

COUNTS MASSIE ROADWAY EXTENSION MAUMELLE, ARKANSAS

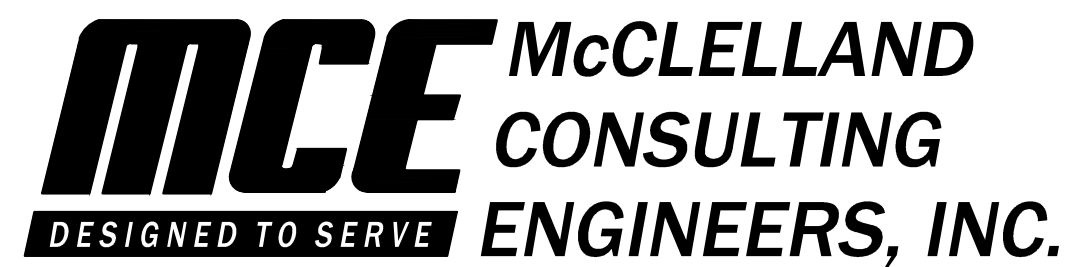
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| 19. CROSS SECTIONS STA. 29+50 TO STA. 34+00 | |
| 20. CROSS SECTIONS STA. 34+50 TO STA. 35+98.66 | |



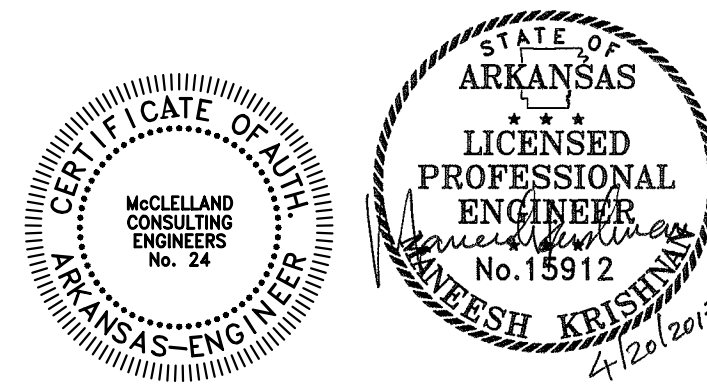
LOCATION MAP

APRIL, 2017
MCE PROJECT NO. LR13-5736

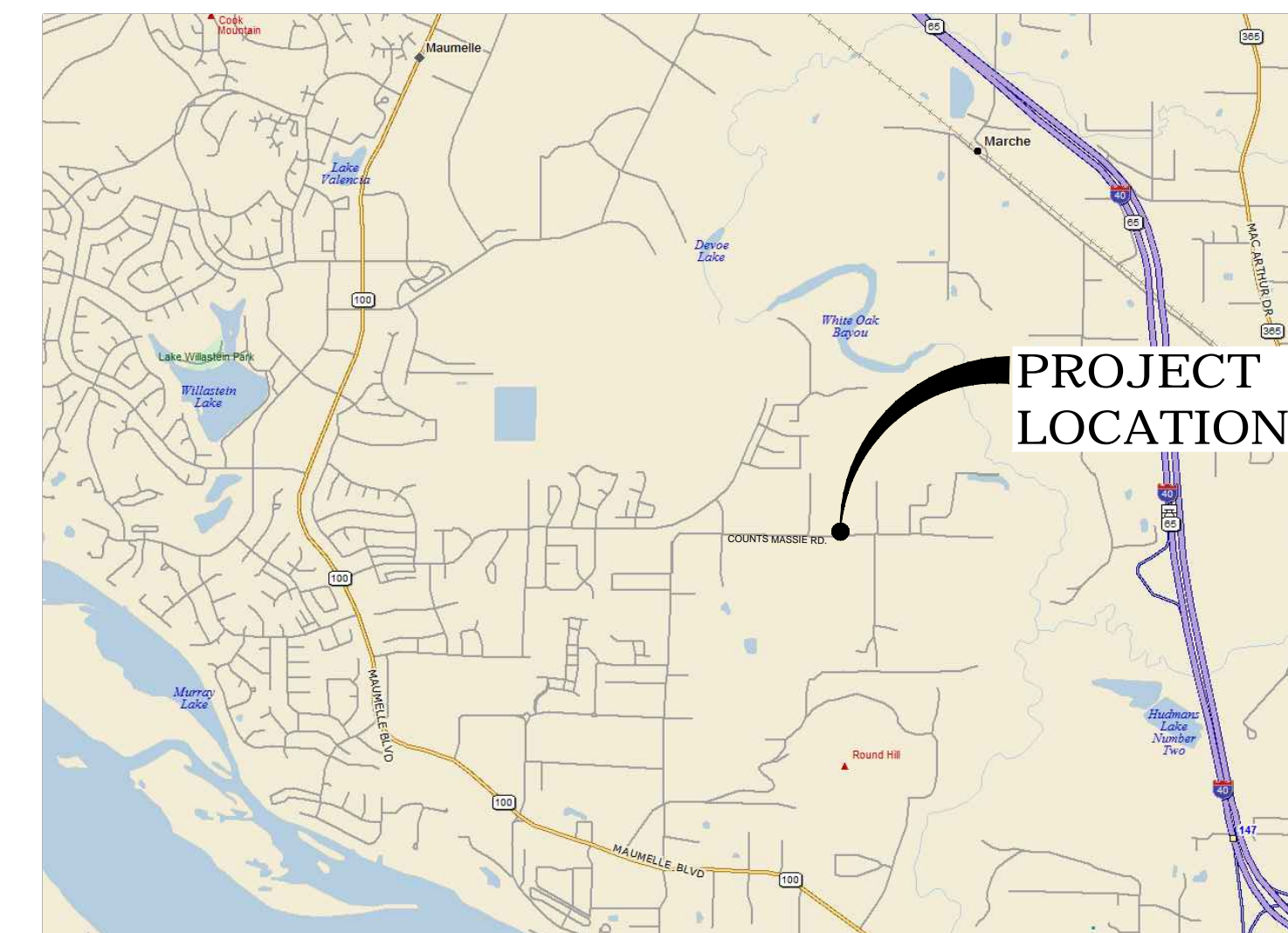


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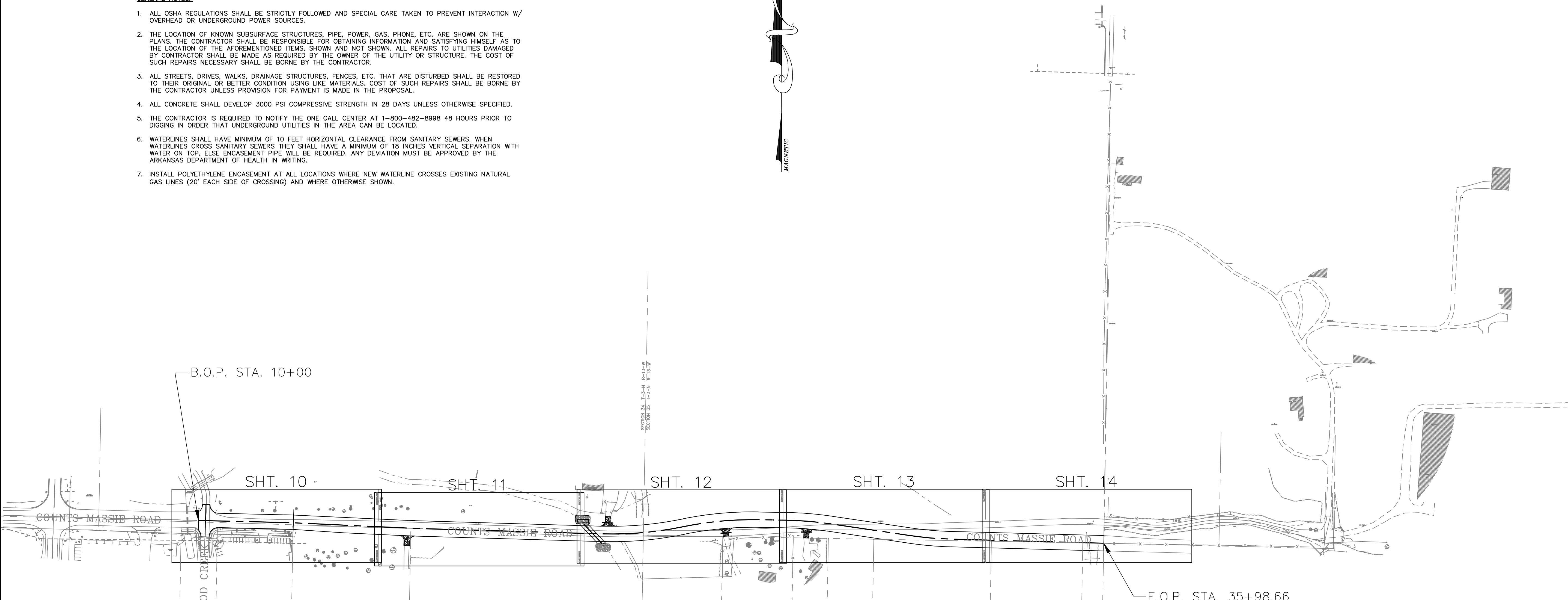
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VICINITY MAP

GENERAL NOTES:

- ALL OSHA REGULATIONS SHALL BE STRICTLY FOLLOWED AND SPECIAL CARE TAKEN TO PREVENT INTERACTION W/ OVERHEAD OR UNDERGROUND POWER SOURCES.
- THE LOCATION OF KNOWN SUBSURFACE STRUCTURES, PIPE, POWER, GAS, PHONE, ETC. ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING INFORMATION AND SATISFYING HIMSELF AS TO THE LOCATION OF THE AFOREMENTIONED ITEMS, SHOWN AND NOT SHOWN. ALL REPAIRS TO UTILITIES DAMAGED BY CONTRACTOR SHALL BE MADE AS REQUIRED BY THE OWNER OF THE UTILITY OR STRUCTURE. THE COST OF SUCH REPAIRS NECESSARY SHALL BE BORNE BY THE CONTRACTOR.
- ALL STREETS, DRIVES, WALKS, DRAINAGE STRUCTURES, FENCES, ETC. THAT ARE DISTURBED SHALL BE RESTORED TO THEIR ORIGINAL OR BETTER CONDITION USING LIKE MATERIALS. COST OF SUCH REPAIRS SHALL BE BORNE BY THE CONTRACTOR UNLESS PROVISION FOR PAYMENT IS MADE IN THE PROPOSAL.
- ALL CONCRETE SHALL DEVELOP 3000 PSI COMPRESSIVE STRENGTH IN 28 DAYS UNLESS OTHERWISE SPECIFIED.
- THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 1-800-482-8998 48 HOURS PRIOR TO DIGGING IN ORDER THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.
- WATERLINES SHALL HAVE MINIMUM OF 10 FEET HORIZONTAL CLEARANCE FROM SANITARY SEWERS. WHEN WATERLINES CROSS SANITARY SEWERS THEY SHALL HAVE A MINIMUM OF 18 INCHES VERTICAL SEPARATION WITH WATER ON TOP. ELSE ENCASUREMENT PIPE WILL BE REQUIRED. ANY DEVIATION MUST BE APPROVED BY THE ARKANSAS DEPARTMENT OF HEALTH IN WRITING.
- INSTALL POLYETHYLENE ENCASUREMENT AT ALL LOCATIONS WHERE NEW WATERLINE CROSSES EXISTING NATURAL GAS LINES (20' EACH SIDE OF CROSSING) AND WHERE OTHERWISE SHOWN.



DEMOLITION NOTES:

- THE INTENT OF THE DEMOLITION PLAN IS TO REMOVE ALL ITEMS NECESSARY FOR THE COMPLETION OF THE PROJECT. THE MAIN ITEMS TO BE REMOVED ARE: ALL THE CURB AND GUTTER, SIDEWALKS, ASPHALT (PARKING LOTS), BUILDINGS CONCRETE APRONS PLANTERS, LIGHTS, BOLLARDS, ETC. THE EXISTING UTILITY SERVICES ARE TO BE DISCONNECTED AND CAPPED PER UTILITY COMPANIES REQUIREMENTS. THE MAIN ITEMS TO REMAIN INCLUDE: FIRE HYDRANTS, TRAFFIC SIGNALS/CONTROLS AND OTHER UTILITY MAINS ON OR NEAR THE PROPERTY.
- THE CONTRACTOR IS TO PROTECT ALL ITEMS TO REMAIN, STREETS, DRIVES, WALKS, DRAINAGE STRUCTURES, FENCES, SIGNS, ETC. THAT ARE DISTURBED SHALL BE RESTORED TO THEIR ORIGINAL OR BETTER CONDITION USING LIKE MATERIALS. COST OF SUCH REPAIRS SHALL BE BORNE BY THE CONTRACTOR UNLESS PROVISIONS FOR PAYMENT IS MADE IN THE PROPOSAL.
- THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 1-800-482-8998 48 HOURS PRIOR TO DIGGING IN ORDER THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.
- THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE TOPOGRAPHICAL SURVEY FOR REFERENCE. THE LOCATION OF KNOWN SUBSURFACE STRUCTURES, PIPES, POWER, GAS, PHONE, ETC. ARE SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING INFORMATION AND SATISFYING HIMSELF AS TO THE LOCATION OF THE AFOREMENTIONED ITEMS, SHOWN AND NOT SHOWN. ALL REPAIRS OR RELOCATION'S NECESSARY SHALL BE MADE AS REQUIRED BY THE OWNER OF THE UTILITY OR STRUCTURE. THE COST OF SUCH REPAIRS OR RELOCATION'S NECESSARY SHALL BE BORNE BY THE CONTRACTOR.
- WITHOUT REGARD TO THE MATERIALS ENCOUNTERED, ALL ROADWAY EXCAVATION, ROUGH EXCAVATION, AND DRAINAGE EXCAVATION SHALL BE UNCLASSIFIED AND SHALL BE DESIGNATED AS "EXCAVATION". IT SHALL BE DISTINCTLY UNDERSTOOD THAT ANY REFERENCE TO SUBSURFACE MATERIALS ON THE PLANS AND IN THE BID DOCUMENTS, WHETHER IN NUMBERS, WORDS, LETTERS OR LINES IS SOLELY FOR THE OWNER'S INFORMATION AND IS NOT TO BE TAKEN AS AN INDICATION OF CLASSIFIED EXCAVATION OR THE QUANTITY OF EITHER ROCK, EARTH, OR ANY OTHER MATERIAL INVOLVED. THE CONTRACTOR MUST DRAW HIS OWN CONCLUSIONS AS TO THE CONDITIONS TO BE ENCOUNTERED. THE OWNER DOES NOT GIVE ANY GUARANTEE AS TO THE ACCURACY OF THE DATA, AND NO CLAIM WILL BE CONSIDERED FOR ADDITIONAL COMPENSATION WHEN THE MATERIALS ENCOUNTERED ARE NOT IN ACCORD WITH THE CLASSIFICATION SHOWN.
- ALL SALVAGEABLE ITEMS SHALL BE STORED FOR REVIEW BY OWNER PRIOR TO REMOVAL.
- CONTRACTOR TO DISPOSE OF ALL UNSALVAGEABLE MATERIAL TO BE REMOVED. ALL MATERIALS TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AS SPECIFIED, UNLESS OTHERWISE NOTED.
- ALL ABANDONED SERVICE LINES SHALL BE DISCONNECTED AND CAPPED PER UTILITY COMPANIES REQUIREMENTS. COORDINATE ALL DISCONNECTIONS WITH UTILITY COMPANIES.
- AT ALL LOCATION WHERE EXISTING CONCRETE IS TO BE REMOVED AND IS IMMEDIATELY ADJACENT TO CONCRETE TO REMAIN, SAWCUT AT EXISTING CONTROL JOINT. VERIFY IN FIELD. ALL CURB AND GUTTER ALONG STREETS ARE TO BE REMOVED WITH SAW CUT AT CONCRETE/ASPHALT JOINT.
- DEMOLITION CONTRACTOR MUST VISIT SITE AND VERIFY ALL EXISTING SITE CONDITIONS.
- CONTRACTOR IS TO BRING TO THE ATTENTION OF THE CIVIL ENGINEER ANY AREA OF DEMOLITION IN QUESTION BEFORE PROCEEDING WITH WORK.
- CONTRACTOR TO REVIEW AND COORDINATE DEMOLITION LIMITS WITH NEW CONSTRUCTION PLANS.
- EXISTING CLEAN TOPSOIL TO BE STOCKPILED FOR FUTURE USE ON THIS SITE, TO BE COORDINATED BY THE GENERAL CONTRACTOR.

GENERAL EROSION CONTROL NOTES:

- THE LOCATION OF KNOWN SUBSURFACE STRUCTURES, PIPE, POWER, GAS, PHONE, ETC. ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING INFORMATION AND SATISFYING HIMSELF AS TO THE LOCATION OF THE AFOREMENTIONED ITEMS, SHOWN AND NOT SHOWN. ALL REPAIRS OR RELOCATION'S NECESSARY SHALL BE MADE AS REQUIRED BY THE OWNER OF THE UTILITY OR STRUCTURE. THE COST OF SUCH REPAIRS OR RELOCATION'S NECESSARY SHALL BE BORNE BY THE CONTRACTOR.
- ALL STREETS, DRIVES, WALKS, DRAINAGE STRUCTURES, FENCES, ETC. THAT ARE DISTURBED SHALL BE RESTORED TO THEIR ORIGINAL OR BETTER CONDITION USING LIKE MATERIALS. COST OF SUCH REPAIRS SHALL BE BORNE BY THE CONTRACTOR UNLESS PROVISION FOR PAYMENT IS MADE IN THE PROPOSAL.
- EROSION CONTROL DEVICES SHALL BE INSTALLED AS THE PROJECT PROGRESSES AND AREAS ARE DISTURBED.
- THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 1-800-482-8998 48 HOURS PRIOR TO DIGGING IN ORDER THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.
- ALL INLETS ON AND ADJACENT TO THE SITE SHALL BE PROTECTED FROM SEDIMENT.
- INSPECT ALL EROSION CONTROL DEVICES WEEKLY AND FOLLOWING RAINFALL EVENTS OF 0.5 INCHES.
- ALL EROSION CONTROL DEVICES ARE TO BE MAINTAINED IN GOOD WORKING CONDITION THROUGHOUT THE DURATION OF THIS PROJECT AND UNTIL PERMANENT VEGETATION IS ESTABLISHED. ALL SEDIMENT TRAPS ARE TO BE CLEANED AS REQUIRED.
- ALL DISTURBED AREAS LEFT IDLE FOR A PERIOD OF 14 DAYS OR LONGER ARE TO RECEIVE TEMPORARY VEGETATION AND MULCHED.
- REMOVE EROSION CONTROL DEVICES AFTER PERMANENT VEGETATION IS ESTABLISHED.
- THIS EROSION CONTROL PLAN AND ALL EROSION CONTROL DEVICES MAY BE ADDED TO OR DELETED AS DIRECTED BY THE ENGINEER.
- THE LOCATIONS OF THESE EROSION CONTROL DEVICES MAY BE CHANGED IF SITE CONDITIONS WARRANT TO PREVENT EROSION.
- CONTRACTOR TO COMPLY WITH ALL OSHA SAFETY REQUIREMENTS.

W:\2013\13-5736 Maumelle Counts Massie Roadway and Utilities Extension\Design-Engineering\13-5736-S1.dwg 5/23/17 at 10:35am

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STATE OF ARKANSAS
 LICENSED PROFESSIONAL ENGINEER
 M. KRISHNAN
 No. 15912
 4/20/2017

ORIGINAL SIGNATURE ON FILE

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 ROADWAY EXTENSION
 MAUMELLE, ARKANSAS

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811
 Know what's below.
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NO.	DATE	REVISIONS DESCRIPTION

PROJECT OVERVIEW AND NOTES

PROJECT ENGR: MK	DRAWN BY: JAM
DATE: APRIL 2017	JOB NUMBER: LR13-5736
SCALE: N.T.S.	

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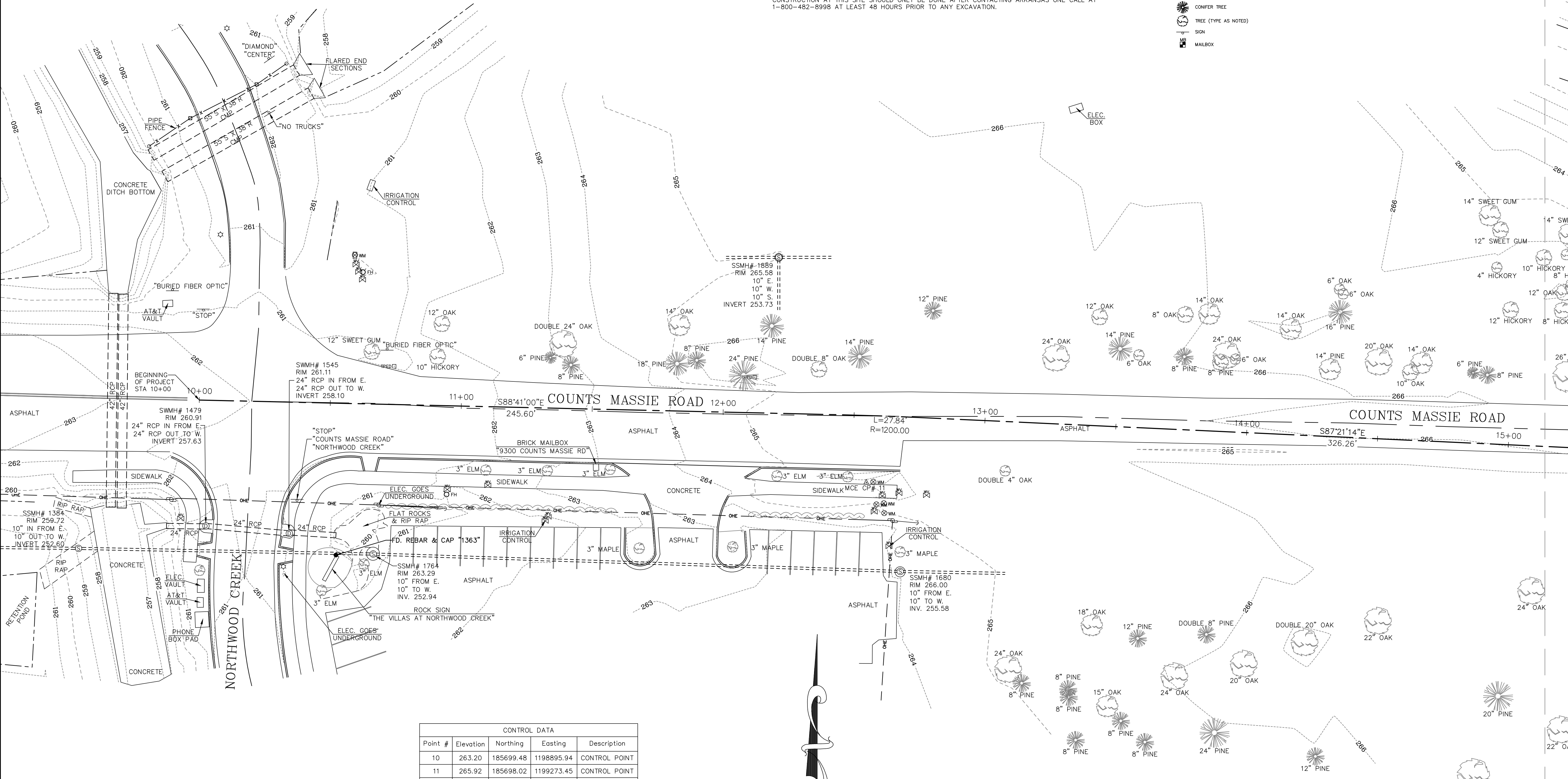
SURVEYOR'S NOTES:
 HORIZONTAL COORDINATES FOR THIS PROJECT ARE ARKANSAS STATE PLANE NORTH ZONE AND ELEVATIONS ARE NAVD83 BASED ON THE PAGS REFERENCE STATION.
 CONTOUR INTERVAL = 1 FOOT.
 THIS IS A TOPOGRAPHIC SURVEY ONLY AND IN NO WAY SHOULD BE INTERPRETED AS A PROPERTY BOUNDARY SURVEY. ANY PROPERTY LINES SHOWN ARE FOR REFERENCE ONLY AND HAVE NOT BEEN VERIFIED.
 FIELD WORK FOR THIS SURVEY WAS COMPLETED APRIL, 2013.
 NO STATEMENT IS MADE CONCERNING SUBSURFACE CONDITIONS.

BURIED UTILITIES AND SUBSURFACE STRUCTURES ARE SHOWN BASED ON VISUAL INSPECTION OF MANHOLES AND OTHER SURFACE FEATURES. McCLELLAND CONSULTING ENGINEERS HAS ACCURATELY DEPICTED THE UNDERGROUND AND SUBSURFACE FEATURES TO THE BEST OF THEIR KNOWLEDGE AND ABILITY. ANY CONSTRUCTION AT THIS SITE SHOULD ONLY BE DONE AFTER CONTACTING ARKANSAS ONE CALL AT 1-800-482-8998 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION.

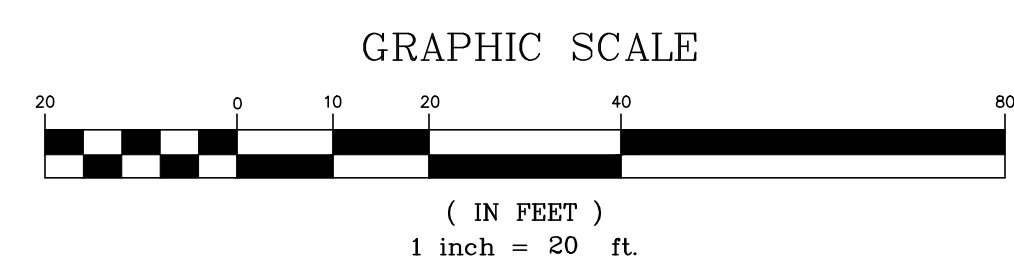
LEGEND

- △ SURVEY CONTROL MONUMENT (TYPE AS NOTED)
- FOUND SURVEY BOUNDARY MARKER (TYPE AS NOTED)
- ⊙ STORM WATER MANHOLE
- ⊙ SANITARY SEWER MANHOLE
- ☆ LIGHT POLE
- ⊙ POWER POLE
- ⊙ GUY LINE
- ⊙ TELEPHONE PEDESTAL
- ⊙ WATER VALVE
- ⊙ WATER METER
- ⊙ FIRE HYDRANT
- ⊙ CONIFER TREE
- ⊙ TREE (TYPE AS NOTED)
- ⊙ SIGN
- ⊙ MAILBOX

_____ CURB LINE
 - - - - - OHE OVERHEAD ELECTRIC LINE
 - - - - - FENCE
 - - - - - STORM WATER LINE
 - - - - - SANITARY SEWER LINE
 - - - - - DITCH OR STREAM LINE



CONTROL DATA				
Point #	Elevation	Northing	Easting	Description
10	263.20	185699.48	1198895.94	CONTROL POINT
11	265.92	185698.02	1199273.45	CONTROL POINT
12	265.53	185720.09	1199819.60	CONTROL POINT
13	264.07	185718.78	1200203.02	CONTROL POINT
14	268.40	185675.49	1200498.41	CONTROL POINT
15	272.15	185725.03	1200971.19	CONTROL POINT
16	269.22	185668.58	1200670.73	CONTROL POINT
17	271.68	185727.09	1201307.18	CONTROL POINT
18	272.51	185718.95	1201570.43	CONTROL POINT
19	273.56	185702.95	1201790.67	CONTROL POINT
20	275.42	185738.32	1201988.82	CONTROL POINT
21	276.25	185673.76	1202232.52	CONTROL POINT
22	277.41	185713.61	1202354.70	CONTROL POINT



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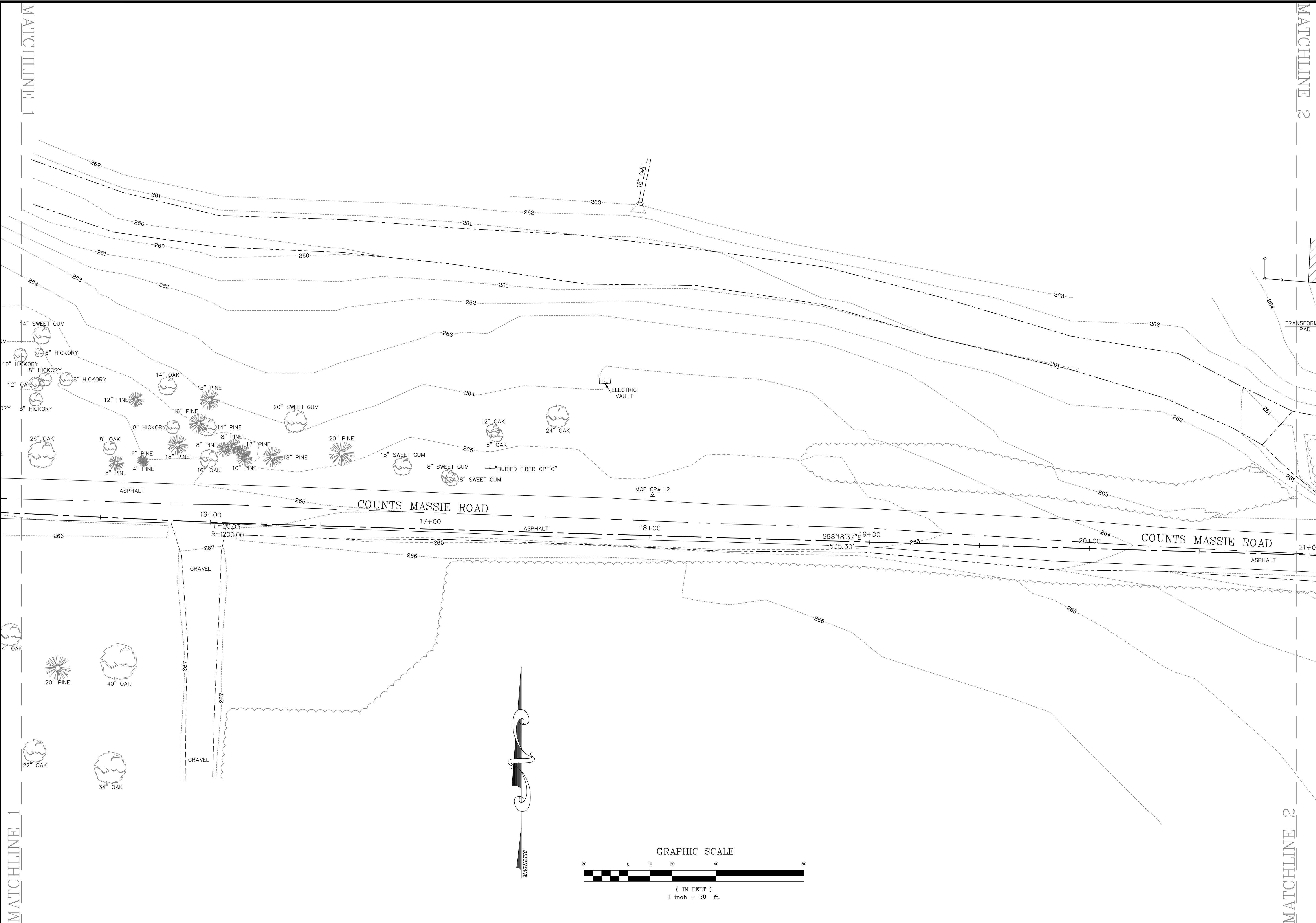
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NO.	DATE	REVISIONS	DESCRIPTION

TOPOGRAPHIC SURVEY

SURVEY MGR: KLS	DRAWN BY: JDM
DATE: 5-6-13	JOB NUMBER: LR13-5736
SCALE: 1"=20'	

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MATCHLINE 1

MATCHLINE 2

MATCHLINE 1

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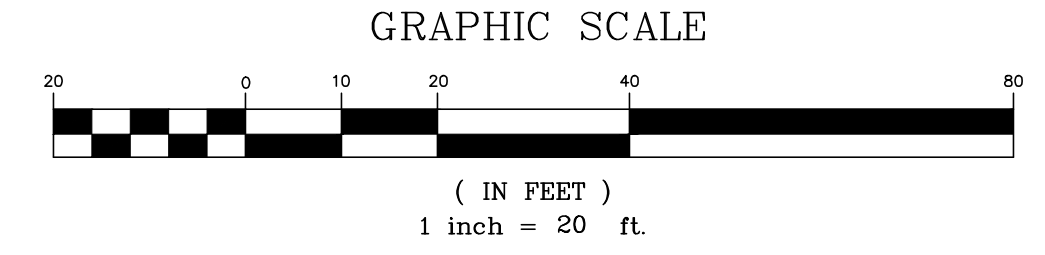
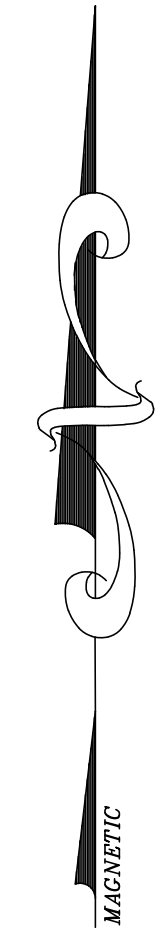
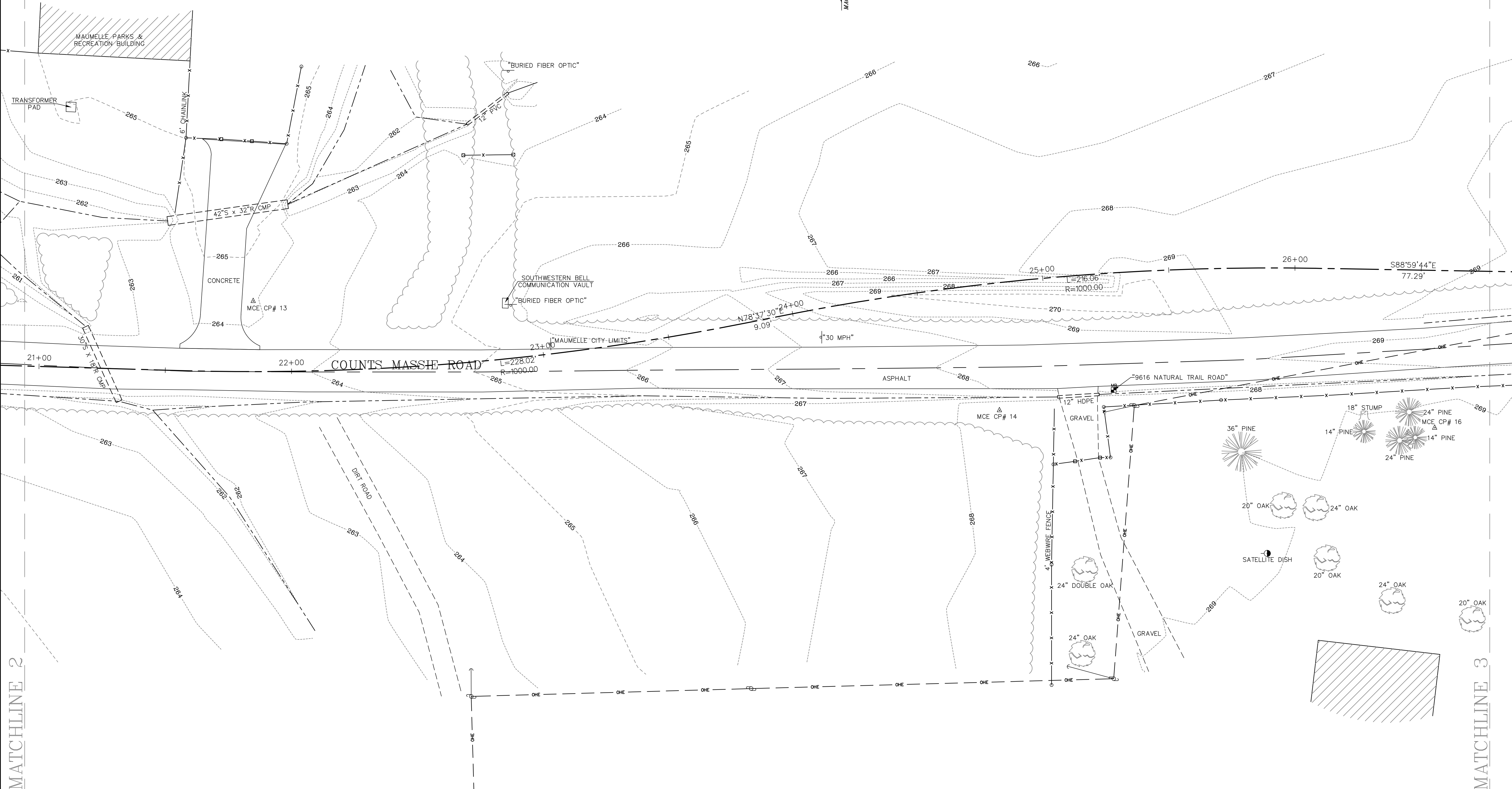
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DATE: 5-6-13	JOB NUMBER: LR13-5736
SCALE: 1"=20'	

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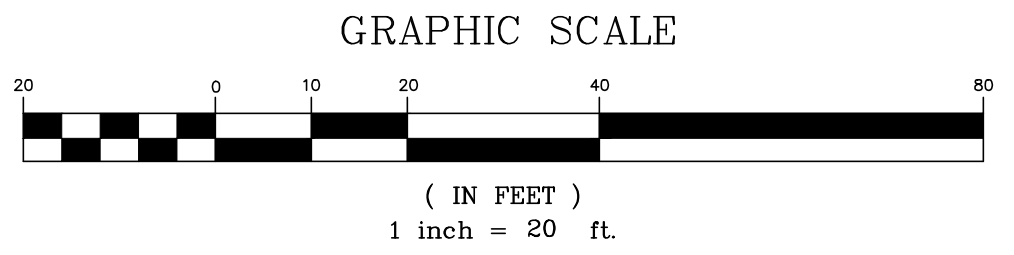
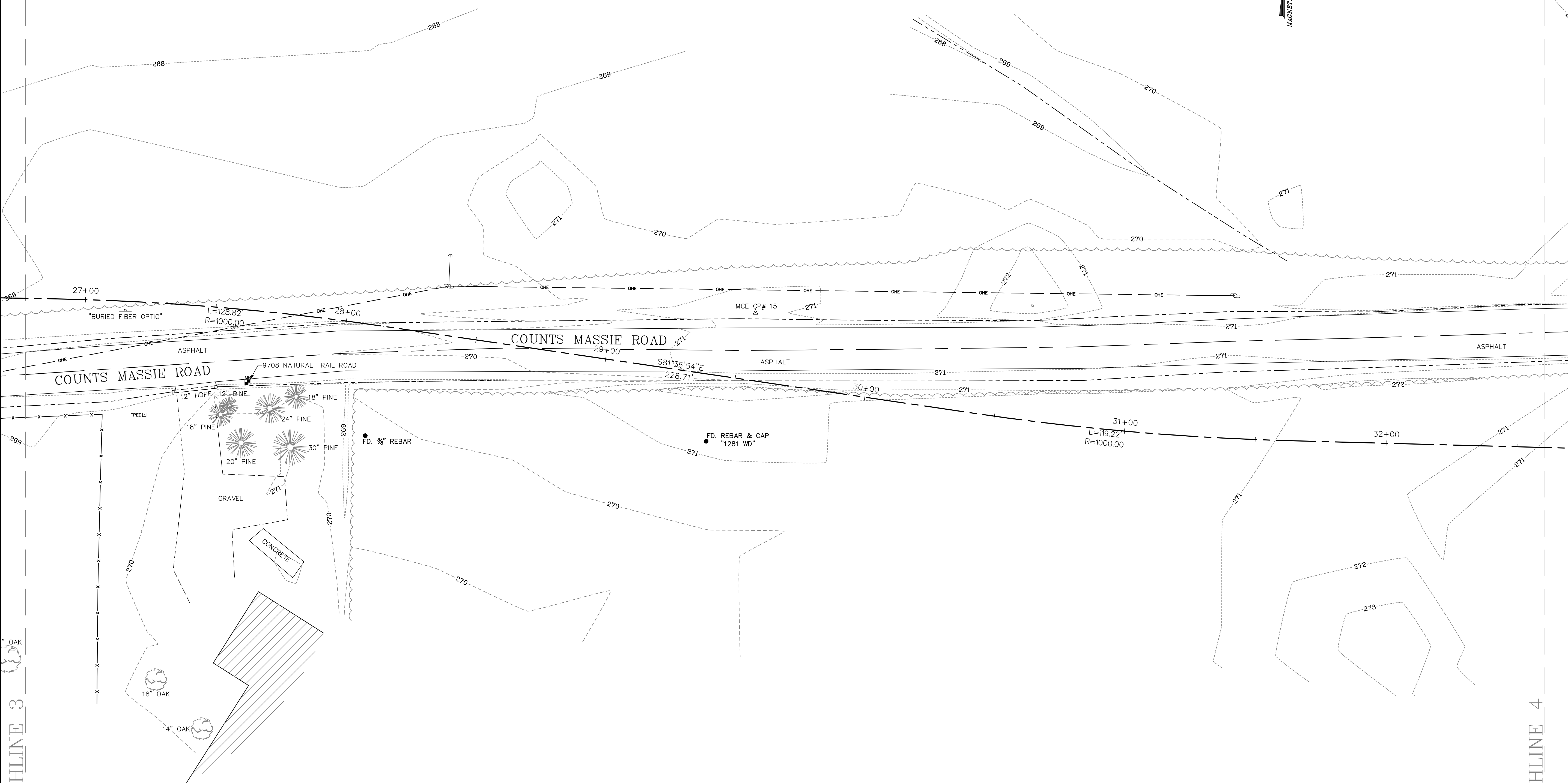
**TOPOGRAPHIC
SURVEY**

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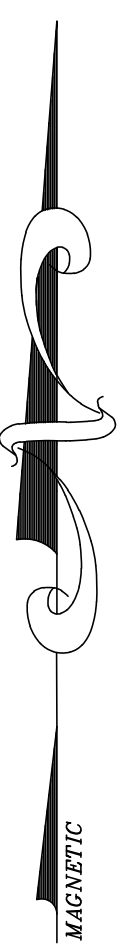
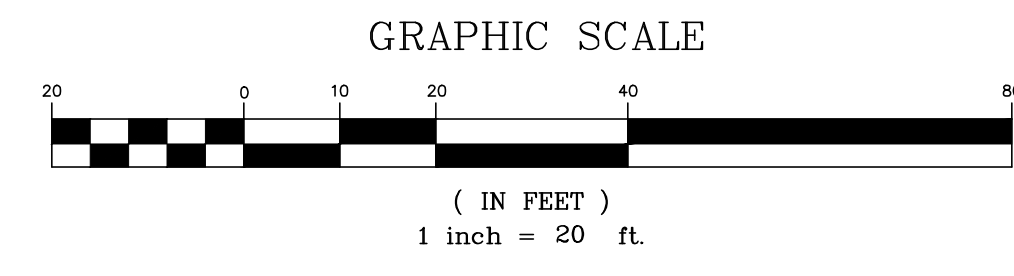
TOPOGRAPHIC SURVEY

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SCALE: 1"=20'	

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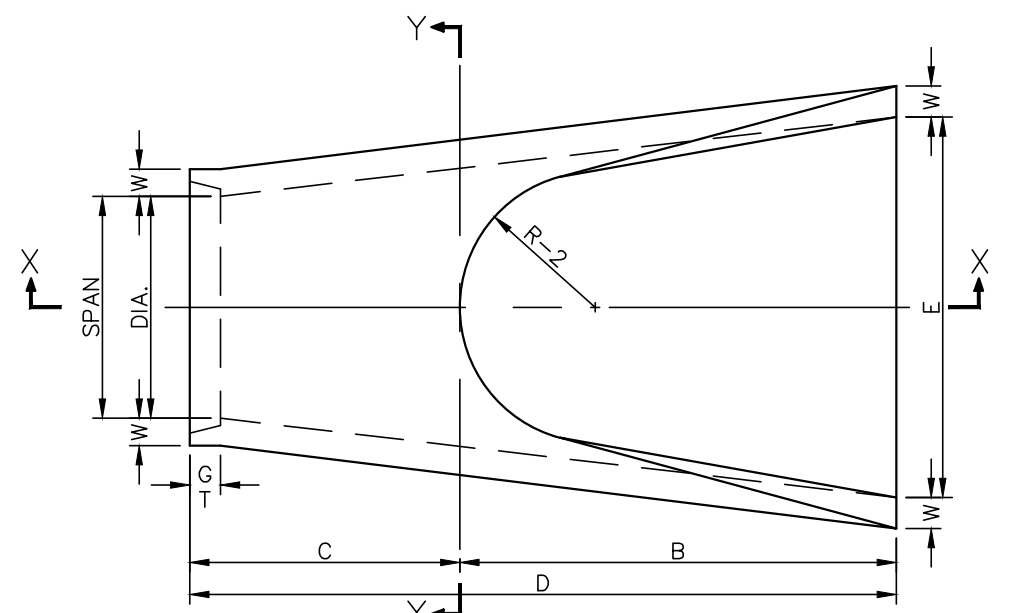
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 MAUMELLE, ARKANSAS

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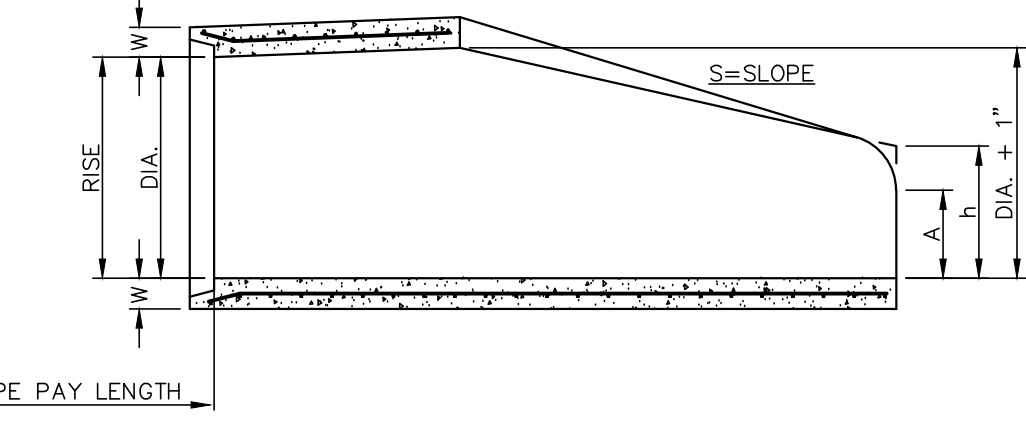
NO.	DATE	REVISIONS DESCRIPTION

TOPOGRAPHIC SURVEY

SURVEY MGR: KLS	DRAWN BY: JDM
DATE: 5-6-13	
SCALE: 1"=20'	JOB NUMBER: LR13-5736



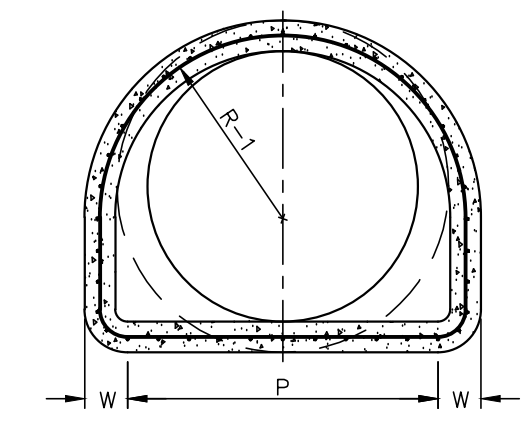
PLAN
N.T.S.



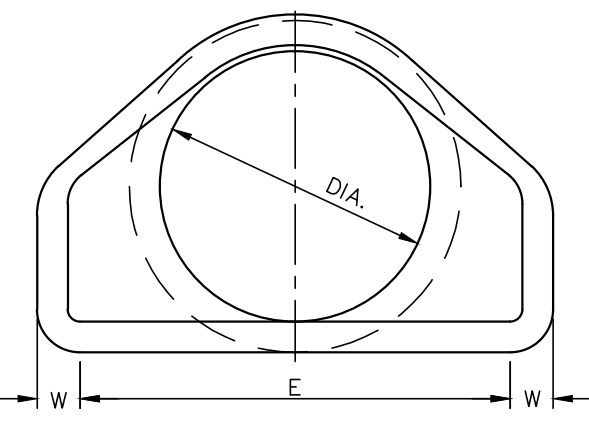
SECTION X-X
N.T.S.

