

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 &
 PUBLIC FACILITIES

PROPOSED HIGHWAY PROJECT
 0002351/NFHWHY00015
 GOLD MINE TRAIL ROAD UPGRADE
 GRADING & DRAINAGE

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0002351/NFHWHY00015	2017	A1	26
CDS ROUTE: 150060		MILEPOINT: 0.20 TO 0.92		

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
A1	TITLE SHEET
A2-A3	LEGEND & SHEET LAYOUT INDEX
B1-B2	TYPICAL SECTIONS
C1	ESTIMATE OF QUANTITIES & GENERAL NOTES
D1	SUMMARIES
E1	MISCELLANEOUS DETAILS
E2-E4	CULVERT/DRAINAGE DETAILS & SUMMARY
F1-F5	PLAN & PROFILE
G1	APPROACH SUMMARY & DETAILS
H1-H4	SIGNING & STRIPING
Q1-Q4	EROSION SEDIMENT CONTROL PLANS
T1	TRAFFIC CONTROL PLANS

Preliminary PS&E
 December 7, 2017
 Northern Region

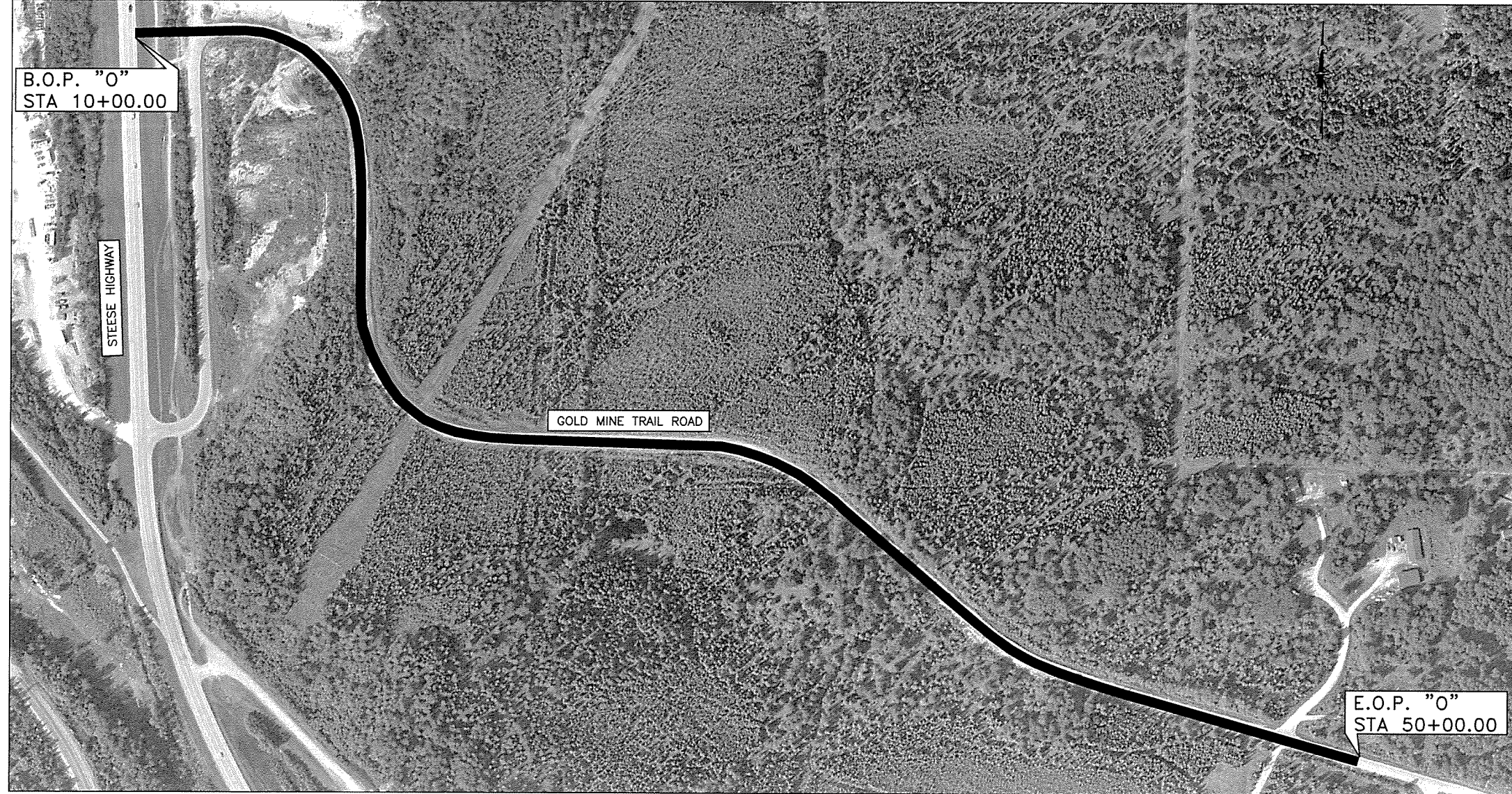
THE FOLLOWING STANDARD DRAWINGS APPLY TO THIS PROJECT:
 C-00.00,
 D-00.00,
 G-04.11S, G-10.01, G-20.11
 I-81.00
 M-20.14, M-23.12
 S-01.01, S-05.01, S-30.04, S-31.01

DESIGN DESIGNATIONS	
ADT (2015)	950
ADT (2045)	1,280
DHV (11.4%)	150
PERCENT TRUCKS (T)	6%
DIRECTIONAL SPLIT (D)	50/50
DESIGN SPEED (V)	30 MPH
DESIGN EAL'S (?? YEARS)	N/A

PROJECT SUMMARY	
WIDTH OF PAVEMENT	32 FT
LENGTH OF GRADING	4,000 FT
LENGTH OF PAVING	800 FT
LENGTH OF PROJECT	4,000 FT

JEFFREY C. ORGANEK, P.E., PROJECT MANAGER
 NATHAN J. STEPHAN, DESIGNER/DESIGN ENGINEER

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 &
 PUBLIC FACILITIES
 APPROVED BY: _____ DATE _____
 Sarah E. Schacher, P.E.
 Preconstruction Engineer, Northern Region
 ACCEPTED FOR CONSTRUCTION: _____ DATE _____
 Ryan F. Anderson, P.E.
 Regional Director, Northern Region



H:\Projects\Fbks_NP\FHWHY00015 Gold Mine Trail Road Upgrade\9 Drafting\PS&E drawings\00015_A_Title-Title- West, Nov/22/17 12:42pm

PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0002351/NFHWY00015	2017	A2	A3

	RECOVERED	SET
BLM MONUMENT		
GLO MONUMENT		
USC&GS MONUMENT		
PRIMARY MONUMENT		
CENTERLINE MONUMENT IN CASING		
PRIMARY R.O.W. MONUMENT		
BEARING OBJECT		
MISCELLANEOUS MONUMENT		
LINE OF SIGHT MONUMENT		
CONCRETE R.O.W. MONUMENT		
BENCHMARK		
REBAR AND CAP		
REBAR		
IRON PIPE		
PK NAIL		
SPIKE		
HUB AND TACK		
CONSTRUCTION CENTERLINE		
MISCELLANEOUS CENTERLINE		
STATION EQUATION		
PROJECT RIGHT-OF-WAY LINE		
EXISTING RIGHT-OF-WAY LINE		
EXISTING PROPERTY LINE		
CONTROLLED ACCESS LINE		
UTILITY EASEMENT LINE		
TEMPORARY EASEMENT LINE (TCP OR TCE)		
ACCESS OR SECTION LINE EASEMENT		
PROPOSED CUT SLOPE LIMIT		
PROPOSED FILL SLOPE LIMIT		
SECTION LINE		
1/4 SECTION LINE		
1/16 SECTION LINE		
TOWNSHIP & RANGE LINE		

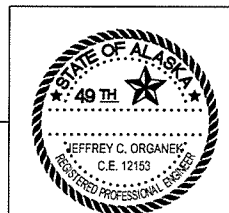
	EXISTING	PROPOSED
SANITARY SEWER (FLOW DIRECTION →)		
FUEL LINE		
GAS LINE		
WATER LINE		
METER, VALVE, FIRE HYDRANT		
EXISTING STORM DRAIN (FLOW DIRECTION →)		
PROPOSED STORM DRAIN		
FIBER OPTIC LINE		
DIRECT BURIAL TELEPHONE CABLE		
DIRECT BURIAL ELECTRIC CABLE		
ELECTRIC LINE (OVERHEAD)		
POWER POLE LINE		
JOINT USE POWER & TELEPHONE		
TELEPHONE POLE LINE		
POLE ANCHOR		
STUB POLE (POWER OR TELEPHONE)		
TELEPHONE DUCT		
TELEPHONE PEDESTAL		
BURIED CABLE MARKER		
PIPELINE MARKER OR VALVE		
CATCH BASIN OR DROP INLET		
MANHOLE		
SANITARY SEWER CLEAN OUT		

	EXISTING	PROPOSED
ROADWAY/PAVEMENT EDGE		
FENCE		
CURB AND GUTTER		
DETECTABLE WARNINGS		
GUARDRAIL		
CULVERT PIPE		
SIGN		
MAILBOX		
RAILROAD TRACKS		
RAILROAD DEVICES		
TREE LINE		
WATER BOUNDARY		
ORDINARY HIGH WATER LINE		
FLOW CENTERLINE		
FLOW DIRECTION		
WETLANDS		
EXISTING BUILDINGS		
POST OR BOLLARD		
WELL OR MONITORING WELL		
SEPTIC PIPE		
FUEL TANK FILL PIPE/VENT		
SATELLITE DISH		
TEST HOLE		
CONIFER TREE		
DECIDUOUS TREE		
GRAVE		
THERMOSIPHON		
PARKING METER		
VEHICLE PLUG-IN		
DELINEATOR/GUIDE MARKER		

- H = HOUSE
- G = GARAGE
- M = MERCHANT/STORE
- B = BARN
- S = SHED
- P = PRIVY
- SS = SERVICE STATION
- W = WAREHOUSE

	EXISTING	PROPOSED
JUNCTION BOX, TYPE IA		
JUNCTION BOX, TYPE II		
JUNCTION BOX, TYPE III		
SIGNAL FACE, VEHICULAR		
SIGNAL FACE, BACKPLATE		
SIGNAL FACE, LEFT TURN, BACKPLATE		
SIGNAL FACE, PEDESTRIAN		
LOOP DETECTOR		
VIDEO DETECTOR		
RADAR DETECTOR		
OPTICOM DETECTOR		
PEDESTRIAN PUSH BUTTON		
SIGNAL POST W/O MAST ARM		
SIGNAL POLE W/MAST ARM		
SIGNAL CONTROLLER		
LOAD CENTER		
LUMINAIRE		
RIGID METAL CONDUIT		

LEGEND



STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0002351/NFHwy00015	2017	A3	A3

TRAFFIC MARKING KEY

4"W	4" WHITE LINE
4"WS	4" WHITE SKIP LINE (10' STRIPE/30' SKIP PATTERN)
4"WD-1	4" WHITE DOTTED LINE (2' STRIPE/6' SKIP PATTERN)
4"WD-2	4" WHITE DOTTED LINE (3' STRIPE/9' SKIP PATTERN)
4"Y	4" YELLOW LINE
4"YS	4" YELLOW SKIP LINE (10' STRIPE/30' SKIP PATTERN)
4"DY	4" DOUBLE YELLOW LINE
8"W	8" WHITE LINE
8"WD-1	8" WHITE WIDE DOTTED LINE (2' STRIPE/4' SKIP PATTERN)
8"WD-2	8" WHITE WIDE DOTTED LINE (3' STRIPE/9' SKIP PATTERN)
12"WD	12" WHITE WIDE DOTTED LINE (2' STRIPE/2' SKIP PATTERN)
24"W	24" WHITE LINE
STD	SEE STANDARD DRAWING

NOTE:
DIMENSIONS ARE TO CENTER OF STRIPE OR STRIPE GROUP.

TRAFFIC MARKING NOTES TO DESIGNER:

1. The "STRIPE ANNOTATION" block in this drawing is dynamic with all of the callouts labels given above, plus some.
2. The TRAFFIC MARKING KEY is typically placed on the first striping sheet, but it can be placed on each sheet if there is space.

This Key is typically placed on the first plan and profile sheet

PLAN VIEW KEY

A	STATION TYPE, WIDTH	Civil 3D <u>Note Label Style</u>
	CONSTRUCT APPROACH	
P	STATION DIAMETER X LENGTH	Civil 3D <u>Pipe Label Styles</u>
	INSTALL CULVERT PIPE	
R	STATION DIAMETER X LENGTH	Civil 3D <u>Pipe Label Styles</u>
	REMOVE PIPE	
C	STATION DIAMETER X LENGTH	Civil 3D <u>Pipe Label Styles</u>
	CLEAN CULVERT PIPE	

SIGNING KEY

#	STATION SIGN CODE(S)	Civil 3D <u>Note Label Style</u> (or dynamic blocks SignPointerLt/Rt)
	SIGN LOCATION #	

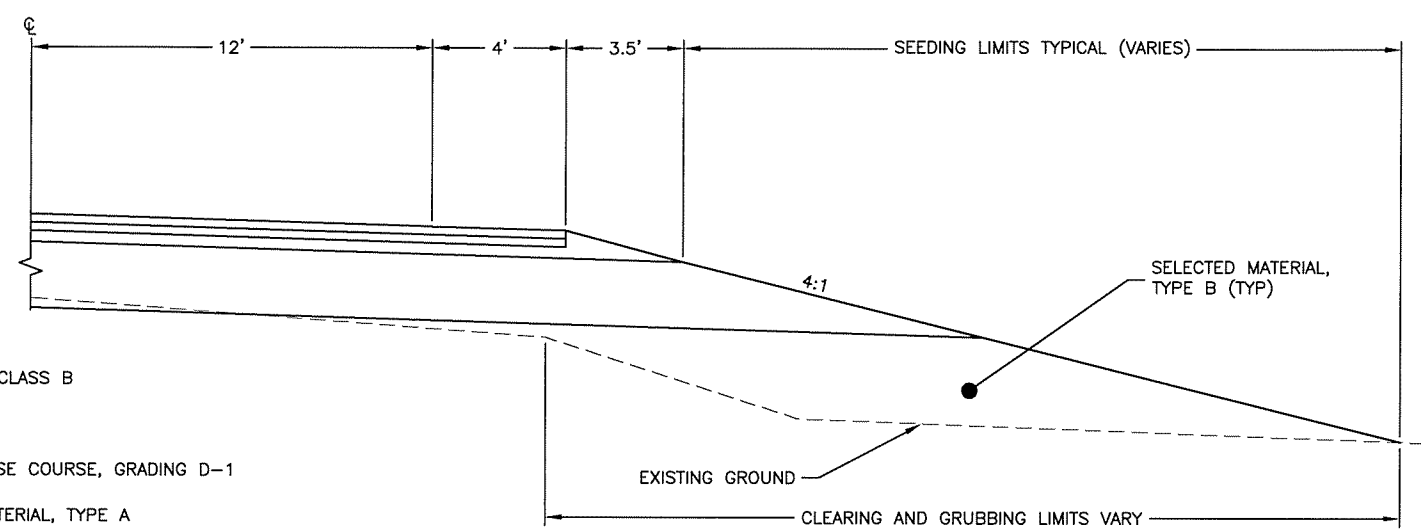
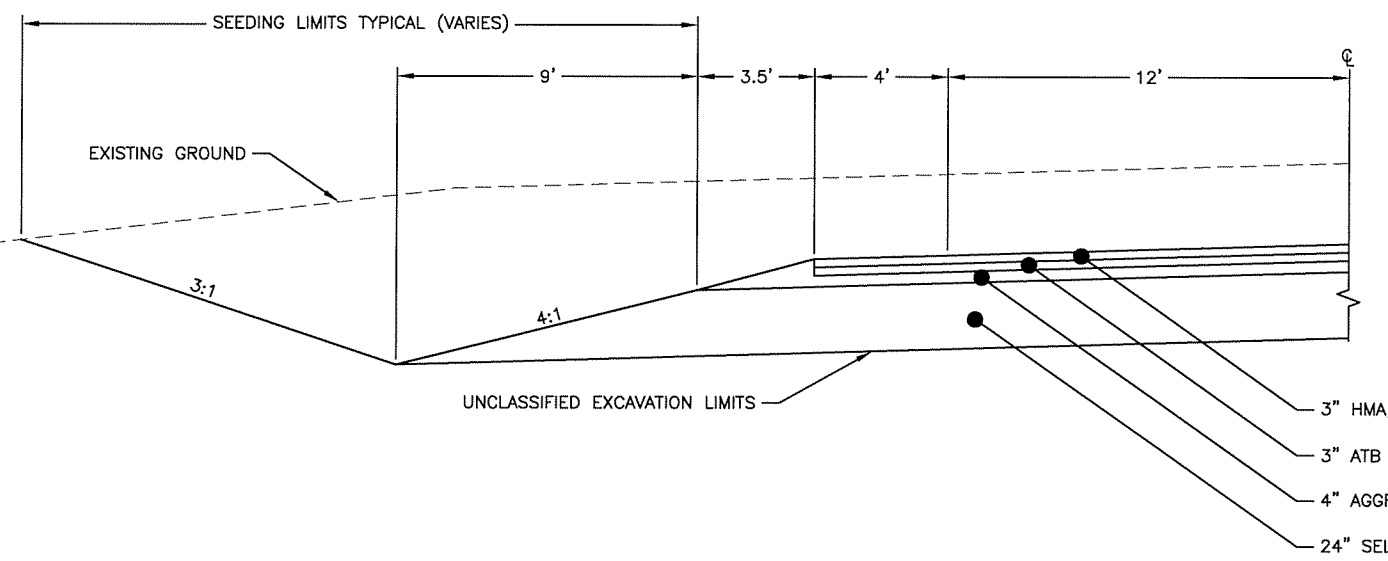
PLAN VIEW KEY

P	STATION DIAMETER X LENGTH	Civil 3D <u>Note Label Style</u>
	INSTALL CULVERT PIPE	
R	STATION DIAMETER X LENGTH	Civil 3D <u>Note Label Style</u>
	REMOVE PIPE	
C	STATION DIAMETER X LENGTH	Civil 3D <u>Note Label Style</u>
	CLEAN CULVERT PIPE	
A	STATION TYPE, WIDTH	Civil 3D <u>Note Label Style</u>
	CONSTRUCT APPROACH	
#	STATION SIGN CODE(S)	Civil 3D <u>Note Label Style</u>
	SIGN LOCATION #	

MISC LEGENDS



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHwy00015	2017	B1	B2



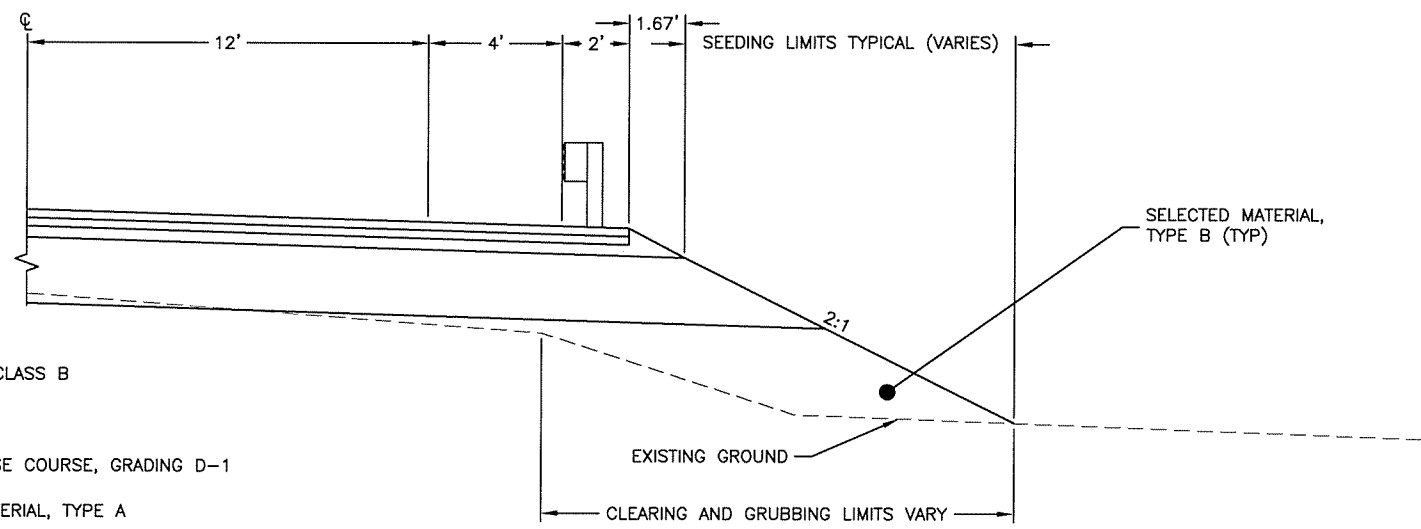
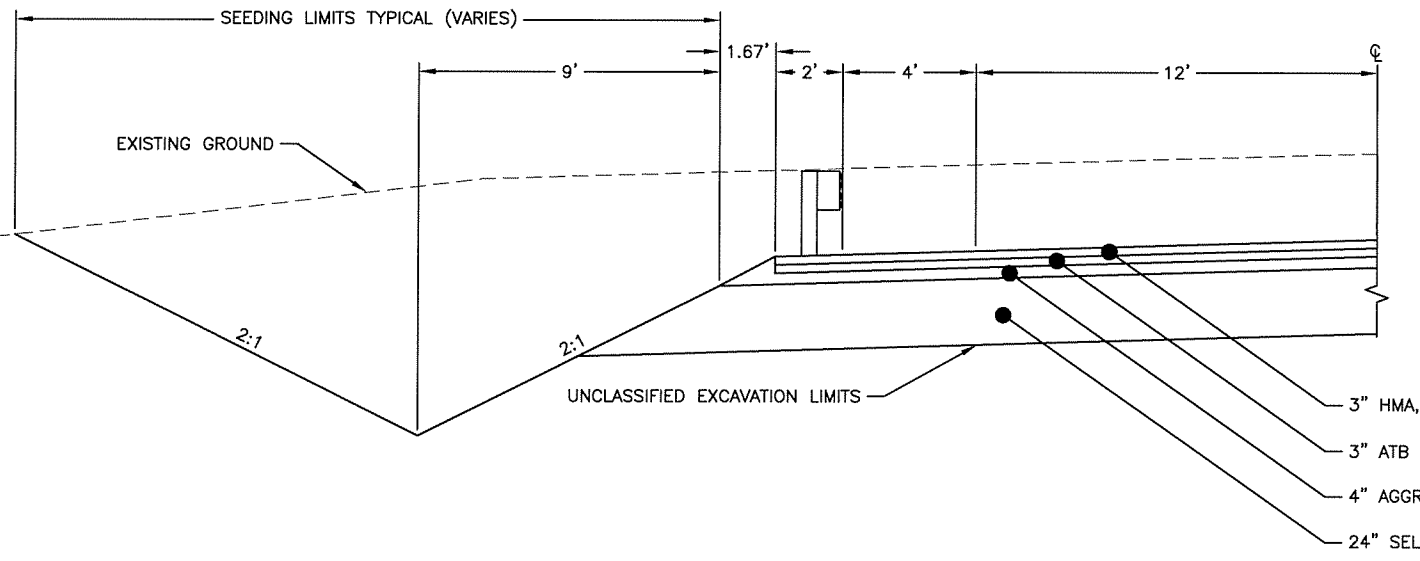
CUT TYP

