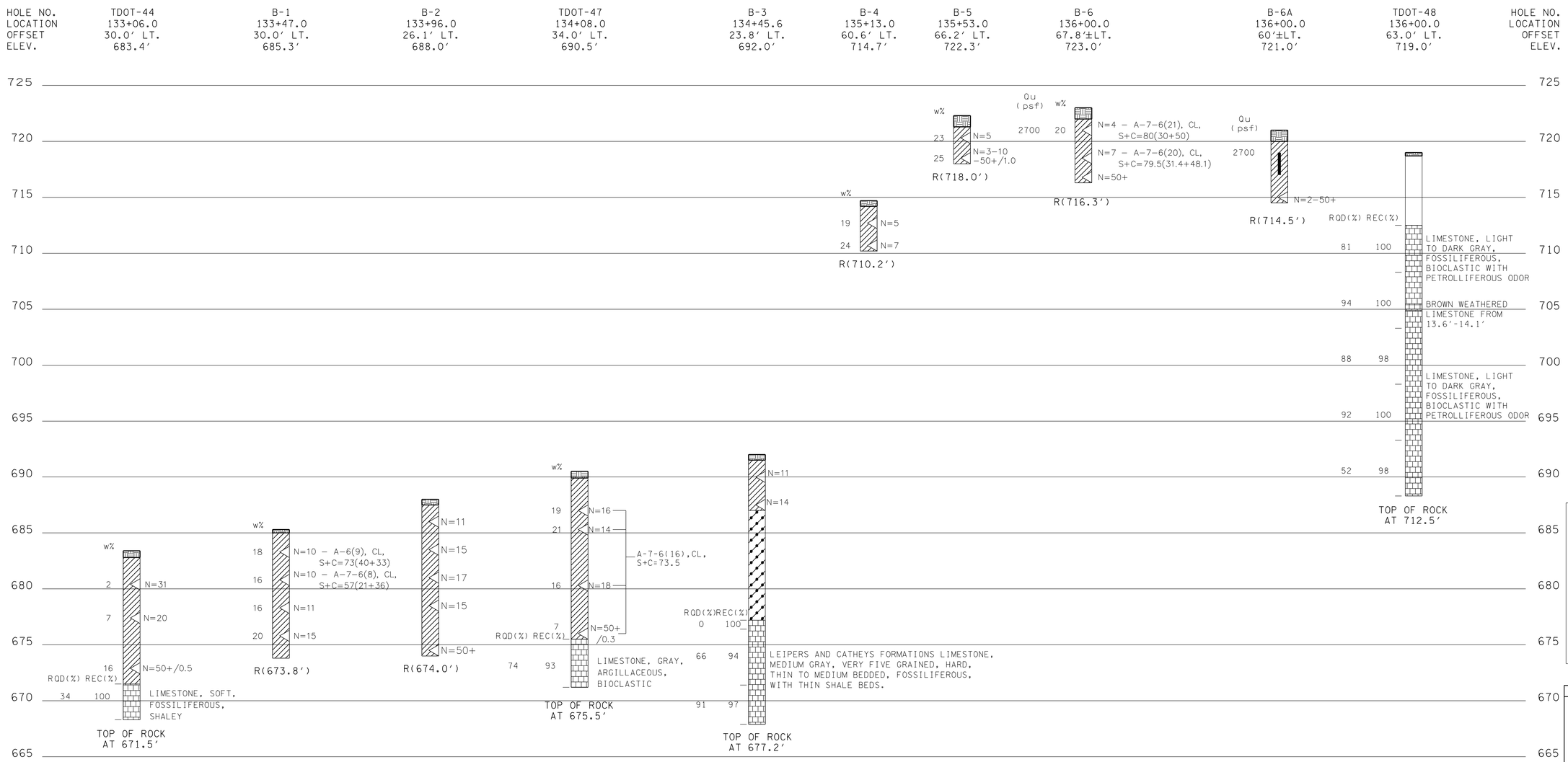
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	
CONST.	2014	STP/PHSIP-10(24)	2Ra



LOGS OF BORINGS

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

SR-10 SOUTHBOUND
MACON COUNTY
STA.133+50.00 TO STA.136+00.00

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 1
LOGS OF BORINGS
DRAWING

SHEET 4 OF 6

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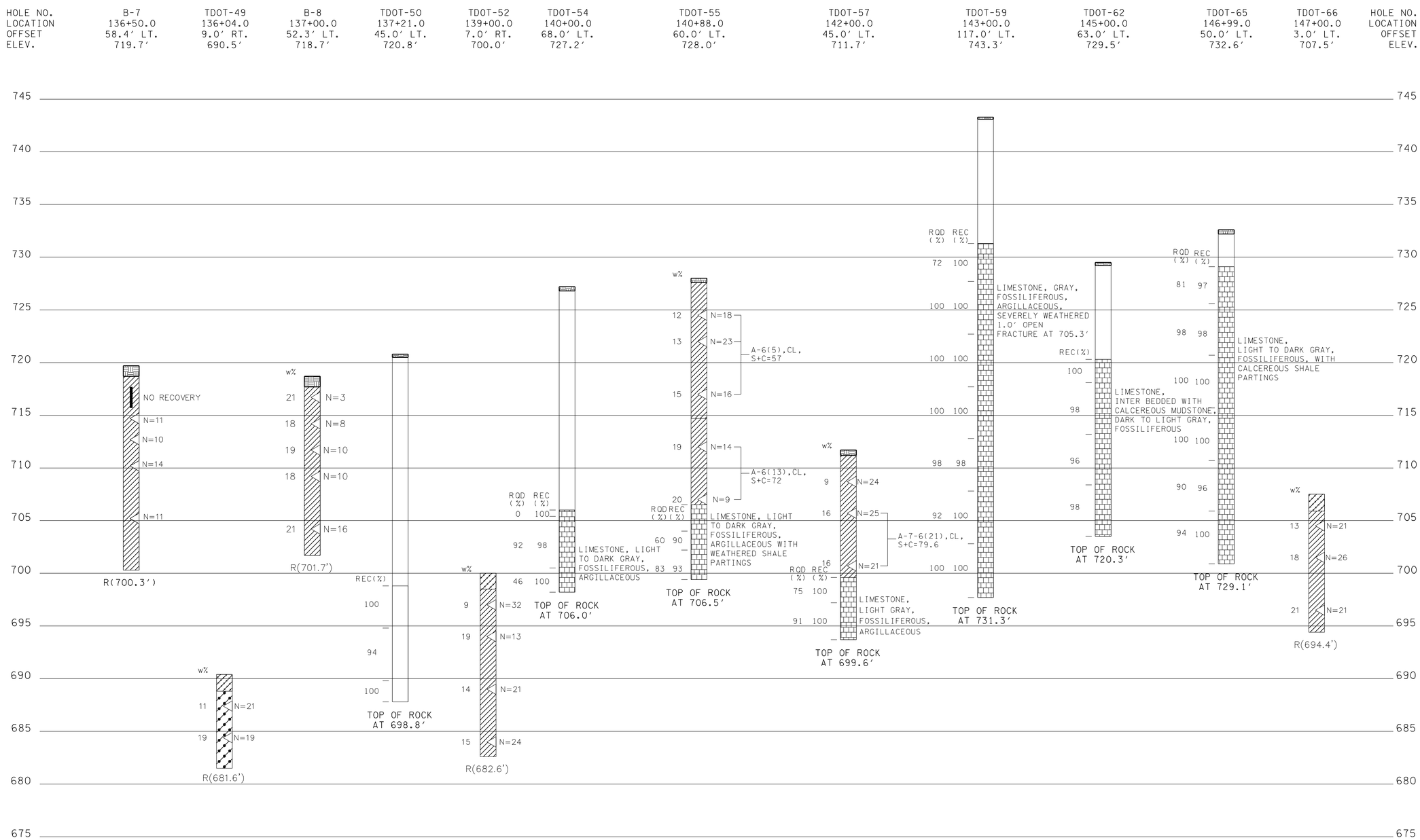
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	
CONST.	2014	STP/PHSIP-10(24)	2Rb



LOGS OF BORINGS

UNOFFICIAL SET
NOT FOR BIDDING

LEGEND

- TOPSOIL
- OVERBURDEN
- CLAYEY GRAVEL
- CLAY
- LIMESTONE

SEALED BY

SR-10 SOUTHBOUND
MACON COUNTY
STA.136+00.00 TO STA.147+00.00

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL
NO. 1
LOGS OF BORINGS
DRAWING

SHEET 5 OF 6

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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	
CONST.	2014	STP/PHSIP-10(24)	2Rc

RETAINING WALL DESIGN NOTES

UNLESS SPECIFICALLY STATED OTHERWISE IN THE CONTRACT PLANS, THE BIDDING FOR, THE DESIGN OF AND THE CONSTRUCTION OF RETAINING WALLS SHOWN IN THE PLANS SHALL BE GOVERNED BY THE TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. THIS SPECIAL PROVISION SHALL BE CONSIDERED AS ONE OF THOSE DOCUMENTS WHICH THE BIDDER/CONTRACTOR HAS EXAMINED AND MADE HIMSELF FAMILIAR WITH AS DESCRIBED IN SECTION 102.04 - EXAMINATION OF THE SITE, THE WORK, THE PLANS, AND THE SPECIFICATIONS IN THE TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

EXCAVATION FOR THE WALL AND/OR ITS FOOTING SHALL NOT BE ACCOMPLISHED UNTIL THE CONTRACTOR HAS SUBMITTED WALL DESIGNS AND CALCULATIONS AND HAS BEEN ISSUED AN APPROVED SET OF WALL PLANS AND HAS LABOR AND MATERIAL RESOURCES AVAILABLE TO BEGIN AND CONTINUE WALL CONSTRUCTION IMMEDIATELY AFTER EXCAVATION.

THIS WALL SHALL BE DESIGNED IN ACCORDANCE WITH LRFD DESIGN PROCEDURES AND REQUIREMENTS AS DESCRIBED IN 1) AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS AND 2) PUBLICATION FHWA-IF-99-015/FHWA GEC 004 GROUND ANCHORS AND ANCHORED SYSTEMS, JUNE 1999.

FOR PROPRIETARY WALL SYSTEMS THAT HAVE BEEN APPROVED AS SHOWN IN SPECIAL PROVISION 624, THE WALL DESIGNER SHALL BE RESPONSIBLE FOR PROVIDING WALL DESIGNS INCORPORATING MATERIALS AND COMPONENTS (I.E. REINFORCEMENT CONNECTION DEVICES, SPECIFIC MANUFACTURER AND PROPERTIES OF GEOGRID) AS WAS ORIGINALLY SUBMITTED AND APPROVED BY TDOT, IF A MATERIAL AND/OR COMPONENT OF THE WALL SYSTEM HAVE BEEN MODIFIED FROM THE ORIGINALLY APPROVED SYSTEM, A WALL DESIGN AND SET OF PLANS AND CALCULATIONS FOR THIS WALL SYSTEM CANNOT BE SUBMITTED FOR REVIEW AND APPROVAL UNTIL THE WALL SYSTEM DESIGNER WHO ORIGINALLY SUBMITTED THE WALL SYSTEM FOR APPROVAL BY TDOT SUBMITS A REQUEST FOR RE-APPROVAL UTILIZING THE MODIFIED ELEMENTS OF THE WALL. THIS SUBMITTAL DOES NOT GUARANTEE APPROVAL OF THE MODIFIED SYSTEM. IF THIS RE-APPROVAL PROCESS DOES NOT MEET THE CONTRACTOR'S SCHEDULE OR IF THE MODIFIED SYSTEM IS NOT APPROVED, THE CONTRACTOR/WALL DESIGNER SHALL PROVIDE A WALL DESIGN FOR ONE OF THE APPROVED SYSTEMS AT NO CHANGE IN CONTRACT PRICE FOR THE RETAINING WALL AND NO CHANGE IN PROJECT SCHEDULE REQUIREMENTS WILL BE ALLOWED.

THE WALL DESIGNER SHALL PROVIDE RETAINING WALL PLANS, DETAILS AND CALCULATIONS AS REQUIRED BY SPECIAL PROVISION 624 AND AS REQUIRED HEREIN.

- THE WALL DESIGNER SHALL UTILIZE THE GEOTECHNICAL PARAMETERS AND RESISTANCE FACTORS AS PROVIDED FOR EACH PROJECT RETAINING WALL ON THE WALL CONCEPT SHEET AND RELATED RETAINING WALL SHEETS TO PREPARE AND SUBMIT DESIGN CALCULATIONS. LOAD FACTORS AND OTHER PERTINENT DESIGN REQUIREMENTS PROVIDED IN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS SHALL BE USED FOR NON-MSE WALLS AND PUBLICATION FHWA-NHI-10-024/FHWA GEC 011, DESIGN AND CONSTRUCTION OF MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES, NOVEMBER 2009 FOR MSE WALLS.
- CALCULATIONS FOR BOTH INTERNAL AND EXTERNAL STABILITY (SLIDING, ECCENTRICITY, AND BEARING CAPACITY-GLOBAL STABILITY AND SETTLEMENT BEING THE EXCEPTIONS) SHALL BE PROVIDED FOR EACH CRITICAL WALL SECTION WHICH DEMONSTRATES THE REQUIRED CAPACITY TO DEMAND RATIO OF 1.0 IS MET UTILIZING THE DESIGN PARAMETERS PROVIDED. FOR MSE WALLS, THE WALL DESIGNER MUST ADJUST THE REINFORCEMENT LENGTHS BEYOND THOSE MINIMUM REQUIRED LENGTHS, IF REQUIRED, TO MEET BOTH INTERNAL AND EXTERNAL REQUIREMENTS. THE WALL DESIGNER/CONTRACTOR PLANS MUST INCLUDE ANY FOUNDATION IMPROVEMENTS AS REQUIRED HEREIN ON THE WALL DESIGNER/CONTRACTOR'S WALL ELEVATION VIEWS AND ANY CROSS-SECTIONAL DETAIL DRAWINGS.
- UNLESS OTHERWISE STATED, THE WALL DESIGNER CAN ASSUME THAT MINIMUM GLOBAL STABILITY AND SETTLEMENT CRITERIA IS ACHIEVED WITH A WALL DESIGN MEETING OTHER MINIMUM EXTERNAL STABILITY REQUIREMENTS AND ASSUMING WALL FOUNDATION CONDITIONS ARE MET. WHILE THE WALL DESIGNER'S DESIGN MUST DEMONSTRATE COMPLIANCE WITH EXTERNAL STABILITY REQUIREMENTS AS DISCUSSED ABOVE, THE WALL DESIGNER MAY PROVIDE CERTIFICATION (BY SIGNING AND STAMPING BY PROFESSIONAL ENGINEER REGISTERED IN STATE OF TENNESSEE) OF THE WALLS PLANS AND CALCULATIONS "FOR INTERNAL STABILITY ONLY".
- LOAD COMBINATIONS STRENGTH I, EXTREME EVENT I, AND EXTREME EVENT II AS GIVEN IN TABLE 4-1 OF PUBLICATION FHWA-NHI-10-024/FHWA GEC 011, DESIGN AND CONSTRUCTION OF MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES, NOVEMBER 2009 FOR MSE WALLS SHALL BE EVALUATED FOR MSE WALLS. LOAD COMBINATIONS FOR OTHER WALL TYPES SHALL BE AS GIVEN IN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS

NOTE REGARDING CONSTRUCTION SLOPES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE EXCAVATION IN ACCORDANCE WITH OSHA AND OTHER APPLICABLE STATE AND LOCAL REGULATIONS REGARDING CONSTRUCTION SLOPES AND TRENCHES. IN ADDITION TO FOLLOWING APPLICABLE REGULATORY REQUIREMENTS, AS A MINIMUM REQUIREMENT, ALL TEMPORARY CONSTRUCTION SLOPES SHALL BE PLACED AT A MAXIMUM OF A 1:1 SLOPE IN SOIL AND SHALL NOT BE LEFT OPEN WITHOUT SHORING FOR ANY LONGER THAN ABSOLUTELY NECESSARY. THE CONTRACTOR BUILDING THE WALL SHALL ENSURE THAT THESE TEMPORARY BACK SLOPES ARE NOT AND DO NOT BECOME UNSTABLE. IF SLOPE IS UNSTABLE, BECOMES UNSTABLE, IS CUT STEEPER THAN A 1:1 SLOPE OR IS UNACCEPTABLE FOR ANOTHER REASON, THEN TEMPORARY SHORING SHALL BE USED. ANY UNUSUAL SOIL CONDITIONS OTHER THAN THOSE ASSUMED SHOULD BE REPORTED TO THE PROJECT ENGINEER.

ACCEPTABLE WALL TYPES

THE RETAINING WALL SHALL BE ONE OF THE WALL TYPES LISTED BELOW. FOR RETAINING WALL SYSTEMS LISTED AS BIN WALL, CRIB WALL, MSE (EITHER SEGMENTAL PANEL OR MODULAR BLOCK) AND GROUND ANCHOR WALL, THE SPECIFIC WALL SYSTEM SUPPLIER/INSTALLER SHALL BE ONE OF THOSE LISTED AS PRE-APPROVED IN THE SPECIAL PROVISION 624.

- SOLDIER PILE AND LAGGING WALL (UNANCHORED)
- ANCHORED WALL (ANCHORS SHALL NOT EXTEND OUTSIDE OF THE TDOT RIGHT-OF-WAY)

TABLE 1-DESIGN REQUIREMENTS AND PARAMETERS

DESCRIPTION	VALUE-SOLDIER PILE AND LAGGING WALLS (UNANCHORED AND ANCHORED)	NOTE *
DESIGN LIFE	75 YEARS	
SEISMIC ACCELERATION COEFFICIENT (As)	0.201	
EFFECTIVE (DRAINED) FRICTION ANGLE		
RETAINED BACKFILL-UNCLASSIFIED SITE OR BORROW SOIL	26°	
RETAINED BACKFILL-SELECT BACKFILL	34° TO MAX 40°	1
UNIT WEIGHT		
UNCLASSIFIED SITE OR BORROW SOIL	120 POUNDS PER CUBIC FOOT	
SELECT BACKFILL MATERIAL	VARIES	1A
PULLOUT RESISTANCE OF ANCHORS		
COHESIONLESS (GRANULAR) SOILS	0.65	2
COHESIVE SOILS	0.70	
ROCK	0.50	
WHERE PROOF TESTS ARE CONDUCTED	1.0	3
TENSILE RESISTANCE OF ANCHOR TENDON		
MILD STEEL, (E.G., ASTM A615 BARS)	0.90	4
HIGH STRENGTH STEEL (E.G., ASTM A722 BARS)	0.80	
FLEXURAL CAPACITY OF VERTICAL ELEMENTS	0.90	
RESISTANCE FACTORS OF A SINGLE DRIVEN PILE		
STATIC ANALYSIS METHODS		
SIDE RESISTANCE AND END BEARING: CLAY AND MIXED SOILS		
α-METHOD (TOMLINSON, 1987; SKEMPTON, 1951)	0.35	
β-METHOD (ESRIG & KIRBY, 1997; SKEMPTON 1951)	0.25	
λ-METHOD (VIJAYVERGIYA & FOCHT, 1972; SKEMPTON 1951)	0.40	
SIDE RESISTANCE AND END BEARING: SAND		
NORDLUND/THURMAND METHOD (HANNIGAN ET AL, 2005	0.45	
SPT-METHOD (MEYERHOF)	0.30	
CPT-METHOD (SCHMERTMANN)	0.50	
END BEARING IN ROCK (CANADIAN GEOTECHNICAL SOCIETY)	0.45	
LATERAL GEOTECHNICAL RESISTANCE OF A SINGLE PILE		
ALL SOILS AND ROCK	1.0	
RESISTANCE FACTORS OF A SINGLE DRILLED PILE/SHAFT		
SIDE RESISTANCE IN CLAY		
α-METHOD (O'NEILL AND REESE, 1999)	0.45	
TIP RESISTANCE IN CLAY		
TOTAL STRESS (O'NEILL AND REESE, 1999)	0.40	
SIDE RESISTANCE IN SAND		
β-METHOD (O'NEILL AND REESE, 1999)	0.55	
TIP RESISTANCE IN SAND		
O'NEILL AND REESE, 1999	0.50	
SIDE RESISTANCE IN INTERMEDIATE GEOMATERIALS (IGMs)		
O'NEILL AND REESE, 1999	0.60	
TIP RESISTANCE IN INTERMEDIATE GEOMATERIALS (IGMs)		
O'NEILL AND REESE, 1999	0.55	
SIDE RESISTANCE IN ROCK		
HORVATH AND KENNEY (1979), OR O'NEILL AND REESE (1999)	0.55	
CARTER AND KULHAWY (1988)	0.50	
TIP RESISTANCE IN ROCK		
CANADIAN GEOTECHNICAL. SOCIETY (1985), ORO'NEILL AND REESE (1999)	0.50	
LATERAL GEOTECHNICAL RESISTANCE OF A SINGLE PILE/SHAFT		
ALL MATERIALS	1.0	
*REFER TO TABLE 1.1 FOR NOTES.		

TABLE 1.1
NOTES FOR TABLE 1

NO.	NOTE
1	A MINIMUM FRICTION ANGLE OF 34 DEGREES CAN BE ASSUMED FOR MATERIAL MEETING SPECIFICATIONS IN SECTION F, PART1, AND ITEM E OF TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. A HIGHER FRICTION ANGLE CAN BE UTILIZED IF THE CONTRACTOR SUBMITS INDEPENDENT TESTING AND IT IS VERIFIED BY TDOT. HOWEVER, IN NO CASE SHALL THE FRICTION ANGLE FOR ANALYSIS EXCEED 40-DEGREES.
1A	SELECT BACKFILL UNIT WEIGHT TO BE DETERMINED BY CONTRACTOR/DESIGNER DEPENDING ON ACTUAL BACKFILL MATERIAL USED. SELECT BACKFILL IS DEFINED AS MATERIAL MEETING SPECIFICATIONS IN SECTION F, PART 1, AND ITEM E OF TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. IN ORDER TO UTILIZED ϕ FOR SELECT BACKFILL DESIGN, SELECT BACKFILL MUST BE PLACED FOR A MINIMUM ZONE FORMED BY A 1:1 SLOPE FROM 2 FEET BEHIND THE BOTTOM OF BACK OF WALL FOOTING OR REINFORCED SOIL ZONE FOR MSE WALLS UP TO FINISHED GRADE.
2	APPLY TO PRESUMPTIVE ULTIMATE UNIT BOND STRESSES FOR PRELIMINARY DESIGN ONLY
3	APPLY WHERE PROOF TEST(S) ARE CONDUCTED ON EVERY PRODUCTION ANCHOR TO A LOAD OF 1.0 OR GREATER TIMES THE FACTORED LOAD ON THE ANCHOR.
4	APPLY TO MAXIMUM PROOF TEST FOR ANCHORS. FOR MILD STEEL, APPLY RESISTANCE FACTOR TO Fy. FOR HIGH STRENGTH STEEL, APPLY THE RESISTANCE FACTOR TO GUARANTEED ULTIMATE TENSILE STRENGTH.
	UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE FACTORS SHALL BE TAKEN AS 1.0 WHEN INVESTIGATING AN EXTREME EVENT LIMIT STATE

TABLE 2 SOIL AND BED ROCK DESIGN PARAMETERS FOR SOLDIER PILE AND LAGGING OR ANCHOR WALL

STATION LIMITS	MATERIAL	NOMINAL PULLOUT RESISTANCE	UNCONFINED COMPRESSIVE STRENGTH	UNIT WEIGHT
133+50 – 146+25	LEAN CLAY, SANDY, WITH CHERT	0.6 ksf	1.5 ksf	120 pcf
	LIMESTONE (LEIPERS AND CATHEY FORMATIONS)	20 ksf	350 ksf*	145 pcf

* INTACT ROCK CORE SPECIMEN

OTHER DESIGN REQUIREMENTS

THE ROCK SOCKETS FOR THE SOLDIER PILES AND ANCHORS WILL BE CONSTRUCTED IN LIMESTONE BEDROCK OF THE LEIPERS AND CATHEYS FORMATION. THE ESTIMATED ROCK LINE IS DEPICTED ON THE WALL PROFILE SHOWN ON THE RETAINING WALL GEOTECHNICAL DESIGN DRAWING AND THE ROADWAY CROSS-SECTIONS IN THE CONSTRUCTION PLAN SET. BASED ON ROCK DESCRIPTIONS OF LEIPERS AND CATHEYS FORMATION LIMESTONE ON THE BORING LOGS, STANTEC RECOMMENDS A PRESUMPTIVE UNCONFINED COMPRESSIVE STRENGTH OF 350 KSF FOR INTACT ROCK CORE SPECIMENS AND A UNIT WEIGHT OF 145 PCF BE USED FOR DESIGN PURPOSES. THE RETAINING WALL DESIGNER SHALL REDUCE THE STRENGTH OF THE INTACT ROCK CORE SPECIMENS TO BE REPRESENTATIVE OF THE ROCK MASS FOR DESIGN PURPOSES BASED ON THEIR INTERPRETATION OF ROCK CORING DATA PRESENTED ON THE GRAPHICAL BORING LOGS SHOWN ON THE RETAINING WALL GEOTECHNICAL DESIGN DRAWINGS.

ALL SOLDIER PILES SHALL BE SOCKETED INTO BEDROCK A MINIMUM OF 5 FEET. THE TOTAL EMBEDMENT DEPTHS SHALL BE DETERMINED BY THE WALL DESIGNER BASED ON THE LATERAL AND VERTICAL LOAD RESISTANCE REQUIREMENTS INHERENT TO THEIR DESIGN CONFIGURATION.

THE WALL SHALL HAVE A DRAINAGE GUTTER AT THE TOP DESIGNED TO CARRY SURFACE RUNOFF TO EITHER OR BOTH ENDS OF WALLS. DETAILS OF THIS DRAINAGE FEATURE SHALL BE PROVIDED IN WALL DESIGNER/CONTRACTOR'S WALL DESIGN PLANS.

CONSTRUCTION NOTES

ASSUME DRILLING THROUGH IN-PLACE ROCK OR RESIDUAL SOIL REQUIRED FOR INSTALLTION OF SOLDIER PILES.

TYPICAL CROSS-SECTION ON PREVIOUS SHEET DEPICTS CONDITIONS FOR DESIGN LOADS.

THE CONTRACTOR SHALL COORDINATE THE WALL DESIGN CONFIGURATION AND DETAILS WITH EXISTING AND PROPOSED UTILITIES TO AVOID CONFLICTS.

BECAUSE OF THE LIMITED AMOUNT OF BEDROCK INFORMATION ALONG THE WALL ALIGNMENT, ONE PERCUSSION TEST HOLE SHOULD BE DRILLED EVERY THIRD SOLDIER PILE LOCATION IN ORDER TO VERIFY BEDROCK COMPETENCY WITHIN AND BELOW THE ROCK SOCKET. THE PERCUSSION TEST HOLES SHOULD BE EXTENDED A MINIMUM OF FIVE (5) FEET OR FIVE TIMES THE PILE WIDTH/DIAMETER (5B) BELOW THE PLANNED PILE BEARING ELEVATION. EACH TEST HOLE SHALL BE EVALUATED BY A TECHNICIAN WORKING UNDER THE DIRECT SUPERVISION OF A LICENSED GEOTECHNICAL ENGINEER BY MONITORING THE ADVANCEMENT OF THE PERCUSSION DRILLING TOOLS. THE PERCUSSION DRILLING TOOLS SHOULD ADVANCE WITH DEPTH AT A CONSISTENT RATE. RAPID ADVANCEMENT OR "DROPPING" OF THE DRILL TOOLS OF GREATER THAN 2 INCHES SHALL CONSTITUTE A DISCONTINUITY OR DELETERIOUS FEATURE. AFTER PENETRATING THE MINIMUM REQUIRED EMBEDMENT DEPTH, NO DISCONTINUITY OR DELETERIOUS FEATURE OF GREATER THAN 2 INCHES WILL BE ACCEPTED WITHIN THE PROPOSED ROCK SOCKET. CUMULATIVE DISCONTINUITIES OR DELETERIOUS FEATURES SHALL NOT EXCEED 6 INCHES TOTAL BENEATH THE PROPOSED ROCK SOCKET. IF THE ABOVE CUMULATIVE DELETERIOUS FEATURES ARE EXCEEDED UPON REACHING THE MINIMUM DISTANCE BELOW THE ROCK SOCKET, THE DESIGNER SHALL BE CONTACTED TO ASSESS THE PILE EMBEDMENT REQUIREMENTS INHERENT TO THEIR DESIGN ASSUMPTIONS. THE TEST HOLES SHALL BE PAID SEPARATELY UNDER ITEM NO. 203-40.05.

DUE TO THE SITE GEOLOGY AND THE POTENTIAL CORROSIVE ENVIRONMENT AT THE ANCHOR AREA, IT IS RECOMMENDED THAT THE TENDON BOND LENGTH BE ENCAPSULATED TO PROVIDE ADDITIONAL CORROSION PROTECTION (DOUBLE CORROSION PROTECTION), THE ENCAPSULATION SHALL BE FABRICATED FROM ONE THE FOLLOWING:

i. HIGH DENSITY CORRUGATED POLYETHYLENE TUBING CONFORMING TO THE REQUIREMENTS OF ASSHTO M 252 AND HAVING A MINIMUM WALL THICKNESS OF 0.06 INCH EXEPT PREGROUTED TENDONS, WHICK MAY HAVE A MINIMUM WALL THICHNESS OF 0.04 INCH.

ii. CORRUGATED POLYVINYL CHLORIDE TUBES MANUFACTURED FROM RIGID PVC COMPOUNDS CONFORMING TO ASTM D 1784, CLASS 13646-B.

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

SR-10 NORTHBOUND
MACON COUNTY
STA.133+50.00 TO STA.146+25.00

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 1 GEOTECHNICAL NOTES

19-MAR-2014 12:33
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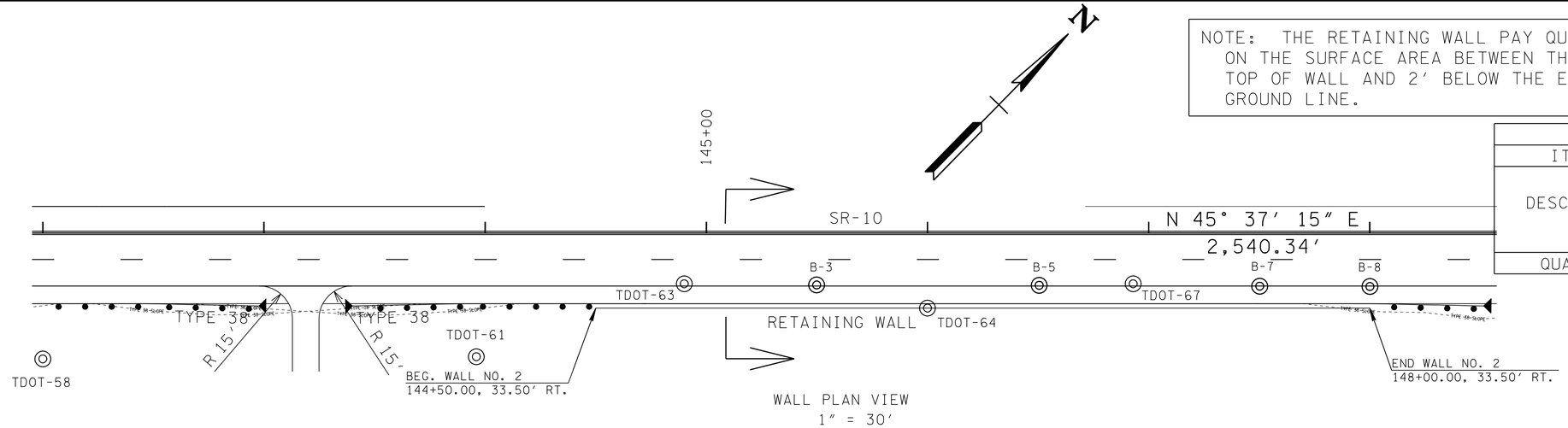
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	2
CONST.	2014	STP/HSIP-10(24)	2S

NOTE: THE RETAINING WALL PAY QUANTITY IS BASED ON THE SURFACE AREA BETWEEN THE APPROXIMATE TOP OF WALL AND 2′ BELOW THE EXISTING/PROPOSED GROUND LINE.

ESTIMATED QUANTITIES		
ITEM NO.	604-07.02	620-05.01
DESCRIPTION	RETAINING WALL (WALL NO. 2) SQ. FT.	CONCRETE PARAPET SINGLE SLOPE (STD-1-1SS) L.F.
QUANTITY	3,800	350



WALL PLAN VIEW
1″ = 30′

△L2 LETTING REV: 05-19-14 REVISED ITEM NO. 604-07.02 QUANTITY. ADDED PROPOSED GROUND LINE @ WALL FACE. ADDED 2′ LINE BELOW PROP. GROUND @ WALL FACE.

LEGEND:

◎ TDOT BORING

◎ SOIL SAMPLE BORING

NOTES:

1. THE INFORMATION FOR THE PLAN, ELEVATION AND CROSS-SECTIONS VIEWS PRESENTED ON THIS DRAWING WAS PROVIDED BY THE TENNESSSEE DEPARTMENT OF TRANSPORTATION ON APRIL 9, 2013.
2. BORINGS IDENTIFIED BY THE TDOT-*** DESIGNATION WERE DRILLED AS PART OF THE ROADWAY GEOTECHNICAL EXPLORATION. THE LOCATION AND SUBSURFACE INFORMATION PRESENTED ON THIS DRAWING WAS PROVIDED BY THE TDOT GEOTECHNICAL ENGINEERING SECTION.
3. THIS DRAWING IS FOR FOUNDATION DATA ONLY AND IS NOT TO BE USED AS A LAYOUT.

TDOT BORING INFORMATION

BORING NO.	STATION	OFFSET	ELEVATION
TDOT-58	142+00.00	57.00′ RT	692.1
TDOT-61	143+96.00	56.00′ RT	691.8
TDOT-63	144+90.00	23.00′ RT	704.9
TDOT-64	146+00.00	34.00′ RT	706.0
TDOT-67	146+93.00	23.00′ RT	707.4

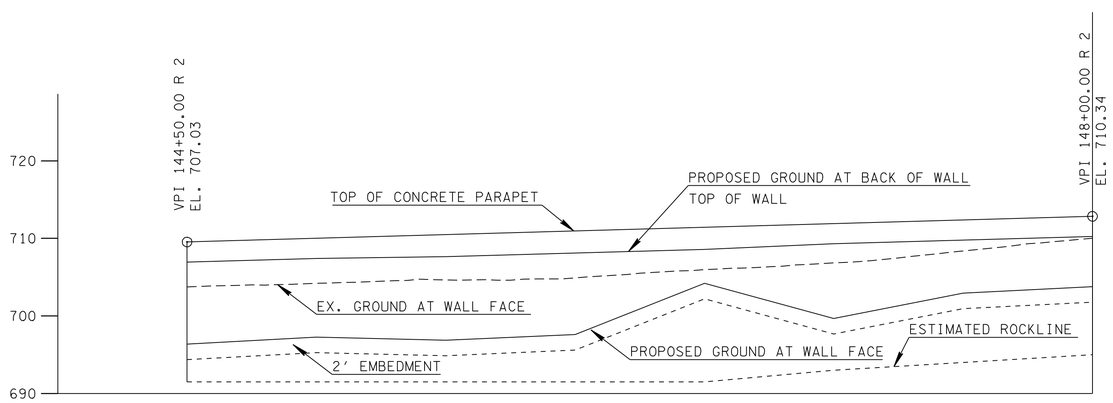
NOTE: BORING INFORMATION PROVIDED BY TDOT GEOTECHNICAL SECTION.

STANTEC BORING INFORMATION

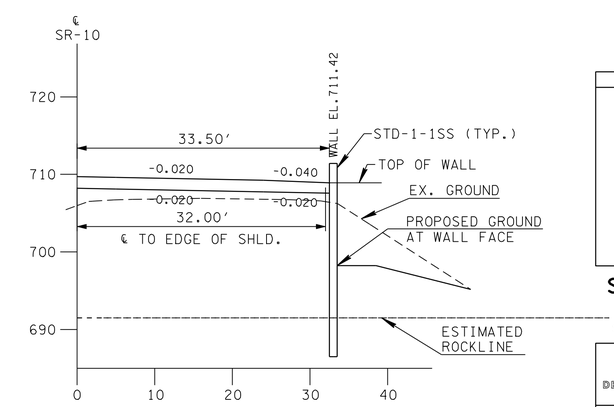
BORING NO.	STATION	OFFSET	NORTHING	EASTING	ELEVATION
B-3	145+49.89	23.54′ RT	791231.50	1955739.55	705.76
B-5	146+50.50	23.69′ RT	791301.76	1955811.56	706.78
B-7	147+50.21	24.09′ RT	791371.21	1955883.11	709.09
B-8	148+00.03	24.22′ RT	791405.96	1955918.81	711.13

NOTE: SURVEY INFORMATION PROVIDED BY CIVIL DESIGN GROUP.

NOTE: WHEN PARAPET ON TOP OF RETAINING WALL IS REQUIRED AND MSE OR SOLDIER PILE WALL SYSTEM IS SELECTED, A MOMENT SLAB WILL BE REQUIRED AND PAID FOR IN THE COST OF THE RETAINING WALL. DESIGN OF THE MOMENT SLAB IS THE RESPONSIBILITY OF THE WALL SYSTEM COMPANY. MOMENT SLAB IS TO BE DESIGNED BY A TENNESSEE LICENSED ENGINEER.



WALL ELEVATION VIEW
1″ = 30′ H
1″ = 10′ V



WALL TYP. CROSS-SECTION @ STA 146+50.00
1″ = 10′ H
1″ = 10′ V

UNOFFICIAL SET
NOT FOR BIDDING

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MACON COUNTY
STA.144+50.00 TO STA.148+00.00

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 2
GEOTECHNICAL DESIGN DRAWING

SHEET 1 OF 3

U-58-165

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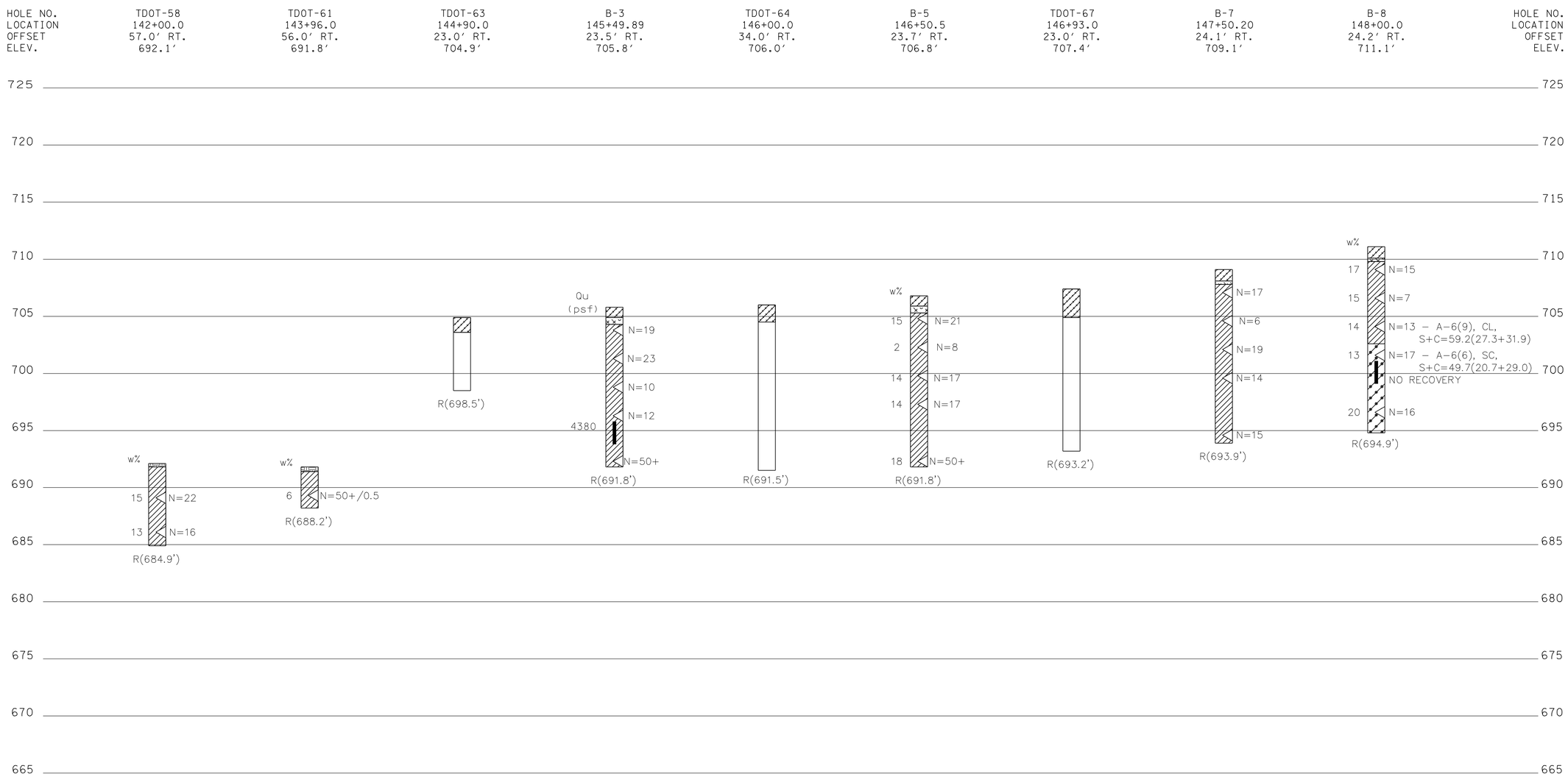
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	
CONST.	2014	STP/PHSIP-10(24)	2Sa



LOGS OF BORINGS

LEGEND

- ASPHALT AND BASE COURSE
- AGGREGATE
- OVERBURDEN
- SANDY CLAY
- CLAY
- LIMESTONE

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

SR-10 NORTHBOUND
MACON COUNTY
STA.144+50.00 TO STA.148+00.00

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL
NO. 2
LOGS OF BORINGS
DRAWING

SHEET 2 OF 3

03-MAR-2014 15:45
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\SHEET 2Sa_Wall-2_Logs.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	
CONST.	2014	STP/PHSIP-10(24)	2Sb

RETAINING WALL DESIGN NOTES

UNLESS SPECIFICALLY STATED OTHERWISE IN THE CONTRACT PLANS, THE BIDDING FOR, THE DESIGN OF AND THE CONSTRUCTION OF RETAINING WALLS SHOWN IN THE PLANS SHALL BE GOVERNED BY THE TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. THIS SPECIAL PROVISION SHALL BE CONSIDERED AS ONE OF THOSE DOCUMENTS WHICH THE BIDDER/CONTRACTOR HAS EXAMINED AND MADE HIMSELF FAMILIAR WITH AS DESCRIBED IN SECTION 102.04 - EXAMINATION OF THE SITE, THE WORK, THE PLANS, AND THE SPECIFICATIONS IN THE TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

EXCAVATION FOR THE WALL AND/OR ITS FOOTING SHALL NOT BE ACCOMPLISHED UNTIL THE CONTRACTOR HAS SUBMITTED WALL DESIGNS AND CALCULATIONS AND HAS BEEN ISSUED AN APPROVED SET OF WALL PLANS AND HAS LABOR AND MATERIAL RESOURCES AVAILABLE TO BEGIN AND CONTINUE WALL CONSTRUCTION IMMEDIATELY AFTER EXCAVATION.

THIS WALL SHALL BE DESIGNED IN ACCORDANCE WITH LRFD DESIGN PROCEDURES AND REQUIREMENTS AS DESCRIBED IN 1) AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS AND 2) PUBLICATION FHWA-IF-99-015/FHWA GEC 004 GROUND ANCHORS AND ANCHORED SYSTEMS, JUNE 1999.

FOR PROPRIETARY WALL SYSTEMS THAT HAVE BEEN APPROVED AS SHOWN IN SPECIAL PROVISION 624, THE WALL DESIGNER SHALL BE RESPONSIBLE FOR PROVIDING WALL DESIGNS INCORPORATING MATERIALS AND COMPONENTS (I.E. REINFORCEMENT CONNECTION DEVICES, SPECIFIC MANUFACTURER AND PROPERTIES OF GEOGRID) AS WAS ORIGINALLY SUBMITTED AND APPROVED BY TDOT, IF A MATERIAL AND/OR COMPONENT OF THE WALL SYSTEM HAVE BEEN MODIFIED FROM THE ORIGINALLY APPROVED SYSTEM, A WALL DESIGN AND SET OF PLANS AND CALCULATIONS FOR THIS WALL SYSTEM CANNOT BE SUBMITTED FOR REVIEW AND APPROVAL UNTIL THE WALL SYSTEM DESIGNER WHO ORIGINALLY SUBMITTED THE WALL SYSTEM FOR APPROVAL BY TDOT SUBMITS A REQUEST FOR RE-APPROVAL UTILIZING THE MODIFIED ELEMENTS OF THE WALL. THIS SUBMITTAL DOES NOT GUARANTEE APPROVAL OF THE MODIFIED SYSTEM. IF THIS RE-APPROVAL PROCESS DOES NOT MEET THE CONTRACTOR'S SCHEDULE OR IF THE MODIFIED SYSTEM IS NOT APPROVED, THE CONTRACTOR/WALL DESIGNER SHALL PROVIDE A WALL DESIGN FOR ONE OF THE APPROVED SYSTEMS AT NO CHANGE IN CONTRACT PRICE FOR THE RETAINING WALL AND NO CHANGE IN PROJECT SCHEDULE REQUIREMENTS WILL BE ALLOWED.

THE WALL DESIGNER SHALL PROVIDE RETAINING WALL PLANS, DETAILS AND CALCULATIONS AS REQUIRED BY SPECIAL PROVISION 624 AND AS REQUIRED HEREIN.

- THE WALL DESIGNER SHALL UTILIZE THE GEOTECHNICAL PARAMETERS AND RESISTANCE FACTORS AS PROVIDED FOR EACH PROJECT RETAINING WALL ON THE WALL CONCEPT SHEET AND RELATED RETAINING WALL SHEETS TO PREPARE AND SUBMIT DESIGN CALCULATIONS. LOAD FACTORS AND OTHER PERTINENT DESIGN REQUIREMENTS PROVIDED IN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS SHALL BE USED FOR NON-MSE WALLS AND PUBLICATION FHWA-NHI-10-024/FHWA GEC 011, DESIGN AND CONSTRUCTION OF MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES, NOVEMBER 2009 FOR MSE WALLS.
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- UNLESS OTHERWISE STATED, THE WALL DESIGNER CAN ASSUME THAT MINIMUM GLOBAL STABILITY AND SETTLEMENT CRITERIA IS ACHIEVED WITH A WALL DESIGN MEETING OTHER MINIMUM EXTERNAL STABILITY REQUIREMENTS AND ASSUMING WALL FOUNDATION CONDITIONS ARE MET. WHILE THE WALL DESIGNER'S DESIGN MUST DEMONSTRATE COMPLIANCE WITH EXTERNAL STABILITY REQUIREMENTS AS DISCUSSED ABOVE, THE WALL DESIGNER MAY PROVIDE CERTIFICATION (BY SIGNING AND STAMPING BY PROFESSIONAL ENGINEER REGISTERED IN STATE OF TENNESSEE) OF THE WALLS PLANS AND CALCULATIONS "FOR INTERNAL STABILITY ONLY".
- LOAD COMBINATIONS STRENGTH I, EXTREME EVENT I, AND EXTREME EVENT II AS GIVEN IN TABLE 4-1 OF PUBLICATION FHWA-NHI-10-024/FHWA GEC 011, DESIGN AND CONSTRUCTION OF MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES, NOVEMBER 2009 FOR MSE WALLS SHALL BE EVALUATED FOR MSE WALLS. LOAD COMBINATIONS FOR OTHER WALL TYPES SHALL BE AS GIVEN IN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS

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- SOLDIER PILE AND LAGGING WALL (UNANCHORED)
- ANCHORED WALL (ANCHORS SHALL NOT EXTEND OUTSIDE OF THE TDOT RIGHT-OF-WAY)

TABLE 1-DESIGN REQUIREMENTS AND PARAMETERS

DESCRIPTION	VALUE-SOLDIER PILE AND LAGGING WALLS (UNANCHORED AND ANCHORED)	NOTE *
DESIGN LIFE	75 YEARS	
SEISMIC ACCELERATION COEFFICIENT (As)	0.201	
EFFECTIVE (DRAINED) FRICTION ANGLE		
RETAINED BACKFILL-UNCLASSIFIED SITE OR BORROW SOIL	26°	
RETAINED BACKFILL-SELECT BACKFILL	34° TO MAX 40°	1
UNIT WEIGHT		
UNCLASSIFIED SITE OR BORROW SOIL	120 POUNDS PER CUBIC FOOT	
SELECT BACKFILL MATERIAL	VARIES	1A
PULLOUT RESISTANCE OF ANCHORS		
COHESIONLESS (GRANULAR) SOILS	0.65	2
COHESIVE SOILS	0.70	
ROCK	0.50	
WHERE PROOF TESTS ARE CONDUCTED	1.0	3
TENSILE RESISTANCE OF ANCHOR TENDON		
MILD STEEL, (E.G., ASTM A615 BARS)	0.90	4
HIGH STRENGTH STEEL (E.G., ASTM A722 BARS)	0.80	
FLEXURAL CAPACITY OF VERTICAL ELEMENTS	0.90	
RESISTANCE FACTORS OF A SINGLE DRIVEN PILE		
STATIC ANALYSIS METHODS		
SIDE RESISTANCE AND END BEARING: CLAY AND MIXED SOILS		
α -METHOD (TOMLINSON, 1987; SKEMPTON, 1951)	0.35	
β -METHOD (ESRIG & KIRBY, 1997; SKEMPTON 1951)	0.25	
λ -METHOD (VIJAYVERGIYA & FOCHT, 1972; SKEMPTON 1951)	0.40	
SIDE RESISTANCE AND END BEARING: SAND		
NORDLUND/THURMAND METHOD (HANNIGAN ET AL, 2005	0.45	
SPT-METHOD (MEYERHOF)	0.30	
CPT-METHOD (SCHMERTMANN)	0.50	
END BEARING IN ROCK (CANADIAN GEOTECHNICAL SOCIETY)	0.45	
LATERAL GEOTECHNICAL RESISTANCE OF A SINGLE PILE		
ALL SOILS AND ROCK	1.0	
RESISTANCE FACTORS OF A SINGLE DRILLED PILE/SHAFT		
SIDE RESISTANCE IN CLAY		
α -METHOD (O'NEILL AND REESE, 1999)	0.45	
TIP RESISTANCE IN CLAY		
TOTAL STRESS (O'NEILL AND REESE, 1999)	0.40	
SIDE RESISTANCE IN SAND		
β -METHOD (O'NEILL AND REESE, 1999)	0.55	
TIP RESISTANCE IN SAND		
O'NEILL AND REESE, 1999	0.50	
SIDE RESISTANCE IN INTERMEDIATE GEOMATERIALS (IGMs)		
O'NEILL AND REESE, 1999	0.60	
TIP RESISTANCE IN INTERMEDIATE GEOMATERIALS (IGMs)		
O'NEILL AND REESE, 1999	0.55	
SIDE RESISTANCE IN ROCK		
HORVATH AND KENNEY (1979), OR O'NEILL AND REESE (1999)	0.55	
CARTER AND KULHAWY (1988)	0.50	
TIP RESISTANCE IN ROCK		
CANADIAN GEOTECHNICAL. SOCIETY (1985), ORO'NEILL AND REESE (1999)	0.50	
LATERAL GEOTECHNICAL RESISTANCE OF A SINGLE PILE/SHAFT		
ALL MATERIALS	1.0	
*REFER TO TABLE 1.1 FOR NOTES.		

TABLE 1.1
NOTES FOR TABLE 1

NO.	NOTE
1	A MINIMUM FRICTION ANGLE OF 34 DEGREES CAN BE ASSUMED FOR MATERIAL MEETING SPECIFICATIONS IN SECTION F, PART1, AND ITEM E OF TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. A HIGHER FRICTION ANGLE CAN BE UTILIZED IF THE CONTRACTOR SUBMITS INDEPENDENT TESTING AND IT IS VERIFIED BY TDOT. HOWEVER, IN NO CASE SHALL THE FRICTION ANGLE FOR ANALYSIS EXCEED 40-DEGREES.
1A	SELECT BACKFILL UNIT WEIGHT TO BE DETERMINED BY CONTRACTOR/DESIGNER DEPENDING ON ACTUAL BACKFILL MATERIAL USED. SELECT BACKFILL IS DEFINED AS MATERIAL MEETING SPECIFICATIONS IN SECTION F, PART 1, AND ITEM E OF TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. IN ORDER TO UTILIZED ϕ FOR SELECT BACKFILL DESIGN, SELECT BACKFILL MUST BE PLACED FOR A MINIMUM ZONE FORMED BY A 1:1 SLOPE FROM 2 FEET BEHIND THE BOTTOM OF BACK OF WALL FOOTING OR REINFORCED SOIL ZONE FOR MSE WALLS UP TO FINISHED GRADE.
2	APPLY TO PRESUMPTIVE ULTIMATE UNIT BOND STRESSES FOR PRELIMINARY DESIGN ONLY
3	APPLY WHERE PROOF TEST(S) ARE CONDUCTED ON EVERY PRODUCTION ANCHOR TO A LOAD OF 1.0 OR GREATER TIMES THE FACTORED LOAD ON THE ANCHOR.
4	APPLY TO MAXIMUM PROOF TEST FOR ANCHORS. FOR MILD STEEL, APPLY RESISTANCE FACTOR TO Fy. FOR HIGH STRENGTH STEEL, APPLY THE RESISTANCE FACTOR TO GUARANTEED ULTIMATE TENSILE STRENGTH.
	UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE FACTORS SHALL BE TAKEN AS 1.0 WHEN INVESTIGATING AN EXTREME EVENT LIMIT STATE

SEE GENERAL NOTES ON SHEET U-58-160.

TABLE 2 SOIL AND BED ROCK DESIGN PARAMETERS FOR SOLDIER PILE AND LAGGING WALL

STATION LIMITS	MATERIAL	NOMINAL PULLOUT RESISTANCE	UNCONFINED COMPRESSIVE STRENGTH	UNIT WEIGHT
144+50 - 148+00	LEAN CLAY, SANDY, WITH CHERT	0.6 ksf	1.5 ksf	120 pcf
	LIMESTONE (LEIPERS AND CATHEYS FORMATION)	20 ksf	350 ksf*	145 pcf

* INTACT ROCK CORE SPECIMEN

OTHER DESIGN REQUIREMENTS

THE ROCK SOCKETS FOR THE SOLDIER PILES AND ANCHORS WILL BE CONSTRUCTED IN LIMESTONE BEDROCK OF THE LEIPERS AND CATHEYS FORMATION. THE ESTIMATED ROCK LINE IS DEPICTED ON THE WALL PROFILE SHOWN ON THE RETAINING WALL GEOTECHNICAL DESIGN DRAWING AND THE ROADWAY CROSS-SECTIONS IN THE CONSTRUCTION PLAN SET. BASED ON ROCK DESCRIPTIONS OF LEIPERS AND CATHEYS FORMATION LIMESTONE ON THE BORING LOGS, STANTEC RECOMMENDS A PRESUMPTIVE UNCONFINED COMPRESSIVE STRENGTH OF 350 KSF FOR INTACT ROCK CORE SPECIMENS AND A UNIT WEIGHT OF 145 PCF BE USED FOR DESIGN PURPOSES. THE RETAINING WALL DESIGNER SHALL REDUCE THE STRENGTH OF THE INTACT ROCK CORE SPECIMENS TO BE REPRESENTATIVE OF THE ROCK MASS FOR DESIGN PURPOSES BASED ON THEIR INTERPRETATION OF ROCK CORING DATA PRESENTED ON THE GRAPHICAL BORING LOGS SHOWN ON THE RETAINING WALL GEOTECHNICAL DESIGN DRAWINGS.

ALL SOLDIER PILES SHALL BE SOCKETED INTO BEDROCK A MINIMUM OF 5 FEET. THE TOTAL EMBEDMENT DEPTHS SHALL BE DETERMINED BY THE WALL DESIGNER BASED ON THE LATERAL AND VERTICAL LOAD RESISTANCE REQUIREMENTS INHERENT TO THEIR DESIGN CONFIGURATION.

THE WALL SHALL HAVE A DRAINAGE GUTTER AT THE TOP DESIGNED TO CARRY SURFACE RUNOFF TO EITHER OR BOTH ENDS OF WALLS. DETAILS OF THIS DRAINAGE FEATURE SHALL BE PROVIDED IN WALL DESIGNER/CONTRACTOR'S WALL DESIGN PLANS.

CONSTRUCTION NOTES

ASSUME DRILLING THROUGH IN-PLACE ROCK OR RESIDUAL SOIL REQUIRED FOR INSTALLTION OF SOLDIER PILES.

TYPICAL CROSS-SECTION ON PREVIOUS SHEET DEPICTS CONDITIONS FOR DESIGN LOADS.

THE CONTRACTOR SHALL COORDINATE THE WALL DESIGN CONFIGURATION AND DETAILS WITH EXISTING AND PROPOSED UTILITIES TO AVOID CONFLICTS.

BECAUSE OF THE LIMITED AMOUNT OF BEDROCK INFORMATION ALONG THE WALL ALIGNMENT, ONE PERCUSSION TEST HOLE SHOULD BE DRILLED EVERY THIRD SOLDIER PILE LOCATION IN ORDER TO VERIFY BEDROCK COMPETENCY WITHIN AND BELOW THE ROCK SOCKET. THE PERCUSSION TEST HOLES SHOULD BE EXTENDED A MINIMUM OF FIVE (5) FEET OR FIVE TIMES THE PILE WIDTH/DIAMETER (5B) BELOW THE PLANNED PILE BEARING ELEVATION. EACH TEST HOLE SHALL BE EVALUATED BY A TECHNICIAN WORKING UNDER THE DIRECT SUPERVISION OF A LICENSED GEOTECHNICAL ENGINEER BY MONITORING THE ADVANCEMENT OF THE PERCUSSION DRILLING TOOLS. THE PERCUSSION DRILLING TOOLS SHOULD ADVANCE WITH DEPTH AT A CONSISTENT RATE. RAPID ADVANCEMENT OR "DROPPING" OF THE DRILL TOOLS OF GREATER THAN 2 INCHES SHALL CONSTITUTE A DISCONTINUITY OR DELETERIOUS FEATURE. AFTER PENETRATING THE MINIMUM REQUIRED EMBEDMENT DEPTH, NO DISCONTINUITY OR DELETERIOUS FEATURE OF GREATER THAN 2 INCHES WILL BE ACCEPTED WITHIN THE PROPOSED ROCK SOCKET. CUMULATIVE DISCONTINUITIES OR DELETERIOUS FEATURES SHALL NOT EXCEED 6 INCHES TOTAL BENEATH THE PROPOSED ROCK SOCKET. IF THE ABOVE CUMULATIVE DELETERIOUS FEATURES ARE EXCEEDED UPON REACHING THE MINIMUM DISTANCE BELOW THE ROCK SOCKET, THE DESIGNER SHALL BE CONTACTED TO ASSESS THE PILE EMBEDMENT REQUIREMENTS INHERENT TO THEIR DESIGN ASSUMPTIONS. THE TEST HOLES SHALL BE PAID SEPARATELY UNDER ITEM NO. 203-40.05.

DUE TO THE SITE GEOLOGY AND THE POTENTIAL CORROSIVE ENVIRONMENT AT THE ANCHOR AREA, IT IS RECOMMENDED THAT THE TENDON BOND LENGTH BE ENCAPSULATED TO PROVIDE ADDITIONAL CORROSION PROTECTION (DOUBLE CORROSION PROTECTION), THE ENCAPSULATION SHALL BE FABRICATED FROM ONE THE FOLLOWING:

i. HIGH DENSITY CORRUGATED POLYETHYLENE TUBING CONFORMING TO THE REQUIREMENTS OF ASSHTO M 252 AND HAVING A MINIMUM WALL THICKNESS OF 0.06 INCH EXEPT PREGROUTED TENDONS, WHICK MAY HAVE A MINIMUM WALL THICHNESS OF 0.04 INCH.

ii. CORRUGATED POLYVINYL CHLORIDE TUBES MANUFACTURED FROM RIGID PVC COMPOUNDS CONFORMING TO ASTM D 1784, CLASS 13646-B.

UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY

SR-10 NORTHBOUND
MACON COUNTY
STA.144+50.00 TO STA.148+00.00

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 2 GEOTECHNICAL NOTES

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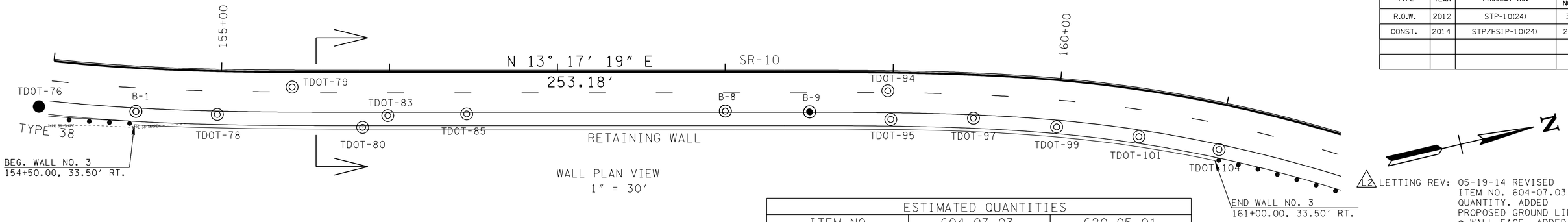
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	3
CONST.	2014	STP/HSIP-10(24)	2T



WALL PLAN VIEW
1″ = 30′

L2 LETTING REV: 05-19-14 REVISED ITEM NO. 604-07.03 QUANTITY. ADDED PROPOSED GROUND LINE @ WALL FACE. ADDED 2′ LINE BELOW PROP. GROUND @ WALL FACE.

ESTIMATED QUANTITIES		
ITEM NO.	604-07.03	620-05.01
DESCRIPTION	RETAINING WALL (WALL NO. 3) SQ. FT.	CONCRETE PARAPET SINGLE SLOPE (STD-1-1SS) L.F.
QUANTITY	5,445	650

TDOT BORING INFORMATION

BORING NO.	STATION	OFFSET	ELEVATION
TDOT-76	153+94.00	28.00′ RT	722.8
TDOT-78	154+98.00	26.00′ RT	718.0
TDOT-79	155+42.00	9.00′ RT	715.6
TDOT-80	155+84.00	33.00′ RT	714.8
TDOT-83	155+99.00	26.00′ RT	714.6
TDOT-85	156+46.00	25.00′ RT	714.2
TDOT-94	158+97.00	11.00′ RT	725.4
TDOT-95	158+99.00	28.00′ RT	724.4
TDOT-97	159+49.00	26.00′ RT	728.0
TDOT-99	160+00.00	28.00′ RT	731.4
TDOT-101	160+51.00	28.00′ RT	734.7
TDOT-104	161+01.00	27.00′ RT	737.8

NOTE: BORING INFORMATION PROVIDED BY TDOT GEOTECHNICAL SECTION.

STANTEC BORING INFORMATION

BORING NO.	STATION	OFFSET	NORTHING	EASTING	ELEVATION
B-1	154+50.41	26.05′ RT	791935.48	1956302.30	720.19
B-8	158+00.02	23.35′ RT	792277.16	1956382.82	718.37
B-9	158+50.24	23.79′ RT	792325.91	1956394.80	721.46

NOTE: SURVEY INFORMATION PROVIDED BY CIVIL DESIGN GROUP.

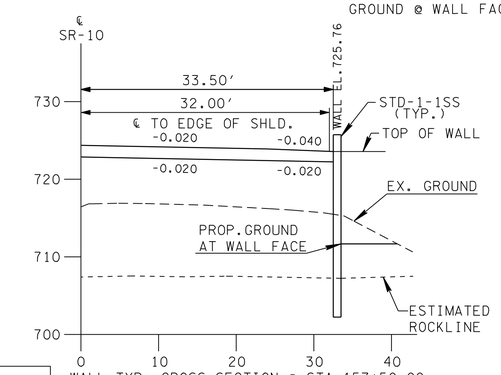
NOTES:

1. THE INFORMATION FOR THE PLAN, ELEVATION AND CROSS-SECTIONS VIEWS PRESENTED ON THIS DRAWING WAS PROVIDED BY THE TENNESSSEE DEPARTMENT OF TRANSPORTATION ON APRIL 9, 2013.
2. BORINGS IDENTIFIED BY THE TDOT-### DESIGNATION WERE DRILLED AS PART OF THE ROADWAY GEOTECHNICAL EXPLORATION. THE LOCATION AND SUBSURFACE INFORMATION PRESENTED ON THIS DRAWING WAS PROVIDED BY THE TDOT GEOTECHNICAL ENGINEERING SECTION.
3. THIS DRAWING IS FOR FOUNDATION DATA ONLY AND IS NOT TO BE USED AS A LAYOUT.

LEGEND:

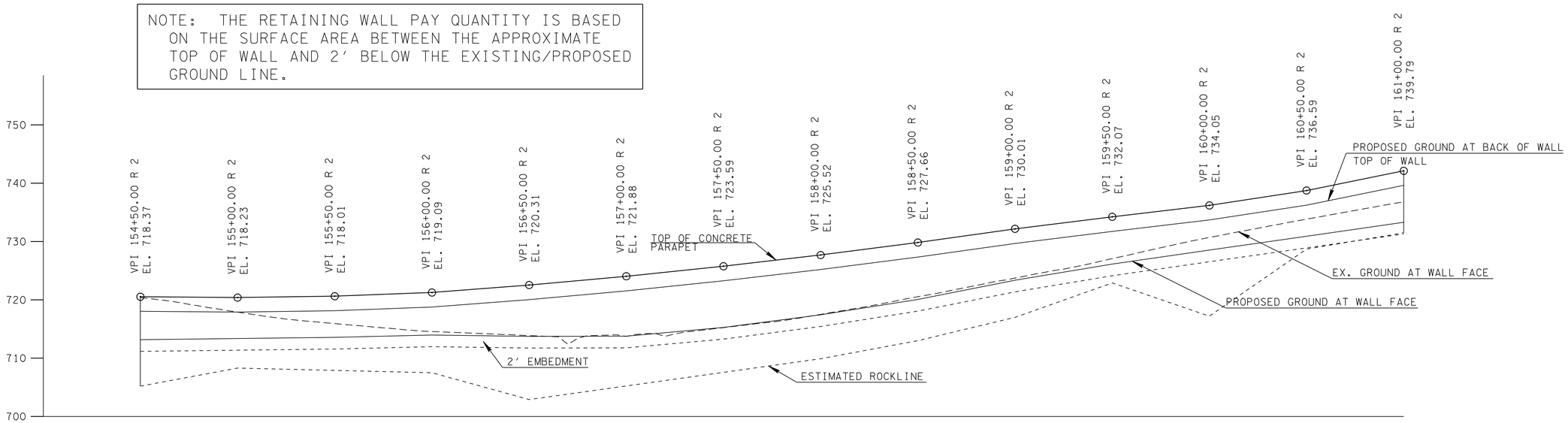
- TDOT BORING
- TDOT ROCK CORE BORING
- SOIL SAMPLE BORING
- SOIL SAMPLE BORING WITH ROCK CORE

NOTE: WHEN PARAPET ON TOP OF RETAINING WALL IS REQUIRED AND MSE OR SOLDIER PILE WALL SYSTEM IS SELECTED, A MOMENT SLAB WILL BE REQUIRED AND PAID FOR IN THE COST OF THE RETAINING WALL. DESIGN OF THE MOMENT SLAB IS THE RESPONSIBILITY OF THE WALL SYSTEM COMPANY. MOMENT SLAB IS TO BE DESIGNED BY A TENNESSEE LICENSED ENGINEER.



WALL TYP. CROSS-SECTION @ STA 157+50.00
1″ = 10′ H
1″ = 10′ V

NOTE: THE RETAINING WALL PAY QUANTITY IS BASED ON THE SURFACE AREA BETWEEN THE APPROXIMATE TOP OF WALL AND 2′ BELOW THE EXISTING/PROPOSED GROUND LINE.



WALL ELEVATION VIEW
1″ = 30′ H
1″ = 10′ V

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 3
GEOTECHNICAL DESIGN DRAWINGS

SHEET 1 OF 4

U-58-168

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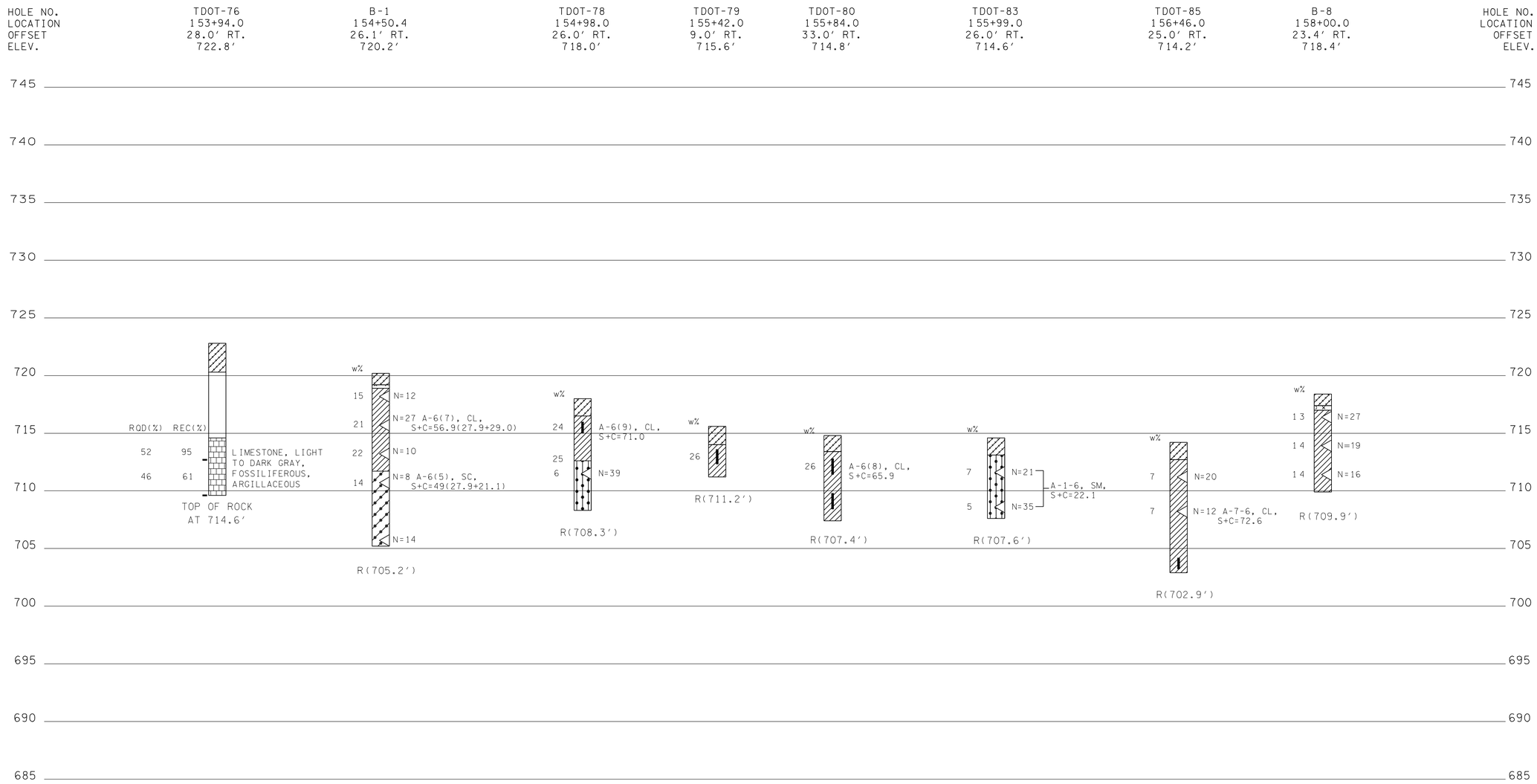
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	
CONST.	2014	STP/PHSIP-10(24)	2Ta

DIRECT SHEAR TEST RESULTS

HOLE NUMBER	DEPTH (FEET)	Ø	C
TDOT-78	2.0 - 2.6	21.1	706.0
TDOT-80	2.0 - 2.4	32.2	279.0



LOGS OF BORINGS

LEGEND

- ASPHALT AND BASE COURSE
- AGGREGATE
- OVERBURDEN
- SANDY CLAY
- CLAY
- SANDY SILT
- LIMESTONE

UNOFFICIAL SET

NOT FOR BIDDING

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 3
LOGS OF BORINGS DRAWING

SHEET 2 OF 4

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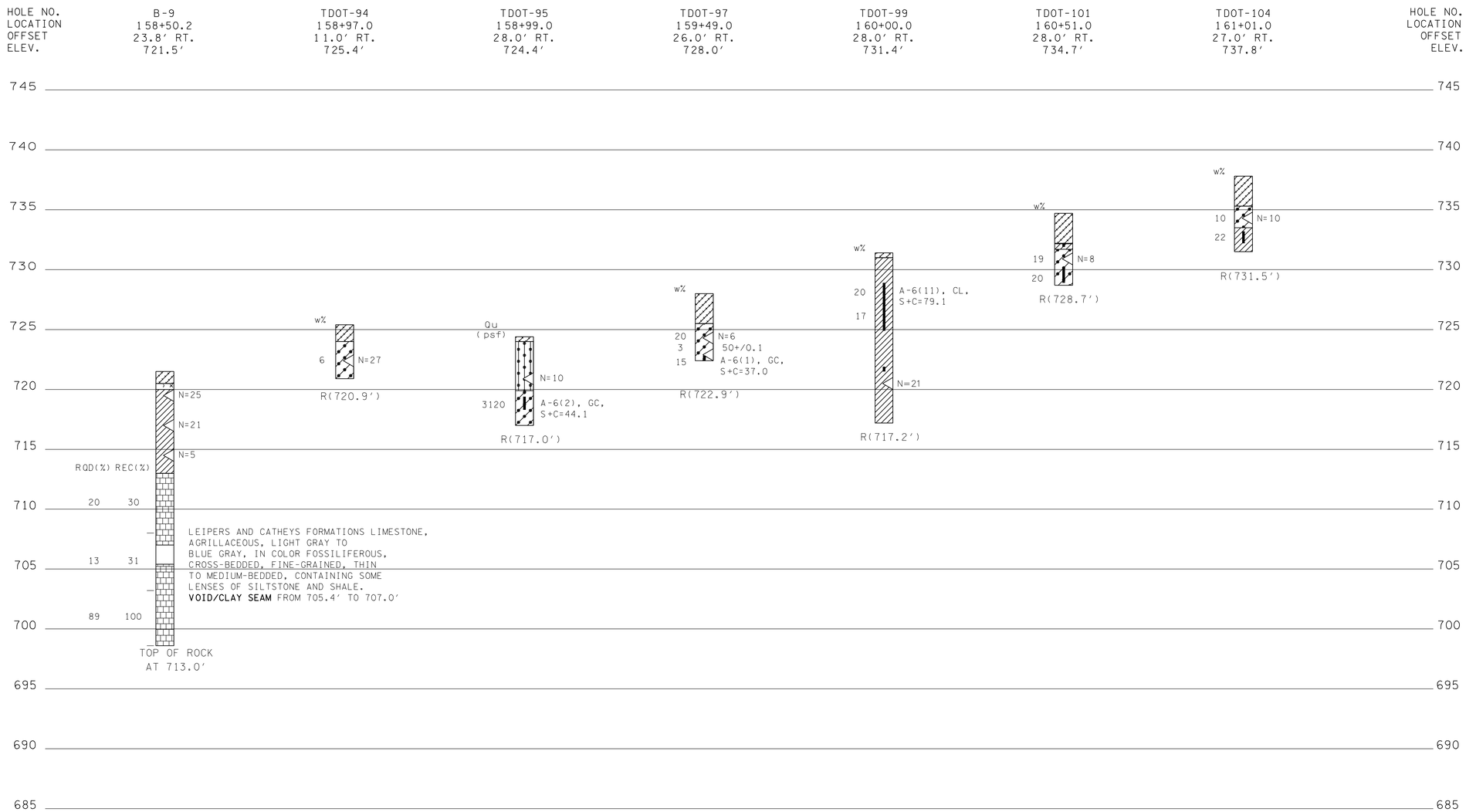
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	
CONST.	2014	STP/PHSIP-10(24)	2Tb

CONSOLIDATED UNDRAINED TRIAXIAL TEST RESULTS	
LOCATION	STA. 160+00, 28.0 RT. (TDOT-99)
DEPTH	2.8′ TO 5.0′
$\bar{\Phi}$	35.4°
$\bar{c}$	366 psf



LOGS OF BORINGS

LEGEND

- ASPHALT AND BASE COURSE
- AGGREGATE
- GRAVELLY CLAY
- CLAY
- SANDY SILT
- LIMESTONE

UNOFFICIAL SET

NOT FOR BIDDING

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MACON COUNTY
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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL
NO. 3
LOGS OF BORINGS
DRAWINGS

SHEET 3 OF 4

13-MAR-2014 15:46
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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	
CONST.	2014	STP/PHSIP-10(24)	2Tc

RETAINING WALL DESIGN NOTES

UNLESS SPECIFICALLY STATED OTHERWISE IN THE CONTRACT PLANS, THE BIDDING FOR, THE DESIGN OF AND THE CONSTRUCTION OF RETAINING WALLS SHOWN IN THE PLANS SHALL BE GOVERNED BY THE TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. THIS SPECIAL PROVISION SHALL BE CONSIDERED AS ONE OF THOSE DOCUMENTS WHICH THE BIDDER/CONTRACTOR HAS EXAMINED AND MADE HIMSELF FAMILIAR WITH AS DESCRIBED IN SECTION 102.04 - EXAMINATION OF THE SITE, THE WORK, THE PLANS, AND THE SPECIFICATIONS IN THE TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

EXCAVATION FOR THE WALL AND/OR ITS FOOTING SHALL NOT BE ACCOMPLISHED UNTIL THE CONTRACTOR HAS SUBMITTED WALL DESIGNS AND CALCULATIONS AND HAS BEEN ISSUED AN APPROVED SET OF WALL PLANS AND HAS LABOR AND MATERIAL RESOURCES AVAILABLE TO BEGIN AND CONTINUE WALL CONSTRUCTION IMMEDIATELY AFTER EXCAVATION.

THIS WALL SHALL BE DESIGNED IN ACCORDANCE WITH LRFD DESIGN PROCEDURES AND REQUIREMENTS AS DESCRIBED IN 1) AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS AND 2) PUBLICATION FHWA-IF-99-015/FHWA GEC 004 GROUND ANCHORS AND ANCHORED SYSTEMS, JUNE 1999.

FOR PROPRIETARY WALL SYSTEMS THAT HAVE BEEN APPROVED AS SHOWN IN SPECIAL PROVISION 624, THE WALL DESIGNER SHALL BE RESPONSIBLE FOR PROVIDING WALL DESIGNS INCORPORATING MATERIALS AND COMPONENTS (I.E. REINFORCEMENT CONNECTION DEVICES, SPECIFIC MANUFACTURER AND PROPERTIES OF GEOGRID) AS WAS ORIGINALLY SUBMITTED AND APPROVED BY TDOT, IF A MATERIAL AND/OR COMPONENT OF THE WALL SYSTEM HAVE BEEN MODIFIED FROM THE ORIGINALLY APPROVED SYSTEM, A WALL DESIGN AND SET OF PLANS AND CALCULATIONS FOR THIS WALL SYSTEM CANNOT BE SUBMITTED FOR REVIEW AND APPROVAL UNTIL THE WALL SYSTEM DESIGNER WHO ORIGINALLY SUBMITTED THE WALL SYSTEM FOR APPROVAL BY TDOT SUBMITS A REQUEST FOR RE-APPROVAL UTILIZING THE MODIFIED ELEMENTS OF THE WALL. THIS SUBMITTAL DOES NOT GUARANTEE APPROVAL OF THE MODIFIED SYSTEM. IF THIS RE-APPROVAL PROCESS DOES NOT MEET THE CONTRACTOR'S SCHEDULE OR IF THE MODIFIED SYSTEM IS NOT APPROVED, THE CONTRACTOR/WALL DESIGNER SHALL PROVIDE A WALL DESIGN FOR ONE OF THE APPROVED SYSTEMS AT NO CHANGE IN CONTRACT PRICE FOR THE RETAINING WALL AND NO CHANGE IN PROJECT SCHEDULE REQUIREMENTS WILL BE ALLOWED.

THE WALL DESIGNER SHALL PROVIDE RETAINING WALL PLANS, DETAILS AND CALCULATIONS AS REQUIRED BY SPECIAL PROVISION 624 AND AS REQUIRED HEREIN.

- THE WALL DESIGNER SHALL UTILIZE THE GEOTECHNICAL PARAMETERS AND RESISTANCE FACTORS AS PROVIDED FOR EACH PROJECT RETAINING WALL ON THE WALL CONCEPT SHEET AND RELATED RETAINING WALL SHEETS TO PREPARE AND SUBMIT DESIGN CALCULATIONS. LOAD FACTORS AND OTHER PERTINENT DESIGN REQUIREMENTS PROVIDED IN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS SHALL BE USED FOR NON-MSE WALLS AND PUBLICATION FHWA-NHI-10-024/FHWA GEC 011, DESIGN AND CONSTRUCTION OF MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES, NOVEMBER 2009 FOR MSE WALLS.
- CALCULATIONS FOR BOTH INTERNAL AND EXTERNAL STABILITY (SLIDING, ECCENTRICITY, AND BEARING CAPACITY-GLOBAL STABILITY AND SETTLEMENT BEING THE EXCEPTIONS) SHALL BE PROVIDED FOR EACH CRITICAL WALL SECTION WHICH DEMONSTRATES THE REQUIRED CAPACITY TO DEMAND RATIO OF 1.0 IS MET UTILIZING THE DESIGN PARAMETERS PROVIDED. FOR MSE WALLS, THE WALL DESIGNER MUST ADJUST THE REINFORCEMENT LENGTHS BEYOND THOSE MINIMUM REQUIRED LENGTHS, IF REQUIRED, TO MEET BOTH INTERNAL AND EXTERNAL REQUIREMENTS. THE WALL DESIGNER/CONTRACTOR PLANS MUST INCLUDE ANY FOUNDATION IMPROVEMENTS AS REQUIRED HEREIN ON THE WALL DESIGNER/CONTRACTOR'S WALL ELEVATION VIEWS AND ANY CROSS-SECTIONAL DETAIL DRAWINGS.
- UNLESS OTHERWISE STATED, THE WALL DESIGNER CAN ASSUME THAT MINIMUM GLOBAL STABILITY AND SETTLEMENT CRITERIA IS ACHIEVED WITH A WALL DESIGN MEETING OTHER MINIMUM EXTERNAL STABILITY REQUIREMENTS AND ASSUMING WALL FOUNDATION CONDITIONS ARE MET. WHILE THE WALL DESIGNER'S DESIGN MUST DEMONSTRATE COMPLIANCE WITH EXTERNAL STABILITY REQUIREMENTS AS DISCUSSED ABOVE, THE WALL DESIGNER MAY PROVIDE CERTIFICATION (BY SIGNING AND STAMPING BY PROFESSIONAL ENGINEER REGISTERED IN STATE OF TENNESSEE) OF THE WALLS PLANS AND CALCULATIONS "FOR INTERNAL STABILITY ONLY".
- LOAD COMBINATIONS STRENGTH I, EXTREME EVENT I, AND EXTREME EVENT II AS GIVEN IN TABLE 4-1 OF PUBLICATION FHWA-NHI-10-024/FHWA GEC 011, DESIGN AND CONSTRUCTION OF MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES, NOVEMBER 2009 FOR MSE WALLS SHALL BE EVALUATED FOR MSE WALLS. LOAD COMBINATIONS FOR OTHER WALL TYPES SHALL BE AS GIVEN IN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS

NOTE REGARDING CONSTRUCTION SLOPES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE EXCAVATION IN ACCORDANCE WITH OSHA AND OTHER APPLICABLE STATE AND LOCAL REGULATIONS REGARDING CONSTRUCTION SLOPES AND TRENCHES. IN ADDITION TO FOLLOWING APPLICABLE REGULATORY REQUIREMENTS, AS A MINIMUM REQUIREMENT, ALL TEMPORARY CONSTRUCTION SLOPES SHALL BE PLACED AT A MAXIMUM OF A 1:1 SLOPE IN SOIL AND SHALL NOT BE LEFT OPEN WITHOUT SHORING FOR ANY LONGER THAN ABSOLUTELY NECESSARY. THE CONTRACTOR BUILDING THE WALL SHALL ENSURE THAT THESE TEMPORARY BACK SLOPES ARE NOT AND DO NOT BECOME UNSTABLE. IF SLOPE IS UNSTABLE, BECOMES UNSTABLE, IS CUT STEEPER THAN A 1:1 SLOPE OR IS UNACCEPTABLE FOR ANOTHER REASON, THEN TEMPORARY SHORING SHALL BE USED. ANY UNUSUAL SOIL CONDITIONS OTHER THAN THOSE ASSUMED SHOULD BE REPORTED TO THE PROJECT ENGINEER.

ACCEPTABLE WALL TYPES

THE RETAINING WALL SHALL BE ONE OF THE WALL TYPES LISTED BELOW. FOR RETAINING WALL SYSTEMS LISTED AS BIN WALL, CRIB WALL, MSE (EITHER SEGMENTAL PANEL OR MODULAR BLOCK) AND GROUND ANCHOR WALL, THE SPECIFIC WALL SYSTEM SUPPLIER/INSTALLER SHALL BE ONE OF THOSE LISTED AS PRE-APPROVED IN THE SPECIAL PROVISION 624.

- SOLDIER PILE AND LAGGING WALL (UNANCHORED)
- ANCHORED WALL (ANCHORS SHALL NOT EXTEND OUTSIDE OF THE TDOT RIGHT-OF-WAY)

TABLE 1-DESIGN REQUIREMENTS AND PARAMETERS

DESCRIPTION	VALUE-SOLDIER PILE AND LAGGING WALLS (UNANCHORED AND ANCHORED)	NOTE *
DESIGN LIFE	75 YEARS	
SEISMIC ACCELERATION COEFFICIENT (As)	0.201	
EFFECTIVE (DRAINED) FRICTION ANGLE		
RETAINED BACKFILL-UNCLASSIFIED SITE OR BORROW SOIL	26°	
RETAINED BACKFILL-SELECT BACKFILL	34° TO MAX 40°	1
UNIT WEIGHT		
UNCLASSIFIED SITE OR BORROW SOIL	120 POUNDS PER CUBIC FOOT	
SELECT BACKFILL MATERIAL	VARIES	1A
PULLOUT RESISTANCE OF ANCHORS		
COHESIONLESS (GRANULAR) SOILS	0.65	2
COHESIVE SOILS	0.70	
ROCK	0.50	
WHERE PROOF TESTS ARE CONDUCTED	1.0	3
TENSILE RESISTANCE OF ANCHOR TENDON		
MILD STEEL, (E.G., ASTM A615 BARS)	0.90	4
HIGH STRENGTH STEEL (E.G., ASTM A722 BARS)	0.80	
FLEXURAL CAPACITY OF VERTICAL ELEMENTS	0.90	
RESISTANCE FACTORS OF A SINGLE DRIVEN PILE		
STATIC ANALYSIS METHODS		
SIDE RESISTANCE AND END BEARING: CLAY AND MIXED SOILS		
α -METHOD (TOMLINSON, 1987; SKEMPTON, 1951)	0.35	
β -METHOD (ESRIG & KIRBY, 1997; SKEMPTON 1951)	0.25	
λ -METHOD (VIJAYVERGIYA & FOCHT, 1972; SKEMPTON 1951)	0.40	
SIDE RESISTANCE AND END BEARING: SAND		
NORDLUND/THURMAND METHOD (HANNIGAN ET AL, 2005	0.45	
SPT-METHOD (MEYERHOF)	0.30	
CPT-METHOD (SCHMERTMANN)	0.50	
END BEARING IN ROCK (CANADIAN GEOTECHNICAL SOCIETY)	0.45	
LATERAL GEOTECHNICAL RESISTANCE OF A SINGLE PILE		
ALL SOILS AND ROCK	1.0	
RESISTANCE FACTORS OF A SINGLE DRILLED PILE/SHAFT		
SIDE RESISTANCE IN CLAY		
α -METHOD (O'NEILL AND REESE, 1999)	0.45	
TIP RESISTANCE IN CLAY		
TOTAL STRESS (O'NEILL AND REESE, 1999)	0.40	
SIDE RESISTANCE IN SAND		
β -METHOD (O'NEILL AND REESE, 1999)	0.55	
TIP RESISTANCE IN SAND		
O'NEILL AND REESE, 1999	0.50	
SIDE RESISTANCE IN INTERMEDIATE GEOMATERIALS (IGMs)		
O'NEILL AND REESE, 1999	0.60	
TIP RESISTANCE IN INTERMEDIATE GEOMATERIALS (IGMs)		
O'NEILL AND REESE, 1999	0.55	
SIDE RESISTANCE IN ROCK		
HORVATH AND KENNEY (1979), OR O'NEILL AND REESE (1999)	0.55	
CARTER AND KULHAWY (1988)	0.50	
TIP RESISTANCE IN ROCK		
CANADIAN GEOTECHNICAL. SOCIETY (1985), ORO'NEILL AND REESE (1999)	0.50	
LATERAL GEOTECHNICAL RESISTANCE OF A SINGLE PILE/SHAFT		
ALL MATERIALS	1.0	
*REFER TO TABLE 1.1 FOR NOTES.		

TABLE 1.1
NOTES FOR TABLE 1

NO.	NOTE
1	A MINIMUM FRICTION ANGLE OF 34 DEGREES CAN BE ASSUMED FOR MATERIAL MEETING SPECIFICATIONS IN SECTION F, PART1, AND ITEM E OF TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. A HIGHER FRICTION ANGLE CAN BE UTILIZED IF THE CONTRACTOR SUBMITS INDEPENDENT TESTING AND IT IS VERIFIED BY TDOT. HOWEVER, IN NO CASE SHALL THE FRICTION ANGLE FOR ANALYSIS EXCEED 40-DEGREES.
1A	SELECT BACKFILL UNIT WEIGHT TO BE DETERMINED BY CONTRACTOR/DESIGNER DEPENDING ON ACTUAL BACKFILL MATERIAL USED. SELECT BACKFILL IS DEFINED AS MATERIAL MEETING SPECIFICATIONS IN SECTION F, PART 1, AND ITEM E OF TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. IN ORDER TO UTILIZED ϕ FOR SELECT BACKFILL DESIGN, SELECT BACKFILL MUST BE PLACED FOR A MINIMUM ZONE FORMED BY A 1:1 SLOPE FROM 2 FEET BEHIND THE BOTTOM OF BACK OF WALL FOOTING OR REINFORCED SOIL ZONE FOR MSE WALLS UP TO FINISHED GRADE.
2	APPLY TO PRESUMPTIVE ULTIMATE UNIT BOND STRESSES FOR PRELIMINARY DESIGN ONLY
3	APPLY WHERE PROOF TEST(S) ARE CONDUCTED ON EVERY PRODUCTION ANCHOR TO A LOAD OF 1.0 OR GREATER TIMES THE FACTORED LOAD ON THE ANCHOR.
4	APPLY TO MAXIMUM PROOF TEST FOR ANCHORS. FOR MILD STEEL, APPLY RESISTANCE FACTOR TO Fy. FOR HIGH STRENGTH STEEL, APPLY THE RESISTANCE FACTOR TO GUARANTEED ULTIMATE TENSILE STRENGTH.
	UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE FACTORS SHALL BE TAKEN AS 1.0 WHEN INVESTIGATING AN EXTREME EVENT LIMIT STATE

SEE GENERAL NOTES ON SHEET U-58-160.

TABLE 2 SOIL AND BED ROCK DESIGN PARAMETERS FOR SOLDIER PILE AND LAGGING OR ANCHOR WALL

STATION LIMITS	MATERIAL	NOMINAL PULLOUT RESISTANCE	UNCONFINED COMPRESSIVE STRENGTH	UNIT WEIGHT
154+50 - 161+00	LEAN CLAY, SANDY, WITH CHERT	0.6 ksf	1.5 ksf	120 pcf
	LIMESTONE (LEIPERS AND CATHEYS FORMATIONS)	20 ksf	350 ksf*	145 pcf

* INTACT ROCK CORE SPECIMEN

OTHER DESIGN REQUIREMENTS

THE ROCK SOCKETS FOR THE SOLDIER PILES AND ANCHORS WILL BE CONSTRUCTED IN LIMESTONE BEDROCK OF THE LEIPERS AND CATHEYS FORMATION. THE ESTIMATED ROCK LINE IS DEPICTED ON THE WALL PROFILE SHOWN ON THE RETAINING WALL GEOTECHNICAL DESIGN DRAWING AND THE ROADWAY CROSS-SECTIONS IN THE CONSTRUCTION PLAN SET. BASED ON ROCK DESCRIPTIONS OF LEIPERS AND CATHEYS FORMATION LIMESTONE ON THE BORING LOGS, STANTEC RECOMMENDS A PRESUMPTIVE UNCONFINED COMPRESSIVE STRENGTH OF 350 KSF FOR INTACT ROCK CORE SPECIMENS AND A UNIT WEIGHT OF 145 PCF BE USED FOR DESIGN PURPOSES. THE RETAINING WALL DESIGNER SHALL REDUCE THE STRENGTH OF THE INTACT ROCK CORE SPECIMENS TO BE REPRESENTATIVE OF THE ROCK MASS FOR DESIGN PURPOSES BASED ON THEIR INTERPRETATION OF ROCK CORING DATA PRESENTED ON THE GRAPHICAL BORING LOGS SHOWN ON THE RETAINING WALL GEOTECHNICAL DESIGN DRAWINGS.

ALL SOLDIER PILES SHALL BE SOCKETED INTO BEDROCK A MINIMUM OF 5 FEET. THE TOTAL EMBEDMENT DEPTHS SHALL BE DETERMINED BY THE WALL DESIGNER BASED ON THE LATERAL AND VERTICAL LOAD RESISTANCE REQUIREMENTS INHERENT TO THEIR DESIGN CONFIGURATION.

THE WALL SHALL HAVE A DRAINAGE GUTTER AT THE TOP DESIGNED TO CARRY SURFACE RUNOFF TO EITHER OR BOTH ENDS OF WALLS. DETAILS OF THIS DRAINAGE FEATURE SHALL BE PROVIDED IN WALL DESIGNER/CONTRACTOR'S WALL DESIGN PLANS.

CONSTRUCTION NOTES

ASSUME DRILLING THROUGH IN-PLACE ROCK OR RESIDUAL SOIL REQUIRED FOR INSTALLTION OF SOLDIER PILES.

TYPICAL CROSS-SECTION ON PREVIOUS SHEET DEPICTS CONDITIONS FOR DESIGN LOADS.

THE CONTRACTOR SHALL COORDINATE THE WALL DESIGN CONFIGURATION AND DETAILS WITH EXISTING AND PROPOSED UTILITIES TO AVOID CONFLICTS.

BECAUSE OF THE LIMITED AMOUNT OF BEDROCK INFORMATION ALONG THE WALL ALIGNMENT, ONE PERCUSSION TEST HOLE SHOULD BE DRILLED EVERY THIRD SOLDIER PILE LOCATION IN ORDER TO VERIFY BEDROCK COMPETENCY WITHIN AND BELOW THE ROCK SOCKET. THE PERCUSSION TEST HOLES SHOULD BE EXTENDED A MINIMUM OF FIVE (5) FEET OR FIVE TIMES THE PILE WIDTH/DIAMETER (5B) BELOW THE PLANNED PILE BEARING ELEVATION. EACH TEST HOLE SHALL BE EVALUATED BY A TECHNICIAN WORKING UNDER THE DIRECT SUPERVISION OF A LICENSED GEOTECHNICAL ENGINEER BY MONITORING THE ADVANCEMENT OF THE PERCUSSION DRILLING TOOLS. THE PERCUSSION DRILLING TOOLS SHOULD ADVANCE WITH DEPTH AT A CONSISTENT RATE. RAPID ADVANCEMENT OR "DROPPING" OF THE DRILL TOOLS OF GREATER THAN 2 INCHES SHALL CONSTITUTE A DISCONTINUITY OR DELETERIOUS FEATURE. AFTER PENETRATING THE MINIMUM REQUIRED EMBEDMENT DEPTH, NO DISCONTINUITY OR DELETERIOUS FEATURE OF GREATER THAN 2 INCHES WILL BE ACCEPTED WITHIN THE PROPOSED ROCK SOCKET. CUMULATIVE DISCONTINUITIES OR DELETERIOUS FEATURES SHALL NOT EXCEED 6 INCHES TOTAL BENEATH THE PROPOSED ROCK SOCKET. IF THE ABOVE CUMULATIVE DELETERIOUS FEATURES ARE EXCEEDED UPON REACHING THE MINIMUM DISTANCE BELOW THE ROCK SOCKET, THE DESIGNER SHALL BE CONTACTED TO ASSESS THE PILE EMBEDMENT REQUIREMENTS INHERENT TO THEIR DESIGN ASSUMPTIONS. THE TEST HOLES SHALL BE PAID SEPARATELY UNDER ITEM NO. 203-40.05.

DUE TO THE SITE GEOLOGY AND THE POTENTIAL CORROSIVE ENVIRONMENT AT THE ANCHOR AREA, IT IS RECOMMENDED THAT THE TENDON BOND LENGTH BE ENCAPSULATED TO PROVIDE ADDITIONAL CORROSION PROTECTION (DOUBLE CORROSION PROTECTION), THE ENCAPSULATION SHALL BE FABRICATED FROM ONE THE FOLLOWING:

i. HIGH DENSITY CORRUGATED POLYETHYLENE TUBING CONFORMING TO THE REQUIREMENTS OF ASSHTO M 252 AND HAVING A MINIMUM WALL THICKNESS OF 0.06 INCH EXEPT PREGROUTED TENDONS, WHICK MAY HAVE A MINIMUM WALL THICHNESS OF 0.04 INCH.

ii. CORRUGATED POLYVINYL CHLORIDE TUBES MANUFACTURED FROM RIGID PVC COMPOUNDS CONFORMING TO ASTM D 1784, CLASS 13646-B.

UNOFFICIAL SET

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MACON COUNTY
STA.154+50.00 TO STA.161+00.00

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 3 GEOTECHNICAL NOTES

19-MAR-2014 12:33
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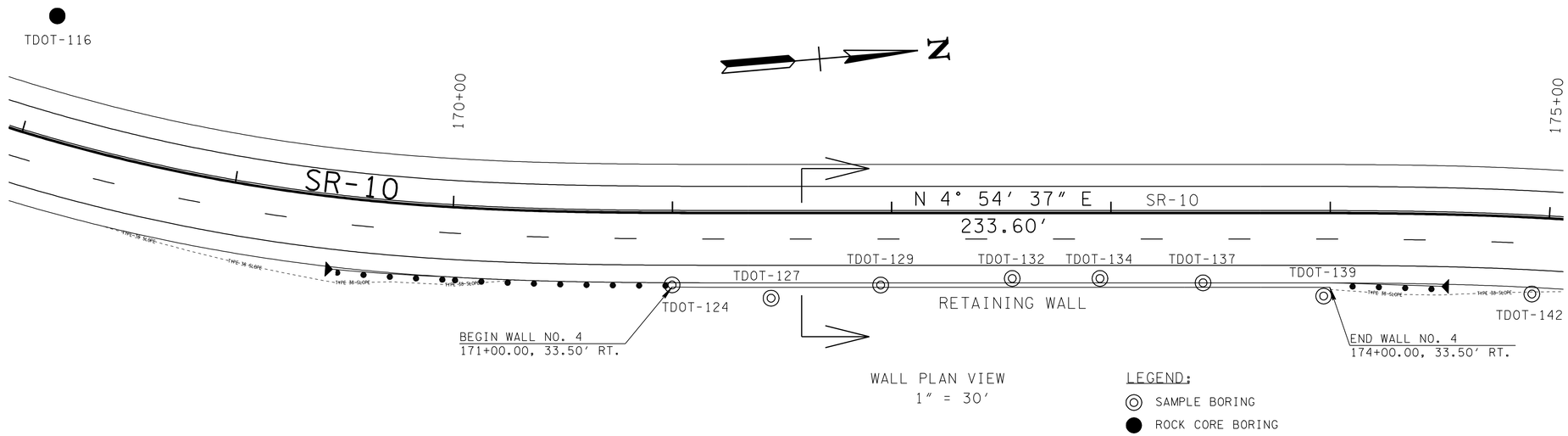
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	4
CONST.	2014	STP/HSIP-10(24)	2U



WALL PLAN VIEW
1″ = 30′

LEGEND:
- SAMPLE BORING
- ROCK CORE BORING

△2 LETTING REV: 05-19-14 REVISED ITEM NO. 604-07.04 QUANTITY. ADDED PROPOSED GROUND LINE @ WALL FACE. ADDED 2′ LINE BELOW PROP. GROUND @ WALL FACE.

BORING INFORMATION

BORING NO.	STATION	OFFSET	ELEVATION
TDOT-116	168+00.00	55.00′ LT	849.5
TDOT-124	171+00.00	33.00′ RT	799.0
TDOT-127	171+45.00	39.00′ RT	800.0
TDOT-129	171+95.00	33.00′ RT	801.7
TDOT-132	172+55.00	30.00′ RT	804.5
TDOT-134	172+95.00	30.00′ RT	806.9
TDOT-137	173+42.00	32.00′ RT	810.2
TDOT-139	173+97.00	38.00′ RT	814.1
TDOT-142	174+94.00	35.00′ RT	822.5

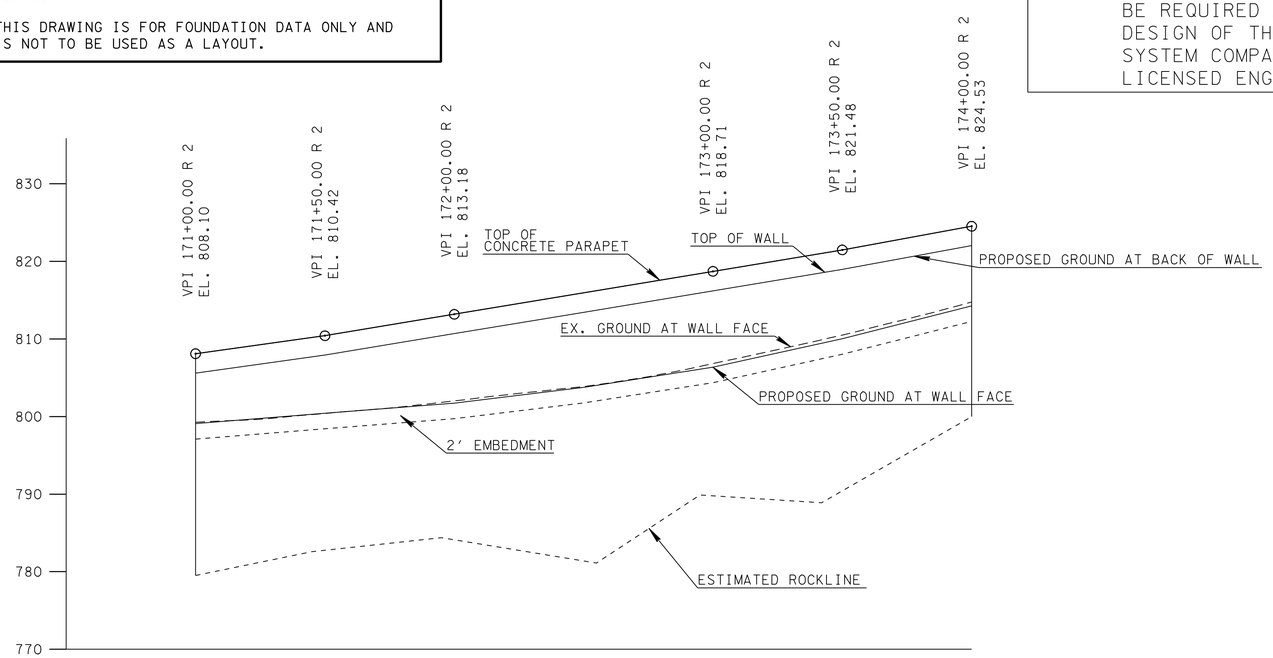
NOTES:

1. THE INFORMATION FOR THE PLAN, ELEVATION AND CROSS-SECTIONS VIEWS PRESENTED ON THIS DRAWING WAS PROVIDED BY THE TENNESSSEE DEPARTMENT OF TRANSPORTATION ON APRIL 9, 2013.
2. BORINGS IDENTIFIED BY THE TDOT-### DESIGNATION WERE DRILLED AS PART OF THE ROADWAY GEOTECHNICAL EXPLORATION. THE LOCATION AND SUBSURFACE INFORMATION PRESENTED ON THIS DRAWING WAS PROVIDED BY THE TDOT GEOTECHNICAL ENGINEERING SECTION.
3. THIS DRAWING IS FOR FOUNDATION DATA ONLY AND IS NOT TO BE USED AS A LAYOUT.

NOTE: THE RETAINING WALL PAY QUANTITY IS BASED ON THE SURFACE AREA BETWEEN THE APPROXIMATE TOP OF WALL AND 2′ BELOW THE EXISTING/PROPOSED GROUND LINE.

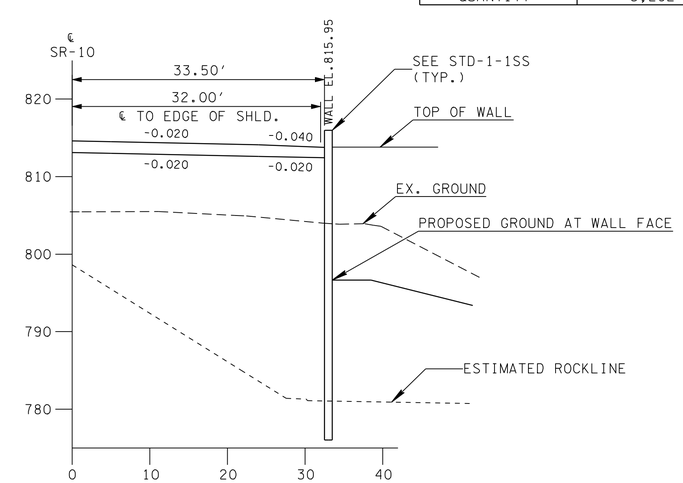
NOTE: WHEN PARAPET ON TOP OF RETAINING WALL IS REQUIRED AND MSE OR SOLDIER PILE WALL SYSTEM IS SELECTED, A MOMENT SLAB WILL BE REQUIRED AND PAID FOR IN THE COST OF THE RETAINING WALL. DESIGN OF THE MOMENT SLAB IS THE RESPONSIBILITY OF THE WALL SYSTEM COMPANY. MOMENT SLAB IS TO BE DESIGNED BY A TENNESSEE LICENSED ENGINEER.

UNOFFICIAL SET
NOT FOR BIDDING



WALL ELEVATION VIEW
1″ = 30′ H
1″ = 10′ V

ESTIMATED QUANTITIES		
ITEM NO.	604-07.04	620-05.01
DESCRIPTION	RETAINING WALL (WALL NO. 4) SQ. FT.	CONCRETE PARAPET SINGLE SLOPE (STD-1-1SS) L.F.
QUANTITY	3,292	300



WALL TYP. CROSS-SECTION @ STA 172+50.00
1″ = 10′ H
1″ = 10′ V

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 4
GEOTECHNICAL DESIGN DRAWINGS

SHEET 1 OF 3

U-58-172

19-MAY-2014 16:36
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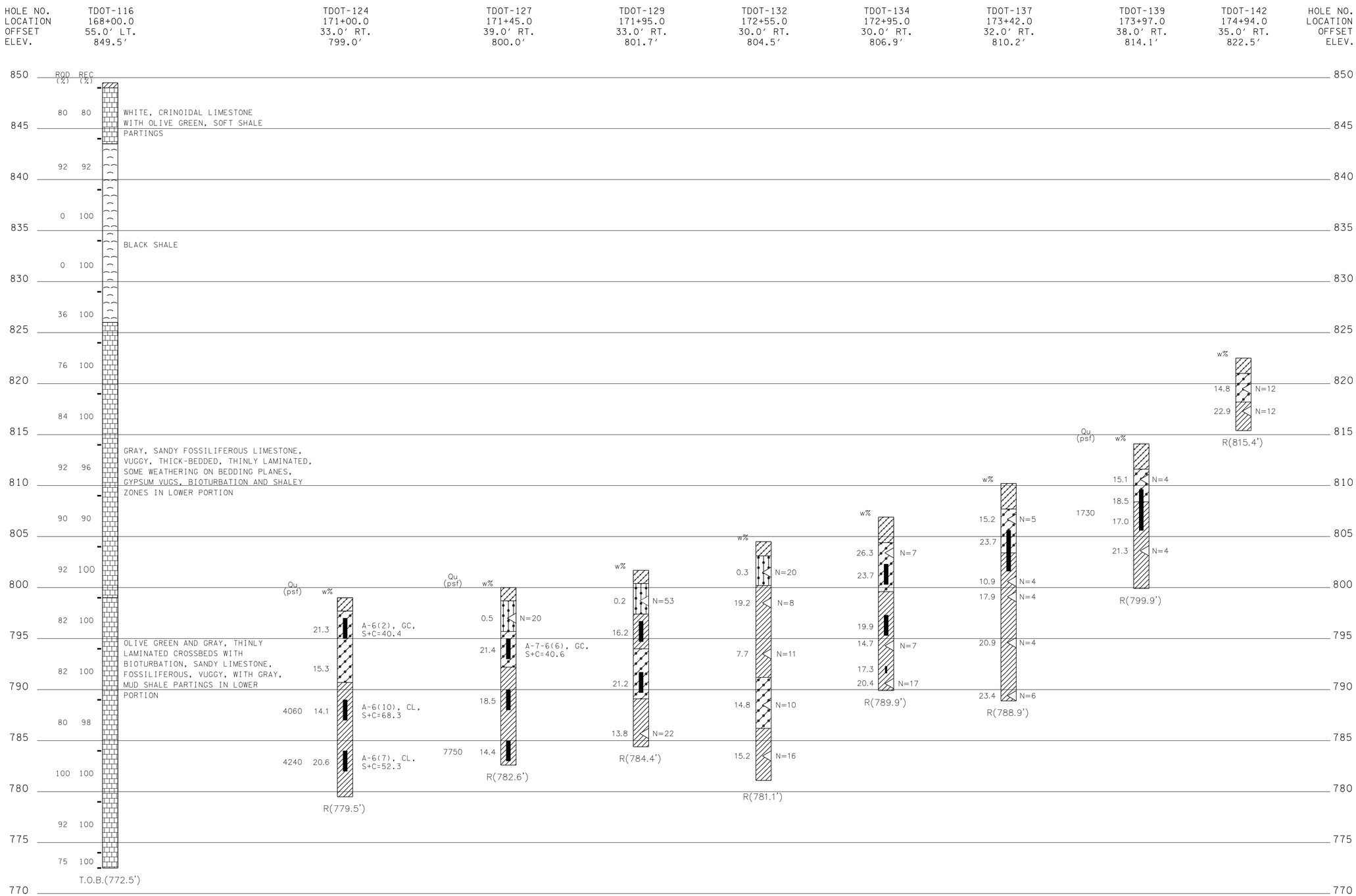
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	
CONST.	2014	STP/PHSIP-10(24)	2Ua



LOGS OF BORINGS

LEGEND

- ASPHALT AND BASE COURSE
- AGGREGATE
- CLAYEY GRAVEL
- CLAY
- SANDY SILTY GRAVEL
- LIMESTONE
- SHALE

UNOFFICIAL SET

NOT FOR BIDDING

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SR-10 NORTHBOUND
MACON COUNTY
STA.171+00.00 TO STA.174+00.00

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 4
LOGS OF BORINGS
DRAWING

SHEET 2 OF 3

13-MAR-2014 15:46
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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	
CONST.	2014	STP/PHSIP-10(24)	2Ub

RETAINING WALL DESIGN NOTES

UNLESS SPECIFICALLY STATED OTHERWISE IN THE CONTRACT PLANS, THE BIDDING FOR, THE DESIGN OF AND THE CONSTRUCTION OF RETAINING WALLS SHOWN IN THE PLANS SHALL BE GOVERNED BY THE TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. THIS SPECIAL PROVISION SHALL BE CONSIDERED AS ONE OF THOSE DOCUMENTS WHICH THE BIDDER/CONTRACTOR HAS EXAMINED AND MADE HIMSELF FAMILIAR WITH AS DESCRIBED IN SECTION 102.04 - EXAMINATION OF THE SITE, THE WORK, THE PLANS, AND THE SPECIFICATIONS IN THE TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

EXCAVATION FOR THE WALL AND/OR ITS FOOTING SHALL NOT BE ACCOMPLISHED UNTIL THE CONTRACTOR HAS SUBMITTED WALL DESIGNS AND CALCULATIONS AND HAS BEEN ISSUED AN APPROVED SET OF WALL PLANS AND HAS LABOR AND MATERIAL RESOURCES AVAILABLE TO BEGIN AND CONTINUE WALL CONSTRUCTION IMMEDIATELY AFTER EXCAVATION.

THIS WALL SHALL BE DESIGNED IN ACCORDANCE WITH LRFD DESIGN PROCEDURES AND REQUIREMENTS AS DESCRIBED IN 1) AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS AND 2) PUBLICATION FHWA-IF-99-015/FHWA GEC 004 GROUND ANCHORS AND ANCHORED SYSTEMS, JUNE 1999.

FOR PROPRIETARY WALL SYSTEMS THAT HAVE BEEN APPROVED AS SHOWN IN SPECIAL PROVISION 624, THE WALL DESIGNER SHALL BE RESPONSIBLE FOR PROVIDING WALL DESIGNS INCORPORATING MATERIALS AND COMPONENTS (I.E. REINFORCEMENT CONNECTION DEVICES, SPECIFIC MANUFACTURER AND PROPERTIES OF GEOGRID) AS WAS ORIGINALLY SUBMITTED AND APPROVED BY TDOT, IF A MATERIAL AND/OR COMPONENT OF THE WALL SYSTEM HAVE BEEN MODIFIED FROM THE ORIGINALLY APPROVED SYSTEM, A WALL DESIGN AND SET OF PLANS AND CALCULATIONS FOR THIS WALL SYSTEM CANNOT BE SUBMITTED FOR REVIEW AND APPROVAL UNTIL THE WALL SYSTEM DESIGNER WHO ORIGINALLY SUBMITTED THE WALL SYSTEM FOR APPROVAL BY TDOT SUBMITS A REQUEST FOR RE-APPROVAL UTILIZING THE MODIFIED ELEMENTS OF THE WALL. THIS SUBMITTAL DOES NOT GUARANTEE APPROVAL OF THE MODIFIED SYSTEM. IF THIS RE-APPROVAL PROCESS DOES NOT MEET THE CONTRACTOR'S SCHEDULE OR IF THE MODIFIED SYSTEM IS NOT APPROVED, THE CONTRACTOR/WALL DESIGNER SHALL PROVIDE A WALL DESIGN FOR ONE OF THE APPROVED SYSTEMS AT NO CHANGE IN CONTRACT PRICE FOR THE RETAINING WALL AND NO CHANGE IN PROJECT SCHEDULE REQUIREMENTS WILL BE ALLOWED.

THE WALL DESIGNER SHALL PROVIDE RETAINING WALL PLANS, DETAILS AND CALCULATIONS AS REQUIRED BY SPECIAL PROVISION 624 AND AS REQUIRED HEREIN.

- THE WALL DESIGNER SHALL UTILIZE THE GEOTECHNICAL PARAMETERS AND RESISTANCE FACTORS AS PROVIDED FOR EACH PROJECT RETAINING WALL ON THE WALL CONCEPT SHEET AND RELATED RETAINING WALL SHEETS TO PREPARE AND SUBMIT DESIGN CALCULATIONS. LOAD FACTORS AND OTHER PERTINENT DESIGN REQUIREMENTS PROVIDED IN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS SHALL BE USED FOR NON-MSE WALLS AND PUBLICATION FHWA-NHI-10-024/FHWA GEC 011, DESIGN AND CONSTRUCTION OF MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES, NOVEMBER 2009 FOR MSE WALLS.

- CALCULATIONS FOR BOTH INTERNAL AND EXTERNAL STABILITY (SLIDING, ECCENTRICITY, AND BEARING CAPACITY-GLOBAL STABILITY AND SETTLEMENT BEING THE EXCEPTIONS) SHALL BE PROVIDED FOR EACH CRITICAL WALL SECTION WHICH DEMONSTRATES THE REQUIRED CAPACITY TO DEMAND RATIO OF 1.0 IS MET UTILIZING THE DESIGN PARAMETERS PROVIDED. FOR MSE WALLS, THE WALL DESIGNER MUST ADJUST THE REINFORCEMENT LENGTHS BEYOND THOSE MINIMUM REQUIRED LENGTHS, IF REQUIRED, TO MEET BOTH INTERNAL AND EXTERNAL REQUIREMENTS. THE WALL DESIGNER/CONTRACTOR PLANS MUST INCLUDE ANY FOUNDATION IMPROVEMENTS AS REQUIRED HEREIN ON THE WALL DESIGNER/CONTRACTOR'S WALL ELEVATION VIEWS AND ANY CROSS-SECTIONAL DETAIL DRAWINGS.

- UNLESS OTHERWISE STATED, THE WALL DESIGNER CAN ASSUME THAT MINIMUM GLOBAL STABILITY AND SETTLEMENT CRITERIA IS ACHIEVED WITH A WALL DESIGN MEETING OTHER MINIMUM EXTERNAL STABILITY REQUIREMENTS AND ASSUMING WALL FOUNDATION CONDITIONS ARE MET. WHILE THE WALL DESIGNER'S DESIGN MUST DEMONSTRATE COMPLIANCE WITH EXTERNAL STABILITY REQUIREMENTS AS DISCUSSED ABOVE, THE WALL DESIGNER MAY PROVIDE CERTIFICATION (BY SIGNING AND STAMPING BY PROFESSIONAL ENGINEER REGISTERED IN STATE OF TENNESSEE) OF THE WALLS PLANS AND CALCULATIONS "FOR INTERNAL STABILITY ONLY".

- LOAD COMBINATIONS STRENGTH I, EXTREME EVENT I, AND EXTREME EVENT II AS GIVEN IN TABLE 4-1 OF PUBLICATION FHWA-NHI-10-024/FHWA GEC 011, DESIGN AND CONSTRUCTION OF MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES, NOVEMBER 2009 FOR MSE WALLS SHALL BE EVALUATED FOR MSE WALLS. LOAD COMBINATIONS FOR OTHER WALL TYPES SHALL BE AS GIVEN IN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS

NOTE REGARDING CONSTRUCTION SLOPES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE EXCAVATION IN ACCORDANCE WITH OSHA AND OTHER APPLICABLE STATE AND LOCAL REGULATIONS REGARDING CONSTRUCTION SLOPES AND TRENCHES. IN ADDITION TO FOLLOWING APPLICABLE REGULATORY REQUIREMENTS, AS A MINIMUM REQUIREMENT, ALL TEMPORARY CONSTRUCTION SLOPES SHALL BE PLACED AT A MAXIMUM OF A 1:1 SLOPE IN SOIL AND SHALL NOT BE LEFT OPEN WITHOUT SHORING FOR ANY LONGER THAN ABSOLUTELY NECESSARY. THE CONTRACTOR BUILDING THE WALL SHALL ENSURE THAT THESE TEMPORARY BACK SLOPES ARE NOT AND DO NOT BECOME UNSTABLE. IF SLOPE IS UNSTABLE, BECOMES UNSTABLE, IS CUT STEEPER THAN A 1:1 SLOPE OR IS UNACCEPTABLE FOR ANOTHER REASON, THEN TEMPORARY SHORING SHALL BE USED. ANY UNUSUAL SOIL CONDITIONS OTHER THAN THOSE ASSUMED SHOULD BE REPORTED TO THE PROJECT ENGINEER.

ACCEPTABLE WALL TYPES

THE RETAINING WALL SHALL BE ONE OF THE WALL TYPES LISTED BELOW. FOR RETAINING WALL SYSTEMS LISTED AS BIN WALL, CRIB WALL, MSE (EITHER SEGMENTAL PANEL OR MODULAR BLOCK) AND GROUND ANCHOR WALL, THE SPECIFIC WALL SYSTEM SUPPLIER/INSTALLER SHALL BE ONE OF THOSE LISTED AS PRE-APPROVED IN THE SPECIAL PROVISION 624.

- SOLDIER PILE AND LAGGING WALL (UNANCHORED)
- ANCHORED WALL (ANCHORS SHALL NOT EXTEND OUTSIDE OF THE TDOT RIGHT-OF-WAY)

TABLE 1-DESIGN REQUIREMENTS AND PARAMETERS

DESCRIPTION	VALUE-SOLDIER PILE AND LAGGING WALLS (UNANCHORED AND ANCHORED)	NOTE *
DESIGN LIFE	75 YEARS	
SEISMIC ACCELERATION COEFFICIENT (As)	0.201	
EFFECTIVE (DRAINED) FRICTION ANGLE		
RETAINED BACKFILL-UNCLASSIFIED SITE OR BORROW SOIL	26°	
RETAINED BACKFILL-SELECT BACKFILL	34° TO MAX 40°	1
UNIT WEIGHT		
UNCLASSIFIED SITE OR BORROW SOIL	120 POUNDS PER CUBIC FOOT	
SELECT BACKFILL MATERIAL	VARIES	1A
PULLOUT RESISTANCE OF ANCHORS		
COHESIONLESS (GRANULAR) SOILS	0.65	2
COHESIVE SOILS	0.70	
ROCK	0.50	
WHERE PROOF TESTS ARE CONDUCTED	1.0	3
TENSILE RESISTANCE OF ANCHOR TENDON		
MILD STEEL, (E.G., ASTM A615 BARS)	0.90	4
HIGH STRENGTH STEEL (E.G., ASTM A722 BARS)	0.80	
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RESISTANCE FACTORS OF A SINGLE DRIVEN PILE		
STATIC ANALYSIS METHODS		
SIDE RESISTANCE AND END BEARING: CLAY AND MIXED SOILS		
α-METHOD (TOMLINSON, 1987; SKEMPTON, 1951)	0.35	
β-METHOD (ESRIG & KIRBY, 1997; SKEMPTON 1951)	0.25	
λ-METHOD (VIJAYVERGIYA & FOCHT, 1972; SKEMPTON 1951)	0.40	
SIDE RESISTANCE AND END BEARING: SAND		
NORDLUND/THURMAND METHOD (HANNIGAN ET AL, 2005	0.45	
SPT-METHOD (MEYERHOF)	0.30	
CPT-METHOD (SCHMERTMANN)	0.50	
END BEARING IN ROCK (CANADIAN GEOTECHNICAL SOCIETY)	0.45	
LATERAL GEOTECHNICAL RESISTANCE OF A SINGLE PILE		
ALL SOILS AND ROCK	1.0	
RESISTANCE FACTORS OF A SINGLE DRILLED PILE/SHAFT		
SIDE RESISTANCE IN CLAY		
α-METHOD (O'NEILL AND REESE, 1999)	0.45	
TIP RESISTANCE IN CLAY		
TOTAL STRESS (O'NEILL AND REESE, 1999)	0.40	
SIDE RESISTANCE IN SAND		
β-METHOD (O'NEILL AND REESE, 1999)	0.55	
TIP RESISTANCE IN SAND		
O'NEILL AND REESE, 1999	0.50	
SIDE RESISTANCE IN INTERMEDIATE GEOMATERIALS (IGMs)		
O'NEILL AND REESE, 1999	0.60	
TIP RESISTANCE IN INTERMEDIATE GEOMATERIALS (IGMs)		
O'NEILL AND REESE, 1999	0.55	
SIDE RESISTANCE IN ROCK		
HORVATH AND KENNEY (1979), OR O'NEILL AND REESE (1999)	0.55	
CARTER AND KULHAWY (1988)	0.50	
TIP RESISTANCE IN ROCK		
CANADIAN GEOTECHNICAL. SOCIETY (1985), ORO'NEILL AND REESE (1999)	0.50	
LATERAL GEOTECHNICAL RESISTANCE OF A SINGLE PILE/SHAFT		
ALL MATERIALS	1.0	
*REFER TO TABLE 1.1 FOR NOTES.		

TABLE 1.1
NOTES FOR TABLE 1

NO.	NOTE
1	A MINIMUM FRICTION ANGLE OF 34 DEGREES CAN BE ASSUMED FOR MATERIAL MEETING SPECIFICATIONS IN SECTION F, PART1, AND ITEM E OF TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. A HIGHER FRICTION ANGLE CAN BE UTILIZED IF THE CONTRACTOR SUBMITS INDEPENDENT TESTING AND IT IS VERIFIED BY TDOT. HOWEVER, IN NO CASE SHALL THE FRICTION ANGLE FOR ANALYSIS EXCEED 40-DEGREES.
1A	SELECT BACKFILL UNIT WEIGHT TO BE DETERMINED BY CONTRACTOR/DESIGNER DEPENDING ON ACTUAL BACKFILL MATERIAL USED. SELECT BACKFILL IS DEFINED AS MATERIAL MEETING SPECIFICATIONS IN SECTION F, PART 1, AND ITEM E OF TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. IN ORDER TO UTILIZED ϕ FOR SELECT BACKFILL DESIGN, SELECT BACKFILL MUST BE PLACED FOR A MINIMUM ZONE FORMED BY A 1:1 SLOPE FROM 2 FEET BEHIND THE BOTTOM OF BACK OF WALL FOOTING OR REINFORCED SOIL ZONE FOR MSE WALLS UP TO FINISHED GRADE.
2	APPLY TO PRESUMPTIVE ULTIMATE UNIT BOND STRESSES FOR PRELIMINARY DESIGN ONLY
3	APPLY WHERE PROOF TEST(S) ARE CONDUCTED ON EVERY PRODUCTION ANCHOR TO A LOAD OF 1.0 OR GREATER TIMES THE FACTORED LOAD ON THE ANCHOR.
4	APPLY TO MAXIMUM PROOF TEST FOR ANCHORS. FOR MILD STEEL, APPLY RESISTANCE FACTOR TO Fy. FOR HIGH STRENGTH STEEL, APPLY THE RESISTANCE FACTOR TO GUARANTEED ULTIMATE TENSILE STRENGTH.
	UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE FACTORS SHALL BE TAKEN AS 1.0 WHEN INVESTIGATING AN EXTREME EVENT LIMIT STATE

SEE GENERAL NOTES ON SHEET U-58-160.

TABLE 2 SOIL AND BED ROCK DESIGN PARAMETERS FOR SOLDIER PILE AND LAGGING OR ANCHOR WALL

STATION LIMITS	MATERIAL	NOMINAL PULLOUT RESISTANCE	UNCONFINED COMPRESSIVE STRENGTH	UNIT WEIGHT
171+00 - 174+00	LEAN CLAY, SANDY, WITH CHERT	0.5 ksf	1.0 ksf	120 pcf
	LIMESTONE (SEQUATCHIE FORMATION)	20 ksf	350 ksf*	145 pcf

* INTACT ROCK CORE SPECIMEN

OTHER DESIGN REQUIREMENTS

THE ROCK SOCKETS FOR THE SOLDIER PILES AND ANCHORS WILL BE CONSTRUCTED IN LIMESTONE BEDROCK OF THE SEQUATCHIE FORMATION. THE ESTIMATED ROCK LINE IS DEPICTED ON THE WALL PROFILE SHOWN ON THE RETAINING WALL GEOTECHNICAL DESIGN DRAWING AND THE ROADWAY CROSS-SECTIONS IN THE CONSTRUCTION PLAN SET. BASED ON ROCK DESCRIPTIONS OF FORT PAYNE FORMATION LIMESTONE ON THE BORING LOGS, STANTEC RECOMMENDS A PRESUMPTIVE UNCONFINED COMPRESSIVE STRENGTH OF 350 KSF FOR INTACT ROCK CORE SPECIMENS AND A UNIT WEIGHT OF 145 PCF BE USED FOR DESIGN PURPOSES. THE RETAINING WALL DESIGNER SHALL REDUCE THE STRENGTH OF THE INTACT ROCK CORE SPECIMENS TO BE REPRESENTATIVE OF THE ROCK MASS FOR DESIGN PURPOSES BASED ON THEIR INTERPRETATION OF ROCK CORING DATA PRESENTED ON THE GRAPHICAL BORING LOGS SHOWN ON THE RETAINING WALL GEOTECHNICAL DESIGN DRAWINGS.

ALL SOLDIER PILES SHALL BE SOCKETED INTO BEDROCK A MINIMUM OF 5 FEET. THE TOTAL EMBEDMENT DEPTHS SHALL BE DETERMINED BY THE WALL DESIGNER BASED ON THE LATERAL AND VERTICAL LOAD RESISTANCE REQUIREMENTS INHERENT TO THEIR DESIGN CONFIGURATION.

THE WALL SHALL HAVE A DRAINAGE GUTTER AT THE TOP DESIGNED TO CARRY SURFACE RUNOFF TO EITHER OR BOTH ENDS OF WALLS. DETAILS OF THIS DRAINAGE FEATURE SHALL BE PROVIDED IN WALL DESIGNER/CONTRACTOR'S WALL DESIGN PLANS.

CONSTRUCTION NOTES

ASSUME DRILLING THROUGH IN-PLACE ROCK OR RESIDUAL SOIL REQUIRED FOR INSTALLTION OF SOLDIER PILES.

TYPICAL CROSS-SECTION ON PREVIOUS SHEET DEPICTS CONDITIONS FOR DESIGN LOADS.

THE CONTRACTOR SHALL COORDINATE THE WALL DESIGN CONFIGURATION AND DETAILS WITH EXISTING AND PROPOSED UTILITIES TO AVOID CONFLICTS.

BECAUSE OF THE LIMITED AMOUNT OF BEDROCK INFORMATION ALONG THE WALL ALIGNMENT, ONE PERCUSSION TEST HOLE SHOULD BE DRILLED EVERY THIRD SOLDIER PILE LOCATION IN ORDER TO VERIFY BEDROCK COMPETENCY WITHIN AND BELOW THE ROCK SOCKET. THE PERCUSSION TEST HOLES SHOULD BE EXTENDED A MINIMUM OF FIVE (5) FEET OR FIVE TIMES THE PILE WIDTH/DIAMETER (5B) BELOW THE PLANNED PILE BEARING ELEVATION. EACH TEST HOLE SHALL BE EVALUATED BY A TECHNICIAN WORKING UNDER THE DIRECT SUPERVISION OF A LICENSED GEOTECHNICAL ENGINEER BY MONITORING THE ADVANCEMENT OF THE PERCUSSION DRILLING TOOLS. THE PERCUSSION DRILLING TOOLS SHOULD ADVANCE WITH DEPTH AT A CONSISTENT RATE. RAPID ADVANCEMENT OR "DROPPING" OF THE DRILL TOOLS OF GREATER THAN 2 INCHES SHALL CONSTITUTE A DISCONTINUITY OR DELETERIOUS FEATURE. AFTER PENETRATING THE MINIMUM REQUIRED EMBEDMENT DEPTH, NO DISCONTINUITY OR DELETERIOUS FEATURE OF GREATER THAN 2 INCHES WILL BE ACCEPTED WITHIN THE PROPOSED ROCK SOCKET. CUMULATIVE DISCONTINUITIES OR DELETERIOUS FEATURES SHALL NOT EXCEED 6 INCHES TOTAL BENEATH THE PROPOSED ROCK SOCKET. IF THE ABOVE CUMULATIVE DELETERIOUS FEATURES ARE EXCEEDED UPON REACHING THE MINIMUM DISTANCE BELOW THE ROCK SOCKET, THE DESIGNER SHALL BE CONTACTED TO ASSESS THE PILE EMBEDMENT REQUIREMENTS INHERENT TO THEIR DESIGN ASSUMPTIONS. THE TEST HOLES SHALL BE PAID SEPARATELY UNDER ITEM NO. 203-40.05.

DUE TO THE SITE GEOLOGY AND THE POTENTIAL CORROSIVE ENVIRONMENT AT THE ANCHOR AREA, IT IS RECOMMENDED THAT THE TENDON BOND LENGTH BE ENCAPSULATED TO PROVIDE ADDITIONAL CORROSION PROTECTION (DOUBLE CORROSION PROTECTION), THE ENCAPSULATION SHALL BE FABRICATED FROM ONE THE FOLLOWING:

i. HIGH DENSITY CORRUGATED POLYETHYLENE TUBING CONFORMING TO THE REQUIREMENTS OF ASSHTO M 252 AND HAVING A MINIMUM WALL THICKNESS OF 0.06 INCH EXEPT PREGROUTED TENDONS, WHICK MAY HAVE A MINIMUM WALL THICHNESS OF 0.04 INCH.

ii. CORRUGATED POLYVINYL CHLORIDE TUBES MANUFACTURED FROM RIGID PVC COMPOUNDS CONFORMING TO ASTM D 1784, CLASS 13646-B.

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

SR-10 NORTHBOUND
MACON COUNTY
STA.171+00.00 TO STA.174+00.00

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 4 GEOTECHNICAL NOTES

19-MAR-2014 12:33
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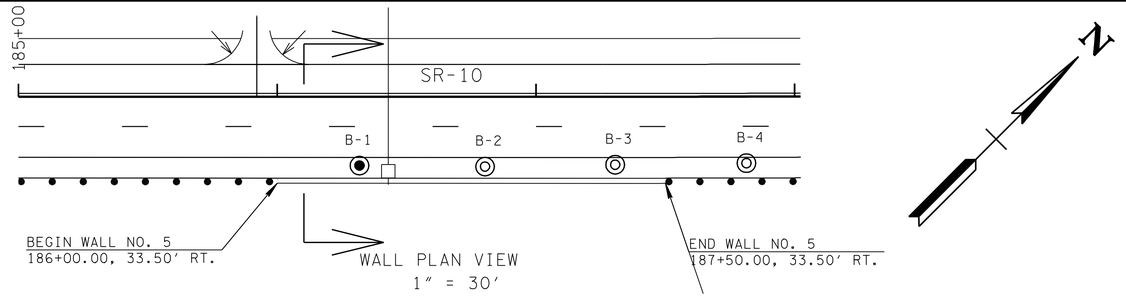
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	5
CONST.	2014	STP/HSIP-10(24)	2V



WALL PLAN VIEW
1" = 30'

LEGEND:

- SOIL SAMPLE BORING
- SOIL SAMPLE AND ROCK CORE BORING

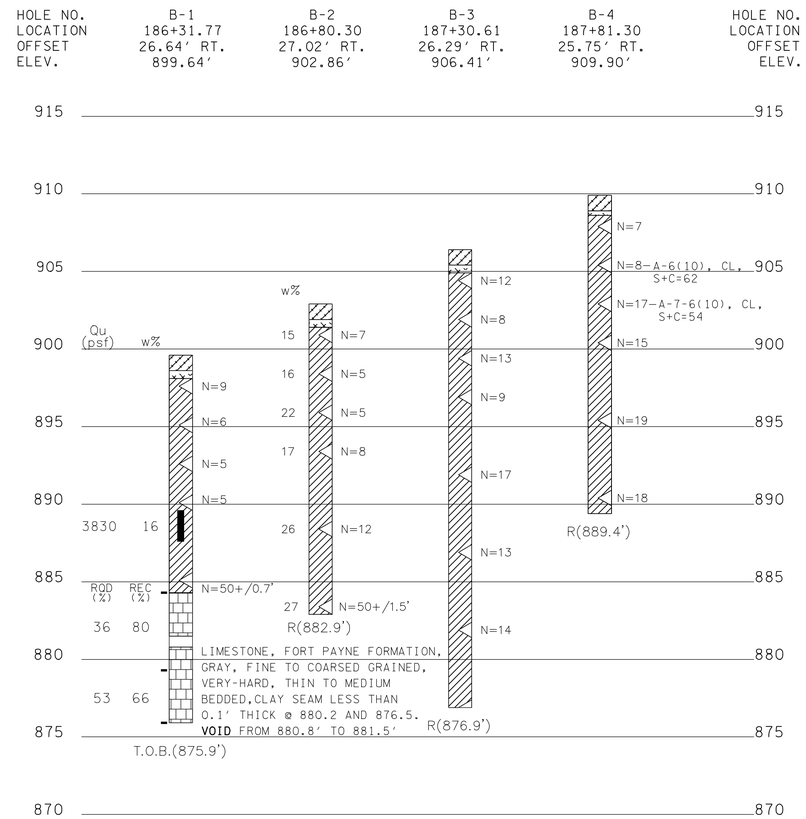
STANTEC BORING INFORMATION

BORING I.D.	STATION	OFFSET DISTANCE	NORTHING	EASTING	GROUND ELEVATION
B-1	186+31.77	26.64' RT	794729.48	1957585.89	899.64
B-2	186+80.30	27.02' RT	794763.50	1957620.51	902.86
B-3	187+30.61	26.29' RT	794799.56	1957655.60	906.41
B-4	187+81.30	25.75' RT	794835.85	1957691.08	909.90

NOTE: SURVEY INFORMATION PROVIDED BY CIVIL DESIGN GROUP.

NOTES:

1. THE INFORMATION FOR THE PLAN,ELEVATION AND CROSS SECTION VIEWS PRESENTED ON THIS DRAWING WAS PROVIDED BY THE TENNESSSEE DEPARTMENT OF TRANSPORTATION ON APRIL 9, 2013.
2. THIS DRAWING IS FOR FOUNDATION DATA ONLY AND IS NOT TO BE USED AS A LAYOUT.



LETTING REV: 05-19-14 REVISED ITEM NO. 604-07.05 QUANTITY. ADDED 2' LINE BELOW PROP. GROUND @ WALL FACE.

LEGEND

- ASPHALT
- AGGREGATE
- CLAY
- LIMESTONE

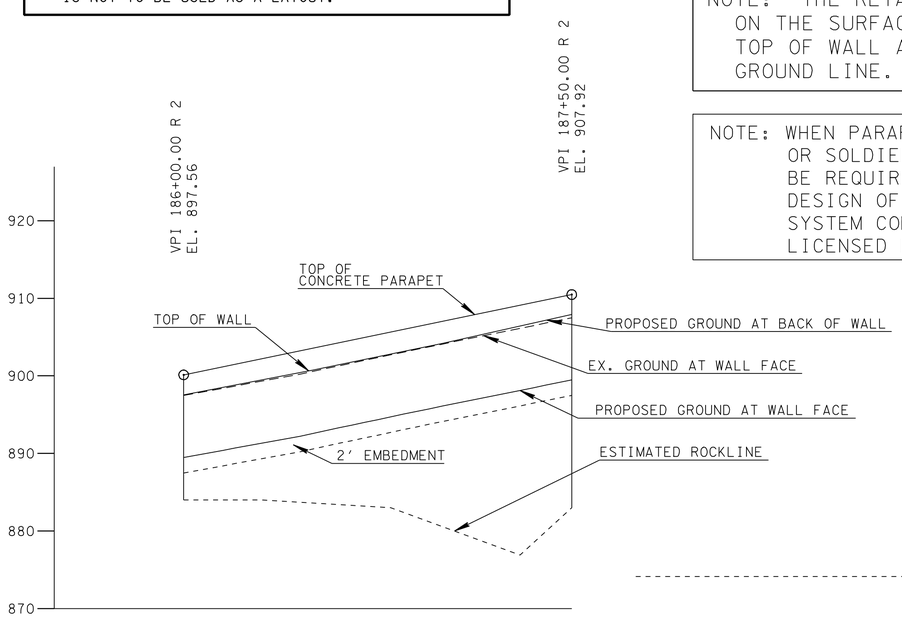
UNOFFICIAL SET
NOT FOR BIDDING

NOTE: THE RETAINING WALL PAY QUANTITY IS BASED ON THE SURFACE AREA BETWEEN THE APPROXIMATE TOP OF WALL AND 2' BELOW THE EXISTING/PROPOSED GROUND LINE.

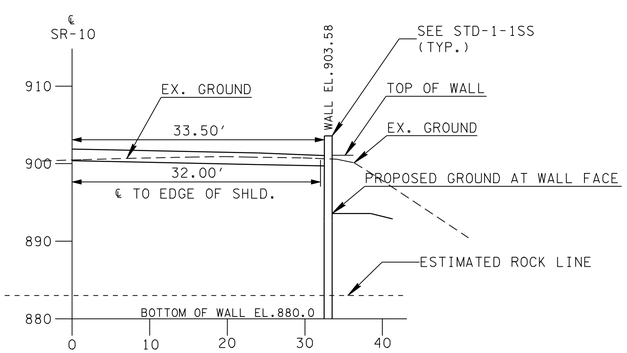
LOGS OF BORINGS

NOTE: WHEN PARAPET ON TOP OF RETAINING WALL IS REQUIRED AND MSE OR SOLDIER PILE WALL SYSTEM IS SELECTED, A MOMENT SLAB WILL BE REQUIRED AND PAID FOR IN THE COST OF THE RETAINING WALL. DESIGN OF THE MOMENT SLAB IS THE RESPONSIBILITY OF THE WALL SYSTEM COMPANY. MOMENT SLAB IS TO BE DESIGNED BY A TENNESSEE LICENSED ENGINEER.

ESTIMATED QUANTITIES		
ITEM NO.	604-07.05	620-05.01
DESCRIPTION	RETAINING WALL (WALL NO. 5) SQ. FT.	CONCRETE PARAPET SINGLE SLOPE (STD-1-1SS) L.F.
QUANTITY	1,526	150



WALL ELEVATION VIEW
1" = 30' H
1" = 10' V



WALL TYP. CROSS-SECTION @ STA 186+50.00
1" = 10' H
1" = 10' V

SEALED BY

SR-10 NORTHBOUND
MACON COUNTY
STA.186+00.00 TO STA.187+50.00

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 5
GEOTECHNICAL DESIGN DRAWINGS

SHEET 1 OF 2

U-58-175

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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	
CONST.	2014	STP/PHSIP-10(24)	2Va

RETAINING WALL DESIGN NOTES

UNLESS SPECIFICALLY STATED OTHERWISE IN THE CONTRACT PLANS, THE BIDDING FOR, THE DESIGN OF AND THE CONSTRUCTION OF RETAINING WALLS SHOWN IN THE PLANS SHALL BE GOVERNED BY THE TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. THIS SPECIAL PROVISION SHALL BE CONSIDERED AS ONE OF THOSE DOCUMENTS WHICH THE BIDDER/CONTRACTOR HAS EXAMINED AND MADE HIMSELF FAMILIAR WITH AS DESCRIBED IN SECTION 102.04 - EXAMINATION OF THE SITE, THE WORK, THE PLANS, AND THE SPECIFICATIONS IN THE TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

EXCAVATION FOR THE WALL AND/OR ITS FOOTING SHALL NOT BE ACCOMPLISHED UNTIL THE CONTRACTOR HAS SUBMITTED WALL DESIGNS AND CALCULATIONS AND HAS BEEN ISSUED AN APPROVED SET OF WALL PLANS AND HAS LABOR AND MATERIAL RESOURCES AVAILABLE TO BEGIN AND CONTINUE WALL CONSTRUCTION IMMEDIATELY AFTER EXCAVATION.

THIS WALL SHALL BE DESIGNED IN ACCORDANCE WITH LRFD DESIGN PROCEDURES AND REQUIREMENTS AS DESCRIBED IN 1) AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS AND 2) PUBLICATION FHWA-IF-99-015/FHWA GEC 004 GROUND ANCHORS AND ANCHORED SYSTEMS, JUNE 1999.

FOR PROPRIETARY WALL SYSTEMS THAT HAVE BEEN APPROVED AS SHOWN IN SPECIAL PROVISION 624, THE WALL DESIGNER SHALL BE RESPONSIBLE FOR PROVIDING WALL DESIGNS INCORPORATING MATERIALS AND COMPONENTS (I.E. REINFORCEMENT CONNECTION DEVICES, SPECIFIC MANUFACTURER AND PROPERTIES OF GEOGRID) AS WAS ORIGINALLY SUBMITTED AND APPROVED BY TDOT, IF A MATERIAL AND/OR COMPONENT OF THE WALL SYSTEM HAVE BEEN MODIFIED FROM THE ORIGINALLY APPROVED SYSTEM, A WALL DESIGN AND SET OF PLANS AND CALCULATIONS FOR THIS WALL SYSTEM CANNOT BE SUBMITTED FOR REVIEW AND APPROVAL UNTIL THE WALL SYSTEM DESIGNER WHO ORIGINALLY SUBMITTED THE WALL SYSTEM FOR APPROVAL BY TDOT SUBMITS A REQUEST FOR RE-APPROVAL UTILIZING THE MODIFIED ELEMENTS OF THE WALL. THIS SUBMITTAL DOES NOT GUARANTEE APPROVAL OF THE MODIFIED SYSTEM. IF THIS RE-APPROVAL PROCESS DOES NOT MEET THE CONTRACTOR'S SCHEDULE OR IF THE MODIFIED SYSTEM IS NOT APPROVED, THE CONTRACTOR/WALL DESIGNER SHALL PROVIDE A WALL DESIGN FOR ONE OF THE APPROVED SYSTEMS AT NO CHANGE IN CONTRACT PRICE FOR THE RETAINING WALL AND NO CHANGE IN PROJECT SCHEDULE REQUIREMENTS WILL BE ALLOWED.

THE WALL DESIGNER SHALL PROVIDE RETAINING WALL PLANS, DETAILS AND CALCULATIONS AS REQUIRED BY SPECIAL PROVISION 624 AND AS REQUIRED HEREIN.

- THE WALL DESIGNER SHALL UTILIZE THE GEOTECHNICAL PARAMETERS AND RESISTANCE FACTORS AS PROVIDED FOR EACH PROJECT RETAINING WALL ON THE WALL CONCEPT SHEET AND RELATED RETAINING WALL SHEETS TO PREPARE AND SUBMIT DESIGN CALCULATIONS. LOAD FACTORS AND OTHER PERTINENT DESIGN REQUIREMENTS PROVIDED IN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS SHALL BE USED FOR NON-MSE WALLS AND PUBLICATION FHWA-NHI-10-024/FHWA GEC 011, DESIGN AND CONSTRUCTION OF MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES, NOVEMBER 2009 FOR MSE WALLS.
- CALCULATIONS FOR BOTH INTERNAL AND EXTERNAL STABILITY (SLIDING, ECCENTRICITY, AND BEARING CAPACITY-GLOBAL STABILITY AND SETTLEMENT BEING THE EXCEPTIONS) SHALL BE PROVIDED FOR EACH CRITICAL WALL SECTION WHICH DEMONSTRATES THE REQUIRED CAPACITY TO DEMAND RATIO OF 1.0 IS MET UTILIZING THE DESIGN PARAMETERS PROVIDED. FOR MSE WALLS, THE WALL DESIGNER MUST ADJUST THE REINFORCEMENT LENGTHS BEYOND THOSE MINIMUM REQUIRED LENGTHS, IF REQUIRED, TO MEET BOTH INTERNAL AND EXTERNAL REQUIREMENTS. THE WALL DESIGNER/CONTRACTOR PLANS MUST INCLUDE ANY FOUNDATION IMPROVEMENTS AS REQUIRED HEREIN ON THE WALL DESIGNER/CONTRACTOR'S WALL ELEVATION VIEWS AND ANY CROSS-SECTIONAL DETAIL DRAWINGS.
- UNLESS OTHERWISE STATED, THE WALL DESIGNER CAN ASSUME THAT MINIMUM GLOBAL STABILITY AND SETTLEMENT CRITERIA IS ACHIEVED WITH A WALL DESIGN MEETING OTHER MINIMUM EXTERNAL STABILITY REQUIREMENTS AND ASSUMING WALL FOUNDATION CONDITIONS ARE MET. WHILE THE WALL DESIGNER'S DESIGN MUST DEMONSTRATE COMPLIANCE WITH EXTERNAL STABILITY REQUIREMENTS AS DISCUSSED ABOVE, THE WALL DESIGNER MAY PROVIDE CERTIFICATION (BY SIGNING AND STAMPING BY PROFESSIONAL ENGINEER REGISTERED IN STATE OF TENNESSEE) OF THE WALLS PLANS AND CALCULATIONS "FOR INTERNAL STABILITY ONLY".
- LOAD COMBINATIONS STRENGTH I, EXTREME EVENT I, AND EXTREME EVENT II AS GIVEN IN TABLE 4-1 OF PUBLICATION FHWA-NHI-10-024/FHWA GEC 011, DESIGN AND CONSTRUCTION OF MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES, NOVEMBER 2009 FOR MSE WALLS SHALL BE EVALUATED FOR MSE WALLS. LOAD COMBINATIONS FOR OTHER WALL TYPES SHALL BE AS GIVEN IN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS

NOTE REGARDING CONSTRUCTION SLOPES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE EXCAVATION IN ACCORDANCE WITH OSHA AND OTHER APPLICABLE STATE AND LOCAL REGULATIONS REGARDING CONSTRUCTION SLOPES AND TRENCHES. IN ADDITION TO FOLLOWING APPLICABLE REGULATORY REQUIREMENTS, AS A MINIMUM REQUIREMENT, ALL TEMPORARY CONSTRUCTION SLOPES SHALL BE PLACED AT A MAXIMUM OF A 1:1 SLOPE IN SOIL AND SHALL NOT BE LEFT OPEN WITHOUT SHORING FOR ANY LONGER THAN ABSOLUTELY NECESSARY. THE CONTRACTOR BUILDING THE WALL SHALL ENSURE THAT THESE TEMPORARY BACK SLOPES ARE NOT AND DO NOT BECOME UNSTABLE. IF SLOPE IS UNSTABLE, BECOMES UNSTABLE, IS CUT STEEPER THAN A 1:1 SLOPE OR IS UNACCEPTABLE FOR ANOTHER REASON, THEN TEMPORARY SHORING SHALL BE USED. ANY UNUSUAL SOIL CONDITIONS OTHER THAN THOSE ASSUMED SHOULD BE REPORTED TO THE PROJECT ENGINEER.

ACCEPTABLE WALL TYPES

THE RETAINING WALL SHALL BE ONE OF THE WALL TYPES LISTED BELOW. FOR RETAINING WALL SYSTEMS LISTED AS BIN WALL, CRIB WALL, MSE (EITHER SEGMENTAL PANEL OR MODULAR BLOCK) AND GROUND ANCHOR WALL, THE SPECIFIC WALL SYSTEM SUPPLIER/INSTALLER SHALL BE ONE OF THOSE LISTED AS PRE-APPROVED IN THE SPECIAL PROVISION 624.

- SOLDIER PILE AND LAGGING WALL (UNANCHORED)
- ANCHORED WALL (ANCHORS SHALL NOT EXTEND OUTSIDE OF THE TDOT RIGHT-OF-WAY)

TABLE 1-DESIGN REQUIREMENTS AND PARAMETERS

DESCRIPTION	VALUE-SOLDIER PILE AND LAGGING WALLS (UNANCHORED AND ANCHORED)	NOTE *
DESIGN LIFE	75 YEARS	
SEISMIC ACCELERATION COEFFICIENT (As)	0.201	
EFFECTIVE (DRAINED) FRICTION ANGLE		
RETAINED BACKFILL-UNCLASSIFIED SITE OR BORROW SOIL	26°	
RETAINED BACKFILL-SELECT BACKFILL	34° TO MAX 40°	1
UNIT WEIGHT		
UNCLASSIFIED SITE OR BORROW SOIL	120 POUNDS PER CUBIC FOOT	
SELECT BACKFILL MATERIAL	VARIES	1A
PULLOUT RESISTANCE OF ANCHORS		
COHESIONLESS (GRANULAR) SOILS	0.65	2
COHESIVE SOILS	0.70	
ROCK	0.50	
WHERE PROOF TESTS ARE CONDUCTED	1.0	3
TENSILE RESISTANCE OF ANCHOR TENDON		
MILD STEEL, (E.G., ASTM A615 BARS)	0.90	4
HIGH STRENGTH STEEL (E.G., ASTM A722 BARS)	0.80	
FLEXURAL CAPACITY OF VERTICAL ELEMENTS	0.90	
RESISTANCE FACTORS OF A SINGLE DRIVEN PILE		
STATIC ANALYSIS METHODS		
SIDE RESISTANCE AND END BEARING: CLAY AND MIXED SOILS		
α -METHOD (TOMLINSON, 1987; SKEMPTON, 1951)	0.35	
β -METHOD (ESRIG & KIRBY, 1997; SKEMPTON 1951)	0.25	
λ -METHOD (VIJAYVERGIYA & FOCHT, 1972; SKEMPTON 1951)	0.40	
SIDE RESISTANCE AND END BEARING: SAND		
NORDLUND/THURMAND METHOD (HANNIGAN ET AL, 2005	0.45	
SPT-METHOD (MEYERHOF)	0.30	
CPT-METHOD (SCHMERTMANN)	0.50	
END BEARING IN ROCK (CANADIAN GEOTECHNICAL SOCIETY)	0.45	
LATERAL GEOTECHNICAL RESISTANCE OF A SINGLE PILE		
ALL SOILS AND ROCK	1.0	
RESISTANCE FACTORS OF A SINGLE DRILLED PILE/SHAFT		
SIDE RESISTANCE IN CLAY		
α -METHOD (O'NEILL AND REESE, 1999)	0.45	
TIP RESISTANCE IN CLAY		
TOTAL STRESS (O'NEILL AND REESE, 1999)	0.40	
SIDE RESISTANCE IN SAND		
β -METHOD (O'NEILL AND REESE, 1999)	0.55	
TIP RESISTANCE IN SAND		
O'NEILL AND REESE, 1999	0.50	
SIDE RESISTANCE IN INTERMEDIATE GEOMATERIALS (IGMs)		
O'NEILL AND REESE, 1999	0.60	
TIP RESISTANCE IN INTERMEDIATE GEOMATERIALS (IGMs)		
O'NEILL AND REESE, 1999	0.55	
SIDE RESISTANCE IN ROCK		
HORVATH AND KENNEY (1979), OR O'NEILL AND REESE (1999)	0.55	
CARTER AND KULHAWY (1988)	0.50	
TIP RESISTANCE IN ROCK		
CANADIAN GEOTECHNICAL. SOCIETY (1985), ORO'NEILL AND REESE (1999)	0.50	
LATERAL GEOTECHNICAL RESISTANCE OF A SINGLE PILE/SHAFT		
ALL MATERIALS	1.0	
*REFER TO TABLE 1.1 FOR NOTES.		

TABLE 1.1
NOTES FOR TABLE 1

NO.	NOTE
1	A MINIMUM FRICTION ANGLE OF 34 DEGREES CAN BE ASSUMED FOR MATERIAL MEETING SPECIFICATIONS IN SECTION F, PART1, AND ITEM E OF TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. A HIGHER FRICTION ANGLE CAN BE UTILIZED IF THE CONTRACTOR SUBMITS INDEPENDENT TESTING AND IT IS VERIFIED BY TDOT. HOWEVER, IN NO CASE SHALL THE FRICTION ANGLE FOR ANALYSIS EXCEED 40-DEGREES.
1A	SELECT BACKFILL UNIT WEIGHT TO BE DETERMINED BY CONTRACTOR/DESIGNER DEPENDING ON ACTUAL BACKFILL MATERIAL USED. SELECT BACKFILL IS DEFINED AS MATERIAL MEETING SPECIFICATIONS IN SECTION F, PART 1, AND ITEM E OF TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. IN ORDER TO UTILIZED ϕ FOR SELECT BACKFILL DESIGN, SELECT BACKFILL MUST BE PLACED FOR A MINIMUM ZONE FORMED BY A 1:1 SLOPE FROM 2 FEET BEHIND THE BOTTOM OF BACK OF WALL FOOTING OR REINFORCED SOIL ZONE FOR MSE WALLS UP TO FINISHED GRADE.
2	APPLY TO PRESUMPTIVE ULTIMATE UNIT BOND STRESSES FOR PRELIMINARY DESIGN ONLY
3	APPLY WHERE PROOF TEST(S) ARE CONDUCTED ON EVERY PRODUCTION ANCHOR TO A LOAD OF 1.0 OR GREATER TIMES THE FACTORED LOAD ON THE ANCHOR.
4	APPLY TO MAXIMUM PROOF TEST FOR ANCHORS. FOR MILD STEEL, APPLY RESISTANCE FACTOR TO Fy. FOR HIGH STRENGTH STEEL, APPLY THE RESISTANCE FACTOR TO GUARANTEED ULTIMATE TENSILE STRENGTH.
	UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE FACTORS SHALL BE TAKEN AS 1.0 WHEN INVESTIGATING AN EXTREME EVENT LIMIT STATE

SEE GENERAL NOTES ON SHEET U-58-160.

TABLE 2 SOIL AND BED ROCK DESIGN PARAMETERS FOR SOLDIER PILE AND LAGGING WALL OR ANCHOR WALL

STATION LIMITS	MATERIAL	NOMINAL PULLOUT RESISTANCE	UNCONFINED COMPRESSIVE STRENGTH	UNIT WEIGHT
186+00 - 187+50	LEAN CLAY	0.6 ksf	1.5 ksf	120 pcf
	LIMESTONE (FORT PAYNE FORMATION)	20 ksf	350 ksf*	145 pcf

* INTACT ROCK CORE SPECIMEN

OTHER DESIGN REQUIREMENTS

THE ROCK SOCKETS FOR THE SOLDIER PILES AND ANCHORS WILL BE CONSTRUCTED IN LIMESTONE BEDROCK OF THE FORT PAYNE FORMATION. THE ESTIMATED ROCK LINE IS DEPICTED ON THE WALL PROFILE SHOWN ON THE RETAINING WALL GEOTECHNICAL DESIGN DRAWING AND THE ROADWAY CROSS-SECTIONS IN THE CONSTRUCTION PLAN SET. BASED ON ROCK DESCRIPTIONS OF FORT PAYNE FORMATION LIMESTONE ON THE BORING LOGS, STANTEC RECOMMENDS A PRESUMPTIVE UNCONFINED COMPRESSIVE STRENGTH OF 350 KSF FOR INTACT ROCK CORE SPECIMENS AND A UNIT WEIGHT OF 145 PCF BE USED FOR DESIGN PURPOSES. THE RETAINING WALL DESIGNER SHALL REDUCE THE STRENGTH OF THE INTACT ROCK CORE SPECIMENS TO BE REPRESENTATIVE OF THE ROCK MASS FOR DESIGN PURPOSES BASED ON THEIR INTERPRETATION OF ROCK CORING DATA PRESENTED ON THE GRAPHICAL BORING LOGS SHOWN ON THE RETAINING WALL GEOTECHNICAL DESIGN DRAWINGS.

ALL SOLDIER PILES SHALL BE SOCKETED INTO BEDROCK A MINIMUM OF 5 FEET. THE TOTAL EMBEDMENT DEPTHS SHALL BE DETERMINED BY THE WALL DESIGNER BASED ON THE LATERAL AND VERTICAL LOAD RESISTANCE REQUIREMENTS INHERENT TO THEIR DESIGN CONFIGURATION.

THE WALL SHALL HAVE A DRAINAGE GUTTER AT THE TOP DESIGNED TO CARRY SURFACE RUNOFF TO EITHER OR BOTH ENDS OF WALLS. DETAILS OF THIS DRAINAGE FEATURE SHALL BE PROVIDED IN WALL DESIGNER/CONTRACTOR'S WALL DESIGN PLANS.

CONSTRUCTION NOTES

ASSUME DRILLING THROUGH IN-PLACE ROCK OR RESIDUAL SOIL REQUIRED FOR INSTALLTION OF SOLDIER PILES.

TYPICAL CROSS-SECTION ON PREVIOUS SHEET DEPICTS CONDITIONS FOR DESIGN LOADS.

THE CONTRACTOR SHALL COORDINATE THE WALL DESIGN CONFIGURATION AND DETAILS WITH EXISTING AND PROPOSED UTILITIES TO AVOID CONFLICTS.

BECAUSE OF THE LIMITED AMOUNT OF BEDROCK INFORMATION ALONG THE WALL ALIGNMENT, ONE PERCUSSION TEST HOLE SHOULD BE DRILLED EVERY THIRD SOLDIER PILE LOCATION IN ORDER TO VERIFY BEDROCK COMPETENCY WITHIN AND BELOW THE ROCK SOCKET. THE PERCUSSION TEST HOLES SHOULD BE EXTENDED A MINIMUM OF FIVE (5) FEET OR FIVE TIMES THE PILE WIDTH/DIAMETER (5B) BELOW THE PLANNED PILE BEARING ELEVATION. EACH TEST HOLE SHALL BE EVALUATED BY A TECHNICIAN WORKING UNDER THE DIRECT SUPERVISION OF A LICENSED GEOTECHNICAL ENGINEER BY MONITORING THE ADVANCEMENT OF THE PERCUSSION DRILLING TOOLS. THE PERCUSSION DRILLING TOOLS SHOULD ADVANCE WITH DEPTH AT A CONSISTENT RATE. RAPID ADVANCEMENT OR "DROPPING" OF THE DRILL TOOLS OF GREATER THAN 2 INCHES SHALL CONSTITUTE A DISCONTINUITY OR DELETERIOUS FEATURE. AFTER PENETRATING THE MINIMUM REQUIRED EMBEDMENT DEPTH, NO DISCONTINUITY OR DELETERIOUS FEATURE OF GREATER THAN 2 INCHES WILL BE ACCEPTED WITHIN THE PROPOSED ROCK SOCKET. CUMULATIVE DISCONTINUITIES OR DELETERIOUS FEATURES SHALL NOT EXCEED 6 INCHES TOTAL BENEATH THE PROPOSED ROCK SOCKET. IF THE ABOVE CUMULATIVE DELETERIOUS FEATURES ARE EXCEEDED UPON REACHING THE MINIMUM DISTANCE BELOW THE ROCK SOCKET, THE DESIGNER SHALL BE CONTACTED TO ASSESS THE PILE EMBEDMENT REQUIREMENTS INHERENT TO THEIR DESIGN ASSUMPTIONS. THE TEST HOLES SHALL BE PAID SEPARATELY UNDER ITEM NO. 203-40.05.

DUE TO THE SITE GEOLOGY AND THE POTENTIAL CORROSIVE ENVIRONMENT AT THE ANCHOR AREA, IT IS RECOMMENDED THAT THE TENDON BOND LENGTH BE ENCAPSULATED TO PROVIDE ADDITIONAL CORROSION PROTECTION (DOUBLE CORROSION PROTECTION), THE ENCAPSULATION SHALL BE FABRICATED FROM ONE THE FOLLOWING:

i. HIGH DENSITY CORRUGATED POLYETHYLENE TUBING CONFORMING TO THE REQUIREMENTS OF ASSHTO M 252 AND HAVING A MINIMUM WALL THICKNESS OF 0.06 INCH EXEPT PREGROUTED TENDONS, WHICK MAY HAVE A MINIMUM WALL THICHNESS OF 0.04 INCH.

ii. CORRUGATED POLYVINYL CHLORIDE TUBES MANUFACTURED FROM RIGID PVC COMPOUNDS CONFORMING TO ASTM D 1784, CLASS 13646-B.

UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY

SR-10 NORTHBOUND
MACON COUNTY
STA.186+00.00 TO STA.187+50.00

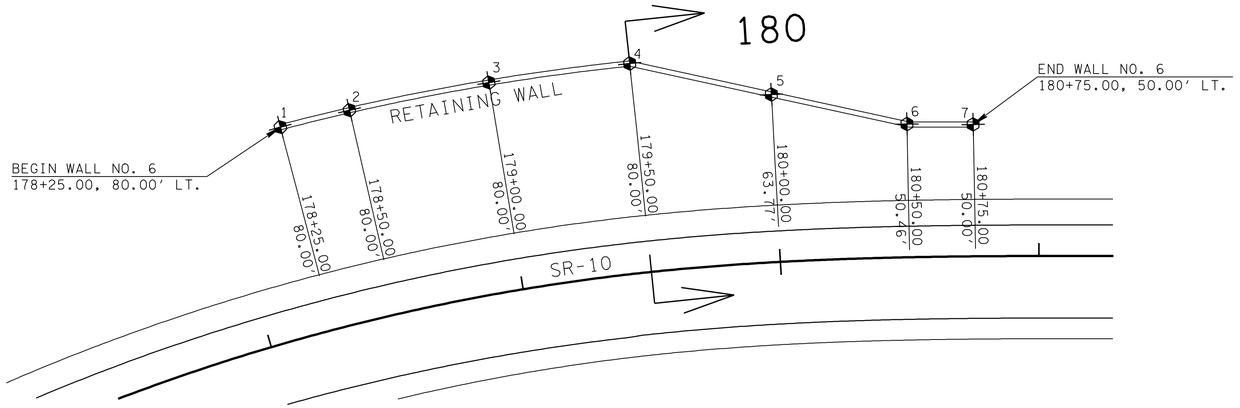
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

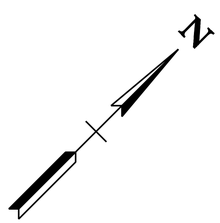
RETAINING WALL NO. 5 GEOTECHNICAL NOTES

19-MAR-2014 12:33
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\SHEET 2Va _Wall-5_Notes.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/HSIP-10(24)	2W

L2 LETTING REV: 05-19-14 REVISED ITEM NO. 604-07.06 QUANTITY. ADDED 2' LINE BELOW PROP. GROUND @ WALL FACE.

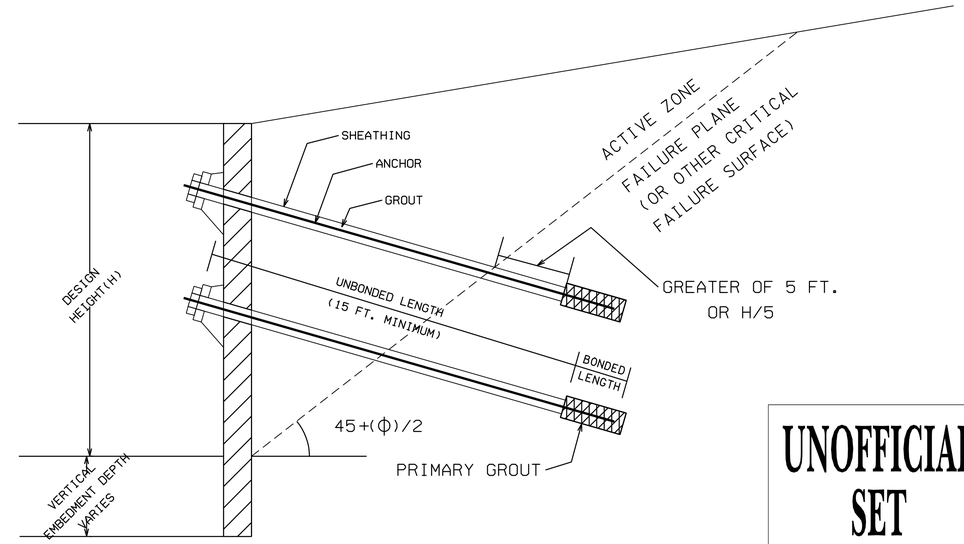




WALL PLAN VIEW
1" = 30'

STAKING POINTS FOR DRILLING					
NO.	STATION	CENTERLINE REFERENCE	N	E	ELEVATION *
1	178+25	80.00' LT. SR-10	794200.15	1956948.96	
2	178+50	80.00' LT. SR-10	794221.25	1956966.95	
3	179+00	80.00' LT. SR-10	794266.78	1956997.12	
4	179+50	80.00' LT. SR-10	794307.64	1957033.39	
5	180+00	63.77' LT. SR-10	794342.98	1957074.23	
6	180+50	50.46' LT. SR-10	794371.90	1957119.39	
7	180+75	50.00' LT. SR-10	794389.87	1957137.52	

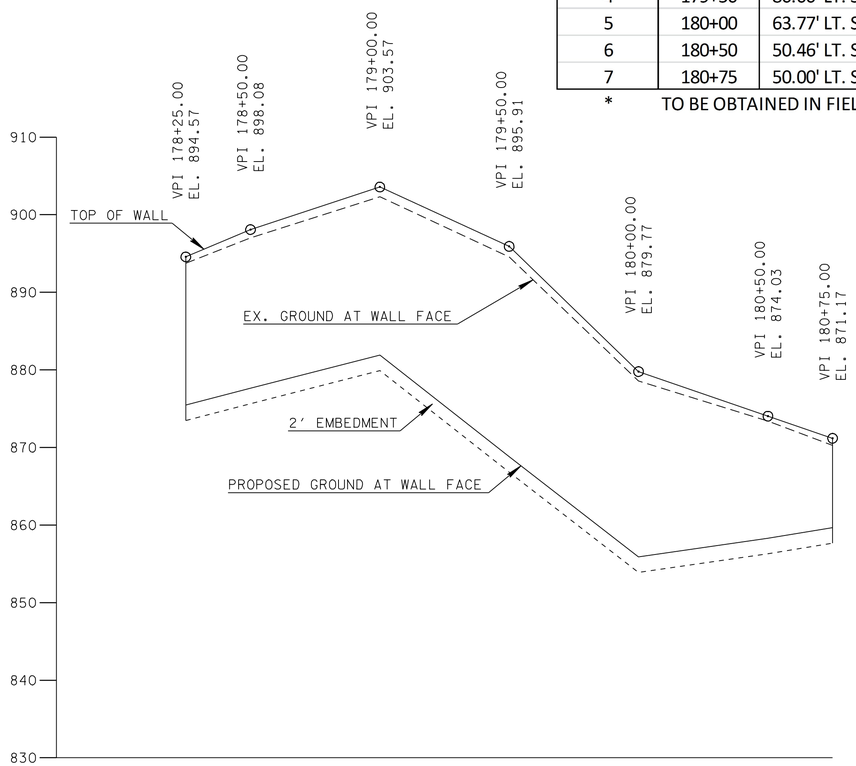
* TO BE OBTAINED IN FIELD BY SURVEY



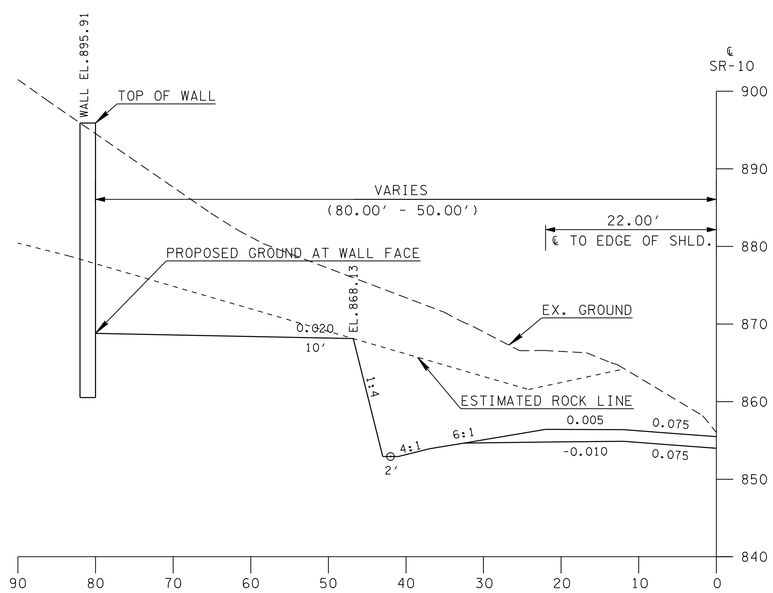
TYPICAL ANCHOR WALL SECTION
NTS FOR SCHEMATIC PURPOSE ONLY

UNOFFICIAL SET
NOT FOR BIDDING

NOTE: THE RETAINING WALL PAY QUANTITY IS BASED ON THE SURFACE AREA BETWEEN THE APPROXIMATE TOP OF WALL AND 2' BELOW THE EXISTING/PROPOSED GROUND LINE.



WALL ELEVATION VIEW
1" = 30' H
1" = 10' V



WALL TYP. CROSS-SECTION @ STA 179+50.00
1" = 10' H
1" = 10' V

ESTIMATED QUANTITIES	
ITEM NO.	604-07.06
DESCRIPTION	RETAINING WALL (WALL NO. 6) SQ. FT.
QUANTITY	5,871

SEALED BY

SR-10 EASTBOUND
MACON COUNTY
STA.178+25.00 TO STA.180+75.00

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 6 CONCEPTUAL DRAWING

SHEET 1 OF 2

U-58-177

09-MAY-2014 16:36
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\SHEET 2W_Wall-6.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	
CONST.	2014	STP/PHSIP-10(24)	2Wa

SEE GENERAL NOTES ON SHEET U-58-160.

RETAINING WALL DESIGN NOTES

UNLESS SPECIFICALLY STATED OTHERWISE IN THE CONTRACT PLANS, THE BIDDING FOR, THE DESIGN OF AND THE CONSTRUCTION OF RETAINING WALLS SHOWN IN THE PLANS SHALL BE GOVERNED BY THE TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. THIS SPECIAL PROVISION SHALL BE CONSIDERED AS ONE OF THOSE DOCUMENTS WHICH THE BIDDER/CONTRACTOR HAS EXAMINED AND MADE HIMSELF FAMILIAR WITH AS DESCRIBED IN SECTION 102.04 - EXAMINATION OF THE SITE, THE WORK, THE PLANS, AND THE SPECIFICATIONS IN THE TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

EXCAVATION FOR THE WALL AND/OR ITS FOOTING SHALL NOT BE ACCOMPLISHED UNTIL THE CONTRACTOR HAS SUBMITTED WALL DESIGNS AND CALCULATIONS AND HAS BEEN ISSUED AN APPROVED SET OF WALL PLANS AND HAS LABOR AND MATERIAL RESOURCES AVAILABLE TO BEGIN AND CONTINUE WALL CONSTRUCTION IMMEDIATELY AFTER EXCAVATION.

THIS WALL SHALL BE DESIGNED IN ACCORDANCE WITH LRFD DESIGN PROCEDURES AND REQUIREMENTS AS DESCRIBED IN 1) AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS AND 2) PUBLICATION FHWA-IF-99-015/FHWA GEC 004 GROUND ANCHORS AND ANCHORED SYSTEMS, JUNE 1999.

FOR PROPRIETARY WALL SYSTEMS THAT HAVE BEEN APPROVED AS SHOWN IN SPECIAL PROVISION 624, THE WALL DESIGNER SHALL BE RESPONSIBLE FOR PROVIDING WALL DESIGNS INCORPORATING MATERIALS AND COMPONENTS (I.E. REINFORCEMENT CONNECTION DEVICES, SPECIFIC MANUFACTURER AND PROPERTIES OF GEOGRID) AS WAS ORIGINALLY SUBMITTED AND APPROVED BY TDOT, IF A MATERIAL AND/OR COMPONENT OF THE WALL SYSTEM HAVE BEEN MODIFIED FROM THE ORIGINALLY APPROVED SYSTEM, A WALL DESIGN AND SET OF PLANS AND CALCULATIONS FOR THIS WALL SYSTEM CANNOT BE SUBMITTED FOR REVIEW AND APPROVAL UNTIL THE WALL SYSTEM DESIGNER WHO ORIGINALLY SUBMITTED THE WALL SYSTEM FOR APPROVAL BY TDOT SUBMITS A REQUEST FOR RE-APPROVAL UTILIZING THE MODIFIED ELEMENTS OF THE WALL. THIS SUBMITTAL DOES NOT GUARANTEE APPROVAL OF THE MODIFIED SYSTEM. IF THIS RE-APPROVAL PROCESS DOES NOT MEET THE CONTRACTOR'S SCHEDULE OR IF THE MODIFIED SYSTEM IS NOT APPROVED, THE CONTRACTOR/WALL DESIGNER SHALL PROVIDE A WALL DESIGN FOR ONE OF THE APPROVED SYSTEMS AT NO CHANGE IN CONTRACT PRICE FOR THE RETAINING WALL AND NO CHANGE IN PROJECT SCHEDULE REQUIREMENTS WILL BE ALLOWED.

THE WALL DESIGNER SHALL PROVIDE RETAINING WALL PLANS, DETAILS AND CALCULATIONS AS REQUIRED BY SPECIAL PROVISION 624 AND AS REQUIRED HEREIN.

- THE WALL DESIGNER SHALL UTILIZE THE GEOTECHNICAL PARAMETERS AND RESISTANCE FACTORS AS PROVIDED FOR EACH PROJECT RETAINING WALL ON THE WALL CONCEPT SHEET AND RELATED RETAINING WALL SHEETS TO PREPARE AND SUBMIT DESIGN CALCULATIONS. LOAD FACTORS AND OTHER PERTINENT DESIGN REQUIREMENTS PROVIDED IN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS SHALL BE USED FOR NON-MSE WALLS AND PUBLICATION FHWA-NHI-10-024/FHWA GEC 011, DESIGN AND CONSTRUCTION OF MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES, NOVEMBER 2009 FOR MSE WALLS.
- CALCULATIONS FOR BOTH INTERNAL AND EXTERNAL STABILITY (SLIDING, ECCENTRICITY, AND BEARING CAPACITY-GLOBAL STABILITY AND SETTLEMENT BEING THE EXCEPTIONS) SHALL BE PROVIDED FOR EACH CRITICAL WALL SECTION WHICH DEMONSTRATES THE REQUIRED CAPACITY TO DEMAND RATIO OF 1.0 IS MET UTILIZING THE DESIGN PARAMETERS PROVIDED. FOR MSE WALLS, THE WALL DESIGNER MUST ADJUST THE REINFORCEMENT LENGTHS BEYOND THOSE MINIMUM REQUIRED LENGTHS, IF REQUIRED, TO MEET BOTH INTERNAL AND EXTERNAL REQUIREMENTS. THE WALL DESIGNER/CONTRACTOR PLANS MUST INCLUDE ANY FOUNDATION IMPROVEMENTS AS REQUIRED HEREIN ON THE WALL DESIGNER/CONTRACTOR'S WALL ELEVATION VIEWS AND ANY CROSS-SECTIONAL DETAIL DRAWINGS.
- UNLESS OTHERWISE STATED, THE WALL DESIGNER CAN ASSUME THAT MINIMUM GLOBAL STABILITY AND SETTLEMENT CRITERIA IS ACHIEVED WITH A WALL DESIGN MEETING OTHER MINIMUM EXTERNAL STABILITY REQUIREMENTS AND ASSUMING WALL FOUNDATION CONDITIONS ARE MET. WHILE THE WALL DESIGNER'S DESIGN MUST DEMONSTRATE COMPLIANCE WITH EXTERNAL STABILITY REQUIREMENTS AS DISCUSSED ABOVE, THE WALL DESIGNER MAY PROVIDE CERTIFICATION (BY SIGNING AND STAMPING BY PROFESSIONAL ENGINEER REGISTERED IN STATE OF TENNESSEE) OF THE WALLS PLANS AND CALCULATIONS "FOR INTERNAL STABILITY ONLY".
- LOAD COMBINATIONS STRENGTH I, EXTREME EVENT I, AND EXTREME EVENT II AS GIVEN IN TABLE 4-1 OF PUBLICATION FHWA-NHI-10-024/FHWA GEC 011, DESIGN AND CONSTRUCTION OF MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES, NOVEMBER 2009 FOR MSE WALLS SHALL BE EVALUATED FOR MSE WALLS. LOAD COMBINATIONS FOR OTHER WALL TYPES SHALL BE AS GIVEN IN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 AND INTERIMS

NOTE REGARDING CONSTRUCTION SLOPES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE EXCAVATION IN ACCORDANCE WITH OSHA AND OTHER APPLICABLE STATE AND LOCAL REGULATIONS REGARDING CONSTRUCTION SLOPES AND TRENCHES. IN ADDITION TO FOLLOWING APPLICABLE REGULATORY REQUIREMENTS, AS A MINIMUM REQUIREMENT, ALL TEMPORARY CONSTRUCTION SLOPES SHALL BE PLACED AT A MAXIMUM OF A 1:1 SLOPE IN SOIL AND SHALL NOT BE LEFT OPEN WITHOUT SHORING FOR ANY LONGER THAN ABSOLUTELY NECESSARY. THE CONTRACTOR BUILDING THE WALL SHALL ENSURE THAT THESE TEMPORARY BACK SLOPES ARE NOT AND DO NOT BECOME UNSTABLE. IF SLOPE IS UNSTABLE, BECOMES UNSTABLE, IS CUT STEEPER THAN A 1:1 SLOPE OR IS UNACCEPTABLE FOR ANOTHER REASON, THEN TEMPORARY SHORING SHALL BE USED. ANY UNUSUAL SOIL CONDITIONS OTHER THAN THOSE ASSUMED SHOULD BE REPORTED TO THE PROJECT ENGINEER.

ACCEPTABLE WALL TYPES

THE RETAINING WALL SHALL BE ONE OF THE WALL TYPES LISTED BELOW. FOR RETAINING WALL SYSTEMS LISTED AS BIN WALL, CRIB WALL, MSE (EITHER SEGMENTAL PANEL OR MODULAR BLOCK) AND GROUND ANCHOR WALL, THE SPECIFIC WALL SYSTEM SUPPLIER/INSTALLER SHALL BE ONE OF THOSE LISTED AS PRE-APPROVED IN THE SPECIAL PROVISION 624.

- SOLDIER PILE AND LAGGING WALL (UNANCHORED)
- ANCHORED WALL (ANCHORS SHALL NOT EXTEND OUTSIDE OF THE TDOT RIGHT-OF-WAY)

TABLE 1-DESIGN REQUIREMENTS AND PARAMETERS

DESCRIPTION	VALUE-SOLDIER PILE AND LAGGING WALLS (UNANCHORED AND ANCHORED)	NOTE *
DESIGN LIFE	75 YEARS	
SEISMIC ACCELERATION COEFFICIENT (As)	0.201	
EFFECTIVE (DRAINED) FRICTION ANGLE		
RETAINED BACKFILL-UNCLASSIFIED SITE OR BORROW SOIL	26°	
RETAINED BACKFILL-SELECT BACKFILL	34° TO MAX 40°	1
UNIT WEIGHT		
UNCLASSIFIED SITE OR BORROW SOIL	120 POUNDS PER CUBIC FOOT	
SELECT BACKFILL MATERIAL	VARIES	1A
PULLOUT RESISTANCE OF ANCHORS		
COHESIONLESS (GRANULAR) SOILS	0.65	2
COHESIVE SOILS	0.70	
ROCK	0.50	
WHERE PROOF TESTS ARE CONDUCTED	1.0	3
TENSILE RESISTANCE OF ANCHOR TENDON		
MILD STEEL, (E.G., ASTM A615 BARS)	0.90	4
HIGH STRENGTH STEEL (E.G., ASTM A722 BARS)	0.80	
FLEXURAL CAPACITY OF VERTICAL ELEMENTS	0.90	
RESISTANCE FACTORS OF A SINGLE DRIVEN PILE		
STATIC ANALYSIS METHODS		
SIDE RESISTANCE AND END BEARING: CLAY AND MIXED SOILS		
α-METHOD (TOMLINSON, 1987; SKEMPTON, 1951)	0.35	
β-METHOD (ESRIG & KIRBY, 1997; SKEMPTON 1951)	0.25	
λ-METHOD (VIJAYVERGIYA & FOCHT, 1972; SKEMPTON 1951)	0.40	
SIDE RESISTANCE AND END BEARING: SAND		
NORDLUND/THURMAND METHOD (HANNIGAN ET AL, 2005	0.45	
SPT-METHOD (MEYERHOF)	0.30	
CPT-METHOD (SCHMERTMANN)	0.50	
END BEARING IN ROCK (CANADIAN GEOTECHNICAL SOCIETY)	0.45	
LATERAL GEOTECHNICAL RESISTANCE OF A SINGLE PILE		
ALL SOILS AND ROCK	1.0	
RESISTANCE FACTORS OF A SINGLE DRILLED PILE/SHAFT		
SIDE RESISTANCE IN CLAY		
α-METHOD (O'NEILL AND REESE, 1999)	0.45	
TIP RESISTANCE IN CLAY		
TOTAL STRESS (O'NEILL AND REESE, 1999)	0.40	
SIDE RESISTANCE IN SAND		
β-METHOD (O'NEILL AND REESE, 1999)	0.55	
TIP RESISTANCE IN SAND		
O'NEILL AND REESE, 1999	0.50	
SIDE RESISTANCE IN INTERMEDIATE GEOMATERIALS (IGMs)		
O'NEILL AND REESE, 1999	0.60	
TIP RESISTANCE IN INTERMEDIATE GEOMATERIALS (IGMs)		
O'NEILL AND REESE, 1999	0.55	
SIDE RESISTANCE IN ROCK		
HORVATH AND KENNEY (1979), OR O'NEILL AND REESE (1999)	0.55	
CARTER AND KULHAWY (1988)	0.50	
TIP RESISTANCE IN ROCK		
CANADIAN GEOTECHNICAL. SOCIETY (1985), ORO'NEILL AND REESE (1999)	0.50	
LATERAL GEOTECHNICAL RESISTANCE OF A SINGLE PILE/SHAFT		
ALL MATERIALS	1.0	
*REFER TO TABLE 1.1 FOR NOTES.		

TABLE 1.1
NOTES FOR TABLE 1

NO.	NOTE
1	A MINIMUM FRICTION ANGLE OF 34 DEGREES CAN BE ASSUMED FOR MATERIAL MEETING SPECIFICATIONS IN SECTION F, PART1, AND ITEM E OF TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. A HIGHER FRICTION ANGLE CAN BE UTILIZED IF THE CONTRACTOR SUBMITS INDEPENDENT TESTING AND IT IS VERIFIED BY TDOT. HOWEVER, IN NO CASE SHALL THE FRICTION ANGLE FOR ANALYSIS EXCEED 40-DEGREES.
1A	SELECT BACKFILL UNIT WEIGHT TO BE DETERMINED BY CONTRACTOR/DESIGNER DEPENDING ON ACTUAL BACKFILL MATERIAL USED. SELECT BACKFILL IS DEFINED AS MATERIAL MEETING SPECIFICATIONS IN SECTION F, PART 1, AND ITEM E OF TENNESSEE DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION 624 REGARDING RETAINING WALLS. IN ORDER TO UTILIZED ϕ FOR SELECT BACKFILL DESIGN, SELECT BACKFILL MUST BE PLACED FOR A MINIMUM ZONE FORMED BY A 1:1 SLOPE FROM 2 FEET BEHIND THE BOTTOM OF BACK OF WALL FOOTING OR REINFORCED SOIL ZONE FOR MSE WALLS UP TO FINISHED GRADE.
2	APPLY TO PRESUMPTIVE ULTIMATE UNIT BOND STRESSES FOR PRELIMINARY DESIGN ONLY
3	APPLY WHERE PROOF TEST(S) ARE CONDUCTED ON EVERY PRODUCTION ANCHOR TO A LOAD OF 1.0 OR GREATER TIMES THE FACTORED LOAD ON THE ANCHOR.
4	APPLY TO MAXIMUM PROOF TEST FOR ANCHORS. FOR MILD STEEL, APPLY RESISTANCE FACTOR TO Fy. FOR HIGH STRENGTH STEEL, APPLY THE RESISTANCE FACTOR TO GUARANTEED ULTIMATE TENSILE STRENGTH.
	UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE FACTORS SHALL BE TAKEN AS 1.0 WHEN INVESTIGATING AN EXTREME EVENT LIMIT STATE

TABLE 4-DESIGN PARAMETERS AND FOR ANCHORED WALL

STATION LIMITS	ELEVATION INTERNAL	MATERIAL	FRICTION ANGLE	COHESION	UNIT WEIGHT
178+25 TO 180+75	TOP OF WALL TO GROUND ELEVATION	LEAN CLAY	26 DEGREES	0 psf	120 pcf
	GROUND ELEVATION TO BASE OF WALL	SOFT SHALE / HARD LIMESTONE	40 DEGREES	7,500 psf	145 pcf

RESISTANCE PARAMETERS

STATION LIMITS	ELEVATION INTERNAL	MATERIAL	NOMINAL PULLOUT RESISTANCE	UNCONFINED COMPRESSIVE STRENGTH	UNIT WEIGHT
178+25 TO 180+75	TOP OF WALL TO GROUND ELEVATION	LEAN CLAY	0.6 kps/foot	1.5 ksf	120 pcf
	GROUND ELEVATION TO BASE OF WALL	SOFT SHALE / HARD LIMESTONE	4.2 kps/foot	15 ksf	145 pcf

OTHER DESIGN REQUIREMENTS

THE WALL SHALL HAVE A DRAINAGE GUTTER AT THE TOP DESIGNED TO CARRY SURFACE RUNOFF TO EITHER OR BOTH ENDS OF WALLS. DETAILS OF THIS DRAINAGE FEATURE SHALL BE PROVIDED IN WALL DESIGNER/CONTRACTOR'S WALL DESIGN PLANS. IF A CONCRETE CANTILEVER WALL IS USED, THE WALL DESIGNER MUST PROVIDE FOR A DRAINAGE LAYER BEHIND THE WALL STEM WITH ADEQUATE DRAINAGE PROVIDED VIA WEEP HOLES.

CONSTRUCTION NOTES

ASSUME THE DRILLING/ CORING OF SOLIDER PILES AND ANCHORS WILL ENCOUNTER COLLUVIUM SOILS OR VARIABLE INTERMITTED LAYERS OF SOFT SHALE AND HARD LIMESTONE. THEREFORE, THE CONTRACTOR /WALL DESIGNER SHALL BE PREPARED FOR ROCK DRILLING TECHNIQUES AS WELL AS SOIL DRILLING TECHNIQUES

THE PILES SHALL BE EMBEDDED A MINIMUM OF 5 FEET BELOW FINISHED GRADE AT BOTTOM OF WALL ELEVATION

THE CONTRACTOR/WALL DESIGNER SHALL INSTALL ANCHORS ONLY WITHIN TDOT RIGHT OF WAY

THE CONTRACTOR SHALL COORDINATE AND PERFORM ALL UTILITY RELOCATION SO THAT IT DOES NOT INTERFERE WITH THE RETAINING WALL INSTALLATION

BECAUSE OF THE LIMITED AMOUNT OF BEDROCK INFORMATION ALONG THE WALL ALIGNMENT, ONE PERCUSSION TEST HOLE SHOULD BE DRILLED EVERY THIRD SOLDIER PILE LOCATION IN ORDER TO VERIFY BEDROCK COMPETENCY WITHIN AND BELOW THE ROCK SOCKET. THE PERCUSSION TEST HOLES SHOULD BE EXTENDED A MINIMUM OF FIVE (5) FEET OR FIVE TIMES THE PILE WIDTH/DIAMETER (5B) BELOW THE PLANNED PILE BEARING ELEVATION. EACH TEST HOLE SHALL BE EVALUATED BY A TECHNICIAN WORKING UNDER THE DIRECT SUPERVISION OF A LICENSED GEOTECHNICAL ENGINEER BY MONITORING THE ADVANCEMENT OF THE PERCUSSION DRILLING TOOLS. THE PERCUSSION DRILLING TOOLS SHOULD ADVANCE WITH DEPTH AT A CONSISTENT RATE. RAPID ADVANCEMENT OR "DROPPING" OF THE DRILL TOOLS OF GREATER THAN 2 INCHES SHALL CONSTITUTE A DISCONTINUITY OR DELETERIOUS FEATURE. AFTER PENETRATING THE MINIMUM REQUIRED EMBEDMENT DEPTH, NO DISCONTINUITY OR DELETERIOUS FEATURE OF GREATER THAN 2 INCHES WILL BE ACCEPTED WITHIN THE PROPOSED ROCK SOCKET. CUMULATIVE DISCONTINUITIES OR DELETERIOUS FEATURES SHALL NOT EXCEED 6 INCHES TOTAL BENEATH THE PROPOSED ROCK SOCKET. IF THE ABOVE CUMULATIVE DELETERIOUS FEATURES ARE EXCEEDED UPON REACHING THE MINIMUM DISTANCE BELOW THE ROCK SOCKET, THE DESIGNER SHALL BE CONTACTED TO ASSESS THE PILE EMBEDMENT REQUIREMENTS INHERENT TO THEIR DESIGN ASSUMPTIONS. THE TEST HOLES SHALL BE PAID SEPARATELY UNDER ITEM NO. 203-40.05.

DUE TO THE SITE GEOLOGY AND THE POTENTIAL CORROSIVE ENVIRONMENT AT THE ANCHOR AREA, IT IS RECOMMENDED THAT THE TENDON BOND LENGTH BE ENCAPSULATED TO PROVIDE ADDITIONAL CORROSION PROTECTION (DOUBLE CORROSION PROTECTION), THE ENCAPSULATION SHALL BE FABRICATED FROM ONE THE FOLLOWING:

I. HIGH DENSITY CORRUGATED POLYETHYLENE TUBING CONFORMING TO THE REQUIREMENTS OF ASSHTO M 252 AND HAVING A MINIMUM WALL THICKNESS OF 0.06 INCH EXEPT PREGROUTED TENDONS, WHICK MAY HAVE A MINIMUM WALL THICHNESS OF 0.04 INCH.

II. CORRUGATED POLYVINYL CHLORIDE TUBES MANUFACTURED FROM RIGID PVC COMPOUNDS CONFORMING TO ASTM D 1784, CLASS 13646-B.

UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY

SR-10 NORTHBOUND
MACON COUNTY
STA.178+25.00 TO STA.180+75.00

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RETAINING WALL NO. 6 GEOTECHNICAL NOTES

SHEET 2 OF 2

19-MAR-2014 12:33
\\AMNASFL02\CADD\PRJ\34240A_SR10\CAD\DGN\SHEET 2Wa_Wall-6_Notes.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	2Wb

L2 LETTING REV: 05-19-14 ADDED EXISTING GROUND LINE. REVISED WALL PATTERN.

4-203.02

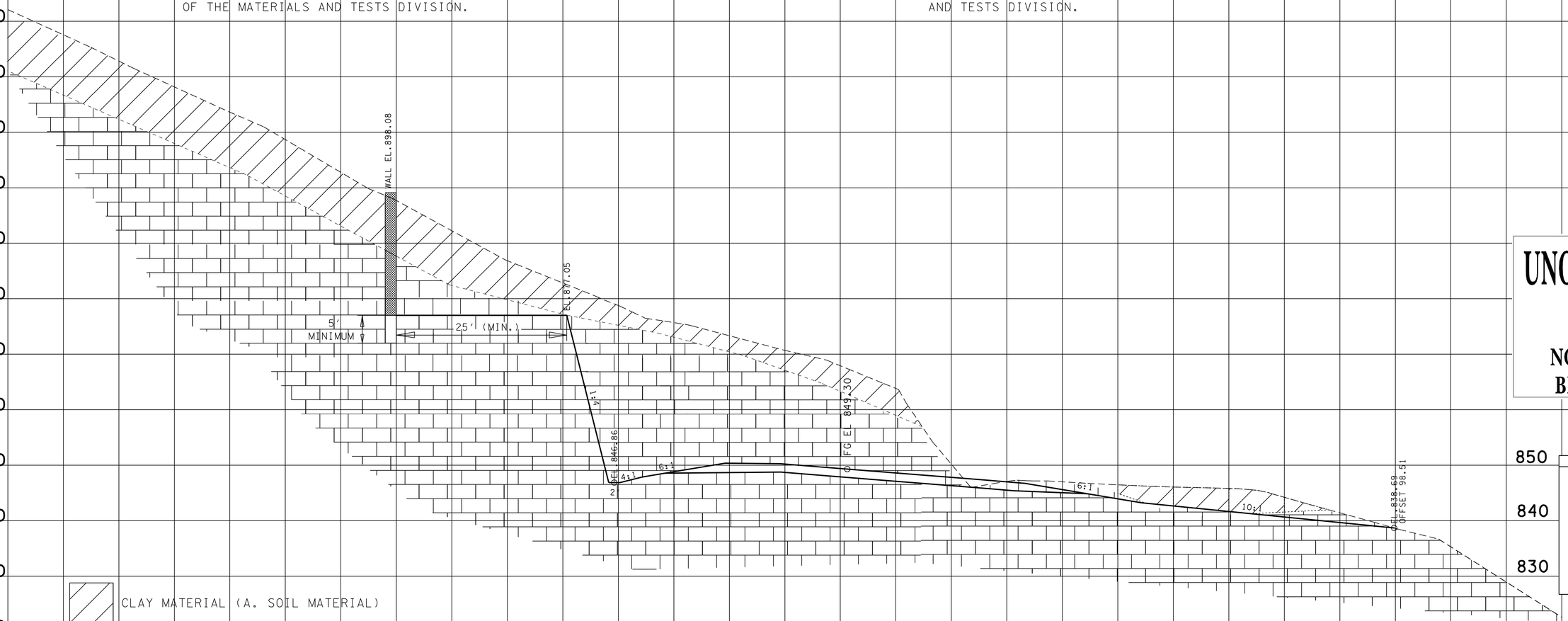
A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.



UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY

178+50.00

MACON COUNTY

19-MAY-2014 16:36
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\Typical178+50 Wall6 - Sheet 2Wb.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	2Wc

4-203.02

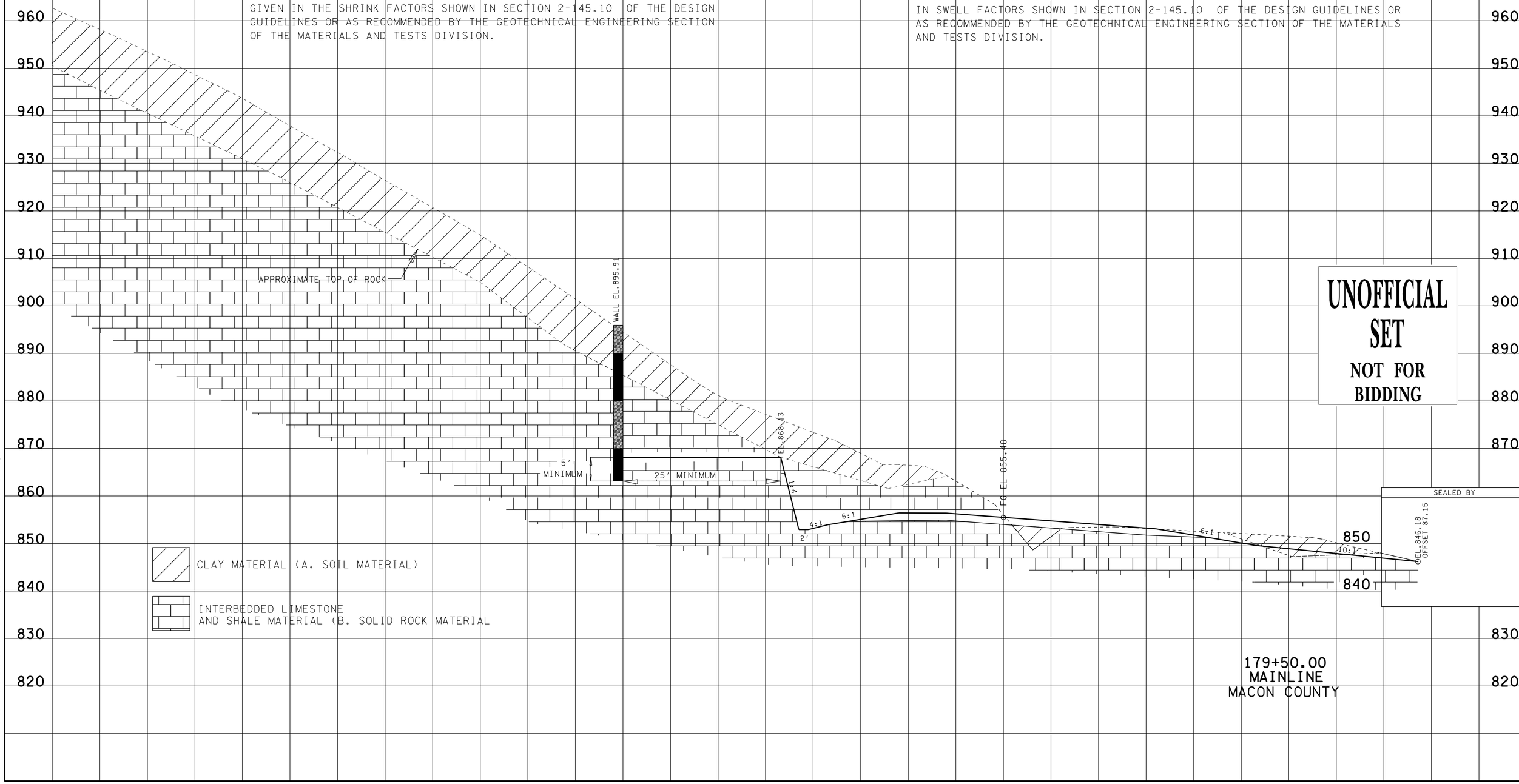
A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.



