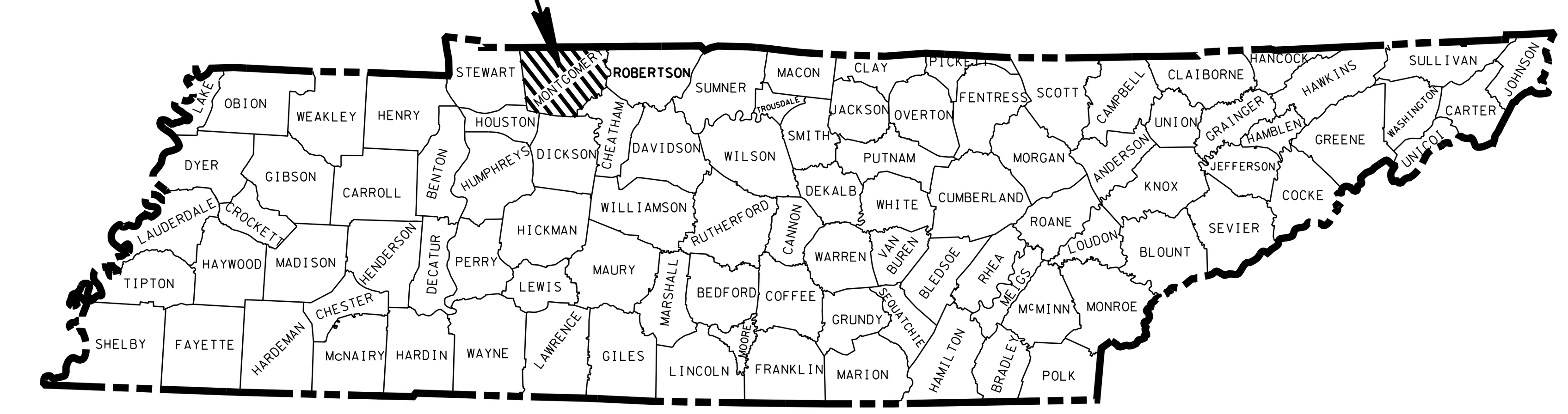
TENN.	YEAR	SHEET NO.
	2016	1
FED. AID PROJ. NO.	STP-M-9301(21)	
STATE PROJ. NO.	63945-3485-54	

Index Of Sheets

SEE SHEET NO. 1A

MONTGOMERY COUNTY, TENNESSEE

STP-M-9301(21)
PROJ. NO. 63945-3485-54
MONTGOMERY COUNTY



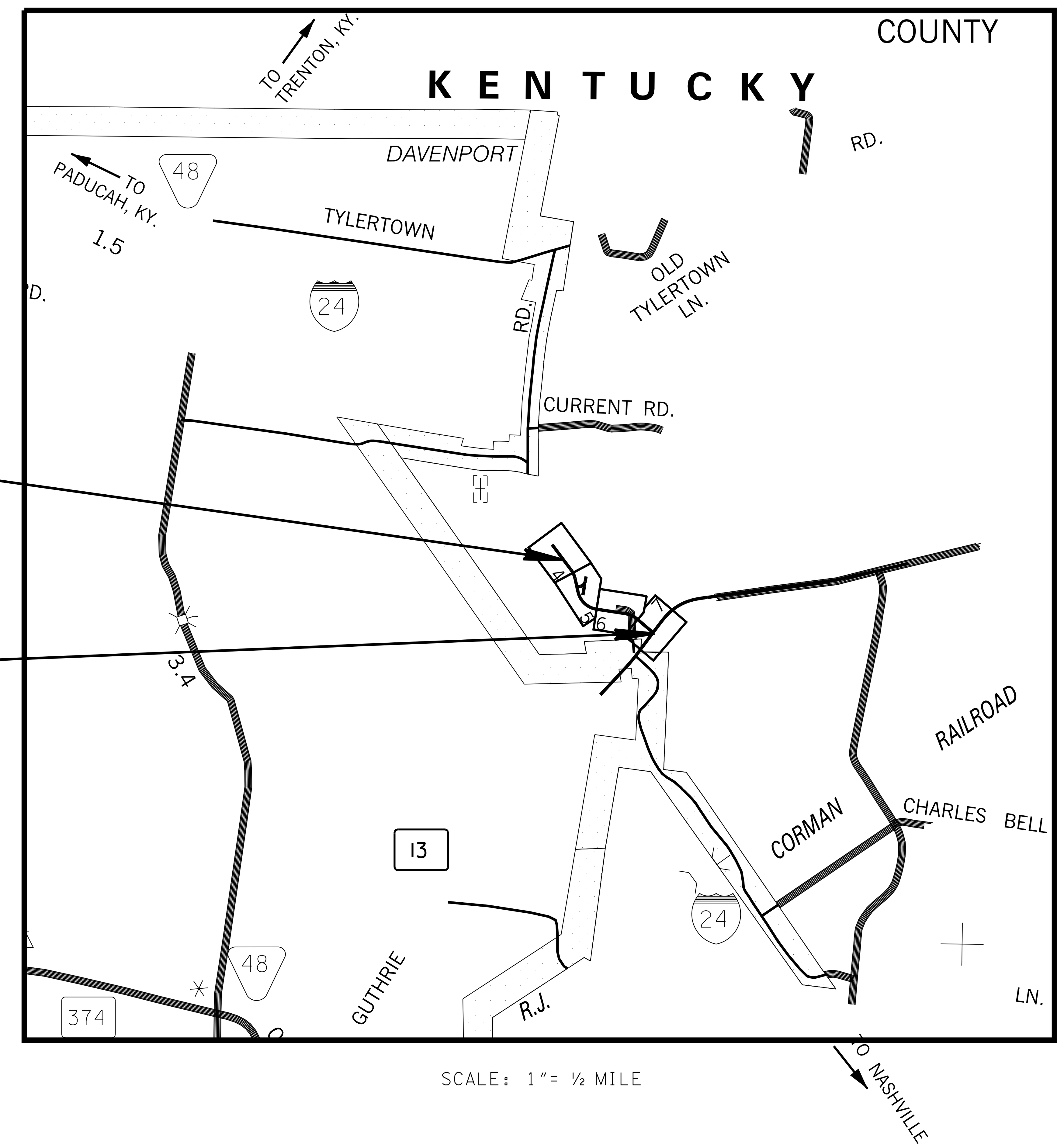
OAKLAND ROAD
FROM: 0.7 MILES ON OAKLAND ROAD
TO: S.R. 13 (U.S. 79)
CONSTRUCTION

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

GRADE, DRAIN, BASE, PAVE,
SIGNS, SIGNAL, AND STRIPING

63945-3485-54
BEG. PROJ. NO. STP-M-9301(21) (CONST.)
STA. 203+00.00

63945-3485-54
END PROJ. NO. STP-M-9301(21) (CONST.)
STA. 233+70.00



SCALE: 1"= ½ MILE

LOCALLY MANAGED PROJECT

NO EQUATIONS
NO EXCLUSIONS

ROAD TO BE CLOSED
DURING CONSTRUCTION

UNOFFICIAL SET
NOT FOR BIDDING

SEALED BY

N

DATUM ADJUSTMENT FACTORS
PROJECT NO. STP-M9301(21) = 1.00000
PROJECT NO. STP-13(66) = 0.99998

ORIGINAL SURVEY
01-03-2013

TRAFFIC DATA	
ADT (2015)	6700
ADT (2035)	8040
DHV (2035)	836
D	55 - 45
T (ADT)	10 %
T (DHV)	1 %
V	40 MPH

OAKLAND ROAD

TRAFFIC DATA	
ADT (2015)	16490
ADT (2035)	25470
DHV (2035)	2805
D	60 - 40
T (ADT)	11 %
T (DHV)	6 %
V	60 MPH

S.R. 13

ROADWAY LENGTH	0.582 MILES
BRIDGE LENGTH	0.000 MILES
BOX BRIDGE LENGTH	0.000 MILES
PROJECT LENGTH	0.582 MILES

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 JANUARY 1, 2015 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

DESIGNED BY NEEL-SCHAFFER, INC.
DESIGNER STEVEN LAMM, P.E. CHECKED BY MICHAEL AGNEW, P.E.
P.E. NO. 63LPLM-F1-031
PIN NO. 112876.00

APPROVED:

MONTGOMERY COUNTY
NICK POWELL, P.E.
COUNTY ENGINEER

DATE:

NEEL-SCHAFFER
Solutions you can build upon

NS PROJECT NO. 00.08846.001

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	SIP-M-9301(21)	1A

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STANDARD DRAWINGS

DWG. NO	REV.	DESCRIPTION
ROADWAY DESIGN STANDARDS		
RD-A-1	12-18-99	STANDARD ABBREVIATIONS
RD-L-1	10-26-94	STANDARD LEGEND
RD-L-2	09-05-01	STANDARD LEGEND FOR UTILITY INSTALLATIONS
RD-L-3	04-15-04	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING
RD-L-4	04-15-04	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING
RD-L-5	05-01-08	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL
RD-L-6	03-30-10	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL
RD-L-7	05-24-12	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL
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-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-SD-4		INTERSECTION SIGHT DISTANCE 5-LANE AND 4-LANE UNDIVIDED ROADWAYS
RD01-SE-2	10-15-02	URBAN SUPERELEVATION DETAILS
RD01-TS-2	10-15-02	DESIGN STANDARDS FOR COLLECTOR ROADS AND STREETS
DRAINAGE - CULVERTS AND ENDWALL		
D-PB-1	01-02-13	STANDARD DETAILS CLASS "B" BEDDING AND CULVERT EXCAVATION
D-PB-2	01-29-14	STANDARD DETAILS FOR PLASTIC PIPE INSTALLATION
D-PE-18A	01-06-15	18” CONCRETE ENDWALL CROSS DRAIN
D-PE-18B		18” CONCRETE ENDWALL CROSS DRAIN
D-PG-3	04-15-97	FERROUS AND ALUMINUM CORRUGATED METAL PIPE
CLEAR ZONE AND SAFETY PLANS		
S-CZ-1		CLEAR ZONE CRITERIA
TRAFFIC CONTROL APPURTENANCES		
T-FAB-1	05-27-97	FLASHING YELLOW ARROW BOARD
T-PBR-1	06-30-09	INTERCONNECTED PORTABLE BARRIER RAIL
T-PBR-2	10-10-06	DETAIL FOR VERTICAL PANELS AND FLEXIBLE DELINEATORS
T-M-1	07-24-14	DETAILS OF PAVEMENT MARKINGS FOR CONVENTIONAL ROADS AND MARKING ABBREVIATIONS
T-M-2	07-24-14	DETAILS OF PAVEMENT MARKINGS FOR CONVENTIONAL ROADS
T-M-3	07-24-14	MARKING STANDARDS FOR TRAFFIC ISLANDS, MEDIANS & PAVED SHOULDERS ON CONVENTIONAL ROADS
T-M-4	07-24-14	STANDARD INTERSECTION PAVEMENT MARKINGS
T-M-15A	01-30-15	ASPHALT SHOULDER RUMBLE STRIP INSTALLATION DETAILS FOR NON-ACCESS CONTROLLED ROUTES
EROSION PREVENTION AND SEDIMENT CONTROL		
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-6	08-01-12	ROCK CHECK DAM
EC-STR-6A	08-01-12	ENHANCED ROCK CHECK DAM
EC-STR-11	08-01-12	CULVERT PROCTECTION TYPE 1
EC-STR-25	08-01-12	TEMPORARY CULVERT CROSSING, CONSTRUCTION EXIT, CONSTRUCTION FORD
EC-STR-37	06-10-14	SEDIMENT TUBE

TRAFFIC OPERATIONS STANDARD DRAWINGS

DWG. NO	REV.	DESCRIPTION
LIGHTING AND UTILITY POLE APPURTENANCES		
T-FO-1		FIBER OPTIC AERIAL ENTRANCE DETAILS
T-FO-2		FIBER OPTIC UNDERGROUND ENTRANCE DETAILS
T-FO-3		FIBER OPTIC AERIAL CONNECTION DETAILS
T-FO-4		FIBER OPTIC PULL BOX, CABINET & POLE DETAILS
SIGNING APPURTENANCES		
T-S-9	06-10-14	STANDARD LAYOUT GROUND MOUNTED SIGNS
T-S-11	04-04-12	STANDARD MOUNTING DETAILS – FLAT SHEET SIGNS, ALUMINUM-STEEL DESIGN
T-S-13	05-27-01	STANDARD STEEL GROUND MOUNTED SIGNS, BREAK-AWAY TYPE POST FOOTING DETAILS, I-BEAMS
T-S-14	08-17-12	STANDARD STEEL GROUND MOUNTED SIGNS, BREAK-AWAY TYPE POST FOOTING DETAILS, WF-BEAMS
T-S-15	12-07-90	STANDARD CONDUIT & GROUND DETAILS FOR OVERHEAD & CANTILEVER SIGN STRUCTURES
T-S-16	07-02-15	GROUND MOUNTED ROADSIDE SIGN AND DETAILS
T-S-16A	07-02-15	GROUND MOUNTED ROADSIDE SIGN PLACEMENT DETAILS
T-S-17	07-02-15	STANDARD GROUND MOUNTED SIGN USING PERFORATED/KNOCKOUT SQUARE TUBE
T-S-18	02-14-14	END OF ROADWAY AND DEAD END SIGNS, METAL BARRICADES (TYPE III) & WORK ZONE SPEED SIGNS
T-S-19	07-19-15	STANDARD MEMBERS BENDAWAY SIGN SUPPORTS
T-S-20	11-01-11	SIGN DETAILS
T-S-23C	07-02-15	BREAKAWAY U-POST SIGN SUPPORTS
SIGNAL APPURTENANCES		
T-SG-1	11-01-11	WOOD POLE DETAILS FOR SPAN MOUNTED SIGNALS
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-4		SPAN WIRE AND MESSENGER CABLE DETAILS
T-SG-5	12-04-13	CONTROLLER CABINET DETAILS
T-SG-7	11-01-11	SIGNAL HEAD ASSEMBLIES AND PEDESTRIAN PUSH BUTTON SIGNS
T-SG-7A	11-01-11	TYPICAL SIGNAL HEAD PLACEMENT
T-SG-8	12-04-13	STRAIN POLE DETAILS FOR SPAN MOUNTED SIGNALS
T-SG-9A	05-01-14	MISCELLANEOUS SIGNAL DETAILS
T-SG-10	06-11-14	MAST ARM POLE AND STRAIN POLES FOUNDATION DETAILS
T-SG-12	11-01-11	TYPICAL WIRING FOR SIGNAL HEADS AND DETECTION LOOPS

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INDEX AND STANDARD DRAWINGS

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	1B

PROJECT COMMITMENTS

COMMITMENT ID	SOURCE DIVISON	DESCRIPTION	STA. / LOCATION
EDEC001	ENVIRONMENTAL DIVISION	TREES WITHIN THE PROJECT AREA WITH A DIAMETER AT BREAST HEIGHT OF FIVE INCHES OR GREATER ARE ONLY TO BE REMOVED FROM OCTOBER 15 THROUGH MARCH 31 TO FURTHER MINIMIZE POTENTIAL FOR HARM TO THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS)	

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PROJECT COMMITMENTS

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	2

ESTIMATED ROADWAY QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
	105-01	CONSTRUCTION STAKES, LINES AND GRADES	LS	0.2
	201-01	CLEARING AND GRUBBING	LS	0.2
	202-03.01	REMOVAL OF ASPHALT PAVEMENT	S.Y.	1800
	202-06.01	REMOVAL OF BUILDINGS (TRACT NO. 11)	LS	1
6	203-01	ROAD & DRAINAGE EXCAVATION (UNCLASSIFIED)	C.Y.	24985
6,10	203-03	BORROW EXCAVATION (UNCLASSIFIED)	C.Y.	8158
	203-06	WATER	M.G.	330
	209-05	SEDIMENT REMOVAL	C.Y.	278
1,2	209-08.02	TEMPORARY SILT FENCE (WITH BACKING)	L.F.	600
1,2	209-08.03	TEMPORARY SILT FENCE (WITHOUT BACKING)	L.F.	3250
1,2	209-08.07	ROCK CHECK DAM PER	EACH	17
1,2	209-08.08	ENHANCED ROCK CHECK DAM	EACH	5
	303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	10110
2	303-10.01	MINERAL AGGREGATE (SIZE 57)	TON	5
	307-01.01	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADING A	TON	2820
	307-01.08	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADING B-M2	TON	1720
	402-01	BITUMINOUS MATERIAL FOR PRIME COAT (PC)	TON	24
	402-02	AGGREGATE FOR COVER MATERIAL (PC)	TON	92
	403-01	BITUMINOUS MATERIAL FOR TACK COAT (TC)	TON	10
	407-20.05	SAW CUTTING ASPHALT PAVEMENT	L.F.	1850
	411-01.07	ACS MIX (PG64-22) GRADING E SHOULDER	TON	25
	411-01.10	ACS MIX(PG64-22) GRADING D	TON	1064
	411-12.03	SCORING FOR RUMBLE STRIPE (NON-CONTINUOUS) (8IN WIDTH)	L.M.	1.15
	415-01.02	COLD PLANING BITUMINOUS PAVEMENT	S.Y.	2500
	607-03.02	18" CONCRETE PIPE CULVERT (CLASS III)	L.F.	419
	607-39.02	18" PIPE CULVERT (SIDE DRAIN)	L.F.	88
	611-07.54	18IN ENDWALL (CROSS DRAIN) 3:1	EACH	5
	611-07.55	18IN ENDWALL (CROSS DRAIN) 4:1	EACH	5
	705-08.51	PORTABLE IMPACT ATTENUATOR NCHRP350 TL-3	EACH	1
1,2	709-05.05	MACHINED RIP-RAP (CLASS A-3)	TON	250
2,9	709-05.06	MACHINED RIP-RAP (CLASS A-1)	TON	126
	712-01	TRAFFIC CONTROL	LS	0.2
	712-02.02	INTERCONNECTED PORTABLE BARRIER RAIL	L.F.	1020
	712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH	100
	712-05.01	WARNING LIGHTS (TYPE A)	EACH	8
	712-05.03	WARNING LIGHTS (TYPE C)	EACH	10
	712-06	SIGNS (CONSTRUCTION)	S.F.	452
	712-07.03	TEMPORARY BARRICADES (TYPE III)	L.F.	96
	712-08.03	ARROW BOARD (TYPE C)	EACH	2
	713-02.14	FLEXIBLE DELINEATOR (WHITE)	EACH	3
3	713-15	REMOVAL OF SIGNS, POSTS AND FOOTINGS	LS	0.2
	713-16.01	CHANGEABLE MESSAGE SIGN UNIT	EACH	2
	713-16.07	END OF ROADWAY SIGN AND SUPPORT	EACH	4
11	713-16.20	SIGNS (R10-12)	EACH	1
11	713-16.23	SIGNS (W14-1)(DEAD END)	EACH	2
11	713-16.24	SIGNS (R1-1)(STOP)	EACH	2
11	713-16.25	SIGNS (W4-2)(LANE ENDS MERGE SYMBOL)	EACH	1
4	716-02.04	PLASTIC PAVEMENT MARKING(CHANNELIZATION STRIPING)	S.Y.	30
4	716-02.05	PLASTIC PAVEMENT MARKING (STOP LINE)	L.F.	18
4	716-02.06	PLASTIC PAVEMENT MARKING (TURN LANE ARROW)	EACH	1
	716-04.14	PLASTIC PAVEMENT MARKING (LANE REDUCTION ARROW)	EACH	2
5	716-05.01	PAINTED PAVEMENT MARKING (4" LINE)	L.M.	2.86
	716-13.01	SPRAY THERMO PVMT MRKNG (60 mil) (4IN LINE)	L.M.	2.73
	717-01	MOBILIZATION	LS	0.2
	725-02.41	FIBER OPTIC TERMINATION SPLICE UNIT	EACH	1
	725-03.44	FIBER OPTIC MODEM TRANSCEIVER (TYPE I)	EACH	1
	725-03.60	CABLE MARKER	EACH	4
	725-05.04	SPLICE ENCLOSURE (UNDER GRADE)	EACH	1
	725-05.06	FUSION SPLICE	EACH	28
	730-02.09	SIGNAL HEAD ASSEMBLY (130 WITH BACKPLATE)	EACH	9
	730-02.30	SIGNAL HEAD ASSEMBLY (130 A3 WITH BACKPLATE)	EACH	2

ESTIMATED ROADWAY QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
	730-03.20	INSTALL PULL BOX (TYPE A)	EACH	3
	730-03.21	INSTALL PULL BOX (TYPE B)	EACH	4
	730-03.23	INSTALL PULL BOX (FIBER OPTIC-TYPE A)	EACH	2
	730-03.24	INSTALL PULL BOX (FIBER OPTIC-TYPE B)	EACH	1
	730-05.01	ELECTRICAL SERVICE CONNECTION	EACH	1
	730-08.02	SIGNAL CABLE - 5 CONDUCTOR	L.F.	255
	730-08.03	SIGNAL CABLE - 7 CONDUCTOR	L.F.	850
	730-08.40	INTERCONNECT CABLE - FIBER OPTIC (6F, SMFO DROP CABLE)	L.F.	75
	730-08.41	INTERCONNECT CABLE - FIBER OPTIC (24F, SINGLE MODE)	L.F.	1675
	730-09.01	SPAN WIRE ASSEMBLY(33,500 LBS.MIN.BRK STRENGTH)	L.F.	580
	730-10.01	TETHER WIRE ASSEMBLY - 1/4" DIAMETER	L.F.	580
	730-12.01	CONDUIT 1" DIAMETER (PVC)	L.F.	75
	730-12.02	CONDUIT 2" DIAMETER (PVC)	L.F.	1075
	730-12.07	CONDUIT 1" DIAMETER (RGS)	L.F.	75
	730-12.13	CONDUIT 2" DIAMETER (JACK AND BORE)	L.F.	350
	730-12.16	CONDUIT (2" DIA, SCH 80)	L.F.	1150
8	730-13.02	VEHICLE DETECTOR (VIDEO)	EACH	1
	730-13.05	VEHICLE DETECTOR (EXT. CALL - DELAY CALL)	EACH	8
	730-14.01	SHIELDED DETECTOR CABLE	L.F.	2860
	730-14.02	SAW SLOT	L.F.	1430
	730-14.03	LOOP WIRE	L.F.	3700
	730-15.11	MODIFY CABINET (INTEGRATE FO EQUIPMENT)	EACH	1
	730-15.32	CABINET (EIGHT PHASE BASE MOUNTED)	EACH	1
	730-16.02	EIGHT PHASE ACTUATED CONTROLLER	EACH	1
	730-23.01	STEEL STRAIN POLE (SIGNAL SUPPORT)	EACH	3
7	730-23.04	STEEL STRAIN POLE (SIGNAL SUPPORT W/ LUMINAIRE ARM)	EACH	1
1,2	740-10.03	GEOTEXTILE (TYPE III)(EROSION CONTROL)	S.Y.	536
1,2	740-11.03	TEMPORARY SEDIMENT TUBE 18IN (EROSION CONTROL)	L.F.	1450
2	801-01.07	TEMPORARY SEEDING (WITH MULCH)	UNIT	150
2	801-03	WATER (SEEDING & SODDING)	M.G.	250
2	803-01	SODDING (NEW SOD)	S.Y.	24000

1. SEE SUBSECTION 209-07 OF THE STANDARD SPECIFICATIONS FOR MAINTENANCE.
2. TO BE USED AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.
3. REMOVE EXISTING SIGN AND SUPPORTS WITHIN THE GRADING LIMITS OF THE PROJECT AND ANY CONFLICING SIGNING OR AS DIRECTED BY THE ENGINEER.
4. THE CONTRACTOR MAY ELECT TO SUBSTITUTE PREFORMED PLASTIC FOR THERMOPLASTIC. PREFORMED PLASTIC SHELL BE PAID FOR AT THE SAME UNIT PRICE AS BID FOR THERMOPLASTIC.
5. TO BE USED FOR TRAFFIC CONTROL.
6. SEE SPECIAL NOTES
7. ITEM FOR SIGNAL POLE WITH LUMINAIRE ARM.
8. ITEM INCLUDES CAMERA, CABLING, PROCESSOR AND ALL MISCELLANEOUS MATERIALS REQUIRED TO IMPLEMENT VIDEO DETECTION.
9. INCLUDES 45 TONS FOR EPSC MEASURES AND 81 TONS FOR PERMANENT OUTLET PROTECTION.
10. ALL SUITABLE EXCESS MATERIAL FROM THE SR-13 PROJECT (PROJ. NO. STP-13(66)) SHALL BE UTILIZED FOR BORROW AREAS ON THIS PROJECT BEFORE PLACING ITEM NO. 203-03, BORROW EXCAVATION.
11. INCLUDES SIGN FACE, SUPPORT, INSTALLATION, AND HARWARE.

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ESTIMATED ROADWAY QUANTITIES

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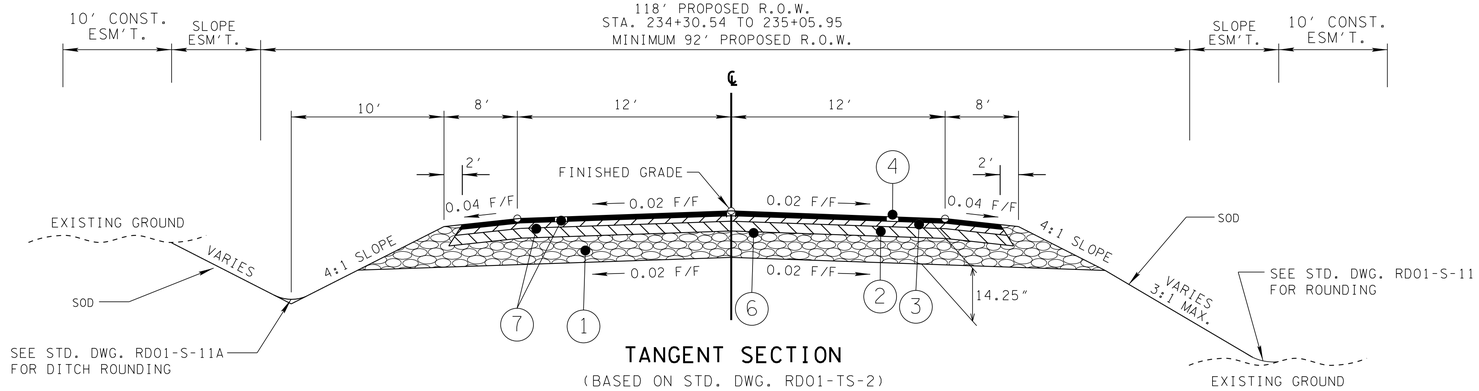
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	2
CONST.	2016	STP-M-9301(21)	2A

REV. 07-10-15: REVISED STA. LIMITS. CHANGED TYPICAL TO RD01-TS-2. ADDED NOTE FOR SHOULDER ROLLOVER AND DITCH ROUNDING. ADDED MINIMUM TO PROP. R.O.W. AND VARIES TO PROP. SLOPES.

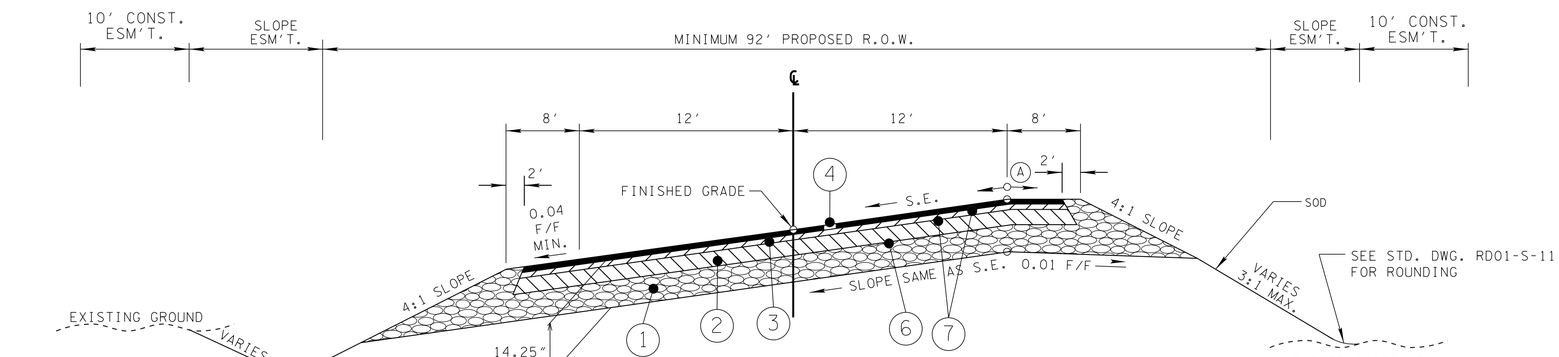


TANGENT SECTION

(BASED ON STD. DWG. RD01-TS-2)

OAKLAND ROAD

STA. 203+00.00 TO 205+48.21
STA. 209+20.84 TO 211+44.77
STA. 219+61.80 TO 225+69.41
STA. 230+53.02 TO 235+46.92



SUPERELEVATED SECTION

(BASED ON STD. DWG. RD01-TS-2)

OAKLAND ROAD

STA. 205+48.21 TO 209+20.84
STA. 211+44.77 TO 219+61.80
STA. 225+69.41 TO 230+53.02

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

NOTE: PROPOSED LAYOUT FOR SPECIAL DITCH TYPICALS

PROPOSED PAVEMENT SCHEDULE

(1) MINERAL AGGREGATE BASE (8"± THICK) ITEM NO. 303-01 MINERAL AGGREGATE, TYPE A BASE, GRADING D	(4) BITUMINOUS SURFACE @ 1.25"± THICK (APPROX. 132.5 LB./S.Y.) ITEM NO. 411-01.10 ACS MIX (PG64-22) GRADING D
(1A) MINERAL AGGREGATE BASE (12.75"± THICK) ITEM NO. 303-01 MINERAL AGGREGATE, TYPE A BASE, GRADING D	(5) BITUMINOUS SURFACE @ 1.50"± THICK (APPROX. 159.0 LB./S.Y.) ITEM NO. 411-01.07 ACS MIX (PG64-22) GRADING E SHOULDER
(2) BITUMINOUS PLANT MIX BASE @ 3.0"± THICK (APPROX. 345 LBS./S.Y.) ITEM NO. 307-01.01 ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADING A	(6) PRIME COAT @ 0.30-0.35 GAL./S.Y. ITEM NO. 402-01 BITUMINOUS MATERIAL FOR PRIME COAT (PC) ITEM NO. 402-02 AGGREGATE FOR COVER MATERIAL (PC) @ 8-12 LB./S.Y.
(3) BITUMINOUS BINDER @ 2.00"± THICK (APPROX. 226.0 LBS./S.Y.) ITEM NO. 307-01.08 ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADING B-M2	(7) TACK COAT @ 0.07 GAL./S.Y. ITEM NO. 403-01 BITUMINOUS MATERIAL FOR TACK COAT (TC)
	(8) COLD PLANING @ 1.25"± THICK ITEM NO. 415-01.02 COLD PLANING BITUMINOUS PAVEMENT

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TYPICAL SECTIONS AND PAVEMENT SCHEDULE

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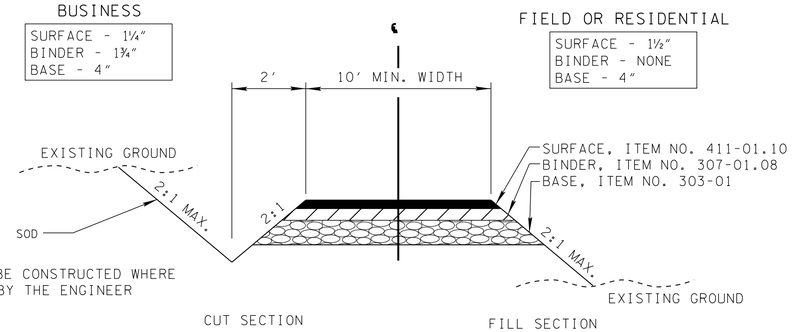
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	2
CONST.	2016	STP-M-9301(21)	2B

REV. 07-20-15: ADDED PAVING ITEM NOS. AND NOTE FOR PVT. DR. TYPICAL.

REV. 02-17-16: REMOVED TYPICAL SECTION FOR S.R. 13.



NOTE: DITCH TO BE CONSTRUCTED WHERE DIRECTED BY THE ENGINEER

TYPICAL SECTION

PRIVATE DRIVE TO BUSINESS, FIELD, OR RESIDENTIAL PROPERTY

ALL DRIVES INTO PARKING AREAS SHALL HAVE 12:1 SIDE SLOPES

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TYPICAL SECTIONS

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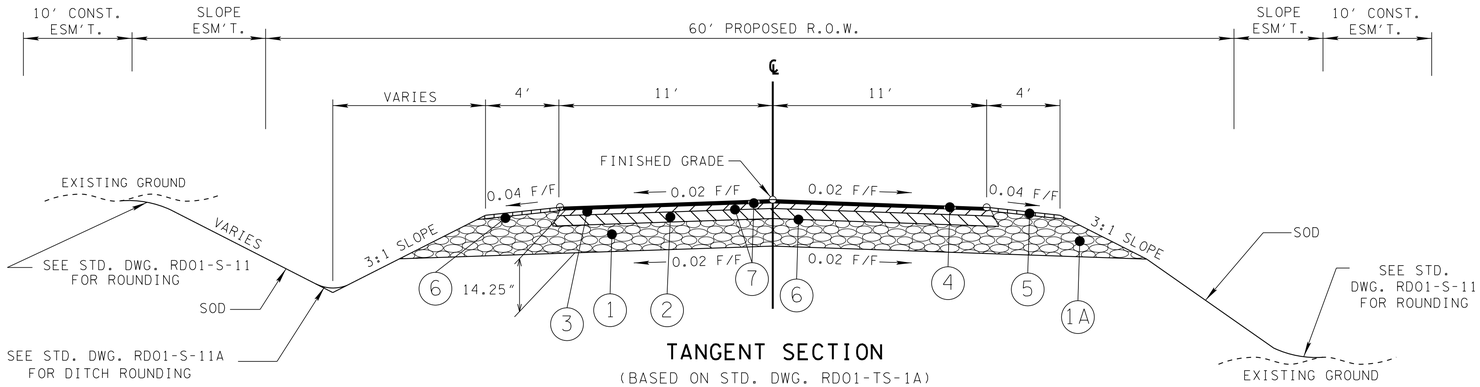
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	2
CONST.	2016	STP-M-9301(21)	2C

REV. 07-10-15: ADDED NOTE FOR SLOPE ROUNDING.

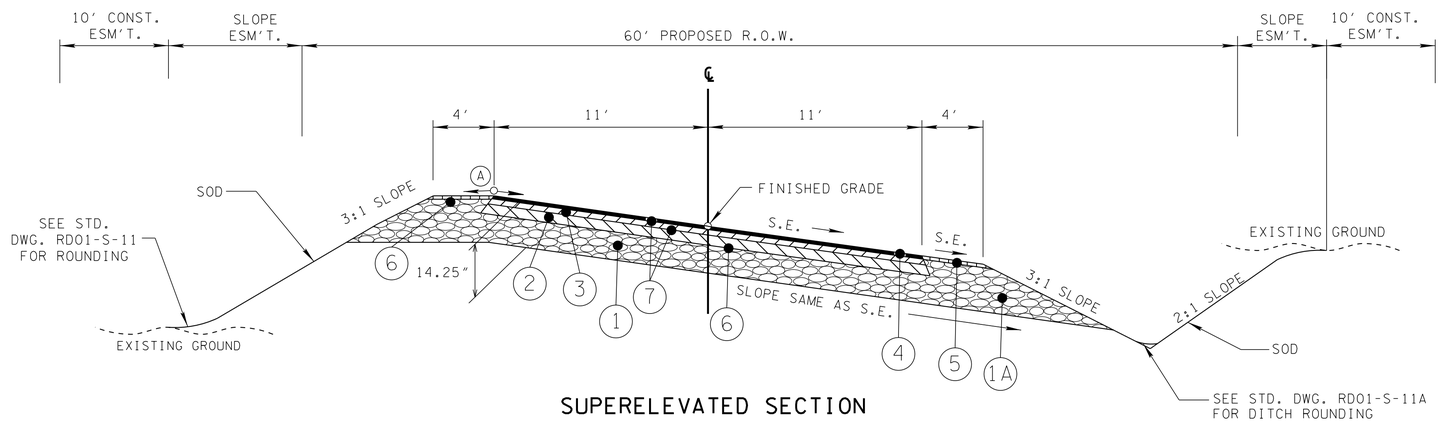


TANGENT SECTION

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

RAMP TO EXIST. OAKLAND RD.

STA. 33+72± TO 33+94±



SUPERELEVATED SECTION

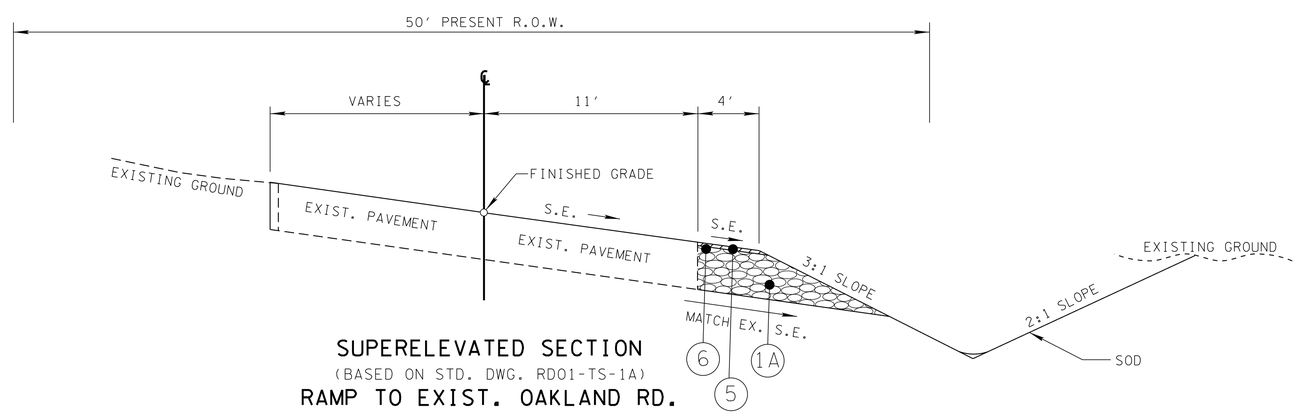
(BASED ON STD. DWG. RD01-TS-1A)

RAMP TO EXIST. OAKLAND RD.

STA. 32+50± TO 33+72±

NOTE: SEE SHEET 2A FOR PAVEMENT SCHEDULE

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



SUPERELEVATED SECTION

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

RAMP TO EXIST. OAKLAND RD.

STA. 31+17.40 TO 32+50±

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TYPICAL SECTIONS

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	2D

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) CERTIFICATION FOR ALL BORROW PITS MUST BE OBTAINED IN ACCORDANCE WITH SUBSECTION 107.06 OF THE STANDARD SPECIFICATIONS.

(3) THE CONTRACTOR SHALL NOT DISPOSE OF ANY MATERIAL EITHER ON OR OFF STATE-OWNED R.O.W. IN A REGULATORY FLOOD WAY AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY 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

(1) ALL EXISTING ROADS WITHIN THE RIGHT-OF-WAY AND NOT IN THE GRADED AREA THAT ARE TO BE ABANDONED SHALL BE SCARIFIED, OBLITERATED, AND S0DDED. 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. SODDING, IN ACCORDANCE WITH SECTION 803 OF THE STANDARD SPECIFICATIONS, WILL BE MEASURED AND PAID FOR UNDER ITEM 803-01.

(2) SOD SHALL BE PLACED AT LOCATIONS SHOWN ON THE PLANS TO PREVENT DAMAGE TO ADJACENT FACILITIES AND PROPERTY DUE TO EROSION ON DRAINAGE

DRAINAGE

(1) 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.

(2) EXCAVATION FOR PIPE CULVERTS, SEWERS, CONDUITS, ALL OTHER CULVERTS, ALL MINOR STRUCTURES OF ANY TYPE AND DESCRIPTION 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).

(3) 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).

(4) 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.

(5) 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.

(6) ALL EXISTING PIPES AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER THAT ARE TO BE LEFT IN PLACE AND ABANDONED MUST BE BACKFILLED AND PLUGGED. ALL COST FOR THIS WORK SHALL BE INCLUDED IN ITEM NO. 204-08.01, BACKFILL MATERIAL (FLOWABLE FILL), C.Y.

MISCELLANEOUS

(1) ALL DETOUR, ACCESS, SERVICE AND FRONTAGE ROADS SHALL BE CONSTRUCTED WITH A MINIMUM OF ONE (1) COURSE OF BASE MATERIAL BEFORE TRAFFIC IS INTERRUPTED ON EXISTING ROADS.

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

(3) 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

(1) 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.

PAVEMENT MARKINGS

TEMPORARY PAVEMENT MARKING ON INTERMEDIATE LAYERS

(1) 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

(2) 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.

DETOURS, LANE SHIFTS AND MEDIAN CROSS-OVERS

(3) THE PAVEMENT MARKING ON THE DETOUR AND LANE SHIFT FOR CENTERLINE, EDGELINE AND LANE 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 IN LINE), LIN. MI.

(4) BEFORE OPENING THE DETOUR AND LANE SHIFTS TO TRAFFIC, THE TRANSITIONAL MARKINGS ON THE EXISTING ROADWAY MUST BE IN PLACE. ALL EXISTING MARKINGS IN THE AREA OF THESE TRANSITIONAL MARKINGS SHALL BE OBLITERATED AND ALL EXISTING RAISED PAVEMENT MARKERS SHALL BE REMOVED TO ELIMINATE CONFLICTING MARKINGS. REMOVAL OF THE EXISTING CONFLICTING MARKINGS AND RAISED PAVEMENT MARKERS WILL NOT BE MEASURED AND PAID FOR DIRECTLY, BUT THE COST WILL BE INCLUDED IN ITEM NO. 712-01 TRAFFIC CONTROL, LUMP SUM.

PAVEMENT

PAVING

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

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

(3) 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.

SIGNING

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

(2) 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.

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

(4) 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.

(5) THE LETTERS, DIGITS, ARROWS, BORDERS, AND ALPHABET ACCESSORIES ON ALL FLAT SHEET SIGNS SHALL BE APPLIED BY SILK SCREENING PROCESS.

SIGNALIZATION

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

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

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

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

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

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GENERAL NOTES

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	2E

GENERAL NOTES

CONSTRUCTION WORK ZONE & TRAFFIC CONTROL

(1) 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.

(2) 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.

(3) 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.

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

(5) 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.

(6) 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.

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

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

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.

DEMOLITION OF BUILDINGS

(1) IF THE ASBESTOS SURVEY AND ABATEMENT IS NOT PART OF THE CONTRACT, THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE TDOT HAZARDOUS MATERIALS OFFICE TO VERIFY THAT AN ASBESTOS SURVEY HAS BEEN COMPLETED FOR ANY BUILDING TO BE REMOVED. IN THE CASE THAT NO SURVEY HAS BEEN COMPLETED THE CONTRACTOR SHALL COORDINATE WITH THE HAZARDOUSE MATERIAL OFFICE IN SCHEDULING A SURVEY.

(2) ASBESTOS-CONTAINING MATERIALS (ACM) ABATEMENT SHALL BE COMPLETED PRIOR TO ANY DEMOLITION ACTIVITIES FOR BUILDINGS INCLUDED IN THE PROJECT. 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.

(3) 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, DEMOLITION, OR MAJOR REPAIR INVOLVING THE REMOVAL/REPLACEMENT OF A STRUCTURAL COMPONENT.

SIGNALIZATION

(1) 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

(1) REFER TO THE EROSION PREVENTION AND SEDIMENT CONTROL PLAN, SHEET 14, FOR NOTES REGARDING SEASONAL WORK LIMITATION OR LIMITATION ON THE TOTAL AREA OF EXPOSED SOIL.

PROJECT COMMITMENTS

(2) SEE PROJECT COMMITMENTS, SHEET 1B, FOR DETAILS RELATING TO SPECIAL ENVIROMENTAL COMMITMENTS.

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GENERAL NOTES

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	2F

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 OR PVC (L.F.) FILL HEIGHT > 16 FT. AND < OR = 24 FT.					SKEW	RIP-RAP 709-05.06 (TON)	END TREATMENT				REMARKS
													INLET		OUTLET		
	18"	24"	30"	36"	48"	18"	24"	30"	36"	48"			TYPE	DRAWING NO.	TYPE	DRAWING NO.	
210+25.00	115										90^	32	TYPE U	D-PE-18A & B	TYPE U	D-PE-18A & B	OAKLAND ROAD
218+70.00	82										90^	7	TYPE U	D-PE-18A & B	TYPE U	D-PE-18A & B	OAKLAND ROAD
226+00.00	60										90^	11	TYPE U	D-PE-18A & B	TYPE U	D-PE-18A & B	OAKLAND ROAD
230+35.00	76										90^	6	TYPE U	D-PE-18A & B	TYPE U	D-PE-18A & B	OAKLAND ROAD
33+45.00	86										90^	25	TYPE U	D-PE-18A & B	TYPE U	D-PE-18A & B	RAMP TO OAKLAND ROAD
TOTALS	**419**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		**81**					

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
															TYPE	DRAWING NO.	
	LT	RT		(L.F.)	15"	18"	24"	30"	36"	18"	24"	30"	36"	48"			
224+75.00	X		PVT. DRIVE	12		20											OAKLAND ROAD
229+50.00		X	PVT. DRIVE	12		20											OAKLAND ROAD
232+85.00	X		PVT. DRIVE	36		48											OAKLAND ROAD
TOTALS					**0**	**88**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			

DISTURBED AREA

IN BETWEEN SLOPE LINES	6.937 (AC)
15 FOOT WIDE STRIP (OUTSIDE SLOPE LINES)	1.245 (AC)
TOTAL DISTURBED AREA	**8.182 (AC)**

PAVEMENT QUANTITIES

LOCATION	PAY ITEMS										
	303-01 (TON)	307-01.01 (TON)	307-01.08 (TON)	307-02.01 (TON)	307-02.08 (TON)	402-01 (TON)	402-02 (TON)	403-01 (TON)	411-01.07 (TON)	411-01.10 (TON)	411-02.10 (TON)
OAKLAND ROAD	8740	2620	1590			22	85	9		930	
RAMP	880	200	130			2	7	1	25	78	
PRIVATE DRIVE/BUS. ENT.	190									56	
MAINTENANCE OF TRAFFIC	300										
TOTALS	**10110**	**2820**	**1720**	**0**	**0**	**24**	**92**	**10**	**25**	**1064**	**0**

ESTIMATED GRADING QUANTITIES

STATION TO STATION	ROAD & DRAINAGE EXC. (UNCL.)		BORROW EXCAVATION		CHANNEL EXC. C.Y.	EXCESS EXC. WASTE C.Y.	EMB. C.Y.
	COMMON C.Y.	TOPSOIL C.Y.	UNCL. - C.Y.	S. ROCK - C.Y.			
OAKLAND ROAD	19821	4504	4971				21558
S.R. 13	193	317	3122				2883
RAMP	50	100	65				100
			0				
TOTALS	**20064**	**4921**	**8158**	**0**	**0**	**0**	**24541**

SEE SHEET NO. 4C FOR EARTHWORK SUMMARY

NOTE: ALL SUITABLE EXCESS MATERIAL FROM THE SR-13 PROJECT (PROJ. NO. STP-13(66)) SHALL BE UTILIZED FOR BORROW AREAS ON THIS PROJECT BEFORE PLACING ITEM NO. 203-03, BORROW EXCAVATION.

CROSS DRAIN ENDWALLS

LOCATION	CROSS DRAIN STATION	OFFSET (FT.)	STRUCTURE TYPE	STANDARD DRAWING	SKEW	RIP-RAP 709-05.06 (TON)	CLASS A CONC. 611-07.01 (C.Y.)	REINF. STEEL 611-07.02 (LB.)	15 IN. ENDWALL 3:1 611-07.51 (EA.)	15 IN. ENDWALL 4:1 611-07.52 (EA.)	15 IN. ENDWALL 6:1 611-07.53 (EA.)	18 IN. ENDWALL 3:1 611-07.54 (EA.)	18 IN. ENDWALL 4:1 611-07.55 (EA.)	18 IN. ENDWALL 6:1 611-07.56 (EA.)	24 IN. ENDWALL 3:1 611-07.57 (EA.)	24 IN. ENDWALL 4:1 611-07.58 (EA.)	24 IN. ENDWALL 6:1 611-07.59 (EA.)
OAKLAND RD.	210+25.00	L 51/ R 64	TYPE U	D-PE-18A & B	**90^**							2					
RAMP	33+45.00	L & R 45	TYPE U	D-PE-18A & B	90^							2					
OAKLAND RD.	218+70.00	L 30/ R 52	TYPE U	D-PE-18A & B	90^							1	1				
OAKLAND RD.	226+00.00	L 35/ R 24	TYPE U	D-PE-18A & B	90^								2				
OAKLAND RD.	230+35.00	L 36/ R 38	TYPE U	D-PE-18A & B	90^								2				
TOTALS						**0**	**0**	**0**	**0**	**0**	**0**	**5**	**5**	**0**	**0**	**0**	**0**

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TABULATED QUANTITIES

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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	3
CONST.	2016	STP-M-9301(21)	3

REV. 11-04-14: REVISED OWNER NAME FOR TRACT NOS. 9, 11, 12, 13, AND 17. REVISED DEED DOC. REFERENCE FOR TRACT NOS. 9, 11, 12, 13, 15, & 17.

REV. 07-20-15: REV. PROP. ROW AND EASEMENTS FOR TRACT NOS. 4, 6, 9, 10, 11, & 12.

REV. 02-17-16: REV. TOTAL AREA, AREA TO BE ACQUIRED, AND EASEMENTS FOR TRACT NOS. 11 AND 12. REMOVED EASEMENTS AND ADDED STRIKETHROUGH LINE FOR TRACT NOS. 13, 15, AND 16.

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 REFERENCE BK.	DEED DOCUMENT REFERENCE PAGE	LEFT	RIGHT	TOTAL	LEFT	RIGHT	TOTAL	LEFT	RIGHT	PERM. DRAINAGE	SLOPE	CONST. ①
~~1~~	~~GEORGE M. KENNEDY, III, AND WIFE VICKI HALL KENNEDY~~	~~016~~	~~020.09~~	~~1111~~	~~1018~~	~~3.000~~		~~3.000~~				~~3.000~~				
~~2~~	~~SONYA M. KENNEDY~~	~~016~~	~~021.01~~	~~1008~~	~~1419~~		~~2.756~~	~~2.756~~					~~2.756~~			
~~3~~	~~RICHARD J. GALLO AND ELIZABETH A. GALLO~~	~~016~~	~~020.08~~	~~1033~~	~~1927~~	~~3.000~~		~~3.000~~				~~3.000~~				
4	GEORGE M. KENNEDY, III, JAMES KENNEDY AND EDWARD KENNEDY	017	017.00	1177	769	2.986	93.514	96.500	1.001	1.068	2.069	1.985	92.446	2073	0.286 AC	0.283 AC
~~5~~	~~MICHAEL A. SCOTT AND WIFE SUSAN A. SCOTT~~	~~016~~	~~020.07~~	~~1172~~	~~2753~~	~~3.000~~		~~3.000~~				~~3.000~~				
6	WILLIAM MACON MARSHALL	016	021.00	1346	2655	2.000		2.000	0.133		0.133	1.867				254
~~7~~	~~LELA HARRIA ETAL~~	~~016~~	~~020.00~~	~~WB-V~~	~~588~~	~~25.500~~		~~25.500~~				~~25.500~~				
~~8~~	~~JOHN THOMAS AND WIFE JOAN THOMAS~~	~~016~~	~~020.04~~	~~582~~	~~2293~~	~~1.570~~		~~1.570~~				~~1.570~~				
9	JOANN BAXTER KEY	016	017.00	122	517	14.687	2724 S.F.	14.750	0.222	2724 S.F.	0.285	14.465			804	2873
				WB 26	156											
10	MERRITT TITMAN	016	023.01	1123	2097		1.000	1.000		670 S.F.	670 S.F.		0.985			
11	SHIRLEY PLUMMER AND THOMAS N. BATEMAN	016	023.00	768	1612	0.699	18.275	18.974	0.464	1.649	2.113	0.235	16.626	425	1474	0.207 AC
				1082	2429											
				PB10	257											
12	JOANN BAXTER KEY	016	017.00	122	517	83.237	0.374	83.611				83.237	0.374		2600	3025
				WB 26	156											
~~13~~	THOMAS N. BATEMAN, SHIRLEY PLUMMER, LINDA S. ALFORD AND JACK B. TURNER	~~033~~	~~003.01~~	~~SEE NOTE 2~~	~~SEE NOTE 2~~	~~32.850~~		~~32.850~~				~~32.850~~				
~~14~~	~~SAM'S REAL ESTATE BUSINESS TRUST~~	~~033~~	~~005.06~~	~~953~~	~~230~~		~~19.439~~	~~19.439~~					~~19.439~~			
~~15~~	~~MIMMS FAMILY PARTNERSHIP~~	~~016~~	~~018.01~~	~~729~~	~~81~~		~~210.400~~	~~210.400~~					~~210.400~~			
~~16~~	~~JACK HUDDLESTON SELLS~~	~~033~~	~~005.05~~	~~854~~	~~306~~		~~2.892~~	~~2.892~~					~~2.892~~			
~~17~~	~~TRUSTEES OF OAKLAND CHURCH OF CHRIST~~	~~016~~	~~018.00~~	~~15~~	~~399~~		~~2.500~~	~~2.500~~					~~2.500~~			

① FOR WORKING AREA AND EROSION PREVENTION AND SEDIMENT CONTROL MEASURES OUTSIDE OF RIGHT OF WAY.

② DEED DOCUMENT REFERENCES FOR TRACT NO. 13: BK 236 PG 110, BK 244 PG 788, BK 301 PG 742, WB 14 PG 377, BK 526 PG 763, BK 612 PG 1074, BK 262 PG 656, BK 392 PG679, WB 27 PG 50, BK 684 PG 858, BK 881 PG 1182, PB 10-257.

UTILITY OWNERS

TELEPHONE: AT&T
333 COMMERCE STREET, RM 23C142
NASHVILLE, TN 37201
KIM BEAN
KB1078@ATT.COM
(615) 214-4871

CATV: CHARTER COMMUNICATION (MID-SOUTH REGION)
1850 BUSINESS PARK DR. SUITE 101
CLARKSVILE, TN 37040
CURT BALLANCE
CURT.BALLANCE@CHARTERCOM.COM
931-241-8441

COMCAST / XFINITY
660 MAINSTREAM DRIVE
NASHVILLE, TN 37228
NICK LEE
NICK_LEE@CABLE.COMCAST.COM
615-244-7462 EXT. 1115251

ELECTRIC: CLARKSVILLE DEPARTMENT OF ELECTRICITY
2021 WILMA RUDOLPH BLVD.
CLARKSVILLE, TN 37040
TERRY RESHA
TRESHA@CLARKSVILLEDE.COM
931-905-7228 EXT. 228

C.E.M.C
1940 MADISON EXTENTION
CLARKSVILLE, TN 37043
MARK COOK
MCOOK@CEMC.ORG
931-645-2481 EXT. 1117

WATER: CITY OF CLARKSVILLE
2215 MADISON STREET
CLARKSVILLE, TN 37043
PAT HICKEY
PAT.HICKEY@CITYOFCLARKSVILLE.COM
931-645-7418 EXT. 1001

STREET LIGHTS: CLARKSVILLE STREET DEPARTMENT
199 TENTH STREET
CLARKSVILLE, TN 37040
DAVID SHEPARD
DSHEPARD@CITYOFCLARKSVILLE.COM
931-645-7464

SEWER: CITY OF CLARKSVILLE
2215 MADISON STREET
CLARKSVILLE, TN 37043
PAT HICKEY
PAT.HICKEY@CITYOFCLARKSVILLE.COM
931-645-7418 EXT. 1001

GAS: CITY OF CLARKSVILLE
2215 MADISON STREET
CLARKSVILLE, TN 37043
MICHAEL YOUNG
MICHAEL.YOUNG@CITYOFCLARKSVILLE.COM
931-645-7418 EXT. 1500

PETROLEUM PIPELINE:
BP PIPELINE (NORTH AMERICA) INC.
150 W. WARRENVILLE RD., BLDG. 605-3RD. FL.
NAPERVILLE, IL 60563
ALICE JOHNSON
ALICE.JOHNSON@BP.COM
630-535-2519

MID-VALLEY PIPELINE COMPANY
1001 COLLEGE HILL ROAD
OXFORD, MS 38655
PAUL REYNOLDS
PCREYNOLDS@SUNOCOLOGISTICS.COM
662-234-4114 EXT. 12

COUNTY: MONTGOMERY COUNTY ENGINEER
1 MILLENNIUM PLAZA, SUITE 102
CLARKSVILLE, TN 37040
NICHOLAS B. POWELL, P.E.
NBPOWELL@MCGTN.NET
931-553-5113

UTILITIES

(1) 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.

(2) 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.

(3) 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.

(4) 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.

(5) 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.

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 2, DESIGN DIVISION IS TO BE NOTIFIED IN SUFFICIENT TIME TO PERMIT HAVING SUCH REMOVALS DESIGNATED AS A PART OF THE CONSTRUCTION CONTRACT.

(2) 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, DESIGN DIVISION AND THE CIVIL ENGINEERING MANAGER 1, REGIONAL DESIGN OFFICE, ARE TO BE NOTIFIED IN SUFFICIENT TIME TO PERMIT HAVING SUCH REMOVALS DESIGNATED AS A PART OF THE CONSTRUCTION CONTRACT.

