

PLANS DEVELOPED BY: RESPEC, CERT. OF AUTHORIZATION NO.: AECC 163270, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
N:\Projects\17258FB-Seppala\C6001cnst-17258FB-H13_Signing and Striping Summary Table Thu, Apr/10/25 01:45pm

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	H13	H17

SIGN SUMMARY																
LOC. NO.	STATION	OFFSET (FT)	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 (IN.)	NO.	
42	"S" 73+53	30.0	X		D3-100(2)	SEPPALA DR	30X8	X		3.33		N/S	TS	3	1	SEE NOTE 1
					D3-100(2)	WEST D ST	30X8	X		3.33		E/W				SEE NOTE 1
					R1-1	STOP	30X30	X		6.25		N				
43	"S" 74+11	31.0		X	D3-100(2)	SEPPALA DR	30X8	X		3.33		N/S	TS	3	1	SEE NOTE 1
					D3-100(2)	WEST D ST	30X8	X		3.33		E/W				SEE NOTE 1
					R1-1	STOP	30X30	X		6.25		S				
44	"S" 77+10	30.0	X		D3-100(2)	SEPPALA DR	30X8	X		3.33		N/S	TS	3	1	SEE NOTE 1
					D3-100(2)	WEST C ST	30X8	X		3.33		E/W				SEE NOTE 1
					R1-1	STOP	30X30	X		6.25		N				
45	"S" 77+65	31.5		X	D3-100(2)	SEPPALA DR	30X8	X		3.33		N/S	TS	3	1	SEE NOTE 1
					D3-100(2)	WEST C ST	30X8	X		3.33		E/W				SEE NOTE 1
					R1-1	STOP	30X30	X		6.25		S				
46	"C" 11+52	29.0	X		D3-100(2)	CENTER CREEK RD	48X8	X		5.33		NW/SE	TS	3	1	SEE NOTE 1
					D3-100(2)	PROSPECT ST	36X12	X		6.00		NE/SW				SEE NOTE 1
					R1-1	STOP	30X30	X		6.25		NW				
47	"P" 1+20	23.0		X	R2-1	SPEED LIMIT 20	24X30			5.00		S	TS	3	1	
										TOTAL	513.3				54	
										ROUNDED TOTAL	514				54	



SPECIAL 1

NOTES:
OUTER R: 1.5"
INNER T: 0.6" RED
OUTER T: 0.4" WHITE
INNER BORDER AND LEGEND: RED
OUTER BORDER AND BACKGROUND: WHITE

POST TYPE LEGEND

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

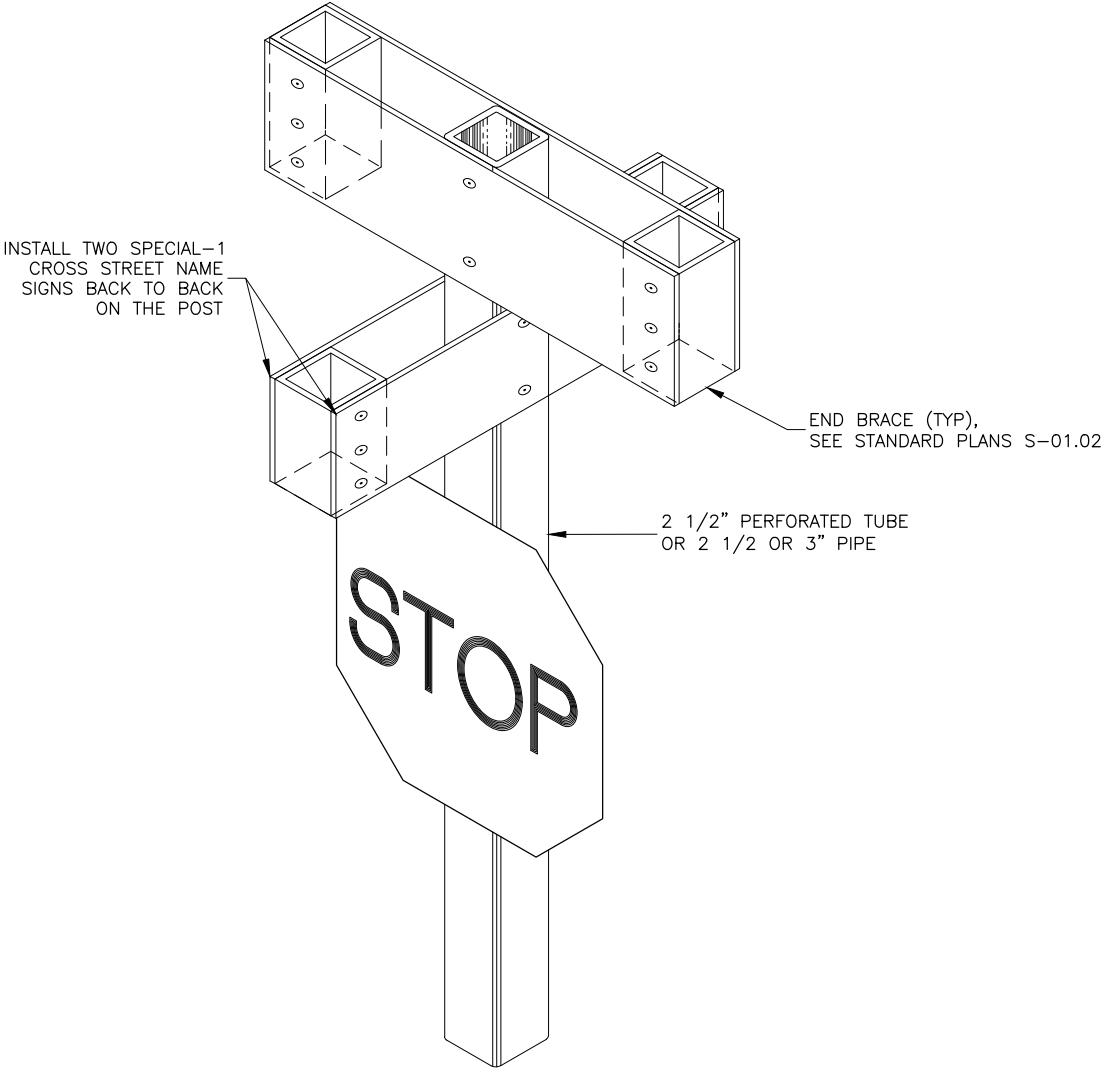
NOTES

1. D3-100 SERIES SIGNS ARE TO INCLUDE TWO IDENTICAL SIGNS INSTALLED BACK TO BACK AS SHOWN ON H14 SIGN DETAIL FOR STREET NAME SIGNS.

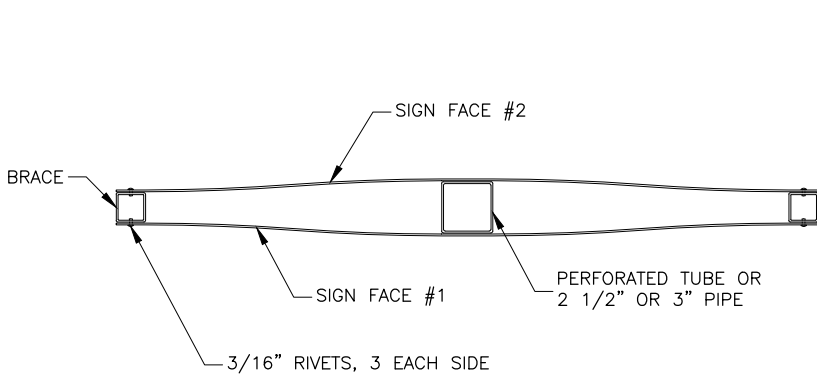
SIGNING AND STRIPING
SUMMARY TABLE



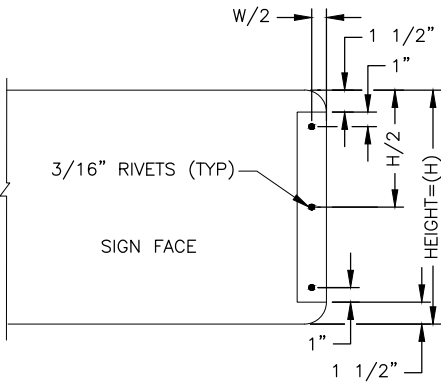
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	H14	H17



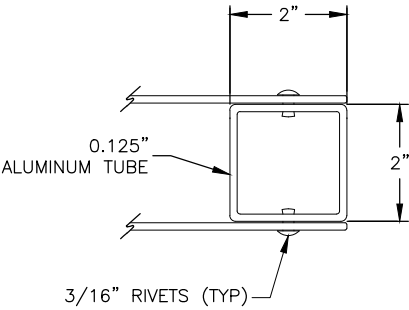
STREET NAME SIGN



PLAN VIEW



RIVET DETAIL ELEVATION VIEW



END BRACE DETAIL

SMALL STREET NAME SIGN (D3-1, D3-100A, D3-100) BRACING DETAILS

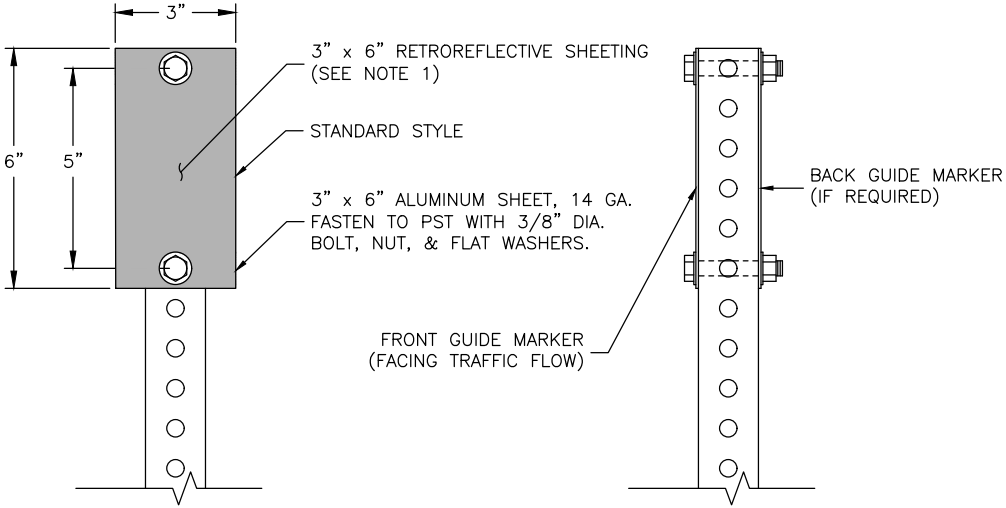
SIGN DETAILS



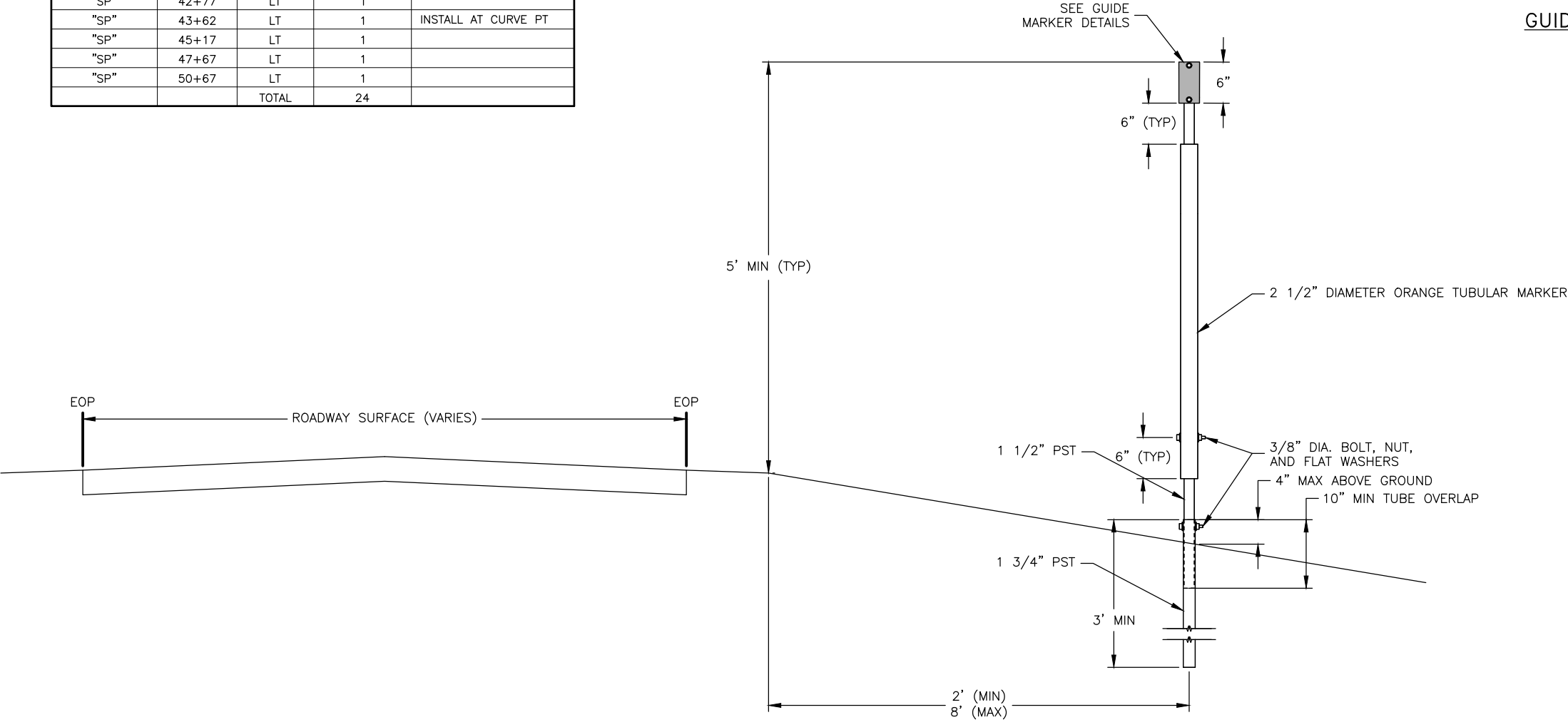
PLANS DEVELOPED BY: RESPEC, CERT. OF AUTHORIZATION NO.: AECC 163270, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
N:\Projects\17258FB-Seppala\C\6001cnst-17258FB-H15 Delineator Details Thu, Apr/10/25 01:48pm

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	H15	H17

615.0004.0000 DELINEATOR, RIGID				
ALIGNMENT	STATION	OFFSET	QUANTITY (EACH)	REMARKS
"AR"	1+85	LT	1	
"AR"	2+50	LT	1	
"AR"	2+95	LT	1	
"AR"	4+10	LT	1	
"AR"	5+60	LT	1	
"SP"	22+40	LT	1	
"SP"	23+40	LT	1	
"SP"	27+74	LT	1	
"SP"	30+74	LT	1	
"SP"	33+24	LT	1	
"SP"	34+79	LT	1	INSTALL AT CURVE PC
"SP"	35+97	LT	1	
"SP"	36+82	LT	1	
"SP"	37+67	LT	1	
"SP"	38+52	LT	1	
"SP"	39+37	LT	1	
"SP"	40+22	LT	1	
"SP"	41+07	LT	1	
"SP"	41+92	LT	1	
"SP"	42+77	LT	1	
"SP"	43+62	LT	1	INSTALL AT CURVE PT
"SP"	45+17	LT	1	
"SP"	47+67	LT	1	
"SP"	50+67	LT	1	
		TOTAL	24	



GUIDE MARKER DETAIL
PST



RIGHT SIDE
(SEE DELINEATOR SPACING DETAIL)

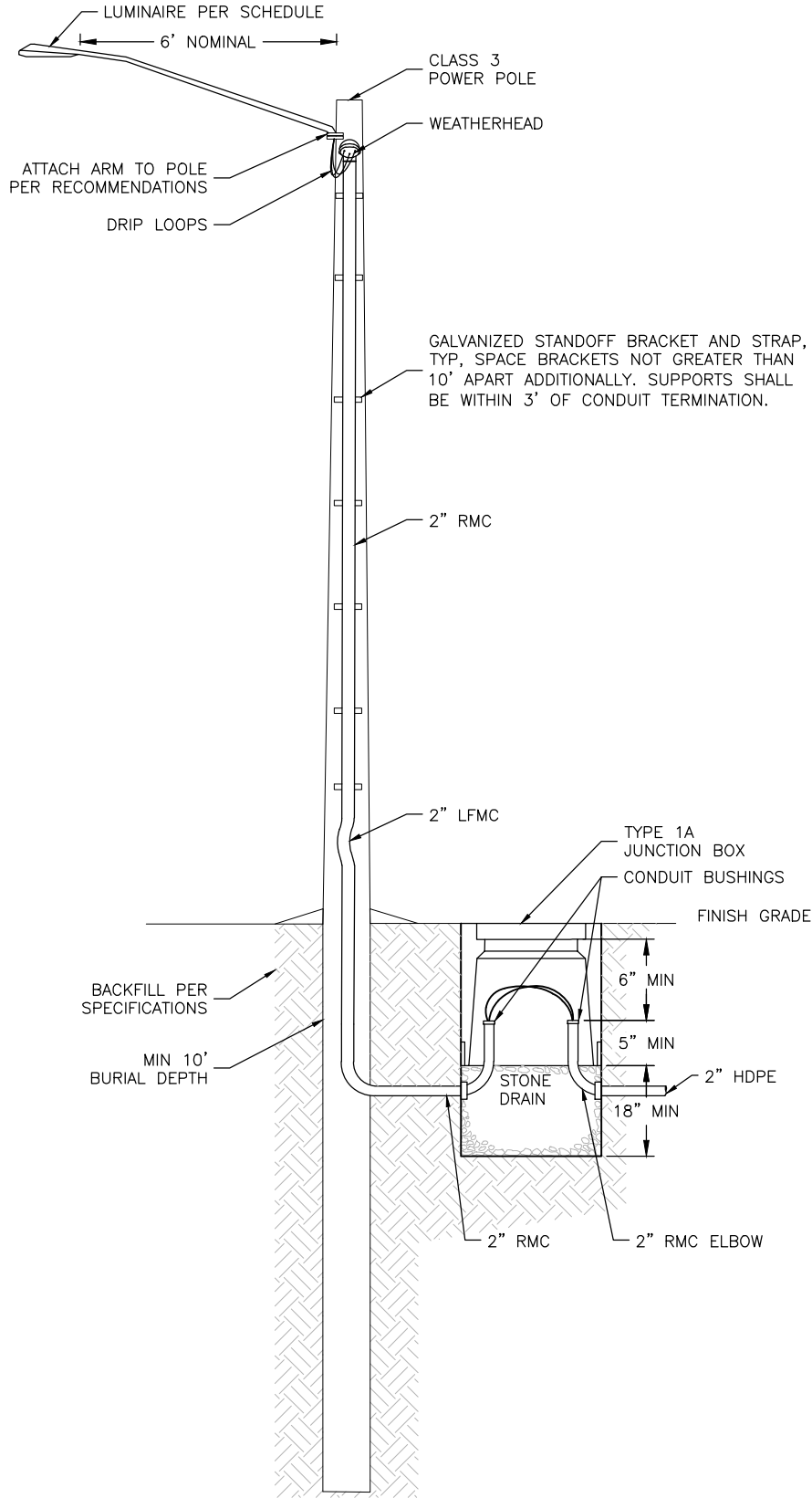
ROADSIDE DELINEATOR DETAIL

DELINEATOR DETAILS



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N:\Projects\17258FB-Seppala\17258FB-H16 Frt, Feb/02/24 12:31pm

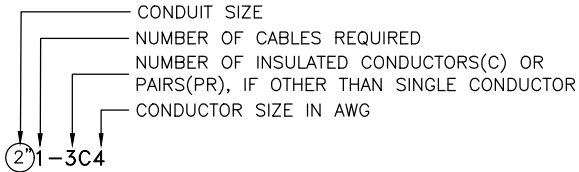
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2023	H16	H17



LUMINAIRE POLE DETAIL
NOT TO SCALE

SYMBOL LEGEND:

EXISTING	PROPOSED	
		ELECTROLIER (LUMINAIRE MAST ARM MOUNTED)
		JUNCTION BOX, TYPE IA
		JUNCTION BOX, TYPE II
		LOAD CENTER
		CONDUIT SIZE IN INCHES
		LIGHTING CONDUIT



NOTES:

- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF THE INSTALLED SERVICE EQUIPMENT DIFFERS FROM WHAT IS SHOWN IN SCHEDULES. ENGINEER WILL PROVIDE A REVISED SHORT CIRCUIT CALCULATION. UTILITY CONNECTION WORK TO BE PERFORMED BY NJUS.
- COORDINATE WITH NOME JOINT UTILITY SYSTEM (NJUS) 30 DAYS PRIOR TO COMMENCING WORK IN THE PROJECT AREA.
- CRITERIA LISTED IN THE LUMINAIRE AND LAMP SCHEDULES IS BASED ON EXISTING CONDITIONS AND AS-BUILT DOCUMENTS. LUMINAIRE CRITERIA SHALL MATCH THAT OF THE EXISTING LUMINAIRES INSTALLED IN THE PROJECT AREA.

CALL BEFORE YOU DIG!

CONTRACTOR SHALL CALL A MINIMUM OF
3 DAYS IN ADVANCE OF CONSTRUCTION

ALASKA DIGLINE....907-278-3121 OR 800-478-3121

CALL OR GO TO WWW.AKONECALL.COM/STATEWIDE.HTM
FOR MEMBER LIST OF WHO WILL BE NOTIFIED

ABBREVIATIONS	
#, NO.	NUMBER
AWG	AMERICAN WIRE GAUGE
CKT	CIRCUIT
CL	CENTERLINE
DOT&PF	DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
HDPE	HIGH DENSITY POLYETHYLENE CONDUIT
INTX	INTERSECTION
LC	LOAD CENTER
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LTG	LIGHTING
M&O	MAINTENANCE AND OPERATIONS
MCB	MAIN CIRCUIT BREAKER
NEC	NATIONAL ELECTRICAL CODE
NJUS	NOME JOINT UTILITIES SERVICE
P	POLE
PEC	PHOTOELECTRIC CELL
PH	PHASE
RMC	RIGID METAL CONDUIT (HOT-DIPPED GALVANIZED)
S	SEPPALA RD ALIGNMENT
SOA	STATE OF ALASKA
V	VOLTS
VA	VOLT AMPERES
VD	VOLTAGE DROP

SUMMARY OF LOAD CENTER "A"											
VOLTAGE: 120/240V, 1PH, 3W				LOAD CENTER TYPE: 2 (SOA)				SERVING UTILITY: NOME JOINT UTILITIES			
BUS AMPS: 100				MIN AIC RATING: 10,000				LOCATION: SEPPALA & CENTER CREEK DR			
MAIN: MCB; 100A				CIRCUITS: 20							
LOAD	LOAD DESCRIPTION	NOTE	VA	AMP	P	CKT	PHASE	CKT	P	AMP	VA
	SPARE			20	1	1	A	2	2	20	400
	SPARE			20	1	3	B	4	-	-	400
	SPACE			-	1	5	A	6	1	-	
	SPACE			-	1	7	B	8	1	-	
	SPACE			-	1	9	A	10	1	-	
	SPACE			-	1	11	B	12	1	-	
	SPACE			-	1	13	A	14	1	-	
	SPACE			-	1	15	B	16	1	-	
	SPACE			-	1	17	A	18	1	-	
	SPACE			-	1	19	B	20	1	-	
LOAD SUMMARY AND CODE DEFINITIONS				CONNECTED KVA				% DIV		NEC TOTAL	
1	LIGHTING =			0.4	0.4	0.8		125%		1.0	
TOTAL KVA (PHASE)				0.4	0.4	0.8				1.0	
TOTAL AMPERES				3.3	3.3	3.3				4.2	
NOTES:											

VOLTAGE DROP CALCULATION - LC "A"							
1-PH, 2W CONFIGURATION, 1 COPPER CONDUCTOR PER PHASE IN RMC. TEMPERATURE RATING 75°C.							
CKT #	SEGMENT SIZE (AWG)	SEGMENT LENGTH (FT)	VOLTAGE	POWER FACTOR	LOAD (KVA)	TOTAL (AMPS)	SEG. (%VD)
A-2,4	8 AWG	550	240V	0.8	0.8	3.3	1.05

LUMINAIRE SCHEDULE	
MANUFACTURER	GE OR APPROVED EQUAL
MODEL	M400A-PLUS OR APPROVED EQUAL
WATTAGE	250
LIGHT SOURCE	HPS
VOLTAGE	240
STYLE	COBRA HEAD
LUMINAIRE TYPE	M-C-3
BALLAST TYPE	MAG-REG
PE CONTROL	YES
IGNITOR MOUNTING	PLUG-IN
LENS TYPE	FLAT GLASS
IES DISTRIBUTION TYPE	MC3
FILTER	CHARCOAL W/ELASTOMER GASKET
UL LISTED	YES

LAMP SCHEDULE	
MANUFACTURER	SYLVANIA OR APPROVED EQUAL
MODEL	LU250 OR APPROVED EQUAL
BULB	ET18
BASE	E39
ANSI SPEC NUMBER	S50
LAMP FINISH	CLEAR
OPERATING POSITION	UNIVERSAL
AVERAGE RATED LIFE	24,000 HOURS
INITIAL LUMENS	29,000
MEAN LUMENS	26,100
CRI	22
CCT	2100

SHORT CIRCUIT CALCULATION LOAD CENTER "A"	
240V AC IN A 1-PH, 3W CONFIGURATION, 1 CONDUCTOR PER PHASE IN CONDUIT. INFINITE PRIMARY BUS.	
ANTICIPATED SERVICE TRANSFORMER RATING	10 KVA
SERVICE VOLTAGE	240/120V
ANTICIPATED TRANSFORMER IMPEDANCE	1.0%
LET-THRU SHORT CIRCUIT CURRENT	4167 A
LENGTH TO SERVICE	85'
ANTICIPATED SERVICE CONDUCTOR SIZE	8 AWG
ANTICIPATED SERVICE CONDUIT	HDPE
MAXIMUM FAULT CURRENT	1440 A

ILLUMINATION LEGEND
AND NOTES



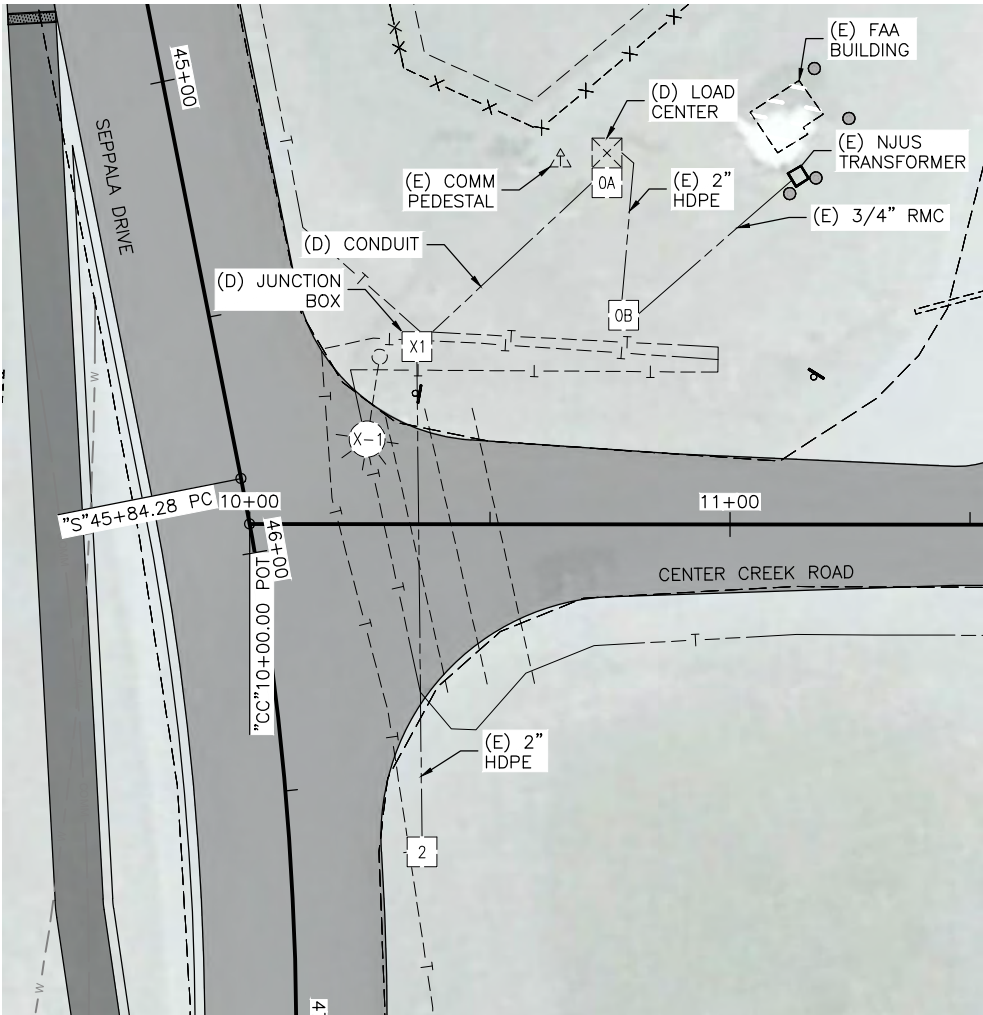
PLANS DEVELOPED BY: RESPEC, CERT. OF AUTHORIZATION NO.: AECC 163270, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
N:\Projects\17258FB-Seppala\17258FB-Seppala\17258FB-H17 Fri, Feb/02/24 12:31pm

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2023	H17	H17

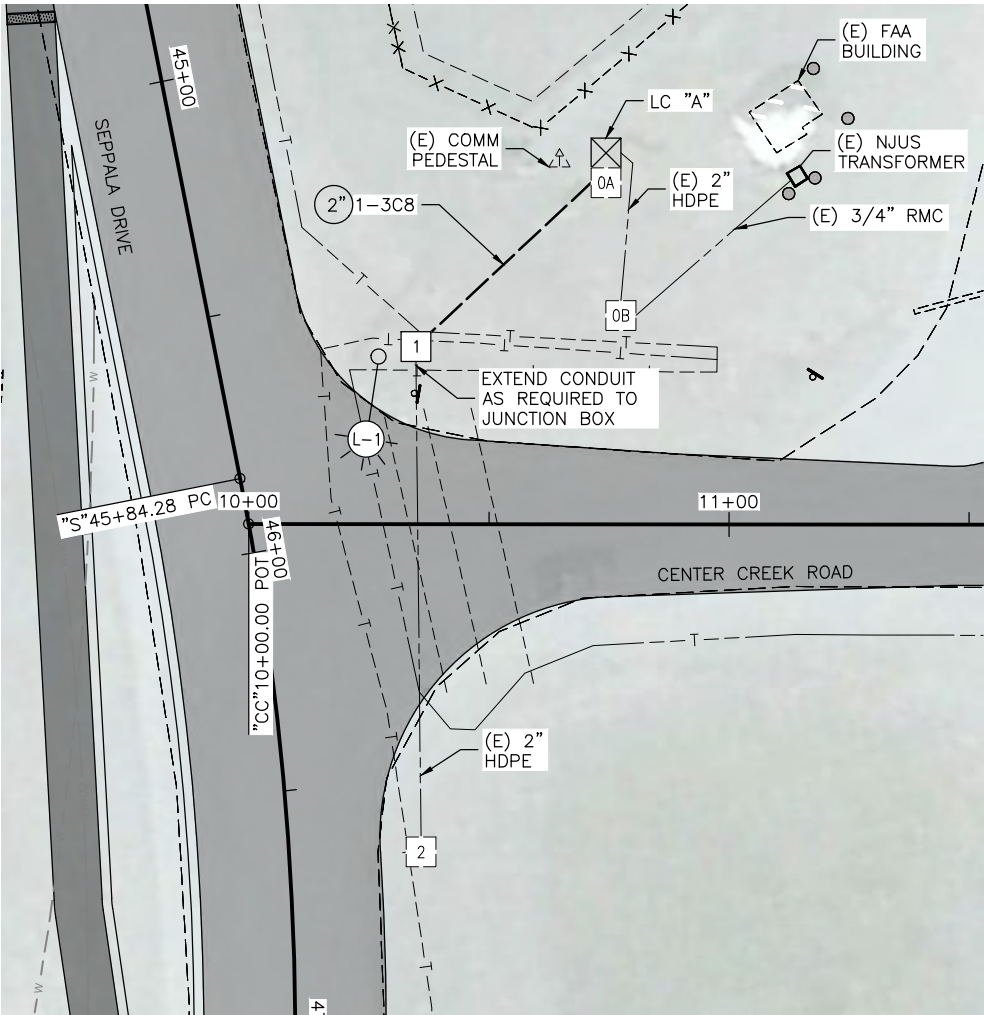
SALVAGE ELECTROLIER SCHEDULE				
POLE NO.	STATION ALIGNMENT	OFFSET	STYLE	REMARKS
X-1	"S" 45+65	33.2' LT	MAST ARM	WOOD POLE

NOTES:

- COORDINATE WITH NOME JOINT UTILITY SYSTEM (NJUS) 30 DAYS PRIOR TO COMMENCING WORK IN THE PROJECT AREA.
- EXISTING ELECTRICAL CONDITIONS AND UNDERGROUND ROUTING BASED ON AS-BUILT DOCUMENTS; VERIFY LOAD CENTER, POLE, AND JUNCTION BOX LOCATIONS WITH PROJECT ENGINEER PRIOR TO WORK.
- DEMOLISH LOAD CENTER AND SERVICE CONDUCTORS, SALVAGE CONDUIT FROM TRANSFORMER ENCLOSURE. NOTIFY PROJECT ENGINEER IF CONDUIT IS IN POOR CONDITION. COORDINATE WITH DOT&PF AND NJUS TO DE-ENERGIZE THE EXISTING CIRCUIT AS REQUIRED.
- PROVIDE LOAD CENTER AT SAME LOCATION, AND 100' OF SERVICE CABLE COILED NEATLY AT LOAD CENTER. NJUS TO PULL SERVICE CABLE FROM LOAD CENTER TO TRANSFORMER ENCLOSURE AND TERMINATE.
- SALVAGE EXISTING ELECTROLIER (POLE, MAST ARM, LUMINAIRE AND LAMP). COORDINATE THE OWNERSHIP OF THE SALVAGED POLE WITH DOT&PF, M&O, AND NJUS THROUGH THE PROJECT ENGINEER. DELIVER SALVAGED ELECTROLIER TO THE RESPECTIVE OWNERS. COORDINATE FOR DELIVERY WITH OWNER THROUGH PROJECT ENGINEER A MINIMUM 7 DAYS PRIOR TO REMOVAL. DEMOLISH JUNCTION BOX AT POLE BASE, AND CONDUIT AND CONDUCTORS FROM LOAD CENTER.
- INSTALL SALVAGED ELECTROLIER. PROVIDE NEW JUNCTION BOX AT POLE BASE, AND NEW CONDUIT AND CONDUCTORS TO LOAD CENTER.
- INTERCEPT EXISTING CONDUIT FROM UPSTREAM ELECTROLIER AND DEMOLISH CONDUCTORS. EXTEND CONDUIT TO REVISED ELECTROLIER LOCATION. PROVIDE NEW CONDUCTORS FROM UPSTREAM ELECTROLIER TO RELOCATED ELECTROLIER AND CONNECT TO LIGHTING CIRCUIT; DO NOT SPLICE CONDUCTORS.
- RACEWAY MAY BE REUSED IN PLACE IF NOT RENDERED UNUSABLE DUE TO OTHER DEMOLITION AND COMPLIES WITH CONTRACT DOCUMENTS. REUSED RACEWAY SHALL BE IN LIKE-NEW, OR REPAIRED TO LIKE-NEW CONDITION BEFORE INSTALLING CONDUCTORS.
- ALL STATION LOCATIONS ARE APPROXIMATE. INSTALL EQUIPMENT TO THE STATIONING SHOWN ON THE TABLES OR AS DIRECTED BY THE FIELD ENGINEER.
- INSTALL WOOD POLES AND LOAD CENTER FOUNDATIONS WITHIN 1-DEGREE OF PLUMB.



DEMOLITION
NOT TO SCALE



NEW WORK
NOT TO SCALE

ELECTROLIER SCHEDULE											
POLE NO.	STATION ALIGNMENT	OFFSET	DISTRIBUTION TYPE	LAMP WATTS	BALLAST VOLTAGE	MOUNTING HEIGHT	SHAFT LENGTH	MASTARM LENGTH	STYLE	TOP OF FOUNDATION	REMARKS
L-1	"S" 45+65	33.2' LT	MC3	250W	240V	25.0'	25.0'	6.0'	MAST ARM	12.6'	WOOD POLE

JUNCTION BOX SCHEDULE			
BOX NO.	STATION ALIGNMENT	OFFSET	TYPE
OA	EXISTING	EXISTING	EXISTING
OB	EXISTING	EXISTING	EXISTING
1	"S" 45+64.4	41.2' LT	1A
2	EXISTING	EXISTING	EXISTING

LOAD CENTER SCHEDULE			
LOAD CENTER	STATION ALIGNMENT	OFFSET	TYPE
"A"	"S" 45+32.6	87.9' LT	TYPE 2 (SOA)

ILLUMINATION PLAN –
CENTER CREEK



ESCP GENERAL NOTES:

1. THIS ESCP IS A GENERAL PLAN FOR GUIDING THE DEVELOPMENT OF THE CONTRACTOR'S SWPPP. THE CONTRACTOR IS EXPECTED TO PROVIDE ADDITIONAL DETAILS AND BMPs BASED ON THE CONTRACTORS ACTUAL SCHEDULE AND CONSTRUCTION METHODS, AS REQUIRED TO COMPLY WITH THE CONSTRUCTION GENERAL PERMIT AND SECTION 641 OF THE PROJECT SPECIFICATIONS.
2. CONSTRUCTION ENTRANCE/EXIT MUST BE ESTABLISHED TO MINIMIZE OFF-SITE IMPACTS.
3. INSTALL PERIMETER CONTROL BMP WHEN WORKING WITHIN 25 FEET OF SURFACE WATERS AND ALONG WETLANDS WHERE A 25 FOOT VEGETATIVE BUFFER IS NOT RETAINED.
4. IF EXCAVATION DE-WATERING WILL OCCUR WITHIN 1,500FT OF AN ADEC IDENTIFIED CONTAMINATED SITE, THEN THE PROJECT MUST COMPLY WITH THE ADEC EXCAVATION DE-WATERING GENERAL PERMIT.
5. ALL IN-WATER WORK MUST BE ISOLATED FROM WATERS OF THE U.S. USING APPROPRIATE BMPs. ISOLATION METHODS MAY INCLUDE:

5.1. SILT CURTAINS

5.2. COFFERDAMS

5.3. DIVERSIONS

5.4. OTHER METHODS APPROVED BY THE ENGINEER
6. INLET / OUTLET PROTECTION REQUIRED FOR ALL CULVERTS, CROSSING CULVERT PROTECTION IS SHOWN ON THE ESCP SHEETS, DRIVEWAY CULVERTS ARE NOT SHOWN FOR VISUAL CLARIFICATION.
7. AREAS OF DISTURBANCE, TEMPORARY AND PERMANENT STABILIZATION, WILL BE MARKED AS WORK PROCEEDS AND ADDED TO THE LEGEND.
8. REFER TO APPENDIX A OF THE CONTRACT FOR ENVIRONMENTAL PERMIT INFORMATION.
9. REFER TO APPENDIX C OF THE CONTRACT FOR THE ESCP TEMPLATE.
10. IF THE DEPARTMENT PROVIDES AN AREA FOR SUPPORT ACTIVITY (E.G. MATERIAL SITE, STAGING AREA, ETC.), PROVIDE A MAP SHOWING ALL REQUIREMENTS LISTED IN SECTION 5.3.5 OF THE CGP.
11. THERE ARE NO PROJECT SPECIFIC ENVIRONMENTAL COMMITMENTS.

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	Q1	Q9

ESCP LEGEND:

— RW —

—>—

—P—P—P—P—

— · — · — · — · —

· · · · ·

— — — — —

RIGHT OF WAY

SURFACE WATER FLOW DIRECTION

PERIMETER CONTROL — FIBER ROLL, VEGETATIVE BUFFER OR SILT FENCE (BMP 10.01 OR 20.00, DOT&PF SWPPP GUIDE) OR FUNCTIONAL EQUIVALENT TO MANUFACTURER'S SPECIFICATIONS.

CULVERT INLET PROTECTION (SEE BMP 08.00 DOT&PF SWPPP GUIDE)

CULVERT OUTLET PROTECTION (SEE SS-10 CALTRANS CONSTRUCTION SITE BMP MANUAL)

VEHICLE TRACKING ENTRANCE/EXIT

WETLANDS

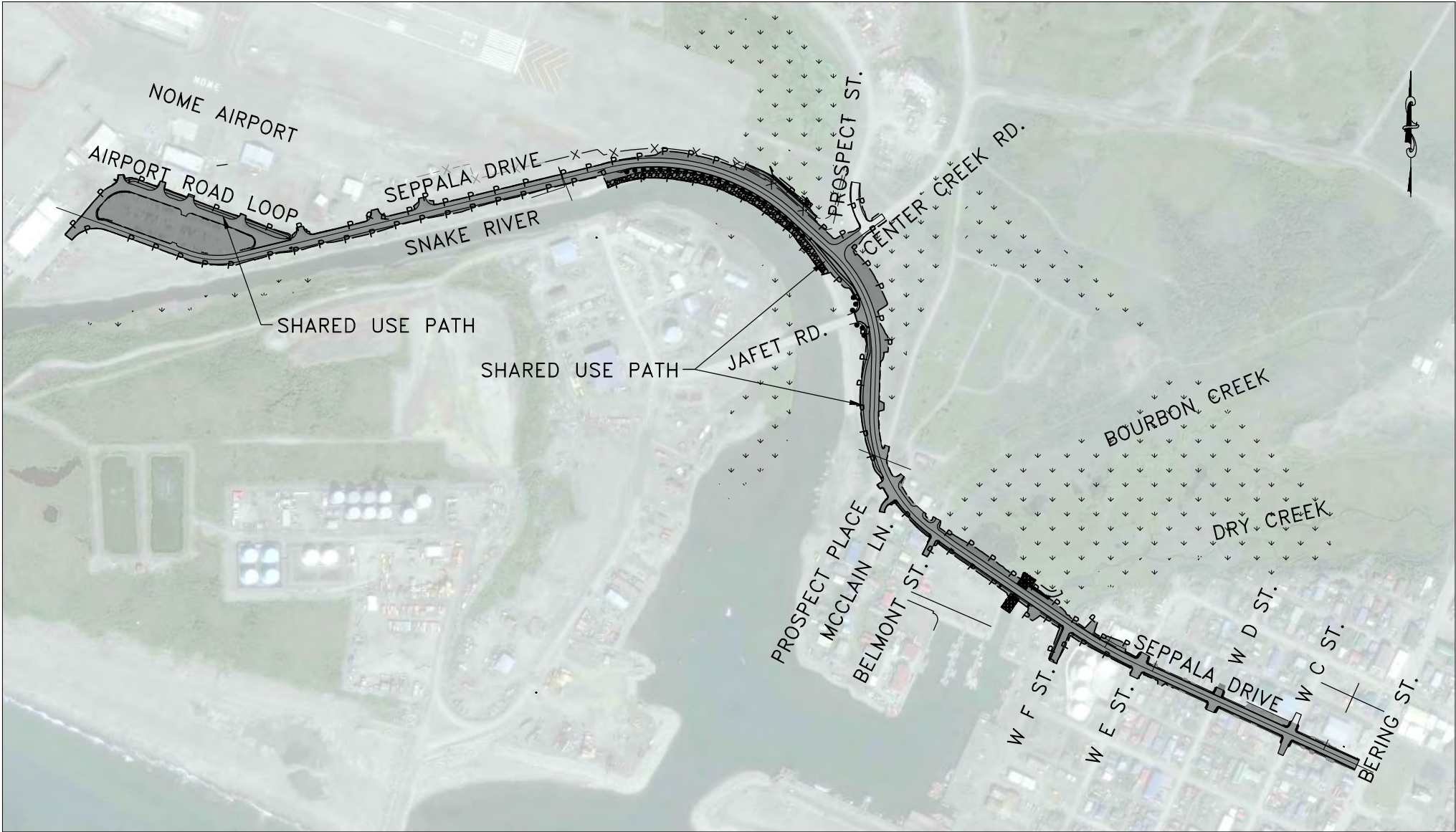
DITCH LINE

PROPOSED FILL

PROPOSED CUT

CATCH BASIN

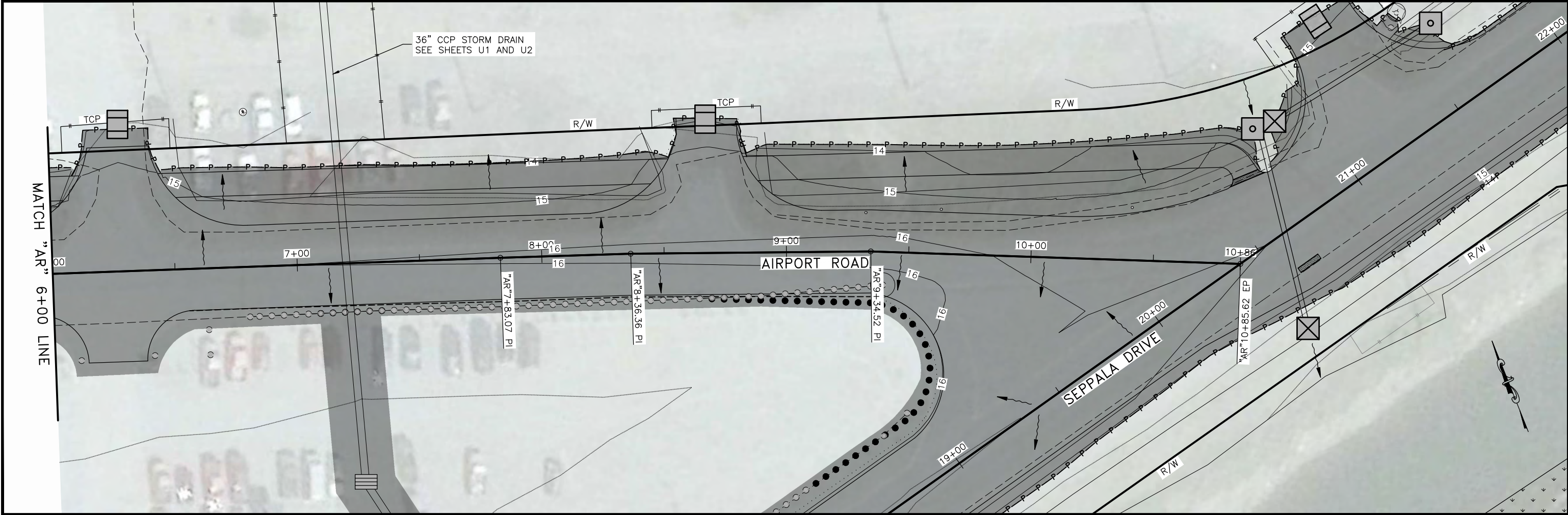
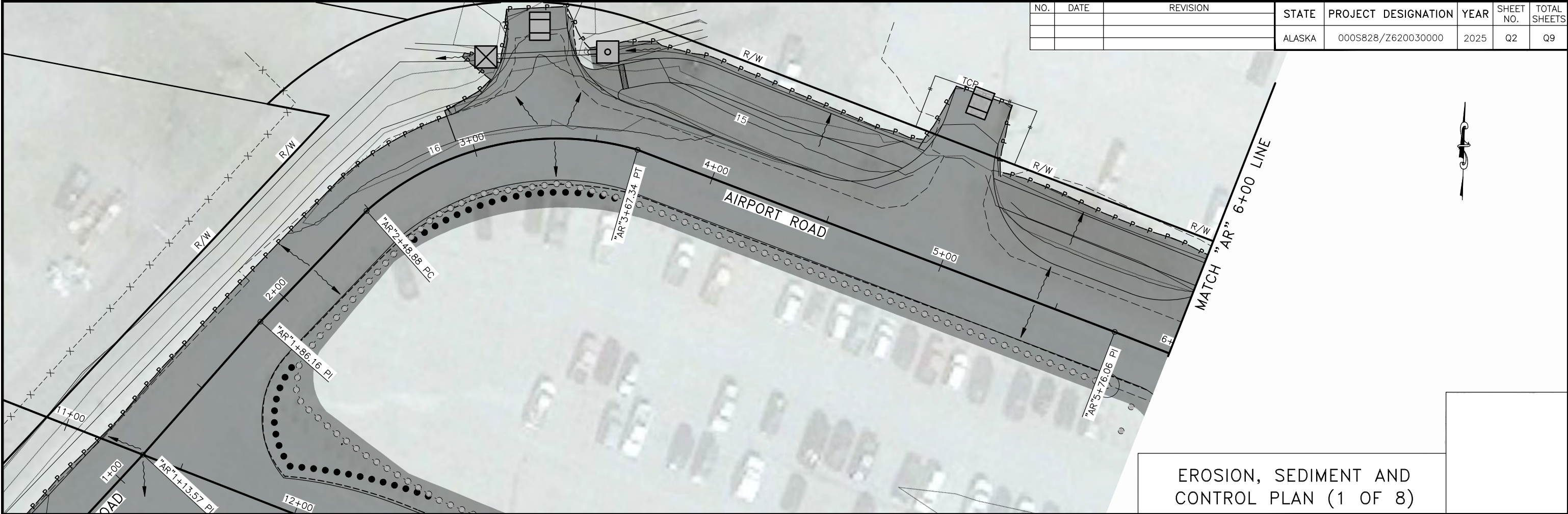
DISTURBED AREA



PROJECT LOCATION

ESCP – GENERAL
NOTES AND LEGEND

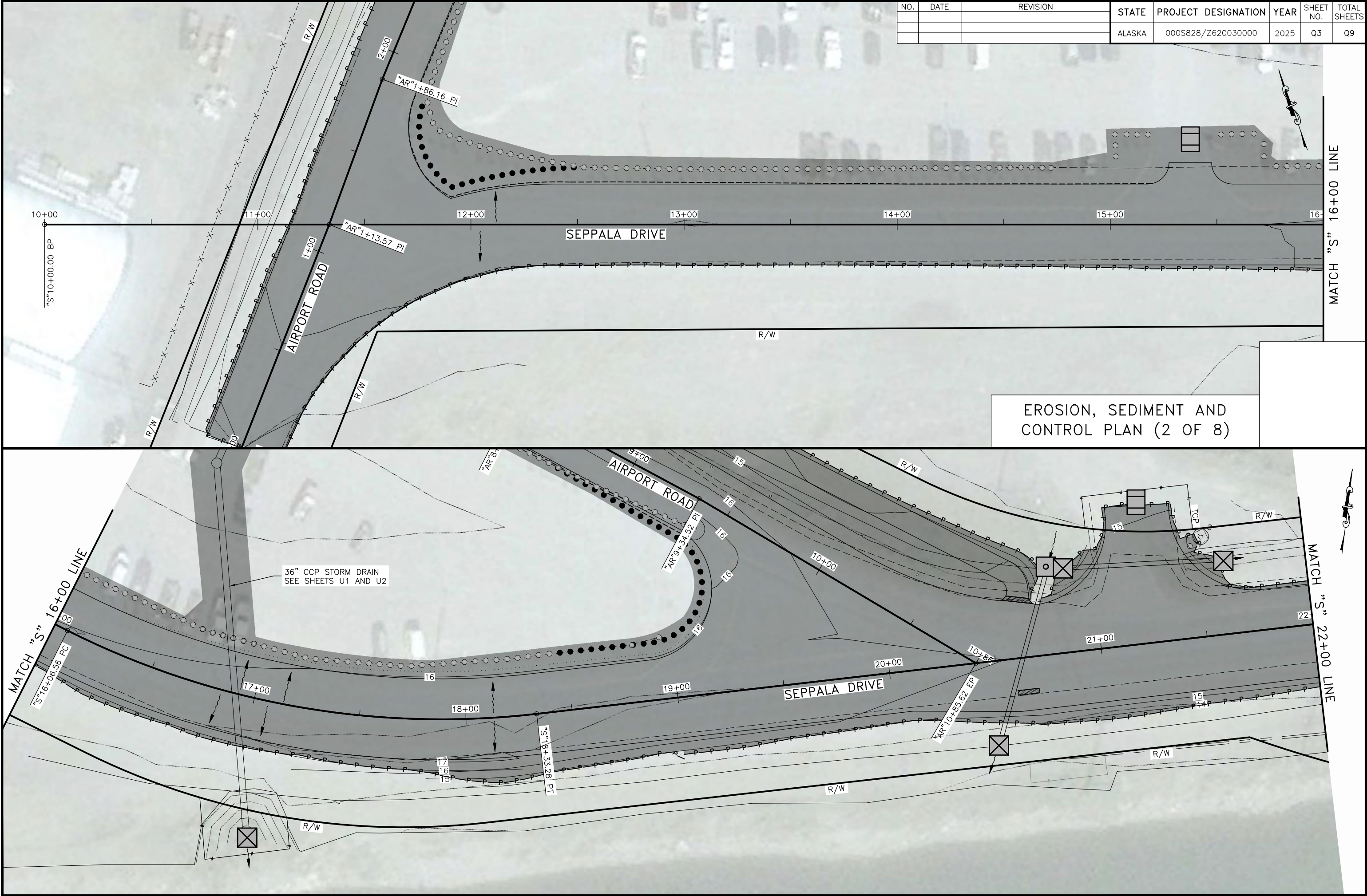
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	Q2	Q9



PLANS DEVELOPED BY: RESPEC, CERT. OF AUTHORIZATION NO.: AECC 163270, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
N:\Projects\17258FB-Septala\17258FB-Q2 Erosion Control and Sediment Plan (1 of 8).Thu, Apr/10/25 01:50pm

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N:\Projects\17258FB- Seppala\C\7001crst-17258FB-Q3 Erosion Control and Sediment Plan (2 of 8).Thu, Apr/10/25 01:51pm

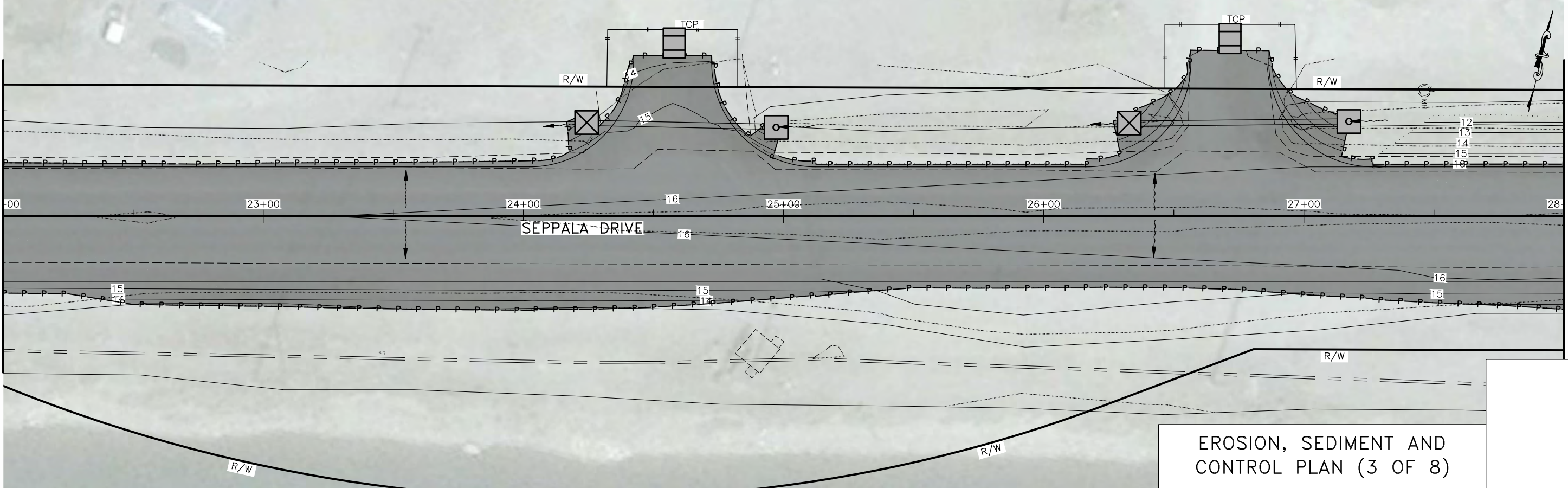
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	Q3	Q9



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	Q4	Q9

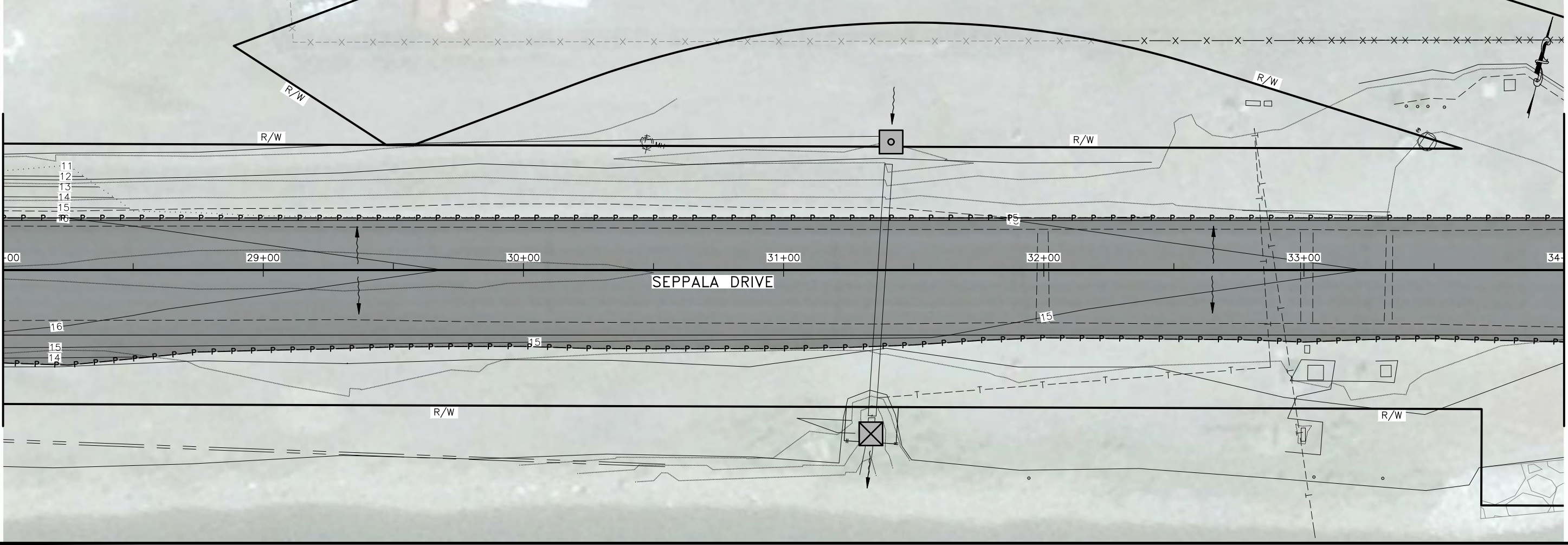
MATCH "S" 22+00 LINE

MATCH "S" 28+00 LINE

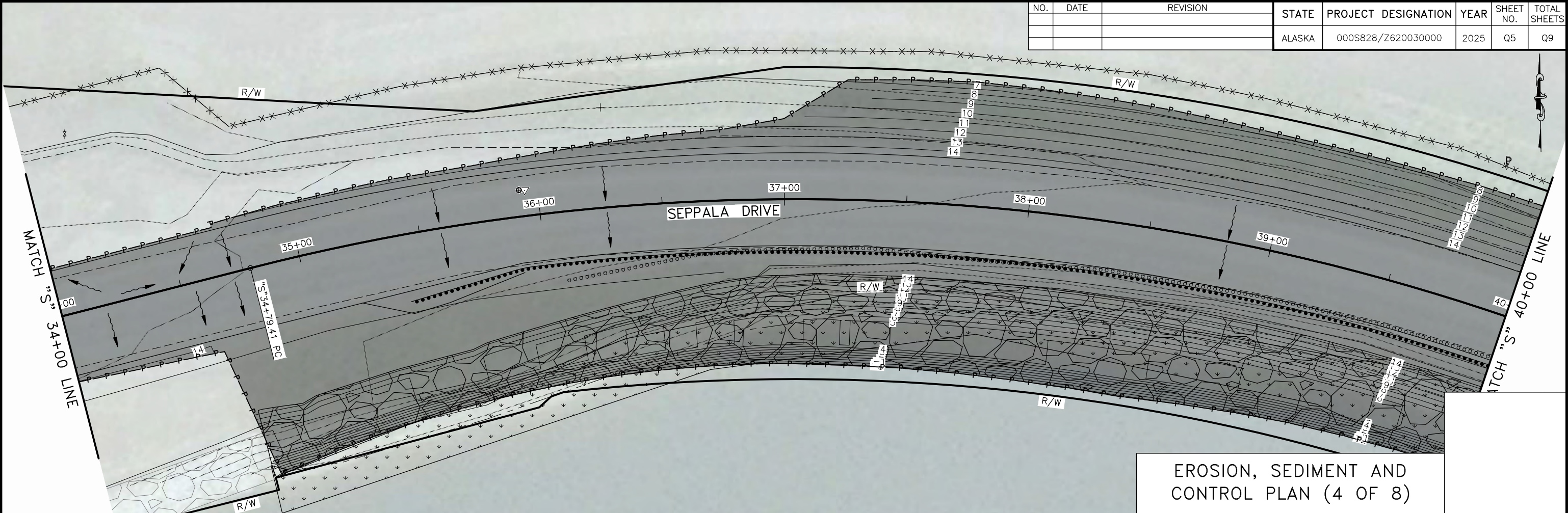


MATCH "S" 28+00 LINE

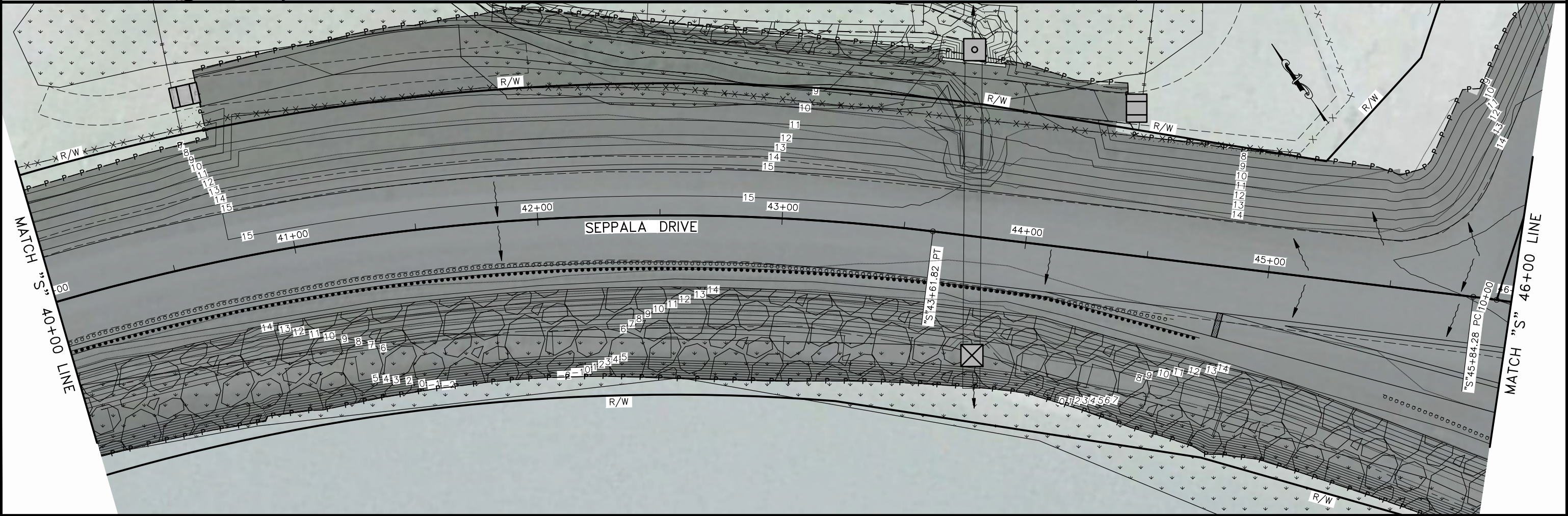
MATCH "S" 34+00 LINE



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	Q5	Q9

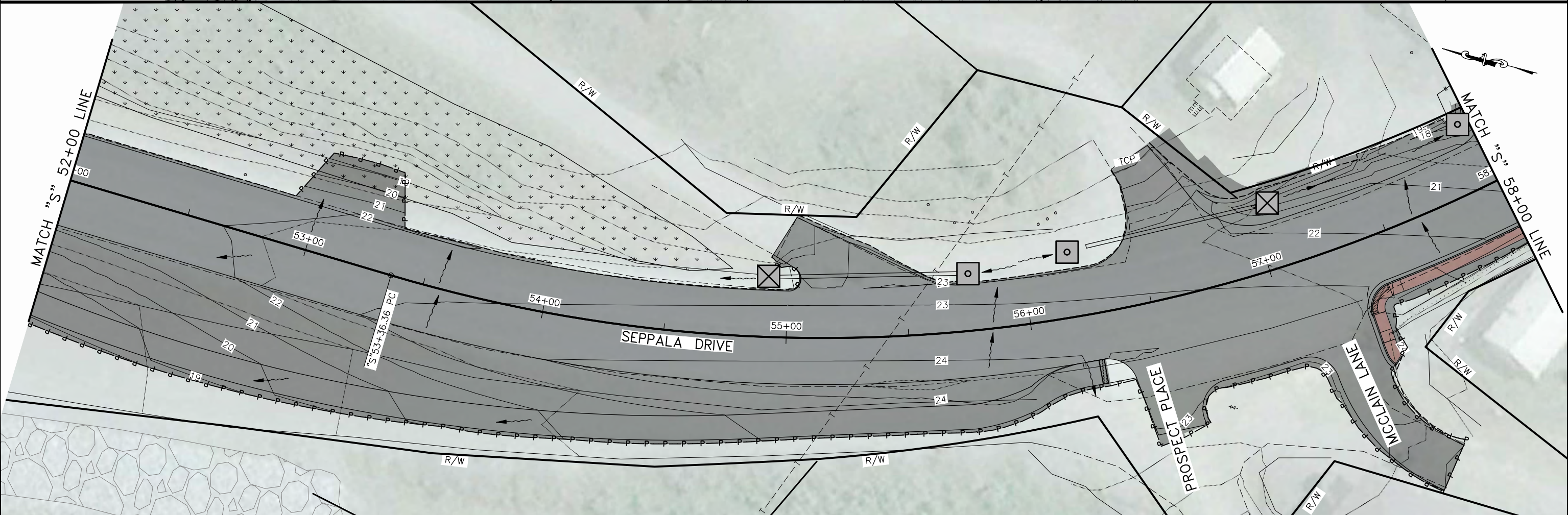
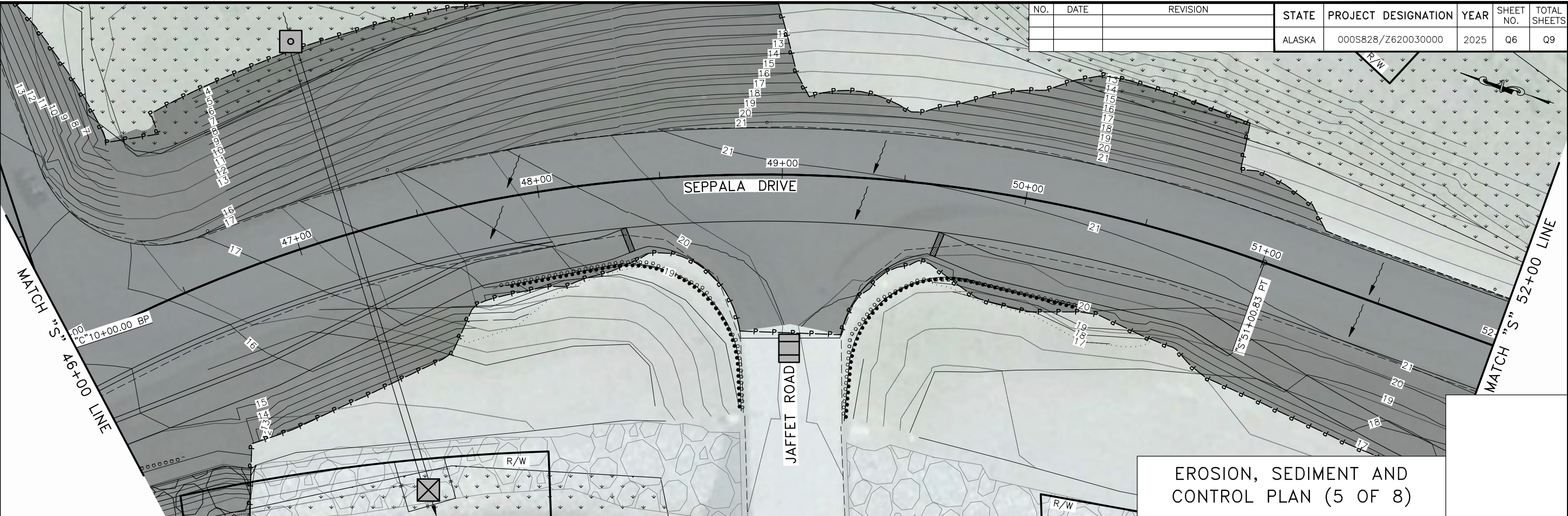


EROSION, SEDIMENT AND
CONTROL PLAN (4 OF 8)

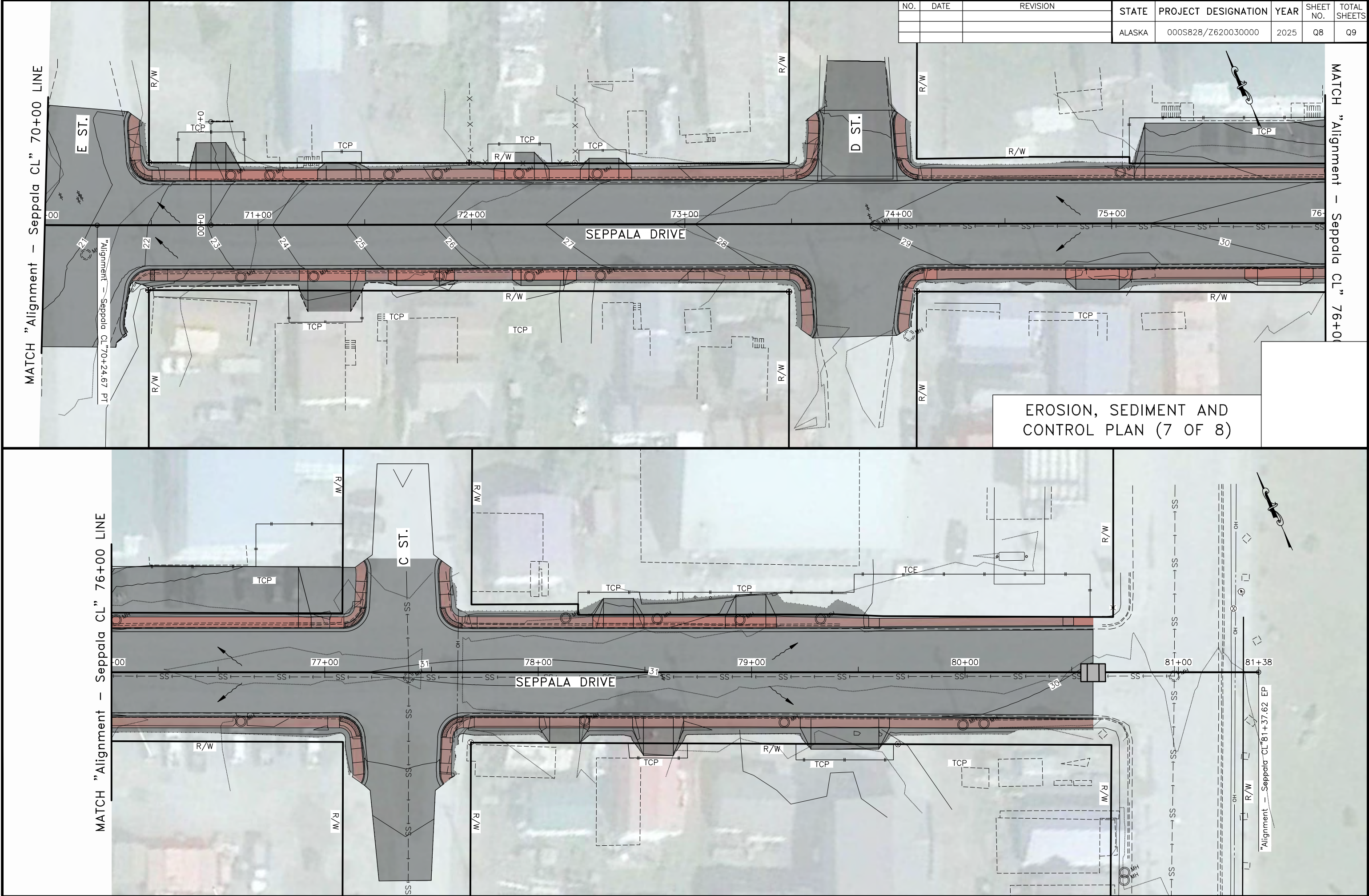


PLANS DEVELOPED BY: RESPEC, CERT. OF AUTHORIZATION NO.: AECC 163270, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
N:\Projects\17258FB-Seppala\C7001crst-17258FB-Q6 Erosion Control and Sediment Plan (5 of 8).Thu, Apr/10/25 01:53pm

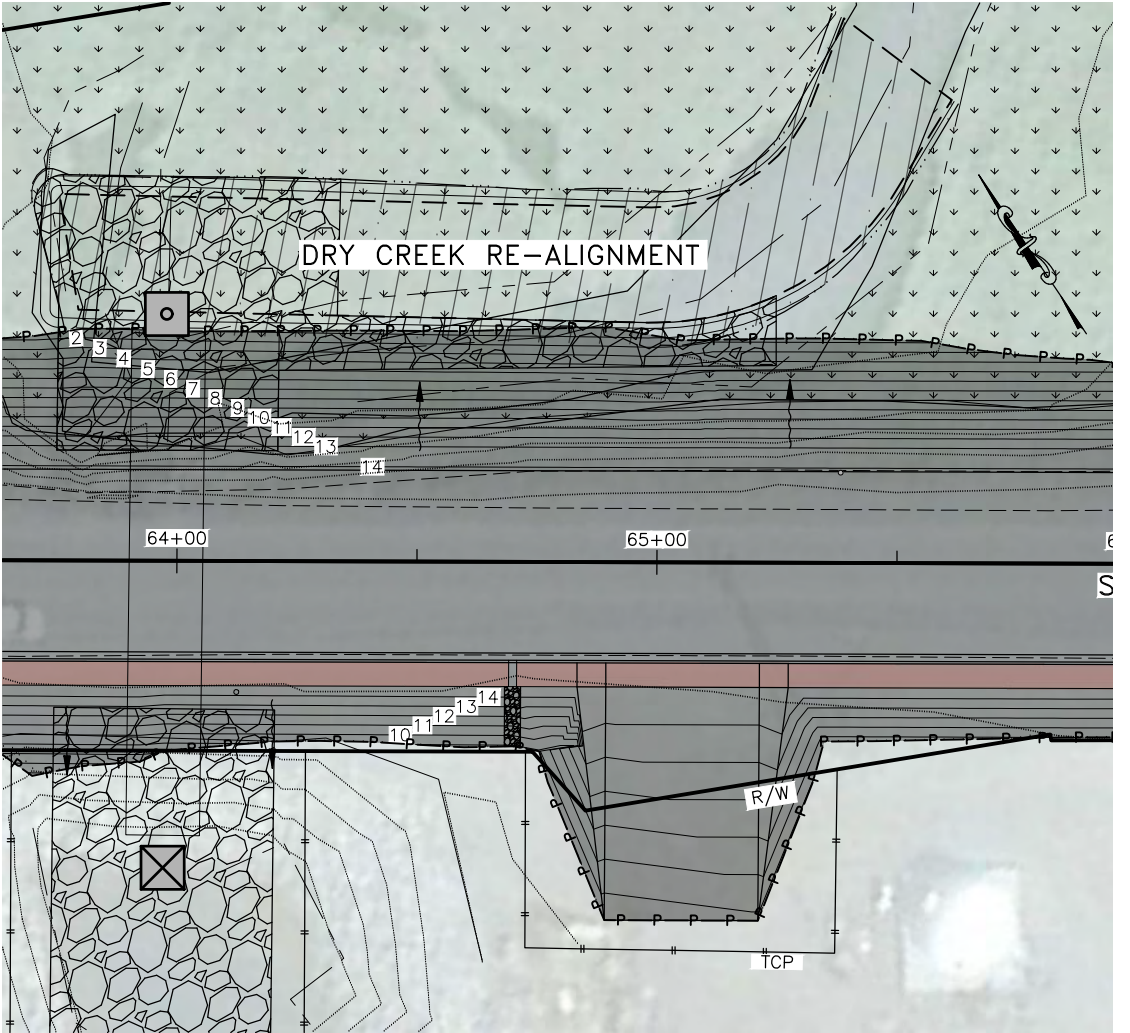
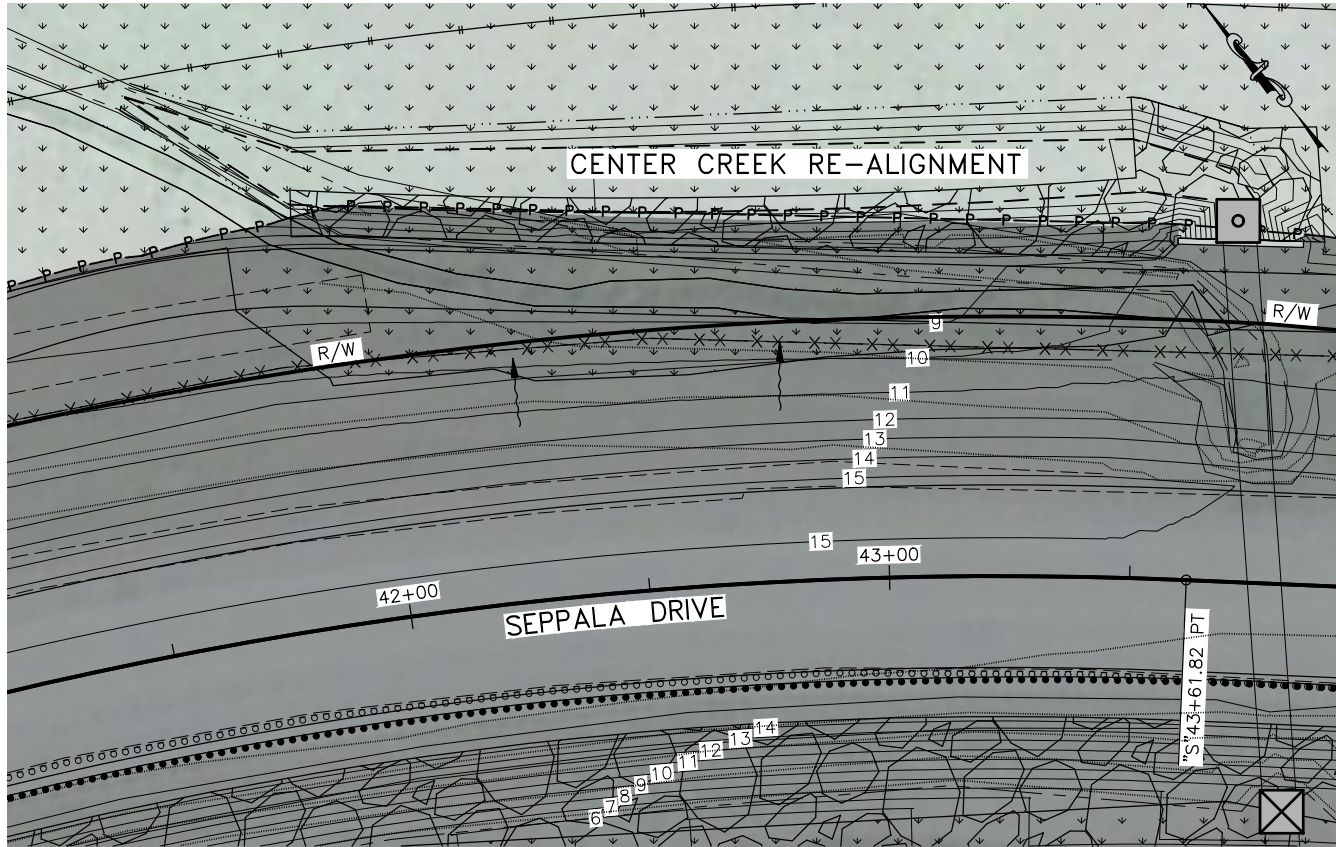
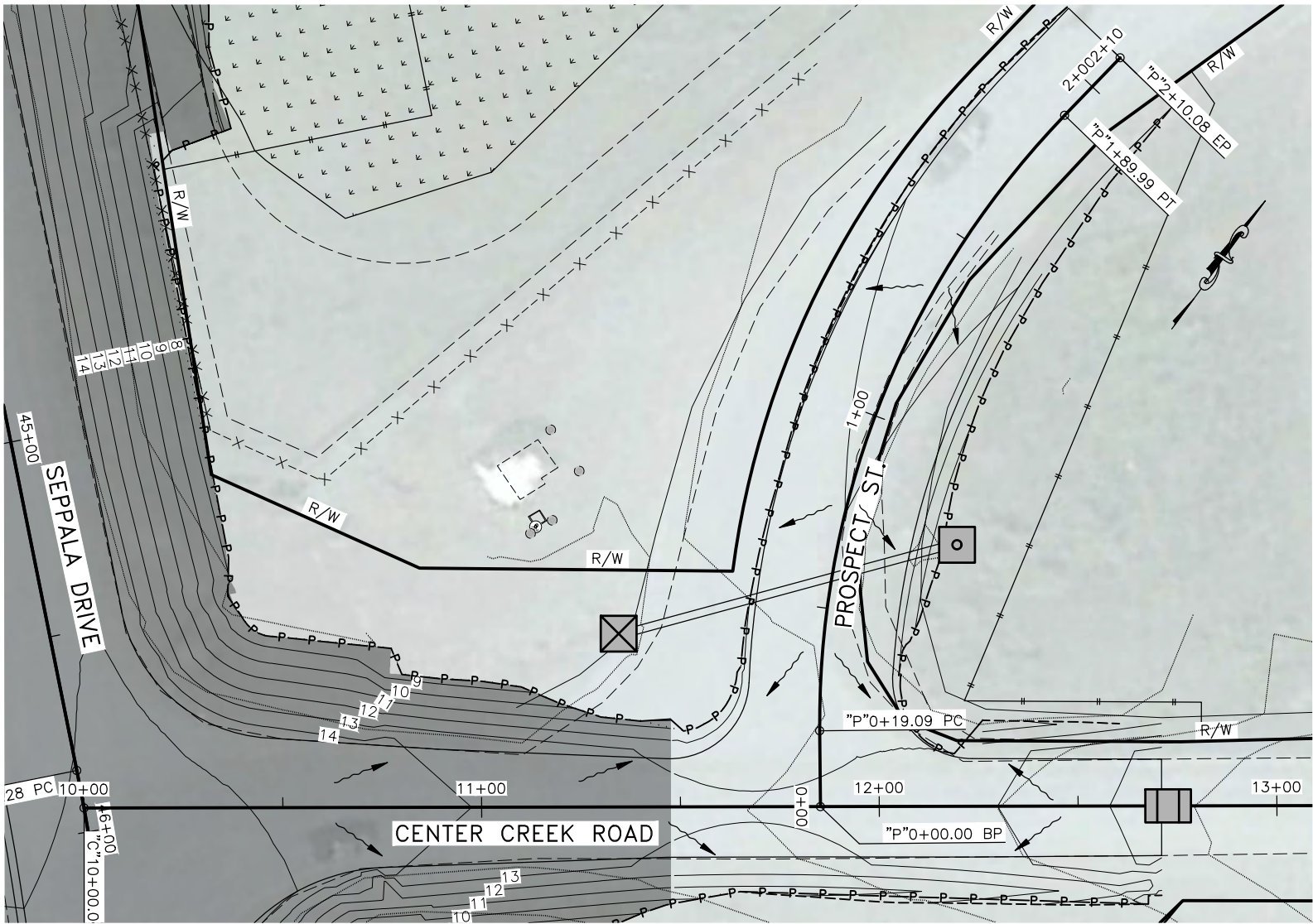
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	Q6	Q9



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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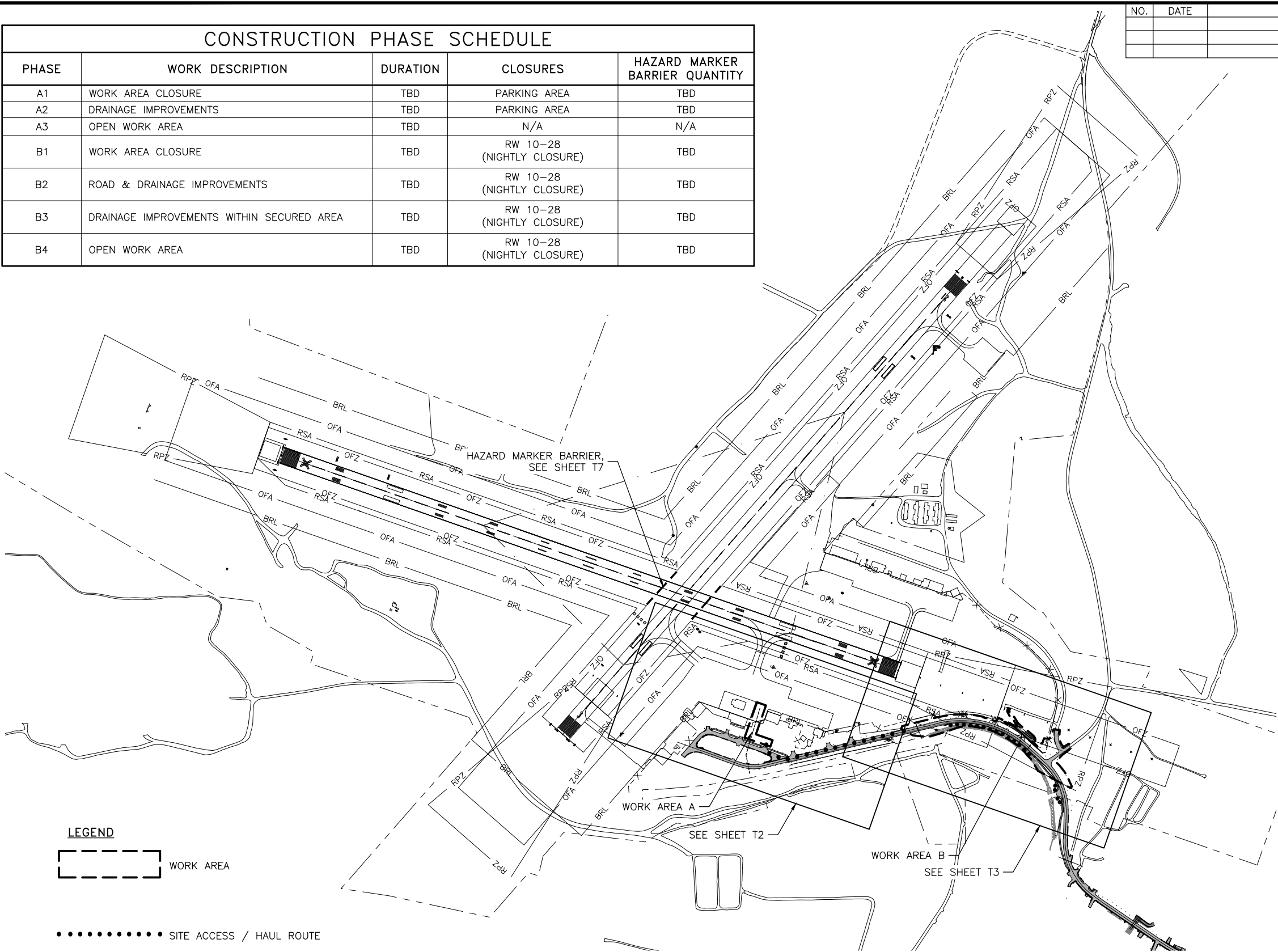


PLANS DEVELOPED BY: RESPEC, CERT. OF AUTHORIZATION NO.: AECC 163270, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
N:\Projects\17258FB-Seppala\C7001cnst-17258FB-09 Erosion Control and Sediment Plan (8 of 8).Thu, Apr/10/25 01:54pm



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	Q9	Q9

PLANS DEVELOPED BY: RESPEC, CERT. OF AUTHORIZATION NO.: AECC 163270, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
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CONSTRUCTION PHASE SCHEDULE				
PHASE	WORK DESCRIPTION	DURATION	CLOSURES	HAZARD MARKER BARRIER QUANTITY
A1	WORK AREA CLOSURE	TBD	PARKING AREA	TBD
A2	DRAINAGE IMPROVEMENTS	TBD	PARKING AREA	TBD
A3	OPEN WORK AREA	TBD	N/A	N/A
B1	WORK AREA CLOSURE	TBD	RW 10-28 (NIGHTLY CLOSURE)	TBD
B2	ROAD & DRAINAGE IMPROVEMENTS	TBD	RW 10-28 (NIGHTLY CLOSURE)	TBD
B3	DRAINAGE IMPROVEMENTS WITHIN SECURED AREA	TBD	RW 10-28 (NIGHTLY CLOSURE)	TBD
B4	OPEN WORK AREA	TBD	RW 10-28 (NIGHTLY CLOSURE)	TBD

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	T1	T7

CONSTRUCTION SAFETY & PHASING NOTES:

1. REFER TO THE SPECIFICATIONS AND THE CONSTRUCTION SAFETY AND PHASING PLAN (CSPP) NARRATIVE, ATTACHED AS A APPENDIX D TO THE SPECIFICATIONS, FOR FURTHER INFORMATION REGARDING OPERATIONAL SAFETY FOR THE PROJECT.
2. CONTRACTOR SHALL DEVELOP A CONSTRUCTION SCHEDULE AS PART OF THE SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) BASED ON THE REQUIREMENTS OF SUBSECTION 643-1.04.
3. THE CONTRACTOR MUST REPORT ANY SAFETY ISSUES TO THE ENGINEER AND AIRPORT MANAGER UPON DISCOVERY. THE CONTRACTOR MUST TAKE IMMEDIATE ACTION TO RESOLVE SAFETY ISSUES AS DIRECTED.
4. AIRCRAFT HAVE THE RIGHT OF WAY OVER CONSTRUCTION VEHICLES AND EQUIPMENT AT ALL TIMES. HAULING ACTIVITIES SHALL BE REGULATED TO THE ACCESS SHOWN ON THE PLANS.
5. THE CONTRACTOR SHALL CONTINUOUSLY CLEAN UP DURING ALL CONSTRUCTION ACTIVITIES AND SHALL PERFORM FINAL CLEAN UP PRIOR TO FINAL INSPECTION. THE CONTRACTOR SHALL ENSURE THAT ALL FOREIGN OBJECT DEBRIS (FOD) CREATED BY CONSTRUCTION ACTIVITY IS TO BE REMOVED IMMEDIATELY FROM ACTIVE SURFACES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL AND TAKE APPROPRIATE MEASURES AS NECESSARY OR AS DIRECTED BY THE ASO, ASCO, OR PROJECT ENGINEER. DUST CONTROL IS SUBSIDIARY TO 643 PAY ITEMS.
7. THE CONTRACTOR SHALL MAINTAIN ACCESS FOR AIRPORT VEHICLES, GROUND SERVICE EQUIPMENT, AND EMERGENCY VEHICLES AT ALL TIMES.
8. ALL PHASES REQUIRE ISSUANCE OF NOTAMS PRIOR TO BEGINNING CONSTRUCTION.
9. WORK WITHIN AREAS A AND B, CAN BE COMPLETED CONTEMPORANEOUSLY
10. THE SECURED AREA OF THE AIRPORT REFERS TO ALL AREAS WITHIN THE AIRPORT SECURITY FENCE.

PROJECT SCHEDULE:

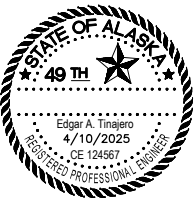
SPRING YEAR TBD:
SUBMIT THE SPCD WITHIN 90 DAYS OF RECEIPT OF NTP. BEGIN COORDINATION THROUGH ENGINEER WITH AIRPORT MANAGEMENT, FAA, AIRPORT USERS, AND OTHER PARTIES DESCRIBED IN THE CSPP.