BEGIN STATION	END STATION
"0" 10+00	"0" 14+50

PAVEMENT TYPICAL SECTION I
"0"10+00 BOP TO "0"18+00

FILL TYP

BEGIN STATION	END STATION
"0" 10+00	



CUT TYP

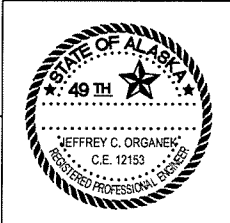
BEGIN STATION	END STATION

PAVEMENT GUARDRAIL WIDENING DETAIL

FILL TYP

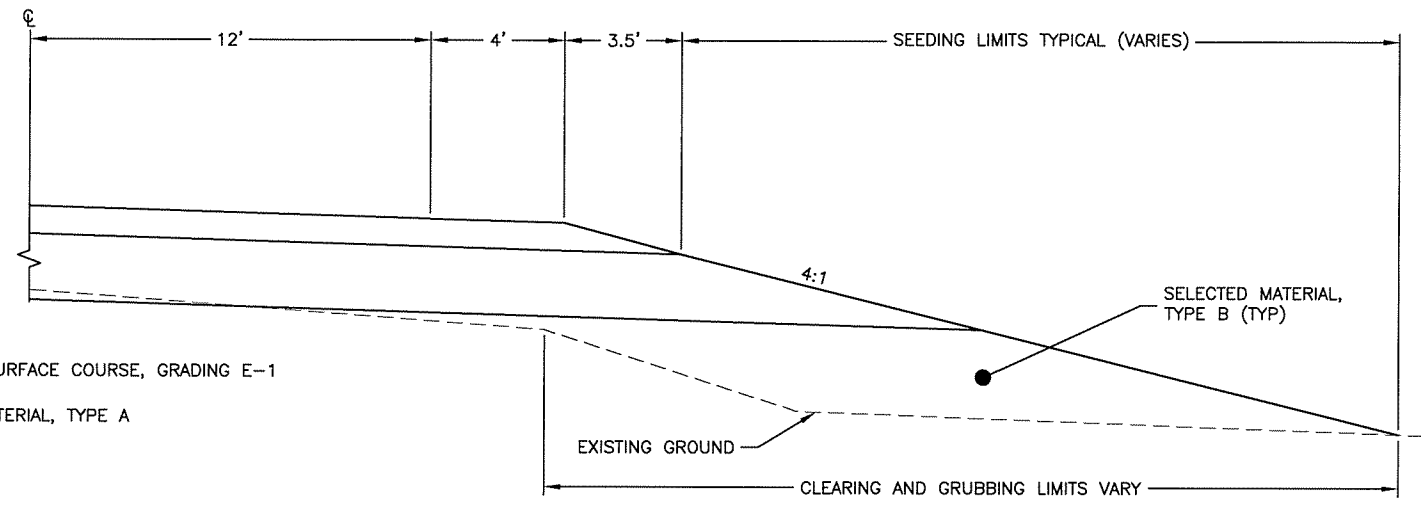
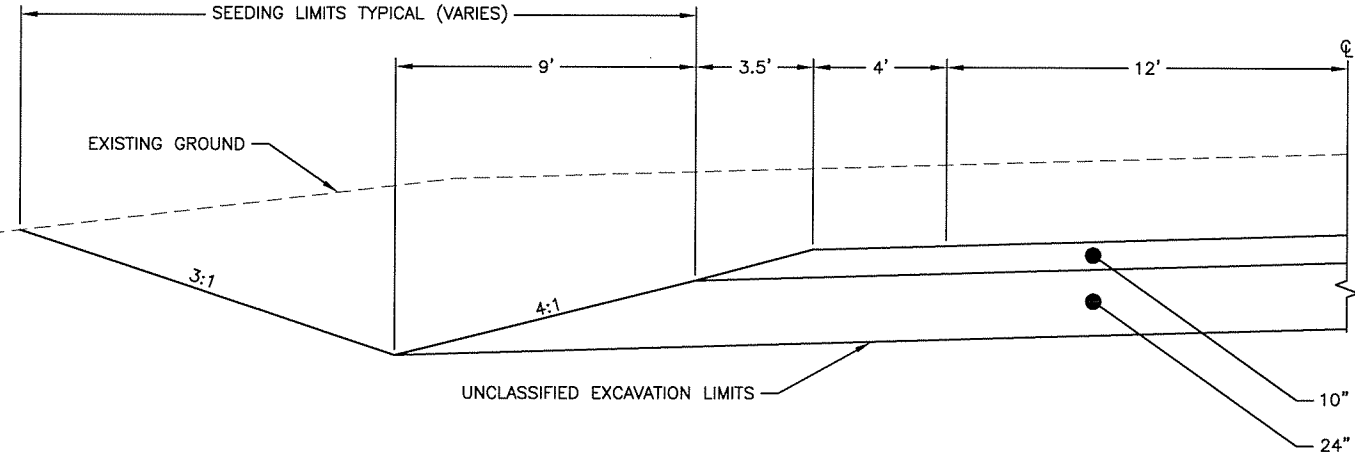
BEGIN STATION	END STATION

TYPICAL PAVE



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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWO0015	2017	B2	B2



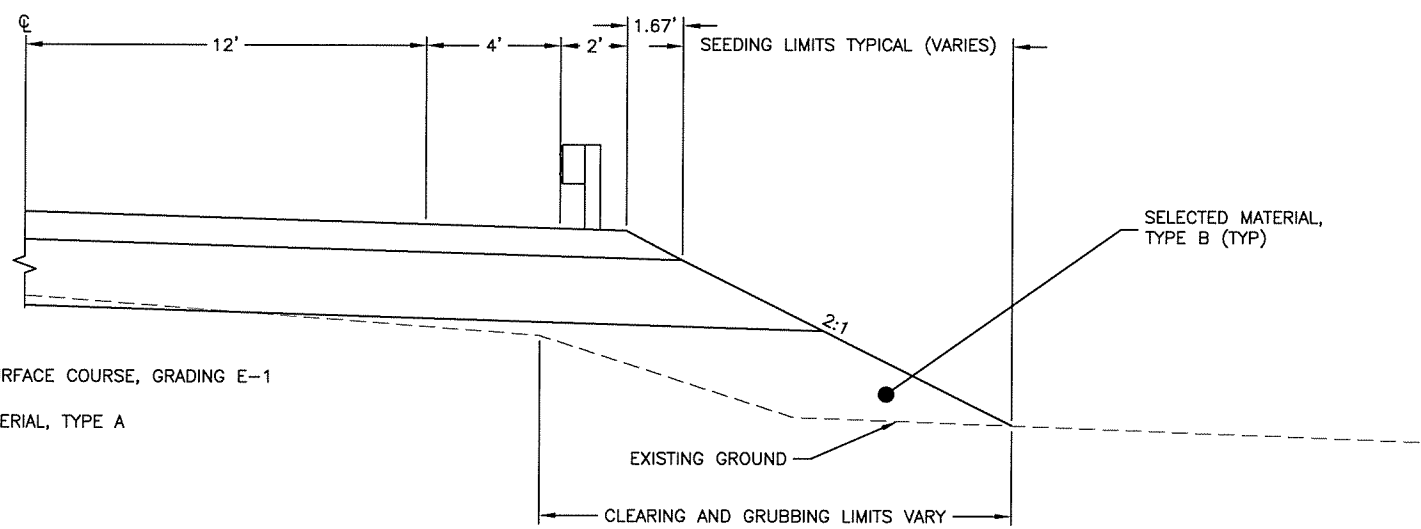
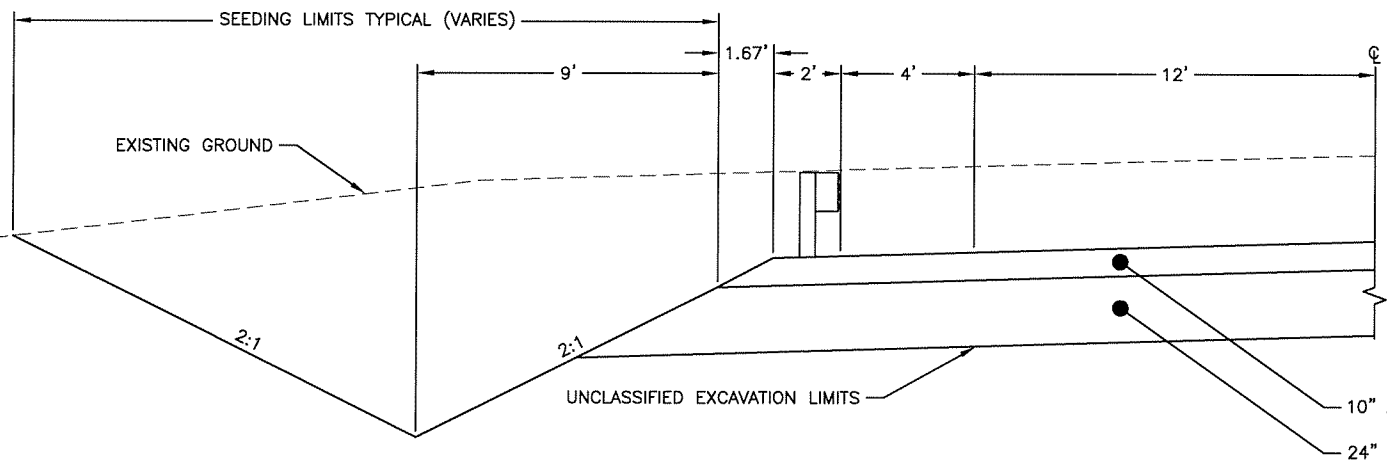
CUT TYP

BEGIN STATION	END STATION
"0" 10+00	"0" 14+50

AGGREGATE TYPICAL SECTION I
"0"18+00 TO "0"50+00

FILL TYP

BEGIN STATION	END STATION
"0" 10+00	



CUT TYP

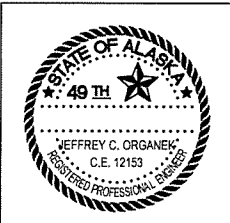
BEGIN STATION	END STATION

AGGREGATE GUARDRAIL WIDENING DETAIL

FILL TYP

BEGIN STATION	END STATION

TYPICAL AGGREGATE



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H:\Projects\Fbks_NP\FHWO0015 Gold Mine Trail Road Upgrade\PS&E drawings\00015_B-TYPICAL AGGREGATE Mon, Nov/13/17 09:10am

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWY00015	2017	C1	C1

ESTIMATE OF QUANTITIES			
ITEM NO.	PAY ITEM	PAY UNIT	QUANTITY
201(3B)	CLEARING AND GRUBBING	LUMP SUM	ALL REQUIRED
202(2)	REMOVAL OF PAVEMENT	SQUARE YARD	3,686
202(10)	SINGLE MAIL BOX INSTALLATION	EACH	3
202(101)	REMOVAL OF CULVERT PIPE	EACH	4
202(125)	DECOMMISSION OF CULVERT PIPE	CUBIC YARD	47
203(3)	UNCLASSIFIED EXCAVATION	CUBIC YARD	41,421
203(6)	BORROW	TON	35,306
203(9)	OBLITERATION OF ROADWAY	SQUARE YARD	10,112
301(1)	AGGREGATE BASE COURSE, GRADING D-1	TON	896
301(3)	AGGREGATE SURFACE COURSE, GRADING E-1	TON	7,152
306(1)	ATB	TON	604
306(102)	ASPHALT BINDER, GRADE PG 52-28		
401(1)	HMA, TYPE II; CLASS B	TON	604
401(15)	ASPHALT MATERIAL PRICE ADJUSTMENT	CONTINGENT SUM	ALL REQUIRED
603(1)-24	24 INCH CSP	LINEAR FOOT	73
603(1)-36	36 INCH CSP	LINEAR FOOT	300
606(1)	W-BEAM GUARDRAIL	LINEAR FOOT	1,912.5
606(6)	REMOVING AND DISPOSING OF GUARDRAIL	LINEAR FOOT	1635
606(13)	PARALLEL GUARDRAIL TERMINAL	EACH	8
613(2)	CULVERT MARKER POST	EACH	8
615(1)	STANDARD SIGN	SQUARE FOOT	55.50
615(2)	REMOVE AND RELOCATE EXISTING SIGN	EACH	1
616(2)	1/2 INCH DIAMETER THAW PIPE	EACH	4
618(2)	SEEDING	POUND	315
639(1)	RESIDENCE DRIVEWAY	EACH	1
639(2)	COMMERCIAL DRIVEWAY	EACH	2
639(101)	APPROACH	EACH	1
640(1)	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED
641(1)	EROSION, SEDIMENT AND POLLUTION CONTROL ADMINISTRATION	LUMP SUM	ALL REQUIRED
641(3)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	ALL REQUIRED
641(5)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL BY DIRECTIVE	CONTINGENT SUM	ALL REQUIRED
641(6)	WITHHOLDING	CONTINGENT SUM	ALL REQUIRED
641(7)	SWPPP MANAGER	LUMP SUM	ALL REQUIRED
642(1)	CONSTRUCTION MANAGER	LUMP SUM	ALL REQUIRED
642(3)	THREE PERSON SURVEY PARTY	HOUR	75
643(2)	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED
643(23)	TRAFFIC PRICE ADJUSTMENT	CONTINGENT SUM	ALL REQUIRED
643(25)	TRAFFIC CONTROL	CONTINGENT SUM	ALL REQUIRED
644(1)	FIELD OFFICE	LUMP SUM	ALL REQUIRED
670(107)	MMA TRANSVERSE MARKINGS INLAID	SQUARE FOOT	60
670(108)	MMA PAVEMENT MARKINGS INLAID	LUMP SUM	ALL REQUIRED
670(114)	REMOVAL OF PAVEMENT MARKINGS	SQUARE FOOT	47

ESTIMATING FACTORS		
ITEM NO.	DESCRIPTION	VALUE
203(6)	BORROW	2 TONS / CY
301(1)	AGGREGATE BASE COURSE, GRADING D-1	2 TONS / CY
301(3)	AGGREGATE SURFACE COURSE, GRADING E-1	2 TONS / CY
401(1)	HMA, TYPE II; CLASS B	2 TONS / CY
618(2)	SEEDING	1 LB / 1,000 SF

AS-BUILT SUMMARY		
PROJECT NUMBER	PROJECT NAME	YEAR COMPLETED
NH-065-1(028)/63915	STEESE HIGHWAY MP 5-11 RESURFACING	2013
037082	GOLDMINE TRAIL EXTENSION	1982

"O" GEOMETRY COORDINATES			
DESCRIPTION	STATION	NORTHING	EASTING
BP	10+00.00	232928.4543	689877.9101
PC	12+25.87	232940.8803	690103.4386
PT	17+30.74	232636.7622	690440.6723
PC	21+19.46	232248.4869	690459.3764
PT	26+03.08	231943.8846	690775.3736
PC	31+09.65	231938.1352	691281.9083
PT	34+61.91	231820.6479	691607.0122
PC	39+51.18	231512.1156	691986.7420
PT	42+85.92	231360.6989	692282.5487
EP	50+00.00	231174.4416	692971.9061

ESTIMATE OF QUANTITIES



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWY00015	2017	D1	D1

SUPERELEVATION SUMMARY

CURVE P.I.	RADIUS (FEET)	BEGIN TRANSITION	TRANSITION LENGTH (FEET)	CURVE P.C.	BEGIN FULL SUPERELEVATION	SUPERELEVATION RATE (%)	END FULL SUPERELEVATION	CURVE P.T.	TRANSITION LENGTH (FEET)	END TRANSITION	REMARKS
15+48.09	320	10+88	159	12+25.87	12+47	5.8	17+10	17+30.74	159	18+69	PAVED
24+20.97	320	19+81	160	21+19.46	21+45	-5.8	25+85	26+03.08	160	27+45	GRAVEL
32+92.70	525	29+86	141	31+09.65	31+27	4.8	34+45	34+61.91	141	35+86	GRAVEL
41+21.04	800	38+38	128	39+51.94	39+66	-4.0	42+71	42+85.92	128	43+99	GRAVEL

SUPERELEVATION NOTES:

1. ROTATE SUPERELEVATION ABOUT CENTERLINE.
2. SUPERELEVATION SHALL BE BUILT INTO THE SUBGRADE AND CARRIED THROUGH THE FULL WIDTH.
3. SEE STANDARD DRAWING I-81.00 FOR SUPERELEVATION TRANSITION DETAILS.

606 GUARDRAIL SUMMARY

BEGIN STATION	END STATION	RT/LT	606(1) W-BEAM GUARDRAIL (LF)	606(6) REMOVING AND DISPOSING OF GUARDRAIL (LF)	606(13) PARALLEL GUARDRAIL TERMINAL (EACH)
"0" 13+97	"0" 20+89	RT	575.0		2
"0" 14+75	"0" 18+50	LT	287.5		2
"0" 33+00	"0" 42+50	RT	850.0		2
"0" 39+45	"0" 42+50	LT	200.0		2
"0" 14+57	"0" 17+44	LT		300.0	
"0" 14+57	"0" 20+56	RT		585.0	
"0" 39+29	"0" 43+09	LT		375.0	
"0" 39+30	"0" 42+96	RT		375.0	

GUARDRAIL NOTES:

1. FOR PARALLEL GUARDRAIL TERMINALS, CONSTRUCT THE GUARDRAIL TERMINAL WIDENING IN ACCORDANCE WITH THE "STANDARD DETAIL" ON STANDARD DRAWING G-20.11 THE END OFFSET (X) SHALL BE 2 FEET.
2. INSTALL PARALLEL GUARDRAIL TERMINALS AT A HEIGHT OF 27-3/4" TO TOP OF THE RAIL. TRANSITION TO THE STANDARD 29" GUARDRAIL HEIGHT IN 25 LINEAR FEET AS NOTED ON STANDARD DRAWING G-04.10S.
3. PER SUBSECTION 606-3.01, INSTALL SIDE-MOUNTED GUARDRAIL REFLECTORS "STARTING WITH THE FIRST STANDARD POST". DO NOT INSTALL THESE REFLECTORS WITHIN THE LIMITS OF PARALLEL GUARDRAIL TERMINALS.
4. GUARDRAIL BEGIN AND END STATIONS INCLUDE PARALLEL GUARDRAIL TERMINALS (50FT).
5. INSTALL END TERMINALS PER MANUFACTURER'S INSTRUCTIONS.
6. INSTALL W-BEAM GUARDRAIL WITH 6FT POST SPACING. MINIMUM W-BEAM GUARDRAIL POST LENGTH SHALL BE 6FT PER STANDARD DRAWING G-10.01 CASE 3.

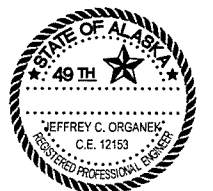
MAILBOX SUMMARY

NUMBER	EXISTING		PROPOSED		SINGLE	DOUBLE	NEWSPAPER	REMARKS
	STATION	OFFSET	STATION	OFFSET				
1	"0"48+20	LT	"0"46+63	LT	1			RELOCATED
1	"0"48+23	LT	"0"46+66	LT	1			RELOCATED
1	"0"48+26	LT	"0"46+69	LT	1			RELOCATED
TOTALS					3	0	0	

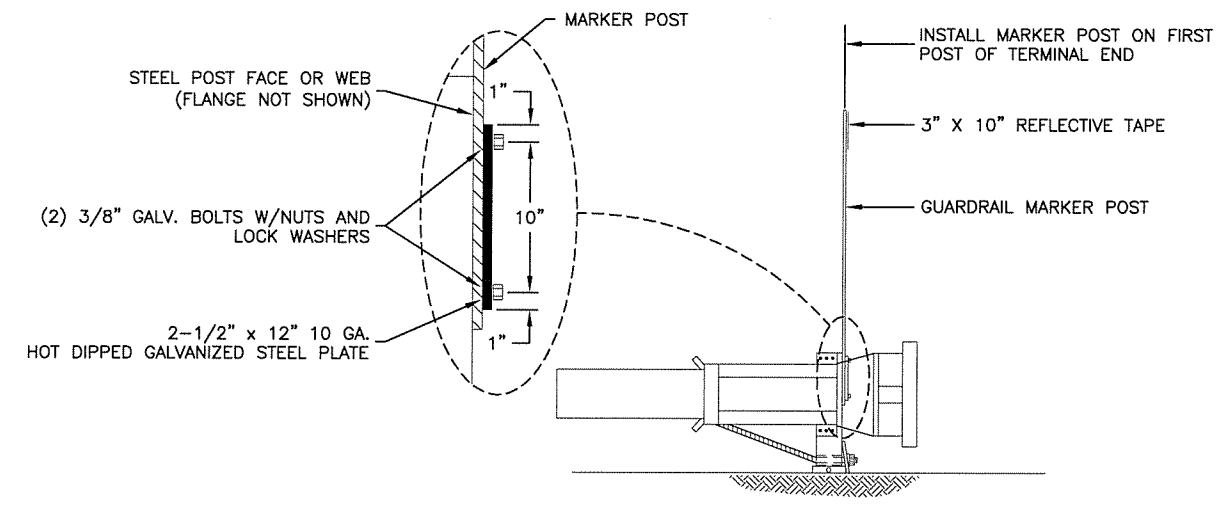
MAILBOX NOTES:

1. STATIONS AND NUMBERS OF MAILBOXES/NEWSPAPER BOXES SHOWN IN THE SUMMARY ARE APPROXIMATE AND SUBJECT TO MINOR REVISIONS BY THE ENGINEER.
2. INSTALL NEW MAILBOXES ACCORDING TO WOOD CANTILEVER INSTALLATION DETAILS IN STANDARD DRAWING M-23.12.
3. LOCATE NEW MAILBOXES ACCORDING TO STANDARD DRAWING M-20.14.