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA.+1"	P	R-1	R-2	G-T	WT.	h
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15 1/2"	12"	2"	1000	1'-0 1/2"
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	3:1	25"	33 3/16"	16 1/2 1/16"	14"	2 1/2"	1600	1'-1 1/2"
30"	3 1/2"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3:1	31"	37"	18 1/2"	15"	3 1/4"	1940	1'-4 5/8"
36"	4"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	3:1	37"	47 3/16"	24 5/16"	20"	3 1/2"	4100	1'-8"
42"	4 1/2"	1'-9"	5'-3"	2'-11"	8'-2"	6'-8"	3:1	43"	53 7/8"	27 7/8"	22"	3 1/2"	5380	2'-2 1/2"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56 1/2"	28 1/2"	22"	3 1/2"	6550	2'-6"
54"	5 1/2"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65 1/2"	33 1/8"	24"	4"	8750	2'-10 1/2"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72 1/2"	36 1/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 3/16"	38 5/16"	24"	5"	13250	4'-6"



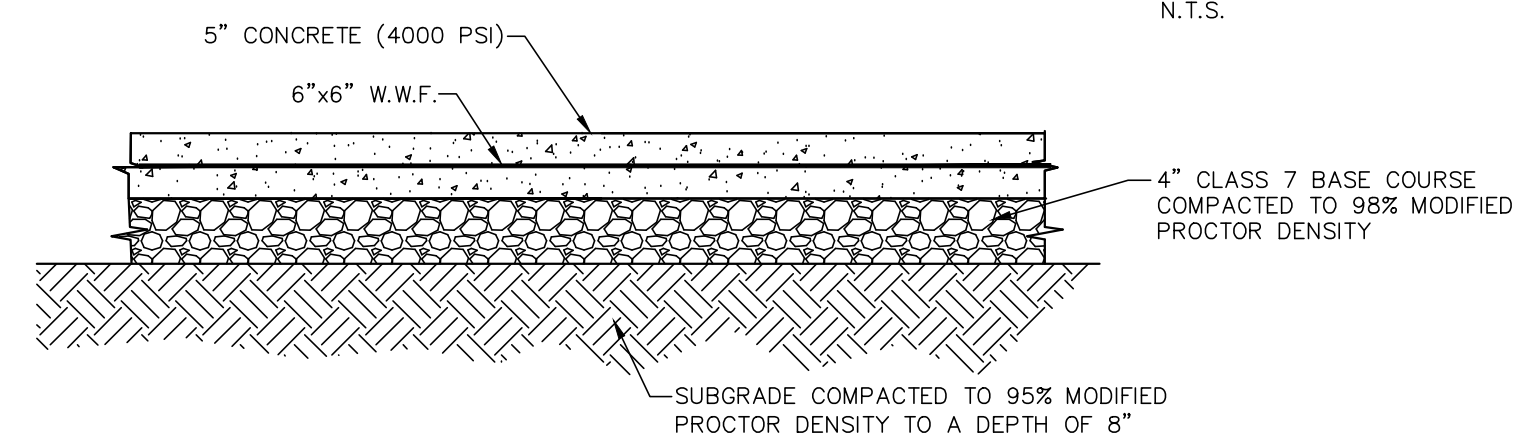
SECTION Y-Y
N.T.S.



END VIEW
N.T.S.

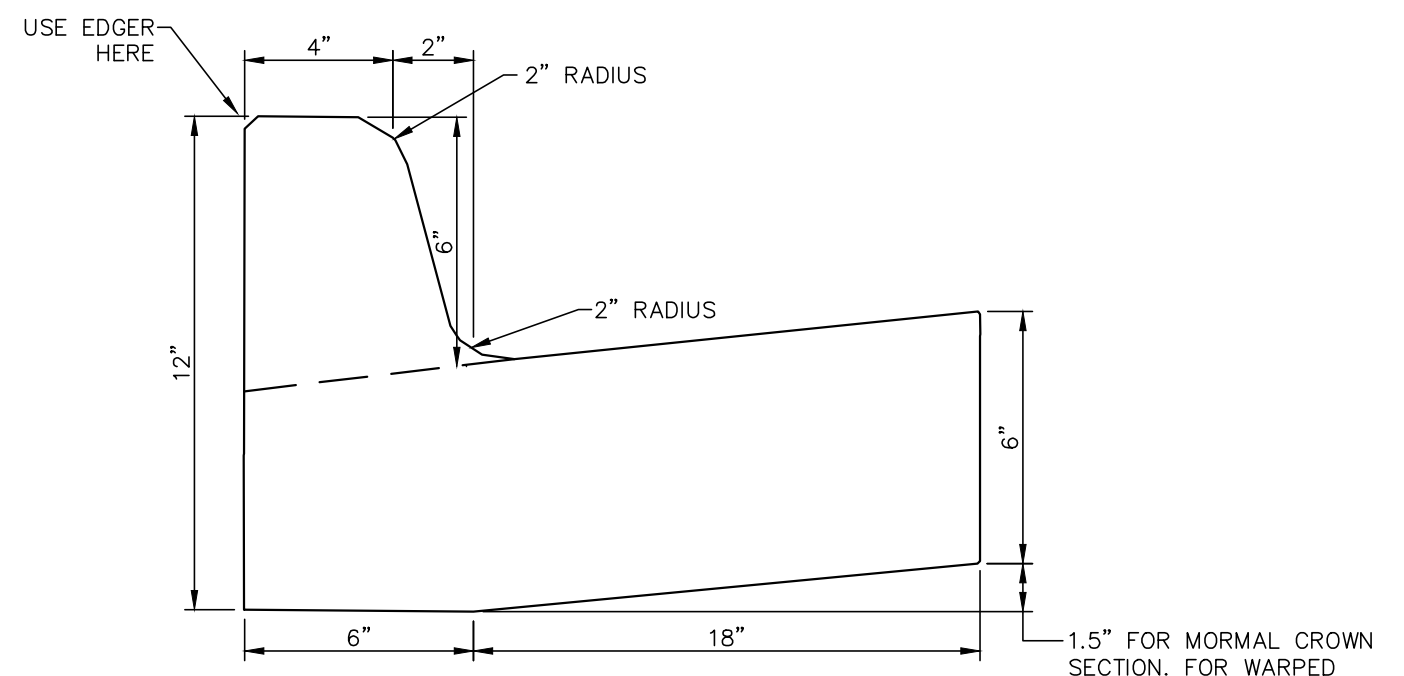
END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS
N.T.S.

NOTE:
TONGUE END ON UPSTREAM SECTION
GROOVED END ON DOWNSTREAM SECTION

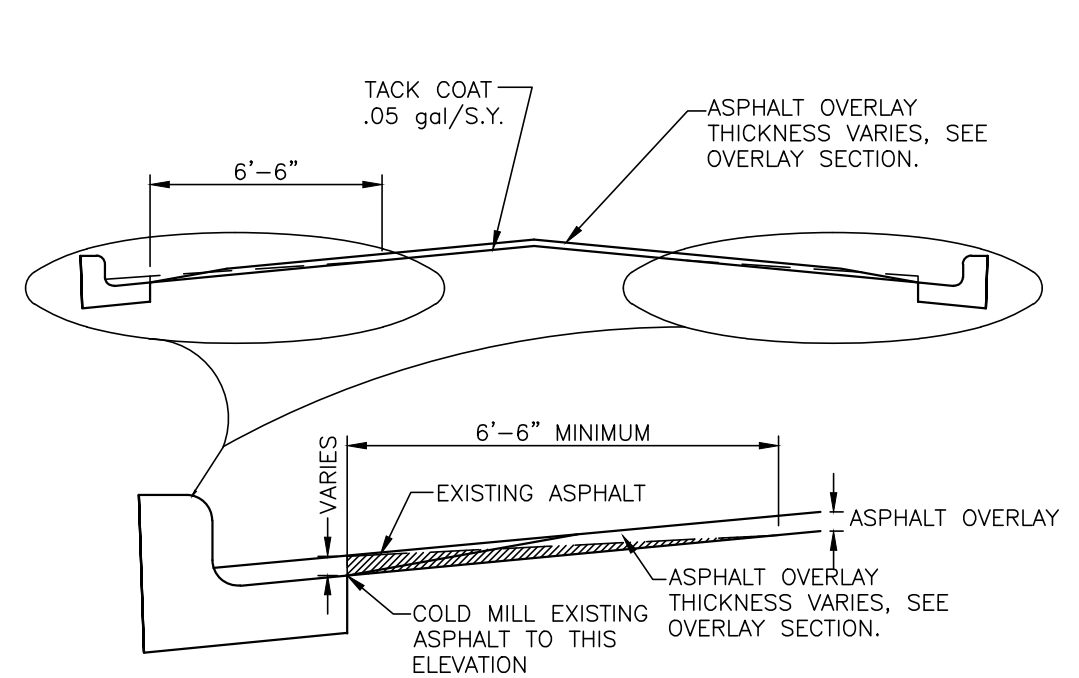


STANDARD DUTY CONCRETE DRIVE SECTION
N.T.S.

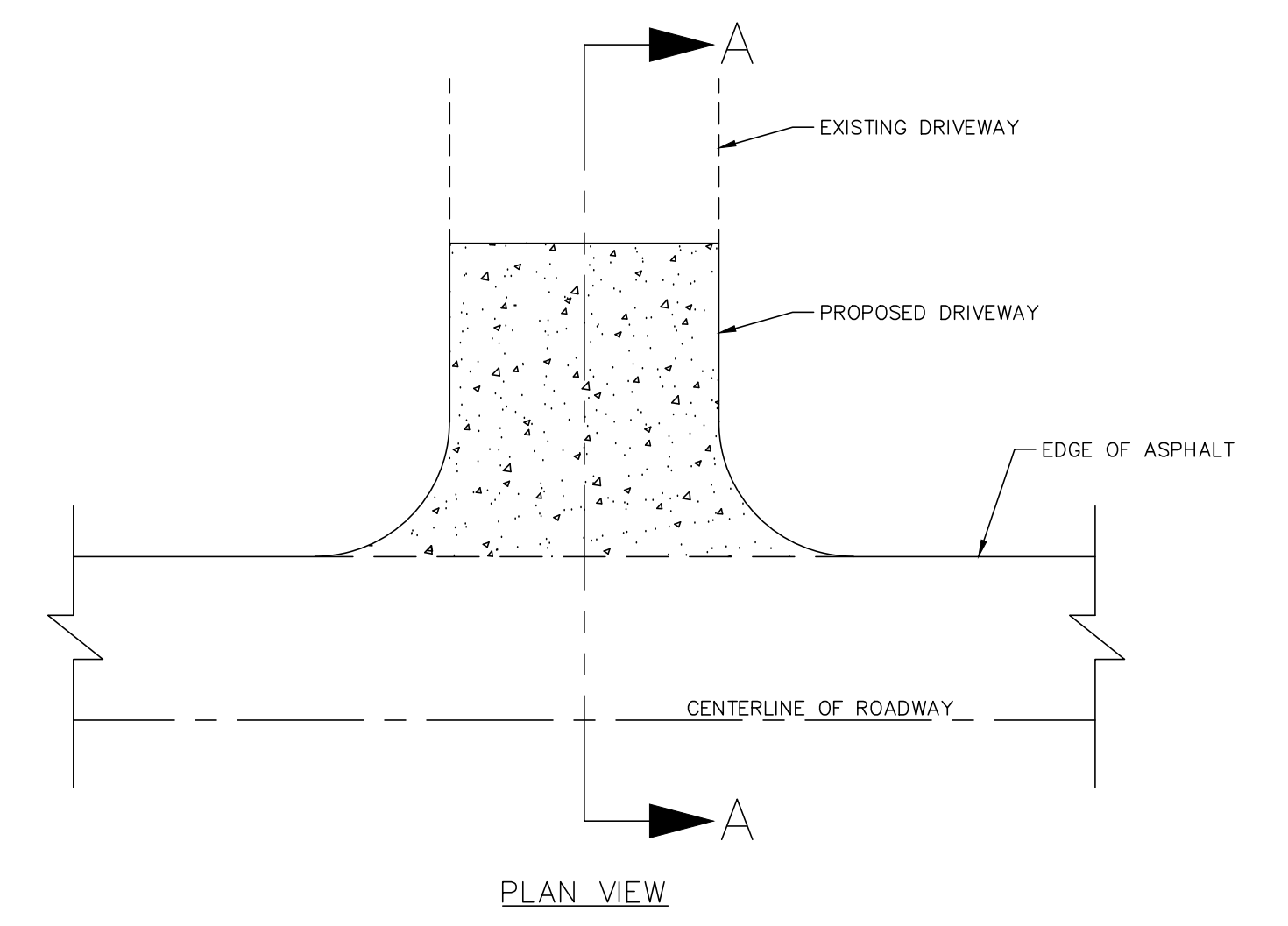
- NOTES:
- INSTALL 1/2" BITUMINOUS EXPANSION JOINT MATERIAL AT 100' MAX. INTERVALS OR AT TIE INS TO BOXES, RADIUS RETURNS OR DRIVEWAY APRONS. CONTROL JOINTS 15' MAX O.C.
 - JOINT SEALANT SHALL BE SONNEBORN SL2 SELF LEVELING URETHANE AS MANUFACTURED BY CHEMREX OR EQUIVALENT.



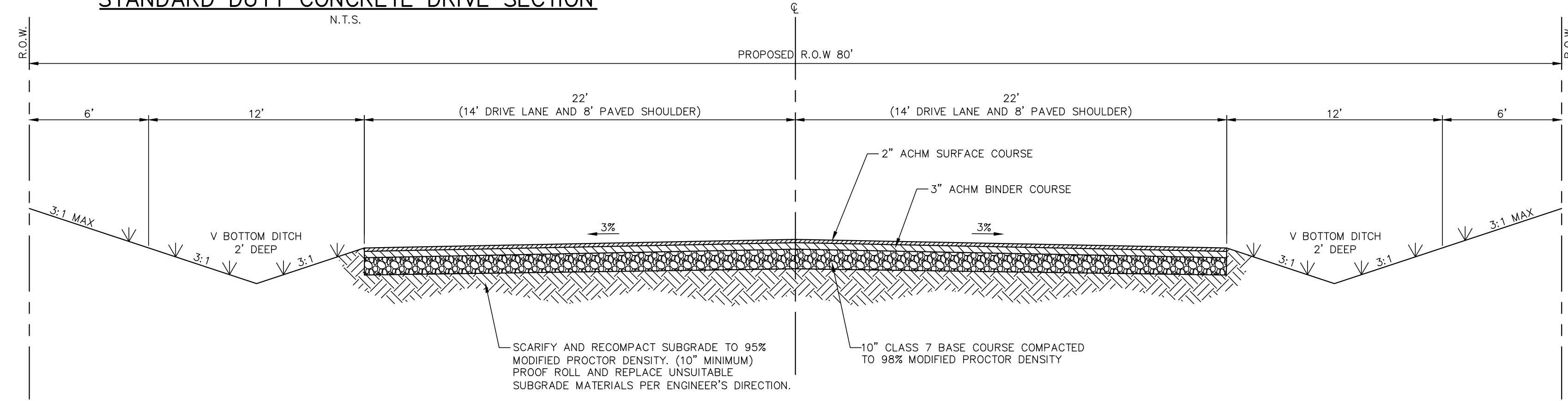
UPRIGHT CLASS 3 CURB & GUTTER SECTION
N.T.S.



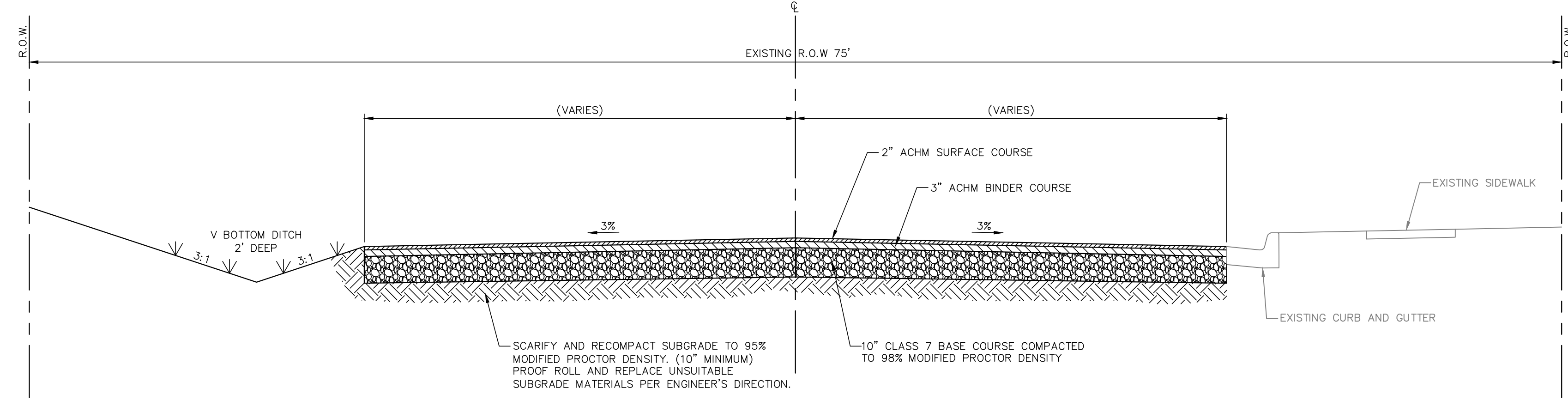
MILLING DETAILS
N.T.S.



RESIDENTIAL DRIVEWAY DETAIL
N.T.S.



TYPICAL SECTION OF ROADWAY IMPROVEMENTS (COUNTS MASSIE RD. STA. 12+70 TO STA. 35+98.66)
N.T.S.



TYPICAL SECTION OF ROADWAY IMPROVEMENTS (COUNTS MASSIE RD. STA. 10+20 TO STA. 12+70)
N.T.S.

MCCLELLAND CONSULTING ENGINEERS, INC.
DESIGNED TO SERVE
702 Kansas Rd.
Little Rock, AR 72204
Phone: 501-571-1672
http://www.mcc.us.com

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15912
ANIL K. KRISHNAN
4/20/2017
ORIGINAL SIGNATURE ON FILE

COUNTS MASSIE
ROADWAY EXTENSION
MAUMELLE, ARKANSAS

One Call
811
Know what's below.
Call before you dig.

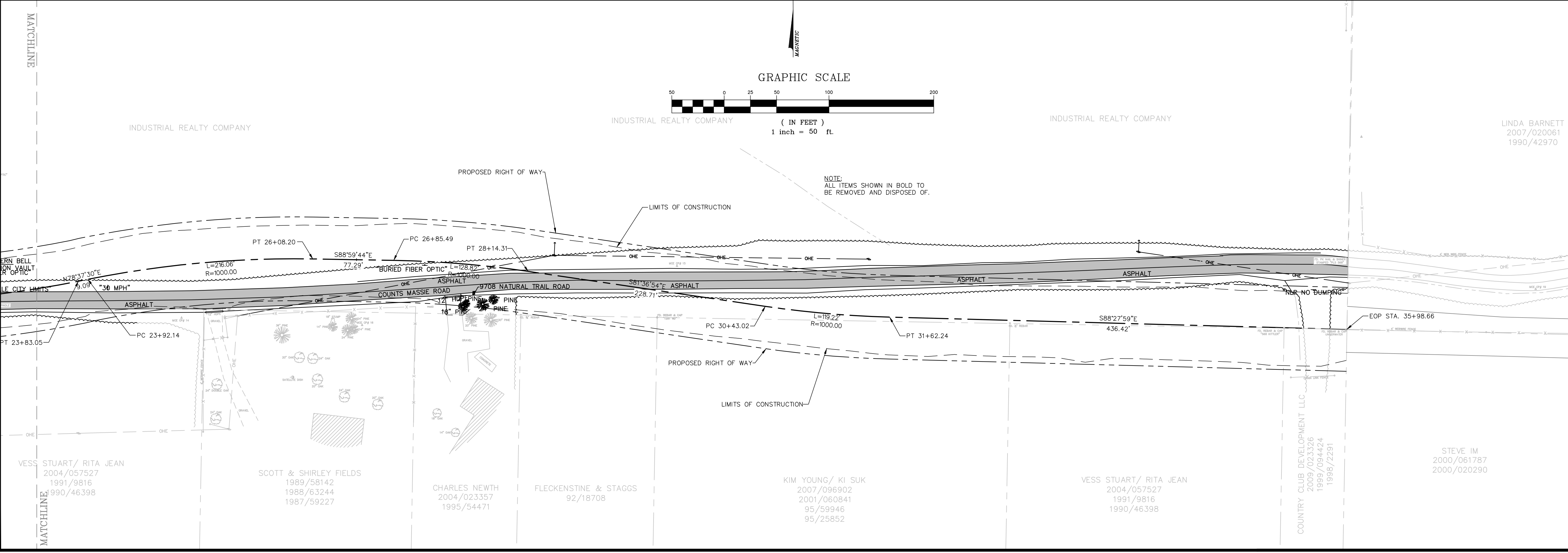
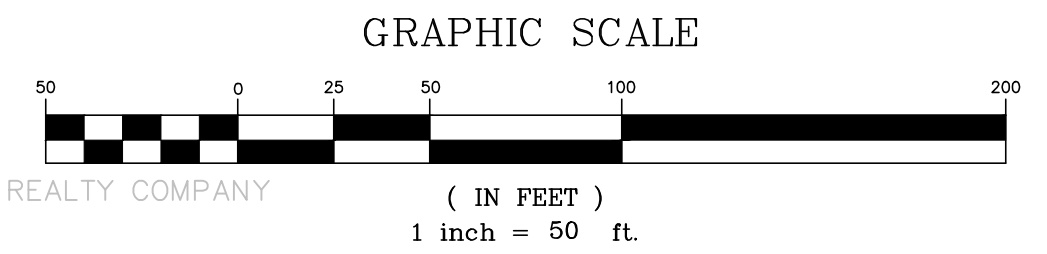
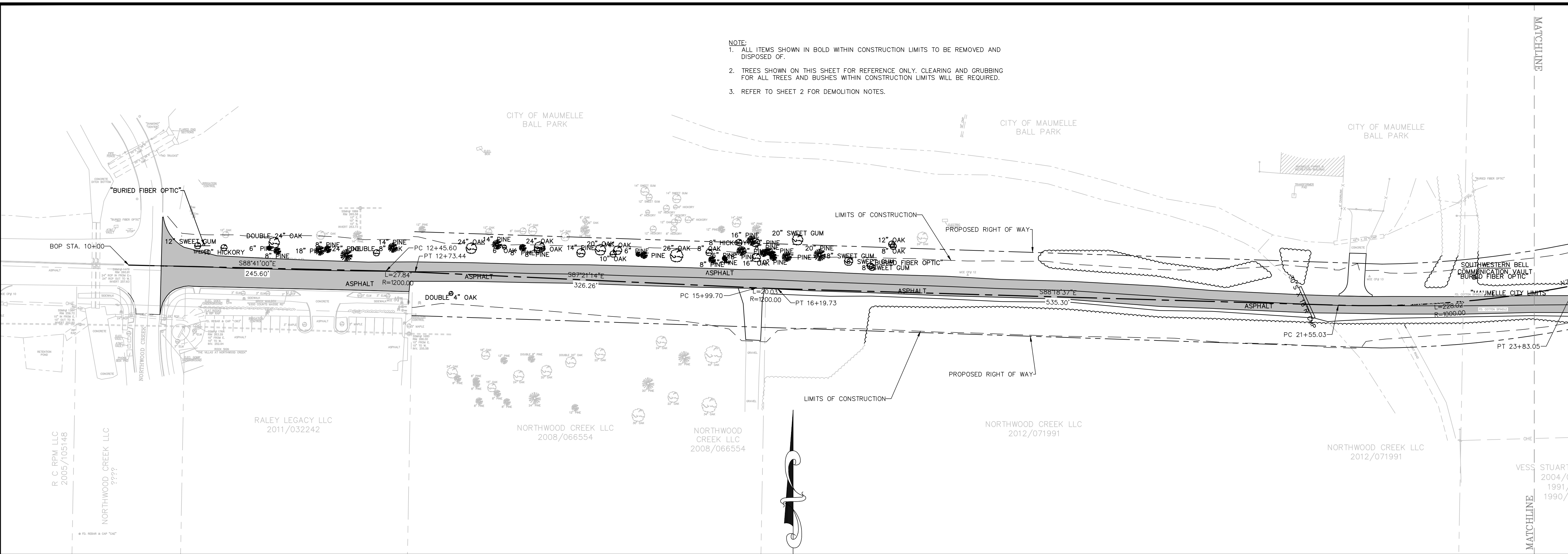
NO.	DATE	REVISIONS DESCRIPTION

TYPICAL SECTION AND DETAILS

PROJECT ENGR: MK
DRAWN BY: JAM
DATE: APRIL 2017
SCALE: N.T.S.
JOB NUMBER: LR13-5736

W:\2013\13-5736 Maumelle Counts Massie Roadway and Utilities Extension\Design-Engineering\13-5736-MD1.dwg 5/23/17 at 11:02am

- NOTE:
1. ALL ITEMS SHOWN IN BOLD WITHIN CONSTRUCTION LIMITS TO BE REMOVED AND DISPOSED OF.
 2. TREES SHOWN ON THIS SHEET FOR REFERENCE ONLY. CLEARING AND GRUBBING FOR ALL TREES AND BUSHES WITHIN CONSTRUCTION LIMITS WILL BE REQUIRED.
 3. REFER TO SHEET 2 FOR DEMOLITION NOTES.



MCC McCLELLAND CONSULTING, INC.
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1810 N. College
Payetteville, AR 72702
PH# 479-443-2377
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Tulsa, OK 74146
PH# 918-571-0272
http://www.mcc.us.com

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
K. KRISHNAN
No. 15912
4/20/2017
ORIGINAL SIGNATURE ON FILE

COUNTS MASSIE
ROADWAY EXTENSION
MAUMELLE, ARKANSAS

One Call
811
Know what's below.
Call before you dig.

NO.	DATE	REVISIONS	DESCRIPTION

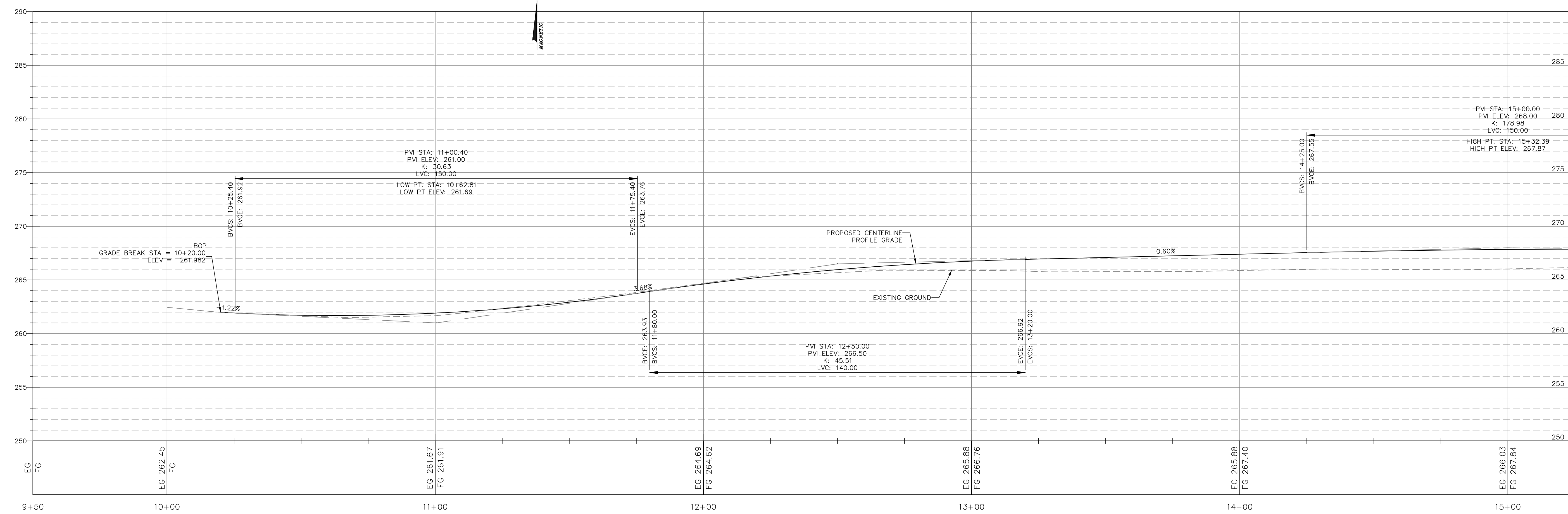
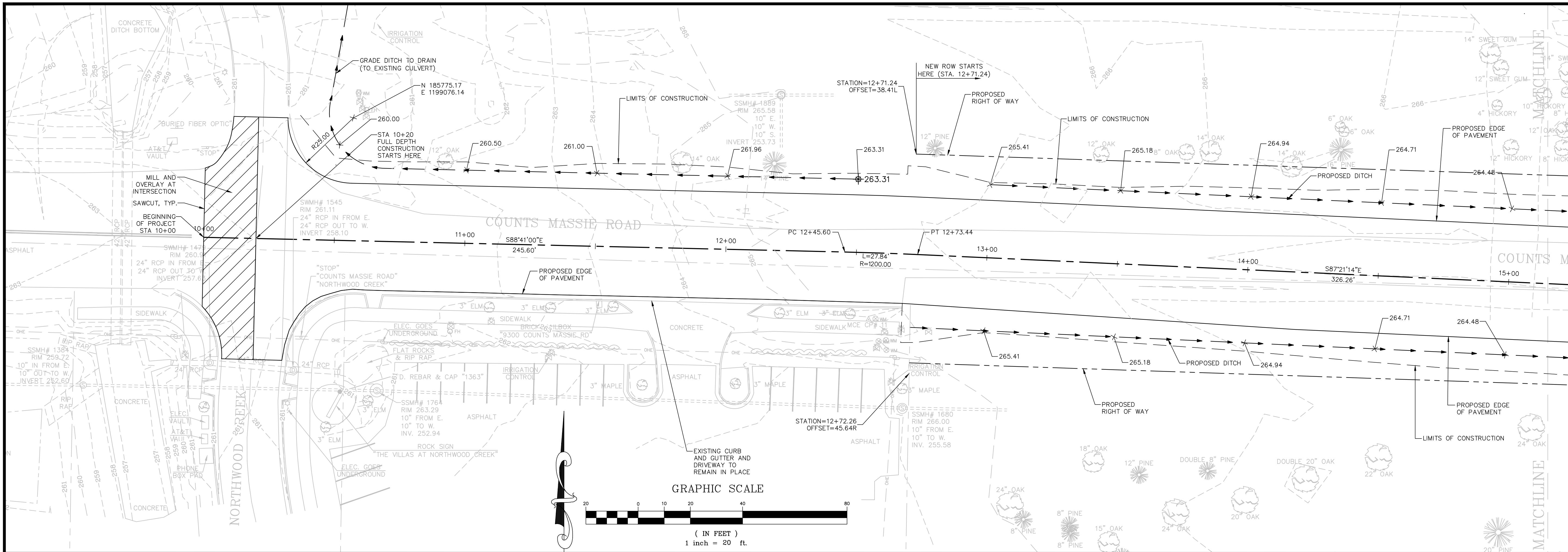
DEMOLITION PLAN

PROJECT ENGR: MK	DRAWN BY: JAM
DATE: APRIL 2017	JOB NUMBER: LR13-5736
SCALE: 1"=50'	

9

W:\2013\13-5736 Maumelle Counts Massie Roadway and Utilities Extension\Design-Engineering\13-5736-S1.dwg 5/23/17 at 12:25pm

W:\2013\13-5736 Maumelle Counts Massie Roadway and Utilities Extension\Design\Engineering\13-5736-S1.dwg 5/23/17 at 12:26pm



COUNTS MASSIE ROAD PROFILE
 SCALE: 1"=20' HORIZ. 1"=5' VERT.

McCLELLAND CONSULTING, INC.
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 7302 Kaint Rd.
 Fayetteville, AR 72702
 4606 S. General Rd. Ste. 401
 Tulsa, OK 74146
 P: 479-443-3377 F: 479-443-3378
 P: 918-694-8803 F: 918-694-8803
<http://www.mcc.us.com>

STATE OF ARKANSAS
 LICENSED PROFESSIONAL ENGINEER
 MAHESH KRISHNAN
 No. 15912
 4/20/2017
 ORIGINAL SIGNATURE ON FILE

COUNTS MASSIE ROADWAY EXTENSION
 MAUMELLE, ARKANSAS

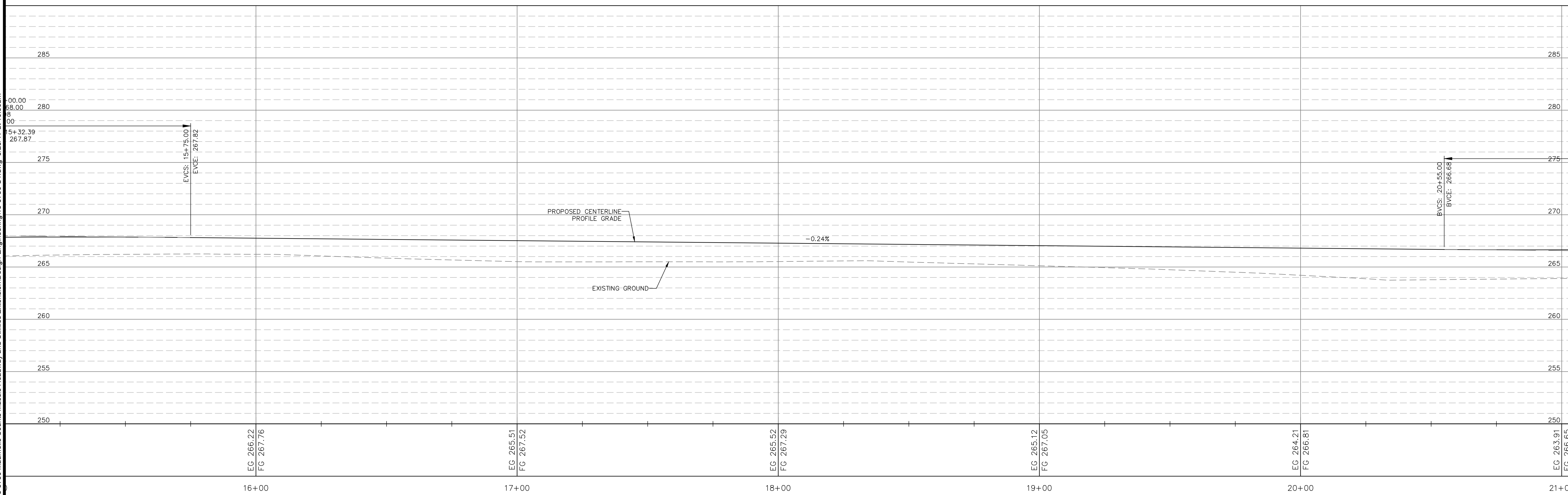
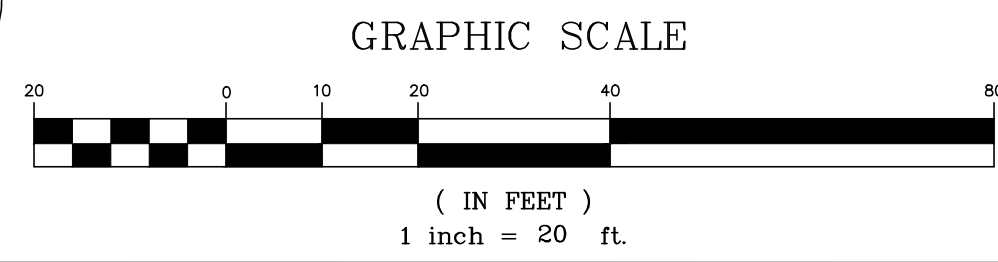
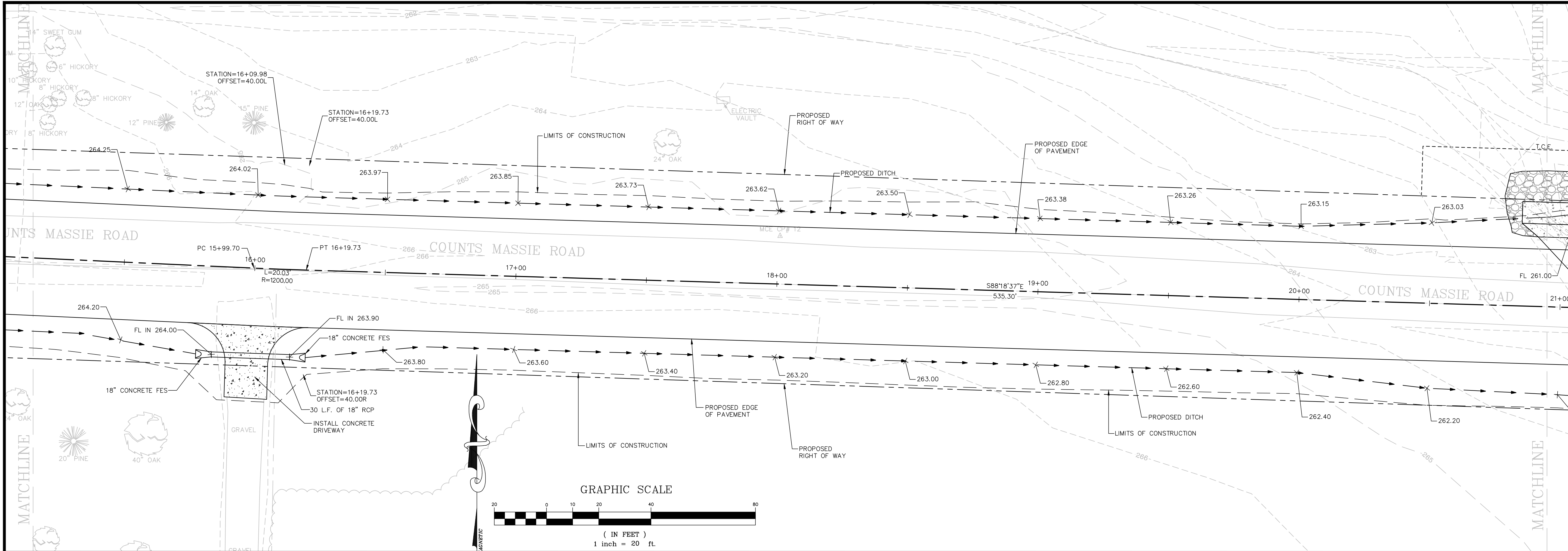
One Call 811
 Know what's below. Call before you dig.

NO.	DATE	DESCRIPTION

PLAN AND PROFILE STA. 10+00 TO STA. 15+15

PROJECT ENGR: MK	DRAWN BY: JAM
DATE: APRIL 2017	
AS SHOWN	JOB NUMBER: LR13-5736

10



COUNTS MASSIE ROAD PROFILE
 SCALE:
 1"=20' HORIZ.
 1"=5' VERT.

W:\2013\13-5736\Counts Massie Roadway and Utilities Extension\Design-Engineering\13-5736-S1.dwg 5/23/17 at 10:36am

MCC McCLELLAND CONSULTING, INC.
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 1810 N. College Fayetteville, AR 72702
 702 Kane Rd. Little Rock, AR 72204
 4606 S. Garner Rd. Sg. 401 Tulsa, OK 74146
 P.O. Box 501-571-0272 P.O. Box 918-69-8003
 http://www.mcc.us.com

STATE OF ARKANSAS
 LICENSED PROFESSIONAL ENGINEER
Amresh Krishnaiah
 No. 15912
 4/20/2017
 ORIGINAL SIGNATURE ON FILE

COUNTS MASSIE ROADWAY EXTENSION
 MAUMELLE, ARKANSAS

One Call
811
 Know what's below.
 Call before you dig.

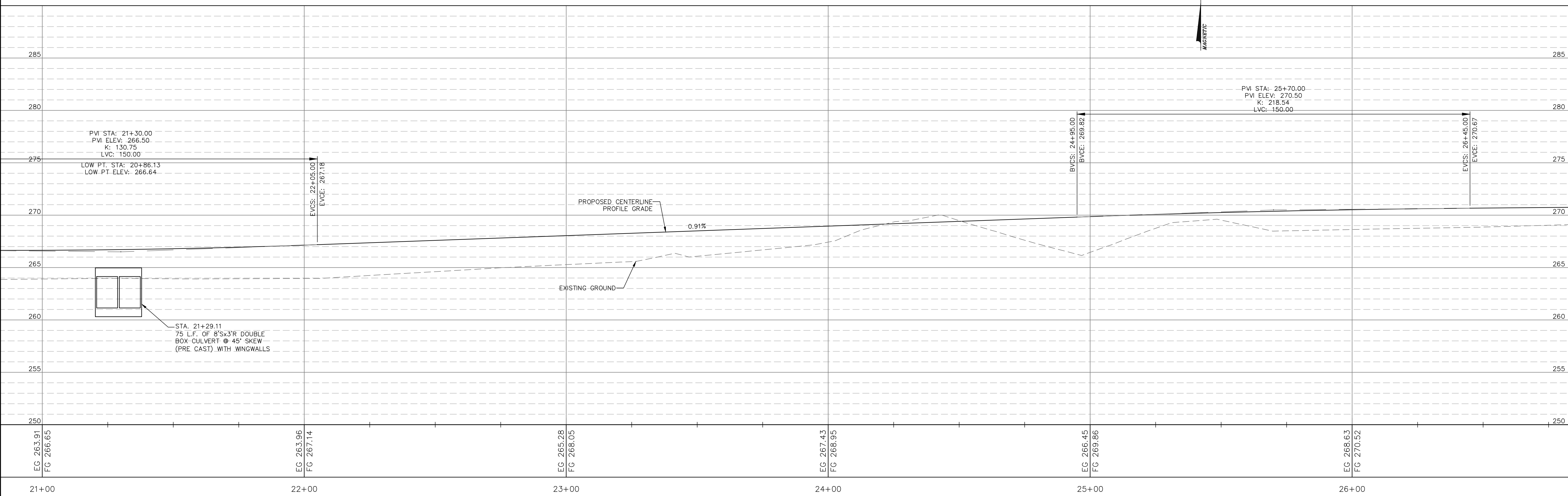
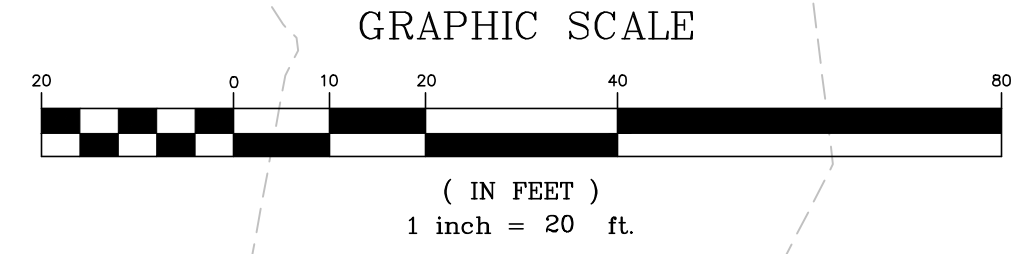
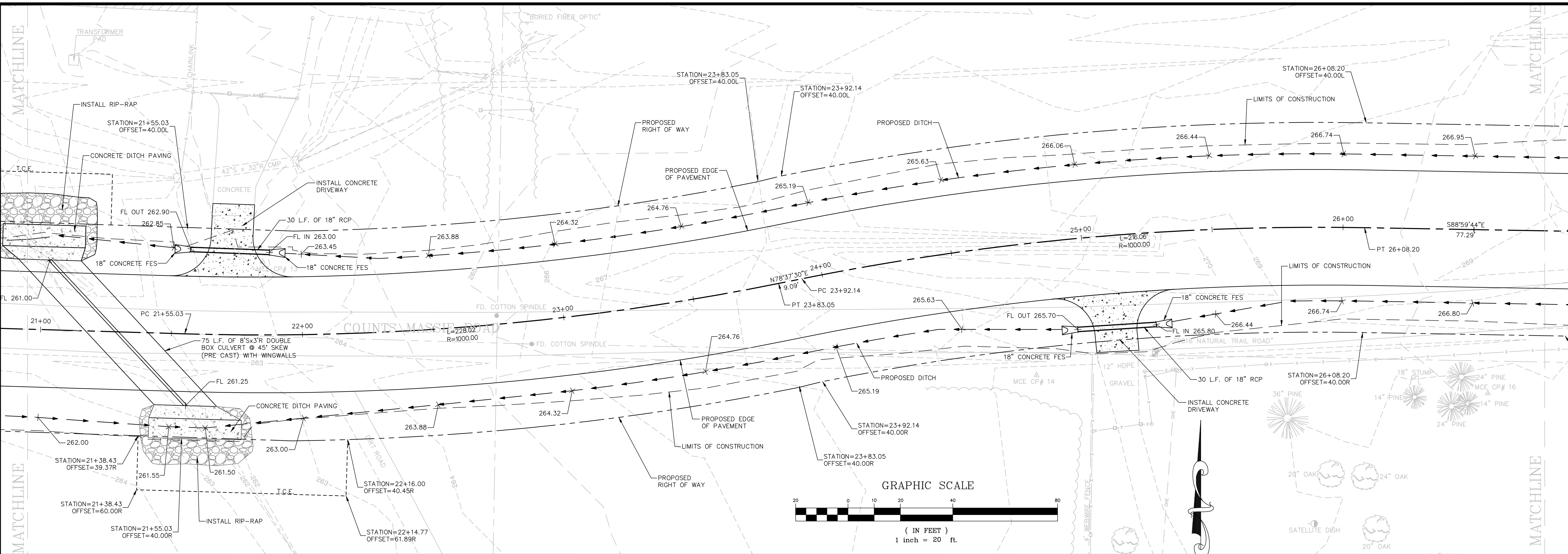
NO.	DATE	DESCRIPTION

PLAN AND PROFILE
 STA. 15+15
 TO STA. 20+95

PROJECT ENGR: MK	DRAWN BY: JAM
DATE: APRIL 2017	
SCALE: AS SHOWN	JOB NUMBER: LR13-5736

11

W:\2013\13-5736 Maumelle Counts Massie Roadway and Utilities Extension\Design-Engineering\13-5736-S1.dwg 5/23/17 at 10:37am



COUNTS MASSIE ROAD PROFILE

SCALE:
1"=20' HORIZ.
1"=5' VERT.

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Tulsa, OK 74146
4066 S. Gansett Rd. Ste. 401
Tulsa, OK 74146
P.O. Box 501571
Tulsa, OK 74151-0571
http://www.mcc.us.com

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15912
Anil K. KRISHNAN
4/20/2017
ORIGINAL SIGNATURE ON FILE

COUNTS MASSIE
ROADWAY EXTENSION
MAUMELLE, ARKANSAS

One Call
811
Know what's below.
Call before you dig.