SUMMER YEAR TBD:
COMPLETE ALL WORK WITHIN AREA A
COMPLETE ALL WORK WITHIN AREA B

ABBREVIATIONS

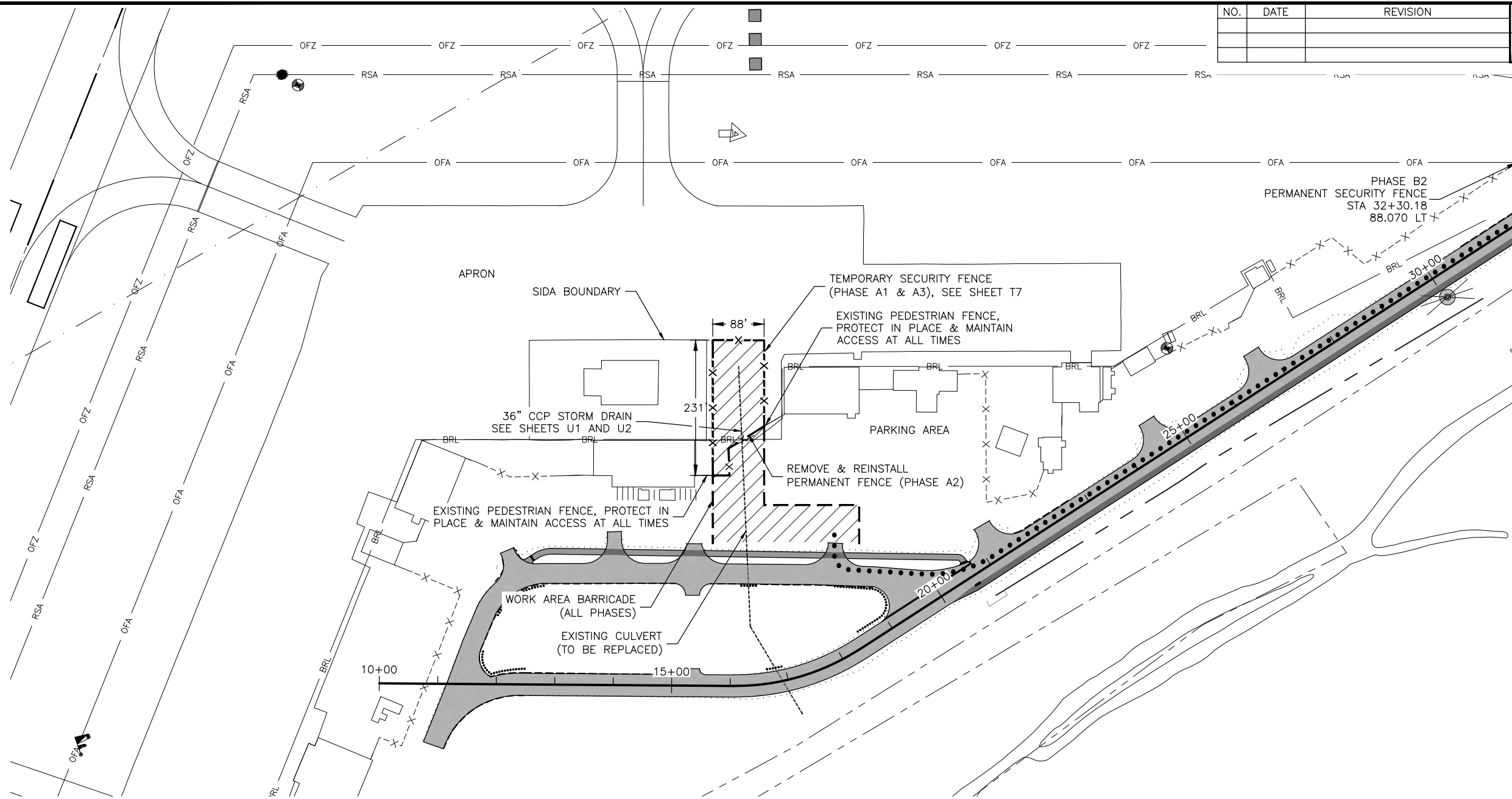
ASO	AIRPORT SAFETY OFFICER
ASCO	AIRPORT SAFETY COMPLIANCE OFFICER
CSSP	CONSTRUCTION SAFETY AND PHASING PLAN
CSP	CORRUGATED STEEL PIPE
FAA	FEDERAL AVIATION ADMINISTRATION
FOD	FOREIGN OBJECT OR DEBRIS
NAVAID	NAVIGATIONAL AID
NOTAM	NOTICE TO AIRMEN
NTP	NOTICE TO PROCEED
OFA	OBJECT FREE AREA
OFZ	OBSTACLE FREE ZONE
RPZ	RUNWAY PROTECTION ZONE
RSA	RUNWAY SAFETY AREA
RW	RUNWAY
SIDA	SECURITY IDENTIFICATION DISPLAY AREA
SPCD	SAFETY PLAN COMPLIANCE DOCUMENT
TBD	TO BE DETERMINED
TW	TAXIWAY

CONSTRUCTION SAFETY AND
PHASING PLAN OVERVIEW



PLANS DEVELOPED BY: RESPEC, CERT. OF AUTHORIZATION NO.: AECC 163270, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	T2	T7



LEGEND

- WORK AREA A
- SITE ACCESS / HAUL ROUTE
- AIRPORT PROPERTY BOUNDARY
- TEMPORARY SECURITY FENCE
- PERMANENT SECURITY FENCE
- CONSTRUCTION BARRICADE
- RSA RUNWAY SAFETY AREA (RSA)
- OFA OBJECT FREE AREA (OFA)
- OFZ OBSTACLE FREE ZONE (OFZ)
- RPZ RUNWAY PROTECTION ZONE (RPZ)

CONSTRUCTION SAFETY & PHASING NOTES:

- PRIOR TO STARTING ALL PHASES, COORDINATE THE FOLLOWING:
 - WITH THE AIRPORT MANAGER AND FAA FOR THE DE-ENERGIZING OF NAVAIDS AND RUNWAY LIGHTING (45 DAYS)
 - WITH THE AIRPORT MANAGER FOR THE ISSUANCE OF NOTAMS (14 DAYS)
 - WITH THE AIR CARRIERS, AIRPORT USERS, AND TENANTS (45 DAYS)
- PRIOR TO COMPLETION OF THE PHASE, THE CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING.
 - REMOVE ALL HAZARDOUS AREA BARRICADES, RUNWAY CLOSURE MARKERS, AND TAXIWAY CLOSURE MARKERS. ENSURE THE RUNWAY, APRON, AND TAXIWAY SURFACES ARE CLEAR OF FOREIGN OBJECT DEBRIS (FOD).
- AT THE END OF THE PHASE, COMPLETE INSPECTION OF ALL SURFACES WITH THE ENGINEER AND AIRPORT MANAGER. COMPLETE ANY PUNCH LISTS THAT ARE BROUGHT TO ATTENTION DURING THE INSPECTION WITHIN 24 HOURS OF THE INSPECTION.
- COORDINATE WITH THE AIRPORT MANAGER AND FAA FOR THE RE-ENERGIZING OF NAVAIDS AND RUNWAY LIGHTING. PERFORM THE COORDINATION WITH FAA FOR THE RE-ENERGIZING OF NAVAIDS AT A MINIMUM OF 7-DAYS IN ADVANCE.
- LOCATIONS OF HAZARD BARRIERS, CONSTRUCTION BARRICADES AND TEMPORARY SECURITY FENCING ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY ENGINEER. RELOCATE AS REQUIRED OR DIRECTED BY ENGINEER. REPAIR OR REPLACE DAMAGED ITEMS UPON DISCOVERY OR NOTIFICATION.

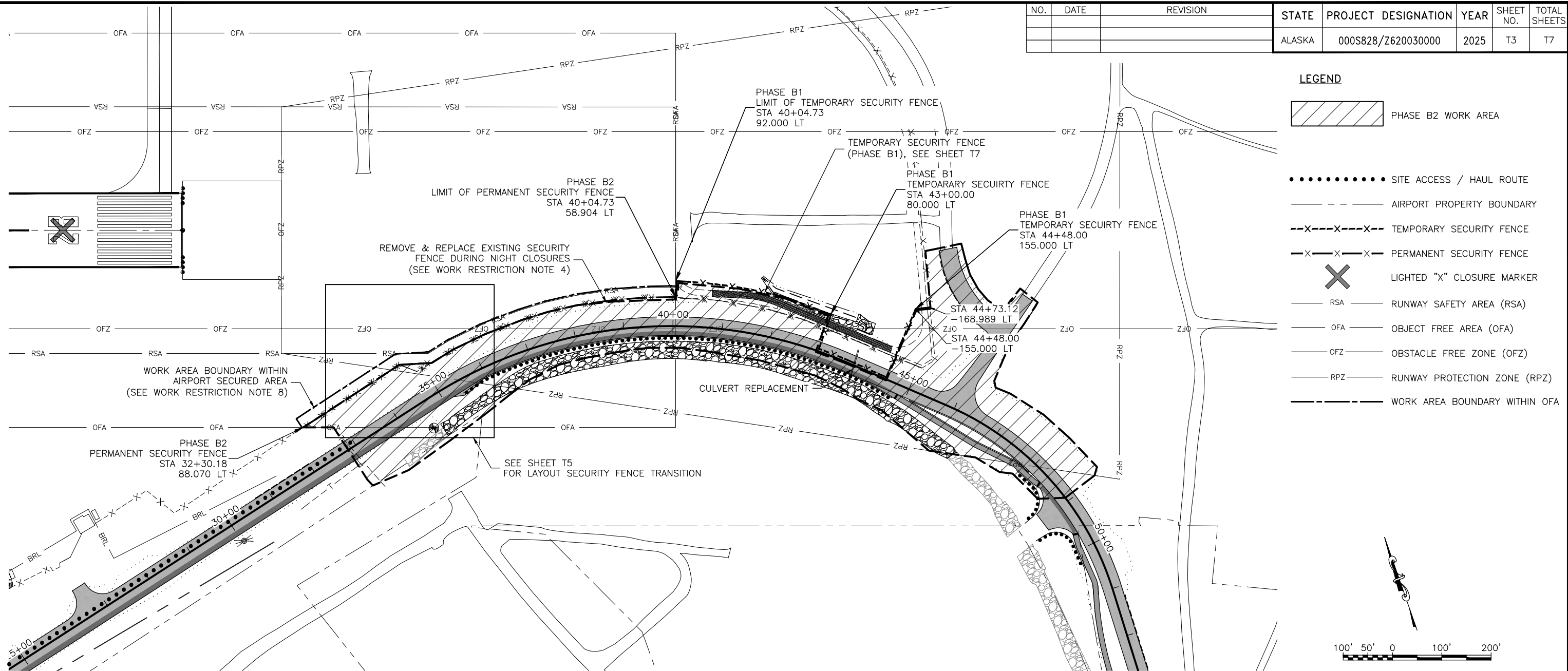
WORK RESTRICTIONS & OPERATIONAL IMPACTS:

- WORK AREA A WILL INCLUDE THE ALL CONSTRUCTION ACTIVITIES REQUIRED TO REPLACE THE EXISTING STORM DRAIN WITHIN THE AIRPORT PARKING AREA. THIS WORK AREA INCLUDES ALL WORK WITHIN THE SECURED AREA OF THE AIRPORT.
- WORK ELEMENTS SHALL CONFORM TO THE FOLLOWING PHASING REQUIREMENTS. SUBSEQUENT PHASING WORK CANNOT BE STARTED UNTIL THE PREVIOUS PHASING WORK IS COMPLETED.
 - INSTALL TEMPORARY SECURITY FENCE WITH CONCRETE BARRIERS AROUND WORK AREA A. PLACE HAZARD BARRIERS AROUND THE WORK AREA PRIOR TO BEGINNING WORK. HAZARD BARRIERS WITHIN THE AIRPORT SAFETY AREA CAN BE REMOVED UPON INSTALLATION OF TEMPORARY FENCE.
 - PERFORM ALL WORK REQUIRED WITHIN WORK AREA A. EXISTING SECURITY FENCE SHALL BE REMOVED PRIOR TO BEGINNING WORK AND REINSTALLED AT COMPLETION OF WORK.
 - REMOVE TEMPORARY SECURITY FENCE AND HAZARD BARRIERS WITHIN THE PARKING AREA.

CONSTRUCTION SAFETY AND
PHASING PLAN WORK AREA A



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CONSTRUCTION SAFETY & PHASING NOTES:

- PRIOR TO STARTING ALL PHASES, COORDINATE THE FOLLOWING:
 - WITH THE AIRPORT MANAGER AND FAA FOR THE DE-ENERGIZING OF NAVAIDS AND RUNWAY LIGHTING (45 DAYS)
 - WITH THE AIRPORT MANAGER FOR THE ISSUANCE OF NOTAMS (14 DAYS)
 - WITH THE AIR CARRIERS, AIRPORT USERS, AND TENANTS (45 DAYS)
- PRIOR TO COMPLETION OF THE PHASE, COORDINATE THE FOLLOWING.
 - REMOVE ALL HAZARDOUS AREA BARRICADES, RUNWAY CLOSURE MARKERS, AND TAXIWAY CLOSURE MARKERS. ENSURE THE RUNWAY, APRON, AND TAXIWAY SURFACES ARE CLEAR OF FOREIGN OBJECT DEBRIS (FOD).
- AT THE END OF THE PHASE, COMPLETE INSPECTION OF ALL SURFACES WITH THE ENGINEER AND AIRPORT MANAGER. COMPLETE ANY PUNCH LISTS THAT ARE BROUGHT TO ATTENTION DURING THE INSPECTION WITHIN 24 HOURS OF THE INSPECTION.
- COORDINATE WITH THE AIRPORT MANAGER AND FAA FOR THE RE-ENERGIZING OF NAVAIDS AND RUNWAY LIGHTING. PERFORM THE COORDINATION WITH FAA FOR THE RE-ENERGIZING OF NAVAIDS AT A MINIMUM OF 45-DAYS IN ADVANCE.
- LOCATIONS OF HAZARD BARRIERS, CONSTRUCTION BARRICADES AND TEMPORARY SECURITY FENCING ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY ENGINEER. RELOCATE AS REQUIRED OR DIRECTED BY ENGINEER. REPAIR OR REPLACE DAMAGED ITEMS UPON DISCOVERY OR NOTIFICATION.

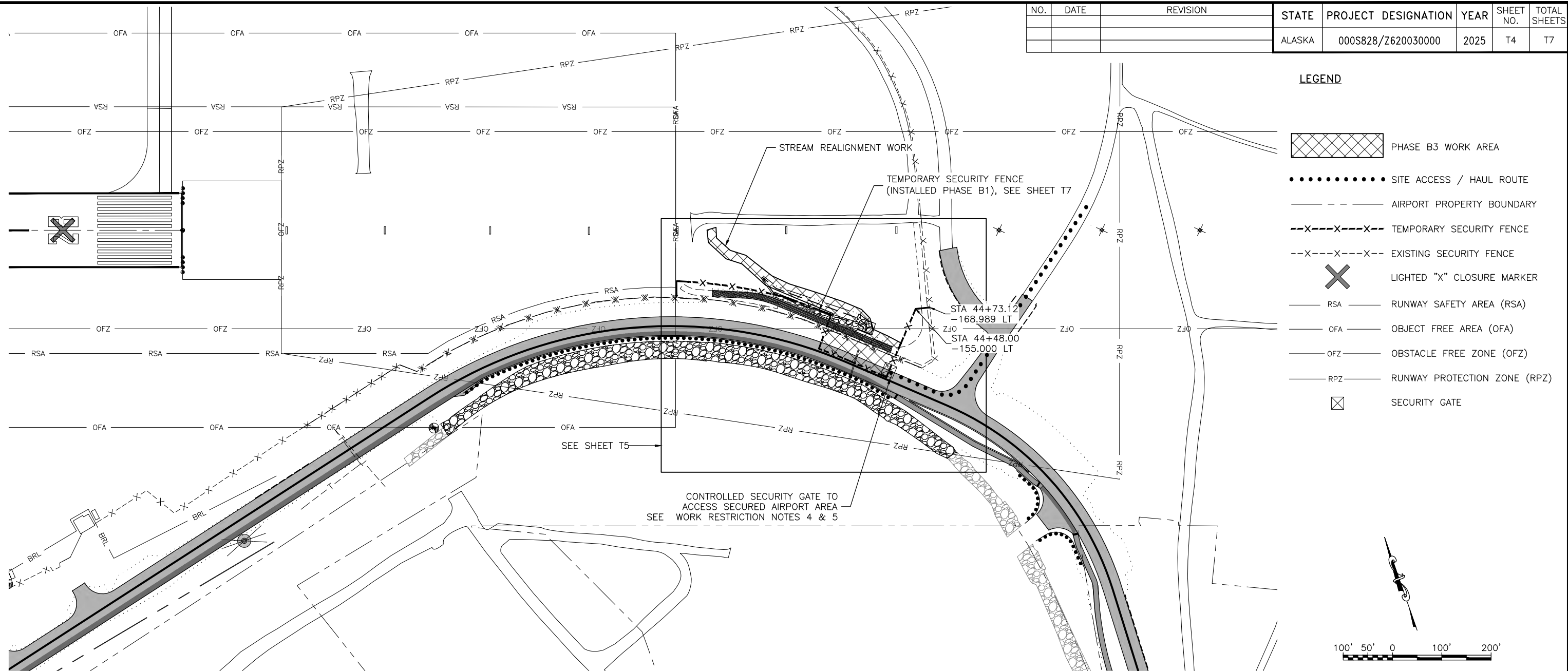
WORK RESTRICTIONS & OPERATIONAL IMPACTS:

- WORK AREA B WILL INCLUDE THE CONSTRUCTION ACTIVITIES ALONG SEPPALA DRIVE FROM STATION 31+70.84 TO 51+28.84, THE INTERSECTION OF SEPPALA DRIVE AND CENTER CREEK ROAD, MAINTENANCE ROAD CONNECTION, CENTER CREEK AND STREAM REALIGNMENT, AND ALL WORK ON CENTER CREEK ROAD AND PROSPECT STREET.
- ALL WORK WITHIN WORK AREA B SHALL BE COMPLETED DURING NIGHTTIME CLOSURES OF RUNWAY 10/28.
- WORK ELEMENTS SHALL CONFORM TO THE FOLLOWING PHASING REQUIREMENTS. SUBSEQUENT PHASING WORK CANNOT BE STARTED UNTIL THE PREVIOUS PHASING WORK IS COMPLETED.
 - INSTALL TEMPORARY SECURITY FENCE BETWEEN 40+04.73 AND 45+00 AND REMOVE EXISTING SECURITY FENCE. TEMPORARY SECURITY FENCE SHALL BECOME OUTER BOUNDARY OF SECURED AREA FOR AIRPORT. HAZARD MARKER BARRIERS SHALL BE PLACED PRIOR TO INSTALLATION OF TEMPORARY SECURITY FENCE AND CAN BE REMOVED UPON COMPLETION OF INSTALLATION.
 - PERFORM ALL WORK WITHIN WORK AREA B2 AND OUTSIDE OF SECURED AREA OF AIRPORT. REMOVE EXISTING SECURITY FENCE AND REPLACE WITH PERMANENT SECURITY FENCE BETWEEN STATIONS 32+30.18 AND 40+04.73.
 - INSTALL TEMPORARY SECURITY FENCE BETWEEN 43+00 AND 44+48.00 AND REMOVE EXISTING SECURITY FENCE. TEMPORARY SECURITY FENCE SHALL BECOME OUTER BOUNDARY OF SECURED AREA FOR AIRPORT. HAZARD MARKER BARRIERS SHALL BE PLACED PRIOR TO INSTALLATION OF TEMPORARY SECURITY FENCE AND CAN BE REMOVED UPON COMPLETION OF INSTALLATION.
- ESTABLISH TEMPORARY ACCESS POINT IN SECURITY FENCE, FOR CONTROLLED ACCESS TO WORK AREA B3. PERFORM ALL WORK REQUIRED WITHIN SECURED AREA OF AIRPORT.
- INSTALL PERMANENT SECURITY FENCE IN PRE-CONSTRUCTION LAYOUT, BETWEEN STATIONS 40+04.73 AND 45+50 AND REMOVE TEMPORARY SECURITY FENCE.
- THE CONTRACTOR SHALL MINIMIZE OPENINGS IN THE SECURITY FENCE TO A MAXIMUM WIDTH THAT CAN BE REASONABLY PROTECTED BY A GATE ATTENDANT. ALL OPENINGS SHALL BE CLOSED TO RESTRICT ACCESS AT THE END OF EACH WORK SHIFT.
- A GATE ATTENDANT SHALL BE STATIONED AT ALL TIMES THAT THERE IS AN ACTIVE ACCESS POINT OR OPENING IN THE SECURITY FENCE.
- ALL PERSONNEL PERFORMING WORK WITHIN THE AIRPORT SECURED AREA SHALL BE BADGED OR UNDER ESCORT.
- TEMPORARY SECURITY FENCE SHALL CONFORM TO THE FENCE DETAIL REQUIREMENTS ON SHEET E4.
- ALL WORK PERFORMED WITHIN AIRPORT OBJECT FREE AREA, INCLUDING ALL LABOR, EQUIPMENT, AND MATERIALS, SHALL REMAIN WITHIN 20 FEET OF SECURITY FENCE.

CONSTRUCTION SAFETY AND
PHASING PLAN WORK AREA B
(1 OF 3)



PLANS DEVELOPED BY: RESPEC, CERT. OF AUTHORIZATION NO.: AECC 163270, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
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CONSTRUCTION SAFETY & PHASING NOTES:

- PRIOR TO STARTING ALL PHASES, COORDINATE THE FOLLOWING:
 - WITH THE AIRPORT MANAGER AND FAA FOR THE DE-ENERGIZING OF NAVAIDS AND RUNWAY LIGHTING (45 DAYS)
 - WITH THE AIRPORT MANAGER FOR THE ISSUANCE OF NOTAMS (14 DAYS)
 - WITH THE AIR CARRIERS, AIRPORT USERS, AND TENANTS (45 DAYS)
- PRIOR TO COMPLETION OF THE PHASE, COORDINATE THE FOLLOWING.
 - REMOVE ALL HAZARDOUS AREA BARRICADES, RUNWAY CLOSURE MARKERS, AND TAXIWAY CLOSURE MARKERS. ENSURE THE RUNWAY, APRON, AND TAXIWAY SURFACES ARE CLEAR OF FOREIGN OBJECT DEBRIS (FOD).
- AT THE END OF THE PHASE, COMPLETE INSPECTION OF ALL SURFACES WITH THE ENGINEER AND AIRPORT MANAGER. COMPLETE ANY PUNCH LISTS THAT ARE BROUGHT TO ATTENTION DURING THE INSPECTION WITHIN 24 HOURS OF THE INSPECTION.
- COORDINATE WITH THE AIRPORT MANAGER AND FAA FOR THE RE-ENERGIZING OF NAVAIDS AND RUNWAY LIGHTING. PERFORM THE COORDINATION WITH FAA FOR THE RE-ENERGIZING OF NAVAIDS AT A MINIMUM OF 7-DAYS IN ADVANCE.
- LOCATIONS OF HAZARD BARRIERS, CONSTRUCTION BARRICADES AND TEMPORARY SECURITY FENCING ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY ENGINEER. RELOCATE AS REQUIRED OR DIRECTED BY ENGINEER. REPAIR OR REPLACE DAMAGED ITEMS UPON DISCOVERY OR NOTIFICATION.

WORK RESTRICTIONS & OPERATIONAL IMPACTS:

- WORK AREA B WILL INCLUDE THE CONSTRUCTION ACTIVITIES ALONG SEPPALA DRIVE FROM STATION 31+70.84 TO 51+28.84, THE INTERSECTION OF SEPPALA DRIVE AND CENTER CREEK ROAD, MAINTENANCE ROAD CONNECTION, CENTER CREEK AND STREAM REALIGNMENT, AND ALL WORK ON CENTER CREEK ROAD AND PROSPECT STREET.
- ALL WORK WITHIN WORK AREA B SHALL BE COMPLETED DURING NIGHTTIME CLOSURES OF RUNWAY 10/28.
- WORK ELEMENTS SHALL CONFORM TO THE FOLLOWING PHASING REQUIREMENTS. SUBSEQUENT PHASING WORK CANNOT BE STARTED UNTIL THE PREVIOUS PHASING WORK IS COMPLETED.
 - INSTALL TEMPORARY SECURITY FENCE BETWEEN 40+04.73 AND 45+00 AND REMOVE EXISTING SECURITY FENCE. TEMPORARY SECURITY FENCE SHALL BECOME OUTER BOUNDARY OF SECURED AREA FOR AIRPORT. HAZARD MARKER BARRIERS SHALL BE PLACED PRIOR TO INSTALLATION OF TEMPORARY SECURITY FENCE AND CAN BE REMOVED UPON COMPLETION OF INSTALLATION.
 - PERFORM ALL WORK WITHIN WORK AREA B2 AND OUTSIDE OF SECURED AREA OF AIRPORT. REMOVE EXISTING SECURITY FENCE AND REPLACE WITH PERMANENT SECURITY FENCE BETWEEN STATIONS 32+30.18 AND 40+04.73.
 - INSTALL TEMPORARY SECURITY FENCE BETWEEN 43+00 AND 44+48.00 AND REMOVE EXISTING SECURITY FENCE. TEMPORARY SECURITY FENCE SHALL BECOME OUTER BOUNDARY OF SECURED AREA FOR AIRPORT. HAZARD MARKER BARRIERS SHALL BE PLACED PRIOR TO INSTALLATION OF TEMPORARY SECURITY FENCE AND CAN BE REMOVED UPON COMPLETION OF INSTALLATION.
 - ESTABLISH TEMPORARY ACCESS POINT IN SECURITY FENCE, FOR CONTROLLED ACCESS TO WORK AREA B3. PERFORM ALL WORK REQUIRED WITHIN SECURED AREA OF AIRPORT.
 - INSTALL PERMANENT SECURITY FENCE IN PRE-CONSTRUCTION LAYOUT, BETWEEN STATIONS 40+04.73 AND 45+50 AND REMOVE TEMPORARY SECURITY FENCE.
- THE CONTRACTOR SHALL MINIMIZE OPENINGS IN THE SECURITY FENCE TO A MAXIMUM WIDTH THAT CAN BE REASONABLY PROTECTED BY A GATE ATTENDANT. ALL OPENINGS SHALL BE CLOSED TO RESTRICT ACCESS AT THE END OF EACH WORK SHIFT.
- A GATE ATTENDANT SHALL BE STATIONED AT ALL TIMES THAT THERE IS AN ACTIVE ACCESS POINT OR OPENING IN THE SECURITY FENCE.
- ALL PERSONNEL PERFORMING WORK WITHIN THE AIRPORT SECURED AREA SHALL BE BADGED OR UNDER ESCORT.
- TEMPORARY SECURITY FENCE SHALL CONFORM TO THE FENCE DETAIL REQUIREMENTS ON SHEET E4.

CONSTRUCTION SAFETY AND
PHASING PLAN WORK AREA B
(2 OF 3)



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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LEGEND

- PHASE B2 WORK AREA
- PHASE B3 WORK AREA
- AIRPORT PROPERTY BOUNDARY
- X--X--X--

TEMPORARY SECURITY FENCE
- X--X--X--

EXISTING SECURITY FENCE
- X-X-X-

NEW PERMANENT SECURITY FENCE
- WORK AREA BOUNDARY WITHIN OFA
- RSA —

RUNWAY SAFETY AREA (RSA)
- OFA —

OBJECT FREE AREA (OFA)
- OFZ —

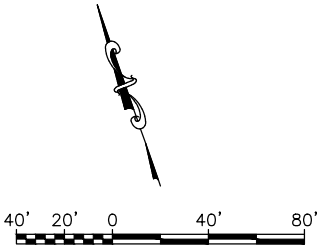
OBSTACLE FREE ZONE (OFZ)
- RPZ —

RUNWAY PROTECTION ZONE (RPZ)
- ⊠

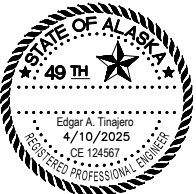
SECURITY GATE

WORK AREA B2 PLAN VIEW

SECURITY FENCE TRANSITION



CONSTRUCTION SAFETY AND
PHASING PLAN WORK AREA B
(3 OF 3)



PLANS DEVELOPED BY: RESPEC, CERT. OF AUTHORIZATION NO.: AECC 163270, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
N:\Projects\17258FB-Seppola\C\0006cnst-17258FB-16 Thu, Apr/10/25 01:56pm

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	T6	T7

- REFER TO THE CONSTRUCTION SAFETY AND PHASING PLAN (CSPP) NARRATIVE (SPECIFICATIONS APPENDIX D) AND SPECIFICATIONS SECTION 643 FOR ADDITIONAL CONSTRUCTION PHASING AND SEQUENCING INFORMATION AND FOR LIMITATIONS ON CONSTRUCTION. PHASE CONSTRUCTION ACTIVITIES TO COMPLY WITH ALL CONDITIONS OF THE SAFETY PLAN AND PROJECT PERMITS STIPULATIONS.
- SUBMIT A SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) TO THE ENGINEER FOR REVIEW PER FAA AC 150/5370-2G. DO NOT BEGIN CONSTRUCTION ACTIVITIES UNTIL THE ENGINEER APPROVES THE SPCD IN WRITING. ALLOW 30 DAYS FOR REVIEW. INCLUDE CONSTRUCTION SEQUENCING. IF PLAN DIFFERS FROM WHAT IS SHOWN OR IF SUBSEQUENT CHANGES ARE MADE, SUBMIT A REVISION TO THE ENGINEER FOR REVIEW AND APPROVAL. ALLOW 10 DAYS FOR REVIEW OF REVISED SAFETY AND SEQUENCING PLANS.
- WHENEVER THE PLANS OR SPECIFICATIONS CALL FOR COORDINATION, NOTIFICATION, CONTACT, OR OTHER INTERACTION WITH FAA, TSA, AIRPORT MANAGEMENT, MAINTENANCE AND OPERATIONS, AIR CARRIERS, AIRPORT TENANTS, AIRPORT USERS, ANY LOCAL, STATE, OR FEDERAL AGENCY, GROUP, OR ASSOCIATION, OR THE GENERAL PUBLIC, SUCH ACTIVITY SHALL BE DONE THROUGH, IN THE PRESENCE OF, OR WITH THE WRITTEN APPROVAL OF THE ENGINEER. ALLOW SUFFICIENT TIME FOR COORDINATION AND APPROVALS WITHIN PROPOSED WORK SCHEDULES.
- MAINTAIN AIRCRAFT ACCESS FOR CARGO AND PASSENGER OPERATIONS TO THE ACTIVE RUNWAY AT ALL TIMES. DO NOT ENTER THE ACTIVE RUNWAY RSA. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND WORKING AROUND ALL SCHEDULED OPERATIONS.
- PROVIDE AN ACCESS PLAN FOR APPROVAL BY THE ENGINEER. APPROVAL OF ACCESS PLAN IS REQUIRED PRIOR TO BEGINNING OF WORK. ACCESS PLAN SHALL INCLUDE, BUT IS NOT LIMITED TO, SCHEDULING WORK, SEPARATION OF AIRCRAFT AND PASSENGERS FROM ACTIVE CONSTRUCTION, TRAFFIC CONTROL DEVICES REQUIRED, AND HAZARD MARKER BARRIER LOCATIONS. SEE GCP-80 AND SPECIFICATIONS APPENDIX D FOR DETAILS.
- THE PROJECT WILL REQUIRE TEMPORARY CLOSURES OF RUNWAY RUNWAY 10-28, AND TAXIWAYS. COORDINATE THROUGH THE ENGINEER PRIOR TO OPENING OR CLOSING AREAS TO AIRCRAFT OPERATIONS AND/OR ADVANCING TO THE NEXT WORK AREA. ALLOW FOR ISSUANCE OF NOTICE TO AIR MISSIONS (NOTAMS) BY AIRPORT MANAGEMENT TO KEEP ALL AIRPORT USERS INFORMED OF CLOSED AREAS AND APRON, TAXIWAY, AND RUNWAY STATUS.
- RUNWAY AND TAXIWAY CLOSURES CAN BE PROPOSED AND PUT INTO AFFECT ONLY WITH THE APPROVAL OF THE ENGINEER. TEMPORARY CLOSURES OF RUNWAY 10-28 ARE ANTICIPATED FOR COMPLETION OF ROAD IMPROVEMENTS, CULVERT AND STORM DRAIN INSTALLATION, STREAM REALIGNMENT, AND GUARDRAIL INSTALLATION.
- PROVIDE WEEKLY NOTIFICATIONS OF ACTIVE AIRPORT AREAS AND CONSTRUCTION ACTIVITIES TO THE CONTACTS LISTED IN THE CSPP AND/OR SPECIFICATIONS. CARRYOUT CONTINUING COORDINATION THROUGH THE ENGINEER USING WEEKLY BRIEFINGS WITH AIRPORT OPERATIONS, AIRPORT MAINTENANCE, AIRPORT RESCUE AND FIRE FIGHTING (ARFF) PERSONNEL, AND AIRPORT USERS TO KEEP EVERYONE AWARE OF THE STATUS AND CHANGES OF AIRPORT SURFACES IN RELATION TO GROUND TRAFFIC. PROVIDE DETAILED DRAWINGS INDICATING TRAFFIC ROUTES FOR GROUND TRAFFIC. INDICATE CLOSED AREAS AND PROVIDE UPDATED DRAWINGS AS CONSTRUCTION PROCEEDS.
- PLACE HAZARD MARKER BARRIERS WHERE SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER FOR EACH PHASE. HAZARD MARKER BARRIERS ARE SHOWN AT APPROXIMATE LOCATIONS. ADDITIONAL LOCATIONS OR ADJUSTMENTS MAY BE REQUIRED. PLACE HAZARD MARKER BARRIERS IN ACCORDANCE WITH SPECIFICATIONS SECTION 643, THE CSPP, AND AS APPROVED BY THE ENGINEER. THE ENGINEER MAY DIRECT THE PLACEMENT OF ADDITIONAL BARRIERS AS DEEMED NECESSARY. MONITOR HAZARD MARKER BARRIERS FREQUENTLY. CORRECT DEFICIENCIES IMMEDIATELY.
- THE CONTRACTOR MUST REPORT ANY SAFETY ISSUES TO THE ENGINEER AND AIRPORT MANAGER UPON DISCOVERY. THE CONTRACTOR MUST TAKE IMMEDIATE ACTION TO RESOLVE SAFETY ISSUES AS DIRECTED.
- NO PERSONNEL OR EQUIPMENT MAY BE IN THE RSA DURING AIRCRAFT OPERATIONS. CLEAR EQUIPMENT FROM WORK AREAS WHEN REQUESTED BY THE ENGINEER. NO EQUIPMENT OR MATERIAL STOCKPILES MAY REMAIN IN CRITICAL AREAS; RUNWAY OBJECT FREE AREAS; TAXIWAY OBJECT FREE AREAS; OR ON CLOSED RUNWAYS, TAXIWAYS, OR APRONS DURING NON-WORK HOURS.
- COORDINATE THROUGH THE ENGINEER FOR THE SHUTDOWN OF ONLY THOSE FAA FACILITIES OUTLINED IN THE CSPP NARRATIVE AND THE CONTRACTOR'S APPROVED SPCD, ALL OTHER FAA FACILITIES MUST REMAIN IN OPERATION. REMAIN CLEAR OF ALL NAVAID CRITICAL AREAS DURING AIRCRAFT OPERATIONS. SEE THE PLAN VIEW FOR LOCATION OF THE CRITICAL AREAS. DAMAGE TO FAA FACILITIES, INCLUDING POWER DISTRIBUTION, MUST BE IMMEDIATELY REPAIRED
- FIELD VERIFY SUITABILITY OF HAUL ROUTES AND STAGING AREAS SHOWN. HAUL ROUTES AND STAGING AREAS AS SHOWN MUST BE APPROVED BY THE ENGINEER. PROVIDE MAINTENANCE PER SPECIFICATIONS. PROVIDE FLAGGERS TO CONTROL ACCESS ONTO THE AIRPORT OPERATIONS AREA (AOA). FLAGGERS SHALL CONTACT FLIGHT SERVICE STATION (FSS) FOR CURRENT TRAFFIC ADVISORIES PRIOR TO EACH TRANSIT. HAUL ACCESS ACROSS CLOSED PORTIONS OF THE RUNWAY WILL BE AT THE DISCRETION OF THE ENGINEER AND IS SUBJECT TO RUNWAY CLOSURE AND REOPENING REQUIREMENTS IN THE SPECIFICATIONS.
- KEEP ALL ACTIVE HAUL ROUTES AND AIRPORT SURFACES CLEAN OF MATERIAL. REMOVE SPILLED OR TRACKED MATERIALS IMMEDIATELY TO AVOID DAMAGING AIRCRAFT. REPAIR ANY HAUL ROUTE DAMAGE TO PRECONSTRUCTION CONDITIONS. AN APPROVED FOREIGN OBJECT AND DEBRIS (FOD) INSPECTION AND TAXIWAY/APRON CLEANING IS REQUIRED PRIOR TO THE END OF EVERY SHIFT.
- PROVIDE AN AIRPORT FLAGGER WHERE CONSTRUCTION ACTIVITY IS CONDUCTED WITHIN 125' OF AN OPEN RUNWAY; WHERE CONSTRUCTION ACTIVITY IS CONDUCTED IN CLOSE PROXIMITY TO OPERATING AIRCRAFT; WHERE ACCESS GATES TO THE AOA ARE LEFT OPEN FOR HAUL OPERATIONS; AND WHERE THE ENGINEER OR AIRPORT PERSONNEL DETERMINES A FLAGGER IS NECESSARY.
- MARK OPEN TRENCHES OR EXCAVATIONS WITH HAZARD AREA BARRIERS. LIGHT WITH RED LIGHTS DURING HOURS OF RESTRICTED VISIBILITY OR DARKNESS. SEE CSPP REGARDING RESTRICTIONS FOR TRENCH AND EXCAVATION LOCATIONS.
- VEHICLES AND EQUIPMENT MUST HAVE BEACONS AND COMPANY RADIOS. TRAFFIC CONTROL MUST HAVE AIRCRAFT AND COMPANY RADIOS. REFER TO THE CSPP NARRATIVE (SPECIFICATIONS APPENDIX D) FOR FURTHER VEHICLE REQUIREMENTS.

- ARFF VEHICLES MUST HAVE CONTINUOUS ACCESS TO THE ENTIRE AIRPORT FOR EMERGENCIES. MAINTAIN SUITABLE CORRIDORS AND COORDINATE ACCESS WITH ARFF PERSONNEL THROUGH THE ENGINEER AS REQUIRED. KEEP ARFF INFORMED OF WORK AREAS, CLOSURES, AND ALL FENCE GATES THAT ARE ADDED TO SERVICE OR OUT OF SERVICE FOR WORK. CONTRACTOR MUST BE PREPARED TO OPEN THE AIRPORT FOR MEDICAL EVACUATION (MEDEVAC) AND OTHER EMERGENCY LANDINGS AT ALL TIMES THE WORK AREA MUST BE CLEARED OF EQUIPMENT, PERSONNEL, CLOSURE MARKERS, BARRICADES, AND ANY OTHER OBSTRUCTIONS GIVEN EXTREMELY SHORT NOTICE (30 MINUTES OR LESS).
- FOR USE OF HAUL ROUTES, CONSTRUCTION OF TEMPORARY ACCESS ONTO THE RUNWAY EMBANKMENT MAY BE NECESSARY. TEMPORARY IMPROVEMENTS MAY INCLUDE GEOTEXTILE SEPARATION, CULVERT PIPE AND FILL MATERIAL. REMOVE THE ACCESS AND RESTORE TO ORIGINAL CONDITION (AS STATED IN SPECIFICATION SUBSECTION 107-1.11) AT PHASE COMPLETION.
- LOCATE BURIED FAA ELECTRICAL LINES AND PLACE STEEL PLATES (OR EQUIVALENT PROTECTION, AS APPROVED BY THE ENGINEER) OVER UTILITY LINE CROSSING LOCATIONS.
- PROVIDE A GATE GUARD IF ANY GATE REMAINS OPEN DURING CONSTRUCTION ACTIVITIES.
- REFER TO FAA ADVISORY CIRCULAR (AC) 150/5370-2 FOR ADDITIONAL GUIDANCE ON PREPARING SAFETY PLANS. REFER TO AC 150/5300-13 CHAPTER 3 FOR CLEARANCE STANDARDS RELATED TO THE OFA, OFZ, AND RSA. THE MOST RESTRICTIVE CRITERIA GOVERNS.

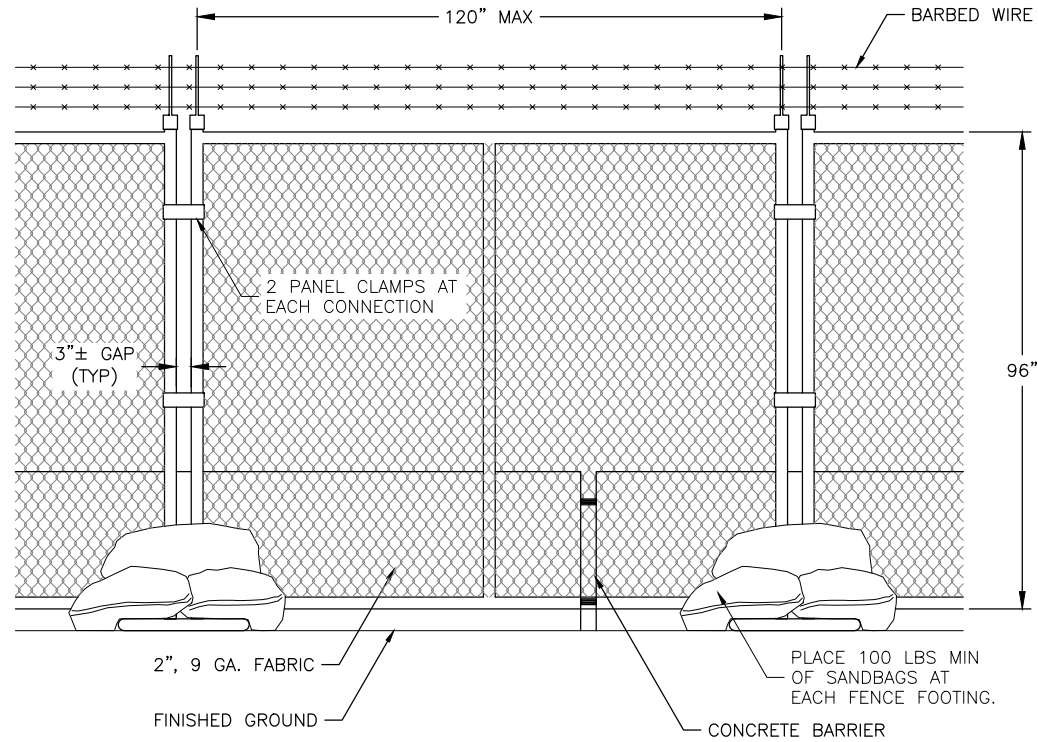
SAFETY AREAS				
RUNWAY	DIMENSION	RSA	OFA	OFZ
RUNWAY 10-28	150' x 6,008'	500' x 7,201' * SEE NOTE	800' x 8,000'	400' x 6,408'
RUNWAY 3-21	150' x 6,176'	500' x 7,176'	800' x 7,576'	400' x 5,976'

* THE LAST 500' OF THE EAST END THE RSA AT RUNWAY END 28, IS SHORTENED TO A WIDTH 365' (135' FROM THE SOUTHEAST CORNER). THIS RSA BOUNDARY MIRRORS THE EXISTING FENCE ALIGNMENT.

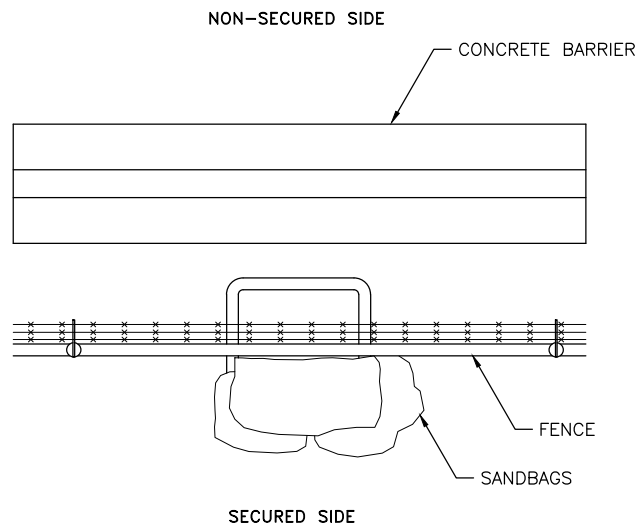
CONSTRUCTION SAFETY AND
PHASING PLAN NOTES



PLANS DEVELOPED BY: RESPEC, CERT. OF AUTHORIZATION NO.: AECC 163270, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
N:\Projects\17258FB-Seppala\C\0006cnsr-17258FB-T7_Thu, Apr/10/25 01:56pm



FENCE ELEVATION

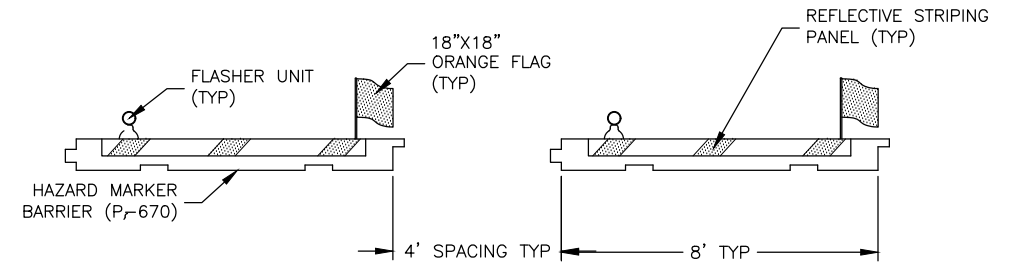


FENCE PLAN

TEMPORARY SECURITY FENCE

N.T.S.

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	T7	T7

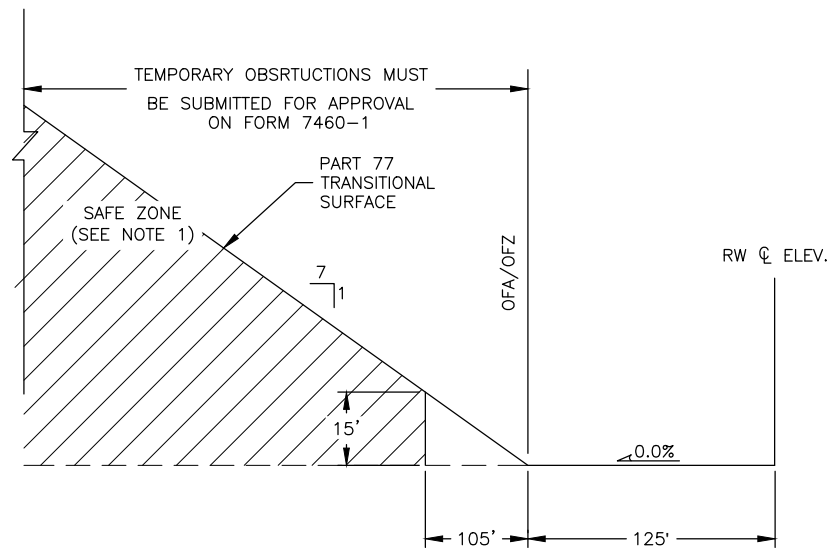


HAZARD MARKER BARRIER NOTES:

- HAZARD MARKER BARRIERS ARE NOT TO BE PLACED WITHIN 125 FEET OF THE ACTIVE RW CENTERLINE.
- DISTANCE BETWEEN BARRIERS CAN BE ADJUSTED FOR CONSTRUCTION TRAFFIC WITH ENGINEER APPROVAL.

HAZARD MARKER BARRIER DETAIL

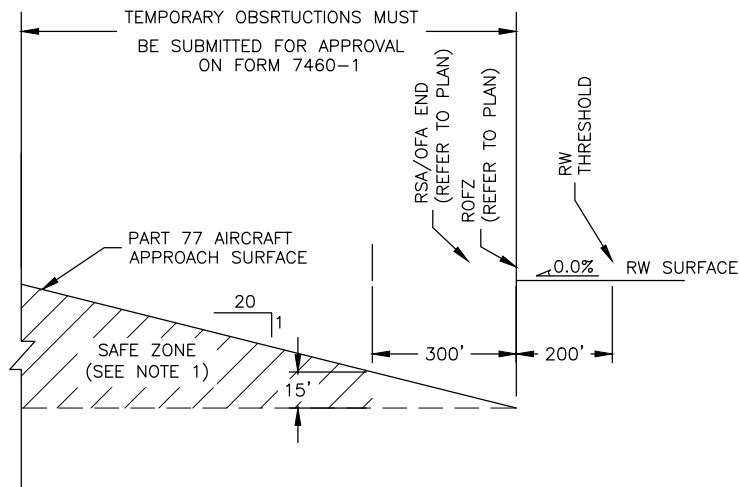
N.T.S.



TRANSITIONAL SURFACE PARALLEL TO RUNWAY CENTERLINE

TRANSITIONAL & APPROACH SURFACE NOTE:

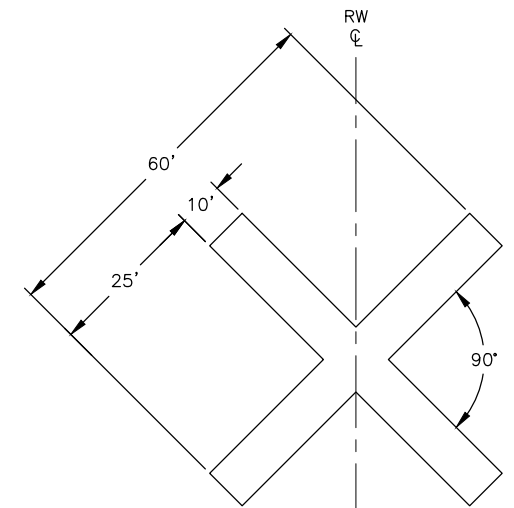
- VEHICLES TALLER THAN 15 FEET (INCLUDING ALL PARTS OF THE EQUIPMENT, E.G. AN EXCAVATOR) MUST REMAIN FARTHER AWAY FROM THE RUNWAY CENTERLINE.



APPROACH SURFACE PERPENDICULAR TO RUNWAY CENTERLINE

PART 77 SURFACE OBSTRUCTION LIMITS

N.T.S.



RUNWAY CLOSURE MARKER NOTES:

- RW CLOSURE MARKERS SHALL BE YELLOW. IF SANDBAGS ARE USED THEY SHALL BE YELLOW.
- INSTALL RW CLOSURE MARKERS AS SHOWN IN THE PHASING PLANS.

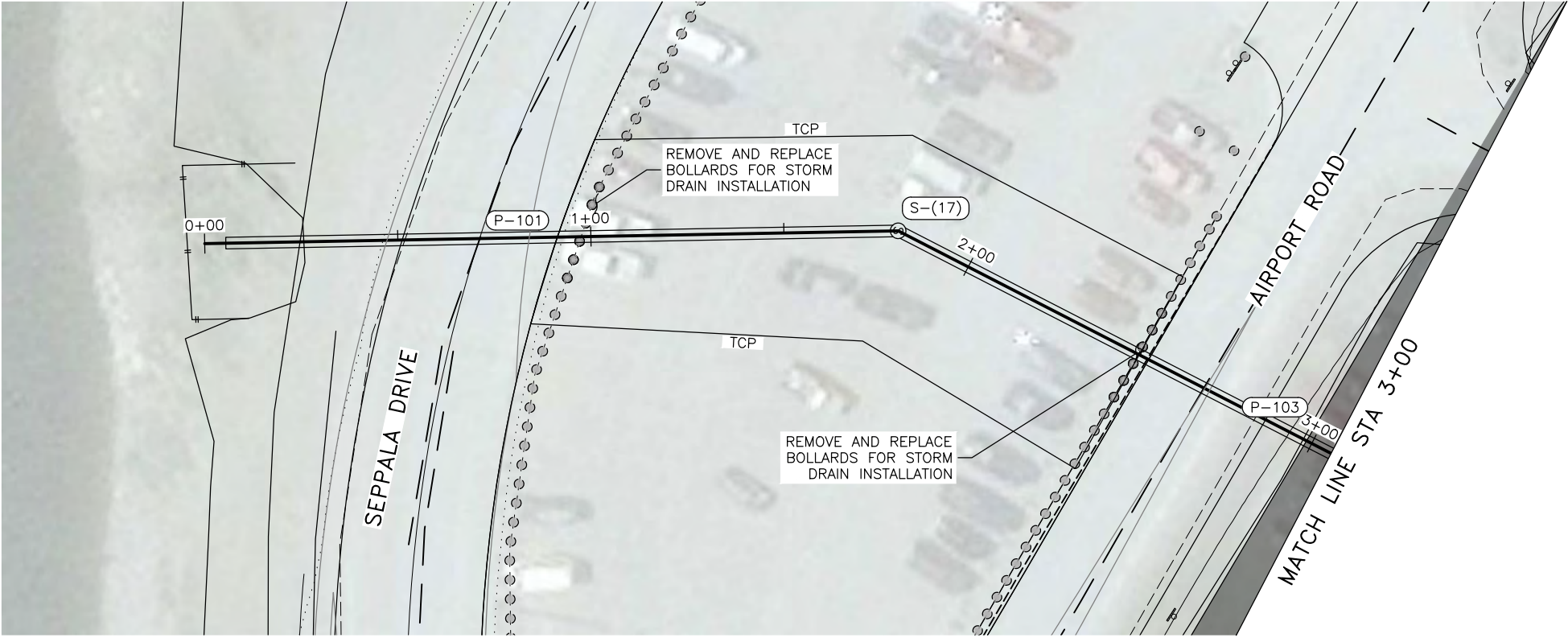
RUNWAY CLOSURE MARKER DETAIL

N.T.S.

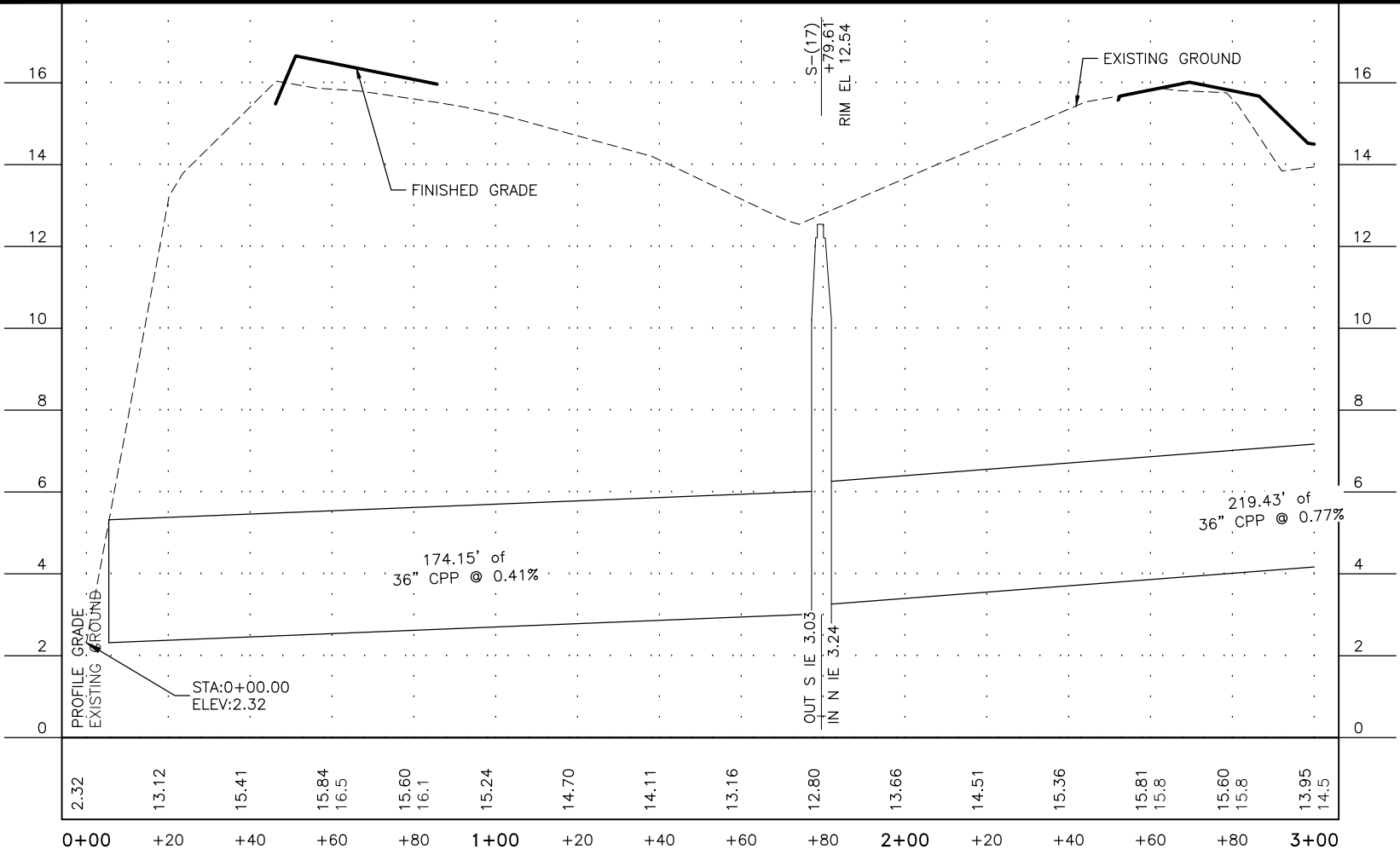
CONSTRUCTION SAFETY AND
PHASING PLAN DETAILS



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	U1	U2

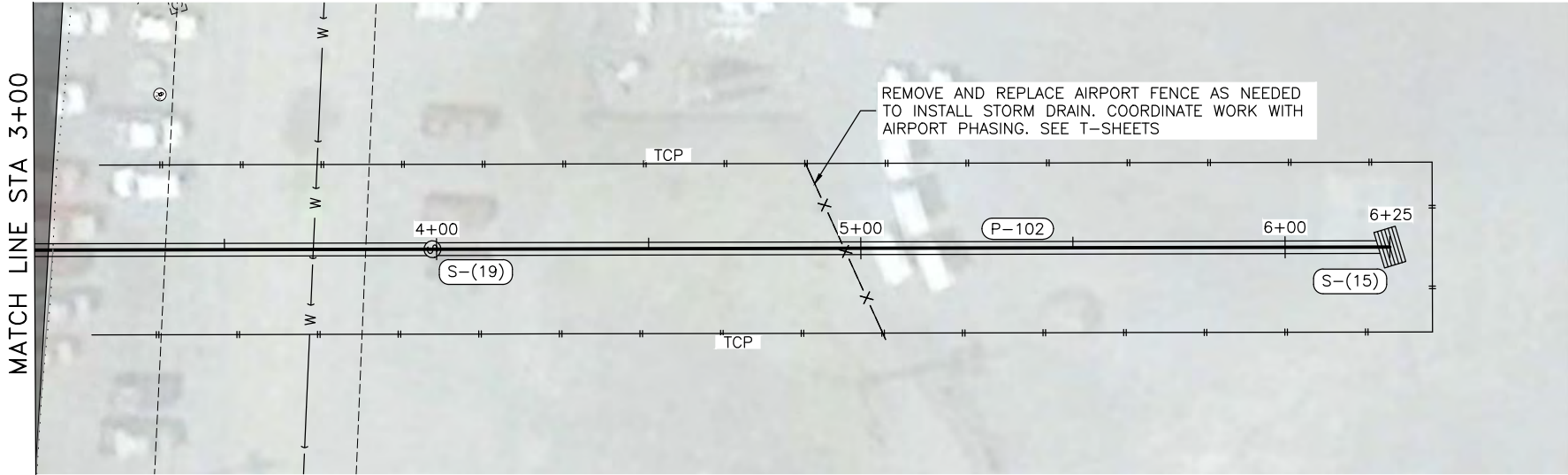


STORM DRAIN



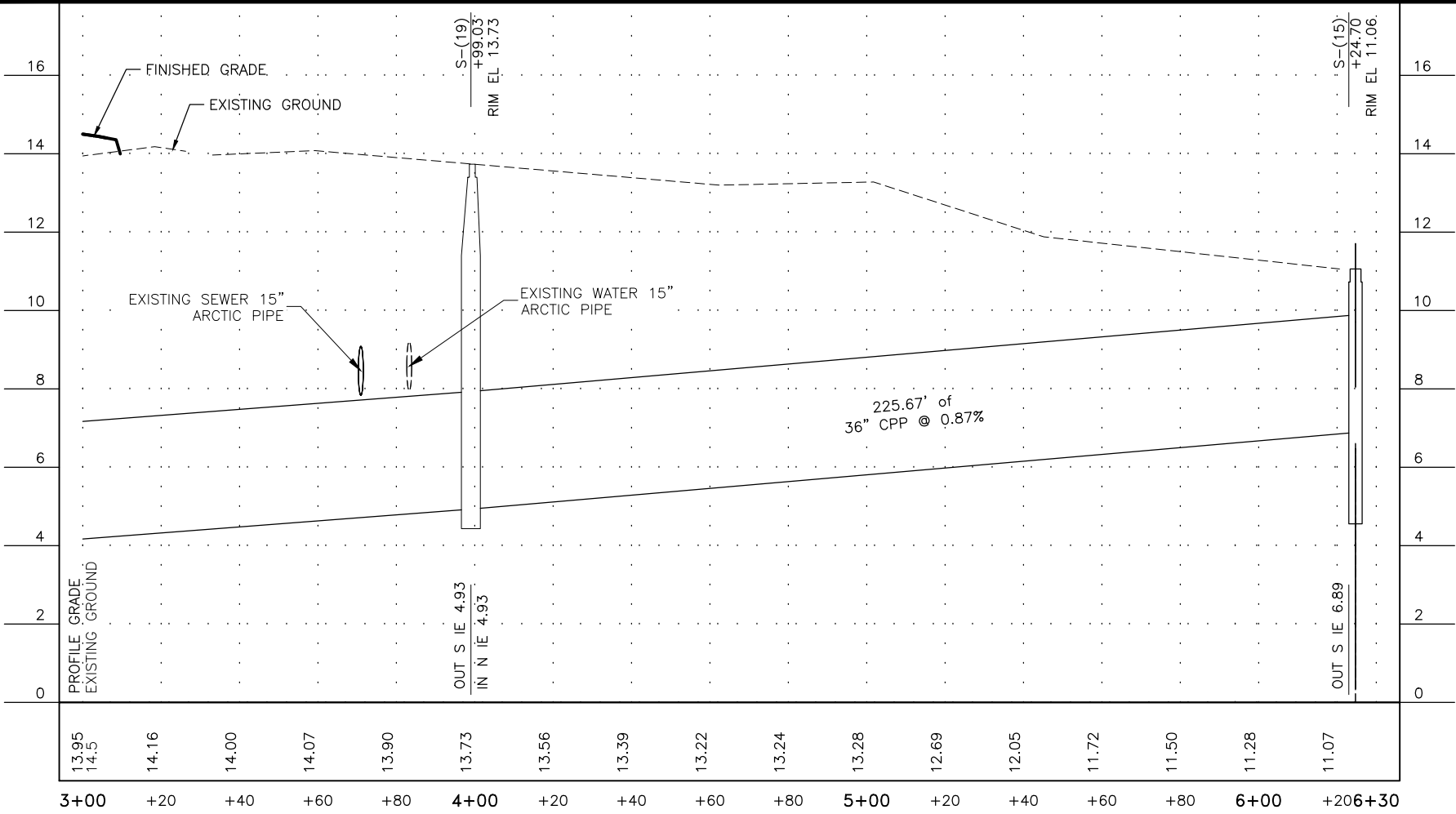
PLANS DEVELOPED BY: RESPEC, CERT. OF AUTHORIZATION NO.: AECC 163270, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
N:\Projects\17258FB-Seppala\C\4002cnst-17258FB-U2 Force Main Thu, Apr/10/25 01:58pm

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2025	U2	U2



STRUCTURE SUMMARY									
NAME:	TYPE	STATION	OFFSET	TOC	PIPES IN INVERTS	PIPES OUT INV.	SUMP	COVER	REMARKS
S-(15)	INLET, TYPE A	6+24.70	0.00	13.733'		(P-102) 6.89' S	2.0	FIELD INLET FRAME AND GRATE	
S-(17)	STORM SEWER MANHOLE, 48 INCH	1+79.61	0.00 R	12.54	(P-103) 3.24' N	(P-101) 3.03' S	2.0	FIELD INLET FRAME AND GRATE	
S-(19)	ECCENTRIC CYLINDRICAL STRUCTURE	3+99.03	0.00 R	13.733'	(P-102) 4.93' N	(P-103) 4.93' S	0.0	FIELD INLET FRAME AND GRATE	

STORM DRAIN

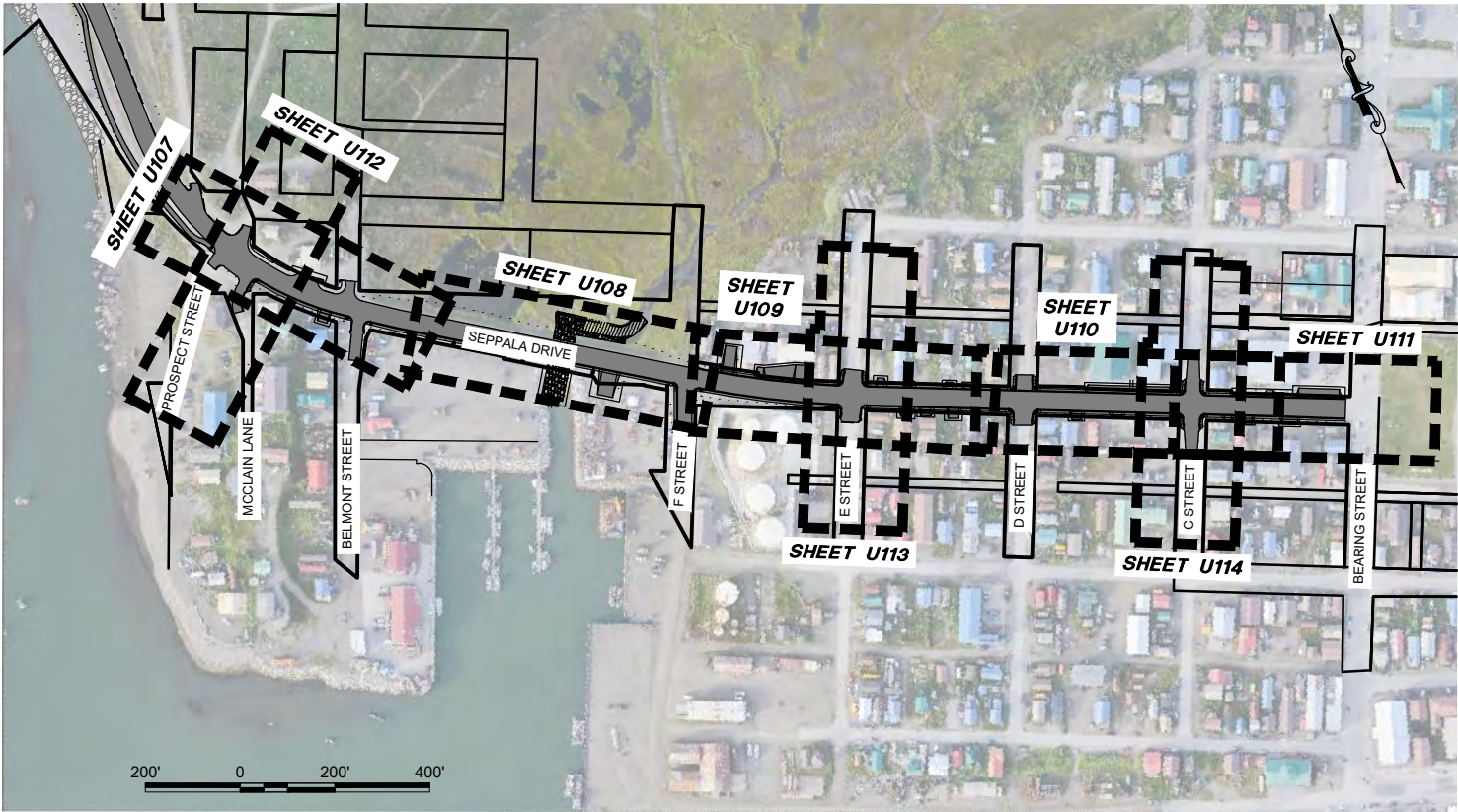


- NOTES:
- ADD 4 INCHES OF R-20 INSULATION BETWEEN CULVERT AND WATER & SEWER PIPES.

PLANS DEVELOPED BY: CRW ENGINEERING GROUP, INC. 3940 ARCTIC BLVD, STE. 300 ANCHORAGE AK 99503, ANCHORAGE, AK 99503 (907) 562-3252
J:\JobsData\32801.05 Seppala Drive Upgrades\00 CADD 2019\01 Working_Set\01 Civil\02 Design\32801.05 Key Map, Legend, and Abbreviations-U100 KEY MAP AND NOTES Thu, Jul/17/25 04:45pm

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2023	U100	U114

WATER & SEWER UTILITY NOTES



VICINITY MAP

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
U100	LEGEND, VICINITY MAP, AND NOTES
U101	SUMMARY TABLES
U102-U106	DETAILS
U107-U114	UTILITIES PLANS

1. CITY OF NOME, NOME FIRE DEPARTMENT AND EXISTING CUSTOMERS SHALL BE NOTIFIED SEVENTY-TWO (72) HOURS IN ADVANCE OF WATER SERVICE INTERRUPTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY WATER SERVICE TO THE EXISTING CUSTOMERS IF THE OUTAGE EXCEEDS 8-HOURS OR IF DEEMED NECESSARY BY THE ENGINEER.
2. THE PROJECT INCLUDES MATERIALS FURNISHED BY NOME JOINT UTILITY SERVICE (NJUS). SEE SPECIFICATION SECTION 106-1.07 DEPARTMENT-FURNISHED MATERIAL FOR A LIST OF MATERIALS TO BE PROVIDED BY NJUS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIALS NOT INCLUDED IN THIS LIST.
3. ALL MATERIALS IN CONTACT WITH POTABLE WATER SHALL BE APPROVED FOR SUCH USE BY THE NATIONAL SANITATION FOUNDATION (NSF) UNDER NSF/ANSI STANDARDS 61 AND 372.
4. EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATION TO THE BEST KNOWLEDGE OF THE ENGINEER AT THE TIME OF DESIGN. UTILITY RECORDS MAY NOT BE COMPLETELY ACCURATE. THE PROJECT SUPERINTENDENT SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF UTILITIES WITHIN EACH CONSTRUCTION REACH PRIOR TO CONSTRUCTION.

ELECTRIC – NOME JOINT UTILITY SYSTEM (NJUS)

TELEPHONE – FASTWYRE TELEPHONE

WATER AND SEWER – NOME JOINT UTILITY SYSTEM (NJUS)

CABLE TELEVISION – GCI

STORM DRAINS – ALASKA DOT&PF

(907) 443-6587

(907) 443-5466

(907) 443-6587

(907) 443-2550

(907) 465-5689
5. HORIZONTAL SEPARATION DISTANCE BETWEEN WATER AND SEWER MAINS SHALL BE TEN (10) FEET MINIMUM, AS MEASURED BETWEEN THE OUTSIDE EDGE OF THE PIPES AND THE OUTSIDE FACE OF A SANITARY SEWER MANHOLE. VERTICAL SEPARATION DISTANCE BETWEEN WATER MAINS, SEWER MAINS AND STORM DRAINS SHALL BE EIGHTEEN (18) INCHES MINIMUM.
6. TOP-OF-CASTING ELEVATIONS (SEWER MANHOLE, WATER VALVE BOX, SEWER CLEANOUT) TO BE SET ONE-HALF TO THREE-FOURTHS ($\frac{1}{2}$ – $\frac{3}{4}$) INCHES BELOW THE FINAL ASPHALT GRADE AND 6-INCHES BELOW GRADE IF LOCATED OUTSIDE OF PAVED AREAS. TOP-OF-CASTING ELEVATIONS FOR WATER SERVICE VALVE VAULTS SHALL BE ONE-QUARTER ($\frac{1}{4}$) INCHES BELOW THE FINAL SIDEWALK GRADE AND 6-INCHES BELOW GRADE IF LOCATED OUTSIDE OF SIDEWALK. CONTRACTOR TO PROVIDE CALCULATED ROADWAY FINISH GRADE AND CASTING ELEVATIONS TO ENGINEER FOR APPROVAL ONE WEEK BEFORE SETTING CASTINGS TO FINAL GRADE.
7. ALL TESTING SHALL BE IN CONFORMANCE WITH THE FOLLOWING REQUIREMENTS: ALL TESTS SHALL BE WITNESSED BY A REPRESENTATIVE DESIGNATED BY THE UTILITY (NJUS). WHEN PRESSURE TESTING WATER MAIN PIPING THAT DOES NOT INCLUDE A GATE VALVE AT THE CONNECTION TO THE EXISTING MAIN, INSTALL A TEST PLUG AND PRESSURE TEST THE SYSTEM. UPON COMPLETION OF A SUCCESSFUL PRESSURE TEST, MAKE THE FINAL CONNECTION TO THE EXISTING WATER MAIN AND PERFORM A VISUAL LEAK INSPECTION IN THE PRESENCE OF NJUS. UPON SUCCESSFUL COMPLETION OF A TEST, THE RESULTS OF THE TEST SHALL BE DOCUMENTED ON A TEST FORM AND ACKNOWLEDGED BY SIGNATURE OF THE UTILITY'S REPRESENTATIVE WITNESSING THE TEST. RED LINED AS-BUILT DRAWINGS SHALL ALSO NOTE THE TIME AND DATE OF THE TEST, AS WELL AS THE NAME OF THE UTILITY'S WITNESS, FOR EACH PIPE SEGMENT TESTED.
8. ALL PIPE JOINTS SHALL BE VISUALLY INSPECTED FOR INTEGRITY PRIOR TO INSTALLING THE INSULATION HALF-SHELLS AND COUPLING BANDS. ALL NEWLY INSTALLED WATERMAINS SHALL BE OPEN BORE FLUSHED TO REMOVE ANY FOREIGN MATTER. OPEN BORE FLUSHING SHALL BE ACCOMPLISHED AT EACH EXTREMITY OF THE MAIN, PRIOR TO SERVICE LINE INSTALLATION, HYDROSTATIC (PRESSURE) TESTING AND DISINFECTION. PERFORM HYDROSTATIC TESTING OF WATERMAINS AFTER OPEN BORE FLUSHING AND BEFORE DISINFECTION (SEE DISINFECTION BELOW). FILL THE LINE WITH WATER AND REMOVE AIR POCKETS PRIOR TO STARTING THE TEST. PRESSURIZE TO 1.5 TIMES THE OPERATING PRESSURE (MAX 80 PSI DURING FIRE EVENTS) = 120 PSI AND LEAVE FOR A MINIMUM OF 1 HOUR. AFTER THIS INITIAL PERIOD, ADD WATER TO BRING THE PRESSURE UP TO 120 PSI AND BEGIN A 1 HOUR TEST. FOR THE LINE TO BE ACCEPTED, THE MAKE-UP WATER REQUIRED TO RETURN THE PRESSURE TO 120 PSI AT THE END OF THE TEST PERIOD SHALL NOT BE GREATER THAN 0.6 GALLONS PER 100 FT OF 8" WATER MAIN.
9. TIE-IN ELEVATIONS ARE ESTIMATED BASED ON RECORD INFORMATION. CONTRACTOR MAY ADJUST TIE-IN ELEVATIONS AS REQUIRED TO FACILITATE CONNECTION AS APPROVED BY THE ENGINEER.
10. ALL STATIONING IS CENTERLINE OF PROPOSED ROAD, UNLESS OTHERWISE NOTED.
11. GENERAL RESTORATION – THE AREAS IMPACTED BY CONSTRUCTION SHALL BE RETURNED TO PRE-CONSTRUCTION CONDITIONS OR BETTER. CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE AREA AND DISPOSED OF IN AN APPROVED MANNER.
12. SERVICE SADDLES SHALL NOT BE INSTALLED WITHIN 3 FEET OF A FUSED JOINT.
13. ALL GATE VALVES SHALL BE FLANGED.
14. AT THE DISCRETION OF THE UTILITY, SALVAGED MANHOLE LIDS, VALVING COMPONENTS, FIRE HYDRANTS, CLEAN-OUTS, ETC. SHALL BE DELIVERED BY THE CONTRACTOR TO THE UTILITY'S YARD. ITEMS NOT SELECTED BY THE UTILITY SHALL BE BECOME THE PROPERTY OF THE CONTRACTOR.
15. FOR ARCTIC INSULATED PIPE, JACKET IS DEFINED AS THE OUTER PIPE (ALUMINUM CMP) AND CORE PIPE IS DEFINED AS THE INNER PIPE THAT CONVEYS WATER/WASTEWATER OR HOUSES HDPE SERVICE LINES.
16. EXISTING UTILITIES TO BE ABANDONED IN PLACE SHALL HAVE ALL PORTIONS ABOVE THE TYPICAL SECTION, 3' MINIMUM, REMOVED WITH REMAINING ENDS PLUGGED WITH A FLOWABLE CEMENTITIOUS LOW STRENGTH GROUT (UNCONFINED COMPRESSIVE STRENGTH GROUT MINIMUM OF 75 PSI AT 56 DAYS).
17. INSTALL R-20 INSULATION BOARD WHEN THE COVER OVER PIPE IS LESS THAN 4 FEET OR THE SEPARATION DISTANCE BETWEEN A WATER OR SEWER PIPE AND STORM DRAIN IS LESS THAN 2 FEET. INSULATION SHOWN IN PLANS IS INCIDENTAL TO THE PIPE BID ITEM.



PLANS DEVELOPED BY: CRW ENGINEERING GROUP, INC. 3940 ARCTIC BLVD, STE. 300 ANCHORAGE AK 99503, ANCHORAGE, AK 99503 (907) 562-3252
J:\JobsData\32801.05 Seppala Drive Upgrades\00 CADD 2015\01 Working_Set\01 Civil\02 Design\32801.05 Summary Tables-U101 SUMMARY TABLES Wed, Jul/16/25 10:23am

ESTIMATE OF QUANTITIES				
ITEM NO	ITEM	PAY UNIT	QUANTITY	REMARKS
202.2029.0000	RESOLUTION OF CONFLICTS	C.S.	ALL REQ'D	INCLUDED AS PART OF UTILITY BETTERMENT WORK.
203.0006.0000	BORROW	TON	364	INCLUDED AS PART OF UTILITY BETTERMENT WORK.
604.0002.0000	SANITARY SEWER MANHOLE	EACH	4	INCLUDED AS PART OF ADOT HIGHWAY PROJECT.
604.0003.0000	RECONSTRUCT EXISTING MANHOLE	EACH	4	INCLUDED AS PART OF ADOT HIGHWAY PROJECT.
604.0004.0001	ADJUST EXISTING MANHOLE	EACH	2	INCLUDED AS PART OF ADOT HIGHWAY PROJECT.
626.2013.0000	ADJUST SANITARY SEWER CLEANOUT	EACH	5	INCLUDED AS PART OF ADOT HIGHWAY PROJECT.
626.2015.0000	TEMPORARY SEWER SYSTEM	L.S.	ALL REQ'D	INCLUDED AS PART OF ADOT HIGHWAY PROJECT.
626.2016.0004	SEWER CONDUIT - ARCTIC, 4-INCH, 4"x12"	L.F.	734	INCLUDED AS PART OF ADOT HIGHWAY PROJECT.
627.0005.0000	FIRE HYDRANT INSTALLATION	EACH	1	INCLUDED AS PART OF UTILITY BETTERMENT WORK.
627.0008.0000	WATER SERVICE CONNECTION	EACH	20	INCLUDED AS PART OF UTILITY BETTERMENT WORK.
627.0009.0004	GATE VALVE, 4-INCH	EACH	2	INCLUDED AS PART OF UTILITY BETTERMENT WORK.
627.0009.0008	GATE VALVE, 8-INCH	EACH	12	INCLUDED AS PART OF UTILITY BETTERMENT WORK.
627.0010.0000	ADJUSTMENT OF VALVE BOX	EACH	3	INCLUDED AS PART OF ADOT HIGHWAY PROJECT.
627.2013.0000	TEMPORARY WATER SYSTEM	L.S.	ALL REQ'D	INCLUDED AS PART OF UTILITY BETTERMENT WORK.
627.2031.0008	HDPE WATER CONDUIT - ARCTIC, 8-INCH, 8"x15"	L.F.	1835	INCLUDED AS PART OF UTILITY BETTERMENT WORK.
627.2032.0000	INSTALL WATER SERVICE VALVE VAULT	EACH	10	INCLUDED AS PART OF ADOT HIGHWAY PROJECT.
682.2005.0000	UTILITY POTHOLE, LOCATE DURING CONSTRUCTION	C.S.	1	INCLUDED AS PART OF UTILITY BETTERMENT WORK.

604.0004.0001, 604.0003.0000 - EXISTING MANHOLE ADJUSTMENT			
STATION	GRADE RING ADJUSTMENT (INCHES)	BARREL ADJUSTMENT (INCHES)	DESCRIPTION
68+70, 2 LT	-	-6.16	REPLACE BARREL SECTION, CONE, AND FRAME AND COVER
70+20, 14 RT	-	-17.12	REPLACE BARREL SECTION, CONE, AND FRAME AND COVER
73+78, 38 LT	-3.72	-	REPLACE GRADE RINGS AND FRAME AND COVER
73+89, 1 RT	-	-11.36	REPLACE BARREL SECTION, CONE, AND FRAME AND COVER
73+90, 26 LT	2.76	-	REPLACE GRADE RINGS AND FRAME AND COVER
77+39, 2 RT	-	11.28	REPLACE BARREL SECTION, CONE, AND FRAME AND COVER

604.0002.0000 - SANITARY SEWER MANHOLE			
STRUCTURE NO	STATION	DECRPTION	REMARKS
MH-1	59+49.42, 8.25' RT	TYPE B MANHOLE	
MH-2	62+57.48, 5.54' RT	TYPE B MANHOLE	
MH-3	65+58.28, 3.79' RT	TYPE B MANHOLE	
MH-4	66+71.58, 12.40' RT	TYPE B MANHOLE	

626.2016.0004 - PIPE SUMMARY - SEWER FORCE MAIN			
PIPE NO	LENGTH (LF)	DESCRIPTION	REMARKS
FM-1	309	4"x12" ARCTIC PIPE HDPE SDR 11	
FM-2	301	4"x12" ARCTIC PIPE HDPE SDR 11	
FM-3	114	4"x12" ARCTIC PIPE HDPE SDR 11	
FM-4	10	4"x12" ARCTIC PIPE HDPE SDR 11	

627.0009.0004, 627.0009.0008 - WATER VALVE SUMMARY			
SHEET	STATION	DESCRIPTION	REMARKS
U109	70+03.60, 4.91' LT	8" GATE VALVE	
U110	73+60.39, 4.35' LT	8" GATE VALVE	
U110	73+67.27, 18.24' RT	8" GATE VALVE	
U110	73+67.35, 22.30' LT	8" GATE VALVE	
U110	77+45.70, 14.5' RT	8" GATE VALVE	
U110	77+55.70, 14.5' RT	8" GATE VALVE	
U110	78+55.41, 13.79' RT	4" GATE VALVE	
U110	78+55.58, 29.52' LT	4" GATE VALVE	INSTALL WITHIN WATER SERVICE VAULT
U112	56+71.98, 68.29' RT	8" GATE VALVE	
U112	56+77.60, 59.55' RT	8" GATE VALVE	
U113	70+08.30, 0.17' RT	8" GATE VALVE	
U113	70+08.30, 9.83' LT	8" GATE VALVE	
U114	77+50.71, 8.69' RT	8" GATE VALVE	
U114	77+50.74, 20.80' RT	8" GATE VALVE	

626.2013.0000 - ADJUST SANITARY SEWER CLEANOUT			
SHEET	STATION AT MAIN	DESCRIPTION	DESCRIPTION
U109	72+67, 15' RT	SEWER CLEANOUT	
U110	75+52, 2' RT	SEWER CLEANOUT	
U110	75+72, 2' RT	SEWER CLEANOUT	
U110	78+97, 2' RT	SEWER CLEANOUT	
U111	79+12, 2' RT	SEWER CLEANOUT	

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2023	U101	U114

627.0005.0000 - FIRE HYDRANT INSTALLATION			
SHEET	STATION AT MAIN	DECRPTION	REMARKS
U113	69+98, 95' LT	FIRE HYDRANT ASSEMBLY	

627.2031.0000 - PIPE SUMMARY - WATER MAIN			
PIPE NO	LENGTH (LF)	DESCRIPTION	REMARKS
...	10	8"x15" ARCTIC PIPE SDR 11	
W-2	373	8"x15" ARCTIC PIPE SDR 11	
W-3	384	8"x15" ARCTIC PIPE SDR 11	
W-4	244	8"x15" ARCTIC PIPE SDR 11	
W-5	11	8"x15" ARCTIC PIPE SDR 11	
W-6	193	8"x15" ARCTIC PIPE SDR 11	
W-7	25	8"x15" ARCTIC PIPE SDR 11	
W-8	8	8"x15" ARCTIC PIPE SDR 11	
W-9	22	8"x15" ARCTIC PIPE SDR 11	
W-10	7	8"x15" ARCTIC PIPE SDR 11	
W-11	38	8"x15" ARCTIC PIPE SDR 11	
W-12	12	8"x15" ARCTIC PIPE SDR 11	
W-13	60	8"x15" ARCTIC PIPE SDR 11	
W-14	7	8"x15" ARCTIC PIPE SDR 11	
W-15	7	8"x15" ARCTIC PIPE SDR 11	
W-16	79	8"x15" ARCTIC PIPE SDR 11	
W-17	11	8"x15" ARCTIC PIPE SDR 11	
W-18	11	8"x15" ARCTIC PIPE SDR 11	
W-19	18	8"x15" ARCTIC PIPE SDR 11	
W-20	20	8"x15" ARCTIC PIPE SDR 11	
W-21	22	8"x15" ARCTIC PIPE SDR 11	
W-22	18	8"x15" ARCTIC PIPE SDR 11	
W-23	23	8"x15" ARCTIC PIPE SDR 11	
W-24	22	8"x15" ARCTIC PIPE SDR 11	
W-25	143	8"x15" ARCTIC PIPE SDR 11	
W-26	67	8"x15" ARCTIC PIPE SDR 11	

627.0008.0000 - WATER SERVICE CONNECTION			
SHEET	STATION AT MAIN	DECRPTION	REMARKS
U109	70+91, 5' LT	1" SUPPLY & 1" RETURN	VAULT ON PROPERTY
U109	71+01, 5' LT	1" SUPPLY & 1" RETURN	ARCTIC BOX ON BUILDING
U109	71+24, 5' LT	1" SUPPLY & 1" RETURN	ARCTIC BOX ON BUILDING
U109	71+67, 5' LT	1" SUPPLY & 1" RETURN	VAULT IN ROW
U109	71+83, 5' LT	1" SUPPLY & 1" RETURN	VAULT IN ROW
U109	72+18, 5' LT	1" SUPPLY & 1" RETURN	VAULT IN ROW
U109	72+41, 4' LT	1" SUPPLY & 1" RETURN	VAULT ON PROPERTY
U109	72+51, 4' LT	1" SUPPLY & 1" RETURN	ARCTIC BOX ON BUILDING
U109	72+62, 4' LT	1" SUPPLY & 1" RETURN	ARCTIC BOX ON BUILDING
U110	75+00, 14' RT	1" SUPPLY & 1" RETURN	ARCTIC BOX ON BUILDING
U110	75+06, 14' RT	1" SUPPLY & 1" RETURN	ARCTIC BOX ON BUILDING
U110	75+96, 14' RT	2" SUPPLY & 1" RETURN	VAULT IN ROW
U110	75+99, 14' RT	2" SUPPLY & 1" RETURN	VAULT IN ROW
U110	77+95, 15' RT	1" SUPPLY & 1" RETURN	ARCTIC BOX ON BUILDING
U110	78+44, 15' RT	1" SUPPLY & 1" RETURN	ARCTIC BOX ON BUILDING
U110	78+55, 15' RT	4" SUPPLY & 1" RETURN	VAULT IN ROW
U110	78+92, 15' RT	1" SUPPLY & 1" RETURN	VAULT IN ROW
U111	79+20, 15' RT	1" SUPPLY & 1" RETURN	VAULT IN ROW
U112	56+79, 144' RT	1" SUPPLY & 1" RETURN	ARCTIC BOX ON BUILDING
U114	77+51, 70' RT	1" SUPPLY & 1" RETURN	ARCTIC BOX ON BUILDING

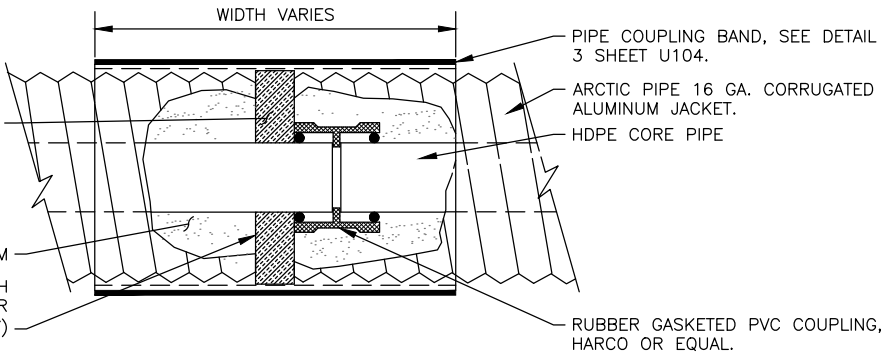
SERVICE LOCATIONS ARE APPROXIMATE AND WILL BE ADJUSTED BY THE ENGINEER IN THE FIELD

SUMMARY TABLES

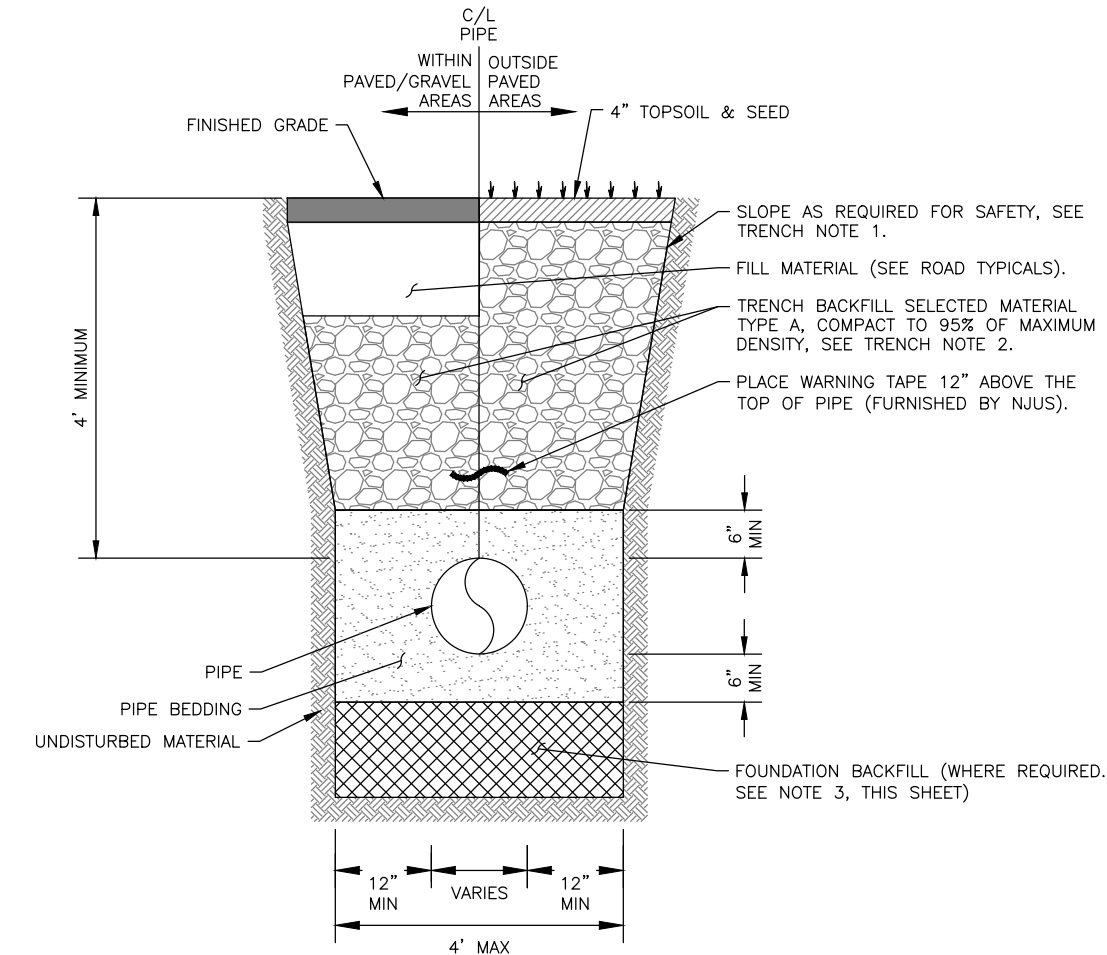


NOMINAL CARRIER PIPE O.D x OUTER JACKET I.D. x 2" THICK RUBBER WASHER (SPEC. ASTM-D-1056-78 GRADE RE-41, BLACK EPT/PE/BUTYL BLEND) #R-4983-T AS MFG. BY RUBATEX CORP. (OR EQUAL)

3.0-4.0 LB/CF DENSITY FOAM
SEAL EXPOSED ENDS OF PIPE INSULATION WITH 25 MILS OF ELASTOMERIC RESIN, DURATHANE OR EQUAL. (FIELD CUTS ONLY)



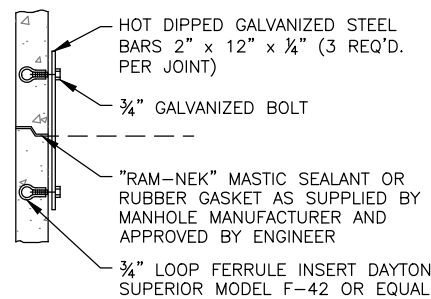
1 WATER SERVICE DUCT PIPE JOINT ENCASEMENT DETAIL
SCALE: NTS



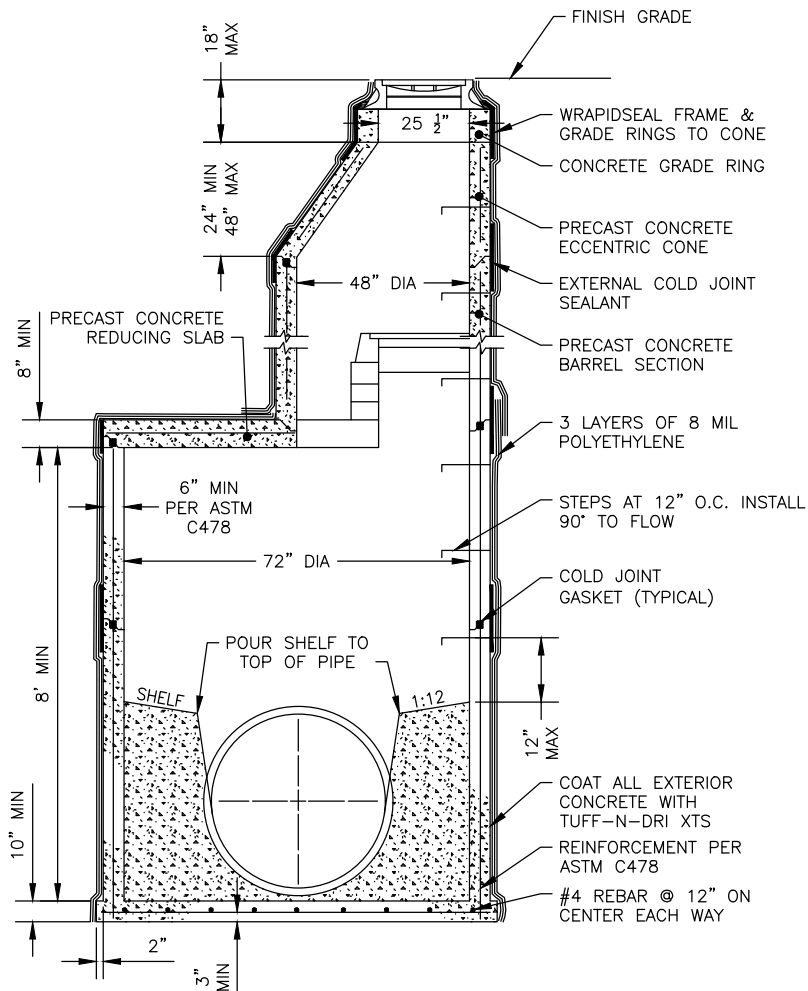
2 TYPICAL TRENCH SECTION
SCALE: NTS

TRENCH NOTES:

- TRENCH EXCAVATION AND SHORING SHALL COMPLY WITH ALL LOCAL, STATE, AND OSHA REGULATIONS AND REQUIREMENTS. INDICATED TRENCH WALL SLOPES AND DIMENSIONS ARE FOR PAY QUANTITY DETERMINATIONS ONLY.
- TRENCH BACKFILL SHALL BE NATIVE TRENCH MATERIAL AS APPROVED BY THE ENGINEER. NATIVE TRENCH MATERIAL NOT APPROVED BY THE ENGINEER SHALL BE REMOVED AND REPLACED WITH BORROW, SELECTED MATERIAL TYPE A CLASSIFIED MATERIAL.
- FURNISH, HAUL, PLACE AND COMPACT FOUNDATION BACKFILL WHERE THE BOTTOM OF UTILITY TRENCH IS NOT SUITABLE TO SUPPORT NEW UTILITY CONDUIT. COORDINATE WITH DEPARTMENT AUTHORIZED REPRESENTATIVE(S) FOR SUITABILITY DETERMINATIONS ONCE BOTTOM OF TRENCH IS EXPOSED. PLACE FOUNDATION BACKFILL AT STATIONS DIRECTED BY THE AUTHORIZED REPRESENTATIVE. FOUNDATION BACKFILL SHALL BE BORROW, SELECTED MATERIAL TYPE A.
- WHERE OTHER UTILITIES ARE ENCOUNTERED, PROVIDE BEDDING MATERIAL AS SHOWN IN THIS DETAIL.