(3) ALL RAMPS MUST CONFORM TO THE DEPARTMENT'S "POLICY ON FINANCING CONSTRUCTION OF PUBLIC ROAD INTERSECTIONS AND DRIVEWAYS ON HIGHWAY RESURFACING, RECONSTRUCTION AND CONSTRUCTION PROJECTS ON NEW LOCATIONS", THE MANUAL ON RULES AND REGULATIONS FOR CONSTRUCTING DRIVEWAYS ON STATE HIGHWAY RIGHT-OF-WAY, STANDARD DRAWING RP-R-1, AND OTHER ACCEPTED DESIGN AND SAFETY STANDARDS.

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

(5) 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.

(6) 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.

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

(8) TRACT REMAINDERS NOT HAVING AN EXISTING DRIVEWAY WILL BE PROVIDED ONE 50-FOOT OPENING IN THE ACCESS CONTROL FENCE AND A DRIVEWAY WILL BE CONSTRUCTED UNLESS ACCESS IS PROVIDED FROM AN INTERSECTING ROAD OR BASED ON PHYSICAL CONDITIONS AND/OR CONFLICTS WITH OTHER DESIGN CONSIDERATIONS WHICH PREVENT AN ACCESS OPENING. PAVING OF THESE NEW DRIVEWAYS WILL BE IN ACCORDANCE TO THE 7 PERCENT CRITERIA PREVIOUSLY MENTIONED FOR EXISTING DRIVEWAYS.

(9) 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.

(10) 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.

(11) ON NON-STATE ROUTES, ADDITIONAL DRIVEWAYS AND FIELD ENTRANCES OTHER THAN THOSE PROVIDED IN THE PLANS SHALL REQUIRE A PERMIT ONLY IF THE LOCAL AGENCY SPECIFIES THE NEED FOR THAT PERMIT.

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RIGHT-OF-WAY ACQUISITION TABLE

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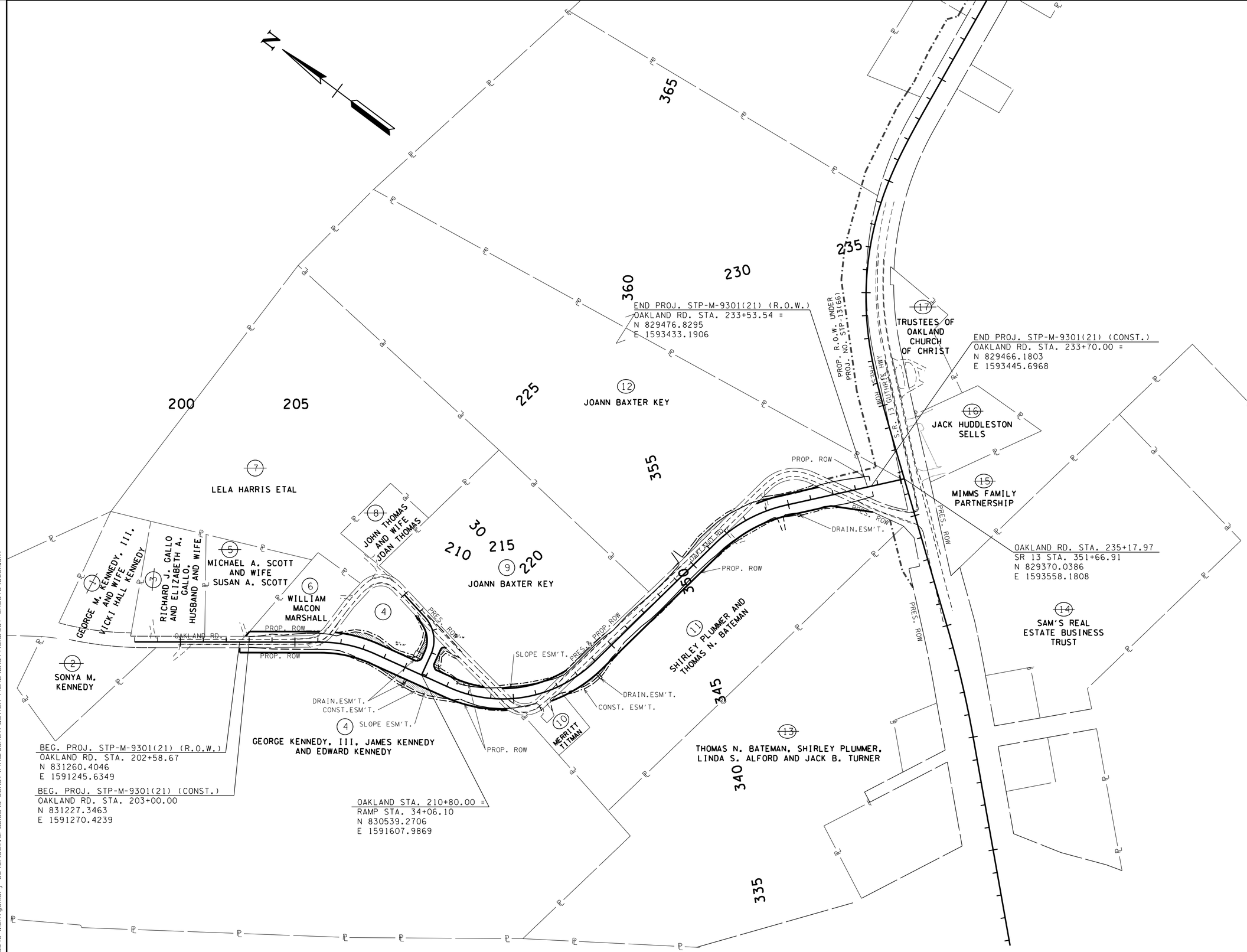
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	3A
CONST.	2015	STP-M-9301(21)	3A

REV. 11-04-14: REVISED PROPERTY OWNER NAMES FOR TRACT NOS. 9, 11, 12, 13, AND 17.

REV. 07-10-15: REV. PROP ROW, SLOPE, CONST., AND DRAINAGE EASEMENTS FOR TR. NO'S. 4, 6, 9, 10, 11, & 12.

REV. 02-17-16: REV. PROP ROW, SLOPE, AND CONST. EASEMENTS FOR TR. NO'S. 11 AND 12. REMOVED EASEMENTS FROM TR. NO'S. 13, 15, AND 16. UPDATED SURVEY.



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PROPERTY MAP

STA.200+00 TO STA.236+31.59

SCALE: 1"=200'

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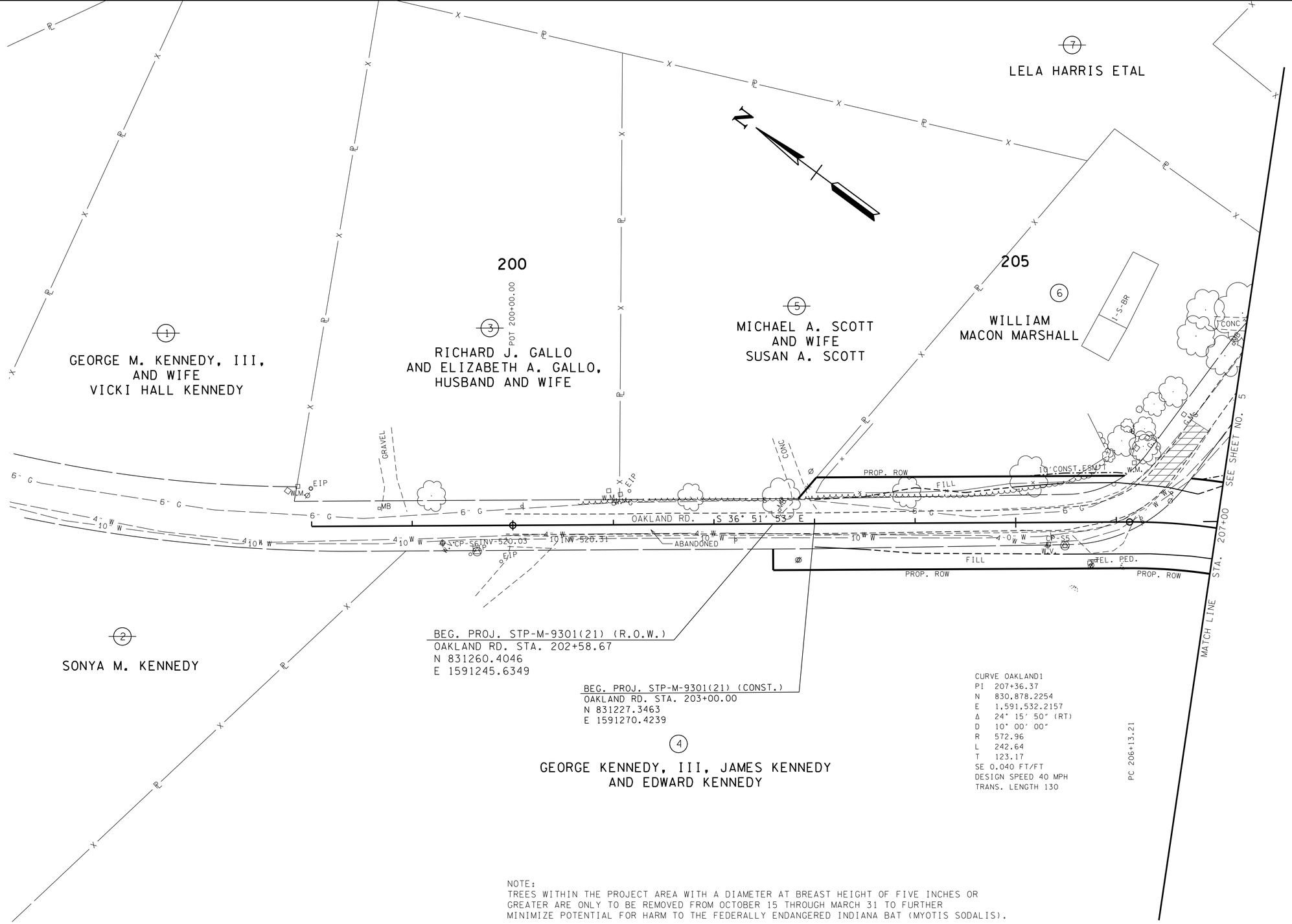
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	4
CONST.	2016	STP-M-9301(21)	4

REV. 07-10-15: REV. PROP. ROW, SLOPE, AND CONST. EASEMENTS FOR TR. NO'S. 4 & 6.



NOTE:
TREES WITHIN THE PROJECT AREA WITH A DIAMETER AT BREAST HEIGHT OF FIVE INCHES OR GREATER ARE ONLY TO BE REMOVED FROM OCTOBER 15 THROUGH MARCH 31 TO FURTHER MINIMIZE POTENTIAL FOR HARM TO THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS).

CONTROL POINTS

	POINT	NORTH	EAST	ELEV.	STATION	OFFSET
	S3	829832.9260	1593007.3710	541.13	228+05.93	0.88' (RT)
	S4	830927.7700	1591868.4040	533.72	207+94.39	344.17' (LT)
	S5	831014.3040	1591401.0760	536.43	205+48.83	23.28' (RT)
	S7	830181.4160	1592345.0510	546.37	220+98.53	243.47' (LT)
	S6	831480.3100	1591048.3050	518.03	199+64.36	25.95' (RT)
*	S8	828986.0730	1593179.1450	537.39	410+63.18	90.83' (LT)
*	S1	830125.9120	1594337.7590	537.75	426+76.67	47.01' (LT)

*SR 13

SCARIFY AND SOD

UNOFFICIAL SET

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COORDINATES ARE NAD/B31(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

PRESENT LAYOUT

STA.200+00 TO STA.207+00

SCALE: 1"= 50'

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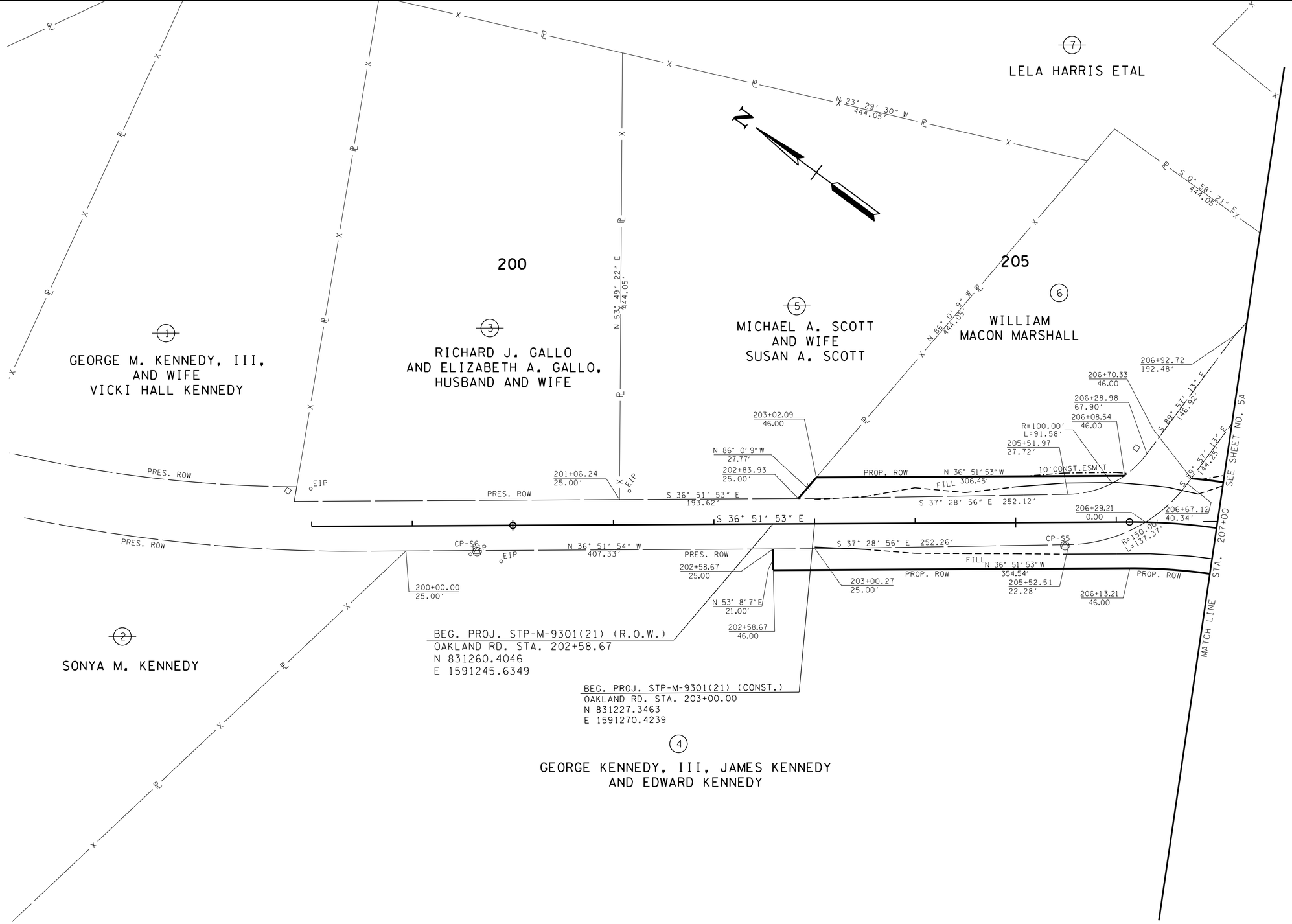
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	4A
CONST.	2016	STP-M-9301(21)	4A

REV. 07-10-15: REV. PROP. ROW, SLOPE, AND CONST. EASEMENTS FOR TR. NO'S. 4 & 6.



CONTROL POINTS

POINT	NORTH	EAST	ELEV.	STATION	OFFSET
S3	829832.9260	1593007.3710	541.13	228+05.93	0.88' (RT)
S4	830927.7700	1591868.4040	533.72	207+94.39	344.17' (LT)
S5	831014.3040	1591401.0760	536.43	205+48.83	23.28' (RT)
S7	830181.4160	1592345.0510	546.37	220+98.53	243.47' (LT)
S6	831480.3100	1591048.3050	518.03	199+64.36	25.95' (RT)
* S8	828986.0730	1593179.1450	537.39	410+63.18	90.83' (LT)
* S1	830125.9120	1594337.7590	537.75	426+76.67	47.01' (LT)

* SR 13

UNOFFICIAL SET

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COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

R.O.W. DETAILS

STA.200+00 TO STA.207+00

SCALE: 1"= 50'

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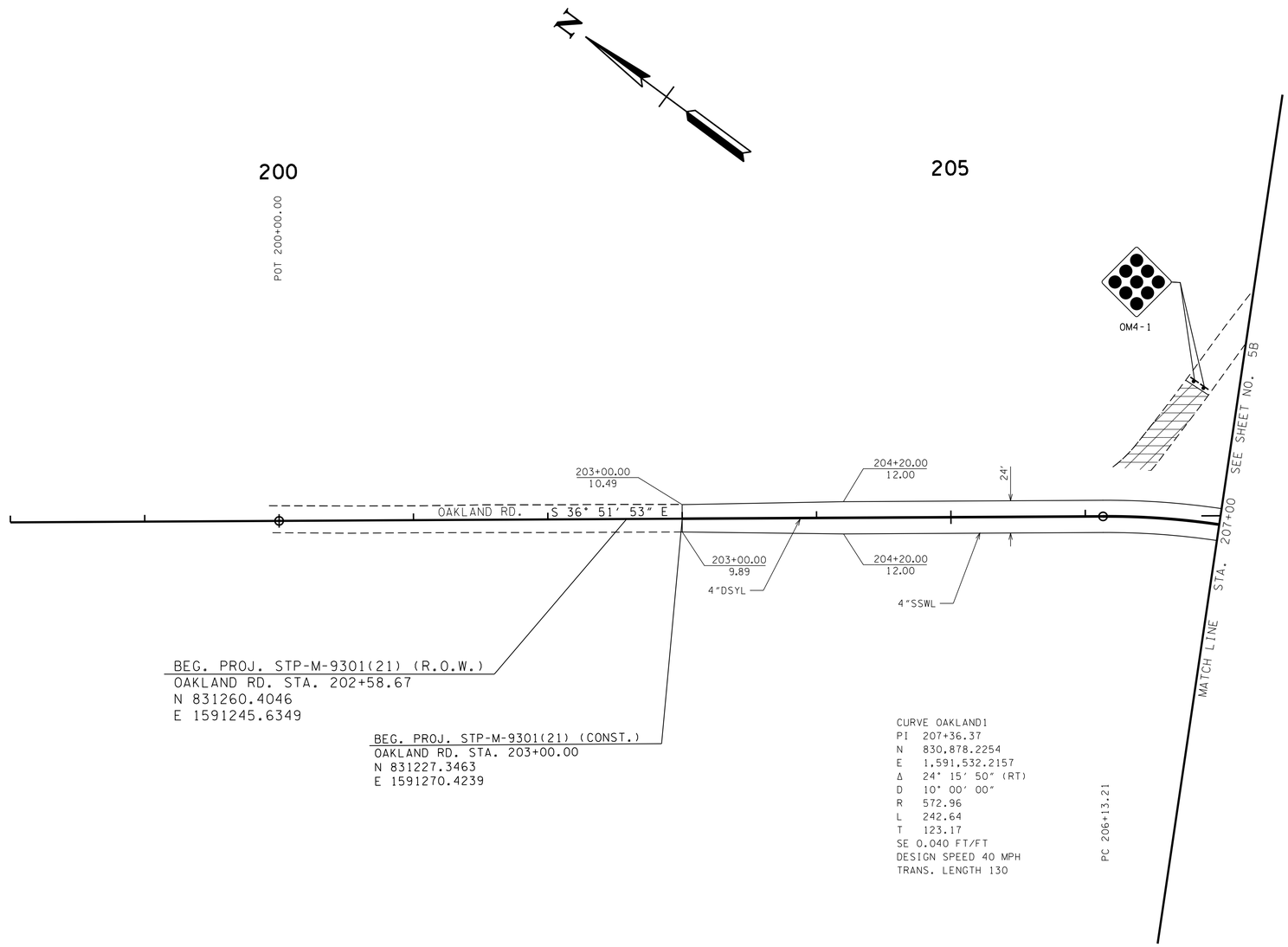
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	4B
CONST.	2016	STP-M-9301(21)	4B



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/B31(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

PROPOSED LAYOUT

STA.200+00 TO STA.207+00

SCALE: 1"= 50'

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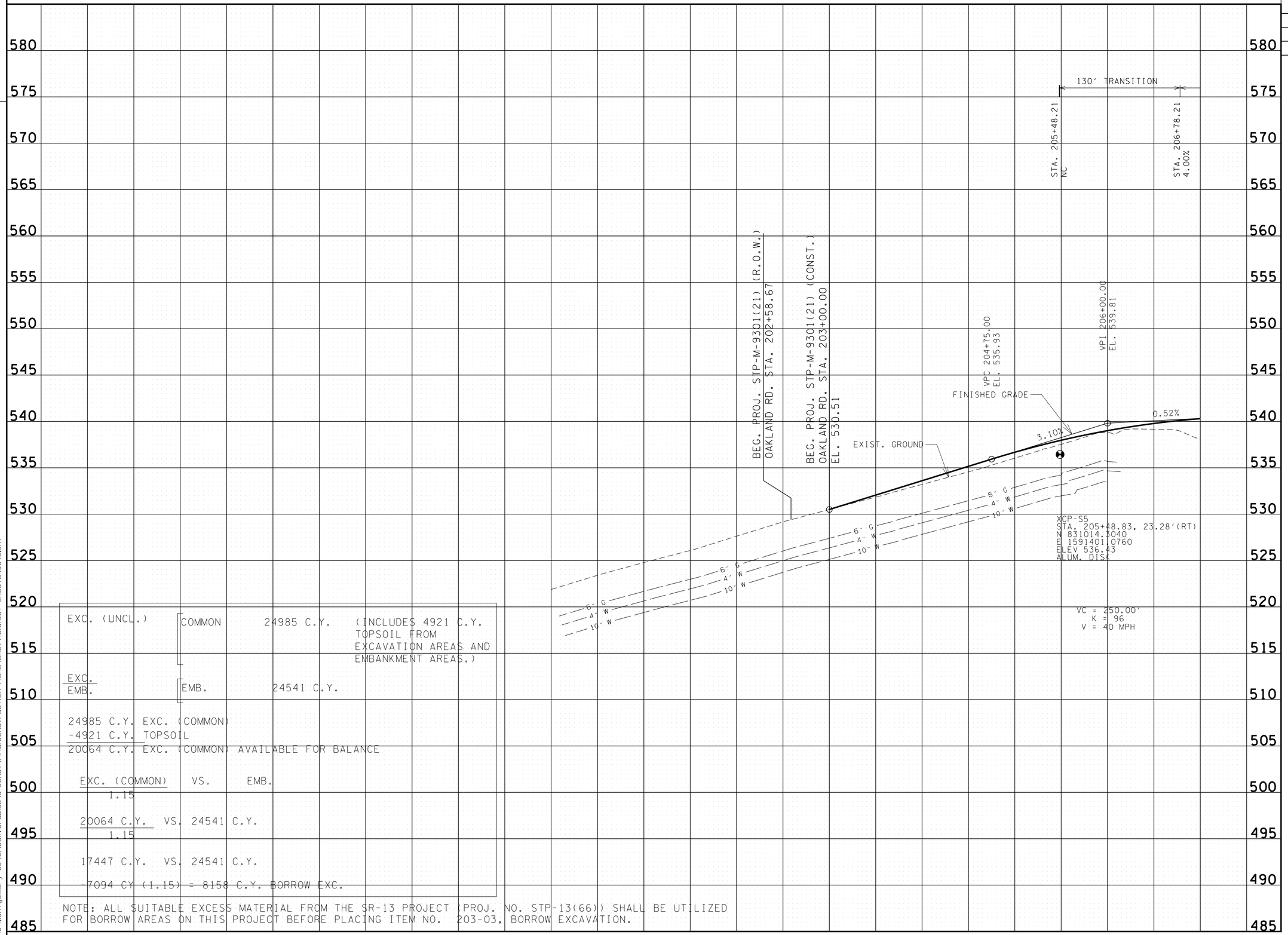
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	4C
CONST.	2016	STP-M-9301(21)	4C



EXC. (UNCL.) COMMON 24985 C.Y. (INCLUDES 4921 C.Y. TOPSOIL FROM EXCAVATION AREAS AND EMBANKMENT AREAS.)

EXC.
EMB. EMB. 24541 C.Y.

24985 C.Y. EXC. (COMMON)
-4921 C.Y. TOPSOIL
20064 C.Y. EXC. (COMMON) AVAILABLE FOR BALANCE

EXC. (COMMON) VS. EMB.
1.15

20064 C.Y. VS. 24541 C.Y.
1.15

17447 C.Y. VS. 24541 C.Y.

-7094 CY (1.15) = 8158 C.Y. BORROW EXC.

NOTE: ALL SUITABLE EXCESS MATERIAL FROM THE SR-13 PROJECT (PROJ. NO. STP-13(66)) SHALL BE UTILIZED FOR BORROW AREAS ON THIS PROJECT BEFORE PLACING ITEM NO. 203-03, BORROW EXCAVATION.

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PROFILE

STA.200+00 TO STA.207+00

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

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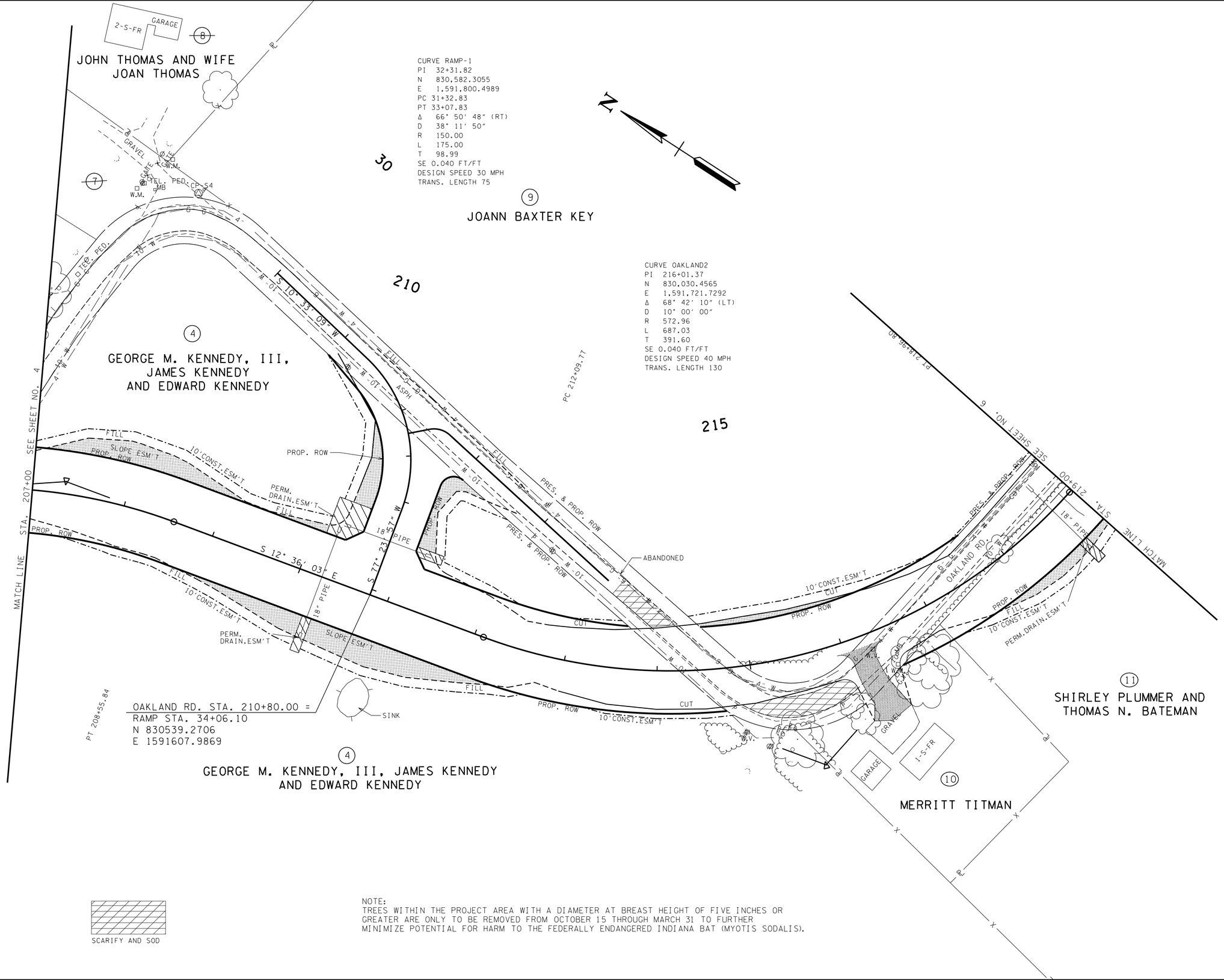
N:8846 Montgomery Co\0\Deliverables\3-Const\Final Construction Plans\Unofficial Set Sheets\004C.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	5
CONST.	2016	STP-M-9301(21)	5

REV. 11-04-14: REVISED PROPERTY OWNER NAMES FOR TRACT NOS. 9 AND 11.
REV. 07-10-15: REV. PROP. ROW, SLOPE, DRAIN. AND CONST. EASEMENTS FOR TR. NO'S. 4, 9, 10 AND 11.



NOTE:
TREES WITHIN THE PROJECT AREA WITH A DIAMETER AT BREAST HEIGHT OF FIVE INCHES OR GREATER ARE ONLY TO BE REMOVED FROM OCTOBER 15 THROUGH MARCH 31 TO FURTHER MINIMIZE POTENTIAL FOR HARM TO THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS).

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

PRESENT LAYOUT

STA.207+00 TO STA.219+00

SCALE: 1"= 50'

9/21/2016 12:08:23 PM
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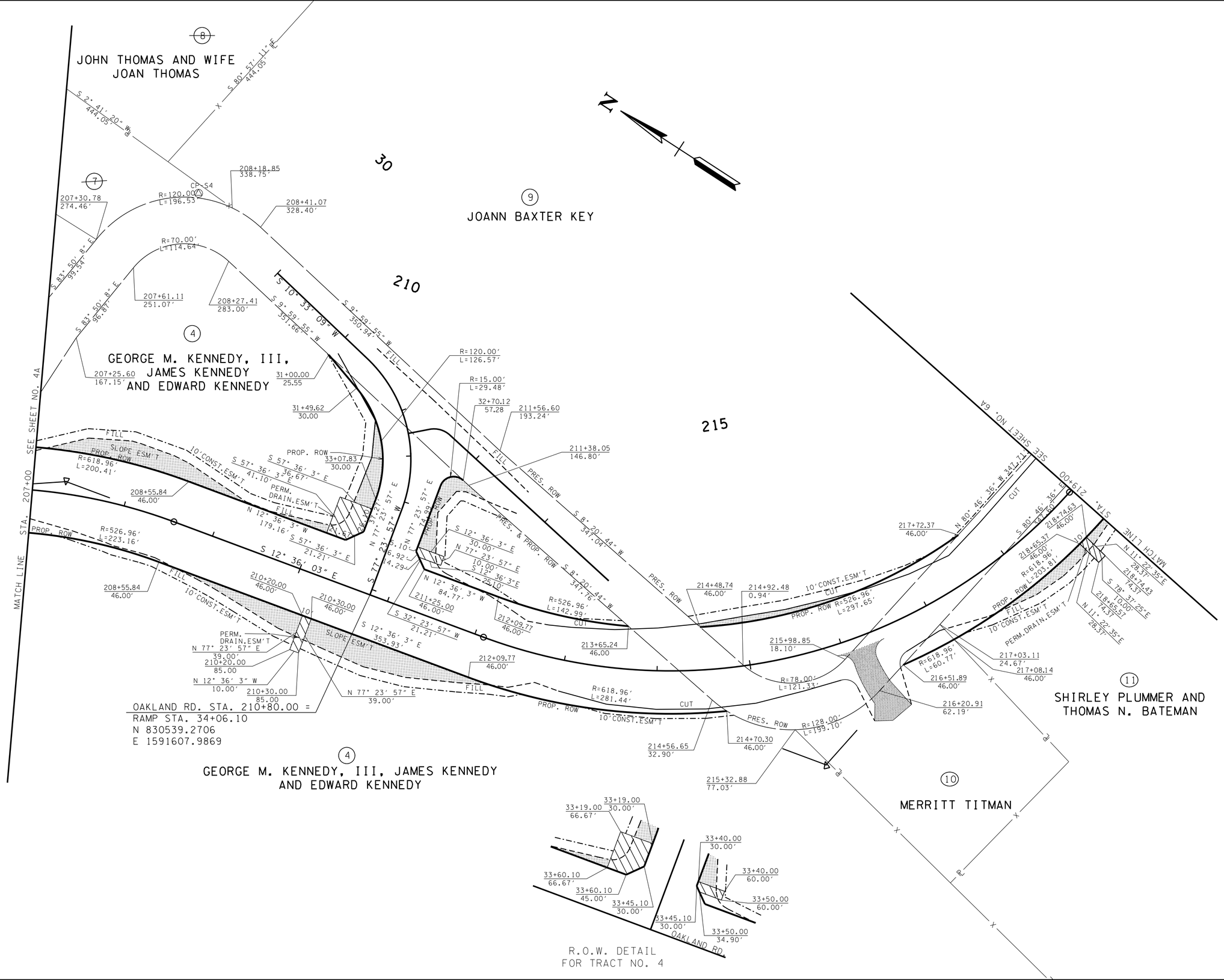
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	5A
CONST.	2015	STP-M-9301(21)	5A

REV. 11-04-14: REVISED PROPERTY OWNER NAMES FOR TRACT NOS. 9 AND 11.
REV. 07-10-15: REV. PROP. ROW, SLOPE, DRAIN. AND CONST. EASEMENTS FOR TR. NO'S. 4, 9, 10 AND 11.



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

R.O.W. DETAILS

STA. 207+00 TO STA. 219+00

SCALE: 1"= 50'

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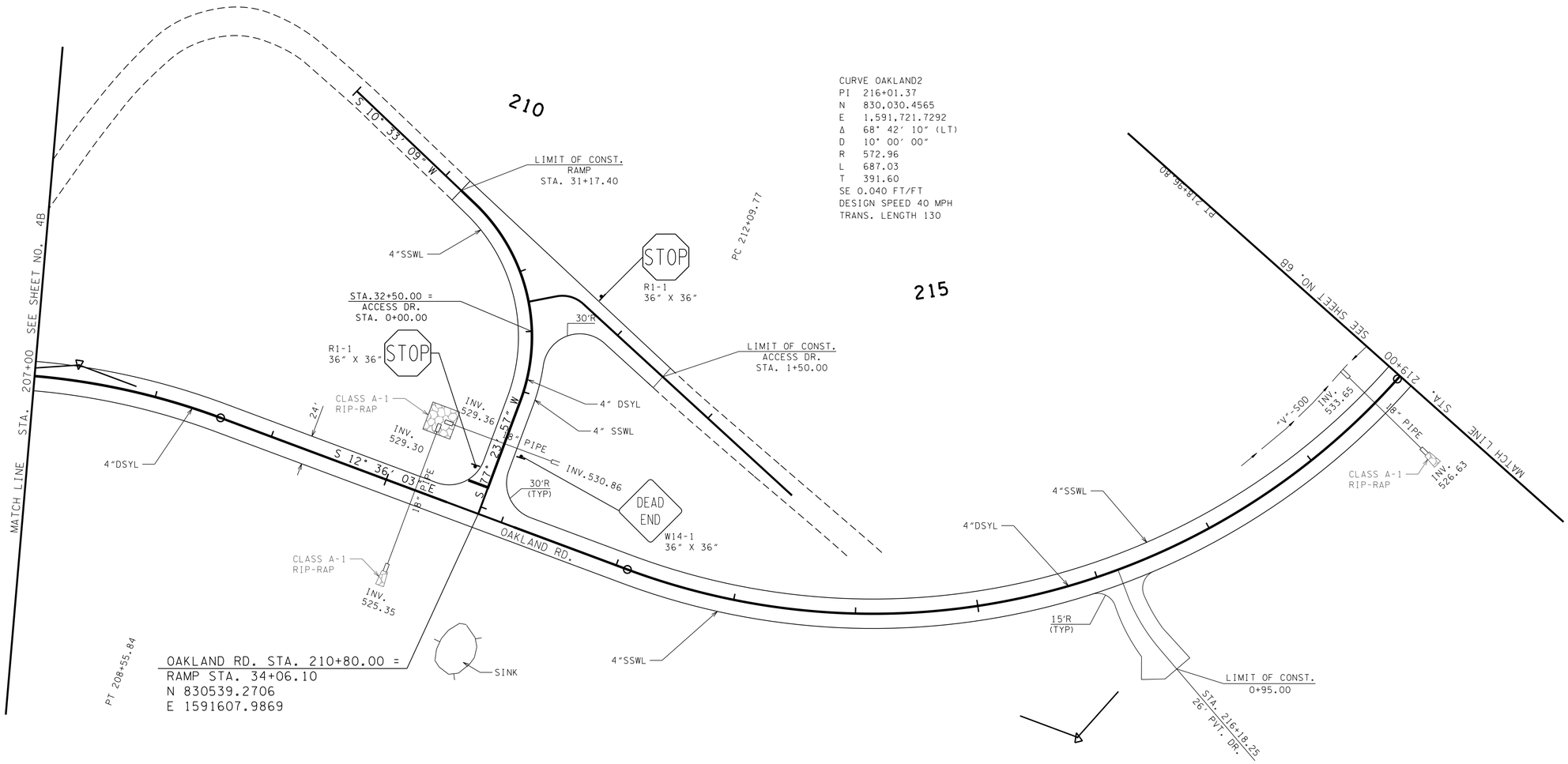
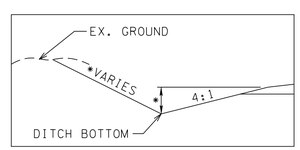
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	5B
CONST.	2016	STP-M-9301(21)	5B

REV. 07-10-15: REV. PROP. CULVERT AT STA. 218+70.00. REVISED PROP. SPECIAL DITCH LT STA. 217+50 TO 219+00. AND ADDED DETAIL.

CURVE RAMP-1
PI 32+31.82
N 830,582.3055
E 1,591,800.4989
PC 31+32.83
PT 33+07.83
Δ 66° 50′ 48″ (RT)
D 38° 11′ 50″
R 150.00
L 175.00
T 98.99
SE 0.040 FT/FT
DESIGN SPEED 30 MPH
TRANS. LENGTH 75

CURVE OAKLAND2
PI 216+01.37
N 830,030.4565
E 1,591,721.7292
Δ 68° 42′ 10″ (LT)
D 10° 00′ 00″
R 572.96
L 687.03
T 391.60
SE 0.040 FT/FT
DESIGN SPEED 40 MPH
TRANS. LENGTH 130





SPECIAL DITCH
TYPICAL SECTION
STA. 217+50 TO STA. 219+00
LEFT

* SEE CROSS SECTIONS

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

PROPOSED LAYOUT

STA.207+00 TO STA.219+00

SCALE: 1″= 50′

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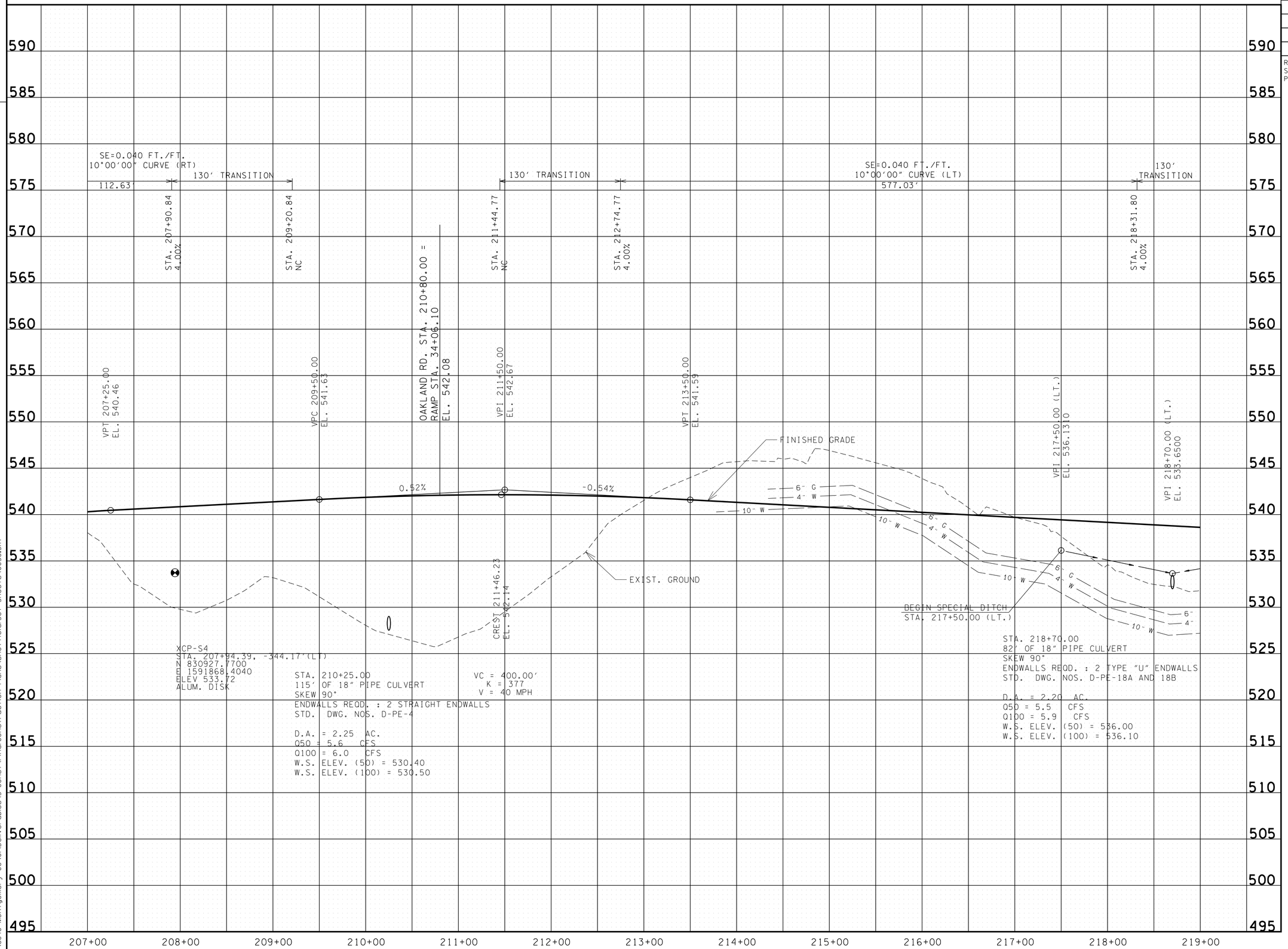
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	5C
CONST.	2016	STP-M-9301(21)	5C

REV. 07-10-15: REVISED CULVERT LENGTH AT STA. 218+70.00, ADDED SPECIAL DITCH PROFILE.



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

MONTGOMERY COUNTY

PROFILE

STA.207+00 TO STA.219+00

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

9/21/2016 12:08:32 PM
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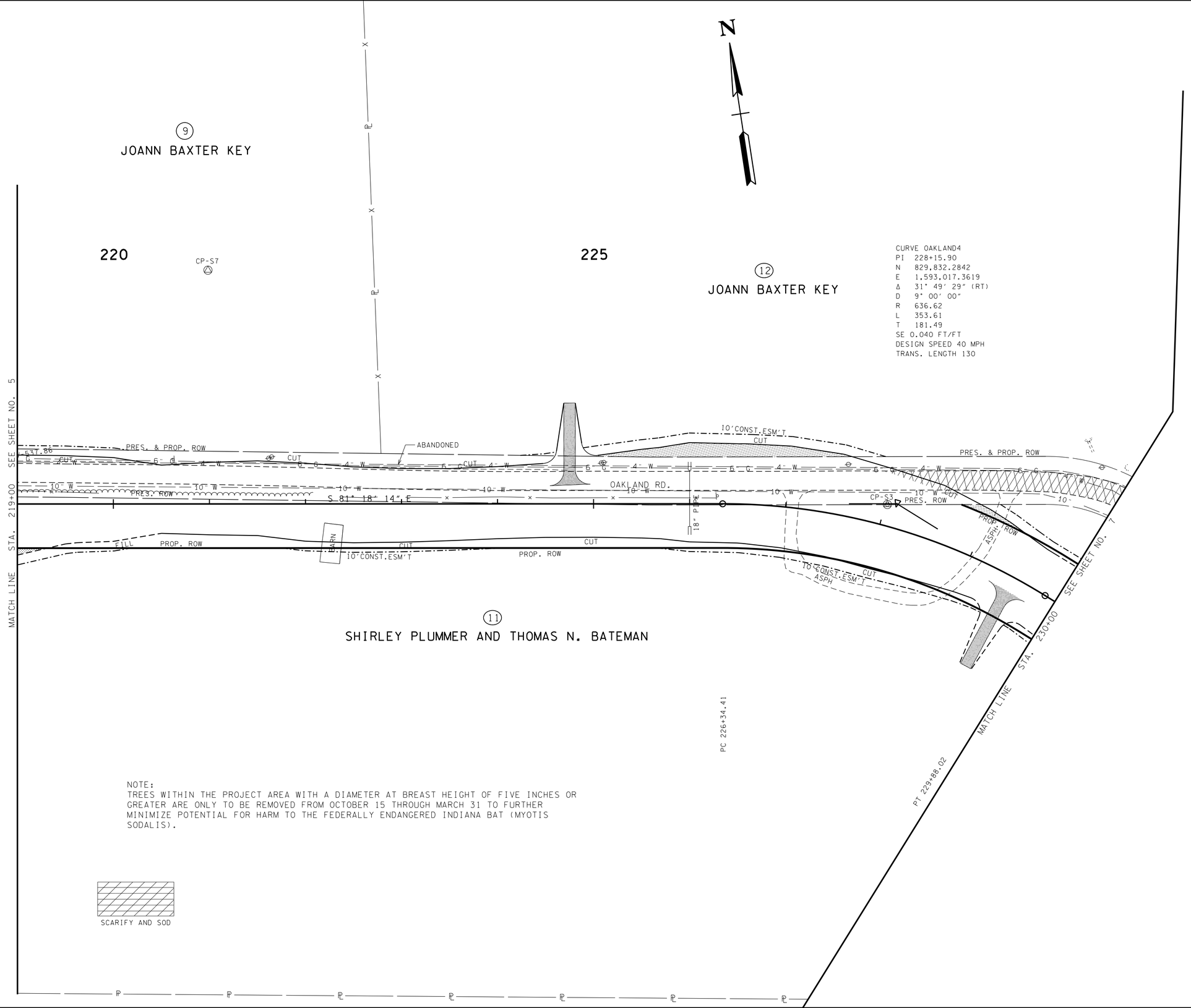
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	6
CONST.	2016	STP-M-9301(21)	6

REV. 11-04-14: REVISED PROPERTY OWNER NAMES FOR TRACT NOS. 9, 11, AND 12.

REV. 07-10-15: REV. PROP. ROW, SLOPE, DRAIN. AND CONST. EASEMENTS FOR TR. NO'S. 9, 11 AND 12. REV. PVT. DR. TR. NO. 11.

REV. 02-17-16: REV. PROP. ROW, SLOPE, AND CONST. EASEMENTS FOR TR. NO'S. 11 AND 12.



NOTE:
TREES WITHIN THE PROJECT AREA WITH A DIAMETER AT BREAST HEIGHT OF FIVE INCHES OR GREATER ARE ONLY TO BE REMOVED FROM OCTOBER 15 THROUGH MARCH 31 TO FURTHER MINIMIZE POTENTIAL FOR HARM TO THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS).

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

PRESENT LAYOUT

STA.219+00 TO STA.230+00

SCALE: 1"= 50'

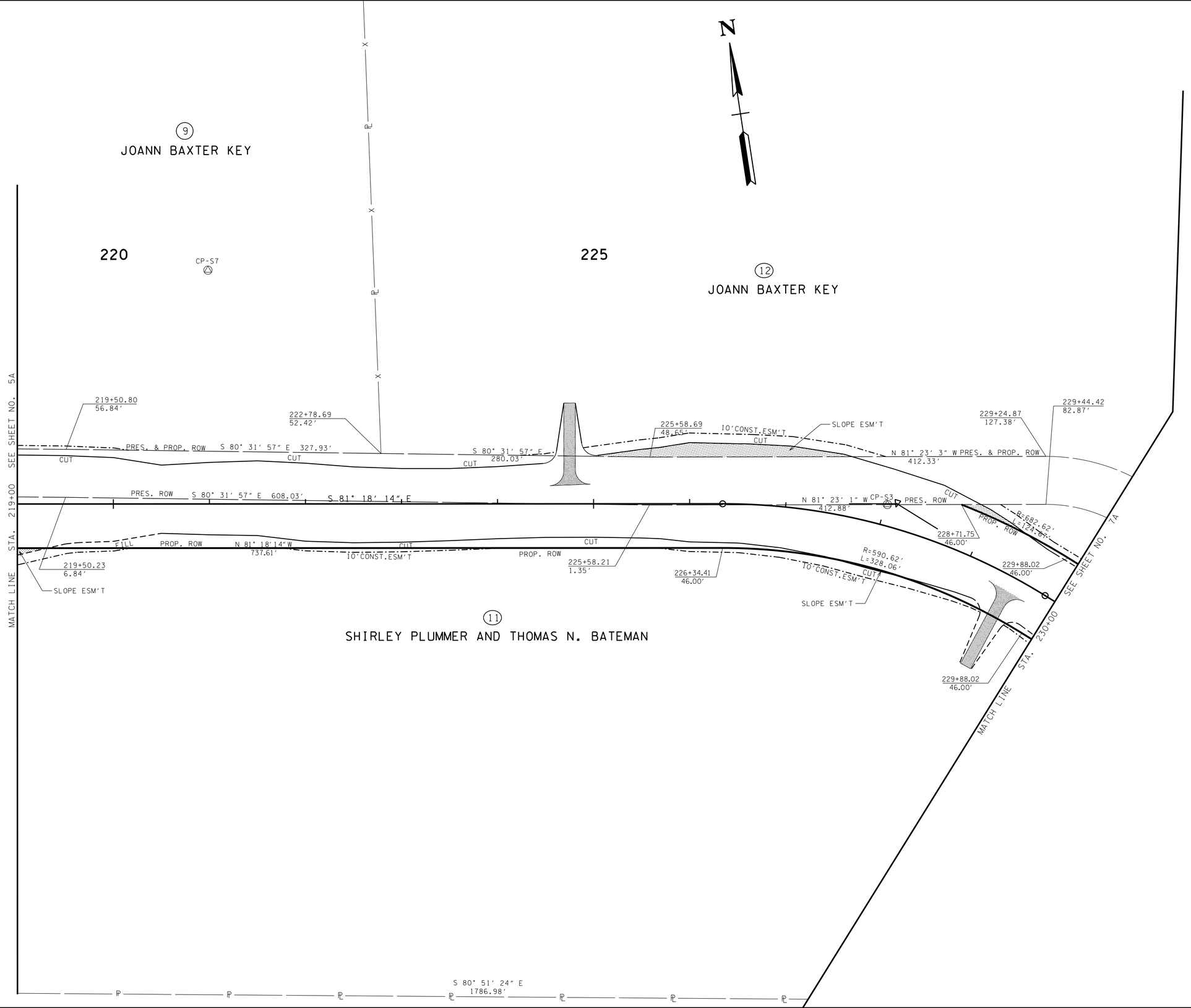
9/21/2016 12:08:34 PM
N:\8846 Montgomery Co\01\Deliverables\3-Const\Final Construction Plans\Unofficial Set Sheets\006.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	6A
CONST.	2016	STP-M-9301(21)	6A

REV. 11-04-14: REVISED PROPERTY OWNER NAMES FOR TRACT NOS. 9, 11, AND 12.

REV. 07-10-15: REV. PROP. ROW, SLOPE, DRAIN. AND CONST. EASEMENTS FOR TR. NO'S. 9, 11 AND 12. REV. PVT. DR. TR. NO. 11.

REV. 02-17-16: REV. PROP. ROW, SLOPE, AND CONST. EASEMENTS FOR TR. NO'S. 11 AND 12.



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

R.O.W. DETAILS

STA.219+00 TO STA.230+00

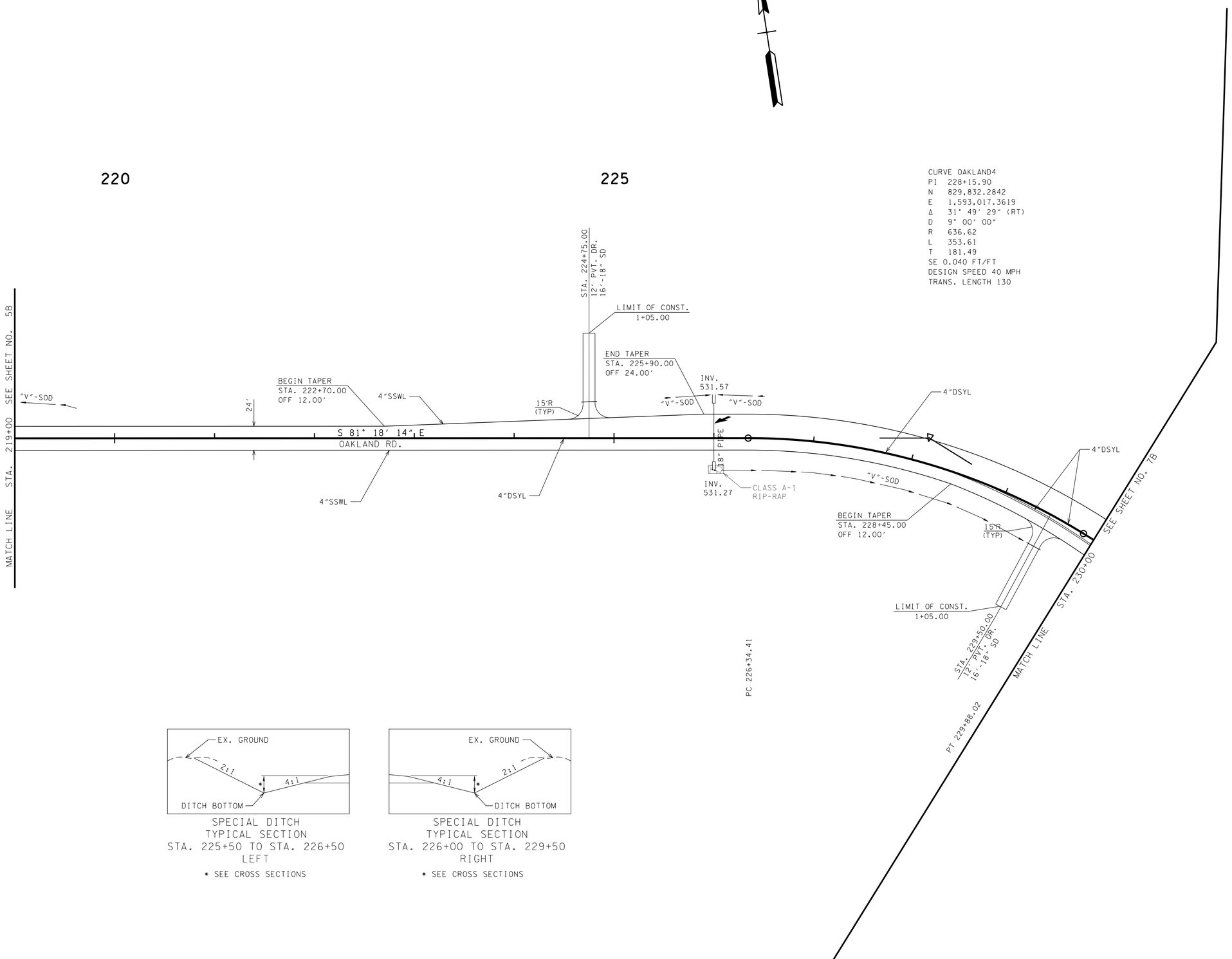
SCALE: 1"= 50'

9/21/2016 12:08:37 PM
N:\8846 Montgomery Co\01\Deliverables\3-Const\Final Construction Plans\Unofficial Set Sheets\006A.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	6B
CONST.	2016	STP-M-9301(21)	6B

REV.07-10-15: REV. PROP. SPECIAL DITCHES STA. 219+00 TO 219+61.80 AND STA. 225+00 TO 230+00 LEFT, STA. 224+50 TO 227+00 RIGHT. ADDED TYPICAL SECTIONS FOR SPECIAL DITCHES. REV. PVT. DR. TR. NO. 11.

REV.02-17-16: REVISED PROP. LAYOUT AND DRAINAGE.



