

GENERAL NOTES

1. CONTRACTOR SHALL PERFORM A ONE CALL PRIOR TO EARTH DISTURBING ACTIVITIES.
2. STRIPPING OF ALL SUBGRADES TO A DEPTH REQUIRED TO REMOVE ALL VEGETATION AND ROOTS BUT NO LESS THAN 6". STRIPPING SHALL EXTEND 5' BEYOND LIMITS OF CONSTRUCTION BUT NOT PROPERTY LIMITS. ALL MATERIAL OBTAINED FROM STRIPPING OPERATIONS SHALL BE SPREAD ON THE SURFACE OF CUT SLOPES AND FILLS OR OTHERWISE DISPOSED WHEN APPROVED BY PROJECT ENGINEER.
3. ADEQUATE STORM WATER DRAINAGE IS TO BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION.
4. CONTRACTOR EQUIPMENT AND/OR PERSONNEL SHALL NOT TRESPASS ONTO ADJACENT PROPERTIES.
5. ENSURE THAT 8" OF 1-1/2" CRUSHER IS PLACED ABOVE ALL 4/0 GROUND GRID.
6. ALL DEFINEABLE FEATURES OF WORK WILL BE INCLUDED IN THE APPROPRIATE BID UNIT.
7. ALL FIELD DIMENSIONS ARE APPROXIMATE AND MUST BE VERIFIED BY CONTRACTOR.
8. OIL CONTAINMENT PAD INSTALLATION TO BE COMPLETED BY OTHERS AND TO INCLUDE GRADING, SURFACING AND SITE ADJUSTMENTS IN SEPARATE WORK ORDER.
9. PROPOSED EQUIPMENT NOT SHOWN FOR CLARITY AND WILL REMAIN DE-ENERGIZED UNTIL NEW TRANSMISSION LINES ARE IN SERVICE.
10. ALL WORK WITHIN STATUTORY RIGHT-OF-WAY MUST BE COORDINATED WITH APPLICABLE GOVERNMENT ENTITY.
11. SODDING AND VEGETATION ESTABLISHMENT TO BE COMPLETED BY OTHERS. CONTRACTOR IS RESPONSIBLE FOR VEGETATION MANAGEMENT DURING PROJECT DURATION.
12. BOLLARD INSTALLATION WILL NOT COMMENCE UNTIL UTILITY LOCATION AND DEPTH HAVE BEEN CONFIRMED. BOLLARD LOCATION TO BE ADJUSTED AS NECESSARY TO AVOID CONFLICTS.

ROCK MATERIAL

1. APPLY MATERIAL TO THE LIMITS AND DEPTHS OF THE AREAS SPECIFIED ON THE PLANS. ROCK MATERIAL MUST BE PLACED UNDER ALL BUS STRUCTURES, STANDS AND BUSWORK PRIOR TO ENERGIZATION.
2. AGGREGATE TO BE DEPOSITED IN LAYERS OF 4" AND EACH LAYER THOROUGHLY WETTED AND COMPACTED WITH A VIBRATORY ROLLER.
3. ROCK SURFACE MATERIAL TO BE MADE OF CRUSHER RUN AGGREGATE CONSISTING OF ROCK OR GRAVEL WITH 100% PAVING OF 1 1/2" SEIVE AND LESS THAN 10% PASSING THE 3/8" SEIVE.
4. WHEN SPECIFIED ROCK SURFACE MATERIAL TO BE MADE OF SCREENING AGGREGATE CONSISTING OF ROCK OR GRAVEL WITH 100% PASSING OF 3/4" SEIVE, 90%-100% PAVING 1/2" SEIVE AND 0%-5% PASSING 3/8" SEIVE.
5. NO LESS THAN 8" OF ROCK SURFACING MATERIAL SHALL BE PLACED IN TOTAL. IN THE EVENT SITE SOILS
6. RIPRAP MATERIAL TO BE MADE OF LARGE AGGREGATE WITH A MINIMUM SIZE OF 2" AND MAXIMUM SIZE OF 4" MEETING OKLAHOMA DEPARTMENT OF TRANSPORTATION CONSTRUCTION SPECIFICATION 713 FOR TYPE I STONE.
7. FILTER BLANKET MATERIAL TO BE MADE OF GRADED AGGREGATE MEETING OKLAHOMA DEPARTMENT OF TRANSPORTATION CONSTRUCTION SPECIFICATION 713.4 FOR A SINGLE COURSE FILTER BLANKET.

CULVERTS

1. SUBGRADE FOR DRIVEWAYS, PARKING AREAS AND PAD OF FOUNDATION MUST BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY.
2. ALL OTHER SUBGRADES FOR FENCE, DITCHES AND OTHER AREAS MUST BE COMPACTED TO 90% OF THE MAXIMUM DRY DENSITY.
3. UNDISTURBED GRADES DO NOT REQUIRE COMPACTING EFFORT.
4. AGGREGATE INCORPORATED INTO PROJEC, SUCH AS PARKING AREAS AND DRIVEWAYS, SHALL BE COMPACTED TO 95% OF THE STANDARD DENSITY.

SITE DRAINAGE

1. PERMANENT POSITIVE DRAINAGE TO BE PROVIDED AROUND PERIMETER OF FOUNDATIONS TO MINIMIZE MOISTURE INFILTRATION INTO THE SUBGRADE OR CONCRETE COVER OF FOUNDATION.
2. WATER NOT PERMITTED TO IMPOUND ADJACENT TO STRUCTURES OR FOUNDATIONS.
3. RUNOFF FROM ROOFS TO BE COLLECTED IN GUTTERS AND DRAINS. OUTLETS FROM DOWNSPOUTS TO BE SURFACED WITH AGGREGATE TO PREVEN WASHOUT. ROOF DRAINS AND DOWNSPOUTS MUST DISCHARGE AWAY FROM STRUCTURE WITH OUTLET A MINIMUM CLEARANCE AWAY FROM STRUCTURE.
4. GROUNDWATER WAS NOT ENCOUNTERED DURING SUBSURFACE EXPLORATION. DUE TO SEASONAL CHANGES IN GROUNDWATER THE PATH AND DEPTHS WILL FLUCTUATE WITH THE HIGHEST LEVEL OCCURRING IN EARLY SPRING AND LOWEST LEVELS IN SUMMER. CONTRACTOR IS RESPONSIBLE FOR OBSERVING GROUNDWATER SEEPAGE IN EXCAVATIONS TO ADJUST CONSTRUCTION OR INSTALLATION AS NECESSARY.

SUBGRADE PREPARATION

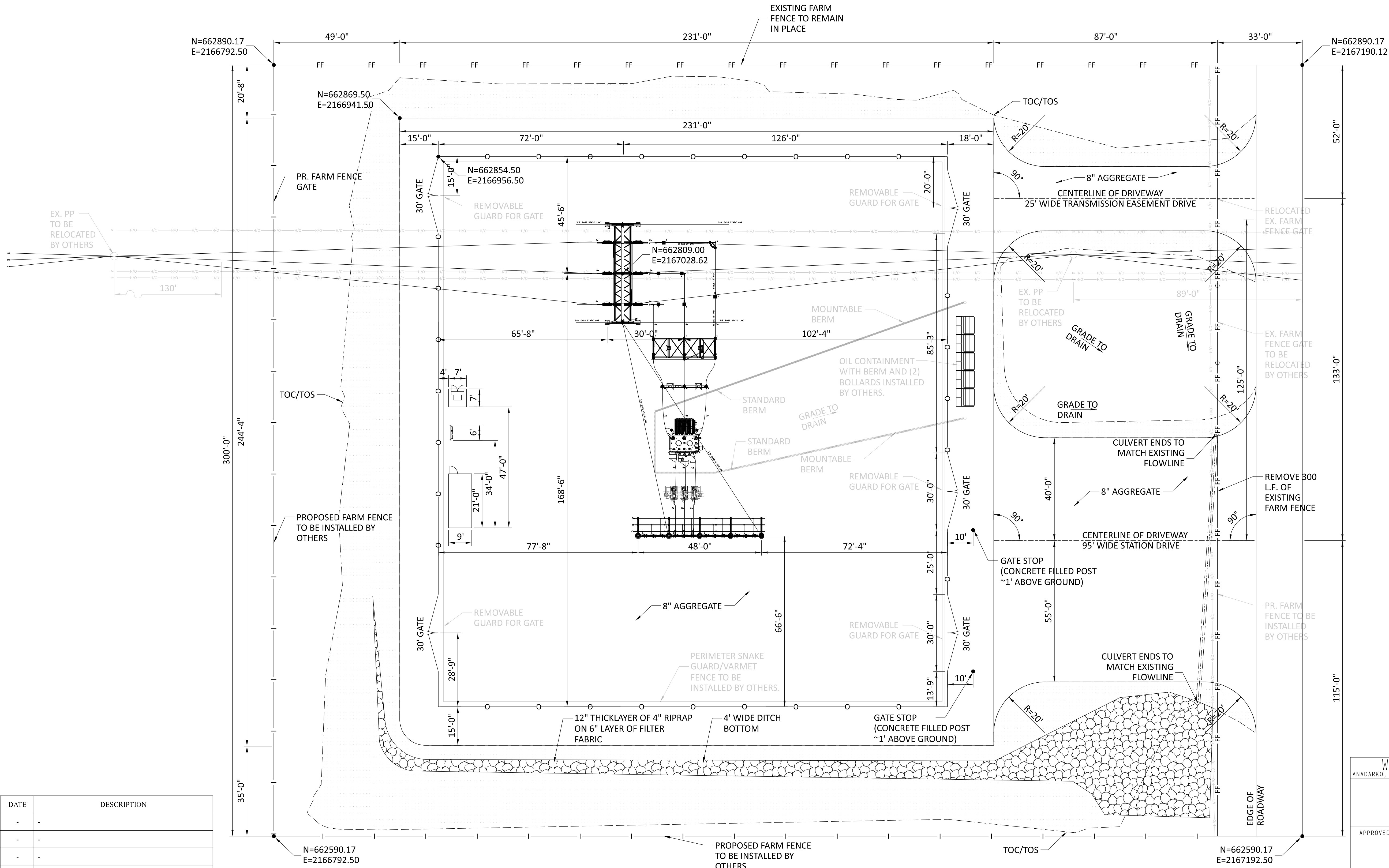
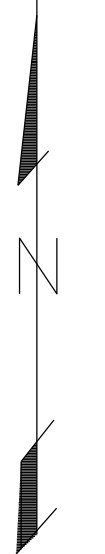
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4. AGGREGATE INCORPORATED INTO PROJEC, SUCH AS PARKING AREAS AND DRIVEWAYS, SHALL BE COMPACTED TO 95% OF THE STANDARD DENSITY.

