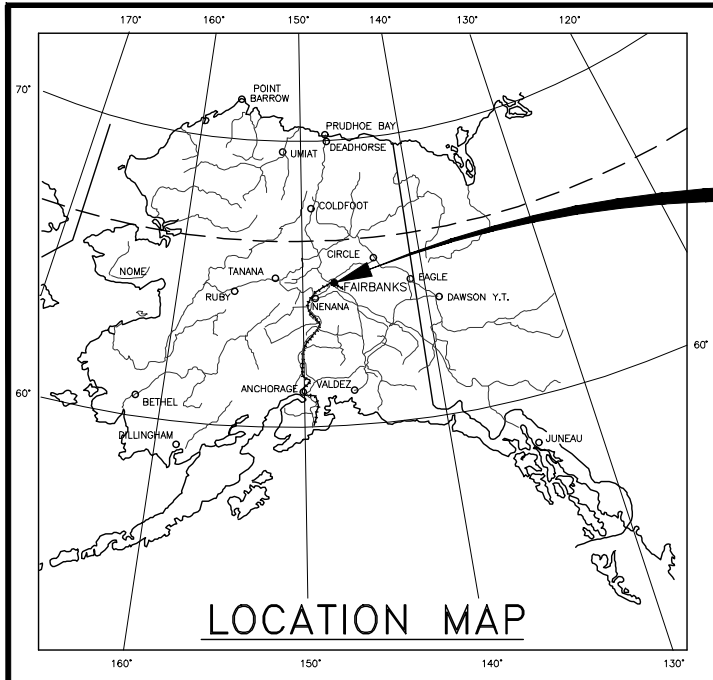


STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	0617012/NFHWHY00270	2019	A1	A4
CDS ROUTE: 175900		MILEPOINT: TO		



PROJECT LOCATION

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
&
PUBLIC FACILITIES

PROPOSED HIGHWAY PROJECT
0617012/NFHWHY00270

UNIVERSITY AVENUE REHABILITATION —
UAF PARKING LOT IMPROVEMENTS

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
A1	TITLE SHEET
A2	LEGEND
A3	NOTES AND ABBREVIATIONS
A4	INDEX SHEET LAYOUT
B1	TYPICAL SECTIONS
C1-C2	ESTIMATE OF QUANTITIES
E1-E2	DEMOLITION PLAN SHEETS
G1-G4	GRADING PLAN SHEETS AND CONTROL POINT TABLES
H1-H2	SIGNING AND STRIPING PLAN SHEETS
J1	DETAILS
Q1-Q2	EROSION SEDIMENT CONTROL PLAN AND NOTES
U1	ELECTRICAL LEGEND AND NOTES
U2	ELECTRICAL SPECIFICATIONS
U3	DEMOLITION ELECTRICAL SITE PLAN
U4	ELECTRICAL SITE PLAN
U5-U6	ELECTRICAL DETAILS
U7	LIGHTING CONTROL SCHEMATIC
U8	HEADBOLT HEATER CONTROL SCHEMATIC
U9	HEADBOLT HEATER CONTROL CABINET LAYOUT
U10	ELECTRICAL ONE-LINE DIAGRAM
U11	FEEDER SCHEDULE
U12	ELECTRICAL PANEL SCHEDULES
V1-V11	STANDARD DRAWINGS



VICINITY MAP

LAUREN LITTLE, P.E., PROJECT MANAGER
HEATHER D. ESTABROOK, P.E., DESIGN ENGINEER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
&
PUBLIC FACILITIES

APPROVED BY: _____ DATE _____

Sarah E. Schacher, P.E.
Preconstruction Engineer, Northern Region
ACCEPTED FOR CONSTRUCTION:

Ryan F. Anderson, P.E.
Regional Director, Northern Region

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	A2	A4

PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AEC605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
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	RECOVERED	SET
BLM MONUMENT		
GLO MONUMENT		
USC&GS MONUMENT		
PRIMARY MONUMENT		
CENTERLINE MONUMENT IN CASING		
PRIMARY R.O.W. MONUMENT		
BEARING OBJECT		
MISCELLANEOUS MONUMENT		
LINE OF SIGHT MONUMENT		
CONCRETE R.O.W. MONUMENT		
BENCHMARK		
REBAR AND CAP		
REBAR		
IRON PIPE		
PK NAIL		
SPIKE		
HUB AND TACK		
CONSTRUCTION CENTERLINE		
MICELLANEOUS CENTERLINE		
STATION EQUATION	$\begin{matrix} "L"48+97.23 \text{ POT BK=} \\ "O"48+97.23 \text{ PC AHD} \end{matrix}$	
PROJECT RIGHT-OF-WAY LINE		
EXISTING RIGHT-OF-WAY LINE		
EXISTING PROPERTY LINE		
CONTROLLED ACCESS LINE		
EXISTING EASEMENT LINE		
PROPOSED EASEMENT LINE		
PROPOSED CUT SLOPE LIMIT		
PROPOSED FILL SLOPE LIMIT		
SECTION LINE		
1/4 SECTION LINE		
1/16 SECTION LINE		
TOWNSHIP & RANGE LINE		
MEANDER LINE		

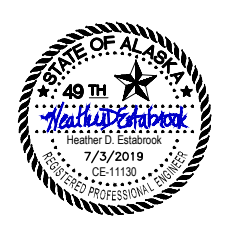
	EXISTING	PROPOSED
SANITARY SEWER (FLOW DIRECTION →)		
SANITARY SEWER (FORCE MAIN)		
FUEL LINE		
GAS LINE		
WATER LINE		
METER, VALVE, FIRE HYDRANT		
EXISTING STORM DRAIN (FLOW DIRECTION →)		
PROPOSED STORM DRAIN		
FIBER OPTIC LINE		
DIRECT BURIAL TELEPHONE CABLE		
DIRECT BURIAL ELECTRIC CABLE		
ELECTRIC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

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

	EXISTING	PROPOSED
JUNCTION BOX, TYPE IA		
JUNCTION BOX, TYPE II		
JUNCTION BOX, TYPE III		
JUNCTION BOX, ABOVE GRADE		
SIGNAL FACE, VEHICULAR		
SIGNAL FACE, BACKPLATE		
SIGNAL FACE, LEFT TURN, BACKPLATE		
SIGNAL FACE, PEDESTRIAN		
LOOP DETECTOR		
VIDEO DETECTOR		
RADAR DETECTOR		
OPTICOM DETECTOR		
PAN, TILT, ZOOM CAMERA		
PEDESTRIAN PUSH BUTTON		
SIGNAL POST W/O MAST ARM		
SIGNAL POLE W/MAST ARM		
INTERCONNECT VAULT		
INTERCONNECT MANHOLE		
SIGNAL CONTROLLER		
LOAD CENTER		
POST MOUNTED TRANSFORMER AND DISCONNECT SWITCH		
LUMINAIRE		
RIGID METAL CONDUIT		
TRAFFIC SIGNAL INTERCONNECT		
BORING/ENCASED CONDUITS		

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

LEGEND



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	A3	A4

GENERAL NOTES

- GRUBBING LIMITS SHALL BE AS SHOWN ON THE PLANS AND SHALL BE AS DIRECTED BY THE ENGINEER. RESTORE ALL DISTURBED AREAS DUE TO CONTRACTORS WORK OUTSIDE THE CLEARING AND GRUBBING LIMITS SHOWN ON THE PLANS. PAYMENT FOR THIS WORK SHALL BE SUBSIDIARY TO THE RESPECTIVE BID ITEM.
- SAWCUT ALL MATCH LINES WHERE NEW CONSTRUCTION ABUTS EXISTING ASPHALT. APPLY STE-1 ASPHALT FOR TACK COAT ON THE VERTICAL FACE OF ALL SAWCUTS. SAWCUT EXISTING SIDEWALKS OR GO BACK TO NEAREST JOINT.

UTILITY NOTES

- UNDERGROUND UTILITIES EXIST WITHIN THE PROJECT CORRIDOR. CONTACT UTILITY OWNERS AND GET LOCATES PRIOR TO ANY EXCAVATION.
- THE DEPTH OF EXISTING UTILITIES SHOWN ON THE PLANS ARE BASED ON AVAILABLE INFORMATION FROM AS BUILT DRAWINGS AND ARE APPROXIMATE ONLY. DETERMINE ACTUAL DEPTH PRIOR TO INSTALLING NEW UTILITIES.
- PROTECT, OR REMOVE AND REPLACE IN SAME LOCATION OR TO THE SIDE OF ROADWAY, EXISTING MARKER POSTS FOR UTILITIES THAT ARE DISTURBED DURING CONSTRUCTION. THIS IS SUBSIDIARY TO OTHER ITEMS OF WORK.
- INSULATING PIPES, INLETS, MANHOLES, FITTINGS, APPURTENANCES AND CROSSING UTILITIES AS INDICATED ON THE PLANS WILL NOT BE MEASURED FOR PAYMENT. THIS WORK IS SUBSIDIARY TO ALL UTILITY AND STORM DRAIN INSTALLATIONS.
- CONTRACTOR MUST RESTORE PUE'S AFTER UTILITY CONSTRUCTION, IN ACCORDANCE WITH PUE REQUIREMENTS.
- CONTRACTOR SHALL PROVIDE SWPPP FOR THE CONCURRENT UTILITY RELOCATIONS. THIS WORK IS SUBSIDIARY TO 641 PAY ITEMS.
- UTILITY COMPANIES WILL BE WORKING CONCURRENTLY WITH THE CONTRACTOR TO COMPLETE THE WORK IN THIS SECTION. THIS WORK MAY INCLUDE, BUT IS NOT LIMITED TO INSTALLING CABLE, SPLICING CABLE, INSTALLING OTHER EQUIPMENT AND CONNECTING SERVICES. THE CONTRACTOR SHALL COOPERATE AND SUPPORT THIS WORK, INCLUDING PROVIDING ANY NECESSARY TRAFFIC CONTROL. TRAFFIC CONTROL FOR UTILITY COMPANY WORK WILL BE PAID UNDER 643 PAY ITEMS.

SIGNING NOTES

- REMOVE AND DISPOSE OF ALL EXISTING SIGNS AND SIGN FOUNDATIONS WITHIN THE PROJECT LIMITS, EXCEPT THOSE DESIGNATED FOR REINSTALLATION, SALVAGE, OR OTHERWISE NOTED.
- MOUNTING HEIGHTS ARE PER STANDARD DRAWING S-05.10 UNLESS OTHERWISE NOTED.
- DETERMINE POST LENGTHS IN THE FIELD. DO NOT EXTEND POSTS ABOVE TOP OF SIGN.
- INSTALL PST SIGN POSTS WITH SLEEVE TYPE CONCRETE FOUNDATIONS PER STANDARD DRAWING S-30.04. ATTACH THE SIGN POST TO THE SLEEVE USING GALVANIZED 3/8" BOLT, NUT, SPLIT LOCK WASHERS AND TWO FLAT WASHERS.
- INSTALL "TUBE POST SIGN BRACING" AS SHOWN ON STANDARD DRAWING S-01.01 ON ALL SIGNS MOUNTED ON A SINGLE PST POST AND HAVING A HORIZONTAL DIMENSION OF 30 INCHES OR GREATER, EXCEPT D3-100 SERIES SIGNS. INSTEAD OF THE 3/8" GALVANIZED BOLTS AND NYLON LOCKING NUTS SHOWN ON STANDARD DRAWING S-01.01. USE GALVANIZED 3/8" BOLT, SPLIT LOCK WASHERS AND NUTS. STAINLESS STEEL FASTENER HARDWARE MAY BE USED INSTEAD OF GALVANIZED. 1/4" X 1 1/2" ALUMINUM ALLOY 6061-T6 BAR MAY ALSO BE USED TO FABRICATE SIGN BRACES.
- ATTACH ALL SIGNS TO THEIR SUPPORTS WITH 3/8" BOLTS, EXCEPT ATTACH UNFRAMED SIGNS TO PST POSTS WITH ALUMINUM DRIVE RIVETS. WIND WASHERS ARE NOT REQUIRED WITH DRIVE RIVETS. INCLUDE SPLIT LOCK WASHERS WHEN BOLTS ARE USED.
- ALL FASTENER HARDWARE SHALL MEET THE REQUIREMENTS OF THE "FASTENER SPECIFICATION TABLE" ON SHEET S-20.10.
- SIGNS TO BE INSTALLED ON LIGHT POLES MAY REQUIRE TEMPORARY INSTALLATION ON 2-1/2 INCH PST UNTIL THE LIGHT POLES ARE IN PLACE. THIS WORK IS SUBSIDIARY TO PAY ITEM 615(1).
- STOP (R1-1) SIGN LOCATIONS, ESPECIALLY THOSE AT LARGE RADIUS INTERSECTIONS, MAY NEED ADJUSTMENT IN THE FIELD. THE ENGINEER WILL APPROVE FINAL LOCATIONS.
- MAINTAIN EXISTING SIGNS UNTIL NEW SIGNS ARE INSTALLED. DO NOT LEAVE DUPLICATE OR CONFLICTING SIGNING UP AT ANY TIME.
- LOCATE AND PROTECT ALL NEW AND EXISTING UNDERGROUND UTILITIES, INCLUDING BUT NOT LIMITED TO: PIPELINES, INTERCONNECT CABLES, SIGNAL SYSTEMS, LIGHTING SYSTEMS, STORM AND SANITARY SEWERS, WATER SYSTEMS, AND TELEPHONE AND ELECTRICAL CABLES, PRIOR TO INSTALLING SIGN POSTS. NOT ALL EXISTING UTILITIES MAY BE SHOWN ON THE PLANS.
- CLEARING MAY BE REQUIRED TO ENSURE ADEQUATE VISIBILITY OF SIGNS, THIS WORK IS SUBSIDIARY TO PAY ITEM 615(1).
- INSTALL WEATHER TIGHT CAPS ON ALL PIPE AND TUBE POSTS, EXCEPT PERFORATED STEEL TUBE.
- CONTRACTOR RESPONSIBLE FOR REPLACING SIGNS BROKEN/DAMAGED DURING CONSTRUCTION ACTIVITIES.
- DO NOT DISTURB SIGN DURING CONSTRUCTION. IF DISTURBANCE OF SIGN IS UNAVOIDABLE SALVAGE AND REINSTALL WITH SLEEVE TYPE CONCRETE FOUNDATION.
- INSTALL SIGNS WITH TOP OF POST, MOUNTING BRACKETS, ETC. WITH A MINIMUM OF 3" BELOW TOP OF SIGN.

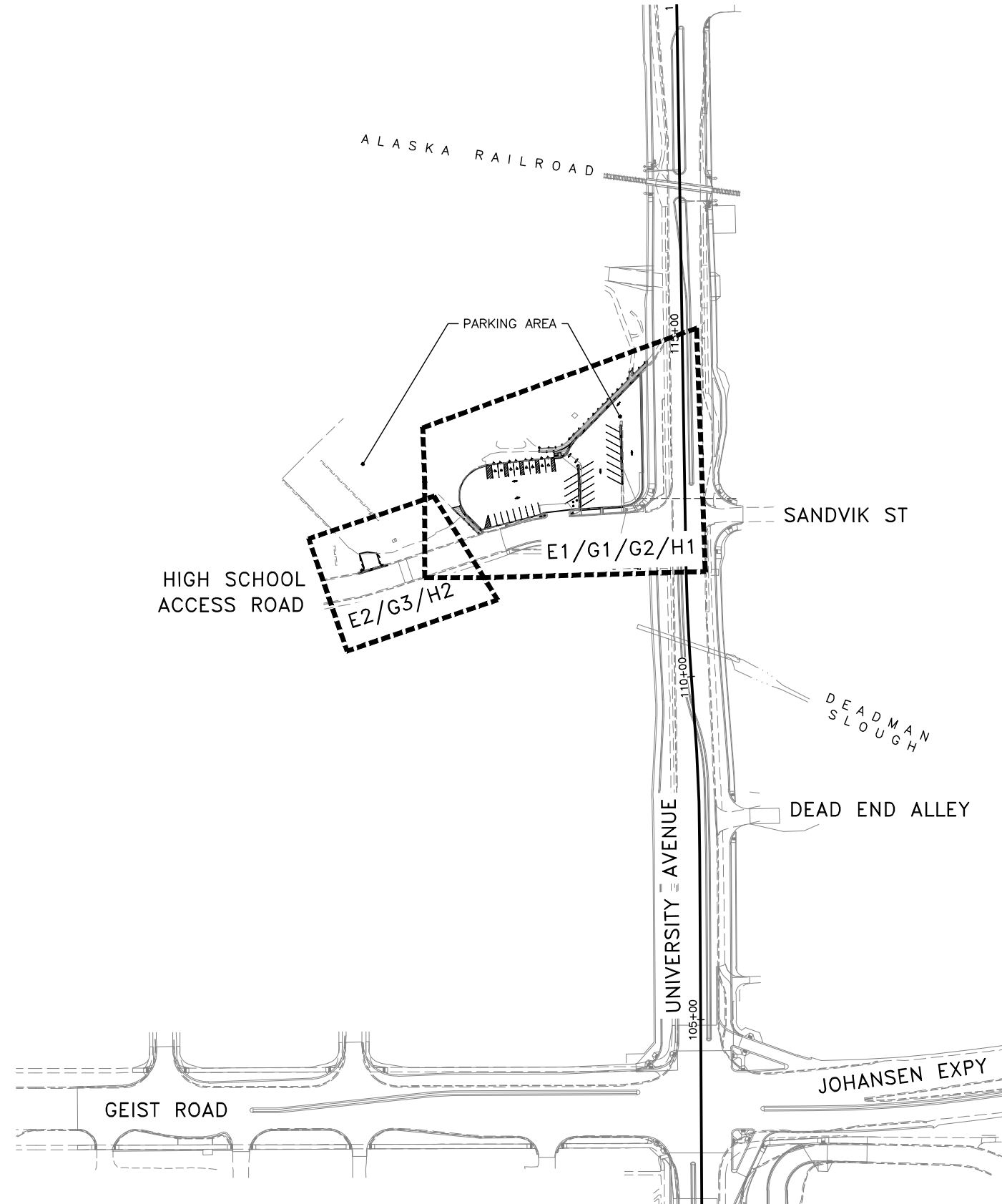
ABBREVIATIONS

ACS	ALASKA COMMUNICATION SYSTEMS	LHF	LEFT HAND FORWARD
ADA	AMERICAN WITH DISABILITIES ACT	LN	LANE
ARRC	ALASKA RAILROAD CORPORATION	LOC	LIP OF CURB
AVE	AVENUE	LP	LOW POINT
BP	BEGIN POINT	LT	LEFT
BV	BUTTERFLY VALVE	LVC	LENGTH OF VERTICAL CURVE
C/A	ACCESS CONTROL	MAX	MAXIMUM
CL	CENTERLINE	MH	MANHOLE
C	CENTER	MIN	MINIMUM
CB	CATCH BASIN	MMA	METHYL METHACRYLATE
CGP	CONSTRUCTION GENERAL PERMIT		
CMP	CORRUGATED METAL PIPE	NO./#	NUMBER
COMM	COMMUNICATIONS	N	NORTHING
CPM	CRITICAL PATH METHOD	NFL	NORMAL FLOW LINE
CSP	CORRUGATED STEEL PIPE	NIC	NOT IN CONTRACT
		NTS	NOT TO SCALE
DEMO	DEMOLITION		
DIP	DUCTILE IRON PIPE	PC	POINT OF CURVATURE
DOT	DEPARTMENT OF TRANSPORTATION	PCC	PORTLAND CEMENT CONCRETE / POINT OF COMPOUND CURVE
DNR	DEPARTMENT OF NATURAL RESOURCES	PRC	POINT OF REVERSE CURVE
DR	DRIVE	PI	POINT OF INTERSECTION
DRWY	DRIVEWAY	PT	POINT OF TANGENCY
DWT	DETECTABLE WARNING TILE	PUE	PUBLIC UTILITY EASEMENT
E	EASTING	R	RADIUS
EA	EACH	RES	RESIDENTIAL
EG	EXISTING GROUND	REHAB	REHABILITATION
ELEV	ELEVATION	RHF	RIGHT HAND FORWARD
EL	EMERGENCY MEDICAL SERVICES	RD	ROAD
EMS	END OF PROJECT	ROW, R/W, R.O.W.	RIGHT OF WAY
EOP	END POINT, END OF PAVEMENT	RP	RADIAL POINT
EP	EXPRESSWAY	RT	RIGHT
EXPY, EXP	EXPANSION JOINT		
EXP	EXISTING	SC	STRUCTURE CENTER
EX		SD	STORM DRAIN
		SDWK	SIDEWALK
FG	FINISHED GRADE	SS	SANITARY SEWER
FL	FLOW LINE	ST	STREET
FLG	FLANGE	STD	STANDARD
FM	FORCE MAIN	STA	STATION
FNG	FAIRBANKS NATURAL GAS	SW	SIDEWALK
FT	FEET	SWR	SEWER
		SWPPP	STORM WATER POLLUTION PREVENTION PLAN
GALV	GALVANIZE		
GB	GRADE BREAK	TBC	TOP BACK OF CURB
GCI	GENERAL COMMUNICATIONS INCORPORATED	TCE	TEMPORARY CONSTRUCTION EASEMENT
GPR	GROUND PENETRATING RADAR	TCP	TEMPORARY CONSTRUCTION PERMIT
GV	GATE VALVE	THK	THICK
GVEA	GOLDEN VALLEY ELECTRIC ASSOCIATION	TOC	TOP OF CASTING
		TYP	TYPICAL
HDPE	HIGH DENSITY POLYETHYLENE	VPC	VERTICAL POINT OF CURVATURE
HMA	HOT MIX ASPHALT	VPI	VERTICAL POINT OF INTERSECTION
HMCP	HAZARDOUS MATERIAL CONTROL PLAN	VPT	VERTICAL POINT OF TANGENCY
HS	HIGH SCHOOL ACCESS ROAD		
IE	INVERT ELEVATION	W/	WITH
INT	INTERSECTION	W, WTR	WATER
INV	INVERT	WWM	WELDED WIRE MESH

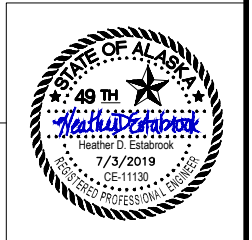
NOTES AND
ABBREVIATIONS



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	A4	A4

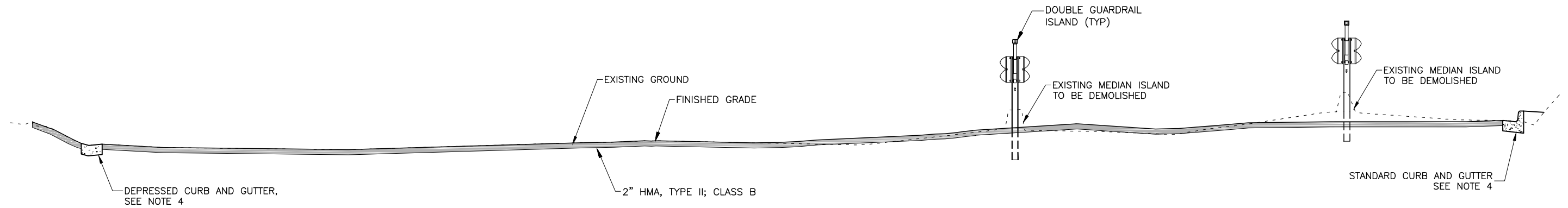


INDEX SHEET LAYOUT

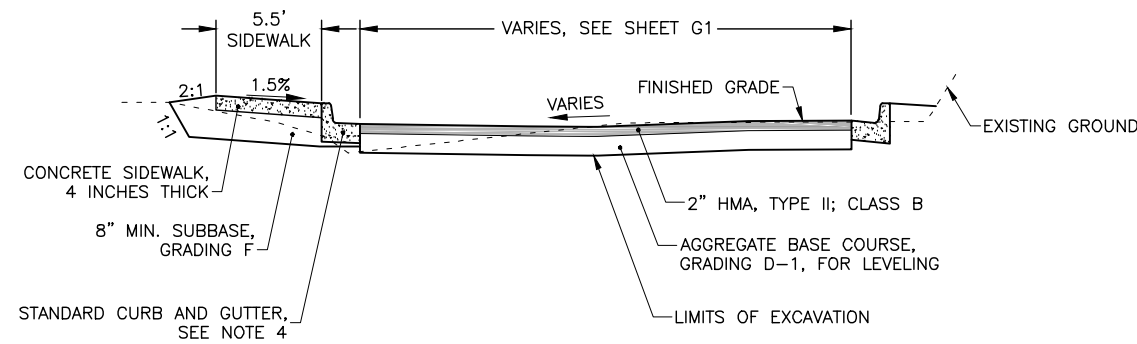


PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC, CERT. OF AUTHORIZATION NO.: AECC605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
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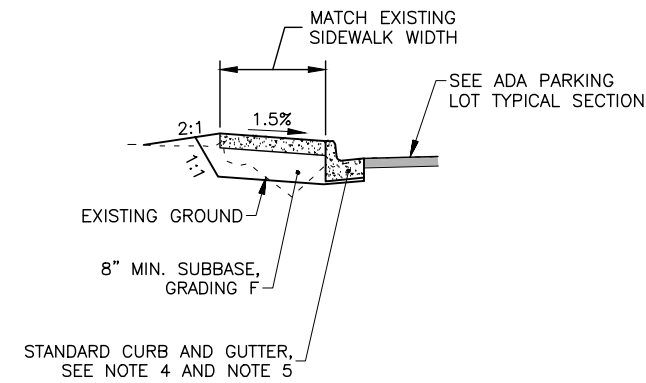
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	B1	B1



1 ADA PARKING LOT TYPICAL SECTION
NTS



2 ADA PARKING LOT SIDEWALK SECTION
NTS



3 PARKING KIOSK SIDEWALK SECTION
NTS

NOTES:

1. SEE GRADING SHEETS G1-G3 FOR SECTION CUT LOCATIONS.
2. SEE SHEET G19 FROM UNIVERSITY AVENUE INDIANA TO THOMAS STREET PROJECT FOR "MATCH EXISTING PAVEMENT DETAIL".
3. PROPOSED GRADES GENERALLY MATCH EXISTING. WHERE GRADES VARY, USE AGGREGATE BASE COURSE, GRADING D-1 AS YOUR LEVELING COURSE.
4. SEE SHEET G19 FROM UNIVERSITY AVENUE INDIANA TO THOMAS STREET PROJECT FOR CURB AND GUTTER DETAILS.
5. TRANSITION FROM STANDARD CURB AND GUTTER TO DEPRESSED CURB AND GUTTER ACROSS THE GENERAL PARKING LOT APPROACH. SEE SHEET G1 FOR CONTROL POINTS.

PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AECC605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
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TYPICAL SECTIONS



ESTIMATE OF QUANTITIES – ADA PARKING LOT

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2018	C1	C2

ITEM NO.	ITEM	PAY UNIT	DOT	UAF	TOTAL QUANTITY
201(2B)	GRUBBING	LUMP SUM	ALL REQUIRED	ALL REQUIRED	ALL REQUIRED
202(1)	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP SUM		ALL REQUIRED	ALL REQUIRED
202(2)	REMOVAL OF PAVEMENT	SQUARE YARD	3,055		3,055
202(3)	REMOVAL OF SIDEWALK	SQUARE YARD	185		185
202(9)	REMOVAL OF CURB AND GUTTER	LINEAR FOOT	805		805
203(3)	UNCLASSIFIED EXCAVATION	CUBIC YARD	210		210
301(1)	AGGREGATE BASE COURSE, GRADING D-1	TON	65		65
304(1)	SUBBASE, GRADING F	TON	70		70
401(1A)	HMA, TYPE II; CLASS A	TON	335		335
401(4)	ASPHALT BINDER, GRADE PG 52-28	TON	18.43		18.43
401(8A)	HMA PRICE ADJUSTMENT, TYPE II; CLASS A	CONTINGENT SUM	ALL REQUIRED		ALL REQUIRED
401(15)	ASPHALT MATERIAL PRICE ADJUSTMENT	CONTINGENT SUM	ALL REQUIRED		ALL REQUIRED
402(1)	STE-1 ASPHALT FOR TACK COAT	TON	0.005		0.005
606(1)	W-BEAM GUARDRAIL	LINEAR FOOT		150	150
606(109)	BOLLARD	EACH		3	3
608(1A)	CONCRETE SIDEWALK, 4 INCHES THICK	SQUARE YARD	195		195
608(6)	CURB RAMP	EACH	1		1
609(2)	CURB AND GUTTER, TYPE I	LINEAR FOOT	595		595
615(1)	STANDARD SIGN	SQUARE FOOT		11	11
615(2)	REMOVE AND RELOCATE EXISTING SIGN	EACH		14	14
640(1)	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED	ALL REQUIRED	ALL REQUIRED
641(1)	EROSION, SEDIMENT AND POLLUTION CONTROL ADMINISTRATION	LUMP SUM	ALL REQUIRED	ALL REQUIRED	ALL REQUIRED
642(1)	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED	ALL REQUIRED	ALL REQUIRED
643(2)	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED	ALL REQUIRED	ALL REQUIRED
643(23)	TRAFFIC PRICE ADJUSTMENT	LUMP SUM	ALL REQUIRED	ALL REQUIRED	ALL REQUIRED
660(UA)	PARKING LOT LIGHTING SYSTEM COMPLETE	LUMP SUM		ALL REQUIRED	ALL REQUIRED
670(1)	PAINTED TRAFFIC MARKINGS	LUMP SUM		ALL REQUIRED	ALL REQUIRED
670(5)	TRANSVERSE MARKINGS, WORD AND SYMBOLS	EACH		15	15

PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AEC0605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
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ESTIMATE OF QUANTITIES
(1 OF 2)



PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AECC605-2700 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	0617012/NFHWY00270	2018	C2	C2

ESTIMATE OF QUANTITIES – GENERAL PARKING LOT – UAF			
ITEM NO.	ITEM	PAY UNIT	QUANTITY
201(2B)	GRUBBING	LUMP SUM	ALL REQUIRED
202(1)	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP SUM	ALL REQUIRED
202(2)	REMOVAL OF PAVEMENT	SQUARE YARD	3
202(9)	REMOVAL OF CURB AND GUTTER	LINEAR FOOT	45
203(3)	UNCLASSIFIED EXCAVATION	CUBIC YARD	15
301(1)	AGGREGATE BASE COURSE, GRADING D-1	TON	15
401(1A)	HMA, TYPE II; CLASS A	TON	8
401(4)	ASPHALT BINDER, GRADE PG 52-28	TON	0.44
401(8A)	HMA PRICE ADJUSTMENT, TYPE II; CLASS A	CS	ALL REQUIRED
401(15)	ASPHALT MATERIAL PRICE ADJUSTMENT	CS	ALL REQUIRED
402(1)	STE-1 ASPHALT FOR TACK COAT	TON	0.0003
609(2)	CURB AND GUTTER, TYPE 1	LINEAR FOOT	45
615(1)	STANDARD SIGN	SF	6
639(101)	APPROACH	EACH	1
640(1)	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED
642(1)	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED

ESTIMATING FACTORS

ITEM NUMBER	ITEM	FACTOR
301(1)	AGGREGATE BASE COURSE, GRADING D-1	1.96 TONS/CUBIC YARD
304(1)	SUBBASE, GRADING F	2 TONS/ CUBIC YARD
401(1A)	HMA, TYPE II; CLASS A	1.96 TONS/CUBIC YARD
401(4)	ASPHALT BINDER, GRADE PG 52-28	5.5%/TON
402(1)	STE-1 ASPHALT FOR TACK COAT	0.0003 TONS/SQUARE YARD

ESTIMATED LUMP SUM QUANTITIES – ADA PARKING LOT

ITEM NUMBER	ITEM	DOT	UAF	TOTAL QUANTITY
201(2B)	GRUBBING	0.003	0.01	0.013 ACRES
202(1)	REMOVAL OF STRUCTURES AND OBSTRUCTIONS			
	SIGNS		4	4 EACH
	HEADBOLT HEATER POST		18	18 EACH
660(UA)	PARKING LOT LIGHTING SYSTEM COMPLETE		--	SEE ELECTRICAL QUANTITIES
670(1)	PAINTED TRAFFIC MARKINGS		1150	1150 LINEAR FOOT

ESTIMATED LUMP SUM QUANTITIES – GENERAL PARKING LOT – UAF

ITEM NUMBER	ITEM	QUANTITY
201(2B)	GRUBBING	0.01 ACRES
202(1)	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	
	FENCE	29.2 LINEAR FOOT

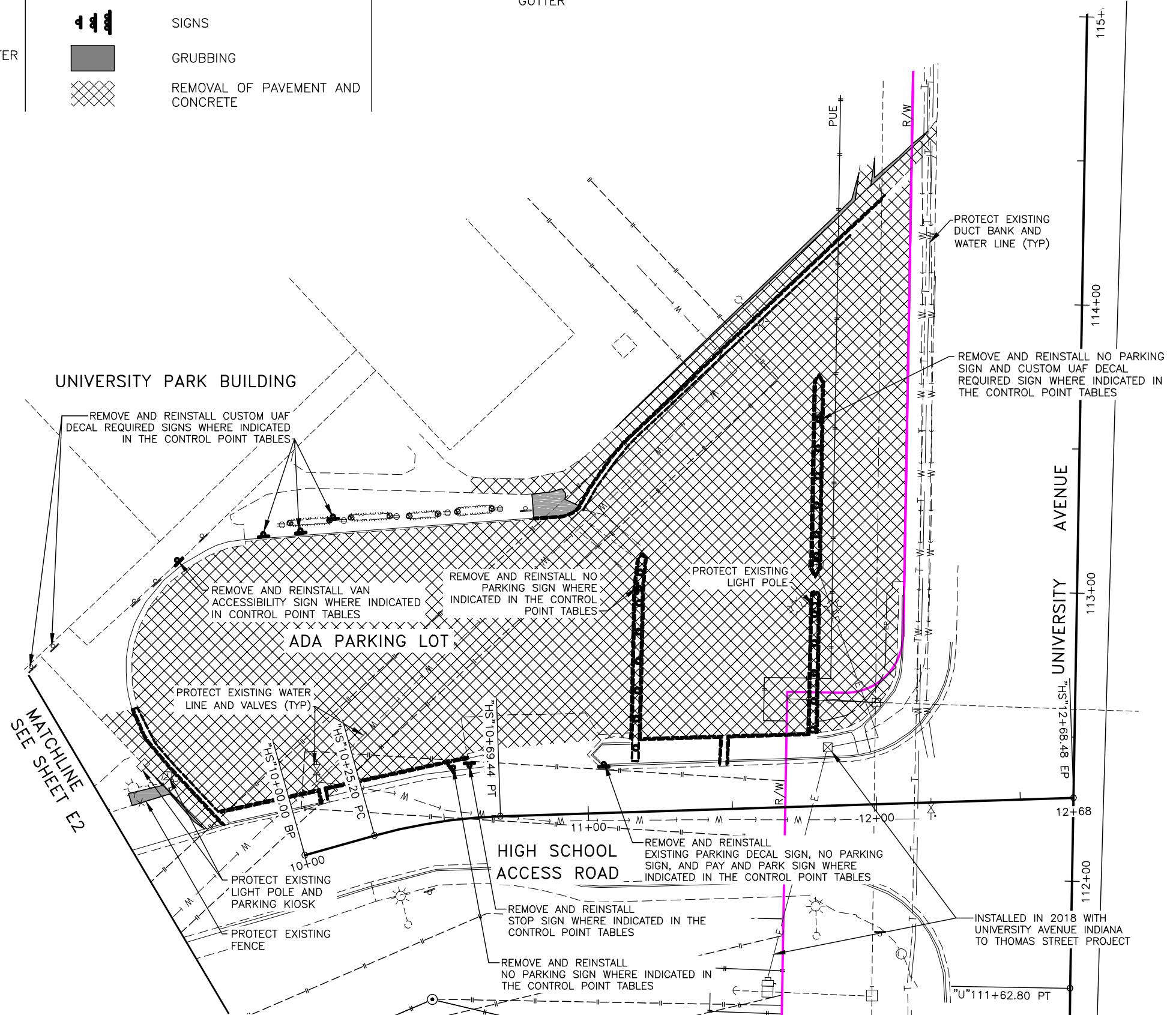
ESTIMATE OF QUANTITIES
(2 OF 2)



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	E1	E2

DEMOLITION INDEX:

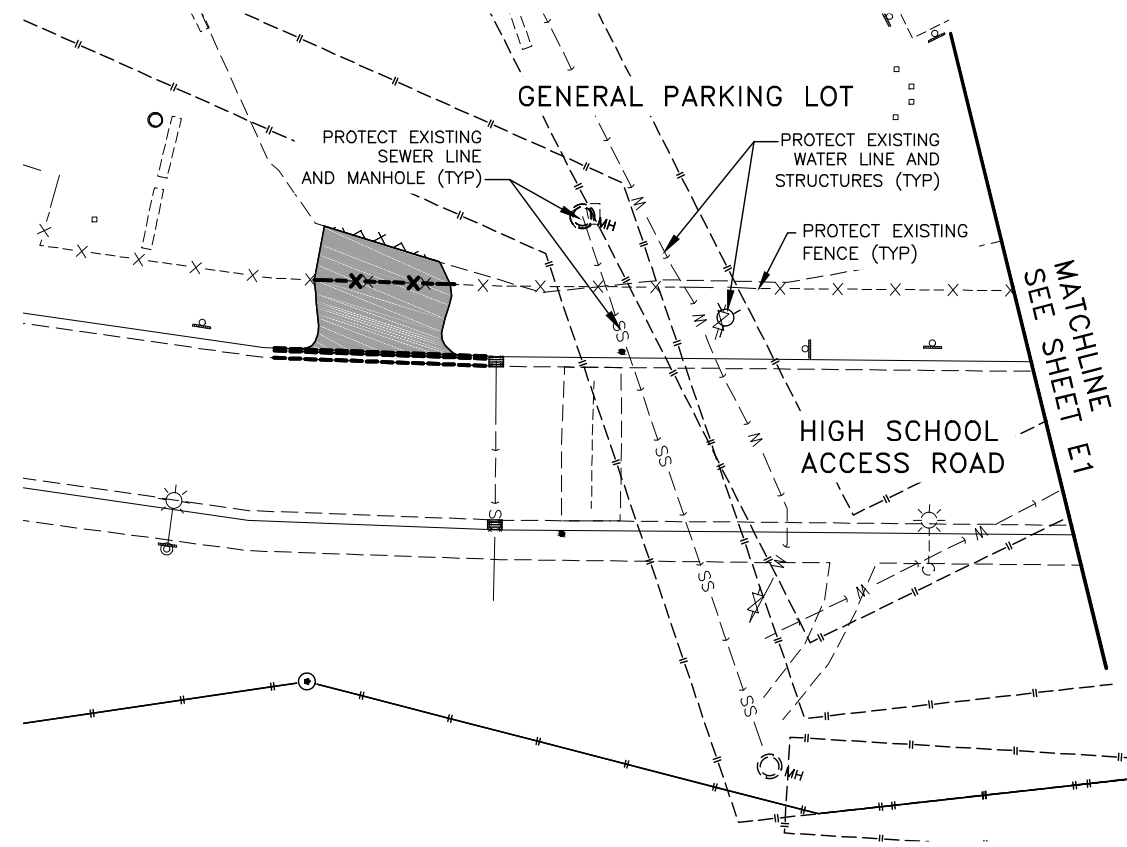
ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
	LIGHTING DEMO		FENCE		REMOVAL OF CURB AND GUTTER
	HEADBOLT HEATER POST		SIGNS		GRUBBING
	STRUCTURES		REMOVAL OF PAVEMENT AND CONCRETE		



PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AECC605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
 P:\2011\1147.01\FB\Segment Improvement Packages\Segment UAF-C\1000.crs\1147.01b-UAF-E1 Wed, Jul/03/19 10:45am



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWHY00270	2019	E2	E2



DEMOLITION INDEX:

ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
	LIGHTING DEMO		FENCE		REMOVAL OF CURB AND GUTTER
	HEADBOLT HEATER POST		SIGNS		
	STRUCTURES		GRUBBING		
			REMOVAL OF PAVEMENT AND CONCRETE		

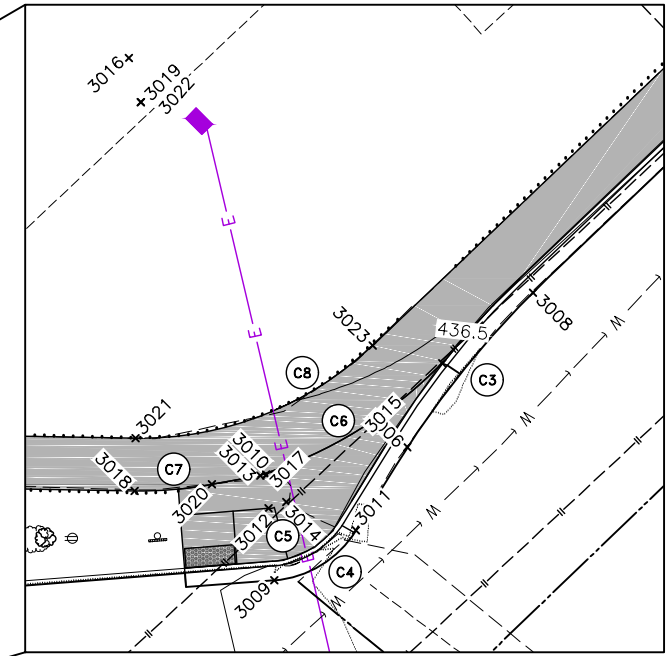
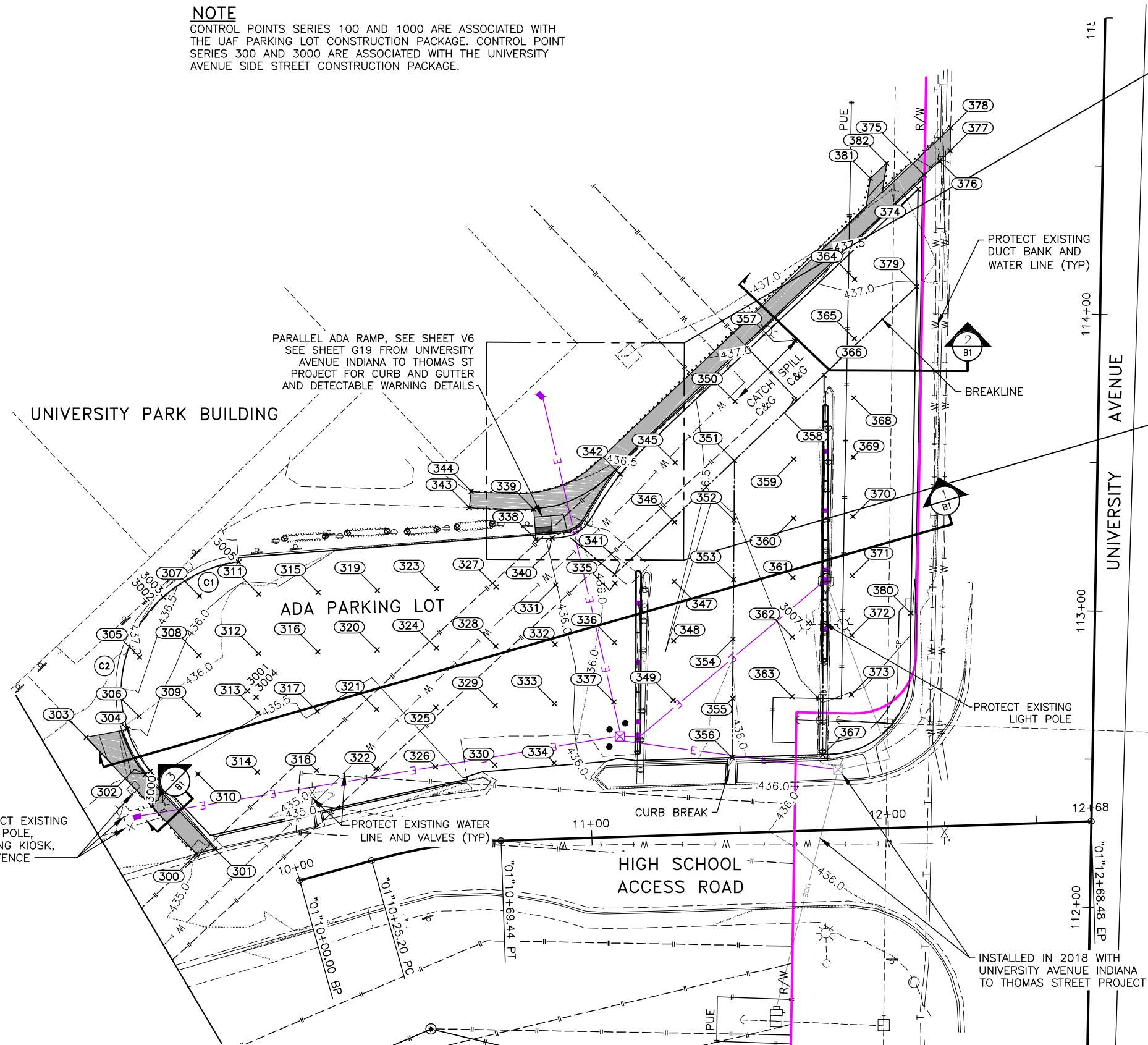
DEMOLITION (2 OF 2)



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	G1	G4

NOTE

CONTROL POINTS SERIES 100 AND 1000 ARE ASSOCIATED WITH THE UAF PARKING LOT CONSTRUCTION PACKAGE. CONTROL POINT SERIES 300 AND 3000 ARE ASSOCIATED WITH THE UNIVERSITY AVENUE SIDE STREET CONSTRUCTION PACKAGE.



G1 CURVE LAYOUT TABLE – SIDE STREET

NO.	R (FT)	PT#	DESC.	NORTHING	EASTING	ELEV.
C1	42.5	3000	PC-LOC	69980.76	17985.56	435.55
		3001	RP-LOC	70007.98	18018.21	
		3002	PT-LOC	70039.54	17989.74	436.65
C2	46	3003	PC-LOC	70039.54	17989.74	436.65
		3004	RP-LOC	70005.92	18021.13	
		3005	PT-LOC	70051.53	18015.12	436.08
C3	81	3006	PC-LOC	70074.06	18138.33	436.12
		3007	RP-LOC	70031.48	18207.24	
		3008	PT-LOC	70090.14	18151.39	436.28
C4	11	3009	PC-LOC	70060.19	18124.48	436.02
		3010	RP-LOC	70071.16	18123.62	
		3011	PT-LOC	70065.39	18132.98	436.06
C5	3.5	3012	PC-SW	70067.67	18123.89	436.40
		3013	RP-SW	70071.16	18123.62	
		3014	PT-SW	70068.35	18125.70	436.40
C6	1.9	3015	PC-SW	70082.76	18141.98	436.46
		3016	RP-SW	70114.57	18109.34	
		3017	PT-SW	70071.10	18123.01	436.39
C7	40.5	3018	PC-SW	70069.49	18109.93	436.35
		3019	RP-SW	70109.98	18110.59	
		3020	PT-SW	70070.16	18117.98	436.38
C8	35	3021	PC-SW	70074.99	18110.02	436.43
		3022	RP-SW	70109.98	18110.59	
		3023	PT-SW	70084.63	18134.72	436.54

PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AECC605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200

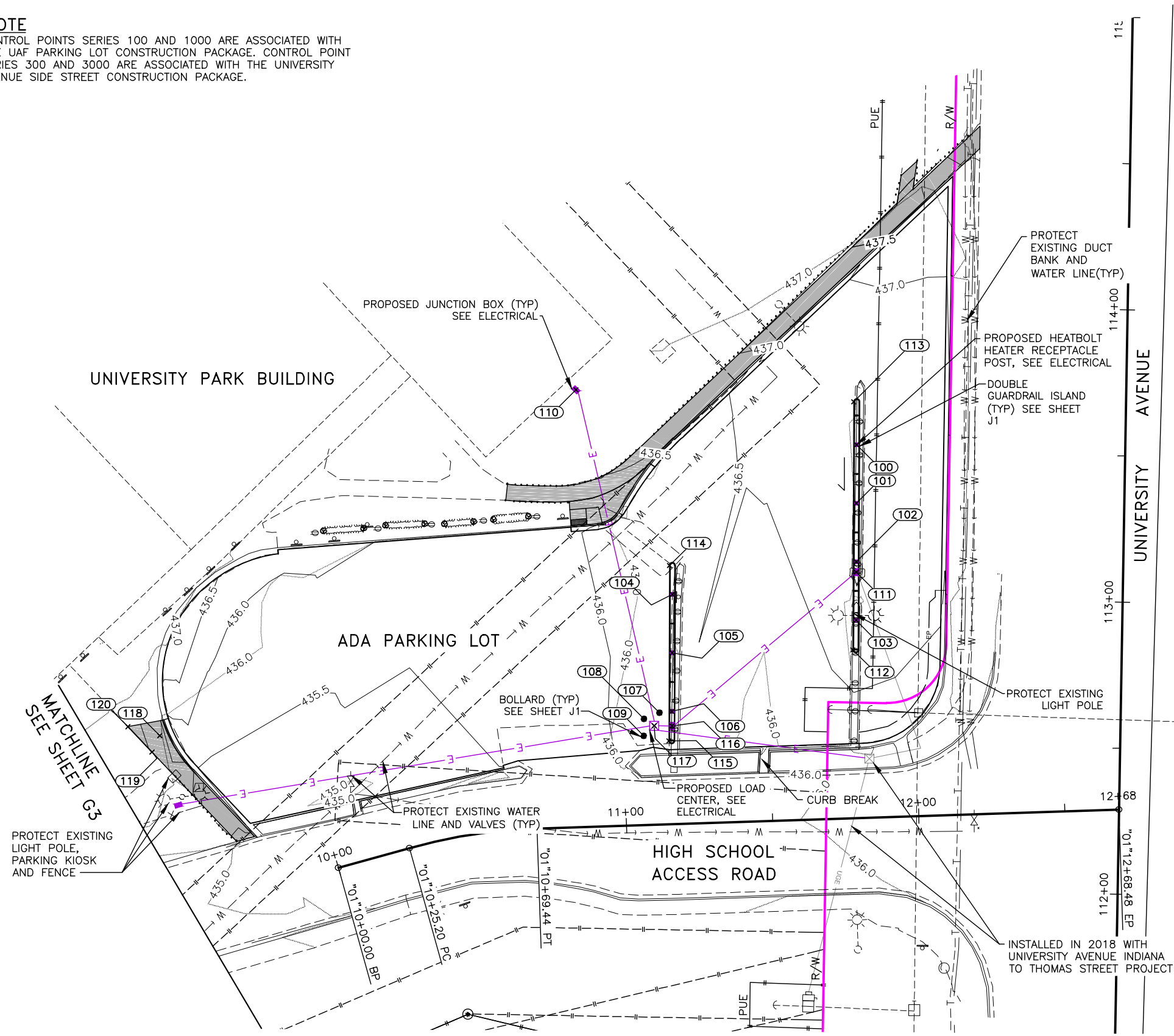
GRADING PLAN – SIDE STREET



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWHY00270	2019	G2	G4

NOTE

CONTROL POINTS SERIES 100 AND 1000 ARE ASSOCIATED WITH THE UAF PARKING LOT CONSTRUCTION PACKAGE. CONTROL POINT SERIES 300 AND 3000 ARE ASSOCIATED WITH THE UNIVERSITY AVENUE SIDE STREET CONSTRUCTION PACKAGE.