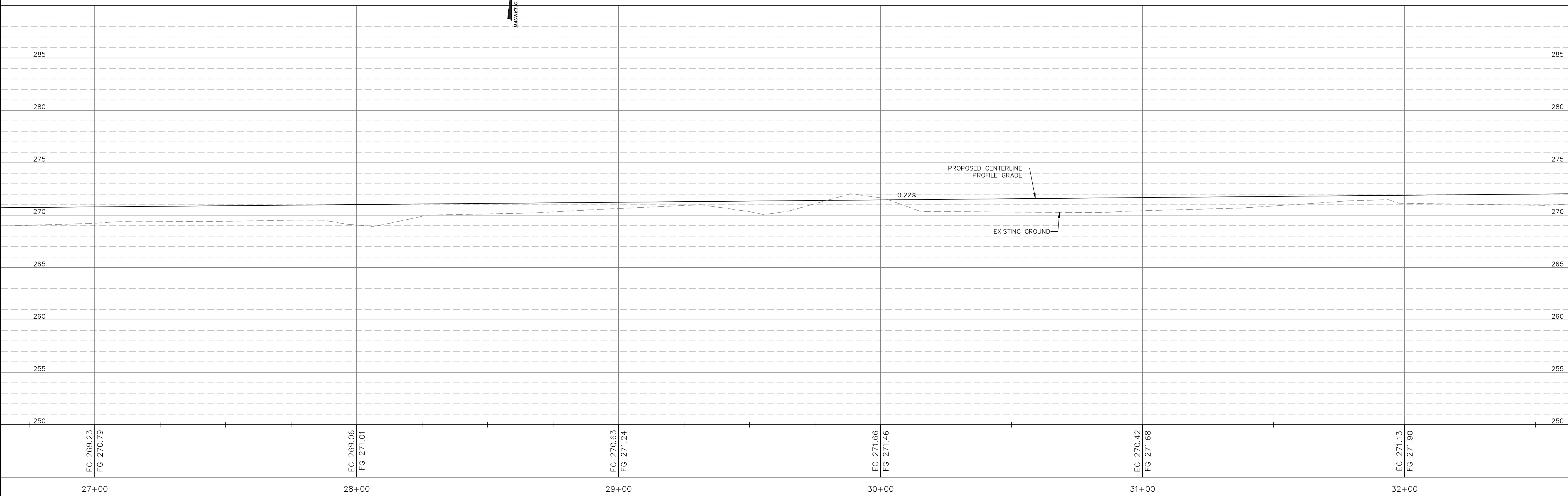
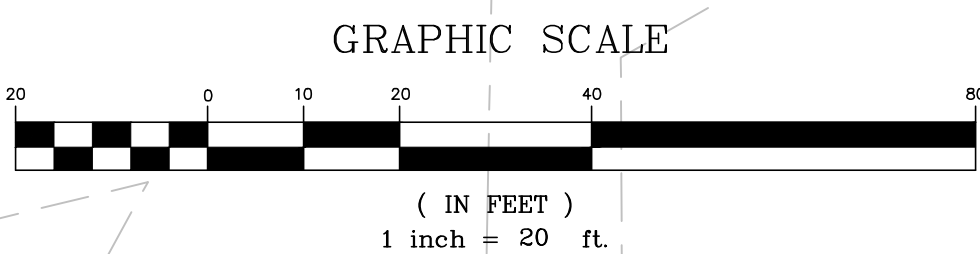
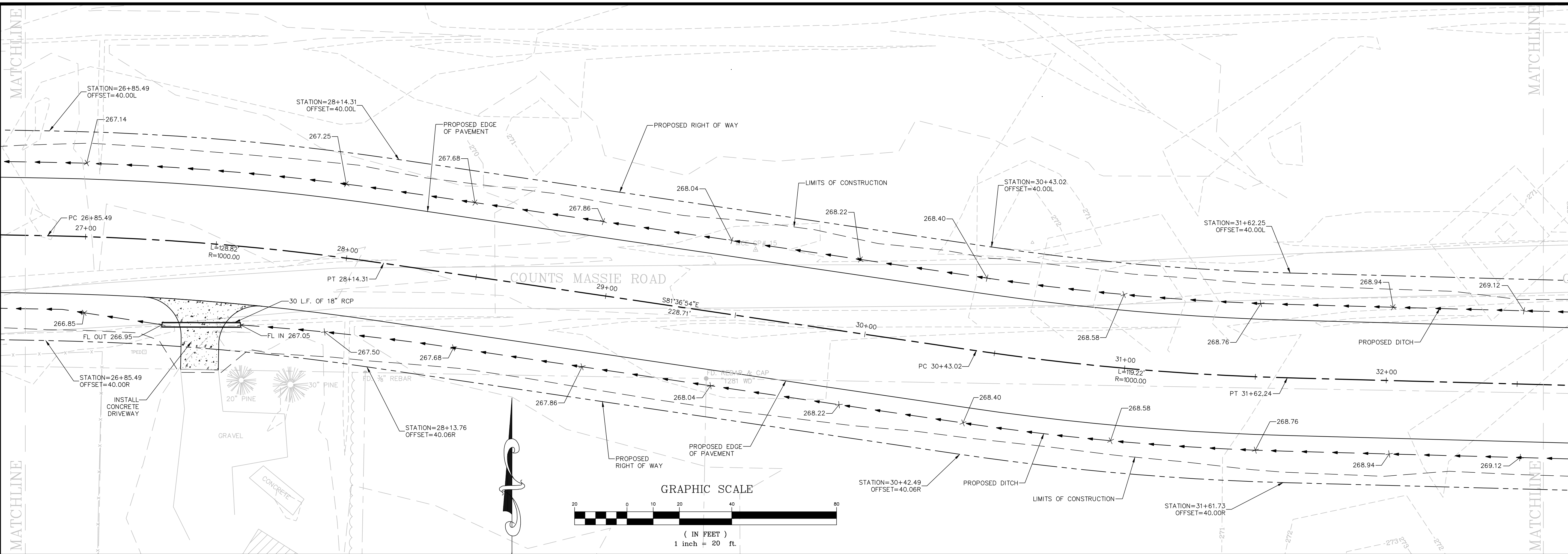
NO.	DATE	REVISIONS	DESCRIPTION

PLAN AND PROFILE
STA. 20+95
TO STA. 26+77

PROJECT ENGR: MK
DRAWN BY: JAM
DATE: APRIL 2017
SCALE: AS SHOWN
JOB NUMBER: LR13-5736

12

W:\2013\13-5736 Maumelle Counts Massie Roadway and Utilities Extension\Design-Engineering\13-5736-S1.dwg 5/23/17 at 10:37am



COUNTS MASSIE ROAD PROFILE
SCALE: 1"=20' HORIZ. 1"=5' VERT.

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No. 15912
Anirudh KRISHNA
4/20/2017
ORIGINAL SIGNATURE ON FILE

COUNTS MASSIE ROADWAY EXTENSION
MAUMELLE, ARKANSAS

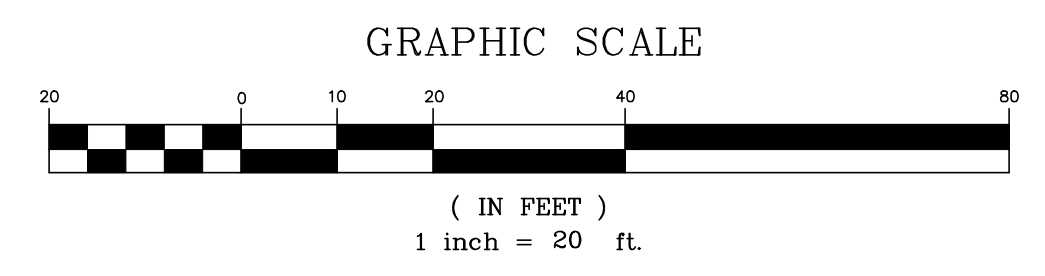
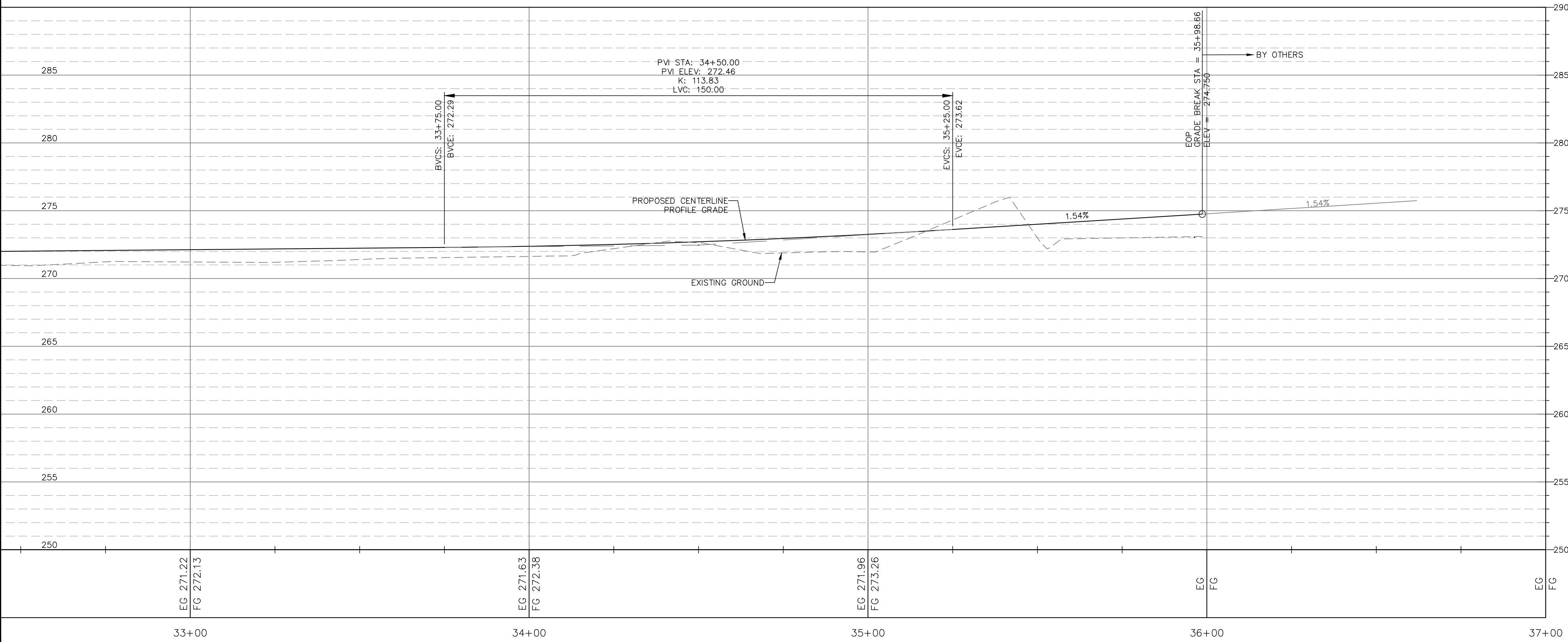
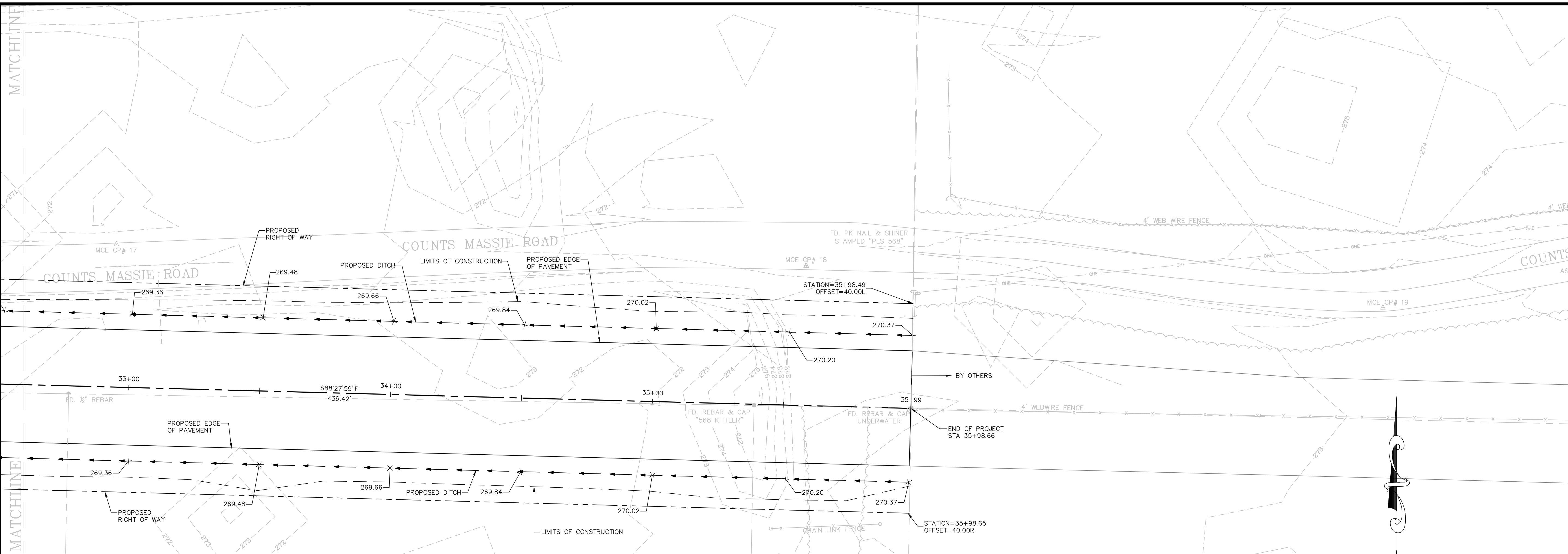
One Call 811
Know what's below. Call before you dig.

NO.	DATE	REVISIONS	DESCRIPTION

PLAN AND PROFILE
STA. 26+77
TO STA. 32+60

PROJECT ENGR: MK
DRAWN BY: JAM
DATE: APRIL 2017
SCALE: AS SHOWN
JOB NUMBER: LR13-5736

W:\2013\13-5736 Maumelle Counts Massie Roadway and Utilities Extension\Design-Engineering\13-5736-S1.dwg 5/23/17 at 10:37am



COUNTS MASSIE ROAD PROFILE
 SCALE:
 1"=20' HORIZ.
 1"=5' VERT.

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 1810 N. College, Fayetteville, AR 72702, P# 479-443-3377
 7302 Kania Rd., Little Rock, AR 72204, P# 501-571-0272
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STATE OF ARKANSAS
 LICENSED PROFESSIONAL ENGINEER
 No. 15912
 Anil K. Krishnan
 4/20/2017
 ORIGINAL SIGNATURE ON FILE

COUNTS MASSIE ROADWAY EXTENSION
 MAUMELLE, ARKANSAS

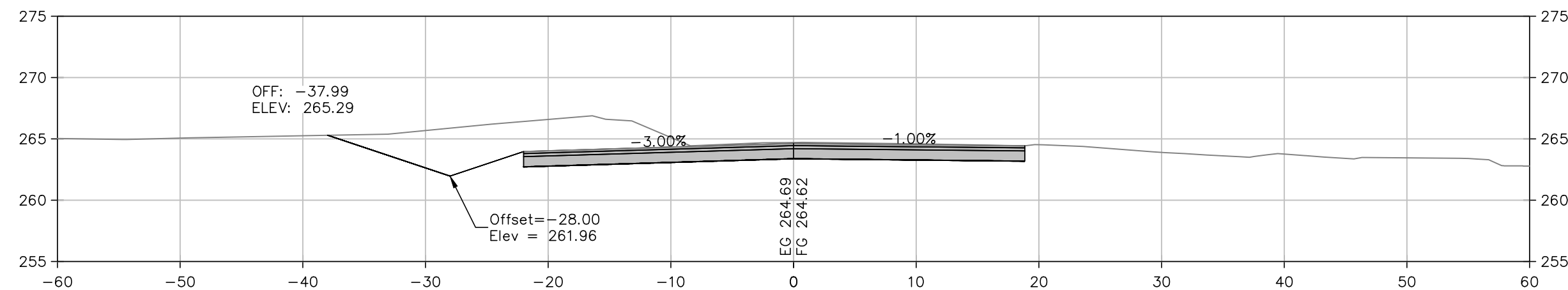
One Call
811
 Know what's below.
 Call before you dig.

NO.	DATE	REVISIONS	DESCRIPTION

PLAN AND PROFILE
 STA. 32+60
 TO STA. 35+98.66

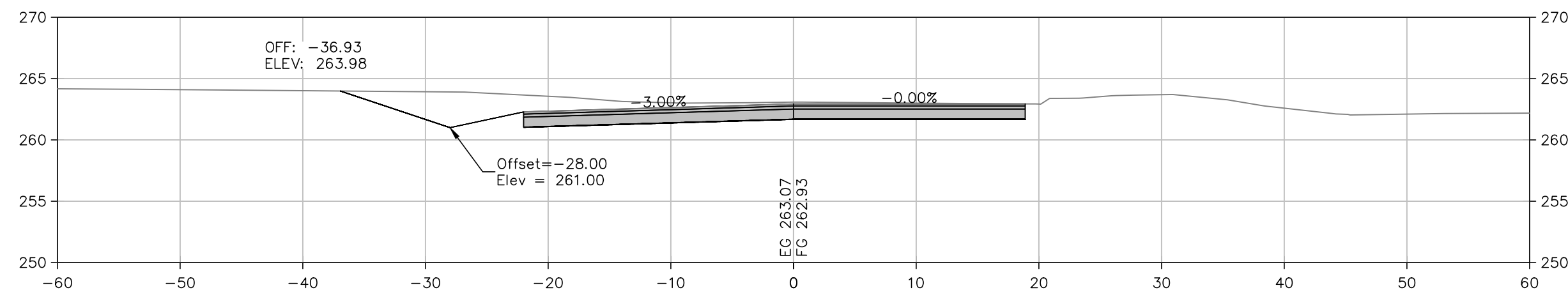
PROJECT ENGR: MK	DRAWN BY: JAM
DATE: APRIL 2017	
SCALE: AS SHOWN	JOB NUMBER: LR13-5736

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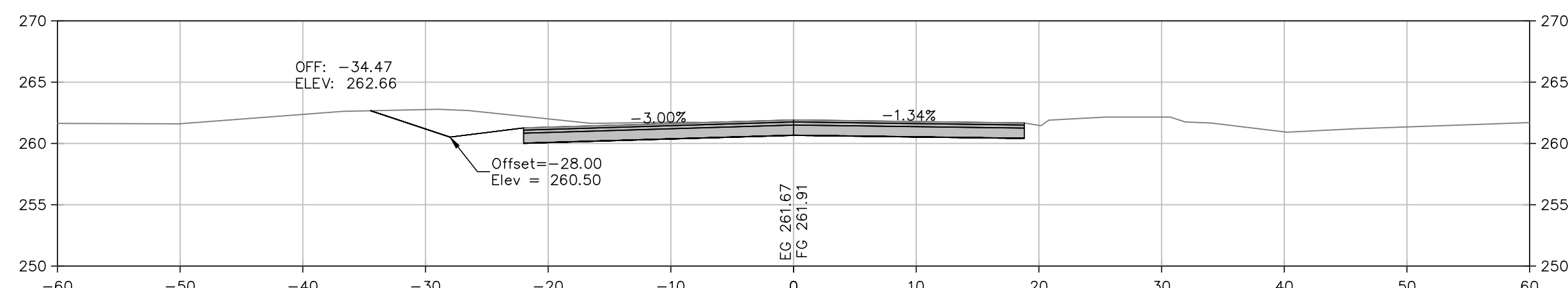
12+00.00

Total Volume at Station 12+00.00	
Cut Area	118.53
Fill Area	0.00
Cut Vol	194.03
Fill Vol	0.00



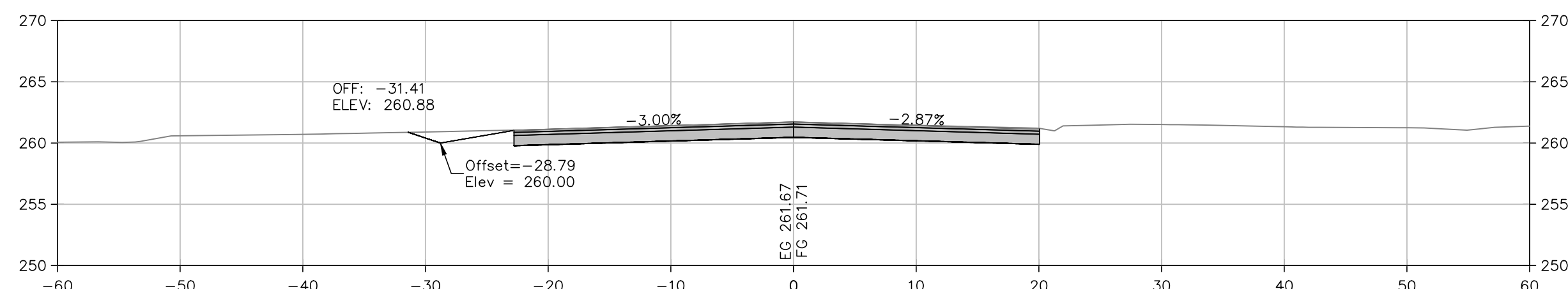
11+50.00

Total Volume at Station 11+50.00	
Cut Area	91.02
Fill Area	0.00
Cut Vol	148.80
Fill Vol	0.00



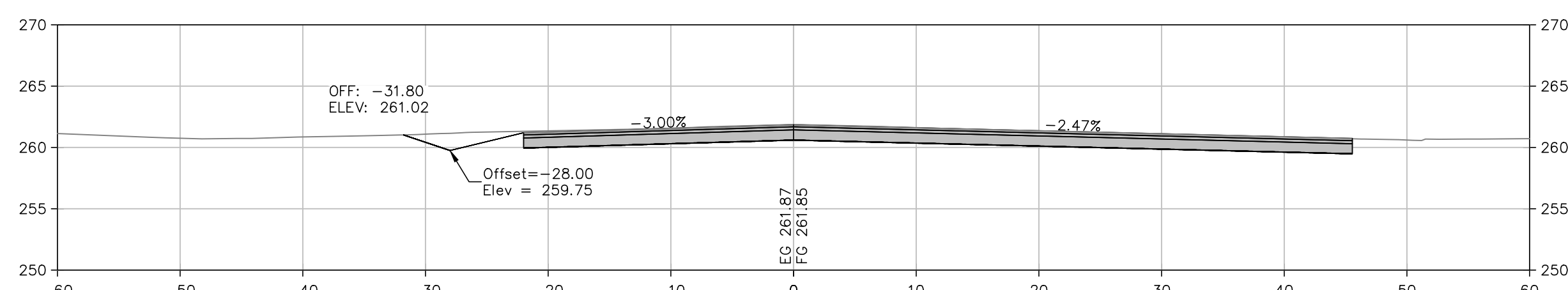
11+00.00

Total Volume at Station 11+00.00	
Cut Area	69.69
Fill Area	0.00
Cut Vol	118.04
Fill Vol	0.00



10+50.00

Total Volume at Station 10+50.00	
Cut Area	57.80
Fill Area	0.00
Cut Vol	52.06
Fill Vol	0.00

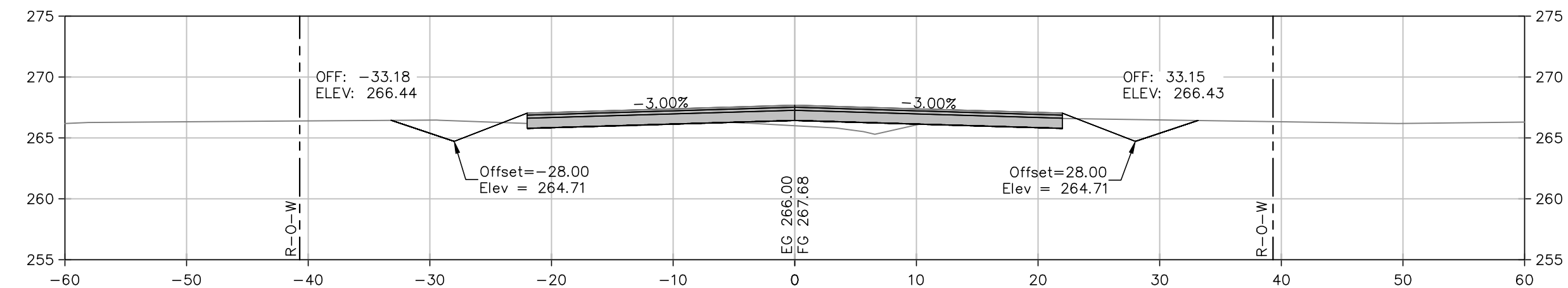


10+31.11

Total Volume at Station 10+31.11	
Cut Area	91.04
Fill Area	0.00
Cut Vol	0.00
Fill Vol	0.00

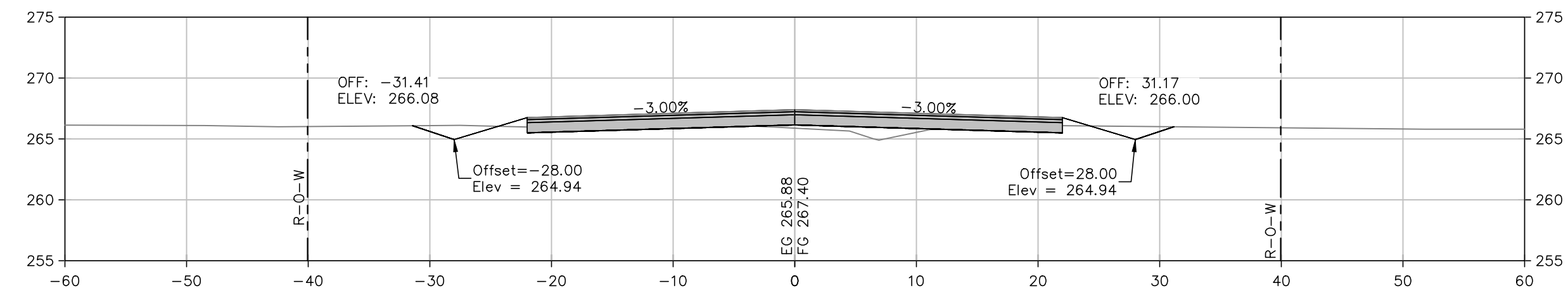
SCALE:
1"=10' HORIZ.
1"=10' VERT.

- NOTES:
1. EARTHWORK VOLUMES SHOWN FOR REFERENCE
2. EARTHWORK SHALL BE PAID PER PLAN QUANTITIES ONLY



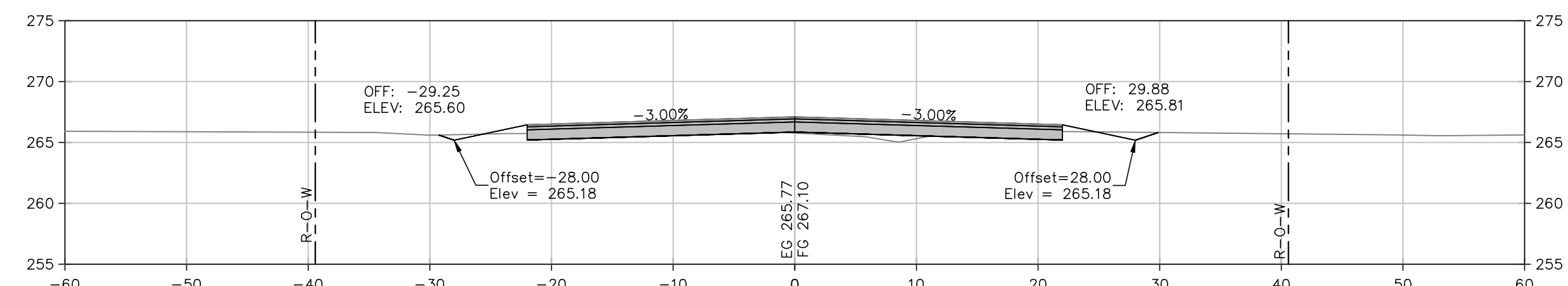
14+50.00

Total Volume at Station 14+50.00	
Cut Area	25.86
Fill Area	7.91
Cut Vol	38.17
Fill Vol	14.38



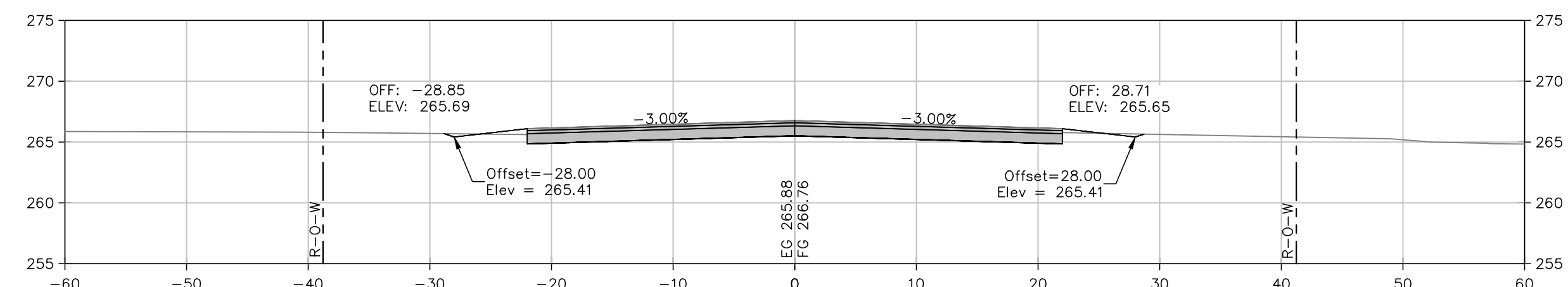
14+00.00

Total Volume at Station 14+00.00	
Cut Area	15.36
Fill Area	7.62
Cut Vol	27.36
Fill Vol	11.40



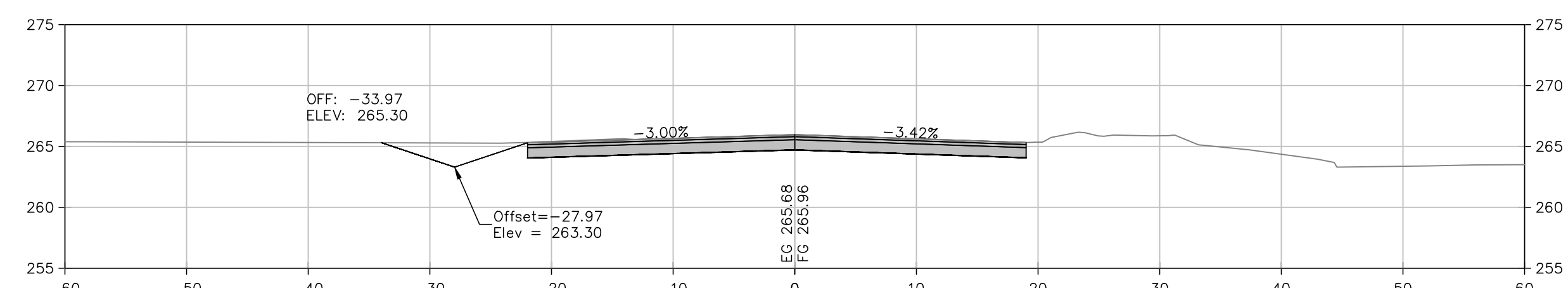
13+50.00

Total Volume at Station 13+50.00	
Cut Area	14.19
Fill Area	4.70
Cut Vol	31.51
Fill Vol	5.73



13+00.00

Total Volume at Station 13+00.00	
Cut Area	19.84
Fill Area	1.49
Cut Vol	71.86
Fill Vol	1.38



12+50.00

Total Volume at Station 12+50.00	
Cut Area	57.60
Fill Area	0.00
Cut Vol	163.09
Fill Vol	0.00

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DESIGNED TO SERVE

4606 S. Garnett Rd., Suite 401
Tulsa, OK 74146
Phone: 918-445-2377
Fax: 918-445-2378
http://www.mcc.us.com

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
MAUMELLE, ARKANSAS
No. 15912
4/20/2017

ORIGINAL SIGNATURE ON FILE

COUNTS MASSIE
ROADWAY EXTENSION
MAUMELLE, ARKANSAS

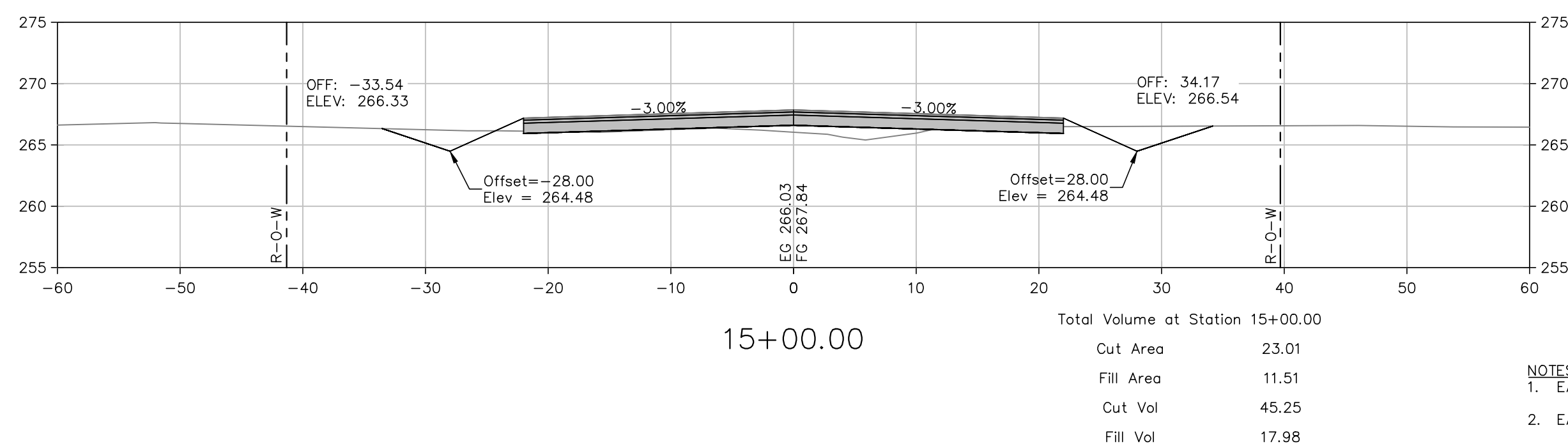
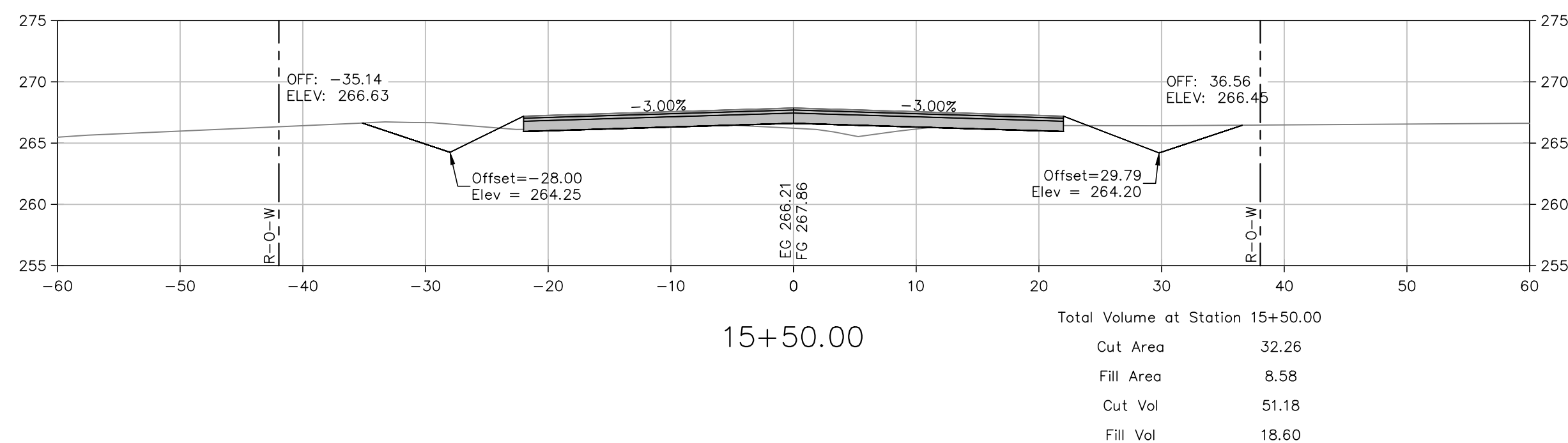
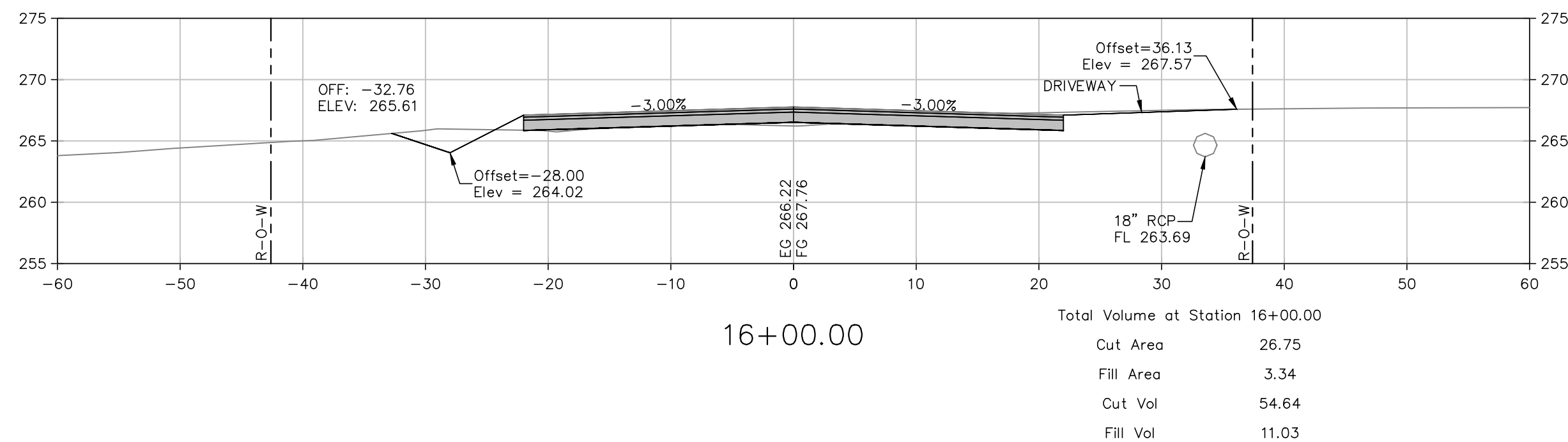
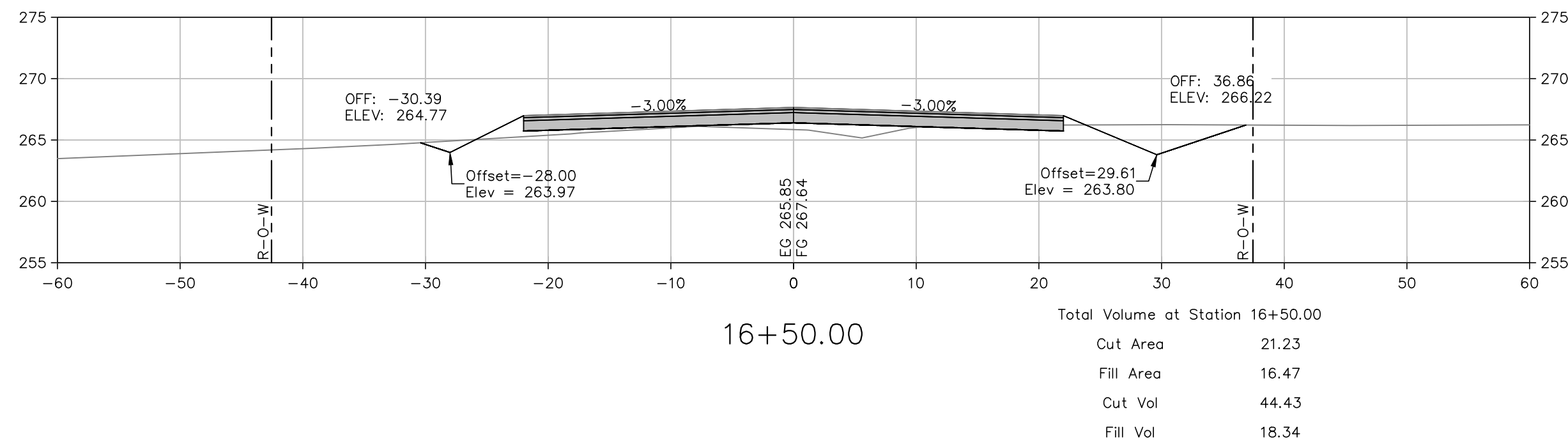
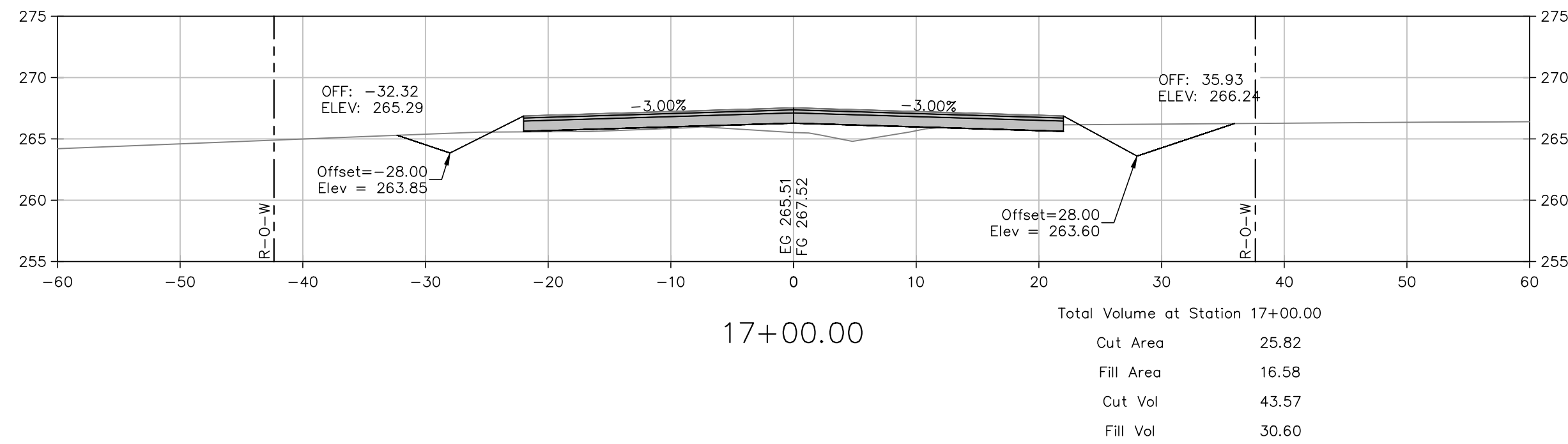
One Call 811
Know what's below.
Call before you dig.

NO.	DATE	REVISIONS	DESCRIPTION

CROSS SECTIONS
STA. 10+31.11
TO STA. 14+50

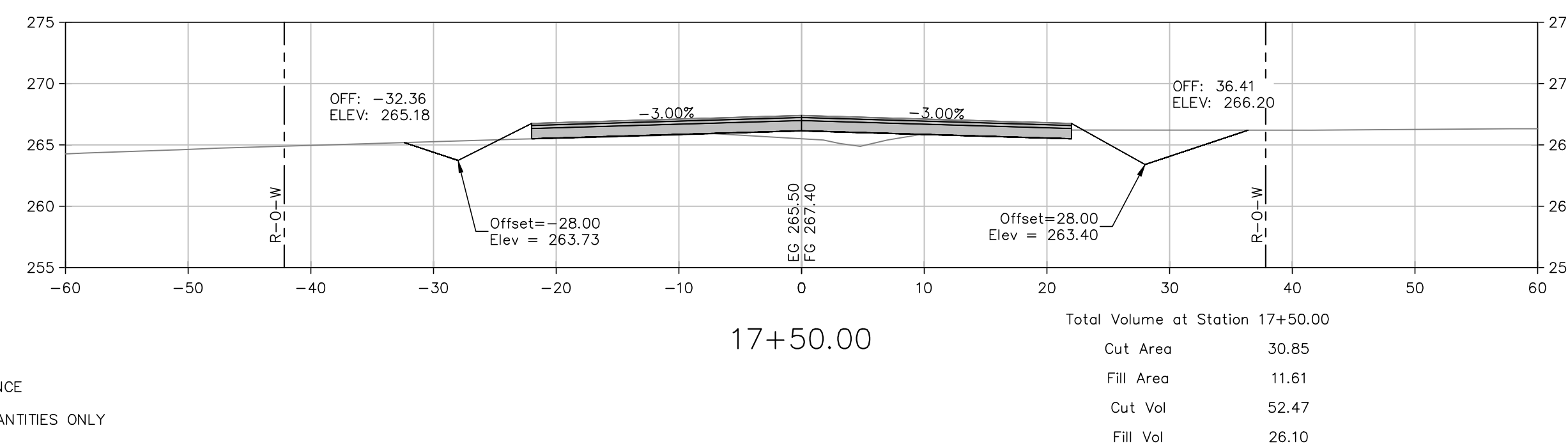
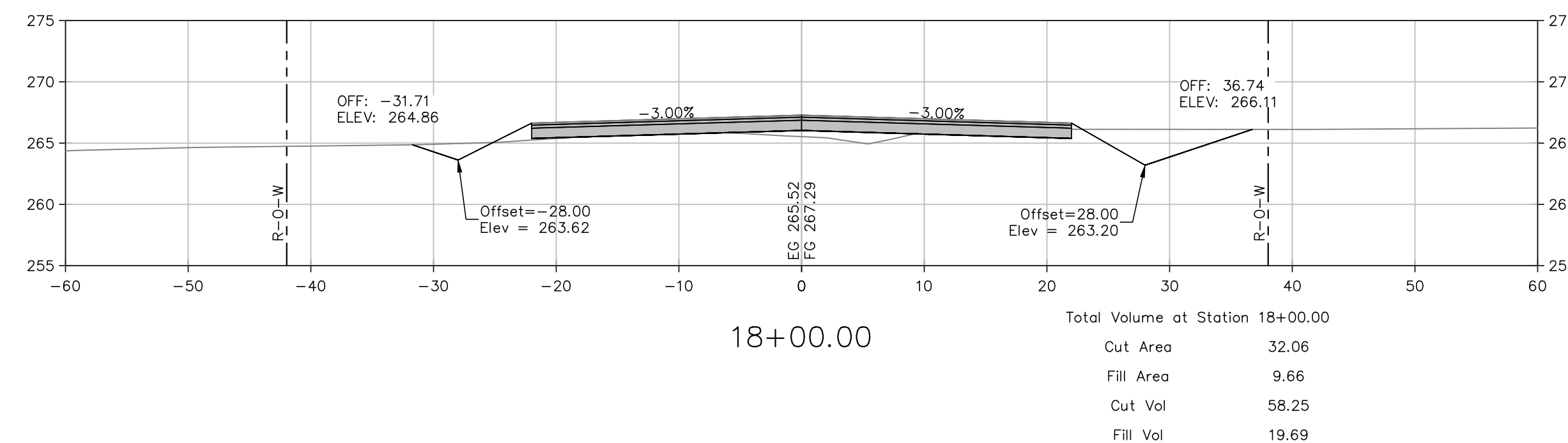
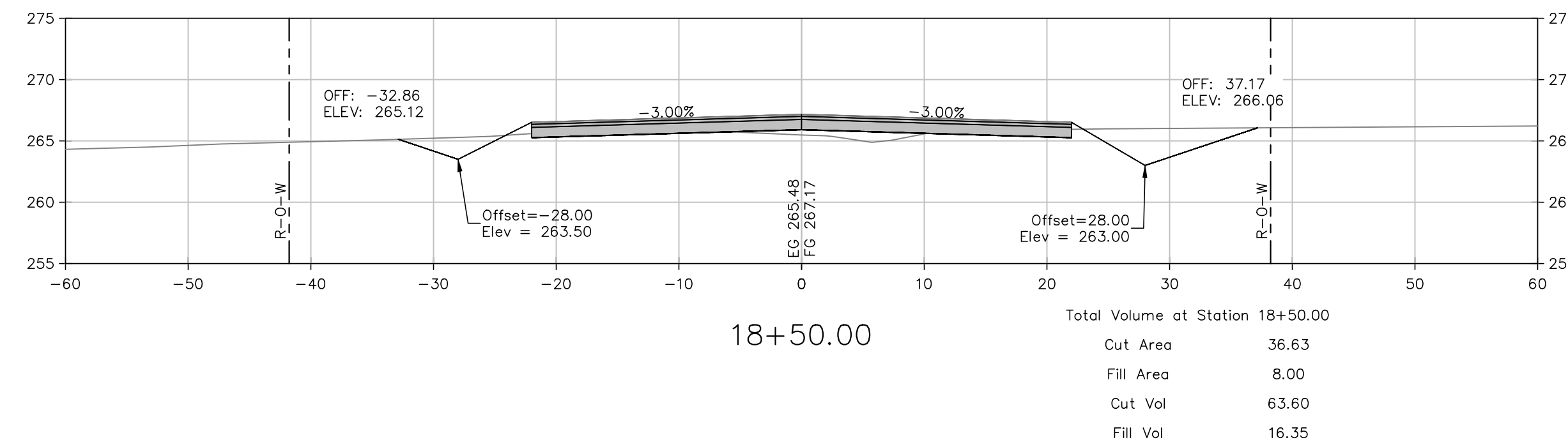
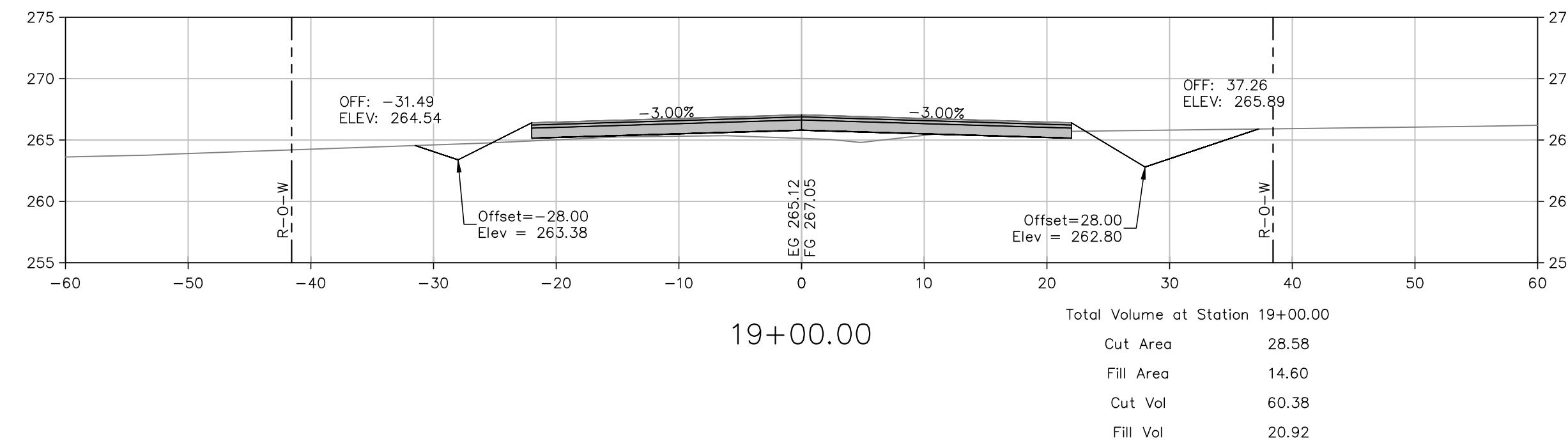
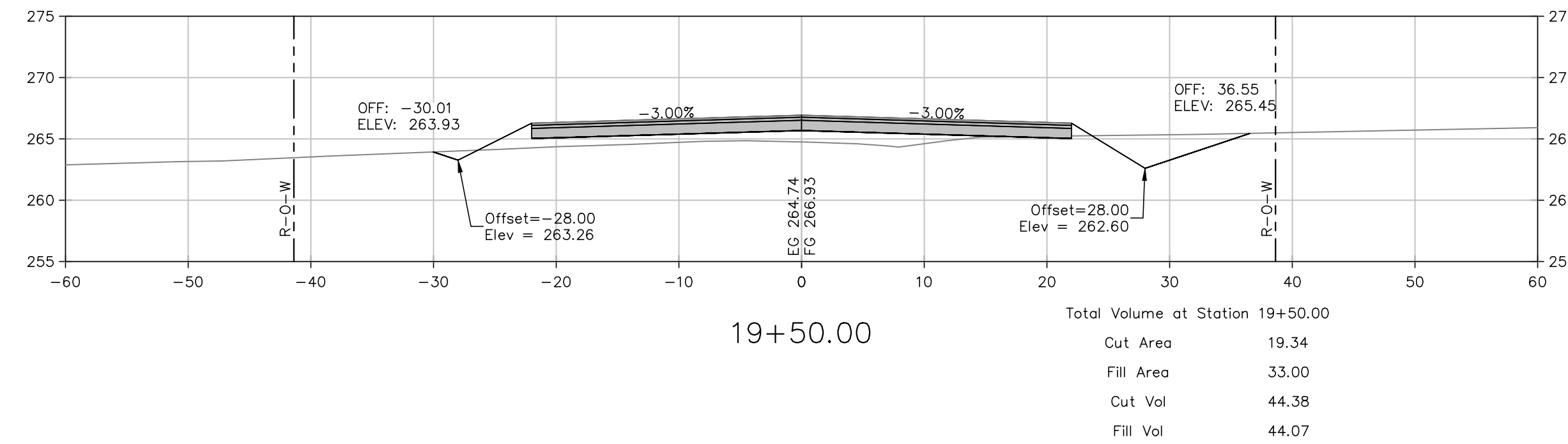
PROJECT ENGR: MK	DRAWN BY: JAM
DATE: APRIL 2017	JOB NUMBER: LR13-5736
SCALE: AS SHOWN	