FOUNDATIONS

1. FOUNDATIONS, SLABS AND FOOTINGS SHALL BE INSTALLED AS SHOWN ON DRAWINGS AND IN CONFORMANCE WITH SPECIFICATIONS. REFERENCE FOUNDATION INFORMATION SHEET.
2. FINISH SOIL GRADE AROUND COMPLETE PIER TO BE SLOPED TO DRAIN WATER AWAY FROM FOOTING, PIER AND/OR FOUNDATIONS. EXCESS SOIL TO BE REMOVED.

FENCE

1. ALL POST SHALL BE SET PLUMB AND TO REQUIRED DEPTH PER THE PLANS.
2. EXTENSION ARMS ARE TO BE INSTALLED WITH 45 DEGREE PROJECTION AWAY FROM SUBSTATION AT A UNIFORM HEIGHT TO ALLOW SLIPPAGE OF THE TOP RAIL WITHOUT BINDING OR DISTORTION. ANY POST WITHOUT EXTENSION ARM WILL BE FITTED WITH A DOMED CAP.
3. TOP RAIL MUST PASS THROUGH EACH EXTENSION ARM OR POST TOP AND FORM A CONTINUOUS BRACE FROM END TO END OF FENCE. FASTENING IS TO BE PER THE SPECIFICATIONS AND PLANS.
4. BRACING SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS AND PROPER FABRIC STRETCHING WITHOUT POST PULL BACK. ALL FABRIC TERMINATIONS SHALL BE BRACED BETWEEN THE TERMINAL POST AND ADJACENT LINE POSTS.
5. BOTTOM OF FENCE FABRIC SHALL BE INSTALLED LEVEL TO GROUND AND TOUCHING FINISH GRADE SURFACING (TOP OF CRUSHED ROCK SURFACE). FABRIC WILL BE FASTENED TO TERMINATION POST ON 14" CENTERS WITH A STRETCHER BAR. FABRIC WILL BE FASTENED TO TOP RAIL AND LINE POSTS AT 24" AND 14" INTERVALS.



LEGEND

- PAD
- RIP RAP
- AGGREGATE SURFACING
- SODDING/SEEDING
- EXISTING FENCE
- PROPOSED FENCE
- EXISTING FARM FENCE
- PROPOSED FARM FENCE

DEFINABLE FEATURES OF WORK-INSTALLATION PHASE			
#	DESCRIPTION	UNITS	TOTAL
1	PAD INSTALLATION (8" OF 1-1/2" CRUSHER RUN, TYPE A3 ROCK)	S.Y.	7,918
2	SOLID SLAB SODDING/SEEDING	S.Y.	1,993
3	CHAINLINK FENCE INSTALLATION	L.F.	674
4	CHAINLINK FENCE GATE (30' WIDE)	EA.	5
5	FINE GRADING	S.Y.	7,623
6	GRADING CUT	C.Y.	4,663
7	GRADING FILL	C.Y.	4,302
8	GRADING EXPORT	C.Y.	362
9	GRADING IMPORT	C.Y.	0
10	TOP SOIL STRIPPED	C.Y.	5,618
11	TOP SOIL FILL	C.Y.	1,747
12	TOP SOIL EXPORT	C.Y.	3,872
13	RIPRAP	TON	144
14	FILTER BLANKET	TON	58
15	SITE CLEARING	AC	2.48
16	24" CGMP W/CETS	L.F.	130
17	SNAKE GUARD/VARMET FENCE	L.F.	658
18	OIL CONTAINMENT UNITS	EA.	5

NOTE:

1. EXISTING FARM FENCE REMOVAL TO BE INCLUDED IN WORK ORDER NO. 8600. WORK IS TO INCLUDE THE REMOVAL OF EXISTING FARM FENCE GATE, BRACE POSTS AND HARDWARE. EXISTING FARM FENCE GATE AND HARDWARE ARE PROPERTY OF WFEC. ALL OTHER MATERIALS INCLUDING EXISTING FARM FENCE ARE THE PROPERTY OF THE CONTRACTOR AND MAY BE DISPOSED OF AFTER REMOVAL. CONTRACTOR WILL STORE ONSITE ALL WFEC RECLAIMED MATERIALS. RECLAIMED MATERIALS WILL BE INSTALLED BY OTHERS.

MARK	DATE	DESCRIPTION
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WESTERN FARMERS ELECTRIC COOPERATIVE
ANADARKO, OKLAHOMA 73005 P.O. BOX 429

MAXWELL SUBSTATION

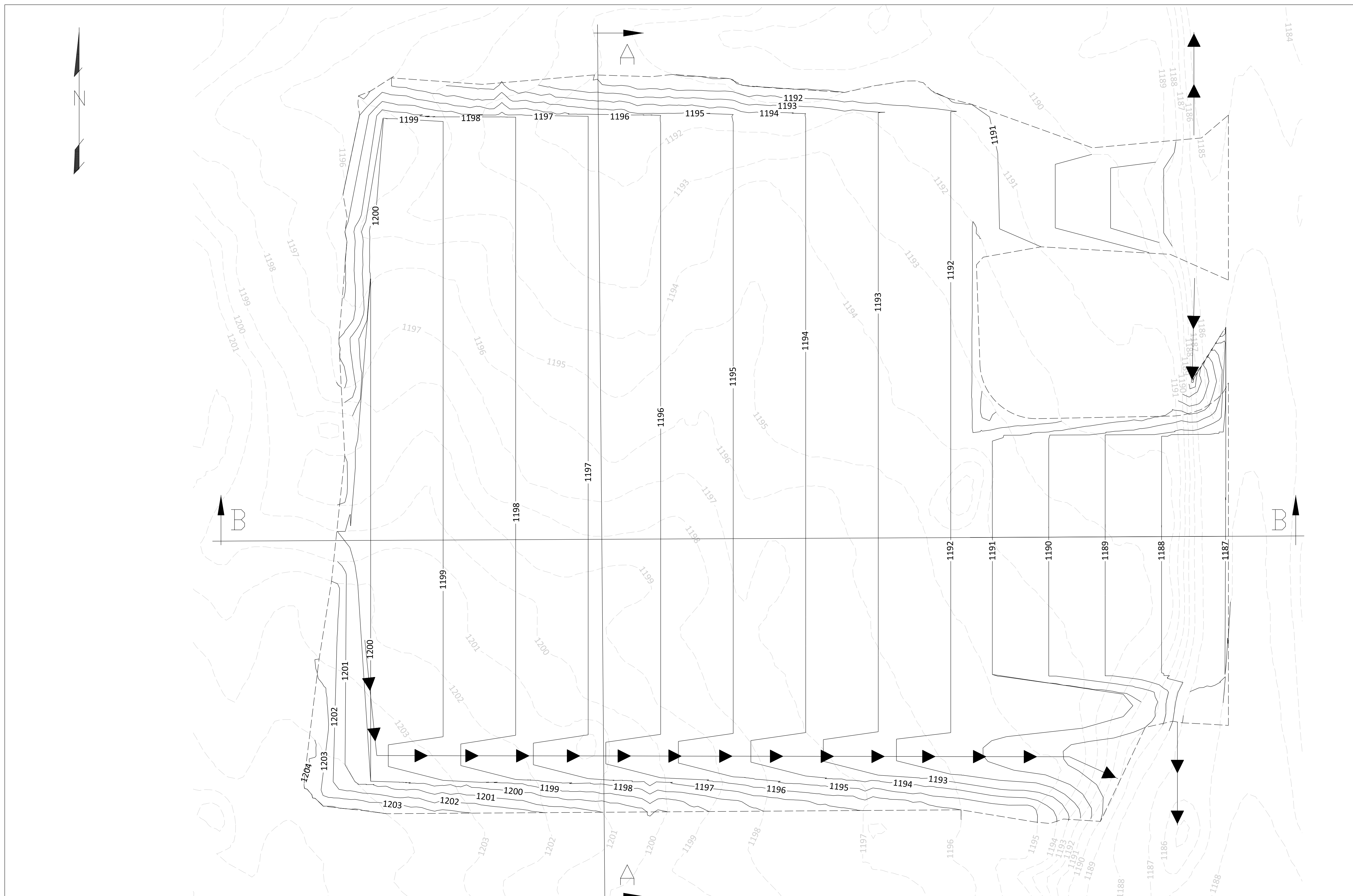
SITE PLAN

SCALE 1" = 20'

COUNTY CLEVELAND SEC. 18
STATE OK T-8-N R-1-W

APPROVED FOR CONSTRUCTION	DATE	PROJECT MANAGER	DATE	WORK ORDER NUMBER
J. COCHRAN	10-9-24	A. HENAGE	TBD	8600
C. YEAGER	10-9-24	T. GOUCHER	TBD	
C. MOSTIERO	TBD			
SIGNATURE	DATE	CONTROL ENGINEER	TBD	SHEET C1

BIDDING INFORMATION			
BID UNIT	DESCRIPTION	UNIT	QUANTITY
M-1	SITE PREPARATION	ACRE	2.48
M-1-GRASS	SODDING	ACRE	0.42
M-1-A3	1-1/2" CRUSHER ROCK	TON	2,970
M-1-A6	RIPRAP	TON	144
M-1-A7	FILTER BLANKET	TON	58
M-1-C	UNCLASSIFIED EXCAVATION	LOT	1.00
M-1-F	UNCLASSIFIED FILL	LOT	1.00
N-1	84" CHAINLINK FENCE WITH SECURITY WIRE	LF	674
N-2-30	30' GATE	EA	5
M-1-CMP	CULVERTS	LF	130



GENERAL NOTES

1. ALL SUBGRADE ELEVATIONS TO MATCH GRADING PLAN WITH LIMITS OF GRADING TO MATCH EXISTING ELEVATIONS.
2. CONTRACTOR SHALL CONTROL THE FINISHED GRADE OPERATION USING A LEVEL AND PREDETERMINED BENCHMARKS.
3. FINAL GRADE ON PLANS MAY BE CHANGED AS NEEDED BY THE PROJECT ENGINEER. WHEN TOP OF FINAL GRADE OR SUBGRADE ELEVATIONS CHANGE THE TOP OF FOUNDATION ELEVATIONS MUST BE CHANGED ACCORDINGLY.
4. FLOWLINE LOCATION IS APPROXIMATE AND POSITIVE SITE DRAINAGE AND RUNOFF IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. SEE SHEET C3 THRU C5 FOR TYPICAL SECTIONS.
6. FLOWLINE LOCATION IS APPROXIMATE AND SITE DRAINAGE IS THE RESPONSIBILITY OF THE CONTRACTOR.
7. LIMITS OF GRADING ARE TO MATCH EXISTING ELEVATIONS.