SPECIAL DITCH
TYPICAL SECTION
STA. 225+50 TO STA. 226+50
LEFT

* SEE CROSS SECTIONS

SPECIAL DITCH
TYPICAL SECTION
STA. 226+00 TO STA. 229+50
RIGHT

* SEE CROSS SECTIONS

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

PROPOSED LAYOUT

STA.219+00 TO STA.230+00

SCALE: 1"= 50′

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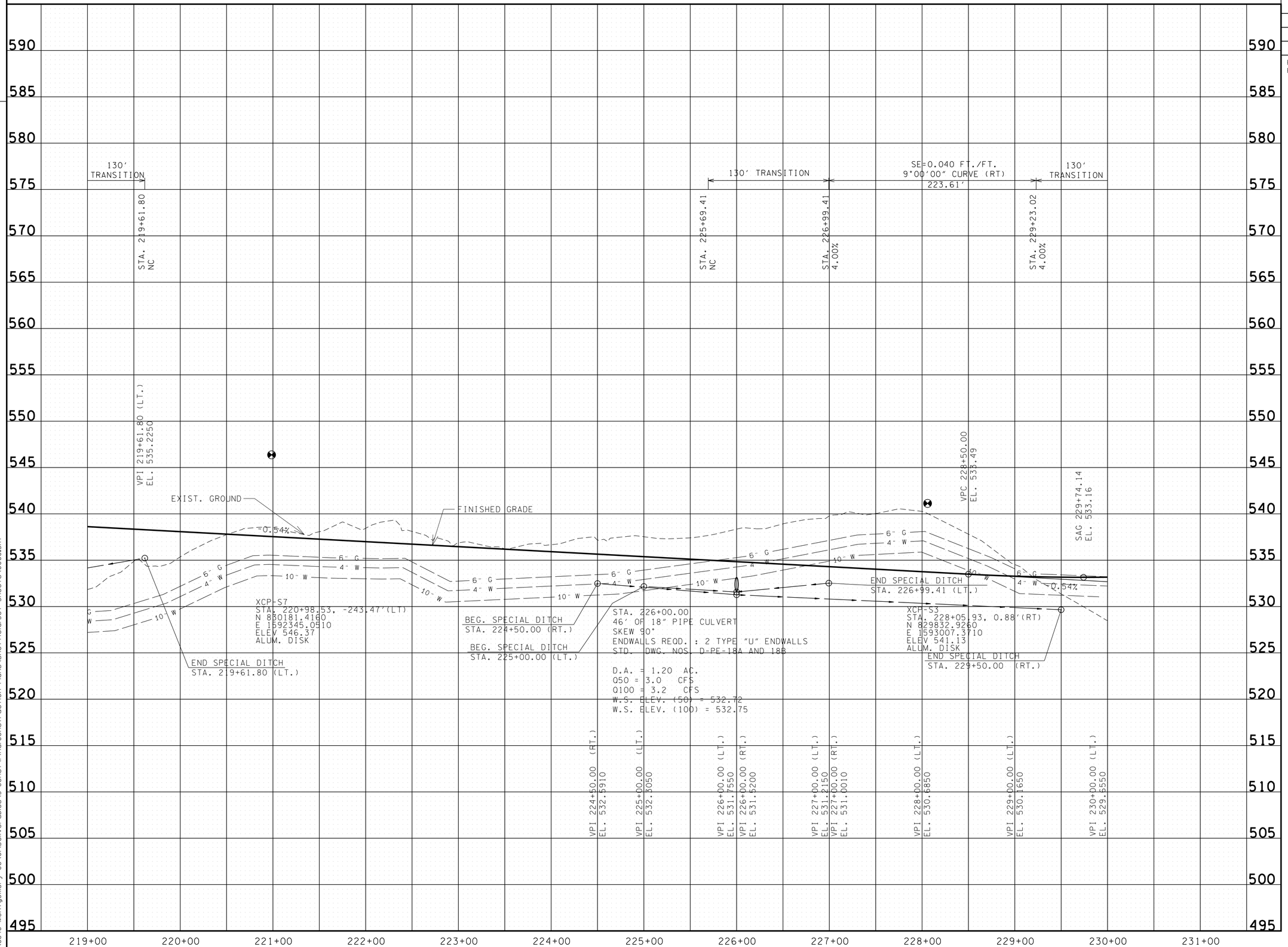
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	6C
CONST.	2016	STP-M-9301(21)	6C

REV.07-10-15: ADDED SPECIAL DITCH PROFILES.



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

MONTGOMERY COUNTY

PROFILE

STA.219+00 TO STA.230+00

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

9/21/2016 12:08:41 PM
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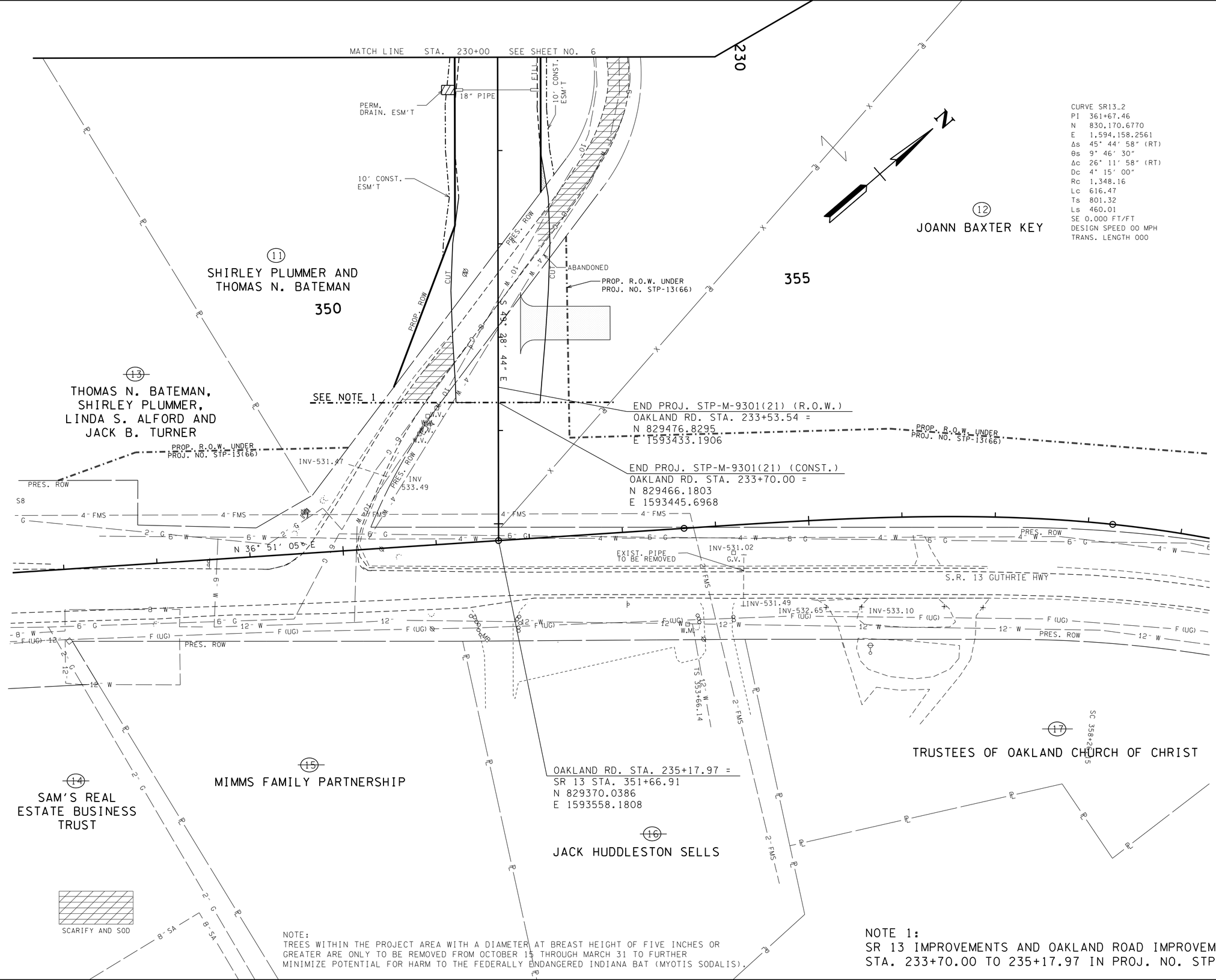
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	7
CONST.	2016	STP-M-9301(21)	7

REV. 11-04-14: REVISED PROPERTY OWNER NAMES FOR TRACT NOS. 11, 12, 13, AND 17.

REV. 07-20-15: REV. PROP. ROW AND EASEMENTS FOR TRACT NOS. 11 AND 12.

REV. 02-17-16: REV. PROP. ROW, SLOPE, DRAIN. AND CONST. EASEMENTS FOR TR. NO'S. 11 AND 12. REMOVED EASEMENTS FROM TR. NO'S. 13, 15, AND 16. UPDATED SURVEY. REVISED PROJECT LIMITS. REVISED SR 13 ALIGNMENT. ADDED NOTE 1.

REV. 06-23-16: ADDED PVT. DR. AT STA. 232+85.00 FOR TRACT NO. 12.



CURVE SR13_2
PI 361+67.46
N 830,170.6770
E 1,594,158.2561
Δs 45° 44' 58" (RT)
θs 9° 46' 30"
Δc 26° 11' 58" (RT)
Dc 4° 15' 00"
Rc 1,348.16
Lc 616.47
Ts 801.32
Ls 460.01
SE 0.000 FT/FT
DESIGN SPEED 00 MPH
TRANS. LENGTH 000

NOTE:
TREES WITHIN THE PROJECT AREA WITH A DIAMETER AT BREAST HEIGHT OF FIVE INCHES OR GREATER ARE ONLY TO BE REMOVED FROM OCTOBER 15 THROUGH MARCH 31 TO FURTHER MINIMIZE POTENTIAL FOR HARM TO THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS).

NOTE 1:
SR 13 IMPROVEMENTS AND OAKLAND ROAD IMPROVEMENTS FROM STA. 233+70.00 TO 235+17.97 IN PROJ. NO. STP-13(66)

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

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MONTGOMERY COUNTY

PRESENT LAYOUT

STA. 230+00 TO STA. 234+81.64
OAKLAND ROAD

SCALE: 1" = 50'

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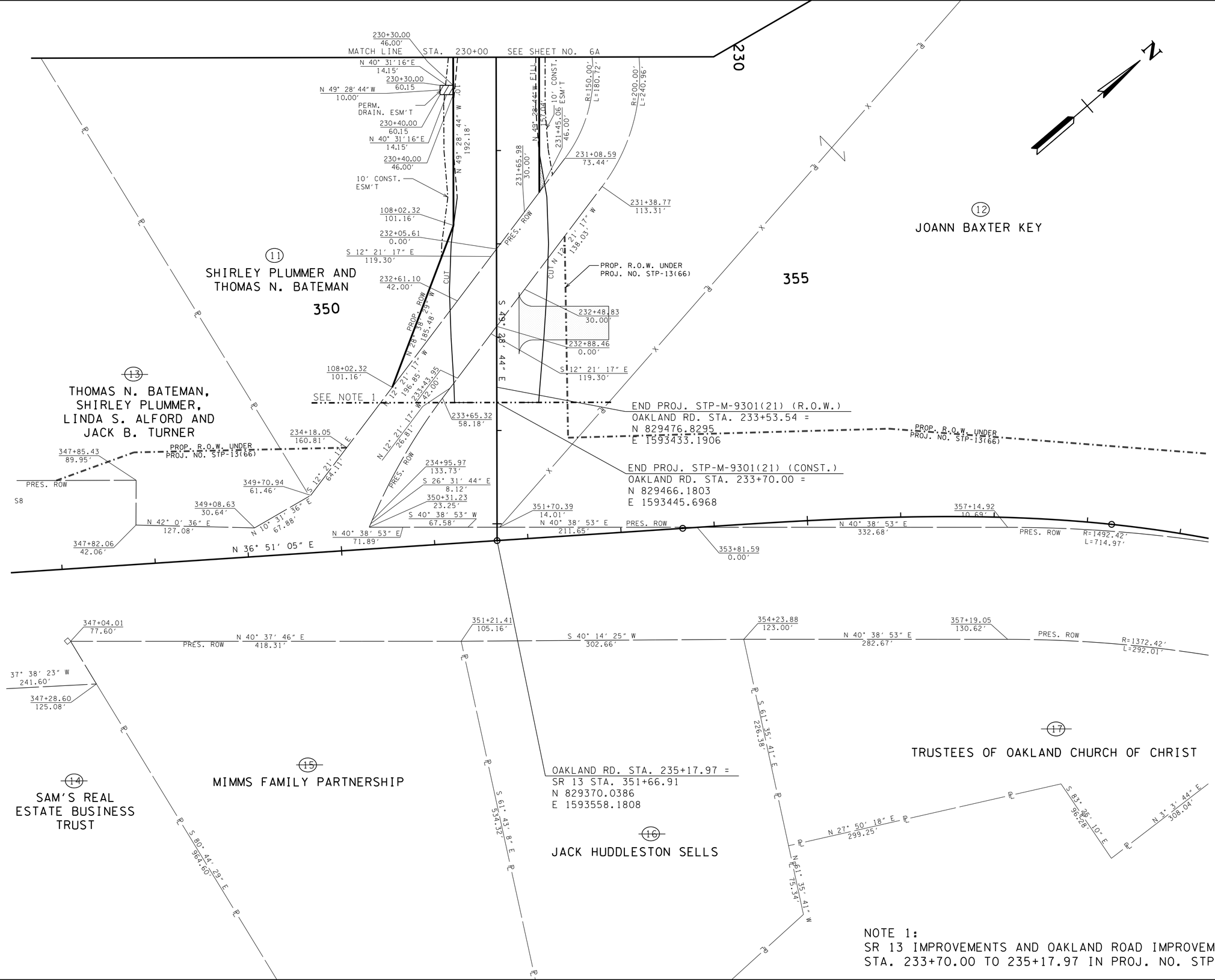
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	7A
CONST.	2016	STP-M-9301(21)	7A

REV. 11-04-14: REVISED PROPERTY OWNER NAMES FOR TRACT NOS. 11, 12, 13, AND 17.

REV. 07-20-15: REV. PROP. ROW AND EASEMENTS FOR TRACT NOS. 11 AND 12.

REV. 02-17-16: REV. PROP. ROW, SLOPE, DRAIN. AND CONST. EASEMENTS FOR TR. NO'S. 11 AND 12. REMOVED EASEMENTS FROM TR. NO'S. 13, 15, AND 16. UPDATED SURVEY. REVISED PROJECT LIMITS. REVISED SR 13 ALIGNMENT. ADDED NOTE 1.

REV. 06-23-16: ADDED PVT. DR. AT STA. 232+85.00 FOR TRACT NO. 12.



NOTE 1:
SR 13 IMPROVEMENTS AND OAKLAND ROAD IMPROVEMENTS FROM STA. 233+70.00 TO 235+17.97 IN PROJ. NO. STP-13(66)

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

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MONTGOMERY COUNTY

R.O.W. DETAILS

STA. 230+00 TO STA. 234+81.64
OAKLAND ROAD

SCALE: 1"= 50'

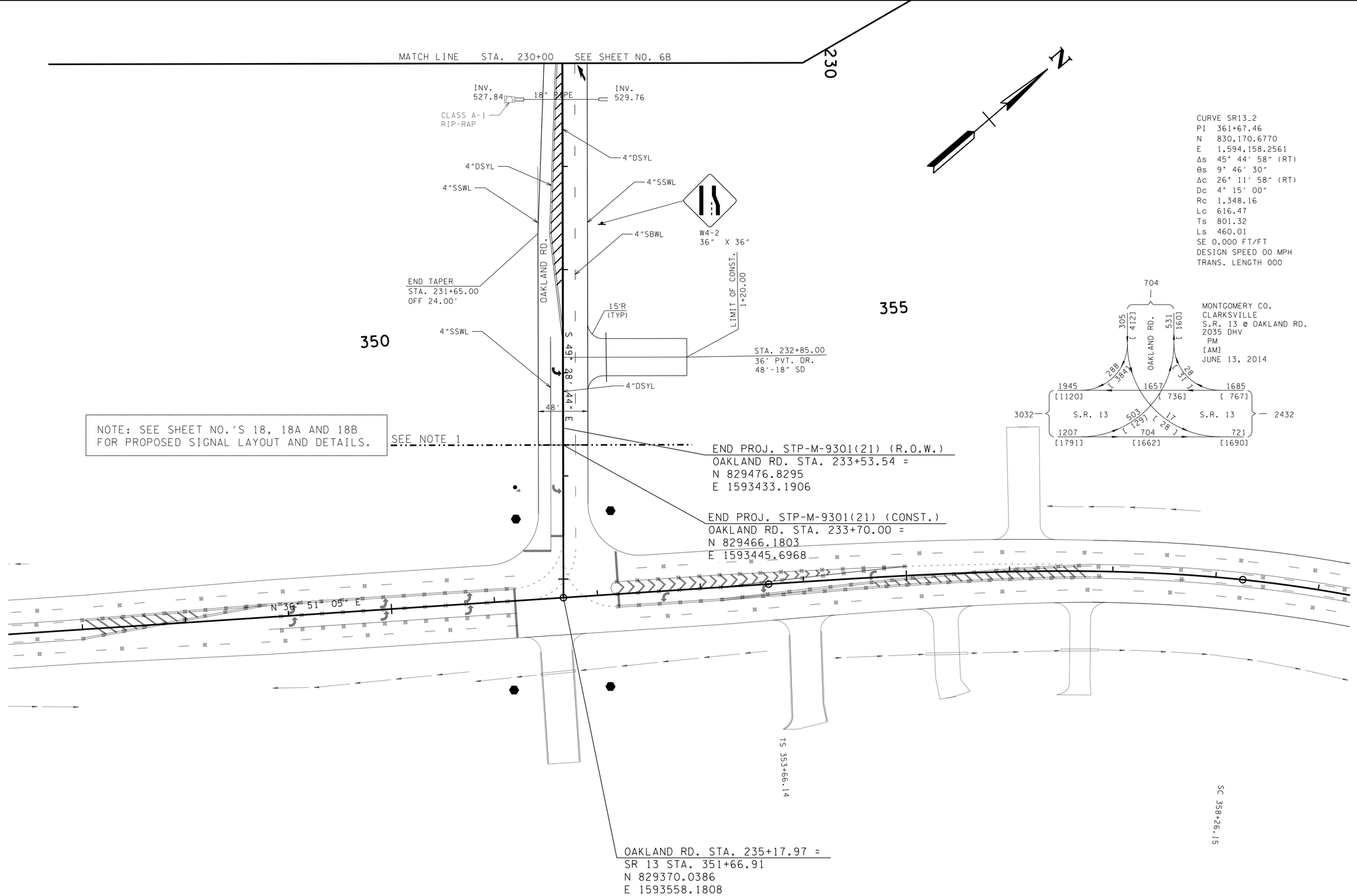
9/21/2016 12:08:46 PM
N:8846 Montgomery Co\01\Deliverables\3-Const\Final Construction Plans\Unofficial Set Sheets\007A.SHT

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	7B
CONST.	2016	STP-M-9301(21)	7B

REV. 07-10-15: REV. PROP. SPECIAL DITCH STA. 230+00 TO 203+35 LEFT. AND ADDED TYPICAL SECTIONS FOR SPECIAL DITCHES.

REV. 02-17-16: REVISED PROP. LAYOUT AND DRAINAGE. REVISED PROJECT LIMITS. REVISED SR 13 ALIGNMENT. ADDED PROP. LAYOUT LINEWORK FOR SR 13 PROJECT (PROJ. NO. STP-13(66). ADDED NOTE 1.

REV. 06-23-16: ADDED PVT. DR. AT STA. 232+85.00 FOR TRACT NO. 12.



CURVE SR13_2
PI 361+67.46
N 830,170.6770
E 1,594,158.2561
Δs 45° 44' 58" (RT)
θs 9° 46' 30"
Δc 26° 11' 58" (RT)
Dc 4° 15' 00"
Rc 1,348.16
Lc 616.47
Ts 801.32
Ls 460.01
SE 0.000 FT/FT
DESIGN SPEED 00 MPH
TRANS. LENGTH 000

MONTGOMERY CO.
CLARKSVILLE
S.R. 13 @ OAKLAND RD.
2035 DHV
PM
[AM]
JUNE 13, 2014

NOTE 1:
SR 13 IMPROVEMENTS AND OAKLAND ROAD IMPROVEMENTS FROM STA. 233+70.00 TO 235+17.97 IN PROJ. NO. STP-13(66)

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

PROPOSED LAYOUT

STA.230+00 TO STA.234+81.64
OAKLAND ROAD

SCALE: 1"= 50'

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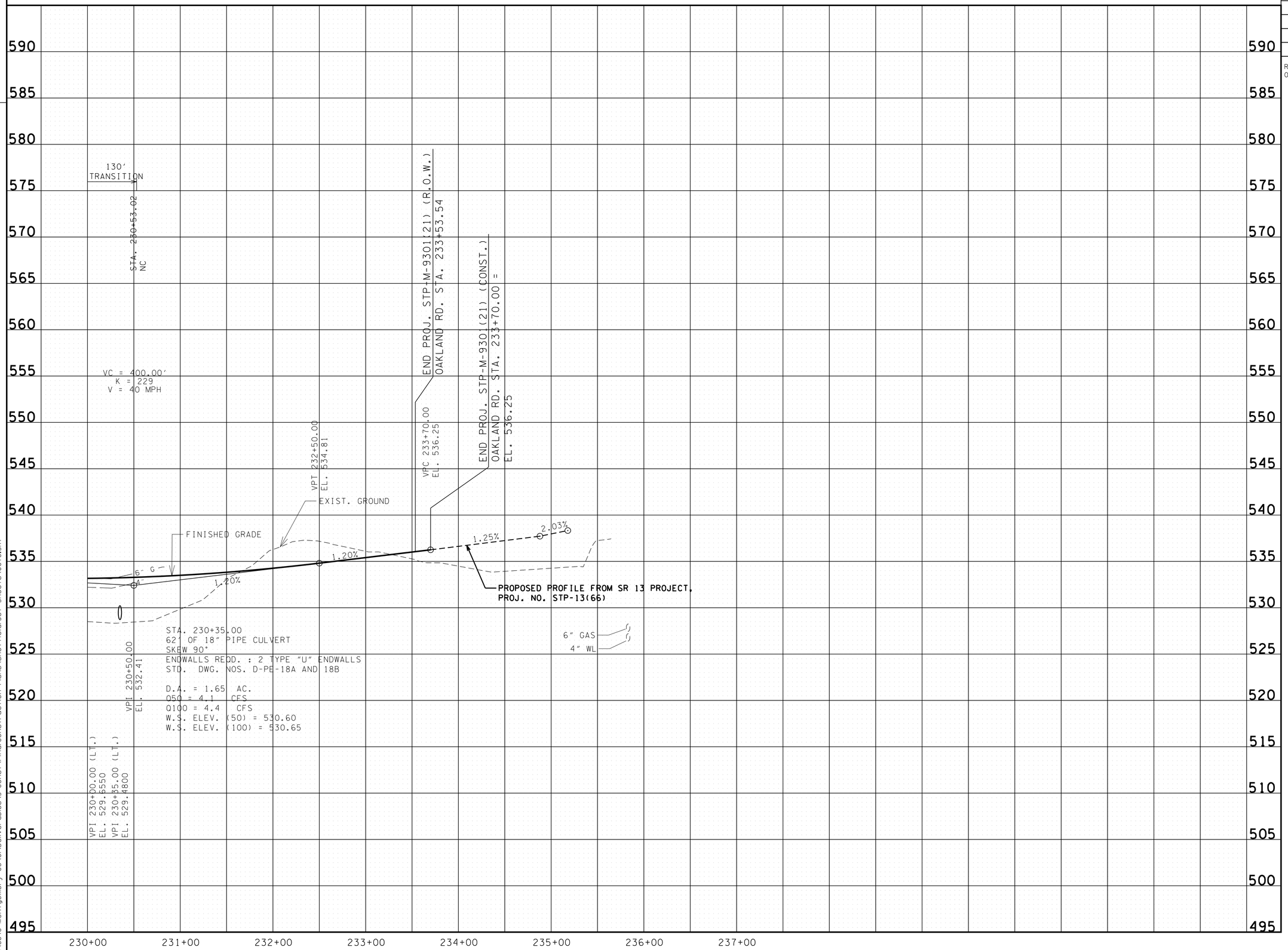
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	7C
CONST.	2016	STP-M-9301(21)	7C

REV.02-17-16: REVISED PROP. PROFILE FOR OAKLAND RD.



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

MONTGOMERY COUNTY

PROFILE

STA.230+00 TO STA.236+31.59

SCALE: 1"= 50′ HORIZ.
1"= 5′ VERT.

9/21/2016 12:08:51 PM
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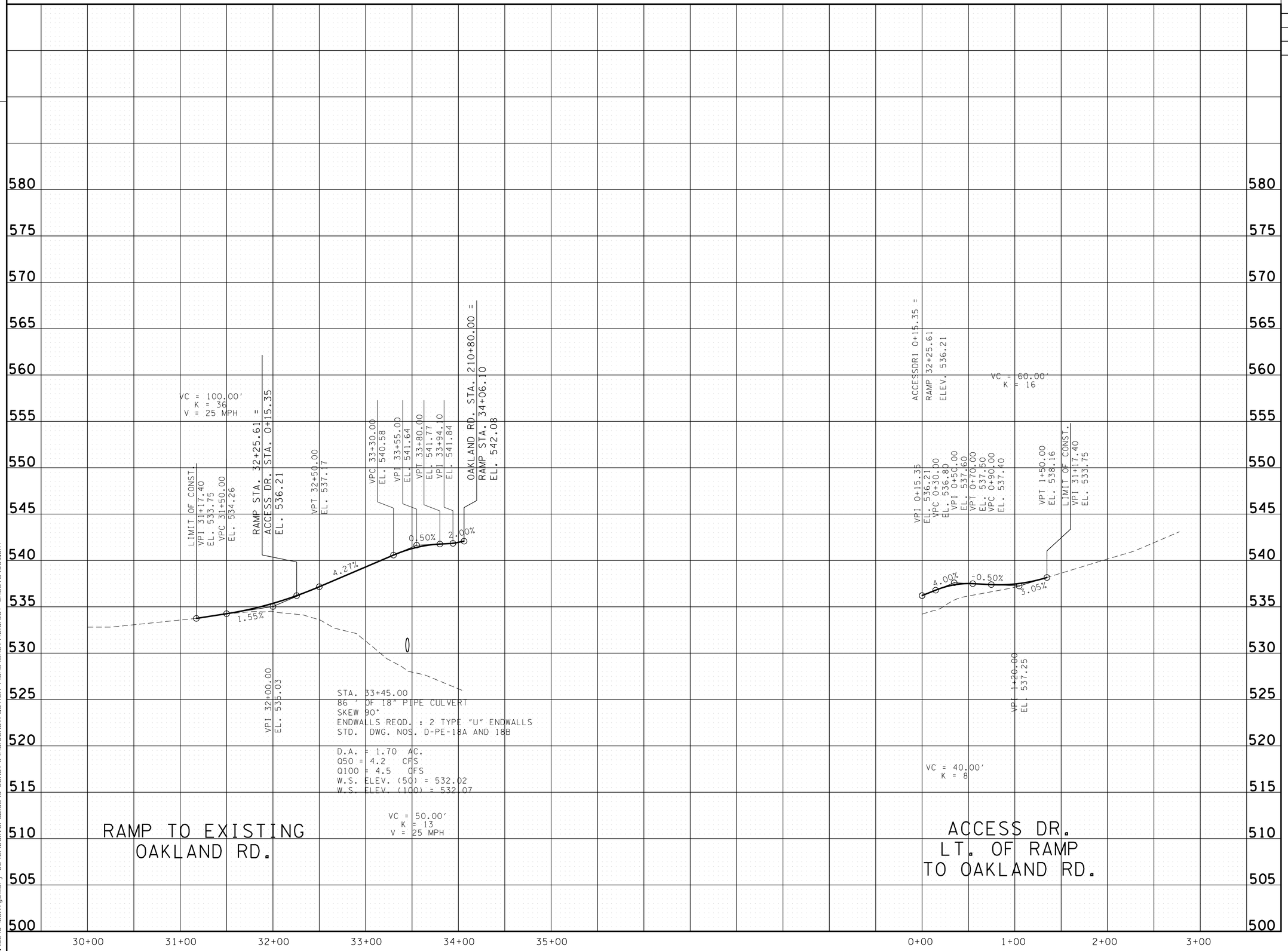
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	9
CONST.	2016	STP-M-9301(21)	9



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

MONTGOMERY COUNTY

PROFILE OF SIDE ROADS AND STREETS

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

9/21/2016 12:08:54 PM
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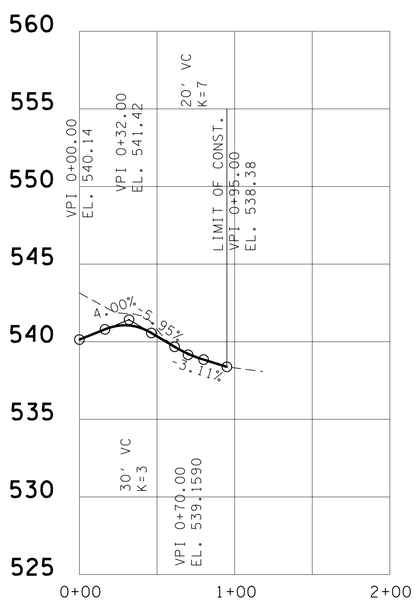
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	10
CONST.	2016	STP-M-9301(21)	10

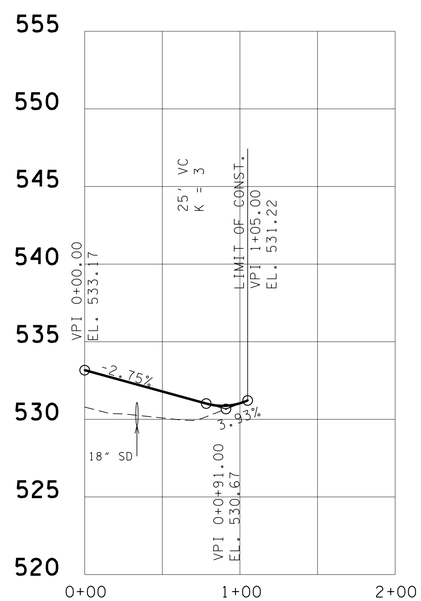
REV. 07-10-15: REV. PROFILES FOR TR. NO'.S 10 AND 11.

REV. 02-17-16: REMOVED PROFILES AT STA. 415+93.96, STA. 418+35.60, AND STA. 419+73.76. REVISED PROFILE AT STA. 224+75.

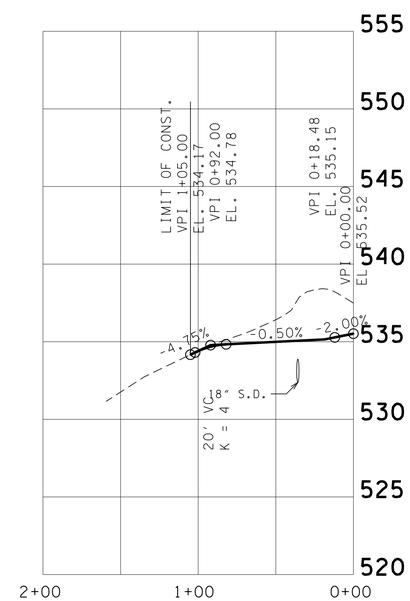
REV. 06-23-16: ADDED PVT. DR. AT STA. 232+85.00 FOR TRACT NO. 12.



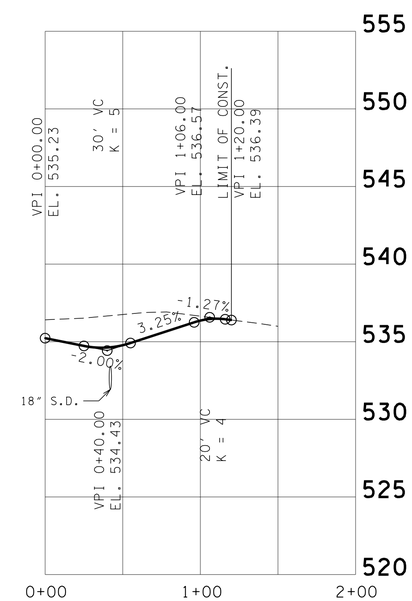
PVT. DR. RT. 216+18.25
OAKLAND ROAD
TRACT NO.10



PVT. DR. LT. 229+50.00
OAKLAND ROAD
TRACT NO.11



PVT. DR. LT. 224+75.00
OAKLAND ROAD
TRACT NO.12



PVT. DR. LT. 232+85.00
OAKLAND ROAD
TRACT NO.12

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

MONTGOMERY COUNTY

PROFILE OF PRIVATE DRIVES

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

9/21/2016 12:08:55 PM
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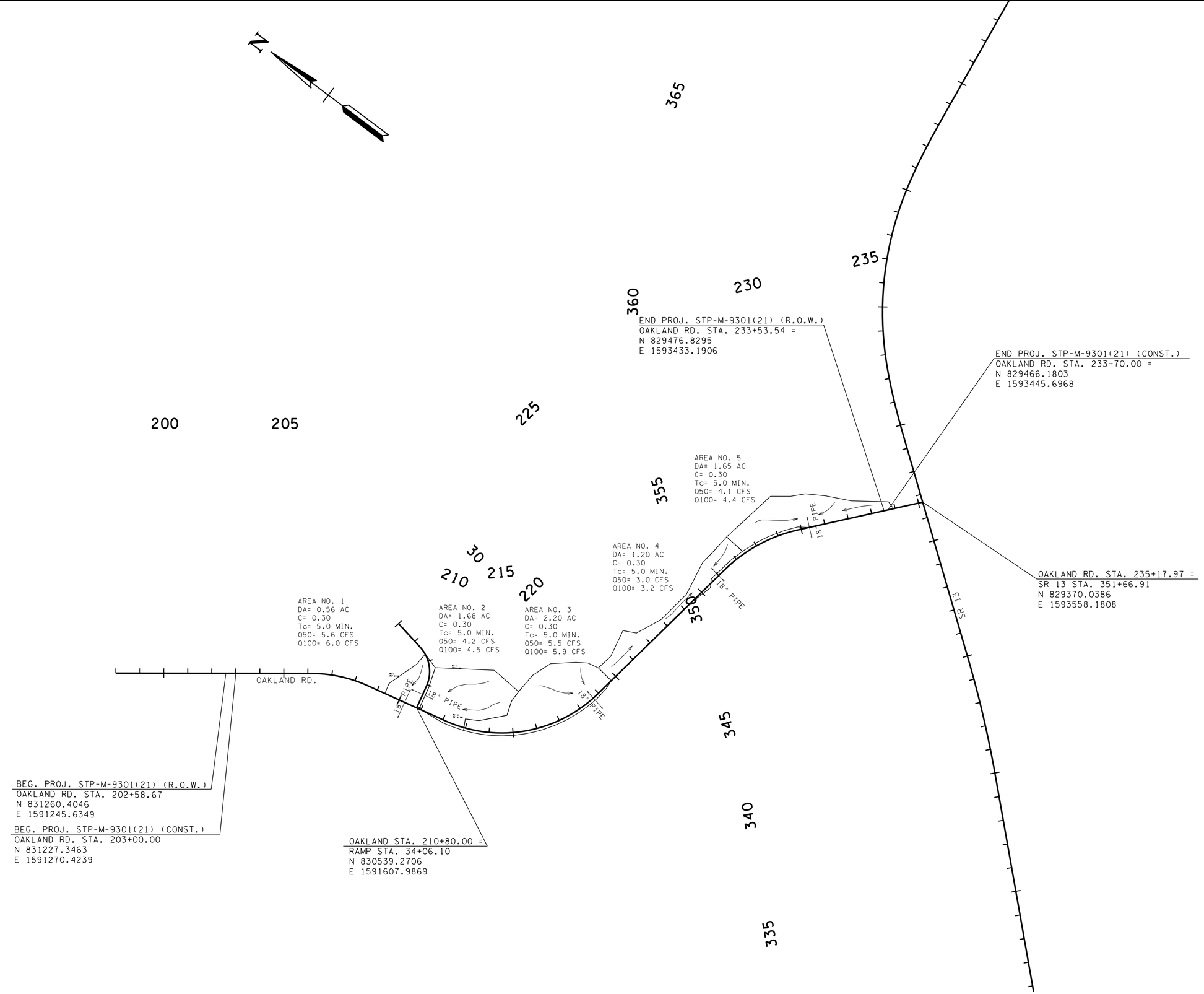
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	11
CONST.	2016	STP-M-9301(21)	11

REV. 02-17-16: REMOVED AREA NO. 6. REVISED PROJECT LIMITS. REVISED SR 13 ALIGNMENT.



UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

MONTGOMERY COUNTY

DRAINAGE MAP

SCALE: 1"=200'

9/21/2016 12:08:58 PM
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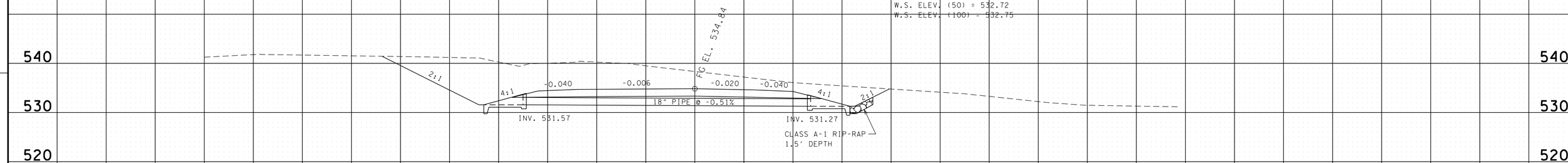
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	12
CONST.	2016	STP-M-9301(21)	12

REV. 07-10-15: REVISED CULVERT AT STA. 218+70.

REV. 02-17-16: REVISED CULVERT AT STA. 226+00.

STA. 226+00.00
60' 18" PIPE CULVERT
SKEW 90°
ENDWALLS REQD. : 2 TYPE "U" 18" ENDWALLS
STD. DWG. NOS. D-PE-18A AND 18 B

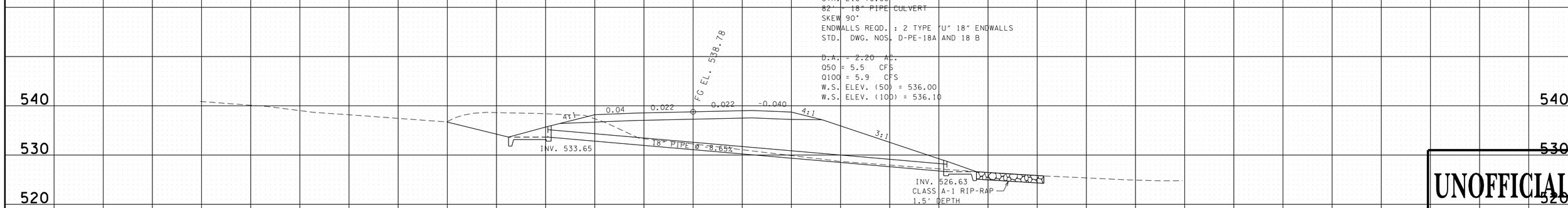
D.A. = 1.20 AC.
Q50 = 3.0 CFS
Q100 = 3.2 CFS
W.S. ELEV. (50) = 532.72
W.S. ELEV. (100) = 532.75



OAKLAND RD.
226+00.00

STA. 218+70.00
82' - 18" PIPE CULVERT
SKEW 90°
ENDWALLS REQD. : 2 TYPE "U" 18" ENDWALLS
STD. DWG. NOS. D-PE-18A AND 18 B

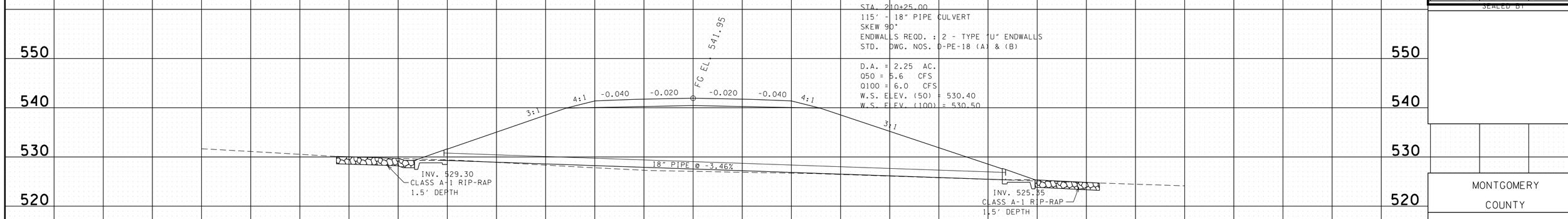
D.A. = 2.20 AC.
Q50 = 5.5 CFS
Q100 = 5.9 CFS
W.S. ELEV. (50) = 536.00
W.S. ELEV. (100) = 536.10



OAKLAND RD.
218+70.00

STA. 210+25.00
115' - 18" PIPE CULVERT
SKEW 90°
ENDWALLS REQD. : 2 - TYPE "U" ENDWALLS
STD. DWG. NOS. D-PE-18 (A) & (B)

D.A. = 2.25 AC.
Q50 = 5.6 CFS
Q100 = 6.0 CFS
W.S. ELEV. (50) = 530.40
W.S. ELEV. (100) = 530.50



OAKLAND RD.
210+25.00

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

MONTGOMERY COUNTY

CULVERT CROSS-SECTIONS

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

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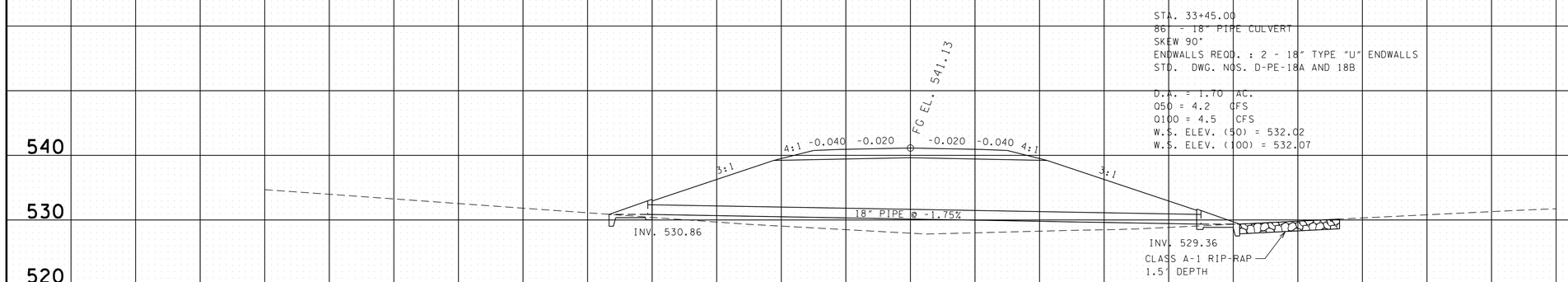
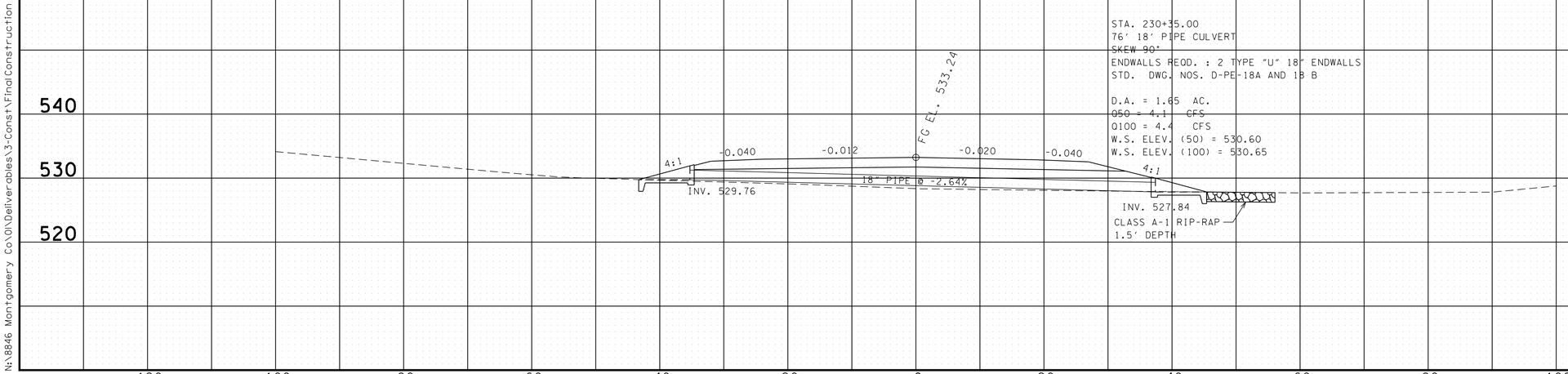
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	13
CONST.	2016	STP-M-9301(21)	13

REV. 02-17-16: REVISED CULVERT AT STA. 230+35. REMOVED CULVERT AT STA. 418+75.



RAMP TO OAKLAND RD.
33+50.00



OAKLAND RD.
230+35.00

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

MONTGOMERY COUNTY

CULVERT CROSS-SECTIONS

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

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TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	14
CONST.	2016	STP-M-9301(21)	14

EROSION PREVENTION AND SEDIMENT CONTROL NOTES

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

(8) RAIN WATER WHICH COLLECTS IN THE UTILITY TRENCH SHALL BE PUMPED INTO A DEWATERING STRUCTURE OR SEDIMENT FILTER BAG AND MAINTAINED.

(9) 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

(10) 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).

(11) 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.

(12) 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.

(13) 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.

(14) 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.

(15) 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.

(16) THE UTILITY CONTRACTOR SHALL RESTORE ALL AFFECTED WET WEATHER CONVEYANCES TO THE EXISTING TOPOGRAPHIC CONDITIONS (AS APPROVED BY THE TDOT PROJECT ENGINEER).

(17) 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.

EROSION PREVENTION AND SEDIMENT CONTROL LEGEND

SYMBOL	ITEM	STD. DWG.
* SF * SF * SF *	SILT FENCE	EC-STR-3B
* SFB * SFB * SFB *	SILT FENCE WITH WIRE BACKING	EC-STR-3C
	ROCK CHECK DAM (V-DITCH)	EC-STR-6
	ENHANCED ROCK CHECK DAM (TRAPEZOIDAL DITCH)	EC-STR-6A
	ENHANCED ROCK CHECK DAM (V-DITCH)	EC-STR-6A
	CULVERT PROTECTION (TYPE 1)	EC-STR-11
(1) TCE	TEMPORARY CONSTRUCTION EXIT	EC-STR-25
** TUBE ** TUBE **	SEDIMENT TUBE	EC-STR-37
	SOD	NA

(1) TO BE PLACED AS NEEDED AT THE DIRECTION OF THE ENGINEER.

EROSION PREVENTION AND SEDIMENT CONTROL QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
209-05	SEDIMENT REMOVAL	C.Y.	278
209-08.02	TEMPORARY SILT FENCE (WITH BACKING)	L.F.	600
209-08.03	TEMPORARY SILT FENCE (WITHOUT BACKING)	L.F.	3250
209-08.07	ROCK CHECK DAM	EACH	17
209-08.08	ENHANCED ROCK CHECK DAM	EACH	5
303-10.01	MINERAL AGGREGATE (SIZE 57)	TON	5
709-05.05	MACHINED RIP-RAP (CLASS A-3)	TON	250
709-05.06	MACHINED RIP-RAP (CLASS A-1)	TON	45
740-10.03	GEOTEXTILE (TYPE III)(EROSION CONTROL)	S.Y.	536
740-11.03	TEMPORARY SEDIMENT TUBE 18 IN (EROSION CONTROL)	L.F.	1450
803-01	SODDING (NEW SOD)	S.Y.	24000

EPSC PHASES:
PHASE 1 - CLEARING AND GRUBBING
PHASE 2 - ACTIVE GRADING
PHASE 3 - FINAL STABILIZATION

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

EROSION PREVENTION AND SEDIMENT CONTROL NOTES

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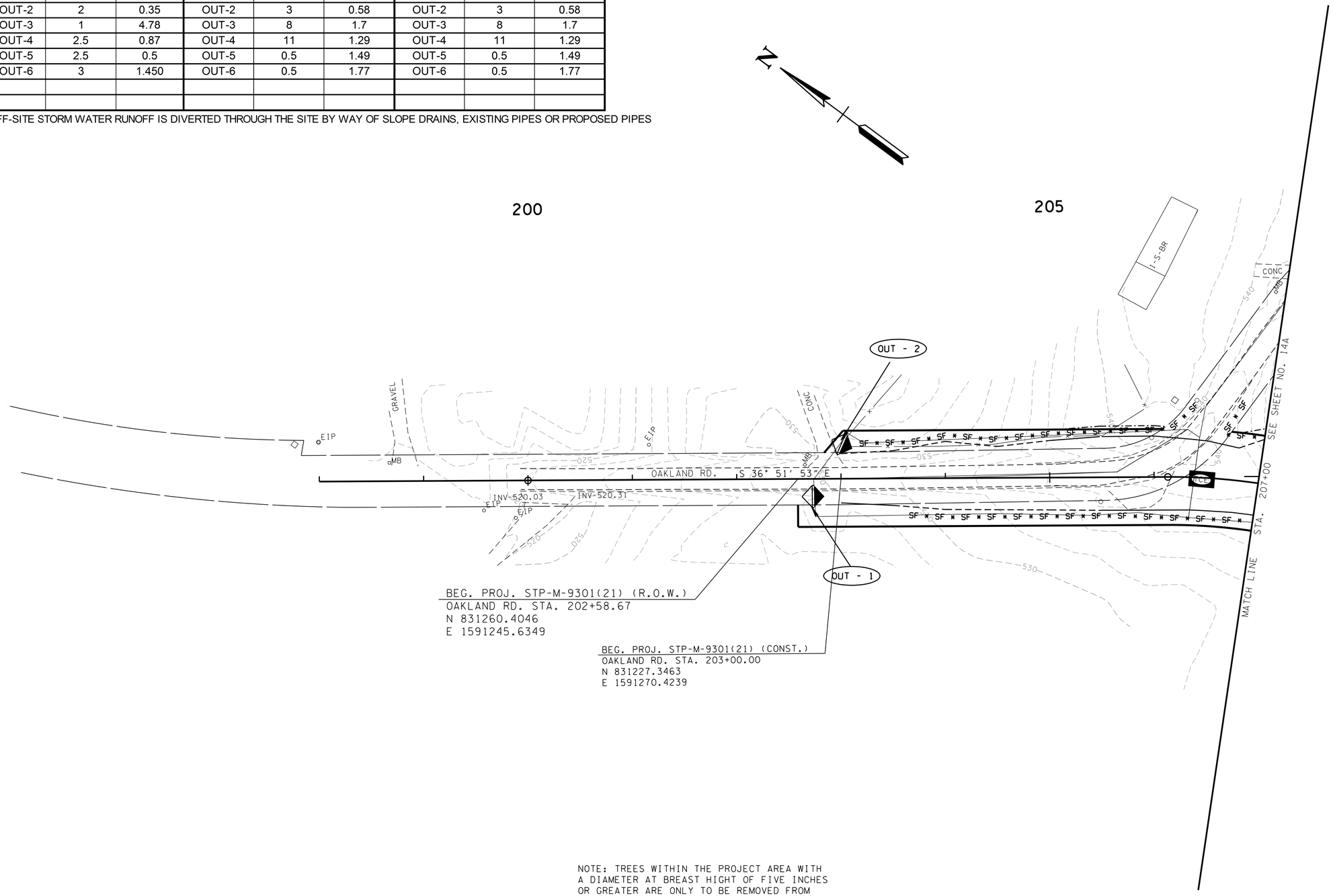
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	14A
CONST.	2016	STP-M-9301(21)	14A

STAGE 1			STAGE 2			STAGE 3		
OUTFALL	SLOPE %	AREA (AC)	OUTFALL	SLOPE %	AREA (AC)	OUTFALL	SLOPE %	AREA (AC)
OUT-1	2	0.25	OUT-1	3	0.6	OUT-1	3	0.6
OUT-2	2	0.35	OUT-2	3	0.58	OUT-2	3	0.58
OUT-3	1	4.78	OUT-3	8	1.7	OUT-3	8	1.7
OUT-4	2.5	0.87	OUT-4	11	1.29	OUT-4	11	1.29
OUT-5	2.5	0.5	OUT-5	0.5	1.49	OUT-5	0.5	1.49
OUT-6	3	1.450	OUT-6	0.5	1.77	OUT-6	0.5	1.77

○ OFF-SITE STORM WATER RUNOFF IS DIVERTED THROUGH THE SITE BY WAY OF SLOPE DRAINS, EXISTING PIPES OR PROPOSED PIPES



NOTE: TREES WITHIN THE PROJECT AREA WITH A DIAMETER AT BREAST HIGHT OF FIVE INCHES OR GREATER ARE ONLY TO BE REMOVED FROM OCTOBER 15 THROUGH MARCH 31 TO FURTHER MINIMIZE POTENTIAL FOR HARM TO THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS).

EXISTING CONTOURS SHOWN

EPSC- STAGE 1

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/B31(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA.200+00 TO STA.207+00

SCALE: 1"=50'

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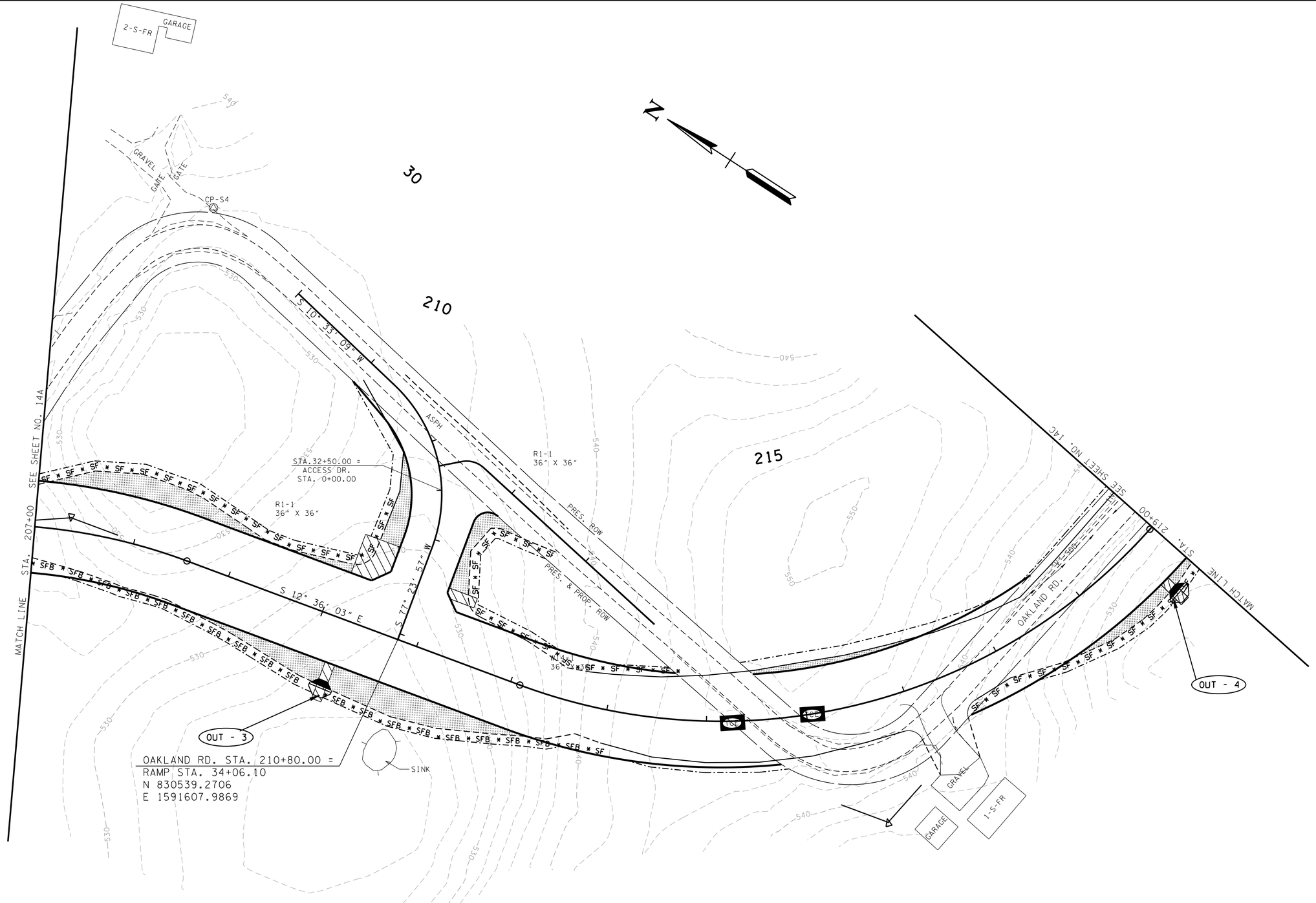
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	14B
CONST.	2016	STP-M-9301(21)	14B



NOTE: TREES WITHIN THE PROJECT AREA WITH A DIAMETER AT BREAST HIGHT OF FIVE INCHES OR GREATER ARE ONLY TO BE REMOVED FROM OCTOBER 15 THROUGH MARCH 31 TO FURTHER MINIMIZE POTENTIAL FOR HARM TO THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS).