UNOFFICIAL SET
NOT FOR BIDDING

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179+50.00
MAINLINE
MACON COUNTY

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	2Wd

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

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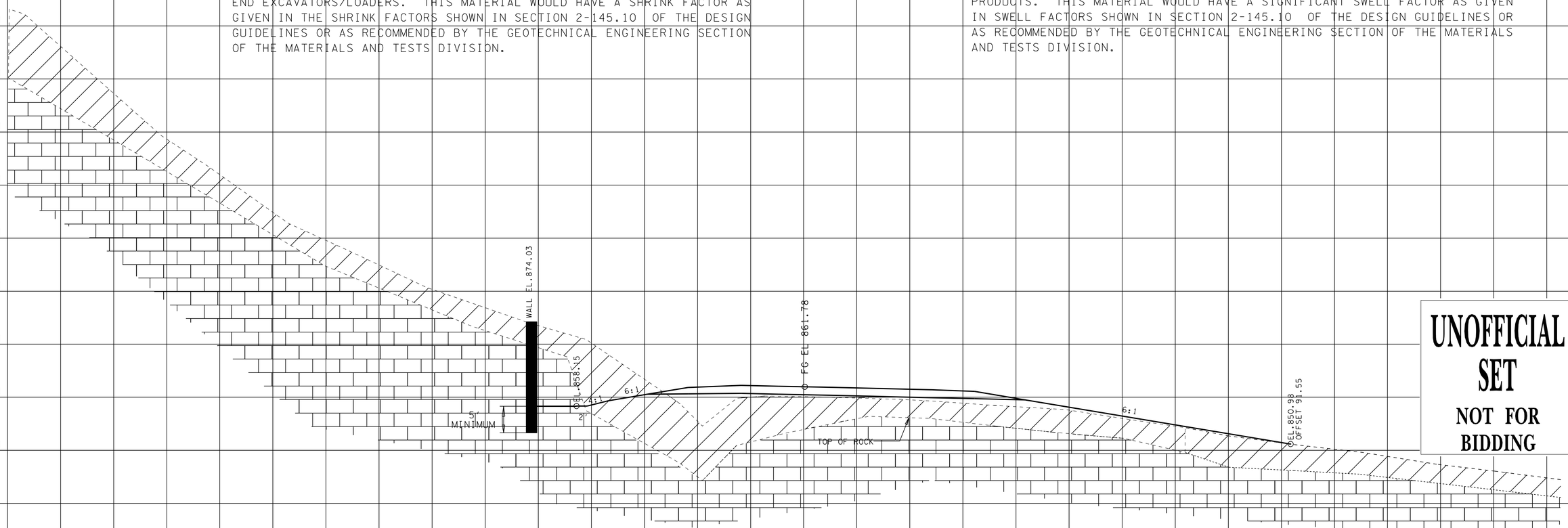

CLAY MATERIAL (A. SOIL MATERIAL)

INTERBEDDED LIMESTONE AND SHALE MATERIAL (B. SOLID ROCK MATERIAL

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180+50.00
MAINLINE
MACON COUNTY

140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	3
CONST.	2014	STP/PHSIP-10(24)	3

RIGHT-OF-WAY NOTES

(1) IT IS INTENDED THAT ALL BUILDINGS AND/OR PORTIONS OF BUILDINGS THAT ARE WITHIN THE PROPOSED RIGHT-OF-WAY AND/OR EASEMENT LINES FOR THE PROJECT BE REMOVED THERE FROM IN THE PROCESS OF RIGHT-OF-WAY ACQUISITION. IF ANY SUCH BUILDINGS OR IMPROVEMENTS ARE NOT REMOVED IN THE COURSE OF RIGHT-OF-WAY ACQUISITION, THE CIVIL ENGINEERING MANAGER 1, DESIGN DIVISION IS TO BE NOTIFIED IN SUFFICIENT TIME TO PERMIT HAVING SUCH REMOVALS DESIGNATED AS A PART OF THE CONSTRUCTION CONTRACT.

(2) EXISTING PAVED DRIVEWAY PER TRACT REMAINDER WILL BE REPLACED IN KIND TO A TOUCHDOWN POINT.

(3) WHERE THE EXISTING DRIVEWAY IS UNPAVED AND THE PROPOSED DRIVEWAY EXCEEDS 7 PERCENT IN GRADE, EACH DRIVEWAY WILL BE PAVED TO A TOUCHDOWN POINT OR UNTIL THE GRADE IS LESS THAN 7 PERCENT.

(4) WHERE THE EXISTING DRIVEWAY IS UNPAVED AND THE PROPOSED DRIVEWAY IS LESS THAN 7 PERCENT IN GRADE, EACH DRIVEWAY WILL BE PAVED A SHOULDER WIDTH FROM THE EDGE OF PAVEMENT AND THE REMAINDER OF THAT DRIVEWAY REPLACED IN KIND TO A TOUCHDOWN POINT.

(5) ANY NECESSARY PAVING OF DRIVEWAYS WILL BE DONE DURING PAVING OPERATIONS ON THE MAIN ROADWAY.

(6) NEW DRIVEWAYS PROVIDED IN THE PLANS WILL BE PAVED BASED ON THE 7 PERCENT CRITERIA. THOSE 7 PERCENT OR STEEPER IN GRADE WILL BE PAVED AND THOSE FLATTER THAN 7 PERCENT WILL BE COVERED WITH BASE STONE.

(7) ON PROJECTS WITHOUT CURB AND GUTTER, IT WILL BE THE RESPONSIBILITY OF THE OWNER TO SECURE A PERMIT AND TO CONSTRUCT ADDITIONAL DESIRED DRIVEWAYS.

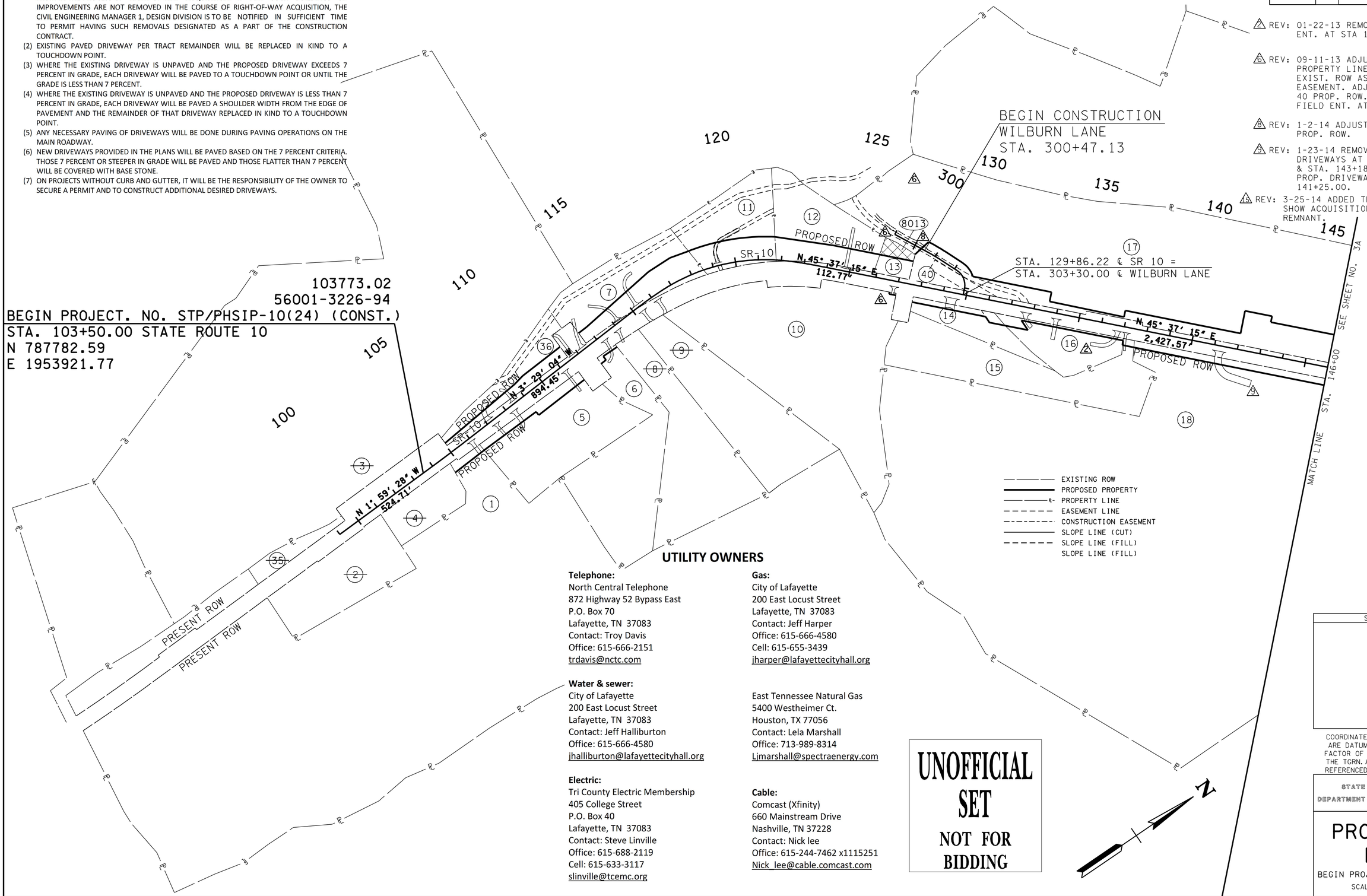
△2 REV: 01-22-13 REMOVED 16' BUS. ENT. AT STA 135+33.17

△6 REV: 09-11-13 ADJUSTED TRACT 13 PROPERTY LINES. RECLASSIFIED EXIST. ROW AS TEMP. BYPASS EASEMENT. ADJUSTED TRACT 40 PROP. ROW. ADDED 10' FIELD ENT. AT STA 126+85.00

△8 REV: 1-2-14 ADJUSTED TRACT 40 PROP. ROW.

△9 REV: 1-23-14 REMOVED PROP. DRIVEWAYS AT STA. 141+05.98 & STA. 143+18.88. ADDED PROP. DRIVEWAY AT STA. 141+25.00.

△15 REV: 3-25-14 ADDED TRACT 8013 TO SHOW ACQUISITION OF UNECONOMIC REMNANT.



UTILITY OWNERS

Telephone:
North Central Telephone
872 Highway 52 Bypass East
P.O. Box 70
Lafayette, TN 37083
Contact: Troy Davis
Office: 615-666-2151
trdavis@nctc.com

Water & sewer:
City of Lafayette
200 East Locust Street
Lafayette, TN 37083
Contact: Jeff Halliburton
Office: 615-666-4580
jhalliburton@lafayettecityhall.org

Electric:
Tri County Electric Membership
405 College Street
P.O. Box 40
Lafayette, TN 37083
Contact: Steve Linville
Office: 615-688-2119
Cell: 615-633-3117
slinville@tcemc.org

Gas:
City of Lafayette
200 East Locust Street
Lafayette, TN 37083
Contact: Jeff Harper
Office: 615-666-4580
Cell: 615-655-3439
jharper@lafayettecityhall.org

East Tennessee Natural Gas
5400 Westheimer Ct.
Houston, TX 77056
Contact: Lela Marshall
Office: 713-989-8314
Ljmarshall@spectraenergy.com

Cable:
Comcast (Xfinity)
660 Mainstream Drive
Nashville, TN 37228
Contact: Nick lee
Office: 615-244-7462 x1115251
Nick_lee@cable.comcast.com

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COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00001 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPERTY MAP

BEGIN PROJ. TO STA.146+00

SCALE: 1"=200'

25-MAR-2014 16:22
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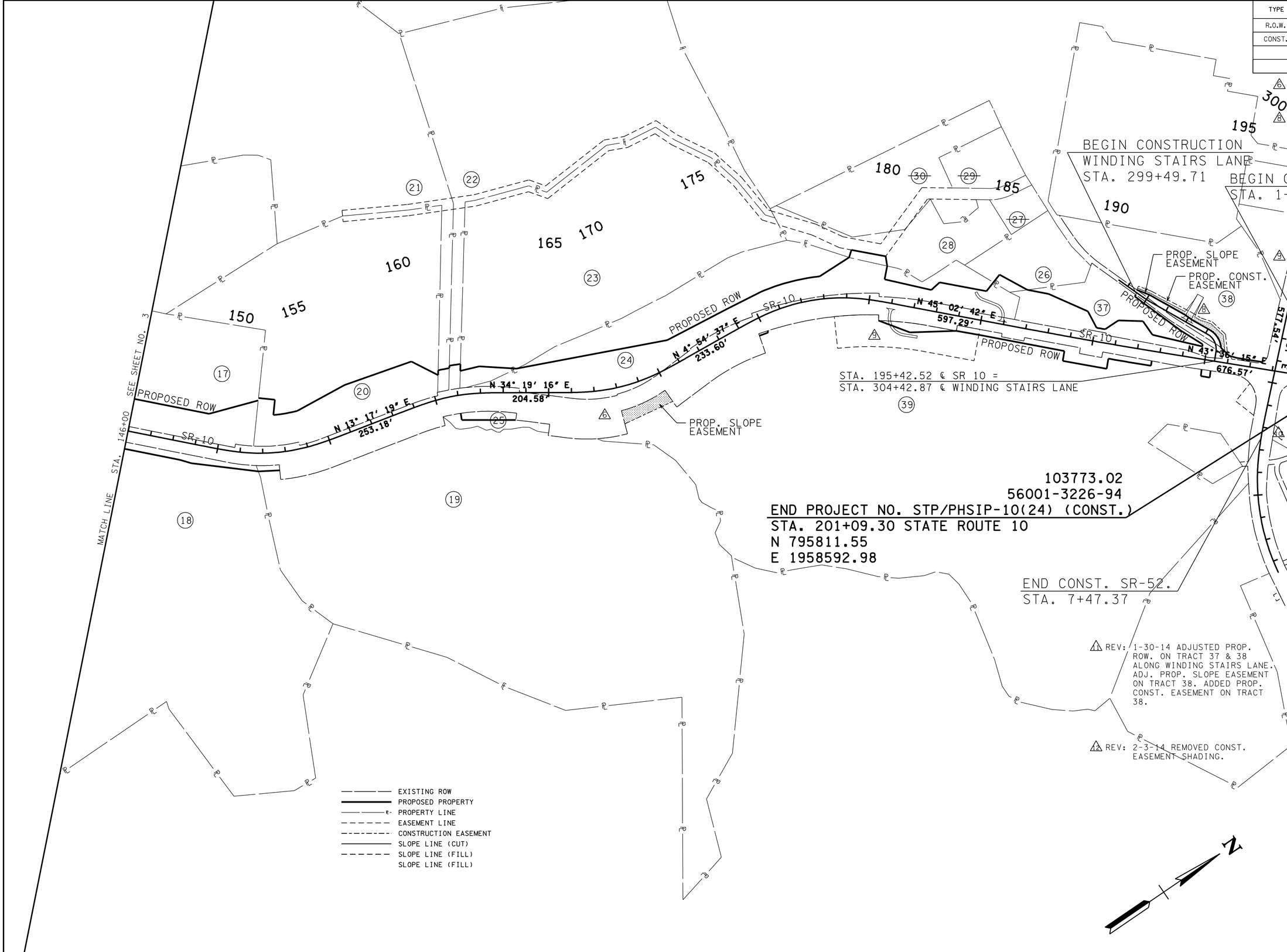
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	3A
CONST.	2014	STP/PHSIP-10(24)	3A



6 REV: 9-11-13 ADDED SLOPE EASEMENT

8 REV: 1-2-14 REVISED TRACT 38 PROP. ROW. ADDED SLOPE EASEMENT. ADDED 30' FIELD ENT. AT STA. 302+00.00

9 REV: 1-23-14 ADJUSTED PROP. ROW. ALONG NORTHERN SIDE OF SR-10 BETWEEN WINDING STAIRS LN & SR-52. ADDED 0' PVT. DRIVEWAY AT STA. 181+00.00

10 REV: 1-24-14 ADJUSTED PROP. ROW. ALONG NORTHERN SIDE OF SR-10 BETWEEN WINDING STAIRS LN & SR-52

11 REV: 1-30-14 ADJUSTED PROP. ROW. ON TRACT 37 & 38 ALONG WINDING STAIRS LANE. ADJ. PROP. SLOPE EASEMENT ON TRACT 38. ADDED PROP. CONST. EASEMENT ON TRACT 38.

12 REV: 2-3-14 REMOVED CONST. EASEMENT SHADING.

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SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPERTY MAP

STA. 146+00 TO END PROJ.

SCALE: 1"=200'

13-MAR-2014 11:43
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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	3B
CONST.	2014	STP/PHSIP-10(24)	3B

3 REV: 2-26-13 REMOVED PRELIM. ROW NOTE

5 REV: 7-11-13 REVISED TRACT 23 OWNER

6 REV: 9-11-13 REVISED TRACT 13 TOTAL AREA, AREA TO BE ACQUIRED & AREA REMAINING. REVISED TRACT 17 TOTAL AREA & AREA REMAINING. ADDED SLOPE EASEMENT TO TRACT 39. REVISED TRACT 40 AREA TO BE ACQUIRED & AREA REMAINING

7 REV: 9-30-13 REVISED TRACT 17 AREA TO BE ACQUIRED & AREA REMAINING

8 REV: 1-2-14 COMBINED TRACT 17 & 40. ADDED SLOPE EASEMENT ON TRACT 38

9 REV: 1-23-14 REVISED TRACT 38 TOTAL AREA, AREA TO BE ACQUIRED & AREA REMAINING

10 REV: 1-24-14 REVISED TRACT 38 TOTAL AREA, AREA TO BE ACQUIRED & AREA REMAINING

11 REV: 1-30-14 REV. TRACT 37 AREA TO BE ACQUIRED & AREA REMAINING. REV. TRACT 38 AREA TO BE ACQUIRED, AREA REMAIN. & SLOPE EASEMENT. ADDED CONST. EASEMENT ON TRACT 38

R.O.W. ACQUISITION TABLE

TRACT NO.	PROPERTY OWNERS	COUNTY RECORDS				TOTAL AREA (ACRES)			AREA TO BE ACQUIRED (ACRES)			AREA REMAINING (ACRES)		EASEMENT (SQUARE FEET)		
		TAX MAP NO.	PARCEL NO.	DEED DOCUMENT BK.	DEED DOCUMENT PAGE	LEFT	RIGHT	TOTAL	LEFT	RIGHT	TOTAL	LEFT	RIGHT	PERM DRAINAGE	SLOPE	CONST.
1	Roger A. Clark & Wife, Brenda G. Clark	69	10.03	273	300		46.607	46.607		0.129	0.129		46.479			
5	Margaret Sue Phillips	69	8.01	194	98		4.438	4.438		0.471	0.471		3.967			
6	Dennis Colter & Wife, Paulette Colter	69	9	210	257		5.134	5.134		1599 S.F.	1599 S.F.		5.097			
7	Dennis Colter & Wife, Donna Colter	69	7.01	191	264	3.293	0.123	3.416	1.158	0.123	1.281	2.135				
10	Jose Guerrero & Wife, Maria Guerrero	58	42	180	301		11.093	11.093		260 S.F.	260 S.F.		11.087			
11	Trustees of Trinity Faith Fellowship Church	58	42.04	263	169	2.870	0.127	2.997	0.807	0.127	0.934	2.063				
12	Judy G. Key	58	42.03	203	251	3.022	157 S.F.	3.025	0.875	157 S.F.	0.879	2.146				
13	Trustees of Trinity Faith Fellowship Church	58	42.02	263	169	0.285		0.285	0.285		0.285					
14	Angela L. Wright	59	24.06	295	137		1.237	1.237		0.237	0.237		1.000			
15	Henry W. Roark & Wife, Betty Ann Roark	59	24.01	127145	232311		4.965	4.965		1478 S.F.	1478 S.F.		4.931			
16	Kimberly Sue Key	59	24.02	238	412		1.718	1.718		0.206	0.206		1.512			
17 / 40	Roger A. Clark & Wife, Brenda G. Clark	59	24.03	202	429	37.800		37.800	5.025		5.025	32.775				
18	David Ace Harrington	59	24.08	275	1		81.871	81.871		0.956	0.956		80.915			
19	Frank W. Fitzgerald Jr. & Wife, Susan Fitzgerald	59	25	234	336		48.171	48.171		2386 S.F.	2386 S.F.		48.116			
20	Rex W. Clement & Wife, Julie T. Clement	59	23.03	206	154	17.872		17.872	3.221		3.221	14.651				
21	Jerry Bolton & Wife, Sarah Bolton and Marty Bolton & Wife, Sheryl Bolton	59	23.04	303	407	35.373		35.373	0.108		0.108	35.265				
22	Mike West	59	23.11	255	104	23.668		23.668	0.119		0.119	23.549				
23	Tim Wooten	59	23.06	300	183	20.393		20.393	0.311		0.311	20.082				
24	Stan D. Pipkin	59	2	235	391	11.292	0.291	11.584	5.837	0.291	6.128	5.455				
25	Herbert H. Pipkin & Wife, Charlene C. Pipkin	59	21	131234	457,69		0.604	0.604		0.197	0.197		0.407			
26	City of Lafayette, Tennessee	59	2.01	155	289	2.499		2.499	0.114		0.114	2.385				
28	Frank Gebhart & Debra N. Jones	59	23.12	267	166	3.822		3.822	0.141		0.141	3.681				
36	Dennis Colter & Wife, Paulette Colter	69	9	195210	352257	1.737		1.737	0.539		0.539	1.199				
37	Herbert H. Pipkin & Wife, Charlene C. Pipkin	59	21	131234	457,69	3.414		3.414	1.626		1.626	1.788				
38	Herbert H. Pipkin & Wife, Charlene C. Pipkin	59	21	131234	457,69	7.076		7.076	0.301		0.301	6.774			0.161 AC	0.119 AC
39	Herbert H. Pipkin & Wife, Charlene C. Pipkin	59	21	131234	457,69		62.945	62.945		0.804	0.804		62.141		0.269 AC	
8013	Trustees of Trinity Faith Fellowship Church	58	42.02	263	169	0.194		0.194	0.194		0.194					

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12 REV: 2-12-14 REV. TRACT 37 AREA TO BE ACQUIRED & AREA REMAINING.

13 REV: 3-25-14 ADDED TRACT 8013 TO SHOW ACQUISITION OF UNECONOMIC REMNANT. REVISED TRACT 13 TO BE A COMPLETE TAKE.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

RIGHT-OF-WAY ACQUISITION TABLE

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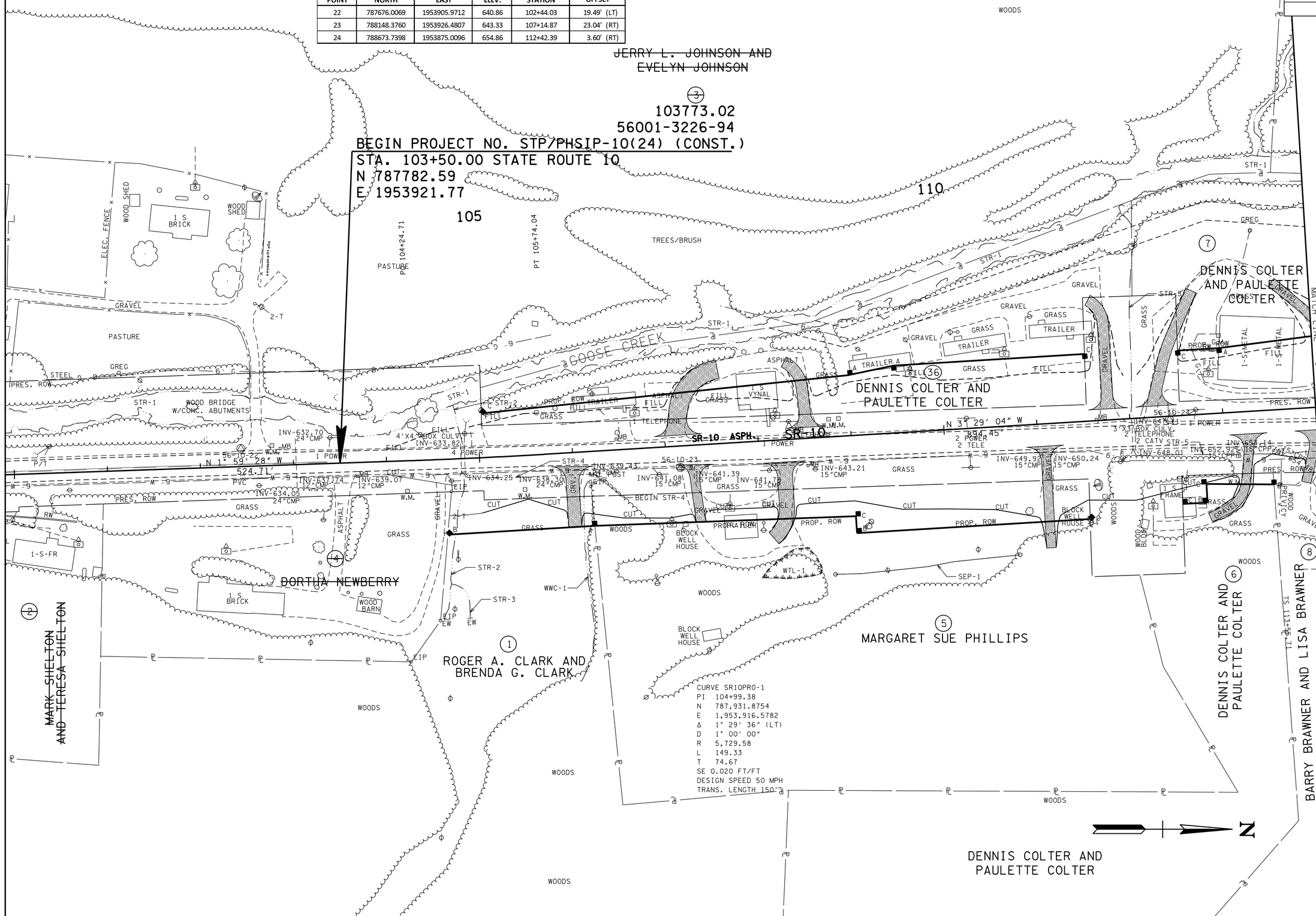
NAD83 (1995) - NAVD 1988 - DATUM ADJUSTMENT FACTOR = 1.00001

CONTROL POINTS					
56-10-## = PREFIX FOR CONTROL TABLE					
POINT	NORTH	EAST	ELEV.	STATION	OFFSET
22	787676.0069	1953905.9712	640.86	102+44.03	19.49' (LT)
23	788148.3760	1953926.4807	643.33	107+14.87	23.04' (RT)
24	788673.7398	1953875.0096	654.86	112+42.39	3.60' (RT)

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	4
CONST.	2014	STP/PHSIP-10(24)	4



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PRESENT LAYOUT

STA. 100+00 TO STA. 114+00

SCALE: 1"= 50'

13-MAR-2014 11:43
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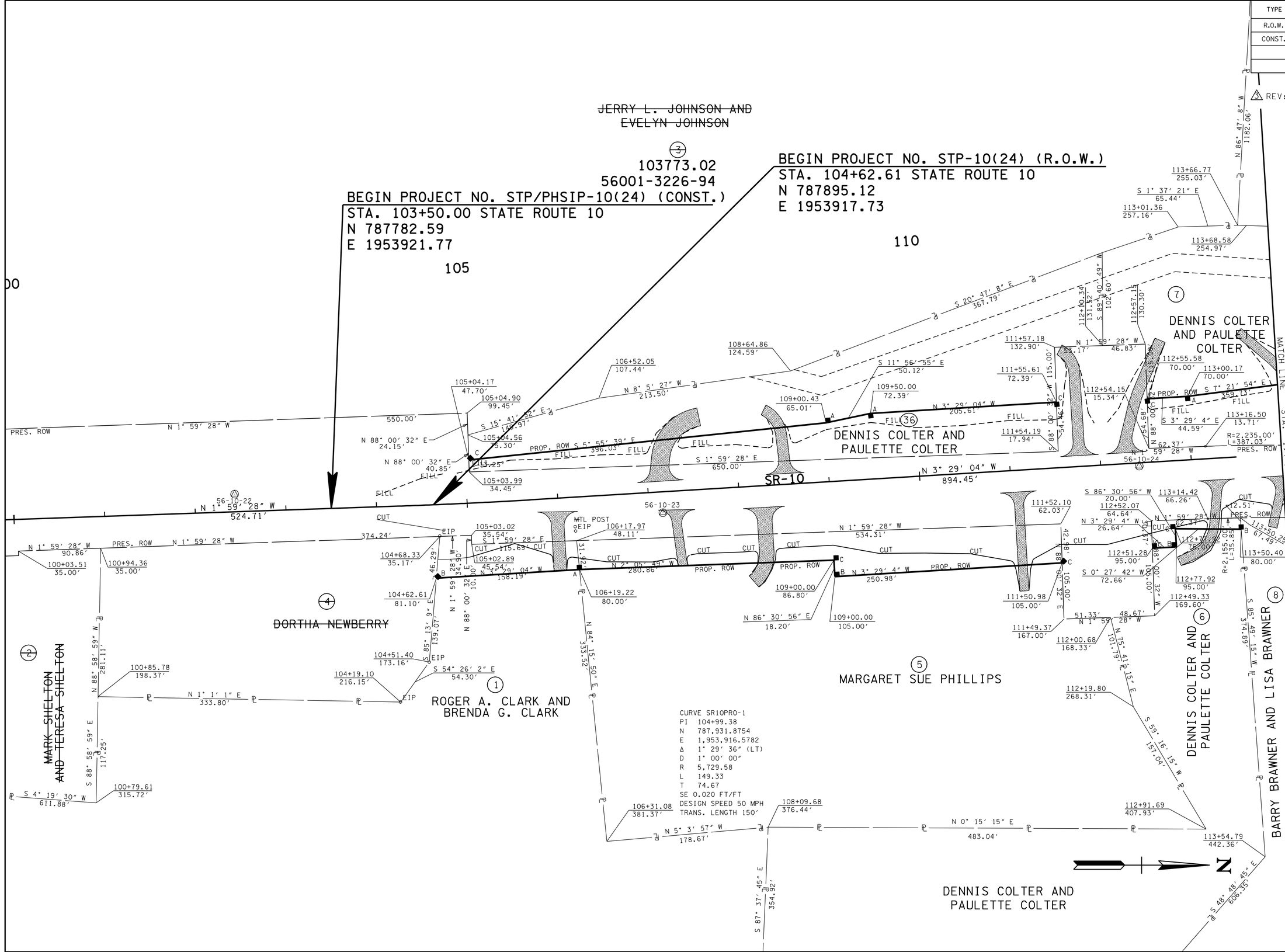
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	4A
CONST.	2014	STP/PHSIP-10(24)	4A

REV: 2-26-13 REVISED TO ADD MISSING BEARINGS, LENGTHS AND OFFSETS ALONG EXIST. AND PROP. ROW LINES



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

R.O.W. DETAILS

STA. 100+00 TO STA. 114+00

SCALE: 1"= 50'

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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	4B
CONST.	2014	STP/PHSIP-10(24)	4B

1. ENVIRONMENTAL CHANNEL RELOCATION

   THE NEW CHANNEL SHALL BE EXCAVATED AND STABILIZED DURING A LOW-WATER PERIOD. RIP-RAP (ONLY AS SHOWN ON PLANS), SEEDING, AND SOD SHALL BE INSTALLED IMMEDIATELY FOLLOWING CHANNEL COMPLETION. TREES SHALL BE INSTALLED IN THE FIRST PLANTING SEASON FOLLOWING CHANNEL EXCAVATION. WATER SHALL BE DIVERTED INTO THE NEW CHANNEL ONLY AFTER IT IS COMPLETELY STABILIZED, AND ONLY DURING A LOW-WATER PERIOD. STABILIZED MEANS THAT ALL SPECIFIED TOCK AN EROSION CONTROL BLANKET OR TURF REINFORCEMENT MAT IS IN PLACE, AND SEEDING AND SOD ARE IN PLACE AND ESTABLISHED.

2. CHANNEL RELOCATION SEQUENCE
   A. FLAG EDGE OF THE NEW CHANNEL TOP BANK PRIOR TO CLEANING. DO NOT CLEAR LARGE TREES IN POSITION TO SHADE THE NEW CHANNEL. LEAVE AS MANY TREES AND SHRUBS AS POSSIBLE BETWEEN TOE OF THE NEW HIGHWAY SLOPE AND THE STREAM.
   B. EXCAVATE THE NEW CHANNEL "IN THE DRY" BY LEAVING AREAS OF UNDISTURBED EARTH (DIVERSION BERMS) IN PLACE AT BOTH ENDS.
   C. SHAPE CHANNEL TO SPECIFICATIONS SHOWN. REMOVE LOOSE SOILS AND DEBRIS.
   D. PLACE TOPSOIL, EROSION CONTROL BLANKET OR TURF REINFORCEMENT MAT, SEED, AND SOD AS SPECIFIED
   E. REMOVE DIVERSION BERMS, BEGINNING WITH THE MOST DOWNSTREAM, BANKS AND BOTTOM ELEVATION OF THE OLD CHANNEL SHOULD TRANSITION SMOOTHLY INTO THE NEW CHANNEL. THE ELEVATIONS OF THE NEW CHANNEL BOTTOM AT EACH END OF THE RELOCATION SEQUENCE SHOULD MATCH THE ELEVATIONS OF THE EXISTING CHANNEL, AND A STEADY PERCENT SLOPE SHOULD BE MAINTAINED THROUGHOUT THE RELOCATED CHANNEL CENTERLINE OR AS SPECIFIED.
   F. INSTALL TREES ACCORDING TO STANDARD SPECIFICATIONS SECTION 802.

3. ONLY RIP-RAP SHOWN ON PLANS SHOULD BE USED IN THE RELOCATED CHANNEL REACH. ANY OTHER PROPOSED RIP-RAP SHOULD BE COORDINATED WITH THE ENVIRONMENTAL DIVISION THROUGH THE TDOT HEADQUARTERS CONSTRUCTION OFFICE.

4. REQUEST BY ANY AGENCY THAT WOULD REQUIRE THE MODIFICATION OF CHANNELS, DITCHES, ELEVATIONS, RIP-RAP OR ANY OTHER STREAM MITIGATION ITEMS ASSOCIATED WITH THE CHANNEL RELOCATIONS SHALL BE REFERRED TO THE TDOT ENVIRONMENTAL DIVISION VIA THE HEADQUARTERS CONSTRUCTION OFFICE FOR COORDINATION WITH ALL INVOLVED AGENCIES AND TDOT DIVISIONS.

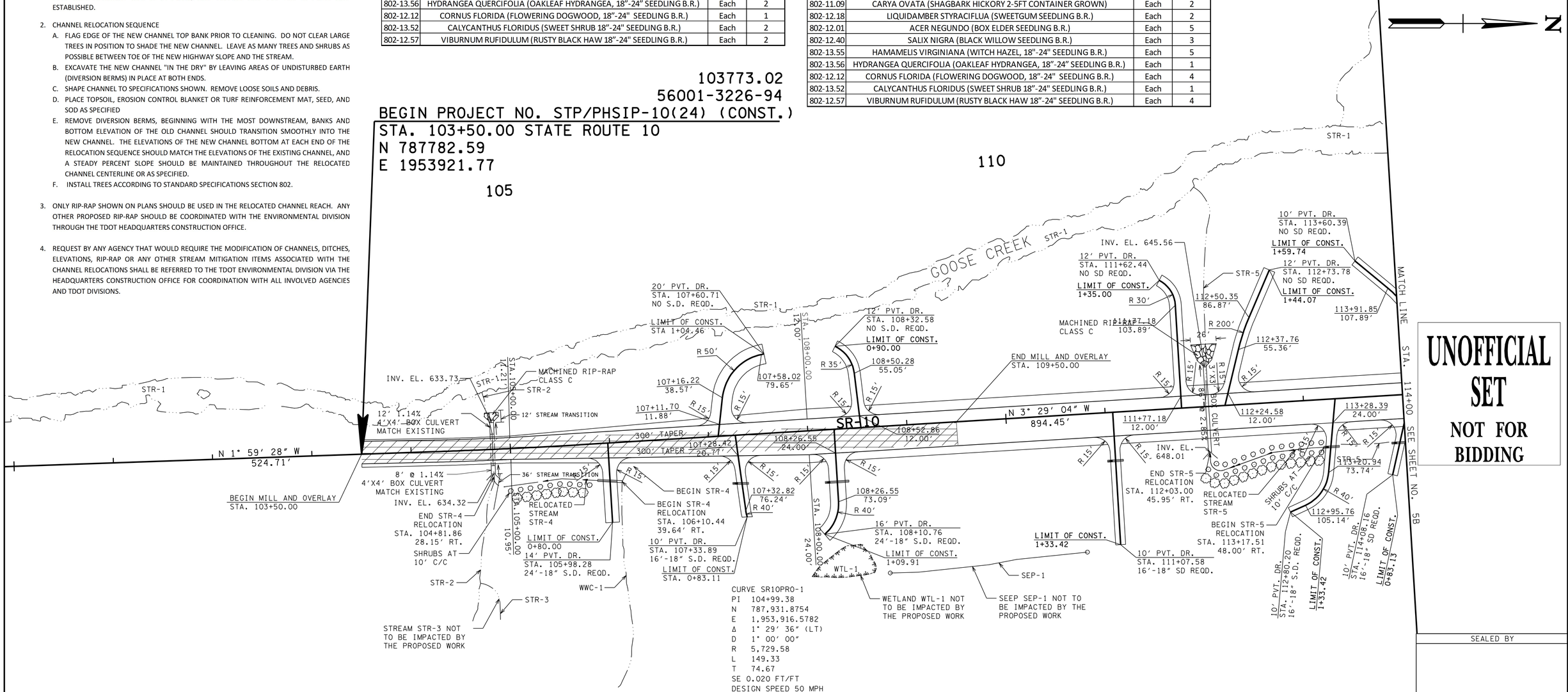
RELOCATED STR-4 PLANT QUANTITIES

Item #	Description	Unit	Quantity
802-11.04	ACER SACHARUM (SUGAR MAPLE 2-5FT CONTAINER GROWN)	Each	3
802-11.31	QUERCUS FALCATA (SOUTHERN RED OAK 2-5FT CONTAINER GROWN)	Each	2
802-11.09	CARYA OVATA (SHAGBARK HICKORY 2-5FT CONTAINER GROWN)	Each	3
802-13.55	HAMAMELIS VIRGINIANA (WITCH HAZEL, 18"-24" SEEDLING B.R.)	Each	2
802-13.56	HYDRANGEA QUERCIFOLIA (OAKLEAF HYDRANGEA, 18"-24" SEEDLING B.R.)	Each	2
802-12.12	CORNUS FLORIDA (FLOWERING DOGWOOD, 18"-24" SEEDLING B.R.)	Each	1
802-13.52	CALYCANTHUS FLORIDUS (SWEET SHRUB 18"-24" SEEDLING B.R.)	Each	2
802-12.57	VIBURNUM RUFIDULUM (RUSTY BLACK HAW 18"-24" SEEDLING B.R.)	Each	2

RELOCATED STR-5 PLANT QUANTITIES

Item #	Description	Unit	Quantity
802-11.04	ACER SACHARUM (SUGAR MAPLE 2-5FT CONTAINER GROWN)	Each	3
802-11.18	LIQUID AMBER STYRACIFLUA (SWEETGUM 2-5FT CONTAINER GROWN)	Each	3
802-11.26	PLANTUS OCCIDENTALIS (SYCAMORE 2-5FT CONTAINER GROWN)	Each	4
802-11.31	QUERCUS FALCATA (SOUTHERN RED OAK 2-5FT CONTAINER GROWN)	Each	1
802-11.09	CARYA OVATA (SHAGBARK HICKORY 2-5FT CONTAINER GROWN)	Each	2
802-12.18	LIQUIDAMBER STYRACIFLUA (SWEETGUM SEEDLING B.R.)	Each	2
802-12.01	ACER NEGUNDO (BOX ELDER SEEDLING B.R.)	Each	5
802-12.40	SALIX NIGRA (BLACK WILLOW SEEDLING B.R.)	Each	3
802-13.55	HAMAMELIS VIRGINIANA (WITCH HAZEL, 18"-24" SEEDLING B.R.)	Each	5
802-13.56	HYDRANGEA QUERCIFOLIA (OAKLEAF HYDRANGEA, 18"-24" SEEDLING B.R.)	Each	1
802-12.12	CORNUS FLORIDA (FLOWERING DOGWOOD, 18"-24" SEEDLING B.R.)	Each	4
802-13.52	CALYCANTHUS FLORIDUS (SWEET SHRUB 18"-24" SEEDLING B.R.)	Each	1
802-12.57	VIBURNUM RUFIDULUM (RUSTY BLACK HAW 18"-24" SEEDLING B.R.)	Each	4

103773.02
56001-3226-94
BEGIN PROJECT NO. STP/PHSIP-10(24) (CONST.)
STA. 103+50.00 STATE ROUTE 10
N 787782.59
E 1953921.77



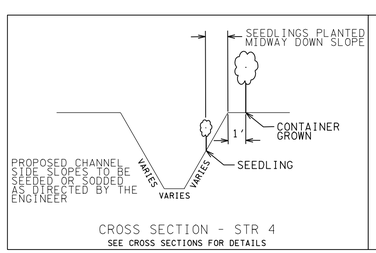
CURVE SR10PRO-1
PI 104+99.38
N 787,931.8754
E 1,953,916.5782
Δ 1° 29′ 36″ (LT)
D 1° 00′ 00″
R 5,729.58
L 149.33
T 74.67
SE 0.020 FT/FT
DESIGN SPEED 50 MPH
TRANS. LENGTH 150′

UNOFFICIAL SET
NOT FOR BIDDING

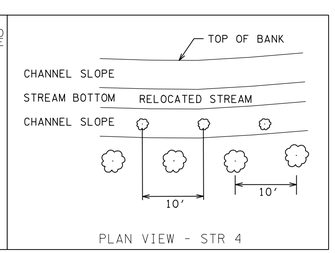
SEALED BY

TREES

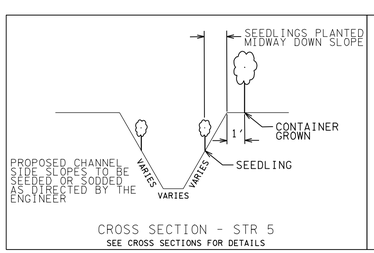
1. NO SUBSTITUTIONS OF TREE SPECIES OR SIZES SHALL BE ALLOWED WITHOUT THE WRITTEN APPROVAL OF THE TDOT ENVIRONMENTAL PLANNING AND PERMITS DIVISION. CONCERNING STREAM MITIGATION, TREES SHALL OF THE VARIETY REQUESTED, WELL BRANCHED, BALL AND BURLAPPED, AND FIRST QUALITY. CONCERNING TEMPORARY WETLAND MITIGATION, TREES SHALL BE OF THE VARIETY REQUESTED, WELL BRANCHED, BARE ROOT (ROOTS MUST BE KEPT MOIST AT ALL TIMES), AND FIRST QUALITY. NO CLONES OR CULTIVARS WILL BE ACCEPTED. ANY FOUND TO BE INCORRECT SPECIES, OR IMPROPERLY PLANTED, AT ANY TIME PRIOR TO TERMINATION OF THE CONTRACT SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. STAKES AND WIRES SHALL BE REMOVED IMMEDIATELY PRIOR TO CONTRACT TERMINATION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. THE CONTRACTOR SHOULD ARRANGE SEVERAL MONTHS AHEAD OF TIME TO OBTAIN THE CORRECT TREE SPECIES, AS SOME MAY REQUIRE SOME TIME TO LOCATE.
3. ALL TREES PLANED SHALL BE WRAPPED AS PER SECTION 802.07 OF TDOT STANDARD SPECIFICATIONS FOR THE ROAD AND BRIDGE CONSTRUCTION.
4. TREES SHALL BE WATERED AS REQUIRED THROUGH THE PERIOD OF THE ESTABLISHMENT TO INSURE SURVIVAL.



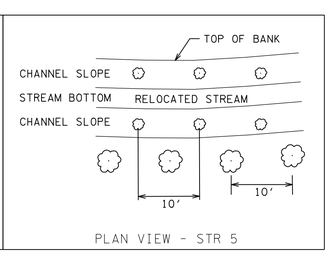
CROSS SECTION - STR 4
SEE CROSS SECTIONS FOR DETAILS



PLAN VIEW - STR 4



CROSS SECTION - STR 5
SEE CROSS SECTIONS FOR DETAILS



PLAN VIEW - STR 5

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00001 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPOSED LAYOUT

STA. 100+00 TO STA. 114+00

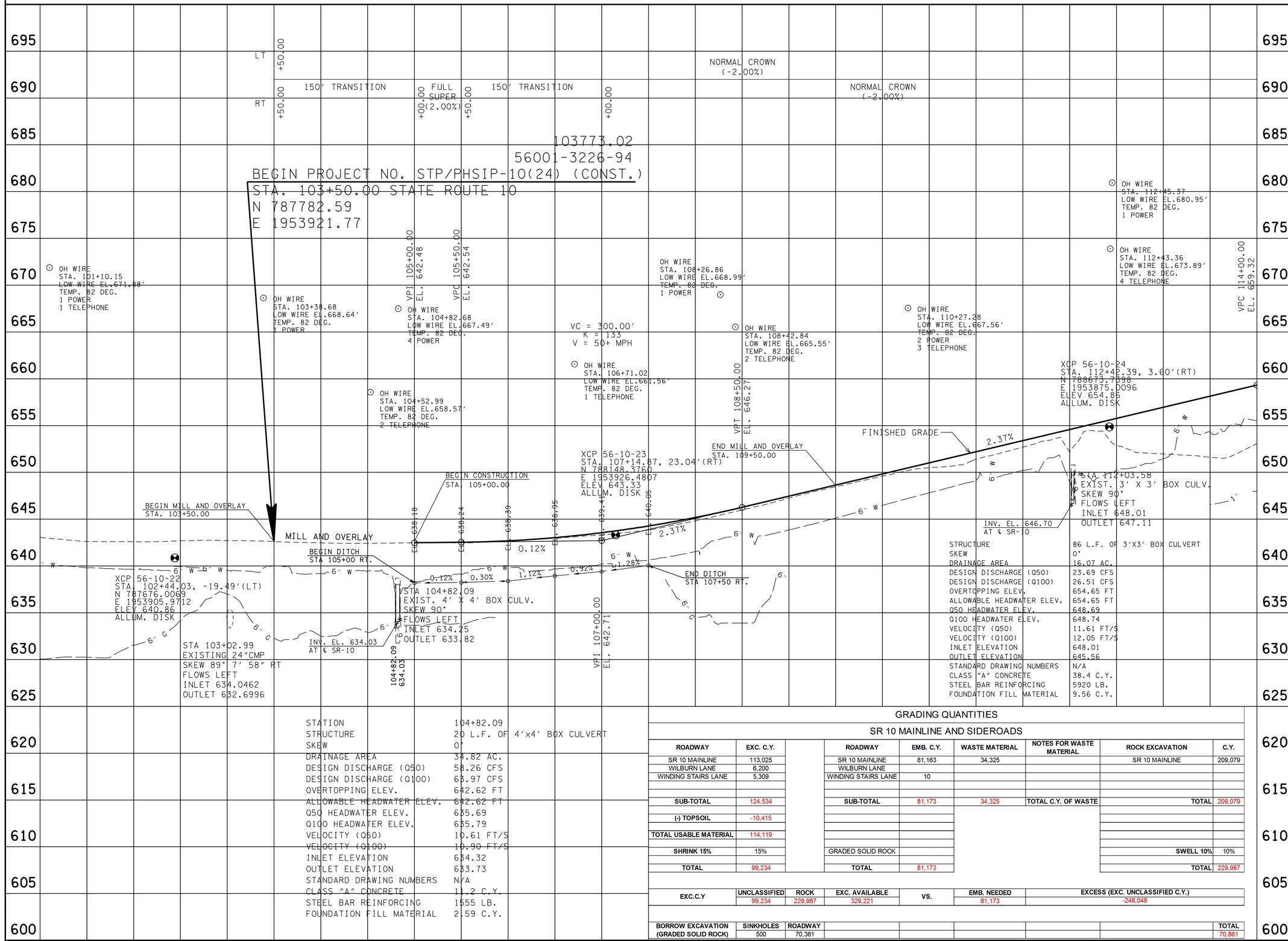
SCALE: 1″= 50′

13-MAR-2014 11:43
\\AMNASFIL02\CADD\PRJ\34240A_SRIO\CAD\DGN\004B.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	4C
CONST.	2014	STP/PHSIP-10(24)	4C

L1 LETTING REV: 04-21-14 ADDED "WASTE MATERIAL" QUANTITY AND ADJ. "ROCK EXCAVATION" QUANTITY.

L2 LETTING REV: 05-19-14 REVISED GRADING QTY. BLOCK.



GRADING QUANTITIES

SR 10 MAINLINE AND SIDEROADS

ROADWAY	EXC. C.Y.
SR 10 MAINLINE	113,025
WILBURN LANE	6,200
WINDING STAIRS LANE	5,309
SUB-TOTAL	124,534
(-) TOPSOIL	-10,415
TOTAL USABLE MATERIAL	114,119
SHRINK 15%	15%
TOTAL	99,234

ROADWAY	EMB. C.Y.	WASTE MATERIAL	NOTES FOR WASTE MATERIAL	ROCK EXCAVATION	C.Y.
SR 10 MAINLINE	81,163	34,325		SR 10 MAINLINE	209,079
WILBURN LANE					
WINDING STAIRS LANE	10				
SUB-TOTAL	81,173	34,325	TOTAL C.Y. OF WASTE	TOTAL	209,079
GRADED SOLID ROCK				SWELL 10%	10%
TOTAL	81,173			TOTAL	229,987

EXC.C.Y	UNCLASSIFIED	ROCK	EXC. AVAILABLE	VS.	EMB. NEEDED	EXCESS (EXC. UNCLASSIFIED C.Y.)
	99,234	229,987	329,221		81,173	-248,048

BORROW EXCAVATION (GRADED SOLID ROCK)	SINKHOLES	ROADWAY	TOTAL
	500	70,361	70,861

UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROFILE

STA.101+00 TO STA.114+00

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

19-MAY-2014 16:31
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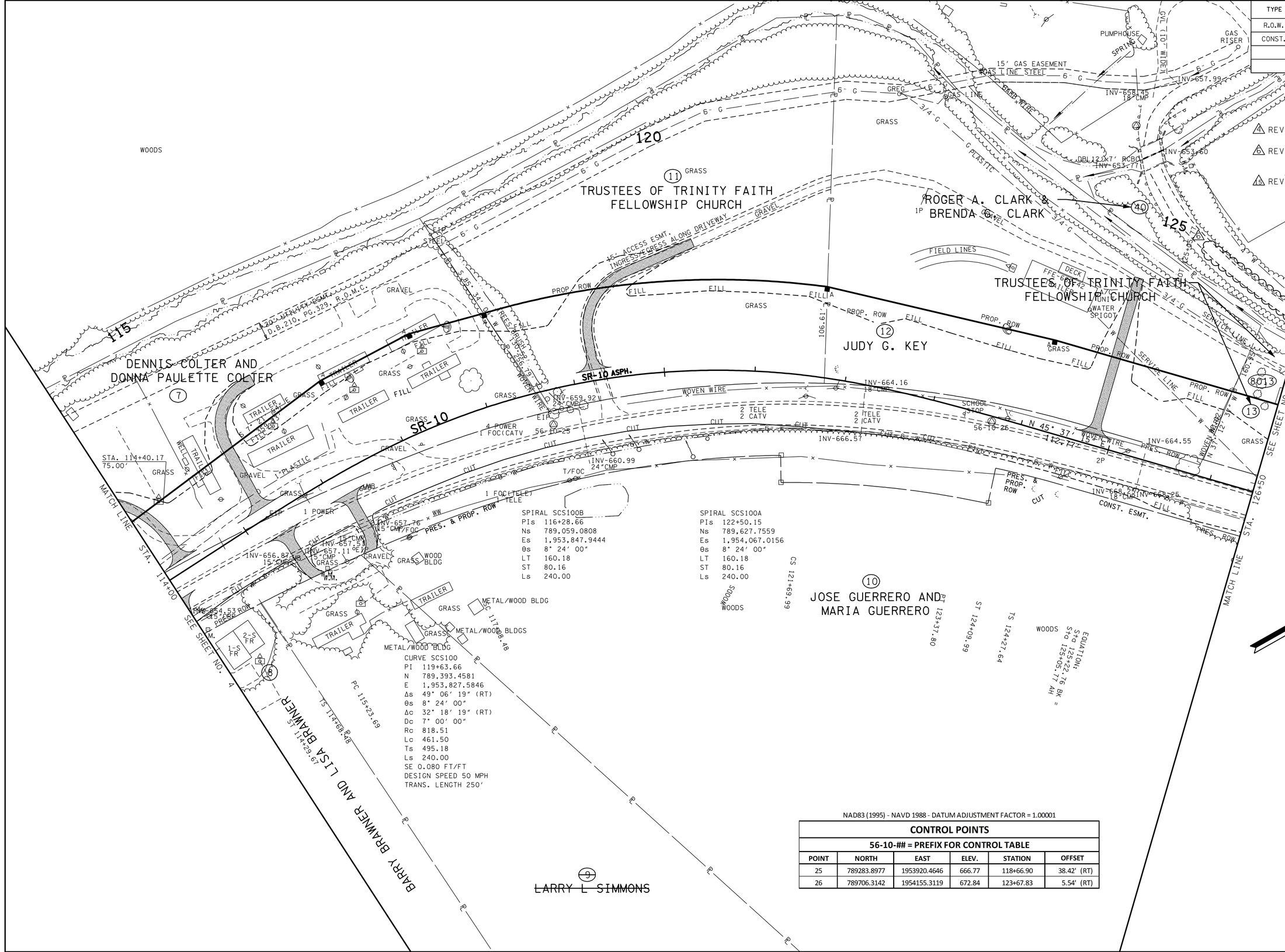
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	5
CONST.	2014	STP/PHSIP-10(24)	5

4 REV: 6-17-13 ADDED DRIVE AT STA 124+80.00

6 REV: 9-11-13 RECLASSIFIED EXIST. ROW AS TEMPORARY BYPASS EASEMENT

15 REV: 3-25-14 ADDED TRACT 8013.



CONTROL POINTS					
56-10-## = PREFIX FOR CONTROL TABLE					
POINT	NORTH	EAST	ELEV.	STATION	OFFSET
25	789283.8977	1953920.4646	666.77	118+66.90	38.42' (RT)
26	789706.3142	1954155.3119	672.84	123+67.83	5.54' (RT)

NAD83 (1995) - NAVD 1988 - DATUM ADJUSTMENT FACTOR = 1.00001

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00001 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PRESENT LAYOUT

STA. 114+00 TO STA. 126+50

SCALE: 1"= 50'

25-MAR-2014 16:22
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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	5A
CONST.	2014	STP/PHSIP-10(24)	5A

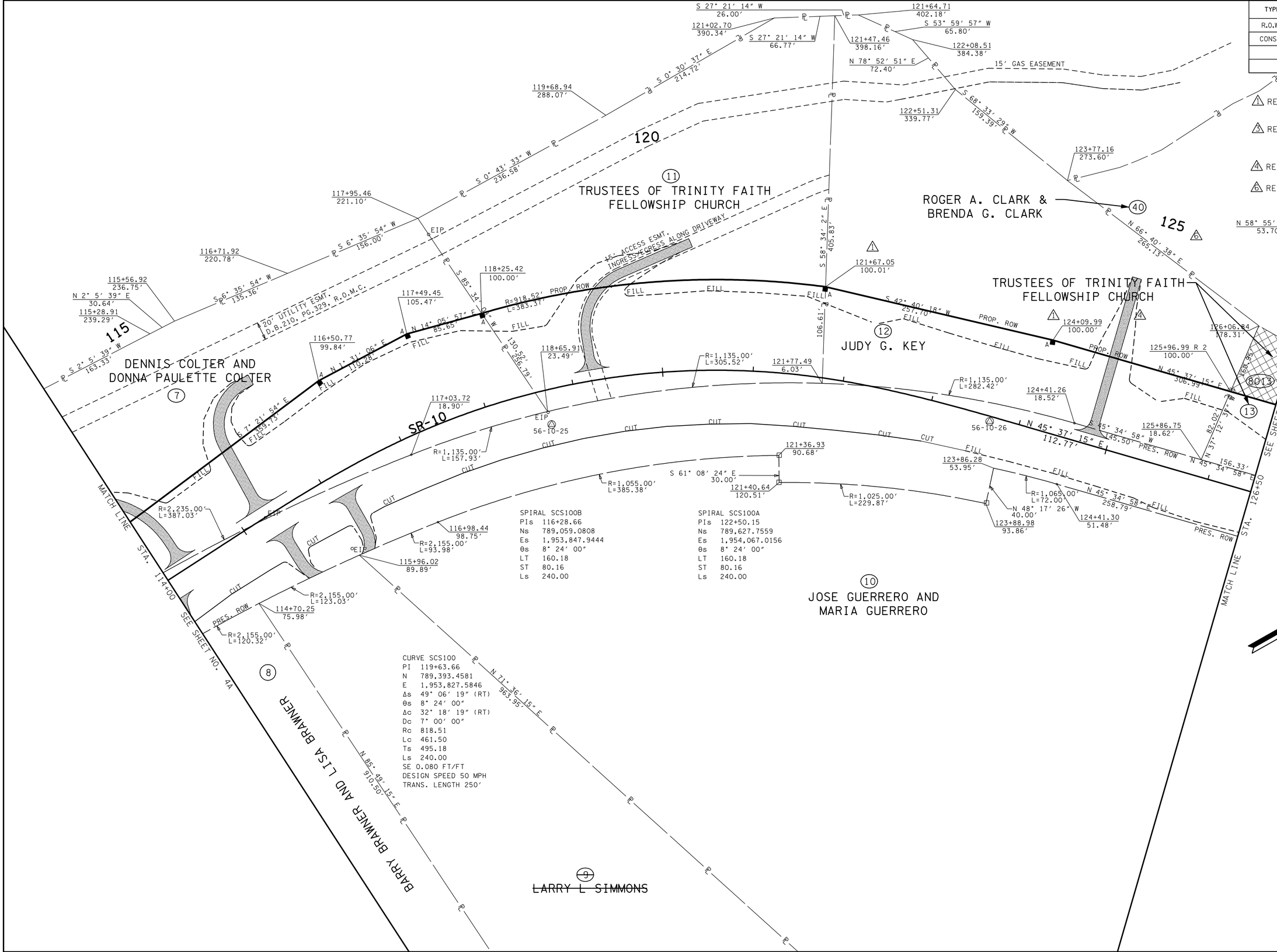
1 REV: 10-01-12 REVISED TO ADD STATIONS & OFFSETS FOR PROP. ROW.

3 REV: 2-26-13 REVISED TO ADD MISSING BEARINGS, LENGTHS AND OFFSETS ALONG EXIST. AND PROP. ROW LINES

4 REV: 6-17-13 ADDED DRIVE AT STA 124+80.00

6 REV: 9-11-13 RECLASSIFIED EXIST. ROW AS TEMPORARY BYPASS EASEMENT

15 REV: 3-25-14 ADDED TRACT 8013 TO SHOW ACQUISITION OF UNECONOMIC REMNANT.



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00001 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

R.O.W. DETAILS

STA. 114+00 TO STA. 126+50

SCALE: 1″= 50′

25-MAR-2014 16:22
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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	5B
CONST.	2014	STP/PHSIP-10(24)	5B

TREES

1. NO SUBSTITUTIONS OF TREE SPECIES OR SIZES SHALL BE ALLOWED WITHOUT THE WRITTEN APPROVAL OF THE TDOT ENVIRONMENTAL PLANNING AND PERMITS DIVISION. CONCERNING STREAM MITIGATION, TREES SHALL OF THE VARIETY REQUESTED, WELL BRANCHED, BALL AND BURLAPPED, AND FIRST QUALITY. CONCERNING TEMPORARY WETLAND MITIGATION, TREES SHALL BE OF THE VARIETY REQUESTED, WELL BRANCHED, BARE ROOT (ROOTS MUST BE KEPT MOIST AT ALL TIMES), AND FIRST QUALITY. NO CLONES OR CULTIVARS WILL BE ACCEPTED. ANY FOUND TO BE INCORRECT SPECIES, OR IMPROPERLY PLANTED, AT ANY TIME PRIOR TO TERMINATION OF THE CONTRACT SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. STAKES AND WIRES SHALL BE REMOVED IMMEDIATELY PRIOR TO CONTRACT TERMINATION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
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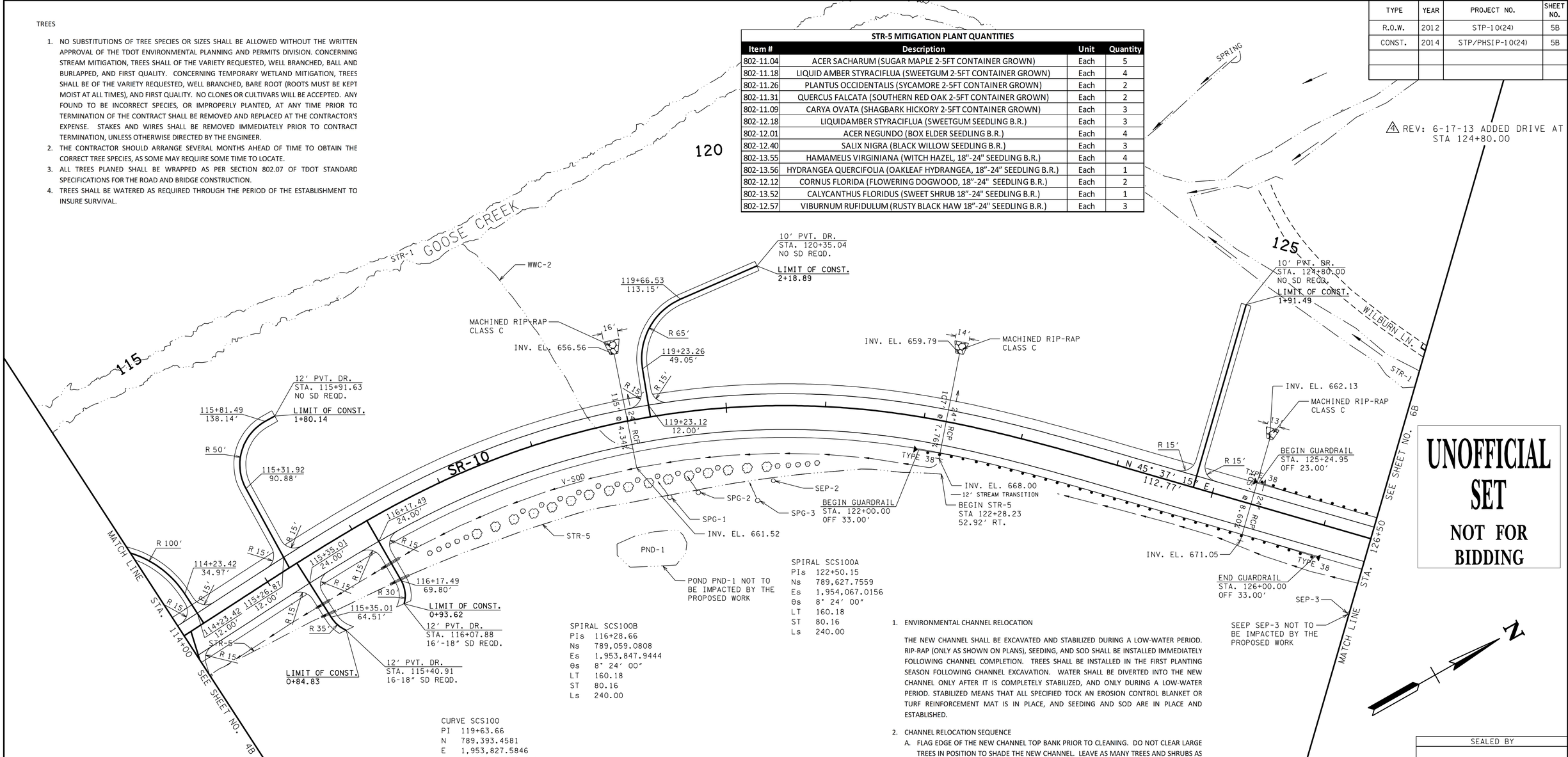
3. ALL TREES PLANED SHALL BE WRAPPED AS PER SECTION 802.07 OF TDOT STANDARD SPECIFICATIONS FOR THE ROAD AND BRIDGE CONSTRUCTION.
4. TREES SHALL BE WATERED AS REQUIRED THROUGH THE PERIOD OF THE ESTABLISHMENT TO INSURE SURVIVAL.

STR-5 MITIGATION PLANT QUANTITIES

Item #	Description	Unit	Quantity
802-11.04	ACER SACHARUM (SUGAR MAPLE 2-5FT CONTAINER GROWN)	Each	5
802-11.18	LIQUID AMBER STYRACIFLUA (SWEETGUM 2-5FT CONTAINER GROWN)	Each	4
802-11.26	PLANTUS OCCIDENTALIS (SYCAMORE 2-5FT CONTAINER GROWN)	Each	2
802-11.31	QUERCUS FALCATA (SOUTHERN RED OAK 2-5FT CONTAINER GROWN)	Each	2
802-11.09	CARYA OVATA (SHAGBARK HICKORY 2-5FT CONTAINER GROWN)	Each	3
802-12.18	LIQUIDAMBER STYRACIFLUA (SWEETGUM SEEDLING B.R.)	Each	3
802-12.01	ACER NEGUNDO (BOX ELDER SEEDLING B.R.)	Each	4
802-12.40	SALIX NIGRA (BLACK WILLOW SEEDLING B.R.)	Each	3
802-13.55	HAMAMELIS VIRGINIANA (WITCH HAZEL, 18"-24" SEEDLING B.R.)	Each	4
802-13.56	HYDRANGEA QUERCIFOLIA (OAKLEAF HYDRANGEA, 18"-24" SEEDLING B.R.)	Each	1
802-12.12	CORNUS FLORIDA (FLOWERING DOGWOOD, 18"-24" SEEDLING B.R.)	Each	2
802-13.52	CALYCANTHUS FLORIDUS (SWEET SHRUB 18"-24" SEEDLING B.R.)	Each	1
802-12.57	VIBURNUM RUFIDULUM (RUSTY BLACK HAW 18"-24" SEEDLING B.R.)	Each	3



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Es 1,954,067.0156
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LT 160.18
ST 80.16
Ls 240.00

SPIRAL SCS100B
PIs 116+28.66
Ns 789,059.0808
Es 1,953,847.9444
θs 8° 24' 00"
LT 160.18
ST 80.16
Ls 240.00

CURVE SCS100
PI 119+63.66
N 789,393.4581
E 1,953,827.5846
Δs 49° 06' 19" (RT)
θs 8° 24' 00"
Δc 32° 18' 19" (RT)
Dc 7° 00' 00"
Rc 818.51
Lc 461.50
Ts 495.18
Ls 240.00
SE 0.080 FT/FT
DESIGN SPEED 50 MPH
TRANS. LENGTH 250'

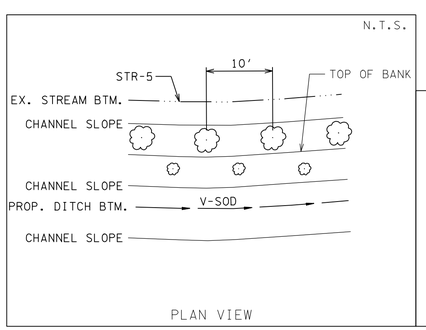
1. ENVIRONMENTAL CHANNEL RELOCATION

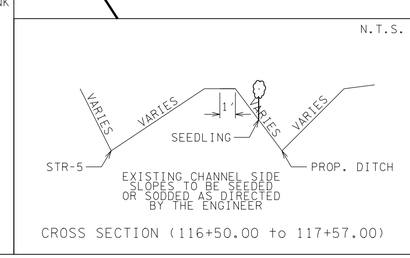
   THE NEW CHANNEL SHALL BE EXCAVATED AND STABILIZED DURING A LOW-WATER PERIOD. RIP-RAP (ONLY AS SHOWN ON PLANS), SEEDING, AND SOD SHALL BE INSTALLED IMMEDIATELY FOLLOWING CHANNEL COMPLETION. TREES SHALL BE INSTALLED IN THE FIRST PLANTING SEASON FOLLOWING CHANNEL EXCAVATION. WATER SHALL BE DIVERTED INTO THE NEW CHANNEL ONLY AFTER IT IS COMPLETELY STABILIZED, AND ONLY DURING A LOW-WATER PERIOD. STABILIZED MEANS THAT ALL SPECIFIED TOCK AN EROSION CONTROL BLANKET OR TURF REINFORCEMENT MAT IS IN PLACE, AND SEEDING AND SOD ARE IN PLACE AND ESTABLISHED.

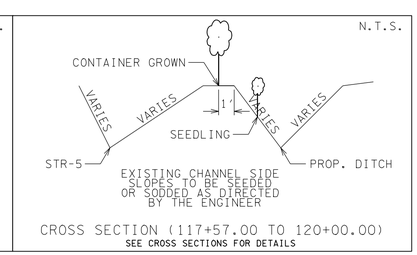
2. CHANNEL RELOCATION SEQUENCE
   A. FLAG EDGE OF THE NEW CHANNEL TOP BANK PRIOR TO CLEANING. DO NOT CLEAR LARGE TREES IN POSITION TO SHADE THE NEW CHANNEL. LEAVE AS MANY TREES AND SHRUBS AS POSSIBLE BETWEEN TOE OF THE NEW HIGHWAY SLOPE AND THE STREAM.
   B. EXCAVATE THE NEW CHANNEL "IN THE DRY" BY LEAVING AREAS OF UNDISTURBED EARTH (DIVERSION BERMS) IN PLACE AT BOTH ENDS.
   C. SHAPE CHANNEL TO SPECIFICATIONS SHOWN. REMOVE LOOSE SOILS AND DEBRIS.
   D. PLACE TOPSOIL, EROSION CONTROL BLANKET OR TURF REINFORCEMENT MAT, SEED, AND SOD AS SPECIFIED
   E. REMOVE DIVERSION BERMS, BEGINNING WITH THE MOST DOWNSTREAM, BANKS AND BOTTOM ELEVATION OF THE OLD CHANNEL SHOULD TRANSITION SMOOTHLY INTO THE NEW CHANNEL. THE ELEVATIONS OF THE NEW CHANNEL BOTTOM AT EACH END OF THE RELOCATION SEQUENCE SHOULD MATCH THE ELEVATIONS OF THE EXISTING CHANNEL, AND A STEADY PERCENT SLOPE SHOULD BE MAINTAINED THROUGHOUT THE RELOCATED CHANNEL CENTERLINE OR AS SPECIFIED.
   F. INSTALL TREES ACCORDING TO STANDARD SPECIFICATIONS SECTION 802.

3. ONLY RIP-RAP SHOWN ON PLANS SHOULD BE USED IN THE RELOCATED CHANNEL REACH. ANY OTHER PROPOSED RIP-RAP SHOULD BE COORDINATED WITH THE ENVIRONMENTAL DIVISION THROUGH THE TDOT HEADQUARTERS CONSTRUCTION OFFICE.

4. REQUEST BY ANY AGENCY THAT WOULD REQUIRE THE MODIFICATION OF CHANNELS, DITCHES, ELEVATIONS, RIP-RAP OR ANY OTHER STREAM MITIGATION ITEMS ASSOCIATED WITH THE CHANNEL RELOCATIONS SHALL BE REFERRED TO THE TDOT ENVIRONMENTAL DIVISION VIA THE HEADQUARTERS CONSTRUCTION OFFICE FOR COORDINATION WITH ALL INVOLVED AGENCIES AND TDOT DIVISIONS.







UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00001 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPOSED LAYOUT

STA. 114+00 TO STA. 126+50

SCALE: 1"= 50'

03-MAR-2014 11:43
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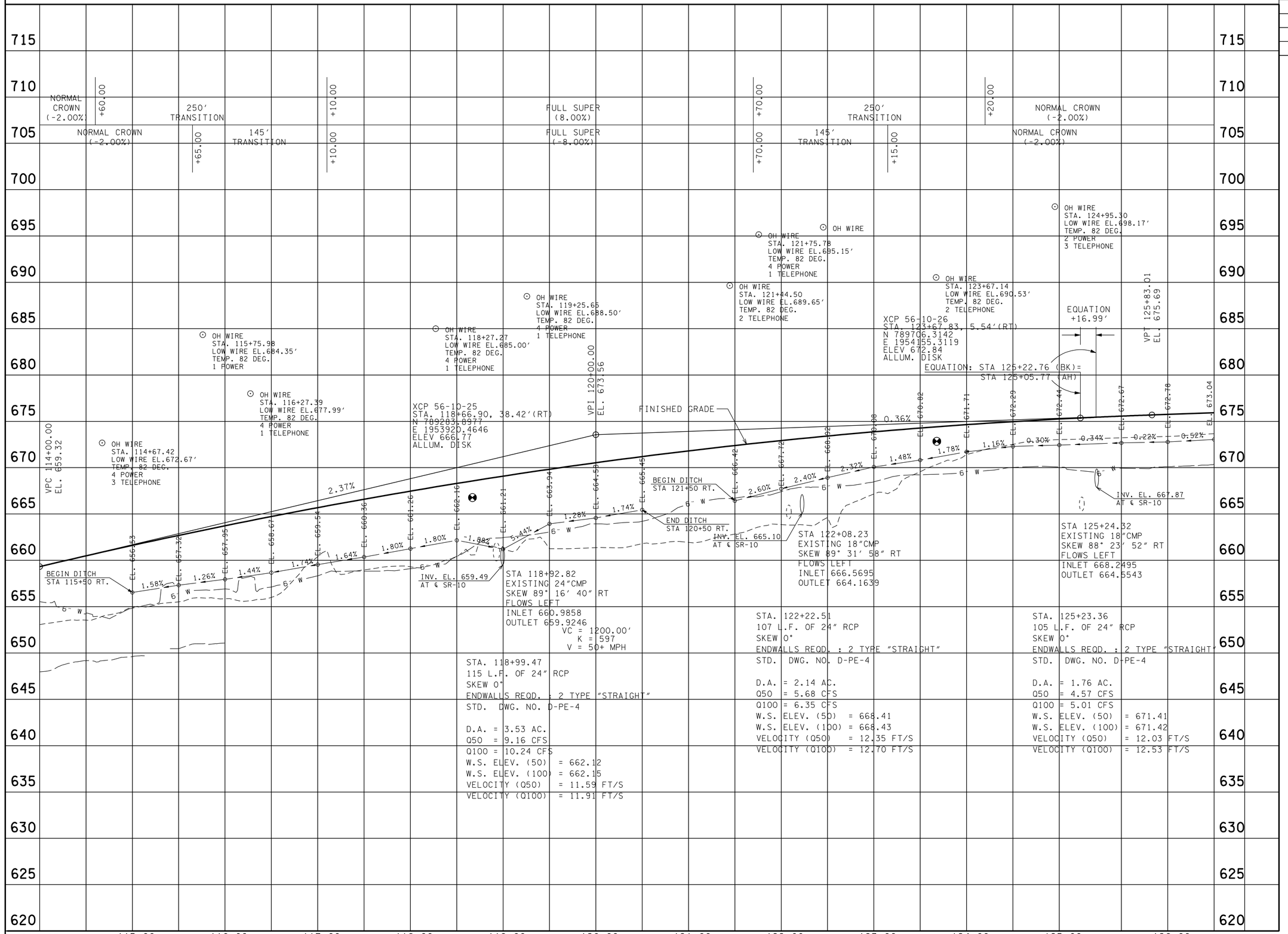
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	5C
CONST.	2014	STP/PHSIP-10(24)	5C



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROFILE

STA.114+00 TO STA.126+50

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

13-MAR-2014 11:43
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\005C.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	6
CONST.	2014	STP/PHSIP-10(24)	6

NAD83 (1995) - NAVD 1988 - DATUM ADJUSTMENT FACTOR = 1.00001

CONTROL POINTS

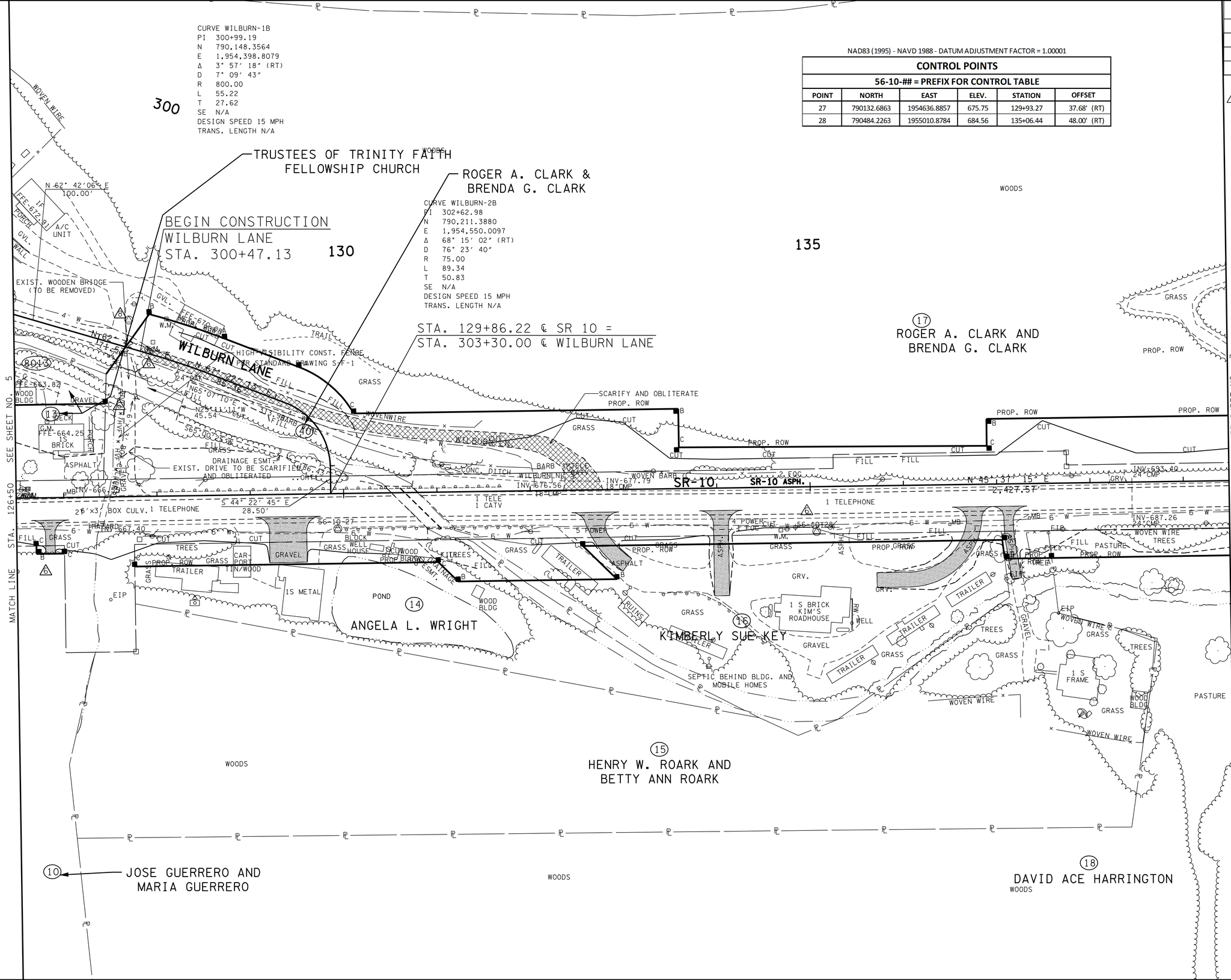
56-10-## = PREFIX FOR CONTROL TABLE

POINT	NORTH	EAST	ELEV.	STATION	OFFSET
27	790132.6863	1954636.8857	675.75	129+93.27	37.68' (RT)
28	790484.2263	1955010.8784	684.56	135+06.44	48.00' (RT)

6 REV: 09-11-13 REMOVED 16' BUS. ENT. AT STA 135+33.17. RECLASSIFIED EXIST. ROW AS TEMP. BYPASS EASEMENT. ADJUSTED TRACT 13 PROPERTY LINES. ADJUSTED TRACT 40 PROP. ROW. ADDED 10' FIELD. ENT. AT STA 126+85.00

8 REV: 1-2-14 ADJUSTED TRACT 40 PROP. ROW

15 REV: 3-25-14 ADDED TRACT 8013.



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

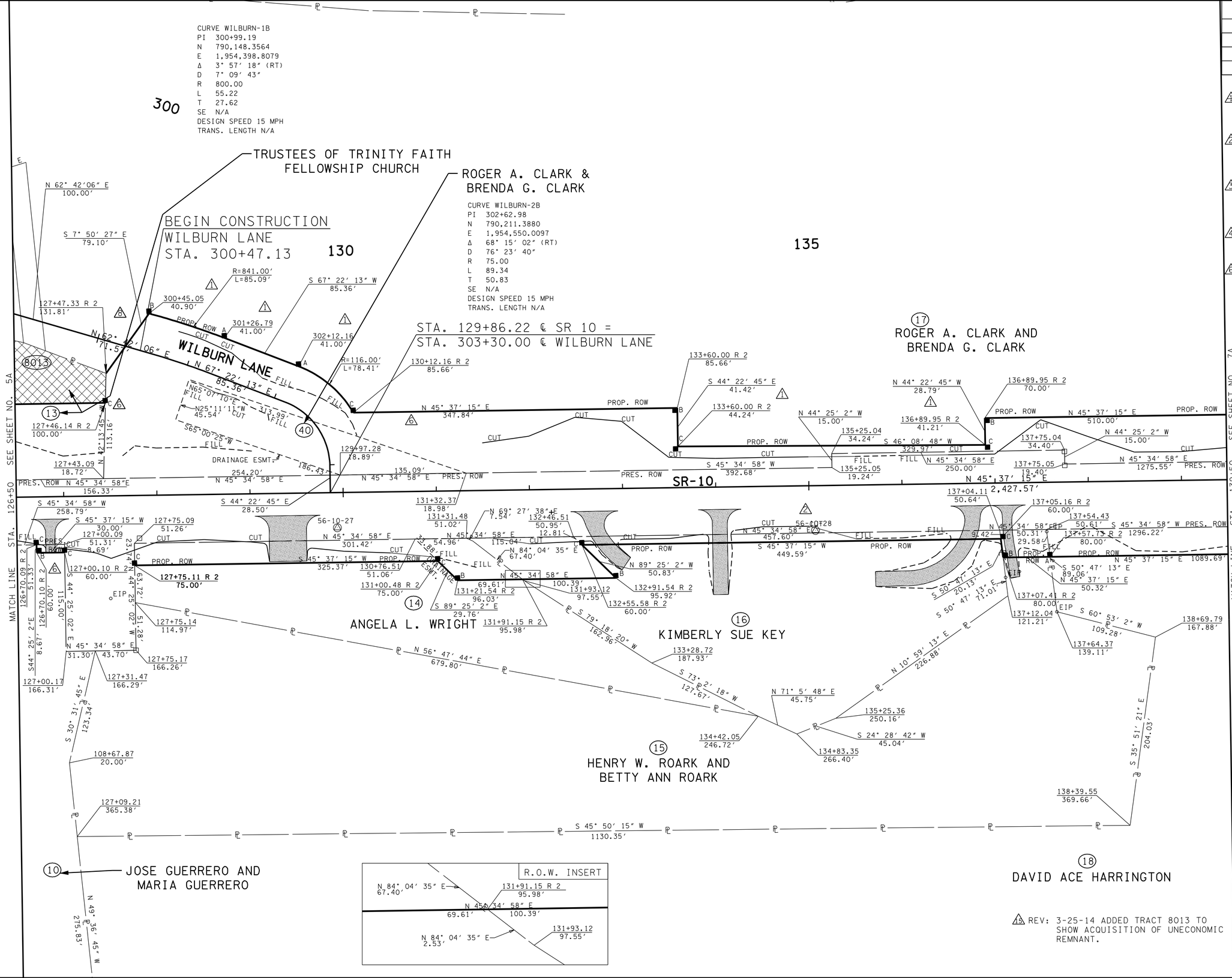
PRESENT LAYOUT

STA. 126+50 TO STA. 139+50

SCALE: 1"= 50'

25-MAR-2014 16:22
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\006.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	6A
CONST.	2014	STP/PHSIP-10(24)	6A



1 ~~REV: 10-01-12 REVISED TO ADD STATIONS & OFFSETS FOR PROP. ROW.~~

2 REV: 01-22-13 REMOVED 16′ BUS. ENT. AT STA 135+33.17

3 REV: 2-26-13 REVISED TO ADD MISSING BEARINGS, LENGTHS AND OFFSETS ALONG EXIST. AND PROP. ROW LINES

4 REV: 7-26-13 ADDED PARCEL 40 DETAIL. ADDED PRIVATE DRIVE AT STA 126+55, RT.

6 REV: 9-11-13 RECLASSIFIED EXIST. ROW AS TEMP. BYPASS EASEMENT. ADJUSTED TRACT 13 PROPERTY LINES. ADJUSTED TRACT 40 PROP. ROW. ADDED 10′ FIELD ENT. AT STA 126+85.00

UNOFFICIAL SET

NOT FOR BIDDING

8 REV: 1-2-14 ADJUSTED TRACT 40 PROP. ROW

13 REV: 3-25-14 ADDED TRACT 8013 TO SHOW ACQUISITION OF UNECONOMIC REMNANT.

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00001 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

R.O.W. DETAILS

STA. 126+50 TO STA. 139+50

SCALE: 1″= 50′

25-MAR-2014 16:22
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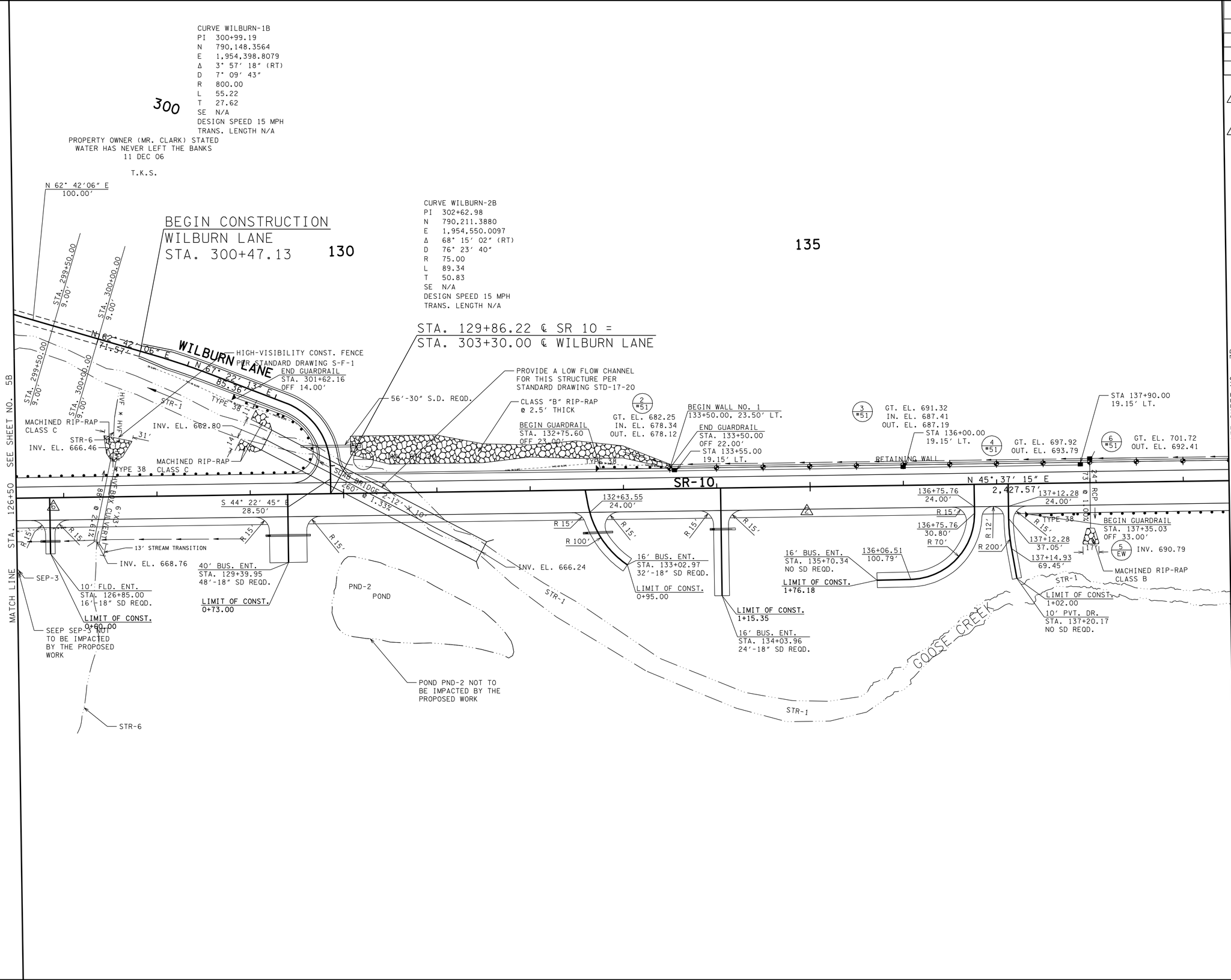
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	6B
CONST.	2014	STP/PHSIP-10(24)	6B

2 REV: 01-22-13 REMOVED 16' BUS. ENT. AT STA 135+33.17

6 REV: 09-11-13 ADDED 10' FIELD ENT. AT STA 126+85.00



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPOSED LAYOUT

STA. 126+50 TO STA. 139+50

SCALE: 1"= 50'

13-MAR-2014 11:44
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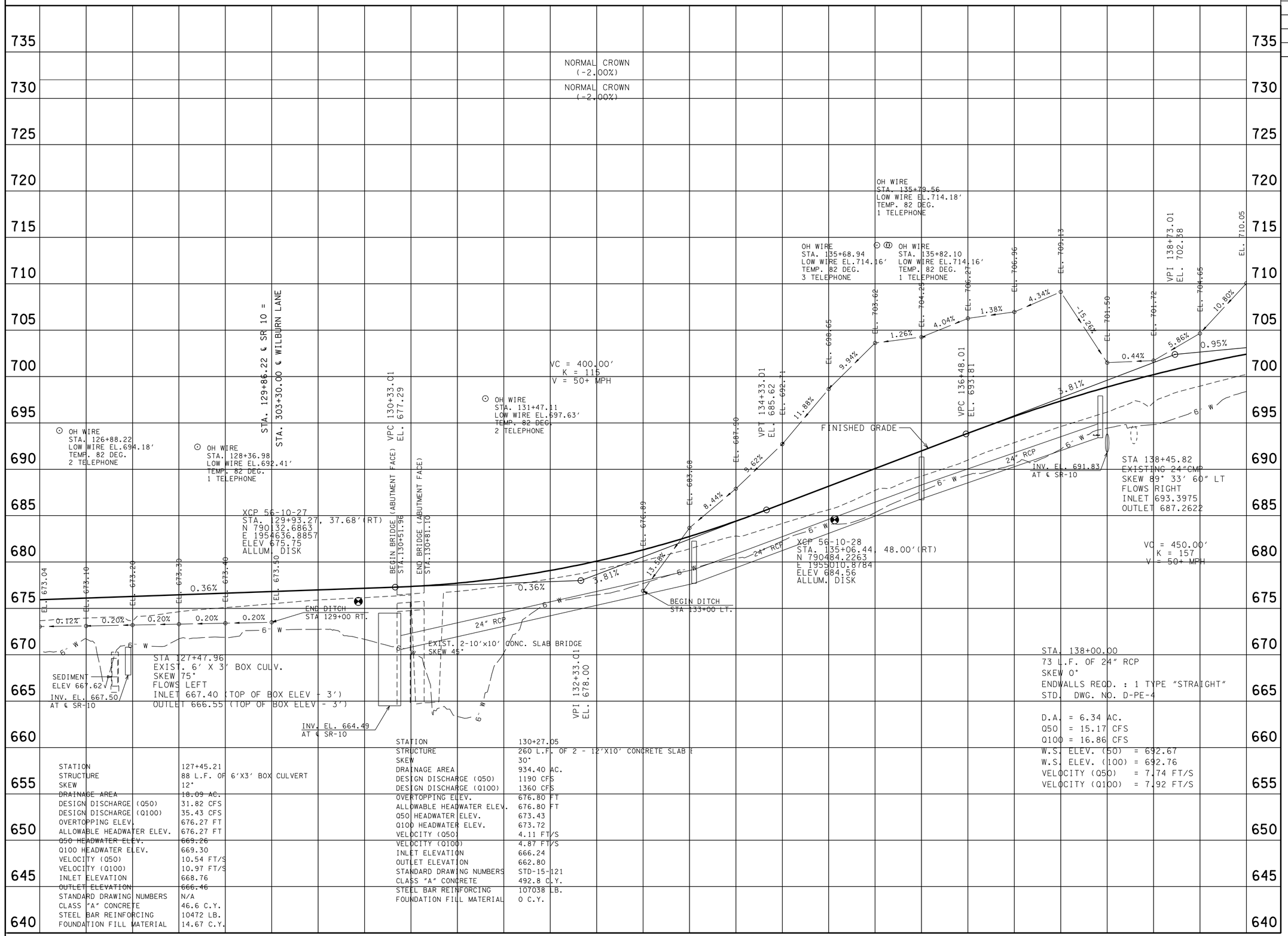
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	6C
CONST.	2014	STP/PHSIP-10(24)	6C



STATION	127+45.21
STRUCTURE	88 L.F. OF 6′X3′ BOX CULVERT
SKEW	12°
DRAINAGE AREA	18.09 AC.
DESIGN DISCHARGE (Q50)	31.82 CFS
DESIGN DISCHARGE (Q100)	35.43 CFS
OVERTOPPING ELEV.	676.27 FT
ALLOWABLE HEADWATER ELEV.	676.27 FT
Q50 HEADWATER ELEV.	669.26
Q100 HEADWATER ELEV.	669.30
VELOCITY (Q50)	10.54 FT/S
VELOCITY (Q100)	10.97 FT/S
INLET ELEVATION	668.76
OUTLET ELEVATION	666.46
STANDARD DRAWING NUMBERS	N/A
CLASS "A" CONCRETE	46.6 C.Y.
STEEL BAR REINFORCING	10472 LB.
FOUNDATION FILL MATERIAL	14.67 C.Y.

STATION	130+27.05
STRUCTURE	260 L.F. OF 2 - 12′X10′ CONCRETE SLAB B
SKEW	30°
DRAINAGE AREA	934.40 AC.
DESIGN DISCHARGE (Q50)	1190 CFS
DESIGN DISCHARGE (Q100)	1360 CFS
OVERTOPPING ELEV.	676.80 FT
ALLOWABLE HEADWATER ELEV.	676.80 FT
Q50 HEADWATER ELEV.	673.43
Q100 HEADWATER ELEV.	673.72
VELOCITY (Q50)	4.11 FT/S
VELOCITY (Q100)	4.87 FT/S
INLET ELEVATION	666.24
OUTLET ELEVATION	662.80
STANDARD DRAWING NUMBERS	STD-15-121
CLASS "A" CONCRETE	492.8 C.Y.
STEEL BAR REINFORCING	107038 LB.
FOUNDATION FILL MATERIAL	0 C.Y.

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NOT FOR BIDDING

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROFILE

STA.126+50 TO STA.139+50

SCALE: 1″= 50′ HORIZ.
1″= 5′ VERT.

13-MAR-2014 11:44
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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	7
CONST.	2014	STP/PHSIP-10(24)	7

4 REV: 6-17-13 REVISED PROPERTY FEATURE AT STA 141+80.00 (RT)

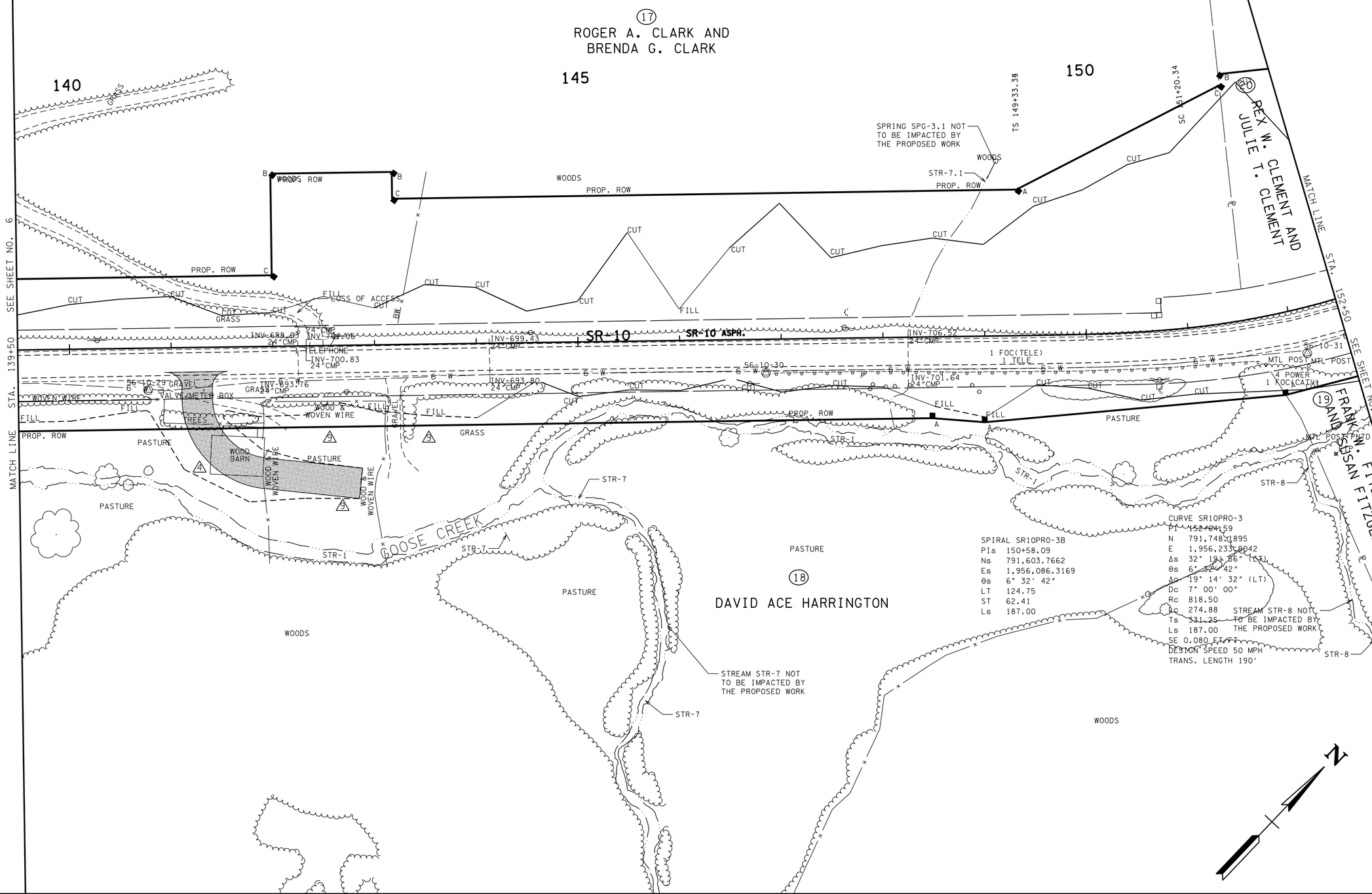
9 REV: 1-23-14 REMOVED PROP. DRIVEWAYS AT STA. 141+05.98 & STA. 143+18.88. ADDED PROP. 30' PVT. DRIVEWAY AT STA. 141+25.00.

NAD83 (1995) - NAVD 1988 - DATUM ADJUSTMENT FACTOR = 1.00001

CONTROL POINTS

56-10-## = PREFIX FOR CONTROL TABLE

POINT	NORTH	EAST	ELEV.	STATION	OFFSET
29	790887.8938	1955413.8248	701.69	140+76.76	41.31' (RT)
30	791318.8739	1955842.3922	706.81	146+84.50	33.02' (RT)
31	791699.5300	1956214.8619	727.63	152+08.68	44.45' (RT)



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00001 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PRESENT LAYOUT

STA. 139+50 TO STA. 152+50

SCALE: 1"= 50'

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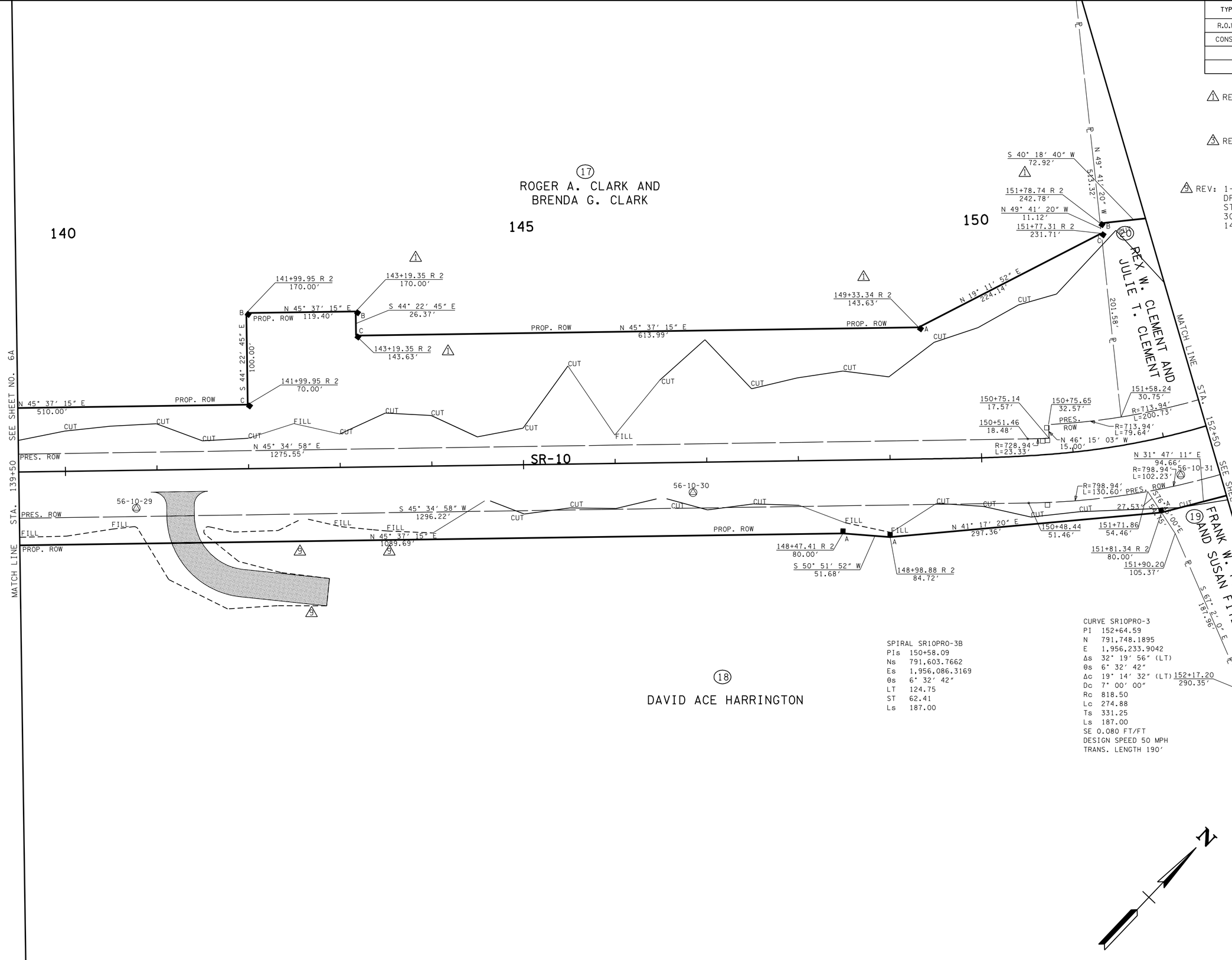
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	7A
CONST.	2014	STP/PHSIP-10(24)	7A

1 REV: 10-01-12 REVISED TO ADD STATIONS & OFFSETS FOR PROP. ROW.

3 REV: 2-26-13 REVISED TO ADD MISSING BEARINGS, LENGTHS AND OFFSETS ALONG EXIST. AND PROP. ROW LINES

9 REV: 1-23-14 REMOVED PROP. DRIVEWAYS AT STA. 141+05.98 & STA. 143+18.88. ADDED PROP. 30' PVT. DRIVEWAY AT STA. 141+25.00.



SPIRAL SR10PRO-3B
PIs 150+58.09
Ns 791,603.7662
Es 1,956,086.3169
θs 6° 32' 42"
LT 124.75
ST 62.41
Ls 187.00

CURVE SR10PRO-3
PI 152+64.59
N 791,748.1895
E 1,956,233.9042
Δs 32° 19' 56" (LT)
θs 6° 32' 42"
Δc 19° 14' 32" (LT)
Dc 7° 00' 00"
Rc 818.50
Lc 274.88
Ts 331.25
Ls 187.00
SE 0.080 FT/FT
DESIGN SPEED 50 MPH
TRANS. LENGTH 190'

UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00001 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

R.O.W. DETAILS

STA. 139+50 TO STA. 152+50

SCALE: 1"= 50'

13-MAR-2014 11:44
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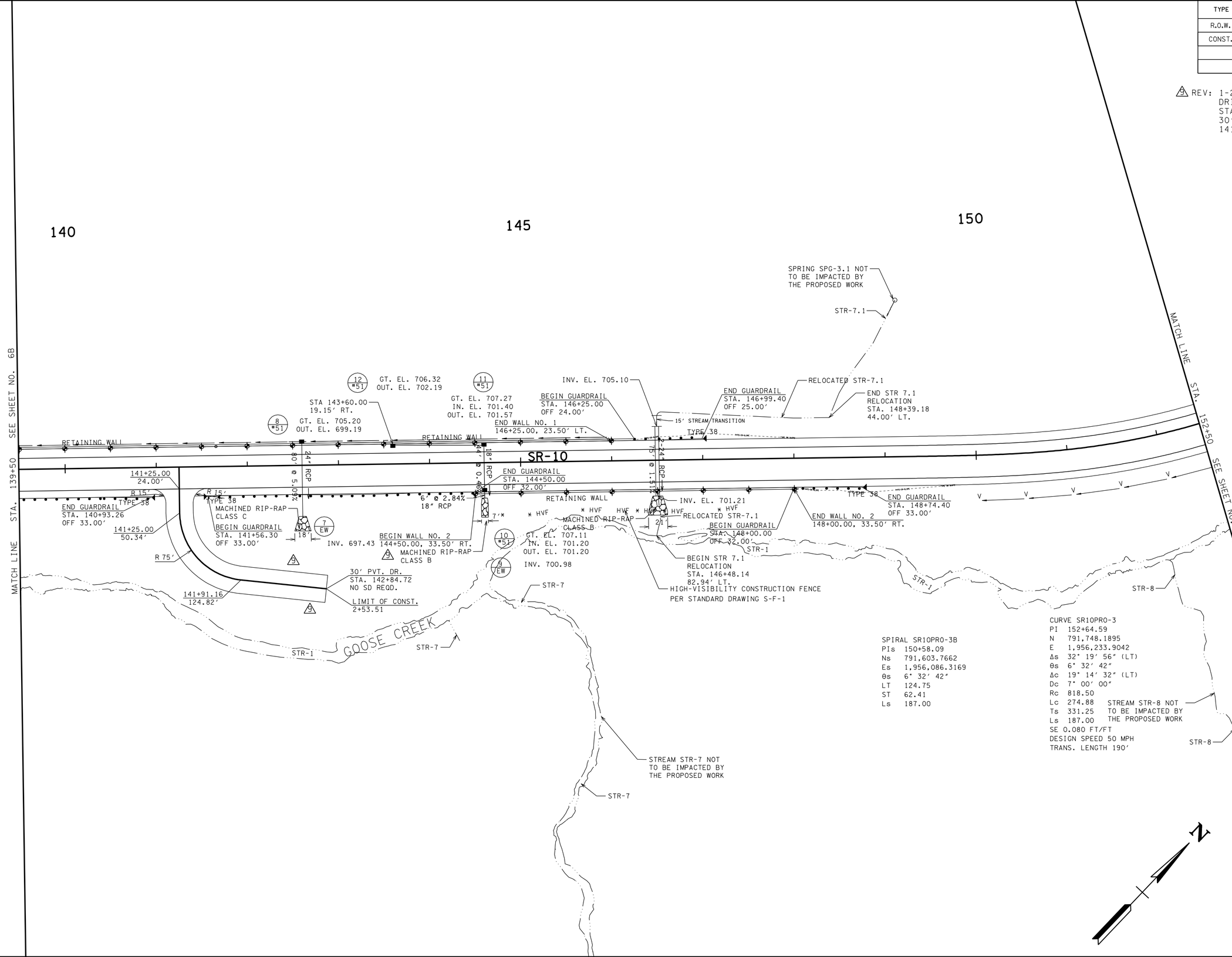
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	7B
CONST.	2014	STP/PHSIP-10(24)	7B

9 REV: 1-23-14 REMOVED PROP. DRIVEWAYS AT STA. 141+05.98 & STA. 143+18.88. ADDED PROP. 30' PVT. DRIVEWAY AT STA. 141+25.00.



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00001 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPOSED LAYOUT

STA. 139+50 TO STA. 152+50

SCALE: 1"= 50'

13-MAR-2014 11:44
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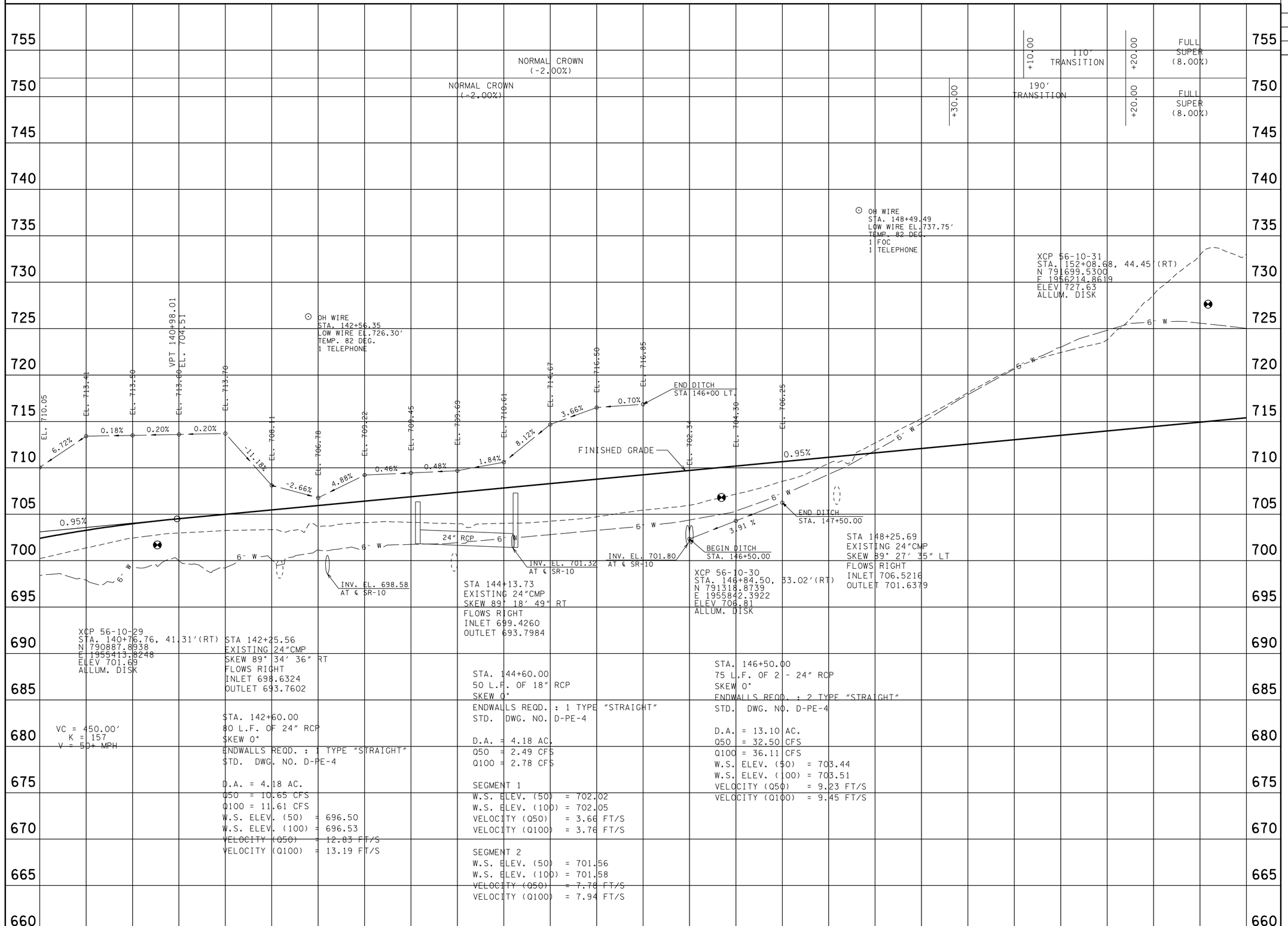
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	7C
CONST.	2014	STP/PHSIP-10(24)	7C



UNOFFICIAL SET

NOT FOR BIDDING

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROFILE

STA.139+50 TO STA.152+50

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

13-MAR-2014 11:44
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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	8
CONST.	2014	STP/PHSIP-10(24)	8

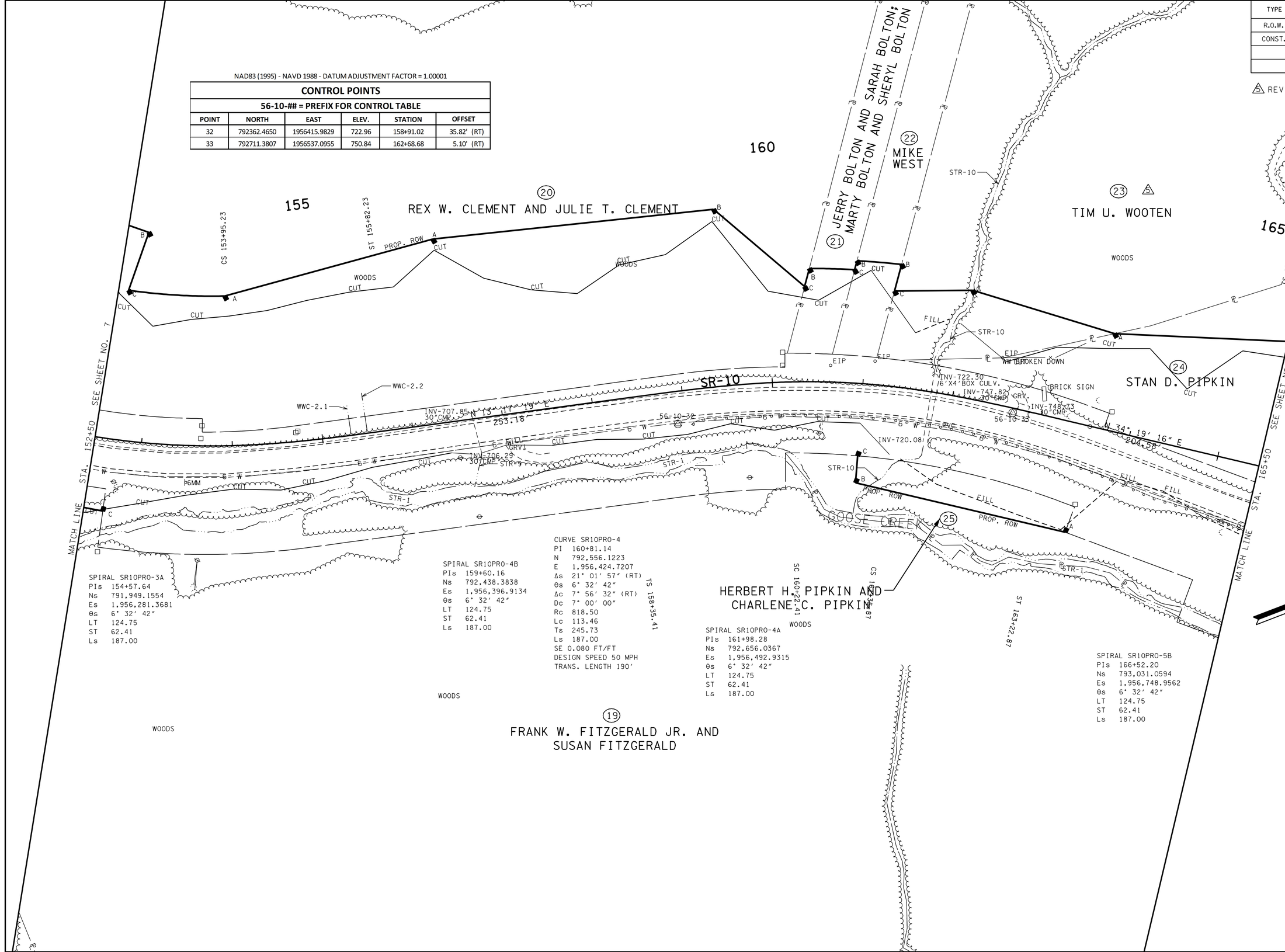
5 REV: 07-11-13 REVISED TRACT 23 OWNER

NAD83 (1995) - NAVD 1988 - DATUM ADJUSTMENT FACTOR = 1.00001

CONTROL POINTS

56-10-## = PREFIX FOR CONTROL TABLE

POINT	NORTH	EAST	ELEV.	STATION	OFFSET
32	792362.4650	1956415.9829	722.96	158+91.02	35.82' (RT)
33	792711.3807	1956537.0955	750.84	162+68.68	5.10' (RT)



SPIRAL SR10PRO-3A
PIs 154+57.64
Ns 791,949.1554
Es 1,956,281.3681
θs 6° 32′ 42″
LT 124.75
ST 62.41
Ls 187.00

SPIRAL SR10PRO-4B
PIs 159+60.16
Ns 792,438.3838
Es 1,956,396.9134
θs 6° 32′ 42″
LT 124.75
ST 62.41
Ls 187.00

CURVE SR10PRO-4
PI 160+81.14
N 792,556.1223
E 1,956,424.7207
Δs 21° 01′ 57″ (RT)
θs 6° 32′ 42″
Δc 7° 56′ 32″ (RT)
Dc 7° 00′ 00″
Rc 818.50
Lc 113.46
Ts 245.73
Ls 187.00
SE 0.080 FT/FT
DESIGN SPEED 50 MPH
TRANS. LENGTH 190′

SPIRAL SR10PRO-4A
PIs 161+98.28
Ns 792,656.0367
Es 1,956,492.9315
θs 6° 32′ 42″
LT 124.75
ST 62.41
Ls 187.00

SPIRAL SR10PRO-5B
PIs 166+52.20
Ns 793,031.0594
Es 1,956,748.9562
θs 6° 32′ 42″
LT 124.75
ST 62.41
Ls 187.00

UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PRESENT LAYOUT

STA. 152+50 TO STA. 165+50

SCALE: 1"= 50′

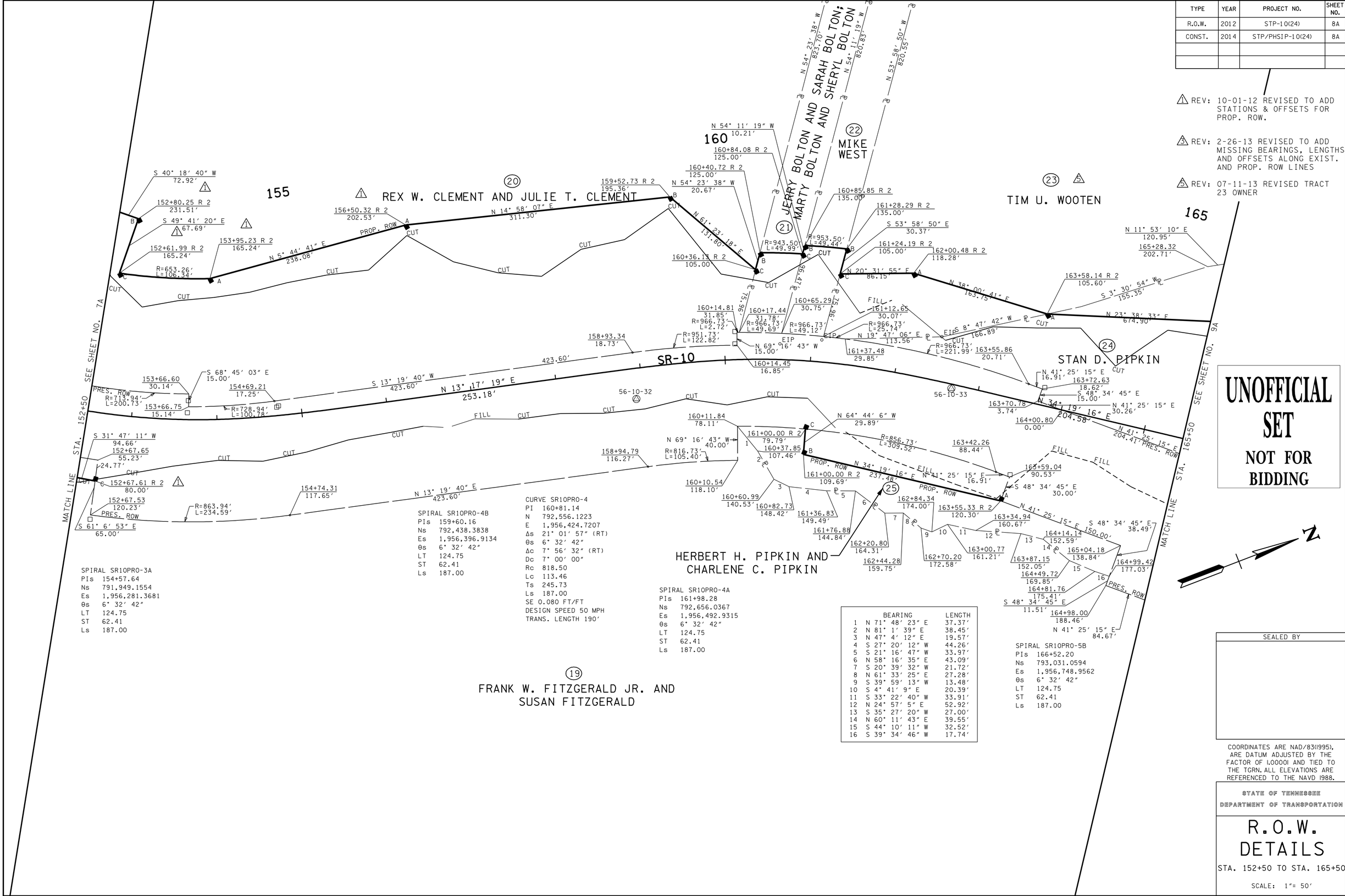
13-MAR-2014 11:44
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\008.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	8A
CONST.	2014	STP/PHSIP-10(24)	8A

1 REV: 10-01-12 REVISED TO ADD STATIONS & OFFSETS FOR PROP. ROW.

3 REV: 2-26-13 REVISED TO ADD MISSING BEARINGS, LENGTHS AND OFFSETS ALONG EXIST. AND PROP. ROW LINES

5 REV: 07-11-13 REVISED TRACT 23 OWNER



SPIRAL SR10PRO-3A
PIs 154+57.64
Ns 791,949.1554
Es 1,956,281.3681
θs 6° 32′ 42″
LT 124.75
ST 62.41
Ls 187.00

SPIRAL SR10PRO-4B
PIs 159+60.16
Ns 792,438.3838
Es 1,956,396.9134
θs 6° 32′ 42″
LT 124.75
ST 62.41
Ls 187.00

CURVE SR10PRO-4
PI 160+81.14
N 792,556.1223
E 1,956,424.7207
Δs 21° 01′ 57″ (RT)
θs 6° 32′ 42″
Δc 7° 56′ 32″ (RT)
Dc 7° 00′ 00″
Rc 818.50
Lc 113.46
Ts 245.73
Ls 187.00
SE 0.080 FT/FT
DESIGN SPEED 50 MPH
TRANS. LENGTH 190′

SPIRAL SR10PRO-4A
PIs 161+98.28
Ns 792,656.0367
Es 1,956,492.9315
θs 6° 32′ 42″
LT 124.75
ST 62.41
Ls 187.00

	BEARING	LENGTH
1	N 71° 48′ 23″ E	37.37′
2	N 81° 1′ 39″ E	38.45′
3	N 47° 4′ 12″ E	19.57′
4	S 27° 20′ 12″ W	44.26′
5	S 21° 16′ 47″ W	33.97′
6	N 58° 16′ 35″ E	43.09′
7	S 20° 39′ 32″ W	21.72′
8	N 61° 33′ 25″ E	27.28′
9	S 39° 59′ 13″ W	13.48′
10	S 4° 41′ 9″ E	20.39′
11	S 33° 22′ 40″ W	33.91′
12	N 24° 57′ 5″ E	52.92′
13	S 35° 27′ 20″ W	27.00′
14	N 60° 11′ 43″ E	39.55′
15	S 44° 10′ 11″ W	32.52′
16	S 39° 34′ 46″ W	17.74′

SPIRAL SR10PRO-5B
PIs 166+52.20
Ns 793,031.0594
Es 1,956,748.9562
θs 6° 32′ 42″
LT 124.75
ST 62.41
Ls 187.00

UNOFFICIAL SET

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

R.O.W. DETAILS

STA. 152+50 TO STA. 165+50

SCALE: 1″= 50′

13-MAR-2014 11:44
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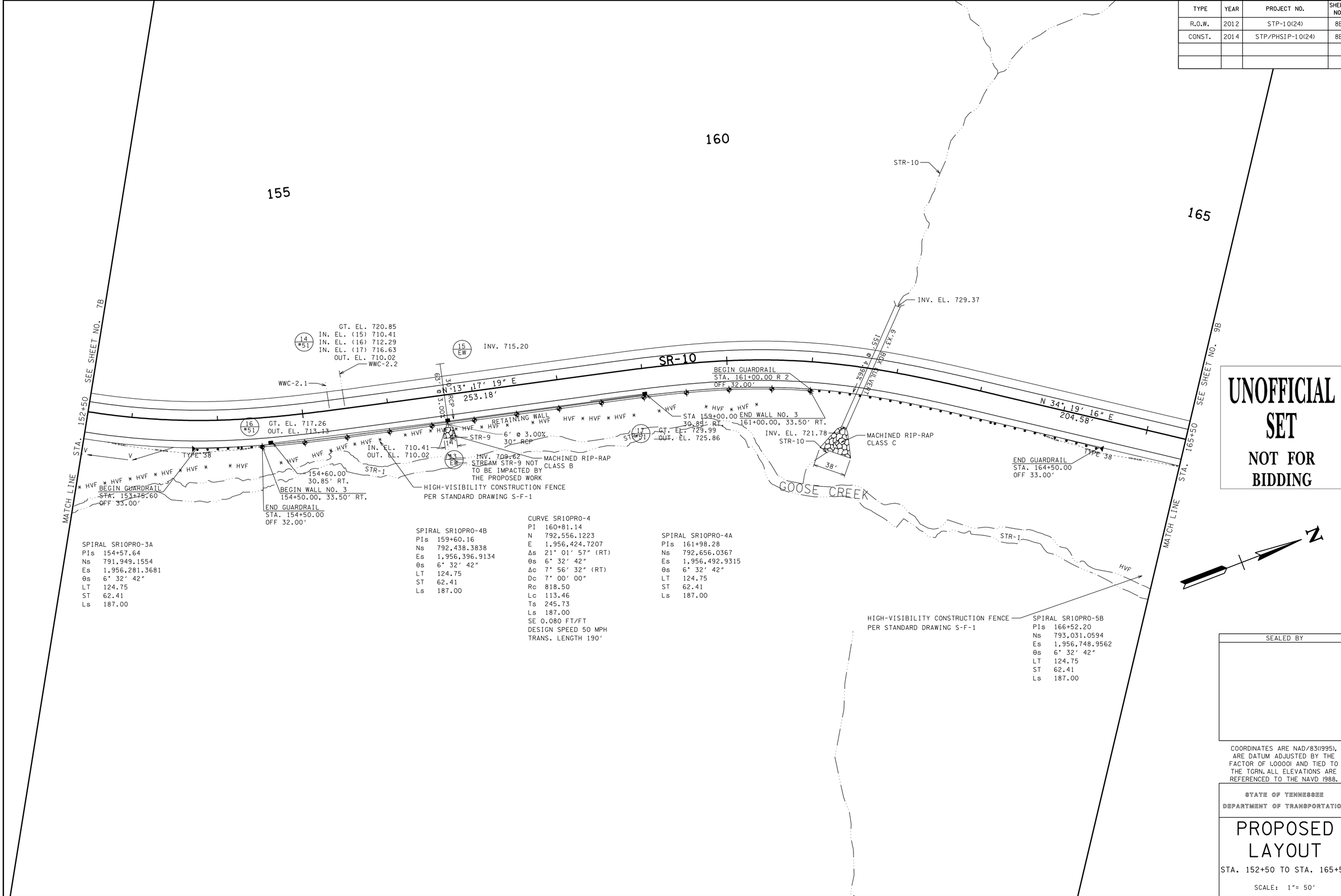
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	8B
CONST.	2014	STP/PHSIP-10(24)	8B



SPIRAL SR10PRO-3A
PIs 154+57.64
Ns 791,949.1554
Es 1,956,281.3681
θs 6° 32′ 42″
LT 124.75
ST 62.41
Ls 187.00

SPIRAL SR10PRO-4B
PIs 159+60.16
Ns 792,438.3838
Es 1,956,396.9134
θs 6° 32′ 42″
LT 124.75
ST 62.41
Ls 187.00

CURVE SR10PRO-4
PI 160+81.14
N 792,556.1223
E 1,956,424.7207
Δs 21° 01′ 57″ (RT)
θs 6° 32′ 42″
Δc 7° 56′ 32″ (RT)
Dc 7° 00′ 00″
Rc 818.50
Lc 113.46
Ts 245.73
Ls 187.00
SE 0.080 FT/FT
DESIGN SPEED 50 MPH
TRANS. LENGTH 190′

SPIRAL SR10PRO-4A
PIs 161+98.28
Ns 792,656.0367
Es 1,956,492.9315
θs 6° 32′ 42″
LT 124.75
ST 62.41
Ls 187.00

SPIRAL SR10PRO-5B
PIs 166+52.20
Ns 793,031.0594
Es 1,956,748.9562
θs 6° 32′ 42″
LT 124.75
ST 62.41
Ls 187.00

UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPOSED LAYOUT

STA. 152+50 TO STA. 165+50

SCALE: 1″= 50′

13-MAR-2014 11:44
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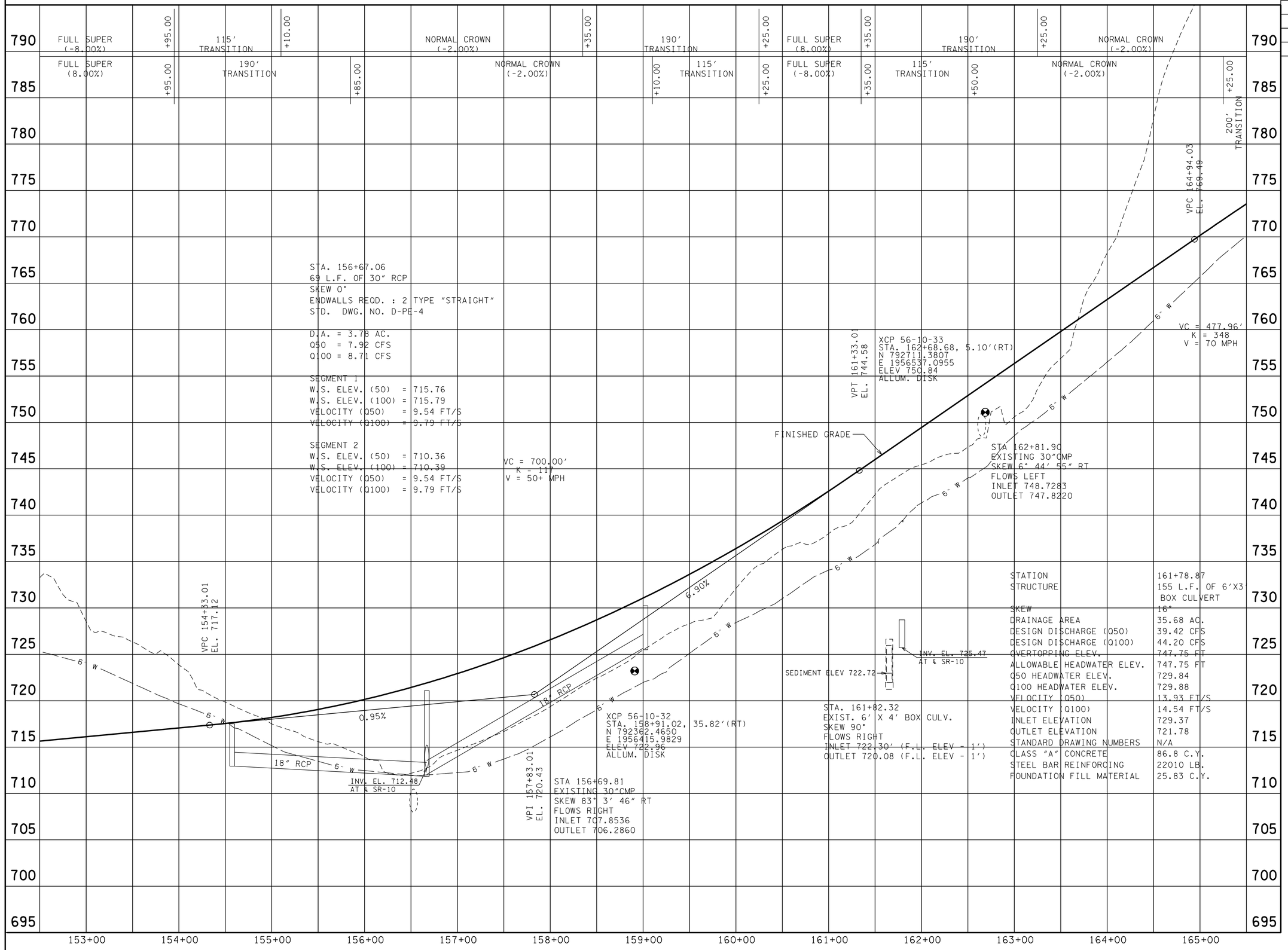
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	8C
CONST.	2014	STP/PHSIP-10(24)	8C



STATION	161+78.87
STRUCTURE	155 L.F. OF 6'X3' BOX CULVERT
SKEW	16°
DRAINAGE AREA	35.68 AC.
DESIGN DISCHARGE (Q50)	39.42 CFS
DESIGN DISCHARGE (Q100)	44.20 CFS
OVERTOPPING ELEV.	747.75 FT
ALLOWABLE HEADWATER ELEV.	747.75 FT
Q50 HEADWATER ELEV.	729.84
Q100 HEADWATER ELEV.	729.88
VELOCITY (Q50)	13.93 FT/S
VELOCITY (Q100)	14.54 FT/S
INLET ELEVATION	729.37
OUTLET ELEVATION	721.78
STANDARD DRAWING NUMBERS	N/A
CLASS "A" CONCRETE	86.8 C.Y.
STEEL BAR REINFORCING	22010 LB.
FOUNDATION FILL MATERIAL	25.83 C.Y.

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROFILE

STA.152+50 TO STA.165+50

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

13-MAR-2014 11:44
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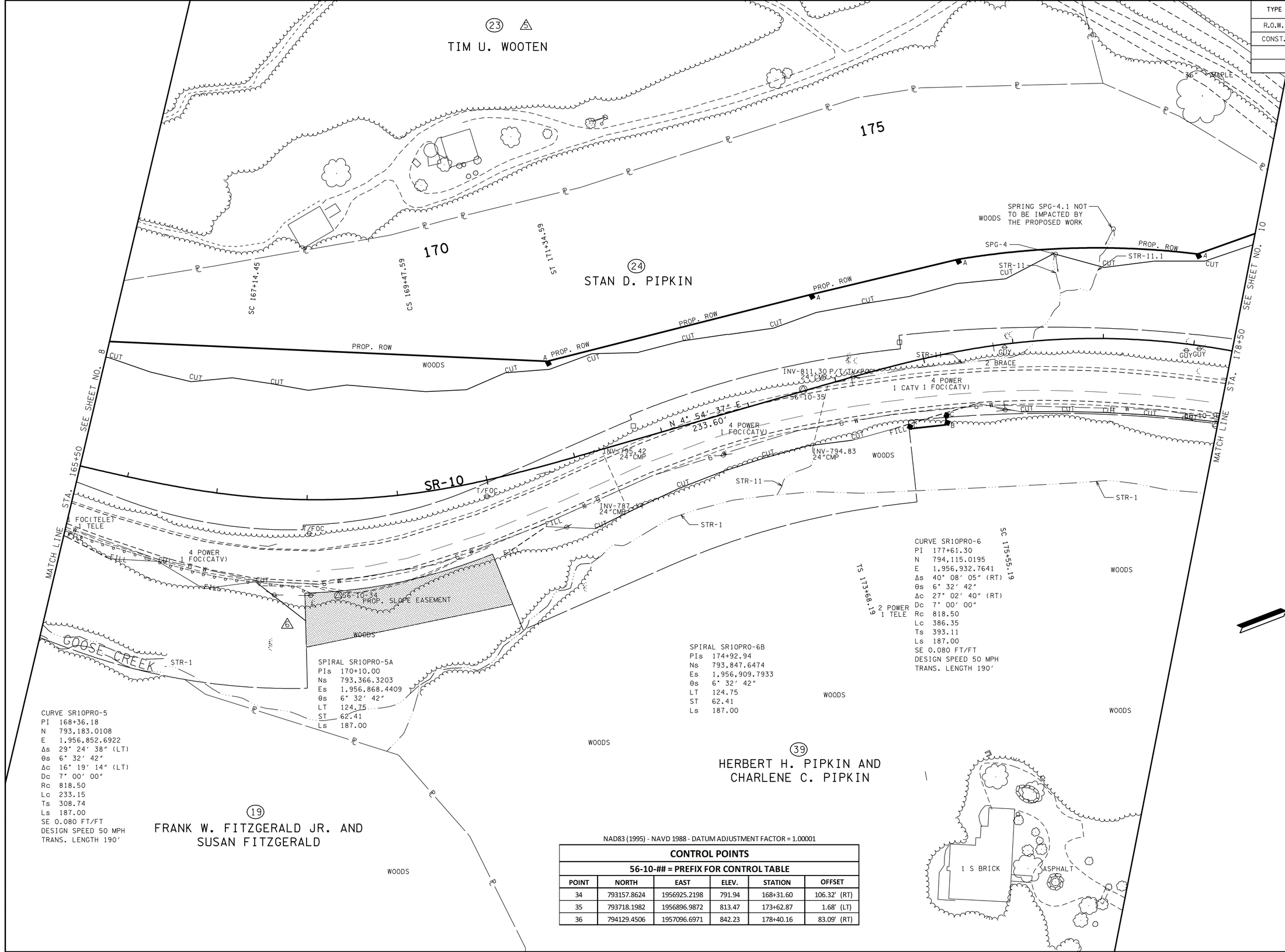
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	9
CONST.	2014	STP/PHSIP-10(24)	9

5 REV: 07-11-13 REVISED TRACT 23 OWNER

6 REV: 09-11-13 ADDED SLOPE EASEMENT



CURVE SR10PRO-5
PI 168+36.18
N 793,183.0108
E 1,956,852.6922
Δs 29° 24′ 38″ (LT)
θs 6° 32′ 42″
Δc 16° 19′ 14″ (LT)
Dc 7° 00′ 00″
Rc 818.50
Lc 233.15
Ts 308.74
Ls 187.00
SE 0.080 FT/FT
DESIGN SPEED 50 MPH
TRANS. LENGTH 190′

SPIRAL SR10PRO-5A
PIs 170+10.00
Ns 793,366.3203
Es 1,956,868.4409
θs 6° 32′ 42″
LT 124.75
ST 62.41
Ls 187.00

SPIRAL SR10PRO-6B
PIs 174+92.94
Ns 793,847.6474
Es 1,956,909.7933
θs 6° 32′ 42″
LT 124.75
ST 62.41
Ls 187.00

CURVE SR10PRO-6
PI 177+61.30
N 794,115.0195
E 1,956,932.7641
Δs 40° 08′ 05″ (RT)
θs 6° 32′ 42″
Δc 27° 02′ 40″ (RT)
Dc 7° 00′ 00″
Rc 818.50
Lc 386.35
Ts 393.11
Ls 187.00
SE 0.080 FT/FT
DESIGN SPEED 50 MPH
TRANS. LENGTH 190′

NAD83 (1995) - NAVD 1988 - DATUM ADJUSTMENT FACTOR = 1.00001

CONTROL POINTS

56-10-## = PREFIX FOR CONTROL TABLE

POINT	NORTH	EAST	ELEV.	STATION	OFFSET
34	793157.8624	1956925.2198	791.94	168+31.60	106.32′ (RT)
35	793718.1982	1956896.9872	813.47	173+62.87	1.68′ (LT)
36	794129.4506	1957096.6971	842.23	178+40.16	83.09′ (RT)

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00001 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PRESENT LAYOUT

STA. 165+50 TO STA. 178+50

SCALE: 1"= 50′

13-MAR-2014 11:44
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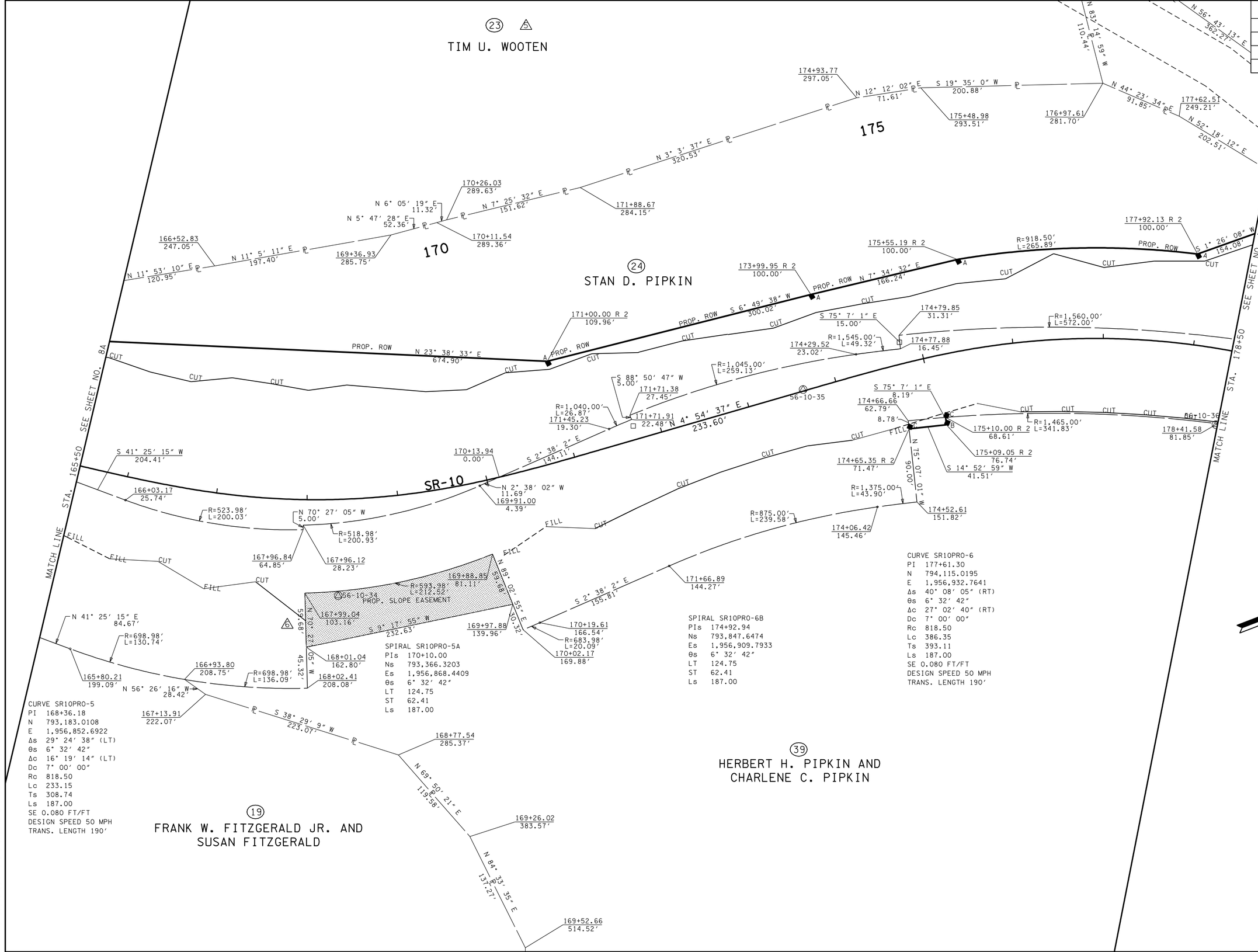
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	9A
CONST.	2014	STP/PHSIP-10(24)	9A



△3 REV: 2-26-13 REVISED TO ADD MISSING BEARINGS, LENGTHS AND OFFSETS ALONG EXIST. AND PROP. ROW LINES

△5 REV: 07-11-13 REVISED TRACT 23 OWNER

△6 REV: 09-11-13 ADDED SLOPE EASEMENT AND CORRESPONDING BEARINGS, OFFSETS, & LENGTHS

UNOFFICIAL SET
NOT FOR BIDDING

CURVE SR10PRO-5
PI 168+36.18
N 793,183.0108
E 1,956,852.6922
Δs 29° 24' 38" (LT)
θs 6° 32' 42"
Δc 16° 19' 14" (LT)
Dc 7° 00' 00"
Rc 818.50
Lc 233.15
Ts 308.74
Ls 187.00
SE 0.080 FT/FT
DESIGN SPEED 50 MPH
TRANS. LENGTH 190'

SPIRAL SR10PRO-5A
PIs 170+10.00
Ns 793,366.3203
Es 1,956,868.4409
θs 6° 32' 42"
LT 124.75
ST 62.41
Ls 187.00

SPIRAL SR10PRO-6B
PIs 174+92.94
Ns 793,847.6474
Es 1,956,909.7933
θs 6° 32' 42"
LT 124.75
ST 62.41
Ls 187.00

CURVE SR10PRO-6
PI 177+61.30
N 794,115.0195
E 1,956,932.7641
Δs 40° 08' 05" (RT)
θs 6° 32' 42"
Δc 27° 02' 40" (RT)
Dc 7° 00' 00"
Rc 818.50
Lc 386.35
Ts 393.11
Ls 187.00
SE 0.080 FT/FT
DESIGN SPEED 50 MPH
TRANS. LENGTH 190'

N

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

R.O.W. DETAILS

STA. 165+50 TO STA. 178+50

SCALE: 1"= 50'

03-MAR-2014 11:44
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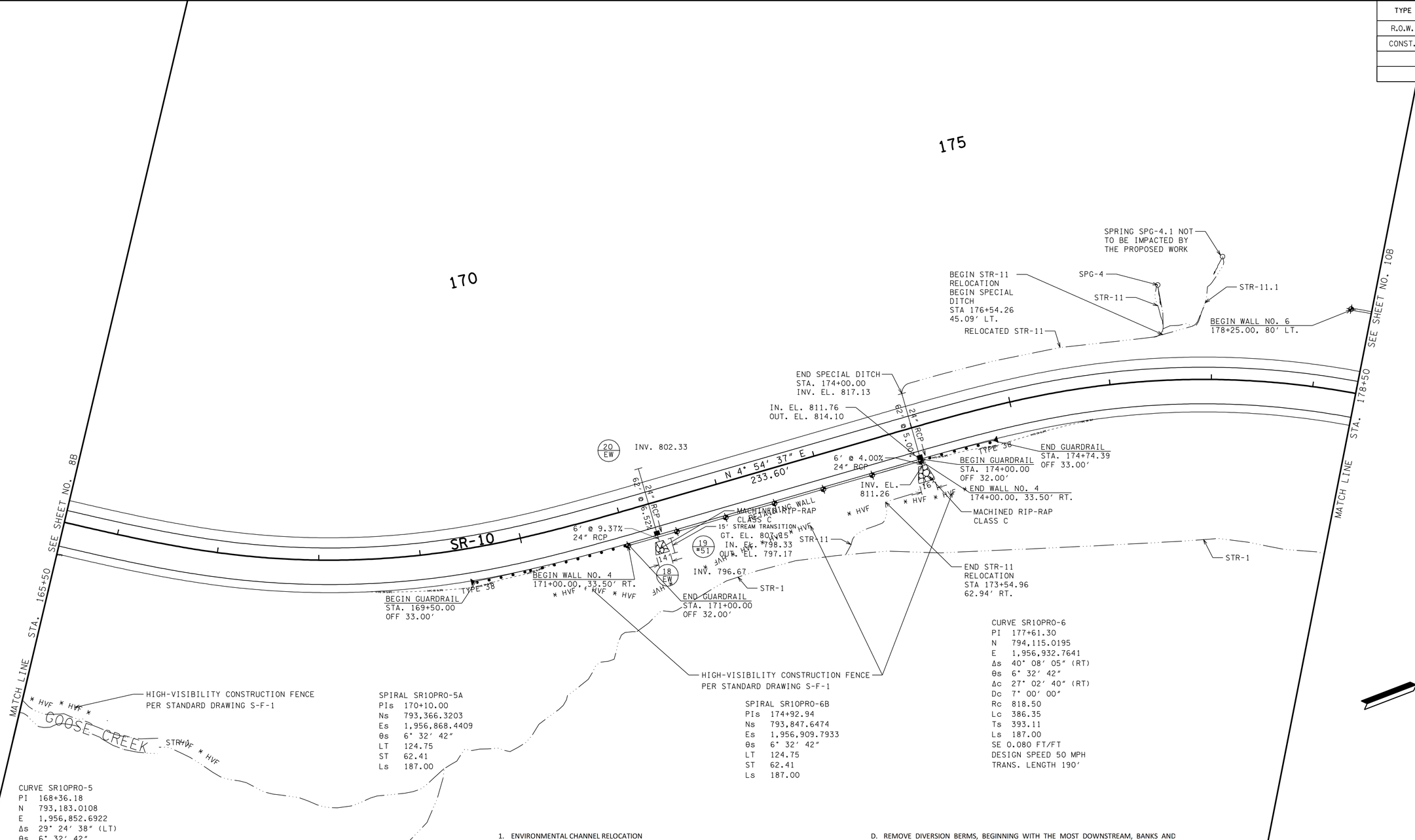
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	9B
CONST.	2014	STP/PHSIP-10(24)	9B



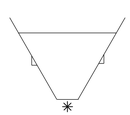
CURVE SR10PRO-5
PI 168+36.18
N 793,183.0108
E 1,956,852.6922
Δs 29° 24' 38" (LT)
θs 6° 32' 42"
Δc 16° 19' 14" (LT)
Dc 7° 00' 00"
Rc 818.50
Lc 233.15
Ts 308.74
Ls 187.00
SE 0.080 FT/FT
DESIGN SPEED 50 MPH
TRANS. LENGTH 190'

SPIRAL SR10PRO-5A
PIs 170+10.00
Ns 793,366.3203
Es 1,956,868.4409
θs 6° 32' 42"
LT 124.75
ST 62.41
Ls 187.00

SPIRAL SR10PRO-6B
PIs 174+92.94
Ns 793,847.6474
Es 1,956,909.7933
θs 6° 32' 42"
LT 124.75
ST 62.41
Ls 187.00

CURVE SR10PRO-6
PI 177+61.30
N 794,115.0195
E 1,956,932.7641
Δs 40° 08' 05" (RT)
θs 6° 32' 42"
Δc 27° 02' 40" (RT)
Dc 7° 00' 00"
Rc 818.50
Lc 386.35
Ts 393.11
Ls 187.00
SE 0.080 FT/FT
DESIGN SPEED 50 MPH
TRANS. LENGTH 190'

RELOCATED CHANNEL TYPICAL SECTION



SEE CROSS SECTIONS FOR SIDE SLOPE AND WIDTH DETAILS

1. ENVIRONMENTAL CHANNEL RELOCATION

   THE NEW CHANNEL SHALL BE EXCAVATED AND STABILIZED DURING A LOW-WATER PERIOD. RIP-RAP (ONLY AS SHOWN ON PLANS), SEEDING, AND SOD SHALL BE INSTALLED IMMEDIATELY FOLLOWING CHANNEL COMPLETION. TREES SHALL BE INSTALLED IN THE FIRST PLANTING SEASON FOLLOWING CHANNEL EXCAVATION. WATER SHALL BE DIVERTED INTO THE NEW CHANNEL ONLY AFTER IT IS COMPLETELY STABILIZED, AND ONLY DURING A LOW-WATER PERIOD. STABILIZED MEANS THAT ALL SPECIFIED TOCK AN EROSION CONTROL BLANKET OR TURF REINFORCEMENT MAT IS IN PLACE, AND SEEDING AND SOD ARE IN PLACE AND ESTABLISHED.

2. CHANNEL RELOCATION SEQUENCE
   A. FLAG EDGE OF THE NEW CHANNEL TOP BANK PRIOR TO CLEANING. DO NOT CLEAR LARGE TREES IN POSITION TO SHADE THE NEW CHANNEL. LEAVE AS MANY TREES AND SHRUBS AS POSSIBLE BETWEEN TOE OF THE NEW HIGHWAY SLOPE AND THE STREAM.
   B. EXCAVATE THE NEW CHANNEL "IN THE DRY" BY LEAVING AREAS OF UNDISTURBED EARTH (DIVERSION BERMS) IN PLACE AT BOTH ENDS.
   C. SHAPE CHANNEL TO SPECIFICATIONS SHOWN. REMOVE LOOSE SOILS AND DEBRIS.
   D. REMOVE DIVERSION BERMS, BEGINNING WITH THE MOST DOWNSTREAM, BANKS AND BOTTOM ELEVATION OF THE OLD CHANNEL SHOULD TRANSITION SMOOTHLY INTO THE NEW CHANNEL. THE ELEVATIONS OF THE NEW CHANNEL BOTTOM AT EACH END OF THE RELOCATION SEQUENCE SHOULD MATCH THE ELEVATIONS OF THE EXISTING CHANNEL, AND A STEADY PERCENT SLOPE SHOULD BE MAINTAINED THROUGHOUT THE RELOCATED CHANNEL CENTERLINE OR AS SPECIFIED.
   E. INSTALL TREES ACCORDING TO STANDARD SPECIFICATIONS SECTION 802.

3. ONLY RIP-RAP SHOWN ON PLANS SHOULD BE USED IN THE RELOCATED CHANNEL REACH. ANY OTHER PROPOSED RIP-RAP SHOULD BE COORDINATED WITH THE ENVIRONMENTAL DIVISION THROUGH THE TDOT HEADQUARTERS CONSTRUCTION OFFICE.

4. REQUEST BY ANY AGENCY THAT WOULD REQUIRE THE MODIFICATION OF CHANNELS, DITCHES, ELEVATIONS, RIP-RAP OR ANY OTHER STREAM MITIGATION ITEMS ASSOCIATED WITH THE CHANNEL RELOCATIONS SHALL BE REFERRED TO THE TDOT ENVIRONMENTAL DIVISION VIA THE HEADQUARTERS CONSTRUCTION OFFICE FOR COORDINATION WITH ALL INVOLVED AGENCIES AND TDOT DIVISIONS.

UNOFFICIAL SET
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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPOSED LAYOUT

STA. 165+50 TO STA. 178+50

SCALE: 1"= 50'

13-MAR-2014 11:44
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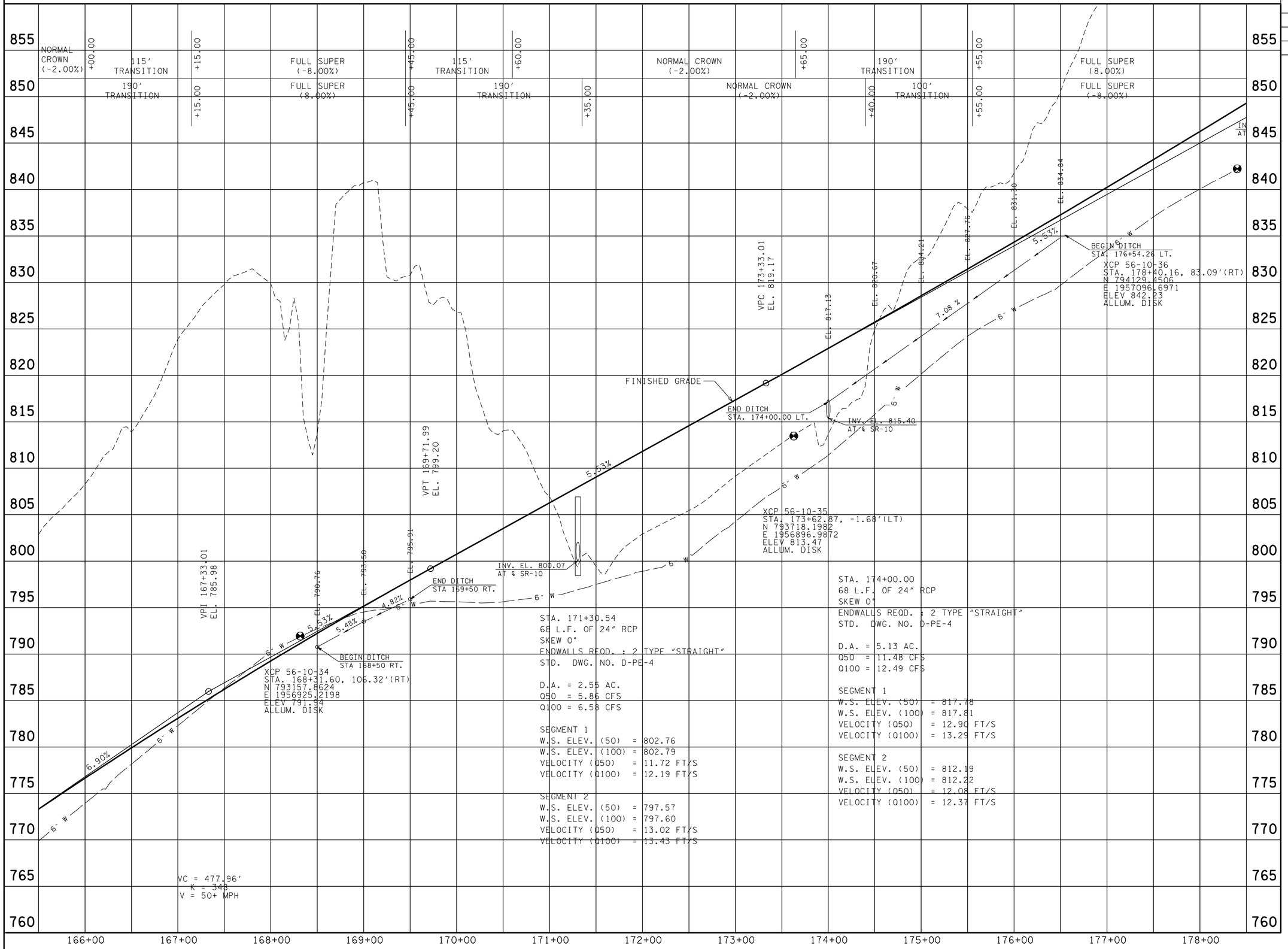
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	9C
CONST.	2014	STP/PHSIP-10(24)	9C



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROFILE

STA.165+50 TO STA.178+50

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

13-MAR-2014 11:44
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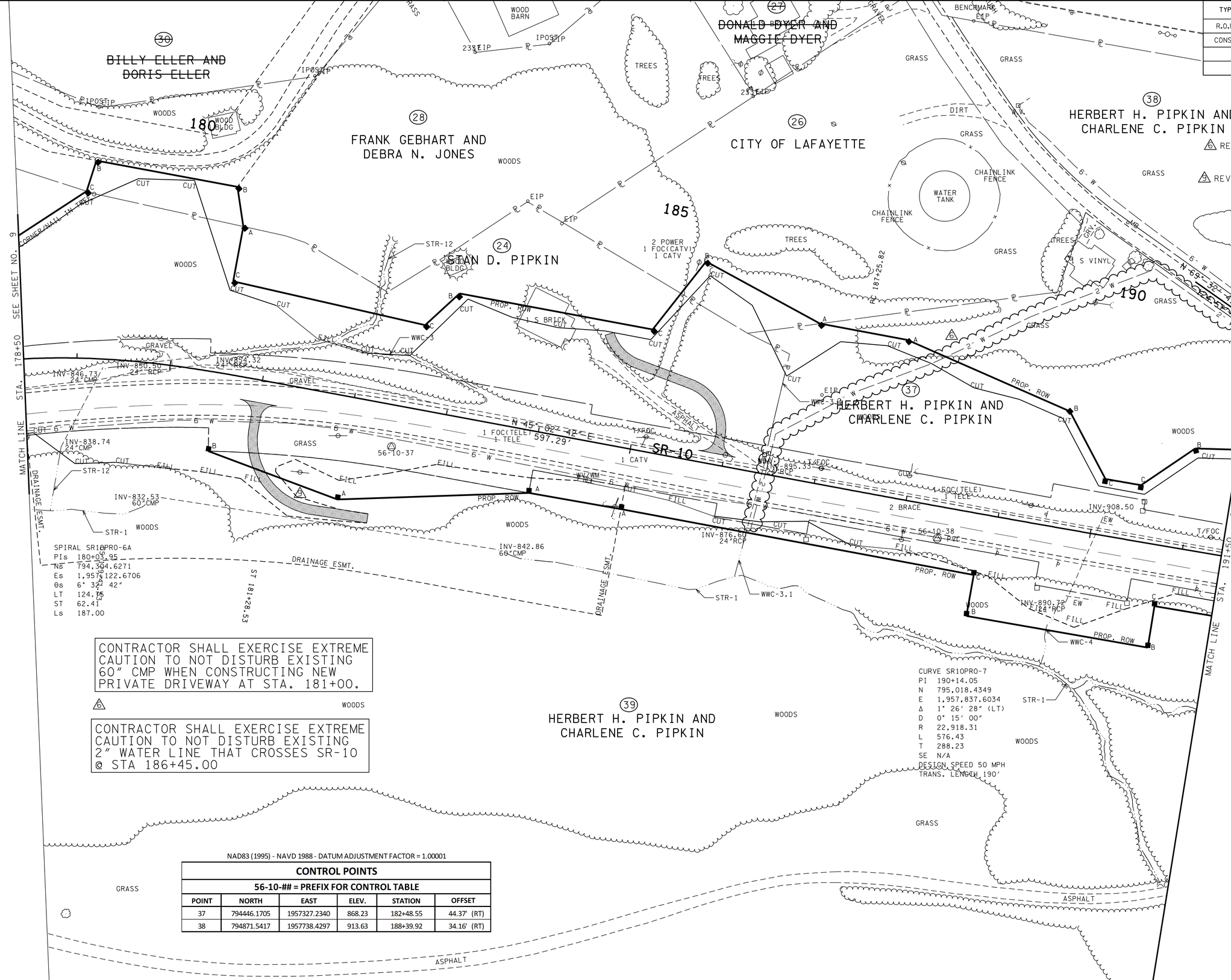
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	10
CONST.	2014	STP/PHSIP-10(24)	10



REV: 9-11-13 ADDED EXISTING 2" WATER LINE. ADDED NOTE REGARDING 2" WATER LINE

REV: 1-23-14 ADDED 10' PVT. DRIVEWAY AT STA. 181+00.00

NAD83 (1995) - NAVD 1988 - DATUM ADJUSTMENT FACTOR = 1.00001

CONTROL POINTS

56-10-## = PREFIX FOR CONTROL TABLE

POINT	NORTH	EAST	ELEV.	STATION	OFFSET
37	794446.1705	1957327.2340	868.23	182+48.55	44.37' (RT)
38	794871.5417	1957738.4297	913.63	188+39.92	34.16' (RT)

UNOFFICIAL SET

NOT FOR BIDDING

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PRESENT LAYOUT

STA. 178+50 TO STA. 191+50

SCALE: 1"= 50'

13-MAR-2014 11:44
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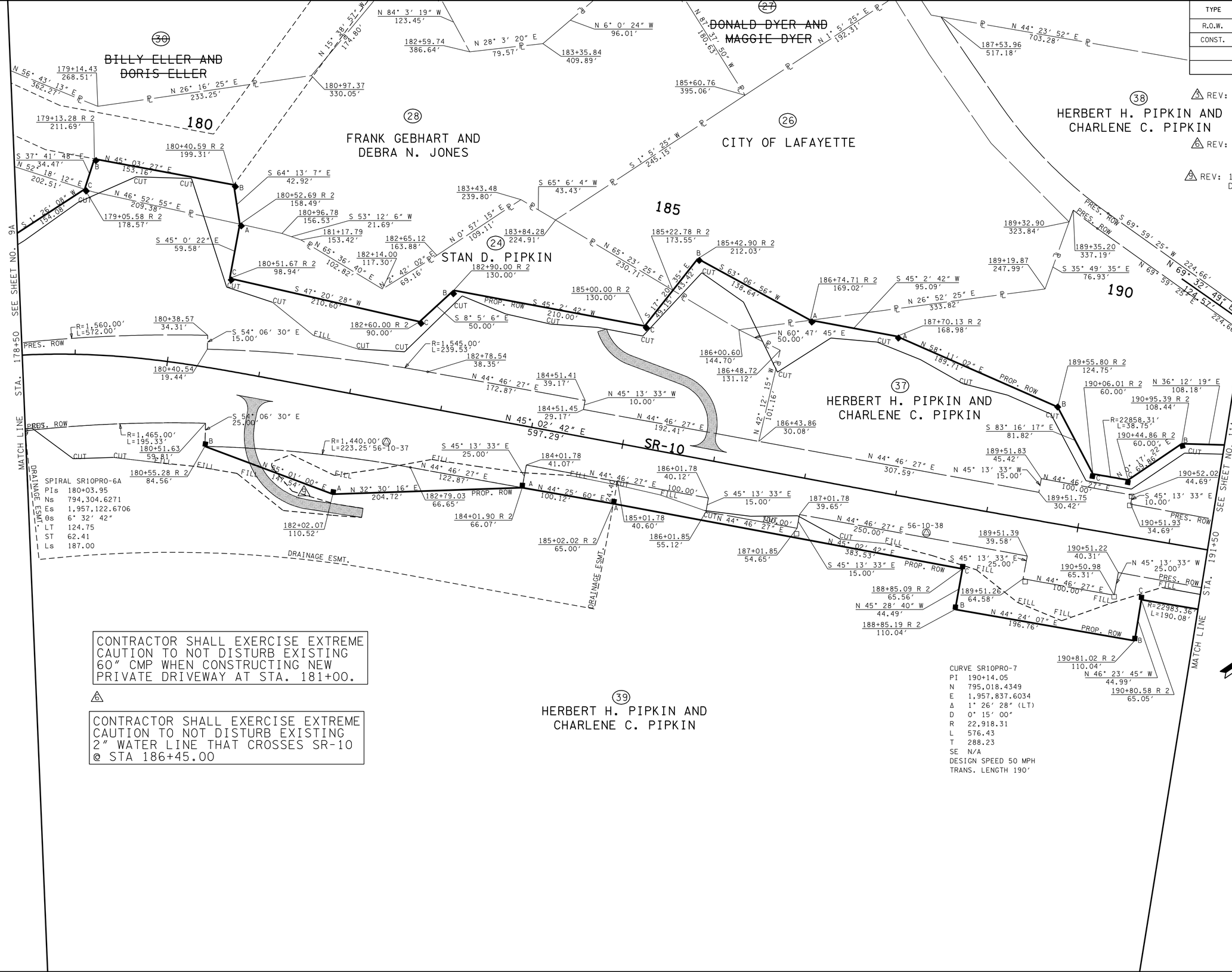
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	10A
CONST.	2014	STP/PHSIP-10(24)	10A

3 REV: 2-26-13 REVISED TO ADD MISSING BEARINGS, LENGTHS AND OFFSETS ALONG EXIST. AND PROP. ROW LINES

6 REV: 9-11-13 ADDED NOTE REGARDING 2" WATER LINE

9 REV: 1-23-14 ADDED 10' PVT. DRIVEWAY AT STA. 181+00.00



UNOFFICIAL SET
NOT FOR BIDDING

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

R.O.W. DETAILS

STA. 178+50 TO STA. 191+50

SCALE: 1"= 50'

13-MAR-2014 11:45
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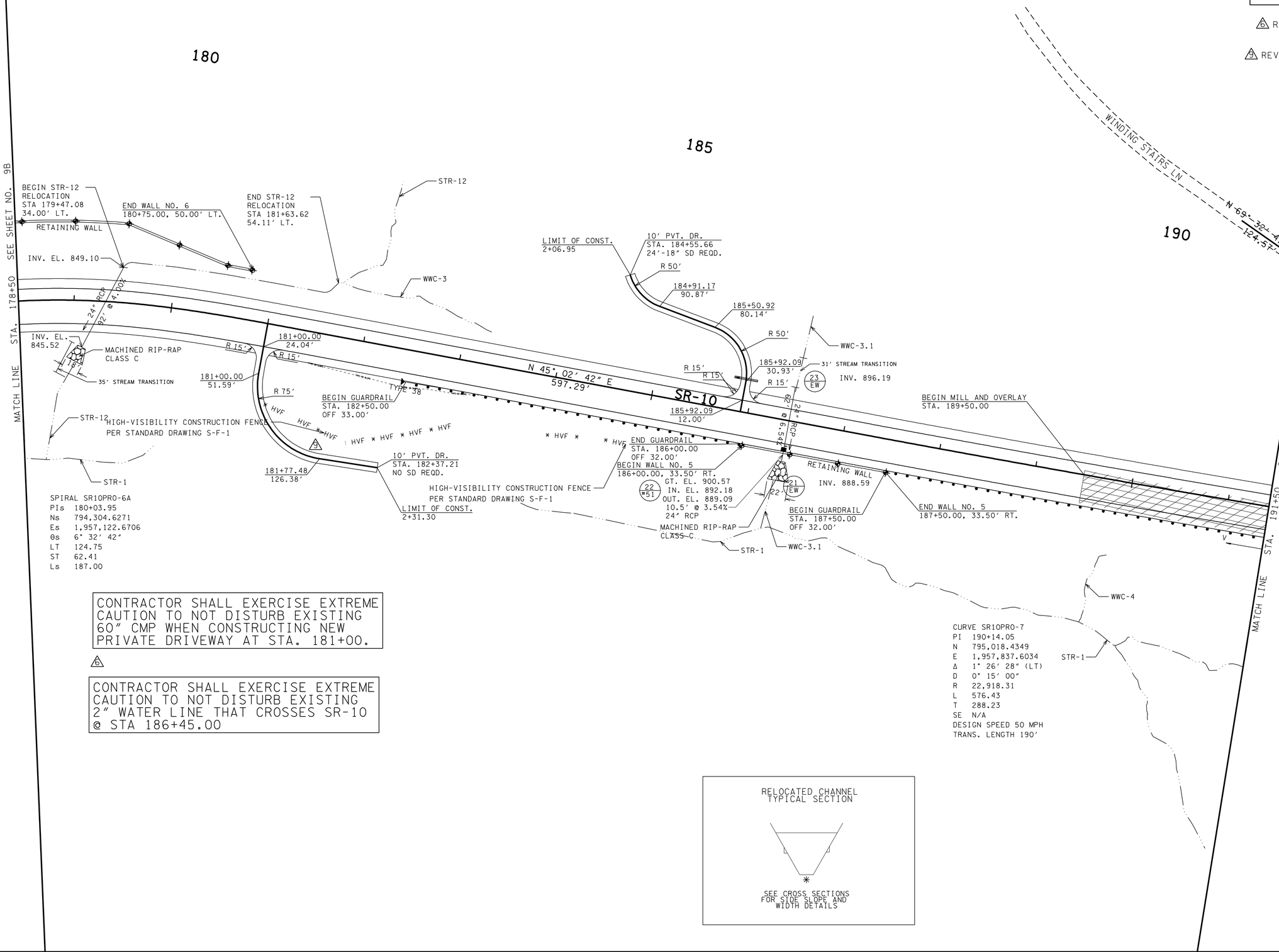
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	10B
CONST.	2014	STP/PHSIP-10(24)	10B

6 REV: 9-11-13 ADDED NOTE REGARDING 2" WATER LINE

9 REV: 1-23-14 ADDED 10' PVT. DRIVEWAY AT STA. 181+00.00



SPIRAL SR10PRO-6A
PIs 180+03.95
Ns 794,304.6271
Es 1,957,122.6706
θs 6° 32' 42"
LT 124.75
ST 62.41
Ls 187.00

CONTRACTOR SHALL EXERCISE EXTREME CAUTION TO NOT DISTURB EXISTING 60" CMP WHEN CONSTRUCTING NEW PRIVATE DRIVEWAY AT STA. 181+00.

6

CONTRACTOR SHALL EXERCISE EXTREME CAUTION TO NOT DISTURB EXISTING 2" WATER LINE THAT CROSSES SR-10 @ STA 186+45.00

CURVE SR10PRO-7
PI 190+14.05
N 795,018.4349
E 1,957,837.6034
Δ 1° 26' 28" (LT)
D 0° 15' 00"
R 22,918.31
L 576.43
T 288.23
SE N/A
DESIGN SPEED 50 MPH
TRANS. LENGTH 190'

RELOCATED CHANNEL TYPICAL SECTION

SEE CROSS SECTIONS FOR SIDE SLOPE AND WIDTH DETAILS

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPOSED LAYOUT

STA. 178+50 TO STA. 191+50

SCALE: 1"= 50'

13-MAR-2014 11:45
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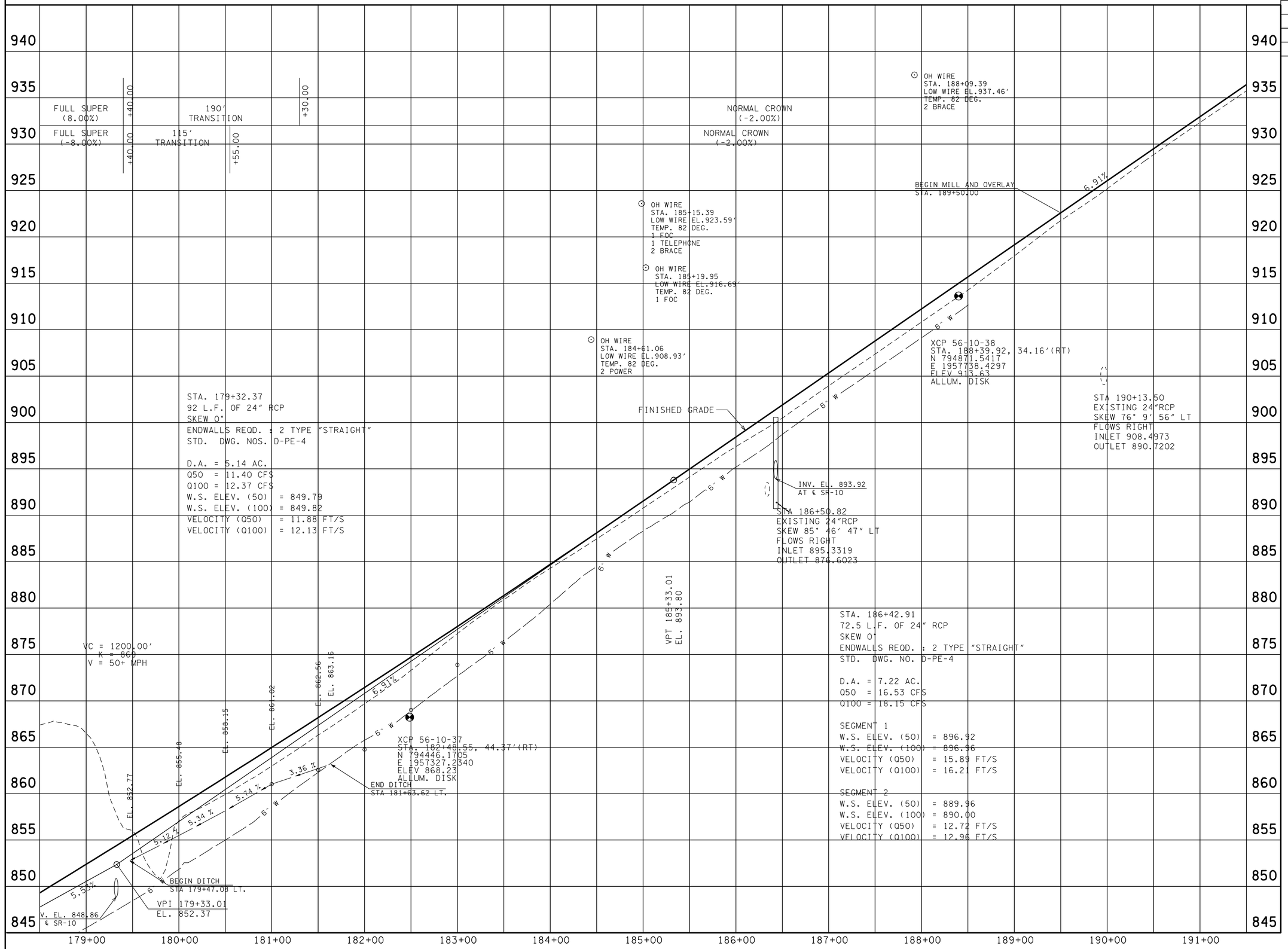
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	10C
CONST.	2014	STP/PHSIP-10(24)	10C



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROFILE

STA.178+50 TO STA.191+50

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

13-MAR-2014 11:45
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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	11
CONST.	2014	STP/PHSIP-10(24)	11

NAD83 (1995) - NAVD 1988 - DATUM ADJUSTMENT FACTOR = 1.00001

CONTROL POINTS

56-10-## = PREFIX FOR CONTROL TABLE

POINT	NORTH	EAST	ELEV.	STATION	OFFSET
39	795312.3111	1958167.5896	956.41	194+54.41	36.27' (RT)
40	795526.4898	1958382.6929	970.59	197+57.85	44.32' (RT)
41	795905.5383	1958033.3104	968.48	197+91.37	470.09' (LT)
* 42	795182.9436	1958812.3197	972.53	198+05.38	592.36' (RT)

* NOT SHOWN ON DRAWING

BEGIN CONSTRUCTION
WINDING STAIRS LANE
STA. 299+49.71

(38)
HERBERT H. PIPKIN AND
CHARLENE C. PIPKIN

CURVE WINDREV-1
PI 300+04.64
N 795,308.4145
E 1,957,813.2133
Δ 5° 44′ 13″ (LT)
D 9° 32′ 57″
R 600.00
L 60.08
T 30.06
SE N/A
DESIGN SPEED 15 MPH
TRANS. LENGTH N/A

CURVE WINDREV-1A
PI 303+61.91
N 795,466.1180
E 1,958,133.8508
Δ 69° 47′ 38″ (RT)
D 76° 23′ 40″
R 75.00
L 91.36
T 52.31
SE N/A
DESIGN SPEED 15 MPH
TRANS. LENGTH N/A

EXISTING 6″ PVC WATERLINE (TO REMAIN)
EXISTING 6″ PVC WATERLINE (RETIRED)
EXISTING 2″ PVC WATERLINE (RETIRED)
NEW INSTALLATION
WINDING STAIRS LANE
SR-52
SR-10
N 63° 48′ 36″ E 214.94′
S 43° 30′ 32″ E 577.54′
N 43° 36′ 15″ E 676.57′
N 43° 36′ 15″ E 200.00′
N 69° 32′ 49″ E
MATCH LINE STA. 191+50 SEE SHEET NO. 10

(39)
HERBERT H. PIPKIN AND
CHARLENE C. PIPKIN

STA. 195+42.52 ℄ SR 10 =
STA. 304+42.87 ℄
WINDING STAIRS LANE

END CONST. SR-52.
STA. 7+47.37
END MILL AND OVERLAY

CONTRACTOR SHALL EXERCISE EXTREME CAUTION TO NOT DISTURB EXISTING WELL ON WINDING STAIRS LANE.

~~CITIZENS BANK~~

BEGIN CONST. SR-52.
STA. 1+46.71
BEGIN MILL AND OVERLAY

(33)
~~BILLY W. McCLARD AND JEAN McCLARD~~

END PROJECT NO. STP/PHSIP-10(24) (CONST.)
STA. 201+09.30 STATE ROUTE 10
N 795811.55
E 1958592.98

STA. 198+11.63 ℄ SR-10
STA. 4+47.09 ℄ SR-52

(32)
~~RITE AID OF TENNESSEE, INC.~~

RITE AIDE PHARMACY
1 S BRICK

1 S BRICK
GRAVEL
METAL BLDG
VINYL BLDG
TRAILER
CHAINLINK FENCE
ASPHALT
GRASS
WOODS
POND
DRAINAGE ESMT.
GOOSE CREEK

REV: 9-11-13 ADDED NOTE REGARDING THE WELL

REV: 1-2-14 REVISED TRACT 38 PROP. ROW. ADDED SLOPE EASEMENT. ADDED 30′ FIELD ENT. AT STA 302+00.00

REV: 1-23-14 ADJUSTED PROP. ROW. ALONG NORTHERN SIDE OF SR-10 BETWEEN WINDING STAIRS LN & SR-52.

REV: 1-24-14 ADJUSTED PROP. ROW. ALONG NORTHERN SIDE OF SR-10 BETWEEN WINDING STAIRS LN & SR-52.

REV: 1-30-14 ADJUSTED PROP. ROW. ON TRACT 37 & 38 ALONG WINDING STAIRS LN. ADJ. PROP. SLOPE EASEMENT ON TRACT 38. ADDED PROP. CONST. EASEMENT ON TRACT 38.

REV: 2-3-14 REMOVED CONST. EASEMENT SHADING.

REV: 2-14-14 ADDED UTILITY RELOCATION LABELS

UNOFFICIAL SET
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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PRESENT LAYOUT

STA. 191+50 TO STA. 198+50

SCALE: 1″= 50′

13-MAR-2014 11:45
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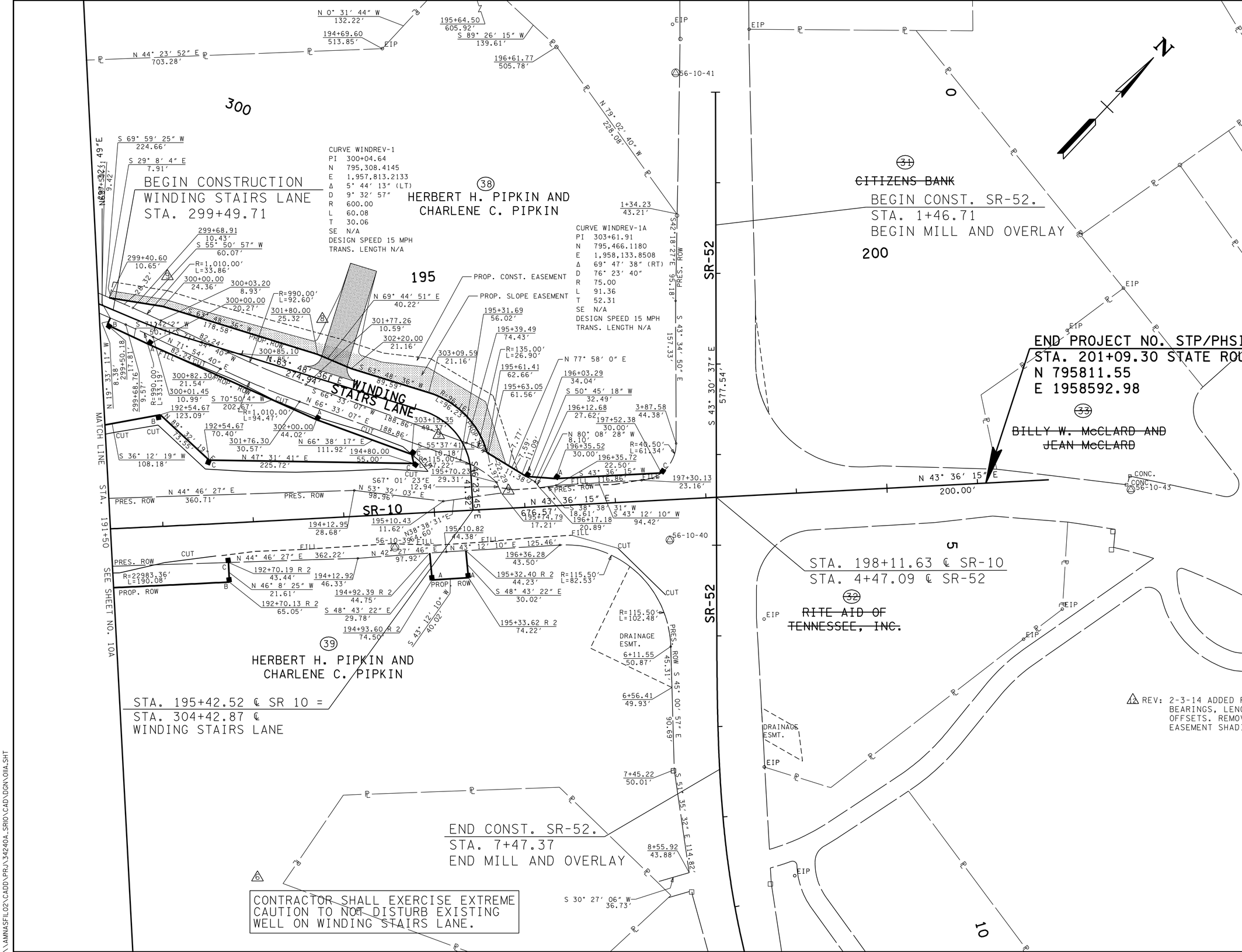
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	11A
CONST.	2014	STP/PHSIP-10(24)	11A



3 REV: 2-26-13 REVISED TO ADD MISSING BEARINGS, LENGTHS AND OFFSETS ALONG EXIST. AND PROP. ROW LINES

6 REV: 9-11-13 ADDED NOTE REGARDING THE WELL

8 REV: 1-2-14 REVISED TRACT 38 PROP. ROW. ADDED SLOPE EASEMENT. ADDED 30′ FIELD ENT. AT STA 302+00.00

9 REV: 1-23-14 ADJUSTED PROP. ROW. ALONG NORTHERN SIDE OF SR-10 BETWEEN WINDING STAIRS LN & SR-52. ADDED ROW. LENGTHS.

10 REV: 1-24-14 ADJUSTED PROP. ROW. ALONG NORTHERN SIDE OF SR-10 BETWEEN WINDING STAIRS LN & SR-52. ADDED ROW. BEARINGS, LENGTHS & OFFSETS.

103773.02
56001-3226-94

11 REV: 1-30-14 ADJUSTED PROP. ROW. ON TRACT 37 & 38 ALONG WINDING STAIRS LN. ADJ. PROP. SLOPE EASEMENT ON TRACT 38. ADDED PROP. CONST. EASEMENT ON TRACT 38. ADDED PROP. BEARINGS, LENGTHS & OFFSETS.

12 REV: 2-3-14 ADDED ROW. BEARINGS, LENGTHS & OFFSETS. REMOVED CONST. EASEMENT SHADING.

UNOFFICIAL SET
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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

R.O.W. DETAILS

STA. 191+50 TO STA. 198+50

SCALE: 1″= 50′

13-MAR-2014 11:45
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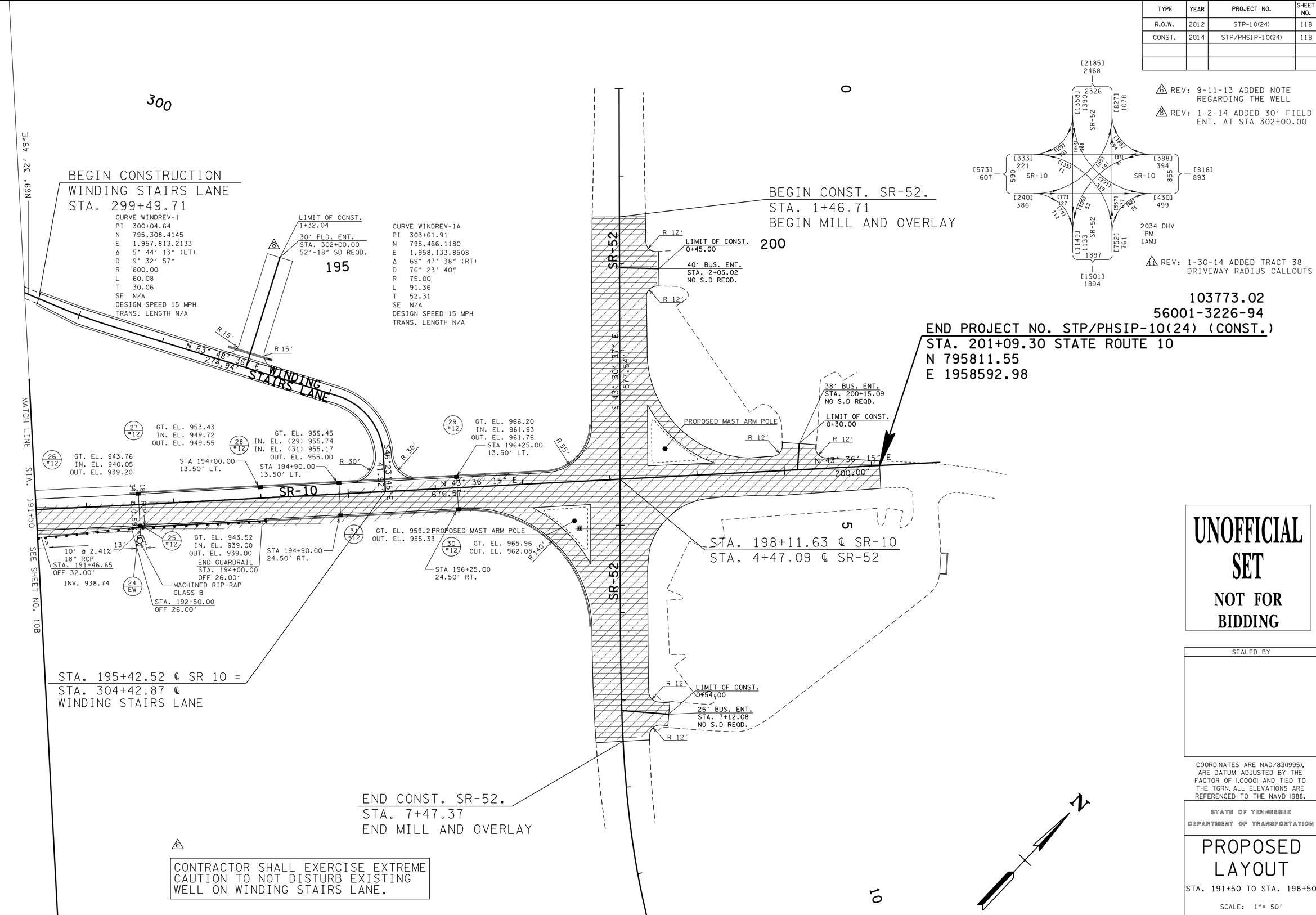
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	11B
CONST.	2014	STP/PHSIP-10(24)	11B



UNOFFICIAL SET

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

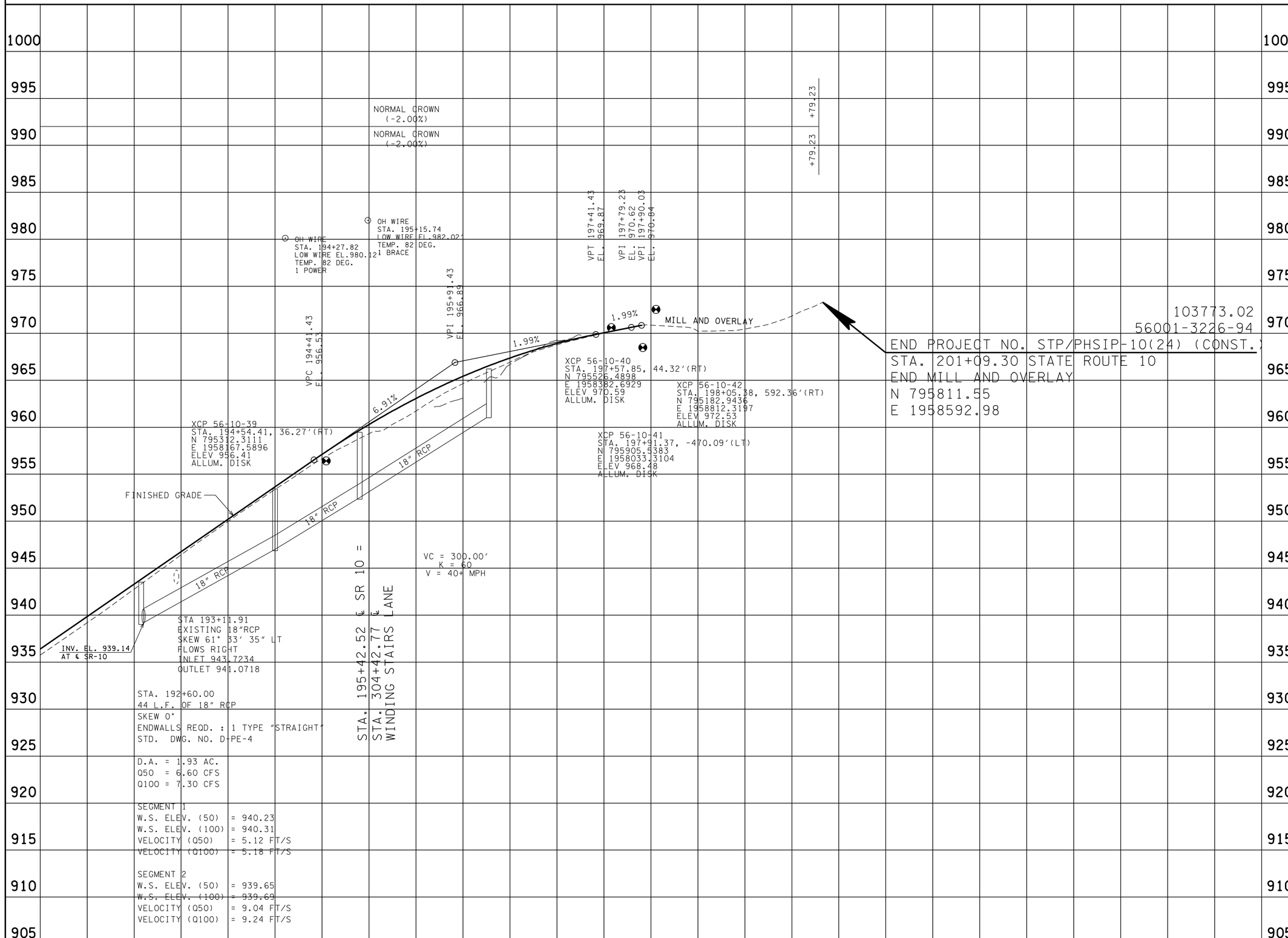
PROPOSED LAYOUT

STA. 191+50 TO STA. 198+50

SCALE: 1″= 50′

13-MAR-2014 11:45
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\01IB.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	11C
CONST.	2014	STP/PHSIP-10(24)	11C



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROFILE

STA.191+50 TO STA.198+50

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

13-MAR-2014 11:45
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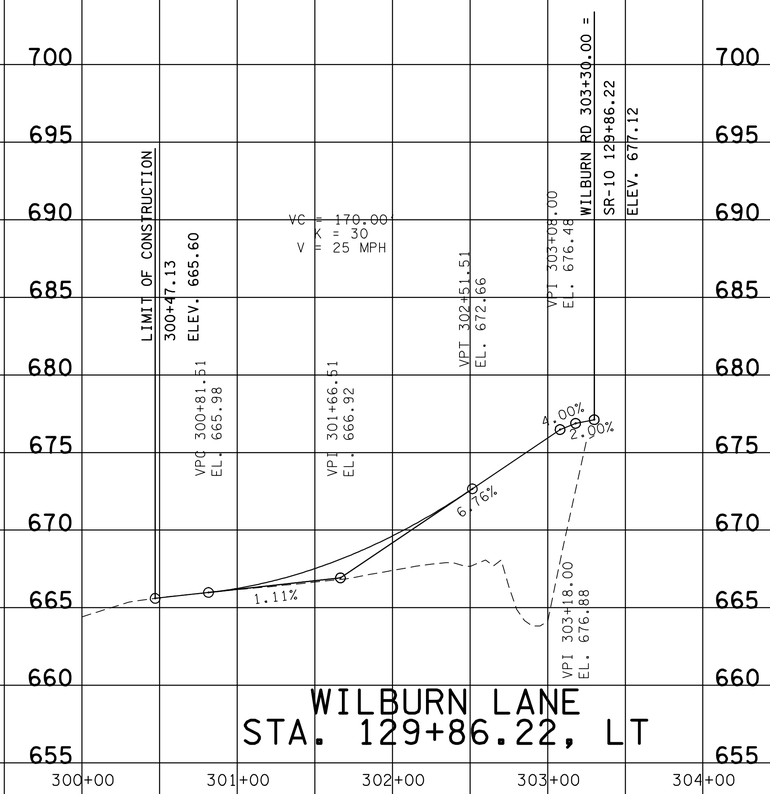
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	12
CONST.	2014	STP/PHSIP-10(24)	12



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROFILE OF SIDE ROADS AND STREETS

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

13-MAR-2014 11:45
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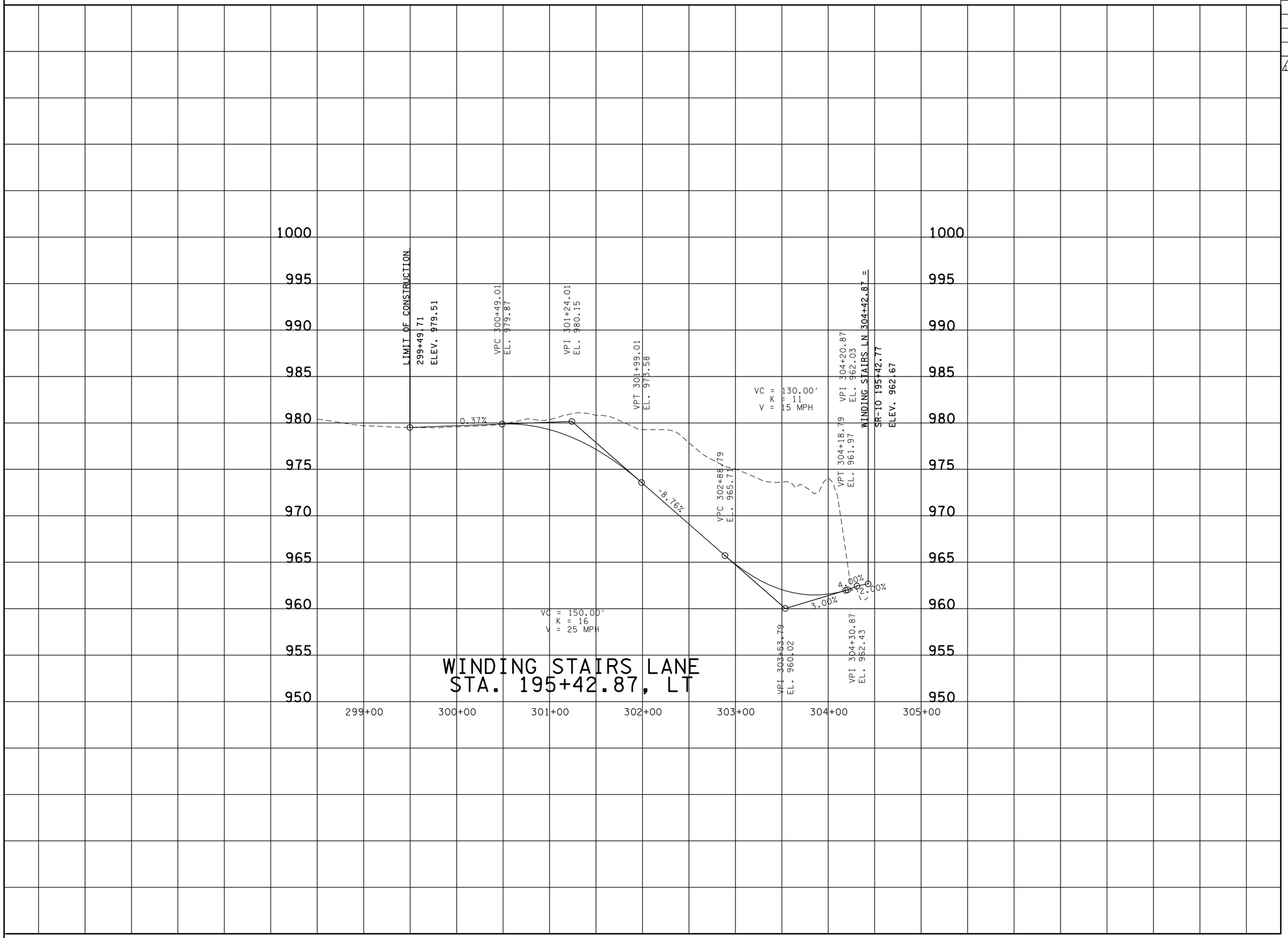
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	13
CONST.	2014	STP/PHSIP-10(24)	13

⚠ REV: 1-30-14 ADJUSTED EXISTING GROUND LINE.