SUMMARY TABLES



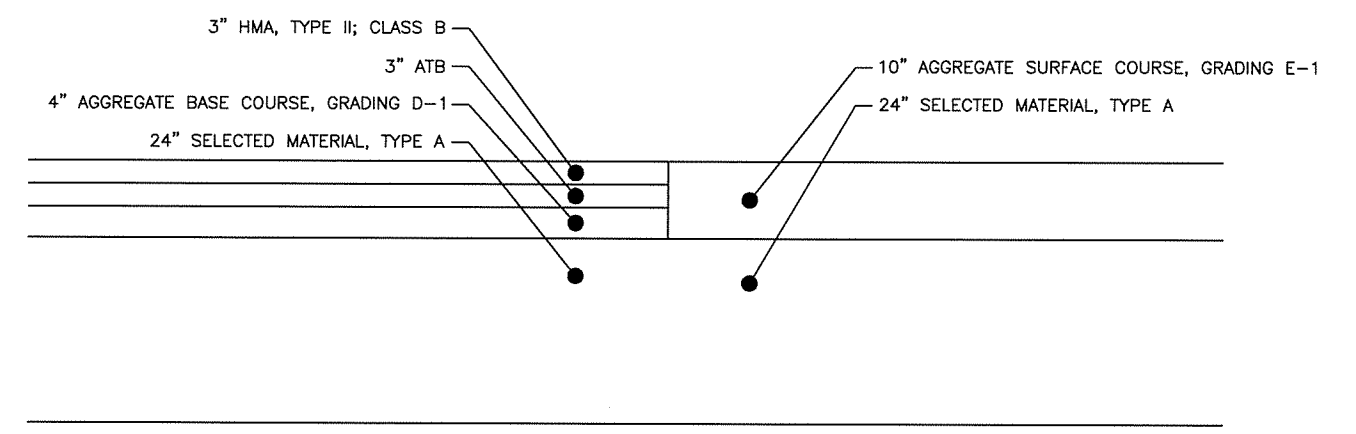
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWY00015	2017	E1	E4



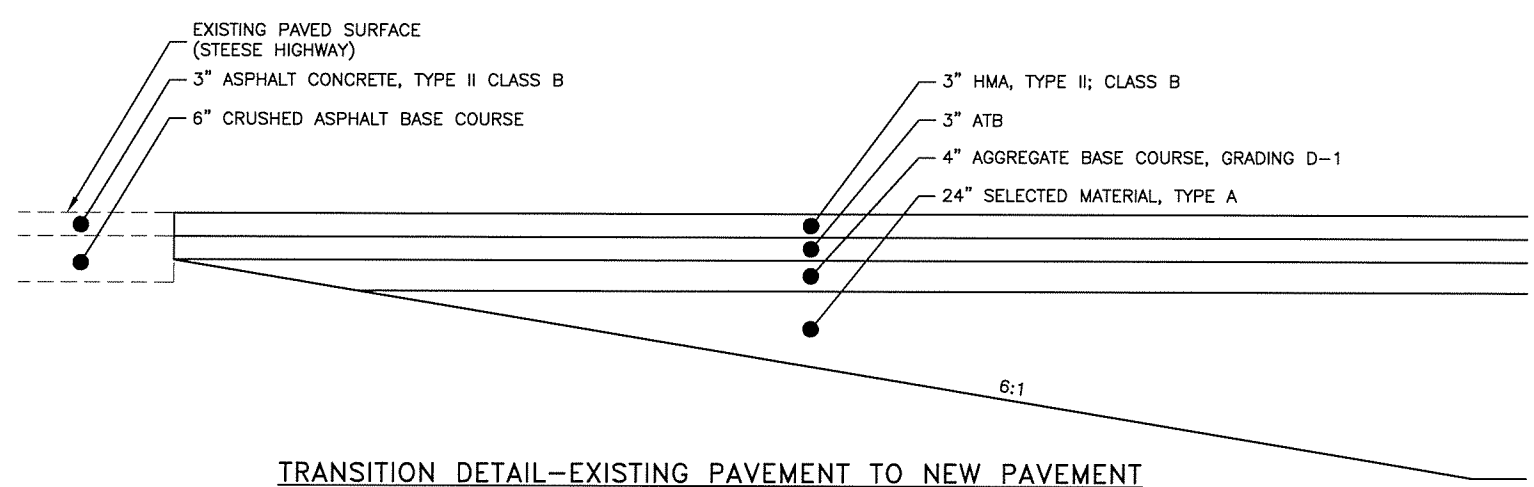
GUARDRAIL MARKER POST ATTACHMENT DETAIL
PARALLEL GUARDRAIL TERMINAL

GUARDRAIL MARKER NOTES:

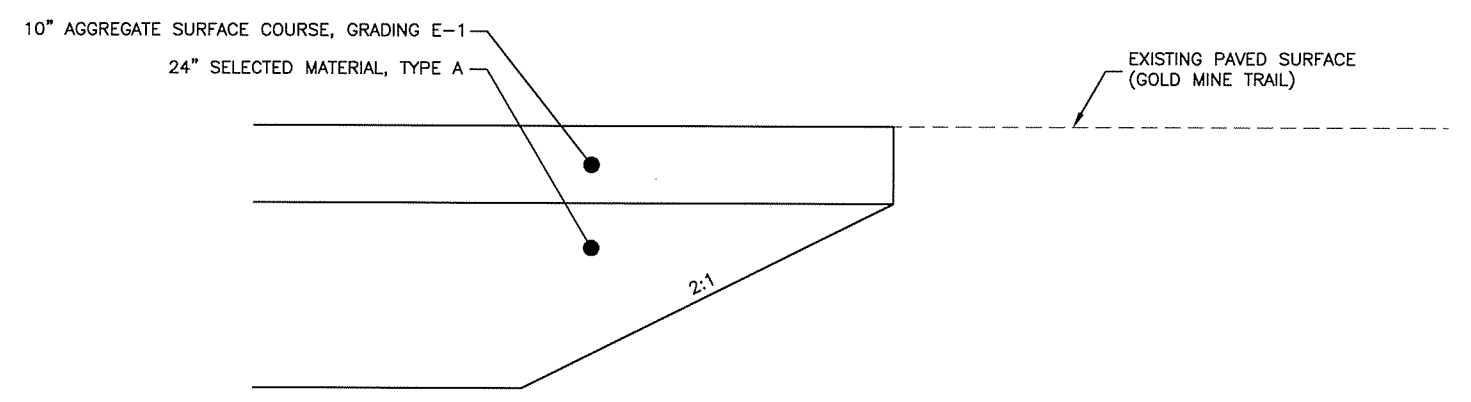
1. GUARDRAIL MARKER POSTS SHALL BE YELLOW, 3" MINIMUM TO 4" MAXIMUM WIDTH AND AT LEAST 78" LONG. POSTS SHALL BE CARSONITE CIB-380, TRAFFICWORKS TW-375, DAVIDSON FLEXI-GUIDE FG 500 FLEXIBLE MARKERS, OR APPROVED EQUAL.
2. INSTALL A 3" X 10" PIECE OF HI-INTENSITY, OR BETTER, REFLECTIVE TAPE AT THE TOP OF THE GUARDRAIL MARKER POST. COLOR OF REFLECTIVE TAPE SHALL MATCH COLOR OF ADJACENT EDGE LINE STRIPE. PLACE REFLECTIVE TAPE ON SIDE OF MARKER POST FACING TRAFFIC IN ADJACENT LANE.
3. DRILL ALL BOLT HOLES. COAT HOLES WITH ZINC RICH PAINT. FLAME CUTTING SHALL NOT BE PERMITTED.
4. ON CONTROLLED RELEASE TERMINALS (CRT), ATTACH GUARDRAIL MARKER POST TO THE GUARDRAIL POST AT THE POINT OF TANGENCY (P.T.) SHOWN ON STANDARD DRAWING G-25.20W.
5. ALL WORK AND MATERIAL REQUIRED TO INSTALL GUARDRAIL MARKER POSTS IS SUBSIDIARY TO 606 PAY ITEMS.



TRANSITION DETAIL-NEW PAVEMENT TO NEW AGGREGATE
"0" 18+00

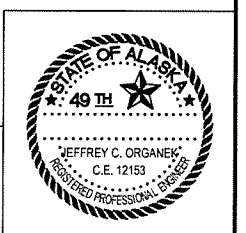


TRANSITION DETAIL-EXISTING PAVEMENT TO NEW PAVEMENT
STEESE HIGHWAY AT "0" 10+00



TRANSITION DETAIL-NEW AGGREGATE TO EXISTING PAVEMENT
"0" 50+00

DETAILS



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H:\Projects\015a_NFHWY00015 Gold Mine Trail Road Upgrade\9 Drafting\PS&E drawings\00015_E_Details-Details Mon, Nov/13/17 09:14am

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHwy00015	2017	E2	E4

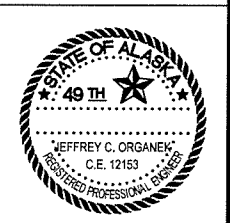
CULVERT SUMMARY												
STATION	EXISTING CULVERT	202(101) REMOVAL OF CULVERT PIPE (EA)	202(125) DECOMMISSION OF CULVERT PIPE (CY)	603(1)-24 (LF)	603(1)-36 (LF)	613(2) CULVERT MARKER POST (EA)	616(2) 1/2 INCH DIAMETER THAW PIPE (EA)	CULVERT ENERGY DISSIPATOR	REMARKS	AS-BUILT CENTERLINE LOCATION		
										STATION	LATITUDE	LONGITUDE
"L" 10+63	24" X 62' CSP	1										
"O" 10+88					102	2	1					
"O" 16+91	24" X 100' CSP	1										
"O" 16+91					98	2	1					
"O" 28+43	36" X 73' CSP	1										
"O" 28+43					100	2	1					
"O" 30+88	18" X 90' CSP		1									
"O" 35+23	18" X 77' CSP		1									
"O" 37+80				73		2	1					
"O" 40+01	36" X 133' CSP		1									
"O" 49+63	18" X 69' CSP	1										
TOTALS:		4	3	73	300	8	4	#				

CULVERT NOTES:

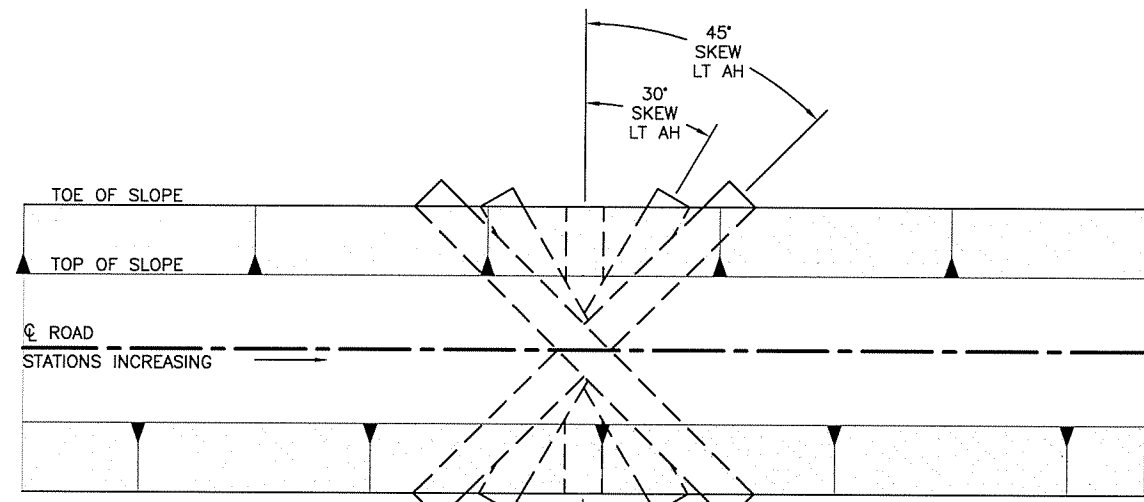
1. FOLLOW MANUFACTURERS INSTALLATION SPECIFICATIONS IN ALL CULVERT INSTALLATIONS.
2. ALL CULVERTS SHALL BE INSTALLED IN EXCAVATIONS ABSENT OF STANDING WATER.
3. CULVERT BEDDING AND BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 204 OF THE SPECIFICATIONS.
4. STATIONING AND SKEW FOR CULVERTS ARE APPROXIMATE. STAKE CULVERTS TO FIT FIELD CONDITIONS AND AS DIRECTED BY THE ENGINEER.
5. CULVERT LENGTHS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR. WHEN INSTALLING SKEWED CULVERTS, ENSURE THE FINAL LENGTH IS DETERMINED OFF THE NEAR EDGE, NOT THE CENTERLINE OF THE CULVERT.
6. REMOVAL OF EXISTING CULVERTS, MARKER POSTS, AND THAW PIPES BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT AND DISPOSED OF AT NO ADDITIONAL COST TO THE DEPARTMENT, UNLESS NOTED OTHERWISE.
7. IN AREAS OF POOR FOUNDATION, SUBEXCAVATE BENEATH CULVERTS 1 FOOT TO 3 FEET, OR GREATER TO PROVIDE ADEQUATE FOUNDATION, AS DIRECTED BY THE ENGINEER.
8. MINIMUM ALLOWABLE CULVERT CROSS SLOPE IS 0.5%, UNLESS NOTED OTHERWISE ON THE PLANS.
9. ALL CULVERTS SHALL HAVE A MINIMUM CAMBER EQUAL TO 1% OF THE LENGTH OF THE PIPE, UNLESS THE PROJECT ENGINEER DIRECTS OTHERWISE.
10. NO CULVERT SHALL BE PLACED UNTIL THE BED HAS BEEN APPROVED BY THE ENGINEER.
11. WHERE APRONS ARE NOT SPECIFIED, MINIMIZE DISTURBANCE TO THE VEGETATIVE MAT AROUND CULVERT ENDS, BUT CLEAR AND GRADE AS NEEDED TO ENSURE PROPER DRAINAGE. THIS WORK IS SUBSIDIARY TO 603 SERIES PAY ITEMS.
12. ESTABLISH RIPRAP APRONS AND FORESLOPES AS SOON AS POSSIBLE AS PERMANENT EROSION CONTROL.
13. PLACE GEOTEXTILE, EROSION CONTROL, CLASS I (NON-WOVEN), UNDER ALL RIPRAP. GEOTEXTILE SHALL BE TRIMMED SO THAT IT IS NOT VISIBLE UPON PROJECT COMPLETION.
14. ALL WORK FOR CULVERT ARMORING AND CULVERT RIPRAP APRONS, INCLUDING EXCAVATION AND CLEARING AND GRUBBING, IS SUBSIDIARY TO 611 PAY ITEMS.
15. THE CONTRACTOR SHALL ENTER AS-BUILT LOCATIONS FOR ALL CULVERTS IN THE CULVERT SUMMARY TABLE. COORDINATES SHALL BE LOCATED AT THE INTERSECTION OF THE CULVERT AND ROAD CENTERLINE. USE NAD 83 DATUM FORMATTED TO DEGREES, MINUTES, SECONDS TO A PRECISION OF 2 DECIMAL PLACES (DDD' MM' SS.SS"). THIS WORK IS SUBSIDIARY TO 603 SERIES PAY ITEMS.
16. ALL CULVERTS TO BE 12 GAGE UNLESS NOTED OTHERWISE ON PLANS AND SPECIFICATIONS.

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H:\Projects\Fbks_NP\FHwy00015 Gold Mine Trail Road Upgrade\9 Drafting\PS&E Drawings\00015_E_Details-CULVERT SUMMARY Mon, Nov/13/17 09:17am

CULVERT SUMMARY



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWY00015	2017	E3	E4

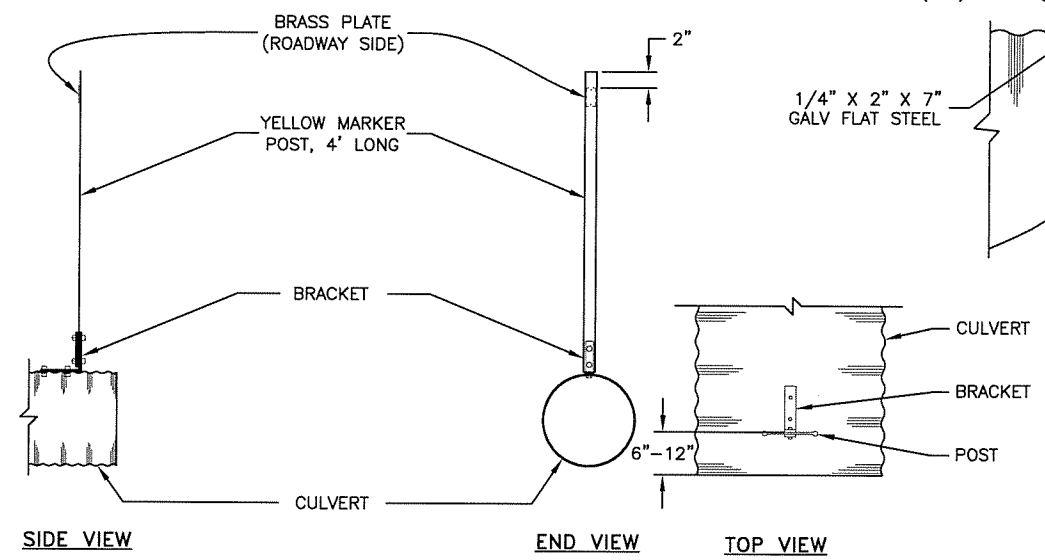


RT = RIGHT
LT = LEFT
AH = AHEAD

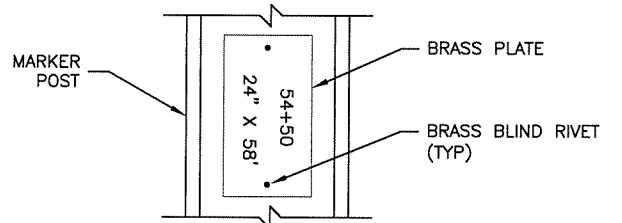
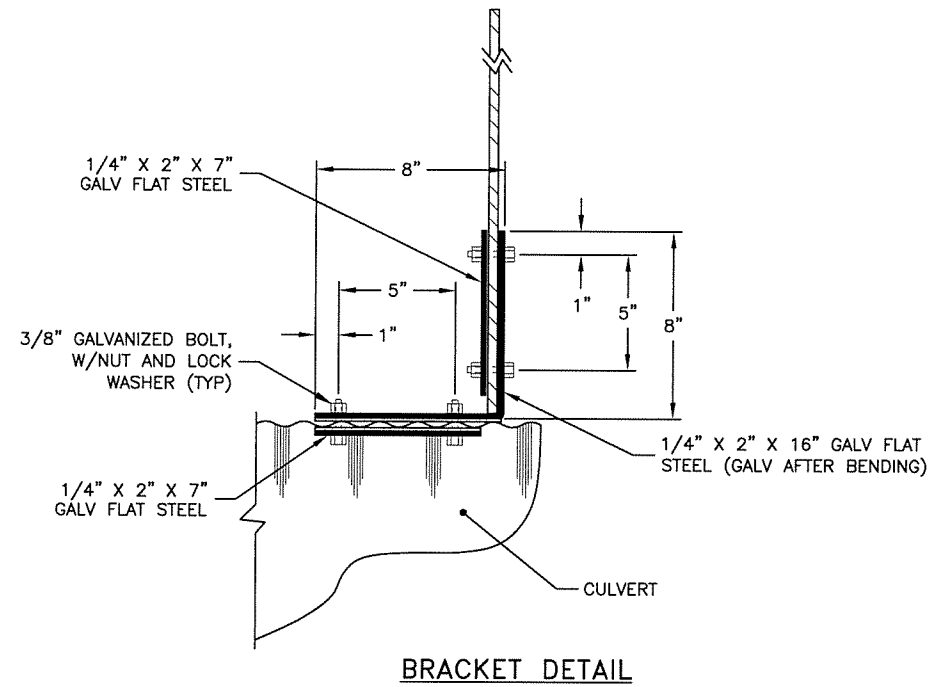
CULVERT SKEW

CULVERT MARKER POSTS NOTES:

1. MARKER POSTS ARE TO BE INSTALLED ON CROSS CULVERTS ONLY.
2. IF CULVERTS ARE CLOSELY SPACED, MARK ONLY THE FIRST AND LAST CULVERT IN SERIES AS APPROVED BY THE ENGINEER.
3. DRILL ALL BOLT HOLES. COAT HOLES WITH ZINC RICH PAINT. FLAME CUTTING SHALL NOT BE PERMITTED.
4. GASKET MATERIAL SHALL BE PLACED BETWEEN DISSIMILAR METALS. GASKET MATERIAL SHALL BE APPROVED PRIOR TO INSTALLATION.