W:\2013\13-5736 Maumelle Counts Massie Roadway and Utilities Extension\Design\Engineering\13-5736-S1.dwg 5/23/17 at 1:18pm



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

- NOTES:
1. EARTHWORK VOLUMES SHOWN FOR REFERENCE
2. EARTHWORK SHALL BE PAID PER PLAN QUANTITIES ONLY

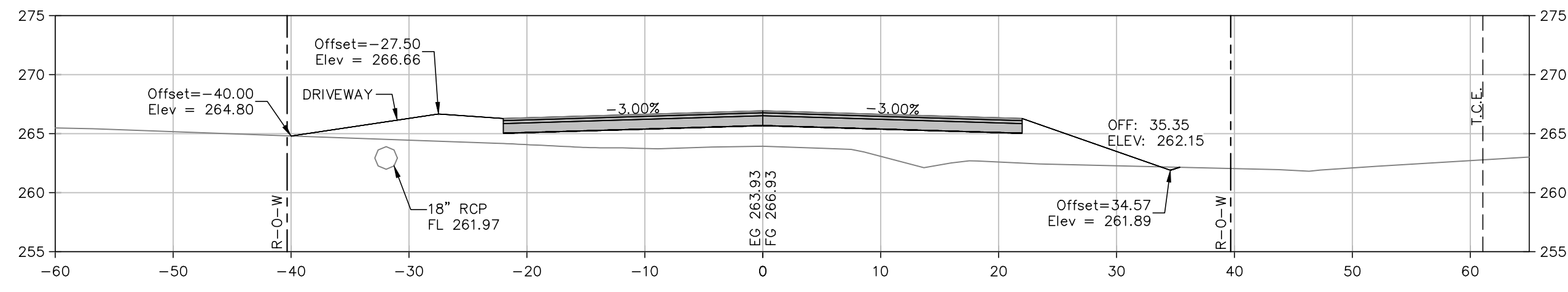


NO.	DATE	REVISIONS	DESCRIPTION

CROSS SECTIONS
 STA. 15+00
 TO STA. 19+50

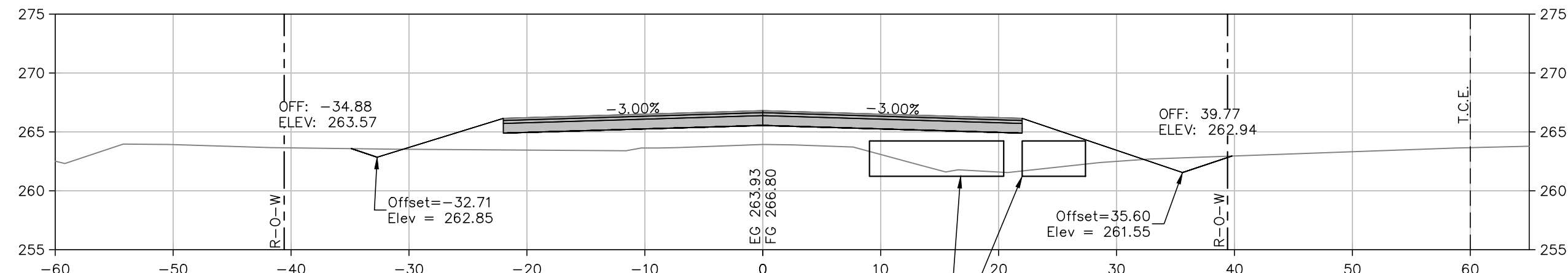
PROJECT ENGR: MK	DRAWN BY: JAM
DATE: APRIL 2017	
SCALE: AS SHOWN	JOB NUMBER: LR13-5736

W:\2013\13-5736 Maumelle Counts Massie Roadway and Utilities Extension\Design\Engineering\13-5736-S1.dwg 5/23/17 at 1:19pm



21+73.00

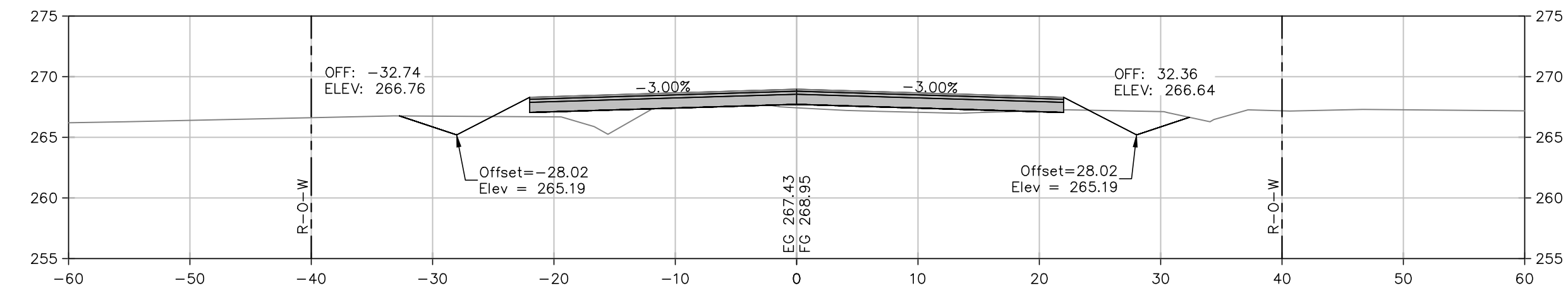
Total Volume at Station 21+73.00	
Cut Area	0.23
Fill Area	131.55
Cut Vol	2.76
Fill Vol	108.93



21+50.00

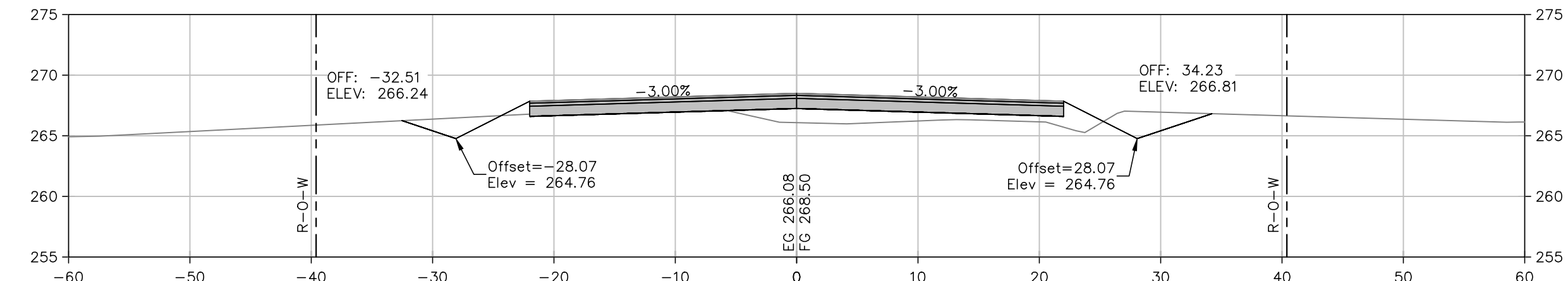
8'Sx3'R DOUBLE BOX CULVERT @ 45° SKEW (PRE CAST) WITH WINGWALLS

Total Volume at Station 21+50.00	
Cut Area	6.15
Fill Area	123.66
Cut Vol	13.61
Fill Vol	221.17



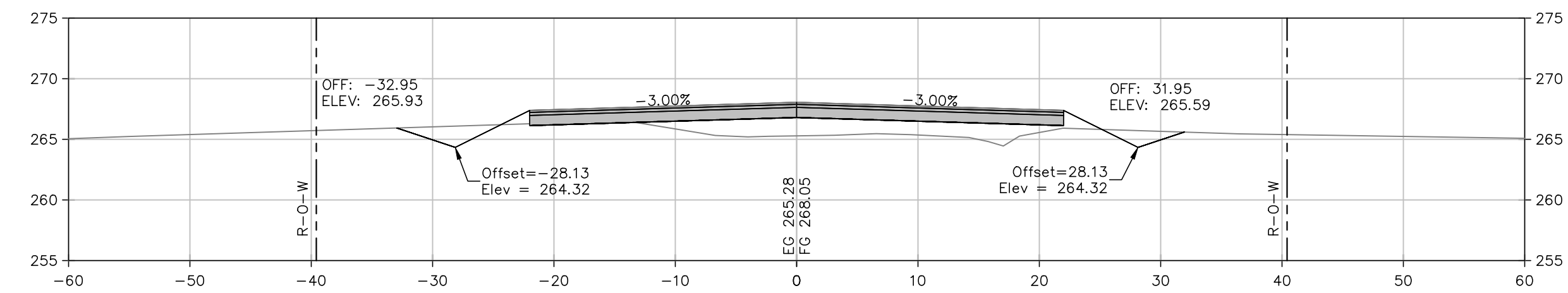
24+00.00

Total Volume at Station 24+00.00	
Cut Area	20.46
Fill Area	18.28
Cut Vol	42.28
Fill Vol	41.91



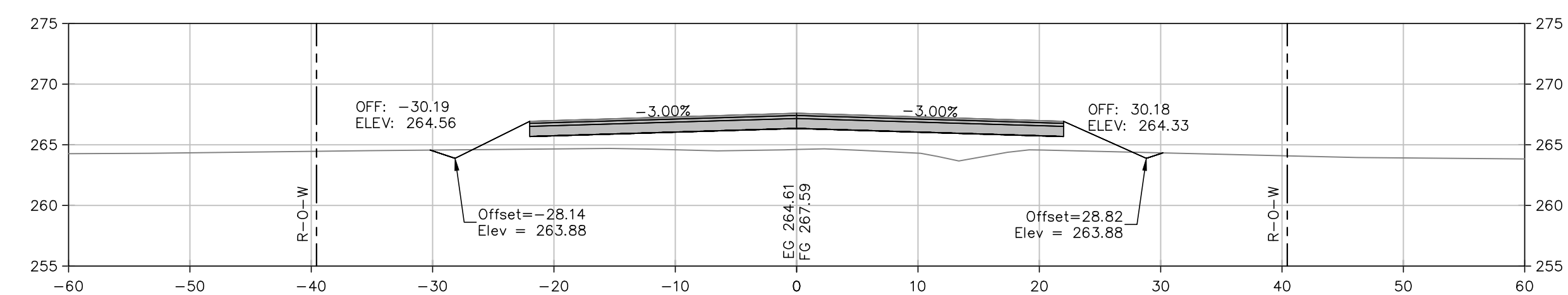
23+50.00

Total Volume at Station 23+50.00	
Cut Area	25.17
Fill Area	26.93
Cut Vol	35.49
Fill Vol	65.62



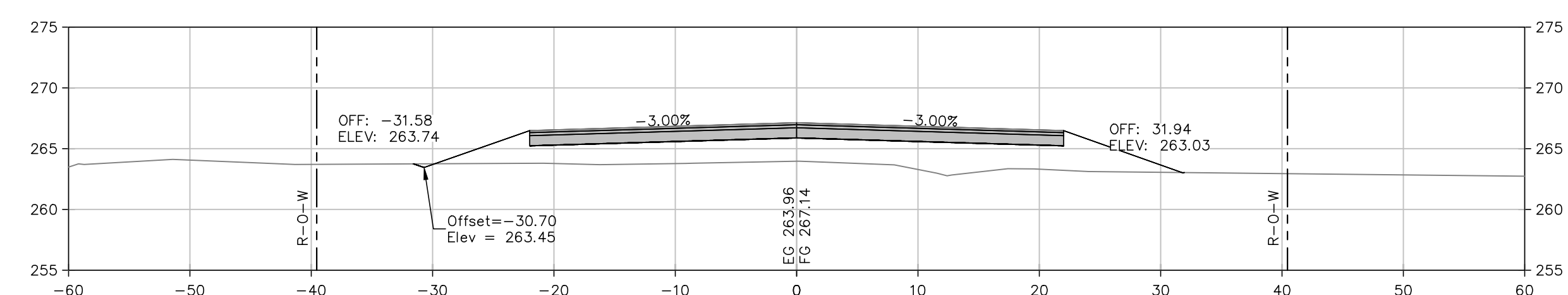
23+00.00

Total Volume at Station 23+00.00	
Cut Area	13.24
Fill Area	43.50
Cut Vol	13.85
Fill Vol	114.21



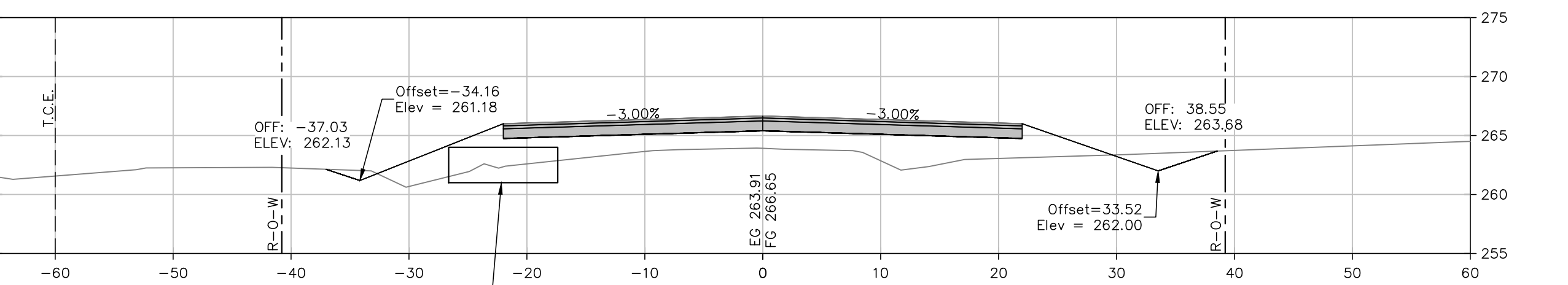
22+50.00

Total Volume at Station 22+50.00	
Cut Area	1.84
Fill Area	79.51
Cut Vol	1.92
Fill Vol	178.08



22+00.00

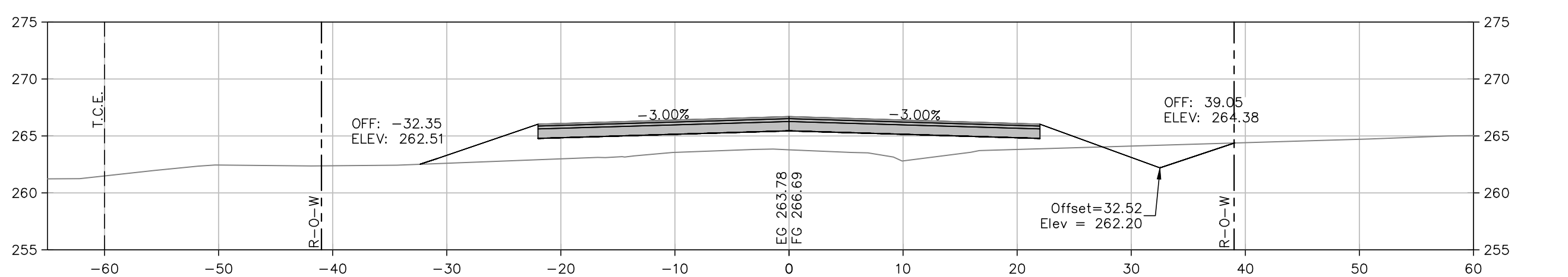
Total Volume at Station 22+00.00	
Cut Area	0.26
Fill Area	112.43
Cut Vol	0.25
Fill Vol	122.17



21+00.00

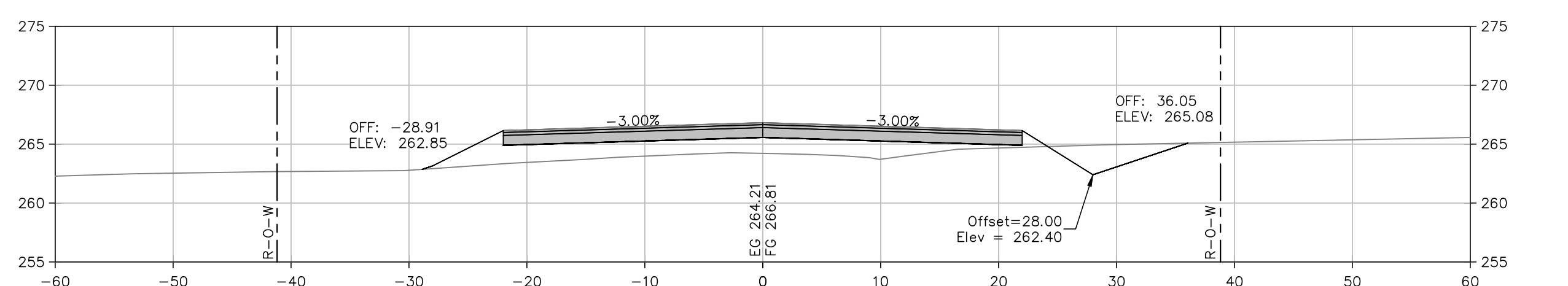
8'Sx3'R DOUBLE BOX CULVERT @ 45° SKEW (PRE CAST) WITH WINGWALLS

Total Volume at Station 21+00.00	
Cut Area	8.55
Fill Area	115.21
Cut Vol	18.52
Fill Vol	194.50



20+50.00

Total Volume at Station 20+50.00	
Cut Area	11.45
Fill Area	94.85
Cut Vol	24.46
Fill Vol	145.74



20+00.00

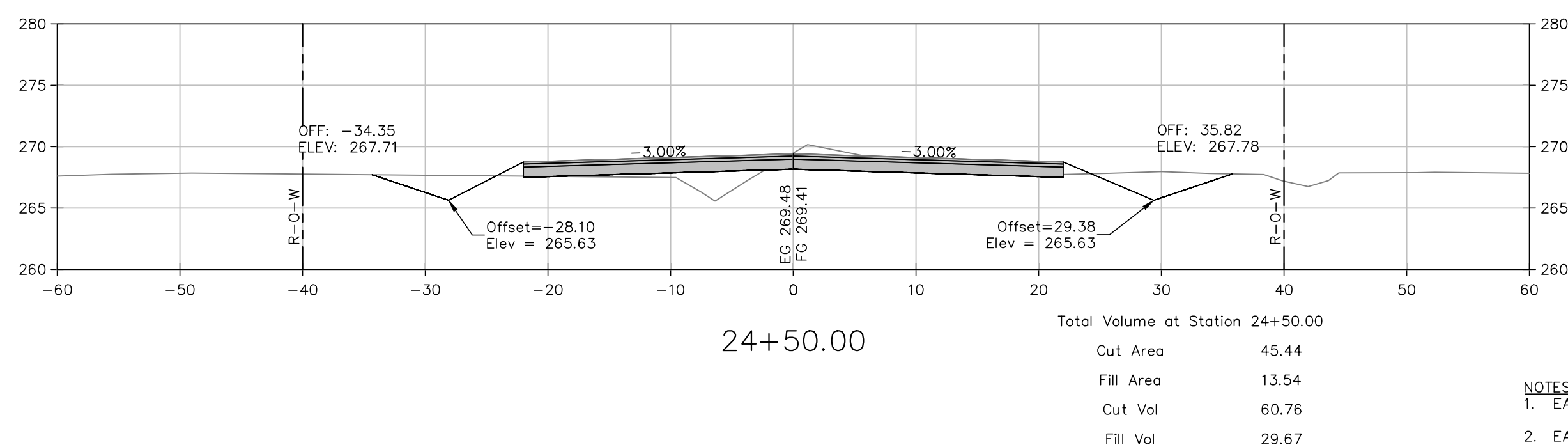
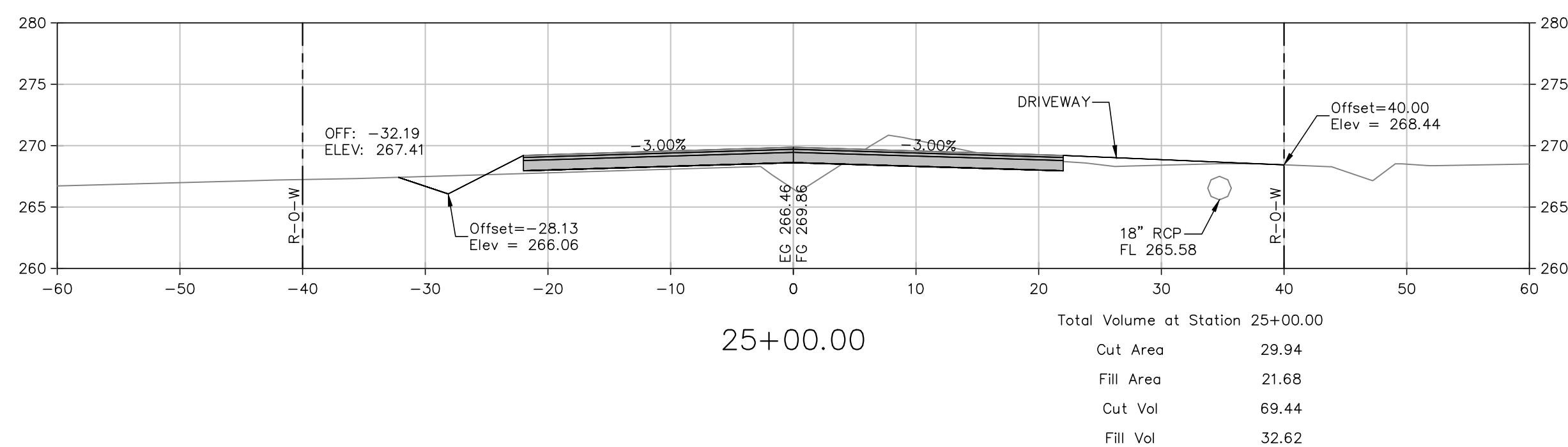
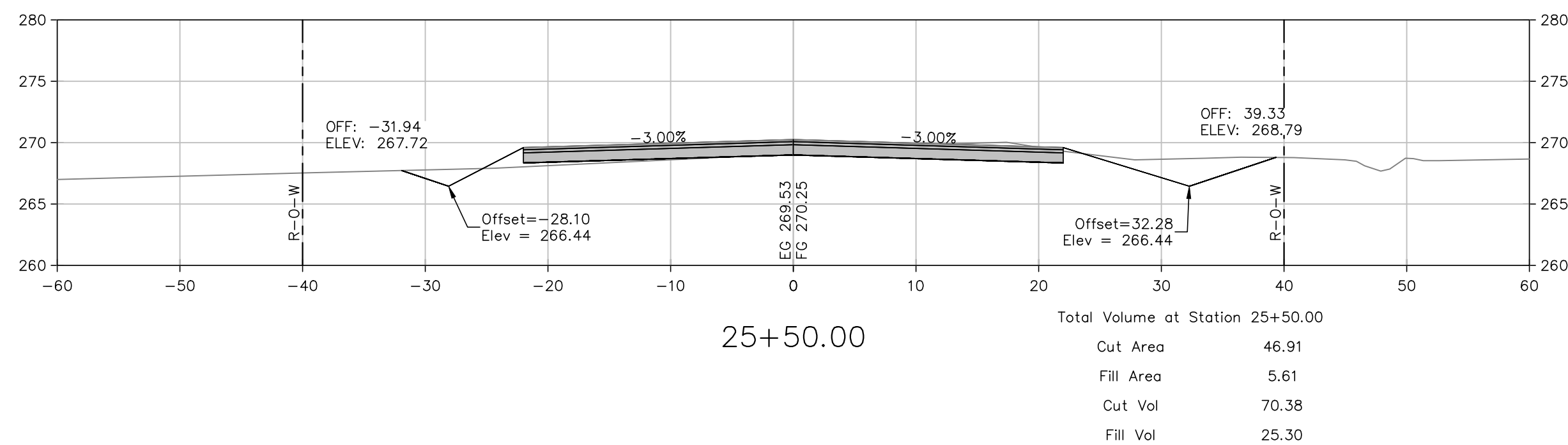
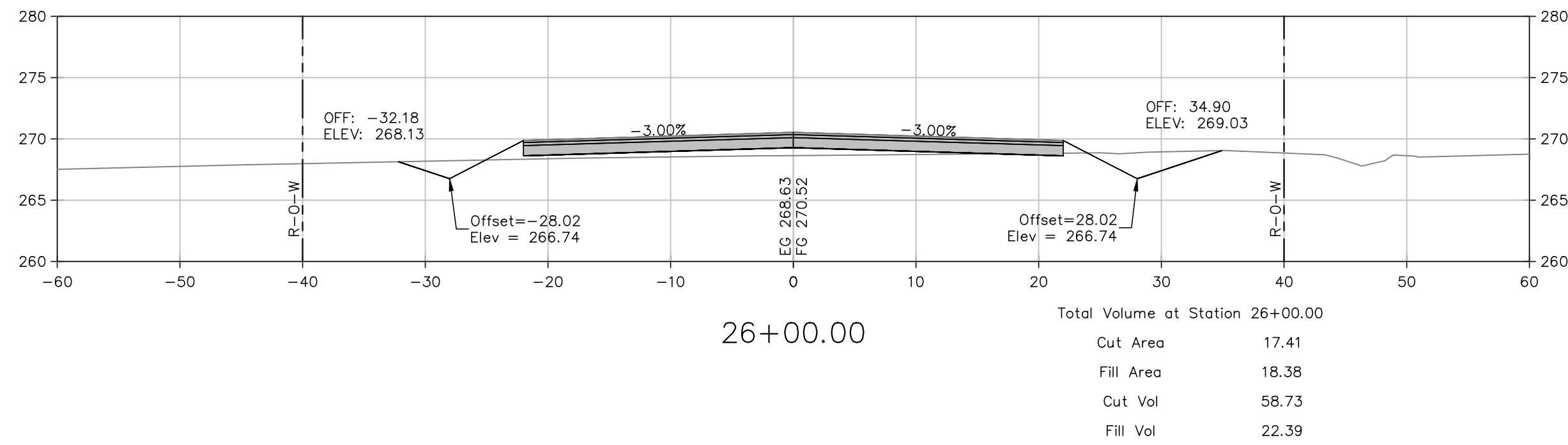
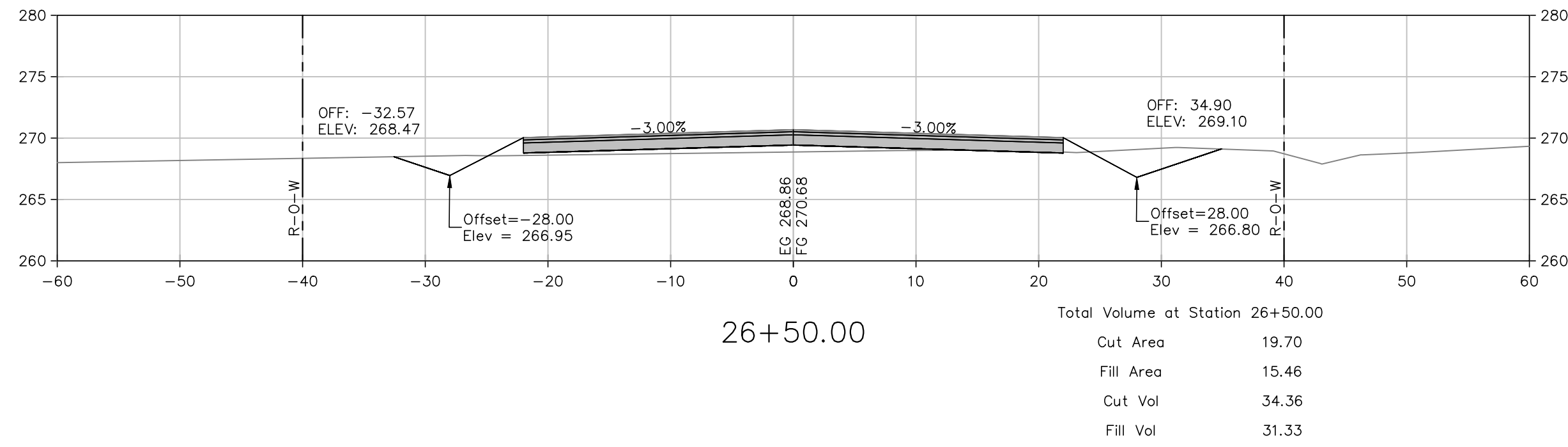
Total Volume at Station 20+00.00	
Cut Area	14.97
Fill Area	62.56
Cut Vol	31.77
Fill Vol	88.48

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

NOTES:
1. EARTHWORK VOLUMES SHOWN FOR REFERENCE
2. EARTHWORK SHALL BE PAID PER PLAN QUANTITIES ONLY

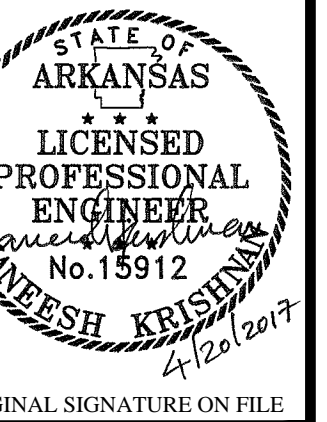
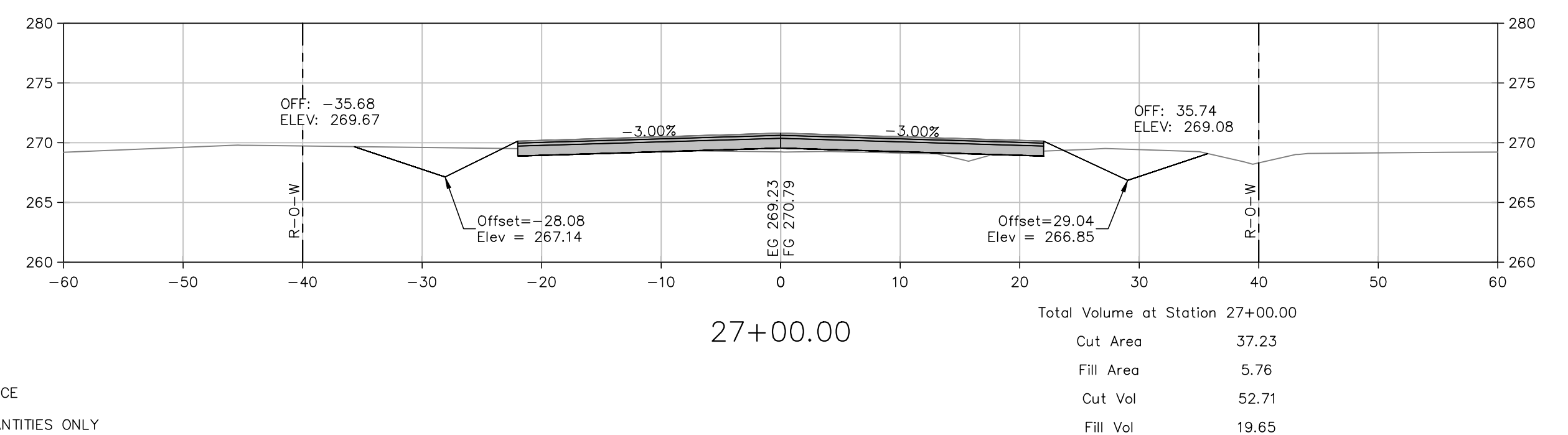
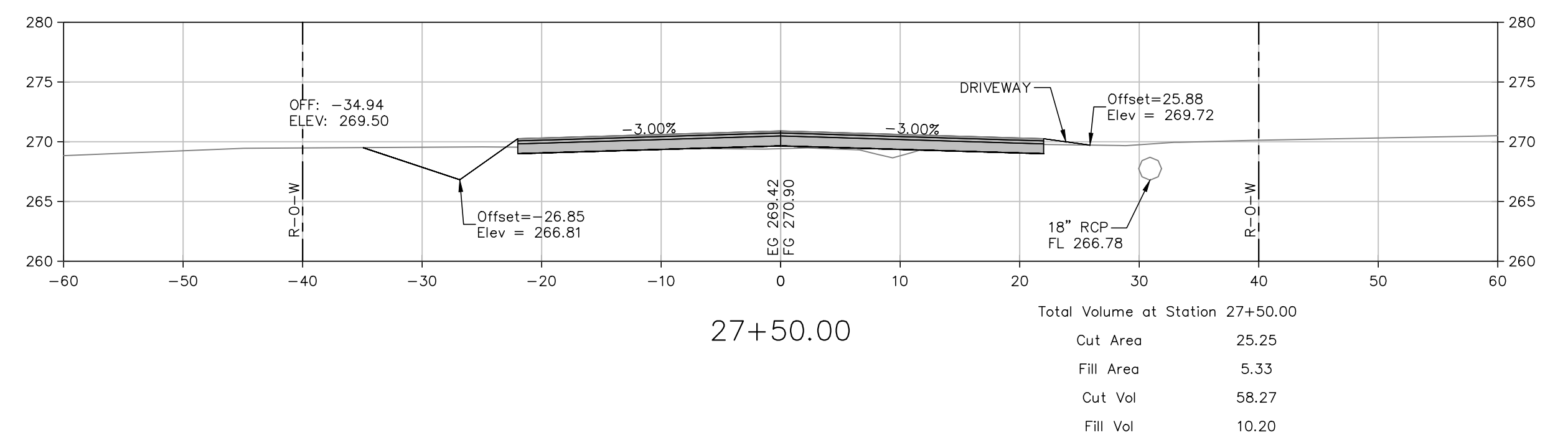
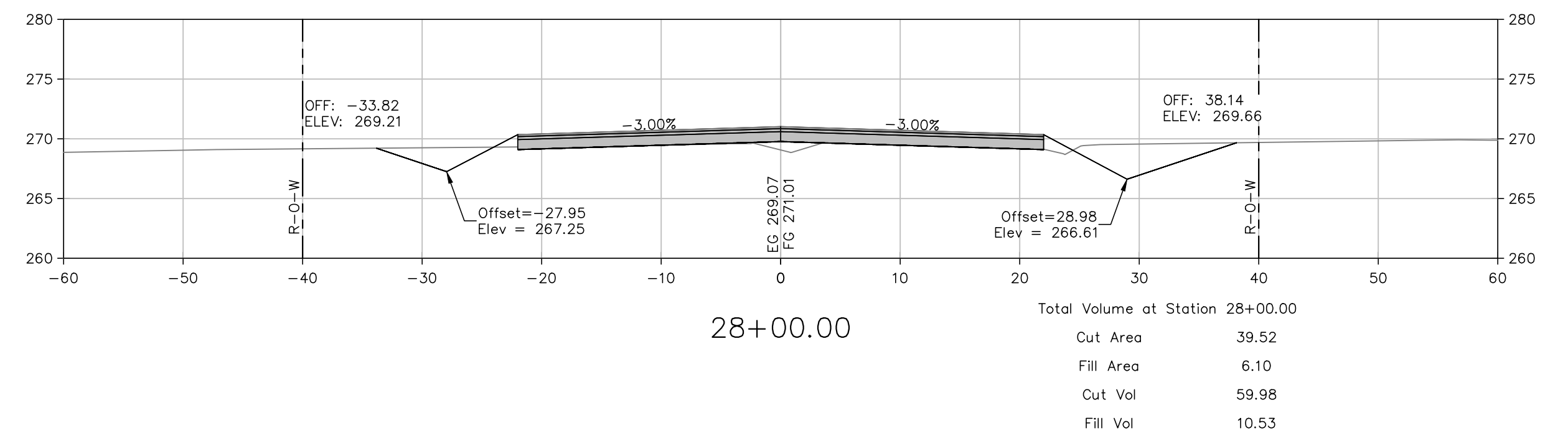
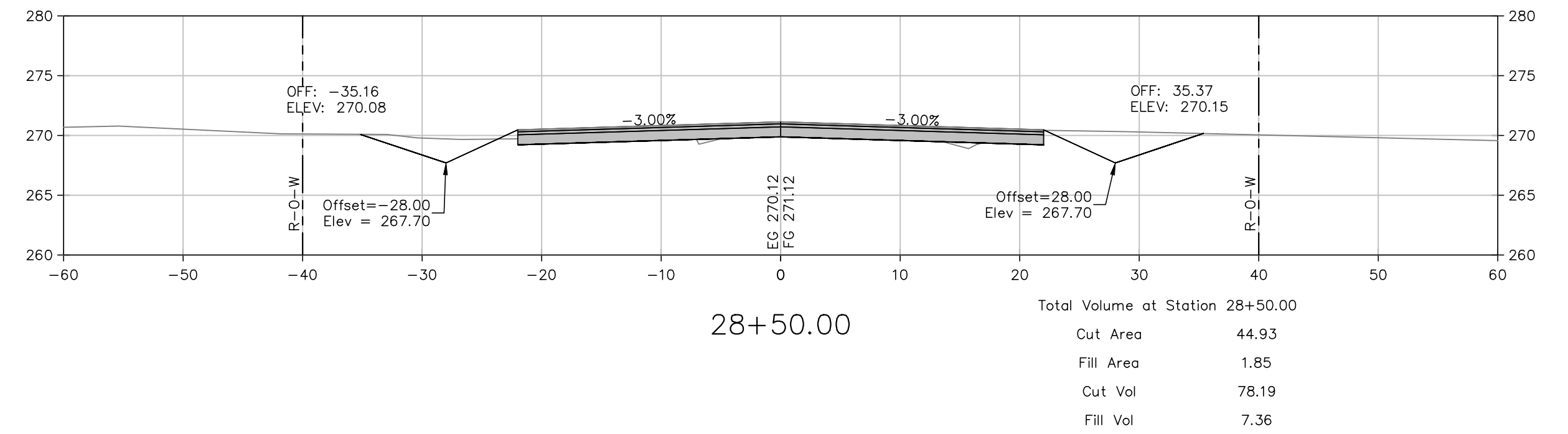
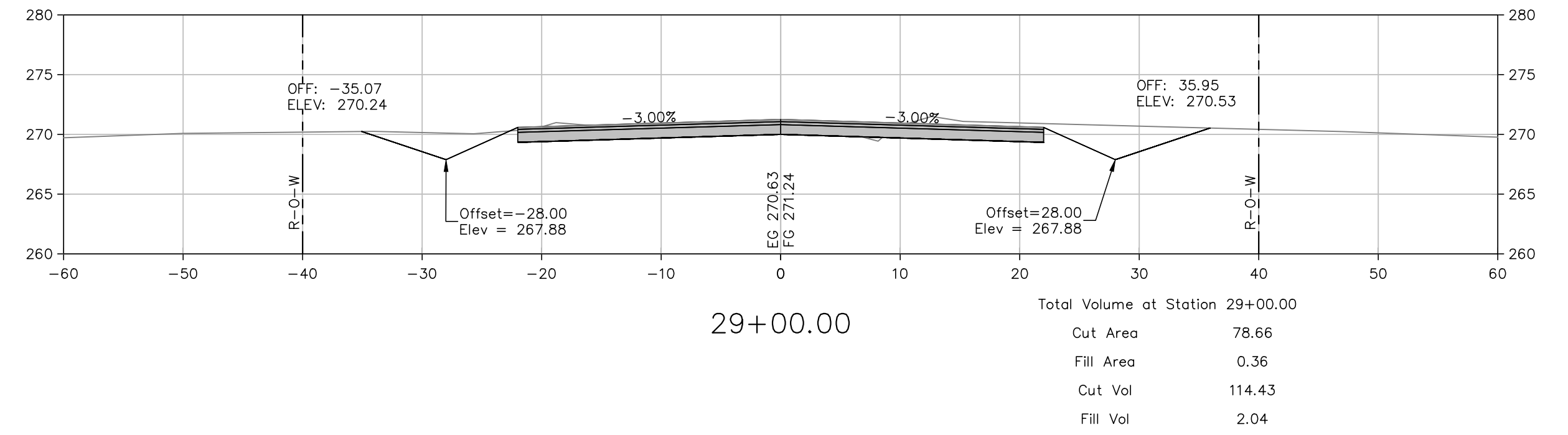
NO.	DATE	REVISIONS	DESCRIPTION

W:\2013\13-5736 Maumelle Counts Massie Roadway and Utilities Extension\Design\Engineering\13-5736-S1.dwg 5/23/17 at 10:40am



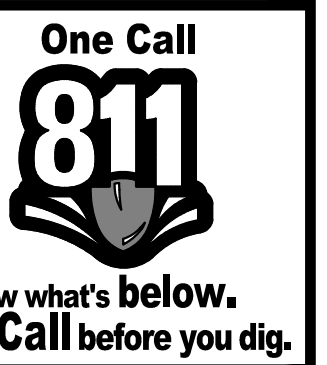
SCALE:
1"=10' HORIZ.
1"=10' VERT.