EXISTING CONTOURS SHOWN

EPSC- STAGE 1

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA.207+00 TO STA.219+00

SCALE: 1"=50'

9/21/2016 12:10:51 PM
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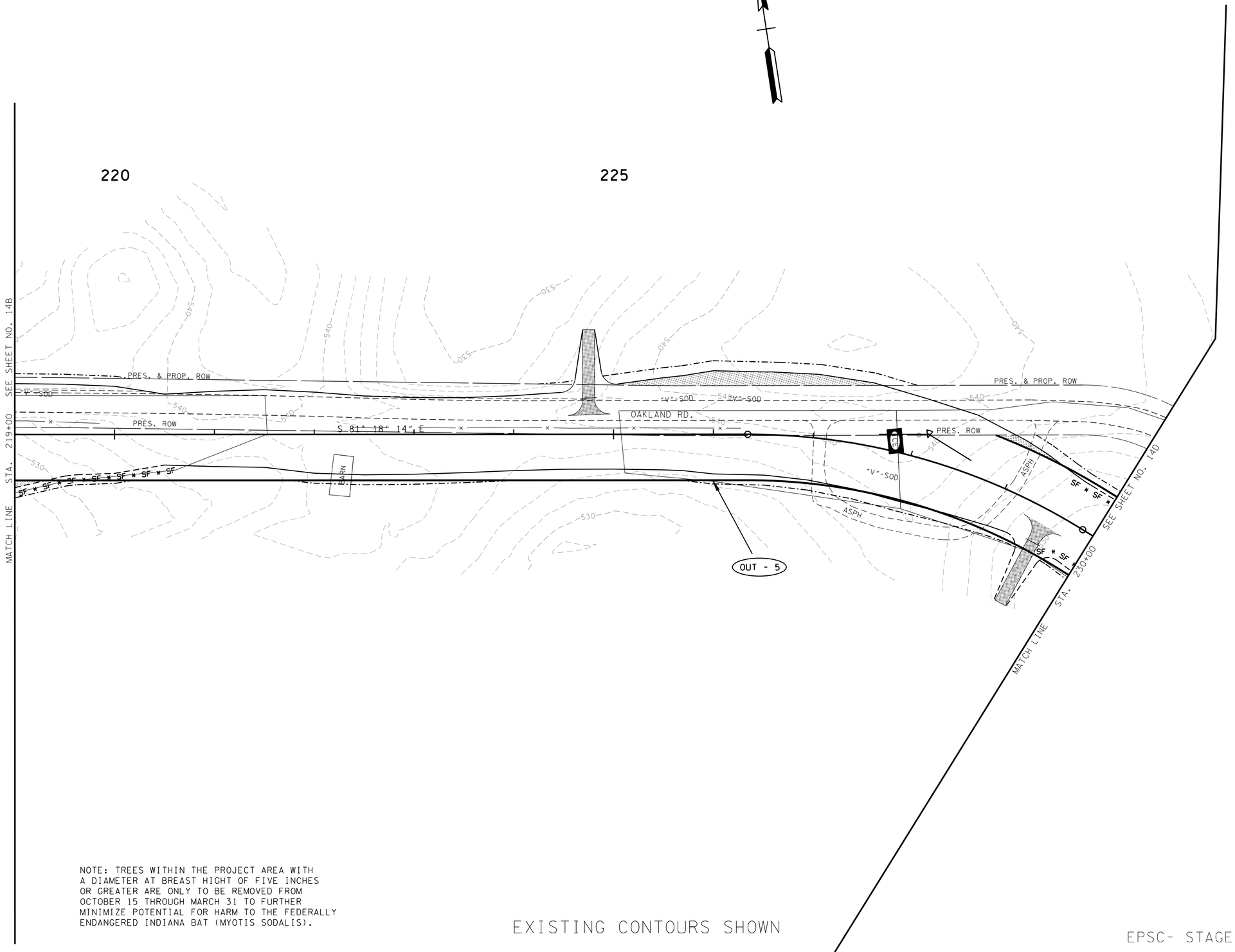
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	14C
CONST.	2016	STP-M-9301(21)	14C



NOTE: TREES WITHIN THE PROJECT AREA WITH A DIAMETER AT BREAST HIGHT OF FIVE INCHES OR GREATER ARE ONLY TO BE REMOVED FROM OCTOBER 15 THROUGH MARCH 31 TO FURTHER MINIMIZE POTENTIAL FOR HARM TO THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS).

EXISTING CONTOURS SHOWN

EPSC- STAGE 1

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA.219+00 TO STA.230+00

SCALE: 1"=50'

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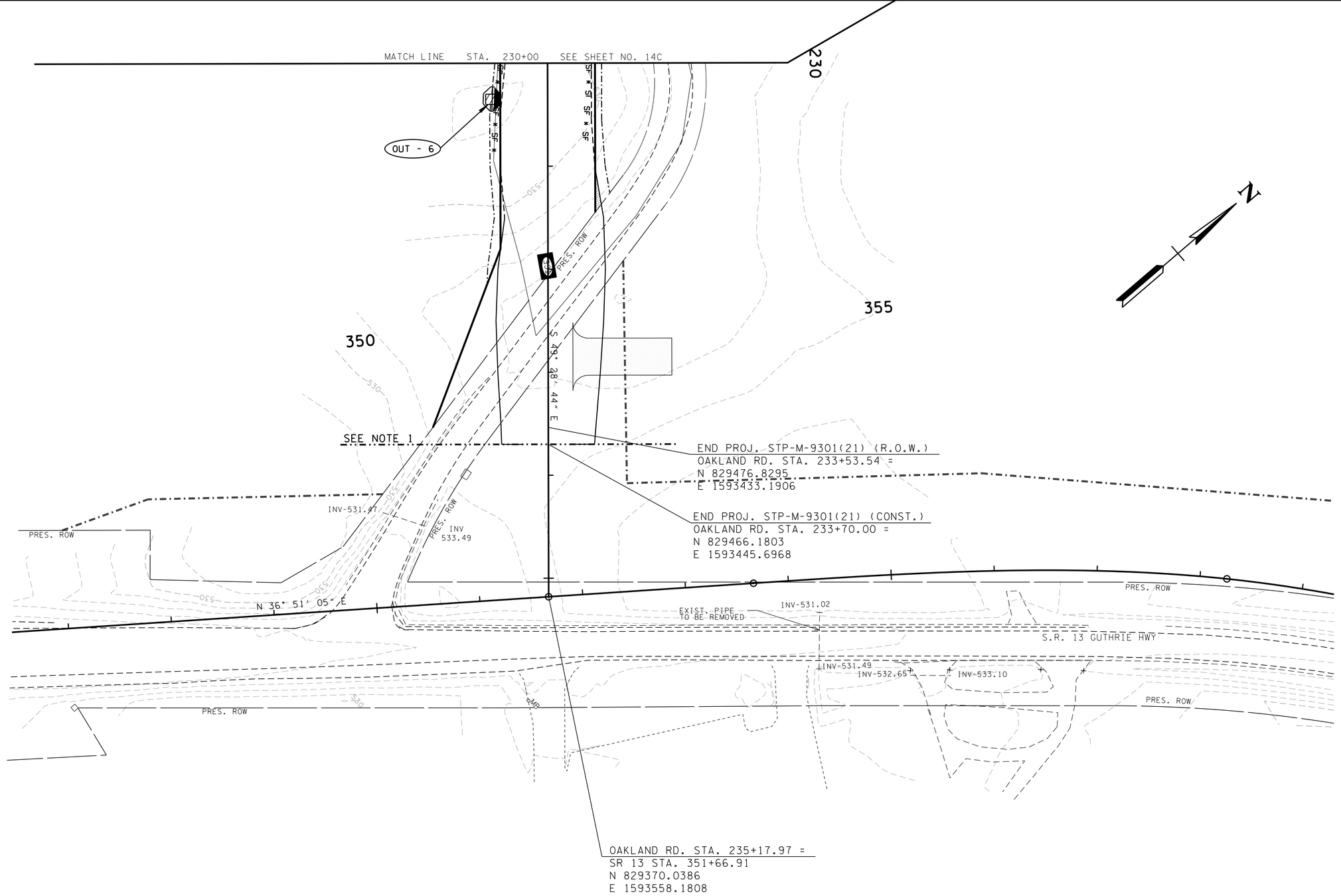
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	14D
CONST.	2016	STP-M-9301(21)	14D

REV. 02-17-16: REVISED EROSION CONTROL PLAN. REVISED PROJECT LIMITS. REVISED SR 13 ALIGNMENT. ADDED NOTE 1.

REV. 06-23-16: ADDED PVT. DR. AT STA. 232+85.00 FOR TRACT NO. 12.



NOTE: TREES WITHIN THE PROJECT AREA WITH A DIAMETER AT BREAST HIGHT OF FIVE INCHES OR GREATER ARE ONLY TO BE REMOVED FROM OCTOBER 15 THROUGH MARCH 31 TO FURTHER MINIMIZE POTENTIAL FOR HARM TO THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS).

EXISTING CONTOURS SHOWN

NOTE 1:
SR 13 IMPROVEMENTS AND OAKLAND ROAD IMPROVEMENTS FROM STA. 233+70.00 TO 235+17.97 IN PROJ. NO. STP-13(66)

EPSC- STAGE 1

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA.230+00 TO STA.235+06.09

SCALE: 1"=50'

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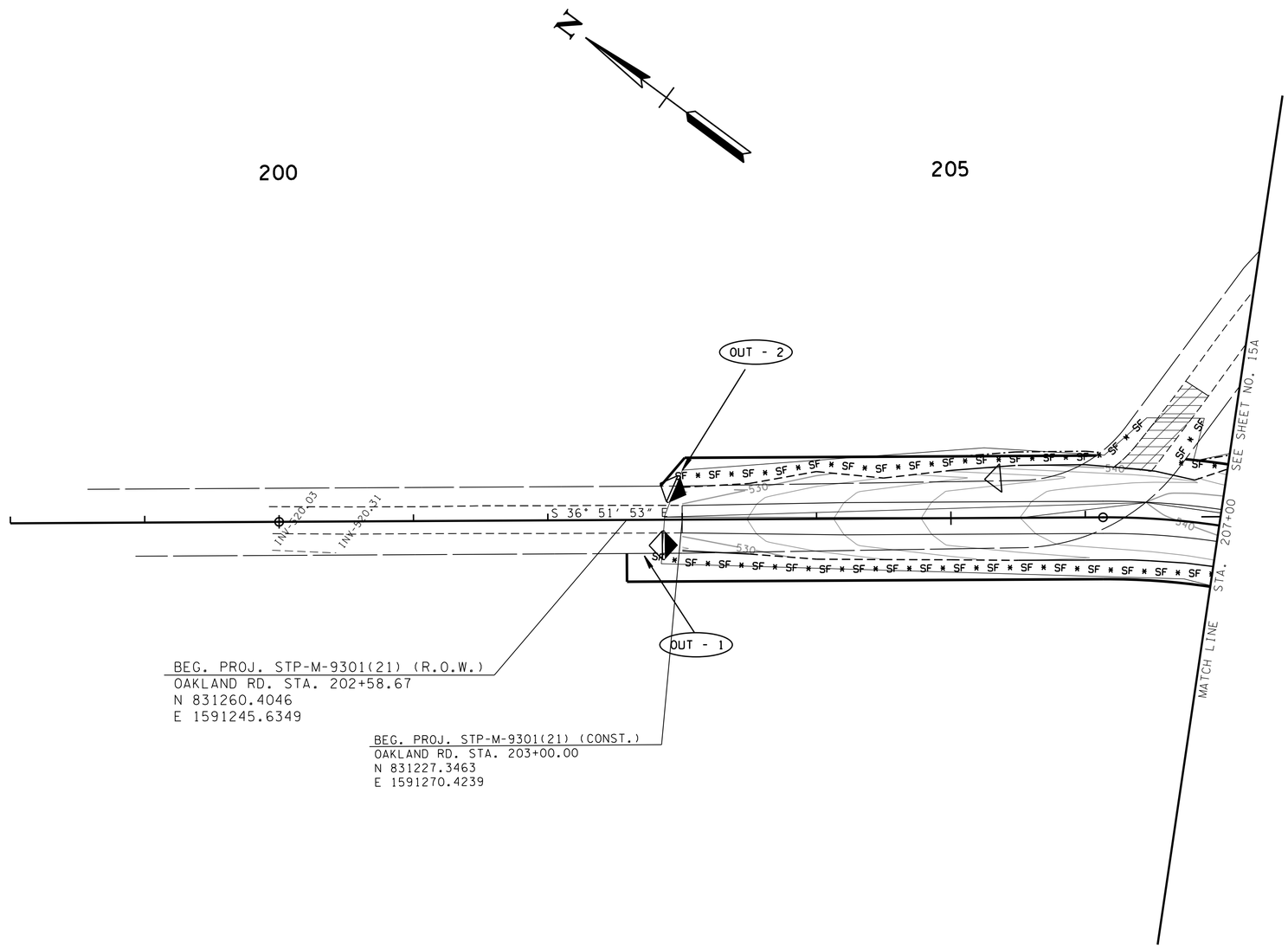
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	15
CONST.	2016	STP-M-9301(21)	15



SCARIFY AND SOD

PROPOSED CONTOURS SHOWN

EPSC- STAGE 2

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA.200+00 TO STA.207+00

SCALE: 1"=50'

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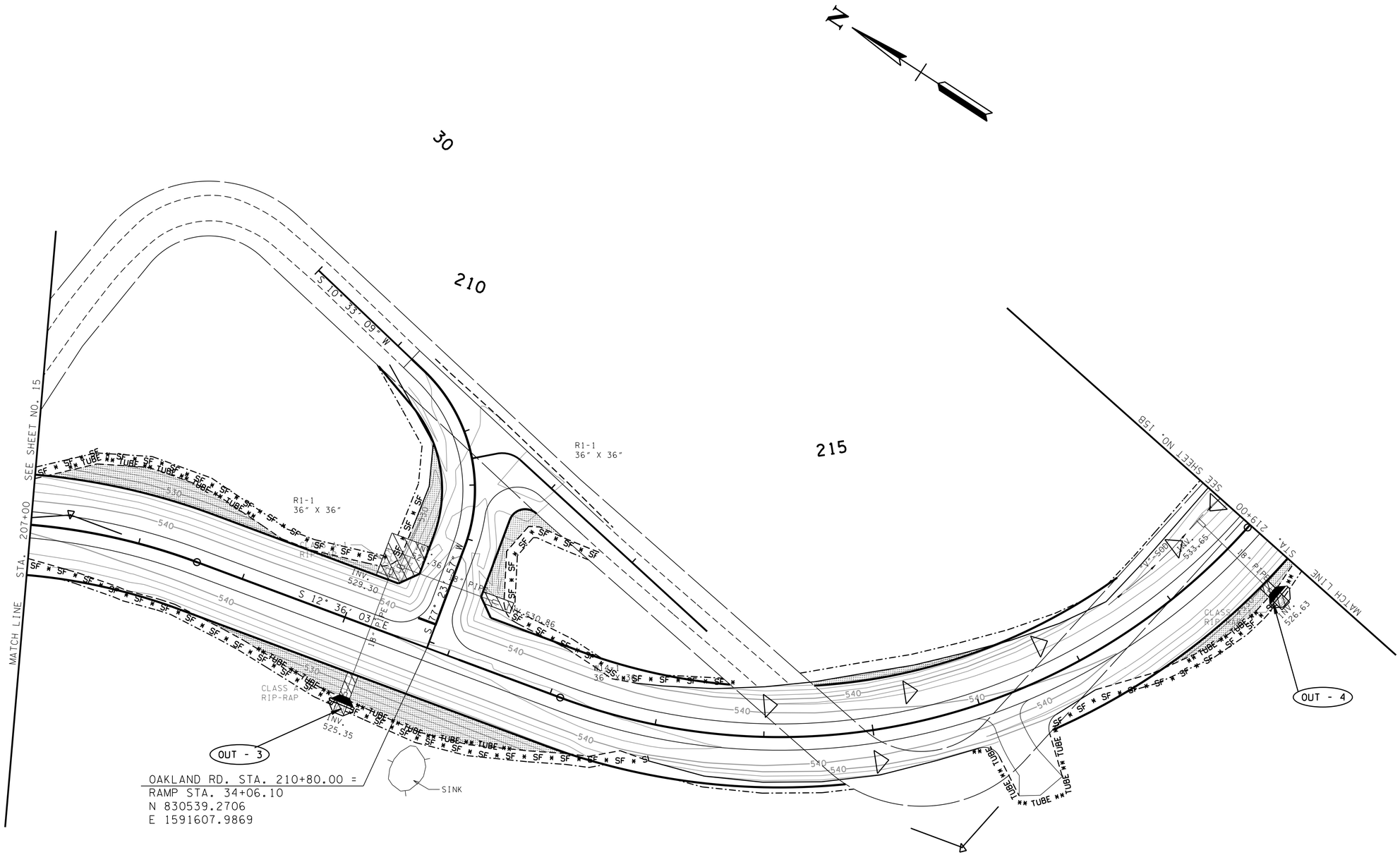
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	15A
CONST.	2016	STP-M-9301(21)	15A



PROPOSED CONTOURS SHOWN

EPSC- STAGE 2

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA.207+00 TO STA.219+00

SCALE: 1"=50'

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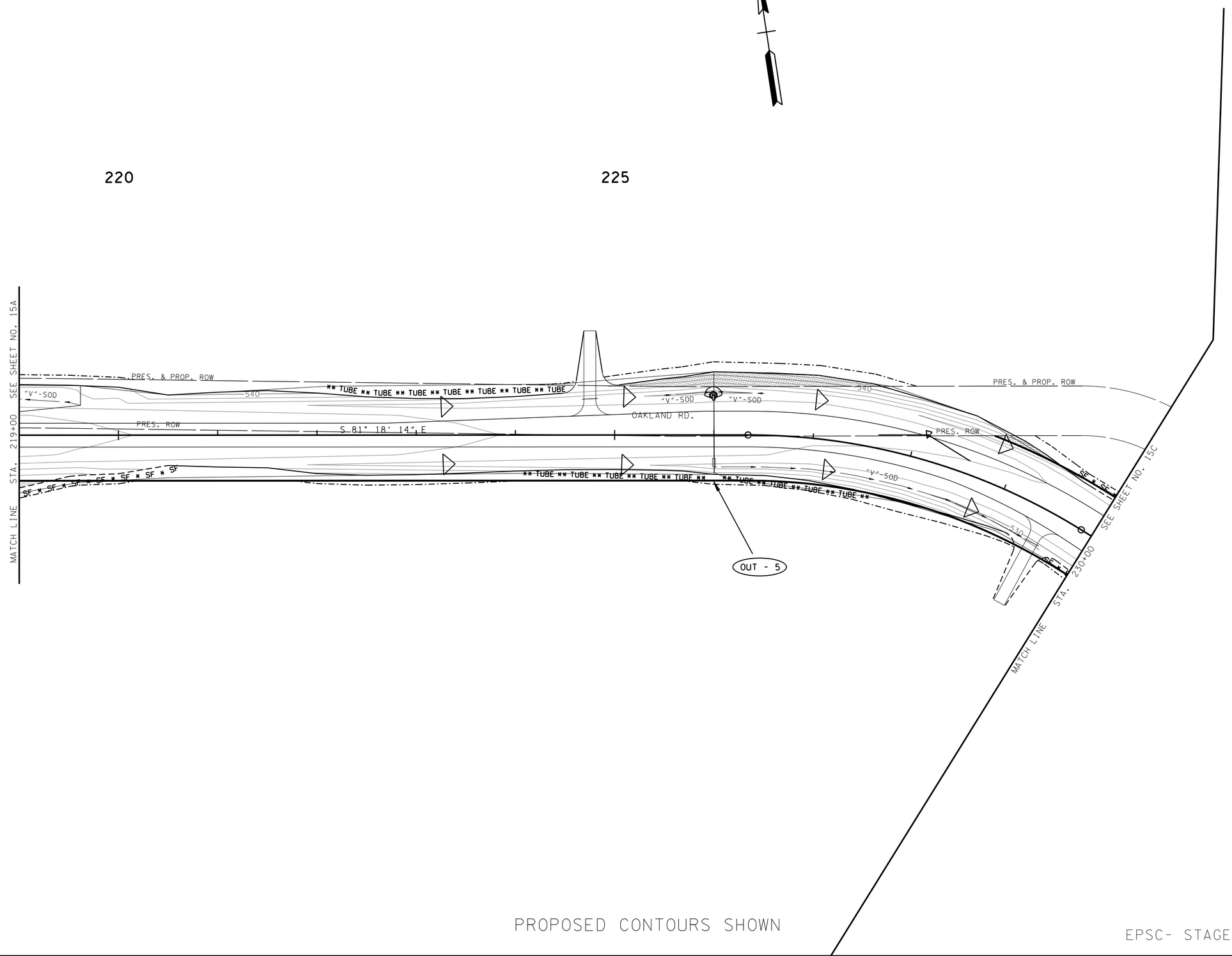
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	15B
CONST.	2016	STP-M-9301(21)	15B

REV. 02-17-16: REVISED EROSION CONTROL PLAN PROP. CONTOURS.



PROPOSED CONTOURS SHOWN

EPSC- STAGE 2

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

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MONTGOMERY COUNTY

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA.219+00 TO STA.230+00

SCALE: 1"=50'

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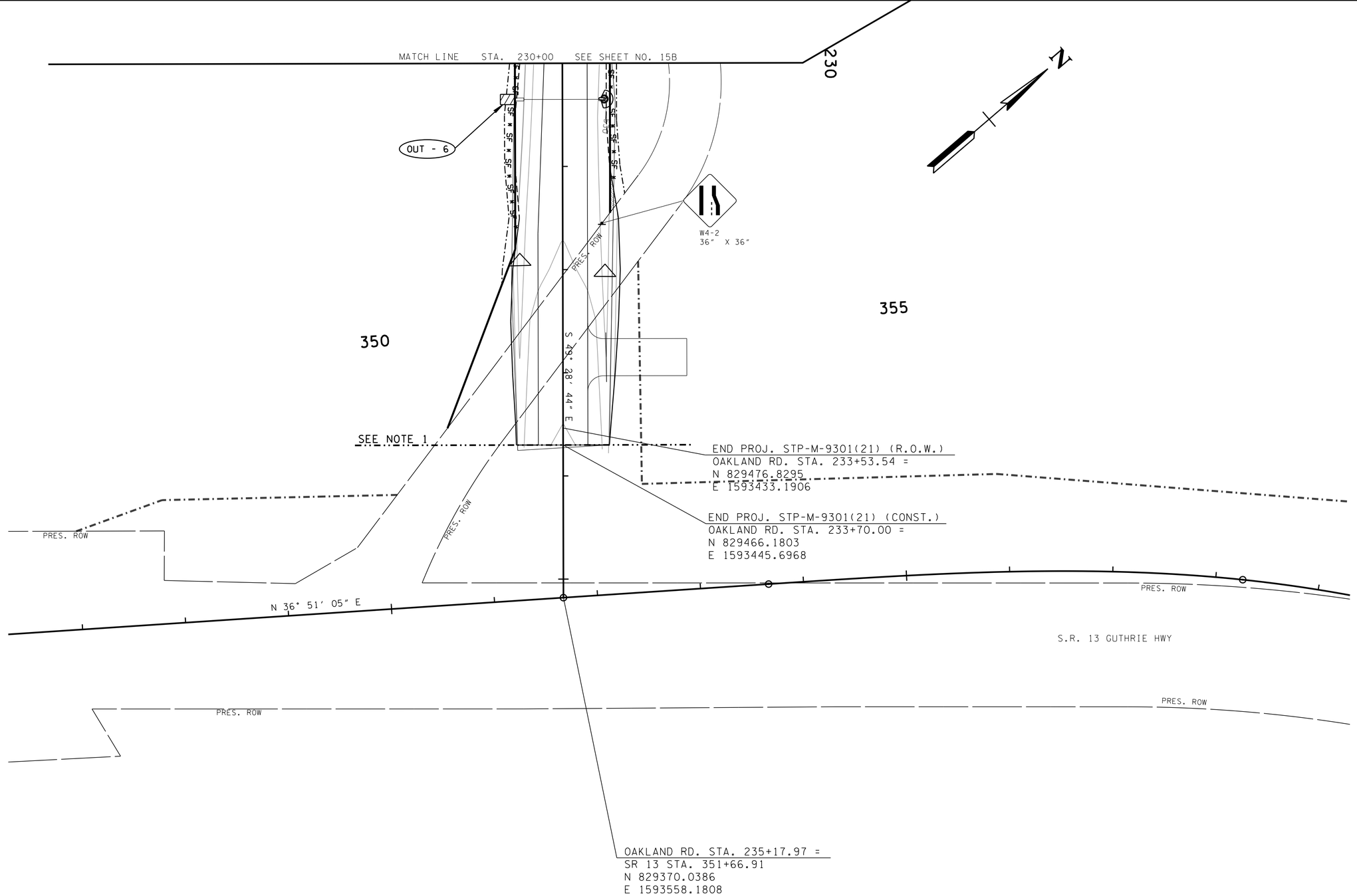
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	15C
CONST.	2016	STP-M-9301(21)	15C

REV. 02-17-16: REVISED EROSION CONTROL PLAN AND PROP. CONTOURS. REVISED PROJECT LIMITS. REVISED SR 13 ALIGNMENT. ADDED NOTE 1.

REV. 06-23-16: ADDED PVT. DR. AT STA. 232+85.00 FOR TRACT NO. 12.



NOTE 1:
SR 13 IMPROVEMENTS AND OAKLAND ROAD IMPROVEMENTS FROM STA. 233+70.00 TO 235+17.97 IN PROJ. NO. STP-13(66)

PROPOSED CONTOURS SHOWN

EPSC- STAGE 2

UNOFFICIAL SET

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COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.000 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

MONTGOMERY COUNTY

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA.230+00 TO STA.235+06.09

SCALE: 1"=50'

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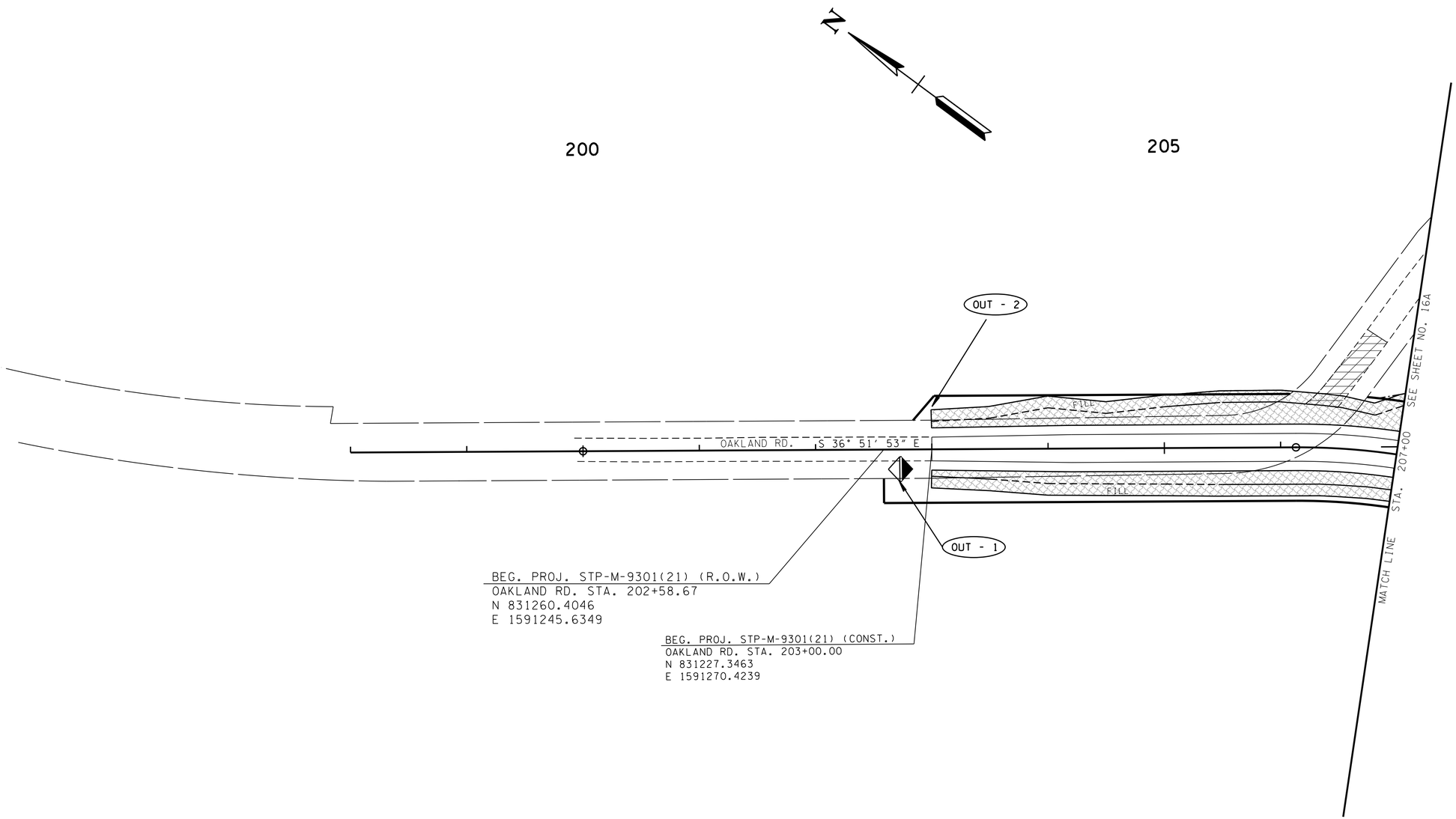
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	16
CONST.	2016	STP-M-9301(21)	16

REV. 02-17-16: REVISED EROSION CONTROL PLAN.



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EPSC- STAGE 3

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MONTGOMERY COUNTY

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA.200+00 TO STA.207+00

SCALE: 1"=50'

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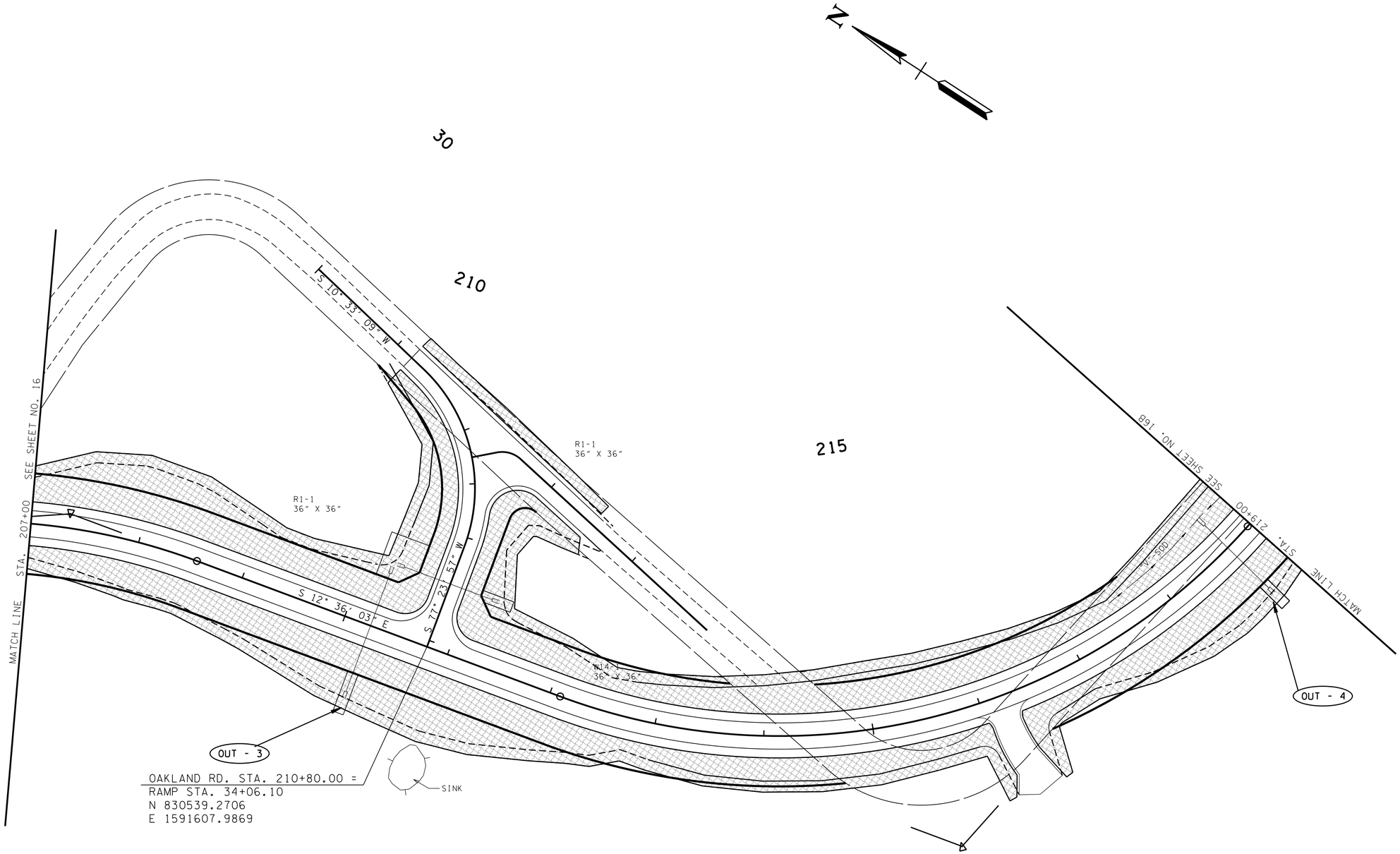
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	16A
CONST.	2016	STP-M-9301(21)	16A

REV. 02-17-16: REVISED EROSION CONTROL PLAN.



EPSC- STAGE 3

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MONTGOMERY COUNTY

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA.207+00 TO STA.219+00

SCALE: 1"=50'

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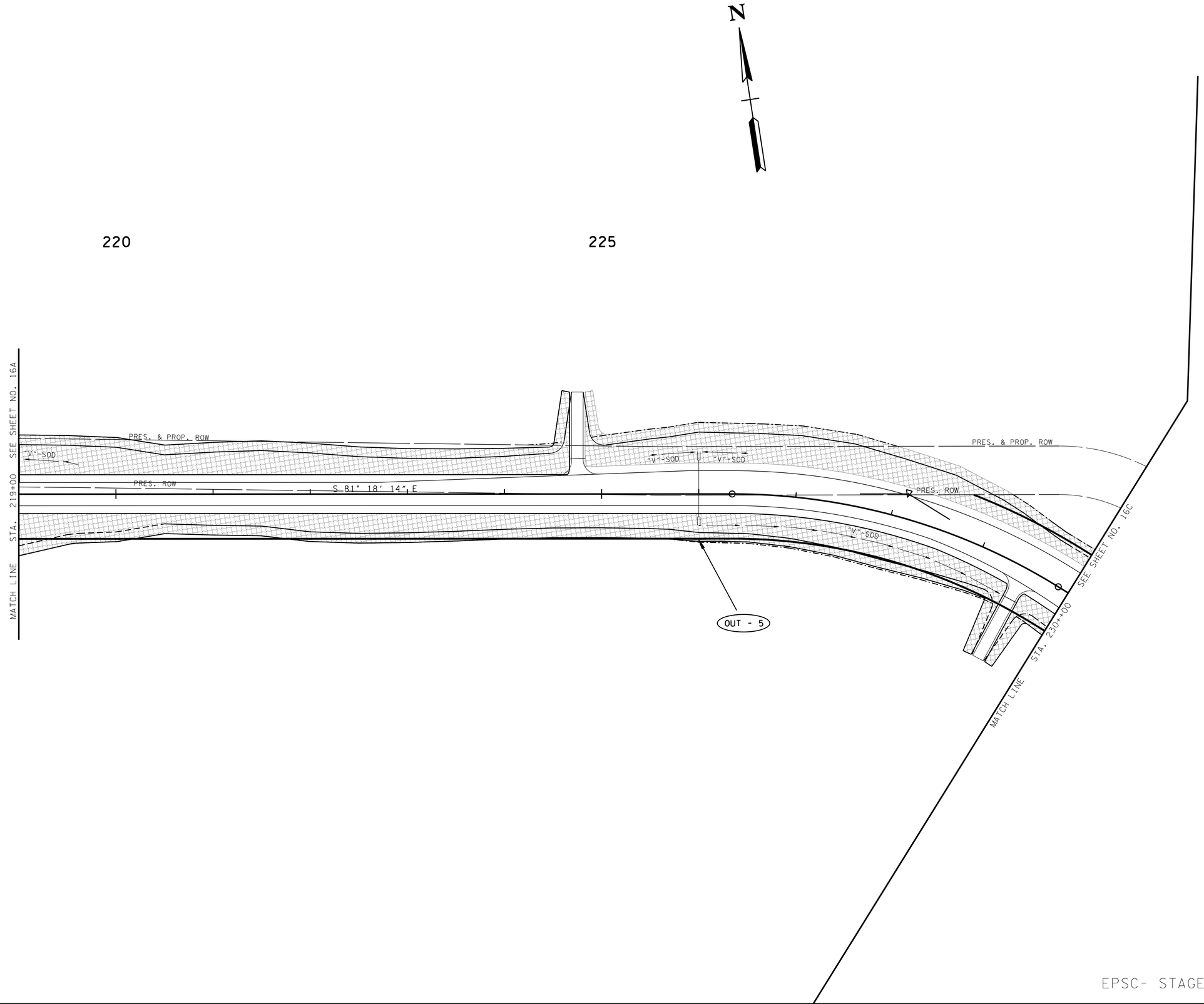
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	16B
CONST.	2016	STP-M-9301(21)	16B

REV. 02-17-16: REVISED EROSION CONTROL PLAN.



EPSC- STAGE 3

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MONTGOMERY COUNTY

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA.219+00 TO STA.230+00

SCALE: 1"=50'

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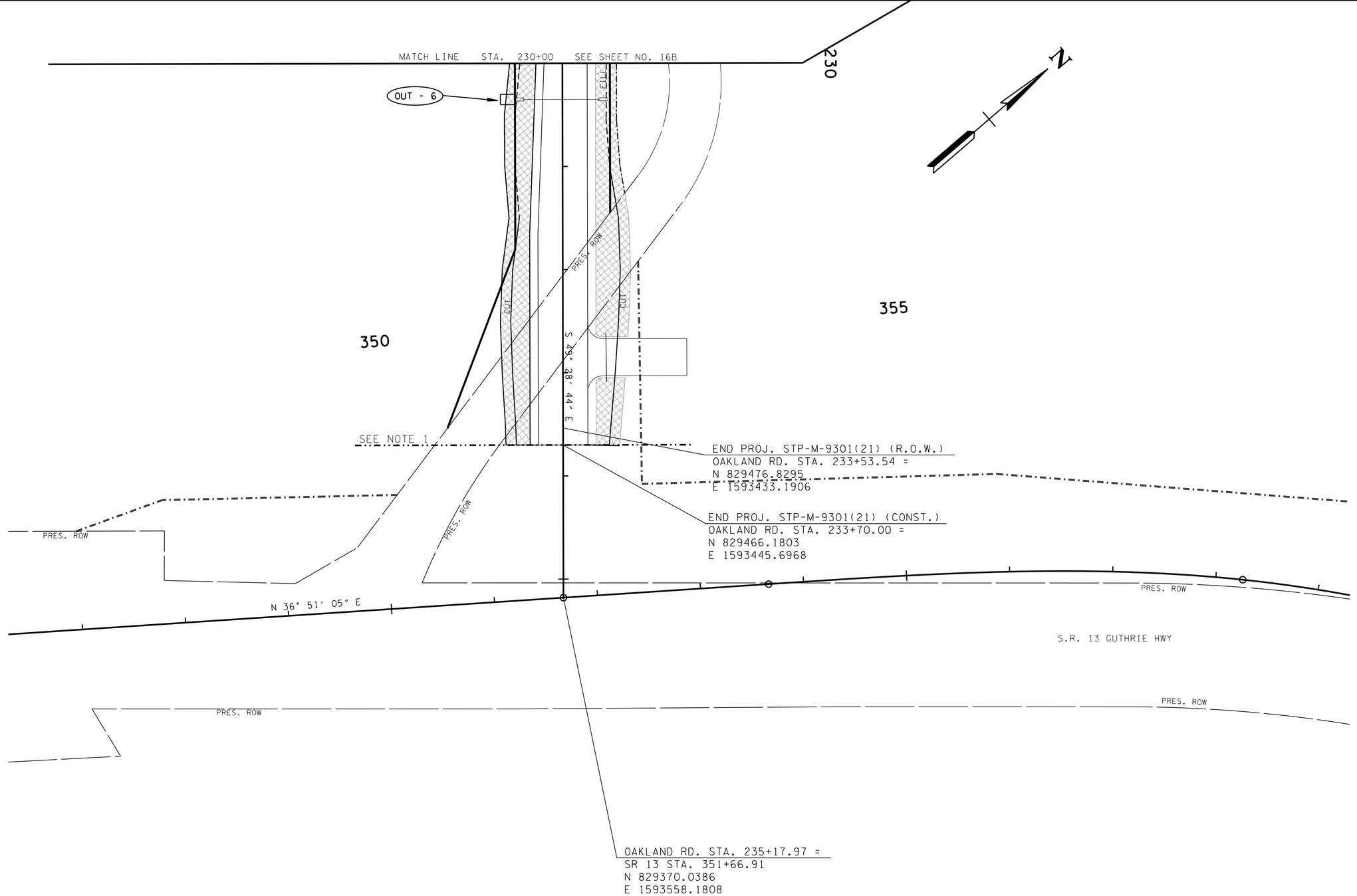
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	16C
CONST.	2016	STP-M-9301(21)	16C

REV. 02-17-16: REVISED EROSION CONTROL PLAN. REVISED PROJECT LIMITS. REVISED SR 13 ALIGNMENT. ADDED NOTE 1.

REV. 06-23-16: ADDED PVT. DR. AT STA. 232+85.00 FOR TRACT NO. 12.



NOTE 1:
SR 13 IMPROVEMENTS AND OAKLAND ROAD IMPROVEMENTS FROM STA. 233+70.00 TO 235+17.97 IN PROJ. NO. STP-13(66)

EPSC- STAGE 3

UNOFFICIAL SET

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MONTGOMERY COUNTY

EROSION PREVENTION AND SEDIMENT CONTROL PLAN

STA.230+00 TO STA.235+06.09

SCALE: 1"=50'

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	17

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.

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MONTGOMERY COUNTY

PAVEMENT EDGE DROP-OFF TRAFFIC CONTROL NOTES

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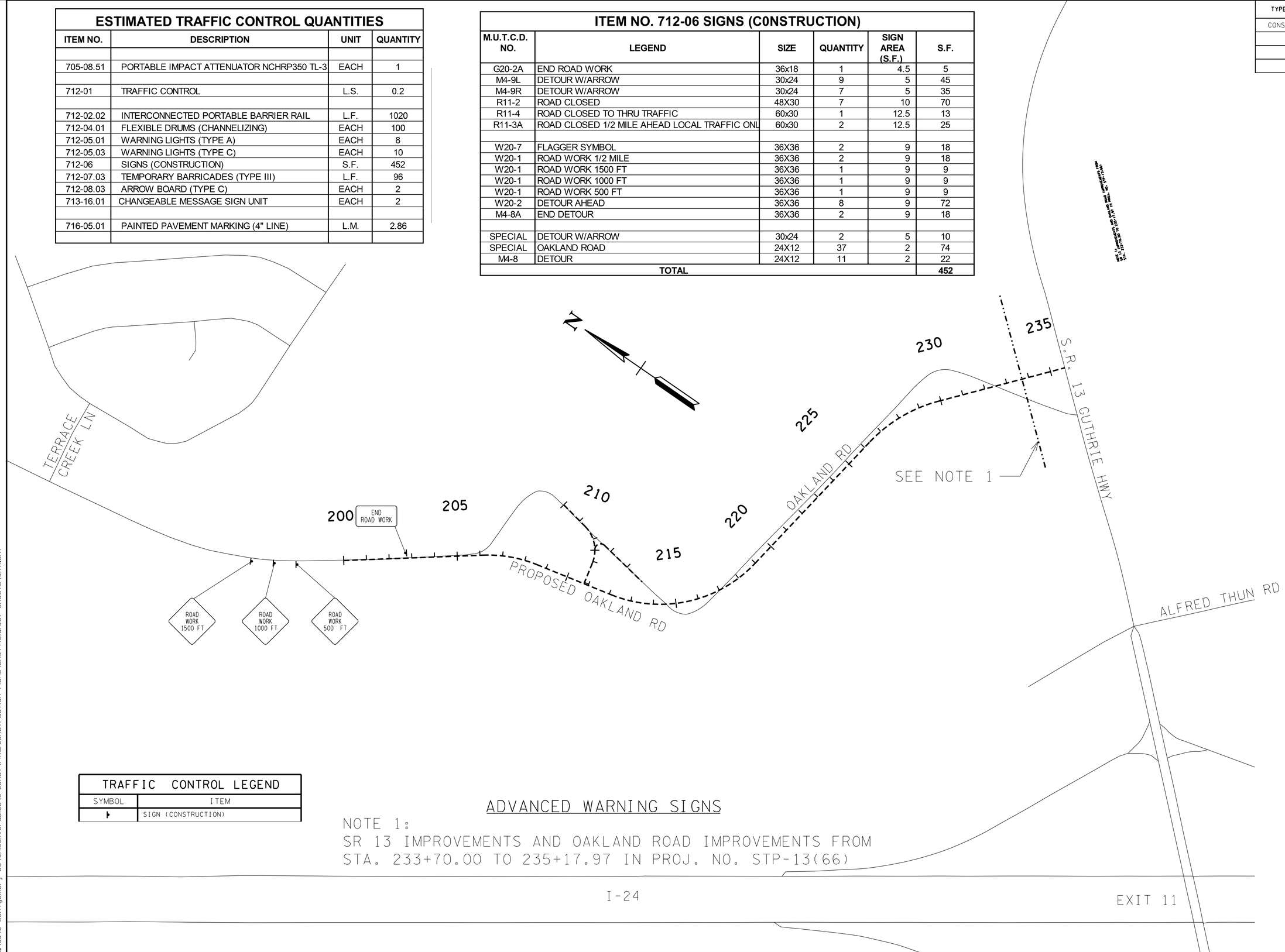
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	17A

ESTIMATED TRAFFIC CONTROL QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
705-08.51	PORTABLE IMPACT ATTENUATOR NCHRP350 TL-3	EACH	1
712-01	TRAFFIC CONTROL	L.S.	0.2
712-02.02	INTERCONNECTED PORTABLE BARRIER RAIL	L.F.	1020
712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH	100
712-05.01	WARNING LIGHTS (TYPE A)	EACH	8
712-05.03	WARNING LIGHTS (TYPE C)	EACH	10
712-06	SIGNS (CONSTRUCTION)	S.F.	452
712-07.03	TEMPORARY BARRICADES (TYPE III)	L.F.	96
712-08.03	ARROW BOARD (TYPE C)	EACH	2
713-16.01	CHANGEABLE MESSAGE SIGN UNIT	EACH	2
716-05.01	PAINTED PAVEMENT MARKING (4" LINE)	L.M.	2.86

ITEM NO. 712-06 SIGNS (C0NSTRUCTION)

M.U.T.C.D. NO.	LEGEND	SIZE	QUANTITY	SIGN AREA (S.F.)	S.F.
G20-2A	END ROAD WORK	36x18	1	4.5	5
M4-9L	DETOUR W/ARROW	30x24	9	5	45
M4-9R	DETOUR W/ARROW	30x24	7	5	35
R11-2	ROAD CLOSED	48X30	7	10	70
R11-4	ROAD CLOSED TO THRU TRAFFIC	60x30	1	12.5	13
R11-3A	ROAD CLOSED 1/2 MILE AHEAD LOCAL TRAFFIC ONL	60x30	2	12.5	25
W20-7	FLAGGER SYMBOL	36X36	2	9	18
W20-1	ROAD WORK 1/2 MILE	36X36	2	9	18
W20-1	ROAD WORK 1500 FT	36X36	1	9	9
W20-1	ROAD WORK 1000 FT	36X36	1	9	9
W20-1	ROAD WORK 500 FT	36X36	1	9	9
W20-2	DETOUR AHEAD	36X36	8	9	72
M4-8A	END DETOUR	36X36	2	9	18
SPECIAL	DETOUR W/ARROW	30x24	2	5	10
SPECIAL	OAKLAND ROAD	24X12	37	2	74
M4-8	DETOUR	24X12	11	2	22
TOTAL					452



TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
▸	SIGN (CONSTRUCTION)

ADVANCED WARNING SIGNS

NOTE 1:
SR 13 IMPROVEMENTS AND OAKLAND ROAD IMPROVEMENTS FROM STA. 233+70.00 TO 235+17.97 IN PROJ. NO. STP-13(66)

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MONTGOMERY COUNTY

TRAFFIC CONTROL PLAN PHASE 1

SCALE: NTS

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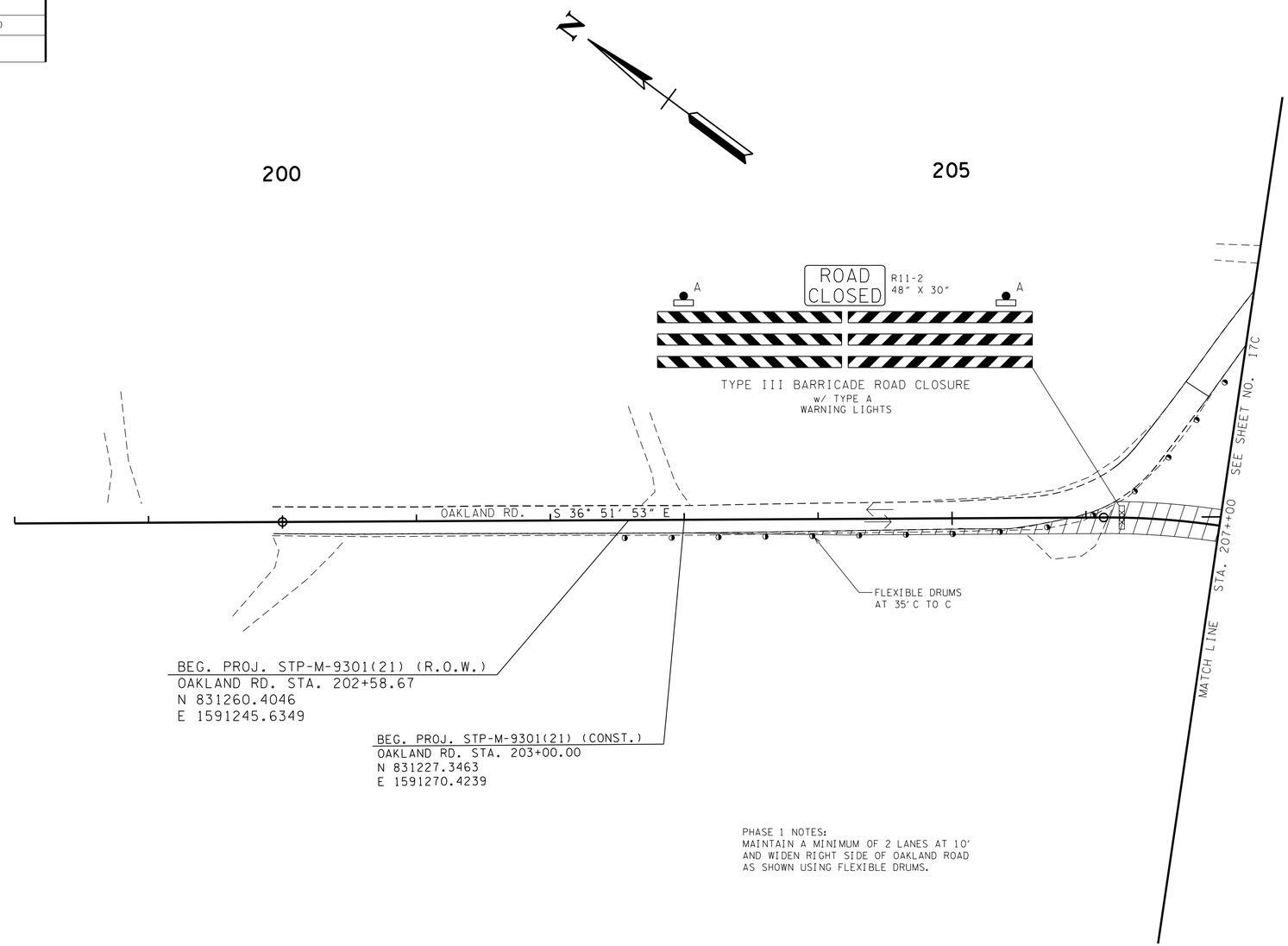
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	17B

TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	WORK ZONE
	FLEXIBLE DRUMS (CHANNELIZING)
	SIGN (CONSTRUCTION)
	PORTABLE BARRIER RAIL
	TEMPORARY BARRICADE (TYPE III)
	TEMPORARY ATTENUATOR



PHASE 1 NOTES:
MAINTAIN A MINIMUM OF 2 LANES AT 10' AND WIDEN RIGHT SIDE OF OAKLAND ROAD AS SHOWN USING FLEXIBLE DRUMS.

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MONTGOMERY COUNTY

TRAFFIC CONTROL PLAN PHASE 1

STA. 200+00 TO STA. 207+00

SCALE: 1"= 50'

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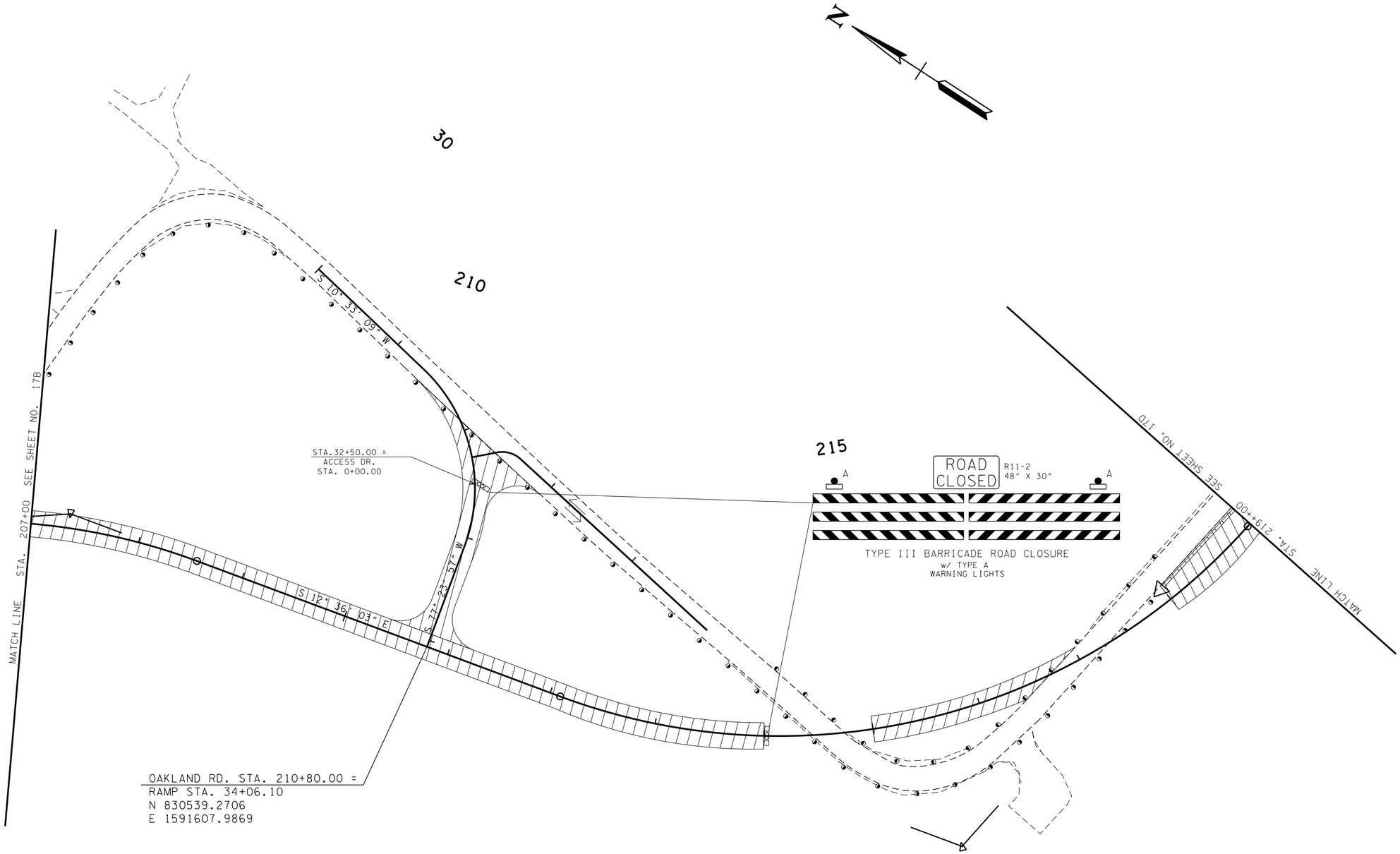
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	17C



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MONTGOMERY COUNTY

TRAFFIC CONTROL PLAN PHASE 1

STA. 207+00 TO STA. 219+00

SCALE: 1"= 50'

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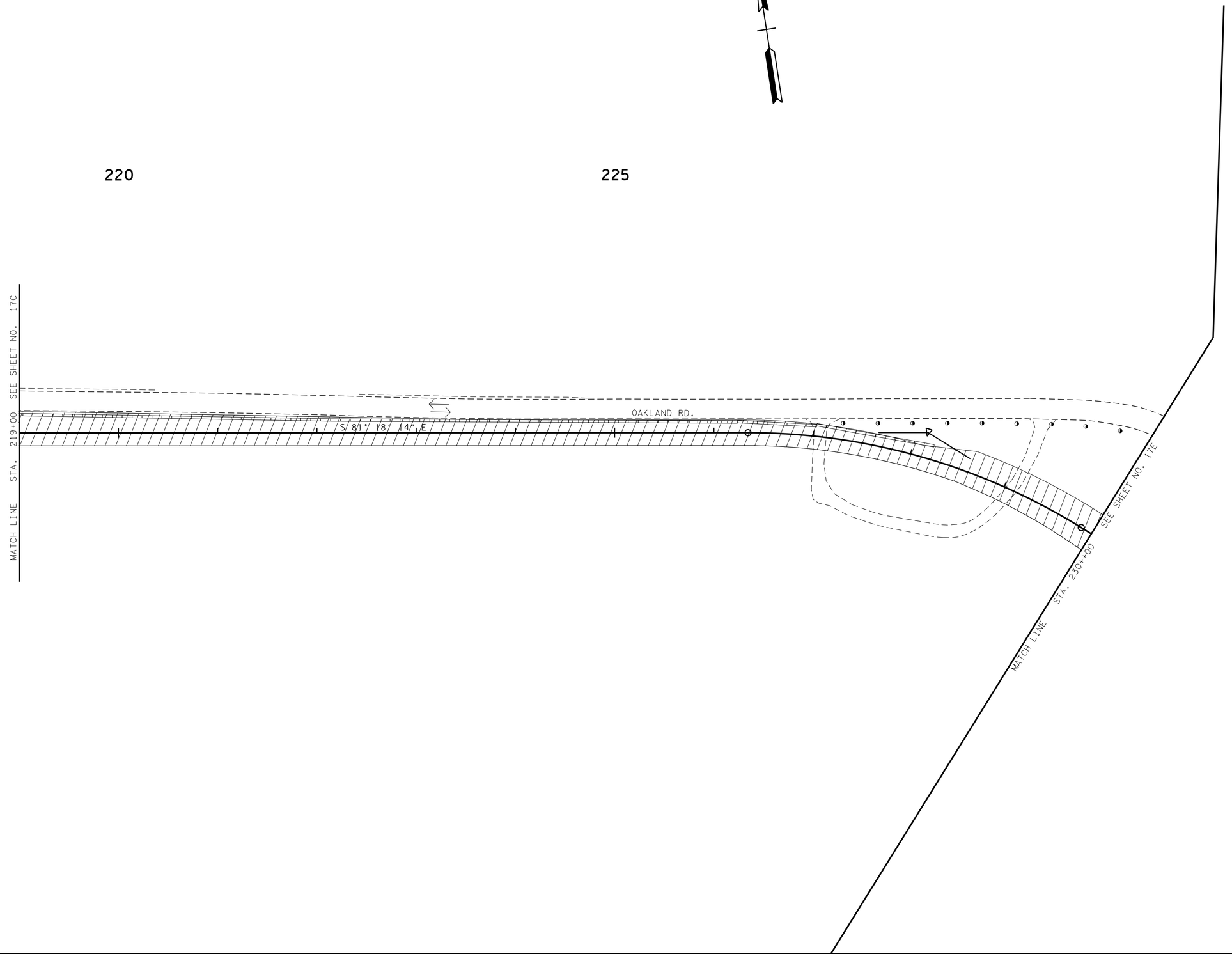
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	17D



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MONTGOMERY COUNTY

TRAFFIC CONTROL PLAN PHASE 1

STA. 219+00 TO STA. 231+00

SCALE: 1"= 50'

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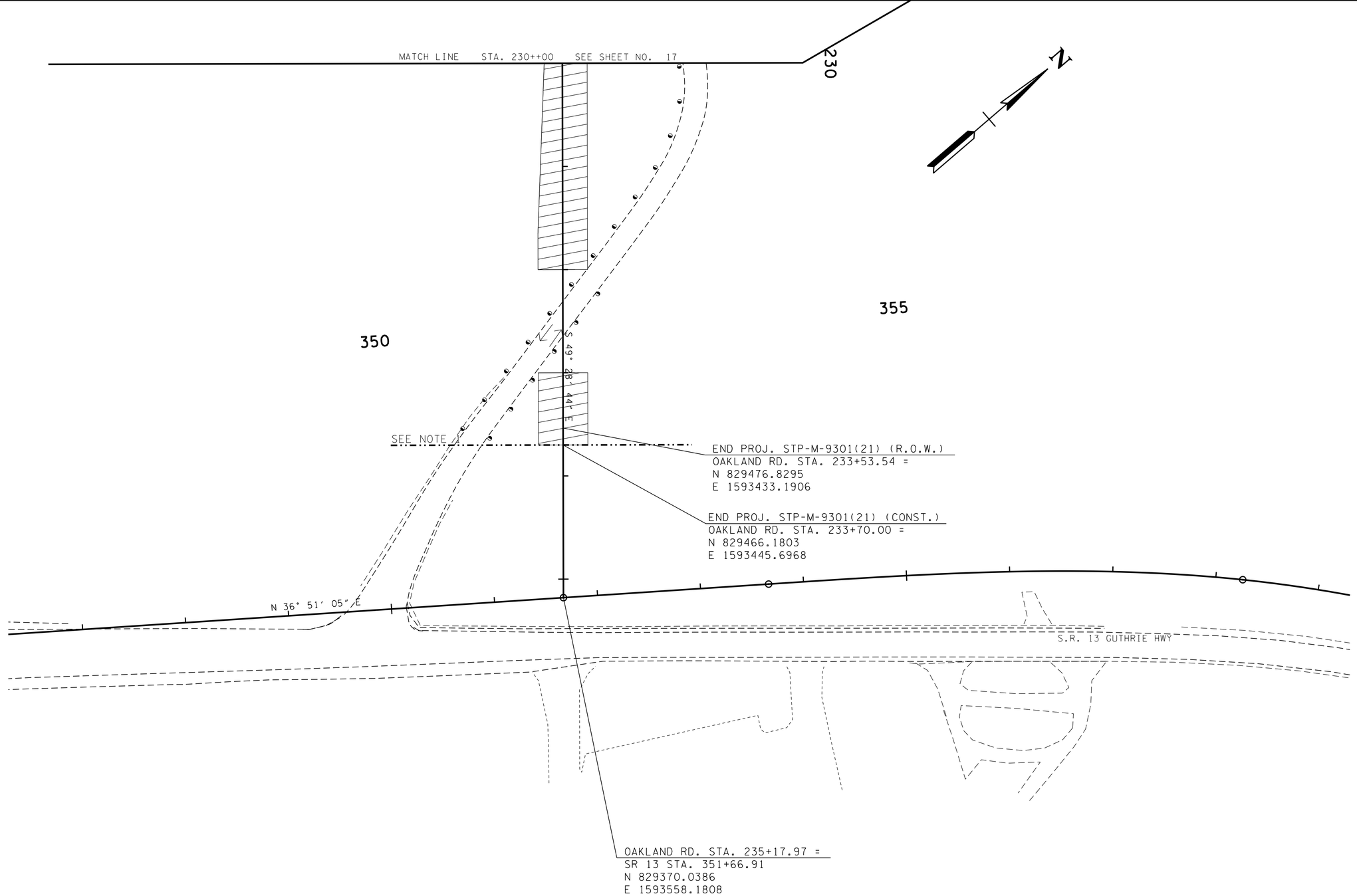
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	17E



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MONTGOMERY COUNTY

TRAFFIC CONTROL PLAN PHASE 1

STA. 231+00 TO STA. 234+81.64

SCALE: 1"= 50'

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	17F

DETOUR PLAN FOR OAKLAND ROAD CLOSURE

(A) ROAD CLOSED 1/2 MILE AHEAD LOCAL TRAFFIC ONLY

(B) ROAD CLOSED TO THRU TRAFFIC

(A) AND (B) MAY BE MOUNTED ON TYPE (III) BARRICADES.