UNOFFICIAL SET

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PROFILE OF SIDE ROADS AND STREETS

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

13-MAR-2014 11:45
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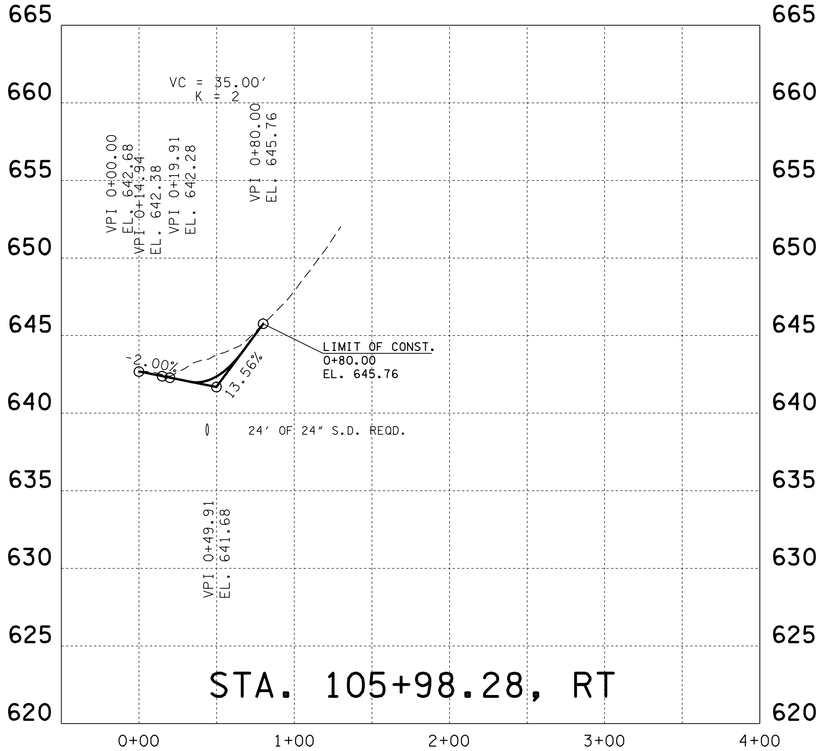
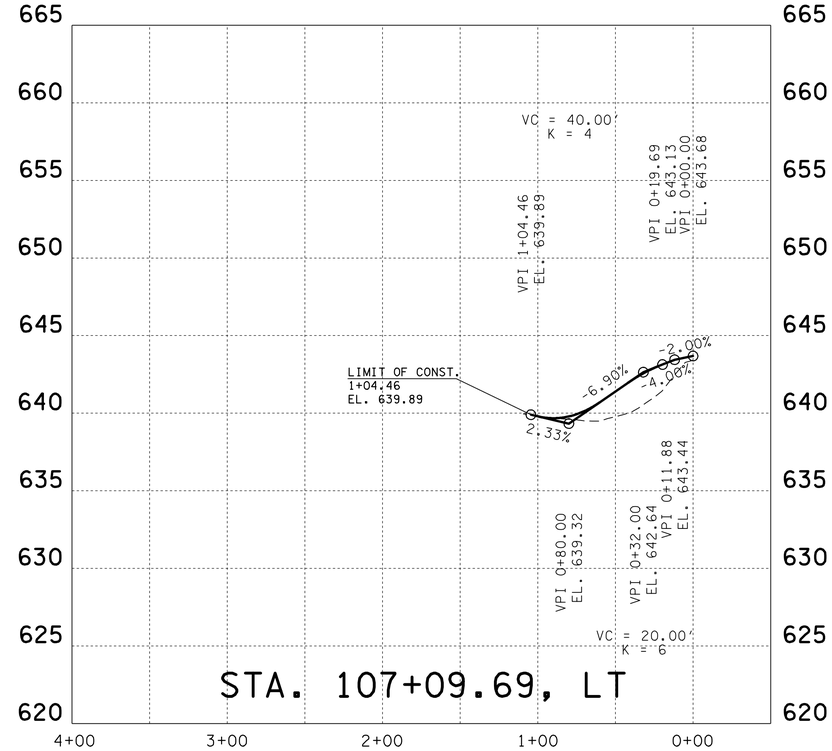
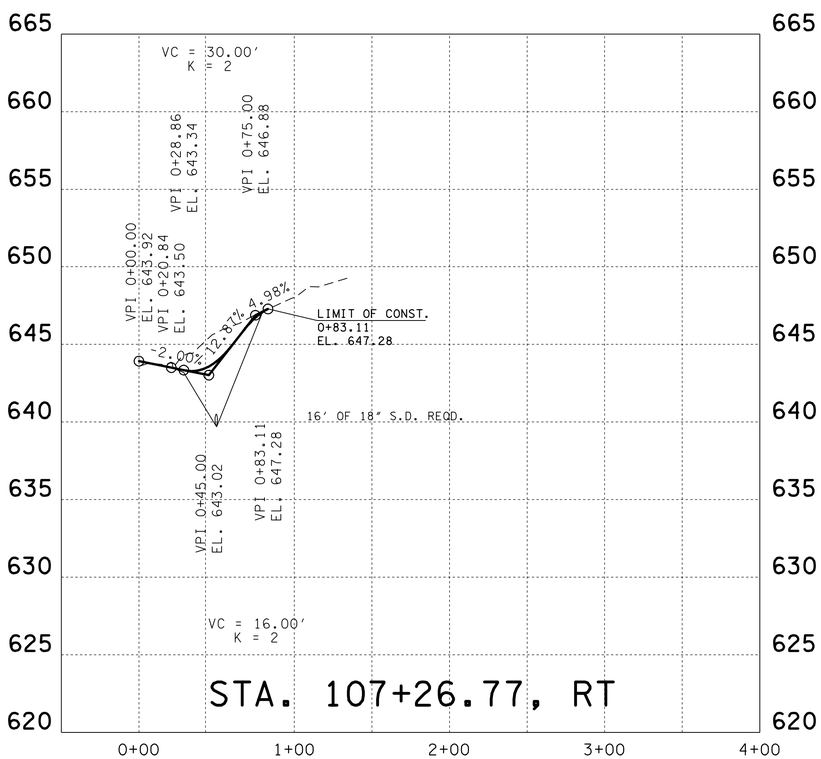
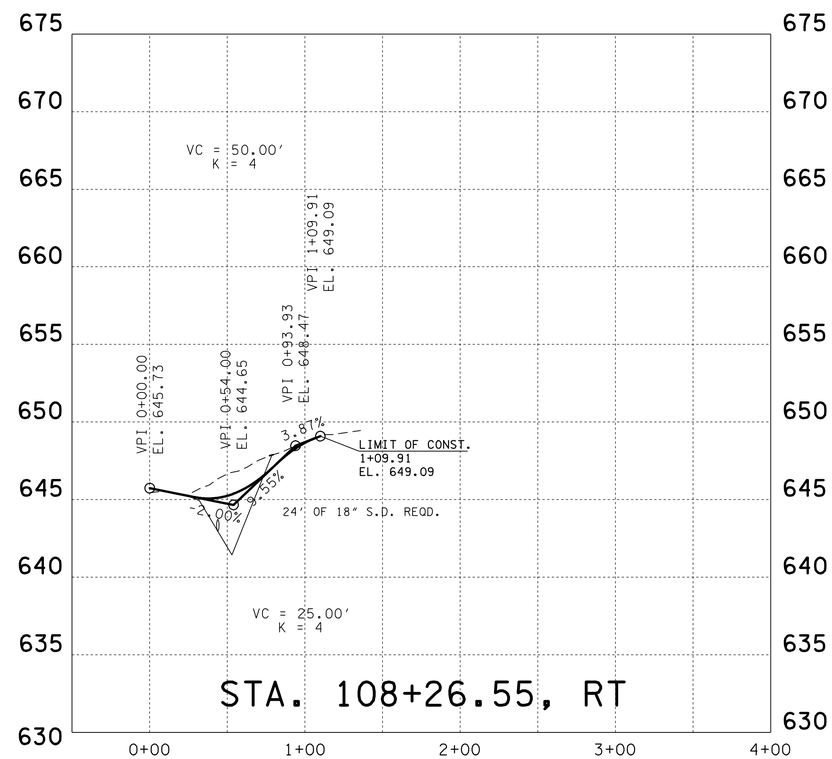
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	14
CONST.	2014	STP/PHSIP-10(24)	14









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DEPARTMENT OF TRANSPORTATION

PROFILE OF PRIVATE DRIVES

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

13-MAR-2014 11:45
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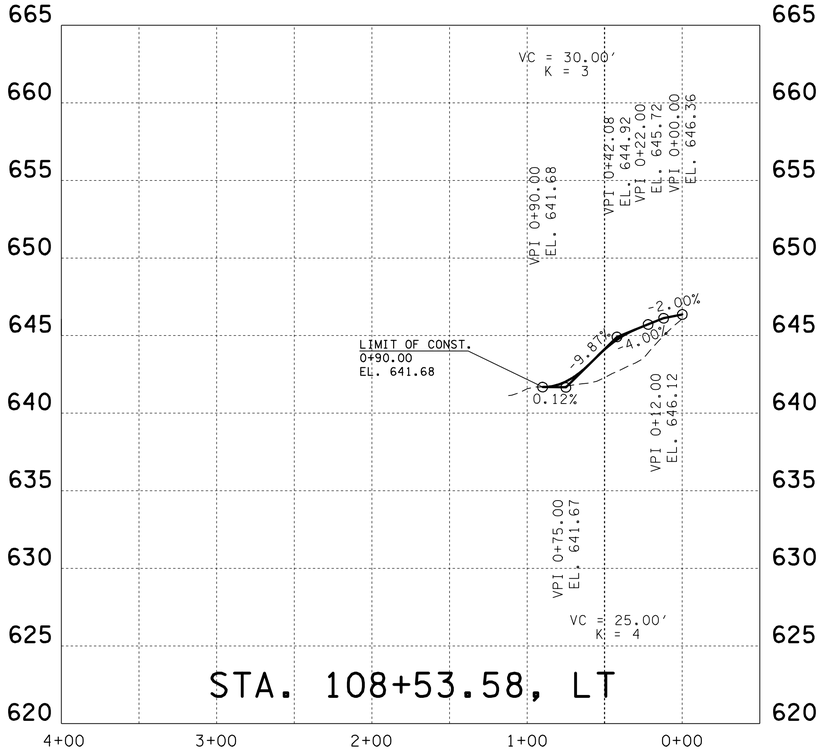
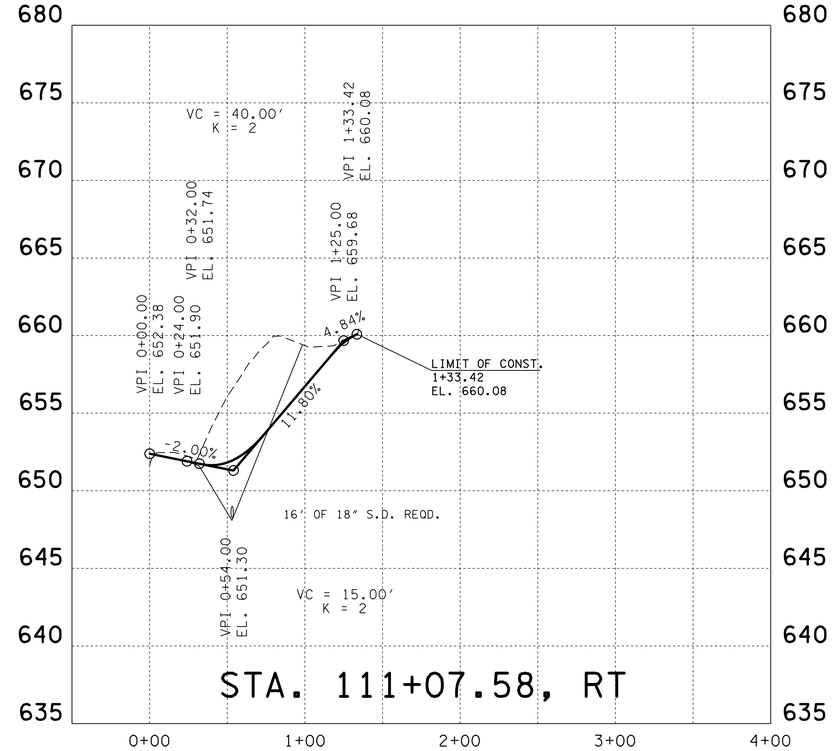
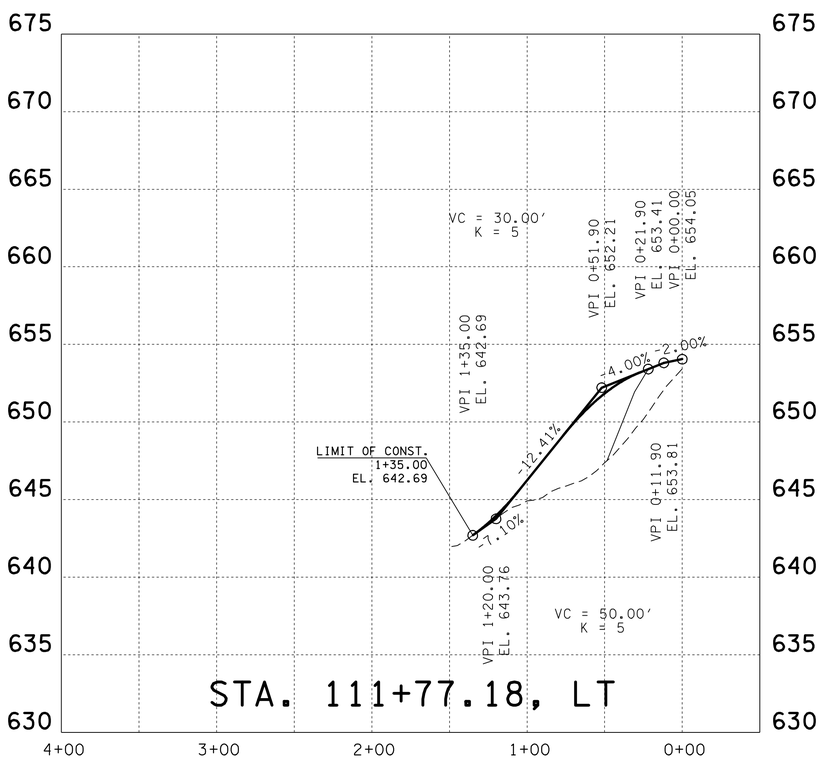
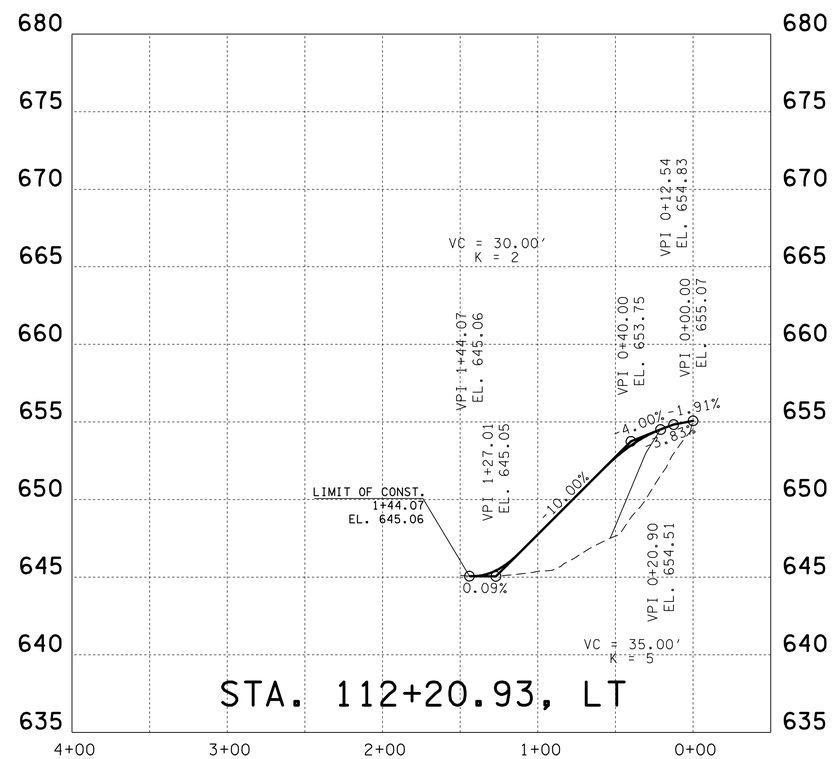
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	15
CONST.	2014	STP/PHSIP-10(24)	15









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PROFILE OF PRIVATE DRIVES

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

13-MAR-2014 11:45
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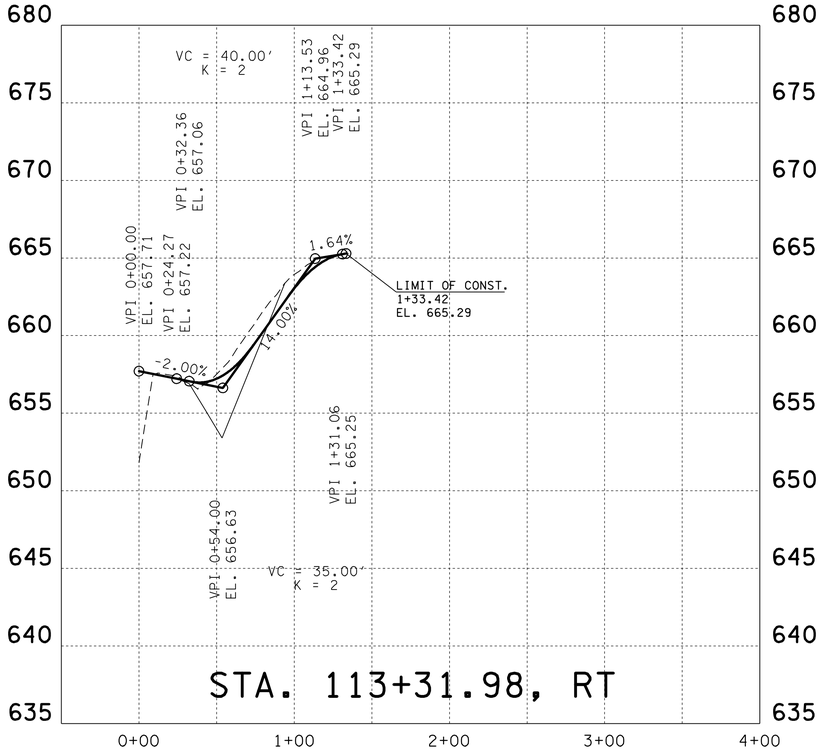
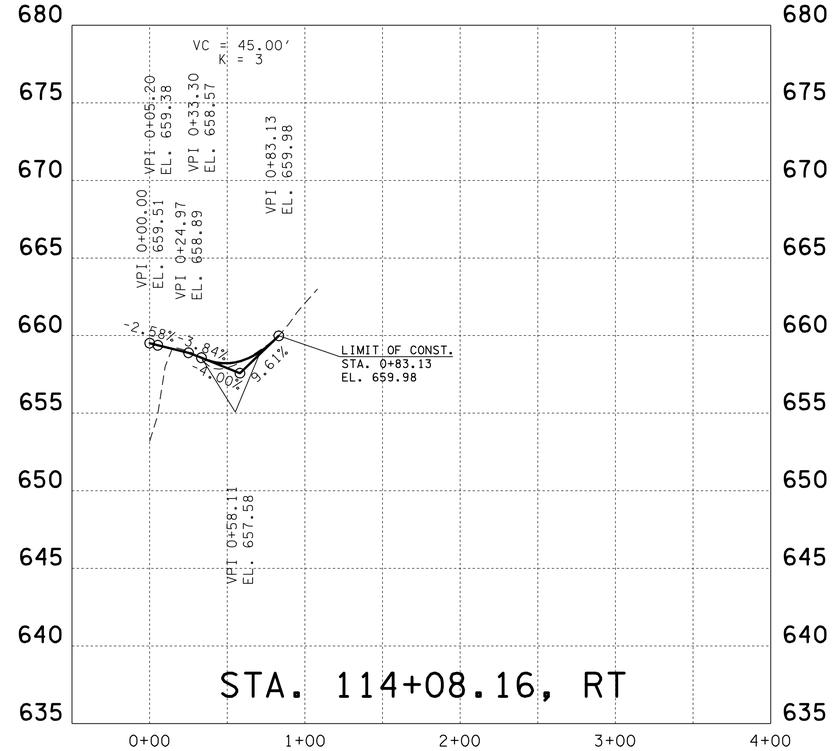
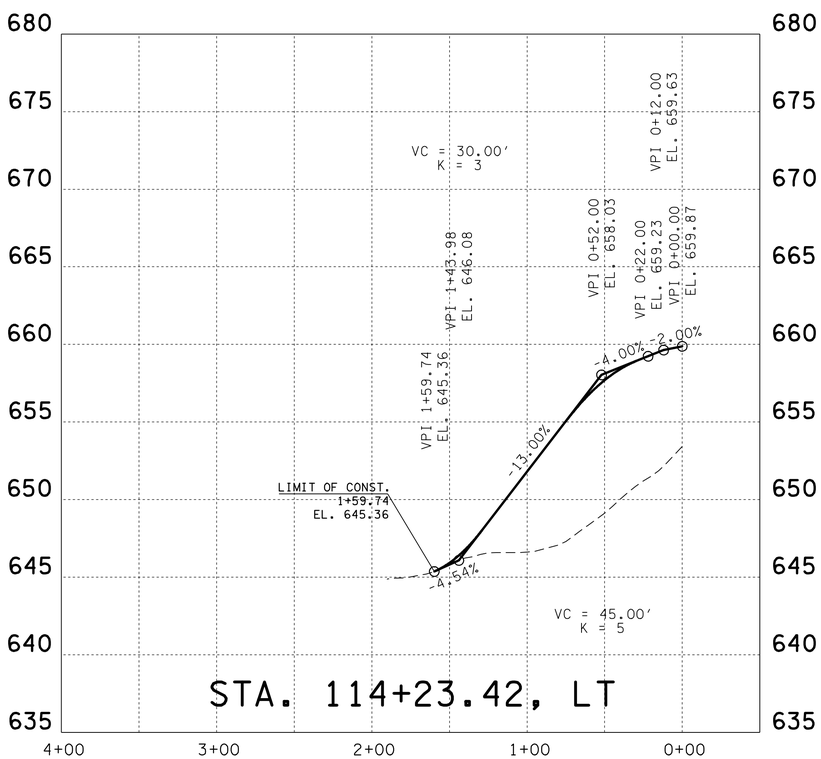
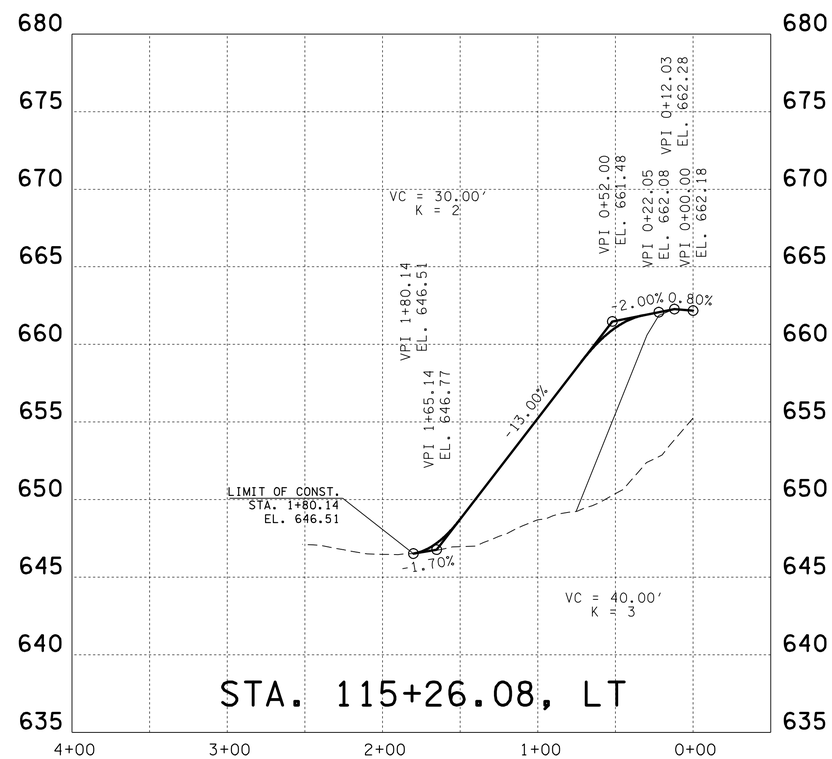
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	16
CONST.	2014	STP/PHSIP-10(24)	16









UNOFFICIAL SET

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PROFILE OF PRIVATE DRIVES

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

13-MAR-2014 11:45
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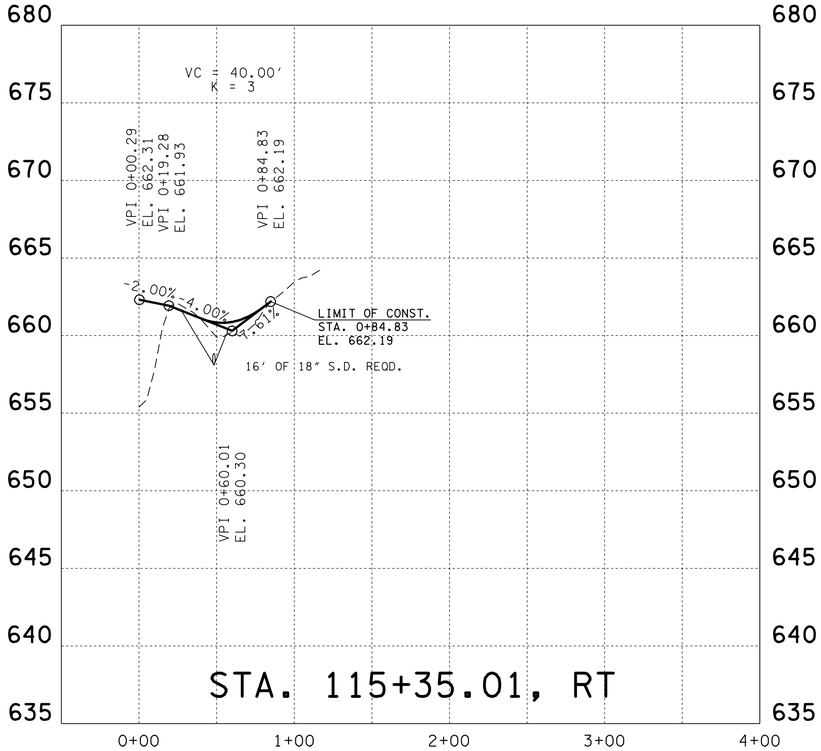
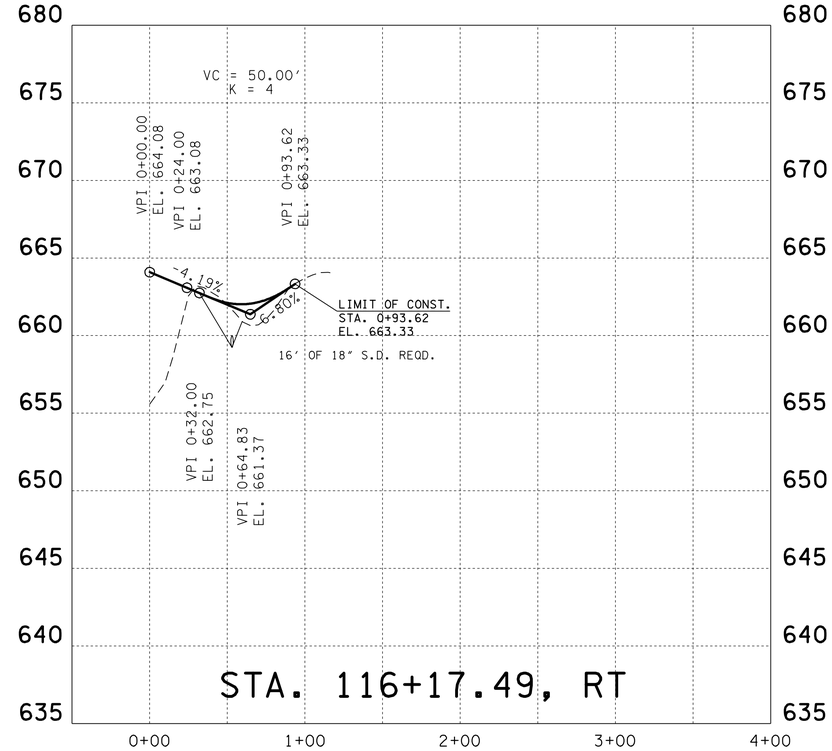
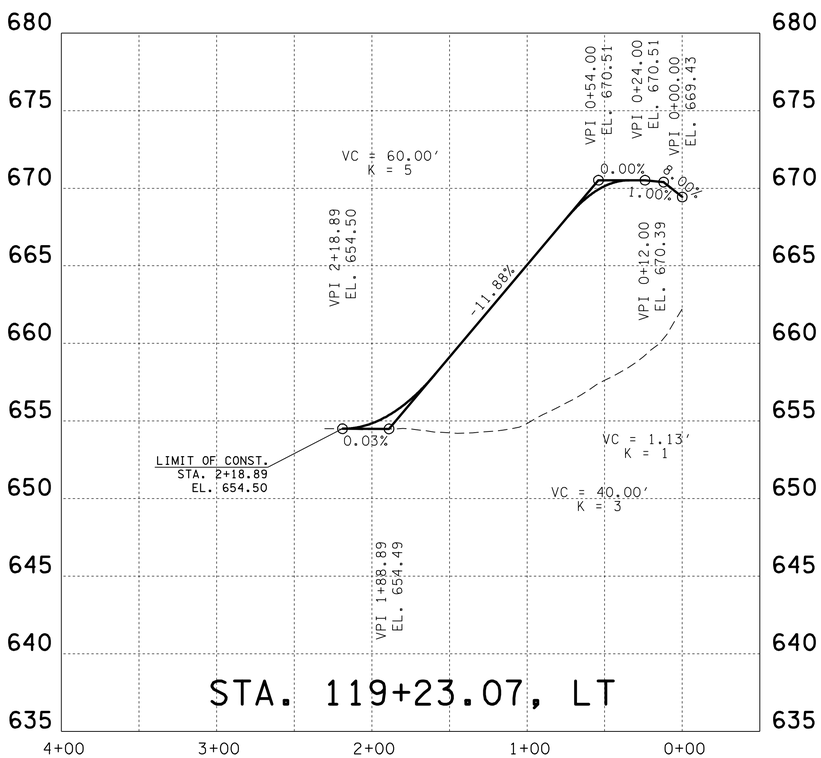
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	17
CONST.	2014	STP/PHSIP-10(24)	17

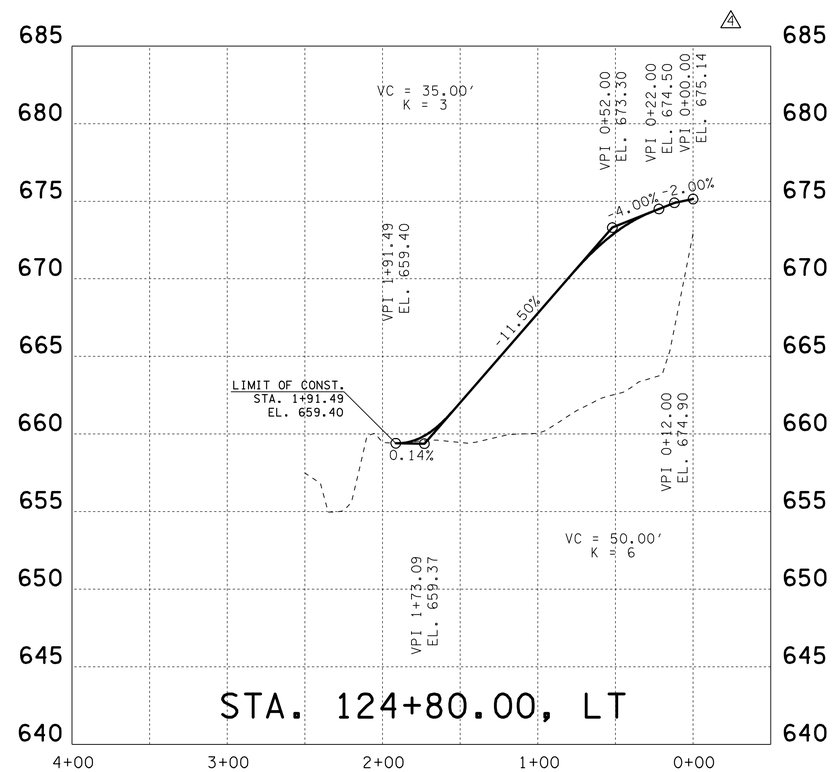
4 REV: 6-17-13 ADDED DRIVE AT STA. 124+80.00

6 REV: 09-11-13 REVISED SHEET TO SEQUENCE PROFILE ORDER CORRECTLY; NO CHANGE IN DESIGN









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PROFILE OF PRIVATE DRIVES

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

13-MAR-2014 11:45
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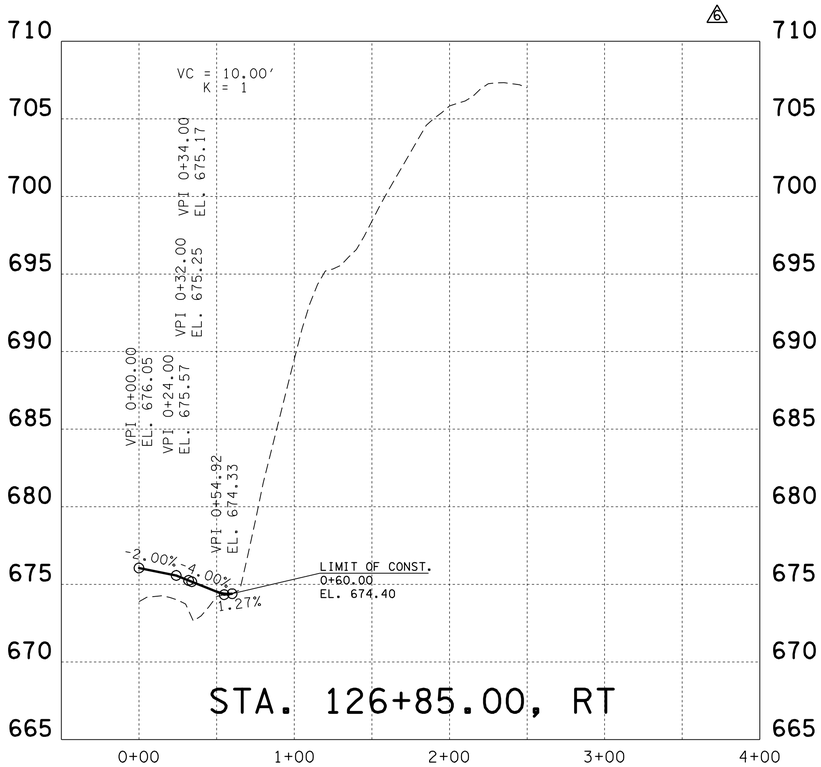
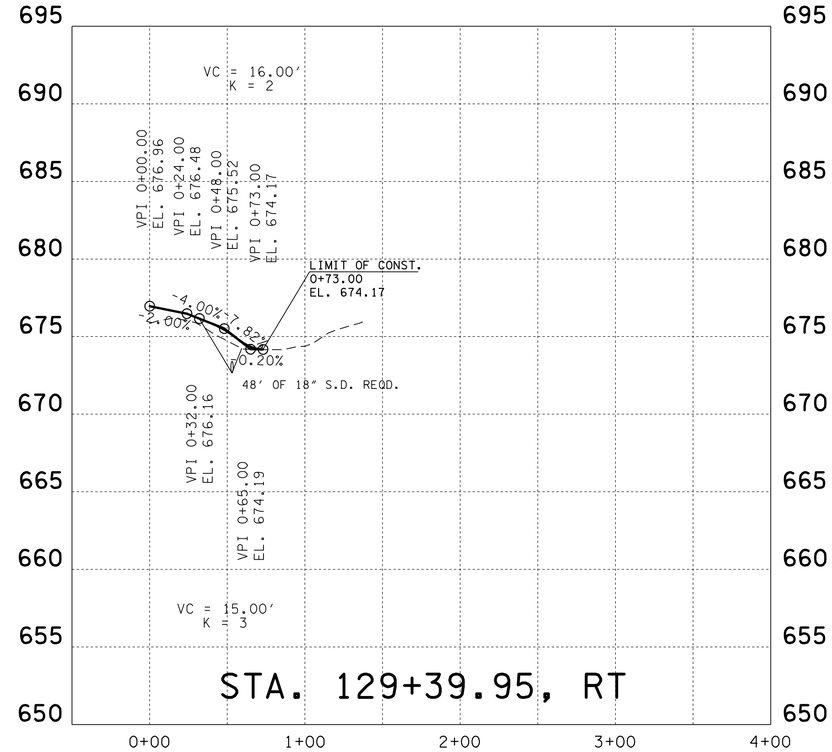
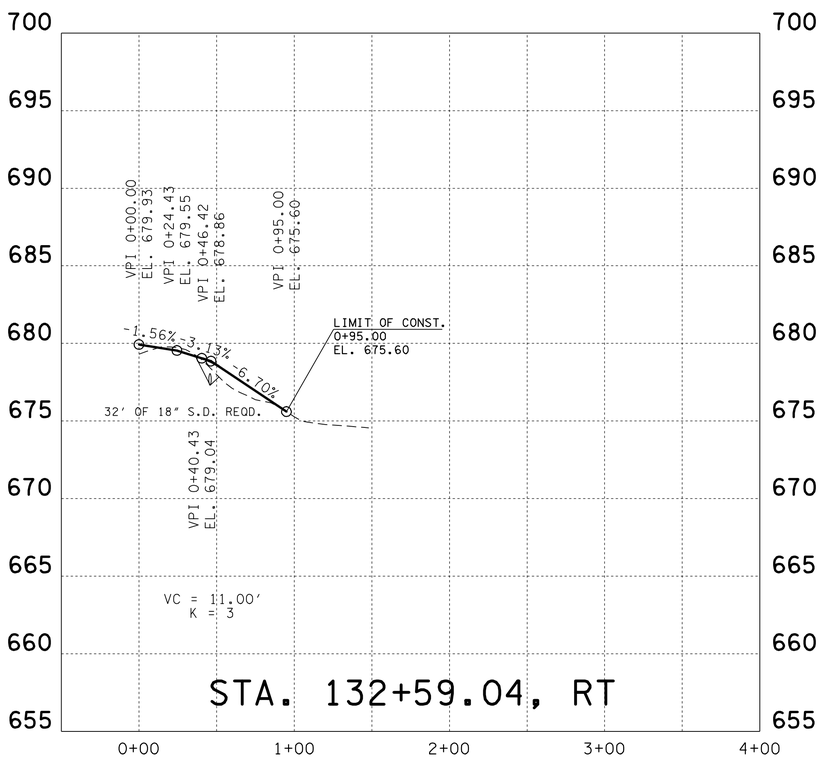
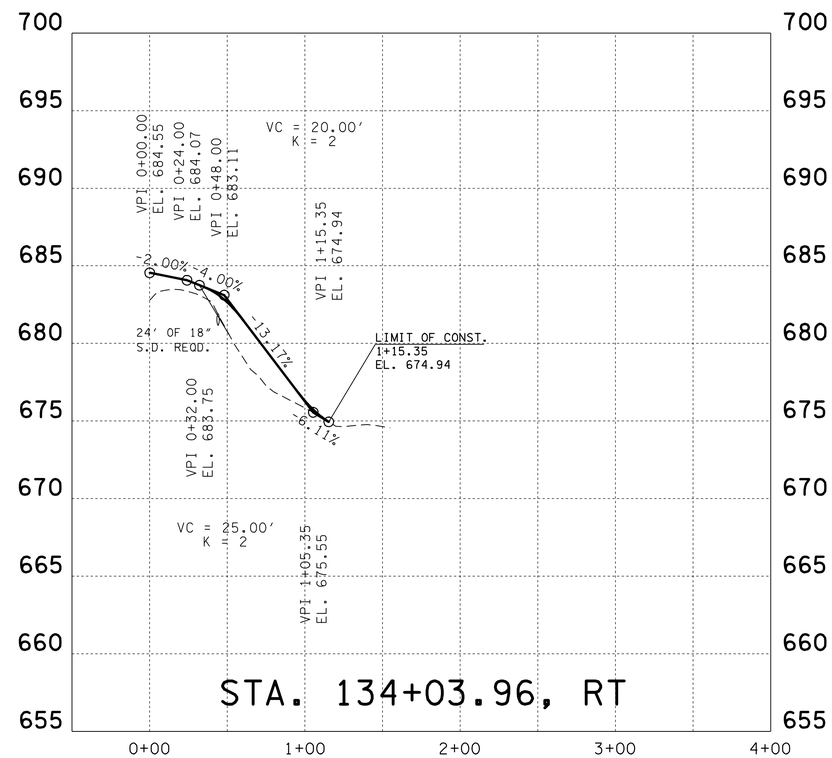
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	18
CONST.	2014	STP/PHSIP-10(24)	18

6 REV: 09-11-13 ADDED 10' FIELD ENT. AT STA. 126+85.00. REVISED REMAINDER OF SHEET TO SEQUENCE PROFILE ORDER CORRECTLY; NO CHANGE IN DESIGN









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PROFILE OF PRIVATE DRIVES

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

13-MAR-2014 11:45
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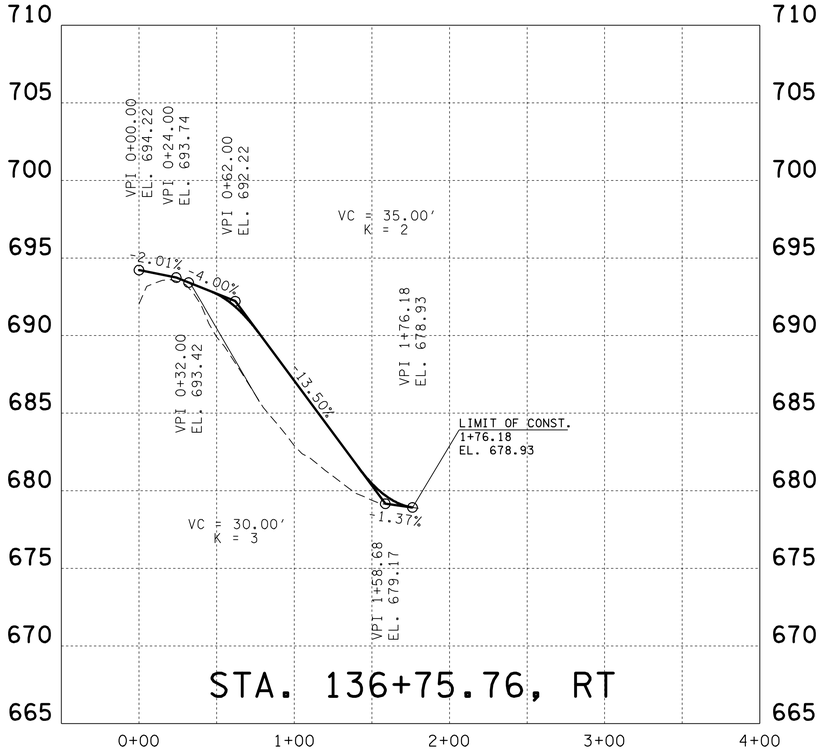
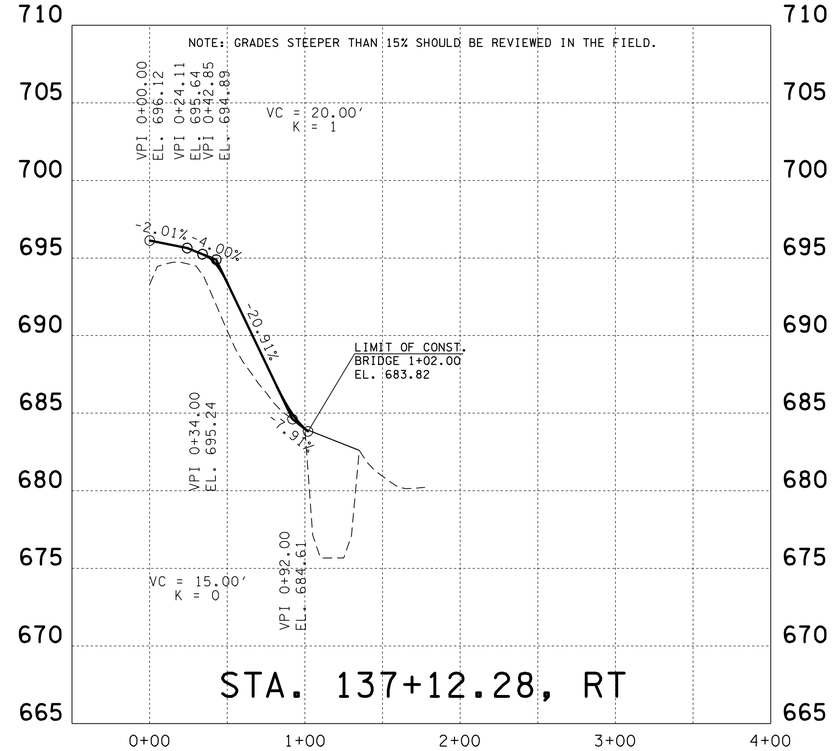
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	19
CONST.	2014	STP/PHSIP-10(24)	19

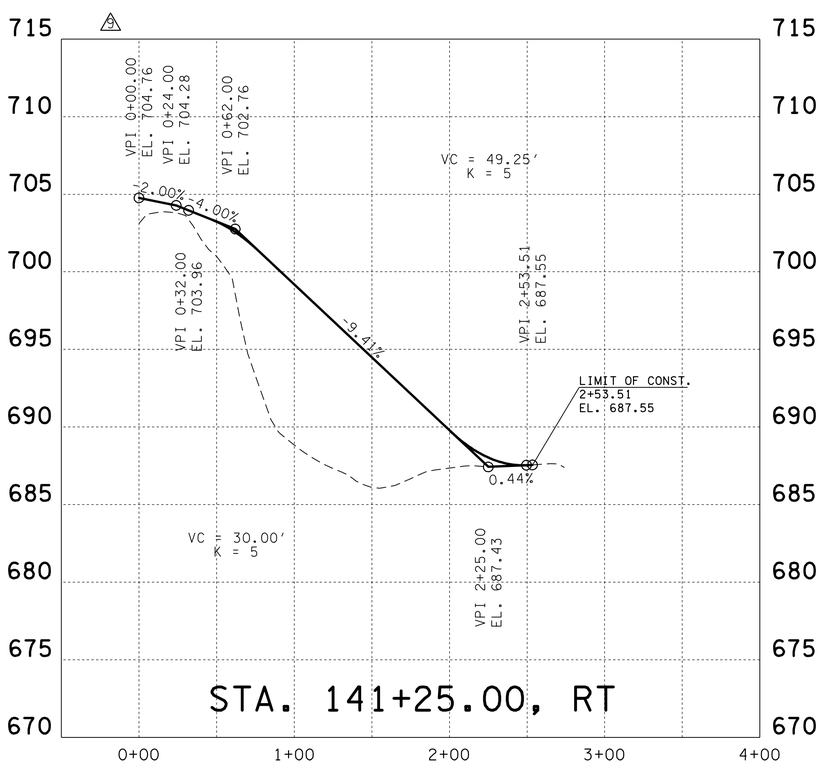
2 REV: 01-22-13 REMOVED 16' BUS. ENT. AT STA 135+33.17

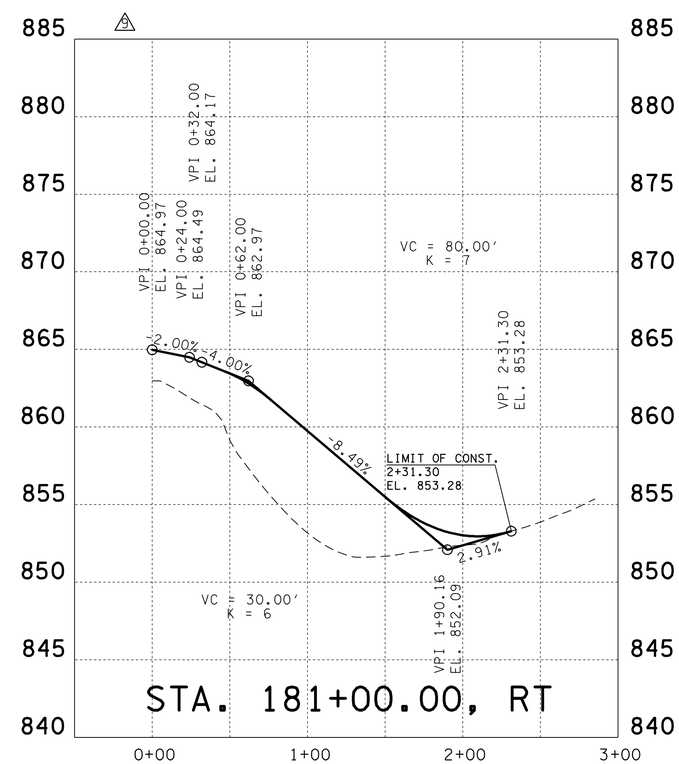
6 REV: 09-11-13 REVISED SHEET TO SEQUENCE PROFILE ORDER CORRECTLY; NO CHANGE IN DESIGN

9 REV: 1-23-14 REMOVED PROP. DRIVEWAYS AT STA. 141+05.98 & STA. 143+18.88. ADDED PROP. DRIVEWAY AT STA. 141+25.00 & STA. 181+00.00









UNOFFICIAL SET

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DEPARTMENT OF TRANSPORTATION

PROFILE OF PRIVATE DRIVES

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

13-MAR-2014 11:45
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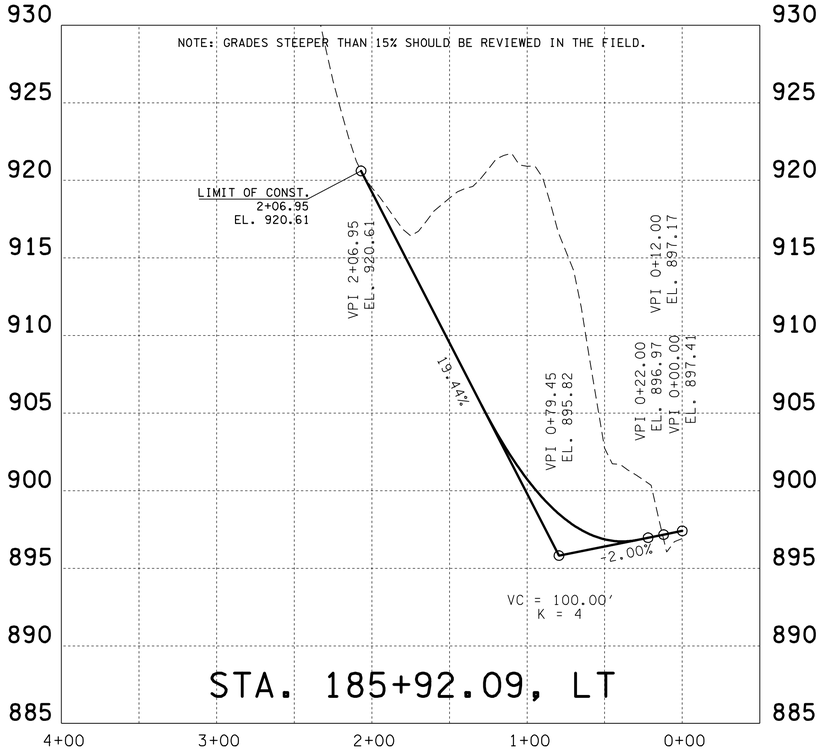
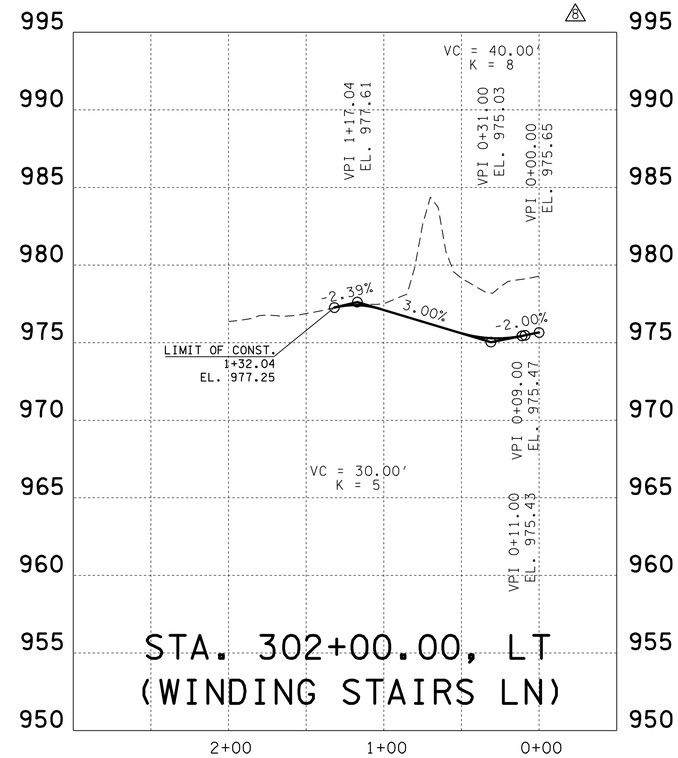


STA. 185+92.09, LT



STA. 302+00.00, LT
(WINDING STAIRS LN)

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	20
CONST.	2014	STP/PHSIP-10(24)	20

6 REV: 09-11-13 REVISED SHEET TO SEQUENCE PROFILE ORDER CORRECTLY; NO CHANGE IN DESIGN

8 REV: 1-2-14 ADDED 30' FIELD ENT. AT STA 302+00.00

11 REV: 1-30-14 ADJUSTED EXISTING GROUND LINE FOR FIELD ENT. AT STA 302+00.00

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DEPARTMENT OF TRANSPORTATION

PROFILE OF PRIVATE DRIVES

SCALE: 1"= 50' HORIZ.
1"= 5' VERT.

13-MAR-2014 11:45
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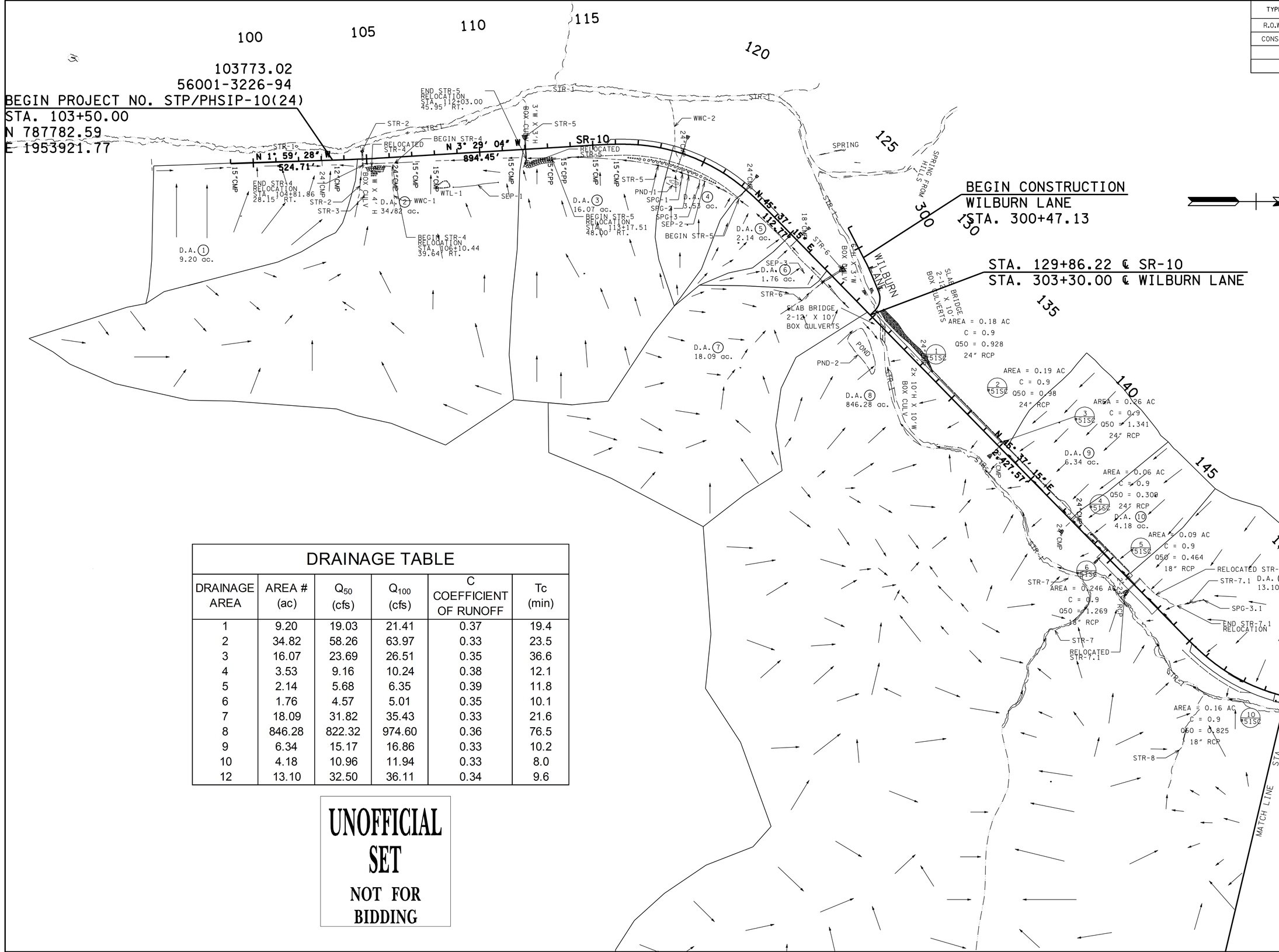
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	21
CONST.	2014	STP/PHSIP-10(24)	21



DRAINAGE TABLE

DRAINAGE AREA	AREA # (ac)	Q_{50} (cfs)	Q_{100} (cfs)	C COEFFICIENT OF RUNOFF	Tc (min)
1	9.20	19.03	21.41	0.37	19.4
2	34.82	58.26	63.97	0.33	23.5
3	16.07	23.69	26.51	0.35	36.6
4	3.53	9.16	10.24	0.38	12.1
5	2.14	5.68	6.35	0.39	11.8
6	1.76	4.57	5.01	0.35	10.1
7	18.09	31.82	35.43	0.33	21.6
8	846.28	822.32	974.60	0.36	76.5
9	6.34	15.17	16.86	0.33	10.2
10	4.18	10.96	11.94	0.33	8.0
12	13.10	32.50	36.11	0.34	9.6

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COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00001 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

DRAINAGE MAP

STA. 100+00 TO STA. 155+00

SCALE: 1"=200'

13-MAR-2014 11:56
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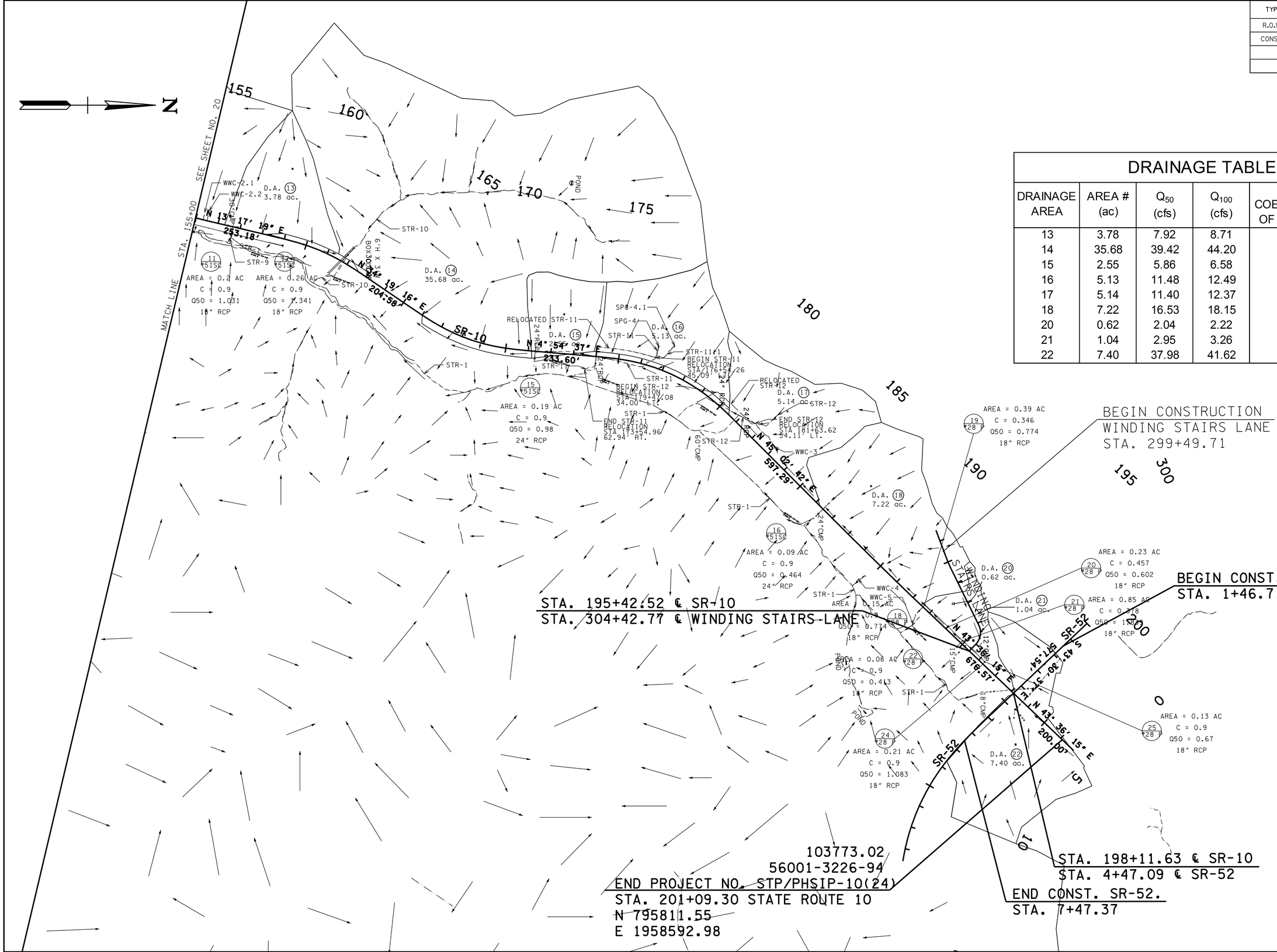
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	21A
CONST.	2014	STP/PHSIP-10(24)	22



DRAINAGE TABLE

DRAINAGE AREA	AREA # (ac)	Q_{50} (cfs)	Q_{100} (cfs)	C COEFFICIENT OF RUNOFF	Tc (min)
13	3.78	7.92	8.71	0.35	16.3
14	35.68	39.42	44.20	0.33	55.4
15	2.55	5.86	6.58	0.35	13.6
16	5.13	11.48	12.49	0.33	18.3
17	5.14	11.40	12.37	0.37	17.3
18	7.22	16.53	18.15	0.37	15.5
20	0.62	2.04	2.22	0.42	8.4
21	1.04	2.95	3.26	0.43	13.9
22	7.40	37.98	41.62	0.70	10.3

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COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00001 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

DRAINAGE MAP

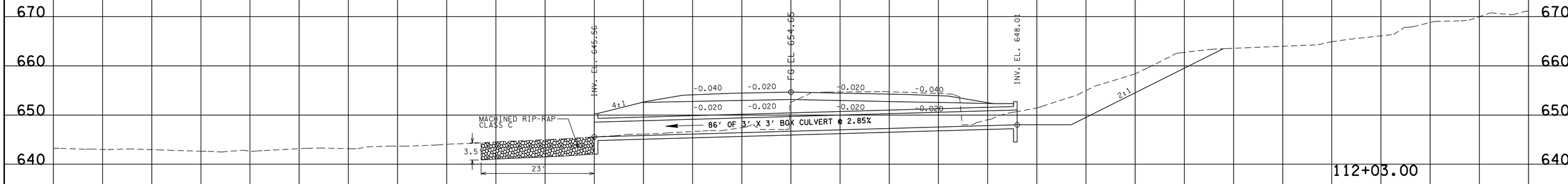
STA. 155+00 TO EOP

SCALE: 1"=200'

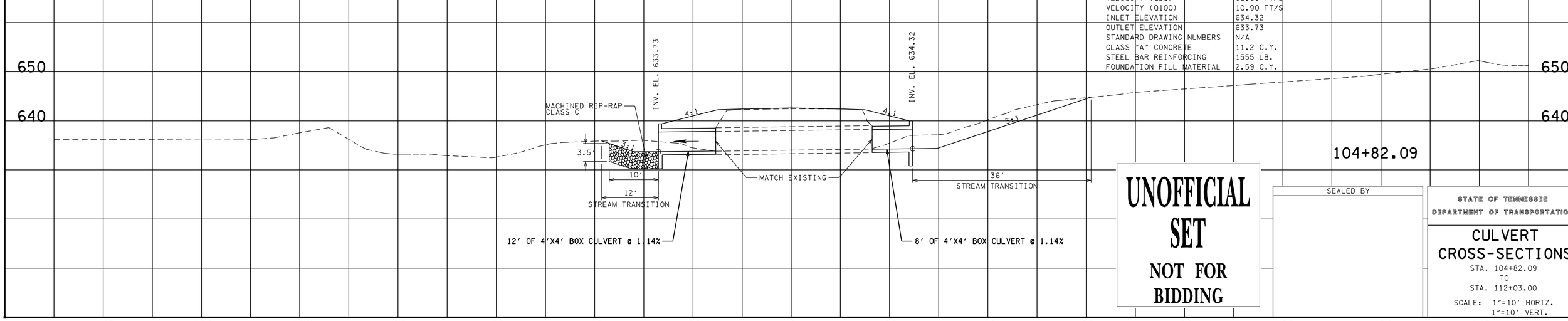
13-MAR-2014 11:45
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\022.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	23
CONST.	2014	STP/PHSIP-10(24)	23

STATION	112+03.00
STRUCTURE	86 L.F. OF 3'X3' BOX CULVERT
SKEW	0°
DRAINAGE AREA	16.07 AC.
DESIGN DISCHARGE (Q50)	23.69 CFS
DESIGN DISCHARGE (Q100)	26.51 CFS
OVERTOPPING ELEV.	654.65 FT
ALLOWABLE HEADWATER ELEV.	654.65 FT
Q50 HEADWATER ELEV.	648.69
Q100 HEADWATER ELEV.	648.74
VELOCITY (Q50)	11.61 FT/S
VELOCITY (Q100)	12.05 FT/S
INLET ELEVATION	648.01
OUTLET ELEVATION	645.56
STANDARD DRAWING NUMBERS	N/A
CLASS "A" CONCRETE	38.4 C.Y.
STEEL BAR REINFORCING	5920 LB.
FOUNDATION FILL MATERIAL	9.56 C.Y.



STATION	104+82.09
STRUCTURE	20 L.F. OF 4'x4' BOX CULVERT
SKEW	0°
DRAINAGE AREA	34.82 AC.
DESIGN DISCHARGE (Q50)	58.26 CFS
DESIGN DISCHARGE (Q100)	63.97 CFS
OVERTOPPING ELEV.	642.62 FT
ALLOWABLE HEADWATER ELEV.	642.62 FT
Q50 HEADWATER ELEV.	635.69
Q100 HEADWATER ELEV.	635.79
VELOCITY (Q50)	10.61 FT/S
VELOCITY (Q100)	10.90 FT/S
INLET ELEVATION	634.32
OUTLET ELEVATION	633.73
STANDARD DRAWING NUMBERS	N/A
CLASS "A" CONCRETE	11.2 C.Y.
STEEL BAR REINFORCING	1555 LB.
FOUNDATION FILL MATERIAL	2.59 C.Y.



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CULVERT CROSS-SECTIONS

STA. 104+82.09
TO
STA. 112+03.00

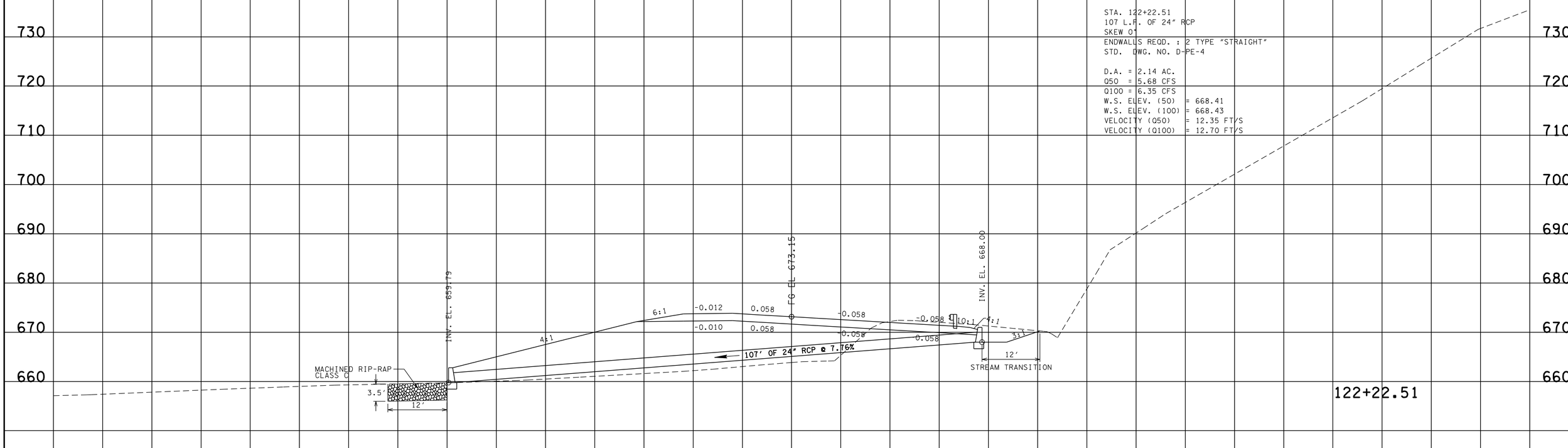
SCALE: 1"=10' HORIZ.
1"=10' VERT.

13-MAR-2014 10:55
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010Culvert-XSections.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	24
CONST.	2014	STP/PHSIP-10(24)	24

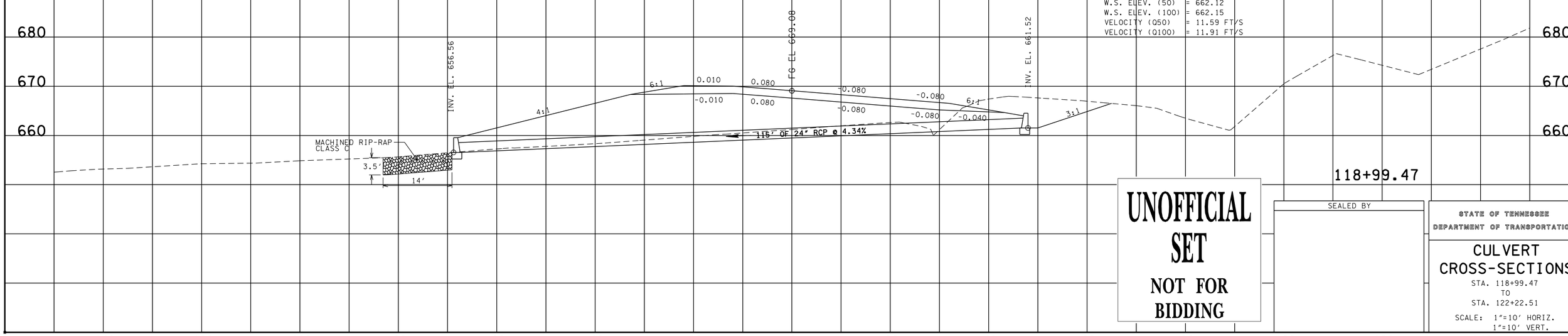
STA. 122+22.51
107 L.F. OF 24" RCP
SKEW 0°
ENDWALLS REQD. : 2 TYPE "STRAIGHT"
STD. DWG. NO. D-PE-4

D.A. = 2.14 AC.
Q50 = 5.68 CFS
Q100 = 6.35 CFS
W.S. ELEV. (50) = 668.41
W.S. ELEV. (100) = 668.43
VELOCITY (Q50) = 12.35 FT/S
VELOCITY (Q100) = 12.70 FT/S



STA. 118+99.47
115 L.F. OF 24" RCP
SKEW 0°
ENDWALLS REQD. : 2 TYPE "STRAIGHT"
STD. DWG. NO. D-PE-4

D.A. = 3.53 AC.
Q50 = 9.16 CFS
Q100 = 10.24 CFS
W.S. ELEV. (50) = 662.12
W.S. ELEV. (100) = 662.15
VELOCITY (Q50) = 11.59 FT/S
VELOCITY (Q100) = 11.91 FT/S



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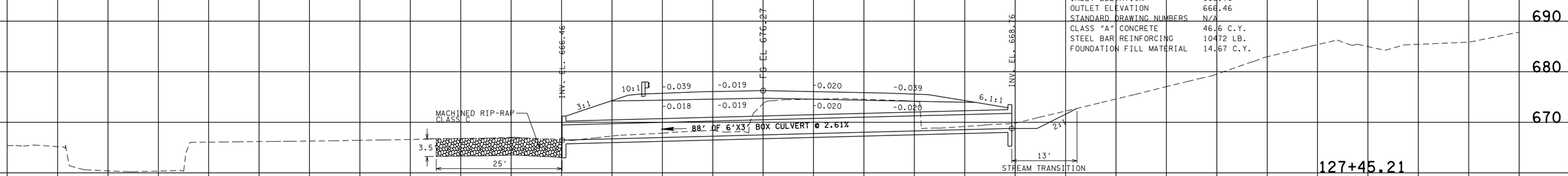
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

CULVERT CROSS-SECTIONS
STA. 118+99.47
TO
STA. 122+22.51
SCALE: 1"=10' HORIZ.
1"=10' VERT.

13-MAR-2014 10:55
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CADD\DGN\MCSR10Culvert1XSections.SHT

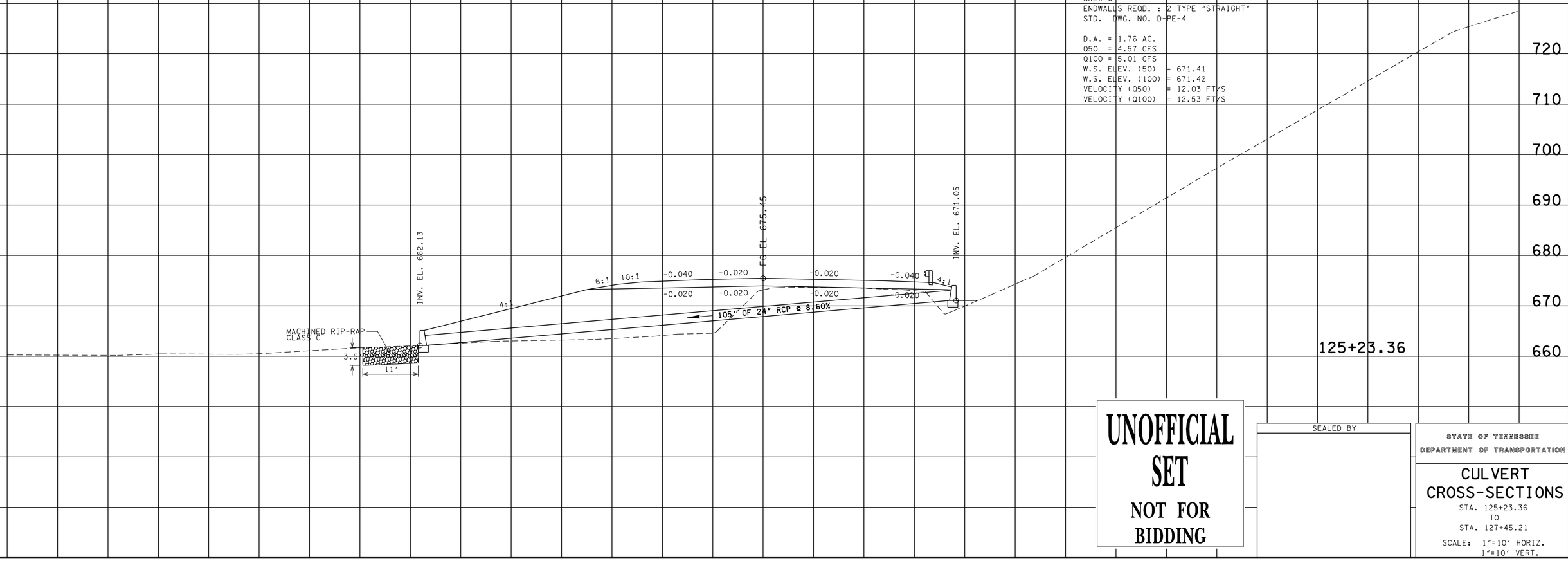
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	25
CONST.	2014	STP/PHSIP-10(24)	25

STATION	127+45.21
STRUCTURE	88 L.F. OF 6'X3' BOX CULVERT
SKEW	12°
DRAINAGE AREA	18.09 AC.
DESIGN DISCHARGE (Q50)	31.82 CFS
DESIGN DISCHARGE (Q100)	35.43 CFS
OVERTOPPING ELEV.	676.27 FT
ALLOWABLE HEADWATER ELEV.	676.27 FT
Q50 HEADWATER ELEV.	669.26
Q100 HEADWATER ELEV.	669.30
VELOCITY (Q50)	10.54 FT/S
VELOCITY (Q100)	10.97 FT/S
INLET ELEVATION	668.76
OUTLET ELEVATION	666.46
STANDARD DRAWING NUMBERS	N/A
CLASS "A" CONCRETE	46.6 C.Y.
STEEL BAR REINFORCING	10472 LB.
FOUNDATION FILL MATERIAL	14.67 C.Y.



STA. 125+23.36
105 L.F. OF 24" RCP
SKEW 0°
ENDWALLS REQD. : 2 TYPE "STRAIGHT"
STD. DWG. NO. D-PE-4

D.A. = 1.76 AC.
Q50 = 4.57 CFS
Q100 = 5.01 CFS
W.S. ELEV. (50) = 671.41
W.S. ELEV. (100) = 671.42
VELOCITY (Q50) = 12.03 FT/S
VELOCITY (Q100) = 12.53 FT/S



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CULVERT
CROSS-SECTIONS
STA. 125+23.36
TO
STA. 127+45.21

SCALE: 1"=10' HORIZ.
1"=10' VERT.

13-MAR-2014 10:55
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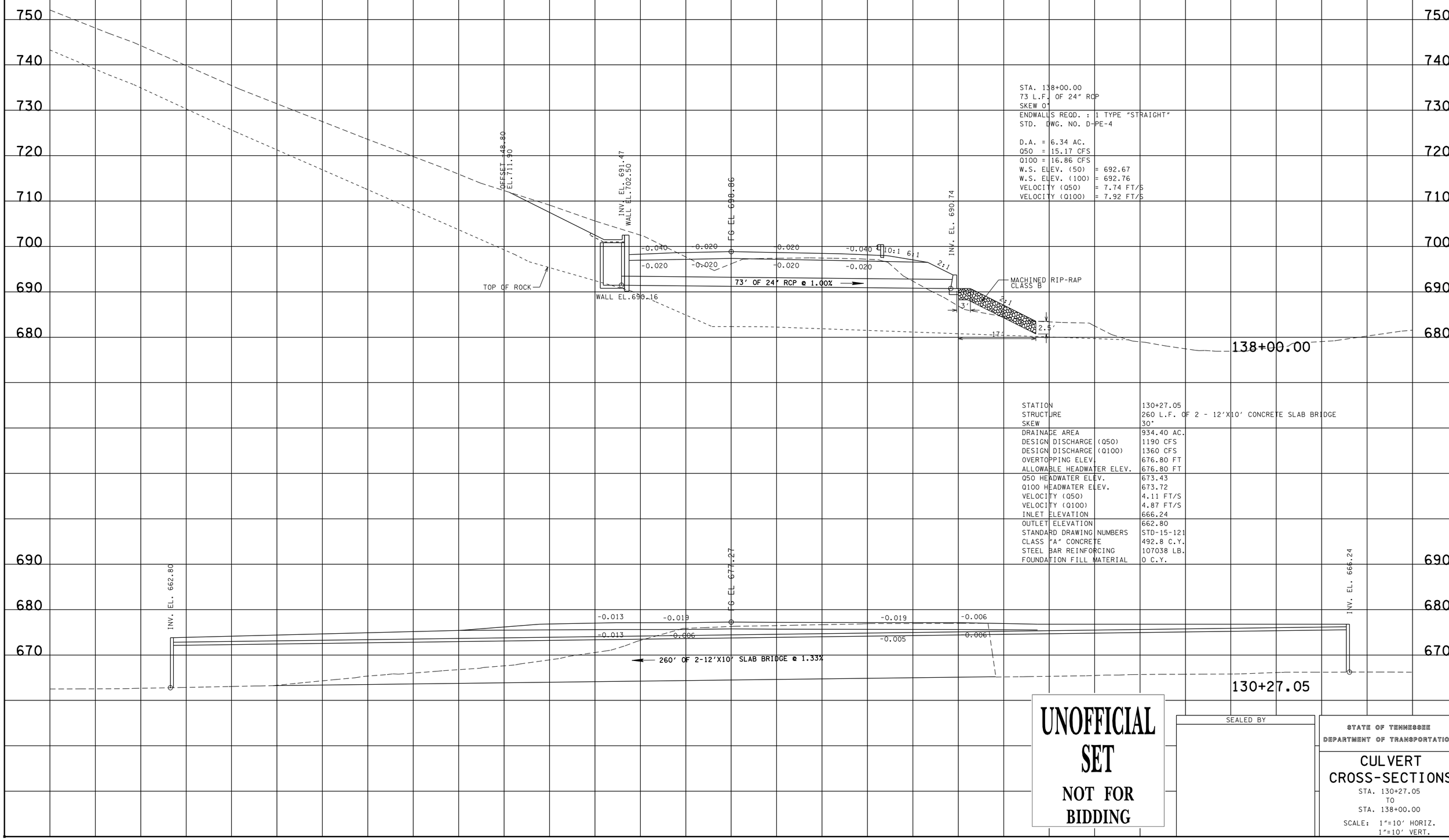
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	26
CONST.	2014	STP/PHSIP-10(24)	26



STATION	130+27.05
STRUCTURE	260 L.F. OF 2 - 12'X10' CONCRETE SLAB BRIDGE
SKEW	30°
DRAINAGE AREA	934.40 AC.
DESIGN DISCHARGE (Q50)	1190 CFS
DESIGN DISCHARGE (Q100)	1360 CFS
OVERTOPPING ELEV.	676.80 FT
ALLOWABLE HEADWATER ELEV.	676.80 FT
Q50 HEADWATER ELEV.	673.43
Q100 HEADWATER ELEV.	673.72
VELOCITY (Q50)	4.11 FT/S
VELOCITY (Q100)	4.87 FT/S
INLET ELEVATION	666.24
OUTLET ELEVATION	662.80
STANDARD DRAWING NUMBERS	STD-15-121
CLASS "A" CONCRETE	492.8 C.Y.
STEEL BAR REINFORCING	107038 LB.
FOUNDATION FILL MATERIAL	0 C.Y.

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CULVERT CROSS-SECTIONS

STA. 130+27.05
TO
STA. 138+00.00

SCALE: 1"=10' HORIZ.
1"=10' VERT.

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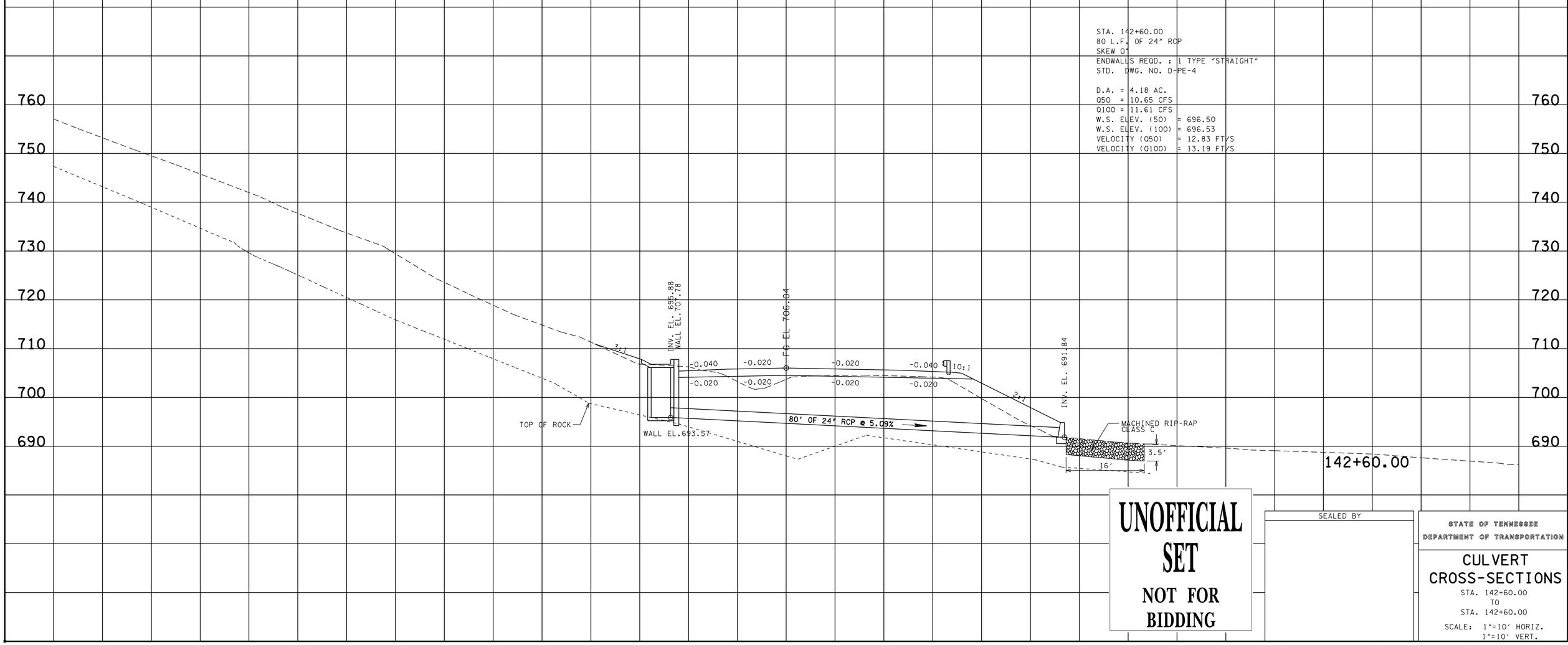
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	27
CONST.	2014	STP/PHSIP-10(24)	27

STA. 142+60.00
80 L.F. OF 24" RCP
SKEW 0°
ENDWALLS REQD. : 1 TYPE "STRAIGHT"
STD. DWG. NO. D-PE-4

D.A. = 4.18 AC.
Q50 = 10.65 CFS
Q100 = 11.61 CFS
W.S. ELEV. (50) = 696.50
W.S. ELEV. (100) = 696.53
VELOCITY (Q50) = 12.83 FT/S
VELOCITY (Q100) = 13.19 FT/S



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CULVERT CROSS-SECTIONS
STA. 142+60.00
TO
STA. 142+60.00
SCALE: 1"=10' HORIZ.
1"=10' VERT.

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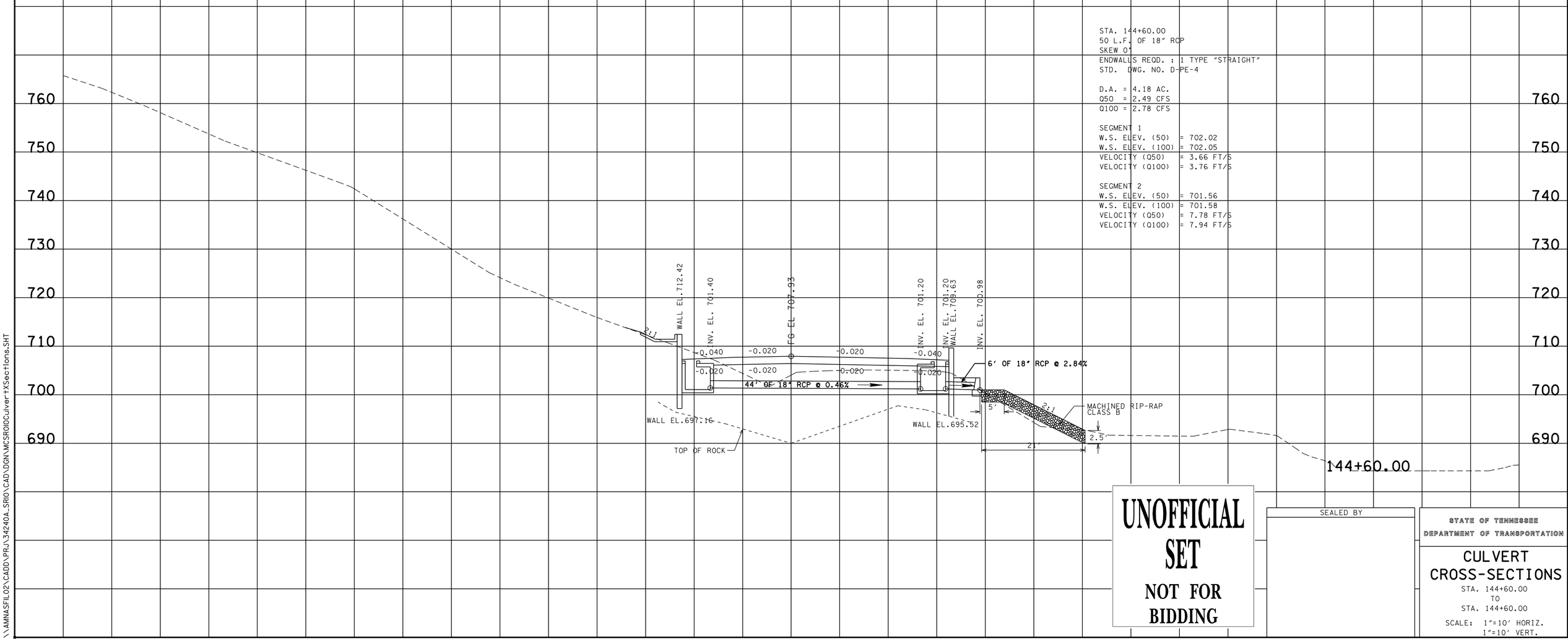
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	28
CONST.	2014	STP/PHSIP-10(24)	28

STA. 144+60.00
50 L.F. OF 18" RCP
SKEW 0°
ENDWALLS REQD. : 1 TYPE "STRAIGHT"
STD. DWG. NO. D-PE-4

D.A. = 4.18 AC.
Q50 = 2.49 CFS
Q100 = 2.78 CFS

SEGMENT 1
W.S. ELEV. (50) = 702.02
W.S. ELEV. (100) = 702.05
VELOCITY (Q50) = 3.66 FT/S
VELOCITY (Q100) = 3.76 FT/S

SEGMENT 2
W.S. ELEV. (50) = 701.56
W.S. ELEV. (100) = 701.58
VELOCITY (Q50) = 7.78 FT/S
VELOCITY (Q100) = 7.94 FT/S



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CULVERT CROSS-SECTIONS
STA. 144+60.00
TO
STA. 144+60.00

SCALE: 1"=10' HORIZ.
1"=10' VERT.

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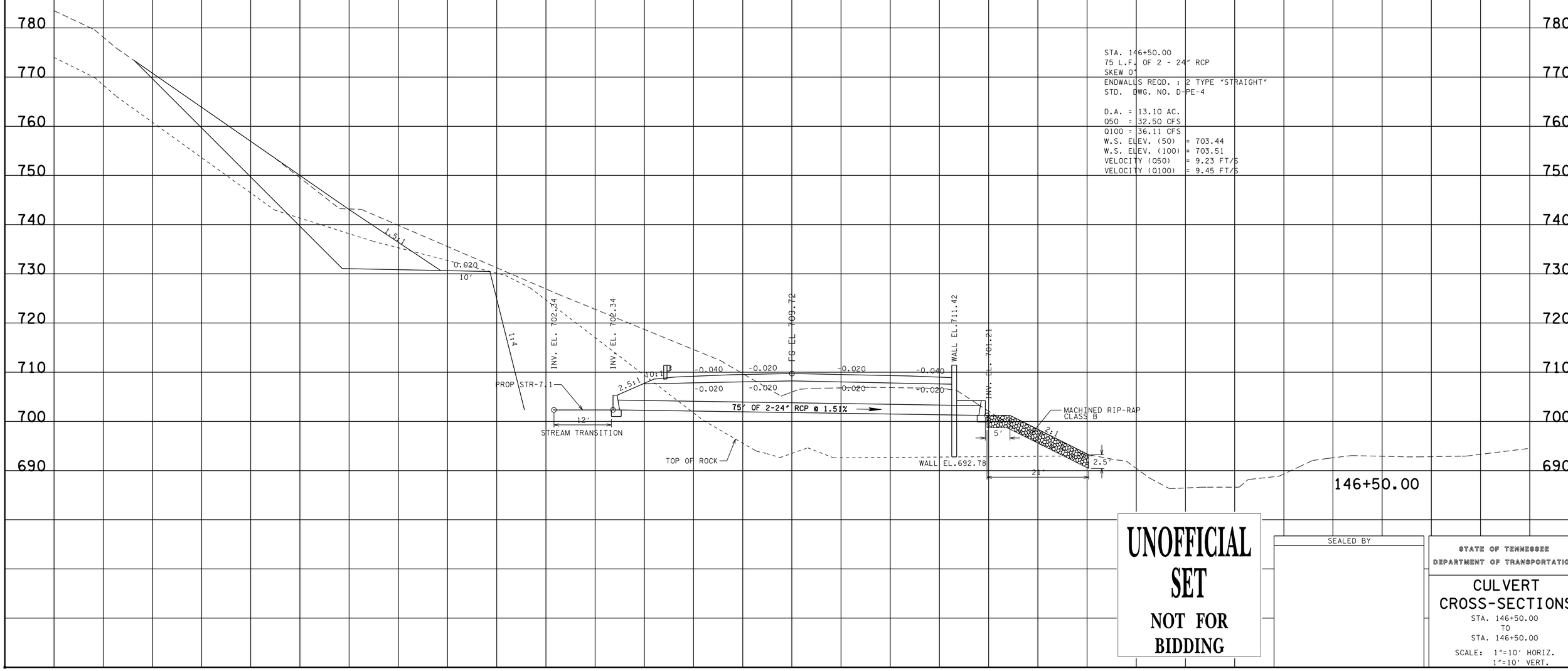
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	29
CONST.	2014	STP/PHSIP-10(24)	29



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CULVERT CROSS-SECTIONS

STA. 146+50.00
TO
STA. 146+50.00

SCALE: 1"=10' HORIZ.
1"=10' VERT.

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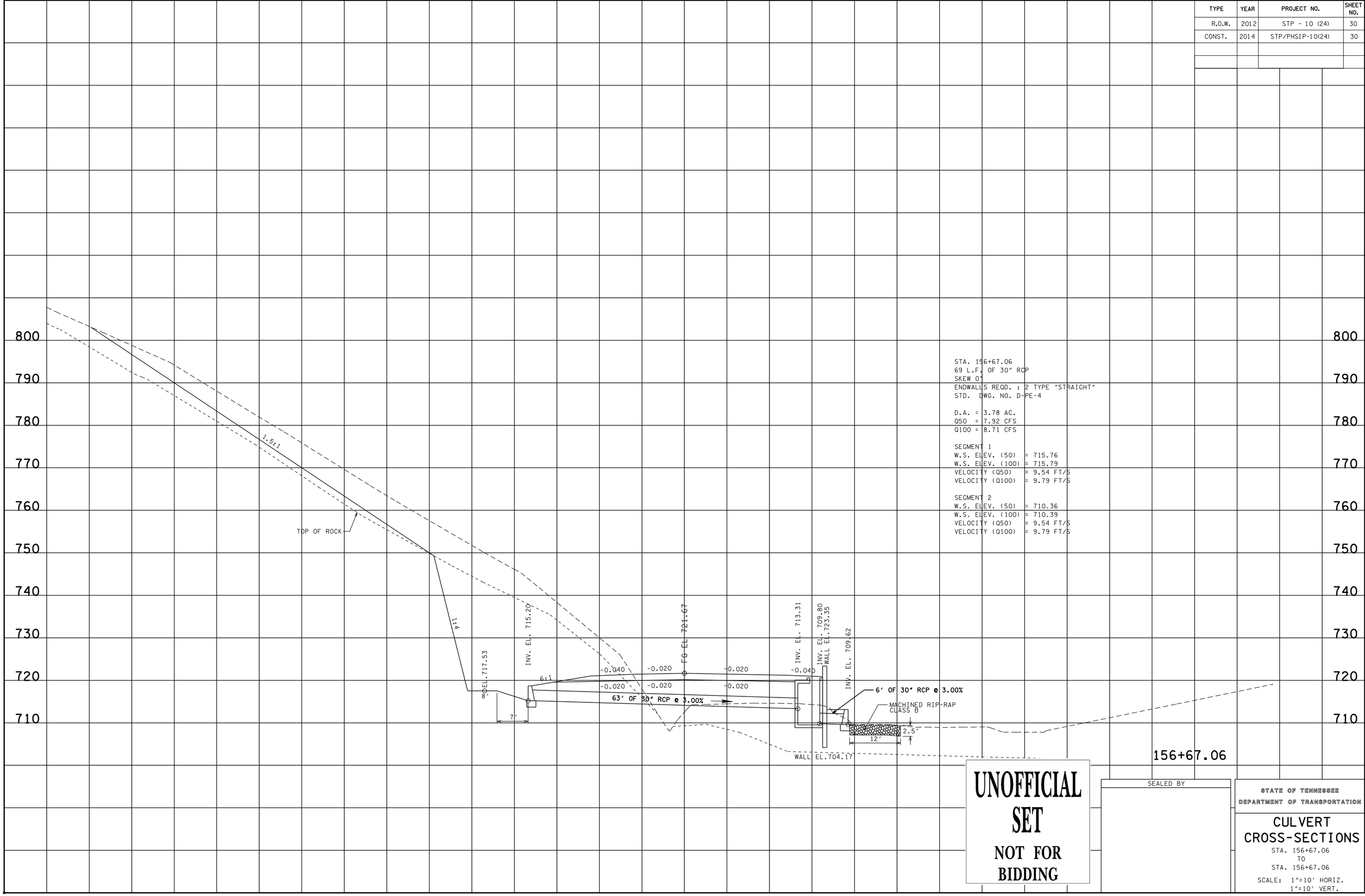
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	30
CONST.	2014	STP/PHSIP-10(24)	30



STA. 156+67.06
69 L.F. OF 30" RCP
SKEW 0°
ENDWALLS REQD. : 2 TYPE "STRAIGHT"
STD. DWG. NO. D-PE-4

D.A. = 3.78 AC.
Q50 = 7.92 CFS
Q100 = 8.71 CFS

SEGMENT 1
W.S. ELEV. (50) = 715.76
W.S. ELEV. (100) = 715.79
VELOCITY (Q50) = 9.54 FT/S
VELOCITY (Q100) = 9.79 FT/S

SEGMENT 2
W.S. ELEV. (50) = 710.36
W.S. ELEV. (100) = 710.39
VELOCITY (Q50) = 9.54 FT/S
VELOCITY (Q100) = 9.79 FT/S

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CULVERT
CROSS-SECTIONS

STA. 156+67.06
TO
STA. 156+67.06

SCALE: 1"=10' HORIZ.
1"=10' VERT.

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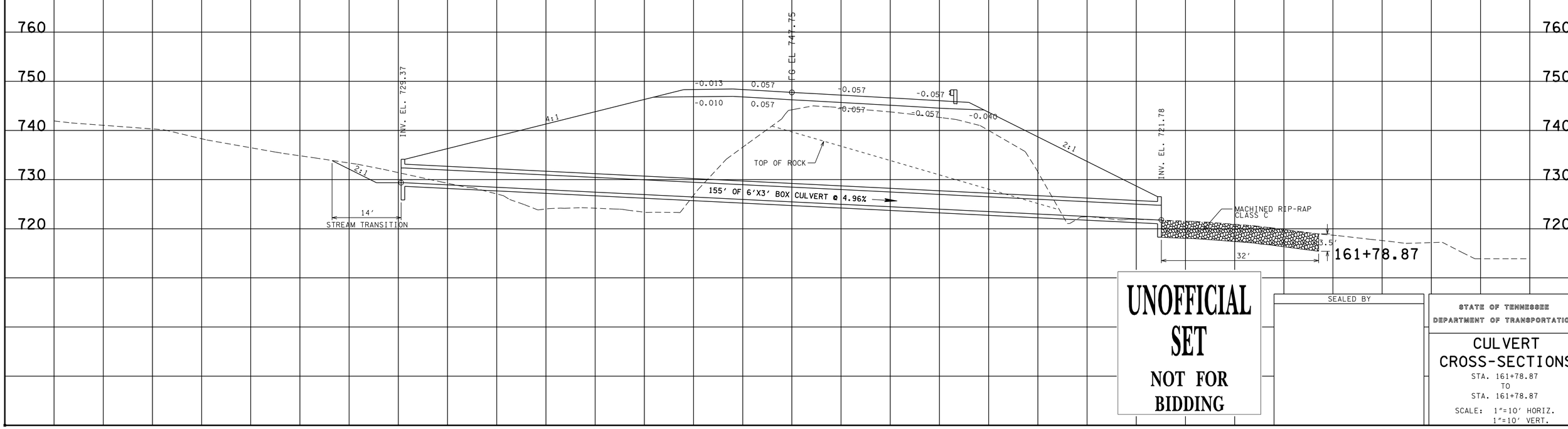
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	31
CONST.	2014	STP/PHSIP-10(24)	31

STATION	161+78.87
STRUCTURE	155 L.F. OF 6'X3' BOX CULVERT
SKEW	16°
DRAINAGE AREA	35.68 AC.
DESIGN DISCHARGE (Q50)	39.42 CFS
DESIGN DISCHARGE (Q100)	44.20 CFS
OVERTOPPING ELEV.	747.75 FT
ALLOWABLE HEADWATER ELEV.	747.75 FT
Q50 HEADWATER ELEV.	729.84
Q100 HEADWATER ELEV.	729.88
VELOCITY (Q50)	13.93 FT/S
VELOCITY (Q100)	14.54 FT/S
INLET ELEVATION	729.37
OUTLET ELEVATION	721.78
STANDARD DRAWING NUMBERS	N/A
CLASS "A" CONCRETE	86.8 C.Y.
STEEL BAR REINFORCING	22010 LB.
FOUNDATION FILL MATERIAL	25.83 C.Y.



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CULVERT CROSS-SECTIONS

STA. 161+78.87
TO
STA. 161+78.87

SCALE: 1"=10' HORIZ.
1"=10' VERT.

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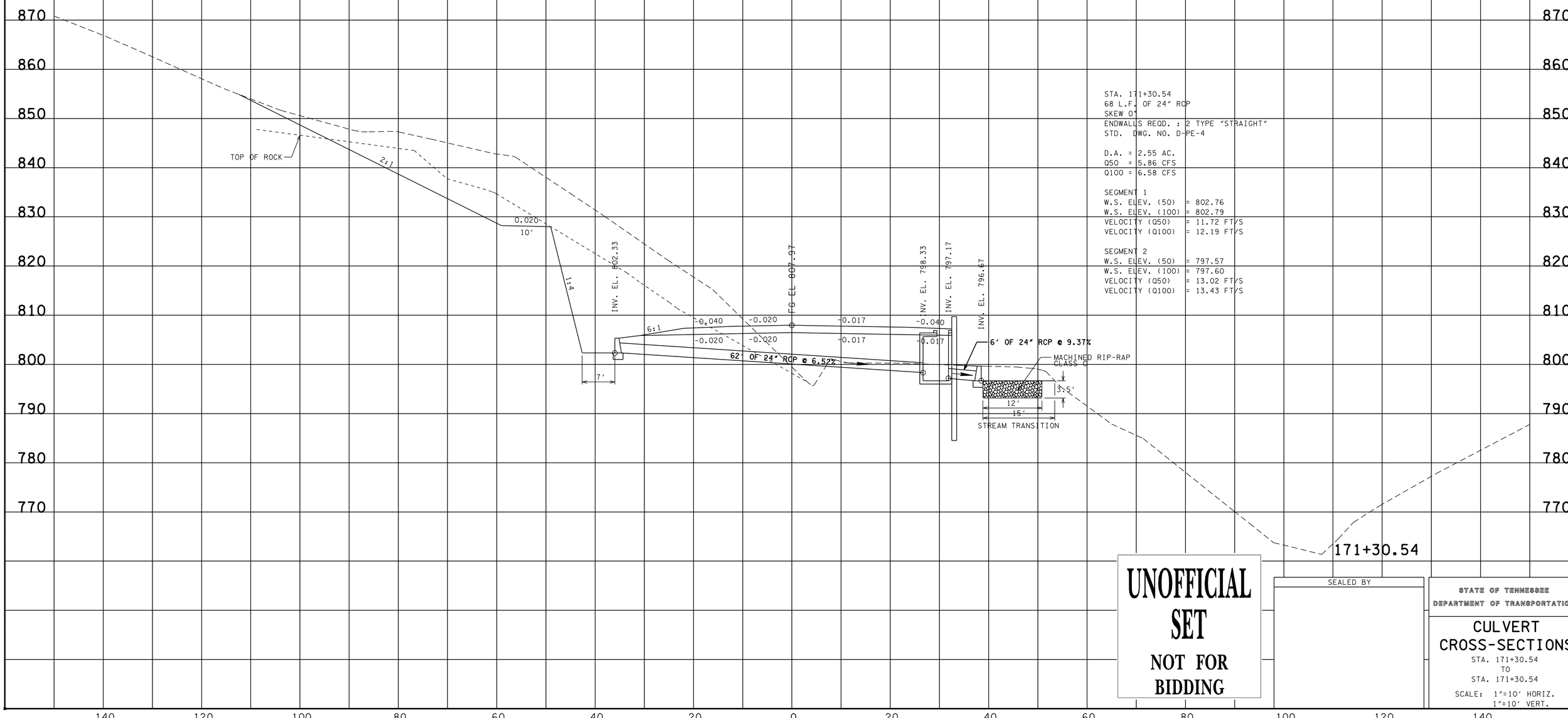
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CADD\DGN\MCSR10Culvert+XSections.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	32
CONST.	2014	STP/PHSIP-10(24)	32



STA. 171+30.54
68 L.F. OF 24" RCP
SKEW 0°
ENDWALLS REQD. : 2 TYPE "STRAIGHT"
STD. DWG. NO. D-PE-4

D.A. = 2.55 AC.
Q50 = 5.86 CFS
Q100 = 6.58 CFS

SEGMENT 1
W.S. ELEV. (50) = 802.76
W.S. ELEV. (100) = 802.79
VELOCITY (Q50) = 11.72 FT/S
VELOCITY (Q100) = 12.19 FT/S

SEGMENT 2
W.S. ELEV. (50) = 797.57
W.S. ELEV. (100) = 797.60
VELOCITY (Q50) = 13.02 FT/S
VELOCITY (Q100) = 13.43 FT/S

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CULVERT CROSS-SECTIONS

STA. 171+30.54
TO
STA. 171+30.54

SCALE: 1"=10' HORIZ.
1"=10' VERT.

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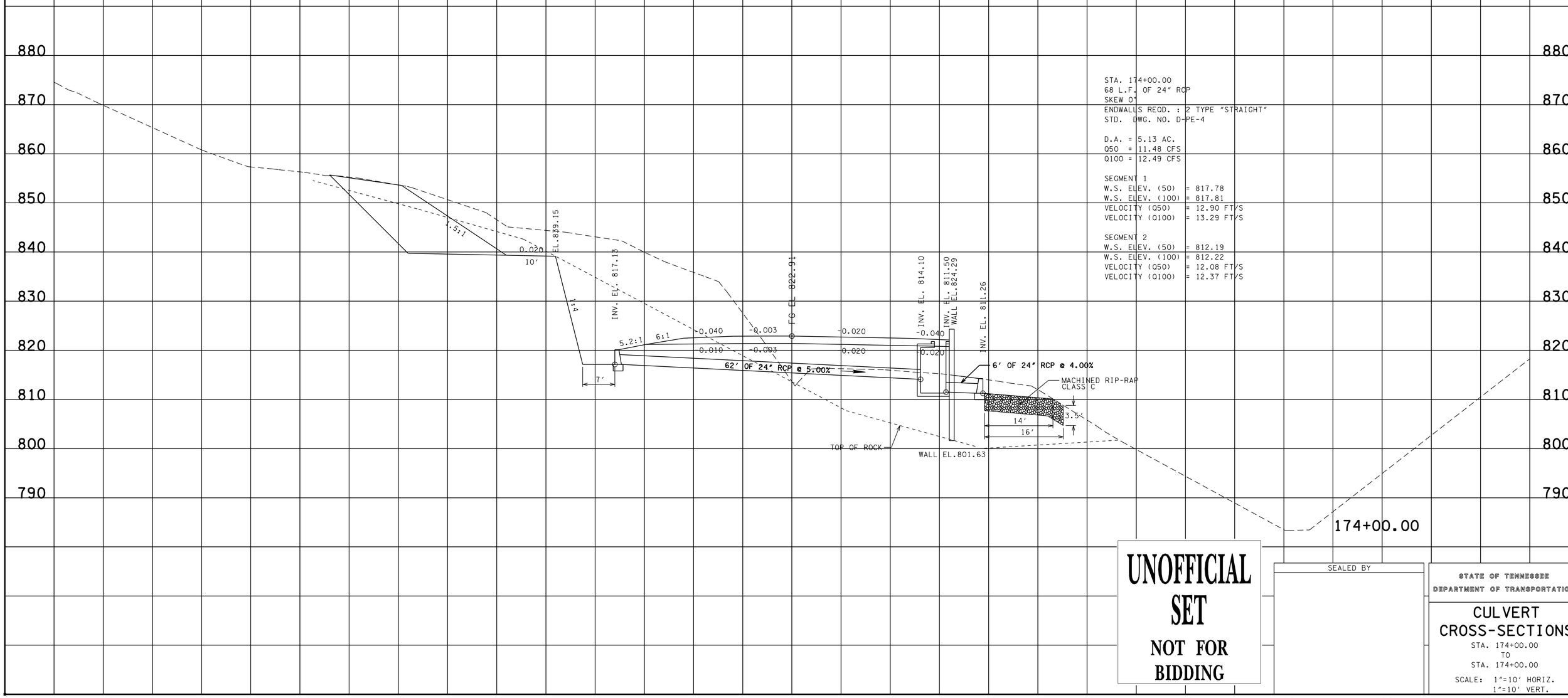
\\AMNASFILO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010Culvert+XSections.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	33
CONST.	2014	STP/PHSIP-10(24)	33



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CULVERT CROSS-SECTIONS

STA. 174+00.00
TO
STA. 174+00.00

SCALE: 1"=10' HORIZ.
1"=10' VERT.

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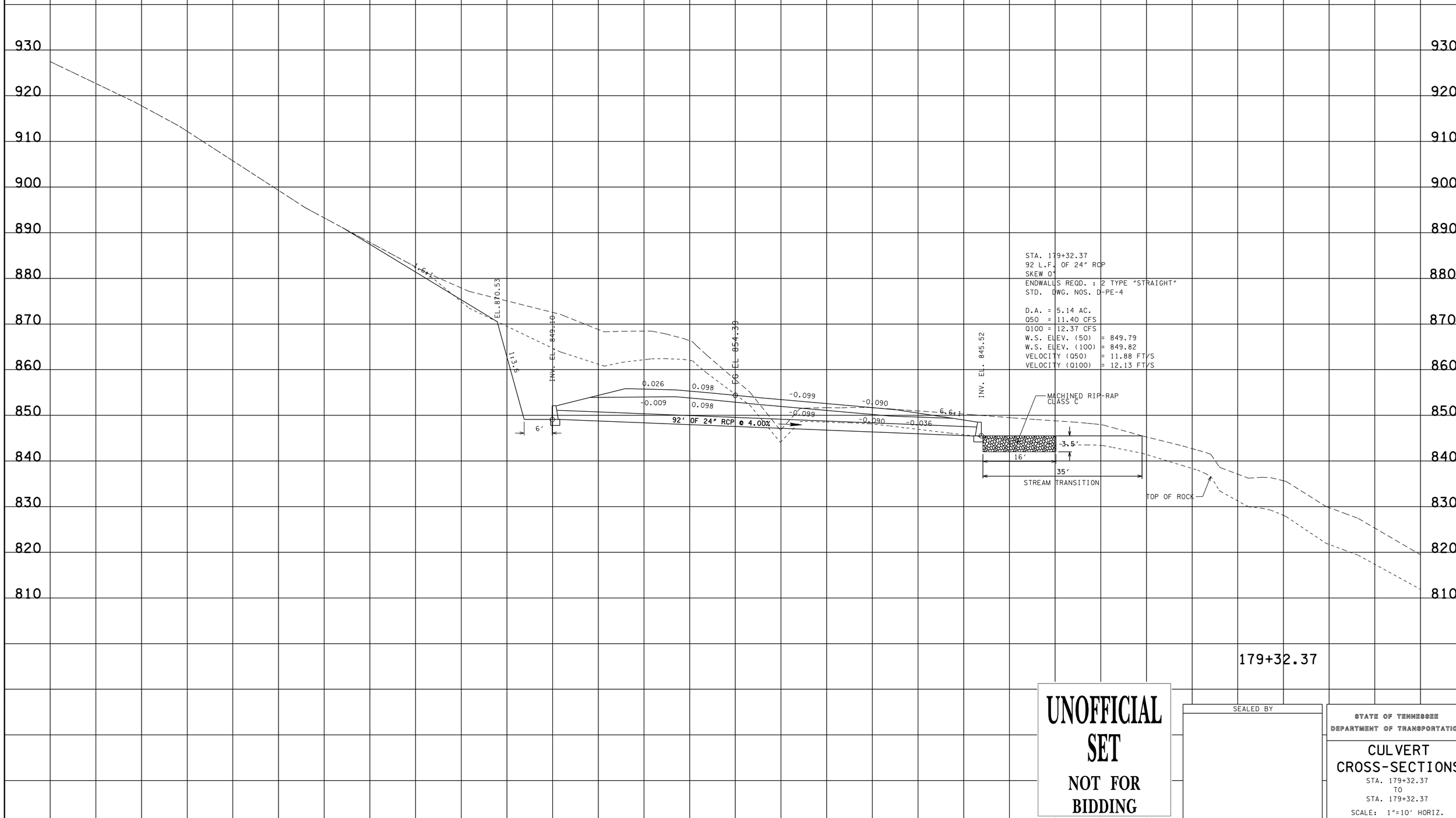
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010Culvert-XSections.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	34
CONST.	2014	STP/PHSIP-10(24)	34



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CULVERT CROSS-SECTIONS

STA. 179+32.37
TO
STA. 179+32.37

SCALE: 1"=10' HORIZ.
1"=10' VERT.

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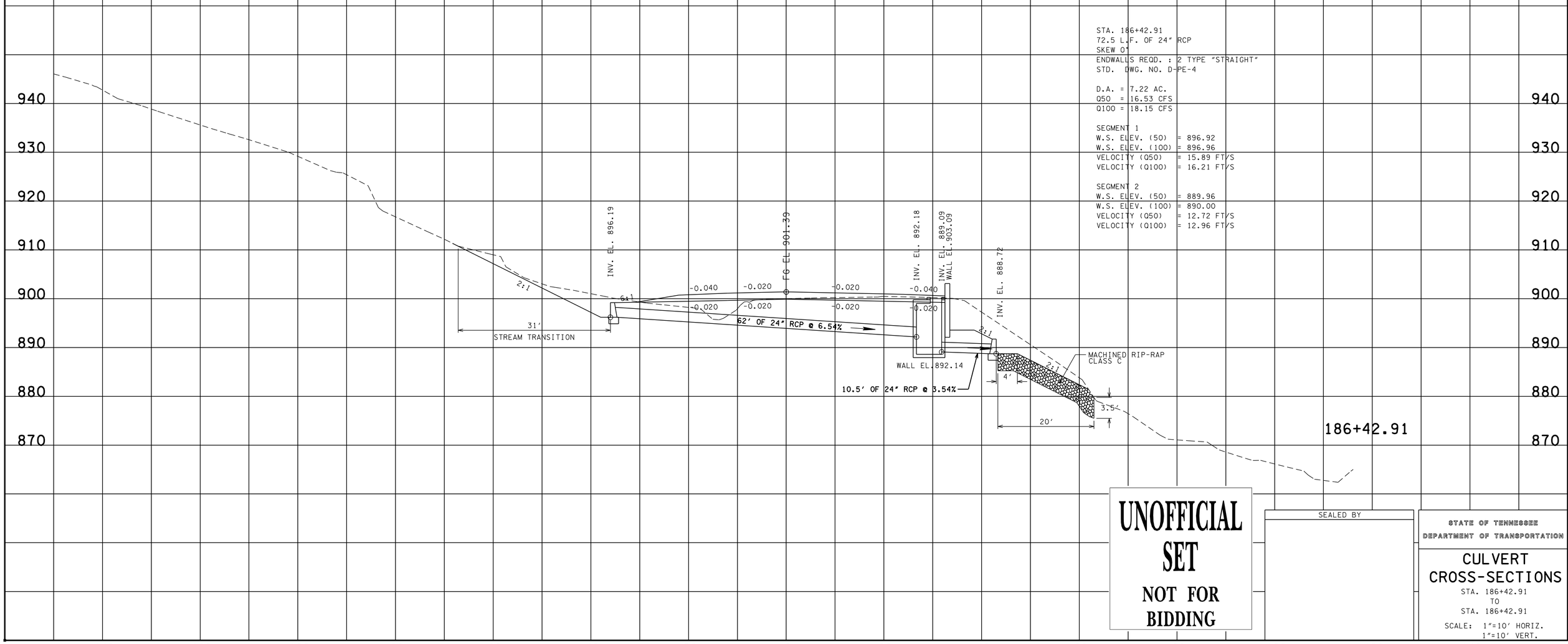
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	35
CONST.	2014	STP/PHSIP-10(24)	35



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CULVERT CROSS-SECTIONS

STA. 186+42.91
TO
STA. 186+42.91

SCALE: 1"=10' HORIZ.
1"=10' VERT.

13-MAR-2014 10:55
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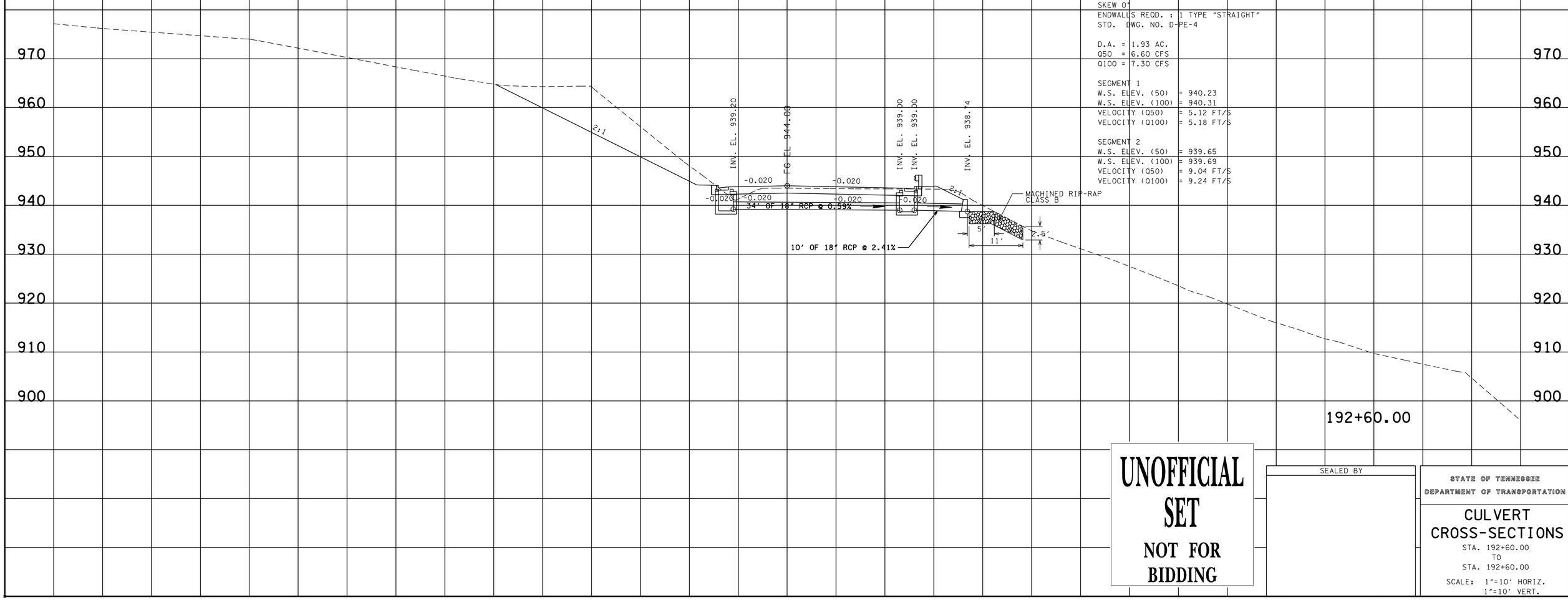
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP - 10 (24)	36
CONST.	2014	STP/PHSIP-10(24)	36

STA. 192+60.00
44 L.F. OF 18" RCP
SKEW 0°
ENDWALLS REQD. : 1 TYPE "STRAIGHT"
STD. DWG. NO. D-PE-4

D.A. = 1.93 AC.
Q50 = 6.60 CFS
Q100 = 7.30 CFS

SEGMENT 1
W.S. ELEV. (50) = 940.23
W.S. ELEV. (100) = 940.31
VELOCITY (Q50) = 5.12 FT/S
VELOCITY (Q100) = 5.18 FT/S

SEGMENT 2
W.S. ELEV. (50) = 939.65
W.S. ELEV. (100) = 939.69
VELOCITY (Q50) = 9.04 FT/S
VELOCITY (Q100) = 9.24 FT/S



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CULVERT CROSS-SECTIONS
STA. 192+60.00
TO
STA. 192+60.00

SCALE: 1"=10' HORIZ.
1"=10' VERT.

13-MAR-2014 10:55
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR10DCulvert+XSections.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	37
CONST.	2014	STP/PHSIP-10(24)	37

EROSION PREVENTION AND SEDIMENT CONTROL NOTES

PHASING NOTES

PHASE 1
INSTALL SILT FENCE, SILT FENCE WITH WIRE BACKING, AND CHECK DAMS CONCURRENTLY WITH CLEARING AND GRUBBING.

PHASE 2
CONSTRUCT SILT FENCE AND SILT FENCE WITH WIRE BACKING.
TEMPORARY BERMS AT TOE OF SLOPES.
CONSTRUCT TEMPORARY BERMS AT TOP OF CUTS WHERE REQUIRED.
CONSTRUCT TEMPORARY DIVERSION CHANNELS REQUIRED FOR CULVERT CONSTRUCTION.
CONSTRUCT TEMPORARY CULVERTS AS DIRECTED BY ENGINEER.
PLACE INLET PROTECTION FOR CULVERTS AND STORM SEWERS WHERE REQUIRED.
CONSTRUCT CHECK DAMS.
REMOVE TEMPORARY CULVERTS AND TEMPORARY DIVERSION CHANNELS.
CONSTRUCT TEMPORARY BERMS AT TOP OF FILL SLOPES AS SHOWN.
TEMPORARY SEEDING OF SLOPES.
PLACE ALL NECESSARY EROSION CONTROL ITEMS FOR FINAL GRADING OF PHASE 2 STAGING AS DIRECTED BY THE ENGINEER.

PHASE 3
CONSTRUCT SILT FENCE AND BERMS AT LOCATIONS OMITTED IN PHASE 2.
CONSTRUCT PERMANENT EPSC MEASURES ALONG WITH FINAL GRADING.
RELEVANT PHASE 2 EPSC ITEMS SHALL REMAIN IN PLACE DURING THESE PHASES.

STREAM/WETLAND

1. ANY WORK WITHIN THE STREAM CHANNEL AREA (E.G., FOR PIER FOOTING, RIP-RAP PLACEMENT, MULTI-BARREL CULVERT/BRIDGE CONSTRUCTION, ETC) SHALL BE SEPARATED FROM FLOWING WATER OR EXPECTED FLOW PATH AND PERFORMED DURING LOW FLOW CONDITIONS. ALL ITEMS USED WITHIN THE STREAM CHANNEL AREA FOR DIVERSION OF FLOW (OR EXPECTED FLOW), UNLESS SPECIFIED IN THE PLANS, SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE COST OF OTHER ITEMS. THIS NOTE EXCLUDES ANY ITEMS SPECIFIED IN THE PLANS FOR THE TEMPORARY DIVERSION CHANNELS, EC-STR-31 AND TEMPORARY DIVERSION CULVERTS, EC-STR-32 FOR SINGLE BARREL CULVERT CONSTRUCTION.

2. STREAM IMPACTS WILL BE MITIGATED USING THE IN-LIEU FEE PROGRAM FOR THE CULVERTS AT THE FOLLOWING STATIONS:

104+82	161+78
112+03	174+00
130+27	179+32
146+50	

3. RIP-RAP SHALL BE PLACED AS TO MIMIC THE EXISTING CONTOURS OF THE STREAM CHANNEL. THE TOP OF THE PROPOSED RIP-RAP SHALL BE AT GRADE WITH THE BOTTOM OF THE EXISTING STREAM CHANNEL. VOIDS WITHIN THE RIP-RAP SHALL BE FILLED WITH CREEK GRAVEL TO PREVENT LOSS OF STREAM WITHIN RIP-RAP AREAS. CREEK GRAVEL CAN BE REMOVED FROM CULVERT EXCAVATION AREA.

NPDES

1. NO WORK SHALL BE STARTED UNTIL THE CONTRACTOR'S PLAN FOR THE STAGING OF THEIR OPERATIONS, INCLUDING THE PLAN FOR STAGING OF TEMPORARY AND PERMANENT EPSC MEASURES, HAS BEEN ACCEPTED BY THE ENGINEER. THE CONTRACTOR'S EPSC PLAN SHALL INCORPORATE AND SUPPLEMENT, AS ACCEPTABLE, THE BASIC EPSC DEVICES ON THE EPSC PLAN CONTAINED IN THE APPROVED SWPPP.

2. THE EPSC MEASURES AND/OR PLAN SHALL BE MODIFIED AS NECESSARY SO THAT THEY ARE EFFECTIVE AT ALL TIMES THROUGHOUT THE COURSE OF THE PROJECT.

3. THE ACCEPTED EPSC PLAN SHALL REQUIRE THAT EPSC MEASURES BE IN PLACE BEFORE CLEARING, GRUBBING, EXCAVATION, GRADING, CUTTING OR FILLING OCCURS, EXCEPT AS SUCH WORK MAY BE NECESSARY TO INSTALL EPSC MEASURES, INCLUDING WITHOUT LIMITATION AS FOLLOWS:

A. INITIAL CLEARING AND GRUBBING SHALL BE LIMITED TO THAT NECESSARY FOR THE INSTALLATION OF APPLICABLE EPSC MEASURES IN ACCORDANCE WITH THE ACCEPTED EPSC PLAN INCORPORATED INTO THE SWPPP.

B. NO OTHER CLEARING AND GRUBBING OPERATIONS SHALL BE STARTED BEFORE APPLICABLE EPSC MEASURES ARE IN PLACE IN ACCORDANCE WITH THE ACCEPTED EPSC PLAN INCORPORATED INTO THE SWPPP.

C. NO CULVERT OR BRIDGE CONSTRUCTION SHALL BE STARTED BEFORE APPLICABLE EPSC MEASURES ARE IN PLACE IN ACCORDANCE WITH THE ACCEPTED EPSC PLAN INCORPORATED INTO THE SWPPP.

D. NO GRADING, EXCAVATION, CUTTING, FILLING, OR OTHER EARTHWORK SHALL BE STARTED BEFORE EPSC MEASURES ARE IN PLACE IN ACCORDANCE WITH THE ACCEPTED EPSC PLAN INCORPORATED INTO THE SWPPP.

4. PERMANENT EPSC MEASURES SHALL BE INITIATED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OF ANY SEQUENCE OR PHASE. TEMPORARY OR PERMANENT STABILIZATION SHALL BE INITIATED WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHEN CONSTRUCTION ACTIVITIES ON A PORTION OF THE SITE ARE TEMPORARILY CEASED AND EARTH DISTURBING ACTIVITIES WILL NOT RESUME UNTIL AFTER 14 CALENDAR DAYS. PERMANENT STABILIZATION WITH PERENNIAL VEGETATION OR OTHER PERMANENTLY STABLE NON-ERODING SURFACE SHALL REPLACE ANY TEMPORARY MEASURES AS SOON AS PRACTICABLE. UNPACKED GRAVEL CONTAINING FINES (SILT AND CLAY SIZED PARTICLES) OR CRUSHER-RUN WILL NOT BE CONSIDERED A NON-ERODIBLE SURFACE.

5. STEEP SLOPES (A NATURAL OR CREATED SLOPE OF 35% GRADE (2.8H:1V) OR GREATER REGARDLESS OF HEIGHT) SHALL BE TEMPORARILY STABILIZED NO LATER THAN 7 CALENDAR DAYS AFTER CONSTRUCTION ACTIVITY ON THE SLOPE HAS TEMPORARILY OR PERMANENTLY CEASED.

6. FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION SUPPORT ACTIVITIES; TDOT PROJECTS ARE COVERED UNDER THE "WASTE AND BORROW" MANUAL PER THE SSWMP.

7. EXCEPT AS OTHERWISE SPECIFIED, THERE ARE NO KNOWN SPECIAL ENVIRONMENTAL FACTORS PRESENT ON THIS PROJECT THAT INDICATE A NEED FOR SEASONAL LIMITATIONS ON THE CLEARING, GRUBBING, EXCAVATION, GRADING, CUTTING OR FILLING OPERATIONS OR ON THE TOTAL AREA OF EXPOSED SOIL.

UTILITY RELOCATION

1. RAIN WATER WHICH COLLECTS IN THE UTILITY TRENCH SHALL BE PUMPED INTO A DEWATERING STRUCTURE OR SEDIMENT FILTER BAG AND MAINTAINED.

2. SILT FENCE SHALL BE INSTALLED ON THE DOWNSTREAM SIDE OF STOCKPILED SOIL. TRENCHING ACROSS WET WEATHER CONVEYANCES SHALL BE DONE DURING NO FLOW CONDITIONS AND STABILIZED BY THE END OF THE WORK DAY.

3. UTILITY CROSSINGS FOR PERENNIAL STREAMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH TDOT STANDARDS AND NO WORK SHALL BE CONDUCTED IN FLOWING WATERS. TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC) REGULATIONS APPLY TO UTILITIES IN THIS PROJECT IN REGARD TO EROSION PREVENTION AND SEDIMENT CONTROL (EPSC). THE STATE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE STORM WATER POLLUTION PREVENTION PLANS (SWPPP).

4. IT IS THE RESPONSIBILITY OF THE STATE UTILITY CONTRACTOR INSTALLER TO PROTECT FROM EROSION EXPOSED EARTH RESULTING FROM THEIR OPERATIONS AND TO PROVIDE FOR CONTAINMENT OF SEDIMENT THAT MAY RESULT FROM THEIR 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 THEIR WORK, EXPOSED EARTH AREAS SHALL BE STABILIZED AS SOON AS POSSIBLE TO PREVENT EROSION. AT NO TIME SHALL EXPOSED EARTH RESULTING FROM THEIR OPERATIONS HAVE UNPROTECTED ACCESS TO FLOWING OFF-SITE AND ENTERING WATERS OF THE STATE/U.S.

5. FOR THE INSTALLATION OF BURIED UTILITIES (PIPES 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. ANY TEMPORARY SPOIL OF EXCAVATED EARTH SHALL BE LOCATED WITHIN TDOT EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES OR RECEIVE SEPARATE EPSC MEASURES. IF TRENCHES ARE NOT BACKFILLED OVERNIGHT, APPROPRIATE EPSC MEASURES WILL BE INSTALLED BY THE STATE UTILITY CONTRACTOR UNTIL SUCH TIME AS THE TRENCH IS BACKFILLED.

6. IN REGARD TO EROSION PREVENTION AND SEDIMENT CONTROL (EPSC), TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC) REGULATIONS APPLY TO THE STATE UTILITY CONTRACTORS IN THIS PROJECT, THEREFORE, THE STATE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE STORM WATER POLLUTIONS PREVENTION PLANS (SWPPP). THE STATE CONTRACTOR IS RESPONSIBLE FOR EPSC MEASURES RELATED TO UTILITY CONSTRUCTION INCLUDED IN THE STATE CONTRACT WORK.

7. TRENCHES FORMED FOR THE INSTALLATION OF BURIED UTILITIES MAY CAUSE STORM WATER RUNOFF TO CONCENTRATE AT THE TRENCH LINE. ADDITIONAL EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES MAY BE REQUIRED TO BE INSTALLED AS APPROVED BY THE TDOT PROJECT ENGINEER.

8. FOR THE INSTALLATION OF UNDERGROUND UTILITIES OUTSIDE OF THE TDOT RIGHT-OF-WAY, EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) SHALL BE INSTALLED PRIOR TO CLEARING (TRENCHING AND ASSOCIATED BLASTING) IN THOSE AREAS NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION AREA. THESE EPSC MEASURES SHALL REMAIN UNTIL THE BACKFILLED TRENCH IS STABILIZED WITH FINAL VEGETATIVE COVER.

9. THE UTILITY CONTRACTOR SHALL RESTORE ALL AFFECTED WET WEATHER CONVEYANCES TO THE EXISTING TOPOGRAPHIC CONDITIONS (AS APPROVED BY THE TDOT PROJECT ENGINEER).

10. THE UTILITY CONTRACTOR WILL PROVIDE APPROPRIATE EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) MEASURES TO REPLACE IN-PLACE EPSC MEASURES REMOVED TO FACILITATE THE INSTALLATION OF UTILITIES. REPLACEMENT OF EPSC MEASURES WILL BE COORDINATED WITH THE TDOT PROJECT ENGINEER BEFORE COMMENCING WORK.

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC NOTES

13-MAR-2014 11:47
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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	38
CONST.	2014	STP/PHSIP-10(24)	38

L2 LETTING REV: 05-19-14 ADDED ITEM NO. 209-09.01 AND 209-20.03.

ESTIMATED EPSC QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
203-01	ROAD AND DRAINAGE EXCAVATION (UNCLASSIFIED)	C.Y.	113,096
209-02.07	18" TEMPORARY SLOPE DRAIN	L.F.	2,183
209-05	SEDIMENT REMOVAL	C.Y.	582
209-08.02	TEMPORARY SILT FENCE (WITH BACKING)	L.F.	10,828
209-08.03	TEMPORARY SILT FENCE (WITHOUT BACKING)	L.F.	8,997
209-08.08	ENHANCED ROCK CHECK DAM	EACH	22
209-09.01	SAND BAGS	EACH	14,208
209-09.04	SEDIMENT FILTER BAG(15' X 10')	EACH	24
209-09.43	CURB INLET PROTECTION (TYPE 4)	EACH	10
209-20.03	POLYETHYLENE SHEETING (6 MIL. MIN.)	S.Y.	168
209-40.34	CATCH BASIN PROTECTION (TYPE E)	EACH	14
209-40.44	CATCH BASIN FILTER ASSEMBLY(TYPE 4)	EACH	3
209-65.04	TEMPORARY IN STREAM DIVERSION	L.F.	100
303-10.01	MINERAL AGGREGATE (SIZE 57)	TON	321
621-03.02	18" TEMPORARY DRAINAGE PIPE	L.F.	205
621-03.03	24" TEMPORARY DRAINAGE PIPE	L.F.	998
621-03.04	30" TEMPORARY DRAINAGE PIPE	L.F.	204
621-03.06	42" TEMPORARY DRAINAGE PIPE	L.F.	102
621-03.11	72" TEMPORARY DRAINAGE PIPE	L.F.	204
709-05.05	MACHINED RIP-RAP (CLASS A-3)	TON	50
709-05.06	MACHINED RIP-RAP (CLASS A-1)	TON	2,615
740-10.03	GEOTEXTILE (TYPE III)(EROSION CONTROL)	S.Y.	2,382
740-11.03	TEMPORARY SEDIMENT TUBE 18IN (EPSC)	L.F.	4,773
801-01.07	TEMPORARY SEEDING (WITH MULCH)	UNIT	1,459
801-01.30	COVER CROP SEED MIX (RIPZN/FLPL) W/MULCH	UNIT	1,459
801-03	WATER (SEEDING & SODDING)	M.G.	146

NOTE: FOR EPSC PHASING QUANTITIES, REFER TO SHT 20.

EROSION PREVENTION AND SEDIMENT CONTROL LEGEND

SYMBOL	ITEM	STD. DWG.
	RIP-RAP	
SFB SFB SFB SFB	SEDIMENT FILTER BAG	EC-STR-2
* SF * SF * SF *	SILT FENCE	EC-STR-3B
*SFB*SFB*SFB*	SILT FENCE WITH WIRE BACKING	EC-STR-3C
	ENHANCED ROCK CHECK DAM (V-DITCH)	EC-STR-6A
	ENHANCED ROCK CHECK DAM (TRAPEZOIDAL DITCH)	EC-STR-6A
	CULVERT PROTECTION (TYPE 1)	EC-STR-11
	CULVERT PROTECTION (TYPE 2)	EC-STR-11A
E	CATCH BASIN PROTECTION (TYPE E)	EC-STR-19
TCE	TEMPORARY CONSTRUCTION EXIT *	EC-STR-25
	TEMPORARY BERM	EC-STR-27
	TEMPORARY SLOPE DRAIN	EC-STR-27
IN DIV	INSTREAM DIVERSION	EC-STR-30A
	TEMPORARY DIVERSION CULVERT (DESCRIBE NUMBER AND SIZE OF PIPES)	EC-STR-32
** TUBE ** TUBE **	SEDIMENT TUBE	EC-STR-37
4	CURB INLET PROTECTION (TYPE 4)	EC-STR-39A
* HVF * HVF	HIGH VISIBILITY FENCE	S-F-1
	WORK ZONE IN CURRENT PHASE	
	COMPLETED WORK	

* TO BE INSTALLED AT LOCATION AS DIRECTED BY ENGINEER.

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DEPARTMENT OF TRANSPORTATION

EPSC NOTES

09-MAY-2014 16:33
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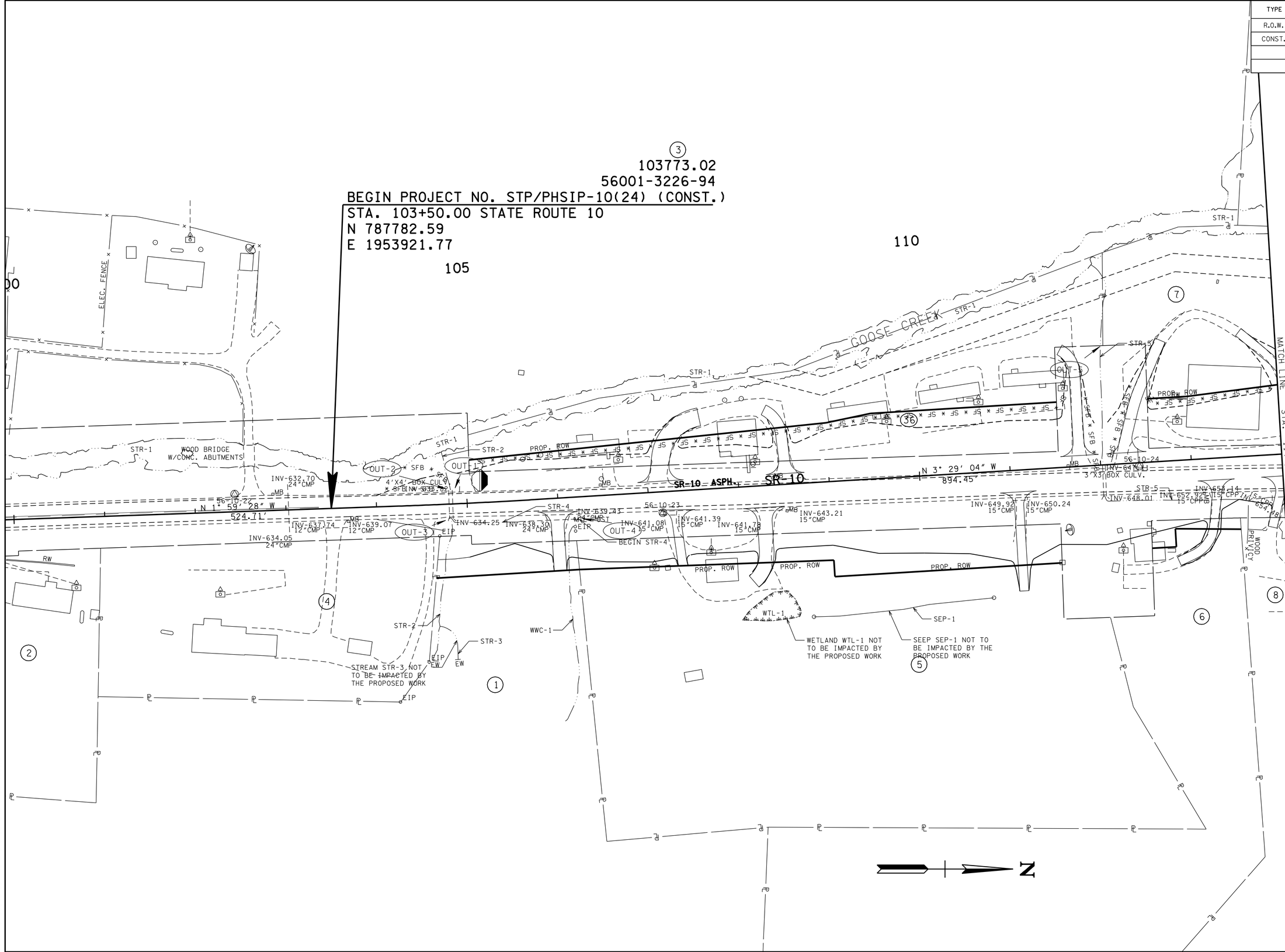
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	39
CONST.	2014	STP/PHSIP-10(24)	39



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 1A

STA. 101+50 TO STA. 114+00

SCALE: 1"= 50'

13-MAR-2014 11:47
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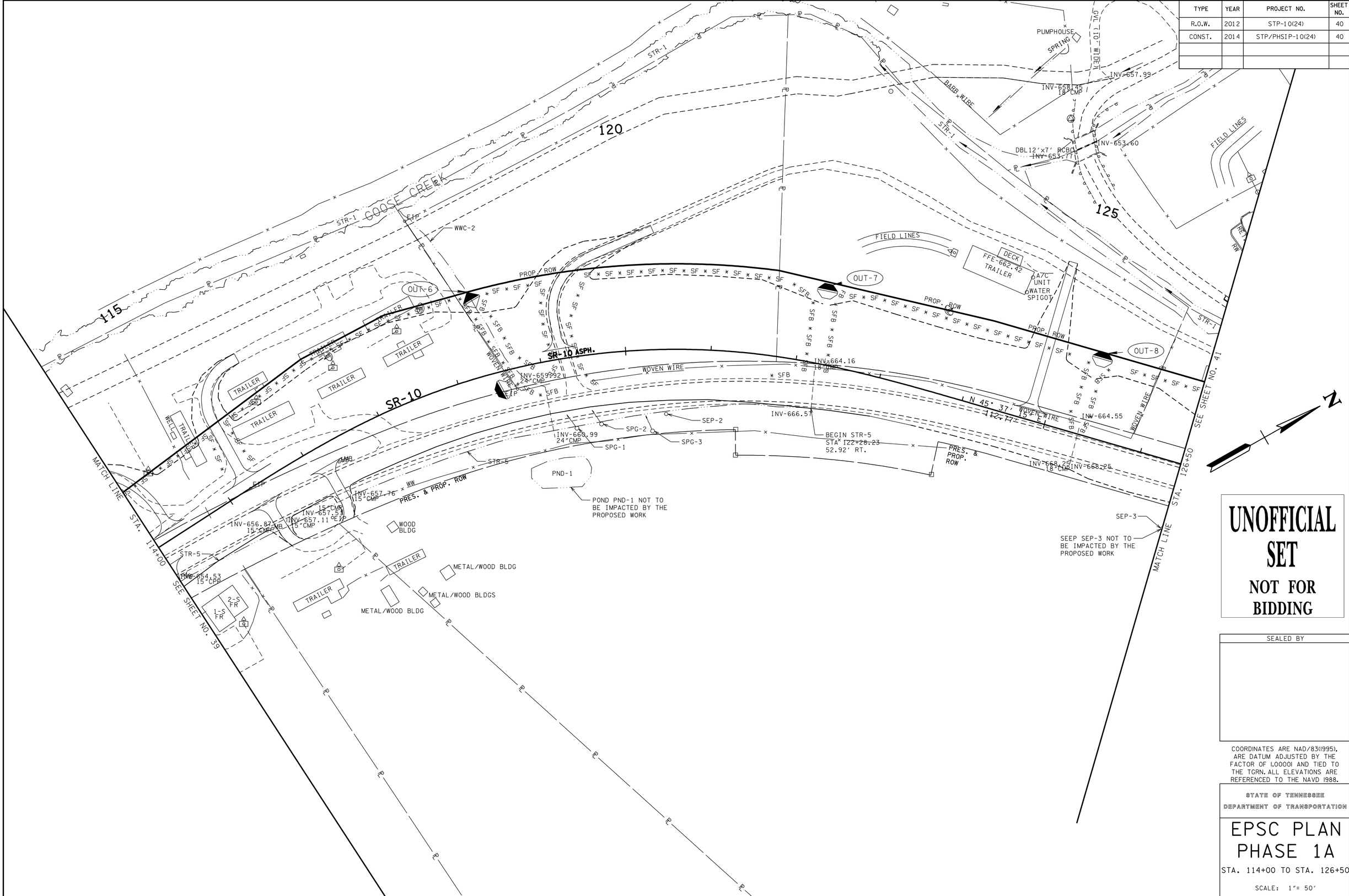
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	40
CONST.	2014	STP/PHSIP-10(24)	40



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 1A

STA. 114+00 TO STA. 126+50

SCALE: 1"= 50'

13-MAR-2014 11:47
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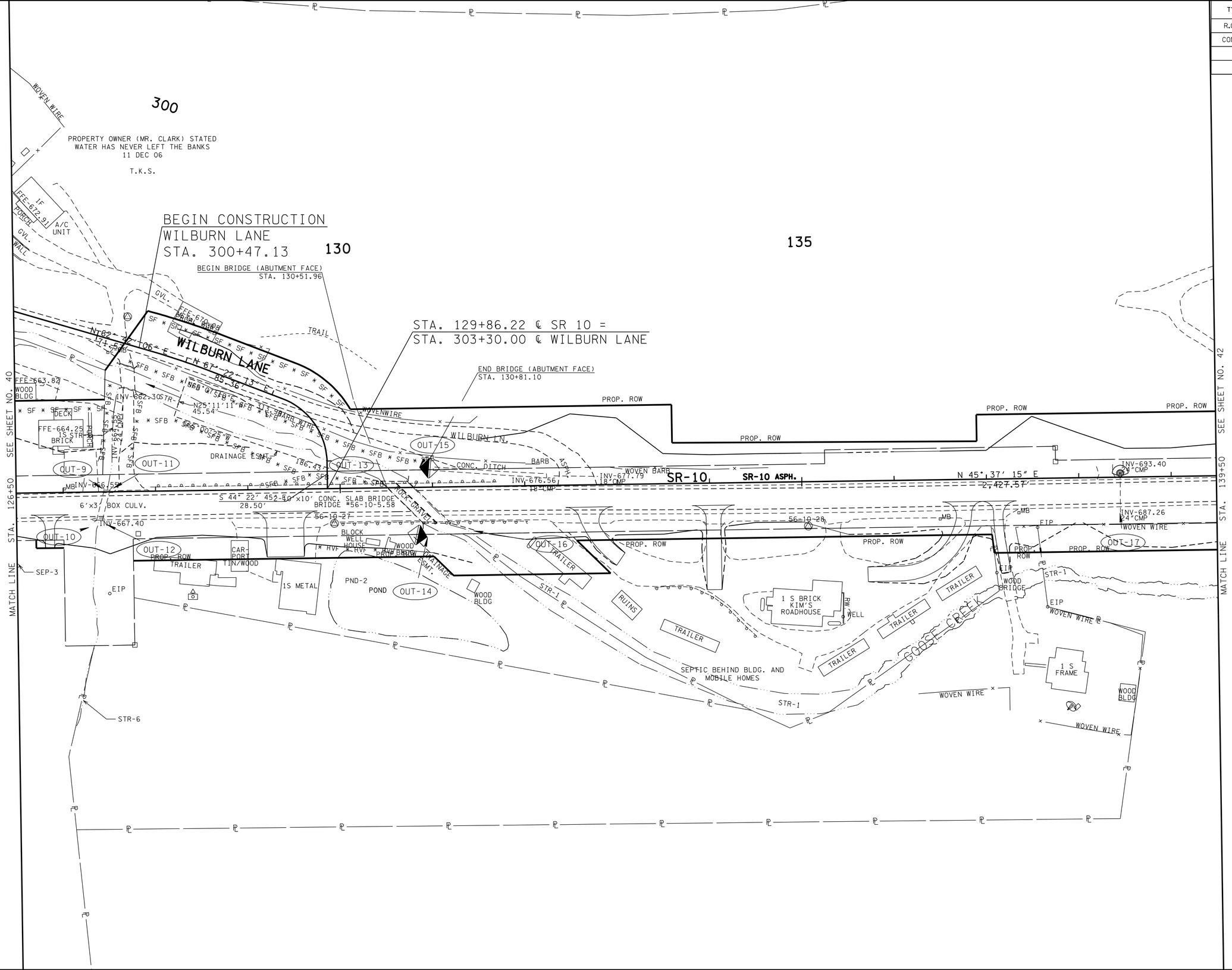
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	41
CONST.	2014	STP/PHSIP-10(24)	41



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 1A

STA. 126+50 TO STA. 139+50

SCALE: 1″= 50′

13-MAR-2014 11:47
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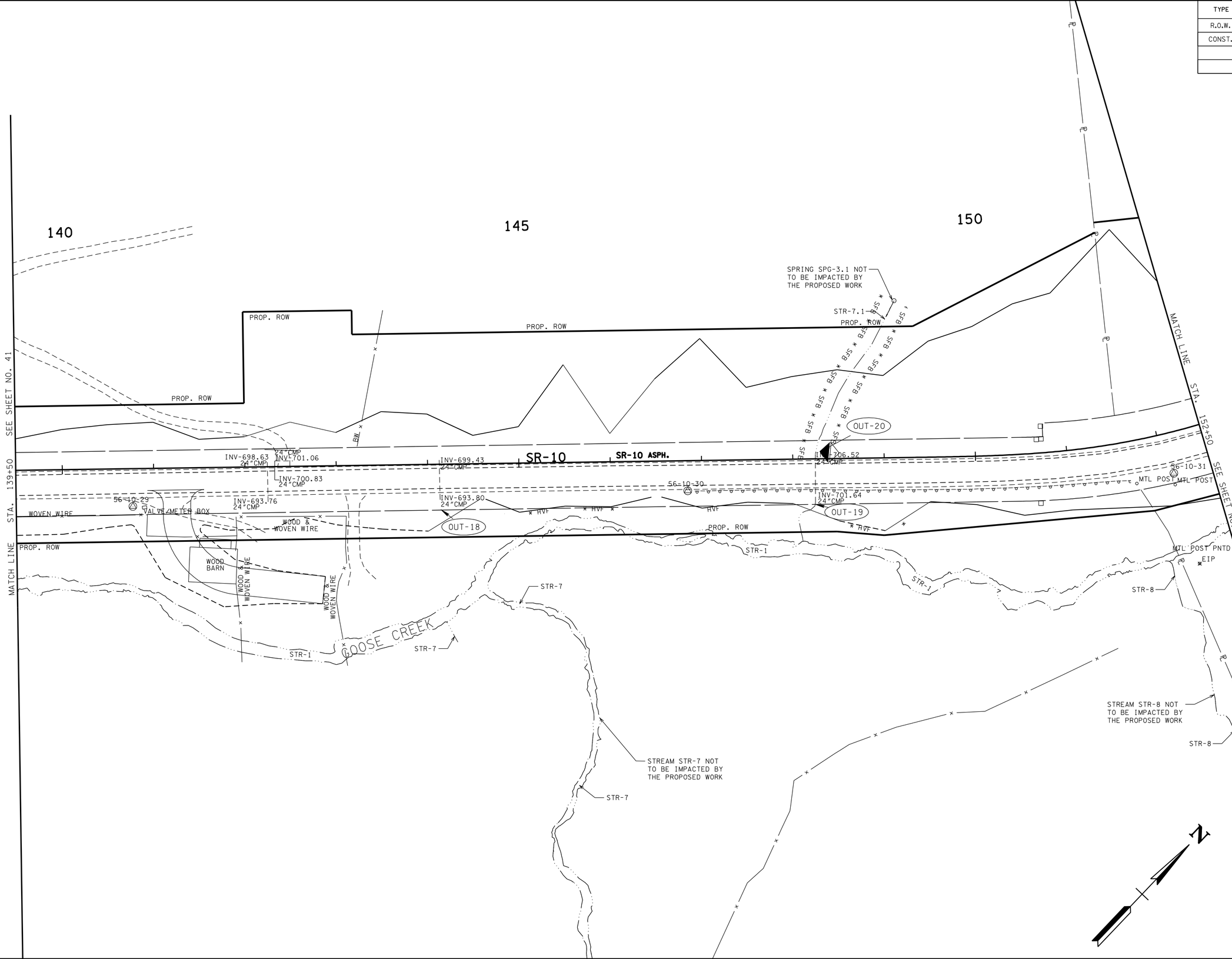
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	42
CONST.	2014	STP/PHSIP-10(24)	42



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 1A

STA. 139+50 TO STA. 152+50

SCALE: 1"= 50'

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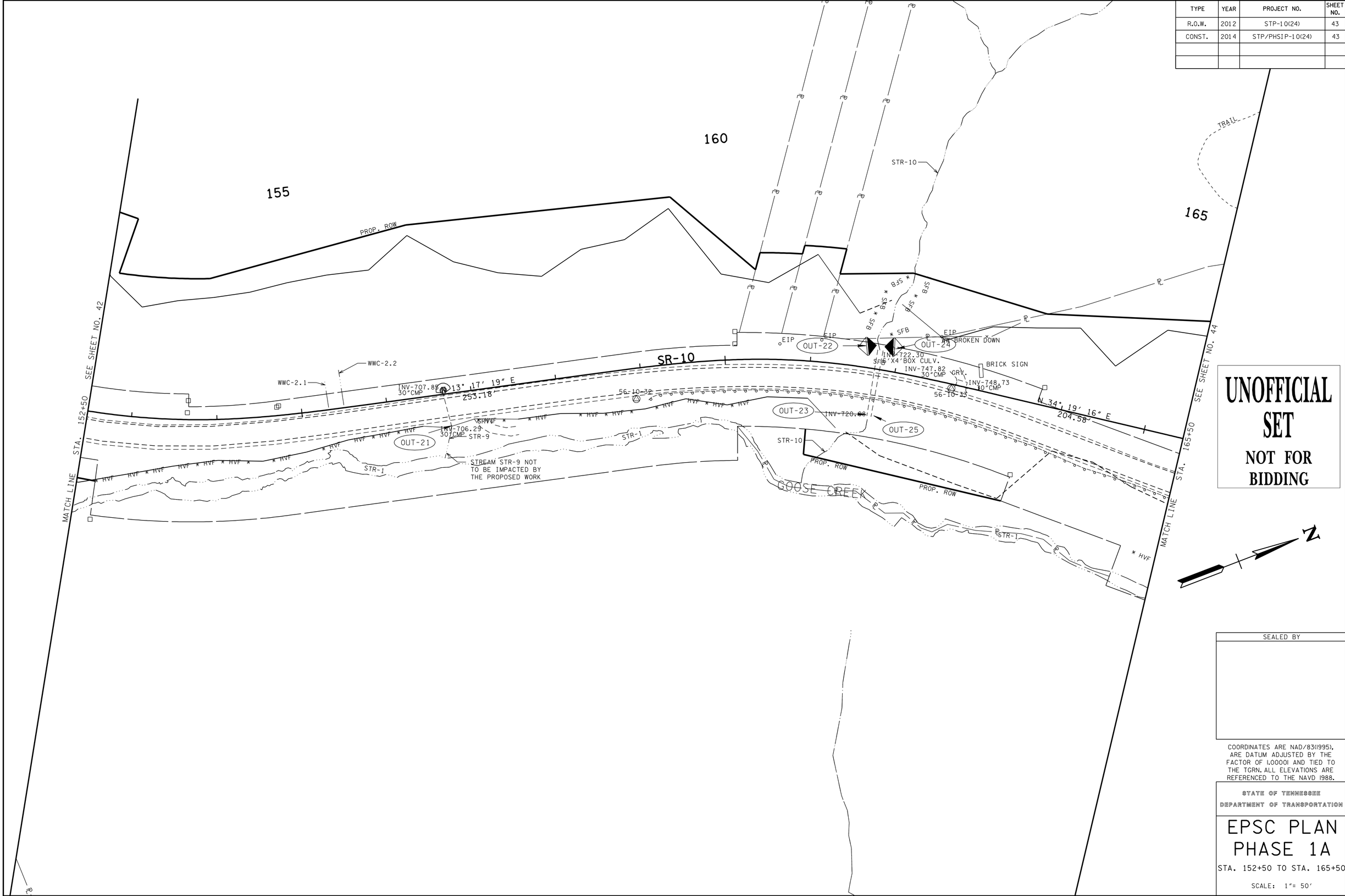
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	43
CONST.	2014	STP/PHSIP-10(24)	43



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 1A

STA. 152+50 TO STA. 165+50

SCALE: 1"= 50'

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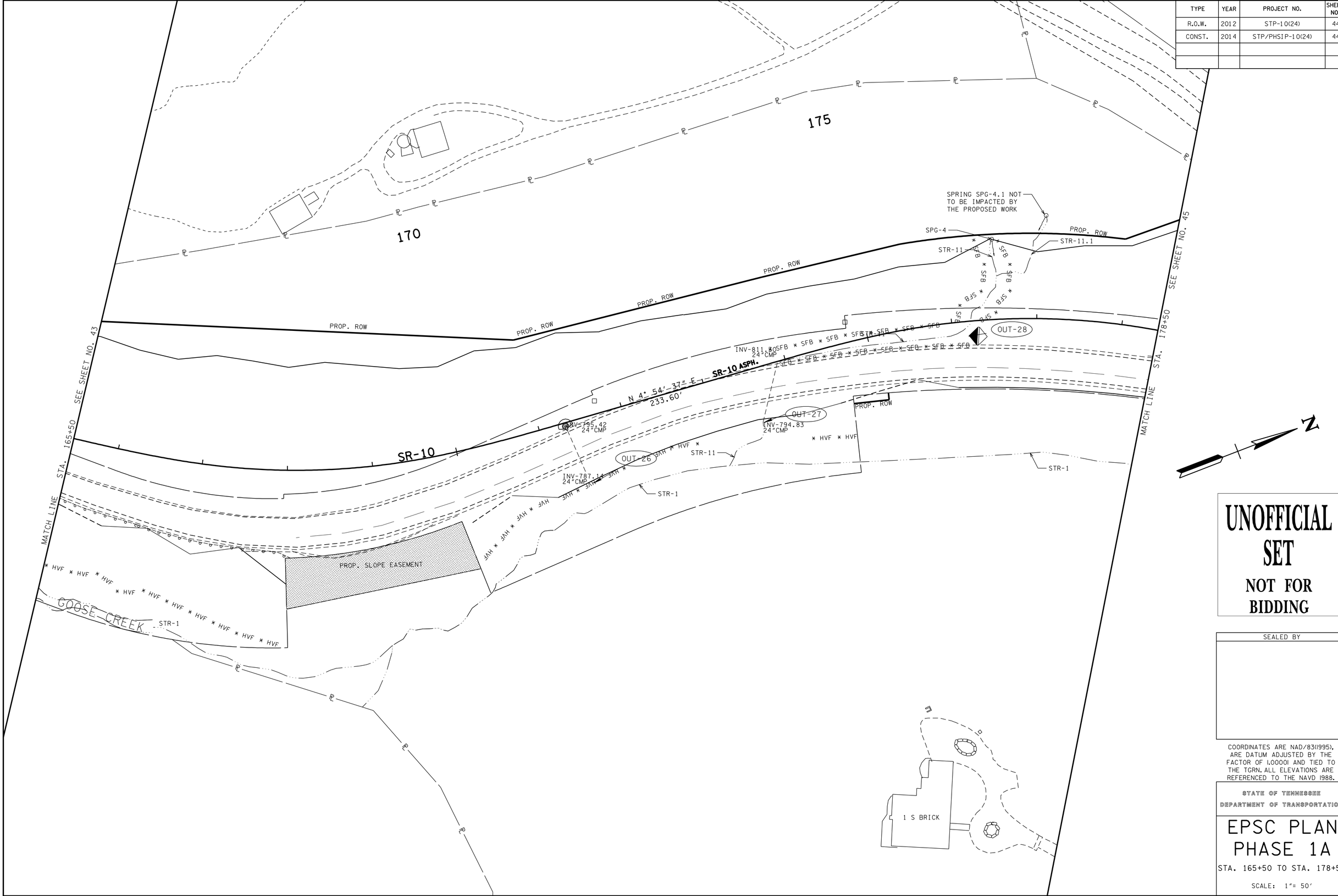
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	44
CONST.	2014	STP/PHSIP-10(24)	44



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 1A

STA. 165+50 TO STA. 178+50

SCALE: 1"= 50'

13-MAR-2014 11:47
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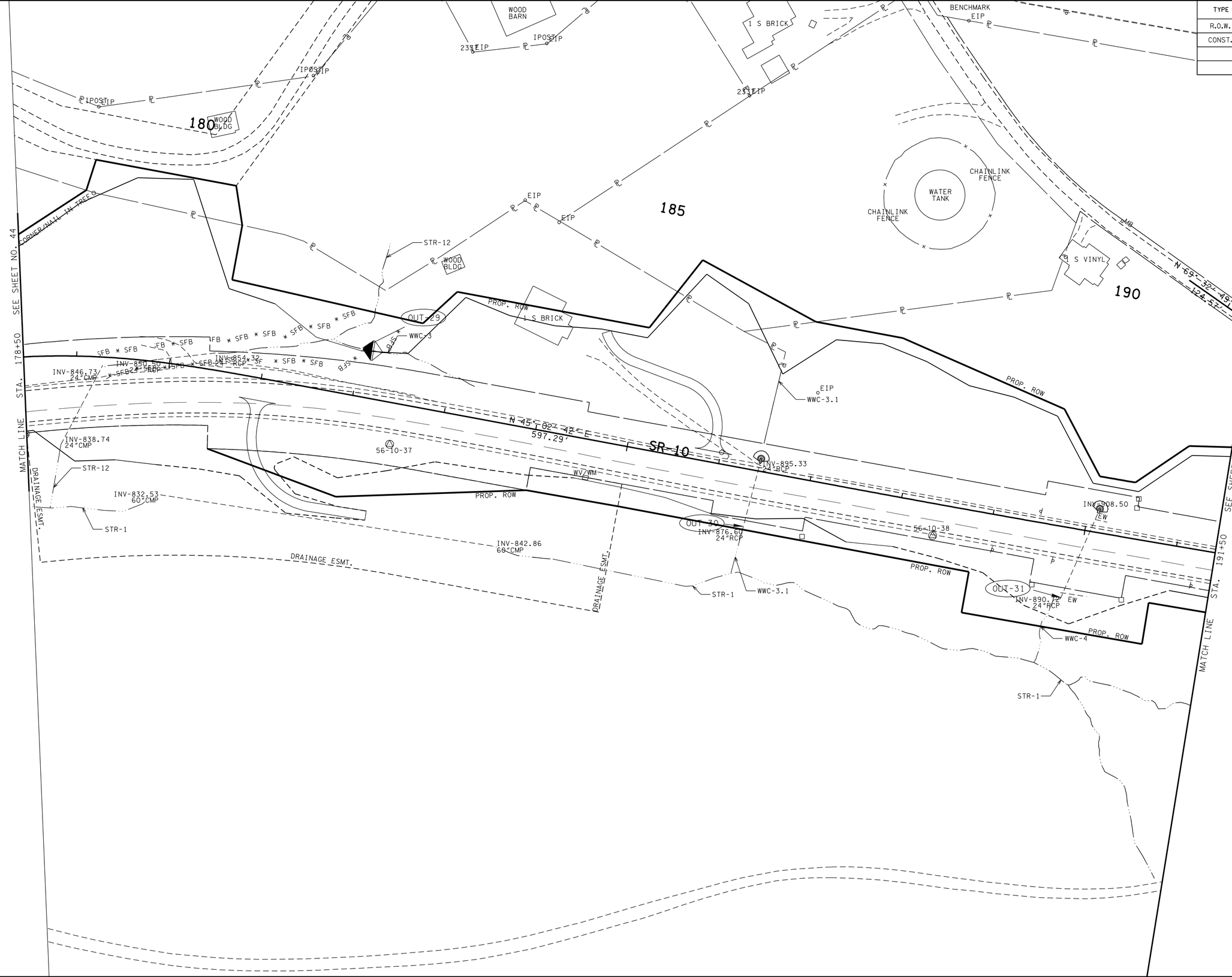
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	45
CONST.	2014	STP/PHSIP-10(24)	45



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 1A

STA. 178+50 TO STA. 191+50

SCALE: 1"= 50'

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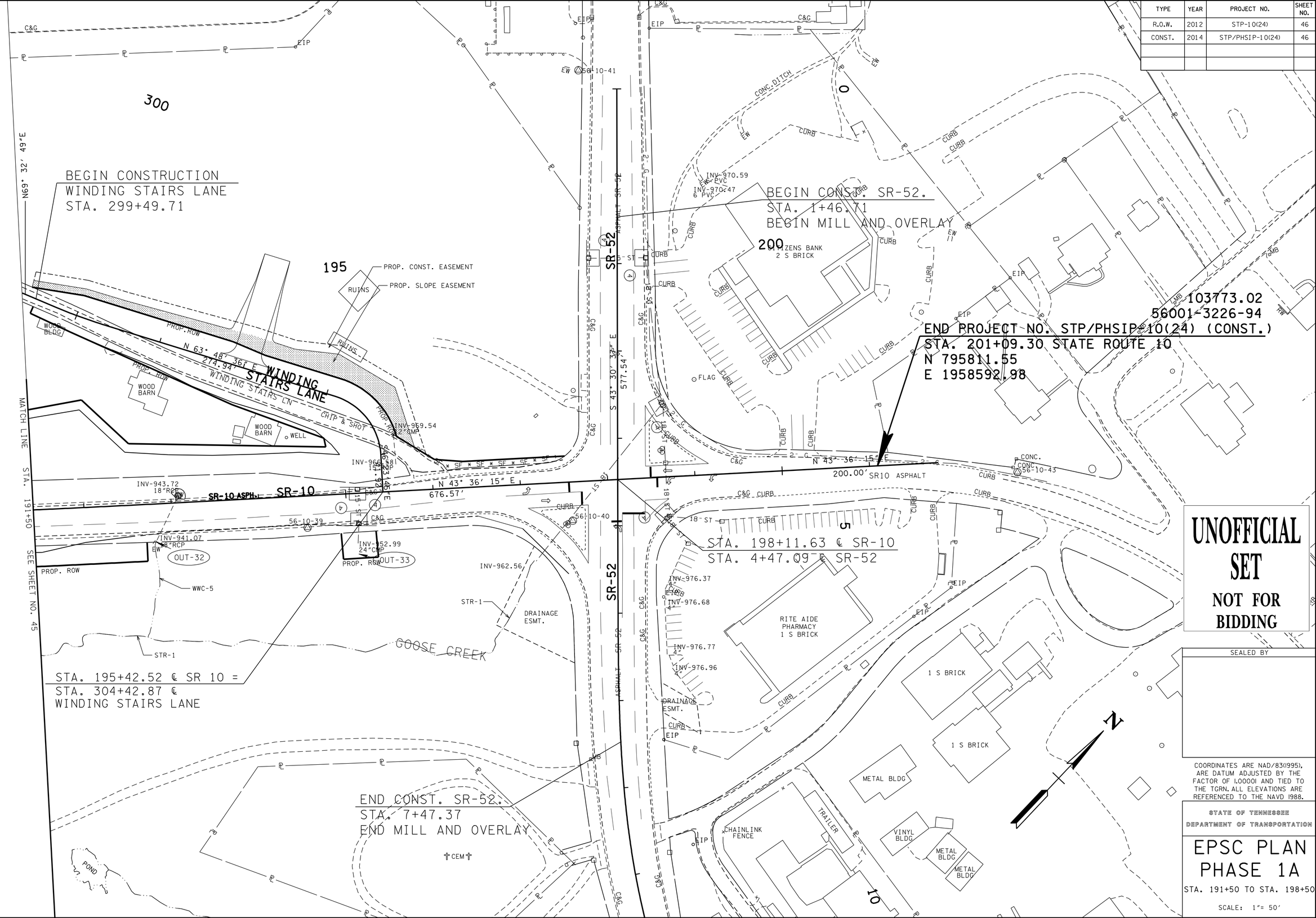
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	46
CONST.	2014	STP/PHSIP-10(24)	46



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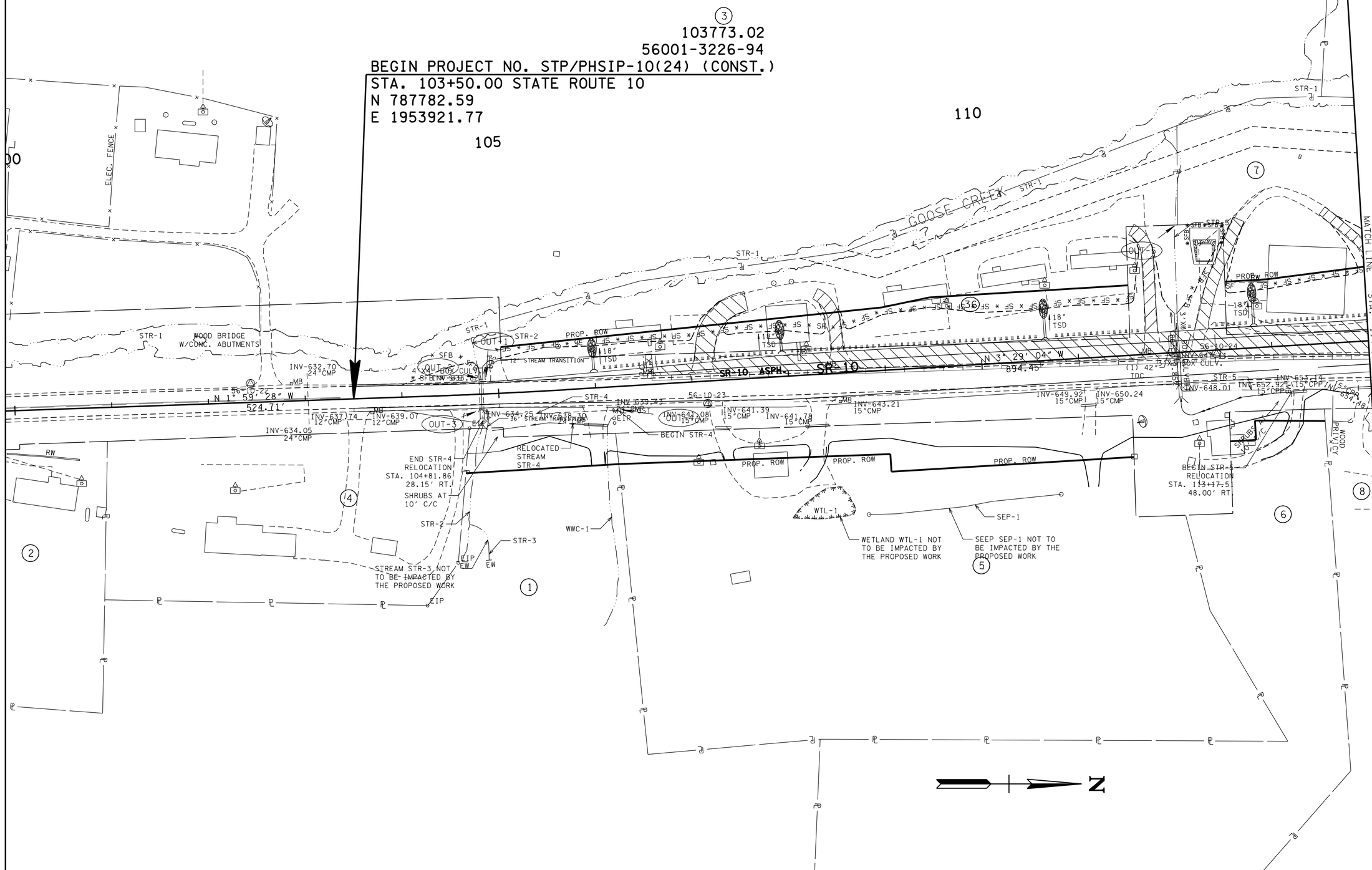
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	47
CONST.	2014	STP/PHSIP-10(24)	47



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 1B

STA. 101+50 TO STA. 114+00

SCALE: 1"= 50'

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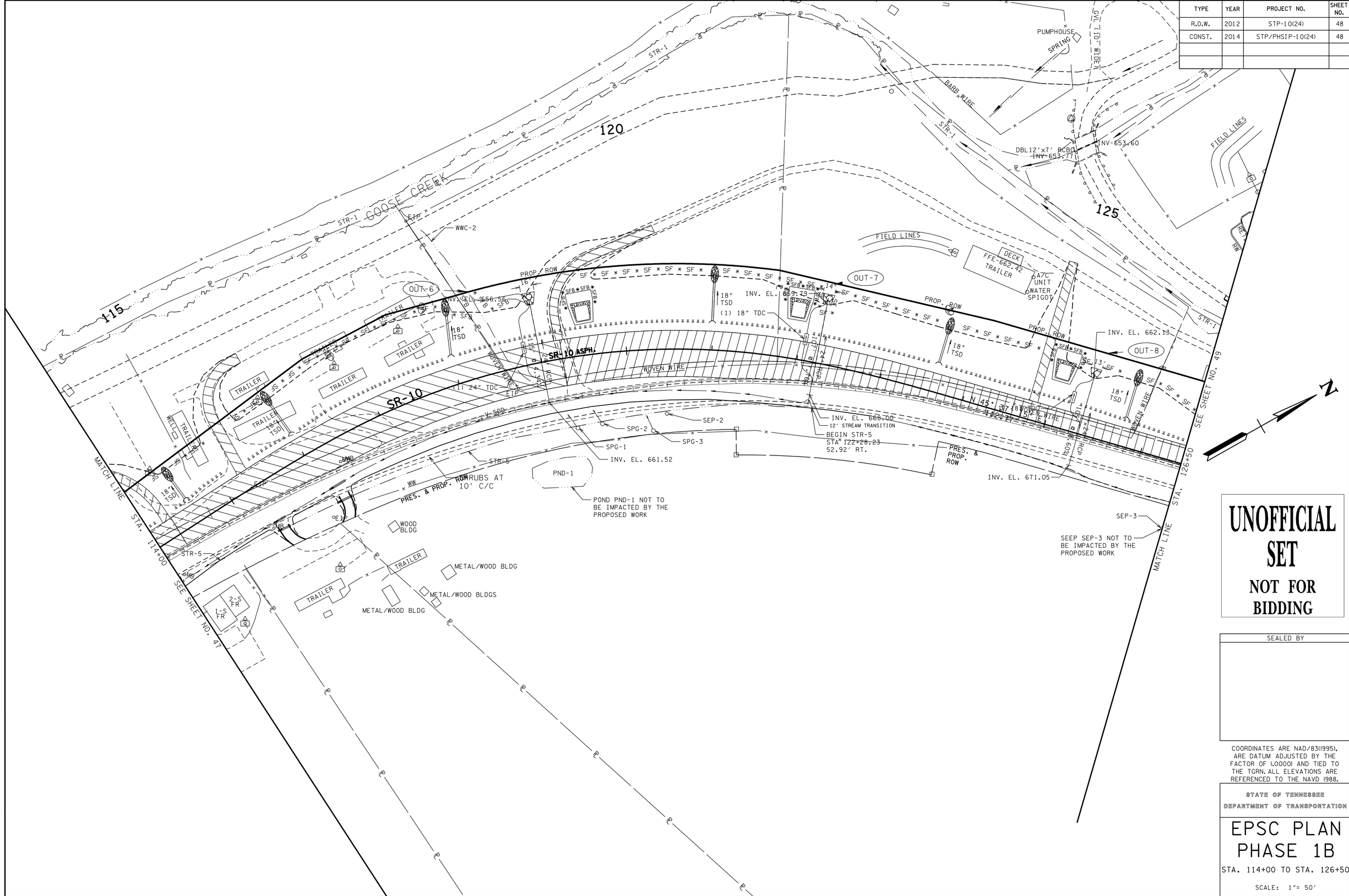
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	48
CONST.	2014	STP/PHSIP-10(24)	48



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 1B

STA. 114+00 TO STA. 126+50

SCALE: 1"= 50'

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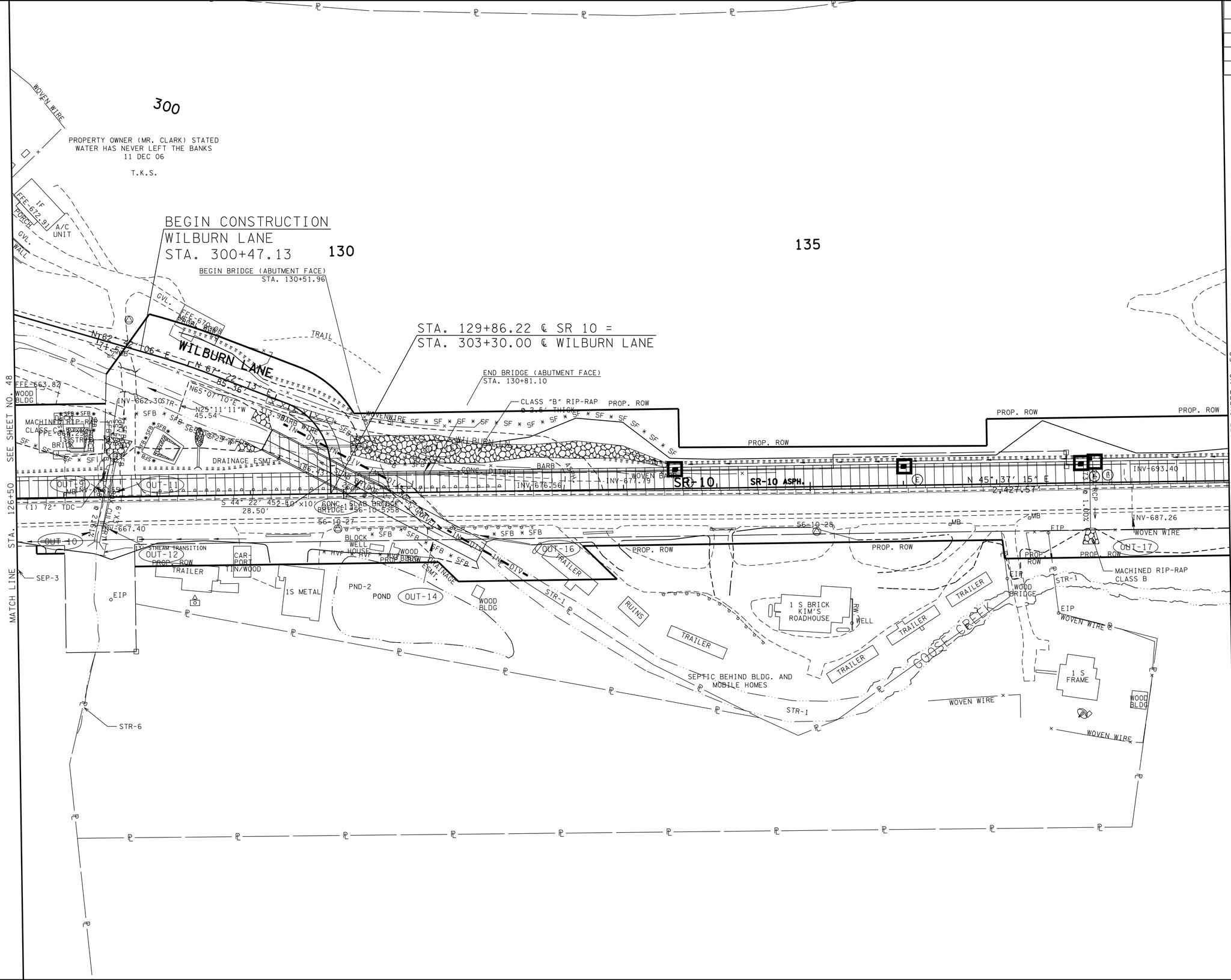
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	49
CONST.	2014	STP/PHSIP-10(24)	49



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 1B

STA. 126+50 TO STA. 139+50

SCALE: 1"= 50'

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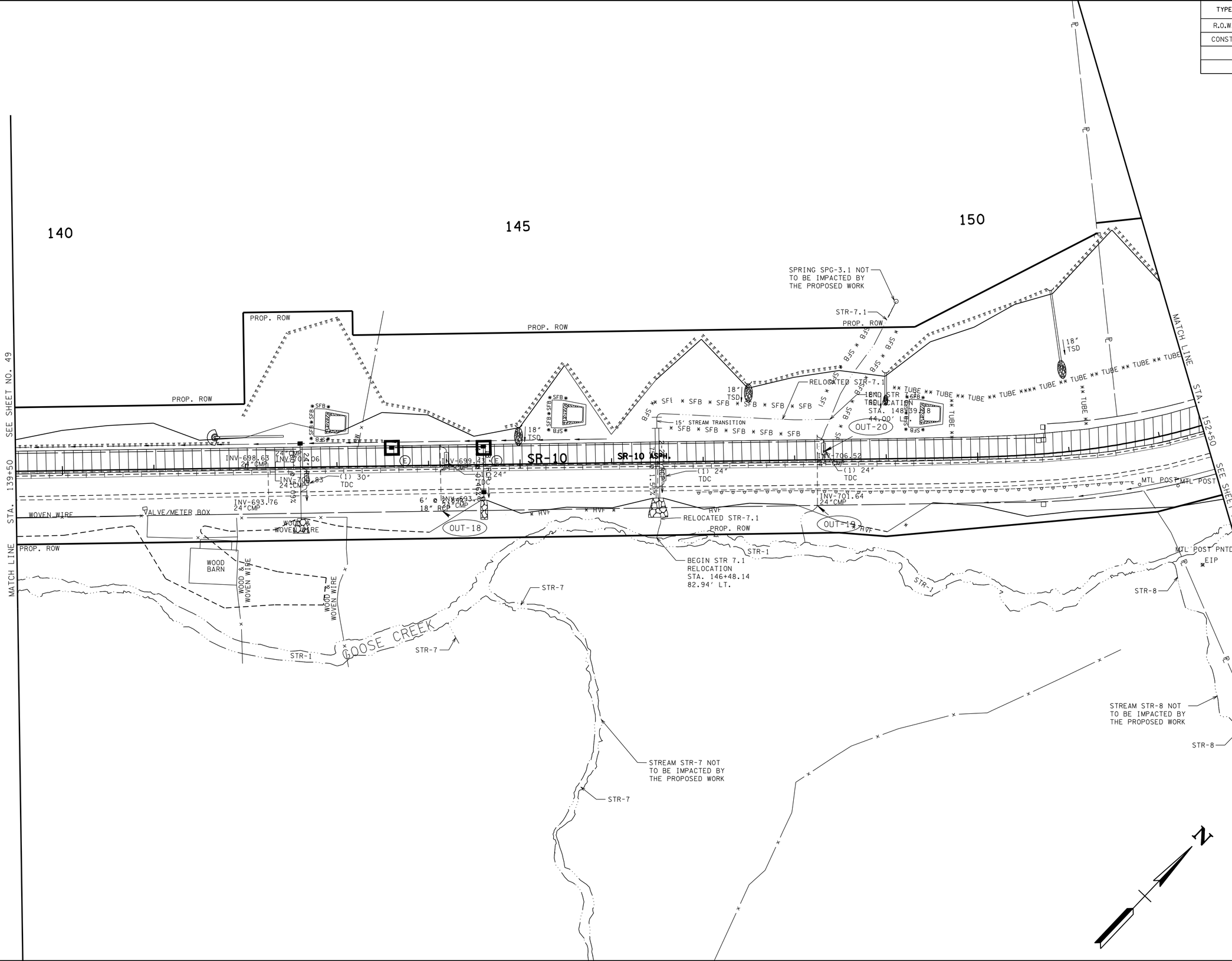
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	50
CONST.	2014	STP/PHSIP-10(24)	50



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 1B

STA. 139+50 TO STA. 152+50

SCALE: 1"= 50'

13-MAR-2014 11:48
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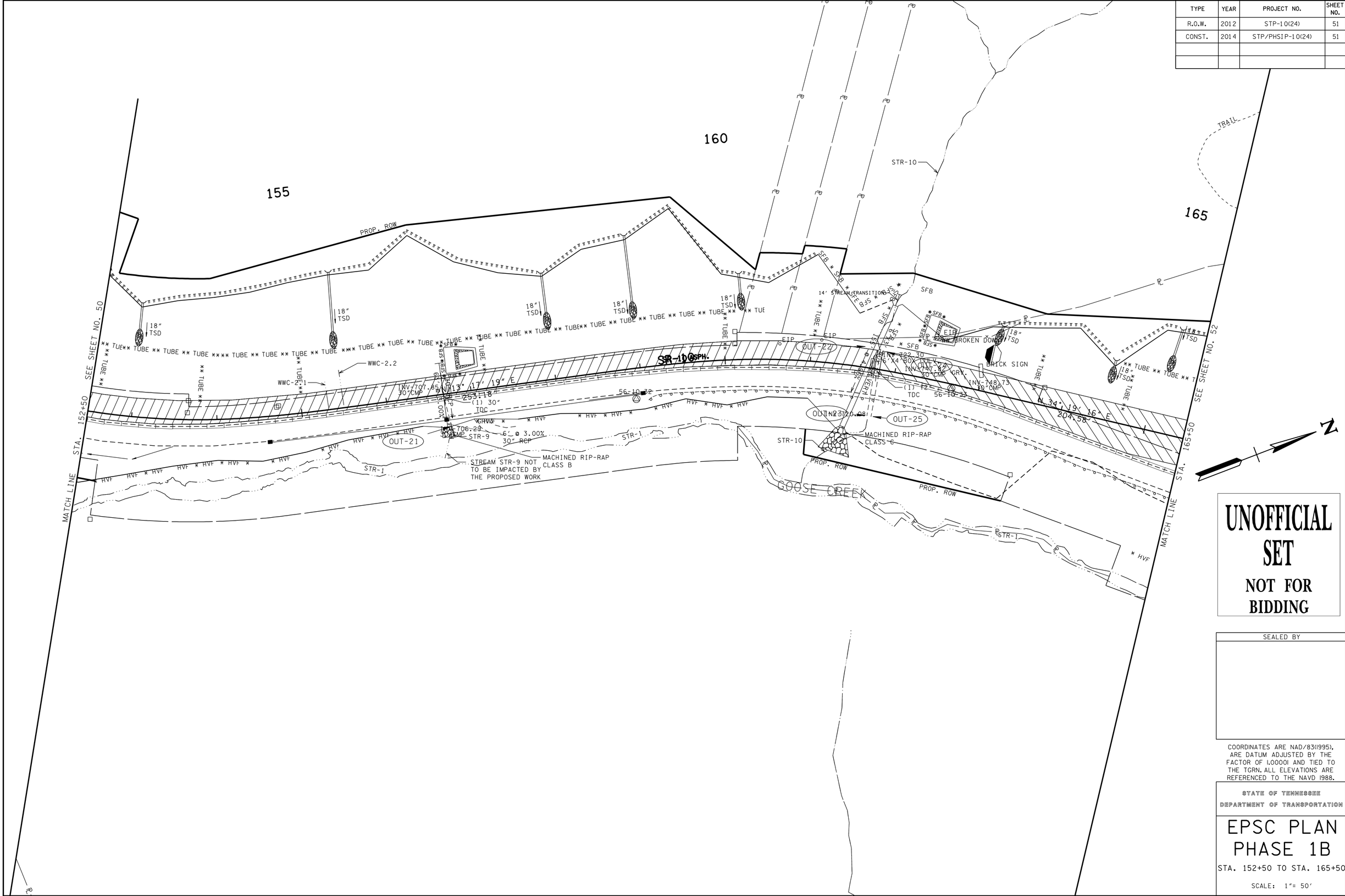
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	51
CONST.	2014	STP/PHSIP-10(24)	51



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STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 1B

STA. 152+50 TO STA. 165+50

SCALE: 1"= 50'

13-MAR-2014 11:48
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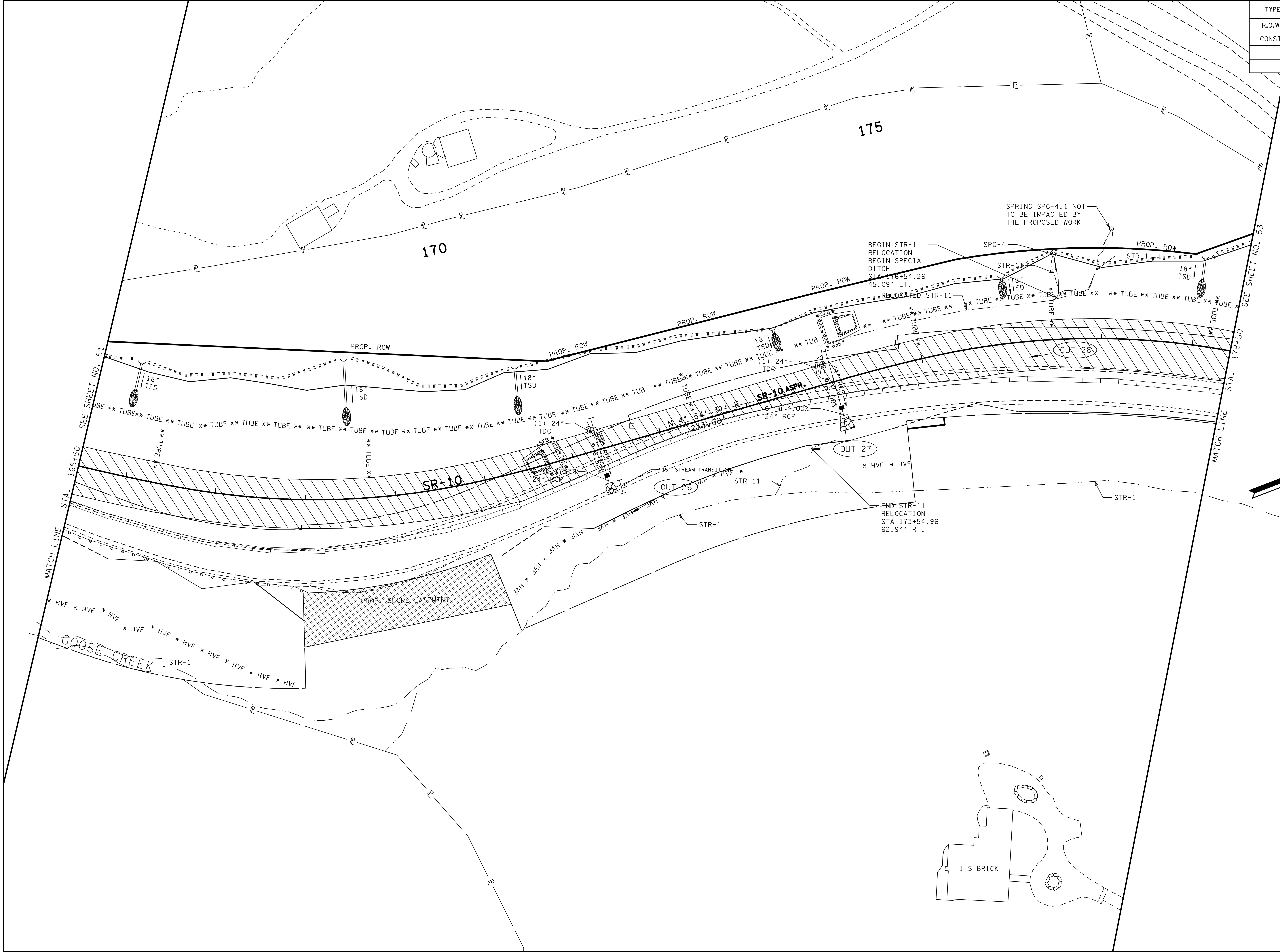
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	52
CONST.	2014	STP/PHSIP-10(24)	52



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STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

EPSC PLAN
PHASE 1B

STA. 165+50 TO STA. 178+50

SCALE: 1"= 50'

13-MAR-2014 11:48
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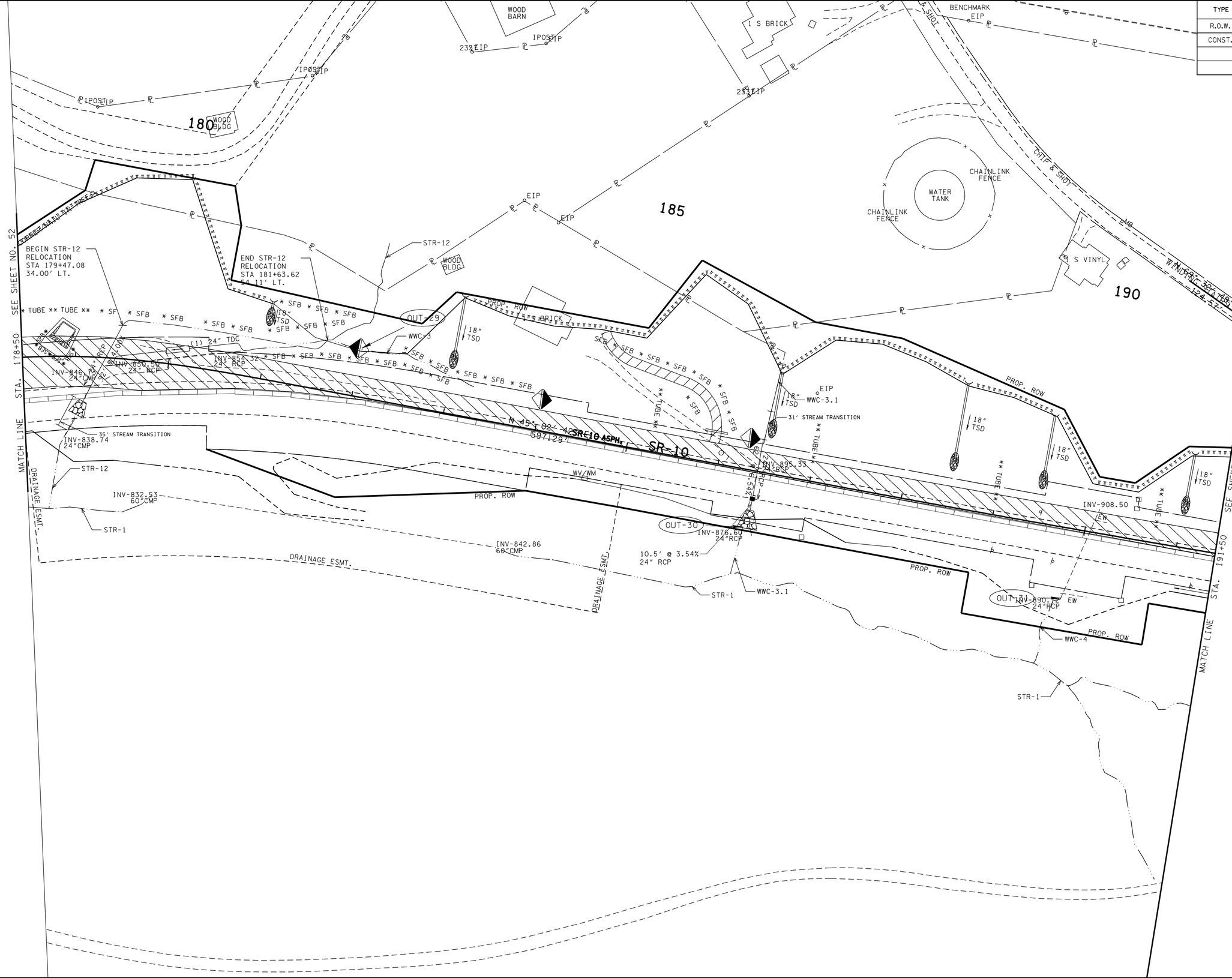
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	53
CONST.	2014	STP/PHSIP-10(24)	53



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 1B

STA. 178+50 TO STA. 191+50

SCALE: 1"= 50'

13-MAR-2014 11:48
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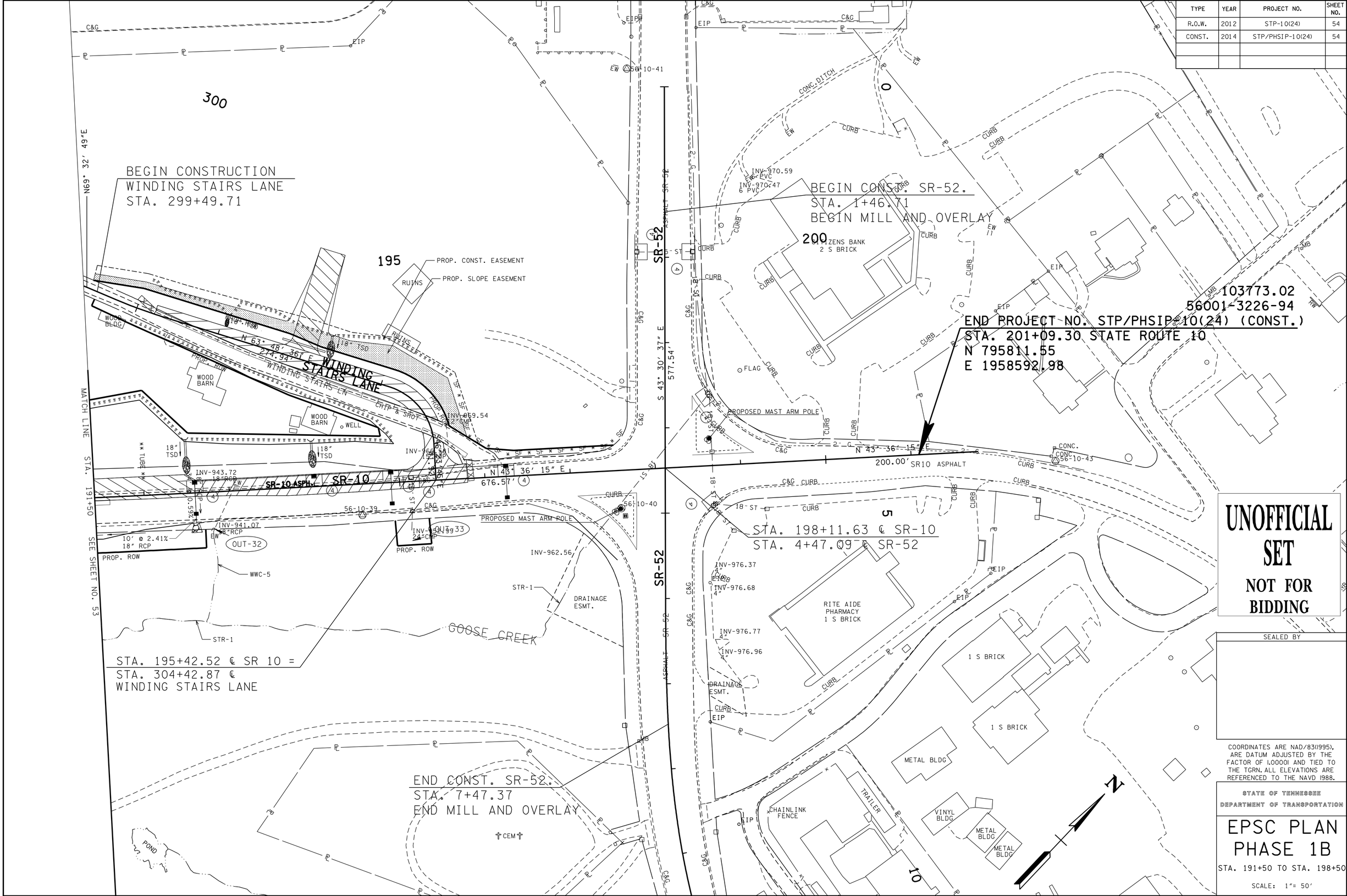
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	54
CONST.	2014	STP/PHSIP-10(24)	54



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 1B

STA. 191+50 TO STA. 198+50

SCALE: 1"= 50'