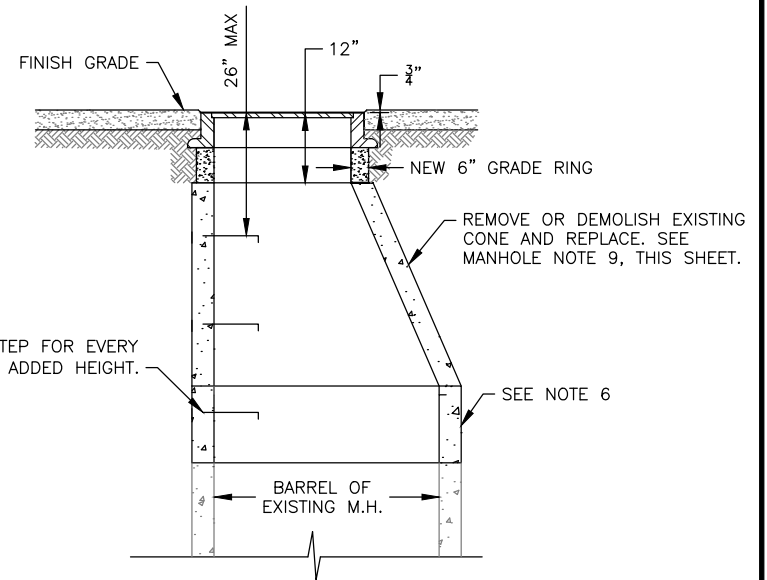
JOINT STRAPPING DETAIL



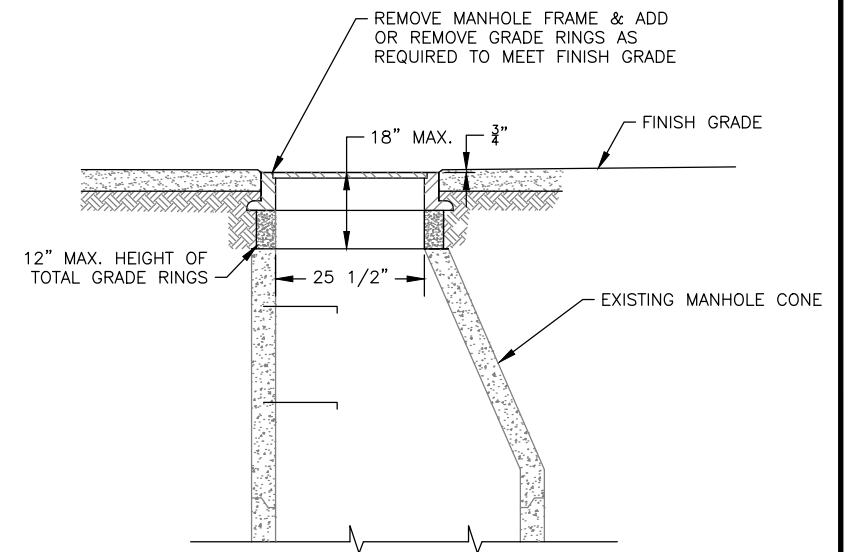
3 TYPE B MANHOLE DETAIL
SCALE: NTS

MANHOLE NOTES:

- BACKFILL AROUND MANHOLE WITH ROADWAY FILL MATERIAL (3 FT MIN).
- RESET CONE WITH COLD JOINT GASKET AND SEAL EXTERIOR JOINT WITH COLD JOINT SEALANT.
- ADJUST FRAME TO PROPER DEPTH BELOW SURFACE OF PAVEMENT. FEATHER EDGE OF PAVEMENT TO SMOOTH TRANSITION.
- SEAL FRAME, AND GRADE RINGS TO CONE WITH WRAPIDSEAL® OR APPROVED EQUAL.
- WRAP CONES & BARREL SECTIONS WITH THREE (3) LAYERS OF 8-MIL THICK POLYETHYLENE ENCASEMENT MATERIAL AFTER INSTALLING THE WRAPIDSEAL®.
- INSTALL/REMOVE BARREL SECTIONS AS NECESSARY TO ADJUST MANHOLE TO FINISH GRADE WITH A MINIMUM OF ONE 6" GRADE RING.
- PRECAST MANHOLE SECTIONS SHALL BE REINFORCED CONCRETE CONFORMING TO ASTM C-478.
- SEAL FRAME AND GRADE RING TO CONE WITH WRAPIDSEAL® OR APPROVED EQUAL.
- WHEN RECONSTRUCTING EXISTING MANHOLE, THE CONTRACTOR SHALL PRESERVE THE EXISTING EXISTING CONE IF POSSIBLE AND DELIVER TO THE LOCATION DESIGNATED BY THE OWNER.
- STEEL REQUIRED FOR BARREL SHALL CONFORM TO ASTM C-478. IMBED STEEL IN BASE SO THAT FIRST BARREL SECTION IS CONNECTED WITH BASE.



4 RECONSTRUCT EXISTING MANHOLE DETAIL
SCALE: NTS

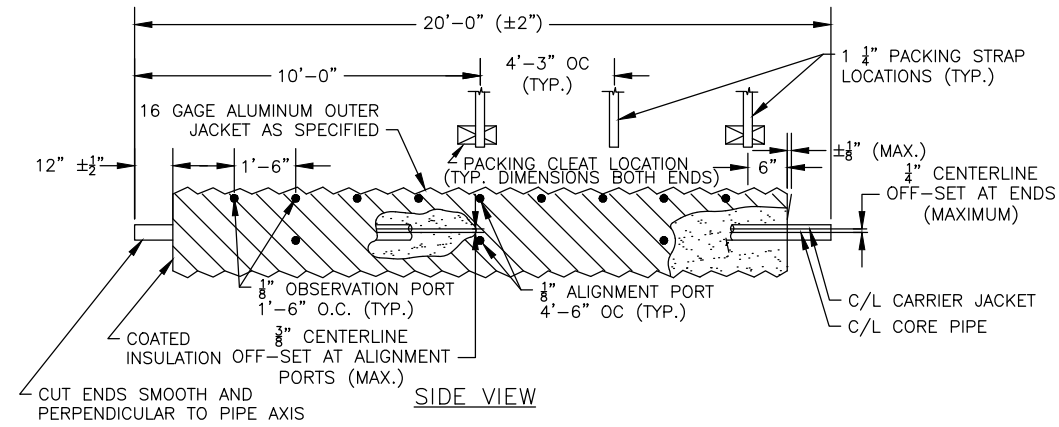


5 ADJUST EXISTING MANHOLE DETAIL
SCALE: NTS

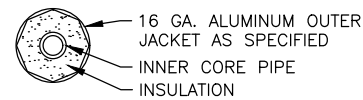
DETAILS



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2023	U103	U114

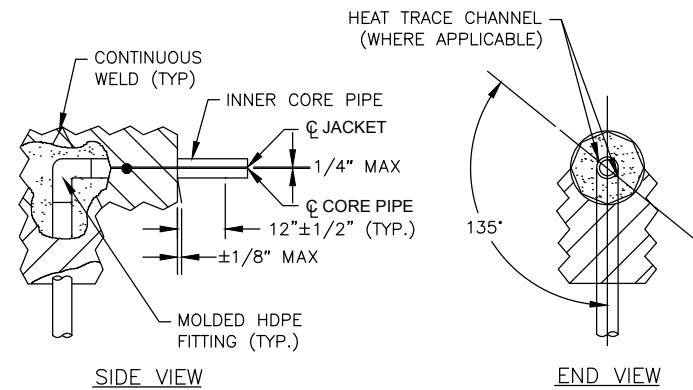


NOMINAL SIZE	CORE PIPE DIAMETER	NOM. OUTER JACKET DIA.
3"x12"	3.50"	12"
4"x12"	4.50"	12"
6"x12"	6.625"	12"
8"x15"	8.625"	15"
12"x18"	12.75"	18"



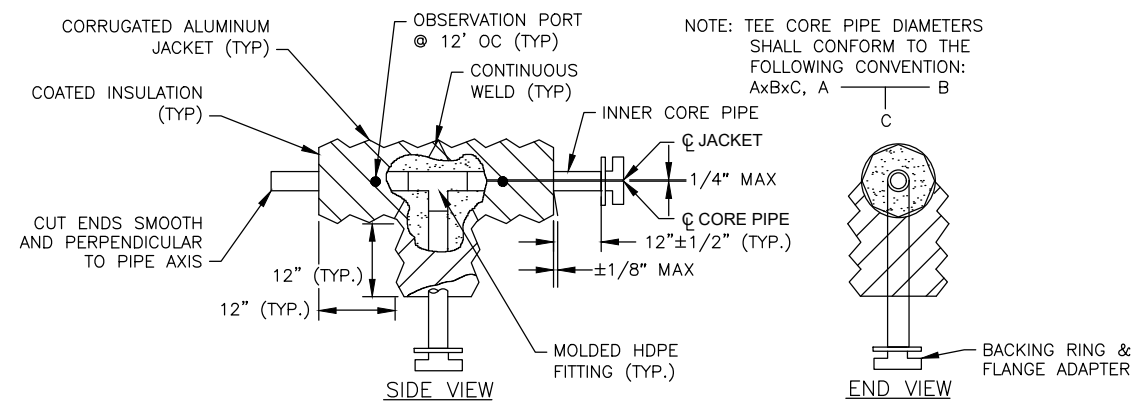
END VIEW

1 HDPE WATERMAIN – ALUMINUM JACKET (20')
U103 SCALE: NTS

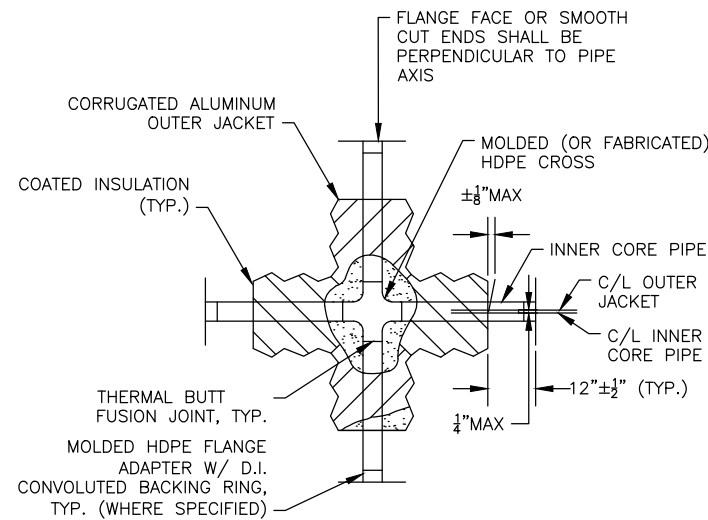


4 HDPE WATER 90° BEND — ALUMINUM JACKET
U103 SCALE: NTS

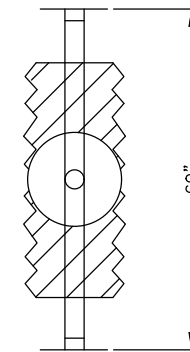
INNER CORE PIPE/OUTER JACKET SCHEDULE		
NOMINAL CORE PIPE DIA.	INNER CORE PIPE O.D.	NOMINAL OUTER JACKET DIA.
3"	3.50"	12"
4"	4.50"	12"
6"	6.625"	12"
8"	8.625"	15"
12"	12.75"	18"



5 HDPE WATER TEE — ALUMINUM JACKET
U103 SCALE: NTS

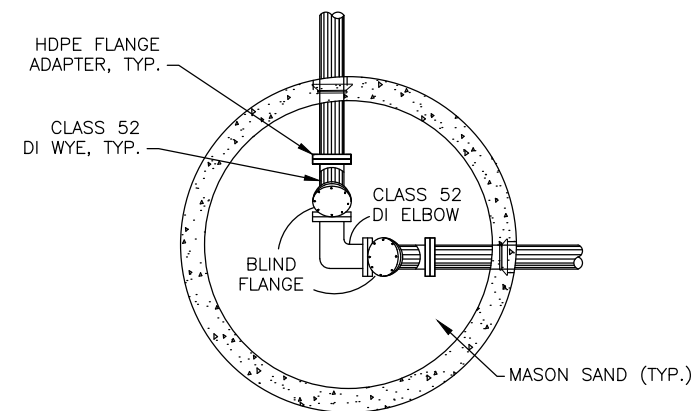


SIDE VIEW

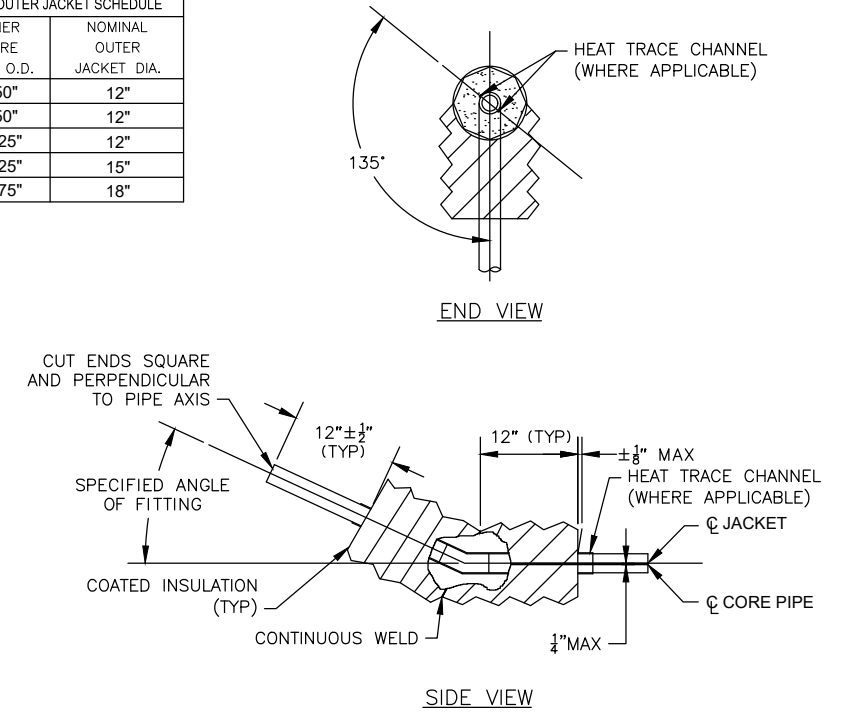


END VIEW

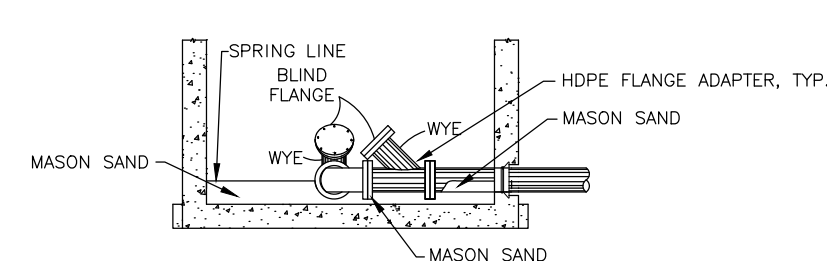
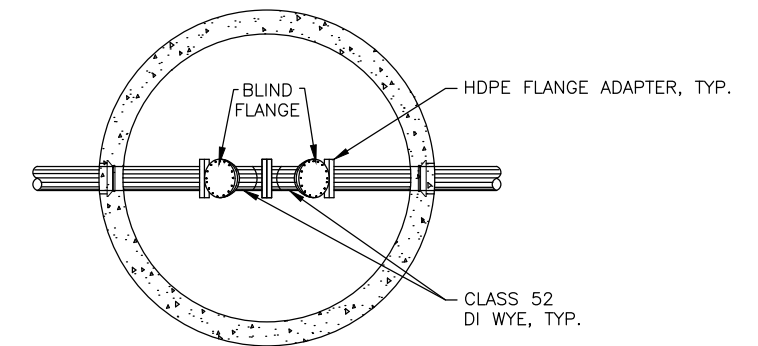
2 HDPE WATERMAIN CROSS ALUMINUM JACKET
U103 SCALE: NTS



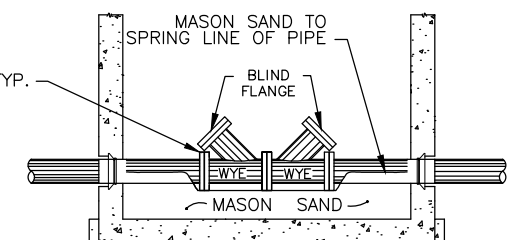
DOUBLE WYE 90° BEND
CLEAN OUT DETAIL
SCALE: NTS



3 HDPE WATER 1" THROUGH 89" – ALUMINUM JACKET
U103 SCALE: NTS



7 DOUBLE WYE CLEANOUT DETAIL
U103 SCALE: NTS

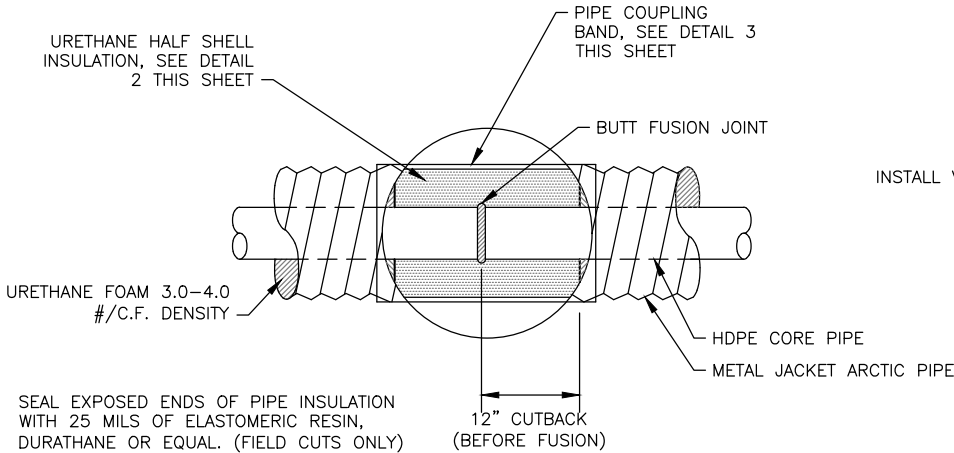


DETAILS

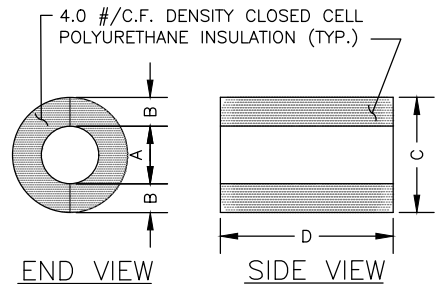


NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2023	U104	U114

NOTE:
TOP SLAB DESIGNED FOR 300 PSF LOADING.
CONTRACTOR TO DESIGN AND SUPPLY LIFTING INSERTS

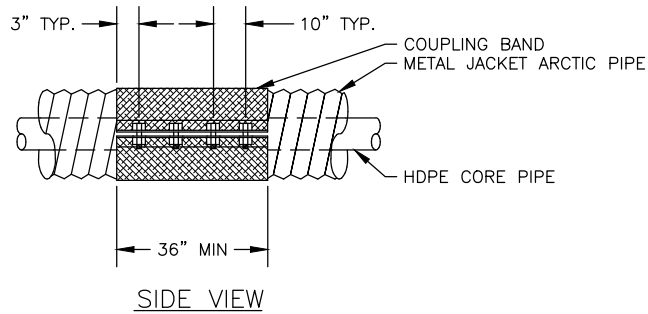


1
U104
BUTT FUSED PIPE JOINT DETAIL
SCALE: NTS

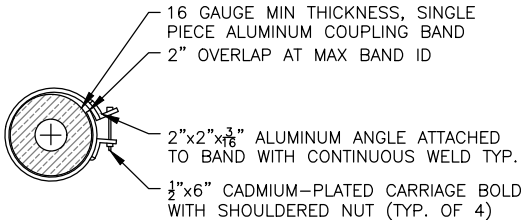


HALF SHELL	A	B	C	D
4"	4 5/8"	3 11/16"	12 3/4"	23"
8"	8 3/4"	3 1/8"	15 7/8"	23"

2
U104
INSULATION HALF SHELL DETAIL
SCALE: NTS

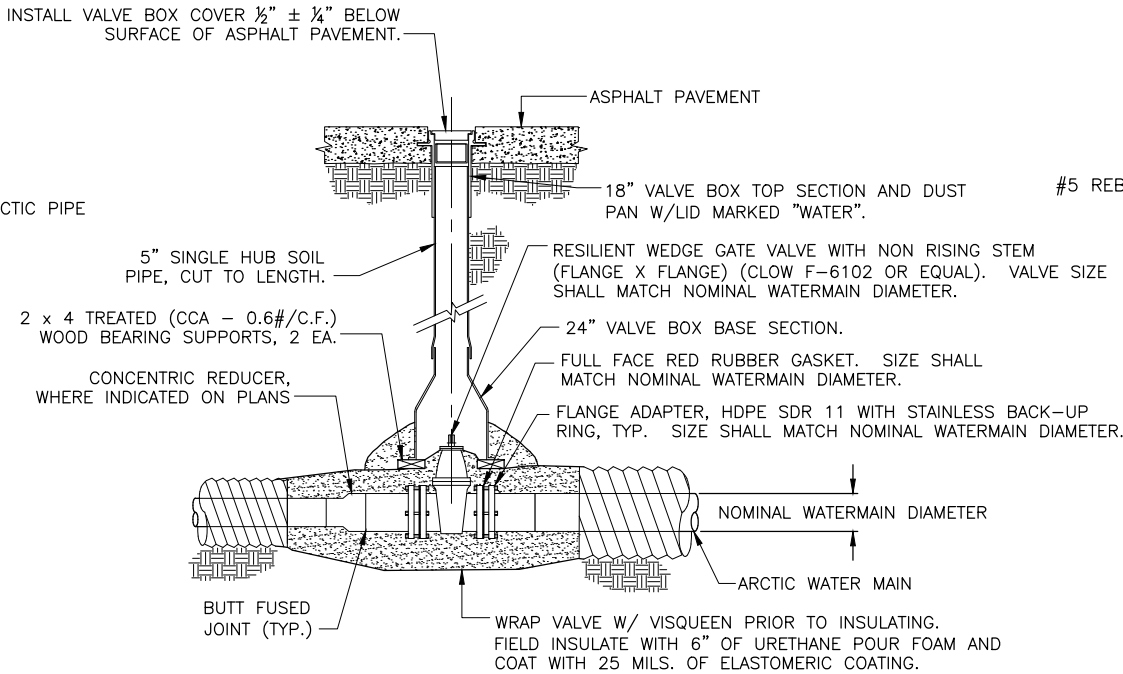


NOM. JACKET SIZE	ACTUAL JACKET SIZE (O.D.)	INSIDE DIAMETER MIN.	INSIDE DIAMETER MAX.
12"	12 7/8"	12 1/8"	13 5/8"
15"	15 7/8"	15 1/8"	16 5/8"

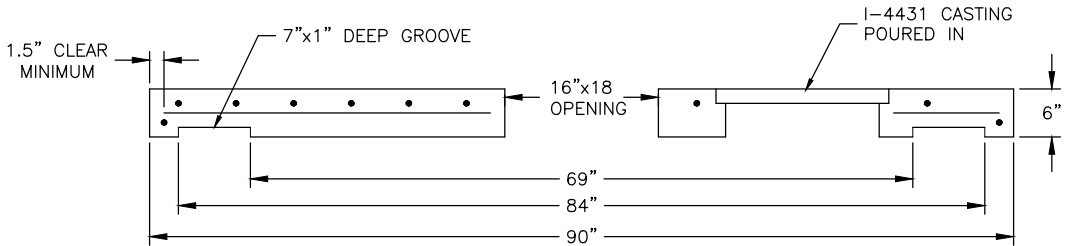
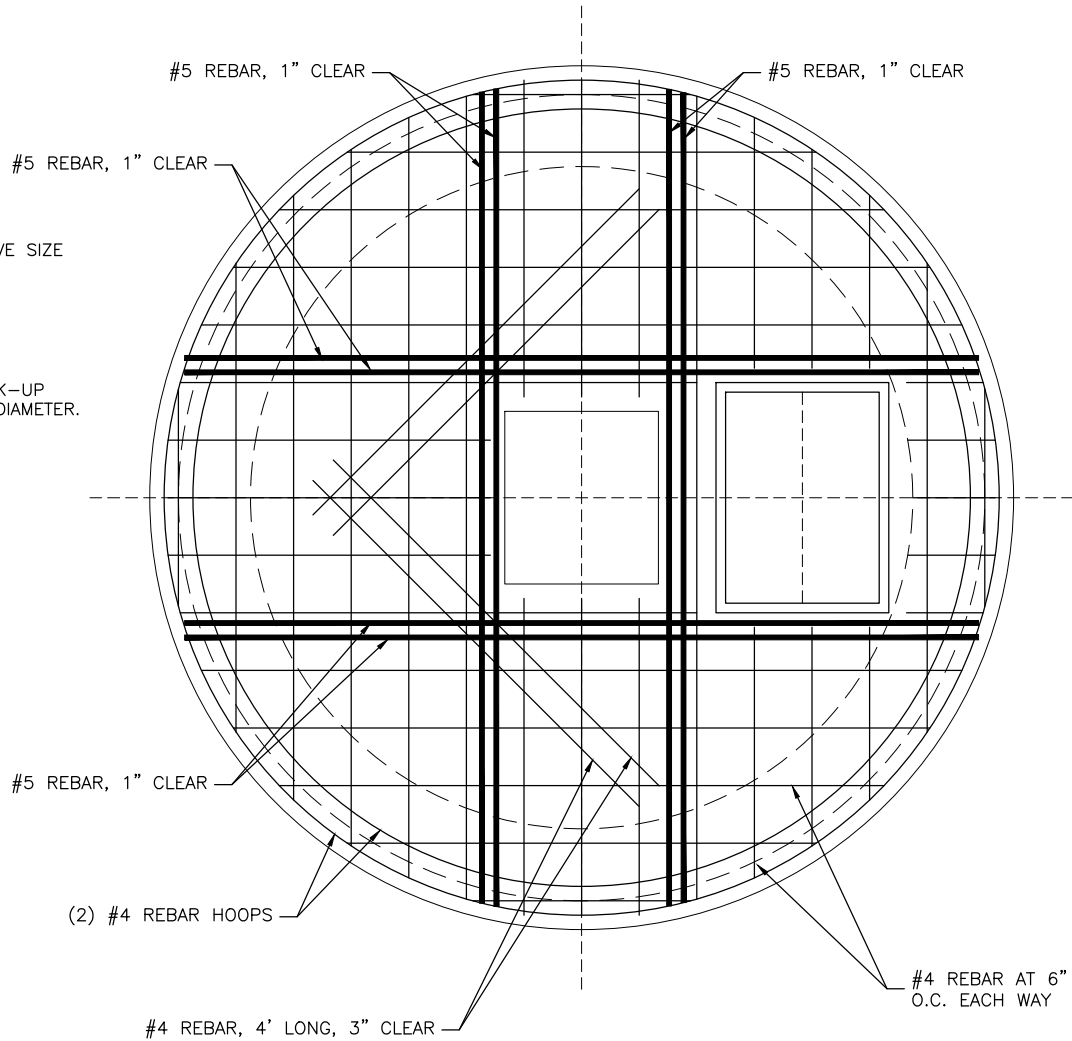
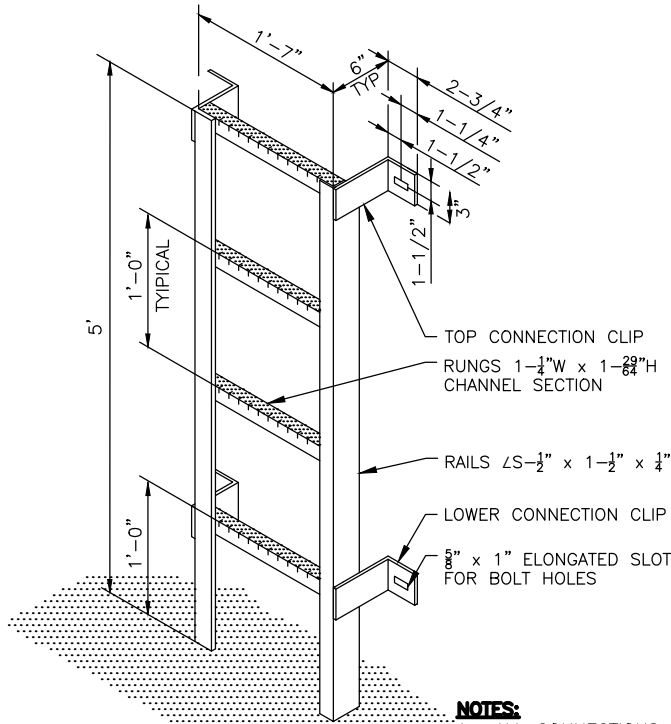


FRONT VIEW

3
U104
ARCTIC PIPE COUPLING BAND DETAIL
SCALE: NTS



4
U104
GATE VALVE INSTALLATION
SCALE: NTS



6
U104
TOP SLAB DETAIL
SCALE: NTS

- NOTES:
1. ALL CONNECTIONS TO BE 3/16" FILLET WELD USING 4043 ALLOY FILLER WIRE.
 2. ALUMINUM FOR RAILS SHALL BE 6061-T6.
 3. RUNGS SHALL BE MORTON TREAD GRIP LADDER RUNGS (2 ROW TYPE) OR APPROVED EQUAL.

5
U104
LADDER DETAIL
SCALE: NTS

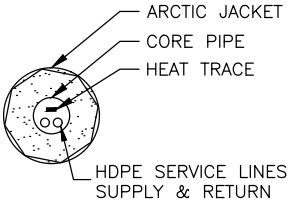
DETAILS



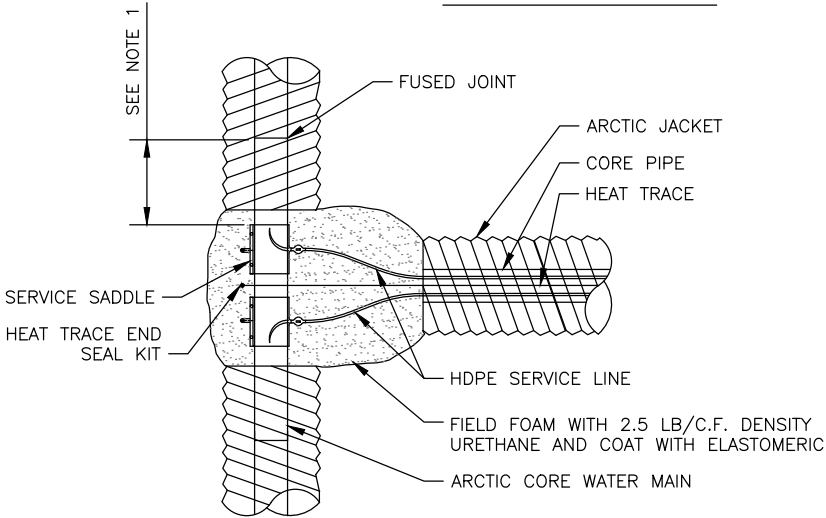
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2023	U106	U114

SERVICE CONNECTION NOTES:

1. SERVICE SADDLES SHALL NOT BE LOCATED WITHIN 3 FEET OF A BUTT FUSED JOINT.

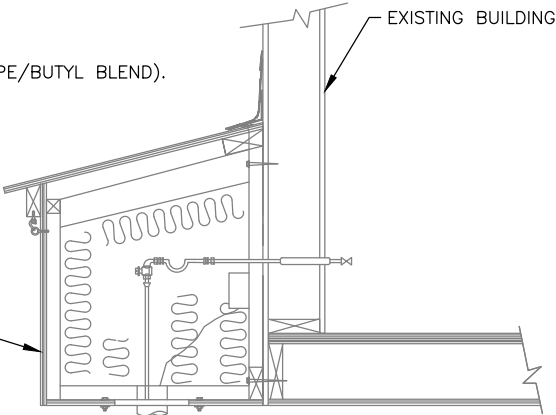


TYPICAL SECTION



MATERIALS (WATER SERVICE)

SERVICE SADDLE	ROMAC SS1-H (ACTUAL WATER MAIN ODO X LENGTH X TAP SIZE (NORMALLY 1" IP), STAINLESS STEEL, 2 BOLT (MIN.) SERVICE SADDLE. PROVIDE 4 EA. SS SPRING WASHERS PER BOLT.
PITORIFICE	1" FORD PITORIFICE CORPORATION STOP F1102-4-P WITH 1" IP THREAD X 1" PACK JOINT FOR PVC SIZE HDPE (1" SDR 11 MEETING ASTM D-3035). PROVIDE SS INSERT STIFFENER (FORD INSERT NO. 53-72 OR MUELLER NO. 504-385) AND PITORIFICE STINGER FOR INSERTION IN 8"Ø MAINLINE.
HDPE SERVICE	1"Ø HDPE (PE 4710), SDR 11, 160 PSI MIN., NSF 61 APPROVED, MEETING ID ASTM D-3035 (1" WATER SERVICE PIPES SHALL BE CONTINUOUS (NO JOINTS) FROM SERVICE SADDLE TO WATER VALVE VAULT)
ARCTIC CARRIER PIPE	NOMINAL 4" X 12" PRE-INSULATED HDPE, IPS, SDR 17, 16 GA. CORRUGATED ALUMINUM JACKET, PUSH ON COUPLING X BEVELED END.
PIPE COUPLING BAND	NOMINAL 12", 16 GA. ALUMINUM, SINGLE PIECE, 3 BOLT BAND SEE <u>DETAIL 6, SHEET U2.2.</u>
INSULATION WASHER	NOMINAL 4 X 12 RUBBER WASHER, 4.75" I.D.X 12" O.D.X 2" THICK (SPEC. ASTM-D-1056-85 GRADE 2A1 BLACK EPT/PE/BUTYL BLEND).
POUR FOAM	2 COMPONENT, 2.5 LBS/FT POLYURETHANE FOAM.
ELASTOMERIC COATING	APPLY 50 MILS DURATHANE ELASTOMERIC RESIN COATING
HEAT TRACE	5 WATTS/FT, 120 VAC, 16 AWG, SELF LIMITING, NELSON #LT5J
HEAT TRACE END SEAL KIT	USE MANUFACTURER'S RECOMMENDED HEAT TRACE END SEAL FOR BELOW GROUND CONDITIONS.
BALL SRV VALVE	FORD BALL SERVICE VALVE, FIP-THREAD X PEP PACK JOINT (FORD #B61-444)
90° ELL (@ BALL VALVE)	90° ELBOW, PEP PACK JOINT X MIP-THREAD
90° ELL (TYPICAL)	90° ELBOW, PEP PACK JOINT X PEP PACK JOINT



LEAVE 5-FEET OF ADDITIONAL PIPING ABOVE FINISH GRADE. PIPING TO BE CONNECTED TO HOUSE BY OTHERS

(2 EA) 1" FORD BALL SVC VALVE

COVER END TO KEEP DEBRIS FROM ENTERING ANNULAR SPACE

FINISH GRADE

ARCTIC LONG OR MEDIUM SWEEP 90° BEND

PIPE COUPLING BAND (TYP. EACH JOINT)

ADJUST EXISTING WATER SERVICE AS NEEDED TO MATCH PENETRATION. WHERE NEW WATER SERVICE LINE AND EXISTING WATER SERVICE LINE ARE IN ALIGNMENT, ADJUST GRADE OF EXISTING WATER SERVICE LINE ARCTIC PIPE TO MATCH VAULT PENETRATION. WHERE NEW WATER SERVICE LINE AND EXISTING WATER SERVICE LINE ARE OFFSET, INSTALL AND ROLL NEW 45° ARCTIC PIPE BEND TO MATCH VAULT PENETRATION.

RESILIENT SEAL "KOR-N-SEAL" MODEL S106 OR EQUAL

ELECTRIC HEAT TRACE FROM BUILDING w/ END SEAL KIT

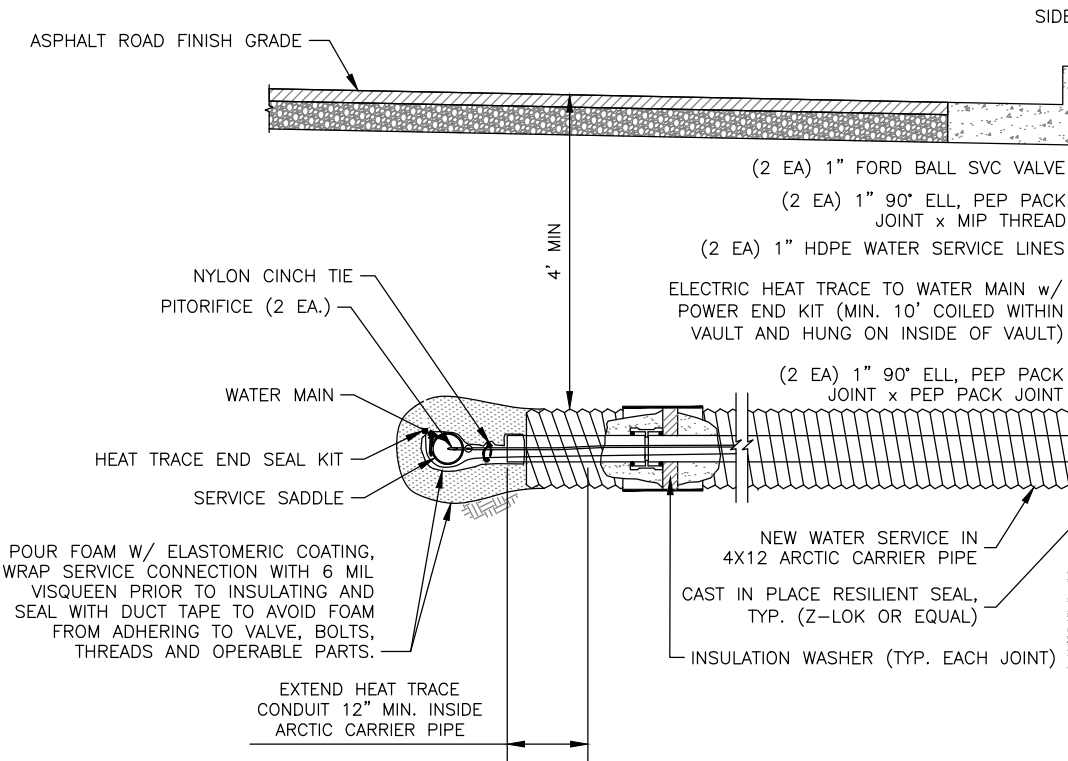
SPRAY-ON FOAM INSULATION WITH ELASTOMERIC COATING

48" DIA PRECAST CONCRETE MANHOLE BASE

12" MIN. TYPE A SELECTED MATERIAL (2" MINUS)

BOTTOM OF EXCAVATION

PLAN VIEW OF WATER SERVICE CONNECTION TO MAIN



CONNECTION TO WATER MAIN - PROFILE

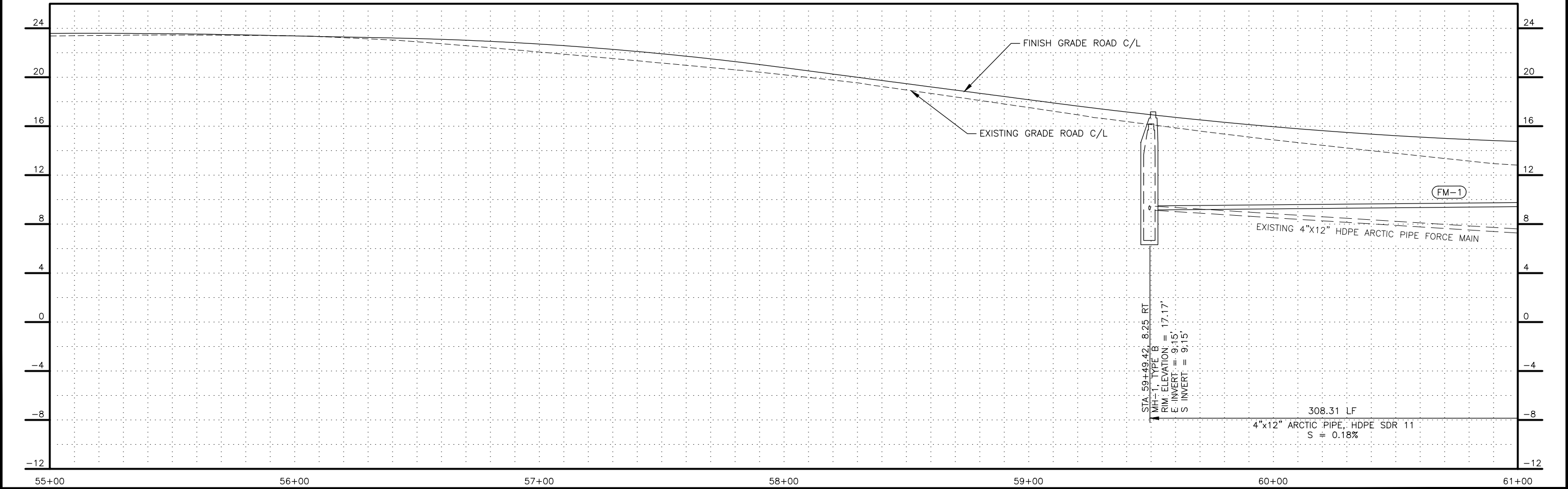
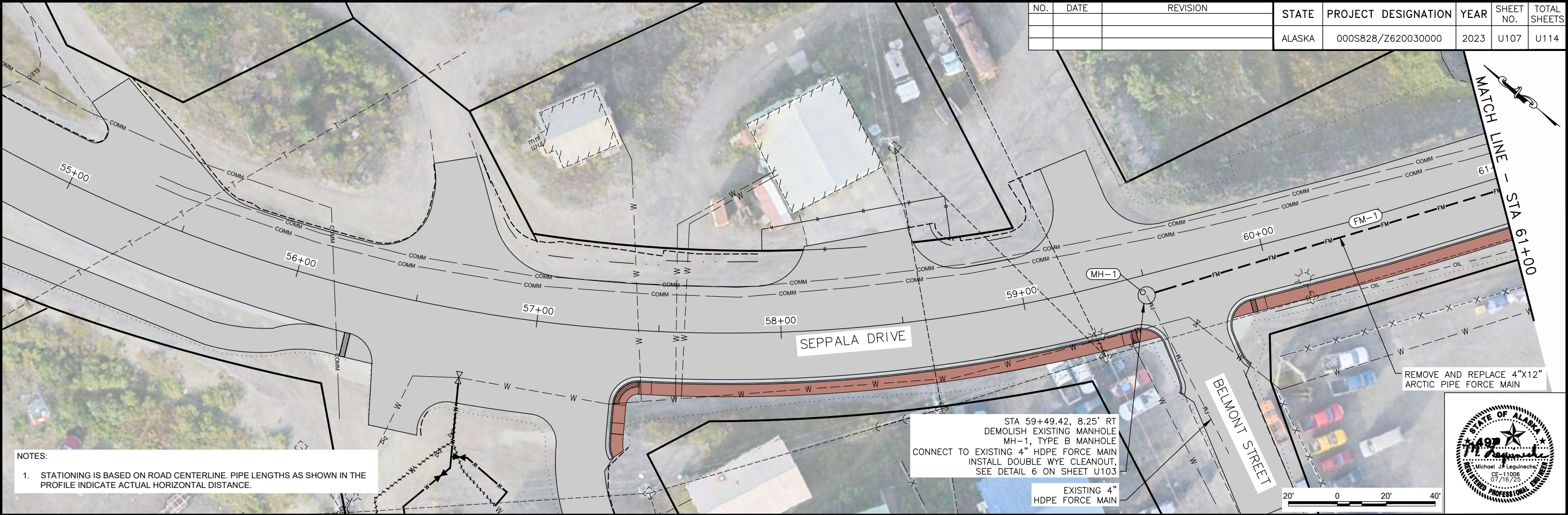
WATER VALVE VAULT - SECTION

DETAILS

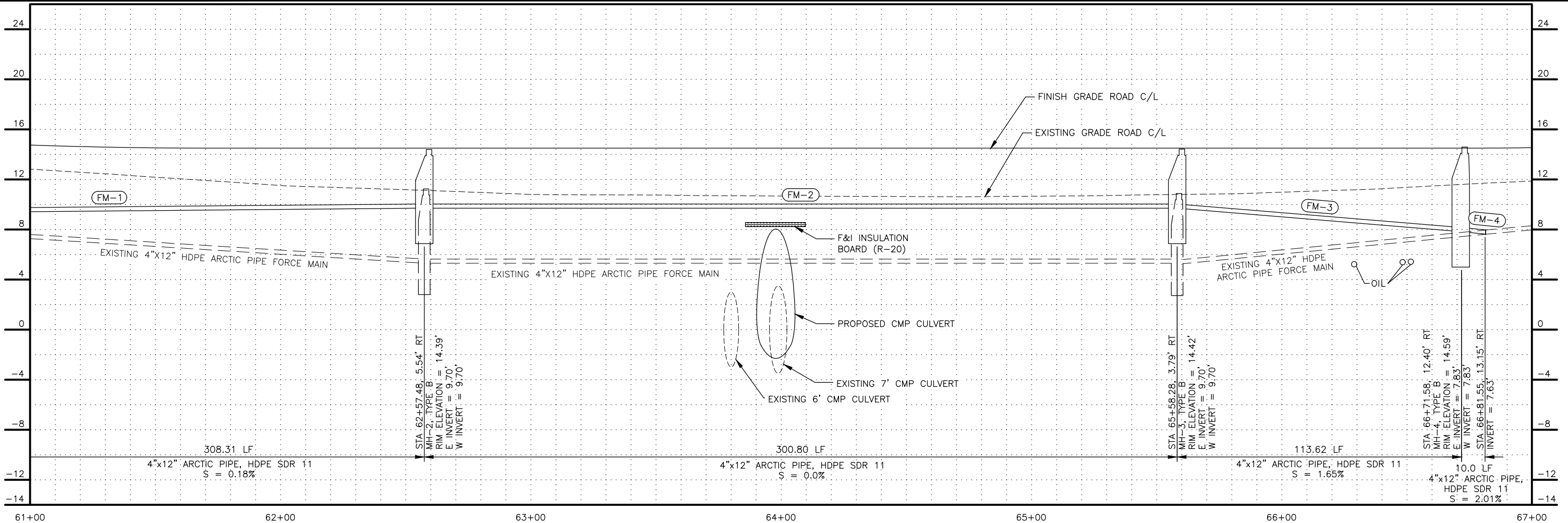
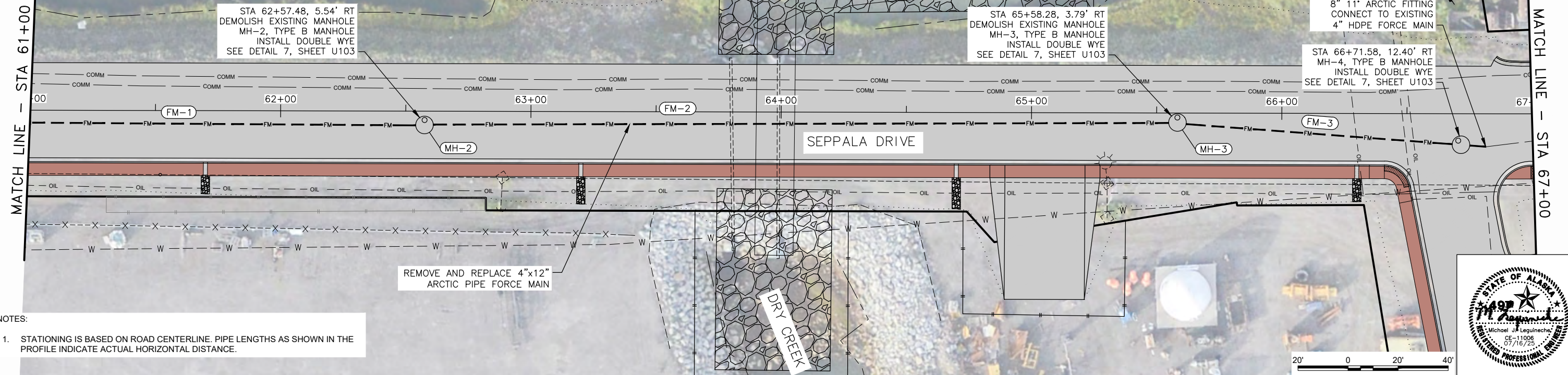


PLANS DEVELOPED BY: CRW ENGINEERING GROUP, INC. 3940 ARCTIC BLVD, STE. 300 ANCHORAGE AK 99503, ANCHORAGE, AK 99503 (907) 562-3252
J:\JobsData\32801.05 Seppala Drive Upgrades\00 CADD 2015\01 Civil\02 Design\32801.05 Plan and Profile-U107 55+00.00-61+00.00 Wed, Jul/16/25 10:23am

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2023	U107	U114

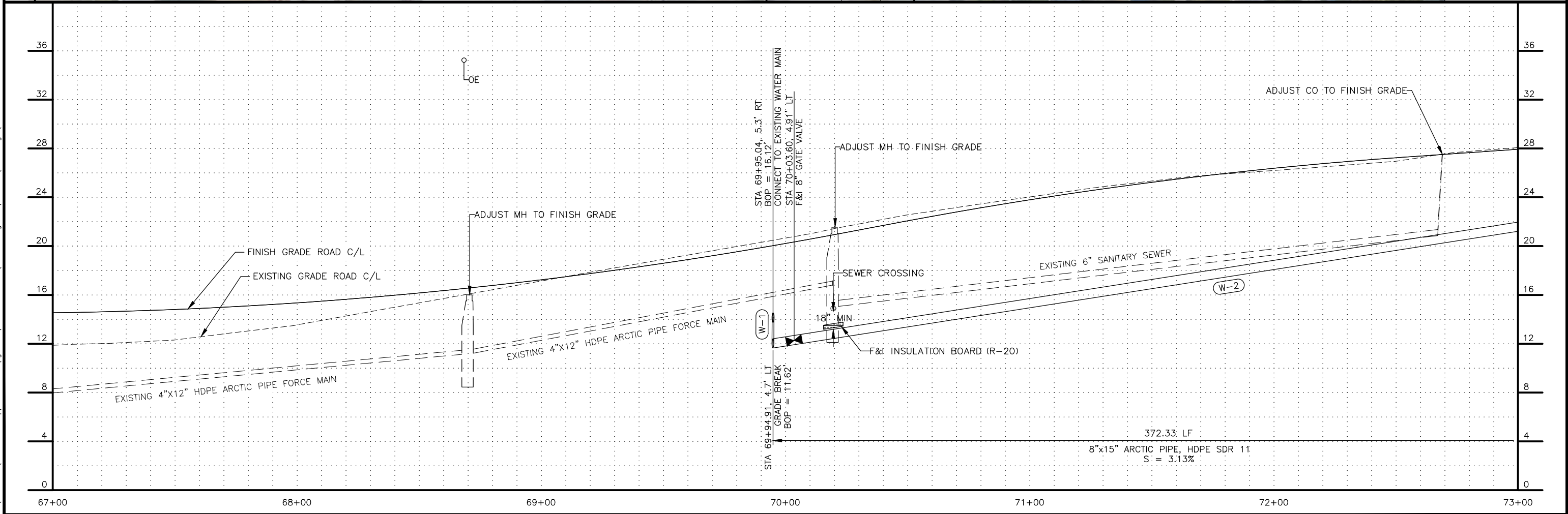
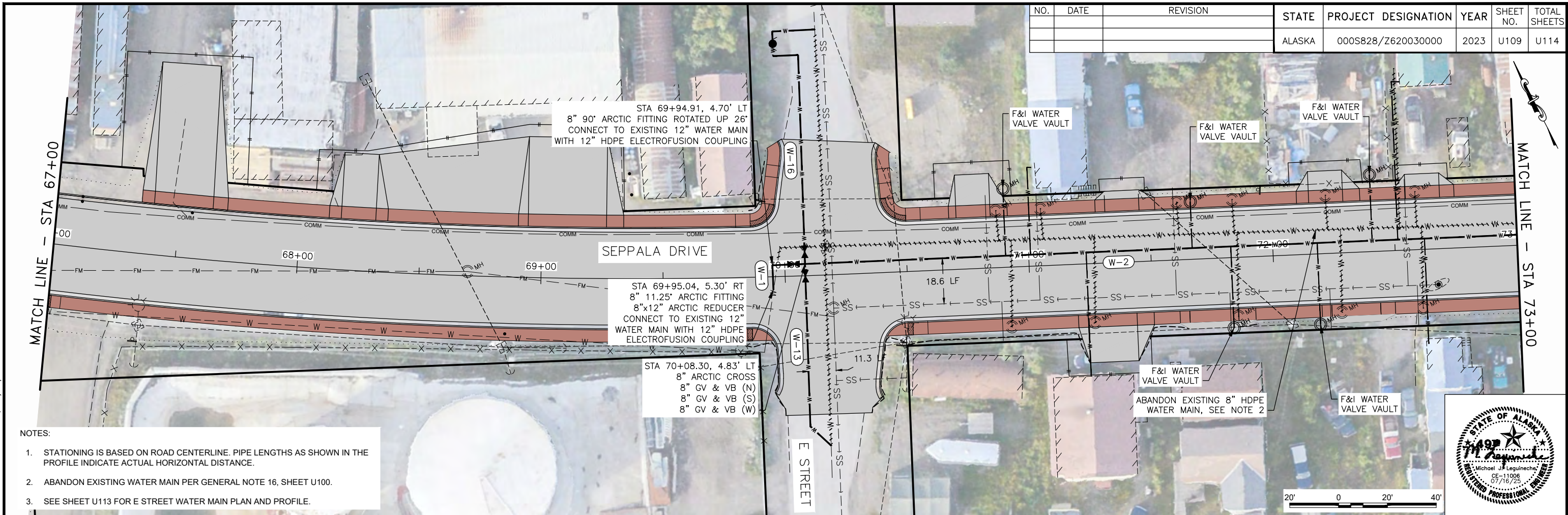


NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2023	U108	U114



PLANS DEVELOPED BY: CRW ENGINEERING GROUP, INC. 3940 ARCTIC BLVD, STE. 300 ANCHORAGE AK 99503, ANCHORAGE, AK 99503 (907) 562-3252
J:\JobsData\32801.05 Seppala Drive Upgrades\00 CADD 2019\01 Working Set\01 Civil\02 Design\32801.05 Plan and Profile-U108 61+00.00-67+00.00 Wed, Jul/16/25 10:23am

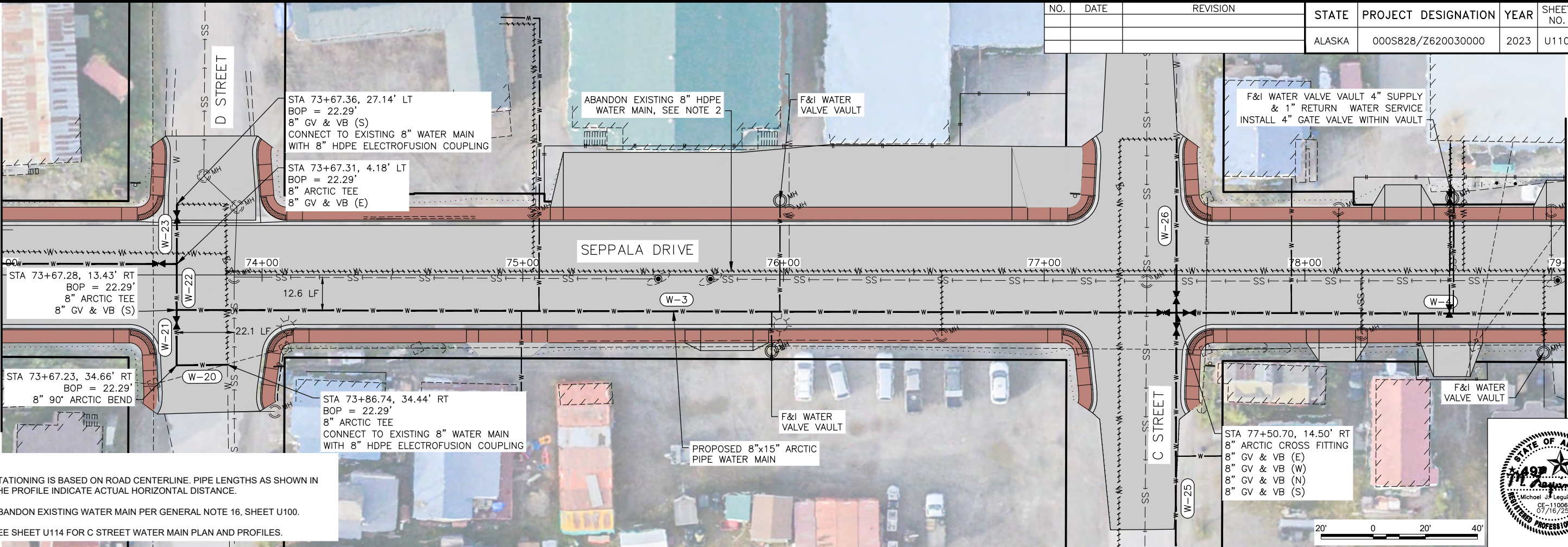
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PLANS DEVELOPED BY: CRW ENGINEERING GROUP, INC. 3940 ARCTIC BLVD, STE. 300 ANCHORAGE AK 99503, ANCHORAGE, AK 99503 (907) 562-3252
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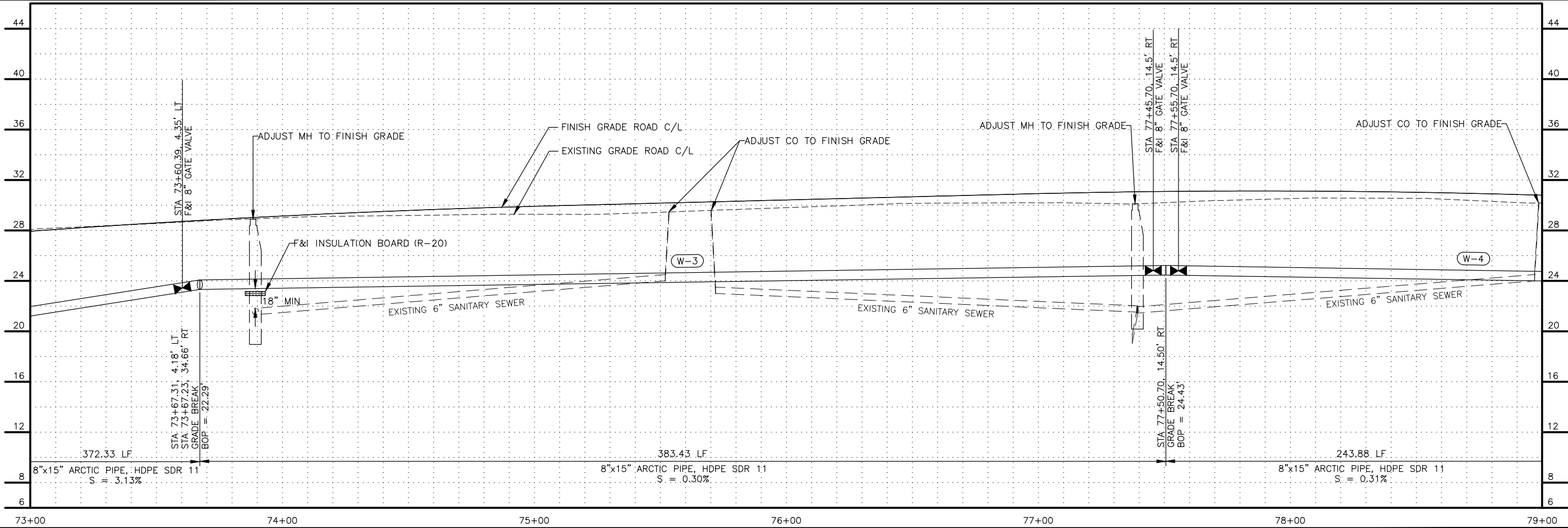
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	000S828/Z620030000	2023	U110	U114

MATCH LINE - STA 73+00



NOTES:

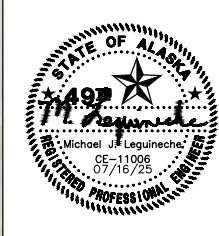
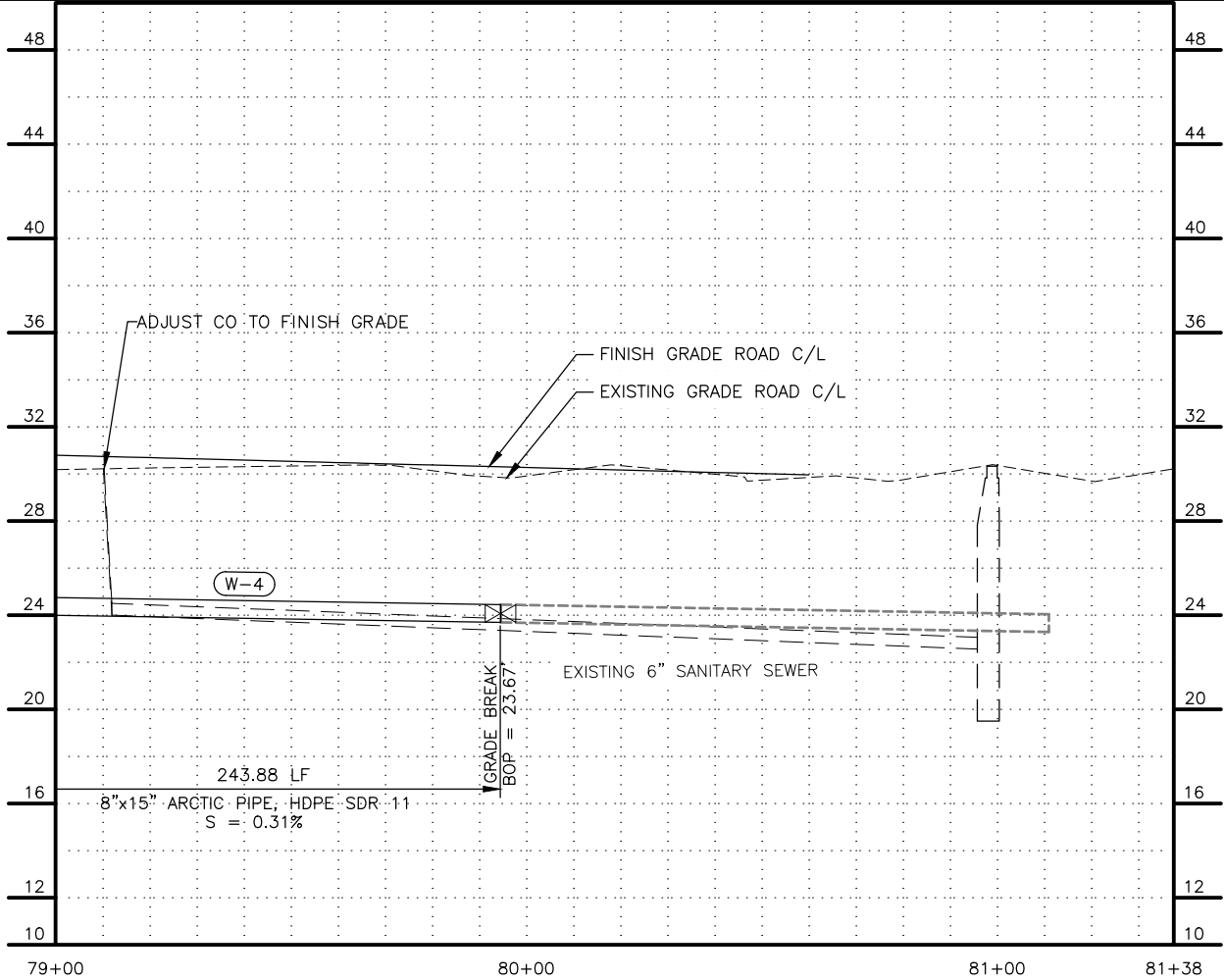
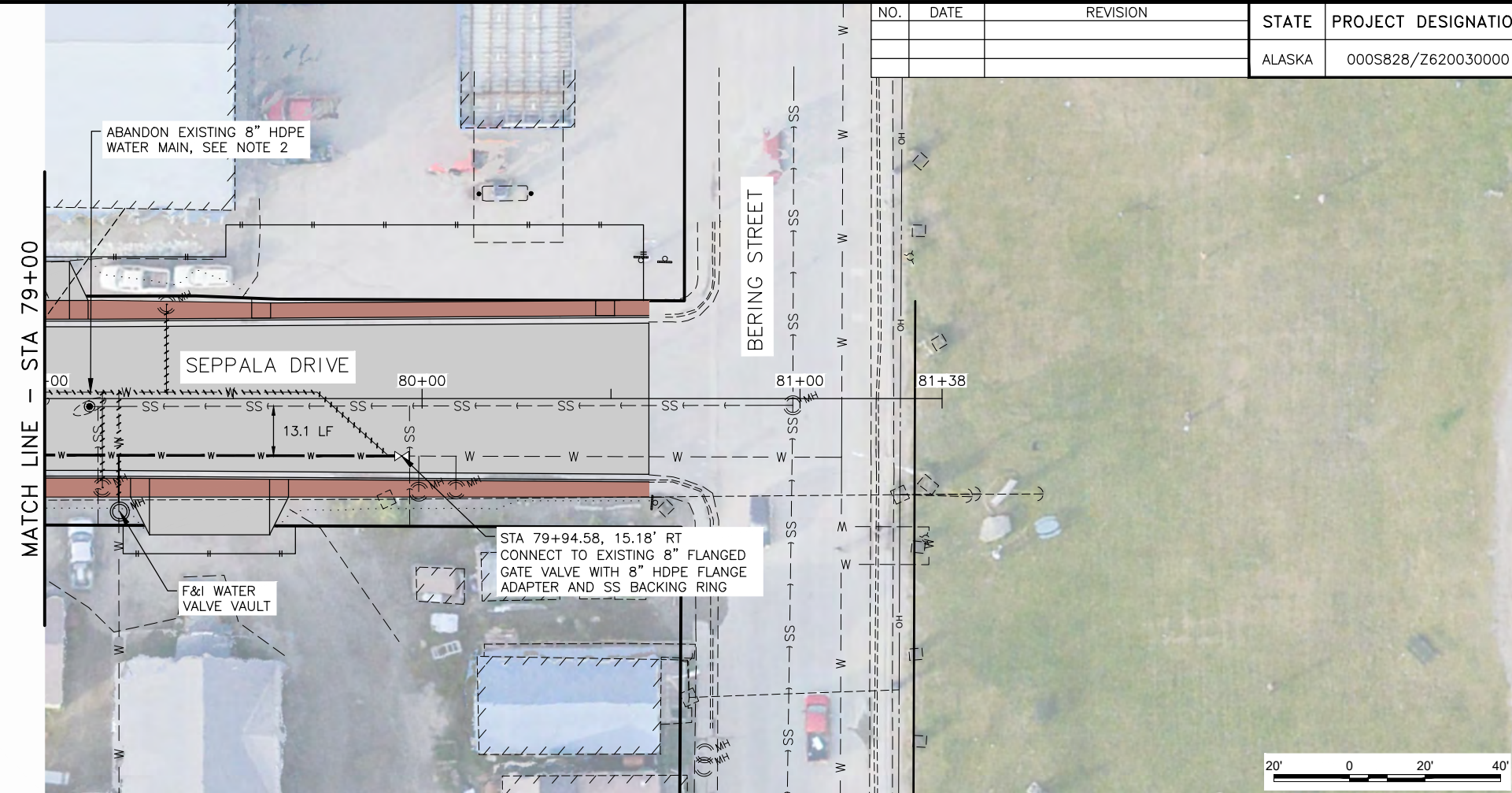
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- ABANDON EXISTING WATER MAIN PER GENERAL NOTE 16, SHEET U100.
- SEE SHEET U114 FOR C STREET WATER MAIN PLAN AND PROFILES.



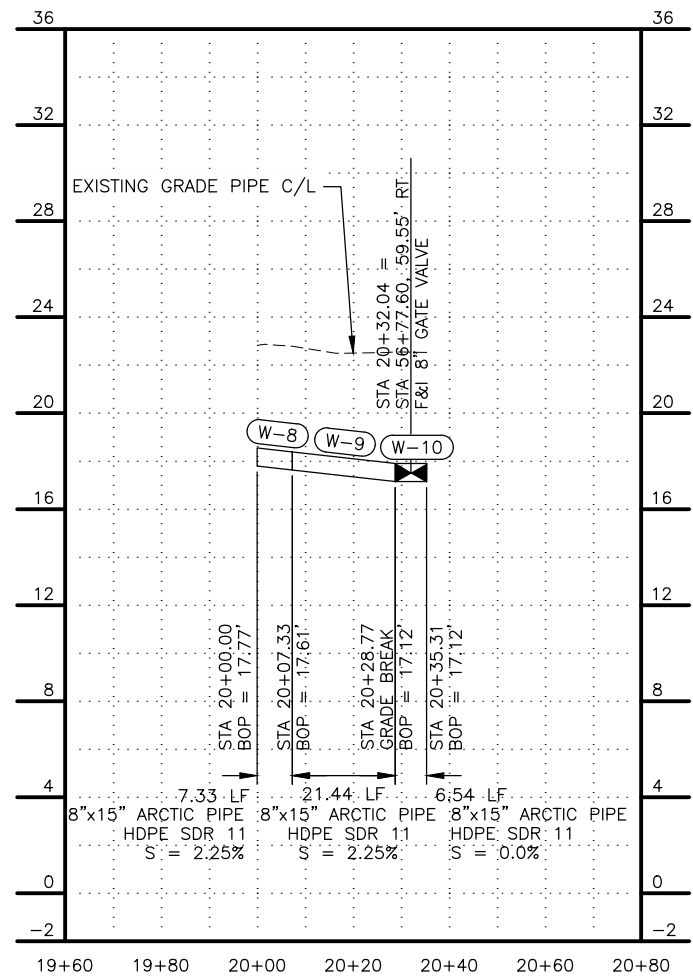
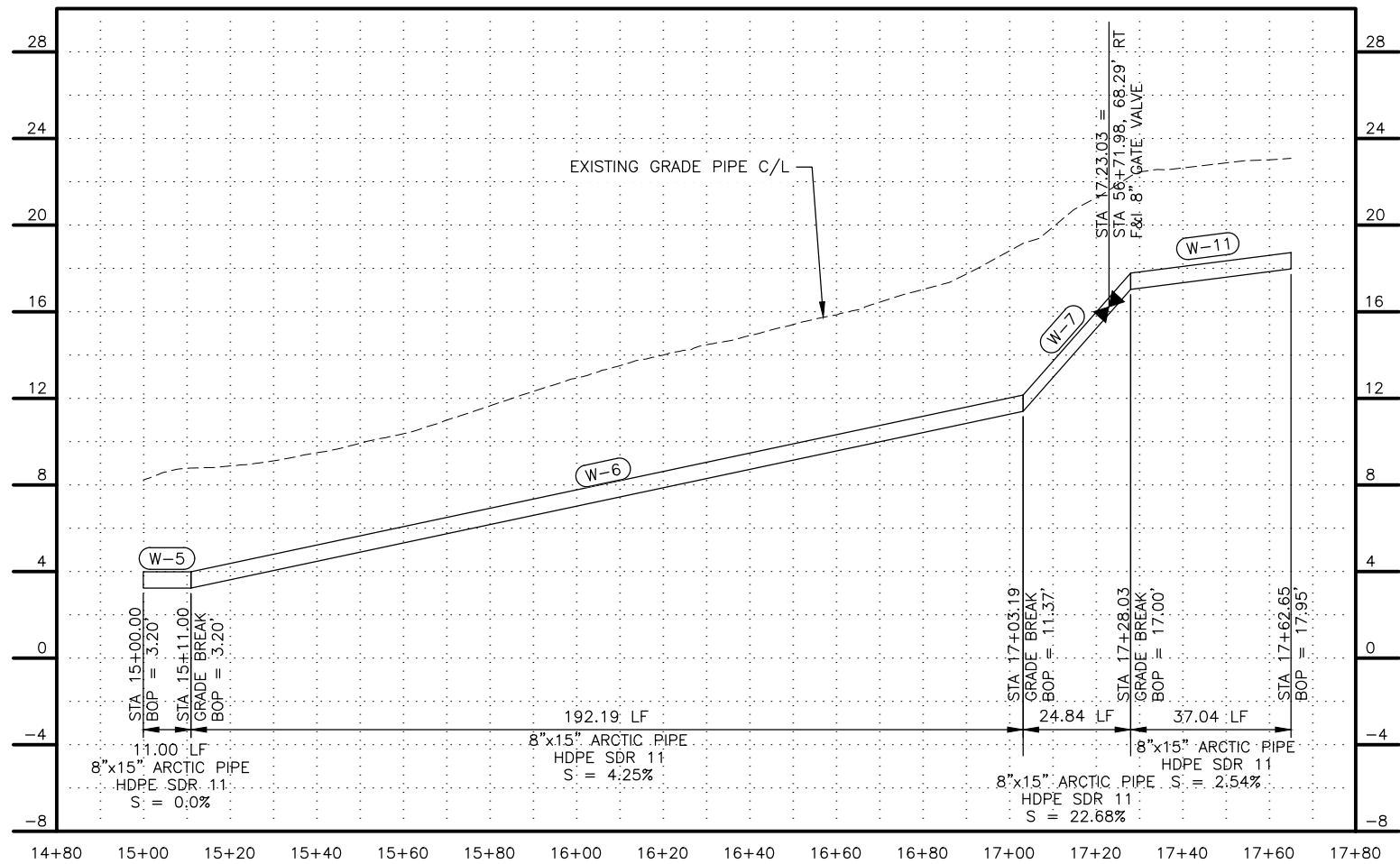
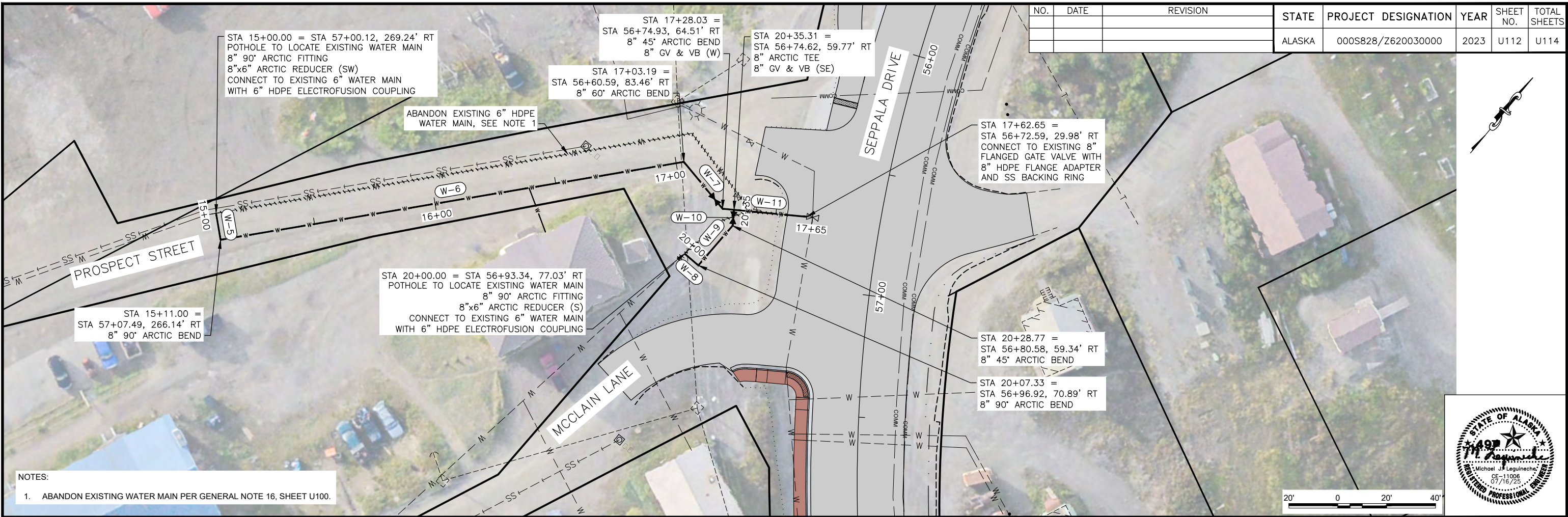
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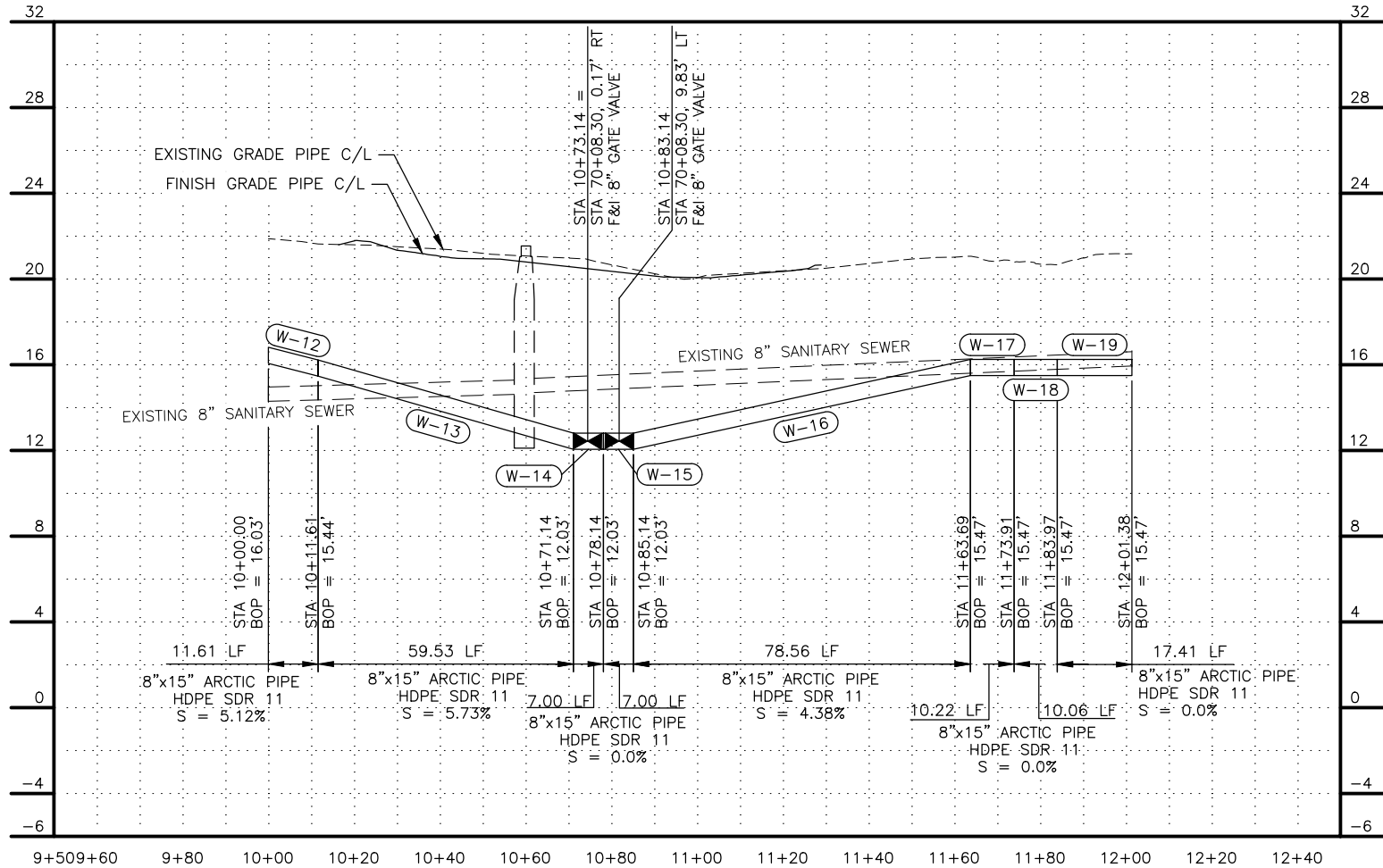
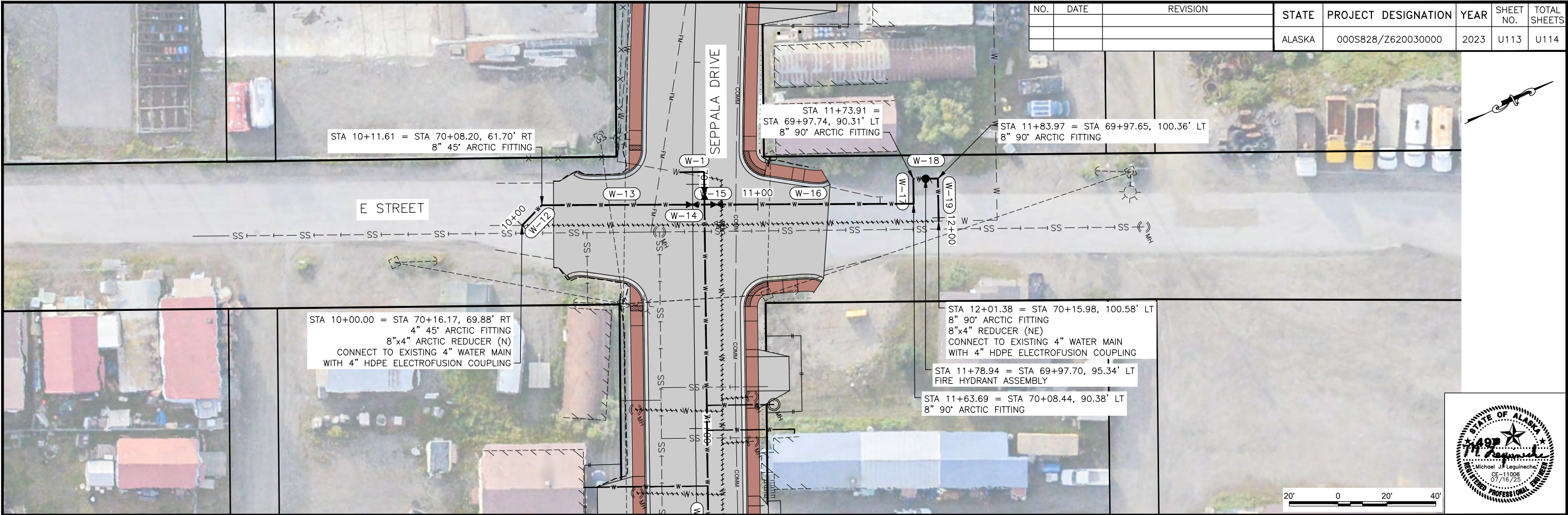
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- ABANDON EXISTING WATER MAIN PER GENERAL NOTE 16, SHEET U100.



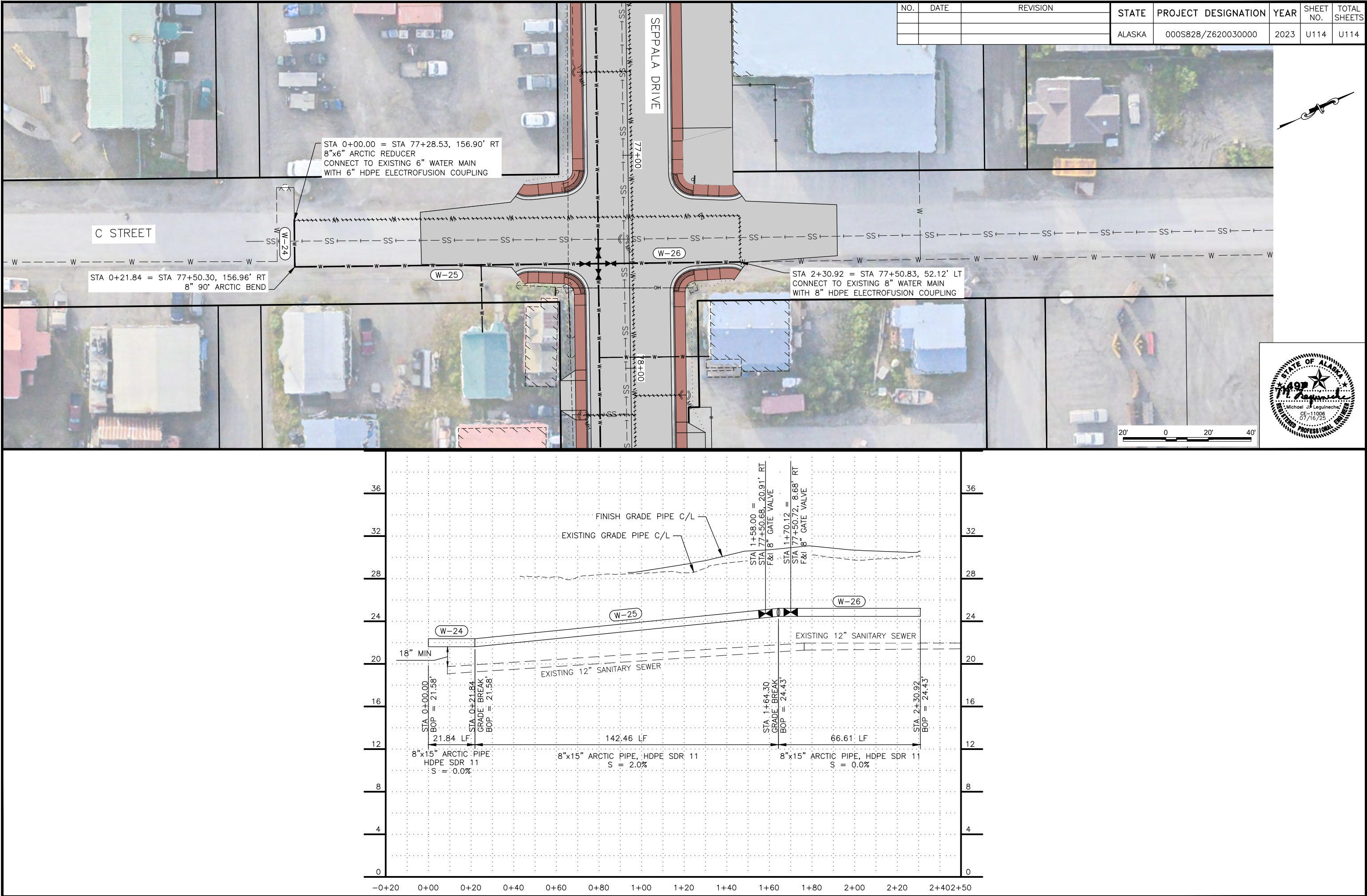
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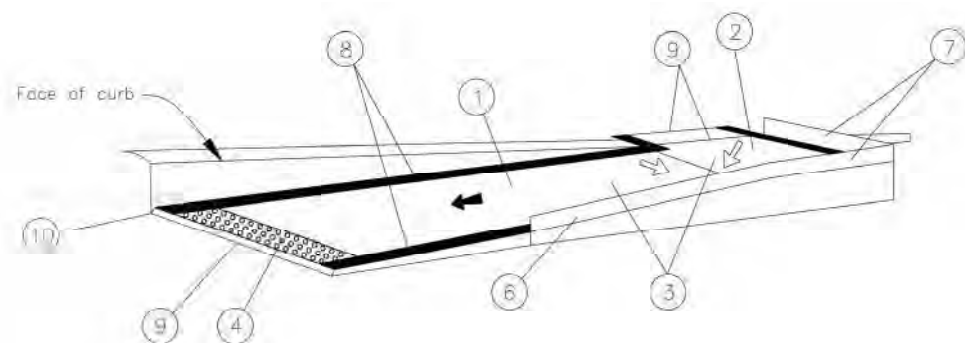


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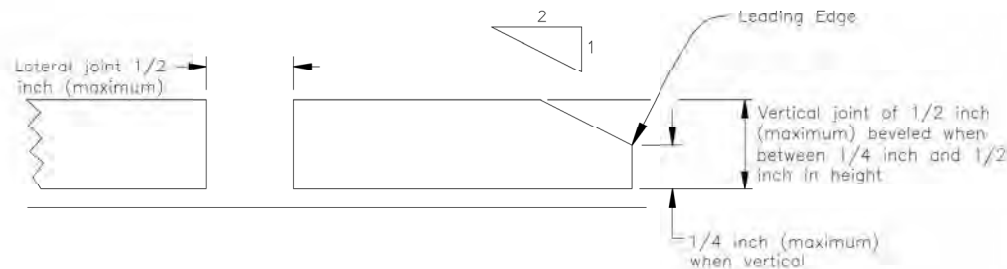


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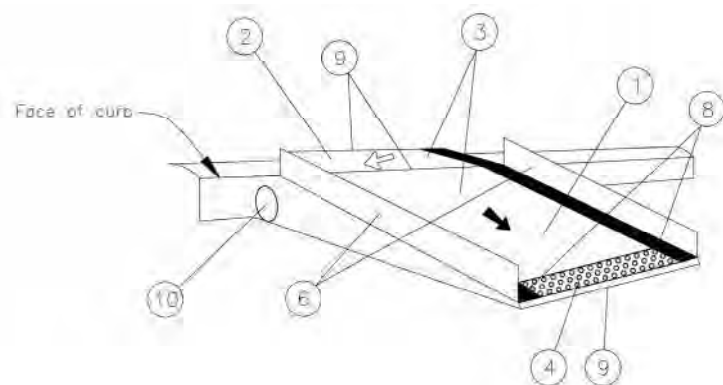




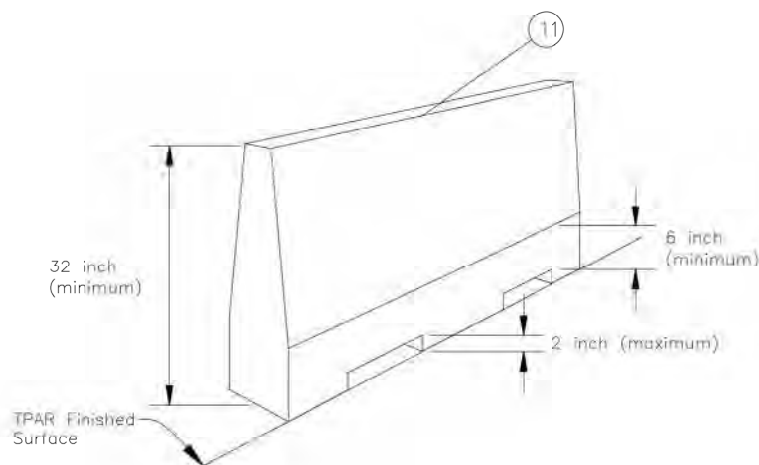
EXAMPLE TEMPORARY CURB RAMP, PARALLEL TO CURB



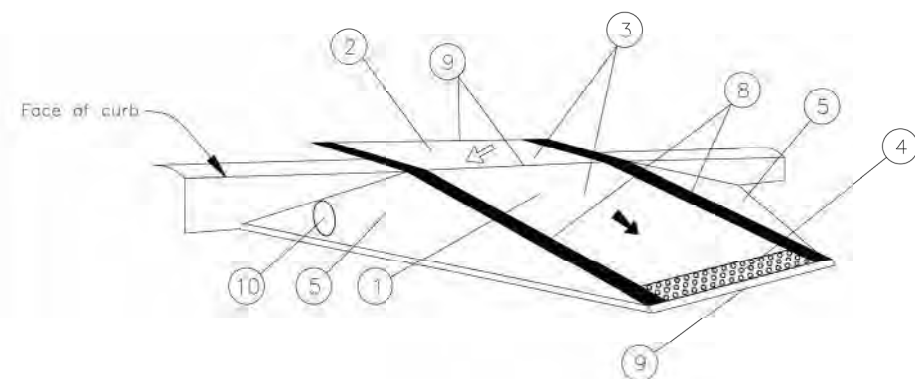
EDGE TREATMENT DETAIL



With Protective Edge



EXAMPLE LONGITUDINAL CHANNELIZING DEVICE DETAIL



With Side Flares

Detectable edging are not required when meeting the requirements of Detail Note 6

EXAMPLE TEMPORARY CURB RAMP, PERPENDICULAR TO CURB

GENERAL NOTES:

1. The curb ramp shall be either self-ballasting or include an anchoring system capable of keeping the platform stationary under pedestrian traffic, including motorized wheelchairs.
2. The curb ramp platform shall be free of sharp, rough edges, or abrasive elements that may harm pedestrians.

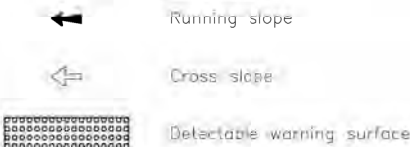
DETAIL NOTES:

1. Clear width per requirements stated in sheets 1 and 2, Note A.
2. Landing shall be provided at the top of curb ramps. The landing clear length shall be 36 inches minimum. The landing clear width shall be at least as wide as the curb ramp (excluding flared sides, leading to the landing).
3. Ramps shall have a running slope of 8.3% maximum (7.7% nominal) and cross slope of 2.0% maximum (1.5% nominal). If the landing functions as a turning space, slope in any direction (including diagonal) of the turning space shall be 2.0% maximum (1.5% nominal).
4. Install detectable warning surface at pedestrian street crossings. The detectable warning shall extend the full width of the curb ramp (excluding flared sides) and shall be 24 inches (minimum) deep measured from the back of the curb on the ramp surface. Omit detectable warning surfaces at end of sidewalk transitions that are not at a crosswalk.
5. Curb ramp flares where provided shall have 10% maximum (8.3% nominal) slope.
6. Detectable edging with 6 inch (minimum) height shall be placed along the ramp run when there is a vertical drop exceeding 6 inches or is adjacent to a side slope exceeding 1:3 (vertical:horizontal).
7. Detectable edging with 6 inch (minimum) height and contrasting color shall be placed on all turning spaces where the walkway changes direction.
8. The curb ramp walkway edge shall be marked with a contrasting color, 4 inch wide stripe. The marking is optional where a contrasting detectable edging is used.
9. See edge treatment detail for requirements on lateral and vertical joints or gaps between surfaces. Surface slopes that meet at a grade break shall be flush.
10. Provide an approved means to maintain water flow along existing curb flow line and to prevent water from accumulating at the bottom of the ramp, or overflowing onto the ramp surface.
11. Where longitudinal channelizing devices are used to delineate a TPAR, continuous detectable top and bottom surfaces in compliance with the Alaska Traffic Manual shall be provided such that pedestrians using a long cane can follow it. The top of the top surface shall be at least 32 inches above the TPAR surface. The bottom surface shall be at least 6 inches in height with a gap no greater than 2 inches above the TPAR surface. Longitudinal channelizing devices shall be interlocked and not have gaps that allow pedestrians to stray from the channelizing path.