FILL MATERIAL

1. ALL FILL MATERIAL IN STRUCTURES AREAS, INCLUDING UTILITY BACKFILL, MUST BE PLACED IN CONTINUOUS, HORIZONTAL LIFTS HAVING A MAXIMUM PRE-COMPACTED THICKNESS OF 9" WHEN CONSOLIDATED WITH HEAVY EQUIPMENT. FILL MATERIAL CONSOLIDATED WITH HAND-HELD OR LIGHT EQUIPMENT IS LIMITED TO PRE-COMPACTED THICKNESS OF 6".
2. ALL AGGREGATE BASE MATERIAL MUST BE PLACED IN CONTINUOUS, HORIZONTAL LIFTS HAVING A PRE-COMPACTED THICKNESS OF 6".
3. ALL LIFTS MUST BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AND WITHIN +/- 2% OF THE OPTIMUM MOISTURE CONTENT.

4. MINIMUM OF 2 FIELD TESTS PER LIFT FOR EACH 2,000 SF AREA OF FENCED ELECTRICAL EQUIPMENT. TEST WILL BE CONDUCTED TO DETERMINE IN-PLACE DENSITY AND MOISTURE CONTENT USING SAND CONE, RUBBER BALLON OR NUCLEAR DENSITY GAUGE TEST IN ACCORDANCE WITH APPROPRIATE ASTM SPECIFICATION.
5. EXCAVATION ARE TO BE PROTECTED FROM STANDING WATER AND RUNOFF BY GRADING, DRAINAGE CHANNELS, PUMPS, PROTECTIVE BERMS COVERS OR BY ANYOTHER METHOD APPROVED BY PROJECT ENGINEER.
6. ENGINEERED FILL WILL CONSIST OF APPROVED MATERIAL FREE OF ORGANIC MATTER AND DEBRIS, EXHIBIT MAXIMUM PLASTIC INDEX (PI) OF 18, MAXIMUM LIQUID LIMIT OF 40 AND CONTAINS AT LEAST 15% FINES (MATERIAL PASSING NO. 200 SEIVE, BASED ON DRY WEIGHT) WITH A MAXIMUM ROCK SIZE OF 3".

OVER EXCAVATION

1. EXCAVATION BEYOND THE SPECIFIED NEAT LINES AND GRADES SHALL BE CORRECTED BY FILLING IN THE RESULTING VOIDS WITH EARTH FILL COMPACTED TO SPECIFICATION. WHEN SUBGRADE IS TO SUPPORT ROCK MATERIAL WITH DIRECT CONTACT, NOT SEPARATED BY GEOTEXTILE, THE VOIDS MAY BE FILLED WITH CRUSHED STONE IN ACCORDANCE WITH THE APPROPRIATE SPECIFICATION FOR CRUSHED ROCK.
2. CONTRACTOR SHALL NOT CORRECT OVEREXCAVATION OF PIERS AND ENTIRE EXCAVATION IS TO BE FILLED WITH CONCRETE.

WASTE MATERIAL

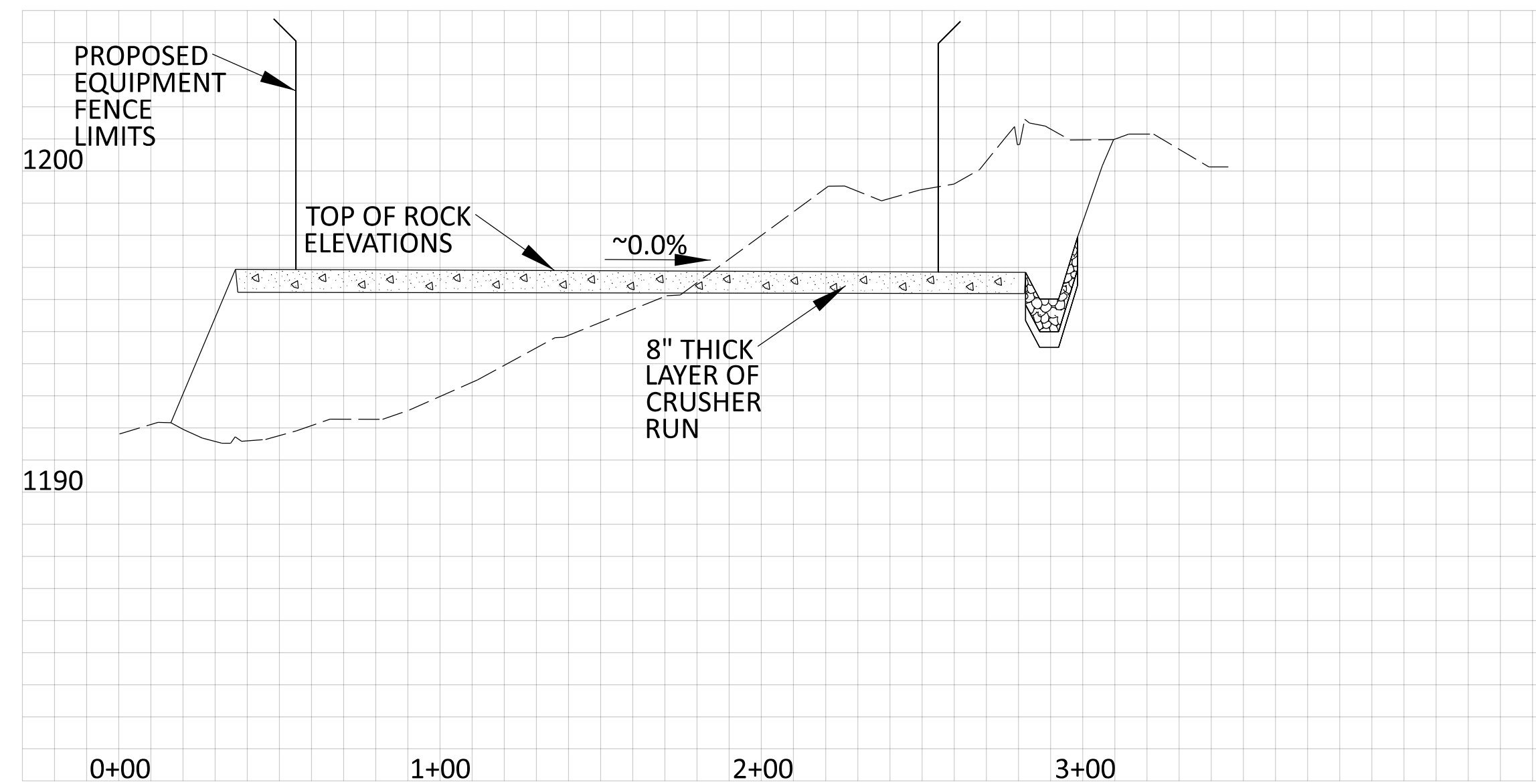
1. WASTER MATERIAL SHALL INCLUDE MATERIALS FROM THE EXCAVATION NOT SUITABLE OR REQUIRED FOR EARTHFILL OR EXCAVATION BACKFILL. ALL WASTE MATERIALS SHALL BE DISPOSED OF BY THE CONTRACTOR.

TESTING

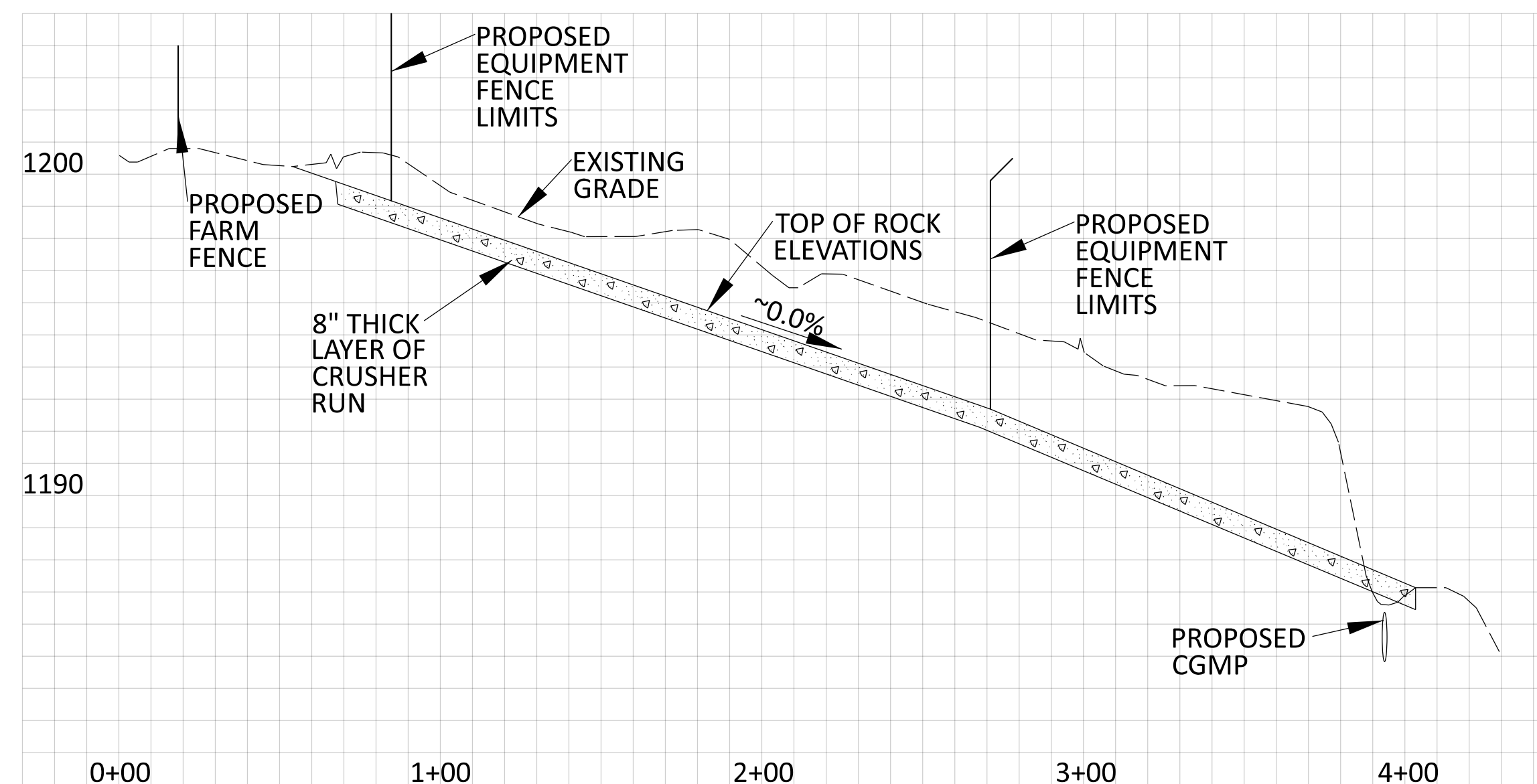
1. CONTRACTOR SHALL PERFORM TESTS ON SOIL AND FINISH GRADE MATERIAL USING AN INDEPENDENT TESTING LABORATORY. SELECTION OF INDEPENDENT TESTING LABORATORY SHALL BE SUBMITTED FOR CONCURRENCE TO PROJECT ENGINEER.
2. CONTRACTOR MUST PROVIDE COPIES OF ALL TESTS REPORTS TO WESTERN FARMERS ELECTRIC COOPERATIVE.