13-MAR-2014 11:48
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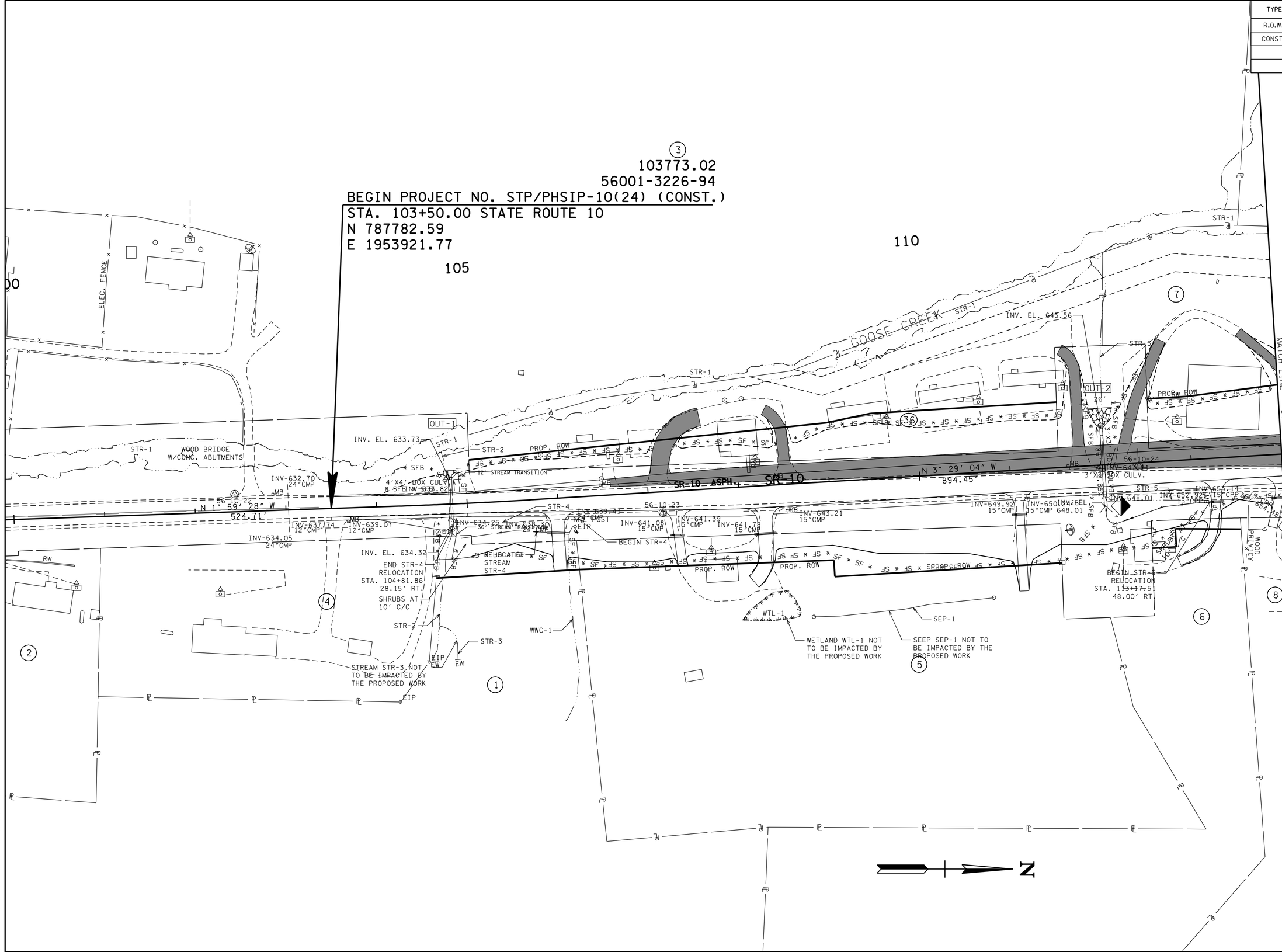
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	55
CONST.	2014	STP/PHSIP-10(24)	55



UNOFFICIAL SET

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 2A

STA. 101+50 TO STA. 114+00

SCALE: 1"= 50'

13-MAR-2014 11:48
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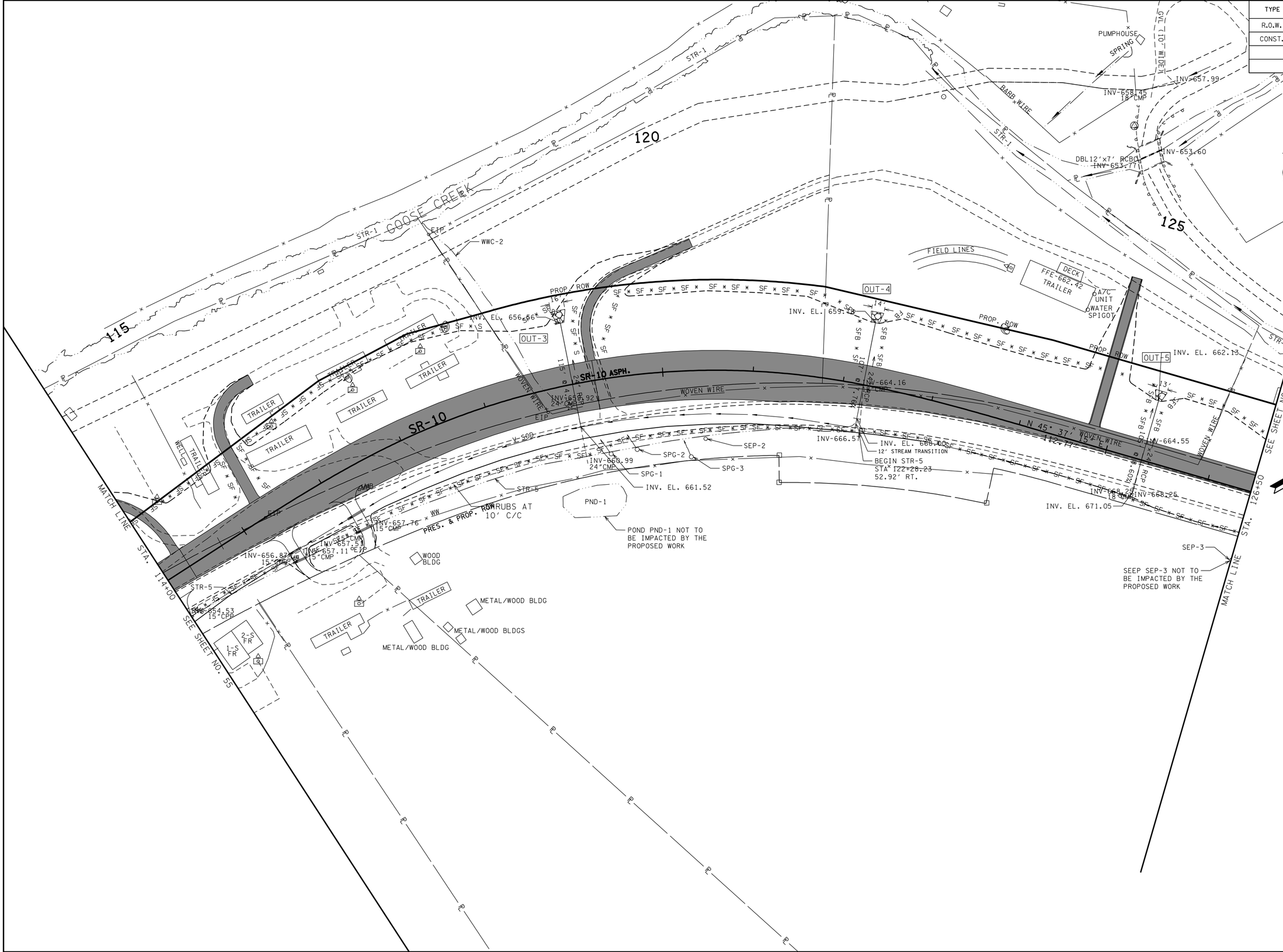
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	56
CONST.	2014	STP/PHSIP-10(24)	56



UNOFFICIAL SET

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 2A

STA. 114+00 TO STA. 126+50

SCALE: 1"= 50'

13-MAR-2014 11:48
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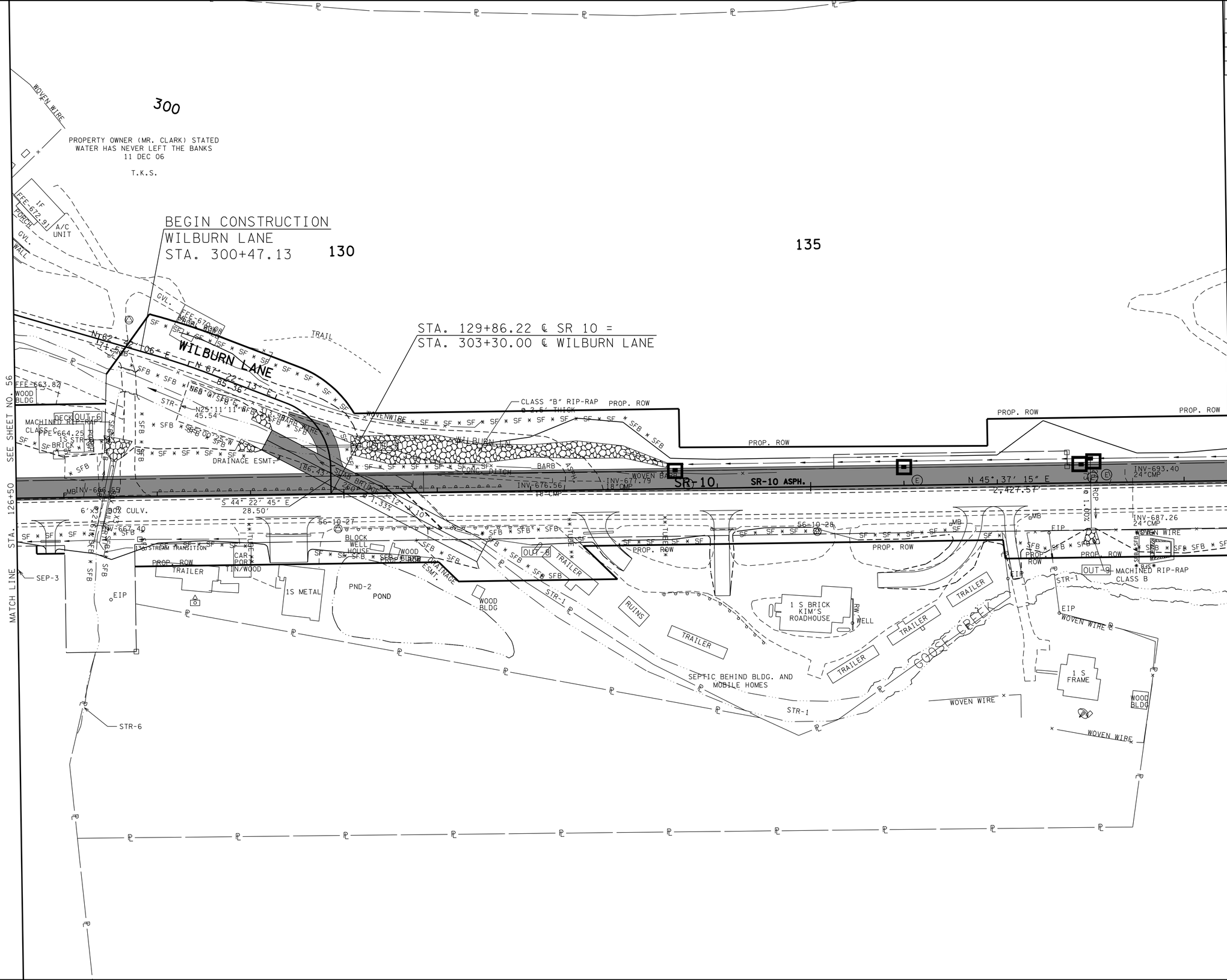
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	57
CONST.	2014	STP/PHSIP-10(24)	57



UNOFFICIAL SET

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 2A

STA. 126+50 TO STA. 139+50

SCALE: 1"= 50'

13-MAR-2014 11:48
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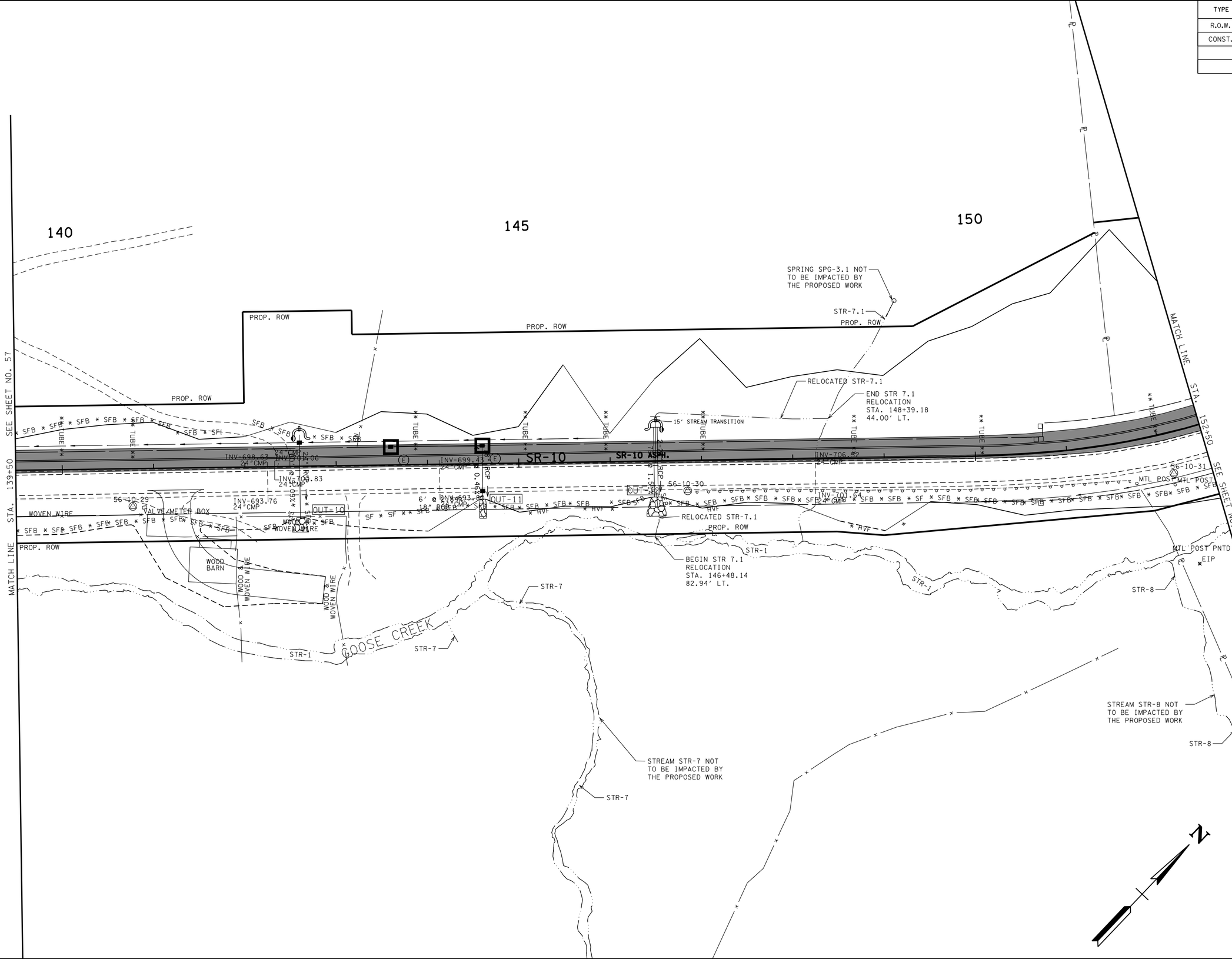
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	58
CONST.	2014	STP/PHSIP-10(24)	58



UNOFFICIAL SET

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 2A

STA. 139+50 TO STA. 152+50

SCALE: 1"= 50'

03-MAR-2014 11:48
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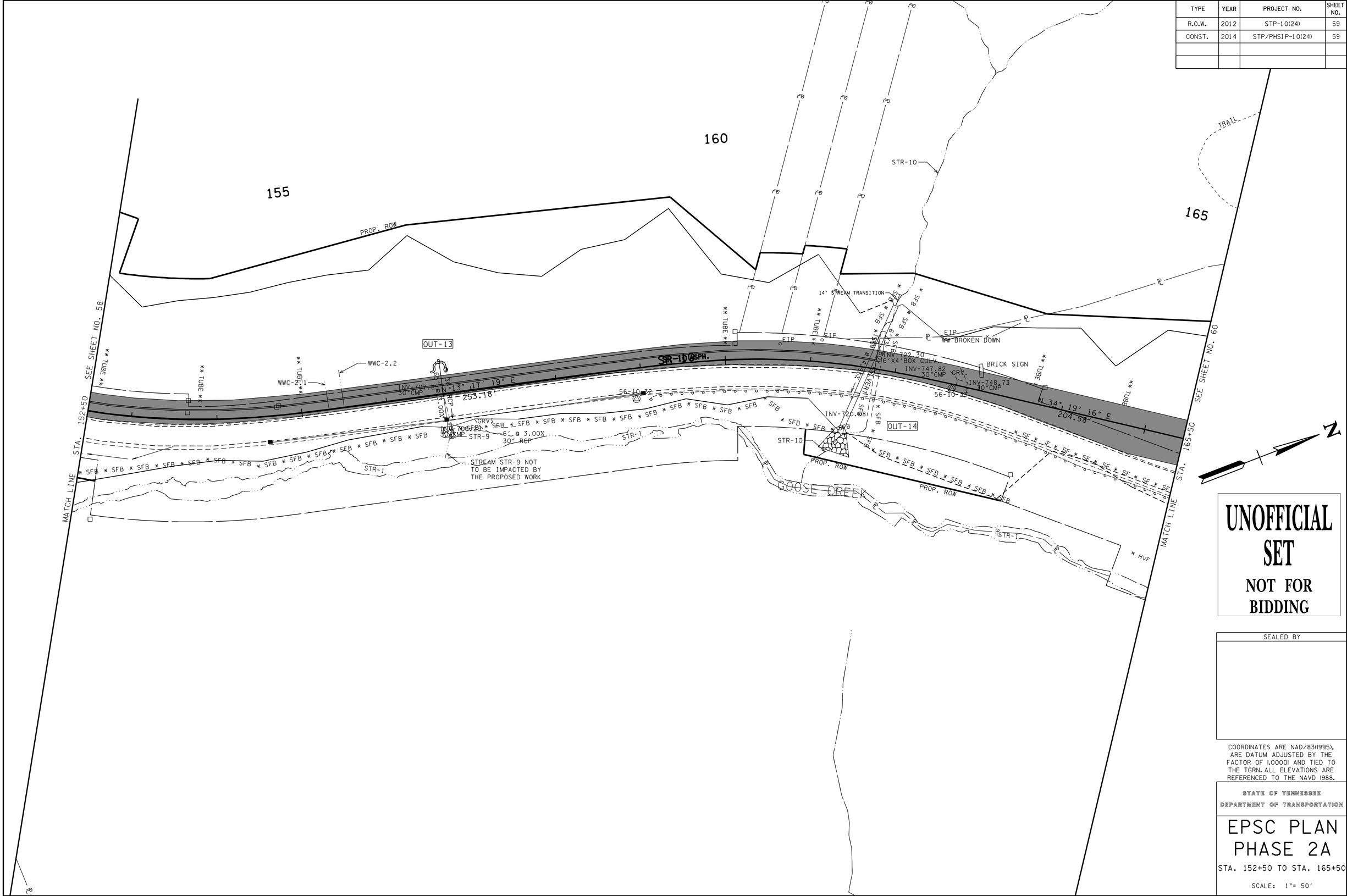
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	59
CONST.	2014	STP/PHSIP-10(24)	59



UNOFFICIAL SET

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STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 2A

STA. 152+50 TO STA. 165+50

SCALE: 1"= 50'

13-MAR-2014 11:48
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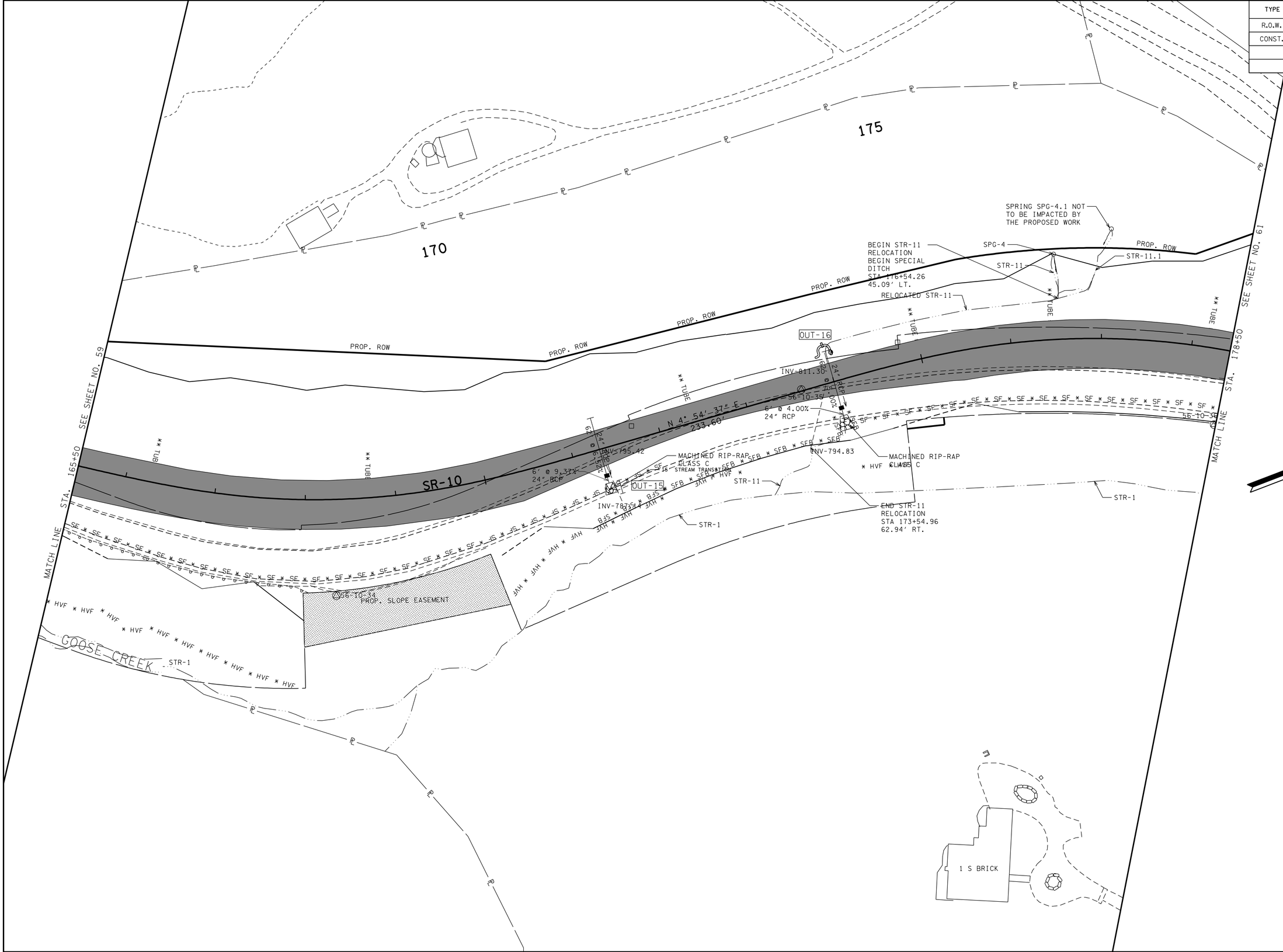
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	60
CONST.	2014	STP/PHSIP-10(24)	60



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 2A

STA. 165+50 TO STA. 178+50

SCALE: 1"= 50'

13-MAR-2014 11:48
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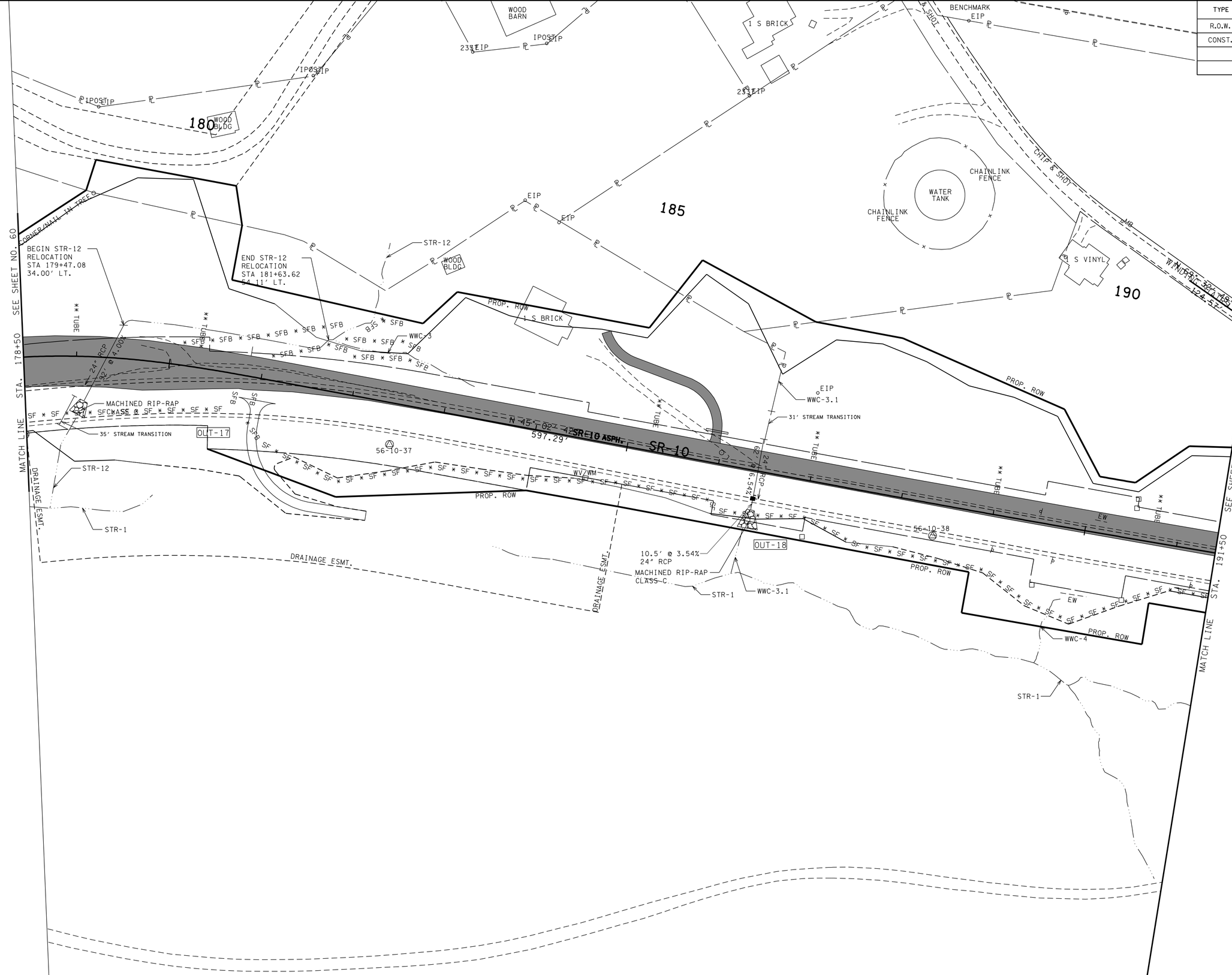
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	61
CONST.	2014	STP/PHSIP-10(24)	61



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 2A

STA. 178+50 TO STA. 191+50

SCALE: 1"= 50'

13-MAR-2014 11:48
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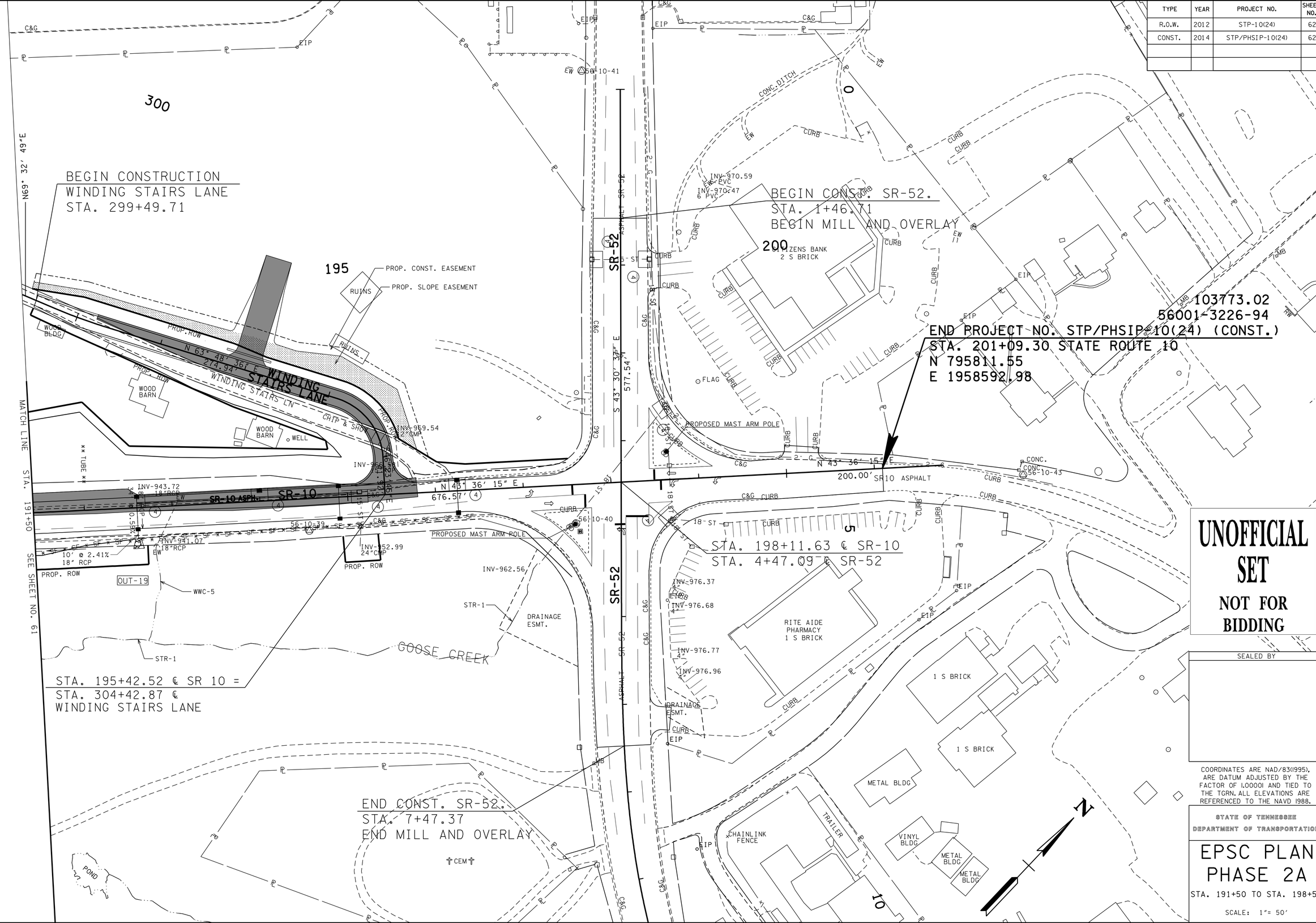
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	62
CONST.	2014	STP/PHSIP-10(24)	62



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 2A

STA. 191+50 TO STA. 198+50

SCALE: 1"= 50'

13-MAR-2014 11:48
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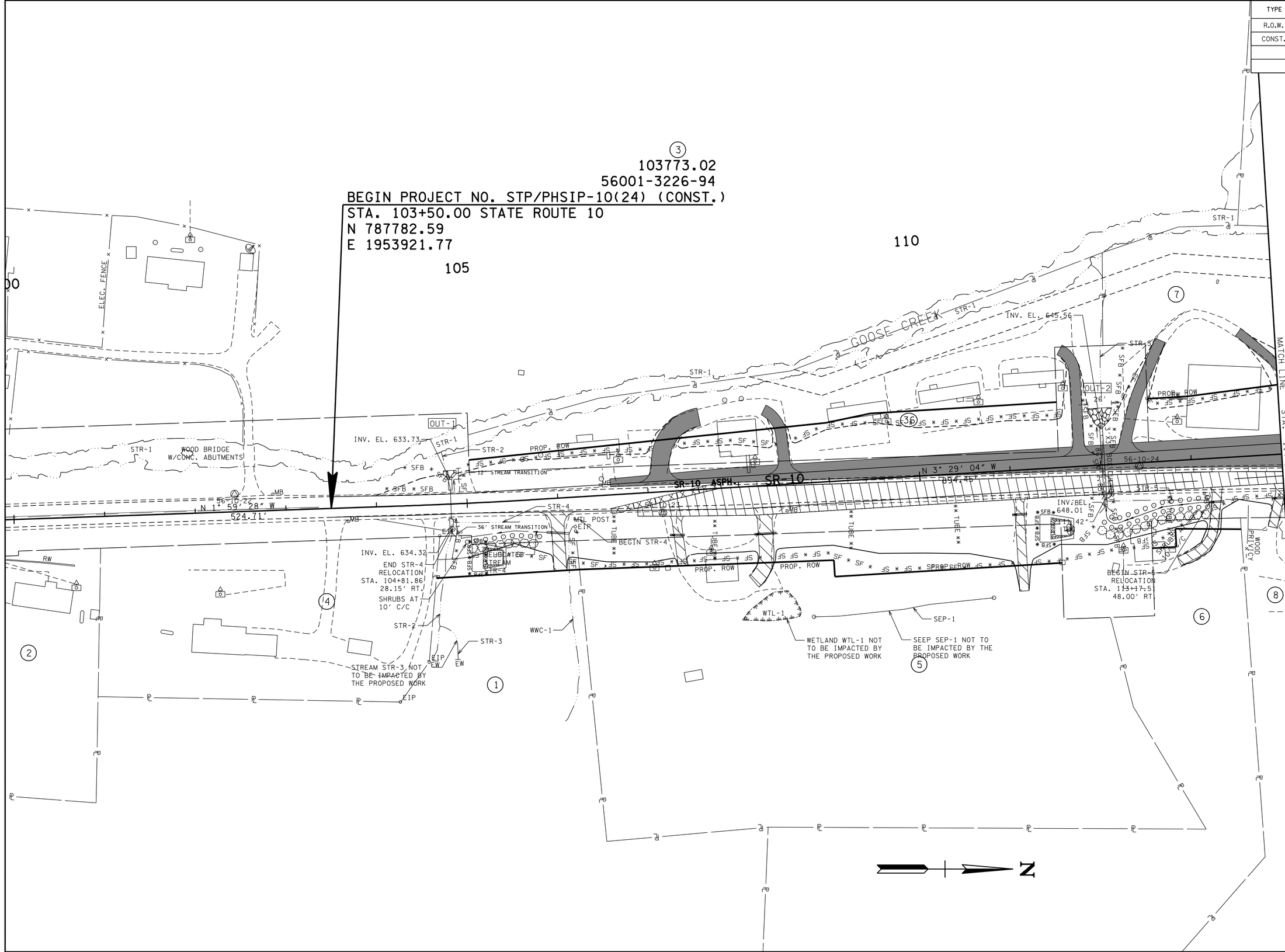
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	63
CONST.	2014	STP/PHSIP-10(24)	63



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

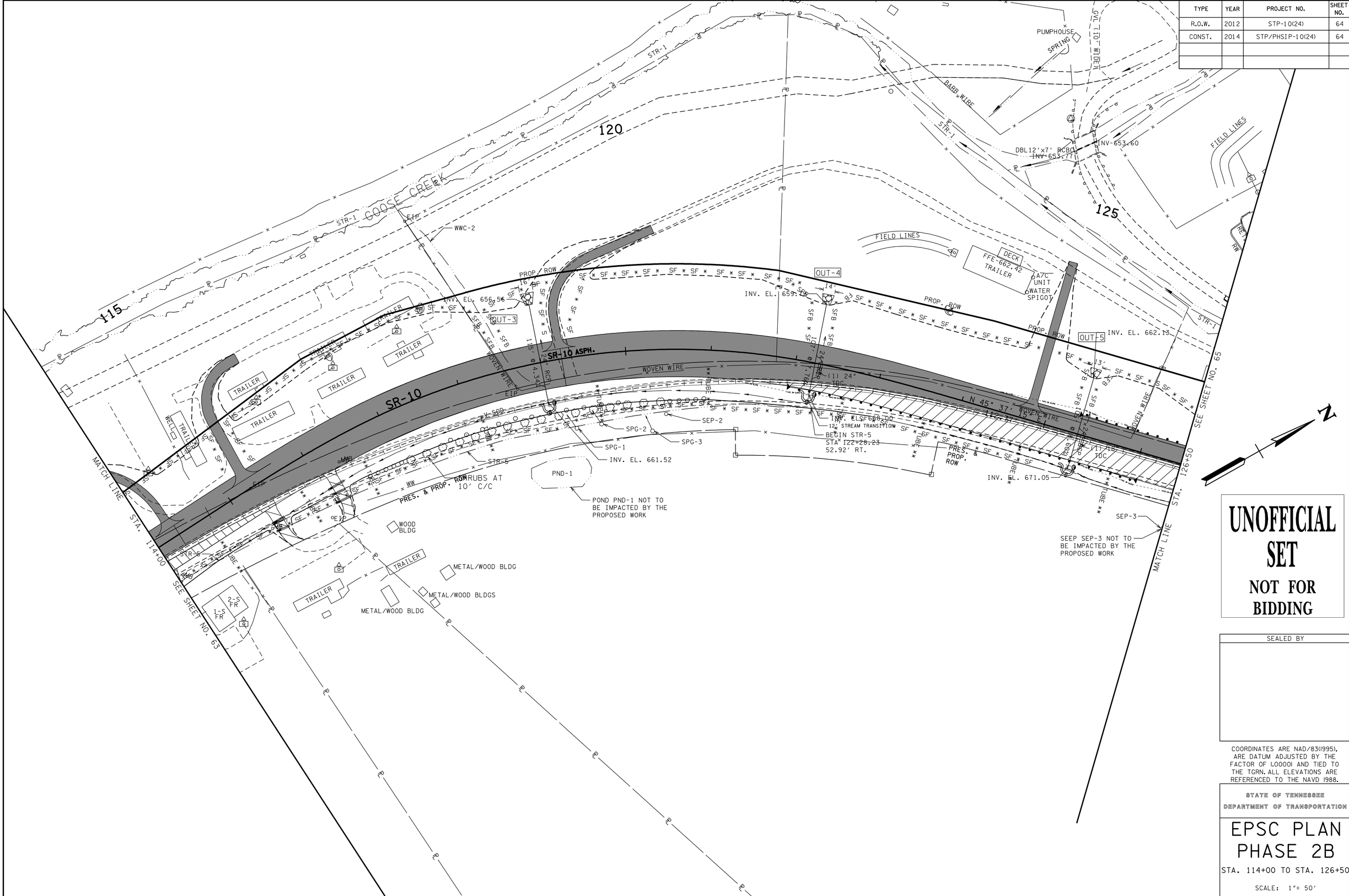
EPSC PLAN PHASE 2B

STA. 101+50 TO STA. 114+00

SCALE: 1"= 50'

13-MAR-2014 11:48
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\063.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	64
CONST.	2014	STP/PHSIP-10(24)	64



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

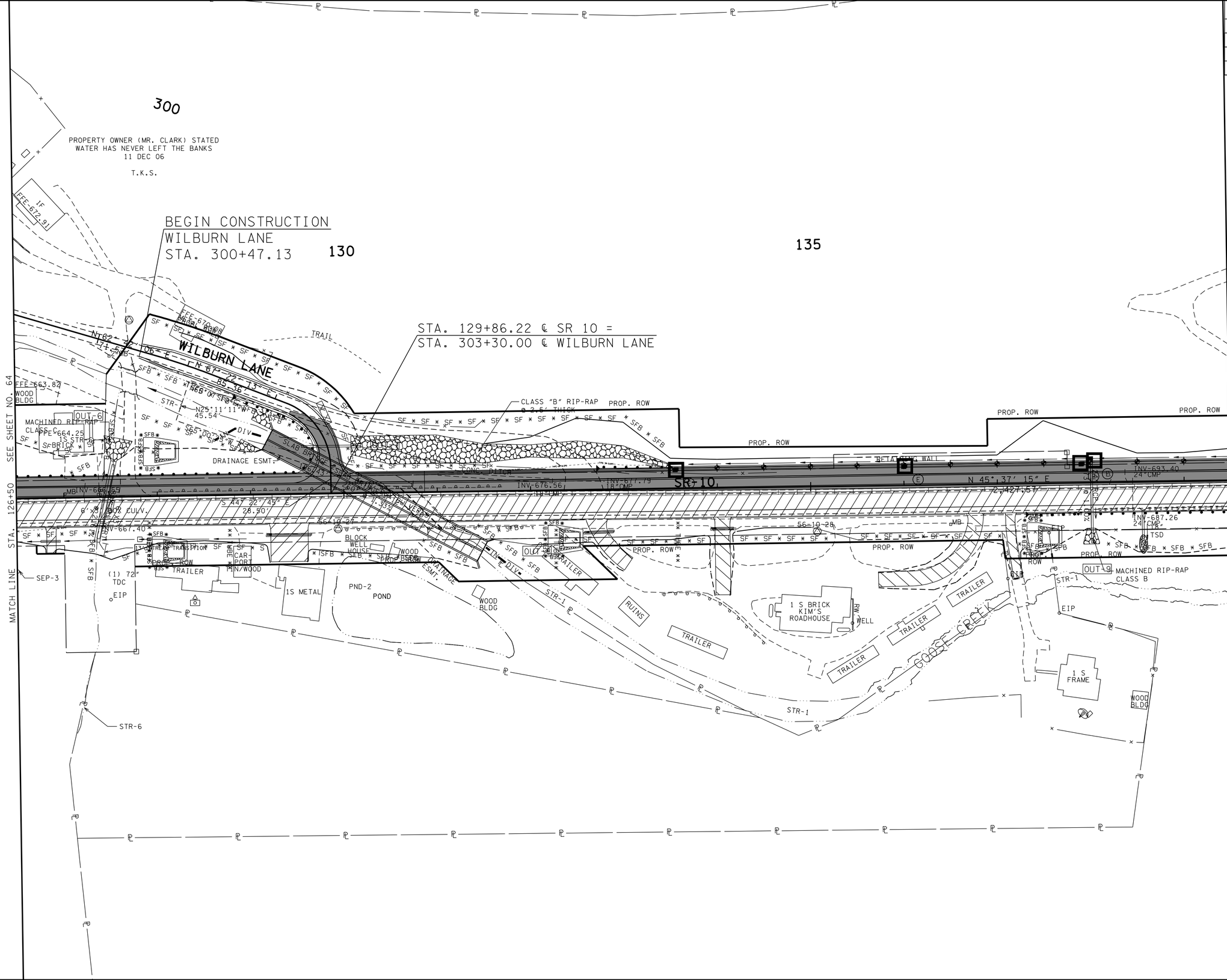
EPSC PLAN PHASE 2B

STA. 114+00 TO STA. 126+50

SCALE: 1"= 50'

13-MAR-2014 11:48
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\064.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	65
CONST.	2014	STP/PHSIP-10(24)	65



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

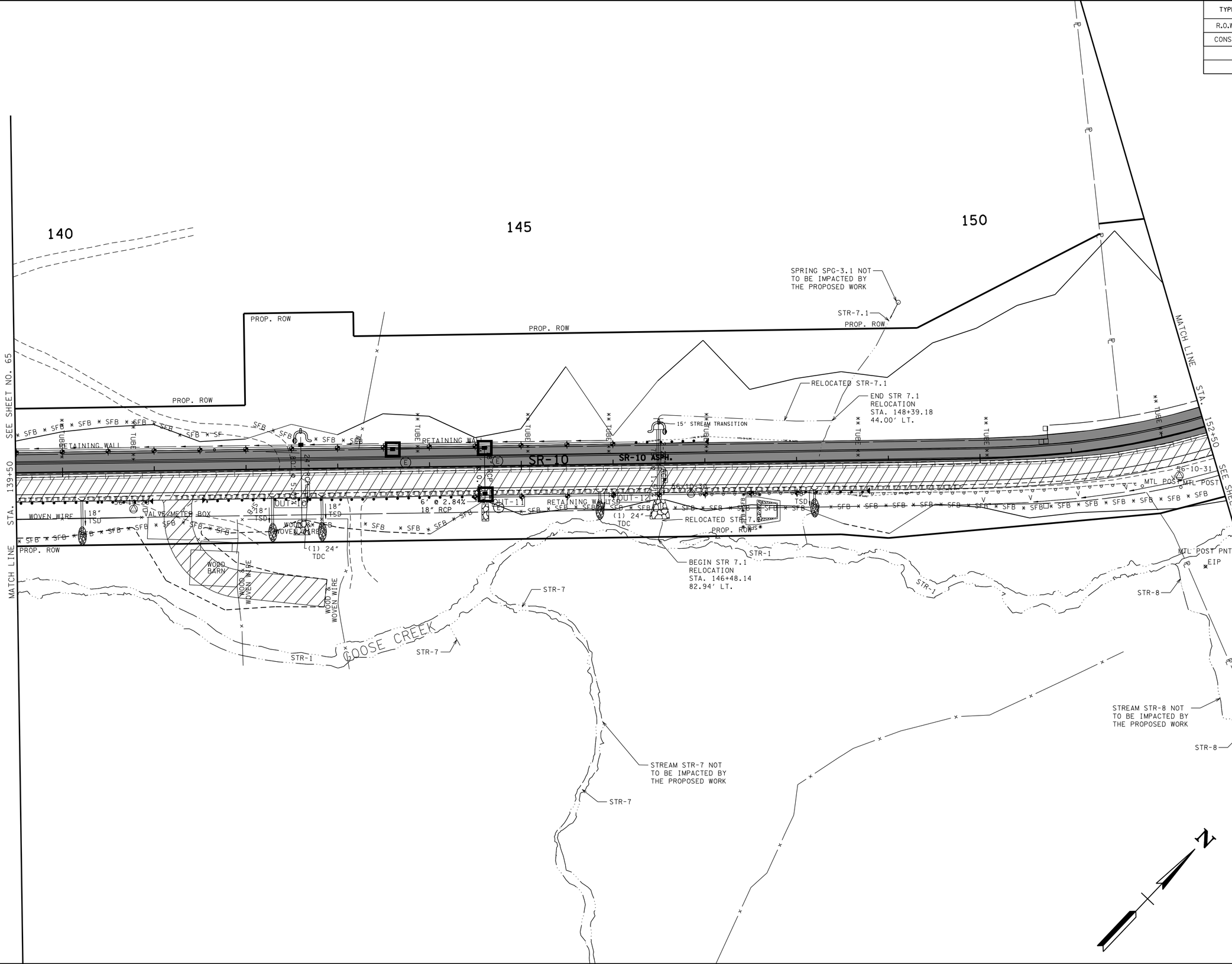
EPSC PLAN PHASE 2B

STA. 126+50 TO STA. 139+50

SCALE: 1"= 50'

13-MAR-2014 11:49
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\065.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	66
CONST.	2014	STP/PHSIP-10(24)	66



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

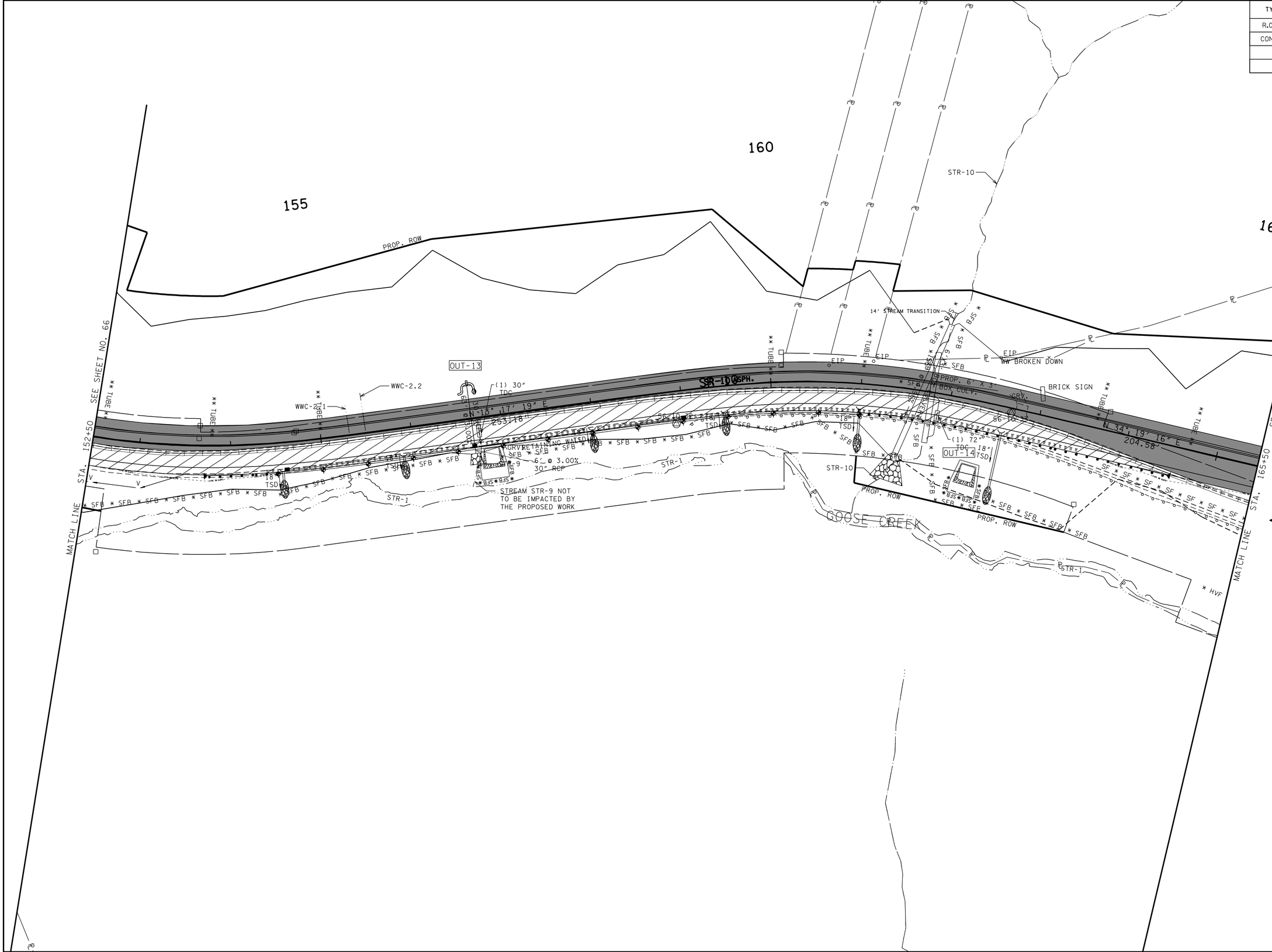
EPSC PLAN PHASE 2B

STA. 139+50 TO STA. 152+50

SCALE: 1"= 50'

03-MAR-2014 11:49
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\066.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	67
CONST.	2014	STP/PHSIP-10(24)	67



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STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

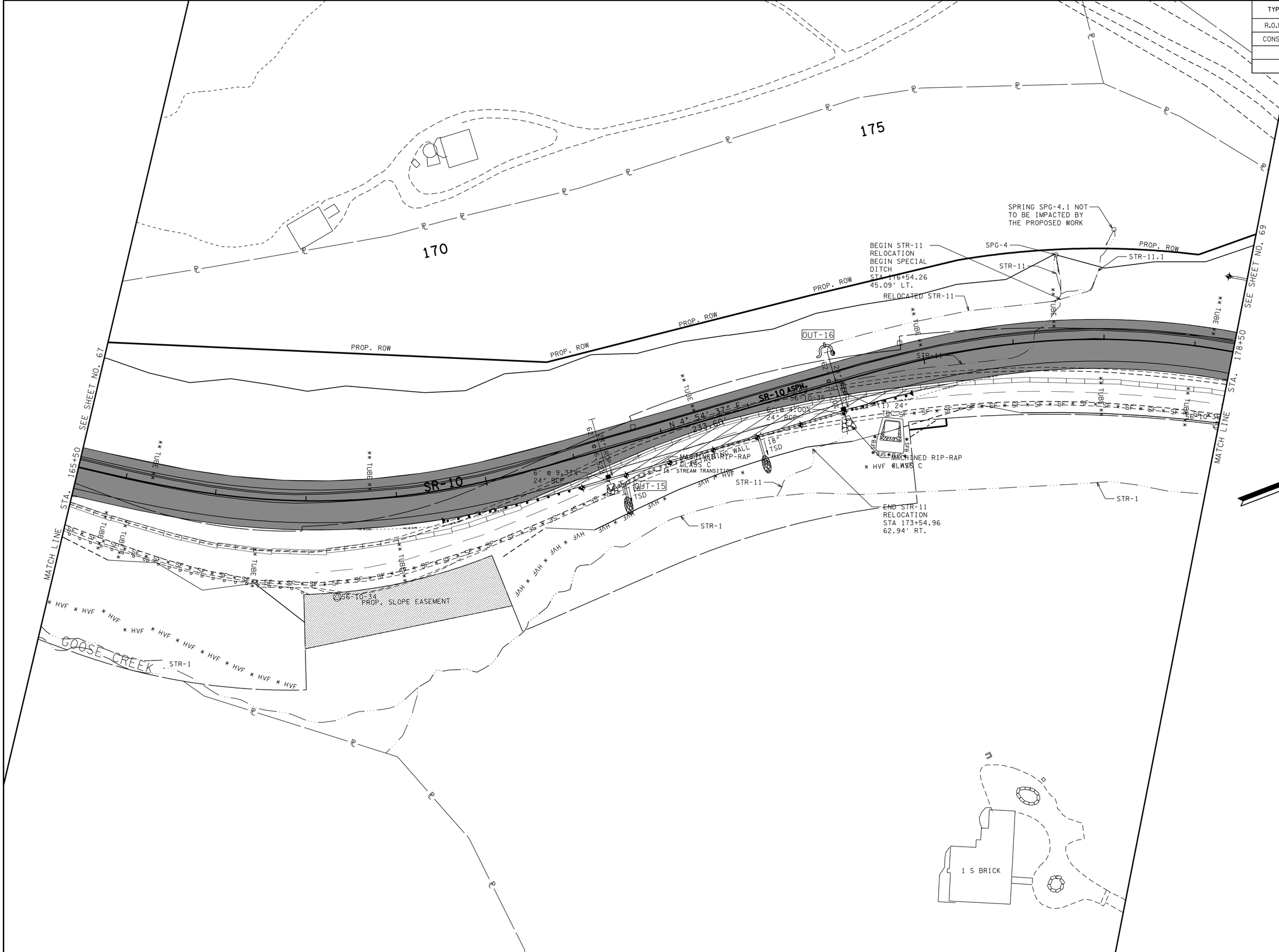
EPSC PLAN PHASE 2B

STA. 152+50 TO STA. 165+50

SCALE: 1"= 50'

13-MAR-2014 11:49
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\067.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	68
CONST.	2014	STP/PHSIP-10(24)	68



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

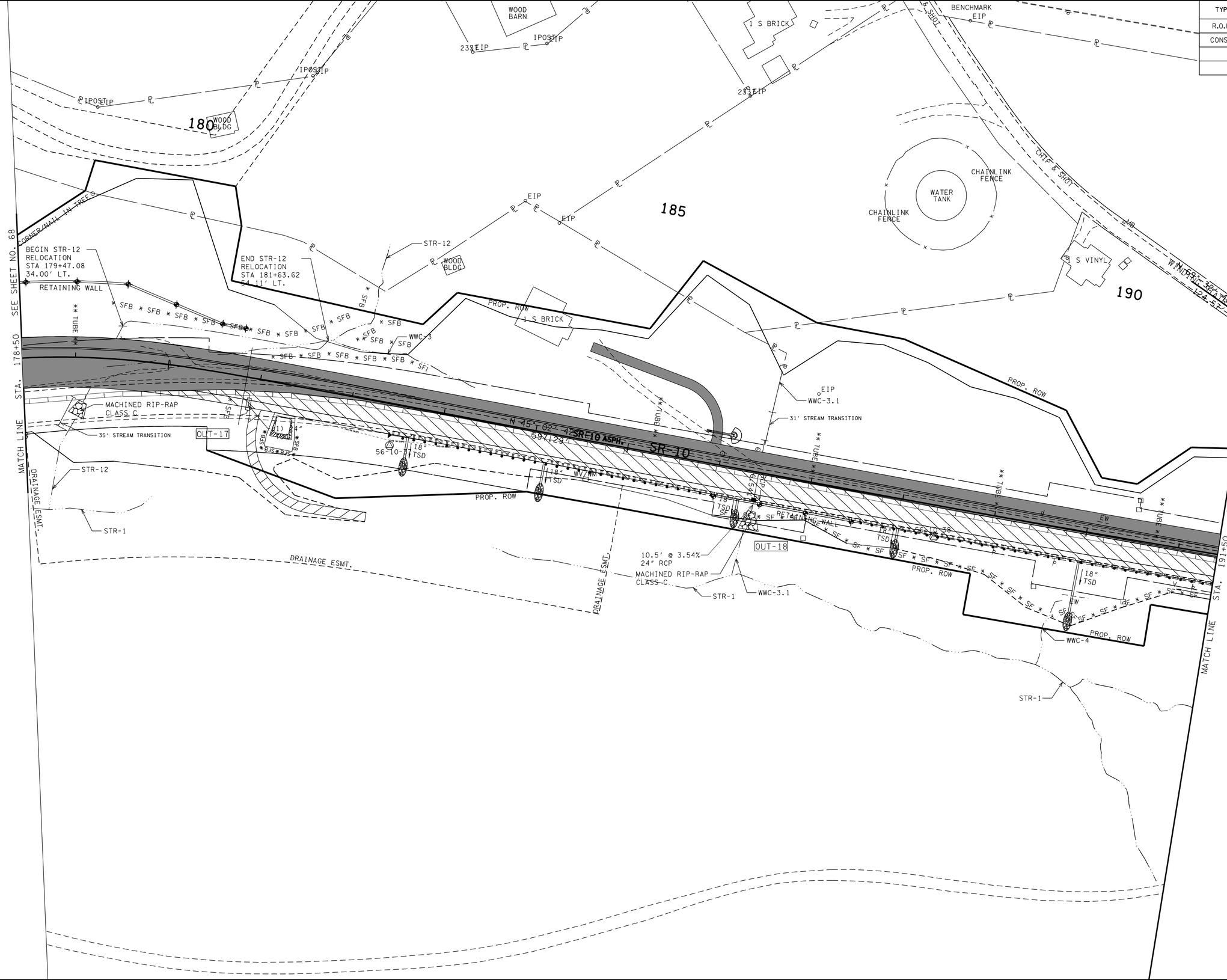
EPSC PLAN PHASE 2B

STA. 165+50 TO STA. 178+50

SCALE: 1"= 50'

13-MAR-2014 11:49
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\068.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	69
CONST.	2014	STP/PHSIP-10(24)	69



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

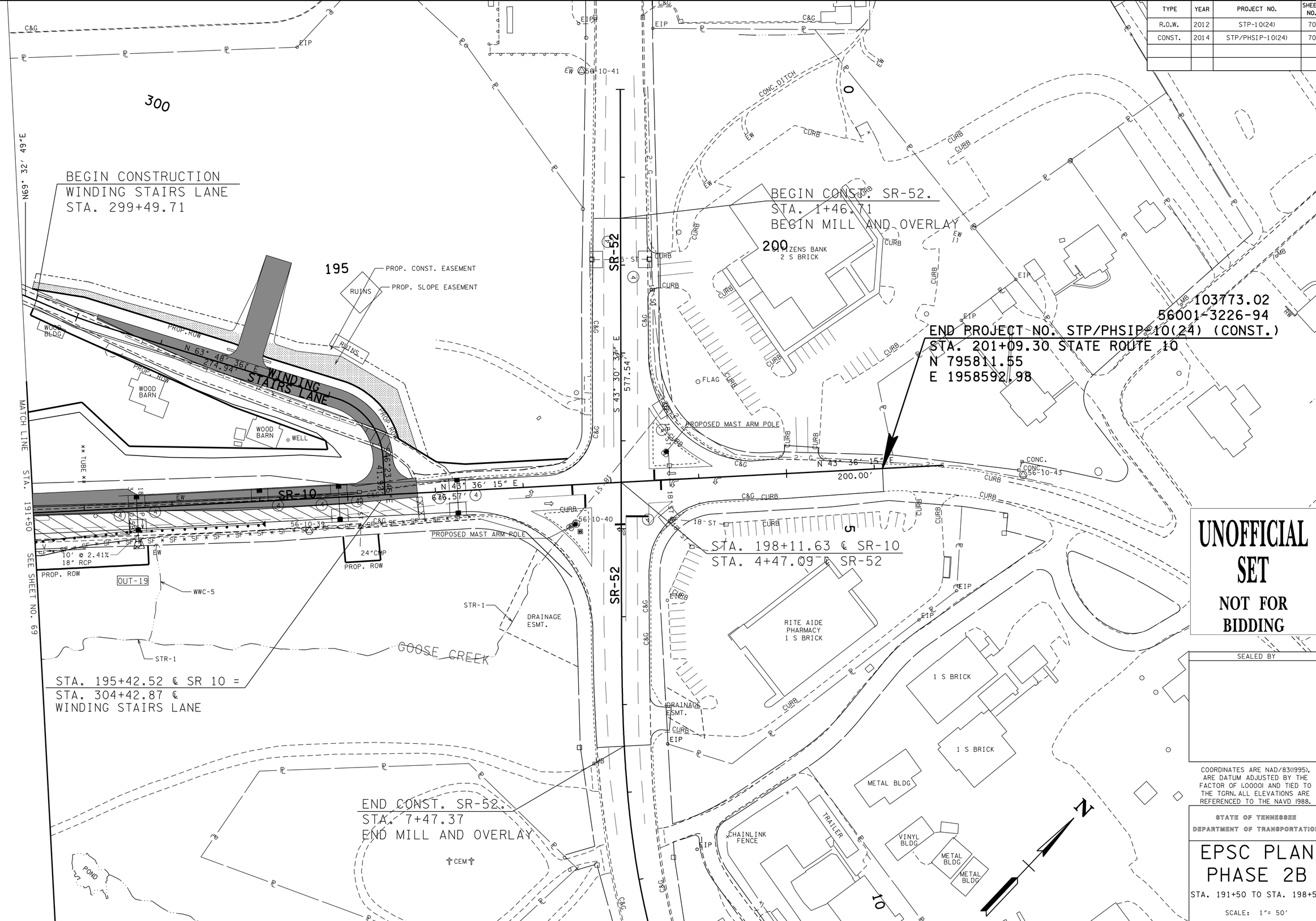
EPSC PLAN PHASE 2B

STA. 178+50 TO STA. 191+50

SCALE: 1"= 50'

13-MAR-2014 11:49
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\069.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	70
CONST.	2014	STP/PHSIP-10(24)	70



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

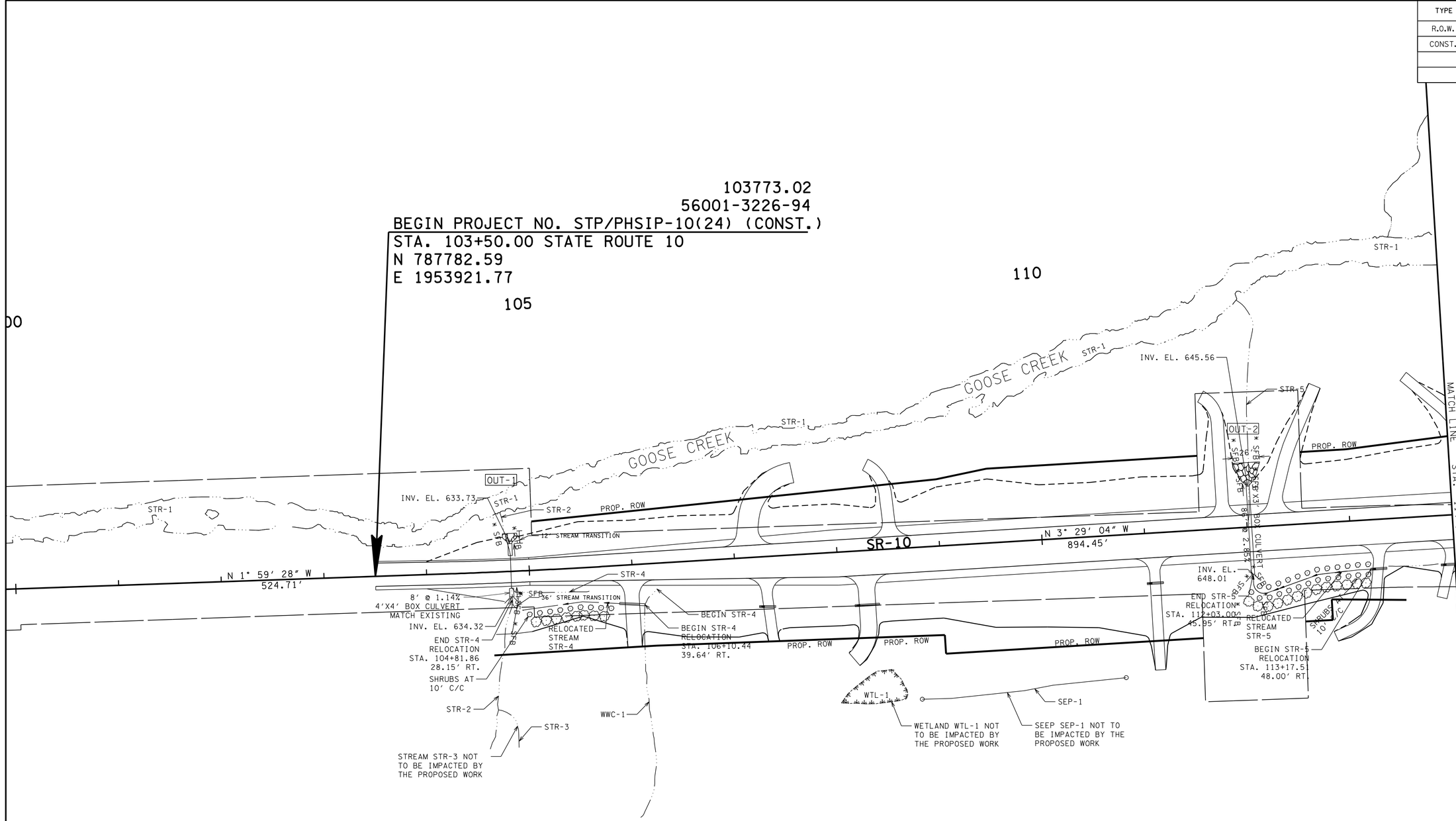
EPSC PLAN PHASE 2B

STA. 191+50 TO STA. 198+50

SCALE: 1"= 50'

13-MAR-2014 11:49
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\070.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	71
CONST.	2014	STP/PHSIP-10(24)	71



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

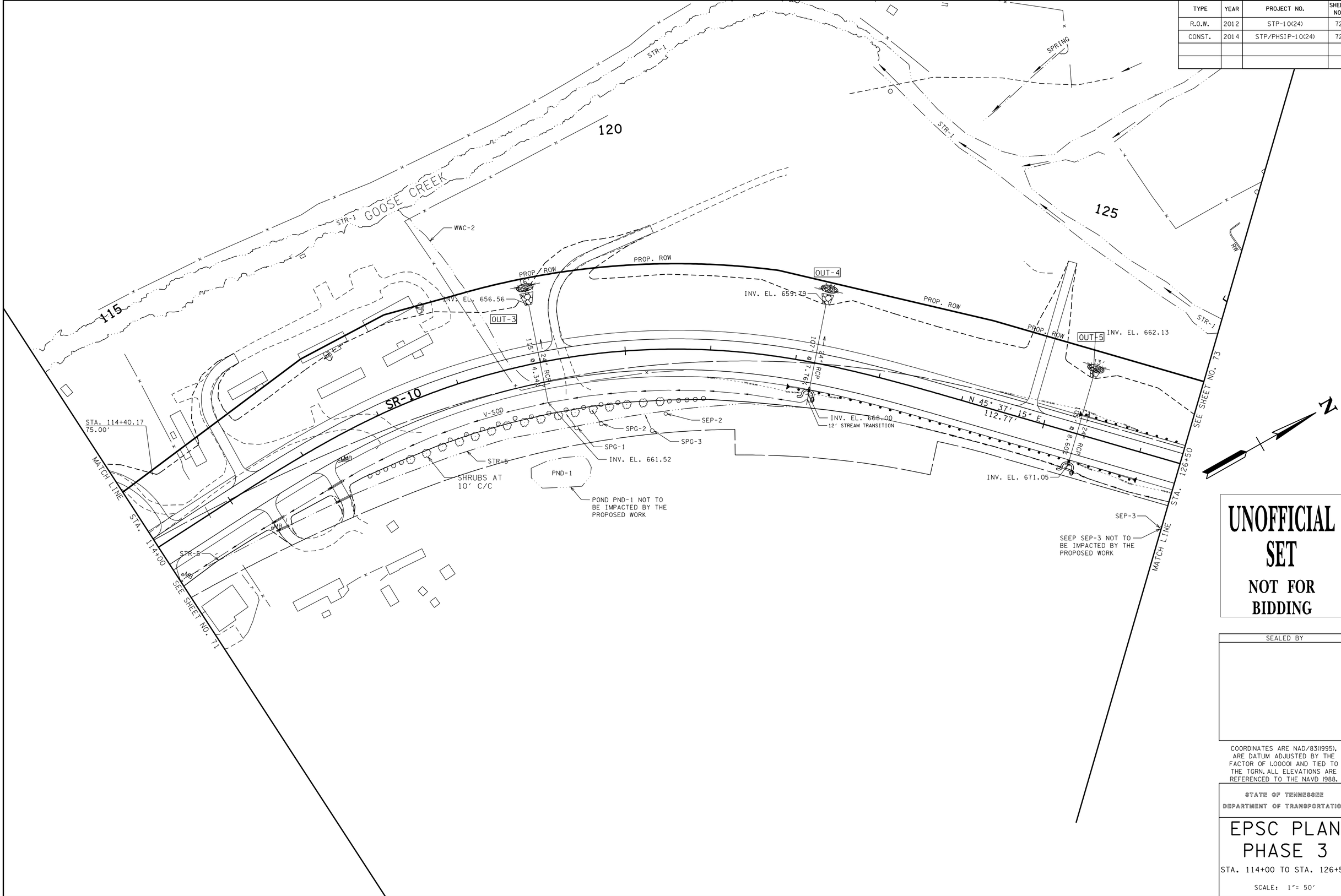
EPSC PLAN PHASE 3

STA. 101+50 TO STA. 114+00

SCALE: 1"= 50'

13-MAR-2014 11:49
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\071.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	72
CONST.	2014	STP/PHSIP-10(24)	72



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

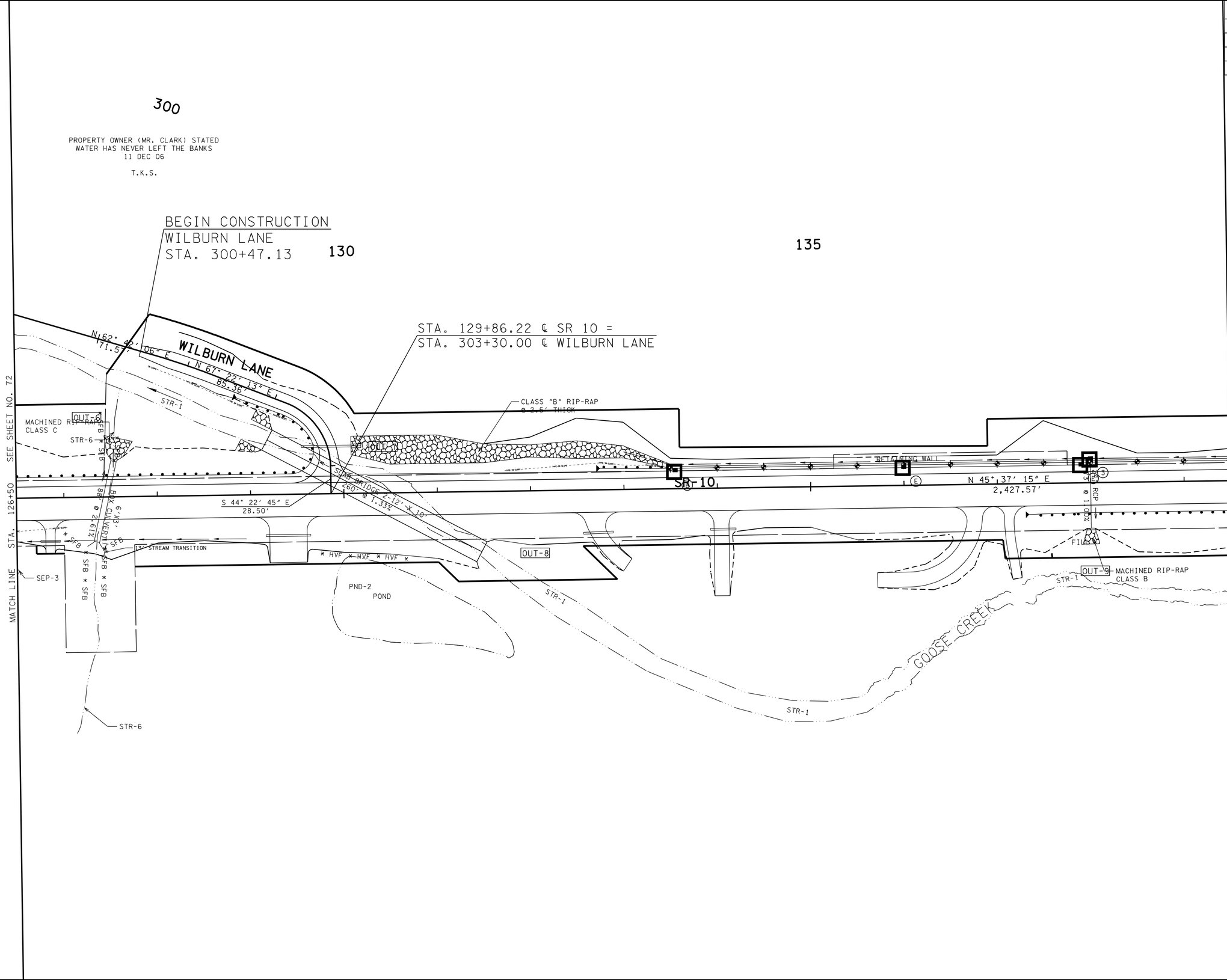
EPSC PLAN PHASE 3

STA. 114+00 TO STA. 126+50

SCALE: 1"= 50'

13-MAR-2014 11:49
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\072.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	73
CONST.	2014	STP/PHSIP-10(24)	73



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

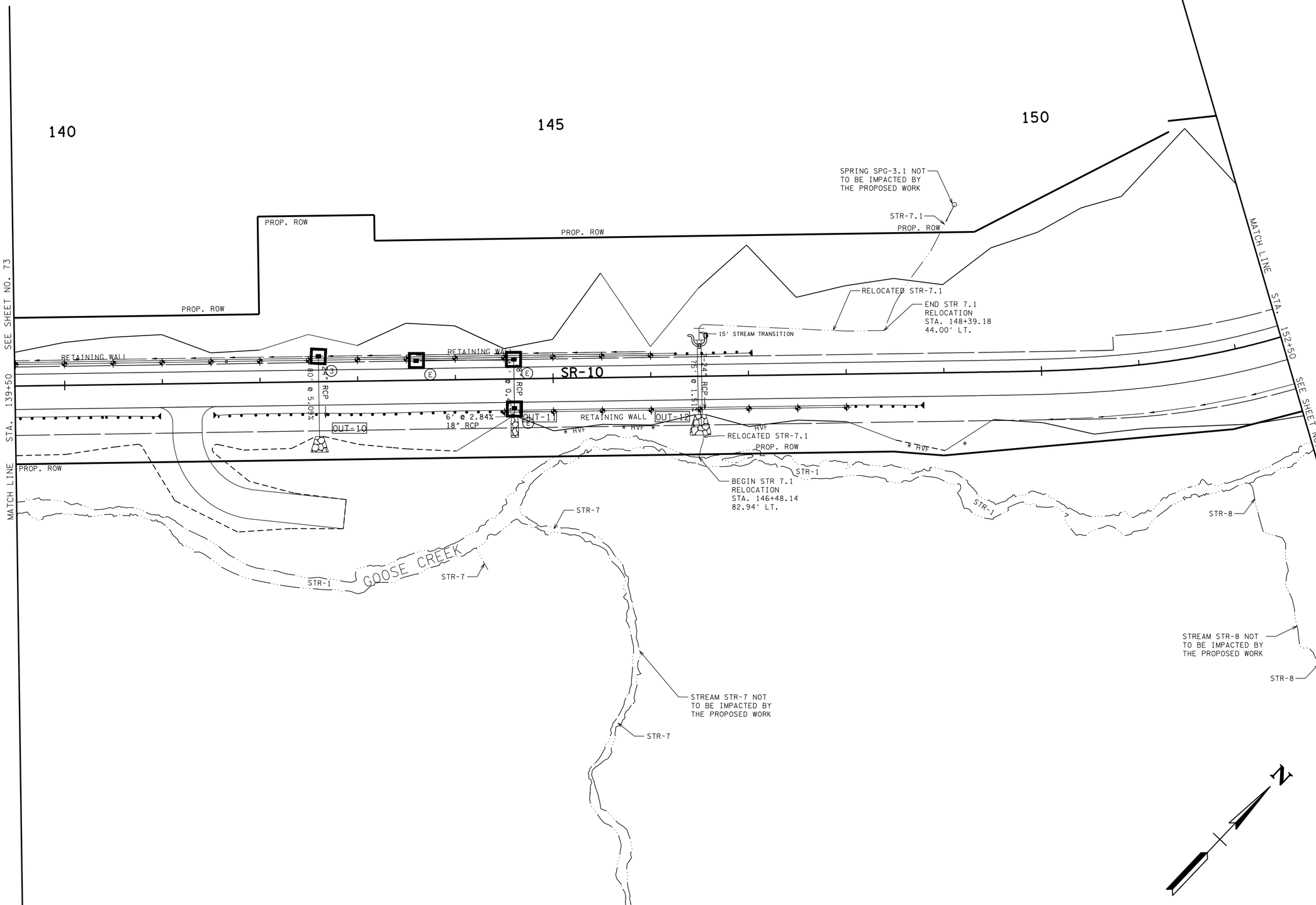
EPSC PLAN PHASE 3

STA. 126+50 TO STA. 139+50

SCALE: 1"= 50′

13-MAR-2014 11:49
\\AMNASFIL02\CADD\PRJ\34240A_SRIO\CAD\DGN\073.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	74
CONST.	2014	STP/PHSIP-10(24)	74



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 3

STA. 139+50 TO STA. 152+50

SCALE: 1"= 50'

13-MAR-2014 11:49
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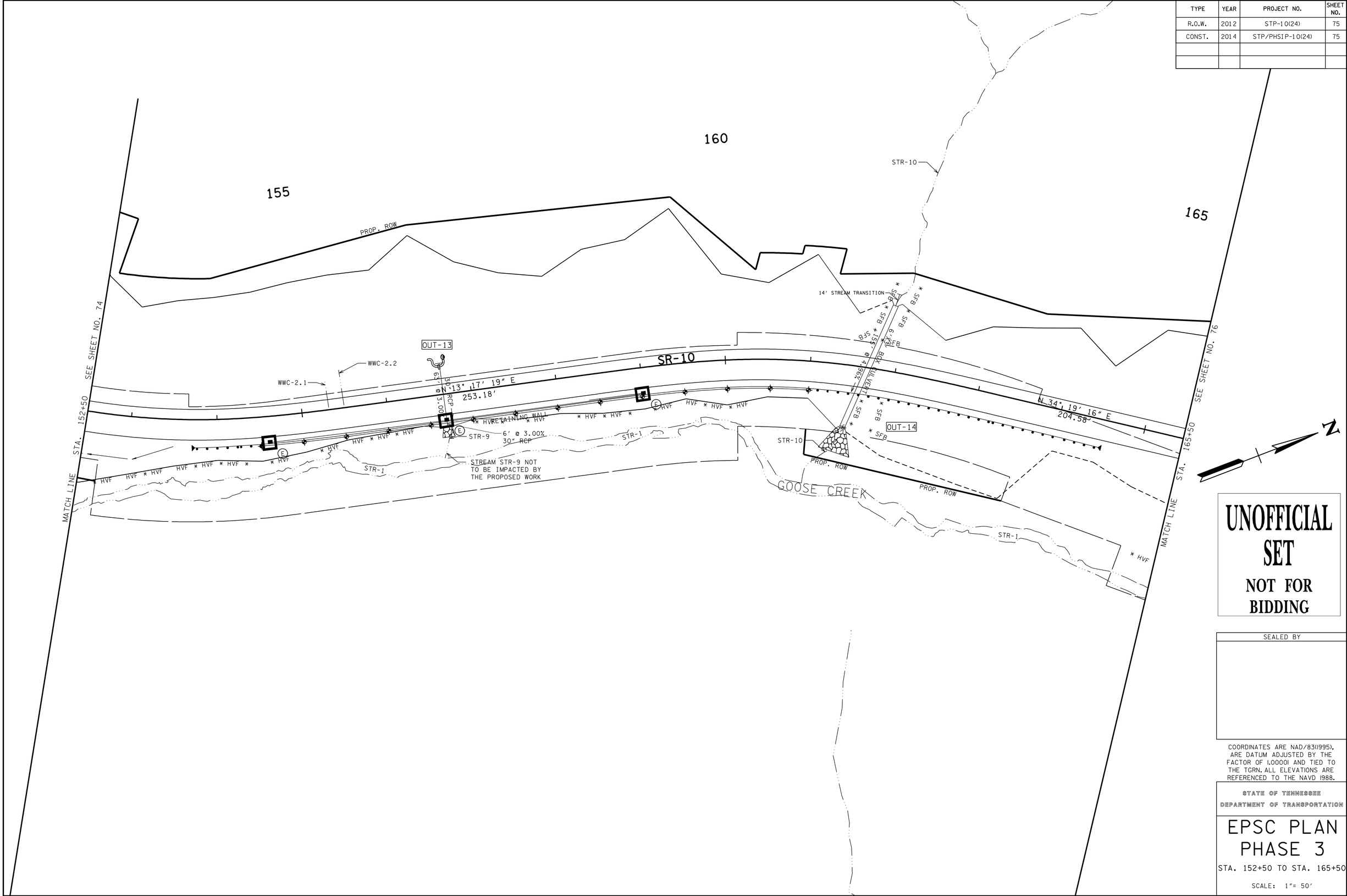
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	75
CONST.	2014	STP/PHSIP-10(24)	75



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

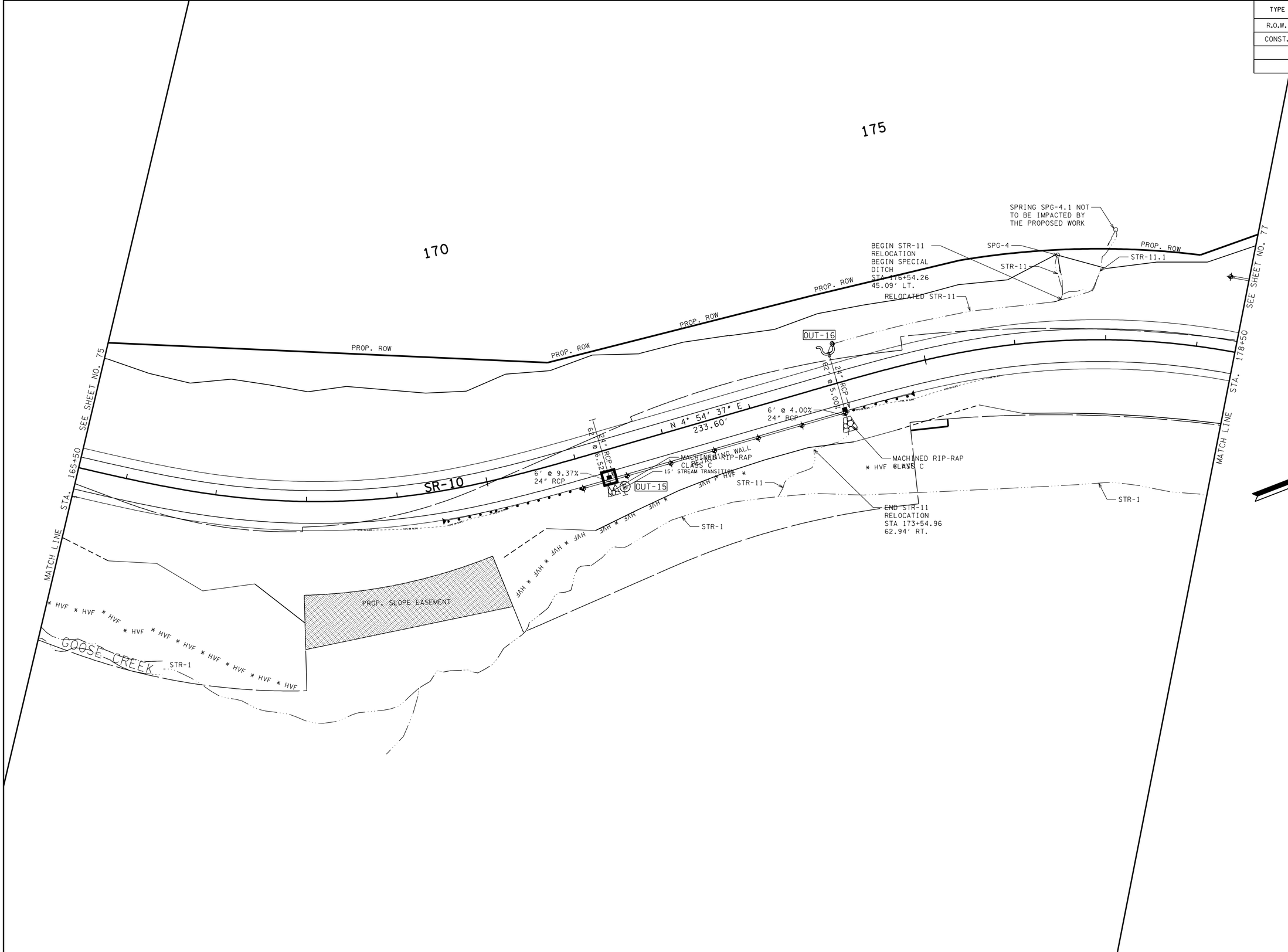
EPSC PLAN PHASE 3

STA. 152+50 TO STA. 165+50

SCALE: 1"= 50'

13-MAR-2014 11:50
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\075.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	76
CONST.	2014	STP/PHSIP-10(24)	76



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

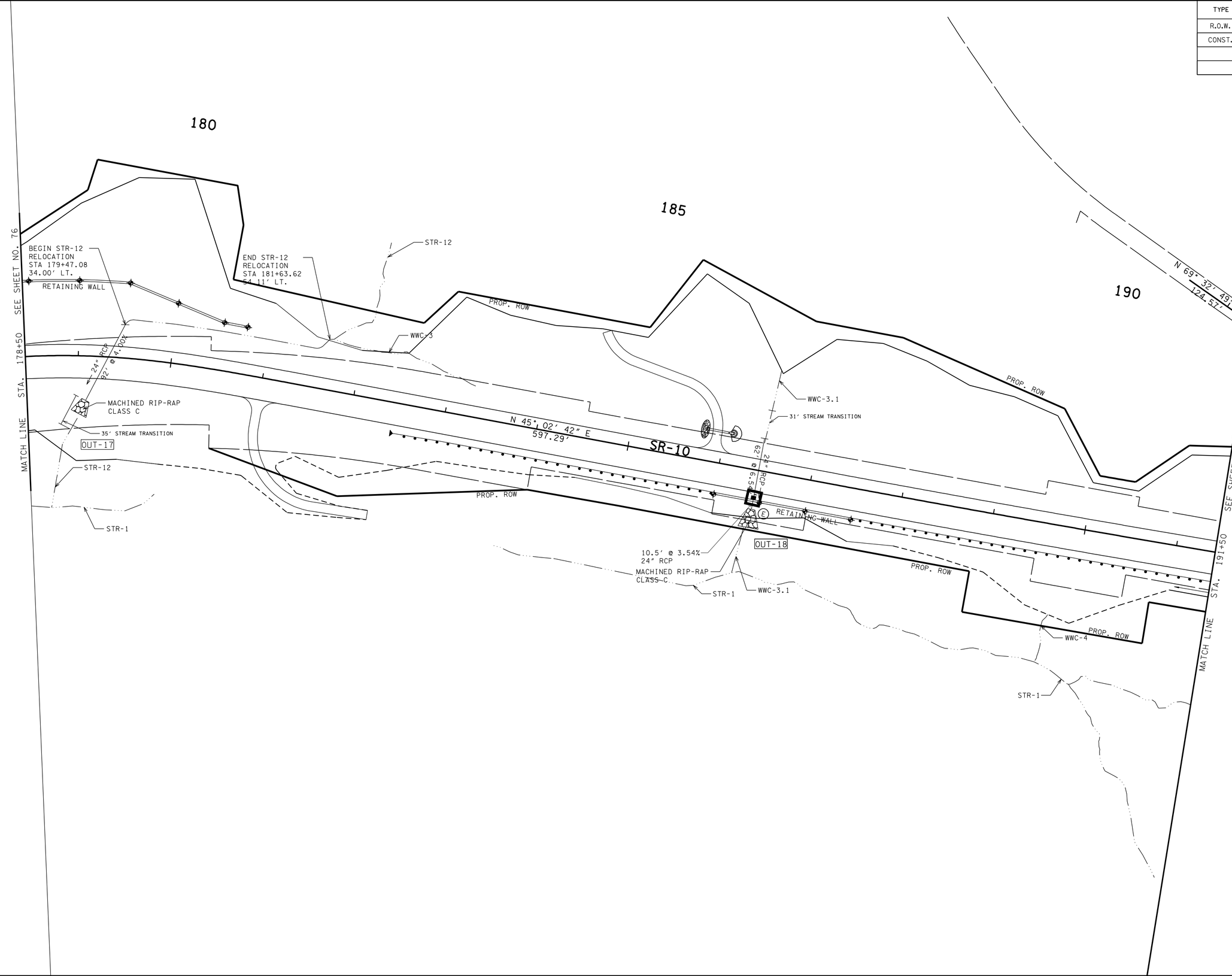
EPSC PLAN PHASE 3

STA. 165+50 TO STA. 178+50

SCALE: 1"= 50'

13-MAR-2014 11:50
\\AMNASFIL02\CADD\PRJ\34240A_SRIO\CAD\DGN\076.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	77
CONST.	2014	STP/PHSIP-10(24)	77



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

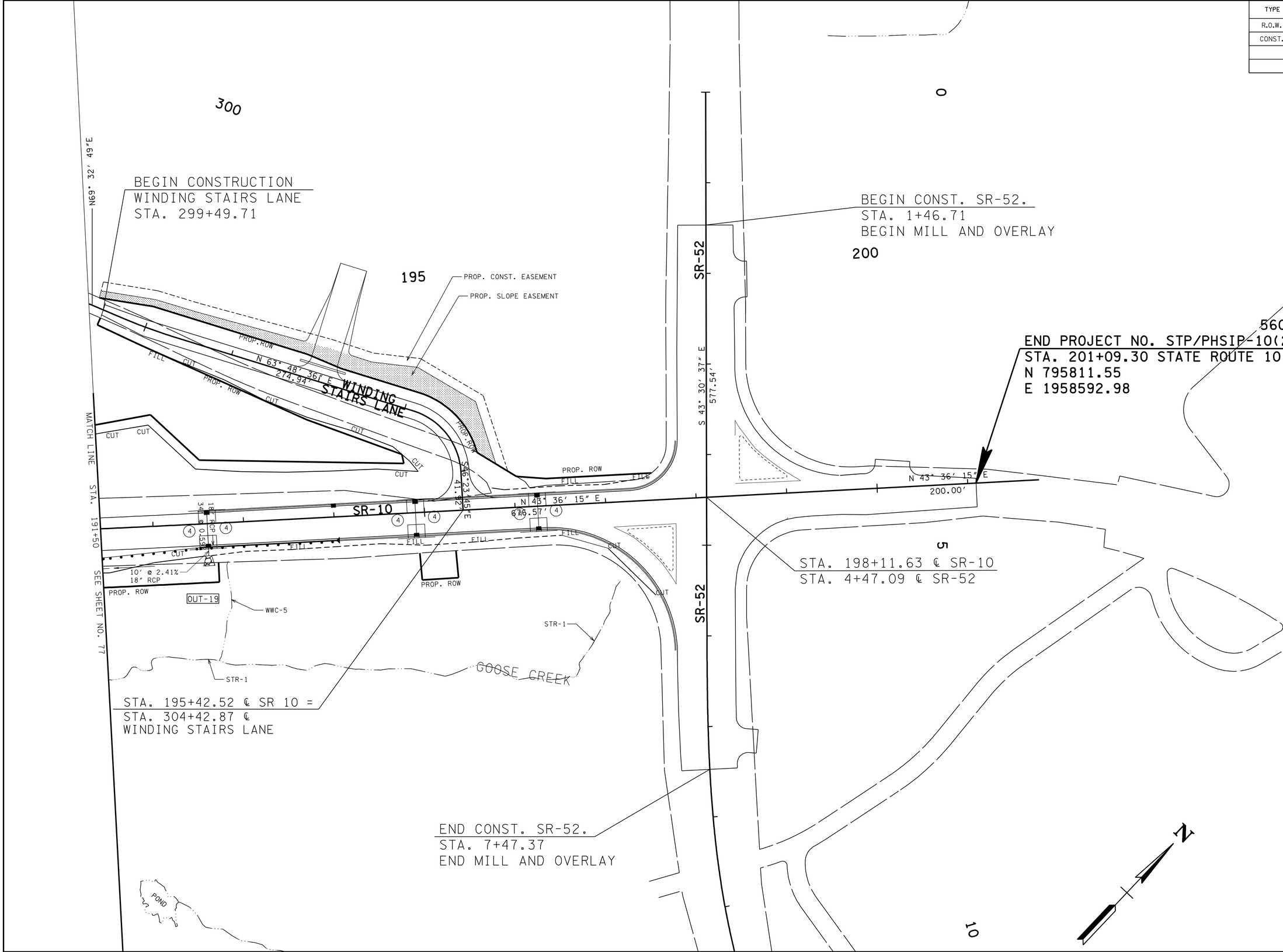
EPSC PLAN PHASE 3

STA. 178+50 TO STA. 191+50

SCALE: 1"= 50'

03-MAR-2014 11:50
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\077.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	78
CONST.	2014	STP/PHSIP-10(24)	78



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EPSC PLAN PHASE 3

STA. 191+50 TO STA. 198+50

SCALE: 1"= 50′

13-MAR-2014 11:50
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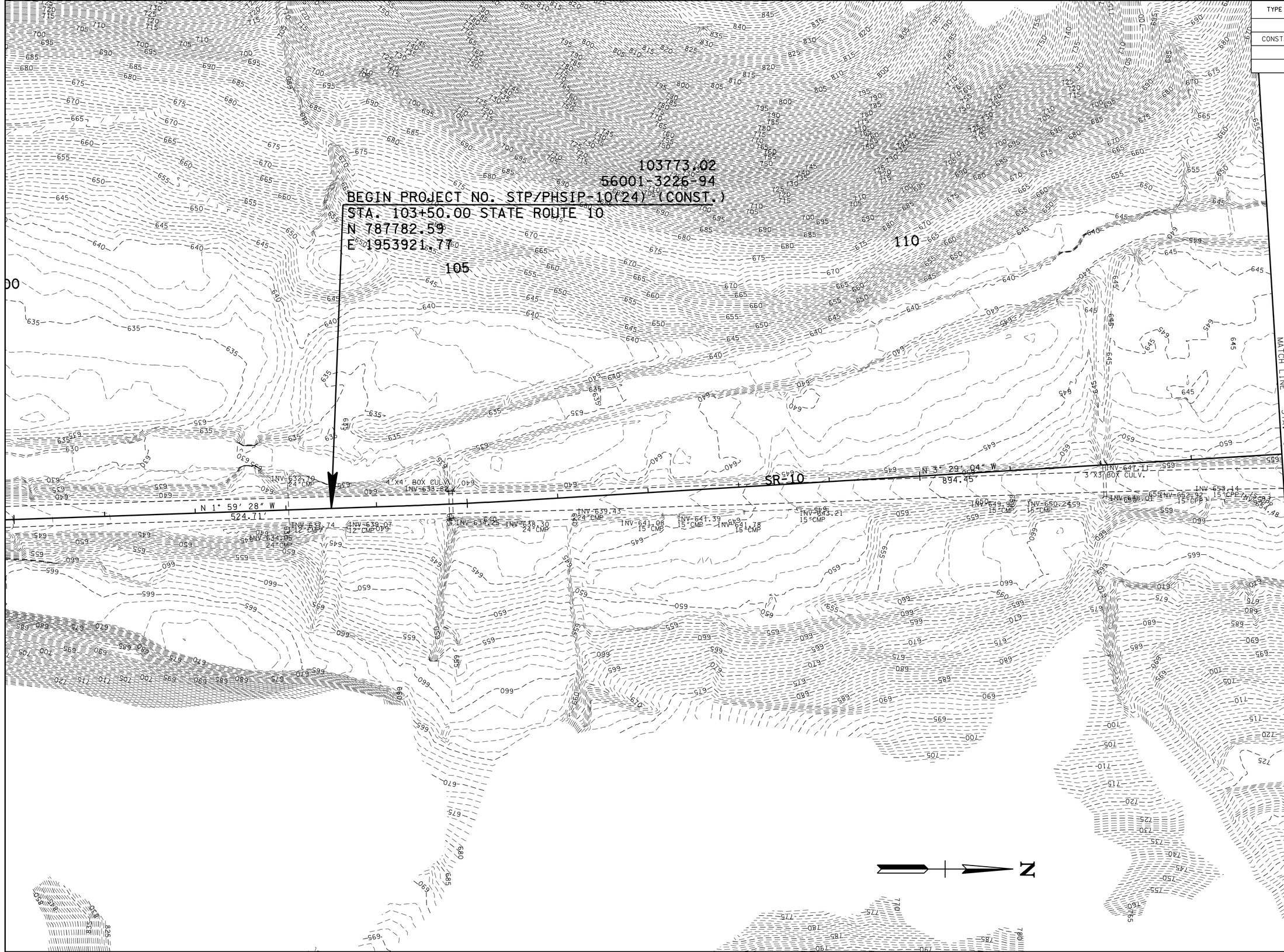
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78A



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EXISTING CONTOURS

STA. 101+50 TO STA. 114+00

SCALE: 1"= 50'

13-MAR-2014 11:50
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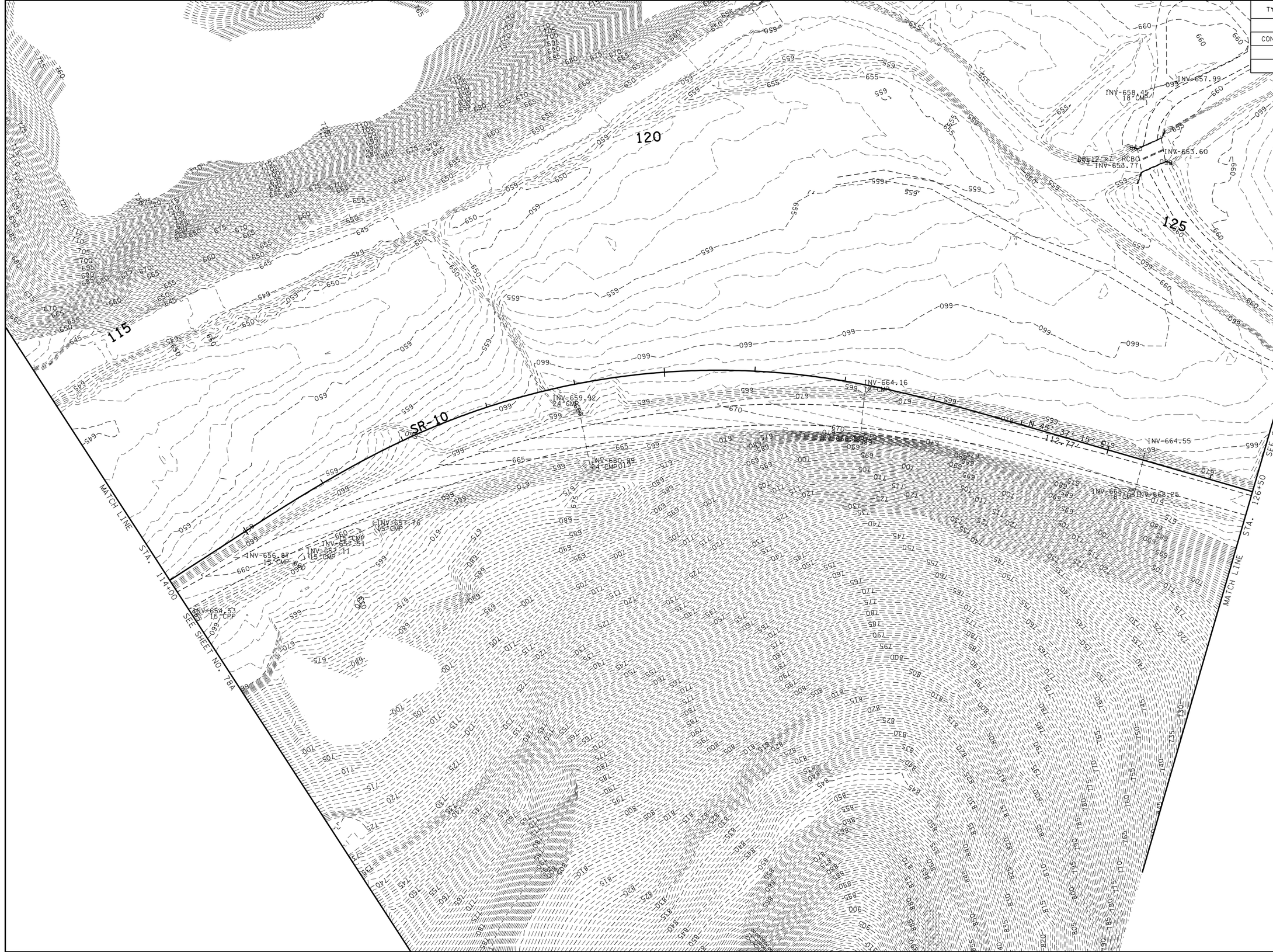
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78B



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

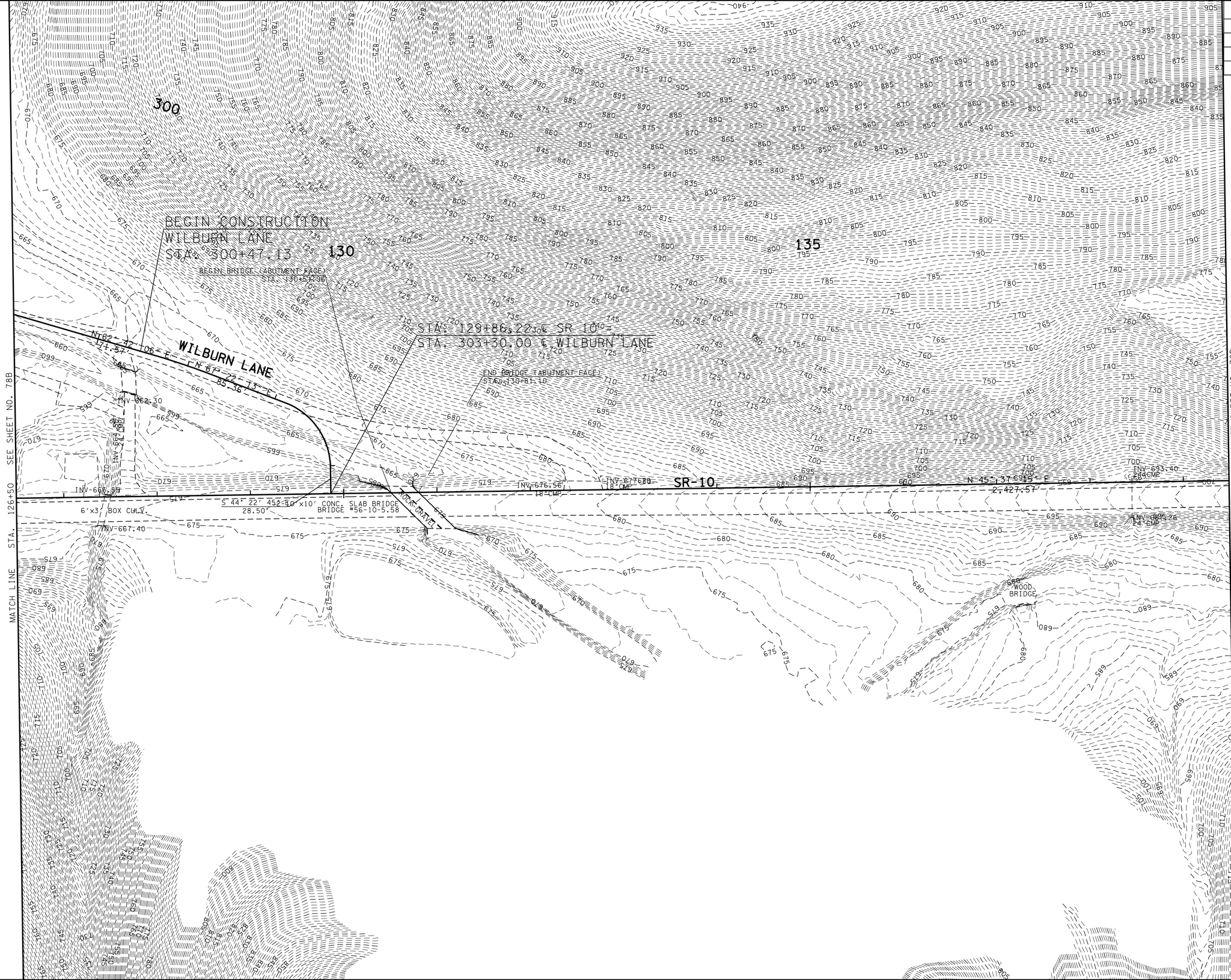
EXISTING CONTOURS

STA.114+00 TO STA.126+50

SCALE: 1"= 50'

13-MAR-2014 11:50
\\AMNASFL02\CADD\PRJ\34240A_SRIO\CAD\DGN\078B.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78C



UNOFFICIAL SET

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SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EXISTING CONTOURS

STA.126+50 TO STA.139+50

SCALE: 1"= 50'

13-MAR-2014 11:50
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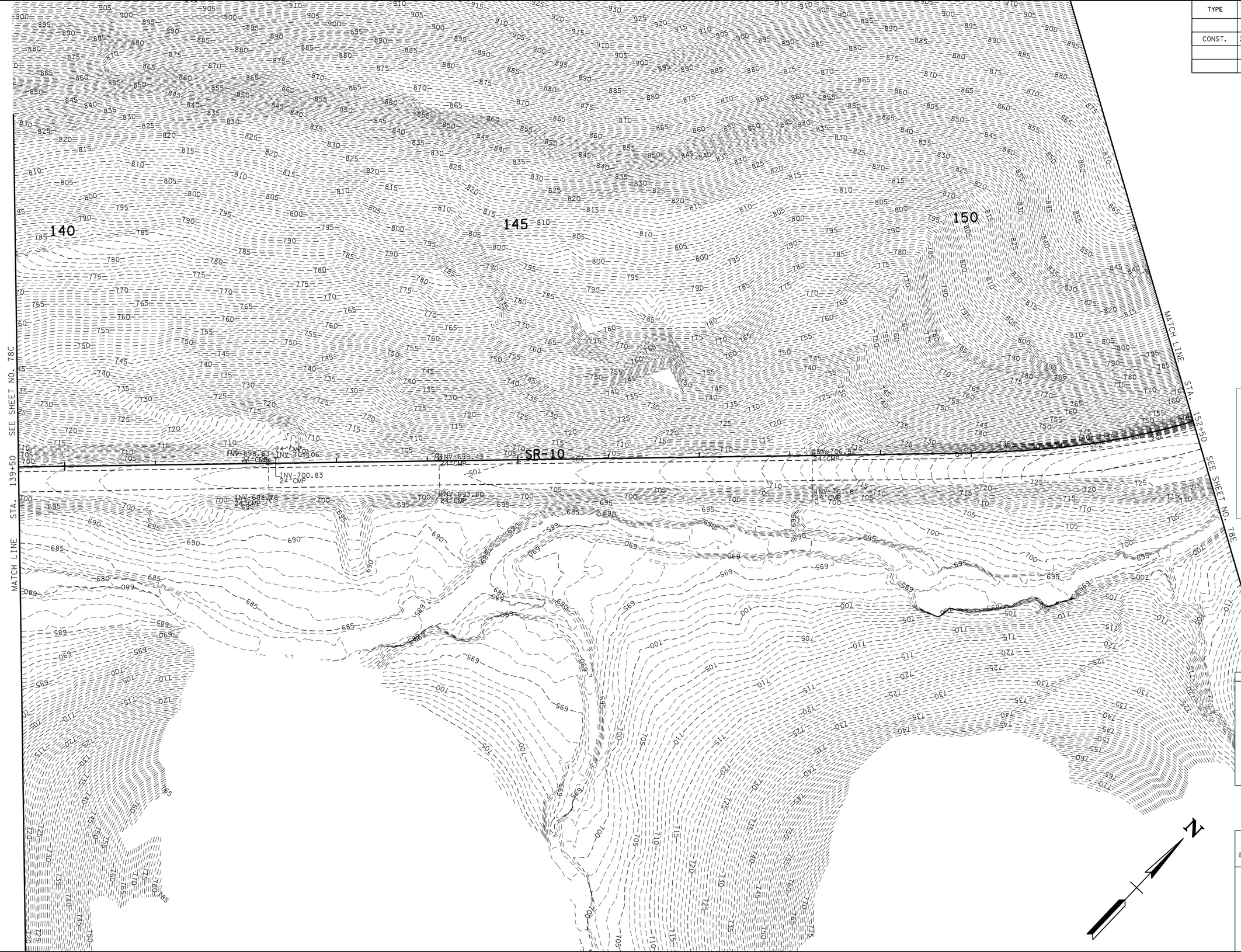
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78D



UNOFFICIAL SET

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EXISTING CONTOURS

STA. 139+50 TO STA. 152+50

SCALE: 1"= 50'

03-MAR-2014 11:50
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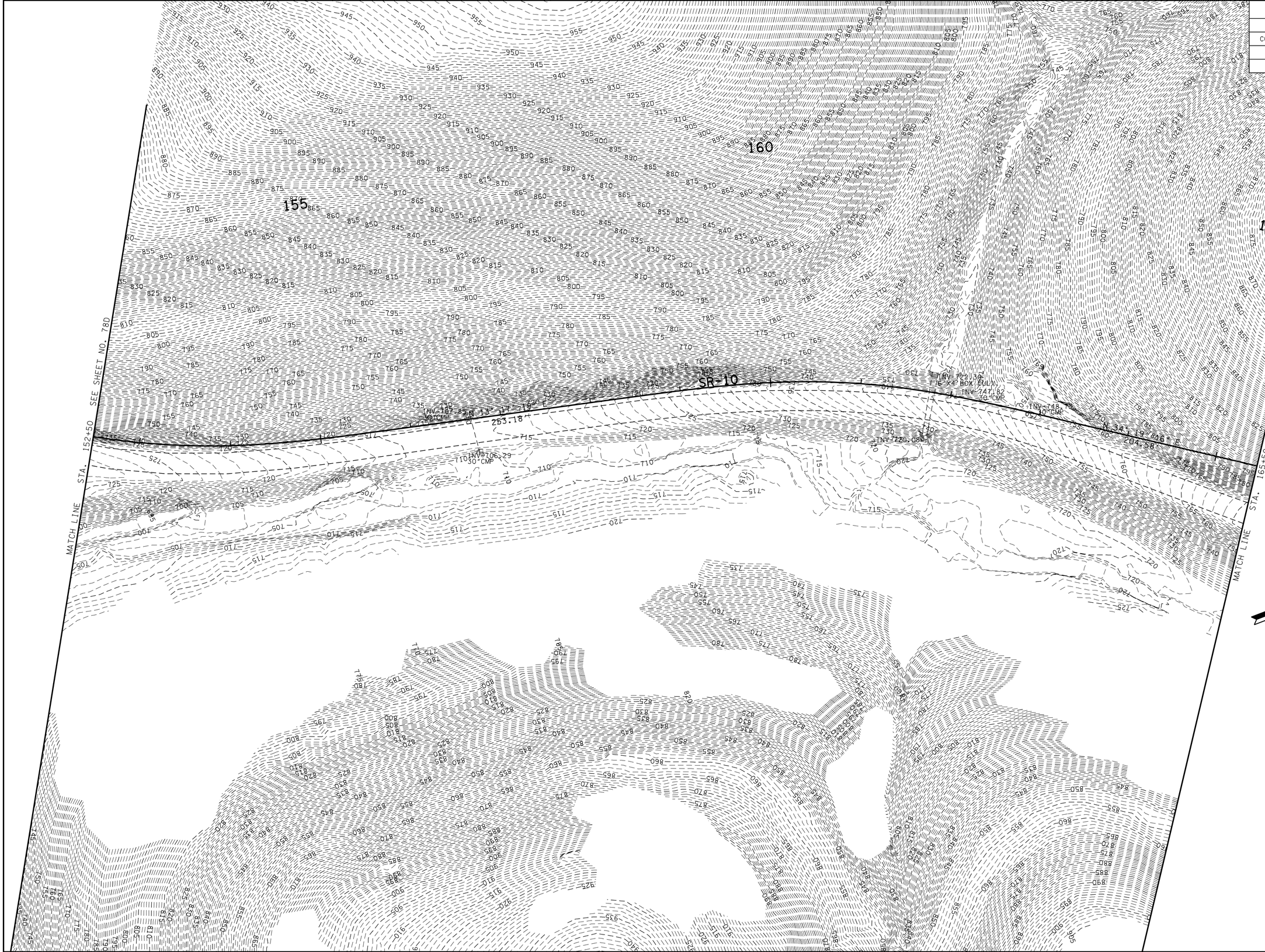
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78E



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STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

EXISTING CONTOURS

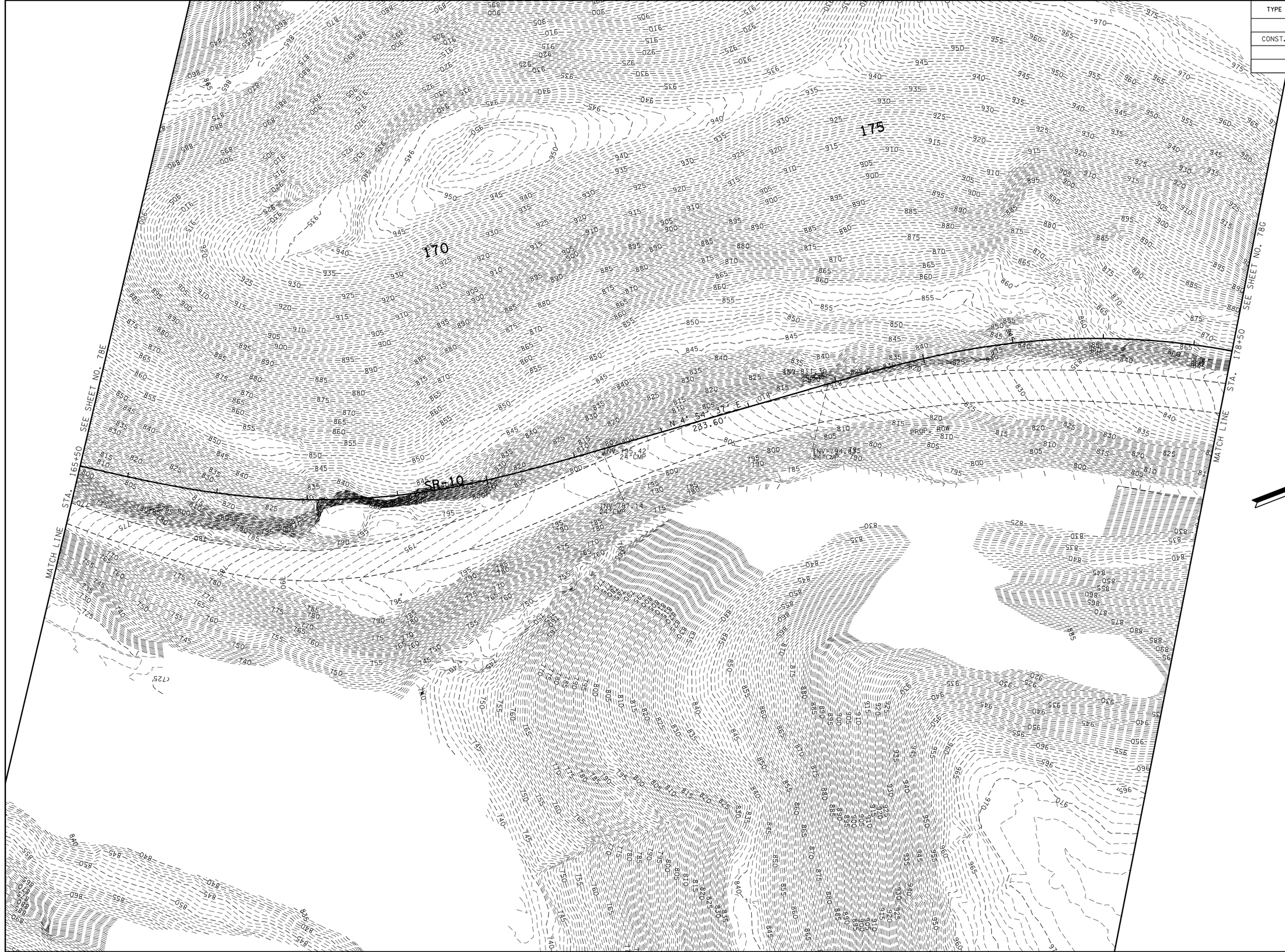
STA.152+50 TO STA.165+50

SCALE: 1"= 50'

03-MAR-2014 11:50

\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\078E.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78F



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EXISTING CONTOURS

STA.165+50 TO STA.178+50

SCALE: 1"= 50'

13-MAR-2014 11:50
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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78G

UNOFFICIAL SET

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

EXISTING CONTOURS

STA.178+50 TO STA.191+50

SCALE: 1"= 50'

13-MAR-2014 11:50
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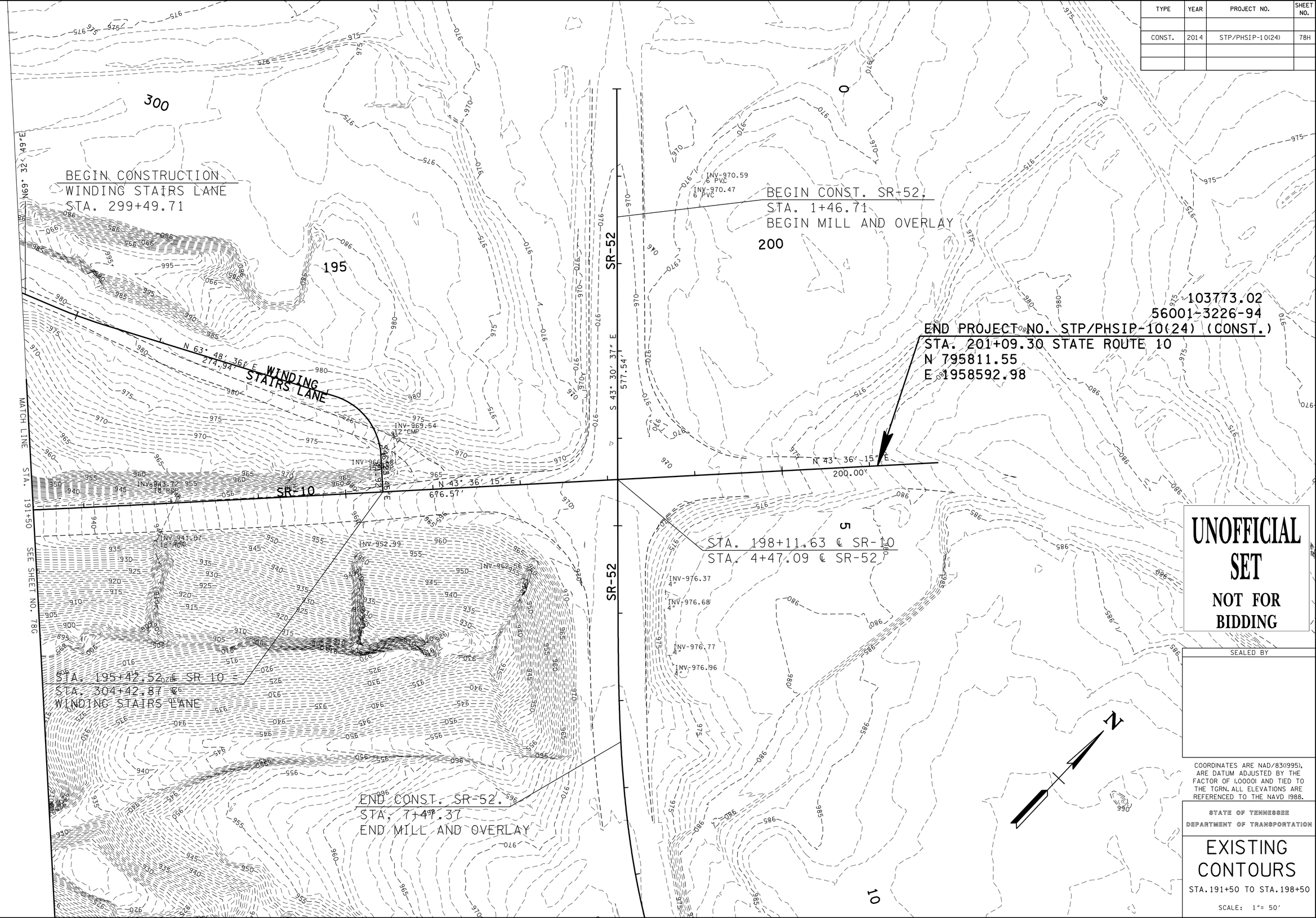
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78H



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

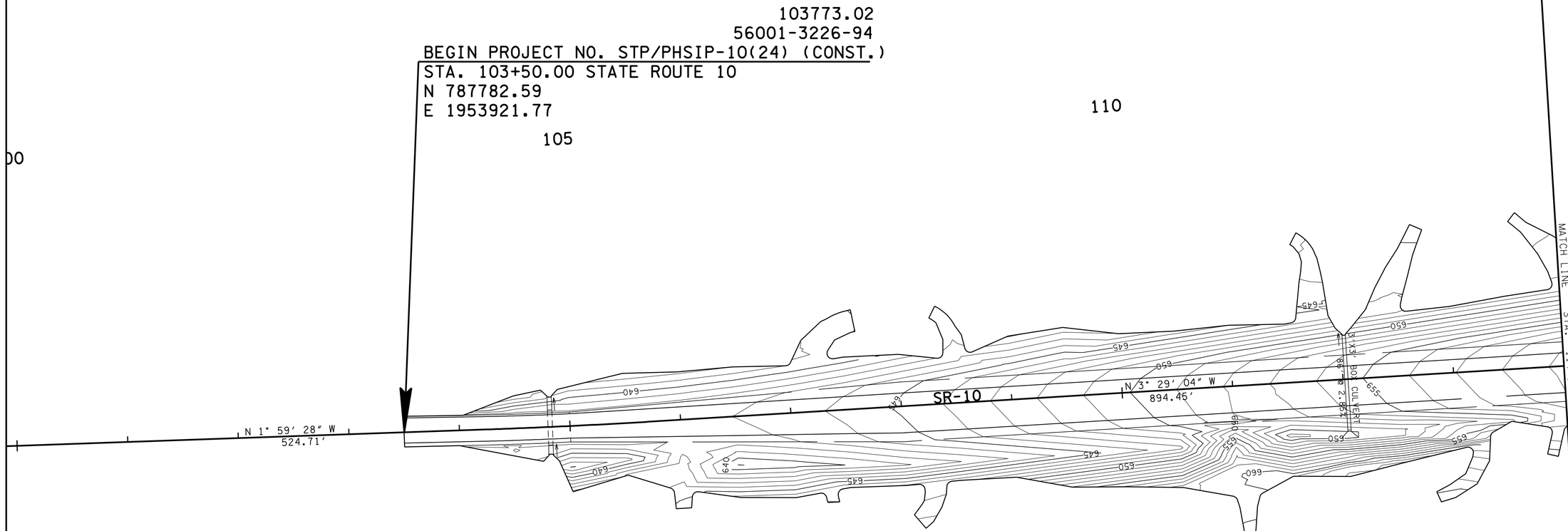
EXISTING CONTOURS

STA.191+50 TO STA.198+50

SCALE: 1"= 50'

13-MAR-2014 11:50
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\078H.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78I



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STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

PROPOSED CONTOURS

STA.101+50 TO STA.114+00

SCALE: 1"= 50′

13-MAR-2014 11:50
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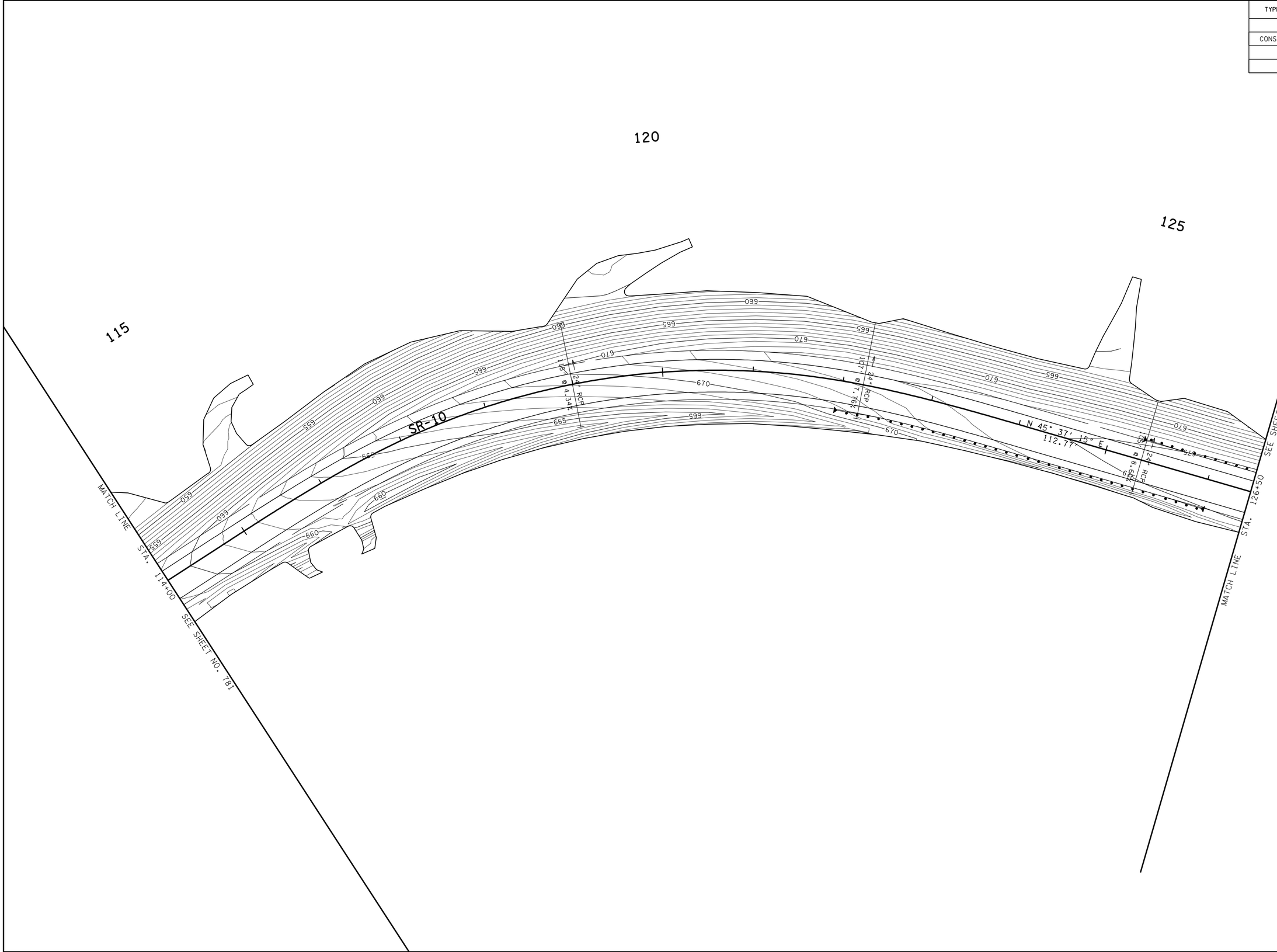
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78J



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STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

PROPOSED CONTOURS

STA.114+00 TO STA.126+50

SCALE: 1"= 50'

13-MAR-2014 11:50
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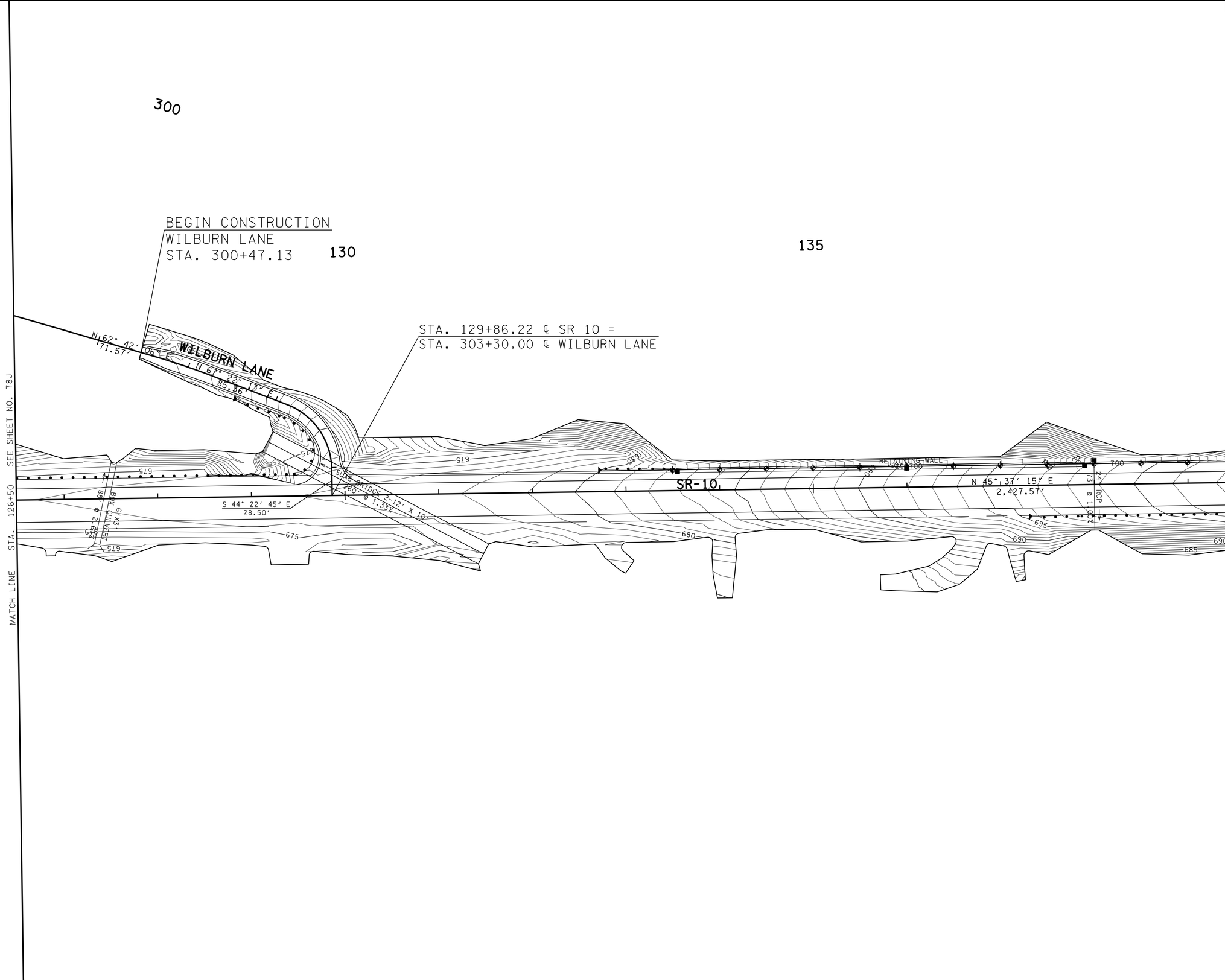
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78K



UNOFFICIAL SET

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPOSED CONTOURS

STA.126+50 TO STA.139+50

SCALE: 1″= 50′

13-MAR-2014 11:50
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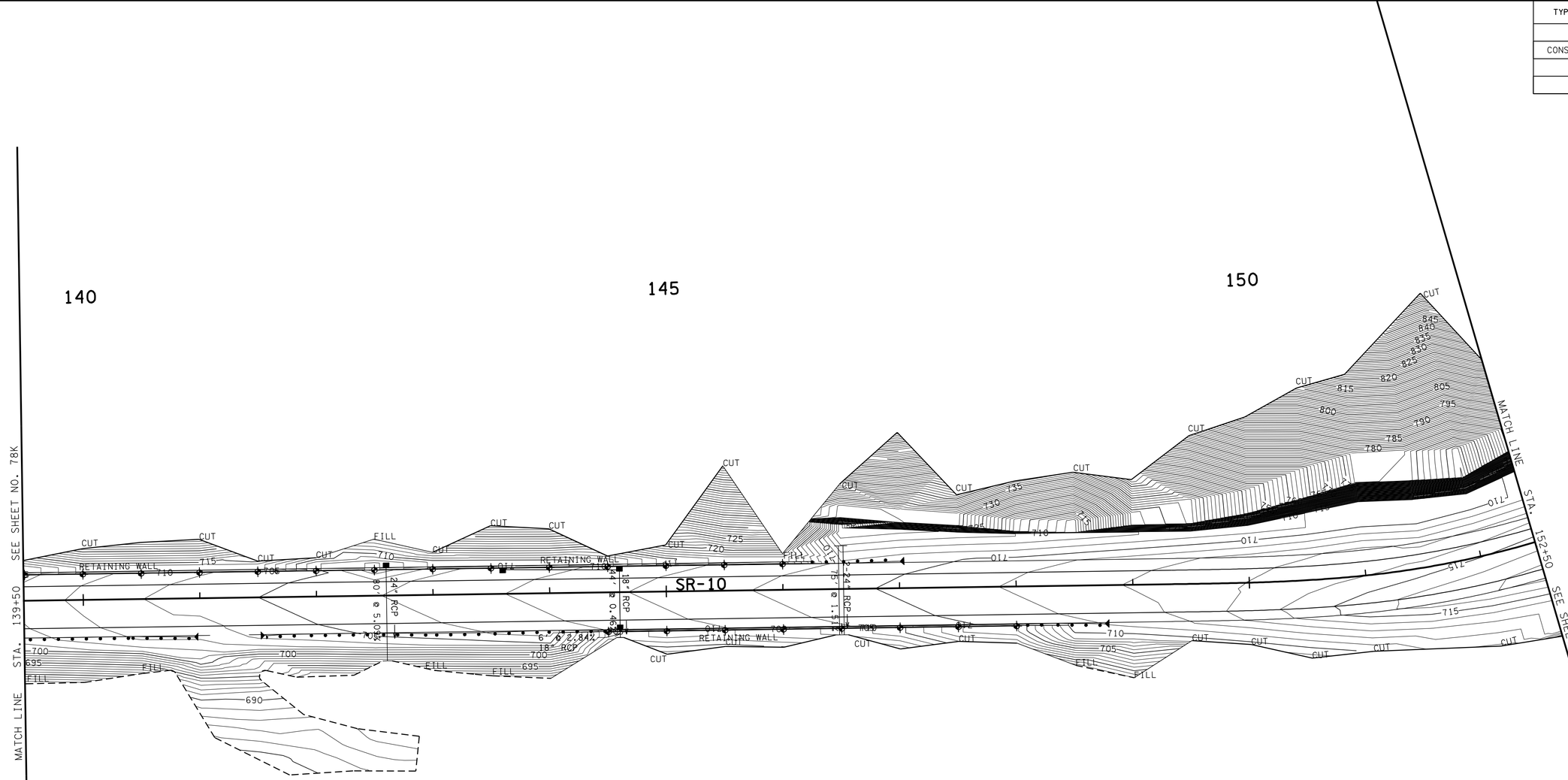
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78L



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STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

PROPOSED CONTOURS

STA. 139+50 TO STA. 152+50

SCALE: 1"= 50'

13-MAR-2014 11:50

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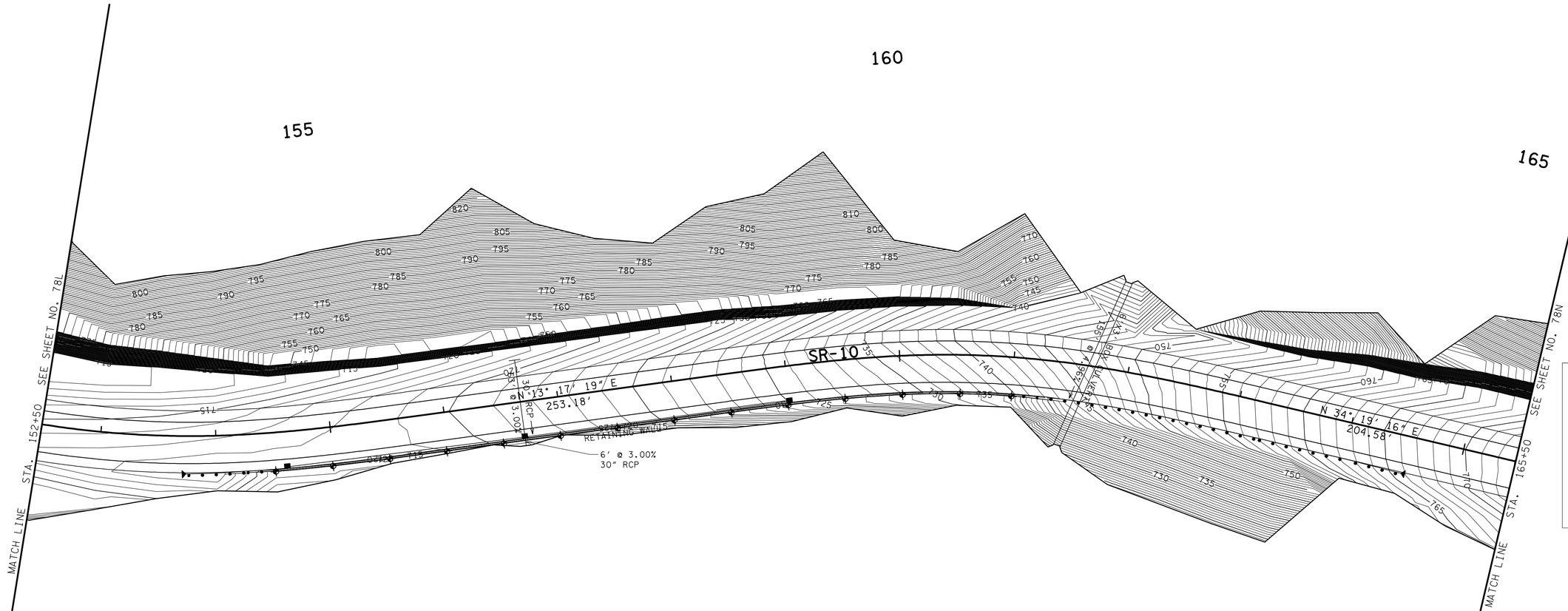
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78M



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STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

PROPOSED CONTOURS

STA.152+50 TO STA.165+50

SCALE: 1"= 50'

13-MAR-2014 11:50

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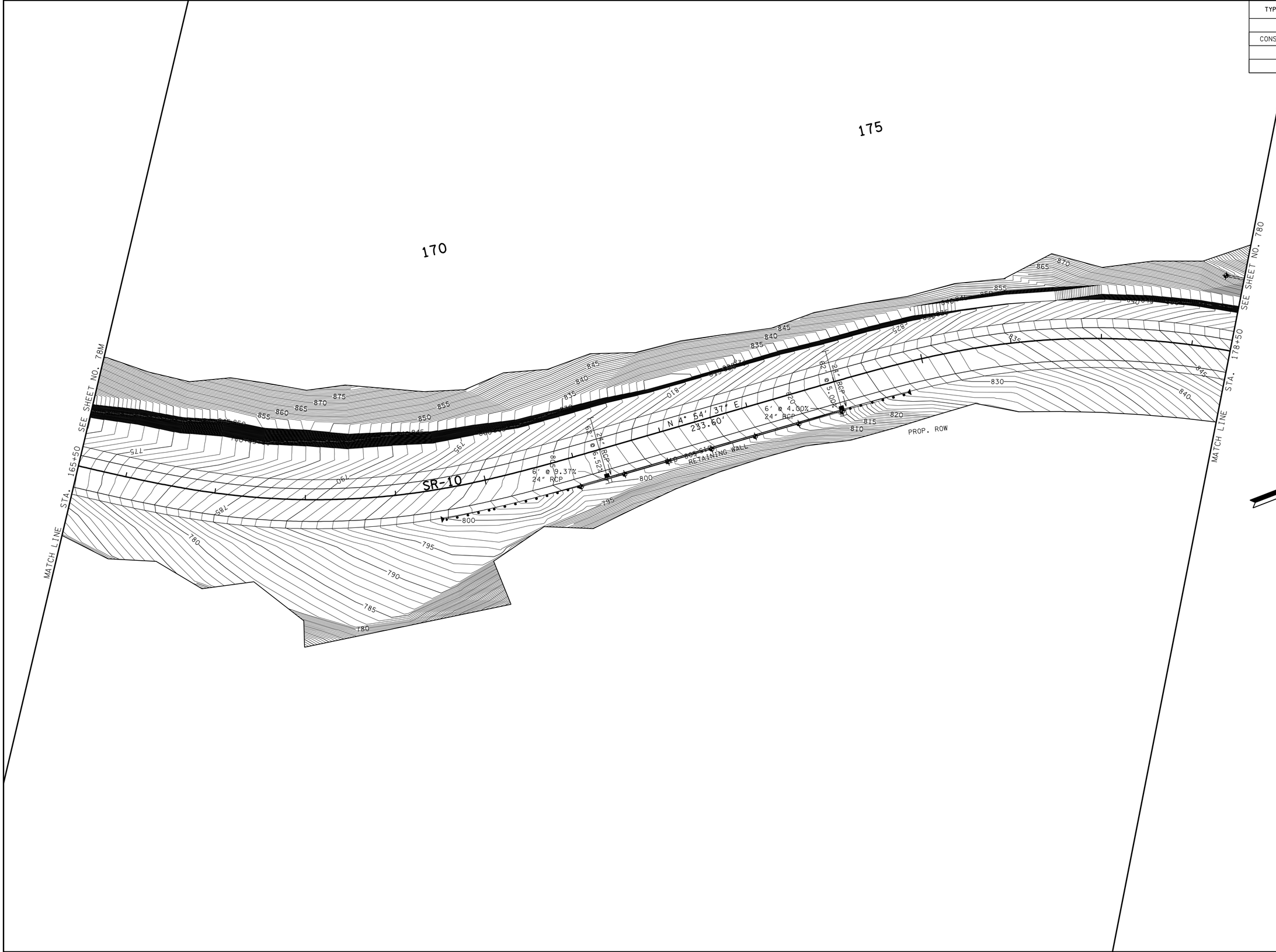
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78N



UNOFFICIAL SET

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPOSED CONTOURS

STA.165+50 TO STA.178+50

SCALE: 1"= 50'

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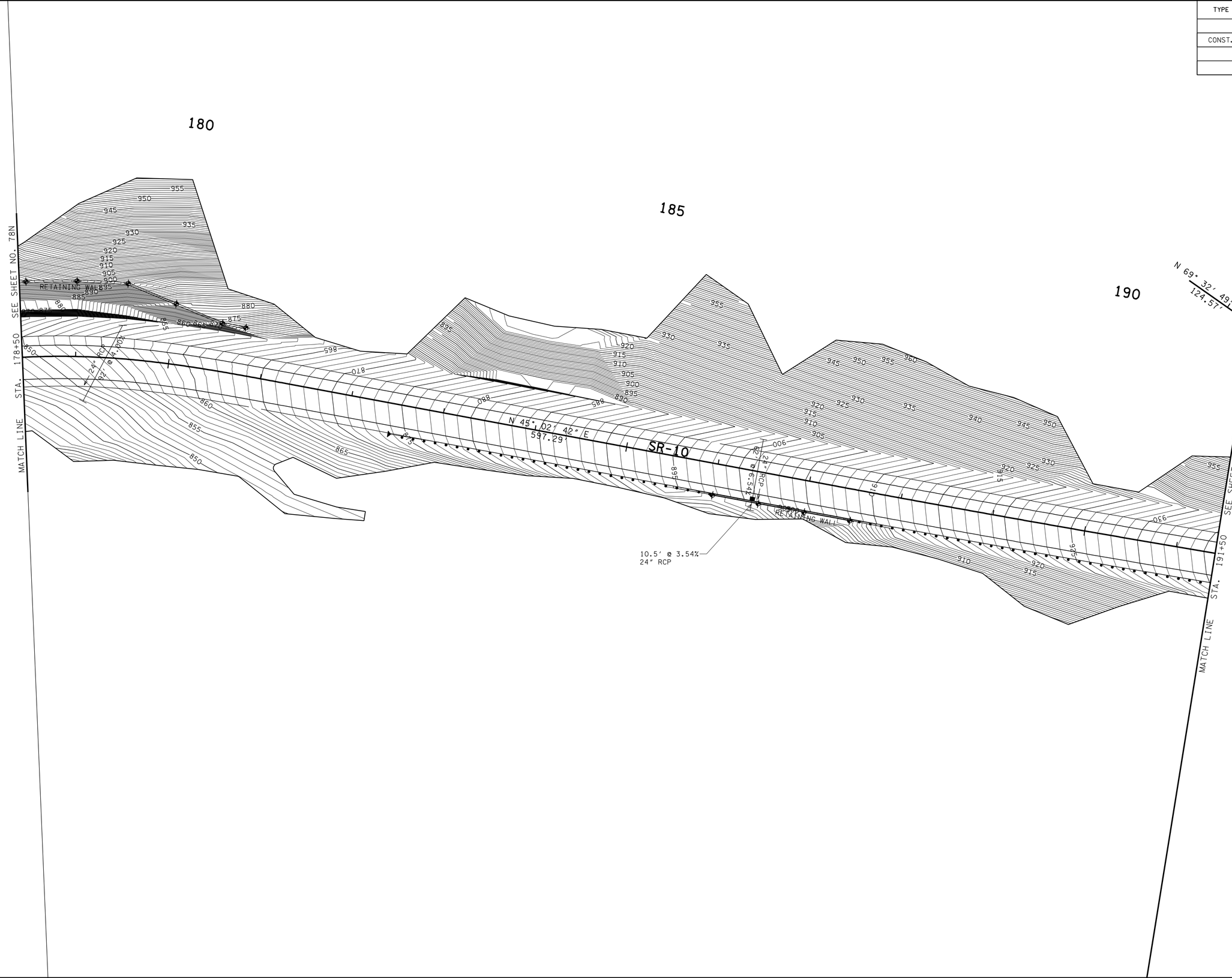
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78O



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STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

PROPOSED CONTOURS

STA.178+50 TO STA.191+50

SCALE: 1"= 50'

13-MAR-2014 11:51
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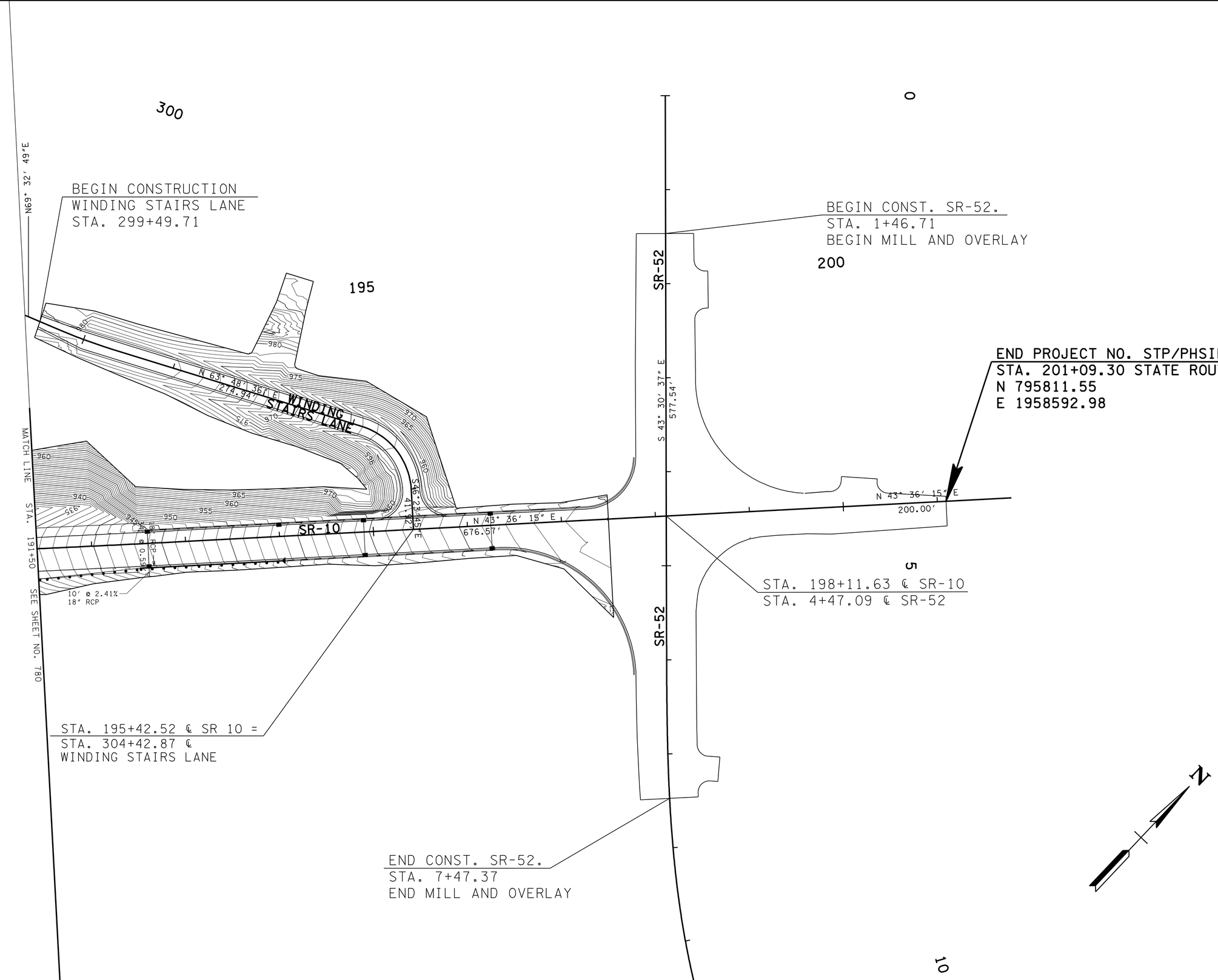
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	78P



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPOSED CONTOURS

STA. 191+50 TO STA. 198+50

SCALE: 1″= 50′

13-MAR-2014 11:51
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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	79

PAVEMENT EDGE DROP-OFF TRAFFIC CONTROL NOTES

A. DIFFERENCES IN ELEVATION BETWEEN ADJACENT TRAFFIC LANES OR TRAFFIC LANE AND SHOULDER WHERE THE TRAFFIC LANE IS BEING USED BY TRAFFIC, CAUSED BY BASE, PAVING OR RESURFACING:

1. DIFFERENCES IN ELEVATION BETWEEN ADJACENT ROADWAY ELEMENTS GREATER THAN 0.75 INCH AND NOT EXCEEDING 2 INCHES:

a. WARNING SIGNS, UNEVEN LANES (W8-11) AND/OR SHOULDER DROP-OFF WITH PLAQUE (W8-17 AND W8-17P), SHALL BE PLACED IN ADVANCE OF AND THROUGHOUT THE EXPOSED AREA. MAXIMUM SPACING BETWEEN SIGNS SHALL BE 2,000 FEET WITH A MINIMUM OF 2 SIGNS PER EXPOSED AREA. WHERE UNEVEN PAVEMENT IS ENCOUNTERED, SIGNS SHALL BE PLACED ON EACH SIDE OF THE ROADWAY.

b. DIFFERENCES IN ELEVATION BETWEEN ADJACENT TRAFFIC LANES BEING UTILIZED BY TRAFFIC CAUSED BY ADDED PAVEMENT SHALL BE ELIMINATED WITHIN THREE WORKDAYS.

c. DIFFERENCES IN ELEVATION BETWEEN ADJACENT TRAFFIC LANES BEING UTILIZED BY TRAFFIC CAUSED BY COLD PLANING SHALL BE ELIMINATED WITHIN THREE WORKDAYS.

d. WHEN THE DIFFERENCE IN ELEVATION IS BETWEEN THE TRAFFIC LANE BEING UTILIZED BY TRAFFIC AND SHOULDER THE DIFFERENCE IN ELEVATION SHALL BE ELIMINATED WITHIN SEVEN WORKDAYS AFTER THE CONDITION IS CREATED.

2. DIFFERENCES IN ELEVATION BETWEEN ADJACENT ROADWAY ELEMENTS GREATER THAN 2 INCHES AND NOT EXCEEDING 6 INCHES. TRAFFIC IS NOT TO BE ALLOWED TO TRAVERSE THIS DIFFERENCE IN ELEVATION.

a. SEPARATION SHALL BE ACCOMPLISHED BY DRUMS, BARRICADES OR OTHER APPROVED DEVICES IN ACCORDANCE WITH THE FOLLOWING:

(1) WHERE POSTED SPEEDS ARE 50 MPH OR GREATER, SPACING OF THE PROTECTIVE DEVICES SHALL NOT EXCEED 100 FEET.

(2) WHERE POSTED SPEEDS ARE LESS THAN 50 MPH, THE MAXIMUM SPACING OF THE PROTECTIVE DEVICES IN FEET SHALL NOT EXCEED TWICE THE POSTED SPEED IN MILES PER HOUR OR 50 FEET, WHICHEVER SPACING IS GREATER.

b. IF THE DIFFERENCE IN ELEVATION IS ELIMINATED OR DECREASED TO 2 INCHES OR LESS BY THE END OF EACH WORKDAY, CONES MAY BE USED DURING DAYLIGHT HOURS IN LIEU OF DRUMS, BARRICADES OR OTHER APPROVED PROTECTIVE DEVICES MENTIONED IN PARAGRAPH a, PROVIDED WARNING SIGNS ARE ERECTED. WARNING SIGNS (UNEVEN LANES AND/OR SHOULDER DROP-OFF) SHALL BE PLACED IN ADVANCE OF AND THROUGHOUT THE EXPOSED AREA. MAXIMUM SPACING BETWEEN SIGNS SHALL BE 2,000 FEET WITH A MINIMUM OF 2 SIGNS PER EXPOSED AREA. WHERE UNEVEN PAVEMENT IS ENCOUNTERED, SIGNS SHALL BE PLACED ON EACH SIDE OF THE ROADWAY.

c. WHEN THE DIFFERENCE IN ELEVATION IS BETWEEN THE THROUGH TRAFFIC LANE AND THE SHOULDER AND THE ELEVATION DIFFERENCE IS LESS THAN 3.5 INCHES, THE CONTRACTOR MAY USE WARNING SIGNS AND/OR PROTECTIVE DEVICES AS APPLICABLE AND APPROVED BY THE ENGINEER. SEE PARAGRAPH a REGARDING USE OF DRUMS, BARRICADES OR OTHER APPROVED PROTECTIVE DEVICES. WARNING SIGNS (UNEVEN LANES AND/OR SHOULDER DROP-OFF) WILL BE PLACED IN ADVANCE OF AND THROUGHOUT THE EXPOSED AREA. MAXIMUM SPACING BETWEEN SIGNS SHALL BE 2,000 FEET WITH A MINIMUM OF 2 SIGNS PER EXPOSED AREA. WHERE UNEVEN PAVEMENT IS ENCOUNTERED, SIGNS SHALL BE PLACED ON EACH SIDE OF THE ROADWAY.

IN THESE SITUATIONS, THE CONTRACTOR SHALL LIMIT HIS OPERATIONS TO ONE WORK ZONE NOT EXCEEDING 2 MILES IN LENGTH UNLESS OTHERWISE NOTED ON THE PLANS OR APPROVED BY THE ENGINEER. ONCE THE CONTRACTOR BEGINS WORK IN A WORK ZONE, A CONTINUOUS OPERATION SHALL BE MAINTAINED UNTIL THE DIFFERENCE IN ELEVATION IS ELIMINATED. SIMULTANEOUS WORK ON SEPARATE ROADWAYS OF DIVIDED HIGHWAYS WILL BE CONSIDERED INDEPENDENTLY IN REGARD TO RESTRICTION OF WORK ZONE ACTIVITY.

3. DIFFERENCES IN ELEVATION BETWEEN ADJACENT ROADWAY ELEMENTS GREATER THAN 6 INCHES BUT NOT EXCEEDING 18 INCHES, THE CONTRACTOR, WITH THE ENGINEER'S APPROVAL, MAY UTILIZE ONE OF THE FOLLOWING:

a. THE CONTRACTOR SHALL ACCOMPLISH SEPARATION BY DRUMS, BARRICADES OR OTHER APPROVED DEVICES IN ACCORDANCE WITH THE FOLLOWING:

(1) WHERE POSTED SPEEDS ARE 50 MPH OR GREATER, SPACING OF THE PROTECTIVE DEVICES SHALL NOT EXCEED 100 FEET.

(2) WHERE POSTED SPEEDS ARE LESS THAN 50 MPH, THE MAXIMUM SPACING OF THE PROTECTIVE DEVICES IN FEET SHALL NOT EXCEED TWICE THE POSTED SPEED IN MILES PER HOUR OR 50 FEET, WHICHEVER SPACING IS GREATER.

IN ORDER TO USE THIS METHOD, THE CONTRACTOR MUST REDUCE THE DIFFERENCE IN ELEVATION TO 6 INCHES OR LESS BY THE END OF THE WORKDAY THAT THE CONDITION IS CREATED.

b. THE CONTRACTOR SHALL PROVIDE DRUMS, BARRICADES OR OTHER APPROVED SEPARATION DEVICES AS SPECIFIED IN PARAGRAPH a, AND CONSTRUCT A STONE WEDGE WITH A 4:1 SLOPE, OR FLATTER, TO ELIMINATE THE VERTICAL OFFSET IF THE LOWER ELEVATION IS AT OR BELOW SUBGRADE AT THE END OF EACH DAY.

c. THE CONTRACTOR SHALL PROVIDE DRUMS, BARRICADES OR OTHER APPROVED SEPARATION DEVICES AS SPECIFIED IN PARAGRAPH a AND IF THE LOWER ELEVATION IS BASE STONE OR ASPHALT PAVEMENT, PLACEMENT OF SUBSEQUENT LAYERS OF PAVEMENT MUST BEGIN THE NEXT WORK DAY AND PROGRESS CONTINUOUSLY UNTIL THE DIFFERENCE IN ELEVATION IS ELIMINATED OR REDUCED TO SIX INCHES OR LESS.

d. THE CONTRACTOR SHALL PROVIDE SEPARATION BY PORTABLE BARRIER RAIL.

FOR PRECEDING CONDITIONS a, b, AND c, THE CONTRACTOR SHALL USE THE SHOULDER DROP-OFF WARNING SIGN WITH PLAQUE (W8-17 AND W8-17P). IT SHALL BE PLACED IN ADVANCE OF AND THROUGHOUT THE EXPOSED AREA. MAXIMUM SPACING BETWEEN THE SIGNS SHALL BE 2,000 FEET WITH A MINIMUM OF 2 SIGNS PER EXPOSED AREA. IN THESE SITUATIONS, THE CONTRACTOR SHALL LIMIT HIS OPERATIONS TO ONE WORK ZONE NOT EXCEEDING 1 MILE IN LENGTH UNLESS OTHERWISE NOTED ON THE PLANS OR APPROVED BY THE ENGINEER. ONCE THE CONTRACTOR BEGINS WORK IN A WORK ZONE, A CONTINUOUS OPERATION SHALL BE MAINTAINED UNTIL THE DIFFERENCE IS ELIMINATED. SIMULTANEOUS WORK ON SEPARATE ROADWAYS OF DIVIDED HIGHWAYS WILL BE CONSIDERED INDEPENDENTLY IN REGARD TO RESTRICTION OF WORK ZONE ACTIVITY.

4. FOR DIFFERENCES IN ELEVATION BETWEEN ADJACENT ROADWAY ELEMENTS GREATER THAN 18 INCHES.

SEPARATION WILL BE PROVIDED BY USE OF PORTABLE BARRIER RAIL.

IN THIS SITUATION THE CONTRACTOR SHALL LIMIT HIS OPERATIONS TO ONE WORK ZONE NOT EXCEEDING 1 MILE IN LENGTH UNLESS OTHERWISE NOTED ON THE PLANS OR APPROVED BY THE ENGINEER. ONCE THE CONTRACTOR BEGINS WORK IN A WORK ZONE, A CONTINUOUS OPERATION SHALL BE MAINTAINED UNTIL THE DIFFERENCE IN ELEVATION IS ELIMINATED. SIMULTANEOUS WORK ON SEPARATE ROADWAYS OF DIVIDED HIGHWAYS WILL BE CONSIDERED INDEPENDENTLY IN REGARD TO RESTRICTION OF WORK ZONE ACTIVITY.

B. IF THE DIFFERENCE IN ELEVATION IS WITHIN 30 FEET OF THE NEAREST TRAFFIC LANE BEING USED BY TRAFFIC CAUSED BY GRADING, EXCAVATION FOR UTILITIES, DRAINAGE STRUCTURES, UNDERCUTTING, ETC.:

1. IF THE DIFFERENCE IN ELEVATION IS WITHIN 8 FEET OF THE NEAREST TRAFFIC LANE WITH DIFFERENCE IN ELEVATION GREATER THAN 3/4 INCH AND NOT EXCEEDING 2 INCHES.

WARNING SIGNS (UNEVEN LANES AND/OR SHOULDER DROP-OFF) SHALL BE PLACED IN ADVANCE OF AND THROUGHOUT THE EXPOSED AREA. MAXIMUM SPACING BETWEEN SIGNS SHALL BE 2,000 FEET WITH A MINIMUM OF 2 SIGNS PER EXPOSED AREA. WHERE UNEVEN PAVEMENT IS ENCOUNTERED, SIGNS SHALL BE PLACED ON EACH SIDE OF THE ROADWAY.

2. IF THE DIFFERENCE IN ELEVATION IS WITHIN 8 FEET OF THE NEAREST TRAFFIC LANE WITH DIFFERENCE IN ELEVATION GREATER THAN 2 INCHES AND NOT EXCEEDING 6 INCHES:

a. SEPARATION SHALL BE ACCOMPLISHED BY DRUMS, BARRICADES OR OTHER APPROVED DEVICES IN ACCORDANCE WITH THE FOLLOWING:

(1) WHERE POSTED SPEEDS ARE 50 MPH OR GREATER, SPACING OF THE PROTECTIVE DEVICES SHALL NOT EXCEED 100 FEET.

(2) WHERE POSTED SPEEDS ARE LESS THAN 50 MPH THE MAXIMUM SPACING OF THE PROTECTIVE DEVICES IN FEET SHALL NOT EXCEED TWICE THE POSTED SPEED IN MILES PER HOUR OR 50 FEET, WHICHEVER SPACING IS GREATER.

3. IF THE DIFFERENCE IN ELEVATION IS WITHIN 8 FEET OF THE NEAREST TRAFFIC LANE WITH DIFFERENCE IN ELEVATION GREATER THAN 6 INCHES:

a. SEPARATION SHALL BE ACCOMPLISHED BY DRUMS, BARRICADES OR OTHER APPROVED DEVICES IN ACCORDANCE WITH THE FOLLOWING:

(1) WHERE POSTED SPEEDS ARE 50 MPH OR GREATER, SPACING OF THE PROTECTIVE DEVICES SHALL NOT EXCEED 100 FEET.

(2) WHERE POSTED SPEEDS ARE LESS THAN 50 MPH THE MAXIMUM SPACING OF THE PROTECTIVE DEVICES IN FEET SHALL NOT EXCEED TWICE THE POSTED SPEED IN MILES PER HOUR OR 50 FEET, WHICHEVER SPACING IS GREATER.

b. ELIMINATE VERTICAL OFFSET BY CONSTRUCTING A STONE WEDGE OR GRADING TO A 4:1 SLOPE, OR FLATTER, OR USE PORTABLE BARRIER RAIL.

THE CONTRACTOR SHALL SCHEDULE THE WORK SO AS TO MINIMIZE THE TIME TRAFFIC IS EXPOSED TO AN ELEVATION DIFFERENCE. ONCE THE CONTRACTOR BEGINS AN ACTIVITY THAT CREATES AN ELEVATION DIFFERENCE WITHIN 8 FEET OF A TRAFFIC LANE, THE ACTIVITY SHALL BE PURSUED AS A CONTINUOUS OPERATION UNTIL THE ELEVATION DIFFERENCE IS ELIMINATED.

C. IF THE DIFFERENCE IN ELEVATION IS FARTHER THAN 8 FEET FROM THE NEAREST TRAFFIC LANE BUT NOT MORE THAN 30 FEET FROM THE NEAREST TRAFFIC LANE:

SEPARATION SHALL BE ACCOMPLISHED BY DRUMS, BARRICADES OR OTHER APPROVED DEVICES IN ACCORDANCE WITH THE FOLLOWING:

1. WHERE POSTED SPEEDS ARE 50 MPH OR GREATER, SPACING OF THE PROTECTIVE DEVICES SHALL NOT EXCEED 100 FEET.

2. WHERE POSTED SPEEDS ARE LESS THAN 50 MPH, THE MAXIMUM SPACING OF THE PROTECTIVE DEVICES IN FEET SHALL NOT EXCEED TWICE THE POSTED SPEED IN MILES PER HOUR OR 50 FEET, WHICHEVER SPACING IS GREATER.

THE CONTRACTOR SHALL SCHEDULE THE WORK SO AS TO MINIMIZE THE TIME TRAFFIC IS EXPOSED TO AN ELEVATION DIFFERENCE. ONCE THE CONTRACTOR BEGINS AN ACTIVITY THAT CREATES AN ELEVATION DIFFERENCE, THE ACTIVITY SHALL BE PURSUED AS A CONTINUOUS OPERATION UNTIL THE ELEVATION DIFFERENCE IS ELIMINATED.

D. TEMPORARY PAVEMENT WILL INCLUDE THE FOLLOWING LAYERS:

1. 1.25" ACS (PG64-22) GR "D"

2. 2.00" AC MIX (PG64-22) GR "B-M2"

3. 10.00" MINERAL AGG BASE GRA "D"

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PAVEMENT EDGE DROP-OFF TRAFFIC CONTROL NOTES

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TEMP. PAVEMENT MARKING ON INTERMEDIATE LAYERS

1. TEMPORARY PAVEMENT LINE MARKINGS ON INTERMEDIATE LAYER OF PAVEMENT SHALL BE REFLECTIVE TAPE OR REFLECTORIZED PAINT INSTALLED TO PERMANENT STANDARDS BEFORE DARK HOURS. SHORT, UNMARKED SECTIONS SHALL NOT BE ALLOWED. THESE MARKINGS WILL BE MEASURED AND PAID FOR UNDER ITEM NO 716-05.01, PAINTED PAVEMENT MARKING (4-INCH LINE) PER LINEAR MILE.

"TRAFFIC CONTROL NOTES"

1. THE CONSTRUCTION SIGNING PLANS ARE TO SERVE AS A GUIDE ONLY, OTHER SIGNS MAY BE REQUIRED DURING VARIOUS PHASES OF CONSTRUCTION.
2. 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 ON UNIFORM TRAFFIC CONTROL DEVICES."
3. THE CONTRACTOR IS TO MAINTAIN ACCESS TO ALL LOCAL PROPERTY OWNERS.

TRAFFIC CONTROL PHASING

1. PRIOR TO CONSTRUCTION OF ANY WORK, THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING AND TRAFFIC CONTROL IN ACCORDANCE WITH THE M.U.T.C.D. MANUAL AND THE CONTRACT PLANS AS DETAILED IN THE FOLLOWING TRAFFIC CONTROL PLAN.
2. PAVING OF THE PROPOSED ROADWAY IN PHASES I AND II SHALL BE UP TO, BUT NOT INCLUDING, THE FINAL SURFACE COURSE.

PHASE 1A, STAGE 1:

1. PLACE ADVANCE WARNING SIGNS AND SAFETY DEVICES
2. CONSTRUCT PORTION OF PROPOSED BOX CULVERT AT STA. 127+45, INCLUDING WINGWALLS TO A LENGTH SUFFICIENT FOR TEMPORARY TRAFFIC LANES. PLACE INLET/OUTLET PROTECTION.
3. USE INSTREAM DIVERSION TO DIVERT FLOW TO ONE SIDE OF THE EXISTING CHANNEL AND INTO NORTHERN SPAN OF EXISTING SLAB CULVERT AT STA 130+00.
4. REMOVE PORTION OF EXISTING STRUCTURE AND CONSTRUCT PORTIONS OF THE WESTERLY SPANS OF THE PROPOSED SLAB CULVERT TO A LENGTH SUFFICIENT FOR TEMPORARY TRAFFIC LANES. PLACE INLET/OUTLET PROTECTION.

PHASE 1A, STAGE 2:

1. PLACE ADVANCE WARNING SIGNS AND SAFETY DEVICES
2. CONSTRUCT TEMPORARY DETOUR AS SHOWN IN THE TRAFFIC CONTROL PLANS.

PHASE 1B, STAGE 1:

1. PLACE ADVANCE WARNING SIGNS AN SAFETY DEVICES
2. SHIFT TRAFFIC TO TEMPORARY DETOUR AS SHOWN IN THE TRAFFIC CONTROL PLAN
3. MAINTAIN INSTREAM DIVERSION TO DIVERT FLOW TO ONE SIDE OF THE EXISTING CHANNEL, INTO NORTHERN SPAN OF EXISTING SLAB CULVERT AT STA 130+00, AND INTO THE NEWLY CONSTRUCTED NORTHERN SPAN OF THE PROPOSED SLAB CULVERT.
4. REMOVE SOUTHERN SPAN OF EXISTING STRUCTURE AND CONSTRUCT THE REMAINDER OF THE SOUTHERN SPAN OF THE PROPOSED STRUCTURE. PLACE INLET/OUTLET PROTECTION.
5. SHIFT TRAFFIC, REMOVE PORTION OF EXISTING STRUCTURE, AND CONSTRUCT REMAINING LENGTH OF THE SOUTHERN SPAN OF THE PROPOSED STRUCTURE. PLACE INLET/OUTLET PROTECTION.

PHASE 1B, STAGE 2:

1. MAINTAIN ADVANCE WARNING SIGNS AND SAFETY DEVICES FROM THE PREVIOUS PHASE.
2. USE INSTREAM DIVERSION TO DIVERT FLOW TO OTHER SIDE OF THE EXISTING CHANNEL AND INTO SOUTHERN SPAN OF THE NEWLY CONSTRUCTED PROPOSED STRUCTURE.
3. REMOVE REMAINING PORTION OF EXISTING STRUCTURE AND CONSTRUCT REMAINING SPAN OF THE PROPOSED STRUCTURE. PLACE INLET/OUTLET PROTECTION.
4. REMOVE INSTREAM DIVERSION.

PHASE 2:

1. PLACE ADVANCE WARNING SIGNS AND SAFETY DEVICES
2. CONSTRUCT MAINLINE FROM STA. 109+00 TO STA. 189+50, INCLUDING PRIVATE DRIVES AND FIELD ENTRANCES ON THE NORTHERN SIDE OF THE MAINLINE. CONSTRUCT TEMP. PAVEMENT ALONG NORTHERN PROPOSED SHOULDER AS PER THE TRAFFIC CONTROL PLAN.
3. CONSTRUCT WILBURN LANE AND WINDING STAIRS LANE UP TO TEMP. PAVEMENT ALONG MAINLINE.

PHASE 3:

1. PLACE ADVANCE WARNING SIGNS AND SAFETY DEVICES
2. MOVE TRAFFIC ONTO THE PREVIOUSLY CONSTRUCTED NORTHERN SIDE OF SR-10 ALONG TEMPORARY ALIGNMENT AS SHOWN IN THE TRAFFIC CONTROL PLAN.
3. CONSTRUCT SOUTHERN PORTION OF MAINLINE FROM STA. 109+00 TO STA. 189+50, INCLUDING PRIVATE DRIVES AND FIELD ENTRANCES ON THE SOUTHERN SIDE OF THE MAINLINE.

PHASE 4:

1. PLACE ADVANCE WARNING SIGNS AND SAFETY DEVICES
2. MOVE TRAFFIC ONTO PREVIOUSLY CONSTRUCTED SOUTHERN SIDE OF SR-10 ALONG PROPOSED ALIGNMENT.
3. REMOVE TEMP. PAVEMENT ALONG NORTHERN MAINLINE SHOULDER AND CONSTRUCT PROPOSED SHOULDERS AND SIDESLOPES.
4. COMPLETE CONSTRUCTION OF PRIVATE DRIVES AND FIELD ENTRANCES.
5. RESURFACE EXISTING SR-10 FROM STA. 103+50 TO STA. 109+00 AND FROM STA. 189+50 TO STA. 197+50.
6. PLACE FINAL SURFACE COURSE.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	79A

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TRAFFIC CONTROL NOTES & PHASING

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	79B

L2 LETTING REV: 05-19-14 REMOVED ITEM 712-02.36. ADJUSTED ITEM 712-02.02.