SIGN SIZE TABLE

ALASKA SIGN DESIGN SPECIFICATIONS CODE	SIZE H X V (INCHES)
R9-9	24 X 12
R9-10	24 X 12
R9-100(L/R), R9-100(L), R9-100(R)	24 X 12
R9-11(L), R9-11(R)	24 X 18
M4-9b(L), M4-9b(R)	30 X 24

LEGEND:



State of Alaska DOT&PF
ALASKA STANDARD PLAN
TEMPORARY PEDESTRIAN
ACCESSIBLE ROUTES

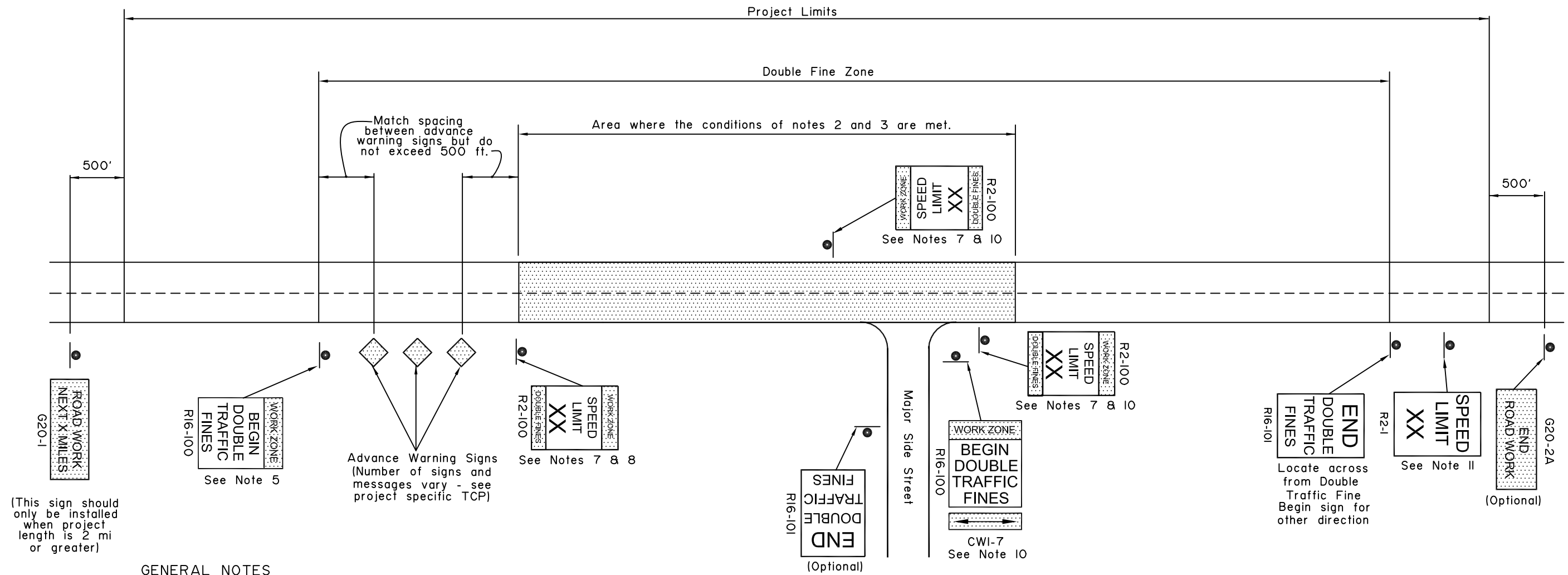
Adapted as an Alaska
Standard Plan by:

Lauren Little, P.E.
Interim Chief Engineer

Adoption Date: 01/29/2024

Last Code and Sids. Review
By: ZSH Date: 12/18/2023

Next Code and Standards Review Date: 12/18/2033



GENERAL NOTES

- Signs are shown for one direction only (with one exception). Signs for the other direction mirror those shown.
- Double fine signs shall be used only where one or more of the following conditions exist:
 - Active work areas (where road workers and/or machines are presently working on or adjacent to a road)
 - Detours on new temporary roads built for that purpose (this does not include detours on existing streets)
 - Sections of paved roads where pavement has been removed.
 - Roads being paved where unmatched asphalt lifts result in a vertical lip between lanes.
- Double fine signs shall be confined to the areas where the above conditions exist, with the following exceptions:
 - If the project is 2 miles or shorter in length, the entire project may be posted for double fines when the above conditions exist on any part of the project.
 - When the above conditions exist at multiple locations separated by less than 2 miles, the locations and the intervening segments may be posted as a single double fine zone.
- Double fine signs shall be removed or covered when work activity ceases for more than two days and conditions b, c, or d of note 2 are not met.
- The R16-100 "BEGIN" sign may be used in place of the first advance warning sign. However, when this is done, the appropriate advance warning sign must be reinstalled when the double fine sign is taken down or covered.
- When a double fine zone is longer than 2 miles, work zone speed limit signs shall be posted at spacings not greater than 2 miles within the double fine zone.
- "Work zone speed limit signs", as used here, refer either to 1) R2-100 signs or 2) standard R2-1 regulatory speed limit signs with CW20-102 "DOUBLE FINES" plates mounted below.
- The limit shown on work zone speed limit signs shall be either the existing limit before construction or, if a work zone speed limit order has been approved in accordance with ADOT&PF Procedure 05.05.020 PDR, a reduced limit.
- All existing regulatory speed limit signs within double fine zones shall either be replaced with R2-100 signs or supplemented with CW20-102 plates.
- Signs shall be installed at major intersections within the double fine zone to warn entering drivers of double fines. This may be done with a R16-100 sign with a CWI-7 arrow panel on the side street or with two work zone speed limit signs on the main street on either side of the intersection. Use of R16-100 signs on side streets eliminates the need for "Road Work Ahead" signs on those streets. If the speed limit has been reduced, the two work zone speed limit signs are mandatory.
- At the end of each double fine zone, install an R2-1 sign showing the speed limit for the road beyond the double fine zone.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

LOCATION OF
DOUBLE TRAFFIC
FINE SIGNS

Adopted as an Alaska
Standard Plan by:
Kenneth J. Fisher, P.E.
Chief Engineer

Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

Next Code and Standards Review date: 02/08/2029

GENERAL NOTES:

1. Final pavement markings conforming to Part 3 of the Alaska Traffic Manual should be installed before paved roads are open to public travel. If that is not practical, install interim pavement markings as shown on this drawing. Maintain interim pavement markings until final pavement markings are installed.
2. No interim pavement markings are required:

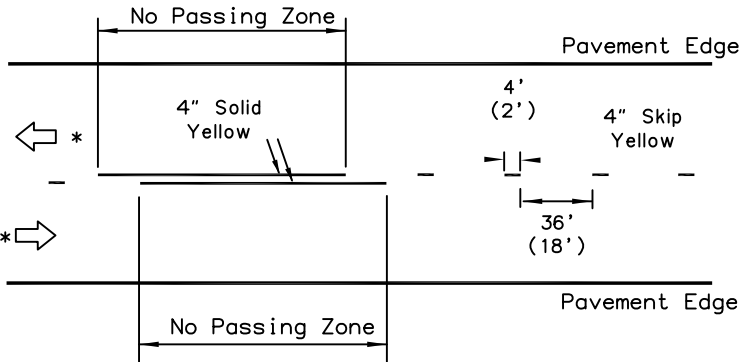
a. on projects that will not have permanent markings when finished.

b. in work zones that are open to public travel for no more than one work shift during daytime or for no more than one hour at night.

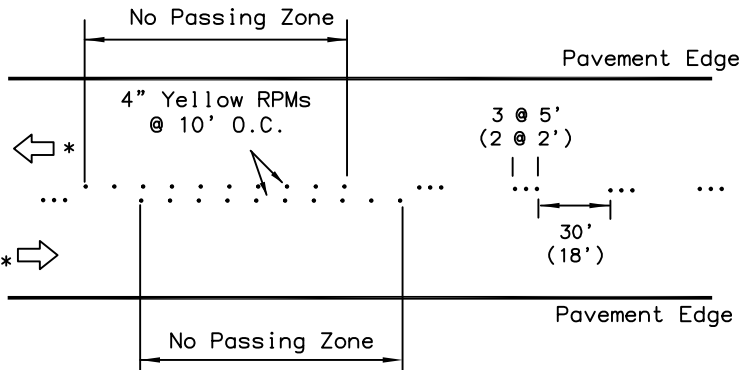
c. where DO NOT PASS and PASS WITH CARE signs are installed on two lane roads as shown in Detail C, no pavement markings are required:

1) for 3 days if seasonal ADT is above 2000, or

2) for 1 month if seasonal ADT is below 2000.
3. Interim pavement markings should not be in place longer than 14 calendar days before being replaced with permanent markings conforming to Part 3 of the Alaska Traffic Manual unless the Engineer provides written approval.
4. Where R4-1 DO NOT PASS signs are used, install at the beginning of no passing zones and at no more than 1500' spacings within no passing zones.
5. Install high level warning devices on all DO NOT PASS and PASS WITH CARE signs.
6. Offset temporary markings 8"-12" from the future location of permanent markings if applied on the same lift of pavement.
7. Dimensions in parenthesis apply to curves with a radius of 1000 feet or less or where posted speed limit is 30 mph or less.



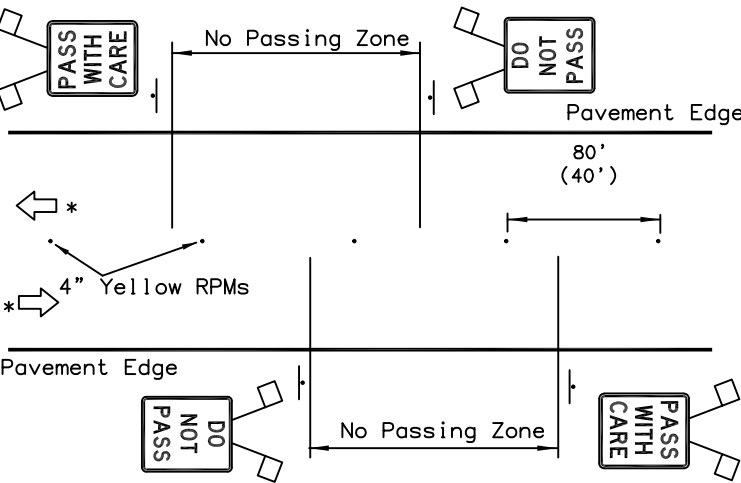
Striping



Temporary Raised Pavement Markers

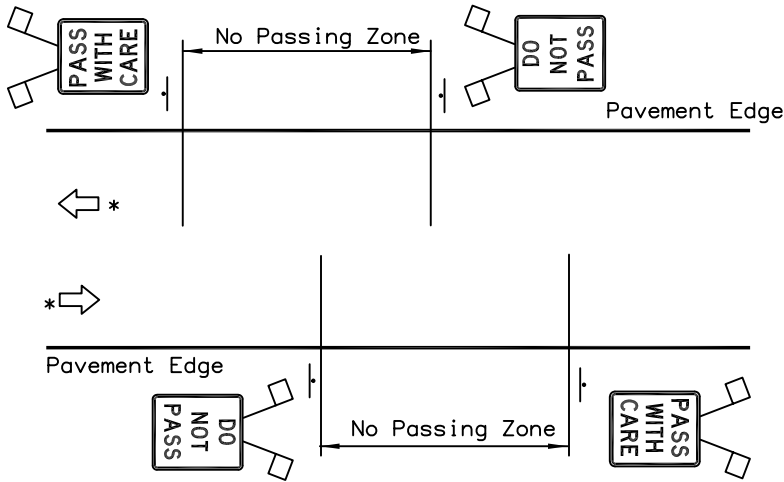
DETAIL A

Two-lane road: No Passing Zones indicated with pavement markings.



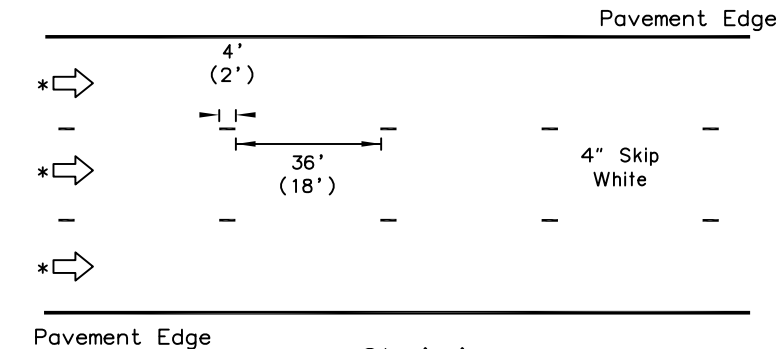
DETAIL B

Two-lane road: No Passing Zones indicated by signs only. Raised pavement markers for centerline delineation.

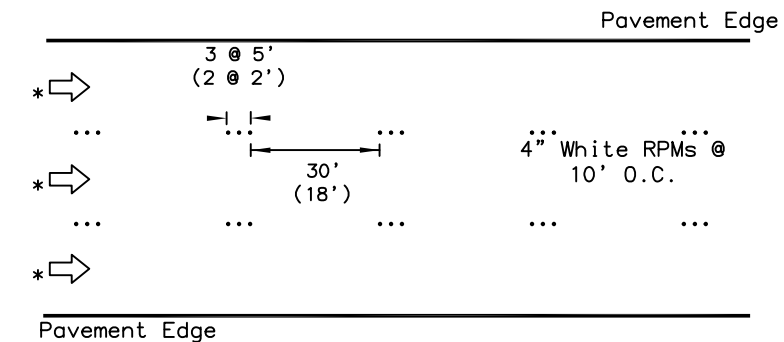


DETAIL C

Two-lane road: No Passing Zones indicated by signs only (see Note 2c). No centerline delineation.



Striping



Temporary Raised Pavement Markers

DETAIL D

Multilane one-way road: Lane dividing lines

* Direction of Travel

State of Alaska DOT&PF
ALASKA STANDARD PLAN

INTERIM
PAVEMENT MARKINGS

Adopted as an Alaska
Standard Plan by: *Kenneth J. Fisher*
Kenneth J. Fisher, P.E.
Chief Engineer

Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

Next Code and Standards Review date: 02/08/2029

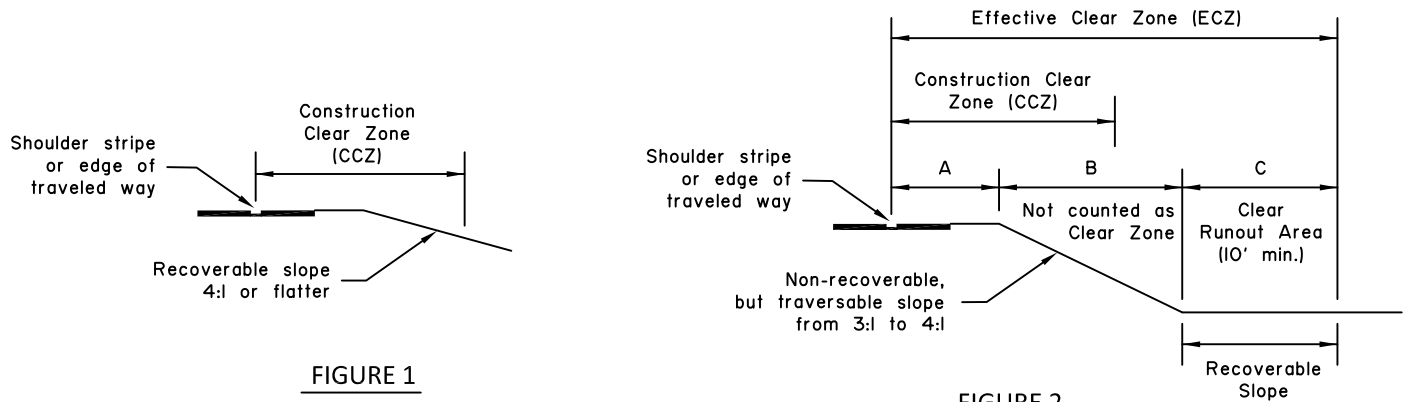


FIGURE 1

FIGURE 2

Table 1 - Width of Construction Clear Zone (feet)									
Hazard	AADT	Posted Speed Limit (MPH)							
		<=30 MPH		35 to 40 MPH		45 to 55 MPH		>=60 MPH	
		6:1 or flatter	5:1 to 4:1	6:1 or flatter	5:1 to 4:1	6:1 or flatter	5:1 to 4:1	6:1 or flatter	5:1 to 4:1
Fill (Fore) & Cut (Back) Slopes	Under 750	8'	6'	6'	8'	8'	10'	12'	16'
	750 - 6,000	8'	10'	8'	10'	14'	18'	20'	26'
	Over 6,000	10'	14'	12'	14'	16'	20'	22'	28'
Fixed Objects	All	15'		30'					

Table 2 - Treatment for Hazards Within Construction Clear Zone		
Roadside Condition to be Treated	Category	Treatment
Fill (Fore) Slopes, including trenches	Steeper than 3:1 or water 3 ft. or deeper	Use Table 5 to select from the following two options: 1. Install rigid barrier or guardrail if the condition warrants barrier, or 2. Use drums or Type II barricades if the condition does not warrant barrier.
	3 : 1 to 4 : 1	1. Use drums or Type II barricades if 10 ft. of runout at the bottom of the slope is not clear of obstructions. 2. No traffic control devices are required if 10 ft. of runout at the bottom of the slope is clear of obstructions. 3. If water 3 ft. or deeper is at bottom of slope, use Table 5.
	Flatter than 4 : 1	No traffic control devices are required, except when water 3 ft. or deeper is in construction clear zone use Table 5.
Fixed Objects	All	Install rigid barrier or guardrail if called for by the plans or specifications. Otherwise use SSHC Section 643-3.04.3 - Fixed Objects.

GENERAL NOTES:

1. The "Construction Clear Zone" (CCZ) may be called "Work Zone Clear Zone" or "Clear Zone in Work Zones" in other publications.
2. In the case of conflicts, this Standard Plan has lesser precedence than Section 643 (Traffic Maintenance) of the Standard Specifications for Highway Construction (SSHC).
3. During seasonal shutdown or if construction activity is scheduled for suspension for 45 days or more, treat hazards within a 30 foot CCZ width or within the permanent design clear zone (CZ) width.
4. These guidelines are not comprehensive and are not intended to limit the use of safety measures.
5. During pilot car operations, keep fixed objects and other hazards, 2 feet or farther, away from the edge of traveled way and delineate with channelizing devices as required by the Engineer.

INSTRUCTIONS FOR USING TABLES 1 THROUGH 5:

Use The following tables to determine how to treat roadside fixed object or slopes (including trenches, berms and material stockpiles) in construction clear zones.

TABLE 1: Use to determine whether the hazard is within the CCZ

TABLE 2: Use to determine the appropriate treatment for hazards within the CCZ. No treatment is required for fixed objects or slopes outside the CCZ.

TABLES 3a and 3b: Use to determine appropriate treatment for pavement edge dropoffs.

TABLE 4: Use to determine barrier flare rates.

TABLE 5: Use to determine whether drums or Type II barricades, or temporary barrier or guardrail, are required on fill slopes or for water hazards.

TABLE 1 NOTES:

1. Measure CCZ from the shoulder stripe. If there is no shoulder stripe, measure from the edge of the traveled way. See Figure 1.
2. If CCZ include or ends on a slope of 3:1 to 4:1, use the Effective Clear Zone (ECZ) that extends beyond the bottom of the slope to provide a clear runout area of 10 foot minimum width. The ECZ width must equal or greater than the CCZ width from Table 1. See Figure 2 and verify that A+C ≥ CCA and C ≥ 10 feet.
3. If a CCZ includes or ends on a slope steeper than 3:1, the top of slope must be delineated by channelizing devices or protected by barrier.
4. The term "fixed objects" is defined in Section 643-1.02 of the SSHC.
5. AADT stands for Average Annual Daily Traffic. Use the higher of the as listed in the plans or the average of June/July/August ADT's, unless otherwise specified by the Engineer.

TABLE 2 NOTES:

1. Eliminate non-traversable slopes (those steeper than 3:1) and fixed objects (as defined in Section 643-1.02 of the SSHC) within the CCZ when practicable. They should only be left in place and treated as shown in this table when elimination is not practicable.
2. Maintain a 2-foot minimum wide lateral buffer space between the edge of traveled way and work areas. This provides an area to install barriers or other delineation by channelizing devices.
3. If necessary to treat multiple hazards on the same road segment (slopes and fixed objects), choose treatments from Table 2 that satisfy the requirements for the most significant of the multiple hazards.

State of Alaska DOT&PF
ALASKA STANDARD PLAN
ROADSIDE SAFETY TREATMENT
FOR WORK ZONES

Adopted as an Alaska Standard Plan by: *Carolyn A. Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer
Adoption Date: 09/15/2022

Last Code and Stds. Review
By: LRG Date: 09/15/2022
Next Code and Standards Review date: 09/15/2032

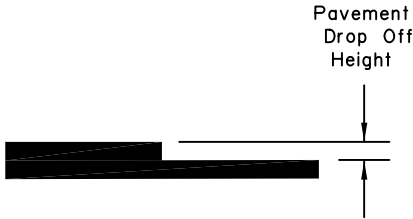


FIGURE 3
Pavement Drop-off Detail

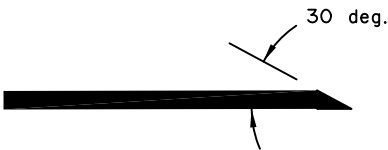


FIGURE 4
Safety Edge Detail

Table 3a - Treatment for Pavement Edge Drop-offs for Posted Speeds > 30 MPH

Nominal Lift Thickness / Height of Pavement Edge Drop-off	Between Active Lanes of traffic moving in same direction	Between Active Lanes of traffic moving in opposing directions	Outside Pavement Edge (if within 3' of traveled way)	Outside Pavement Edge if more than 3' from traveled way and within the CCZ	Across Active Lane, and Entrance and Exit Ramps
0 to 1.0"	No Edge Treatment or Signage Required				
More than 1.0" to 2.0"	UNEVEN LANE Signs		LOW SHOULDER Signs		Taper Drop-off at slope of 15H:1V or flatter Use BUMP Sign
More than 2.0" to 3.0"	UNEVEN LANES Signs - Use Channelizing Devices or Safety Edge	UNEVEN LANES Signs - Use Channelizing Devices	LOW SHOULDER Signs - Use Channelizing Devices - Consider Safety Edge	LOW SHOULDER Signs	
More than 3.0" to 6.0"	UNEVEN LANES Signs - Use Channelizing Devices and Use Safety Edge	UNEVEN LANES Signs - Use Channelizing Devices	SHOULDER DROP OFF Signs - Use Channelizing Devices and Safety Edge; or Use Barrier	SHOULDER DROP OFF Signs - Use Channelizing Devices or Barrier	
More than 6"	Prohibited		Barrier - Installed on traffic side of drop-off	Channelizing Devices or Barrier according to Table 5	

Table 3b - Sign Numbers

Legend	Number	ATM * Ref.
UNEVEN LANES	W8-11	6F.45
LOW SHOULDER	W8-9	6F.44
SHOULDER DROP OFF (Symbol)	W8-17	6F.44
SHOULDER DROP OFF (Plaque)	W8-17P	6F.44
BUMP	W8-1	2C.28
* ATM = Alaska Traffic Manual		

Table 4 - Barrier Flare Rates

Speed (mph)	Flare Rate	
	Rigid	Semi-Rigid
70	20:1	15:1
60	18:1	14:1
55	16:1	12:1
50	14:1	11:1
45	12:1	10:1
40	10:1	8:1
30	8:1	7:1

TABLE 3 NOTES:

1. This table applies to pavement edge drop-offs that are adjacent to traffic and left after the pavement shift ends and for posted speeds > 30 mph. Use engineering judgment for edge treatment for posted speeds ≤30 mph.
2. Use interim pavement markings and signs as required according to Standard Plan C-05 (for all conditions).
3. A Safety Edge is a formed pavement edge taper sloped at approximately 30°, but not more than 35° from horizontal.
4. Use a Safety Edge for longitudinal or diagonal pavement edge drop-offs more than 2 inches within a traveled lane. See Figure 3. Use a Safety Edge on longitudinal joints between lanes as required by Table 3a.
5. The "Across Active Lane, and Entrance and Exit Ramps" column applies to any location where motorists will cross pavement drop-offs (includes transverse construction joints) at an acute angle (45° or more). Taper may be reduced to 6:1 at posted speeds of 30 mph or less.
6. Signage applies to all posted speed for edge drop-offs as shown in Table 3a. For information on signs and locations, see SSHC Section 643-3.04 and the Alaska Traffic Manual (ATM). Signs should be place at the beginning and end points of each paved segment, and in locations between as specified. Also, see Table 3b.
7. "Channelizing Devices" means drums with steady-burn lights, candle, or cones.
8. Treatment for pavement edge drop-offs are in addition to Treatment for Hazards within Construction Clear Zones (CCZs) (i.e. fixed obstacle or slope protection may also be required).

BARRIER TERMINATION AND TABLE 4 NOTES:

1. Terminate portable rigid barrier (concrete or metal) with one of the following methods:
 - a) An NCHRP 350 or MASH TL-3 approved end treatment or crash cushion.
 - b) An NCHRP 350 or MASH TL-3 approved buried-in-backslope treatment
 - c) A Thrie-Beam transition according to Std. Plan G-32 (except attached to a rigid barrier instead of a bridge rail) and terminated with a MASH TL-3 end treatment.
 - d) Terminate outside the CCZ by flaring barriers away from the roadway at the rate shown in Table 4 for rigid barriers (maximum 10:1 cross slope in front of the barrier).
 - e) Sloped ends may be used to terminate barriers within the CZ when the regulatory (black on white sign) speed limit is 30 mph or below. For speeds more than 30 mph, the Engineer may approve sloped ends if they determine NCHRP 350 or MASH compliant end treatments are impracticable. See Std. Plan G-46 for concrete barrier sloped ends.
2. Terminate temporary W-Beam guardrail with one of the following methods:
 - a. With a MASH TL-3 approved end treatment
 - b. By burying it in a backslope according to Std. Plan G-16
 - c. By flaring the guardrail away from the road at the rate shown in Table 4 for semi-rigid barriers (maximum 10:1 cross slope in from of the guardrail).
 - d. Terminate outside the CZ.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

ROADSIDE SAFETY TREATMENT
FOR WORK ZONES

Adopted as an Alaska
Standard Plan by: *Carolyn H Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 09/15/2022

Last Code and Stds. Review
By: LRG Date: 09/15/2022

Next Code and Standards Review date: 09/15/2032

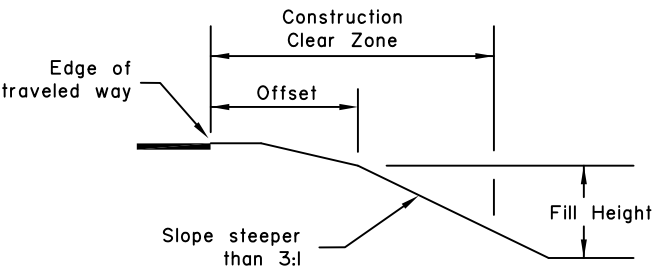


FIGURE 5

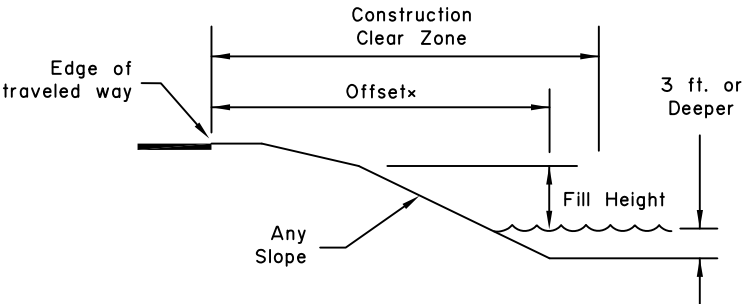


FIGURE 6

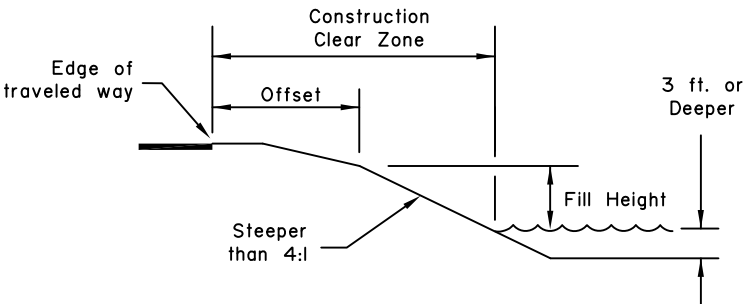


FIGURE 7

TABLE 5 NOTES:

1. Use this table for fill slopes steeper than 3:1 or water hazards that start within the Construction Clear Zone (CCZ). See Figures 5, 6, and 7.
2. Near Lane AADT, as used in this table, means the higher of the AADT listed in the plans or the seasonal Average Daily Traffic (ADT) for June, July, and August in the lane nearest the slope or water hazard during the planned construction period. Assume an even distribution of traffic across lanes - i.e. if there is 6000 one-way AADT on three lanes, use 2000 AADT in each lane.
3. Duration is the estimated number of days traffic will be exposed to the fill (fore) slope or water hazard.
4. To use Table 5, find the cell that corresponds to the speed limit, duration, offset, traffic volume, and the presence of a slope or water hazard.
 - a. If the cell is unshaded, a Temporary Barrier is required when the fill height equals or exceeds the height (in feet) shown in the cell.
 - b. If the cell is shaded or fill height is less than the height shown in the cell, use drums or Type II barricades.
5. A water hazard is defined as:
 - a. Water 3 feet or deeper within the CCZ, or
 - b. Where a slope steeper than 4:1 starts within the CCZ and leads to water 3 feet or deeper.
6. Consider water depth to be the highest level anticipated during the duration period.
7. If both a water hazard and a slope steeper than 3:1 are present, install Temporary Barrier if warranted for either condition.
8. Temporary Barrier is rigid barrier (concrete or metal) or guardrail meeting NCHRP or MASH TL-3, or higher.

			Table 5 - Minimum Fill Height at which Temporary Barrier Is Waranted																
			Seasonal Traffic Volume - ADT																
			0-750	751-1500			1501-6000				6001-15000				15001+				
Posted WZ Speed Limit	Duration (# days)	Offset (ft)	All Slopes/ Water Condition	slope		Water	slope			Water	slope			Water	slope			Water	
				2.9:1 to 1.1:1	1:1 to Vert.		2.9:1 to 1.1:1	2:1- 1.1:1	1:1- Vert.		2.9:1 to 2.1:1	2:1- 1.1:1	1:1- Vert.		2.9:1 to 2.1:1	2:1- 1.1:1	1:1- Vert.		
30 MPH and lower	4-30	5-10																	
		3-5																	
		0-3											11'	11'			11'	11'	
	31-100	5-10																	
		3-5							11'	11'			11'	10'		35'	11'	11'	
		0-3										35'				31'			
	101+	5-10							11'	11'						35'	11'	11'	
		3-5										35'	11'	11'		29'			
		0-3			11'	11'						31'				17'	8'	8'	
35 to 45 MPH	4-30	6-12																	
		3-6											10'	10'		29'	10'	10'	
		0-3																	
	31-100	6-12							10'	10'						29'	10'	10'	
		3-6										29'	10'	10'		19'	9'	9'	
		0-3																	
	101+	6-12							10'	10'			29'	10'	10'		27'	10'	10'
		3-6			10'	10'						28'				12'	7'	7'	
		0-3						29'				18'	9'	9'		7'	6'	6'	
45 to 55 MPH	4-30	9-18																	
		3-9																	
		0-3											8'	8'		13'	8'	8'	
	31-100	9-18							8'	8'						13'	8'	8'	
		3-9										13'	8'	8'		7'	7'	7'	
		0-3					13'									6'	6'	6'	
	101+	9-18							8'	8'			13'	8'	8'		13'	7'	7'
		3-9			8'	8'						12'	7'	7'	37'	6'	5'	5'	
		0-3						13'				7'	6'	6'	23'	5'	3'	3'	
60 MPH and above	4-30	13-26																	
		3-13																	
		0-3										10'	6'	6'		10'	6'	6'	
	31-100	13-26														10'	6'	6'	
		3-13							6'	6'									
		0-3					10'					10'	6'	6'		40'	6'	5'	
	101+	13-26														10'	6'	6'	
		3-13			6'	6'						10'	6'	6'		30'	6'	4'	
		0-3						10'	6'	6'		34'	6'	5'	5'	10'	3'	1'	

State of Alaska DOT&PF
ALASKA STANDARD PLAN

ROADSIDE SAFETY TREATMENT
FOR WORK ZONES

Adopted as an Alaska
Standard Plan by: *Carolyn H Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

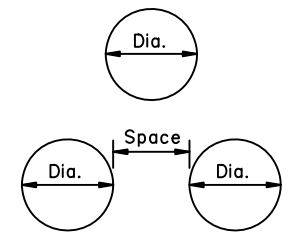
Adoption Date: 09/15/2022

Last Code and Stds. Review
By: LRG Date: 09/15/2022
Next Code and Standards Review date: 09/15/2032

GENERAL NOTES:

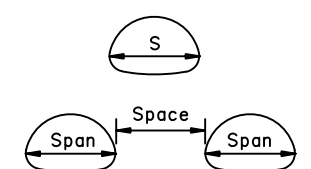
1. Sidefill shall be placed and compacted with care under haunches of pipe and shall be brought up evenly and simultaneously on both sides of pipe to 1 foot above the top of the full length of the pipe.
2. Alternate installation methods may only be used when specified or approved by the Engineer.

D = Nominal Pipe Diameter



MULTIPLE INSTALLATIONS	
Dia.	Minimum Space Between Pipes
0" - 42"	24"
48" & Over	1/2 Dia. of pipe or 3', whichever is less.

S = Nominal Pipe Arch Span



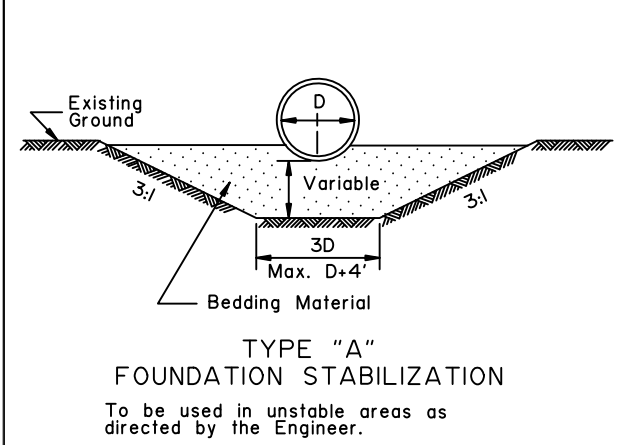
MULTIPLE INSTALLATIONS	
Dia.	Minimum Space Between Pipes
0" - 42"	24"
48" & Over	1/2 Span of pipe arch or 3', whichever is less.

State of Alaska DOT&PF
ALASKA STANDARD PLAN
CULVERT PIPE & ARCH
INSTALLATION DETAILS

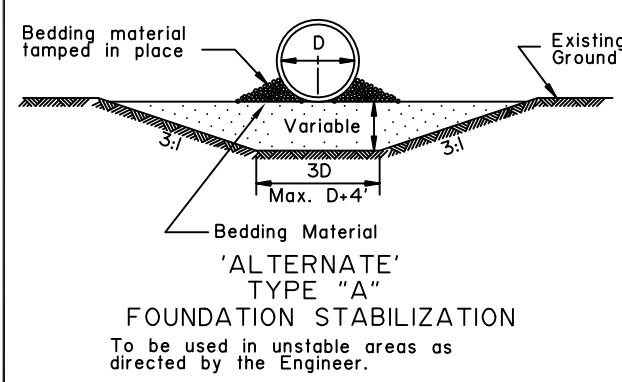
Adopted as an Alaska
Standard Plan by: *Kenneth J. Fisher*
Kenneth J. Fisher, P.E.
Chief Engineer

Adoption Date: 02/08/2019

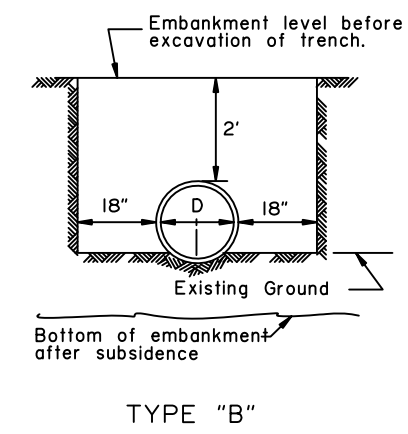
Last Code and Stds. Review
By: Date:
Next Code and Standards Review date: 02/08/2029



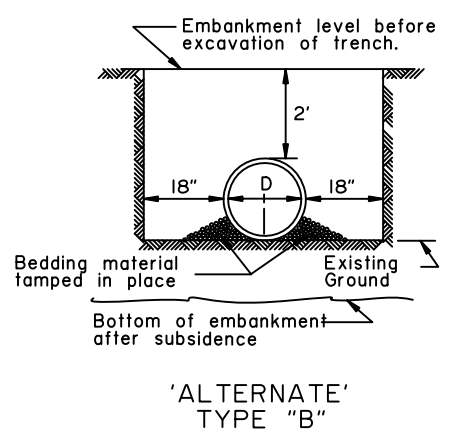
TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as
directed by the Engineer.



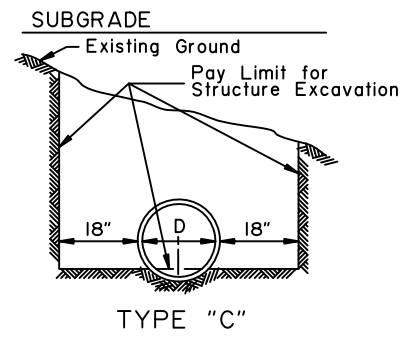
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TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as
directed by the Engineer.



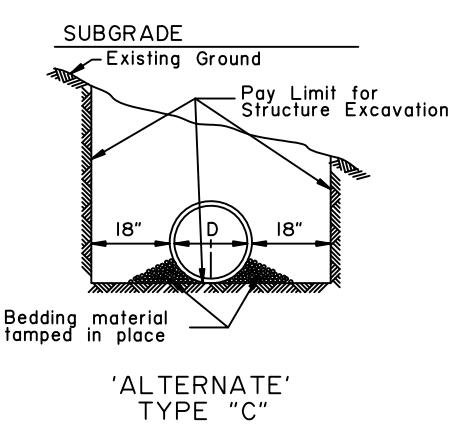
TYPE "B"



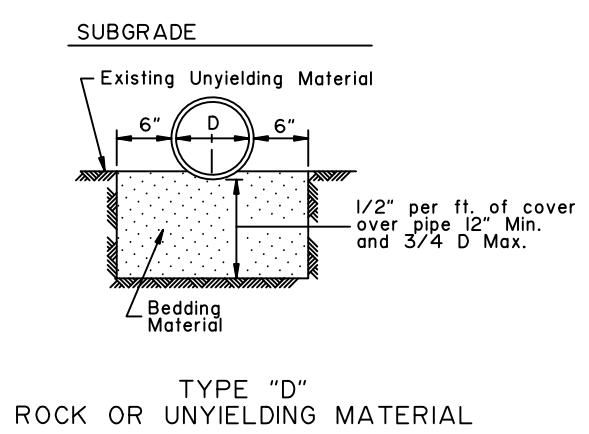
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TYPE "B"



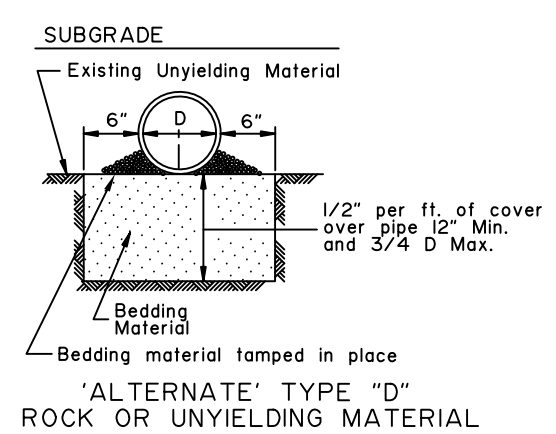
TYPE "C"



'ALTERNATE'
TYPE "C"

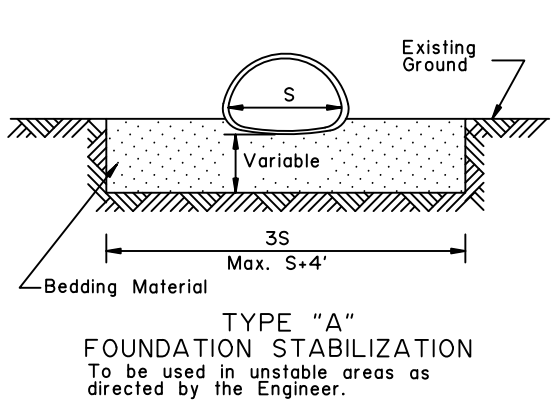


TYPE "D"
ROCK OR UNYIELDING MATERIAL

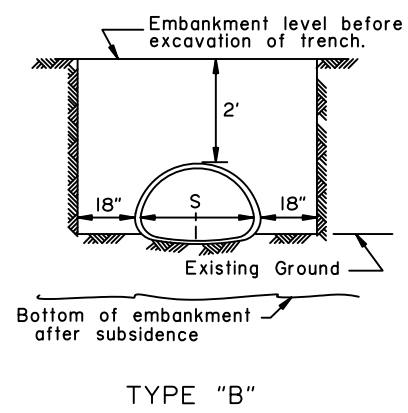


'ALTERNATE' TYPE "D"
ROCK OR UNYIELDING MATERIAL

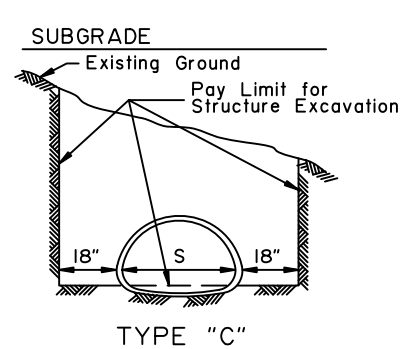
CULVERT PIPE



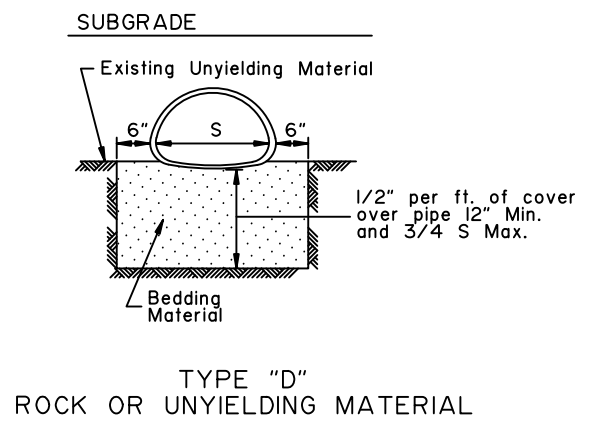
TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as
directed by the Engineer.



TYPE "B"



TYPE "C"



TYPE "D"
ROCK OR UNYIELDING MATERIAL

ARCH

GENERAL NOTES:

- All material and workmanship shall be in accordance with the State of Alaska, Standard Specifications for Highway Construction.
- The contractor shall select only pipes that meet specific height of cover criteria shown on the plans or in the special provisions.
- No more than one type of pipe may be used on any single installation or installation grouping.
- All structural plate pipes shall be placed on a pre-shaped foundation conforming to the depth of the bottom plates with clearance for assembling to the adjacent plates allowed.
- See Standard Plan D-01 "Culvert Pipe & Arch Installation Details" for foundation and structural backfill details.
- Minimum cover shall be measured from the top of pipe to the top of rigid pavement or to the bottom of flexible pavement subgrade. In all cases, the minimum cover shall not be less than 12". Minimum cover during construction shall be that required to protect the pipe from damage or deflection.
- These tables have been developed for an HL-93 live load and for compacted soil weighing 120 lbs. per cubic foot or less. If compacted soil cover exceeds 120 lbs. per cubic foot, the contractor shall use the depth of cover shown in the plans for the specific pipe. Where compacted soil cover exceeds 120 lbs. per cubic foot and no specific cover requirements are provided in the plans, the contractor shall determine the required minimum pipe cover in accordance with Section 12 of the 2017 AASHTO "LRFD Bridge Design Specifications".

Minimum & Maximum Cover for 2 2/3" X 1/2" Aluminum Pipe						
Gage		16	14	12	10	8
Thickness		0.060	0.075	0.105	0.135	0.164
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
12	12	100+	100+	100+	100+	100+
15	12	100	100+	100+	100+	100+
18	12	83	100+	100+	100+	100+
21	12	71	89	100+	100+	100+
24	12	62	78	100+	100+	100+
27	12		69	97	100+	100+
30	12		62	87	100+	100+
36	12		51	73	94	100+
42	12			62	80	100+
48	12			54	70	85
54	15			48	62	76
60	15				52	64
66	18					52
72	18					43

Minimum & Maximum Cover for 3" x 1" Aluminum Pipe						
Gage		16	14	12	10	8
Thickness		0.060	0.075	0.105	0.135	0.164
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
30	12	57	72	100+	100+	100+
36	12	47	60	84	100+	100+
42	12	40	51	72	96	100+
48	12	35	44	62	84	99
54	15	31	39	55	74	88
60	15	28	35	50	67	79
66	18	25	32	45	61	72
72	18	23	29	41	56	66
78	21		27	38	51	61
84	21			35	48	56
90	24			33	44	52
96	24			31	41	49
102	24				39	46
108	24				37	43
114	24					39
120	24					36

Minimum & Maximum Cover for 9" X 2 1/2" Aluminum Structural Plate Pipe*			
Thickness		0.125	0.150
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)
84	18	31	
90	18	27	
96	18	27	
102	18	24	
108	18	24	
114	18	21	
120	24	21	
126	24	19	
132	30	19	
138	30	18	
144	30	18	
150	30		22
156	30		22
162	36		20
168	36		20

*5.33 - 3/4" dia. steel bolts per foot.

CORRUGATED CIRCULAR ALUMINUM PIPE

CORRUGATED ALUMINUM PIPE-ARCH

Minimum & Maximum Cover for 2 2/3" X 1/2" Aluminum Pipe-Arch					
				2 Tons/Sf Corner Bearing Pressure	
Span (Ft.-In.)	Rise (Ft.-In.)	Corner Radius (In)	Min. Thickness (In)	Min. Cover (In)	Max. Cover (Ft)
17	13	3 4/8	16 (0.060)	12	13
21	15	4 1/8	16 (0.060)	12	12
24	18	4 7/8	16 (0.060)	12	12
28	20	5 4/8	14 (0.075)	12	12
35	24	6 7/8	14 (0.075)	12	12
42	29	8 2/8	12 (0.105)	12	12
49	33	9 5/8	12 (0.105)	15	12
57	38	11	10 (0.135)	15	12
64	43	12 3/8	10 (0.135)	18	12
71	47	13 6/8	8 (0.164)	18	12

Minimum & Maximum Cover for 3" x 1" Aluminum Pipe-Arch					
				2 Tons/Sf Corner Bearing Pressure	
Span (Ft.-In.)	Rise (Ft.-In.)	Corner Radius (In)	Min. Thickness (In)	Min. Cover (In)	Max. Cover (Ft)
60	46	18 6/8	14 (0.075)	15	20
66	51	20 6/8	14 (0.075)	18	20
73	55	22 7/8	14 (0.075)	21	20
81	59	20 7/8	12 (0.105)	21	16
87	63	22 7/8	12 (0.105)	24	16
95	67	24 3/8	12 (0.105)	24	16
103	71	26 1/8	10 (0.135)	24	16
112	75	27 6/8	8 (0.164)	24	16

Minimum & Maximum Cover for 9" x 2 1/2" Aluminum Multiplate Pipe-Arch*					
Span (Ft.-In.)	Rise (Ft.-In.)	Corner Radius (In)	Min. Thickness (In)	Min. Cover (In)	2 Tons/Sf Corner Bearing Pressure Max. Cover (Ft)
6-7	5-8	31.75	0.125	24	24
6-11	5-9	31.75	0.125	24	24
7-3	5-11	31.75	0.125	24	18
7-9	6-0	31.75	0.125	24	18
8-5	6-3	31.75	0.125	24	16
9-3	6-5	31.75	0.125	24	15
10-3	6-9	31.75	0.125	30	13
10-9	6-10	31.75	0.125	30	13
11-5	7-1	31.75	0.125	30	13
12-7	7-5	31.75	0.125	30	11
12-11	7-6	31.75	0.125	30	11
13-1	8-2	31.75	0.125	30	11
13-11	8-5	31.75	0.125	36	10
14-8	9-8	31.75	0.125	36	9
15-4	10-0	31.75	0.150	36	8
16-1	10-4	31.75	0.150	36	8
16-9	10-8	31.75	0.150	42	7
17-3	11-0	31.75	0.150	42	7
18-0	11-4	31.75	0.175	42	7
18-8	11-8	31.75	0.175	42	7

*5.33 - 3/4" dia. steel bolts per foot.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

PIPE AND ARCH TABLES

Adopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLH Date: 7/8/2020
Next Code and Standards Review date: 7/8/2030

GENERAL NOTES

1.

All material and workmanship shall be in accordance with the State of Alaska, Standard Specifications for Highway Construction.
2.

The contractor shall select only pipes that meet specific height of cover criteria shown on the plans or in the special provisions.
3.

No more than one type of pipe may be used on any single installation or installation grouping.
4.

All structural plate pipes shall be placed on a pre-shaped foundation conforming to the depth of the bottom plates with clearance for assembling to the adjacent plates allowed.
5.

See Standard Plan D-01 "Culvert Pipe & Arch Installation Details" for foundation and structural backfill details.
6.

Minimum cover shall be measured from the top of pipe to the top of rigid pavement or to the bottom of flexible pavement subgrade. In all cases, the minimum cover shall not be less than 12". Minimum cover during construction shall be that required to protect the pipe from damage or deflection.
7.

These tables have been developed for an HL-93 live load and for compacted soil weighing 120 lbs. per cubic foot or less. If compacted soil cover exceeds 120 lbs. per cubic foot, the contractor shall use the depth of cover shown in the plans for the specific pipe. Where compacted soil cover exceeds 120 lbs. per cubic foot and no specific cover requirements are provided in the plans, the contractor shall determine the required minimum pipe cover in accordance with Section 12 of the 2017 AASHTO "LRFD Bridge Design Specifications".

Minimum & Maximum Cover for 2 2/3" x 1/2" Steel Pipe						
Gage		16	14	12	10	8
Thickness		0.060	0.075	0.105	0.135	0.164
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
12	12	100+	100+	100+	100+	100+
15	12	100+	100+	100+	100+	100+
18	12	100+	100+	100+	100+	100+
21	12	100+	100+	100+	100+	100+
24	12	100+	100+	100+	100+	100+
30	12	83	100+	100+	100+	100+
36	12	69	86	100+	100+	100+
42	12	59	74	100+	100+	100+
48	12	51	64	91	100+	100+
54	12		57	80	100+	100+
60	12			72	93	100+
66	12			66	85	100+
72	12				78	95
78	12					84
84	12					73

Minimum & Maximum Cover fo 3" x 1" Steel Pipe						
Gage		16	14	12	10	8
Thickness		0.060	0.075	0.105	0.135	0.164
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
36	12			100+	100+	100+
42	12			100+	100+	100+
48	12		74	100+	100+	100+
54	12	53	66	93	100+	100+
60	12	47	59	83	100+	100+
66	12	43	54	76	98	100+
72	12	39	49	69	89	100+
78	12	36	45	64	82	100+
84	12	33	42	59	77	94
90	12	31	39	55	71	87
96	12	29	37	52	67	82
102	18	27	34	49	63	77
108	18		32	46	59	73
114	18		31	43	56	69
120	18		29	41	53	65
126	18			39	51	62
132	18			37	48	59
138	18			36	46	57
144	18				44	54

Minimum & Maximum Cover for 5" x 1" Steel Pipe						
Gage		16	14	12	10	8
Thickness		0.060	0.075	0.105	0.135	0.164
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
36	12	71	88	100+	100+	100+
42	12	60	76	100+	100+	100+
48	12	53	66	93	100+	100+
54	12	47	59	82	100+	100+
60	12	42	53	74	96	100+
66	12	38	48	67	87	100+
72	12	35	44	62	79	97
78	12	32	40	57	73	90
84	12	30	37	53	68	83
90	12	28	35	49	63	78
96	12	26	33	46	59	73
102	18	24	31	43	56	69
108	18		29	41	53	65
114	18		27	39	50	61
120	18		26	37	47	58
126	18			35	45	55
132	18			33	43	53
138	18			32	41	50
144	18				39	48

Minimum & Maximum Cover for 6" x 2" Steel Multiplate Pipe*							
Gage		12	10	8	7	5	3
Thickness		0.111	0.140	0.170	0.188	0.218	0.249
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
60	12	46	67	87	100	100+	100+
66	12	42	60	79	91	100+	100+
72	12	38	55	73	83	100+	100+
78	12	35	51	67	77	93	100+
84	12	32	47	62	71	86	100+
90	12	30	44	58	67	80	95
96	12	28	41	54	62	75	89
102	18	27	39	51	59	71	84
108	18	25	37	48	55	67	79
114	18	24	35	45	52	63	75
120	18	22	33	43	50	60	71
126	18	21	31	41	47	57	68
132	18	20	30	39	45	54	64
138	18	19	28	37	43	52	62
144	18	18	27	36	41	50	59

*4 - 3/4" dia. steel bolts per foot.

CORRUGATED CIRCULAR STEEL PIPE

CORRUGATED STEEL PIPE-ARCH

Minimum & Maximum Cover for 2 2/3" X 1/2" Steel Pipe-Arch						
2 Tons/Sf Corner Bearing Pressure						
Span (Ft.-In.)	Rise (Ft.-In.)	Corner Radius (In)	Min. Thickness (In)	Min. Cover (In)	Max. Cover (Ft)	
17	13	3 4/8	16 (0.060)	12	11	
21	15	4 1/8	16 (0.060)	12	11	
24	18	4 7/8	16 (0.060)	12	11	
28	20	5 4/8	16 (0.060)	12	11	
35	24	6 7/8	16 (0.060)	12	11	
42	29	8 2/8	16 (0.060)	12	11	
49	33	9 5/8	14 (0.075)	12	11	
57	38	11	12 (0.109)	12	11	
64	43	12 3/8	12 (0.109)	12	11	
71	47	13 6/8	10 (0.138)	12	11	
77	52	15 1/8	10 (0.138)	12	11	
83	57	16 4/8	8 (0.168)	12	11	

Minimum & Maximum Cover for 3" X 1" Steel Pipe-Arch						
2 Tons/Sf Corner Bearing Pressure						
Span (Ft.-In.)	Rise (Ft.-In.)	Corner Radius (In)	Min. Thickness (In)	Min. Cover (In)	Max. Cover (Ft)	
53	41	10 2/8	14 (0.079)	12	10	
60	46	18 6/8	14 (0.079)	15	29	
66	51	20 6/8	14 (0.079)	15	29	
73	55	22 7/8	14 (0.079)	18	18	
81	59	20 7/8	14 (0.079)	18	15	
87	63	22 7/8	14 (0.079)	18	15	
95	67	24 3/8	14 (0.079)	18	15	
103	71	26 1/8	14 (0.079)	18	14	
112	75	27 6/8	14 (0.079)	21	14	
117	79	29 4/8	12 (0.109)	21	14	
128	83	31 2/8	10 (0.138)	24	14	
137	87	33	10 (0.138)	24	14	
142	91	34 6/8	10 (0.138)	24	13	
150	96	36	10 (0.138)	30	13	
157	96	38	10 (0.138)	30	13	
164	105	40	10 (0.138)	30	14	
171	110	41	10 (0.138)	30	13	

Minimum & Maximum Cover for 5" X 1" Steel Pipe-Arch						
2 Tons/Sf Corner Bearing Pressure						
Span (Ft.-In.)	Rise (Ft.-In.)	Corner Radius (In)	Min. Thickness (In)	Min. Cover (In)	Max. Cover (Ft)	
53	41	10 2/8	14 (0.079)	12	10	
60	46	18 6/8	14 (0.079)	15	29	
66	51	20 6/8	14 (0.079)	15	29	
73	55	22 7/8	14 (0.079)	18	18	
81	59	20 7/8	14 (0.079)	18	15	
87	63	22 7/8	14 (0.079)	18	15	
95	67	24 3/8	14 (0.079)	18	15	
103	71	26 1/8	14 (0.079)	18	14	
112	75	27 6/8	14 (0.079)	21	14	
117	79	29 4/8	12 (0.109)	21	14	
128	83	31 2/8	10 (0.138)	24	14	
137	87	33	10 (0.138)	24	14	
142	91	34 6/8	10 (0.138)	24	13	
150	96	36	10 (0.138)	30	13	
157	96	38	10 (0.138)	30	13	
164	105	40	10 (0.138)	30	14	
171	110	41	10 (0.138)	30	13	

Minimum & Maximum Cover for Steel Multiplate Pipe-Arch 6" x 2" *						
2 Tons/Sf Corner Bearing Pressure						
Span (Ft.-In.)	Rise (Ft.-In.)	Corner Radius (In)	Min. Gage (In)	Min. Cover (In)	Max. Cover (Ft)	
6-1	4-7	18	12 (0.111)	12	14	
7-0	5-1	18	12 (0.111)	12	12	
7-11	5-7	18	12 (0.111)	12	10	
8-10	6-1	18	12 (0.111)	18	9	
9-9	6-7	18	12 (0.111)	18	8	
10-11	7-1	18	12 (0.111)	18	6	
11-10	7-7	18	12 (0.111)	18	5	
12-10	8-4	18	12 (0.111)	24	5	
13-3	9-4	31	10 (0.140)	24	11	
14-2	9-10	31	10 (0.140)	24	10	
15-4	10-4	31	10 (0.140)	24	9	
16-3	10-10	31	10 (0.140)	30	8	
17-2	11-4	31	10 (0.140)	30	8	
18-1	11-10	31	10 (0.140)	30	7	
19-3	12-4	31	10 (0.140)	30	7	
19-11	12-10	31	10 (0.140)	30	6	
20-7	13-2	31	10 (0.140)	36	6	

*4 - 3/4" dia. steel bolts per foot.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

PIPE AND ARCH TABLES

Adopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLH Date: 7/8/2020

Next Code and Standards Review date: 7/8/2030

GENERAL NOTES

1. All materials and workmanship shall be in accordance with the State of Alaska Standard Specifications for Highway Construction.
2. For foundation and structural backfill details see Standard Plan D-OI "Culvert Pipe & Arch Installation Details".
3. Pipe cover height is measured from top of the pipe to top of rigid pavement, or to the bottom of subgrade for flexible pavement. In all cases the minimum cover shall be no less than 2 ft. Where loads traverse the culvert during construction minimum cover shall be no less than 4 ft.

Maximum Cover for Type S Corrugated Polyethelene Pipe	
Size (in)	Max. Cover (ft)
12	24
15	25
18	24
24	20
30	20
36	18
42	16
48	17

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GENERAL NOTES

1. All material and workmanship shall be in accordance with the State of Alaska, Standard Specifications for Highway Construction.
2. The contractor shall select only pipes that meet specific height of cover criteria shown on the plans or in the special provisions.
3. No more than one type of pipe may be used on any single installation or installation grouping.
4. All structural plate pipes shall be placed on a pre-shaped foundation conforming to the depth of the bottom plates with clearance for assembling to the adjacent plates allowed.
5. See Standard Plan D-01 "Culvert Pipe & Arch Installation Details" for foundation and structural backfill details.
6. Minimum cover shall be measured from the top of pipe to the top of rigid pavement or to the bottom of flexible pavement subgrade. In all cases, the minimum cover shall not be less than 12". Minimum cover during construction shall be that required to protect the pipe from damage or deflecton.
7. These tables have been developed for an HL-93 live load and for compacted soil weighing 120 lbs. per cubic foot or less. If compacted soil cover exceeds 120 lbs. per cubic foot, the contractor shall use the depth of cover shown in the plans for the specific pipe. Where compacted soil cover exceeds 120 lbs. per cubic foot and no specific cover requirements are provided in the plans, the contractor shall determine the required minimum pipe cover in accordance with Section 12 of the 2017 AASHTO "LRFD Bridge Design Specifications".

Minimum & Maximum Cover for Aluminum Spiral Rib Circular Pipe*					
Gage		I6	I4	I2	I0
Thickness		0.064	0.079	0.109	0.138
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
18	12	43	61		
21	12	38	52	84	
24	12	33	45	73	
30	15	26	36	58	
36	18	21	30	49	69
42	21		25	41	59
48	24			36	51
54	24			32	46
60	24			29	41
66	24				37
72	30				34

* $\frac{3}{4}$ x $\frac{3}{4}$ x $7\frac{1}{2}$ in. Corrugations

Minimum & Maximum Cover for Aluminum Spiral Rib Pipe-Arch*						
Gage			I6	I4	I2	I0
Thickness			0.060	0.075	0.105	0.135
Span (Ft.-In.)	Rise (Ft.-In.)	Min. Cover (In)	Max. Cover (Ft)			
20	16	12	16			
23	19	12	15			
27	21	15	13	13		
33	26	18	13	13	13	
40	31	21		13	13	
46	36	24			13	13
53	41	24			13	13
60	46	24			13	13
66	51	24				13

* $\frac{3}{4}$ x $\frac{3}{4}$ x $7\frac{1}{2}$ in. Corrugations

ALUMINUM SPIRAL RIB PIPE

STEEL SPIRAL RIB PIPE

Minimum & Maximum Cover for Steel and Aluminized Steel Spiral Rib Circular Pipe*					
Gage		I6	I4	I2	I0
Thickness		0.064	0.079	0.109	0.138
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
18	12	91			
24	12	68	95	100+	
30	12	54	76	100+	
36	12	45	63	100+	
42	12	38	54	90	
48	12	33	47	79	
54	18	30	42	70	
60	18	27	38	63	92
66	18	24	34	57	83
72	18		31	52	76
78	24		29	48	70
84	24		27	45	65
90	24			42	61
96	24			39	56
102	30			36	50
108	30			32	45

* $\frac{3}{4}$ x $\frac{3}{4}$ x $7\frac{1}{2}$ in. Corrugations.

Minimum & Maximum Cover for Steel Spiral Rib Pipe-Arch*					
2 Tons/Sf Corner Bearing Pressure					
Thickness			0.064	0.079	0.109
Span (Ft.-In.)	Rise (Ft.-In.)	Min. Cover (In)	Max. Cover (Ft)		
20	16	12	13		
23	19	12	13		
27	21	12	11		
33	26	12	11		
40	31	12	11		
46	36	12	11		
53	41	18		11	
60	46	18		19	
66	51	18		19	
73	55	18			18
81	59	18			15
87	63	18			15
95	67	18			15

* $\frac{3}{4}$ x $\frac{3}{4}$ x $7\frac{1}{2}$ in. Corrugations

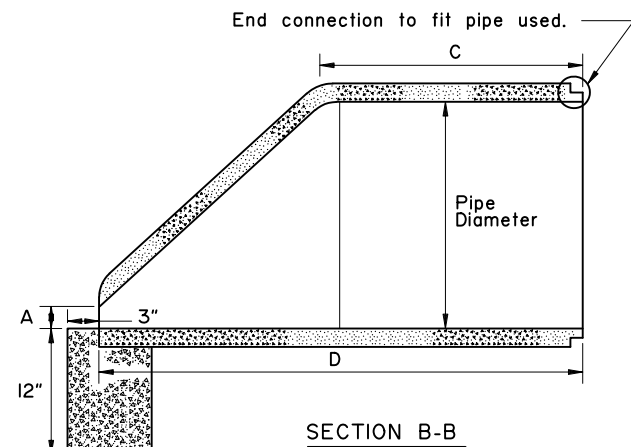
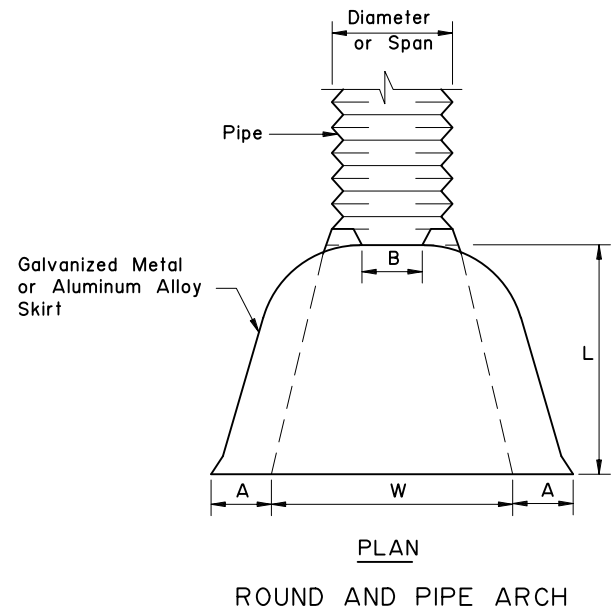
State of Alaska DOT&PF
ALASKA STANDARD PLAN

PIPE AND ARCH TABLES

Adopted as an Alaska
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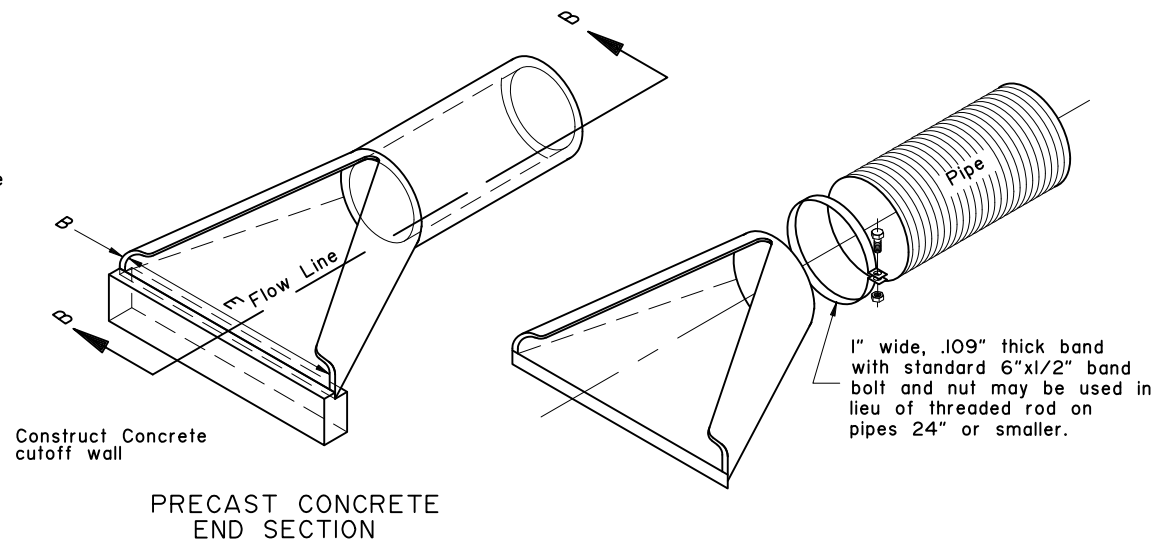
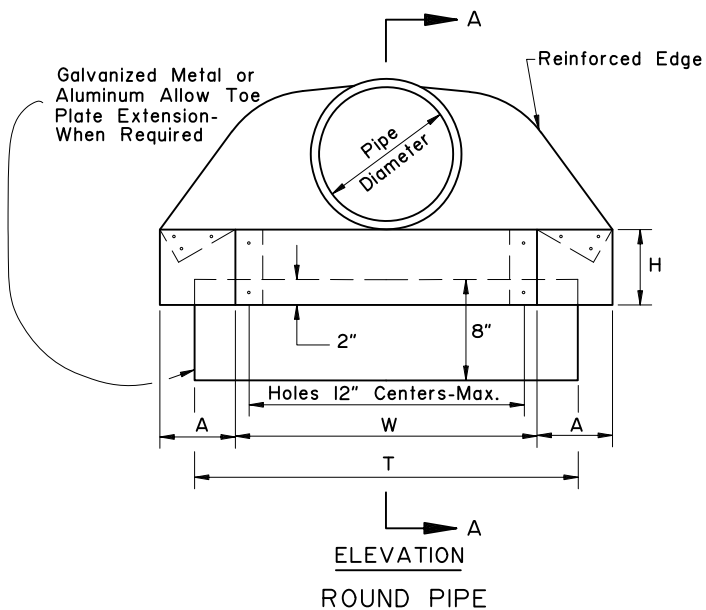
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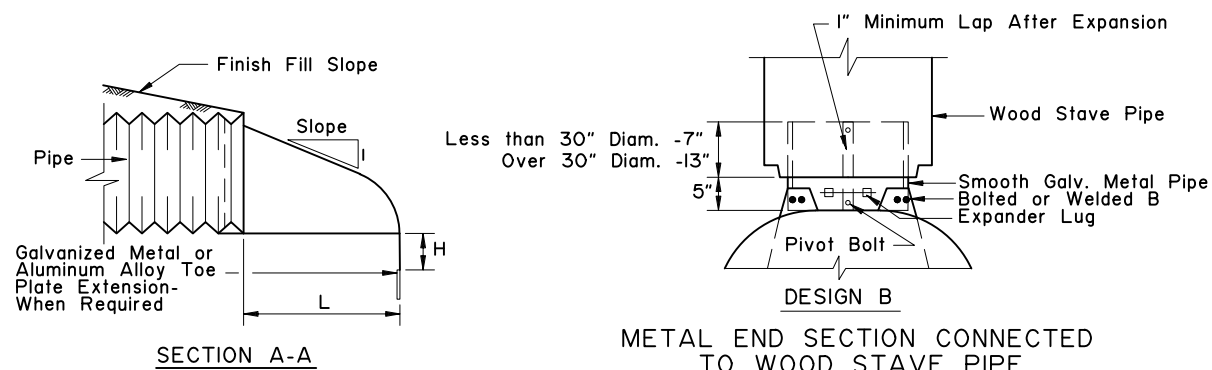
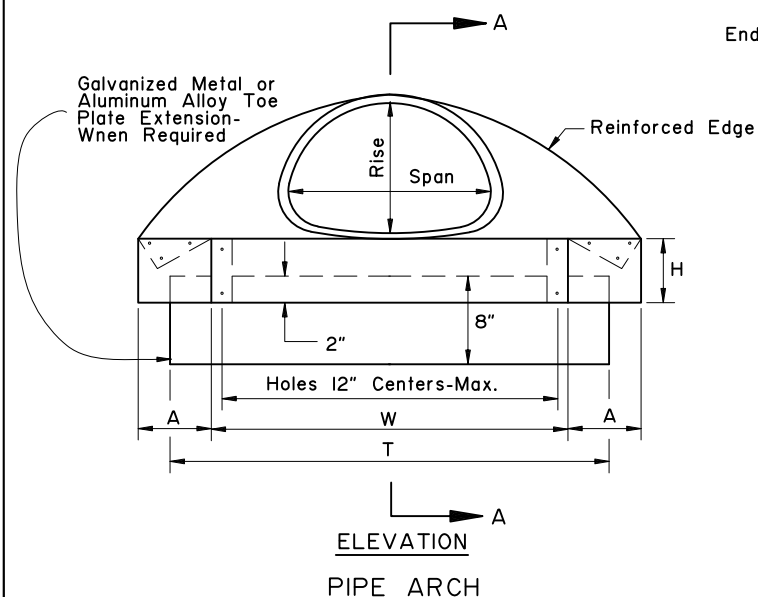
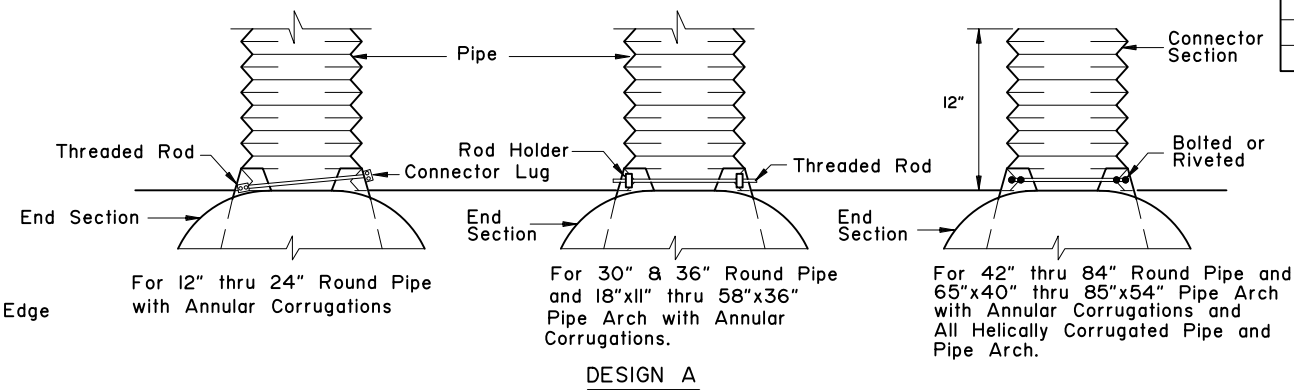


MINIMUM DIMENSIONS					
Pipe Diameter	A	B	C	D	E
12"	4"	1 3/4"	24"	46"	24"
18"	9"	2"	25"	50"	36"
24"	9 1/2"	2 1/2"	30"	72"	48"
30"	12"	3"	20"	73"	60"
36"	15"	3 3/8"	35"	97"	72"
42"	21"	3 3/4"	35"	98"	78"
48"	24"	4 1/4"	26"	98"	84"
54"	27"	4 5/8"	33"	99"	82"

ROUND PIPE										
Pipe Diam. Inches	Thickness For Aluminum	Thk. for Galv. Metal	Dimension Inches						Skirt	Approx. Slope
			1" A Tot.	B Max.	1" H Tot.	1 1/2" L Tot.	2" W Tot.	2" T Tot.		
12"	0.060	0.064	6"	6"	6"	21"	24"	34"	1 Pc.	2 1/2
15"	0.060	0.064	7"	8"	6"	26"	30"	40"	1 Pc.	2 1/2
18"	0.060	0.064	8"	10"	6"	31"	36"	46"	1 Pc.	2 1/2
21"	0.060	0.064	9"	12"	6"	36"	42"	52"	1 Pc.	2 1/2
24"	0.075	0.064	10"	13"	6"	41"	48"	58"	1 Pc.	2 1/2
30"	0.075	0.079	12"	16"	8"	51"	60"	70"	1 Pc.	2 1/2
36"	0.105	0.079	14"	19"	9"	60"	72"	94"	2 Pc.	2 1/2
42"	0.105	0.109	16"	22"	11"	69"	84"	106"	2 Pc.	2 1/2
48"	0.105	0.109	18"	27"	12"	78"	90"	112"	2 Pc.	2 1/4
54"	0.105	0.109	18"	30"	12"	84"	102"	122"	2 Pc.	2 1/4
60"	0.135	0.109	18"	33"	12"	87"	114"	134"	3 Pc.	2 1/4
66"	0.135	0.109	18"	36"	12"	87"	120"	142"	3 Pc.	2 1/4
72"	0.135	0.109	18"	39"	12"	87"	126"	146"	3 Pc.	2 1/4
78"	— —	0.109	18"	42"	12"	87"	132"	152"	3 Pc.	1 1/4
84"	— —	0.109	18"	45"	12"	87"	138"	158"	3 Pc.	1 1/6



PIPE-ARCH												
Pipe-Arch Dimension Inches		Thickness for Aluminum	Thk. for Galv. Metal	Dimension Inches						Skirt	Approx. Slope	
				A 1" Tol.	B Max.	H 1" Tol.	L 1 1/2" Tol.	W 2" Tol.	T 2" Tol.			
Span	Rise											
17"	13"	0.060	0.064	7"	9"	6"	19"	30"	40"	1 Pc.	2 1/2	
21"	15"	0.060	0.064	7"	10"	6"	23"	36"	46"	1 Pc.	2 1/2	
24"	18"	0.060	0.064	8"	12"	6"	28"	42"	52"	1 Pc.	2 1/2	
28"	20"	0.075	0.064	9"	14"	6"	32"	48"	58"	1 Pc.	2 1/2	
35"	24"	0.075	0.079	10"	16"	6"	39"	60"	70"	1 Pc.	2 1/2	
42"	29"	0.105	0.079	12"	18"	8"	46"	75"	85"	1 Pc.	2 1/2	
49"	33"	0.105	0.109	13"	21"	9"	53"	85"	103"	2 Pc.	2 1/2	
57"	38"	0.105	0.109	18"	26"	12"	63"	90"	114"	2 Pc.	2 1/2	
64"	43"	0.105	0.109	18"	30"	12"	70"	102"	130"	2 Pc.	2 1/4	
71"	47"	0.135	0.109	18"	33"	12"	77"	114"	144"	3 Pc.	2 1/4	
77"	52"	0.135	0.109	18"	36"	12"	84"	120"	158"	3 Pc.	2 1/4	
83"	57"	0.135	0.109	18"	39"	12"	90"	126"	170"	3 Pc.	2 1/4	



METAL END SECTION CONNECTED TO WOOD STAVE PIPE

GENERAL NOTES:

1. Toe plate extensions will be required only when provided for on the plans. When required, the toe plate extensions shall be punched with holes to match those in lip of skirt and fastened with 3/8 inch or larger galvanized nuts and bolts and shall be the same gage as the end section.
2. Galvanized Metal or Aluminum Alloy End Sections may be used on Wood Stave and Plastic Pipe.
3. All 3 piece bodies shall have 12 gage sides and 10 gage center panels. Multiple panel bodies shall have lap seams which are to be tightly joined by 3/8" galvanized rivets or bolts.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

CULVERT END SECTIONS

Adopted as an Alaska
Standard Plan by:
Kenneth J. Fisher, P.E.
Chief Engineer

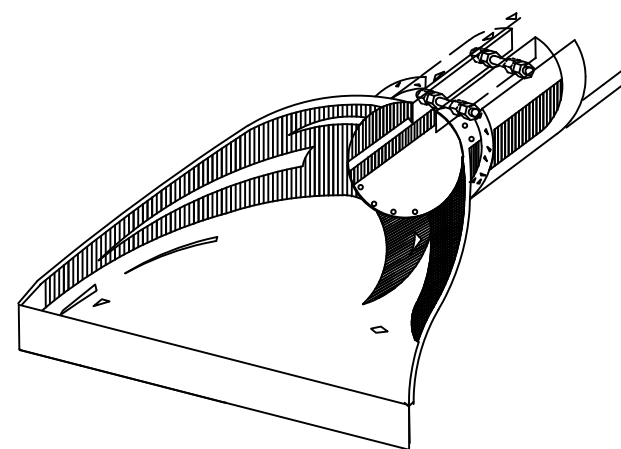
Adoption Date: 02/08/2019

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By: Date:

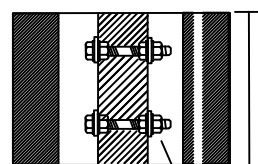
Next Code and Standards Review date: 02/08/2029

GENERAL NOTES

1. See general notes on sheet 1 of 3.
2. See sheet 1 of 3 for metal end section dimensions.
3. Insert bolts, washers and rivets shall be galvanized. Insert thickness is the same as the end section.
4. Use culvert inserts only at inlet.

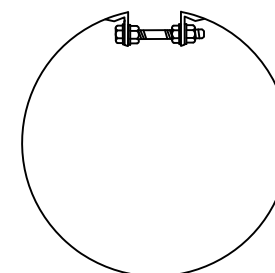


FOR CONNECTING CONCRETE PIPE OR CORRUGATED
POLYETHYLENE PIPE TO METAL END SECTION.



5/8" GALV.BOLTS

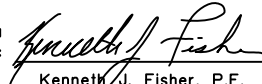
SEE NOTE 2



METAL INSERTS FOR USE WITH CORRUGATED PLASTIC PIPE AND METAL END SECTIONS

State of Alaska DOT&PF
ALASKA STANDARD PLAN

CULVERT END SECTIONS

Adopted as an Alaska
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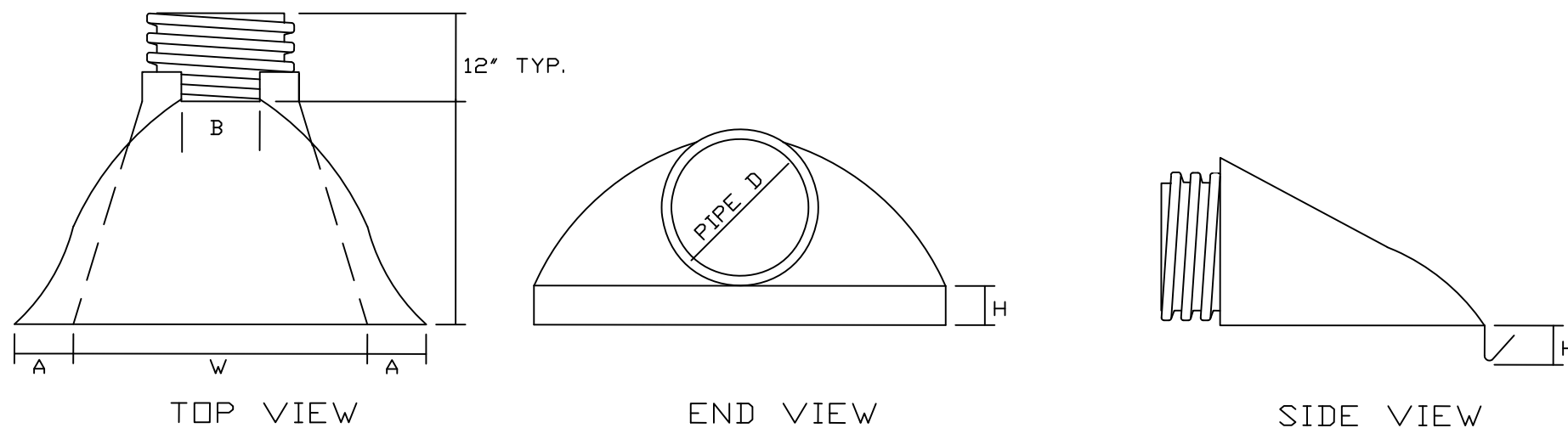
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Next Code and Standards Review date: 02/08/2029

GENERAL NOTES

1. Plastic flared end sections may be used with HDPE corrugated culvert pipes where noted in project plans or approved by project engineer.
2. Consult manufacturer's recommendations for proper sizing and coupling devices. Recommended fasteners may include connecting bands or cinch ties. Fittings across dimension B may include threaded rods with wing nuts or bolts and washers. plastic welds may be recommended.
3. Align coupling to accomodate pipe corrugations.
4. Metal components e.g. bolts or washers must be galvanized.
5. Attachment of end section should preserve culvert alignment and not impair pipe function. Use end sections only on culvert inlet.
6. Toe plate extensions will be required only when designated on the plans.
7. End sections will not be used on HDPE culvert pipes larger than 36" unless indicated by project plans or approved by the Engineer.

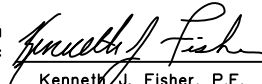


PIPE DIAMETER	DIMENSIONS IN MILLIMETERS				
	A<1"±>	B MAX	H<1"±>	L<1/2"±>	W<2"±>
12" and 15"	6 1/2"	10"	6 1/2"	25"	29"
18"	7 1/2"	15"	6 1/2"	32"	35"
24"	7 1/2"	18"	6 1/2"	36"	45"
30"	10 1/2"	N/A	7"	53"	68"
36"	10 1/2"	N/A	7"	53"	68"

PLASTIC END SECTION FOR CORRUGATED PLASTIC PIPE

State of Alaska DOT&PF
ALASKA STANDARD PLAN

CULVERT END SECTIONS

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Standard Plan by: 
Kenneth J. Fisher, P.E.
Chief Engineer

Adoption Date: 02/08/2019

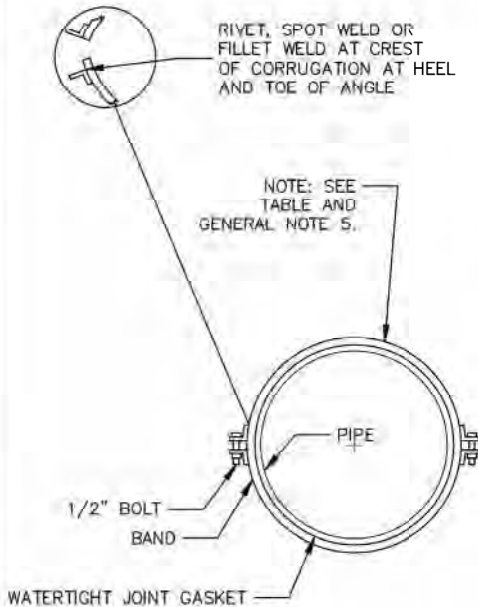
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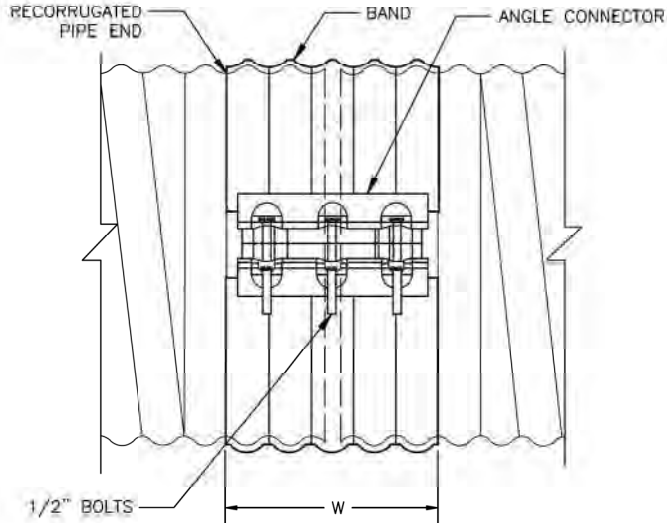
ANNULAR BAND				
BAND MATERIAL	PIPE DIA.	PIPE-ARCH SPAN x RISE (IN.)	BAND AND CONNECTOR WIDTH (W)	BOLT QUANTITY SEE NOTE 2
STEEL	12" - 30"	17x13 TO 35x24	12"	2
	36" - 72"	49x29 TO 83x57	24"	5/6, 10/12
	54" - 144" SEE NOTE 1	NOT APPROPRIATE		10/12, 15/18
ALUMINUM ALLOY	12" - 30"	17x13 TO 35x24	12"	3
	36" - 54"	42x29 TO 64x43	24"	5/6, 10/12
	36" - 96" SEE NOTE 1	NOT APPROPRIATE		

ANNULAR BAND NOTES:

1. TYPICALLY 3" X 1" OR 5" X 1" CORRUGATION SIZES.
2. STACKED BOLT QUANTITY INDICATES NUMBER OF BOLTS FOR ANGLE CONNECTORS THAT ARE ONE OR TWO PIECED. EX 5/6 USES 5 BOLTS FOR SINGLE ANGLE OR 6 BOLTS TOTAL FOR TWO PIECE ANGLE.
3. 8" CONNECTOR MAY BE USED WITH A 12" BAND ON 12"-30" STEEL PIPES.
4. NEOPRENE GASKET 12" WIDE X 3/8" THICK.
5. BOLTS ARE 1/2" X 6" MIN, 1/2" X 8" PREFERRED.



ANGLE CONNECTOR DETAIL

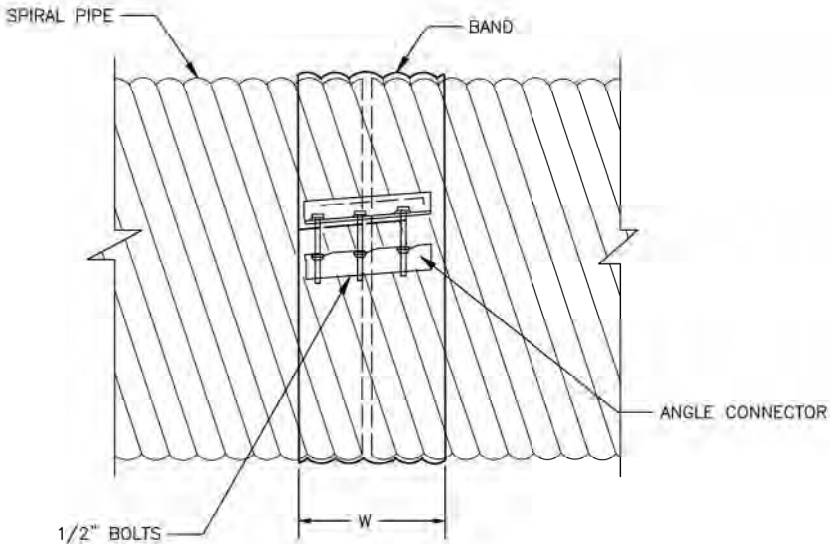


ANNULAR BAND

SPIRAL/HELICAL ANGLE BAND			
BAND MATERIAL	PIPE DIA.	BAND AND CONNECTOR WIDTH (W)	BOLT QUANTITY SEE NOTE 2
STEEL	12" - 30"	12"	3/6
	36" - 144" SEE NOTE 1	24"	5/6, 10/12, 15/18
ALUMINUM ALLOY	12" - 30"	12"	3/6
	36" - 54"	12"	5/6, 10/12
	36" - 96" SEE NOTE 1	24"	5/6, 10/12

SPIRAL BAND NOTES:

1. TYPICALLY 3" X 1" OR 5" X 1" CORRUGATION SIZES.
2. STACKED BOLT QUANTITY INDICATES NUMBER OF BOLTS FOR ANGLE CONNECTORS THAT ARE ONE OR TWO PIECED. EX 5/6 USES 5 BOLTS FOR SINGLE ANGLE OR 6 BOLTS TOTAL FOR TWO PIECE ANGLE.
3. NEOPRENE GASKET 12" WIDE X 3/8" THICK.
4. BOLTS ARE 1/2" X 6" MIN, 1/2" X 8" PREFERRED.



SPIRAL BAND

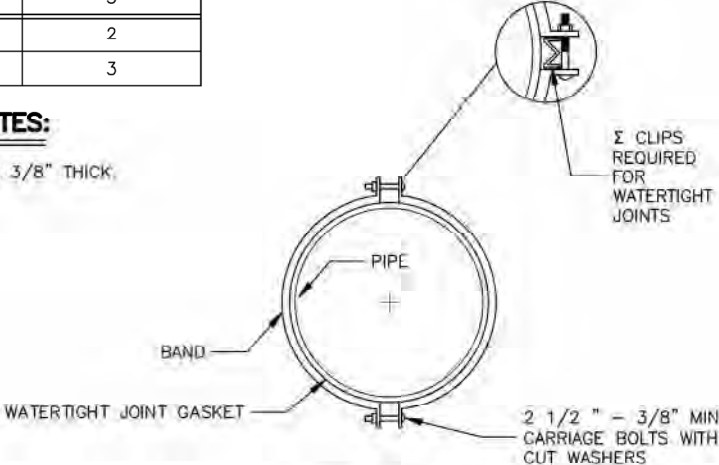
CORRUGATED BANDS

N.T.S.

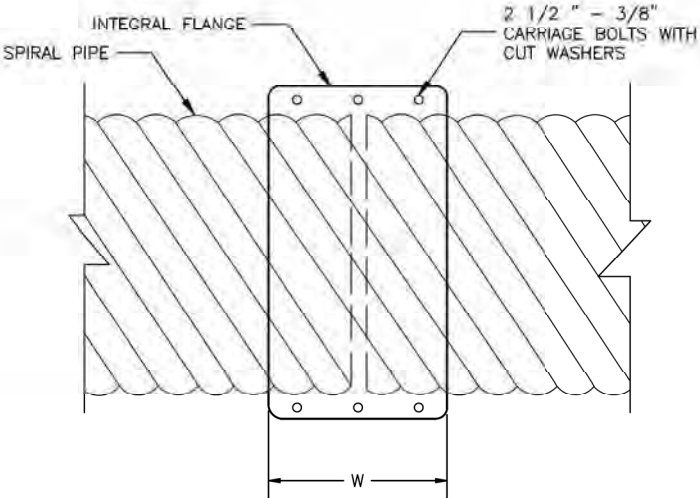
SPIRAL/HELICAL BIAS BAND			
BAND MATERIAL	PIPE DIA.	BAND AND CONNECTOR WIDTH (W)	BOLT QUANTITY
STEEL	6" - 10"	7"	2
	12" - 18"	12"	3
ALUMINUM ALLOY	6" - 10"	7"	2
	12" - 18"	12"	3

2-PIECE BIAS BAND NOTES:

1. NEOPRENE GASKET 7" WIDE X 3/8" THICK.



BIAS BAND END VIEW



2-PIECE BIAS BAND

GENERAL NOTES:

1. ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE STATE OF ALASKA, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, AND THE PROJECT SPECIAL PROVISIONS.
2. ALL NEOPRENE GASKETS ARE STRIP TYPE OR BUTT-CEMENTED OR VULCANIZED SLEEVE TYPE. MATERIAL MEETS ASTM SPECIFICATION D 1056, TYPE 2 (CLOSED CELL SPONGE), CLASS B, GRADE 3. O-RING GASKETS TO MEET SPECIFICATION ASTM C-443.
3. BAND ANGLE LENGTH IS NOMINAL AND IS GIVEN TO THE NEAREST INCH OF LENGTH. LENGTH OVER 12" MAY CONSIST OF MULTIPLE ANGLES OF SHORTER LENGTH.
4. BOLT QUANTITY VARIES WITH BAND WIDTH, DIAMETER, CONNECTION HARDWARE TYPE, AND NUMBER OF BAND SEGMENTS.
5. PROVIDE ONE-PIECE ANGLE CONNECTOR THRU 42" DIAMETER, 2-PIECE ANGLE CONNECTORS FOR DIAMETERS 48" THRU 90", AND THREE-PIECE ANGLE CONNECTORS FOR DIAMETERS 96" THRU 144", OR AS OTHERWISE REQUESTED.

State of Alaska DOT&PF
ALASKA STANDARD PLAN
BAND COUPLER AND
HARDWARE SCHEDULE

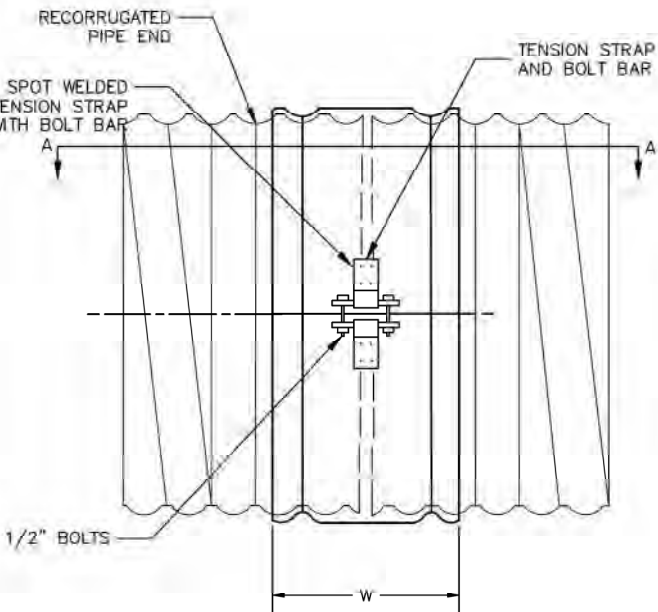
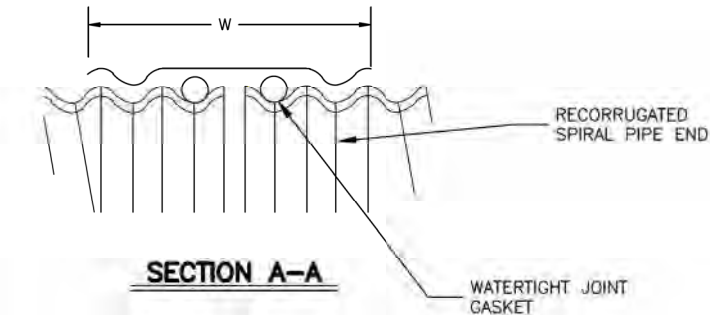
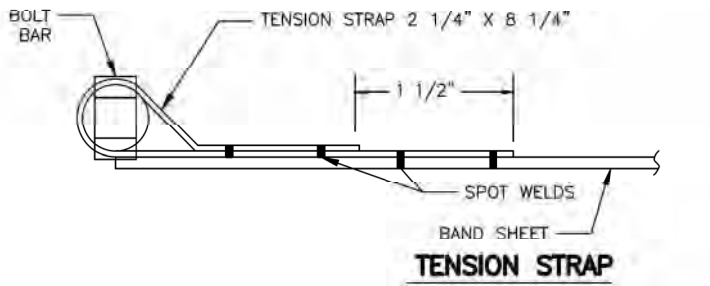
Adapted as an Alaska
Standard Plan by: 
Lauren Little, P.E.
Interim Chief Engineer

Adoption Date: 01/29/2024

Last Code and Stds. Review
By: BMM Date: 12/13/2023

Next Code and Standards Review Date: 12/13/2033

D-08.00



SEMI-CORRUGATED
N.T.S.