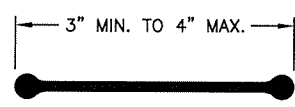


CULVERT MARKER POST DETAIL



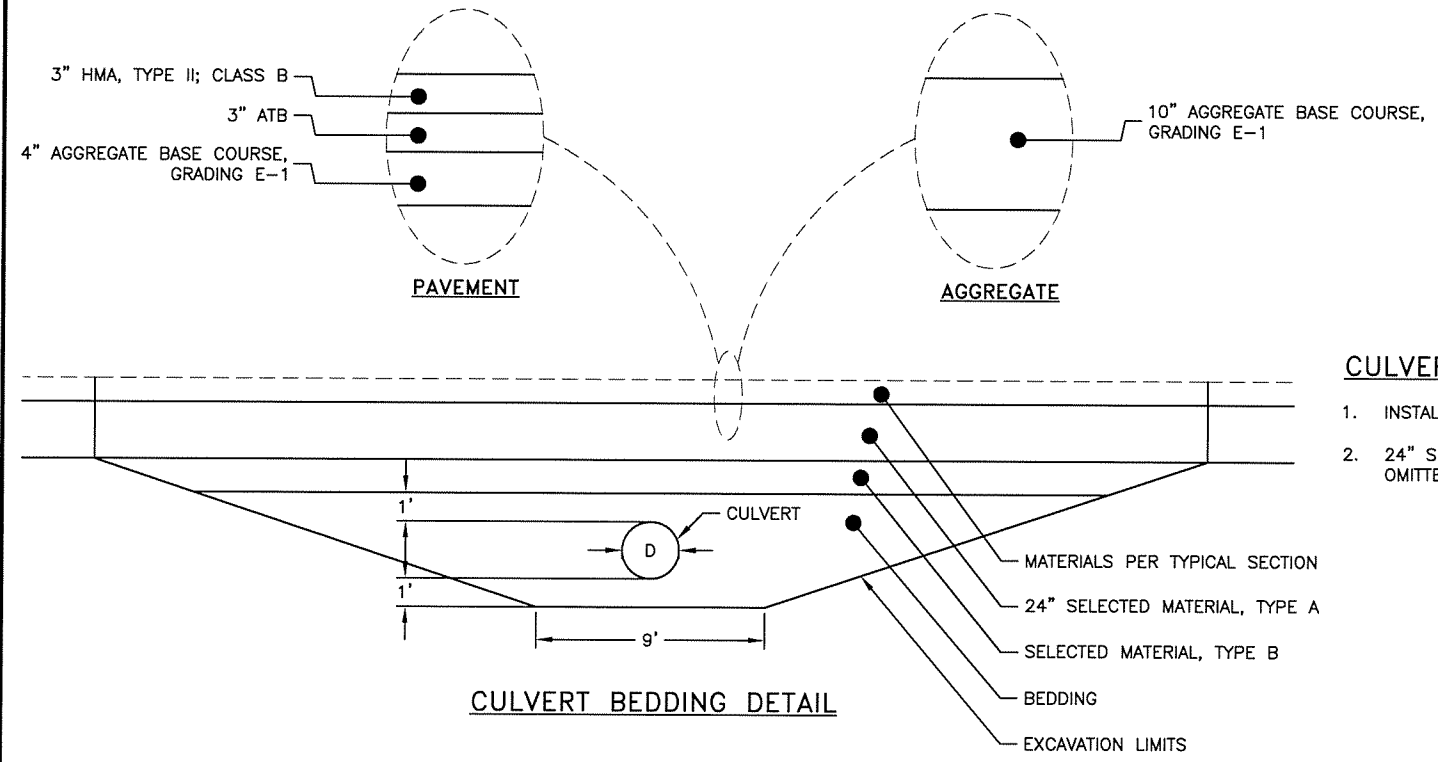
STAMP STATION AND PIPE SIZE, USING 3/8" HIGH MINIMUM LETTERS INTO A 2" X 4" X 0.064" THICK BRASS PLATE. FASTEN PLATE TO THE SIDE FACING THE ROADWAY WITH TWO 1/8" BRASS BLIND RIVETS.

BRASS PLATE DETAIL



CULVERT BEDDING NOTES:

1. INSTALL MATERIAL LAYERS AS SHOWN ON TYPICAL SECTIONS.
2. 24" SELECTED MATERIAL, TYPE A, AND SELECTED MATERIAL, TYPE B, LAYERS MAY BE OMITTED AS DIRECTED.

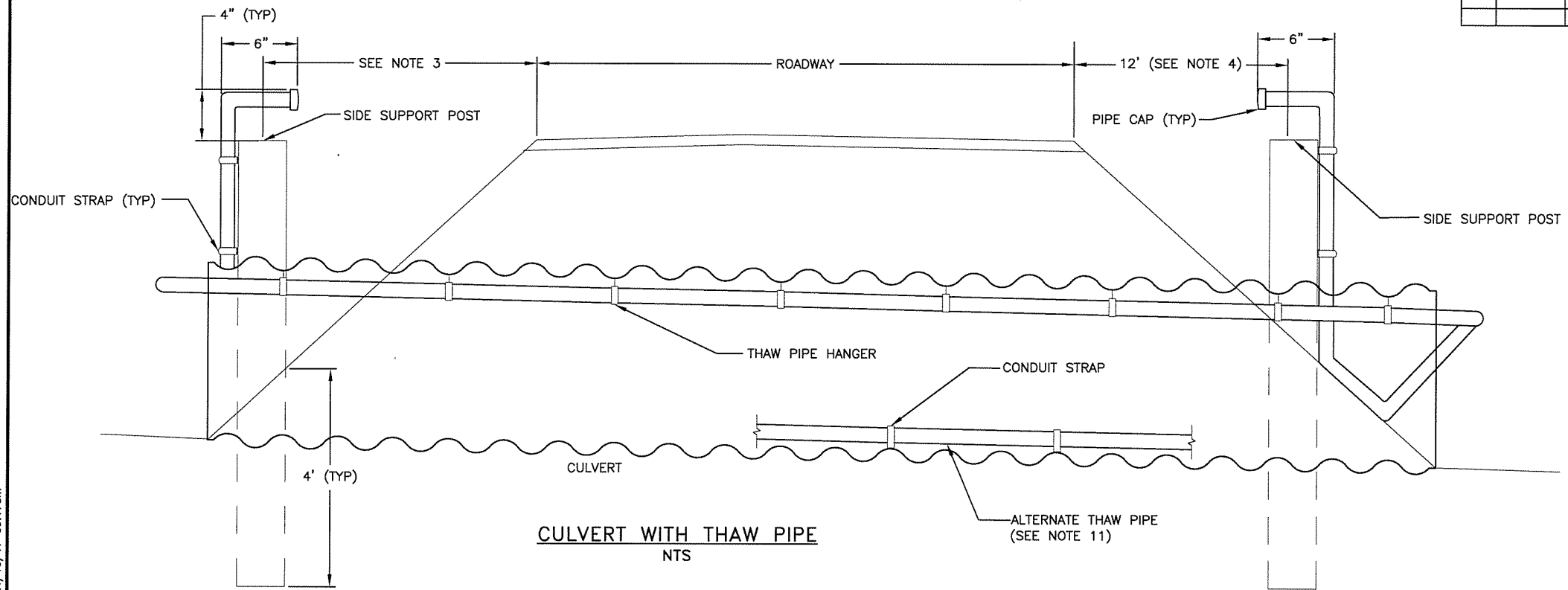


CULVERT DETAILS



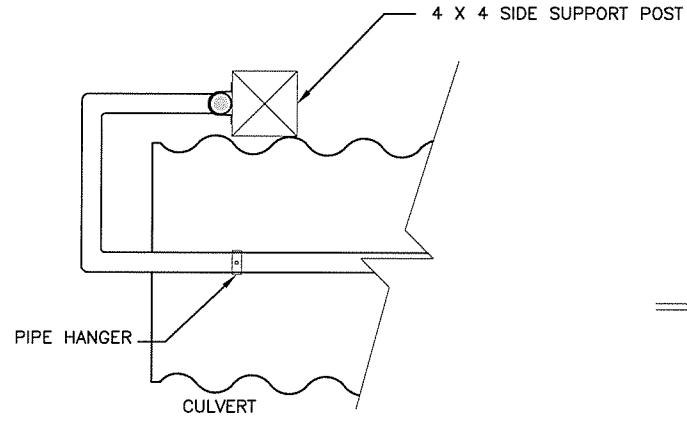
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H:\Projects\Fbks_NP\FHWY00015_Gold_Mine_Trail_Road_Upgrade\PS&E Drawings\00015_E_Details-CULVERT DETAILS Mon, Nov/13/17 09:17am

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWO0015	2017	E4	E4

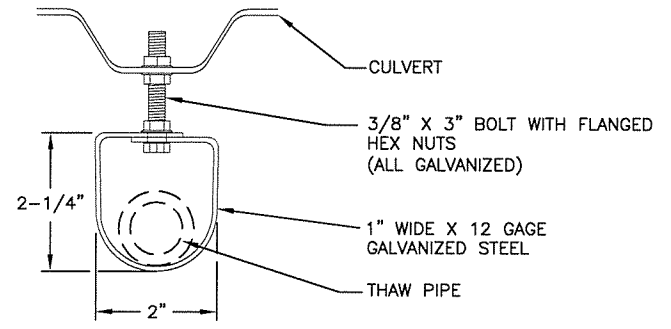


GENERAL NOTES:

1. THESE THAW PIPES ARE INTENDED FOR USE IN STEAM THAWING.
2. USE 1/2" ID SCHEDULE 40 BLACK IRON PIPE AND FITTINGS TO MATCH.
3. WHEN THE HEIGHT OF FILL IS LESS THAN 5' TO TOP OF PIPE, LOCATE SUPPORT POST AT THE TOE OF SLOPE.
4. WHEN THE HEIGHT OF FILL EXCEEDS 5' TO TOP OF PIPE, LOCATE THE SUPPORT POST ON THE SIDE SLOPE 12' FROM THE SHOULDER.
5. FASTEN THE THAW PIPE TO THE TOP OF THE CULVERT WITH THAW PIPE HANGERS ON 4' CENTERS MAX. THE MAXIMUM DISTANCE FROM END OF CULVERT TO FIRST PIPE HANGER IS 12 INCHES.
6. WHEN 2 THAW PIPES ARE CALLED FOR IN THE PLANS, INSTALL AT 10 O'CLOCK AND 2 O'CLOCK.
7. USE PRESSURE TREATED SUPPORT POSTS OF HEM-FIR, NO. 2 OR BETTER. USE AMMONIACAL COPPER ZINC ARSENATE (ACZA) OR CHROMATED COPPER ARSENATE (CCA) PRESERVATIVES ON SUPPORT POSTS. PRESSURE TREAT IN ACCORDANCE WITH AASHTO M133.
8. ALIGN THE TOP OF THE SUPPORT POST WITH THE EDGE OF SHOULDER, OR TO A MAXIMUM HEIGHT OF 5'.
9. FASTEN THAW PIPE TO SUPPORT POSTS WITH GALVANIZED RIGID CONDUIT STRAPS AND 3" LONG GALVANIZED LAG SCREWS AT MAX. 12" CENTERS, IF MORE THAN ONE IS REQUIRED.
10. FILL THAW PIPE WITH A MINUS 50° FAHRENHEIT MIX OF RV ANTIFREEZE AND WATER, THEN CAP.
11. PLACE THAW PIPES IN THE BOTTOM OF THE CULVERT, IF DIRECTED BY THE ENGINEER. ATTACH WITH GALVANIZED RIGID CONDUIT STRAPS USING SAME SPACING AS WITH HANGERS. ATTACH PIPES TO POSTS AS SHOWN.
12. DO NOT USE ANY COUPLINGS OR CONNECTION HARDWARE WITHIN 2' OF A CORNER.

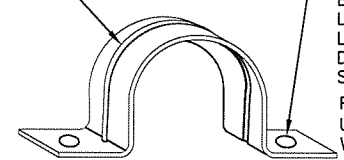


**LOW FILL CONDITION
TOP VIEW (NTS)**



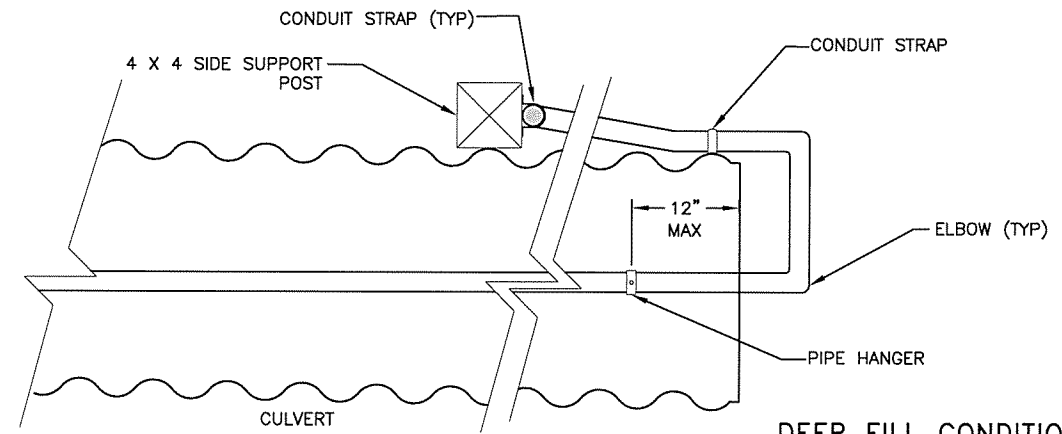
THAW PIPE HANGER DETAIL

SIZED TO FIRMLY HOLD THAW PIPE



GALVANIZED RIGID CONDUIT STRAP DETAIL

FOR ATTACHMENT TO POSTS AND BOTTOM OF CULVERT USE 2" MIN. LENGTH GALVANIZED LAG SCREWS WITH LOCK WASHERS, DIAMETER TO MATCH HOLES IN STRAP.
FOR ATTACHMENT TO SIDE OF CULVERT USE 2" GALVANIZED BOLTS, LOCK WASHERS AND NUTS.



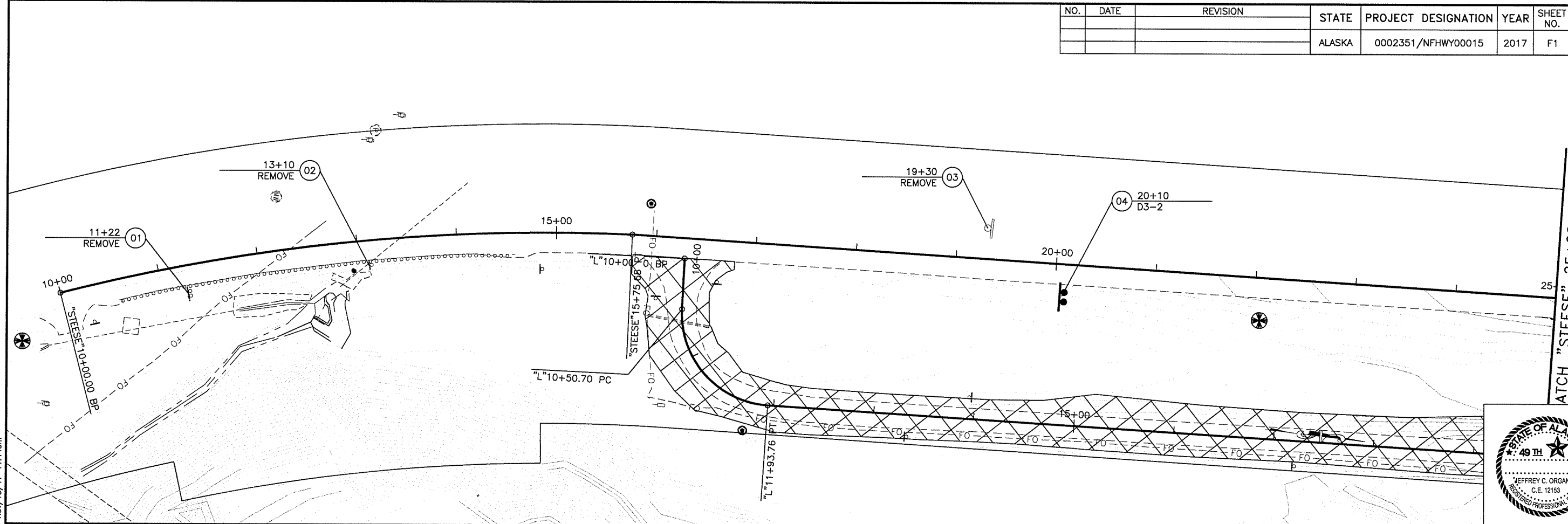
**DEEP FILL CONDITION
TOP VIEW (NTS)**

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H:\Projects\015a_NP\FHWO0015 Gold Mine Trail Road Upgrade\PS&E Drawings\00015_E_Details-CULVERT THAW PIPE DETAILS Mon, Nov/13/17 09:17am

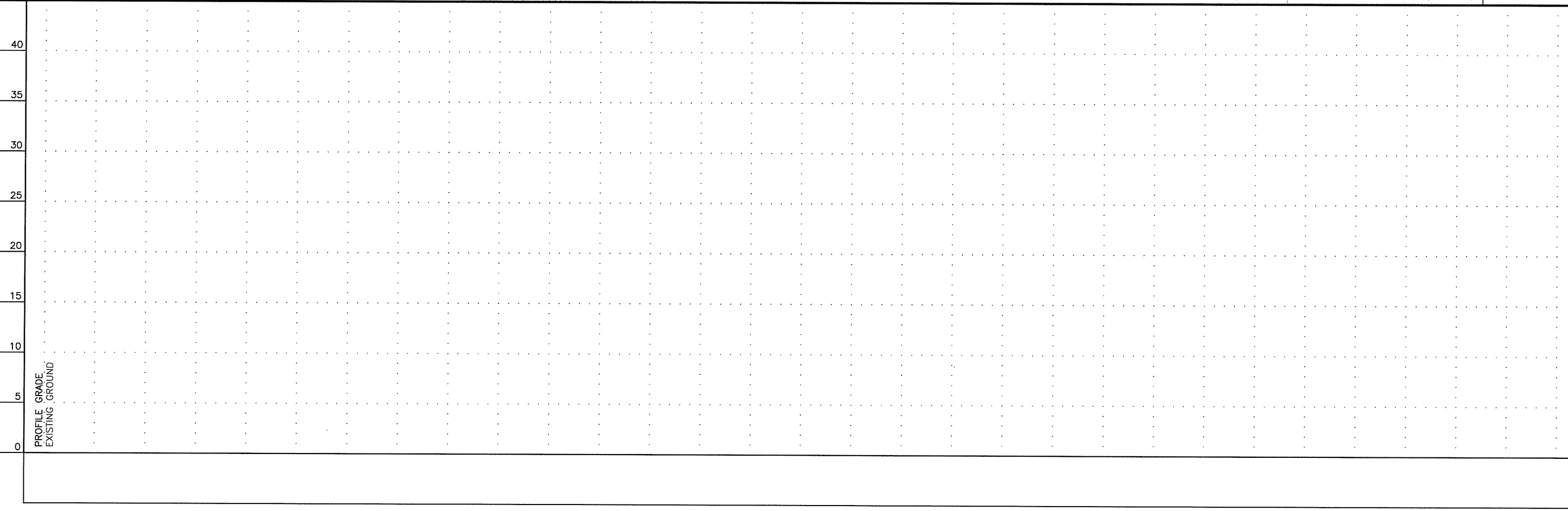


CULVERT THAW PIPE DETAILS

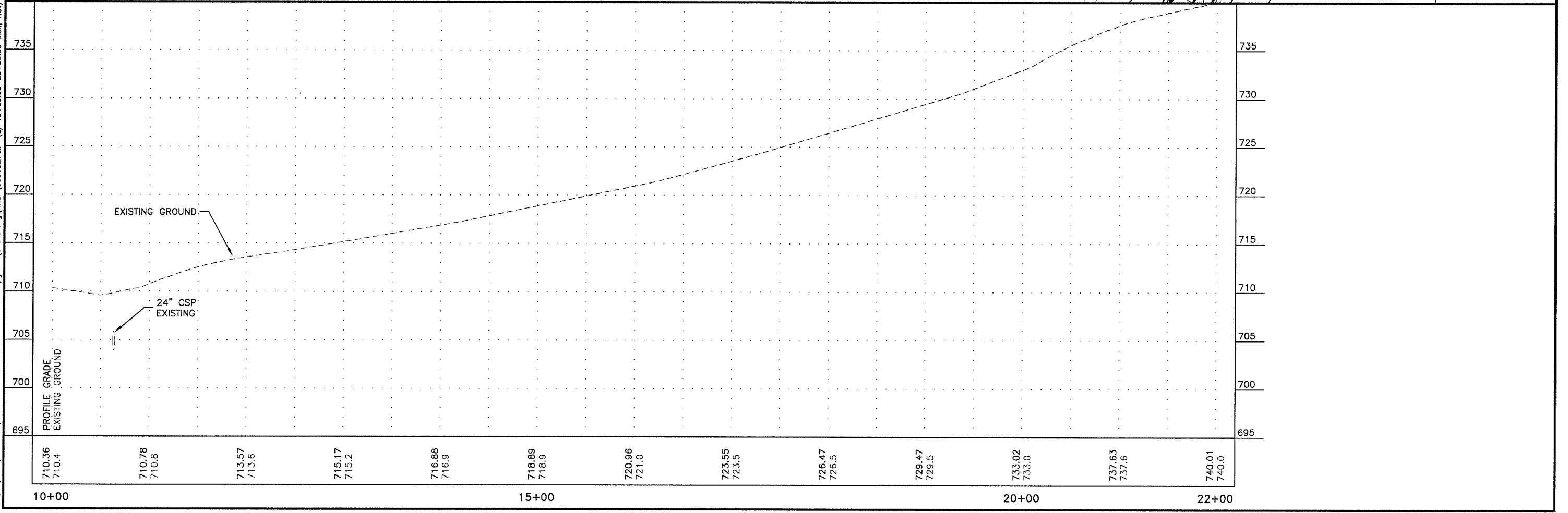
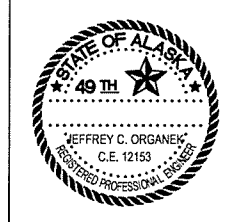
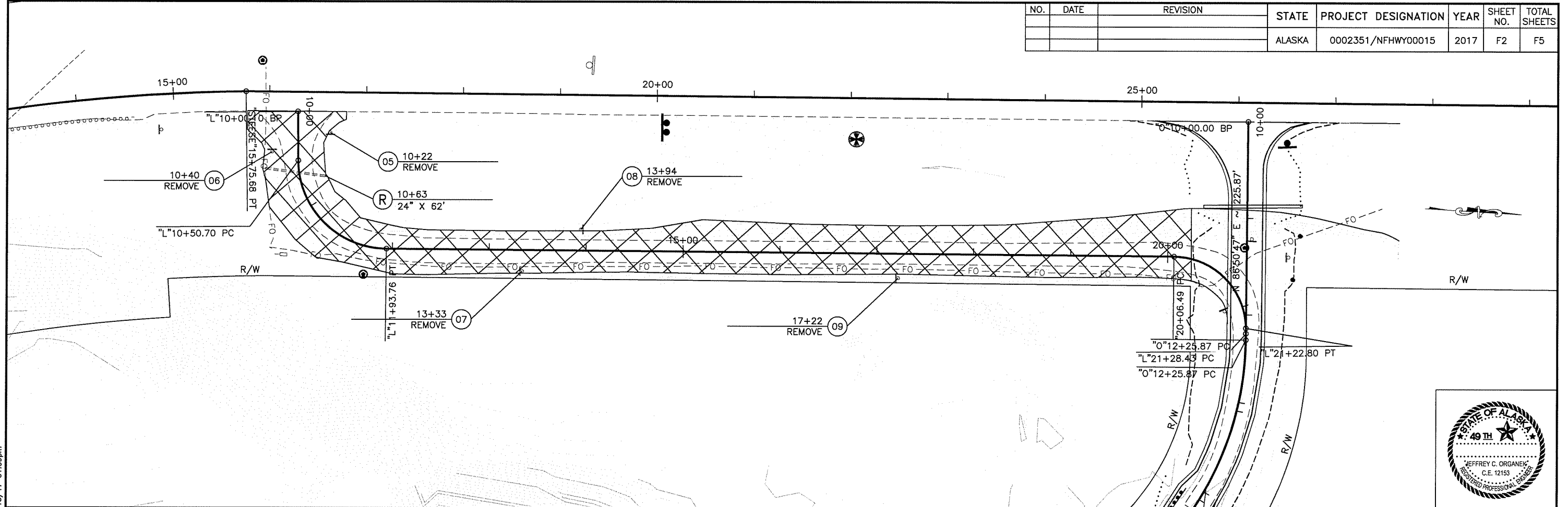
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWY00015	2017	F1	F5