TRAFFIC CONTROL QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	ITEM NO. 712-06 (S.F.)	SIZE	M.U.T.C.D. NO.	REMARKS
606-24.13	TEMPORARY SHEET PILES	LS	1				
705-08.51	PORTABLE IMPACT ATTENUATOR NCHRP350 TL-3	EACH	8				
712-01	TRAFFIC CONTROL	LS	1				
712-02.02	INTERCONNECTED PORTABLE BARRIER RAIL	LF	17,250				
712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH	110				
712-05.01	WARNING LIGHTS (TYPE A)	EACH	115				
712-07.03	TEMPORARY BARRICADES (TYPE III)	LF	45				
716-01.07	TEMPORARY RAISED PAVEMENT MARKER, YELLOW	EACH	260				
716-05.01	PAINTED PAVEMENT MARKING (4" LINE)	L.M.	13.5				
716-05.05	PAINTED PAVEMENT MARKING (STOP LINE)	L.F.	66				
				30	24" x 30"	R2-1	SIGNS
				30	24" x 30"	R4-1	SIGNS
				30	24" x 30"	R4-9	SIGNS
				20	48" x 30"	R11-2	SIGNS
				36	36" x 36"	W1-4	SIGNS
				16	48" x 24"	W1-6	SIGNS
				9	36" x 36"	W3-5	SIGNS
				16	24" x 24"	W13-1P	SIGNS
				90	36" x 36"	W20-1	SIGNS
				9	36" x 36"	W21-5b	SIGNS
				9	36" x 18"	G20-2	SIGNS
				18	36" x 18"	G20-4	SIGNS
				27	36" x 18"	E5-2	SIGNS
TOTAL				**340**			

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TRAFFIC CONTROL QUANTITIES

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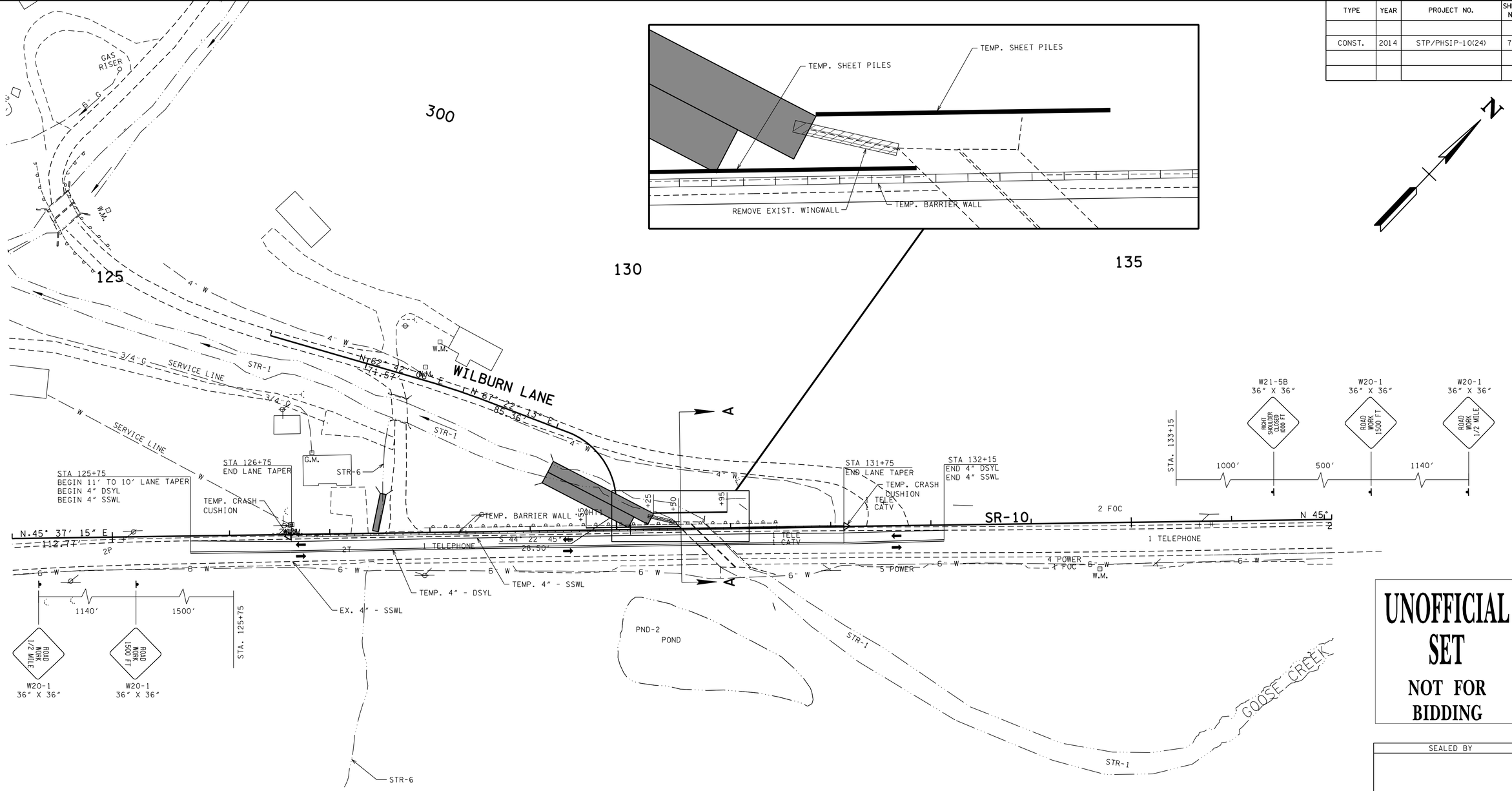
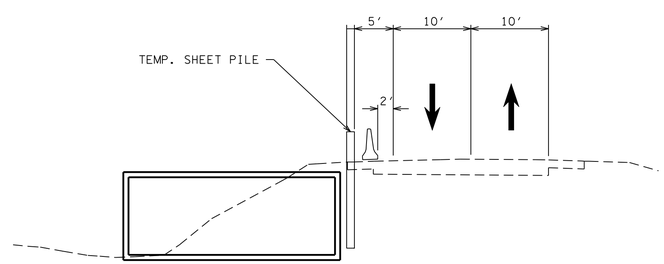
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	79C





SECTION A-A
NTS

CHANNELIZATION DEVICE LEGEND
SIGN SUPPORT
DIRECTION OF TRAFFIC
RAISED PAVEMENT MARKER (SEE APPROVED QUALIFIED PRODUCT LIST)

UNOFFICIAL SET

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STATE OF TENNESSEE
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TRAFFIC CONTROL PLAN PHASE 1A

STA.124+00 TO STA.137+00

SCALE: 1"=50'

STAGE 1

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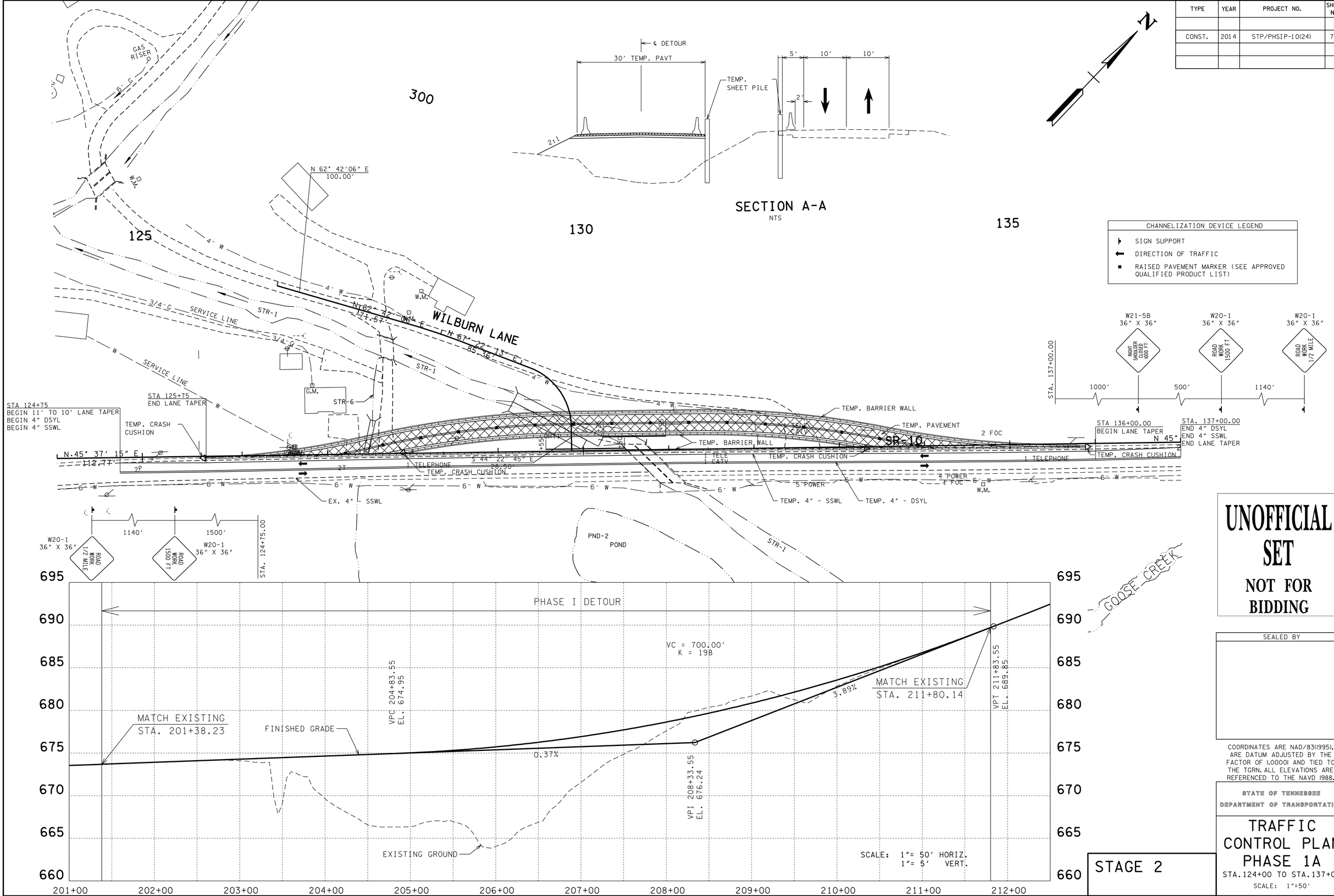
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	79D



CHANNELIZATION DEVICE LEGEND

- SIGN SUPPORT
- DIRECTION OF TRAFFIC
- RAISED PAVEMENT MARKER (SEE APPROVED QUALIFIED PRODUCT LIST)

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLAN PHASE 1A

STA.124+00 TO STA.137+00

SCALE: 1"=50'

STAGE 2

20-MAR-2014 10:28
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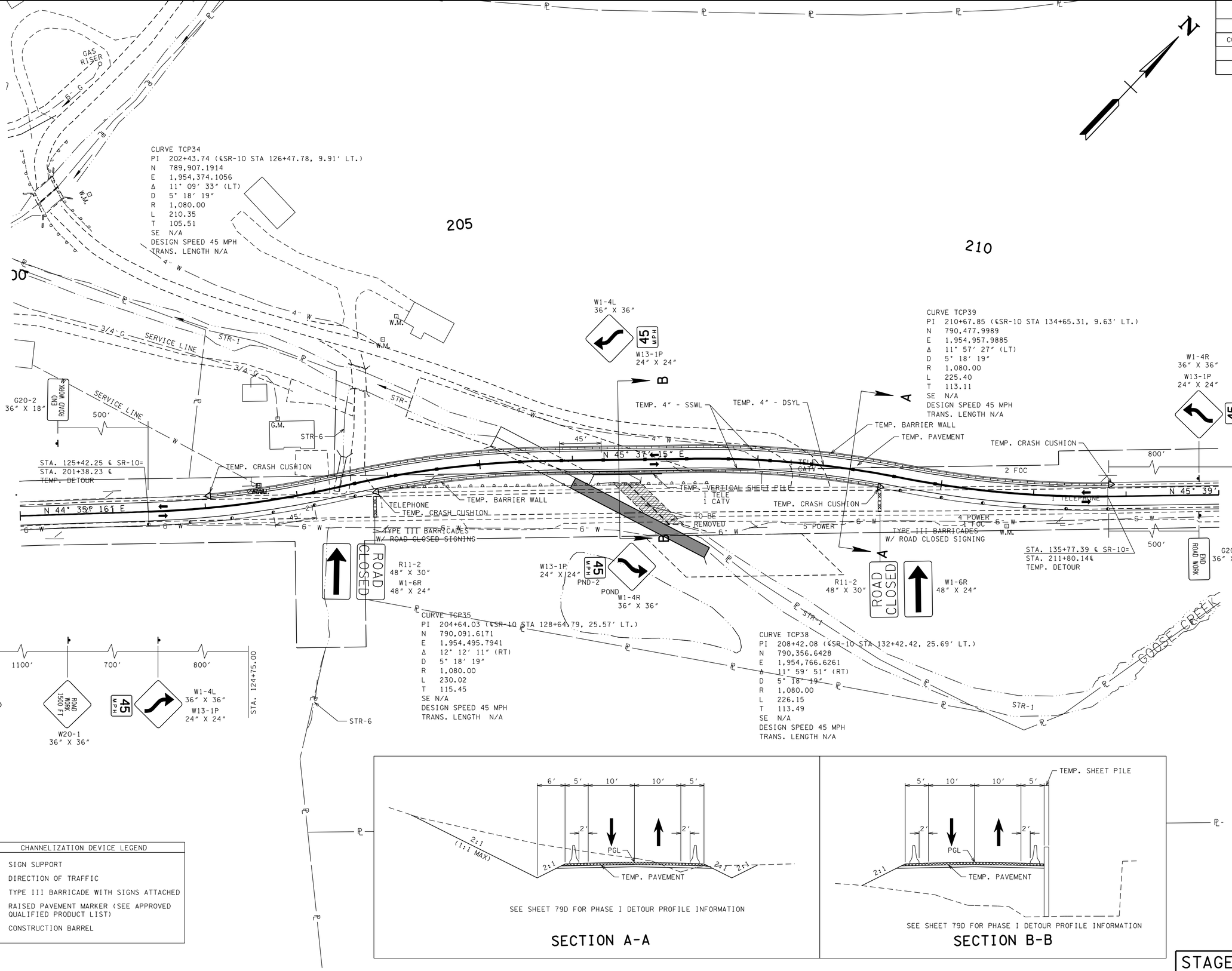
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	79E



CHANNELIZATION DEVICE LEGEND

- SIGN SUPPORT
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE WITH SIGNS ATTACHED
- RAISED PAVEMENT MARKER (SEE APPROVED QUALIFIED PRODUCT LIST)
- CONSTRUCTION BARREL

UNOFFICIAL SET

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TRAFFIC CONTROL PLAN PHASE IB

STA.200+00 TO STA.213+00

SCALE: 1″=50′

STAGE 1

20-MAR-2014 10:28
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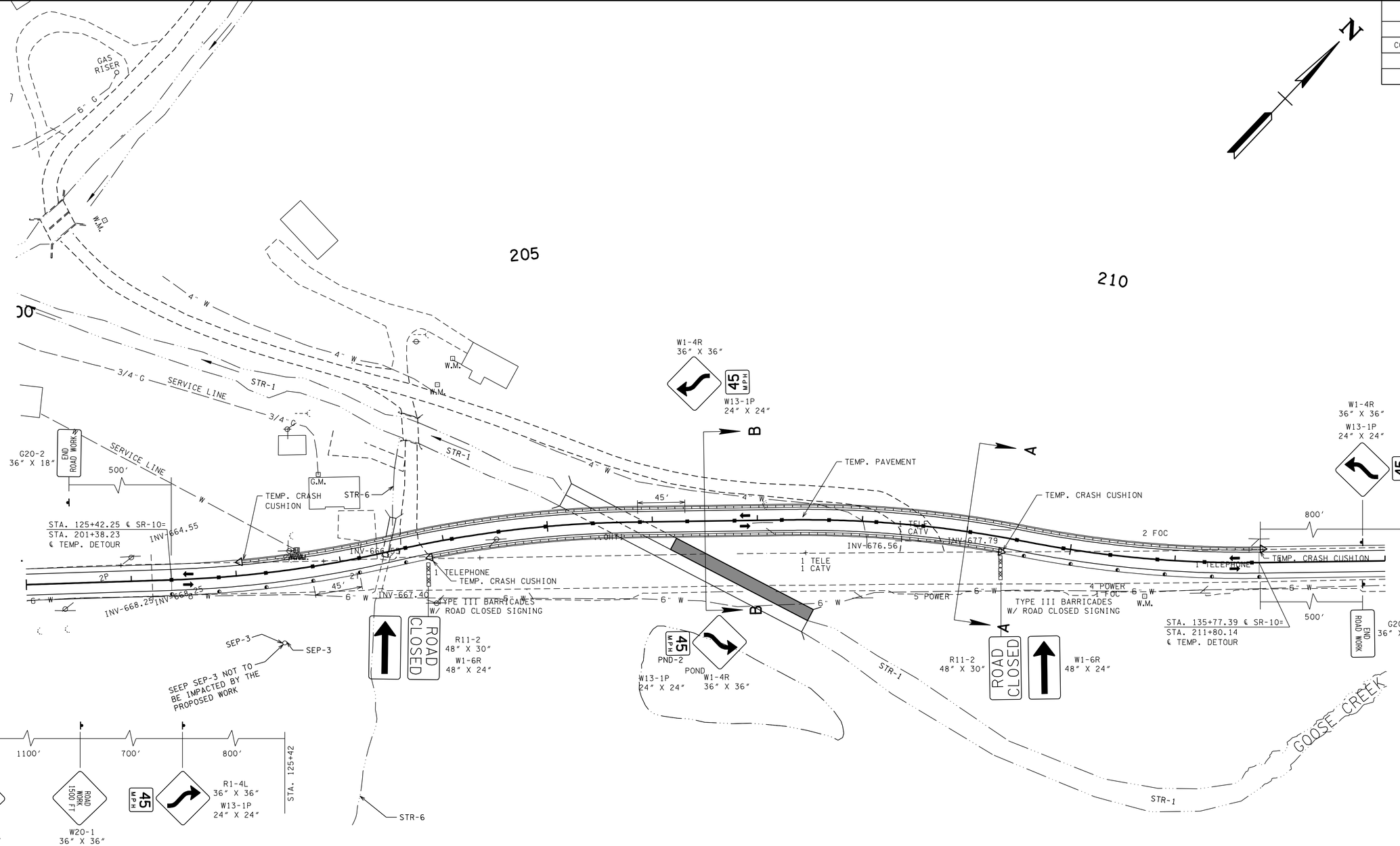
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	79F



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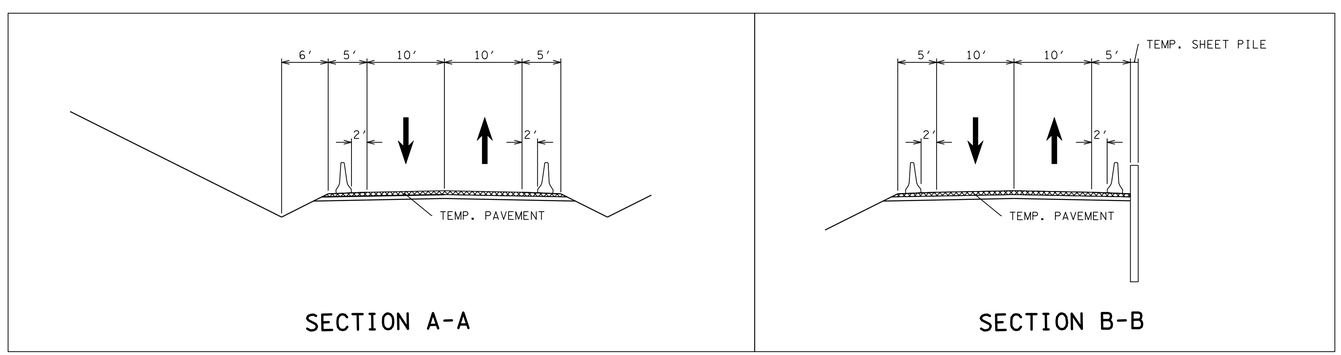
CHANNELIZATION DEVICE LEGEND
SIGN SUPPORT
DIRECTION OF TRAFFIC
TYPE III BARRICADE WITH SIGNS ATTACHED
RAISED PAVEMENT MARKER (SEE APPROVED QUALIFIED PRODUCT LIST)
CONSTRUCTION BARREL



TRAFFIC CONTROL PLAN PHASE IB

STA.200+00 TO STA.213+00

SCALE: 1"=50'

STAGE 2

20-MAR-2014 10:28
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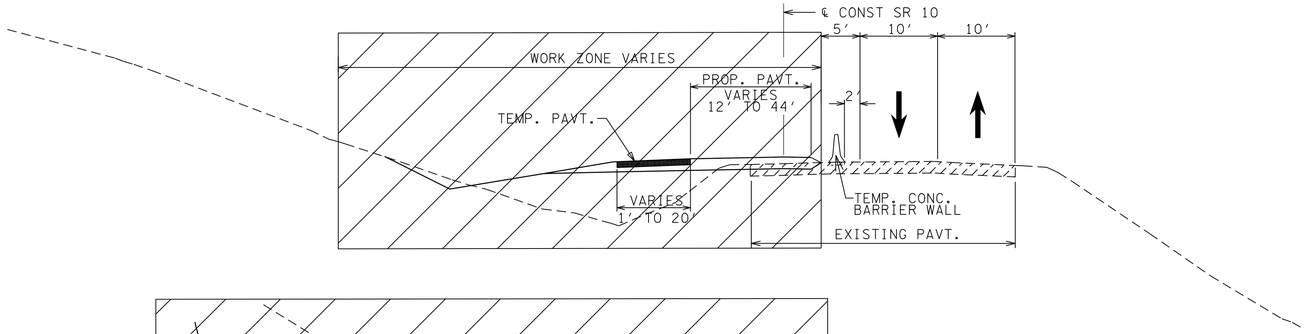
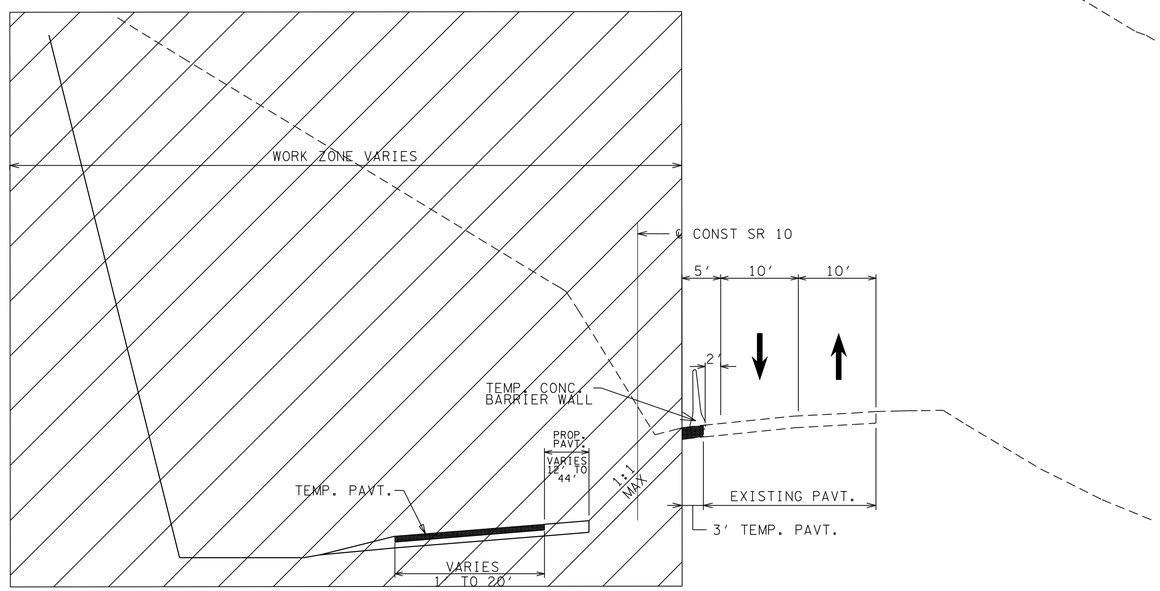
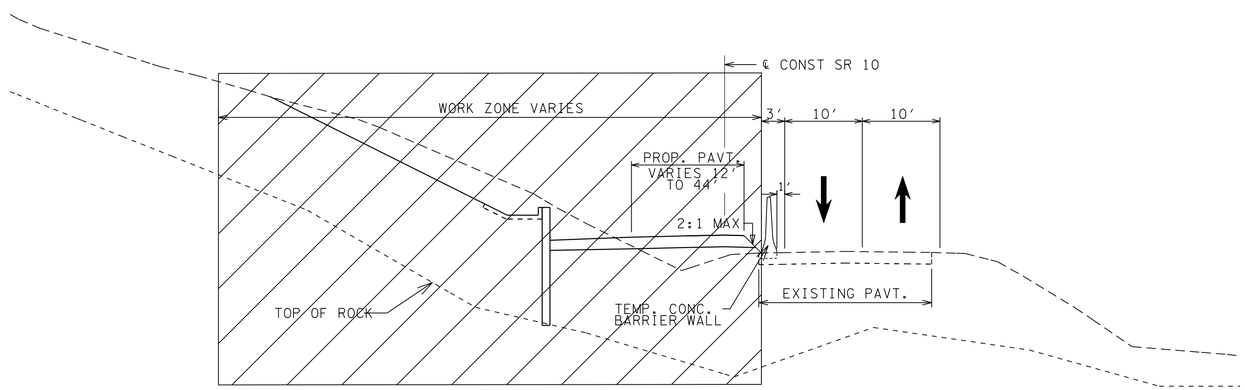
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	79G



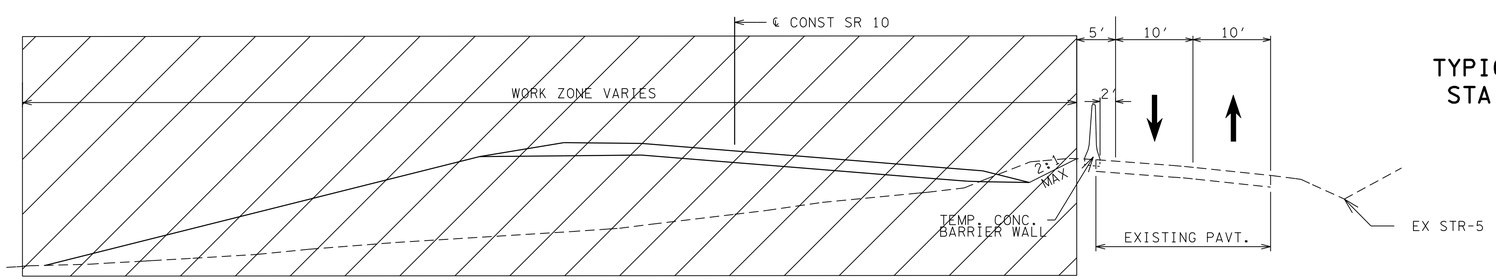
TYPICAL SECTION
STA 190+00.00



TYPICAL SECTION
STA 151+50.00



TYPICAL SECTION
STA 143+50.00



TYPICAL SECTION
STA 118+00.00

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TRAFFIC CONTROL PLAN
TYP. SECTIONS
(PHASE II)

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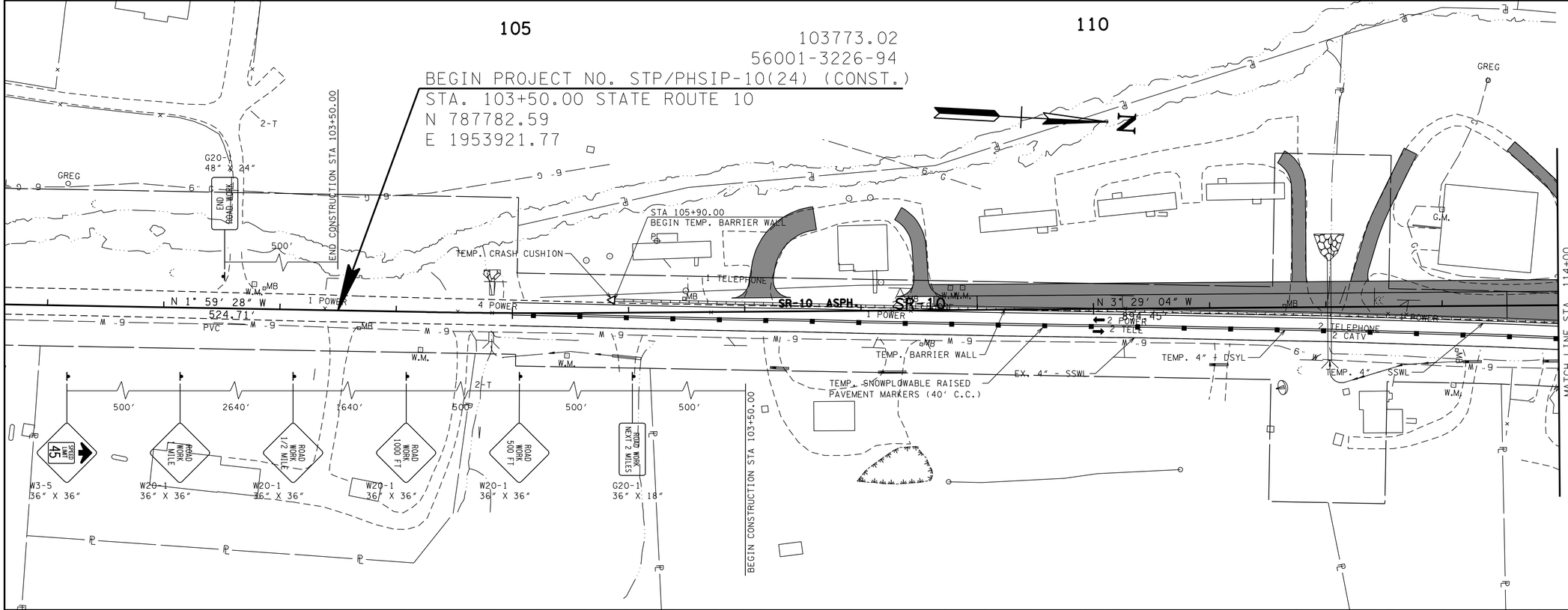
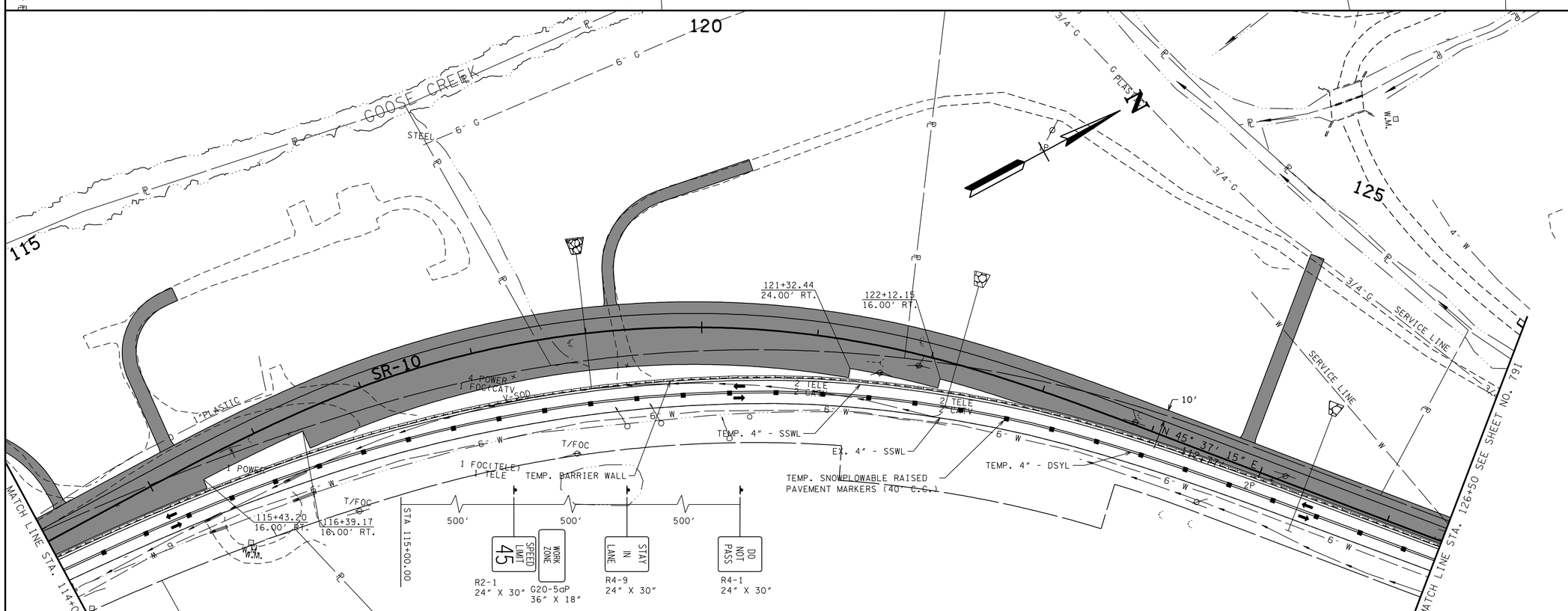
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2013	STP-10(24)	79B
CONST.	2014	STP/PHSIP-10(24)	79H





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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLAN PHASE II

STA.101+00 TO STA.126+50

SCALE: 1"=50'

20-MAR-2014 10:28
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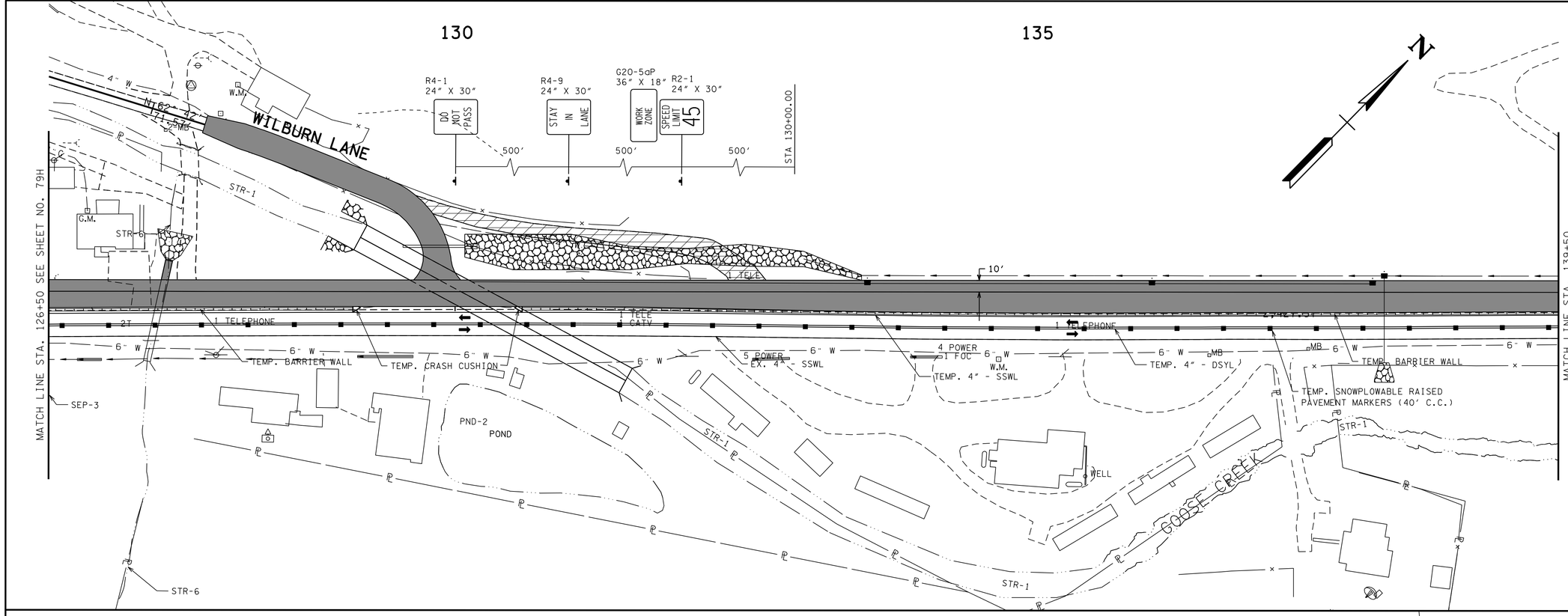
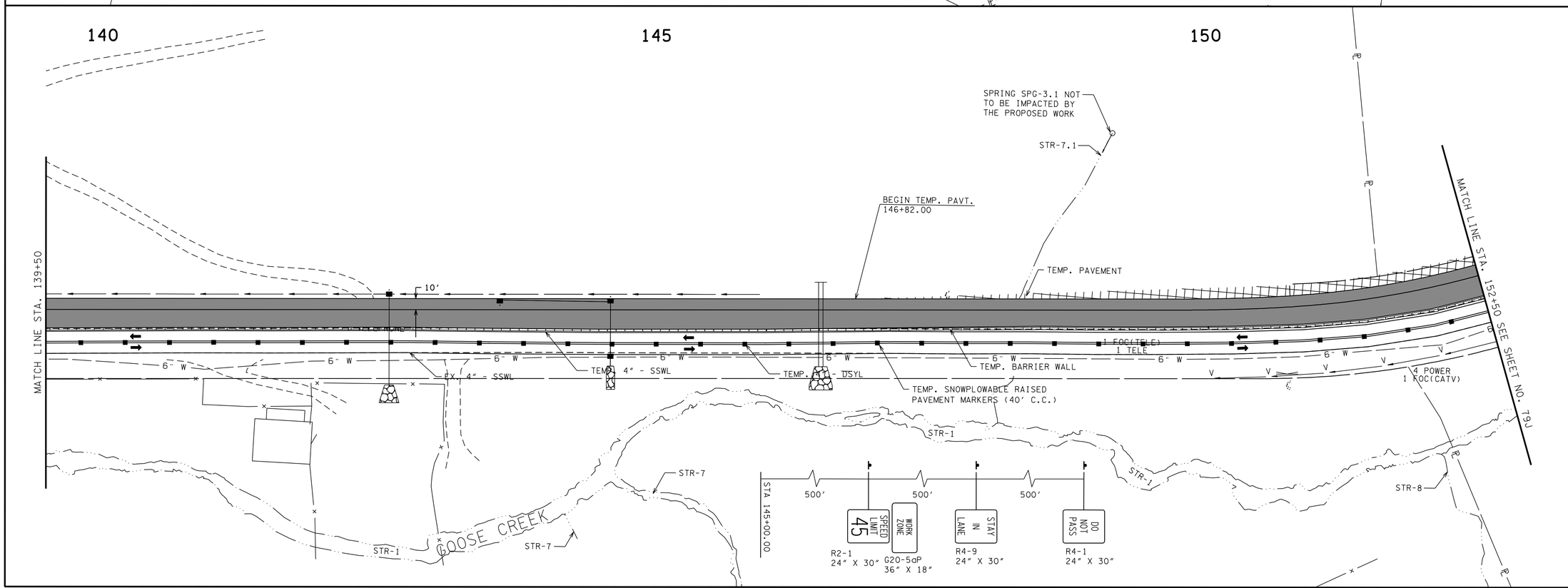
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2013	STP-10(24)	79C
CONST.	2014	STP/PHSIP-10(24)	79I



PHASE II WORK ZONE



UNOFFICIAL SET

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STATE OF TENNESSEE
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TRAFFIC CONTROL PLAN PHASE II

STA.126+50 TO STA.152+50

SCALE: 1"=50'

20-MAR-2014 10:28
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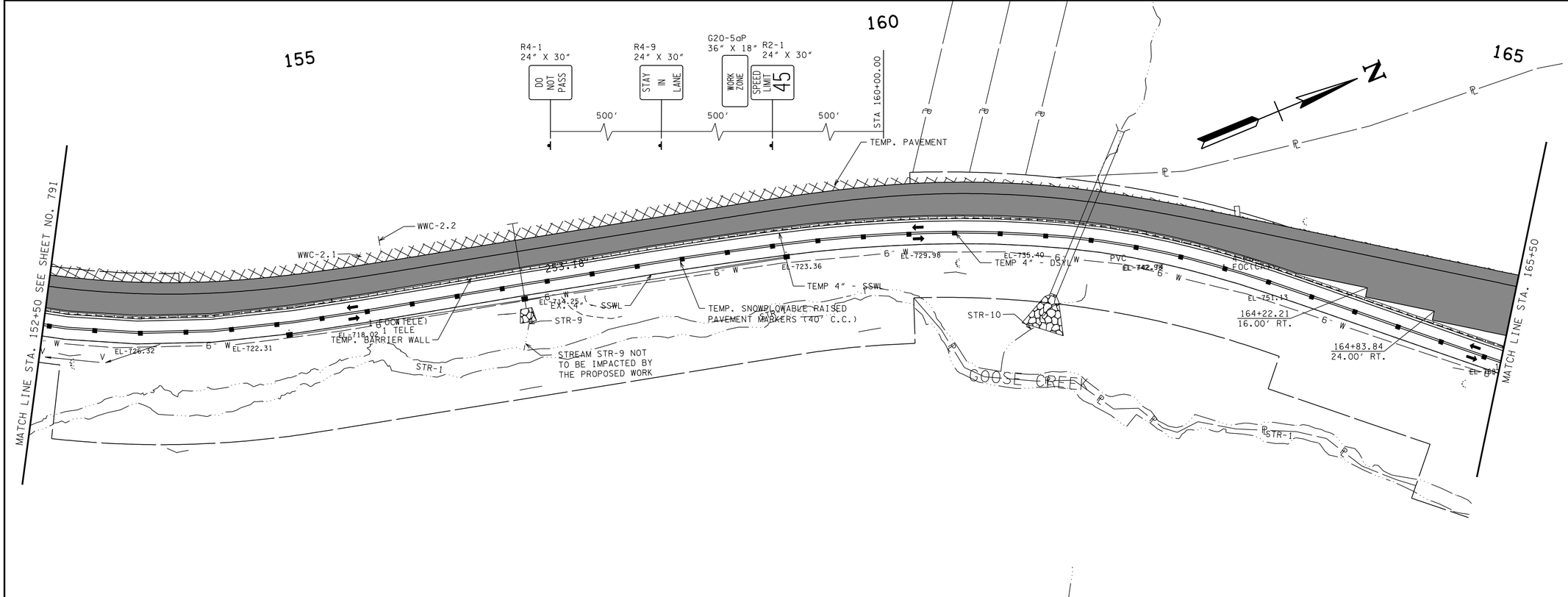
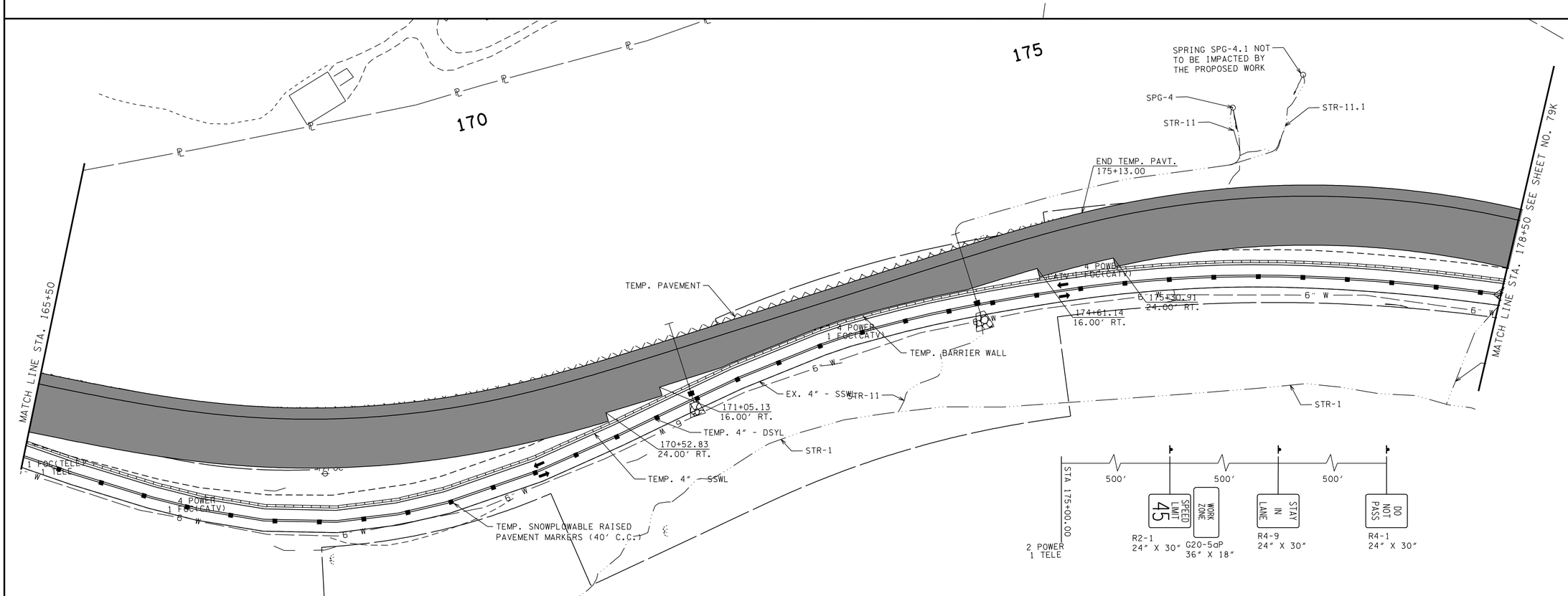
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2013	STP-10(24)	79D
CONST.	2014	STP/PHSIP-10(24)	79J



PHASE II WORK ZONE



UNOFFICIAL SET

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TRAFFIC CONTROL PLAN PHASE II

STA.152+50 TO STA.178+50

SCALE: 1"=50'

20-MAR-2014 10:28
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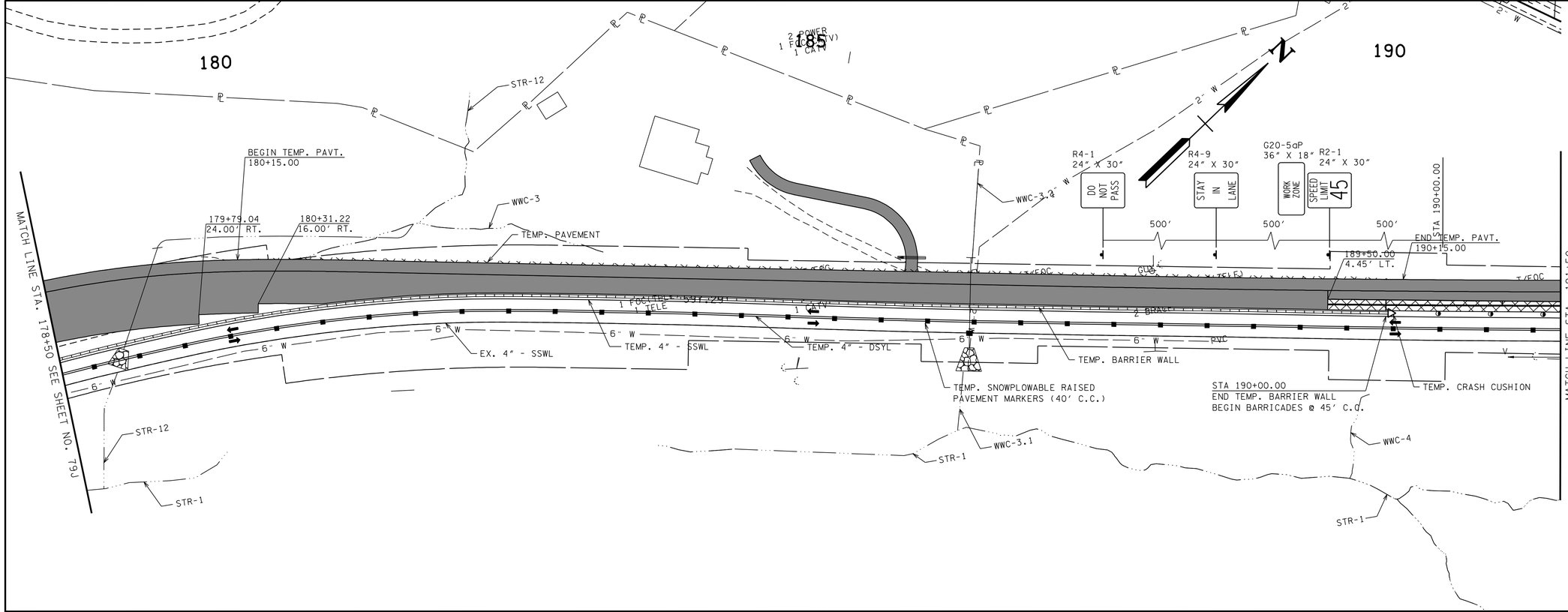
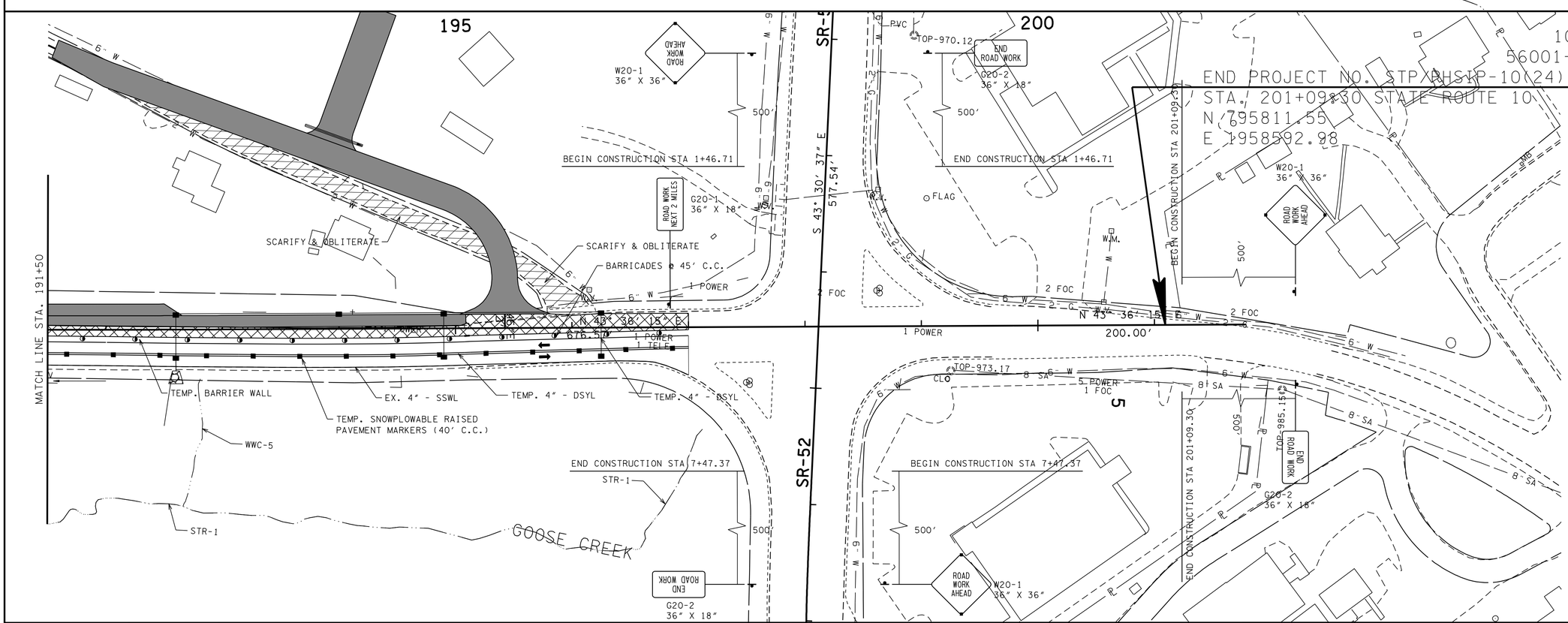
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2013	STP-10(24)	79E
CONST.	2014	STP/PHSIP-10(24)	79K



UNOFFICIAL SET

NOT FOR BIDDING

PHASE II WORK ZONE



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TRAFFIC CONTROL PLAN PHASE II

STA.178+50 TO STA.202+00

SCALE: 1"=50'

20-MAR-2014 10:28
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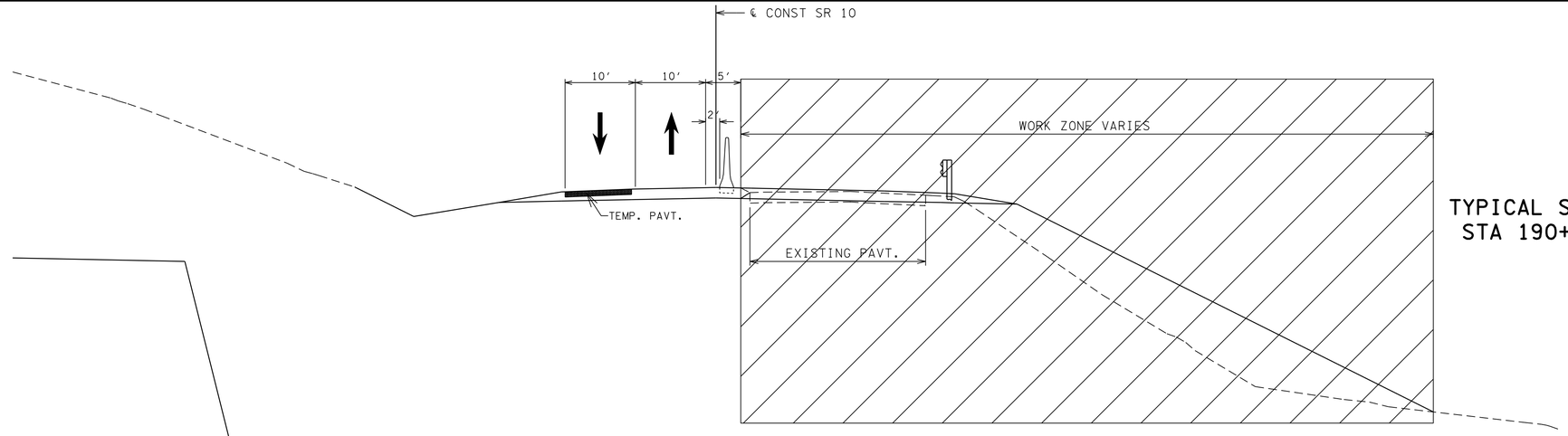
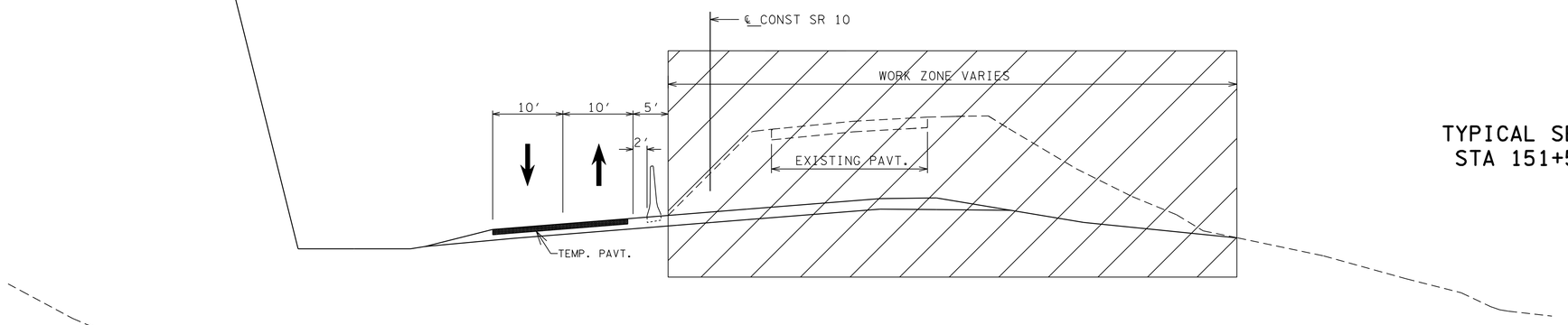
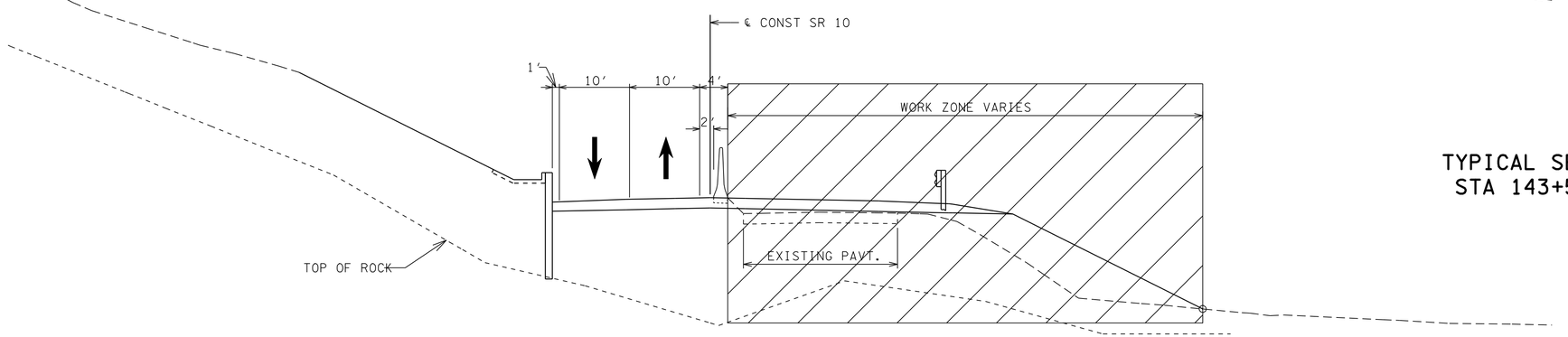
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	79L



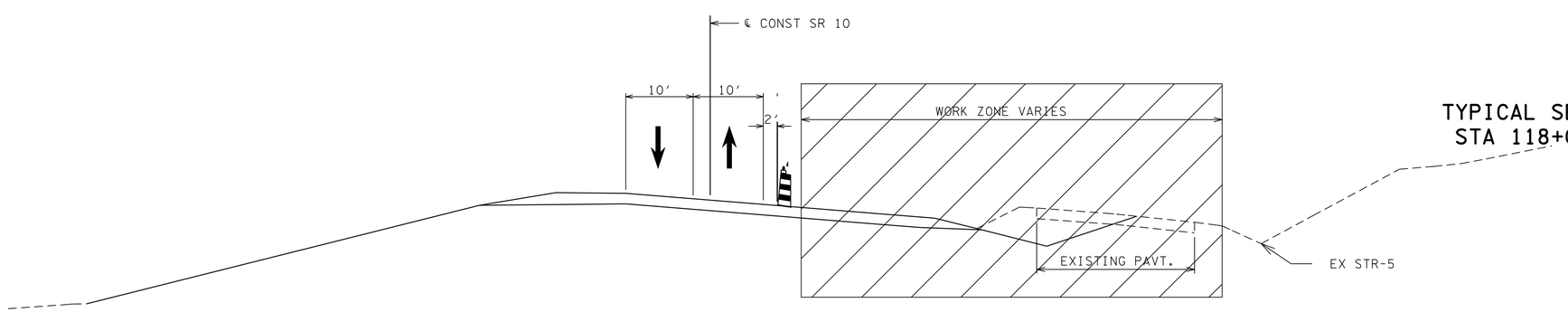
TYPICAL SECTION
STA 190+00.00



TYPICAL SECTION
STA 151+50.00



TYPICAL SECTION
STA 143+50.00



TYPICAL SECTION
STA 118+00.00

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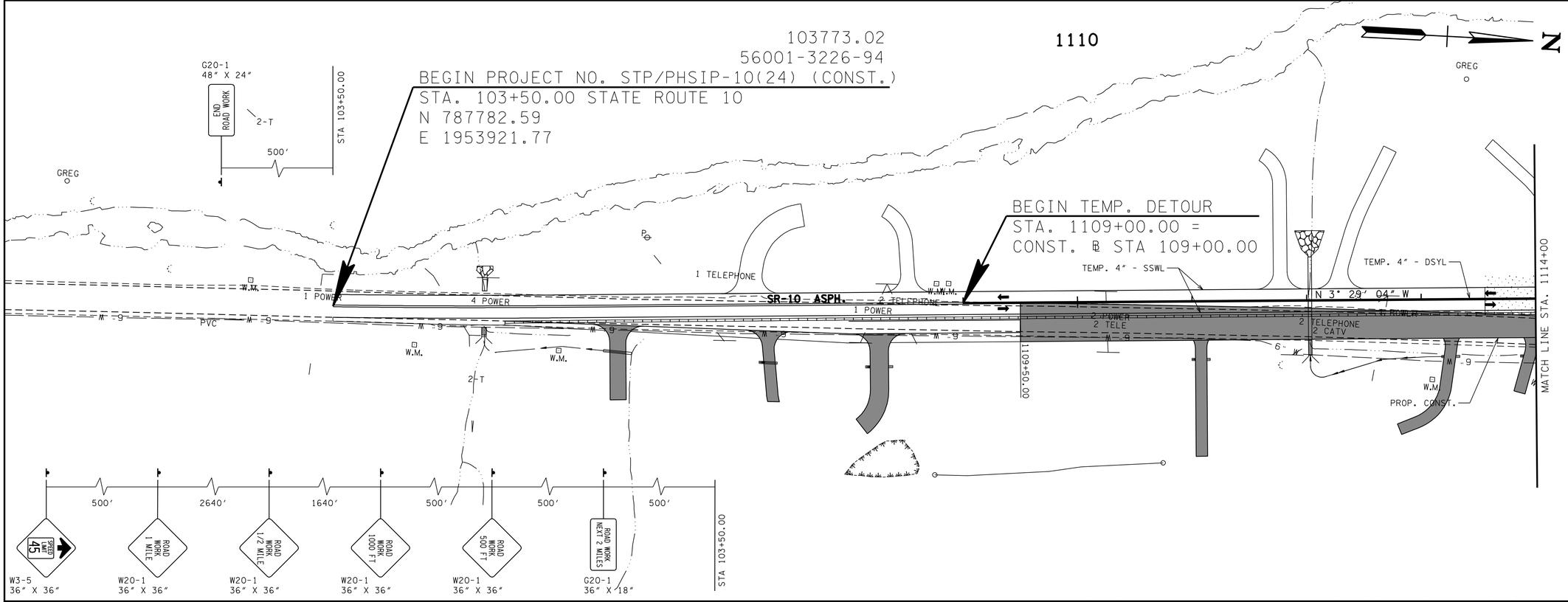
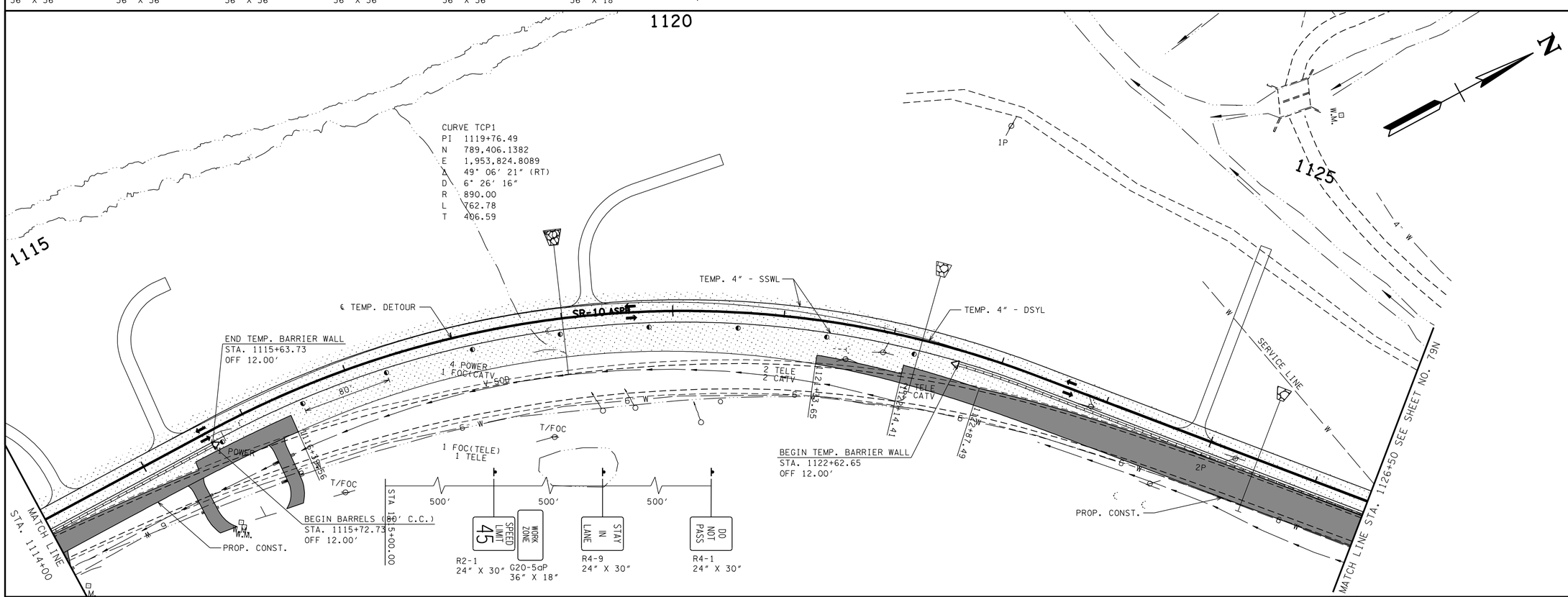
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLAN
TYP. SECTIONS
(PHASE III)

20-MAR-2014 10:28
\\AMNASFIL02\CADD\PRJ\34240A_SRIO\CAD\DGN\079L.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2013	STP-10(24)	79H
CONST.	2014	STP/PHSIP-10(24)	79M





UNOFFICIAL SET

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

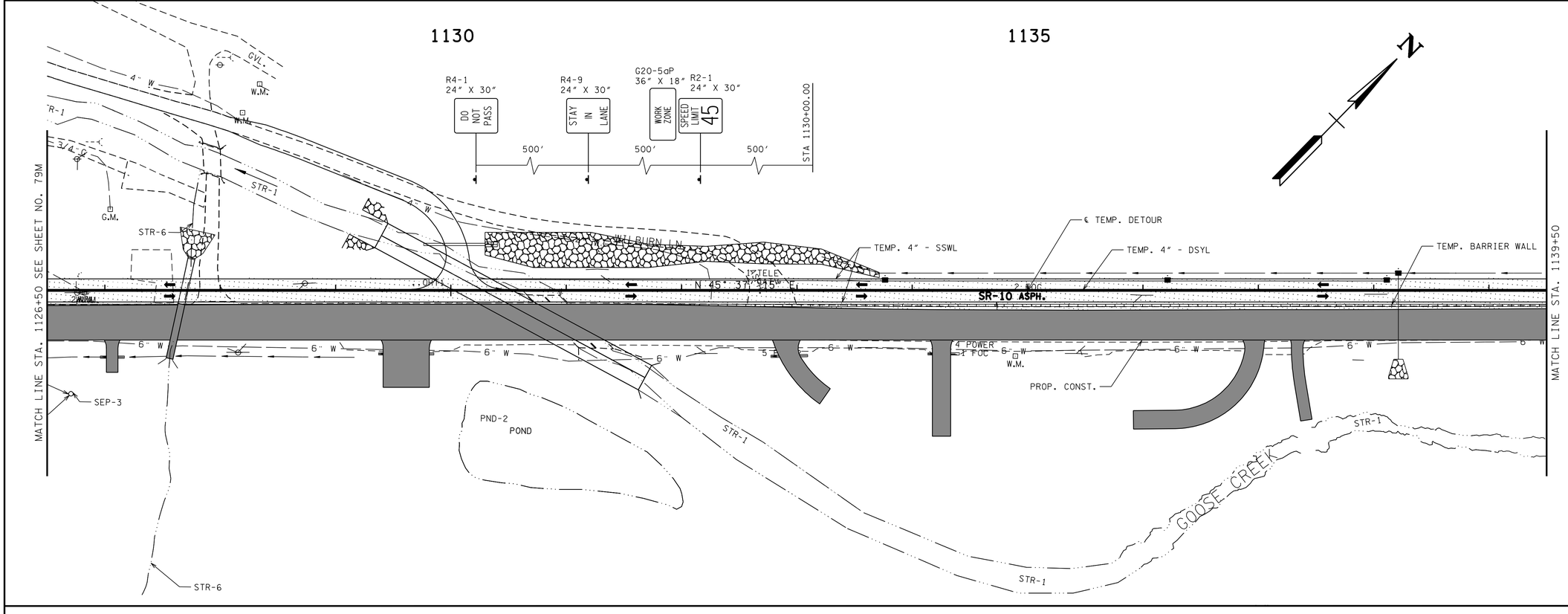
TRAFFIC CONTROL PLAN PHASE III

STA.1101+00 TO STA.1126+50

SCALE: 1"=50'

20-MAR-2014 10:28
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\079M.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2013	STP-10(24)	79I
CONST.	2014	STP/PHSIP-10(24)	79N



CURVE TCP2
PI 1152+93.84
N 791,775.4929
E 1,956,217.7474
Δ 30° 30' 27" (LT)
D 6° 56' 42"
R 825.00
L 439.28
T 224.98

UNOFFICIAL SET

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

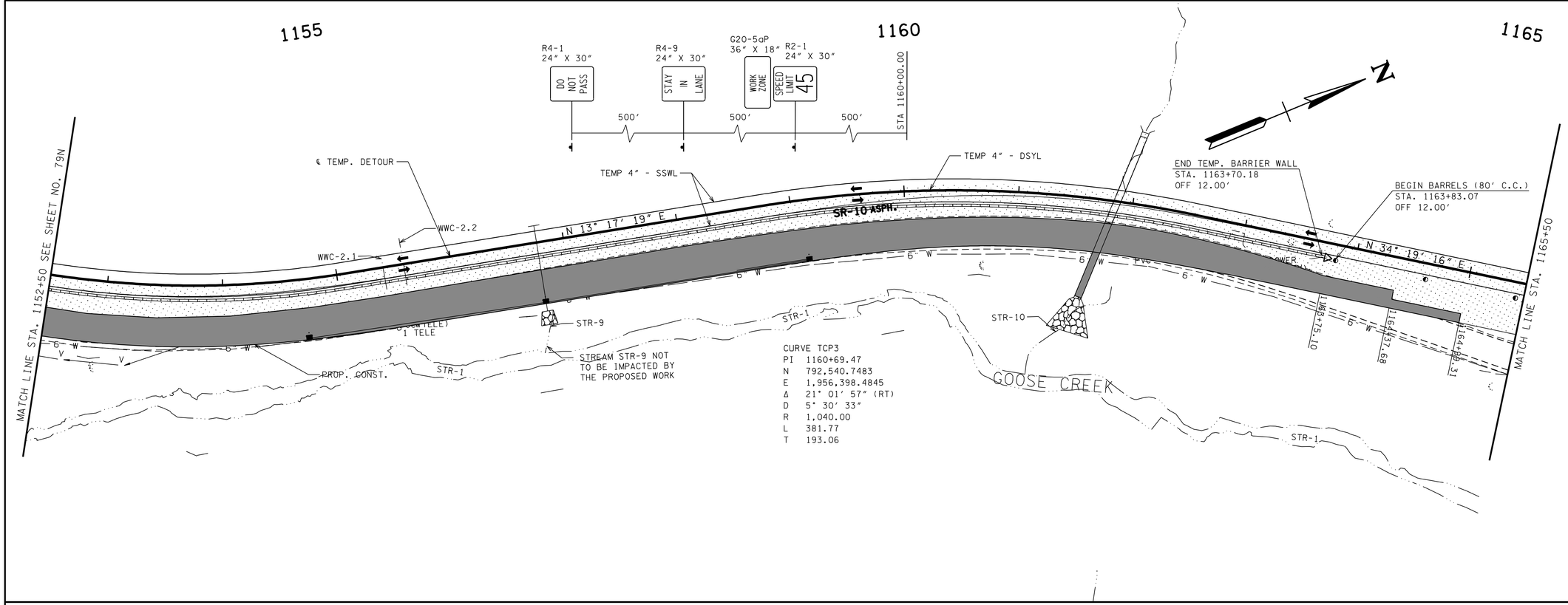
TRAFFIC CONTROL PLAN PHASE III

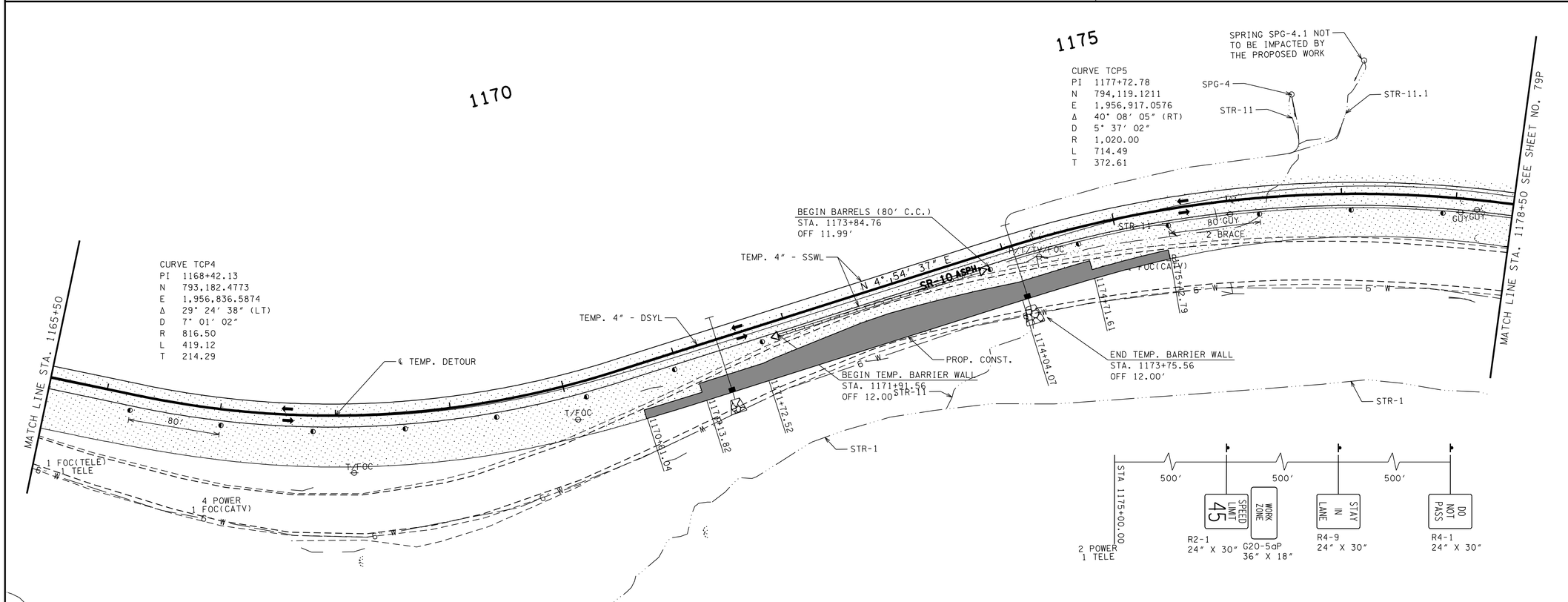
STA.1126+50 TO STA.1152+50

SCALE: 1"=50'

20-MAR-2014 10:28
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\079N.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2013	STP-10(24)	79J
CONST.	2014	STP/PHSIP-10(24)	79O





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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

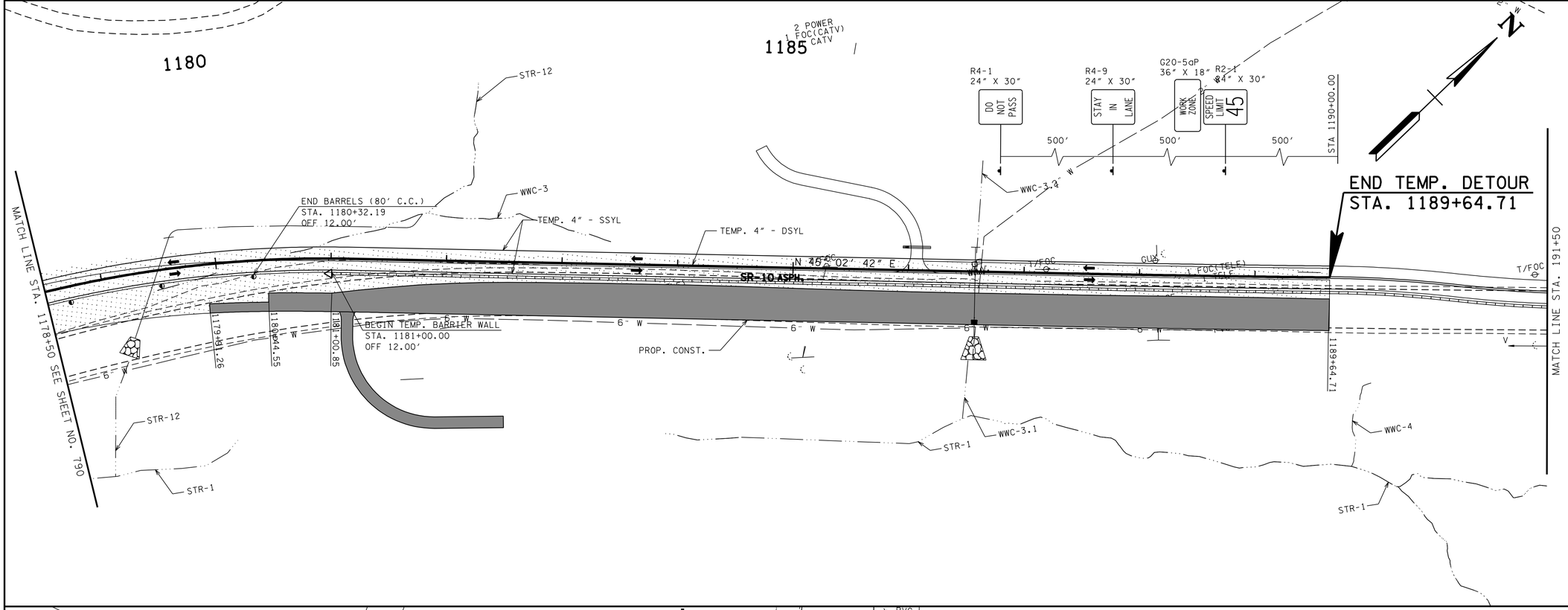
TRAFFIC CONTROL PLAN PHASE III

STA.1152+50 TO STA.1178+50

SCALE: 1"=50'

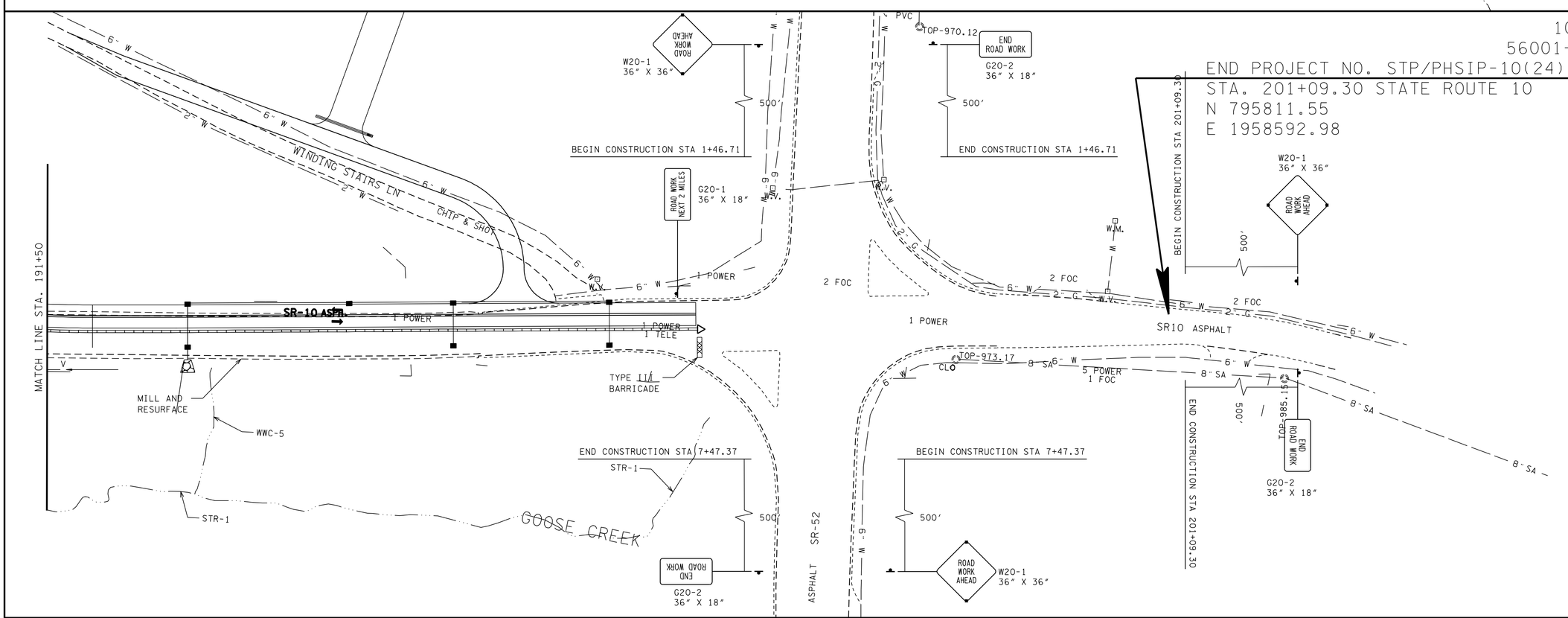
20-MAR-2014 10:28
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\0790.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2013	STP-10(24)	79K
CONST.	2014	STP/PHSIP-10(24)	79P



UNOFFICIAL SET

NOT FOR BIDDING



SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

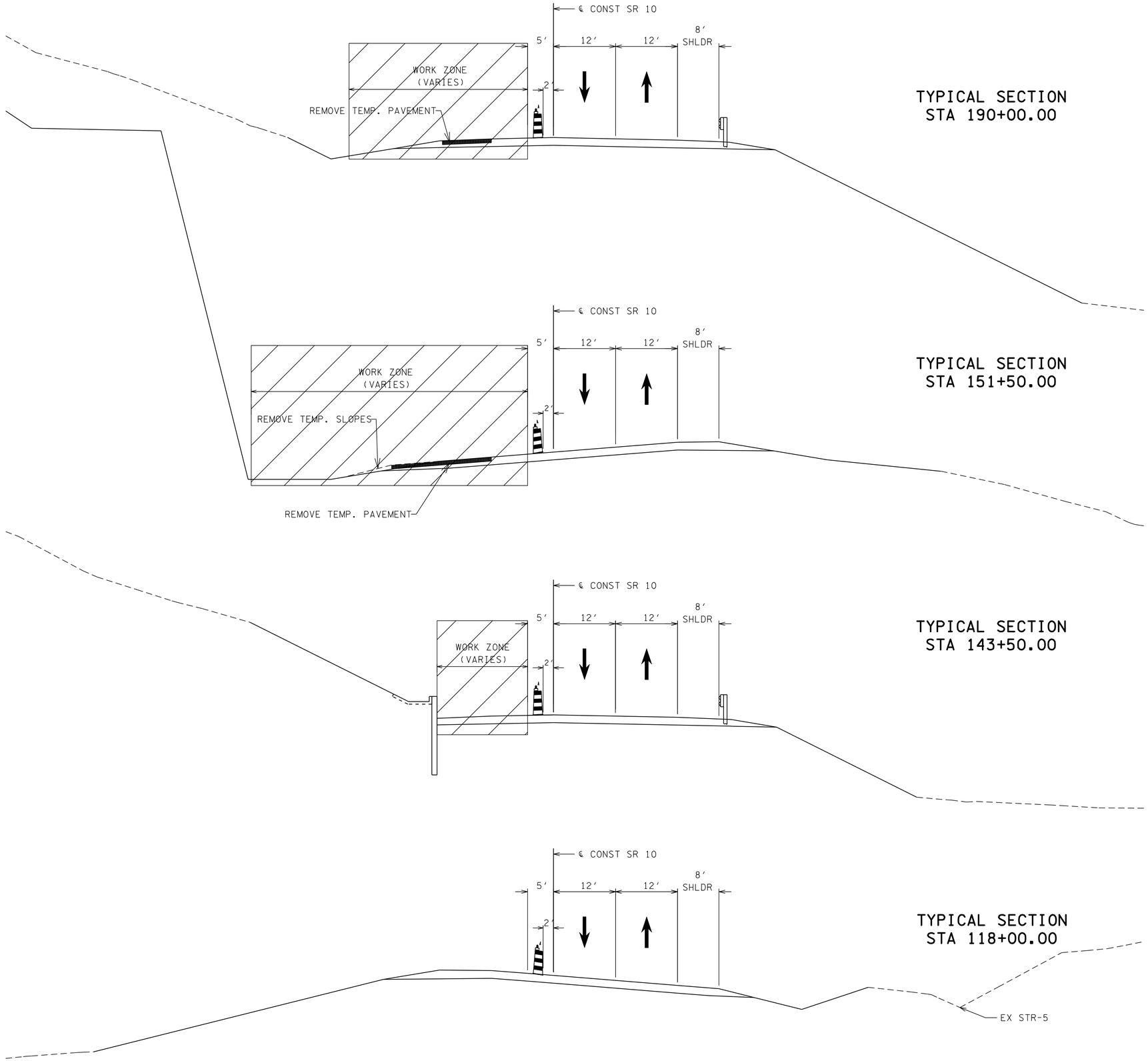
TRAFFIC CONTROL PLAN PHASE III

STA.1178+50 TO STA.202+00

SCALE: 1"=50'

20-MAR-2014 10:28
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\079P.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	79Q



UNOFFICIAL SET

NOT FOR BIDDING

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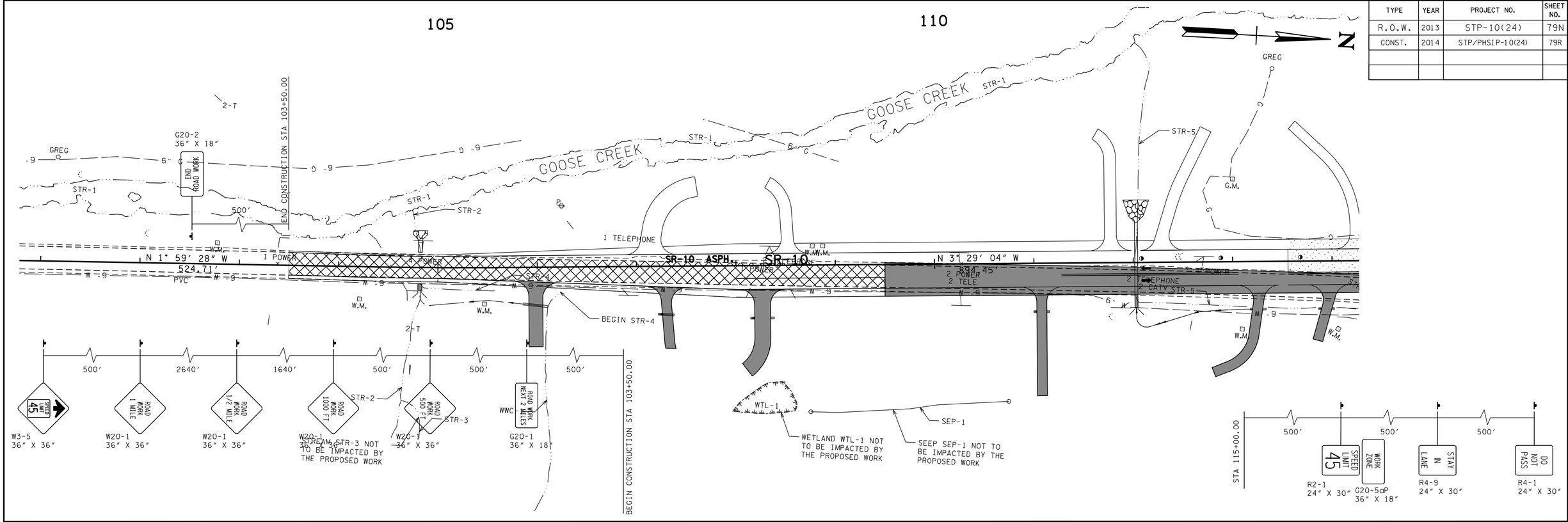
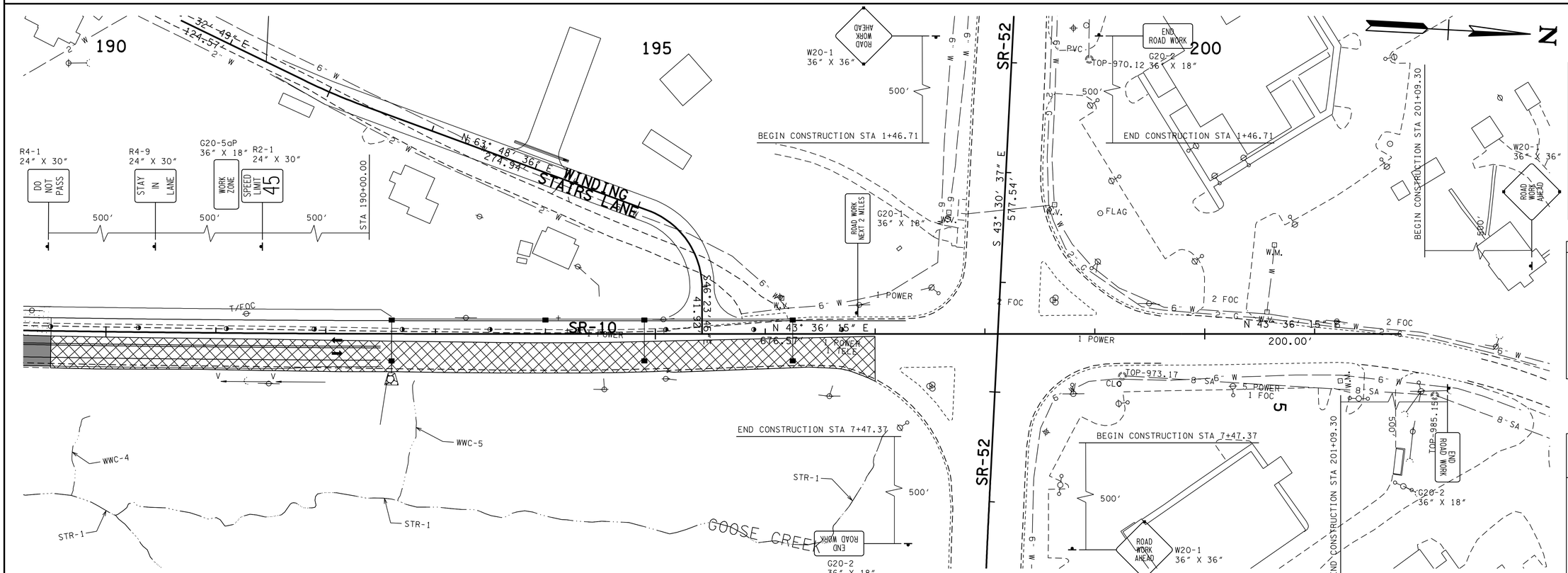
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLAN TYP. SECTIONS (PHASE IV)

20-MAR-2014 10:28
\\AMNASFIL02\CADD\PRJ\34240A_SRIO\CAD\DGN\0790.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2013	STP-10(24)	79N
CONST.	2014	STP/PHSIP-10(24)	79R





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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLAN PHASE IV

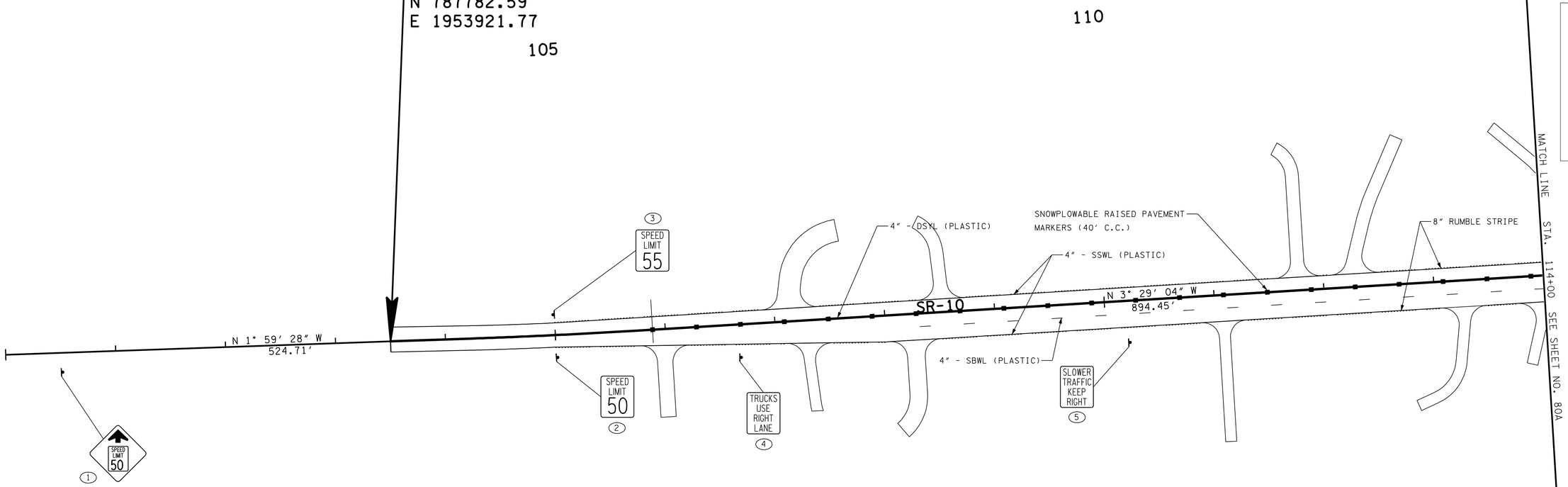
STA.101+00 TO STA.126+50

SCALE: 1"=50'

20-MAR-2014 10:28
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\079R.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	22
CONST.	2014	STP/PHSIP-10(24)	80

103773.02
56001-3226-94
BEGIN PROJECT NO. STP/PHSIP-10(24) (CONST.)
STA. 103+50.00 STATE ROUTE 10
N 787782.59
E 1953921.77



UNOFFICIAL SET
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SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

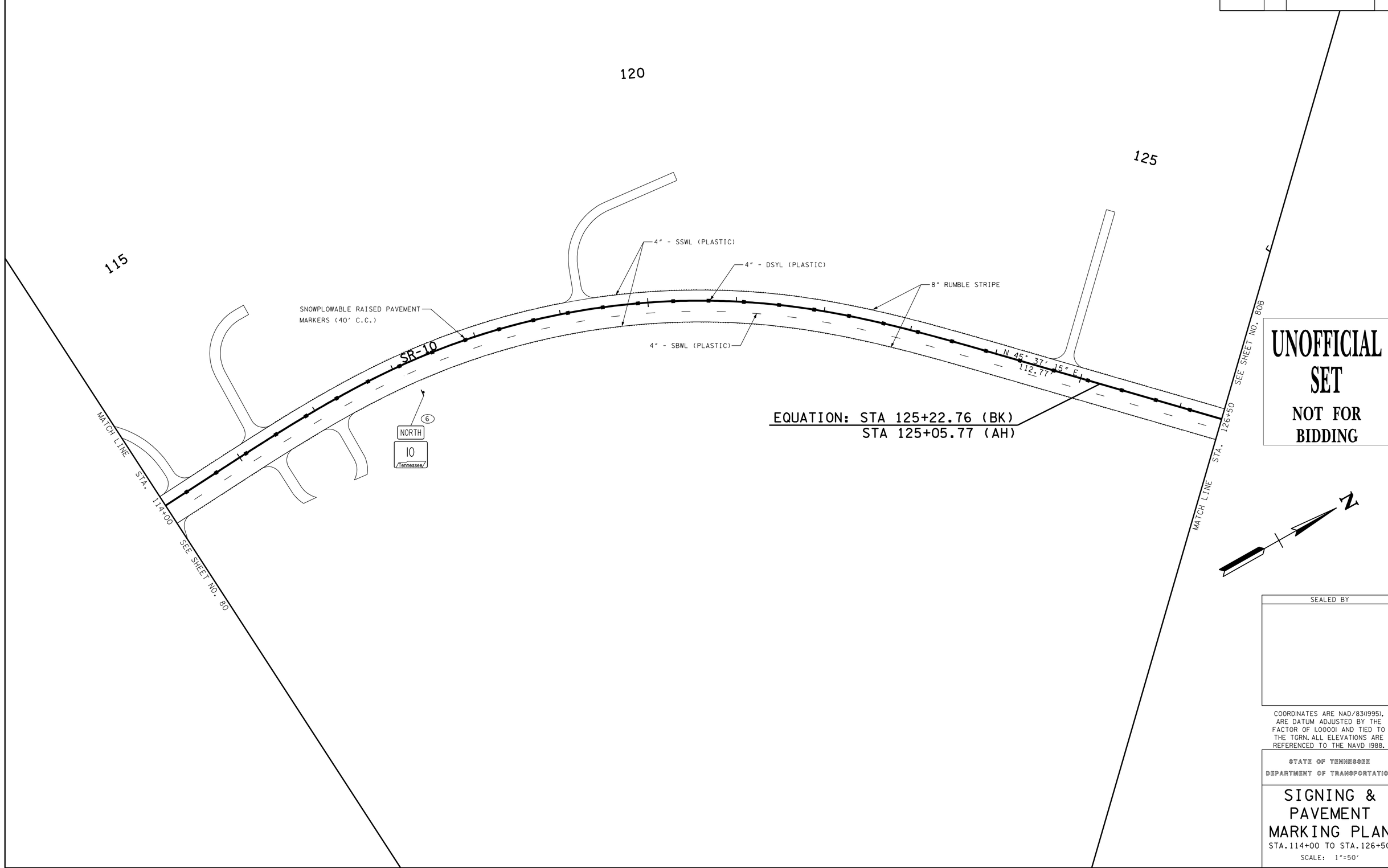
SIGNING & PAVEMENT MARKING PLAN

STA.101+50 TO STA.114+00

SCALE: 1"=50'

13-MAR-2014 11:30
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\080.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	22A
CONST.	2014	STP/PHSIP-10(24)	80A



UNOFFICIAL SET

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STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

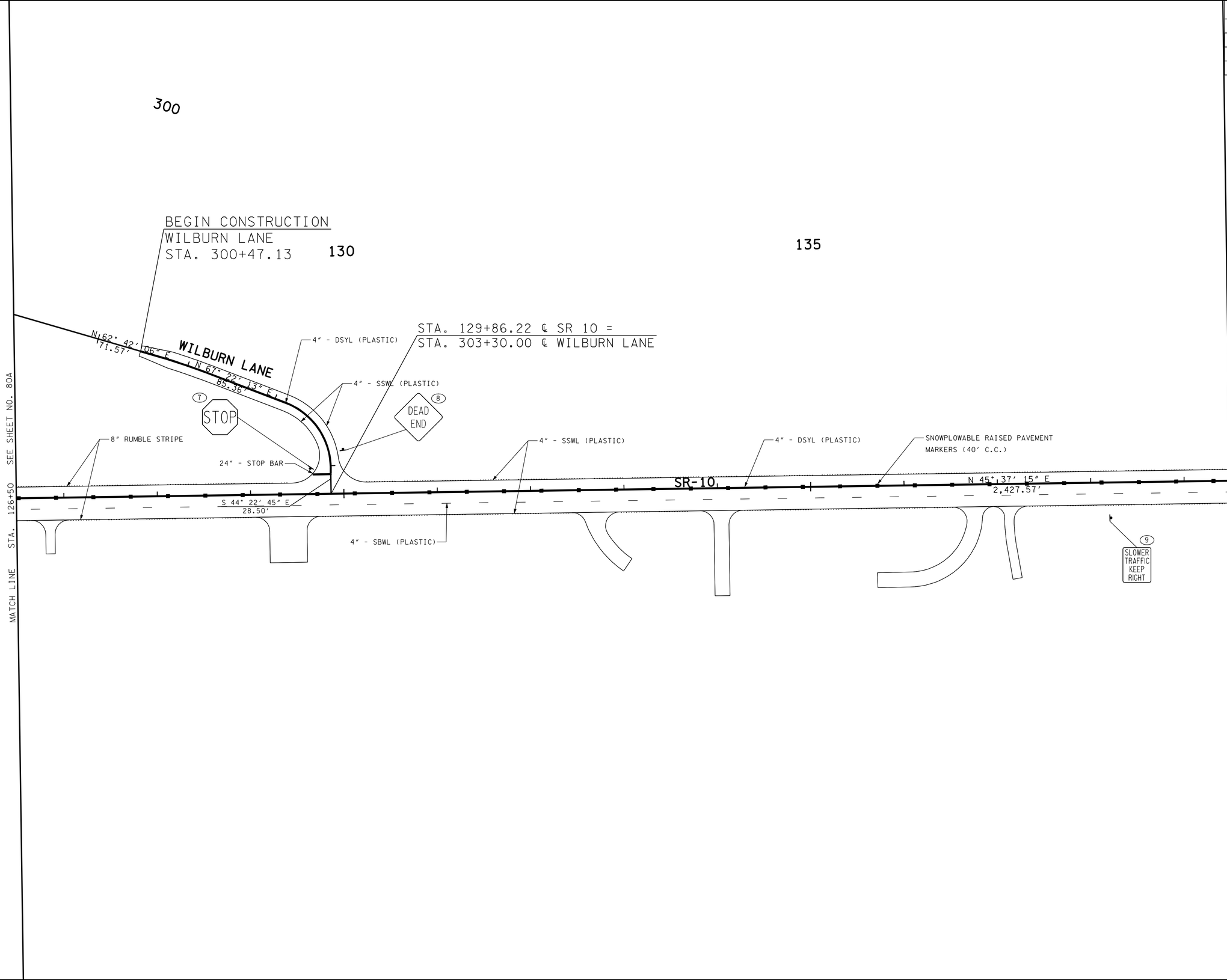
SIGNING & PAVEMENT MARKING PLAN

STA.114+00 TO STA.126+50

SCALE: 1"=50'

03-MAR-2014 11:30
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\080A.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	22B
CONST.	2014	STP/PHSIP-10(24)	80B



UNOFFICIAL SET

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STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

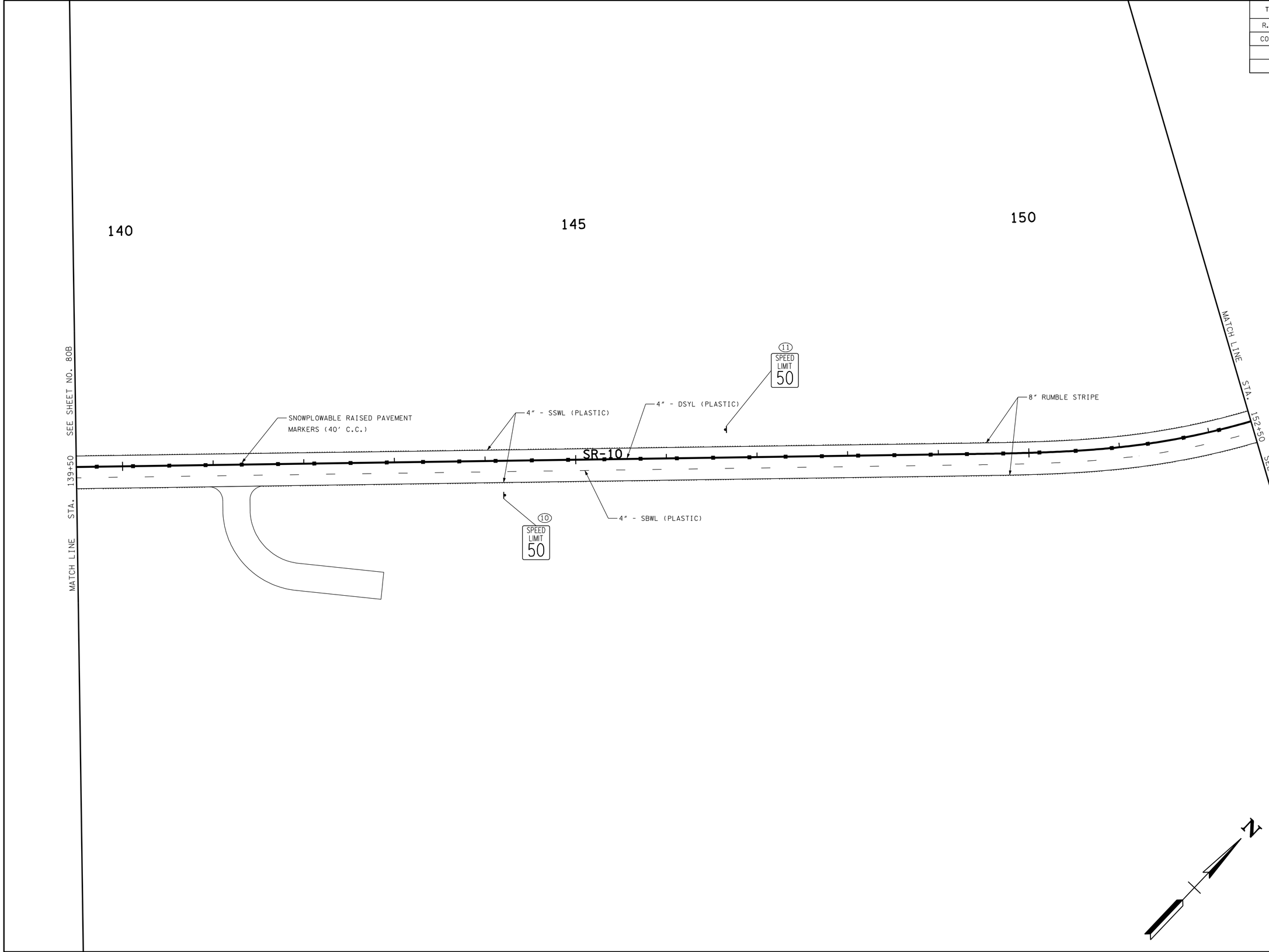
SIGNING & PAVEMENT MARKING PLAN

STA.126+50 TO STA.139+50

SCALE: 1″=50′

13-MAR-2014 11:30
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\080B.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	22C
CONST.	2014	STP/PHSIP-10(24)	80C



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

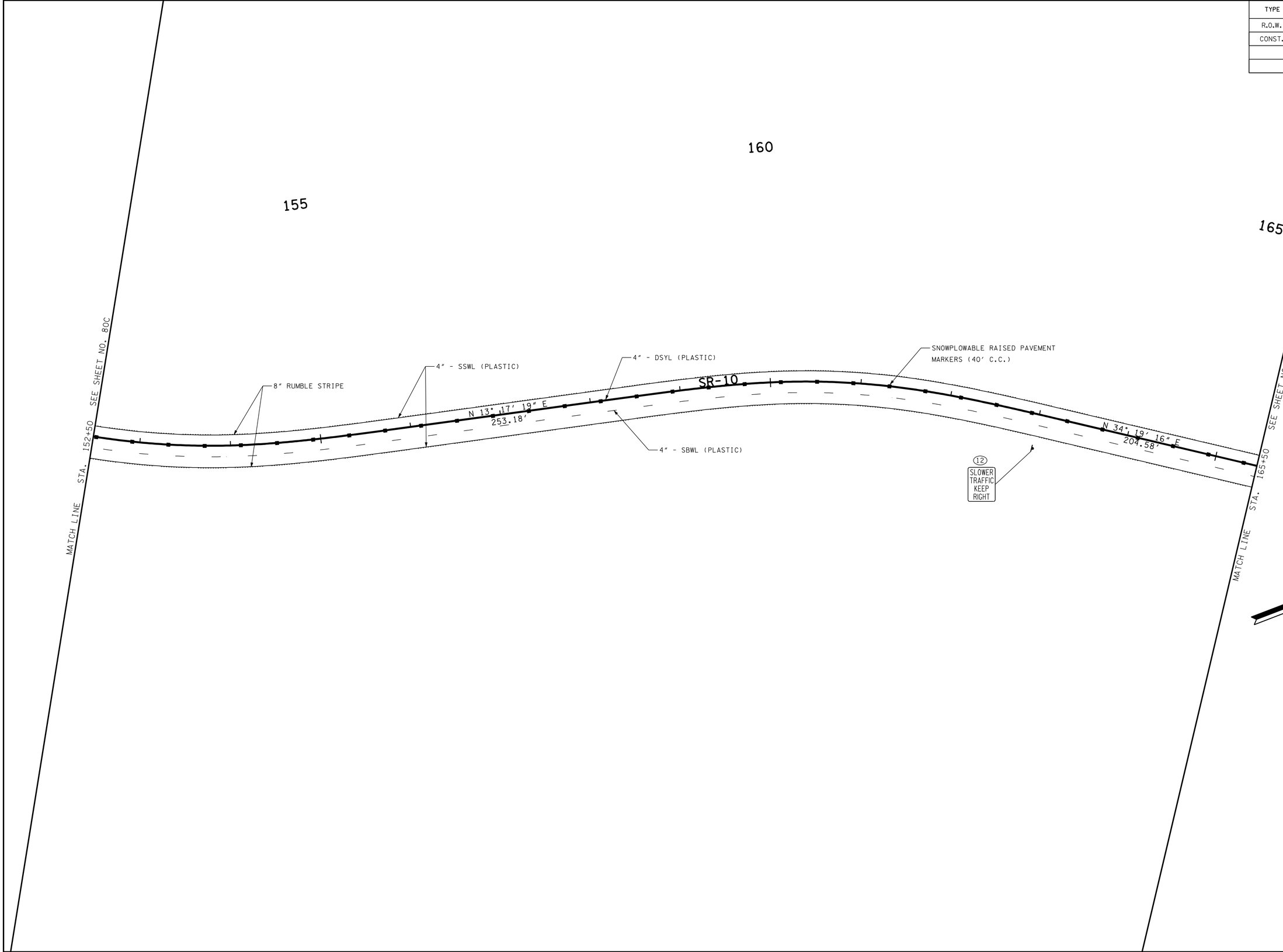
SIGNING & PAVEMENT MARKING PLAN

STA.139+50 TO STA.152+50

SCALE: 1"=50'

03-MAR-2014 11:30
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\080C.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	22D
CONST.	2014	STP/PHSIP-10(24)	80D



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STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

SIGNING & PAVEMENT MARKING PLAN

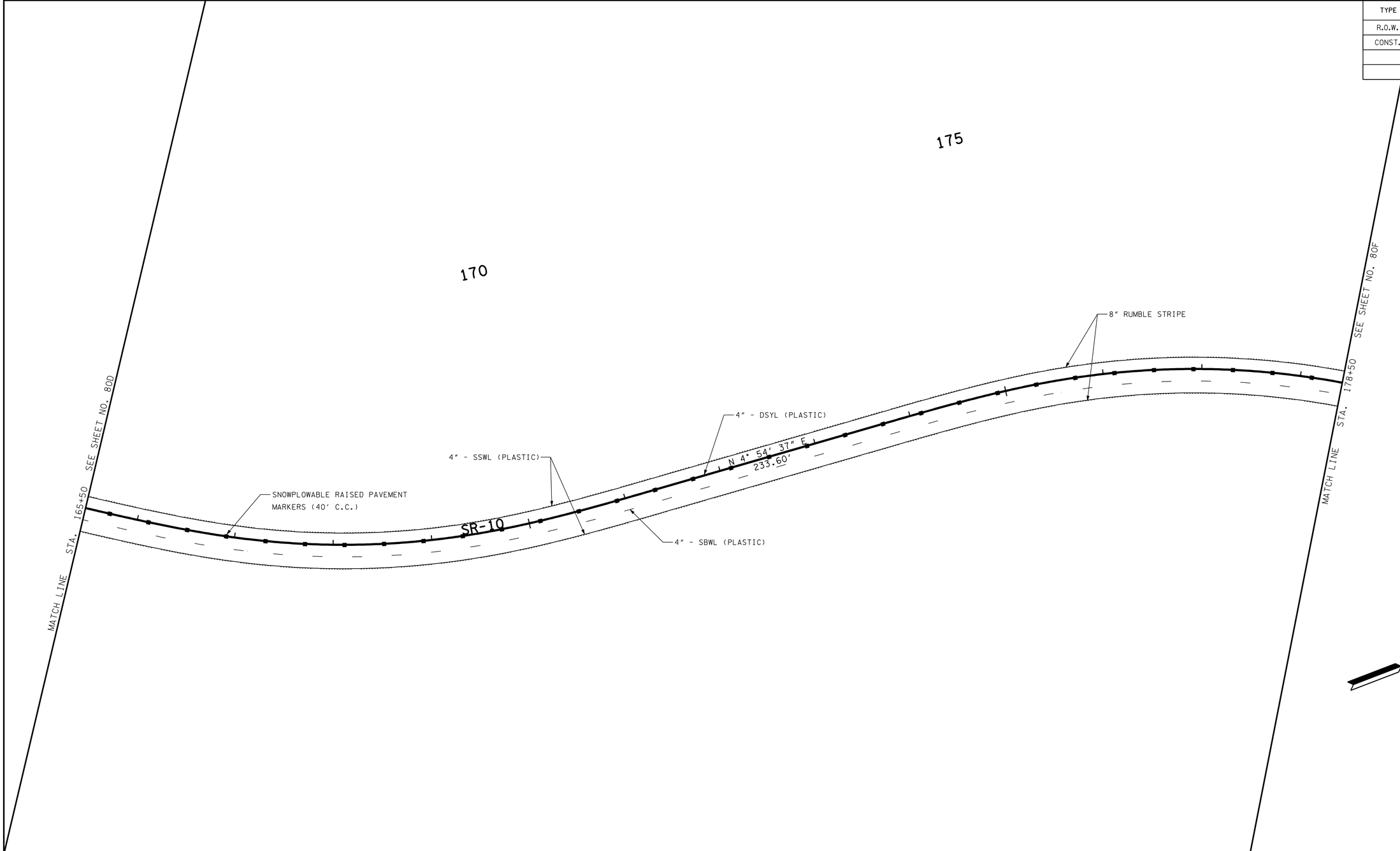
STA.152+50 TO STA.165+50

SCALE: 1"=50'

13-MAR-2014 11:31

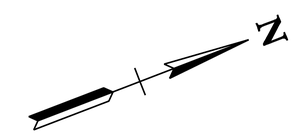
\\AMNASFIL02\CADD\PRJ\34240A_SRIO\CAD\DGN\080D.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	22E
CONST.	2014	STP/PHSIP-10(24)	80E



UNOFFICIAL SET

NOT FOR BIDDING



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STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

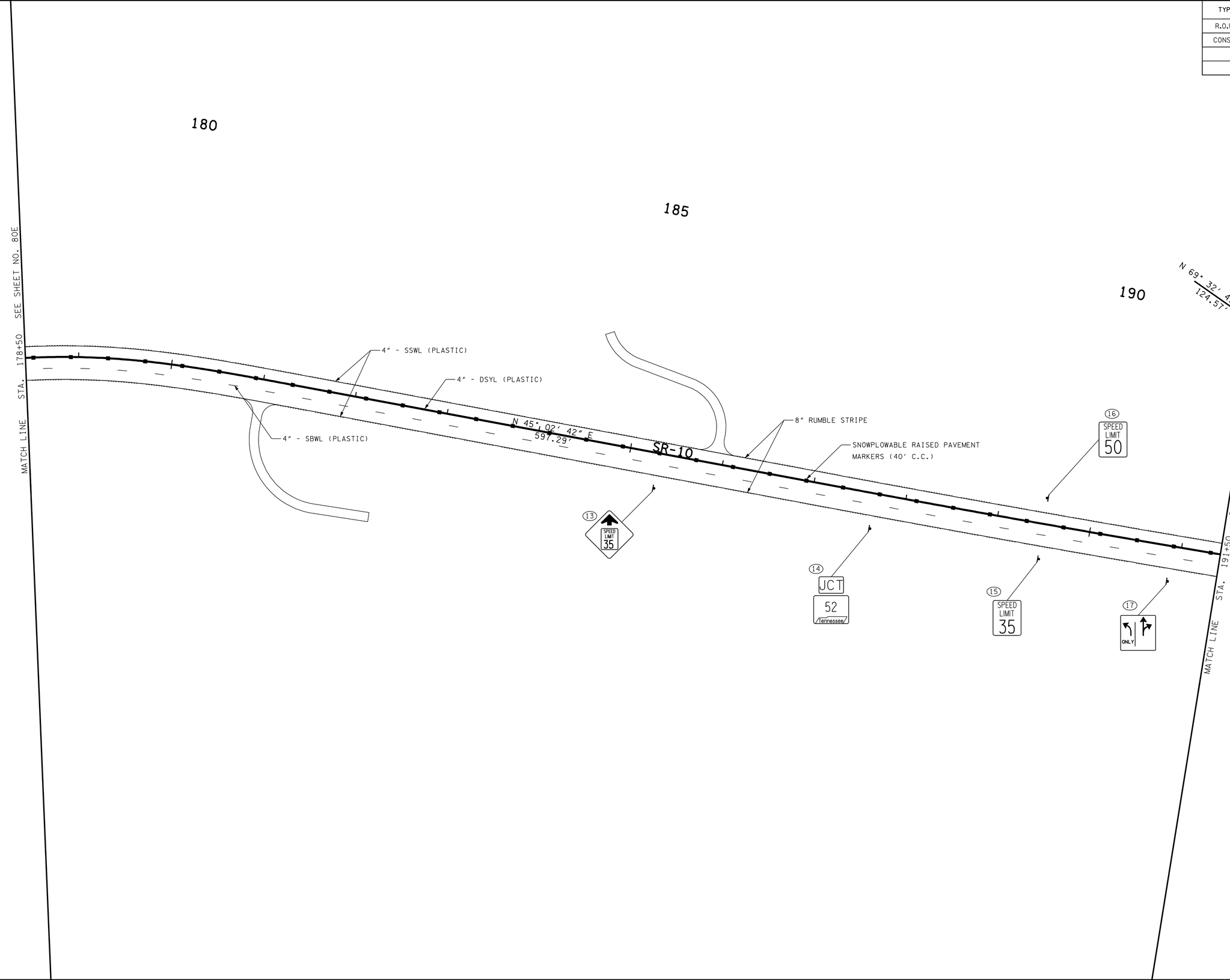
SIGNING & PAVEMENT MARKING PLAN

STA.165+50 TO STA.178+50

SCALE: 1"=50'

13-MAR-2014 11:31
\\AMNASFIL02\CADD\PRJ\34240A_SRIO\CAD\DGN\080E.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	22F
CONST.	2014	STP/PHSIP-10(24)	80F



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STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

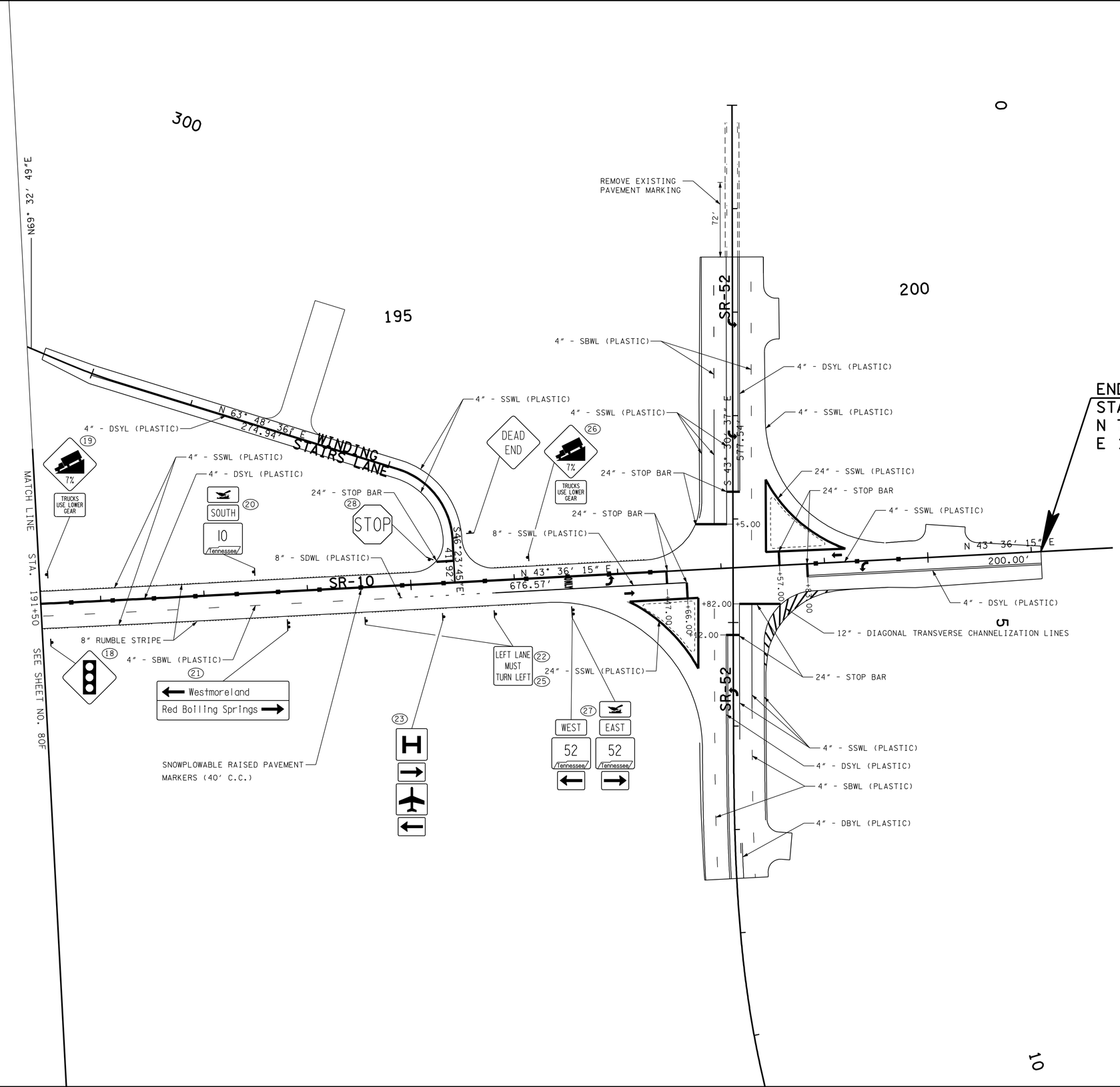
SIGNING & PAVEMENT MARKING PLAN

STA.178+50 TO STA.191+50

SCALE: 1"=50'

13-MAR-2014 11:31
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\080F.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	22G
CONST.	2014	STP/PHSIP-10(24)	80G



103773.02
56001-3226-94
END PROJECT NO. STP/PHSIP-10(24) (CONST.)
STA. 201+09.30 STATE ROUTE 10
N 795811.55
E 1958592.98

N

UNOFFICIAL SET

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SIGNING & PAVEMENT MARKING PLAN

STA.191+50 TO STA.000+00

SCALE: 1"=50'

13-MAR-2014 11:32
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\080G.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	81

ALL SIGNS SHOWN WITH DESIGNATIONS ARE TO BE FABRICATED AS DETAILED IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (CURRENT EDITION)

SIGN NO	LEGEND		SHEET NO	SIZE				COPY				SHIELD	ARROW	SIGN FACE			STEEL DESIGN (BREAK-AWAY)					MINIMUM VERTICAL CLEARANCE	REMARKS
				LENGTH	HEIGHT	RADIUS	BORDER WIDTH	CAPITAL	LOWER CASE	NUMERAL	SERIES			COPY	BACKGROUND	MATERIAL	SUPPORT TYPE	SUPPORT LENGTH	FOOTING	CONC. CU. YD.	REIN STEEL LBS.		
3	SPEED LIMIT 55	R2-1		36"	48"									BLACK	WHITE (REF.)	0.100" SHEET ALUMINUM	P8	h =14'-0"				5'-0"	
2	SPEED LIMIT 50	R2-1		36"	48"									BLACK	WHITE (REF.)	0.100" SHEET ALUMINUM	P8	h =14'-0"				5'-0"	
10																		h =14'-0"					
11																		h =14'-0"					
16																		h =14'-0"					
15	SPEED LIMIT 35	R2-1		36"	48"									BLACK	WHITE (REF.)	0.100" SHEET ALUMINUM	P8	h =14'-0"				5'-0"	
1	SPEED LIMIT 50	W3-5		36"	36"									(ARROW) BLACK (STOP) RED (REF.)	YELLOW (REF.)	0.100" SHEET ALUMINUM	P8	h =13'-6"				5'-0"	
13	SPEED LIMIT 35	W3-5		36"	36"									(ARROW) BLACK (STOP) RED (REF.)	YELLOW (REF.)	0.100" SHEET ALUMINUM	P8	h =13'-6"				5'-0"	
7	STOP	R1-1		36"	36"									WHITE (REF.)	RED (REF.)	0.080" SHEET ALUMINUM	P8	h =12'-6"				5'-0"	
28																		h =12'-6"					
18		W3-3		36"	36"									BLACK RED (REF.) GREEN (REF.)	YELLOW (REF.)	0.100" SHEET ALUMINUM	P8	h =13'-6"				5'-0"	
4	TRUCKS USE RIGHT LANE	R4-5		36"	48"									BLACK	WHITE (REF.)	0.100" SHEET ALUMINUM	P8	h =14'-0"				5'-0"	
5	SLOWER TRAFFIC KEEP RIGHT	R4-3		36"	48"									BLACK	WHITE (REF.)	0.100" SHEET ALUMINUM	P8	h =14'-0"				5'-0"	
9																		h =14'-0"					
12																		h =14'-0"					
22	LEFT LANE MUST TURN LEFT	R3-7		30"	30"									BLACK	WHITE (REF.)	0.080" SHEET ALUMINUM	P8	h =12'-0"				5'-0"	
25																		h =12'-0"					
19	7 %	W7-1b		36"	36"									BLACK	YELLOW (REF.)	0.100" SHEET ALUMINUM	P5	h =12'-0"				5'-0"	REQUIRES SLIP BASE ITEM NO. 713-11.21 SEE STD. DRAWING T-S-23A
26	TRUCKS USE LOWER GEAR	W7-2b		24"	18"									BLACK		0.080" SHEET ALUMINUM		h =12'-0"					
17	ONLY	R3-8		36"	36"									BLACK	WHITE (REF.)	0.100" SHEET ALUMINUM	P8	h =12'-6"				5'-0"	

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ROLAND LEE JONES REGISTERED ENGINEER AGRICULTURE COMMERCE NO. 17640 STATE OF TENNESSEE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SIGN SCHEDULE

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	81A

ALL SIGNS SHOWN WITH DESIGNATIONS ARE TO BE FABRICATED AS DETAILED IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (CURRENT EDITION)

SIGN NO	LEGEND	SHEET NO	SIZE				COPY				SHIELD	ARROW	SIGN FACE			STEEL DESIGN (BREAK-AWAY)					MINIMUM VERTICAL CLEARANCE	REMARKS
			LENGTH	HEIGHT	RADIUS	BORDER WIDTH	CAPITAL	LOWER CASE	NUMERAL	SERIES			COPY	BACKGROUND	MATERIAL	SUPPORT TYPE	SUPPORT LENGTH	FOOTING	CONC. CU. YD.	REIN STEEL LBS.		
23	H D9-2 → M6-1 ✈ I-5 ← M6-1		24" 21" 24" 21"	24" 15" 24" 15"									WHITE (REF.) WHITE (REF.)	BLUE (REF.) BLUE (REF.)	0.080" SHEET ALUMINUM	P5	h =13'-0"				5'-0"	REQUIRES SLIP BASE ITEM NO. 713-11.21 SEE STD. DRAWING T-S-23A
8 24	DEAD END W14-1		30"	30"									BLACK	YELLOW (REF.)	0.080" SHEET ALUMINUM	P8	h =12'-6" h =12'-6"				5'-0"	
6	NORTH M3-1 10 Tennessee TN-6c		21" 30"	15" 24"									BLACK	WHITE (REF.)	0.080" SHEET ALUMINUM	P8	h =12'-6"				5'-0"	
14	JCT M2-1 52 Tennessee TN-6c		21" 30"	15" 24"									BLACK	WHITE (REF.)	0.080" SHEET ALUMINUM	P8	h =13'-0"				5'-0"	
20	TN-22a SOUTH M3-1 10 Tennessee TN-6c		24" 24" 30"	12" 12" 24"									BLACK	WHITE (REF.)	0.080" SHEET ALUMINUM	P8	h =14'-0"				5'-0"	
27	TN-22a M3-4 WEST EAST M3-2 TN-6c 52 Tennessee 52 Tennessee TN-6c M6-1 ← → M6-1		24" 24" 30" 21"	12" 12" 24" 15"									BLACK	WHITE (REF.)	0.080" SHEET ALUMINUM	P8	h_1=14'-0" h_2=15'-6"				5'-0"	
21	← Westmoreland Red Boiling Spring → D1-2		90"	30"			6"	4.5"		"D"		6"X9"	WHITE (REF.)	GREEN (REF.)	0.100" SHEET ALUMINUM	U3	h_1=12'-6" h_2=13'-0" h_3=13'-6"				7'-0"	REDUCE LETTER SPACING 50% OR TO FIT
	HWY 52 BYPASS D3-1		96"	18"			8"	6"		"D"												REDUCE LETTER SPACING 50% OR TO FIT SEE SIGNAL SHEET #82 FOR LOCATION
	SR-10 D3-1		42"	18"			8"	6"		"D"												SEE SIGNAL SHEET #82 FOR LOCATION

UNOFFICIAL SET

NOT FOR BIDDING

U-POST SUBSTITUTION TABLE

BID ITEM 713-11.01	SUBSTITUTION ALLOWED
2#/FT. U1	2#/FT. MU1 OR 2#/FT. R1
2.5#/FT. U3	2.5#/FT. MU3 OR 3#/FT. R2*
3#/FT. U6	
4#/FT. U7	NO SUBSTITUTES

* PAID AT A RATE OF 2.5#/FT.

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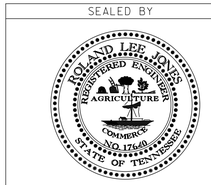


STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SIGN SCHEDULE

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	22H
CONST.	2014	STP/PHSIP-10(24)	82

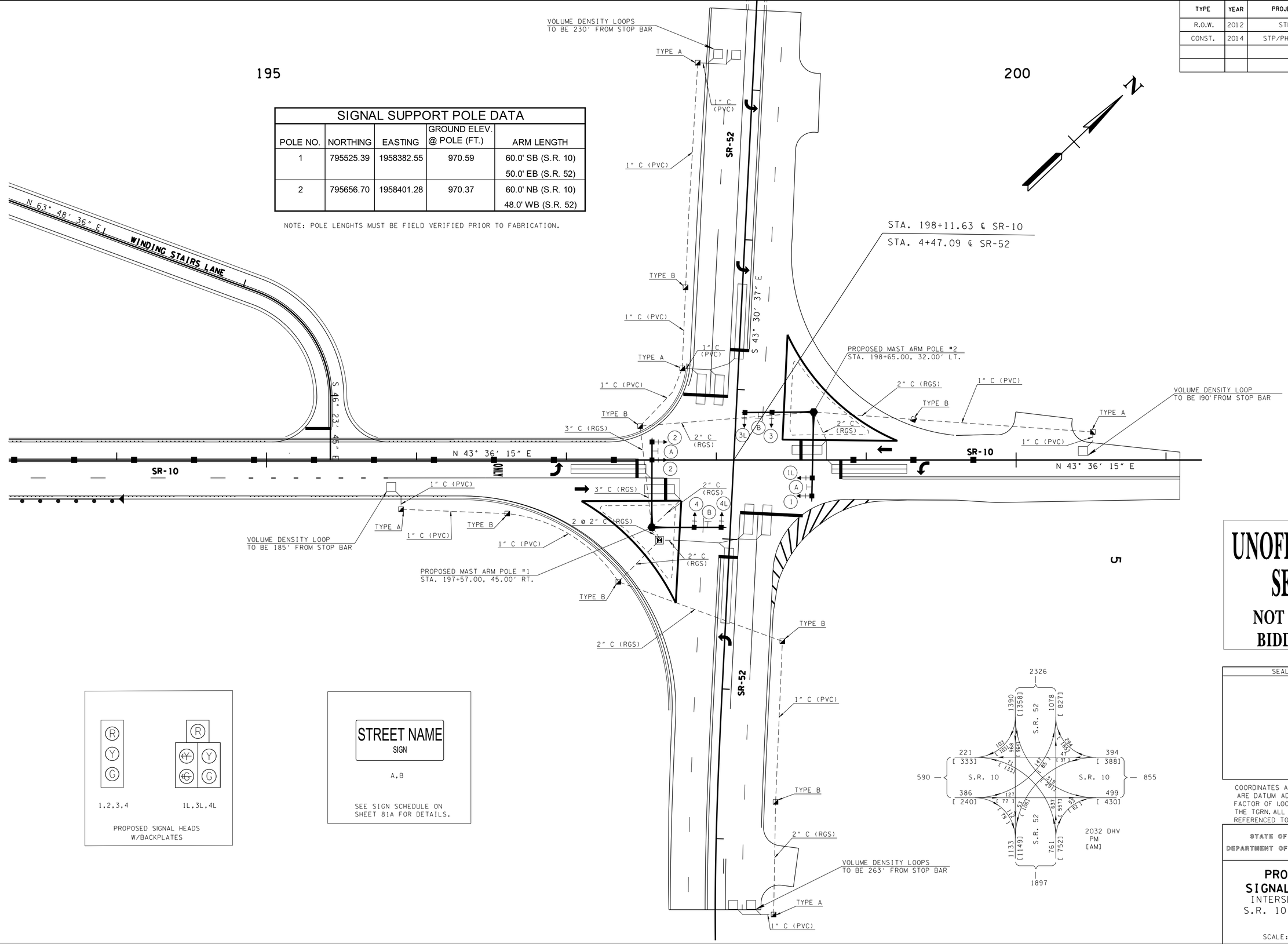
195

200

SIGNAL SUPPORT POLE DATA

POLE NO.	NORTHING	EASTING	GROUND ELEV. @ POLE (FT.)	ARM LENGTH
1	795525.39	1958382.55	970.59	60.0' SB (S.R. 10) 50.0' EB (S.R. 52)
2	795656.70	1958401.28	970.37	60.0' NB (S.R. 10) 48.0' WB (S.R. 52)

NOTE: POLE LENGHTS MUST BE FIELD VERIFIED PRIOR TO FABRICATION.



5

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00001 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPOSED SIGNAL LAYOUT
INTERSECTION OF
S.R. 10 AT S.R. 52

SCALE: 1"=30 '

3/13/2014 11:44:27 AM
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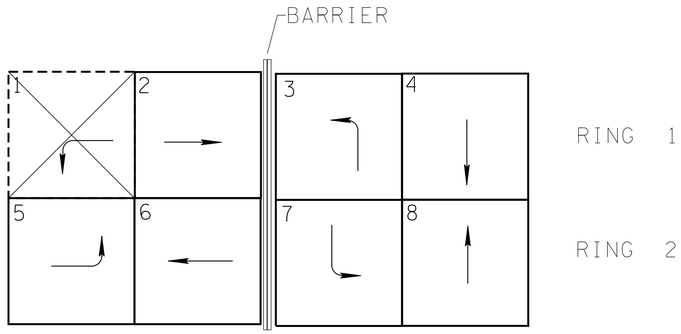
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	82A



NEMA EIGHT PHASE DESIGNATIONS

ACTIVE PHASE

INACTIVE PHASE (NOT USED)

- OPERATION IS DUAL ENTRY MODE, FULL SKIP CAPABILITY
- SINGLE DIRECTION, LAGGING LEFT TURN PHASES ARE NOT ALLOWED
- ALL SIGNAL DISPLAYS AND CLEARANCES SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

BASIC OR SEMI - ACTUATED TIMING (SECS)

PHASE	INITIAL INTERVAL	VEHICLE INTERVAL	MAX I	MAX II	CLEARANCE		PEDESTRIAN		RECALL TO	MEMORY POSITION (1)	LEFT TURN OPERATION (2)
					YELLOW	ALL RED	WALK	FLASHING DONT WALK			
5	6.0	2.0	6.0	-	4.5	2.0	-	-	MIN	NL	P+P
3	6.0	2.0	8.5	-	4.5	1.5	-	-	MIN	NL	P+P
7	6.0	2.0	9.0	-	4.5	2.5	-	-	MIN	NL	P+P
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

(1) NL = NONLOCK
L = LOCK

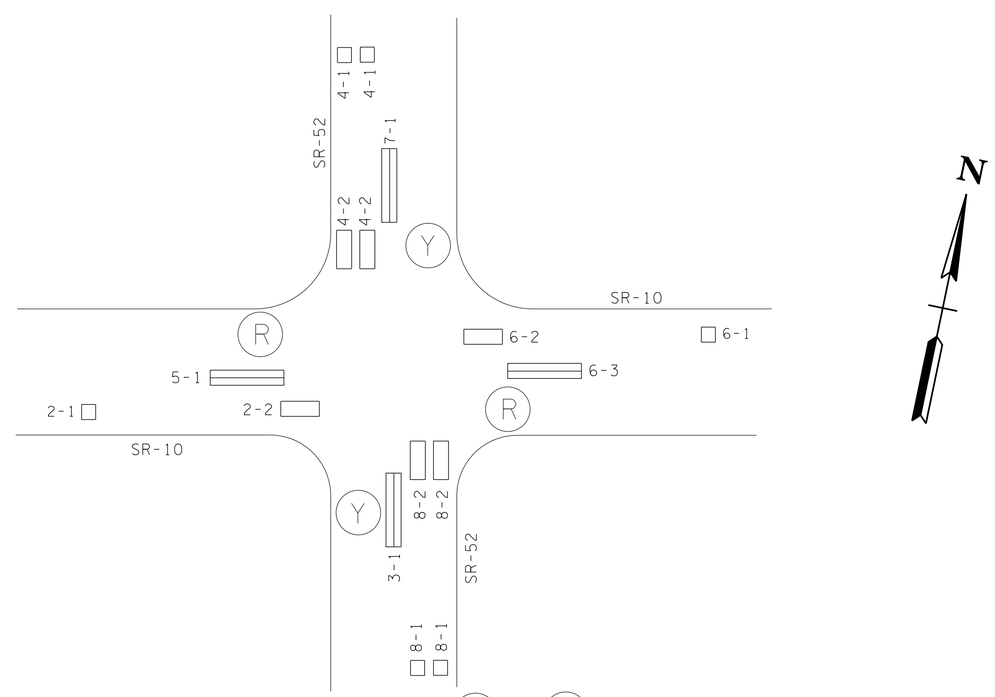
(2) PERM = PERMITTED
PROT = PROTECTED
P + P = PROT/PERM

VOLUME - DENSITY TIMING (SECS)

PHASE	INITIAL INTERVAL	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 DONT WALK		
2	10.0	2.4	3.9	3.9	10.0	8.0	26.0	-	4.5	2.0	-	-	MIN	L
6	10.0	2.4	4.0	4.0	10.0	5.0	13.5	-	4.5	2.0	-	-	MIN	L
4	10.0	2.3	4.2	4.2	10.0	5.0	21.0	-	4.5	2.5	-	-	MIN	L
8	10.0	2.3	4.6	4.6	10.0	5.0	20.5	-	4.5	1.5	-	-	MIN	L

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

DETECTION LOOP DIAGRAM



FLASHING OPERATION (Y) OR (R)

DETECTION LOOP NUMBERING

LOOP AND AMP ASSIGNMENTS

	LOOP #	VEHICLE DETECT #	LOOP LENGTH	AMP MODE	AMP. FEATURE TIMING(SEC)	ASSOC. Ø
	2-1	2	1@6'	PULSE		2
	2-2	3	1@20'	PRES		2
*	3-1	1	1@50'	PRES		3
	4-1	2	2@6'	PULSE		4
	4-2	3	2@20'	PRES		4
*	5-1	1	1@50'	PRES		5
	6-1	2	1@6'	PULSE		6
	6-2	3	1@20'	PRES		6
*	6-3	1	1@50'	PRES		6
*	7-1	1	1@50'	PRES		7
	8-1	2	2@6'	PULSE		8
	8-2	3	2@20'	PRES		8

* QUADRAPOLE LOOP

- ALL LOOPS ARE 6' IN WIDTH, CENTERED IN TRAFFIC LANE . REFER TO STD. DWG. T-SG-3 FOR NUMBER OF TURNS FOR VARIOUS LOOP LENGTHS.
- LOOP WIRE CONNECTIONS SHALL BE WIRED TO PROVIDE THE APPROPRIATE INDUCTANCE AS REQUIRED BY STD. DWG. T-SG-3.

UNOFFICIAL SET
NOT FOR BIDDING

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INTERSECTION OF SR-10/SR-52

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PHASING, TIMING, DETECTOR ASSIGNMENT

EIGHT PHASE

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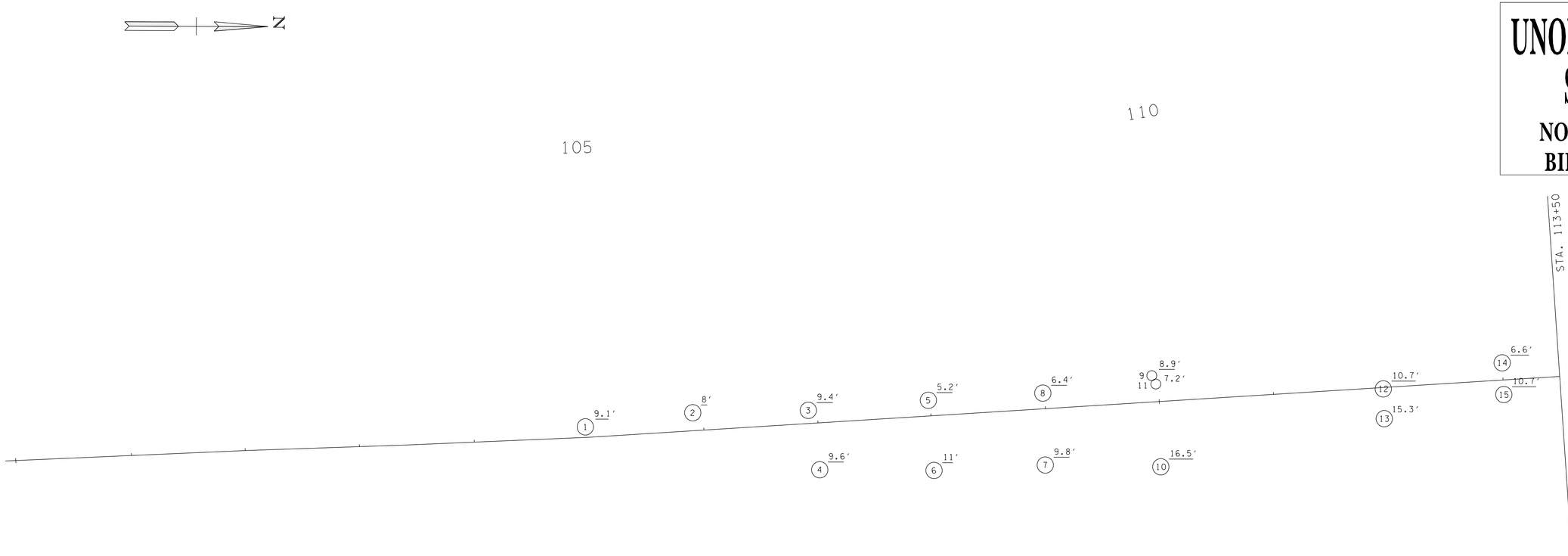
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83

UNOFFICIAL SET

NOT FOR BIDDING



HOLE NO	SAMPLE NO	DEPTH
1	--	0-1.5
	† 19	1.5-9.1
2	--	0-1.5
	19	1.5-8
3	--	0-0.5
	19	0.5-9.4
4	--	0-0.5
	† 1	0.5-9.6
5	--	0-0.4
	19	0.4-5.2
6	--	0-0.4
	7	0.4-11
7	--	0-0.5
	7	0.5-9.8
8	--	0-0.5
	1	0.5-6.4

HOLE NO	SAMPLE NO	DEPTH
9	--	0-0.6
	7	0.6-8.9
10	--	0-0.5
	1	0.5-16.5
11	--	0-0.6
	1	0.6-7.2
12	--	0-0.6
	1	0.6-10.7
13	--	0-1.5
	20	1.5-15.3
14	--	0-0.4
	† 20	0.4-6.6
15	--	0-1.5
	† 3	1.5-14.1

† INDICATES LOCATION WHERE SAMPLE WAS TAKEN AND LAB TEST PERFORMED. ALL OTHER SAMPLE NUMBER LABELS INDICATE AN APPARENT SIMILARITY BASED ON VISUAL IDENTIFICATION IN THE FIELD.

SAMPLE NO.	DESCRIPTION	DENSITY	OPTIMUM MOISTURE	MOISTURE RANGE	IN-SITU MOISTURE	LL	PL	AASHTO CLASS	USCS CLASS
1	GRAVEL - dark brown, tan, grey, silty with sand				16	36	20	A-6(10)	CL
3	GRAVEL - beige clayey with sand	107	14	13.4-21.5		38	18	A-6(6)	GC
7	CLAY - tan, sandy, lean					46	21	A-7-6(15)	CL
19	GRAVEL - dark brown, tan, grey, silty with sand				8.5	20	20	A-1-b(0)	GM
20	CLAY - dark brown, tan, grey, sandy lean				13.8	31	16	A-6(4)	CL

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10
STATION 103+50
TO
STATION 113+50

MACON COUNTY

3/13/2014
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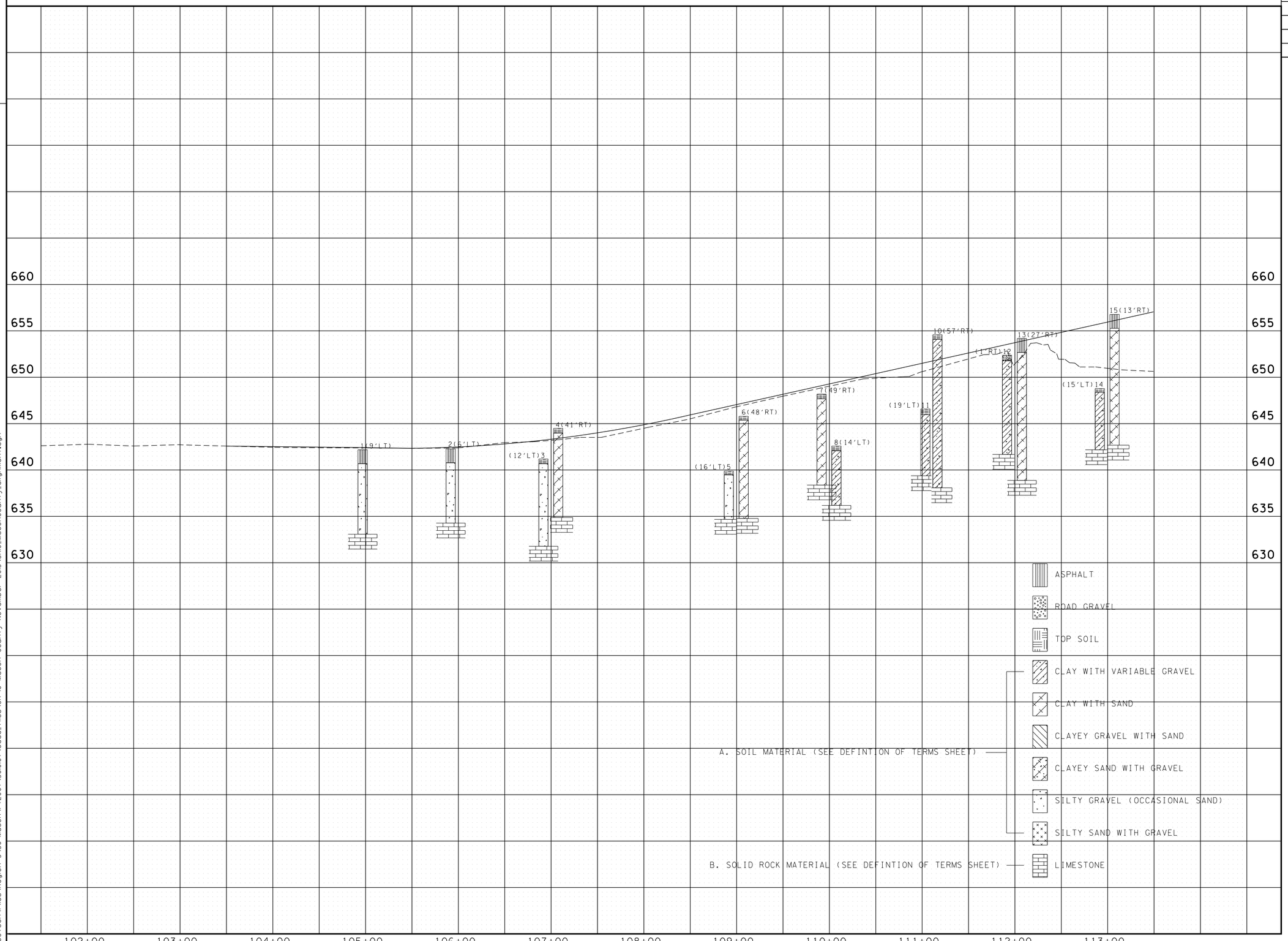
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83A



UNOFFICIAL SET

NOT FOR BIDDING

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10
STATION 103+50
TO
STATION 113+50

MACON COUNTY

3/13/2014
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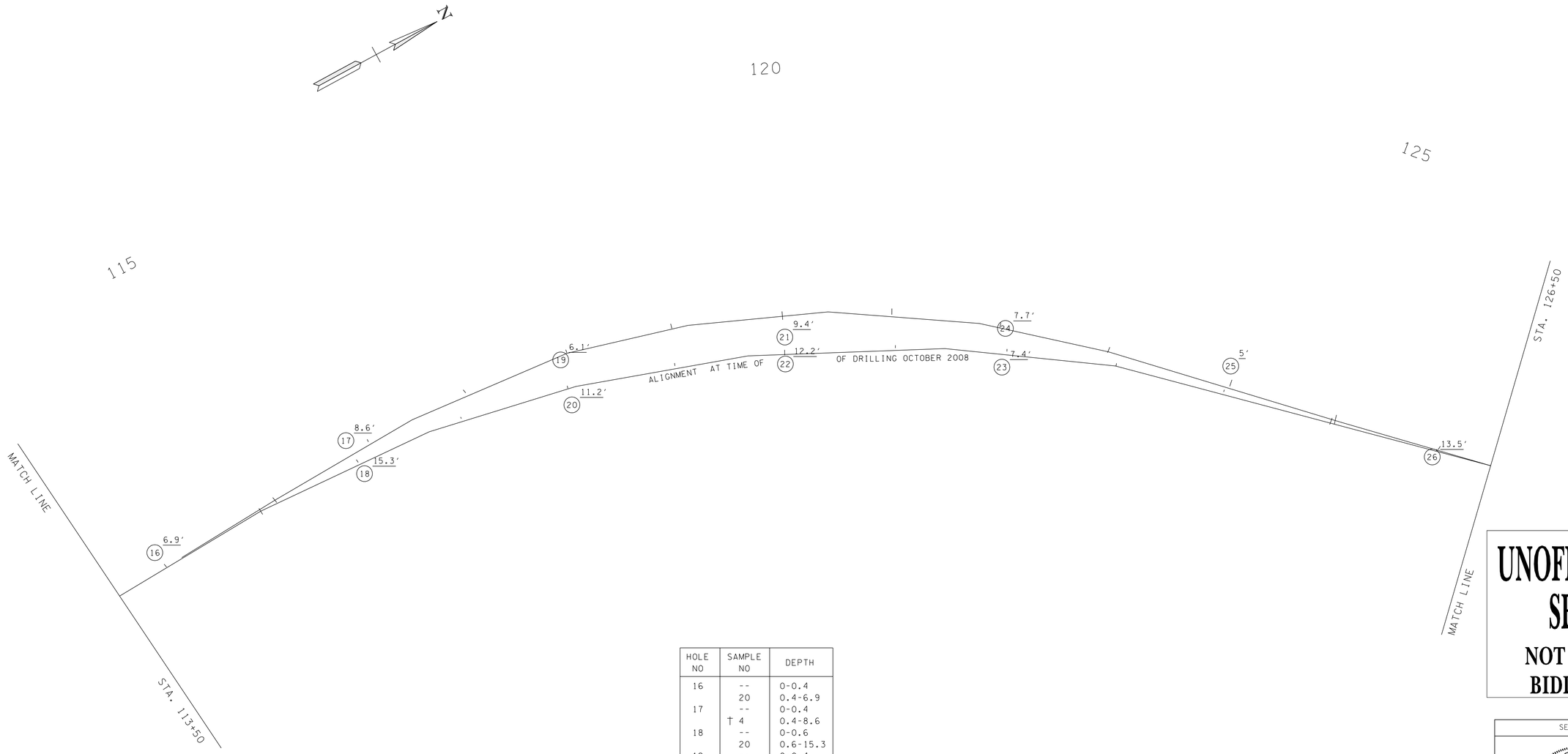
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83B



HOLE NO	SAMPLE NO	DEPTH
16	--	0-0.4
	20	0.4-6.9
17	--	0-0.4
	† 4	0.4-8.6
18	--	0-0.6
	20	0.6-15.3
19	--	0-0.4
	21	0.4-6.1
20	--	0-0.5
	21	0.5-11.2
21	--	0-0.5
	4	0.5-9.4
22	--	0-1.5
	† 21	1.5-12.2
23	--	0-1.6
	20	1.6-7.4
24	--	0-0.4
	4	0.4-7.7
25	--	0-0.5
	4	0.5-5
26	--	0-1.5
	20	1.5-13.5

† INDICATES LOCATION WHERE SAMPLE WAS TAKEN AND LAB TEST PERFORMED.
ALL OTHER SAMPLE NUMBER LABELS INDICATE AN APPARENT SIMILARITY BASED ON VISUAL IDENTIFICATION IN THE FIELD.

SAMPLE NO.	DESCRIPTION	DENSITY	OPTIMUM MOISTURE	MOISTURE RANGE	IN-SITU MOISTURE	LL	PL	AASHTO CLASS	USCS CLASS
4	GRAVEL - beige clayey with sand	108	12	10.7-24.0		34	17	A-2-6(1)	GC
20	CLAY - dark brown, tan, grey, sandy lean				13.8	31	16	A-6(4)	CL
21	CLAY - brown, sandy, lean				20.8	33	19	A-6(8)	CL

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10
STATION 113+50
TO
STATION 126+50

MACON COUNTY

3/13/2014
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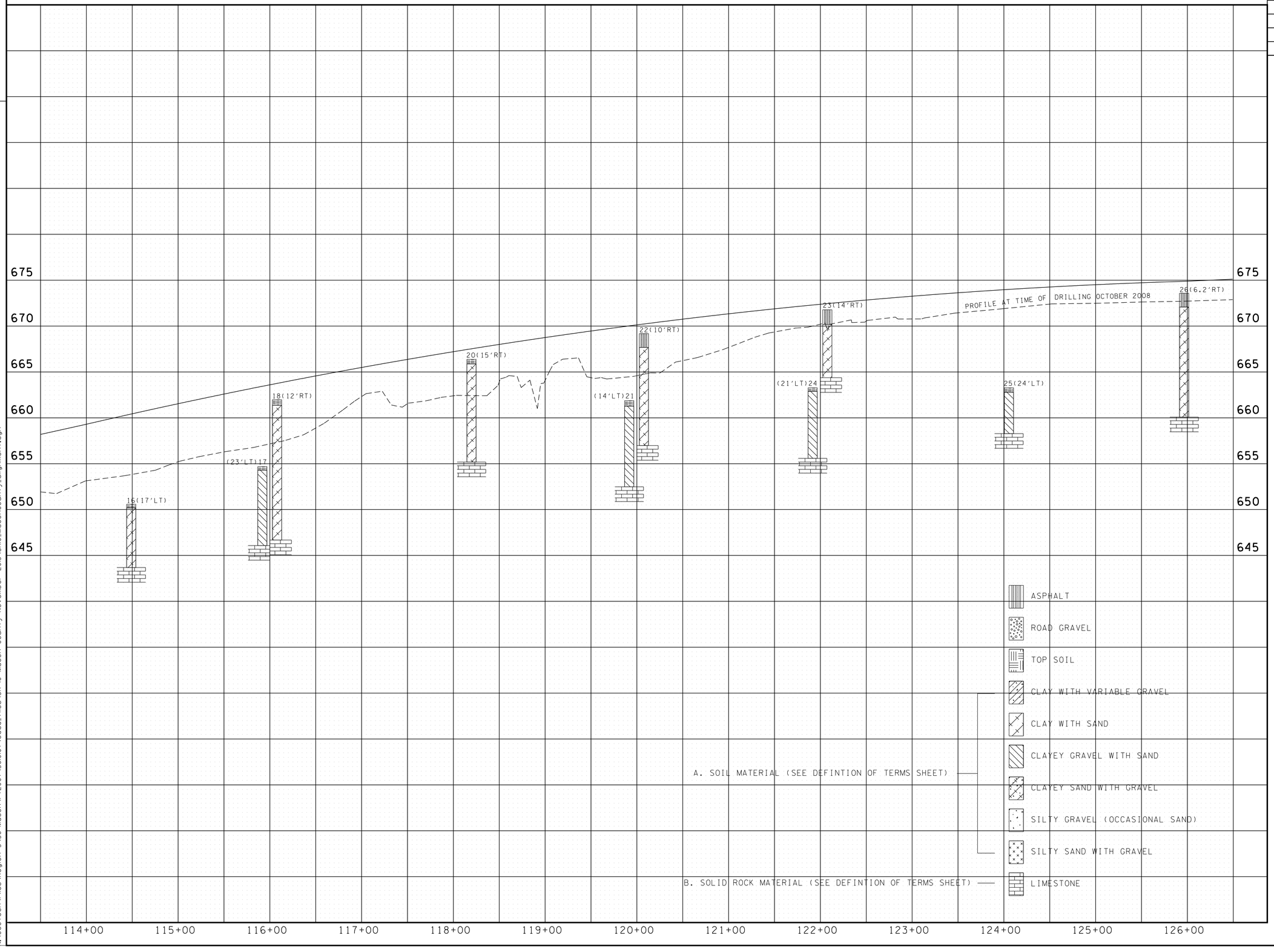
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83C



UNOFFICIAL SET

NOT FOR BIDDING

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10
STATION 113+50
TO
STATION 126+50

MACON COUNTY

3/13/2014
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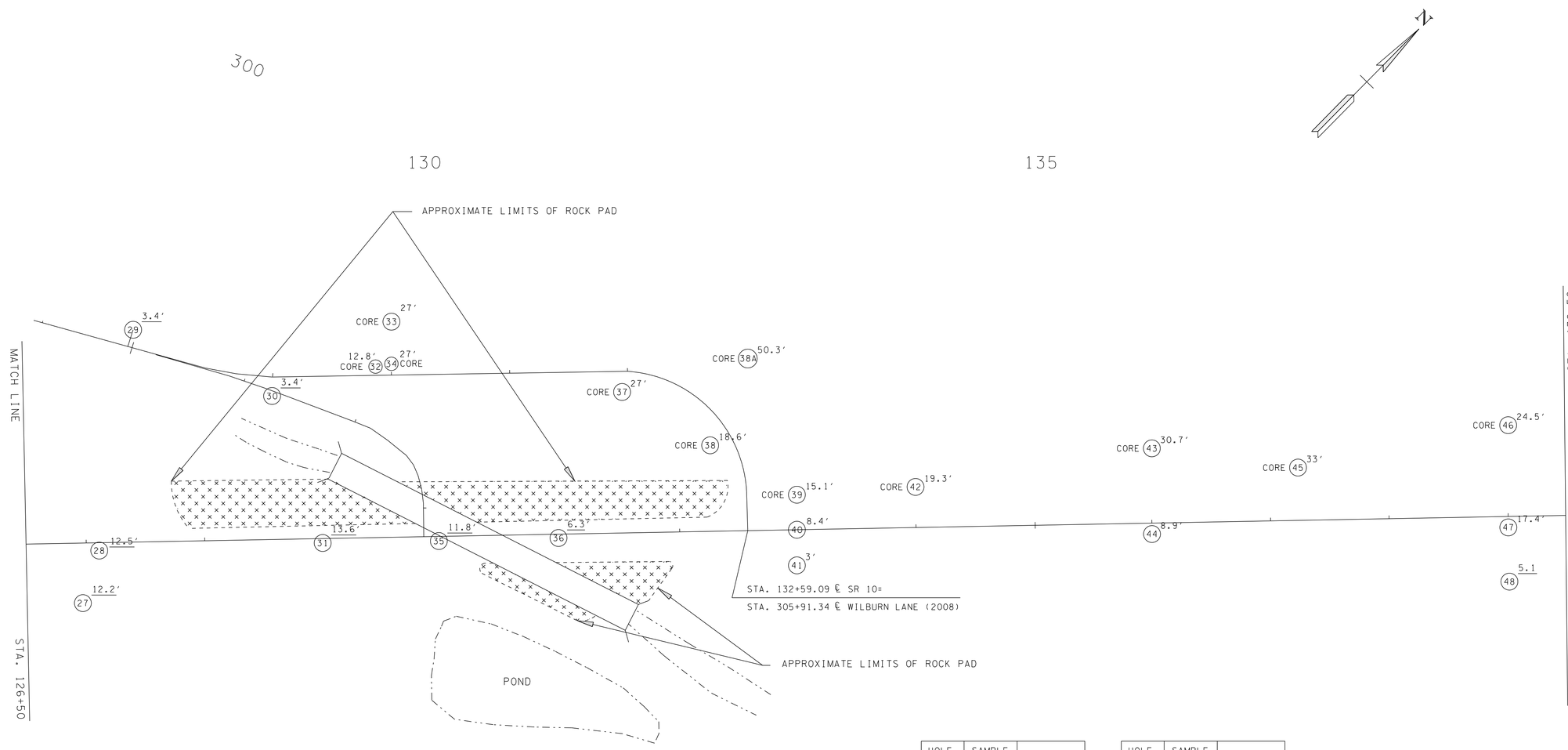
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83D

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



UNOFFICIAL SET
NOT FOR BIDDING

SAMPLE NO.	DESCRIPTION	DENSITY	OPTIMUM MOISTURE	MOISTURE RANGE	IN-SITU MOISTURE	LL	PL	AASHTO CLASS	USCS CLASS
1	GRAVEL - dark brown, tan, grey, silty with sand				16	36	20	A-6(10)	CL
4	GRAVEL - beige clayey with sand	108	12	10.7-24.0		34	17	A-2-6(1)	GC
5	CLAY - dark beige, lean, sandy	113	12	6.8-14.0		44	20	A-7-6(14)	CL
20	CLAY - dark brown, tan, grey, sandy lean				13.8	31	16	A-6(4)	CL
21	CLAY - brown, sandy, lean				20.8	33	19	A-6(8)	CL
22	CLAY - dark brown, lean with gravel				15.7	44	21	A-7-6(16)	CL
23	CLAY - brown, beige, sandy with gravel				13.5	32	18	A-6(5)	CL
33	CLAY - brown, orange-brown, lean with sand				20.4	44	16	A-6(11)	CL

HOLE NO	SAMPLE NO	DEPTH
27	--	0-0.4
	20	0.4-12.2
28	--	0-1.6
	20	1.6-12.5
29	--	0-0.6
	4	0.6-3.4
30	--	0-0.4
	4	0.4-3.4
31	--	0-1.7
	1	1.7-13.6
32	--	0-0.6
	20	0.6-7.8
33	--	0-0.4
	33	0.4-11
34	--	0-0.4
	20	0.4-8.5
35	--	0-1.5
	† 5	1.5-11.8
36	--	0-1.5
	20	1.5-6.3
37	--	0-0.4
	1	0.4-12.6
38	--	0-0.6
	30	0.6-10
	33	10-14.1

HOLE NO	SAMPLE NO	DEPTH
38A	--	0-2
39	--	0-0.6
	20	0.6-11.9
40	--	0-0.5
	20	0.5-5
	21	5-8.4
41	--	0-0.3
	22	0.3-3
42	--	0-0.4
	22	0.4-15
43	--	0-0.3
	22	0.3-6.5
44	--	0-1.6
	22	1.6-8.9
45	--	0-0.3
	22	0.3-20
46	--	0-0.3
	22	0.3-9.3
47	--	0-1.5
	† 22	1.5-5
	23	5-17.4
48	--	0.4-5.1
	22	

† INDICATES LOCATION WHERE SAMPLE WAS TAKEN AND LAB TEST PERFORMED. ALL OTHER SAMPLE NUMBER LABELS INDICATE AN APPARENT SIMILARITY BASED ON VISUAL IDENTIFICATION IN THE FIELD.

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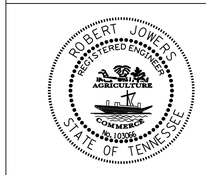

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10
STATION 126+50
TO
STATION 139+50

MACON COUNTY

3/13/2014
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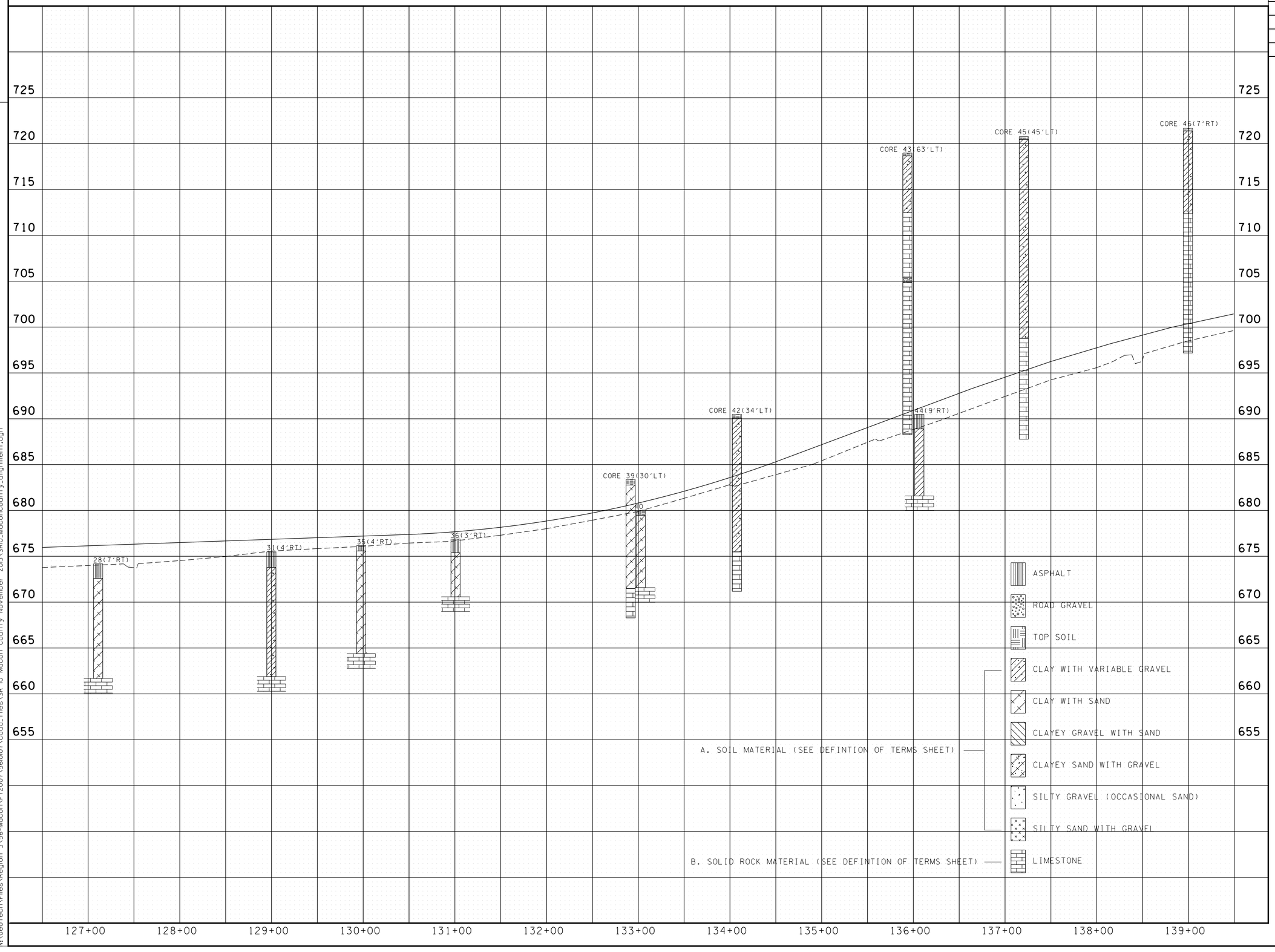
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83E



UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10
STATION 126+50
TO
STATION 139+50

MACON COUNTY

3/13/2014
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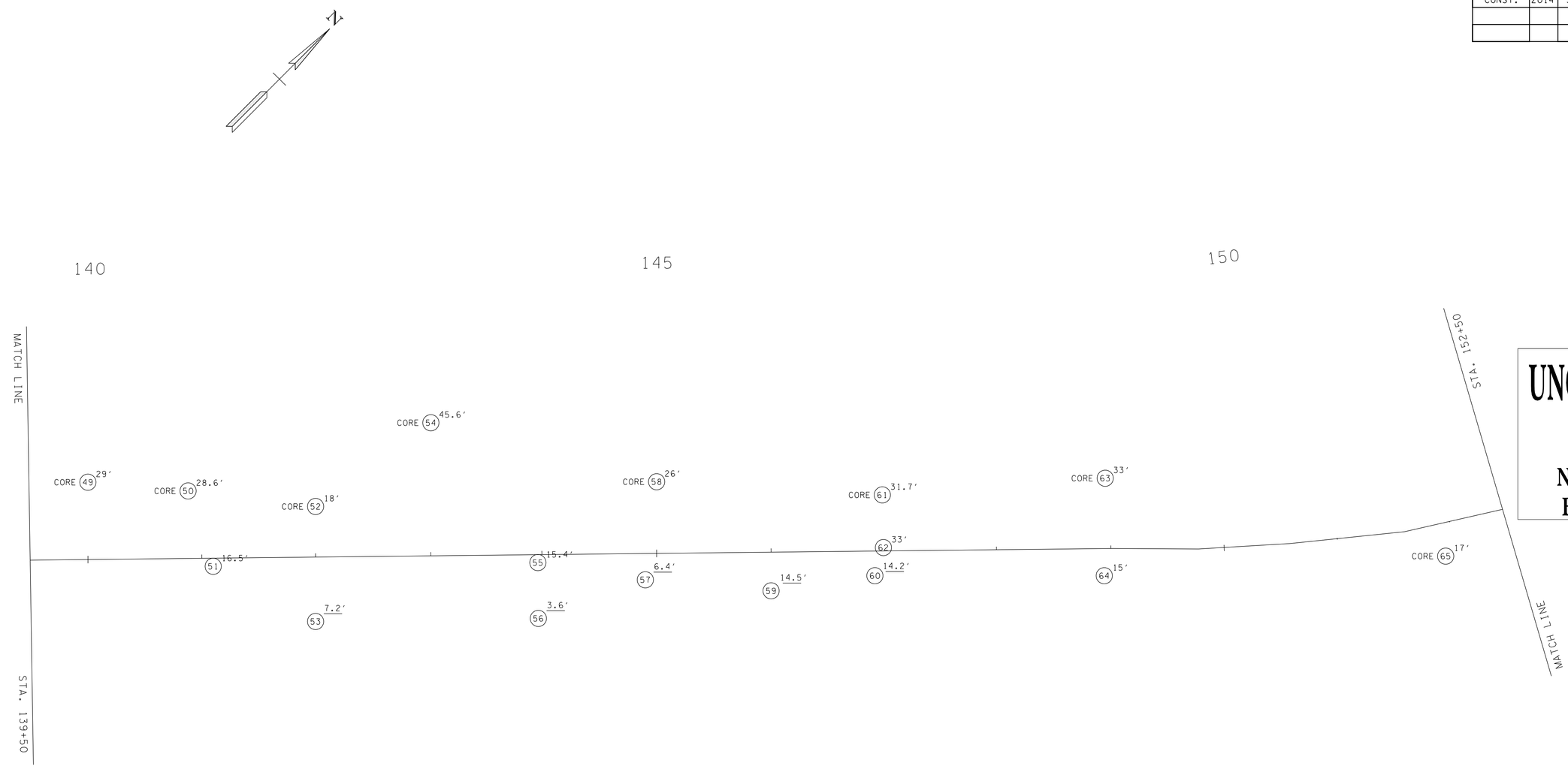
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83F

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



UNOFFICIAL SET
NOT FOR BIDDING

SAMPLE NO.	DESCRIPTION	DENSITY	OPTIMUM MOISTURE	MOISTURE RANGE	IN-SITU MOISTURE	LL	PL	AASHTO CLASS	USCS CLASS
2	CLAY - brown-orange, lean with sand	107	18			39	19	A-6(13)	CL
18	CLAY - brown, pink-brown, lean with sand					45	18	A-7-6(21)	CL
20	CLAY - dark brown, tan, grey, sandy lean				13.8	31	16	A-6(4)	CL
22	CLAY - dark brown, lean with gravel				15.7	44	21	A-7-6(16)	CL
23	CLAY - brown, beige, sandy with gravel				13.5	32	18	A-6(5)	CL
24	CLAY - brown, lean with sand				19.6	39	19	A-6(13)	CL

HOLE NO	SAMPLE NO	DEPTH
49	--	0-0.4
	23	0.4-21.2
50	--	0-0.4
	23	0.4-15
	24	15-21.5
51	--	0-1.5
	22	1.5-5
	23	5-16.5
52	--	0-0.5
	22	0.5-5
	18	5-12.1
53	--	0-0.3
	23	0.3-7.2
54	--	0-0.2
	23	0.2-12
55	--	0-1.5
	22	1.5-10
	† 24	10-15.4
56	--	0-0.4
	22	0.4-3.6

HOLE NO	SAMPLE NO	DEPTH
57	--	0-1.3
	† 18	1.3-6.4
58	--	0-0.3
	22	0.3-9.2
59	--	0-1.5
	18	1.5-14.5
60	--	0-2.5
	25	2.5-14.2
61	--	0-0.4
	22	0.4-1.6
62	--	0-1.6
	25	1.6-13.1
63	--	0-0.2
64	--	0-1.5
	2	1.5-15
65	--	0-1.6
	20	1.6-6

† INDICATES LOCATION WHERE SAMPLE WAS TAKEN AND LAB TEST PERFORMED.
ALL OTHER SAMPLE NUMBER LABELS INDICATE AN APPARENT SIMILARITY
BASED ON VISUAL IDENTIFICATION IN THE FIELD.

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10
STATION 139+50
TO
STATION 152+50

MACON COUNTY

3/13/2014
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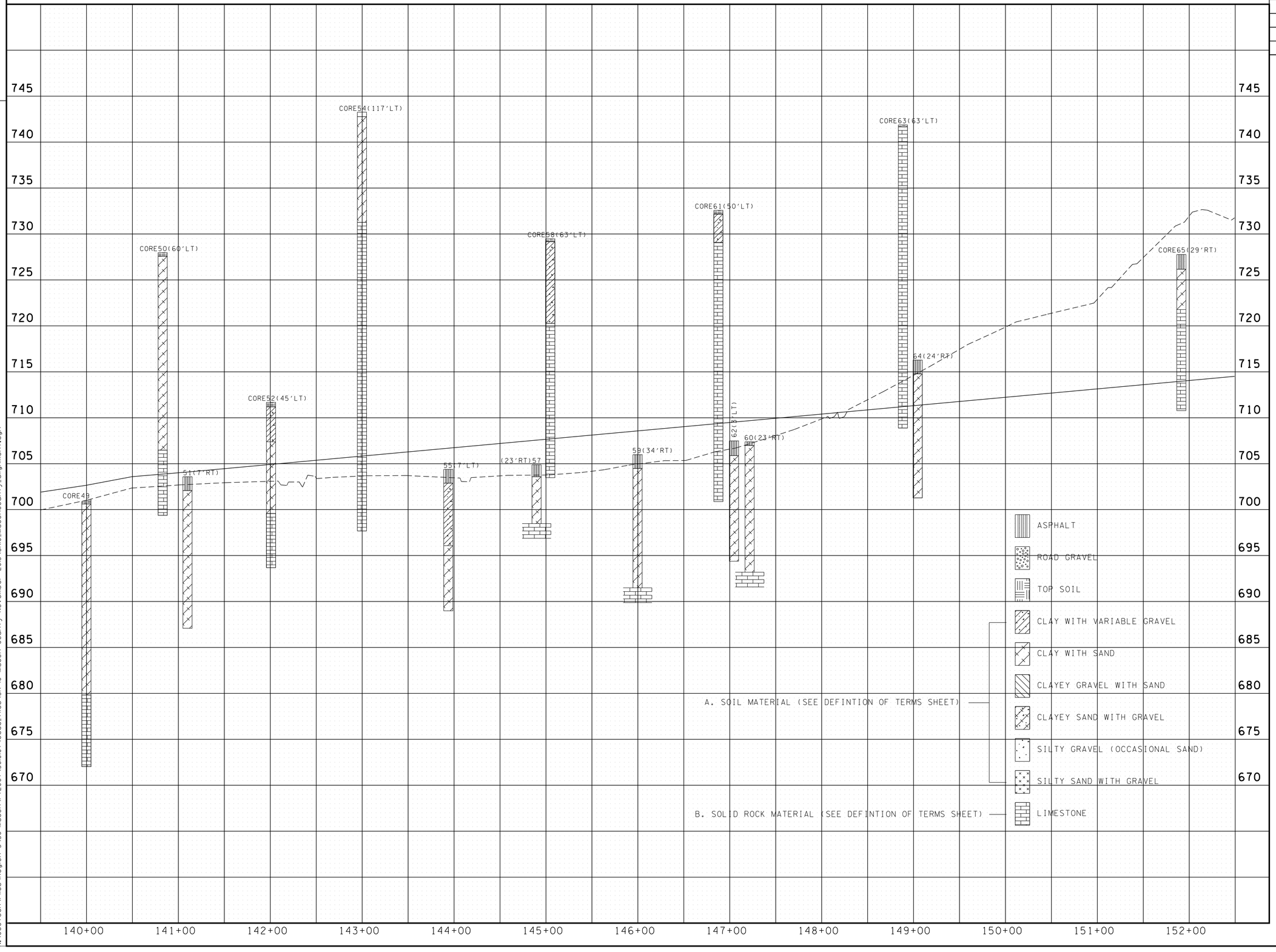
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83G



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ROBERT JOWERS
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 110708
STATE OF TENNESSEE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10
STATION 139+50
TO
STATION 152+50

MACON COUNTY

3/13/2014
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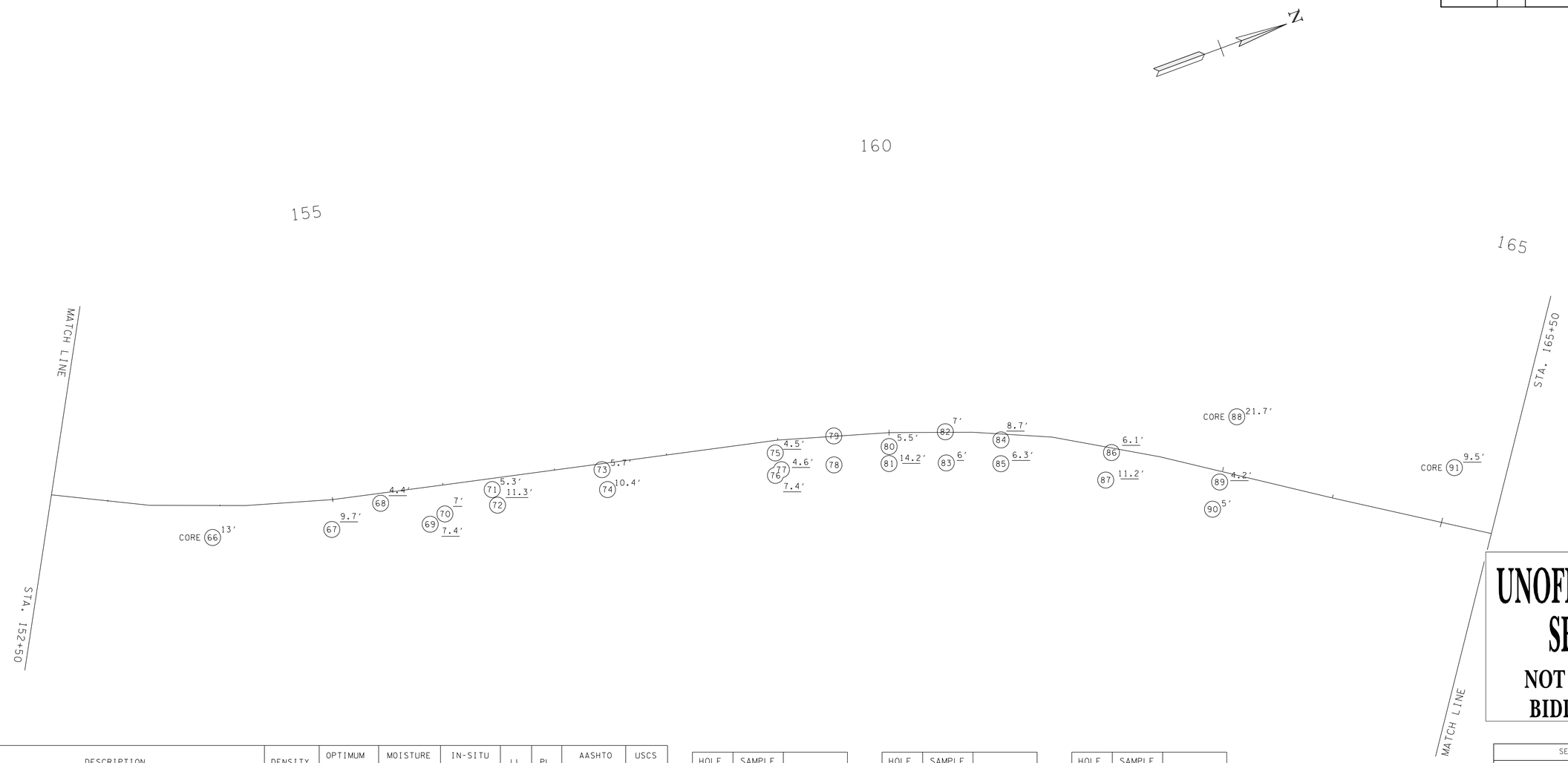
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83H



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NOT FOR BIDDING

SAMPLE NO.	DESCRIPTION	DENSITY	OPTIMUM MOISTURE	MOISTURE RANGE	IN-SITU MOISTURE	LL	PL	AASHTO CLASS	USCS CLASS
1	GRAVEL - dark brown, tan, grey, silty with sand				16	36	20	A-6(10)	CL
2	CLAY - brown-orange, lean with sand	107	18			39	19	A-6(13)	CL
8	CLAY - brown, tan, grey, lean with sand	100	20	15.2-23.5		45	21	A-7-6(16)	CL
11	CLAY - brown, orange, sandy, lean				14.5	37	18	A-6(10)	CL
20	CLAY - dark brown, tan, grey, sandy lean				13.8	31	16	A-6(4)	CL
22	CLAY - dark brown, lean with gravel				15.7	44	21	A-7-6(16)	CL
25	CLAY - brown, lean with sand				24.3	33	18	A-6(9)	CL
26	GRAVEL - dark brown, silty				25.4			A-1-0)	GM
27	CLAY - dark brown, lean, gravelly with sand				26.4	33	18	A-6(8)	CL
28	CLAY - brown, tan, grey, silty with gravel				5.9			A-1-b(0)	SM
29	GRAVEL - brown, tan, red-brown, clayey with sand				10.1	32	16	A-6(2)	GC
30	GRAVEL - brown, clayey with sand				13.9	30	17	A-6(2)	GC
32	CLAY - dark brown, lean with sand				27.0	35	18	A-6(12)	CL
33	CLAY - brown, orange-brown, lean with sand				20.4	44	16	A-6(11)	CL

HOLE NO	SAMPLE NO	DEPTH
66	--	0-2.5
	2	2.5-8.2
67	--	0-1.5
	25	1.5-5
	26	5-9.7
68	--	0-1.6
	25	1.6-4.4
69	--	0-1.4
	27	1.4-7.4
70	--	0-1.5
	28	1.5-7
71	--	0-1.5
	27	1.5-2
	8	2-5.3
72	--	0-1.5
	8	1.5-11.3
73	--	0-1.5
	28	1.5-5.7
74	--	0-1.5
	29	1.5-5
	28	5-10.4

HOLE NO	SAMPLE NO	DEPTH
75	--	0-1.4
	29	1.4-4.5
76	--	0-0.4
	28	0.4-5
	30	5-7.4
77	--	0-1.2
	29	1.2-4.6
78	--	0-0.4
	† 25	0.4-2.5
	† 26	2.5-5.1
79	--	0-1.5
	11	1.5-5.1
80	--	0-1.6
	28	1.6-4.5
	† 27	4.5-5.5
81	--	0-0.4
	33	0.4-14.2
82	--	0-1.5
	1	1.5-7
83	--	0-0.4
	† 28	0.4-6

HOLE NO	SAMPLE NO	DEPTH
84	--	0-1.5
	1	1.5-8.7
85	--	0-0.4
	† 8	0.4-2.5
	30	2.5-4
	32	4-6.3
86	--	0-1.5
	1	1.5-6.1
87	--	0-1.5
	1	1.5-11.2
88	20	0-3.3
89	--	0-1.5
	† 29	1.5-4.2
90	--	0-1.5
	1	1.5-5
91	22	0-9.5

† INDICATES LOCATION WHERE SAMPLE WAS TAKEN AND LAB TEST PERFORMED. ALL OTHER SAMPLE NUMBER LABELS INDICATE AN APPARENT SIMILARITY BASED ON VISUAL IDENTIFICATION IN THE FIELD.

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DEPARTMENT OF TRANSPORTATION

SOILS
STATE ROUTE 10
STATION 152+50
TO
STATION 165+50
MACON COUNTY

3/13/2014
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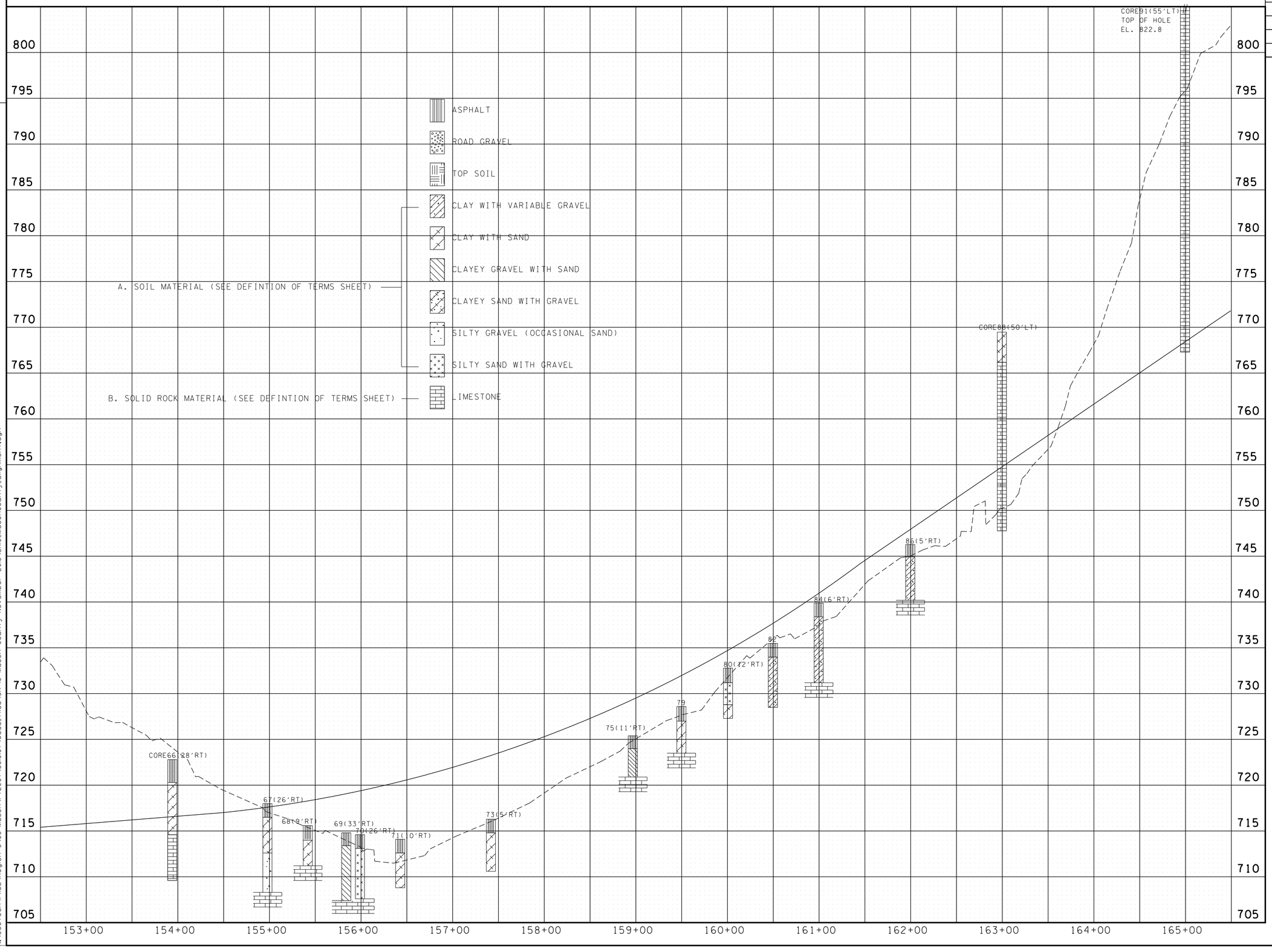
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83I

UNOFFICIAL SET

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ROBERT JOWERS
REGISTERED ENGINEER
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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10
STATION 152+50
TO
STATION 165+50

MACON COUNTY

3/13/2014
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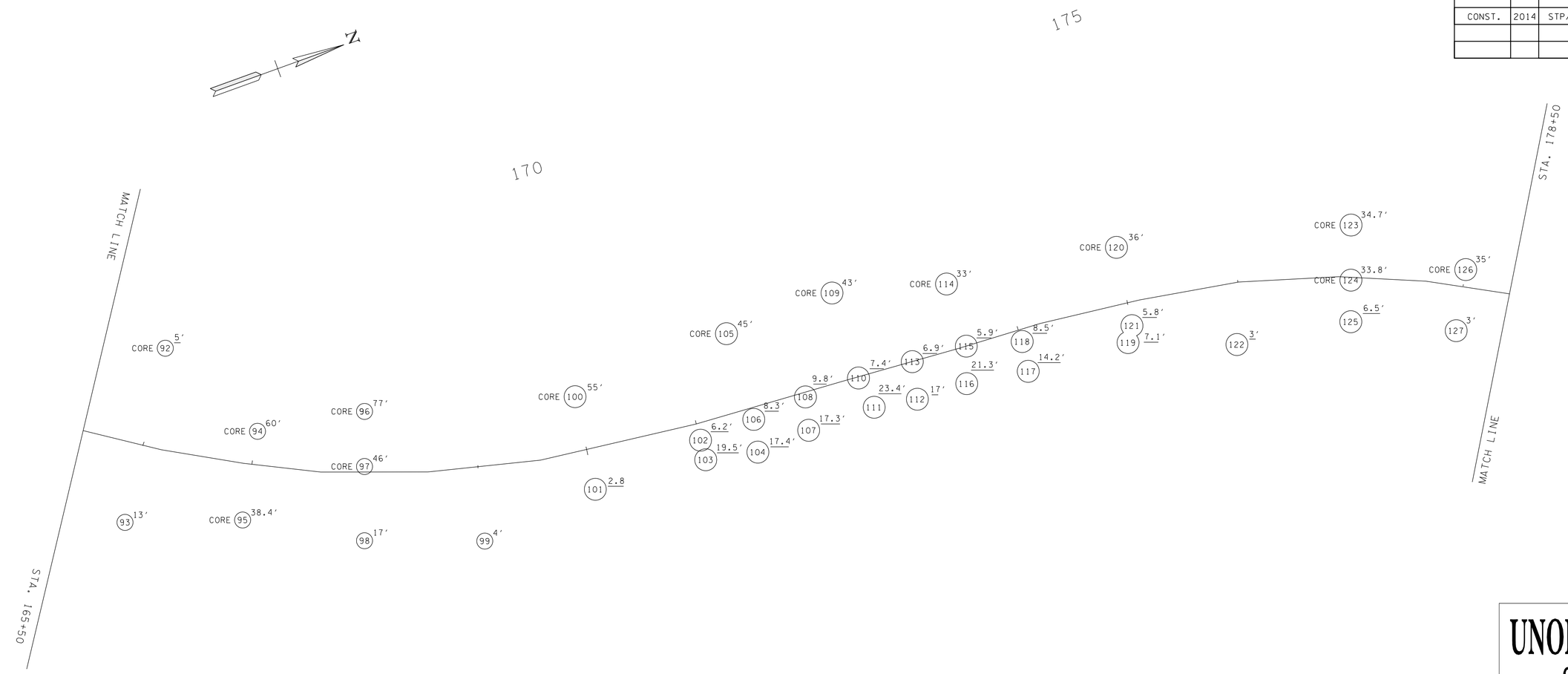
TENNESSEE D.O.T.	DESIGN DIVISION	FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83J



SAMPLE NO.	DESCRIPTION	DENSITY	OPTIMUM MOISTURE	MOISTURE RANGE	IN-SITU MOISTURE	LL	PL	AASHTO CLASS	USCS CLASS
1	GRAVEL - dark brown, tan, grey, silty with sand				16	36	20	A-6(10)	CL
2	CLAY - brown-orange, lean with sand	107	18			39	19	A-6(13)	CL
7	CLAY - tan, sandy, lean					46	21	A-7-6(15)	CL
9	SAND - brown, grey, clayey with gravel					28	16	A-6(2)	ML
10	CLAY - dark brown, lean with sand				17.9	38	18	A-6(15)	CL
11	CLAY - brown, orange, sandy, lean				14.5	37	18	A-6(10)	CL
12	CLAY - yellow beige, sandy, lean					34	17	A-6(9)	CL
13	CLAY - dark brown, tan-grey, gravelly				18.4	55	20	A-7-6(18)	CH
14	CLAY - red-brown, sandy, lean				20.2	41	17	A-7-6(15)	CL
22	CLAY - dark brown, lean with gravel				15.7	44	21	A-7-6(16)	CL
23	CLAY - brown, beige, sandy with gravel				13.5	32	18	A-6(5)	CL
28	CLAY - brown, tan, grey, silty with gravel				5.9			A-1-b(0)	SM
30	GRAVEL - brown, clayey with sand				13.9	30	17	A-6(2)	GC
31	GRAVEL - brown, orange-brown, clayey with sand				15.3	30	18	A-6(1)	GC
32	CLAY - dark brown, lean with sand				27.0	35	18	A-6(12)	CL
34	GRAVEL - yellow beige, clayey with sand				21.3	34	18	A-6(11)	CL
35	CLAY - green, grey, brown, sandy lean				14.1	36	19	A-6(10)	CL
36	GRAVEL - dark brown, grey, clayey				20.6	40	20	A-6(7)	CL
37	GRAVEL - red-brown, grey, clayey				21.4	47	20	A-7-6(6)	GC

HOLE NO	SAMPLE NO	DEPTH
92	23	0-5
93	--	5-1.5
	10	1.5-13
94	23	0-8.9
95	--	0-1.5
	† 30	1.5-4.4
96	--	0-0.6
	† 11	0.6-6
97	† 31	0-10.2
98	--	0-0.3
	† 32	0.3-2.9
99	--	0-0.3
	† 2	0.3-4
100	--	0-8.9
101	--	0-2.8
102	--	0-0.3
	7	0.3-4.1
	11	4.1-6.2
103	--	0-1.3
	† 34	1.3-10
	† 35	10-15
	† 36	15-19.5

HOLE NO	SAMPLE NO	DEPTH
104	--	0-1.3
	28	1.3-5
	37	5-10
	35	10-17.4
105	22	0-6.4
106	--	0-0.3
	10	0.3-4
	35	4-8.3
107	--	0-1.3
	28	1.3-5
	35	5-10
	37	10-17.3
108	--	0-3
	13	3-9.8
109	† 9	0-4.5
110	--	0-1.5
	14	1.5-7.4
111	--	0-1.4
	28	1.4-5
	14	5-15
	37	15-20
	36	20-23.4

HOLE NO	SAMPLE NO	DEPTH
112	--	0-2.5
	37	2.5-9.6
	35	9.6-14.6
	36	14.6-17
113	--	0-1.5
	† 10	1.5-6.9
114	22	0-4.5
115	--	0-1.5
	23	1.5-5.9
116	--	0-2.5
	37	2.5-6.6
	35	6.6-9.5
	36	9.5-21.3
117	--	0-2.5
	37	2.5-6.5
	35	6.5-9.5
	34	9.5-14.2
118	--	0-1.5
	37	1.5-8.5
119	--	0-1.5
	30	1.5-4.2
	32	4.2-7.1

HOLE NO	SAMPLE NO	DEPTH
120	22	0-4.1
121	--	0-1.5
	32	1.5-5.8
122	--	0-3
123	--	0-0.4
	† 12	0.4-6.4
124	--	0-0.4
	1	0.4-8.5
125	--	0-1.5
	36	1.5-6.5
126	--	0-0.4
	1	0.4-4.1
127	11	0-1.5
	† 37	1.5-3

† INDICATES LOCATION WHERE SAMPLE WAS TAKEN AND LAB TEST PERFORMED.
ALL OTHER SAMPLE NUMBER LABELS INDICATE AN APPARENT SIMILARITY
BASED ON VISUAL IDENTIFICATION IN THE FIELD.

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DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10
STATION 165+50
TO
STATION 178+50

MACON COUNTY

3/13/2014
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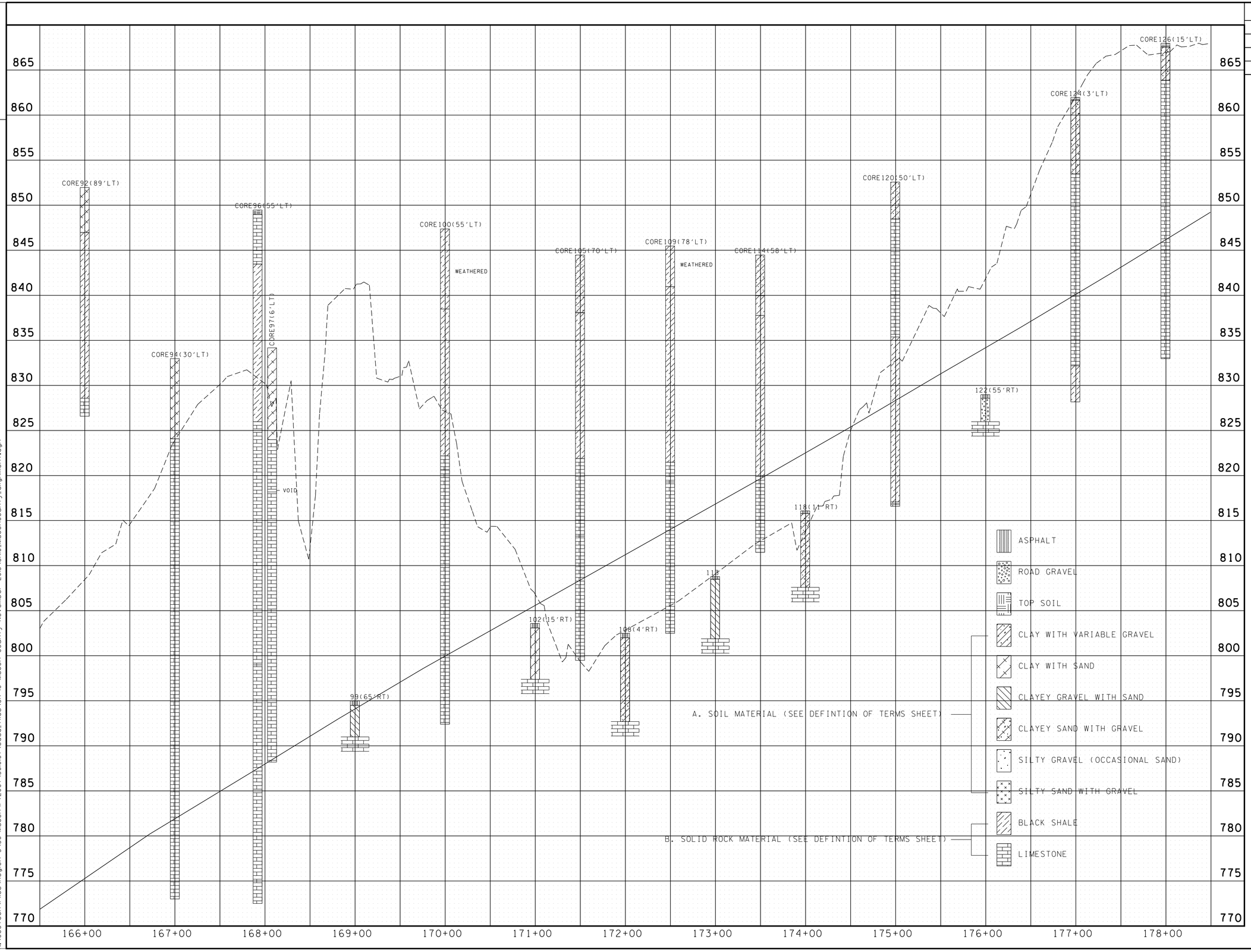
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83K

UNOFFICIAL SET

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REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 103565
STATE OF TENNESSEE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10
STATION 165+50
TO
STATION 178+50

MACON COUNTY

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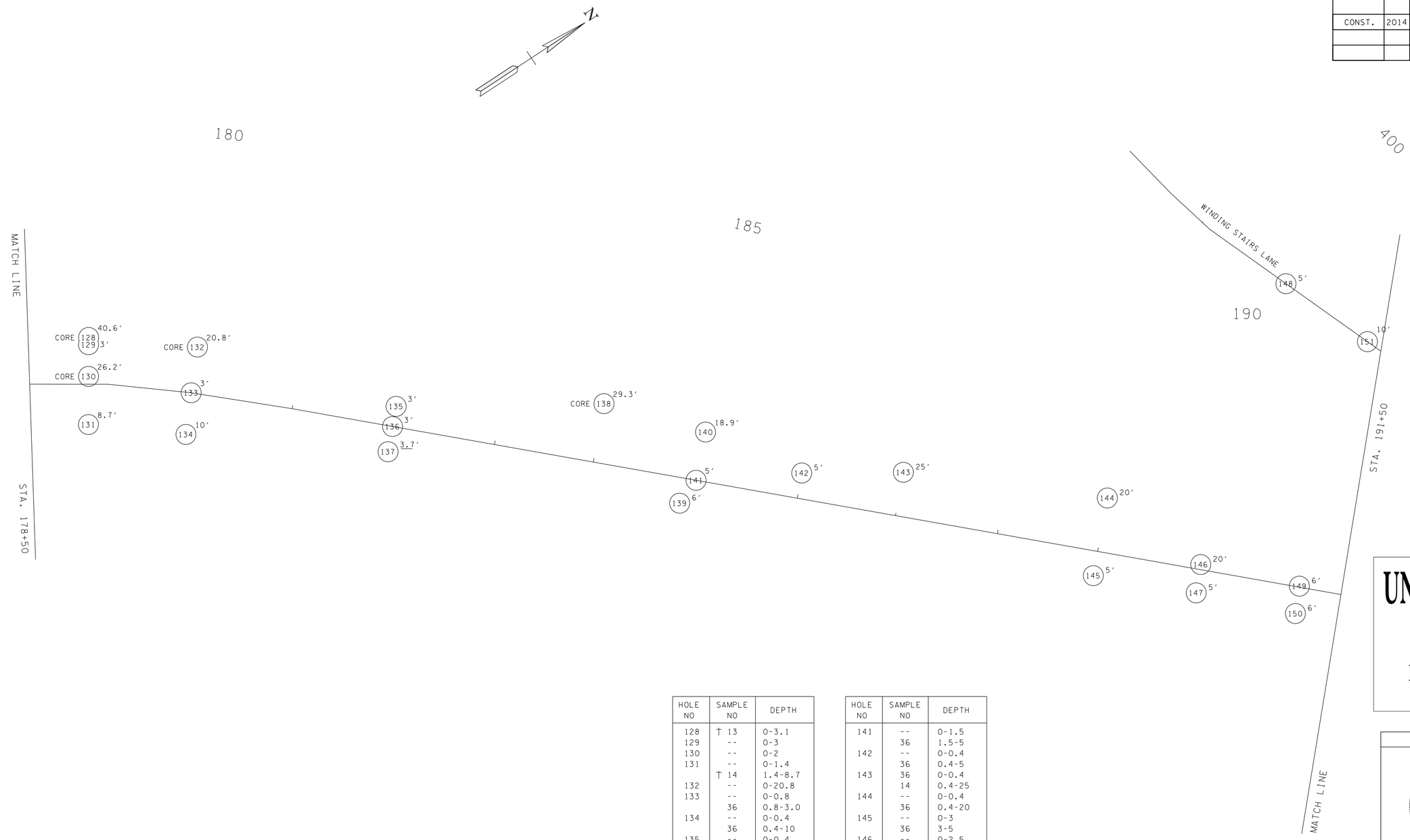
TENNESSEE D.O.T.	DESIGN DIVISION	FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83L



HOLE NO	SAMPLE NO	DEPTH
128	† 13	0-3.1
129	--	0-3
130	--	0-2
131	--	0-1.4
	† 14	1.4-8.7
132	--	0-20.8
133	--	0-0.8
	36	0.8-3.0
134	--	0-0.4
	36	0.4-10
135	--	0-0.4
	36	0.4-3
136	--	0-1.5
	36	1.5-3
137	--	0-1.5
	36	1.5-3.7
138	--	0-0.4
	1	0.4-9.2
139	--	0-3
	36	3-6
140	--	0-0.4
	36	0.4-10.2
	14	10.2-18.9

HOLE NO	SAMPLE NO	DEPTH
141	--	0-1.5
	36	1.5-5
142	--	0-0.4
	36	0.4-5
143	36	0-0.4
	14	0.4-25
144	--	0-0.4
	36	0.4-20
145	--	0-3
	36	3-5
146	--	0-2.5
	36	2.5-20
147	--	0-3
	36	3-5
148	--	0-1.8
	36	1.8-504
149	--	0-2.5
	36	2.5-6
150	--	0-2.5
	36	2.5-6
151	--	0-1.2
	23	1.2-10

† INDICATES LOCATION WHERE SAMPLE WAS TAKEN AND LAB TEST PERFORMED.
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SAMPLE NO.	DESCRIPTION	DENSITY	OPTIMUM MOISTURE	MOISTURE RANGE	IN-SITU MOISTURE	LL	PL	AASHTO CLASS	USCS CLASS
1	GRAVEL - dark brown, tan, grey, silty with sand				16	36	20	A-6(10)	CL
13	CLAY - dark brown, tan-grey, gravelly				18.4	55	20	A-7-6(18)	CH
14	CLAY - red-brown, sandy, lean				20.2	41	17	A-7-6(15)	CL
23	CLAY - brown, beige, sandy with gravel				13.5	32	18	A-6(5)	CL
36	GRAVEL - dark brown, grey, clayey				20.6	40	20	A-6(7)	CL

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10
STATION 178+50
TO
STATION 191+50

MACON COUNTY

3/13/2014
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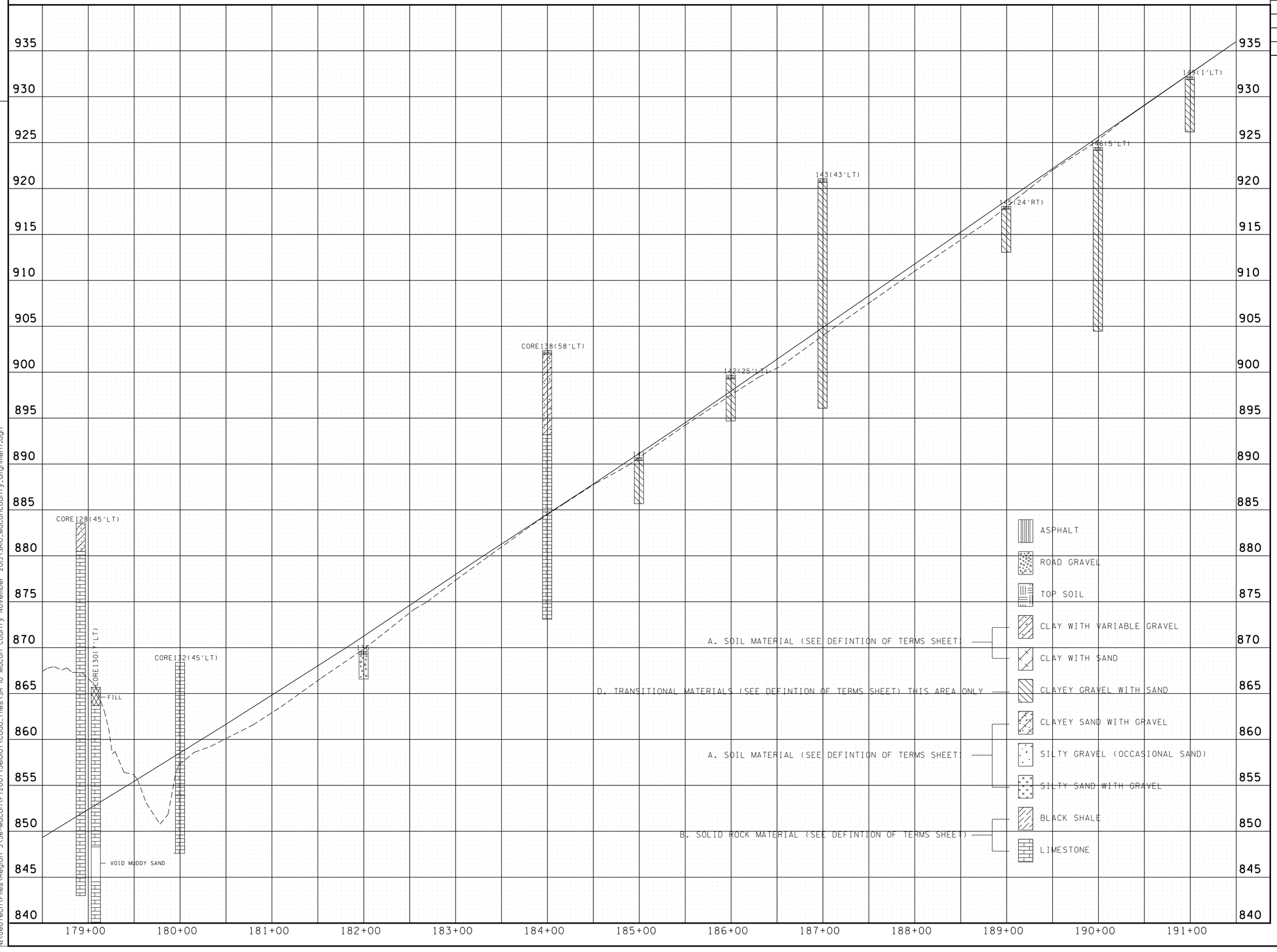
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83M



UNOFFICIAL SET

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10
STATION 178+50
TO
STATION 191+50

MACON COUNTY

3/13/2014
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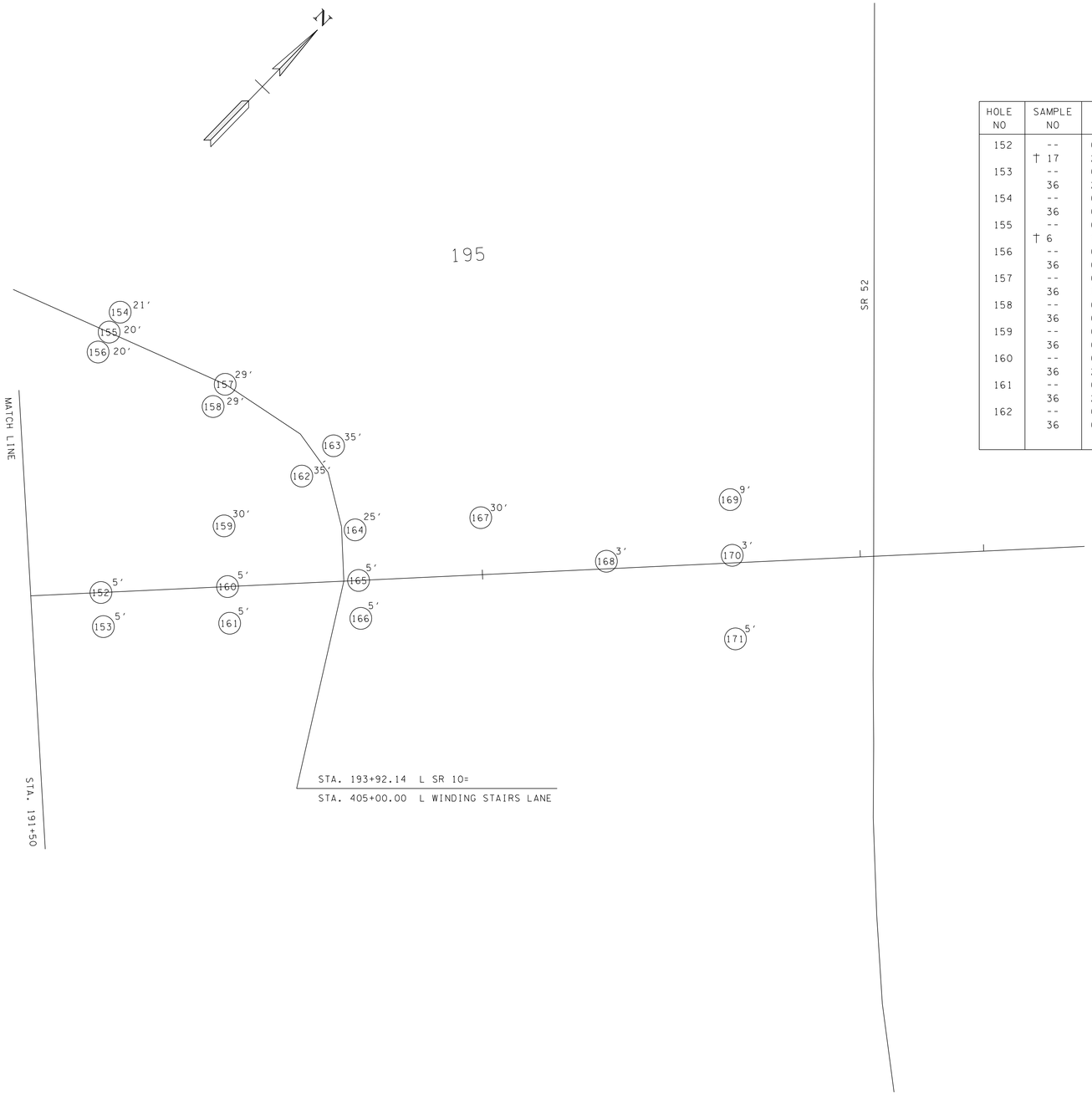
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83N



HOLE NO	SAMPLE NO	DEPTH
152	--	0-2.5
	† 17	2.5-5
153	--	0-2.5
	36	2.5-5
154	--	0-0.4
	36	0.4-21
155	--	0-1.0
	† 6	1.0-20
156	--	0-0.4
	36	0.4-20
157	--	0-1.8
	36	1.8-29
158	--	0-0.3
	36	0.3-29
159	--	0-0.4
	36	0.4-307
160	--	0-2.5
	36	2.5-5
161	--	0-2.5
	36	2.5-5
162	--	0-0.4
	36	0.4-35

HOLE NO	SAMPLE NO	DEPTH
163	--	0-0.4
	36	0.4-35
164	--	0-0.4
	36	0.4-25
165	--	0-2
	36	2-5-
166	--	0-2.5
	36	2.5-5
167	--	0-0.4
	36	0.4-30
168	--	0-3
169	--	0-0.4
	36	0.4-9
170	--	0-1.5
	36	1.5-3
171	--	0-0.4
	† 15	0.4-5

† INDICATES LOCATION WHERE SAMPLE WAS TAKEN AND LAB TEST PERFORMED. ALL OTHER SAMPLE NUMBER LABELS INDICATE AN APPARENT SIMILARITY BASED ON VISUAL IDENTIFICATION IN THE FIELD.

UNOFFICIAL SET

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SAMPLE NO.	DESCRIPTION	DENSITY	OPTIMUM MOISTURE	MOISTURE RANGE	IN-SITU MOISTURE	LL	PL	AASHTO CLASS	USCS CLASS
15	CLAY - tan, sandy, fat, with gravel					57	19	A-7-6(19)	CH
17	SAND - grey, clayey with gravel					23	12	A-2-6(0)	SC
36	GRAVEL - dark brown, grey, clayey				20.6	40	20	A-6(7)	CL

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10
STATION 191+50
TO
END OF PROJECT

MACON COUNTY

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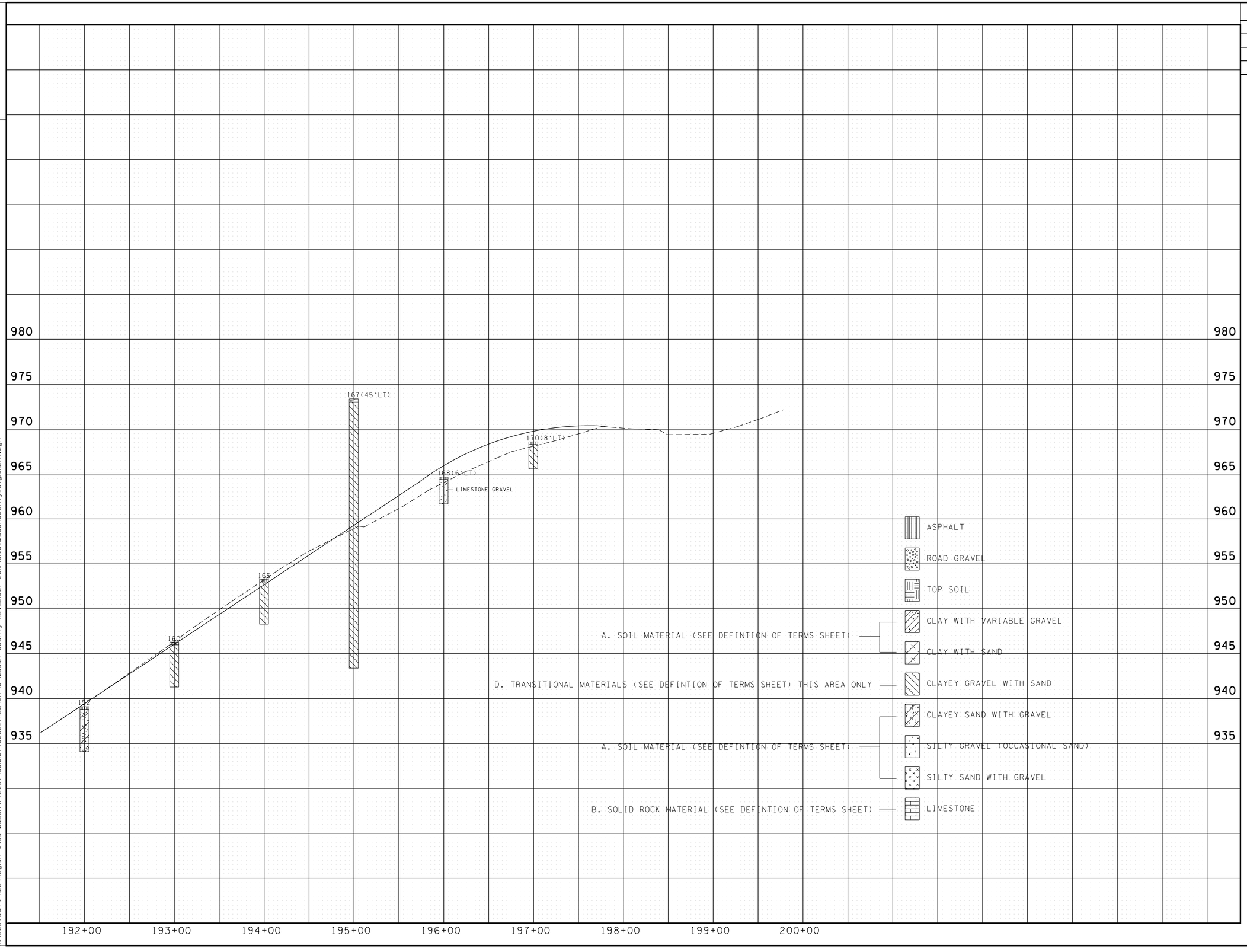
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	830



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DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10
STATION 191+50
TO
END OF PROJECT

MACON COUNTY

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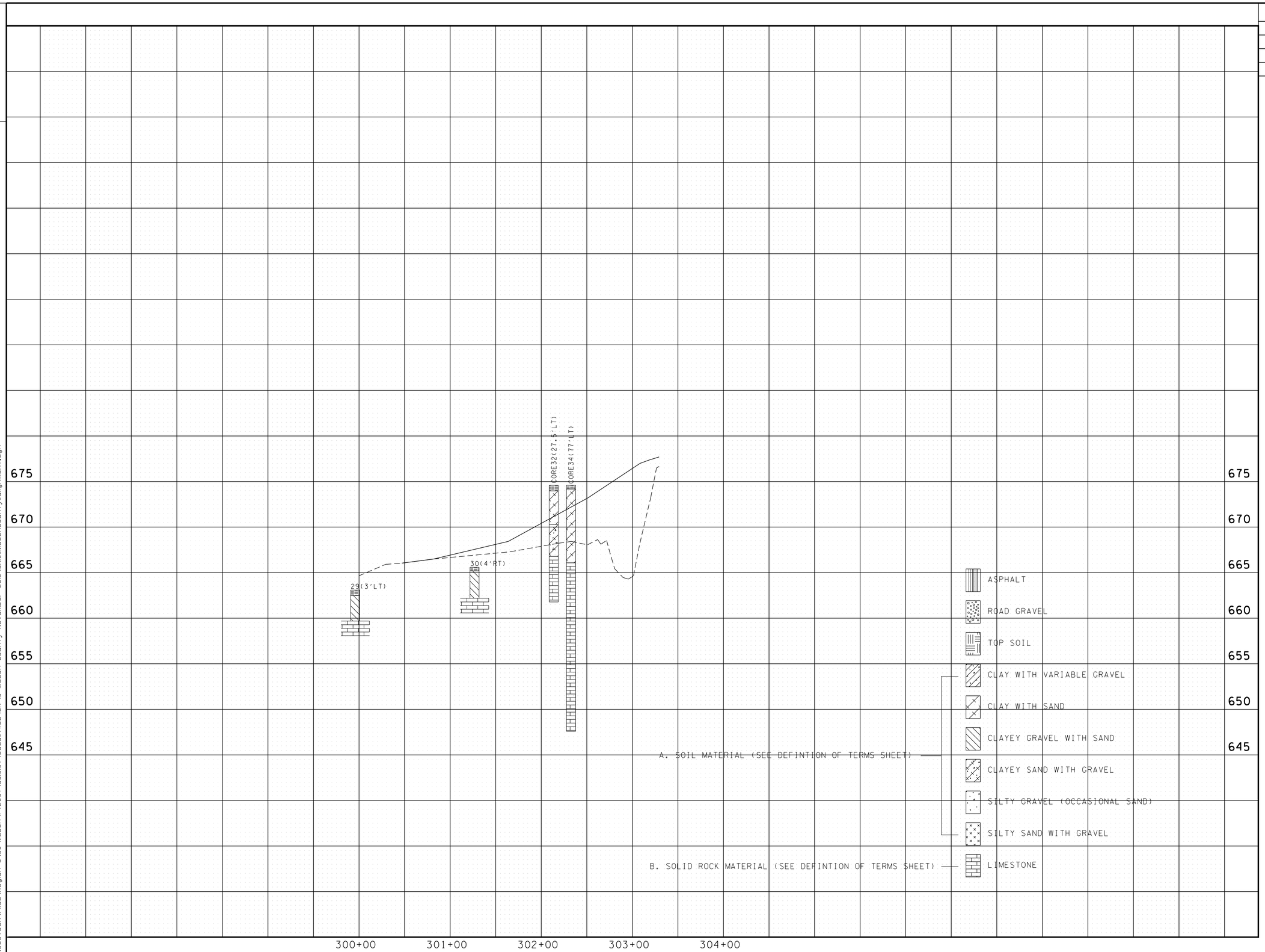
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83P



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10

WILBURN LANE
REVISION

MACON COUNTY

3/13/2014
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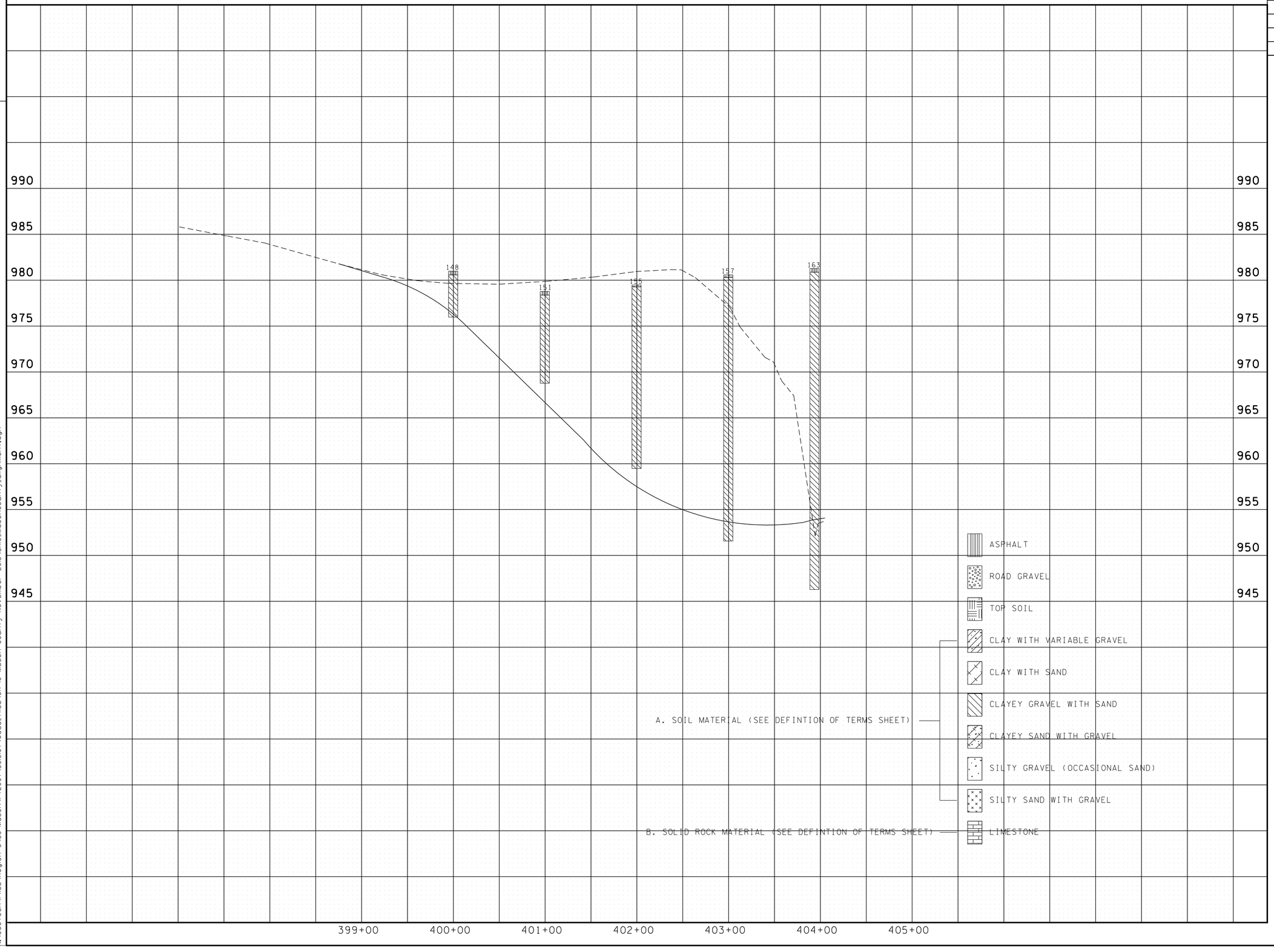
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	830

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS

STATE ROUTE 10

WINDING STAIRS LANE

MACON COUNTY

3/13/2014
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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83R

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

C. SOFT ROCK OR DEGRADABLE ROCK

THIS MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES THAT ARE SO FIRMLY BONDED SUCH THAT THEY ARE NOT FAIRLY READILY SEPARATED INTO SMALL PIECES YET HAS SUCH RELATIVELY LOW BONDING STRENGTH THAT WOULD ALLOW FOR SEPARATING INTO SMALL PIECES THROUGH MODERATE TO HEAVY CRUSHING FORCES. FOR CONSTRUCTION PURPOSES THIS MATERIAL WOULD HAVE TO BE SUBJECTED TO RIPPING TYPE EQUIPMENT, HOE RAMS, OR RUGGED USE OF A LARGE BULLDOZER IN ORDER TO SEPARATE THE MATERIAL SUCH THAT IT CAN BE READILY LOADED INTO EARTH MOVING TRUCKS. THESE MATERIALS WOULD TYPICALLY BE SHALES, CLAYSTONES, SILTSTONES, WEATHERED SANDSTONES, WEATHERED SCHIST AND WEATHERED GNEISS. THIS MATERIAL WOULD HAVE A RELATIVELY SMALL SHRINK OR SWELL FACTOR DEPENDING ON THE TYPE MATERIAL AND THE DEGREE OF WEATHERING, DISINTEGRATION, OR DEGRADATION.