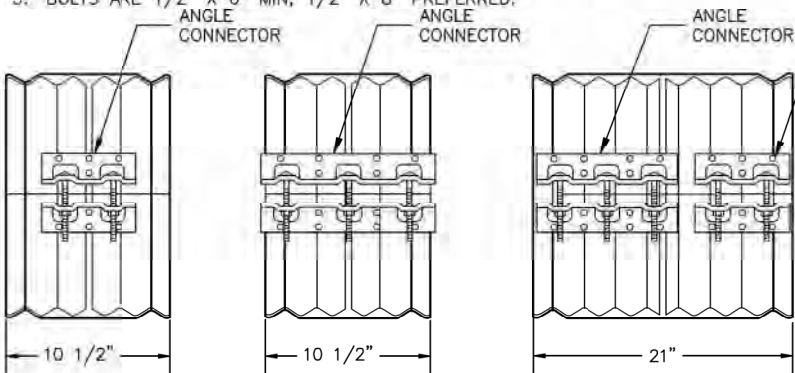
SEMI-CORRUGATED BAND NOTES:

1. ANNULAR PIPE WIDTH 2 2/3" X 1/2" CORRUGATIONS WIDTH IS 13 3/8", FOR 3"x1" CORRUGATIONS WIDTH IS 14 3/4"
2. BOLTS ARE 1/2" X 6" MIN, 1/2" X 8" PREFERRED.
3. ALTERNATE DESIGNS OF TENSIONS STRAPS ARE PERMISSIBLE IF TENSILE STRENGTH EXCEEDS 7500 LBS.

TYPE 1 BAND					
BAND MATERIAL	PIPE DIA.	PIPE-ARCH SPAN x RISE (IN.)	BAND WIDTH (W)	CONNECTOR WIDTH (W)	BOLT QUANTITY SEE NOTE 2
STEEL	12" - 30"	17x13 TO 35x24	10 1/2"	8"	2/4
	36" - 72"	49x29 TO 83x57	21"	20"	5/10
	54" - 144" SEE NOTE 1	NOT APPROPRIATE			10/15
ALUMINUM ALLOY	12" - 30"	17x13 TO 35x24	10 1/2"	8"	2/4
	36" - 54"	42x29 TO 64x43	21"	20"	5/6, 10/12
	54" - 96" SEE NOTE 1	NOT APPROPRIATE			

TYPE 1 BAND NOTES:

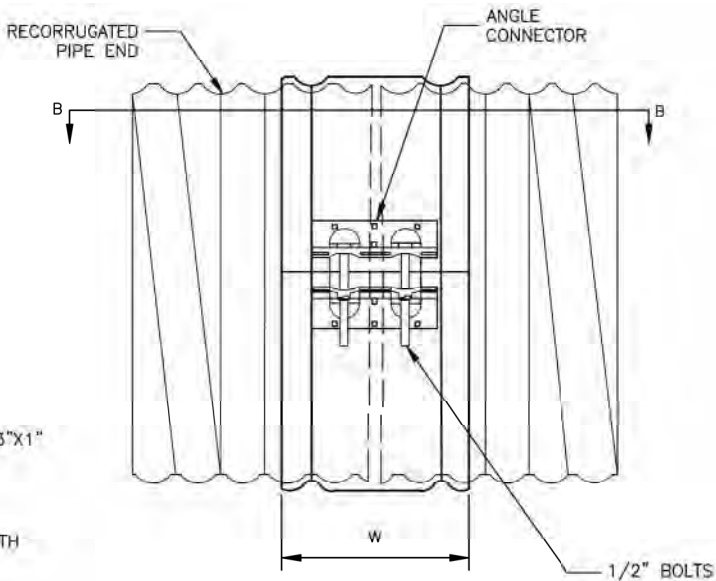
1. TYPICALLY 3" X 1" OR 5" X 1" CORRUGATION SIZES.
2. STACKED BOLT QUANTITY INDICATES NUMBER OF BOLTS FOR ANGLE CONNECTORS THAT ARE ONE OR TWO PIECED. EX 2/4 USES 2 BOLTS FOR SINGLE ANGLE OR 4 BOLTS TOTAL FOR TWO PIECE ANGLE.
3. NEOPRENE GASKET 12" WIDE X 3/8" THICK.
4. O-RING GASKETS (APPLICABLE TO STEEL ONLY) ARE 13/16" FOR BANDS WITH PIPE DIAMETER THROUGH 72", AND 7/8" FOR PIPES WITH PIPE DIAMETER OVER 72".
5. BOLTS ARE 1/2" X 6" MIN, 1/2" X 8" PREFERRED.



TYPE 1
SINGLE 8" BAND

TYPE 1
SINGLE 12" BAND

TYPE 1
DOUBLE BAND



SEMI-CORRUGATED
TYPE 1

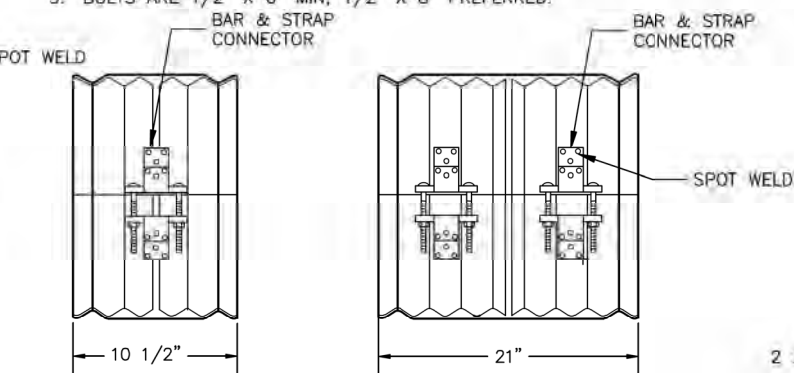
SEMI-CORRUGATED BANDS (TYPE 1 & 2)

N.T.S.

TYPE 2 BAND					
BAND MATERIAL	PIPE DIA.	PIPE-ARCH SPAN x RISE (IN.)	BAND WIDTH (W)	CONNECTOR WIDTH (W)	BOLT QUANTITY SEE NOTE 2
STEEL	12" - 30"	17x13 TO 35x24	10 1/2"	2.25"	2/4
	36" - 72"	49x29 TO 83x57	21"	2.25"x2"	4/8
	54" - 144" SEE NOTE 1	NOT APPROPRIATE			8/12
ALUMINUM ALLOY	12" - 30"	17x13 TO 35x24	10 1/2"	2.25"	2/4
	36" - 54"	42x29 TO 64x43	21"	2.25"x2"	5/6, 10/12
	54" - 96" SEE NOTE 1	NOT APPROPRIATE			

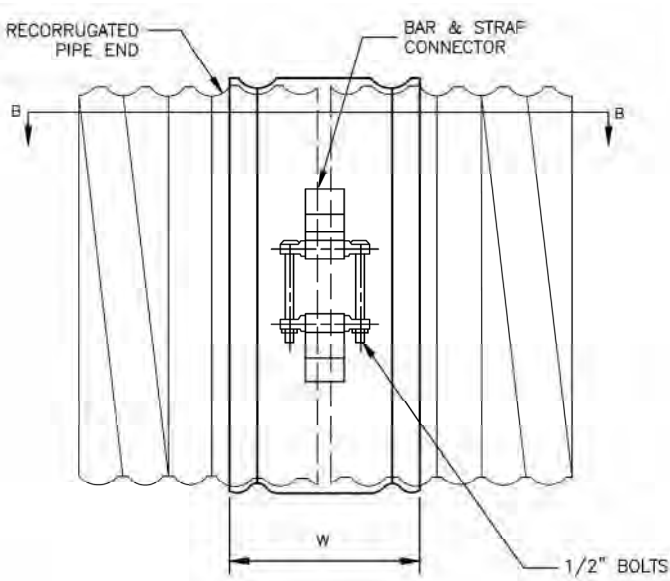
TYPE 2 BAND NOTES:

1. TYPICALLY 3" X 1" OR 5" X 1" CORRUGATION SIZES.
2. STACKED BOLT QUANTITY INDICATES NUMBER OF BOLTS FOR ANGLE CONNECTORS THAT ARE ONE OR TWO PIECED. EX 2/4 USES 2 BOLTS FOR SINGLE ANGLE OR 4 BOLTS TOTAL FOR TWO PIECE ANGLE.
3. NEOPRENE GASKET 12" WIDE X 3/8" THICK.
4. O-RING GASKETS (APPLICABLE TO STEEL ONLY) ARE 13/16" FOR BANDS WITH PIPE DIAMETER THROUGH 72", AND 7/8" FOR PIPES WITH PIPE DIAMETER OVER 72".
5. BOLTS ARE 1/2" X 6" MIN, 1/2" X 8" PREFERRED.

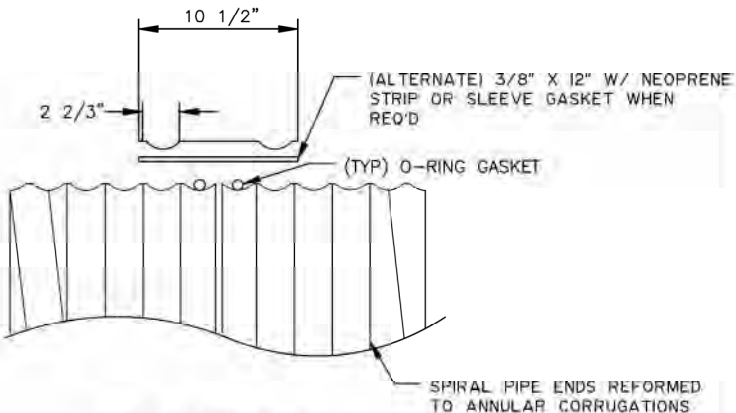


TYPE 2
SINGLE BAR & STRAP

TYPE 2
DOUBLE BAR & STRAP



SEMI-CORRUGATED
TYPE 2



SECTION B-B

State of Alaska DOT&PF
ALASKA STANDARD PLAN
BAND COUPLER AND
HARDWARE SCHEDULE

Adapted as an Alaska
Standard Plan by: 
Lauren Little, P.E.
Interim Chief Engineer

Adoption Date: 01/29/2024

Last Code and Stds. Review
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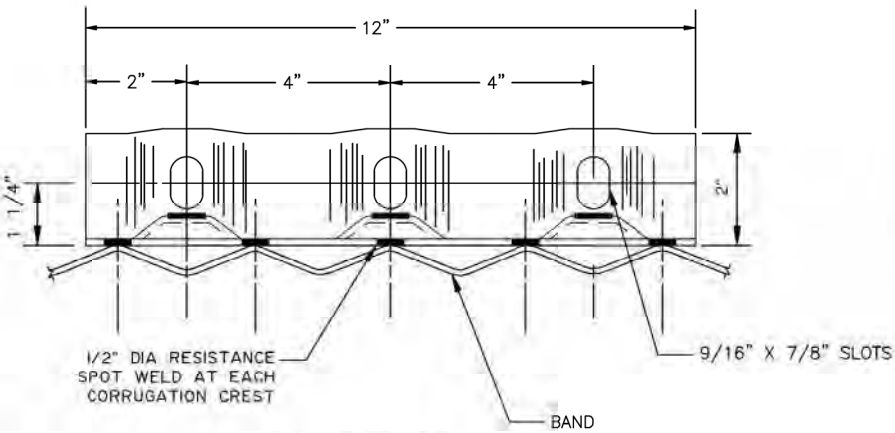
Next Code and Standards Review Date: 12/13/2033

D-08.00

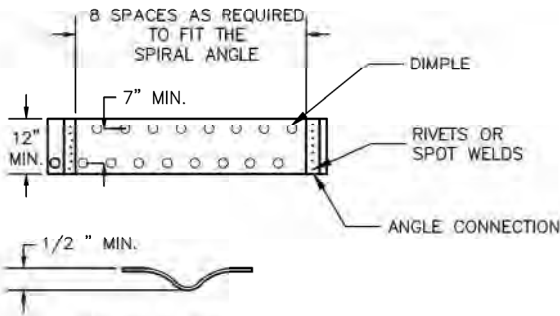
DIMPLE BAND				
BAND MATERIAL	PIPE DIA.	PIPE ARCH SPAN x RISE (IN.)	BAND AND CONNECTOR WIDTH (W)	BOLT QUANTITY SEE NOTE 2
STEEL	12" - 30"	17x13 TO 35x24	12"	3/6
	36" - 72"	49x29 TO 83x57	24"	5/6, 10/12
	54" - 144" SEE NOTE 1	42x29 TO 171x110		10/12, 15/18
ALUMINUM ALLOY	12" - 30"	17x13 TO 35x24	12"	3/6
	36" - 54"	42x29 TO 64x43	24"	5/6, 10/12
	36" - 96" SEE NOTE 1	60x46 TO 112x75		

DIMPLE BAND NOTES:

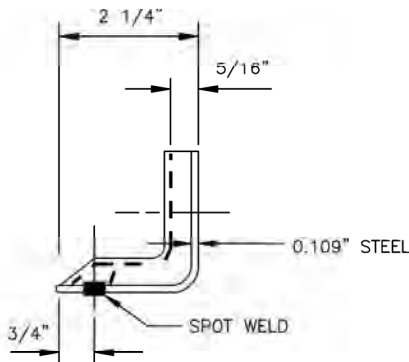
1. TYPICALLY 3" X 1" OR 5" X 1" CORRUGATION SIZES.
2. STACKED BOLT QUANTITY INDICATES NUMBER OF BOLTS FOR ANGLE CONNECTORS THAT ARE ONE OR TWO PIECED. EX 3/6 USES 3 BOLTS FOR SINGLE ANGLE OR 6 BOLTS TOTAL FOR TWO PIECE ANGLE.
3. DIMPLE BANDS ARE RESTRICTED TO JOINING FIELD CUT PIPE, EXTENSIONS OF EXISTING PIPE WITH SPIRAL ENDS, AND 3X1 OR 5X1 CORRUGATION PIPE-ARCHES.
4. NEOPRENE GASKET 12" WIDE X 3/8" THICK EXCEPT 1" THICK REQUIRED ON SPIRAL ENDS WITH 1" DEEP CORRUGATIONS.



SIDE VIEW



DIMPLE SECTION



END VIEW

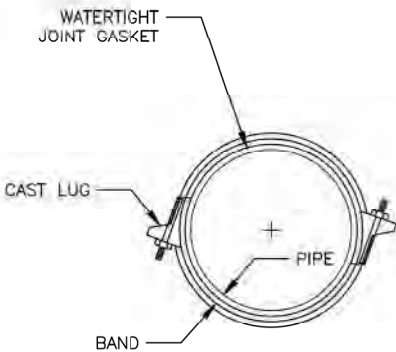
ANGLE CONNECTION DETAILS

N.T.S.

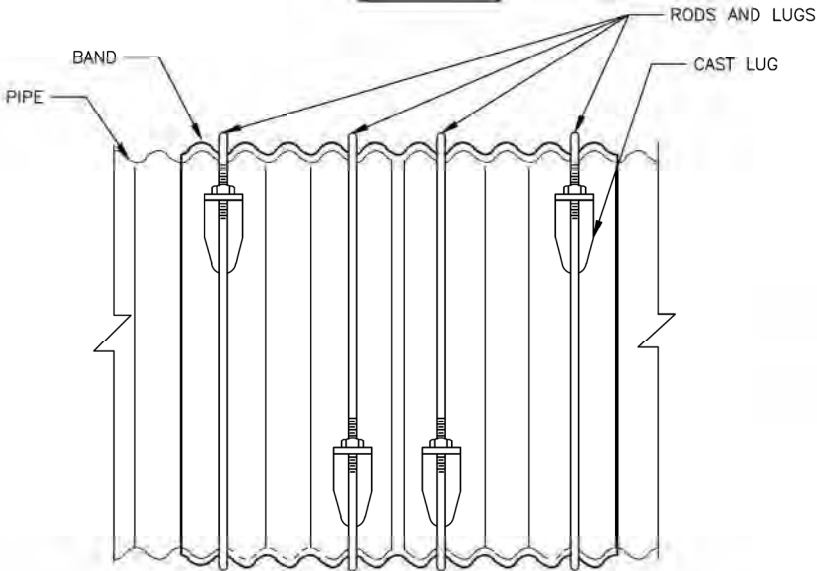
ROD AND LUG BAND				
CORRUGATION	PIPE DIA.	BAND WIDTH (W)	ROD DIAMETER (IN.)	ROD QUANTITY SEE NOTE 2
2 3/8" x 1/2"	12" - 21"	12"	3/8"	2
	24" - 54"	12" OR 24"	1/2"	2/4
	60" - 84"	12" OR 24"	5/8"	2/4
3" X 1"	36" - 54"	14" OR 26"	1/2"	2/4
	60" - 84"	14" OR 26"	5/8"	2/4
	84" - 120"	26"	5/8"	4

ROD AND LUG NOTES:

1. PROVIDE WIDER BAND UNLESS OTHERWISE SPECIFIED.
2. STACKED ROD QUANTITY INDICATES NUMBER OF RODS FOR NARROW OR WIDE BANDS. EX 2/4 USES 2 RODS FOR NARROW BAND OR 4 RODS TOTAL FOR WIDE BANDS.

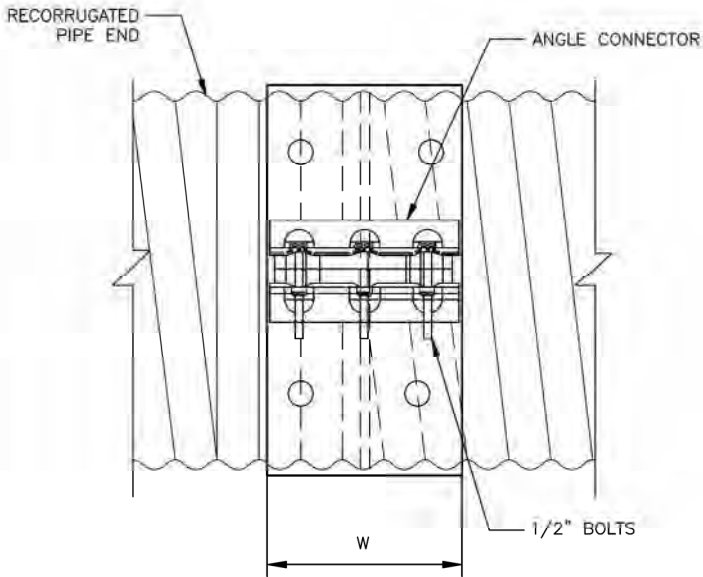


END VIEW



ROD AND LUG BAND DETAILS

N.T.S.



DIMPLE BAND DETAILS

N.T.S.

State of Alaska DOT&PF
ALASKA STANDARD PLAN
BAND COUPLER AND
HARDWARE SCHEDULE

Adapted as an Alaska
Standard Plan by: 
Lauren Little, P.E.
Interim Chief Engineer

Adoption Date: 01/29/2024

Last Code and Stds. Review
By: BMM Date: 12/13/2023

Next Code and Standards Review Date: 12/13/2033

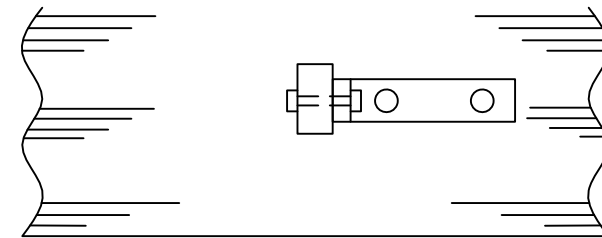
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GENERAL NOTES:

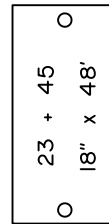
- I. Culvert marker post shall be installed with galvanized steel hardware meeting the following requirements: Galvanizing for nuts and washers shall meet the requirements of ASTM A-153, Class C. Galvanizing for steel mounting supports shall meet the requirements of MIL-P-26915A, or ASTM A-153, Class C.

DIRECTION OF TRAFFIC

Shoulder of Road



TOP VIEW

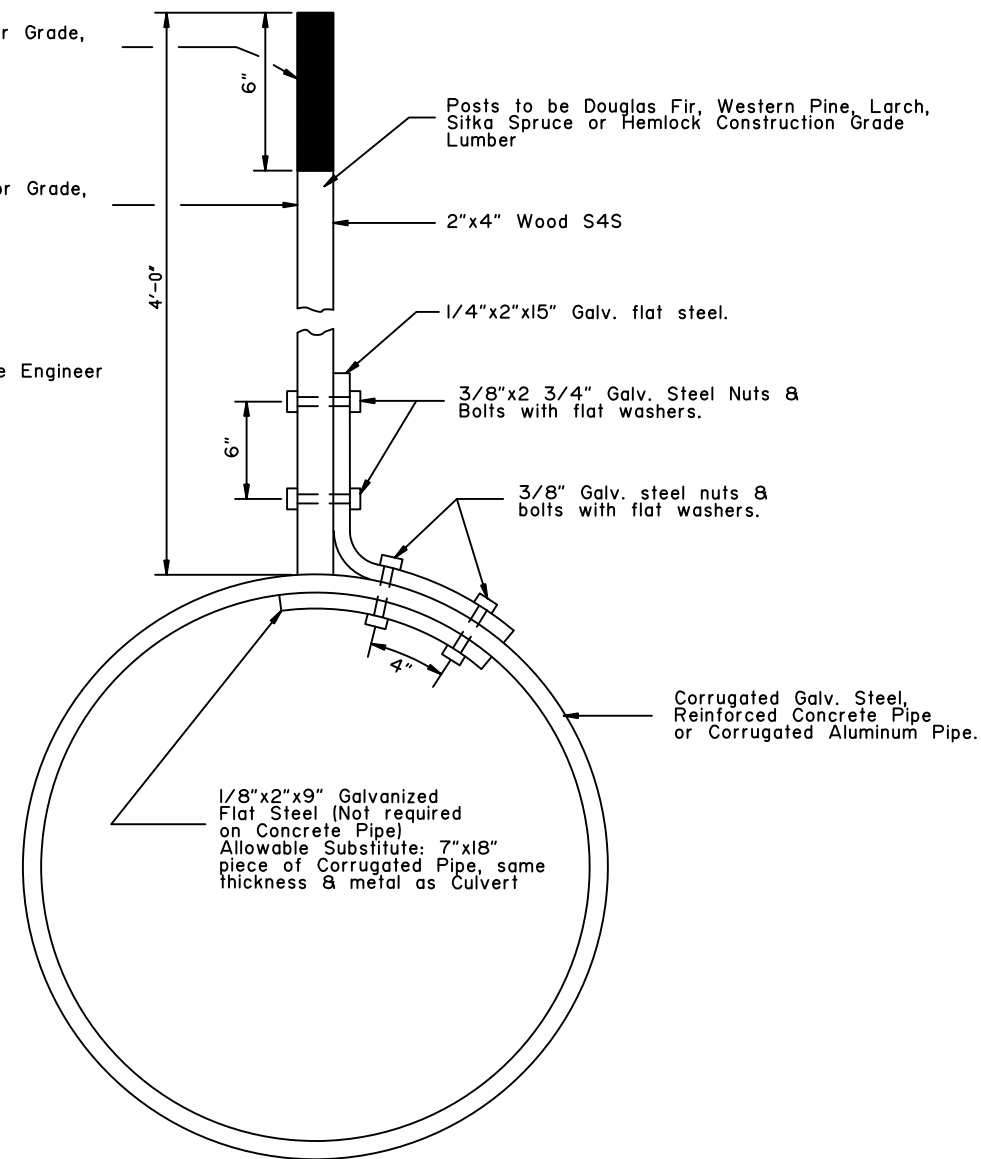


Sta. and size of Culvert to be stamped into a 2"x4"x0.064" thick brass plate, fastened, with No. 8 round head brass screws, to the marker post as shown. Plate to be on side of post facing traffic.

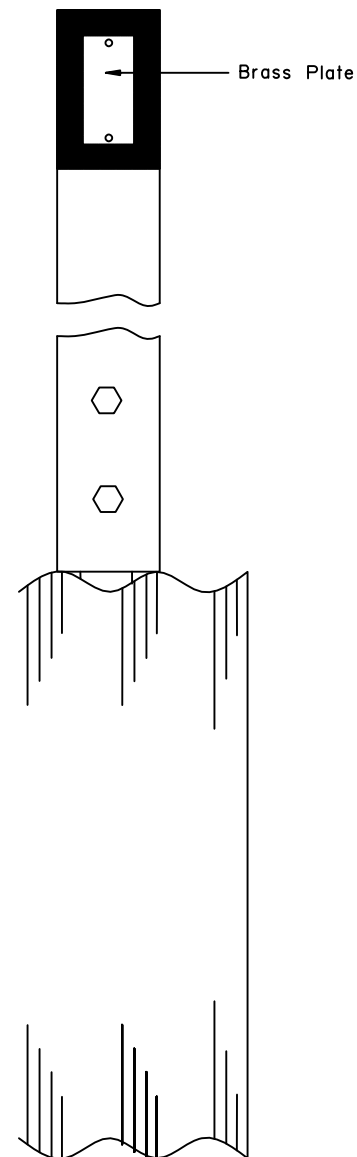
* Black Paint, Exterior Grade, Semi Gloss Enamel.

* White Paint, Exterior Grade, Semi Gloss Enamel

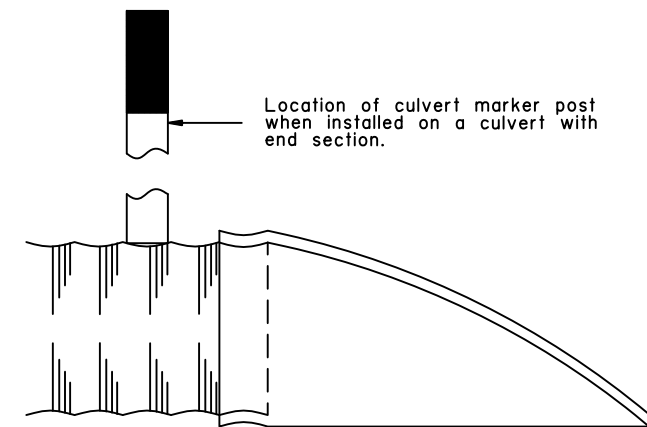
* As approved by the Engineer



END VIEW



SIDE VIEW



END SECTION SIDE VIEW

State of Alaska DOT&PF
ALASKA STANDARD PLAN

CULVERT MARKER POST

Adopted as an Alaska
Standard Plan by: *Kenneth J. Fisher*
Kenneth J. Fisher, P.E.
Chief Engineer

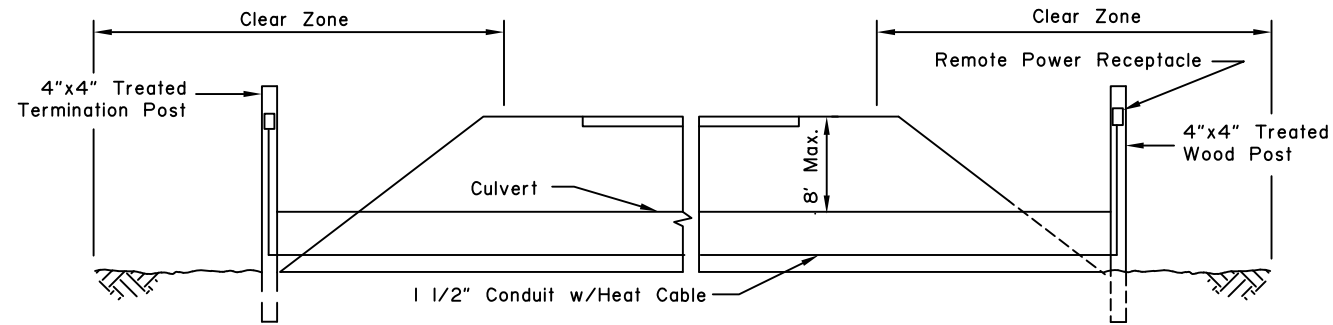
Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

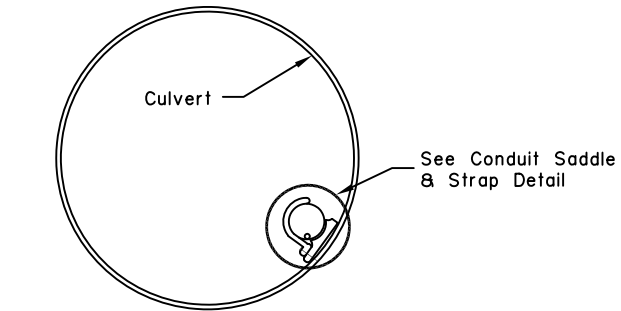
Next Code and Standards Review date: 02/08/2029

GENERAL NOTES:

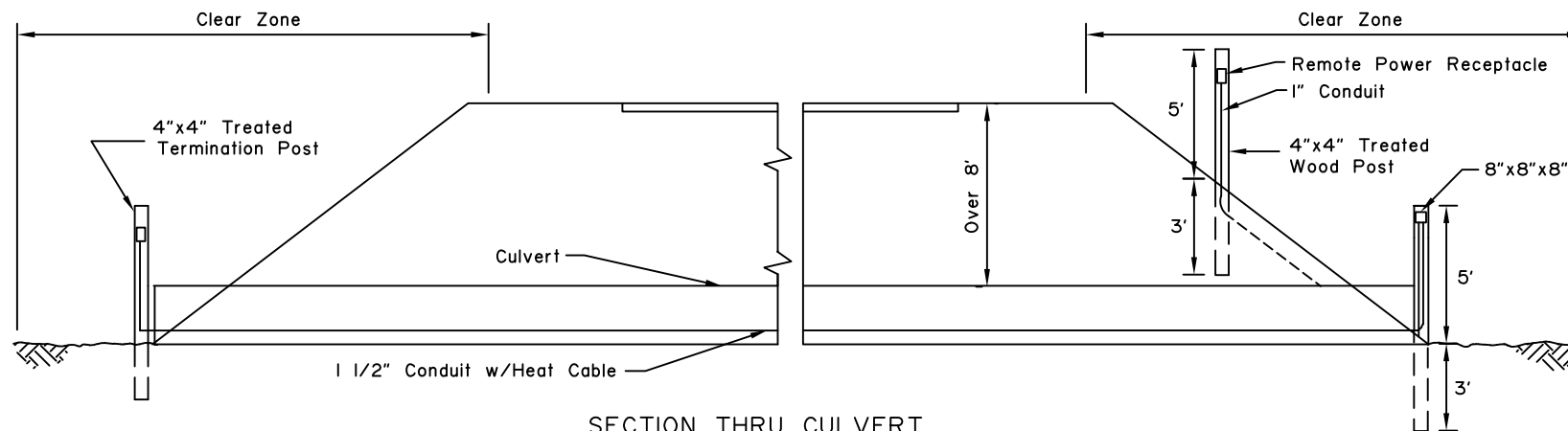
1. Type FD Cast Device Box w/green pilot light on the termination post shall be located a minimum of 6" above high water.



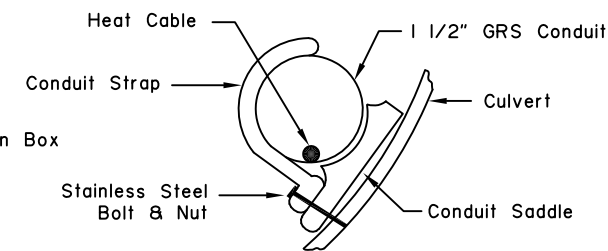
SECTION THRU CULVERT
(Low Fill)



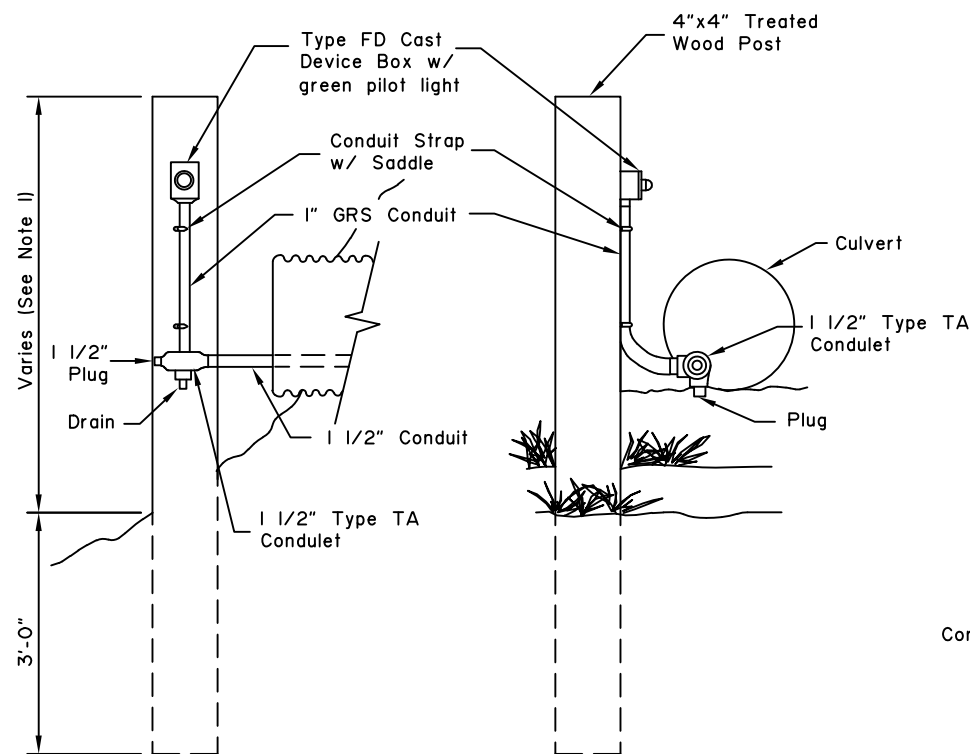
CULVERT CROSS SECTION



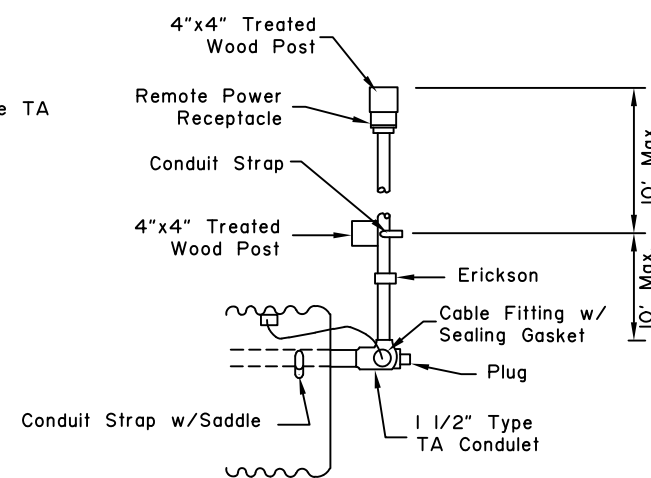
SECTION THRU CULVERT
(High Fill)



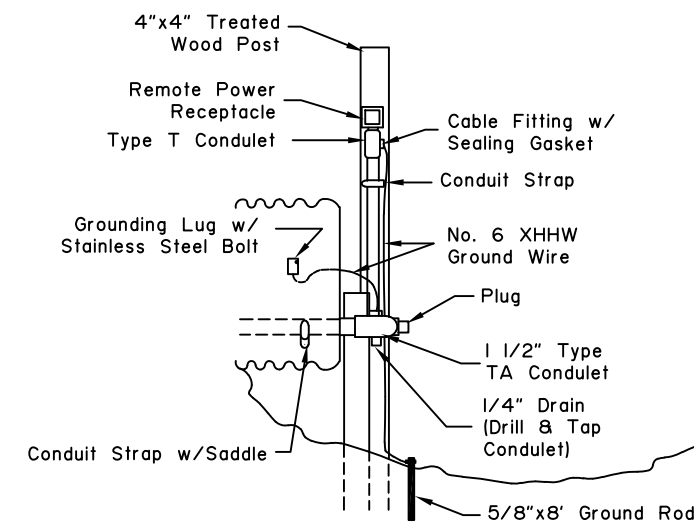
CONDUIT SADDLE &
STRAP DETAIL



FRONT VIEW
PROFILE VIEW
TERMINATION POST DETAIL



PLAN VIEW



ELEVATION

REMOTE CULVERT ENTRY DETAIL

State of Alaska DOT&PF ALASKA STANDARD PLAN REMOTE THAW WIRE INSTALLATION

Adopted as an Alaska
Standard Plan by: *Kenneth J. Fisher*
Kenneth J. Fisher, P.E.
Chief Engineer

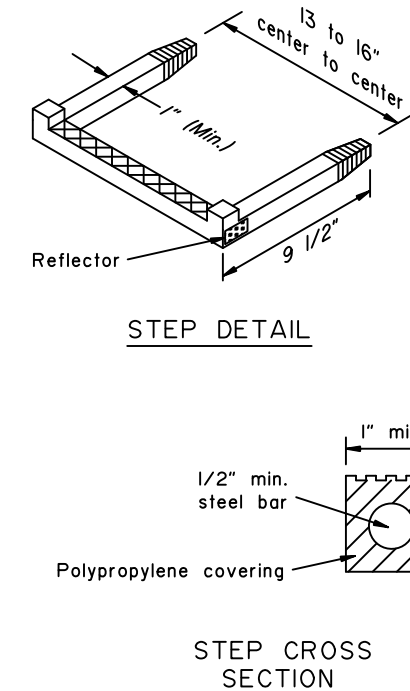
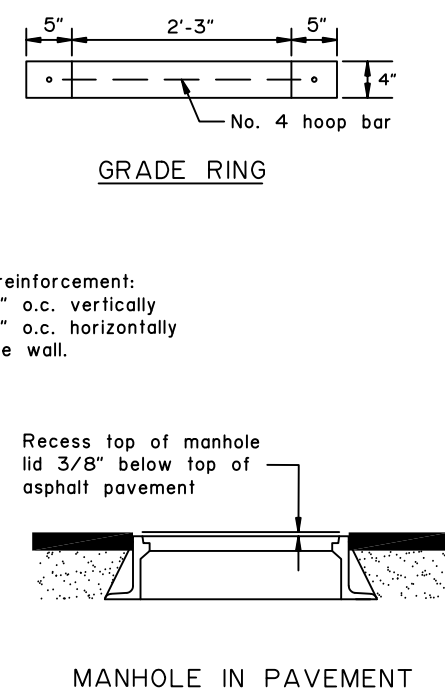
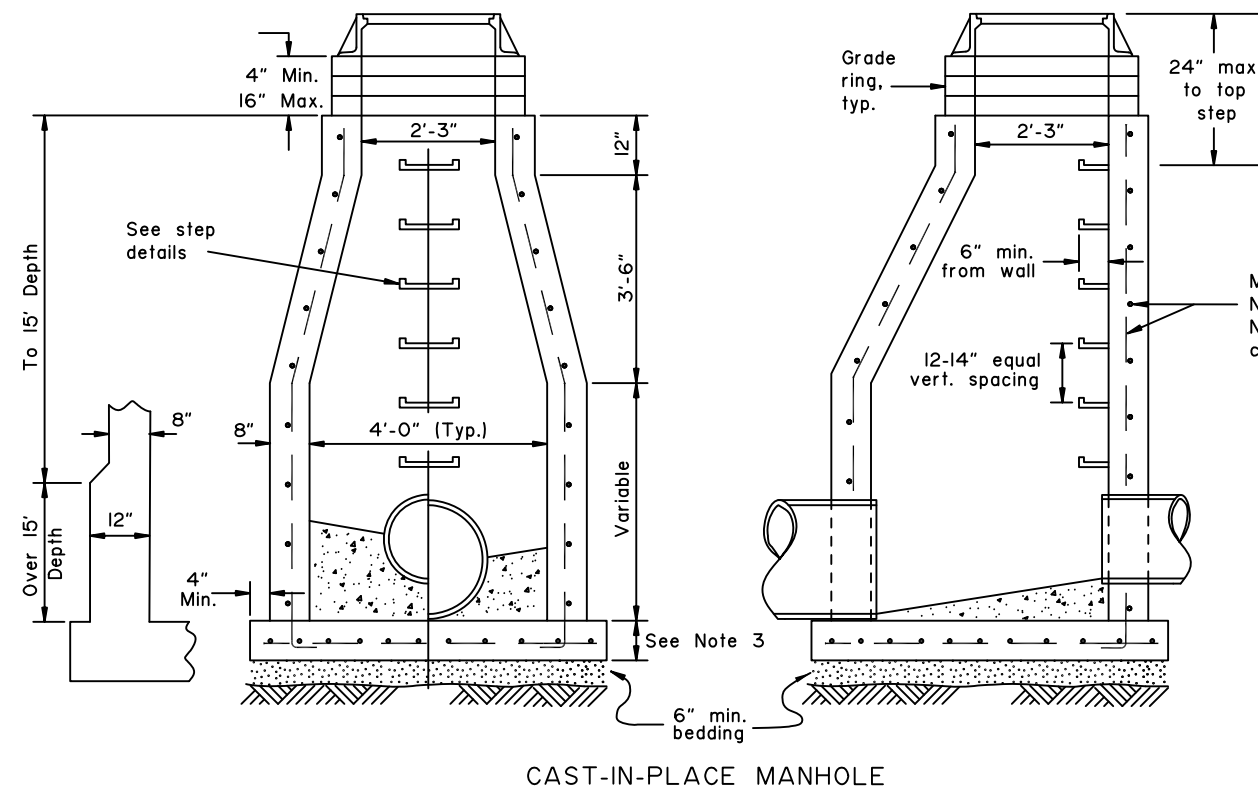
Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

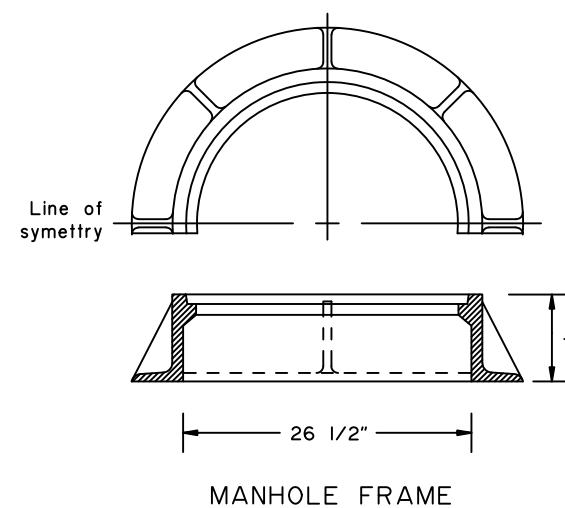
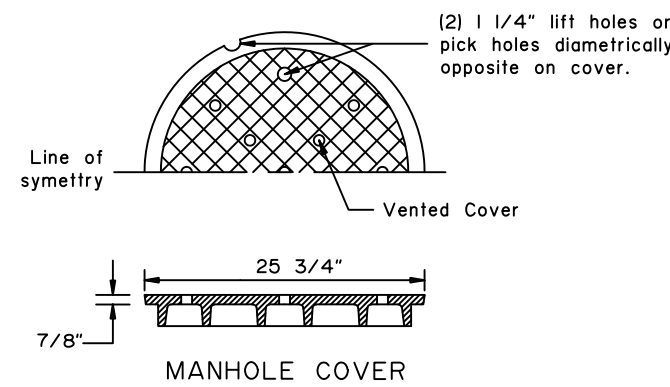
Next Code and Standards Review date: 02/08/2029

GENERAL NOTES:

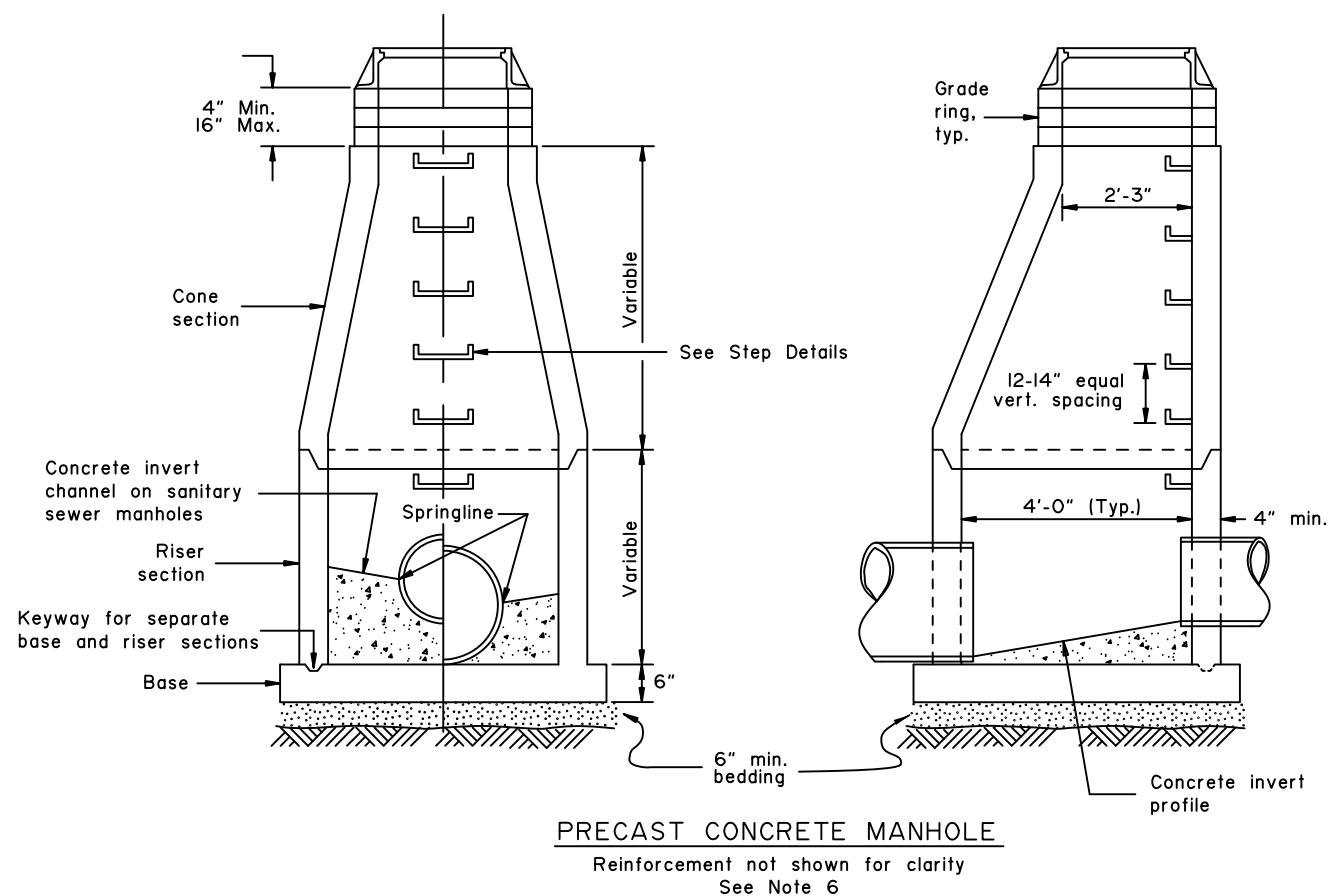
1. Either precast or cast-in-place manholes may be used.
2. Details for manhole frame, cover and step are generic in nature and may vary from shown depending on manufacturer
3. Use 8" thick cast-in-place concrete bases for depths less than 15' and 12" thick bases for depths 15' or greater.
4. Manhole frames shall have a depth of 6" unless otherwise indicated on the plans.
5. Step requirements:
 - a. 18" max. vertical clearance to bottom of manhole or concrete invert.
 - b. 3" minimum embedment.
 - c. 1,500 lb. min. pullout force.
 - d. ASTM A-615 grade 60 steel bar.
 - e. Injection molded polypropylene covering meeting ASTM D-41010
 - f. Slip resistant foot tread with "wings" to prevent feet from sliding off the edge.
 - g. Reflectors at step corners
6. Reinforcement for precast manhole sections shall meet AASHTO M 199.



STEP CROSS SECTION



MANHOLE FRAME & COVER MINIMUM WEIGHT		
* Depth		
6"		380 lbs
7"		400 lbs
8"		440 lbs
9"		470 lbs
10"		500 lbs



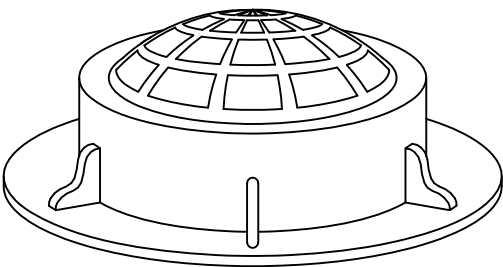
State of Alaska DOT&PF
ALASKA STANDARD PLAN
MANHOLES, FRAME
AND COVER

Adopted as an Alaska
Standard Plan by: *Kenneth J. Fisher, P.E.*
Kenneth J. Fisher, P.E.
Chief Engineer

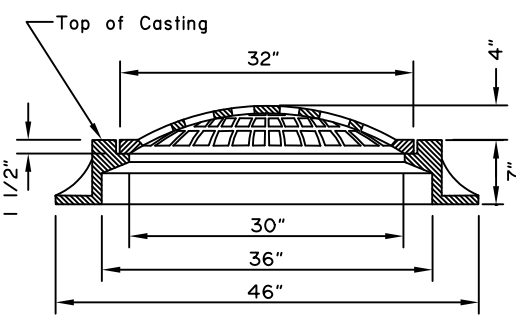
Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

Next Code and Standards Review date: 02/08/2029

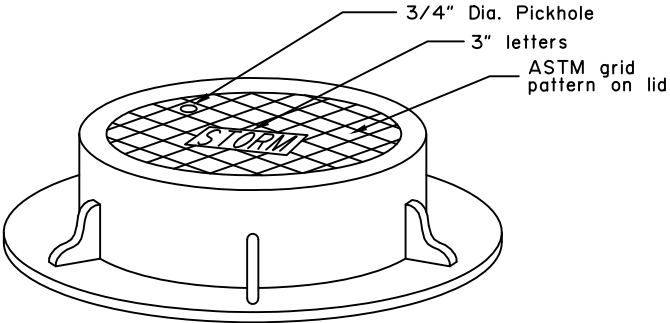


Surround field inlets with a 24" wide rock rubble collar
10" deep, 3" maximum size rock.



FIELD INLET FRAME & GRATE

To be supplied for storm drain manholes
where field inlets are specified.
Field inlet frame and grate shall have
a Minimum total weight of 525 lb.

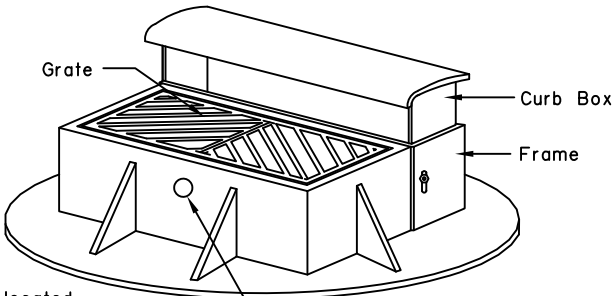


MANHOLE LID FRAME AND GRATE

NOTES:

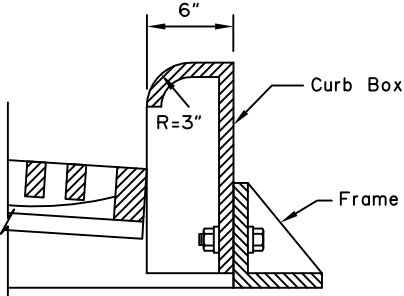
1. Details shown are to indicate general design only. Dimensions and design may vary among the manufacturers, except that inlet grate shall be within ¼"± of dimensions shown on this drawing.
2. Manhole lids shall be 32" in diameter and may be used with field inlet frames.
3. Type A field inlet frame inside dimensions shall be 24" x 36". Lugs will not protrude outside the concrete surface of the inlet box.
4. Grates shall be bicycle safe. Where high capacity grates are called for on the plans, they shall conform to Std. Dwg. D-25.
5. Frame and grate casting types are identified by the following abbreviations:

C.I. = Curb Inlet
F.I. = Field Inlet
M.H. = Manhole
6. Flowline depression shall conform to Std. Dwg. D-23 for an on grade or sag point conditions.
7. These are the default frames and grates to be used unless shown otherwise on the drainage plans or drainage structure summary.

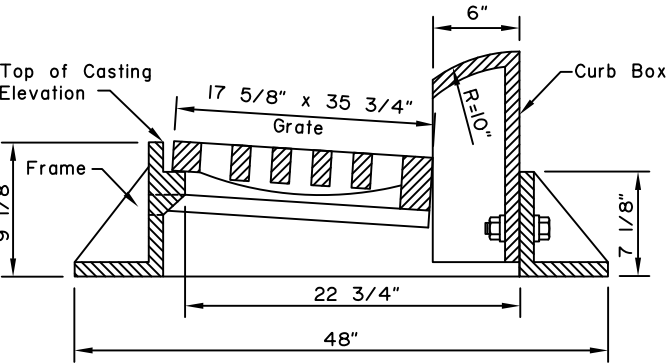


Pickhole located
3" from the top of frame

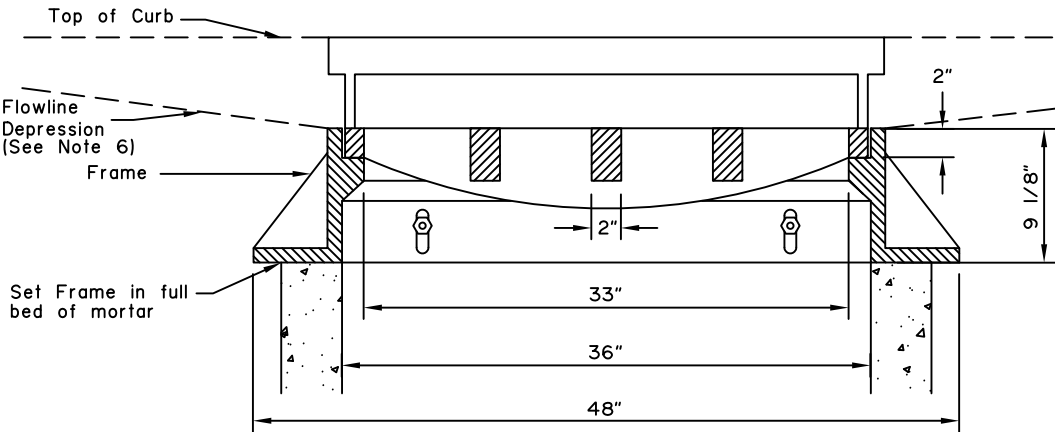
NOTE:
Curb Box, Grate and frame shall have a minimum
total weight of 725 lb.



SIDE VIEW
MOUNTABLE CURB AND GUTTER



SIDE VIEW
EXPRESSWAY CURB AND GUTTER



FRONT VIEW

CURB INLET FRAME AND GRATE

To be supplied for storm drain manholes Type I, Type II and Type III
where curb inlets are specified.

NOT TO SCALE

REQUIRED FRAME AND GRATES (See Note 7)			
STRUCTURE	INLET TYPE	CURB TYPE	TYPE FRAME AND GRATE
INLET BOX, TYPE A	Curb	Mountable	Standard Curb Inlet
	Curb	Expressway	Mountable Curb Inlet
	Curb	Rolled Curb	Depressed Inlet
	Field	-----	Field Inlet
STORM DRAIN MANHOLES, TYPE I, II AND III	Curb	Mountable	Mountable Curb Inlet
	Curb	Expressway	Expressway Curb Inlet
	Curb	Rolled Curb	Depressed Inlet
	Field	-----	Field Inlet
	Manhole Lids	-----	Field Inlet Frame, Solid MH. Lid

State of Alaska DOT&PF
ALASKA STANDARD PLAN
STORMDRAIN MANHOLE
FRAME AND GRATE
DETAILS

Adopted as an Alaska
Standard Plan by:
Kenneth J. Fisher, P.E.
Chief Engineer

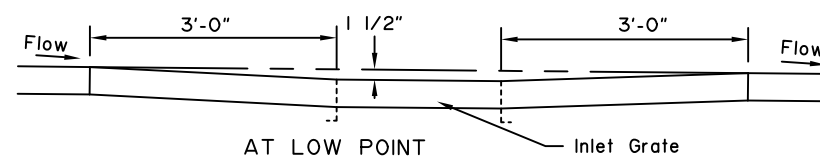
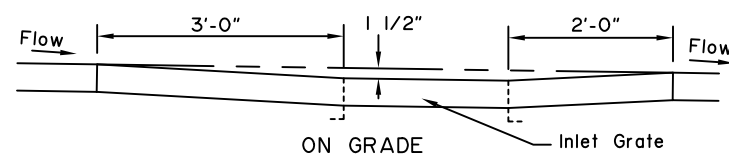
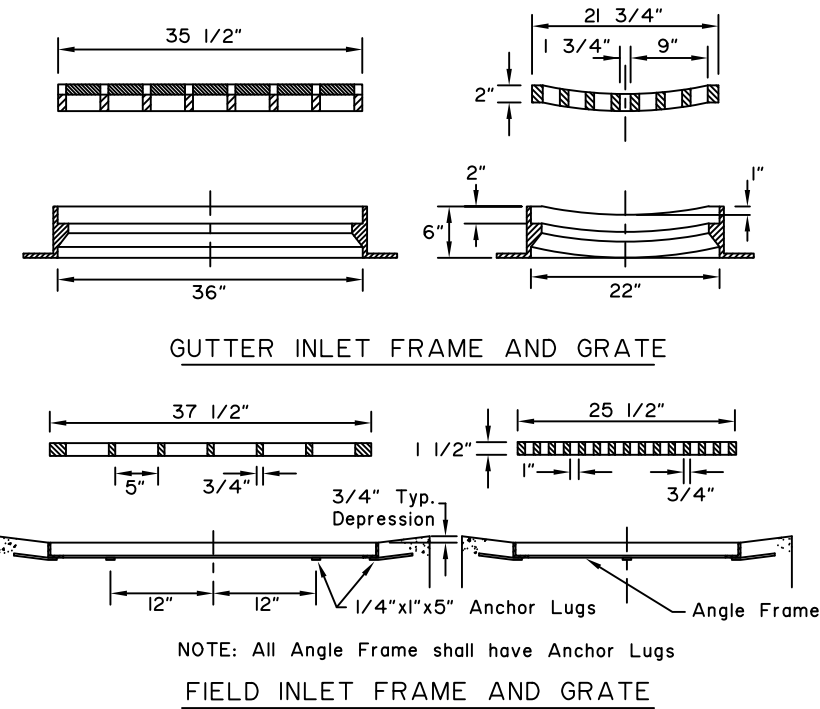
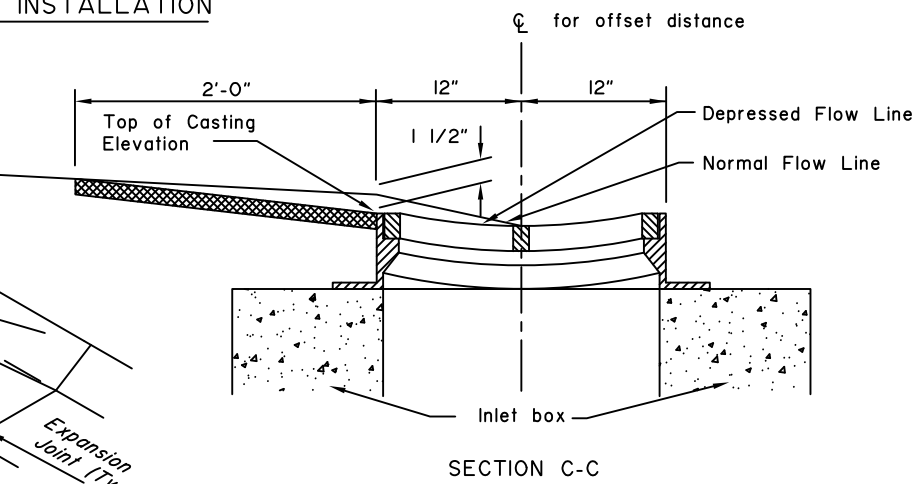
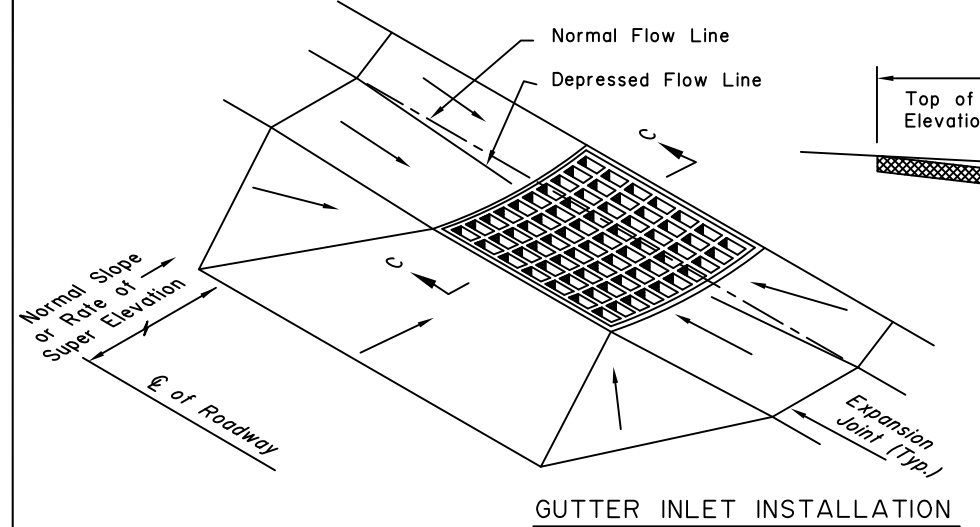
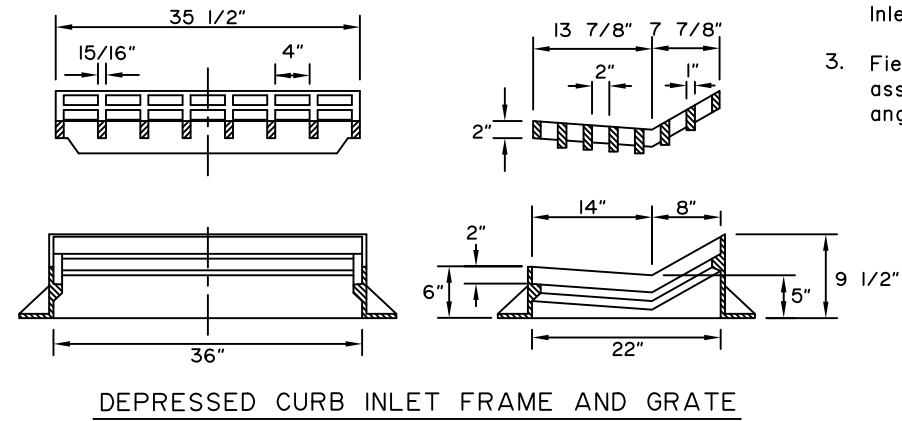
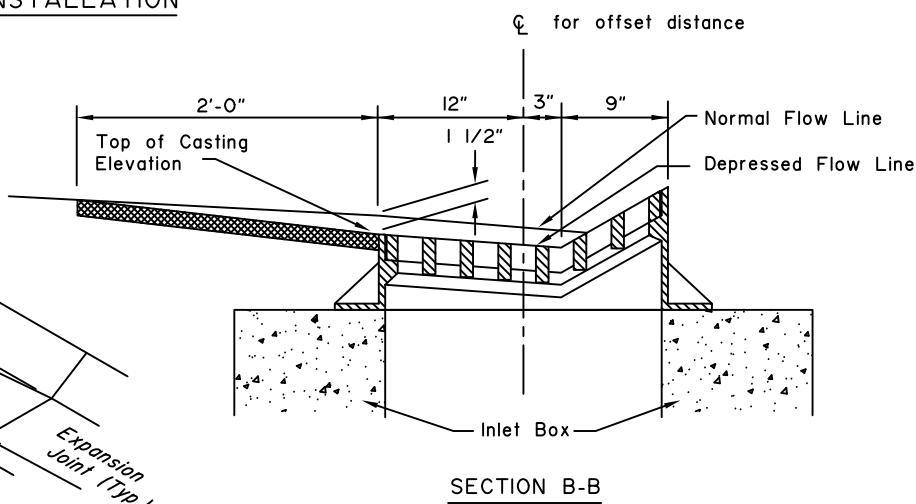
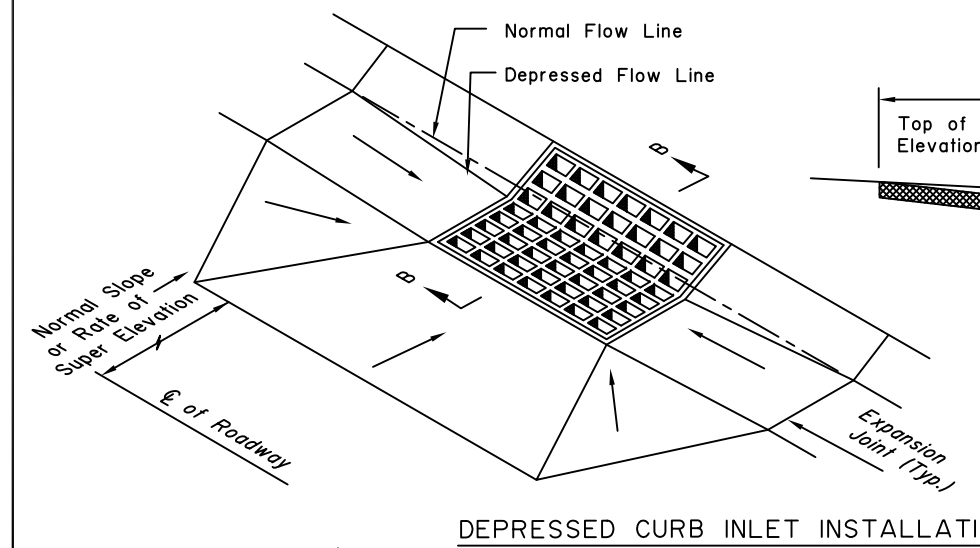
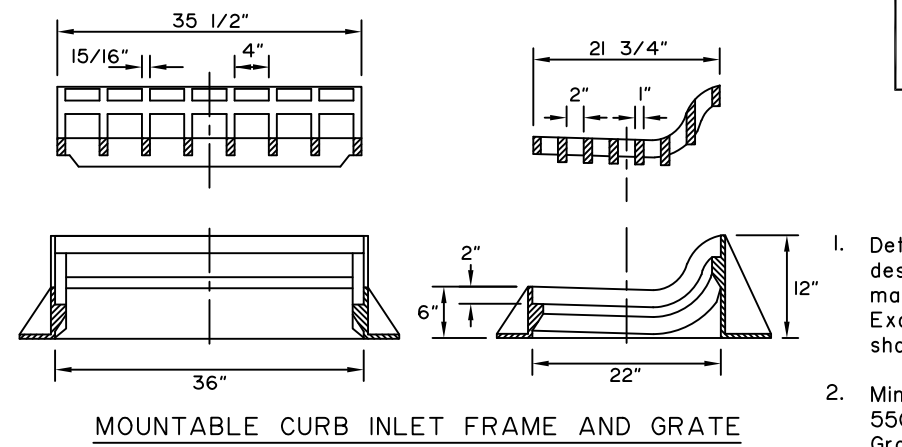
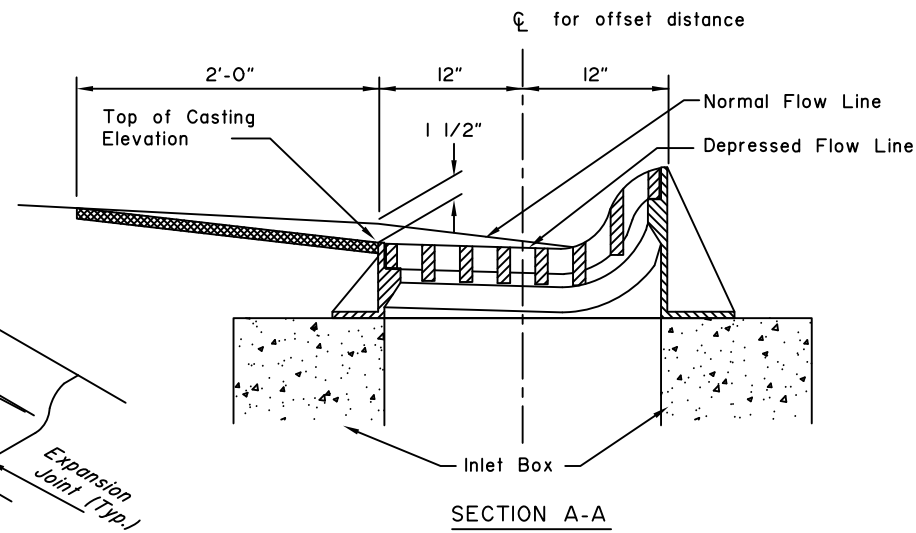
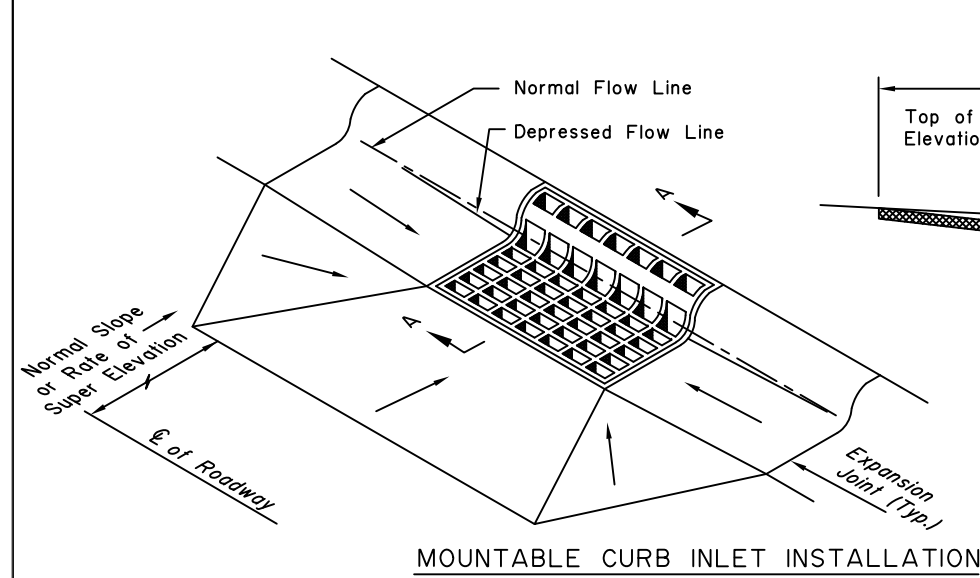
Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

Next Code and Standards Review date: 02/08/2029

GENERAL NOTES:

1. Details shown are to indicate general design only. Dimensions and design may vary among the manufacturers. Except inlet grate outside dimension shall be as shown on this drawing.
2. Minimum casting weight shall be 550lbs. for Curb Inlet Frame and Grate, 450lbs. for Gutter Inlet Frame and Grate, and 300lbs. for Field Inlet Frame and Grate.
3. Field Inlet Frame may be welded assembly of L 1 3/4"x1 3/4"x1/4" angle equivalent to ASTM A-36 steel.



DEPRESSION IN FLOW LINE AT INLET CONSTRUCTION DETAILS

State of Alaska DOT&PF ALASKA STANDARD PLAN INLET FRAMES AND GRATES

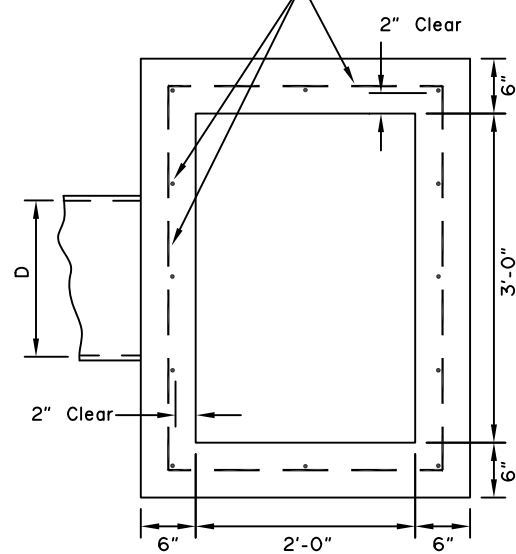
Adopted as an Alaska
Standard Plan by: *Kenneth J. Fisher*
Kenneth J. Fisher, P.E.
Chief Engineer

Adoption Date: 02/08/2019

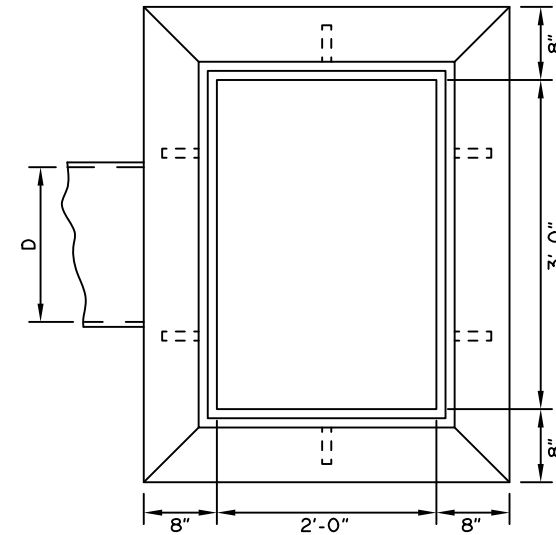
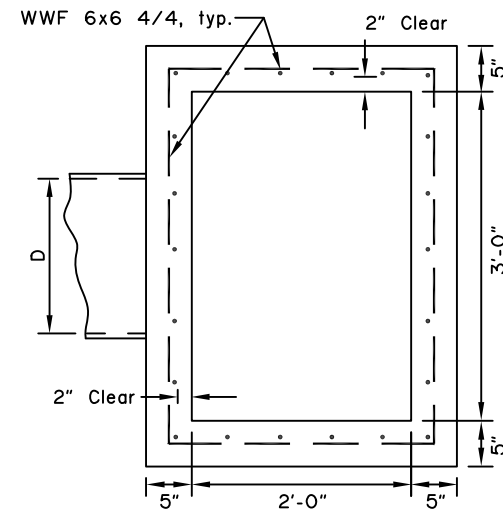
Last Code and Stds. Review
By: Date:

Next Code and Standards Review date: 02/08/2029

No. 4 Bar @ 12" c-c, typ.

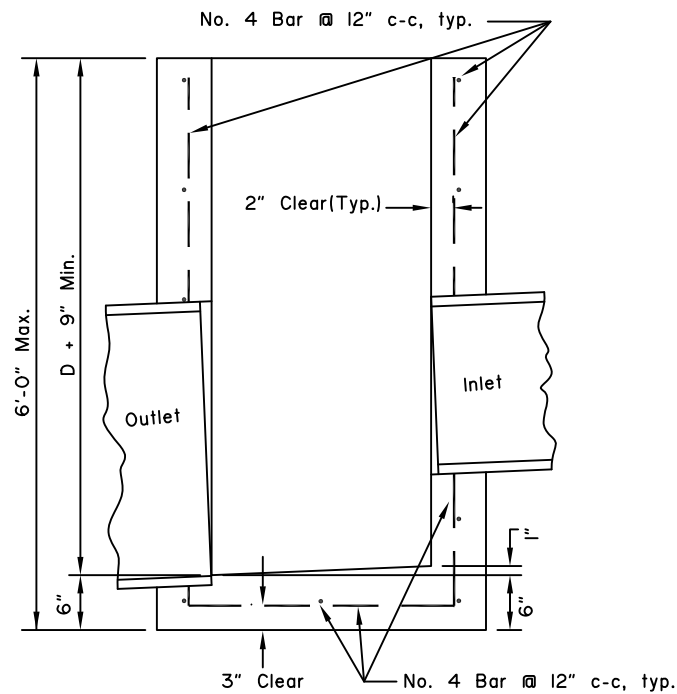


WWF 6x6 4/4, typ.

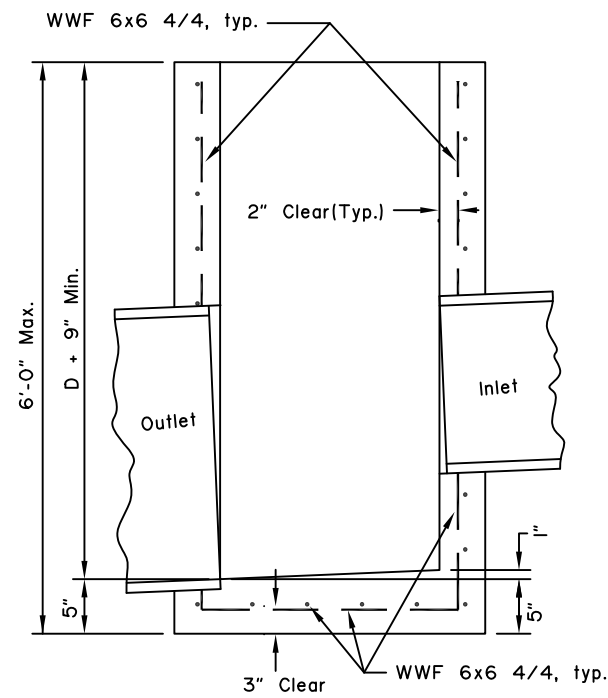


GENERAL NOTES:

1. Install inlet boxes parallel to the curb line.
2. The plans will indicate which inlet boxes require a sump.
3. Shape floors to drain.
4. Use Grade 40 minimum reinforcing steel.
5. The plans will indicate which inlet boxes require sumps.



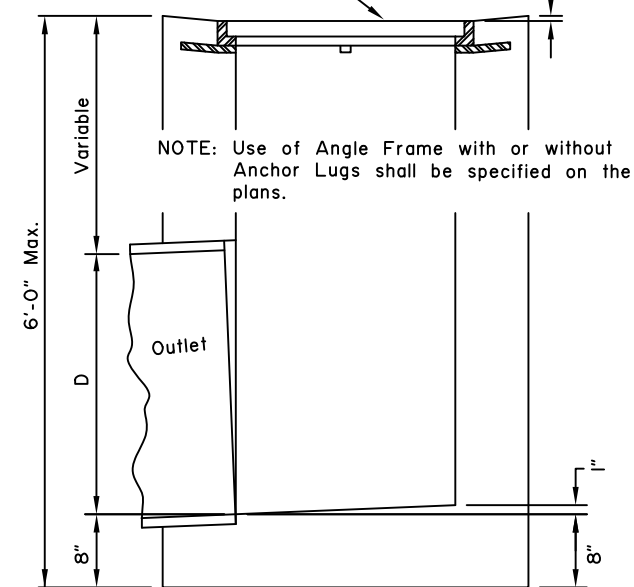
REINFORCED
CAST IN PLACE



PRECAST

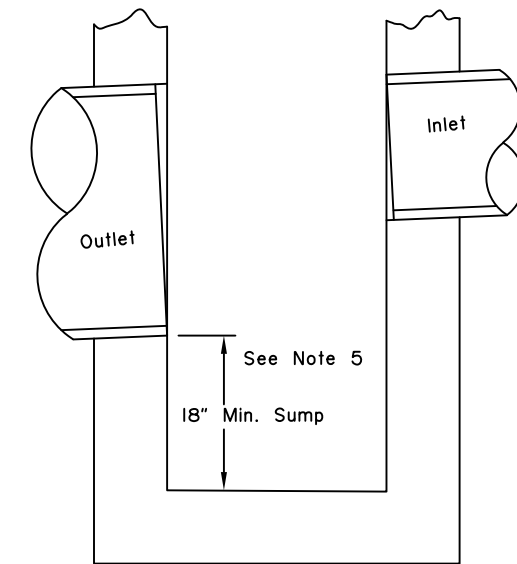
TYPE "A" CONCRETE INLET BOXES

Angle Frame 3/4" Depressed



FIELD INLET BOX
CAST* IN PLACE

* May be Precast or Reinforced
Cast-In-Place Box.



SUMP DETAIL

State of Alaska DOT&PF
ALASKA STANDARD PLAN

TYPE "A"
INLET BOX

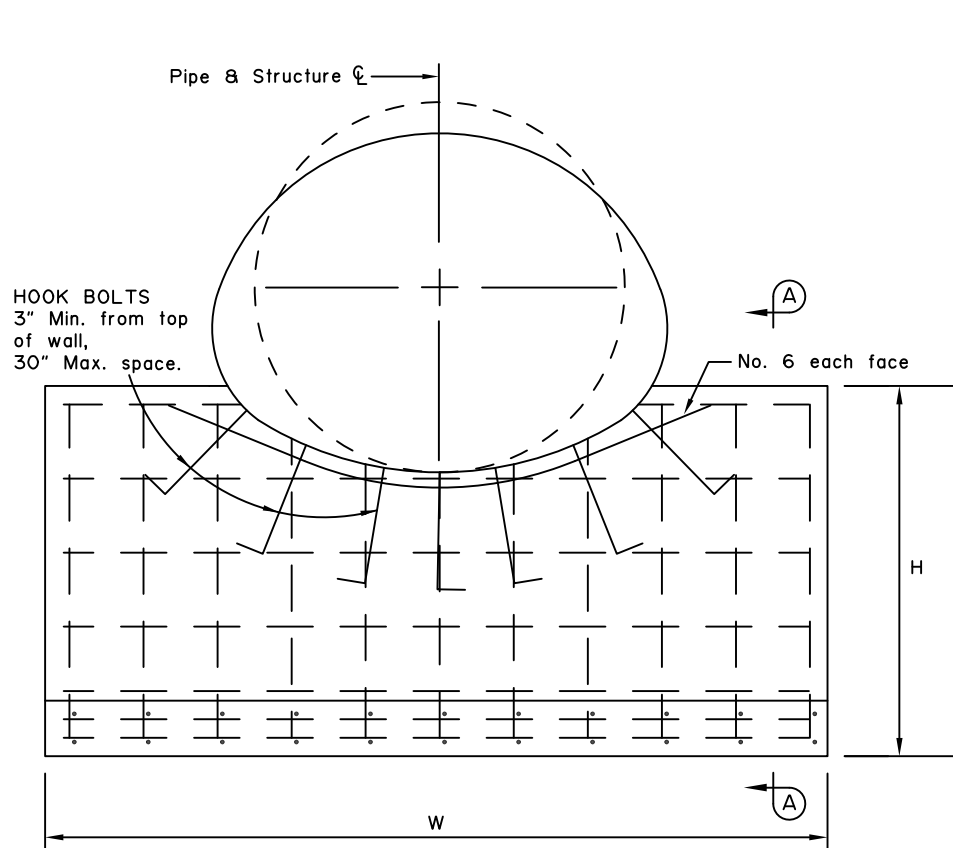
Adopted as an Alaska
Standard Plan by: *Kenneth J. Fisher*
Kenneth J. Fisher, P.E.
Chief Engineer

Adoption Date: 02/08/2019

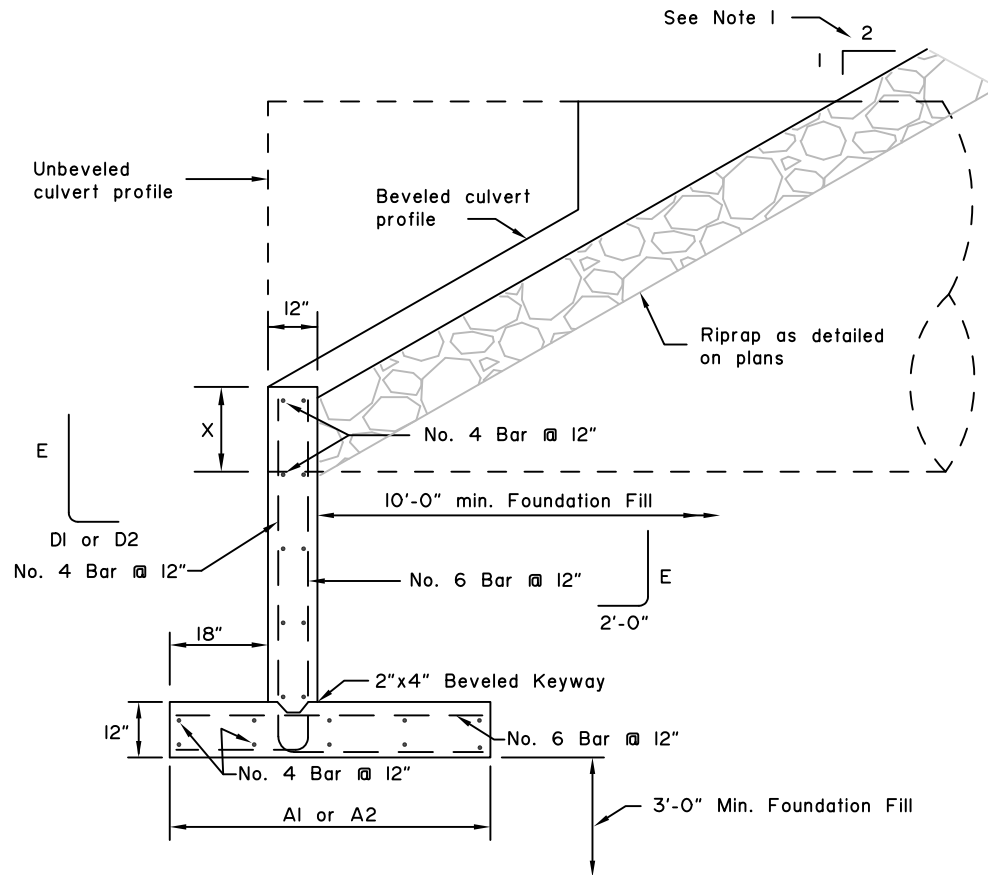
Last Code and Stds. Review
By: Date:

Next Code and Standards Review date: 02/08/2029

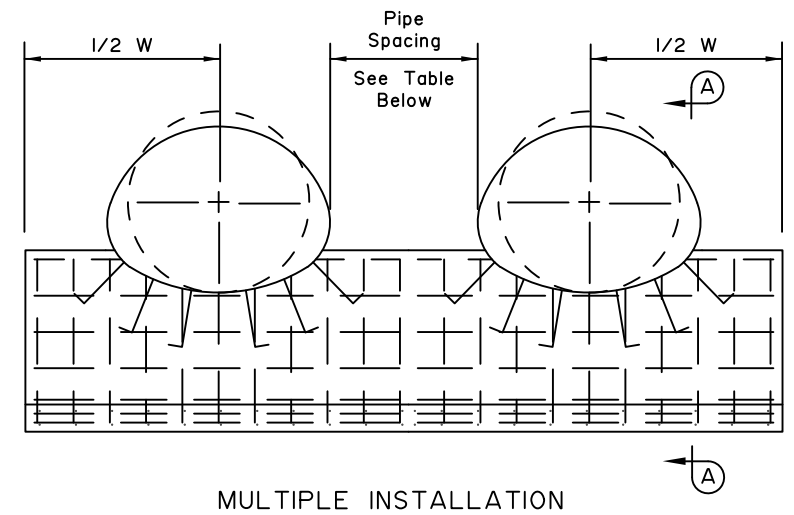
NOT TO SCALE



ELEVATION



SECTION A-A



MULTIPLE INSTALLATION

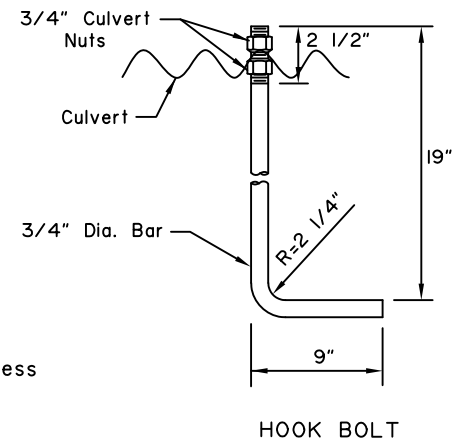
Minimum Space Between Pipes
1/2 Dia. of Pipe or 1/2 Span of Pipe Arch, 24" Min.

CORRUGATED METAL PIPE * SEE NOTE II							
Dia.	W	H	A1*	A2*	D1*	D2*	E
5'-0"	9'-0"	4'-0"	4'-0"	4'-0"	2'-0"	2'-0"	3'-6"
5'-6"	10'-0"	4'-6"	4'-0"	4'-0"	2'-0"	2'-0"	4'-0"
6'-0"	11'-0"	4'-6"	4'-0"	4'-0"	2'-0"	2'-0"	4'-0"
6'-6"	12'-0"	4'-6"	4'-0"	4'-0"	2'-0"	2'-0"	4'-0"
7'-0"	12'-6"	4'-6"	4'-0"	4'-0"	2'-0"	2'-0"	4'-0"
7'-6"	13'-6"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"
8'-0"	14'-6"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"
8'-6"	15'-6"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"
9'-0"	16'-6"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"
9'-6"	17'-0"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"
10'-0"	18'-0"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"
10'-6"	19'-0"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"
11'-0"	20'-0"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"
11'-6"	21'-0"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"
12'-0"	21'-6"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"
12'-6"	22'-6"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"
13'-0"	23'-6"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"
13'-6"	24'-6"	6'-0"	5'-6"	4'-0"	3'-6"	2'-0"	5'-6"
14'-0"	25'-6"	6'-6"	6'-0"	4'-0"	4'-0"	2'-0"	6'-0"
14'-6"	26'-0"	6'-6"	6'-0"	4'-0"	4'-0"	2'-0"	6'-0"
15'-0"	27'-0"	6'-6"	6'-0"	4'-0"	4'-0"	2'-0"	6'-0"

CORRUGATED METAL PIPE ARCH * SEE NOTE II									
SPAN	RISE	W	H	A1*	A2*	D1*	D2*	E	
6'-1"	4'-7"	14'-0"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"	
6'-4"	4'-9"	14'-6"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"	
6'-9"	4'-11"	15'-0"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"	
7'-0"	5'-1"	15'-6"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"	
7'-3"	5'-3"	16'-0"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"	
7'-8"	5'-5"	16'-6"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"	
7'-11"	5'-7"	17'-0"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"	
8'-2"	5'-9"	17'-6"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"	
8'-7"	5'-11"	18'-0"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"	
8'-10"	6'-1"	18'-6"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"	
9'-4"	6'-3"	19'-0"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"	
9'-6"	6'-5"	19'-6"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"	
9'-9"	6'-7"	20'-0"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"	
10'-3"	6'-9"	20'-6"	5'-0"	4'-6"	4'-0"	2'-6"	2'-0"	4'-6"	
10'-8"	6'-11"	21'-0"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
10'-11"	7'-1"	21'-6"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
11'-5"	7'-3"	22'-0"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
11'-7"	7'-5"	22'-6"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
11'-10"	7'-7"	23'-0"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
12'-4"	7'-9"	23'-6"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
12'-6"	7'-11"	24'-0"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
12'-8"	8'-1"	24'-6"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
12'-10"	8'-4"	25'-0"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
13'-5"	8'-5"	25'-6"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
13'-11"	8'-7"	26'-0"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
14'-1"	8'-9"	26'-6"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
14'-3"	8'-11"	27'-0"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
14'-10"	9'-1"	27'-6"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
15'-4"	9'-3"	28'-0"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
15'-6"	9'-5"	28'-6"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
15'-8"	9'-7"	29'-0"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
15'-10"	9'-10"	29'-6"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
16'-5"	9'-11"	30'-0"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	
16'-7"	10'-1"	30'-6"	5'-6"	5'-0"	4'-0"	3'-0"	2'-0"	5'-0"	

GENERAL NOTES:

- For use on 2:1 or flatter backfill slopes only.
- See plans for pipe beveling requirements. See Std. Dwg. D-07 for "X" dimension and culvert beveling geometry.
- Use Class A concrete.
- Use epoxy-coated ASTM A706, Grade 60 reinforcing steel $f_y=60,000$ psi.
- Place reinforcement 3" clear from surface of concrete unless otherwise noted.
- Chamfer all exposed concrete corners 3/4".
- If unsuitable foundation material is encountered, remove and backfill with Foundation Fill as directed by the Engineer.
- Furnishing and installing hook bolts in place is incidental to Class A concrete.
- Use galvanized ASTM A307 hook bolts and nuts. Torque culvert nuts to 140 ft-lbs.
- Headwalls for skewed culverts to be parallel to road centerline. See plans for dimensions of openings in headwalls for skewed culverts.
- For backfill soil with:
 $\phi=30^\circ, \gamma=130$ pcf
Use A1 and D1
 $\phi=34^\circ, \gamma=135$ pcf
Use A2 and D2



State of Alaska DOT&PF
ALASKA STANDARD PLAN
HEADWALLS
CAST-IN-PLACE
TYPE I

Adopted as an Alaska
Standard Plan by: *Kenneth J. Fisher, P.E.*
Kenneth J. Fisher, P.E.
Chief Engineer

Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

Next Code and Standards Review date: 02/08/2029

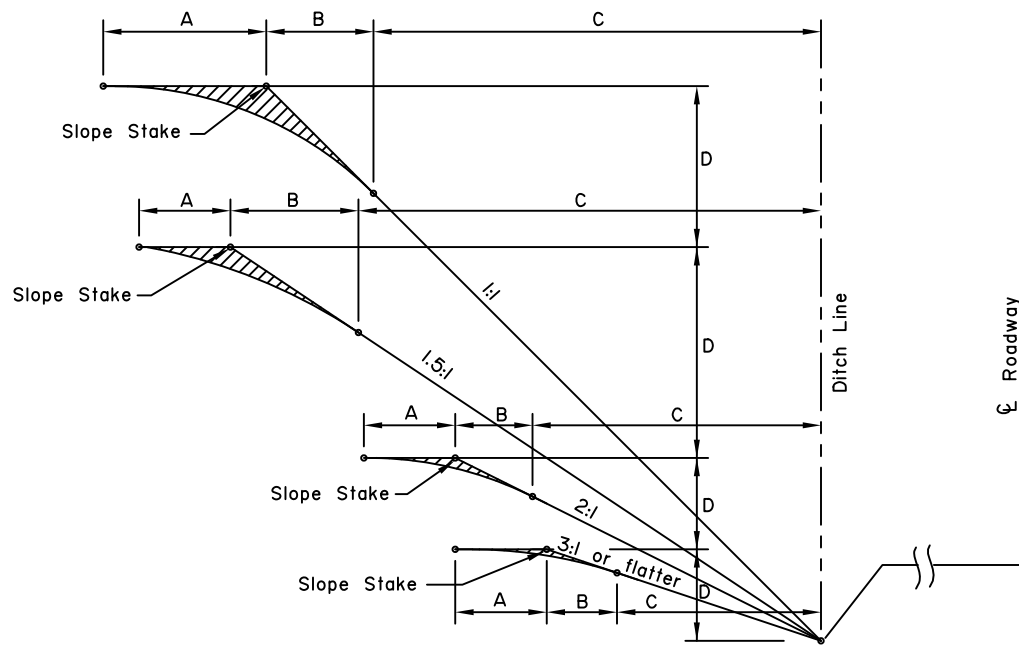


FIG. 1
TYPICAL SECTION OF ROUNDED SLOPES

Rate of Slope	A		B	
	When B's 5.0' or less	When B is more than 5.0'	When D's 15.0' or less	When D is more than 15.0'
3:1 or flatter	B	5.0'	5.0'	5.0'
2:1	B	5.0'	5.0'	D/3
1.5:1	B	5.0'	5.0'	D/3
1:1	B	$\frac{D}{3}$, Max. 10.0'		D/3

GENERAL NOTES

- Cut and fill slopes shall be rounded as shown in fig. 1, 2, and 3 when required by the plans or special provisions. Rounding of fill slopes shall be done in the same manner as shown for cut slopes.
- Intersections of cut and fill slopes shall be warped as shown in fig. 4 and 5 when required by the plans or special provisions.
- Warping of cut and fill slopes is for the purpose of attaining a more pleasing appearance and to promote the growth of natural vegetation by causing the fill slope to flow smoothly into the cut slope. The length of slope warping is relatively proportional to the character of the topography, the distance between end limits of warped surfaces being lessened as the terrain steepens and lengthened as the topography flattens out. The procedure as outlined herein is typical and shall be varied to meet special conditions and shall be as staked by the Engineer.
- SUGGESTED PROCEDURE FOR WARPING SLOPING

A--Select end points for warping to fit specified slope ratios as follows:-

 - The dimensions A, B, and C shall all be constant throughout the full length of warping, E.
 - When the average depth of cut or fill is such that the dimension B+C exceeds 10 feet, the ends of warping shall be at points where B+C is 10 feet, provided the warping distance E does not exceed 100 feet. That is, as shown in fig. 4 and 5, warping shall begin at a cut or fill depth of 6.7 feet for 1.5:1 slopes, at 50 feet for 2:1 slopes, etc. if the dimension E exceeds 100 feet, the dimension B+C shall be reduced until the intersections of the prescribed slopes with the natural ground are 100 feet apart.
 - When the average depth of cut or fill is such that the distance B+C is between 5 feet and 10 feet, the ends of warping shall be at points where C is 0 feet, but such points shall not be more than 150 feet apart.
 - When the average depth of cut or fill is such that the dimension B is less than 5 feet, the ends of warping shall be 200 feet apart.