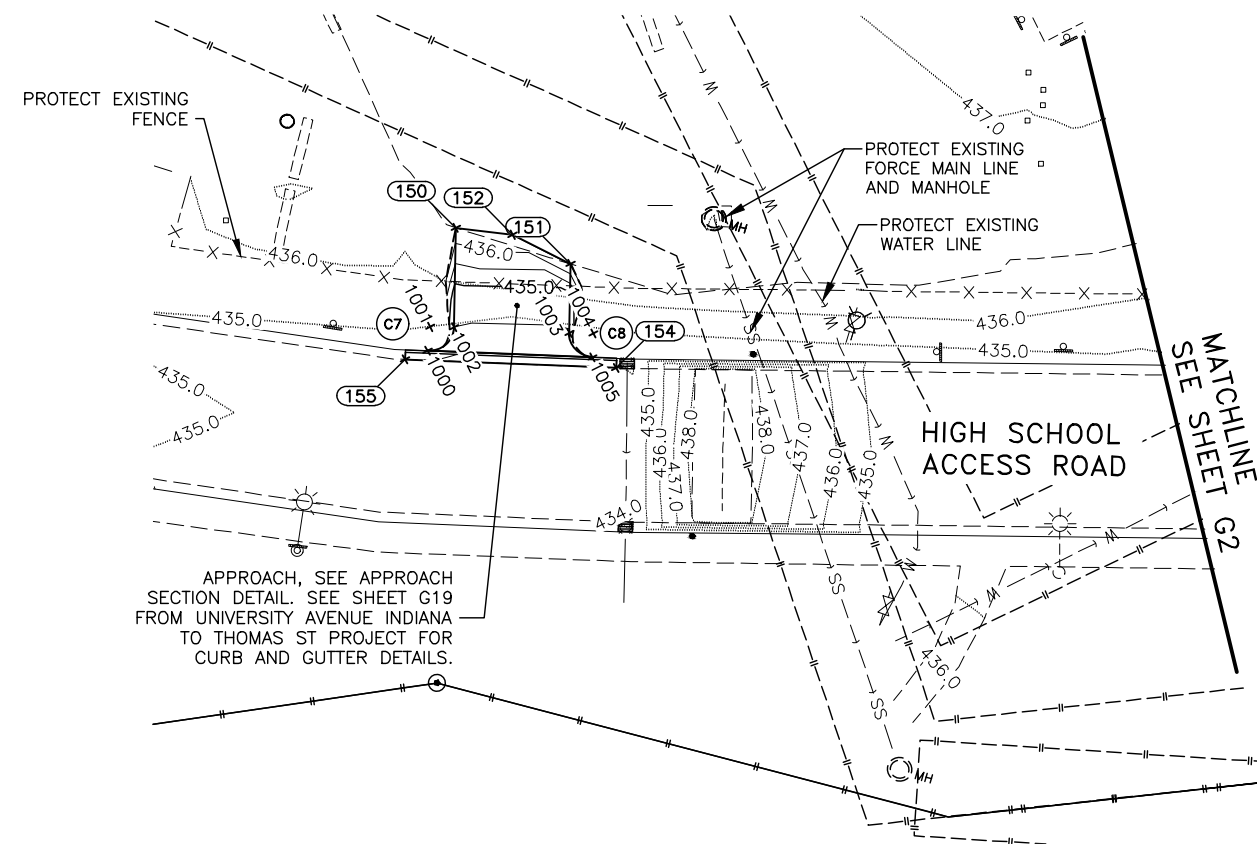


GRADING PLAN – UAF
(1 OF 2)

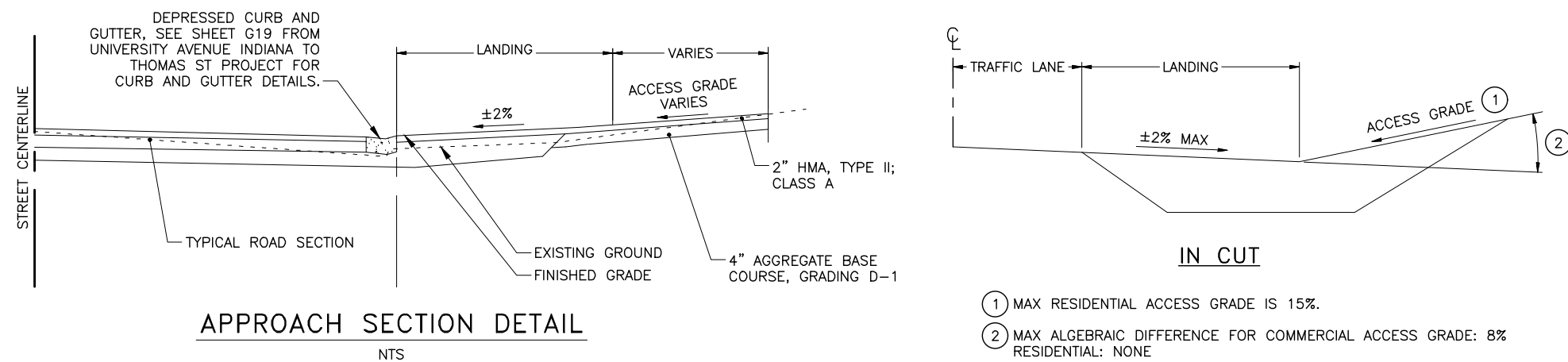


PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AECC605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	G3	G4



NO.	R (FT)	PT#	DESC.	NORTHING	EASTING
C7	5	1000	PC-EP	69903.20	17829.00
		1001	RP-EP	69908.10	17828.03
		1002	PT-LOC	69909.51	17832.83
C8	5	1003	PC-LOC	69915.45	17856.10
		1004	RP-LOC	69916.85	17860.90
		1005	PT-LOC	69912.02	17862.18



NOTE
CONTROL POINTS SERIES 100 AND 1000 ARE ASSOCIATED WITH THE UAF PARKING LOT CONSTRUCTION PACKAGE. CONTROL POINT SERIES 300 AND 3000 ARE ASSOCIATED WITH THE UNIVERSITY AVENUE SIDE STREET CONSTRUCTION PACKAGE.

- ① MAX RESIDENTIAL ACCESS GRADE IS 15%.
- ② MAX ALGEBRAIC DIFFERENCE FOR COMMERCIAL ACCESS GRADE: 8% RESIDENTIAL: NONE

GRADING PLAN - UAF
(2 OF 2)



PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AEC0605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
P:\2011\1147.0\FEB\Segment Improvement Packages\Segment UAF-C\2000\cst1147.0\fb-uaf-g3 Wed Jul 03 19 10:46am

PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AEC0605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
 P:\2011\11147.0\FEB\Segment Improvement Packages\Segment UAF\UAF-C\2000cst11147.0\FB-uaf-G4 Wed, Jul/03/19 10:46am

SHEET G1 CONTROL POINT TABLE – SIDE STREET				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
300		69953.05	18001.28	SW
301		69954.79	18007.40	TBC
302	436.04	69979.72	17983.83	TBC – TRANSITION (1)
303		69992.15	17963.94	SW
304	435.94	69995.06	17977.72	LOC
305	436.73	70019.26	17981.83	FG
306	436.17	69999.25	17981.74	FG
307	436.12	70039.96	18001.93	FG
308	435.85	70019.95	18001.84	FG
309	435.63	69999.93	18001.75	FG
310	435.42	69979.92	18001.66	FG
311	435.95	70040.65	18021.93	FG
312	435.72	70020.64	18021.84	FG
313	435.51	70000.62	18021.75	FG
314	435.31	69980.61	18021.66	FG
315	435.90	70041.34	18041.93	FG
316	435.70	70021.33	18041.84	FG
317	435.50	70001.31	18041.75	FG
318	435.30	69981.30	18041.66	FG
319	435.78	70042.03	18061.94	FG
320	435.58	70022.02	18061.85	FG
321	435.45	70002.00	18061.76	FG
322	435.34	69981.99	18061.67	FG
323	435.81	70042.72	18081.94	FG
324	435.69	70022.71	18081.85	FG
325	435.58	70002.69	18081.76	FG
326	435.46	69982.68	18081.67	FG
327	435.87	70043.41	18101.94	FG
328	435.79	70023.39	18101.85	FG
329	435.71	70003.38	18101.76	FG
330	435.63	69983.36	18101.67	FG
331	436.00	70044.10	18121.95	FG
332	435.95	70024.08	18121.86	FG
333	435.91	70004.07	18121.77	FG
334	435.91	69984.05	18121.68	FG
335	436.19	70044.79	18141.95	FG
336	436.21	70024.77	18141.86	FG
337	436.24	70004.76	18141.77	FG
338	435.97	70059.47	18115.27	LOC
339	436.46	70069.67	18114.47	SW
340	436.00	70059.90	18120.75	LOC
341	436.18	70047.73	18141.86	BREAKLINE
342	436.09	70081.54	18143.56	LOC
343		70070.11	18092.75	SW
344		70075.63	18093.39	SW
345	436.35	70085.51	18162.13	FG
346	436.40	70065.49	18162.04	FG
347	436.46	70045.48	18161.95	FG
348	436.48	70025.46	18161.86	FG
349	436.39	70005.45	18161.77	FG
350	436.59	70106.21	18182.22	FG

SHEET G1 CONTROL POINT TABLE – SIDE STREET				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
351	436.60	70086.20	18182.13	FG
352	436.48	70066.18	18182.05	FG
353	436.36	70046.17	18181.96	FG
354	436.24	70026.15	18181.87	FG
355	436.12	70006.14	18181.78	FG
356	436.60	69986.12	18181.69	BREAKLINE
357	436.76	70126.91	18202.32	FG
358	436.68	70106.90	18202.23	FG
359	436.64	70086.89	18202.14	FG
360	436.60	70066.87	18202.05	FG
361	436.56	70046.86	18201.96	FG
362	436.52	70026.90	18201.87	FG
363	436.43	70006.83	18201.78	FG
364	437.02	70147.62	18222.41	FG
365	436.84	70127.60	18222.32	FG
366	436.72	70115.28	18212.18	BREAKLINE
367	436.72	69987.17	18212.18	BREAKLINE
368	436.74	70107.59	18222.23	FG
369	436.66	70087.57	18222.14	FG
370	436.62	70067.56	18222.05	FG
371	436.58	70047.54	18221.96	FG
372	436.54	70027.53	18221.87	FG
373	436.50	70007.51	18221.78	FG
374	437.41	70178.03	18243.71	LOC
375	437.82	70182.75	18245.76	SW
376	438.17	70187.57	18250.83	SW
377		70191.02	18254.45	SW
378		70198.67	18254.51	SW
379	436.97	70145.18	18243.26	EP
380		70035.13	18241.75	LOC
381		70181.66	18227.53	SW
382		70186.76	18233.00	SW

SHEET G2 CONTROL POINT TABLE – UAF			
POINT #	NORTHING	EASTING	DESCRIPTION
100	70089.54	18212.71	HBH
101	70069.54	18212.71	HBH
102	70049.54	18212.71	HBH
103	70029.54	18212.71	HBH
104	70038.13	18149.89	HBH
105	70018.13	18149.89	HBH
106	69998.13	18149.89	HBH
107	69997.63	18145.62	BOLLARD
108	69995.51	18140.33	BOLLARD
109	69989.68	18140.30	BOLLARD
110	70107.97	18116.62	JUNCTION BOX
111	70045.99	18212.71	JUNCTION BOX
112	70019.37	18211.68	GUARDRAIL PC
113	70104.20	18211.68	GUARDRAIL PC

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	G4	G4

SHEET G2 CONTROL POINT TABLE – UAF			
POINT #	NORTHING	EASTING	DESCRIPTION
114	70047.97	18148.86	GUARDRAIL PC
115	69987.97	18148.86	GUARDRAIL PC
116	69993.13	18149.89	JUNCTION BOX
117	69993.13	18143.86	LOAD CENTER
118	69989.16	17974.78	PI
119	69983.53	17972.18	EP
120	69992.15	17963.94	EP

SHEET G3 CONTROL POINT TABLE – UAF				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
150		69929.38	17827.03	EP
151		69929.28	17852.06	EP
152		69931.50	17838.77	EP
153		70106.65	17786.73	EG
154		69911.39	17867.57	LOC
155		69900.07	17825.05	LOC

NOTE
 (1) TRANSITION FROM STANDARD CURB AND GUTTER TO DEPRESSED CURB AND GUTTER.

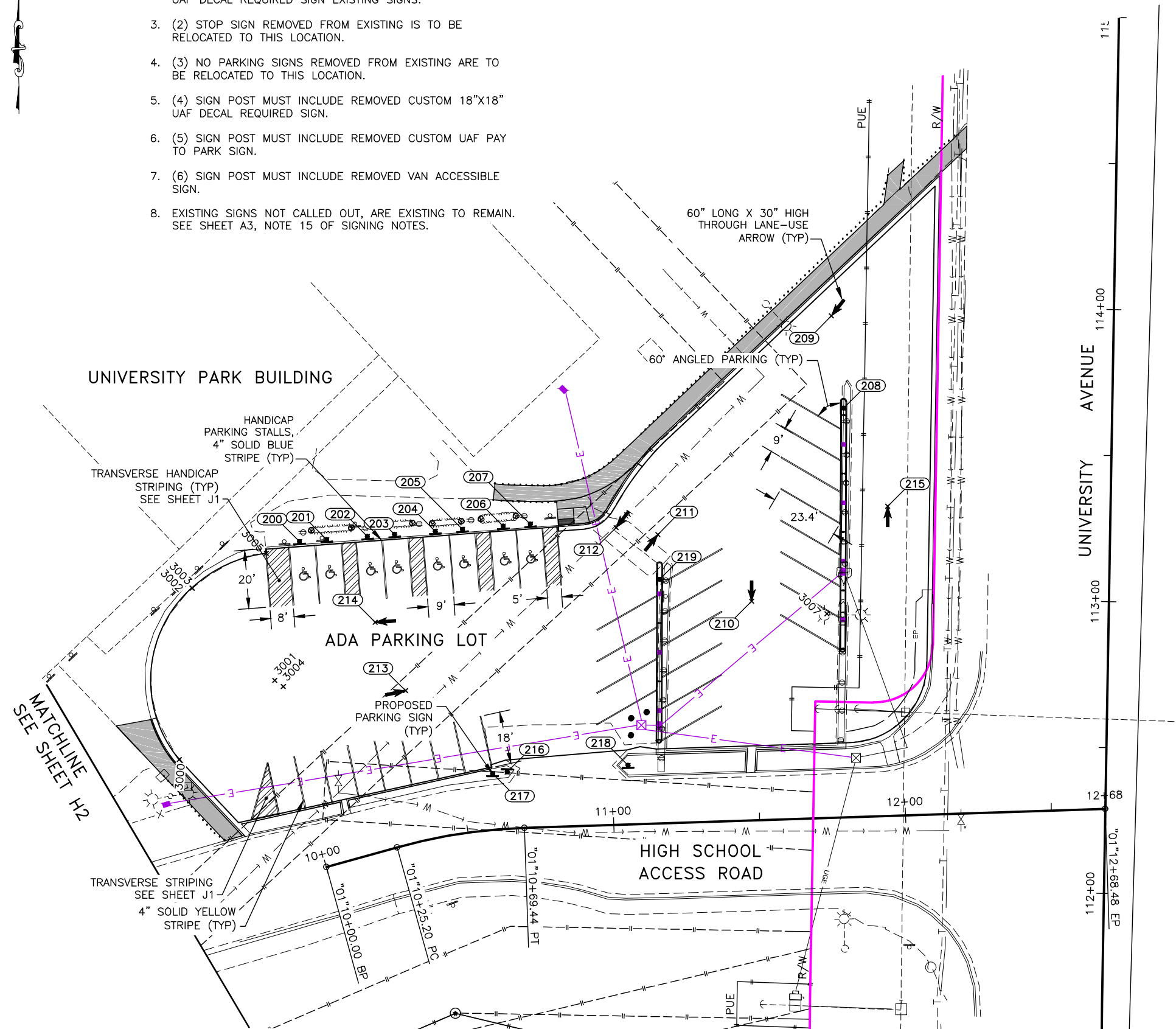
CONTROL POINT TABLES



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	H1	H2

NOTES

- SEE SHEET A3 FOR GENERAL SIGNING NOTES.
- (1) SIGN POST MUST INCLUDE A REMOVED CUSTOM 18"x9" UAF DECAL REQUIRED SIGN EXISTING SIGNS.
- (2) STOP SIGN REMOVED FROM EXISTING IS TO BE RELOCATED TO THIS LOCATION.
- (3) NO PARKING SIGNS REMOVED FROM EXISTING ARE TO BE RELOCATED TO THIS LOCATION.
- (4) SIGN POST MUST INCLUDE REMOVED CUSTOM 18"x18" UAF DECAL REQUIRED SIGN.
- (5) SIGN POST MUST INCLUDE REMOVED CUSTOM UAF PAY TO PARK SIGN.
- (6) SIGN POST MUST INCLUDE REMOVED VAN ACCESSIBLE SIGN.
- EXISTING SIGNS NOT CALLED OUT, ARE EXISTING TO REMAIN. SEE SHEET A3, NOTE 15 OF SIGNING NOTES.



POINT #	NORTHING	EASTING	DESCRIPTION/NOTE
200	70055.57	18026.47	RELOCATE EXISTING (1)(6)
201	70056.31	18035.77	R7-1, 12"x18" (1)
202	70057.40	18049.73	R7-1, 12"x18" (1)
203	70058.13	18059.03	R7-1, 12"x18" (1)
204	70059.23	18072.99	R7-1, 12"x18" (1)
205	70059.96	18082.29	R7-1, 12"x18"
206	70061.06	18096.25	R7-1, 12"x18"
207	70061.79	18105.56	R7-1, 12"x18"
208	70101.95	18212.71	RELOCATE EXISTING SIGN (3)(5)
209	70133.53	18208.39	ARROW
210	70035.72	18181.40	ARROW
211	70058.43	18149.22	ARROW
212	70060.77	18134.90	ARROW
213	70004.65	18062.97	ARROW
214	70028.01	18052.53	ARROW
215	70068.40	18227.94	ARROW
216	69976.95	18097.92	RELOCATE EXISTING (2)
217	69976.34	18092.96	RELOCATE EXISTING (3)
218	69979.39	18139.31	RELOCATE EXISTING SIGN (3)(4)(5)
219	70043.13	18149.89	RELOCATE EXISTING SIGN (3)

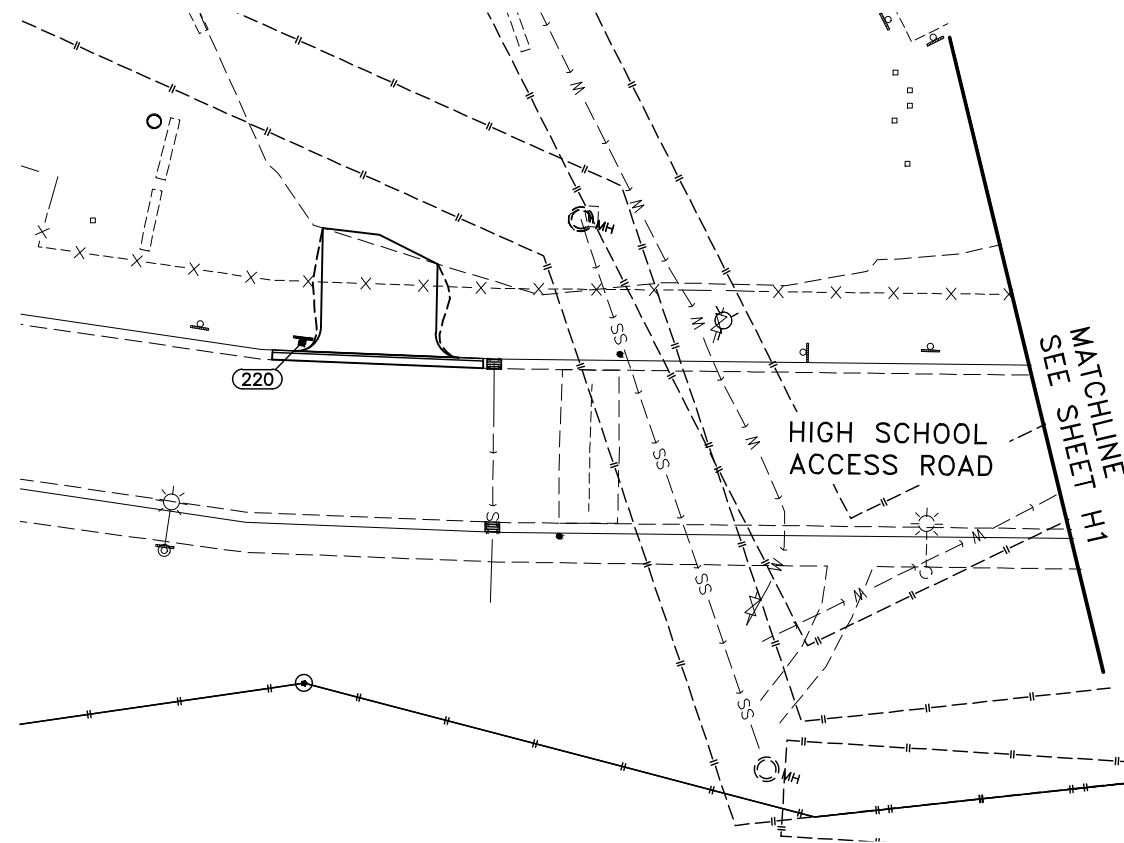
PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AEC605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
 P:\2011\11147.01\FB\Segment Improvement Packages\Segment UAF-UAF-C\0008\enr\11147.01\FB-UAF-H1 Wed, Jul/03/19 11:18am

SIGNING AND STRIPING
- UAF (1 OF 2)



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHwy00270	2019	H2	H2

SHEET H2 CONTROL POINT TABLE			
POINT #	NORTHING	EASTING	DESCRIPTION/NOTE
220	69905.35	17830.05	R1-1, 30"x30"

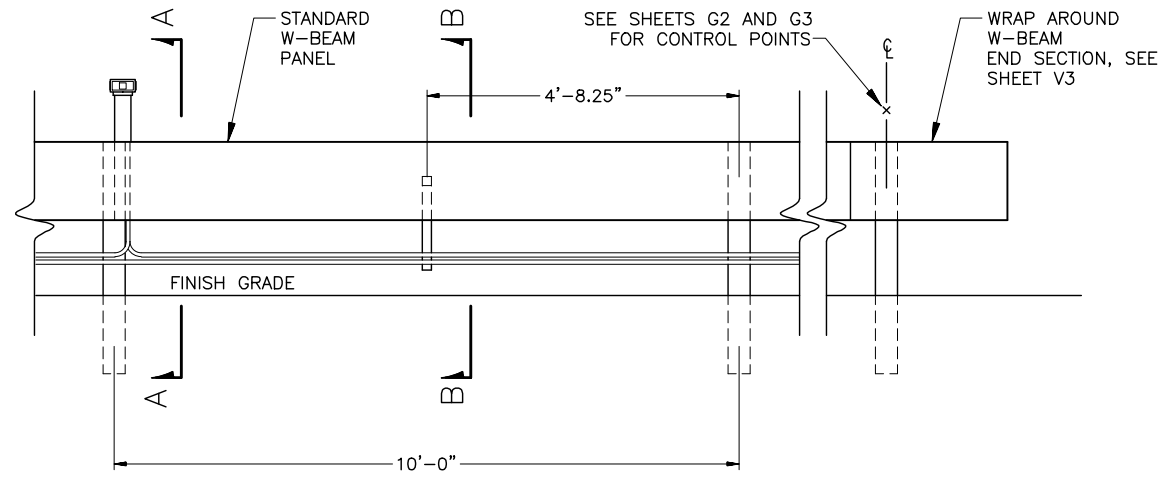


PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AECC605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
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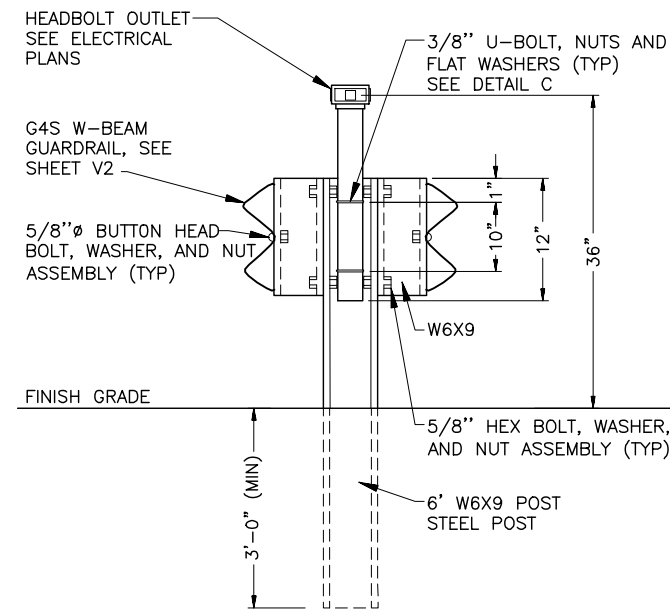
SIGNING AND STRIPING
 - UAF (2 OF 2)



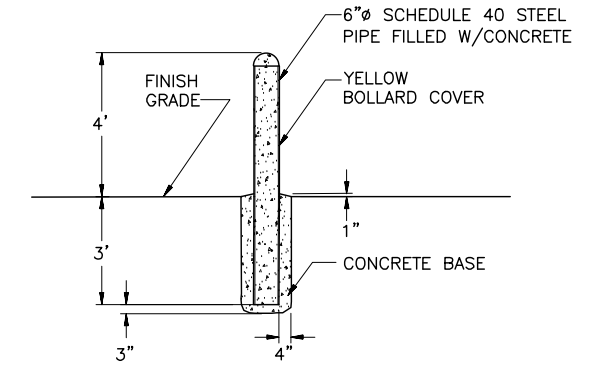
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	J1	J1



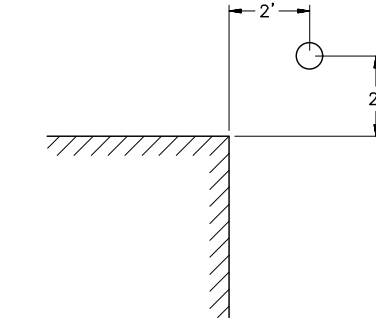
**ELEVATION:
DOUBLE GUARDRAIL ISLAND**
NTS



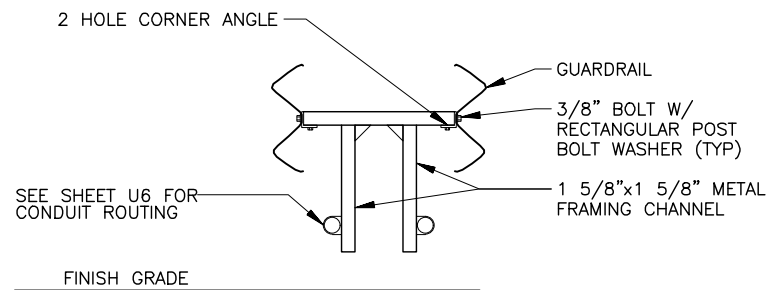
**SECTION DETAIL A - A:
TYPICAL DOUBLE GUARDRAIL ISLAND**
NTS



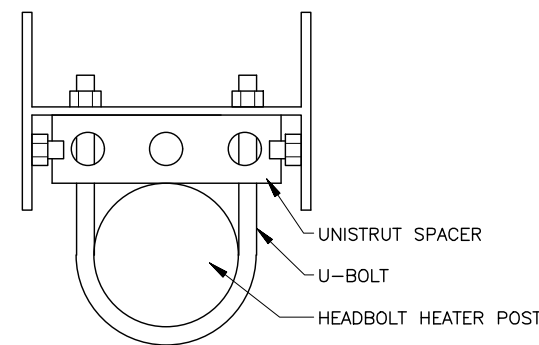
NOTE: BOLLARDS TO BE PLACED 2' FROM OBJECT THEY ARE PROTECTING, UNLESS OTHERWISE CONTROLLED.