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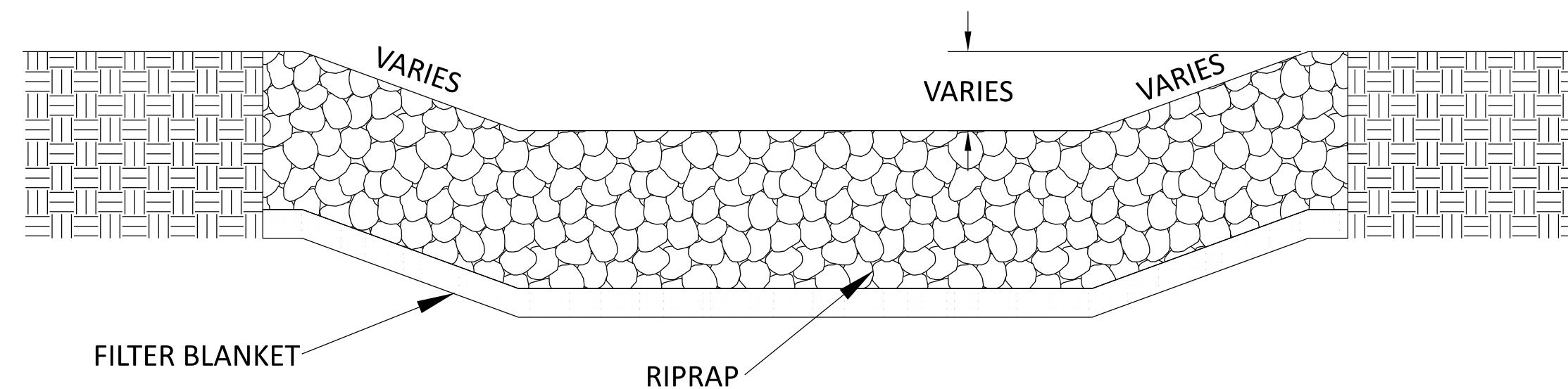
WESTERN FARMERS ELECTRIC COOPERATIVE ANADARKO, OKLAHOMA 73005				P.O. BOX 429	
MAXWELL SUBSTATION				SCALE 1" = 20'	
GRADING PLAN				COUNTY CLEVELAND	SEC. 18
				STATE OK	T-8-N R-1-W
APPROVED FOR CONSTRUCTION	DESIGNED BY J. COCHRAN	DATE 10-9-24	PROJECT MANAGER A. HENAGE	DATE TBD	WORK ORDER NUMBER 8600
	CHECKED BY C. YEAGER	DATE 10-9-24	ENGINEERING MANAGER T. GOUCHER	DATE TBD	
	PROJECT ENGINEER C. MOSTIERO	DATE TBD			
SIGNATURE	DATE	CONTROL ENGINEER TBD	TBD		
					SHEET C2



SECTION A-A



SECTION B-B



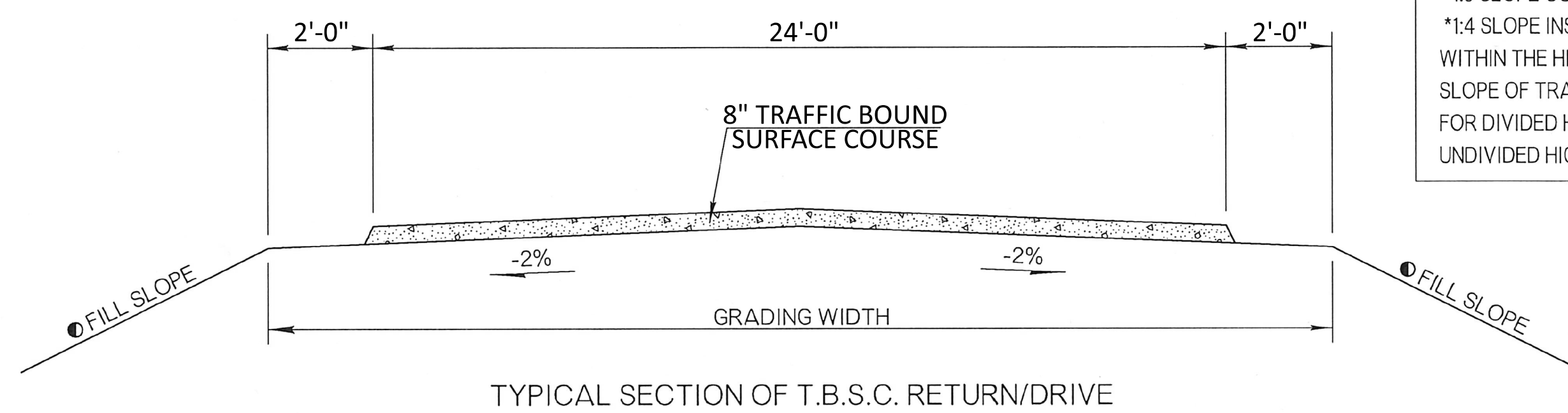
RIPRAP CHANNEL PROFILE

GENERAL NOTES:

1. PROPERTY BOUNDARY LIMITS ARE APPROXIMATE AND THE RESPONSIBILITY OF THE CONTRACTOR TO STAKE.
2. PROPOSED FENCE LIMITS ARE APPROXIMATE AND THE RESPONSIBILITY OF THE CONTRACTOR TO STAKE.

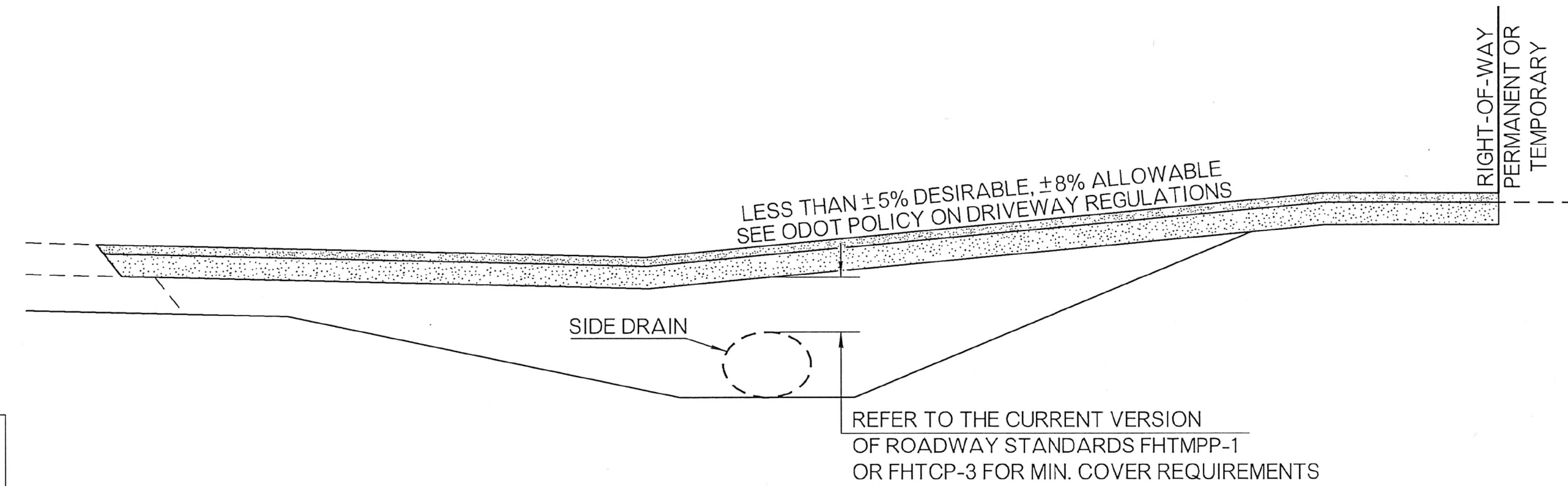
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A	2-19-24	PRELIMINARY DESIGN
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WESTERN FARMERS ELECTRIC COOPERATIVE ANADARKO, OKLAHOMA 73005				P.O. BOX 429	
MAXWELL SUBSTATION				SCALE:	
SECTION VIEWS A-A & B-B				COUNTY	SEC. 18
				CLEVELAND	T-8-N
				STATE	R-1-W
				OK	
APPROVED FOR CONSTRUCTION	DESIGNER	DATE	PROJECT MANAGER	CHECKED	WORK ORDER NUMBER
	J. COCHRAN	10-9-24	A. HENAGE	TBD	8600
	C. YEAGER	10-9-24	T. GOUCHER	TBD	
	ELECTRICAL ENGINEER				
	C. MOSTIERO	TBD			
	CONTROL ENGINEER				
	TBD	TBD			
SIGNATURE	DATE				SHEET C3