B--Set slope stakes at end of warping.

C--Set additional slope stakes at various intervals between end stakes and at the same distance from centerline.

D--Flatten and round warped slopes as shown in figure 4 for each section.
- A layer of earth overlying a rock cut shall be rounded as far as possible as though the total height of slope were in earth cut.

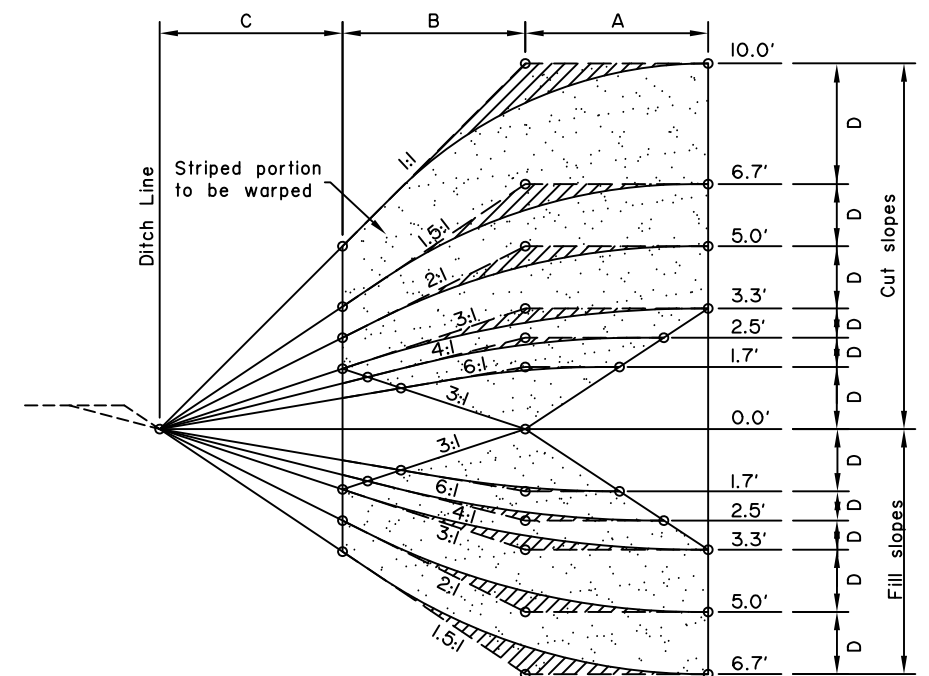


FIG. 4
TYPICAL GRADING FOR WARPING SLOPES

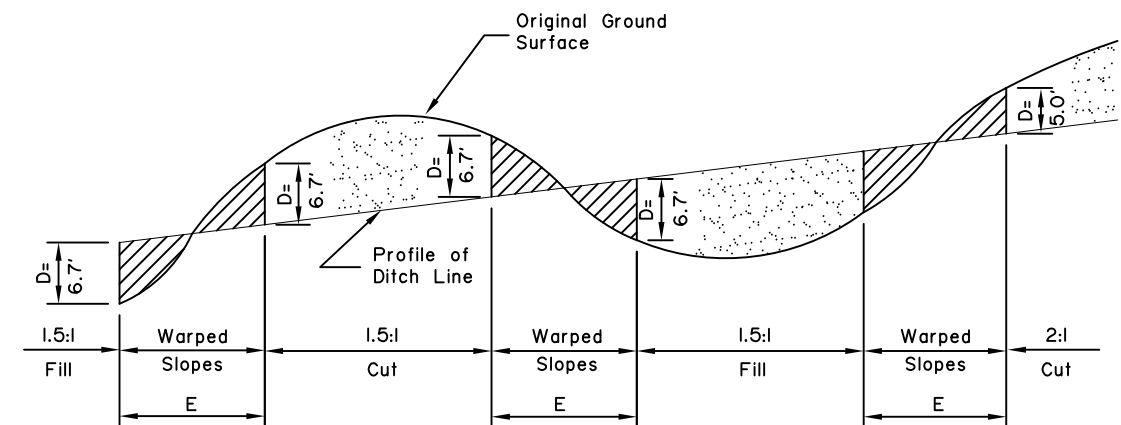


FIG. 5
TYPICAL PROFILE OF WARPED SLOPES

TYPICAL SLOPE WARPING

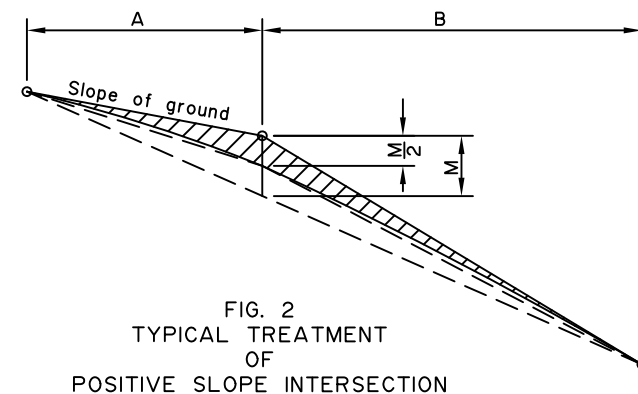


FIG. 2
TYPICAL TREATMENT
OF
POSITIVE SLOPE INTERSECTION

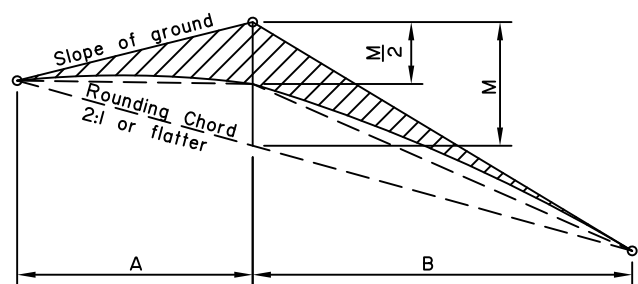
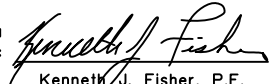


FIG. 3
TYPICAL TREATMENT
OF
NEGATIVE SLOPE INTERSECTION

TYPICAL SLOPE ROUNING

State of Alaska DOT&PF
ALASKA STANDARD PLAN
SLOPE
ROUNDING AND WARPING

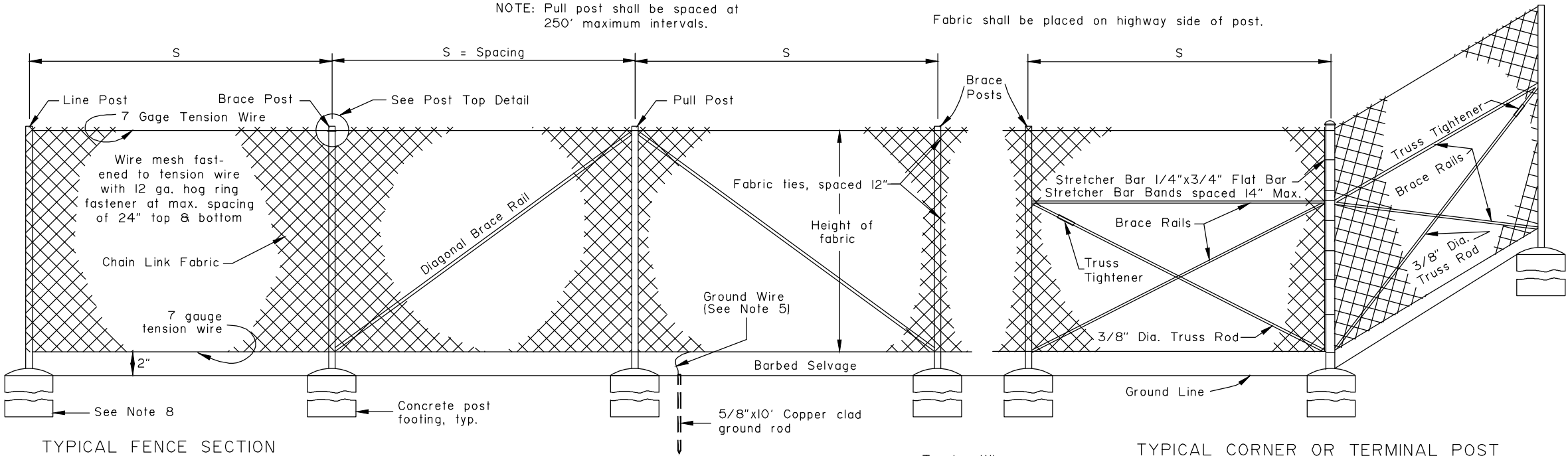
Adopted as an Alaska
Standard Plan by: 
Kenneth J. Fisher, P.E.
Chief Engineer

Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

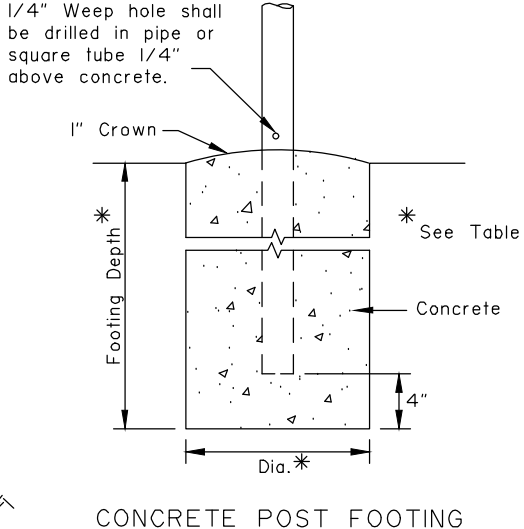
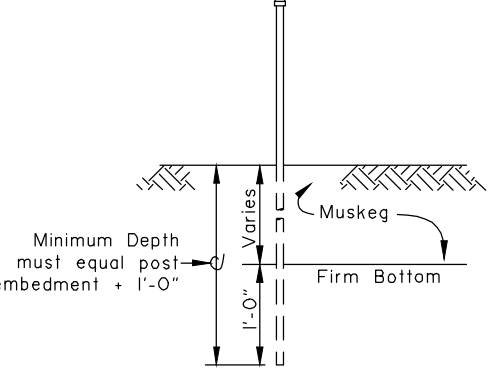
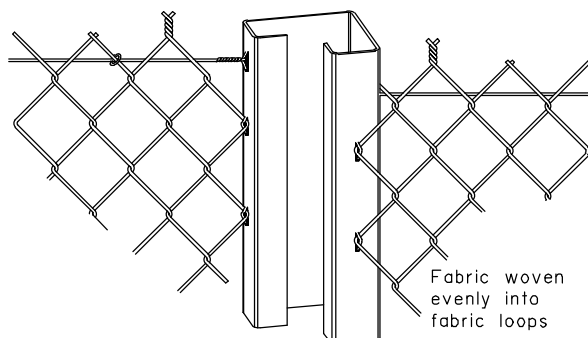
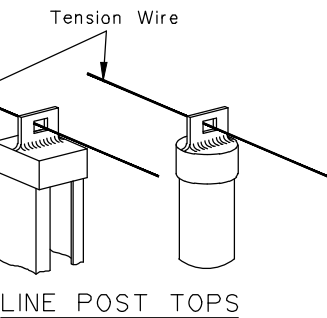
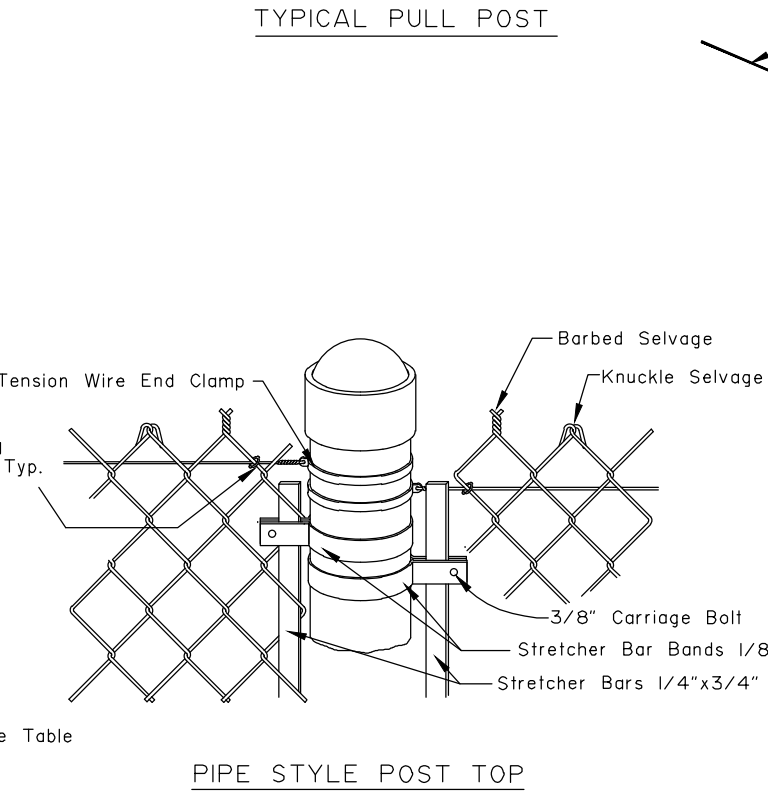
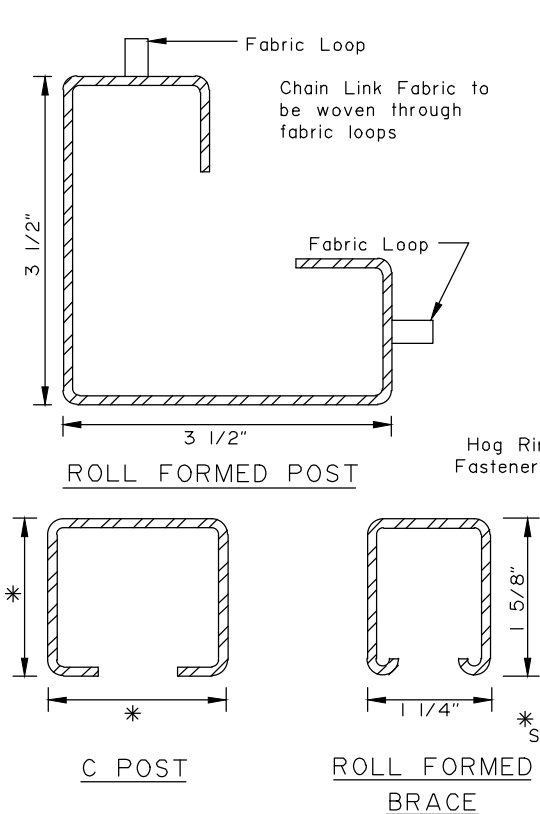
Next Code and Standards Review date: 02/08/2029

NOTE: Pull post shall be spaced at 250' maximum intervals.
Fabric shall be placed on highway side of post.

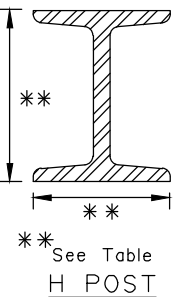


GENERAL NOTES:

- 1. Use equal pole spacing (S). Maximum pole spacing is 10 feet unless directed otherwise by the Engineer.
- 2. Securely fasten post tops to post.
- 3. Securely fasten brace rails and truss rods to post with brace bands.
- 4. Provide truss rods with a tensioning adjusting mechanism.
- 5. Attach ground wire to fence fabric with a split bolt.
- 6. Stretch fabric to a smooth uniform appearance.
- 7. Details shown indicate general design and dimensions may vary among manufacturers.
- 8. Set line, pull, corner, and terminal posts in concrete footings unless in muskeg or shown otherwise in the plans.



FABRIC HEIGHT	POST														TOP OR BRACE RAIL								ALTERNATE POST	
	END-CORNER-PULL								LINE-BRACE														LINE-BRACE	
	PIPE		SQUARE TUBE		ROLL FORMED		FOOTING		PIPE		C POST		FOOTING		PIPE		ROLL FORMED		H POST		H POST			
	SIZE	WT/FT.	SIZE	WT/FT.	SIZE	WT/FT.	DEPTH	DIA.	SIZE	WT/FT.	SIZE	WT/FT.	DEPTH	DIA	SIZE	WT/FT.	SIZE	WT/FT.	SIZE	WT/FT.	SIZE	WT/FT.		
3'	2"	3.65 #	2" x 2"	4.31 #	3 1/2"x3 1/2"	4.84 #	40"	10"	1 1/2"	2.72 #	1 7/8"x1 5/8"	2.28 #	28"	10"	1 1/4"	2.27 #	1 5/8"	1.35 #	1 1/2"x 1 5/16"	2.27 #	1 7/8"x1 5/8"	2.72 #		
4'	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
5'	2"	3.65 #	2" x 2"	4.31 #	3 1/2"x3 1/2"	4.84 #	40"	10"	1 1/2"	2.72 #	1 7/8"x1 5/8"	2.28 #	28"	10"	"	"	"	"	"	"	1 7/8"x1 5/8"	2.72 #		
6'	2 1/2"	5.79 #	2 1/2"x2 1/2"	5.59 #	3 1/2"x3 1/2"	4.84 #	48"	15"	2"	3.65 #	2 1/4"x1 45/64"	2.64 #	40"	12"	"	"	"	"	"	"	2 1/4"x2"	4.1 #		
7'	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
8'	2 1/2"	5.79 #	2 1/2"x2 1/2"	5.59 #	3 1/2"x3 1/2"	4.84 #	48"	15"	2"	3.65 #	2 1/4"x1 45/64"	2.64 #	40"	12"	"	"	"	"	"	"	2 1/4"x2"	4.1 #		



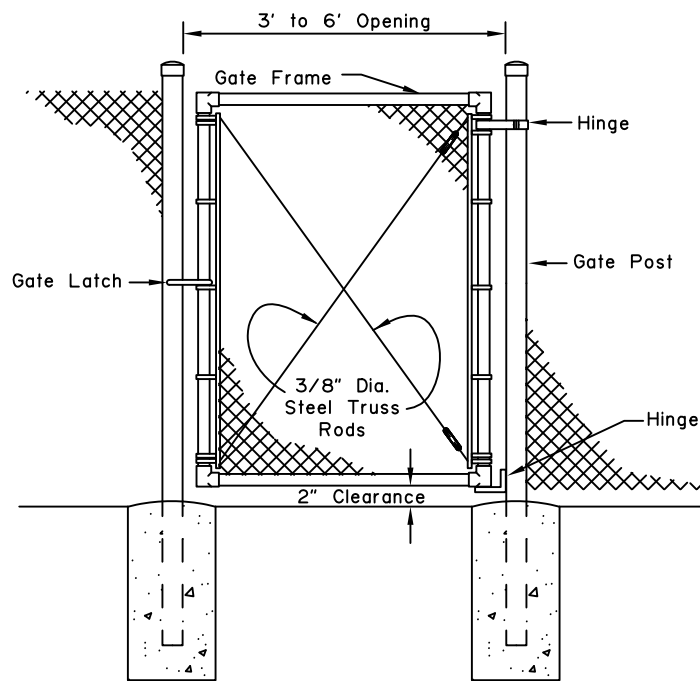
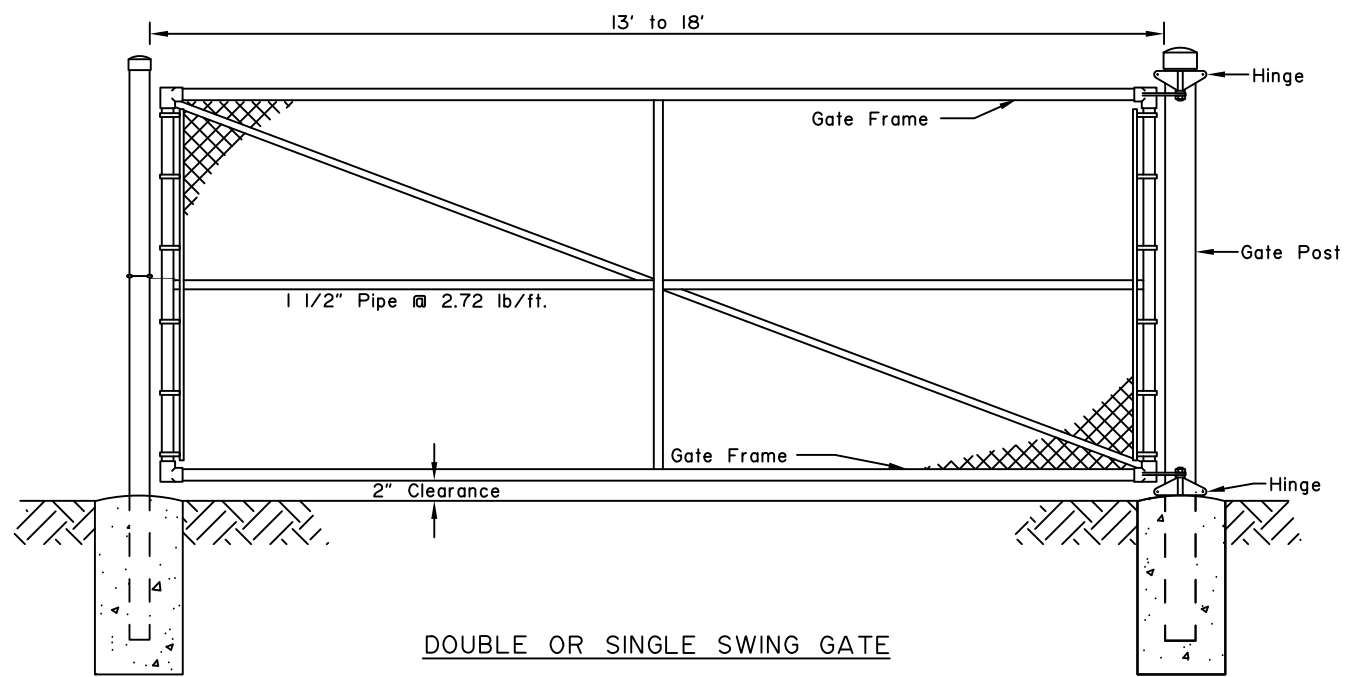
State of Alaska DOT&PF
ALASKA STANDARD PLAN
CHAIN LINK FENCE

Adopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

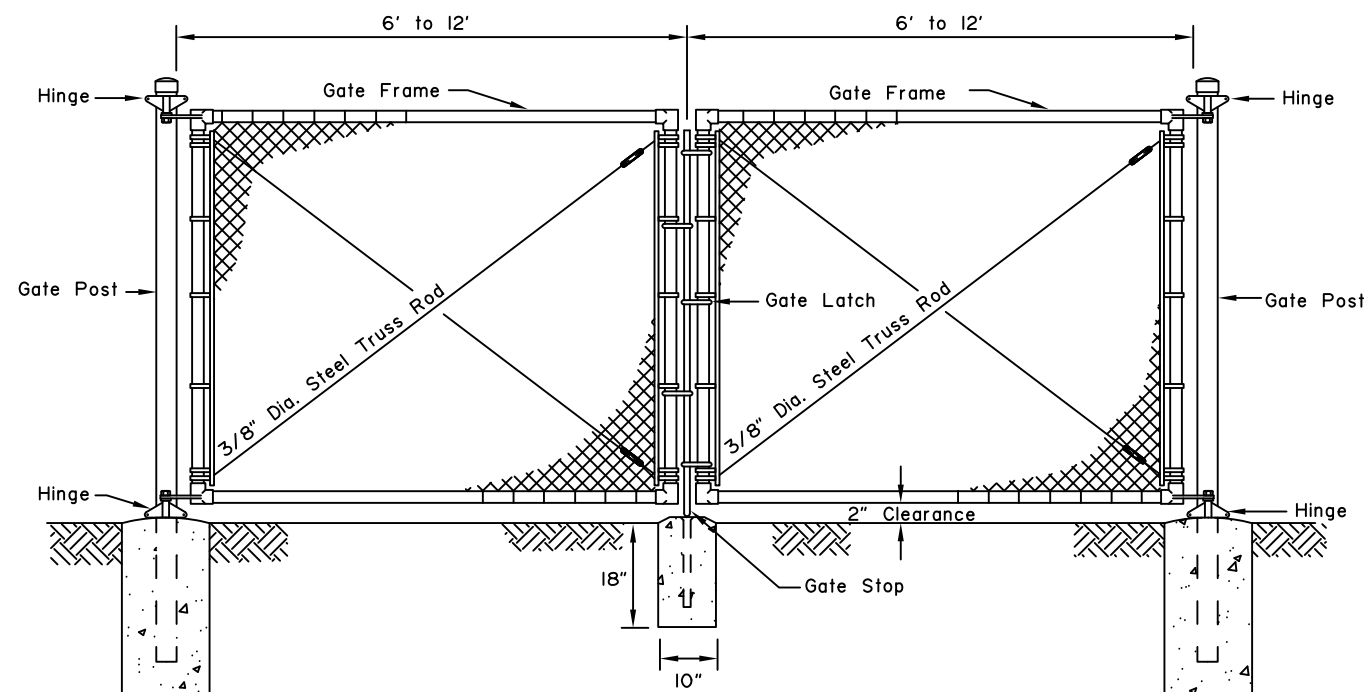
Last Code and Stds. Review
By: KLH Date: 7/8/2020

Next Code and Standards Review date: 7/8/2030

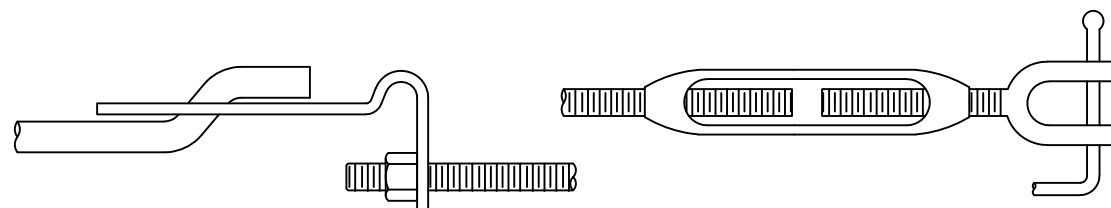


GENERAL NOTES:

1. Details shown are to indicate general design only. Dimensions may vary slightly among the manufacturers.
2. Gate fabric shall be of the same design and height of line fence fabric.
3. Gate fabric shall be furnished with knuckle selvage top and bottom.
4. Concrete footings shall be of the same depth as end posts with a diameter 1 1/2 times larger except as shown for gate stop.
5. Gate frames may be fabricated by welding or riveting and shall be braced to eliminate sagging. Hinges, latches and other gate appurtenances shall be of sufficient strength and design to assure easy trouble free operation.



Gate Fabric Height	Gate Opening		GATE POST						GATE FRAME			
	SINGLE GATE	DOUBLE GATE	ST'D PIPE		SQUARE TUBE		ROLL FORMED		ST'D PIPE		SQUARE TUBE	
			SIZE	WT/FT.	SIZE	WT/FT.	SIZE	WT/FT.	SIZE	WT/FT.	SIZE	WT/FT.
3' to 5'	3' to 6'	6' to 12'	2"	3.65 #	2" x 2"	4.31 #	3 1/2"x3 1/2"	5.14 #	1 1/2"	2.72 #	2" x 2"	4.31 #
"	7' to 12'	13' to 24'	2 1/2"	5.79 #	2 1/2"x2 1/2"	5.59 #	" "	" "	" "	" "	" "	" "
"	13' to 18'	25' to 36'	"	"	" "	"	" "	" "	" "	" "	" "	" "
6' to 8'	3' to 6'	6' to 12'	2 1/2"	5.79 #	2 1/2"x2 1/2"	5.59 #	3 1/2"x3 1/2"	5.14 #	1 1/2"	2.72 #	" "	" "
"	7' to 12'	13' to 24'	3 1/2"	9.11 #	3 1/2"x3 1/2"	8.14 #	————	————	2"	3.65 #	" "	" "
"	13' to 18'	25' to 36'	6"	18.97 #	6" x 6"	18.82 #	————	————	" "	" "	2" x 2"	4.31 #



DOUBLE SWING GATE

TYPICAL TRUSS ROD TIGHTENERS

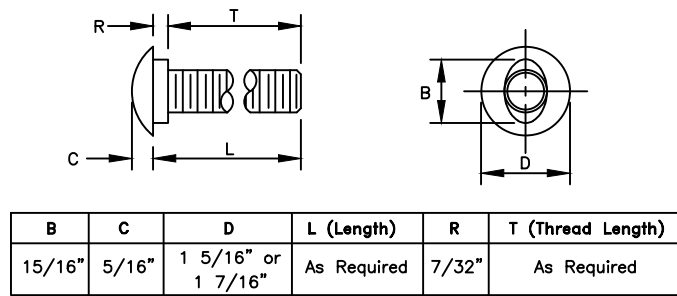
State of Alaska DOT&PF
ALASKA STANDARD PLAN
CHAIN LINK FENCE
GATE

Adopted as an Alaska
Standard Plan by: *Kenneth J. Fisher*
Kenneth J. Fisher, P.E.
Chief Engineer

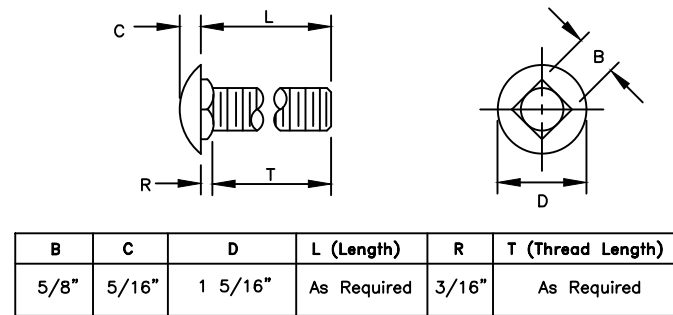
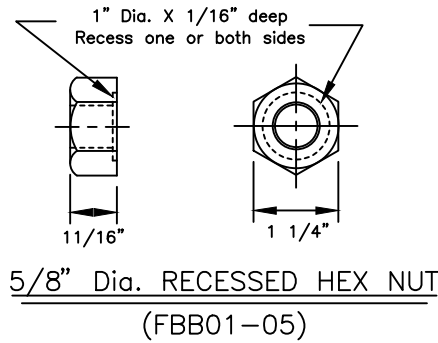
Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

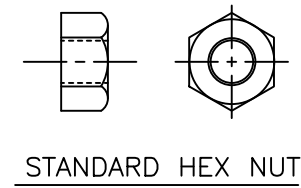
Next Code and Standards Review date: 02/08/2029



5/8" BUTTONHEAD BOLT
(FBB01-05)

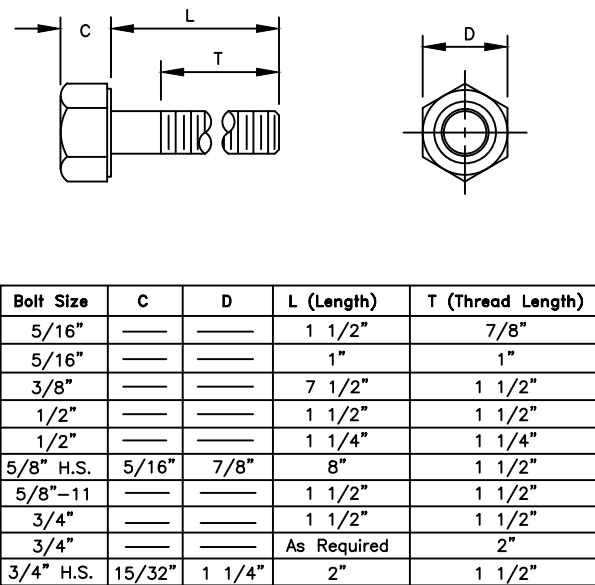


5/8" Dia. CARRIAGE BOLT
(FBC10-20)

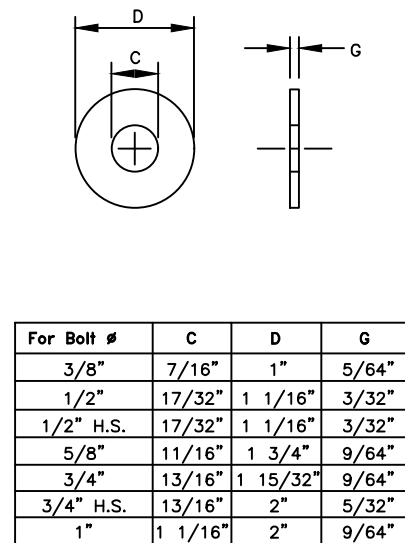


GENERAL NOTES:

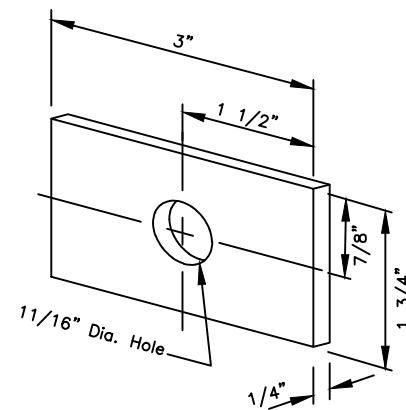
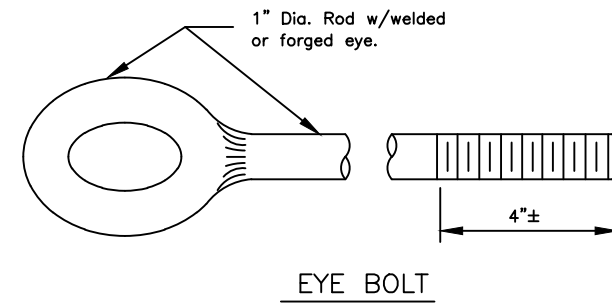
1. All covered hardware shall comply with the Task Force 13 (TF13) Guide to Standardized Roadside Safety Hardware online publication. Designators given when possible in parentheses.



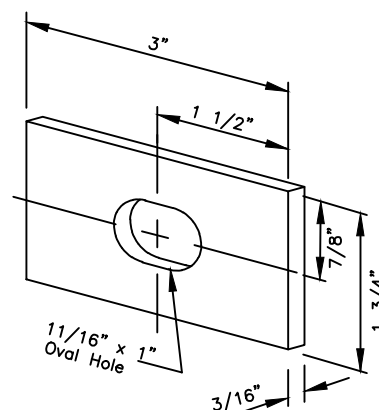
STANDARD HEX BOLTS



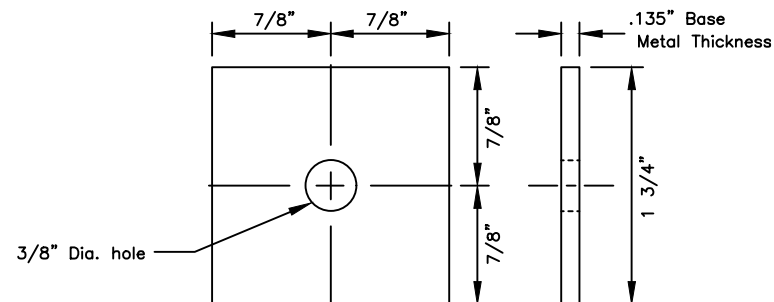
STANDARD STEEL WASHERS



FLAT PLATE WASHER



RECTANGULAR POST BOLT WASHER
(FWR03)



SQUARE STEEL WASHER
(FWR01)

State of Alaska DOT&PF
ALASKA STANDARD PLAN

STANDARD GUARDRAIL
HARDWARE
(NUTS, BOLTS & WASHERS)

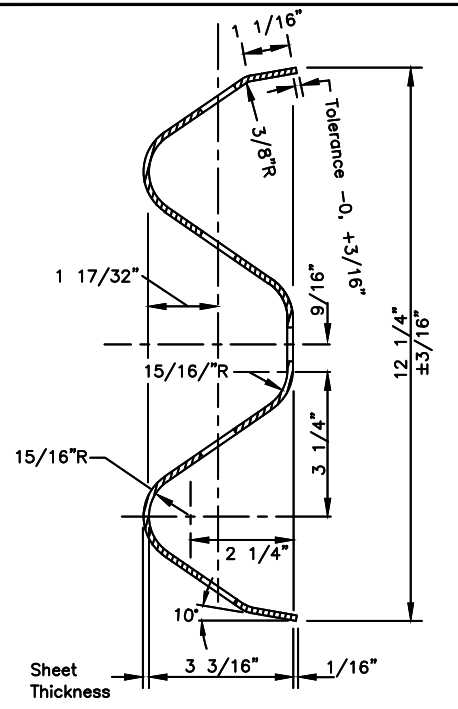
Adopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

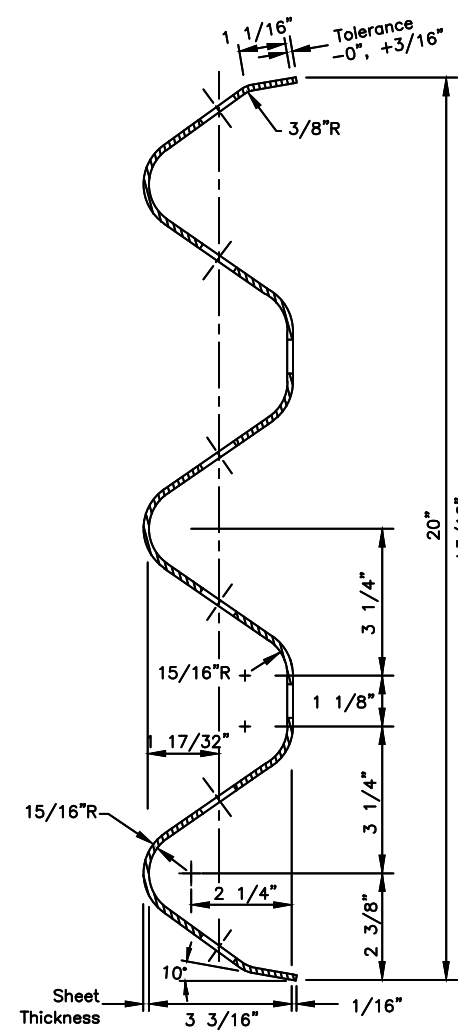
Last Code and Stds. Review
By: KLK Date: 7/8/2020
Next Code and Standards Review Date: 7/8/2030

GENERAL NOTES:

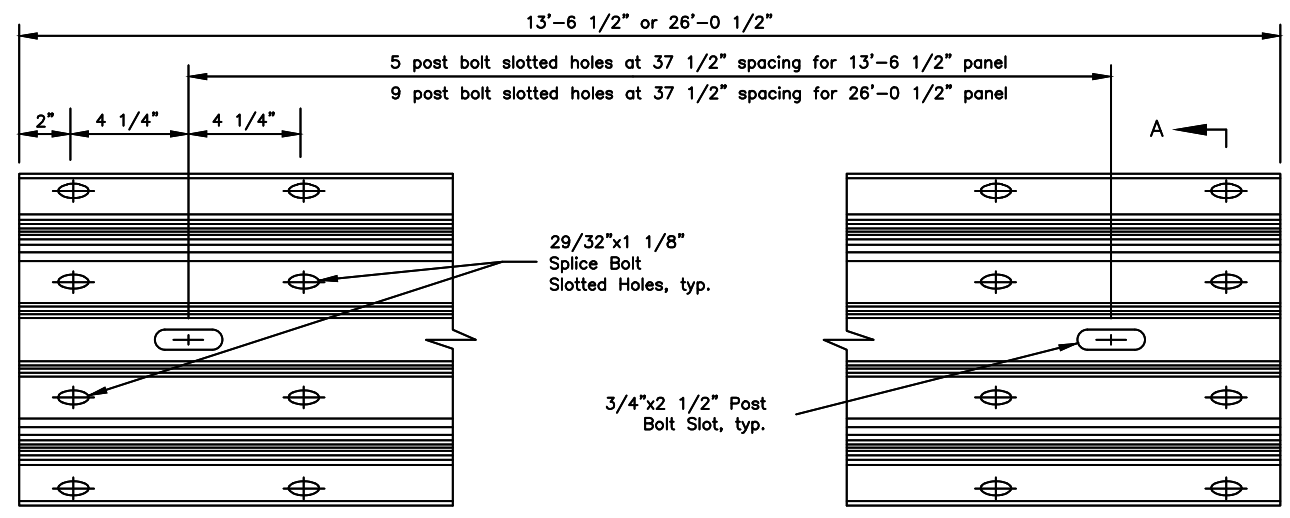
1. All covered hardware shall comply with the Task Force 13 (TF13) Guide to Standardized Roadside Safety Hardware online publication. Designators given when possible in parentheses.
2. Install back-up plates between blockouts and w-beam or thrie-beam rail at intermediate (non-splice) posts when steel blockouts are used but not with wood, rubber, plastic, or other approved blockouts.



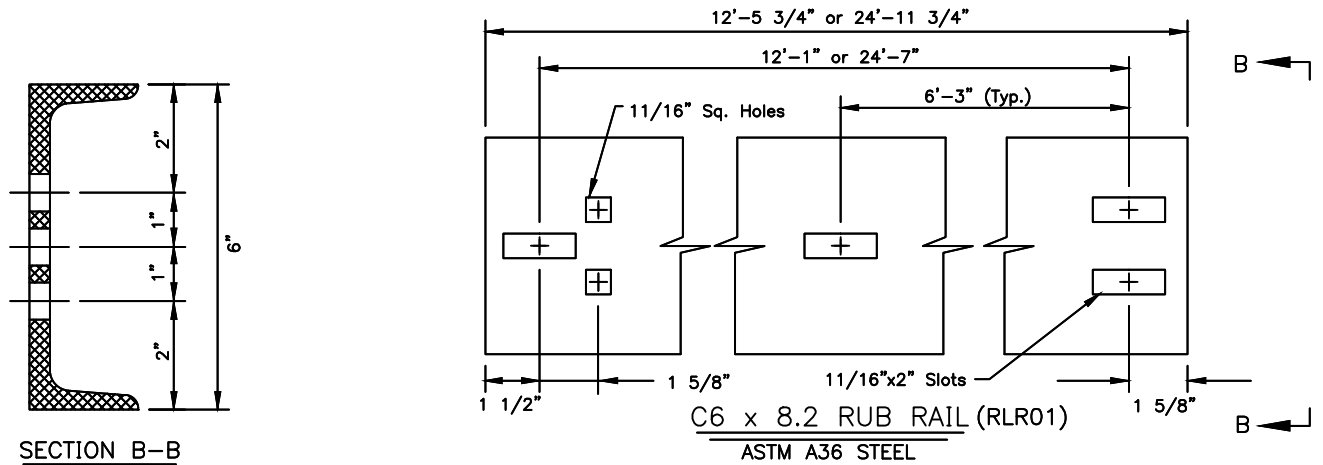
SECTION A-A
(cross section same as RWM02a-b)



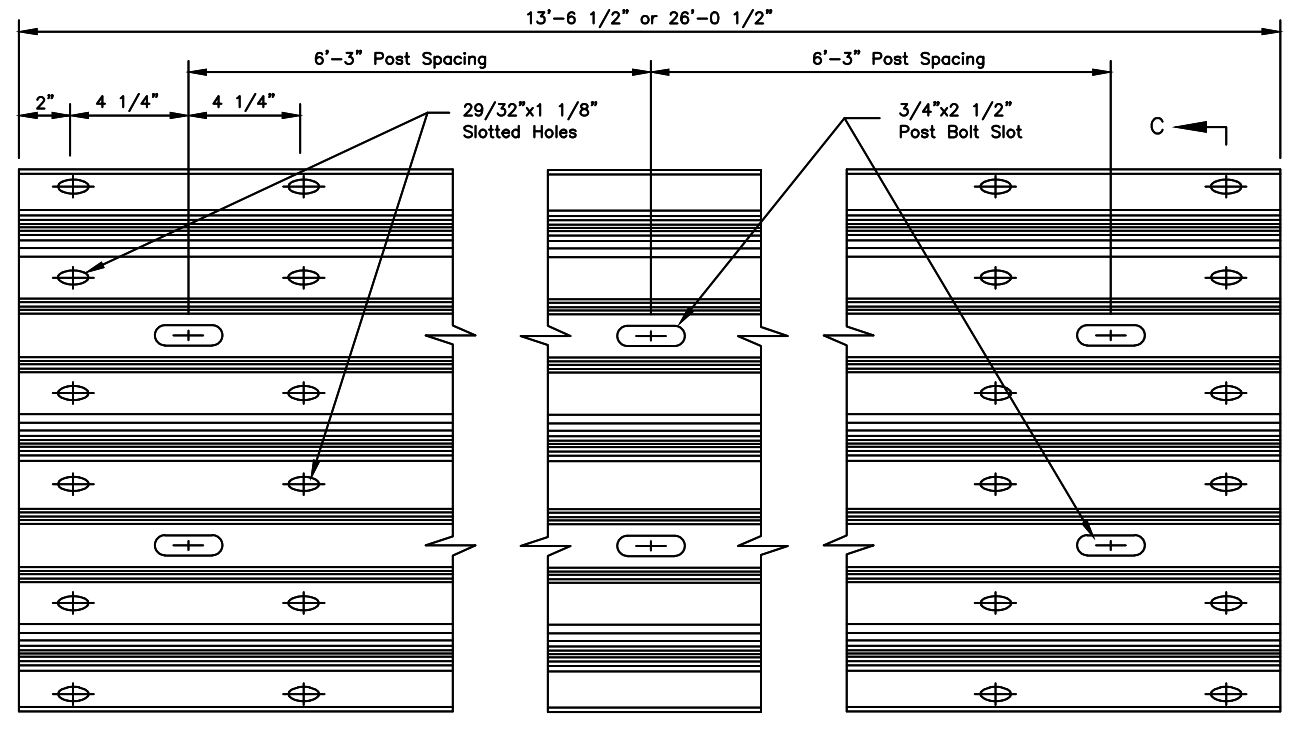
SECTION C-C
(RTM01a-02b)



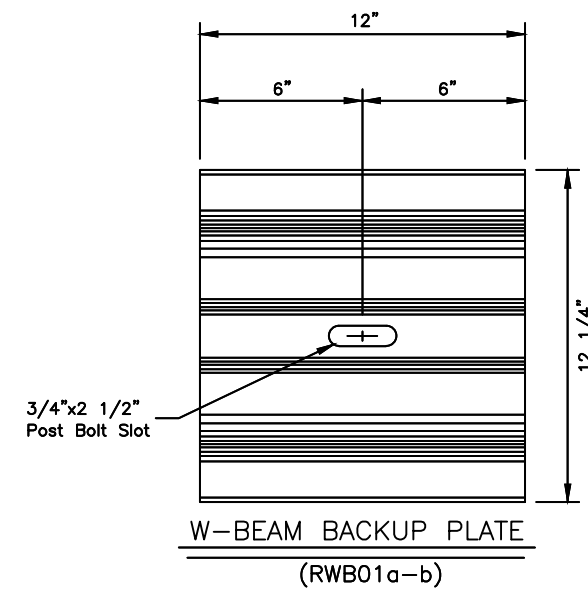
STANDARD W-BEAM PANEL (RWM04a-b)



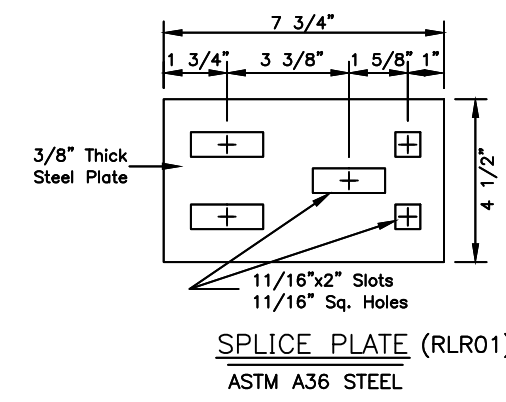
C6 x 8.2 RUB RAIL (RLR01)
ASTM A36 STEEL



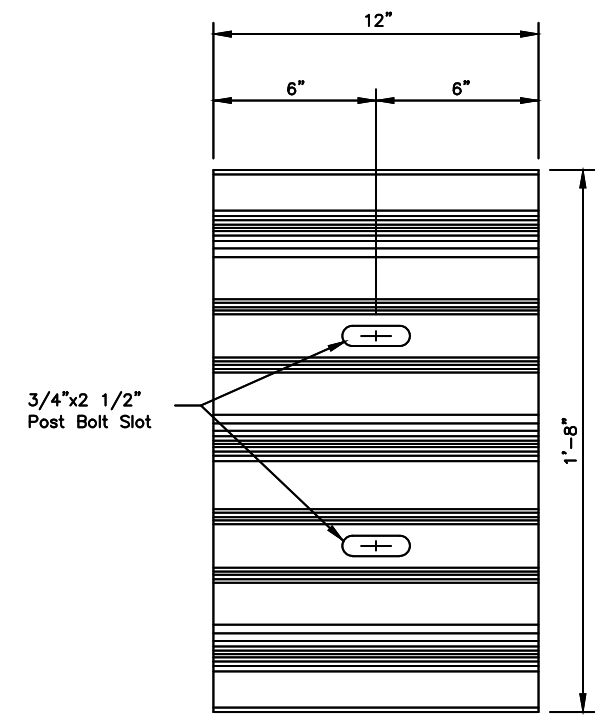
STANDARD THRIE BEAM PANEL (RTM01a-02b)



W-BEAM BACKUP PLATE
(RWB01a-b)



SPLICE PLATE (RLR01)
ASTM A36 STEEL



THRIE BEAM BACKUP PLATE
(RTB01a-02b)

State of Alaska DOT&PF
ALASKA STANDARD PLAN

STANDARD GUARDRAIL
HARDWARE
(RAILS AND SPLICES)

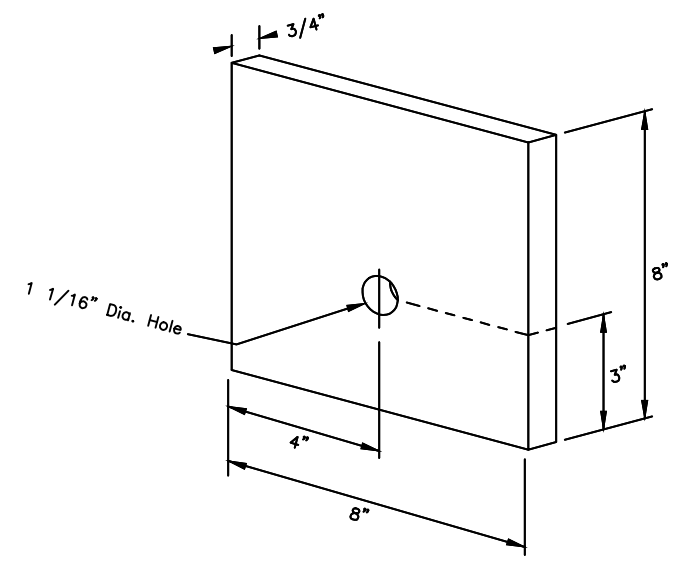
Adopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

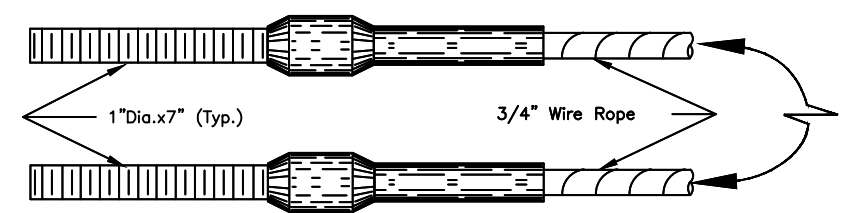
Last Code and Stds. Review
By:KLK Date: 7/8/2020
Next Code and Standards Review Date: 7/8/2030

GENERAL NOTES:

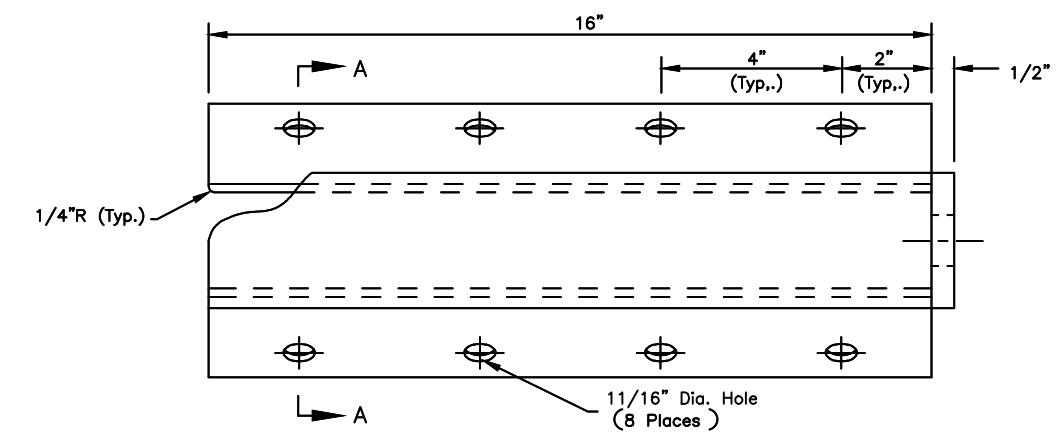
1. Cable Anchor Plate may be formed in single unit or welded fabrication.
2. Anchor Cable Assembly must conform to AASHTO M 30 with Type II Wire Rope.
3. Provide Sleeve for Wood Posts meeting the requirements of ASTM A53 and made of 2-inch galvanized standard pipe. Sleeve shall be a tight, pressed fit in post.
4. Attach radius ID plates to all shop-bent guardrail sections. Bolt the ID plates to the back side of the guardrail panel with the lower splice bolt nearest the P.C. of the radius.
5. Show the Rail bend radius, in feet, as "XX" on the radius ID plate. Digits shall be etched or stamped and have a min. height of 1 1/2" and a max. width of 3/4". Galvanize the plate after the digits are marked.
6. All covered hardware shall comply with the Task Force 13 (TF13) Guide to Standardized Roadside Safety Hardware online publication. Designators given when possible in parentheses.



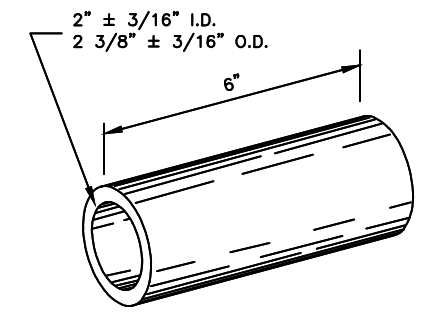
BEARING PLATE for CRT TERMINAL ANCHOR
(FPB01)



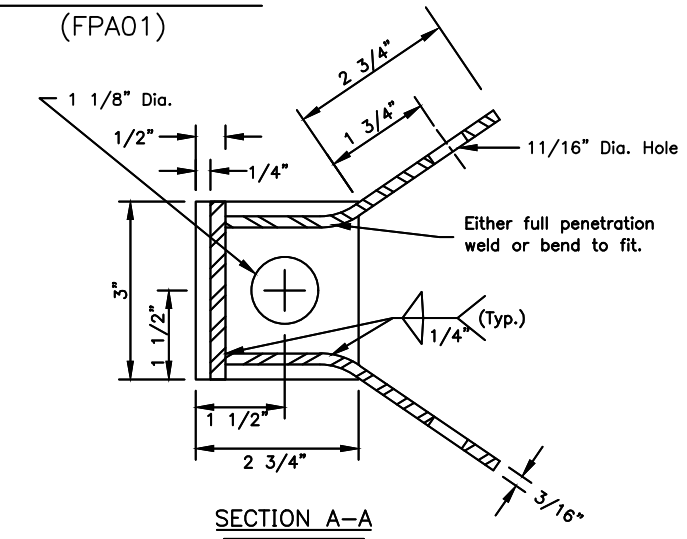
SWAGED FITTING DETAIL
(FCA01-02)



CABLE ANCHOR PLATE
(FPA01)

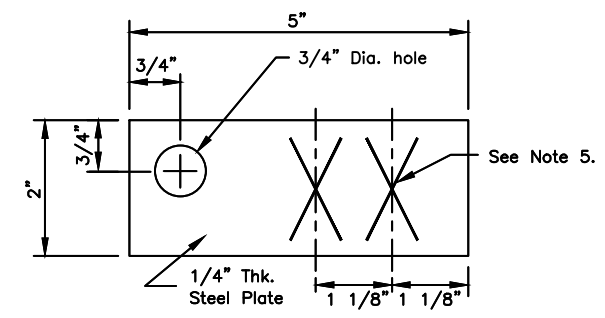


SLEEVE DETAIL
(FMM02)

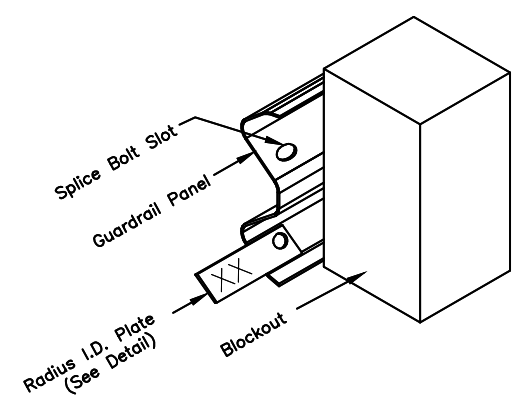


SECTION A-A

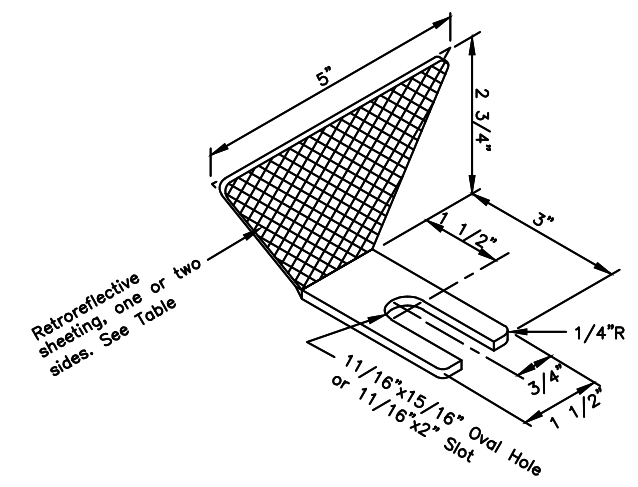
CONTROLLED RELEASE TERMINAL HARDWARE DETAILS



RADIUS I.D. PLATE



RADIUS I.D. PLATE
MOUNTING DETAIL



GUARDRAIL REFLECTOR

Guardrail Reflector Table		
Type	Color	Reflectorized
A	White	Front & Rear
B	White	Front
C	Yellow	Front
D	Yellow	Front & Rear

State of Alaska DOT&PF
ALASKA STANDARD PLAN

STANDARD GUARDRAIL
HARDWARE
(MISCELLANEOUS)

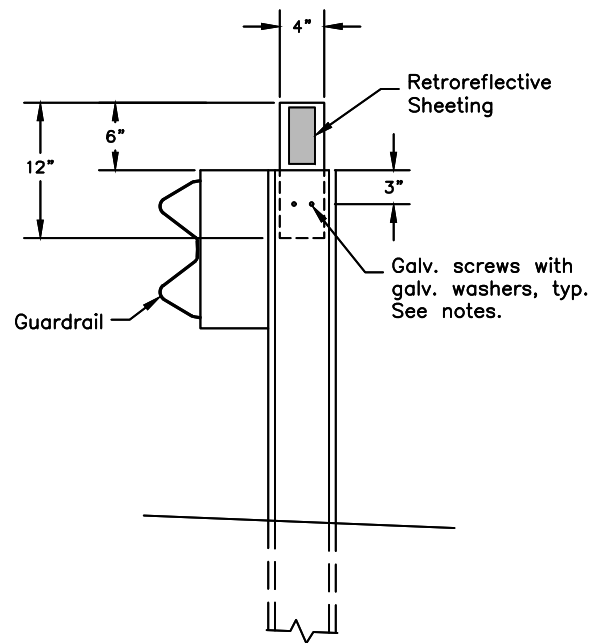
Adopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLK Date: 7/8/2020

Next Code and Standards Review Date: 7/8/2030

G-00.05



GUARDRAIL FLEXIBLE DELINEATOR DETAIL

(Steel post shown – similar for wood post)

CONSTRUCTION NOTES

1. Install guardrail flexible delineators where shown on the plans.
2. Install guardrail flexible delineators at 50 foot spacing, unless otherwise noted on the plans. Install not less than 2 delineators per guardrail run.
3. Use 3" x 5" white/yellow/red retroreflective sheeting as required per Standard Plan T-05. Install retroreflective sheeting on both sides of delineator on two-way roads.
4. Attach 4" x 12" flexible delineators to the top of new guardrail posts, on the trailing side of the posts relative to the adjacent lane's direction of travel.
5. Use 2 each 1/4" dia. x 1-1/2" long galvanized lag screws for attaching to wood posts and 2 each 1/4" dia. x 3/4" long galvanized self-drilling fasteners for steel posts. Install a galvanized washer between the fastener head and the flexible delineator.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

STANDARD GUARDRAIL
HARDWARE
(FLEXIBLE DELINEATORS)

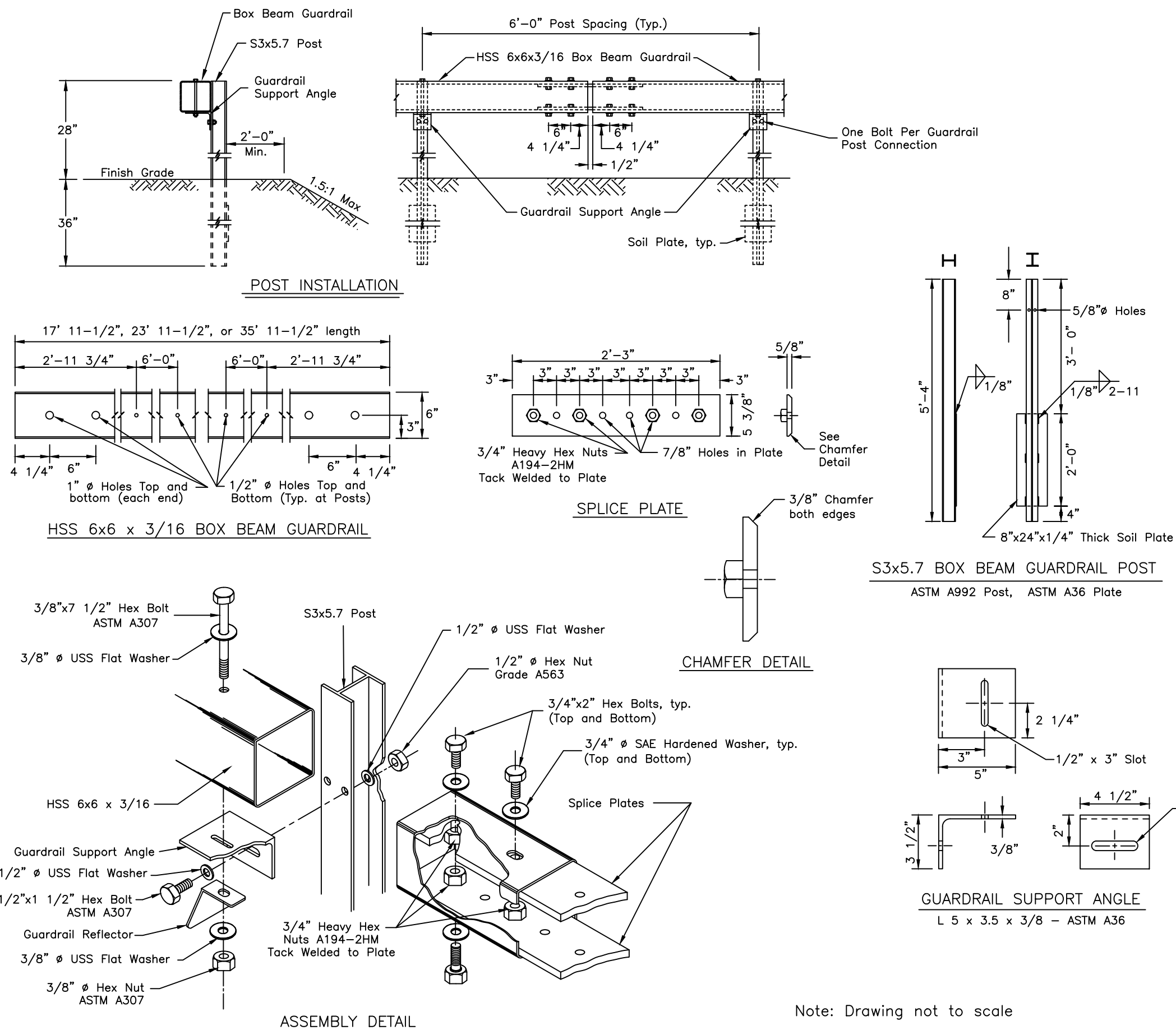
Adopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLK Date: 7/8/2020

Next Code and Standards Review Date: 7/8/2030

G-00-05



CONSTRUCTION NOTES:

1. No fixed objects allowed within 60" of the back of the guardrail post.
2. Shop form guardrail on curves with a radius of less than 717'.
3. Splice plate connections shall meet ASTM F3125, Grade A325 for bolts and A563, Grade A for hex nuts.
4. HSS Steel Tube box beam rail elements shall meet ASTM A500 Grade B.
5. Provide guardrail reflectors conforming to Standard Plan G-00 and Section 606 of the Standard Specifications.
6. Mount guardrail reflectors every 48' on tangents and 24' on curves. Start reflector installation on the first post. Use Type A reflectors unless shown otherwise on the plans.
7. Do not galvanize contact surfaces between the splice plate and the interior HSS tube surface.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

MASH BOX BEAM GUARDRAIL

Adopted as an Alaska Standard Plan by: *Carolyn Morehouse*

Carolyn Morehouse, P.E.
Chief Engineer

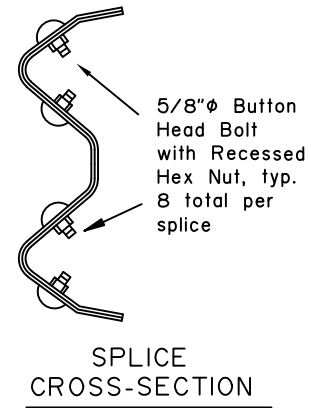
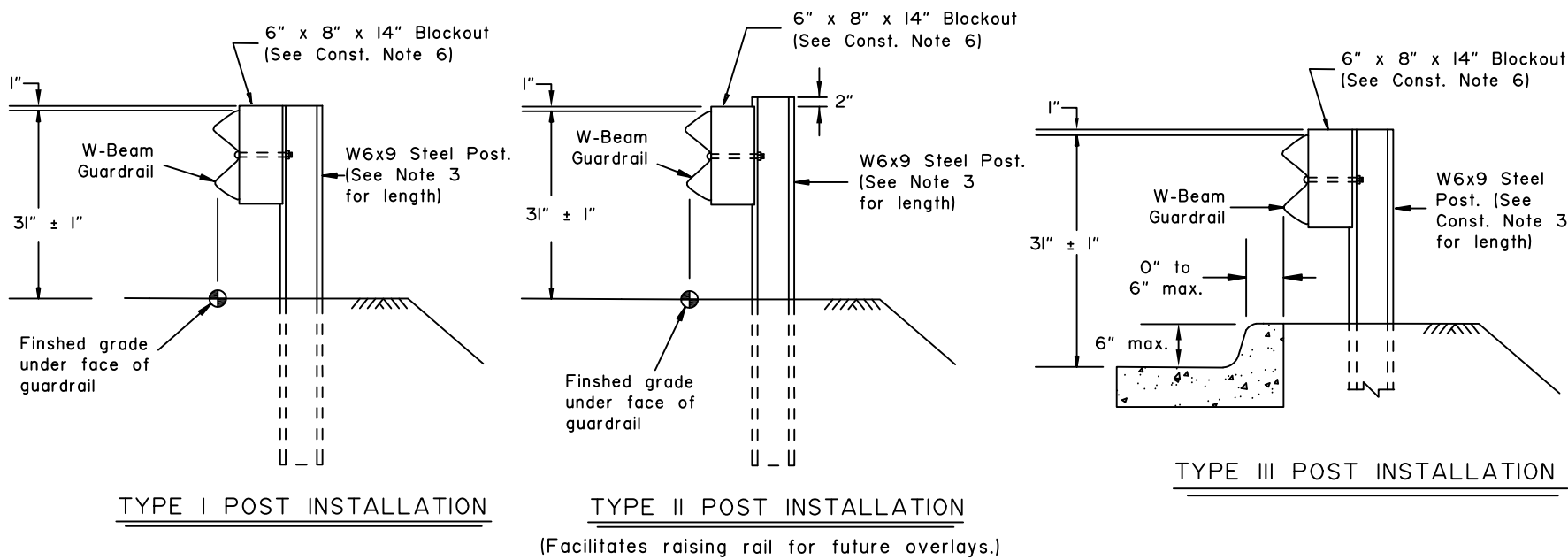
Adoption Date: 07/30/2021

Last Code and Stds. Review
By: LRG Date: 07/30/2021

Next Code and Standards Review date: 7/30/2021

Note: Drawing not to scale

G-04.00

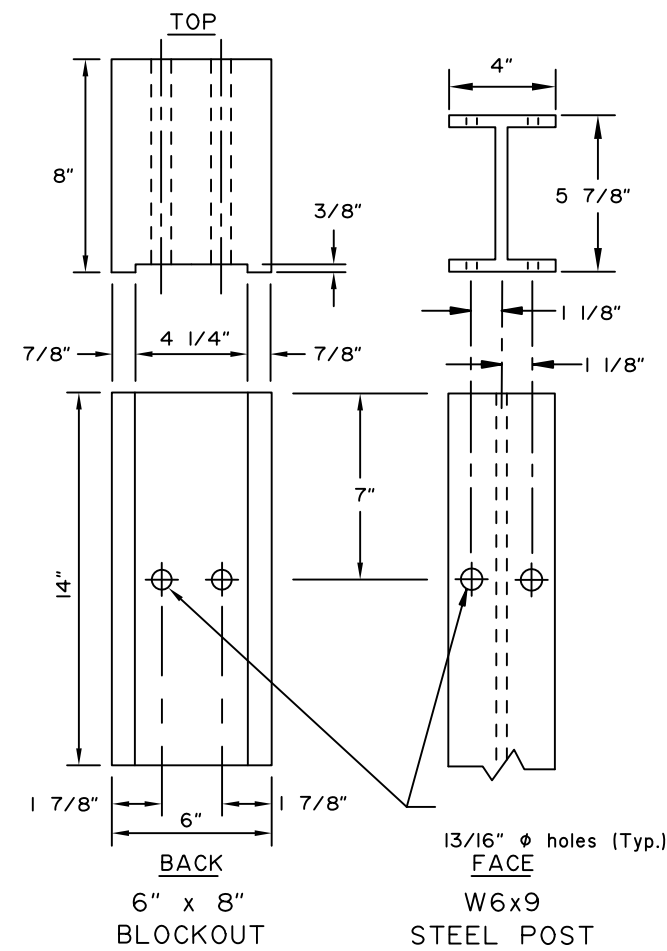
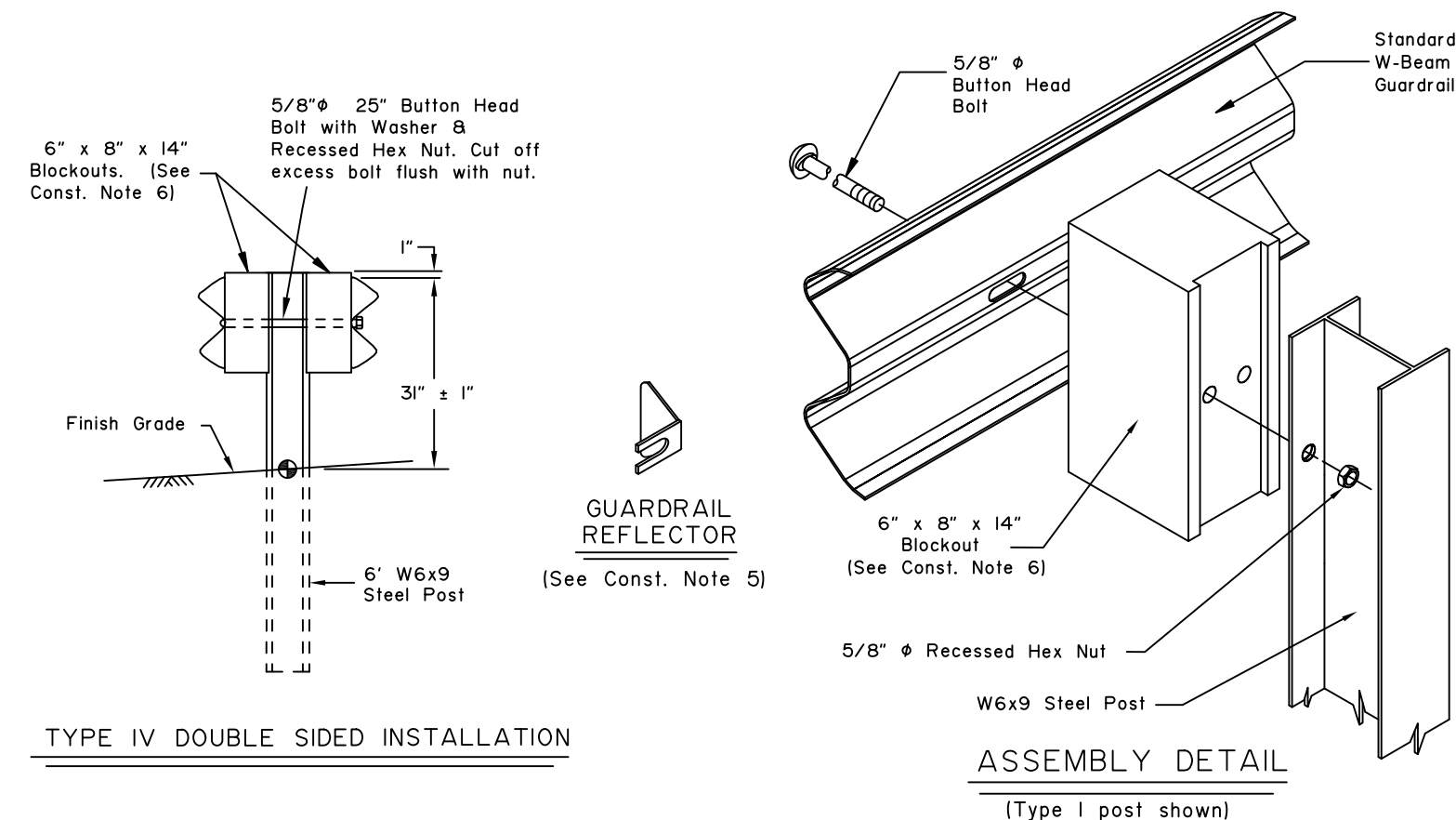


CONSTRUCTION NOTES:

1. Provide hardware compliant with the Task Force 13 (TF13) Guide to Standardized Roadside Safety Hardware.
2. See Standard Plan G-00 for hardware details not shown on this drawing.
3. See Standard Plan G-10 for post lengths corresponding to different combinations of slope and behind-post embankment width.
4. Typical post spacing is 6'-3" center to center.
5. Attach guardrail reflector to guardrail using a 5/8" button head bolt with 5/8" recessed head hex nut and steel washer at location shown in the Typical Elevation. Install reflectors every 25' on tangents and every 12.5' on curves starting 100' before the P.C. and ending 100' after the P.T.
6. Use wood or synthetic blockouts designed, tested, and passed per MASH for use with steel posts. Either bolt hole on the blockout may be used for attachment.
7. Use a 25 linear foot transition to match differing height of existing or new rail elements and end treatments - see Standard Plan G-II.
8. W6x8.5 steel post may be substituted for W6x9 steel post.
9. Install flexible delineators on guardrail posts when called for in the contract. See Standard Plan G-00 for guardrail flexible delineator details.

DESIGN NOTES:

1. No fixed objects allowed within 36" of the back side of guardrail post.
2. This barrier is acceptable under MASH Tests 3-10 and 3-11.



State of Alaska DOT&PF
ALASKA STANDARD PLAN

STEEL POST W31
GUARDRAIL

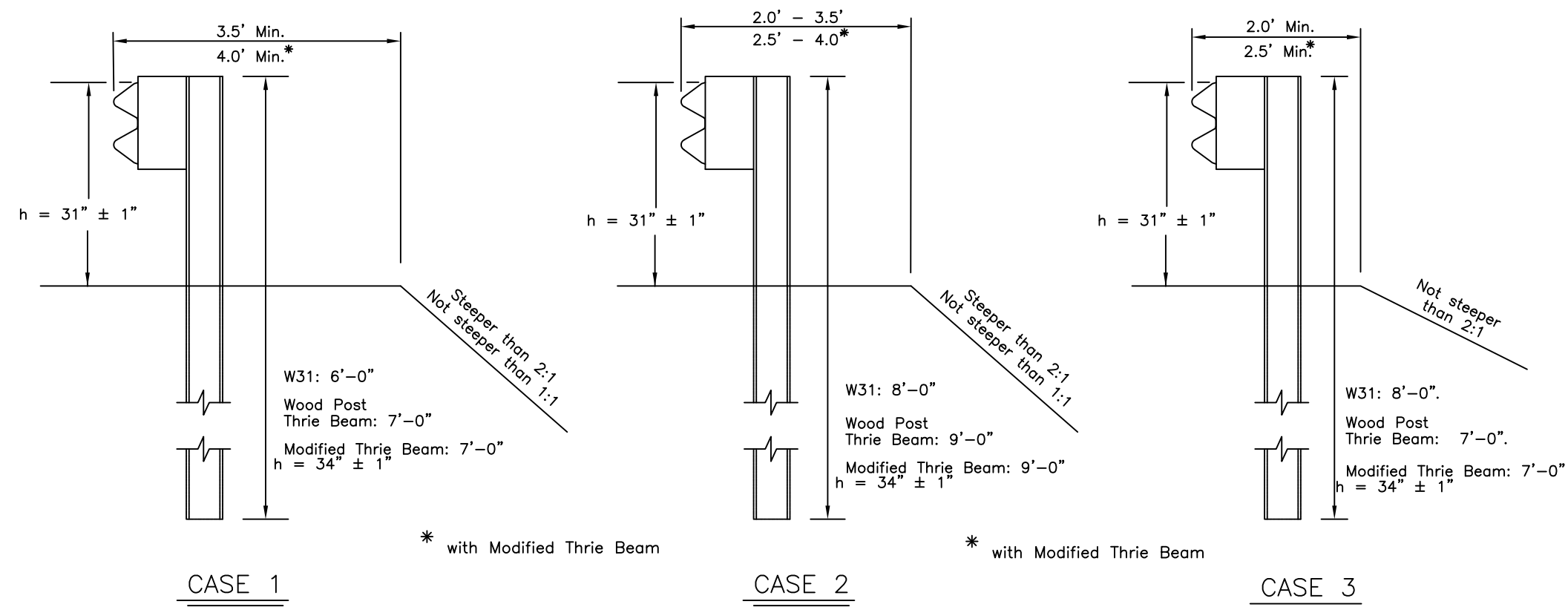
Adopted as an Alaska Standard Plan by: Carolyn Morehouse

Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 05/15/2019

Last Code and Stds. Review
By: LRG Date: 5/15/2019

Next Code and Standards Review date: 5/15/2029

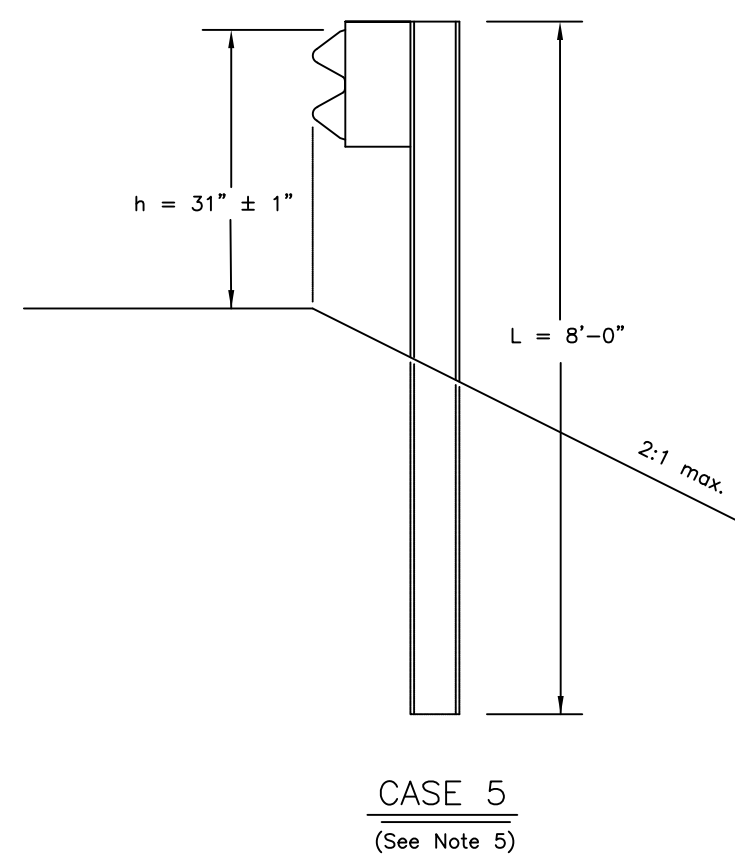
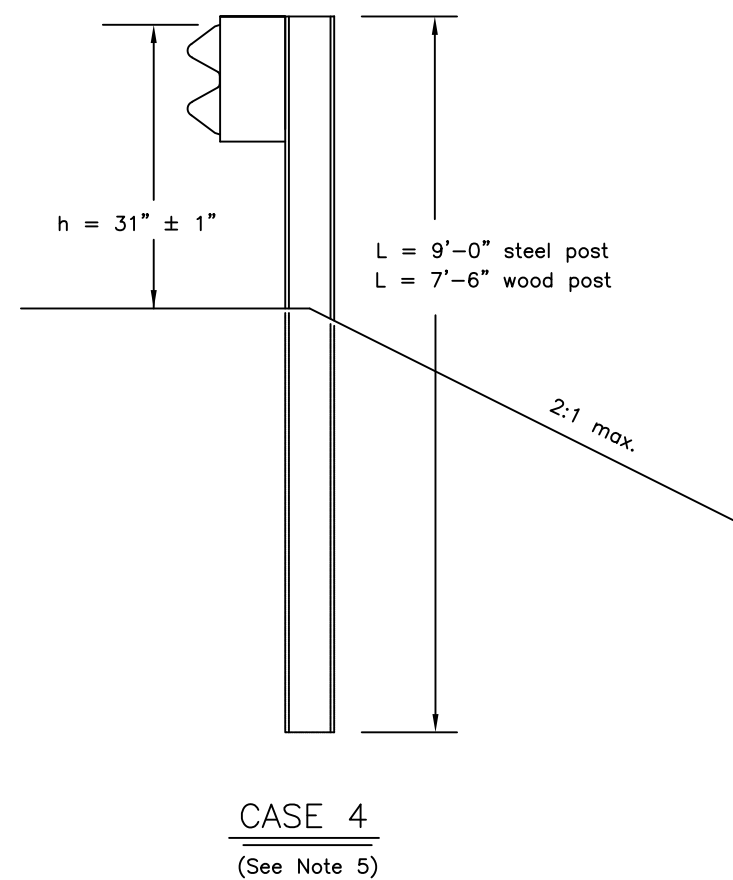


CONSTRUCTION NOTES:

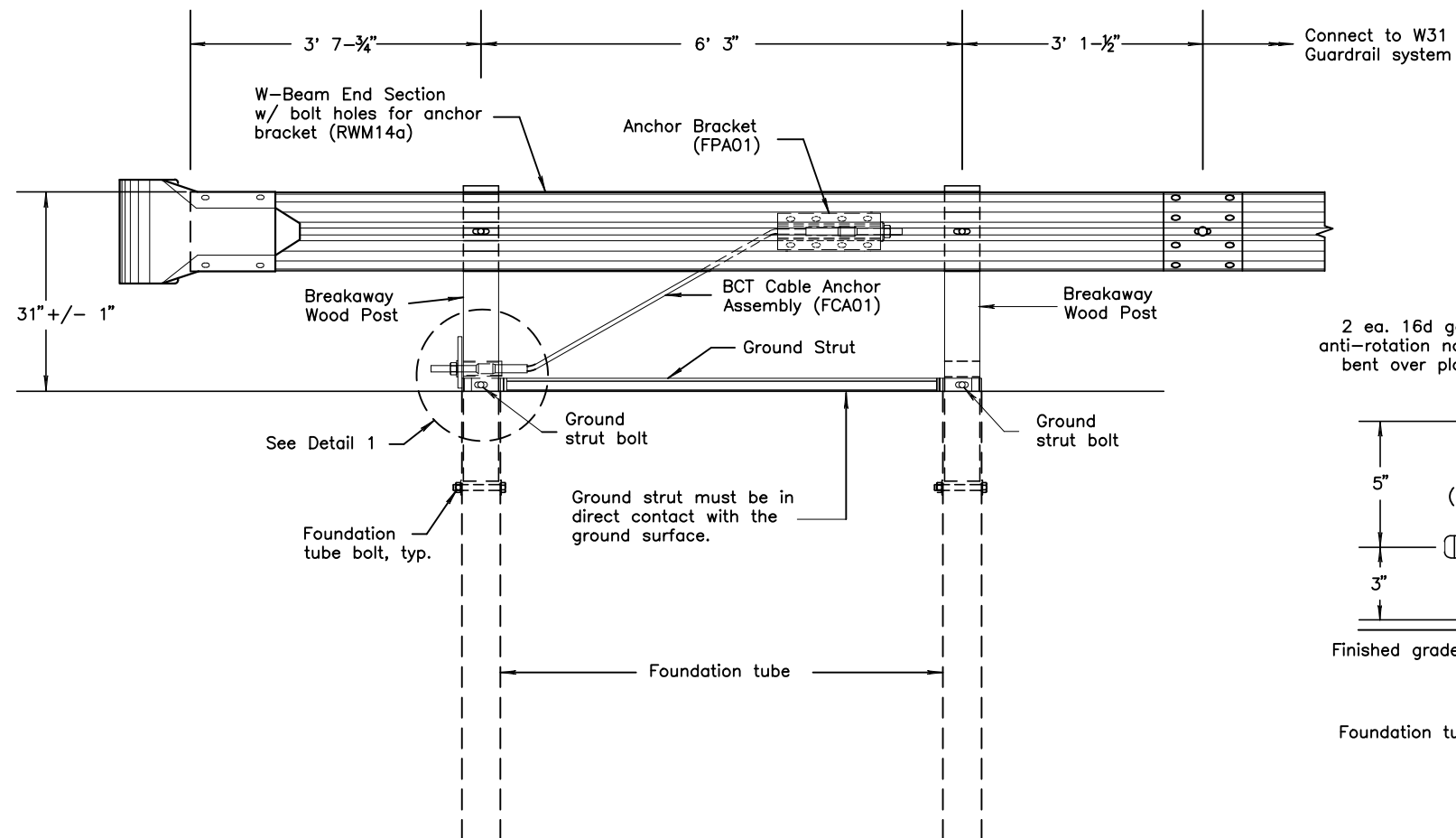
1. This drawings is to be used for post length determination only. See Plans for slopes and behind-post embankment widths.
2. To determine post length, identify the case that matches site conditions and read the length corresponding to the pertinent guardrail type.
3. These dimensions apply to both curbed and uncurbed section.
4. Case 1, 2 and 3 are shown with steel posts. Wood posts may be substituted when allowed by specifications. Wood Post Thrie Beam installations must use wood posts only.
5. Case 4 and 5 apply to W31 guardrail only.

DESIGN NOTES:

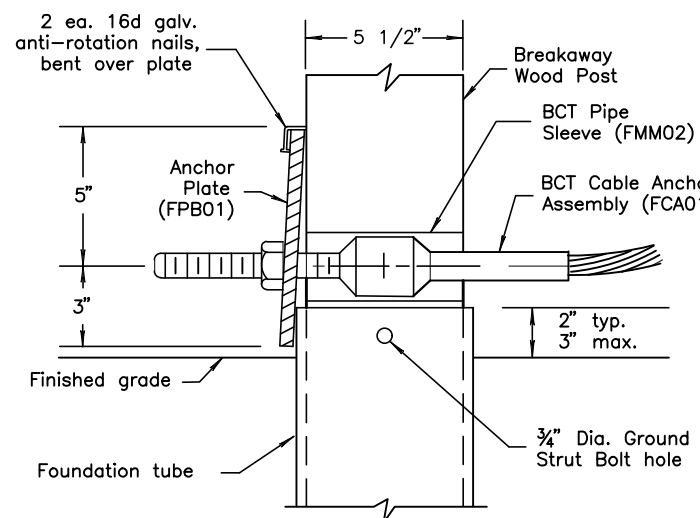
1. No fixed objects allowed within 48" of the back of post for Cases 1, 2, 3, 4, and 5.



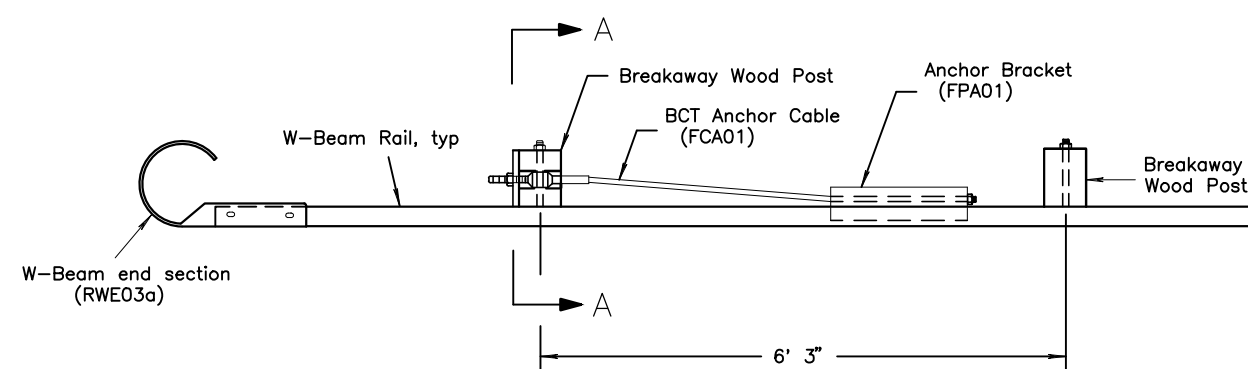
State of Alaska DOT&PF ALASKA STANDARD PLAN	
GUARDRAIL POST INSTALLATION	
Adopted as an Alaska Standard Plan by:	<i>Carolyn H. Morehouse</i> Carolyn Morehouse, P.E. Chief Engineer
Adoption Date: 09/15/2022	
Last Code and Stds. Review By: LRG Date: 09/15/2022	
Next Code and Standards Review date:09/15/2032	



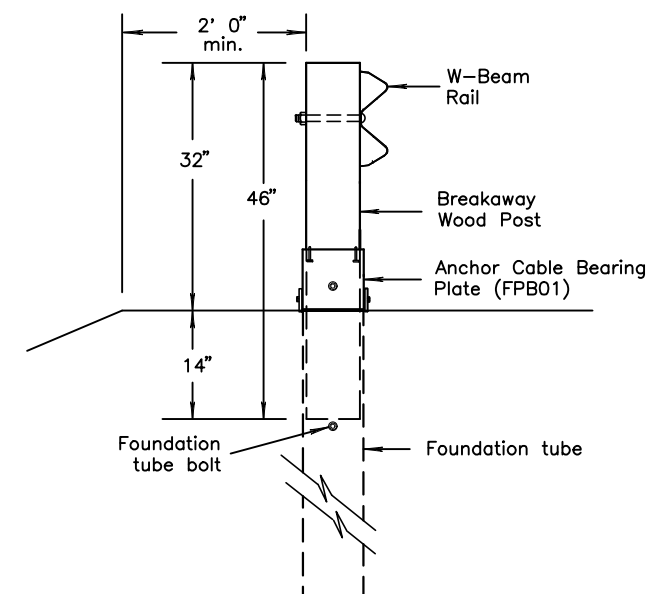
ELEVATION



DETAIL 1
(Ground strut not shown for clarity)



PLAN VIEW



SECTION A-A

CONSTRUCTION NOTES

1. All covered hardware must comply with Task Force 13 (TF13) Guide to Standardized Roadside Safety Hardware online publication. Designators are given in parenthesis, when possible.
2. End section bolts and nuts have the same material requirements as splice bolts.
3. Foundation tube bolts are are 7/8" diameter ASTM A307 hex head. Foundation tube bolts require an ASTM A563 A nut and two ASTM F844 7/8" diameter flat washers. Install one washer under bolt head and one under nut.
4. Anchor bracket and strut bolts are are 5/8" diameter ASTM A307 hex head. Foundation tube bolts require ASTM A563 A nut and two ASTM F844 7/8" diameter flat washers. Install one washer under bolt head and one under nut.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

W31 DOWNSTREAM
END ANCHOR

Adopted as an Alaska
Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

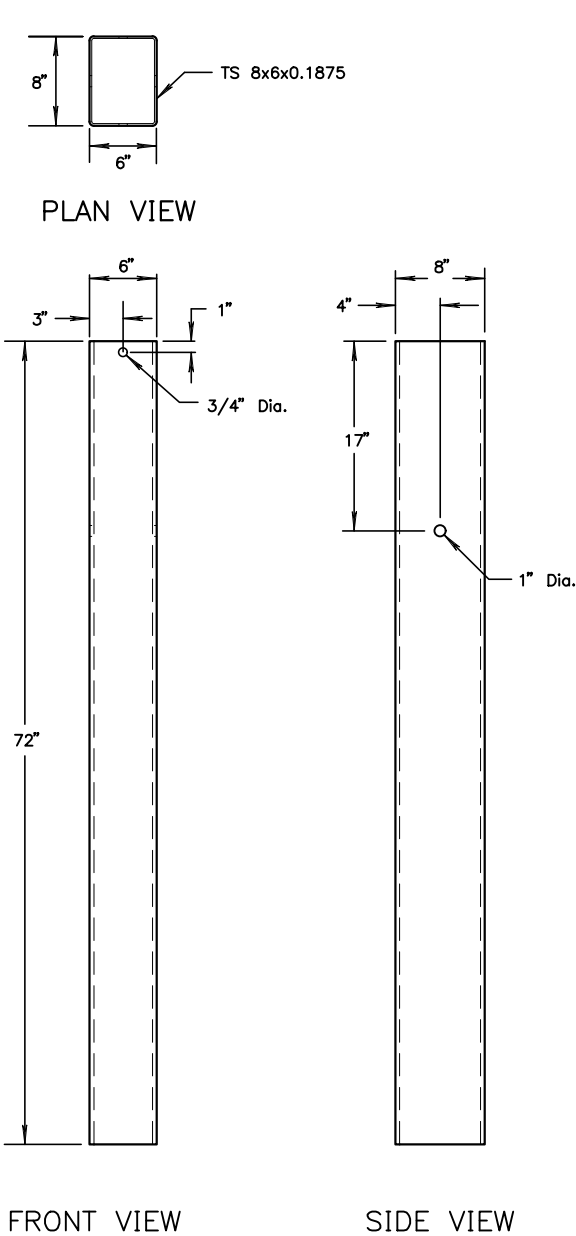
Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLK Date: 7/8/2020

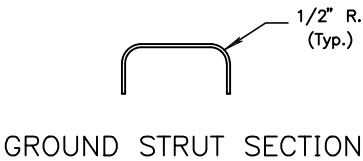
Next Code and Standards Review Date: 7/8/2030

CONSTRUCTION NOTES

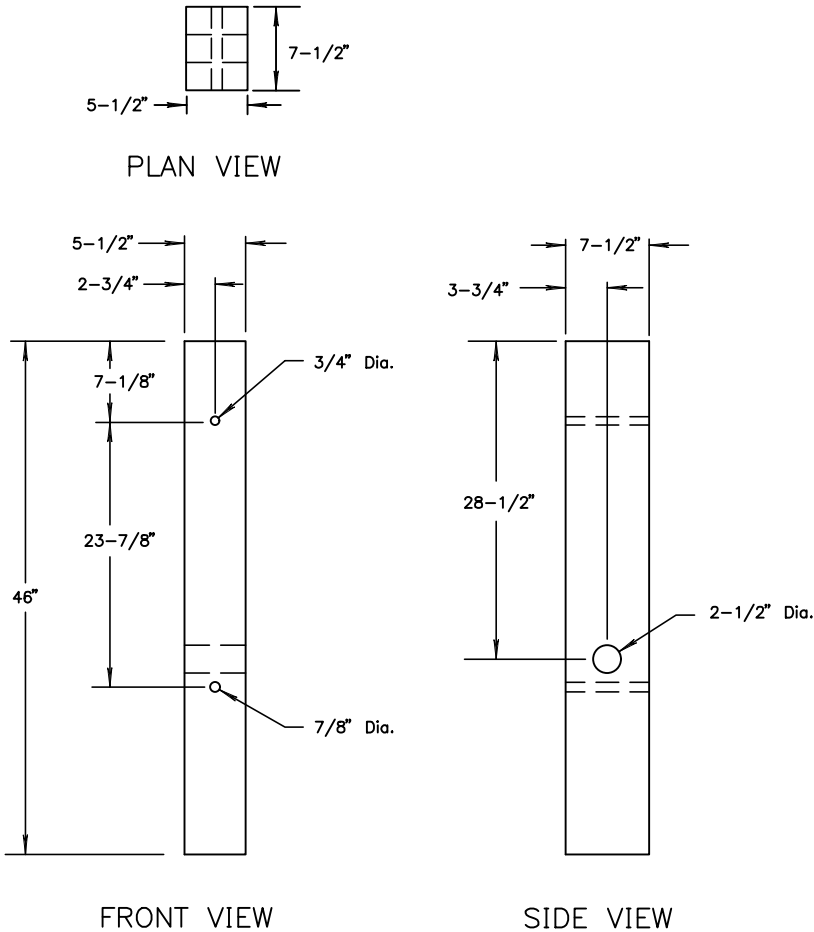
1. All covered hardware must comply with Task Force 13 (TF13) Guide to Standardized Roadside Safety Hardware online publication. Designators are given in parenthesis, when possible.