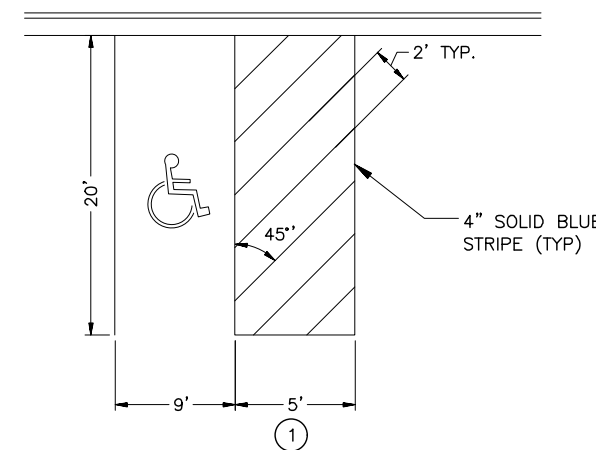
BOLLARD DETAIL
NTS



**SECTION DETAIL B - B:
INTERMEDIATE CONDUIT SUPPORT
@ DOUBLE GUARDRAIL ISLAND**
NTS

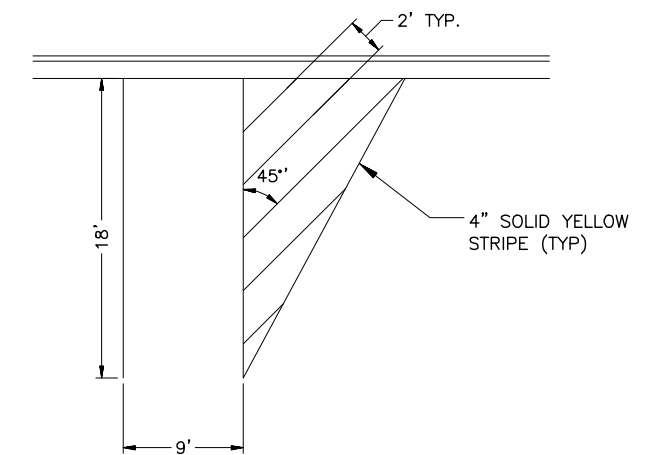


**DETAIL C:
HEADBOLT HEATER POST
ATTACHMENT**
NTS



**TRANSVERSE HANDICAP STRIPING
DETAIL**
NTS

① 8' WIDE TRANSVERSE STRIPING AREA FOR THE VAN ACCESSIBLE PARKING STALL. AS INDICATED ON SHEET H1.



TRANSVERSE STRIPING DETAIL
NTS

DETAILS



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	Q1	Q2

SITE INFORMATION

1. SITE FUNCTION: ROAD
2. 2-YEAR, 24-HOUR RAINFALL EVENT: 1.08 INCHES (SOURCE: http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_ak.html) FOR FAIRBANKS
3. AVERAGE ANNUAL PRECIPITATION: 10.53 INCHES (SOURCE: WESTERN REGIONAL CLIMATE CENTER) FOR FAIRBANKS WSO AIRPORT
4. STAGING AND STOCKPILE AREAS: LOCATIONS OF THESE ELEMENTS ARE TO BE DETERMINED BY THE CONTRACTOR AND MUST COMPLY WITH THE CGP, SWPPP, SECTION 641, AND ALL PERMITS.
5. PROJECT AREAS ARE LISTED BELOW (MATERIAL SITES NOT INCLUDED):

PROJECT INFORMATION TABLE	
PROJECT AREA (ACRE)	7.7 AC
DISTURBED AREA (ACRE)	0.8 AC
PRE-CONSTRUCTION IMPERVIOUS AREA (%)	58%
POST-CONSTRUCTION IMPERVIOUS AREA (%)	58%
PRE-CONSTRUCTION RUNOFF COEFFICIENT	0.63
POST-CONSTRUCTION RUNOFF COEFFICIENT	0.63

6. LANDSCAPE TOPOGRAPHY: RELATIVELY FLAT AND URBANIZED WITH RESIDENTIAL AND COMMERCIAL DEVELOPMENT ALONG THE PROJECT CORRIDOR.
7. DRAINAGE PATTERNS: SURFACE DRAINAGE VIA DITCHES AND STORM DRAINS FLOW TO NOYES SLOUGH AND DEADMAN SLOUGH.
8. SOILS: ALLUVIAL SAND AND GRAVEL OVERLAIN BY SILT AND ORGANIC SILT.
9. EXISTING VEGETATION: PROJECT AREA IS A MIX OF RESIDENTIAL AND COMMERCIAL WITH LAWNS, SHRUBS AND TREES.
10. APPROXIMATE GROWING SEASON: MAY 3 THROUGH OCTOBER 3 (SOURCE: USACE WETLANDS DELINEATION MANUAL: ALASKA REGION (VERSION 2))
11. HISTORIC SITE CONTAMINATION: KNOWN SITES HAVE BEEN OR ARE BEING REMEDIATED. PROBABILITY OF ENCOUNTERING HAZARDOUS MATERIALS DURING CONSTRUCTION IS LOW.








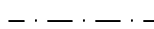
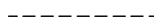
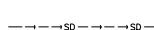


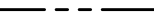



ENVIRONMENTAL INFORMATION

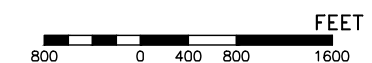
1. RECEIVING WATERS: NOYES SLOUGH, DEADMAN SLOUGH
2. IMPAIRED WATER BODIES: CHENA RIVER, NOYES SLOUGH
3. TOTAL MAXIMUM DAILY LOAD (TMDL): NONE
4. STORM SEWER/DRAINAGE SYSTEMS: FAIRBANKS NORTH STAR BOROUGH MS4 CONSISTING OF PIPED AND SURFACE WATER DRAINAGE NETWORK. THIS PROJECT INCLUDES MODIFICATIONS TO THIS SYSTEM.
5. THREATENED AND ENDANGERED SPECIES: NONE
6. HISTORICAL & CULTURAL RESOURCE PRESENCE: NONE AFFECTED
7. FISH & WILDLIFE HABITAT PRESENCE: NONE
8. WETLANDS: NONE
9. CONTACT THE PROJECT ENGINEER WITH QUESTIONS/CONCERNS REGARDING ENVIRONMENTAL ISSUES OR PERMIT INFORMATION.
10. KNOWN CONTAMINATION AREAS ARE PRESENT IN THE PROJECT AREA AS FOLLOWS: DEC HAZARD 26489 - 655 UNIVERSITY AVENUE (FORMER HOLIDAY HOUSE APARTMENTS), DEC HAZARD ID 4103 - 685 INDIANA AVENUE, RESIDENCE.
11. NO EXISTING PUBLIC WATER SYSTEM (PWS) DRINKING WATER PROTECTION AREAS (DWPA) INTERSECT THE BOUNDARY OF THE PROPOSED PROJECT. (SOURCE: ADEC DRINKING WATER PROTECTION MAP)
12. ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE MIGRATORY BIRD TREATY ACT TO PREVENT THE KILLING OR TAKING OF MIGRATORY BIRDS OR ANY PART, NEST OR EGGS. SEE THE US FISH AND WILDLIFE SERVICES "LAND CLEARING TIMING GUIDANCE FOR ALASKA" FOR MORE INFORMATION.

GENERAL NOTES

1. READ AND COMPLY WITH THE CONSTRUCTION GENERAL PERMIT (CGP) AND SECTION 641 OF THE PROJECT SPECIFICATIONS.
2. A SWPPP AND HMCP ARE REQUIRED FOR THIS PROJECT.
3. EROSION AND SEDIMENT CONTROL FEATURES MUST BE BASED ON THE DOT&PF MANUAL ALASKA STORM WATER POLLUTION PREVENTION PLAN GUIDE (OCTOBER 2016 OR LATEST VERSION) AND LATEST BMPs.
4. INITIATE EROSION AND SEDIMENT CONTROLS PRIOR TO ANY EARTH DISTURBING ACTIVITIES.
5. DEVICES MAY NEED TO BE REMOVED AND REINSTALLED TO ALLOW CONSTRUCTION ACTIVITIES TO PROCEED. MAINTAIN ALL DEVICES DAILY INCLUDING, BUT NOT LIMITED TO REMOVAL AND DISPOSAL OF ACCUMULATED SOILS, CLEANING DEVICES AND REPLACEMENT OF DAMAGED DEVICES.
6. STOCKPILE AND STAGING LOCATIONS MUST BE RECLAIMED TO THEIR ORIGINAL CONDITION. STOCKPILES AND/OR STAGING AREAS ARE NOT ALLOWED IN WETLANDS.
7. ENSURE LOADS ARE STABLE OR COVERED SO THAT NO MATERIAL ESCAPES DURING HAULING ACTIVITIES.
8. PROVIDE CONCRETE WASHOUT FACILITIES.
9. PROVIDE VEHICLE CLEANING EQUIPMENT OR OTHER APPROVED CONTROLS TO PREVENT TRACKING OF DIRT AND GRAVEL ONTO PAVED SURFACES.
10. PROVIDE INLET PROTECTION AT ALL INLETS IN AND ADJACENT TO WORK AREAS (SEE BMP 25.00 - 29.00 DOT&PF SWPPP GUIDE).
11. AVOID UNNECESSARY GROUND DISTURBANCE AND MAINTAIN NATIVE VEGETATION WHERE PRACTICABLE THROUGH THE USE OF BMPs AND DOT&PF REVIEW OF PROPOSED SWPPP.
12. FOLLOW BMPs, SOPs, AND THE SWPPP TO AVOID IMPACTS TO A CONTAMINATED SITE IF THE AREA MUST BE USED FOR CONSTRUCTION STAGING. DEVELOP A CONTINGENCY PLAN IN THE EVENT THAT CONTAMINATION IS UNEXPECTEDLY ENCOUNTERED, AND PHASE UNDERGROUND CONSTRUCTION WORK IN KNOWN GROUNDWATER-CONTAMINATED AREAS DURING PERIODS OF LOW GROUNDWATER.
13. VEGETATIVE BUFFERS IS THE PREFERRED METHOD OF PERIMETER CONTROL FOR THIS PROJECT. WHERE VEGETATION IS NOT 25 FEET WIDE, THEN A BMP MUST BE INSTALLED FOR PERIMETER CONTROL.
14. SWEEP CLEAN STABILIZED CONSTRUCTION EXITS EACH SHIFT OR AS DIRECTED BY ENGINEER.

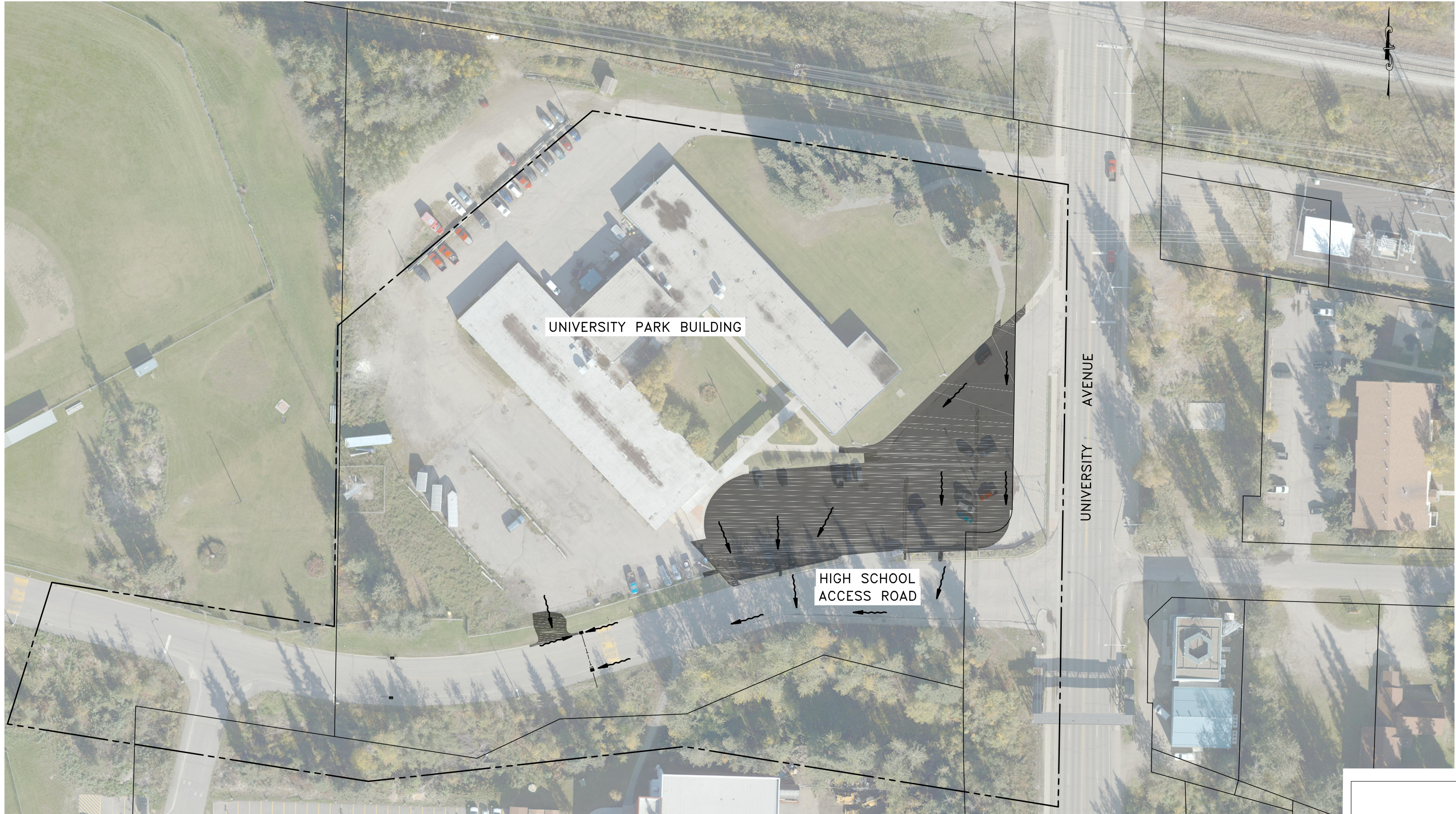
ESCP LEGEND:

-  PARCEL BOUNDARY
-  SURFACE WATER FLOW DIRECTION
-  CULVERT INLET PROTECTION (SEE BMP 08.00 DOT&PF SWPPP GUIDE)
-  VELOCITY DISSIPATOR (RIPRAP CLASS II OR FUNCTIONAL EQUIVALENT)
-  WETLANDS
-  UPLANDS
-  TEMPORARY CHECK DAM (SEE BMP 31.00-33.00 DOT&PF SWPPP GUIDE)
-  DITCH LINE
-  EXISTING EMBANKMENT CATCHLINE (CUT OR FILL)
-  EXISTING STORM DRAIN (FLOW DIRECTION →)
-  STORM DRAIN MANHOLE
-  STORM DRAIN CATCH BASIN
-  CATCH BASIN PROTECTION AREA
-  CULVERT PIPE
-  TEMPORARY CULVERT INLET SEDIMENT TRAP
-  APPROXIMATE LIMITS OF EARTH DISTURBANCE



EROSION CONTROL NOTES AND DETAILS

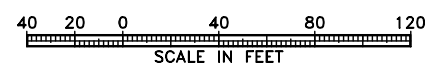
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWHY00270	2019	Q2	Q2



UNIVERSITY PARK BUILDING

HIGH SCHOOL ACCESS ROAD

UNIVERSITY AVENUE



EROSION SEDIMENT CONTROL PLAN

PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AEC605, 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	0617012/NFHWY00270	2019	U1	U12

ABBREVIATIONS	
A	AMPERES
AC	ALTERNATING CURRENT
AF	AMP FRAME
AFG	ABOVE FINISH GRADE
AIC	AMPS INTERRUPTING CAPACITY
AL	ALUMINUM
AK	ALASKA
AMP	AMPERES
ANC	ANCHOR
ARRC	ALASKA RAILROAD CORPORATION
ASMBLY	ASSEMBLY
AT	AMP TRIP
AWG	AMERICAN WIRE GAUGE
BCU	BARE COPPER WIRE
C	CONDUCTOR, CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CPT	CONTROL POWER TRANSFORMER
CU	COPPER
DEG	DEGREE
DISC	DISCONNECT
DOT	DEPARTMENT OF TRANSPORTATION
EGC	EQUIPMENT GROUNDING CONDUCTOR
F	FAHRENHEIT
FLA	FULL LOAD AMPS
FT	FEET
FU	FUSE
GA	GAUGE
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
GND	GROUND OR GROUNDED
GVEA	GOLDEN VALLEY ELECTRIC ASSOCIATION
HBDALA	HEADBOLT DISTRIBUTION ASSEMBLY LOT A
HBDALB	HEADBOLT DISTRIBUTION ASSEMBLY LOT B
HBH	HEADBOLT HEATER
ID	IDENTIFICATION
JB	JUNCTION BOX
K	KELVIN
KVA	KILOVOLT AMPERES
LED	LIGHT EMITTING DIODE
LT	LEFT
LV	LOW VOLTAGE
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MIN	MINIMUM
N	NEUTRAL, NORTH
N/A	NOT APPLICABLE
NEC	NATIONAL ELECTRICAL CODE; NFPA 70
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NO	NUMBER
NTS	NOT TO SCALE
OH	OVERHEAD
P	POLE
PE	POLYETHYLENE
PH	PHASE
PRI	PRIMARY
QTY	QUANTITY
RCPT	RECEPTACLE
RMC	RIGID METAL CONDUIT (HOT-DIPPED GALVANIZED)
RMS	ROOT MEAN SQUARED
REQD	REQUIRED
RT	RIGHT
SEC	SECONDARY
SPEC	SPECIFICATION
SVD	SERVICE DISCONNECT
TYP	TYPICAL
UAF	UNIVERSITY OF ALASKA FAIRBANKS
UGE	UNDERGROUND ELECTRICAL
V	VOLTS
VA	VOLT AMPERES
W	WATT, WEST or WIRE
WH	WATT HOUR
XFMR	TRANSFORMER
#	NUMBER
NOT ALL ABBREVIATIONS ARE USED	

SYMBOLS	
	POWER POLE LINE
	JOINT USE POWER & TELEPHONE
	JUNCTION BOX, TYPE 1A
	LOAD CENTER
	ELECTRICAL SERVICE
	LUMINAIRE
	HEADBOLT HEATER RECEPTACLE POST; QUANTITY OF RCPT INDICATED

EQUIPMENT NAME CONVENTION	
DESIGN DRAWING NAME	UAF NAME
PNL HBLA	GV422 NP PNL NL034
PNC LTLA	GV422 NP PNL NL035
HBH CONTROL CABINET	GV422 NP CONT NL036
LIGHTING CONTROL CABINET	GV422 NP CONT NL037

GENERAL ELECTRICAL NOTES:

1. COMPLY WITH NFPA 70, NATIONAL ELECTRICAL CODE 2017 EDITION; NECA 1, STANDARD FOR GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION; AND NATIONAL ELECTRICAL SAFETY CODE 2012 EDITION.
2. ELECTRICAL COMPONENTS, DEVICES, ASSEMBLIES, AND ACCESSORIES ARE REQUIRED TO BE LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED USE.
3. DRAWINGS SHOW THE GENERAL LOCATIONS OF THE ELECTRICAL FEATURES ONLY, UNLESS OTHERWISE INDICATED. MAKE MINOR RELOCATIONS AS REQUIRED FOR PROJECT CONDITIONS WHEN NECESSARY TO PRESENT SYMMETRICAL APPEARANCE OR TO AVOID INTERFERENCE WITH OTHER INSTALLATIONS.
4. NEUTRAL CONDUCTORS SHALL NOT BE SHARED BETWEEN BRANCH CIRCUITS, UNLESS OTHERWISE INDICATED.
5. PROVIDE INSULATED EQUIPMENT GROUNDING CONDUCTORS WITH ALL FEEDERS AND BRANCH CIRCUITS. TERMINATE EACH END ON SUITABLE LUG, BUS OR BUSHING. SIZE EQUIPMENT GROUNDING CONDUCTORS IN ACCORDANCE WITH NEC, UNLESS OTHERWISE INDICATED, BUT NOT SMALLER THAN NO. 12 AWG.
6. FOR PURPOSE OF THIS DESIGN, "LOT B" IS DEFINED TO BE THE PARKING LOT LOCATED WEST OF THE U-PARK BUILDING AND "LOT C" IS DEFINED TO BE THE PARKING LOT LOCATED NORTH OF THE U-PARK BUILDING.

SHEET KEYNOTES:

1. PANELS AND CABINETS IN TABLE TO BE FIELD LABELED WITH UAF NAMING CONVENTION INDICATED.

PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AECC605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
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ELECTRICAL LEGEND
AND NOTES



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	U2	U12

GENERAL ELECTRICAL NOTES:

1. GENERAL REGULATORY REQUIREMENTS
 - 1.1 DELIVER, STORE, PROTECT, AND HANDLE PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PROTECT PRODUCTS FROM WEATHER.
 - 1.2 ACCEPT PRODUCTS ON SITE IN MANUFACTURER'S PACKAGING. INSPECT FOR DAMAGE. NOTIFY PROJECT MANAGER OF ALL DAMAGED PRODUCTS.
 - 1.3 THE CONTRACT DOCUMENTS ARE COMPLEMENTARY; WHAT IS REQUIRED BY ONE IS AS BINDING AS IF REQUIRED BY ALL.
 - 1.4 REVIEW AND COORDINATE THIS WORK WITH ALL ASSOCIATED CIVIL WORK AND ALL OTHER DRAWINGS AND SPECIFICATIONS. ADJUST THE WORK AS REQUIRED TO COORDINATE WITH OTHER WORK AND BE COMPATIBLE WITH CONDITIONS.
 - 1.5 WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE, FEDERAL, AND OSHA SAFETY REQUIREMENTS.
 - 1.6 CONTRACTOR COORDINATION
 - 1.6.1 CONTRACTOR SHALL COORDINATE START-UP AND ENERGIZING OF ALL ELECTRICAL EQUIPMENT WITH PROJECT MANAGER.
 - 1.6.2 CONTRACTOR SHALL COORDINATE POWER OUTAGES AND DE-ENERGIZING OF ALL EXISTING ELECTRICAL EQUIPMENT WITH PROJECT MANAGER.
2. SUBMITTALS
 - 2.1 SUBMIT PRODUCT DATA FOR REVIEW AND APPROVAL.
3. DEMOLITION
 - 3.1 RECONNECT AND LABEL EXISTING BRANCH CIRCUITS NOT BEING REMOVED WHICH PASS THROUGH, OR CONNECT INTO, THE PROJECT AREA.
 - 3.2 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.
 - 3.3 SALVAGE SHALL MEAN REMOVE WITHOUT DAMAGE DURING DEMOLITION AND REUSE DURING NEW CONSTRUCTION.
 - 3.4 ELECTRICAL EQUIPMENT REMOVED AND DEEMED UNUSABLE BY THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE PROPERLY DISPOSED OF. EQUIPMENT DEEMED USABLE BY THE OWNER SHALL BE DELIVERED WITHOUT DAMAGE TO A LOCATION DESIGNATED BY THE OWNER, UNLESS OTHERWISE INDICATED.
4. CONDUCTORS
 - 4.1 CONDUCTOR MATERIAL: COPPER. SOLID FOR NO. 10 AWG AND SMALLER; STRANDED FOR NO. 8 AWG AND LARGER.
 - 4.2 INSULATION AND APPLICATION
 - 4.2.1 FEEDERS: TYPE XHHW-2, SINGLE CONDUCTORS IN RACEWAY.
 - 4.2.2 BRANCH CIRCUITS: TYPE XHHW-2; SINGLE CONDUCTORS IN RACEWAY.
 - 4.3 INSTALLATION
 - 4.3.1 NEUTRAL CONDUCTORS SHALL NOT BE SHARED BETWEEN BRANCH CIRCUITS, UNLESS OTHERWISE INDICATED.
 - 4.3.2 MINIMUM CONDUCTOR SIZE FOR BRANCH CIRCUITS: NO. 12 AWG.
 - 4.4 FIELD QUALITY CONTROL: AFTER INSTALLING CONDUCTORS AND CABLES AND BEFORE ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, TEST FOR UNINTENDED OPENS, SHORTS, AND GROUNDS.
5. GROUNDING AND BONDING
 - 5.1 INSULATED CONDUCTORS: COPPER WIRE OR CABLE INSULATED FOR 600 V UNLESS OTHERWISE INDICATED.
 - 5.2 CONNECTORS: LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION FOR APPLICATIONS IN WHICH USED, AND FOR SPECIFIC TYPES, SIZES, AND COMBINATIONS OF CONDUCTORS AND OTHER ITEMS CONNECTED.
 - 5.3 GROUND RODS: COPPER-CLAD STEEL; 3/4 INCH BY 10 FEET.
 - 5.4 INSTALLATION
 - 5.4.1 PROVIDE INSULATED EQUIPMENT GROUNDING CONDUCTORS WITH ALL FEEDERS AND BRANCH CIRCUITS. TERMINATE EACH END ON SUITABLE LUG, BUS OR BUSHING. SIZE EQUIPMENT GROUNDING CONDUCTORS IN ACCORDANCE WITH NEC, UNLESS OTHERWISE INDICATED, BUT NOT SMALLER THAN NO. 12 AWG.
6. RACEWAY
 - 6.1 RMC: COMPLY WITH ANSI C80.1 AND UL 6, HOT-DIPPED ZINC GALVANIZED.
 - 6.2 IMC: COMPLY WITH ANSI C80.6 AND UL 1242, ZINC-COATED STEEL WITH THREADED FITTINGS.
 - 6.3 LFMC: ZINC-COATED STEEL WITH SUNLIGHT-RESISTANT AND MINERAL-OIL-RESISTANT PLASTIC JACKET, WORKING TEMPERATURE RANGE -55 DEG C TO 105 DEG C AND COMPLYING WITH UL 360.
 - 6.4 RIGID OR CONTINUOUS HDPE: TYPE SCHEDULE 40, COMPLY WITH UL 651A.
 - 6.4.1 COLOR DESIGNATION: THREE LONGITUDINALLY CO-EXTRUDED STRIPES SPACED AT APPROXIMATELY EQUAL DISTANCE CIRCUMFERENTIALLY APART.
 - 6.4.1.1 STRIPE COLOR FOR POWER, RED.
 - 6.5 FITTINGS FOR METAL CONDUIT: COMPLY WITH NEMA FB 1 AND UL 514B.
 - 6.6 FITTINGS FOR HDPE: MECHANICAL TYPE.
 - 6.7 INSTALLATION
 - 6.7.1 OUTDOORS: ABOVEGROUND USE IMC OR RMC AND UNDERGROUND USE RMC UNLESS OTHERWISE INDICATED.
 - 6.7.1.1 UNDERGROUND USE HDPE WHERE INDICATED ON DRAWINGS; THE SWEEPS, ELBOWS, AND ABOVE GRADE CONDUIT FOR CONDUIT RUNS OF HDPE SHALL BE RMC.
 - 6.7.2 MINIMUM RACEWAY SIZE:
 - 6.7.2.1 1/2-INCH TRADE SIZE.
 - 6.7.3 OUTDOORS: ON TOP AND SIDES OF ENCLOSURES ABOVEGROUND IMC OR RMC HUBS AND RACEWAY FITTINGS SHALL BE OF THE WET LOCATION SEALING TYPE.
 - 6.7.4 COMPLETE RACEWAY INSTALLATION BEFORE STARTING CONDUCTOR INSTALLATION.
 - 6.7.5 USE MINIMUM OF 18 INCHES TO MAXIMUM OF 72 INCHES OF FMC FOR CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND MOTOR-DRIVEN EQUIPMENT).
 - 6.7.6 USE LFMC IN DAMP OR WET LOCATIONS.
 - 6.7.7 HDPE CONDUIT SHALL BE RUN THROUGH APPROVED RE-ROUNDING AND STRAIGHTENING EQUIPMENT DURING INSTALLATION.
7. BOXES
 - 7.1 PROVIDE HBH POST BOXES AND COVERS AS DETAILED ON THE DRAWING.
 - 7.2 METAL WIREWAYS AND AUXILIARY GUTTERS
 - 7.2.1 SHEET METAL, COMPLYING WITH UL 870 AND NEMA 250, TYPE 3R UNLESS OTHERWISE INDICATED, AND SIZED ACCORDING TO DRAWINGS.
 - 7.2.2 FITTINGS AND ACCESSORIES: INCLUDE COVERS, COUPLINGS, OFFSETS, ELBOWS, EXPANSION JOINTS, ADAPTERS, HOLD-DOWN STRAPS, END CAPS, AND OTHER FITTINGS TO MATCH AND MATE WITH WIREWAYS AS REQUIRED FOR COMPLETE SYSTEM.
 - 7.2.3 WIREWAY COVERS: NEMA 3R, SCREW-COVER TYPE UNLESS OTHERWISE INDICATED.
 - 7.2.4 FINISH: MANUFACTURER'S STANDARD ENAMEL FINISH.
 - 7.3 BOXES, ENCLOSURES, AND CABINETS
 - 7.3.1 GENERAL REQUIREMENTS FOR BOXES, ENCLOSURES, AND CABINETS: BOXES, ENCLOSURES, AND CABINETS INSTALLED IN WET LOCATIONS SHALL BE LISTED FOR USE IN WET LOCATIONS.
 - 7.3.2 SMALL SHEET METAL PULL AND JUNCTION BOXES: NEMA OS 1.
 - 7.3.3 CABINETS:
 - 7.3.3.1 SEE DRAWINGS FOR REQUIREMENTS
 - 7.4 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING
 - 7.4.1 BELOW GRADE JUNCTIONS BOX TO BE ADOT STANDARD TYPE 1A. SEE PROJECT DETAILS AND ADOT STANDARD SPECIFICATIONS FOR HWY CONSTRUCTION-2017, SECTION 660-3.04 FOR ADDITIONAL REQUIREMENTS.
8. DISTRIBUTION TRANSFORMERS
 - 8.1 COMPLY WITH NEMA ST 20, AND LIST AND LABEL AS COMPLYING WITH UL 1561.
 - 8.2 ENCLOSURES
 - 8.2.1 OUTDOOR: VENTILATED, RAIN-TIGHT, NEMA 250, TYPE 3R.
 - 8.3 INSULATION CLASS: 220 DEG C, UL-COMPONENT-RECOGNIZED INSULATION SYSTEM WITH A MAXIMUM OF 150 DEG C RISE ABOVE 40 DEG C AMBIENT TEMPERATURE.
9. PANELBOARDS
 - 9.1 BRANCH-CIRCUIT PANELBOARDS, SPECIFICATION TYPE BPB; BOLT-ON CIRCUIT BREAKERS, SQUARE D PANELBOARD TYPES NQ OR EQUAL.
 - 9.2 GENERAL REQUIREMENTS
 - 9.2.1 ENCLOSURES: NEMA 250, TYPE 3R/12. SEE PANELBOARD SCHEDULE FOR ADDITIONAL INFORMATION.
 - 9.2.2 PHASE, NEUTRAL, AND GROUND BUSES
 - 9.2.2.1 MATERIAL: TIN-PLATED ALUMINUM.
 - 9.2.2.2 EQUIPMENT GROUND BUS: ADEQUATE FOR FEEDER AND BRANCH-CIRCUIT EQUIPMENT GROUND CONDUCTORS; BONDED TO BOX.
 - 9.2.3 ALL CONDUCTOR TERMINATIONS SHALL BE LISTED AND LABELED FOR WIRE RATED 75 DEG C.
 - 9.3 INSTALLATION: INSTALL PANELBOARDS AND ACCESSORIES ACCORDING TO NECA 407.
 - 9.4 FIELD QUALITY CONTROL:
 - 9.4.1 PERFORM EACH VISUAL AND MECHANICAL INSPECTION AND ELECTRICAL TEST IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
 - 9.4.2 NEW BREAKERS IN EXISTING PANELS SHALL BE OF THE SAME MANUFACTURER AND LISTED FOR THE EXISTING PANEL, AND SHALL BE OF AN INTERRUPTING CAPACITY SUITABLE TO THE APPLICATION.
10. WIRING DEVICES
 - 10.1 GFCI RECEPTACLES, 125 V, 20A: SPECIFICATION-GRADE, COMPLY WITH NEMA WD 1, NEMA WD 6, UL 498, UL 943 CLASS A, FS W-C-596, AND DUAL INDICATOR LIGHTS (GREEN/AMBER). GREEN LIGHT TO INDICATE RECEPTACLE HAS POWER AND AMBER LIGHT INDICATES GFCI HAS MALFUNCTIONED AND NO LONGER PROVIDES PROPER GFCI PROTECTION.
 - 10.2 PLATES
 - 10.2.1 WET-LOCATION, WEATHERPROOF COVER PLATES: NEMA 250, COMPLYING WITH TYPE 3R, WEATHER-RESISTANT, "EXTRA DUTY" DIE-CAST ALUMINUM WHILE-IN-USE WITH LOCKABLE COVER.
 - 10.3 INSTALLATION
 - 10.3.1 GROUND FAULT RECEPTACLES SHALL NOT BE THROUGH WIRED. PROVIDE INTEGRAL PROTECTION AT EACH GROUND FAULT RECEPTACLE LOCATION SHOWN ON THE DRAWINGS.
 - 10.3.2 FOR 20 AMP RECEPTACLES PIGTAIL ANY CONDUCTOR LARGER THAN 12 AWG.
 - 10.4 FIELD QUALITY CONTROL
 - 10.4.1 GFCI TRIP: USING A TEST PLUG TEST FOR TRIPPING VALUES SPECIFIED IN UL 1436 AND UL 943.
 - 10.4.2 USING THE TEST PLUG, VERIFY THAT THE DEVICE AND ITS OUTLET BOX ARE SECURELY MOUNTED.
 - 10.4.3 THE TESTS SHALL BE DIAGNOSTIC, INDICATING IMPROPER WIRING, DEFECTIVE DEVICES, OR SIMILAR PROBLEMS. CORRECT CIRCUIT CONDITIONS, REMOVE MALFUNCTIONING UNITS AND REPLACE WITH NEW ONES, AND RETEST AS SPECIFIED ABOVE.
11. ENCLOSED SWITCHES
 - 11.1 FUSIBLE SWITCHES, TYPE HD, HEAVY DUTY, SINGLE THROW: UL 98 AND NEMA KS 1, HORSEPOWER RATED, WITH CLIPS OR BOLT PADS TO ACCOMMODATE CLASS R FUSES CURRENT LIMITING TIME-DELAY FUSES, LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT THREE PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION.
 - 11.2 NONFUSIBLE SWITCHES, TYPE HD, HEAVY DUTY, SINGLE THROW: UL 98 AND NEMA KS 1, HORSEPOWER RATED, LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT THREE PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION.
 - 11.3 ENCLOSURES: NEMA 250, TYPE 3R.
 - 11.4 ALL CONDUCTOR TERMINATIONS SHALL BE LISTED AND LABELED FOR WIRE APPLIED AT 75 DEG C AMPACITY.
 - 11.5 FIELD QUALITY CONTROL: PERFORM EACH VISUAL AND MECHANICAL INSPECTION AND ELECTRICAL TEST IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
12. ENCLOSED CONTACTORS/CONTROLLERS
 - 12.1 GENERAL REQUIREMENTS: COMPLY WITH NEMA ICS 2, GENERAL PURPOSE, CLASS A.
 - 12.2 COMBINATION MAGNETIC CONTACTOR: FACTORY-ASSEMBLED COMBINATION OF MAGNETIC CONTACTOR, OCPD, AND DISCONNECTING MEANS.
 - 12.2.1 FUSIBLE DISCONNECTING MEANS: AS SPECIFIED UNDER ENCLOSED SWITCHES.
 - 12.3 ALL BRANCH CIRCUIT CONDUCTOR TERMINATIONS SHALL BE LISTED AND LABELED FOR WIRE RATED 75 DEG C.
 - 12.4 MAGNETIC CONTACTORS: FULL VOLTAGE, ACROSS THE LINE, ELECTRICALLY HELD.
 - 12.4.1 ALL ENCLOSED CONTACTORS: CONTROL CIRCUIT 120VAC; OBTAINED FROM INTEGRAL CPT, WITH PRIMARY AND SECONDARY FUSES, WITH CPT OF SUFFICIENT CAPACITY TO OPERATE INTEGRAL DEVICES, PLUS 50VA MINIMUM SPARE CAPACITY.
 - 12.4.2 HBH COMBINATION CONTACTORS: INCLUDE INTERPOSING RELAY WITH 120VAC COIL AND CONTACTS SWITCHING THE MAIN CONTACTOR COIL. THE 120VAC POWER SHALL BE OBTAINED FROM THE CPT.
 - 12.5 ENCLOSURES: NEMA ICS 6, TYPE 3R.
 - 12.6 ACCESSORIES
 - 12.6.1 PUSH BUTTONS, LED TYPE PILOT LIGHTS, AND ROTARY SELECTOR SWITCHES: HEAVY-DUTY, OILTIGHT TYPE.
 - 12.6.2 ONE SET N.C./N.O. AUXILIARY CONTACTS FOR USE BY CUSTOMER.
 - 12.6.3 CONTROL RELAYS: AUXILIARY AND ADJUSTABLE TIME-DELAY RELAYS, AS REQUIRED.
 - 12.7 FIELD QUALITY CONTROL: PERFORM EACH VISUAL AND MECHANICAL INSPECTION AND ELECTRICAL TEST IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
13. CONTROL PANELS
 - 13.1 APPLICABLE STANDARD
 - 13.1.1 CONTROL PANELS SHALL BE MANUFACTURED BY AN APPROVED UNDERWRITERS LABORATORY (U.L.) PANEL SHOP.
 - 13.1.2 CONTROL PANELS AND COMPONENTS SHALL BE U.L. LISTED FOR USE IN LOCATION INSTALLED.
 - 13.1.3 PANEL SHALL BE COMPLETELY ENGINEERED, FABRICATED, WIRED, FACTORY TESTED, LISTED AND LABELED AND READY FOR INSTALLATION.
 - 13.2 SEE DETAILS AND PLANS FOR ADDITIONAL REQUIREMENTS.
14. IDENTIFICATION
 - 14.1 APPLICABLE STANDARD
 - 14.1.1 COMPLY WITH NFPA 70, 29 CFR 1910.144 AND 29 CFR 1910.145; AND ANSI Z535.4 FOR SAFETY SIGNS AND LABELS.
 - 14.2 CONDUCTOR IDENTIFICATION
 - 14.2.1 COLOR-CODING CONDUCTOR TAPE: COLORED, SELF-ADHESIVE VINYL TAPE NOT LESS THAN 3 MILS THICK BY 1" WIDE.
 - 14.2.2 CONTROL WIRING: SELF-ADHESIVE, SELF-LAMINATING POLYESTER LABELS: PREPRINTED, 3-MIL-THICK FLEXIBLE LABEL WITH ACRYLIC PRESSURE-SENSITIVE ADHESIVE THAT PROVIDES A CLEAR, WEATHER RESISTANT, SELF-LAMINATING, PROTECTIVE SHIELD OVER THE LEGEND.
 - 14.3 UNDERGROUND MARKER TAPE.
 - 14.3.1 COMPLY WITH ANSI Z535.1 THROUGH ANSI Z535.5.
 - 14.3.2 REINFORCED, DETECTABLE THREE-LAYER LAMINATE, CONSISTING OF A SOLID ALUMINUM-FOIL CORE, CLEAR PROTECTIVE FILM THAT ALLOWS INSPECTION OF THE CONTINUITY OF THE CONDUCTIVE CORE, BRIGHT RED-COLORED CONTINUOUS-PRINTED "ELECTRIC LINE" ON ONE SIDE. OVERALL THICKNESS 8 MILS. FOIL CORE THICKNESS 0.35 MILS, WEIGHT 34 LB/1000 SQUARE FEET, 3 INCH TENSILE STRENGTH ACCORDING TO ASTM D 882 AND 12500 PSI.
 - 14.4 OUTDOOR EXPOSED WARNING AND EQUIPMENT LABELS AND SIGNS.
 - 14.4.1 METAL-BACKED, BUTYRATE WARNING SIGNS: WEATHER-RESISTANT, NONFADING, PREPRINTED, CELLULOSE-ACETATE BUTYRATE SIGNS WITH 0.0396-INCH GALVANIZED-STEEL BACKING; AND WITH COLORS, LEGEND, AND SIZE REQUIRED FOR APPLICATION.
 - 14.4.2 CONTROL CABINET WARNING LABELS SHALL INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING LEGEND: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
 - 14.5 LABELS BEHIND PROTECTIVE PANELS AND IN ENCLOSURES
 - 14.5.1 ENGRAVED, LAMINATED ACRYLIC OR MELAMINE PLASTIC, MINIMUM 1/8 INCH THICK FOR LARGER SIZES, PUNCH OR DRILLED FOR MECHANICAL FASTENERS, COLOR AND TEXT SIZE AS INDICATED.



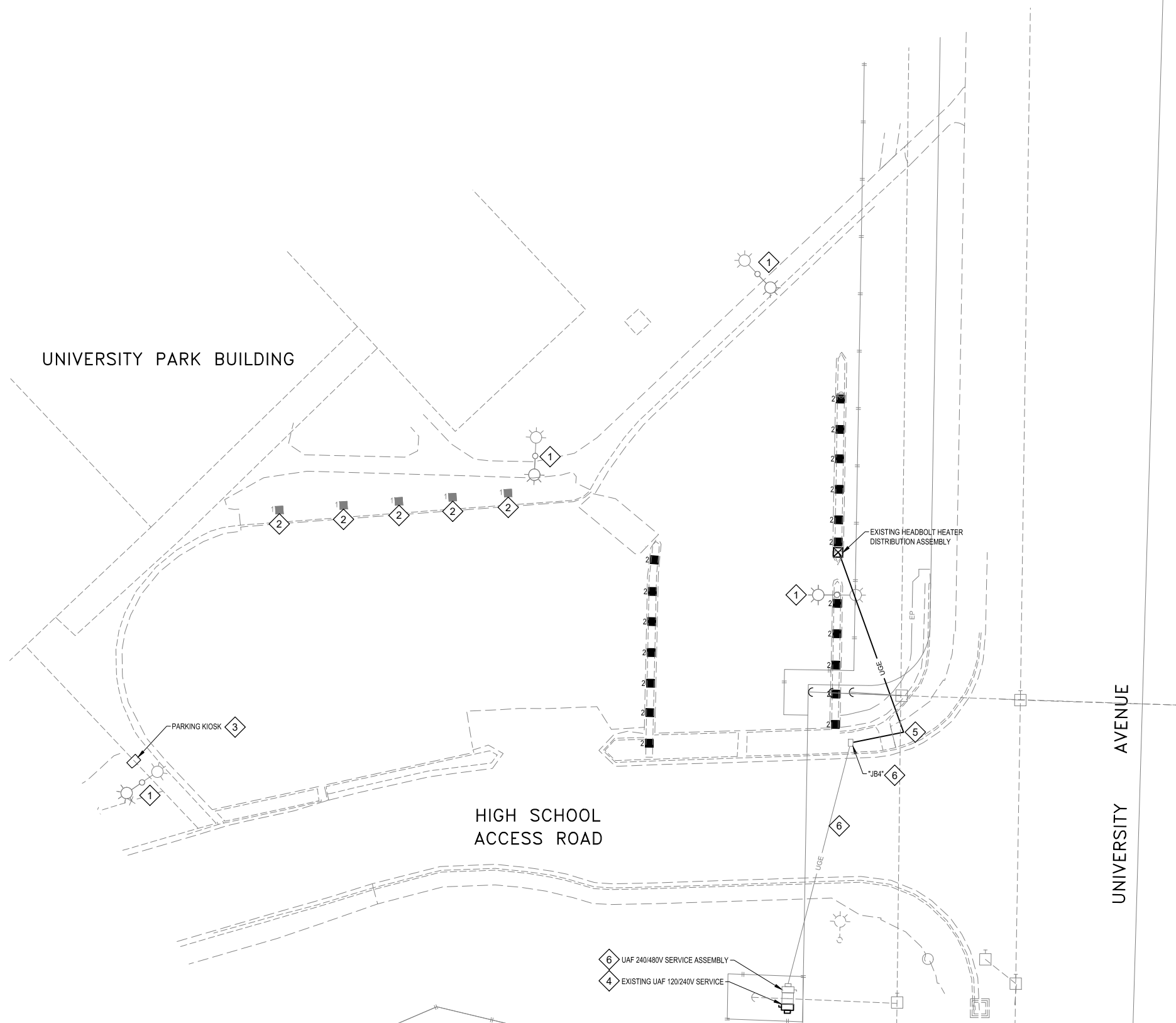
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	U3	U12

GENERAL DEMOLITION NOTES

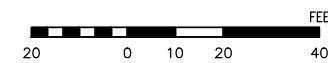
- EXISTING ELECTRICAL CONDITIONS BASED ON AS-BUILT DOCUMENTS AND LIMITED FIELD OBSERVATION BY THE ENGINEER. CONTRACTOR SHALL FIELD VERIFY.
- DEMOLISH ALL ELECTRICAL EQUIPMENT ON THE DEMOLITION PLANS SHOWN IN HEAVY SOLID LINES. REMOVE CIRCUIT CONDUCTORS FROM UNDERGROUND RACEWAY ASSOCIATED WITH EQUIPMENT TO BE DEMOLISHED. ABANDON UNDERGROUND RACEWAY; IF RACEWAY IN CONFLICT WITH NEW WORK THEN DEMOLISH, UNLESS NOTED OTHERWISE.
- ELECTRICAL EQUIPMENT ON THE DEMOLITION PLAN SHOWN IN THIN SOLID LINES INDICATES EXISTING TO REMAIN, UNLESS OTHERWISE INDICATED.

SHEET KEYNOTES X

- ASSOCIATED CIRCUIT CONDUCTORS AND RACEWAY ARE EXISTING AND TO REMAIN. EXISTING CIRCUITS TO BE RECONNECTED TO NEW HEADBOLT HEATER DISTRIBUTION ASSEMBLY.
- DEMOLISH DUPLEX RECEPTACLE AND FACEPLATE. EXISTING HBH POST, DEVICE BOX AND ASSOCIATE CONDUCTOR IN RACEWAY ARE EXISTING TO REMAIN. EXISTING CIRCUITS TO BE RECONNECTED TO NEW HEADBOLT HEATER DISTRIBUTION ASSEMBLY.
- UAF INDICATED THAT PARKING KIOSK IS POWERED FROM THE OLD U-PARK BUILDING. ASSOCIATED EXISTING POWER AND SIGNALING CIRCUIT CONDUCTORS AND RACEWAY ARE EXISTING TO REMAIN.
- DURING UNIVERSITY AVE 2018 CONSTRUCTION SEASON, CONTRACTOR SALVAGED AND REINSTALLED EXISTING METER BASE ON NEW SERVICE POLE TO RESUPPLY EXISTING HEADBOLT HEATER DISTRIBUTION ASSEMBLY.
- DURING UNIVERSITY AVE 2018 CONSTRUCTION SEASON, CONTRACTOR INTERCEPTED EXISTING CIRCUIT BETWEEN OLD SERVICE POLE LOCATION AND EXISTING HEADBOLT HEATER DISTRIBUTION ASSEMBLY.
- CONTRACTOR PROVIDED DURING UNIVERSITY AVE 2018 CONSTRUCTION SEASON.



6 UAF 240/480V SERVICE ASSEMBLY
4 EXISTING UAF 120/240V SERVICE



DEMOLITION ELECTRICAL SITE PLAN



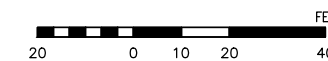
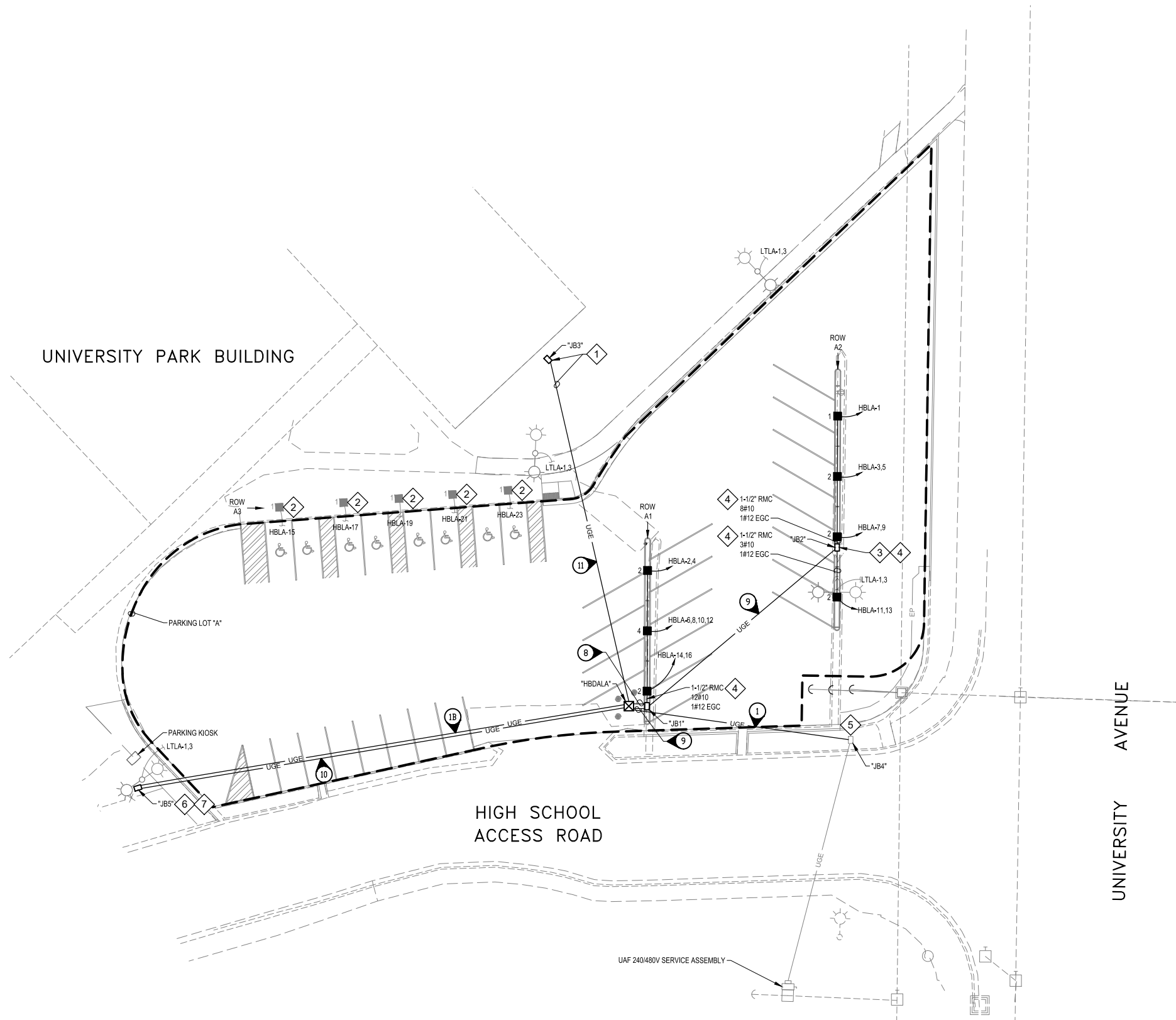
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	U4	U12

GENERAL SITE PLAN NOTES

- SEE CIVIL DESIGN FOR ELECTRICAL EQUIPMENT CONTROL POINTS LOCATIONS.

SHEET KEYNOTES X

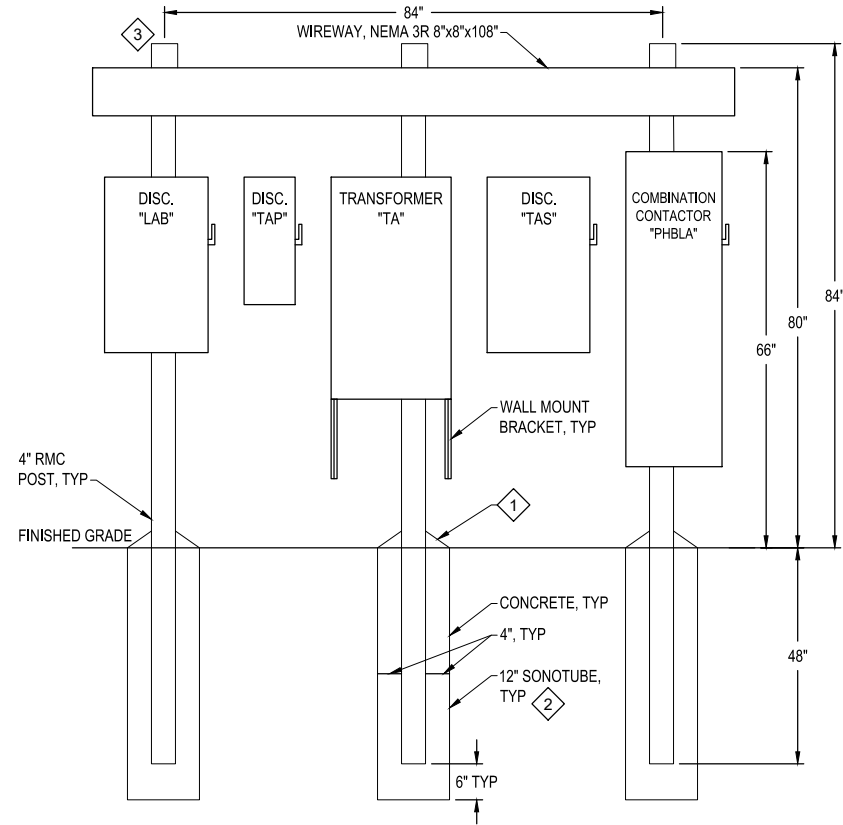
- ADOT TYPE 1A JUNCTION BOX "JB3" AND UNDERGROUND RACEWAY PROVIDED FOR FUTURE CONNECTION OF BUILDING DDC SYSTEM FOR HBH AND PARKING LOT LIGHTING CONTROL.
- REPLACE DEMOLISHED RECEPTACLE WITH WEATHER RESISTANT GFCI TYPE. ALSO, REPLACE DEMOLISHED FACE PLATE/ COVER WITH CAST ALUMINUM HEAVY DUTY IN-USE WEATHERPROOF FACE PLATE/COVER THAT IS COMPATIBLE WITH GFCI TYPE RECEPTACLE.
- ROUTE EXISTING HBH AND LIGHTING CIRCUITS THAT STUB UP AT INDICATED LOCATION TO LOCATION OF NEW HEADBOLT HEATER DISTRIBUTION ASSEMBLY. SPLICE EXISTING AND NEW CIRCUIT CONDUCTORS IN ADOT TYPE 1A JUNCTION BOX.
- ROUTE GUARDRAIL CIRCUITS TO HBH DISTRIBUTION ASSEMBLY "HBDALA" THROUGH ADOT TYPE 1A JUNCTION BOXES "JB1" AND "JB2".
- IN "JB4" SPLICE EXISTING CIRCUIT ROUTED FROM UAF 240/480V SERVICE ASSEMBLY TO NEW CIRCUIT ROUTED TO "HBDALA".
- "JB5" AND ASSOCIATED UNDERGROUND RACEWAY PROVIDED FOR FUTURE CONNECTION TO FUTURE LOT "B" HEADBOLT HEATER DISTRIBUTION ASSEMBLY.
- ALL FUTURE WIRING ROUTED TO JUNCTION BOX SHALL BE RATED FOR 600V TO COMPLY WITH NEC CLASS I CIRCUIT REQUIREMENTS.