4-203.02

D. TRANSITIONAL MATERIALS

THIS MATERIAL IS THAT MATERIAL COMPRISED OF A COMBINATION OF SOIL AND ROCK (MATERIAL A,B, AND C AS DEFINED IN SECTION 4-230.02 OF THE TDOT ROADWAY DESIGN GUIDELINES) OCCURRING IN EITHER NON- UNIFORM INTERBEDDED LAYERS OF THE ABOVE MATERIALS (I.E., SHALE MATERIAL WITH RELATIVELY THIN LAYERS OF SOLID ROCK SUCH AS HARD LIMESTONE) OR ERRATIC LOCALIZED CHANGES OF MATERIAL TYPES BOTH LATERALLY AND WITH DEPTH (SUCH AS A GEOLOGIC FORMATION RESULTING IN PINNACLED ROCK COLUMNS, FLOATING BOULDERS OR LENSES INTERCALATED WITH CLAY SOIL, A COMMON OCCURRENCE IN CERTAIN REGIONS OF TENNESSEE). FOR CONSTRUCTION PURPOSES, THIS MATERIAL MAY HAVE TO BE EXCAVATED USING A COMBINATION OF EXCAVATION METHODS SUCH AS BLASTING OF ROCK PINNACLES, LAYERS OF BOULDERS ALONG WITH RIPPING OF WEATHERED ROCK AND EXCAVATING OF SOIL WITH TRACK HOES OR LOADERS ALL WITHIN A LOCALIZED AREA. THIS MATERIAL WOULD NOT BE SUITABLE FOR THE USE OF EXCAVATING PAN TYPE EQUIPMENT.

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS
DEFINITION OF TERMS
USED FOR EARTHWORK
GRADING CALCULATIONS
MACON COUNTY

3/13/2014
N:\Geotech\Files\Region 3\56-Macon\FY2007\56I007\cadd_files\SR 10 Macon County November 2013\SR10_MaconCounty_alignment.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83S

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

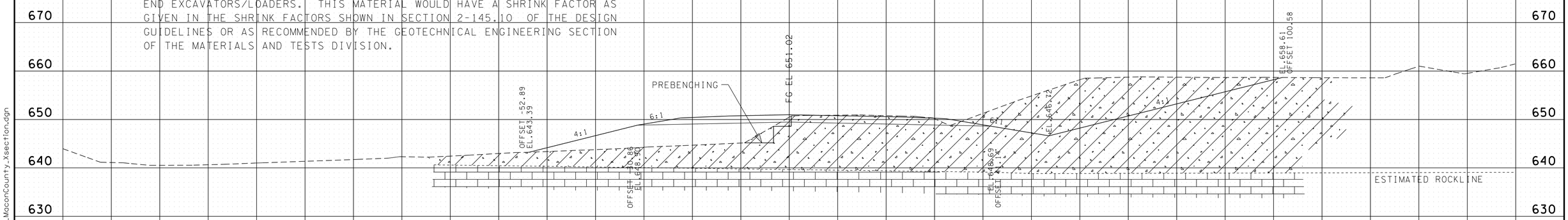
REPRESENTATIVE OF STATION 105+00.00 TO STATION 113+00.00

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

NOTE:
EXISTING EMBANKMENT TO BE PREBENCHED ACCORDING TO TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUB SECTION 205.03 PARAGRAPH 6 (MARCH 1, 2006).



4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

110+50.00 MAINLINE

CLAY WITH VARIABLE GRAVEL (A. SOIL MATERIAL)

LIMESTONE (B. SOLID ROCK MATERIAL)

SEALED BY

UNOFFICIAL SET
NOT FOR BIDDING

STATE ROUTE 10
MACON COUNTY

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

3/13/2014
N:\Geotech\Files\Region 3\56-Macon\FY2007\5610107\cadd_files\SR 10 Macon County November 2013\SR10_MaconCounty_Xsection.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83T

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

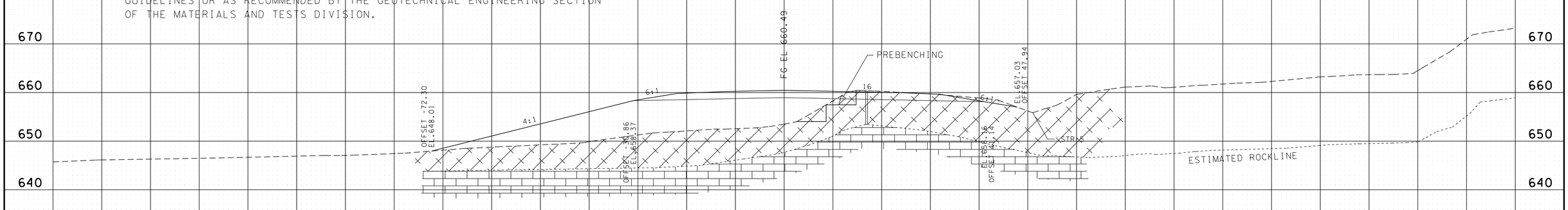
REPRESENTATIVE OF STATION 113+00.00 TO STATION 123+00.00

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

NOTE:
EXISTING EMBANKMENT TO BE PREBENCHED ACCORDING TO TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUB SECTION 205.03 PARAGRAPH 6 (MARCH 1, 2006).



CLAY WITH SAND (A. SOIL MATERIAL)

LIMESTONE (B. SOLID ROCK MATERIAL)

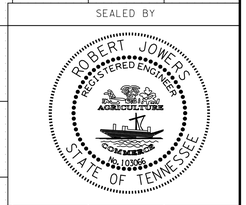
114+50.00 MAINLINE

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

SEALED BY



UNOFFICIAL SET
NOT FOR BIDDING

STATE ROUTE 10
MACON COUNTY

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

3/13/2014
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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83U

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

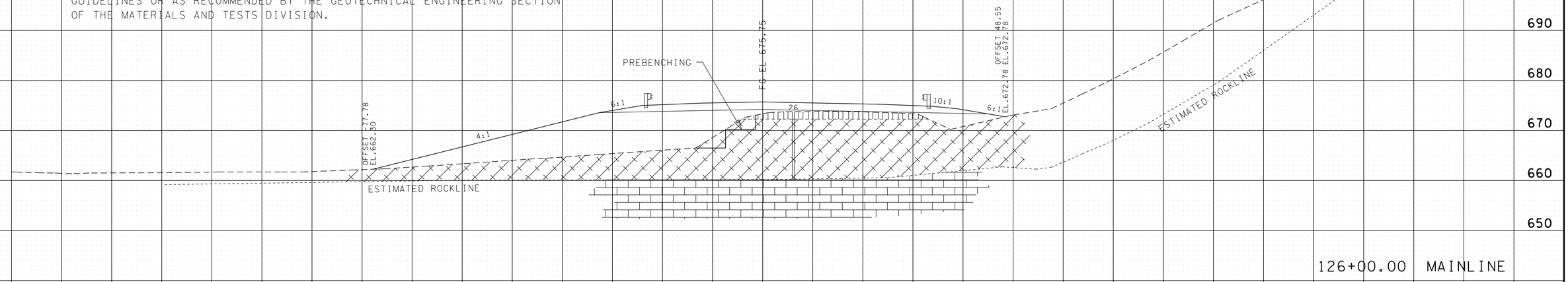
REPRESENTATIVE OF STATION 123+00.00 TO STATION 128+00.00

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

NOTE:
EXISTING EMBANKMENT TO BE PREBENCHED ACCORDING TO TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUB SECTION 205.03 PARAGRAPH 6 (MARCH 1, 2006).



4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

ASPHALT

CLAY WITH SAND (A. SOIL MATERIAL)

LIMESTONE (B. SOLID ROCK MATERIAL)

SEALED BY

ROBERT JOWERS
REGISTERED ENGINEER
No. 103066
STATE OF TENNESSEE

UNOFFICIAL SET

NOT FOR BIDDING

STATE ROUTE 10

MACON COUNTY

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

3/13/2014
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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83V

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

REPRESENTATIVE OF STATION 128+00.00 TO STATION 129+25.00

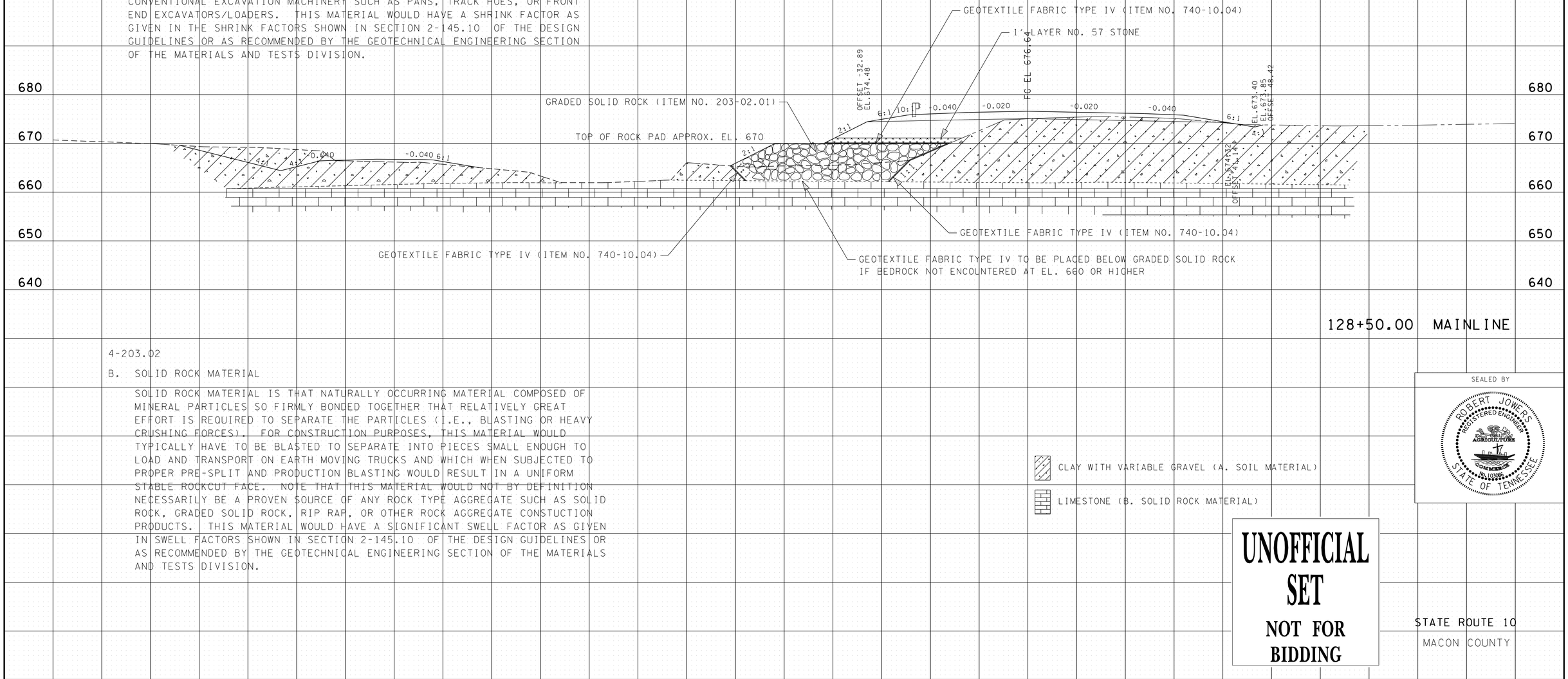
ITEM NO. 203-02.01 GRADED SOLID ROCK

BORROW EXCAVATION (GRADED SOLID ROCK) SHALL CONSIST OF THE REMOVAL AND SATISFACTORY PLACEMENT OF SOUND, NON-DEGRADABLE ROCK WITH A MAXIMUM SIZE OF 3 FT. (1 M) . AT LEAST 50 PERCENT OF THE ROCK SHALL BE UNIFORMLY DISTRIBUTED BETWEEN 1 FT.(30 CM) AND 3 FT. (1 M) IN DIAMETER AND NO GREATER THAN 10 PERCENT SHALL BE LESS 2 IN. (50 MM) IN DIAMETER. THE MATERIAL SHALL BE ROUGHLY EQUI-DIMENSIONAL IN SHAPE. THIN, SLABBY MATERIAL WILL NOT BE ACCEPTED. THE CONTRACTOR SHALL BE REQUIRED TO PROCESS THE MATERIAL WITH AN ACCEPTABLE MECHANICAL SCREENING PROCESS THAT PRODUCES THE REQUIRED GRADATION. WHEN THE MATERIAL IS SUBJECTED TO FIVE ALTERATIONS OF THE SODIUM SULFATE SOUNDNESS TEST (AASHTO T 104), THE WEIGHTED PERCENTAGE OF LOSS SHALL BE NOT MORE THAN 12. THE MATERIAL SHALL BE APPROVED BY THE ENGINEER BEFORE USE.

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.



4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

SEALED BY

UNOFFICIAL SET
NOT FOR BIDDING

STATE ROUTE 10
MACON COUNTY

3/13/2014
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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83W

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

REPRESENTATIVE OF STATION 129+00.00 TO STATION 132+00.00

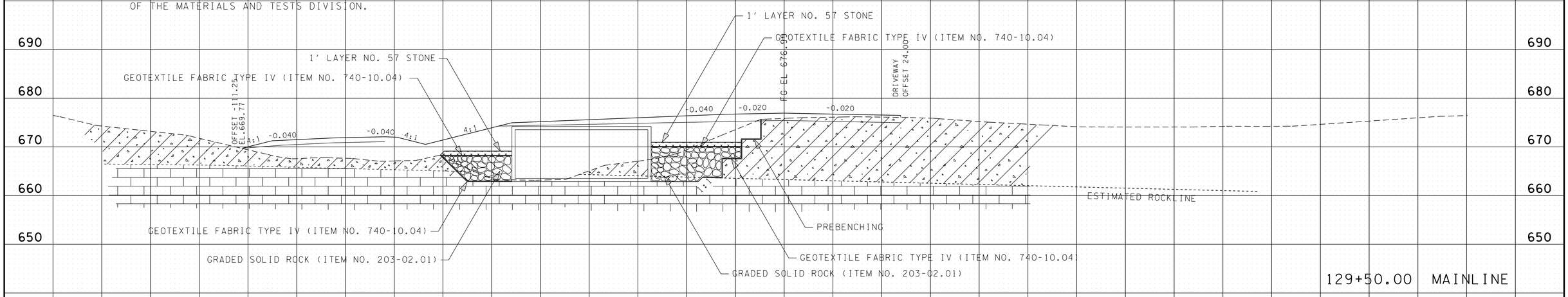
4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

ITEM NO. 203-02.01 GRADED SOLID ROCK

BORROW EXCAVATION (GRADED SOLID ROCK) SHALL CONSIST OF THE REMOVAL AND SATISFACTORY PLACEMENT OF SOUND, NON-DEGRADABLE ROCK WITH A MAXIMUM SIZE OF 3 FT. (1 M) . AT LEAST 50 PERCENT OF THE ROCK SHALL BE UNIFORMLY DISTRIBUTED BETWEEN 1 FT.(30 CM) AND 3 FT. (1 M) IN DIAMETER AND NO GREATER THAN 10 PERCENT SHALL BE LESS 2 IN. (50 MM) IN DIAMETER. THE MATERIAL SHALL BE ROUGHLY EQUI-DIMENSIONAL IN SHAPE. THIN, SLABBY MATERIAL WILL NOT BE ACCEPTED. THE CONTRACTOR SHALL BE REQUIRED TO PROCESS THE MATERIAL WITH AN ACCEPTABLE MECHANICAL SCREENING PROCESS THAT PRODUCES THE REQUIRED GRADATION. WHEN THE MATERIAL IS SUBJECTED TO FIVE ALTERATIONS OF THE SODIUM SULFATE SOUNDNESS TEST (AASHTO T 104), THE WEIGHTED PERCENTAGE OF LOSS SHALL BE NOT MORE THAN 12. THE MATERIAL SHALL BE APPROVED BY THE ENGINEER BEFORE USE.



4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

NOTE:
EXISTING EMBANKMENT TO BE PREBENCHED ACCORDING TO TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUB SECTION 205.03 PARAGRAPH 6 (MARCH 1, 2006).

CLAY WITH VARIABLE GRAVEL (A. SOIL MATERIAL)

LIMESTONE (B. SOLID ROCK MATERIAL)

SEALED BY

UNOFFICIAL SET
NOT FOR BIDDING

STATE ROUTE 10
MACON COUNTY

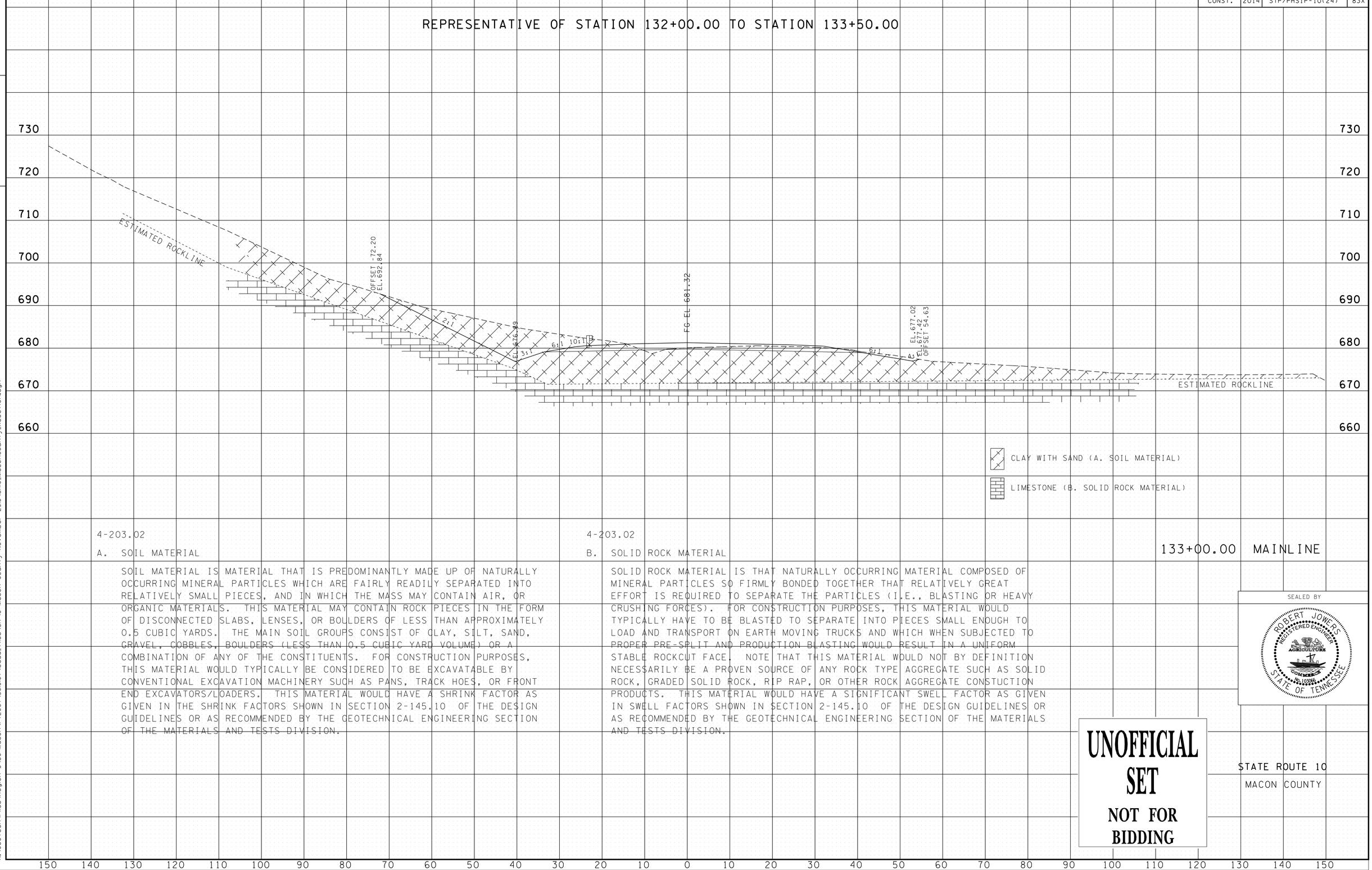
3/13/2014
N:\Geotech\Files\Region 3\56-Macon\FY2007\56I0107\cadd_files\SR 10 Macon County November 2013\SR10_MaconCounty_Xsection.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83X

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

REPRESENTATIVE OF STATION 132+00.00 TO STATION 133+50.00



4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

133+00.00 MAINLINE

SEALED BY

ROBERT JOWERS
REGISTERED ENGINEER
AGRICULTURE
No. 103306
STATE OF TENNESSEE

UNOFFICIAL SET
NOT FOR BIDDING

STATE ROUTE 10
MACON COUNTY

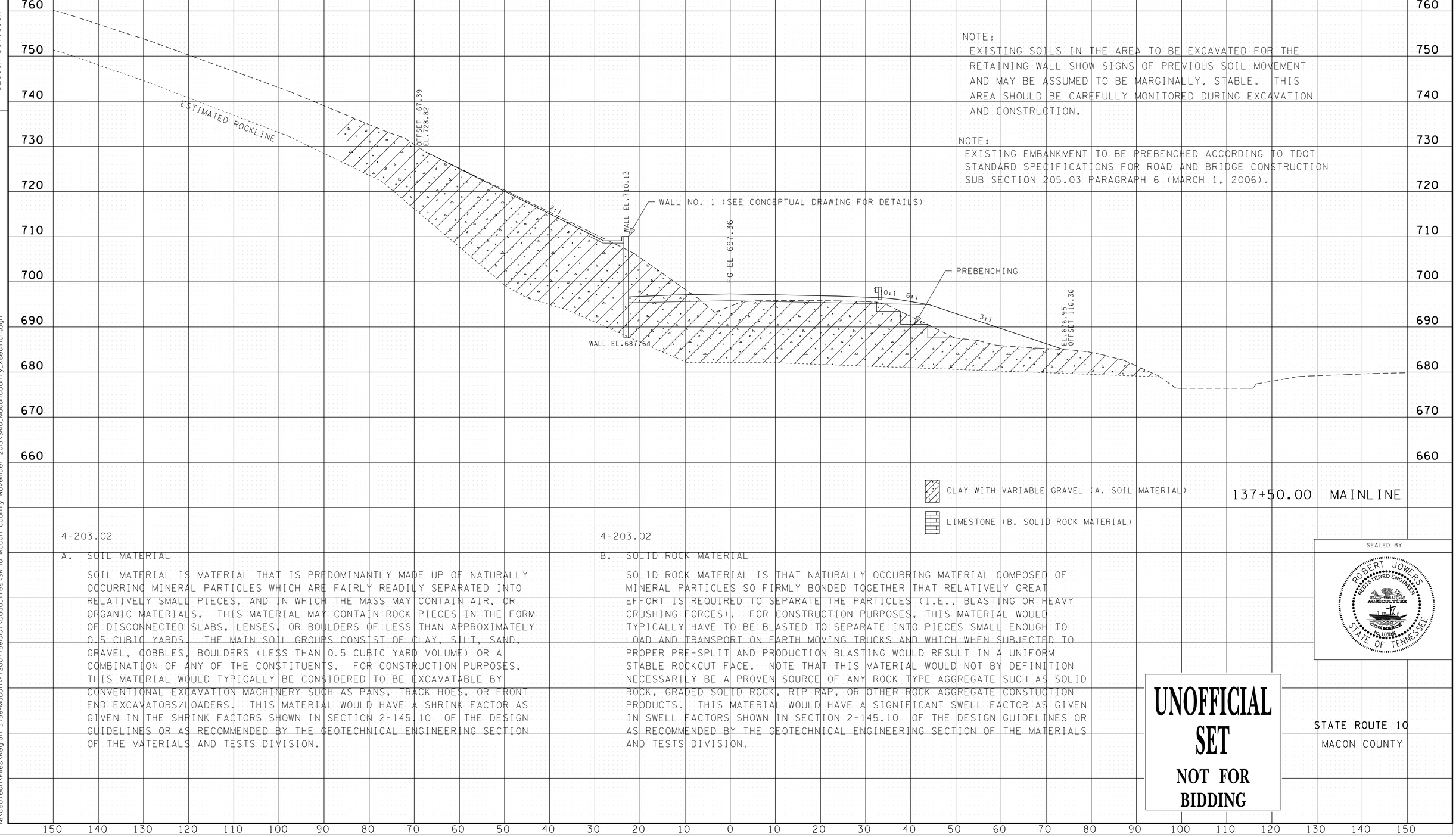
3/13/2014
N:\Geotech\Files\Region 3\56-Macon\FY2007\56I0I07\cadd_files\SR 10 Macon County November 2013\SR10_MaconCounty_Xsection.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83Y

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

REPRESENTATIVE OF STATION 133+50.00 TO STATION 144+50.00



NOTE:
EXISTING SOILS IN THE AREA TO BE EXCAVATED FOR THE RETAINING WALL SHOW SIGNS OF PREVIOUS SOIL MOVEMENT AND MAY BE ASSUMED TO BE MARGINALLY, STABLE. THIS AREA SHOULD BE CAREFULLY MONITORED DURING EXCAVATION AND CONSTRUCTION.

NOTE:
EXISTING EMBANKMENT TO BE PREBENCHED ACCORDING TO TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUB SECTION 205.03 PARAGRAPH 6 (MARCH 1, 2006).

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

SEALED BY

ROBERT JOWERS
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
NO. 103062
STATE OF TENNESSEE

UNOFFICIAL SET

NOT FOR BIDDING

STATE ROUTE 10
MACON COUNTY

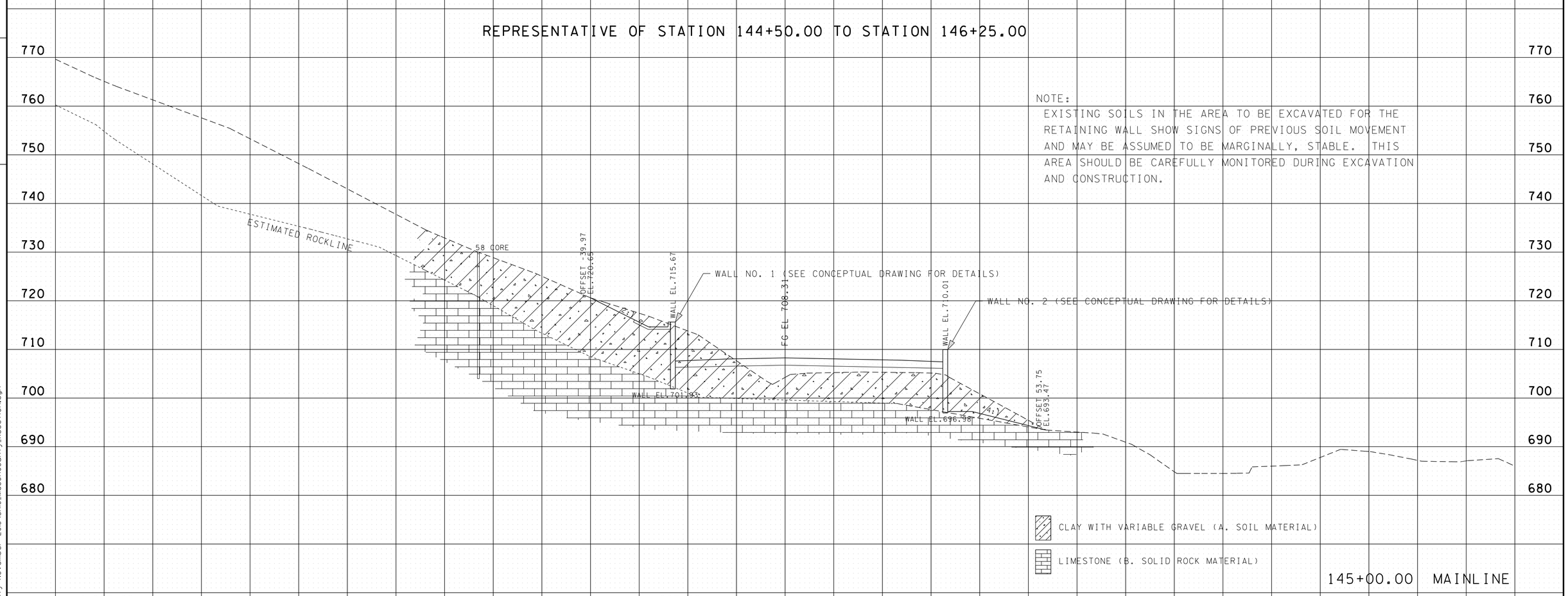
3/13/2014
N:\Geotech\Files\Region 3\56-Macon\FY2007\5610107\cadd_files\SR 10 Macon County November 2013\SR10_MaconCounty_Xsection.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83Z

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

REPRESENTATIVE OF STATION 144+50.00 TO STATION 146+25.00



NOTE:
EXISTING SOILS IN THE AREA TO BE EXCAVATED FOR THE RETAINING WALL SHOW SIGNS OF PREVIOUS SOIL MOVEMENT AND MAY BE ASSUMED TO BE MARGINALLY, STABLE. THIS AREA SHOULD BE CAREFULLY MONITORED DURING EXCAVATION AND CONSTRUCTION.

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

SEALED BY

UNOFFICIAL SET
NOT FOR BIDDING

STATE ROUTE 10
MACON COUNTY

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

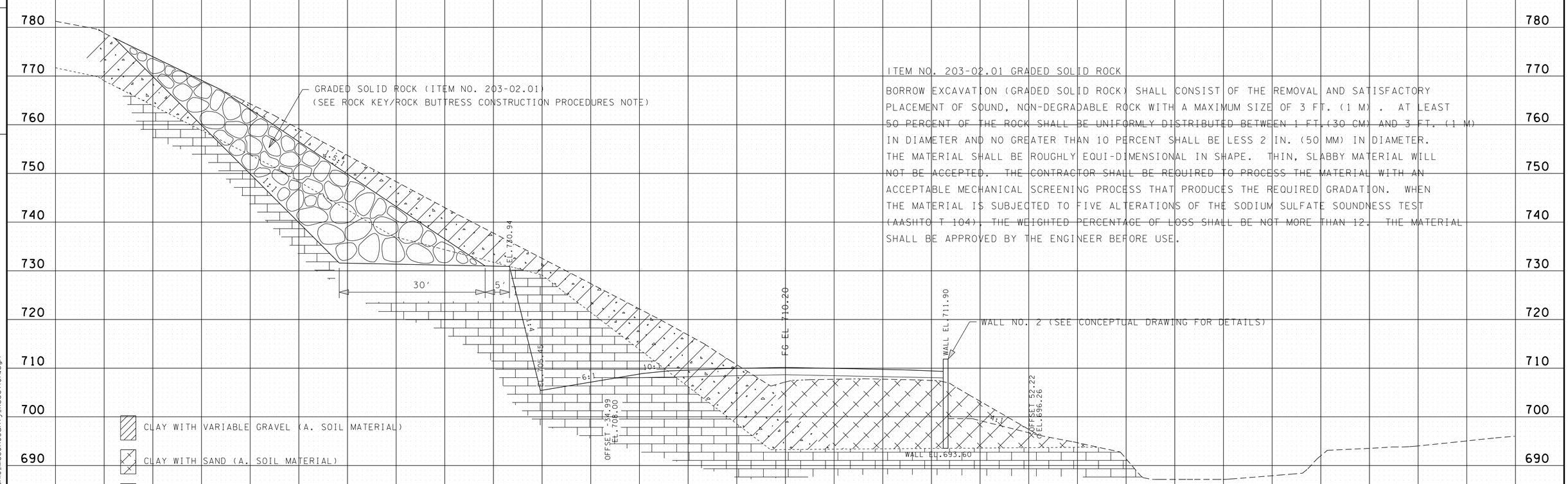
3/13/2014
N:\Geotech\Files\Region 3\56-Macon\FY2007\56I007\cadd_files\SR 10 Macon County November 2013\SR10_MaconCounty_Xsection.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AA

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

REPRESENTATIVE OF STATION 146+25.00 TO STATION 148+00.00



147+00.00 MAINLINE

ITEM NO. 203-02.01 GRADED SOLID ROCK

BORROW EXCAVATION (GRADED SOLID ROCK) SHALL CONSIST OF THE REMOVAL AND SATISFACTORY PLACEMENT OF SOUND, NON-DEGRADABLE ROCK WITH A MAXIMUM SIZE OF 3 FT. (1 M) . AT LEAST 50 PERCENT OF THE ROCK SHALL BE UNIFORMLY DISTRIBUTED BETWEEN 1 FT.(30 CM) AND 3 FT. (1 M) IN DIAMETER AND NO GREATER THAN 10 PERCENT SHALL BE LESS 2 IN. (50 MM) IN DIAMETER. THE MATERIAL SHALL BE ROUGHLY EQUI-DIMENSIONAL IN SHAPE. THIN, SLABBY MATERIAL WILL NOT BE ACCEPTED. THE CONTRACTOR SHALL BE REQUIRED TO PROCESS THE MATERIAL WITH AN ACCEPTABLE MECHANICAL SCREENING PROCESS THAT PRODUCES THE REQUIRED GRADATION. WHEN THE MATERIAL IS SUBJECTED TO FIVE ALTERATIONS OF THE SODIUM SULFATE SOUNDNESS TEST (AASHTO T 104), THE WEIGHTED PERCENTAGE OF LOSS SHALL BE NOT MORE THAN 12. THE MATERIAL SHALL BE APPROVED BY THE ENGINEER BEFORE USE.

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS REDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

SEALED BY

UNOFFICIAL SET

NOT FOR BIDDING

STATE ROUTE 10

MACON COUNTY

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

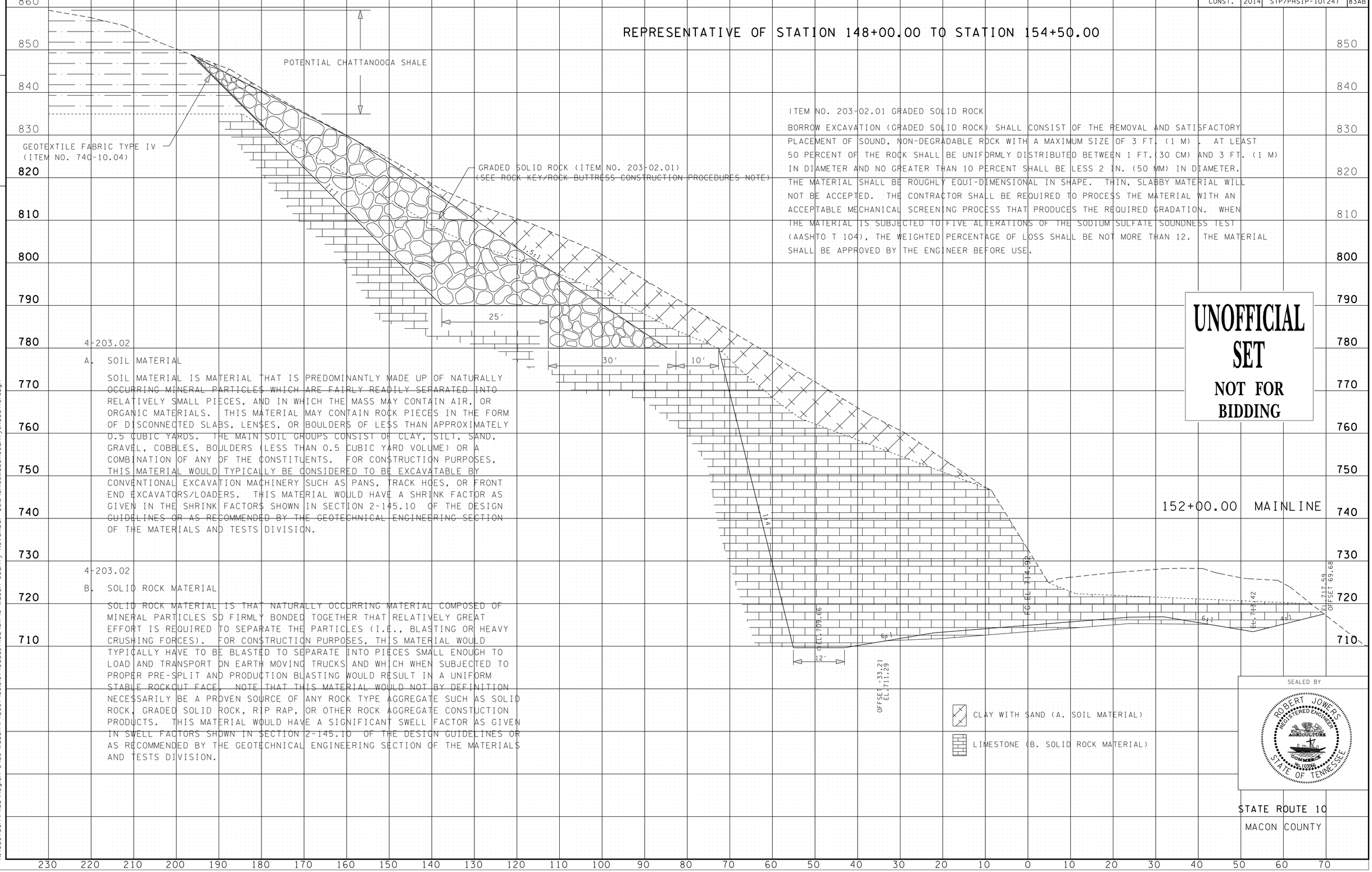
3/13/2014
N:\Geotech\Files\Region 3\56-Macon\FY2007\56I0107\cadd_files\SR 10 Macon County November 2013\SR10_MaconCounty_Xsection.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AB

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.

REPRESENTATIVE OF STATION 148+00.00 TO STATION 154+50.00



ITEM NO. 203-02.01 GRADED SOLID ROCK

BORROW EXCAVATION (GRADED SOLID ROCK) SHALL CONSIST OF THE REMOVAL AND SATISFACTORY PLACEMENT OF SOUND, NON-DEGRADABLE ROCK WITH A MAXIMUM SIZE OF 3 FT. (1 M). AT LEAST 50 PERCENT OF THE ROCK SHALL BE UNIFORMLY DISTRIBUTED BETWEEN 1 FT. (30 CM) AND 3 FT. (1 M) IN DIAMETER AND NO GREATER THAN 10 PERCENT SHALL BE LESS 2 IN. (50 MM) IN DIAMETER. THE MATERIAL SHALL BE ROUGHLY EQUI-DIMENSIONAL IN SHAPE. THIN, SLABBY MATERIAL WILL NOT BE ACCEPTED. THE CONTRACTOR SHALL BE REQUIRED TO PROCESS THE MATERIAL WITH AN ACCEPTABLE MECHANICAL SCREENING PROCESS THAT PRODUCES THE REQUIRED GRADATION. WHEN THE MATERIAL IS SUBJECTED TO FIVE ALTERATIONS OF THE SODIUM SULFATE SOUNDNESS TEST (AASHTO T 104), THE WEIGHTED PERCENTAGE OF LOSS SHALL BE NOT MORE THAN 12. THE MATERIAL SHALL BE APPROVED BY THE ENGINEER BEFORE USE.

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY

STATE ROUTE 10
MACON COUNTY

3/13/2014
N:\Geotech\Files\Region 3\56-Macon\FY2007\56I0I07\cadd_files\SR 10 Macon County November 2013\SR10_MaconCounty_Xsection.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AC

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

REPRESENTATIVE OF STATION 154+50.00 TO STATION 161+00.00

4-203.02

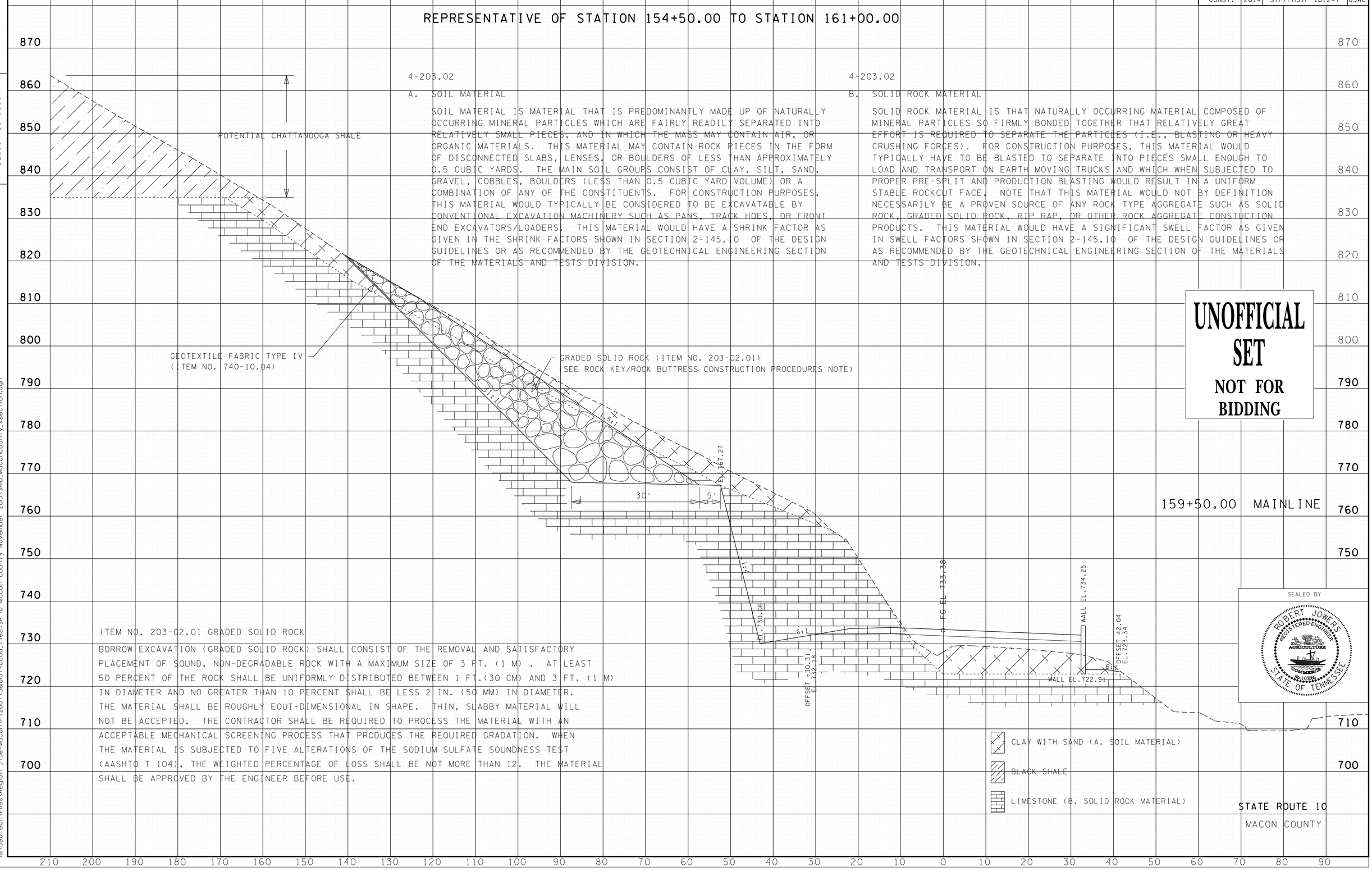
A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.



ITEM NO. 203-02.01 GRADED SOLID ROCK

BORROW EXCAVATION (GRADED SOLID ROCK) SHALL CONSIST OF THE REMOVAL AND SATISFACTORY PLACEMENT OF SOUND, NON-DEGRADABLE ROCK WITH A MAXIMUM SIZE OF 3 FT. (1 M) . AT LEAST 50 PERCENT OF THE ROCK SHALL BE UNIFORMLY DISTRIBUTED BETWEEN 1 FT.(30 CM) AND 3 FT. (1 M) IN DIAMETER AND NO GREATER THAN 10 PERCENT SHALL BE LESS 2 IN. (50 MM) IN DIAMETER. THE MATERIAL SHALL BE ROUGHLY EQUI-DIMENSIONAL IN SHAPE. THIN, SLABBY MATERIAL WILL NOT BE ACCEPTED. THE CONTRACTOR SHALL BE REQUIRED TO PROCESS THE MATERIAL WITH AN ACCEPTABLE MECHANICAL SCREENING PROCESS THAT PRODUCES THE REQUIRED GRADATION. WHEN THE MATERIAL IS SUBJECTED TO FIVE ALTERATIONS OF THE SODIUM SULFATE SOUNDNESS TEST (AASHTO T 104), THE WEIGHTED PERCENTAGE OF LOSS SHALL BE NOT MORE THAN 12. THE MATERIAL SHALL BE APPROVED BY THE ENGINEER BEFORE USE.

UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY
ROBERT JOWERS
REGISTERED ENGINEER
AGRICULTURE
NO. 103066
STATE OF TENNESSEE

STATE ROUTE 10
MACON COUNTY

3/13/2014
N:\Geotech\Files\Region 3\56-Macon\FY2007\56I0I07\cadd_files\SR 10 Macon County November 2013\SR10_MaconCounty_Xsection.dgn

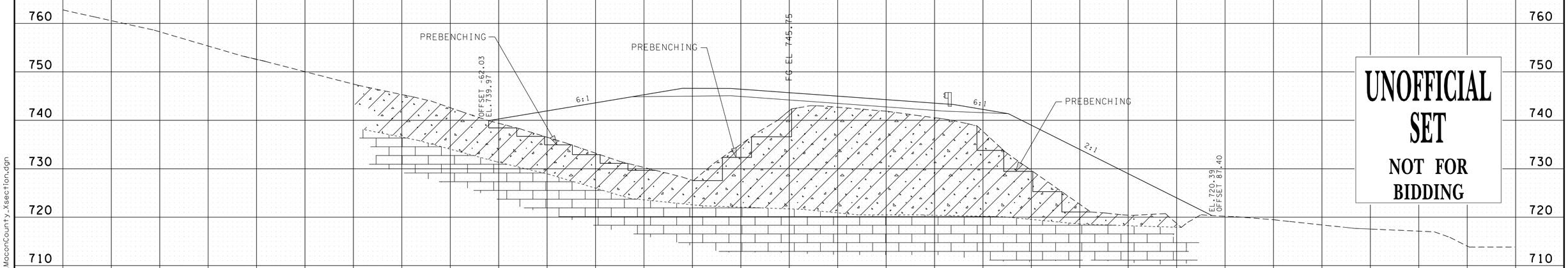
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AD

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

REPRESENTATIVE OF STATION 161+00.00 TO STATION 162+75.00

NOTE:
EXISTING EMBANKMENT TO BE PREBENCHED ACCORDING TO TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUB SECTION 205.03 PARAGRAPH 6 (MARCH 1, 2006).



UNOFFICIAL SET
NOT FOR BIDDING

CLAY WITH VARIABLE GRAVEL (A. SOIL MATERIAL)

LIMESTONE (B. SOLID ROCK MATERIAL)

161+50.00 MAINLINE

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS REDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

SEALED BY

ROBERT JOWERS
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
NO. 105056
STATE OF TENNESSEE

STATE ROUTE 10
MACON COUNTY

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

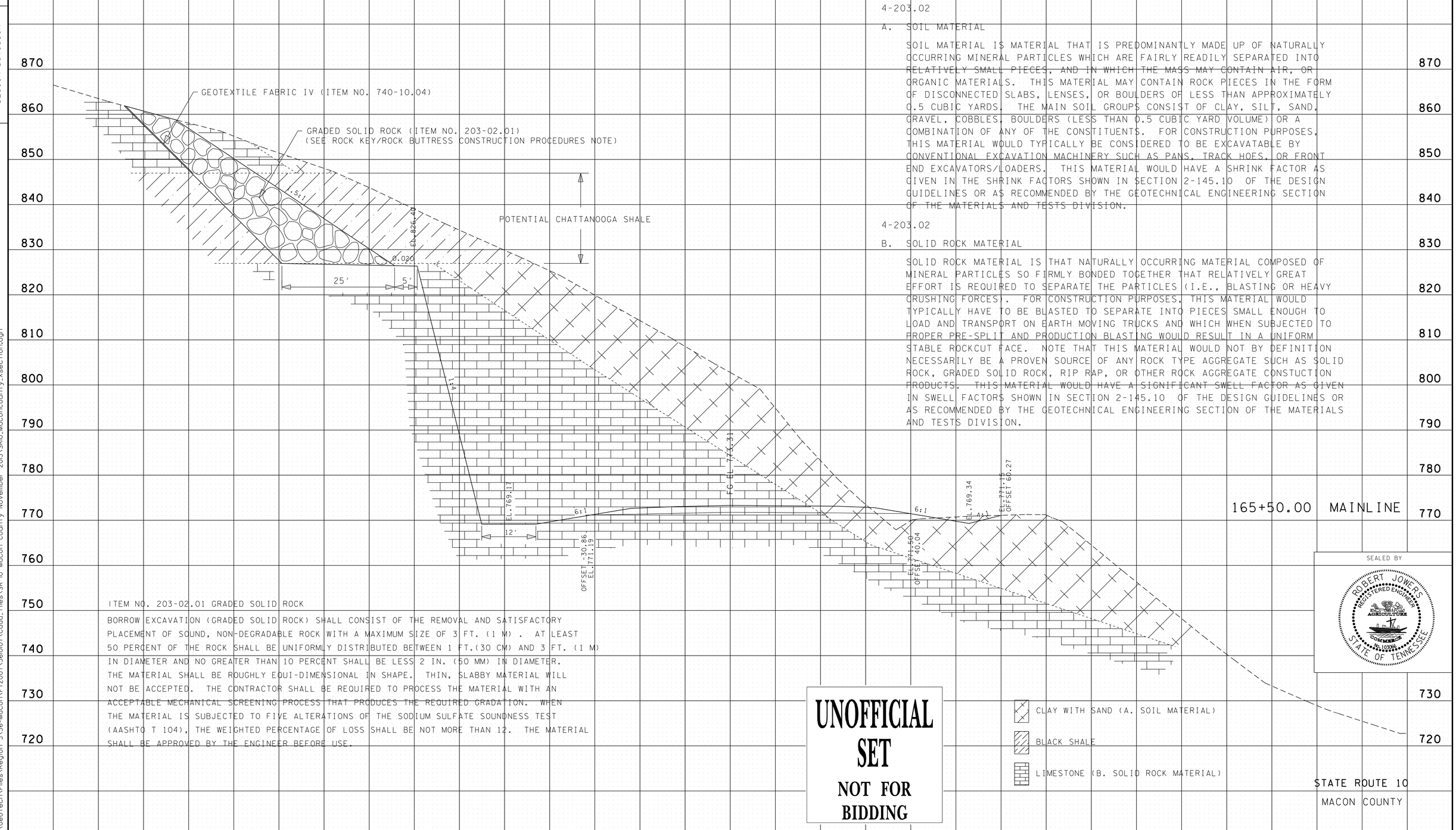
3/13/2014
N:\Geotech\Files\Region 3\56-Macon\FY2007\56I007\cadd_files\SR 10 Macon County November 2013\SR10_MaconCounty_Xsection.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AE

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

REPRESENTATIVE OF STATION 162+75.00 TO STATION 171+00.00



4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

ITEM NO. 203-02.01 GRADED SOLID ROCK

BORROW EXCAVATION (GRADED SOLID ROCK) SHALL CONSIST OF THE REMOVAL AND SATISFACTORY PLACEMENT OF SOUND, NON-DEGRADABLE ROCK WITH A MAXIMUM SIZE OF 3 FT. (1 M) . AT LEAST 50 PERCENT OF THE ROCK SHALL BE UNIFORMLY DISTRIBUTED BETWEEN 1 FT.(30 CM) AND 3 FT. (1 M) IN DIAMETER AND NO GREATER THAN 10 PERCENT SHALL BE LESS 2 IN. (50 MM) IN DIAMETER. THE MATERIAL SHALL BE ROUGHLY EQUI-DIMENSIONAL IN SHAPE. THIN, SLABBY MATERIAL WILL NOT BE ACCEPTED. THE CONTRACTOR SHALL BE REQUIRED TO PROCESS THE MATERIAL WITH AN ACCEPTABLE MECHANICAL SCREENING PROCESS THAT PRODUCES THE REQUIRED GRADATION. WHEN THE MATERIAL IS SUBJECTED TO FIVE ALTERATIONS OF THE SODIUM SULFATE SOUNDNESS TEST (AASHTO T 104), THE WEIGHTED PERCENTAGE OF LOSS SHALL BE NOT MORE THAN 12. THE MATERIAL SHALL BE APPROVED BY THE ENGINEER BEFORE USE.

UNOFFICIAL SET
NOT FOR BIDDING

CLAY WITH SAND (A. SOIL MATERIAL)
BLACK SHALE
LIMESTONE (B. SOLID ROCK MATERIAL)

SEALED BY
ROBERT JOWERS
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
NO. 103056
STATE OF TENNESSEE

STATE ROUTE 10
MACON COUNTY

3/13/2014
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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AF

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

REPRESENTATIVE OF STATION 171+00.00 TO STATION 174+00.00

4-203.02

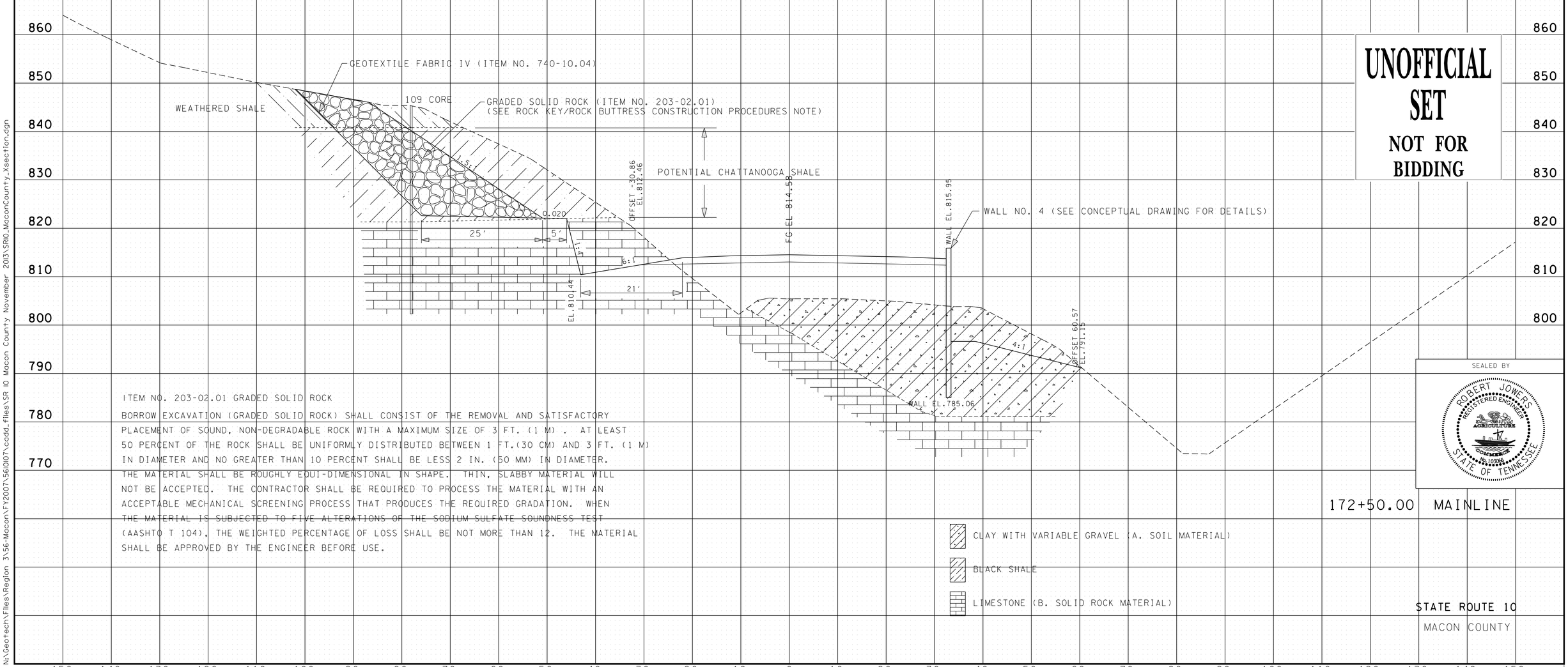
A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.



UNOFFICIAL SET
NOT FOR BIDDING

ITEM NO. 203-02.01 GRADED SOLID ROCK

BORROW EXCAVATION (GRADED SOLID ROCK) SHALL CONSIST OF THE REMOVAL AND SATISFACTORY PLACEMENT OF SOUND, NON-DEGRADABLE ROCK WITH A MAXIMUM SIZE OF 3 FT. (1 M) . AT LEAST 50 PERCENT OF THE ROCK SHALL BE UNIFORMLY DISTRIBUTED BETWEEN 1 FT.(30 CM) AND 3 FT. (1 M) IN DIAMETER AND NO GREATER THAN 10 PERCENT SHALL BE LESS 2 IN. (50 MM) IN DIAMETER. THE MATERIAL SHALL BE ROUGHLY EQUI-DIMENSIONAL IN SHAPE. THIN, SLABBY MATERIAL WILL NOT BE ACCEPTED. THE CONTRACTOR SHALL BE REQUIRED TO PROCESS THE MATERIAL WITH AN ACCEPTABLE MECHANICAL SCREENING PROCESS THAT PRODUCES THE REQUIRED GRADATION. WHEN THE MATERIAL IS SUBJECTED TO FIVE ALTERATIONS OF THE SODIUM SULFATE SOUNDNESS TEST (AASHTO T 104), THE WEIGHTED PERCENTAGE OF LOSS SHALL BE NOT MORE THAN 12. THE MATERIAL SHALL BE APPROVED BY THE ENGINEER BEFORE USE.

CLAY WITH VARIABLE GRAVEL (A. SOIL MATERIAL)

BLACK SHALE

LIMESTONE (B. SOLID ROCK MATERIAL)

SEALED BY

ROBERT JOWERS
REGISTERED ENGINEER
AGRICULTURE
No. 10595
COMMERCE
STATE OF TENNESSEE

172+50.00 MAINLINE

STATE ROUTE 10
MACON COUNTY

3/13/2014
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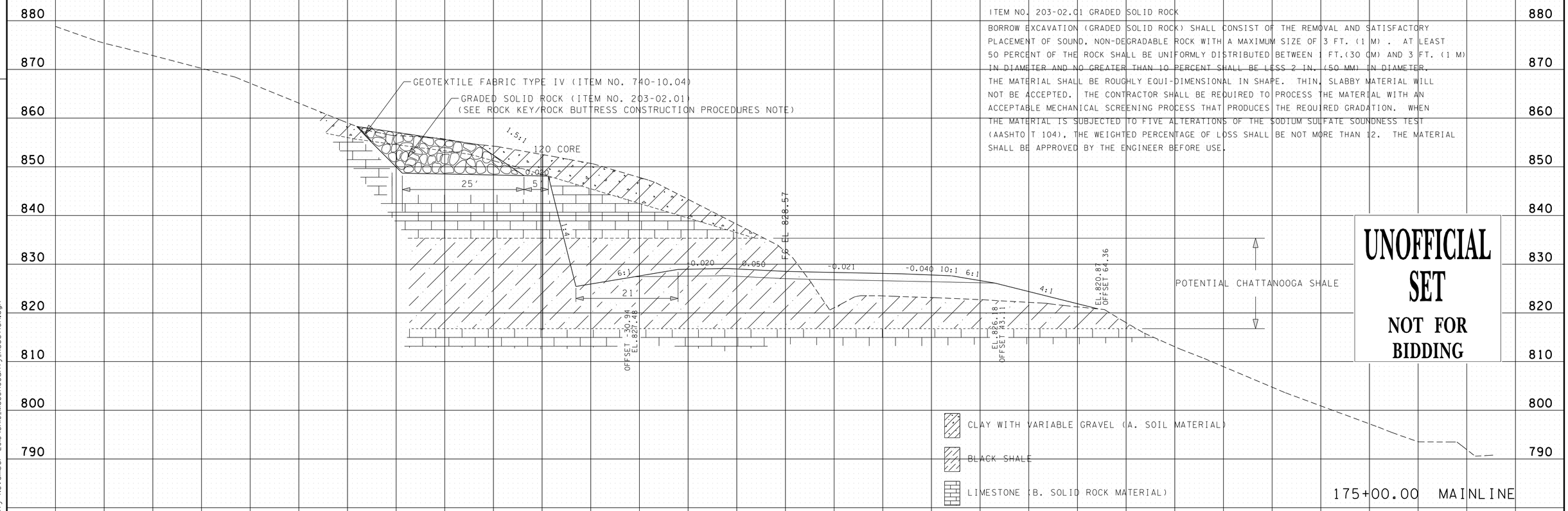
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AG

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

REPRESENTATIVE OF STATION 174+00.00 TO STATION 176+50.00



ITEM NO. 203-02.01 GRADED SOLID ROCK

BORROW EXCAVATION (GRADED SOLID ROCK) SHALL CONSIST OF THE REMOVAL AND SATISFACTORY PLACEMENT OF SOUND, NON-DEGRADABLE ROCK WITH A MAXIMUM SIZE OF 3 FT. (1 M) . AT LEAST 50 PERCENT OF THE ROCK SHALL BE UNIFORMLY DISTRIBUTED BETWEEN 1 FT.(30 CM) AND 3 FT. (1 M) IN DIAMETER AND NO GREATER THAN 10 PERCENT SHALL BE LESS 2 IN. (50 MM) IN DIAMETER. THE MATERIAL SHALL BE ROUGHLY EQUI-DIMENSIONAL IN SHAPE. THIN, SLABBY MATERIAL WILL NOT BE ACCEPTED. THE CONTRACTOR SHALL BE REQUIRED TO PROCESS THE MATERIAL WITH AN ACCEPTABLE MECHANICAL SCREENING PROCESS THAT PRODUCES THE REQUIRED GRADATION. WHEN THE MATERIAL IS SUBJECTED TO FIVE ALTERATIONS OF THE SODIUM SULFATE SOUNDNESS TEST (AASHTO T 104), THE WEIGHTED PERCENTAGE OF LOSS SHALL BE NOT MORE THAN 12. THE MATERIAL SHALL BE APPROVED BY THE ENGINEER BEFORE USE.

UNOFFICIAL SET
NOT FOR BIDDING

4-203.02

A. SOIL MATERIAL

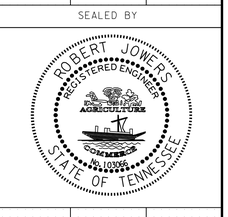
SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

SEALED BY



STATE ROUTE 10
MACON COUNTY

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

3/13/2014
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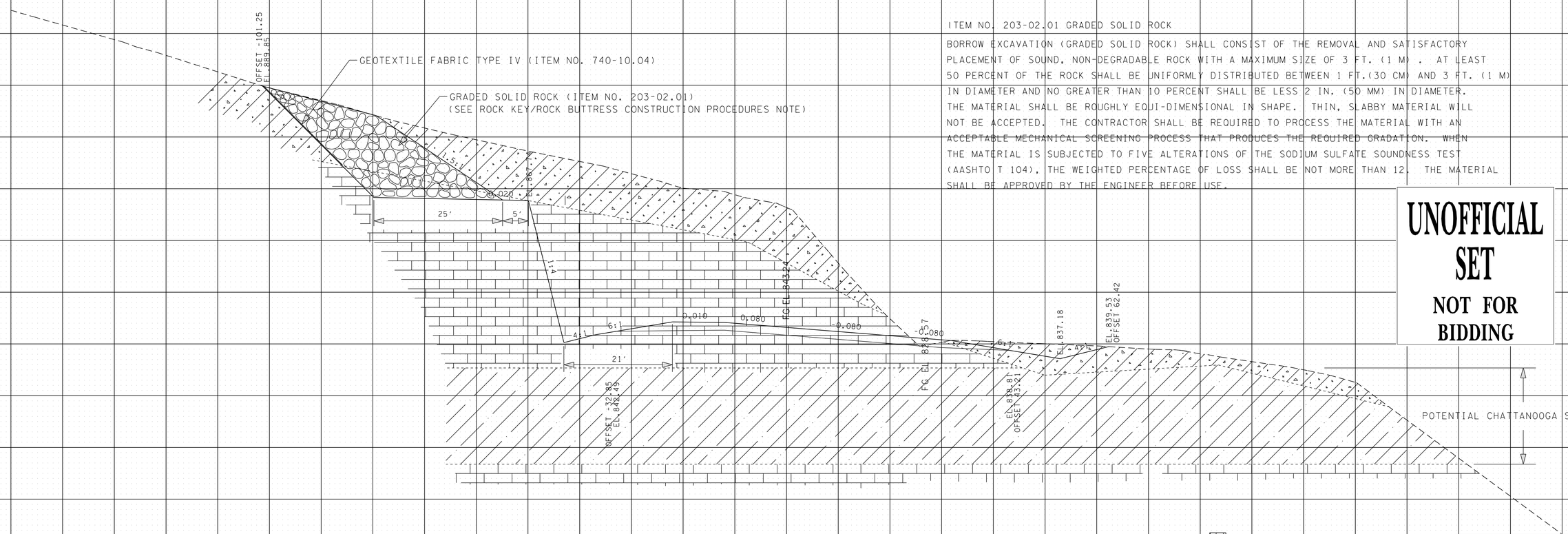
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AH

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

REPRESENTATIVE OF STATION 176+50.00 TO STATION 178+25.00



ITEM NO. 203-02.01 GRADED SOLID ROCK

BORROW EXCAVATION (GRADED SOLID ROCK) SHALL CONSIST OF THE REMOVAL AND SATISFACTORY PLACEMENT OF SOUND, NON-DEGRADABLE ROCK WITH A MAXIMUM SIZE OF 3 FT. (1 M) . AT LEAST 50 PERCENT OF THE ROCK SHALL BE UNIFORMLY DISTRIBUTED BETWEEN 1 FT.(30 CM) AND 3 FT. (1 M) IN DIAMETER AND NO GREATER THAN 10 PERCENT SHALL BE LESS 2 IN. (50 MM) IN DIAMETER. THE MATERIAL SHALL BE ROUGHLY EQUI-DIMENSIONAL IN SHAPE. THIN, SLABBY MATERIAL WILL NOT BE ACCEPTED. THE CONTRACTOR SHALL BE REQUIRED TO PROCESS THE MATERIAL WITH AN ACCEPTABLE MECHANICAL SCREENING PROCESS THAT PRODUCES THE REQUIRED GRADATION. WHEN THE MATERIAL IS SUBJECTED TO FIVE ALTERATIONS OF THE SODIUM SULFATE SOUNDNESS TEST (AASHTO T 104), THE WEIGHTED PERCENTAGE OF LOSS SHALL BE NOT MORE THAN 12. THE MATERIAL SHALL BE APPROVED BY THE ENGINEER BEFORE USE.

UNOFFICIAL SET
NOT FOR BIDDING

4-203.02

A. SOIL MATERIAL

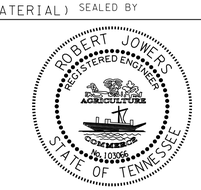
SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

SEALED BY



177+50.00 MAINLINE

STATE ROUTE 10
MACON COUNTY

3/13/2014
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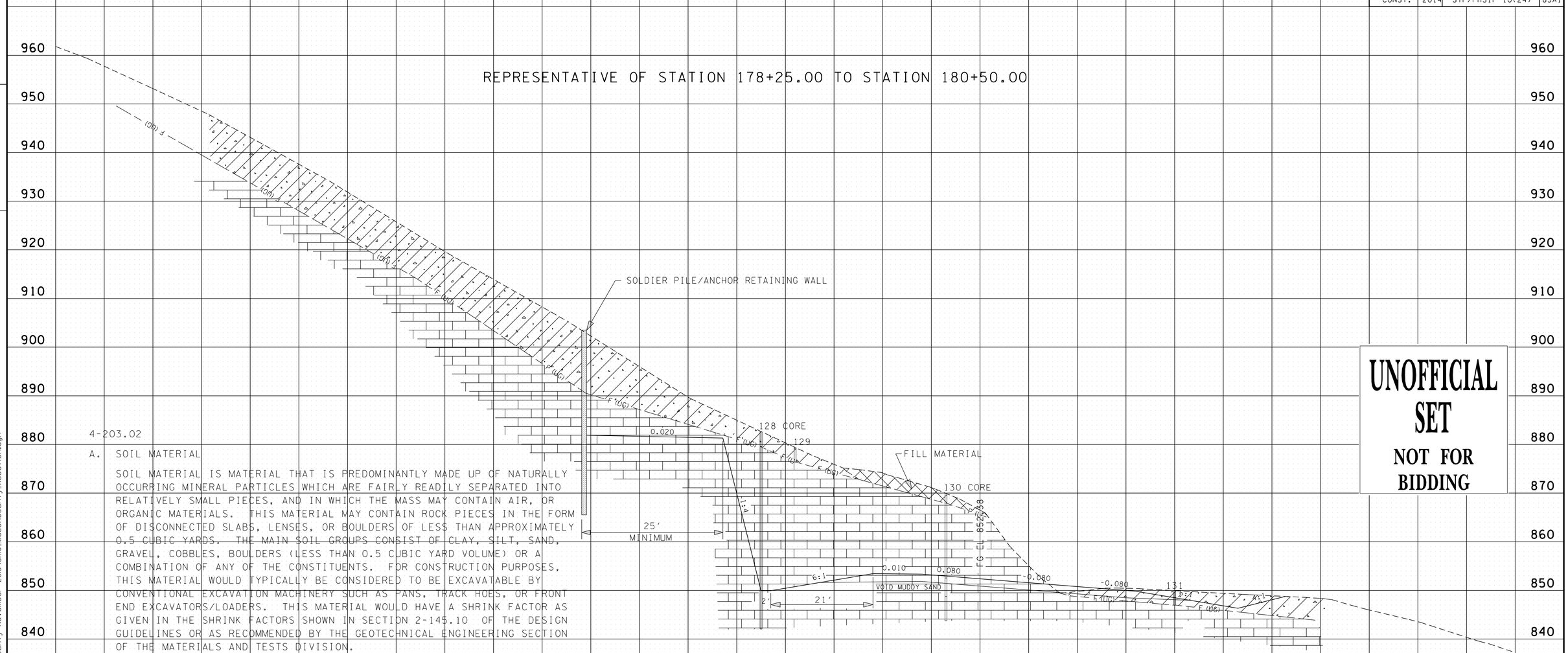
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AI

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

REPRESENTATIVE OF STATION 178+25.00 TO STATION 180+50.00



UNOFFICIAL SET
NOT FOR BIDDING

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

CLAY WITH VARIABLE GRAVEL (A. SOIL MATERIAL)

LIMESTONE (B. SOLID ROCK MATERIAL)

SEALED BY

ROBERT JOWERS
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
NO. 103065
STATE OF TENNESSEE

179+00.00 MAINLANE

STATE ROUTE 10

MACON COUNTY

190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110

3/13/2014
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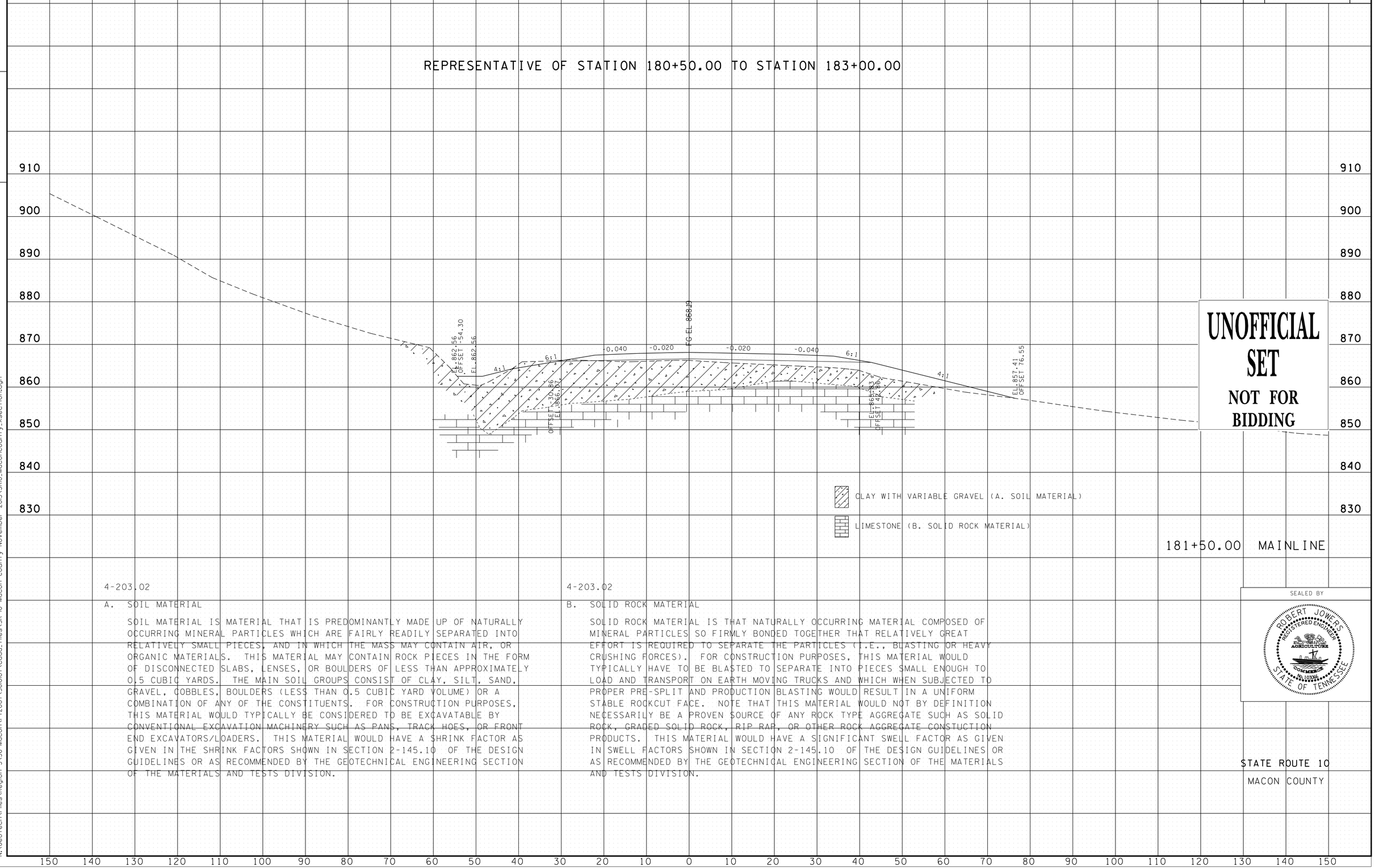
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AJ

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.

REPRESENTATIVE OF STATION 180+50.00 TO STATION 183+00.00



UNOFFICIAL SET
NOT FOR BIDDING

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

SEALED BY

STATE ROUTE 10
MACON COUNTY

3/13/2014
N:\Geotech\Files\Region 3\56-Macon\FY2007\56I007\cadd_files\SR 10 Macon County November 2013\SR10_MaconCounty_Xsection.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AK

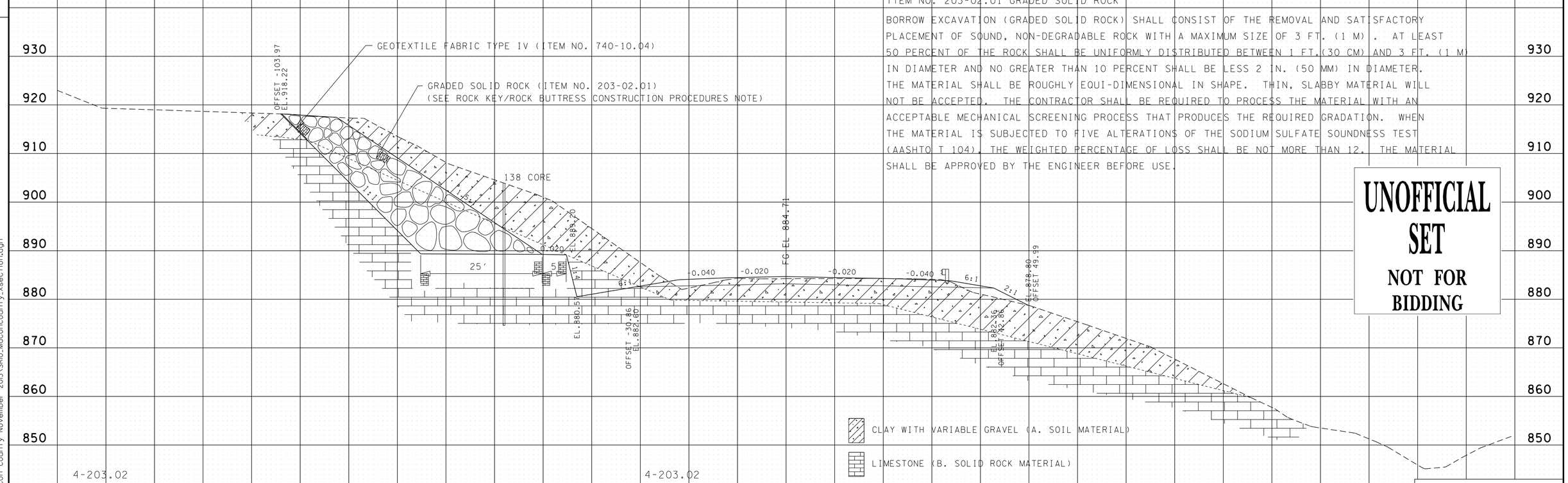
FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

REPRESENTATIVE OF STATION 183+00.00 TO STATION 185+00.00

ITEM NO. 203-02.01 GRADED SOLID ROCK

BORROW EXCAVATION (GRADED SOLID ROCK) SHALL CONSIST OF THE REMOVAL AND SATISFACTORY PLACEMENT OF SOUND, NON-DEGRADABLE ROCK WITH A MAXIMUM SIZE OF 3 FT. (1 M) . AT LEAST 50 PERCENT OF THE ROCK SHALL BE UNIFORMLY DISTRIBUTED BETWEEN 1 FT.(30 CM) AND 3 FT. (1 M) IN DIAMETER AND NO GREATER THAN 10 PERCENT SHALL BE LESS 2 IN. (50 MM) IN DIAMETER. THE MATERIAL SHALL BE ROUGHLY EQUI-DIMENSIONAL IN SHAPE. THIN, SLABBY MATERIAL WILL NOT BE ACCEPTED. THE CONTRACTOR SHALL BE REQUIRED TO PROCESS THE MATERIAL WITH AN ACCEPTABLE MECHANICAL SCREENING PROCESS THAT PRODUCES THE REQUIRED GRADATION. WHEN THE MATERIAL IS SUBJECTED TO FIVE ALTERATIONS OF THE SODIUM SULFATE SOUNDNESS TEST (AASHTO T 104), THE WEIGHTED PERCENTAGE OF LOSS SHALL BE NOT MORE THAN 12. THE MATERIAL SHALL BE APPROVED BY THE ENGINEER BEFORE USE.



UNOFFICIAL SET
NOT FOR BIDDING

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

B. SOLID ROCK MATERIAL

SOLID ROCK MATERIAL IS THAT NATURALLY OCCURRING MATERIAL COMPOSED OF MINERAL PARTICLES SO FIRMLY BONDED TOGETHER THAT RELATIVELY GREAT EFFORT IS REQUIRED TO SEPARATE THE PARTICLES (I.E., BLASTING OR HEAVY CRUSHING FORCES). FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY HAVE TO BE BLASTED TO SEPARATE INTO PIECES SMALL ENOUGH TO LOAD AND TRANSPORT ON EARTH MOVING TRUCKS AND WHICH WHEN SUBJECTED TO PROPER PRE-SPLIT AND PRODUCTION BLASTING WOULD RESULT IN A UNIFORM STABLE ROCKCUT FACE. NOTE THAT THIS MATERIAL WOULD NOT BY DEFINITION NECESSARILY BE A PROVEN SOURCE OF ANY ROCK TYPE AGGREGATE SUCH AS SOLID ROCK, GRADED SOLID ROCK, RIP RAP, OR OTHER ROCK AGGREGATE CONSTUCTION PRODUCTS. THIS MATERIAL WOULD HAVE A SIGNIFICANT SWELL FACTOR AS GIVEN IN SWELL FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

SEALED BY

184+00.00 MAINLINE

STATE ROUTE 10

MACON COUNTY

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

3/13/2014
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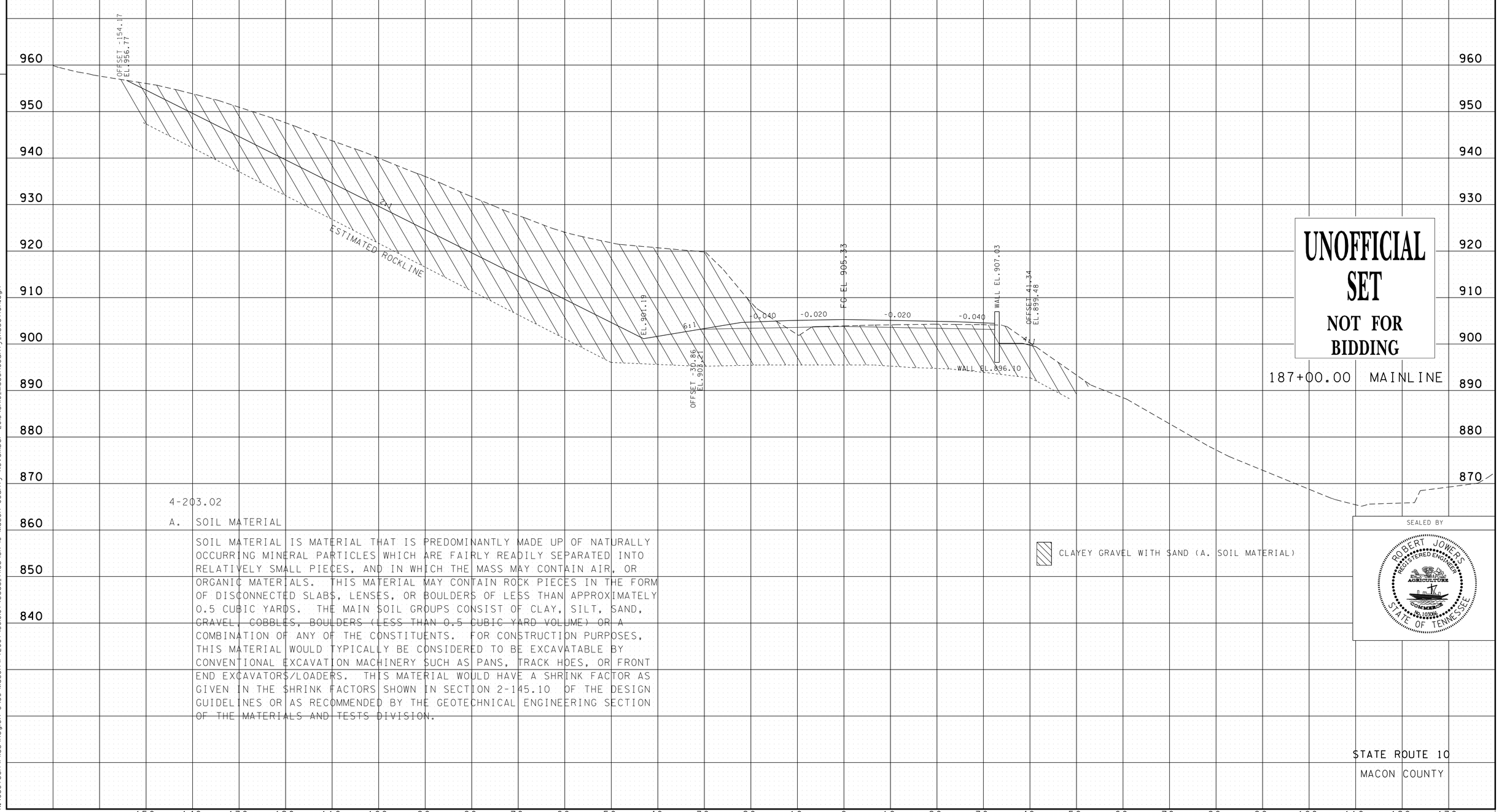
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AL

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

REPRESENTATIVE OF STATION 186+00.00 TO STATION 187+50.00



UNOFFICIAL SET
NOT FOR BIDDING

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

SEALED BY

STATE ROUTE 10
MACON COUNTY

3/13/2014
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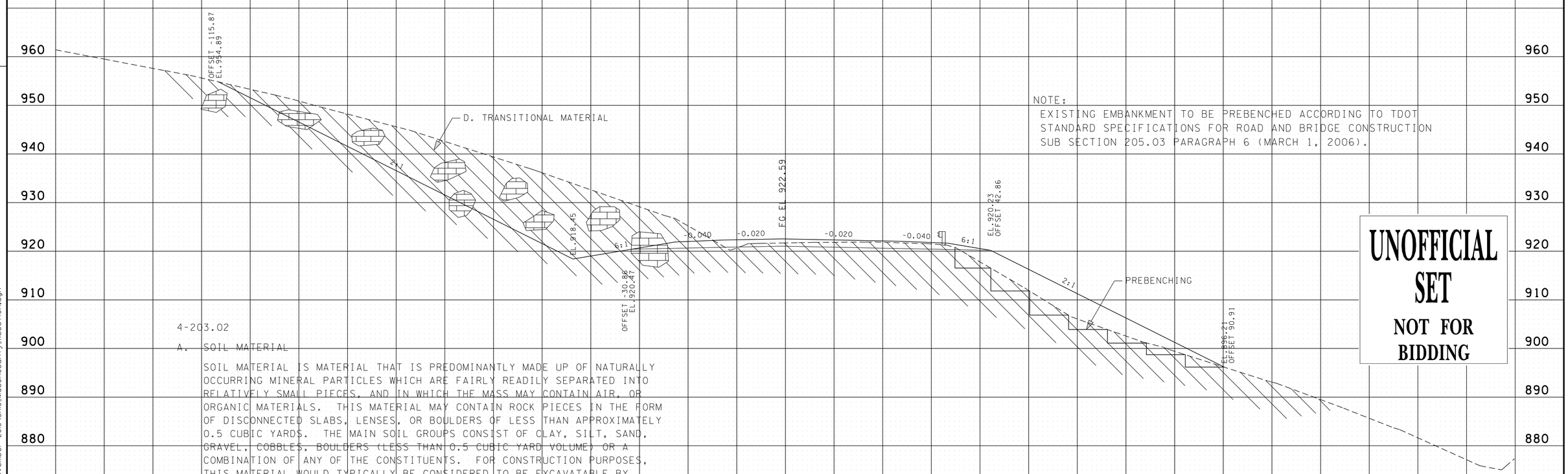
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AM

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

REPRESENTATIVE OF STATION 188+00.00 TO STATION 199+50.00



NOTE:
EXISTING EMBANKMENT TO BE PREBENCHED ACCORDING TO TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUB SECTION 205.03 PARAGRAPH 6 (MARCH 1, 2006).

UNOFFICIAL SET
NOT FOR BIDDING

4-203.02

A. SOIL MATERIAL

SOIL MATERIAL IS MATERIAL THAT IS PREDOMINANTLY MADE UP OF NATURALLY OCCURRING MINERAL PARTICLES WHICH ARE FAIRLY READILY SEPARATED INTO RELATIVELY SMALL PIECES, AND IN WHICH THE MASS MAY CONTAIN AIR, OR ORGANIC MATERIALS. THIS MATERIAL MAY CONTAIN ROCK PIECES IN THE FORM OF DISCONNECTED SLABS, LENSES, OR BOULDERS OF LESS THAN APPROXIMATELY 0.5 CUBIC YARDS. THE MAIN SOIL GROUPS CONSIST OF CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDERS (LESS THAN 0.5 CUBIC YARD VOLUME) OR A COMBINATION OF ANY OF THE CONSTITUENTS. FOR CONSTRUCTION PURPOSES, THIS MATERIAL WOULD TYPICALLY BE CONSIDERED TO BE EXCAVATABLE BY CONVENTIONAL EXCAVATION MACHINERY SUCH AS PANS, TRACK HOES, OR FRONT END EXCAVATORS/LOADERS. THIS MATERIAL WOULD HAVE A SHRINK FACTOR AS GIVEN IN THE SHRINK FACTORS SHOWN IN SECTION 2-145.10 OF THE DESIGN GUIDELINES OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEERING SECTION OF THE MATERIALS AND TESTS DIVISION.

4-203.02

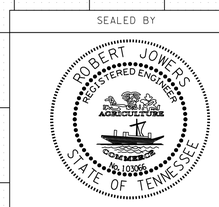
D. TRANSITIONAL MATERIALS

THIS MATERIAL IS THAT MATERIAL COMPRISED OF A COMBINATION OF SOIL AND ROCK (MATERIAL A,B, AND C AS DEFINED IN SECTION 4-230.02 OF THE TDOT ROADWAY DESIGN GUIDELINES) OCCURRING IN EITHER NON- UNIFORM INTERBEDDED LAYERS OF THE ABOVE MATERIALS (I.E., SHALE MATERIAL WITH RELATIVELY THIN LAYERS OF SOLID ROCK SUCH AS HARD LIMESTONE) OR ERRATIC LOCALIZED CHANGES OF MATERIAL TYPES BOTH LATERALLY AND WITH DEPTH (SUCH AS A GEOLOGIC FORMATION RESULTING IN PINNACLED ROCK COLUMNS, FLOATING BOULDERS OR LENSES INTERCALATED WITH CLAY SOIL, A COMMON OCCURRENCE IN CERTAIN REGIONS OF TENNESSEE). FOR CONSTRUCTION PURPOSES, THIS MATERIAL MAY HAVE TO BE EXCAVATED USING A COMBINATION OF EXCAVATION METHODS SUCH AS BLASTING OF ROCK PINNACLES, LAYERS OF BOULDERS ALONG WITH RIPPING OF WEATHERED ROCK AND EXCAVATING OF SOIL WITH TRACK HOES OR LOADERS ALL WITHIN A LOCALIZED AREA. THIS MATERIAL WOULD NOT BE SUITABLE FOR THE USE OF EXCAVATING PAN TYPE EQUIPMENT.

CLAYEY GRAVEL WITH SAND (A. SOIL MATERIAL)

CLAYEY GRAVEL WITH SAND AND BOULDERS (D. TRANSITIONAL MATERIAL)

SEALED BY



189+50.00 MAINLINE

STATE ROUTE 10
MACON COUNTY

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3/13/2014
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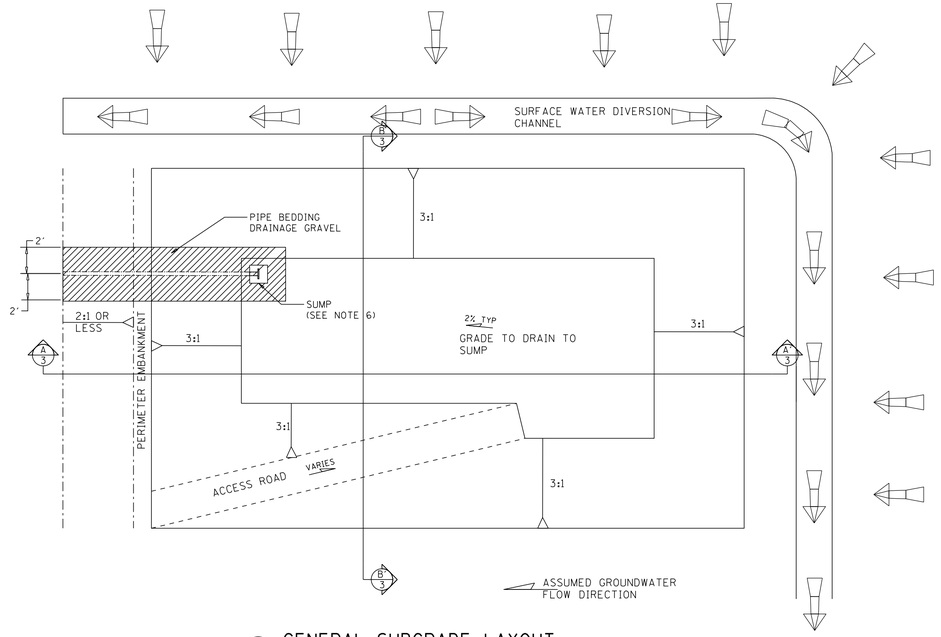
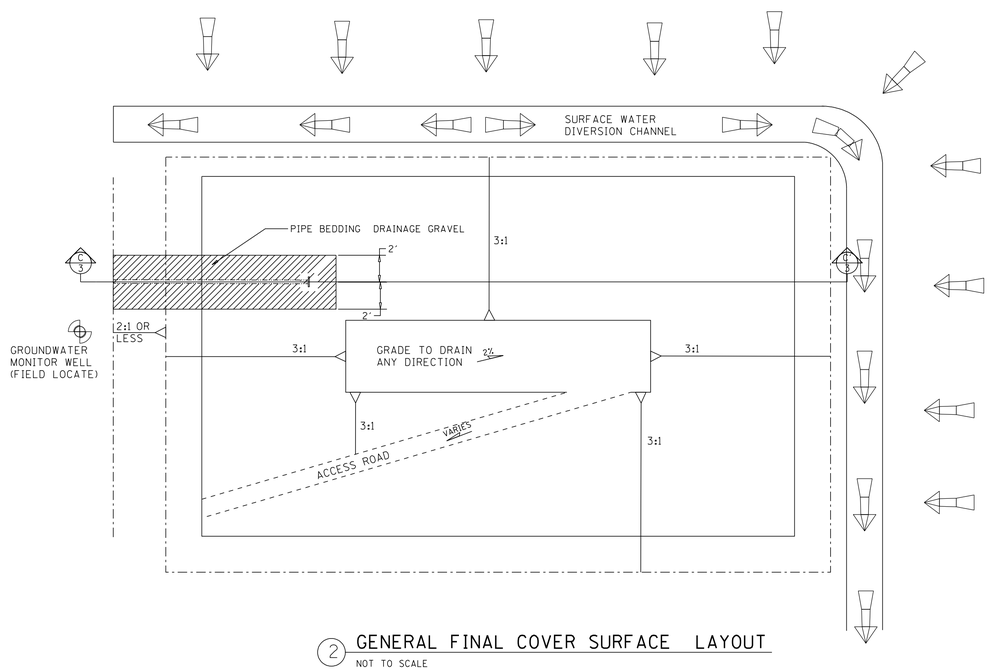
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AN



1 GENERAL SUBGRADE LAYOUT
NOT TO SCALE



2 GENERAL FINAL COVER SURFACE LAYOUT
NOT TO SCALE

LEGEND

- PRESUMED DIRECTION OF SURFACE WATER FLOW (IF PRESENT) SEE NOTE 1
- FOOTPRINT OF CELL
- EDGE OF COVER MATERIAL
- DRAIN PIPE - ITEM NO. 630-01.04
- ACCESS ROAD
- 2:1 / 1.3:1 — SLOPE RATIO INDICATORS
- C/2 — DETAIL NUMBER / PAGE WHERE DETAIL IS CALLED OUT

NOTE

1. WHERE SURFACE FLOW IS PRESENT A DIVERSION CHANNEL SHALL BE REQUIRED TO DIRECT WATER AWAY FROM ENCAPSULATION AREA.
2. DEPTH OF EXCAVATION/FILL VARIES DEPENDING ON LOCATION.
3. SUMP SHALL BE ON DOWN GRADIENT SIDE OF GROUNDWATER FLOW DIRECTION.
4. THIS DRAWING IS A GENERIC REPRESENTATION OF THE APR ENCAPSULATION CONCEPT. FINAL ENCAPSULATION LOCATION AND LIMITS WILL BE DETERMINED BASED ON ACTUAL OFF-SITE LOCATION.
5. MATERIAL SUBSTITUTIONS ALLOWED WITH THE CONCURRENCE OF TDOT GEOTECHNICAL ENGINEERING SECTION.
6. IN SOME DESIGN SITUATIONS, A SUMP DRAIN MAY NOT BE PRACTICAL WHEREBY SUBSTITUTION OF A MONITORING WELL WITH A 4 INCH DIAMETER SCHEDULE 40 PVC CASING IS REQUIRED. THE MONITORING WELL SCREENED INTERVAL SHALL NOT EXTEND ABOVE THE AGRICULTURAL LIMESTONE ZONE IN THE BOTTOM OF THE ENCAPSULATION CELL.
7. ACQUISITION AND CONSTRUCTION OF OFF-SITE ENCAPSULATION AREAS SHALL BE IN ACCORDANCE WITH SPECIAL PROVISIONS 107L, THE STATEWIDE STORMWATER MANAGEMENT PLAN - PROCEDURES FOR PROVIDING OFFSITE WASTE AND BORROW ON TDOT CONSTRUCTION PROJECTS AND THE CONTRACT PLANS.

UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS
STATE ROUTE 10
APR OFF-SITE DISPOSAL
SUBGRADE AND FINAL COVER LAYOUTS
PLANS VIEW
DWG 2
MACON COUNTY

LAST UPDATE: 02/27/2014

3/14/2014
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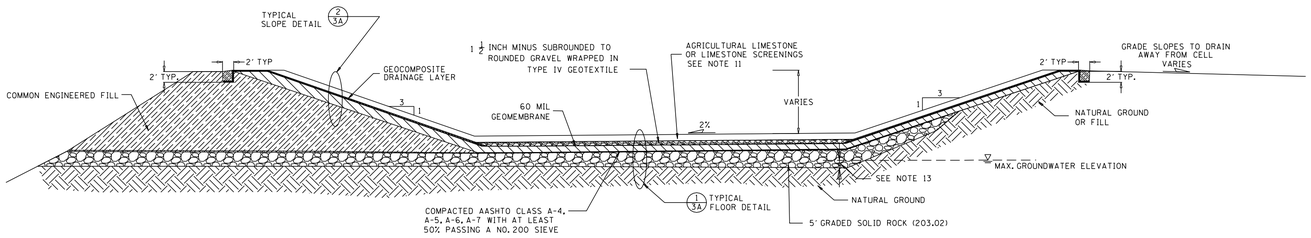
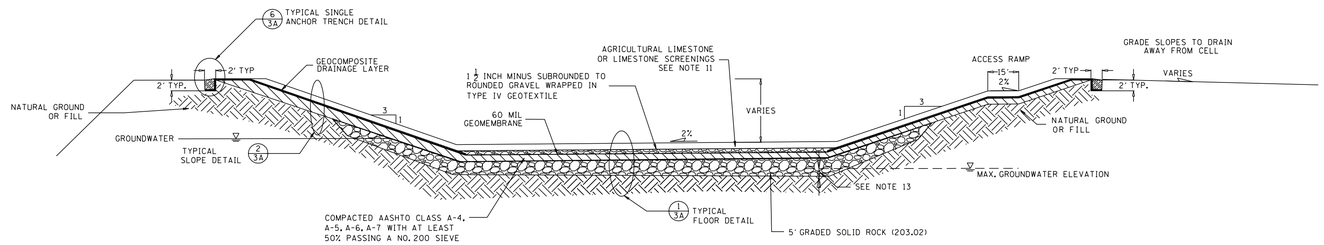
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83A0



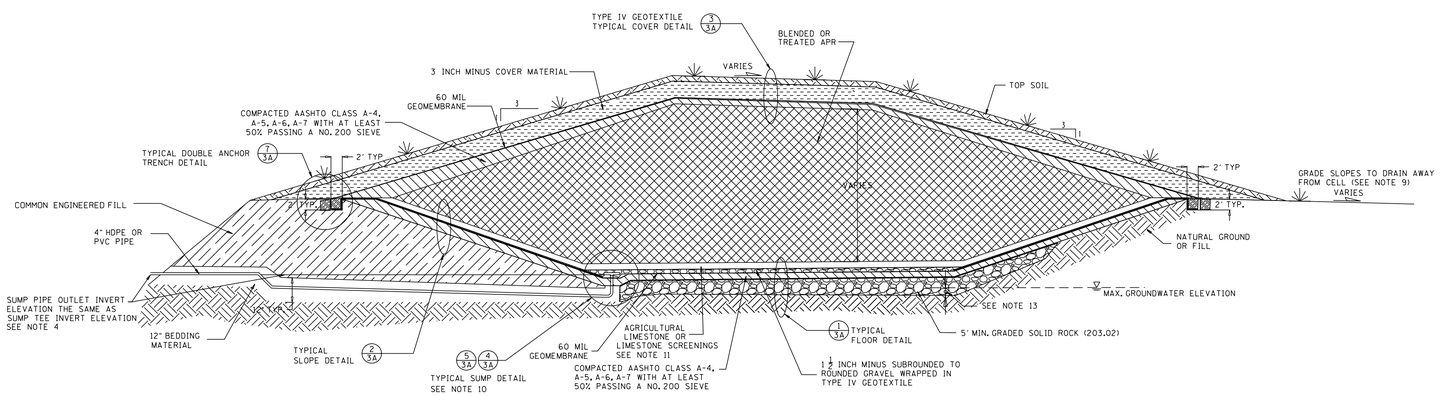
A-A' TYPICAL CROSS SECTION

NOT TO SCALE



B-B'' TYPICAL CROSS SECTION

NOT TO SCALE



C-C' TYPICAL FINISHED GRADE CROSS SECTION

NOT TO SCALE

ITEM NO. 203-02.01 GRADED SOLID ROCK

BORROW EXCAVATION (GRADED SOLID ROCK) SHALL CONSIST OF THE REMOVAL AND SATISFACTORY PLACEMENT OF SOUND, NON-DEGRADABLE ROCK WITH A MAXIMUM SIZE OF 3 FT. (1 M) . AT LEAST 50 PERCENT OF THE ROCK SHALL BE UNIFORMLY DISTRIBUTED BETWEEN 1 FT.(30 CM) AND 3 FT. (1 M) IN DIAMETER AND NO GREATER THAN 10 PERCENT SHALL BE LESS THAN 2 IN. (50 MM) IN DIAMETER. THE MATERIAL SHALL BE ROUGHLY EQUI-DIMENSIONAL IN SHAPE. THIN, SLABBY MATERIAL WILL NOT BE ACCEPTED. THE CONTRACTOR SHALL BE REQUIRED TO PROCESS THE MATERIAL WITH AN ACCEPTABLE MECHANICAL SCREENING PROCESS THAT PRODUCES THE REQUIRED GRADATION. WHEN THE MATERIAL IS SUBJECTED TO FIVE ALTERATIONS OF THE SODIUM SULFATE SOUNDNESS TEST (AASHTO T 104), THE WEIGHTED PERCENTAGE OF LOSS SHALL BE NOT MORE THAN 12. THE MATERIAL SHALL BE APPROVED BY THE ENGINEER BEFORE USE.

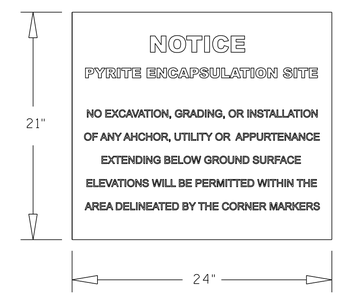
LAST UPDATE: 02/27/2014

LEGEND

- SLOPE RATIO INDICATORS (2:1, 3:1)
- GROUNDWATER LEVEL
- DETAIL NUMBER
- PAGE WHERE DETAIL IS CALLED OUT (1/3A)
- COMMON ENGINEERED FILL
- TOPSOIL
- 3" MINUS COVER MATERIAL
- BLENDED OR TREATED ACID PRODUCING ROCK (APR)
- AGRICULTURAL LIMESTONE OR LIMESTONE SCREENINGS
- GEOCOMPOSITE DRAINAGE LAYER
- DRAIN ROCK WRAPPED IN. TYPE IV GEOTEXTILE
- 60 MIL. GEOMEMBRANE - ITEM NO. 740-06.01
- COMPACTED AASHTO CLASS A-4, A-5, A-6, A-7 WITH AT LEAST 50% PASSING A NO. 200 SIEVE
- TYPE IV GEOTEXTILE - ITEM NO. 740-10.04
- GRADED SOLID ROCK (203.02) 50% > 1' TO 3' 100% > 2"
- PIPE BEDDING MATERIAL
- NATURAL GROUND

NOTES

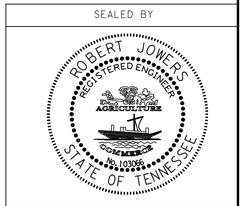
1. DEPTH OF EXCAVATION / FILL VARIES DEPENDING ON LOCATION.
2. SUMP SHALL BE ON DOWN GRADIENT SIDE OF GROUNDWATER.
3. TOP OF ENCAPSULATION SHALL HAVE A MINIMUM 3% SLOPE IN B-B' DIRECTION (TO LEFT OR RIGHT OF CENTERLINE) FOR AN ENCAPSULATION PLACED AS SHOWN. FOR ANY ENCAPSULATION, THE TOP SHALL BE AT A MINIMUM LEVEL AND GRADED TO DRAIN WITH A MINIMUM OF 3% IN THE SMALL PLAN VIEW DIMENSION.
4. THE SUMP PIPE OUTLET ELEVATION DESIGNED TO KEEP THE PIPE FULL OF WATER TO PREVENT AIR ENTRY INTO THE ENCAPSULATION. THE SUMP PIPE SHALL BE FILLED AFTER THE ENCAPSULATION CONSTRUCTION IS COMPLETE.
5. BLENDED APR MATERIAL MAY BE PLACED ABOVE ENCAPSULATION IF NECESSARY. THIS MATERIAL SHALL ONLY BE PLACED WITH THE CONCURRENCE OF THE GEOTECHNICAL ENGINEERING SECTION.
6. BLENDED OR TREATED POTENTIAL APR SHALL BE COMPACTED TO CONFORM TO TDOT STANDARD SPECIFICATIONS. BLENDING RATE FOR STATION _SPECIFIC_ TO STATION _FOR EACH_ SHALL BE _PROJECT_ LBS. PER 1000 SQ. FT. OF LIFT AREA FOR NO MORE THAN 2 FOOT LIFTS.
7. MATERIAL SUBSTITUTIONS ALLOWED WITH THE CONCURRENCE OF TDOT GEOTECHNICAL ENGINEERING SECTION.
8. TDOT - APPROVED ENCAPSULATION MONUMENT/MARKERS SHOULD BE LOCATED AT ALL 4 CORNERS OF ENCAPSULATION ZONE. SIGNS TO BE PLACED IN CONJUNCTION WITH ENCAPSULATION CORNER MONUMENT/MARKERS.
9. DIVERSION CHANNEL MAY BE REQUIRED. (SEE DWG 2).
10. IN SOME DESIGN SITUATIONS, A SUMP DRAIN MAY NOT BE PRACTICAL WHEREBY SUBSTITUTION OF A MONITORING WELL WITH A 4 INCH DIAMETER SCHEDULE 40 PVC CASING IS REQUIRED. THE MONITORING WELL SCREENED INTERVAL SHALL NOT EXTEND ABOVE THE AGRICULTURAL LIMESTONE ZONE IN THE BOTTOM OF THE ENCAPSULATION CELL.
11. LIMESTONE SCREENINGS SHALL HAVE A CALCIUM CARBONATE ($CaCO_3$) CONTENT OF AT LEAST 95% AND SHALL BE PRE-APPROVED BY THE GEOTECHNICAL ENGINEERING SECTION. LESSER $CaCO_3$ CONTENT MAY BE ACCEPTABLE; HOWEVER, THIS WILL INCREASE THE BLENDING RATE. IN NO CASE WILL $CaCO_3$ CONTENT BE LESS THAN 80%. BLENDING RATES FOR LIMESTONE SCREENINGS WITH $CaCO_3$ CONTENT FROM 80% TO LESS THAN 95% WILL BE GIVEN AFTER SUBMISSION OF LIMESTONE SCREENING SAMPLES TO THE GEOTECHNICAL ENGINEERING SECTION.
12. ONLY GEOTEXTILE FABRIC (TYPE IV) LISTED ON THE QUALIFIED PRODUCTS LIST SHALL BE USED.
13. MAX GROUNDWATER ELEVATION EXPECTED SHALL BE NO MORE THAN ½ THE HEIGHT OF THE GRADED SOLID ROCK LAYER MEASURED FROM THE BASE OF THE GRADED SOLID ROCK LAYER AT THE BOTTOM OF THE ENCAPSULATION.
14. GEOMEMBRANE MATERIAL AND INSTALLATION SHALL MEET THE REQUIREMENTS SPECIFICED IN SPECIAL PROVISION 740D.



SIGN DETAIL

UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS
STATE ROUTE 10
APR OFF-SITE DISPOSAL CELL
CROSS SECTIONS
DWG 3
MACON COUNTY

3/14/2014
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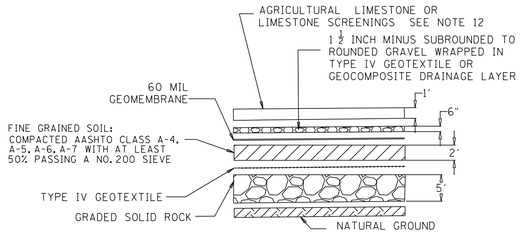
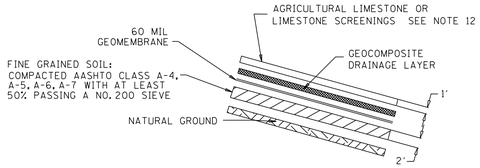
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AP

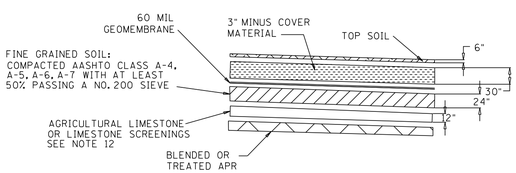
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



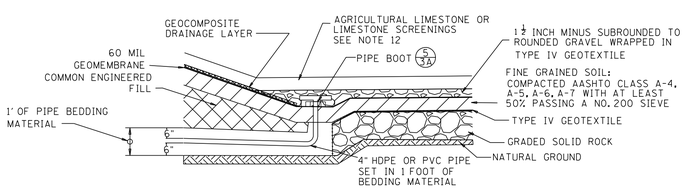
1 / 3A TYPICAL FLOOR DETAIL (SEE NOTE 8)
NOT TO SCALE



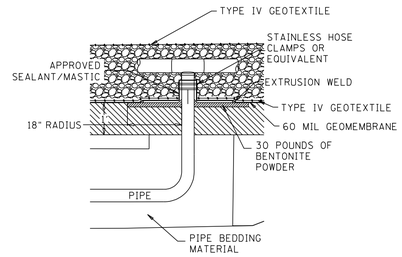
2 / 3A TYPICAL SLOPE DETAIL
NOT TO SCALE



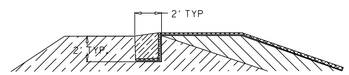
3 / 3A TYPICAL COVER DETAIL
NOT TO SCALE



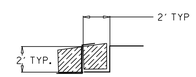
4 / 3A TYPICAL SUMP DETAIL
NOT TO SCALE



5 / 3A PIPE BOOT DETAIL
NOT TO SCALE



6 / 3A TYPICAL ANCHOR TRENCH DETAIL
NOT TO SCALE



7 / 3A DOUBLE ANCHOR TRENCH DETAIL
NOT TO SCALE

NOTES

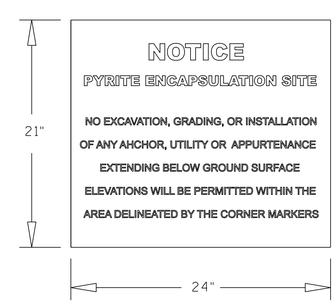
1. DEPTH OF EXCAVATION / FILL VARIES DEPENDING ON LOCATION.
2. SUMP SHALL BE ON DOWN GRADIENT SIDE OF GROUNDWATER.
3. TOP OF ENCAPSULATION SHALL HAVE A MINIMUM 3% SLOPE IN B-B' DIRECTION (TO LEFT OR RIGHT OF CENTERLINE) FOR AN ENCAPSULATION PLACED AS SHOWN. FOR ANY ENCAPSULATION, THE TOP SHALL BE AT A MINIMUM LEVEL AND GRADED TO DRAIN WITH A MINIMUM OF 3% IN THE SMALL PLAN VIEW DIMENSION.
4. THE SUMP PIPE OUTLET ELEVATION DESIGNED TO KEEP THE PIPE FULL OF WATER TO PREVENT AIR ENTRY INTO THE ENCAPSULATION. THE SUMP PIPE SHALL BE FILLED AFTER THE ENCAPSULATION CONSTRUCTION IS COMPLETE.
5. BLENDED APR MATERIAL MAY BE PLACED ABOVE ENCAPSULTATION IF NECESSARY. THIS MATERIAL SHALL ONLY BE PLACED WITH THE CONCURRENCE OF THE GEOTECHNICAL ENGINEERING SECTION.
6. BLENDED OR TREATED POTENTIAL APR/APR SHALL BE COMPACTED TO CONFORM TO TDOT STANDARD SPECIFICATIONS. BLENDING RATE SHALL BE SPECIFIC FOR EACH PROJECT LBS PER 1000 SQ. FT. OF LIFT AREA FOR NO MORE THAN 2 FOOT LIFTS.
7. MATERIAL SUBSTITUTIONS ALLOWED WITH THE CONCURRENCE OF TDOT GEOTECHNICAL ENGINEERING SECTION.
8. SUBSTITUTION OF THE MINIMUM TWO FOOT THICK LAYER OF COMPACTED CLAY PLACED IN 12" THICK UNCOMPACTED LIFTS COMPACTED TO 95% PROCTOR DENSITY WITH GEOMEMBRANE AND GEOTEXTILE AS PER DRAWING 1A IS ALLOWED.
9. TDOT - APPROVED ENCAPSULATION MONUMENT/MARKERS SHOULD BE LOCATED AT ALL 4 CORNERS OF ENCAPSULATION ZONE. SIGNS TO BE PLACED IN CONJUNCTION WITH ENCAPSULATION CORNER MONUMENT/MARKERS.
10. DIVERSION CHANNEL MAY BE REQUIRED, (SEE DWG 2).
11. IN SOME DESIGN SITUATIONS, A SUMP DRAIN MAY NOT BE PRACTICAL WHEREBY SUBSTITUTION OF A MONITORING WELL WITH A 4 INCH DIAMETER SCHEDULE 40 PVC CASING IS REQUIRED. THE MONITORING WELL SCREENED INTERVAL SHALL NOT EXTEND ABOVE THE AGRICULTURAL LIMESTONE ZONE IN THE BOTTOM OF THE ENCAPSULATION CELL.
12. LIMESTONE SCREENINGS SHALL HAVE A CALCIUM CARBONATE ($CaCO_3$) CONTENT OF AT LEAST 95% AND SHALL BE PRE-APPROVED BY THE GEOTECHNICAL ENGINEERING SECTION. LESSER $CaCO_3$ CONTENT MAY BE ACCEPTABLE; HOWEVER, THIS WILL INCREASE THE BLENDING RATE. IN NO CASE WILL CaCO CONTENT BE LESS THAN 80%. BLENDING RATES FOR LIMESTONE SCREENINGS WITH $CaCO_3$ CONTENT FROM 80% TO LESS THAN 95% WILL BE GIVEN AFTER SUBMISSION OF LIMESTONE SCREENING SAMPLES TO THE GEOTECHNICAL ENGINEERING SECTION.
13. ONLY GEOTEXTILE FABRIC (TYPE IV) LISTED ON THE QUALIFIED PRODUCTS LIST SHALL BE USED.
14. GEOMEMBRANE MATERIAL AND INSTALLATION SHALL MEET THE REQUIREMENTS SPECIFICED IN SPECIAL PROVISION 740D.

LEGEND

- COMMON ENGINEERED FILL
- TOPSOIL
- 3" MINUS COVER MATERIAL
- BLENDED OR TREATED ACID PRODUCING ROCK (APR)
- AGRICULTURAL LIMESTONE OR LIMESTONE SCREENINGS
- GEOCOMPOSITE DRAINAGE LAYER
- DRAIN ROCK WRAPPED IN TYPE IV GEOTEXTILE
- 60 MIL. GEOMEMBRANE - ITEM NO. 740-06.01
- COMPACTED AASHTO CLASS A-4, A-5, A-6, A-7 WITH AT LEAST 50% PASSING A NO. 200 SIEVE
- TYPE IV GEOTEXTILE - ITEM NO. 740-10.04
- GRADED SOLID ROCK (20302) 50% > 1' TO 3' 100% > 2"
- PIPE BEDDING MATERIAL
- NATURAL GROUND
- 2:1 / 33% SLOPE RATIO INDICATORS
- GROUNDWATER LEVEL
- 1/3A DETAIL NUMBER / PAGE WHERE DETAIL IS CALLED OUT

ITEM NO. 203-02.01 GRADED SOLID ROCK

BORROW EXCAVATION (GRADED SOLID ROCK) SHALL CONSIST OF THE REMOVAL AND SATISFACTORY PLACEMENT OF SOUND, NON-DEGRADABLE ROCK WITH A MAXIMUM SIZE OF 3 FT. (1 M) . AT LEAST 50 PERCENT OF THE ROCK SHALL BE UNIFORMLY DISTRIBUTED BETWEEN 1 FT.(30 CM) AND 3 FT. (1 M) IN DIAMETER AND NO GREATER THAN 10 PERCENT SHALL BE LESS THAN 2 IN. (50 MM) IN DIAMETER. THE MATERIAL SHALL BE ROUGHLY EQUI-DIMENSIONAL IN SHAPE. THIN, SLABBY MATERIAL WILL NOT BE ACCEPTED. THE CONTRACTOR SHALL BE REQUIRED TO PROCESS THE MATERIAL WITH AN ACCEPTABLE MECHANICAL SCREENING PROCESS THAT PRODUCES THE REQUIRED GRADATION. WHEN THE MATERIAL IS SUBJECTED TO FIVE ALTERATIONS OF THE SODIUM SULFATE SOUNDNESS TEST (AASHTO T 104), THE WEIGHTED PERCENTAGE OF LOSS SHALL BE NOT MORE THAN 12. THE MATERIAL SHALL BE APPROVED BY THE ENGINEER BEFORE USE.



SIGN DETAIL

UNOFFICIAL SET
NOT FOR BIDDING

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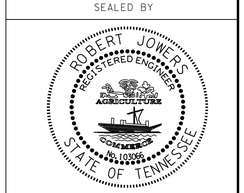

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS
STATE ROUTE 10
APR OFF-SITE DISPOSAL CELL DETAILS
DWG 3A
MACON COUNTY

LAST UPDATE: 02/27/2014

3/14/2014
N:\Geotech\Files\Region 3\56-Macon\FY2007\56I0I07\cadd_files\SR 10 Macon County November 2013\SR10_MaconCounty_Xsection.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2014	STP/PHSIP-10(24)	83AQ

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

ROCK KEY/ROCK BUTTRESS CONSTRUCTION PROCEDURES

1. PRIOR TO EXCAVATION FOR THE ROCK KEY/ROCK BUTTRESS, THE CONTRACTOR SHALL HAVE LOCATED AND HAVE AVAILABLE AT THE SITE, OR READY TO TRANSPORT TO THE SITE, ROCK (GRADED SOLID ROCK - ITEM NUMBER 201-02.02) MATERIAL TESTED AND APPROVED FOR USE. THE CONTRACTOR SHALL HAVE TYPE IV GEOTEXTILE FABRIC AVAILABLE ON-SITE AS WELL.

2. EXCAVATION FOR THE ROCK KEY/ROCK BUTTRESS SHALL BE CONSTRUCTED USING EXCAVATION SLOPE RATIOS NO STEEPER THAN SHOWN ON THE CROSS SECTIONS. THE EXCAVATED MATERIAL IS ASSUMED TO BE UNSUITABLE FOR USE AND SHALL BE WASTED.

3. THE EXCAVATION MAY PROCEED SUCH THAT A MAXIMUM LENGTH (STATION-WISE) OF 50 FEET IS EXCAVATED TO PLANS GRADE. THE CONTRACTOR SHALL MONITOR SLOPES TO ENSURE THAT THEY DO NOT BECOME UNSTABLE DURING THE EXCAVATION.

4. PLACE THE FABRIC AGAINST THE EXCAVATED SOIL SLOPE AND ALONG THE BASE. THE FABRIC MUST BE SEWN PRIOR TO PLACEMENT AND ORIENTED WITH SEAMS PERPENDICULAR TO THE ROADWAY CENTERLINE. BACKFILL OPEN AREA WITH GRADED SOLID ROCK WITH A TRACK HOE, CLAMSHELL, OR ANY MEANS SUCH THAT THE ROCK DOES NOT FREE FALL DIRECTLY ONTO THE FABRIC. AFTER 5 FEET HAS BEEN ESTABLISHED, ROCK PLACEMENT BY TRUCK AND DOZER SPEADING WILL BE ALLOWED.

5. EXCAVATION AND ROCK BACKFILL MAY PROCEED SIMULTANEOUSLY SUCH THAT THE DISTANCE BETWEEN THE EXCAVATION AND ROCK BACKFILL LINES DOES NOT EXCEED 30 FEET. THE MINIMUM DISTANCE SHALL BE SUCH THAT ROCK BACKFILL IS ONLY PLACED ON THE BOTTOM OF EXCAVATION THAT HAS BEEN NEATLY EXCAVATED TO GRADE.

6. IF THE EXCAVATION BECOMES UNSTABLE, HEAVY PRECIPITATION IS IMMINENT, OR CONSTRUCTION IS HALTED FOR MORE THAN A ONE DAY PERIOD, THE EXCAVATION SHALL CEASE. ROCK PLACEMENT SHALLCONTINUE UP TO THE LINE OF EXCAVATION SO AS TO PROVIDE A STABLE EXCAVATION TILL CONSTRUCTION CAN PROCEED AGAIN. THIS MAY REQUIRE THE REMOVAL OF SOME OF THE ROCK MIXED WITH SOIL ONCE THE PROCEDURE BEGINS AGAIN.

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NOT FOR BIDDING

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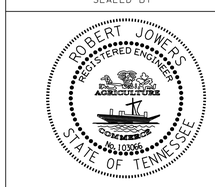

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ROCK KEY
ROCK BUTTRES
CONSTRUCTION
PROCEDURES

3/14/2014
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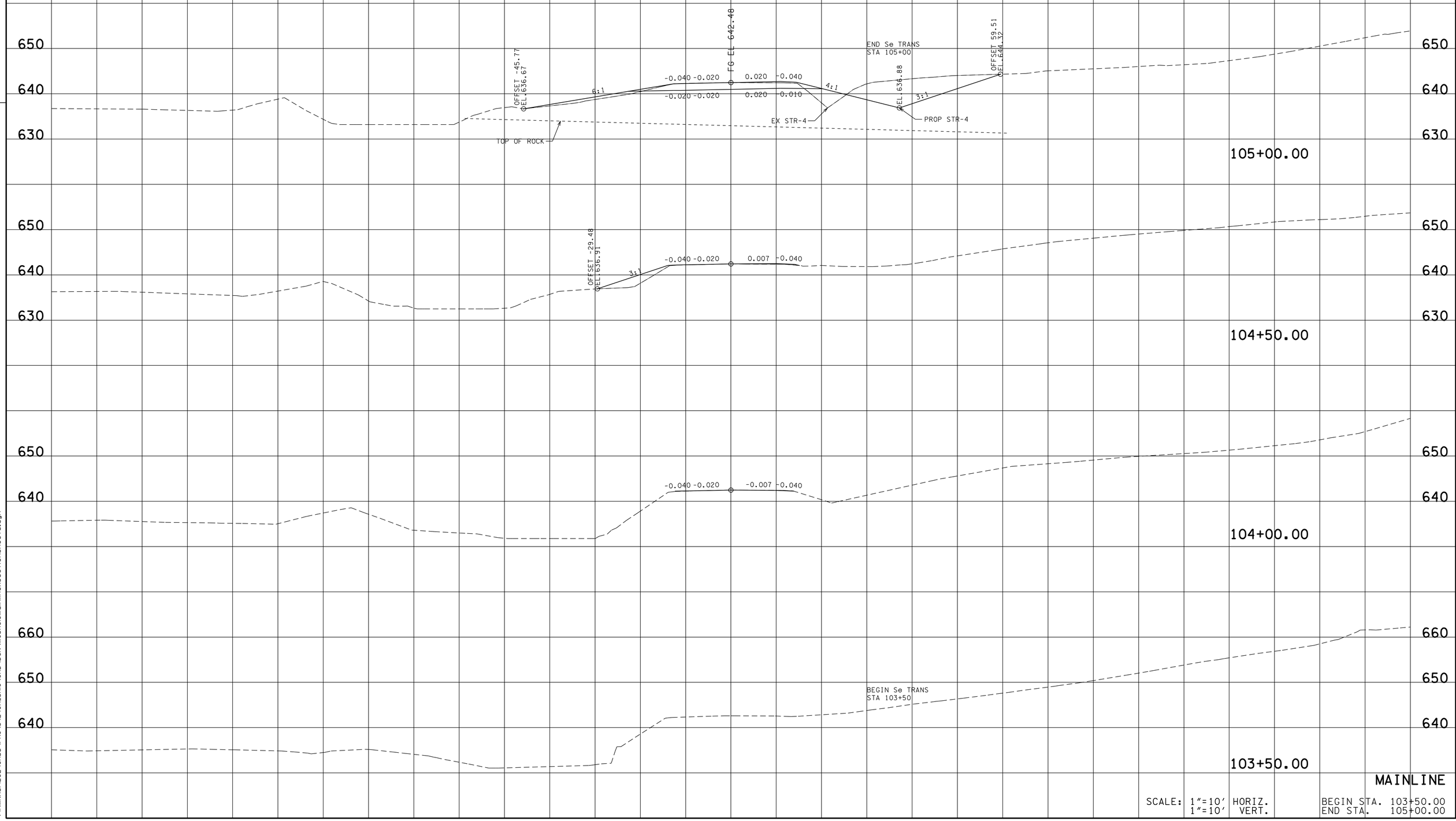
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	1
CONST.	2014	STP/PHSIP-10(24)	84

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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13-MAR-2014 10:56
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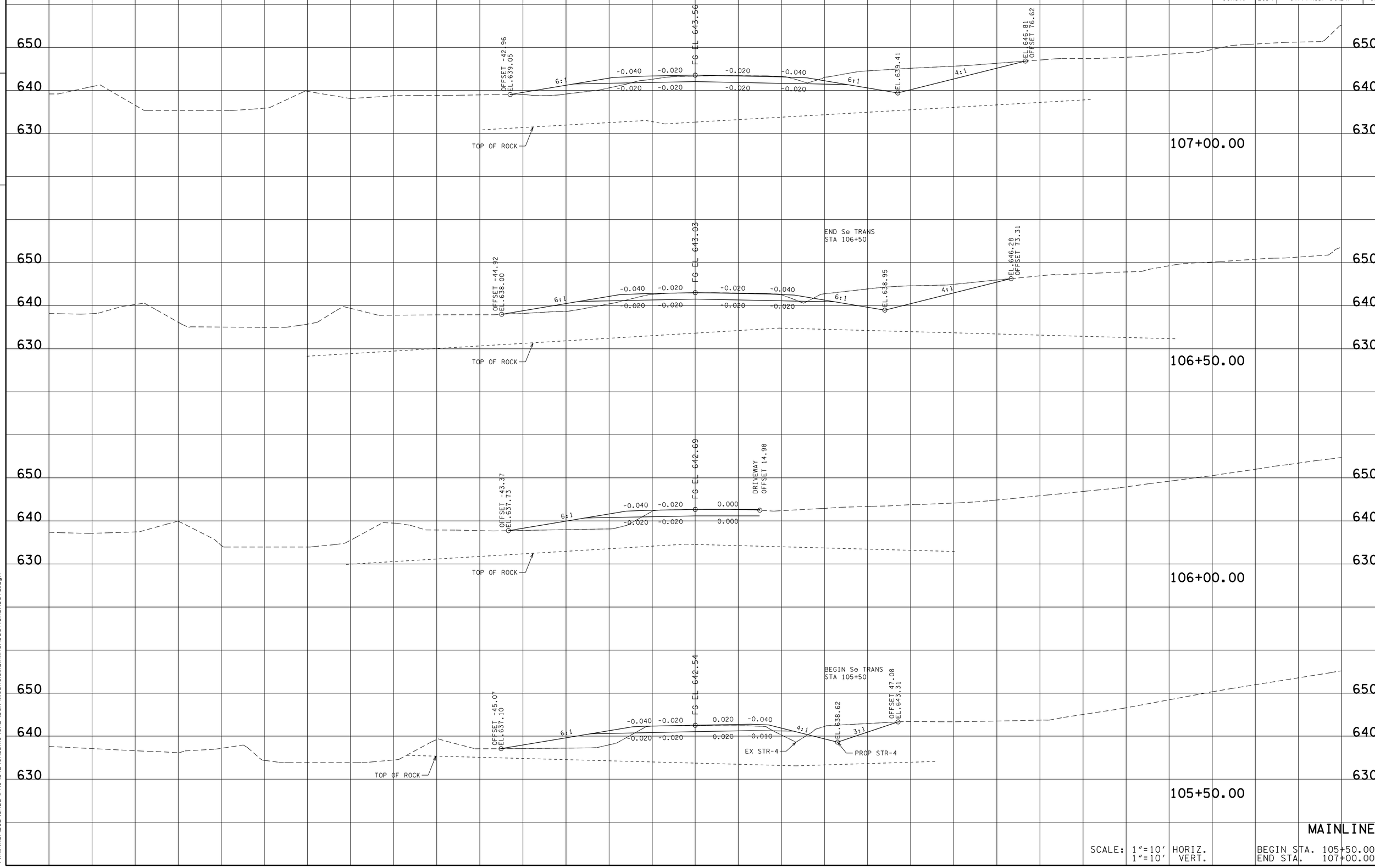
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	2
CONST.	2014	STP/PHSIP-10(24)	85

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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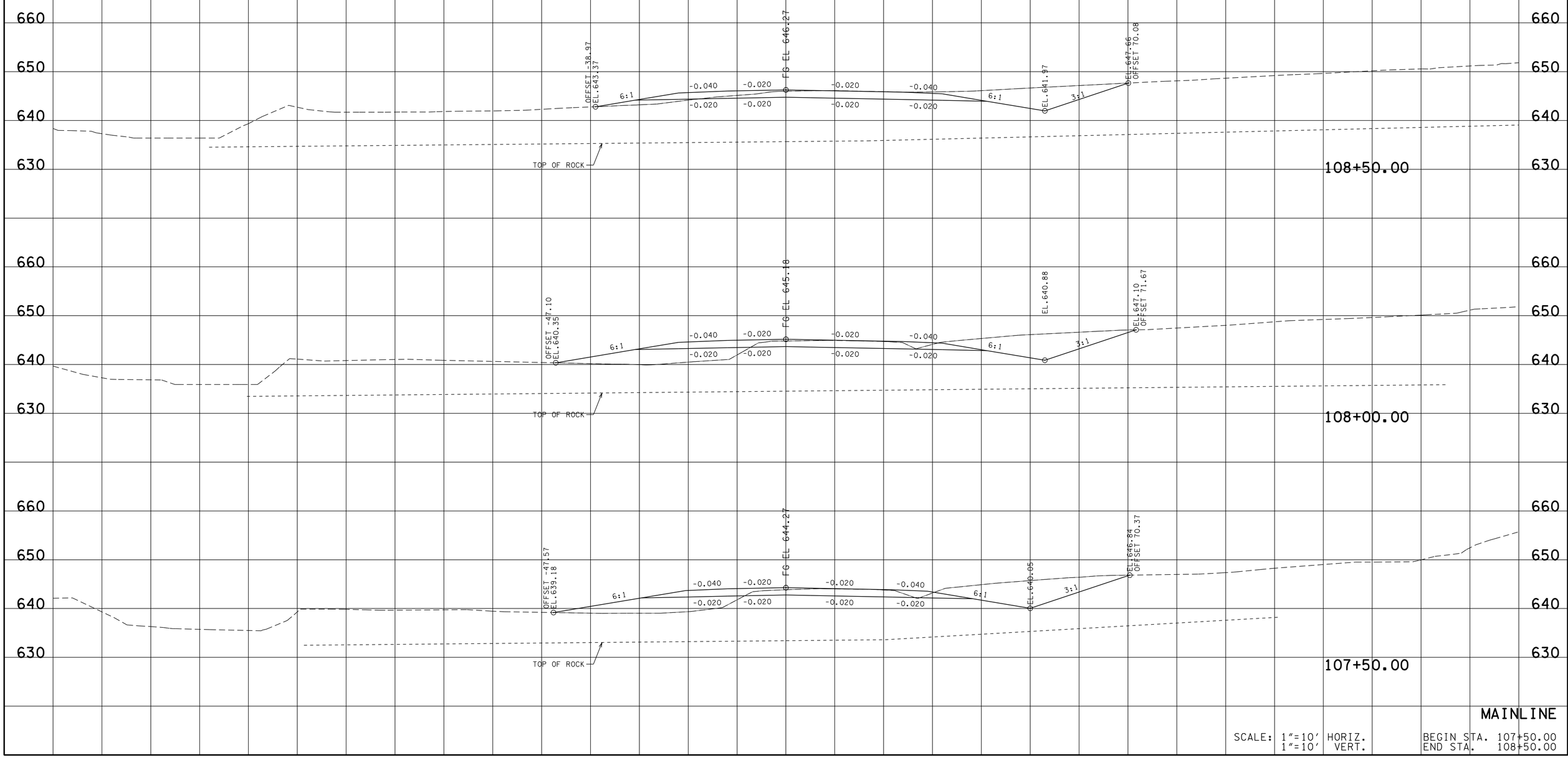
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	3
CONST.	2014	STP/PHSIP-10(24)	86

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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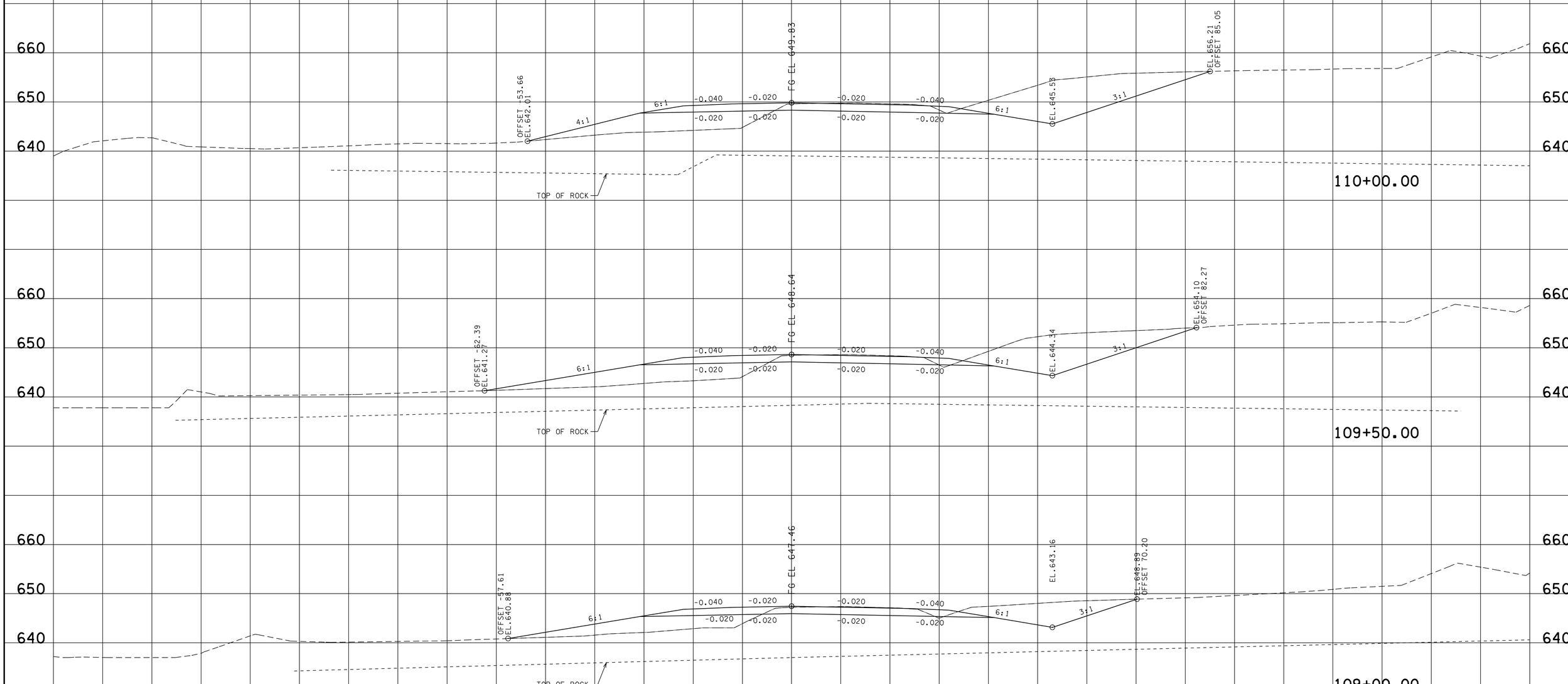
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	4
CONST.	2014	STP/PHSIP-10(24)	87

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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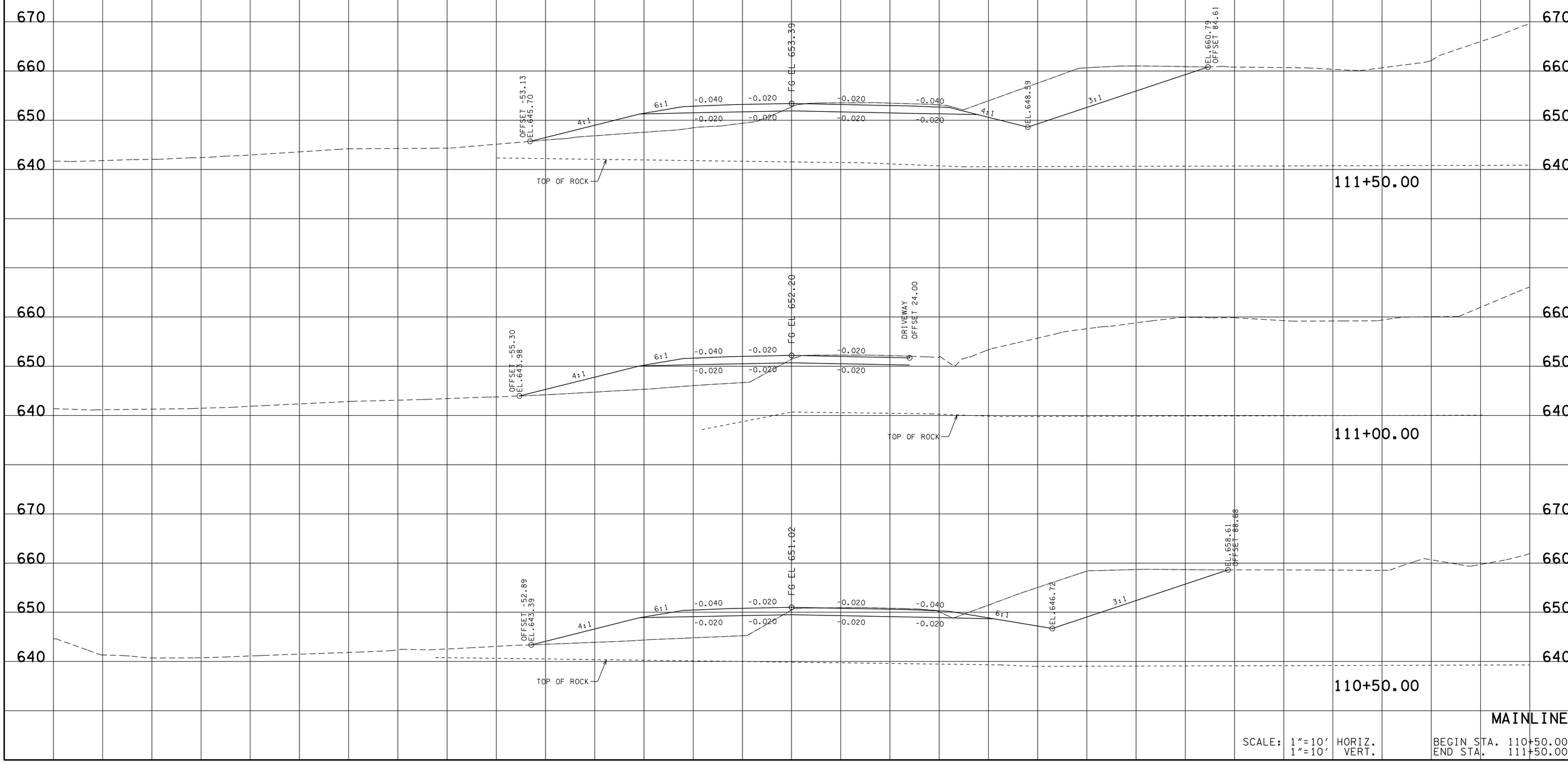
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	5
CONST.	2014	STP/PHSIP-10(24)	88

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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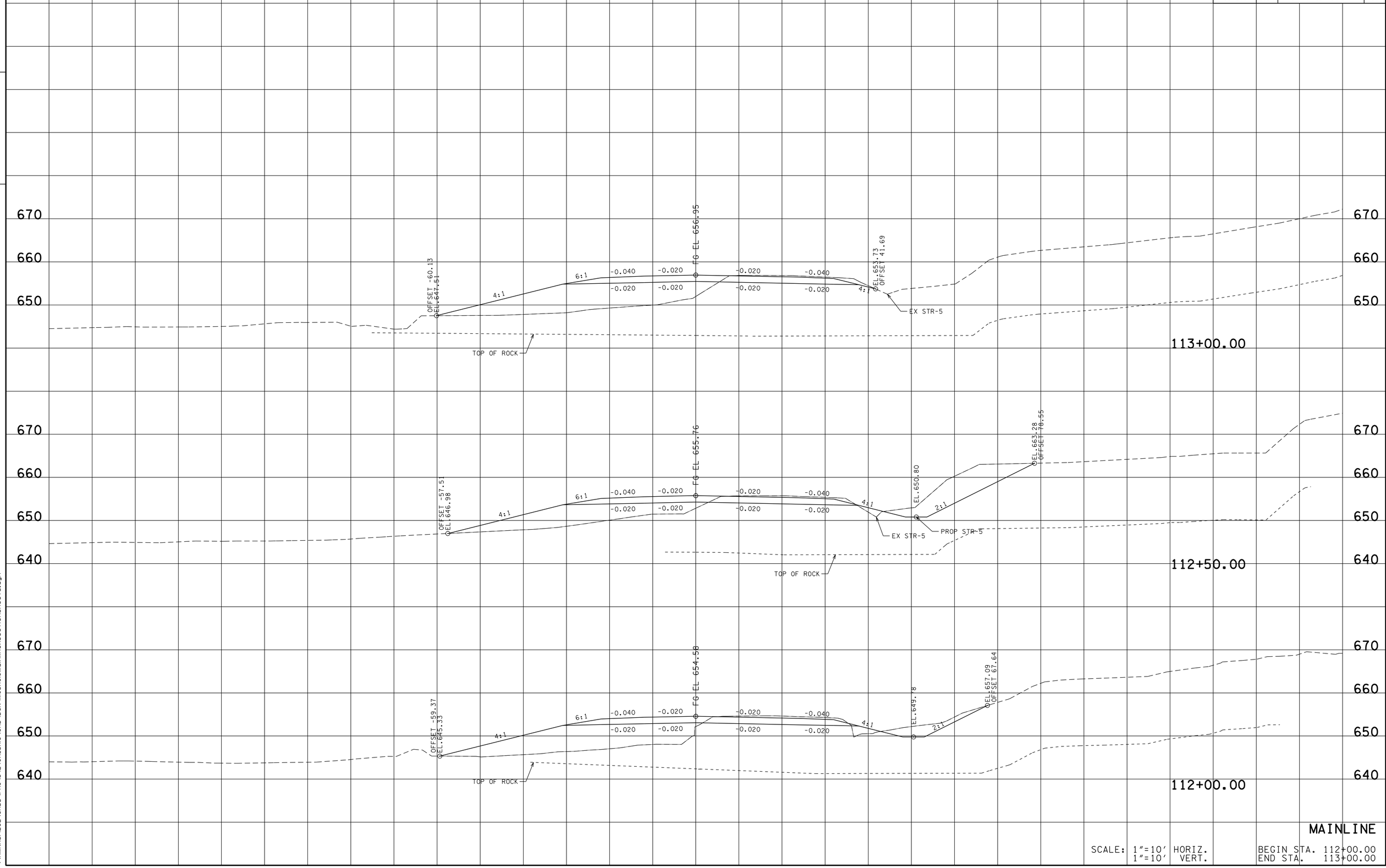
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	6
CONST.	2014	STP/PHSIP-10(24)	89

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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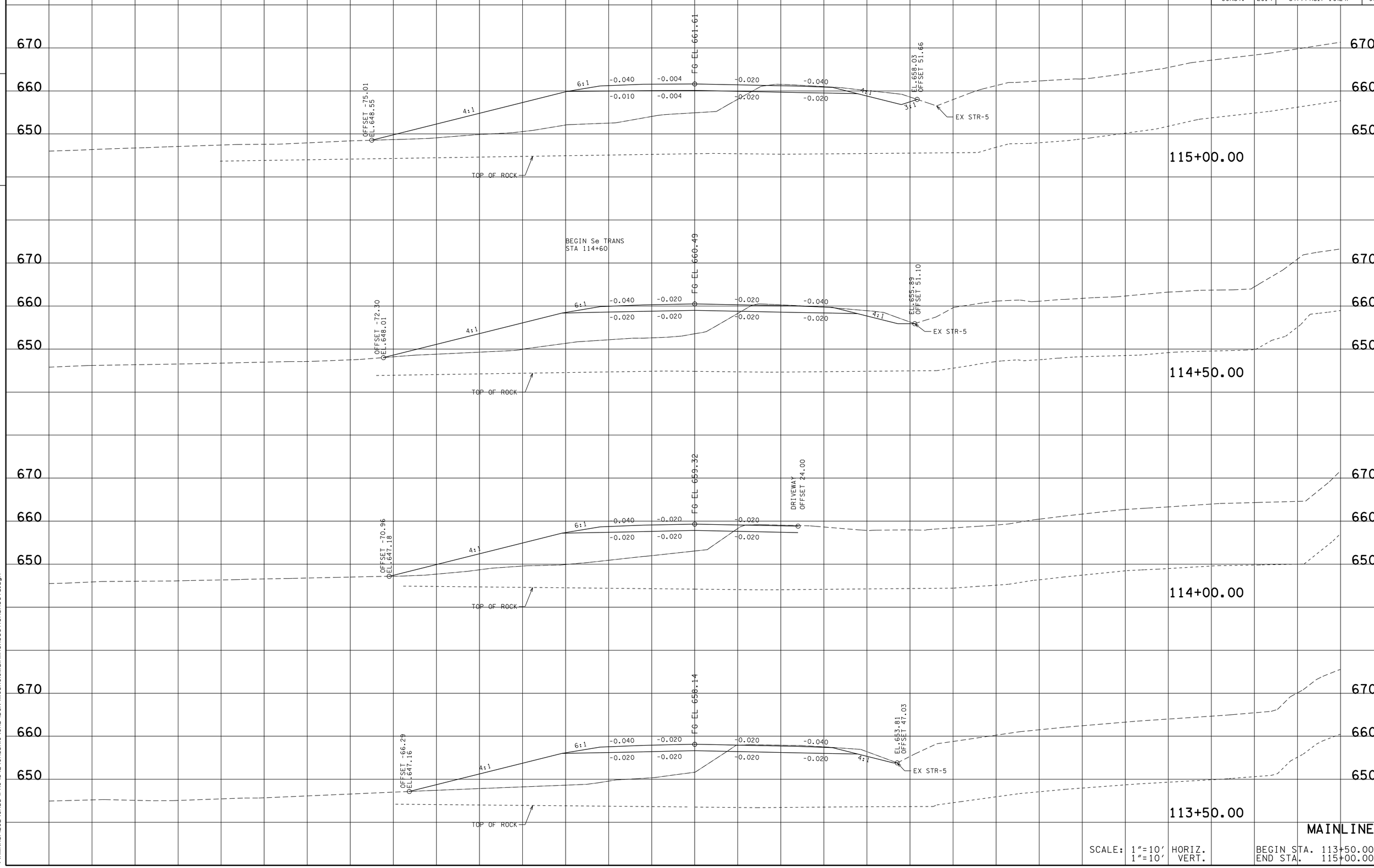
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	7
CONST.	2014	STP/PHSIP-10(24)	90

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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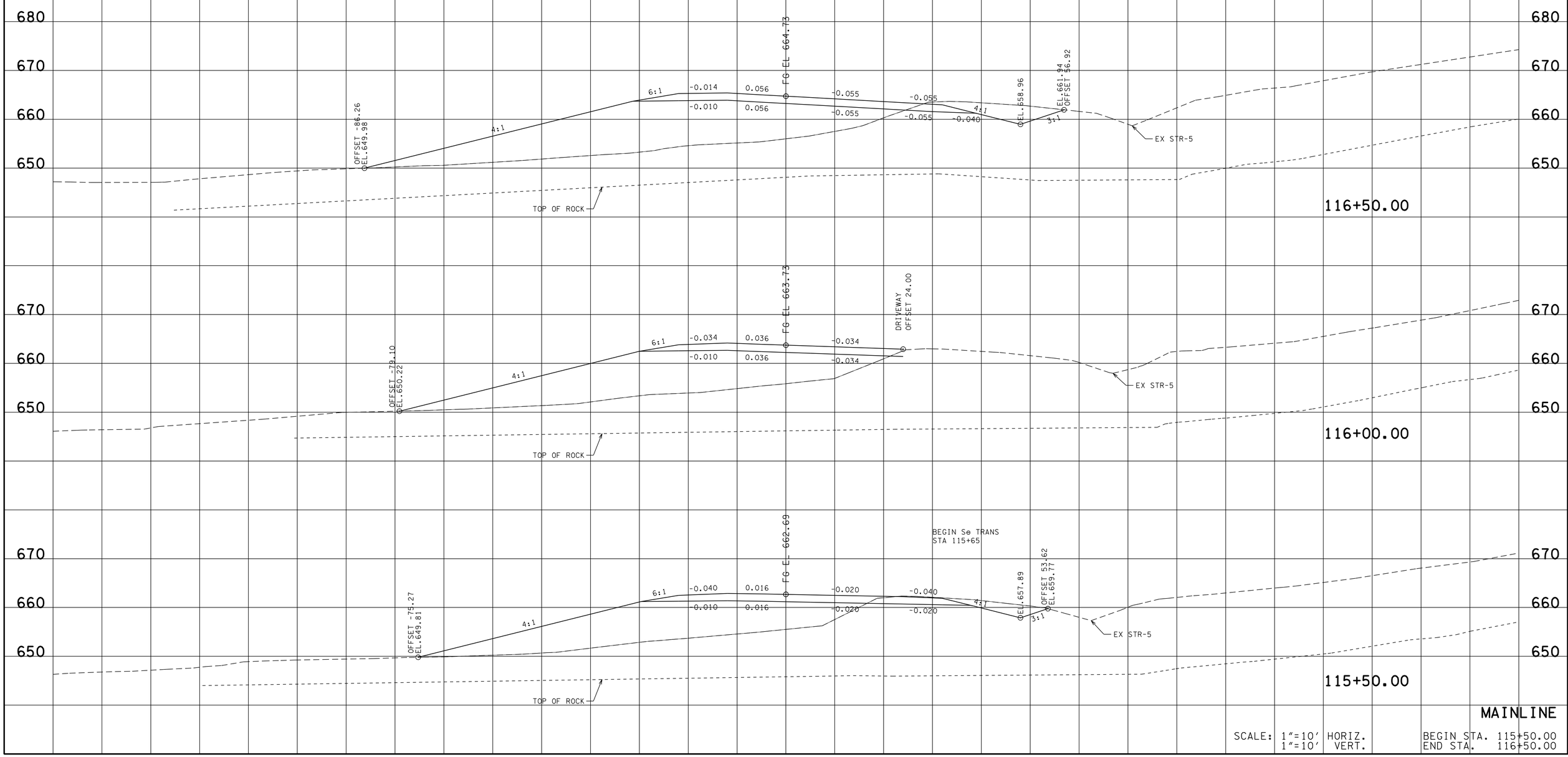
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	8
CONST.	2014	STP/PHSIP-10(24)	91

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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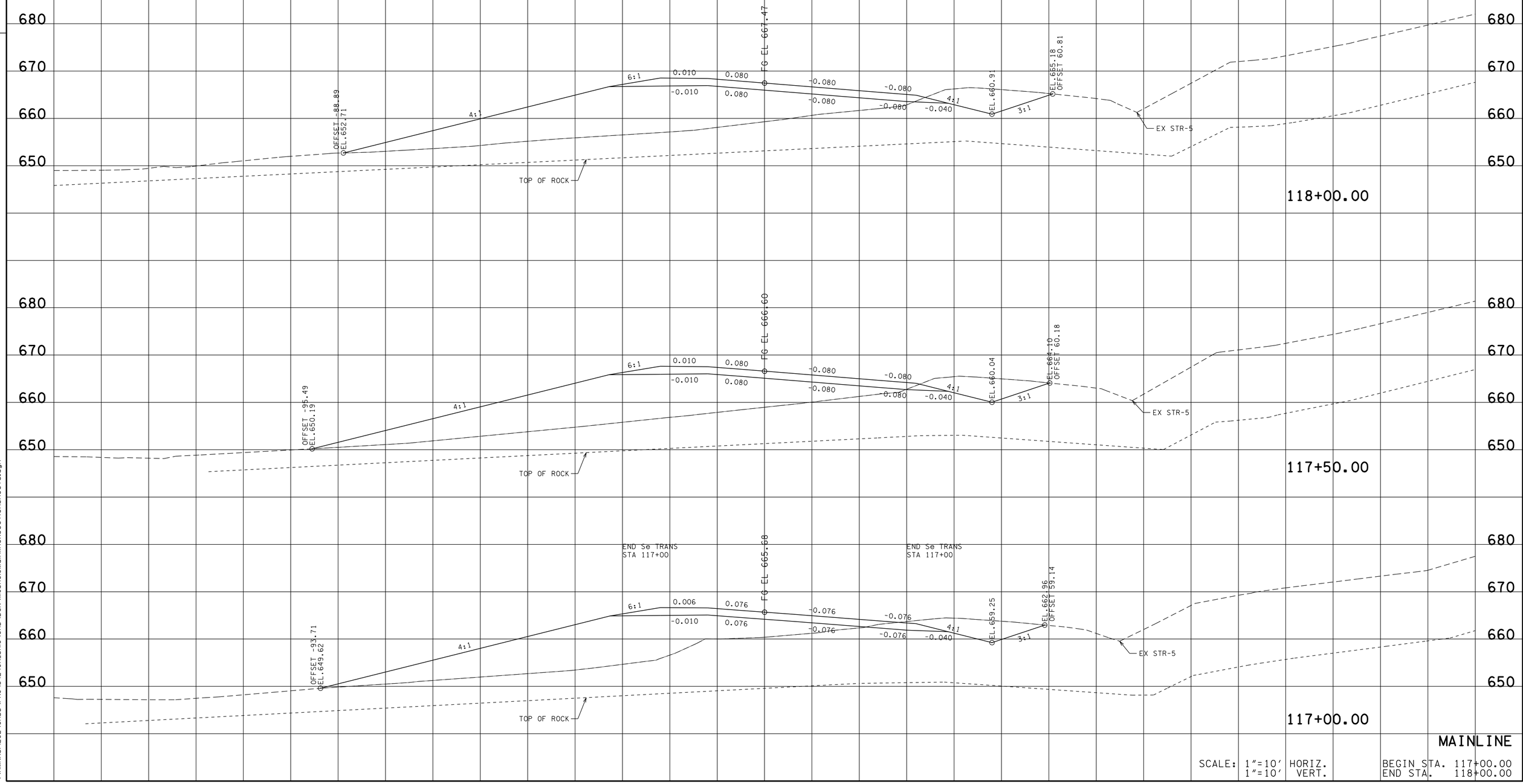
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	9
CONST.	2014	STP/PHSIP-10(24)	92

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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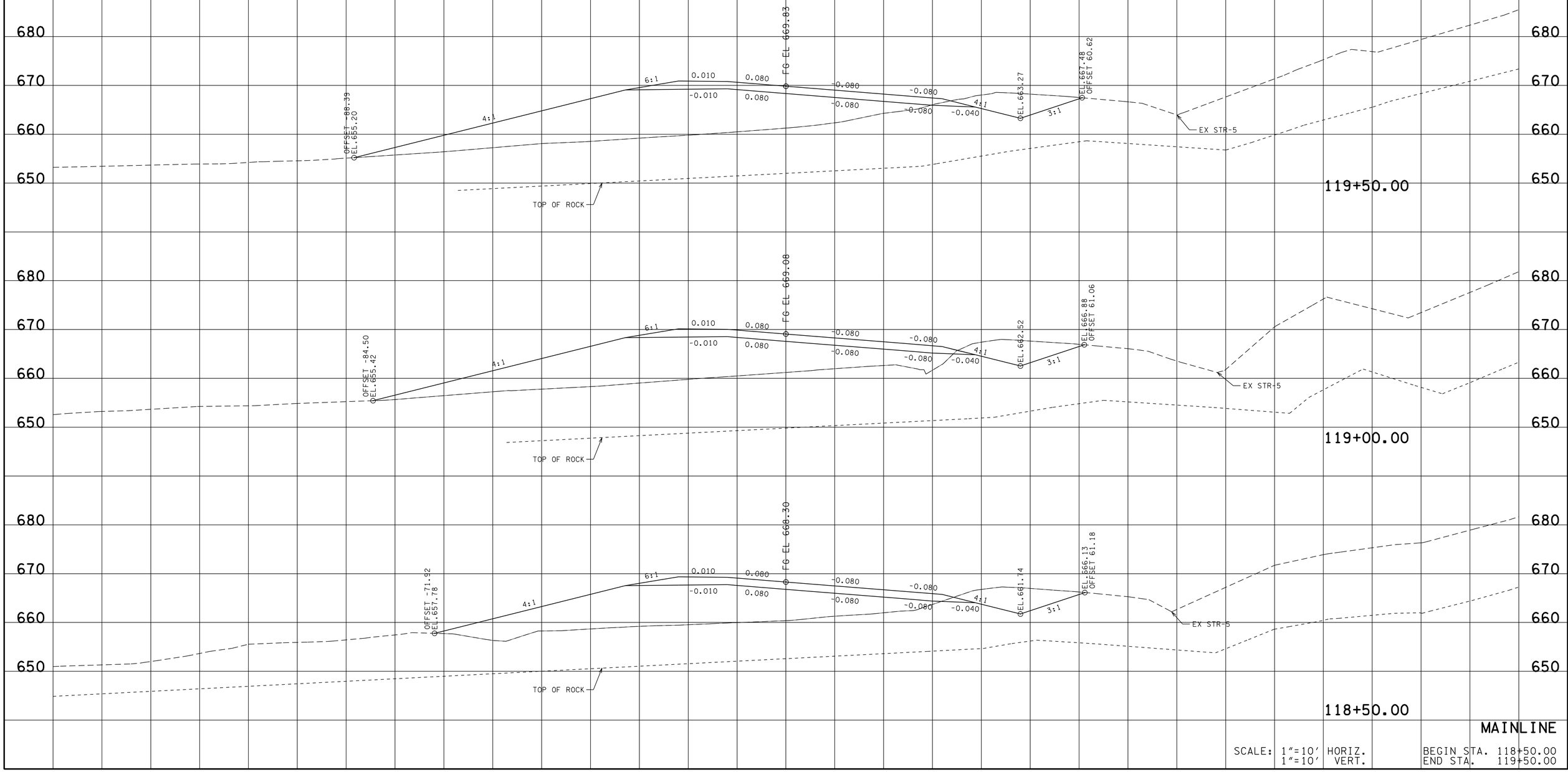
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	10
CONST.	2014	STP/PHSIP-10(24)	93

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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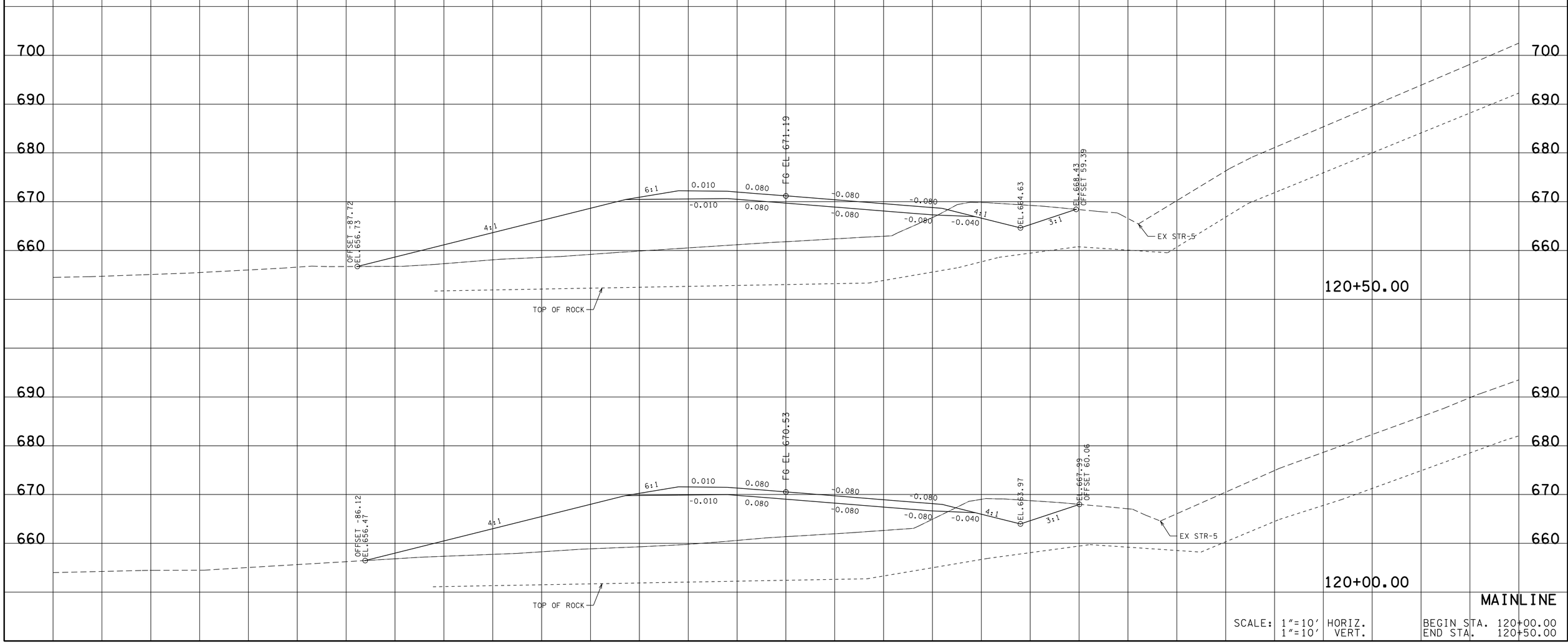
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	11
CONST.	2014	STP/PHSIP-10(24)	94

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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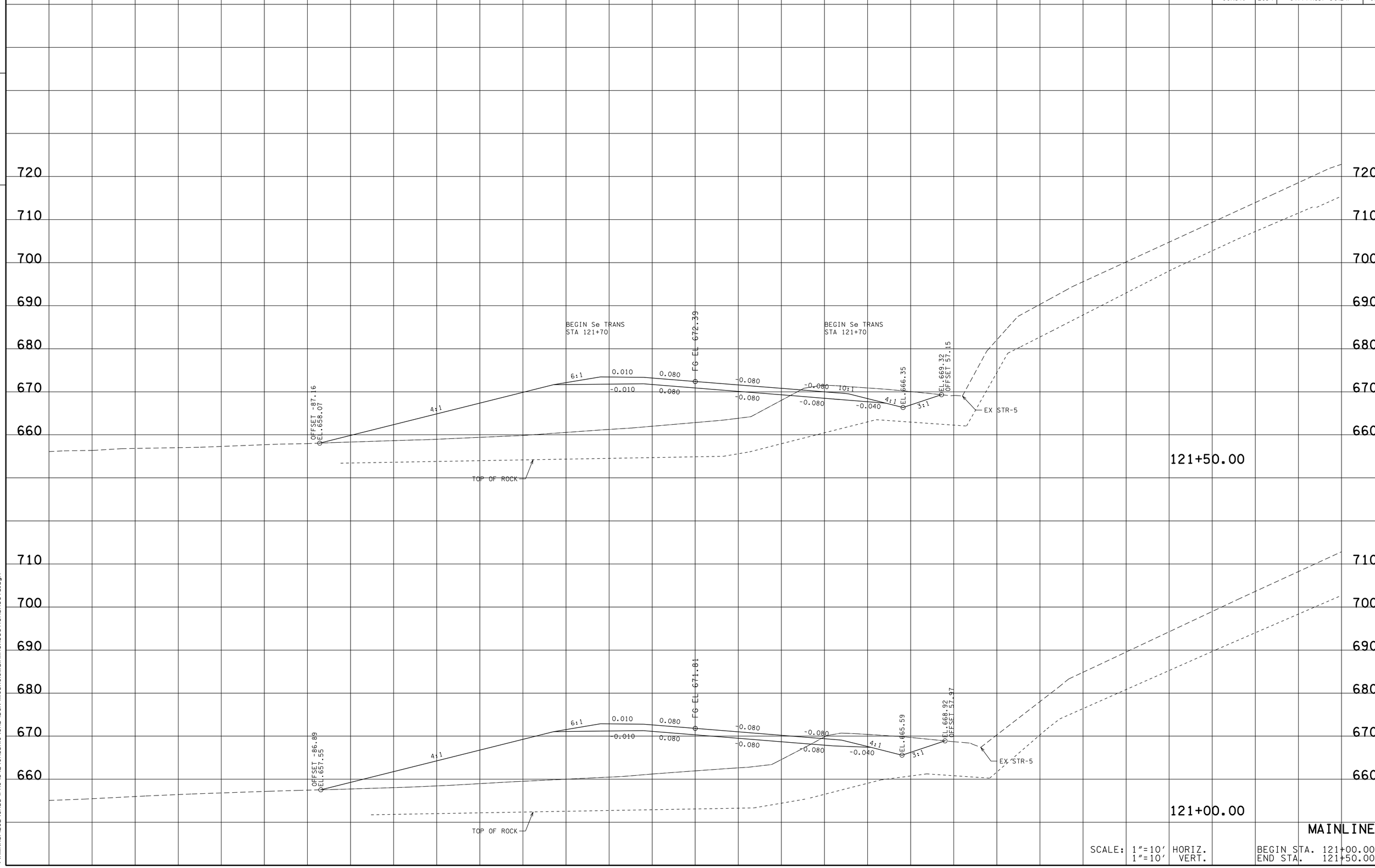
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	12
CONST.	2014	STP/PHSIP-10(24)	95

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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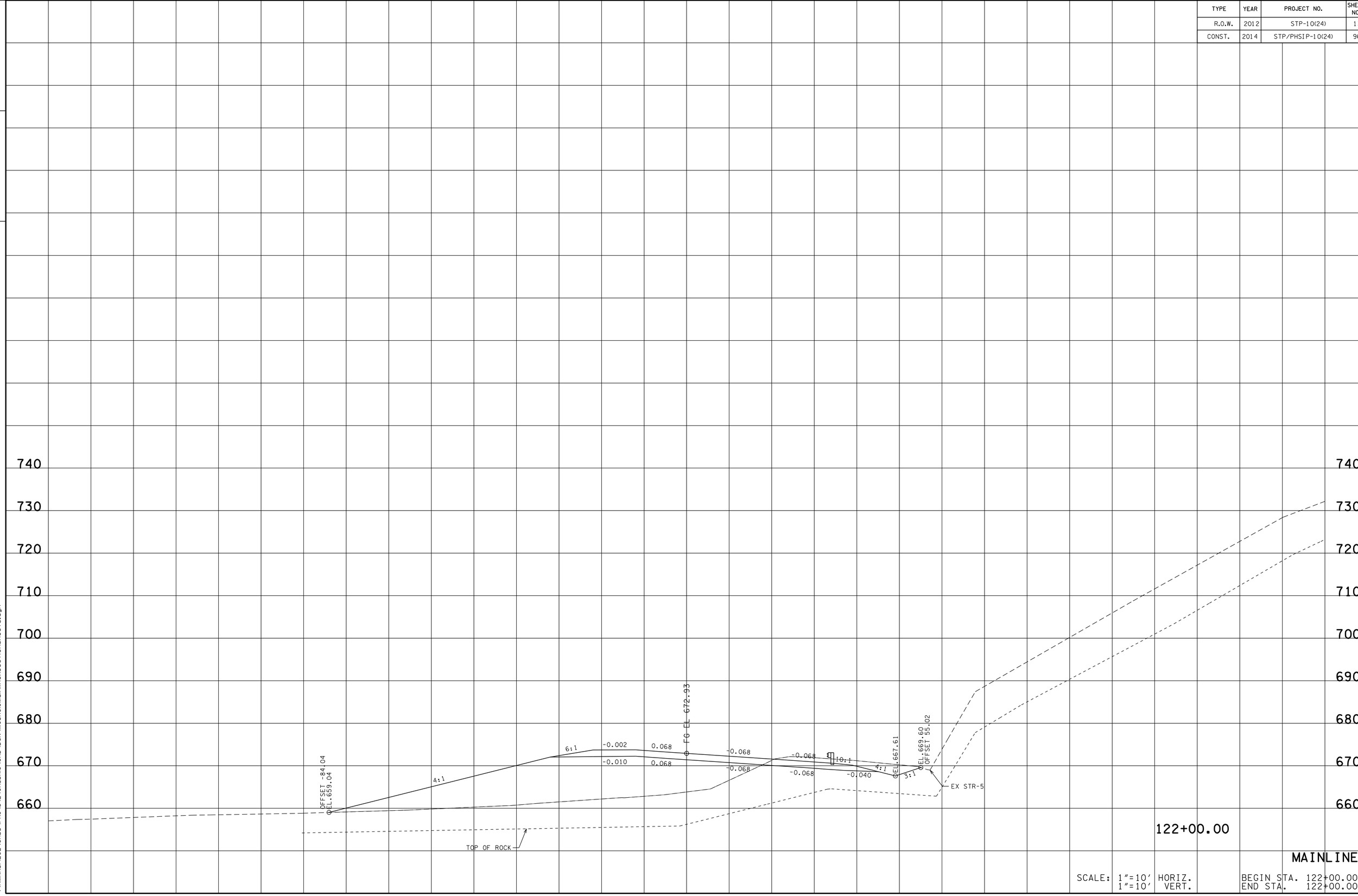
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	13
CONST.	2014	STP/PHSIP-10(24)	96

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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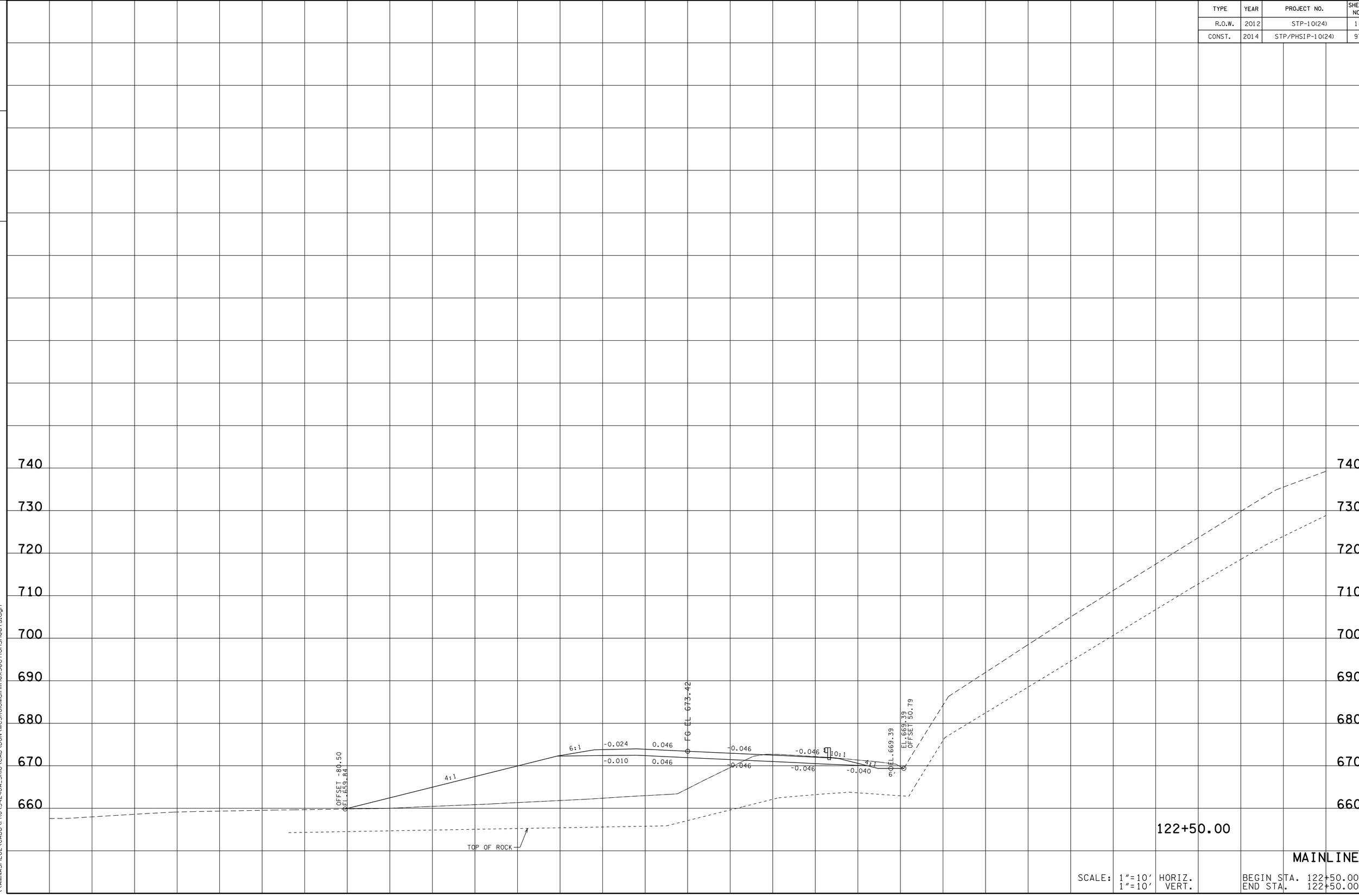
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	14
CONST.	2014	STP/PHSIP-10(24)	97

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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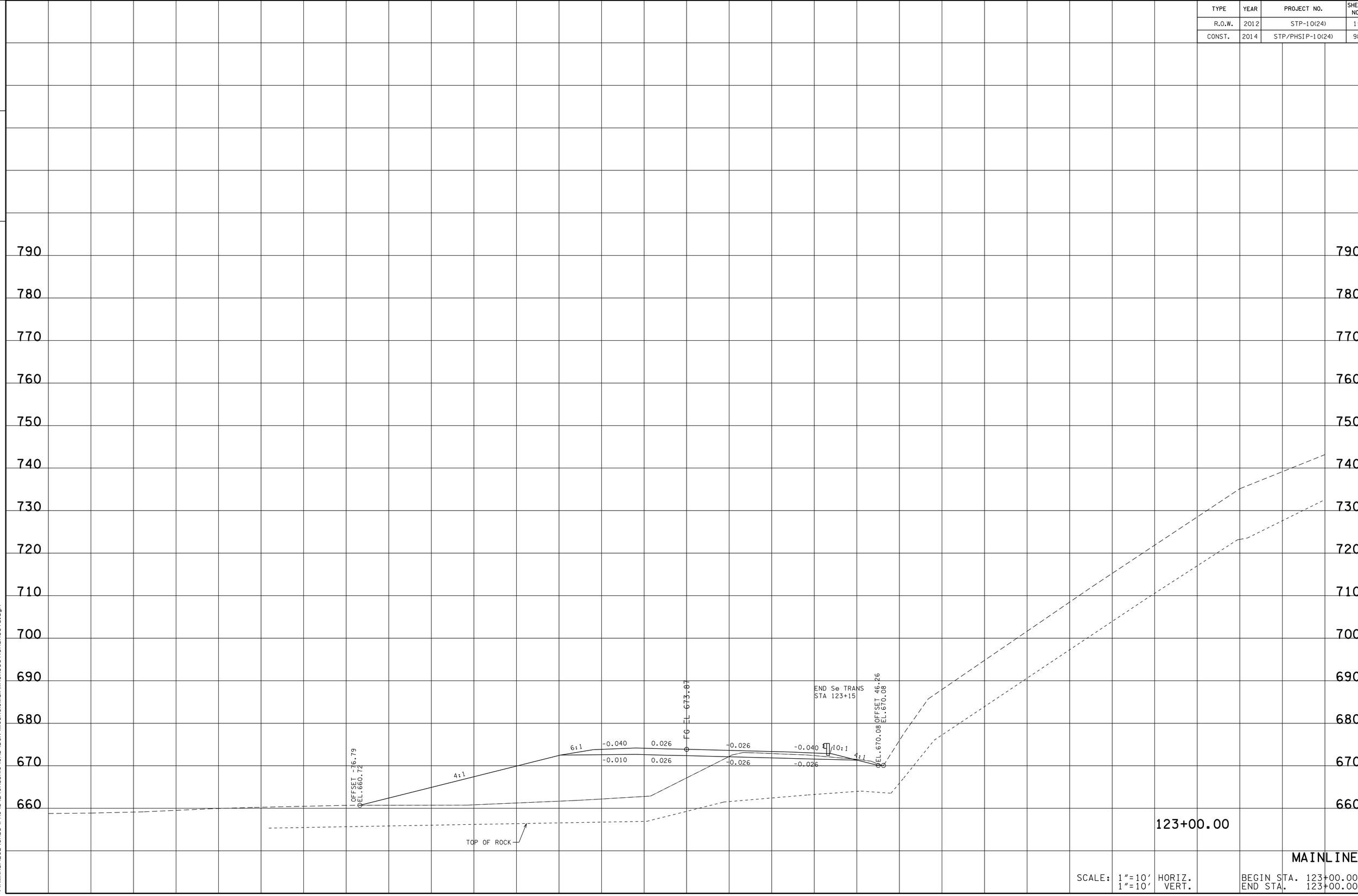
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	15
CONST.	2014	STP/PHSIP-10(24)	98

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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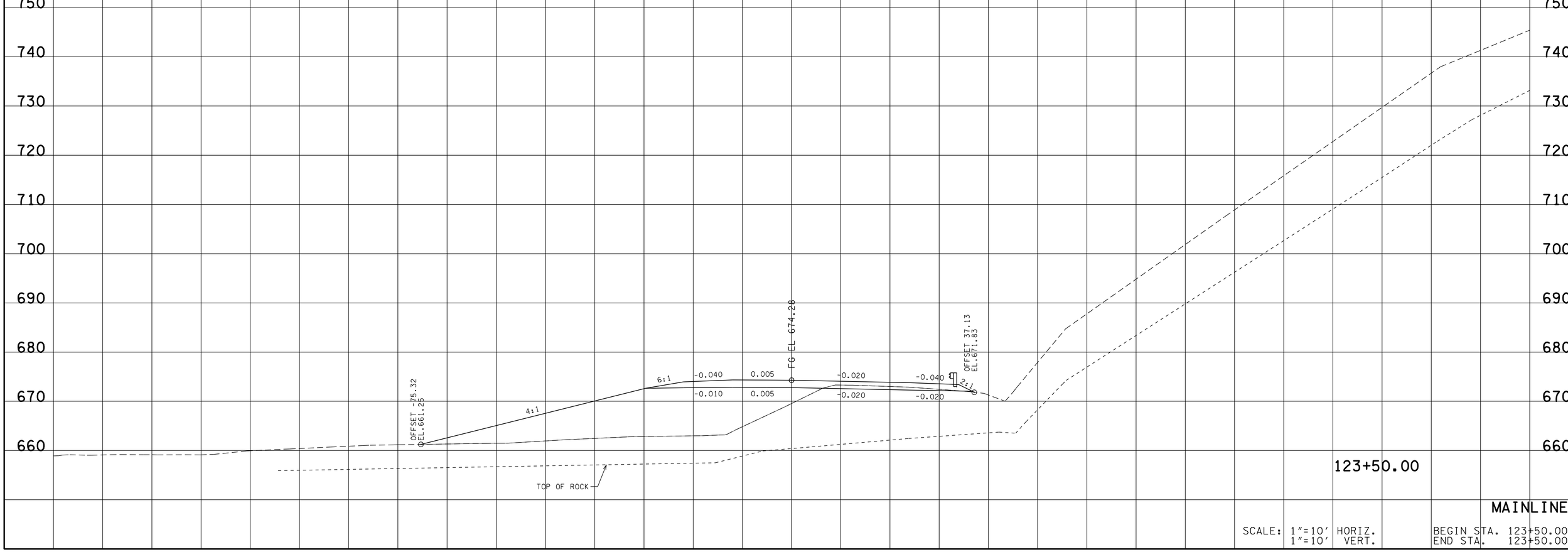
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	16
CONST.	2014	STP/PHSIP-10(24)	99

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



123+50.00

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13-MAR-2014 10:57
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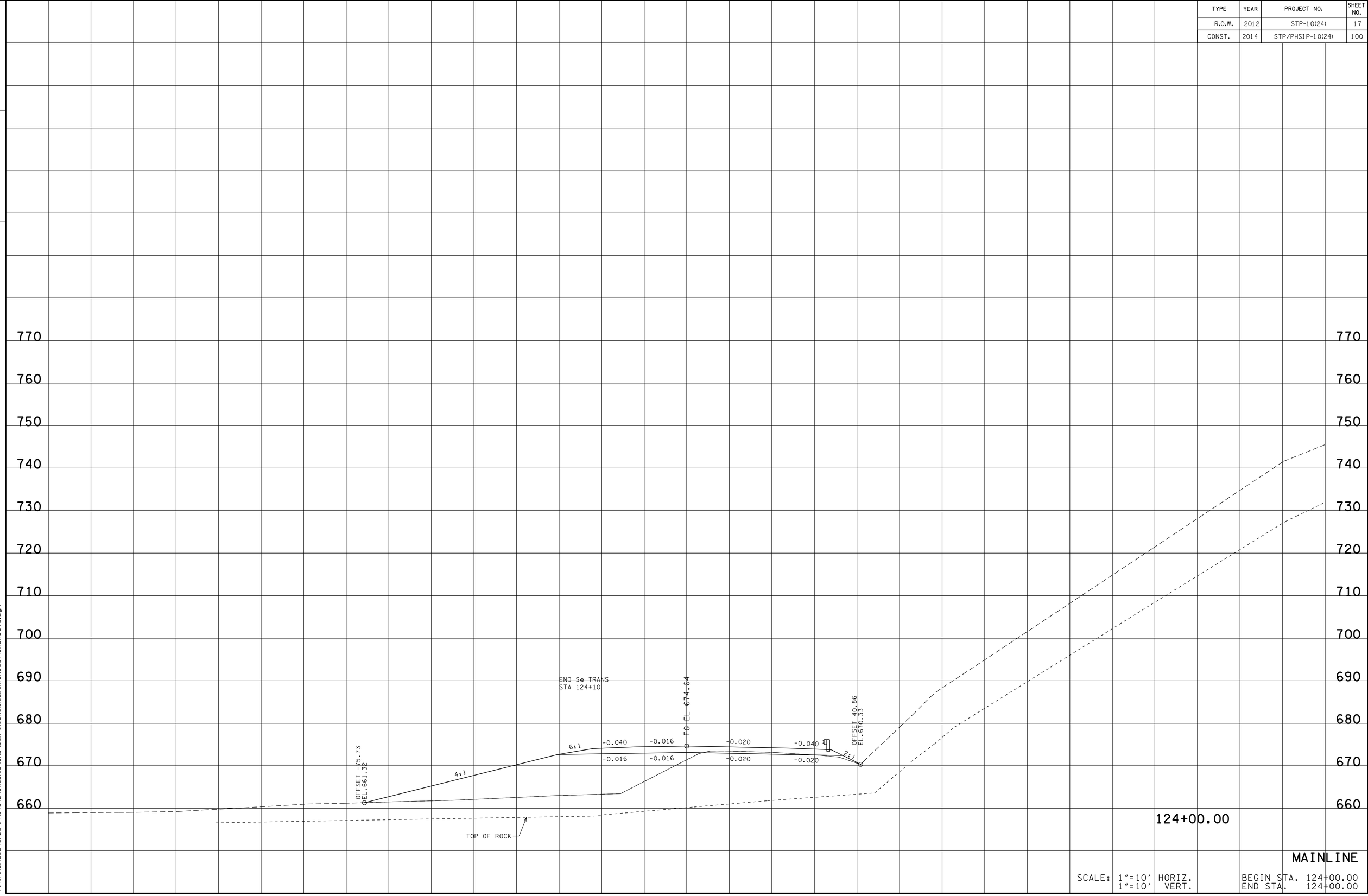
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	17
CONST.	2014	STP/PHSIP-10(24)	100

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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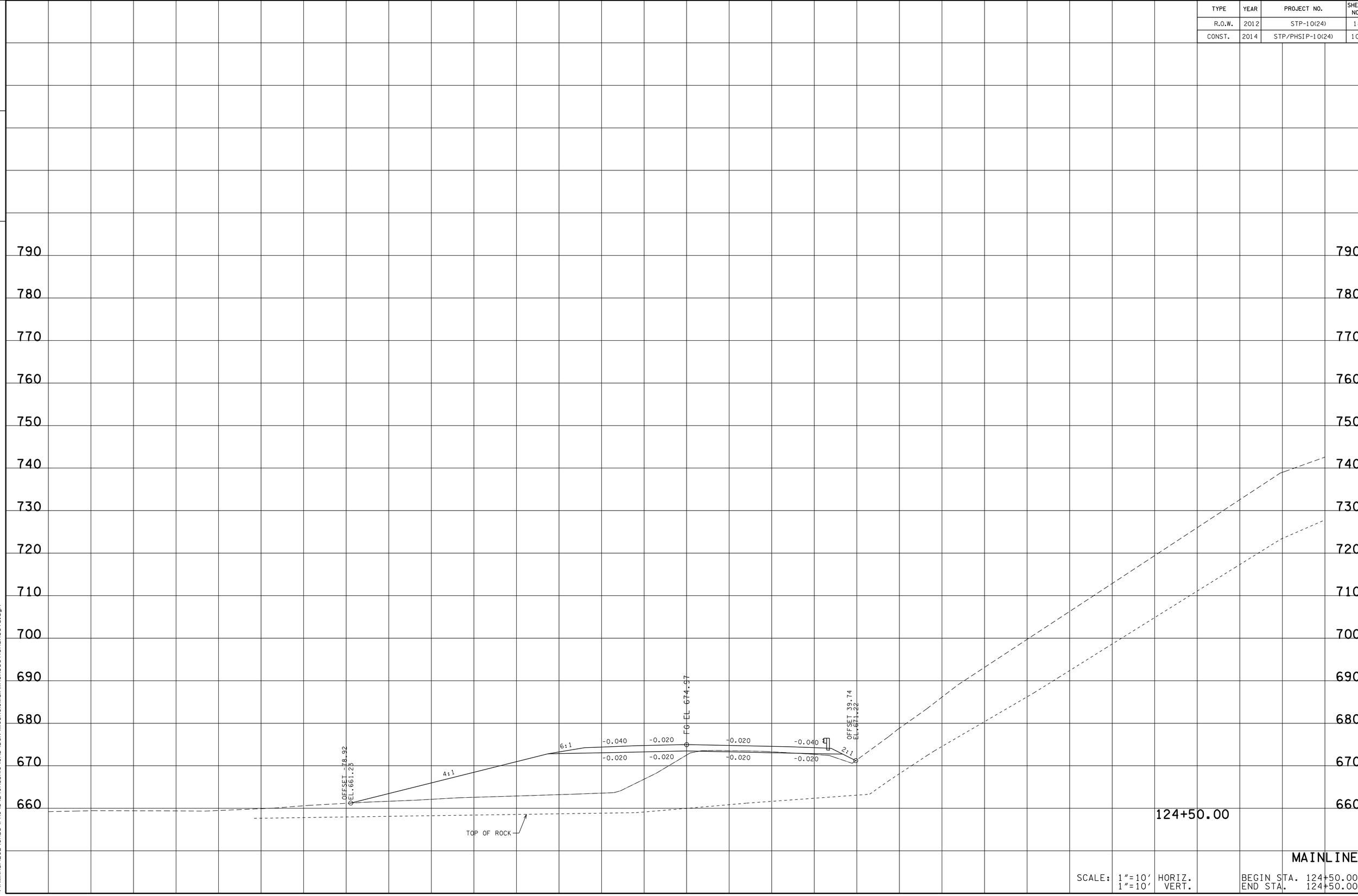
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	18
CONST.	2014	STP/PHSIP-10(24)	101

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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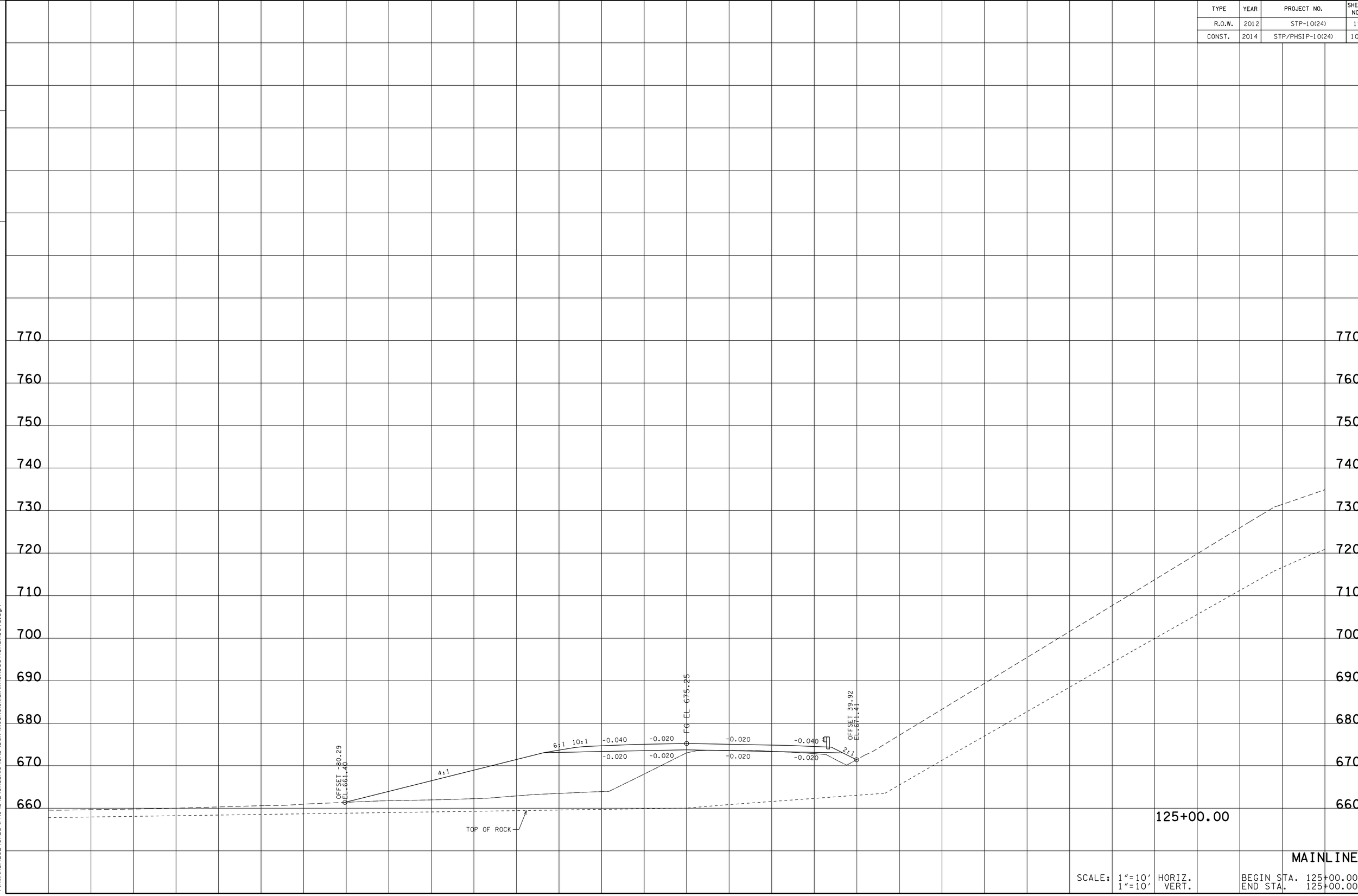
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	19
CONST.	2014	STP/PHSIP-10(24)	102

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

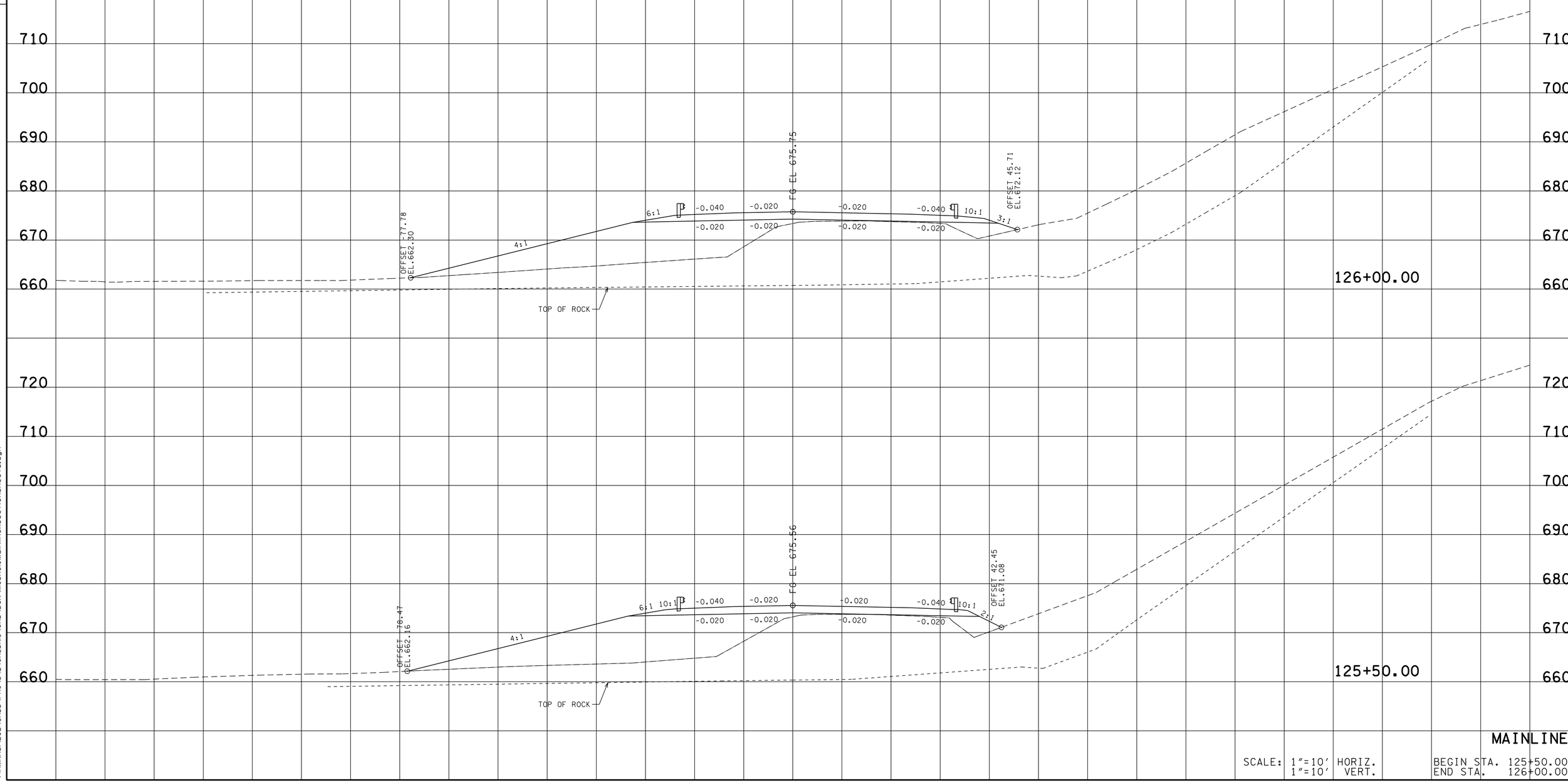
BEGIN STA. 125+00.00
END STA. 125+00.00

13-MAR-2014 10:57
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CADD\DGN\MCSR10MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	20
CONST.	2014	STP/PHSIP-10(24)	103

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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BEGIN STA. 125+50.00
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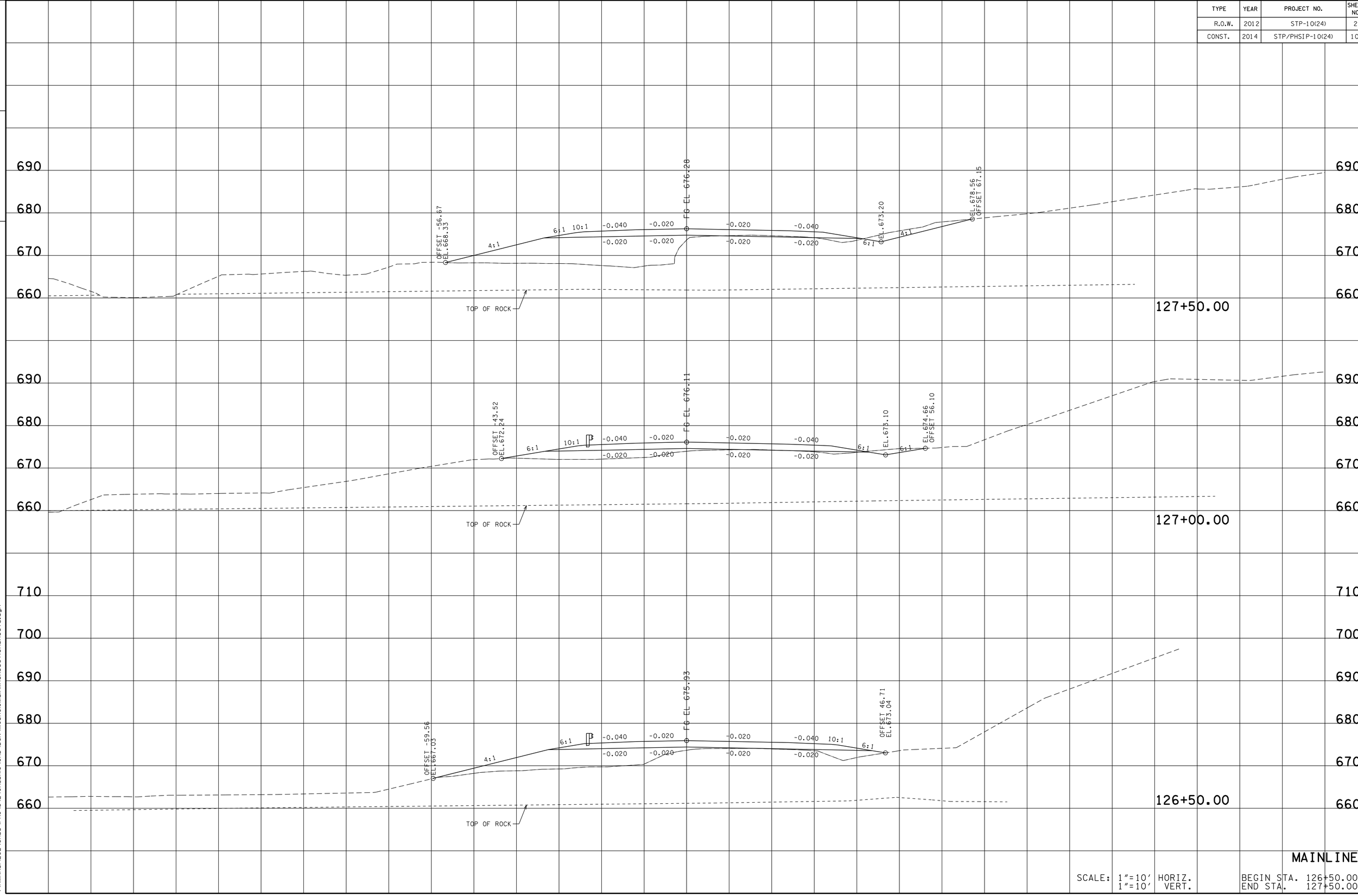
13-MAR-2014 10:57
\\AMNASFILO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	21
CONST.	2014	STP/PHSIP-10(24)	104

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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BEGIN STA. 126+50.00
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13-MAR-2014 10:57
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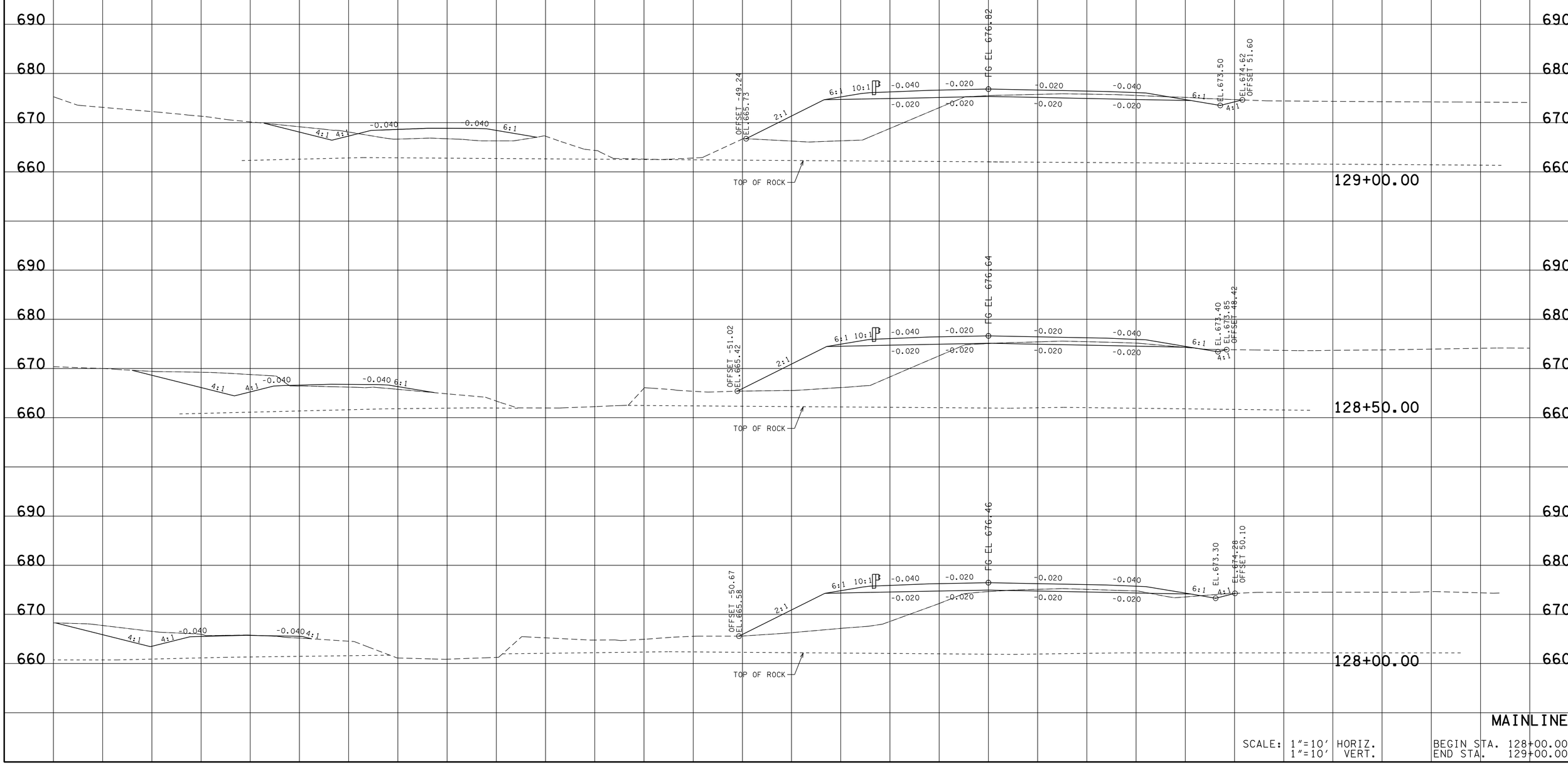
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	22
CONST.	2014	STP/PHSIP-10(24)	105

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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SCALE: 1"=10' HORIZ.
1"=10' VERT.