(C) DETOUR AHEAD — OAKLAND RD.

(D) OAKLAND RD. DETOUR ←

(E) OAKLAND RD. DETOUR →

(F) DETOUR — OAKLAND RD.

(G) END DETOUR

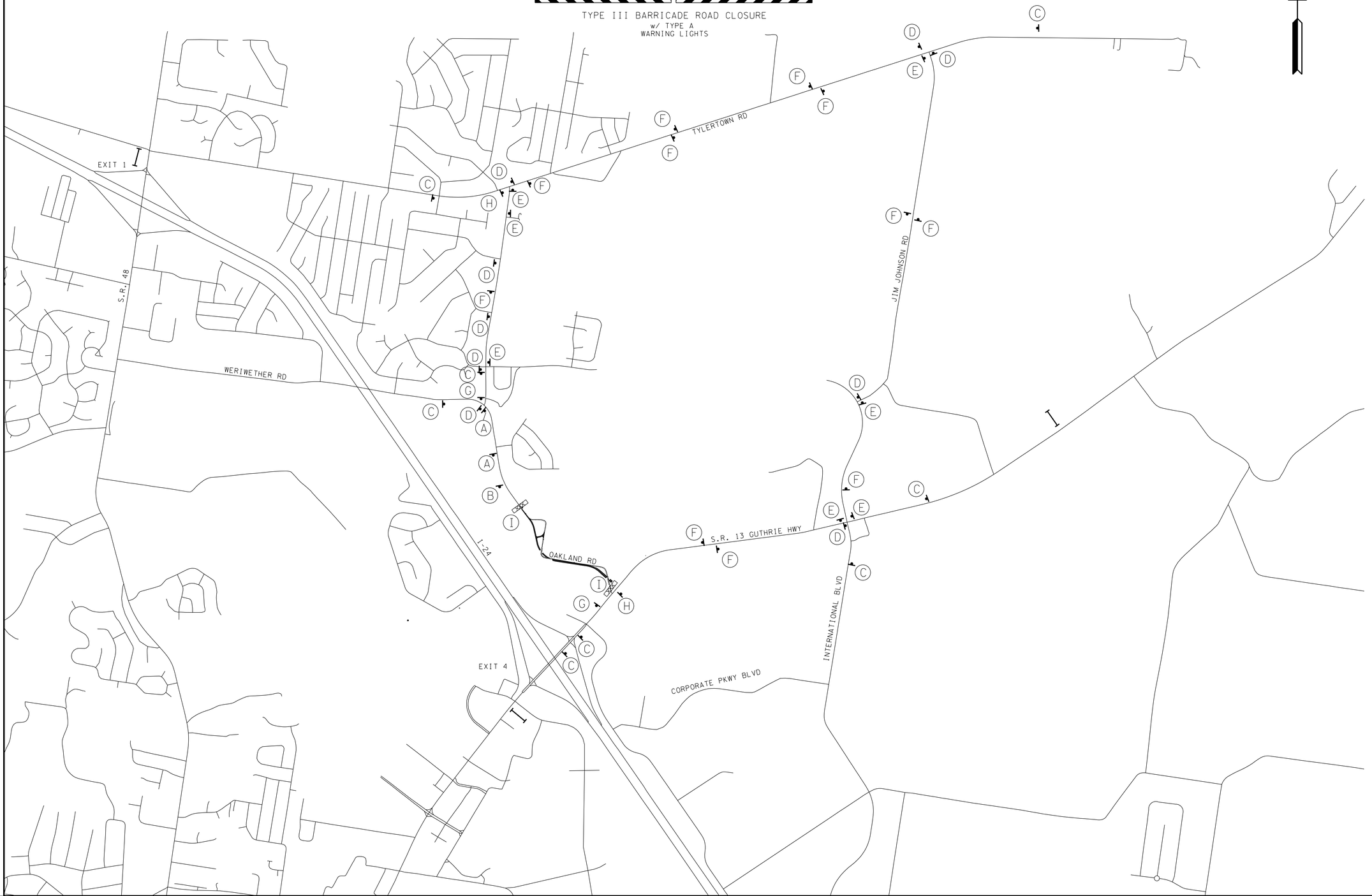
(H) OAKLAND RD. DETOUR ↑

(I) ROAD CLOSED R11-2 48" X 30" — A

TYPE III BARRICADE ROAD CLOSURE w/ TYPE A WARNING LIGHTS

TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	SIGN (CONSTRUCTION)
	CHANGEABLE MESSAGE SIGN
	TEMPORARY BARRICADE (TYPE III)

N



UNOFFICIAL SET

NOT FOR BIDDING

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MONTGOMERY COUNTY

TRAFFIC CONTROL PLAN PHASE 2

SCALE: NTS

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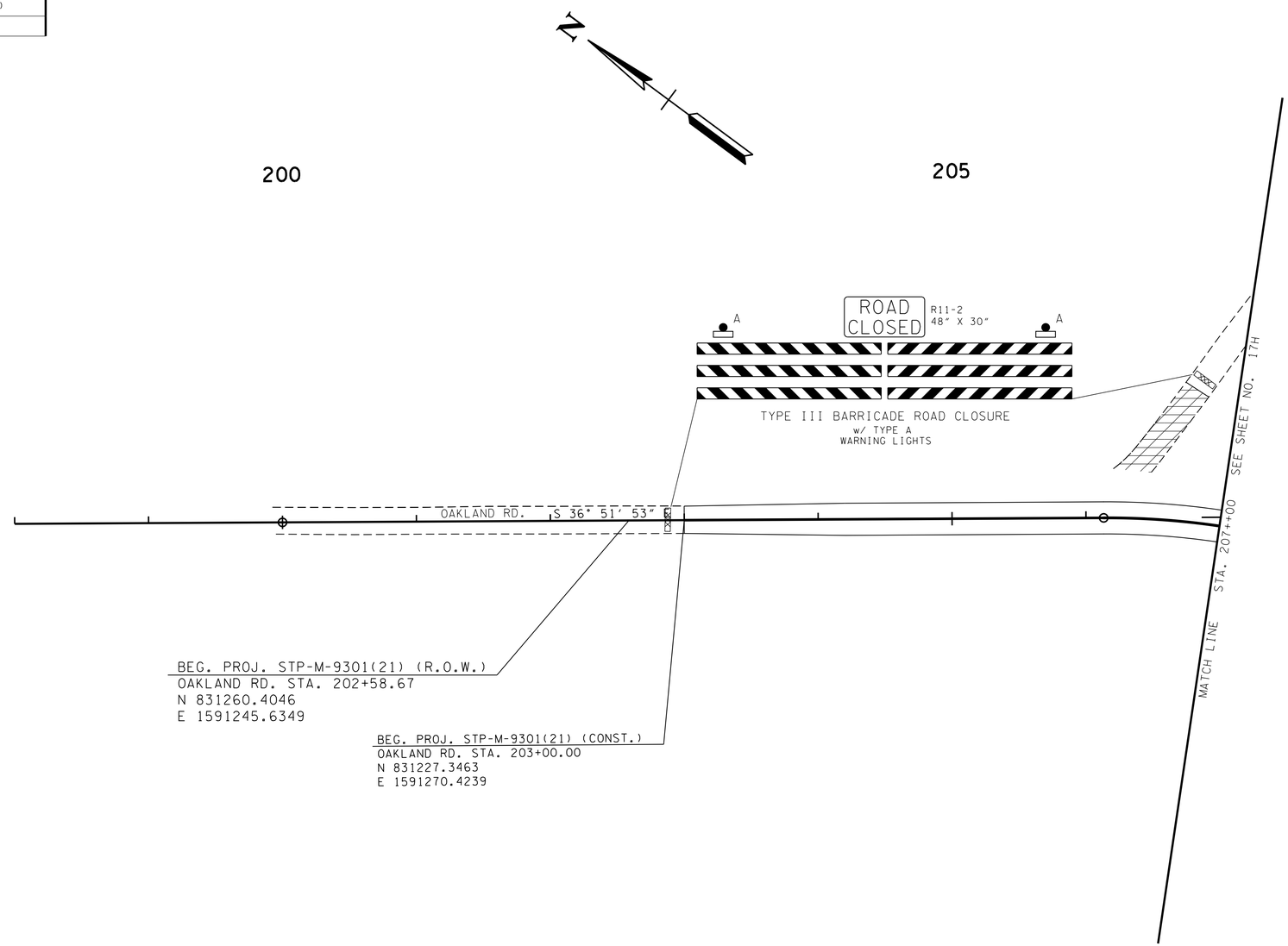
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	17G

TRAFFIC CONTROL LEGEND	
SYMBOL	ITEM
	WORK ZONE
	FLEXIBLE DRUMS (CHANNELIZING)
	SIGN (CONSTRUCTION)
	TEMPORARY BARRICADE (TYPE III)
	FLEXIBLE DRUMS (CHANNELIZING)



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UNOFFICIAL SET

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MONTGOMERY COUNTY

TRAFFIC CONTROL PLAN PHASE 2

STA. 200+00 TO STA. 207+00

SCALE: 1"= 50'

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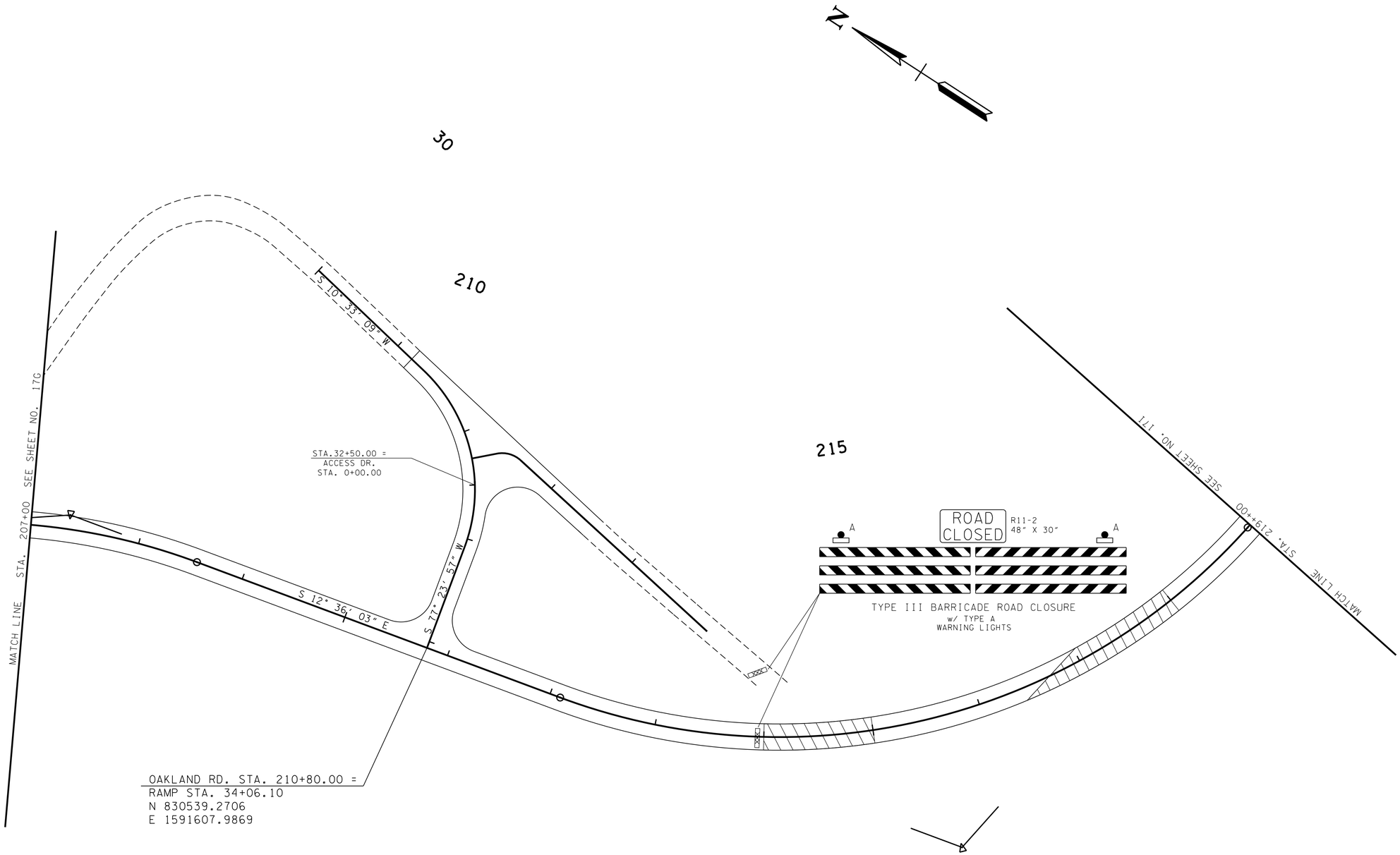
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	17H



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MONTGOMERY COUNTY

TRAFFIC CONTROL PLAN PHASE 2

STA. 207+00 TO STA. 219+00

SCALE: 1"= 50'

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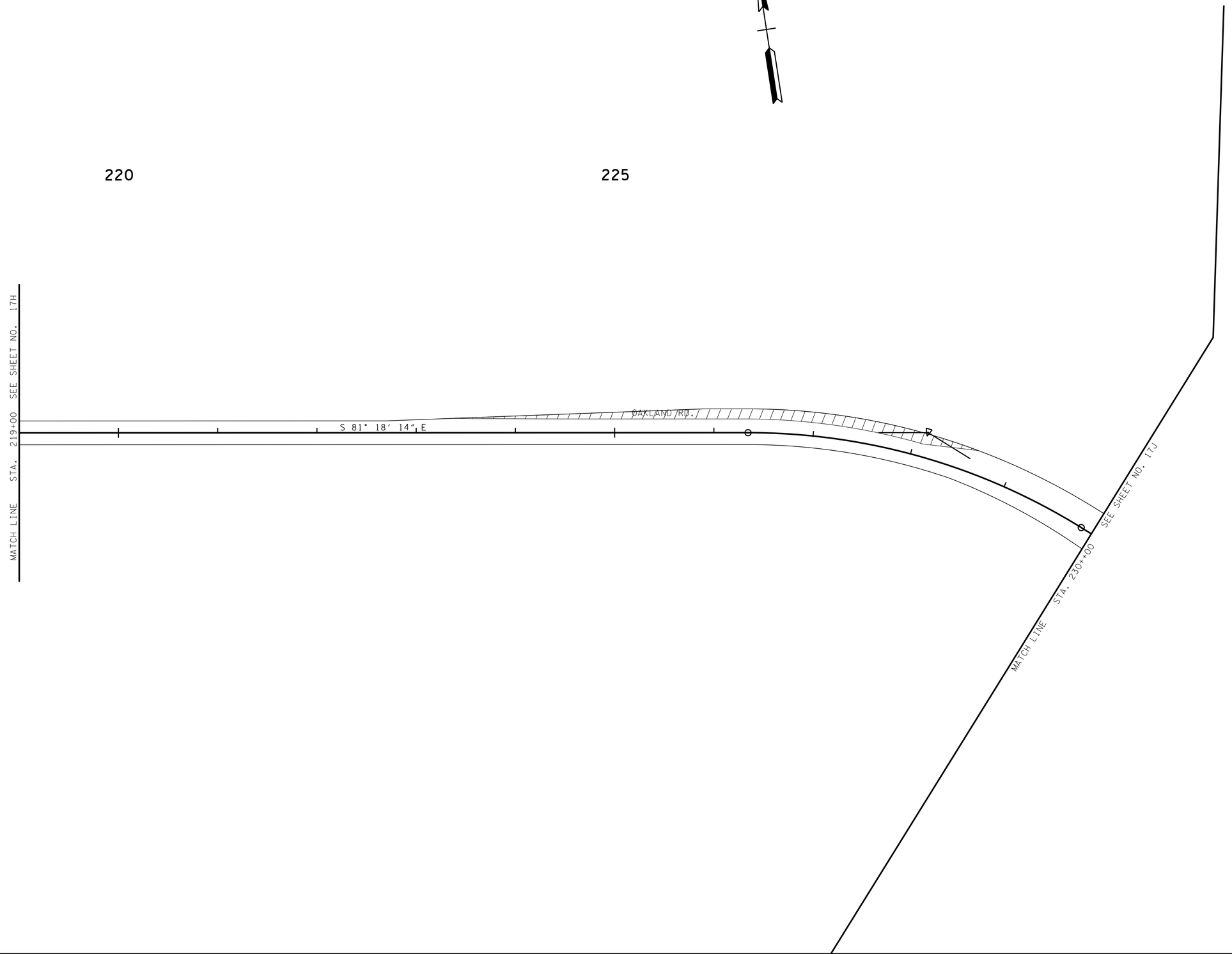
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	17I



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MONTGOMERY COUNTY

TRAFFIC CONTROL PLAN PHASE 2

STA. 219+00 TO STA. 231+00

SCALE: 1"= 50'

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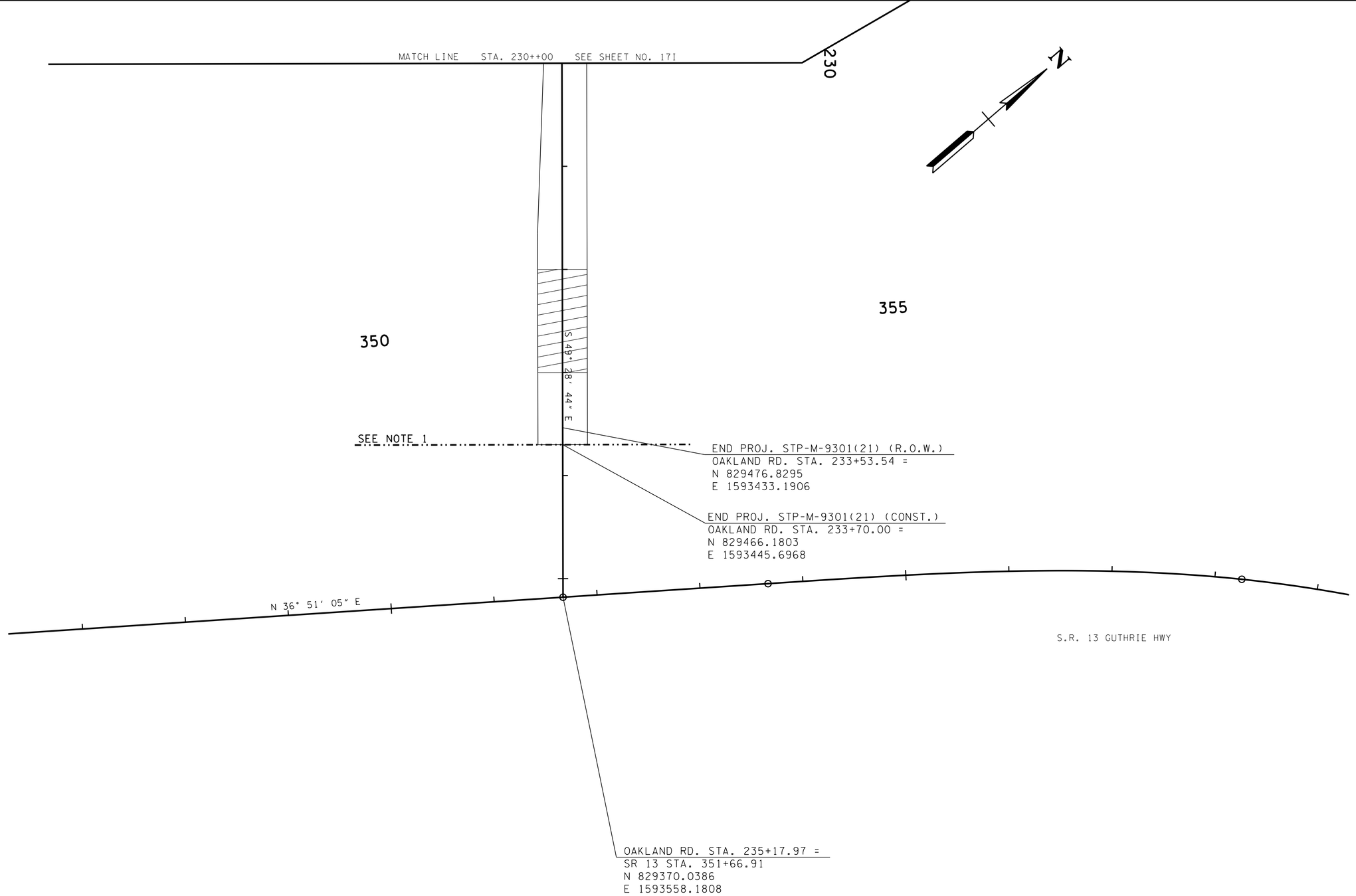
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	17J



NOTE 1:
SR 13 IMPROVEMENTS AND OAKLAND ROAD IMPROVEMENTS FROM STA. 233+70.00 TO 235+17.97 IN PROJ. NO. STP-13(66)

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NOT FOR BIDDING

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MONTGOMERY COUNTY

TRAFFIC CONTROL PLAN PHASE 2

STA. 231+00 TO STA. 234+81.64

SCALE: 1"= 50′

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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2016	STP-M-9301(21)	18

SIGNAL PHASING DIAGRAM

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

-PROT LEFT-TURN: Ø1
-MIN RECALL: Ø2,Ø6
-COORD PHASE: Ø2,Ø6
NOTE: SEE SIGNAL DETAIL SHEET FOR PHASING, TIMING AND ACTUATION DETAILS.

SIGNAL HEADS

TYPE 130 A3 W/ BACKPLATE 12" L.E.D. 1

TYPE 130 W/ BACKPLATE 12" L.E.D. 2,4,6,8

SIGN SCHEDULE

LEFT TURN YIELD ON GREEN
R10-12
30"x36"
(A)

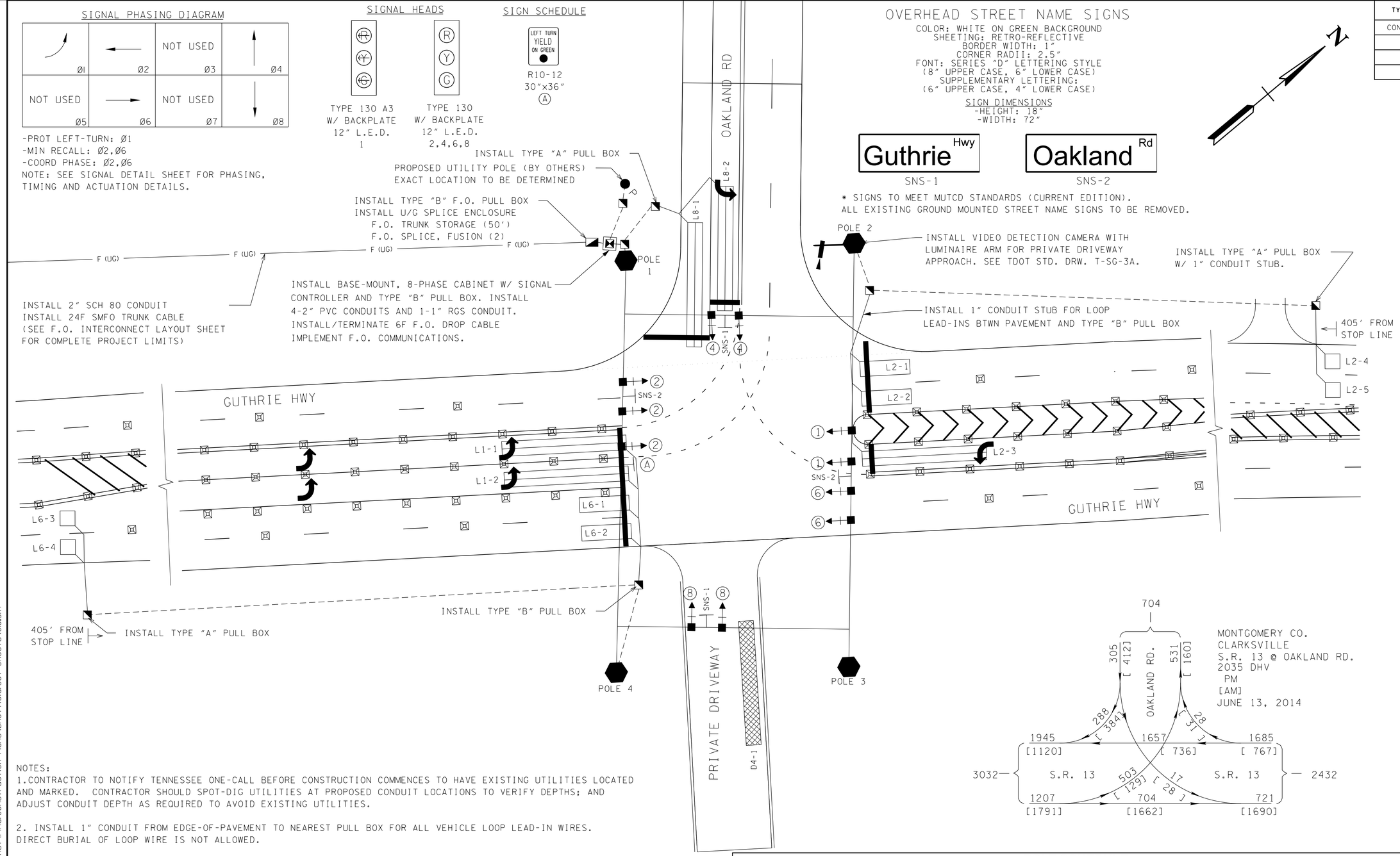
OVERHEAD STREET NAME SIGNS

COLOR: WHITE ON GREEN BACKGROUND
SHEETING: RETRO-REFLECTIVE
BORDER WIDTH: 1"
CORNER RADII: 2.5"
FONT: SERIES "D" LETTERING STYLE
(8" UPPER CASE, 6" LOWER CASE)
SUPPLEMENTARY LETTERING:
(6" UPPER CASE, 4" LOWER CASE)

SIGN DIMENSIONS
-HEIGHT: 18"
-WIDTH: 72"

Guthrie Hwy — SNS-1
Oakland Rd — SNS-2

* SIGNS TO MEET MUTCD STANDARDS (CURRENT EDITION).
ALL EXISTING GROUND MOUNTED STREET NAME SIGNS TO BE REMOVED.



MONTGOMERY CO.
CLARKSVILLE
S.R. 13 @ OAKLAND RD.
2035 DHV
PM
[AM]
JUNE 13, 2014

NOTES:
1.CONTRACTOR TO NOTIFY TENNESSEE ONE-CALL BEFORE CONSTRUCTION COMMENCES TO HAVE EXISTING UTILITIES LOCATED AND MARKED. CONTRACTOR SHOULD SPOT-DIG UTILITIES AT PROPOSED CONDUIT LOCATIONS TO VERIFY DEPTHS; AND ADJUST CONDUIT DEPTH AS REQUIRED TO AVOID EXISTING UTILITIES.

2. INSTALL 1" CONDUIT FROM EDGE-OF-PAVEMENT TO NEAREST PULL BOX FOR ALL VEHICLE LOOP LEAD-IN WIRES. DIRECT BURIAL OF LOOP WIRE IS NOT ALLOWED.

3. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY TO ARRANGE POWER SERVICE. POWER SERVICE SHALL INCLUDE METER AND/OR DISCONNECT, IF REQUIRED, WITH COST INCLUDED IN PAY ITEM FOR POWER SERVICE. EXACT LOCATION OF POLE TO BE DETERMINED ONCE POWER LINES ARE RELOCATED DURING THE CONSTRUCTION OF THE OAKLAND RD REALIGNMENT PROJECT. COORDINATE WITH PROJECT ENGINEER AND UTILITY OWNER AS REQUIRED TO DETERMINE THE BEST POLE FOR POWER SERVICE FOR TRAFFIC SIGNAL.

5. ALL PROPOSED CONDUIT CROSSING EXISTING PAVEMENT OR ROADWAY SHALL BE SCHEDULE 80 AND JACK/BORED BETWEEN PULL BOXES. OPEN CUT/TRENCH OF ROADWAYS IS NOT ALLOWED WITHOUT PRIOR APPROVAL FROM ENGINEER.

6. CONTRACTOR TO ENSURE SIGNAL HEAD POSITIONS CONFORM TO CURRENT MUTCD STANDARDS.

7. INSTALL NEW LOCAL CONTROLLER THAT IS COMPATIBLE WITH EXISTING CITY CLOSED LOOP SOFTWARE. NEW F.O. MODEM TO BE COMPATIBLE WITH SIGNAL EQUIPMENT AND BE PAID AS PART OF SIGNAL CONTROLLER. PROGRAM SIGNAL CONTROLLER TO IMPLEMENT F.O. COMMUNICATIONS. CONTACT CLARKSVILLE CITY TRAFFIC ENGINEER FOR EQUIPMENT SPECIFICATIONS AND REQUIREMENTS.

8. CABINET FOUNDATION SHALL INCLUDE INSTALLATION OF TWO (2) - 2" SPARE CONDUIT STUBS FOR FUTURE USE.

POLE SCHEDULE

POLE ID	POLE TYPE	ATTACH HEIGHT (FT)	FOOTING DIAMETER	FOOTING DEPTH (FT)	STATION	OFFSET	POLE COORDINATES		GROUND ELEVATION	MOMENT CAPACITY (FT-LBS)
1	STRAIN	30.0	4'	21'	234+41.71	46' RT	N=	829384.6636	534.0	332,500
							E=	1593470.3603		
2	STRAIN	30.0	4'	22'	234+33.75	46' LT	N=	829459.5002	532.8	353,250
							E=	1593523.8591		
3	STRAIN	29.0	4'	21'	416+45.78	39.5' RT(SR13)	N=	829348.5474	536.0	333,000
							E=	1593653.1824		
4	STRAIN	30.0	4'	21'	415+51.89	42.5'RT(SR13)	N=	829275.4074	533.60	327,250
							E=	1593594.9582		

* POLE LOCATION IS APPROXIMATE AND MAY BE ADJUSTED PER THE SPECIAL NOTES. FINAL POLE POSITION SHALL BE STAKED AND FIELD APPROVED BY ENGINEER PRIOR TO CONSTRUCTION.

UNOFFICIAL SET

NOT FOR BIDDING

SEALED BY

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPOSED SIGNAL LAYOUT
OAKLAND RD
AT GUTHRIE HWY
(S.R. 13)

SCALE: 1"=20'

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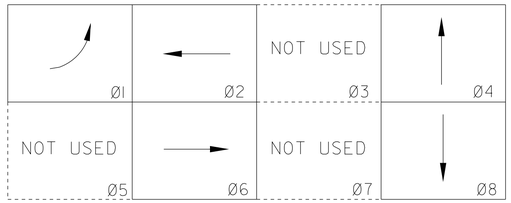
TENNESSEE D.O.T.	DESIGN DIVISION	FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2015	STP-M-9301(21)	18A

SIGNAL PHASING DIAGRAM



EIGHT PHASE SEQUENCING

ACTIVE PHASE INACTIVE PHASE (NOT USED)

- FULL SKIP CAPABILITY
- PROT LEFT-TURN: Ø1
- MIN RECALL: Ø2,Ø6
- COORD PHASE: Ø2,Ø6
- DUAL ENTRY: Ø4,Ø8

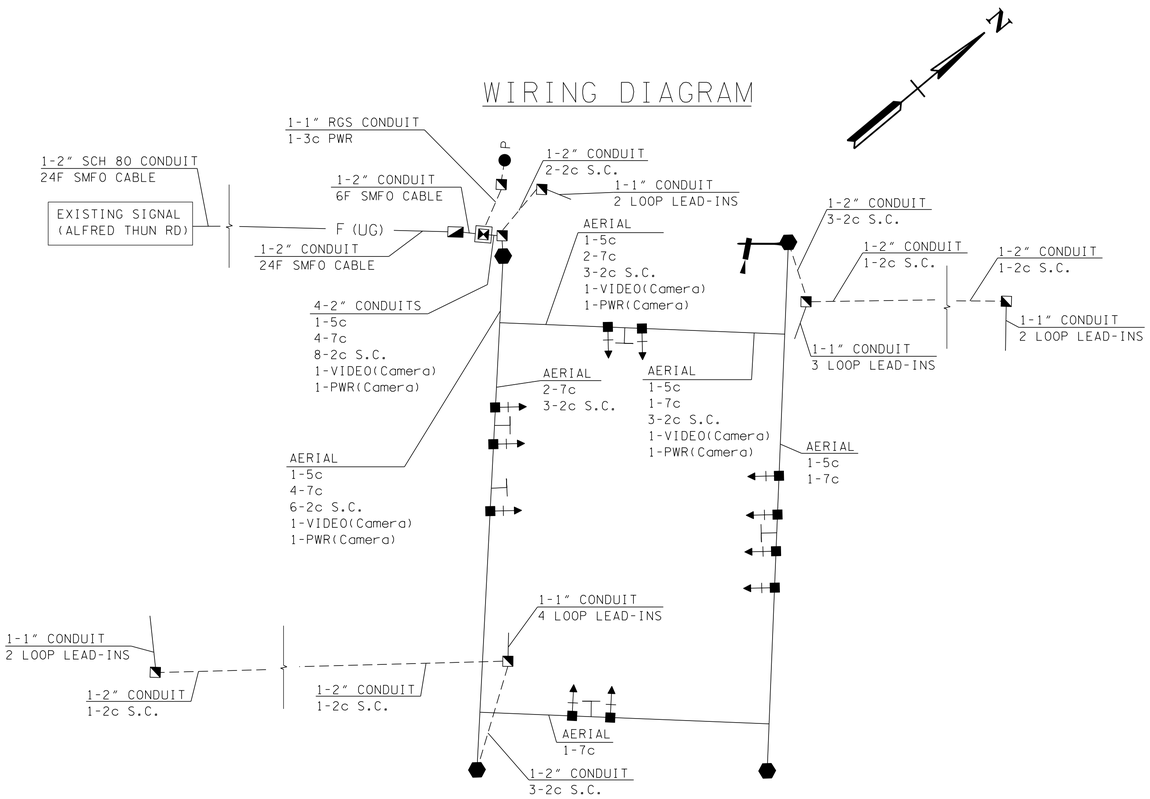
BASIC OR SEMI-ACTUATED TIMINGS (SECS)

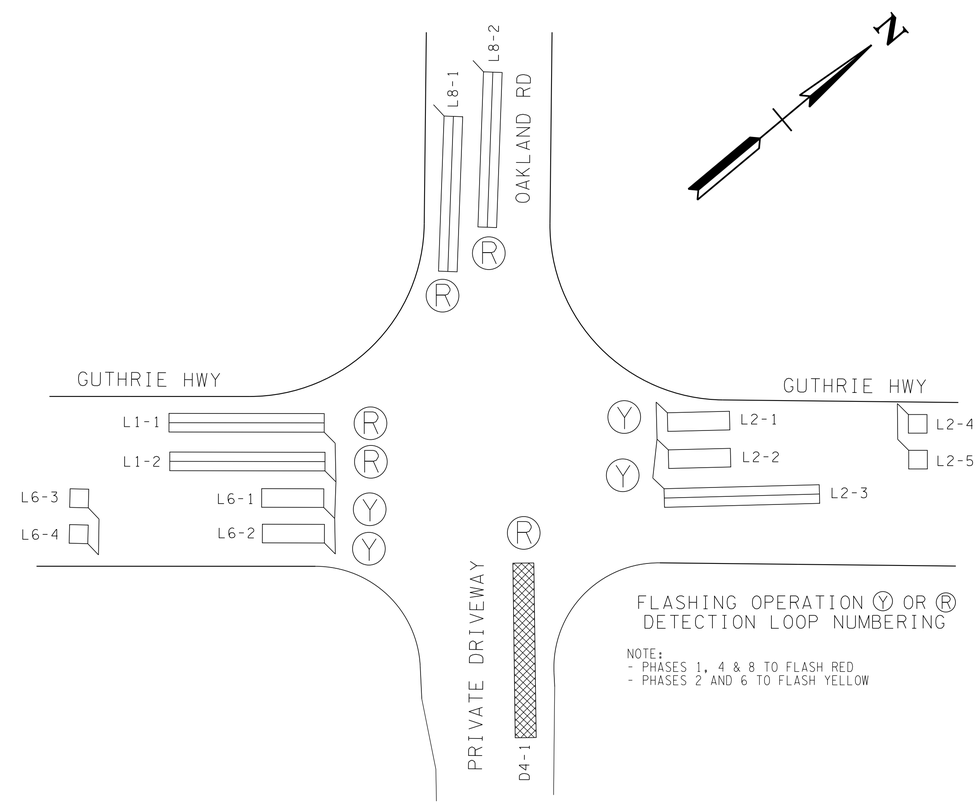
CONTROLLER PROGRAMMING DATA

	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 6	PHASE 7	PHASE 8
MOVEMENT	NBL	SB		WB		NB		EB
PHASE DATA								
MIN GREEN	7.0	15.0		8.0		15.0		8.0
PASSAGE TIME	2.5	4.0		3.0		4.0		3.0
MAXIMUM I	30.0	60.0		30.0		60.0		30.0
MAXIMUM II	40.0	75.0		40.0		75.0		40.0
YELLOW	3.5	4.5		3.5		4.5		3.5
RED	2.5	2.0		3.0		2.0		3.0
WALK								
PED CLEAR								
ADDED INITIAL								
MAX INITIAL								
TIME BEFORE REDUC								
TIME TO REDUCE								
MIN GAP								
UNIT DATA								
NON-LOCK MEMORY	NO	YES		YES		YES		YES
DUAL ENTRY				Ø8				Ø4
LAST CAR PASSAGE								
COND SERVICE								
NO SIMULT GAP								
GENERAL CONTROLS								
INITIALIZATION	INACTIVE	GREEN		INACTIVE		GREEN		INACTIVE
VEHICLE RECALL	NONE	MIN		NONE		MIN		NONE
PEDESTRIAN RECALL								

- THESE TIMINGS ARE INITIAL AND MAY BE ADJUSTED IN THE FIELD BY THE CONTRACTOR WITH PRIOR APPROVAL FROM ENGINEER.
- COORD TIMINGS AND SETTINGS, IF USED, TO BE PROVIDED BY CITY OF CLARKSVILLE TRAFFIC ENGINEER.

WIRING DIAGRAM





LOOP AND DETECTOR ASSIGNMENTS

DETECTOR CHANNEL	ASSOCIATED PHASE	MODE	TIMING EXTEND	TIMING DELAY	LOOP NO.	LENGTH	TURNS	COMMENTS
1	1	PRES		2.0	1-1	50'	2-4-2	IN SERIES W/ 1-2
1	1	PRES		2.0	1-2	50'	2-4-2	IN SERIES W/ 1-1
2	2	PRES			2-1	20'	3	IN SERIES W/ 2-2
2	2	PRES			2-2	20'	3	IN SERIES W/ 2-1
3	2	PRES			2-3	50'	2-4-2	
4	2	PULSE			2-4	6'	3	IN SERIES W/ 2-5
4	2	PULSE			2-5	6'	3	IN SERIES W/ 2-4
5	4	PRES		5.0	D4-1	50'	N/A	Video Detection Zone 50'x6'
6	6	PRES			6-1	20'	3	IN SERIES W/ 6-2
6	6	PRES			6-2	20'	3	IN SERIES W/ 6-1
7	6	PULSE			6-3	6'	3	IN SERIES W/ 6-4
7	6	PULSE			6-4	6'	3	IN SERIES W/ 6-3
8	8	PRES		8.0	8-1	50'	2-4-2	
9	8	PRES		2.0	8-2	50'	2-4-2	

- ALL LOOPS ARE 6 FT IN WIDTH, CENTERED IN TRAFFIC LANE. 6' X 6' LOOPS HAVE 3 TURNS OF LOOP WIRE. ALL OTHERS HAVE 2 TURNS OF LOOP WIRE UNLESS OTHERWISE INDICATED.
- LOOP WIRE CONNECTIONS SHALL BE WIRED TO PROVIDE THE APPROPRIATE INDUCTANCE AS REQUIRED BY STD. DWG. T-SG-3.

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NOT FOR BIDDING

SEALED BY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PHASING, TIMING, AND DETECTOR ASSIGNMENT

OAKLAND RD AT
GUTHRIE HWY (S.R. 13)

SCALE: NOT TO SCALE

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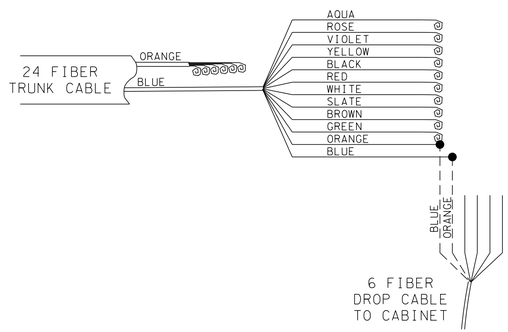
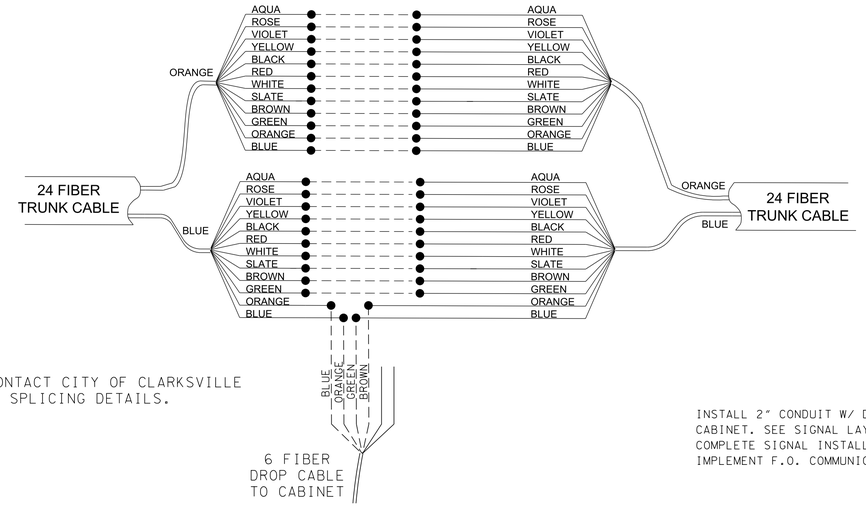
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	2015	STP-M-9301(21)	18B

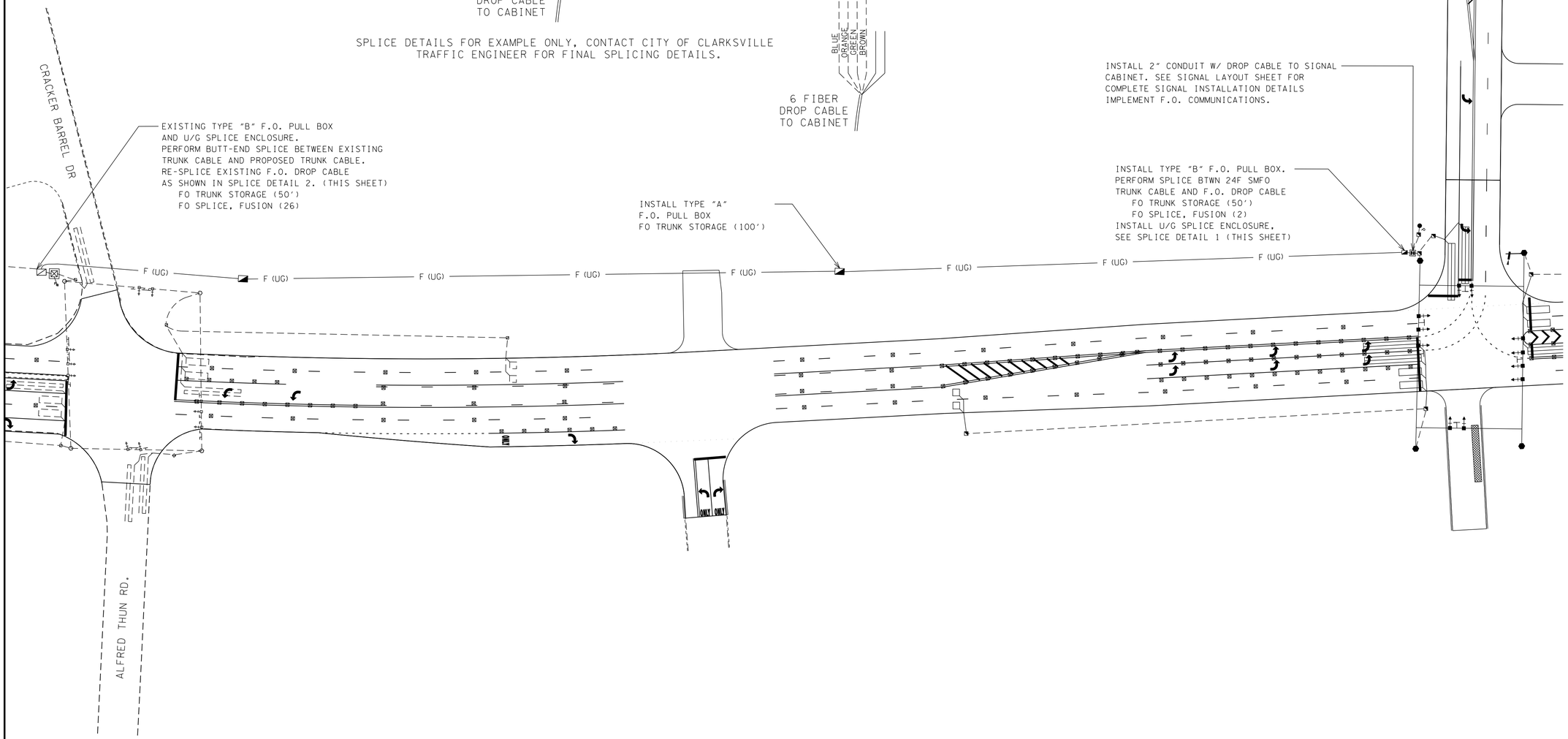
F.O. DROP TYPE 1 SPLICE DETAIL



F.O. DROP TYPE SPLICE 2 DETAIL



SPLICE DETAILS FOR EXAMPLE ONLY, CONTACT CITY OF CLARKSVILLE TRAFFIC ENGINEER FOR FINAL SPLICING DETAILS.



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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROPOSED SIGNAL INTERCONNECT LAYOUT

SCALE: 1"= 50'

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SITE PREPARATION

1. The proposed right-of-way (ROW) should be cleared of trees, stumps, brush, and other undesirable materials. Trees, stumps, and roots should be completely grubbed. Clearing and grubbing should extend to the limits of the proposed ROW or the construction limits, whichever is less.

2. Topsoil should be stripped from the construction area, except in deep (i.e., greater than 5 feet) fill areas where it may be left in-place. Topsoil may be stockpiled to dress slope areas.

3. No materials should be stockpiled within 10 feet of the top of cut-slopes or embankment slopes.

4. The exposed subgrade in both roadway and embankment areas should be proofrolled to delineate unstable areas. The proofrolling should be performed after a suitable period of dry weather to avoid degrading the subgrade. The proofrolling equipment should make several passes over each section of the subgrade.

5. Soft, organic, and unstable soils within 10 feet of planned grade (i.e., at cut subgrades, or in embankment areas where fills of 10 feet or less will be constructed) should be undercut as recommended. While the location requiring repair will be dependent on conditions encountered at the time of construction, some undercutting or remediation is expected, particularly near existing grade within agricultural areas or in low lying areas near existing drainage ditches. Station limits identified as possible remediation sites are listed below:

   - Station 205+50 to 207+50 (RT and LT of CL)
   - Station 217+50 to 220+50 (RT of CL)
   - Station 233+50 to 235+00 (RT and LT of CL)

   Subgrade repairs should be completed using the appropriate treatment methods outlined below.

   - For areas requiring less than 5 feet of new fill, undercut materials to allow for placement of at least 3 feet of Graded Solid Rock over Type IV Geotextile Fabric. We recommend using an estimated quantity of 2,550 cubic yards of undercut for budgeting purposes. Undercuts should not exceed 3 feet without consulting a geotechnical engineer or engineering geologist for guidance.
   - For areas requiring more than 5 feet of fill, place Type IV Geotextile Fabric across softened subgrade and place 3 feet of Graded Solid Rock fill as an initial lift.

   The completed repairs should be capped with a final layer of Type IV Geotextile Fabric. Unit rates for Graded Solid Rock and Type IV geotextile should be included in the project budget.

   Subgrade repairs are required for Stations 207+50 to 212+50 consisting of a bridge lift comprised of at least 5 feet of Graded Solid Rock. Type IV Geotextile Fabric should be placed over the existing subgrade prior to placement of Graded Solid Rock and capped with a final layer of Type IV Geotextile Fabric prior to placement of compacted embankment fill.

6. When extending existing fill embankments that are steeper than 4H:1V, the new fill should be suitably benched into the existing fill embankment to remove weak surficial materials and facilitate compaction. Benching can be accomplished by cutting into the existing embankment at least one blade width of a bulldozer.

7. The top 6 inches of roadway subgrade in cut areas should be scarified and recompacted according to the criteria in Section 207.04 of the TDOT Standard Specifications. These areas should be reworked after the area is excavated to grade and proofrolled.

COMPACTED FILL

We expect materials generated through excavation will be used as embankment fill elsewhere on the project. These soils consist of silty to clayey soils. For reuse as fill, the materials should be free of organics and roots. Procedures for placement and compaction of soil materials in embankment fills are provided in Section 205 of the TDOT Standard Specifications for Road and Bridge Construction (latest edition). The laboratory data reveals the natural moisture content of some soils along the alignment is up to several percentage points above the expected optimum moisture content. Depending upon the actual conditions encountered at the time of construction, some soils may require moisture conditioning (wetting or drying) prior to reuse as embankment fill. Drying the soil will be difficult if grading occurs during cool, wet weather. Further, some of the clays along the alignment were classified as fat clays (primarily AASHTO type A-7-6). These soils have a relatively wide range of moisture content over which they can achieve the desired compaction but a relatively narrow moisture range over which they are stable. The contractor should be made aware of the limitations of these soils.

Positive surface drainage should be maintained during grading operations to prevent water from ponding on the exposed subgrade. Surface water drainage from off-site areas should be diverted around the construction area using ditches or berms. The surface should be rolled smooth to enhance drainage if precipitation is expected. The geotechnical engineer should provide recommendations for treatment if the soils become excessively wet or dry, or frozen.

As an alternative to soil fill, non-degradable rock materials may be utilized as fill for the project. Non-degradable rock should have a maximum size of 24 inches, with a maximum soil fines percentage of 10 percent by volume. The materials should be spread so that larger rock pieces lie flat and do not overlap each other in a maximum lift thickness of 36 inches. The rock fill should be compacted by making multiple passes with a Caterpillar D8 bulldozer or equivalent. The number of passes should be sufficient to demonstrate the material is densified and stable. If smaller compaction equipment is used, then the lift thickness and particle sizes will need to be adjusted downward based on the capacity of the equipment considered for use and limitations for required fill thicknesses to reach designed grade. Fill placement and compaction techniques should be monitored by an engineering technician working under the direction of a qualified geotechnical engineer. The technician level personnel should document fill constituents, lift thickness, and compaction techniques.

Graded Solid Rock materials may also be considered for use as compacted fill and shall conform to TDOT Item No. 203-02.01 (ton). Graded Solid Rock shall consist of the satisfactory placement of sound, non-degradable rock with a maximum size of 3 feet. At least 50 percent of the rock shall be uniformly distributed between 1 foot and 3 feet in diameter and no greater than 10 percent shall be less than 2 inches in diameter. The material shall be roughly equal – dimensional in shape. The materials should be spread so that larger rock pieces lie flat and do not overlap each other in a maximum lift thickness of 3 feet. The rock fill should be placed and compacted as described previously for non-degradable rock fill.

SINKHOLE TREATMENT

Two closed depressions were mapped near Stations 208+00, Left and 211+00, Right. In addition, an open throat was observed 111 feet right of centerline near Station 211+00, outside the planned ROW. It is possible that other similar features may be present within the ROW along the alignment. Features identified within existing ROW and inside proposed construction limits should be repaired using TDOT Standard Drawings – Sinkhole Treatment Options 2 or 2A (see Special Details Sinkhole Treatment Sheet). Repairs should be completed under the direction of a qualified geotechnical engineer or engineering geologist. Sinkhole repairs must be permitted by the Groundwater Protection Division of the Tennessee Department of Environment and Conservation (TDEC).

Features identified outside proposed construction limits, either in or out of planned ROW, should be protected using proper erosion control measures in accordance with applicable standards within the State of Tennessee. Consultation with the Groundwater Protection Division of TDEC is recommended and permitting may be required. However, repairing is optional, unless required by TDOT.