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 H:\Projects\01511\NFHWY00015 Gold Mine Trail Road Upgrade\9 Drafting\REF\00015_P&P-(STEESSE) 10+00.00-25+00.00 Mon, Nov/13/17 11:44am

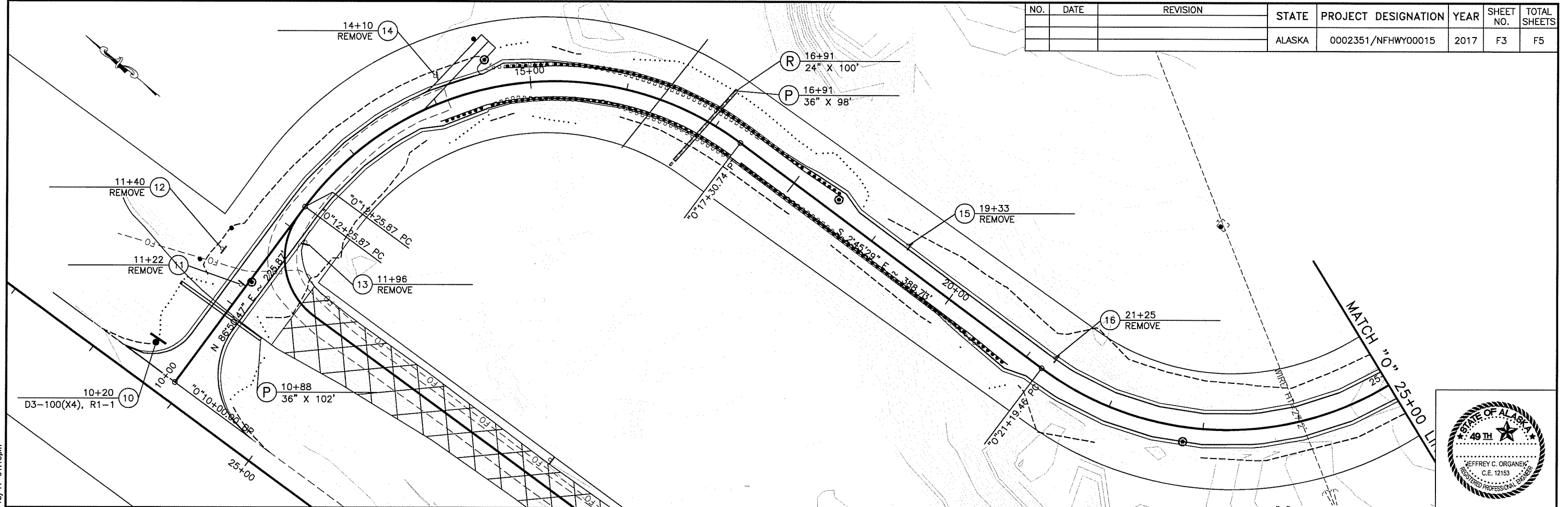


NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHwy00015	2017	F2	F5

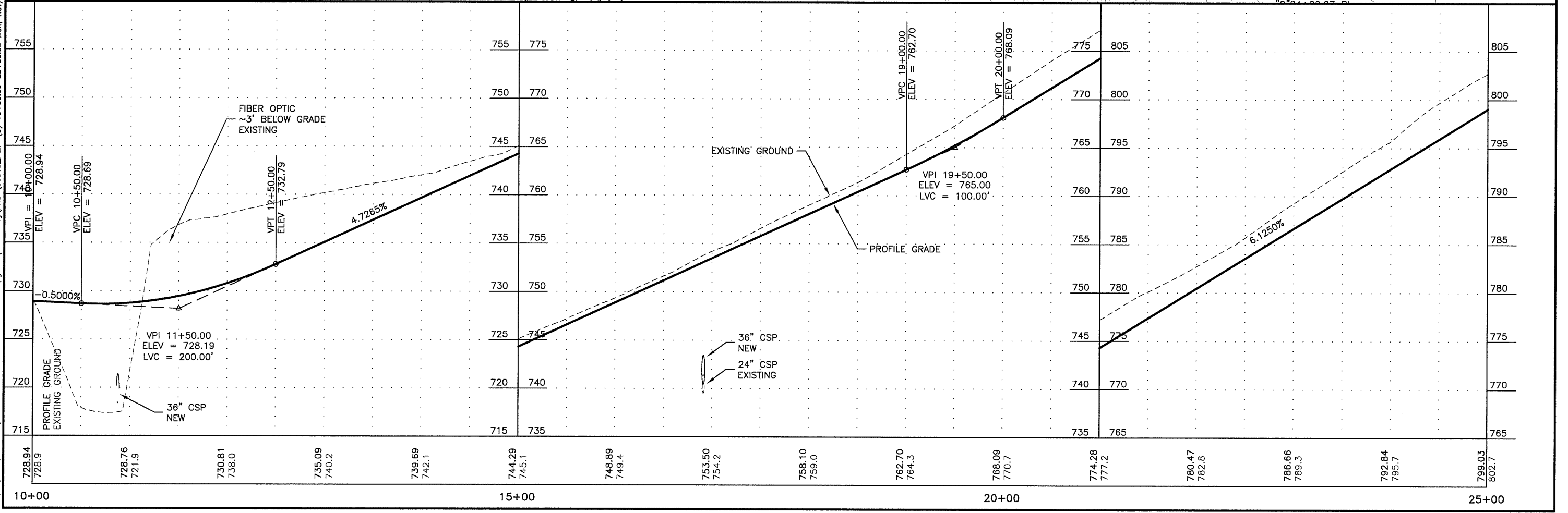


PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWY00015	2017	F3	F5

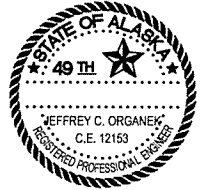
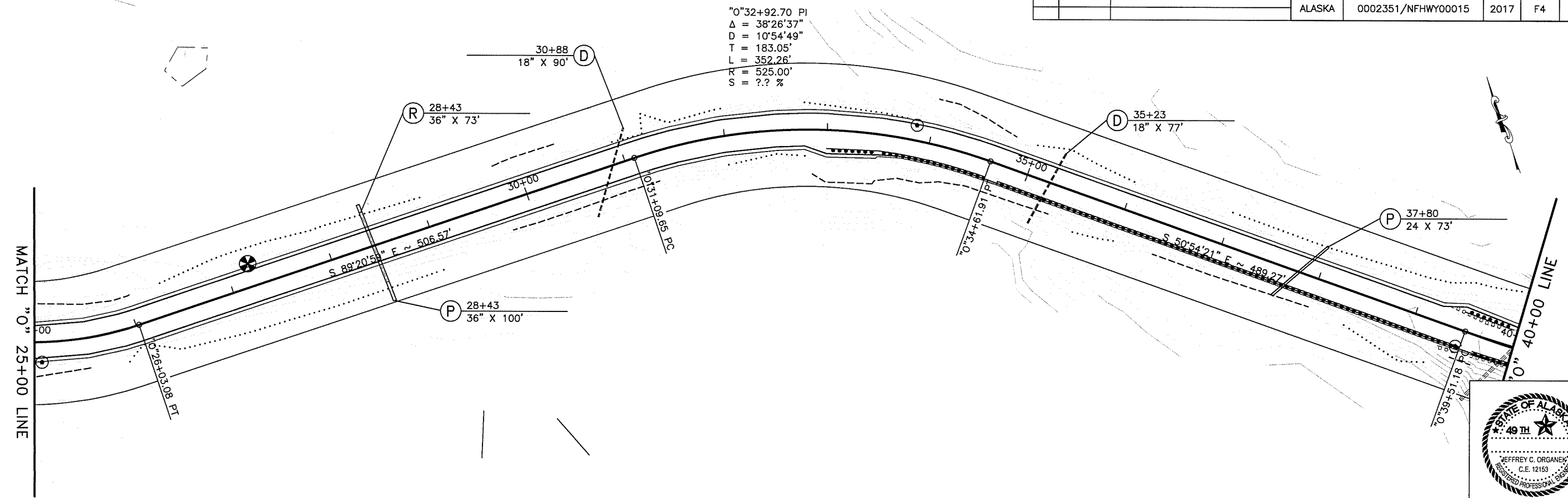


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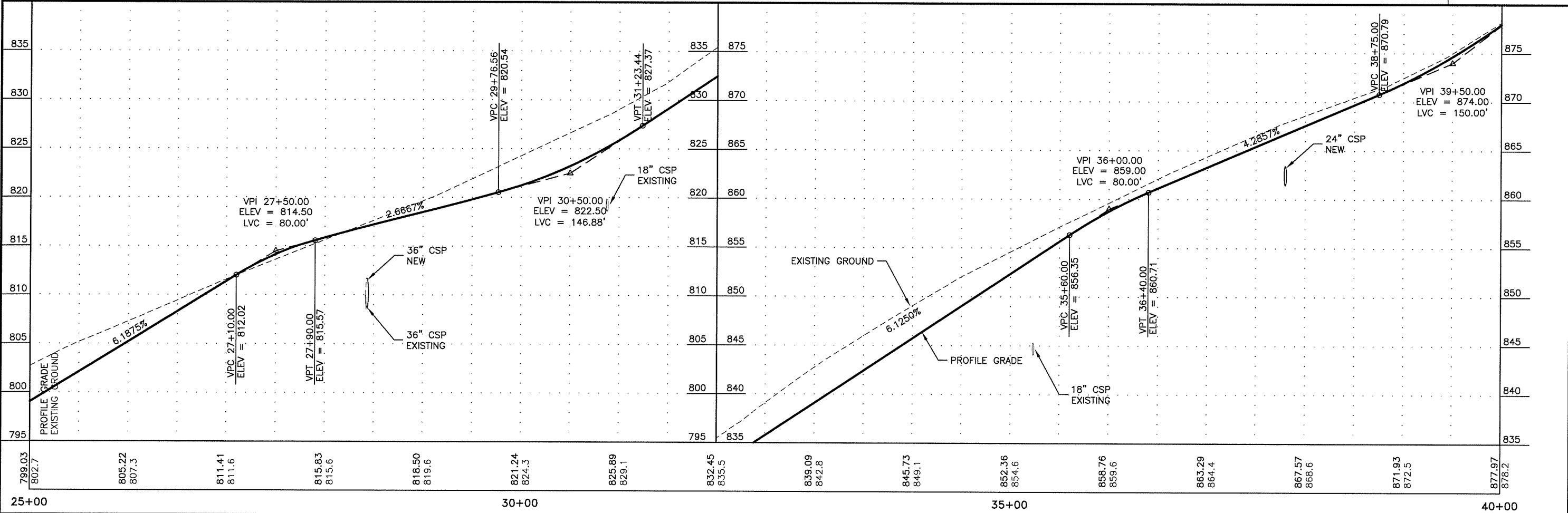


NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWY00015	2017	F4	F5

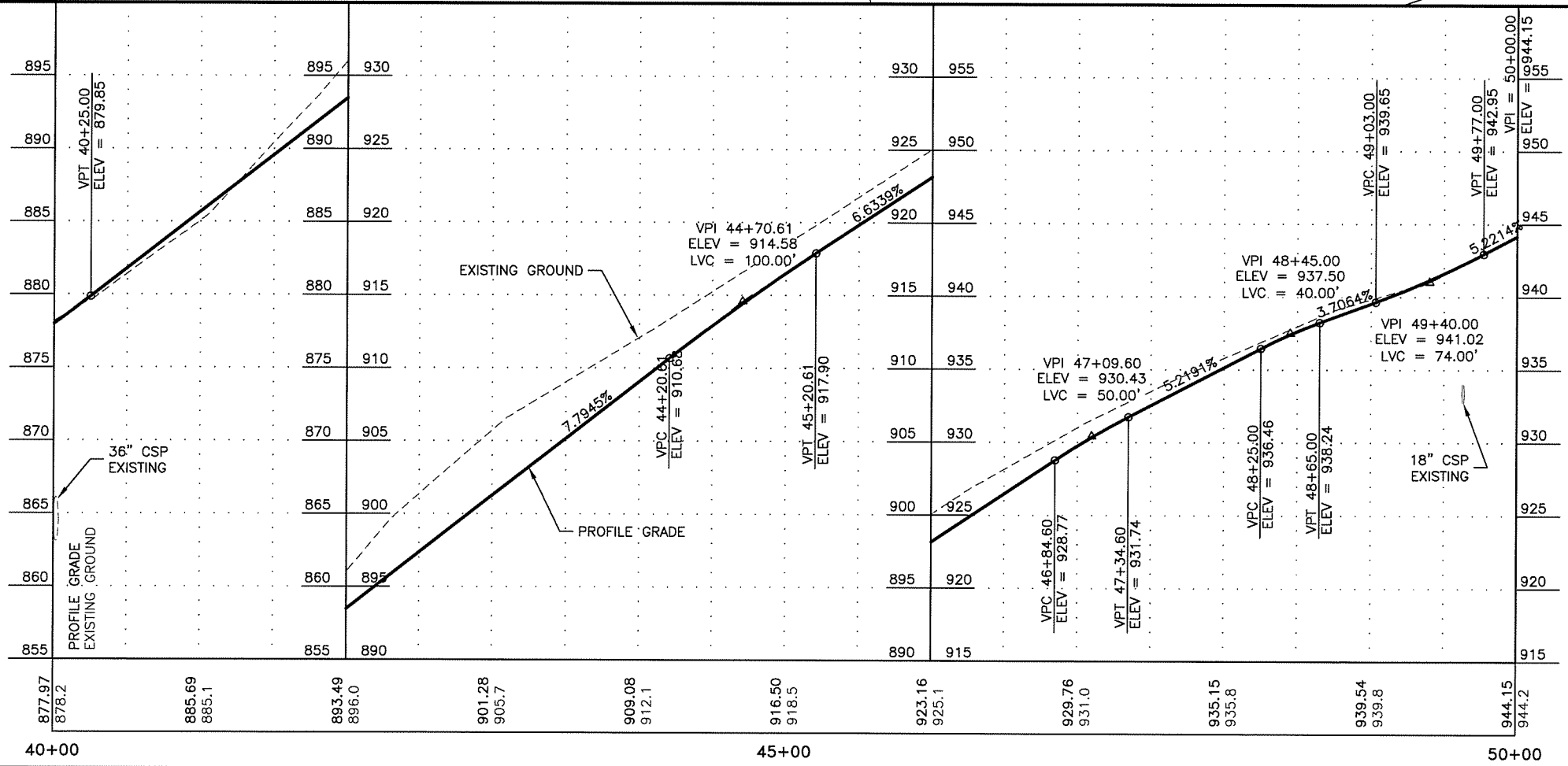
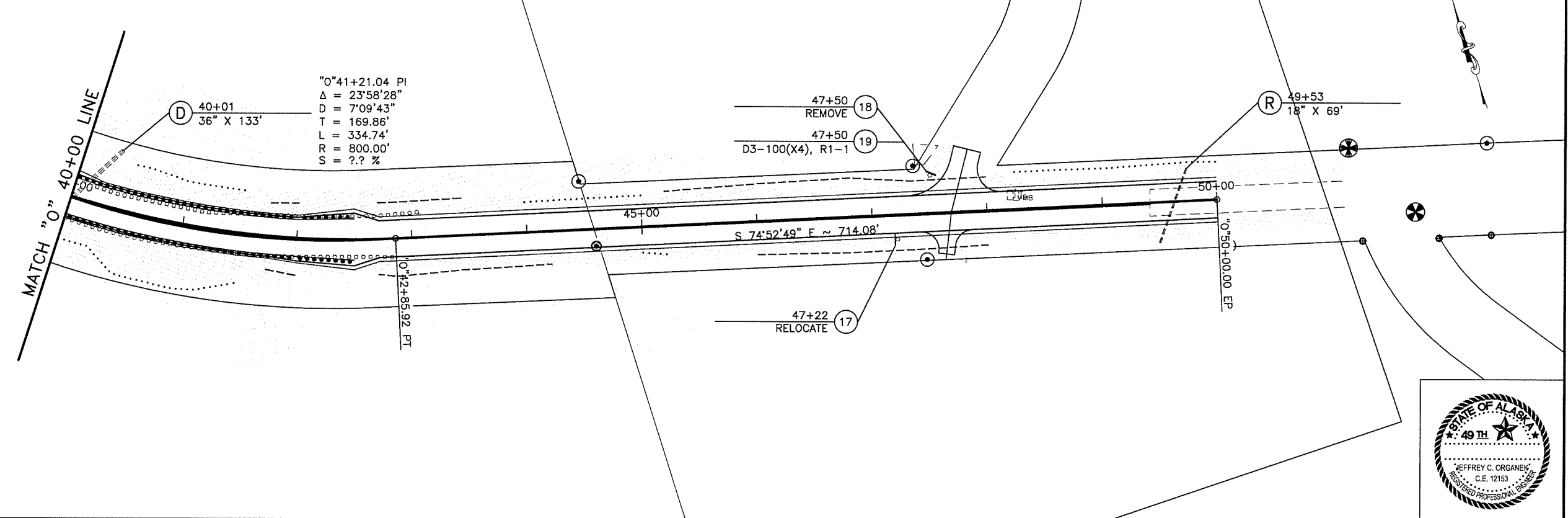
"O"32+92.70 PI
 $\Delta = 38^{\circ}26'37"$
 $D = 10^{\circ}54'49"$
 $T = 183.05'$
 $L = 352.26'$
 $R = 525.00'$
 $S = ??\%$



PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWY00015	2017	F5	F5



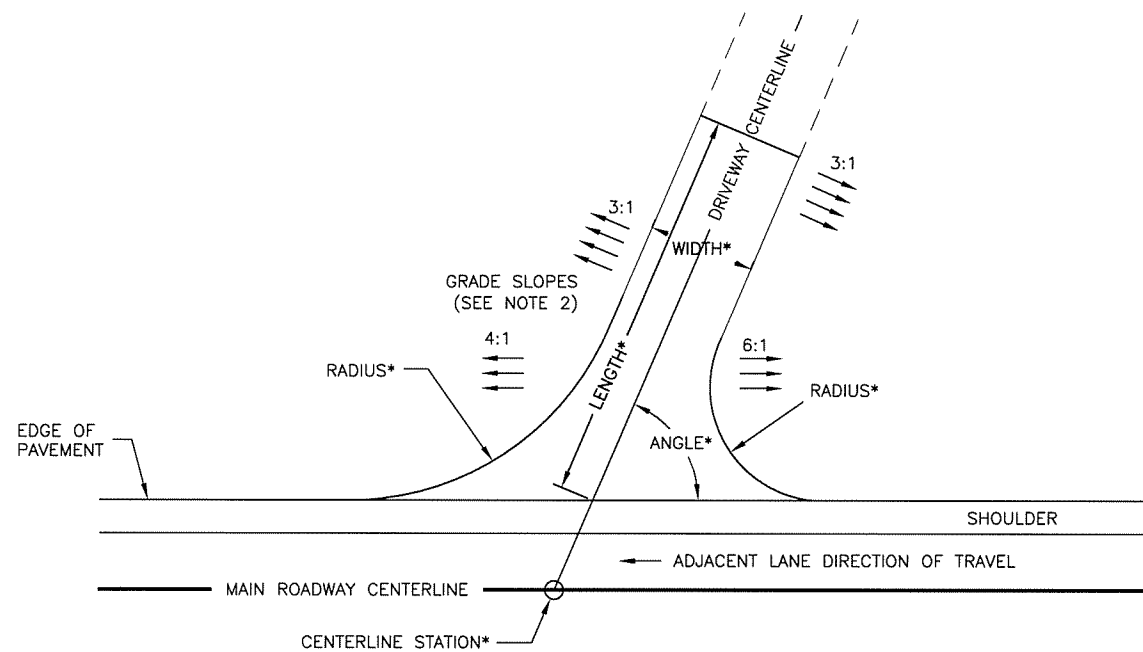
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 H:\Projects\Fhwa_NP\FHFW00015 Gold Mine Trail Road Upgrade\9 Drafting\REF\00015_P&P-(O) 40+00.00-50+00.00 Mon, Nov/13/17 01:16pm

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHwy00015	2017	G1	G1

APPROACH SUMMARY									
APPROACH	CENTERLINE STATION	LT	RT	ANGLE (DEG)	WIDTH (FT)	RADIUS (FT)	LANDING LENGTH (FT)	LANDING GRADE (%)	LENGTH (FT)
01	"STEESE" 100+00		X	90	32	50 / 80	30		80
02	"O" 13+85	X		28	20	5 / 40	30		60
03	"O" 47+69	X		73	24	20 / 40	30		40
04	"O" 47+69		X	81	14	15	12		20

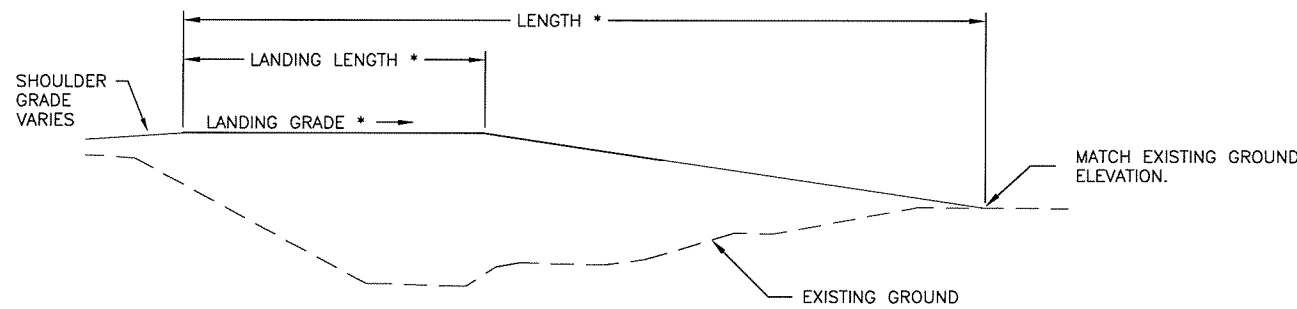
APPROACH DETAIL NOTES:

1. APPROACH DIMENSIONS AND LOCATIONS MAY BE FIELD ADJUSTED BY THE ENGINEER.
2. REMOVAL OF EXISTING APPROACH EMBANKMENT WILL NOT BE MEASURED FOR PAYMENT AND IS SUBSIDIARY.
3. BEYOND THE PAVING LIMIT, WARP EMBANKMENT SLOPES FROM 6:1 (H:V) TO 3:1 (H:V) OVER 50 FT AND FROM 4:1 (H:V) TO 3:1 (H:V) OVER 25 FT OR AS APPROVED BY THE ENGINEER. GRADING OF SLOPES IS SUBSIDIARY TO EMBANKMENT CONSTRUCTION.
4. BLEND AND GRADE FOR A SMOOTH TRANSITION BETWEEN THE DRIVEWAY AND THE EXISTING GROUND.
5. APPROACH RADIUS BEGINS AT END OF TAPER.
6. ENSURE POSITIVE DRAINAGE AWAY FROM THE ROADWAY AND DRIVEWAY EMBANKMENTS.
7. DRIVEWAY AND APPROACH TERMS ARE USED INTERCHANGEABLY.
8. STAKE EACH APPROACH AND PROVIDE THE ENGINEER WITH GRADING DETAILS FOR APPROACH LANDING, TRANSITION, AND SIDE SLOPES; OBTAIN ENGINEER APPROVAL PRIOR TO DEMOLITION OR CONSTRUCTION OF ANY APPROACH.