- NOTES:
1. EARTHWORK VOLUMES SHOWN FOR REFERENCE
2. EARTHWORK SHALL BE PAID PER PLAN QUANTITIES ONLY



ORIGINAL SIGNATURE ON FILE

**COUNTS MASSIE
ROADWAY EXTENSION
MAUMELLE, ARKANSAS**

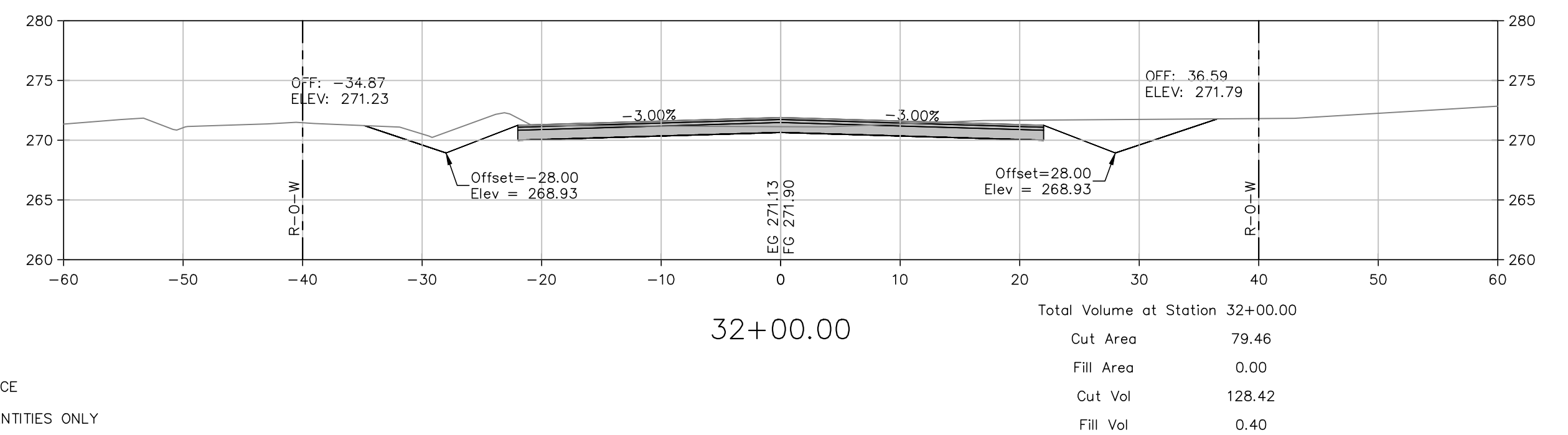
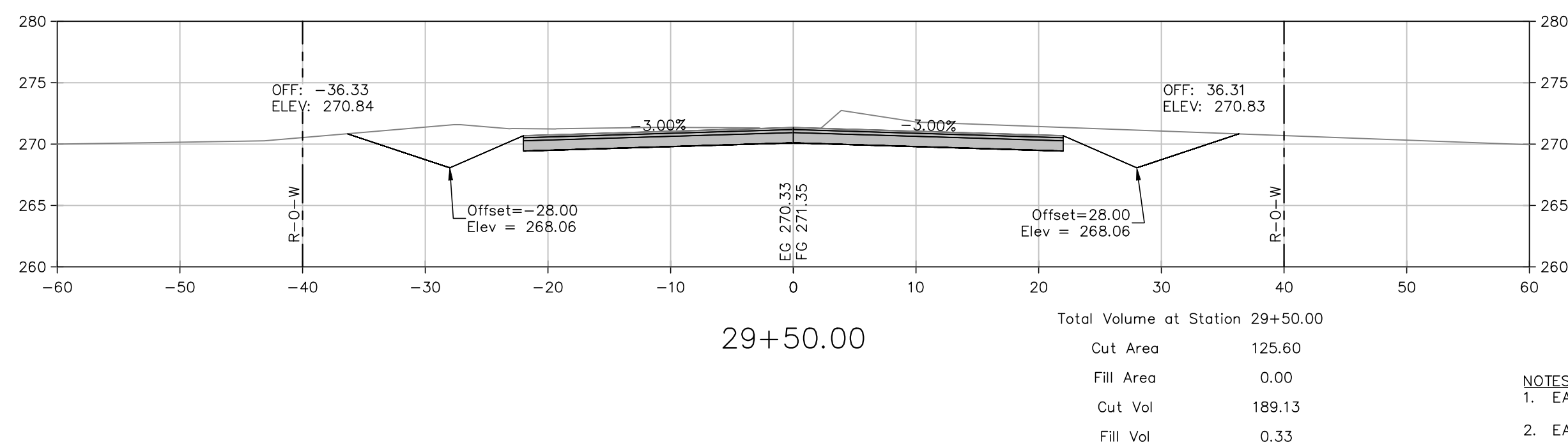
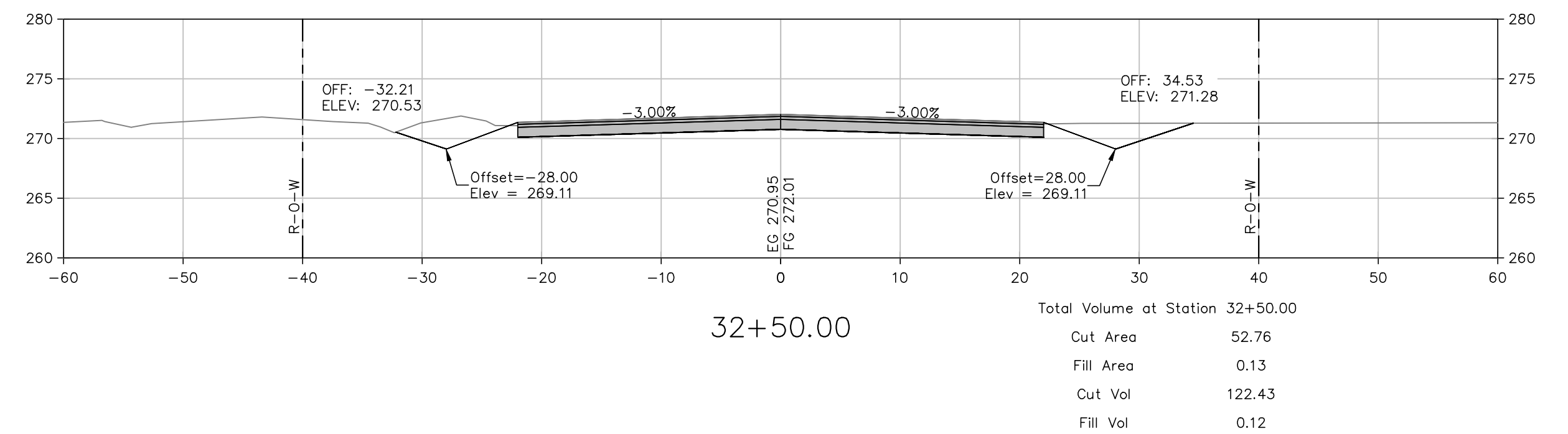
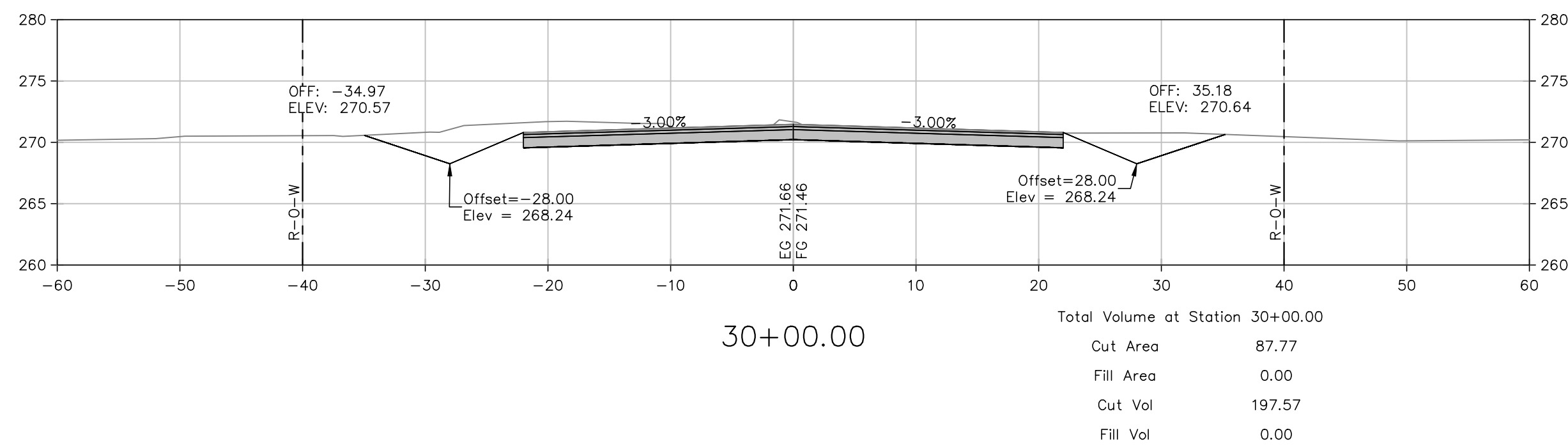
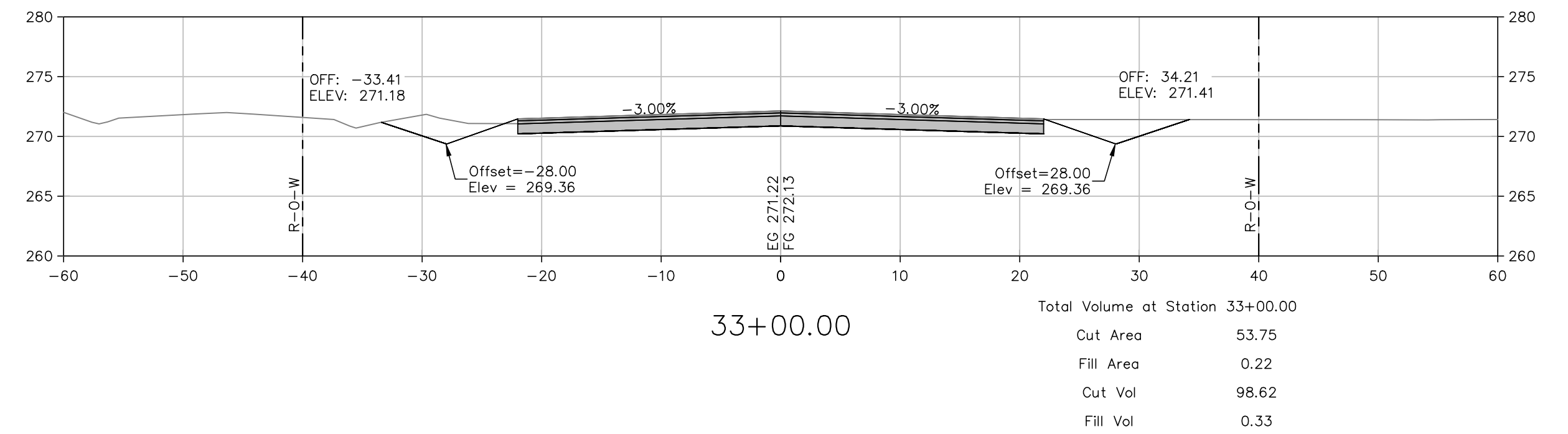
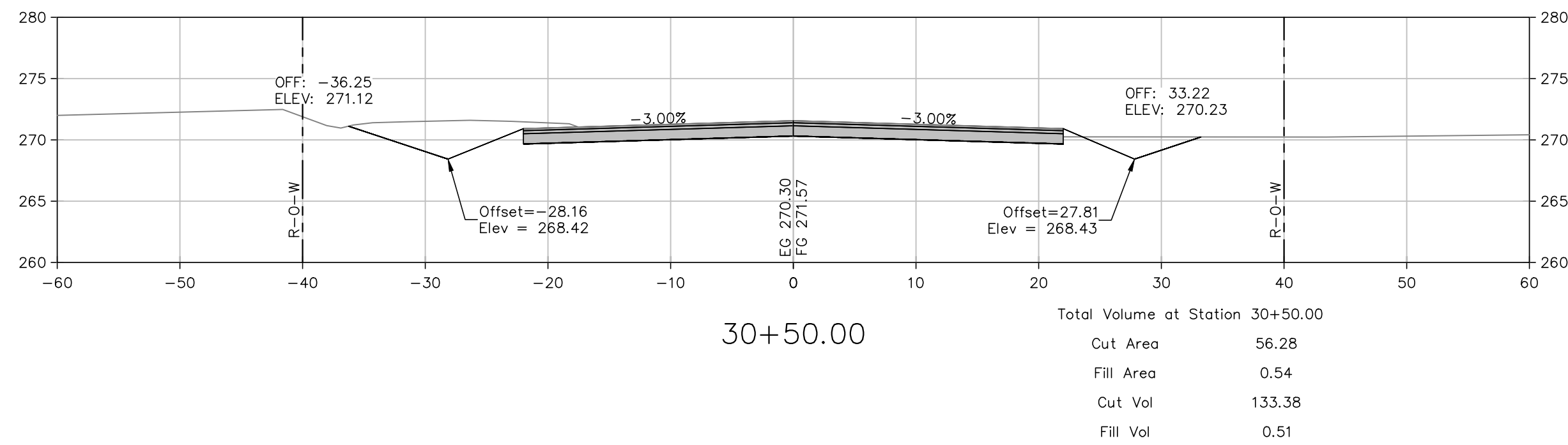
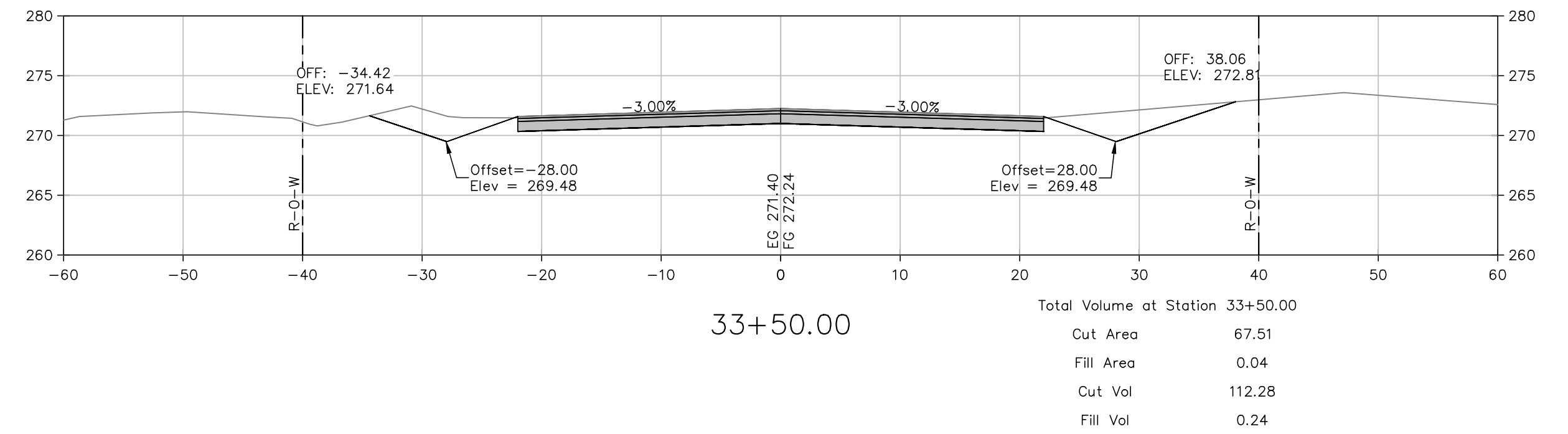
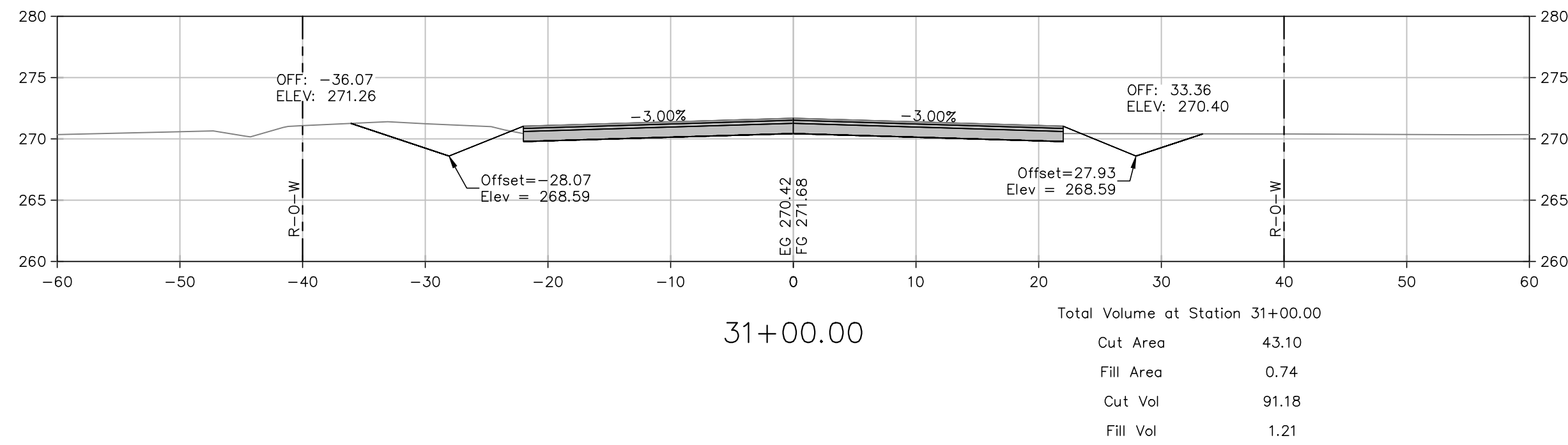
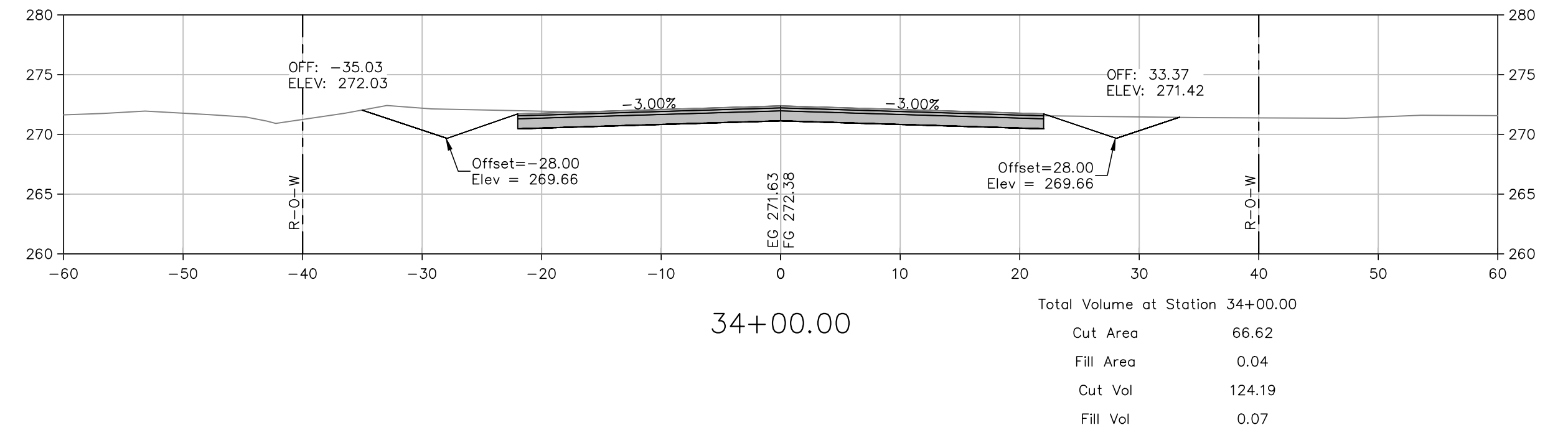
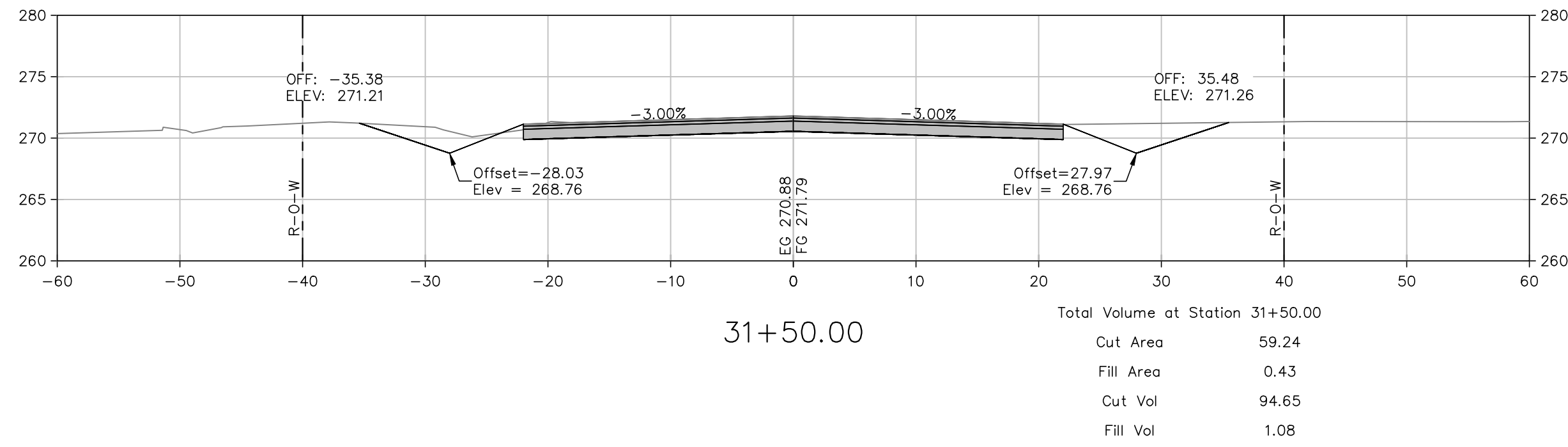


NO.	DATE	REVISIONS	DESCRIPTION

**CROSS SECTIONS
STA. 24+50
TO STA. 29+00**

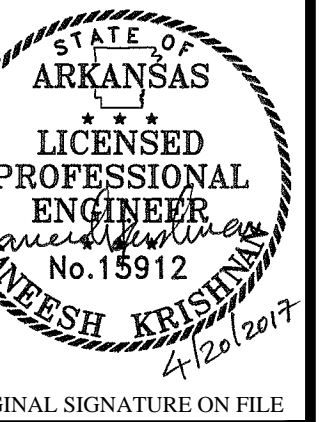
PROJECT ENGR: MK	DRAWN BY: JAM
DATE: APRIL 2017	JOB NUMBER: LR13-5736
SCALE: AS SHOWN	

W:\2013\13-5736 Maumelle Counts Massie Roadway and Utilities Extension\Design-Engineering\13-5736-S1.dwg 5/23/17 at 10:40am



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

- NOTES:
1. EARTHWORK VOLUMES SHOWN FOR REFERENCE
2. EARTHWORK SHALL BE PAID PER PLAN QUANTITIES ONLY



ORIGINAL SIGNATURE ON FILE

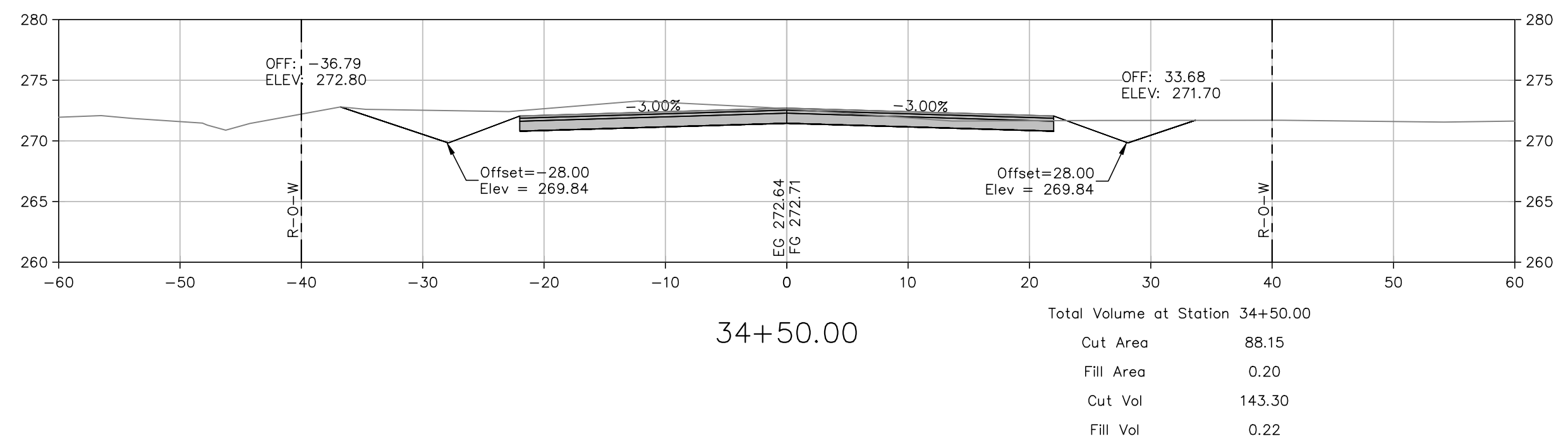
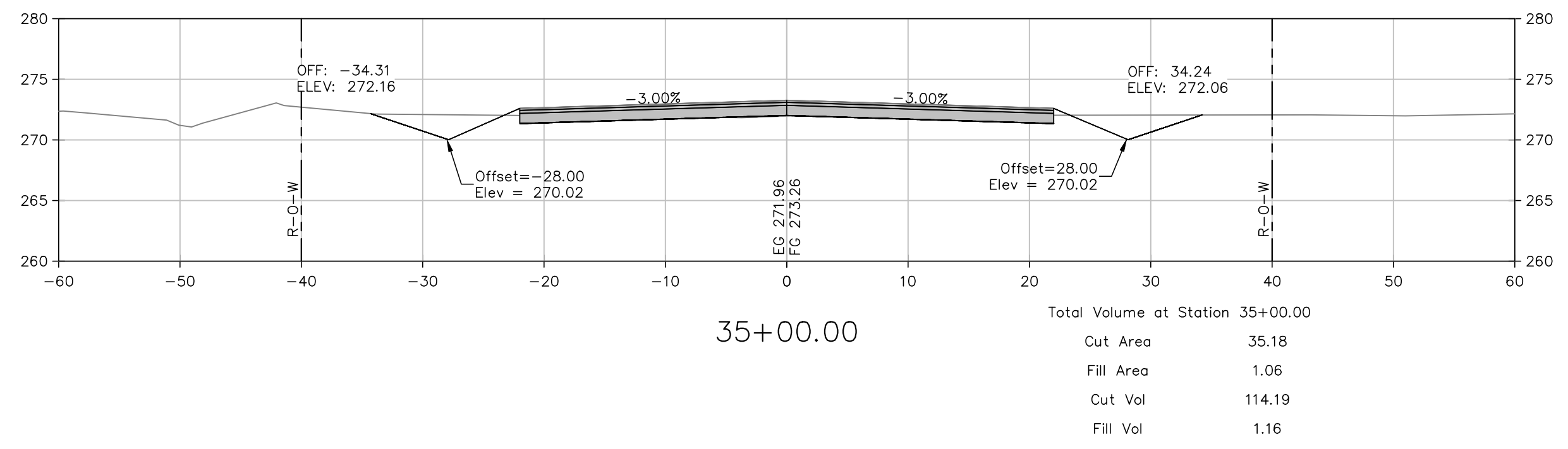
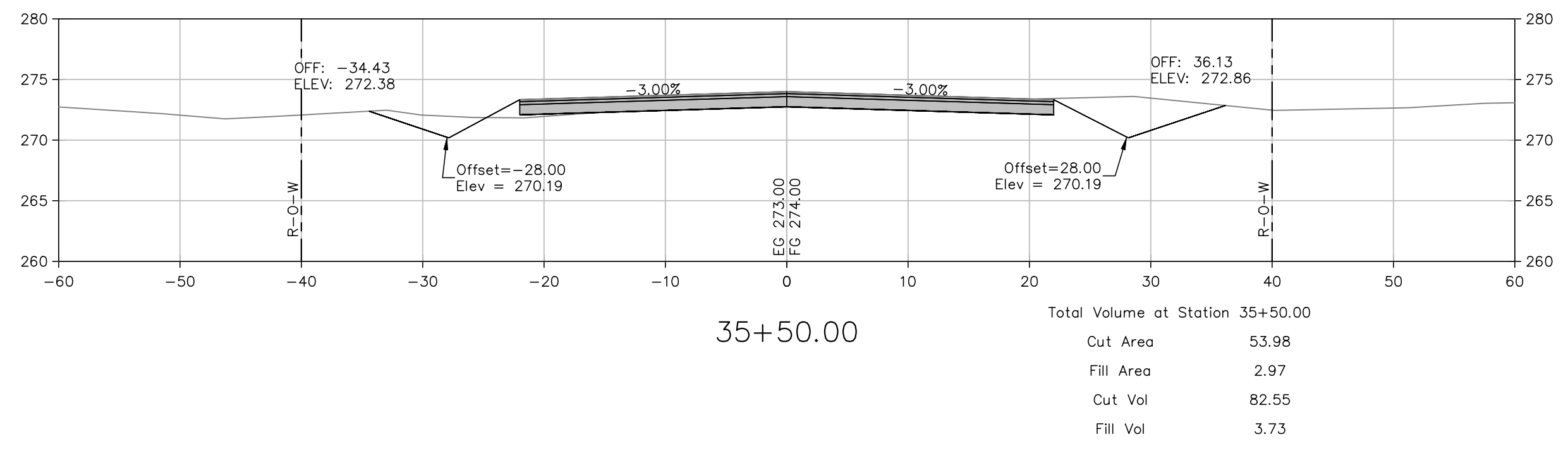
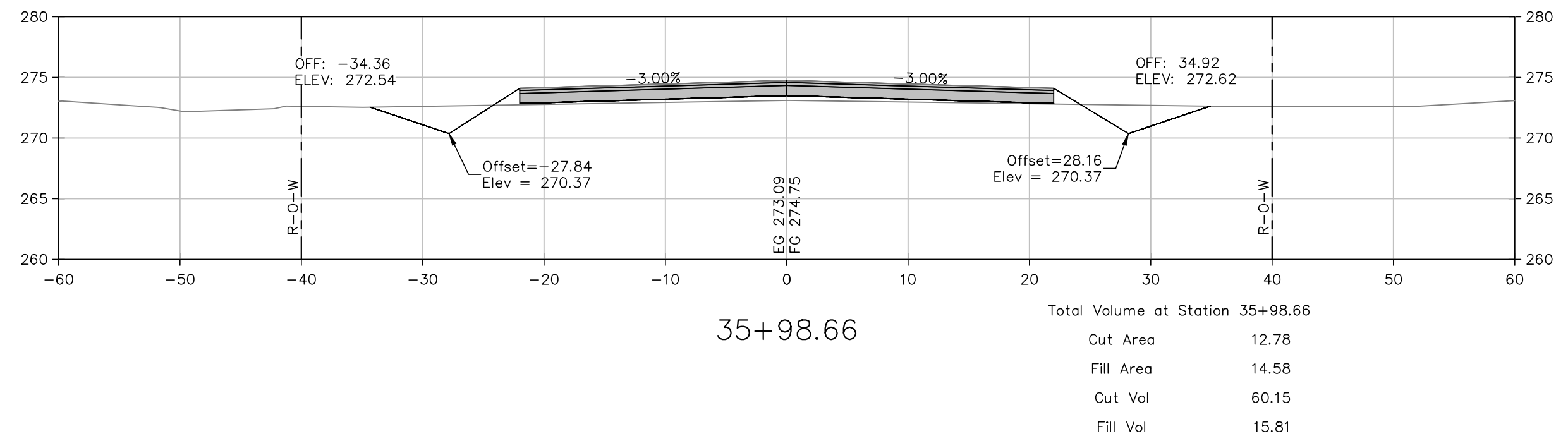
**COUNTS MASSIE
ROADWAY EXTENSION
MAUMELLE, ARKANSAS**



NO.	DATE	REVISIONS	DESCRIPTION

**CROSS SECTIONS
STA. 29+50
TO STA. 34+00**

PROJECT ENGR: MK	DRAWN BY: JAM
DATE: APRIL 2017	JOB NUMBER: LR13-5736
SCALE: AS SHOWN	



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

- NOTES:
1. EARTHWORK VOLUMES SHOWN FOR REFERENCE
2. EARTHWORK SHALL BE PAID PER PLAN QUANTITIES ONLY

W:\2013\13-5736 Maumelle Counts Roadway and Utilities Extension\Design-Engineering\13-5736-S1.dwg 5/23/17 at 10:41am



ORIGINAL SIGNATURE ON FILE

COUNTS MASSIE
ROADWAY EXTENSION
MAUMELLE, ARKANSAS

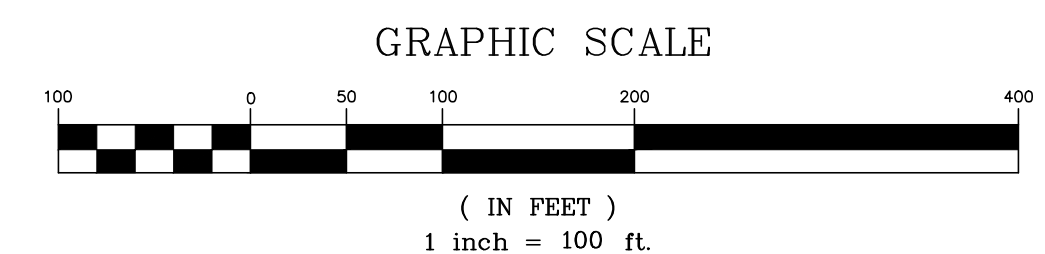
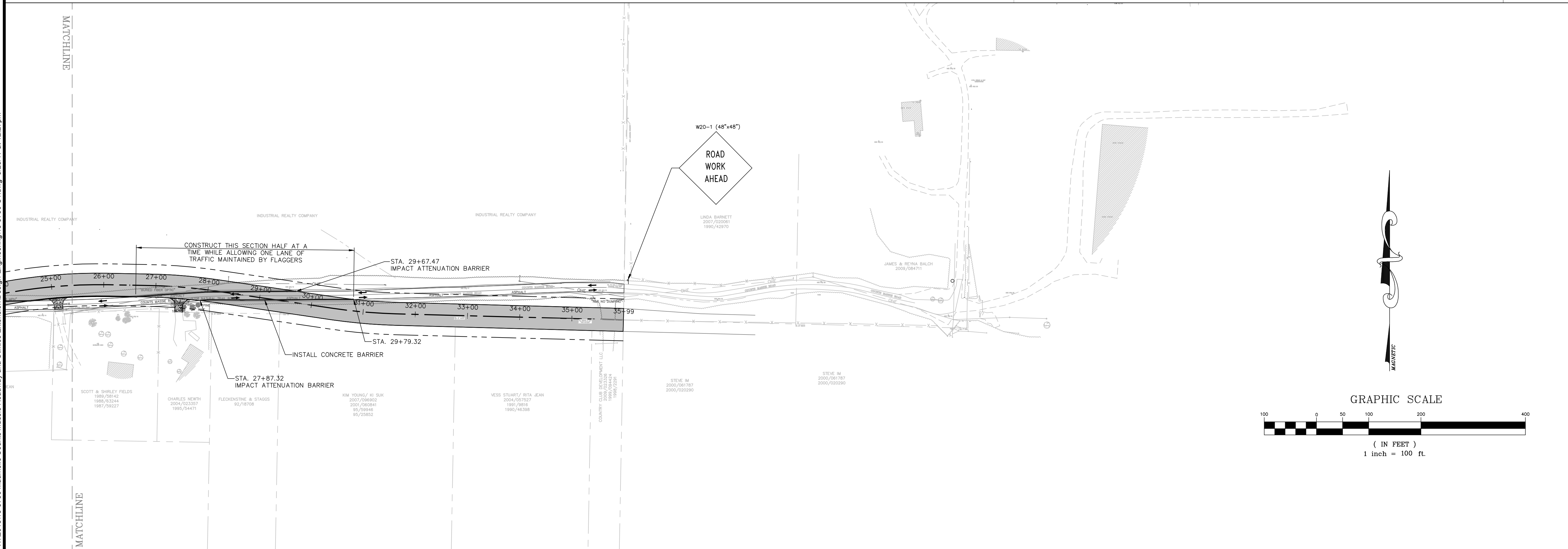
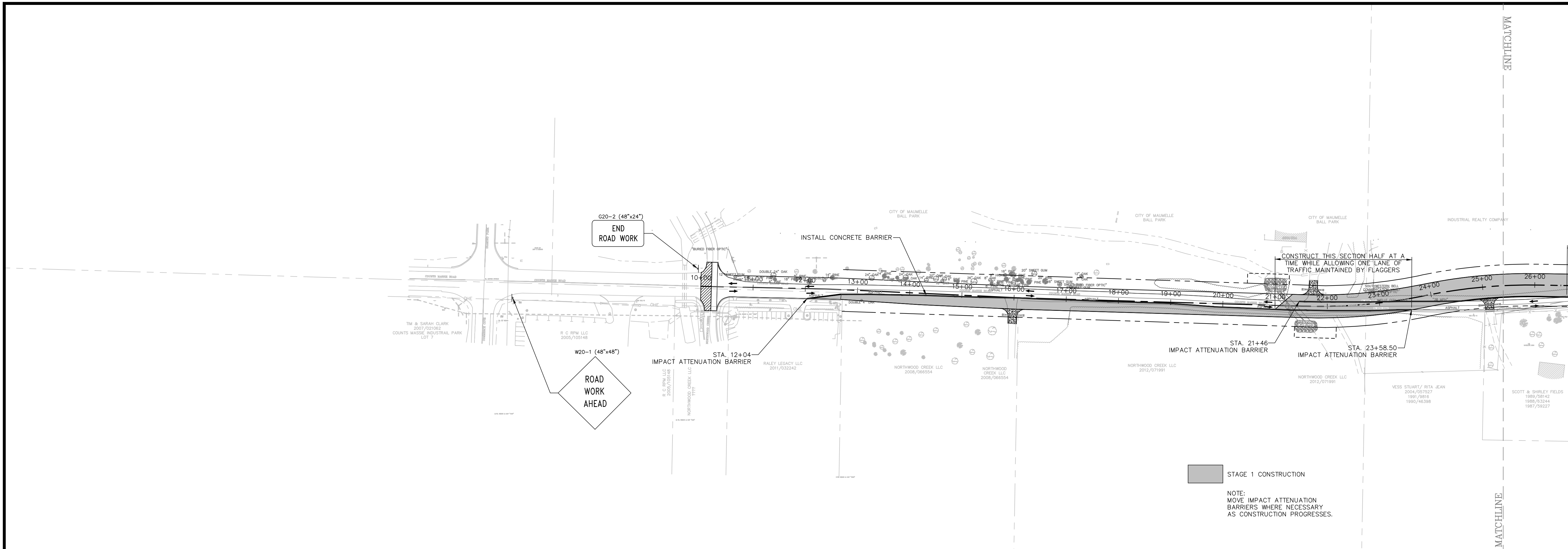


NO.	DATE	REVISIONS DESCRIPTION

CROSS SECTIONS
STA. 34+50
TO STA. 35+98.66

PROJECT ENGR: MK	DRAWN BY: JAM
DATE: APRIL 2017	
SCALE: AS SHOWN	JOB NUMBER: LR13-5736

W:\2013\13-5736 Maumelle Counts Roadway and Utilities Extension\Design\Engineering\13-5736-S1.dwg 5/23/17 at 12:27pm



MCCLELLAND CONSULTING, INC.
DESIGNED TO SERVE ENGINEERS, INC.
7302 Kams Rd.
Payetteville, AR 72702
PH# 479-443-5377
4606 S. Campbell Rd. Ste. 401
Tulsa, OK 74146
PH# 918-517-6073
<http://www.mcc.us.com>

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
MAHESH KRISHNAN
No. 15912
4/20/2017

ORIGINAL SIGNATURE ON FILE

COUNTS MASSIE
ROADWAY EXTENSION
MAUMELLE, ARKANSAS

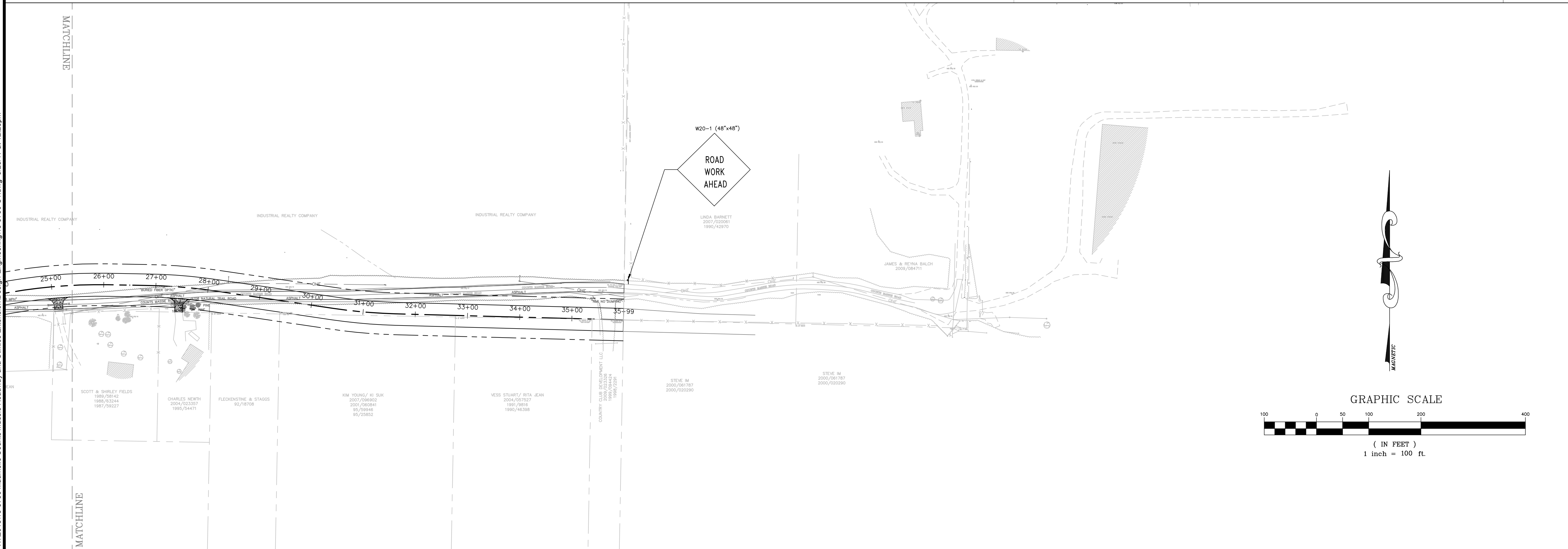
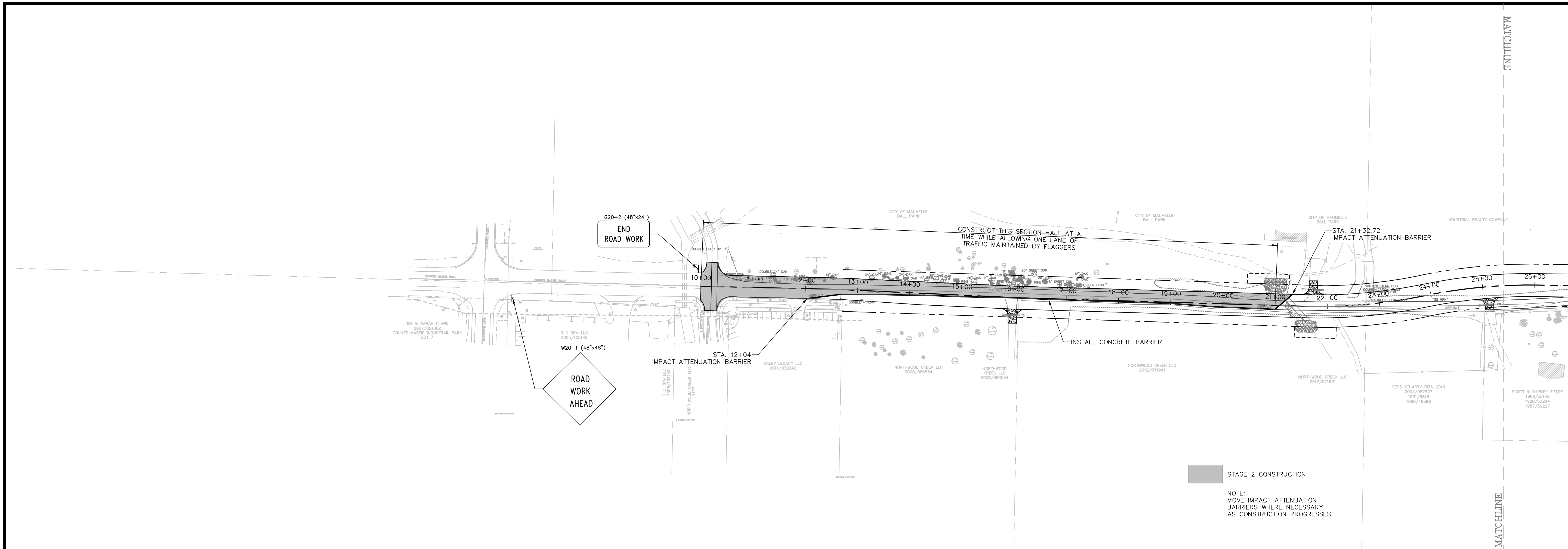
One Call
811
Know what's below.
Call before you dig.

NO.	DATE	REVISIONS	DESCRIPTION

MAINTENANCE OF TRAFFIC
STAGE 1

PROJECT ENGR: MK	DRAWN BY: JAM
DATE: APRIL 2017	
SCALE: 1"=100'	JOB NUMBER: LR13-5736

W:\2013\13-5736 Maumelle Counts Roadway and Utilities Extension\Design\Engineering\13-5736-S1.dwg 5/23/17 at 12:28pm



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7302 Kams Rd.
Payetteville, AR 72702
PH# 479-443-3377
4606 S. Gambel Rd. Ste. 401
Tulsa, OK 74146
PH# 918-517-0073
<http://www.mccc.us.com>

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
MAHESH KRISHNAN
No. 15912
4/20/2017
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COUNTS MASSIE
ROADWAY EXTENSION
MAUMELLE, ARKANSAS

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NO.	DATE	REVISIONS DESCRIPTION

MAINTENANCE OF TRAFFIC STAGE 2

PROJECT ENGR: **MK** DRAWN BY: **JAM**
DATE: **APRIL 2017**
SCALE: **1"=100'** JOB NUMBER: **LR13-5736**

22

INDUSTRIAL REALTY COMPANY

LINDA BARNETT
2007/020061/
1990/42970

- NOTES:
1. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A STORM WATER POLLUTION PREVENTION PLAN.
 2. CONTRACTOR SHALL KEEP AN UP-TO-DATE MAP OF THE EROSION CONTROL PLAN IN THE SWPPP MAIL BOX.
 3. CONTRACTOR SHALL FOLLOW BEST MANAGEMENT PRACTICES FOR INSTALLING, INSPECTING, AND MAINTAINING EROSION CONTROL DEVICES.

1. INSTALL SILT FENCE AT TOP OF SLOPE PRIOR TO CONSTRUCTION.
2. REMOVE SILT FENCE AFTER FINAL COVER IS ESTABLISHED.

1. INSTALL ROCK OR SAND BAG DITCH CHECKS AS RECD.
2. REMOVE DITCH CHECKS AFTER FINAL STABILIZATION.

1. INSTALL ROCK OR SAND BAG DITCH CHECKS AS RECD.
2. REMOVE DITCH CHECKS AFTER FINAL STABILIZATION.

1. INSTALL SILT FENCE AT TOP OF SLOPE PRIOR TO CONSTRUCTION.
2. REMOVE SILT FENCE AFTER FINAL COVER IS ESTABLISHED.

MATCHLINE

MATCHLINE

COUNTS MASSIE ROAD

COUNTS MASSIE ROAD

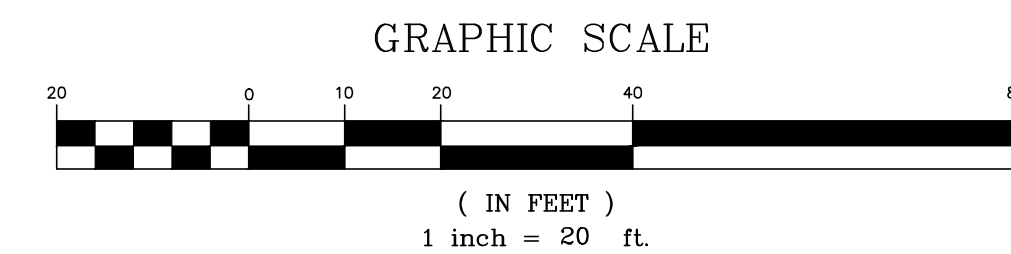
COUNTS MASSIE ROAD

COUNTRY CLUB DEVELOPMENT LLC

2009/023326
1999/094424
1998/2291

STEVE IM
2000/061787
2000/020290

VESS STUART/ RITA JEAN
2004/057527
1991/9816
1990/46398



MCE McCLELLAND CONSULTING, INC.
DESIGNED TO SERVE ENGINEERS, INC.