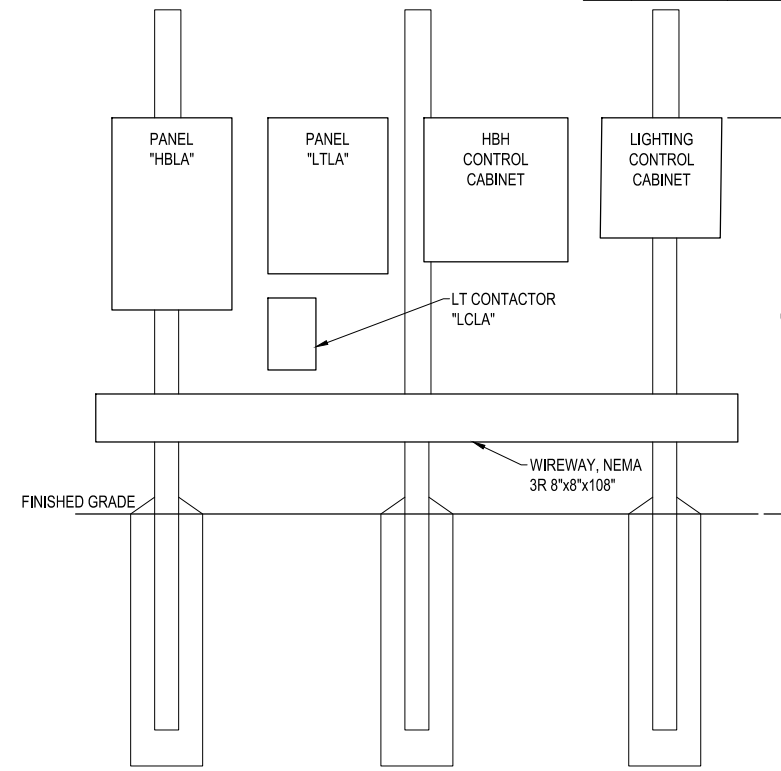
ELECTRICAL SITE PLAN



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	U5	U12



1 ELECTRICAL DISTRIBUTION ASSEMBLY "HBDALA" - BACK VIEW, EAST ELEVATION
U5 SCALE: NTS



2 ELECTRICAL DISTRIBUTION ASSEMBLY "HBDALA" - FRONT VIEW, WEST ELEVATION
U5 SCALE: NTS

SHEET NOTES

- ELECTRICAL RACK TO BE DESIGNED PER REQUIREMENTS OF ASCE 07-10 CHAPTER 13. MEMBERS AND CONNECTORS TO BE DESIGNED WITH A S_{ps} OF 0.715g AND AND $L_e=1.0$. DESIGN TO BE SUBMITTED TO ENGINEER FOR APPROVAL.

SHEET KEYNOTES

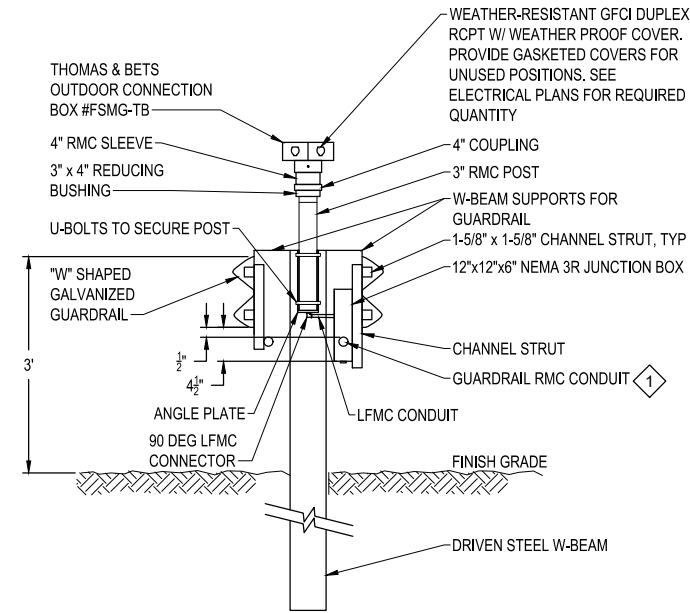
- SLOPE CROWN TO PREVENT WATER POOLING.
- BACKFILL SONOTUBE WITH NON FROST SUSCEPTIBLE MATERIAL.
- PROVIDE CAP ON ALL POSTS.

PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AECC605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
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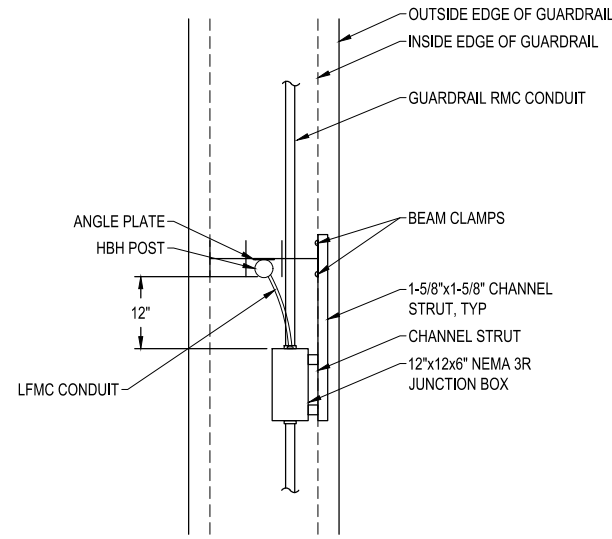
ELECTRICAL DETAILS



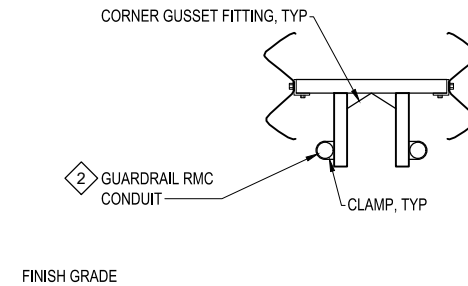
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
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1 HEADBOLT HEATER GUARDRAIL DETAIL - SIDE VIEW
U6 SCALE: NTS



2 HEADBOLT HEATER GUARDRAIL DETAIL - TOP VIEW
U6 SCALE: NTS



3 GUARDRAIL DETAIL - INTERMEDIATE CONDUIT SUPPORT
U6 SCALE: NTS

SHEET KEYNOTES

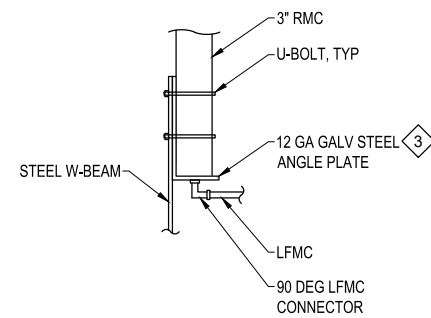
- CONDUITS TO BE ROUTED UNDER "W-BEAM SUPPORTS FOR GUARDRAIL".
- CONDUITS TO BE IN LINE CONDUITS INDICATED ON SHEET U6, DETAIL 1.
- WIDTH OF ANGLE PLATE TO BE EQUIVALENT TO THE DIAMETER OF THE 3" RMC POST.

GUARDRAIL DETAILS SHEET NOTES

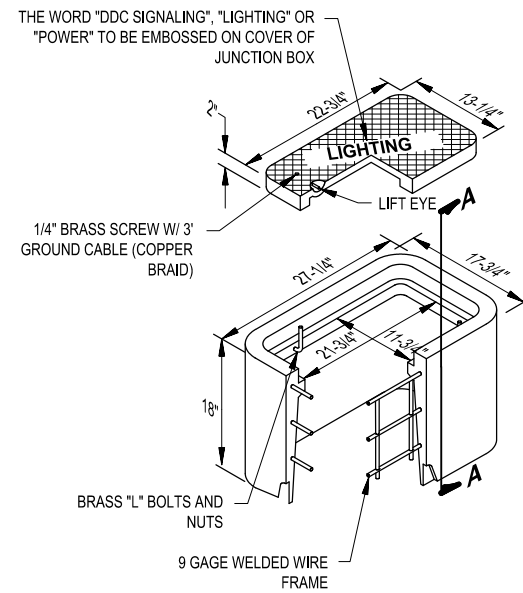
- SEE CIVIL DESIGN FOR GUARDRAIL ASSEMBLY DESIGN.
- ALL CHANNEL STRUT BOLTS TO BE 1/2" MINIMUM AND SPRING NUTS TO BE HEAVY DUTY TYPE.

BURIAL DETAIL SHEET NOTES

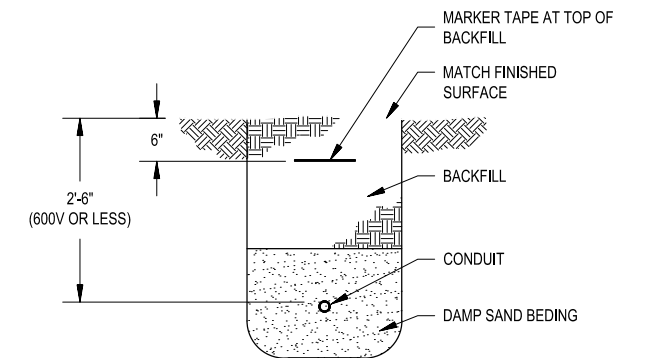
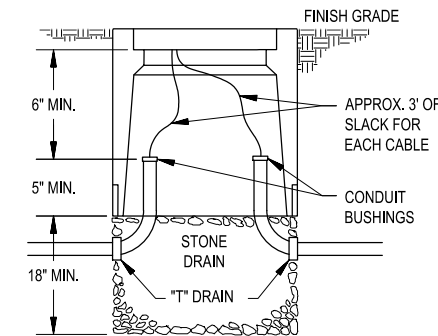
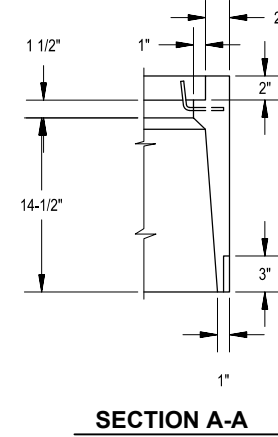
- DISTURBED TRENCH BOTTOM SHALL BE TAMPED AND COMPACTED TO AT LEAST 85 PERCENT MAXIMUM DENSITY.
- DAMP SAND MOISTURE CONTENT MEANS THE SAND DOES NOT FLOW WHEN TAMPED OR WHEN THE BACKFILL MATERIAL IS PLACED IN THE TRENCH AND COMPACTED. MULTIPLE RACEWAYS SHALL BE SPACED ONE DIAMETER MINIMUM APART. MINIMUM CLEAR SPACING OF ANY CONDUIT TO IN-SITU OR BACKFILL MATERIAL SHALL BE 4 INCHES.
- TRENCH BACKFILL MATERIAL SHALL BE FREE OF COBBLES AND BOULDERS. THE MATERIAL SHALL BE UNFROZEN, FREE OF VEGETABLE MATTER, LUMPS OR EXCESSIVE AMOUNTS OF CLAY AND OTHER OBJECTIONABLE FOREIGN SUBSTANCES. COMPACT BACKFILL TO AT LEAST 90 PERCENT MAXIMUM DENSITY IN UNPAVED AREAS.



4 HEADBOLT HEATER GUARDRAIL DETAIL - ANGLE PLATE
U6 SCALE: NTS



5 A.D.O.T TYPE 1A JUNCTION BOX DETAIL
U6 SCALE: NTS



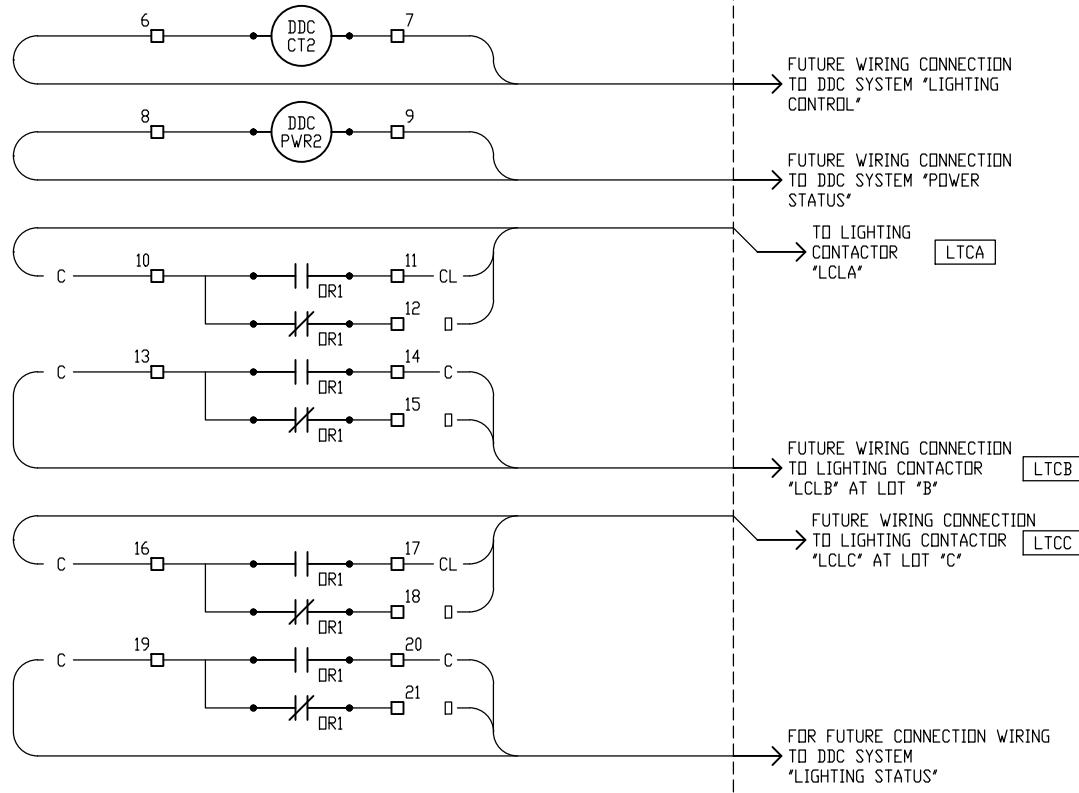
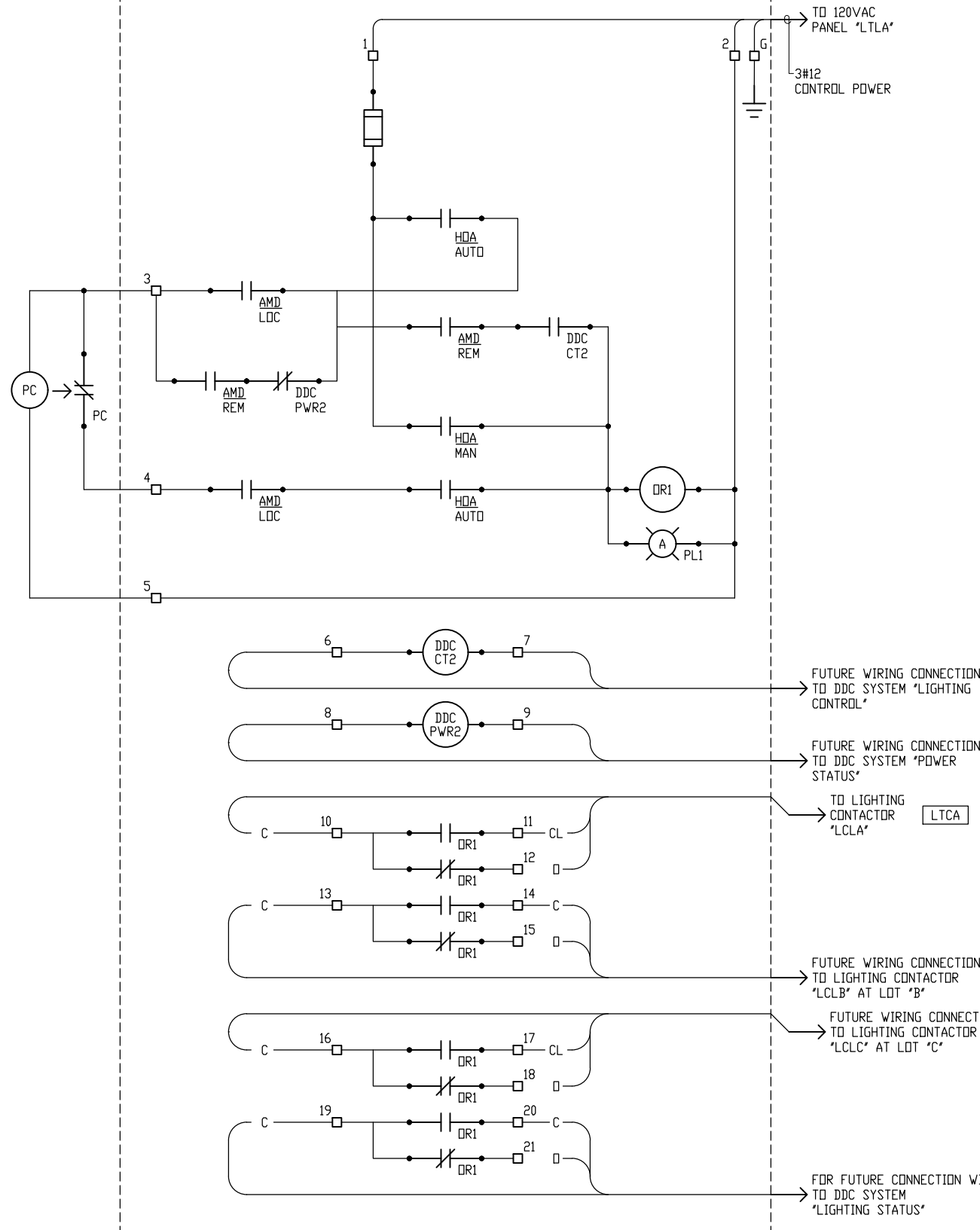
6 BURIAL DETAIL
U6 SCALE: NTS

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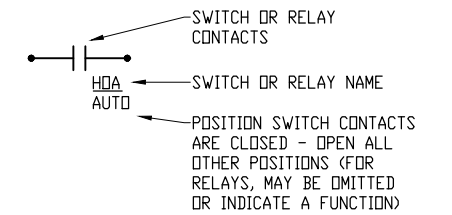
LIGHTING CONTROL CABINET AT 'HBDALA'



LIGHTING CONTROL SCHEMATIC NOTES

- SEE SHEET U9 FOR COMPONENT LIST. ADJUST CABINET SIZE AND LAYOUT FROM THAT INDICATED ON THAT SHEET.
- LIGHTING CONTROL CABINET SEQUENCE OF OPERATION WHEN THE CONTROL SWITCH (HOA) IS IN AUTO POSITION:
 - WHEN THE AUTO MODE SWITCH (AMD) IS IN LOCAL POSITION THE LIGHTING IS SWITCHED BASED ON AMBIENT LIGHT SENSED BY THE PHOTO-CONTROL (PC).
 - WHEN THE AUTO MODE SWITCH (AMD) IS IN REMOTE POSITION THE LIGHTING IS CONTROLLED BY THE OLD UNIVERSITY PARKS DDC SYSTEM. IF THE BUILDING DDC SYSTEM LOSES POWER (SENSED BY RELAY DDCPWR2), CONTROL OF LIGHTING WILL REVERT TO LOCAL MODE.
- LIGHTING CONTROL CABINET SEQUENCE OF OPERATION WHEN THE CONTROL SWITCH (HOA) IS IN OFF POSITION: THE LIGHTING CONTINUOUSLY DE-ENERGIZED.
 - THE AUTO MODE SWITCH (AMD) HAS NO AFFECT.
- LIGHTING CONTROL CABINET SEQUENCE OF OPERATION WHEN THE CONTROL SWITCH (HOA) IS IN HAND POSITION: THE LIGHTING CONTINUOUSLY ENERGIZED.
 - THE AUTO MODE SWITCH (AMD) HAS NO AFFECT.

CONTACT LABELING CONVENTION



LIGHTING CONTROL CABINET LABEL PLATES (LP-x)			
LABEL PLATE NO.	PLATE MINIMUM SIZE	TEXT / BACKGROUND COLOR	LEGEND
1	1-3/4" X 14"L	BLACK / WHITE	PARKING LIGHTING CONTROL CABINET (FIRST LINE, 1/2" HIGH), FED FROM PANEL LTLA (SECOND LINE, 1/4" HIGH)
2	1" X 5"L	BLACK / WHITE	LIGHTING CONTACTORS ON (1/4" HIGH).
3	1-1/2" X 6"L	BLACK / WHITE	LIGHTING CONTROL SWITCH (FIRST LINE, 1/4" HIGH), HAND - LIGHTS ENERGIZED CONTINUOUSLY (SECOND LINE, 3/16" HIGH), OFF - LIGHTS DE-ENERGIZED (THIRD LINE, 3/16" HIGH), AUTO - LIGHTS UNDER PHOTO-CONTROL OR DDC SYSTEM CONTROL (FOURTH LINE, 3/16" HIGH).
4	1-1/2" X 6"L	BLACK / WHITE	AUTOMATIC MODE SWITCH (FIRST LINE, 1/4" HIGH), LOCAL - PHOTOCCELL CONTROL (SECOND LINE, 3/16" HIGH), REMOTE - DDC CONTROL (THIRD LINE, 3/16" HIGH)

SCHEDULE NOTES:
1. ALL TEXT LINES ARE CENTER JUSTIFIED.