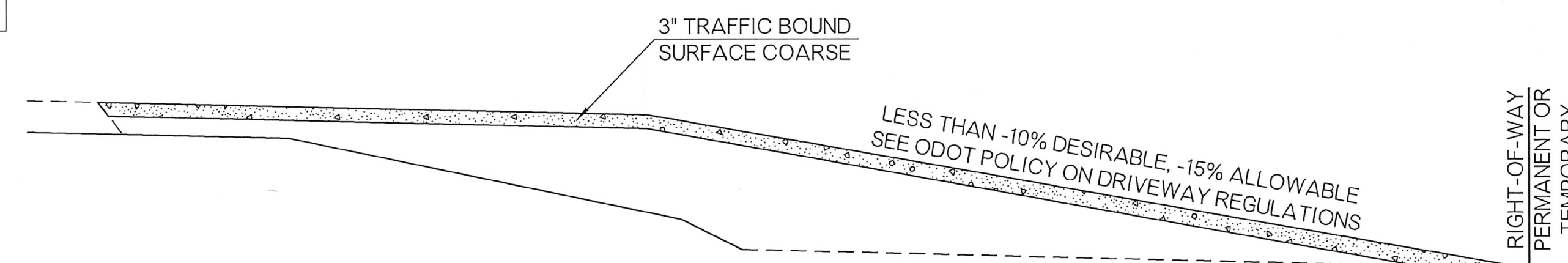


TYPICAL SECTION OF T.B.S.C. RETURN/DRIVE

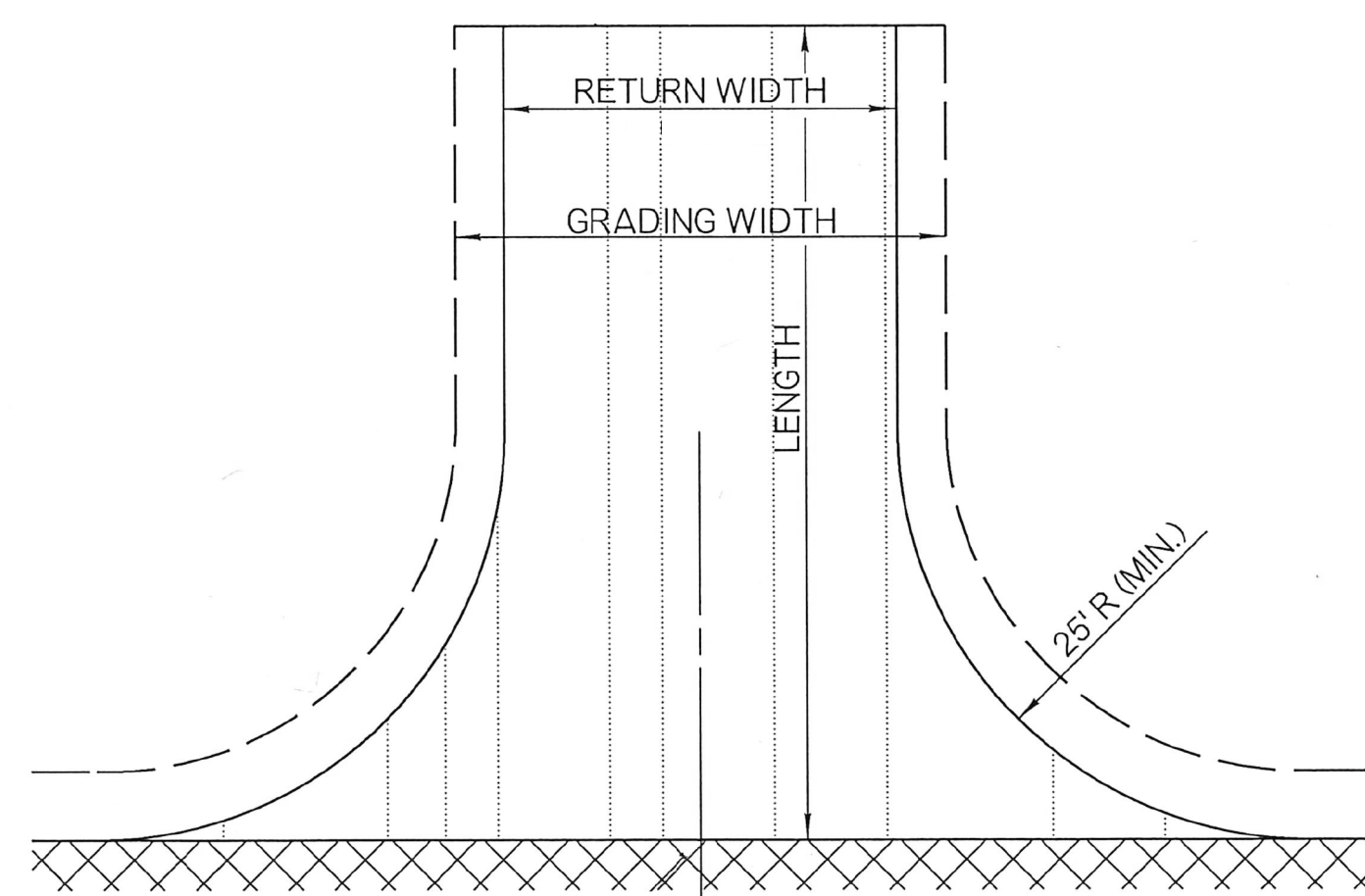
FILL SLOPE NOTES:
 FILL SLOPE AS SHOWN IN TYPICAL SECTIONS SHALL NOT EXCEED:
 *1:3 SLOPE OUTSIDE HIGHWAY CLEARZONE
 *1:4 SLOPE INSIDE HIGHWAY CLEARZONE
 WITHIN THE HIGHWAY CLEARZONE, ADJUST SLOPE OF TRAFFIC APPROACH END TO 1:10 FOR DIVIDED HIGHWAYS AND 1:6 FOR UNDIVIDED HIGHWAYS.



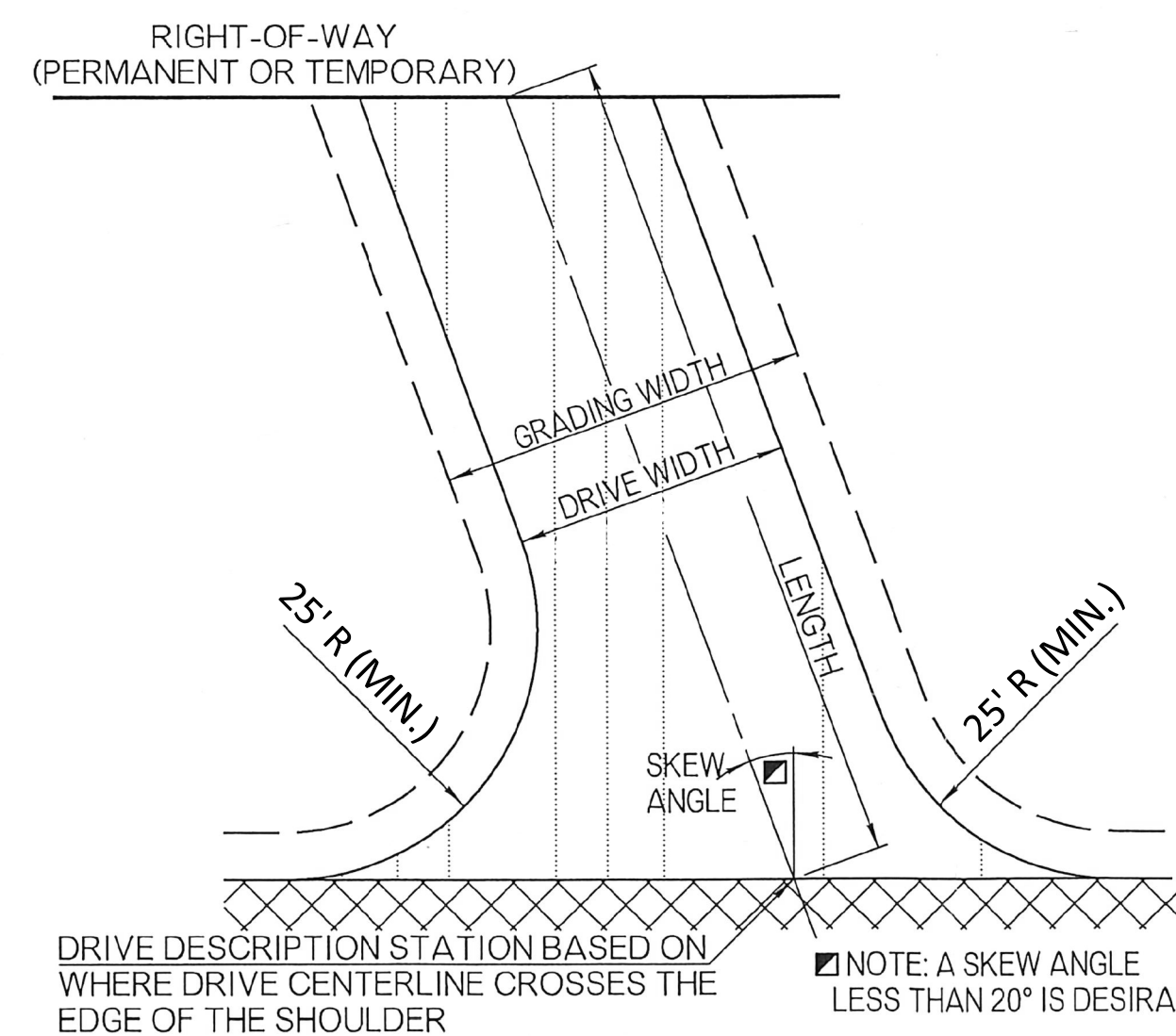
PROFILE OF TYPICAL RETURN/DRIVE ON ROADWAY CUT SECTION



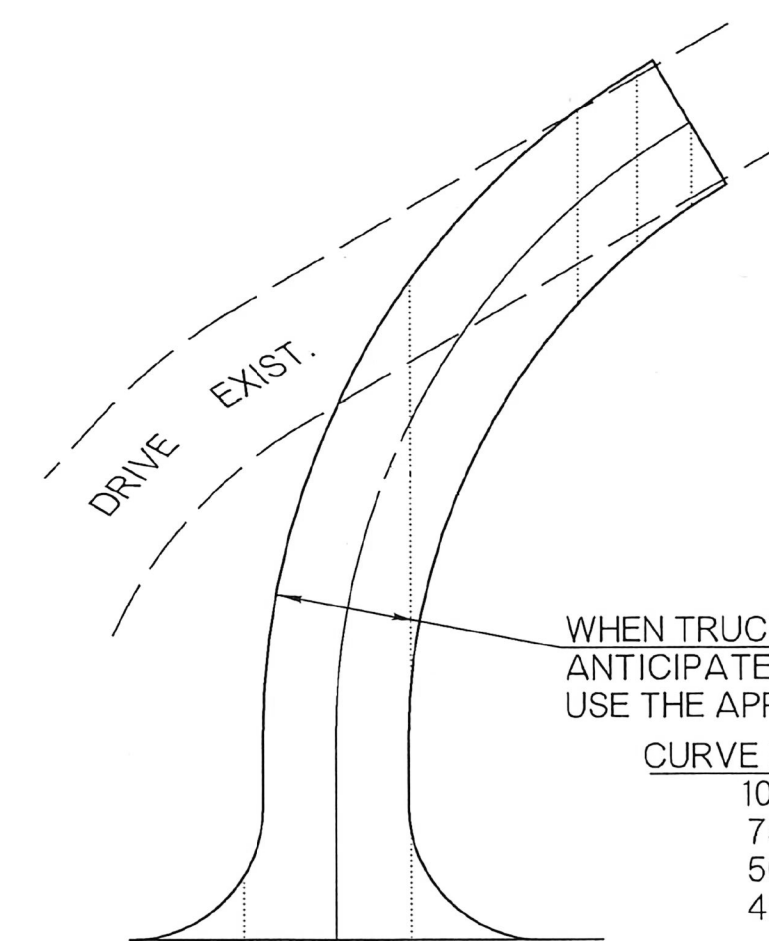
PROFILE OF TYPICAL RETURN/DRIVE ON ROADWAY FILL SECTION



PLAN TYPICAL SECTION LINE RETURN



PLAN TYPICAL DRIVE ON SKEW



WHEN TRUCKS OR FARM EQUIPMENT ARE ANTICIPATED, FOR THE FOLLOWING RADIUS, USE THE APPROPRIATE MIN. WIDTH OF DRIVE:

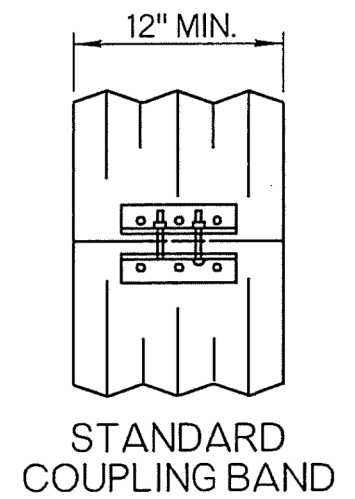
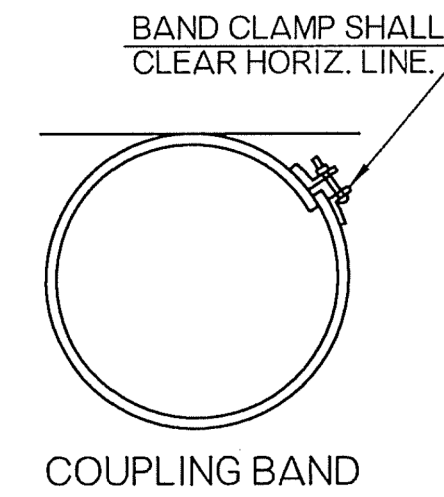
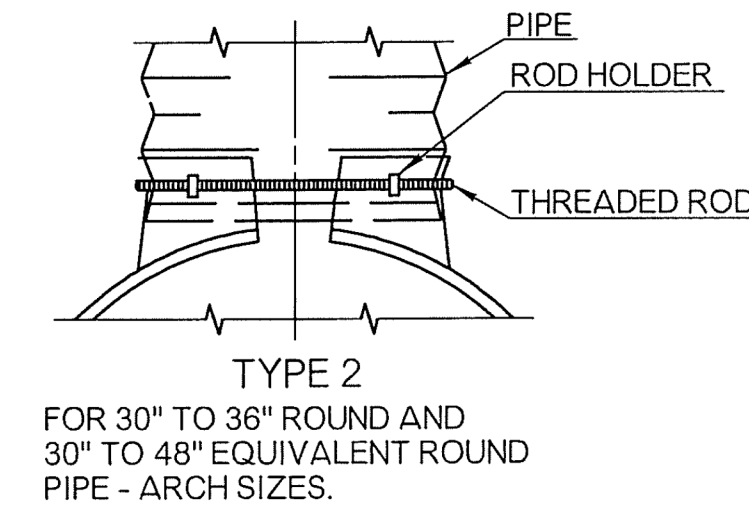
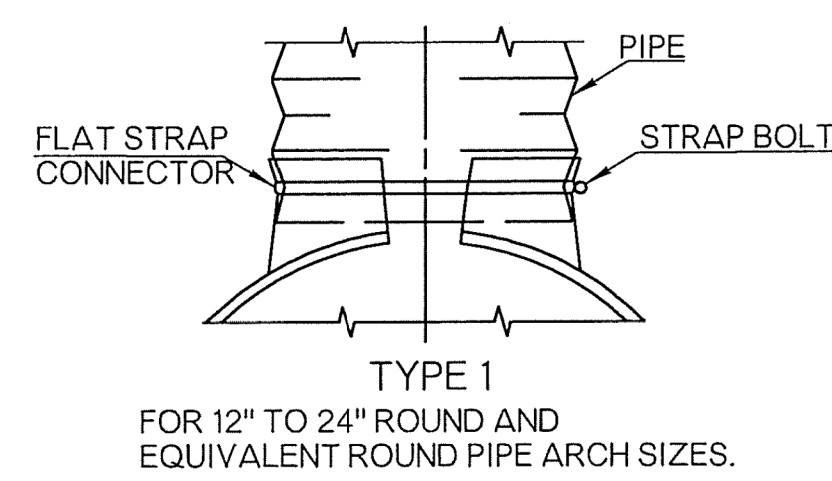
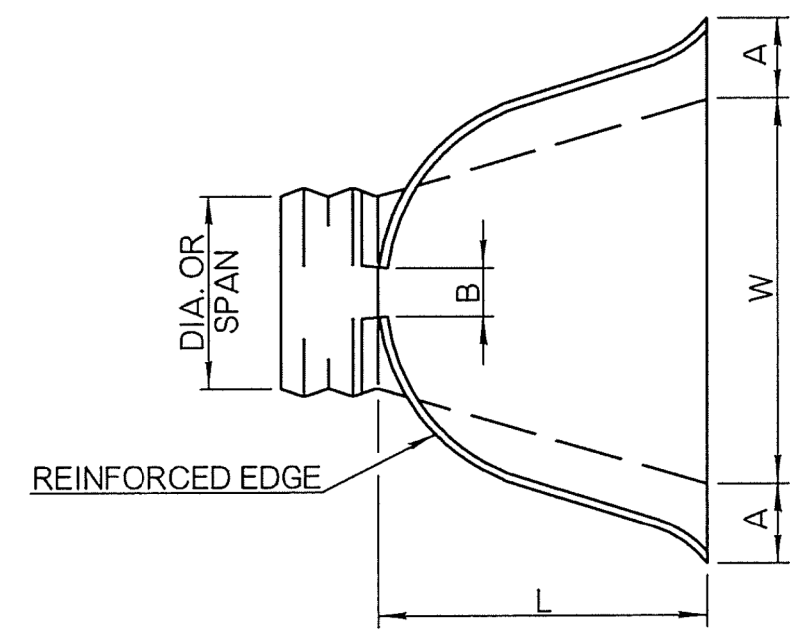
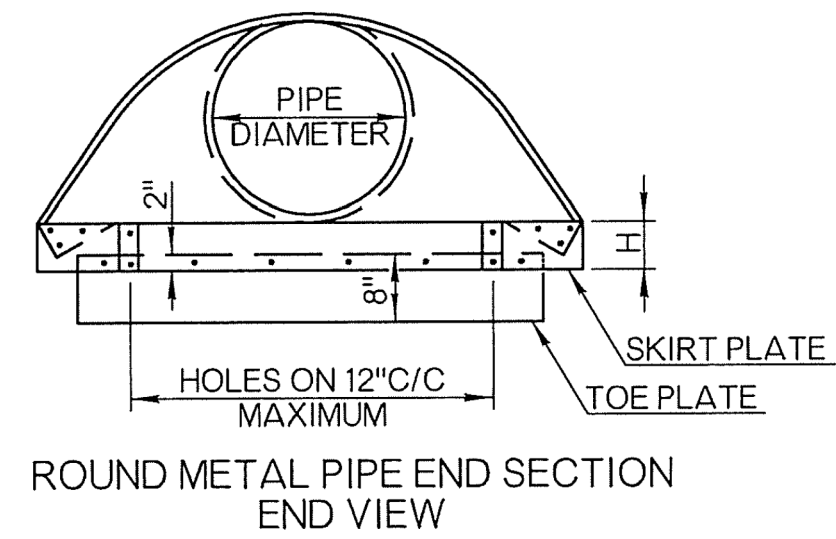
CURVE RADIUS	MIN. WIDTH
100'	14'
75'	16'
50'	18'
40'	20'

SECTION LINE OR DRIVE WITH CURVED ALIGNMENT

MARK	DATE	DESCRIPTION
-	-	-
-	-	-
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WESTERN FARMERS ELECTRIC COOPERATIVE ANADARKO, OKLAHOMA 73005				P.O. BOX 429	
MAXWELL SUBSTATION				SCALE: N.T.S.	
DRIVEWAY INSTALLATION				COUNTY CLEVELAND	SEC. 18
				STATE OK	R-1-W
APPROVED FOR CONSTRUCTION	DRAWN	DATE	PROJECT MANAGER	DATE	WORK ORDER NUMBER
			TBD	TBD	8600
SIGNATURE	DATE	CONTROLS ENGINEER	TBD	TBD	SHEET C7

DIMENSIONS OF END SECTIONS FOR ROUND METAL PIPE									
PIPE DIA.	GA.	A	B	H	L	W	APPROX. SLOPE	BODY TYPE	
12"	16	6"	6"	6"	21"	24"	1:2 1/2	1 PC.	
15"	16	7"	8"	6"	26"	30"	1:2 1/2	1 PC.	
18"	16	8"	10"	6"	31"	36"	1:2 1/2	1 PC.	
21"	16	9"	12"	6"	36"	42"	1:2 1/2	1 PC.	
24"	16	10"	13"	6"	41"	48"	1:2 1/2	1 PC.	
30"	14	12"	16"	8"	51"	60"	1:2 1/2	1 PC.	
36"	14	14"	19"	9"	60"	72"	1:2 1/2	2 PC.	
42"	12	16"	22"	11"	69"	84"	1:2 1/2	2 PC.	
48"	12	18"	27"	12"	78"	90"	1:2 1/4	2 PC.	
54"	12	18"	30"	12"	84"	102"	1:2	2 PC.	
60"	12	18"	33"	12"	87"	114"	1:1 3/4	3 PC.	
66"	12	18"	36"	12"	87"	120"	1:1 1/2	3 PC.	
72"	12	18"	39"	12"	87"	126"	1:1 1/3	3 PC.	
78"	12	18"	42"	12"	87"	132"	1:1 1/4	3 PC.	
84"	12	18"	45"	12"	87"	138"	1:1 1/6	3 PC.	



ROUND METAL PIPE END SECTION END VIEW

METAL END SECTION PLAN VIEW

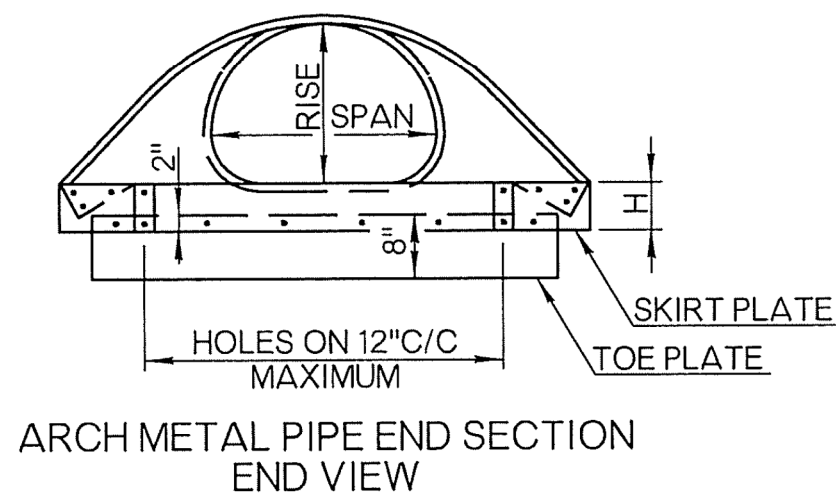
TYPE 1 FOR 12" TO 24" ROUND AND EQUIVALENT ROUND PIPE ARCH SIZES.