1810 N. College Fayetteville, AR 72702
702 Kania Rd. Little Rock, AR 72204
4606 S. Garner Rd. Suite 401 Tulsa, OK 74146
PH# 479-443-2377 PH# 501-571-0272
http://www.mcc.us.com

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
MAHESH KRISHNAN
No. 15912
4/20/2017

ORIGINAL SIGNATURE ON FILE

COUNTS MASSIE ROADWAY EXTENSION
MAUMELLE, ARKANSAS

One Call
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Know what's below.
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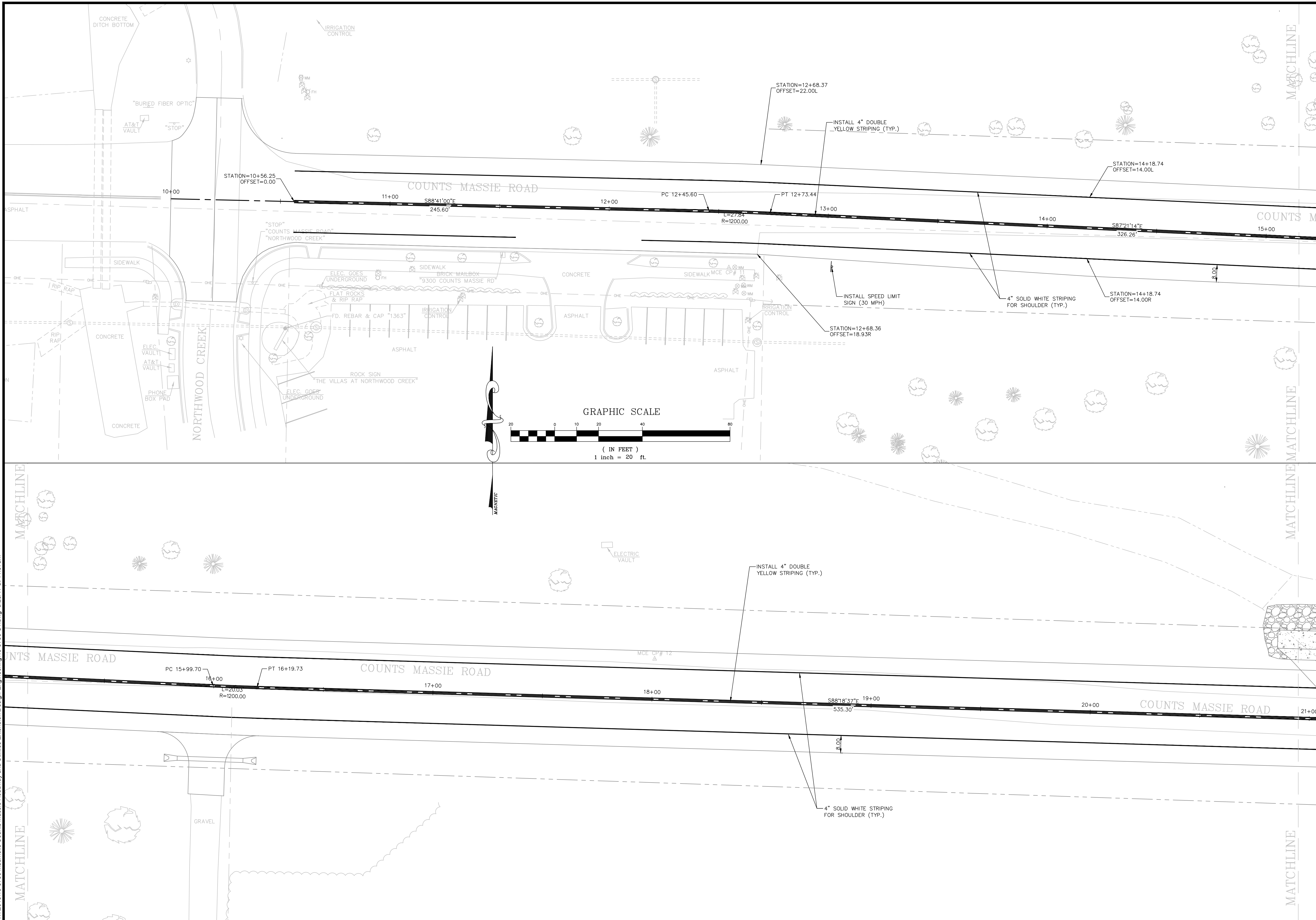
NO.	DATE	REVISIONS	DESCRIPTION

EROSION CONTROL PLAN
STA. 32+57
TO STA. 35+96.38

PROJECT ENGR: MK	DRAWN BY: JAM
DATE: APRIL 2017	
SCALE: 1"=20'	JOB NUMBER: LR13-5736

W:\2013\13-5736 Maumelle Counts Massie Roadway and Utilities Extension\Design-Engineering\13-5736-S1.dwg 5/23/17 at 10:45am

W:\2013\13-5736 Maumelle Counts Massie Roadway and Utilities Extension\Design\Engineering\13-5736-S1.dwg 5/23/17 at 11:37am



MCE McClelland Consulting, Inc.
 DESIGNED TO SERVE ENGINEERS, INC.
 702 S. Kansas Rd., Fayetteville, AR 72702
 4606 S. Gambel Rd. Ste. 401, Tulsa, OK 74146
 P.O. Box 50137, Little Rock, AR 72254
 P: 479-443-3377 F: 479-443-3378
 www.mccc.us.com

STATE OF ARKANSAS
 LICENSED PROFESSIONAL ENGINEER
 No. 15912
 Anil K. Krishnan
 4/20/2017
 ORIGINAL SIGNATURE ON FILE

COUNTS MASSIE ROADWAY EXTENSION
 MAUMELLE, ARKANSAS

One Call
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 Know what's below.
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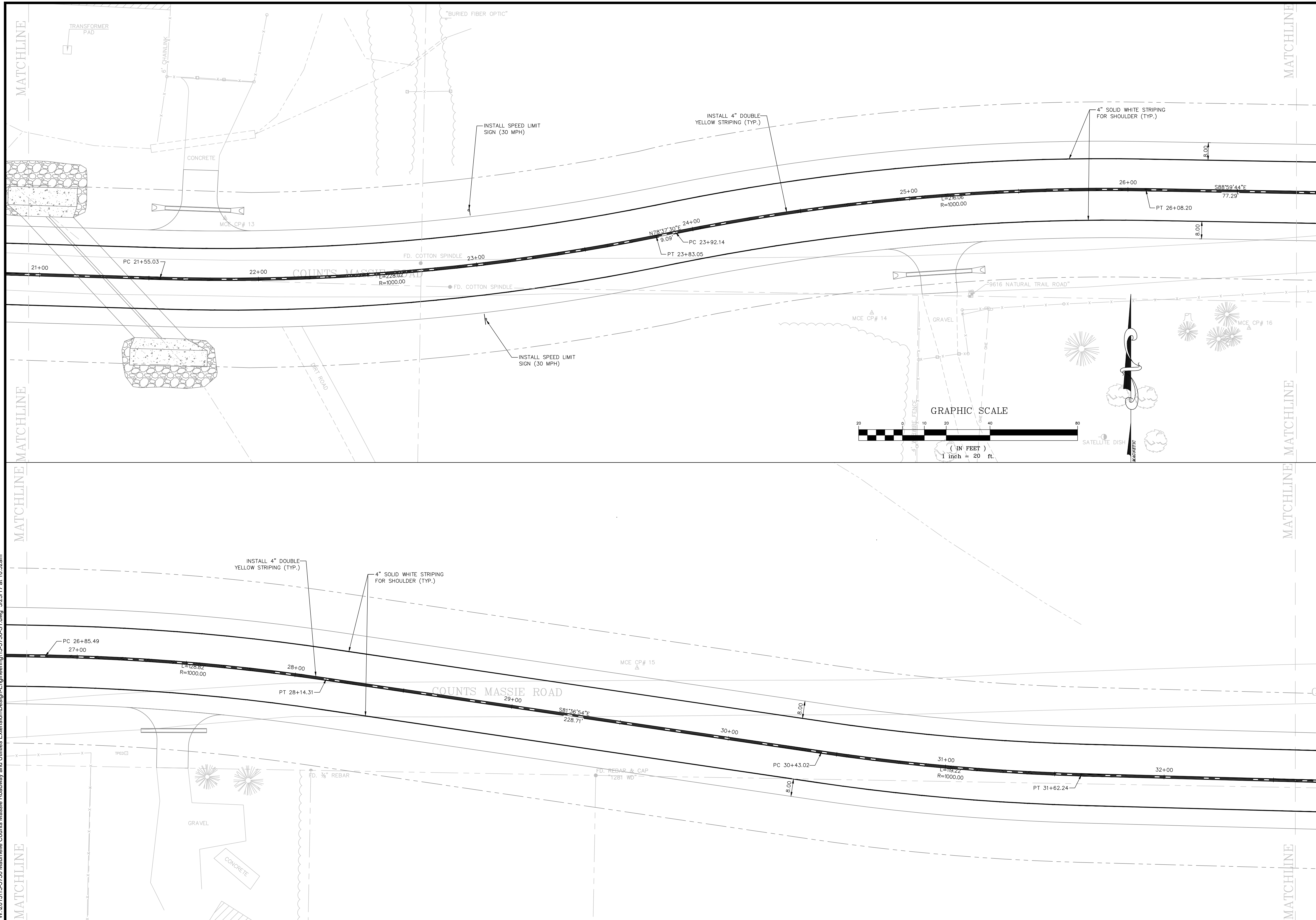
NO.	DATE	REVISIONS	DESCRIPTION

STRIPING AND SIGNAGE PLAN
 STA. 10+00 TO STA. 20+95

PROJECT ENGR: MK	DRAWN BY: JAM
DATE: APRIL 2017	
SCALE: 1"=20'	JOB NUMBER: LR13-5736

26

W:\2013\13-5736 Maumelle Counts Massie Roadway and Utilities Extension\Design\Engineering\13-5736-S1.dwg 5/23/17 at 10:52am



MCE McClelland Consulting, Inc.
 DESIGNED TO SERVE ENGINEERS, INC.
 702 S. Kansas Rd., Fayetteville, AR 72702
 4606 S. Campbell Rd., Suite 401, Tulsa, OK 74146
 Phone: 479-443-5377, 479-503-5740, 479-503-5983
 http://www.mccc.us.com

STATE OF ARKANSAS
 LICENSED PROFESSIONAL ENGINEER
 No. 15912
 V. KRISHNA
 4/20/2017
 ORIGINAL SIGNATURE ON FILE

COUNTS MASSIE ROADWAY EXTENSION
 MAUMELLE, ARKANSAS

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NO.	DATE	REVISIONS	DESCRIPTION

STRIPING AND SIGNAGE PLAN
 STA. 20+95 TO STA. 32+57

PROJECT ENGR: MK	DRAWN BY: JAM
DATE: APRIL 2017	
SCALE: 1"=20'	JOB NUMBER: LR13-5736

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MATCHLINE

MATCHLINE

INDUSTRIAL REALTY COMPANY

LINDA BARNETT
2007/020061
1990/42970

MCE McCLELLAND
CONSULTING, INC.
DESIGNED TO SERVE ENGINEERS, INC.
7302 Kamis Rd.
Little Rock, AR 72204
PH# 479-443-5377
FAX 479-443-5377
http://www.mce.us.com

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15912
Anish Krishnan
4/20/2017
ORIGINAL SIGNATURE ON FILE

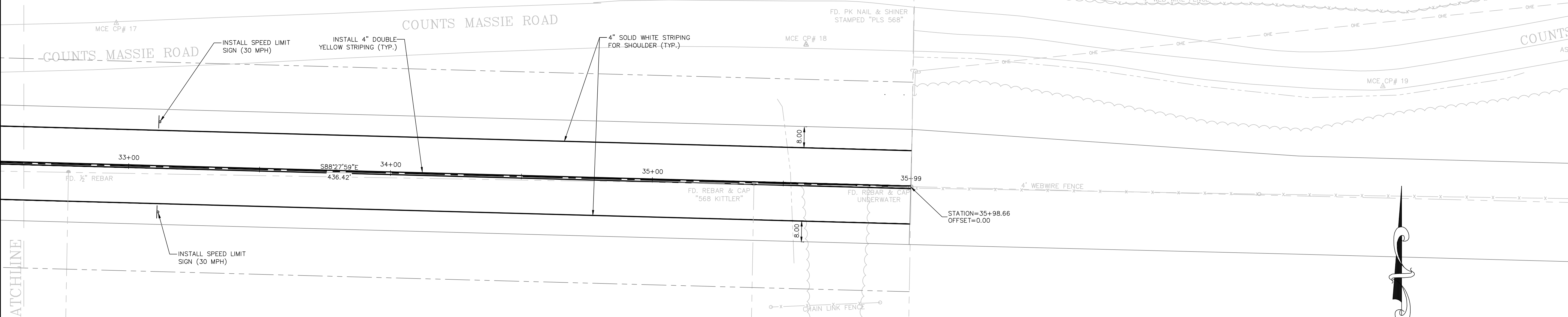
COUNTS MASSIE
ROADWAY EXTENSION
MAUMELLE, ARKANSAS

One Call
811
Know what's below.
Call before you dig.

NO.	DATE	REVISIONS	DESCRIPTION

STRIPING AND SIGNAGE PLAN
STA. 32+57
TO STA. 35+98.66

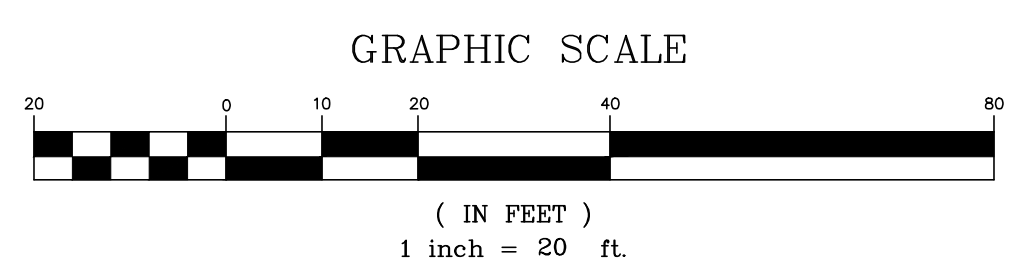
PROJECT ENGR:	DRAWN BY:
MK	JAM
DATE:	APRIL 2017
SCALE:	JOB NUMBER:
1"=20'	LR13-5736

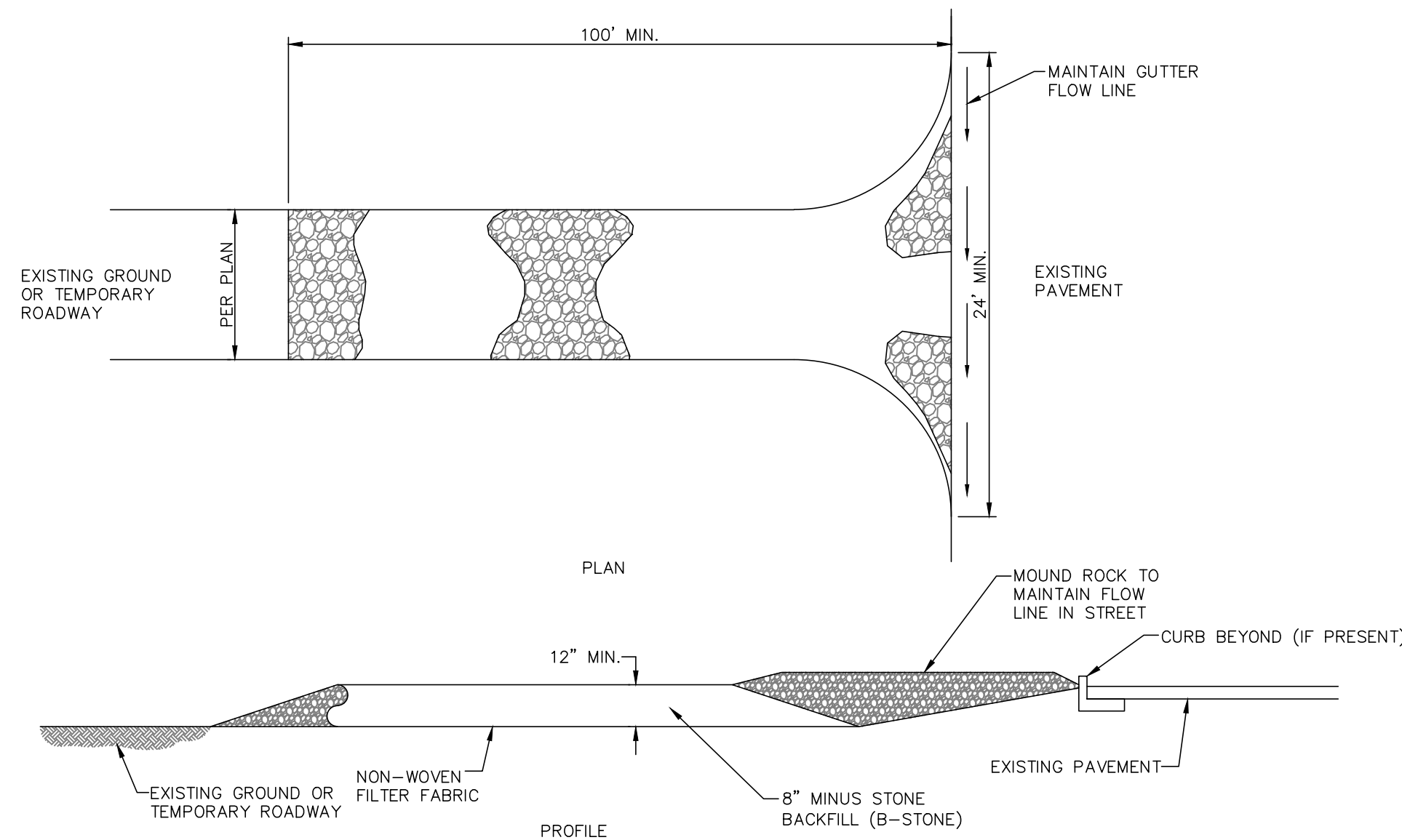


CLUB DEVELOPMENT LLC
2009/023326
1999/094424
1998/2291

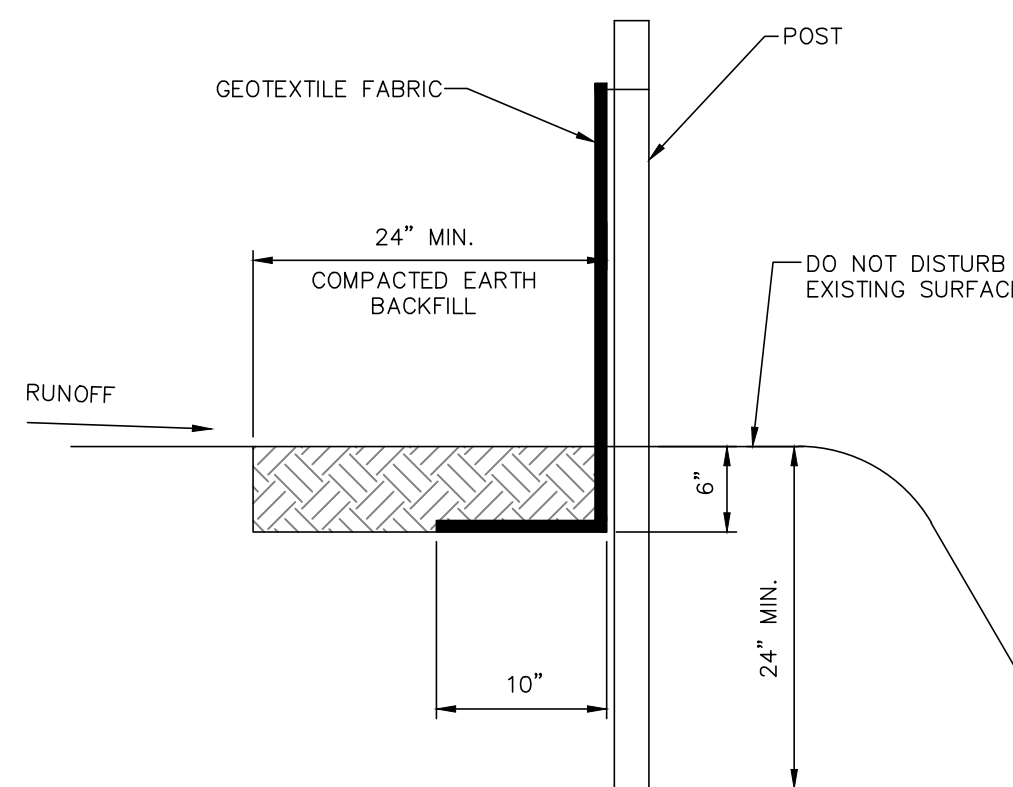
VESS STUART/ RITA JEAN
2004/057527

STEVE IM
2000/061787
2000/020290

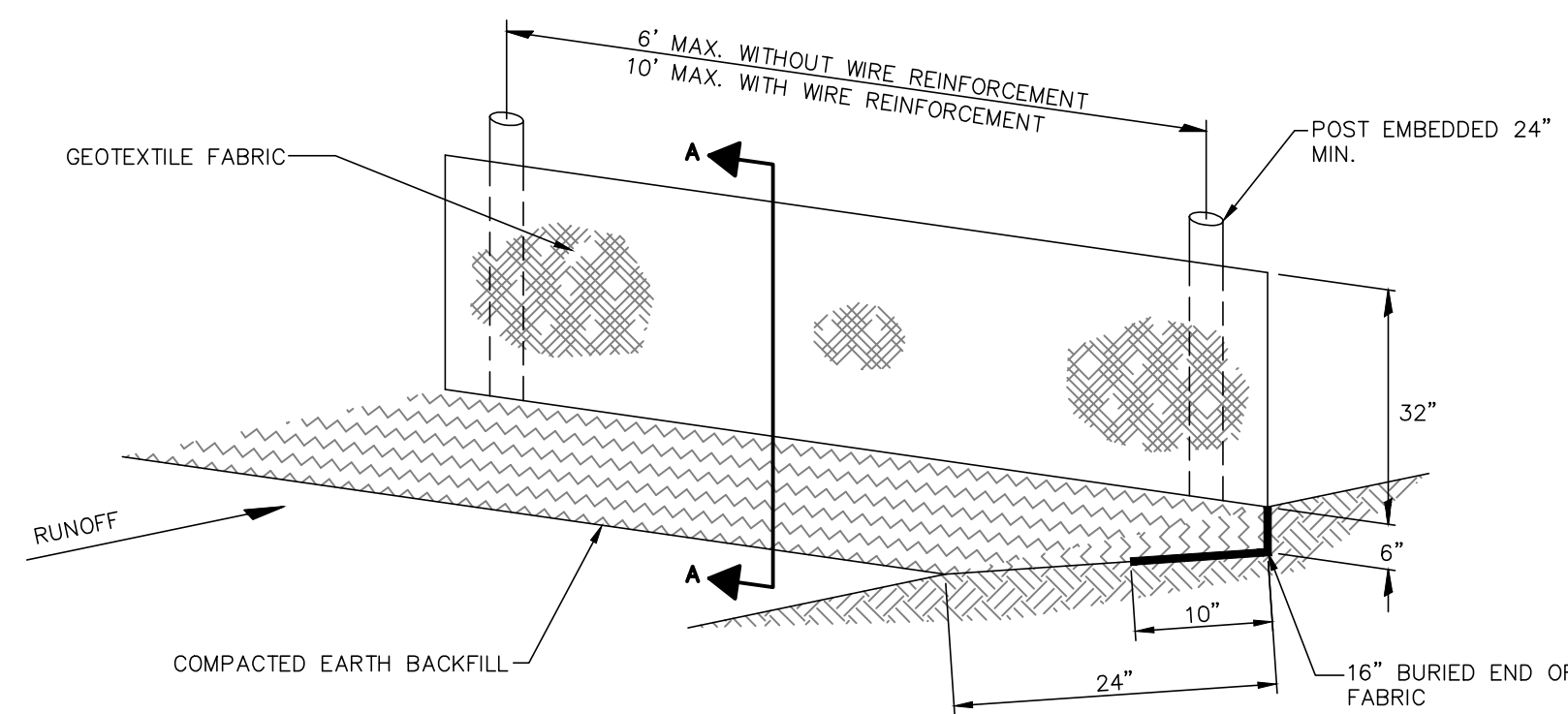




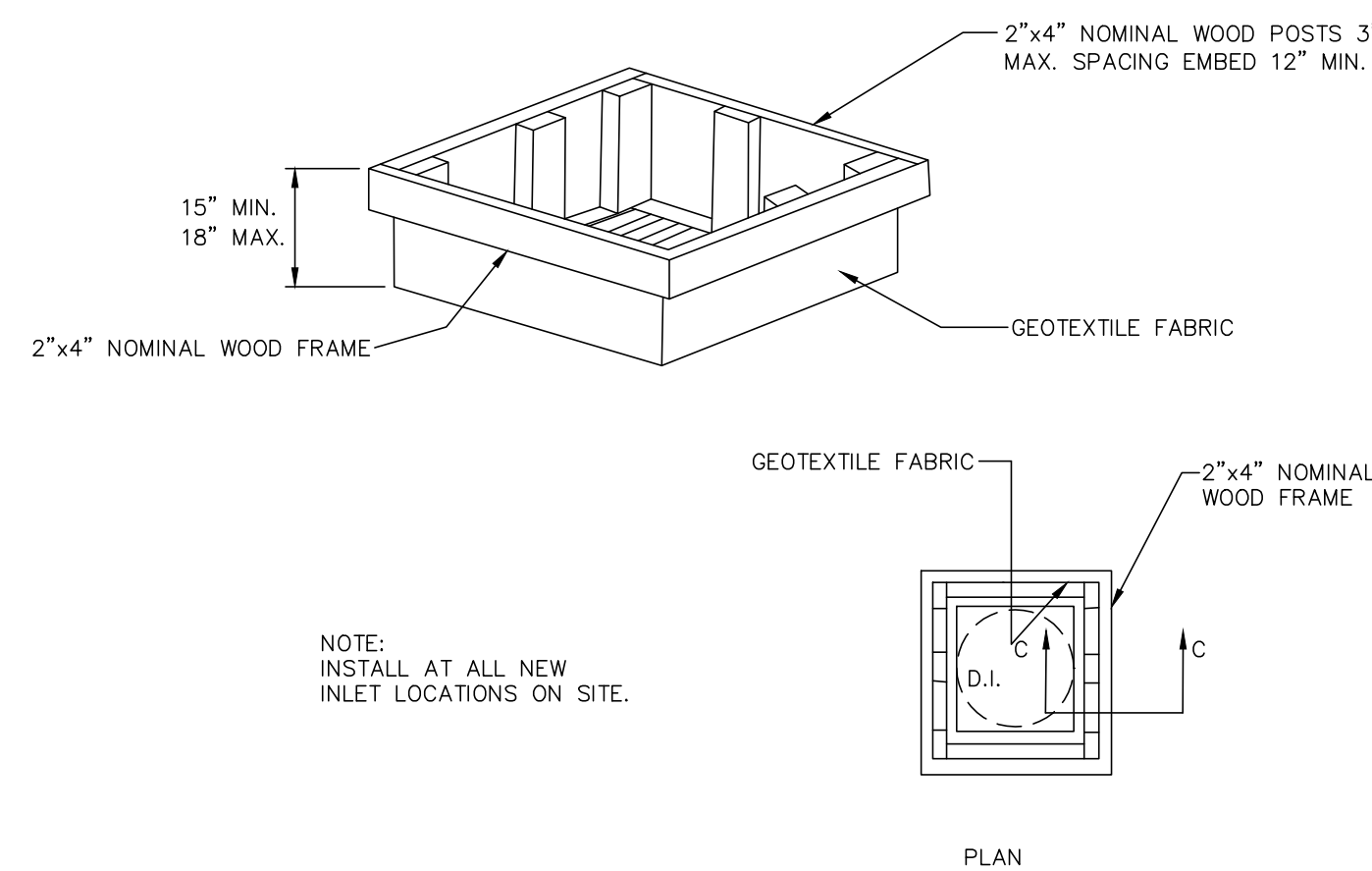
STABILIZED CONSTRUCTION ENTRANCE
N.T.S.



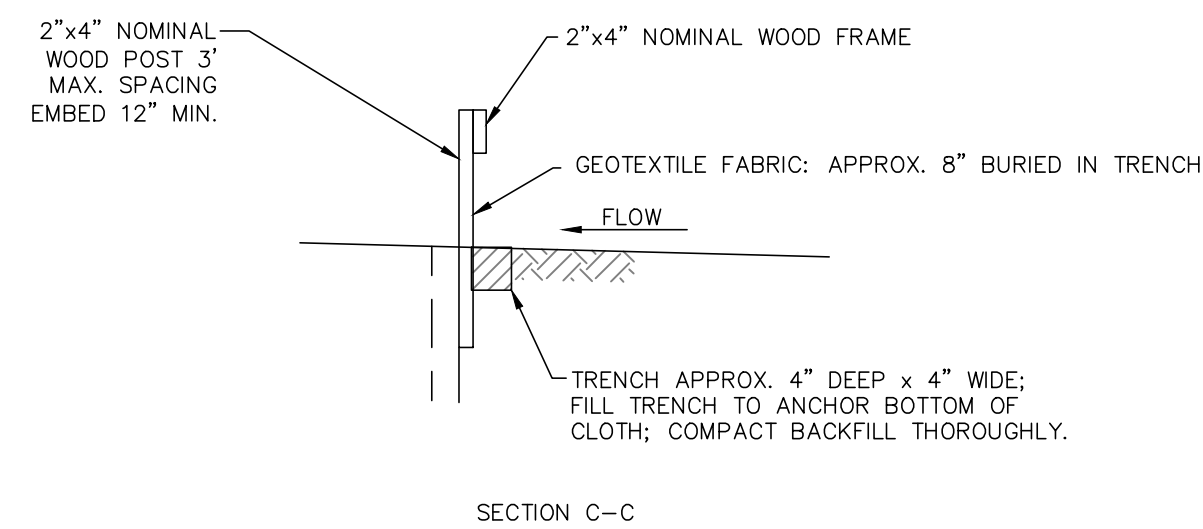
SECTION A-A
N.T.S.



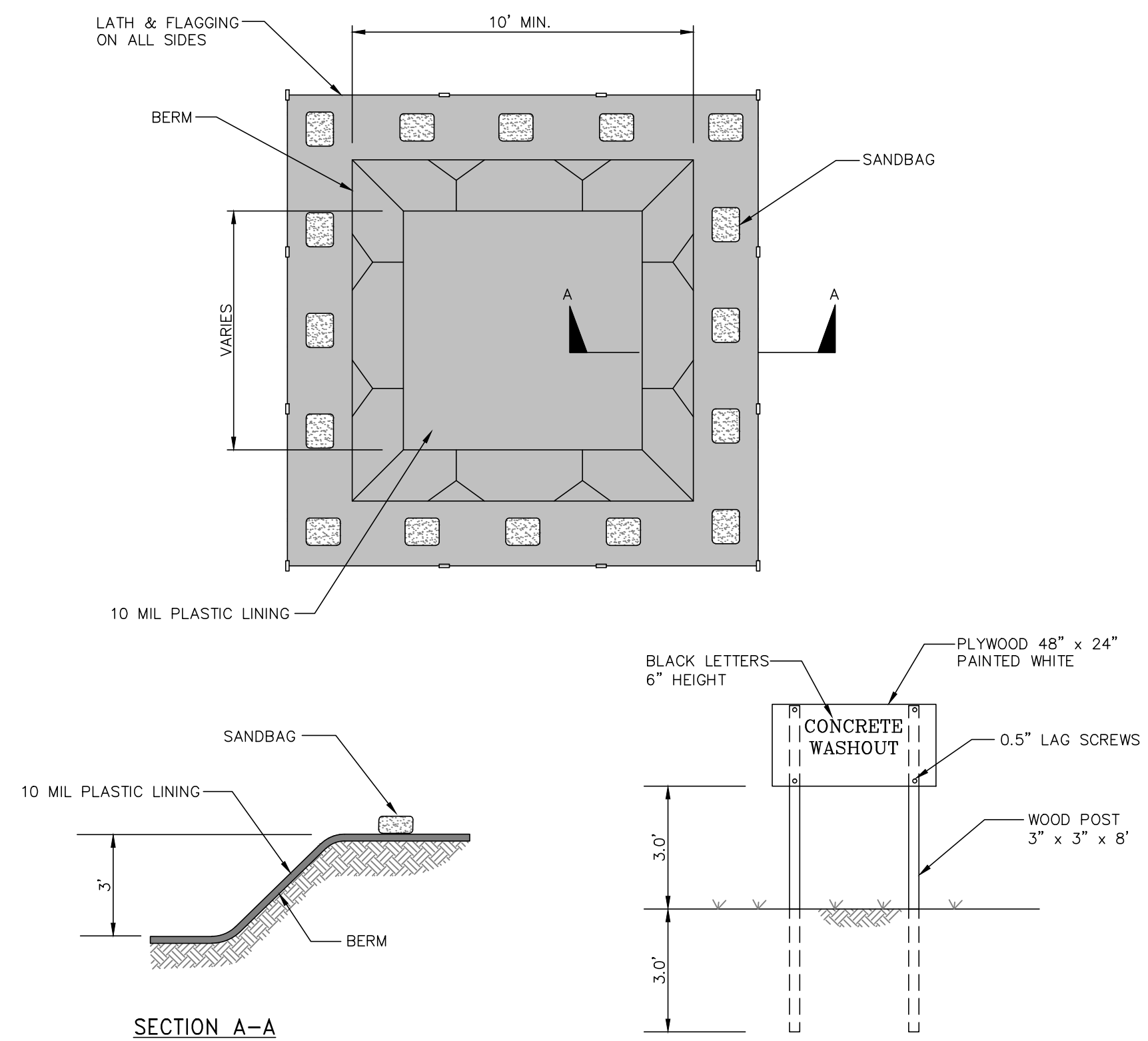
SILT FENCE
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CONCRETE WASHOUT
N.T.S.

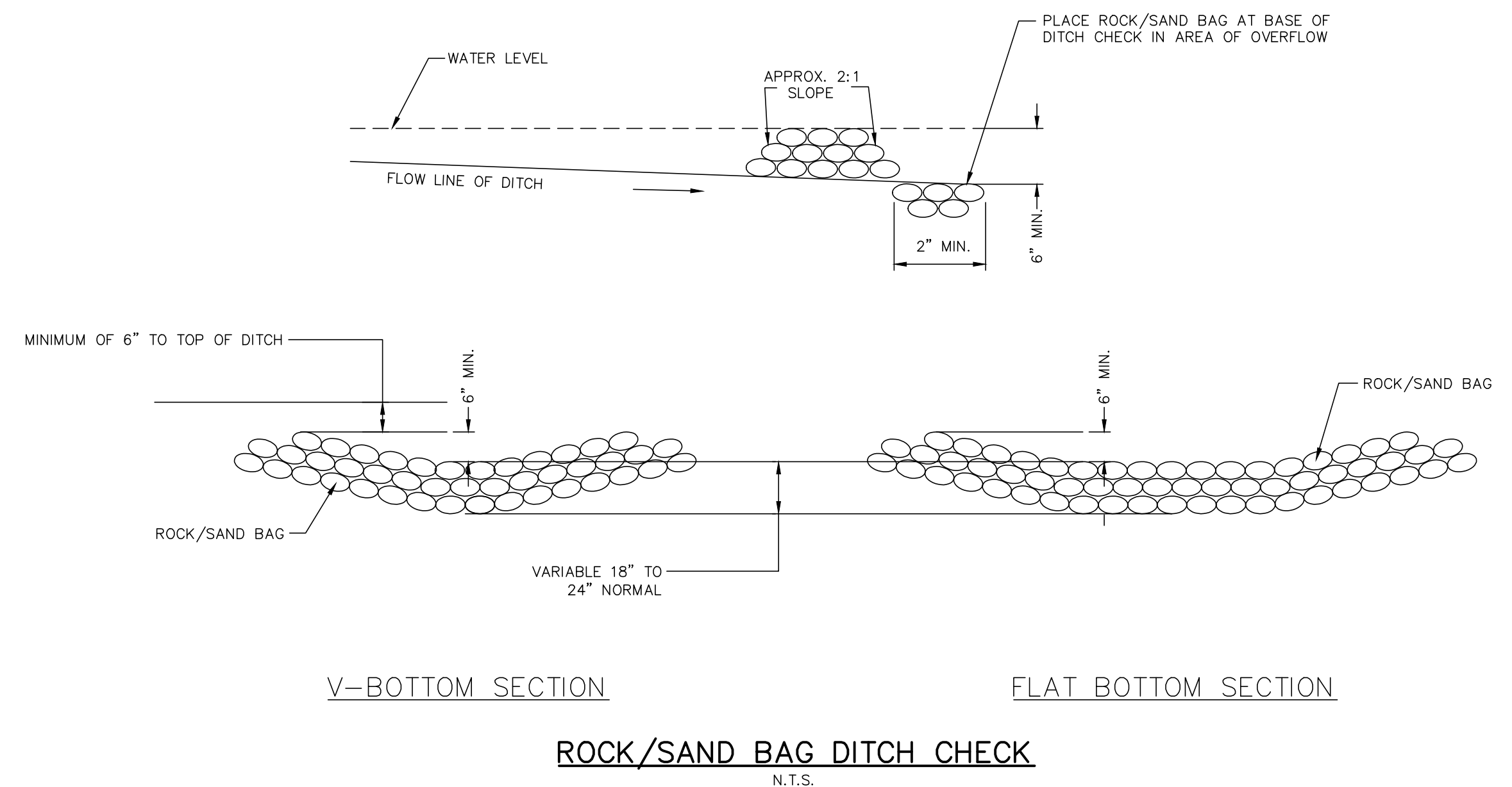


SILT FENCE AT DROP INLET
N.T.S.



- NOTES**
1. NO WASHING OUT OF CONCRETE TRUCKS OR WASHING OF SWEEPINGS FROM EXPOSED AGGREGATE CONCRETE INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS IS ALLOWED.
 2. EXCESS CONCRETE IS NOT ALLOWED TO BE DUMPED ON-SITE, EXCEPT IN DESIGNATED TEMPORARY CONCRETE WASHOUT PIT AREAS.
 3. ON-SITE TEMPORARY CONCRETE WASHOUT AREAS WILL BE LOCATED AT LEAST 50 FEET FROM STORM DRAINS, OPEN DITCHES, OR WATER BODIES AS DETERMINED IN THE FIELD.
 4. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
 5. TEMPORARY CONCRETE WASHOUT FACILITIES WILL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.
 6. WASHOUT FACILITIES WILL BE CLEANED OUT ONCE THE WASHOUT IS 75% FULL.
 7. PLASTIC LINING MATERIAL WILL BE MINIMUM OF 10 MIL POLYETHYLENE SHEETING AND WILL BE FREE OF HOLES, TEARS, OR OTHER DEFECTS.
 8. WHEN WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR WORK, THE HARDENED CONCRETE WILL BE REMOVED AND DISPOSED OF. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES WILL BE REMOVED FROM THE SITE AND DISPOSED OF.

CONCRETE WASHOUT
N.T.S.

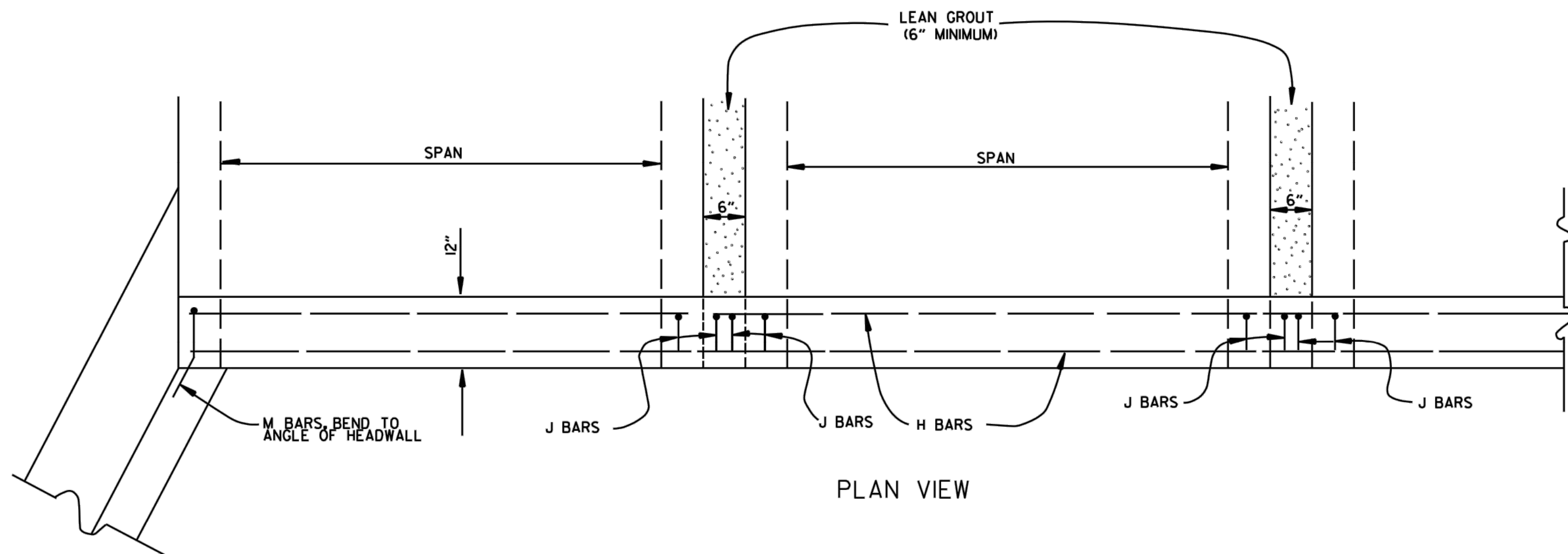


ROCK/SAND BAG DITCH CHECK
N.T.S.

NO.	DATE	REVISIONS	DESCRIPTION

PROJECT ENGR: MK	DRAWN BY: JAM
DATE: APRIL 2017	
SCALE: AS SHOWN	JOB NUMBER: LR13-5736

W:\2013\13-5736 Maumelle Counts Massie Roadway and Utilities Extension\Design\Engineering\13-5736-MD2.dwg 5/23/17 at 11:04am



PLAN VIEW

BAR LIST

BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	

• NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT

GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING. STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
 PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
 SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS. THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE. THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

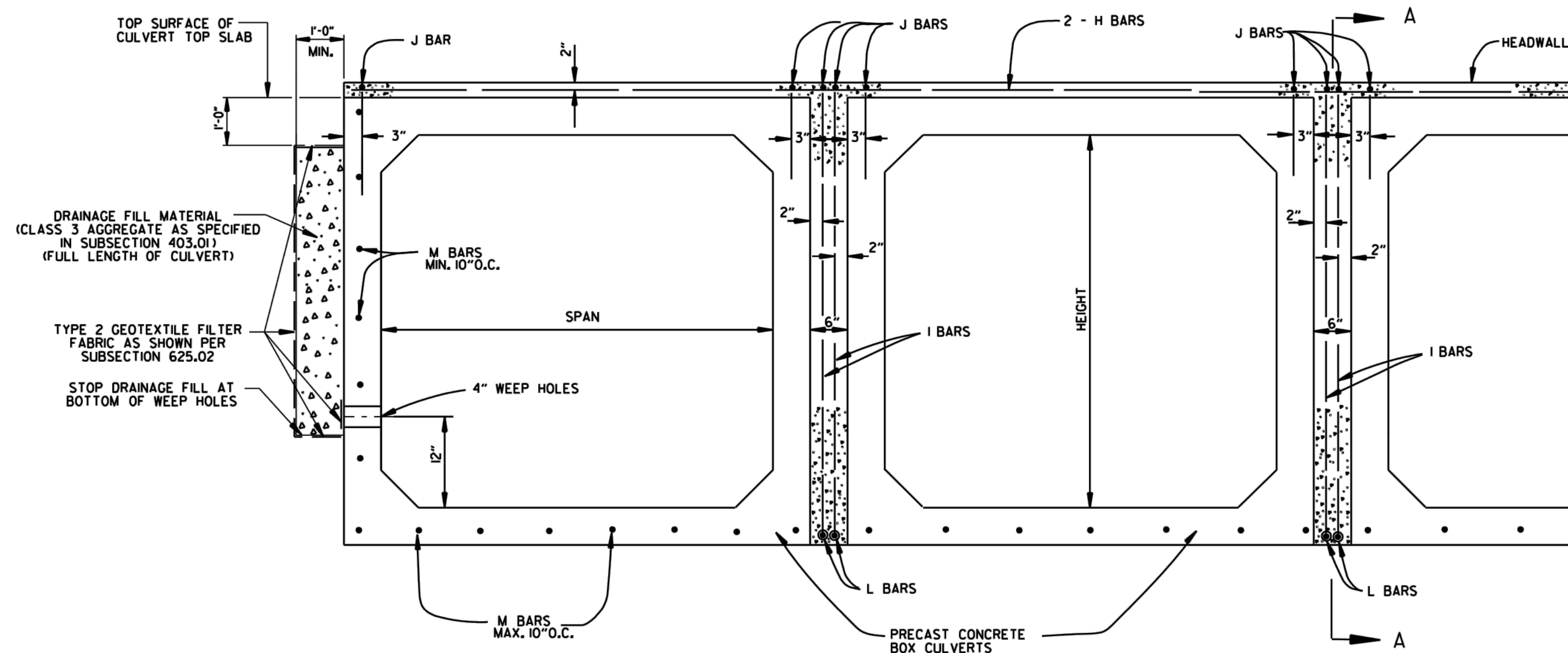
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

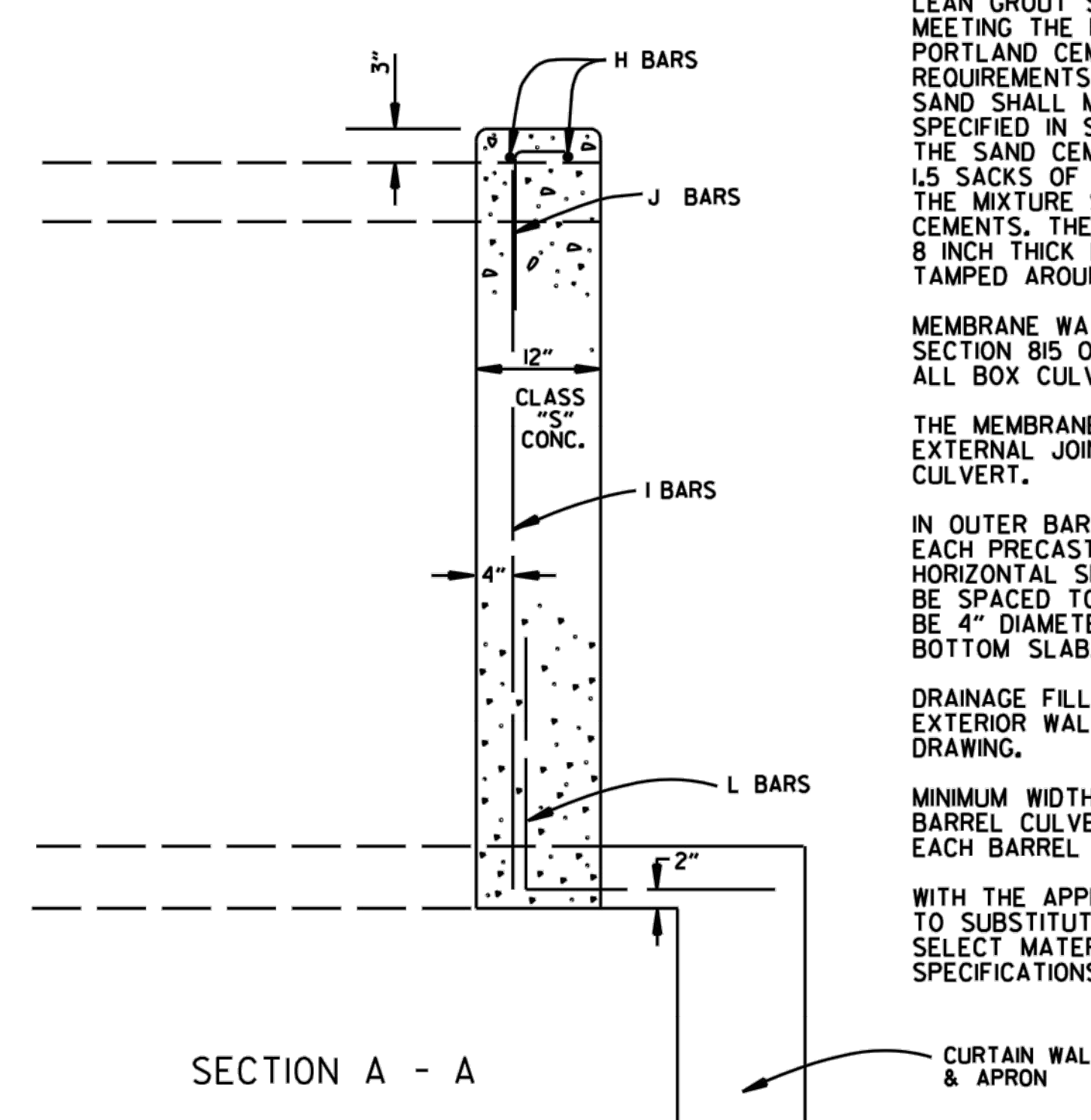
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.