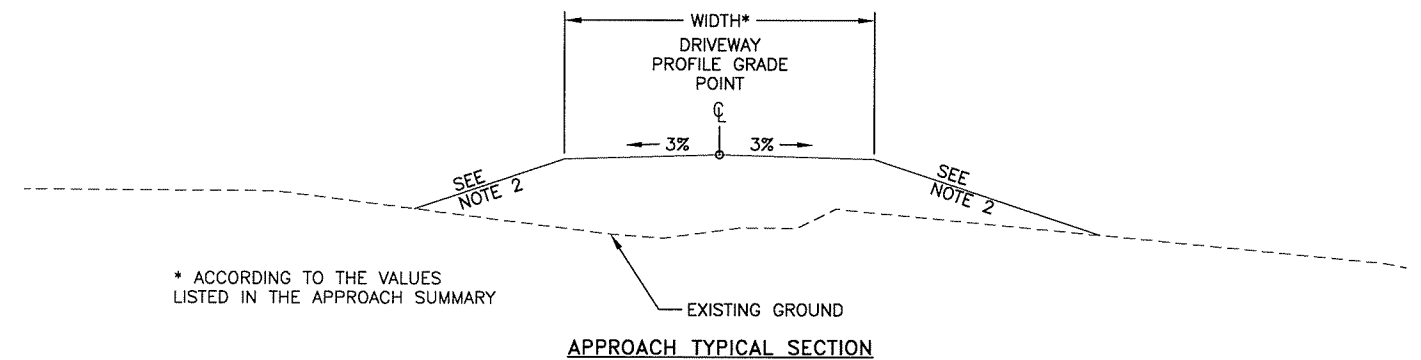


APPROACH PLAN VIEW

* ACCORDING TO THE VALUES LISTED IN THE APPROACH SUMMARY



APPROACH PROFILE CROSS-SECTION TYPICAL

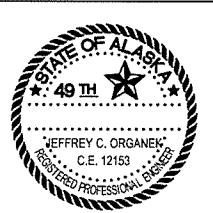


* ACCORDING TO THE VALUES LISTED IN THE APPROACH SUMMARY

APPROACH TYPICAL SECTION

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H:\Projects\Fkns_NF\NFHWY00015 Gold Mine Trail Road Upgrade\PS&E drawings\00015_G_Approaches-APPROACH SUMMARY & DETAILS Mon, Nov/13/17 01:18pm

APPROACH SUMMARY & DETAILS



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWY00015	2017	H1	H4

SIGNING SUMMARY

LOC. NO.	STATION	LOCATION		ASDS CODE	LEGEND	SIZE H X V (INCHES)	BRACING/FRAMING		AREA (SQ.FT.)	MTG. HGT. (FT.)	DIR.	POST			REMARKS
		LT.	RT.				BRACED	FRAMED				TYPE	SIZE (INCHES)	NO.	
01	"STEESSE" 11+22		X	D3-2	Gold Mine Tr-->	162 X 24					S	TS	3.5	2	REMOVE
02	"STEESSE" 13+10		X	W2-2R	Intersection T (Symbol)	36 X 36					S	PST	2.5	1	REMOVE
				W16-8P	GOLD MINE TR	54 X 12				S					
03	"STEESSE" 19+30	X		W2-2L	Intersection T (Symbol)	36 X 36					N	PST	2.5	1	REMOVE
				W16-8P	GOLD MINE TR	54 X 12				N					
04	"STEESSE" 20+10		X	D3-2	Gold Mine Tr-->	162 X 24		X	27.00		S	TS	3.5	2	SEE NOTE 18
05	"L" 10+22	X		D3-1	Steese Hwy	30 X 8					E	PST	2.5	1	REMOVE
				D3-1	Steese Hwy	30 X 8				W					
				D3-1	Gold Mine Tr	48 X 12				N					
				D3-1	Gold Mine Tr	48 X 12				S					
				R1-1	STOP	36 X 36				E					
06	"L" 10+40		X	W1-1L	Turn (Symbol)	36 X 36					W	PST	2.5	1	REMOVE
				W13-1	15 MPH	24 X 24				W					
07	"L" 13+33		X	R2-1	SPEED LIMIT 30	24 X 30					S	PST	2.5	1	REMOVE
08	"L" 13+94	X		W3-1	SYMBOL	36 X 36					N	PST	2.5	1	REMOVE
				W3-1	STOP AHEAD	24 X 18				N					
09	"L" 17+22		X	W1-1R	Turn (Symbol)	36 X 36					S	PST	2.5	1	REMOVE
				W13-1	10 MPH	24 X 24				S					
10	"O" 10+20	X		D3-100	Steese Hwy	30 X 8	X		1.67		E	PST	2.5	1	
				D3-100	Steese Hwy	30 X 8	X		1.67		W				
				D3-100	Gold Mine Tr	36 X 8	X		2.00		N				
				D3-100	Gold Mine Tr	36 X 8	X		2.00		S				
				R1-1	STOP	30 X 30	X		6.25		E				
11	"O" 11+22	X		W1-6L	LEFT ARROW	48 X 24					E	PST	2.5	1	REMOVE
				OM1-1	OBJECT MARKER	18 X 18				E					
12	"O" 11+40	X		W1-6R	RIGHT ARROW	48 X 24					S	PST	2.5	1	REMOVE
				OM1-1	OBJECT MARKER	18 X 18				S					
13	"O" 11+96		X	W1-1R	Turn (Symbol)	36 X 36					S	PST	2.5	1	REMOVE
				W13-1	10 MPH	30 X 30				S					
14	"O" 14+10	X		W1-1L	Turn (Symbol)	36 X 36					E	PST	2.5	1	REMOVE
				W13-1	10 MPH	24 X 24				E					
15	"O" 19+33	X		W1-11	HAIRPIN CURVE	36 X 36					S	PST	2.5	1	REMOVE
				W13-1	10 MPH	24 X 24				S					
16	"O" 21+25		X								PST	2.5	1	REMOVE PST	
SUBTOTAL = 40.58															

POST TYPE LEGEND:

PST = PERFORATED STEEL TUBE
 TS = TUBE STEEL (SQUARE STRUCTURAL STEEL TUBING)
 W_X_ = WIDE FLANGE

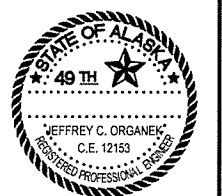
SIGNING SUMMARY

LOC. NO.	STATION	LOCATION		ASDS CODE	LEGEND	SIZE H X V (INCHES)	BRACING/FRAMING		AREA (SQ.FT.)	MTG. HGT. (FT.)	DIR.	POST			REMARKS
		LT.	RT.				BRACED	FRAMED				TYPE	SIZE (INCHES)	NO.	
17	"O" 47+22		X	R2-1	SPEED LIMIT 30	24 X 30					W	PST	2.5	1	REMOVE AND RELOCATE
18	"O" 47+50	X		D3-1	GOLD BEARING CT	36 X 8					E	PST	2.5	1	REMOVE
				D3-1	GOLD BEARING CT	36 X 8				W					
				R1-1	STOP	30 X 30				N					
19	"O" 47+50	X		D3-100	Gold Mine Tr	36 X 8	X		2.00		S	PST	2.5	1	
				D3-100	Gold Mine Tr	36 X 8	X		2.00		N				
				D3-100	Gold Bearing Ct	42 X 8	X		2.33		E				
				D3-100	Gold Bearing Ct	42 X 8	X		2.33		W				
				R1-1	STOP	30 X 30	X		6.25		N				
SUBTOTAL = 14.92															

NOTES:

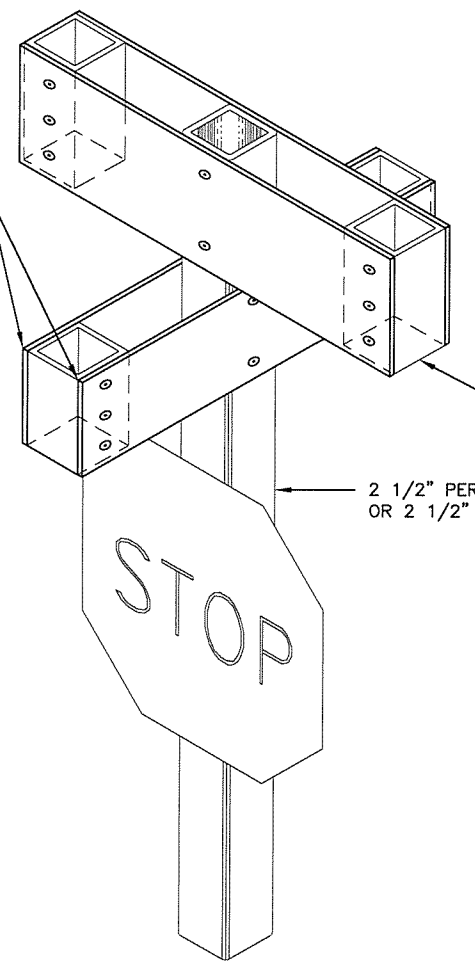
- REMOVE AND DISPOSE OF ALL EXISTING SIGNS AND SIGN FOUNDATIONS WITHIN THE PROJECT LIMITS, EXCEPT THOSE DESIGNATED FOR REINSTALLATION, SALVAGE OR OTHERWISE NOTED.
- MOUNTING HEIGHTS ARE PER STANDARD DRAWING S-05.01 UNLESS OTHERWISE NOTED.
- DETERMINE POST LENGTHS IN THE FIELD. DO NOT EXTEND POSTS ABOVE TOP OF SIGN.
- INSTALL PST SIGN POSTS WITH SLEEVE TYPE SOIL EMBEDMENT PER STANDARD DRAWING S-30.04. ATTACH THE SIGN POST TO THE SLEEVE USING GALVANIZED 3/8" BOLT, NUT, SPLIT LOCK WASHER AND TWO FLAT WASHERS.
- INSTALL "TUBE POST SIGN BRACING" AS SHOWN ON STANDARD DRAWING S-01.01 ON ALL SIGNS MOUNTED ON A SINGLE PST POST AND HAVING A HORIZONTAL DIMENSION OF 30 INCHES OR GREATER, EXCEPT D3-100 SERIES SIGNS. INSTALL GALVANIZED SPLIT LOCK WASHERS ON ALL 3/8" BOLTS. STAINLESS STEEL FASTENER HARDWARE MAY BE USED INSTEAD OF GALVANIZED. 1/4" X 1 1/2" ALUMINUM ALLOY 6061-T6 BAR MAY ALSO BE USED TO FABRICATE SIGN BRACES.
- ATTACH ALL SIGNS TO THEIR SUPPORTS WITH 3/8" BOLTS, EXCEPT ATTACH UNFRAMED SIGNS TO PST POSTS WITH ALUMINUM DRIVE RIVETS. WIND WASHERS ARE NOT REQUIRED WITH DRIVE RIVETS. INCLUDE SPLIT LOCK WASHERS WHEN BOLTS ARE USED.
- ALL FASTENER HARDWARE SHALL MEET THE REQUIREMENTS OF THE "FASTENER SPECIFICATION TABLE" ON SHEET H2.
- STOP (R1-1) AND YIELD (R1-2) SIGN LOCATIONS, ESPECIALLY THOSE AT LARGE RADIUS INTERSECTIONS, MAY NEED ADJUSTMENT IN THE FIELD. THE ENGINEER WILL APPROVE FINAL LOCATIONS.
- INSTALL D3-100 SIGNS ABOVE THEIR RESPECTIVE STOP SIGNS. WHEN TWO D3-100 SERIES SIGNS ARE TO BE LOCATED ON THE SAME POST, INSTALL THE CROSS-STREET PANEL IN THE LOWER POSITION.
- D3-100 SERIES SIGNS REQUIRE TWO SEPARATE SINGLE SIDED PANELS. END-BRACE PANELS PER SMALL STREET NAME SIGN BRACING DETAILS IN STANDARD DRAWING S-01.01.
- MAINTAIN EXISTING SIGNS UNTIL NEW SIGNS ARE INSTALLED. DO NOT LEAVE DUPLICATE OR CONFLICTING SIGNING UP AT ANY TIME.
- ALL SIGNS NOTED FOR REMOVAL AND REINSTALLATION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE IF THEY ARE DAMAGED DURING THE RELOCATION EFFORT.
- USE SERIES C LETTERS FOR D3-100 SERIES SIGNS UNLESS OTHERWISE NOTED. USE 4.5" FOR DIMENSION "E" FOR 12" D3-100 SIGNS. THE LETTERING INDICATING THE TYPE OF STREET (SUCH AS St, Ave, OR Rd) WILL BE UPPER CASE AND LOWER CASE. THIS MODIFIES THE ASDS.
- USE A 3" HORIZONTAL SPACING BETWEEN WORDS, BETWEEN CARDINAL DIRECTIONS AND WORDS, AND BETWEEN WORDS AND NUMBERS ON D3-100 AND D3-100A. SIGNS UNLESS OTHERWISE NOTED.
- LOCATE AND PROTECT ALL NEW AND EXISTING UNDERGROUND UTILITIES, INCLUDING BUT NOT LIMITED TO: PIPELINES, INTERCONNECT CABLES, SIGNAL SYSTEMS, LIGHTING SYSTEMS, STORM AND SANITARY SEWERS, WATER SYSTEMS, AND TELEPHONE AND ELECTRICAL CABLES, PRIOR TO INSTALLING SIGN POSTS. NOT ALL EXISTING UTILITIES MAY BE SHOWN ON THE PLANS.
- CLEARING MAY BE REQUIRED TO ENSURE ADEQUATE VISIBILITY OF SIGNS. THIS WORK IS SUBSIDIARY TO PAY ITEM 615(1).
- INSTALL WEATHER TIGHT CAPS ON ALL PIPE AND TUBE POSTS, EXCEPT PERFORATED STEEL TUBE.
- INSTALL FRANGIBLE COUPLING SYSTEMS IN ACCORDANCE WITH STANDARD DRAWING S-31.01.
- HINGED JOINTS WITH FRANGIBLE FUSE PLATES ARE REQUIRED ON ALL MULTIPLE POST SIGNS WITH FRANGIBLE COUPLING SYSTEMS. THE HINGE LOCATION ON ALL POSTS SHALL BE THE SAME DISTANCE BELOW THE SIGN, INSTEAD OF THE 6" MINIMUM SHOWN ON STANDARD DRAWING S-31.01. SEE MANUFACTURER'S SPECIFICATION FOR HINGE LOCATION BELOW SIGN.

SIGN SUMMARY



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWO0015	2017	H2	H4

INSTALL TWO D3-100 SERIES CROSS STREET NAME SIGNS BACK TO BACK ON THE POST



END BRACE (TYP)
SEE STANDARD DRAWING S-01

2 1/2" PERFORATED TUBE
OR 2 1/2" TUBE

SIGN WIDTH(W)	EFFECTIVE BRACE LENGTH		
	WARNING	YIELD	OTHER
24"	30"	18"	18"
30"	36"	24"	24"
36"	42"	30"	30"
42"	48"	-	36"
48"	54"*	36"	42"

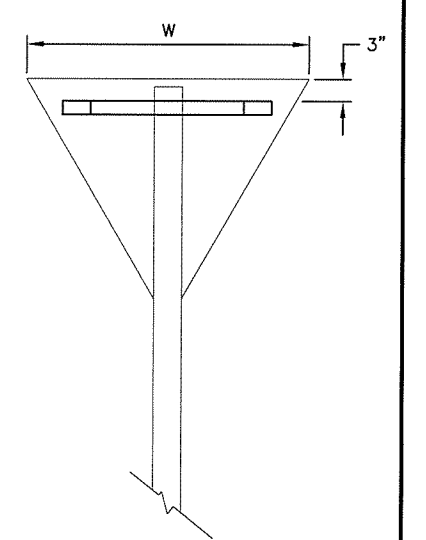
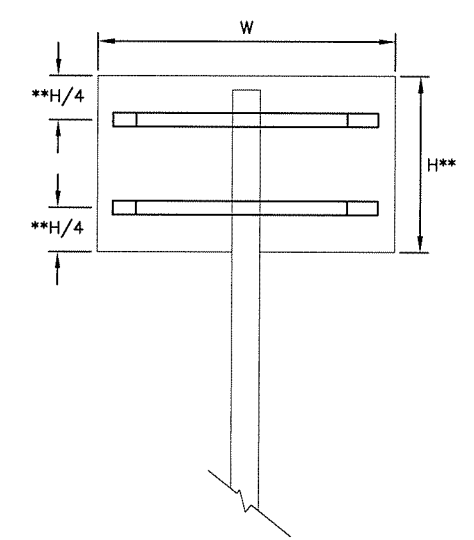
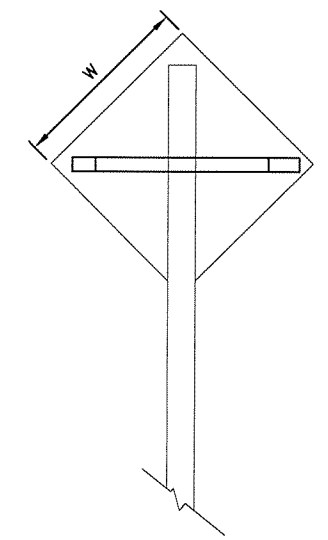
* OR FRAME 48" WARNING SIGNS WITH THREE WIND FRAMING MEMBERS AS SHOWN ON STANDARD DRAWING S-00.

NOTES:

1. ALL FASTENER HARDWARE SHALL MEET THE REQUIREMENTS OF THE "FASTENER SPECIFICATION TABLE" ON SHEET H2. STAINLESS STEEL FASTENER HARDWARE MAY BE USED INSTEAD OF GALVANIZED.
2. 1/4" X 1 1/2" ALUMINUM ALLOY 6061-T6 BAR MAY ALSO BE USED TO FABRICATE SIGN BRACES.
3. ADJUST LOCATION OF BRACING SO BOLTS AND WASHERS WILL MISS THE LEGEND.

FASTENER SPECIFICATION TABLE		
FASTENERS	STEEL	STAINLESS STEEL
BOLTS	ASTM A 307	ASTM F 593
NUTS	ASTM A 563	ASTM F 594
WASHERS	ASTM F 844	ASTM A 480

THESE SPECIFICATIONS APPLY TO ALL SIGN FASTENER HARDWARE ON THE PROJECT.



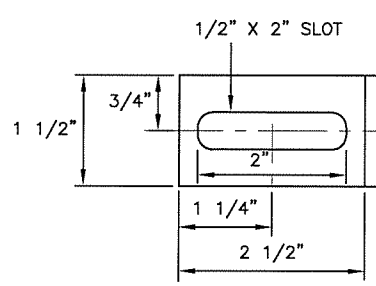
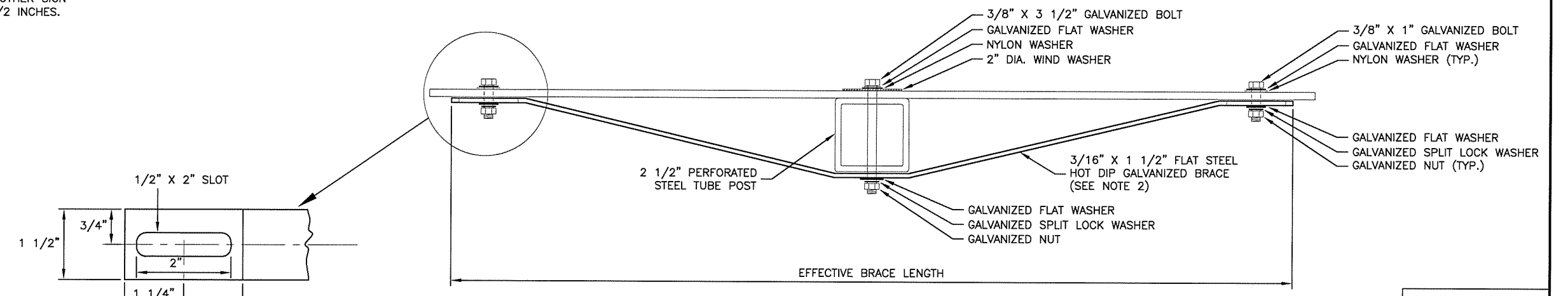
** USE ONE BRACE WHEN $H \leq 18"$
USE TWO BRACES WHEN $18" < H < 48"$
USE THREE BRACES WHEN $H \geq 48"$

STREET NAME SIGN MOUNTING DETAIL

STREET NAME SIGN NOTE:

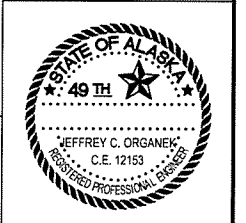
VERTICALLY SEPARATE R1-1 (STOP) SIGN AND ALL OTHER SIGN ASSEMBLIES MOUNTED ON THE SAME POST BY 2 1/2 INCHES.