A majority of sinkholes occur during site grading, when the natural drainage mechanisms have been disrupted by removal of vegetation or altering of grades. In recognition of the karst related risk, the following recommendations are provided to reduce the possibility of future sinkhole development:

- Control storm water drainage by properly grading the site to promote complete and rapid runoff of surface water away from construction areas and avoid the ponding of water in open excavations.
- To the extent practicable, provide for overland or piped discharge of storm water and limit the flow of water into sinkholes.
- Thoroughly evaluate any area of suspected sinkhole development, such as areas of abnormally thick topsoil deposits, depressed areas, locations of soil collapse or voids within the overburden.
- Where incipient sinkholes are detected, perform remedial treatment under the direction of the geotechnical engineer or engineering geologist who must provide recommendations based on observation of the actual conditions encountered in accordance with TDOT Standard Drawings.

SUMMARY OF SOIL LABORATORY TESTS

Boring No.	Sample Depth (ft)	Station Location	Description	Proctor Maximum Dry Density (PCF)	Optimum Moisture (%)	Compactible Moisture Range (%)	LL	PI	AASHTO Classification	USCS Classification	CBR Value
B-09	0.5-4.0	Station 225+00, CL	Fat Clay with sand, yellowish brown	99.3	22.5	20.0 to 25.5	64	45	A-7-6	CH	n/a
B-10	3.0-7.0	Station 228+00, 30 feet RT	Lean Clay, yellowish red	107.1	18.9	17.0 to 21.9	41	21	A-7-6	CL	3

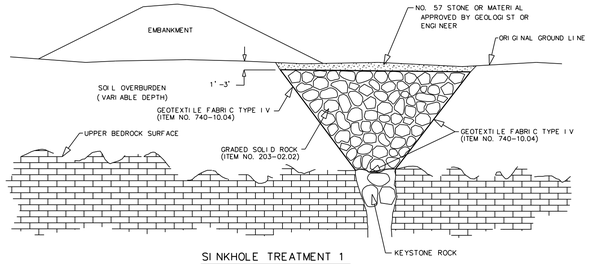
FOR ADDITIONAL INFORMATION, PLEASE REFER TO SOIL AND GEOLOGICAL SURVEY REPORT PREPARED BY TTL, INC., DATED SEPTEMBER 2016.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL NOTES

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

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	19A



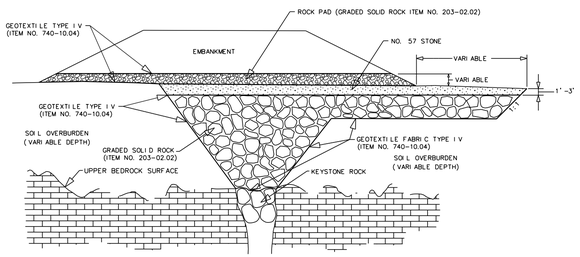
SINKHOLE TREATMENT 1

SINKHOLE TREATMENT 1, ACTIVE

NOTE: AFTER EXCAVATION IS COMPLETE AND ROCK OPENING IS EXPOSED, THE SITE AND TREATMENT METHOD SHALL BE APPROVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEERING SECTION OF THE DIVISION OF MATERIALS AND TESTS. THE TOP 1-3 FT. OF MATERIAL SHALL BE APPROVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEERING SECTION OF THE DIVISION OF MATERIALS AND TESTS.

SEQUENCE OF CONSTRUCTION:

1. EXCAVATE SINKHOLE TO DEFINE OPENING IN BEDROCK MAKING SURE TO REMOVE ALL SOIL AND DEBRIS.
2. FIT THE OPENING WITH KEYSTONE ROCK, WHICH SHALL BE OF SUFFICIENT SIZE TO LOCK IN PLACE WITHOUT CREATING AN AIRBLOCK TO SUBSURFACE DRAINAGE.
3. PLACE THE GEOTEXTILE FABRIC TYPE IV ON EXCAVATED SLOPES AND BASE OF SINKHOLE.
4. BACKFILL TO A MAXIMUM OF 1 FT. OF THE SPECIFIED GRADE WITH GRADED SOLID ROCK (CLASSIFICATION 203.02.02 BORROW EXCAVATION).
5. BACKFILL TO GRADE WITH A MINIMUM OF 1 FT. OF NO.57 STONE ON TOP OF THE GRADED SOLID ROCK AND GEOTEXTILE FABRIC TYPE IV.



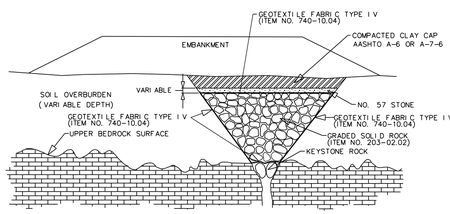
SINKHOLE TREATMENT 1A

SINKHOLE TREATMENT 1A ACTIVE

NOTE: AFTER EXCAVATION IS COMPLETE AND ROCK OPENING IS EXPOSED, THE SITE AND TREATMENT METHOD SHALL BE APPROVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEERING SECTION OF THE DIVISION OF MATERIALS AND TESTS. THE TOP 1-3 FT. MATERIAL SHALL BE APPROVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEERING SECTION OF THE DIVISION OF MATERIALS AND TESTS.

SEQUENCE OF CONSTRUCTION:

1. EXCAVATE SINKHOLE TO DEFINE OPENING IN BEDROCK MAKING SURE TO REMOVE ALL SOIL AND DEBRIS.
2. FIT THE OPENING WITH KEYSTONE ROCK, WHICH SHALL BE OF SUFFICIENT SIZE TO LOCK IN PLACE WITHOUT CREATING AN AIRBLOCK TO SUBSURFACE DRAINAGE.
3. PLACE THE GEOTEXTILE FABRIC TYPE IV ON EXCAVATED SLOPES AND BASE OF SINKHOLE.
4. BACKFILL TO WITHIN 1.5-3 FT. OF THE SPECIFIED GRADE WITH GRADED SOLID ROCK (CLASSIFICATION 203-02.02 BORROW EXCAVATION).
5. PLACE THE GEOTEXTILE FABRIC TYPE IV ON TOP OF GRADED SOLID ROCK.
6. BACKFILL TO GRADE WITH NO. 57 STONE.
7. CONSTRUCT EMBANKMENT INCLUDING ANY REQUIRED ROCK PAD IN ACCORDANCE WITH CONTRACT PLANS AND CROSS-SECTIONS.



SINKHOLE TREATMENT 2

SINKHOLE TREATMENT 2 AND 2A, INACTIVE

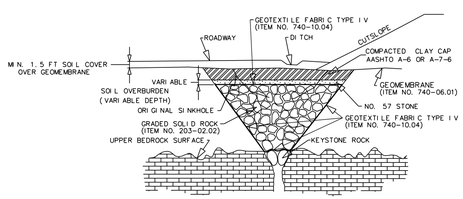
NOTE: AFTER EXCAVATION IS COMPLETE AND ROCK OPENING IS EXPOSED, THE SITE AND TREATMENT METHOD SHALL BE APPROVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEERING SECTION OF THE DIVISION OF MATERIALS AND TESTS. ANY CHANGE IN THE NO. 57 STONE FILL OR THE CLAY CAP SHALL BE APPROVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEERING SECTION OF THE DIVISION OF MATERIALS AND TESTS.

SEQUENCE OF CONSTRUCTION:

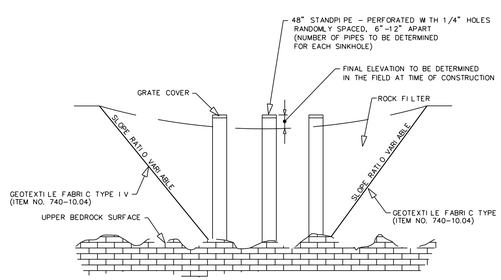
1. EXCAVATE SINKHOLE TO DEFINE OPENING IN BEDROCK MAKING SURE TO REMOVE ALL SOIL AND DEBRIS.
2. FIT THE OPENING WITH KEYSTONE ROCK, WHICH SHALL BE OF SUFFICIENT SIZE TO LOCK IN PLACE WITHOUT CREATING AN AIRBLOCK TO SUBSURFACE DRAINAGE.
3. PLACE THE GEOTEXTILE FABRIC TYPE IV ON EXCAVATED SLOPES AND BASE OF SINKHOLE.
4. BACKFILL WITH GRADED SOLID ROCK (CLASSIFICATION 203-02.02 BORROW EXCAVATION) UP TO SPECIFIED GRADE.
5. PLACE GEOTEXTILE FABRIC TYPE IV ON TOP OF GRADED SOLID ROCK. PLACE NO. 57 STONE ON TOP OF GETEXTILE FABRIC.
6. CONSTRUCT COMPACTED CLAY CAP. SOIL SHOULD BE OF TYPE AASHTO A-6 OR A-7-6.

FOR 2A ACTIVE ONLY

7. PLACE GEOMEMBRANE ON TOP OF SOIL CAP BEFORE CONSTRUCTION OF ANY OVERLYING STRUCTURES OR EMBANKMENTS. THERE SHOULD BE A MINIMUM OF 1.5 FT. OF SOIL PLACED OVER THE MEMBRANE.
8. DITCH SHOULD BE PAVED OR LINED WITH A GEOMEMBRANE.



SINKHOLE TREATMENT 2A



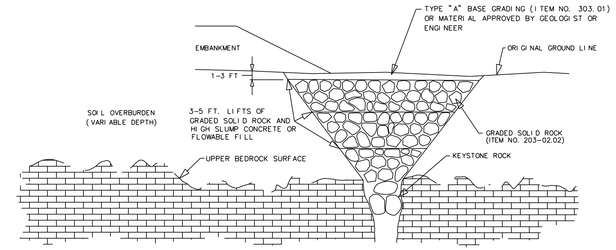
SINKHOLE TREATMENT 3

SINKHOLE TREATMENT 3, ACTIVE

NOTE: AFTER EXCAVATION IS COMPLETE AND ROCK IS EXPOSED, THE SITE AND TREATMENT METHOD SHALL BE APPROVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEERING SECTION OF THE DIVISION OF MATERIALS AND TESTS.

SEQUENCE OF CONSTRUCTION

1. EXCAVATE SOIL DOWN TO BEDROCK OR TO LIMITS SPECIFIED BY THE ENGINEER OR GEOLOGIST.
2. LOCATE ALL OPENINGS WITHIN THE PITS, REMOVE ALL LOOSENED MATERIAL. ALL EXCAVATED MATERIALS SHALL BE REMOVED FROM THE BASIN.
3. INSTALL 48" DIAMETER VERTICAL STANDPIPES OVER THE LOCATED OPENINGS. THESE PIPES SHOULD BE PERFORATED FOR AT LEAST THE LOWER 5 FT. WITH 1/4" HOLES SPACED 6-12" APART.
4. PLACE GEOTEXTILE FABRIC TYPE IV AS SHOWN OR AS DIRECTED BY THE ENGINEER OR GEOLOGIST TO PREVENT THE LATERAL INFLOW OF FINES.



SINKHOLE TREATMENT 4

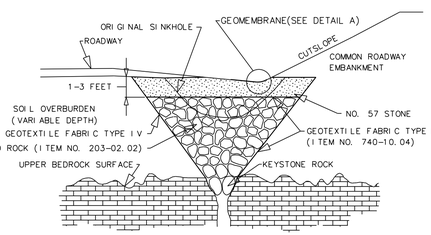
SINKHOLE TREATMENT 4, INACTIVE

NOTE: AFTER EXCAVATION IS COMPLETE AND ROCK OPENING IS EXPOSED, THE SITE AND TREATMENT METHOD SHALL BE APPROVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEERING SECTION OF THE DIVISION OF MATERIALS AND TESTS. ANY CHANGE IN THE THE NO.57 STONE FILL SHALL BE APPROVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEERING SECTION OF THE DIVISION OF MATERIALS AND TESTS.

SEQUENCE OF CONSTRUCTION

1. EXCAVATE SINKHOLE TO DEFINE OPENING IN BEDROCK MAKING SURE TO REMOVE ALL SOIL DEBRIS.
2. FIT THE OPENING WITH KEYSTONE ROCK, WHICH SHALL BE OF SUFFICIENT SIZE TO LOCK IN PLACE WITHOUT CREATING AN AIRBLOCK TO SUBSURFACE DRAINAGE.
3. ALTERNATE LAYERS OF GRADED SOLID ROCK (CLASSIFICATION 203-02.02 BORROW EXCAVATION) 3-5 FT. IN DEPTH AND HIGH SLUMP CONCRETE (OR FLOWABLE FILL). HIGH SLUMP CONCRETE SHALL BE CONCRETE WITH A SLUMP OF 7-9".

   HIGH SLUMP CONCRETE OR FLOWABLE FILL SHALL BE APPLIED AFTER A LAYER OF GRADED SOLID ROCK UNTIL THE CONCRETE (OR FLOWABLE FILL) JUST COVERS THE GRADED ROCK LAYER. THE NEXT LAYER OF GRADED SOLID ROCK SHALL BE PLACED IMMEDIATELY AFTER THE PLACEMENT OF THE CONCRETE (OR FLOWABLE FILL). THE PURPOSE OF THIS IS TO INTERMIX THE MATERIALS. THE WORK SHALL NOT BE INTERRUPTED AFTER THE PLACEMENT OF CONCRETE (OR FLOWABLE FILL) EXCEPT FOR THE TOP LAYER. IF WORK CANNOT BE FINISHED IN A SPECIFIED INTERVAL, WORK MAY BE STOPPED ONLY AFTER A COMPLETE LAYER OF GRADED SOLID ROCK HAS BEEN PLACED.
4. AFTER THE FINAL LAYER OF CONCRETE (OR FLOWABLE FILL) HAS BEEN SET, BACKFILL TO GRADE WITH TYPE "A" BASE GRADING (ITEM NO. 303.01) OR OTHER MATERIAL APPROVED BY THE ENGINEER OR GEOLOGIST.



SINKHOLE TREATMENT 5

SINKHOLE TREATMENT 5 ACTIVE

NOTE: AFTER EXCAVATION IS COMPLETE AND ROCK OPENING IS EXPOSED, THE SITE AND TREATMENT METHOD SHALL BE APPROVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEERING SECTION OF THE DIVISION OF MATERIALS AND TESTS. ANY CHANGE IN THE NO. 57 STONE FILL SHALL BE APPROVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEERING SECTION OF THE DIVISION OF MATERIALS AND TESTS.

SEQUENCE OF CONSTRUCTION:

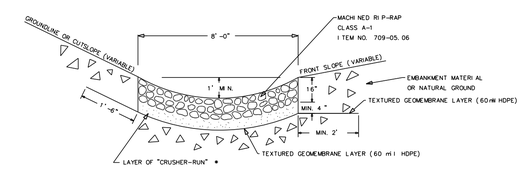
1. EXCAVATE SINKHOLE TO DEFINE OPENING IN BEDROCK MAKING SURE TO REMOVE ALL SOIL AND DEBRIS. COVER ALL EXPOSED SOIL SURFACES WITH GEOTEXTILE FABRIC (ITEM NO. 740-10.04) PRIOR TO BACKFILLING.
2. FIT THE OPENING WITH KEYSTONE ROCK, WHICH SHALL BE OF SUFFICIENT SIZE TO LOCK IN PLACE WITHOUT CREATING AN AIRBLOCK TO SUBSURFACE DRAINAGE.
3. BACKFILL WITH GRADED SOLID ROCK (CLASSIFICATION 203.02.02 BORROW EXCAVATION) UP TO 1-3 FEET OF EXISTING DITCHLINE GRADE.
4. PLACE GEOTEXTILE FABRIC TYPE IV ON TOP OF GRADED SOLID ROCK PLACE NO. 57 STONE ON TOP OF GEOTEXTILE FABRIC.
5. DITCH SHOULD BE LINED WITH A GEOMEMBRANE AND COVERED WITH A MINIMUM OF 16 INCHES OF MACHINED RIP-RAP (CLASS A-1) OR MATERIAL APPROVED BY HYDRAULIC DESIGN.
6. BACKFILL WITH A ROCK FILTER TO A HEIGHT OF 3.5 FT. BELOW THE TOP OF THE STANDPIPE.

   THE ROCK FILTER MATERIAL SHALL CONSIST OF A MIXTURE OF LIMESTONE SHOT ROCK AND CRUSHED STONE TO MEET THE FOLLOWING GRADATION:

SIZE RANGE (ALONG ITS MAXIMUM DIMENSION)	VOLUME
2'-1'	60-40%
1'-6"	40-20%
6"-2"	20-10%
LESS THAN 2"	5-0%

7. THE ROCK FILTER MATERIAL SHALL BE PLACED WITH A CLAMSHELL. NO END DUMPING WILL BE PERMITTED.

GEOMEMBRANE LINED RIP-RAP DITCH



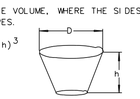
DETAIL A

ITEM NO. 203-02.02 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.

EQUATION FOR ESTIMATING SINKHOLE VOLUME, WHERE THE SIDES OF THE SINKHOLE ARE AT 1:1 SLOPES.

$$\text{VOL. } 1:1 \approx 0.13D^3 - (0.5D - h)^3$$



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SINKHOLE STANDARD DRAWINGS

SINKHOLE TREATMENT ILLUSTRATIONS

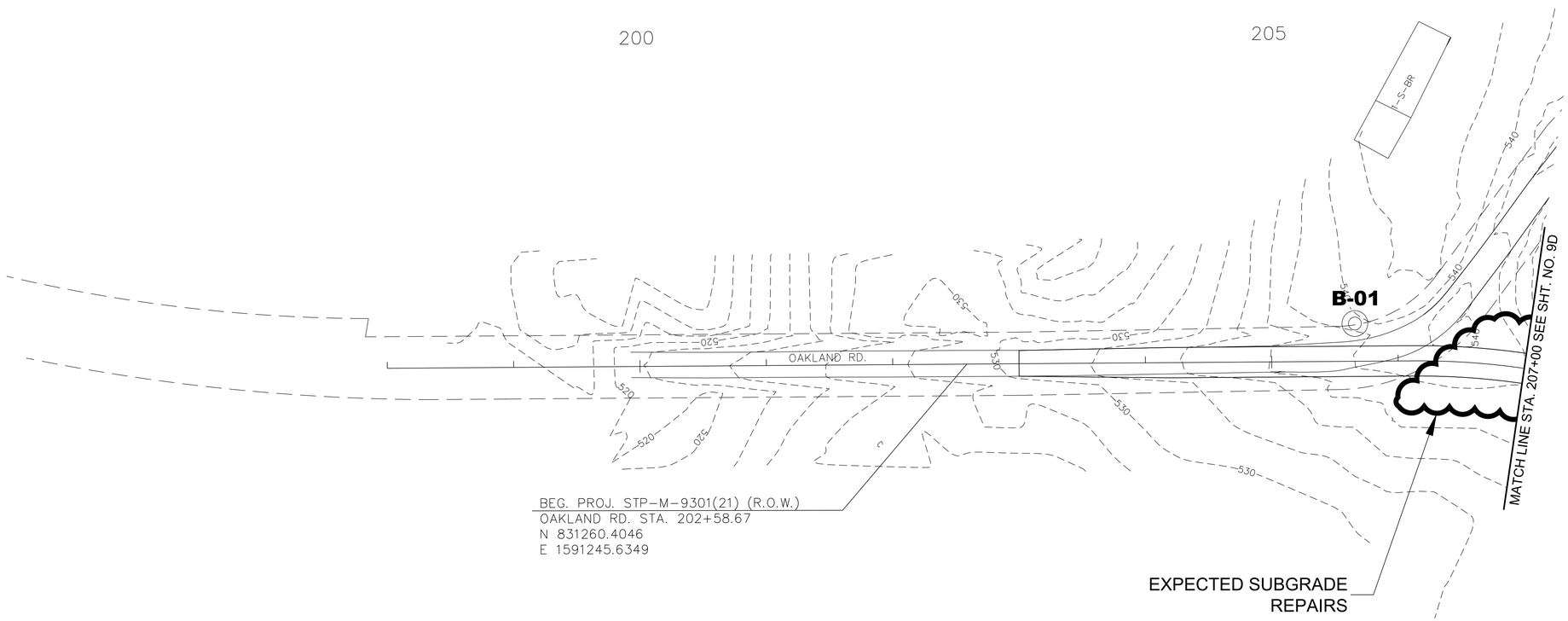
1, 1A, 2, 2A, 3, 4 AND 5

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

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	19B

B-11 Soil Boring Location and Identifier

BORING LOCATIONS				
BORING NO.	STATION	OFFSET	DEPTH	REFUSAL
B-01	205+66	30' LT	20 ft.	NONE



FOR PLANNING PURPOSES, WE HAVE IDENTIFIED AREAS OF EXPECTED REPAIRS. HOWEVER, THE ACTUAL REPAIR LOCATIONS AND TOTAL QUANTITIES CAN ONLY BE DETERMINED BASED ON THE ACTUAL CONDITIONS ENCOUNTERED IN THE FIELD DURING CONSTRUCTION ACTIVITIES. REFER TO GEOTECHNICAL NOTES AND SOILS TYPICAL SECTION (STATION 205+50) FOR ADDITIONAL INFORMATION.

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00006 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

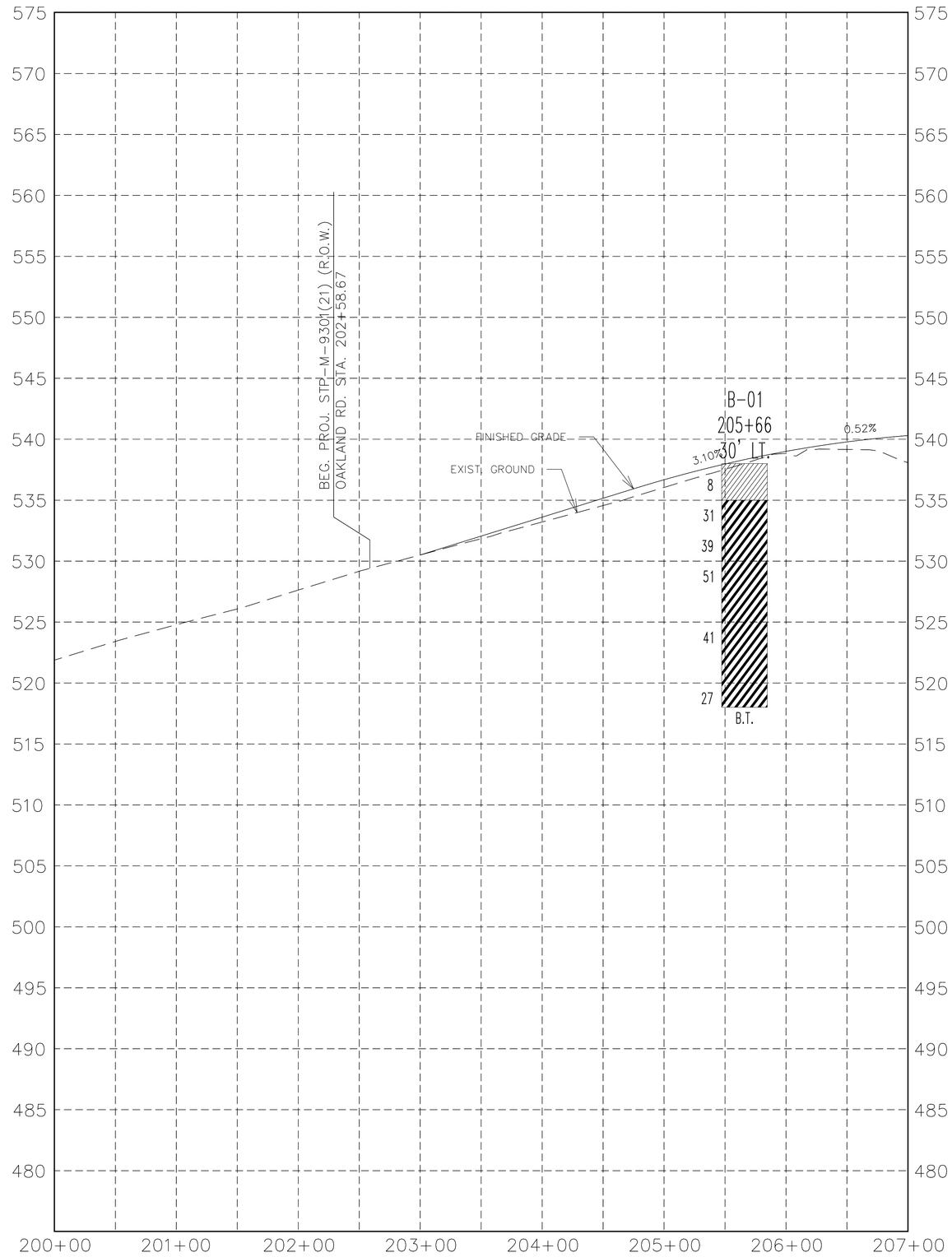
BORING LAYOUT

BEGIN PROJ. TO STA. 207+00

SCALE: 1"=50'

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

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	19C



Existing Ground at Centerline
Proposed Grade at Centerline

Water level at time of boring
Delayed water level
Cave-in depth

AR = Auger Refusal BT = Boring Terminated

Bore Holes are Projected onto Centerlne Profile

Lean Clay
Fat Clay
Fill
Overburden
Topsoil
Weathered Limestone

BORING LOCATIONS				
BORING NO.	STATION	OFFSET	DEPTH	REFUSAL
B-01	205+66	30' LT	20 ft.	NONE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

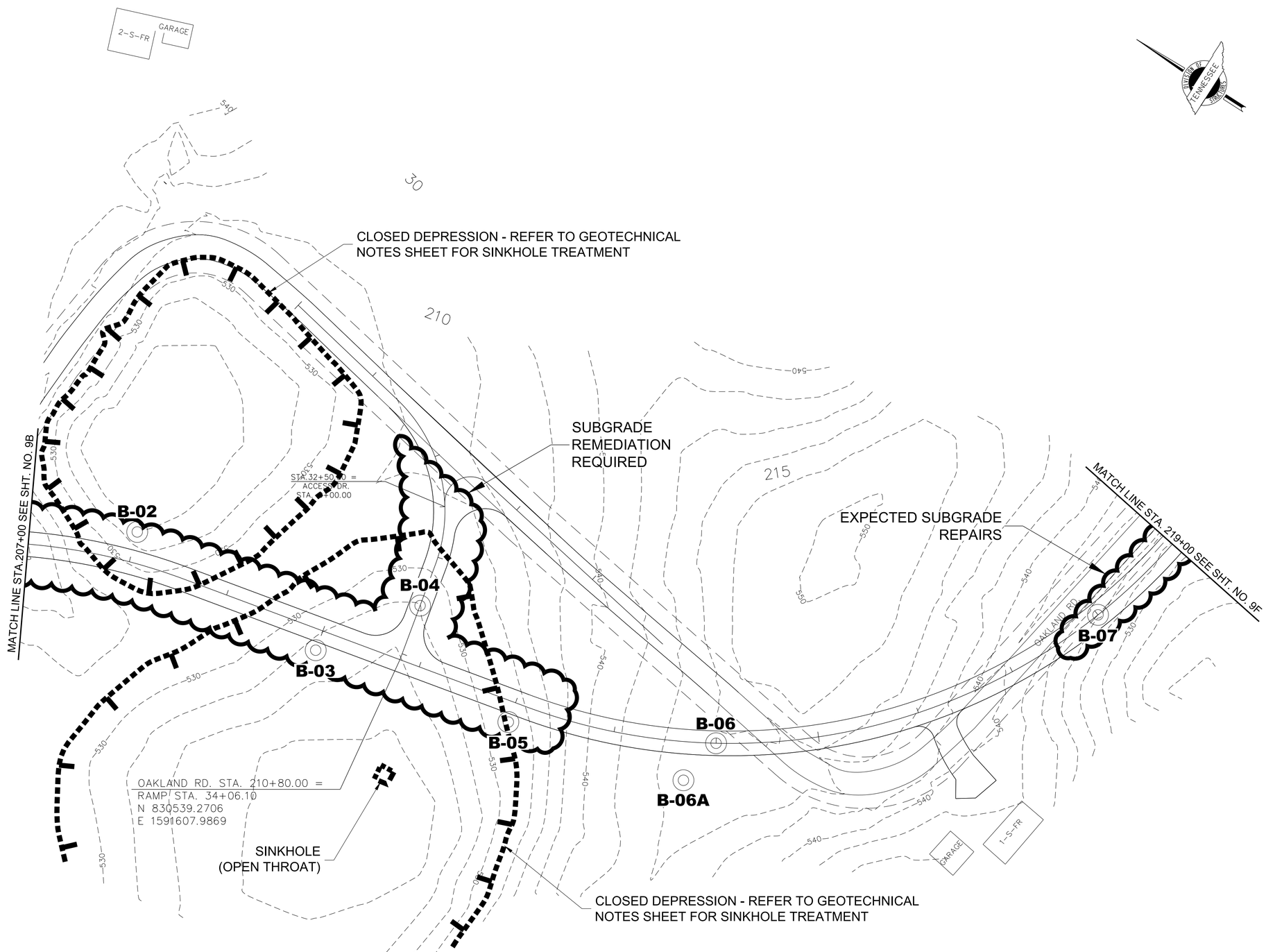
BORING PROFILE

BEGIN PROJ. TO STA. 207+00

SCALE:
1"=50' HORIZONTAL
1"=5' VERTICAL

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

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	19D



B-11 Soil Boring Location and Identifier

BORING LOCATIONS				
BORING NO.	STATION	OFFSET	DEPTH	REFUSAL
B-02	208+00	30' LT	40 ft.	NONE
B-03	210+00	20' RT	30 ft.	NONE
B-04	210+80*	56' LT*	50 ft.	NONE
B-05	212+00	20' RT	49.4 ft.	49.4 ft.
B-06	214+00	CL	10 ft.	10 ft.
B-06A	213+71	38' RT	25 ft.	NONE
B-07	218+00	CL	10 ft.	NONE

* RAMP STATION 33+50 AT CL

FOR PLANNING PURPOSES, WE HAVE IDENTIFIED AREAS OF EXPECTED REPAIRS. HOWEVER, THE ACTUAL REPAIR LOCATIONS AND TOTAL QUANTITIES CAN ONLY BE DETERMINED BASED ON THE ACTUAL CONDITIONS ENCOUNTERED IN THE FIELD DURING CONSTRUCTION ACTIVITIES. REFER TO GEOTECHNICAL NOTES AND SOILS TYPICAL SECTION (STATIONS 210+00 AND 218+00) FOR ADDITIONAL INFORMATION.

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00006 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

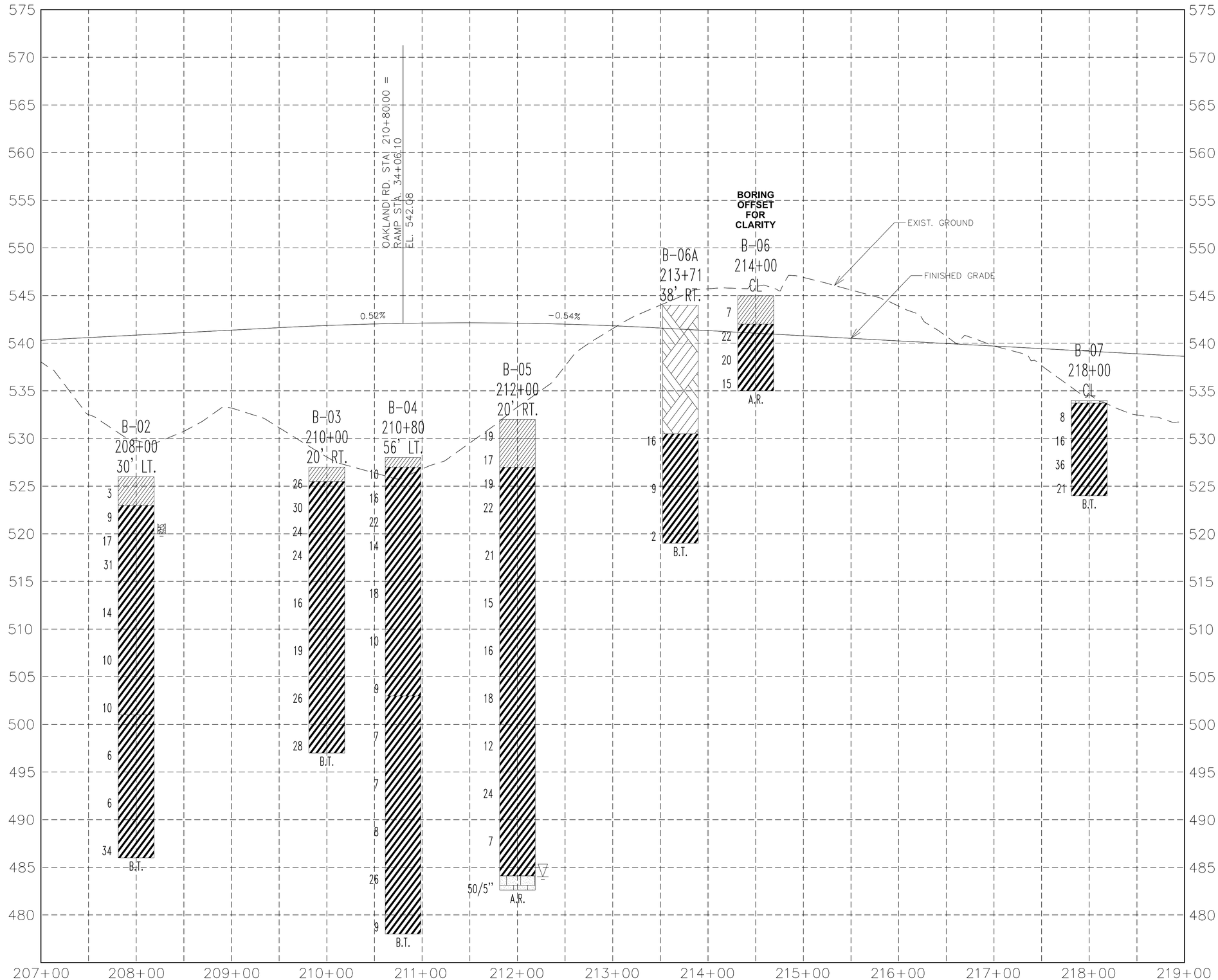
BORING LAYOUT

STA. 207+00 TO STA. 219+00

SCALE: 1"=50'

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

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	19E



Existing Ground at Centerline
Proposed Grade at Centerline

Water level at time of boring
Delayed water level
Cave-in depth

AR = Auger Refusal BT = Boring Terminated

Bore Holes are Projected onto Centerlne Profile

Lean Clay
Fat Clay
Fill
Overburden
Topsoil
Weathered Limestone

BORING LOCATIONS				
BORING NO.	STATION	OFFSET	DEPTH	REFUSAL
B-02	208+00	30' LT	40 ft.	NONE
B-03	210+00	20' RT	30 ft.	NONE
B-04	210+80*	56' LT*	50 ft.	NONE
B-05	212+00	20' RT	49.4 ft.	49.4 ft.
B-06	214+00	CL	10 ft.	10 ft.
B-06A	213+71	38' RT	25 ft.	NONE
B-07	218+00	CL	10 ft.	NONE

* RAMP STATION 33+50 AT CL

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BORING PROFILE

STA. 207+00 TO STA. 219+00

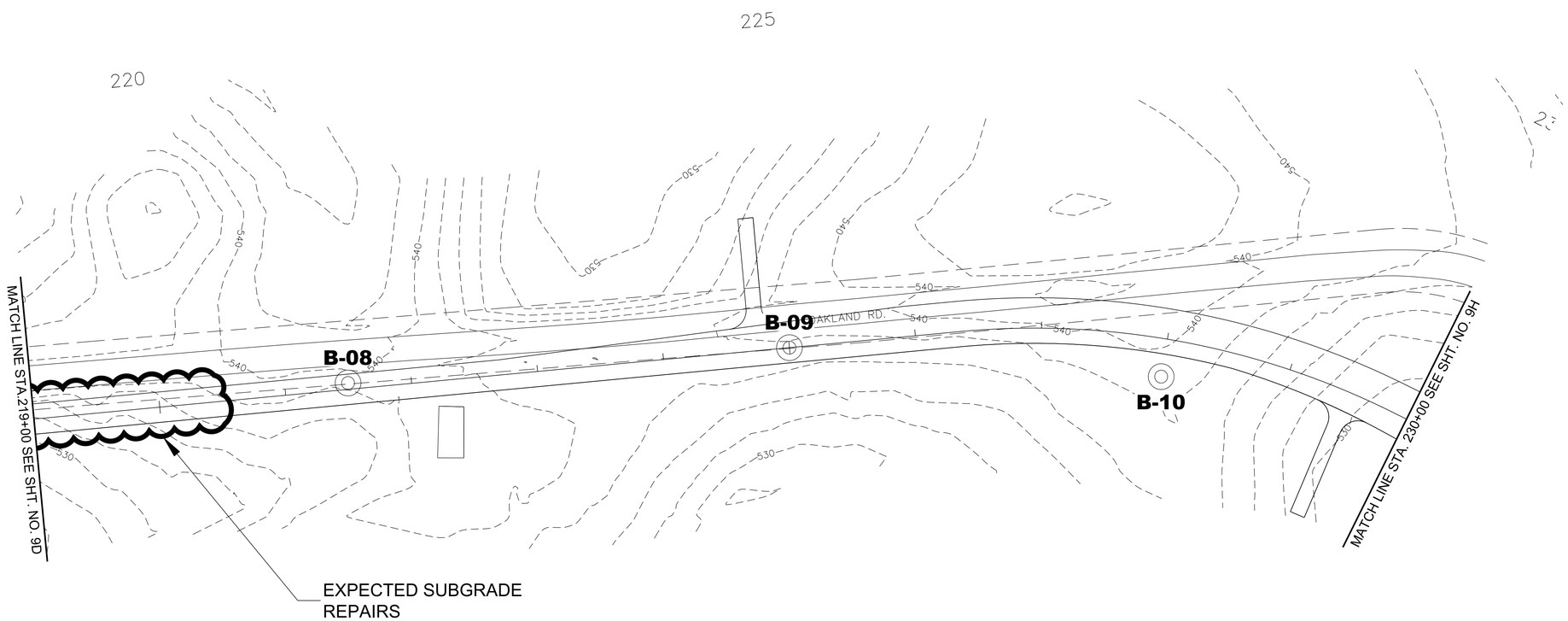
SCALE:
1"=50' HORIZONTAL
1"=5' VERTICAL

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

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	19F

B-11 Soil Boring Location and Identifier

BORING LOCATIONS				
BORING NO.	STATION	OFFSET	DEPTH	REFUSAL
B-08	221+50	5' LT	15 ft.	NONE
B-09	225+00	CL	10 ft.	10 ft.
B-10	228+00	30' RT	25 ft.	NONE



FOR PLANNING PURPOSES, WE HAVE IDENTIFIED AREAS OF EXPECTED REPAIRS. HOWEVER, THE ACTUAL REPAIR LOCATIONS AND TOTAL QUANTITIES CAN ONLY BE DETERMINED BASED ON THE ACTUAL CONDITIONS ENCOUNTERED IN THE FIELD DURING CONSTRUCTION ACTIVITIES. REFER TO GEOTECHNICAL NOTES AND SOILS TYPICAL SECTION (STATION 218+00) FOR ADDITIONAL INFORMATION.

SUMMARY OF SOIL LABORATORY TESTS											
Boring No.	Sample Depth (ft)	Station Location	Description	Proctor Maximum Dry Density (PCF)	Optimum Moisture (%)	Compactible Moisture Range (%)	LL	PI	AASHTO Classification	USCS Classification	CBR Value
B-09	0.5-4.0	Station 225+00, CL	Fat Clay with sand, yellowish brown	99.3	22.5	20.0 to 25.5	64	45	A-7-6	CH	n/a
B-10	3.0-7.0	Station 228+00, 30 feet RT	Lean Clay, yellowish red	107.1	18.9	17.0 to 21.9	41	21	A-7-6	CL	3

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00006 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

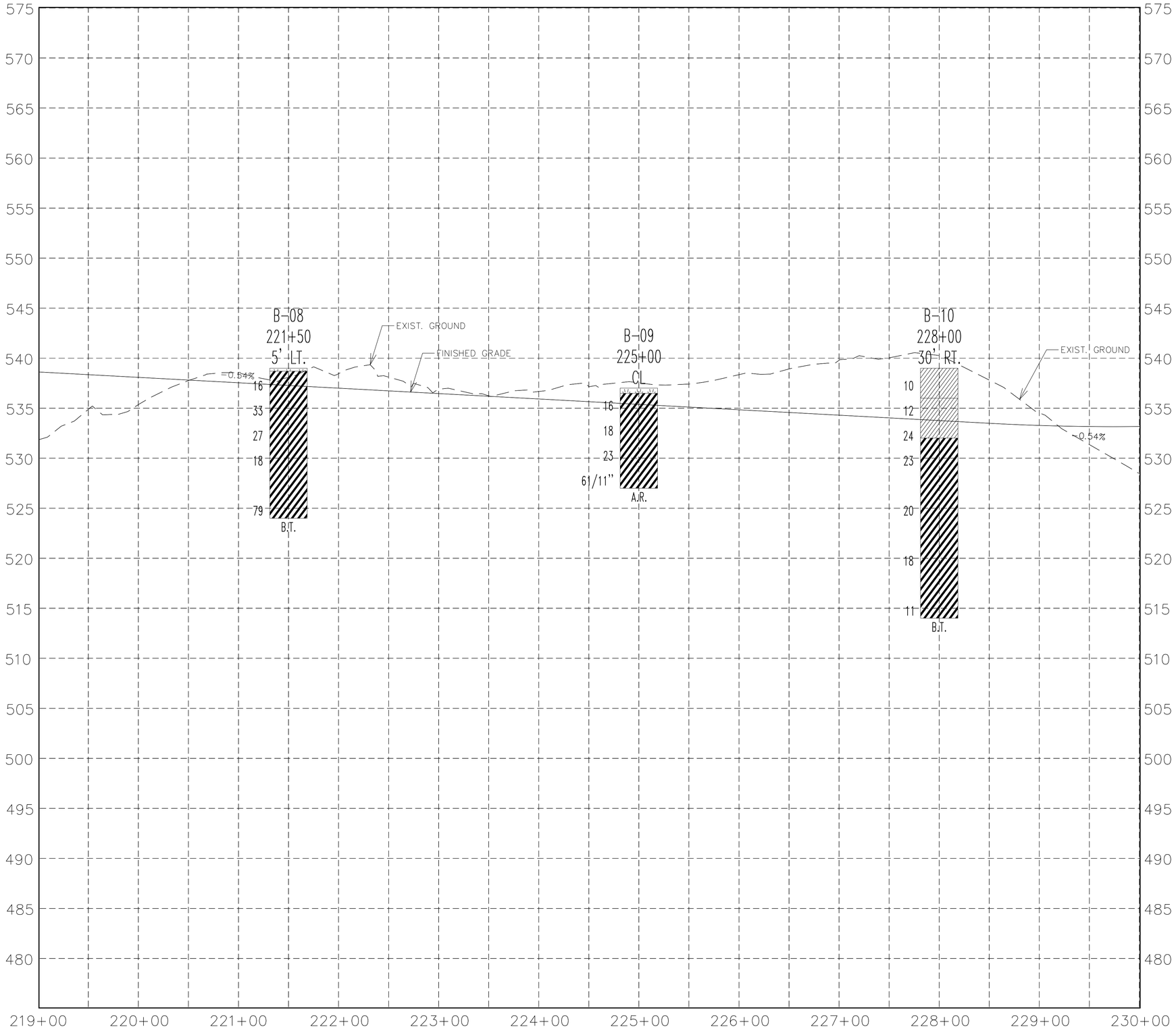
BORING LAYOUT

STA. 219+00 TO STA. 230+00

SCALE: 1"=50'

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

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	19G



Existing Ground at Centerline

Proposed Grade at Centerline

Water level at time of boring

Delayed water level

Cave-in depth

AR = Auger Refusal BT = Boring Terminated

Bore Holes are Projected onto Centerlne Profile

Lean Clay

Fat Clay

Fill

Overburden

Topsoil

Weathered Limestone

BORING LOCATIONS				
BORING NO.	STATION	OFFSET	DEPTH	REFUSAL
B-08	221+50	5' LT	15 ft.	NONE
B-09	225+00	CL	10 ft.	10 ft.
B-10	228+00	30' RT	25 ft.	NONE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

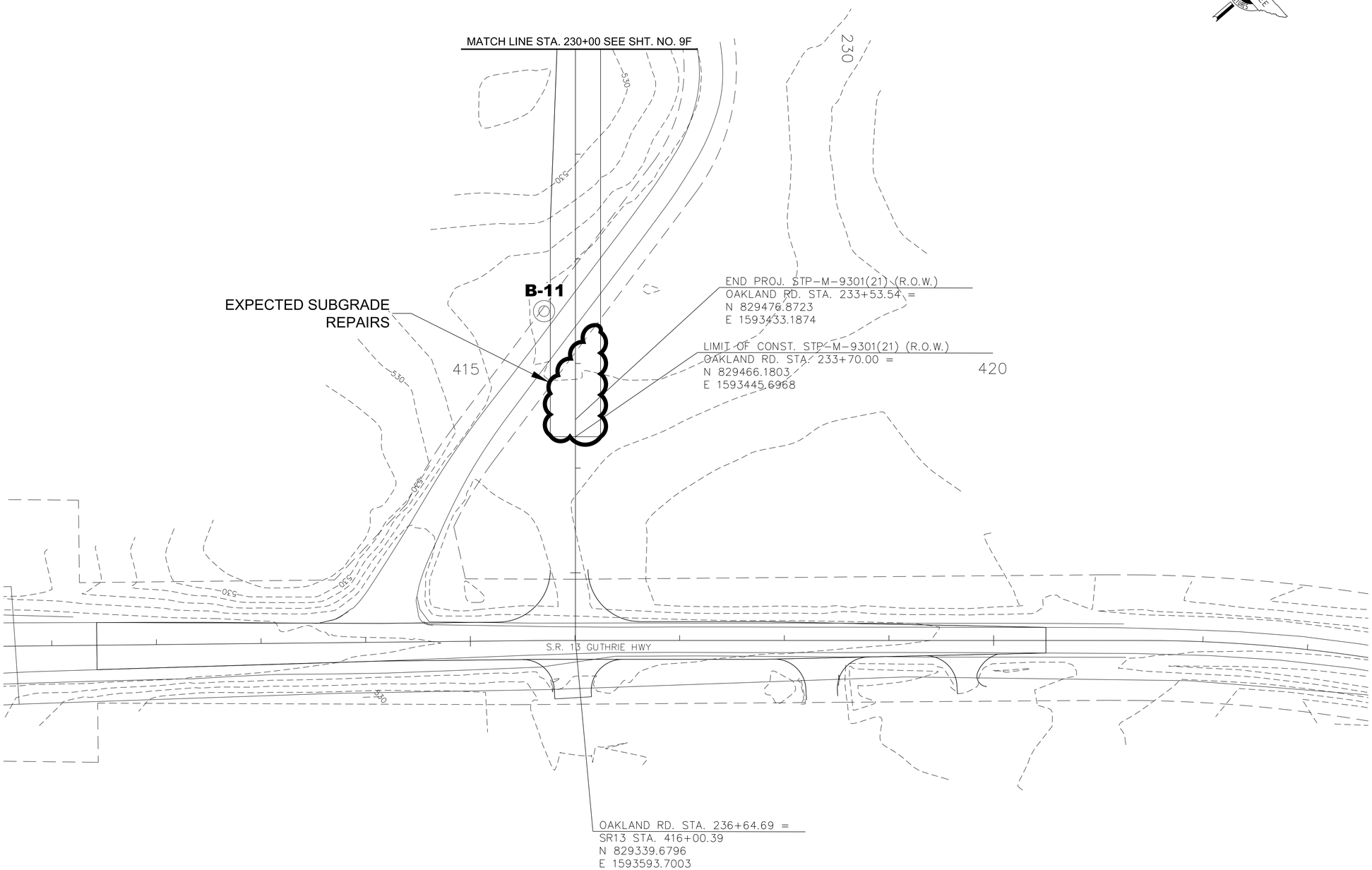
BORING PROFILE

STA. 219+00 TO STA. 230+00

SCALE:
1"=50' HORIZONTAL
1"=5' VERTICAL

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

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	19H



B-11 Soil Boring Location and Identifier

BORING LOCATIONS				
BORING NO.	STATION	OFFSET	DEPTH	REFUSAL
B-11	232+50	30' RT	20 ft.	NONE

FOR PLANNING PURPOSES, WE HAVE IDENTIFIED AREAS OF EXPECTED REPAIRS. HOWEVER, THE ACTUAL REPAIR LOCATIONS AND TOTAL QUANTITIES CAN ONLY BE DETERMINED BASED ON THE ACTUAL CONDITIONS ENCOUNTERED IN THE FIELD DURING CONSTRUCTION ACTIVITIES. REFER TO GEOTECHNICAL NOTES AND SOILS TYPICAL SECTION (STATION 232+50) FOR ADDITIONAL INFORMATION.

COORDINATES ARE NAD/83(1995), ARE DATUM ADJUSTED BY THE FACTOR OF 1.00006 AND TIED TO THE TGRN. ALL ELEVATIONS ARE REFERENCED TO THE NAVD 1988.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BORING LAYOUT

STA. 230+00 TO END PROJ.

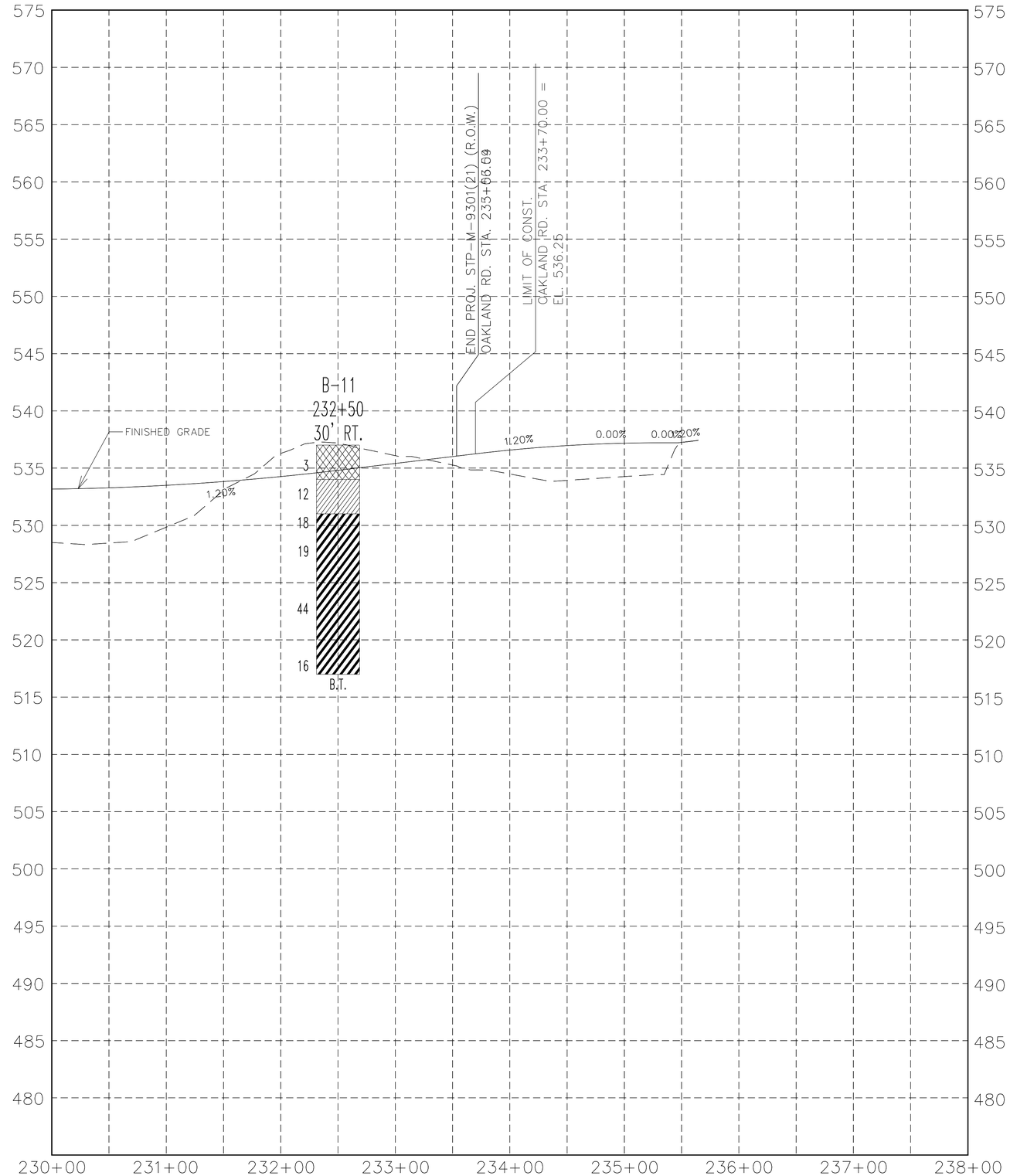
SCALE: 1"=50'

TENNESSEE D.O.T.

DESIGN DIVISION

FILE NO.

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	19I



Existing Ground at Centerline

Proposed Grade at Centerline

Water level at time of boring

Delayed water level

Cave-in depth

AR = Auger Refusal BT = Boring Terminated

Bore Holes are Projected onto Centerlne Profile

Lean Clay

Fat Clay

Fill

Overburden

Topsoil

Weathered Limestone

BORING LOCATIONS				
BORING NO.	STATION	OFFSET	DEPTH	REFUSAL
B-11	232+50	30' RT	20 ft.	NONE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

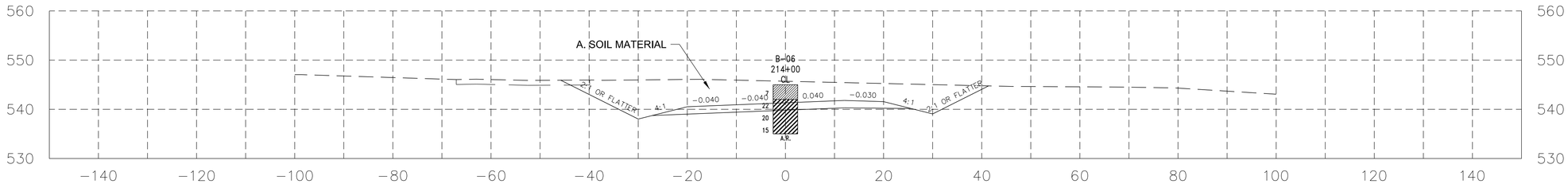
BORING PROFILE

STA. 230+00 TO END PROJ.

SCALE:
1"=50' HORIZONTAL
1"=5' VERTICAL

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

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	19J



STATION 214+00

STA. 213+00 TO STA. 217+00

Existing Ground at Centerline

Proposed Grade at Centerline

Water level at time of boring

Delayed water level

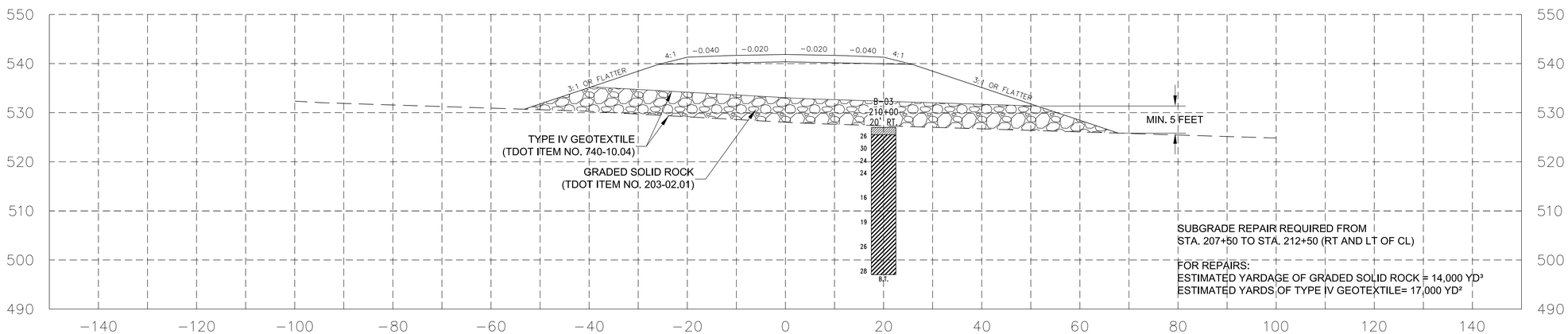
Cave-in depth

AR = Auger Refusal BT = Boring Terminated

Lean Clay

Fat Clay

Fill



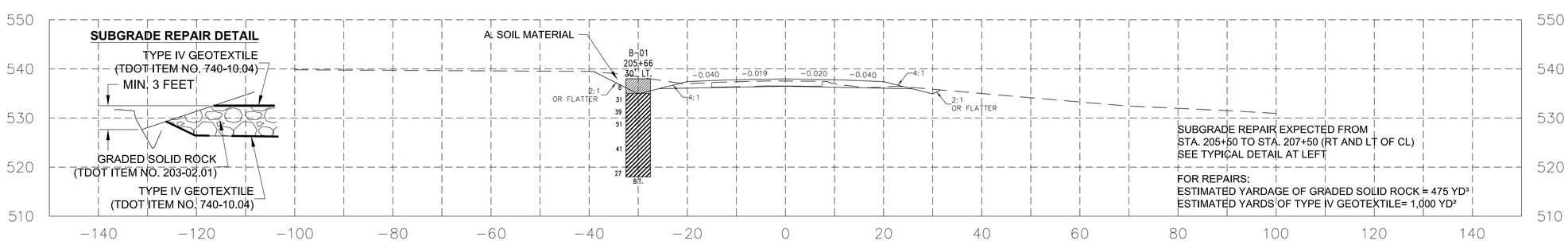
STATION 210+00

STA. 206+50 TO STA. 213+00

4-203.02 DEFINITION OF TERMS USED FOR EARTHWORK GRADING CALCULATIONS

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, water, 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: The typical cross-sections are based on a limited number of individual borings and with the assumption that the materials exposed therein represent conditions across the site. It is possible that different conditions could exist between explored locations. Therefore, the station for the typical cross-sections should be considered approximate.