END VIEW




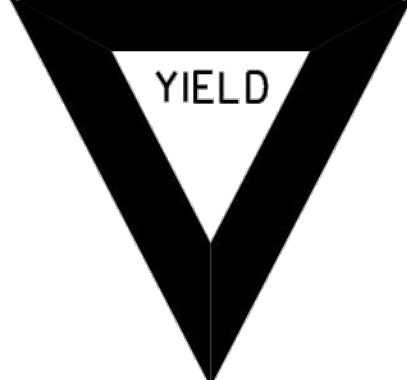

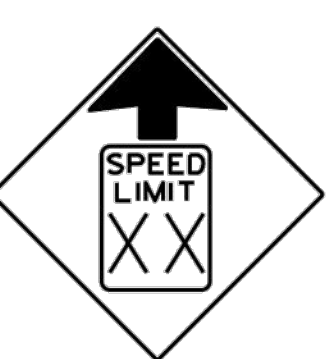

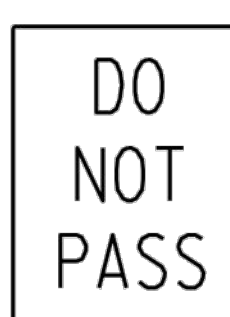



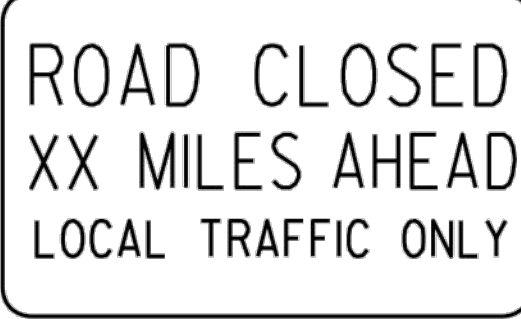


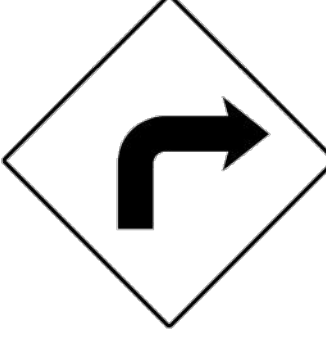


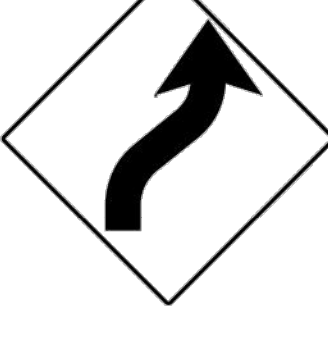

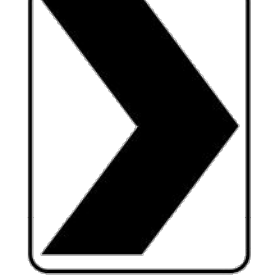
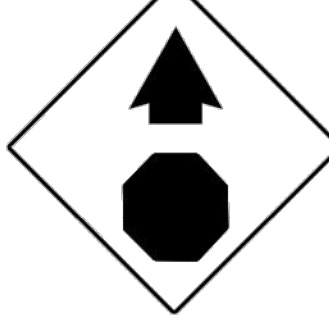
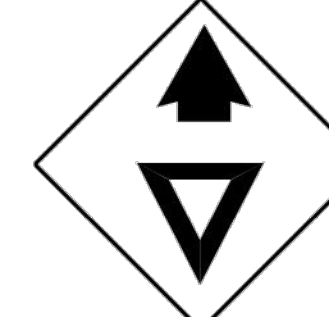
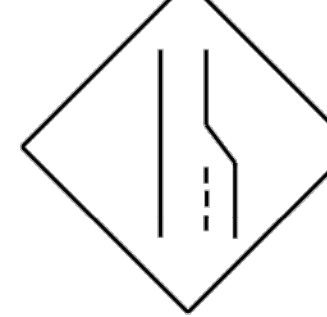

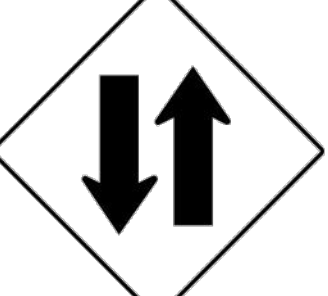

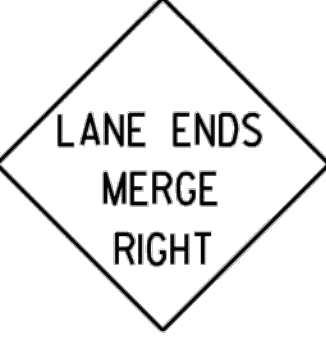


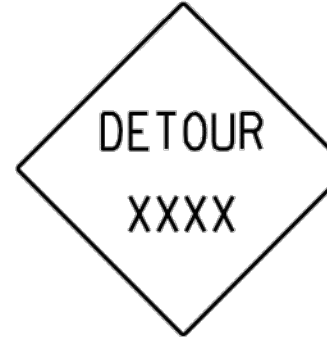






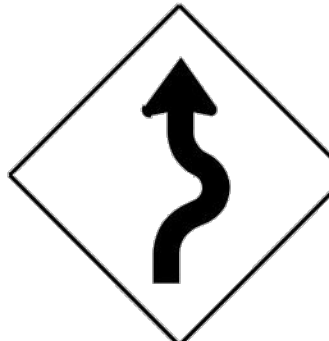



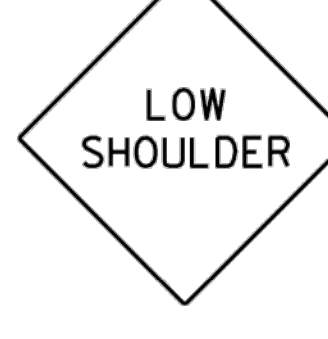

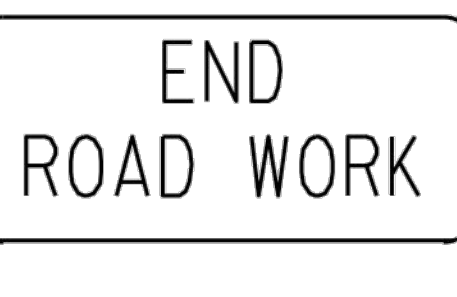
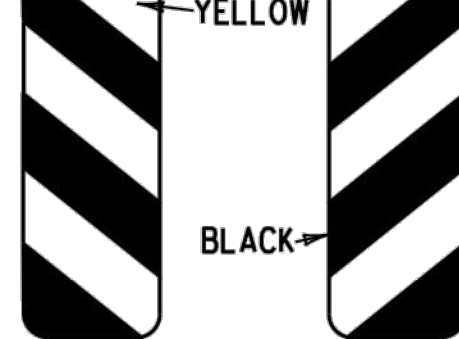
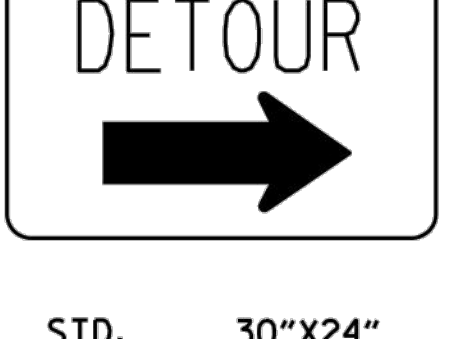

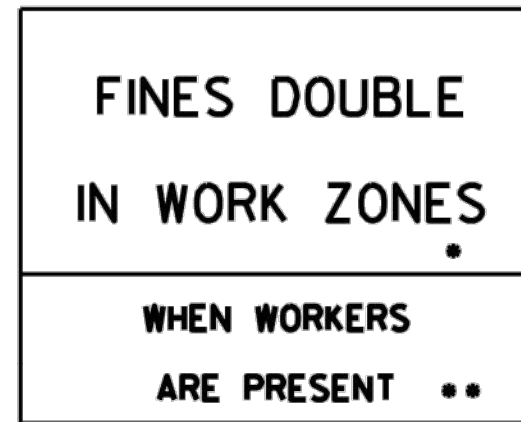
SECTION A - A

1-28-15	REVISED GEOTEXTILE FABRIC PLACEMENT	
12-15-11	ADDED NOTE & DTLs FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE FOR LEAN GROUT	
11- 8-90	REVISED FOR 1991 SPECS	
11-30-89	ISSUED; JABE	
DATE	REVISION	DATE FILED

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

<p>RI-1</p>  <p>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</p>	<p>RI-2</p>  <p>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</p>	<p>R2-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>W3-5</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p>	<p>W3-5a</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p>	<p>R4-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-2</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	
<p>R5-1</p>  <p>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>R11-2</p>  <p>48"x30"</p>	<p>R11-3A</p>  <p>60"x30"</p>	<p>R11-4</p>  <p>60"x30"</p>	<p>RSP-1</p>  <p>48"x30"</p>	<p>W1-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W1-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>W1-3</p>  <p>STD. 48"x48"</p>	<p>W1-4</p>  <p>STD. 48"x48"</p>	<p>W1-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p>	<p>W1-8</p>  <p>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</p>	<p>W3-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W3-2</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W4-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	
<p>W5-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W6-3</p>  <p>EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>W8-7</p>  <p>EXPWY. 36"x36" FWY. 48"x48"</p>	<p>W9-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W13-1</p>  <p>STD. 24"x24"</p>	<p>W20-1</p>  <p>STD. 48"x48"</p>	<p>W20-2</p>  <p>STD. 48"x48"</p>	<p>W20-3</p>  <p>STD. 48"x48"</p>
<p>W20-4</p>  <p>STD. 48"x48"</p>	<p>W20-5</p>  <p>STD. 48"x48"</p>	<p>W20-7a</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W21-2</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W21-5</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W24-1</p>  <p>STD. 36"x36"</p>	<p>W1-4b</p>  <p>STD. 48"x48"</p>	<p>R56-1</p>  <p>STD. 18"x18"</p>
<p>W8-11</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W8-9</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>G20-1</p>  <p>60"x24"</p>	<p>G20-2</p>  <p>48"x24"</p>	<p>OM-3L OM-3R</p>  <p>12"x36"</p>	<p>M4-9</p>  <p>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</p>	<p>M4-10</p>  <p>48"x18"</p>	<p>R55-1</p>  <p>36"x60"</p> <p>• USE 6" C LETTERS •• USE 4" D LETTERS</p>

ADVANCE DISTANCES (XXXX)

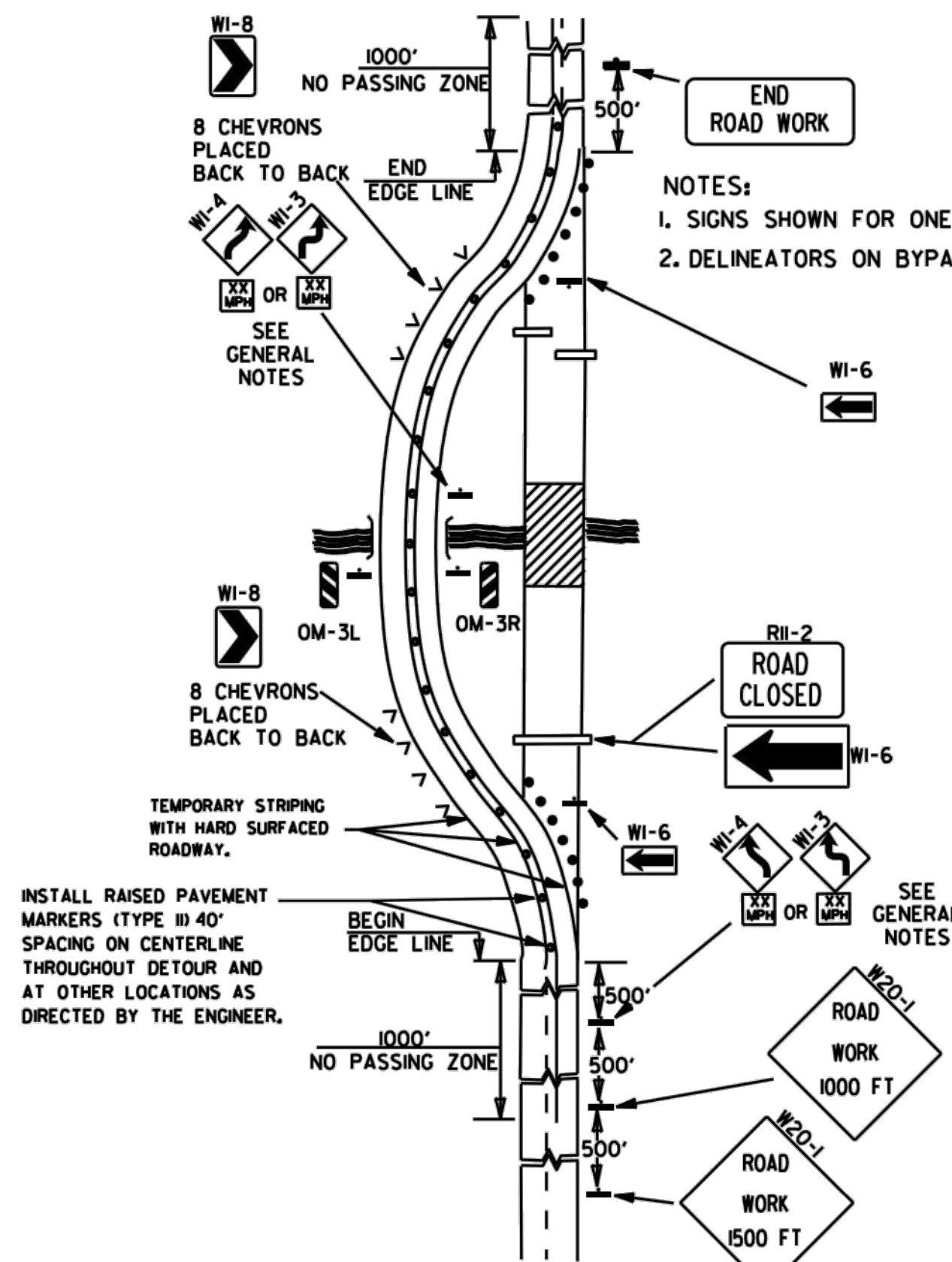
500 FT	1/2 MILE
1000 FT	3/4 MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

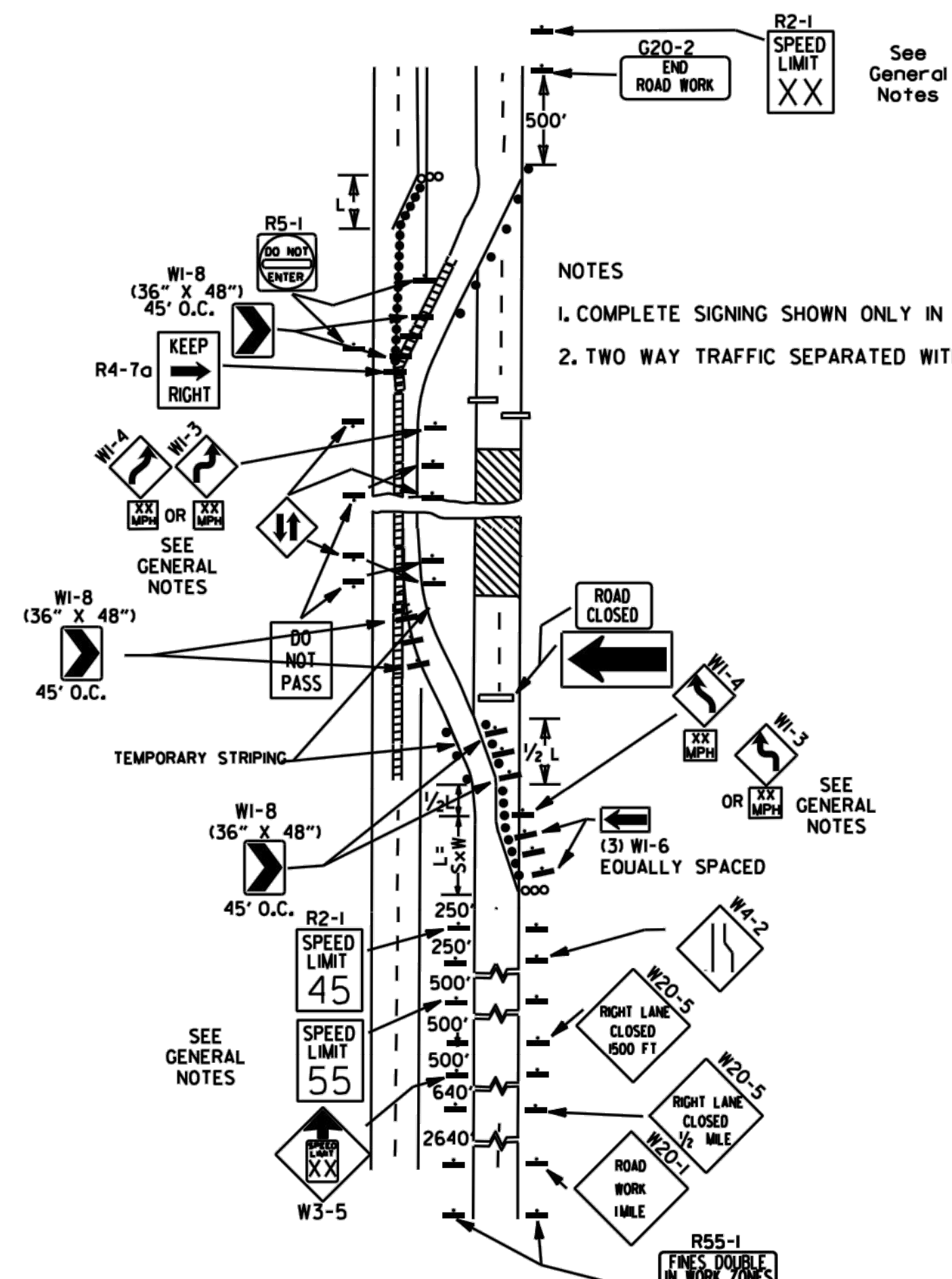
- ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
- TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
- EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SO. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
- POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
- ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
- FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
- MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
- R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5 BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

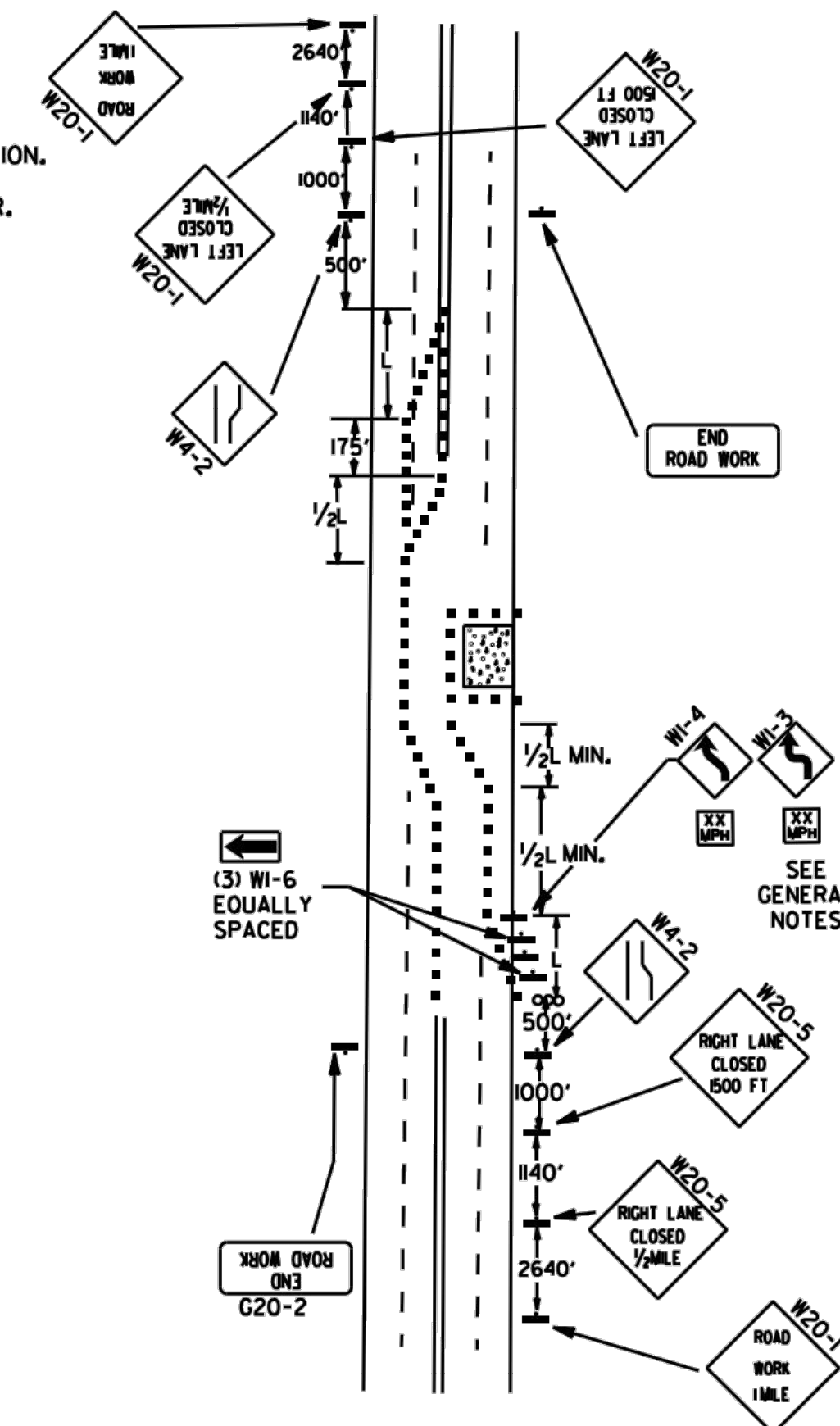
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS	
	REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILMED



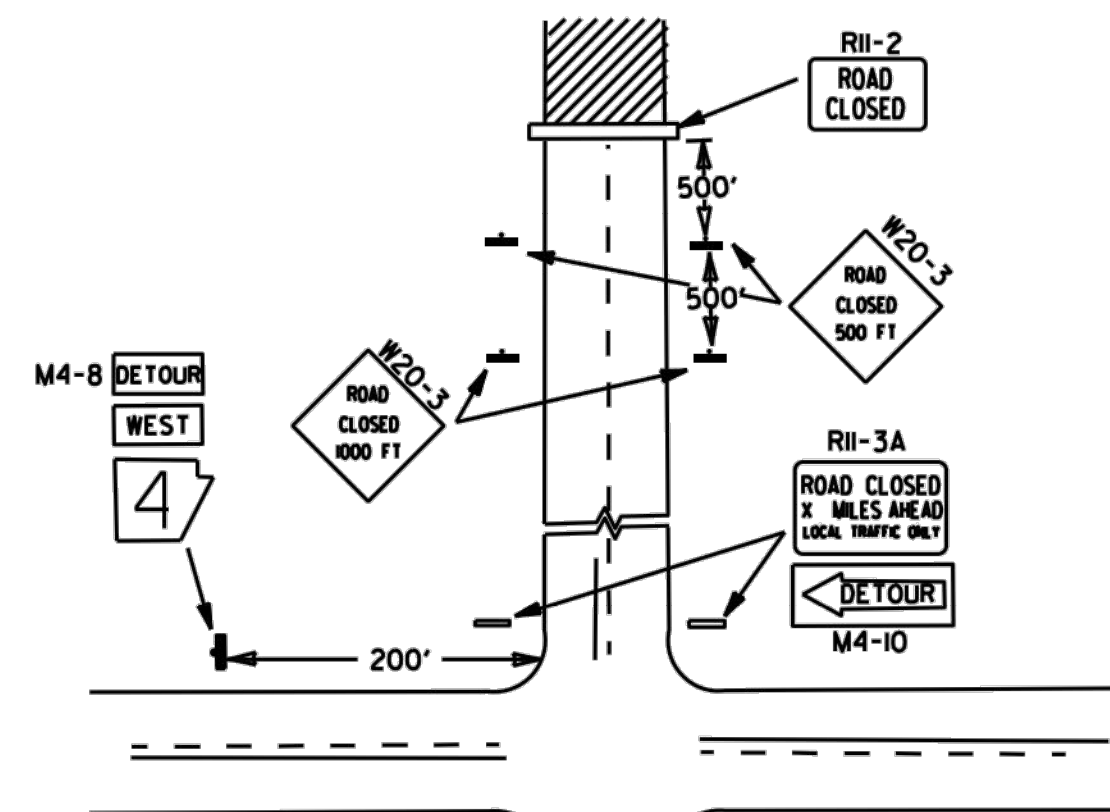
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



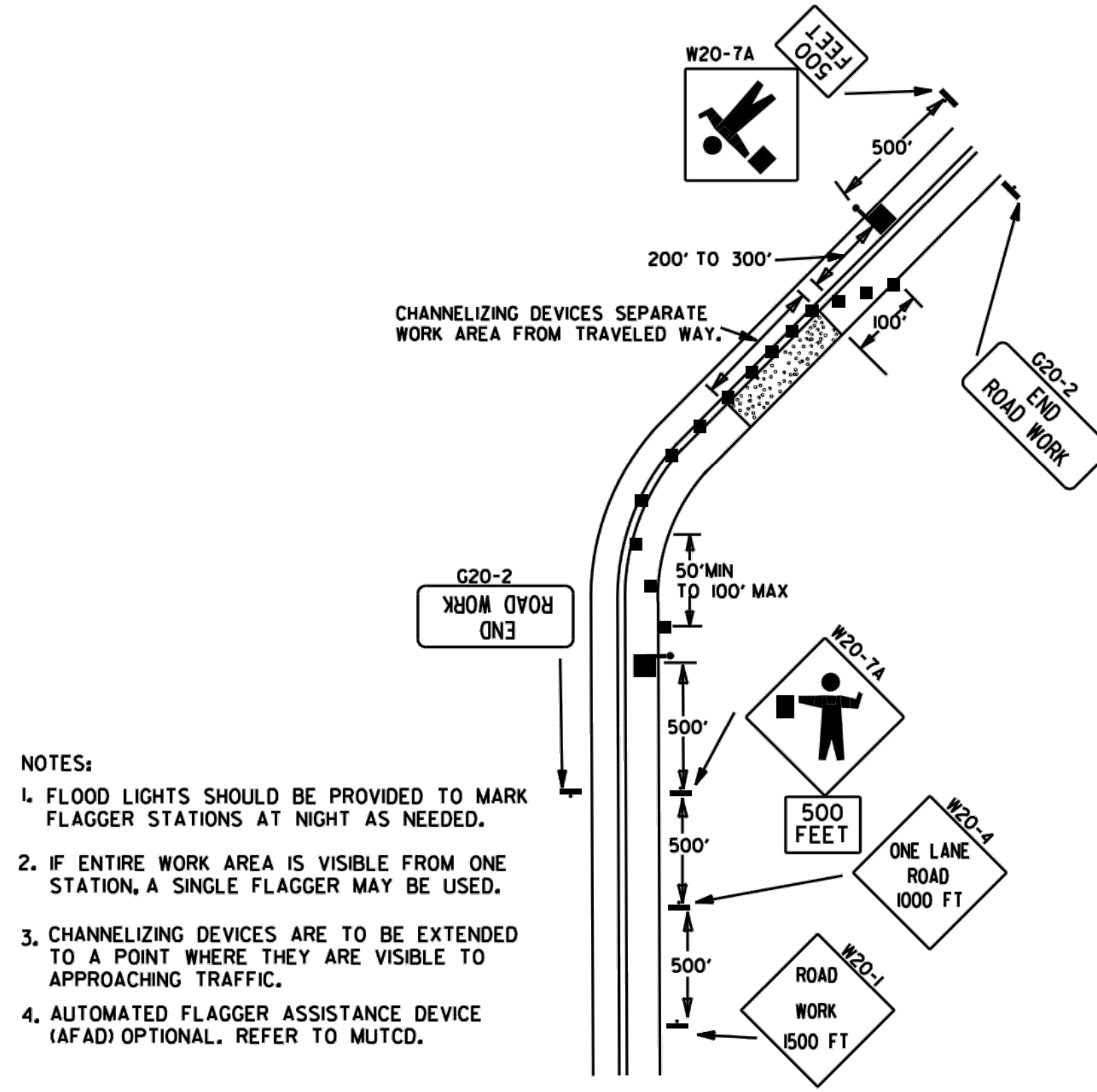
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



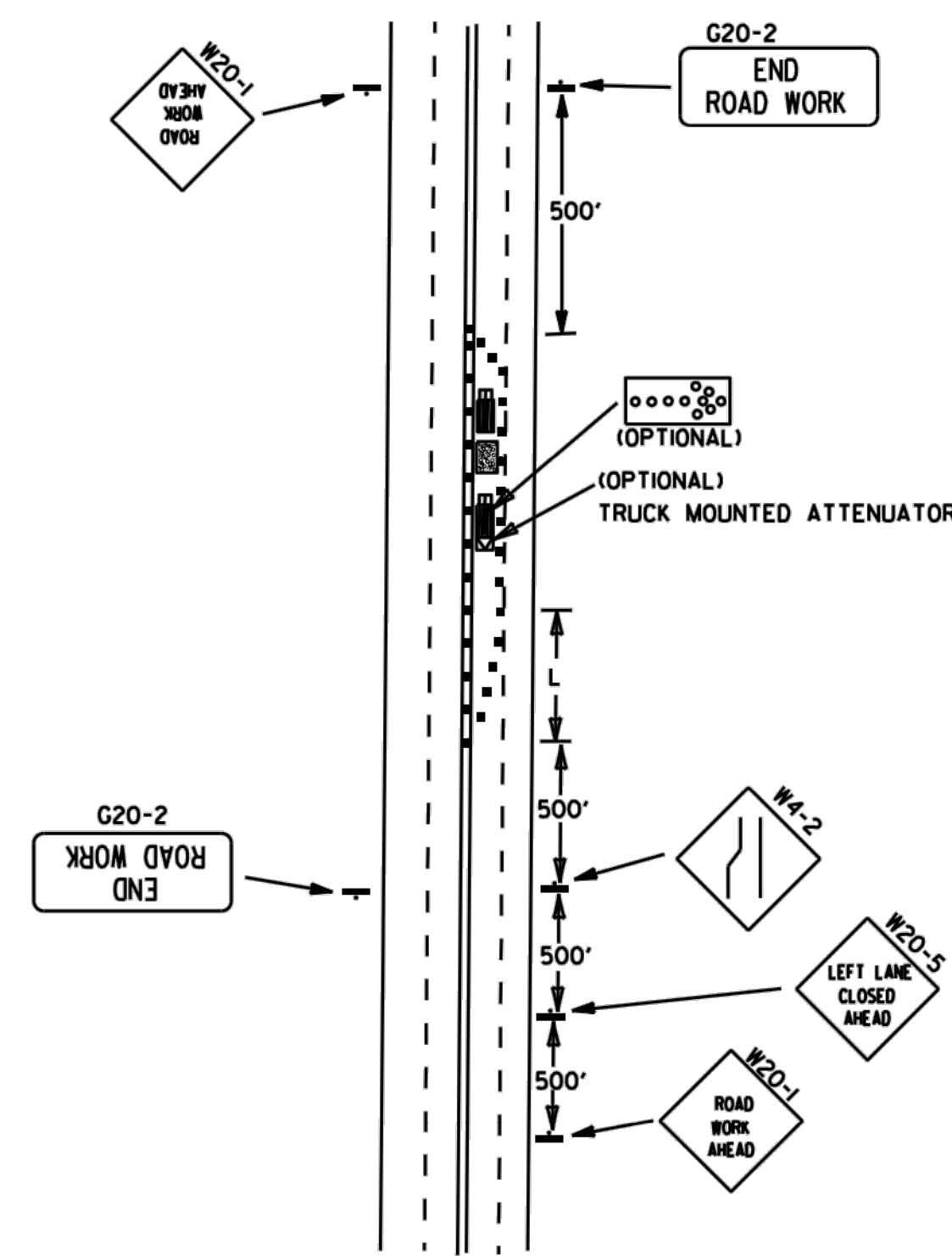
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.

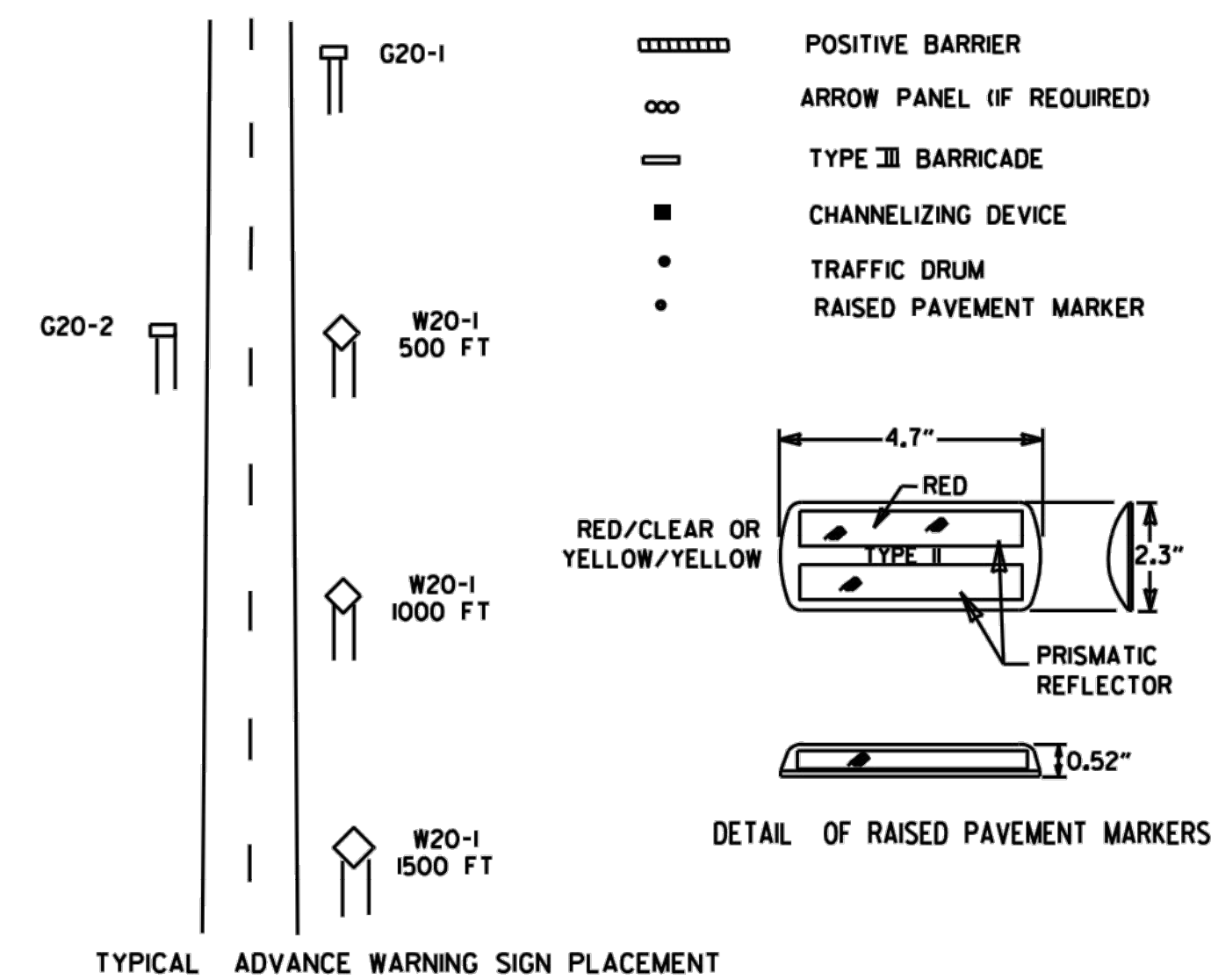


(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

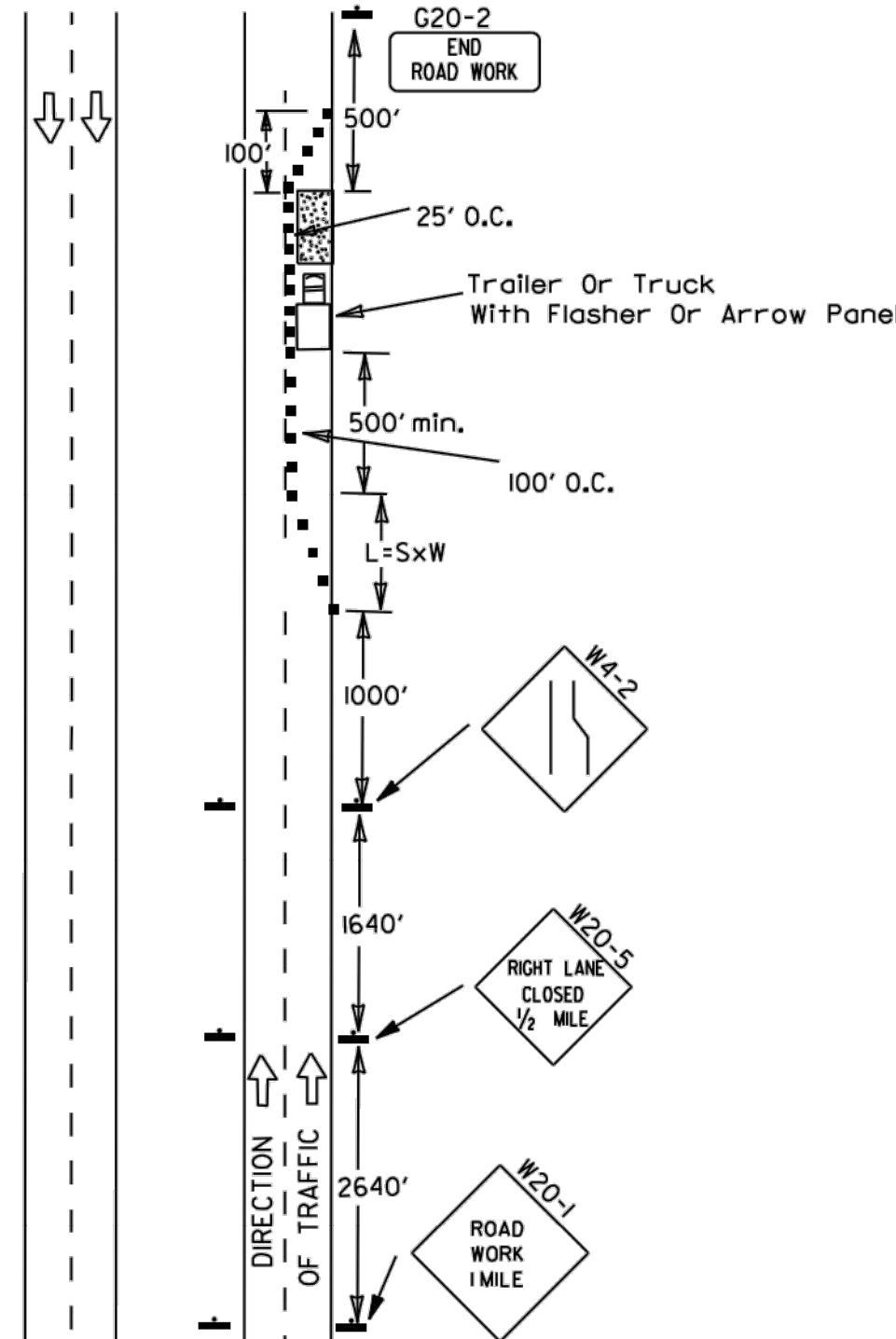
- KEY:
- FLAGGER
 - POSITIVE BARRIER
 - ARROW PANEL (IF REQUIRED)
 - TYPE III BARRICADE
 - CHANNELIZING DEVICE
 - TRAFFIC DRUM
 - RAISED PAVEMENT MARKER



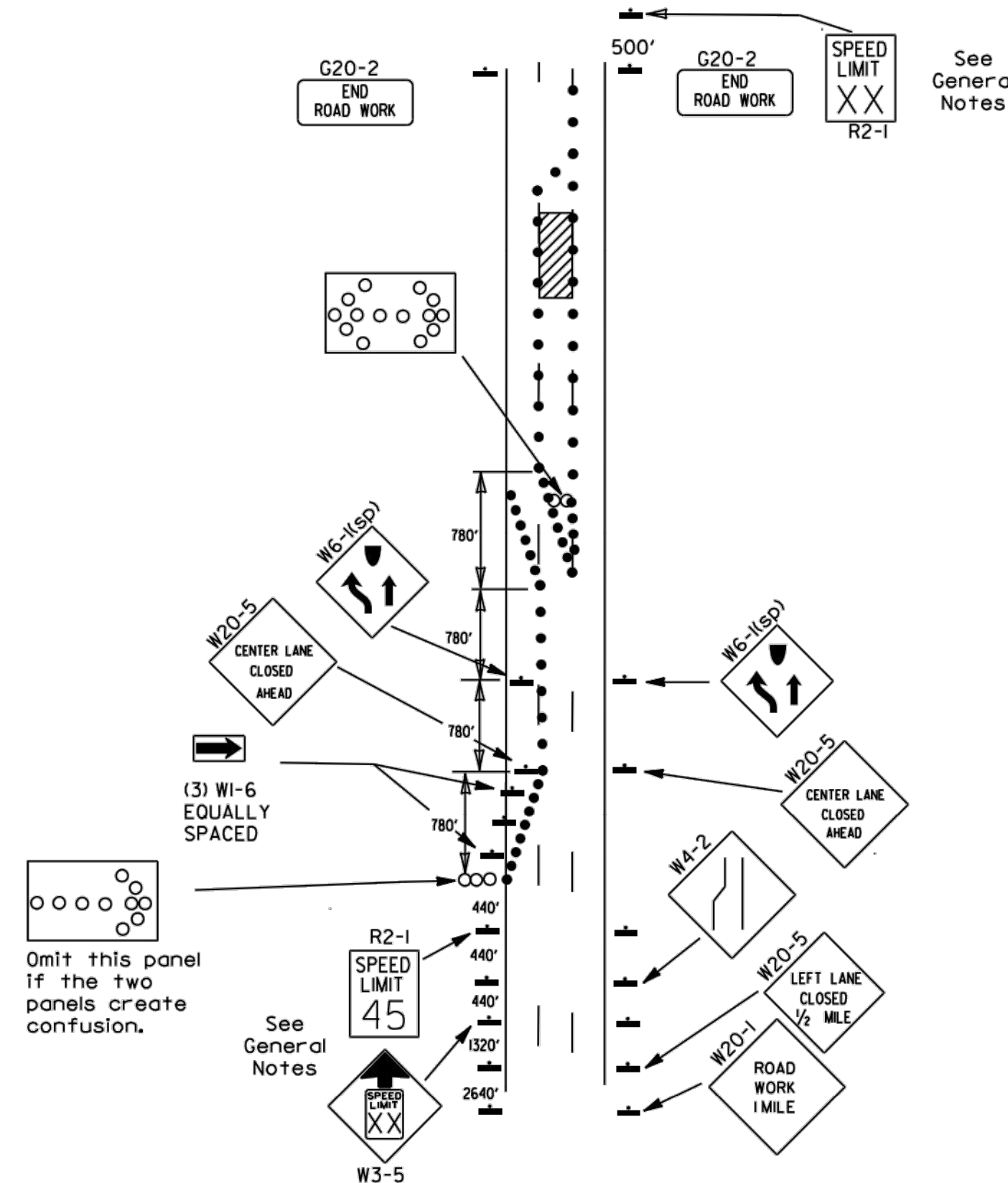
TAPER FORMULAE:
 $L = SXW$ FOR SPEEDS OF 45MPH OR MORE.
 $L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.
 WHERE:
 L= MINIMUM LENGTH OF TAPER.
 S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
 W= WIDTH OF OFFSET.

- GENERAL NOTES:
 1. ADVISORY SPEED POSTED ON WI-3 OR WI-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE WI-4 WHEN SPEED IS GREATER THAN 30MPH AND WI-3 WHEN 30MPH OR LESS.
 2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-(K55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
 3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-(K65) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
 4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
 5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
 6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
 7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
 8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER, REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

DATE	REVISION	FILED
9-2-85	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON WI-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	



(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.

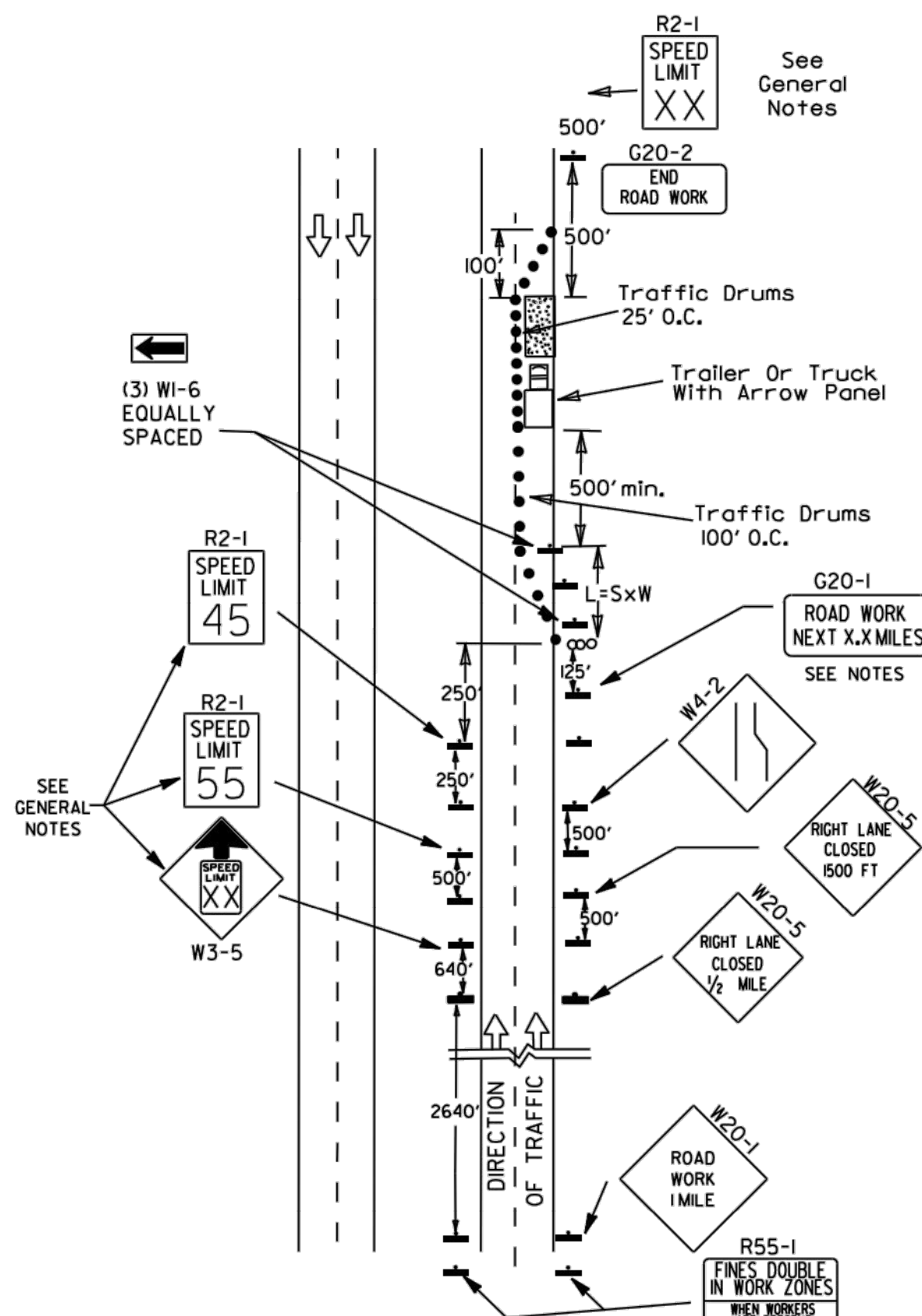


(B) Typical application - 3-lane one-way roadway where center lane is closed.

- KEY:
- Arrow Panel (if Required)
 - Channelizing Device
 - Traffic drum

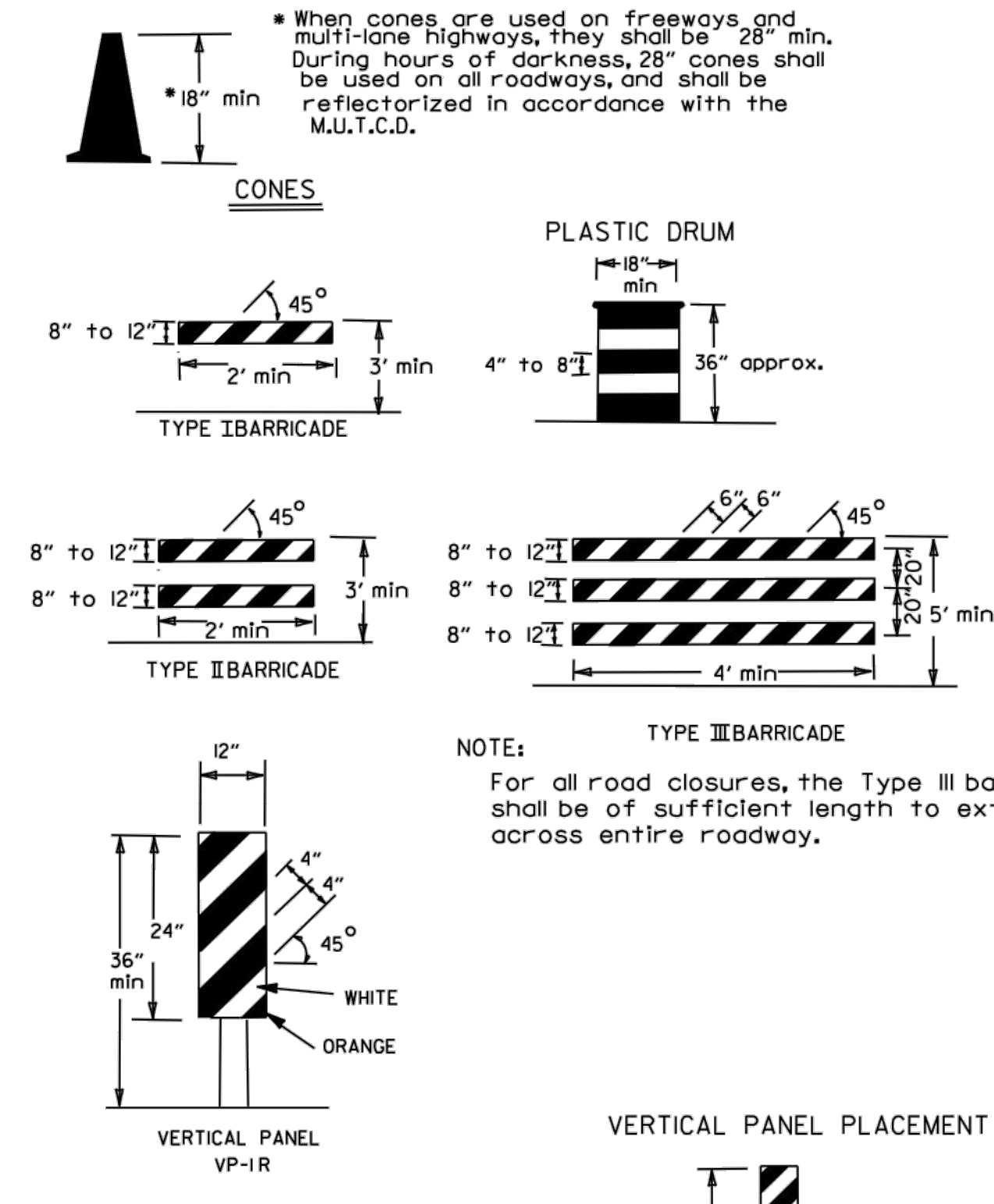
GENERAL NOTES:

1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-1(45) speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(65) shall be omitted. Additional R2-1(55) speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1(1/2 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.