TYPE 2 FOR 30" TO 36" ROUND AND 30" TO 48" EQUIVALENT ROUND PIPE - ARCH SIZES.

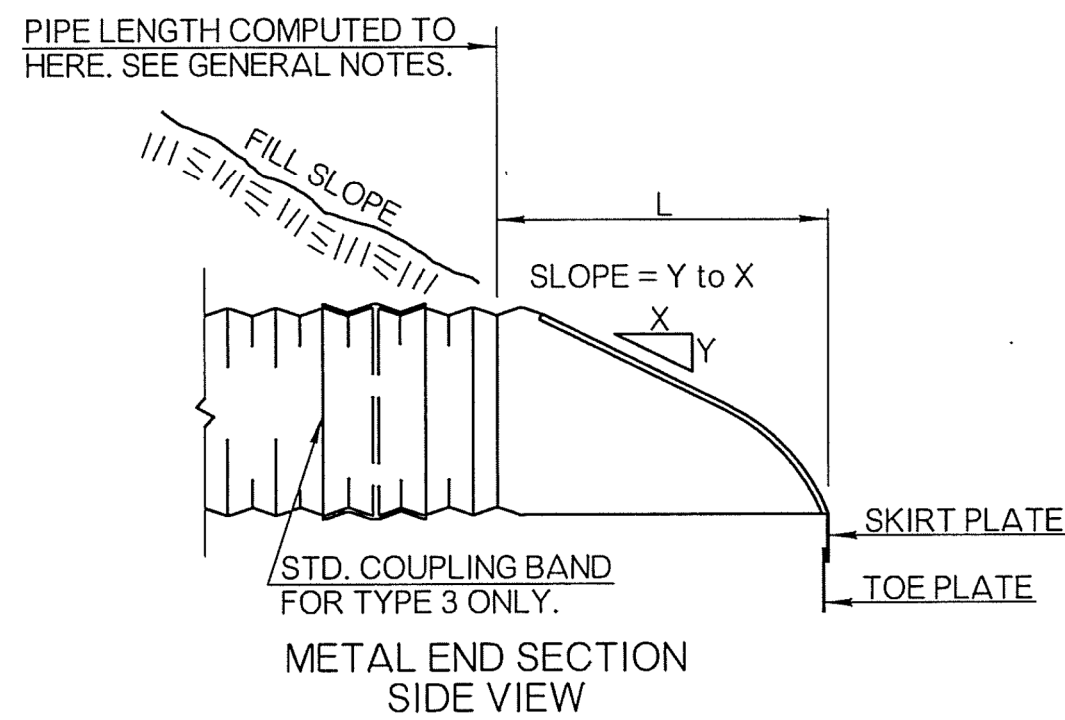
COUPLING BAND

STANDARD COUPLING BAND

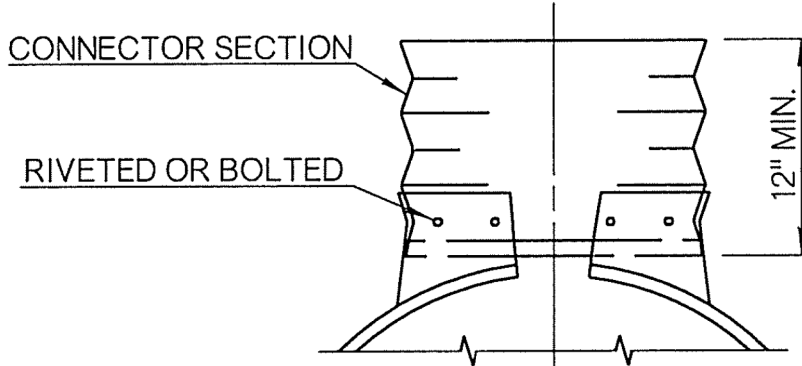
DIMENSIONS OF END SECTIONS FOR METAL PIPE - ARCH									
SPAN x RISE	EQUIV. ROUND	GA.	A	B	H	L	W	APPROX. SLOPE	BODY TYPE
17" x 13"	15"	16	7"	9"	6"	19"	30"	1:2 1/2	1 PC.
21" x 15"	18"	16	7"	10"	6"	23"	36"	1:2 1/2	1 PC.
24" x 18"	21"	16	8"	12"	6"	28"	42"	1:2 1/2	1 PC.
28" x 20"	24"	#16	9"	14"	6"	32"	48"	1:2 1/2	1 PC.
35" x 24"	30"	14	10"	16"	6"	39"	60"	1:2 1/2	1 PC.
42" x 29"	36"	#14	12"	18"	8"	46"	75"	1:2 1/2	1 PC.
49" x 33"	42"	12	13"	21"	9"	53"	85"	1:2 1/2	2 PC.
57" x 38"	48"	12	18"	26"	12"	63"	90"	1:2 1/2	2 PC.
64" x 43"	54"	12	18"	30"	12"	70"	102"	1:2 1/4	2 PC.
71" x 47"	60"	12	18"	33"	12"	77"	114"	1:2 1/4	3 PC.
77" x 52"	66"	12	18"	36"	12"	77"	126"	1:2	3 PC.
83" x 57"	72"	12	18"	39"	12"	77"	138"	1:2	3 PC.



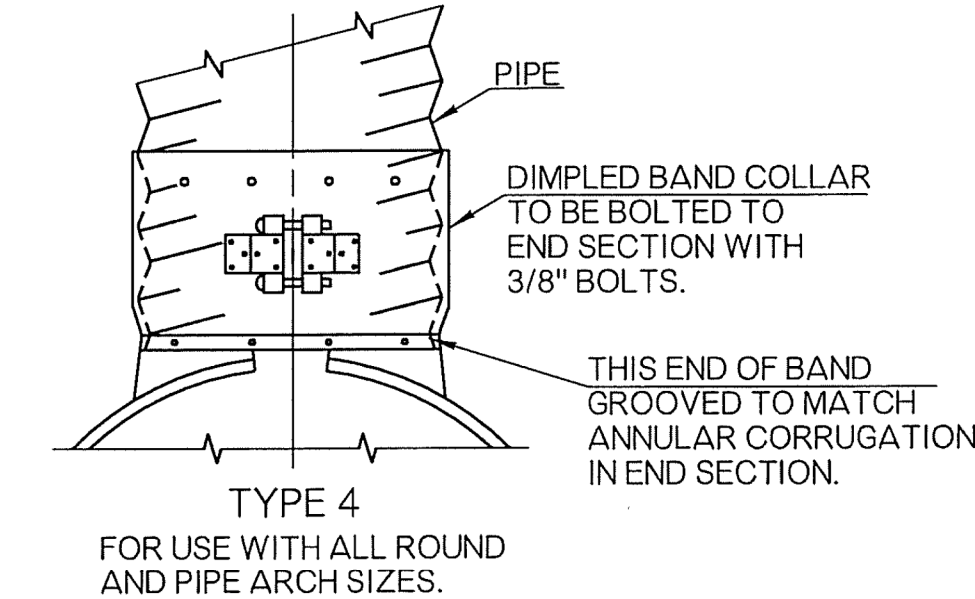
ARCH METAL PIPE END SECTION END VIEW



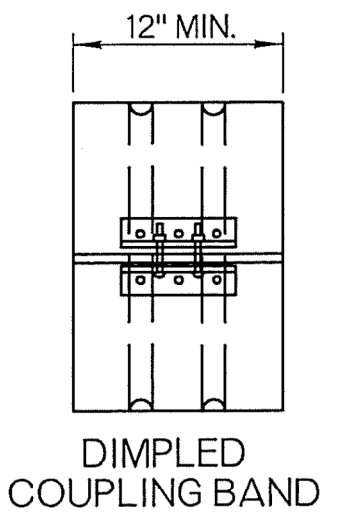
METAL END SECTION SIDE VIEW



TYPE 3 FOR 42" TO 84" ROUND AND 54" TO 72" EQUIVALENT ROUND PIPE - ARCH SIZES.



TYPE 4 FOR USE WITH ALL ROUND AND PIPE ARCH SIZES.



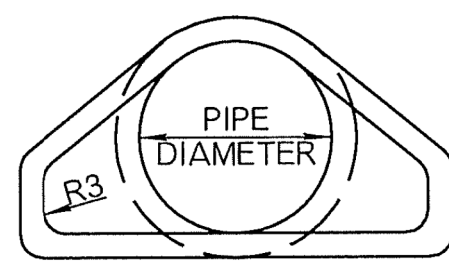
DIMPLED COUPLING BAND

TYPICAL METAL END SECTION CONNECTIONS

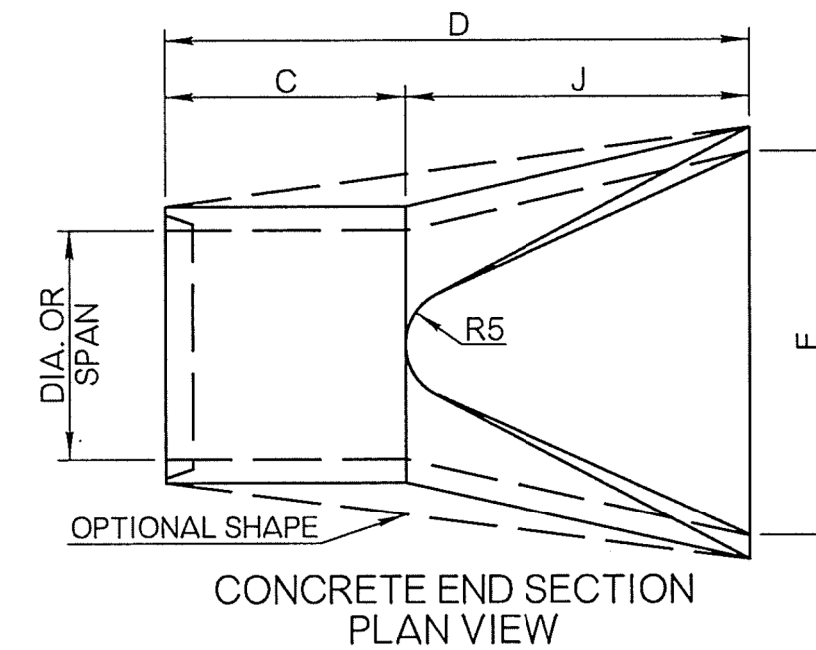
GENERAL NOTES

- ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 ODOT STANDARD SPECIFICATIONS.
- CULVERT END SECTIONS SHALL BE OF THE SAME MATERIAL AND SHAPE (ROUND, ARCH, OR ELLIPTICAL) AS THE PIPE ON WHICH THEY ARE INSTALLED.
- DIMENSIONS SHOWN FOR END SECTIONS ARE SUBJECT TO MANUFACTURER TOLERANCES.
- TOE PLATE WILL BE REQUIRED ON ALL METAL END SECTIONS UNLESS SOLID ROCK IS ENCOUNTERED. HOLES IN TOE PLATE TO BE PUNCHED TO MATCH HOLES IN SKIRT PLATE. 3/8" BOLTS TO BE FURNISHED. LENGTH OF TOE PLATES FOR ROUND PIPE END SECTIONS SHALL BE W=10" FOR 12" TO 30" DIAMETER PIPE. W=20" FOR 36" TO 84" DIAMETER PIPE. LENGTH OF TOE PLATES FOR ARCH PIPE END SECTIONS SHALL BE W=10" FOR A RISE OF 13" TO 29" AND W=20" FOR A RISE OF 33" TO 57".
- CONNECTOR SECTION, SKIRT PLATE, AND TOE PLATE ON METAL END SECTIONS SHALL BE THE SAME GAGE AND MATERIAL AS THE SKIRT AND SHALL BE INCLUDED IN PRICE BID FOR END SECTION.
- IF TYPE 3 METAL END SECTION IS USED AS OPTIONAL PIPE, THE LENGTH OF PIPE TO BE REDUCED BY 12" FOR EACH END SECTION. IF CONCRETE PIPE OPTION IS USED, THE LENGTH OF PIPE TO BE REDUCED BY THE C DIMENSION FOR EACH END SECTION.