SIGN BRACING PLACEMENT



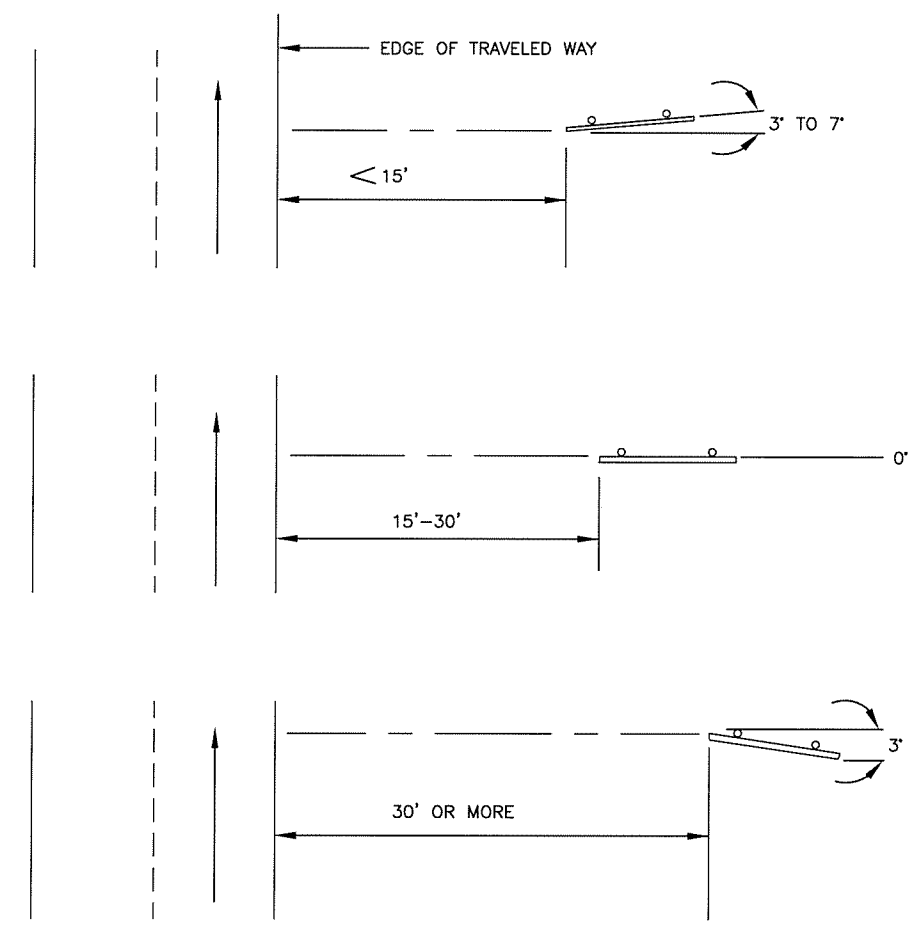
BRACE SLOT DETAIL
ELEVATION VIEW

PERFORATED STEEL TUBE POST SIGN BRACING
PLAN VIEW

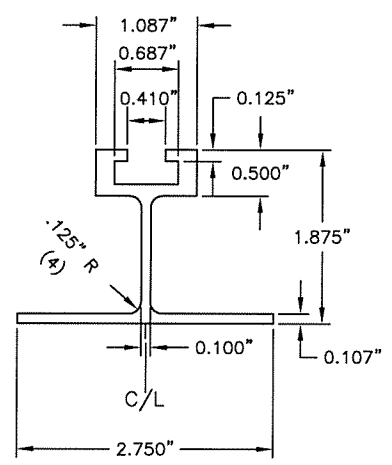


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H:\Projects\Fwks_NP\FHWO0015 Gold Mine Trail Road Upgrade\9 Drafting\PS&E drawings\00015_H_Signing-Signing DETAILS 1 OF 2 Mon, Nov/13/17 01:20pm

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWY00015	2017	H3	H4

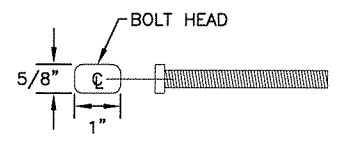


SIGN INSTALLATION ANGLES

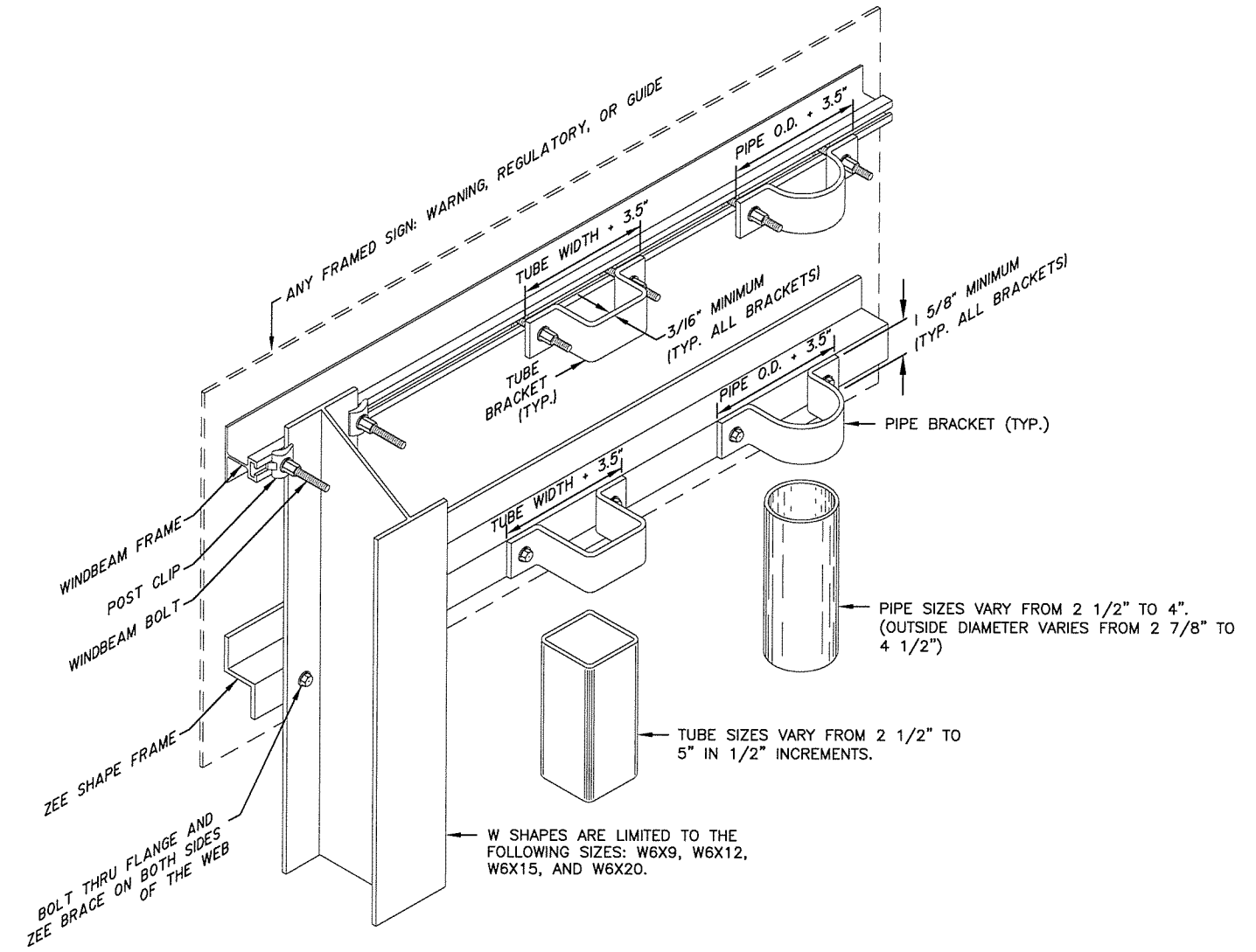


EXTRUDED ALUMINUM WINDBEAM

- NOTES:**
1. ALUMINUM ALLOY 6061-T6 SHALL BE USED FOR EXTRUDED WINDBEAM AND RIVETS.
 2. ATTACH SIGNS TO WINDBEAM WITH 3/6" RIVETS AT 4" STAGGERED SPACING.

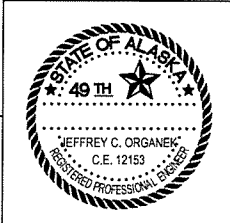


3/8" WINDBEAM BOLT



FRAMED SIGN ATTACHMENT BRACKETS

- NOTES:**
1. ATTACH FRAMED SIGNS TO POSTS WHEREVER THE FRAMES CROSS THE POSTS. AT EACH CROSSING, ATTACH THE SIGN USING TWO POST CLIPS ON W-SHAPE POSTS, A U-SHAPED BRACKET ON PIPES OR A BRACKET WITH SQUARE CORNERS ON TUBES.
 2. THE TUBE BRACKETS USED ON EVEN INCH SIZE TUBES MAY ALSO BE USED ON TUBES 1/2" SMALLER IN SIZE.
 3. THE BRACKET DETAILS SHOWN INDICATE GENERAL DESIGNS ONLY. DESIGNS MAY VARY BY MANUFACTURER.
 4. ALUMINUM ALLOY 6061-T6 SHALL BE USED FOR ZEE SHAPE FRAMING AND RIVETS.



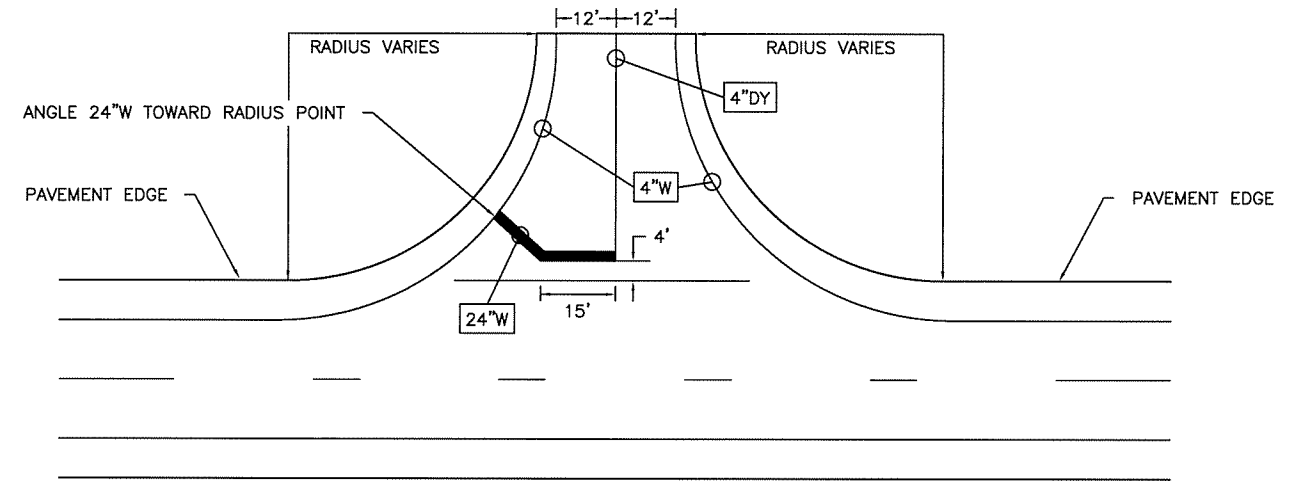
PLANS DEVELOPED BY: STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, NORTHERN REGION, 2301 PEGER ROAD, FAIRBANKS, AK 99709 (907)451-2200
 H:\Projects\Alaska\NFHWY00015 Gold Mine Trail Road Upgrade\9 Drafting\PS&E drawings\00015_H_Signing-Signing DETAILS 2 OF 2 Mon, Nov/13/17 01:20pm

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWY00015	2017	H4	H4

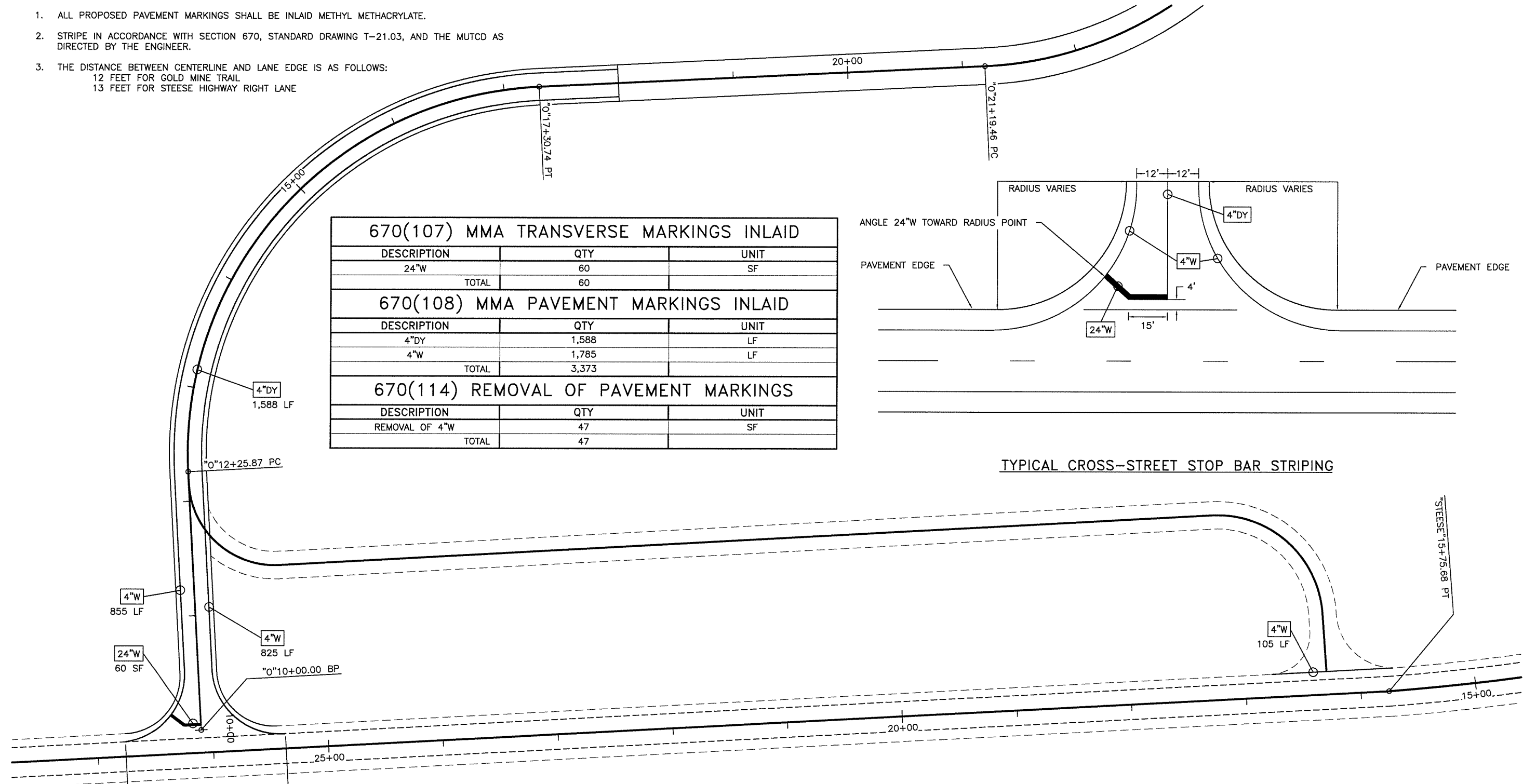
STRIPING NOTES:

- ALL PROPOSED PAVEMENT MARKINGS SHALL BE INLAID METHYL METHACRYLATE.
- STRIPE IN ACCORDANCE WITH SECTION 670, STANDARD DRAWING T-21.03, AND THE MUTCD AS DIRECTED BY THE ENGINEER.
- THE DISTANCE BETWEEN CENTERLINE AND LANE EDGE IS AS FOLLOWS:
 12 FEET FOR GOLD MINE TRAIL
 13 FEET FOR STEESE HIGHWAY RIGHT LANE

670(107) MMA TRANSVERSE MARKINGS INLAID		
DESCRIPTION	QTY	UNIT
24"W	60	SF
TOTAL	60	
670(108) MMA PAVEMENT MARKINGS INLAID		
DESCRIPTION	QTY	UNIT
4"DY	1,588	LF
4"W	1,785	LF
TOTAL	3,373	
670(114) REMOVAL OF PAVEMENT MARKINGS		
DESCRIPTION	QTY	UNIT
REMOVAL OF 4"W	47	SF
TOTAL	47	



TYPICAL CROSS-STREET STOP BAR STRIPING



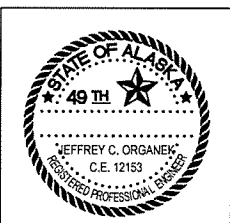
140 LF = 47 SF
 REMOVAL OF EXISTING
 4"W PAVEMENT MARKINGS

TRAFFIC MARKING KEY

- 4"W 4" WHITE LINE
- 4"DY 4" DOUBLE YELLOW LINE
- 24"W 24" WHITE LINE

NOTE:
 DIMENSIONS ARE TO CENTER OF STRIPE OR STRIPE GROUP.

STRIPING



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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWY00015	2017	Q1	Q4

GENERAL SITE INFORMATION:

1. SITE FUNCTION: ROAD.
2. AVERAGE ANNUAL PRECIPITATION = 14.37 INCHES (SOURCE: WESTERN REGIONAL CLIMATE CENTER WEBSITE FOR GILMORE CREEK, AK).
3. 2-YEAR 24-HOUR PRECIPITATION = 1.27 INCHES (SOURCE: http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_ak.html).

SEE SHEET A1 FOR GENERAL PROJECT AREA MAP.
SEE USGS QUAD MAPS FAIRBANKS D-2 NE.

LOCATION	QUADRANGLE	SECTION	TOWNSHIP	RANGE	MERIDIAN
GOLD MINE TRAIL ROAD	FAIRBANKS (D-2)	6,7	01 N	01 E	FAIRBANKS

PROJECT INFORMATION TABLE

PROJECT AREA (ACRE)	8.3
RECLAIMED PAVEMENT AREA (ACRE)	0.8
PRE-CONSTRUCTION IMPERVIOUS AREA (ACRE)	0.8
POST-CONSTRUCTION IMPERVIOUS AREA (ACRE)	0.7
PRE-CONSTRUCTION RUNOFF COEFFICIENT	0.7
POST-CONSTRUCTION RUNOFF COEFFICIENT	0.7

RUNOFF COEFFICIENTS:

TYPE OF SURFACE	RUNOFF COEFFICIENT (C)
PAVED	0.7-0.9
GRAVEL ROADWAY OR SHOULDERS	0.4-0.6
CUT, FILL SLOPES	0.5-0.7
GRASSED AREAS	0.1-0.7

NOTE: FROM HYDRAULIC CIRCULAR #12, "DRAINAGE OF HIGHWAY PAVEMENTS" MARCH 1984, PAGE 12. FOR FLAT SLOPES AND/OR PERMEABLE SOILS, USE LOWER VALUE. FOR STEEP SLOPES AND/OR IMPERMEABLE SOILS, USE HIGHER VALUES.

ENVIRONMENTAL INFORMATION:

1. RECEIVING WATER BODIES: ENGINEER CREEK.
2. IMPAIRED WATER BODIES: NONE.
3. TOTAL MAXIMUM DAILY LOAD (TMDL) WATERS: NONE.
4. THREATENED AND ENDANGERED SPECIES: NONE.
5. HISTORIC & CULTURAL RESOURCE PRESENCE: NONE.
6. FISH & WILDLIFE ESSENTIAL HABITAT: NONE.
7. WETLANDS: NONE WITHIN PROJECT FOOTPRINT.
8. REFER TO APPENDIX A FOR PROJECT SPECIFIC PERMITS.
9. CONTACT THE PROJECT ENGINEER WITH QUESTIONS/CONCERNS REGARDING ENVIRONMENTAL ISSUES OR PERMIT INFORMATION.

PLAN VIEW:

1. EROSION & SEDIMENT CONTROLS SHOWN ON THESE PLAN SHEETS ARE AS DESCRIBED IN THE ALASKA STORMWATER GUIDE, EFFECTIVE JUNE, 2009.
2. CONTOURS SHOWN ON SHEETS Q2-Q4 ARE AT 2 FOOT INTERVALS.

GENERAL:

1. IT IS OUR UNDERSTANDING THAT THIS PROJECT WILL NOT REQUIRE A SWPPP.
2. READ AND COMPLY WITH THE CONSTRUCTION GENERAL PERMIT (CGP) AND SECTION 641 OF THE PROJECT SPECIFICATIONS.
3. INITIATE EROSION AND SEDIMENT CONTROLS PRIOR TO ANY EARTH DISTURBING ACTIVITIES.
4. STOCKPILE AND STAGING LOCATIONS SHALL BE RECLAIMED TO THEIR ORIGINAL CONDITION AS APPROVED BY THE ENGINEER.
5. TEMPORARY BMP'S, IF REQUIRED, ARE SUBSIDIARY TO OTHER ITEMS.

CULVERTS:

6. PROVIDE TEMPORARY INLET AND OUTLET PROTECTION FOR PROPOSED CULVERTS IN THE AREA OF DISTURBANCE PRIOR TO MAKING OPERATIONAL OR BEGINNING EARTH DISTURBING ACTIVITIES.
7. PERMANENT CULVERT INLET AND OUTLET PROTECTION IS ESTABLISHED VEGETATION.