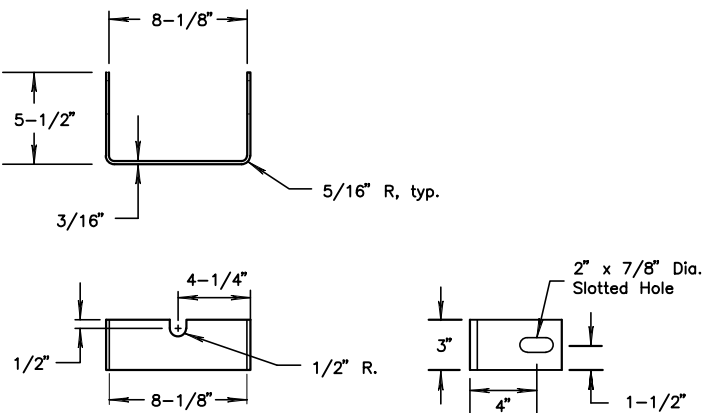
FOUNDATION TUBE



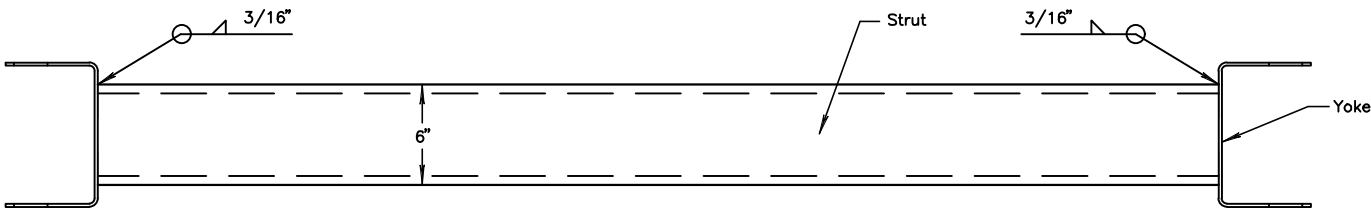
GROUND STRUT SECTION



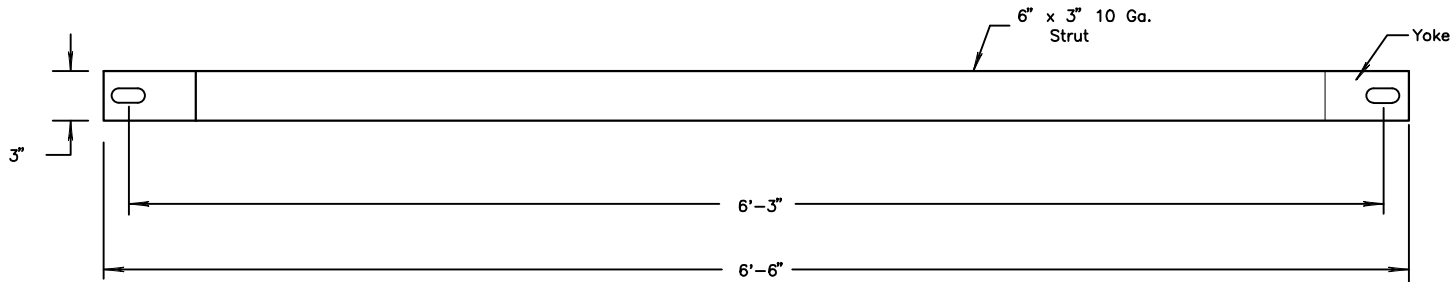
BREAKAWAY WOOD POST



YOKE DETAIL



PLAN VIEW



FRONT VIEW

GROUND STRUT DETAIL

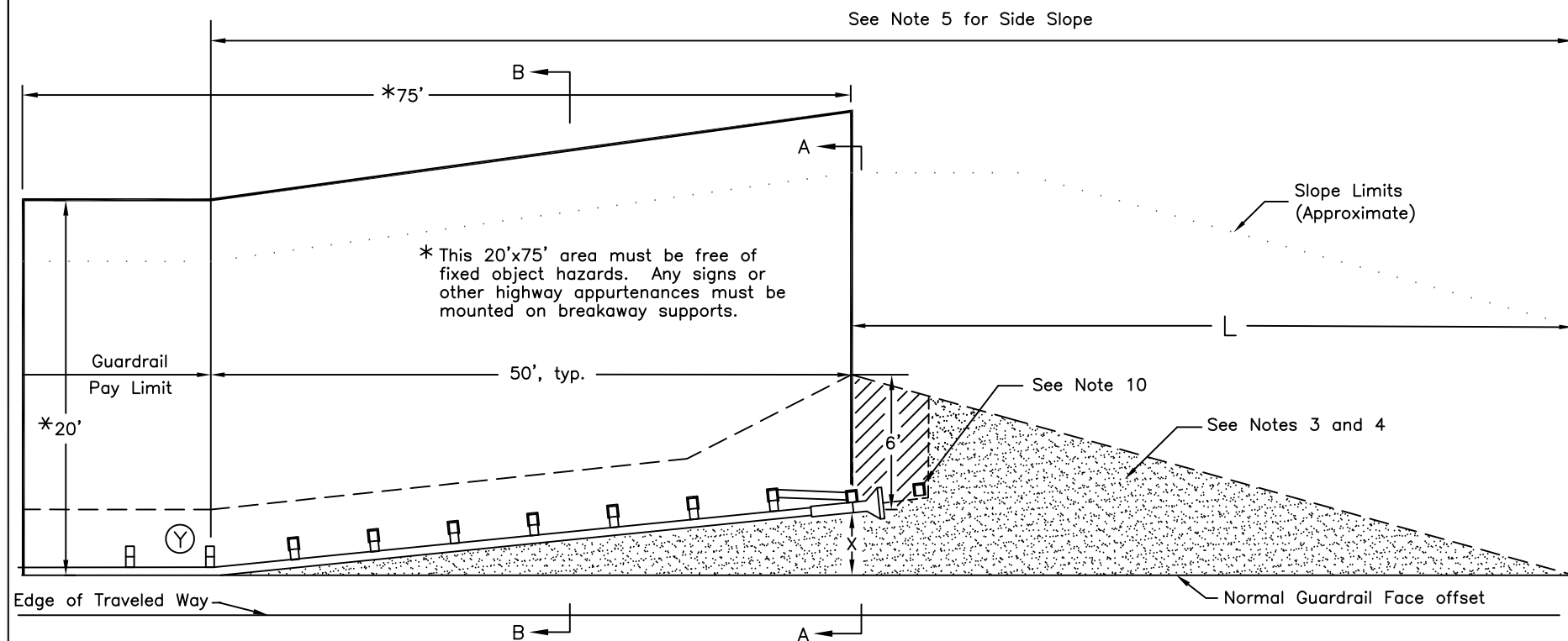
State of Alaska DOT&PF
ALASKA STANDARD PLAN

W31 DOWNSTREAM
END ANCHOR

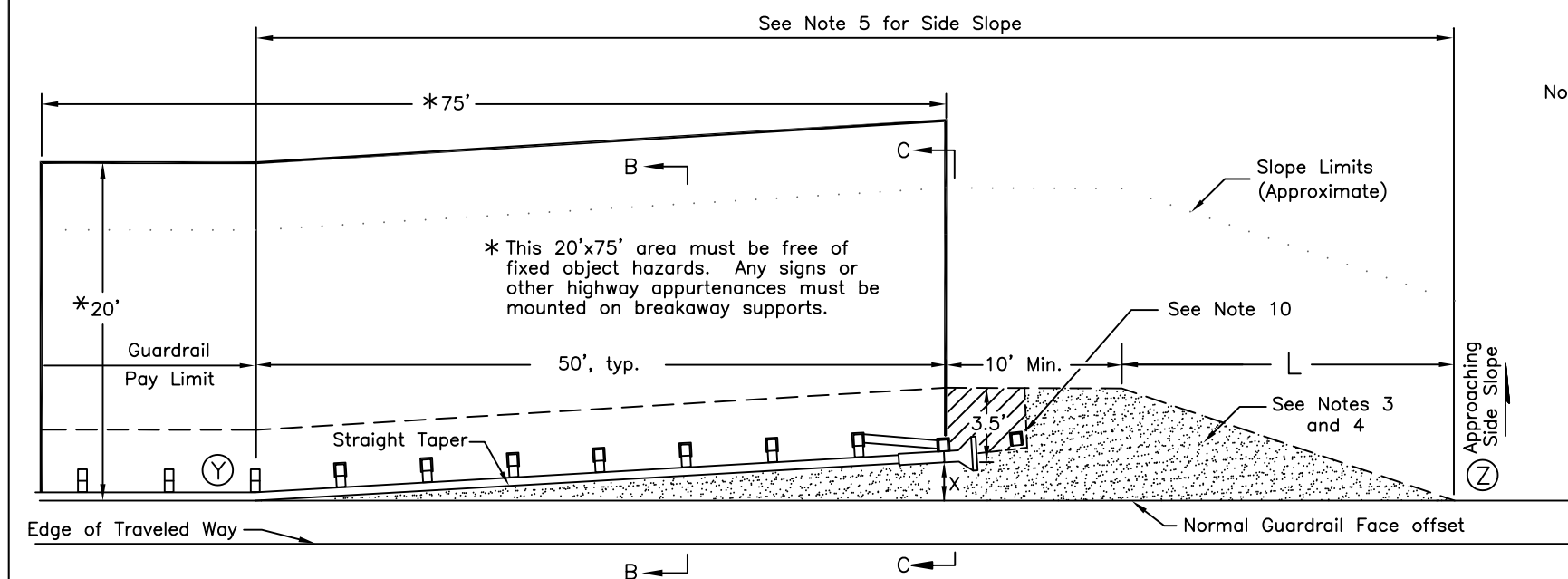
Adopted as an Alaska Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLK Date: 7/8/2020
Next Code and Standards Review Date: 7/8/2030



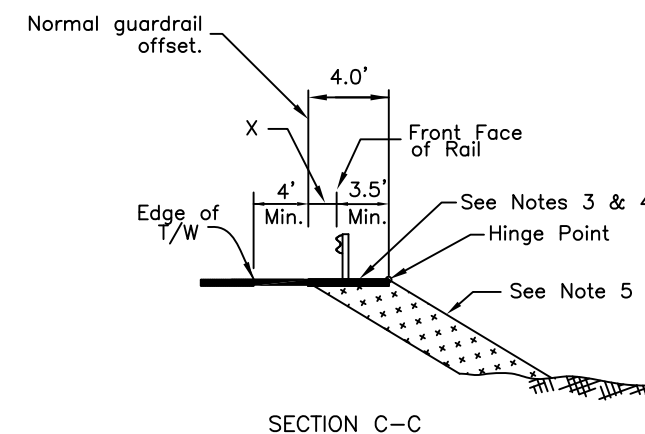
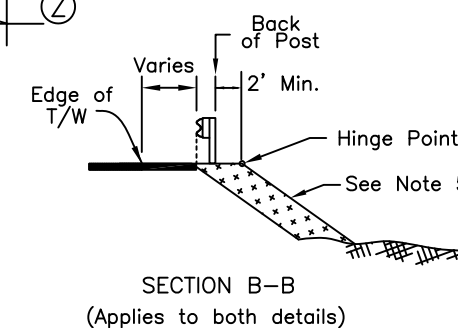
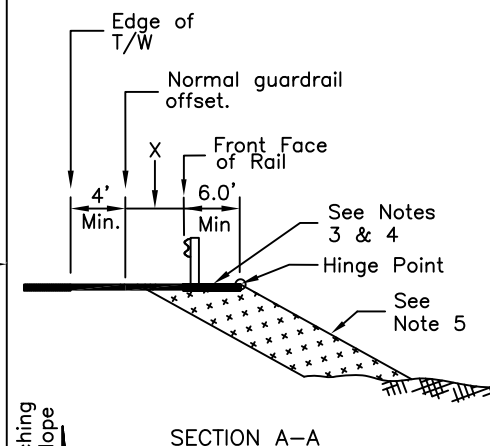
STANDARD GUARDRAIL TERMINAL WIDENING DETAIL



ALTERNATE GUARDRAIL TERMINAL WIDENING DETAIL

(USE ONLY WHEN LIMITED RIGHT-OF-WAY OR LIMITING SITE CONDITIONS MAKE THE STANDARD DETAIL INFEASIBLE)

X=End offset. See manufacturer's information for the range of acceptable end offsets for each MASH compliant terminal.



Taper Lengths (L) for Common End Offsets (X)		
End Offset	Standard Detail	Alternate Detail
0'	24.0'	13.0'
1'	26.0'	17.0'
1.5'	28.0'	19.0'
2'	30.0'	21.0'
2.5'	32.0'	22.0'
4'	37.0'	28.0'
Interpolate if the end offset falls between table values		

GENERAL NOTES

1. This Std. Dwg. applies to all MASH approved guardrail end terminals (GETs). The alternate detail may only be used with parallel or tangent GETs. The terminal details shown are for illustration only – see manufacturer's drawings for actual post, rail, strut, etc. configuration and layout.
2. Use this Std. Widening Detail for all GETs except when limited right-of-way or limiting site conditions make the use of the Std. Widening Detail infeasible. In that case, the alternate detail is permissible.
3. Construct the shaded areas to match the slope of the adjacent shoulder. The slope may be increased to 10:1 if identified in the plans or when approved by the engineer. Match the slope when the shoulder slopes toward the road as well as away from the road.
4. On paved roads, the shaded areas shall be paved. On gravel roads, surface the shaded areas with the same materials used to surface the travel lanes.
5. From point (Y) to point (Z) make the side slope match the approaching side slope except where it is flatter than 4:1. In that case, the slope may be steepened to 4:1.
6. Attach a flexible marker at the beginning of each GET.
7. The max. allowable height for foundation tubes or other steel components of terminal post breakaway systems is 4" above the surrounding grade.
8. The details on this sheet do not apply to W31 Downstream End Anchors (Std Dwg G-14).
9. The details on this sheet apply to GETs on both the approach and downstream ends on two-way undivided roads and to any downstream MASH compliant GETs.
10. Some MASH GET systems have an additional post/anchor at the approximate location shown. If this post/anchor is present do not pave the diagonally hatched area. If not present, pave the diagonally hatched area also.

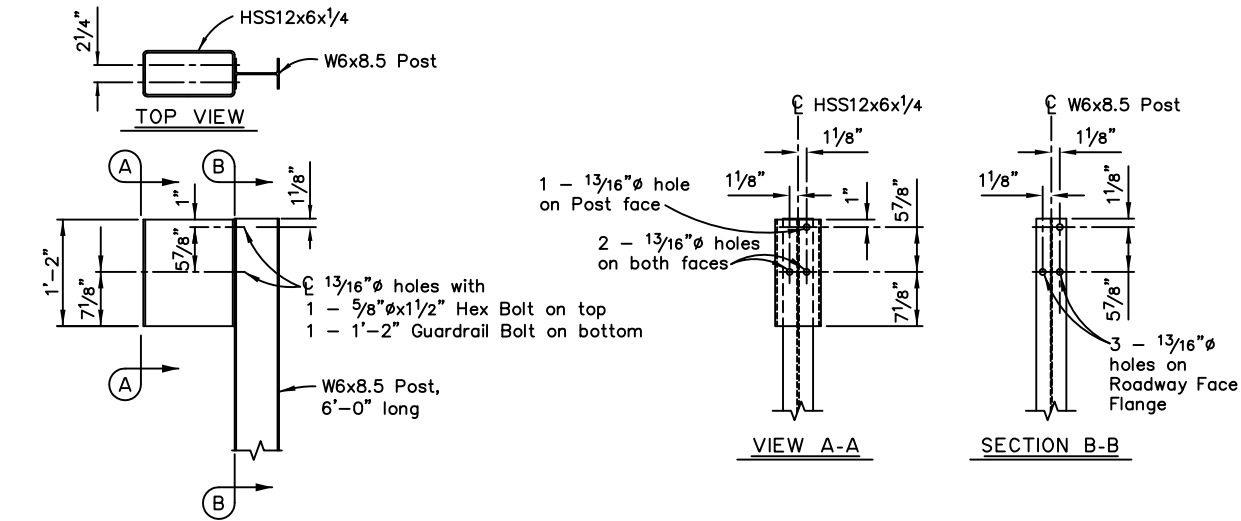
State of Alaska DOT&PF
ALASKA STANDARD PLAN
WIDENING FOR
GUARDRAIL END TERMINALS

Adopted as an Alaska
Standard Plan by: *Kenneth J. Fisher, P.E.*
Kenneth J. Fisher, P.E.
Chief Engineer

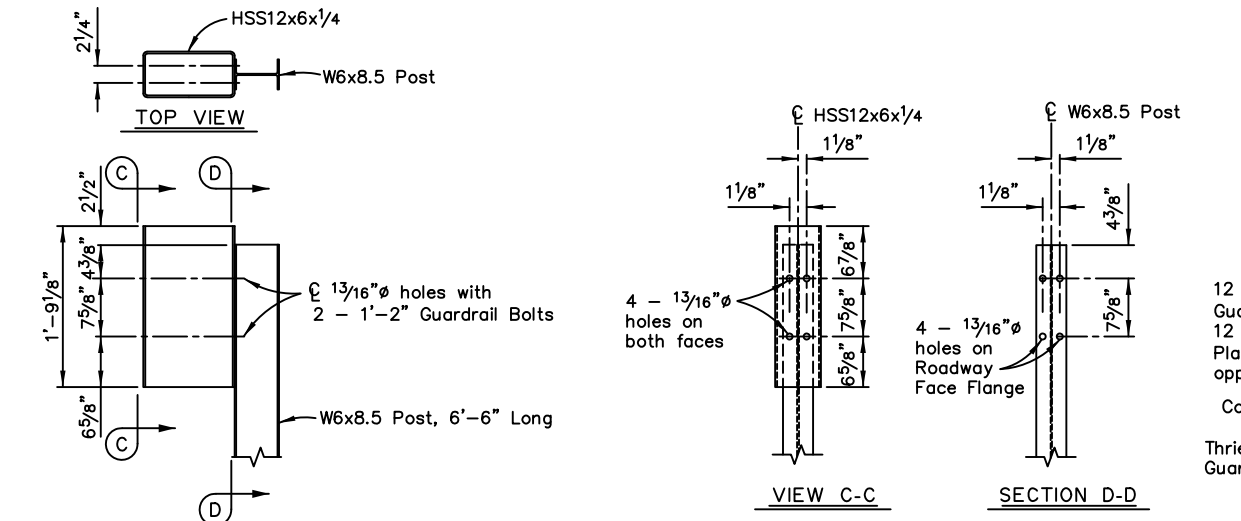
Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

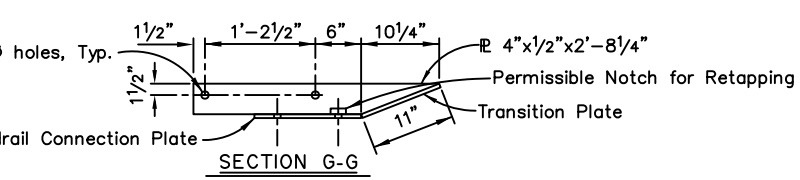
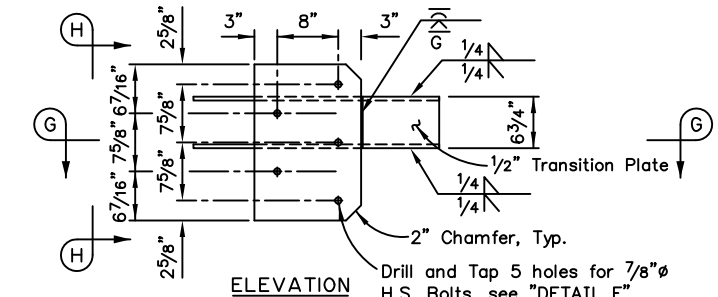
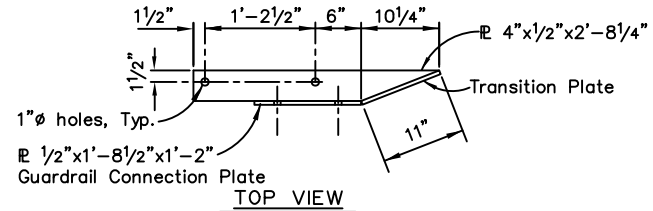
Next Code and Standards Review date:02/08/2029



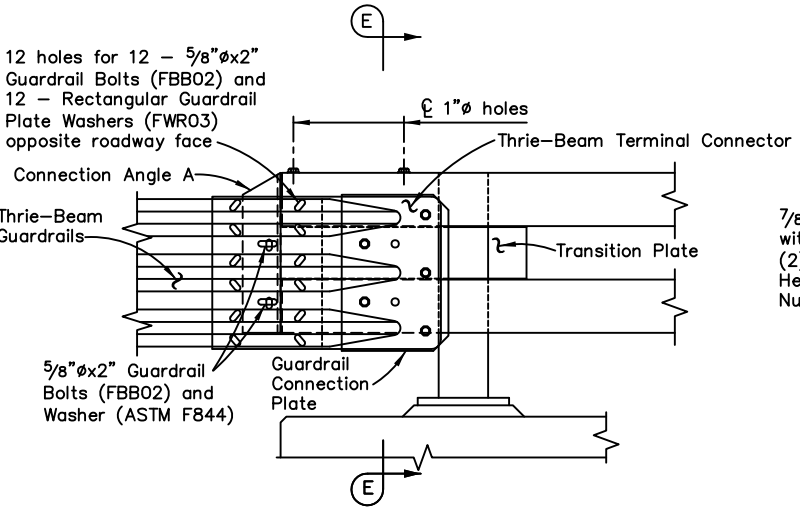
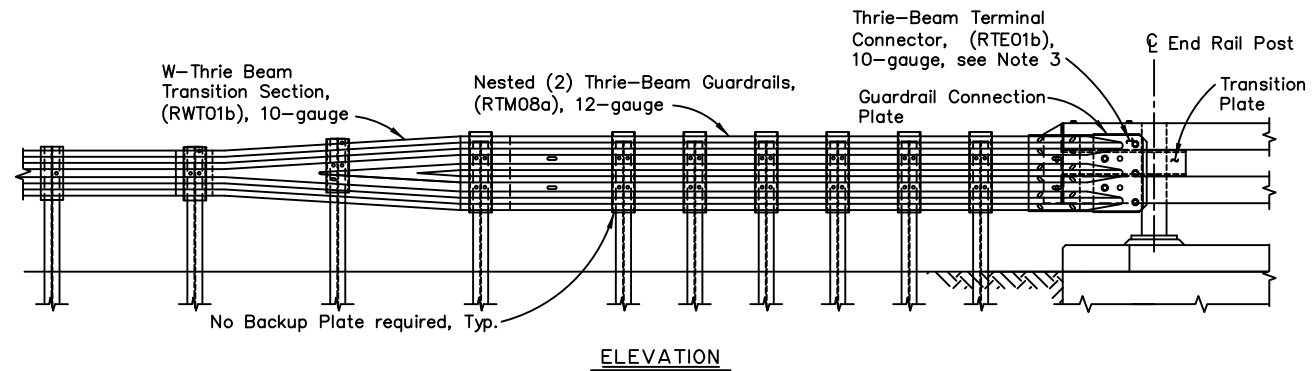
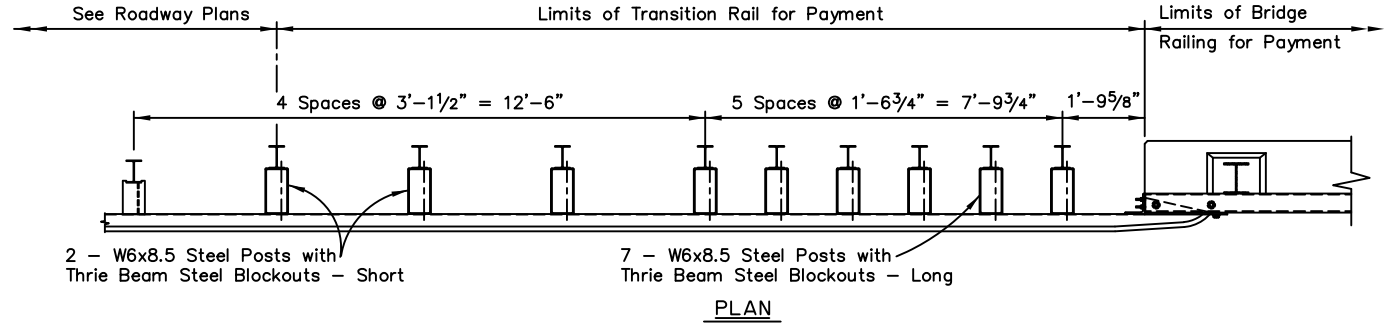
THRIE BEAM STEEL BLOCKOUT - SHORT



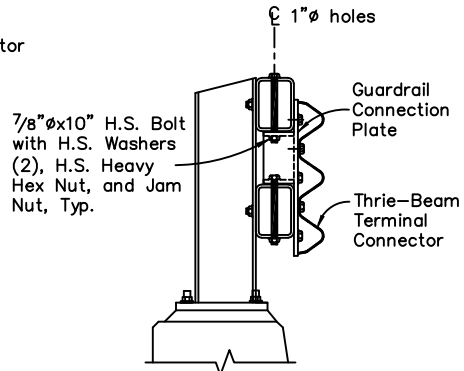
THRIE BEAM STEEL BLOCKOUT - LONG



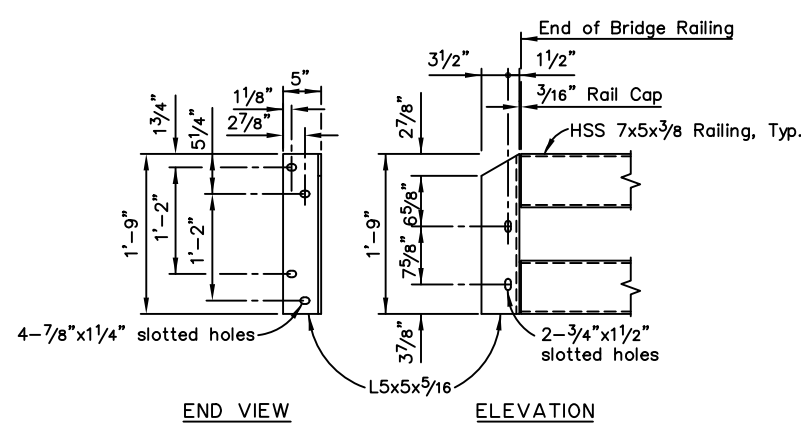
GUARDRAIL CONNECTION PLATE DETAILS



TRANSITION CONNECTION - ELEVATION



SECTION E-E



END VIEW

CONNECTION ANGLE A

- NOTES:
1. Conform to G-00, G-05, and G-10 of the Standard Plans for all Thrie Beam Transition details not shown.
 2. Thrie Beam Transition part numbers are listed in parentheses and referenced in the "Task Force 13 Guide to Standardize Roadside Hardware."
 3. Contractor to select the Thrie-Beam Terminal Connector Original, Alternate 1 (shown), or Alternate 2 that fits over and under the Nested Thrie-Beam Guardrail components without field modifications
 4. Recessed Guardrail Nuts on all 5/8" Bolts unless otherwise indicated.

State of Alaska DOT&PF
ALASKA STANDARD PLAN
MASH BRIDGE RAIL
THRIE BEAM TRANSITION

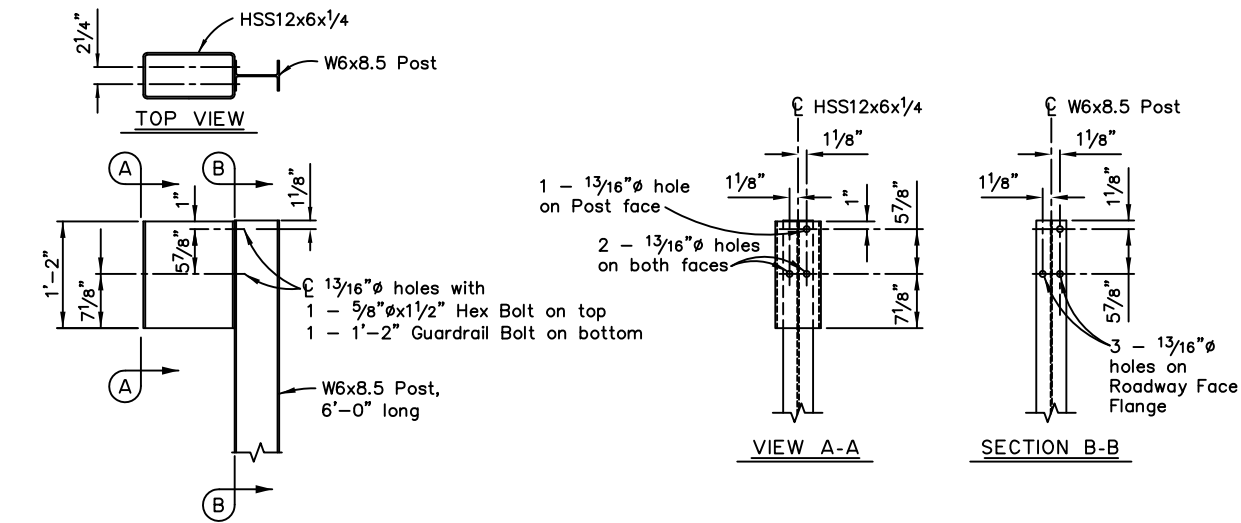
Adopted as an Alaska
Standard Plan by:
087718E00CC647E...
Lauren Little, P.E.
Chief Engineer

Adoption Date: 04/04/2025

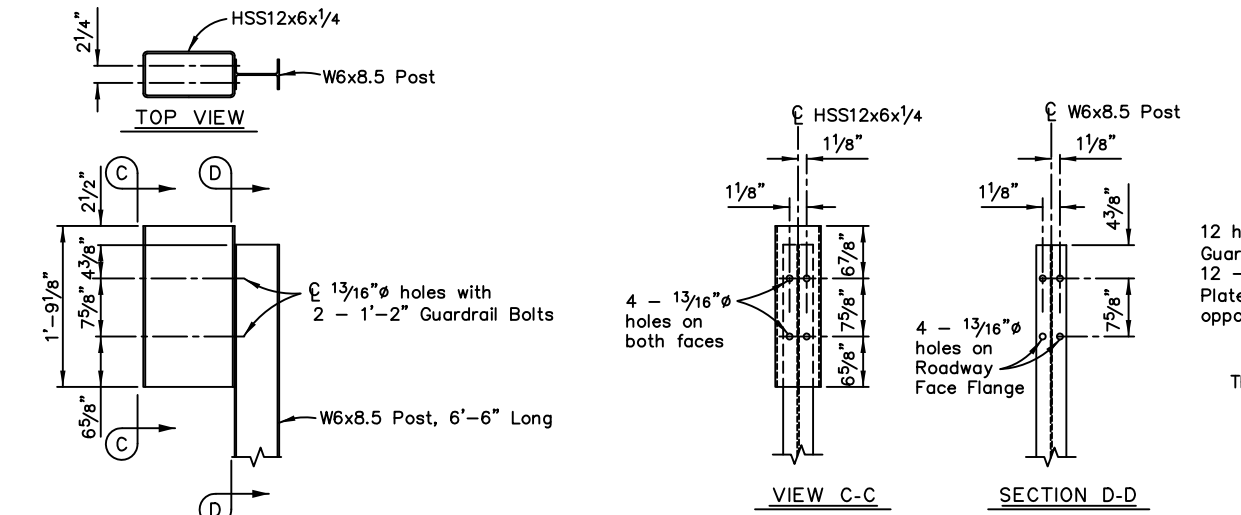
Last Code and Stds. Review
By: SEM Date: 04/04/2025

Next Code and Standards Review Date: 04/04/2035

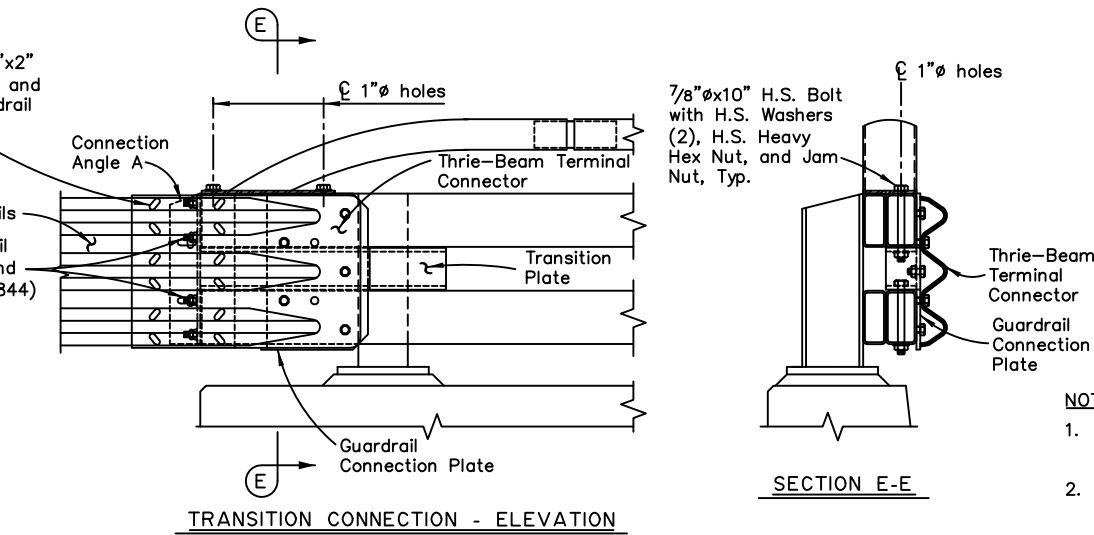
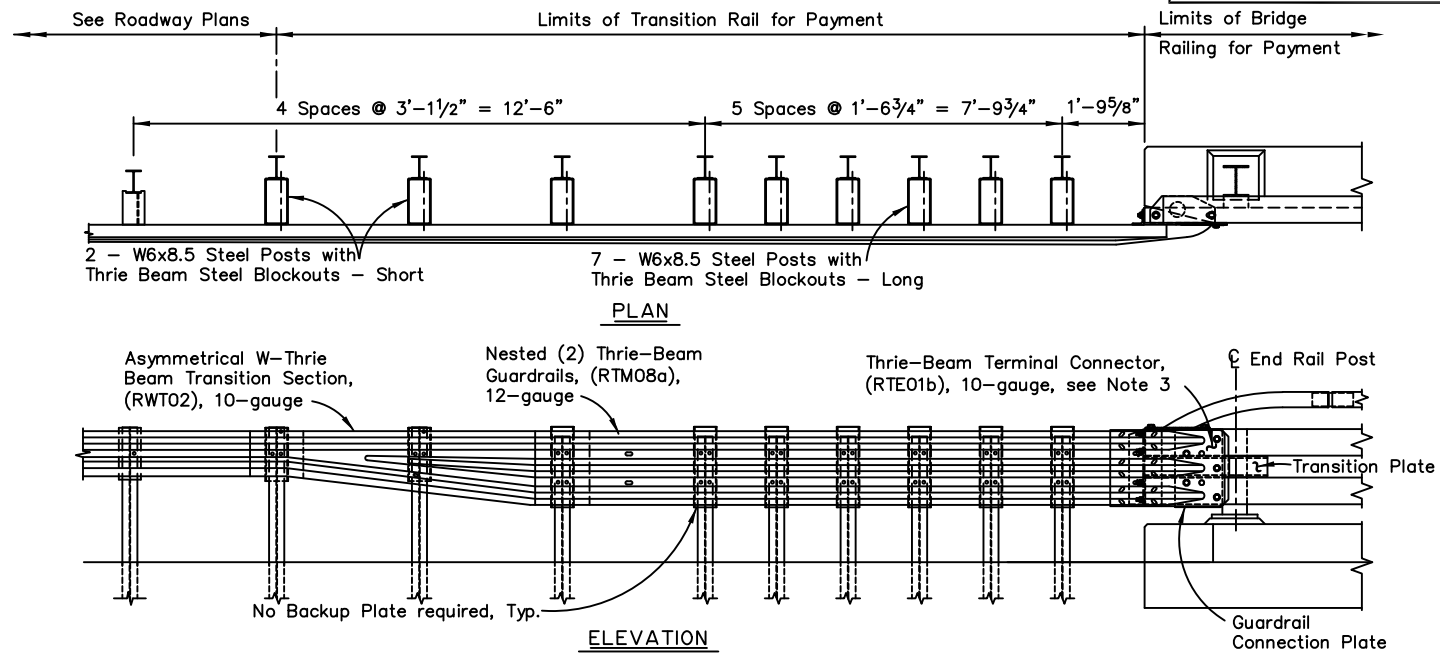
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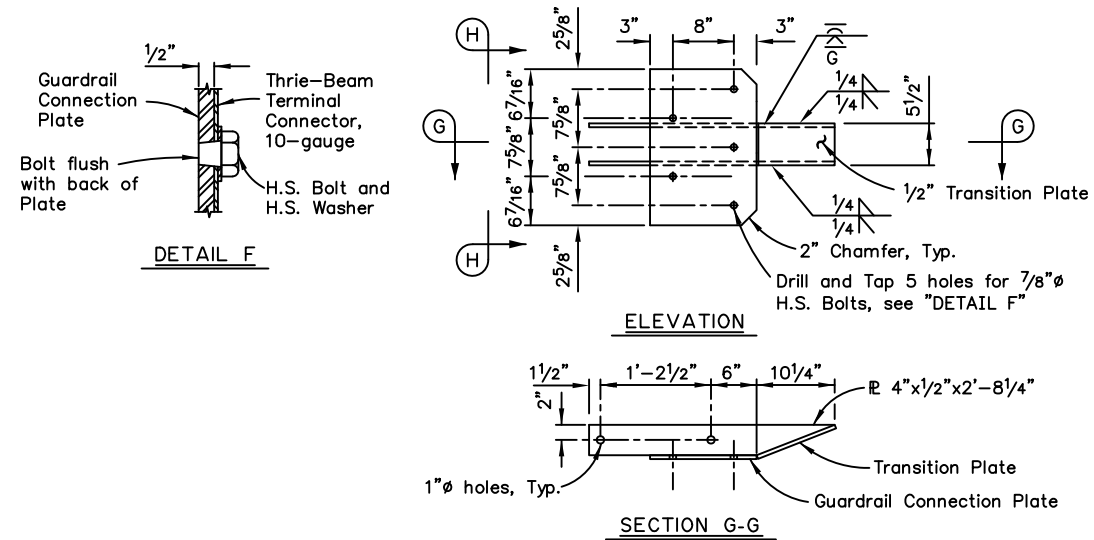
THRIE BEAM STEEL BLOCKOUT - SHORT



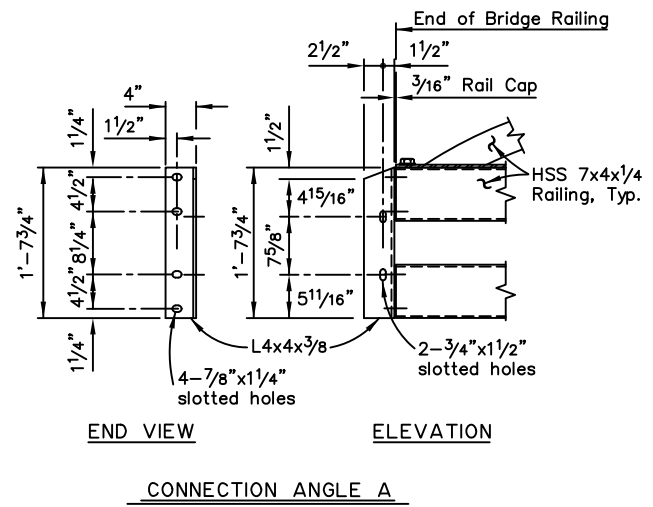
THRIE BEAM STEEL BLOCKOUT - LONG



- NOTES:
1. Conform to G-00, G-05 and G-10 of the Standard Plans for all Thrie Beam Transition details not shown.
 2. Thrie Beam Transition part numbers are listed in parentheses and referenced in the "Task Force 13 Guide to Standardize Roadside Hardware."
 3. Contractor to select the Thrie-Beam Terminal Connector Original, Alternate 1 (Shown), or Alternate 2 that fits over and under the Nested Thrie-Beam Guardrail components without field modifications.
 4. Recessed Guardrail Nuts on all 5/8" Bolts unless otherwise indicated.



GUARDRAIL CONNECTION PLATE DETAILS



CONNECTION ANGLE A

No Scale

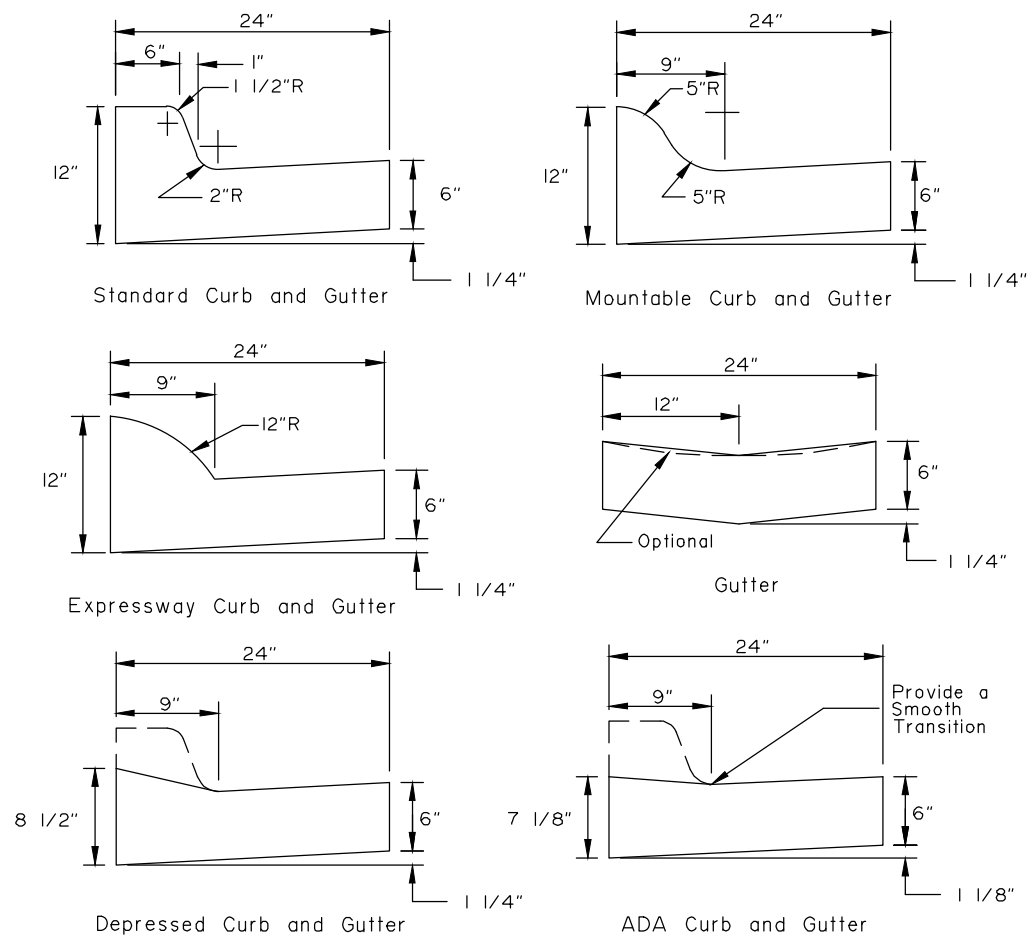
State of Alaska DOT&PF
ALASKA STANDARD PLAN
MASH 3-TUBE BRIDGE RAIL
THRIE BEAM TRANSITION

DocuSigned by:
Adopted as an Alaska
Standard Plan by:
087718E00CC647E...
Lauren Little, P.E.
Chief Engineer

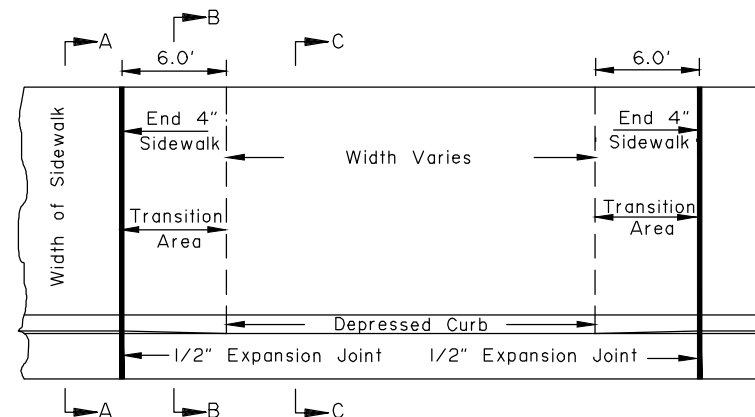
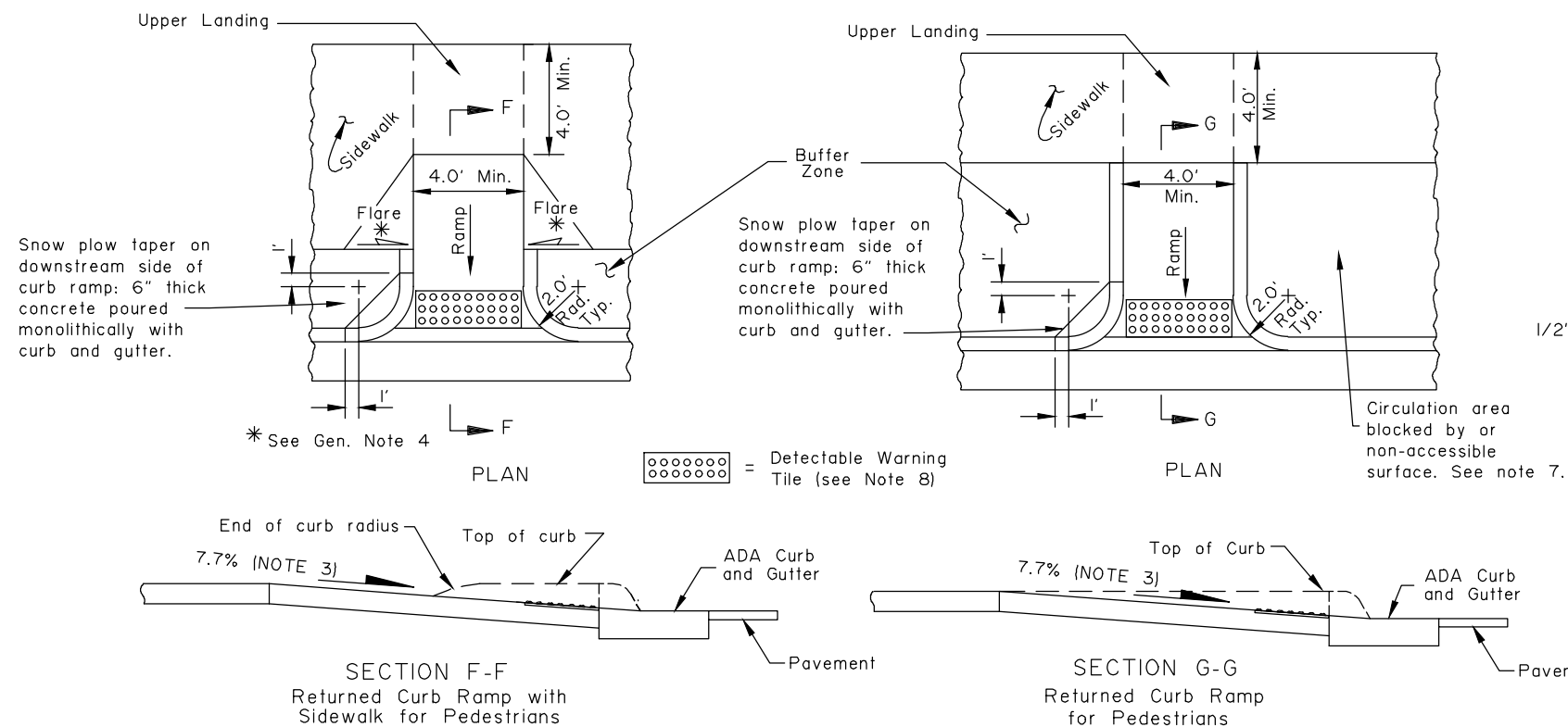
Adoption Date: 04/04/2025

Last Code and Stds. Review
By: SEM Date: 04/04/2025

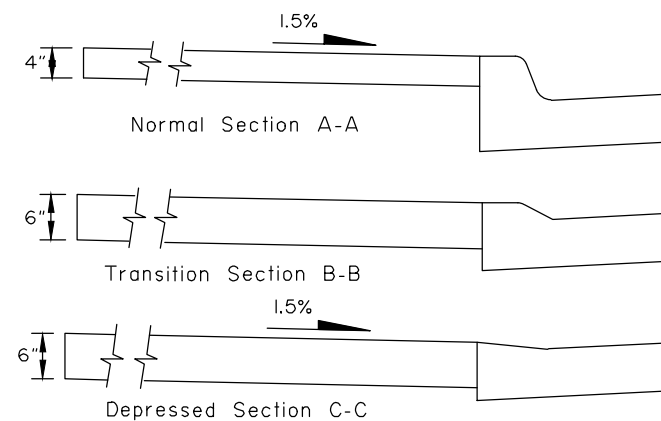
Next Code and Standards Review Date: 04/04/2035



CURB and GUTTER DETAILS

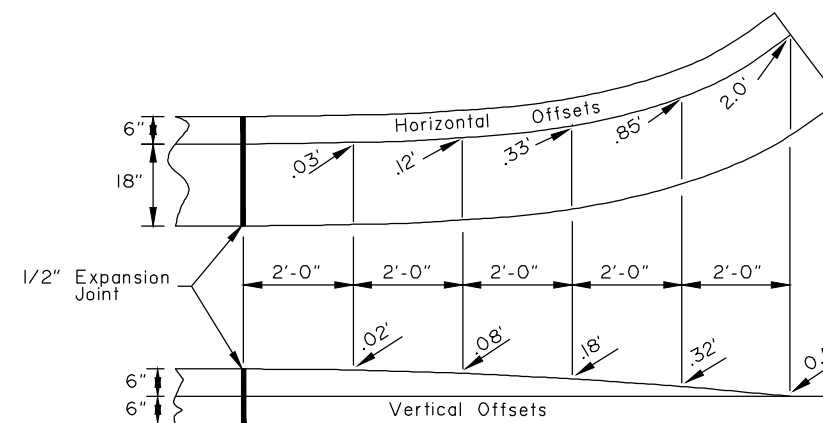


DRIVEWAY CURB CUT DETAILS



CONSTRUCTION NOTES:

1. Use the type of curb and gutter shown on the plans.
2. Construct ramp runs and landings of concrete, regardless of whether the sidewalk is asphalt or concrete.
3. Construct ramp slopes at a 7.7% nominal grade, or flatter. Ramp slopes may be increased to a maximum of 8.3% when site conditions warrant it. Ramp lengths should be increased to keep grades under the 8.3% maximum, but are not required to exceed 15.0 feet. The resulting ramp grade at a 15.0 foot ramp length is acceptable even if it exceeds 8.3%.
4. Construct flare slopes at 8.3% (measured parallel to the curb line) or flatter, sidewalk cross slopes at 1.5% nominal (1.0% min. and 2.0% max), and ADA Curb and Gutter gutter pan slopes at 4.7% nominal. Construct grade breaks perpendicular to ramp runs.
5. Do not construct flare slopes steeper than 10.0%, sidewalk cross slopes steeper than 2.0% and ADA Curb and Gutter gutter pan slopes steeper than 5.0%. These are the steepest slopes allowed under the 2006 ADA Standards for Transportation Facilities.
6. Provide a coarse broomed finish on ramp runs perpendicular to the ramp slope.
7. When approved by the Engineer, curb returns may be replaced with flares at locations where access to the side of a ramp run is free of poles, utility boxes, other obstructions, or non-accessible surfaces such as a dirt planter strips. See Standard Plan I-22 for flare details.
8. Install 24" wide detectable warning tiles for the full width of the ramp. Provide tiles with truncated domes meeting Section 705.1 of the 2006 ADA Standards for Transportation Facilities. Align truncated dome pattern in the predominant direction of wheelchair travel to permit wheels to roll between domes.
9. Maximum cross slope on upper landings, measured in any direction, is 2.0%. Maximum cross slope on ramps is 2.0% measured perpendicular to the ramp run.

CURB and GUTTER
TERMINATION TRANSITIONSState of Alaska DOT&PF
ALASKA STANDARD PLANCURB CUT
CURB & GUTTER
AND CURB RAMP DETAILSAdopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

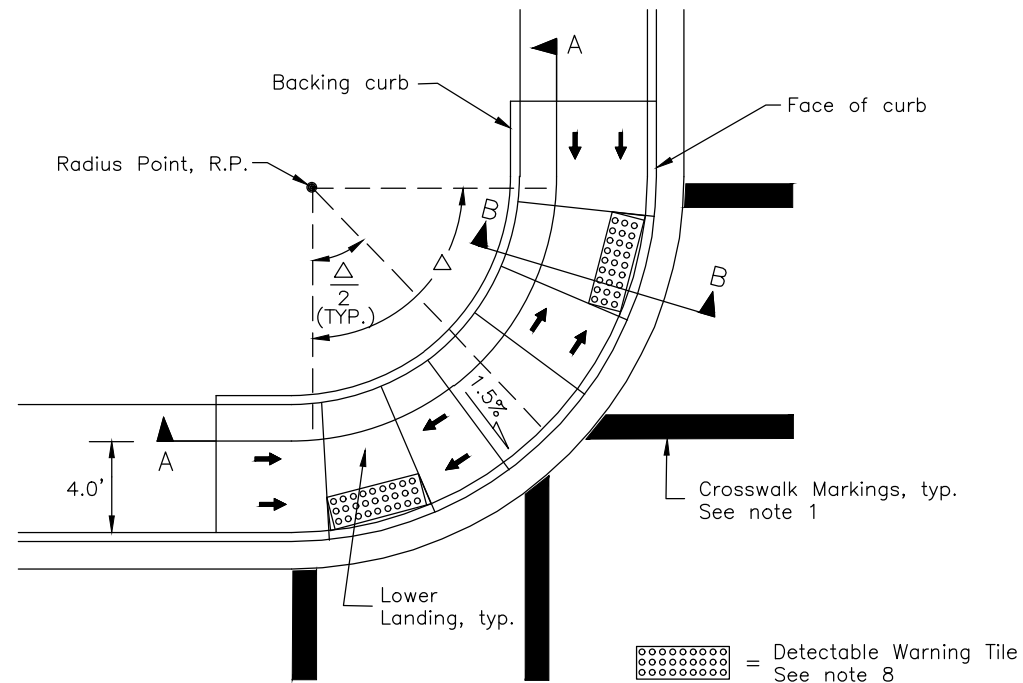
Last Code and Stds. Review
By: KLH Date: 7/8/2020

Next Code and Standards Review date: 7/8/2030

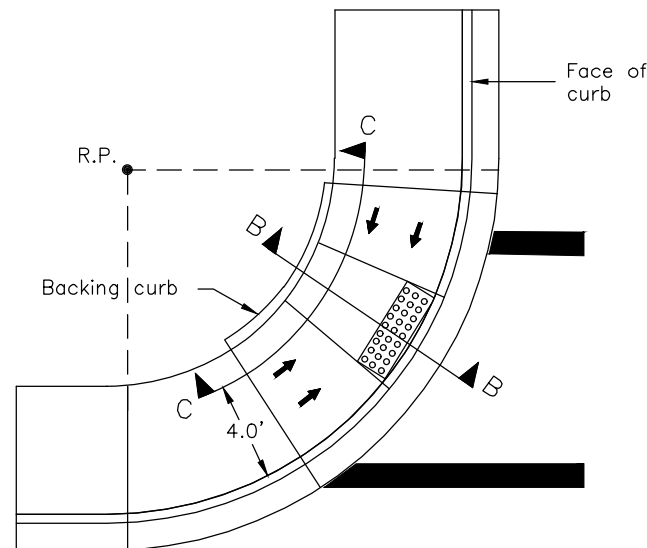
Note: Drawing not to scale

CONSTRUCTION NOTES:

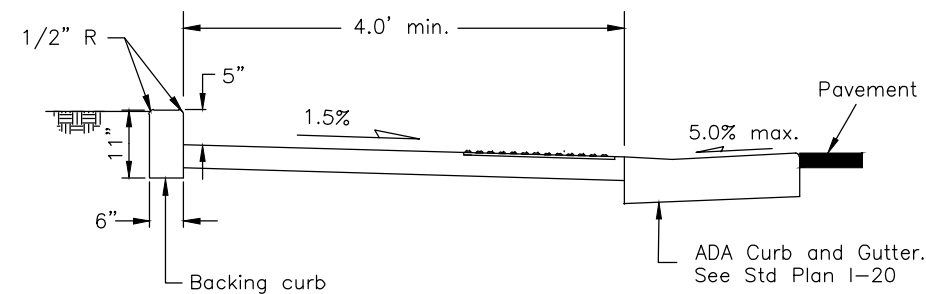
1. See plans for ramp type at specific locations. See striping plans for crosswalk layouts.
2. Construct ramp runs and landings of concrete, regardless of whether the sidewalk is asphalt or concrete.
3. When one parallel curb ramp will serve two directions, use the One Crossing Direction detail and refer to the striping plans for crosswalk layouts.
4. Ramp run lengths are shown for a flat sidewalk grade. For other sidewalk grades, increase or decrease ramp and flare lengths to maintain the slopes shown.
5. Construct ramp slopes at a nominal 7.7% grade, or flatter. Ramp slopes may be increased to a maximum of 8.3% when site conditions warrant it. Ramp lengths should be increased to keep grades under the 8.3% maximum, but are not required to exceed 15.0 feet. The resulting ramp grade at a 15.0 foot ramp length is acceptable even if it exceeds 8.3%.
6. Construct sidewalk cross slopes at 1.5% nominal (1.0% min. and 2.0% max).
7. Provide a coarse broomed finish running perpendicular to the curb on ramp runs and upper landings and parallel to the curb on lower landings.
8. Install 24" detectable warning tiles meeting Section 705.1 of the 2006 ADA Standards for Transportation Facilities for the full width of the ramp.
9. Maximum cross slope on lower landings is 2.0% as measured in any direction. Maximum cross slope on ramps is 2.0% measured perpendicular to the ramp run.
10. Provide 4" minimum thick concrete on ramps and landings.



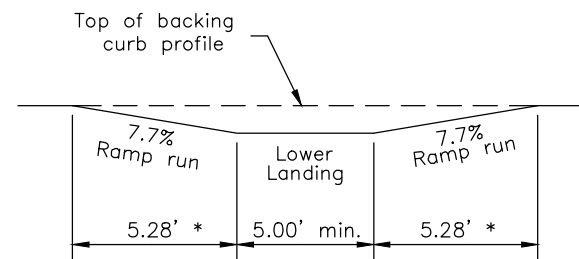
TWO CROSSING DIRECTIONS
At corner



ONE CROSSING DIRECTION
At corner – generic location shown

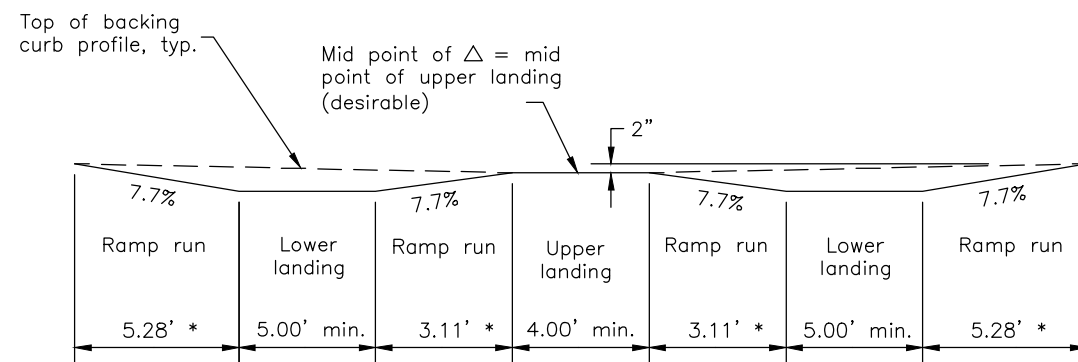


SECTION B-B



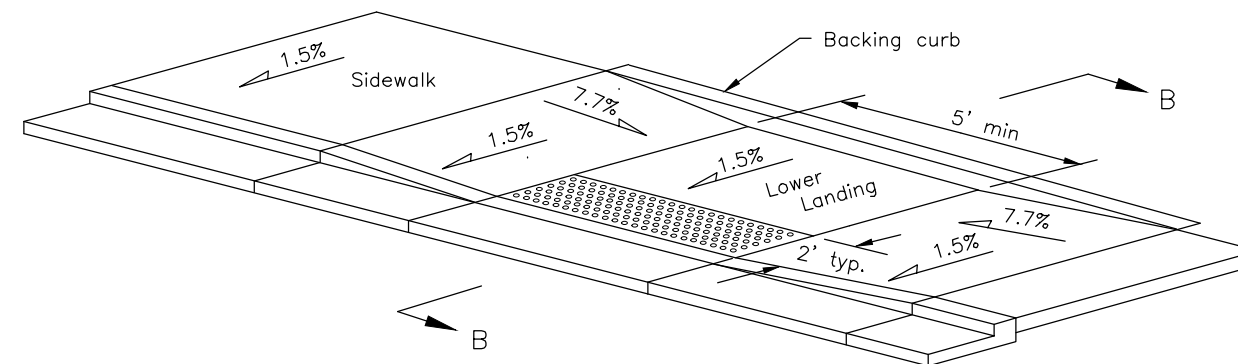
* See Const.
Note 5

PROFILE C-C



* See Const.
Note 5

PROFILE A-A



MID-BLOCK

Note: Drawing not to scale

State of Alaska DOT&PF
ALASKA STANDARD PLAN

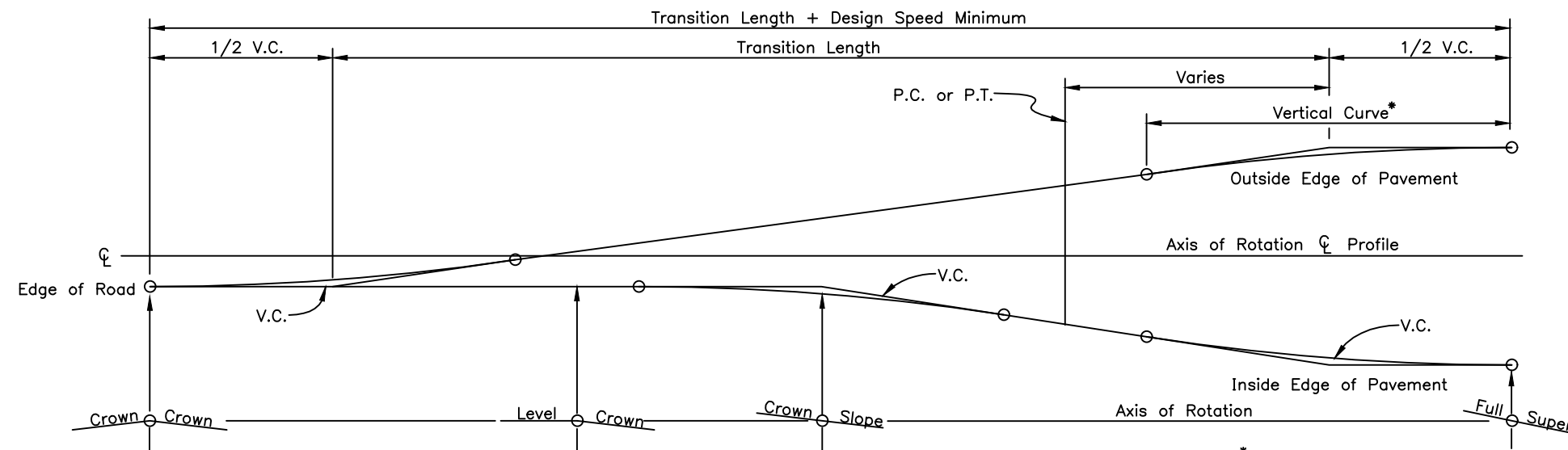
PARALLEL CURB RAMP

Adopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

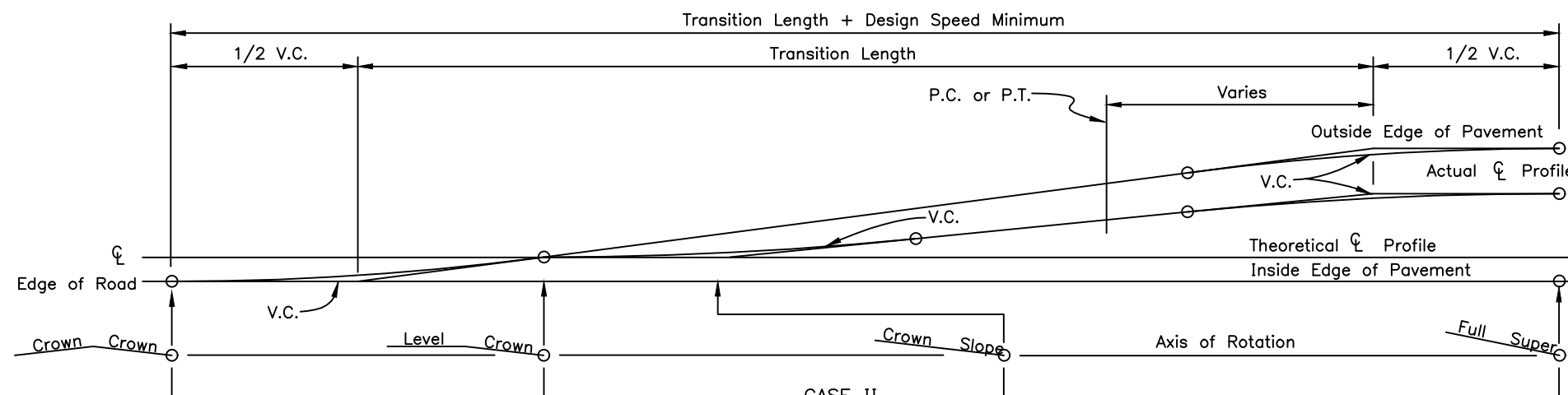
Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLH Date: 7/8/2020

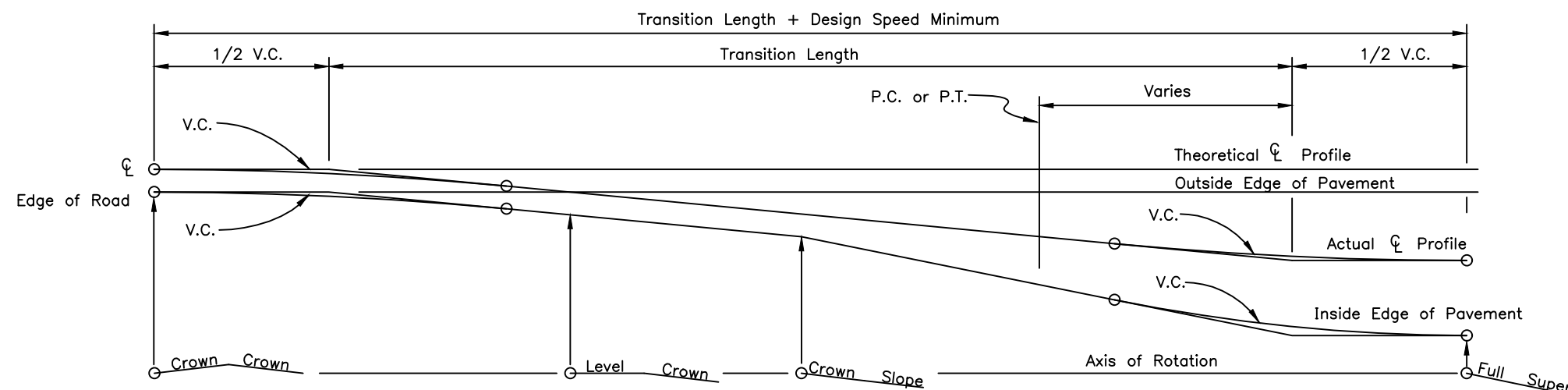
Next Code and Standards Review date: 7/8/2030



CASE I
PAVEMENT REVOLVED ABOUT CENTERLINE



CASE II
PAVEMENT REVOLVED ABOUT INSIDE EDGE
TO BE USED WHERE DRAINAGE IS THE GOVERNING CONSIDERATION



CASE III
PAVEMENT REVOLVED ABOUT OUTSIDE EDGE TO BE
USED WHERE OVERALL APPEARANCE IS THE MAIN CONTROL

GENERAL NOTES:

1. Location of transition length relative to horizontal curves will be shown on the plans or as directed by the Engineer.
2. Widening for guardrail or curvature will not change the location of the axis of rotation.
3. Minimum vertical curve length in feet shall be the numerical value of the design speed in M.P.H.
4. Superelevation shall be built into the subgrade and carried through the shoulders.

*See General Note 3

State of Alaska DOT&PF
ALASKA STANDARD PLAN

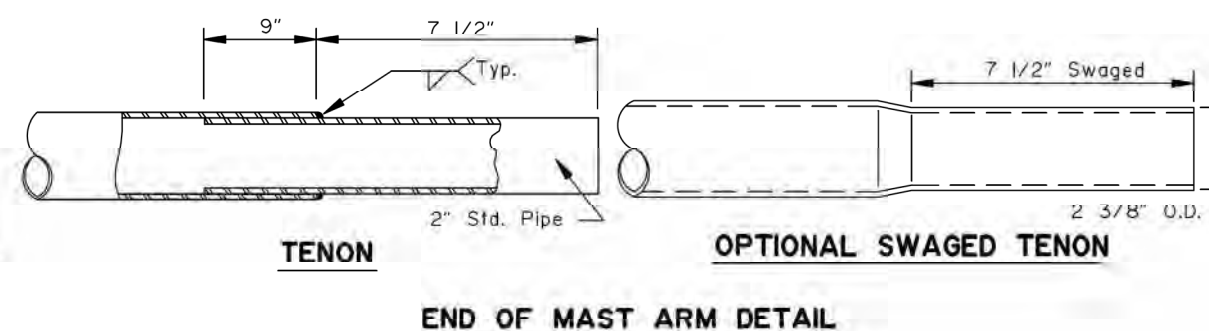
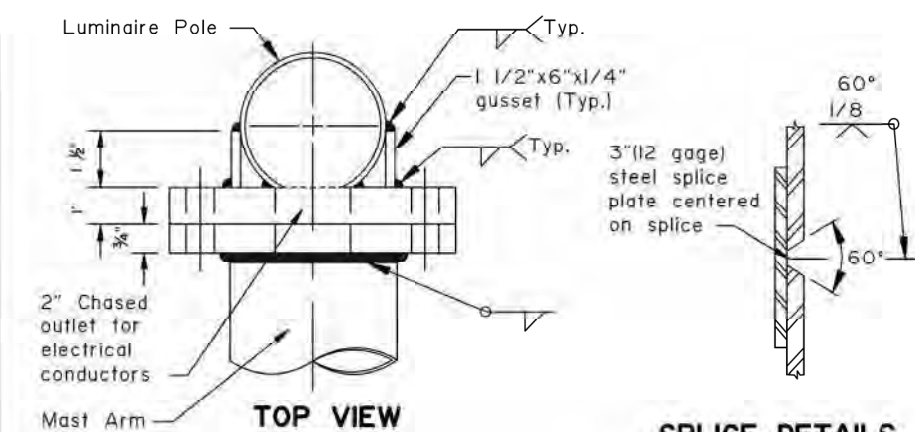
SUPERELEVATION TRANSITION

Adopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

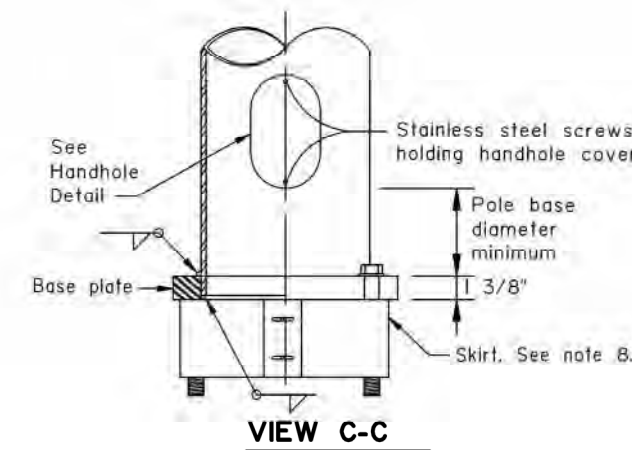
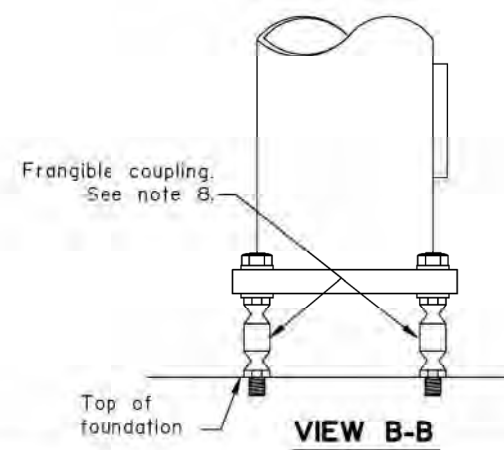
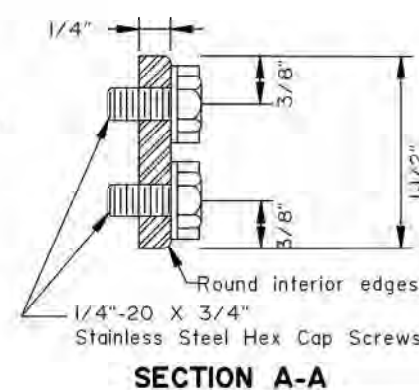
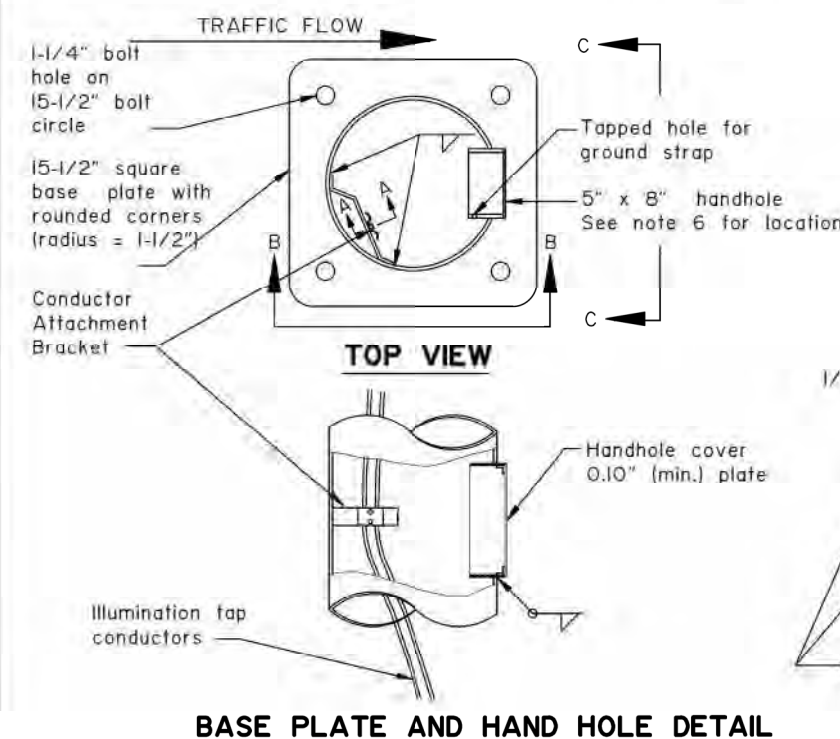
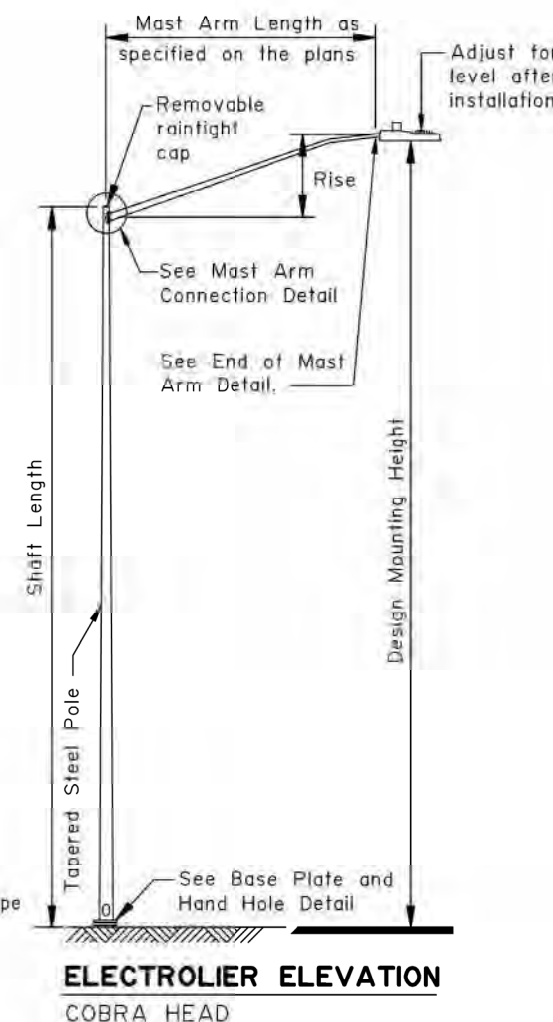
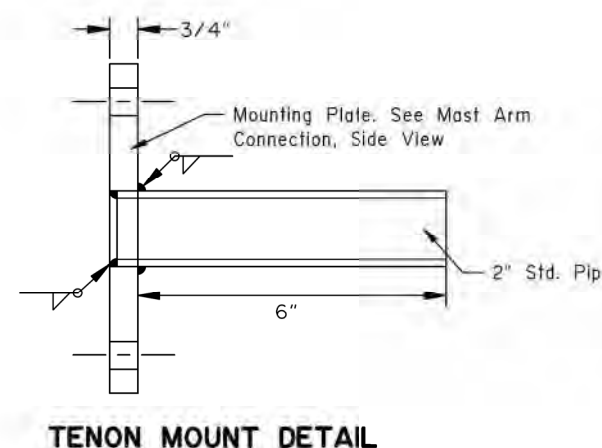
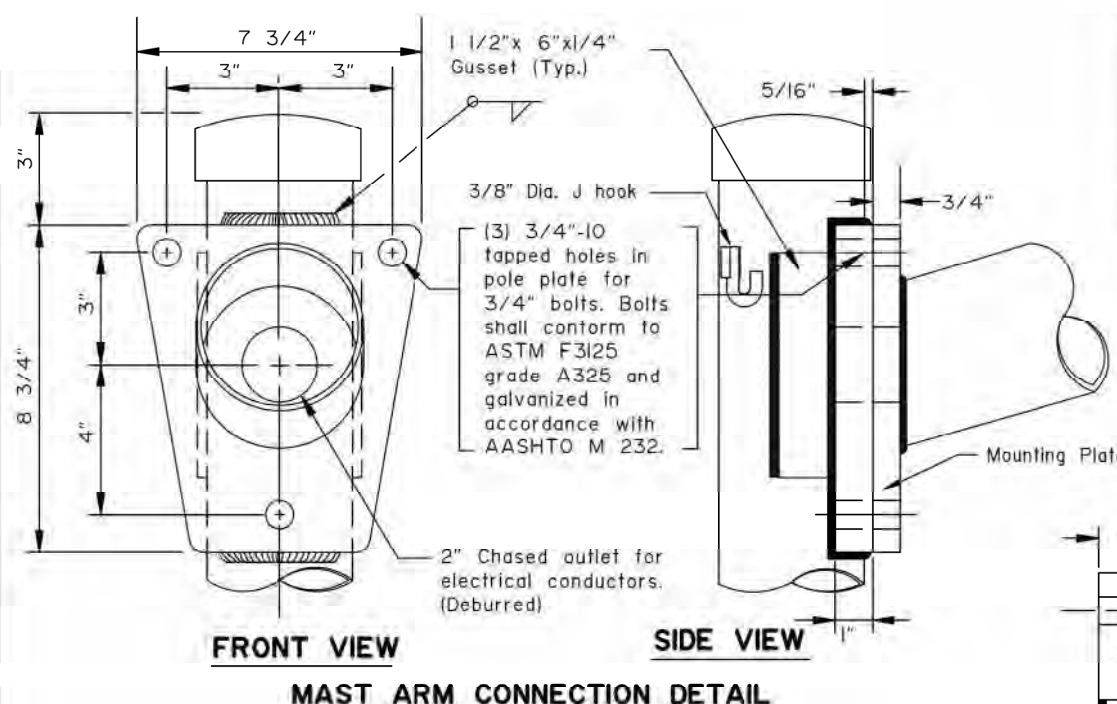
Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLK Date: 7/8/2020
Next Code and Standards Review Date: 7/8/2030

I-81.00



MAST ARM DATA		
ARM LENGTH	ARM RISE	SHAFT LENGTH (MAX)
22'-4"	6'-0"	40'
20'-4"	5'-6"	42'
18'-4"	4'-6"	44'
15'-4"	4'-3"	46'
12'-4"	3'-6"	49'
10'-4"	2'-6"	51'
8'-4"	2'-3"	53'
6'-4"	1'-6"	55'
4'-4"	1'-3"	55'
TENON MOUNT		55'



GENERAL NOTES:

- Design and fabricate Lighting Standards according to AASHTO LTS-6-13, 2019 and 2020 Interim Revisions to (2013 Sixth Edition) Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals. Fatigue and temporary loads are not to be considered.
- All shafts shall support the maximum arm lengths shown in the MAST ARM DATA table with luminaire. Assume each offset fixture weighs 30 lbs. and has an effective projected area of 1.5 SF. Assume each Cobra weighs 25 lbs. and has an effective projected area of 0.75 square feet. The electrolier total weight shall not exceed 992 lbs.
- Weld size to be determined by manufacturer.
- Mounting height, if specified in the plans, refers to the height of luminaire above the finished roadway surface. Adjust each pole's shaft length to maintain this difference in elevation whenever slope and/or offset varies.
- Minimum outside diameter at the top of pole equals 3-7/8". Pole diameter shall taper uniformly from the top of pole to the base plate, with a minimum taper rate of 0.14" per foot.
- Mast arm rise may vary ±0.5ft from the values listed in the table.
- Locate the handhole at 90 degrees to the mast arm on the side of pole downstream from traffic flow.
- Furnish all poles with a j-hook to support the illumination tap conductors. Furnish all mast arm poles with a removable raintight cap.
- See ASP L-30 for frangible coupling and skirt details and notes.

State of Alaska DOT&PF ALASKA STANDARD PLAN LIGHTING STANDARDS

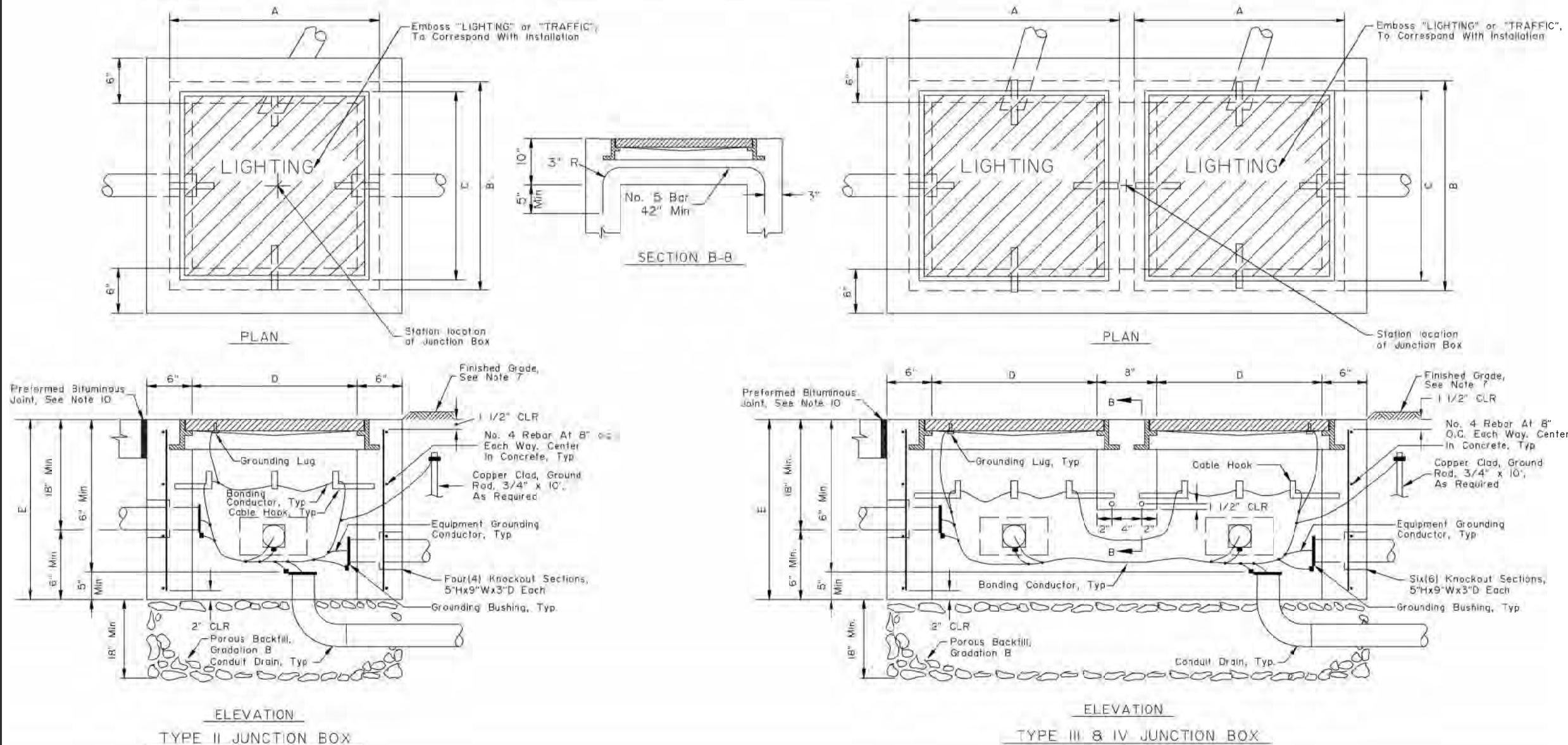
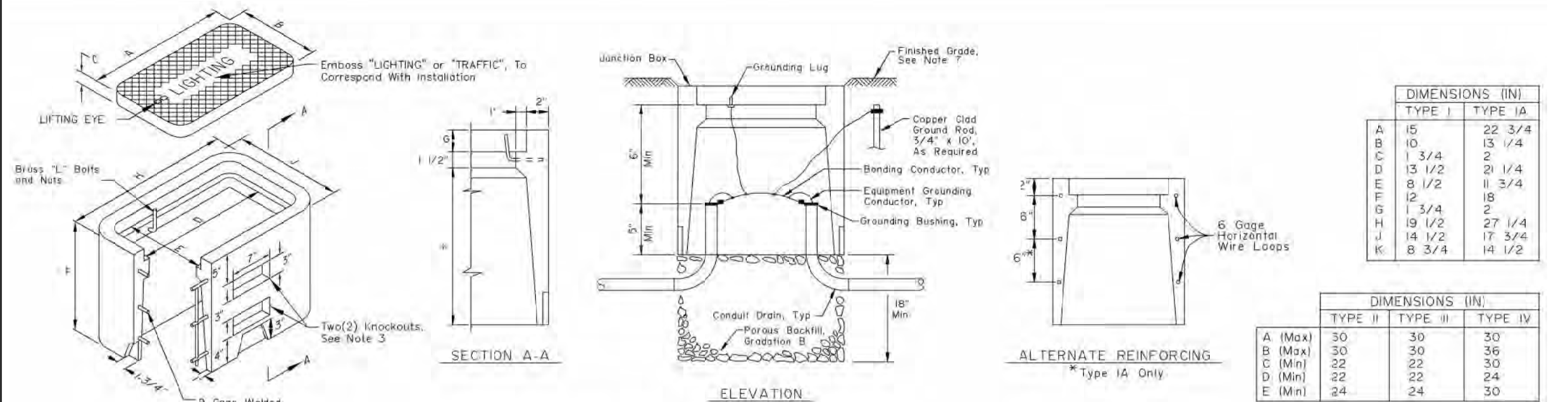
Adapted as an Alaska
Standard Plan by:

Lauren Little, P.E.
Interim Chief Engineer

Adoption Date: 01/29/2024

Last Code and Stds. Review
By: CMW Date: 12/19/2023

Next Code and Standards Review Date: 12/19/2033



- GENERAL NOTES:
- See the Standard Specifications for Highway Construction (SSH) for additional requirements.
 - See Section 660-2.01 of the SSH for concrete and reinforcing steel requirements.
 - Provide knockouts indicated in Type IA junction box when installed for loop detection. Conduit for loop detectors to enter junction box through knockouts.
 - Covers for junction boxes shall be cast iron. Type I and IA shall be secured to junction box with a minimum of two bolts and be rated ANSI/SCTE 77, Tier 8, minimum. Type II, Type III and Type IV cover shall weigh over 100 pounds and be ANSI/SCTE 77, AASHTO H-20 traffic rated.
 - The minimum required bearing capacity for Type I shall be 6,800psf, for Type IA shall be 5,100psf, for Type II shall be 3,500psf, for Type III shall be 2,300psf, and for Type IV shall be 2,000psf.
 - See section 703-2.10 of the SSH for Porous Backfill material requirements.
 - See section 660-3.04 of the SSH for top of junction box placement to finished grade requirements.
 - Provide conduits as required, size and quantity indicated in plans.
 - Provide grout around conduits in knockouts and for unused knockouts.
 - Provide a 1/2" thick preformed bituminous joint material around junction boxes installed in concrete walkways.
 - Metal conduits and junction box covers shall be bonded together to be electrically continuous using No. 8 AWG minimum copper bonding conductor. Cover shall be bonded using a flinned copper braided bonding jumper.

NOT TO SCALE

State of Alaska DOT&PF
ALASKA STANDARD PLAN

JUNCTION BOXES
FOR ELECTROLIER
& TRAFFIC SIGNALS

Adopted as an Alaska
Standard Plan by *Carolyn H. Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 09/15/2022

Last Code and Stds. Review
By: CNH Date: 7/15/2020

Next Code and Standards Review date: 7/15/2030



- ### INSTALLATION NOTES:

1. INSTALL TYPE 3 LOAD CENTER POLES OF SUFFICIENT LENGTH TO PROVIDE THE FOLLOWING MINIMUM GROUND TO SERVICE CONDUCTOR CLEARANCE:
 - A. 18.5 FEET, IF THE SERVICE CONDUCTORS ARE LOCATED ABOVE ROADWAYS OR PARKING AREAS.
 - B. 26.5 FEET, IF THE SERVICE CONDUCTORS ARE LOCATED WITHIN 20 FEET OF A RAILROAD TRACK.
 - C. 18.5 FEET IN ALL OTHER CIRCUMSTANCES.
2. SET THE BUTT END OF TYPE 3 LOAD CENTER POLES TO THE FOLLOWING MINIMUM DEPTH:
 - A. 10 PERCENT OF ITS LENGTH PLUS 24 INCHES, OR 60 INCHES, WHICHEVER IS GREATER, IF IT IS INSTALLED IN EARTH OTHER THAN SOLID ROCK OR MUSKEG.
 - B. 10 PERCENT OF ITS LENGTH, OR 48 INCHES, WHICHEVER IS GREATER, IF IT IS INSTALLED IN SOLID ROCK.
 - C. CONSIDER MUSKEG TO BE AIR, AND SET THE BUTT ENDS TO THE DEPTH GIVEN IN A OR B, WHICHEVER APPLIES, IN THE UNDERLYING EARTH OR ROCK.

WHENEVER MORE THAN 24 INCHES OF EARTH OVERLAYS ROCK, OR THE DIAMETER OF THE DRILLED HOLE IN ROCK EXCEEDS TWICE THE DIAMETER OF THE POLE AT THE GROUND LINE, CONSIDER THE INSTALLATION AS EARTH.

3. ATTACH ALL CONDUITS TO THE POSTS AND POLES USING TWO HOLE RIGID METAL CONDUIT STRAPS LOCATED ON 24 INCHES MAXIMUM CENTERS.
4. ATTACH ALL GROUND CONDUCTORS TO THE POSTS AND POLES USING CABLE STAPLES LOCATED ON 12 INCH CENTERS. MAKE ALL GROUNDING CONDUCTORS CONTINUOUS. USE #6 AWG CU GEC FOR 100A SERVICE AND #4 AWG CU GEC FOR 200 AMP SERVICE.
5. ALL POSTS, POLES, AND STRUTS SHALL BE COMMERCIALY TREATED AND SHALL MEET THE REQUIREMENTS SET FORTH IN ALASKA DOT&PF SSHC SECTIONS 713 & 714.
6. ALL ELECTRICAL ENCLOSURES SHALL FEATURE MEANS FOR SEALING AND LOCKING ALL DOORS AND ACCESS COVERS THAT MAY CONTAIN EXPOSED ENERGIZED ELECTRICAL PARTS.