DIMENSIONS OF PRECAST END SECTIONS FOR ROUND PIPE											
DIAMETER	R3	R4	R5	T	K	J	C	D	E	SLOPE	
18"	3"	3"	6"	2 1/2"	9"	2.25'	3.83'	6.08'	3.00'	1:3	
24"	3"	3"	7"	3"	9 1/2"	3.63'	2.50'	6.12'	4.00'	1:3	
30"	3"	3"	8"	3 1/2"	12"	4.50'	1.65'	6.16'	5.00'	1:3	
36"	3"	3"	10 1/2"	4"	15"	5.25'	2.90'	8.15'	6.00'	1:3	
42"	3"	3"	10 1/2"	4 1/2"	21"	5.25'	2.92'	8.17'	6.50'	1:3	
48"	6"	6"	14"	5"	24"	6.00'	2.17'	8.17'	7.00'	1:3	
54"	6"	6"	-	5 1/2"	27"	5.42'	2.92'	8.33'	7.50'	1:2 1/2	
60"	6"	6"	-	6"	30"	5.00'	3.25'	8.25'	8.00'	1:2	
66"	6"	6"	-	6 1/2"	24"	6.50'	1.75'	8.25'	8.50'	1:2	
72"	6"	6"	-	7"	24"	6.50'	1.75'	8.25'	9.00'	1:2	

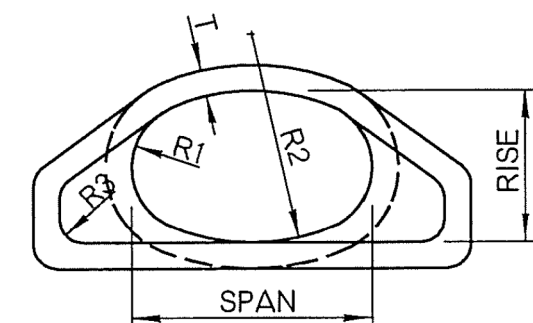


ROUND CONCRETE PIPE END SECTION END VIEW

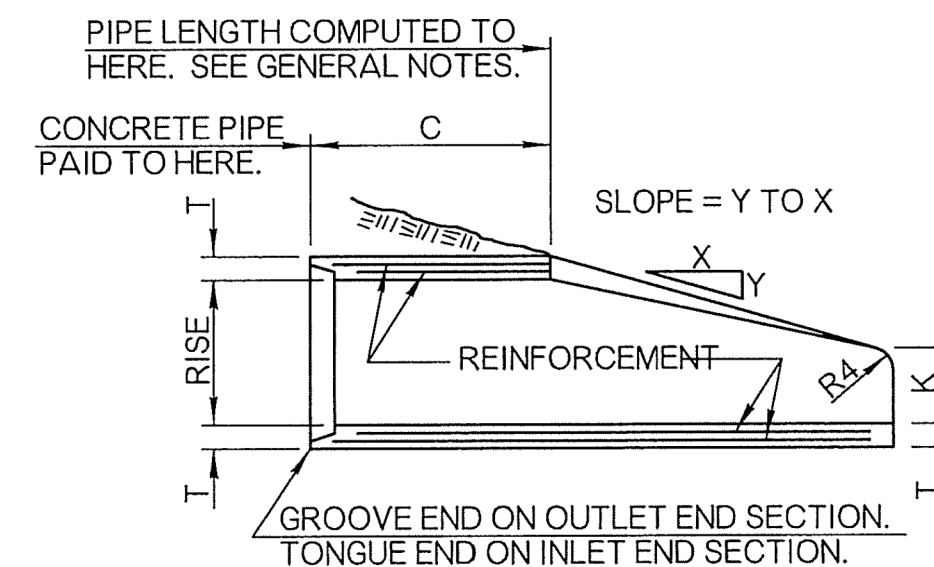


CONCRETE END SECTION PLAN VIEW

APPROX. EQUIV. DIAMETER	DIMENSIONS OF PRECAST END SECTIONS FOR ELLIPTICAL PIPE														
	RISE	SPAN	R1	R2	R3	R4	R5	T	K	J	C	D	E	SLOPE	
18"	14"	23"	6"	20"	3"	3"	6"	2 3/4"	8"	2.25'	3.75'	6.00'	3.00'	1:3	
24"	19"	30"	8 1/4"	26 1/4"	3"	3"	7"	3 1/4"	8 1/2"	3.25'	2.75'	6.00'	4.00'	1:3	
30"	24"	38"	10 1/4"	32 3/4"	3"	3"	9"	3 3/4"	9 1/2"	4.50'	1.50'	6.00'	5.00'	1:3	
36"	29"	45"	12 1/4"	39 1/4"	3"	3"	12"	4 1/2"	11 1/4"	5.00'	3.00'	8.00'	6.00'	1:3	
42"	34"	53"	14 1/2"	46"	6"	6"	13"	5"	15 3/4"	5.00'	3.00'	8.00'	6.50'	1:3	
48"	38"	60"	16 1/2"	51 1/2"	6"	6"	14"	5 1/2"	21"	5.00'	3.00'	8.00'	7.00'	1:3	
54"	43"	68"	18 3/4"	58 1/2"	6"	6"	16"	6"	25 1/2"	5.00'	3.00'	8.00'	7.50'	1:3	
60"	48"	76"	20 3/4"	65"	6"	6"	18"	6 11/16"	30"	5.00'	3.25'	8.25'	8.00'	1:2	
66"	53"	83"	22 3/4"	71 1/2"	6"	6"	18"	36 1/8"	7 1/2"	24"	6.50'	1.75'	8.25'	8.50'	1:2
72"	58"	91"	24 3/4"	78"	6"	6"	38"	7 1/2"	24"	6.50'	1.75'	8.25'	9.00'	1:2	

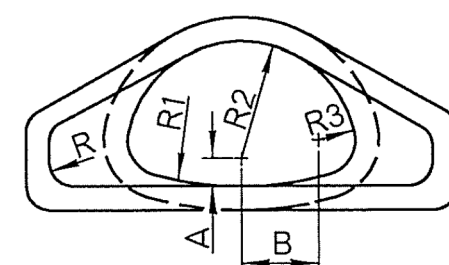


ELLIPTICAL CONCRETE PIPE END SECTION END VIEW



CONCRETE END SECTION SIDE VIEW

APPROX. EQUIV. DIAMETER	DIMENSIONS OF PRECAST END SECTIONS FOR ARCH PIPE																
	SPAN	RISE	A	B	R	R1	R2	R3	R4	R5	T	K	J	C	D	E	SLOPE
18"	22"	13"	- 1/4"	5 3/4"	2"	27 1/2"	13 3/4"	5 1/4"	3"	13"	2 1/2"	7"	2.25'	3.75'	6.08'	3.00'	1:3
24"	28"	18"	3 7/16"	9 21/32"	3"	40 11/16"	14 9/16"	4 19/32"	3"	16 13/16"	3"	9 1/2"	3.58'	2.50'	6.08'	4.00'	1:3
30"	36"	22"	3 3/4"	12 3/32"	3"	51"	18 3/4"	6 1/32"	3"	18 1/2"	3 1/2"	12"	4.50'	1.58'	6.08'	5.00'	1:3
36"	43"	26"	4 1/8"	15 1/2"	6"	62"	22 1/2"	6 9/8"	3"	24 5/16"	4"	15"	5.25'	2.90'	8.15'	6.00'	1:3
42"	51"	31"	5 1/16"	18"	6"	73"	26 1/4"	7 9/16"	3"	27 1/2"	4 1/2"	21"	5.25'	2.92'	8.17'	6.50'	1:3
48"	58"	36"	6"	20 1/2"	6"	84"	30"	8 3/4"	3"	28 1/2"	5"	24"	6.00'	2.17'	8.17'	7.00'	1:3
54"	65"	40"	6 9/16"	22 11/16"	6"	92 1/2"	33 3/8"	9 13/16"	6"	33 1/8"	5 1/2"	27"	5.42'	2.92'	8.34'	7.50'	1:2.4
60"	73"	45"	7 1/2"	25 9/32"	6"	105"	37 1/2"	11 7/32"	6"	33 11/16"	6"	30"	5.00'	3.25'	8.25'	8.00'	1:2
72"	88"	54"	9"	31 7/16"	6"	126"	45"	12 9/16"	6"	38 15/16"	7"	24"	6.50'	1.75'	8.25'	9.00'	1:2



ARCH CONCRETE PIPE END SECTION END VIEW

MARK	DATE	DESCRIPTION
-	-	-
-	-	-
-	-	-
-	-	-

WESTERN FARMERS ELECTRIC COOPERATIVE
ANADARKO, OKLAHOMA 73005

MAXWELL SUBSTATION

SCALE: N.T.S.

COUNTY CLEVELAND SEC. 18

PIPE END TREATMENT

STATE T-8-N

APPROVED FOR CONSTRUCTION DATE PROJECT MANAGER

DRAWN BY DATE PROJECT MANAGER

CIVIL ENGINEER DATE PROJECT MANAGER

ELECTRICAL ENGINEER DATE PROJECT MANAGER

CONTROLS ENGINEER DATE PROJECT MANAGER

OK OK

WORK ORDER NUMBER **8600**

SIGNATURE DATE SHEET C8