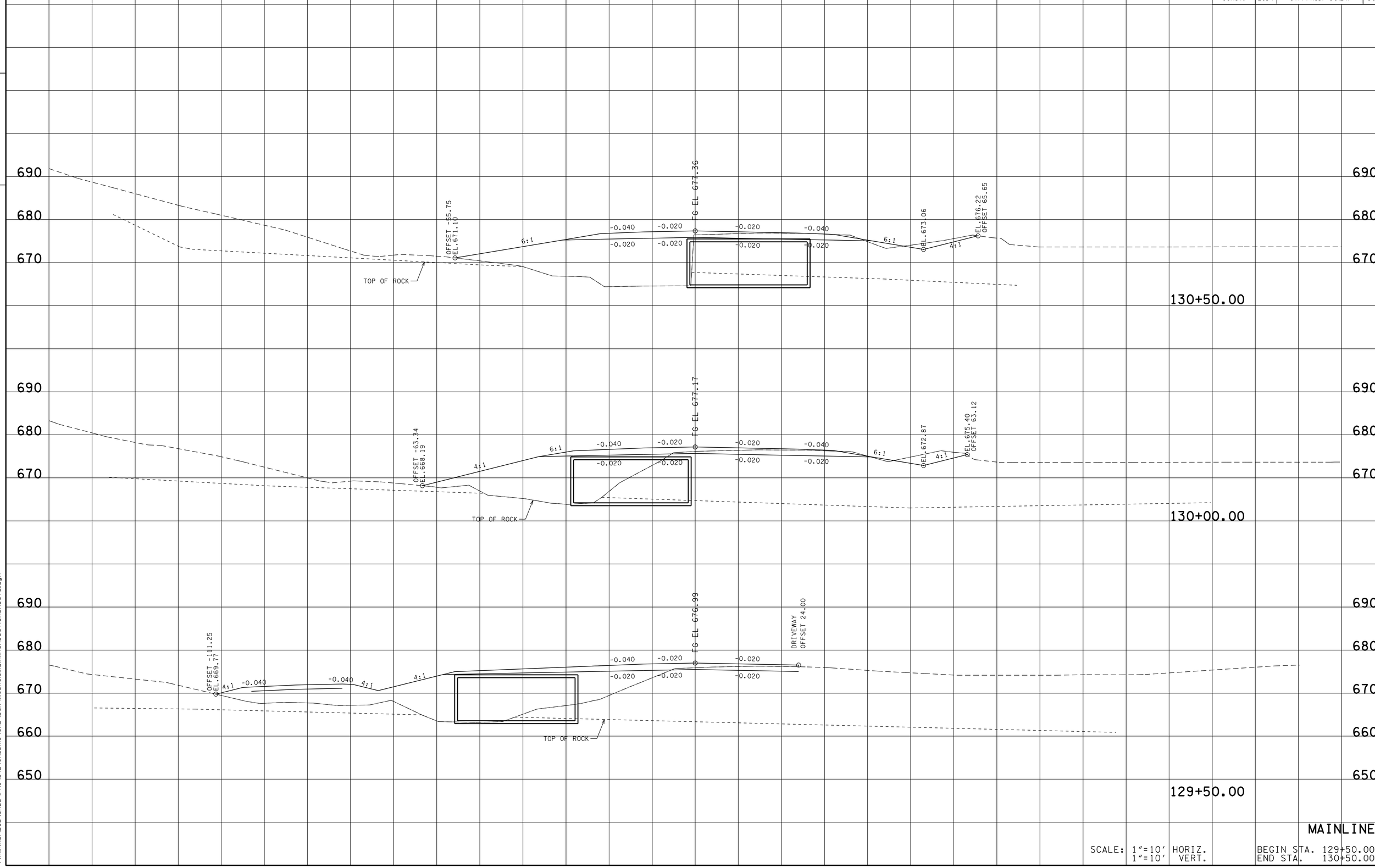
BEGIN STA. 128+00.00
END STA. 129+00.00

13-MAR-2014 10:57
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	23
CONST.	2014	STP/PHSIP-10(24)	106

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

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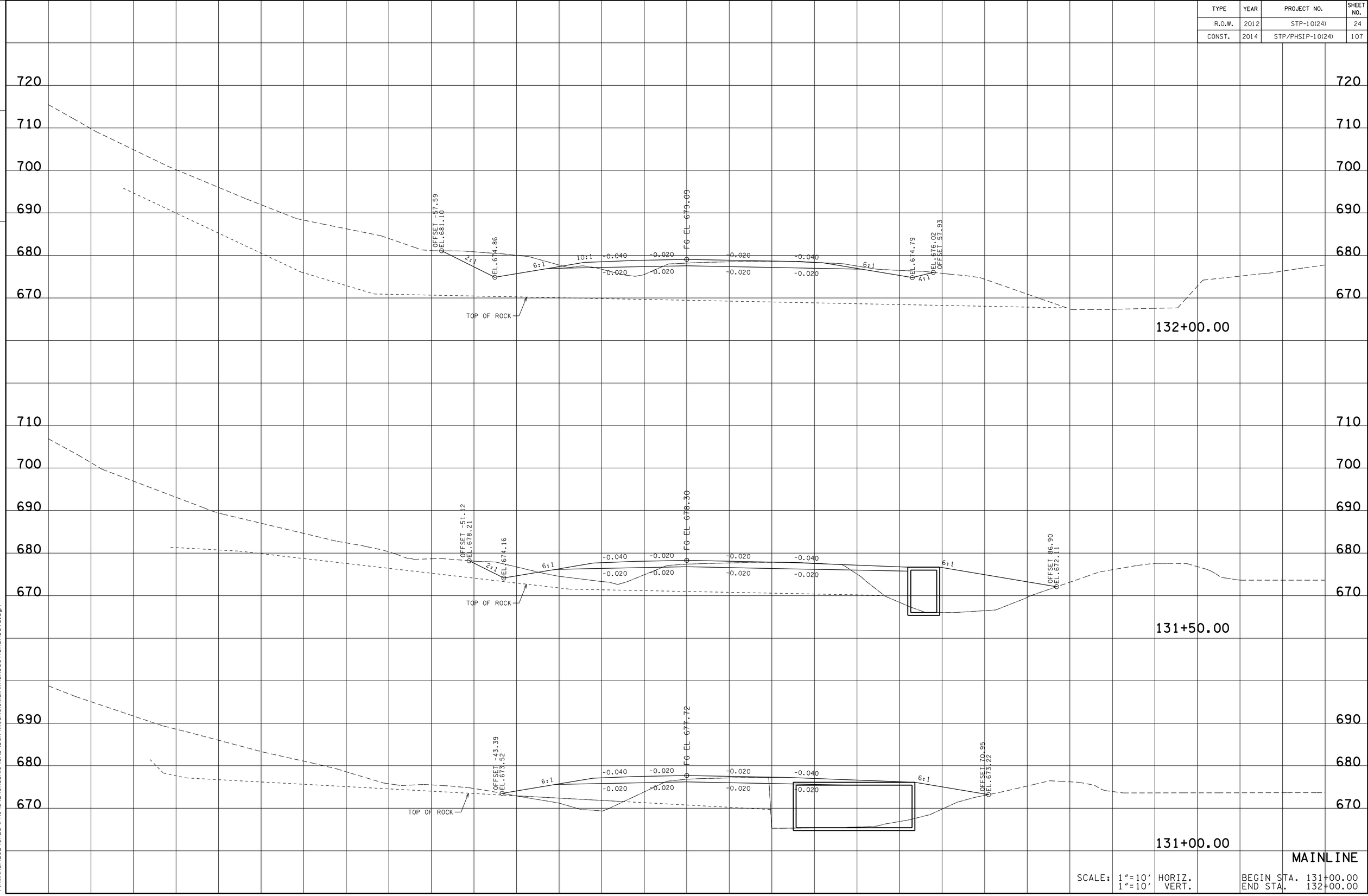
1"=10' VERT.

BEGIN STA. 129+50.00
END STA. 130+50.00

13-MAR-2014 10:57
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	24
CONST.	2014	STP/PHSIP-10(24)	107



MAINLINE

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1"=10' VERT.

BEGIN STA. 131+00.00
END STA. 132+00.00

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.

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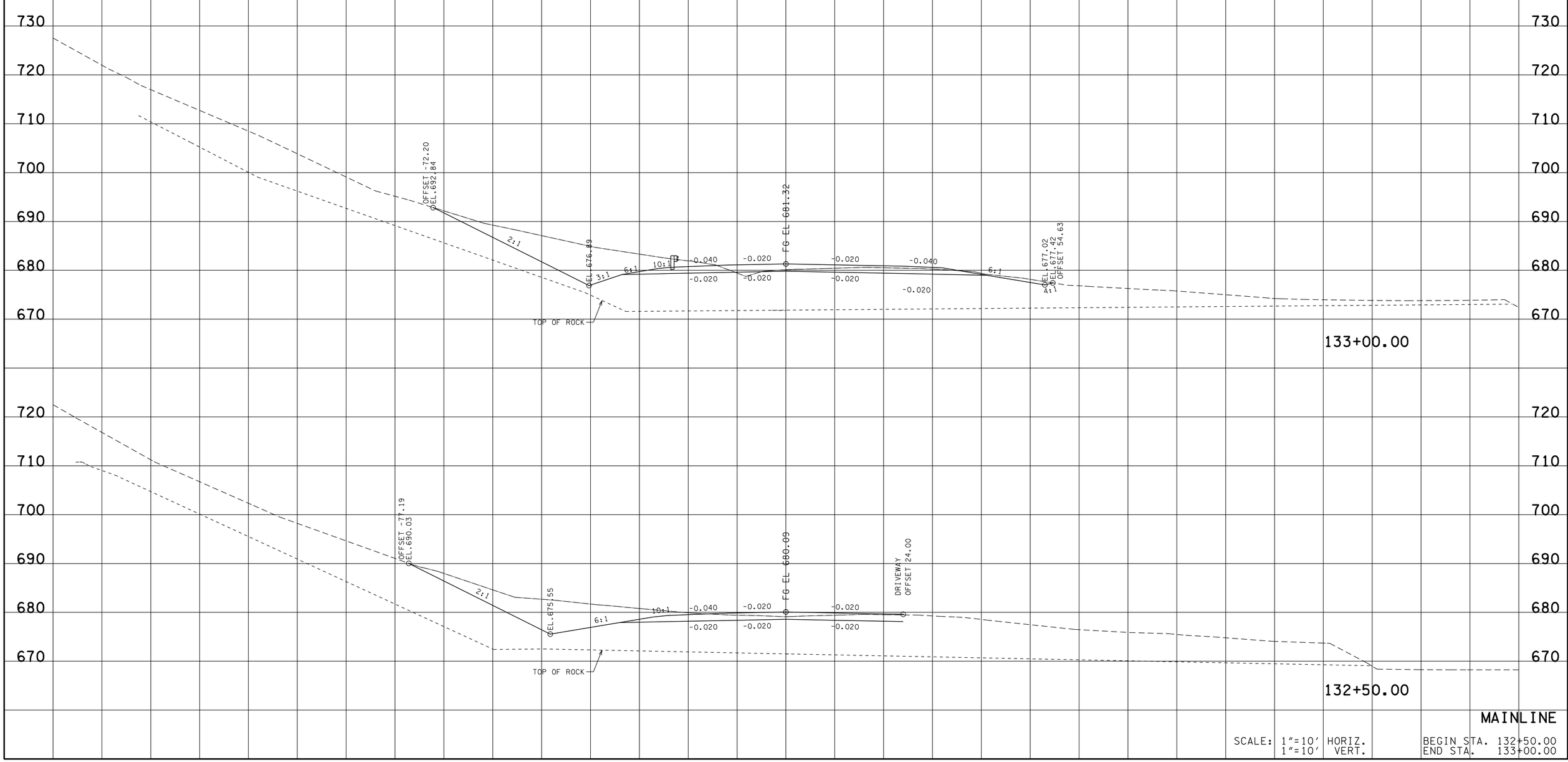
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	25
CONST.	2014	STP/PHSIP-10(24)	108

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



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13-MAR-2014 10:57
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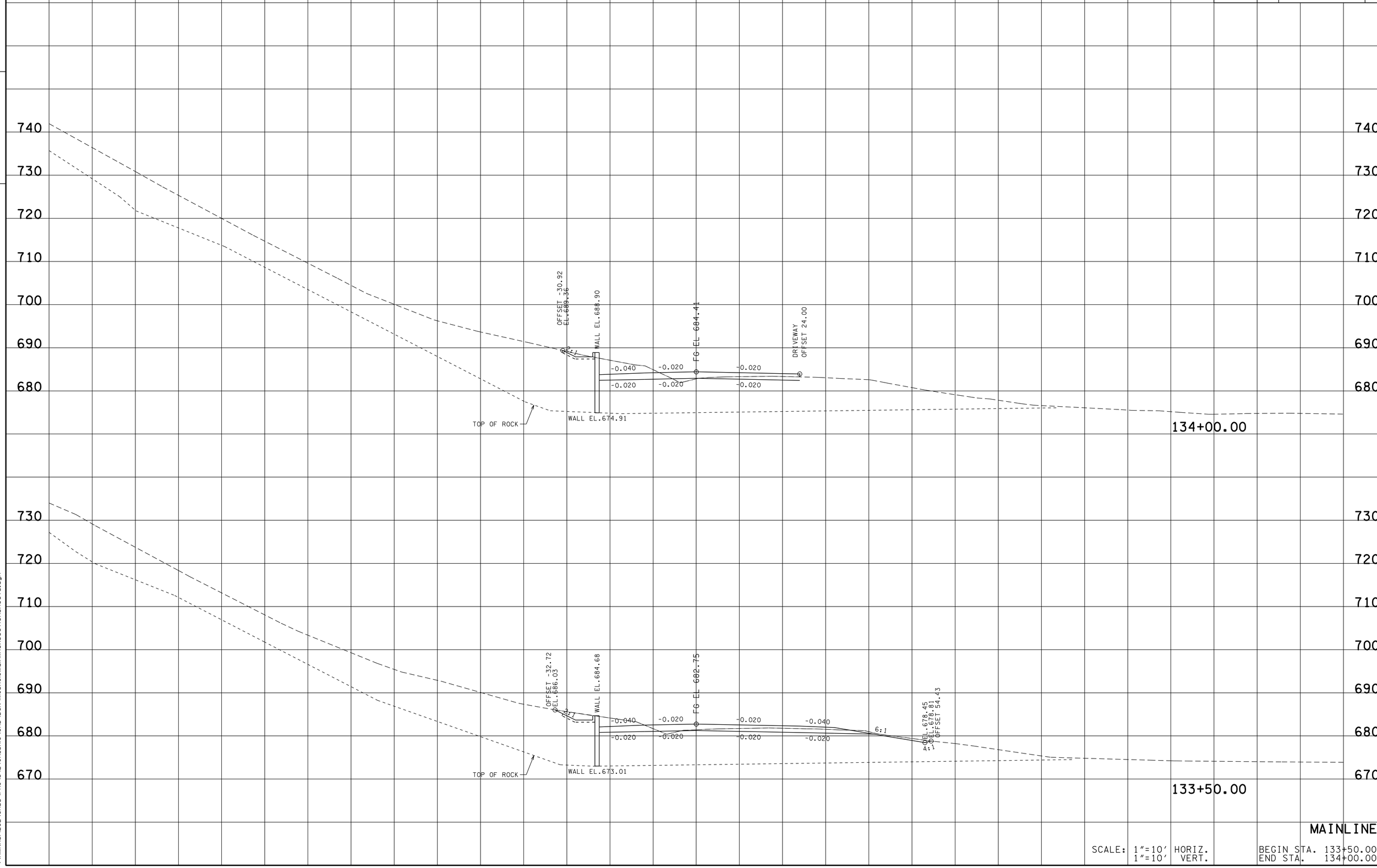
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	26
CONST.	2014	STP/PHSIP-10(24)	109

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

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1"=10' VERT.

BEGIN STA. 133+50.00
END STA. 134+00.00

13-MAR-2014 10:57
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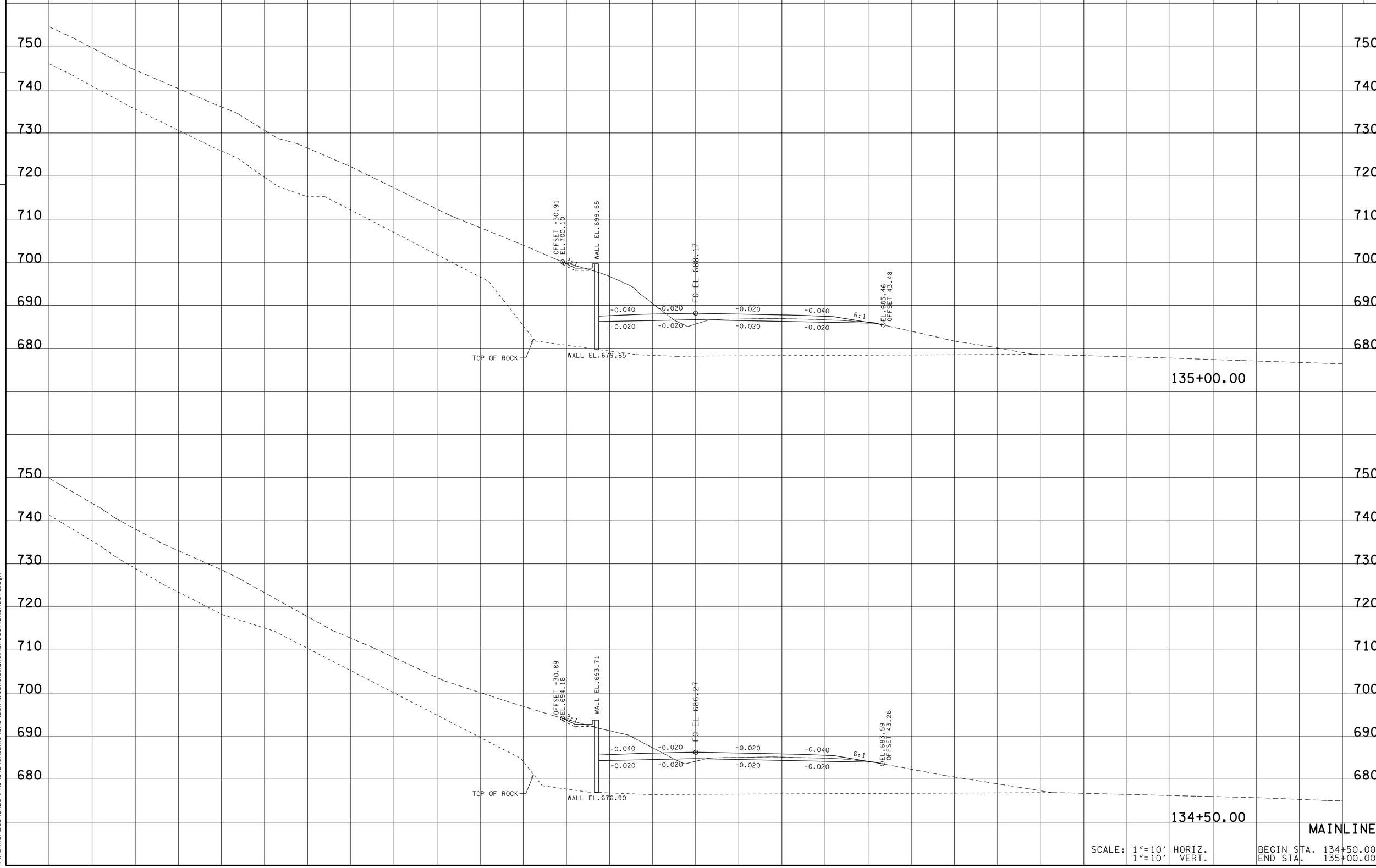
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	27
CONST.	2014	STP/PHSIP-10(24)	110

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



MAINLINE

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1"=10' VERT.

BEGIN STA. 134+50.00
END STA. 135+00.00

13-MAR-2014 10:57
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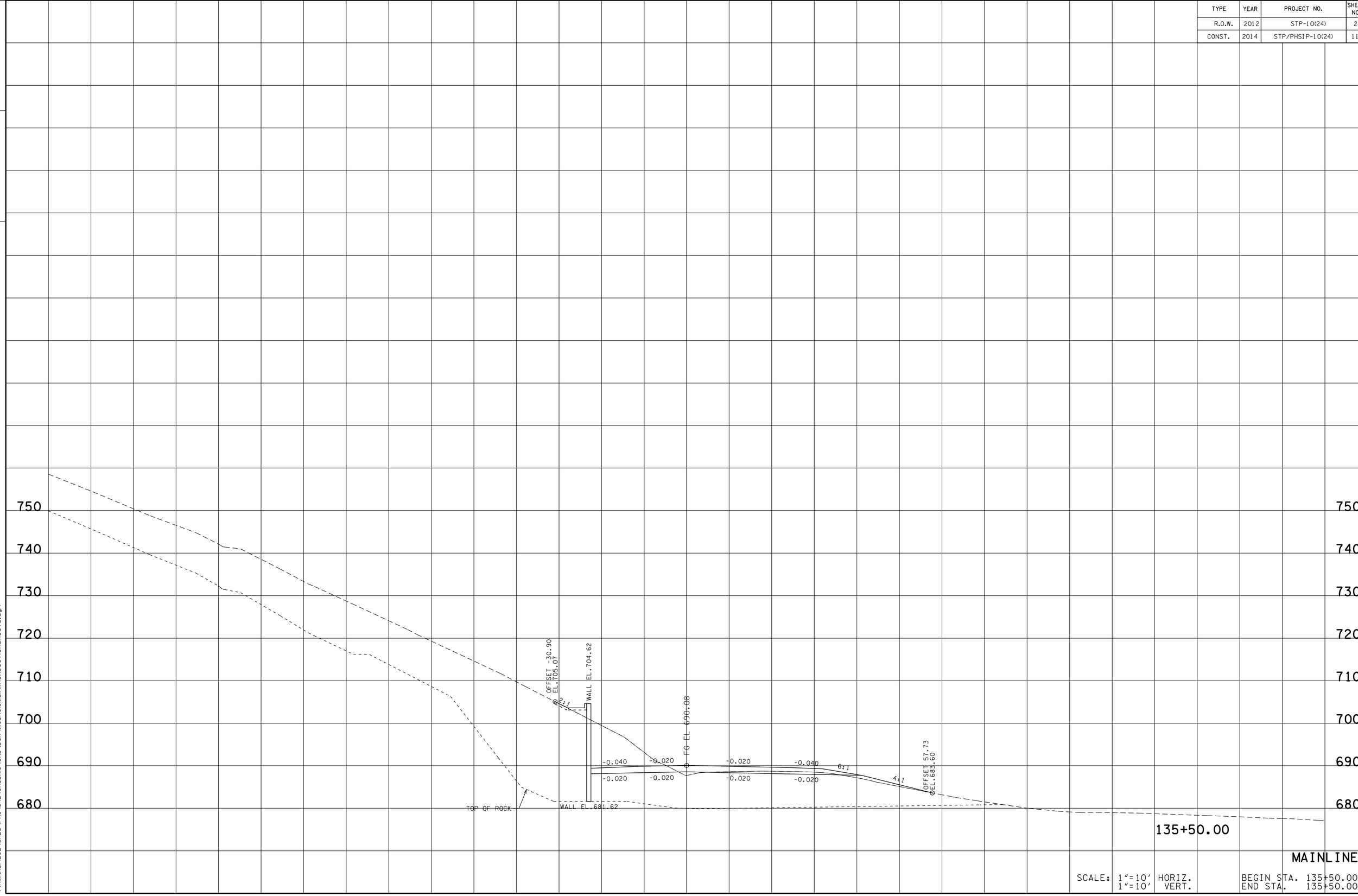
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	28
CONST.	2014	STP/PHSIP-10(24)	111

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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1"=10' VERT.

BEGIN STA. 135+50.00
END STA. 135+50.00

13-MAR-2014 10:57
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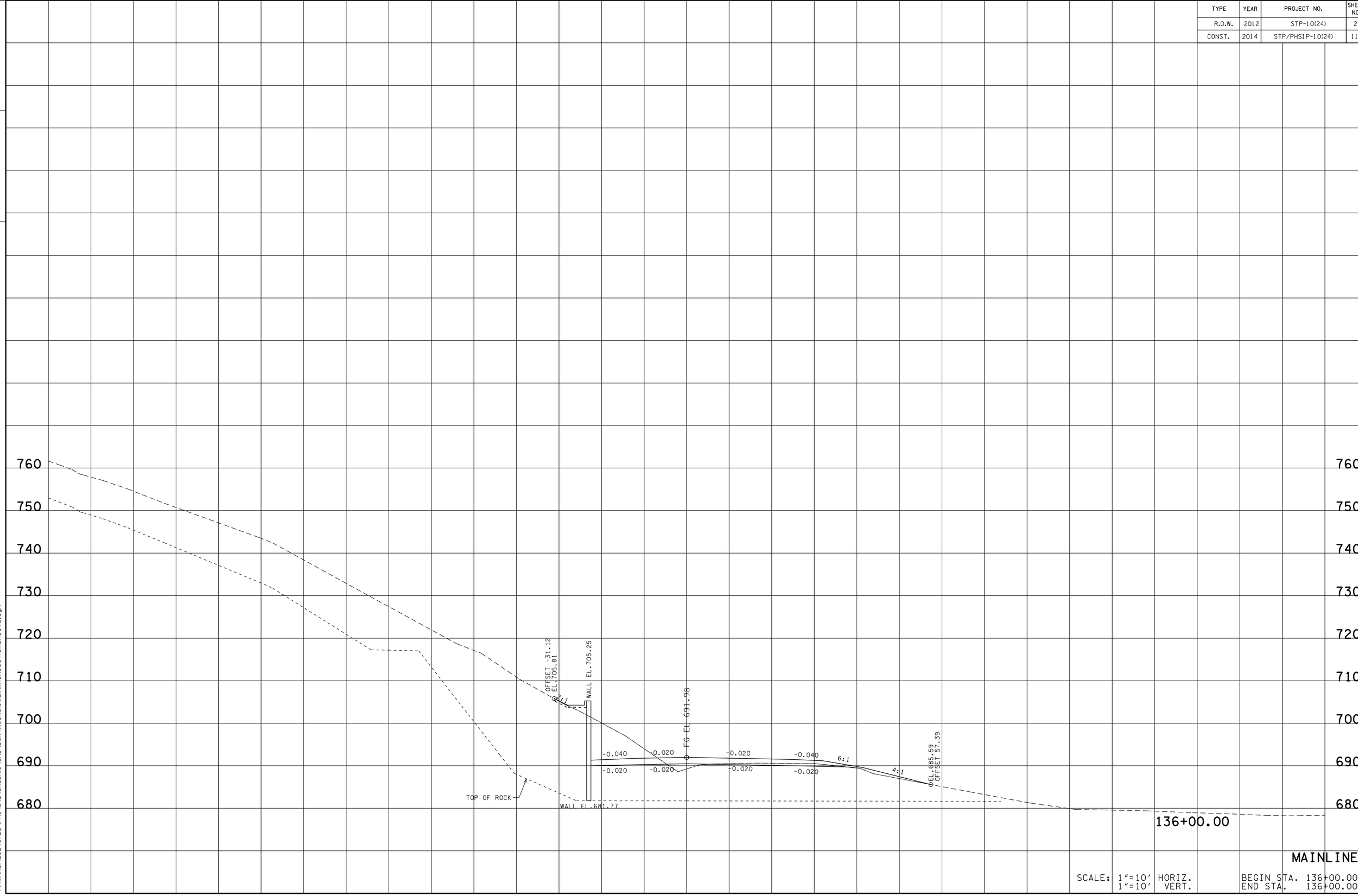
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	29
CONST.	2014	STP/PHSIP-10(24)	112

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 136+00.00
END STA. 136+00.00

13-MAR-2014 10:57
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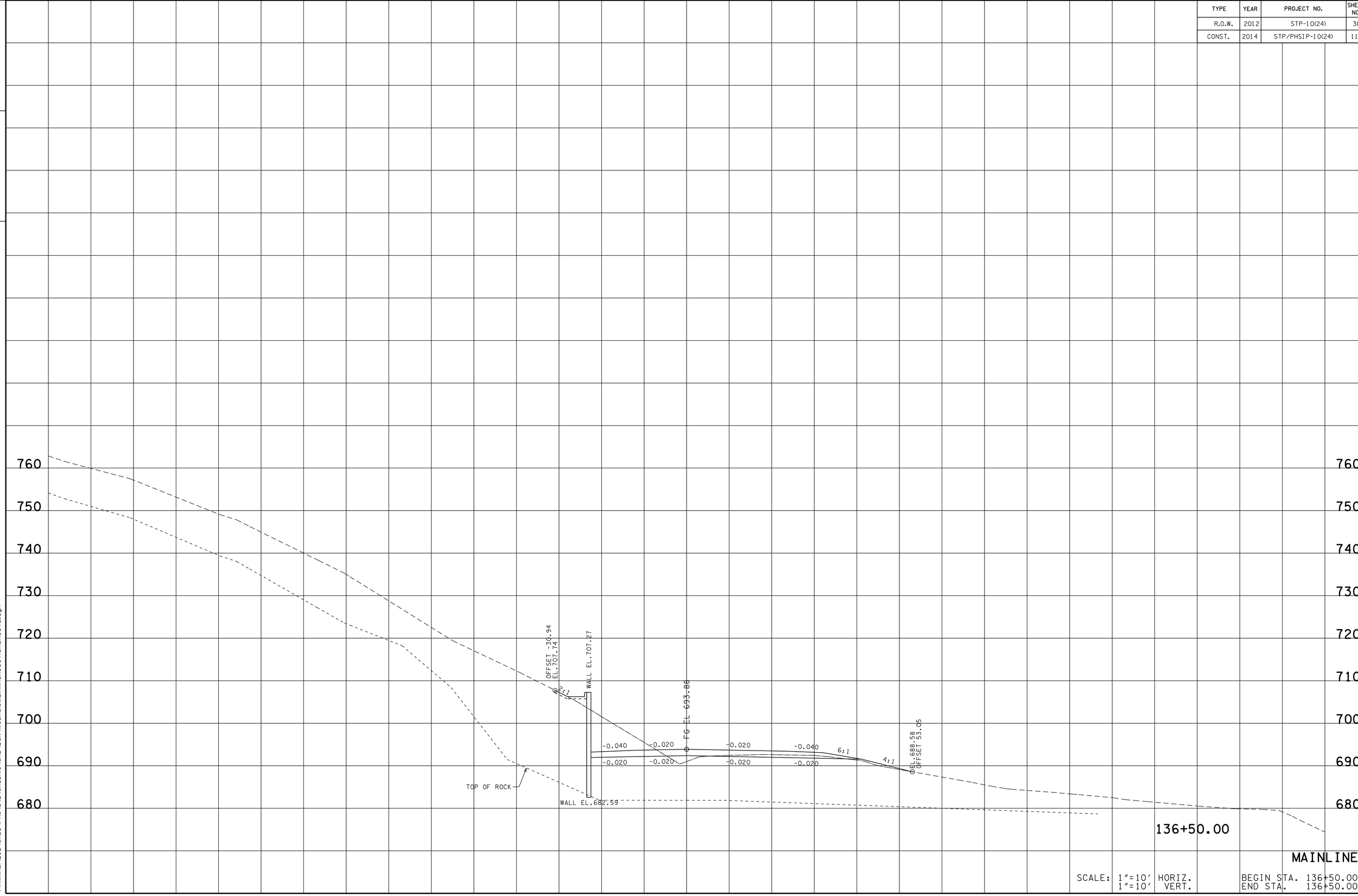
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	30
CONST.	2014	STP/PHSIP-10(24)	113

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 136+50.00
END STA. 136+50.00

13-MAR-2014 10:57
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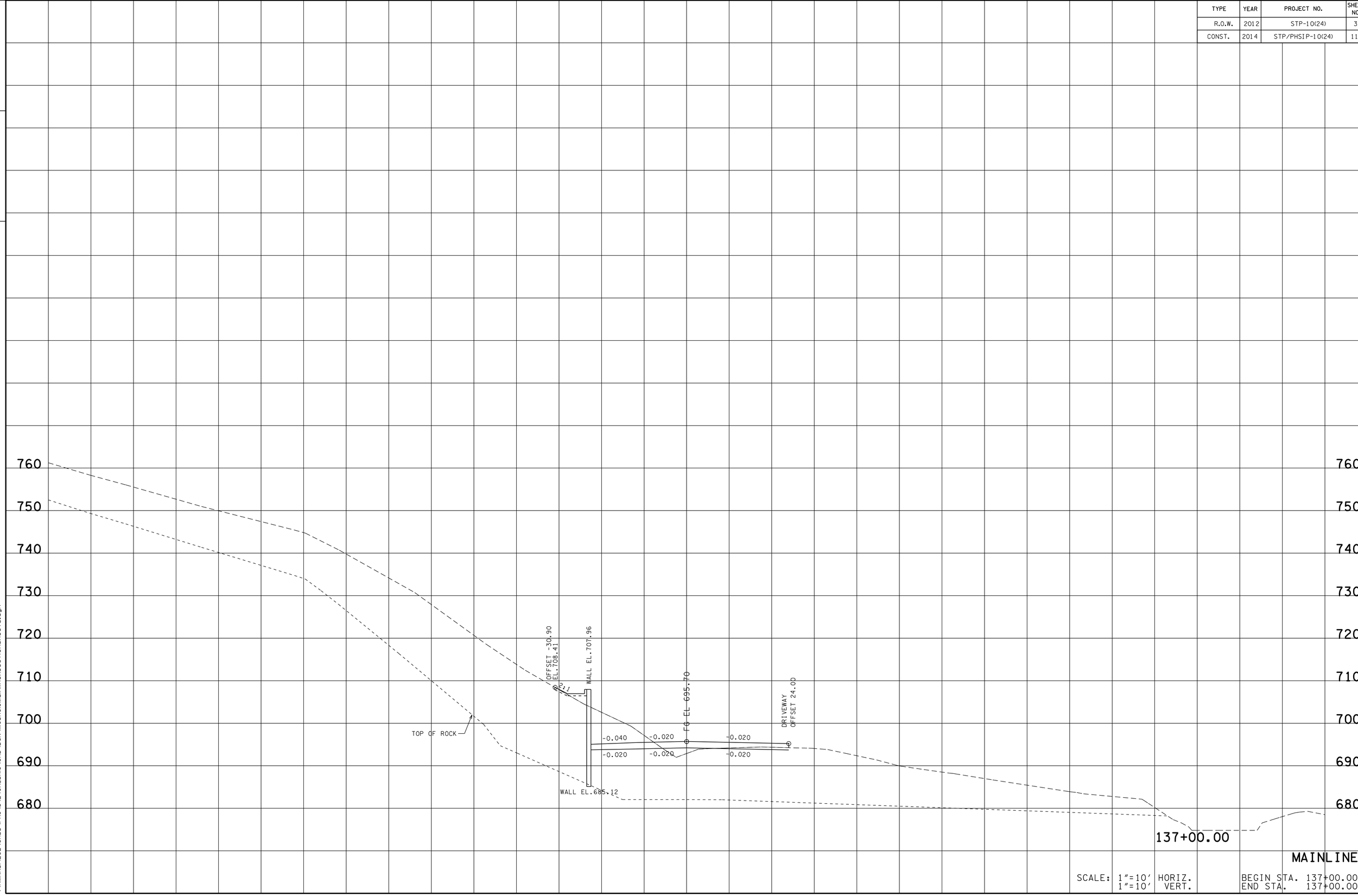
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	31
CONST.	2014	STP/PHSIP-10(24)	114

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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1"=10' VERT.

BEGIN STA. 137+00.00
END STA. 137+00.00

13-MAR-2014 10:57
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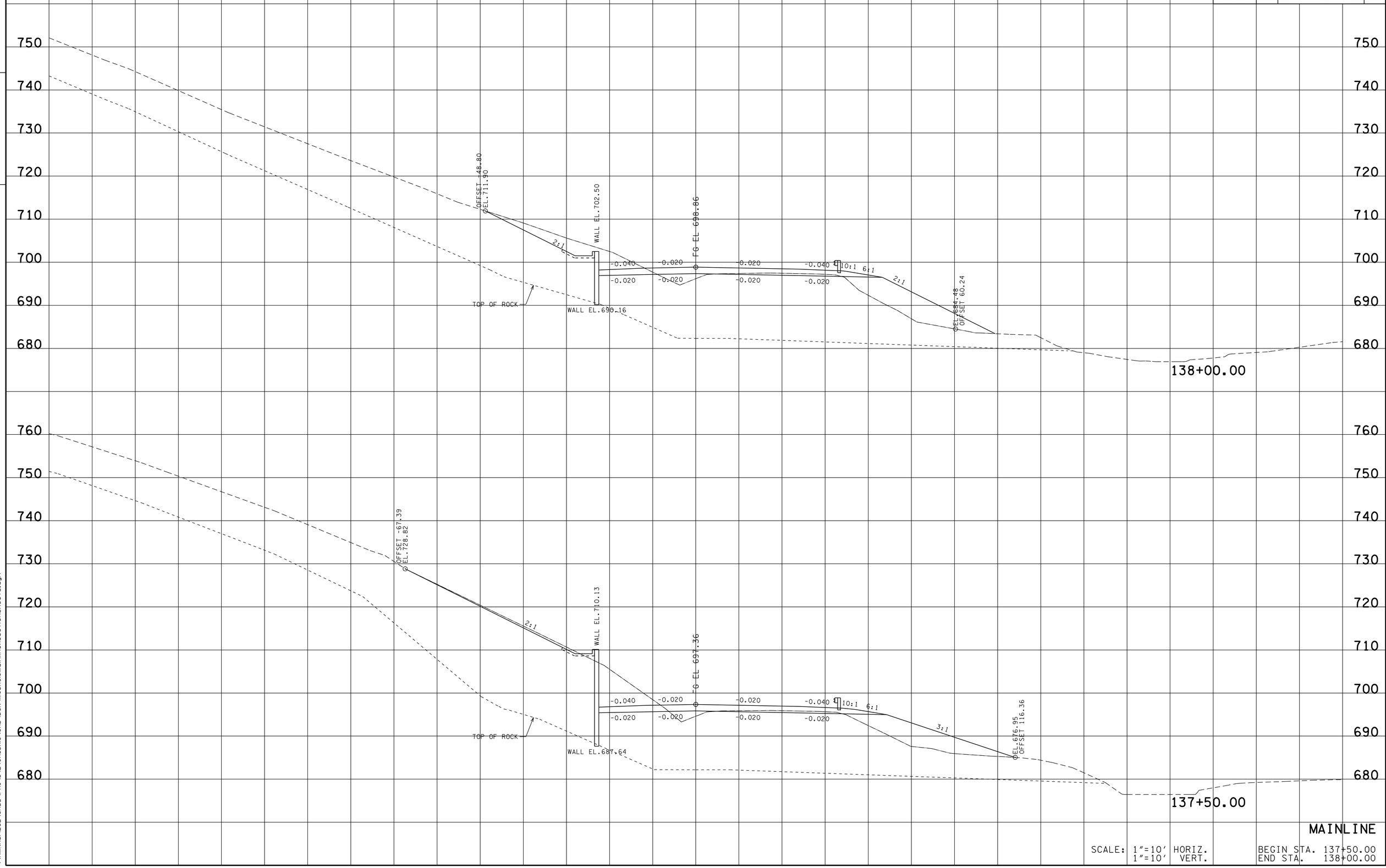
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	32
CONST.	2014	STP/PHSIP-10(24)	115

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



MAINLINE

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1"=10' VERT.

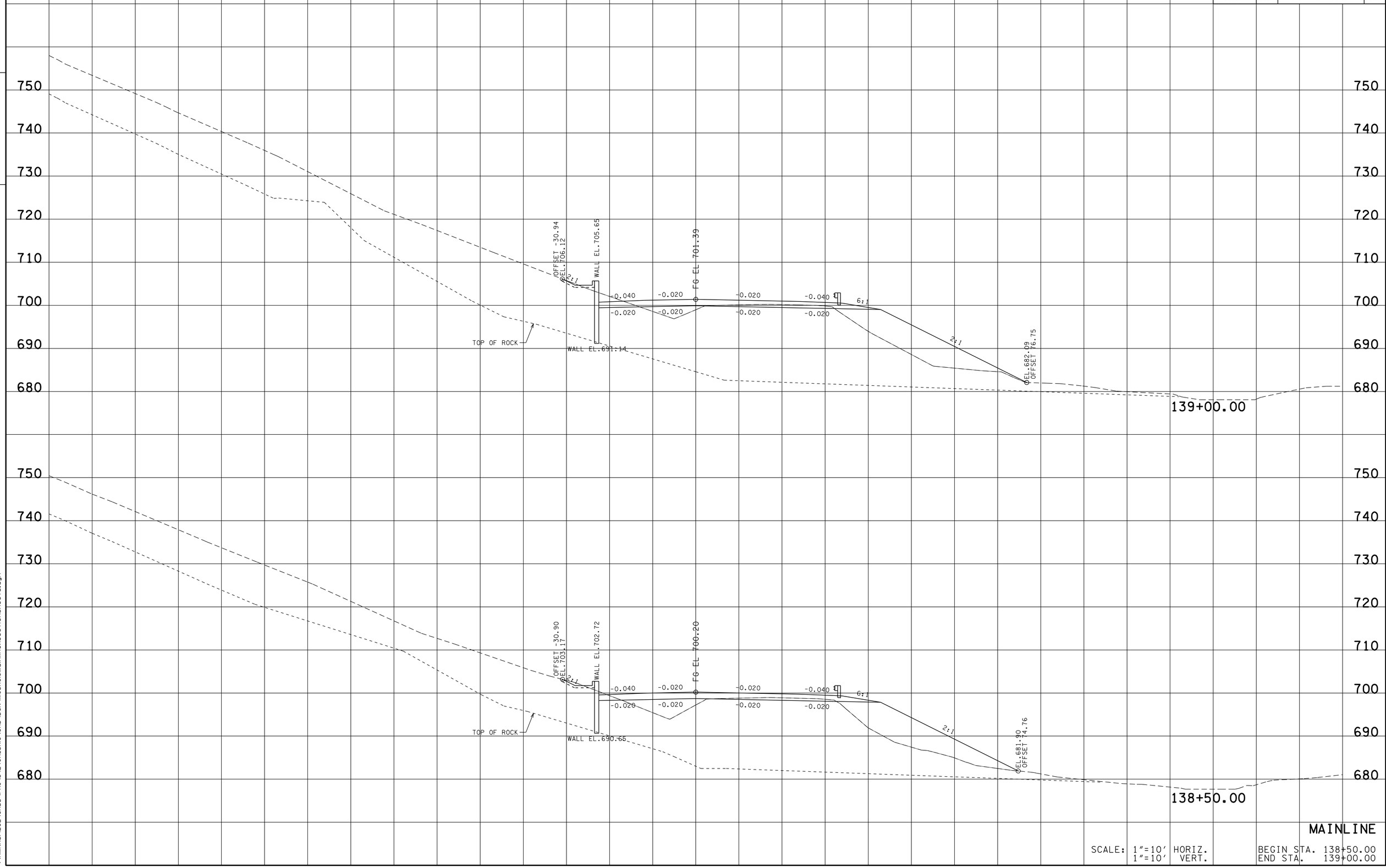
BEGIN STA. 137+50.00
END STA. 138+00.00

13-MAR-2014 10:58
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	33
CONST.	2014	STP/PHSIP-10(24)	116

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

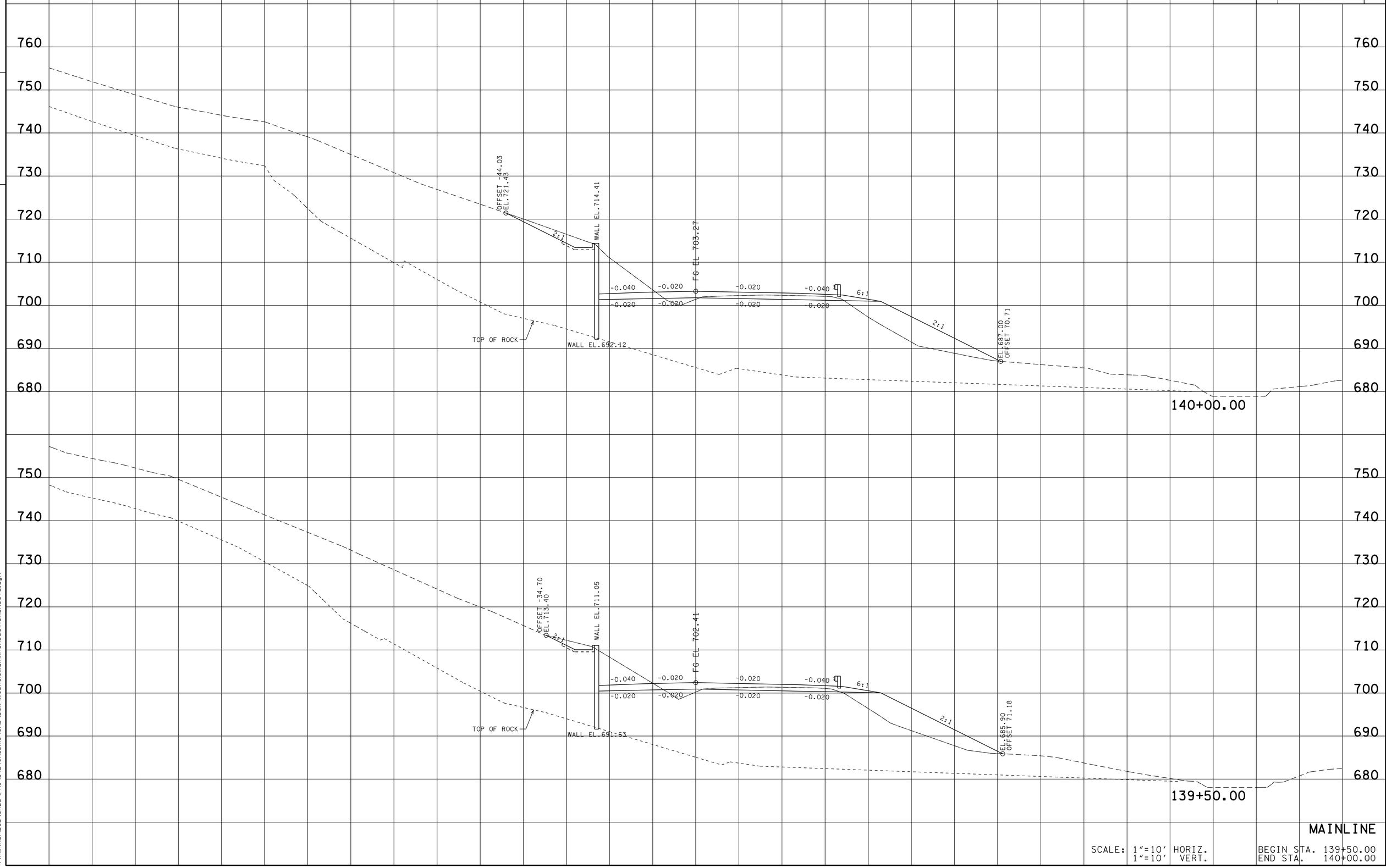
BEGIN STA. 138+50.00
END STA. 139+00.00

13-MAR-2014 10:58
\\AMNASFLO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR10MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	34
CONST.	2014	STP/PHSIP-10(24)	117

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

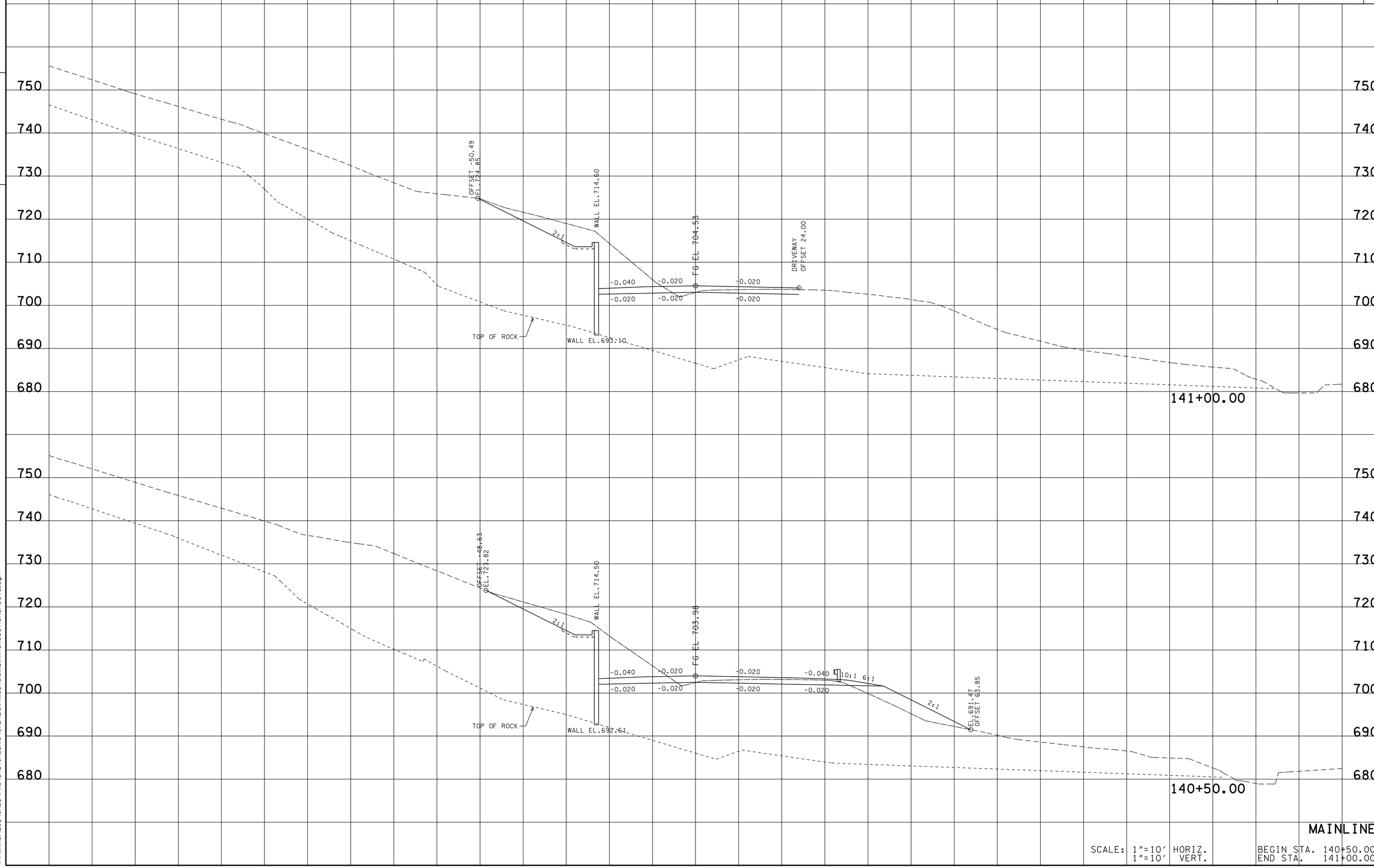
BEGIN STA. 139+50.00
END STA. 140+00.00

13-MAR-2014 10:58
\\AMNASFLO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	35
CONST.	2014	STP/PHSIP-10(24)	118

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 140+50.00
END STA. 141+00.00

13-MAR-2014 10:58
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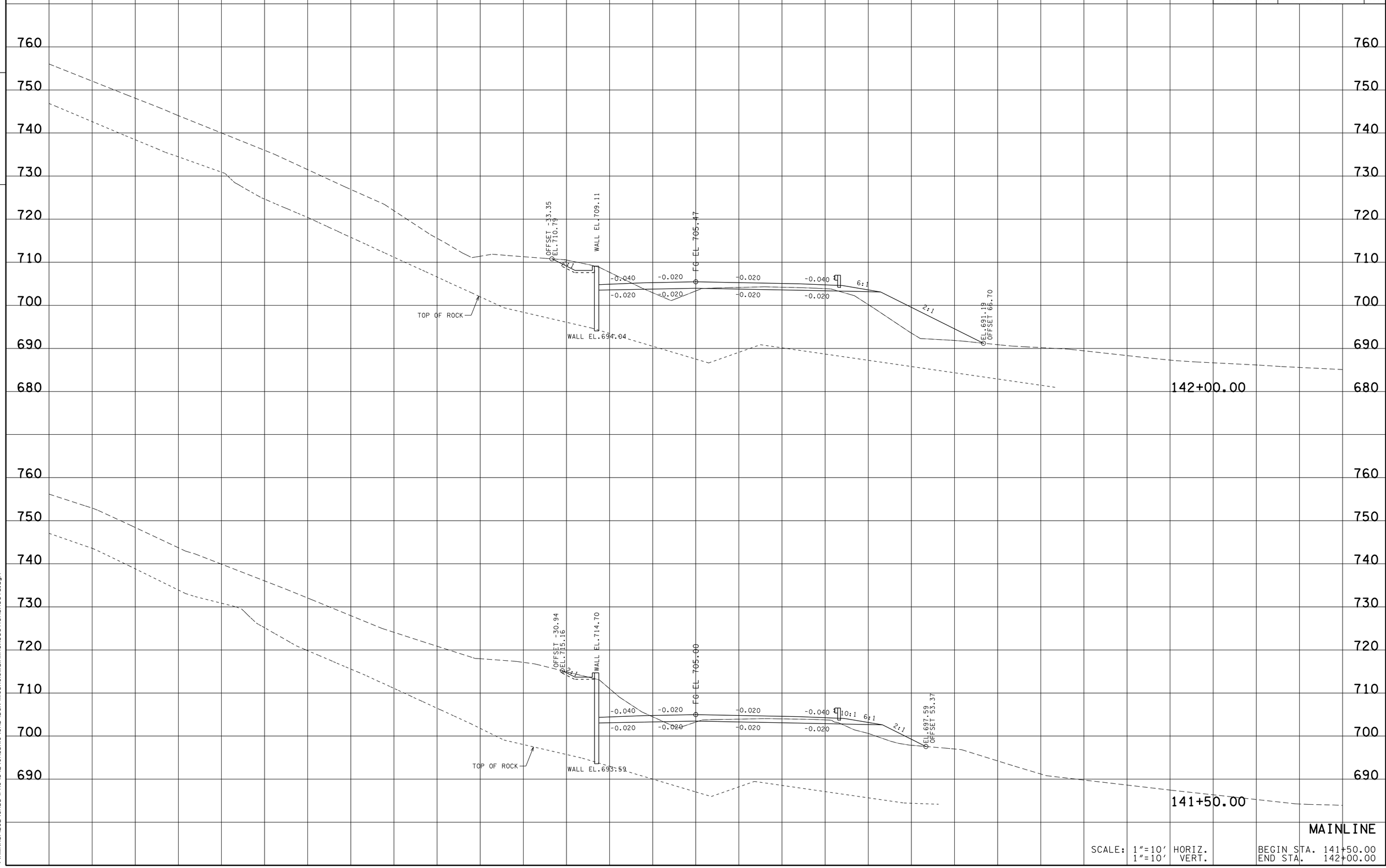
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	36
CONST.	2014	STP/PHSIP-10(24)	119

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

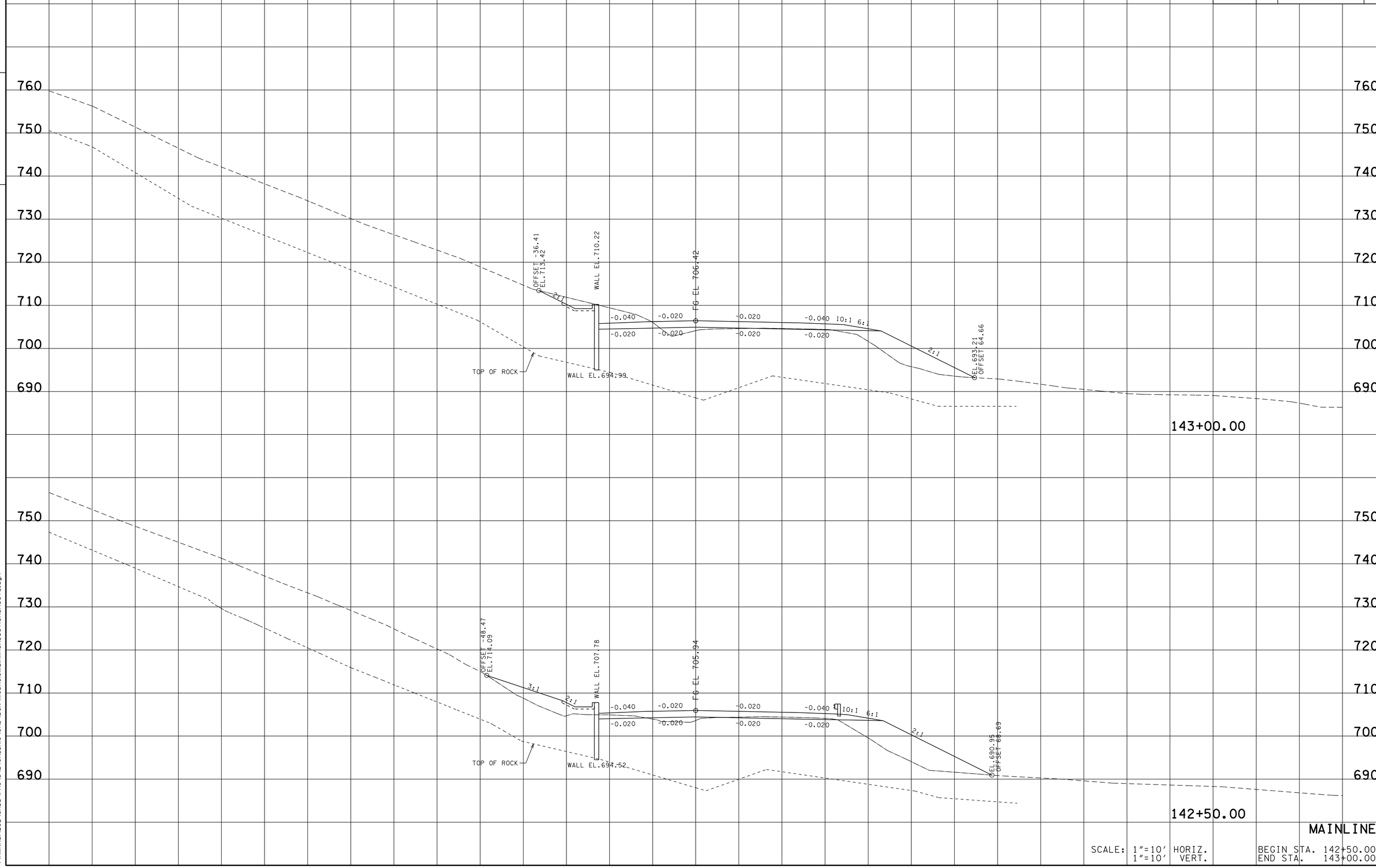
BEGIN STA. 141+50.00
END STA. 142+00.00

13-MAR-2014 10:58
\\AMNASFLO2\CADD\PRJ\34240A_SR10\CADD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	37
CONST.	2014	STP/PHSIP-10(24)	120

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 142+50.00
END STA. 143+00.00

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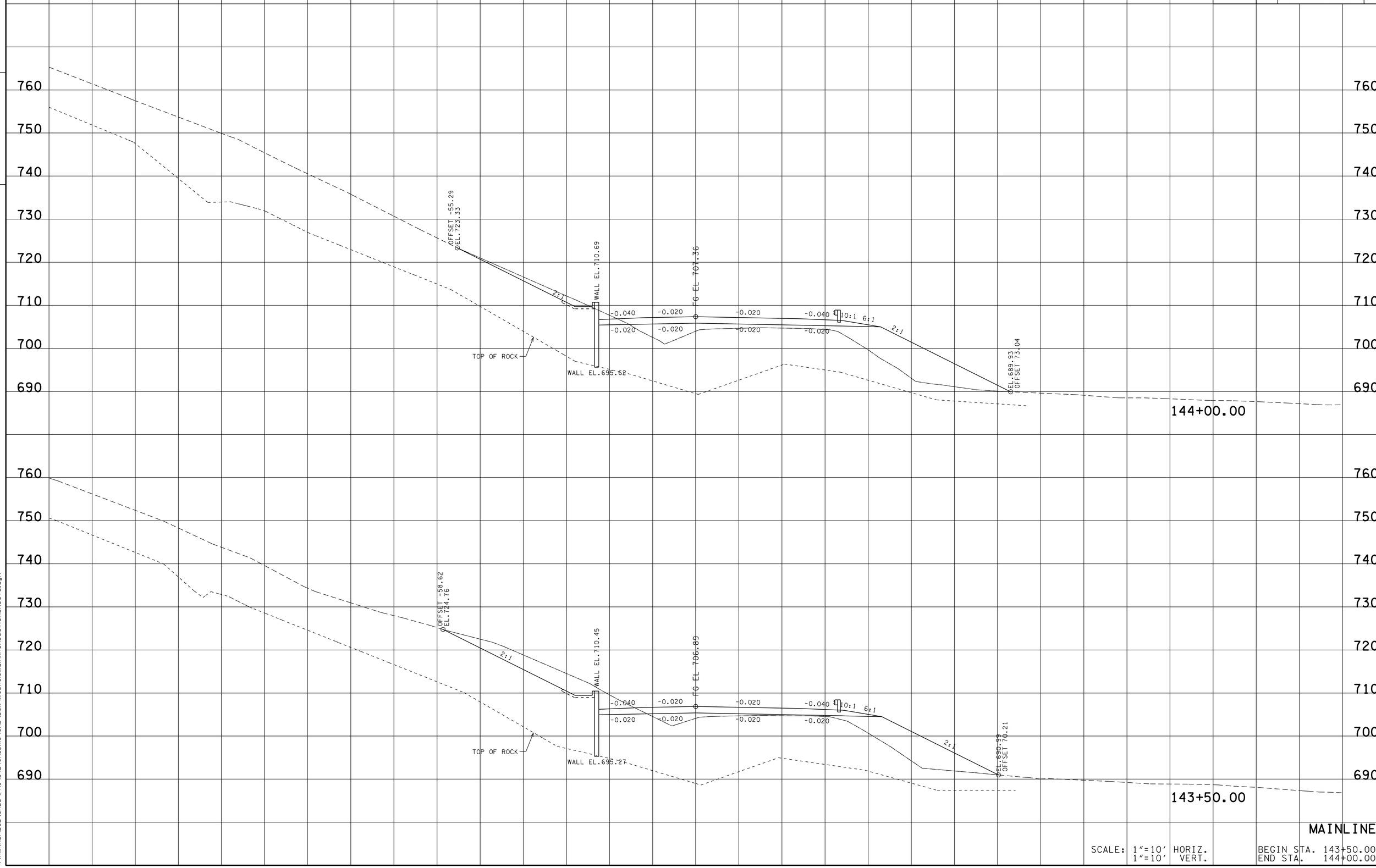
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	38
CONST.	2014	STP/PHSIP-10(24)	121

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 143+50.00
END STA. 144+00.00

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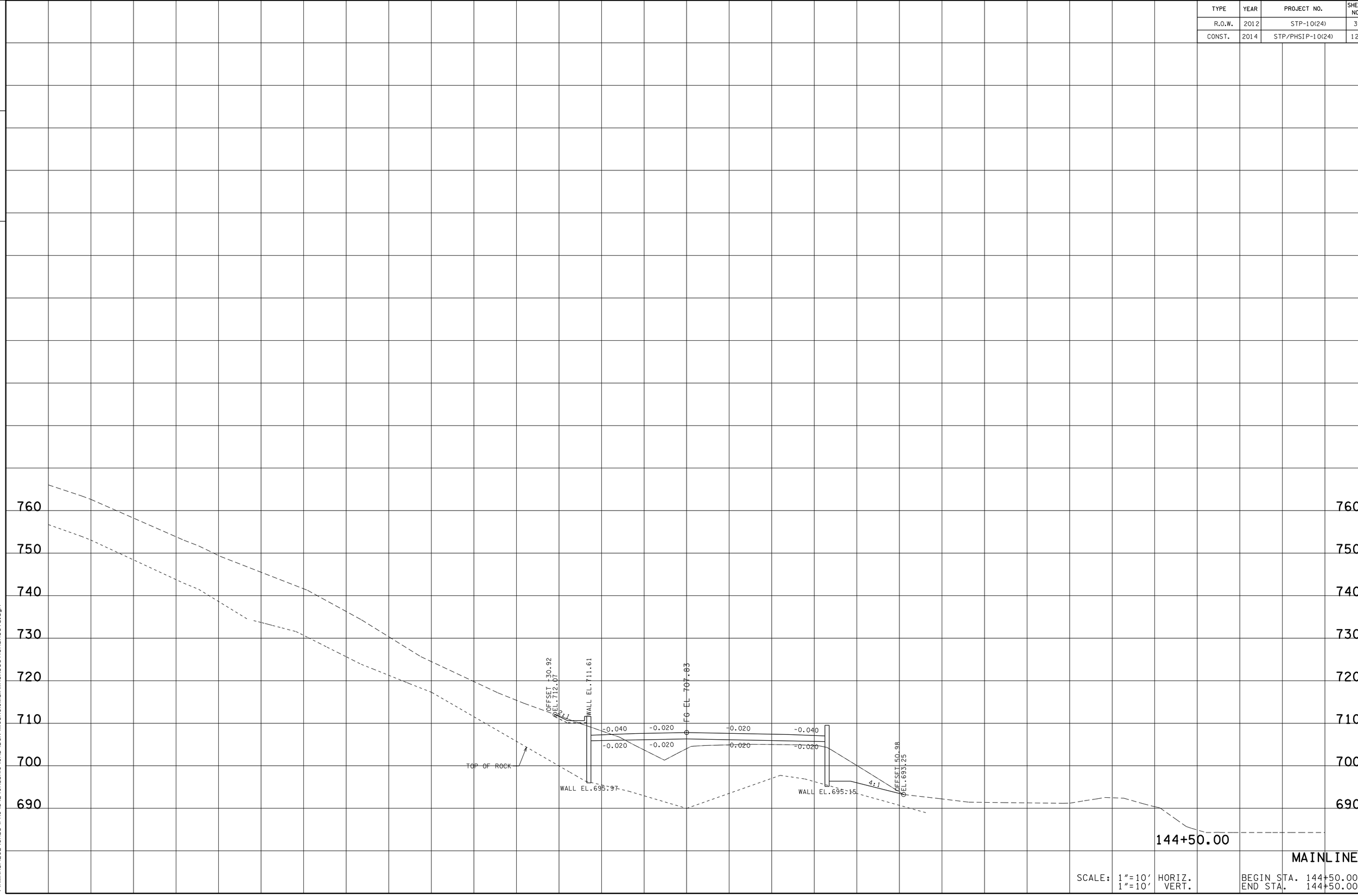
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	39
CONST.	2014	STP/PHSIP-10(24)	122

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 144+50.00
END STA. 144+50.00

13-MAR-2014 10:58
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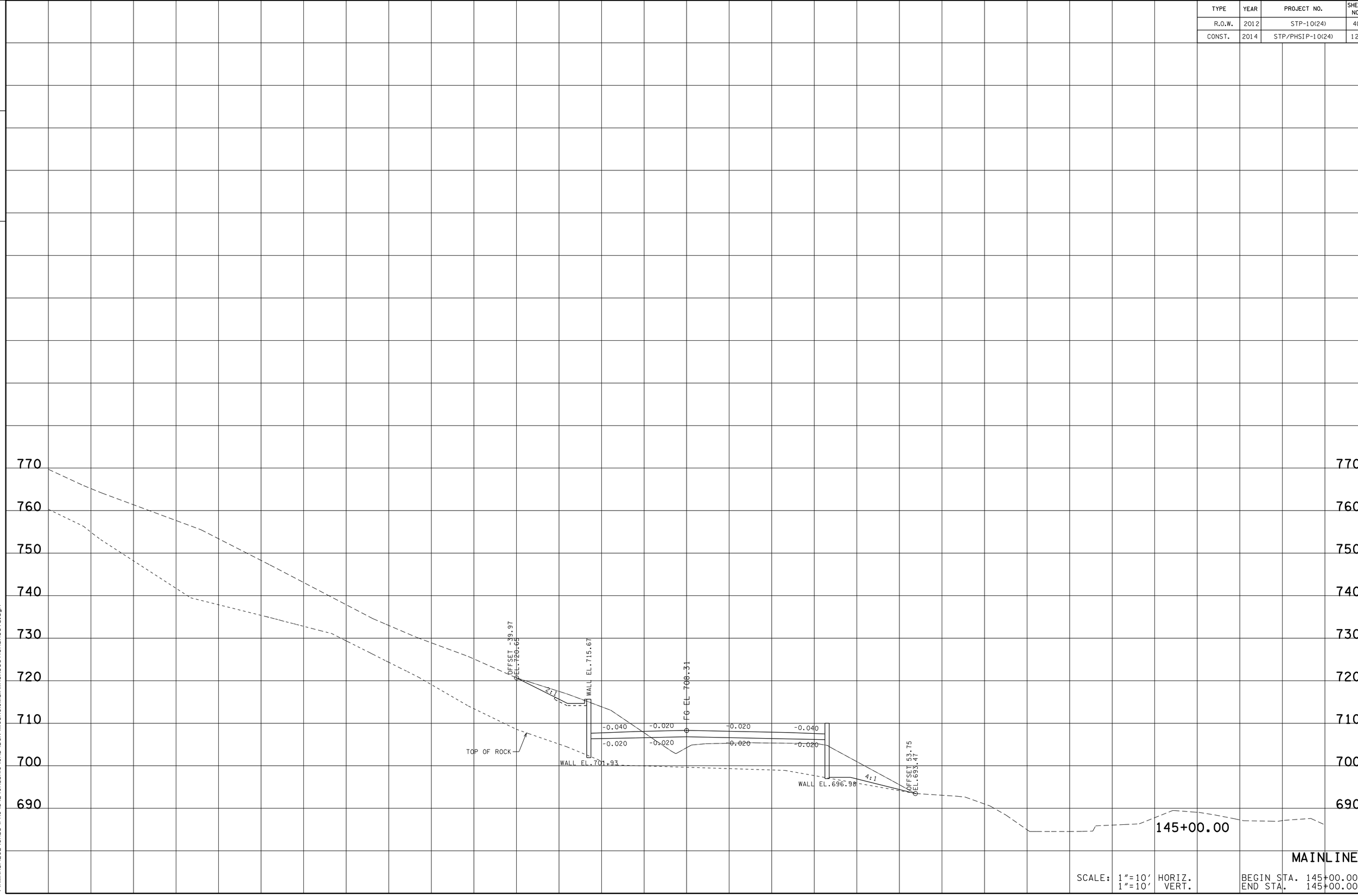
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	40
CONST.	2014	STP/PHSIP-10(24)	123

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 145+00.00
END STA. 145+00.00

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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	41
CONST.	2014	STP/PHSIP-10(24)	124

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 145+50.00
END STA. 145+50.00

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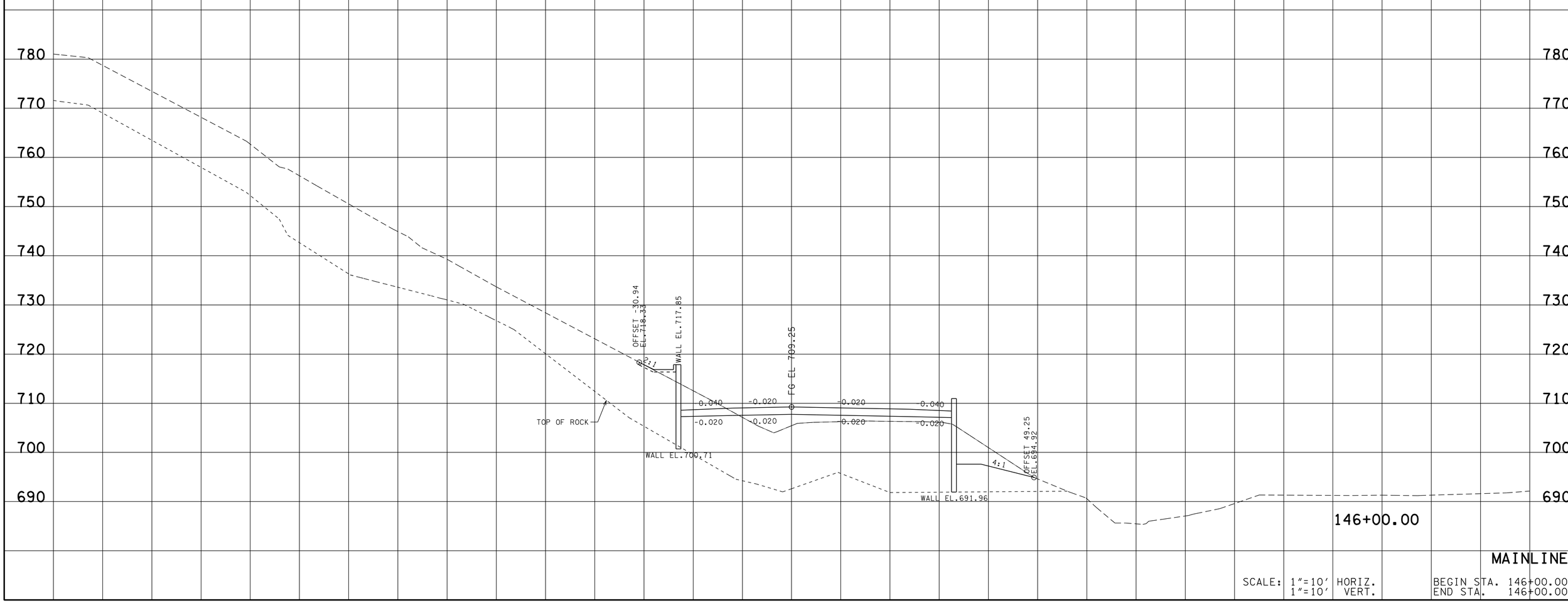
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	42
CONST.	2014	STP/PHSIP-10(24)	125

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 146+00.00
END STA. 146+00.00

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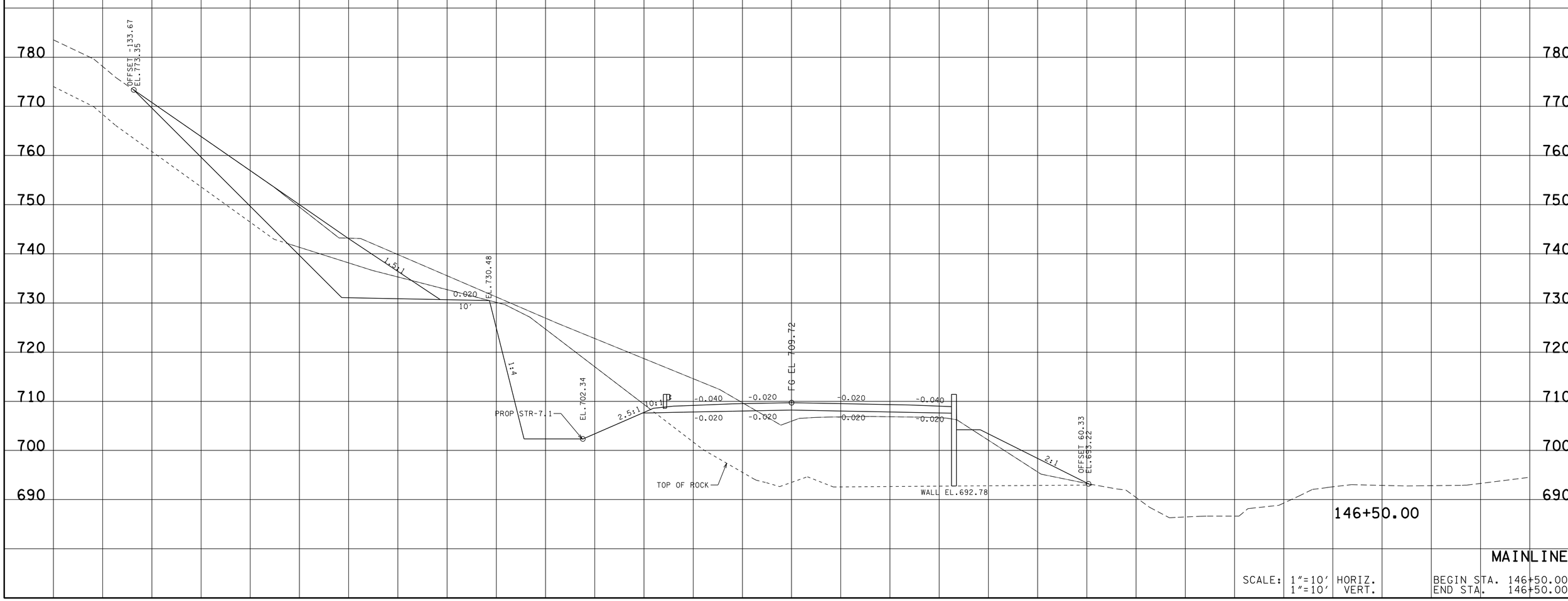
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	43
CONST.	2014	STP/PHSIP-10(24)	126



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SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 146+50.00
END STA. 146+50.00

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.

13-MAR-2014 10:58
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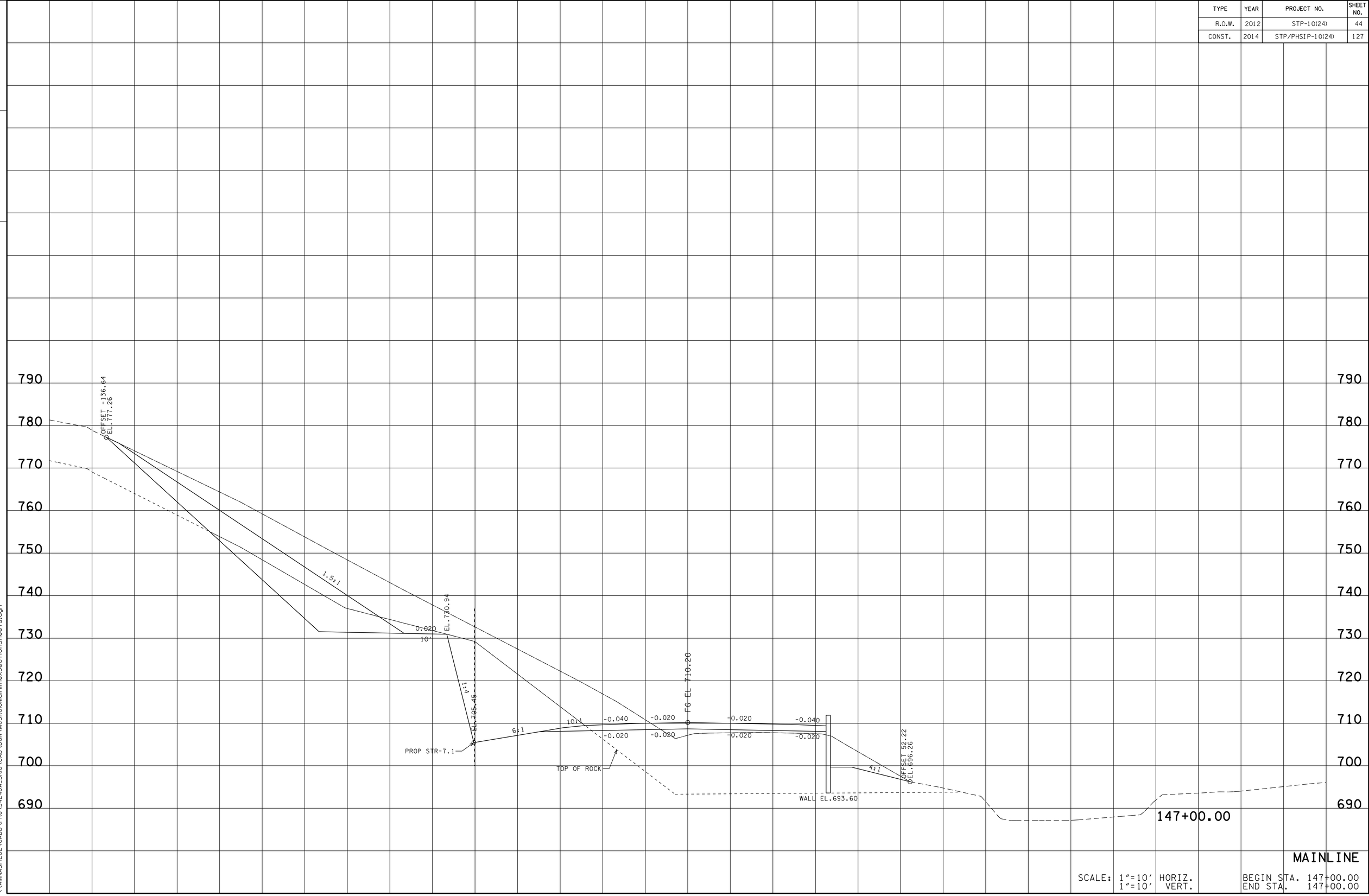
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	44
CONST.	2014	STP/PHSIP-10(24)	127



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 147+00.00
END STA. 147+00.00

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.

13-MAR-2014 10:58
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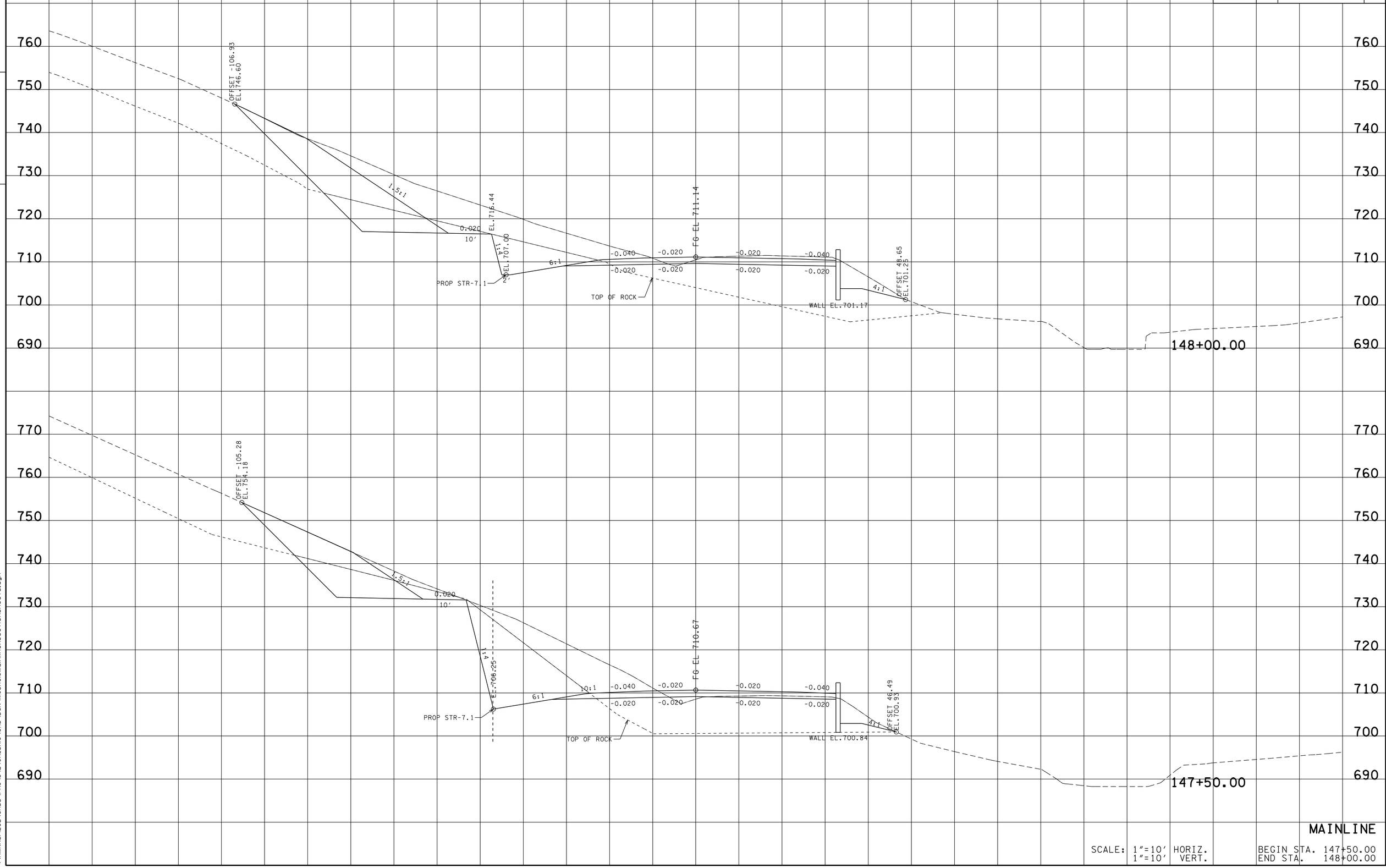
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	45
CONST.	2014	STP/PHSIP-10(24)	128

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 147+50.00
END STA. 148+00.00

13-MAR-2014 10:58
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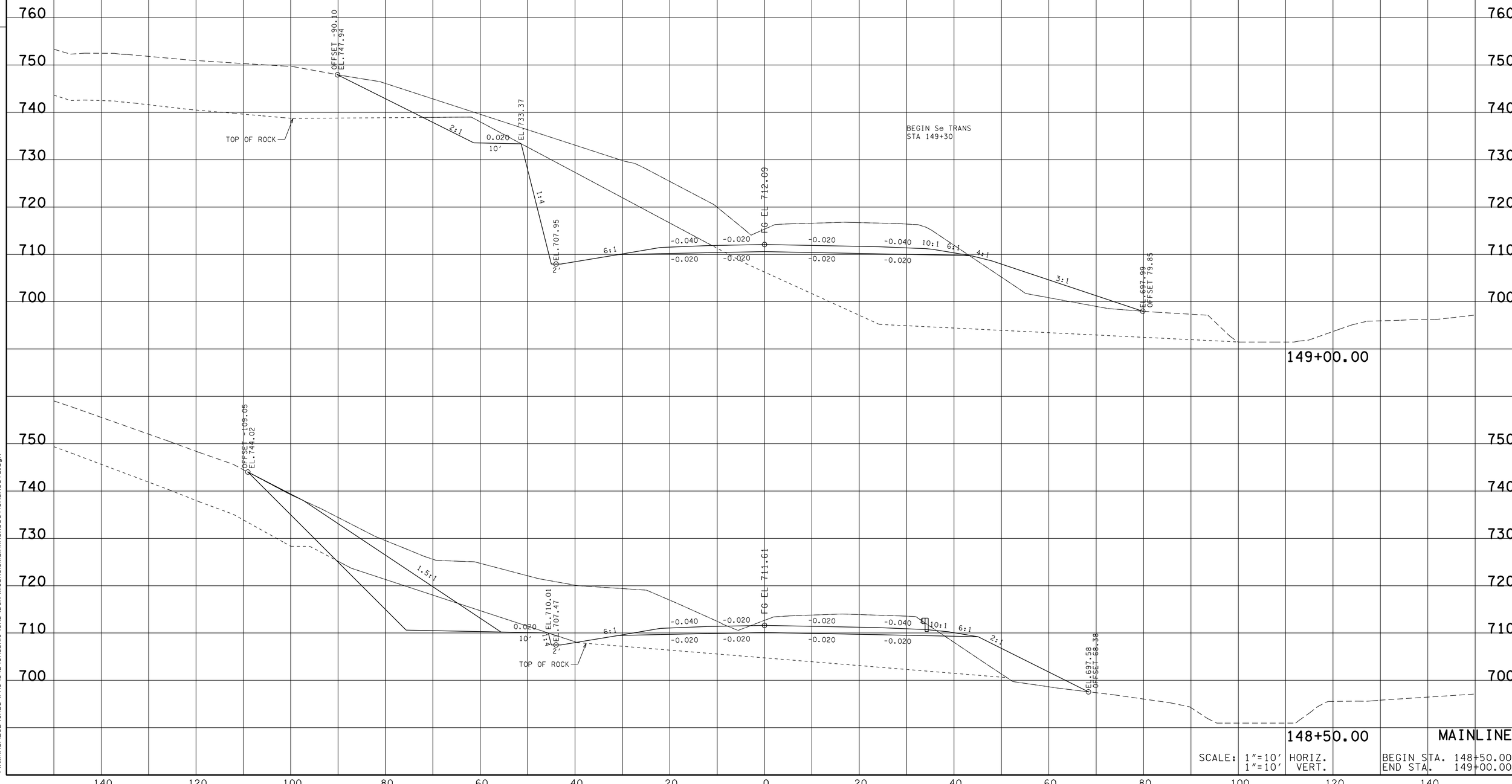
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	46
CONST.	2014	STP/PHSIP-10(24)	129

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

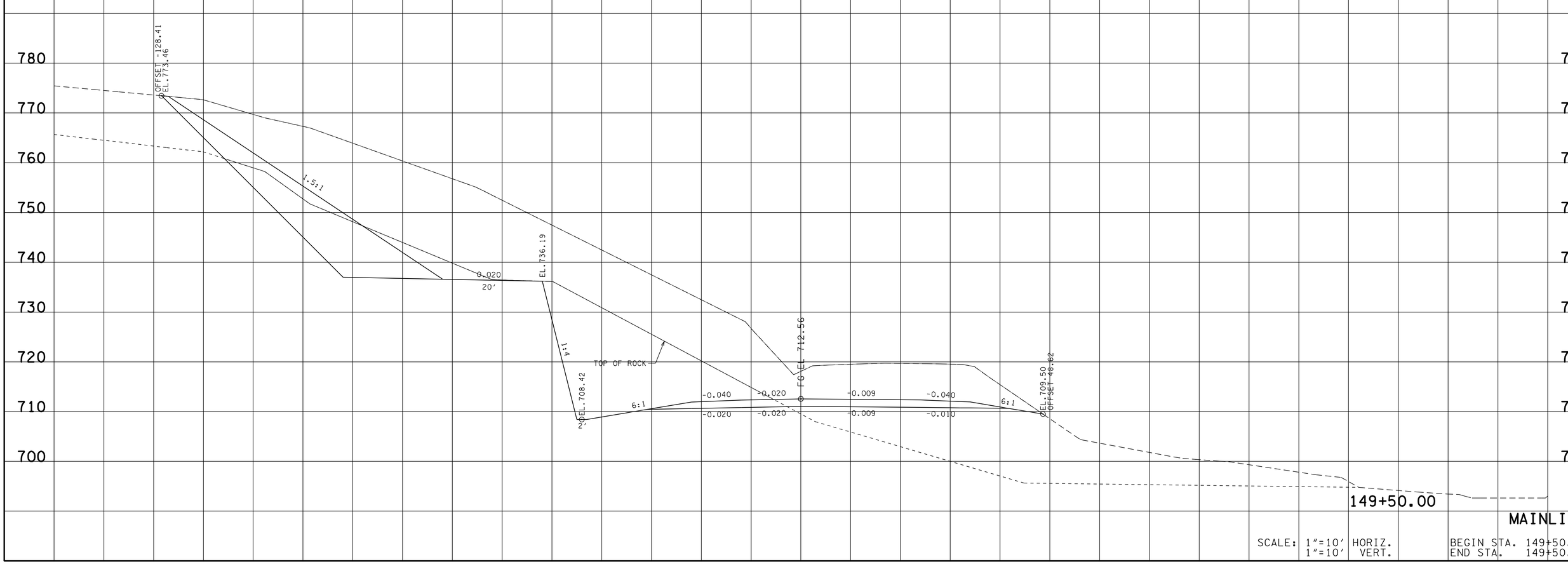
SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 148+50.00
END STA. 149+00.00

13-MAR-2014 10:58
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR01MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	47
CONST.	2014	STP/PHSIP-10(24)	130

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



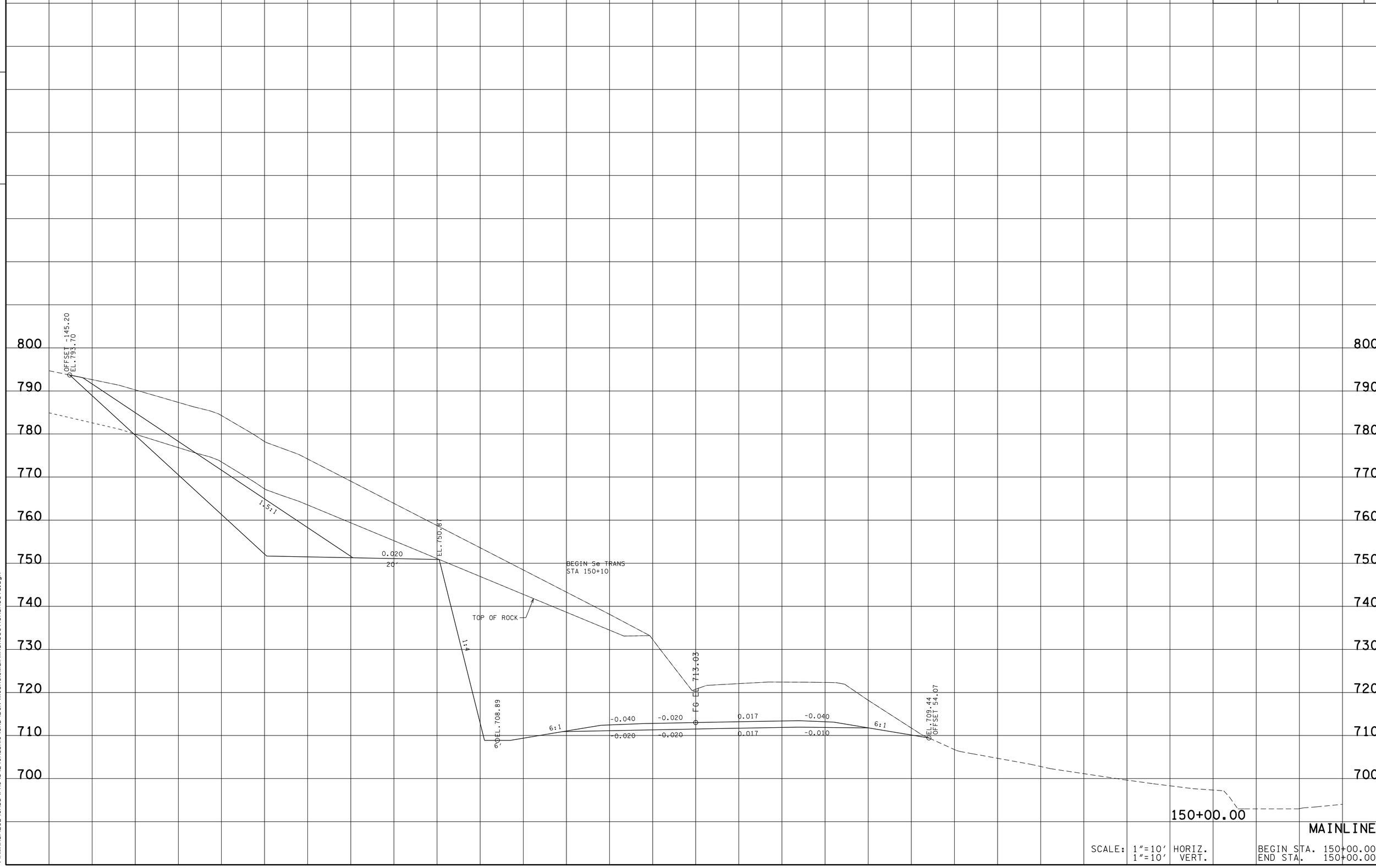
MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 149+50.00
END STA. 149+50.00

13-MAR-2014 10:58
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR01MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	48
CONST.	2014	STP/PHSIP-10(24)	131



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 150+00.00
END STA. 150+00.00

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.

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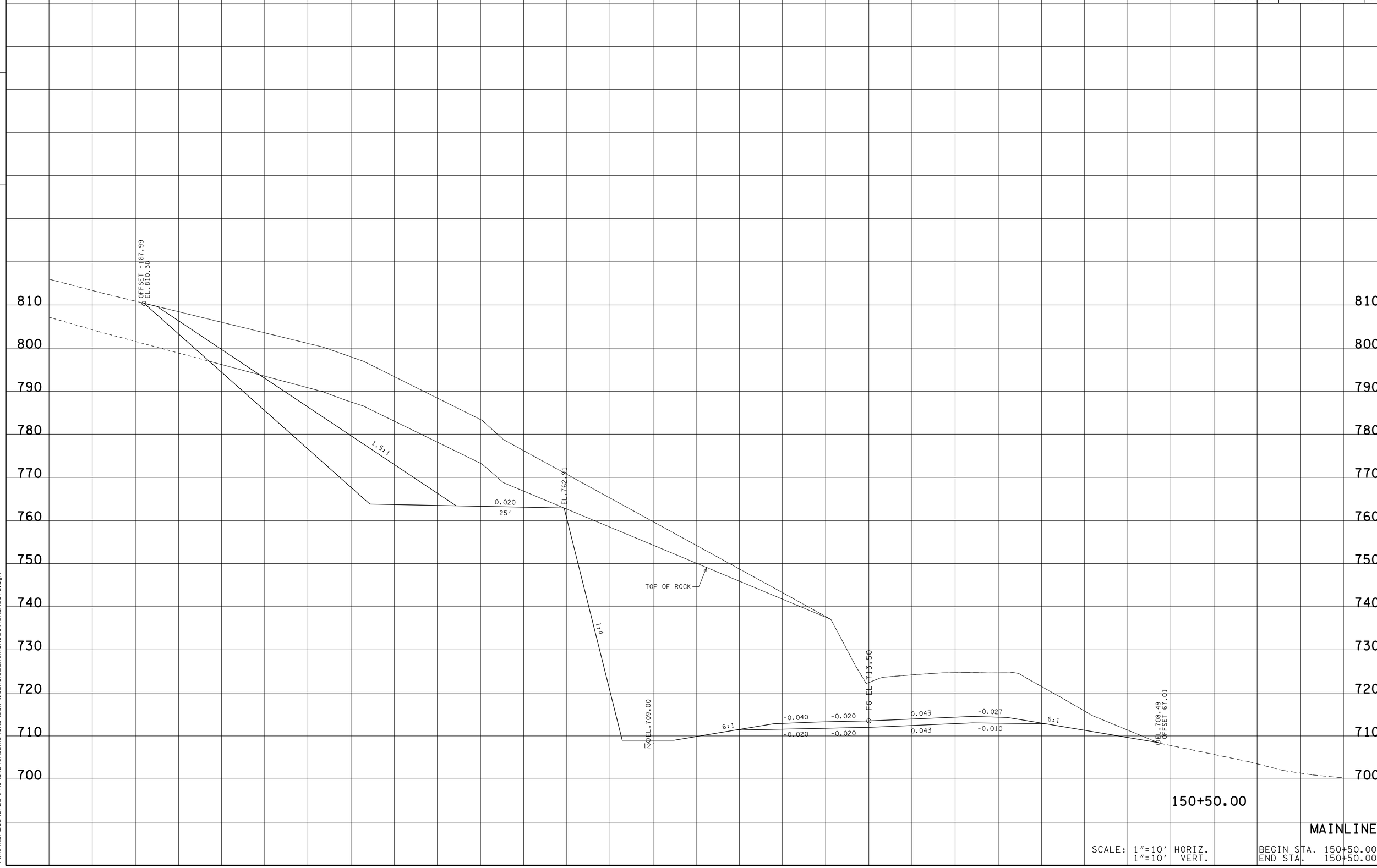
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	49
CONST.	2014	STP/PHSIP-10(24)	132

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 150+50.00
END STA. 150+50.00

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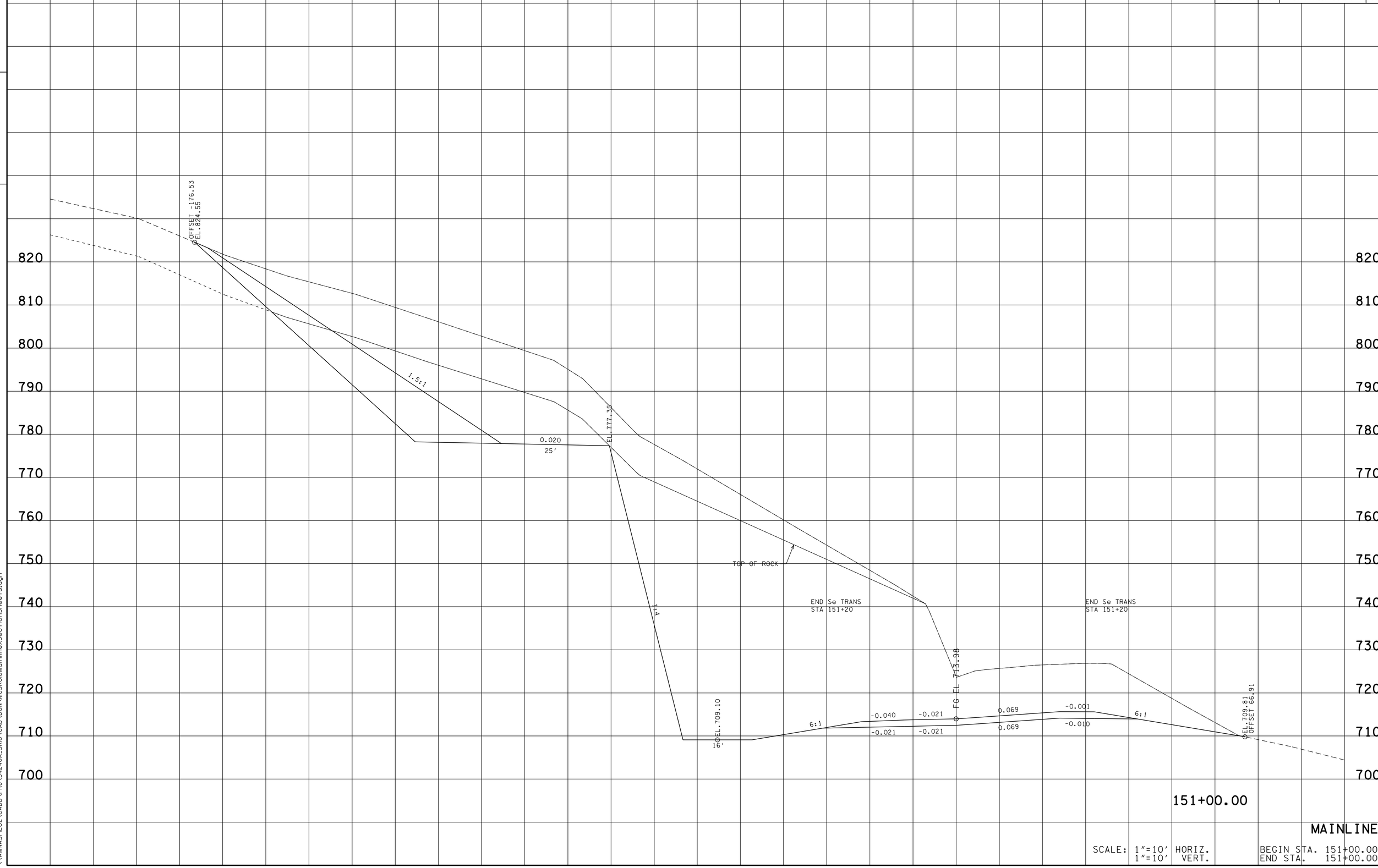
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	50
CONST.	2014	STP/PHSIP-10(24)	133

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



13-MAR-2014 10:58
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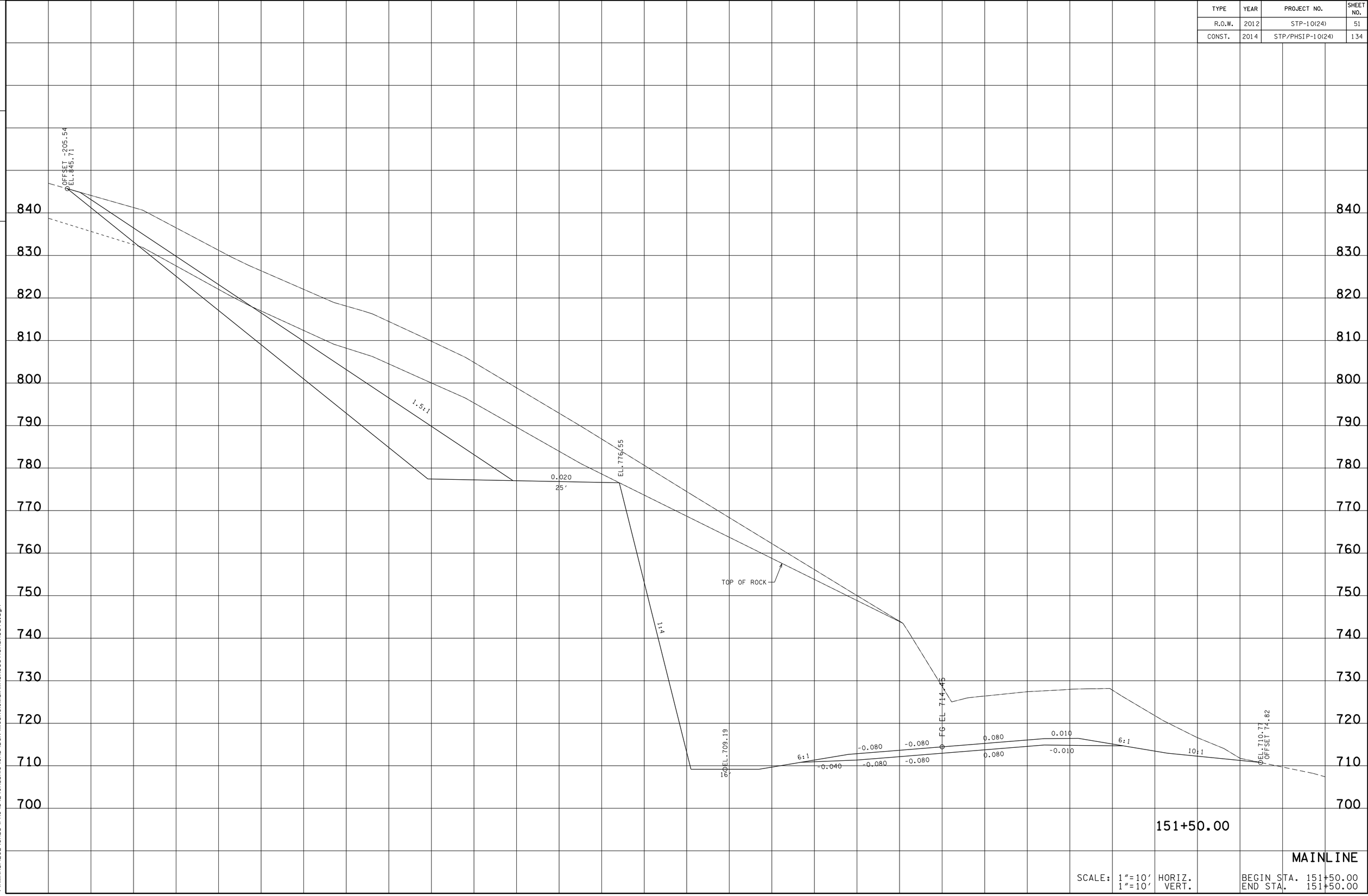
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	51
CONST.	2014	STP/PHSIP-10(24)	134

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



13-MAR-2014 10:58
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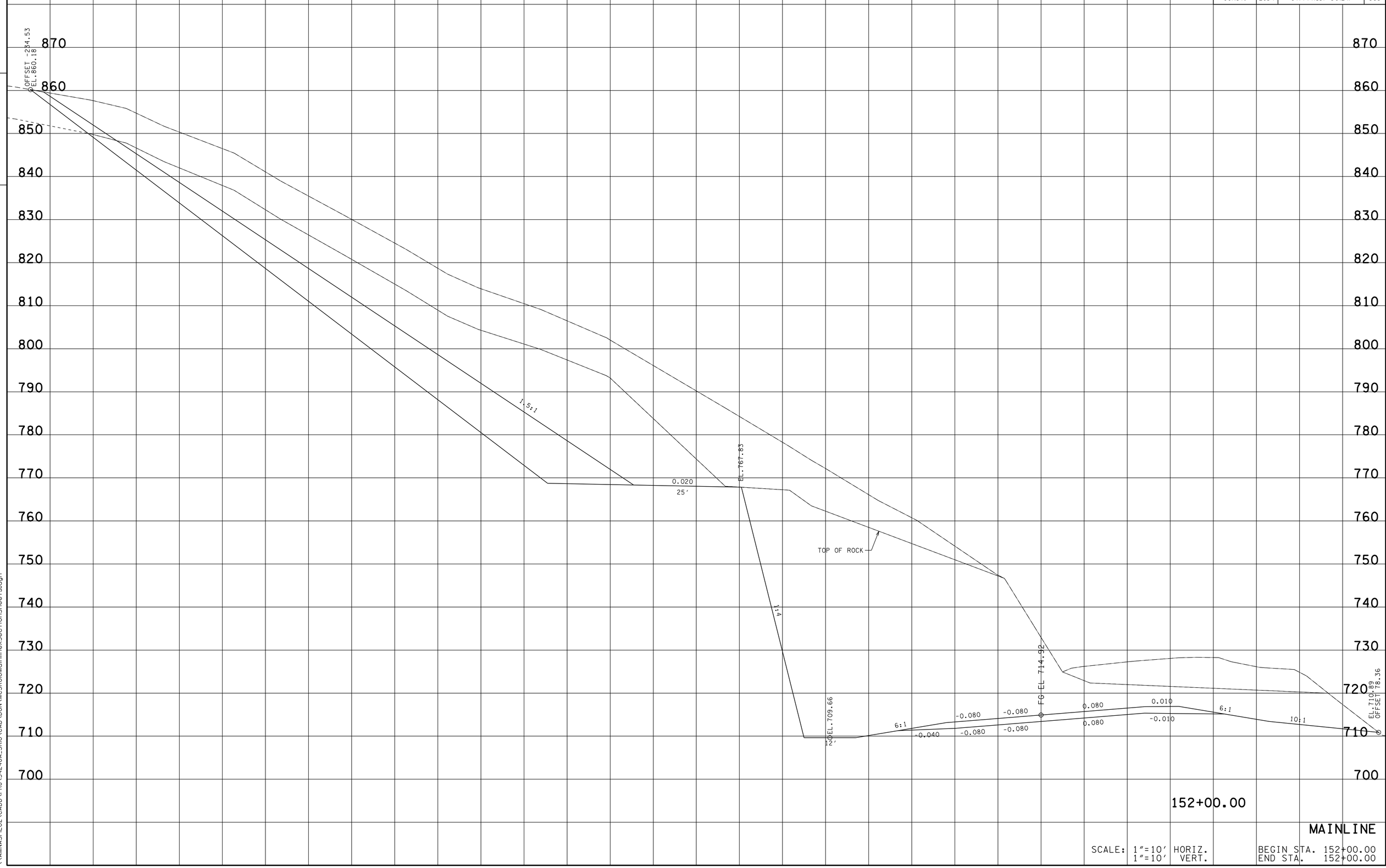
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	52
CONST.	2014	STP/PHSIP-10(24)	135



152+00.00

MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 152+00.00
END STA. 152+00.00

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

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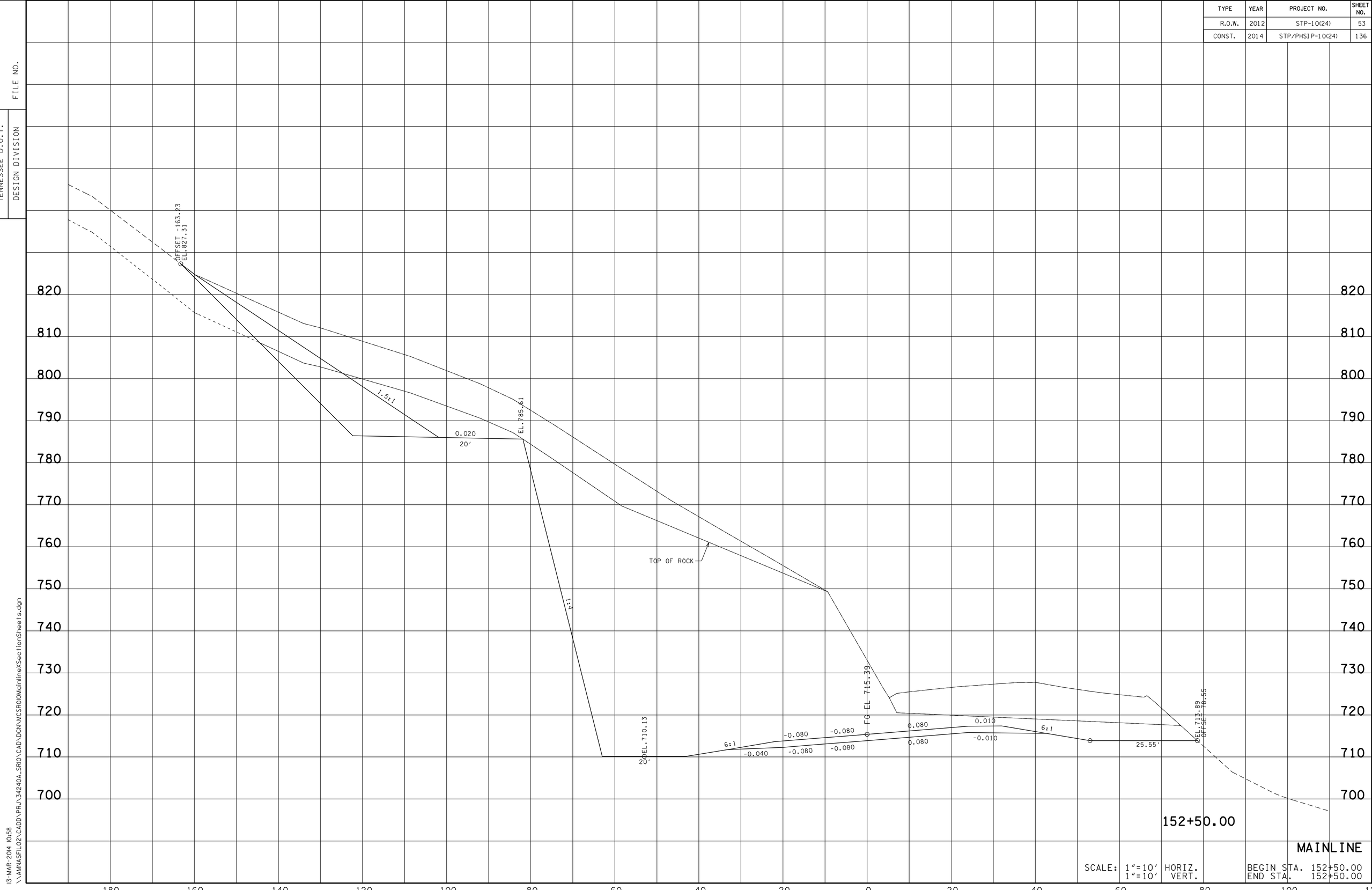
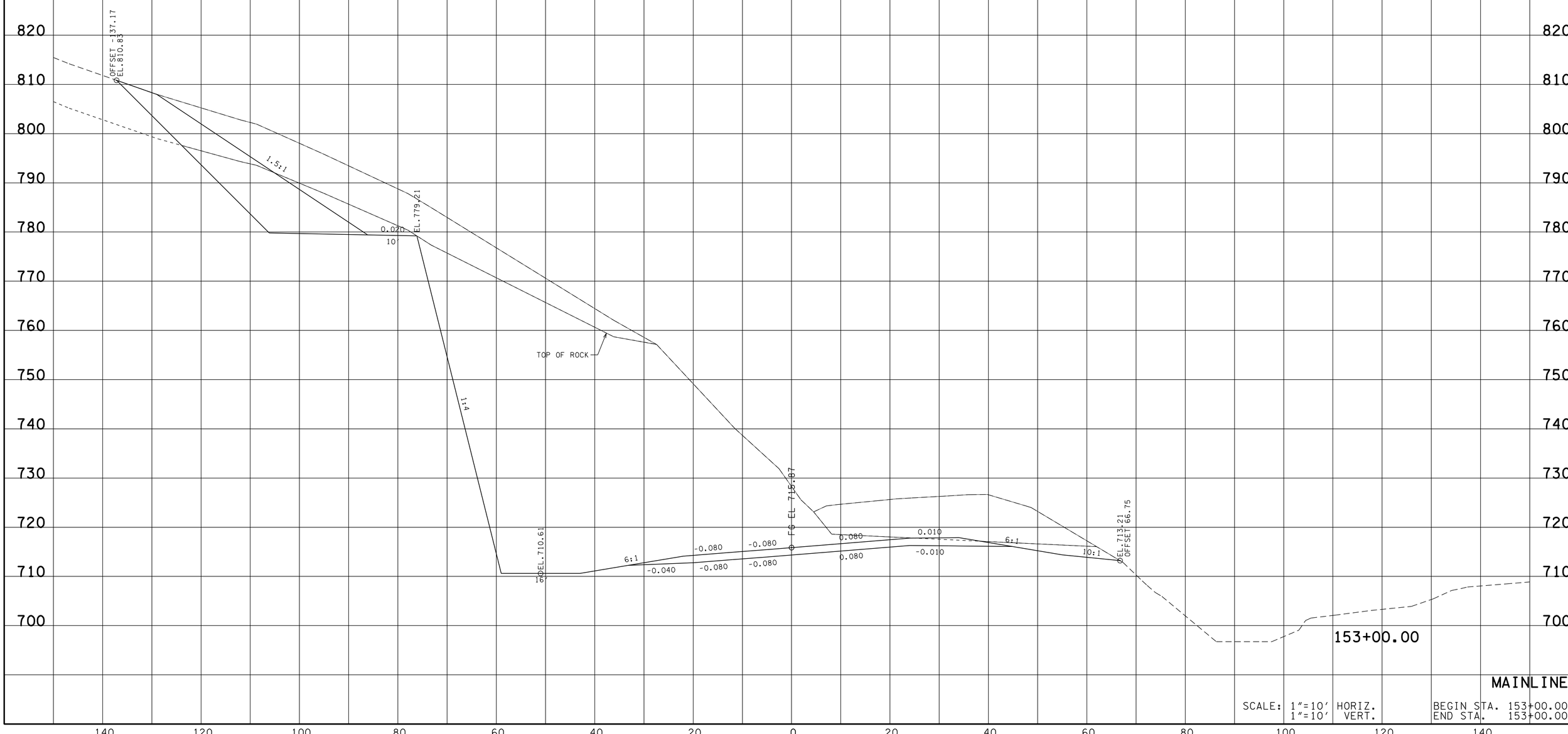
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	53
CONST.	2014	STP/PHSIP-10(24)	136



TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	54
CONST.	2014	STP/PHSIP-10(24)	137

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 153+00.00
END STA. 153+00.00

13-MAR-2014 10:58
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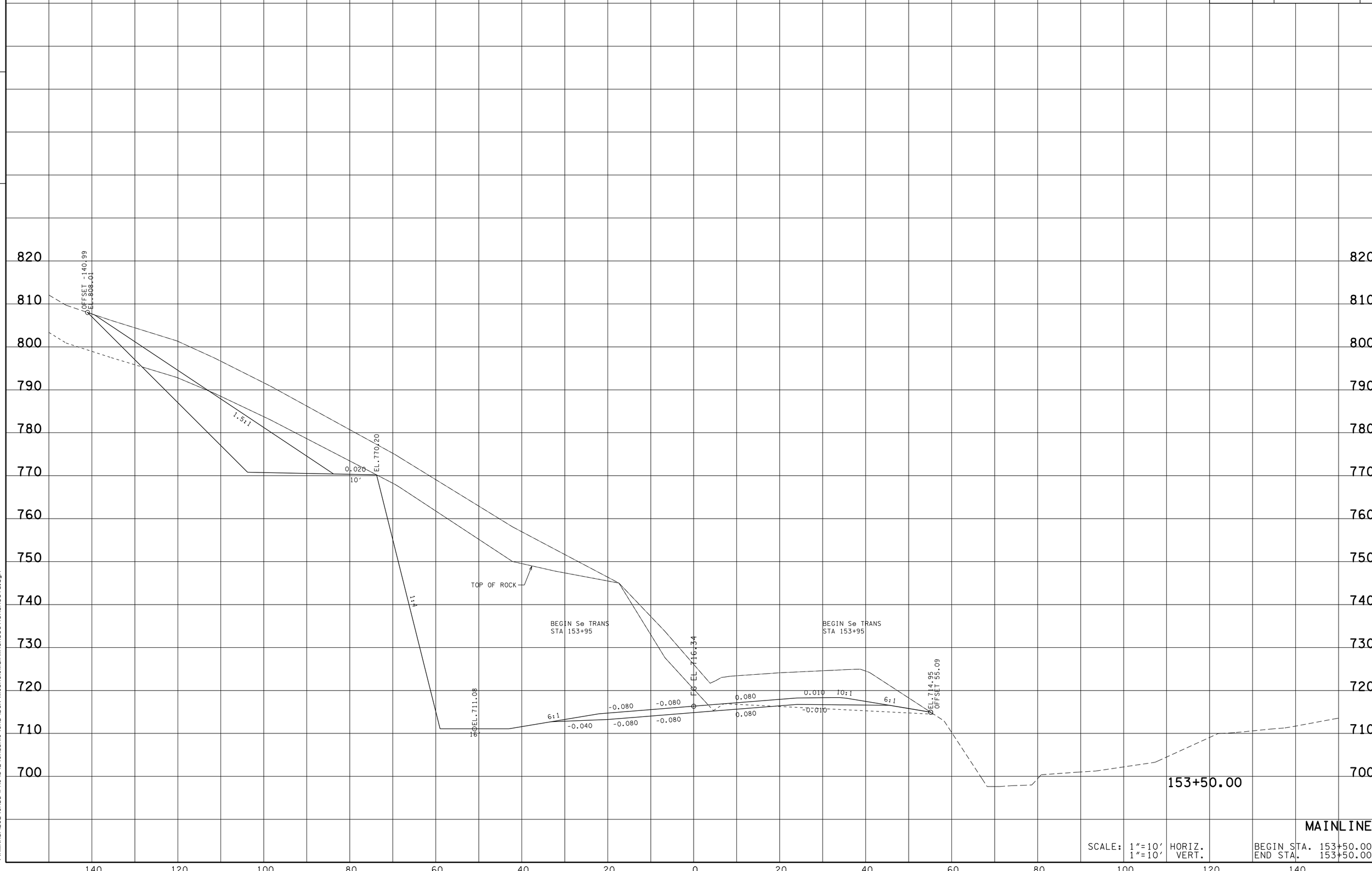
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	55
CONST.	2014	STP/PHSIP-10(24)	138

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 153+50.00
END STA. 153+50.00

13-MAR-2014 10:58
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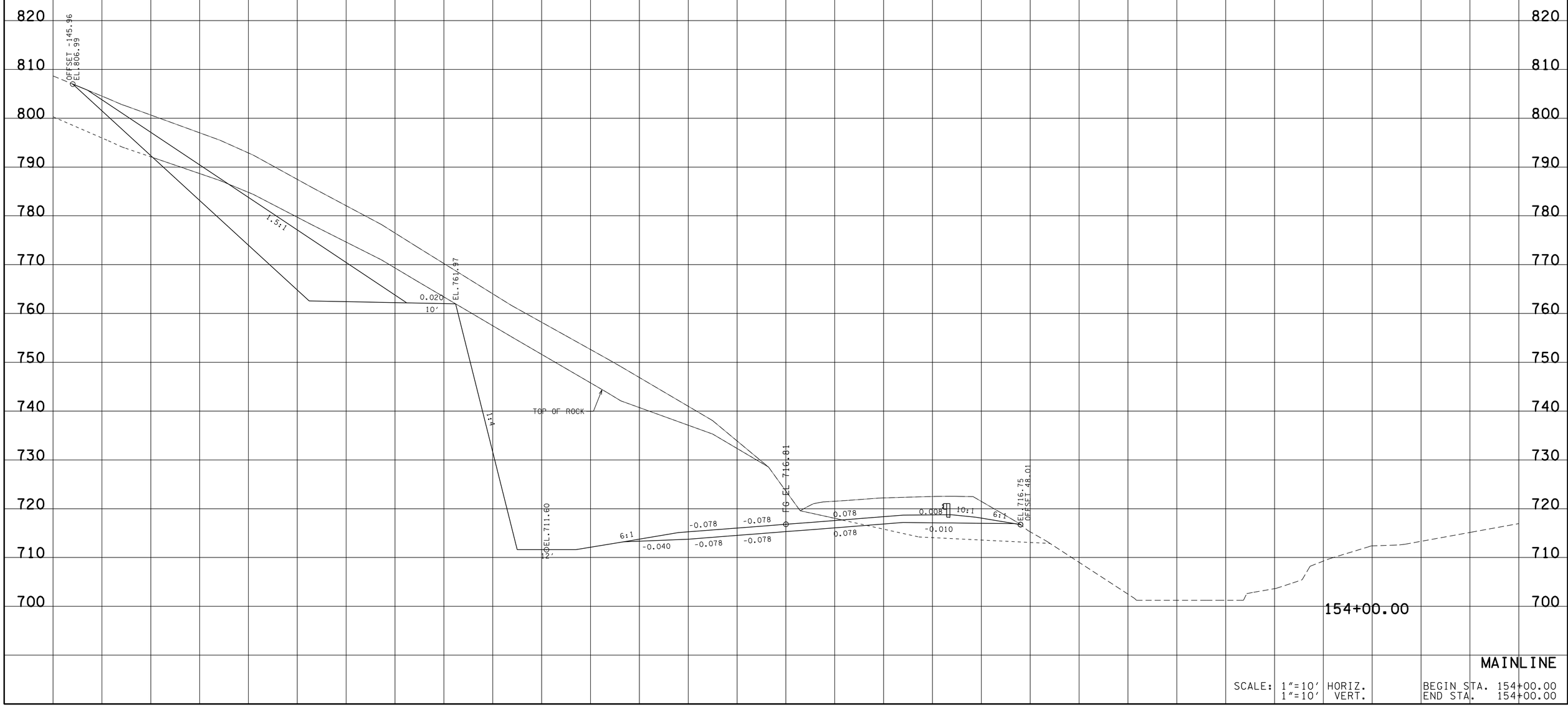
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	56
CONST.	2014	STP/PHSIP-10(24)	139

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 154+00.00
END STA. 154+00.00

13-MAR-2014 10:58
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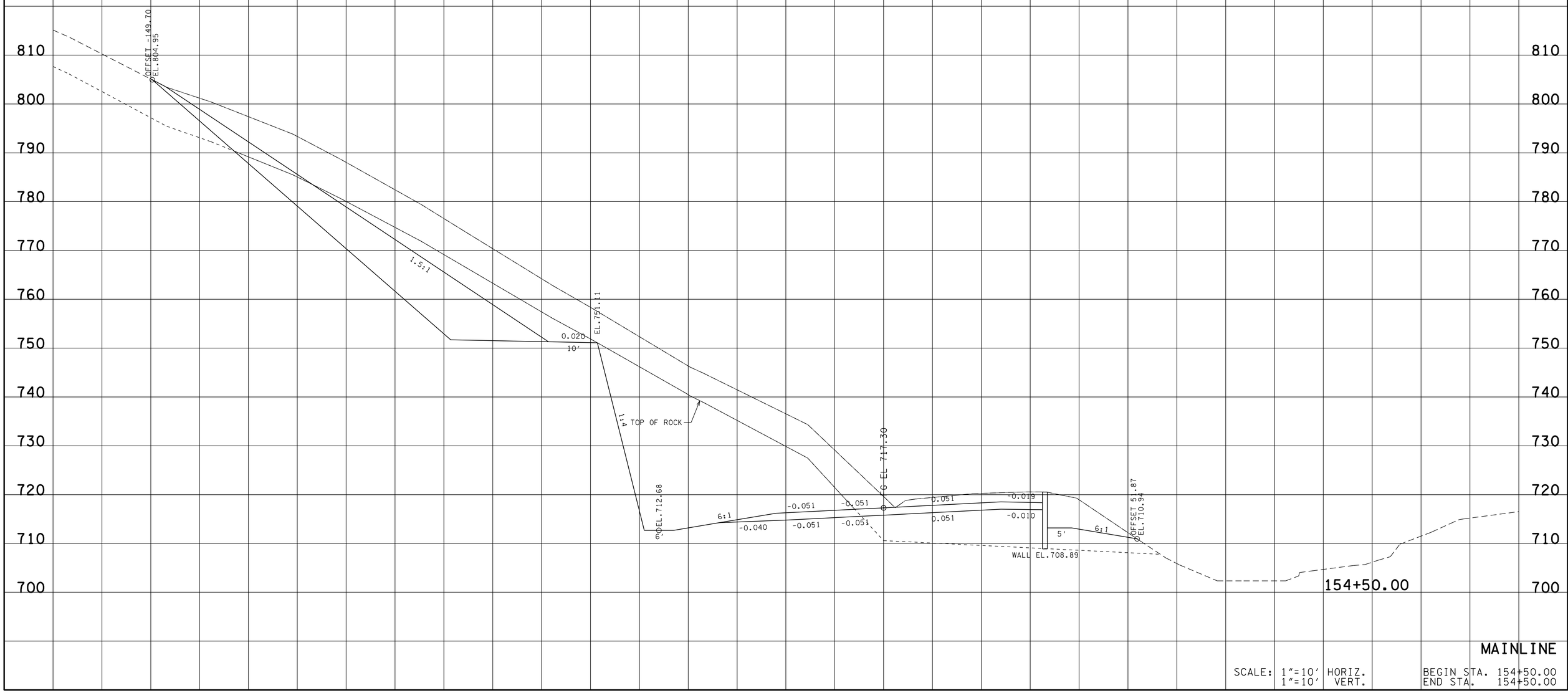
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	57
CONST.	2014	STP/PHSIP-10(24)	140

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



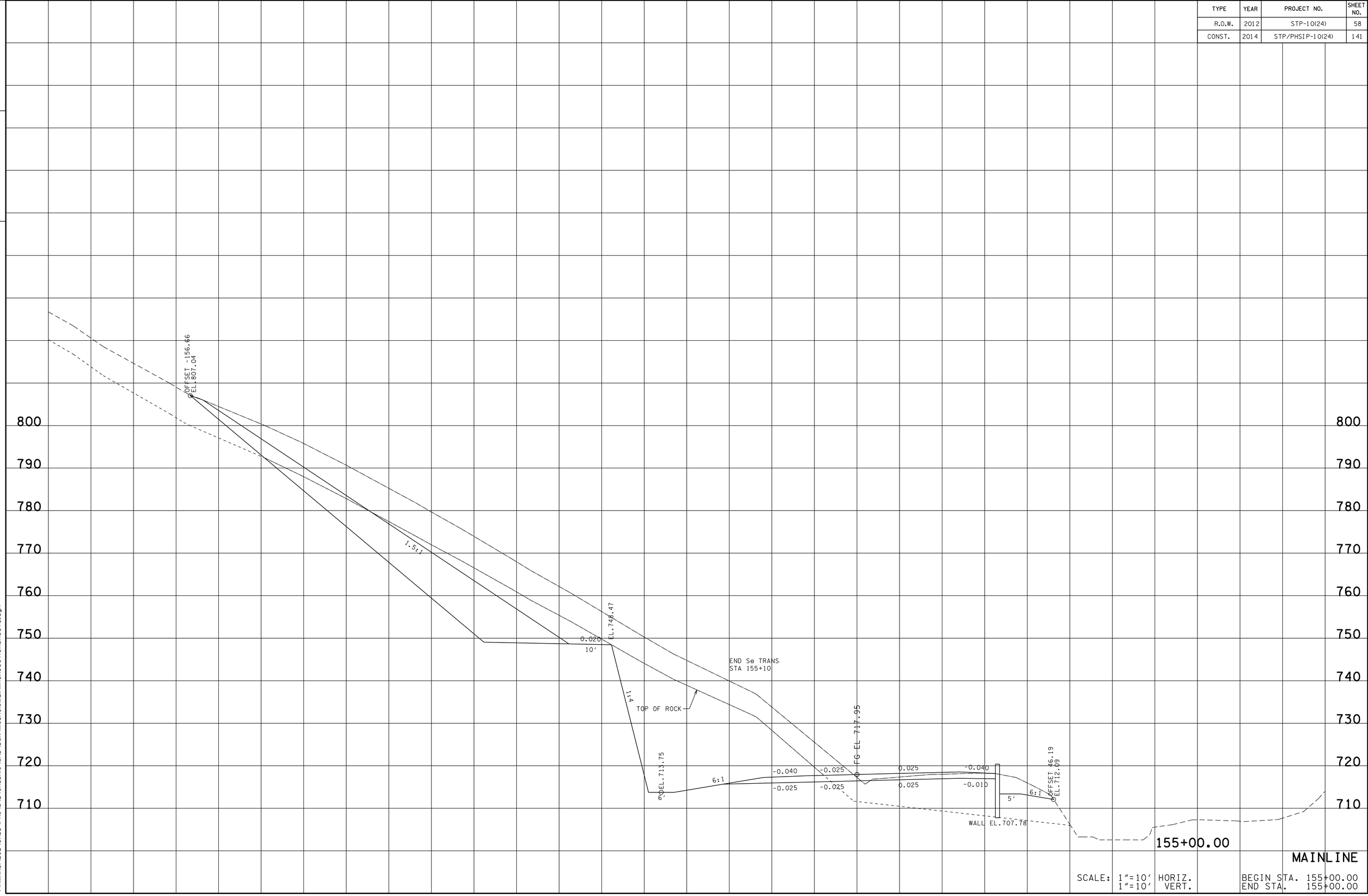
MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 154+50.00
END STA. 154+50.00

13-MAR-2014 10:59
\\AMNASFILO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR10MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	58
CONST.	2014	STP/PHSIP-10(24)	141



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 155+00.00
END STA. 155+00.00

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

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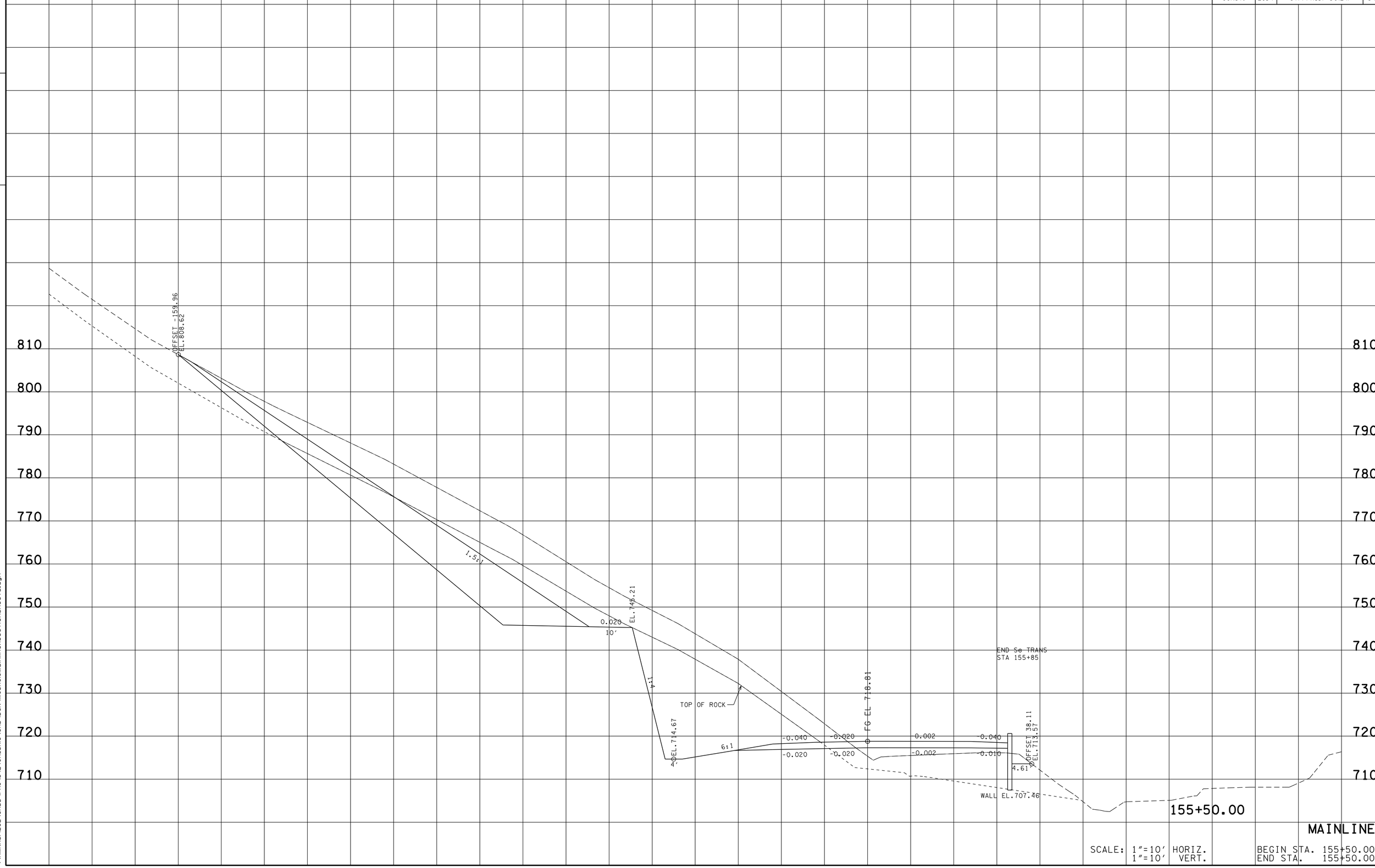
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	59
CONST.	2014	STP/PHSIP-10(24)	142

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

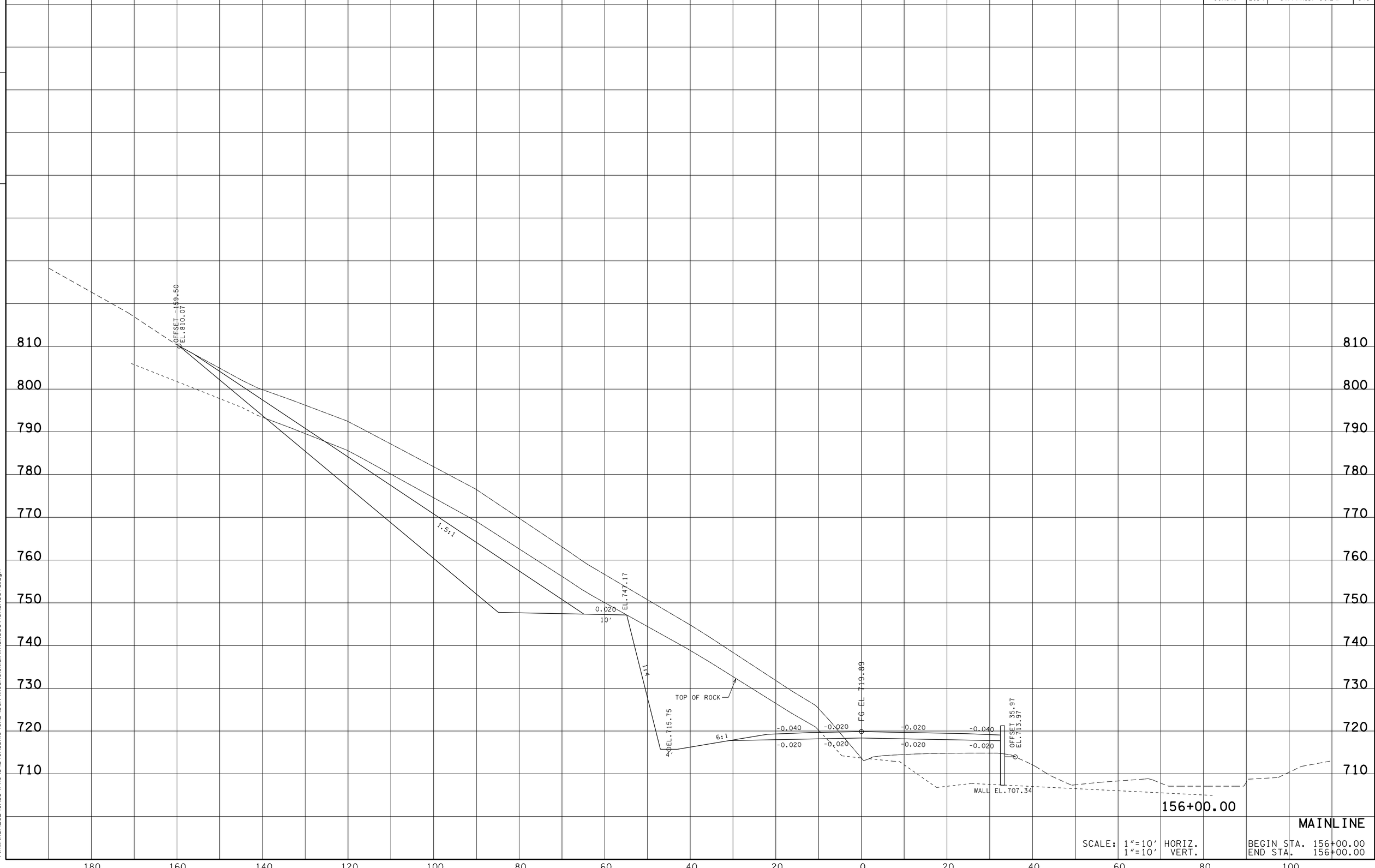
BEGIN STA. 155+50.00
END STA. 155+50.00

13-MAR-2014 10:59
\\AMNASFILO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	60
CONST.	2014	STP/PHSIP-10(24)	143

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 156+00.00
END STA. 156+00.00

13-MAR-2014 10:59
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR10MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	61
CONST.	2014	STP/PHSIP-10(24)	144

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

156+50.00 MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 156+50.00
END STA. 156+50.00

13-MAR-2014 10:59
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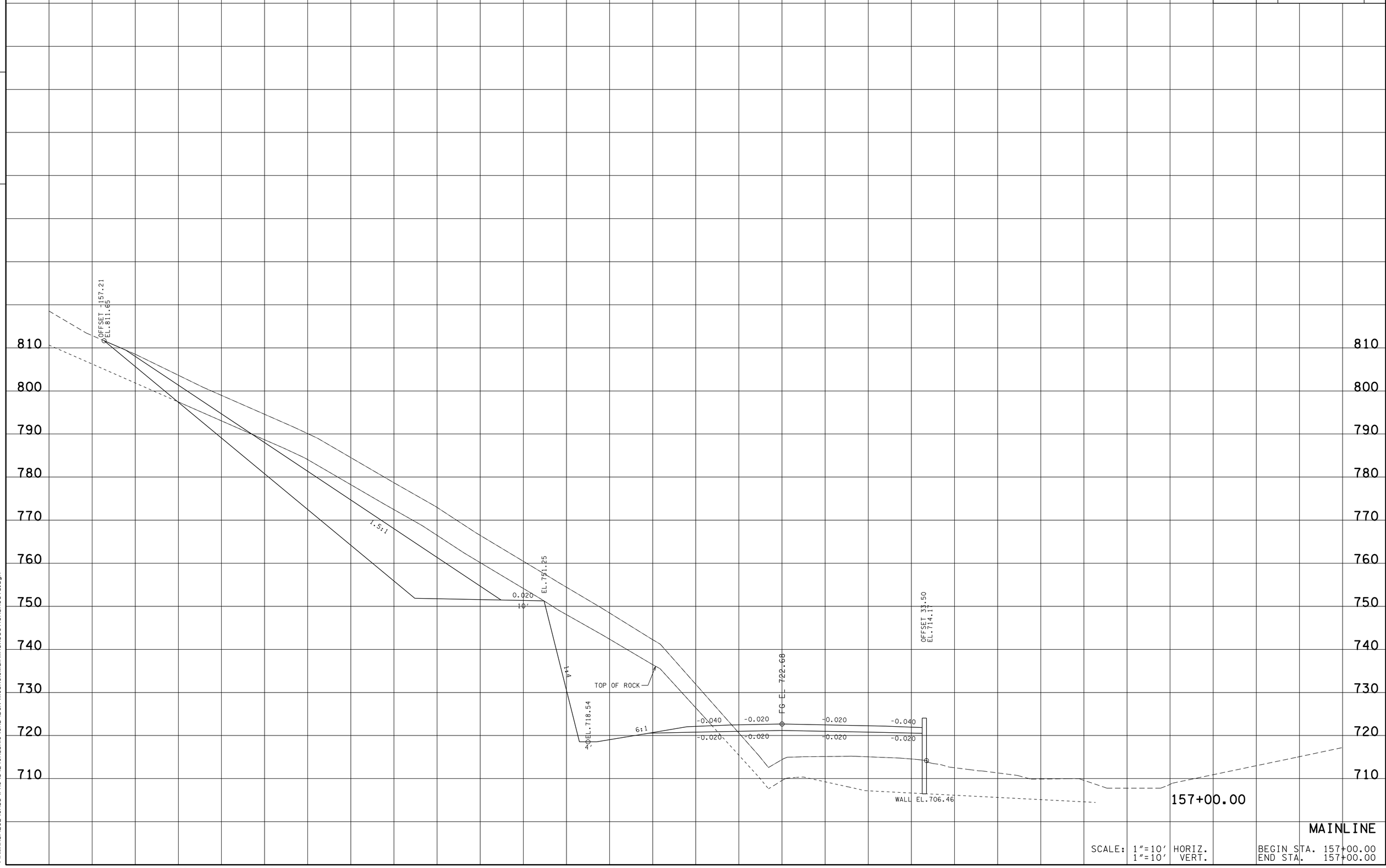
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	62
CONST.	2014	STP/PHSIP-10(24)	145

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

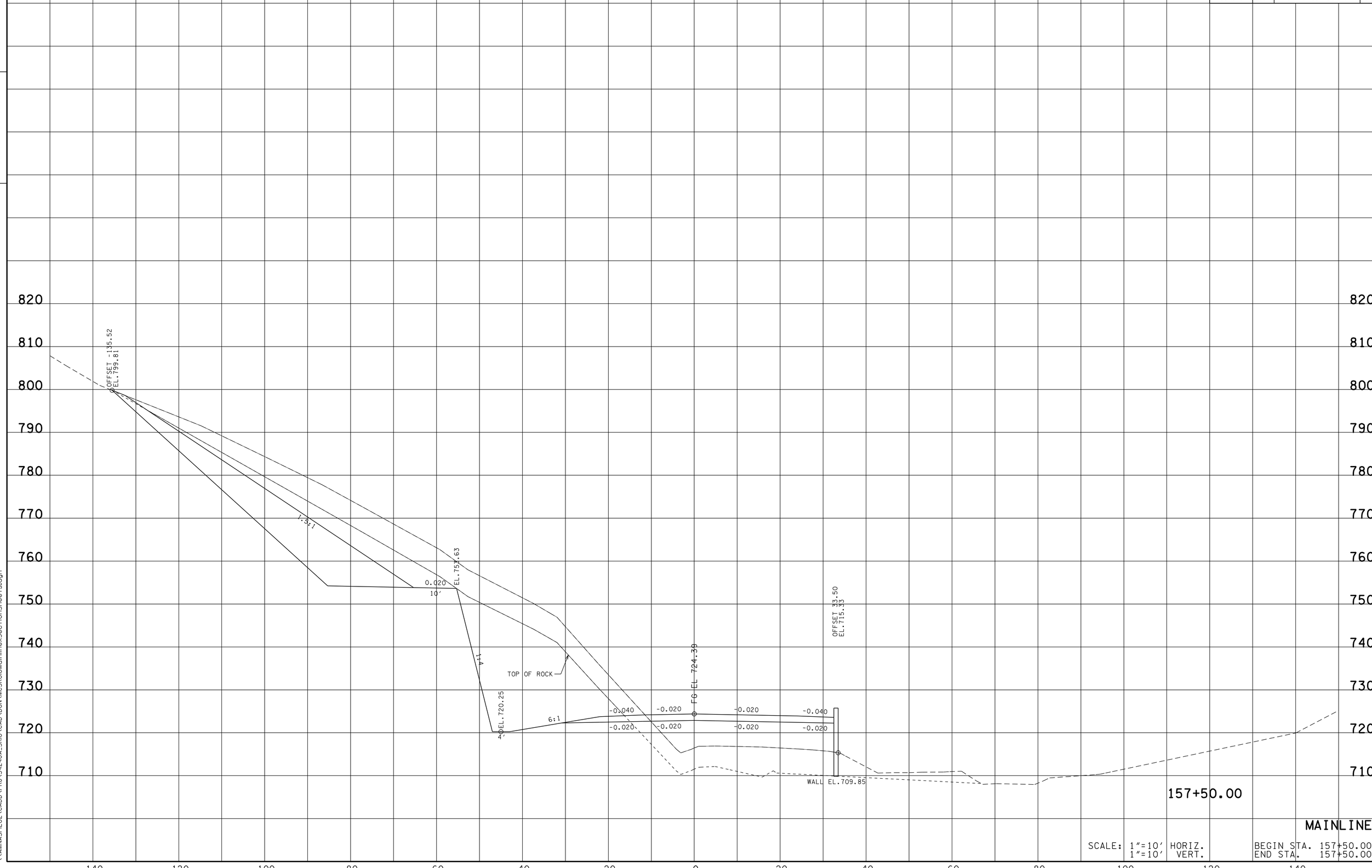
BEGIN STA. 157+00.00
END STA. 157+00.00

13-MAR-2014 10:59
\\AMNASFILO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	63
CONST.	2014	STP/PHSIP-10(24)	146

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 157+50.00
END STA. 157+50.00

13-MAR-2014 10:59
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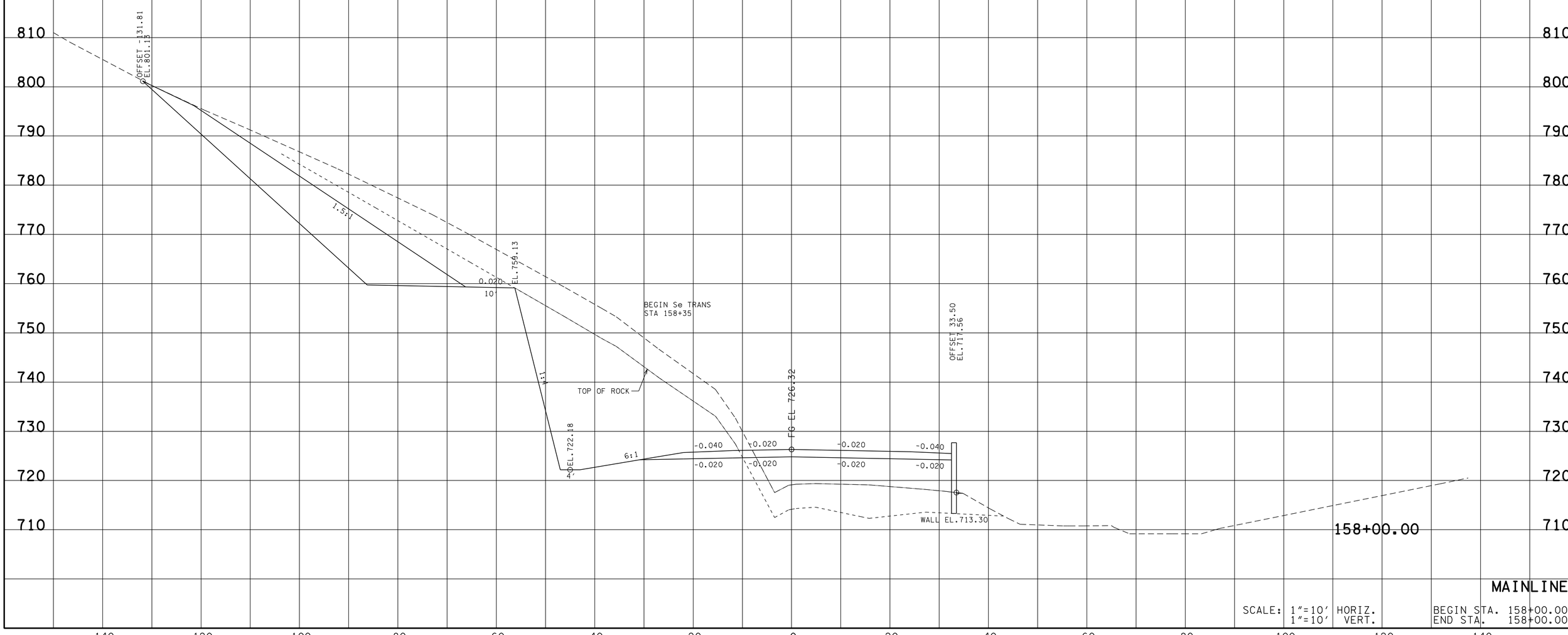
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	64
CONST.	2014	STP/PHSIP-10(24)	147

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 158+00.00
END STA. 158+00.00

13-MAR-2014 10:59
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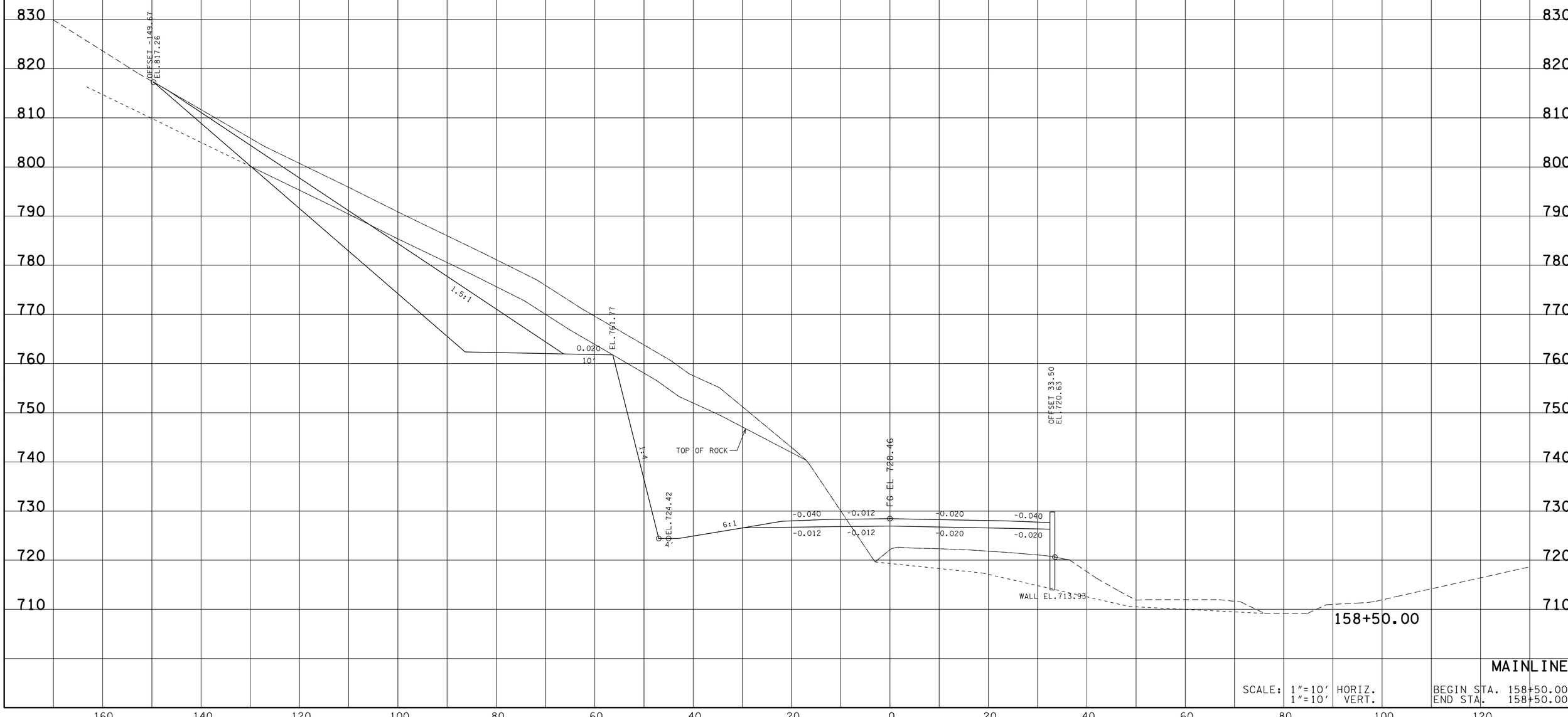
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	65
CONST.	2014	STP/PHSIP-10(24)	148

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 158+50.00
END STA. 158+50.00

13-MAR-2014 10:59
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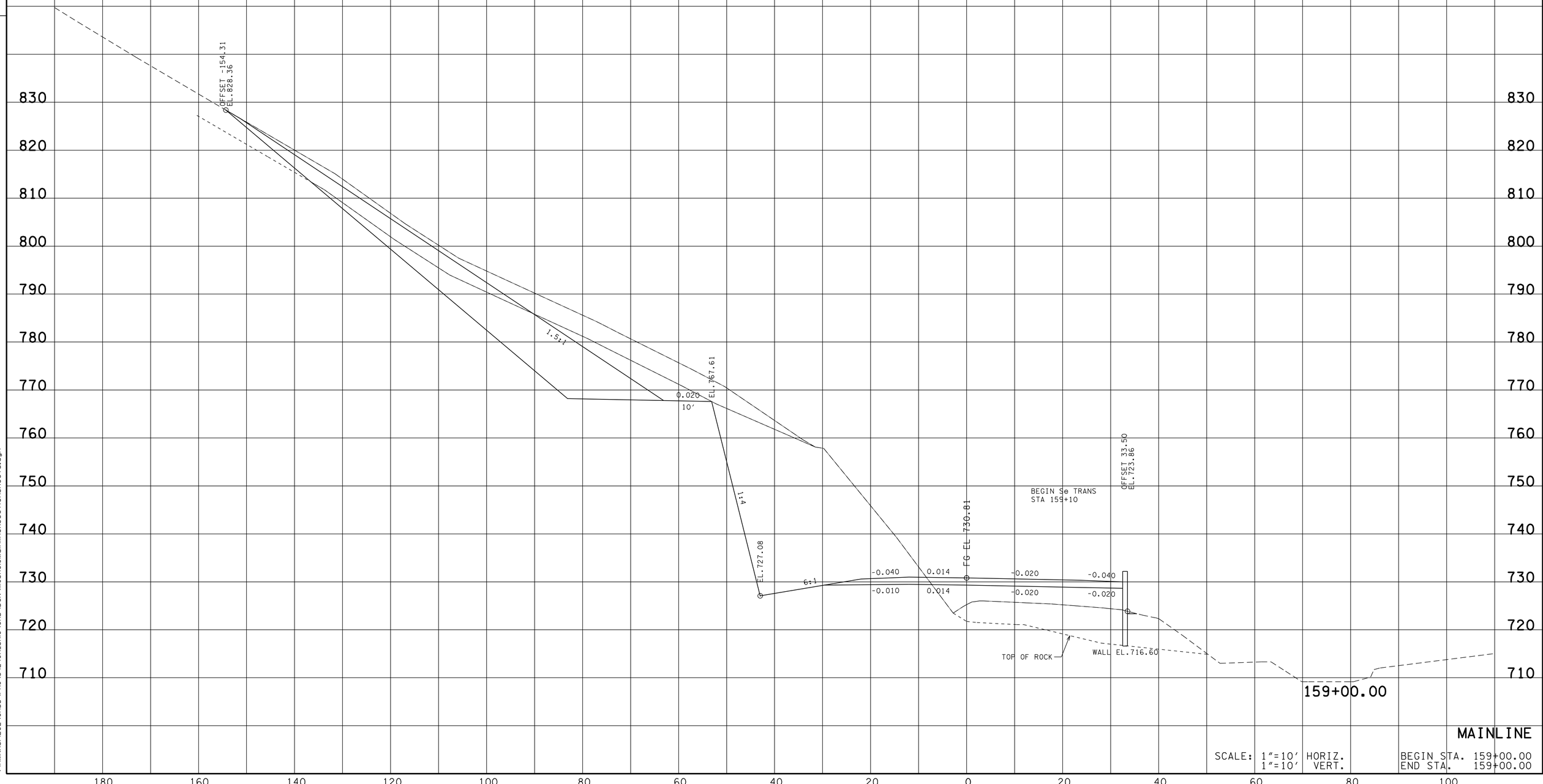
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	66
CONST.	2014	STP/PHSIP-10(24)	149

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 159+00.00
END STA. 159+00.00

13-MAR-2014 10:59
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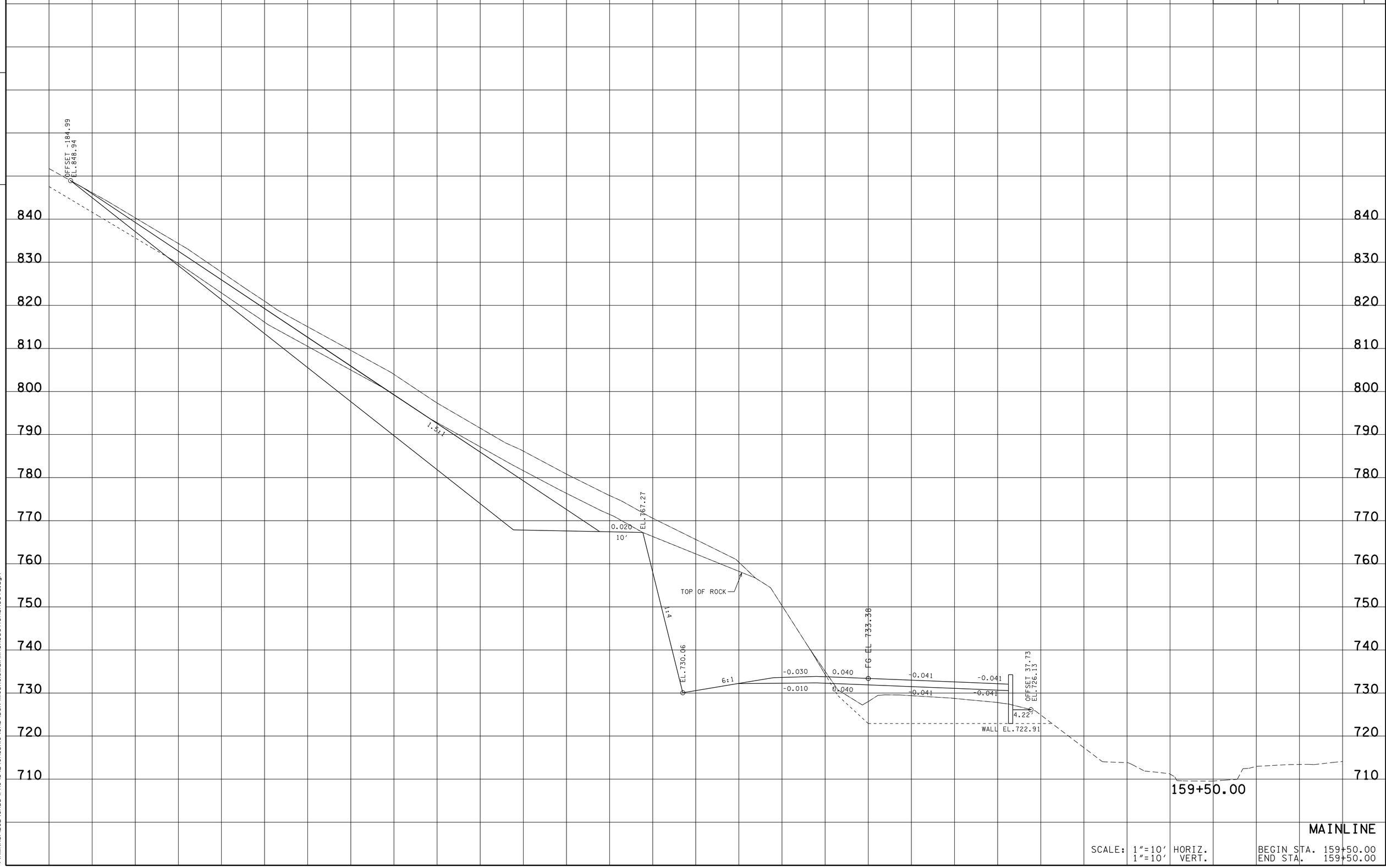
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	67
CONST.	2014	STP/PHSIP-10(24)	150

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 159+50.00
END STA. 159+50.00

13-MAR-2014 10:59
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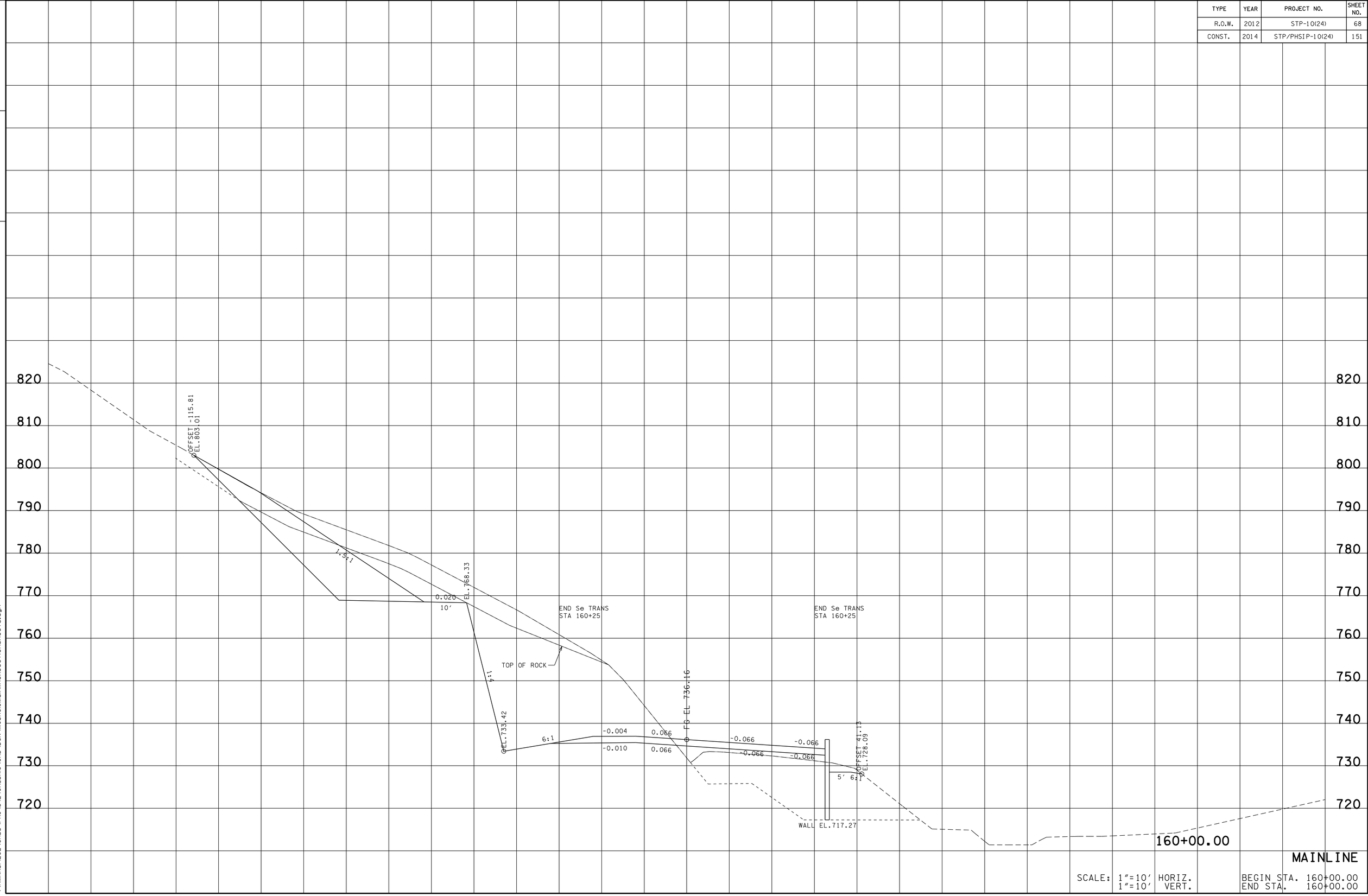
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	68
CONST.	2014	STP/PHSIP-10(24)	151



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 160+00.00
END STA. 160+00.00

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.

13-MAR-2014 10:59
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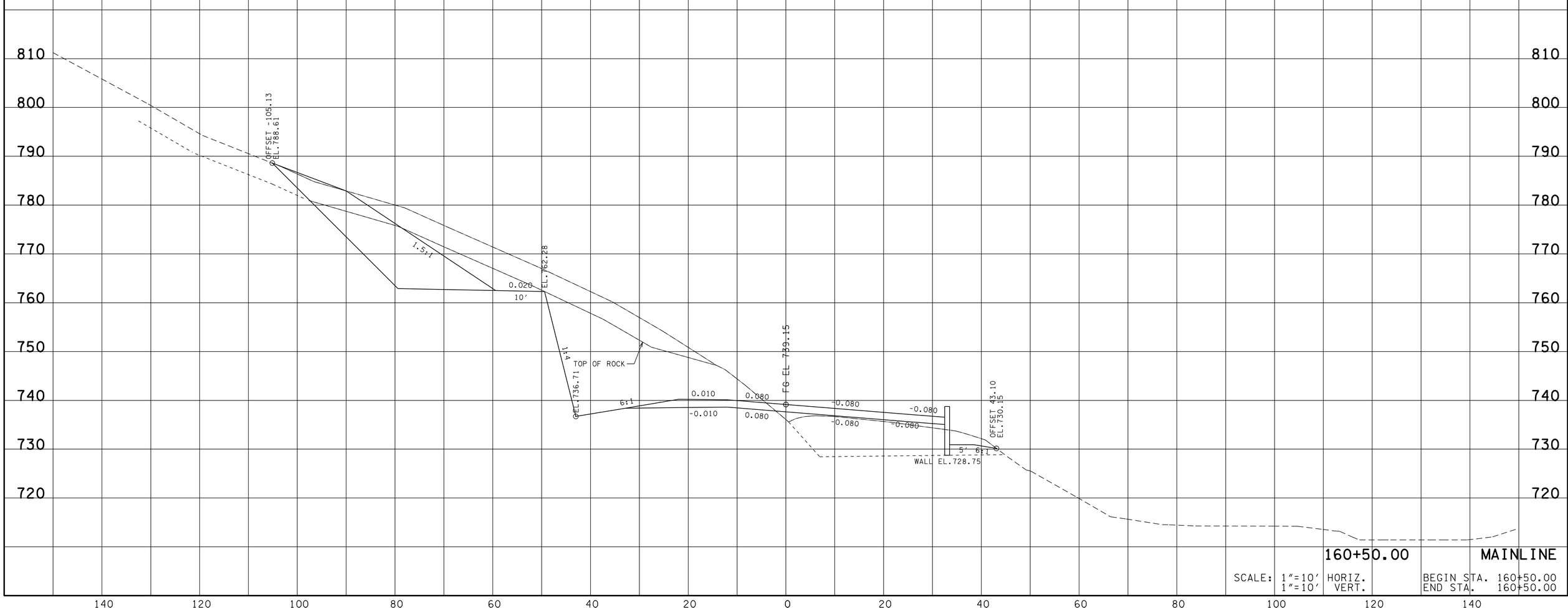
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	69
CONST.	2014	STP/PHSIP-10(24)	152

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



160+50.00 MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 160+50.00
END STA. 160+50.00

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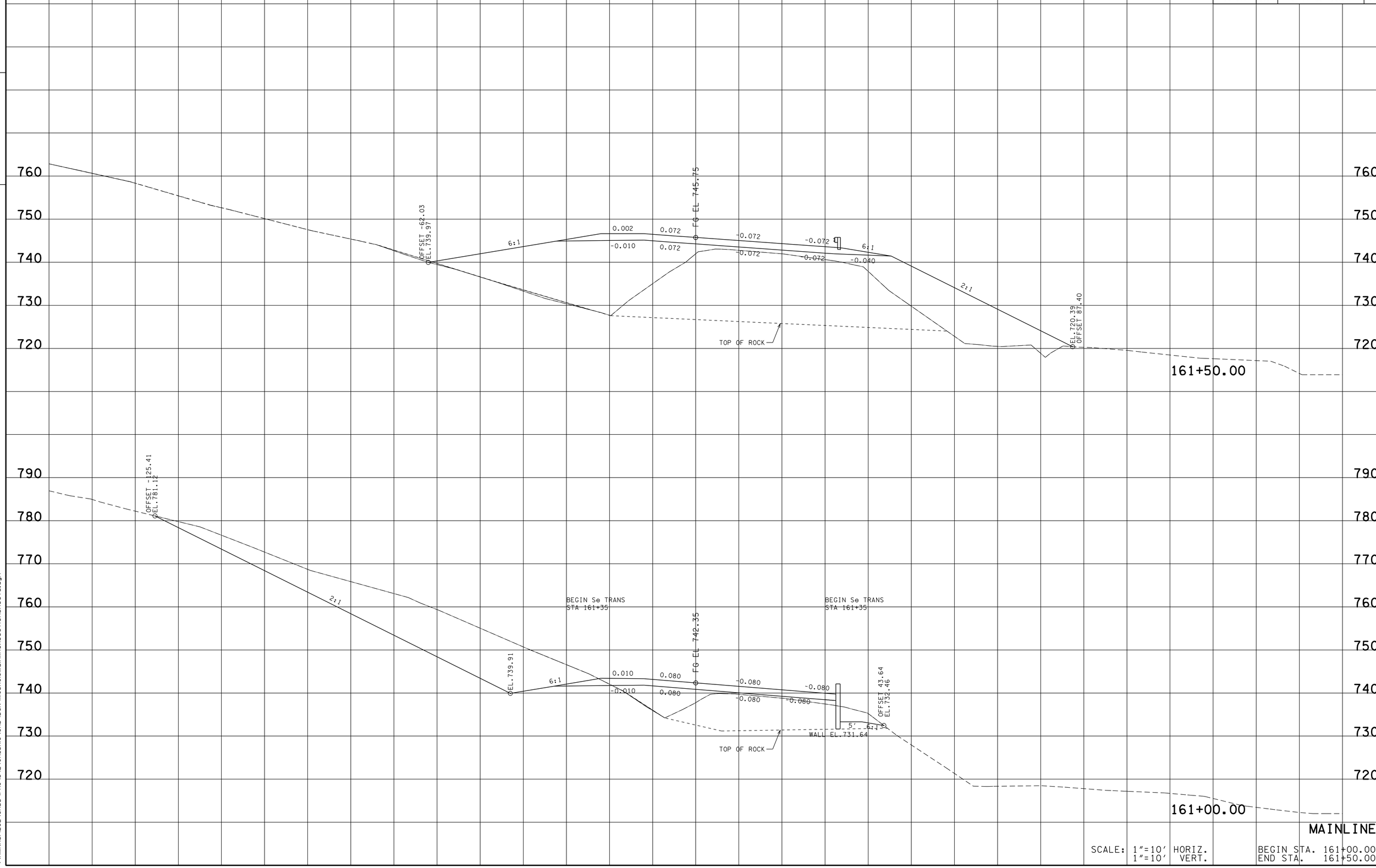
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	70
CONST.	2014	STP/PHSIP-10(24)	153

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 161+00.00
END STA. 161+50.00

13-MAR-2014 10:59
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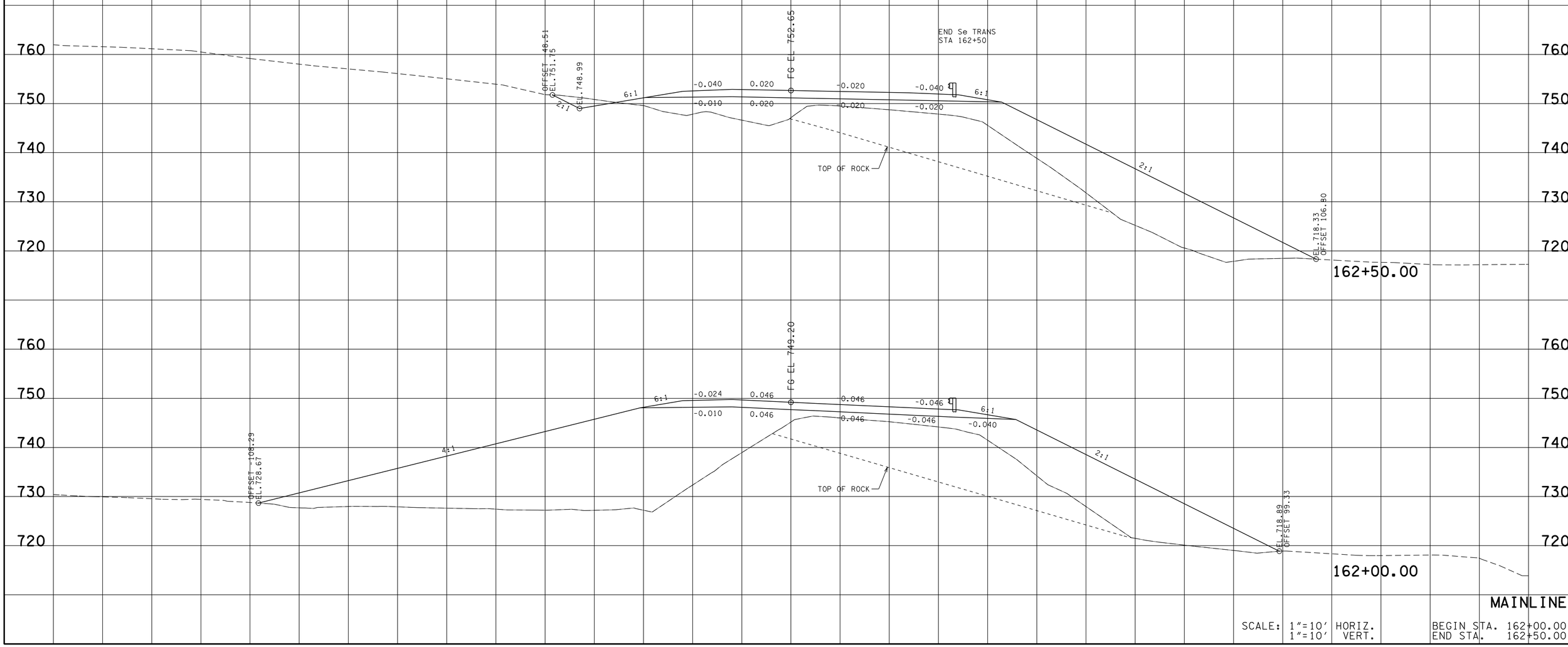
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	71
CONST.	2014	STP/PHSIP-10(24)	154

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 162+00.00
END STA. 162+50.00

13-MAR-2014 10:59
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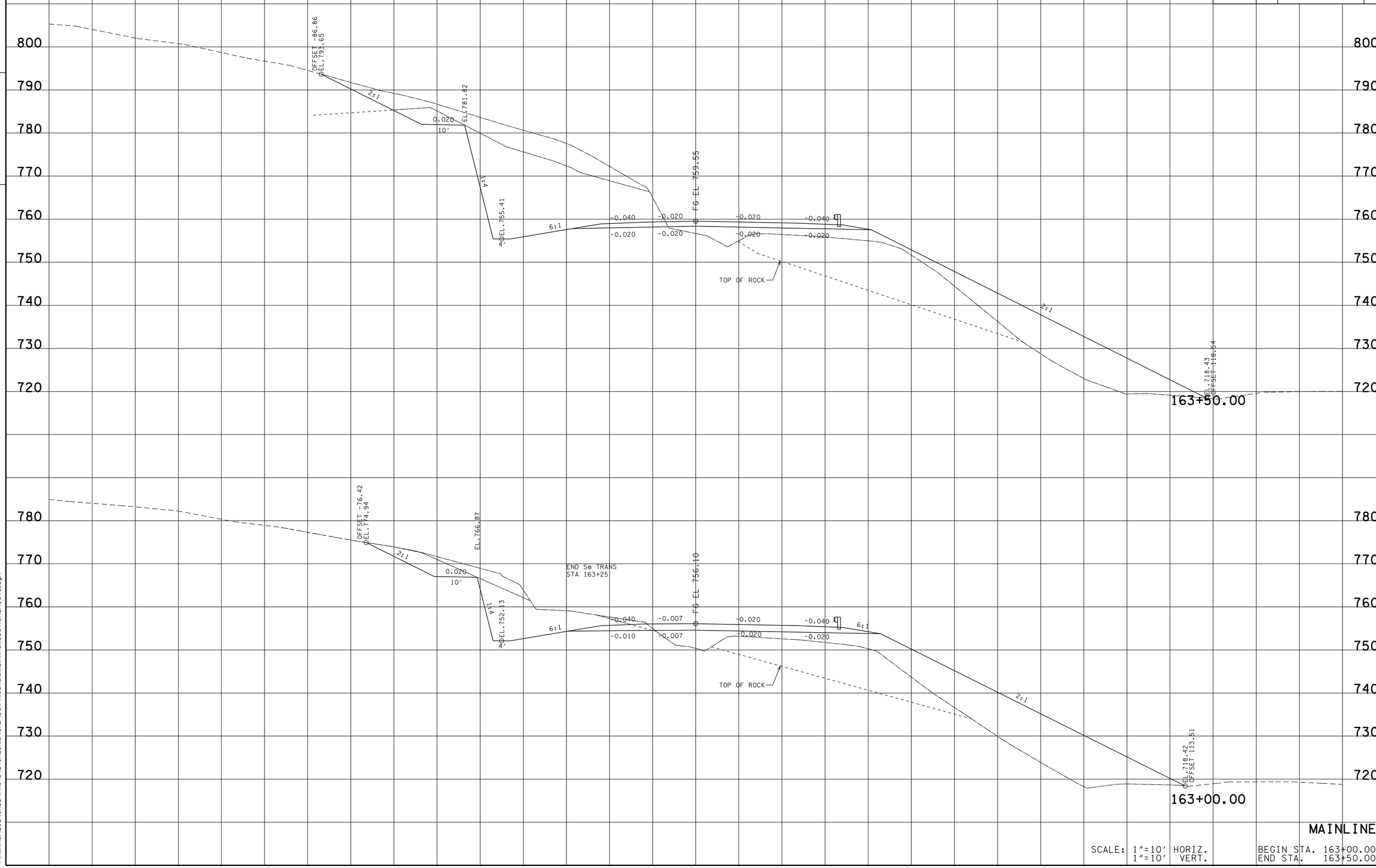
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	72
CONST.	2014	STP/PHSIP-10(24)	155



TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

13-MAR-2014 10:59
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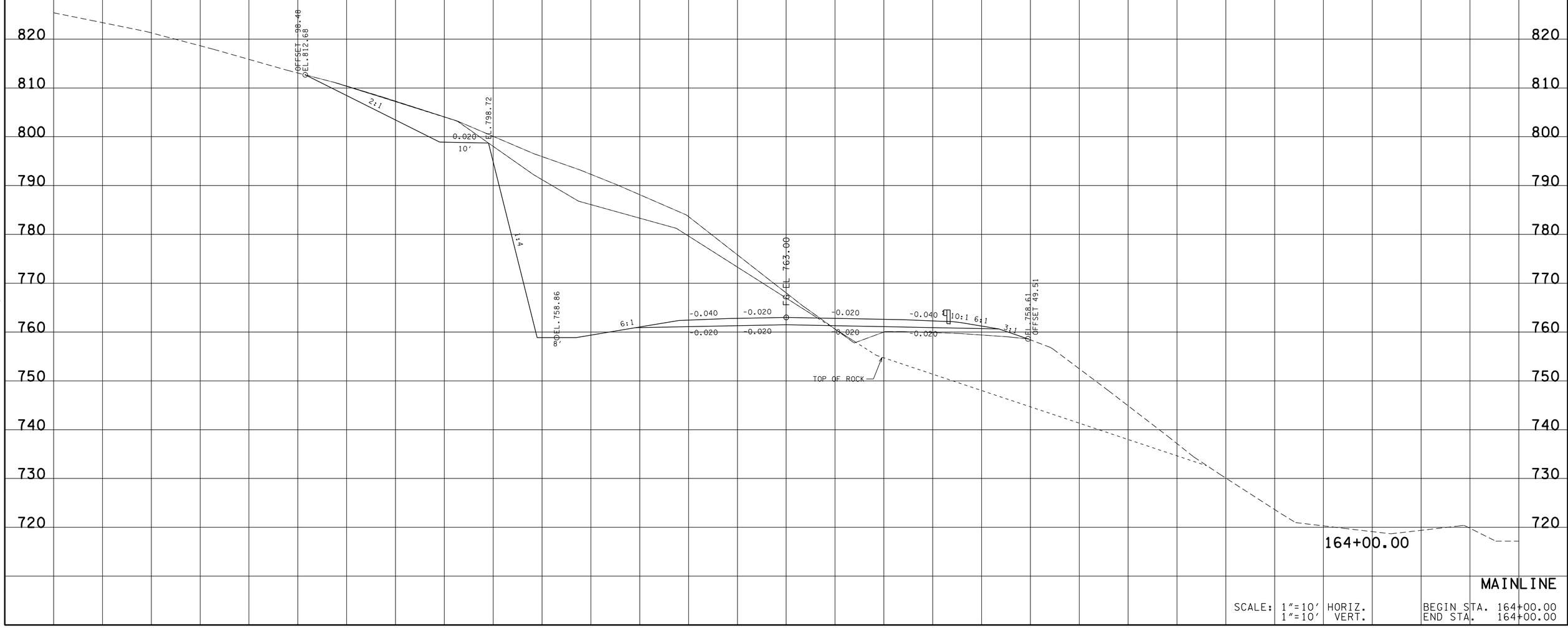
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	73
CONST.	2014	STP/PHSIP-10(24)	156



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 164+00.00
END STA. 164+00.00

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

13-MAR-2014 10:59
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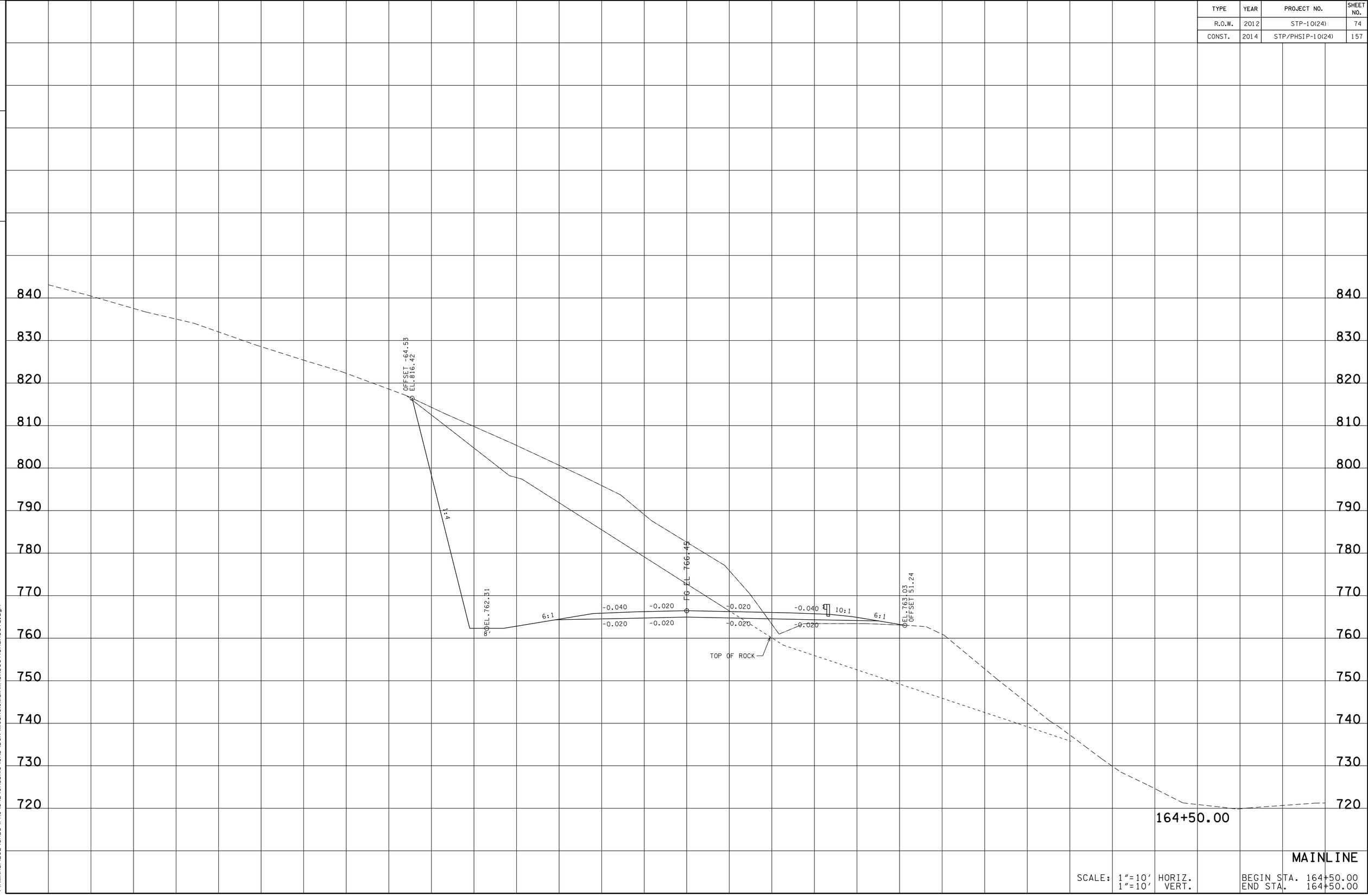
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	74
CONST.	2014	STP/PHSIP-10(24)	157

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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BEGIN STA. 164+50.00
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13-MAR-2014 10:59
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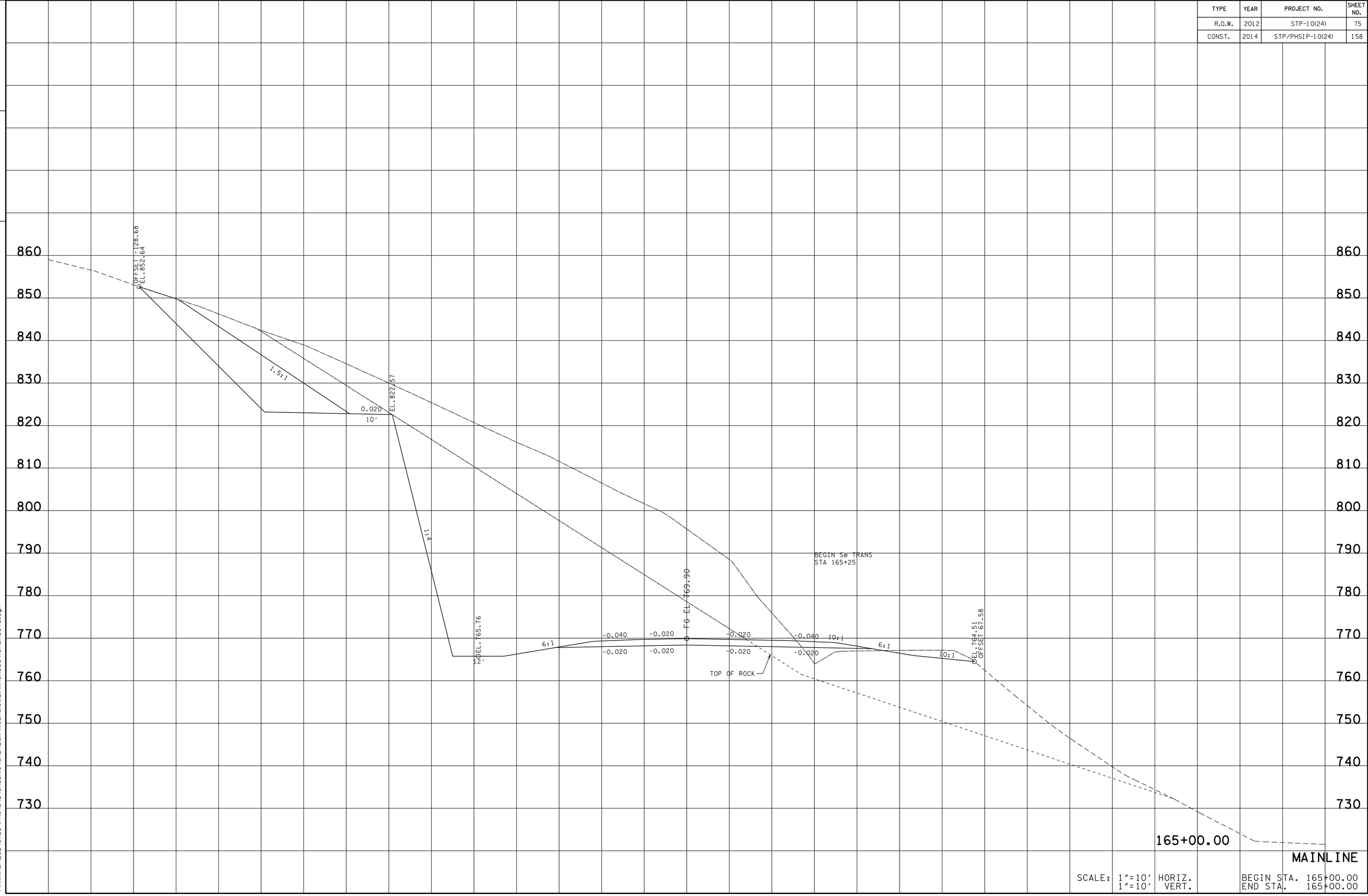
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	75
CONST.	2014	STP/PHSIP-10(24)	158

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.