- UTILITY REQUIREMENTS:

1. USE THE SINGLE-POST TYPE 2 "STANDARD" LOAD CENTER IN ALL LOCATIONS EXCEPT WHERE THE SERVING UTILITY REQUIRES THE TWO-POST TYPE 2 "ALTERNATIVE" LOAD CENTER. REFER TO THE LOAD CENTER SUMMARY FOR WHICH TO INSTALL.
2. THE LENGTH AND TYPE OF SERVICE ENTRANCE CONDUIT INSTALLED BY THE CONTRACTOR VARIES BY UTILITY. REGARDLESS OF ITS LENGTH, INSTALL A PULL ROPE IN THE SERVICE CONDUIT AND A CAP ON THE BURIED END: MARK THE BURIED END WITH A 2"x6" WOOD STAKE. SEE THE LOAD CENTER SUMMARIES FOR THE FOLLOWING INFORMATION.
 - A. STATION AND OFFSET OF THE LOAD CENTER AND POWER SOURCE.
 - B. WHERE THE CONTRACTOR TERMINATES THE SERVICE ENTRANCE CONDUIT.
 - C. THE TYPE OF SERVICE ENTRANCE CONDUIT (SUCH AS RIGID METAL CONDUIT OR LIQUID-TIGHT FLEXIBLE METAL CONDUIT).
 - D. THE MAXIMUM AND MINIMUM DISTANCES ALLOWED BETWEEN THE TYPE-3 LOAD CENTER POLE AND UTILITY POLE TO WHICH THE AERIAL DROP IS CONNECTED.
3. VERTICAL CLEARANCE FOR SERVICE-DROP CONDUCTORS IN ACCORDANCE WITH NEC 230.24(B).

State of Alaska DOT&PF
ALASKA STANDARD PLAN

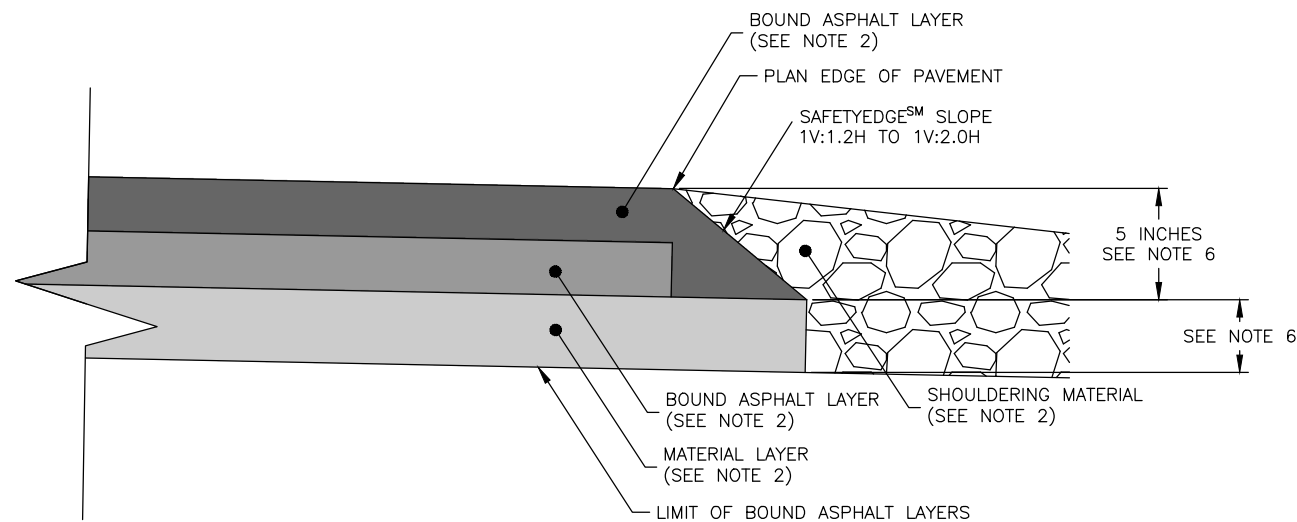
TYPE 2 AND 3
LOAD CENTERS

Adopted as an Alaska
Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 07/17/2020

Last Code and Stds. Review
By: JC Date: 07/17/2020

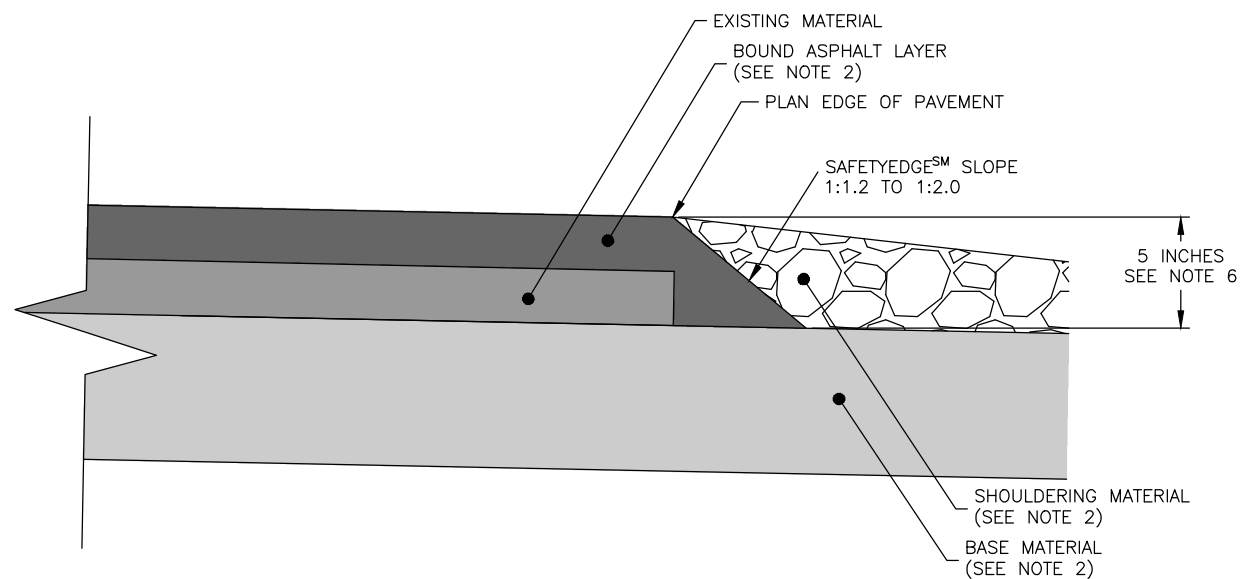
Next Code and Standards Review date: 07/17/2030



NEW CONSTRUCTION; RECONSTRUCTION DETAIL

N.T.S.

- ASPHALT SAFETYEDGESM NOTES:**
1. DO NOT CONSTRUCT SAFETYEDGESM ACROSS BRIDGES OR BRIDGE SLABS AND WHERE CURB AND GUTTER IS PRESENT.
 2. REFER TO TYPICAL SECTIONS FOR MATERIAL TYPE AND THICKNESS.
 3. REFER TO PROJECT SPECIFICATIONS FOR SAFETYEDGESM LABOR AND EQUIPMENT PAYMENT INFORMATION.
 4. OBTAIN ENGINEER APPROVAL BEFORE CONSTRUCTING SAFETYEDGESM BY HAND.
 5. SAFETYEDGESM IS NOT REQUIRED, BUT IS PERMISSIBLE WHERE GUARDRAIL IS PRESENT AND ACROSS DRIVEWAYS.
 6. CONSTRUCT SAFETYEDGESM FOR ALL BOUND ASPHALT LAYERS UP TO A DEPTH OF 5 INCHES. SAFETYEDGESM IS NOT REQUIRED, BUT IS PERMISSIBLE FOR BOUND ASPHALT LAYERS BELOW THE UPPER FIVE INCHES.

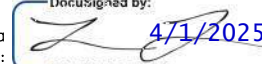


RESURFACING; OVERLAY DETAIL

N.T.S.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

**ASPHALT
SAFETY EDGE**

Adopted as an Alaska
Standard Plan by:  4/1/2025
0B7718E00CC647E...
Lauren Little, P.E.
Chief Engineer

Adoption Date: 04/01/2025

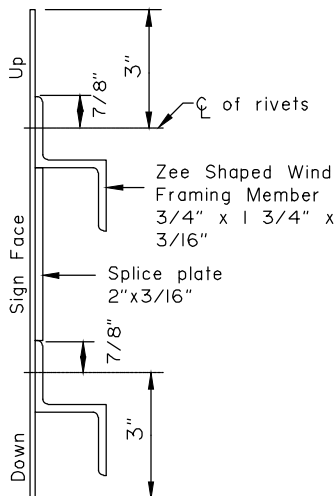
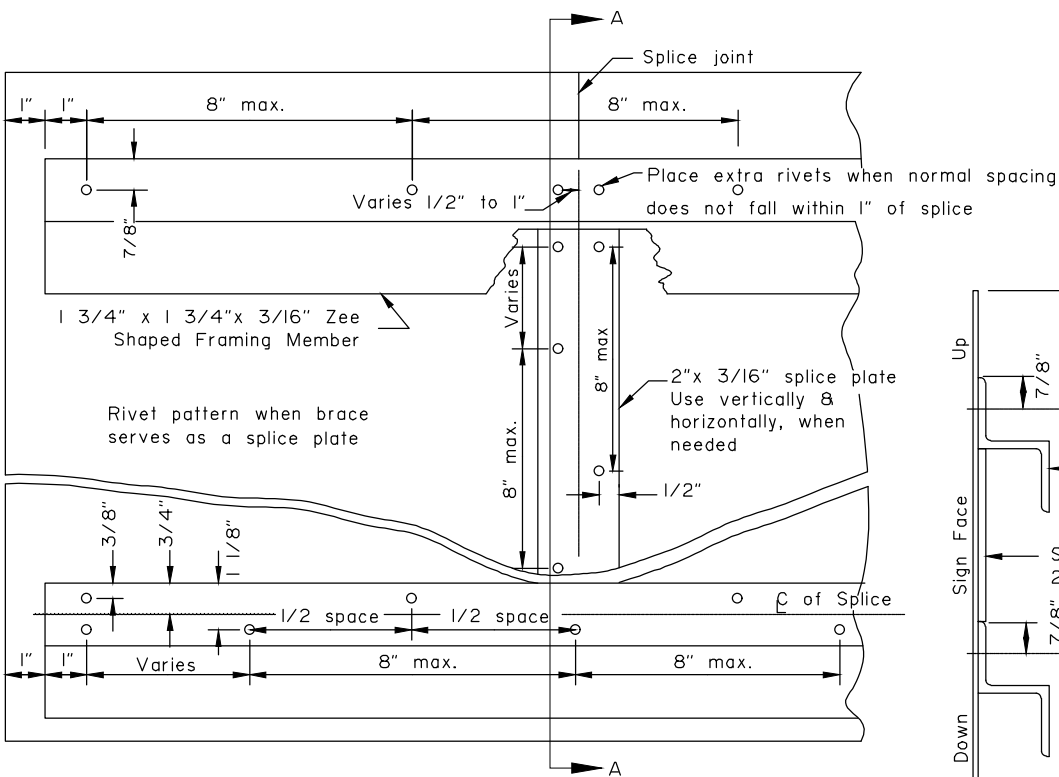
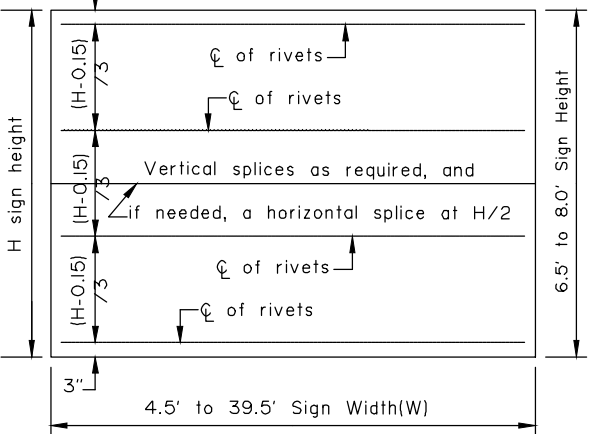
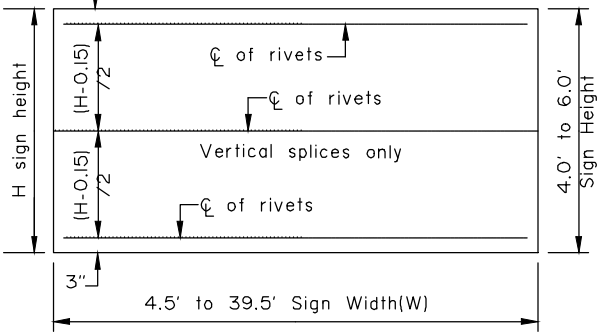
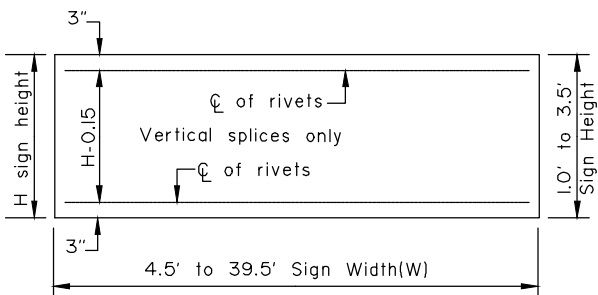
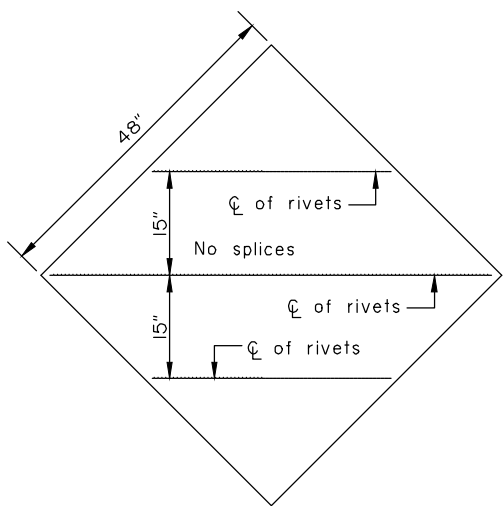
Last Code and Sds. Review
By: BEI Date: 04/01/2025

Next Code and Standards Review Date: 04/01/2035

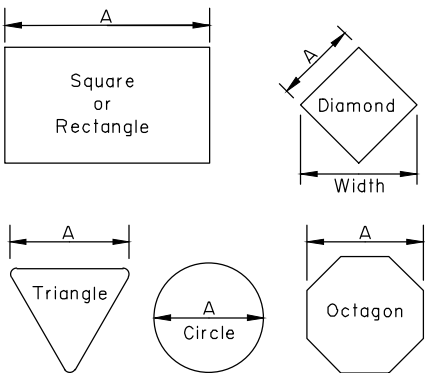
M-25.00

GENERAL NOTES

1. See the standard specifications for the aluminum alloys that you may use for sign sheeting and wind framing members.
2. Fabricate all signs from 0.125" thick aluminum sheeting.
3. Sign fabricators may use alternates to the zee shaped framing member with approval of the engineer, if the frame manufacturer certifies their design equals or exceeds the strength of the zee shaped design.
4. Install one piece wind framing members on all signs up to 23.5' wide. Use one splice in each wind frame on all signs wider than 23.5'. Locate splices at least 18" from all posts and panel edges. Stagger splices in adjacent framing members at least 8.0' apart.
5. Attach wind framing members with rivets or with an engineer approved, double sided, high strength, adhesive tape. Clean and handle sheeting and framing members and apply tape in accordance with the tape manufacturer's written instructions. Install two rivets in both ends of each framing member.
6. Use 3/16" diameter rivets conforming to aluminum alloy 6061-T6 for cold driven rivets, or aluminum alloy 6061-T43 for hot driven rivets.
7. Sign fabricators may use sign panels extruded with integral framing with approval of the engineer, if the manufacturer certifies their design equals or exceeds the strength of the 0.125" thick panel with framing attached to it.
8. Frame all signs taller than 8.0' with five wind framing members located $(H-0.15)/4$ spaces. If needed, make a horizontal splice at the middle wind frame.
9. Do not use round pipes for sign supports.



SECTION A-A



Maximum size unframed signs using 0.125" thick aluminum sheeting.	
Sign Shape	A
Squares, Shields, and Route Markers	48"
Rectangles	48"
Diamonds	48"
Triangles	48"
Rounds and Octagons	48"

Install wind framing on all signs that exceed the dimensions listed.

LIGHT SIGNS

WIND FRAMING
LOCATIONS

RIVET DETAIL FOR ZEE SHAPED
WIND FRAMING & SPLICE PLATE

Note: Drawing not to scale

State of Alaska DOT&PF
ALASKA STANDARD PLAN

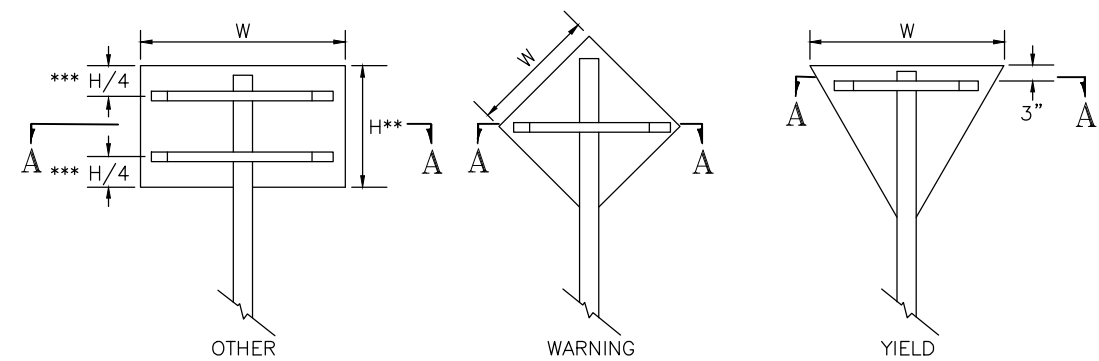
SIGN FRAMING

Adopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: WTH Date: 7/8/2020

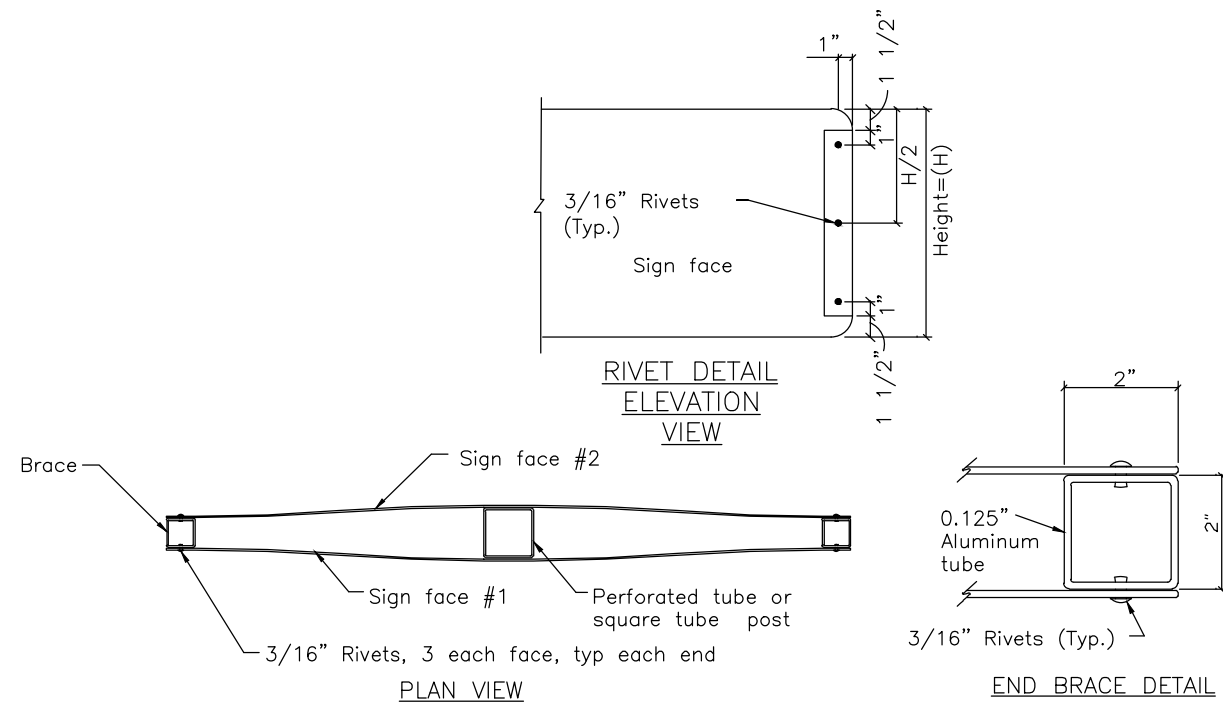
Next Code and Standards Review date: 7/8/2030



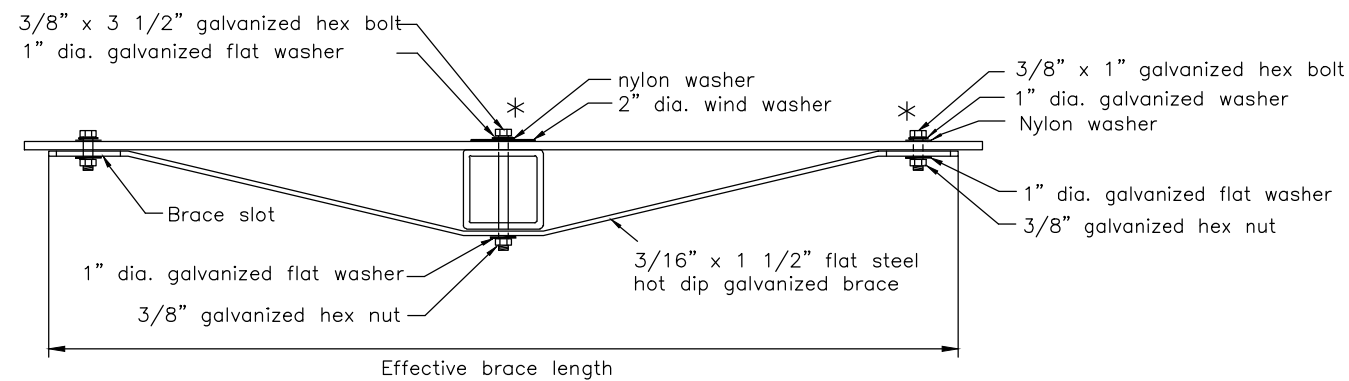
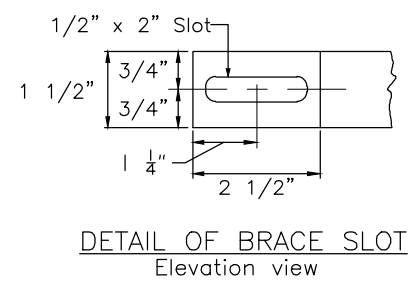
*** Use one brace when $H \leq 18"$
Use two braces when $18" < H < 48"$
Use three braces when $H \geq 48"$

** Position of brace may be varied to match
Predrilled mounting holes in panel

SIGN BRACING PLACEMENT



SMALL STREET NAME SIGN (D3-1, D3-1A, D3-1D) BRACING DETAILS



TUBE POST SIGN BRACING SECTION A-A
Plan view

* Adjust location of bracing so that bolts
and washers will miss the sign legend

Sign Width(W)	Effective Brace Length		
	Warning	Yield	Other
30"	36"	24"	24"
36"	42"	30"	30"
42"	48"	-	36"
48"	Two posts	36"	42"

< 30" No bracing required and use square tube

Note: Drawing not to scale

State of Alaska DOT&PF
ALASKA STANDARD PLAN

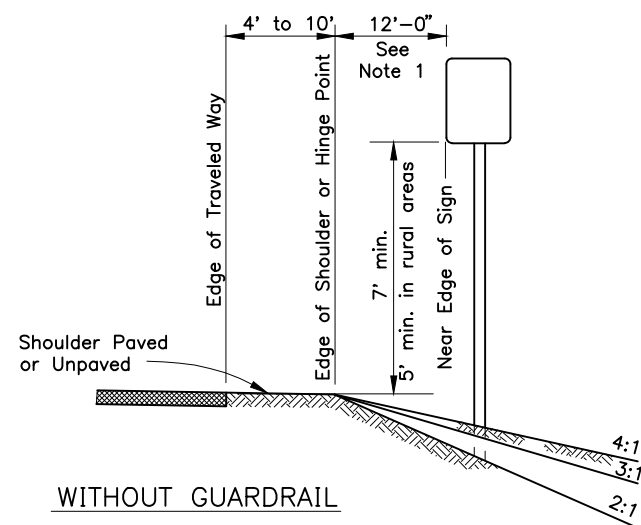
BRACING FOR SIGNS
MOUNTED ON SINGLE POST

Adopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

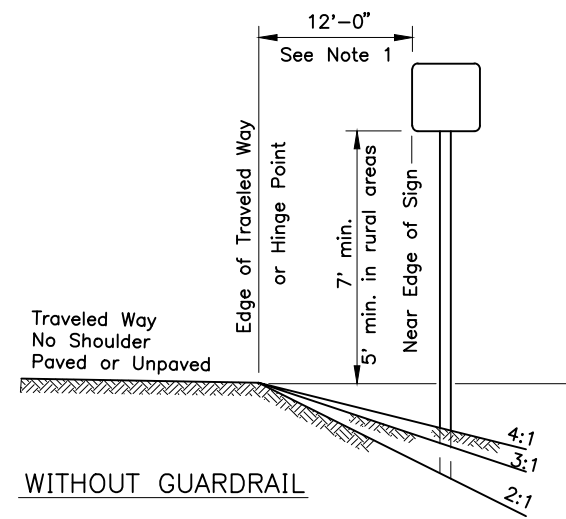
Adoption Date: 7/17/2020

Last Code and Stds. Review
By: WTH Date: 7/8/2020

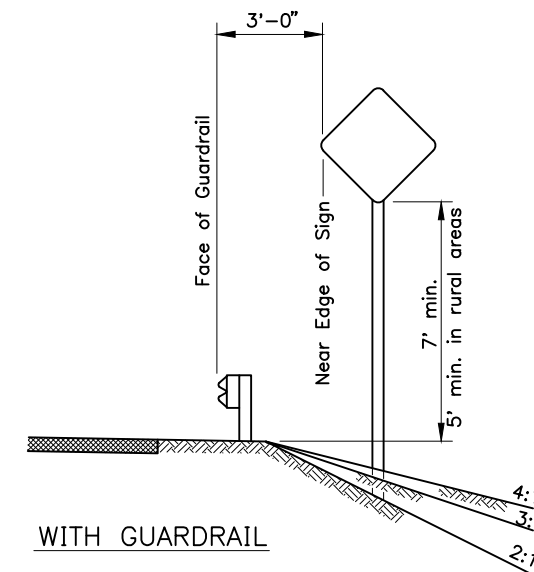
Next Code and Standards Review date: 7/8/2030



WITHOUT GUARDRAIL
SUBGRADES OVER 28', ALL SLOPES



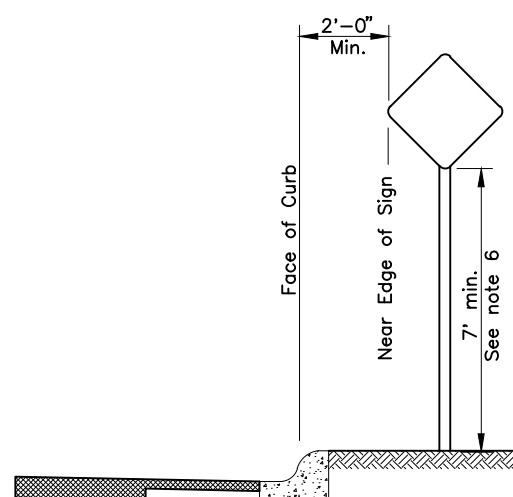
WITHOUT GUARDRAIL
SUBGRADES 24' TO 28', ALL SLOPES



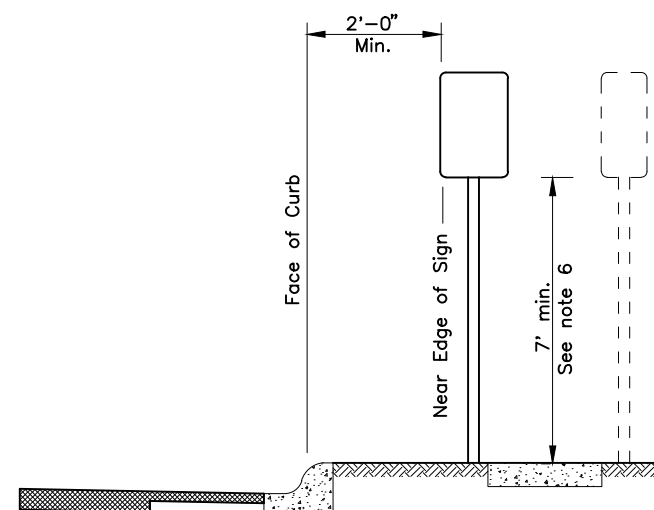
WITH GUARDRAIL
ALL SUBGRADES, ALL SLOPES

GENERAL NOTES

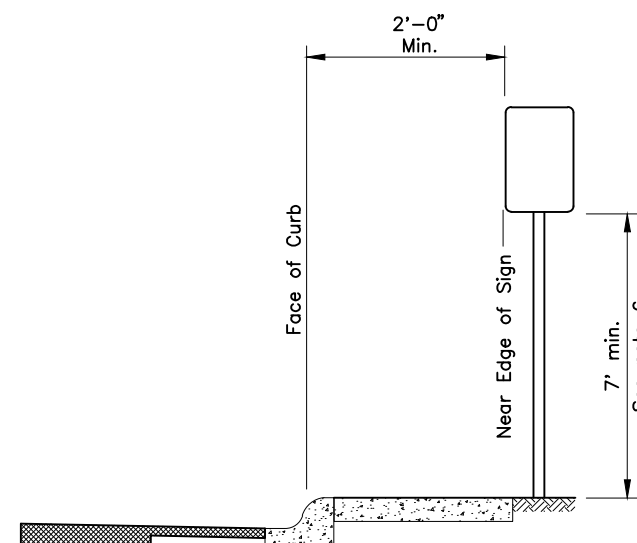
1. Unless shown otherwise on the plans, the standard sign offset is 12'. The minimum is 6' where shoulder width is 6' or greater.
2. Add 6" to mounting height on unpaved roads.
3. If signs extend over bike paths, the minimum vertical clearance is 8' 0".
4. When signs are placed 30' or more from the edge of traveled way, mount them with the bottom of the sign at least 5' above the road surface at the near edge of the road.
5. When multiple hinged sign supports are used, mount hinges at least 7' above the ground.
6. Minimum mounting height is 7'-0" where parking or pedestrian movements are likely to occur, or where signs extend over sidewalks.
7. For construction signs in rural areas, mounting height shall be 7' minimum.



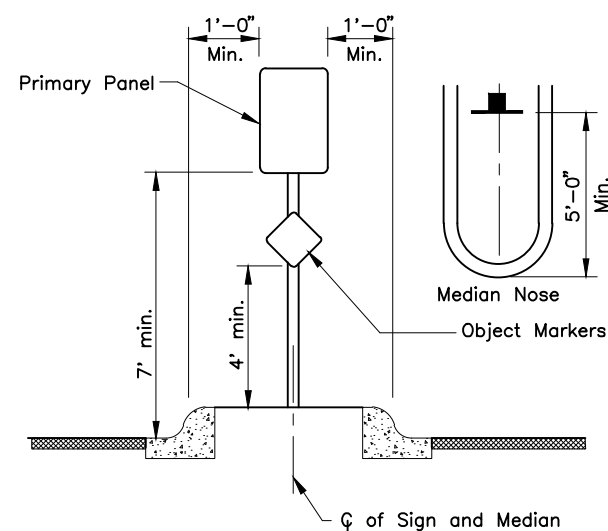
CURB WITHOUT SIDEWALK



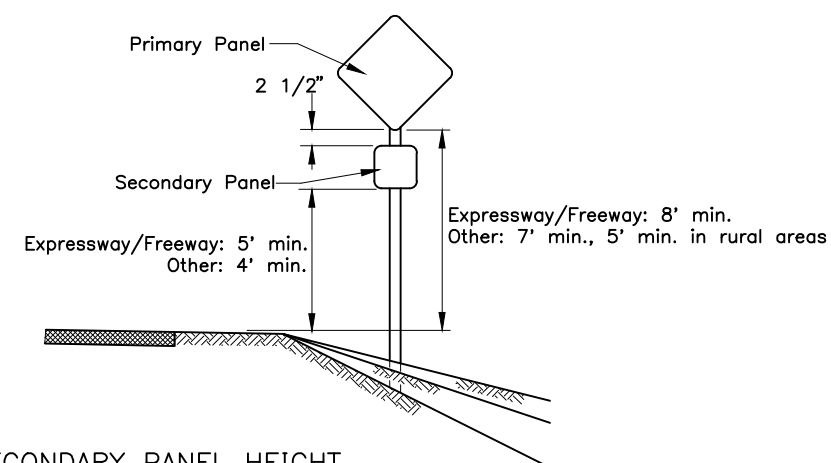
CURB WITH PARKWAY AND SIDEWALK
(If R/W width permits, signs should be placed behind sidewalk.)



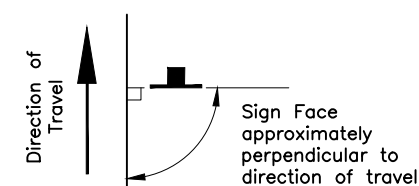
CURB WITH SIDEWALK WITHOUT PARKWAY



RAISED MEDIANS
Minimum 4' Width for Signing



SECONDARY PANEL HEIGHT
ALL TWO PANEL MOUNTING



SIGN POSITIONING

State of Alaska DOT&PF
ALASKA STANDARD PLAN

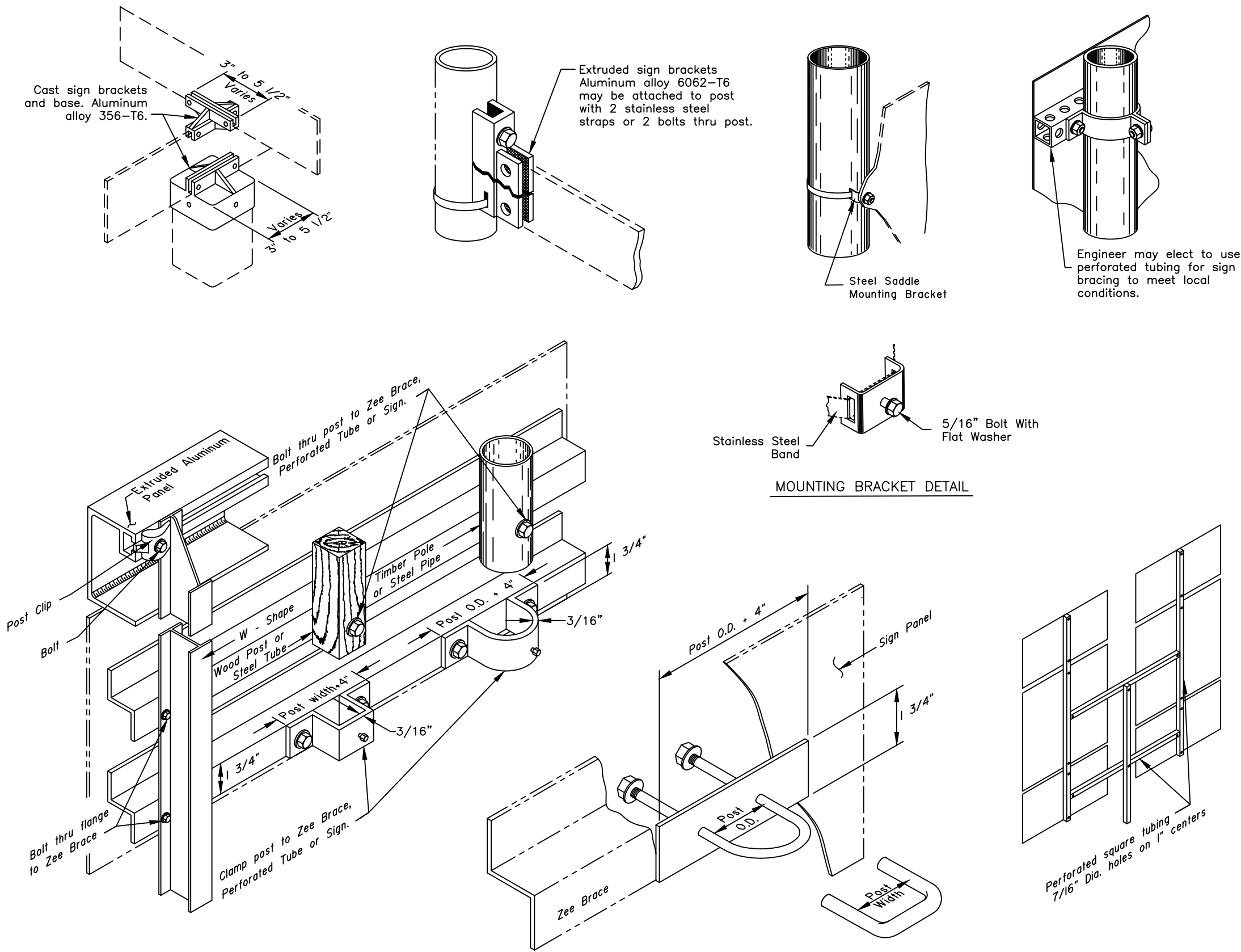
POST MOUNTED SIGN OFFSET AND HEIGHT

Adopted as an Alaska
Standard Plan by *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KKK Date: 7/8/2020

Next Code and Standards Review Date: 7/8/2030



CONSTRUCTION NOTES

1. Details shown indicate general design only. Dimensions and design may vary among manufacturers.
2. Install weather tight caps on all pipe and tube post (except perforated tubing).
3. Protect driven sign posts with drive caps during installation.
4. Bolt braces to posts at each point where they cross posts.
5. Install signs with top of post, mounting brackets, etc. with a minimum of 3" below top of sign.
6. Paint all sign mounting fasteners on sign face a color closely matching the sign face.
7. Attach all signs, zees and braces mounted to the posts with 5/16" bolts, nuts and washers.
8. Furnish all aluminum nuts, bolts and washers with anodized finish.

FASTENER SPECIFICATION TABLE
(ALL REFERENCES ARE TO ASTM)

FASTENERS		ALUMINUM	STEEL	STAINLESS STEEL
BOLTS	MACHINE	F468 2024-T4	A307	F593
	CARRIAGE "U"	F468 2024-T4	A307	A276 TYPE 304
NUTS	REGULAR	F467 6061-T6	A563	F594
	LOCKING	F467 2017-T4		
WASHERS		F468 2024-T4	F844	A480
POST CLIP		A356-T6	N/A	N/A

State of Alaska DOT&PF
ALASKA STANDARD PLAN

SIGN TO SIGN POST
CONNECTION

Adopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 07/30/2021

Last Code and Stds. Review
By: LRG Date: 07/30/2021

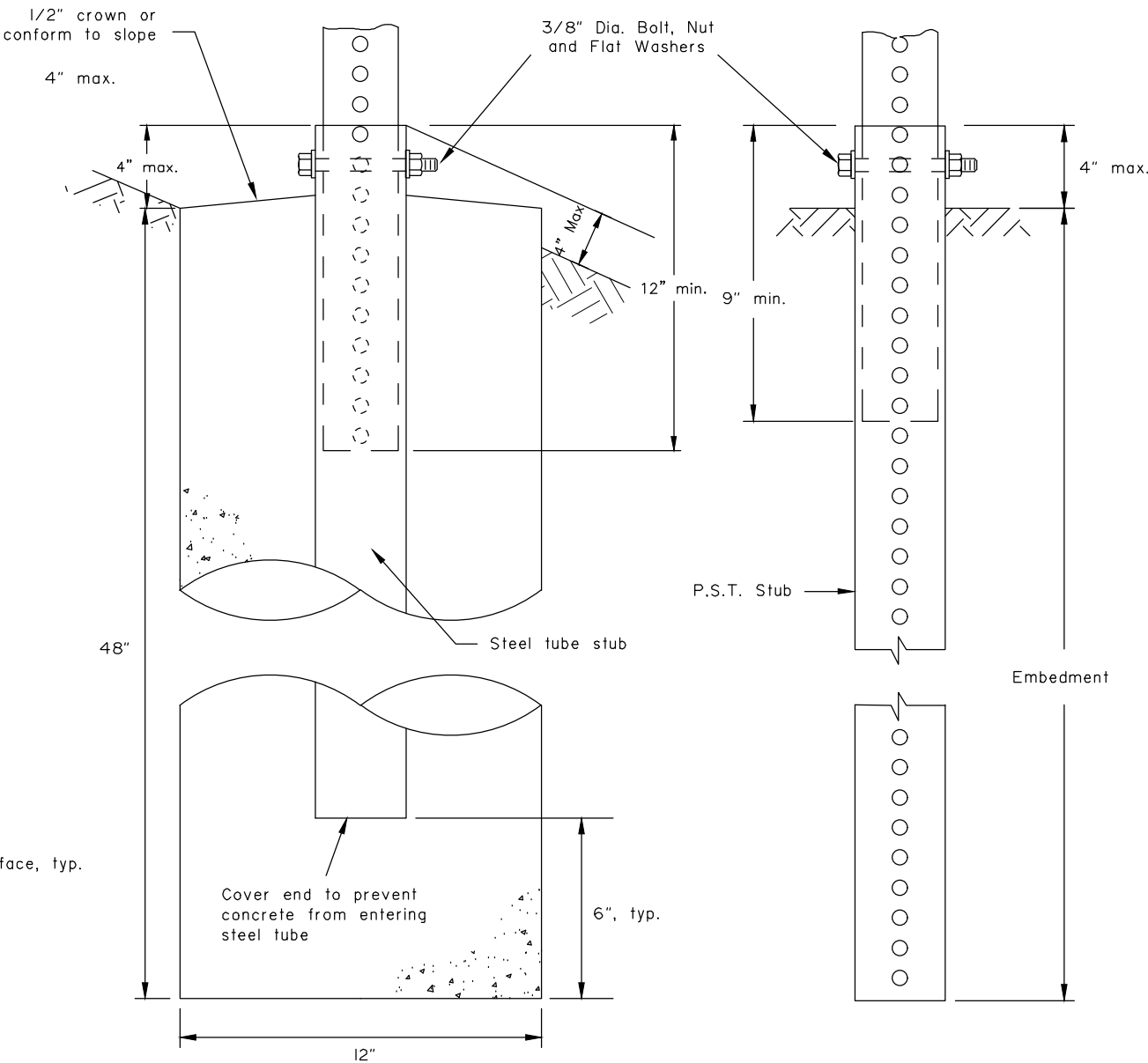
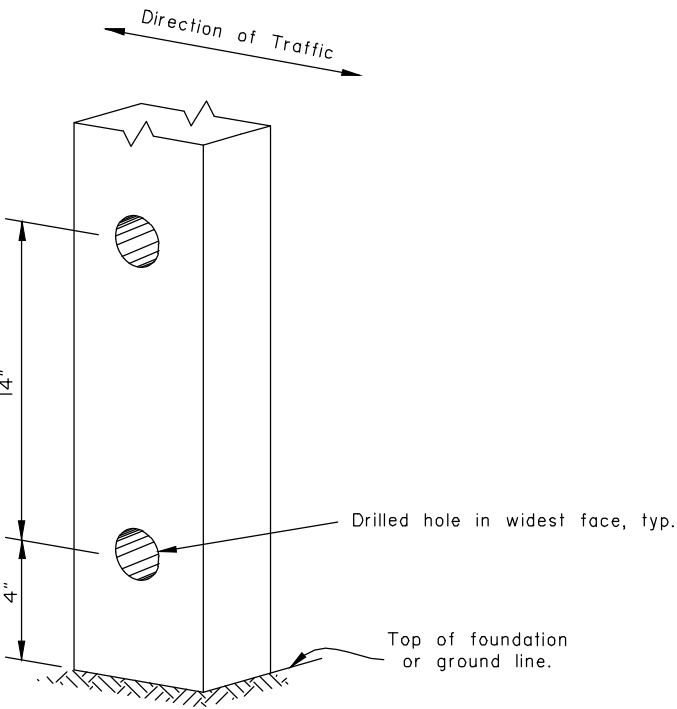
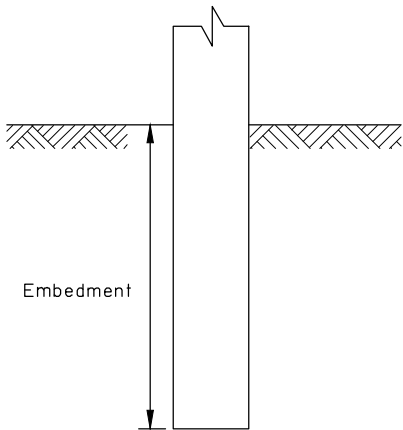
Next Code and Standards Review date: 07/30/2031

GENERAL NOTES:

1. Sign shall be placed symmetrically around posts and refer to Standard Plan S-00 for sign framing details.
2. See plans for type of post, size and embedment type.
3. To maintain crashworthiness, install no more than the number of P.S.T.s or wood posts specified in the tables within 7' of each other.
4. Concrete shall be class B.
5. Do not use the supports on this drawing for multiple support signs if supports are separated by more than 7 feet.
6. Treat all field cuts and field drilled holes in wood posts in accordance with Section 730-2.04 of the Standard Specifications.

SIGN POST SPACING NOTES:

1. Install sign support in accordance with the table below, unless otherwise required by plans or specifications.
2. Exceptions:
 - a. Use one post for all E5-I gore signs, regardless of width.
 - b. Use one 2.5" P.S.T. for all STOP signs, with or without street name signs.
3. Supports placed within 7' of each other must be acceptable for that use. See tables below for the sizes of wood posts and P.S.T.s that may be used within 7'. See Manufacturer's documentation for breakaway couplings and tubes that may be used within 7'.
4. See Standard Plan S-3I for frangible couplings, hinges, and foundations for tube and W-shape sign supports.



SLEEVE TYPE
CONCRETE FOUNDATION

SLEEVE TYPE*
SOIL EMBEDMENT

WOOD SIGN POSTS			
SIZE	HOLE DIA.	EMBEDMENT*	NO. OF POSTS WITHIN 7 Ft. PATH
4"x4"	NONE	4'-1"	2
4"x6"	1 1/2"	5'-3"	2
6"x6"	1 1/2"	4'-9"	1
6"x8"	3"	4'-9"	1

* Embedment depth applies in both strong and weak soil.

WOOD POSTS

PERFORATED STEEL TUBES (P.S.T.)		
POST SIZE	Embedment Depth	No. of P.S.T.s permitted within 7 ft path
1 1/2" x 1 1/2"	4'-8"	2
1 3/4" x 1 3/4"	4'-6"	2
2" x 2"	4'-3"	2
2 1/4" x 2 1/4"	5'-0"	1
2 1/2" x 2 1/2"	4'-6"	1

* Use 3"x3"x3/16" Stub for 2 1/2"x2 1/2" PST Applications.

PERFORATED STEEL TUBE (PST) POSTS

TUBE SIGN POST SPACING								
Sign Width (feet)	No. of Posts	Distance Between Posts	Sign Overhang	Post Type				Notes
				P.S.T.	Wood	Steel Tube	W-Shape	
0.5 to 4.0	1	-	0.5W	X	X	X		See Note 2.
4.5 to 10.0	2	0.6W	0.2W	X	X	X		See Note 3.
10.5 to 11.0	2	6	Varies	X	X	X		See Note 3.
11.5 to 13.0	2	8	Varies				X	
13.5 to 20.0	2	0.6W	0.2W				X	
20.5 to 22.5	3	8	Varies				X	
23.0 to 29.5	3	0.35W	0.15W				X	
30.0 to 31.5	4	8	Varies				X	
32.0 to 40.0	4	0.25W	0.125W				X	

TUBE SIGN POST SPACING

Note: Drawing not to scale

State of Alaska DOT&PF
ALASKA STANDARD PLAN

LIGHT SIGN STRUCTURE
POST EMBEDMENT

Adopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

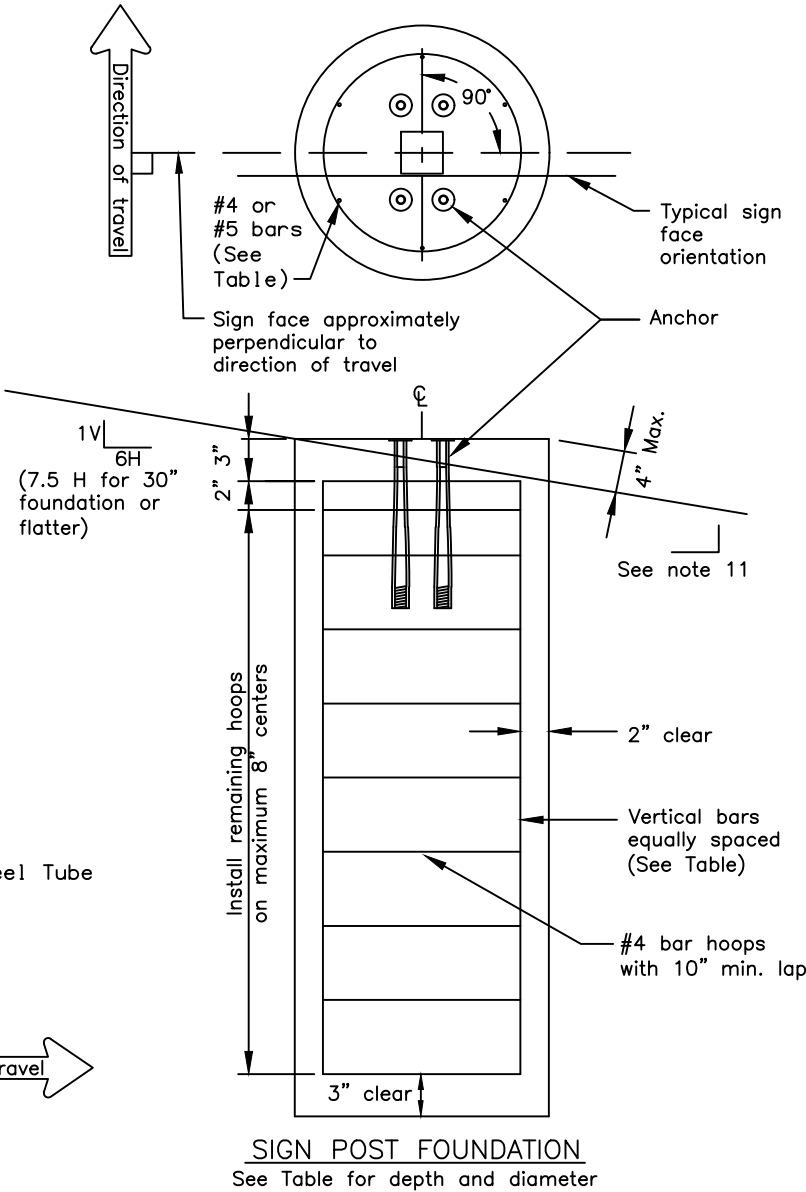
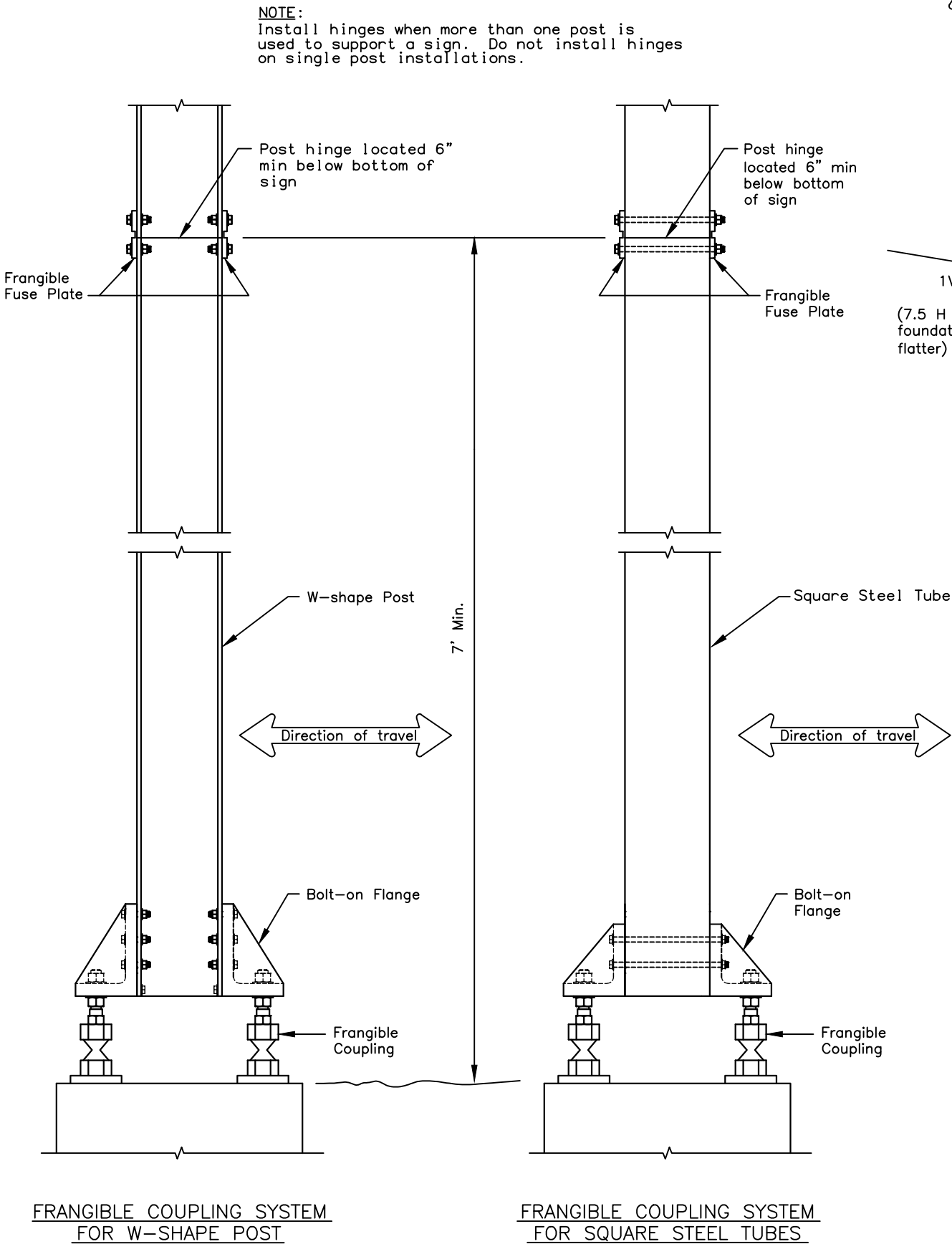
Adoption Date: 7/17/2020

Last Code and Stds. Review
By: WTH Date: 7/8/2020

Next Code and Standards Review date: 7/8/2030

GENERAL NOTES

- Furnish sign posts with NCHRP 350 compliant frangible couplings designed to break away safely when struck from any direction. There is no MASH compliant device at this time. See SPDR report for more info.
- Furnish frangible coupling systems with bolt-on flanges.
- Details on this sheet illustrate only the general components of a frangible coupling system, and are not intended to specify a particular product.
- Install frangible fuse plates as specified by the manufacturer and hinged joints when multiple posts are used to support a sign. Do not use round pipes.
- Install the components of the breakaway system, including hinges, in accordance with the written instructions of the system manufacturer.
- Use Class A, B or W concrete conforming to Sections 501 or 550 of the Standard Specifications. Furnish ASTM A615 grade 60 steel bars for concrete reinforcement conforming to AASHTO M31.
- Spiral reinforcing steel may be substituted for hoops in concrete foundation. Spiral option shall consist of #3 plain spiral with 6" pitch with three flat turns at the top and one flat turn at the bottom.
- Install the concrete anchors using a rigid template. Locate the anchors on centers and within tolerances specified by the manufacturer.
- Install the anchors in fresh concrete as recommended by the manufacturer. Adjust the template's final position until it is level. Remove and replace all foundations that need more than 2 shims under any 1 coupling or more than a total of 3 shims under any pair of couplings to plumb the post.
- Drill the holes for attaching brackets before the sign posts are hot dip galvanized. Test fit templates in the holes to ensure the brackets can be installed square to the posts.
- Special grading detail and/or shielding may be required to maintain 4" maximum clear distance.



POST SIZE & TYPE	FOUNDATION *			REINFORCEMENT			
	DIA.	MIN. DEPTH	CY ³ CONC.	VERTICAL BARS QTY. SIZE	LGTH.	HOOPS QTY. SIZE	DIA.
2 1/2" TUBE	1'-6"	6'-0"	0.39	7 #5	5'-6"	10 #4	1'-2"
3" TUBE	1'-6"	6'-0"	0.39	7 #5	5'-6"	10 #4	1'-2"
3 1/2" TUBE	1'-6"	6'-0"	0.39	7 #5	5'-6"	10 #4	1'-2"
4" TUBE	2'-6"	6'-0"	1.09	8 #8	5'-6"	10 #4	2'-2"
4 1/2" TUBE	2'-6"	6'-0"	1.09	8 #8	5'-6"	10 #4	2'-2"
5" TUBE	2'-6"	6'-0"	1.09	8 #8	5'-6"	10 #4	2'-2"
W6 x 9	2'-6"	6'-0"	1.09	8 #8	5'-6"	10 #4	2'-2"
W6 x 12	2'-6"	6'-0"	1.09	8 #8	5'-6"	10 #4	2'-2"
W6 x 15	3'-0"	6'-6"	1.70	8 #11	6'-0"	12 #4	2'-8"
W6 x 30	3'-0"	7'-6"	1.96	8 #11	7'-0"	13 #4	2'-8"

* Foundations sized for use where there are no loose, high moisture, or fine grained soils.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

SIGN POST BASE AND
FOUNDATION

Adopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

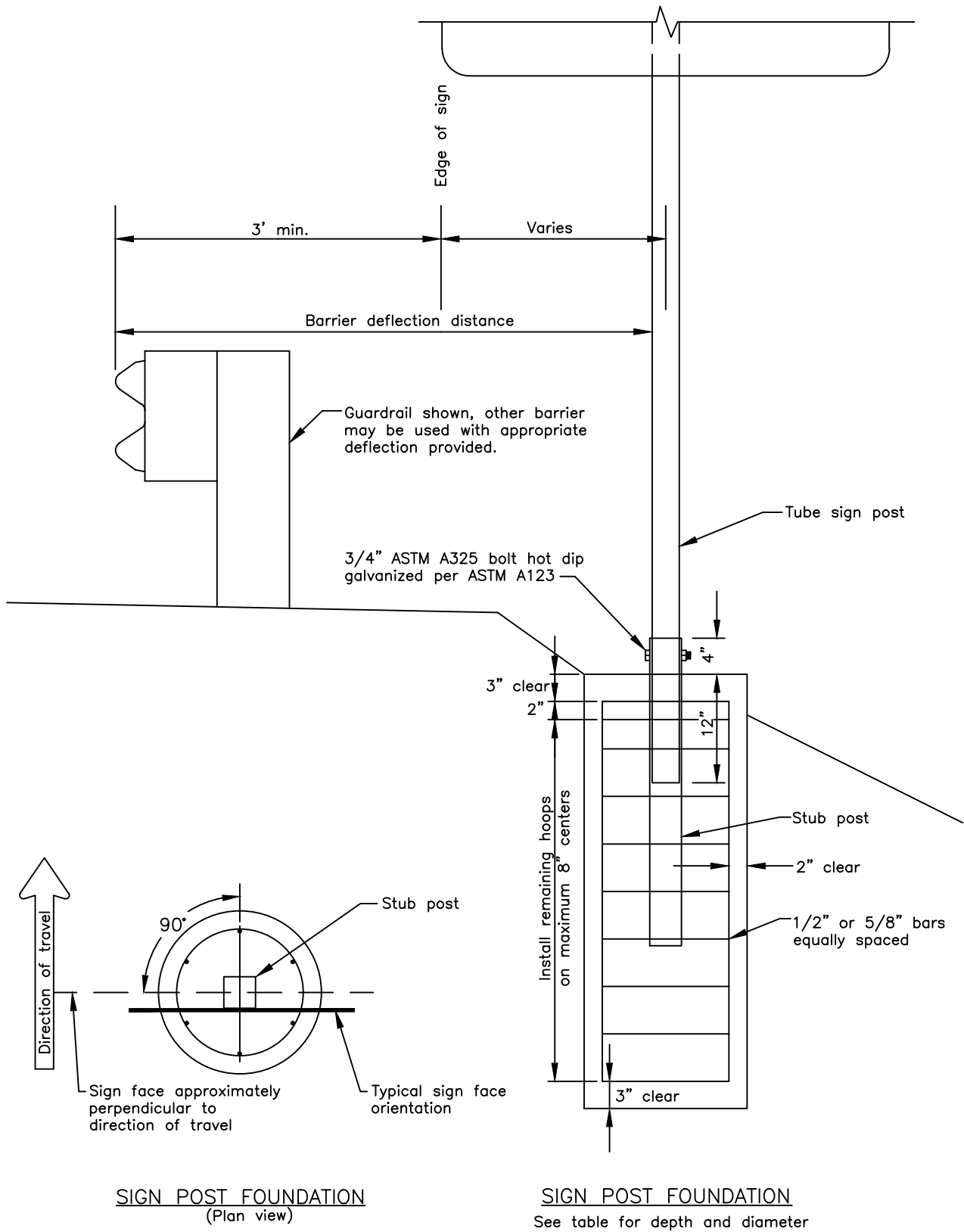
Last Code and Stds. Review
By: KLK, MJM Date: 7/8/2020
Next Code and Standards Review Date: 7/8/2030

GENERAL NOTES

1. This is a non-crashworthy sign support. It may only be used at locations shielded by a guardrail, barrier, or wall. It may not be used if the sign post is within 20' of the rail and is closer than 75' from the guardrail end post (measured along the rail). For this case use a breakaway sign support. See Standard Plan G-20.
2. Furnish steel tube sign post and stub post that conform to ASTM A500, grade B, and meet ASTM A123 for hot dip galvanizing.
3. Install tubes and stub post with a 0.1875" wall thickness.
4. For Perforated Tubes use Standard Plan S-30.
5. Spiral reinforcing steel may be substituted for hoops in concrete foundation. Spiral option shall consist of No. 3 plain spiral with 6" pitch with three flat turns at the top and one flat turn at the bottom.
6. Use Class A, B or W concrete.

POST SIZE & TYPE	FOUNDATION *			REINFORCEMENT						STUB POST	
	DIA.	MIN. DEPTH	C.Y. CONC.	VERTICAL BARS HOOPS						SLEEVE	
				QTY.	SIZE	LGTH.	SIZE	DIA.	SIZE	LGTH.	
2 1/2" TUBE	1'-0"	4'-6"	0.13	6	#4	4'-0"	#4	8"	3"	3'	
3" TUBE	1'-6"	4'-0"	0.25	7	#5	3'-6"	#4	1'-2"	3 1/2"	3'	
3 1/2" TUBE	1'-6"	4'-6"	0.27	7	#5	4'-0"	#4	1'-2"	4"	3'	
4" TUBE	2'-6"	4'-0"	0.69	8	#8	3'-6"	#4	2'-2"	4 1/2"	3'	
4 1/2" TUBE	2'-6"	4'-6"	0.78	8	#8	4'-0"	#4	2'-2"	5"	3'	

* Foundation sized for use where there are no loose, high moisture, or fine grained soil.



State of Alaska DOT&PF
ALASKA STANDARD PLAN

SIGN POST BASE AND
FOUNDATION BEHIND
BARRIER

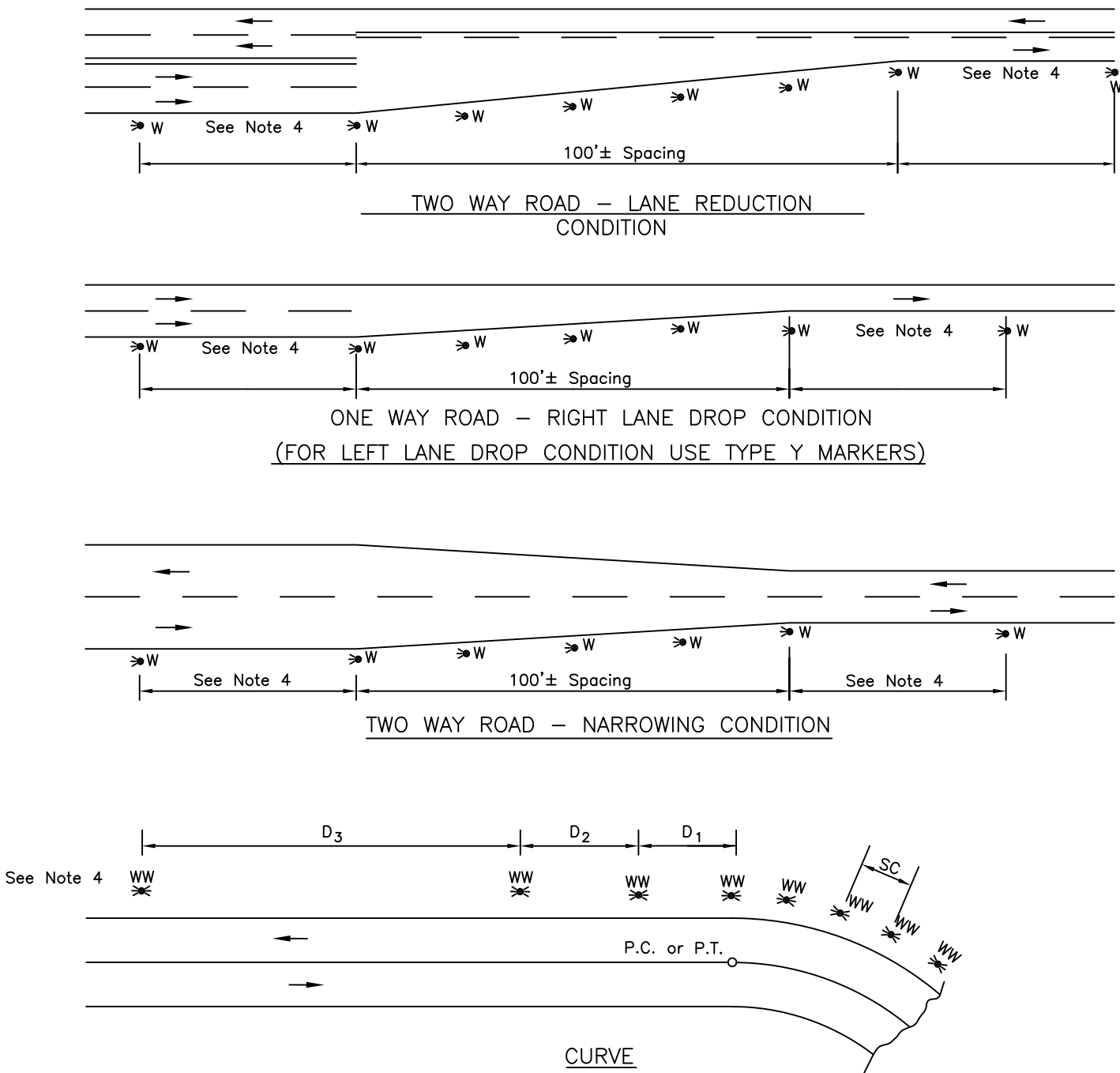
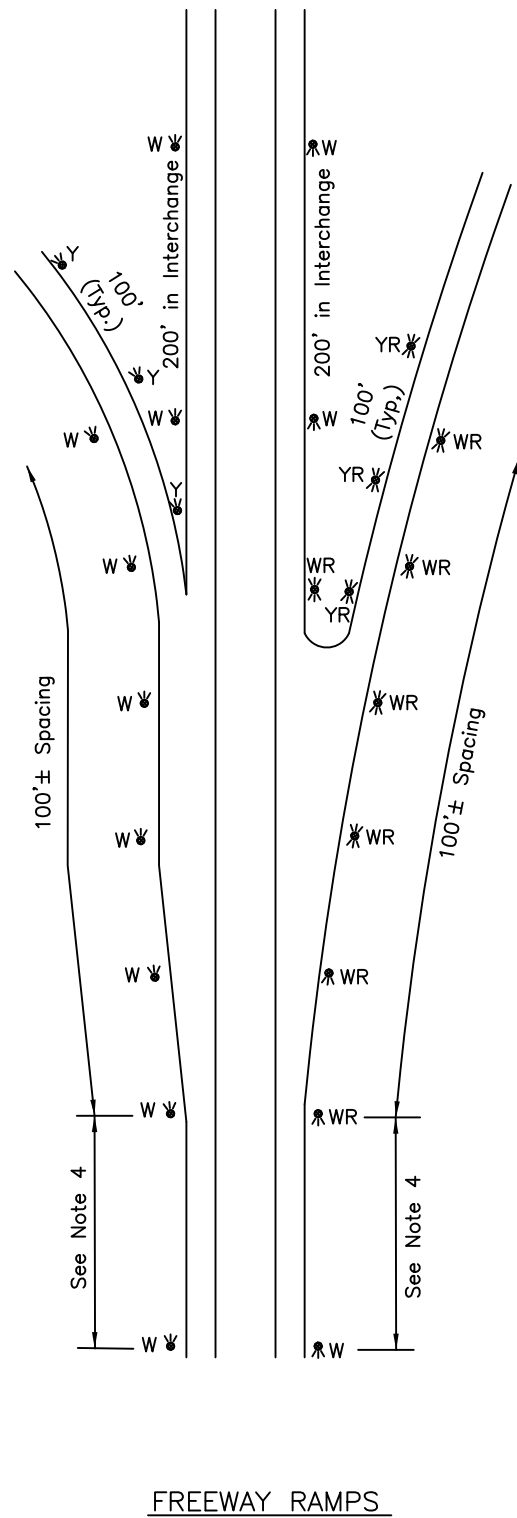
Adopted as an Alaska
Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By:KLK Date: 7/8/2020
Next Code and Standards Review Date: 7/8/2030

GENERAL NOTES

- Maximum spacing on tapers, speed change lanes, pavement transitions, and ramps should be 100'±.
- On roads with continuous delineation, adjust existing guide marker locations to tie into these configurations.
- Marker spacing in table has been rounded for ease of calculation and field layout.
- Spacing on tangents should be approximately 500', 530' maximum. See table for spacing on curves.

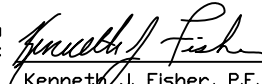


SPACING ON CURVES				
RADIUS FT	SPACING ON CURVE	SPACING IN ADVANCE AND BEYOND CURVE		
		FIRST	SECOND	THIRD
R	SC	D ₁	D ₂	D ₃
1,000'	90'	160'	270'	300'
900'	85'	155'	250'	300'
800'	80'	145'	240'	300'
700'	75'	135'	225'	300'
600'	70'	125'	210'	300'
500'	65'	115'	195'	300'
400'	55'	100'	165'	300'
300'	50'	90'	150'	300'
250'	40'	70'	120'	240'
180'	35'	65'	105'	210'
115'	25'	55'	90'	180'
50'	20'	35'	60'	120'

GUIDE MARKER REFLECTORS		
TYPE	FRONT COLOR	BACK COLOR
WW	WHITE	WHITE
W	WHITE	--
Y	YELLOW	--
YY	YELLOW	YELLOW
WR	WHITE	RED
YR	YELLOW	RED

State of Alaska DOT&PF
ALASKA STANDARD PLAN

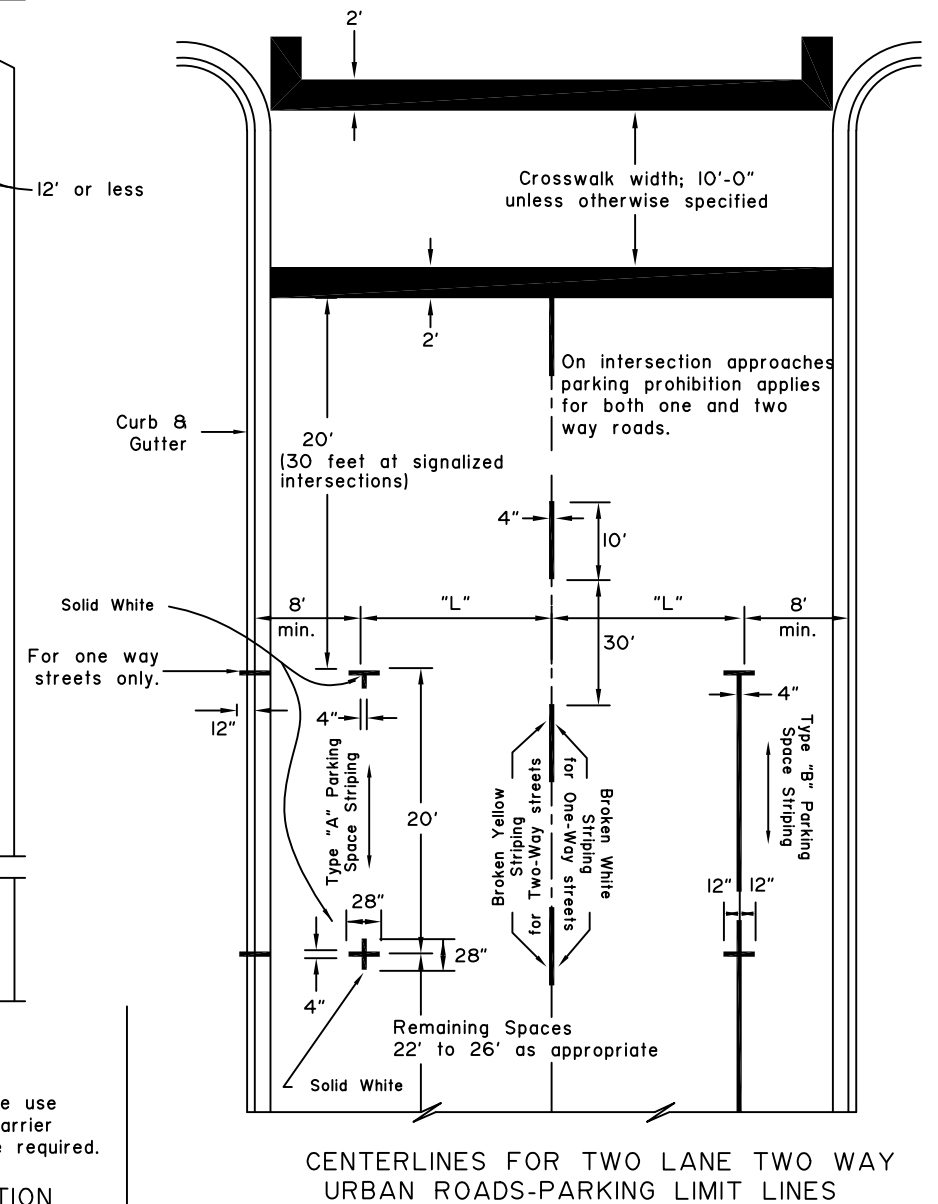
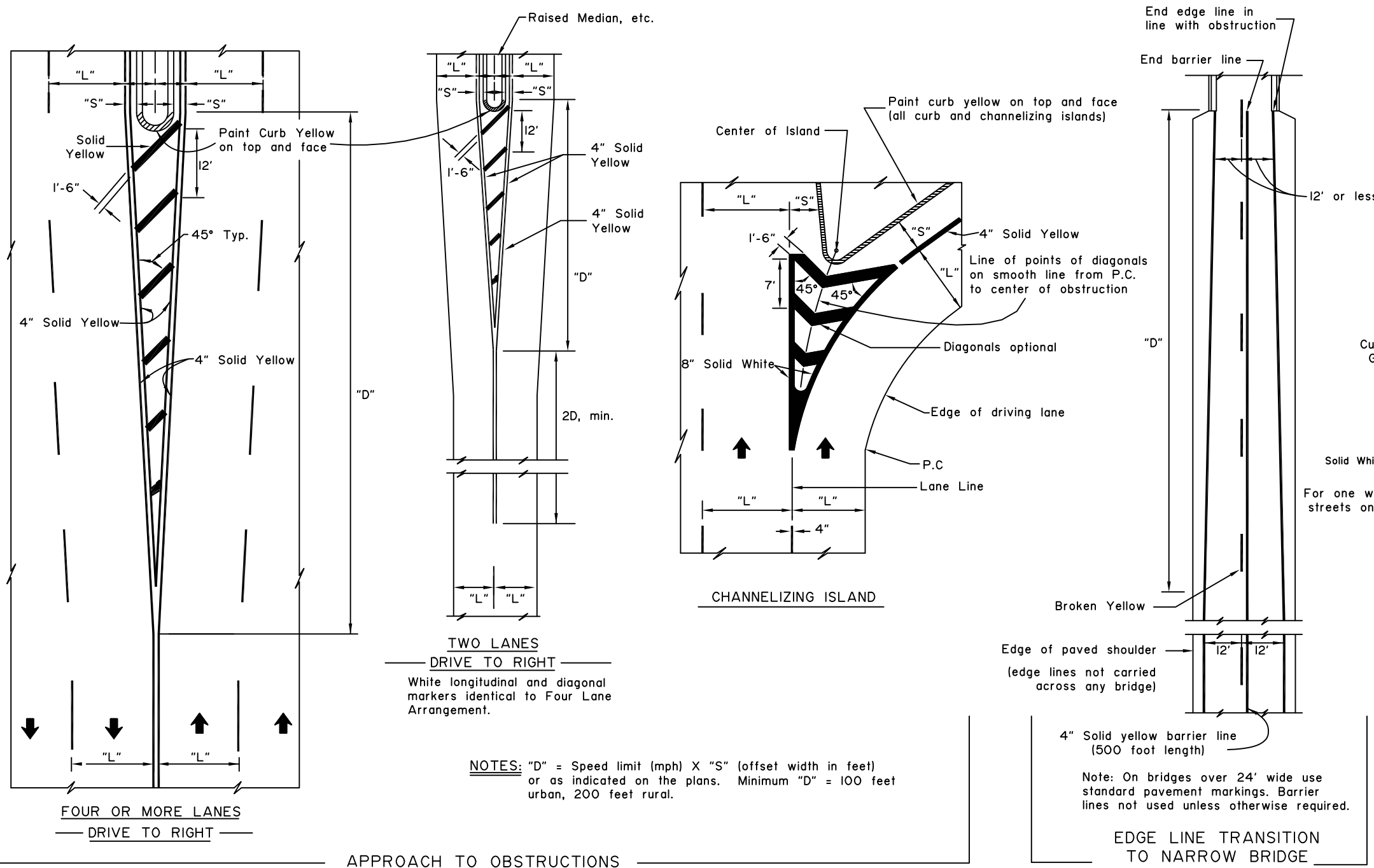
GUIDE MARKER PLACEMENT

Adopted as an Alaska
Standard Plan by: 
Kenneth J. Fisher, P.E.
Chief Engineer

Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

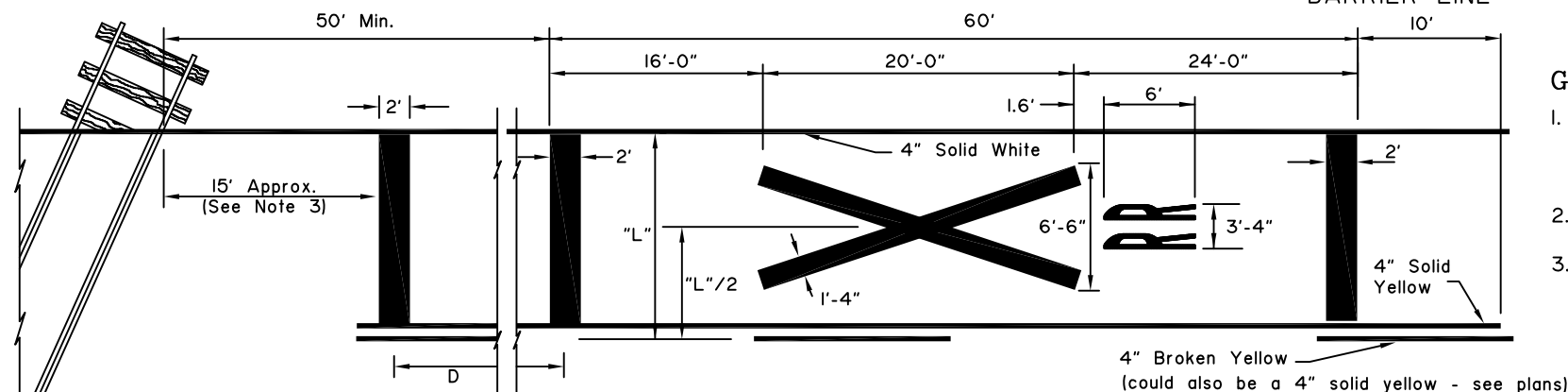
Next Code and Standards Review date:02/08/2029



RAILROAD CROSSING NOTES:

1. All markings solid white unless indicated otherwise.
2. On 4-lane roadways place railroad crossing approach markings in each lane of the approach.
3. Locate Stop Bar 15' from railroad track or 8' from gate, if present.
4. Place edge lines and lane lines on a uni-directional approach in a normal manner except that the lane line(s) shall be solid 4" white in lieu of broken for a distance of (D+60') in advance of the stop bands.

POSTED LIMIT	D
30 M.P.H.	225'
40	350'
50	475'
60	625'



APPROACH TO RAILROAD CROSSING ON 2 LANE 2 WAY HIGHWAY

GENERAL NOTES:

1. "S"= offset distance as shown on the plans, otherwise 1 to 2 feet.
2. "L"= driving lane width.
3. See the Alaska Traffic Manual for additional guidance and/or restrictions on the use of traffic control devices.

NOT TO SCALE

State of Alaska DOT&PF
ALASKA STANDARD PLAN
PAVEMENT MAKING
APPLICATIONS

Adopted as an Alaska
Standard Plan by: Kenneth J. Fisher
Kenneth J. Fisher, P.E.
Chief Engineer

Adoption Date: 02/08/2019

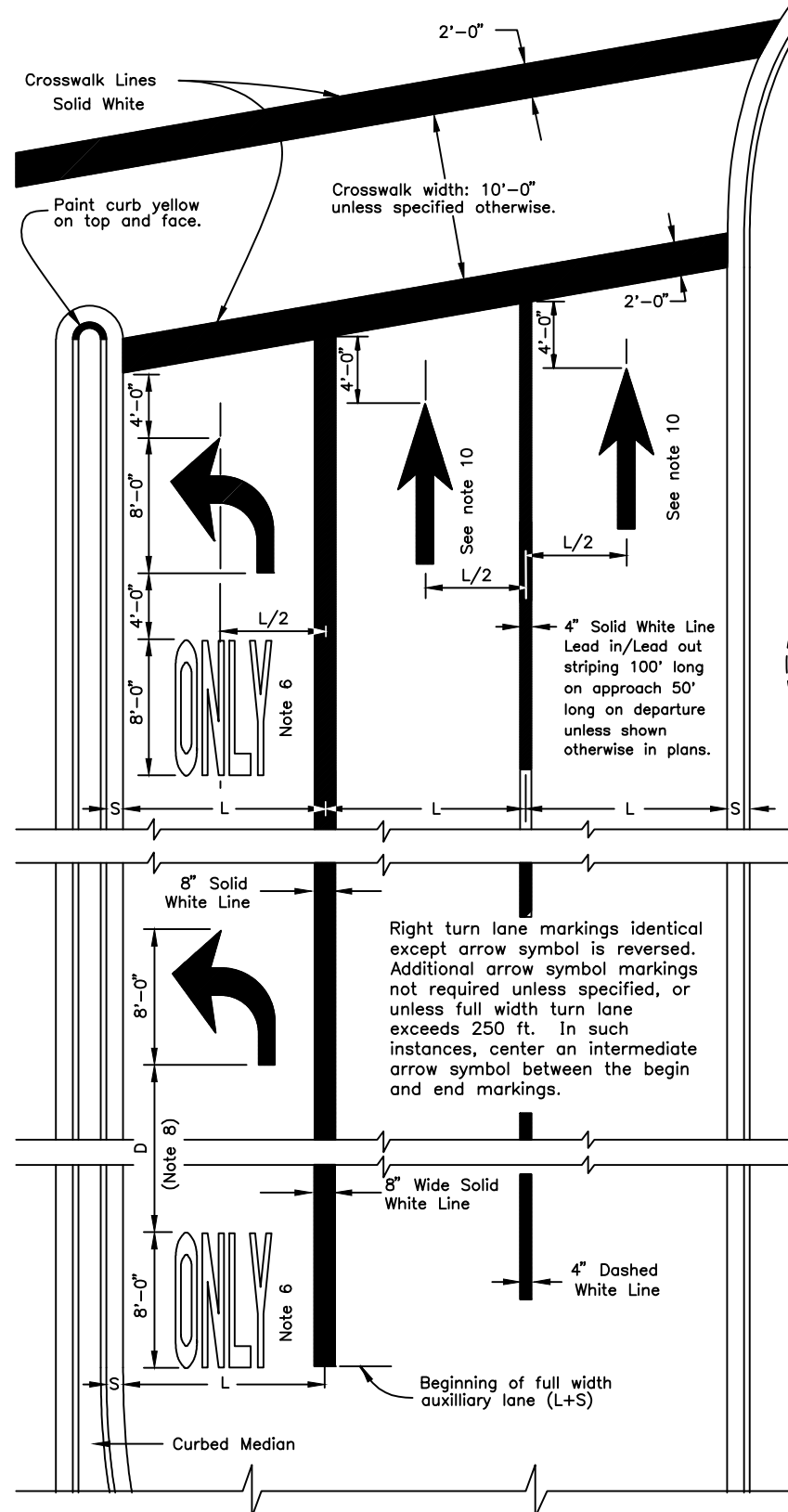
Last Code and Stds. Review By: Date:
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Next Code and Standards Review date: 02/08/2029	5
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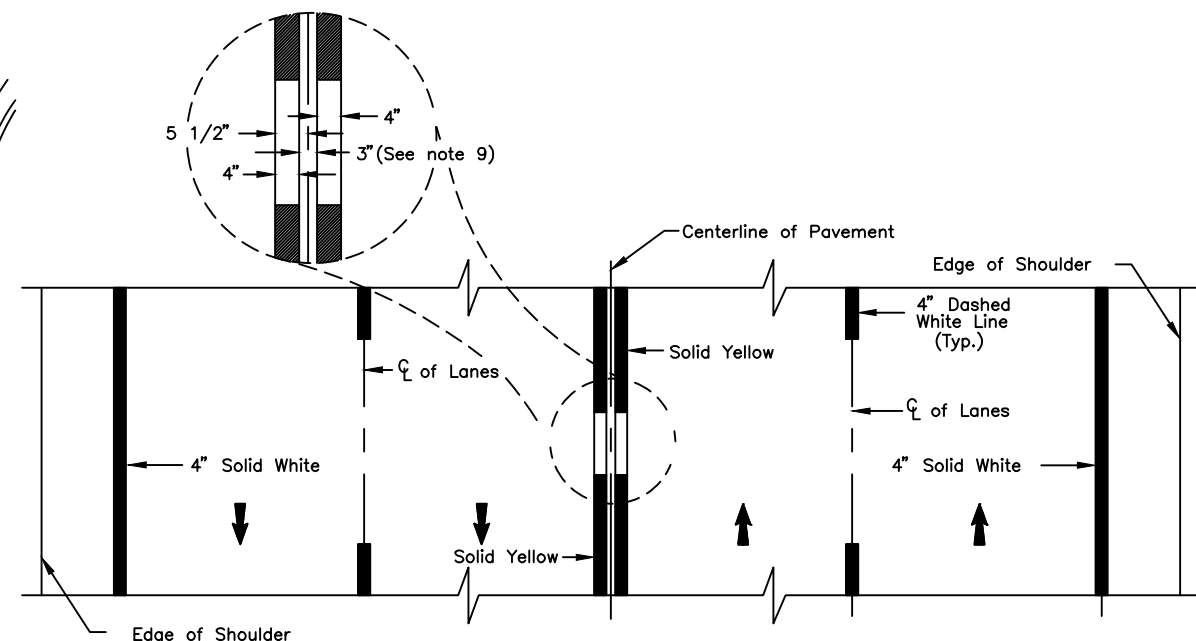
GENERAL NOTES:

1. All markings white unless indicated otherwise.
2. Lengths of stripe and gap for lane and center lines identical.
3. Lane lines for auxiliary lanes are unbroken solid lines.
4. "L" = driving lane width.
5. "S" = shy distance as shown on plans, otherwise 1 to 2 feet.
6. ONLY markings are required where through lanes change to turn lanes. In other cases, apply ONLY markings as indicated on plans.
7. See ALASKA TRAFFIC MANUAL for additional instruction on the use of TRAFFIC CONTROL DEVICES.
8. Adjust distance D between ONLY and Turn Arrow based on SPEED vs. D table. Table may be used for spacing between pairs of TWLT markings.
9. Adjust centerline spacing from 3" up to 5" where recessed pavement markers are required.
10. Arrows and symbols are used for through lanes only when the lane layout deviates from the normal intersection rules, and shall only be used where indicated in the plans.

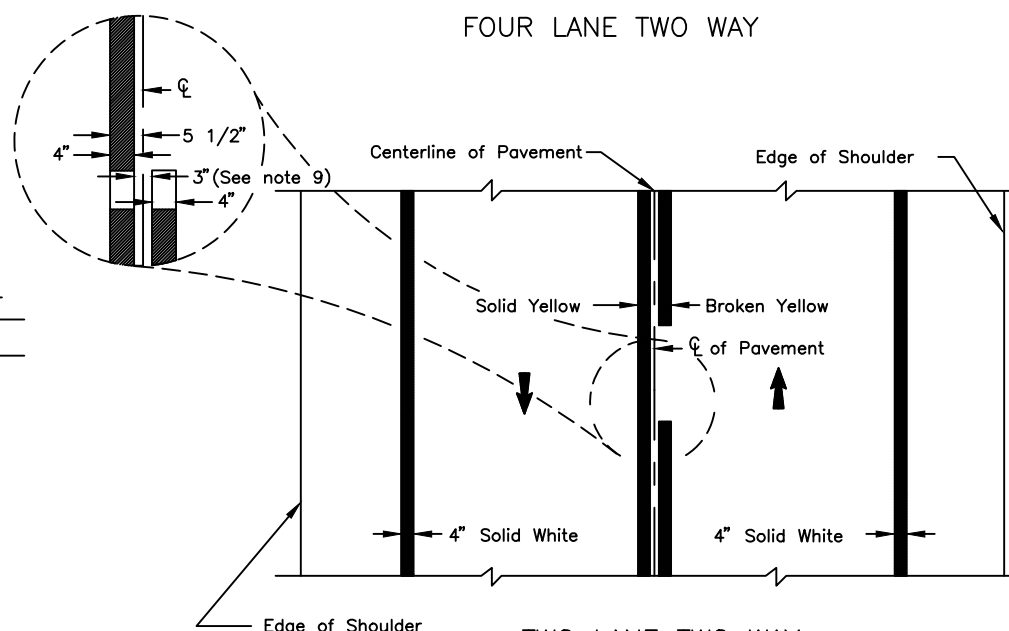
SPEED	D
25 or less	35'
30	45'
35	50'
40	60'
45	65'
50	75'
55 or more	80'



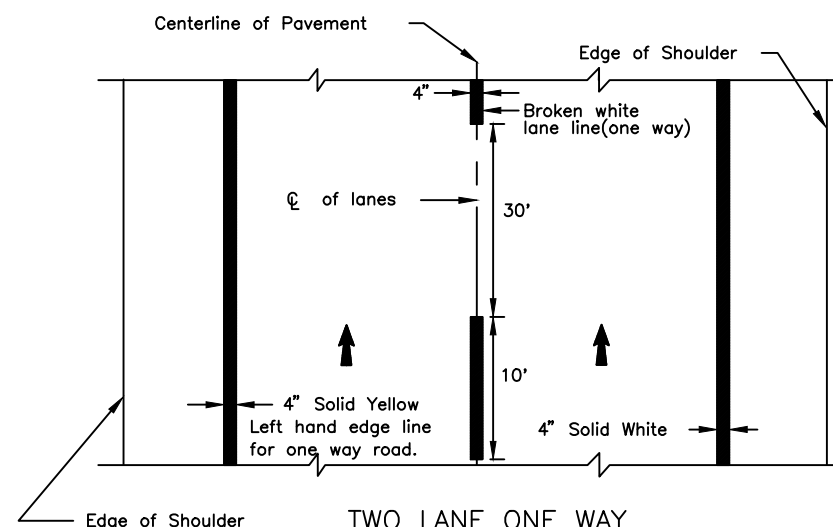
APPROACH TO INTERSECTION



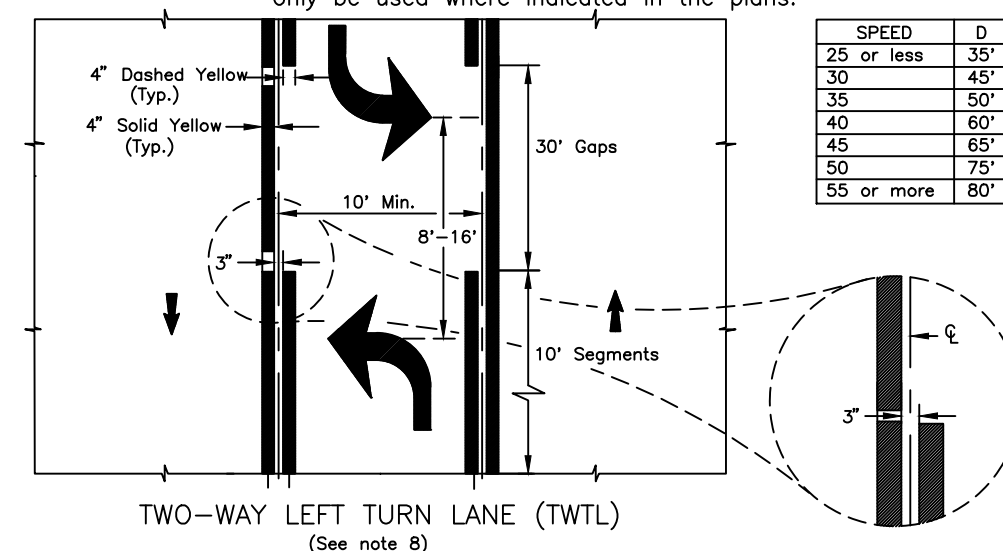
FOUR LANE TWO WAY



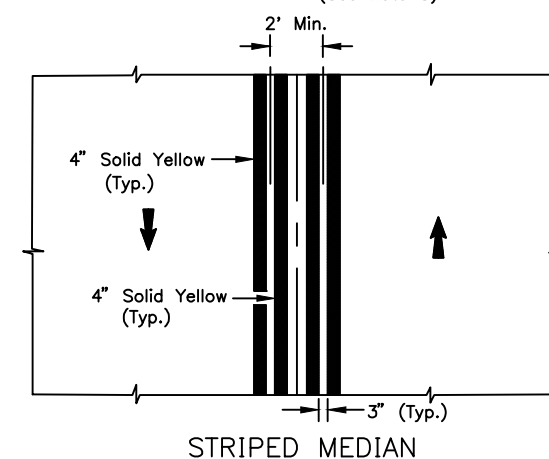
TWO LANE TWO WAY



TWO LANE ONE WAY



TWO-WAY LEFT TURN LANE (TWTL)
(See note 8)



STRIPED MEDIAN

State of Alaska DOT&PF
ALASKA STANDARD PLAN

PAVEMENT MARKING APPLICATIONS

Adopted as an Alaska Standard Plan by: *Carolyn Morehouse*
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLK Date: 7/8/2020

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