(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

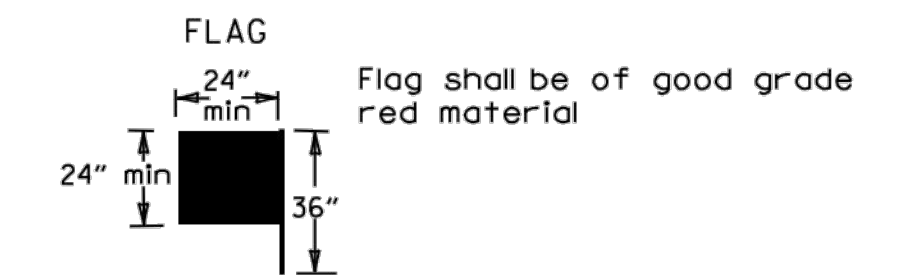
Channelizing devices



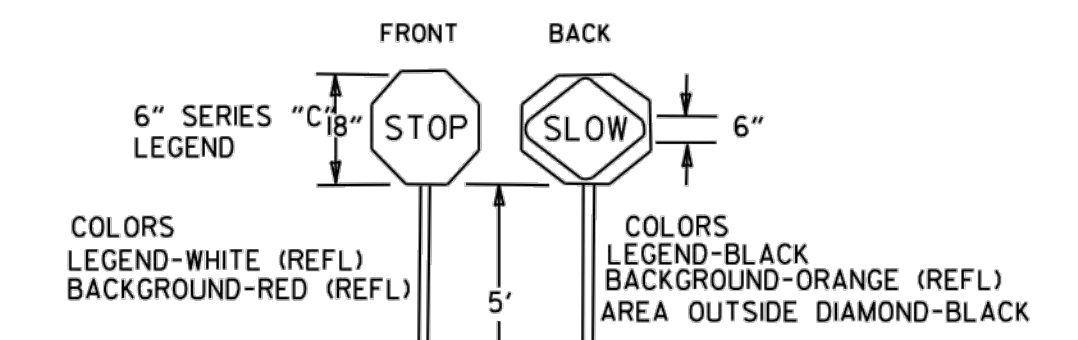
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-land vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

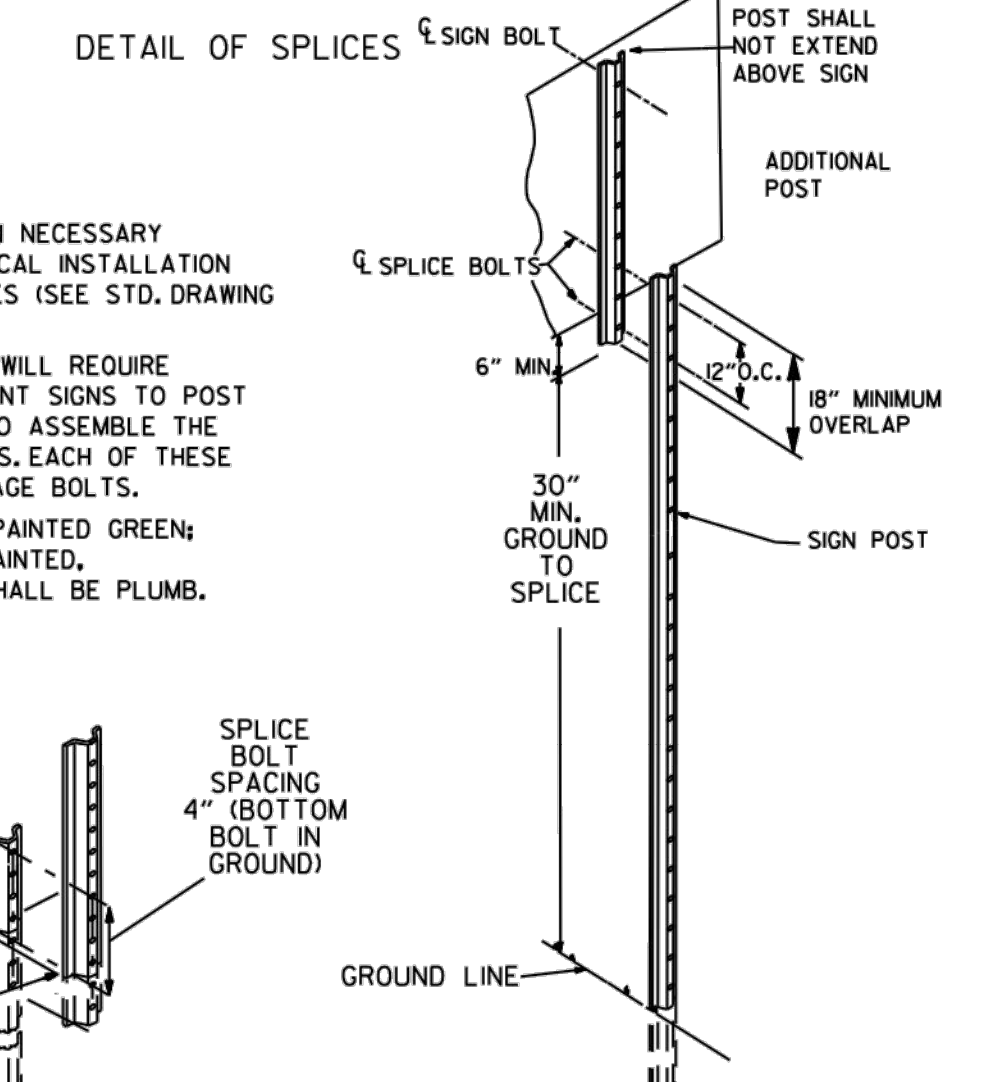
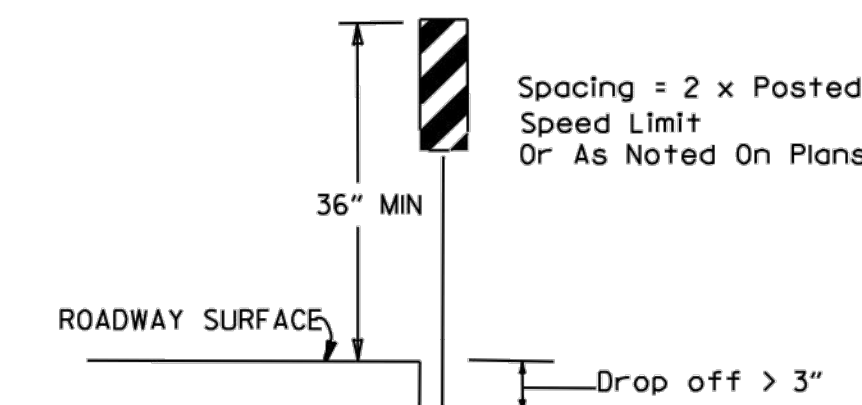
* When shown on the plans concrete barrier will be used.
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



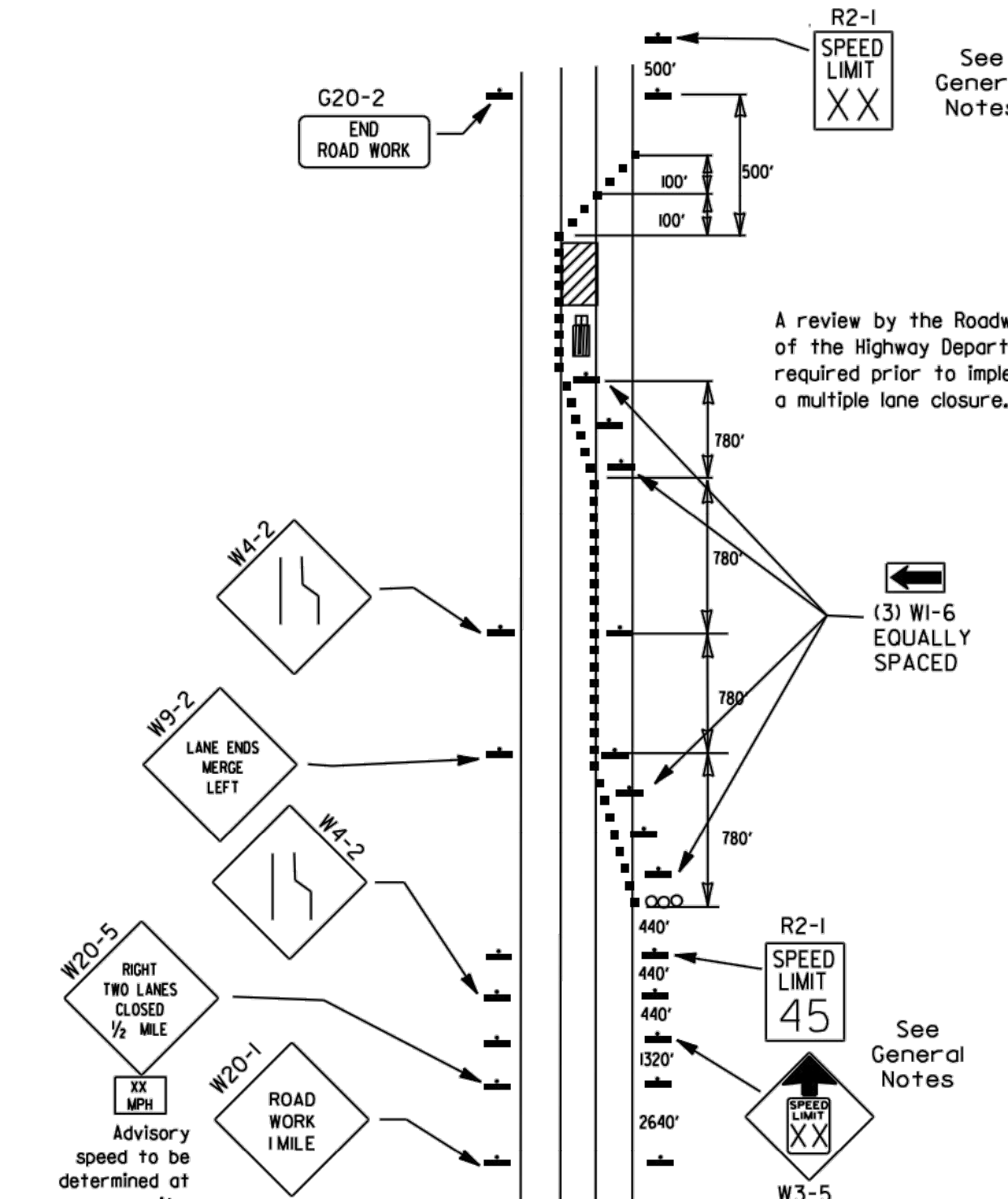
STOP SLOW PADDLE



VERTICAL PANEL PLACEMENT



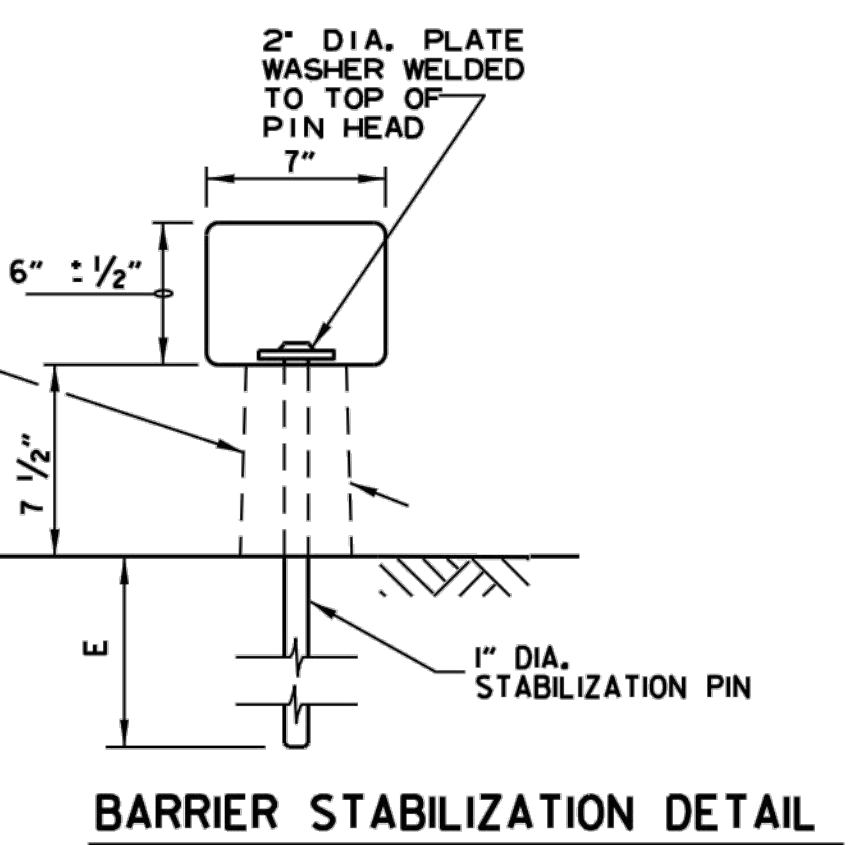
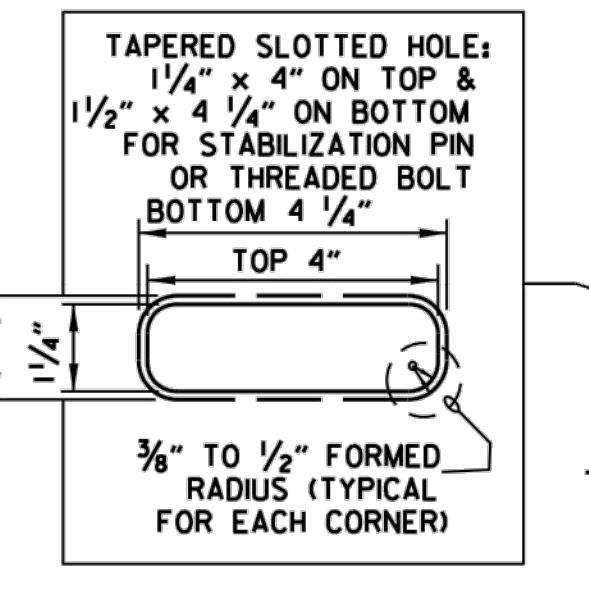
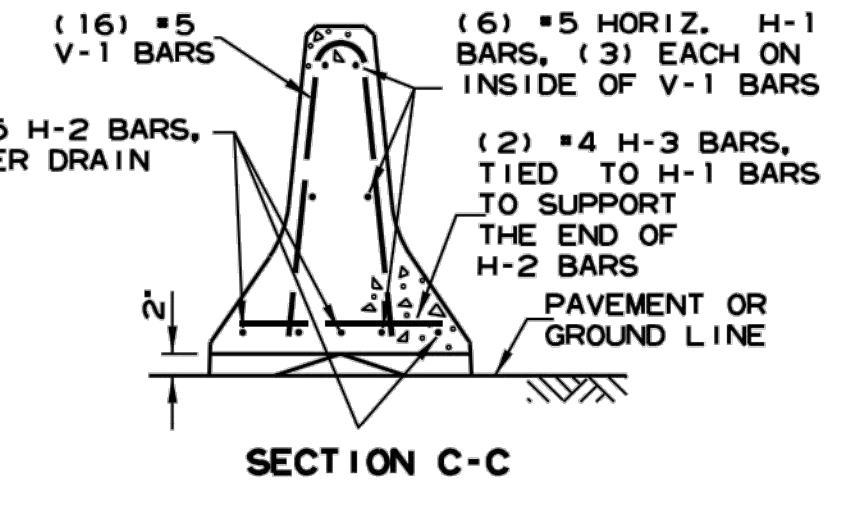
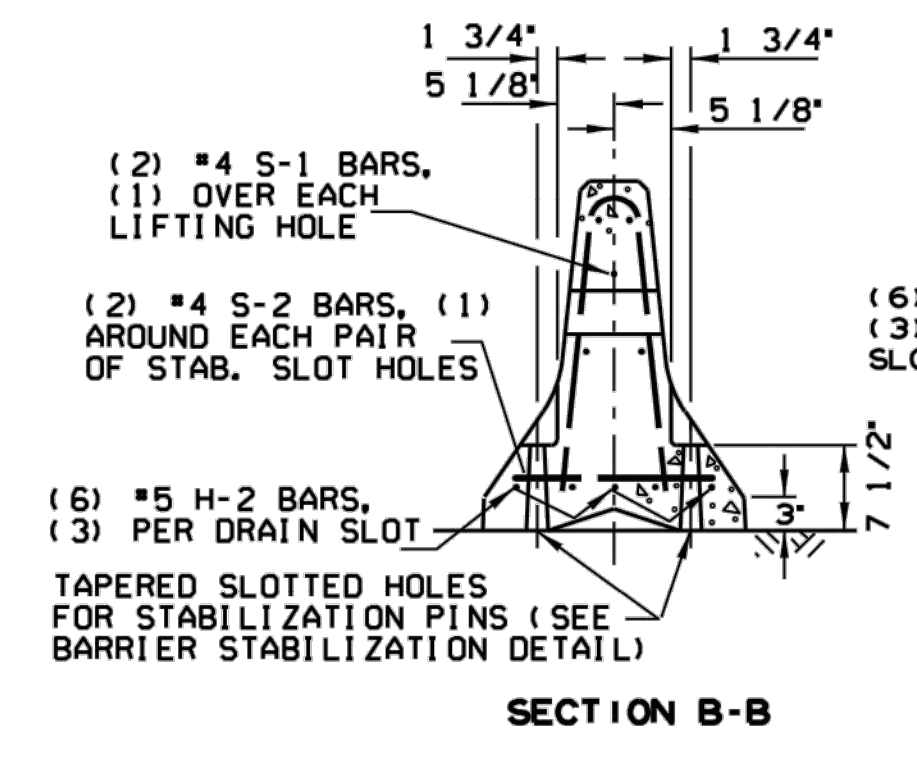
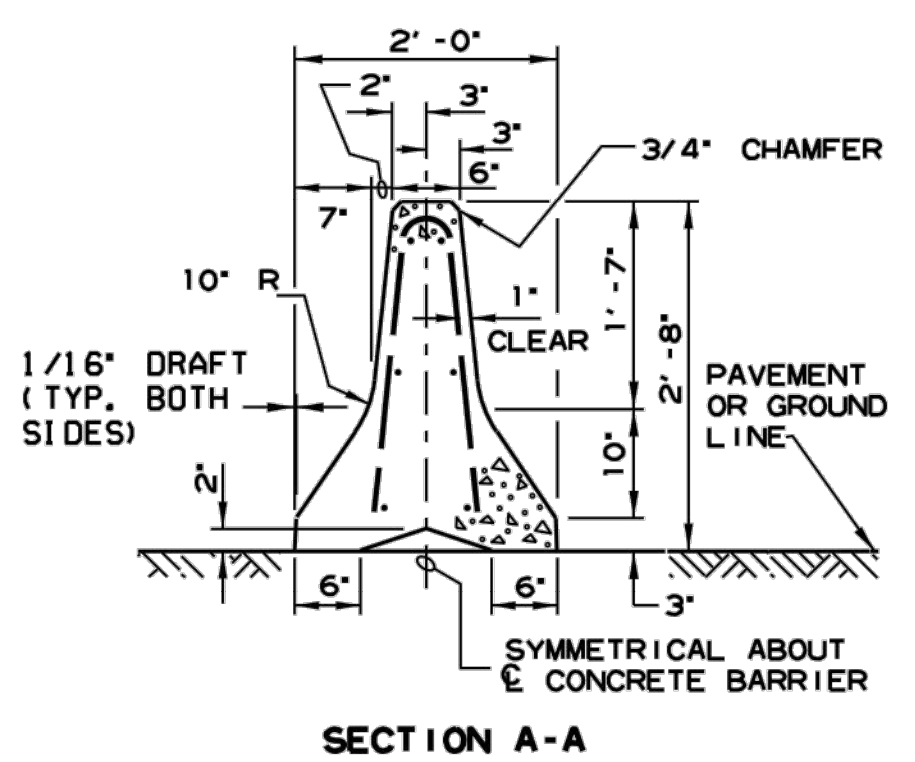
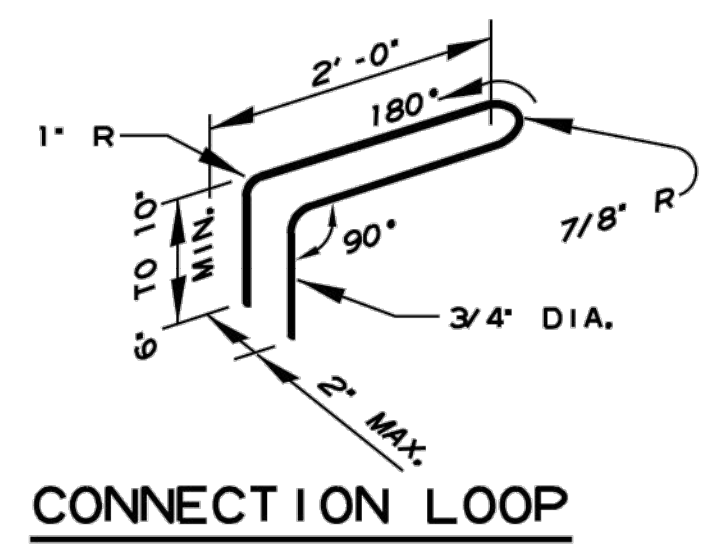
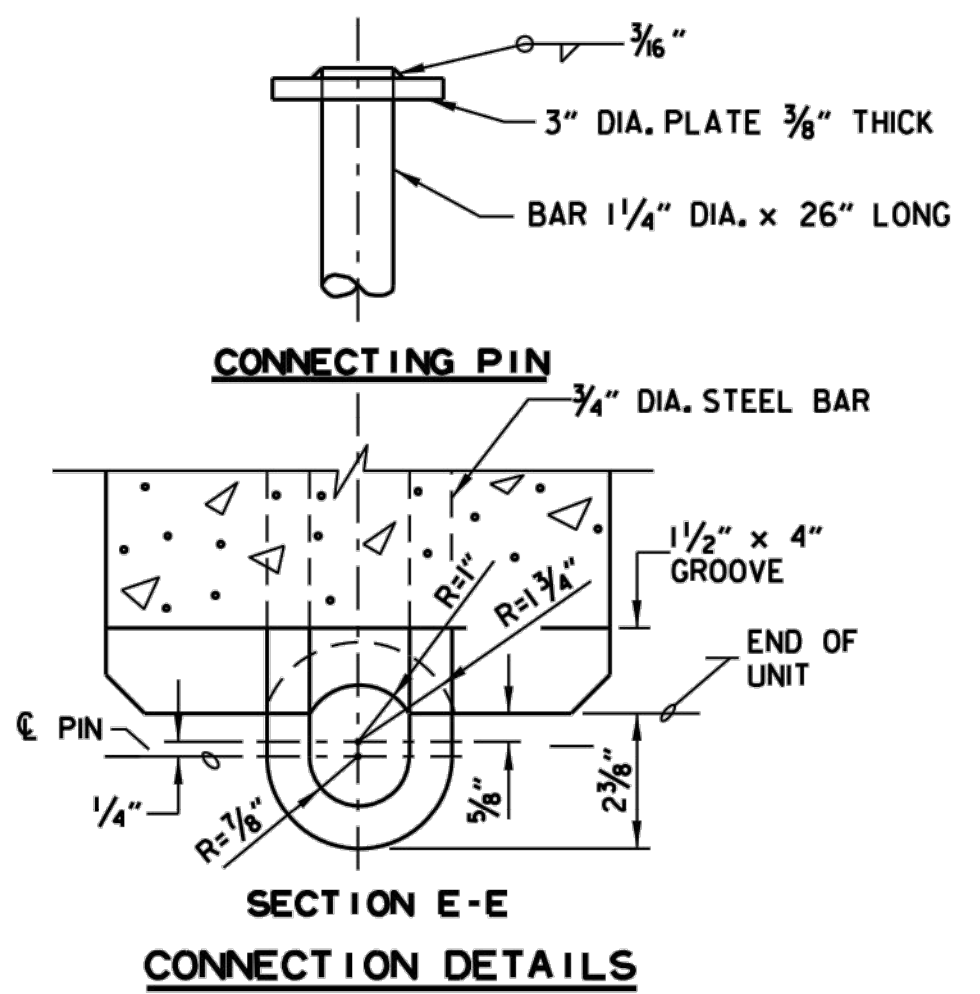
- NOTES:
- USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)
 - NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.
 - SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.



(D) Typical application - closing multiple lanes of a multilane highway.

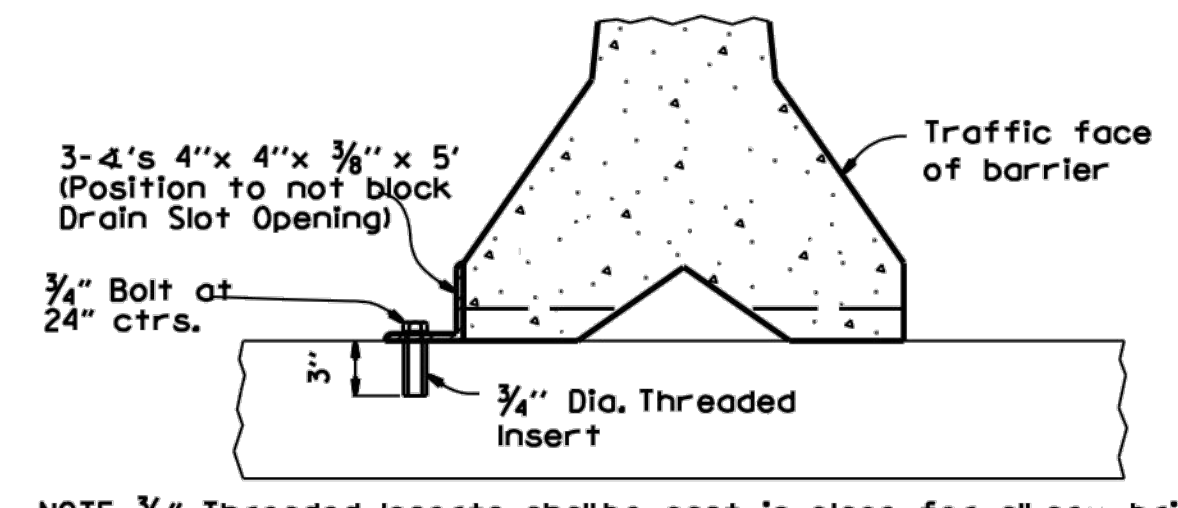
DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1& REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

REINFORCING BAR TABLE PER BARRIER UNIT				
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5" 3 3/8" R 90°
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S & DRAIN SLOTS	#4	(2)	1 1/2" R SLOTS 1" MIN. CLEAR TO BAR
V-1	VERTICAL IN BARRIER (3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9" 2 3/16" R 12° 4 3/8" 2'-1 3/8" 1 1/2"



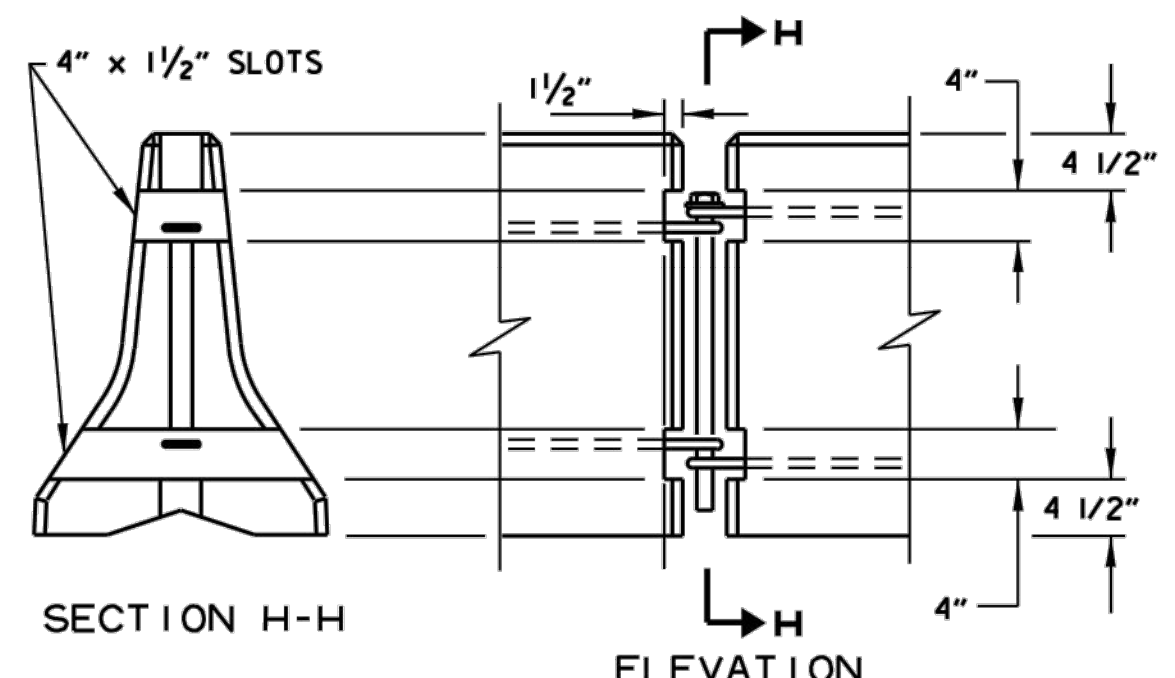
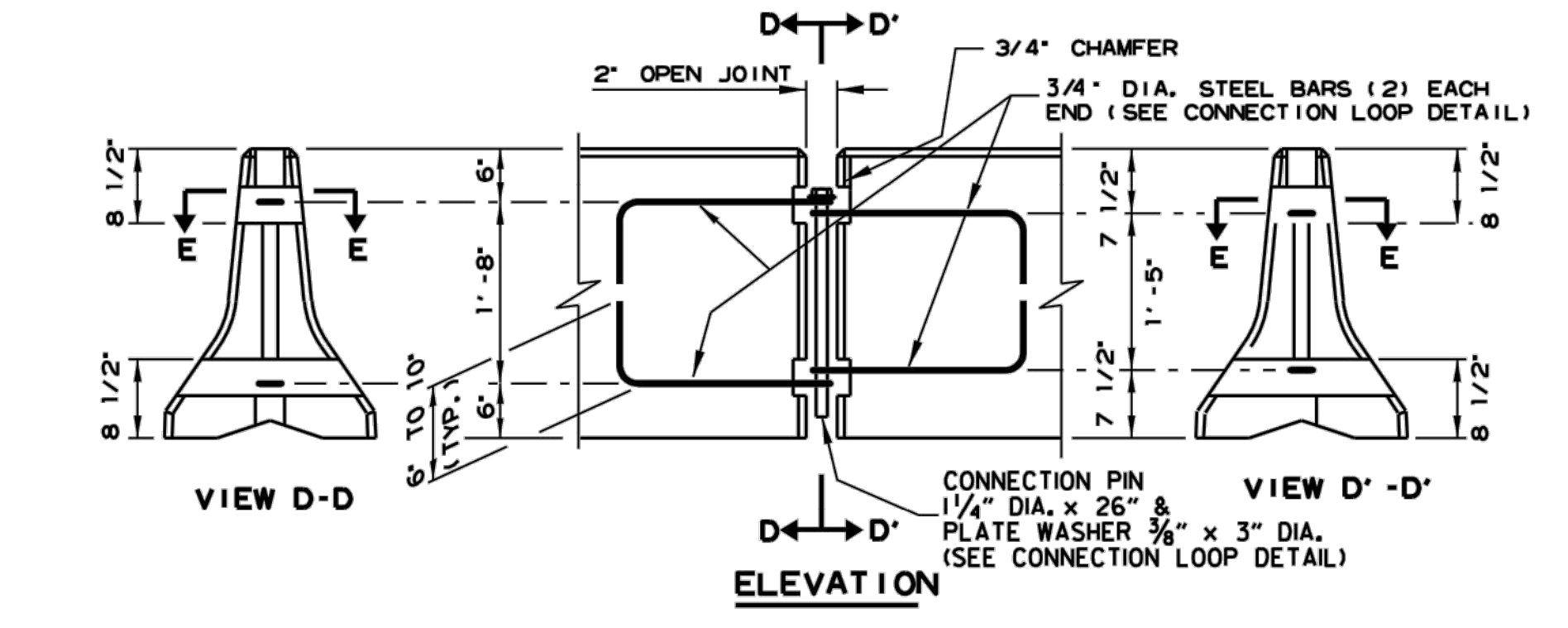
ROADWAY SECTION

- 4" - Concrete Pavement
- 8" - Asphalt Pavement
- 12" - Shoulder Areas

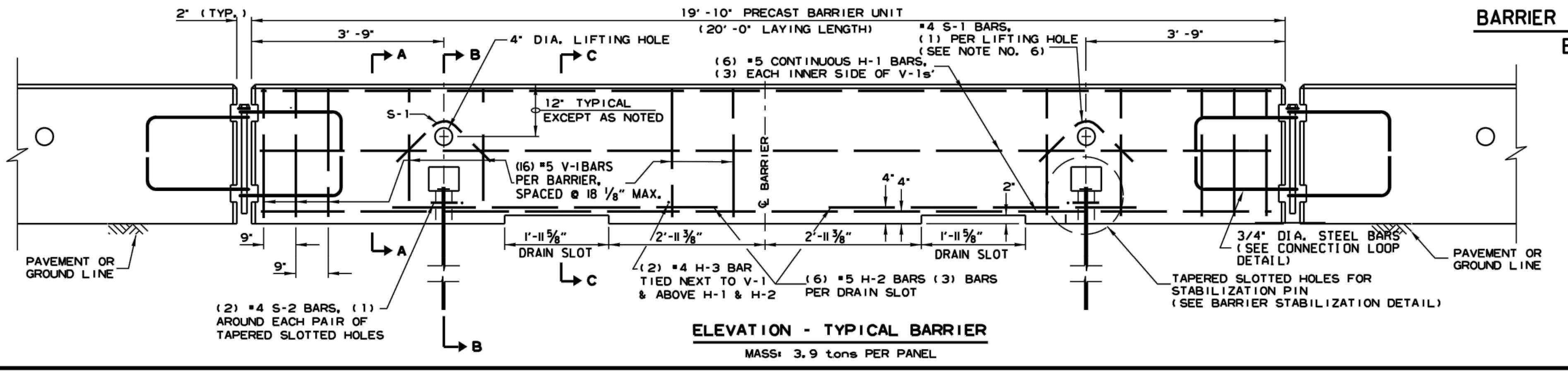


NOTE: 3/4" Threaded inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the inserts shall be filled with approved non-shrink epoxy.

BARRIER STABILIZATION DETAIL BRIDGE DECKS



BARRIER REMOVAL SLOT DETAILS



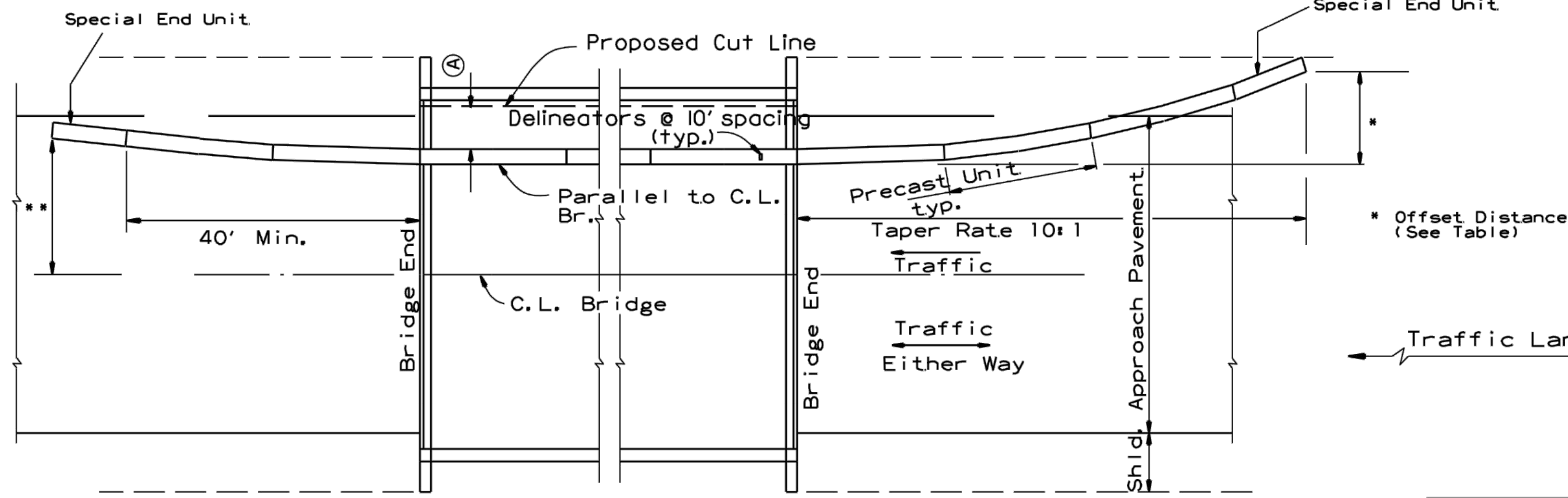
DATE	REVISION	FILED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

- General Notes**
- The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.
 - Materials shall meet the following minimum requirements: Concrete: 2500 psi compressive strength at 28 days. Reinforcing Steel: AASHTO M 31 or M 53, Grade 60 Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin. Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

In applications where barrier walls within 6 feet of a traffic lane, additional delineators shall be placed on the barrier at 10' spacing approximately one (1) foot from the top of the barrier. Delineators shall be on the AHTD Qualified Products List for Construction Concrete Barrier Markers. Delineator color shall be in accordance with the Manual Uniform Traffic Control Devices. Payment for delineators shall be considered included in the price bid per Lin. Ft. for "Furnishing and Installing Precast Concrete Barrier". The contractor shall certify to the Engineer that the material and the design used in the precast barrier units meets the requirements as shown on this standard drawing.
 - Other Precast Concrete Barriers that have been crash tested and approved by the Federal Highway Administration to meet the requirements of NCHRP-350 test level 3 or Manual For Assessing Safety Hardware (MASH) will be accepted in lieu of the barrier shown. Drain slots shall be provided as needed or as directed by the Engineer. The Contractor shall furnish a certification of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) compliance for any other types of precast barrier to be used. The certification shall state that the precast concrete barrier meets the requirements of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) and include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments. Precast concrete barrier units shall be fabricated and installed in accordance with crash testing and documentation provided in the FHWA approval letter. Mixing of shapes will not be allowed in a continuous line of units.
 - Dowel holes in pavement or bridge slabs that are to remain in place shall be filled. Holes in concrete pavement and bridge slabs shall be filled with an approved non-shrink epoxy grout. Holes in asphalt pavement shall be filled with an approved asphalt joint filler. Payment for drilling and filling holes to be included in the price for various barrier items.
 - Attach Units To Roadway Surface with Stabilization Pins and to Deck Slabs using bolts when required.
 - A 4" White PVC Sleeve may be used to form the Lifting Hole and if used the Sleeve is to be left in place.

ARKANSAS STATE HIGHWAY COMMISSION
 STANDARD TRAFFIC CONTROLS
 FOR HIGHWAY CONSTRUCTION -
 TEMPORARY PRECAST BARRIER
 STANDARD DRAWING TC-4

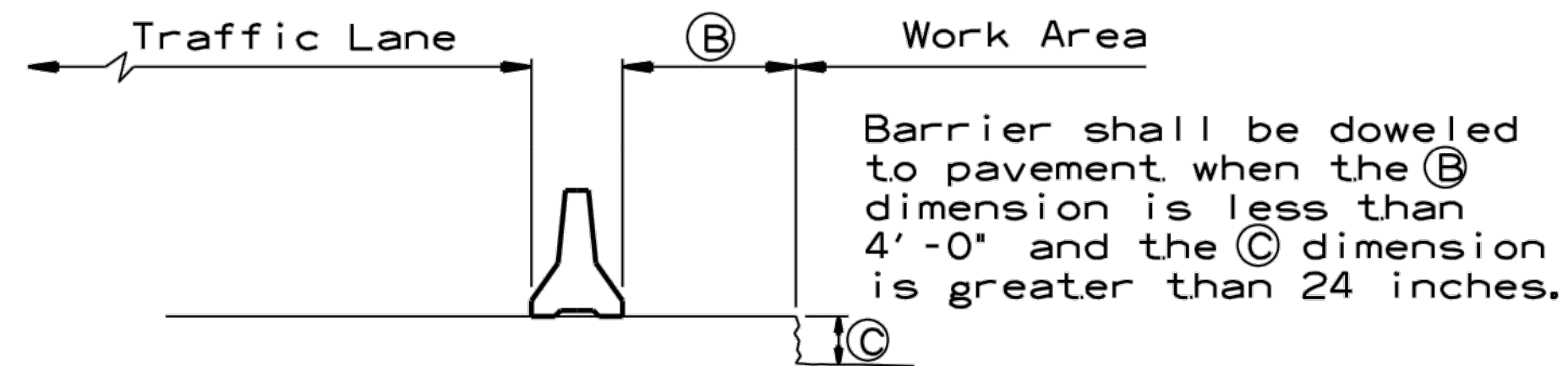
(A) 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

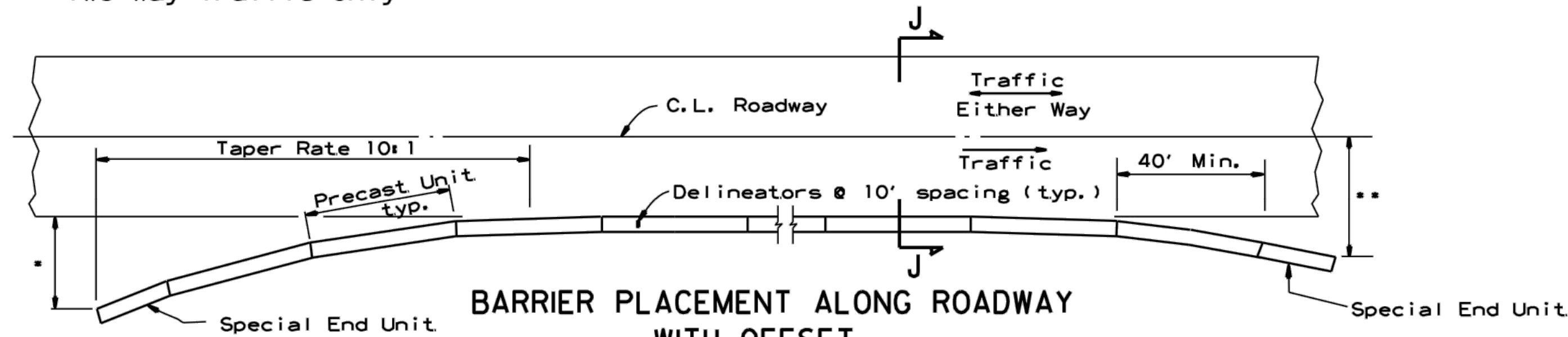
No Scale

** Offset Distance for Two Way Traffic Only



SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

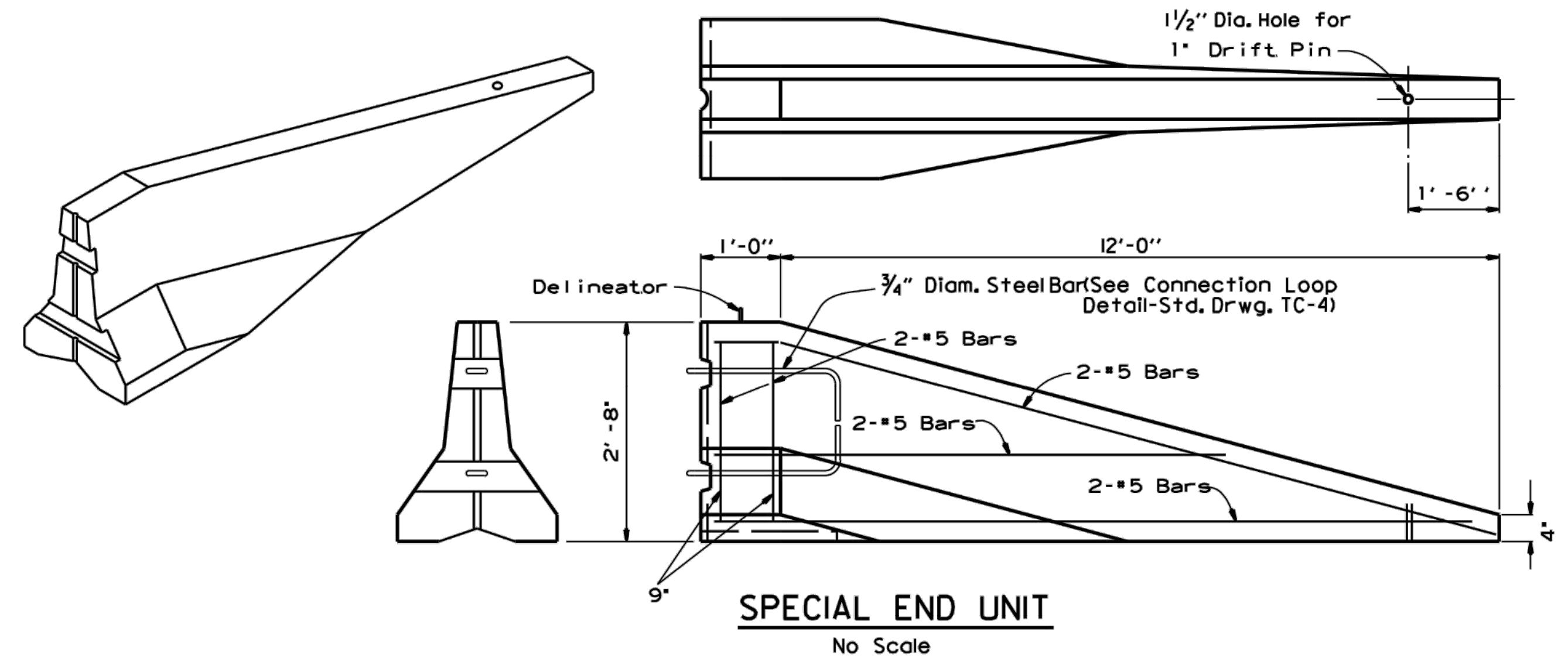
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

Offset Distance Table

Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

If offset distance is not attainable, then see 'Barrier Placement With Attenuator' Detail shown below.

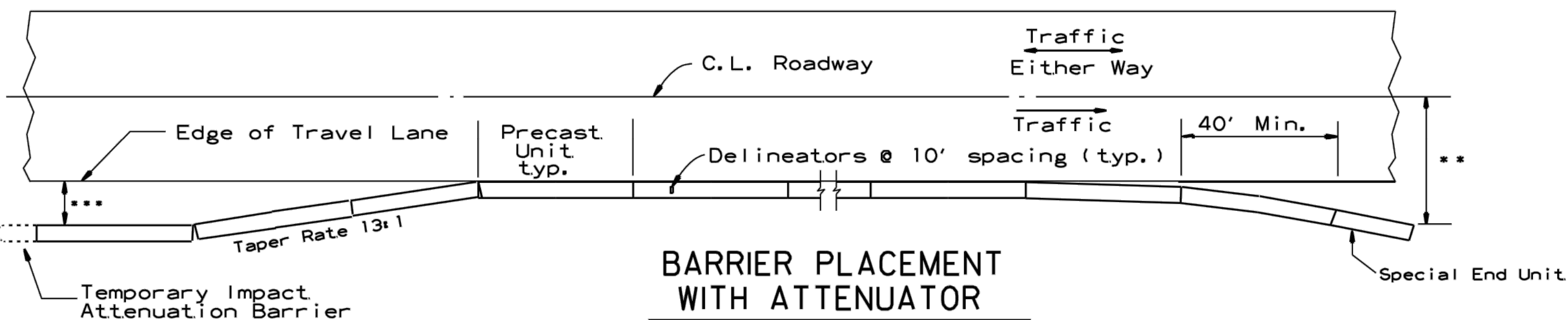


SPECIAL END UNIT

No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."



BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

**STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION -
TEMPORARY PRECAST BARRIER**

STANDARD DRAWING TC-5