STATION 205+50

BEGIN PROJ. TO STA. 206+50

FOR PLANNING PURPOSES, WE HAVE IDENTIFIED AREAS OF EXPECTED REPAIRS. HOWEVER, THE ACTUAL REPAIR LOCATIONS AND TOTAL QUANTITIES CAN ONLY BE DETERMINED BASED ON THE ACTUAL CONDITIONS ENCOUNTERED IN THE FIELD DURING CONSTRUCTION ACTIVITIES.

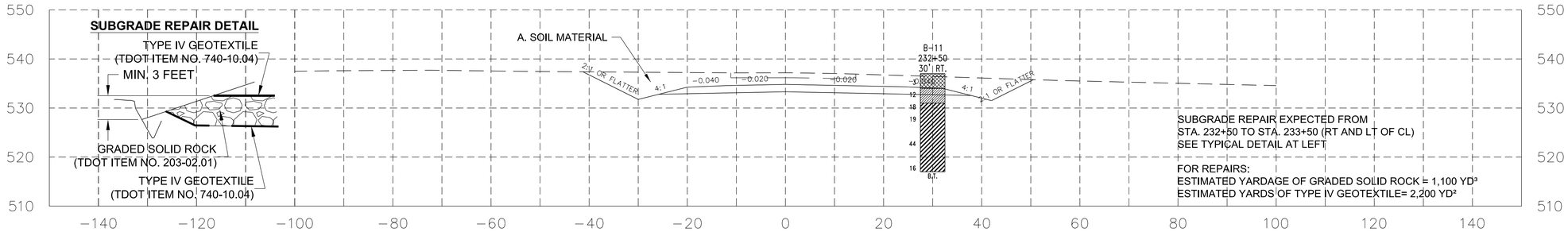
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS TYPICAL SECTIONS

SCALE:
1"=12' HORIZONTAL
1"=12' VERTICAL

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

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	19K



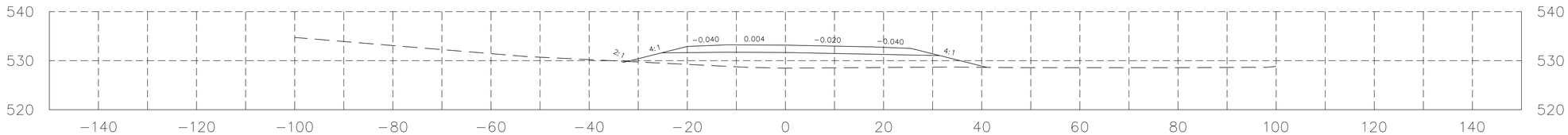
STATION 232+50

STA. 231+50 TO END PROJ.

SUBGRADE REPAIR EXPECTED FROM
STA. 232+50 TO STA. 233+50 (RT AND LT OF CL)
SEE TYPICAL DETAIL AT LEFT

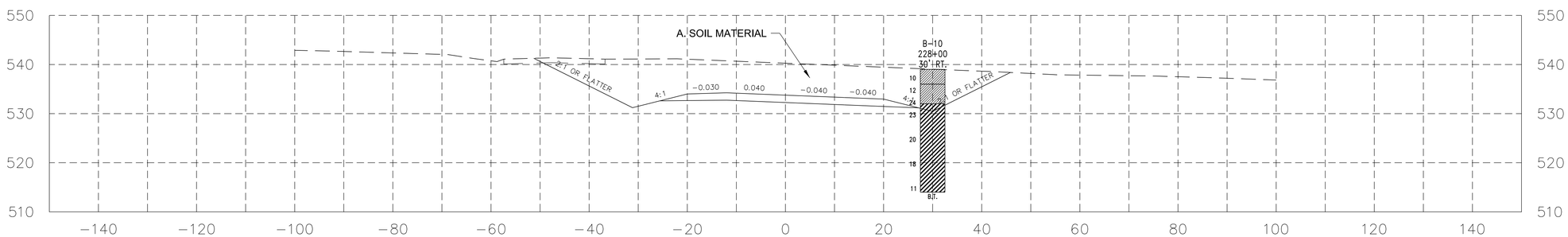
FOR REPAIRS:
ESTIMATED YARDAGE OF GRADED SOLID ROCK = 1,100 YD³
ESTIMATED YARDS OF TYPE IV GEOTEXTILE= 2,200 YD²

FOR PLANNING PURPOSES, WE HAVE IDENTIFIED AREAS OF EXPECTED REPAIRS. HOWEVER, THE ACTUAL REPAIR LOCATIONS AND TOTAL QUANTITIES CAN ONLY BE DETERMINED BASED ON THE ACTUAL CONDITIONS ENCOUNTERED IN THE FIELD DURING CONSTRUCTION ACTIVITIES.



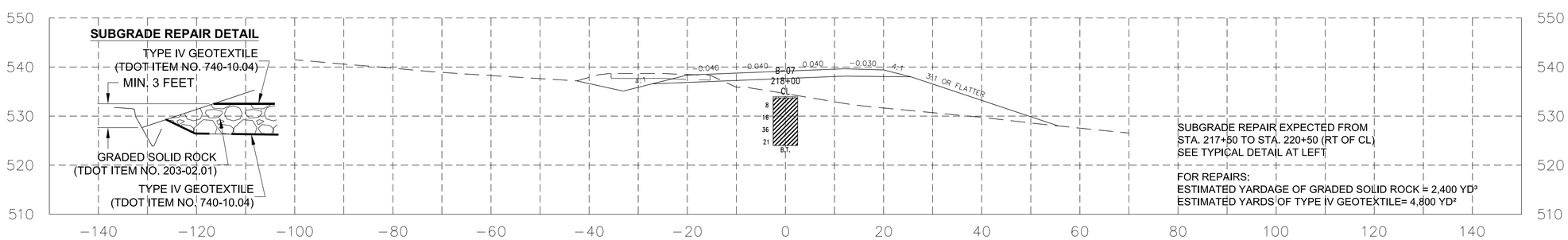
STATION 230+00

STA. 229+50 TO STA. 231+50



STATION 228+00

STA. 220+50 TO STA. 229+50



STATION 218+00

STA. 217+00 TO STA. 220+50

SUBGRADE REPAIR EXPECTED FROM
STA. 217+50 TO STA. 220+50 (RT OF CL)
SEE TYPICAL DETAIL AT LEFT

FOR REPAIRS:
ESTIMATED YARDAGE OF GRADED SOLID ROCK = 2,400 YD³
ESTIMATED YARDS OF TYPE IV GEOTEXTILE= 4,800 YD²

FOR PLANNING PURPOSES, WE HAVE IDENTIFIED AREAS OF EXPECTED REPAIRS. HOWEVER, THE ACTUAL REPAIR LOCATIONS AND TOTAL QUANTITIES CAN ONLY BE DETERMINED BASED ON THE ACTUAL CONDITIONS ENCOUNTERED IN THE FIELD DURING CONSTRUCTION ACTIVITIES.

Existing Ground at Centerline
Proposed Grade at Centerline

Water level at time of boring
Delayed water level
Cave-in depth

AR = Auger Refusal BT = Boring Terminated

Lean Clay
Fat Clay
Fill

4-203.02 DEFINITION OF TERMS USED FOR EARTHWORK GRADING CALCULATIONS

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, water, 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: The typical cross-sections are based on a limited number of individual borings and with the assumption that the materials exposed therein represent conditions across the site. It is possible that different conditions could exist between explored locations. Therefore, the station for the typical cross-sections should be considered approximate.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS TYPICAL SECTIONS

SCALE:
1"=12' HORIZONTAL
1"=12' VERTICAL

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

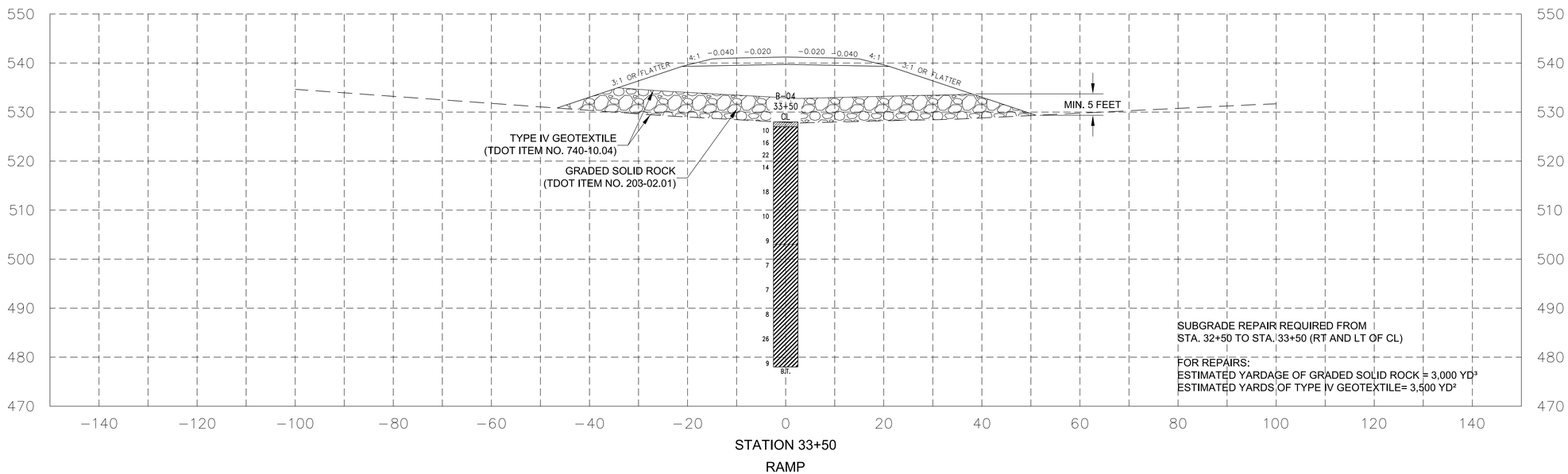
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-9301(21)	19L

Existing Ground at Centerline
Proposed Grade at Centerline

Water level at time of boring
Delayed water level
Cave-in depth

AR = Auger Refusal BT = Boring Terminated

Lean Clay
Fat Clay
Fill



4-203.02 DEFINITION OF TERMS USED FOR EARTHWORK GRADING CALCULATIONS

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, water, 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: The typical cross-sections are based on a limited number of individual borings and with the assumption that the materials exposed therein represent conditions across the site. It is possible that different conditions could exist between explored locations. Therefore, the station for the typical cross-sections should be considered approximate.

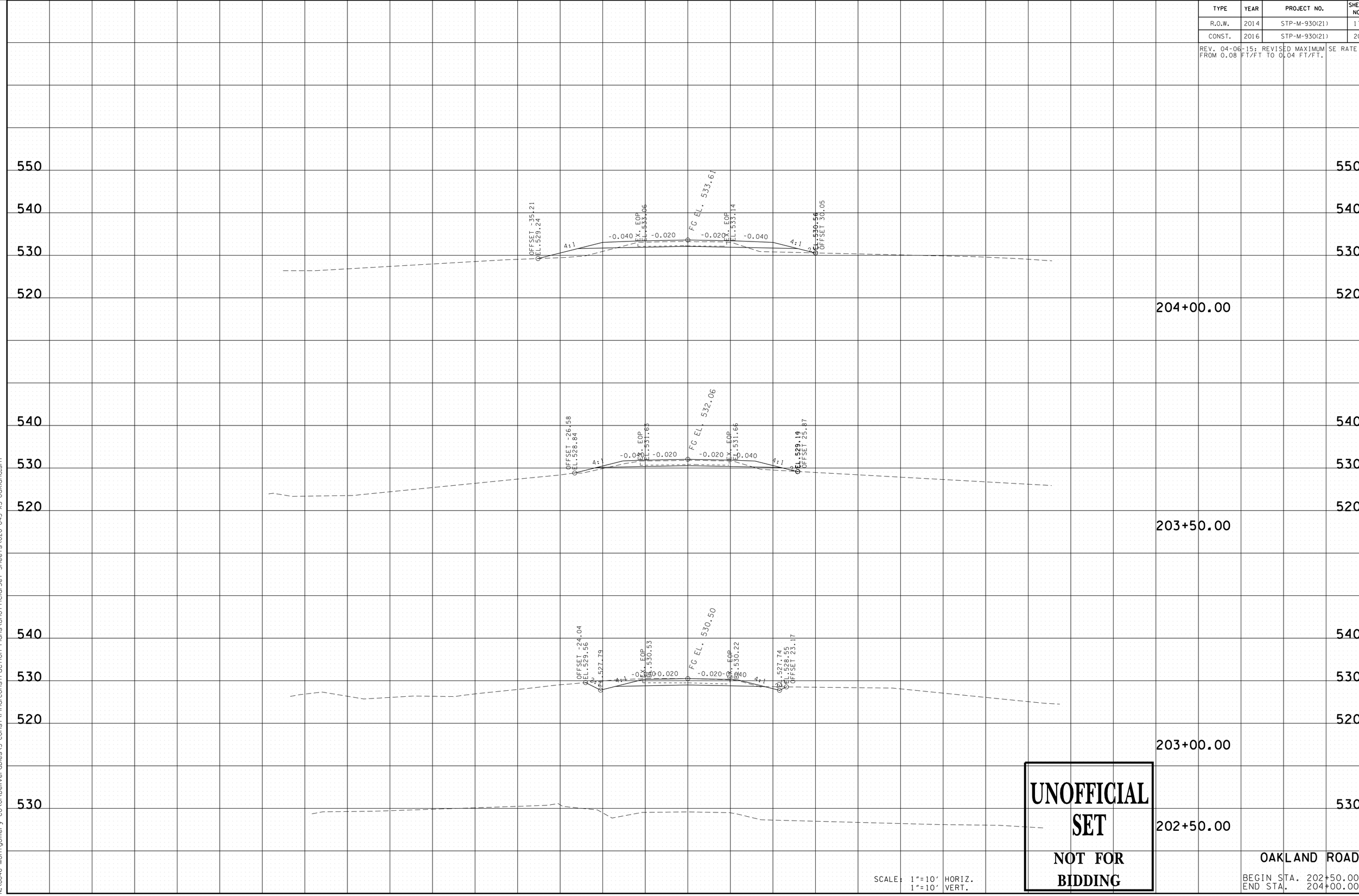
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SOILS TYPICAL SECTIONS

SCALE:
1"=12' HORIZONTAL
1"=12' VERTICAL

TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	17
CONST.	2016	STP-M-930(21)	20

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 202+50.00
END STA. 204+00.00

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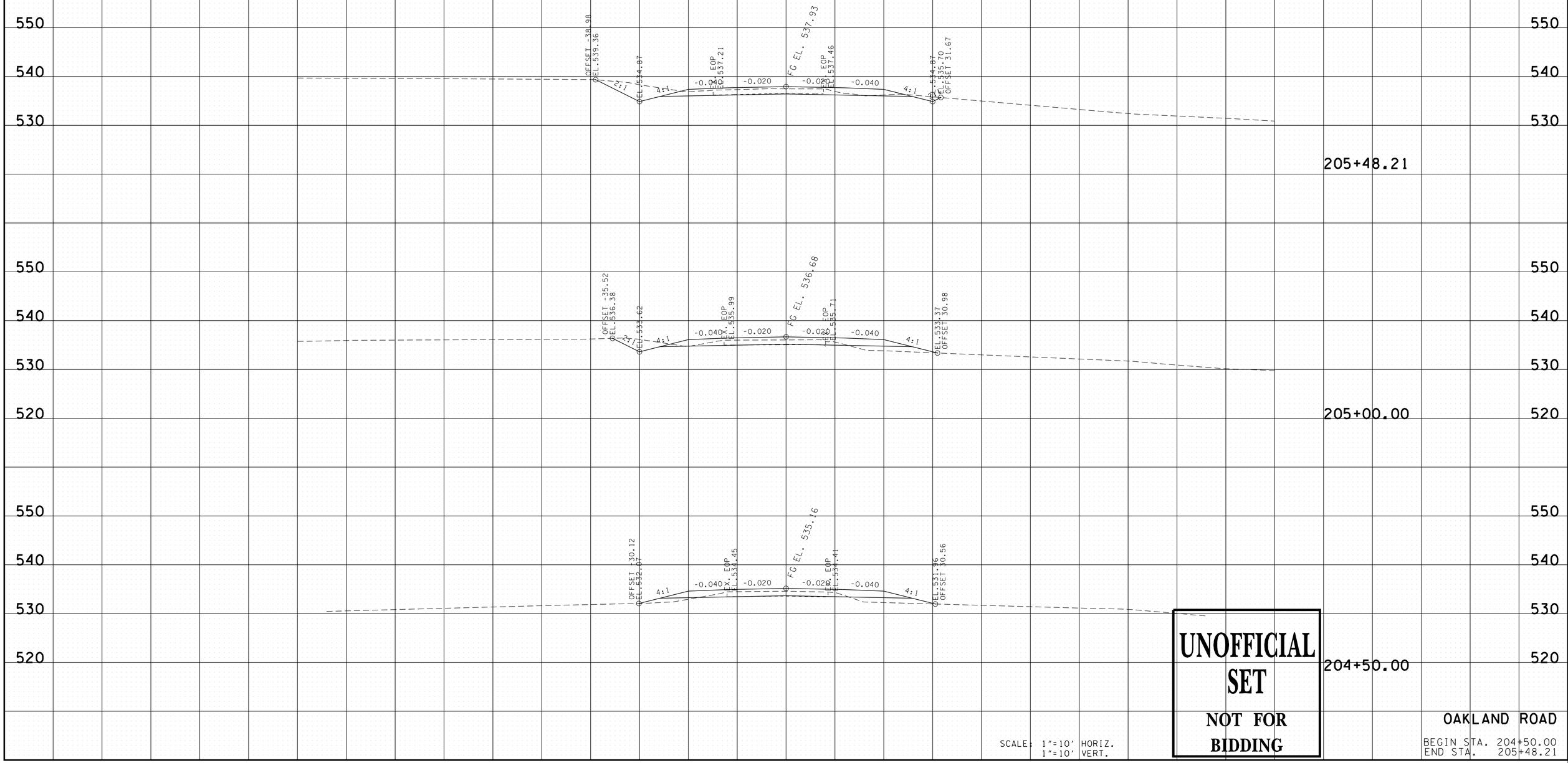
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	18
CONST.	2016	STP-M-930(21)	21

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 204+50.00
END STA. 205+48.21

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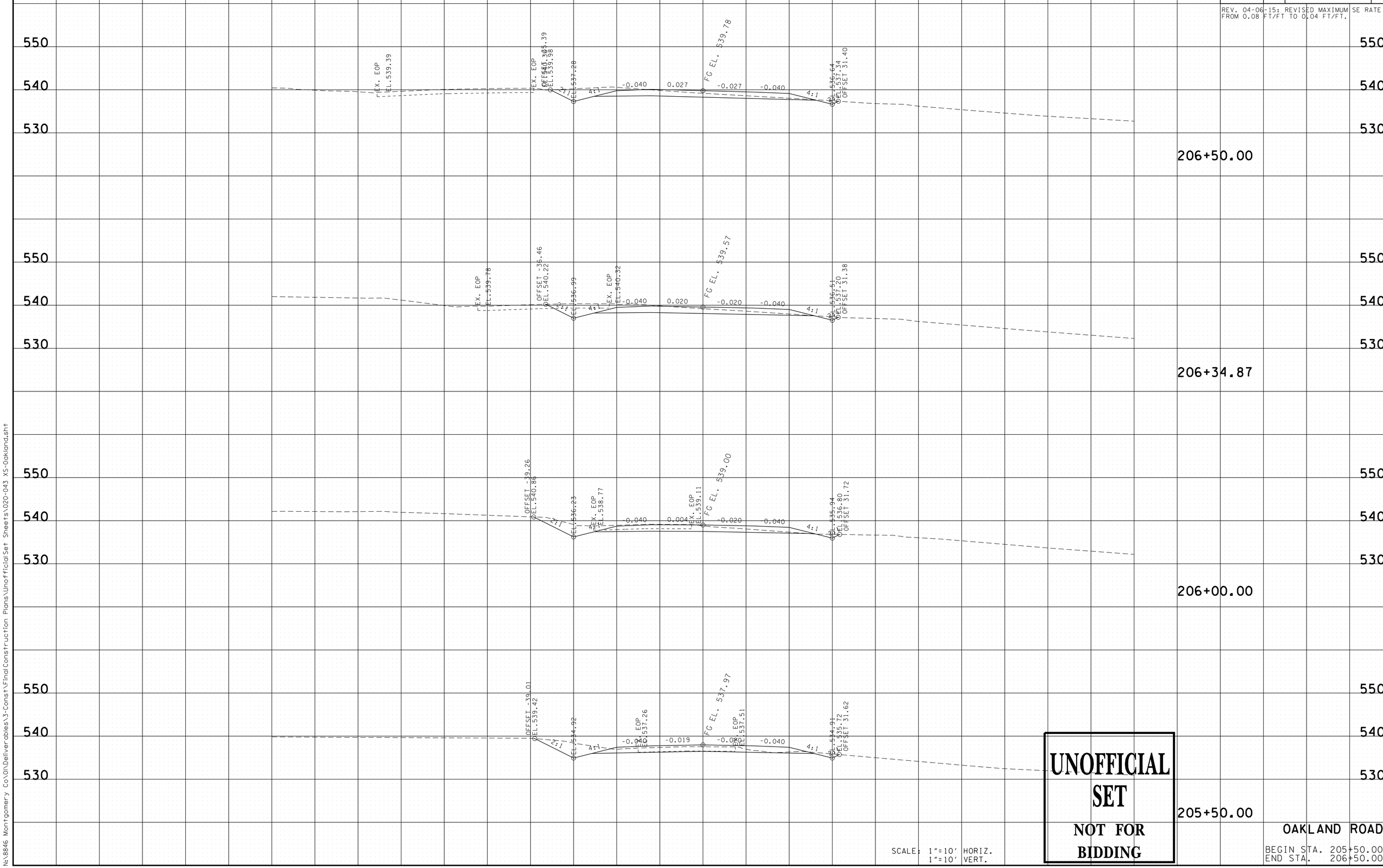
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	19
CONST.	2016	STP-M-930(21)	22

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 205+50.00
END STA. 206+50.00

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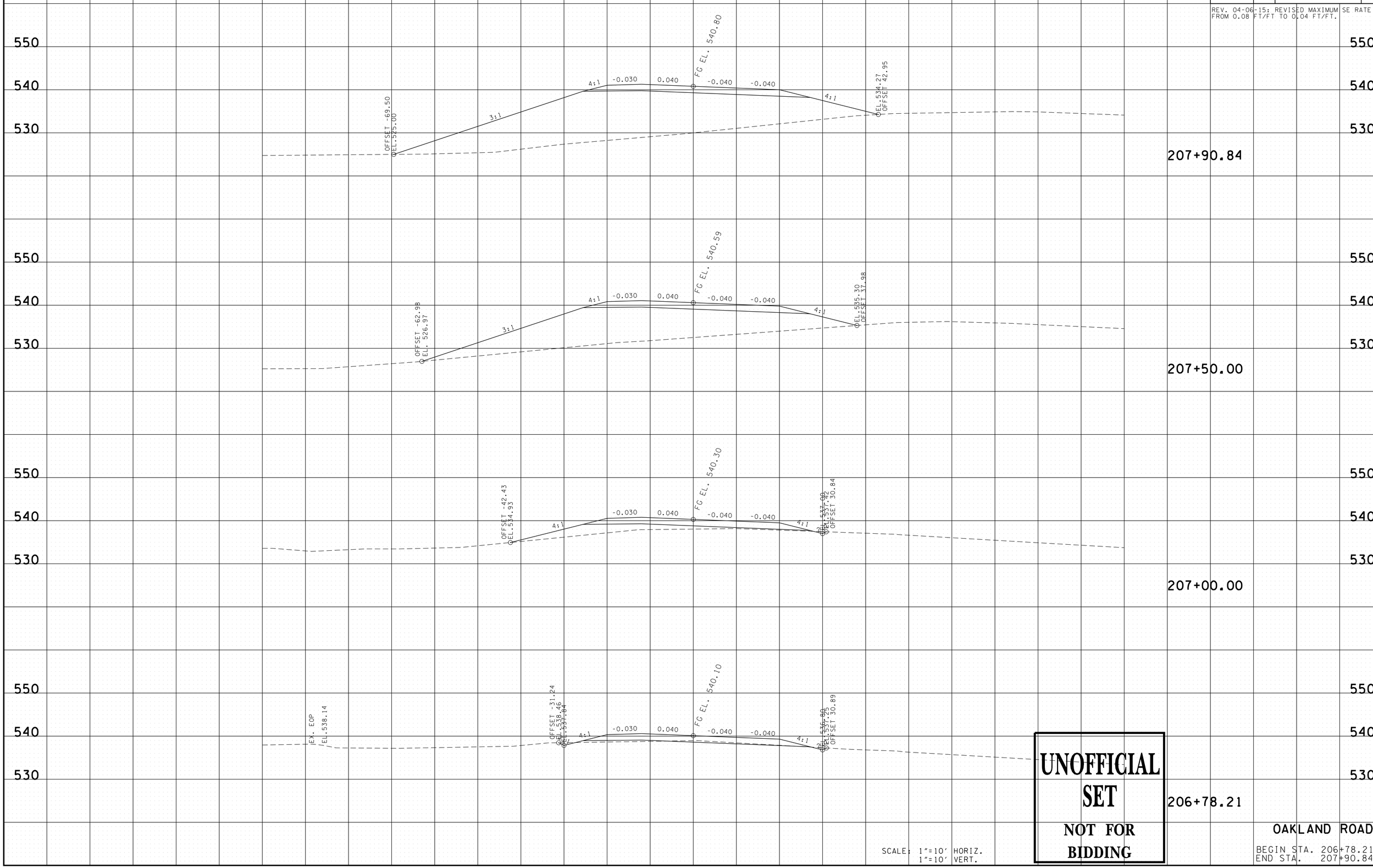
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	20
CONST.	2016	STP-M-930(21)	23

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 206+78.21
END STA. 207+90.84

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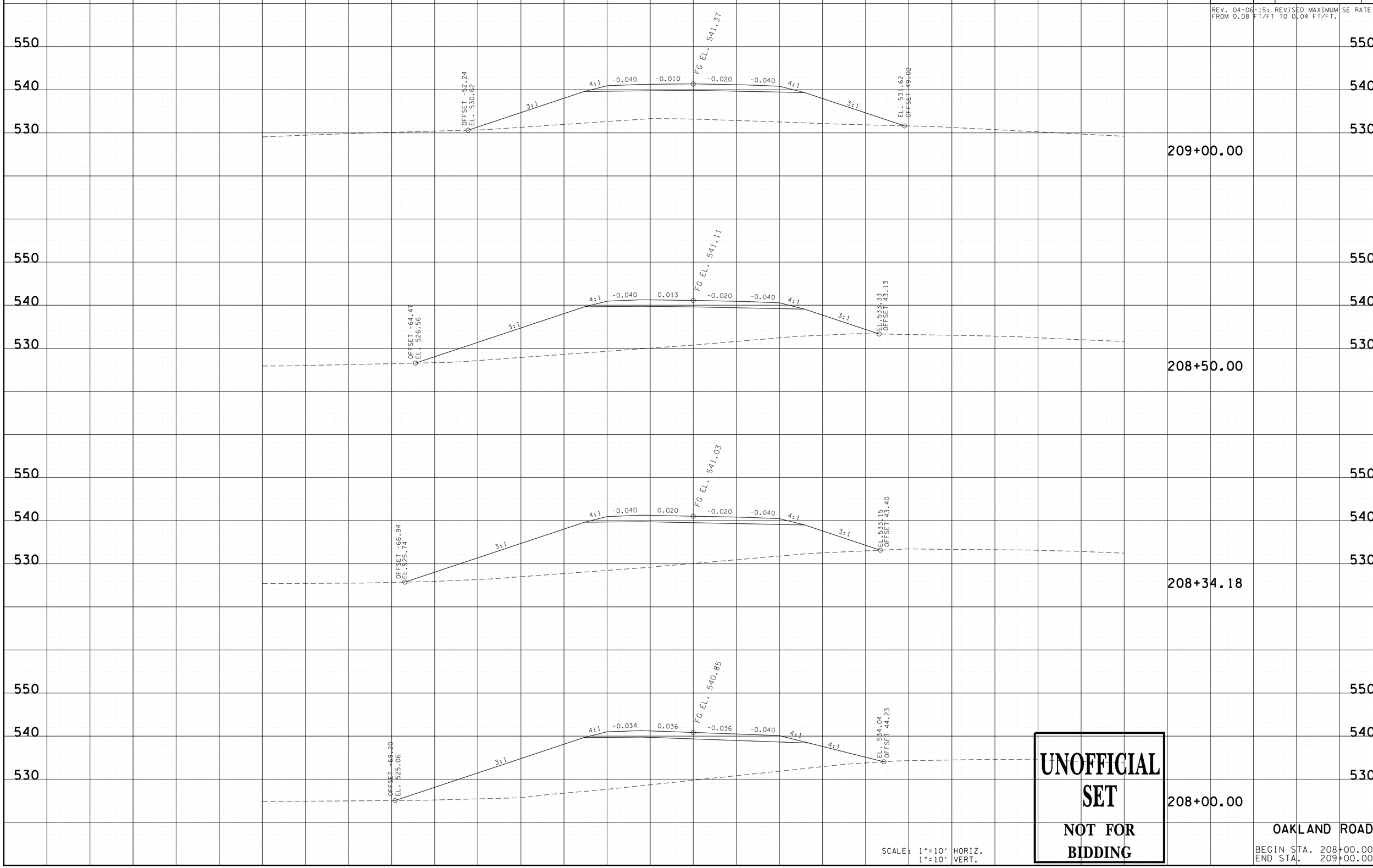
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	21
CONST.	2016	STP-M-930(21)	24

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 208+00.00
END STA. 209+00.00

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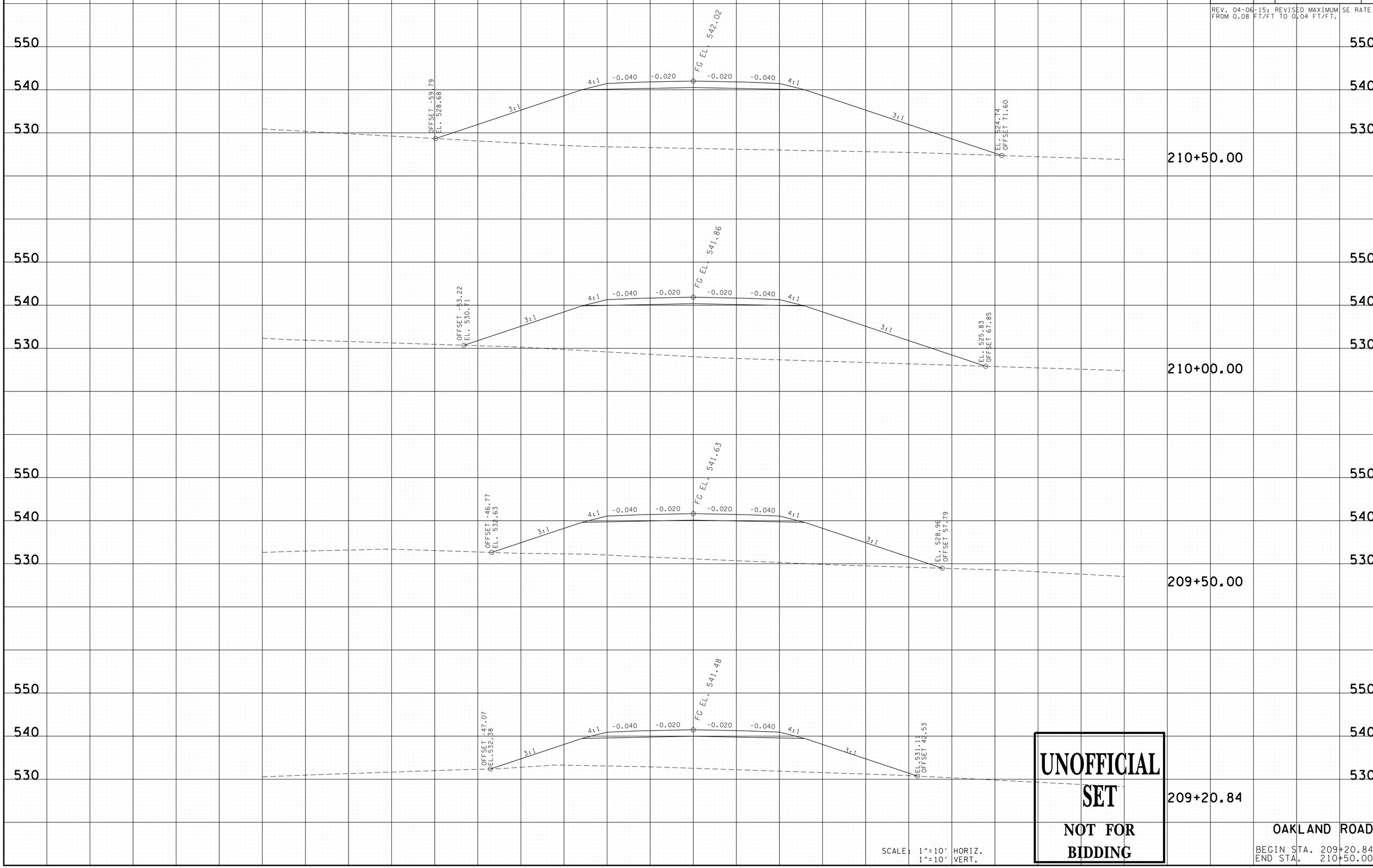
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	22
CONST.	2016	STP-M-930(21)	25

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 209+20.84
END STA. 210+50.00

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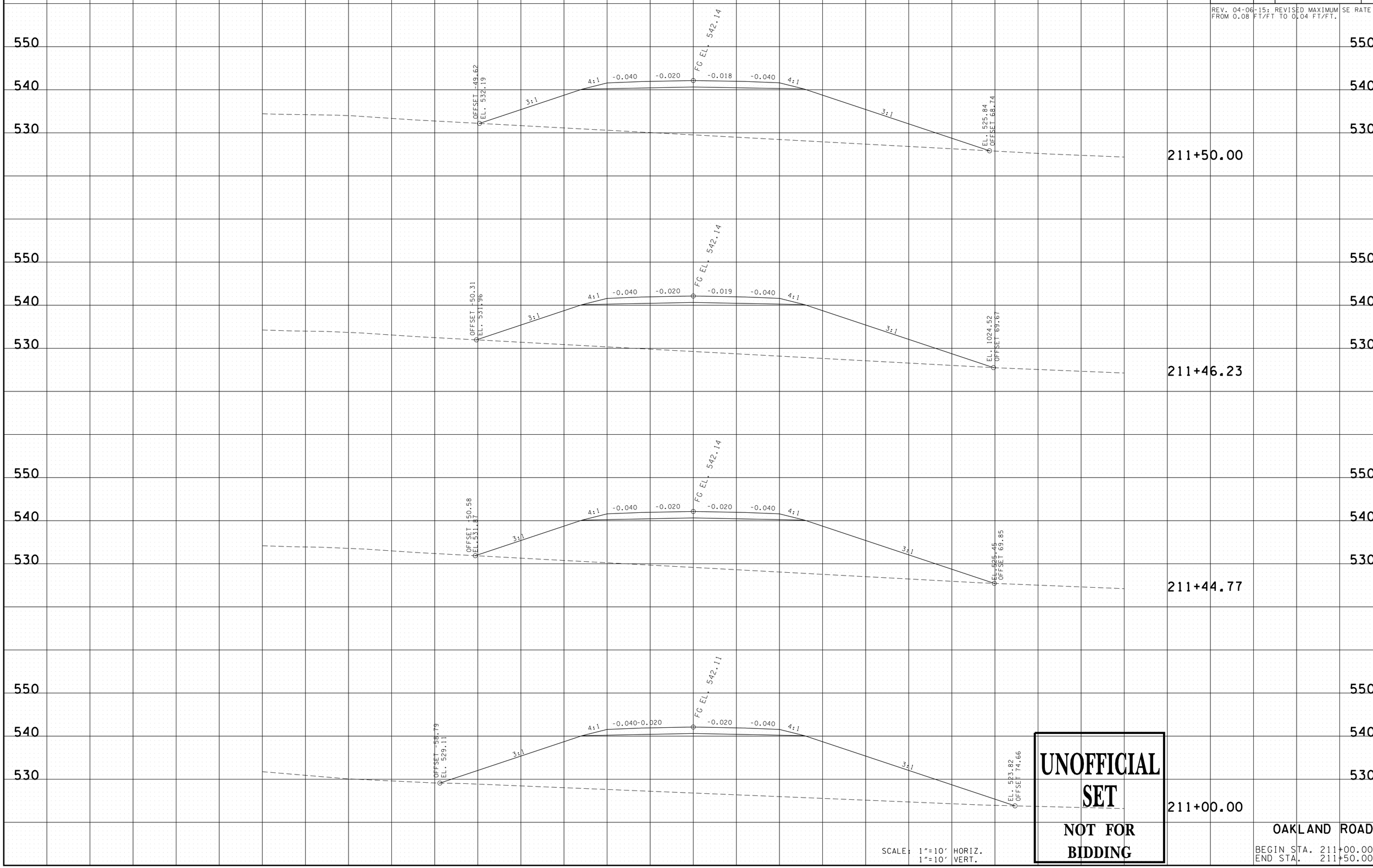
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	23
CONST.	2016	STP-M-930(21)	26

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 211+00.00
END STA. 211+50.00

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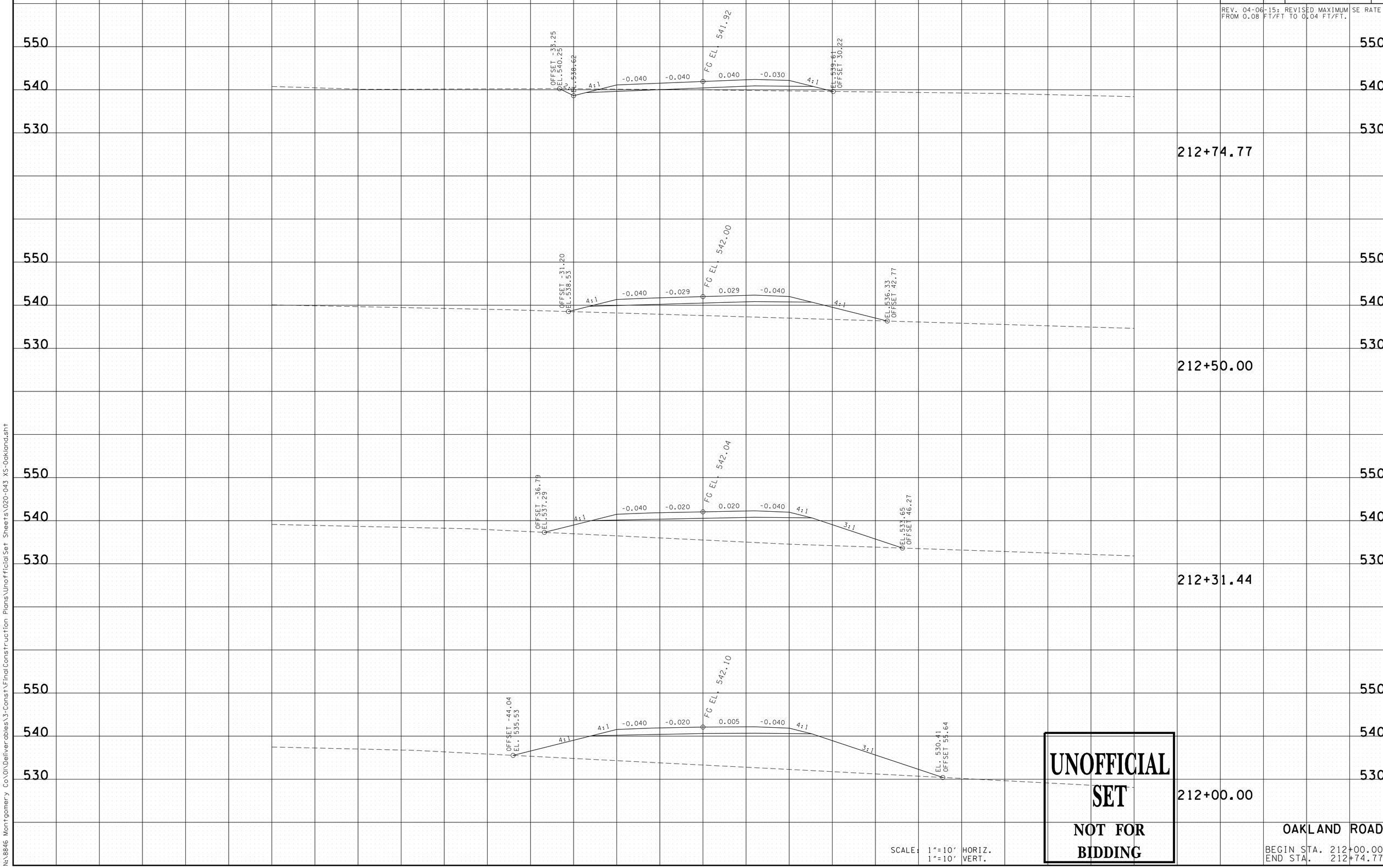
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	24
CONST.	2016	STP-M-930(21)	27

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 212+00.00
END STA. 212+74.77

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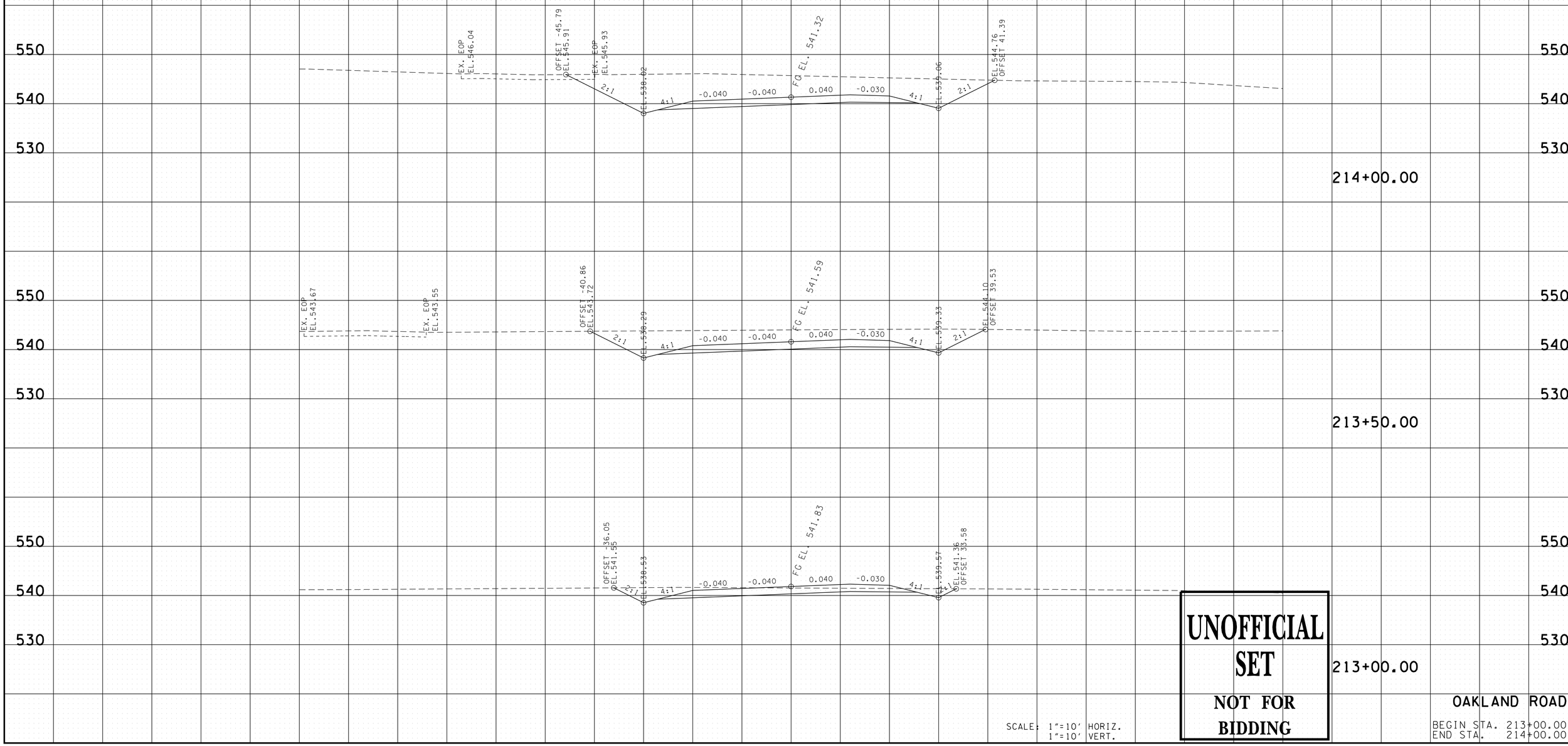
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	25
CONST.	2016	STP-M-930(21)	28

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 213+00.00
END STA. 214+00.00

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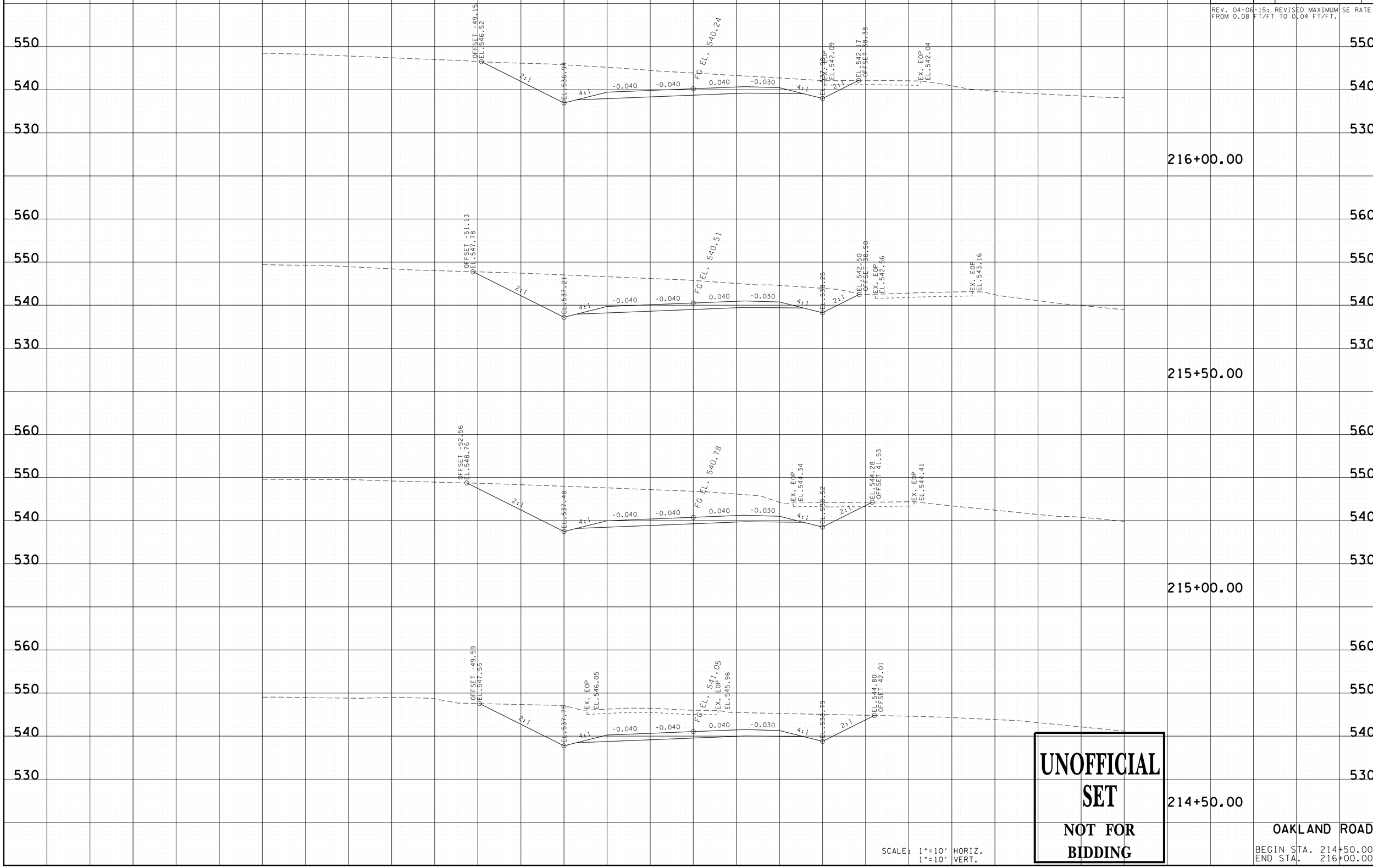
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	26
CONST.	2016	STP-M-930(21)	29

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 214+50.00
END STA. 216+00.00

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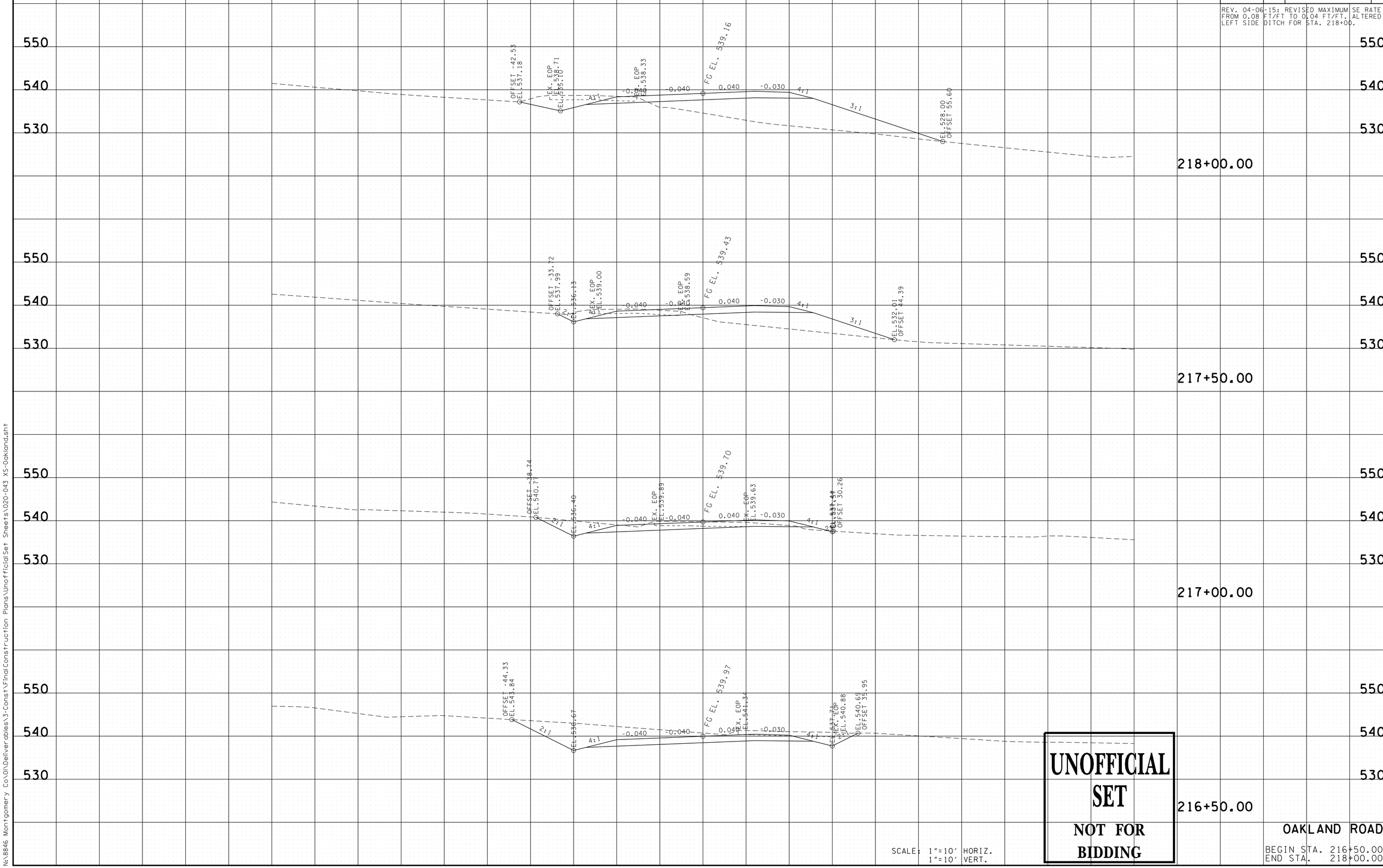
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	27
CONST.	2016	STP-M-930(21)	30

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT. ALTERED LEFT SIDE DITCH FOR STA. 218+00.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 216+50.00
END STA. 218+00.00

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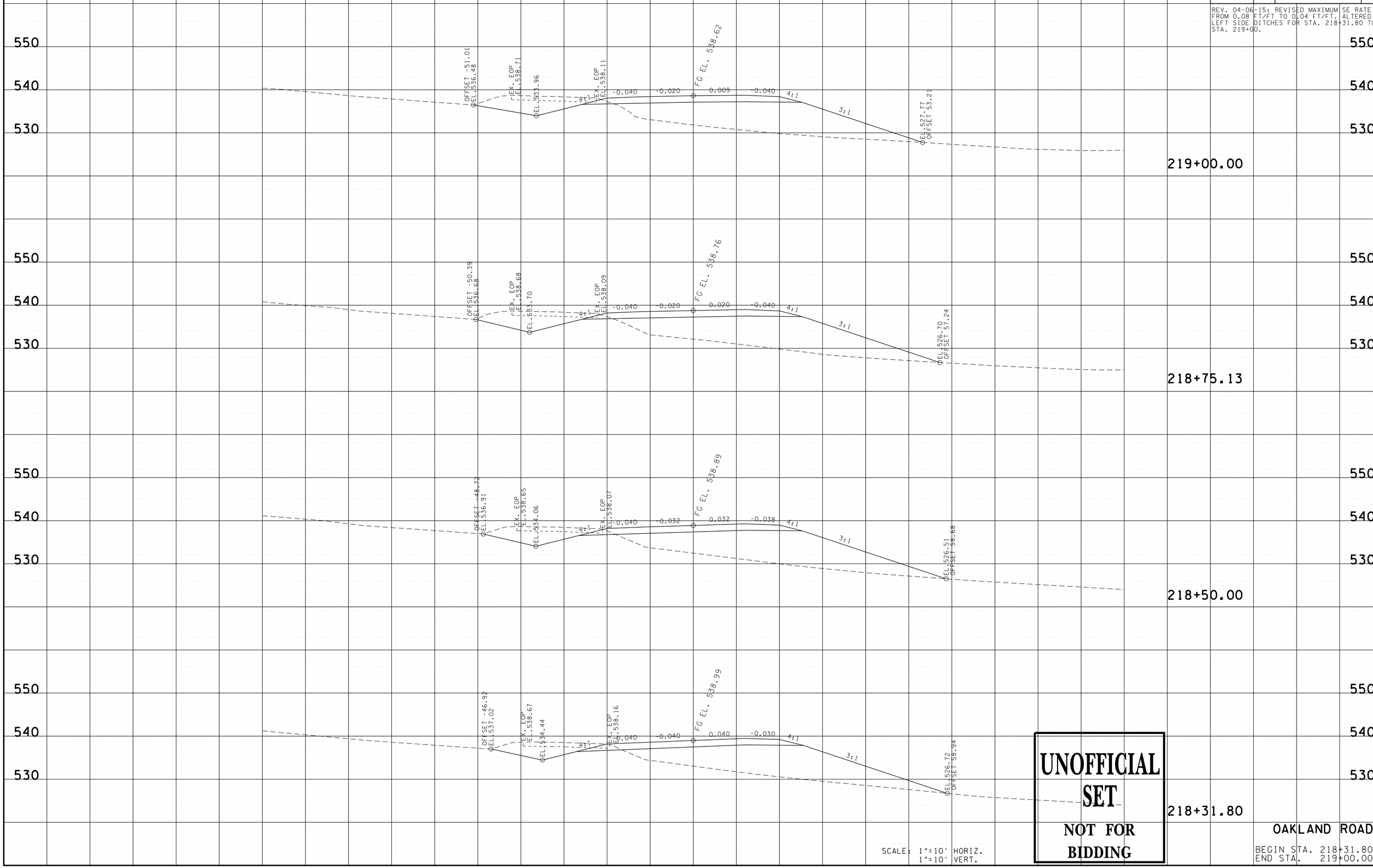
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	28
CONST.	2016	STP-M-930(21)	31

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT. ALTERED LEFT SIDE DITCHES FOR STA. 218+31.80 TO STA. 219+00.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 218+31.80
END STA. 219+00.00