1 LIGHTING CONTROL CABINET SCHEMATIC
U7 SCALE: NTS

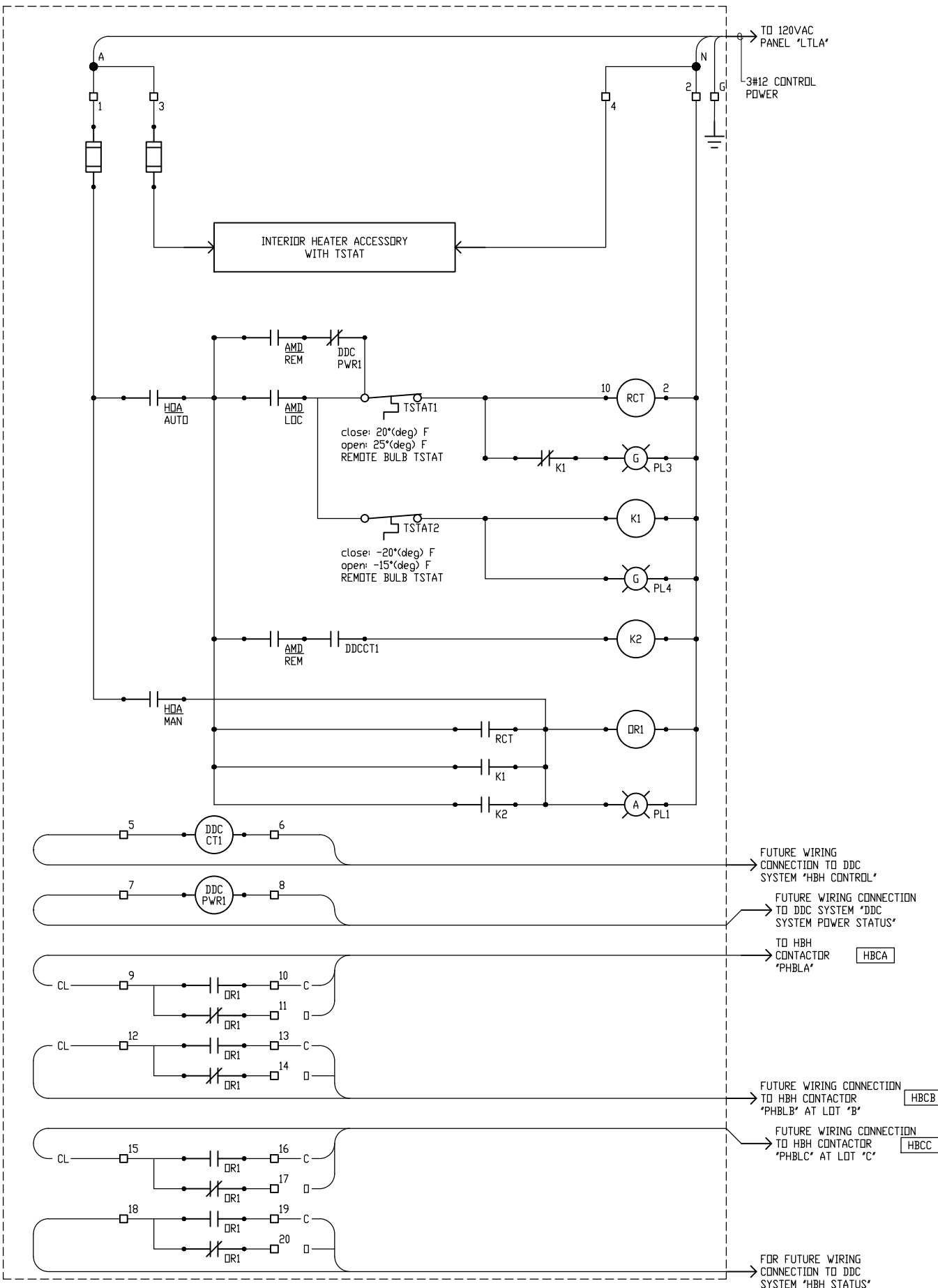
LIGHTING CONTROL SCHEMATIC



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HEADBOLT HEATER CONTROL CABINET



1 HEADBOLT HEATER CONTROL CABINET SCHEMATIC
 U8 SCALE: NTS

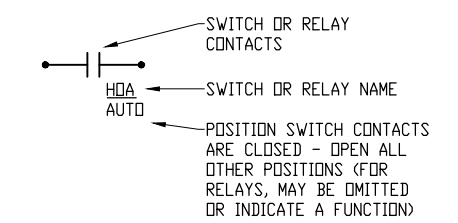
FUTURE WIRING CONNECTION TO DDC SYSTEM 'HBH CONTROL'
 FUTURE WIRING CONNECTION TO DDC SYSTEM 'DDC SYSTEM POWER STATUS'
 TO HBH CONTACTOR 'PHBLA' HBCA
 FUTURE WIRING CONNECTION TO HBH CONTACTOR 'PHBLB' AT LOT 'B' HBCB
 FUTURE WIRING CONNECTION TO HBH CONTACTOR 'PHBLC' AT LOT 'C' HBCC
 FOR FUTURE WIRING CONNECTION TO DDC SYSTEM 'HBH STATUS'

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HBH CONTROL SCHEMATIC NOTES

- SEE NEXT SHEET FOR COMPONENT LIST.
- HEADBOLT HEATER (HBH) CONTROL CABINET SEQUENCE OF OPERATION WHEN THE CONTROL SWITCH (HOA) IS IN AUTO POSITION:
 - WHEN THE AUTO MODE SWITCH (AMD) IS IN LOCAL POSITION THE HBH OUTLETS (PANELBOARDS) ARE SWITCHED BASED ON AMBIENT TEMPERATURE SENSED BY TSTAT1 AND TSTAT2. ALL HBH OUTLETS ARE DE-ENERGIZED FOR AMBIENT TEMPERATURE ABOVE THE SETTING OF "TSTAT1". FOR AMBIENT TEMPERATURE BELOW THE SETTING OF "TSTAT1" BUT ABOVE THE SETTING OF "TSTAT2" THE OUTLETS ARE CYCLED SUBJECT TO THE SETTING OF REPEAT CYCLE TIMER "RCT". FOR AMBIENT TEMPERATURE BELOW THE SETTING OF "TSTAT2" THE OUTLETS ARE CONTINUOUSLY ENERGIZED.
 - WHEN THE AUTO MODE SWITCH (AMD) IS IN REMOTE POSITION THE HBH OUTLETS (PANELBOARDS) ARE CONTROLLED BY THE OLD UNIVERSITY PARKS DDC SYSTEM. IF THE BUILDING DDC SYSTEM LOSES POWER (SENSED BY RELAY DDCPWR1), CONTROL OF HBH OUTLETS WILL REVERT TO LOCAL MODE.
- HEADBOLT HEATER (HBH) CONTROL CABINET SEQUENCE OF OPERATION WHEN THE CONTROL SWITCH (HOA) IS IN OFF POSITION: THE HBH OUTLETS (PANELBOARDS) ARE CONTINUOUSLY DE-ENERGIZED.
 - THE AUTO MODE SWITCH (AMD) HAS NO AFFECT.
- HEADBOLT HEATER (HBH) CONTROL CABINET SEQUENCE OF OPERATION WHEN THE CONTROL SWITCH (HOA) IS IN HAND POSITION: THE HBH OUTLETS (PANELBOARDS) ARE CONTINUOUSLY ENERGIZED.
 - THE AUTO MODE SWITCH (AMD) HAS NO AFFECT.

CONTACT LABELING CONVENTION

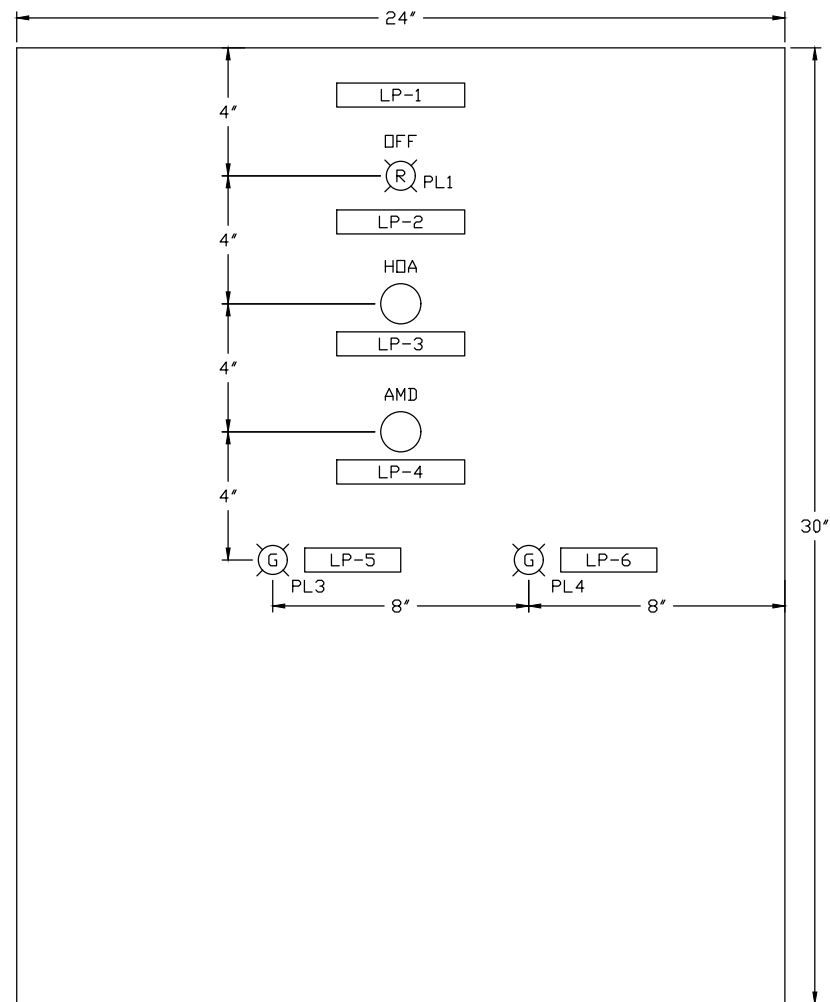


HEADBOLT HEATER CONTROL SCHEMATIC

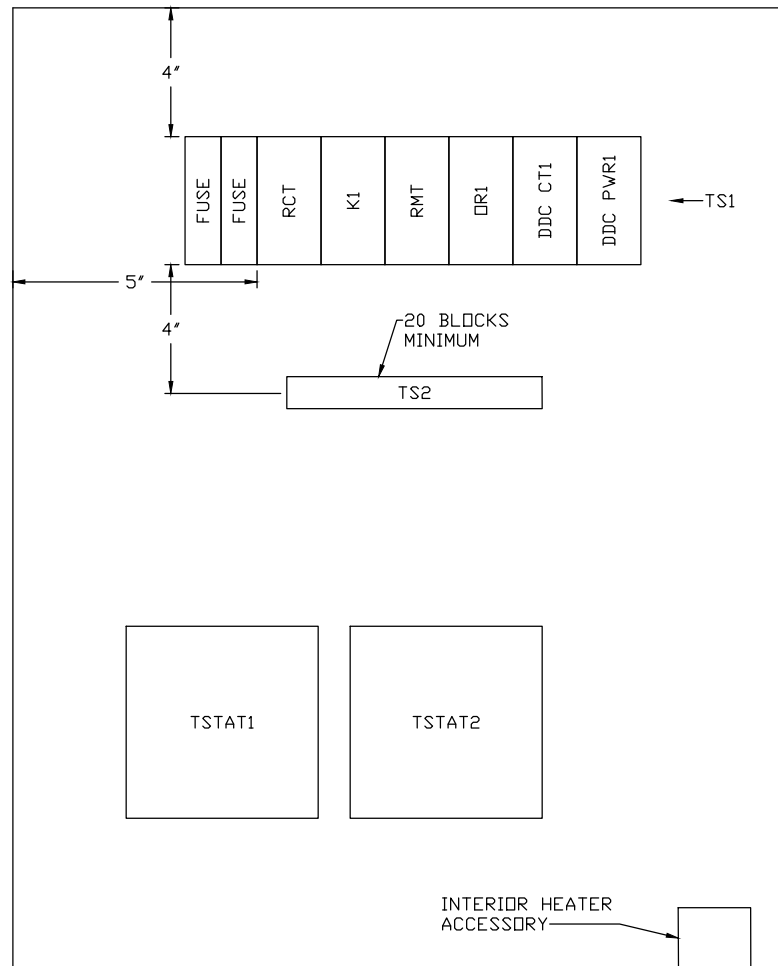


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DIMENSION ARE FOR OVERALL ENCLOSURE



1 INTERIOR SWING-OUT PANEL FRONT VIEW
SCALE: NTS



2 INTERIOR BACK PANEL COMPONENT LAYOUT
SCALE: NTS

SHEET NOTES:

- HEADBOLT HEATER (HBH) CONTROL CABINET SEQUENCE OF OPERATION: SEE PREVIOUS SHEET.

ITEM	NAME	DESCRIPTION
ENCL	ENCLOSURE	NEMA TYPE 4/12 SURFACE MOUNTED STEEL ENCLOSURE, SINGLE HINGED FRONT PANEL, 30" HIGH X 24" WIDE X 8" DEEP MINIMUM, WITH INTERIOR SWING OUT DEVICE PANEL AND INTERIOR BACK PANEL, INTERIOR HEATER ASSEMBLY, DESIGN BASIS HOFFMAN A30H24BLP WITH A30P24 INTERIOR PANEL AND MATCHING ANADFK SWING-OUT KIT
TSx	TERMINAL STRIP	STEEL DIN RAIL WITH ANI-CORROSION PLATING, SYMMETRICAL 35MM COMPONENT MOUNTING, ALLEN-BRADLEY 199-DR1 DIN RAIL AND 1492-EAHJ35 HEAVY DUTY END ANCHORS, OR EQUAL.
DDCCTx	RELAY	SOCKET MOUNTED PLUG-IN TUBE-BASE STYLE, CONTACTS 3PDT B300 10 AMP 120 VAC MINIMUM, COIL 24 VDC, INTERNAL PILOT LIGHT AND , ALLEN-BRADLEY 700-HA33A24-3-4 WITH 700-HN205 SOCKET AND AC/DC RC SURGE SUPPRESSOR 700-AR1, OR EQUAL.
DDCPWRx	RELAY	SAME AS DDCCT1
FUX	FUSE	FUSE BLOCK, MODULAR FINGER-SAFE, 600 VOLT, 30 AMP, NON-INDICATING, SCREW TERMINAL WITH WIRE CLAMP OR BOX LUG WITH PRESSURE PLATE, WIRE RANGE 16-12 AWG, APPROXIMATE DENSITY 16 PCS/FT, UL MIDGET 13/32 X 1 1/2 INCH (10 X 38 mm) FUSE, 35mm DIN RAIL MOUNTED, EATON/EDISON EHM1DU OR EQUAL.
HOA	HAND-OFF-AUTO SWITCH	3-MAINTAINED POSITION SELECTOR SWITCH, 30.5MM NEMA TYPE 4/13 WATERTIGHT/OILTIGHT, METAL BODY, NON-ILLUMINATED, CONTACT BLOCKS FOR FUNCTION INDICATED, KNOB COLOR BLACK, WITH HAND-OFF-AUTO LEGEND PLATE, ALLEN-BRADLEY 800T SERIES OR EQUAL.
AMD	AUTOMATIC MODE SWITCH	SIMILAR TO HOA SWITCH, BUT 2-MAINTAINED POSITION WITH LOCAL-REMOTE LEGEND PLATE.
Kx	RELAY	SOCKET MOUNTED PLUG-IN SQUARE-BASE STYLE, CONTACTS 4PDT C300 10 AMP 120 VAC MINIMUM, COIL 120 VAC, INTERNAL PILOT LIGHT AND TEST OPERATOR, ALLEN-BRADLEY 700-HF34A1-1-4 WITH 700-HN139 SOCKET AND RETAINER CLIP, OR EQUAL.
ORx	RELAY	SAME AS Kx
PLx	PILOT LIGHT	PILOT LIGHT, 30.5MM NEMA TYPE 4/13 WATERTIGHT/OILTIGHT, METAL BODY, 120 VAC LED HIGH VISIBILITY TYPE, COLOR AS INDICATED ON THE SCHEMATIC, ALLEN-BRADLEY 800TQH10x SERIES OR EQUAL.
RCT	REPEAT CYCLE RELAY	ELECTRONIC REPEAT CYCLE TIMER, 120 VAC POWERED, ADJUSTABLE ON-OFF TIME 1-100 MINUTES, SOCKET MOUNTED PLUG-IN TUBE-BASE STYLE, CONTACTS 3PDT 10 AMP 125 VAC MINIMUM, ALLEN-BRADLEY 700-HA33A1-4 WITH 700-HN203 SOCKET AND 700-HT1 TIMING MODULE, OR EQUAL.
TS-x	TERMINAL BLOCKS	FEED-THROUGH BLOCKS, 600 VOLT, UL 50 AMP, WIRE RANGE 22-8 AWG, DENSITY 38 PCS/FT, GRAY, PRESSURE SCREW CONNECTION BOXED LUG, DIN RAIL MOUNTED, ALLEN-BRADLEY 1492-W10 OR EQUAL.
TSTATx	THERMOSTAT	AMBIENT SENSING THERMOSTAT, REMOTE BULB WITH 8 FOOT CAPILLARY, ADJUSTMENT RANGE -30 TO 90 DEG F, SPDT CONTACTS 3 AMP AT 120 VAC MINIMUM, MAKE/BREAK TEMPERATURE DIFFERENTIAL 5 DEG F, HONEYWELL T6031A OR EQUAL.
WIRING		INTERIOR WIRING SHALL BE FINE-STRANDED COPPER, 16 AWG MINIMUM, TYPE SIS OR "ARCTIC ULTRAFLEX BLUE" TYPE AWM, WHERE CONDUCTORS ARE CLAMPED TO THE ENCLOSURE UTILIZE SCREW MOUNTED CLAMP TIES, ADHESIVE MOUNTED TIES ARE NOT ACCEPTABLE. WIRING CROSSING HINGE SHALL BE BOUND IN BRAIDED EXPANDABLE SLEEVING, PANDUIT SE-SERIES OR EQUAL.

LABEL PLATE NO.	PLATE MINIMUM SIZE	TEXT / BACKGROUND COLOR	LEGEND
1	1-3/4"H X 14"L	BLACK / WHITE	HEADBOLT HEATER CONTROL CABINET (FIRST LINE, 1/2" HIGH), FED FROM PANEL LTLA (SECOND LINE, 1/4" HIGH)
2	1"H X 5"L	BLACK / WHITE	HEADBOLT HEATER CONTACTORS ON (1/4" HIGH).
3	1-1/2"H X 6"L	BLACK / WHITE	HEADBOLT HEATER CONTROL SWITCH (FIRST LINE, 1/4" HIGH), HAND - OUTLETS ENERGIZED CONTINUOUSLY (SECOND LINE, 3/16" HIGH), OFF - OUTLETS DE-ENERGIZED (THIRD LINE, 3/16" HIGH), AUTO - OUTLETS UNDER THERMOSTATIC CONTROL OR DDC SYSTEM CONTROL (FOURTH LINE, 3/16" HIGH).
4	1-1/2"H X 6"L	BLACK / WHITE	AUTOMATIC MODE SWITCH (FIRST LINE, 1/4" HIGH), LOCAL-THERMOSTATIC CONTROL (SECOND LINE, 3/16" HIGH), REMOTE-DDC CONTROL (THIRD LINE, 3/16" HIGH)
5	1"H X 5"L	BLACK / WHITE	HEADBOLT HEATER OUTLETS CYCLING (1/4" HIGH).
6	1"H X 5"L	BLACK / WHITE	HEADBOLT HEATER OUTLETS CONTINUOUSLY ENERGIZED (1/4" HIGH).

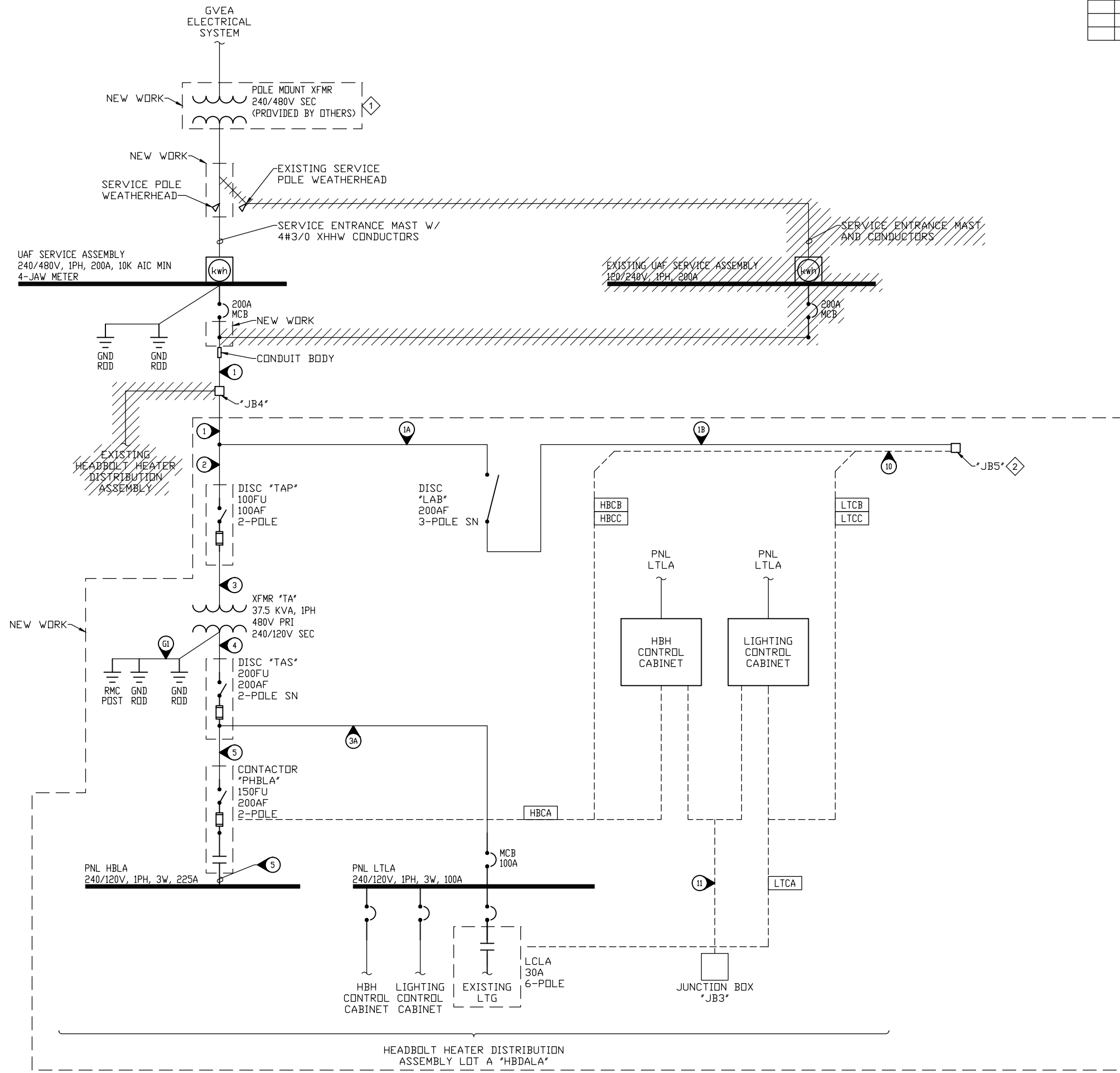
SCHEDULE NOTES:
1. ALL TEXT LINES ARE CENTER JUSTIFIED.

PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AECC605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
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HEADBOLT HEATER CONTROL CABINET LAYOUT



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	U10	U12



SHEET NOTES

- EXISTING ELECTRICAL CONDITIONS BASED ON AS-BUILT DOCUMENTS AND LIMITED FIELD OBSERVATION BY THE ENGINEER. CONTRACTOR SHALL FIELD VERIFY.
- DEMOLISH ELECTRICAL EQUIPMENT ON THE ELECTRICAL ONE-LINE DIAGRAM SHOWN HATCHED AND ALL ASSOCIATED CONDUCTORS AND RACEWAY, UNLESS OTHERWISE INDICATED.
- PROVIDE NEW WORK AS INDICATED.

SHEET KEYNOTES X

- COORDINATE WITH GVEA TO REPLACE EXISTING 120/240V, 1-PHASE TRANSFORMER WITH 240/480V, 1-PHASE TRANSFORMER.
- PROVISIONS FOR FUTURE CONNECTION TO LOT B AND LOT C.

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ELECTRICAL
ONE-LINE DIAGRAM



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	U11	U12

FEEDER AND CIRCUIT SCHEDULE				
NO.	CONDUCTORS	INSULATION	RACEWAY SIZE	REMARKS
1	4#3/0 1#6 EGC	XHHW-2 UON	3" RMC	
1A	3#3/0 1#2 NEUT 1#6 EGC		2"	
1B	2#3/0 1#2 NEUT 1#6 EGC		2"	
2	2#2 1#6 EGC		1"	NEC TAP RULES APPLY
3	2#2 1#8 EGC		1"	
3A	2#2 1#6 EGC		1"	NEC TAP RULES APPLY
4	3#3/0 1#4 EGC/GEC		2"	
5	3#3/0 1#6 EGC		2"	
5A	SAME AS 5			NEC TAP RULES APPLY
6	2#1/0 1#6 EGC		1-1/2"	
7	3#4/0 1#2 EGC/GEC		2"	
8	12#10 1#10 EGC		1-1/2"	PARKING ROW A1 - HBH BRANCH CIRCUITS. SEE SITE PLAN.
9	24#10 1#10 EGC		1-1/2"	PARKING ROWS A2, A3 - HBH BRANCH CIRCUITS. PARKING LOT "A" LIGHTING. SEE SITE PLAN.
10	20#10 1#10 EGC		1-1/2"	SIGNALING CONDUCTORS FOR HBH AND LIGHTING CONTROL. SIGNALING CONTROL TAGS: HBCB, HBCC, LTCB, LTCC
11	NA		1-1/2"	RACEWAY PROVISIONS FOR FUTURE CONNECTION TO BUILDING DDC SYSTEM.
G1	1#2 BCU			GROUNDING ELECTRODE CONDUCTOR

SHEET NOTES:

- IN GENERAL RACEWAY SHALL BE RMC/IMC ABOVE GRADE AND HDPE/RMC BELOW GRADE. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

SHEET KEYNOTES:

- FEEDERS 1 - 1A: AN ADDITIONAL PHASE CONDUCTOR IS PROVIDED TO ALLOW UPGRADE TO A 3-PHASE SERVICE/LOAD IN THE FUTURE. SEAL BOTH ENDS OF UNUSED PHASE CONDUCTOR WITH INTERNALLY COATED HEAT SHRINK CAPS.
- IF ADDITION OF LOT "B" AND LOT "C" TO SYSTEM OR OTHER WORK INCREASES LOAD BEYOND THE CURRENT 200 AMP SINGLE PHASE SERVICE, DESIGN INTENT IS TO CHANGE THE SYSTEM BACKBONE TO 200 AMP 3-PHASE. EXPECTATION IS THAT LOT "A" GOES TO PHASES A, B; LOT "B" GOES TO PHASES B, C; AND LOT "C" GOES TO PHASES C, A.
- INSTALL RACEWAY ONLY. INSTALLATION OF CONDUCTORS IS NOT IN CONTRACT, INTENDED TO DEPICT FUTURE WORK.