DITCH PROTECTION AND CONCENTRATED FLOWS:

8. DURING CONSTRUCTION, PROTECT DITCHES TO LIMIT RELEASE OF SEDIMENT. PROVIDE TEMPORARY DITCH PROTECTION IN THE FORM OF VELOCITY CONTROLS OR TEMPORARY NON-ERODIBLE LINING.
9. EXPOSED MATERIAL OF NEW DITCHES CAPABLE OF SUPPORTING VEGETATION SHALL BE SEEDED FOR FINAL STABILIZATION.
10. WHEN POSSIBLE, AVOID CONDITIONS WHICH PROMOTE CONCENTRATED FLOWS. OTHERWISE, INSTALL VELOCITY CONTROL BMPS (I.E. WATTLE CHECK DAMS OR ROCK CHECK DAMS).

PERIMETER CONTROL:

11. VEGETATIVE BUFFER IS THE PREFERRED PERIMETER PROTECTION FOR THIS PROJECT. THERE ARE NO WETLANDS IN THE PROJECT AREA.

HAULING:

12. ENSURE LOADS ARE STABLE OR COVERED SO THAT NO MATERIAL ESCAPEMENT OCCURS DURING HAULING ACTIVITIES.

STOCKPILE PROTECTION:

13. ALL ERODIBLE STOCKPILES MUST BE PROTECTED BY EROSION AND SEDIMENT CONTROL DEVICES.
14. EROSION AND SEDIMENT CONTROL BMPS MAY HAVE TO BE REMOVED AND RE-INSTALLED EACH SHIFT.
15. COVER MUST BE USED ON STOCKPILES IN ACCORDANCE WITH SUBSECTION 641-3.01.5 TO PROVIDE ADDITIONAL EROSION PROTECTION.

TIMING OF BMP INSTALLATION:

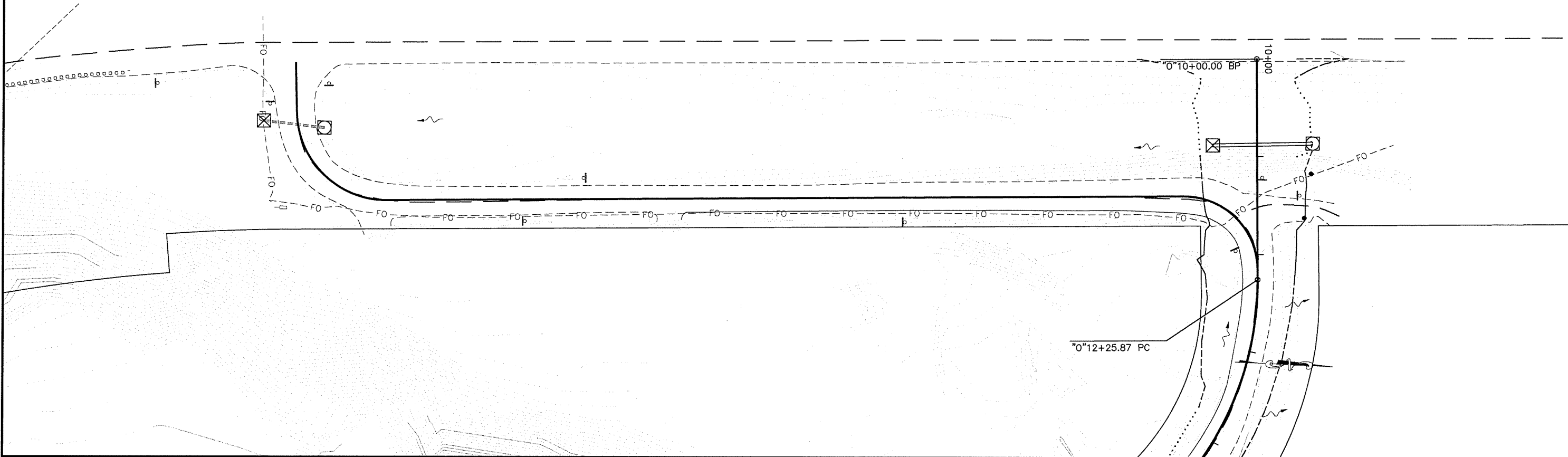
16. INSTALL EROSION AND SEDIMENT CONTROL BMP'S PRIOR TO THE START OF CONSTRUCTION, AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND CAPTURE SEDIMENT ONSITE.
17. INSTALL TEMPORARY PERIMETER CONTROL BMP'S BEFORE ANY UP-GRADIENT SOIL DISTURBANCE OCCURS.

WINTER SHUTDOWN:

18. IF FINAL STABILIZATION IS NOT ACHIEVED BEFORE WINTER SHUTDOWN, EXPOSED GROUND, INCLUDING BUT NOT LIMITED TO EMBANKMENT SLOPES AND STOCKPILES, SHALL BE TEMPORARILY STABILIZED FOR SPRING BREAK-UP AND UNTIL PERMANENT STABILIZATION IS ACHIEVED THE NEXT SEASON. ALL STABILIZATION AND OTHER EROSION CONTROL MEASURES NECESSARY FOR WINTER SHUTDOWN ARE SUBSIDIARY TO OTHER ITEMS.

KEY:	
WETLANDS	
APPROACH	
CULVERT	
RIPRAP	
REVEGETATIVE EFFORT	
PERIMETER CONTROL	
INLET PROTECTION	
OUTLET PROTECTION	

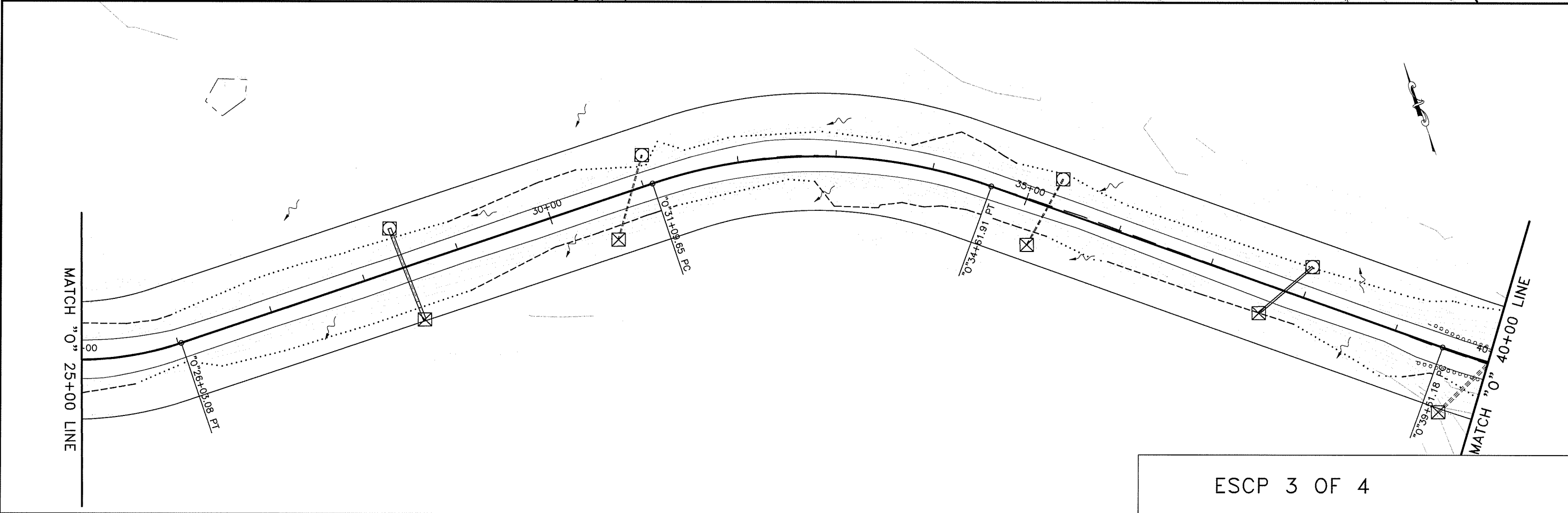
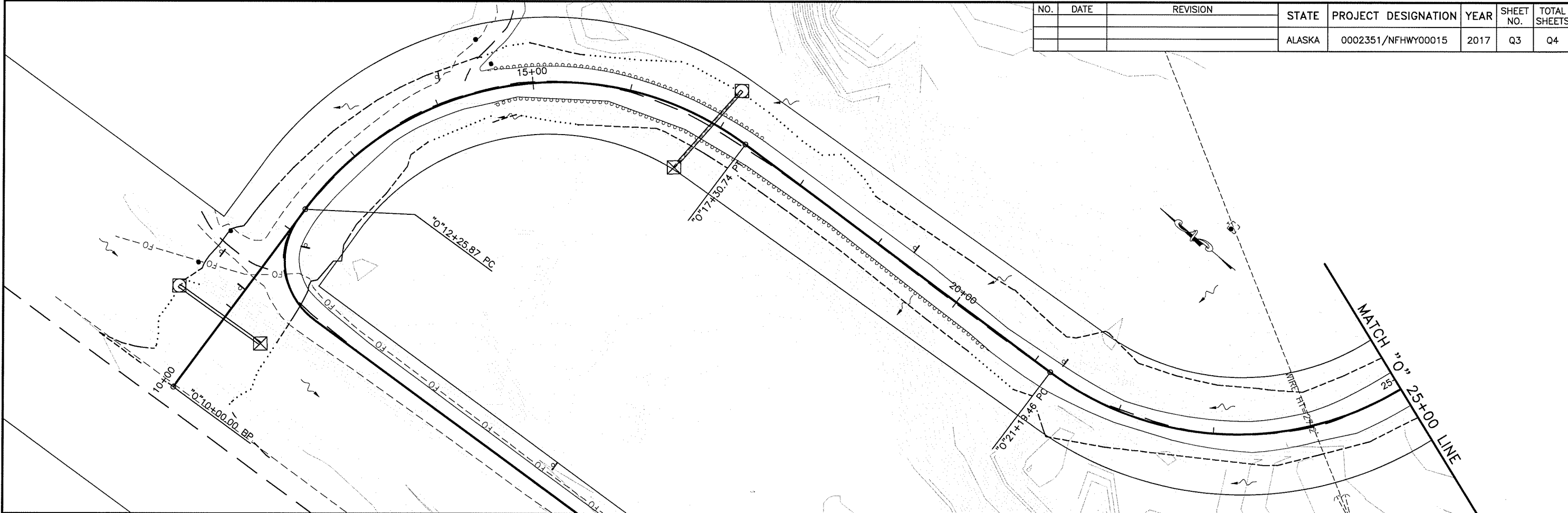
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHwy00015	2017	Q2	Q4



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ESCP 2 OF 4

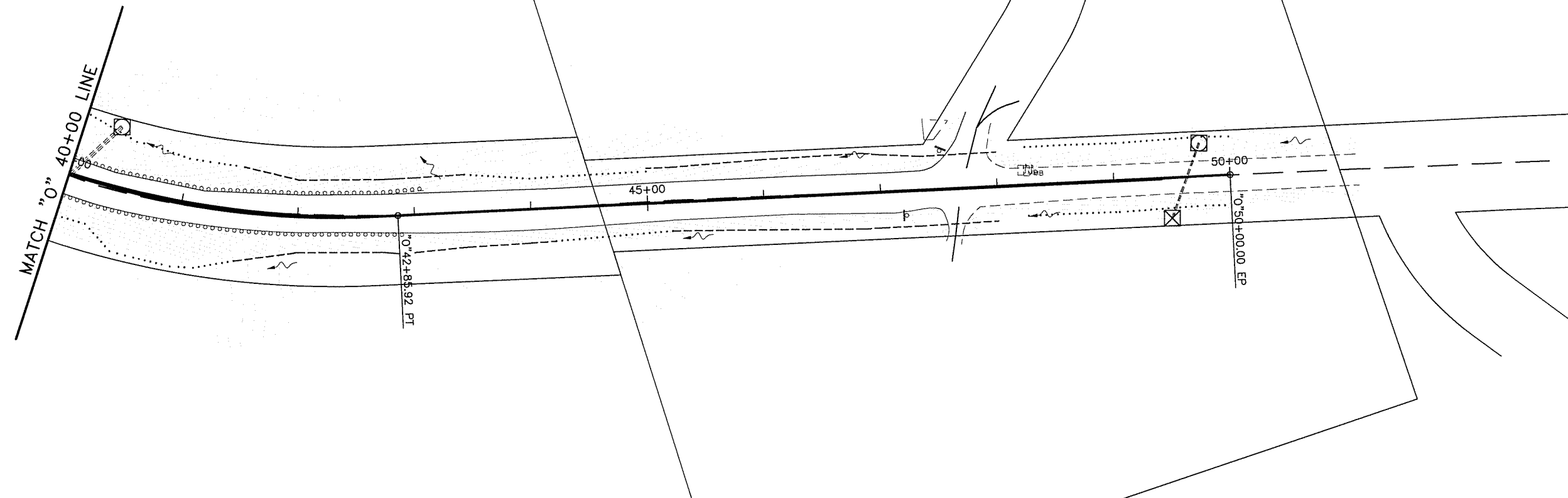
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWY00015	2017	Q3	Q4



ESCP 3 OF 4

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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHwy00015	2017	Q4	Q4

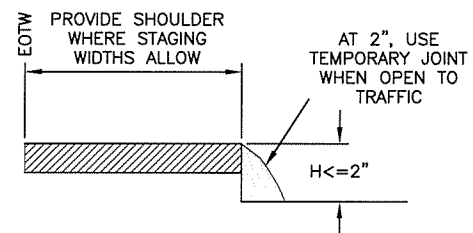


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ESCP 4 OF 4

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0002351/NFHWO0015	2017	T1	T1

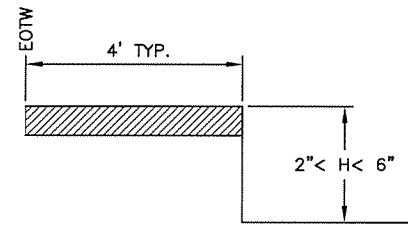
VERTICAL DROP-OFFS



CASE A

DROP-OFFS ≤ 2 INCHES (PAVED SURFACES ONLY)

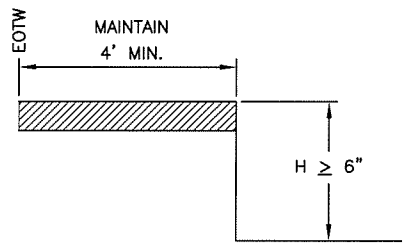
1. USE "UNEVEN LANES" (CW8-11) SIGNS FOR ALL DROP-OFFS IN BETWEEN TRAFFIC LANES.
2. LEAVE NO DROP-OFFS > 1.5 " IN THE TRAFFIC LANE OR ACTIVE WHEEL TRACK.



CASE B

$2" < \text{DROP-OFFS} < 6"$ (ALL ROADWAY SURFACES)

1. PLACE CONES OR CANDLES FOR DROP-OFFS ≥ 4 FEET AND ≤ 30 FEET FROM THE EOTW.
2. USE DRUMS OR TYPE II BARRICADES FOR DROP-OFFS < 4 FEET FROM THE EOTW.



CASE C

DROP-OFFS $\geq 6"$ (ALL ROADWAY SURFACES AND ROADSIDE SLOPES)

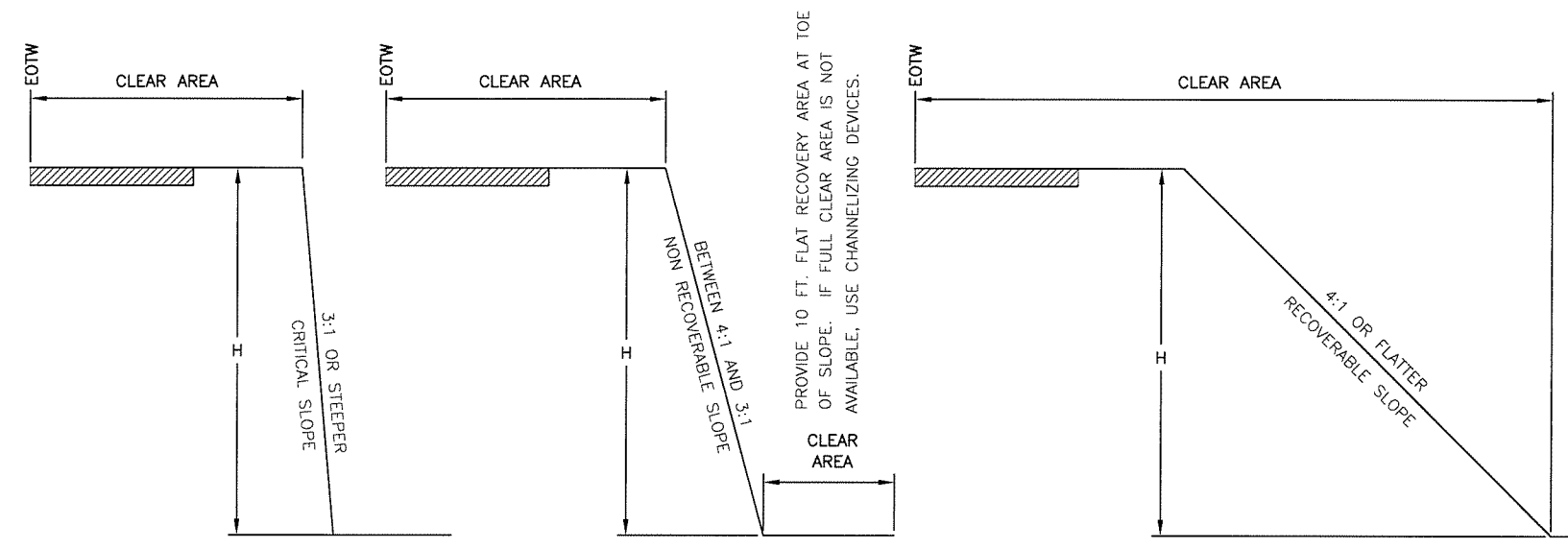
1. PLACE DRUMS OR TYPE II BARRICADES FOR DROP-OFFS ≤ 24 " WITHIN THE CLEAR AREA.
2. PROVIDE PORTABLE CONCRETE BARRIER FOR DROP-OFFS > 24 " WITHIN 15 FEET OF THE EOTW. USE DRUMS OR TYPE II BARRICADES IF BEYOND 15 FEET.

FILL SLOPES

STEEPER THAN OR EQUAL TO 3:1

BETWEEN 4:1 AND 3:1

FLATTER THAN OR EQUAL TO 4:1



CLEAR AREA REQUIREMENTS			
	LOW SPEED ≤ 35 MPH	INTERMEDIATE SPEED 40 MPH TO 45 MPH	HIGH SPEED ≥ 50 MPH
RURAL	15'	24'	30'
URBAN	10' DITCH SECTIONS, OR 2' BEHIND CURB	15' DITCH CONDITIONS, OR 2' BEHIND CURB	15' DITCH CONDITIONS, OR 2' BEHIND CURB

CHANNELIZING DEVICE REQUIREMENTS FOR SLOPES 3:1 OR STEEPER WITHIN THE CLEAR AREA		
	H $\leq 15'$	H $> 15'$
< 2000 VPD LOW VOLUME	CANDLES OR CONES	TYPE II BARRICADES OR DRUMS
> 2000 VPD	TYPE II BARRICADE OR DRUMS	PORTABLE CONCRETE BARRIER OR TEMPORARY GUARDRAIL

TRAFFIC CONTROL NOTES:

1. USE THE EXISTING CROSS-SECTION (PRIOR TO CONSTRUCTION) AS A BASIS FOR DETERMINING WHEN CHANNELIZING DEVICES ARE NEEDED.
2. INSTALL CHANNELIZING DEVICES WHEN THE HORIZONTAL OR VERTICAL CURVATURE IS MADE MORE SEVERE.
3. INSTALL FLEXIBLE DELINEATORS WHEN ALL VEGETATION OVER 4 FEET HIGH IS CLEARED FROM FILL SLOPES THAT ARE 3:1 OR STEEPER IN THE CLEAR AREA.
4. USE PORTABLE CONCRETE BARRIER FOR WARRANTING CONDITIONS WHICH LAST LONGER THAN 3 DAYS. FOR CONDITIONS LASTING LESS THAN 3 DAYS, OTHER CHANNELIZING DEVICES MAY BE INSTALLED.
5. TERMINATE RUNS OF PORTABLE CONCRETE BARRIER USING THE FOLLOWING METHODS:
 - A) CONNECT TO A PORTABLE CRASH CUSHION, OR
 - B) PROVIDE A CONCRETE BARRIER WITH THREE BEAM TRANSITION TO W-BEAM GUARDRAIL, TREATED WITH A PARALLEL TERMINAL (SEE SECTION 710).
 - C) FLARE THE ENDS OF THE PORTABLE CONCRETE BARRIER AWAY FROM THE ROADWAY AT A RATE OF 7:1 ON A COMPACTED SLOPE OF 6:1 OR FLATTER, OUTSIDE OF THE CLEAR AREA. INSTALL A SLOPING PORTABLE CONCRETE BARRIER END TREATMENT, OR
 - D) BURY IN THE BACKSLOPE.

WINTER SHUTDOWN NOTES:

1. TERMINATE THE RUNS OF TEMPORARY W-BEAM GUARDRAIL USING THE FOLLOWING METHODS:
 - A) PROVIDE A PARALLEL TERMINAL (SEE SECTION 710)
 - B) FLARE THE ENDS OF THE TEMPORARY GUARDRAIL AWAY FROM THE ROADWAY AT A RATE OF 6:1 ON A COMPACTED SLOPE OF 6:1 OR FLATTER OUTSIDE OF THE CLEAR AREA, TERMINATE WITH A STANDARD W-BEAM END SECTION, OR
 - C) BURY IN THE BACKSLOPE.

EQUIPMENT NOTES:

1. WHEN THERE IS ACTIVE, NONMOBILE CONSTRUCTION EQUIPMENT WITHIN THE CLEAR AREA, DELINEATE THE ROADSIDE WITH TRAFFIC CONES.
2. SEPARATE PROCEDURES ARE REQUIRED FOR MOBILE WORK ZONE OPERATIONS AND SHORT DURATION WORK OF LESS THAN 12 HOURS.

1. WHEN REQUIRED, USE CHANNELIZING DEVICES WHICH CAN BE MAINTAINED OVER WINTER.
2. NO CHANNELIZING DEVICES ARE REQUIRED IF:
 - A) CONSTRUCTION SLOPES ARE RECOVERABLE, AND
 - B) SLOPES ARE SMOOTH AND COMPACTED, AND
 - C) REQUIRED CLEAR AREA IS PROVIDED

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TRAFFIC CONTROL DEVICES