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13-MAR-2014 10:59
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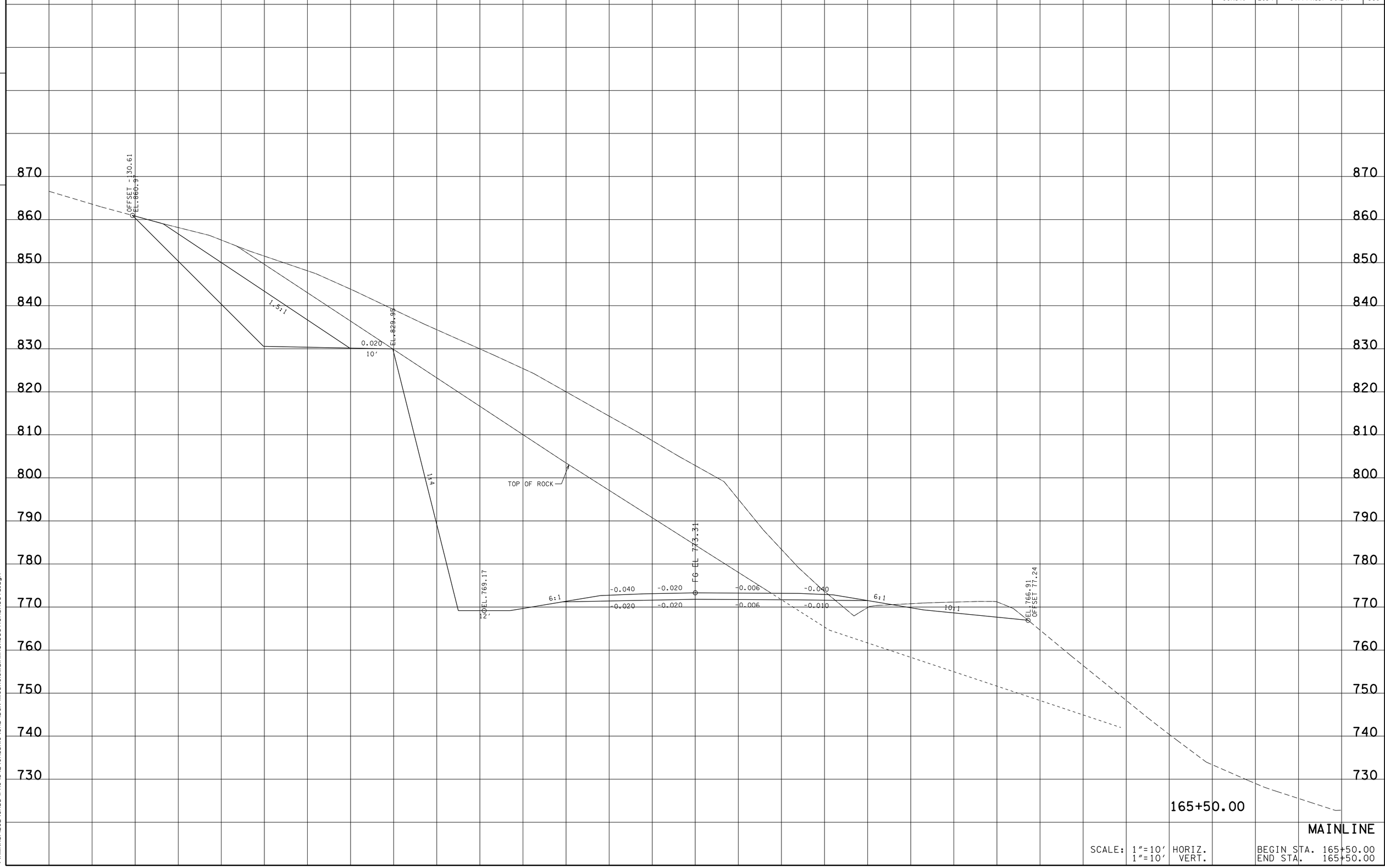
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	76
CONST.	2014	STP/PHSIP-10(24)	159

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



SCALE: 1"=10' HORIZ.
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13-MAR-2014 10:59
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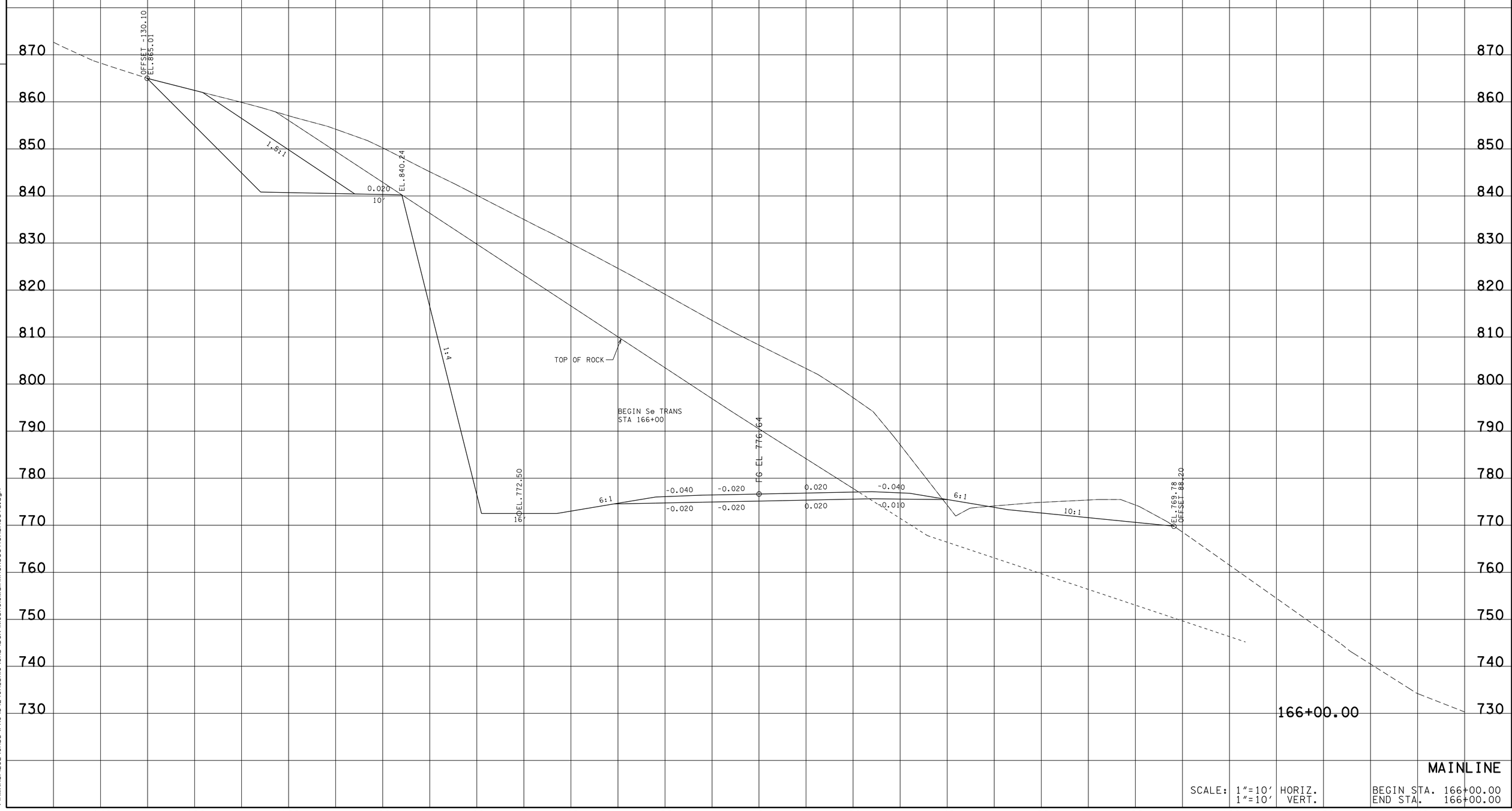
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	77
CONST.	2014	STP/PHSIP-10(24)	160

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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1"=10' VERT.

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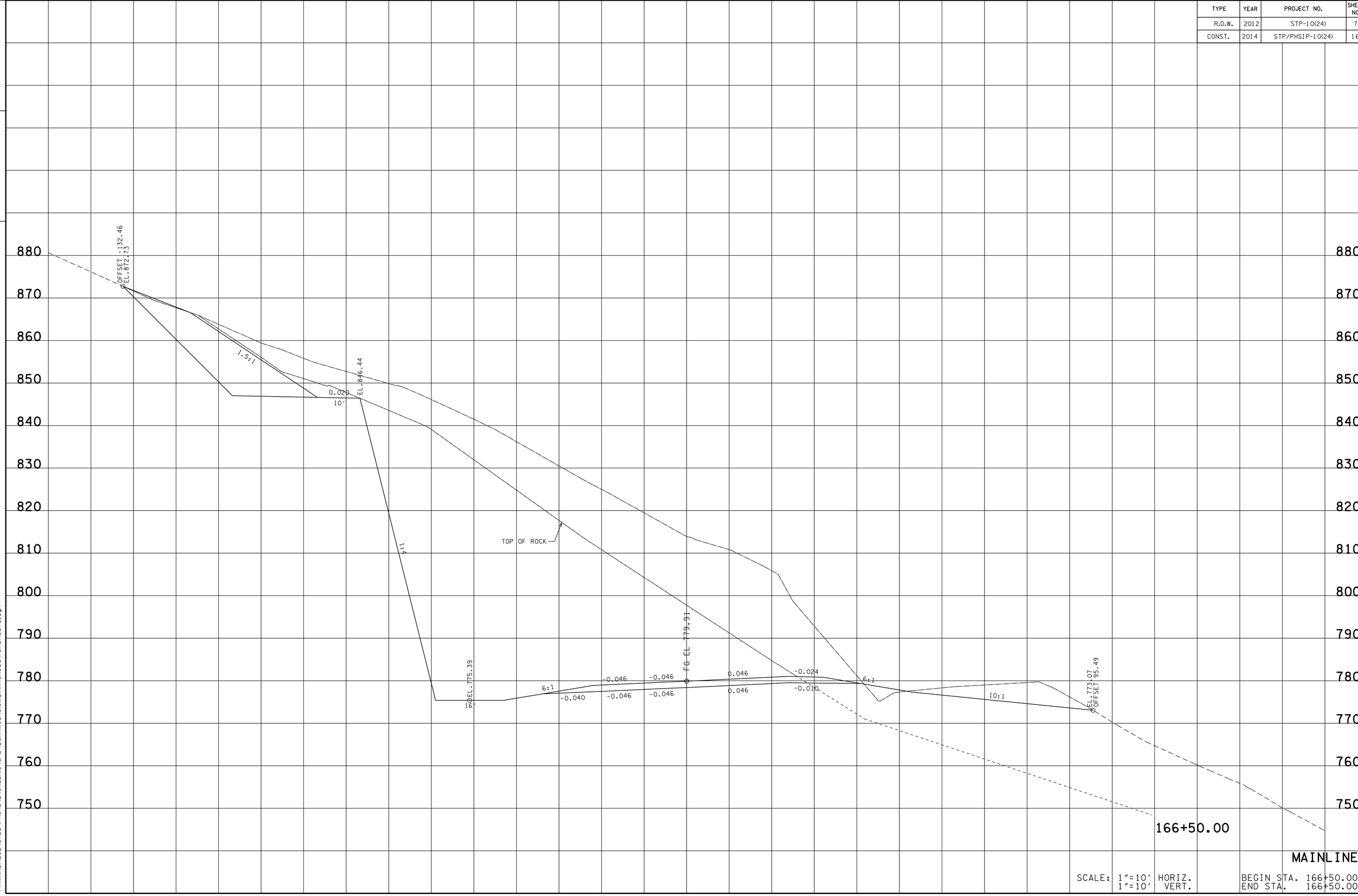
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	78
CONST.	2014	STP/PHSIP-10(24)	161

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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1"=10' VERT.

BEGIN STA. 166+50.00
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13-MAR-2014 10:59
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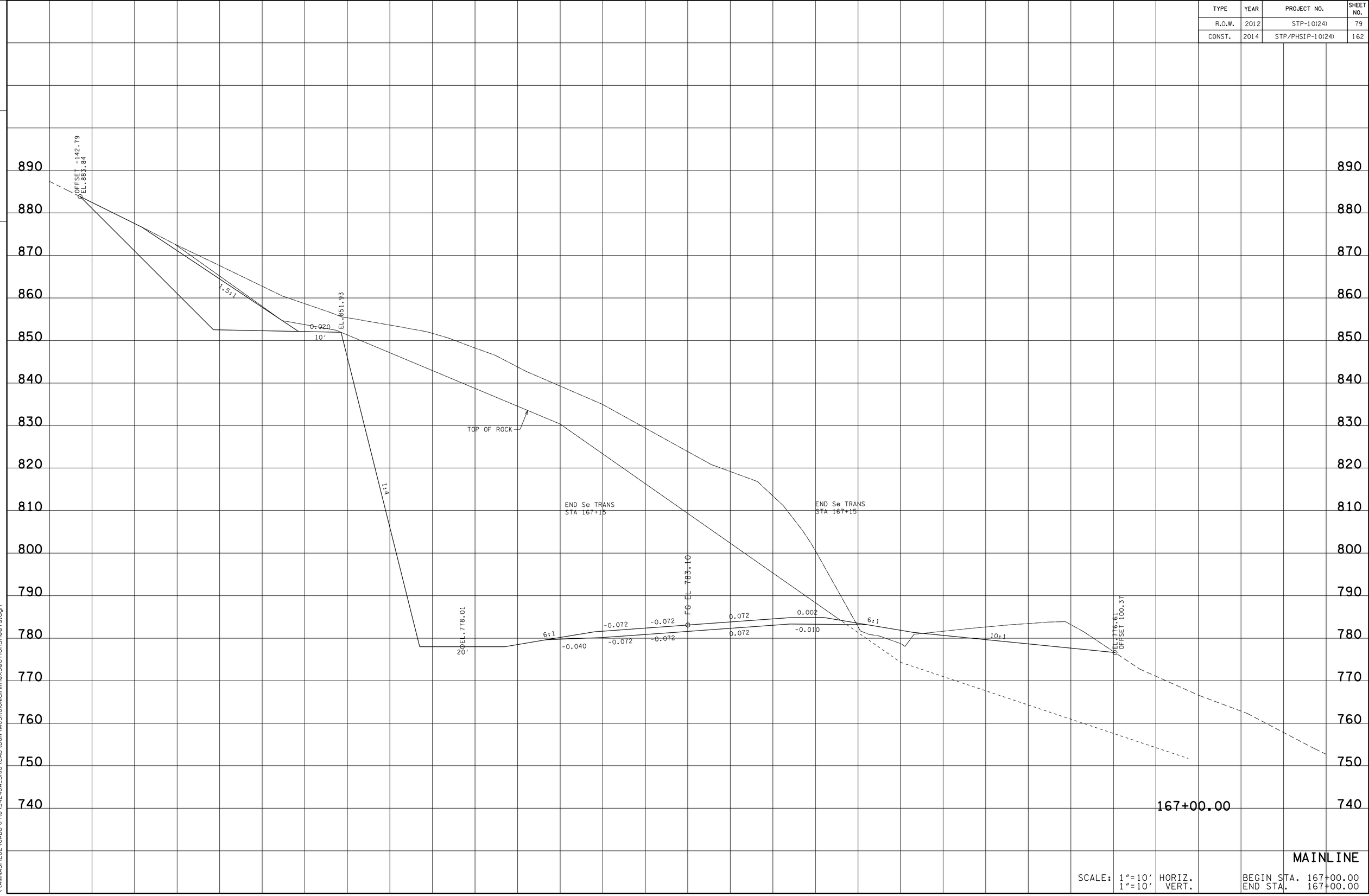
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	79
CONST.	2014	STP/PHSIP-10(24)	162

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 167+00.00
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13-MAR-2014 10:59
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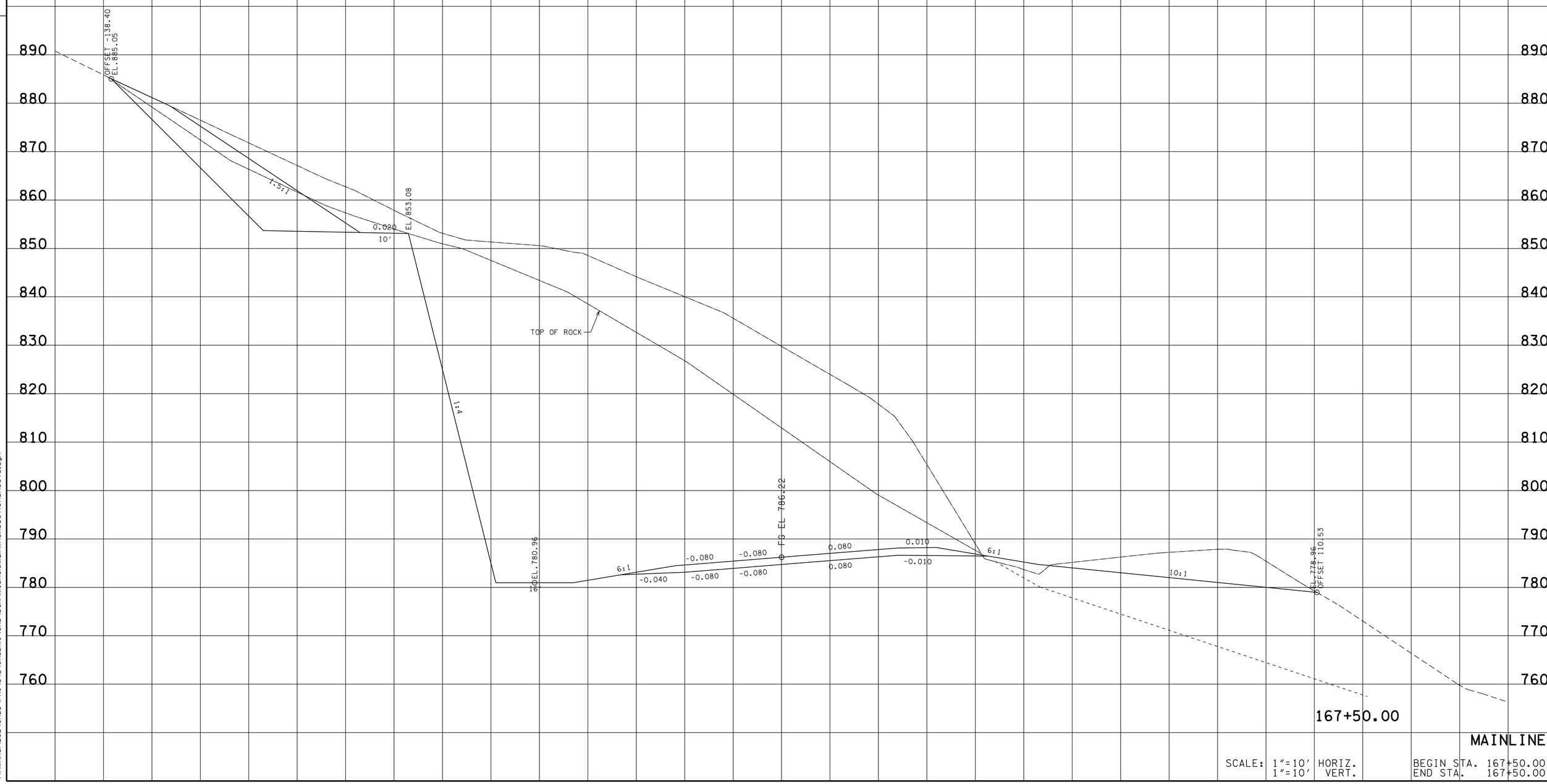
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	80
CONST.	2014	STP/PHSIP-10(24)	163

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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1"=10' VERT.

BEGIN STA. 167+50.00
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13-MAR-2014 10:59
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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	81
CONST.	2014	STP/PHSIP-10(24)	164

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 168+00.00
END STA. 168+00.00

13-MAR-2014 10:59
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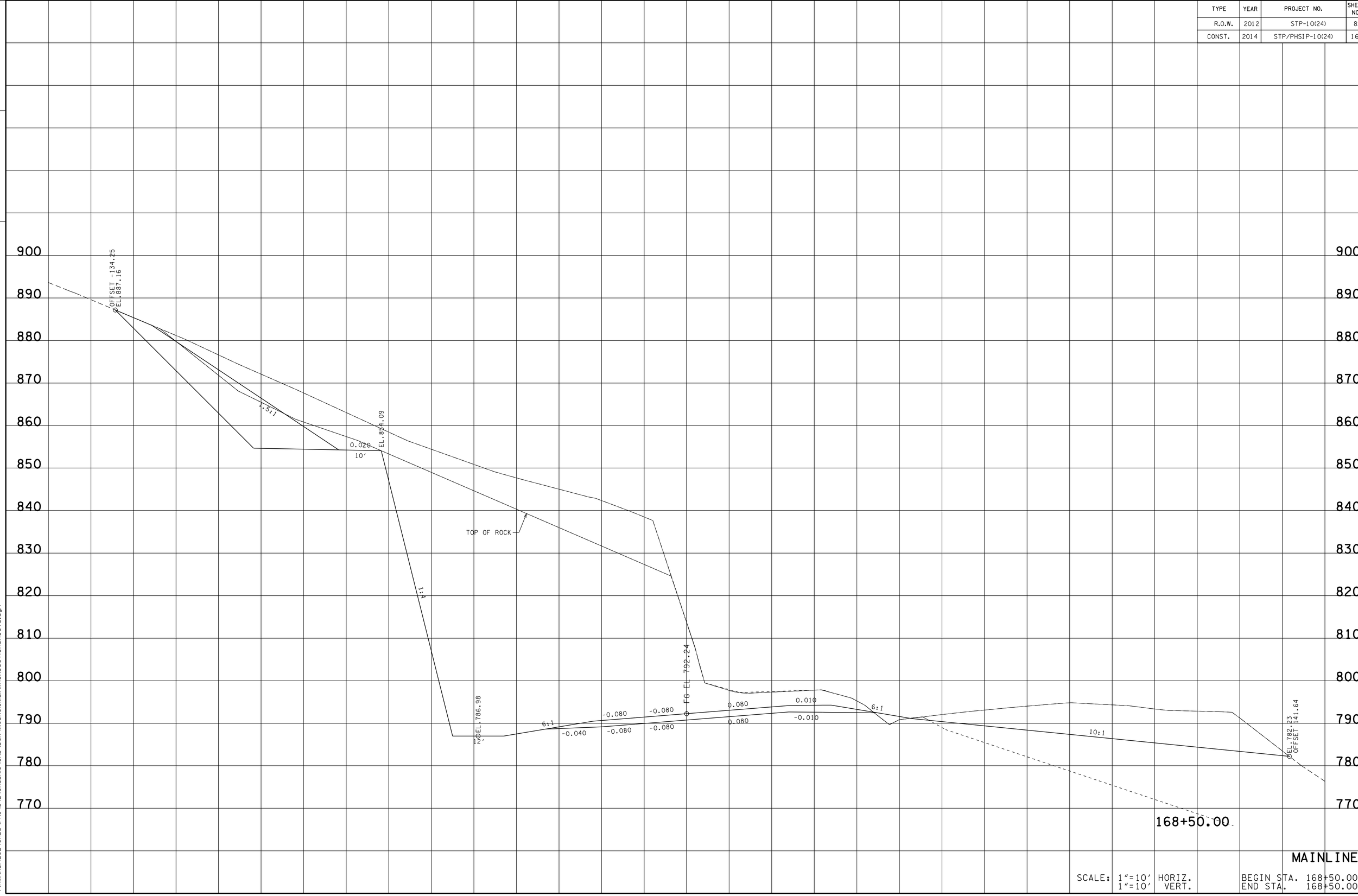
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	82
CONST.	2014	STP/PHSIP-10(24)	165

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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1"=10' VERT.

BEGIN STA. 168+50.00
END STA. 168+50.00

13-MAR-2014 10:59
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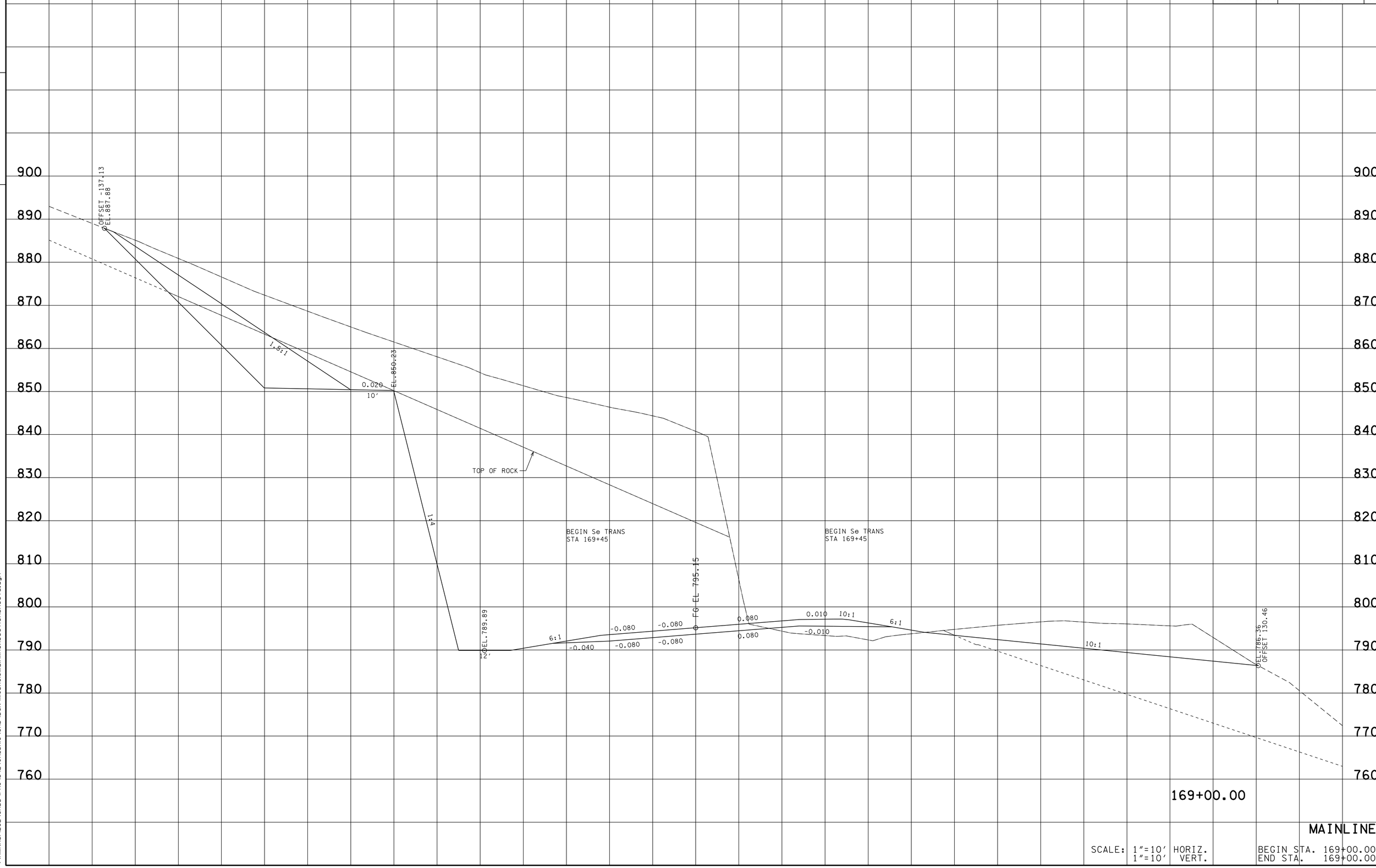
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	83
CONST.	2014	STP/PHSIP-10(24)	166

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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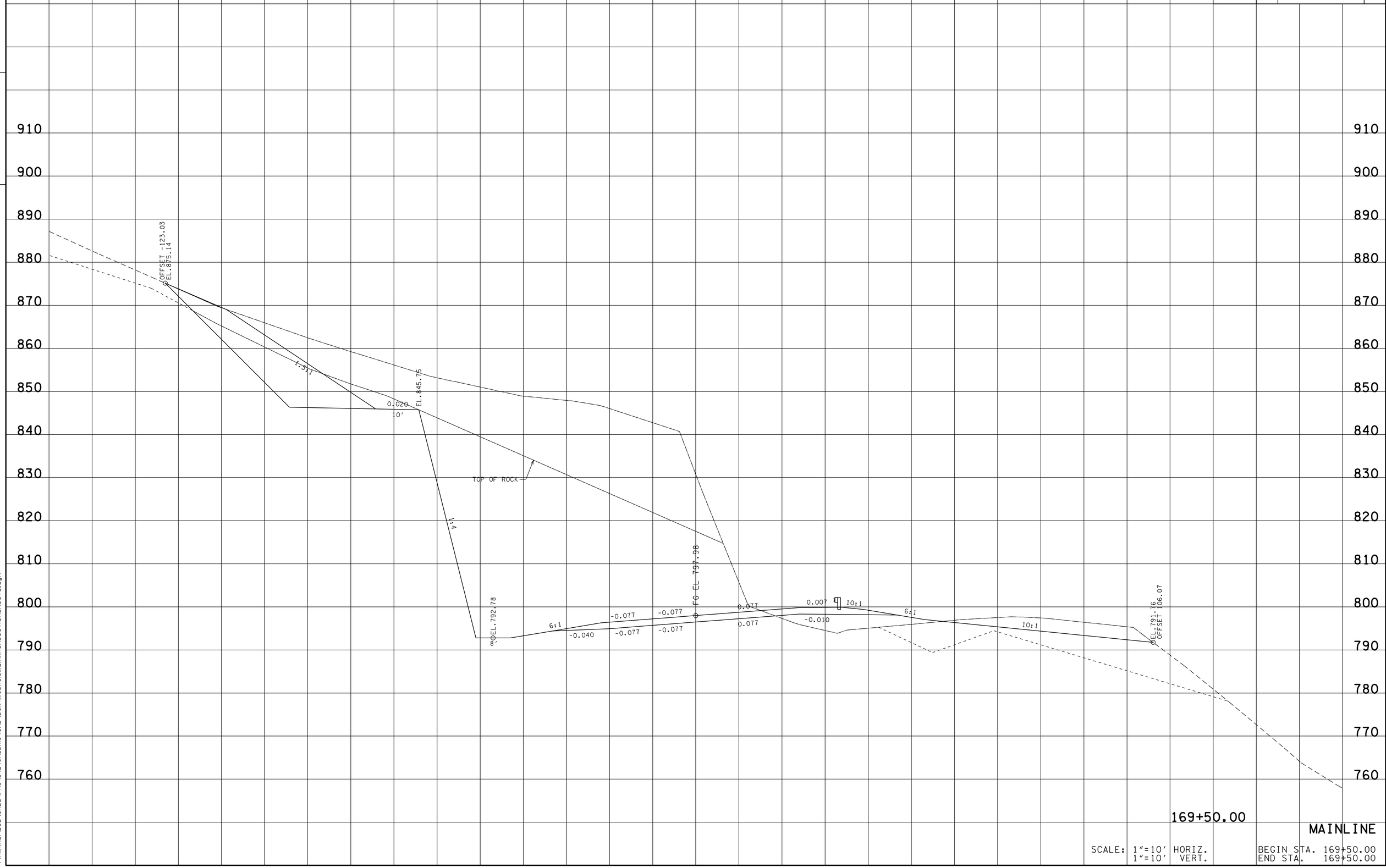
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	84
CONST.	2014	STP/PHSIP-10(24)	167

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



SCALE: 1"=10' HORIZ.
1"=10' VERT.

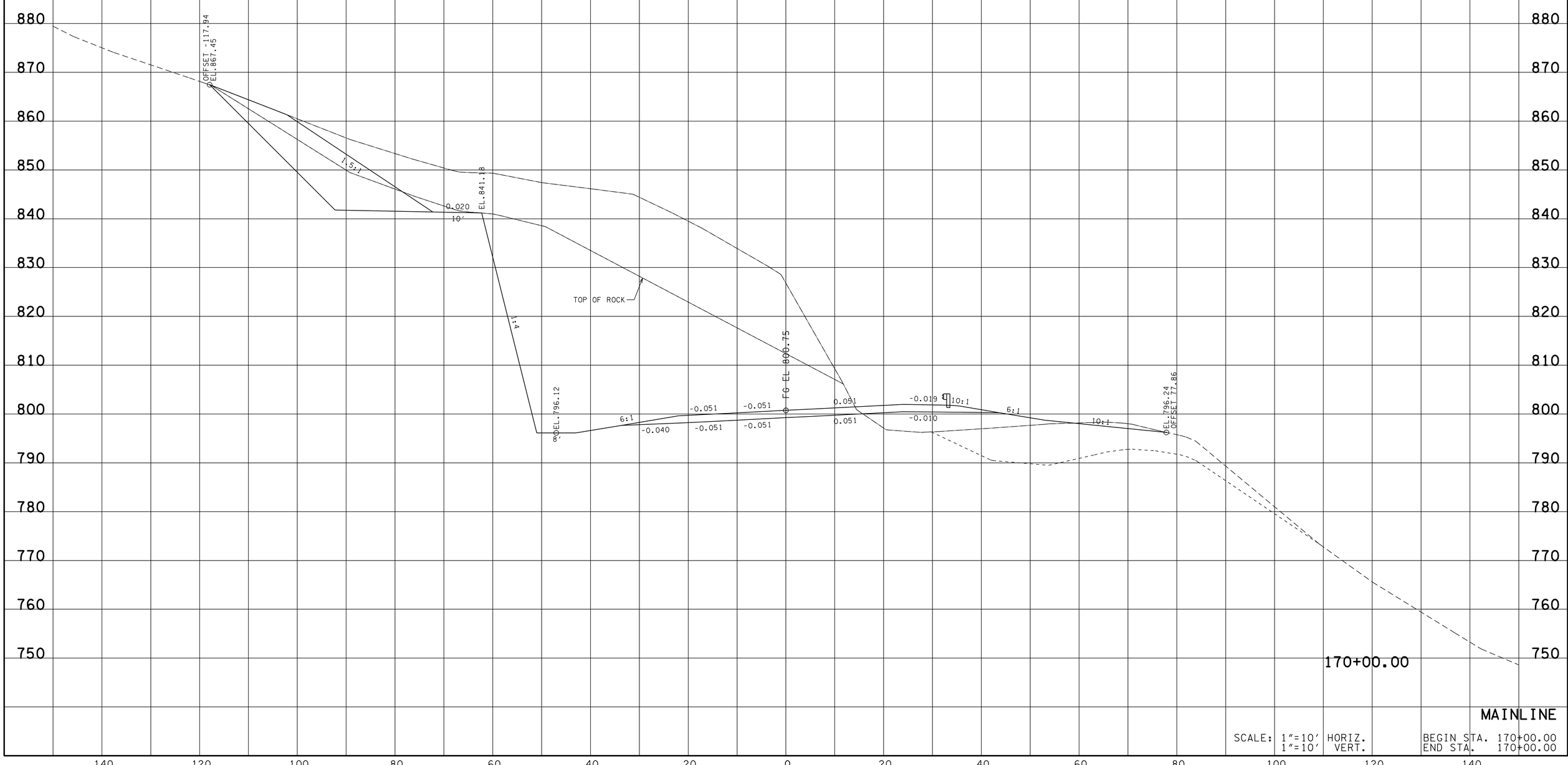
BEGIN STA. 169+50.00
END STA. 169+50.00

13-MAR-2014 10:59
\\AMNASFILO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR0\0MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	85
CONST.	2014	STP/PHSIP-10(24)	168

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.



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1"=10' VERT.

BEGIN STA. 170+00.00
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13-MAR-2014 10:59
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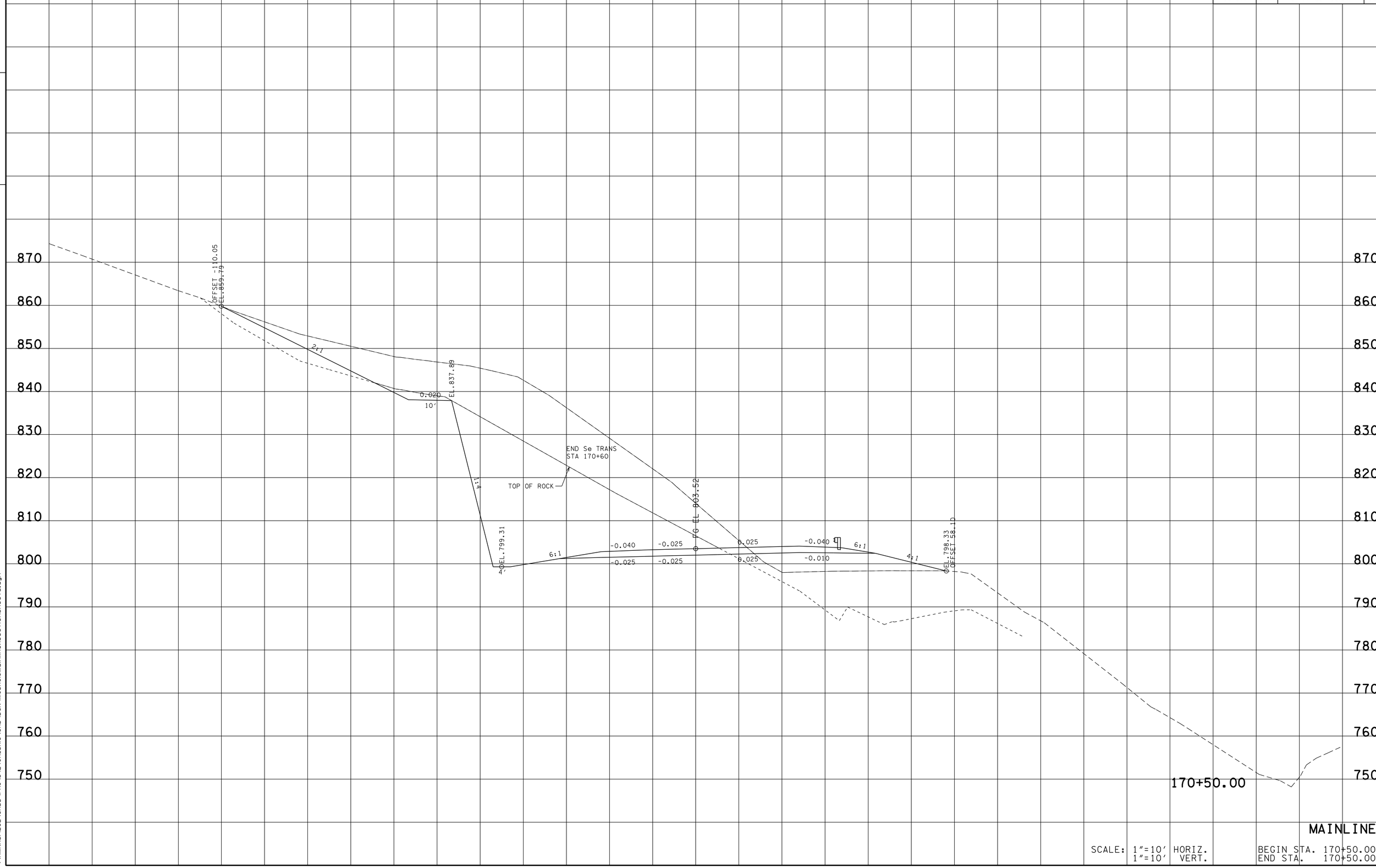
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	86
CONST.	2014	STP/PHSIP-10(24)	169

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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1"=10' VERT.

BEGIN STA. 170+50.00
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13-MAR-2014 10:59
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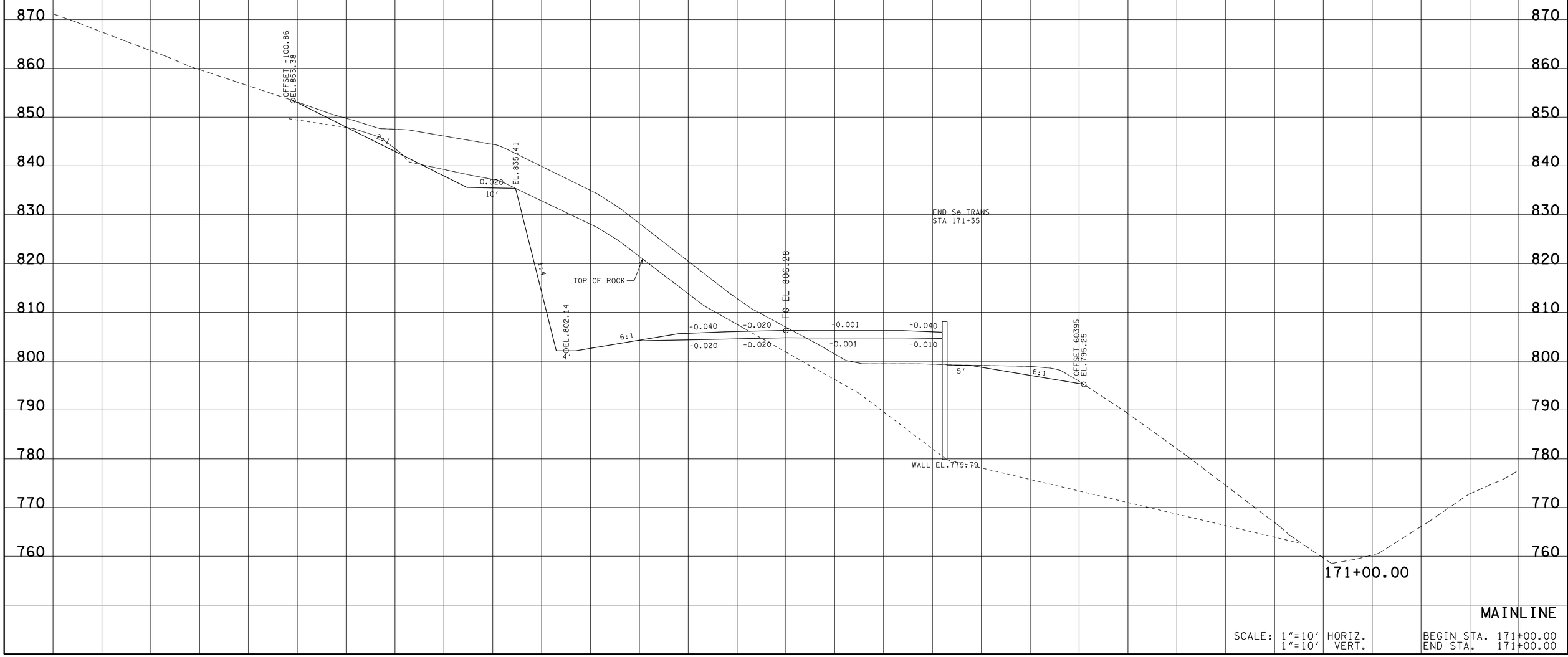
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	87
CONST.	2014	STP/PHSIP-10(24)	170

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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1"=10' VERT.

BEGIN STA. 171+00.00
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13-MAR-2014 11:00
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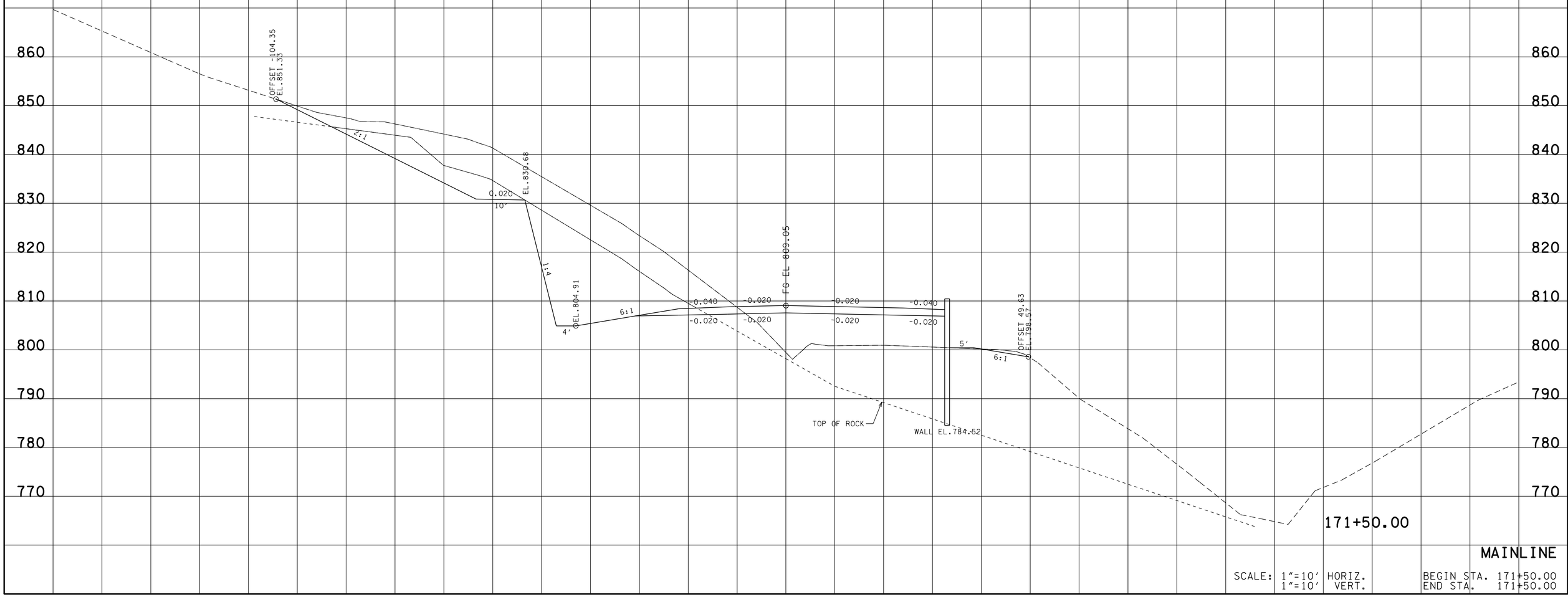
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	88
CONST.	2014	STP/PHSIP-10(24)	171

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 171+50.00
END STA. 171+50.00

13-MAR-2014 11:00
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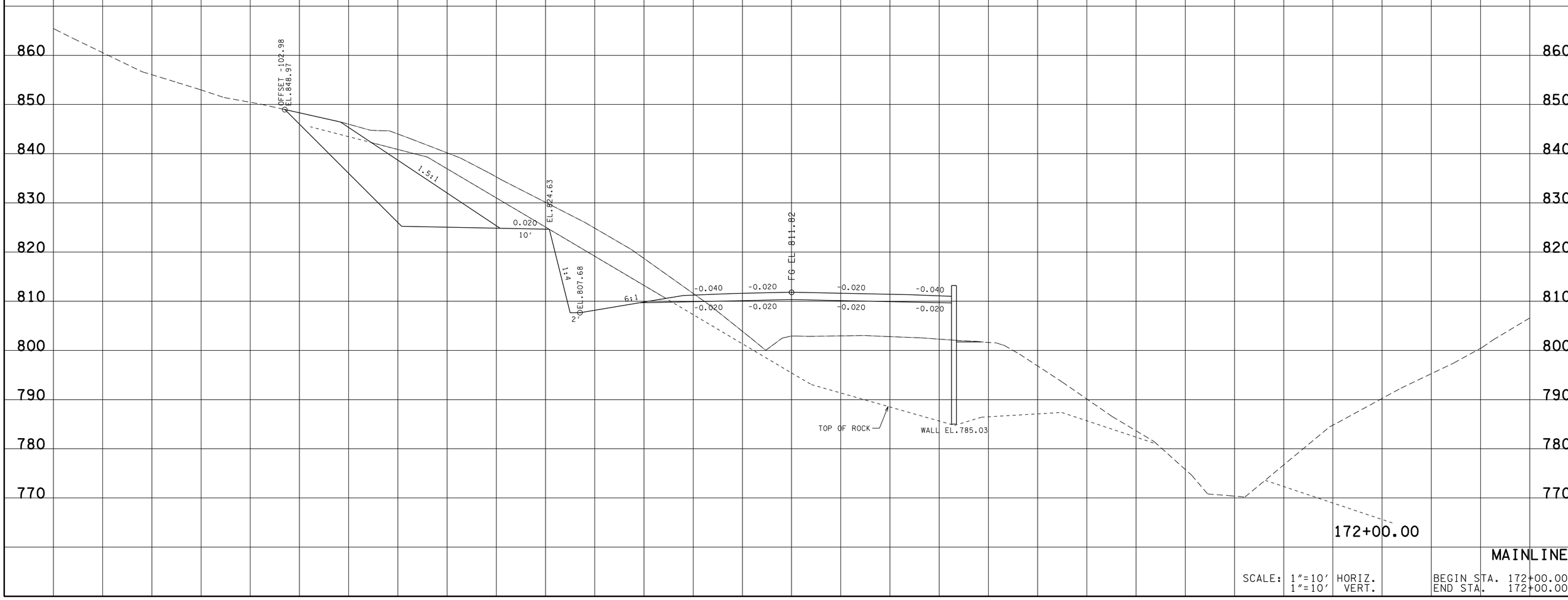
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	89
CONST.	2014	STP/PHSIP-10(24)	172

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 172+00.00
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13-MAR-2014 11:00
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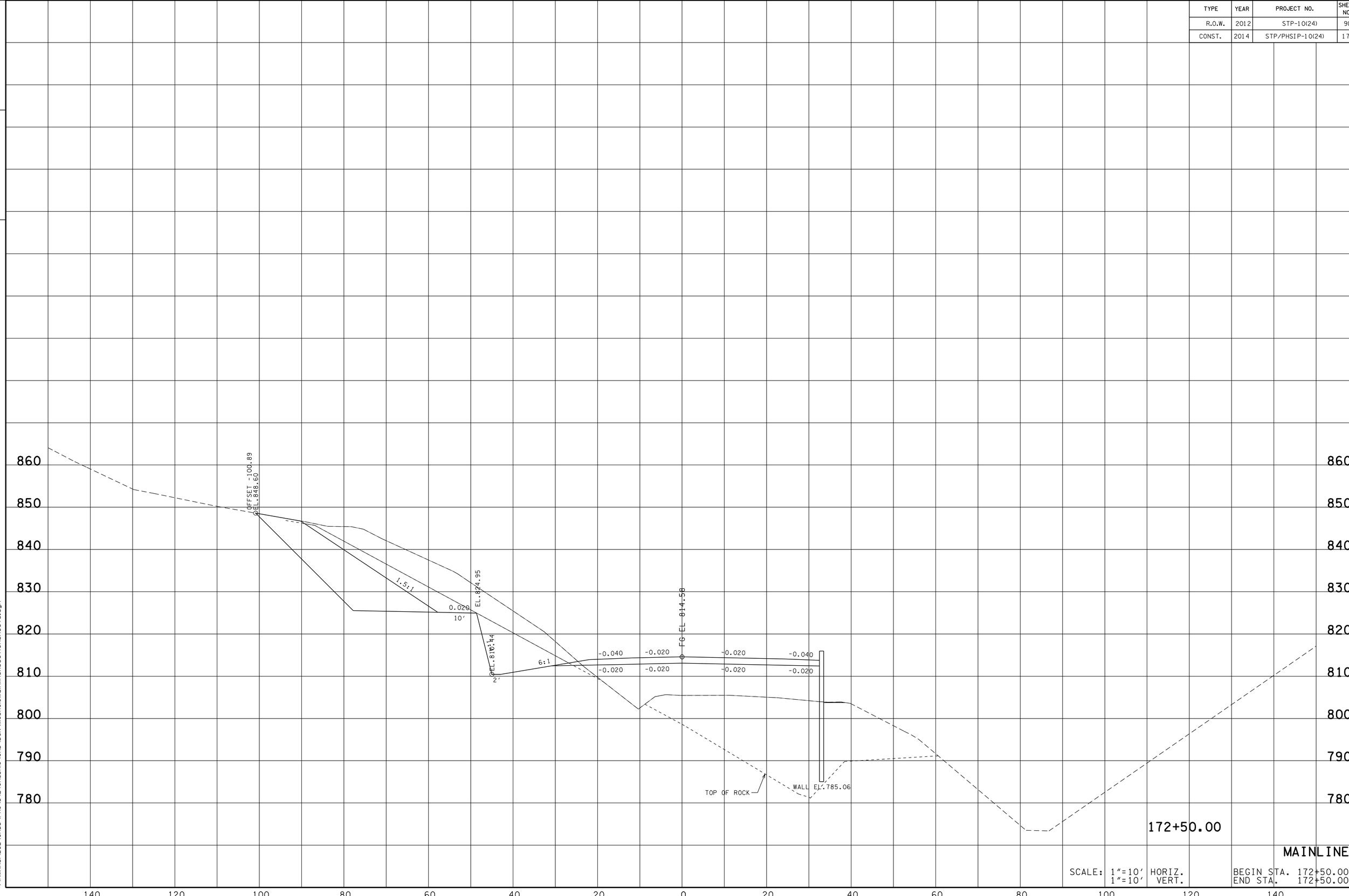
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	90
CONST.	2014	STP/PHSIP-10(24)	173

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



172+50.00

MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 172+50.00
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13-MAR-2014 11:00
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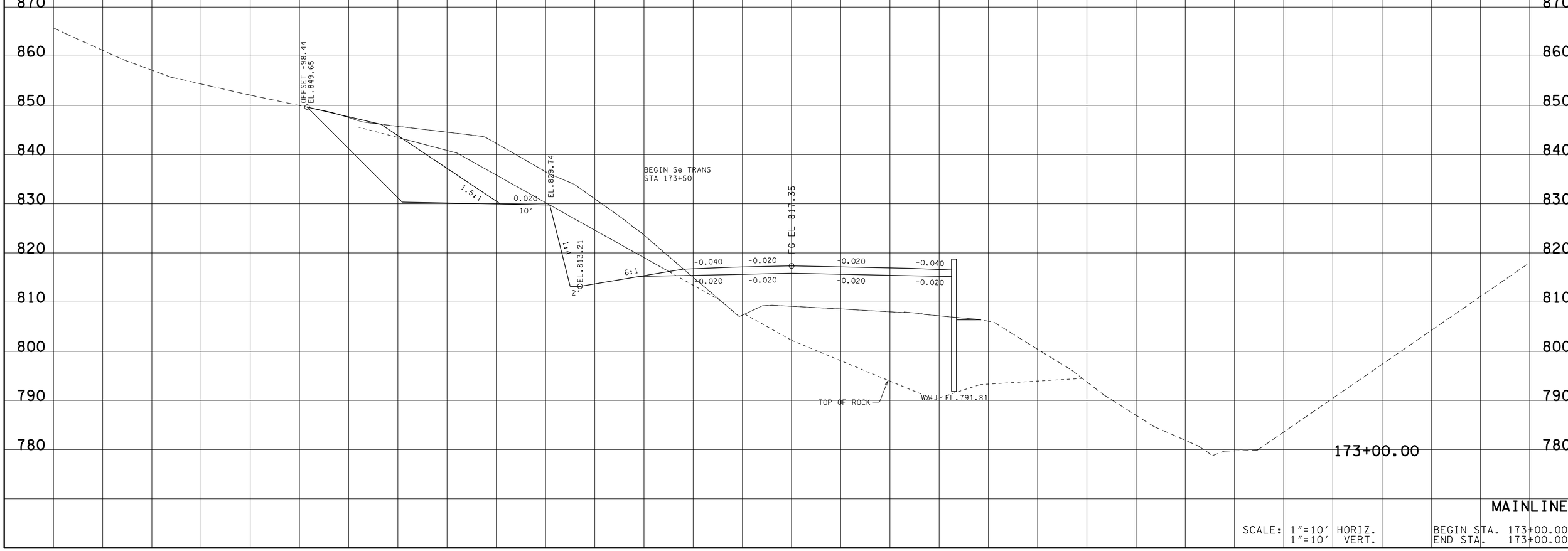
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	91
CONST.	2014	STP/PHSIP-10(24)	174

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 173+00.00
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13-MAR-2014 11:00
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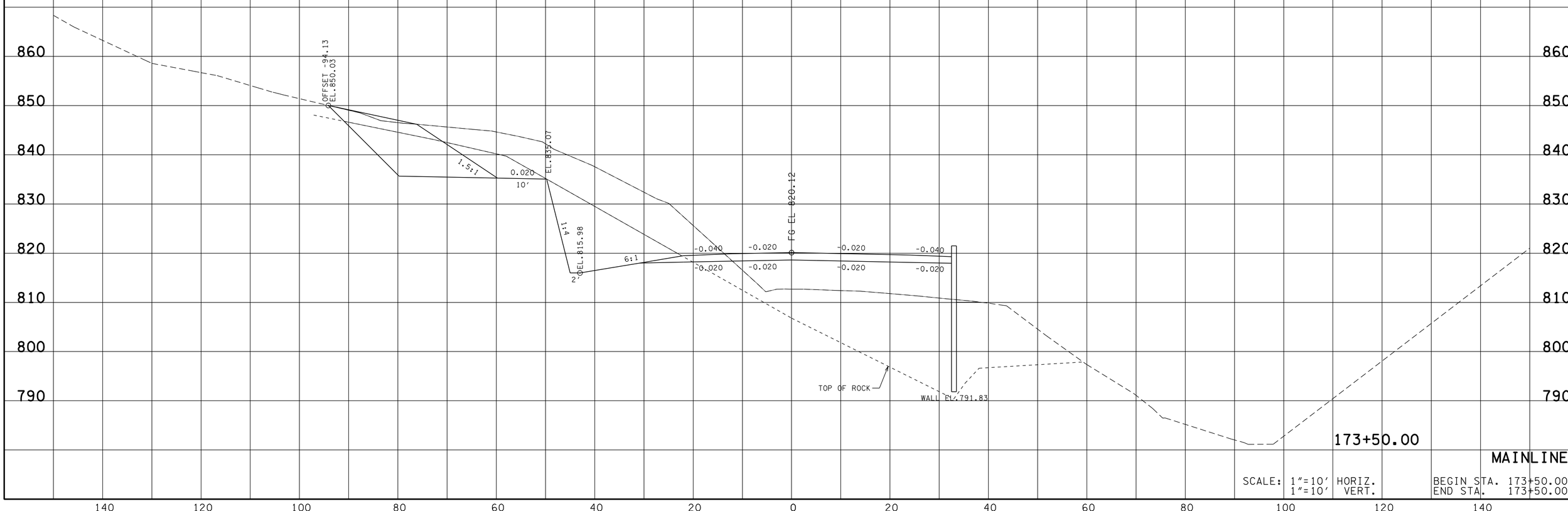
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	92
CONST.	2014	STP/PHSIP-10(24)	175

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



173+50.00

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SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 173+50.00
END STA. 173+50.00

13-MAR-2014 11:00
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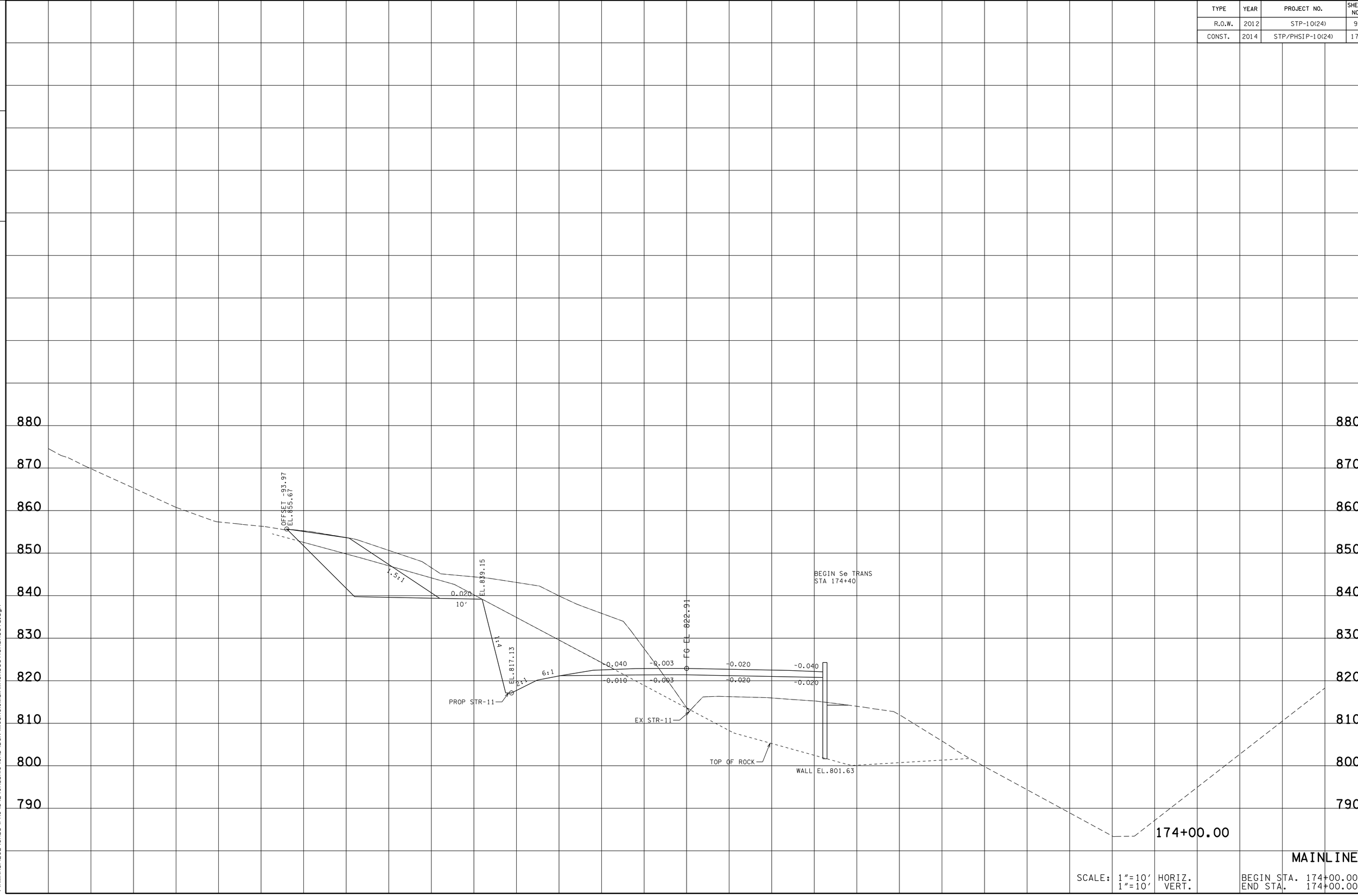
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	93
CONST.	2014	STP/PHSIP-10(24)	176



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SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 174+00.00
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TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.

13-MAR-2014 11:00
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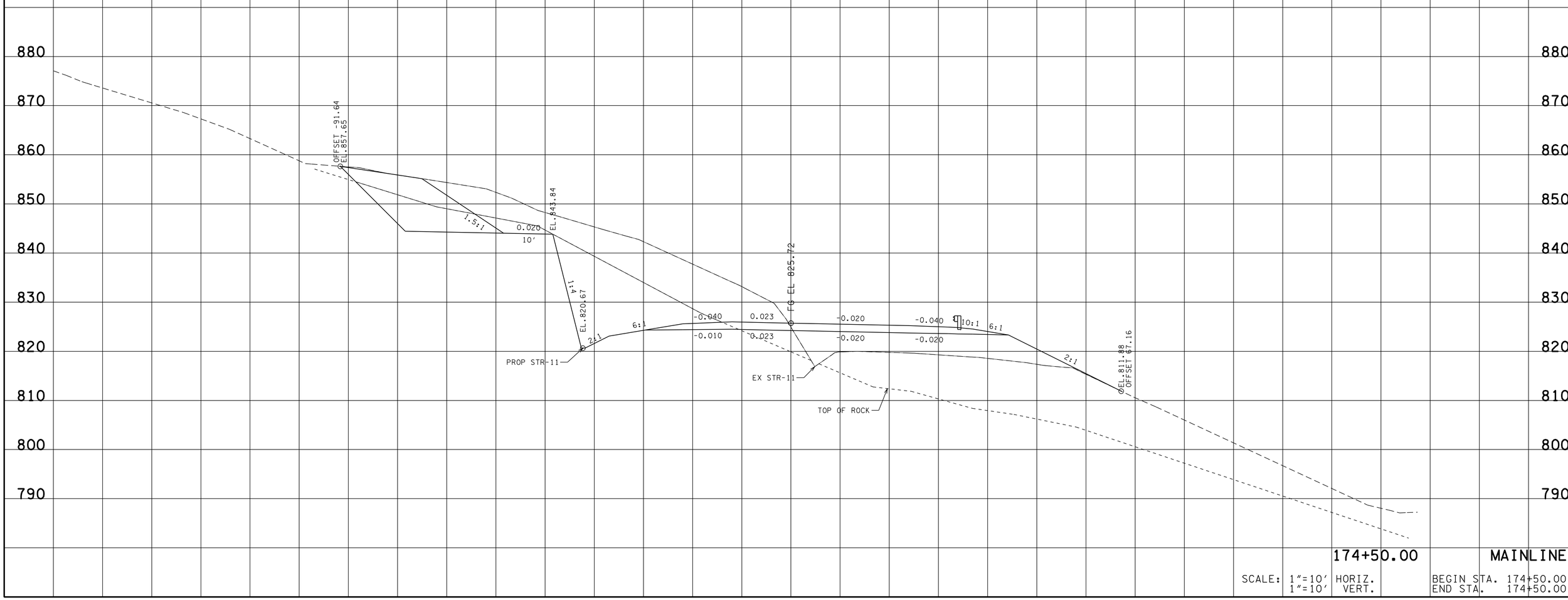
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	94
CONST.	2014	STP/PHSIP-10(24)	177



174+50.00 MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 174+50.00
END STA. 174+50.00

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.

13-MAR-2014 11:00
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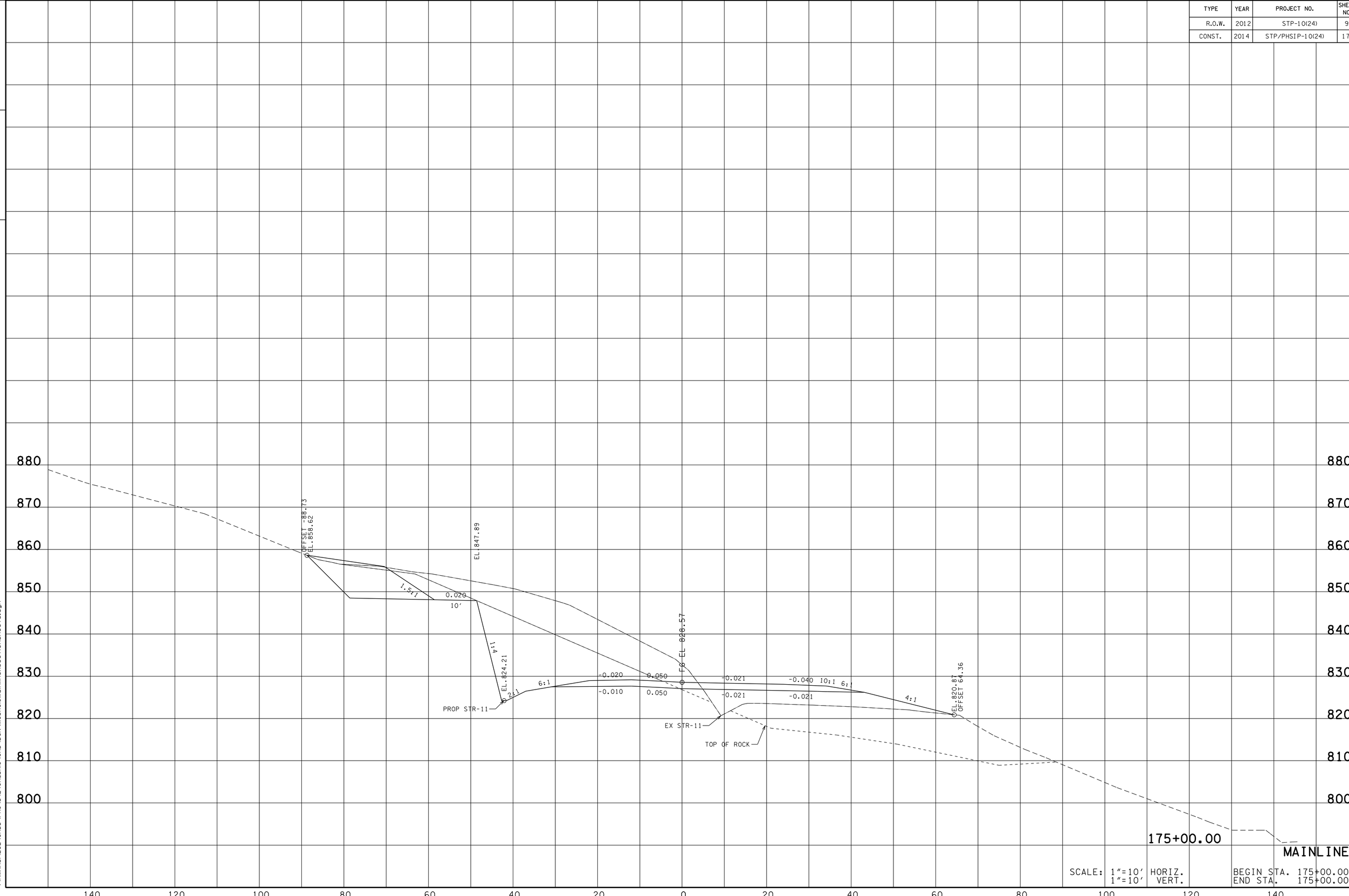
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	95
CONST.	2014	STP/PHSIP-10(24)	178



SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 175+00.00
END STA. 175+00.00

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.

13-MAR-2014 11:00
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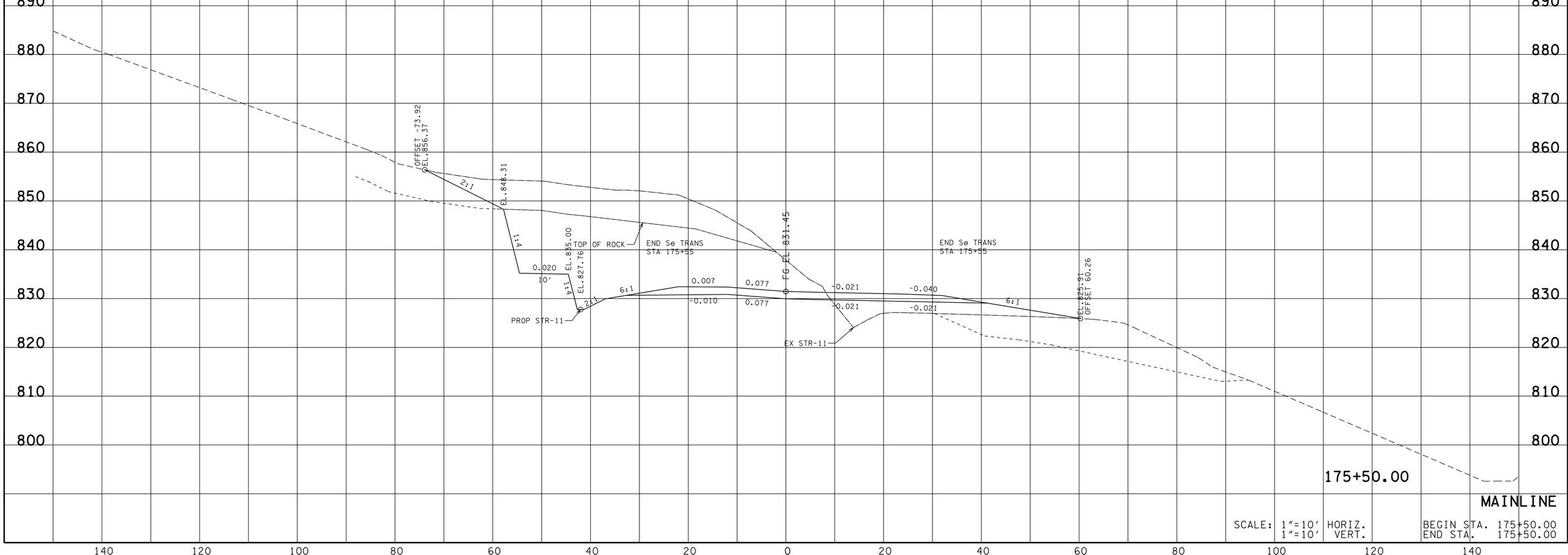
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	96
CONST.	2014	STP/PHSIP-10(24)	179

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



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SCALE: 1"=10' HORIZ.
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BEGIN STA. 175+50.00
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13-MAR-2014 11:00
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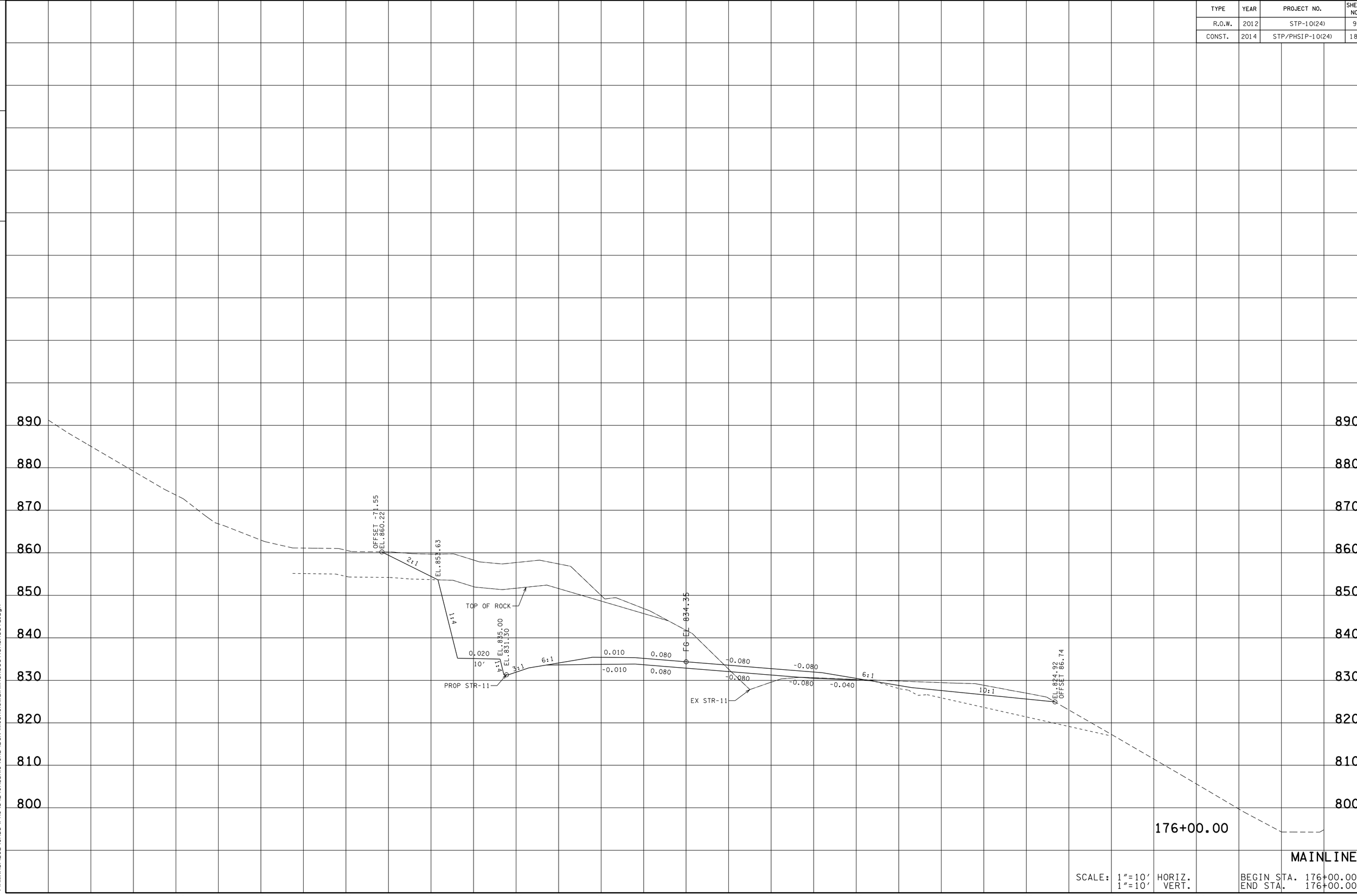
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	97
CONST.	2014	STP/PHSIP-10(24)	180



SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 176+00.00
END STA. 176+00.00

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.

13-MAR-2014 11:00
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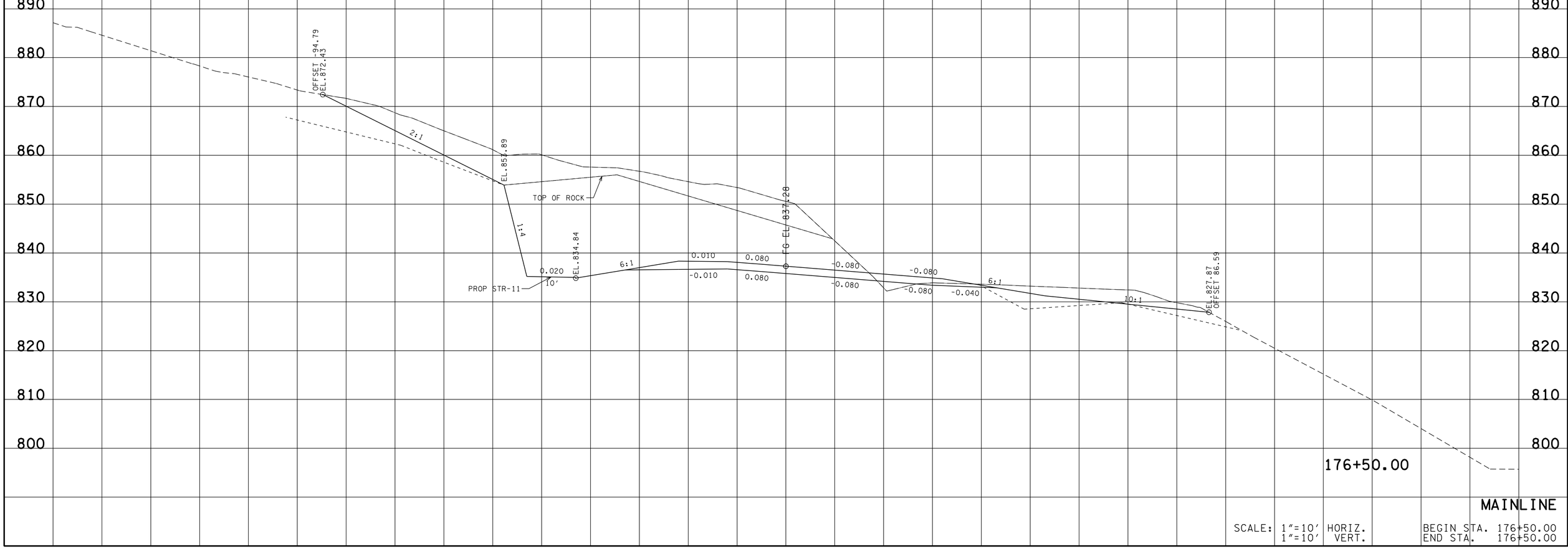
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	98
CONST.	2014	STP/PHSIP-10(24)	181

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



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SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 176+50.00
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13-MAR-2014 11:00
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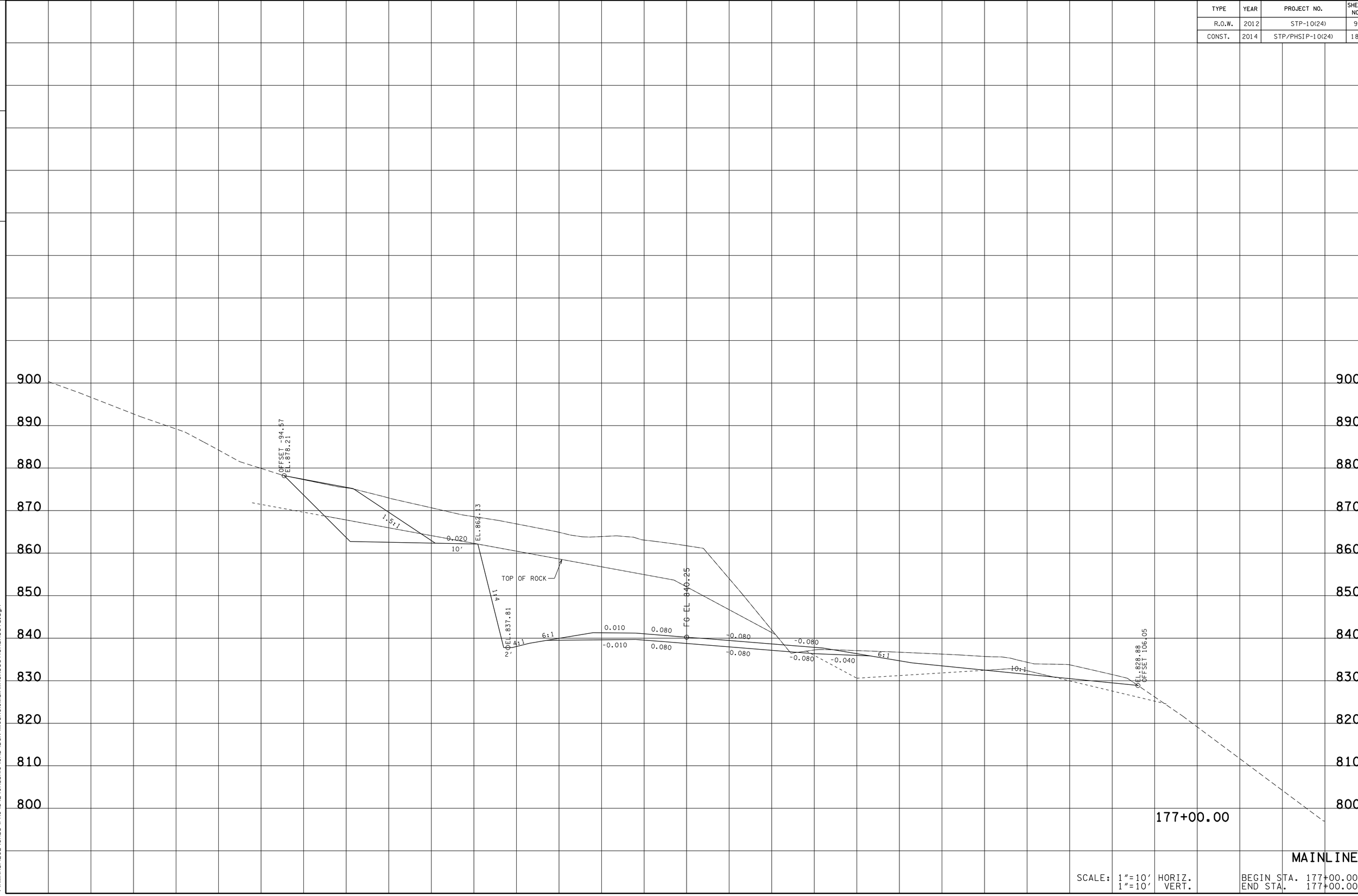
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	99
CONST.	2014	STP/PHSIP-10(24)	182

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



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SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 177+00.00
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13-MAR-2014 11:00
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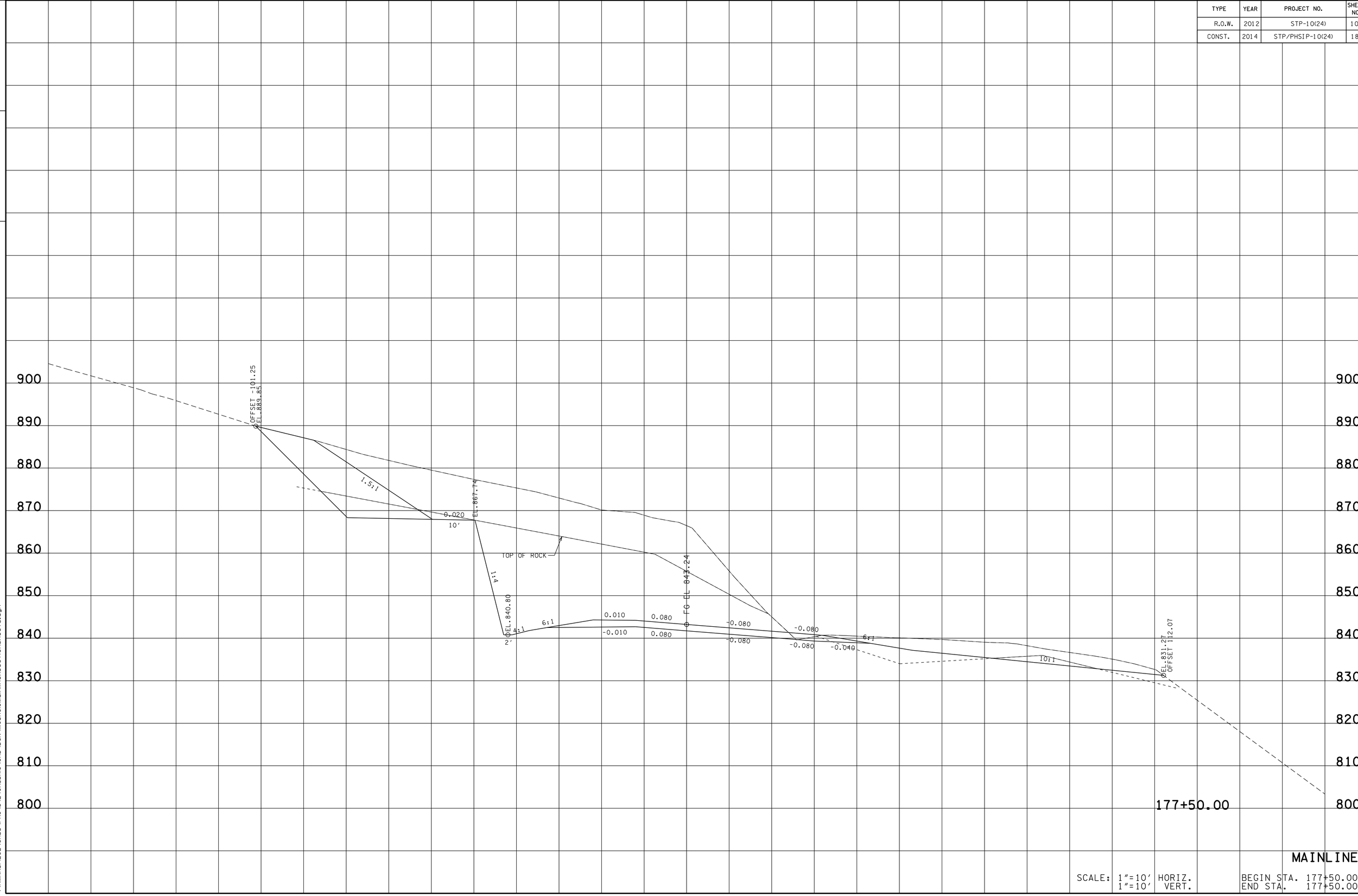
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	100
CONST.	2014	STP/PHSIP-10(24)	183

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

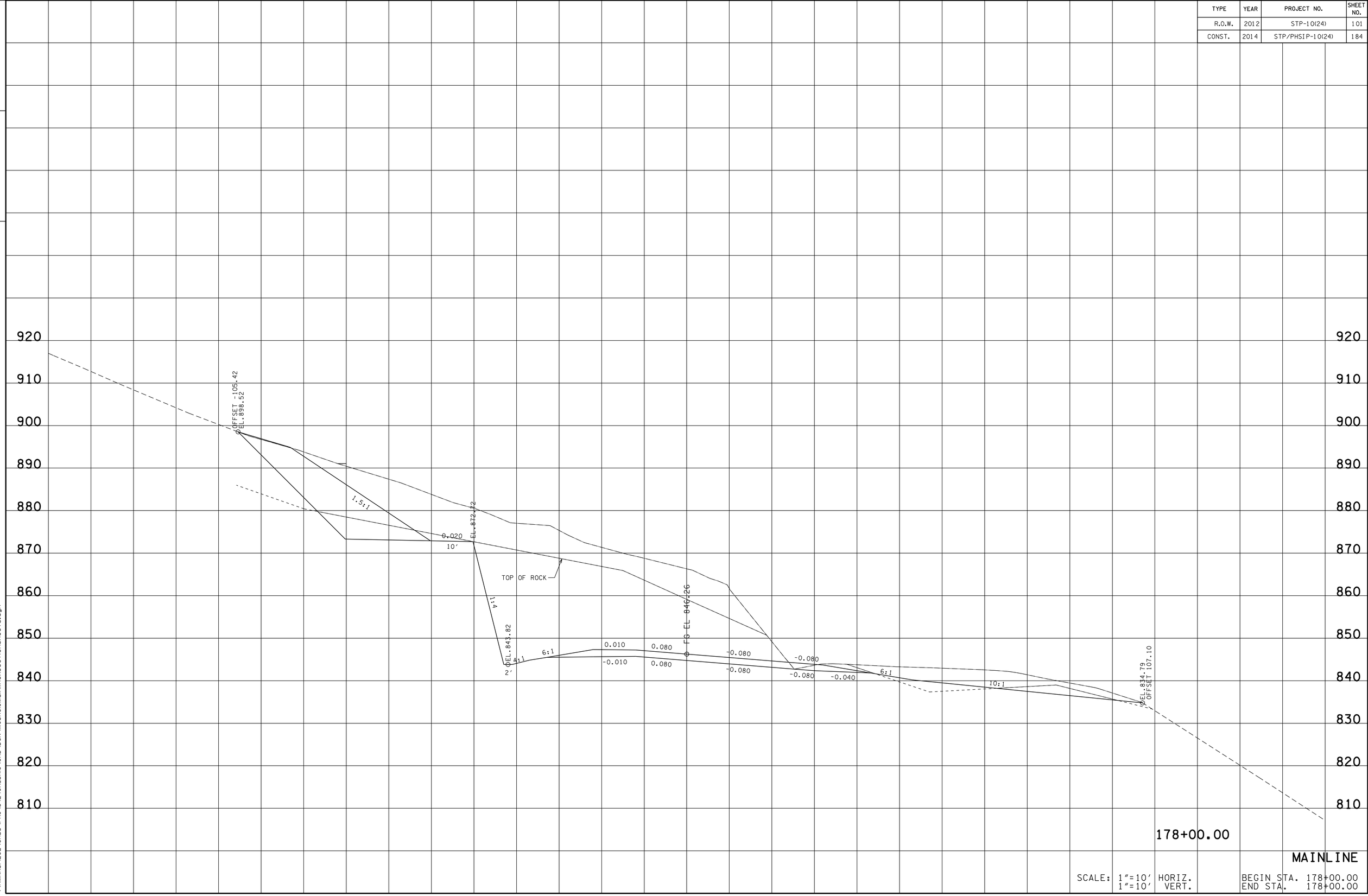
BEGIN STA. 177+50.00
END STA. 177+50.00

13-MAR-2014 11:00
\\AMNASFILO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	101
CONST.	2014	STP/PHSIP-10(24)	184

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



SCALE: 1"=10' HORIZ.
1"=10' VERT.

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13-MAR-2014 11:00
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	102
CONST.	2014	STP/PHSIP-10(24)	185

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

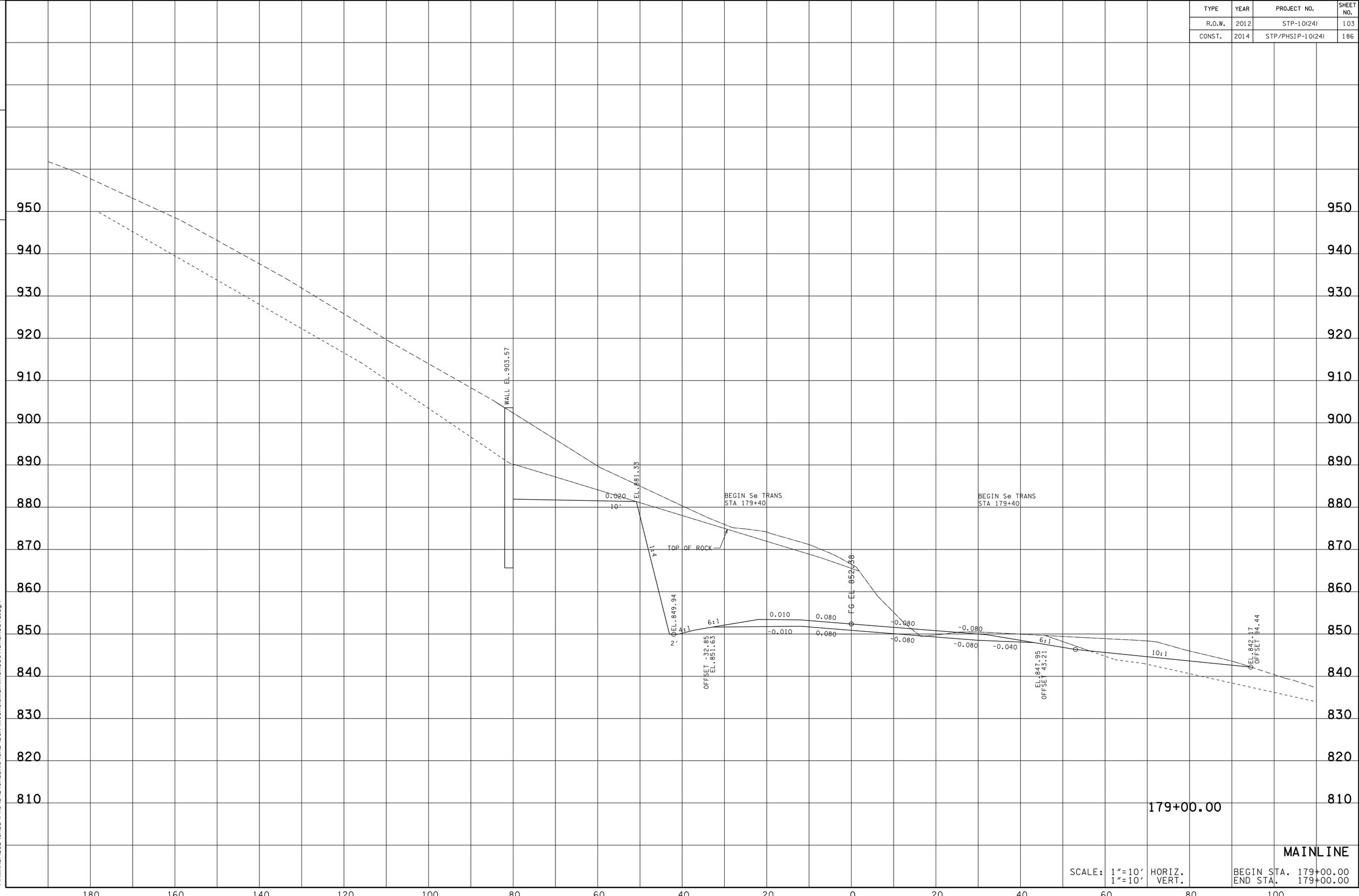
BEGIN STA. 178+50.00
END STA. 178+50.00

13-MAR-2014 11:00
\\AMNASFILO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	103
CONST.	2014	STP/PHSIP-10(24)	186

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

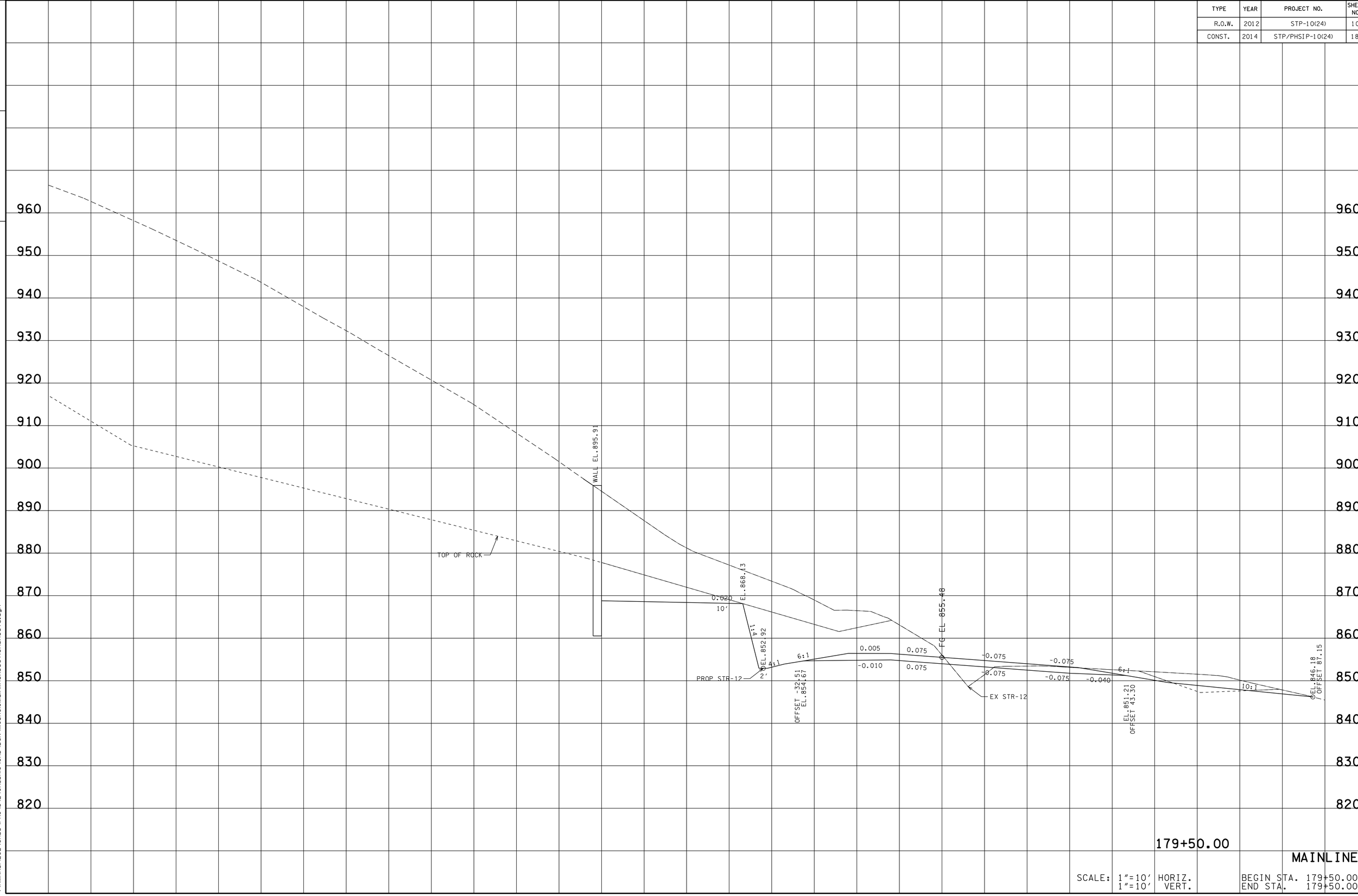


13-MAR-2014 11:00
\\AMNASFILO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR10MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	104
CONST.	2014	STP/PHSIP-10(24)	187

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



SCALE: 1"=10' HORIZ.
1"=10' VERT.

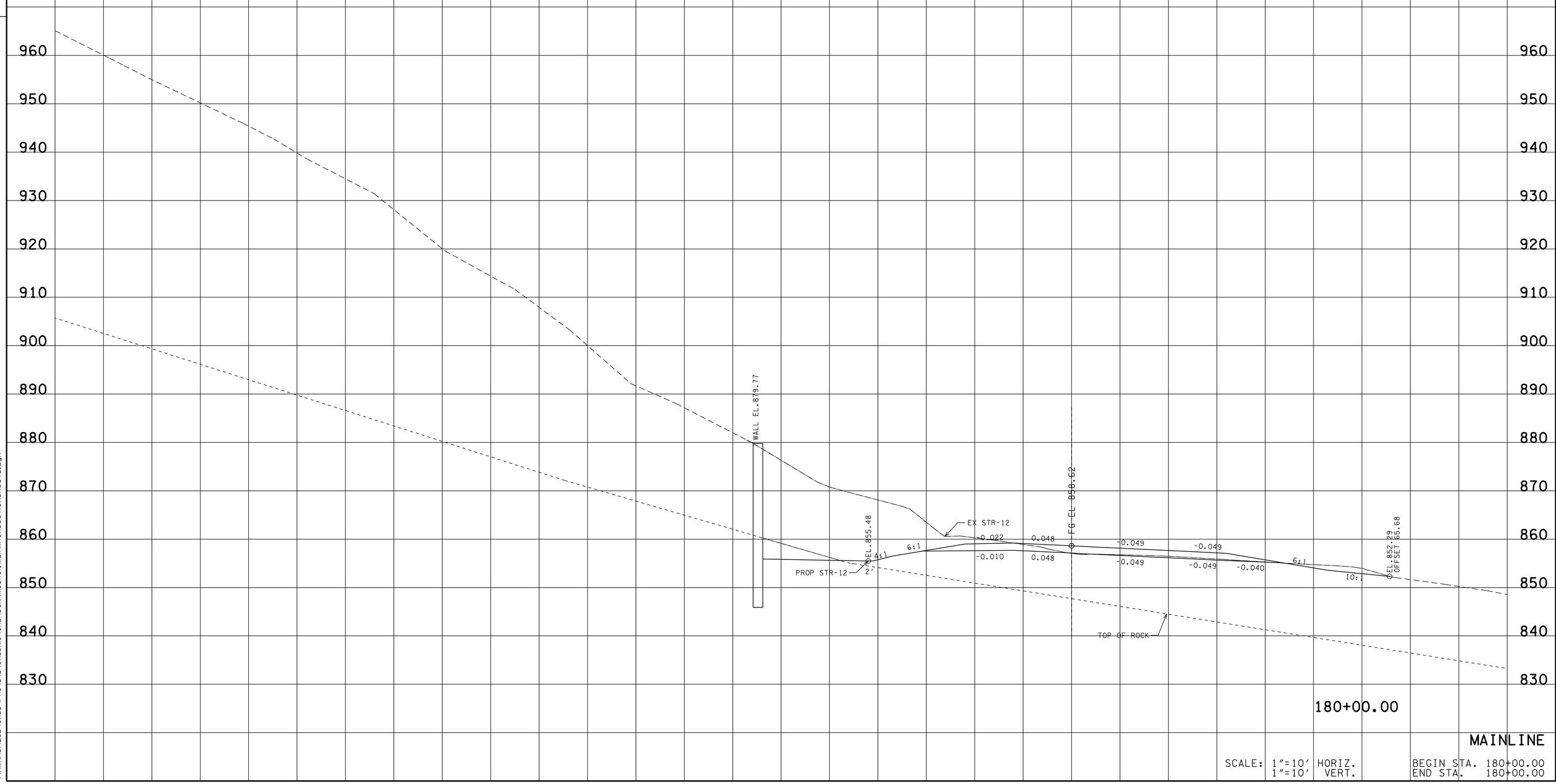
BEGIN STA. 179+50.00
END STA. 179+50.00

13-MAR-2014 11:00
\\AMNASFILO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	105
CONST.	2014	STP/PHSIP-10(24)	188

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

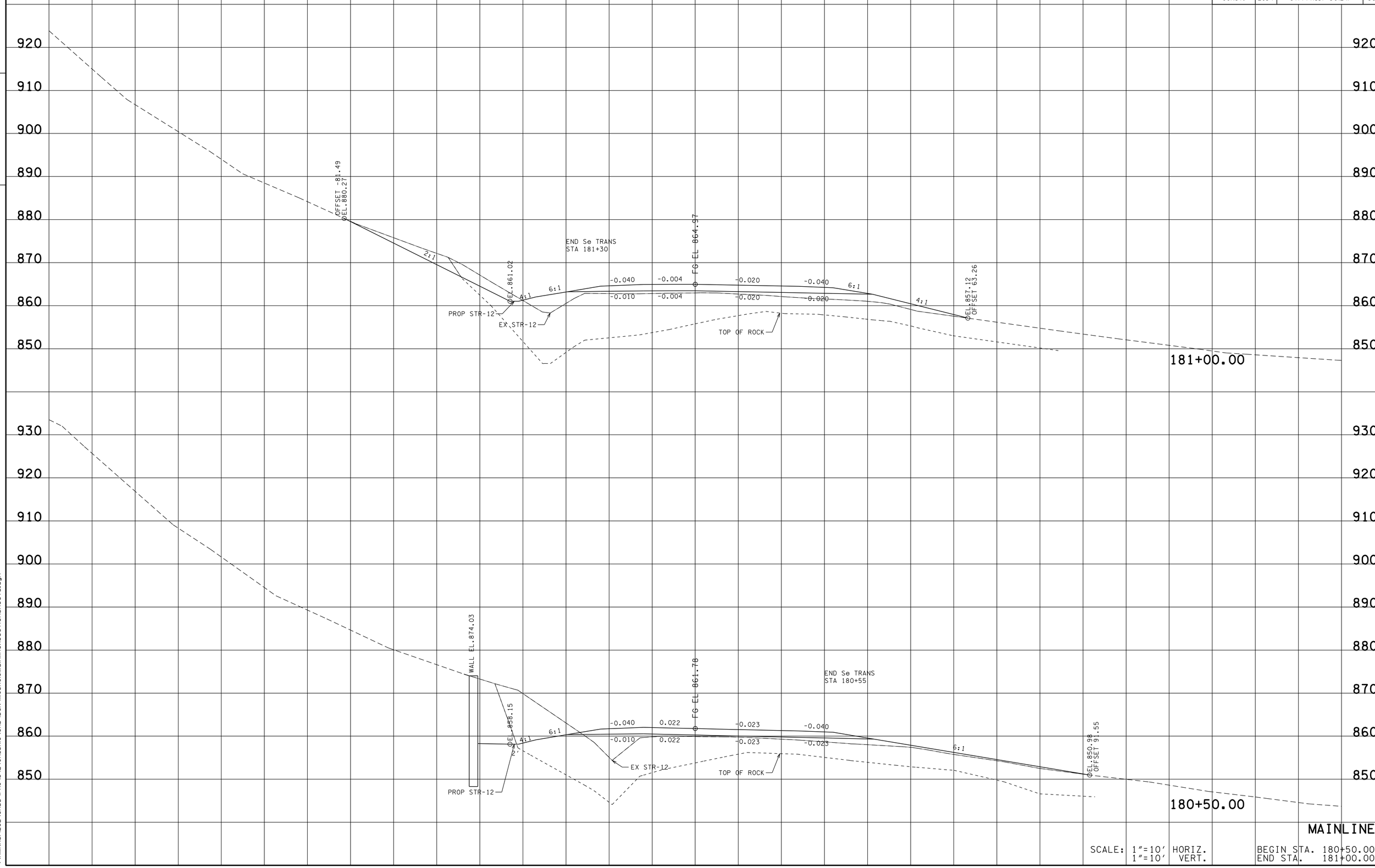
SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 180+00.00
END STA. 180+00.00

13-MAR-2014 11:00
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	106
CONST.	2014	STP/PHSIP-10(24)	189

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

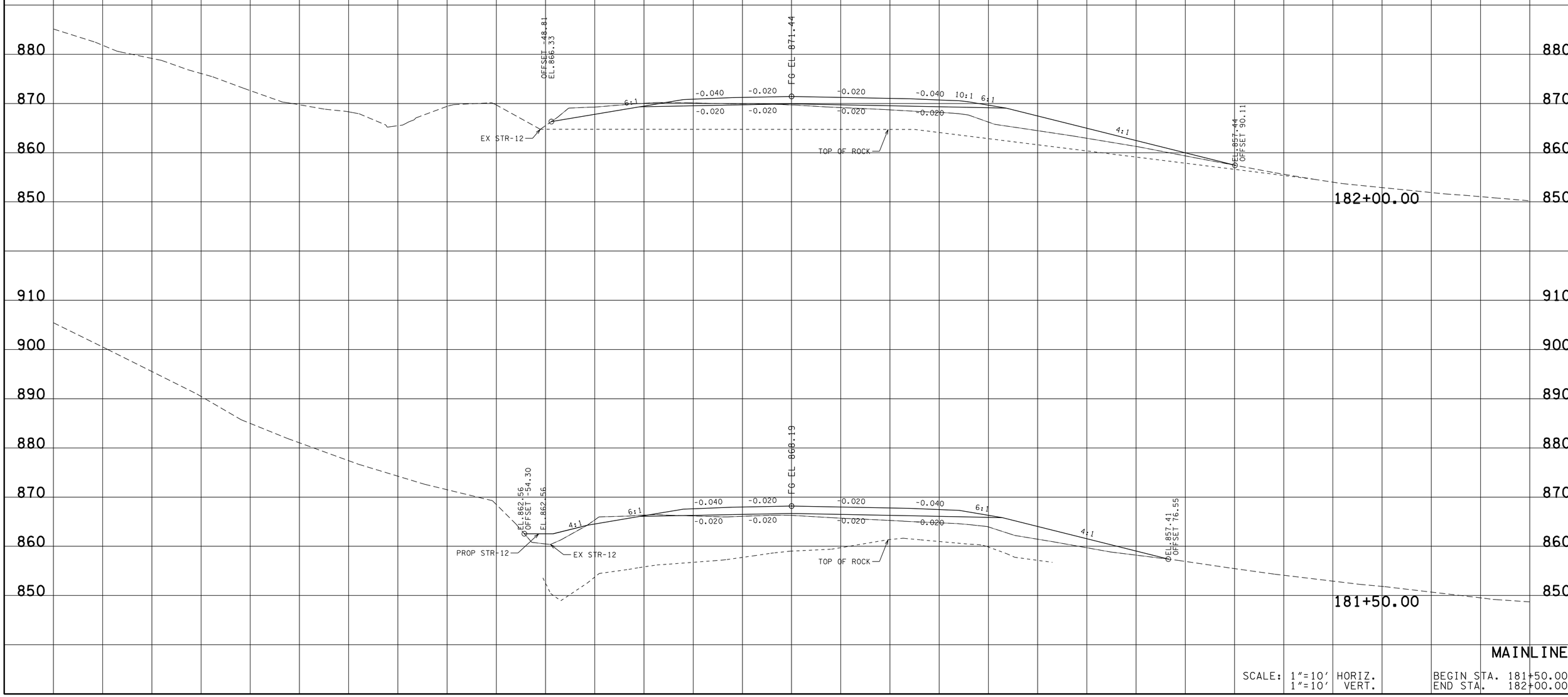
BEGIN STA. 180+50.00
END STA. 181+00.00

13-MAR-2014 11:00
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR01MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	107
CONST.	2014	STP/PHSIP-10(24)	190

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

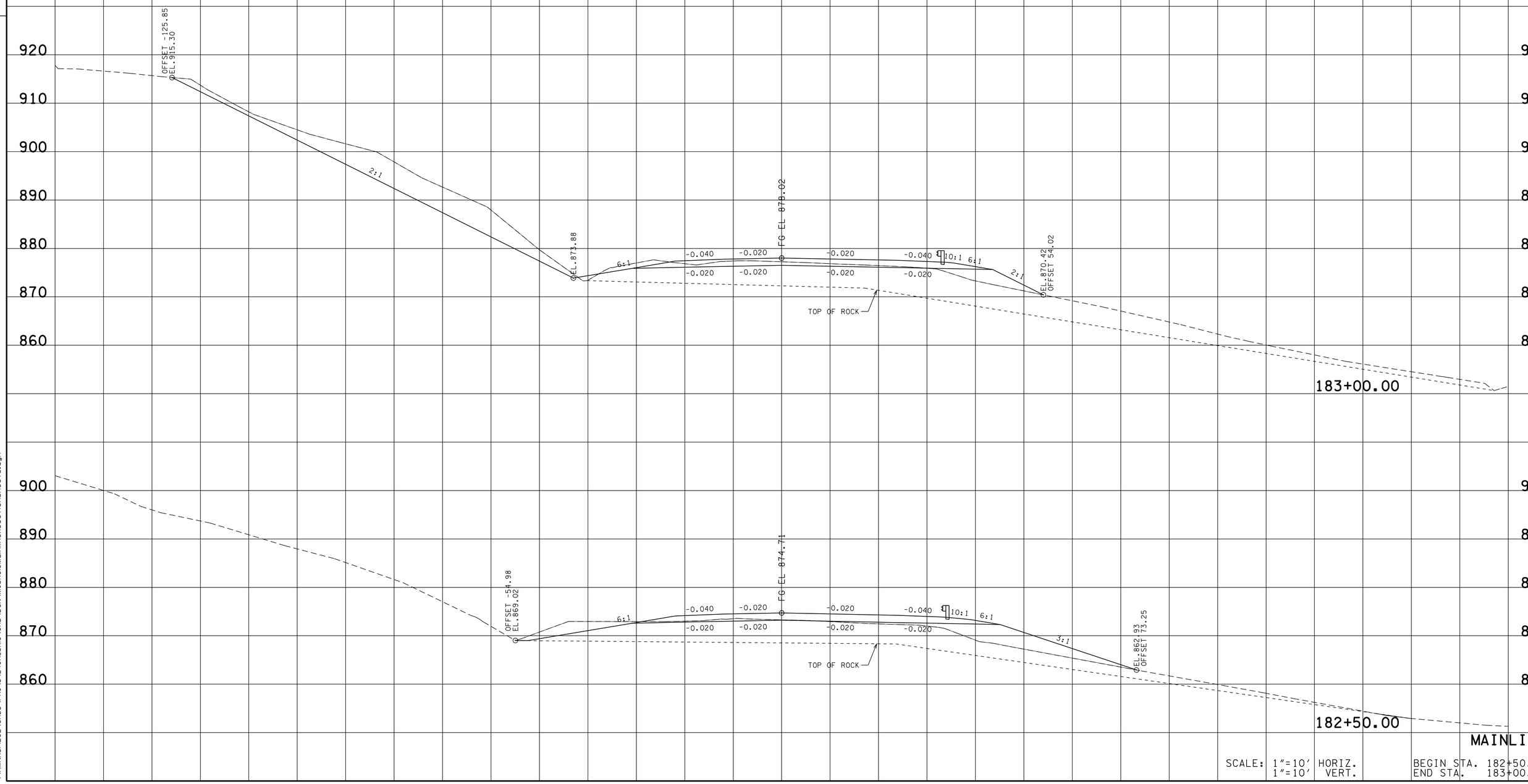
SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 181+50.00
END STA. 182+00.00

13-MAR-2014 11:00
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	108
CONST.	2014	STP/PHSIP-10(24)	191

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

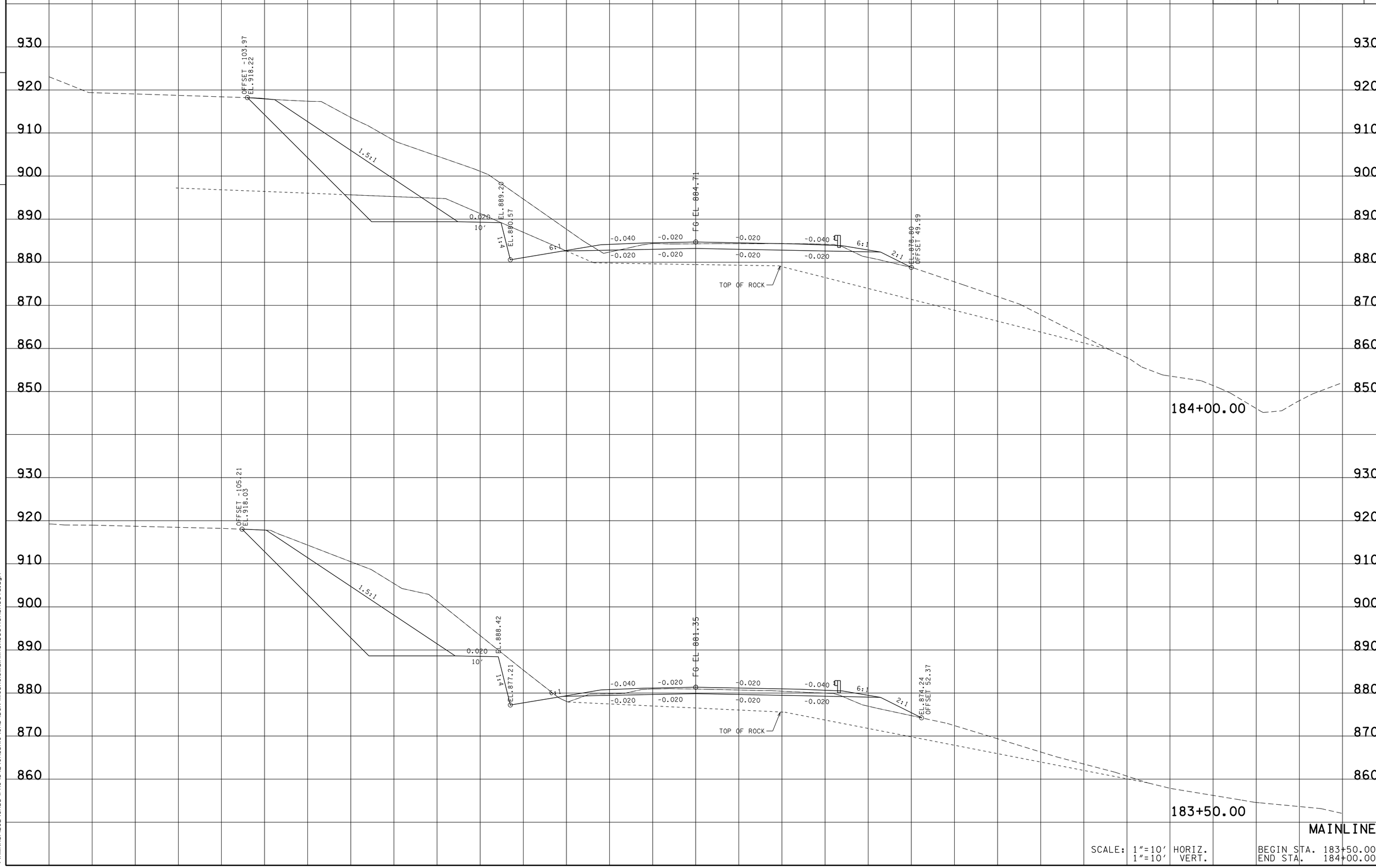
BEGIN STA. 182+50.00
END STA. 183+00.00

13-MAR-2014 11:00
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR01MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	109
CONST.	2012	STP/PHSIP-10(24)	192

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

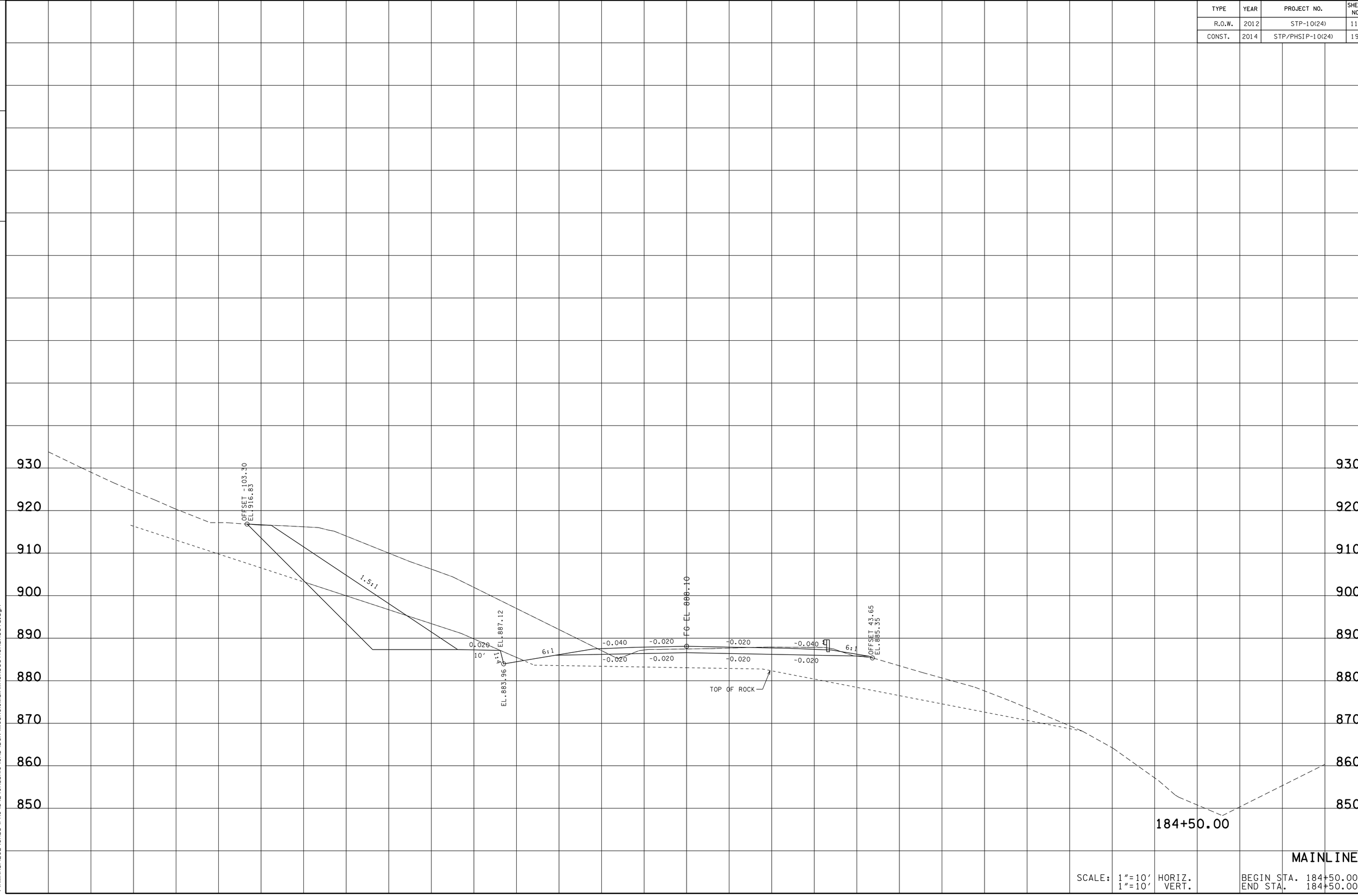
BEGIN STA. 183+50.00
END STA. 184+00.00

13-MAR-2014 11:00
\\AMNASFLO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	110
CONST.	2014	STP/PHSIP-10(24)	193

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

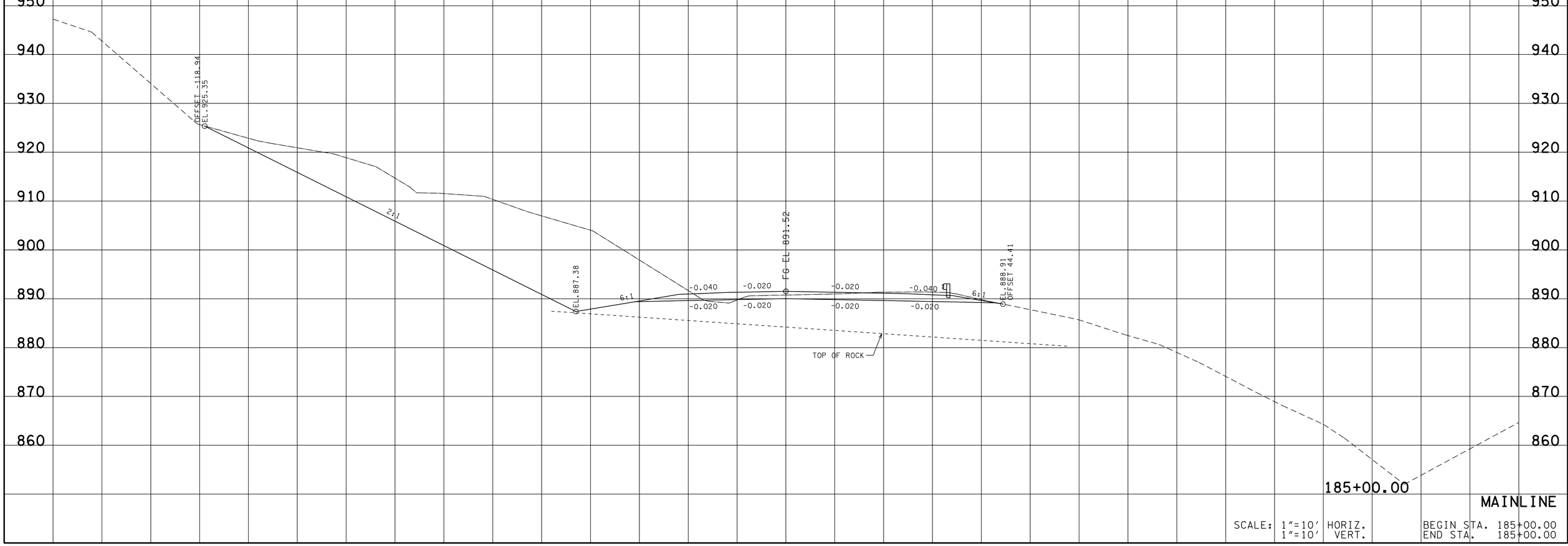
BEGIN STA. 184+50.00
END STA. 184+50.00

13-MAR-2014 11:00
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	111
CONST.	2014	STP/PHSIP-10(24)	194

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 185+00.00
END STA. 185+00.00

13-MAR-2014 11:00
\\AMNASFLO2\CADD\PRJ\34240A_SR10\CADD\DGN\MCSR10MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	112
CONST.	2014	STP/PHSIP-10(24)	195

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 185+50.00
END STA. 185+50.00

13-MAR-2014 11:00
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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	113
CONST.	2014	STP/PHSIP-10(24)	196

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION

MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

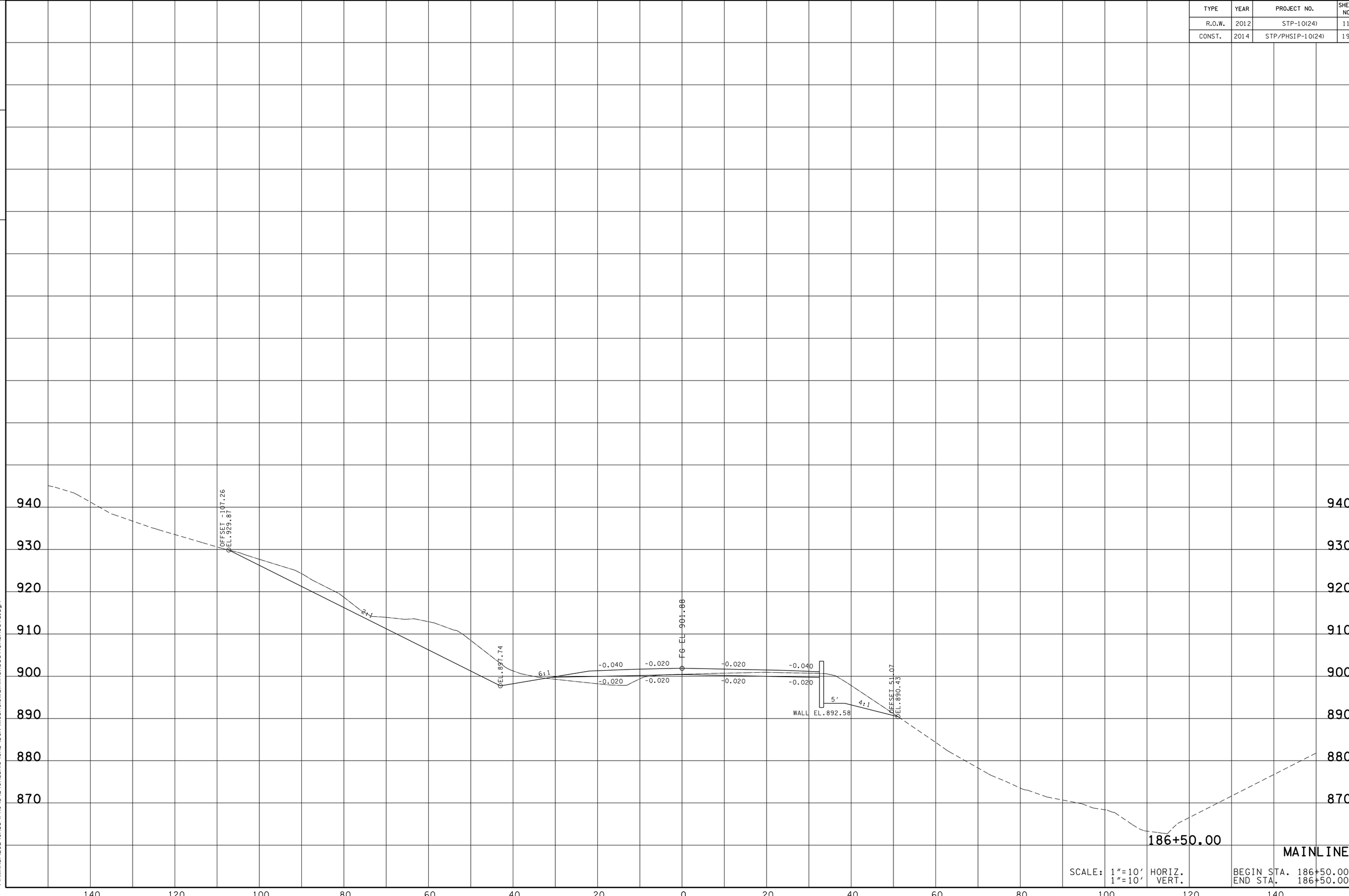
BEGIN STA. 186+00.00
END STA. 186+00.00

13-MAR-2014 11:00
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	114
CONST.	2014	STP/PHSIP-10(24)	197

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

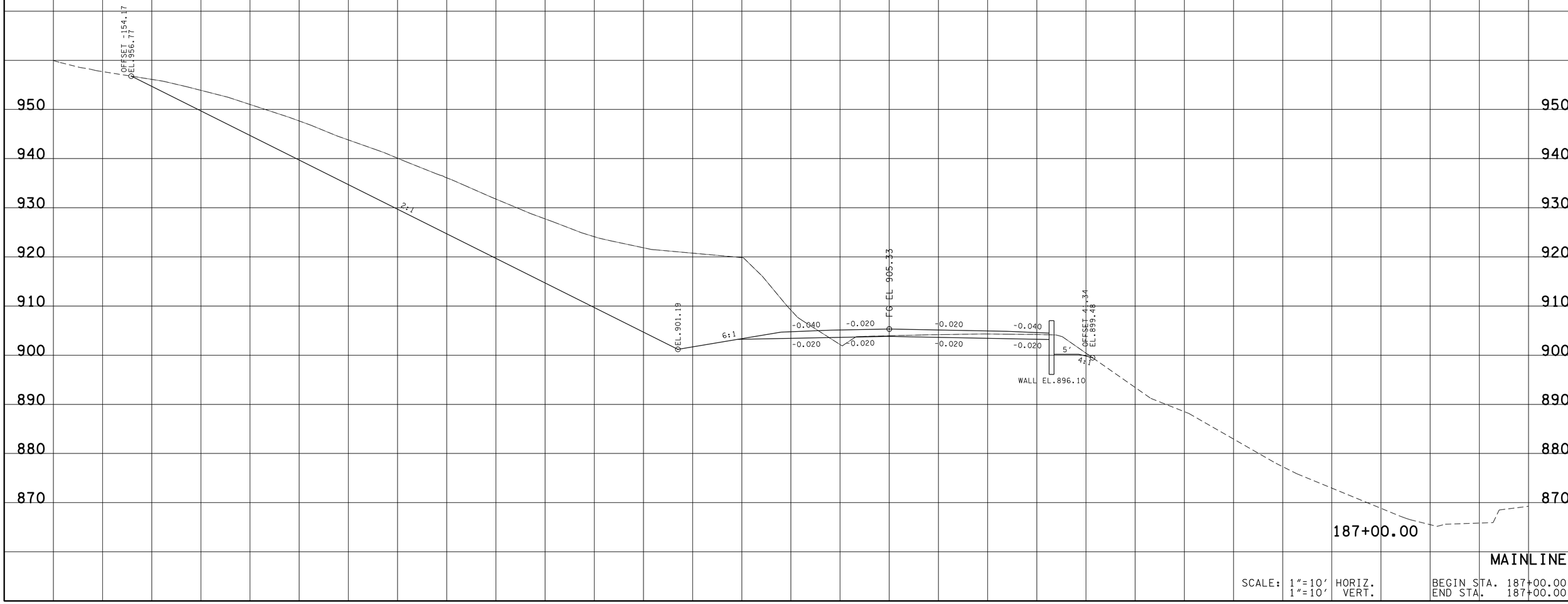
SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 186+50.00
END STA. 186+50.00

13-MAR-2014 11:00
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR01MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	115
CONST.	2014	STP/PHSIP-10(24)	198

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



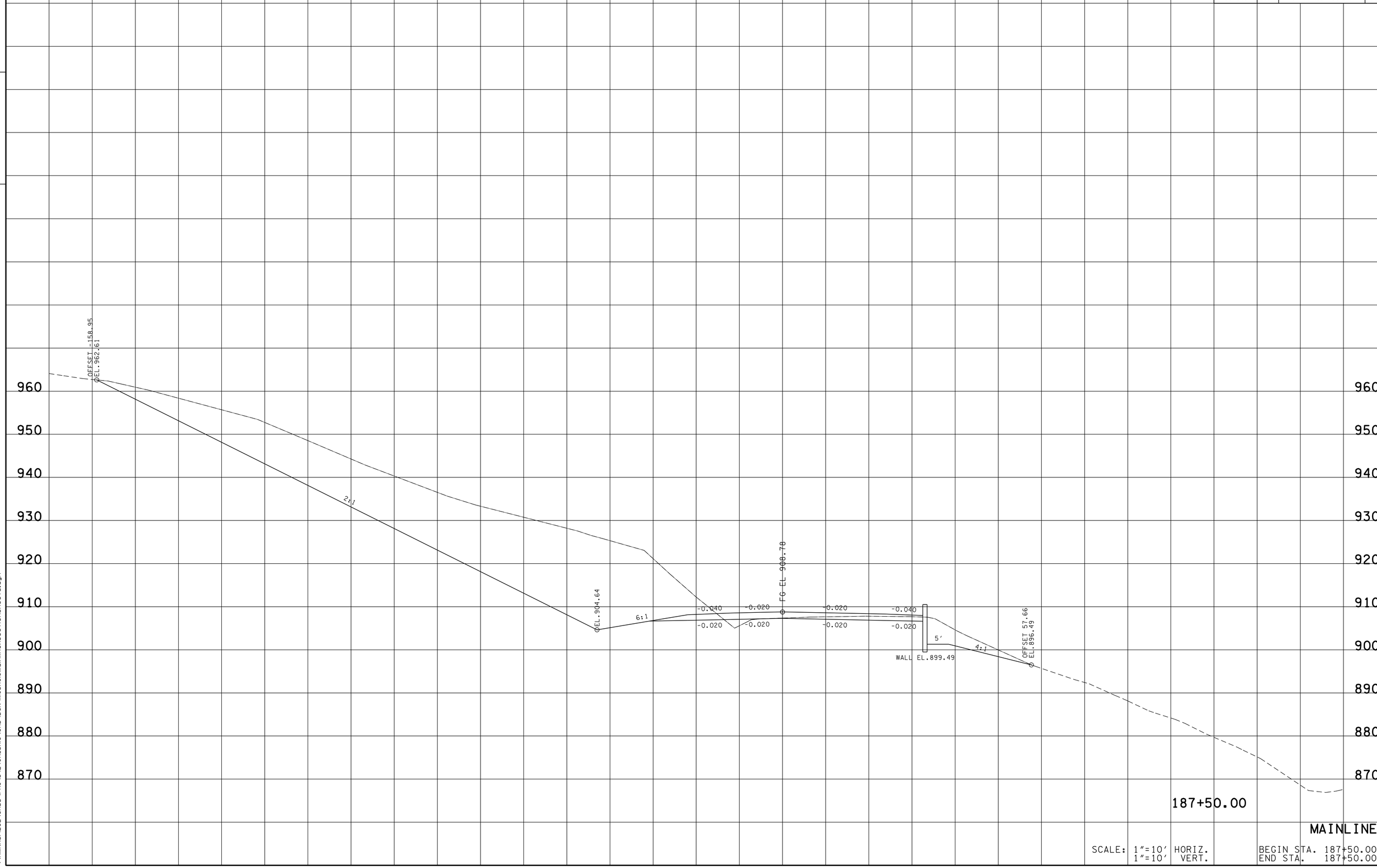
MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 187+00.00
END STA. 187+00.00

13-MAR-2014 11:00
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR01MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	116
CONST.	2014	STP/PHSIP-10(24)	199



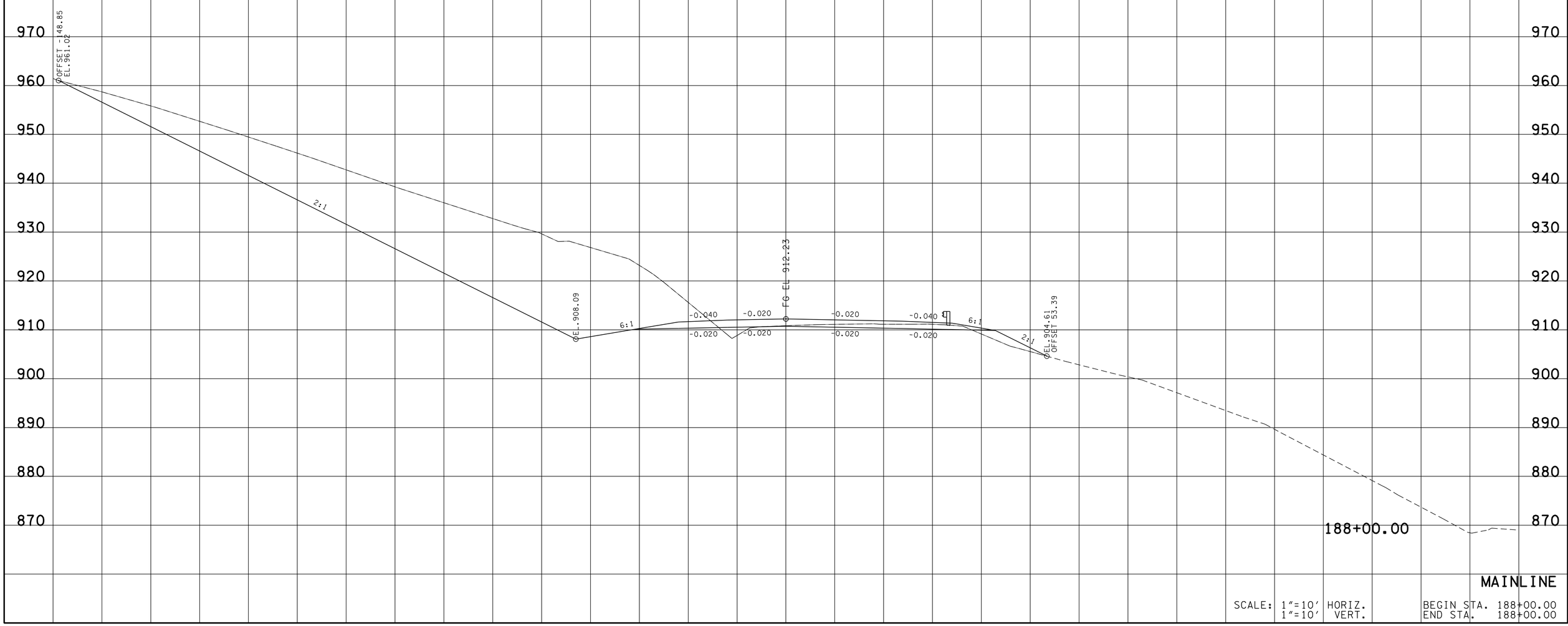
TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.

13-MAR-2014 11:00
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	117
CONST.	2014	STP/PHSIP-10(24)	200

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.



MAINLINE

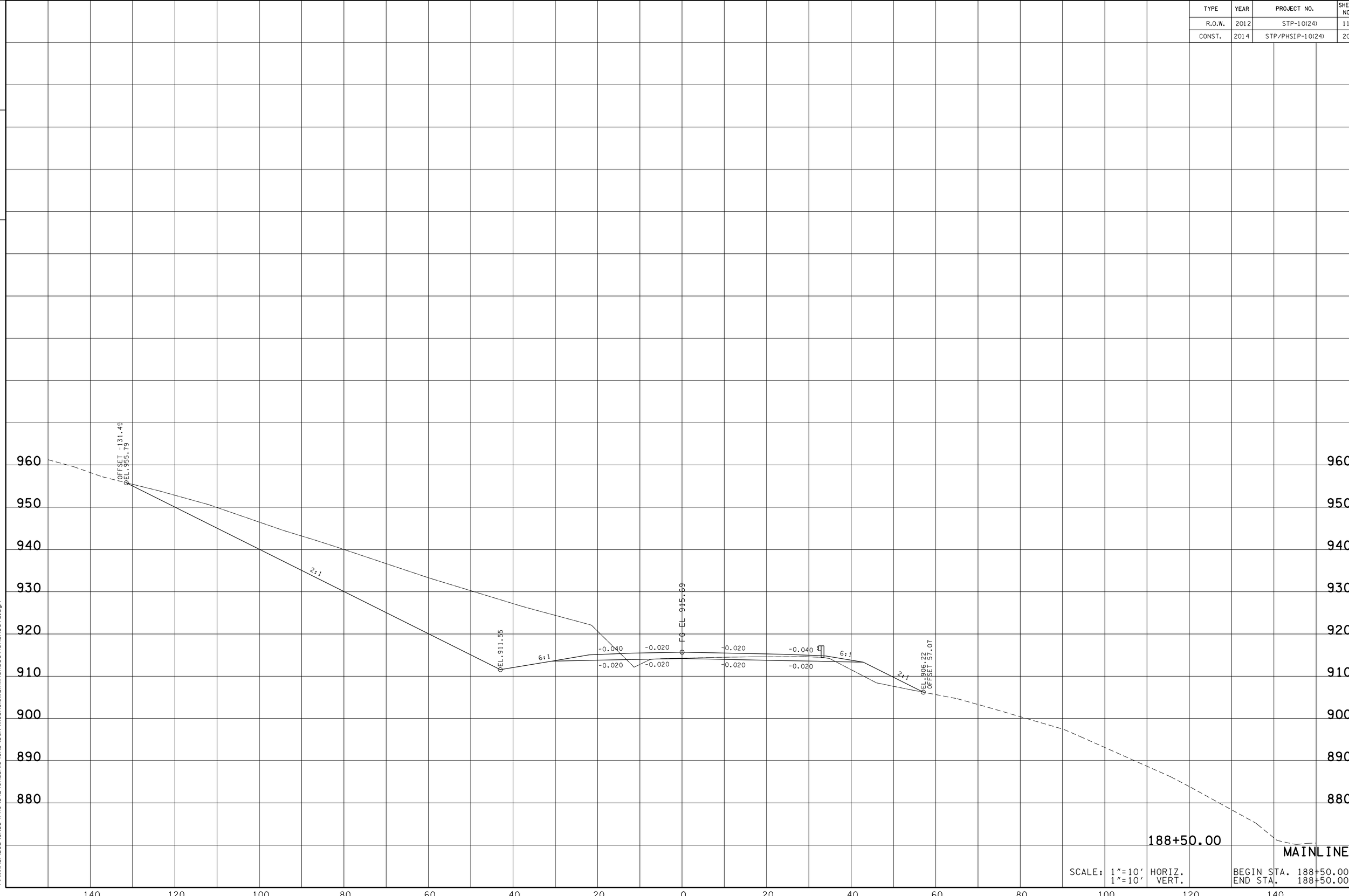
SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 188+00.00
END STA. 188+00.00

13-MAR-2014 11:00
\\AMNASFILO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	118
CONST.	2014	STP/PHSIP-10(24)	201

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 188+50.00
END STA. 188+50.00

13-MAR-2014 11:00
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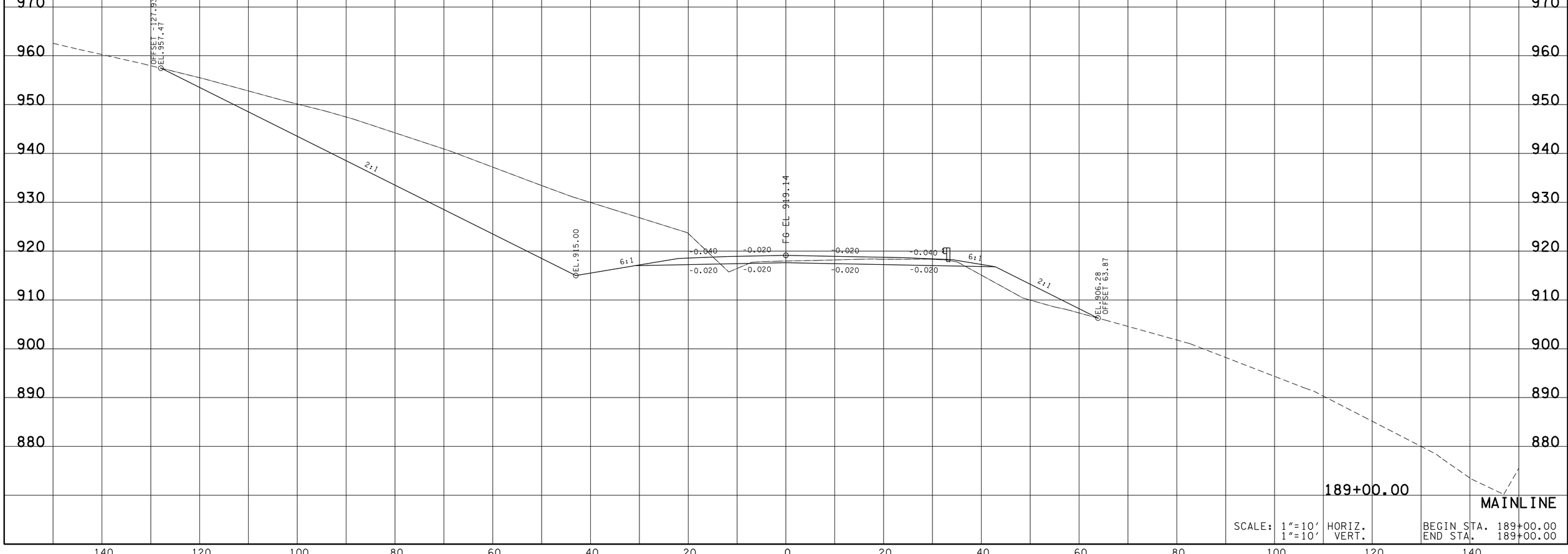
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	119
CONST.	2014	STP/PHSIP-10(24)	202

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



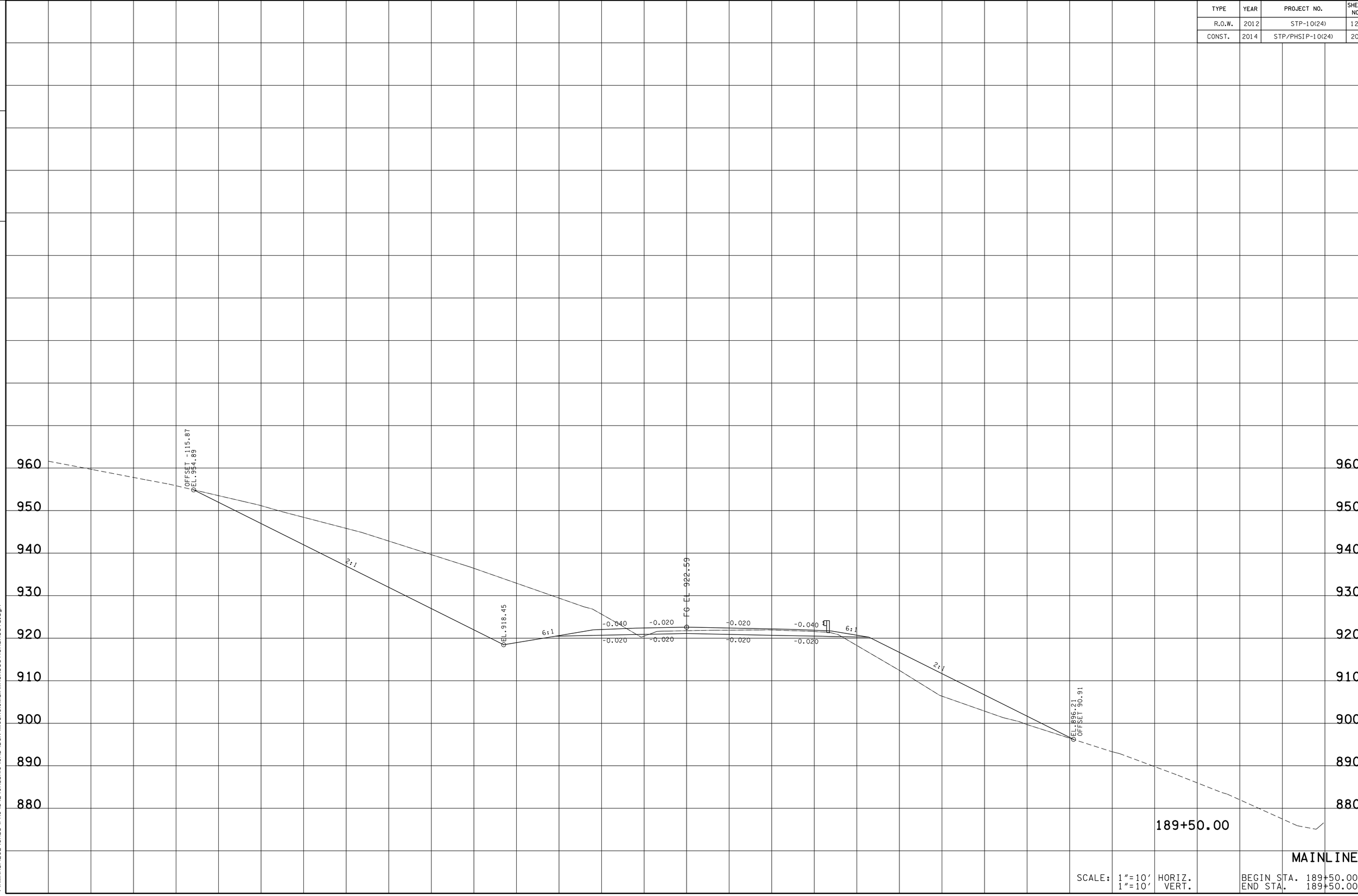
SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 189+00.00
END STA. 189+00.00

13-MAR-2014 11:00
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	120
CONST.	2014	STP/PHSIP-10(24)	203

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO.



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

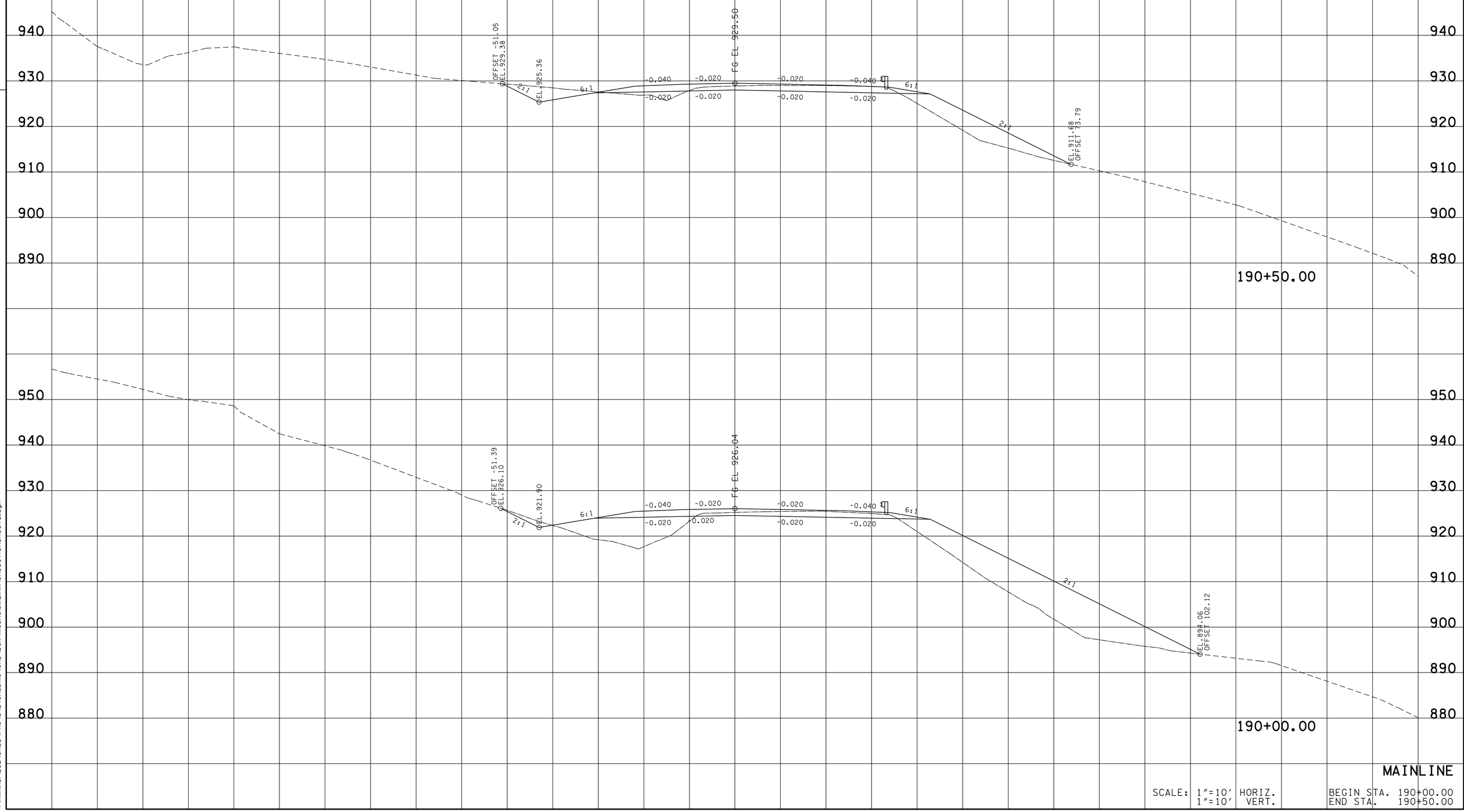
BEGIN STA. 189+50.00
END STA. 189+50.00

13-MAR-2014 11:01
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR01MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	121
CONST.	2014	STP/PHSIP-10(24)	204

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

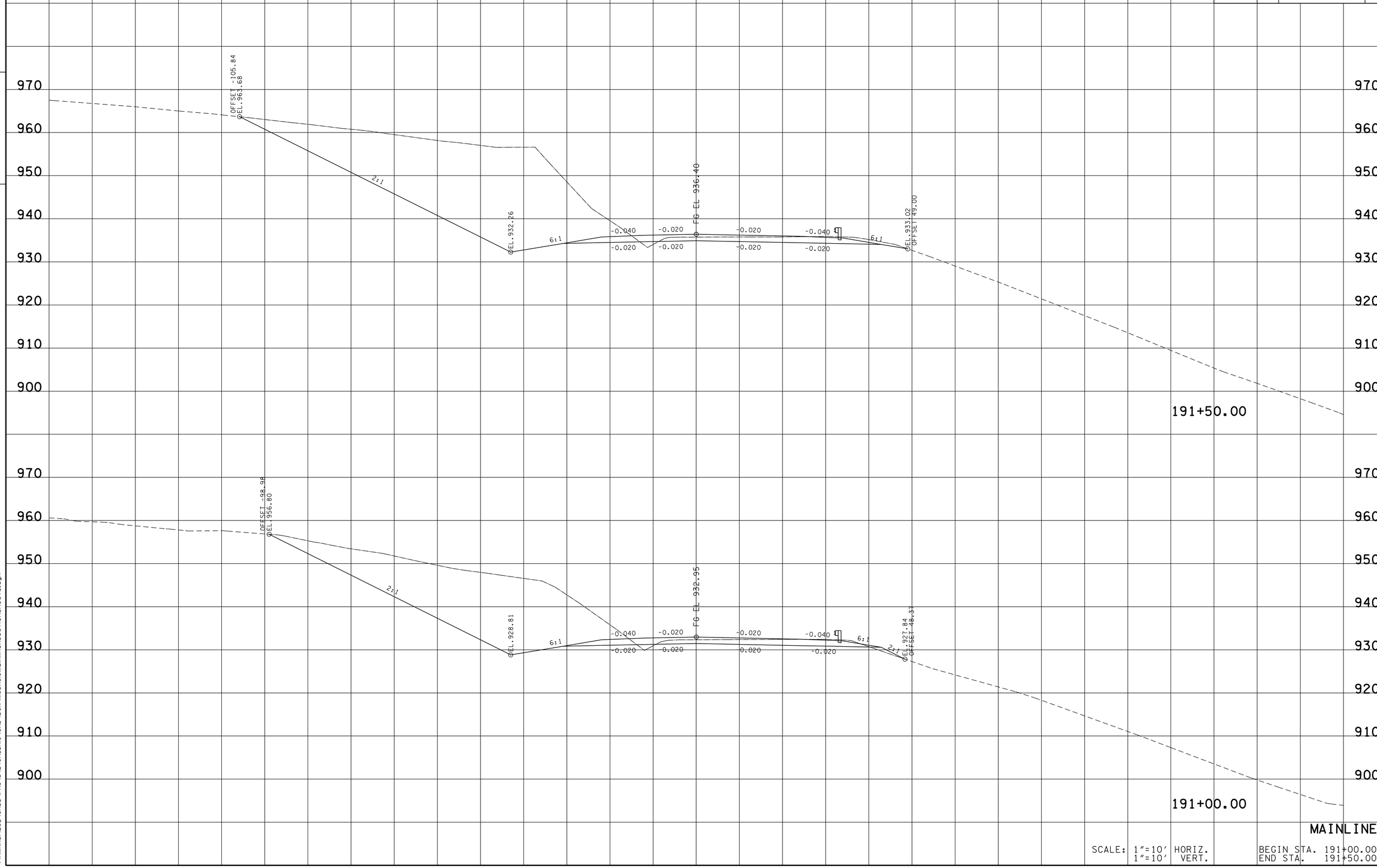
BEGIN STA. 190+00.00
END STA. 190+50.00

13-MAR-2014 11:01
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR01MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	122
CONST.	2014	STP/PHSIP-10(24)	205

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



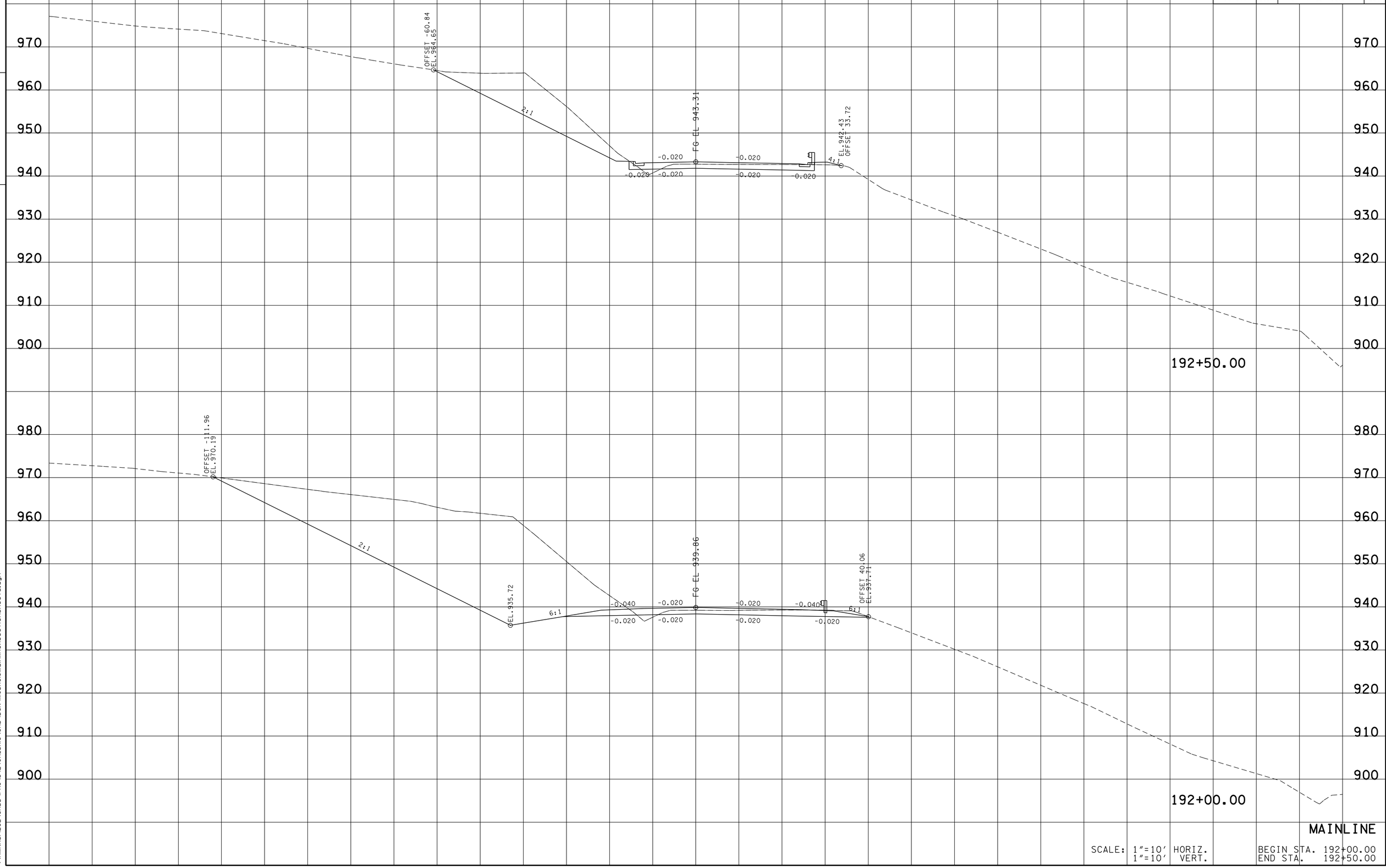
MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 191+00.00
END STA. 191+50.00

13-MAR-2014 11:01
\\AMNASFLO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	123
CONST.	2014	STP/PHSIP-10(24)	206



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 192+00.00
END STA. 192+50.00

TENNESSEE D.O.T.
DESIGN DIVISION

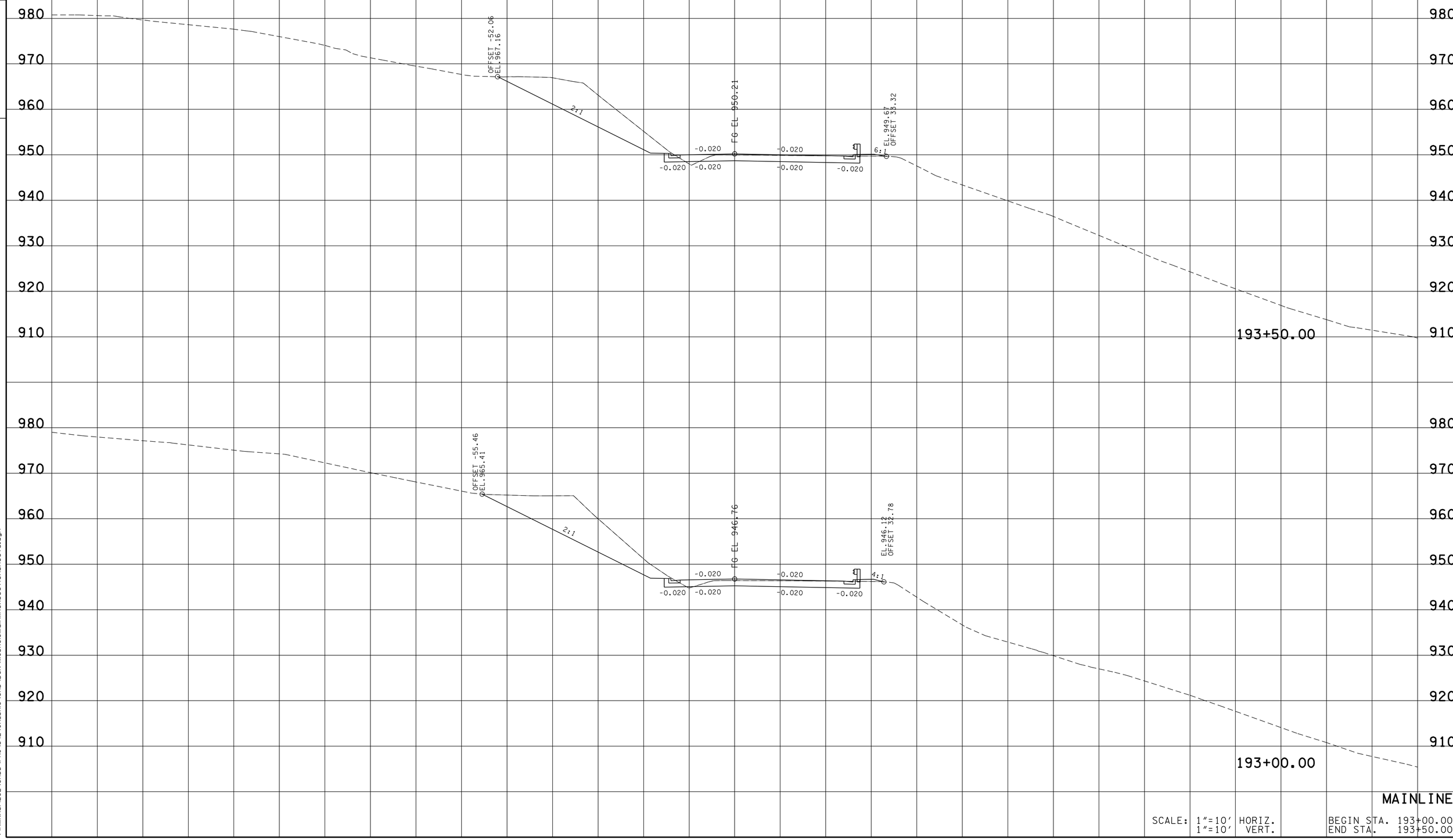
FILE NO.

13-MAR-2014 11:01
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR01MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	124
CONST.	2014	STP/PHSIP-10(24)	207

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

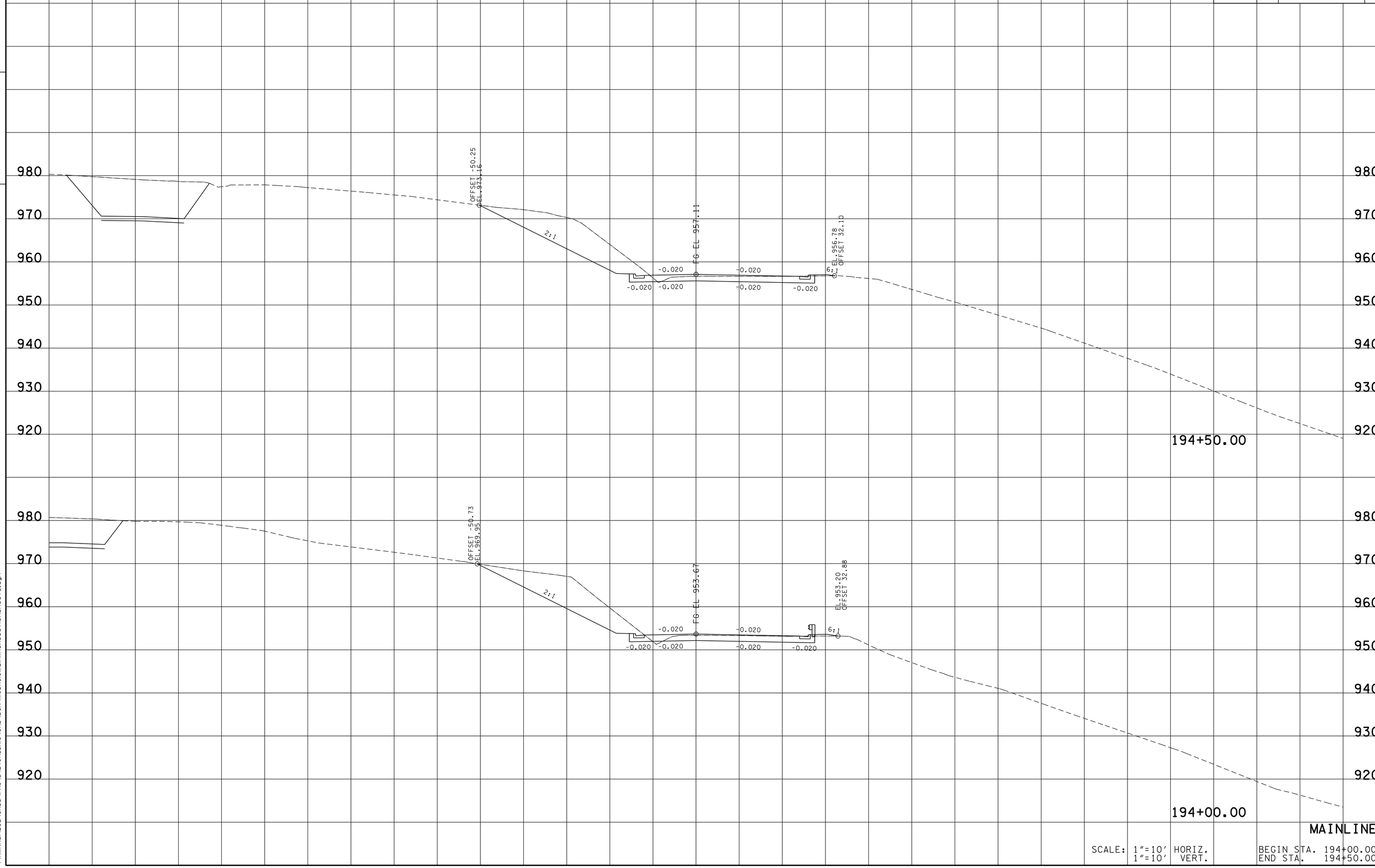
BEGIN STA. 193+00.00
END STA. 193+50.00

13-MAR-2014 11:01
\\AMNASFLO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	125
CONST.	2014	STP/PHSIP-10(24)	208

TENNESSEE D.O.T.
DESIGN DIVISION

FILE NO.



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

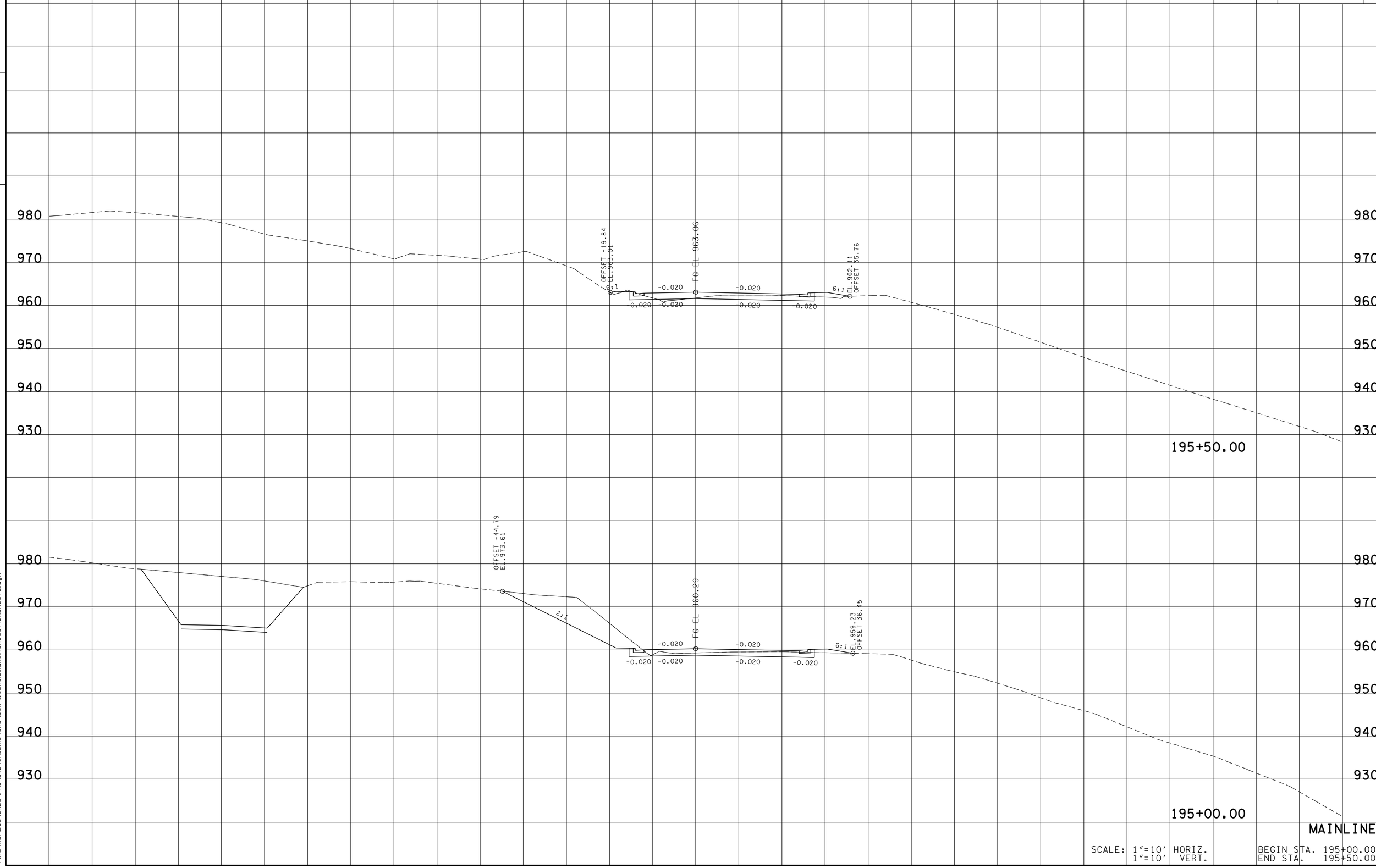
BEGIN STA. 194+00.00
END STA. 194+50.00

13-MAR-2014 11:01
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CADD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	126
CONST.	2014	STP/PHSIP-10(24)	209

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

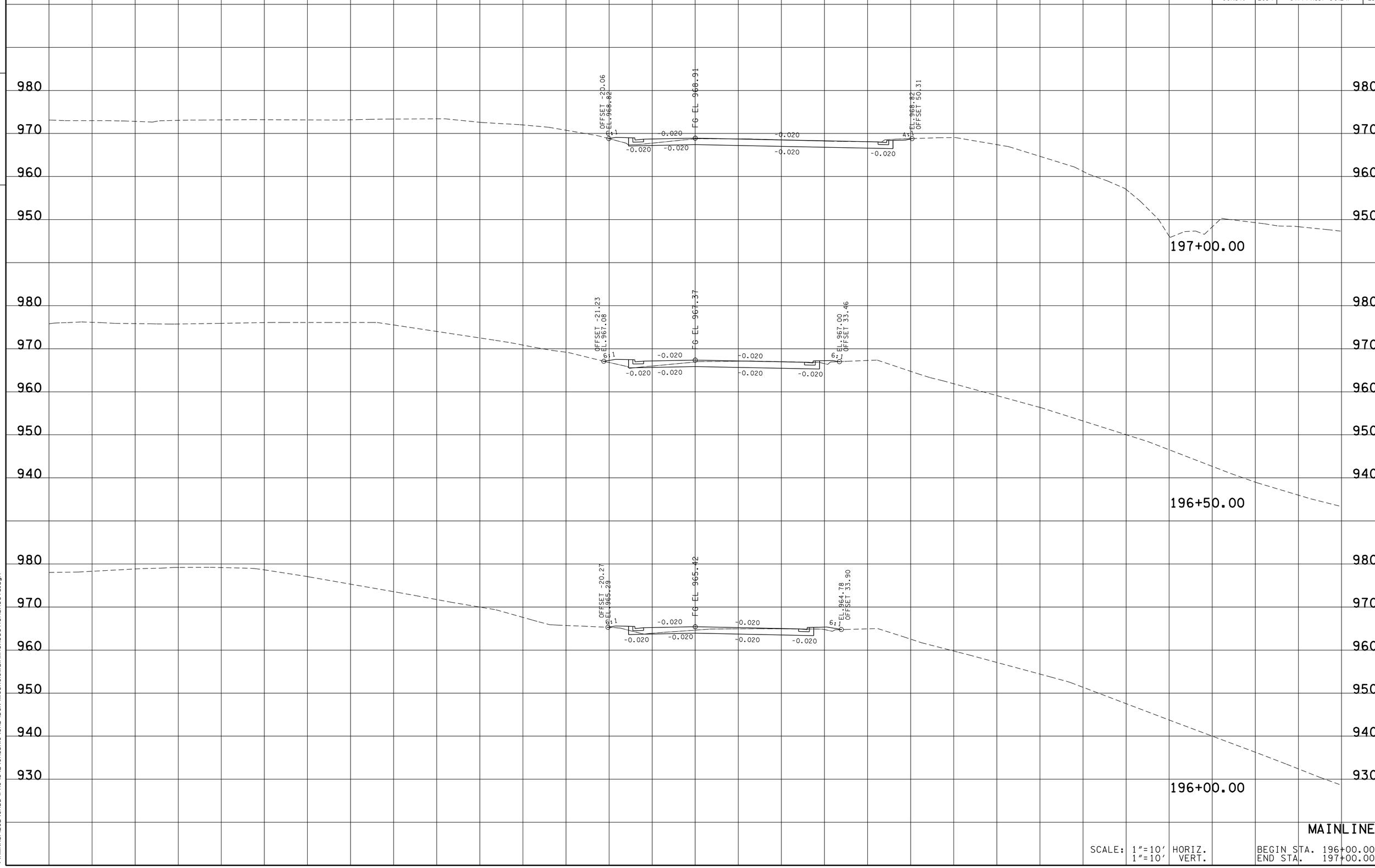
BEGIN STA. 195+00.00
END STA. 195+50.00

13-MAR-2014 11:01
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR10MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	127
CONST.	2014	STP/PHSIP-10(24)	210

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

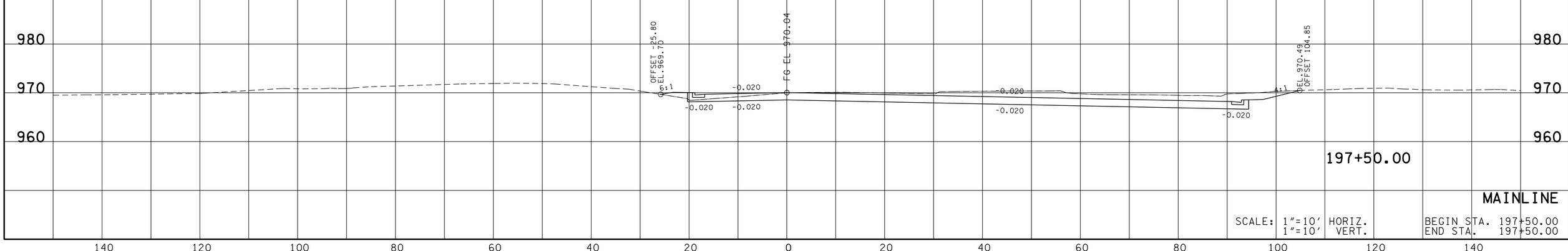
BEGIN STA. 196+00.00
END STA. 197+00.00

13-MAR-2014 11:01
\\AMNASFILO2\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR10MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	128
CONST.	2014	STP/PHSIP-10(24)	211

FILE NO.

TENNESSEE D.O.T.
DESIGN DIVISION



197+50.00

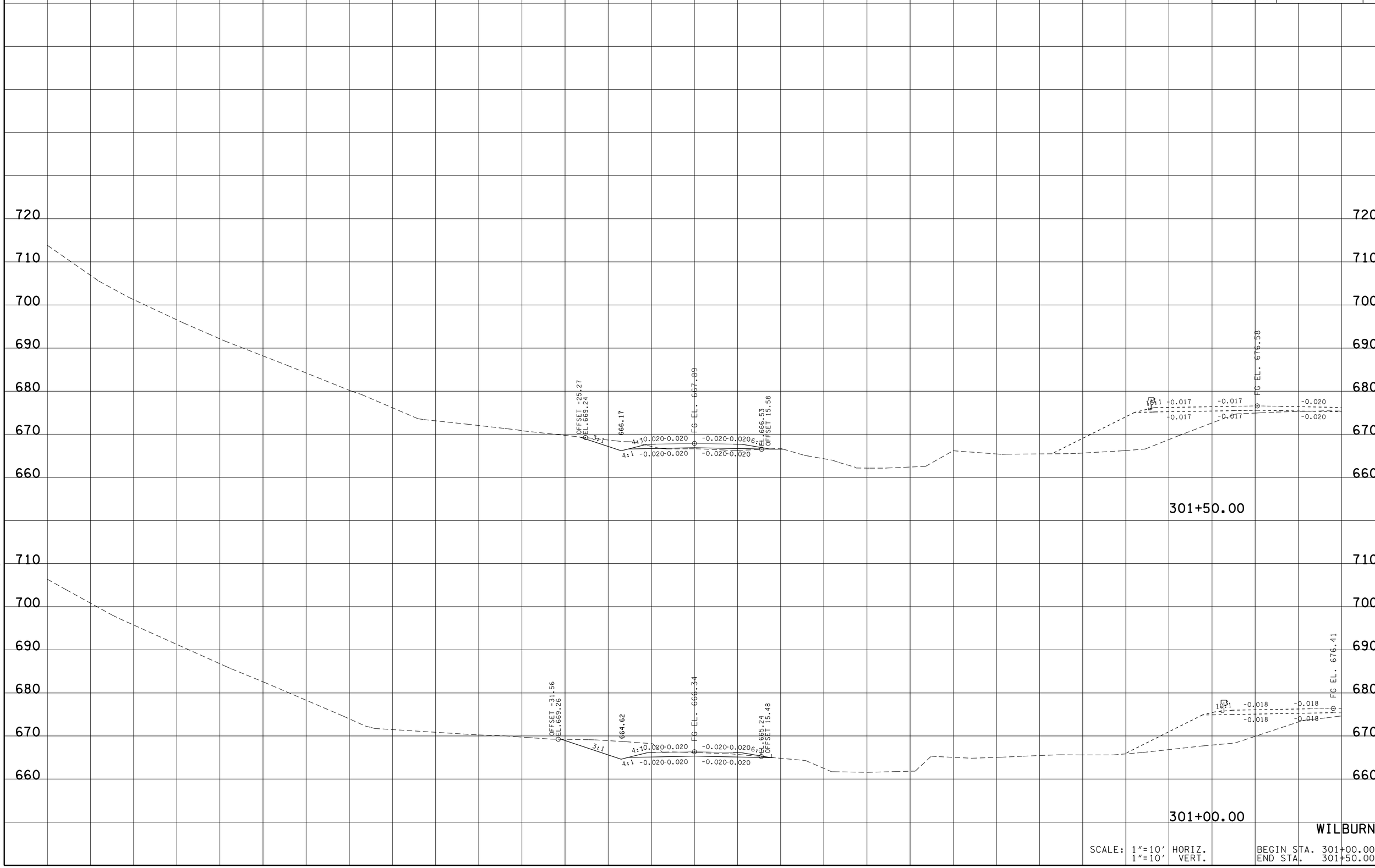
MAINLINE

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 197+50.00
END STA. 197+50.00

13-MAR-2014 11:01
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010MainlineXSectionSheets.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	129
CONST.	2014	STP/PHSIP-10(24)	212



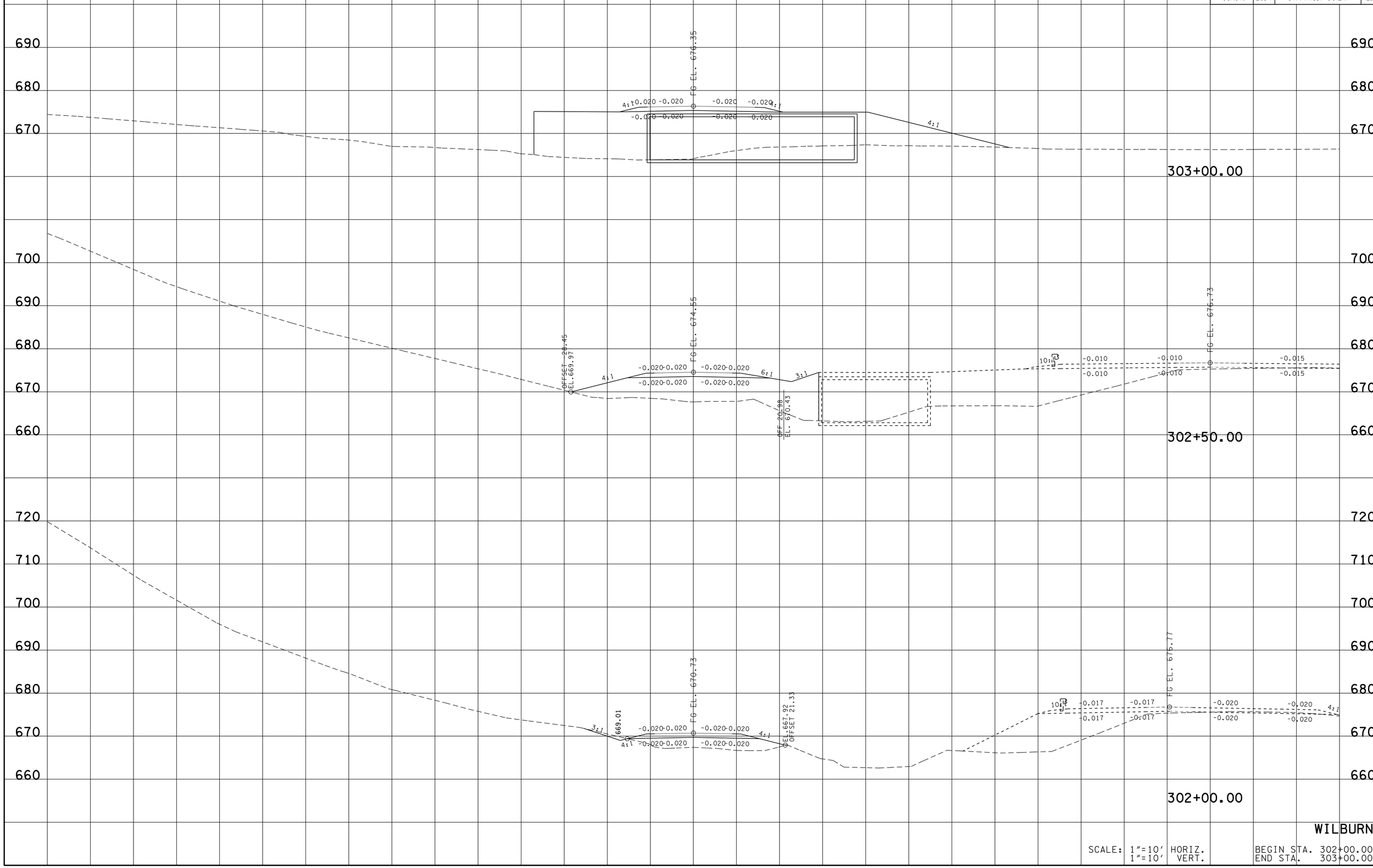
WILBURN

SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 301+00.00
END STA. 301+50.00

13-MAR-2014 10:53
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR010SideRdXSectionSheets (50').dgn

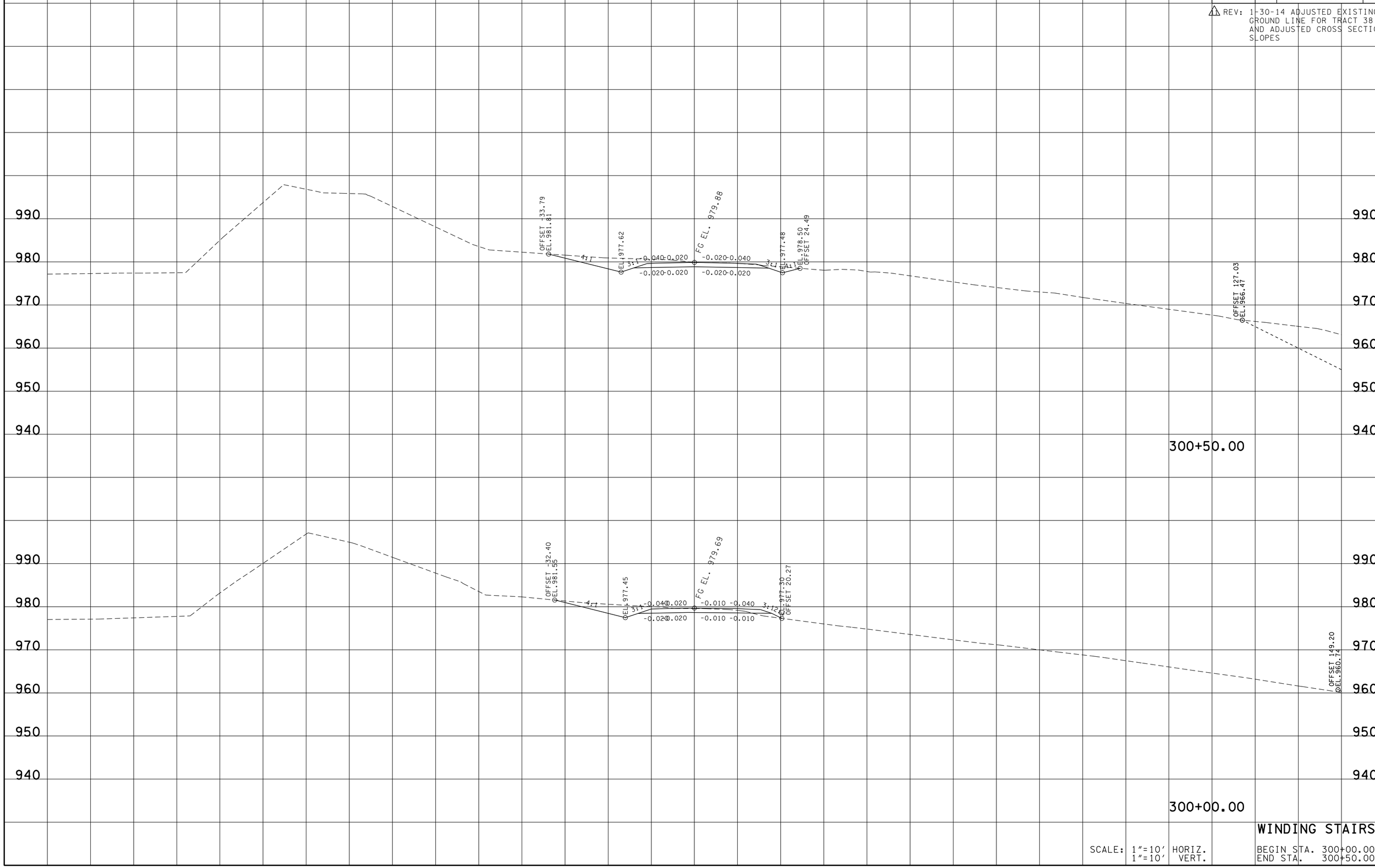
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	130
CONST.	2014	STP/PHSIP-10(24)	213



13-MAR-2014 10:53
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CADD\DGN\MCSR10SideRdXSectionSheets (50'\.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	136
CONST.	2014	STP/PHSIP-10(24)	214

REV: 1-30-14 ADJUSTED EXISTING GROUND LINE FOR TRACT 38 AND ADJUSTED CROSS SECTION SLOPES



WINDING STAIRS

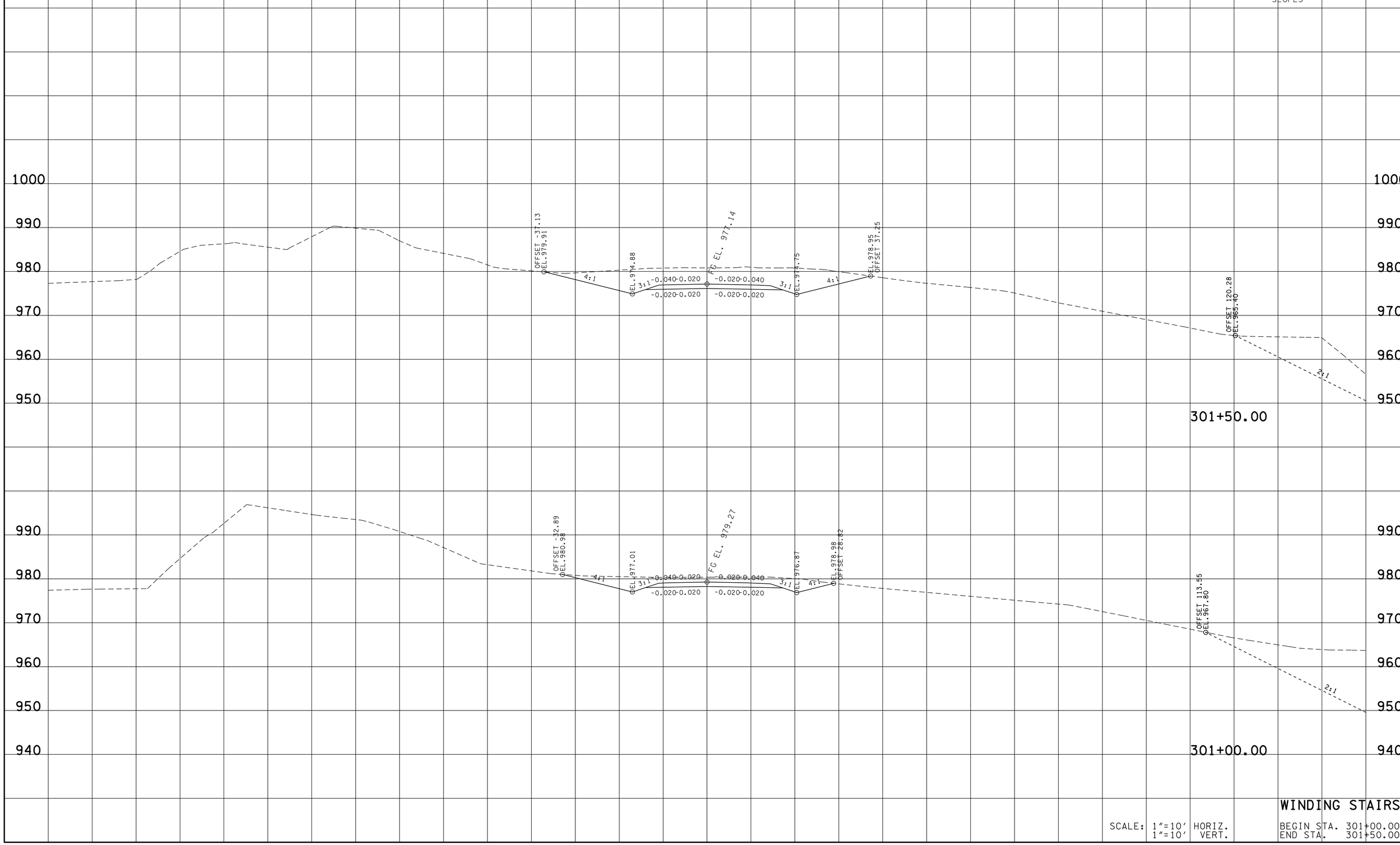
SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 300+00.00
END STA. 300+50.00

13-MAR-2014 10:53
\\AMNASFIL02\CADD\PRJ\34240A_SRIO\CAD\DGN\MCSRIOSideRdXSectionSheets (50'\.dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	137
CONST.	2014	STP/PHSIP-10(24)	215

△1 REV: 1-30-14 ADJUSTED EXISTING GROUND LINE FOR TRACT 38 AND ADJUSTED CROSS SECTION SLOPES



WINDING STAIRS

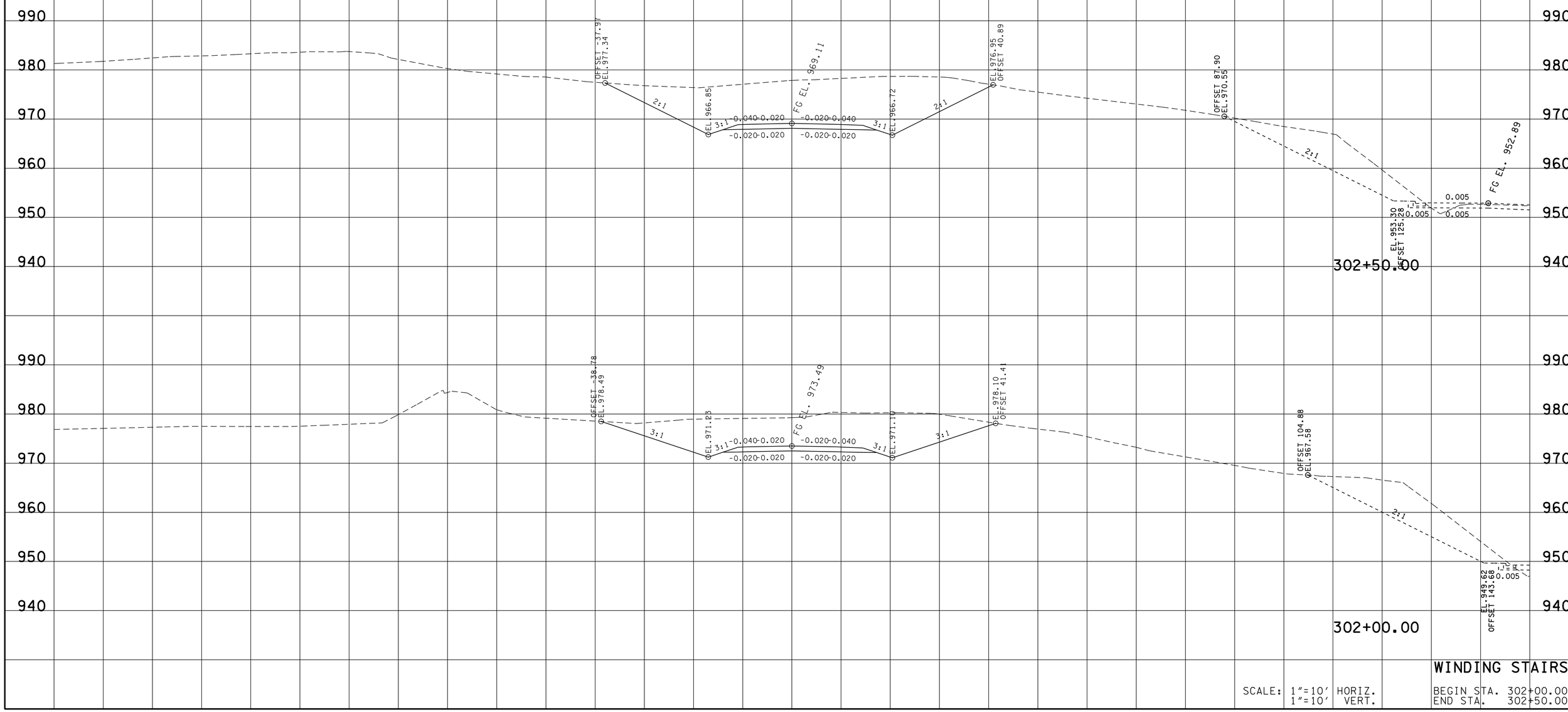
SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 301+00.00
END STA. 301+50.00

13-MAR-2014 10:53
\\AMNASFLO2\CADD\PRJ\34240A_SRIO\CADD\DGN\MCSR010SideRdXSectionSheets (50').dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	138
CONST.	2014	STP/PHSIP-10(24)	216

REV: 1-30-14 ADJUSTED EXISTING GROUND LINE FOR TRACT 38 AND ADJUSTED CROSS SECTION SLOPES



WINDING STAIRS

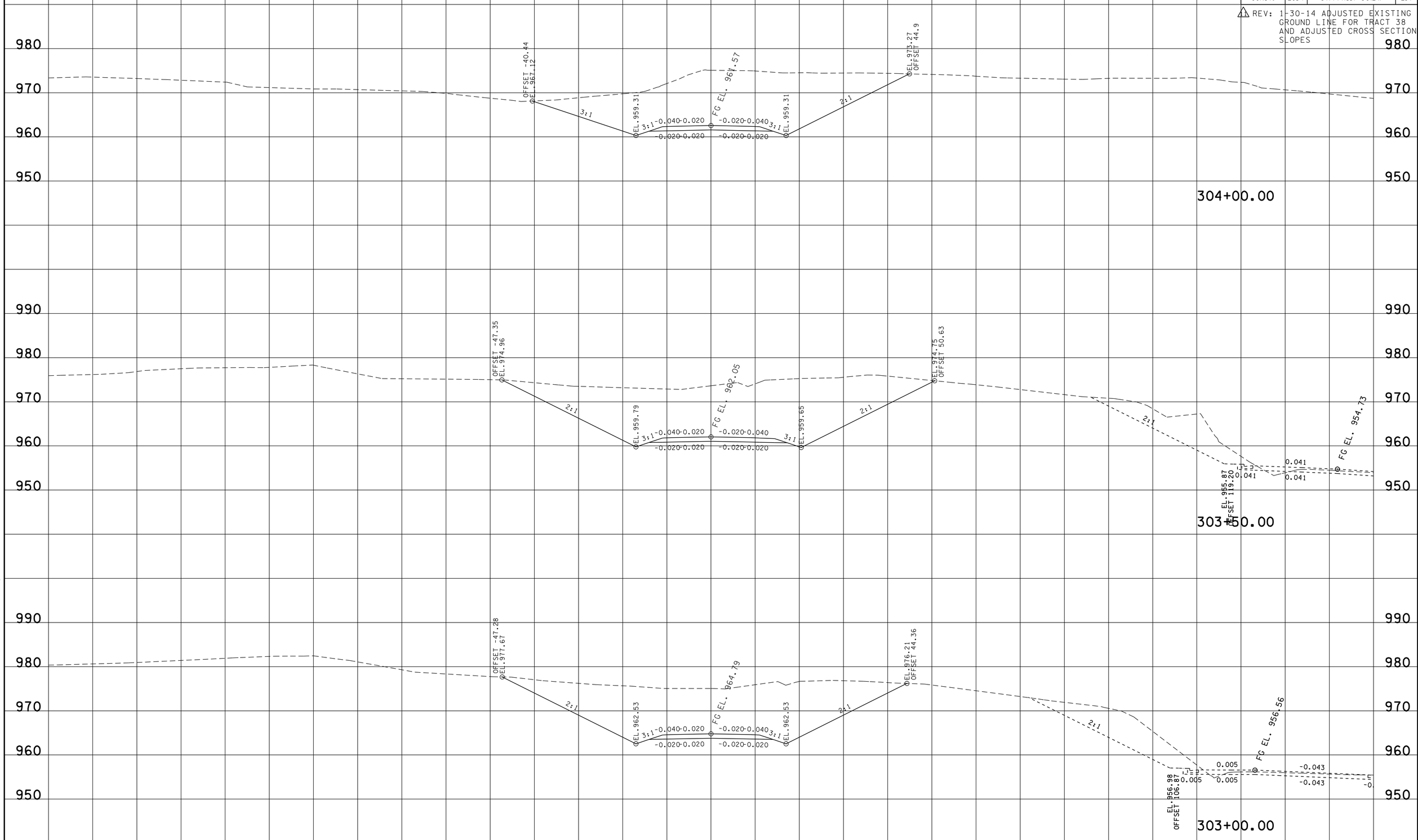
SCALE: 1"=10' HORIZ.
1"=10' VERT.

BEGIN STA. 302+00.00
END STA. 302+50.00

13-MAR-2014 10:54
\\AMNASFIL02\CADD\PRJ\34240A_SR10\CAD\DGN\MCSR10SideRdxSectionSheets (50').dgn

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2012	STP-10(24)	139
CONST.	2014	STP/PHSIP-10(24)	217

△1 REV: 1-30-14 ADJUSTED EXISTING GROUND LINE FOR TRACT 38 AND ADJUSTED CROSS SECTION SLOPES



SCALE: 1"=10' HORIZ.
1"=10' VERT.

WINDING STAIRS

BEGIN STA. 303+00.00
END STA. 304+00.00

13-MAR-2014 10:54
\\AMNASFILO2\CADD\PRJ\34240A_SR10\CADD\DGN\MCSR10ISIdeRdXSectionSheets (50').dgn