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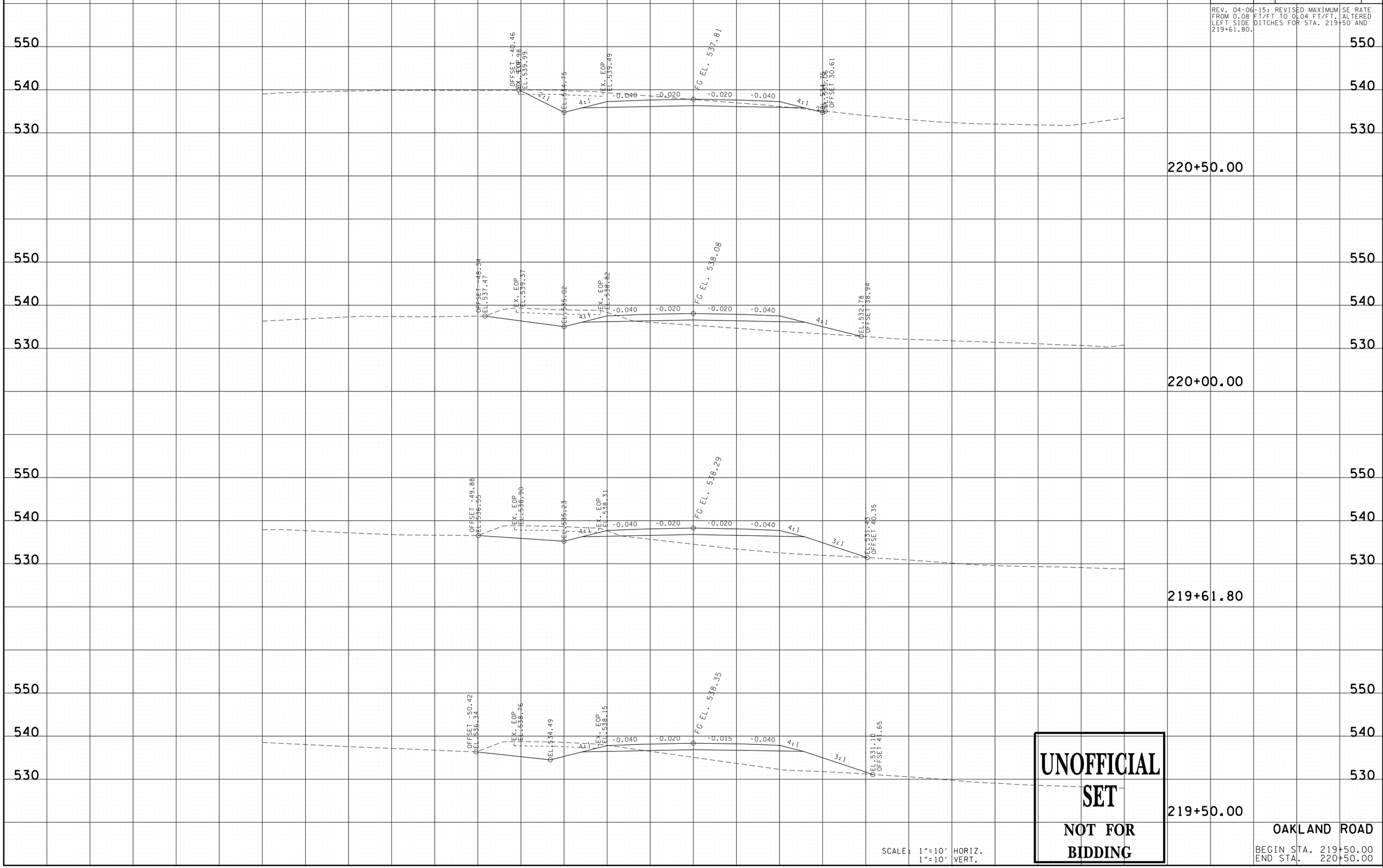
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	29
CONST.	2016	STP-M-930(21)	32

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT. ALTERED LEFT SIDE DITCHES FOR STA. 219+50 AND 219+61.80.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 219+50.00
END STA. 220+50.00

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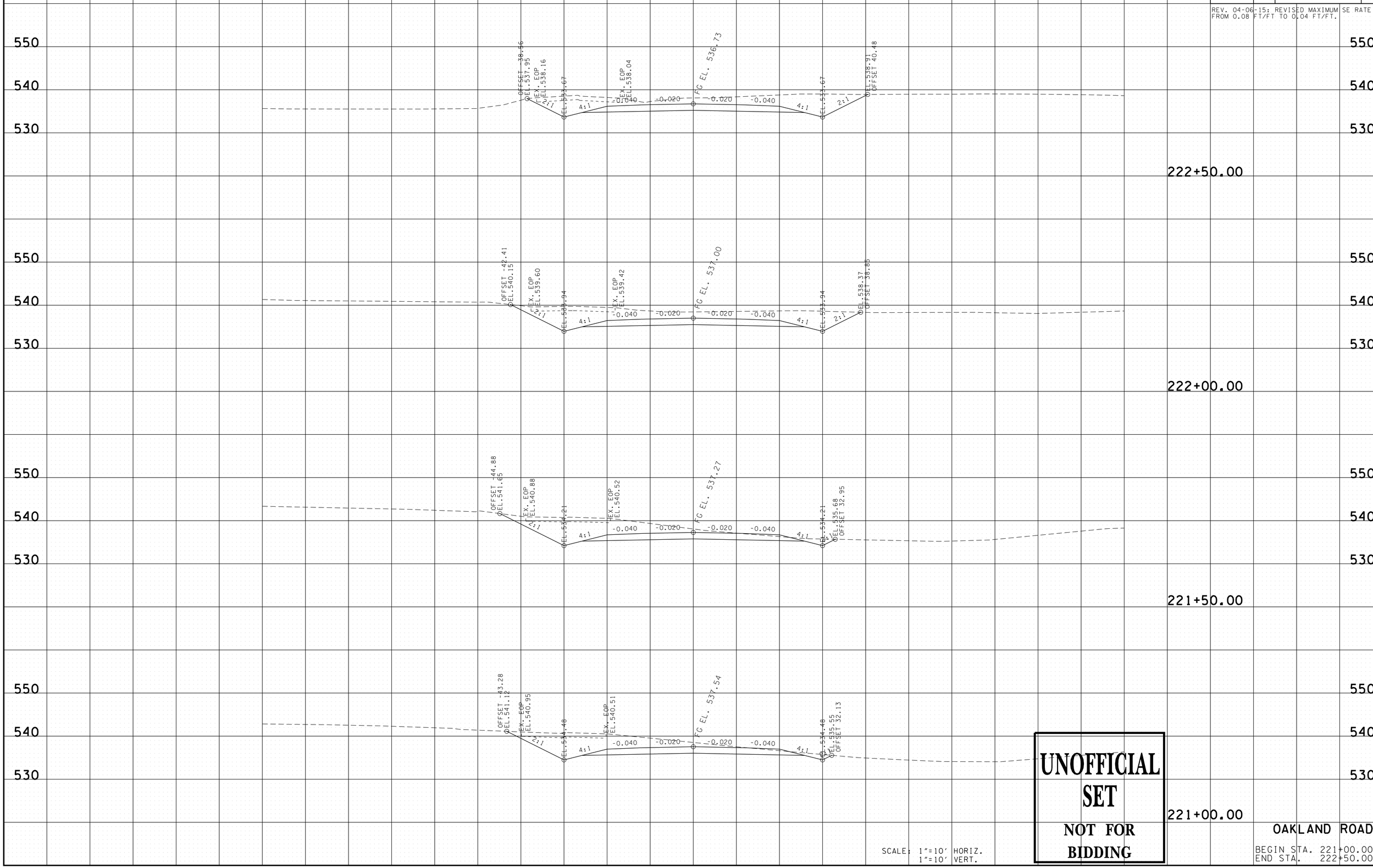
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	30
CONST.	2016	STP-M-930(21)	33

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 221+00.00
END STA. 222+50.00

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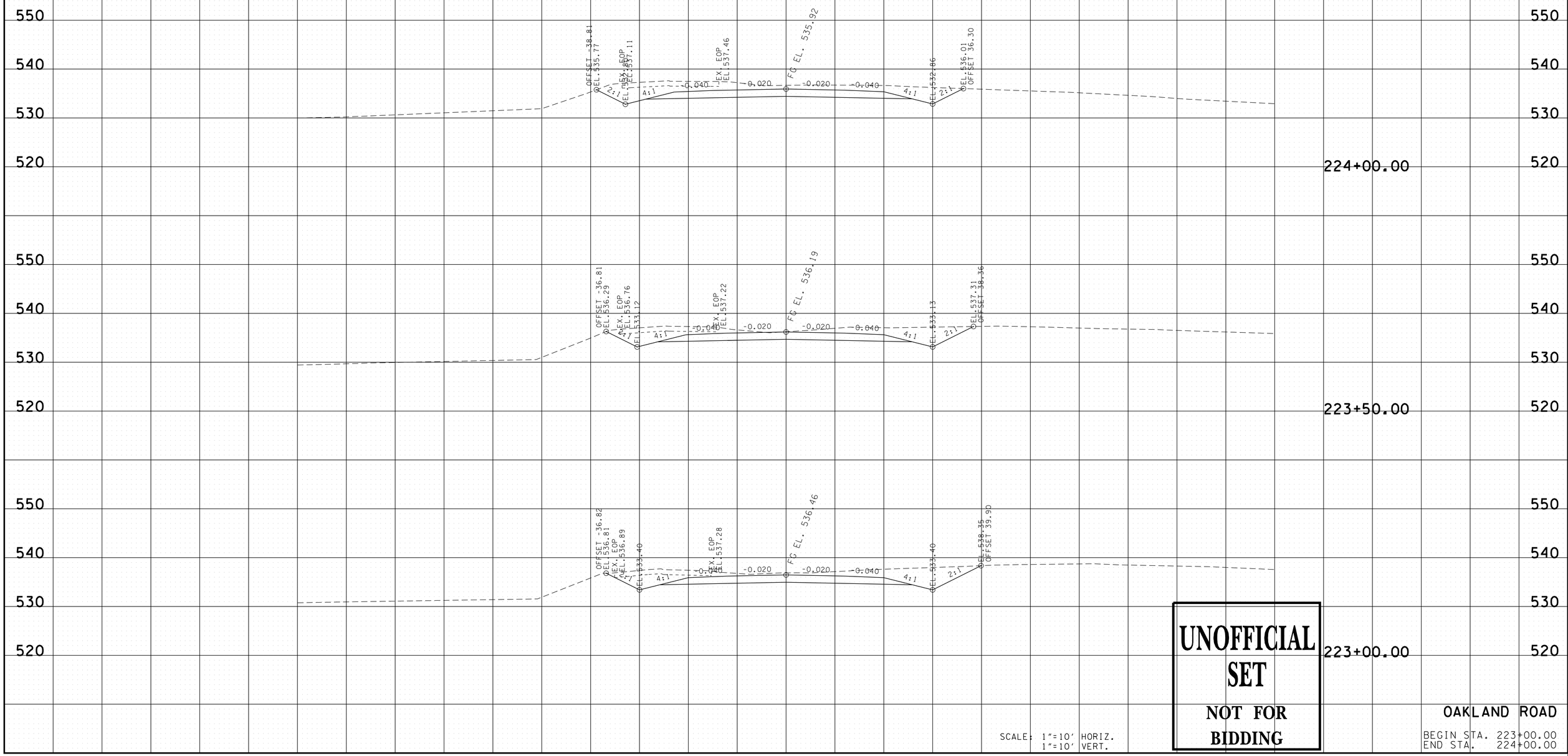
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	31
CONST.	2016	STP-M-930(21)	34

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT.

REV. 02-17-16: REVISED PROP. CROSS SECTIONS AT STA. 223+50 AND 224+00.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 223+00.00
END STA. 224+00.00

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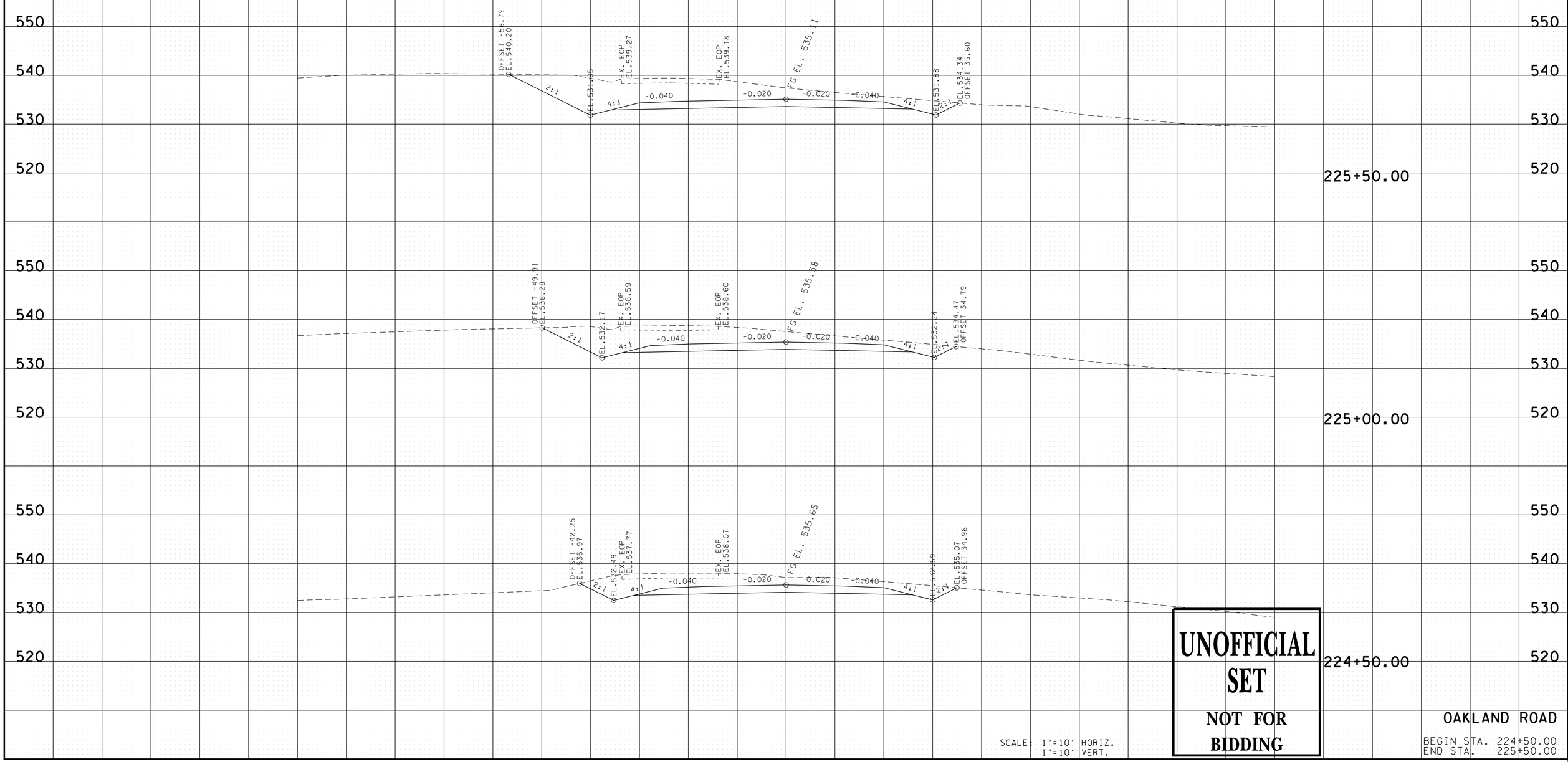
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	32
CONST.	2016	STP-M-930(21)	35

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT. ALTERED LEFT AND RIGHT SIDE DITCHES AND TIE POINTS FOR STA. 225+00 AND 225+50.

REV. 02-17-16: REVISED PROP. CROSS SECTIONS.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 224+50.00
END STA. 225+50.00

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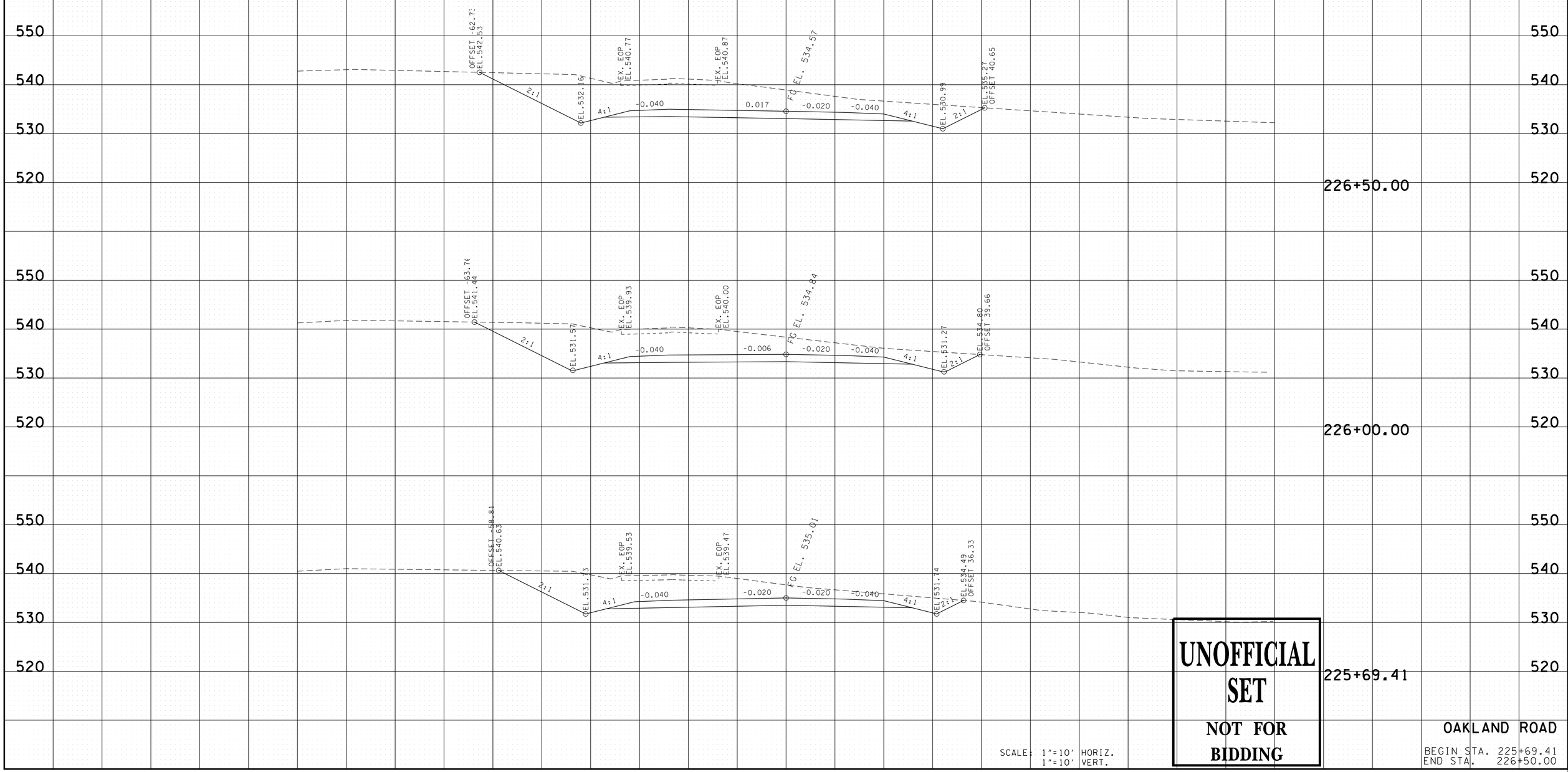
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	33
CONST.	2016	STP-M-930(21)	36

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT. ALTERED LEFT AND RIGHT SIDE DITCHES AND TIE POINTS.

REV. 02-17-16: REVISED PROP. CROSS SECTIONS.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 225+69.41
END STA. 226+50.00

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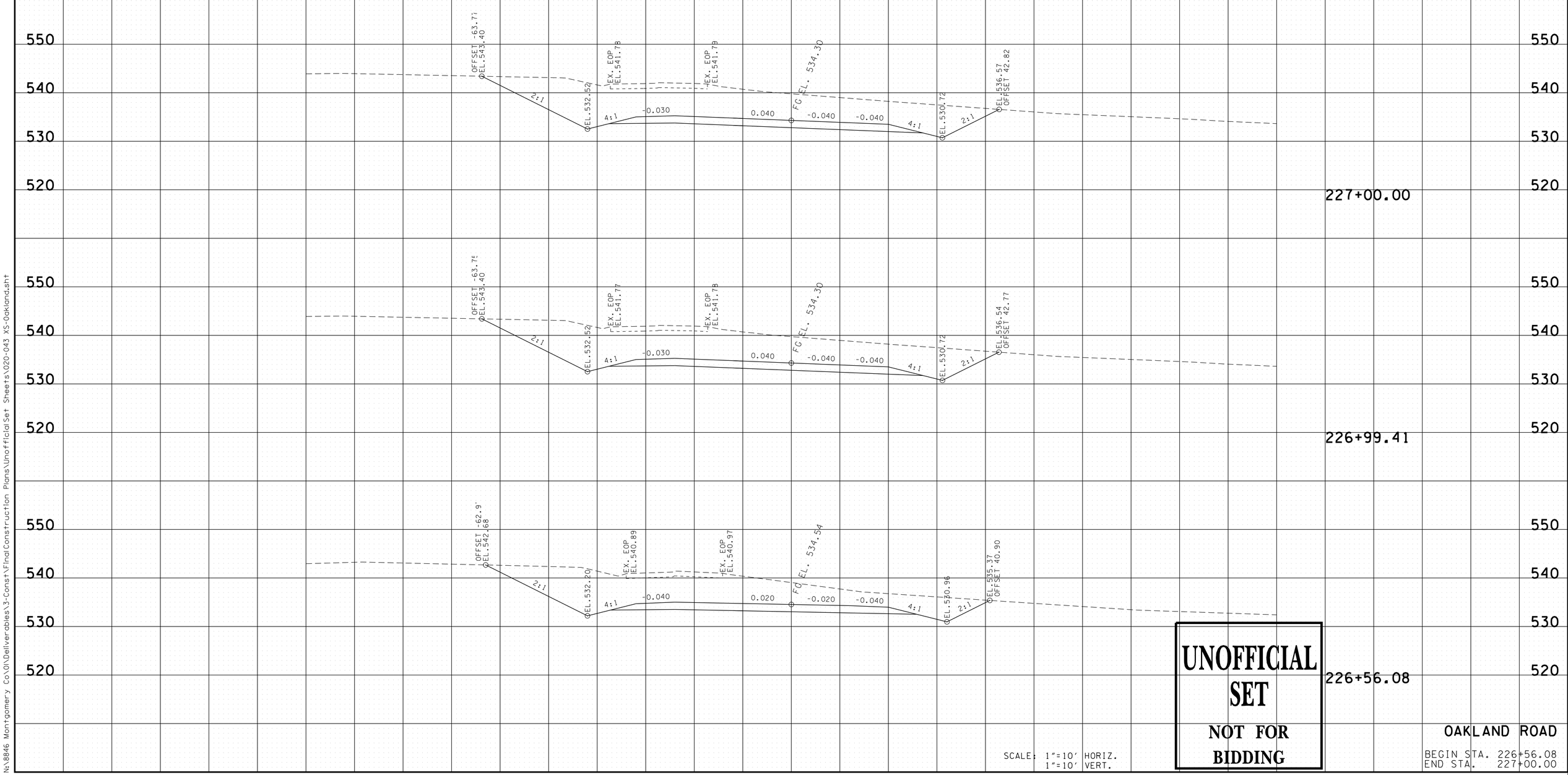
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	34
CONST.	2016	STP-M-930(21)	37

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT. ALTERED LEFT AND RIGHT SIDE DITCH AND TIE POINTS. ALTERED RIGHT SIDE DITCH AND TIE POINT FOR STA. 226+56.08 AND 226+99.41.

REV. 02-17-16: REVISED PROP. CROSS SECTIONS.

REV. 02-17-16: REVISED PROP. CROSS SECTIONS.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 226+56.08
END STA. 227+00.00

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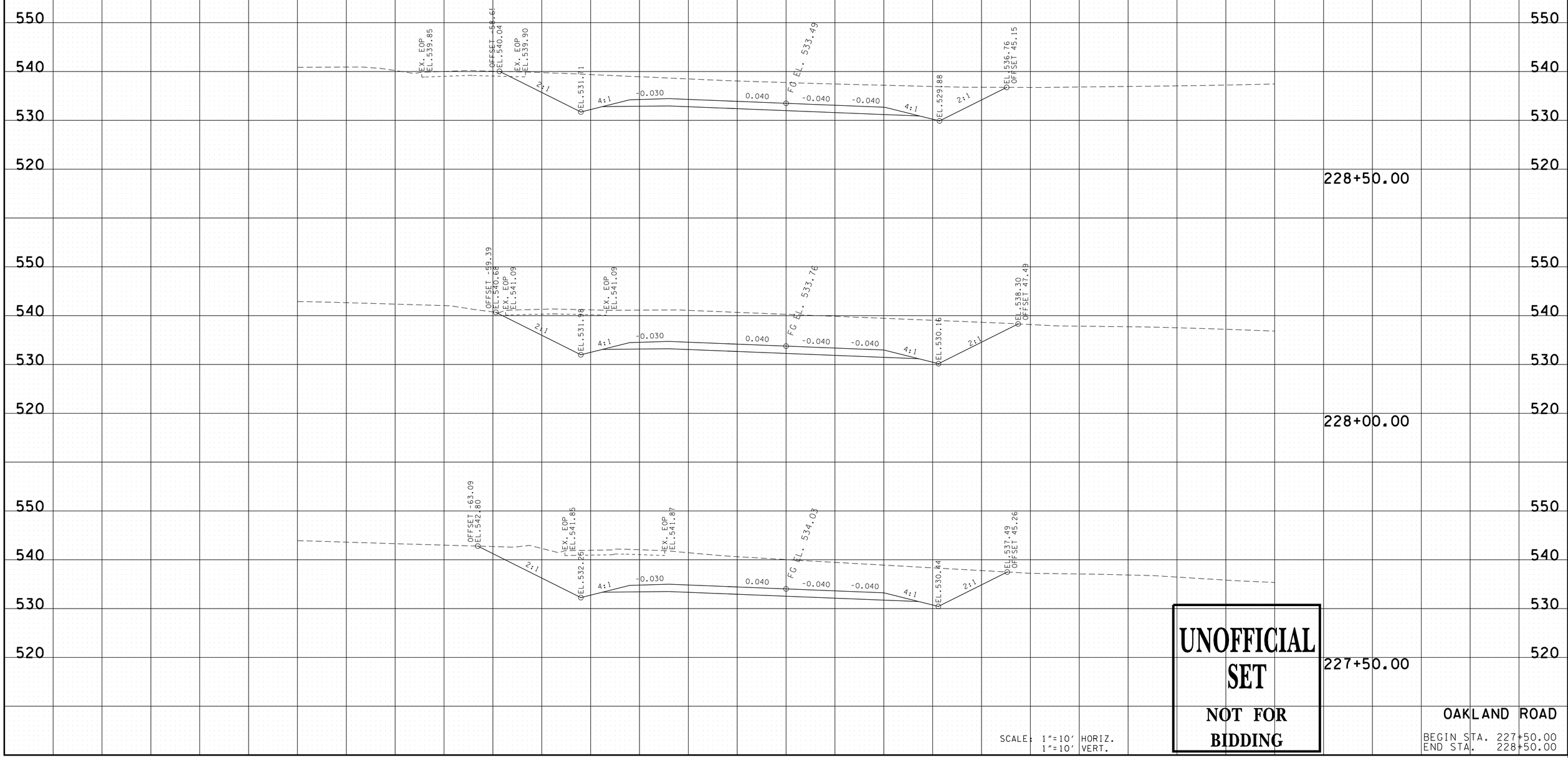
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	35
CONST.	2016	STP-M-930(21)	38

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT. ALTERED LEFT SIDE DITCH AND TIE POINT.

REV. 02-17-16: REVISED PROP. CROSS SECTIONS.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 227+50.00
END STA. 228+50.00

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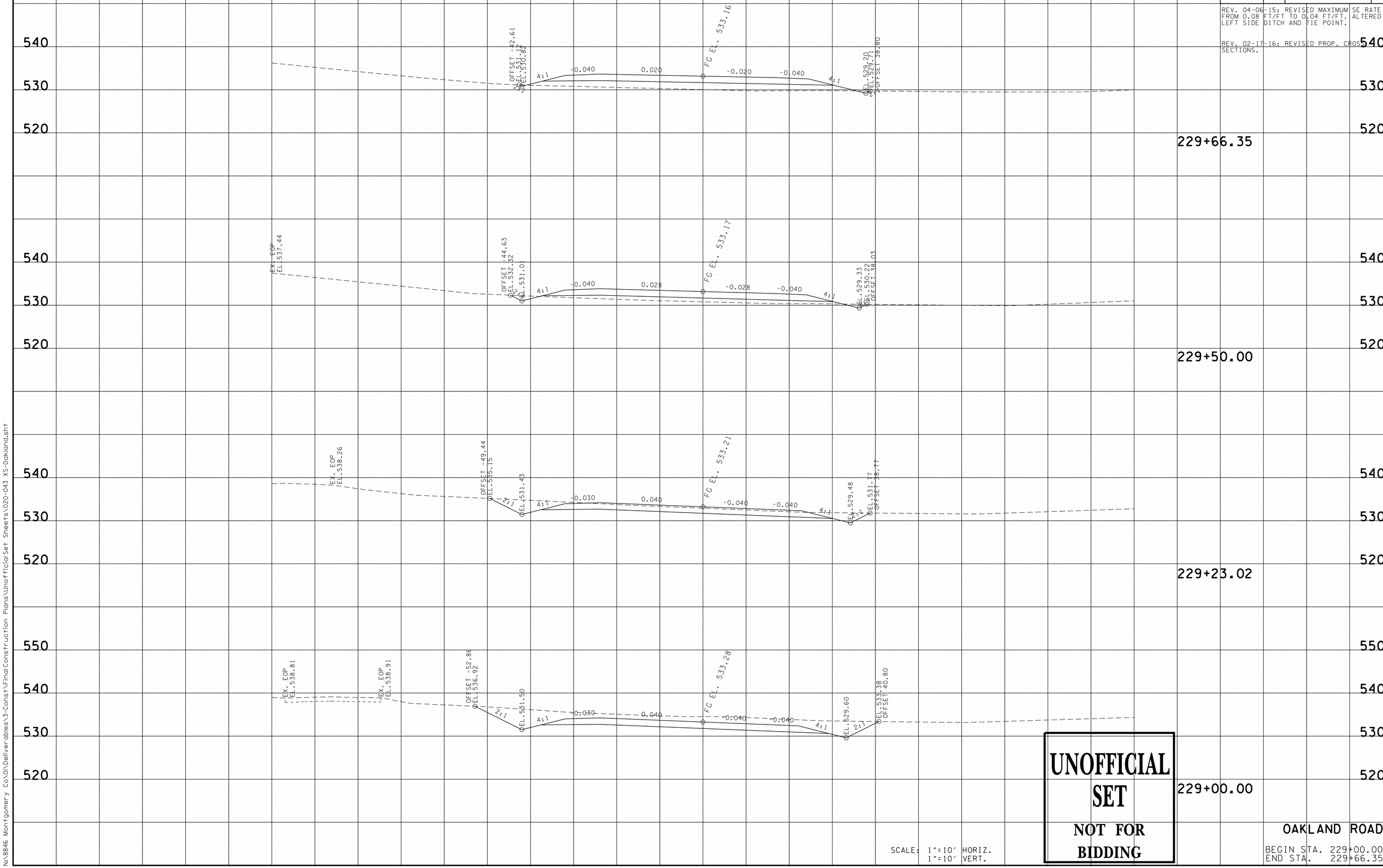
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	36
CONST.	2016	STP-M-930(21)	39

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT. ALTERED LEFT SIDE DITCH AND TIE POINT.

REV. 02-17-16: REVISED PROP. CROSS SECTIONS.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 229+00.00
END STA. 229+66.35

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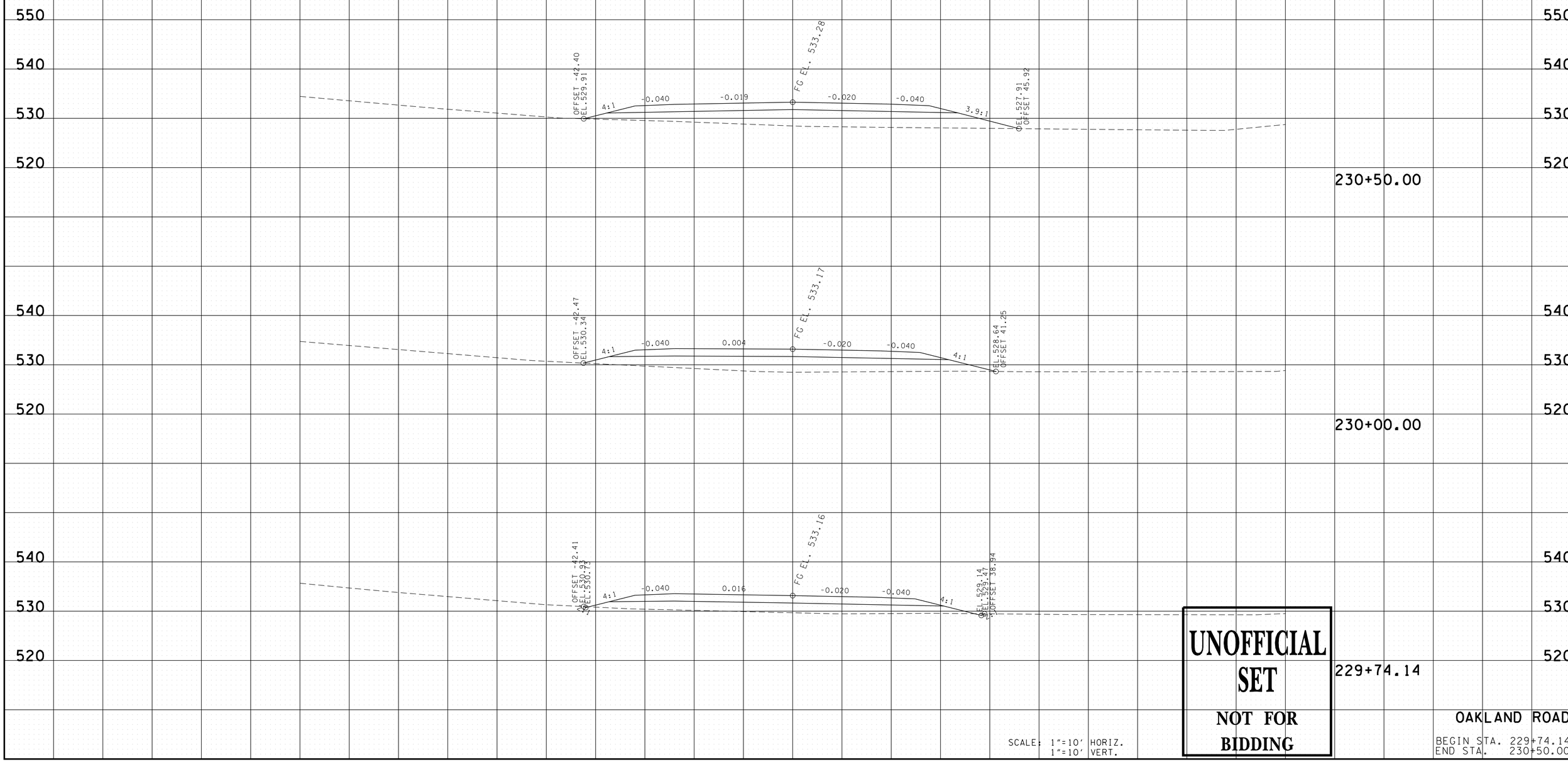
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	37
CONST.	2016	STP-M-930(21)	40

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT. ALTERED LEFT SIDE DITCH AND TIE POINT FOR STA. 229+74.14 AND 230+00.

REV. 02-17-16: REVISED PROP. CROSS SECTIONS.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 229+74.14
END STA. 230+50.00

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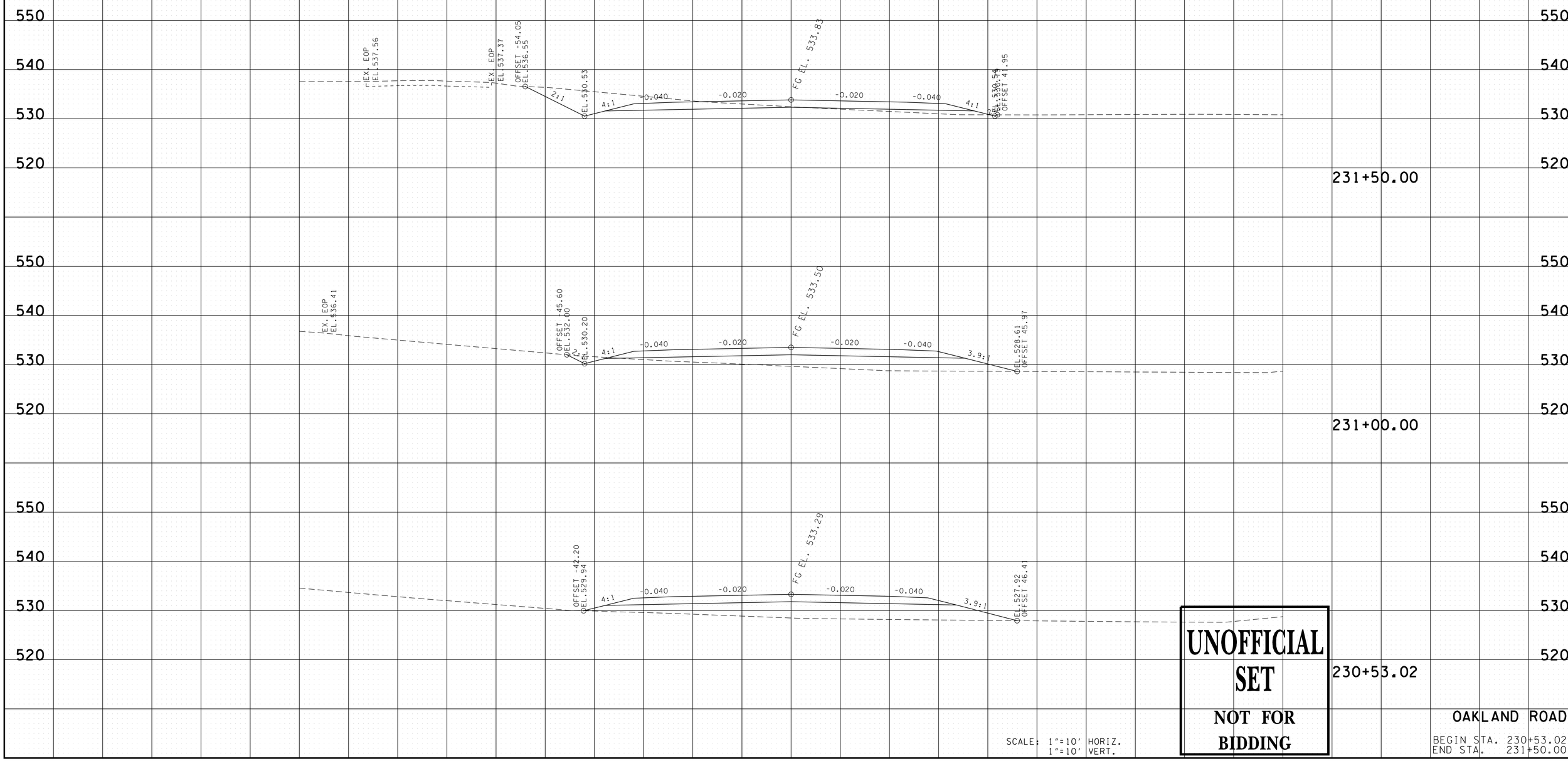
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	38
CONST.	2016	STP-M-930(21)	41

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT.

REV. 02-17-16: REVISED PROP. CROSS SECTIONS.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 230+53.02
END STA. 231+50.00

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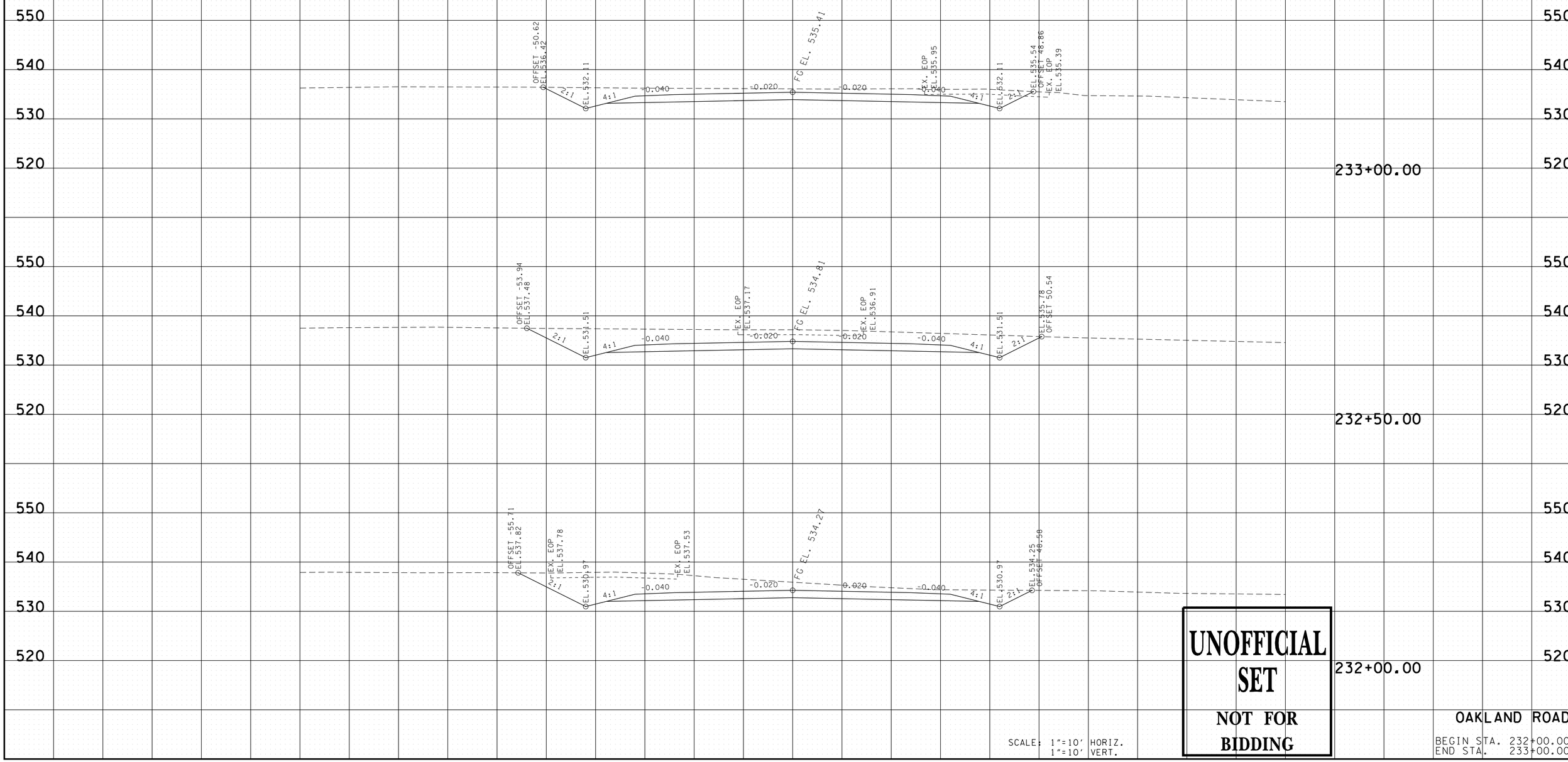
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	39
CONST.	2016	STP-M-930(21)	42

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT.

REV. 02-17-16: REVISED PROP. CROSS SECTIONS.



UNOFFICIAL SET

NOT FOR BIDDING

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

OAKLAND ROAD

BEGIN STA. 232+00.00
END STA. 233+00.00

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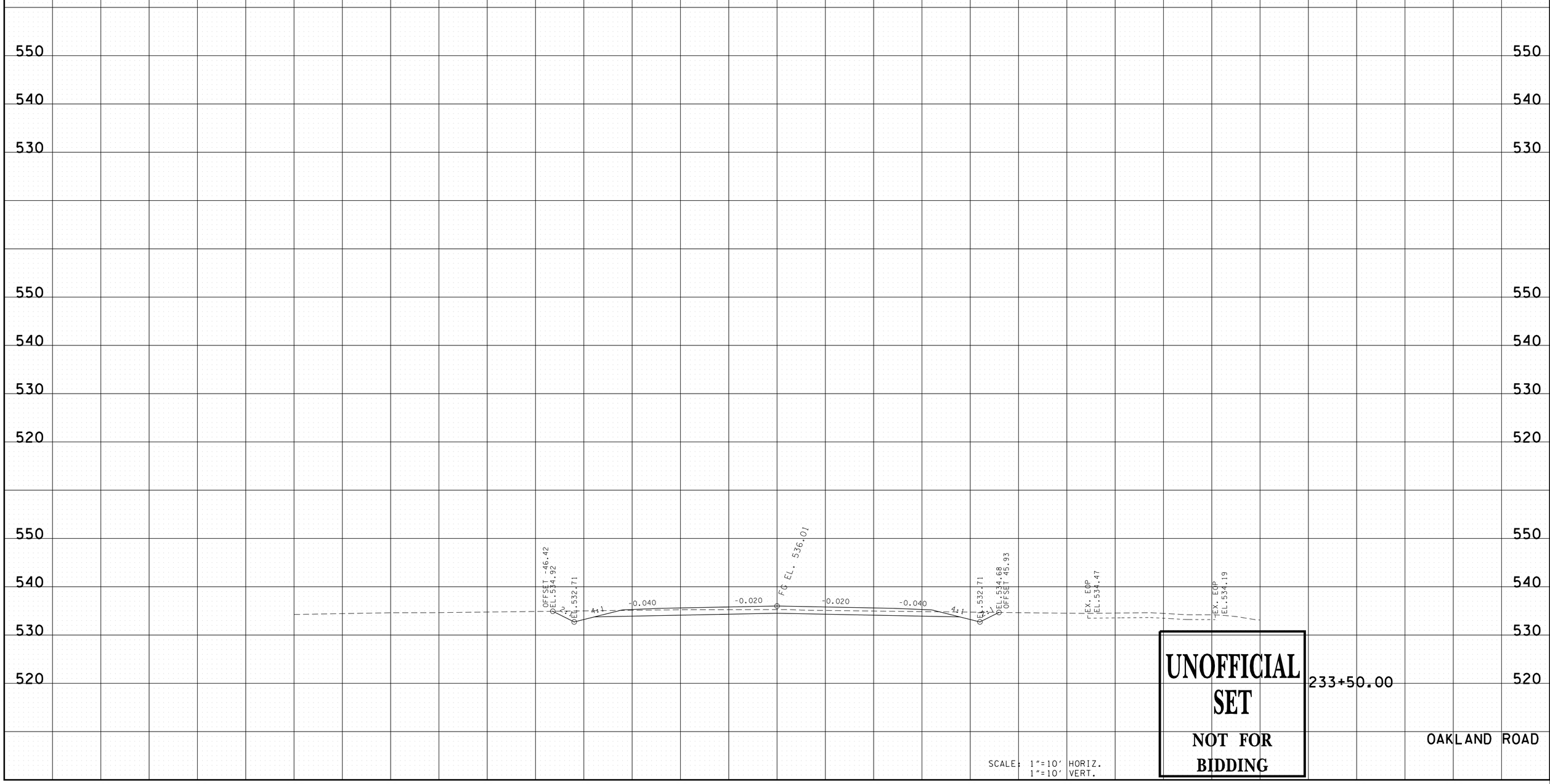
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	40
CONST.	2016	STP-M-930(21)	43

REV. 04-06-15: REVISED MAXIMUM SE RATE FROM 0.08 FT/FT TO 0.04 FT/FT.

REV. 02-17-16: REVISED PROP. CROSS SECTION AT STA. 233+50. REMOVED CROSS SECTION AT STA. 234+00 AND STA. 234+50.



233+50.00

OAKLAND ROAD

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

UNOFFICIAL SET

NOT FOR BIDDING

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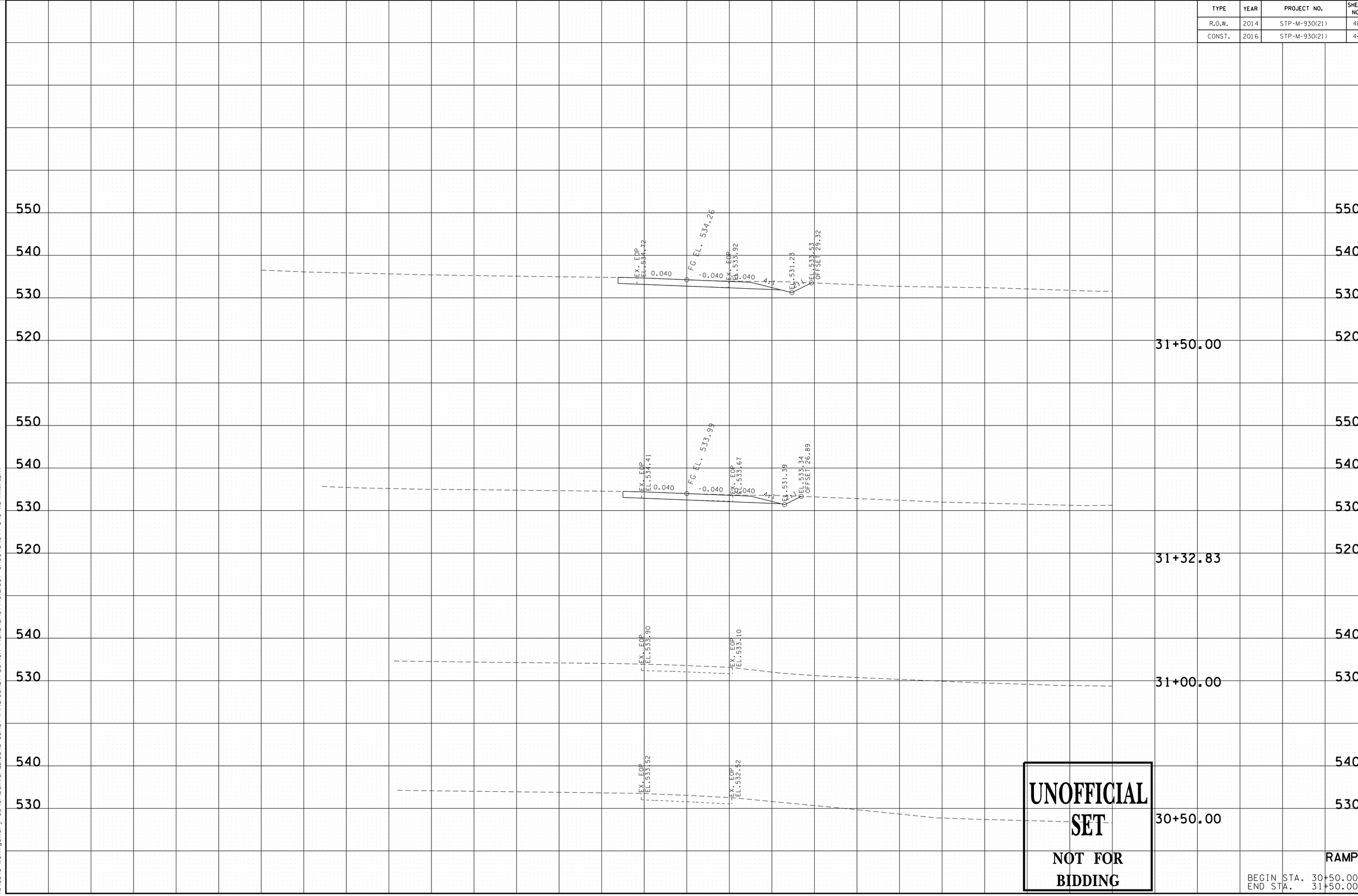
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	48
CONST.	2016	STP-M-930(21)	44



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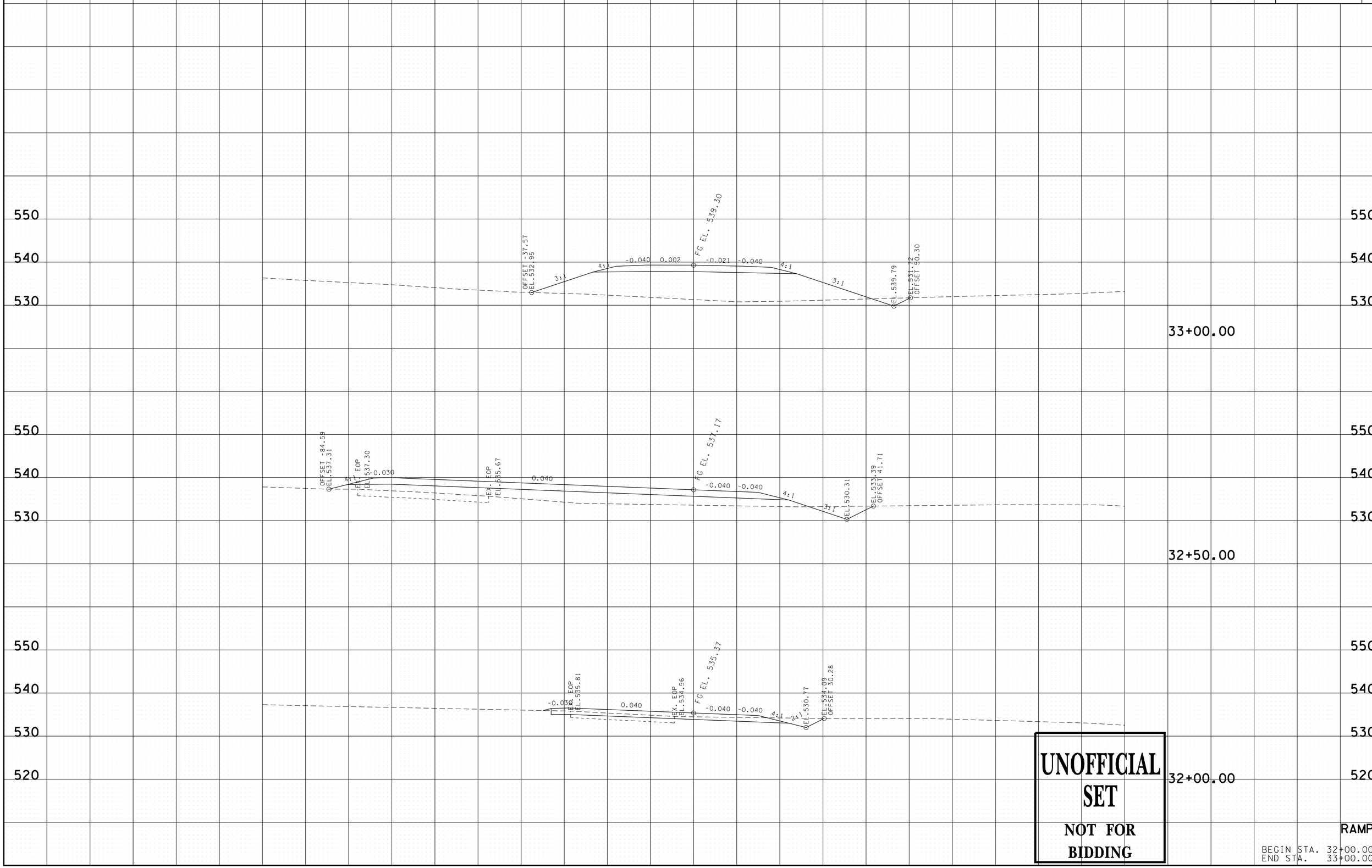
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	49
CONST.	2016	STP-M-930(21)	45



UNOFFICIAL SET

NOT FOR BIDDING

RAMP

BEGIN STA. 32+00.00
END STA. 33+00.00

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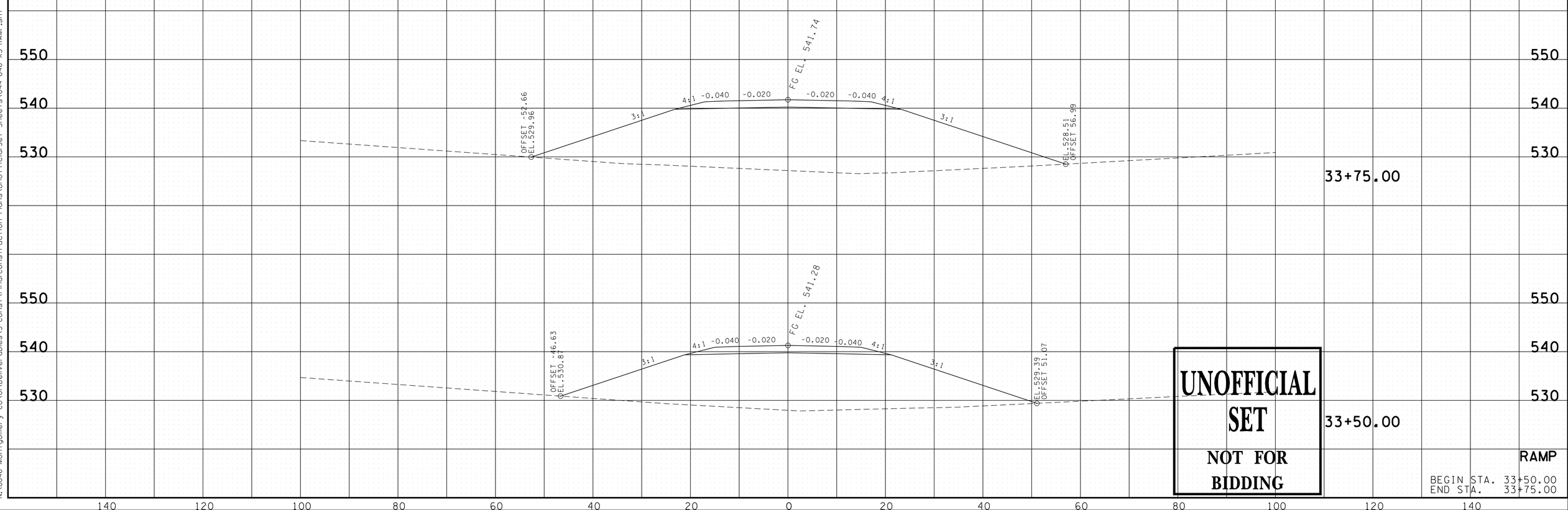
TYPE	YEAR	PROJECT NO.	SHEET NO.
R.O.W.	2014	STP-M-930(21)	50
CONST.	2016	STP-M-930(21)	46



UNOFFICIAL SET

NOT FOR BIDDING

RAMP

BEGIN STA. 33+50.00
END STA. 33+75.00

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