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FEEDER SCHEDULE



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	U12	U12

PANELBOARD HBLA														
VOLTAGE: 120/240V, 1PH, 3W BUS AMPS: 225 MAIN: MLO				SPECIFICATION TYPE: BPB MIN AIC RATING: 10,000 CIRCUITS: 42				ENCLOSURE: SEE NOTE 1 MOUNTING: SURFACE LOCATION: LOT A "HBDALA"						
LOAD	LOAD DESCRIPTION	NOTE	VA	AMP	P	CKT	PHASE	CKT	P	AMP	VA	NOTE	LOAD DESCRIPTION	LOAD
6	HBH RCPT-LOT A		1200	20	1	1	A	2	2	20	1200	2	HBH RCPT-LOT A	6
6	HBH RCPT-LOT A	2	1200	20	2	3	B	4	-	-	1200		" " "	6
6	" " "		1200	-	-	5	A	6	2	20	1200	2	HBH RCPT-LOT A	6
6	HBH RCPT-LOT A	2	1200	20	2	7	B	8	-	-	1200		" " "	6
6	" " "		1200	-	-	9	A	10	2	20	1200	2	HBH RCPT-LOT A	6
6	HBH RCPT-LOT A	2	1200	20	2	11	B	12	-	-	1200		" " "	6
6	" " "		1200	-	-	13	A	14	2	20	1200	2	HBH RCPT-LOT A	6
6	HBH RCPT-LOT A, HANDICAP PARKING	3	1200	20	1	15	B	16	-	-	1200		" " "	6
6	HBH RCPT-LOT A, HANDICAP PARKING	3	1200	20	1	17	A	18	1	20			SPARE	
6	HBH RCPT-LOT A, HANDICAP PARKING	3	1200	20	1	19	B	20	1	20			SPARE	
6	HBH RCPT-LOT A, HANDICAP PARKING	3	1200	20	1	21	A	22	1	20			SPARE	
6	HBH RCPT-LOT A, HANDICAP PARKING	3	1200	20	1	23	B	24						
						25	A	26						
						27	B	28						
						29	A	30						
						31	B	32						
						33	A	34						
						35	B	36						
						37	A	38						
						39	B	40						
						41	A	42						
LOAD SUMMARY AND CODE DEFINITIONS			CONNECTED KVA			% DIV		NEC TOTAL		NOTES:				
			PHA	PH B	TOTAL				1. ENCLOSURE TO BE NEMA 3R/12- RAINPROOF AND DUSTTIGHT, HINGED AND LOCKABLE FRONT PANEL. COORDINATE TYPE WITH OWNER.					
1	LIGHTING =					125%			2. INDICATED CIRCUITS ARE MULTIWIRE BRANCH CIRCUIT WITH SHARED NEUTRAL.					
2	RECEPTACLES =					10K+50%			3. HBH ARE EXISTING TO REMAIN, UNLESS OTHERWISE NOTED.					
3	MOTORS =					100%								
4	LARGEST MOTOR =					125%								
5	MISC. NON-CONTINUOUS =					100%								
6	MISC. CONTINUOUS =	12.0	12.0	24.0		125%	30.0							
7	NON-COINCIDENTAL =					0%								
8	SPARE =					100%								
9	OTHER =					100%								
TOTAL KVA (PHASE)			12.0	12.0	24.0		30.0							
TOTAL AMPERES			100.0	100.0	100.0		125.0							

PANELBOARD PARKING LTLA														
VOLTAGE: 120/240V, 1PH, 3W BUS AMPS: 100 MAIN: 100A MCB				SPECIFICATION TYPE: BPB MIN AIC RATING: 10,000 CIRCUITS: 18				ENCLOSURE: SEE NOTE 1 MOUNTING: SURFACE LOCATION: LOT A "HBDALA"						
LOAD	LOAD DESCRIPTION	NOTE	VA	AMP	P	CKT	PHASE	CKT	P	AMP	VA	NOTE	LOAD DESCRIPTION	LOAD
1	LIGHTING- LOT A	2	1600	30	2	1	A	2	1	15	20		LIGHTING CONTACTOR "LCLA", PHOTOCCELL	6
1	" " "		1600	-	-	3	B	4	1	20	250		HEADBOLT HEATER CONTROL CABINET "HBCLA"	6
	SPARE			20	1	5	A	6	1	20	250		LIGHTING CONTROL CABINET "LTCLA"	6
	SPARE			20	1	7	B	8	1	20			SPARE	
						9	A	10						
						11	B	12						
						13	A	14						
						15	B	16						
						17	A	18						
LOAD SUMMARY AND CODE DEFINITIONS			CONNECTED KVA			% DIV		NEC TOTAL		NOTES:				
			PHA	PH B	TOTAL				1. ENCLOSURE TO BE NEMA 3R/12- RAINPROOF AND DUSTTIGHT, HINGED AND LOCKABLE FRONT PANEL. COORDINATE TYPE WITH OWNER.					
1	LIGHTING =		1.6	1.6	3.2	125%	4.0	2. PARKING LOT LIGHTING IS EXISTING TO REMAIN.						
2	RECEPTACLES =					10K+50%								
3	MOTORS =					100%								
4	LARGEST MOTOR =					125%								
5	MISC. NON-CONTINUOUS =					100%								
6	MISC. CONTINUOUS =	0.3	0.3	0.5		125%	0.7							
7	NON-COINCIDENTAL =					0%								
8	SPARE =					100%								
9	OTHER =					100%								
TOTAL KVA (PHASE)			1.9	1.9	3.7		4.7							
TOTAL AMPERES			15.6	15.4	15.5		19.4							

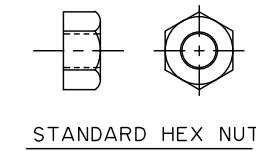
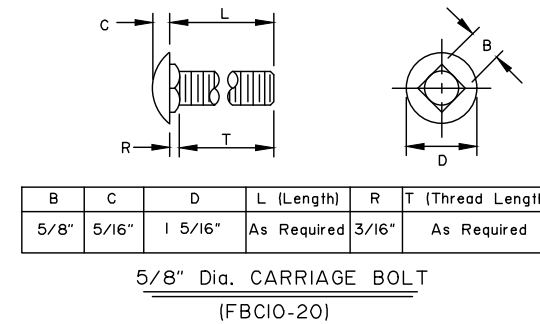
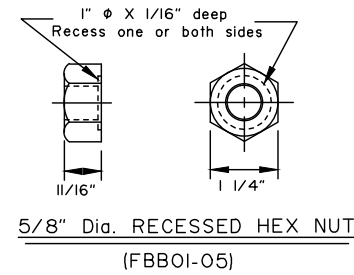
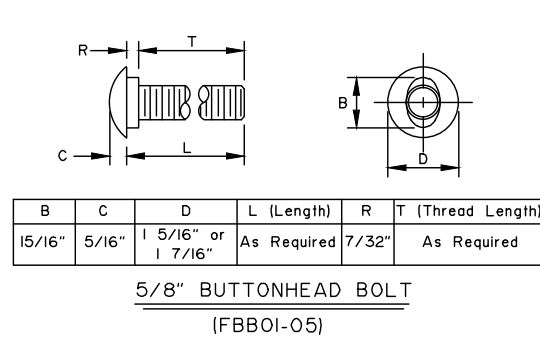
PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AECC605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
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ELECTRICAL PANEL SCHEDULES

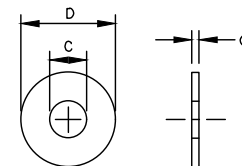
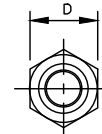
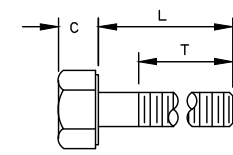


NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	V1	V11

G-00.04 SHEET
1 of 5



GENERAL NOTES:
1. All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition. Designators given when possible in parentheses.

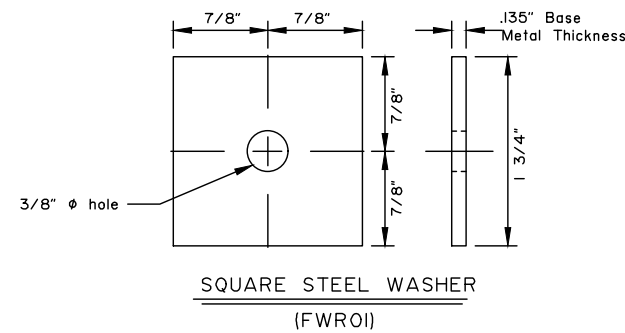
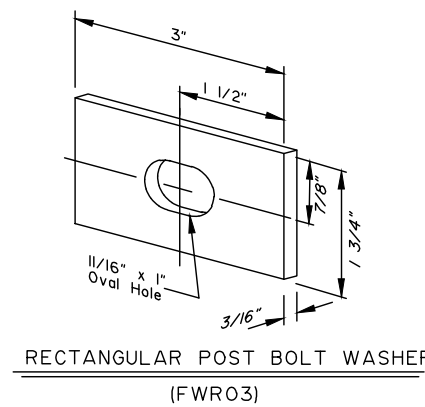
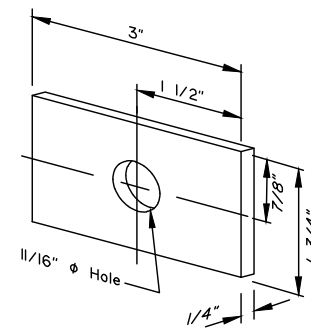
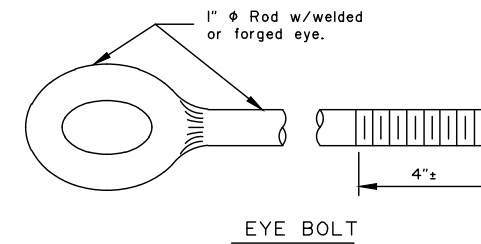


Bolt Size	C	D	L (Length)	T (Thread Length)
5/16"	---	---	1 1/2"	7/8"
5/16"	---	---	1"	1"
3/8"	---	---	7 1/2"	1 1/2"
1/2"	---	---	1 1/2"	1 1/2"
1/2"	---	---	1 1/4"	1 1/4"
5/8" H.S.	5/16"	7/8"	8"	1 1/2"
5/8"-II	---	---	1 1/2"	1 1/2"
3/4"	---	---	1 1/2"	1 1/2"
3/4"	---	---	As Required	2"
3/4" H.S.	5/32"	1 1/4"	2"	1 1/2"

STANDARD HEX BOLTS

For Bolt ϕ	C	D	G
3/8"	7/16"	1"	5/64"
1/2"	17/32"	1 1/16"	3/32"
1/2" H.S.	17/32"	1 1/16"	3/32"
5/8"	11/16"	1 3/4"	9/64"
3/4"	13/16"	1 5/32"	9/64"
3/4" H.S.	13/16"	2"	5/32"
1"	1 1/16"	2"	9/64"

STANDARD STEEL WASHERS



Note: drawing not to scale

REVISIONS		
Date	Description	By
3/15/99	Delete BCT Hardware	KJS
1/16/17	Added Designators	LRG
12/22/17	No changes this sht.	LRG

State of Alaska DOT&PF
**STANDARD GUARDRAIL
HARDWARE
(NUTS, BOLTS & WASHERS)**

G-00.04

STANDARD DRAWING
G-00.04 (1 OF 4)

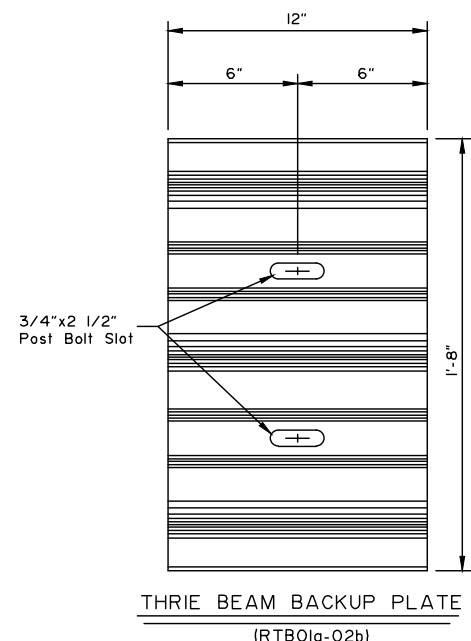
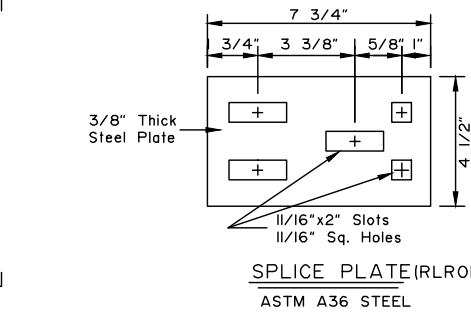
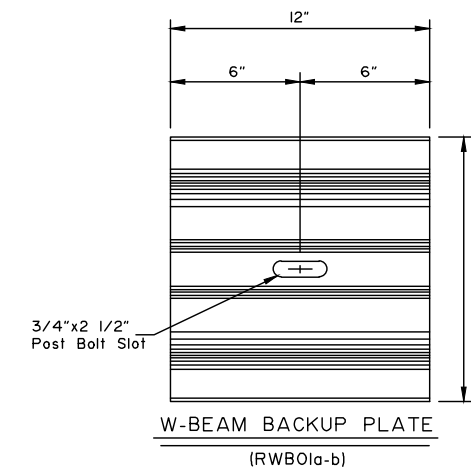
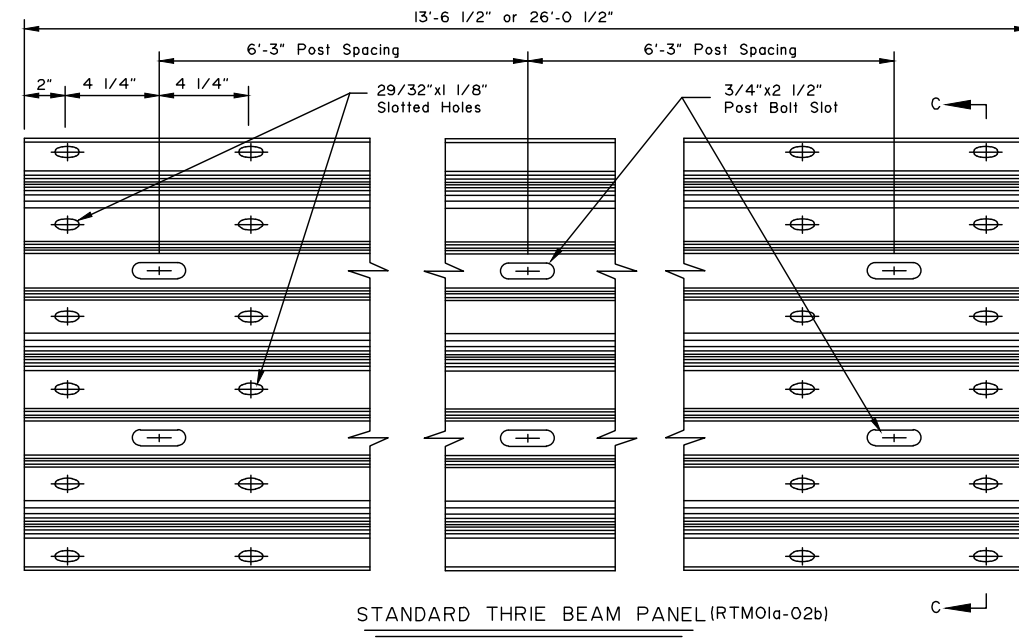
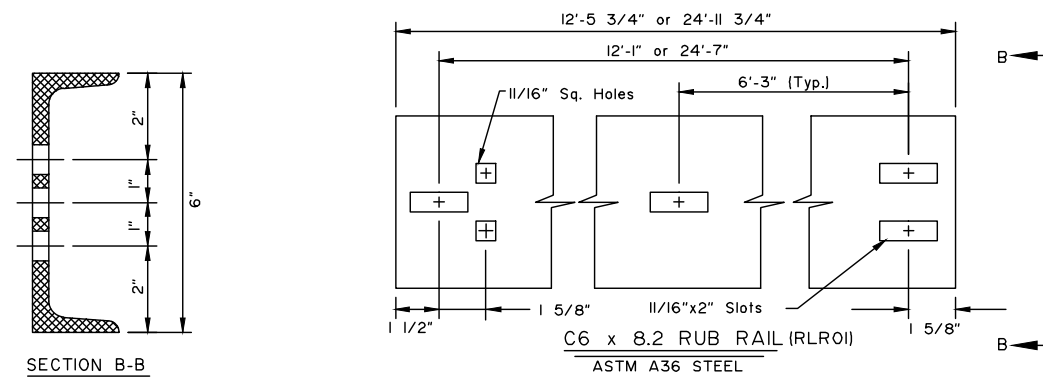
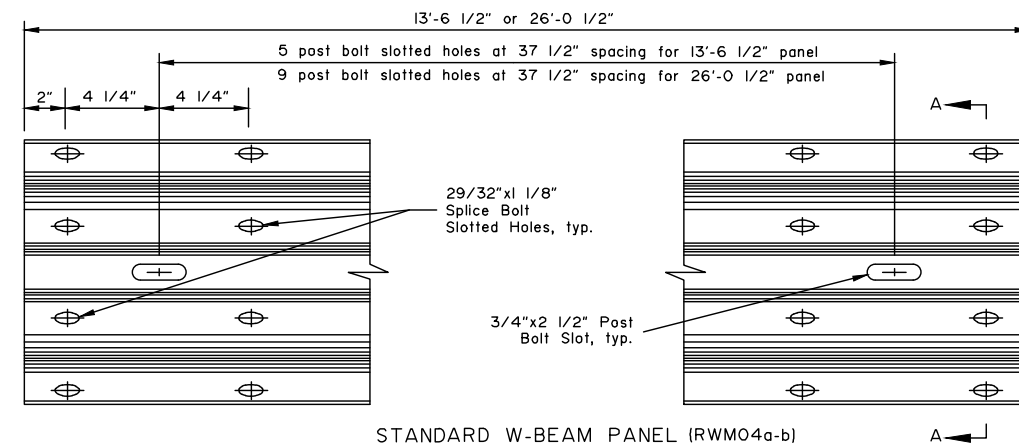
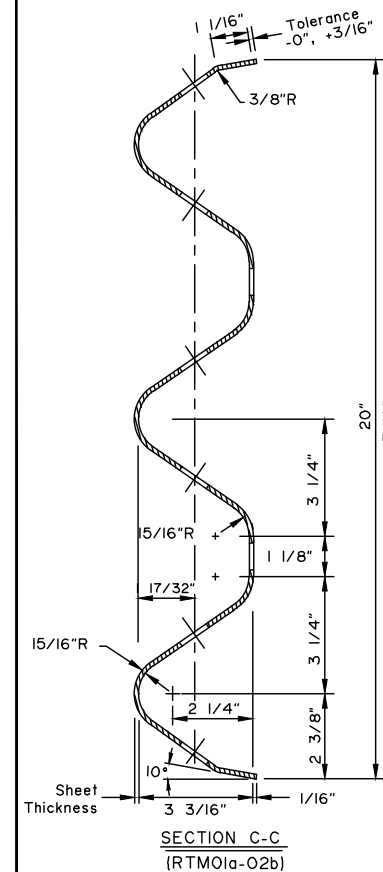
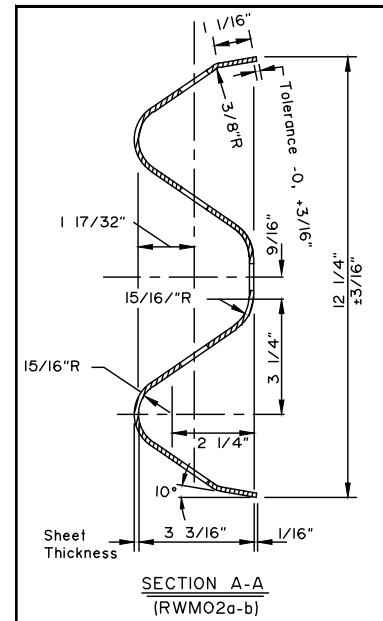


NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	V2	V11

G-00.04 SHEET
2 of 5

GENERAL NOTES:

- All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition. Designators given when possible in parentheses.
- 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.



REVISIONS		
Date	Description	By
4/28/10	Revise general notes	KJS
1/16/17	Fix dimensions in Sections A-A and C-C	LRG
12/22/17	Std w-beam to RWM04	LRG

State of Alaska DOT&PF
**STANDARD GUARDRAIL
HARDWARE
(RAILS AND SPLICES)**

G-00.04

PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AEC605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
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STANDARD DRAWING
G-00.04 (2 OF 4)

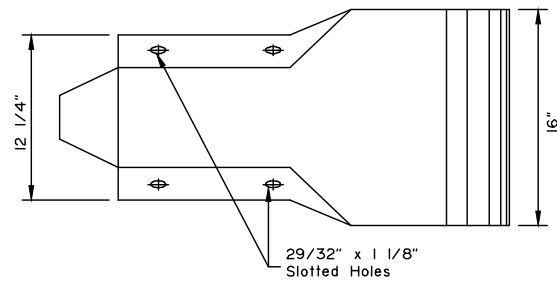


NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	V3	V11

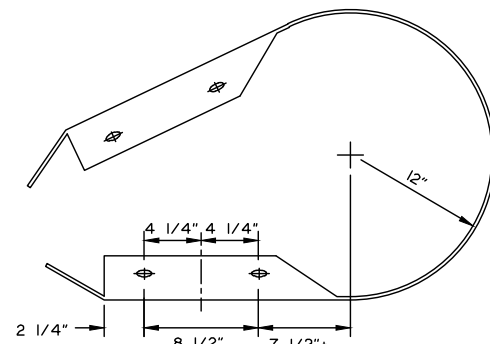
G-00.04 SHEET
3 of 5

GENERAL NOTES:

1. W-Beam and Thrie Beam Terminal Connectors shall conform to AASHTO M 180, Class B, Type II.
2. W-Beam end sections shall conform to AASHTO M 180, Class A, Type II.
3. All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition. Designators given when possible in parentheses.

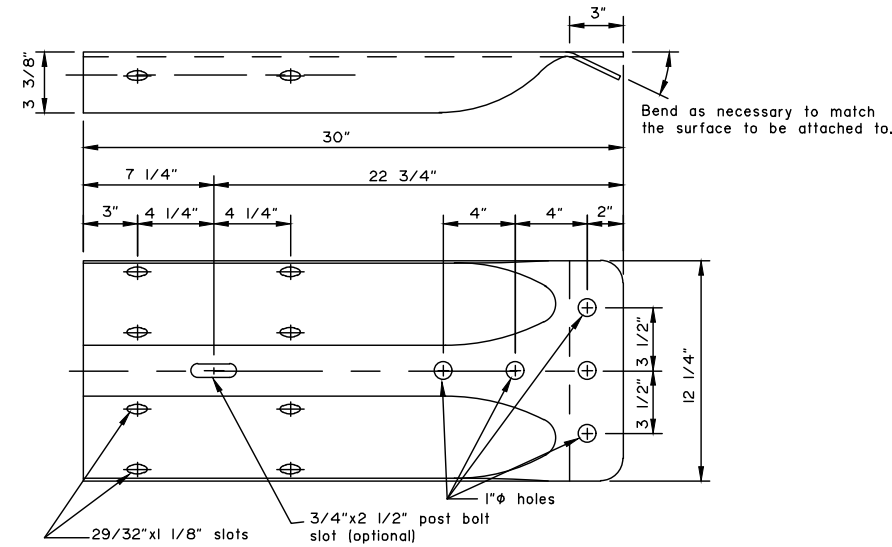


PROFILE

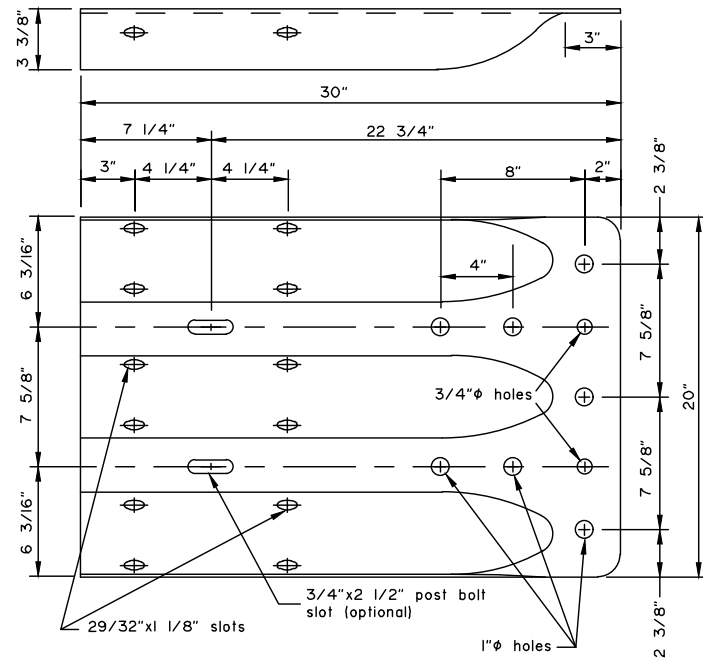


W-BEAM PLAN VIEW
*Radius to be specified on the plans

STANDARD W-BEAM END SECTION
(RWE06)



STANDARD W-BEAM TERMINAL CONNECTOR
(RWE02)



STANDARD THRIE BEAM TERMINAL CONNECTOR
(RTE01b)

Note: Drawing not to scale

REVISIONS		
Date	Description	By
3/15/99	Delete Thrie end sect.	KJS
1/16/17	Holes added to Thrie	LRG
12/22/17	No changes this sht.	LRG

State of Alaska DOT&PF
**STANDARD GUARDRAIL
HARDWARE
(TERMINAL CONNECTORS)**

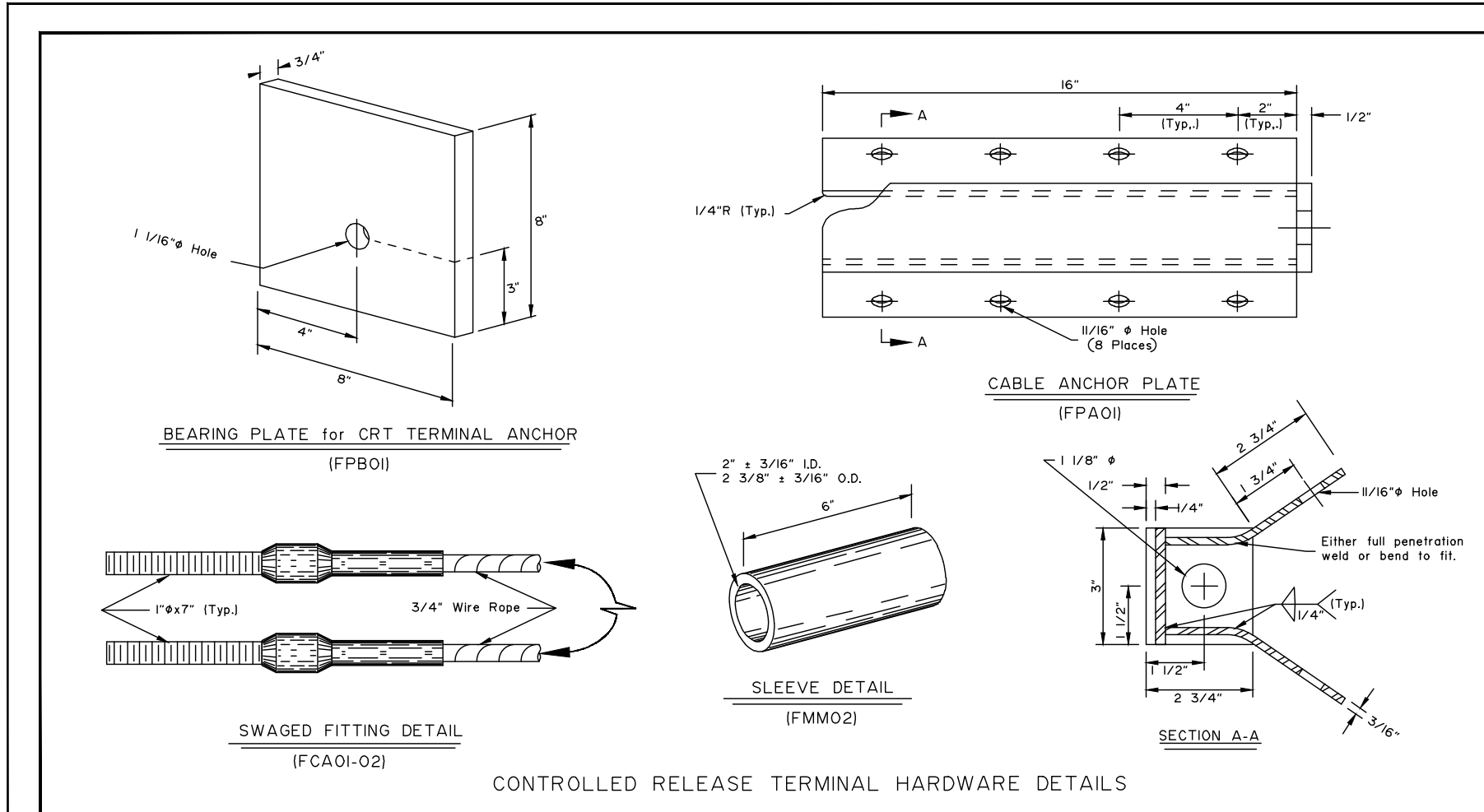
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STANDARD DRAWING
G-00.04 (3 OF 4)



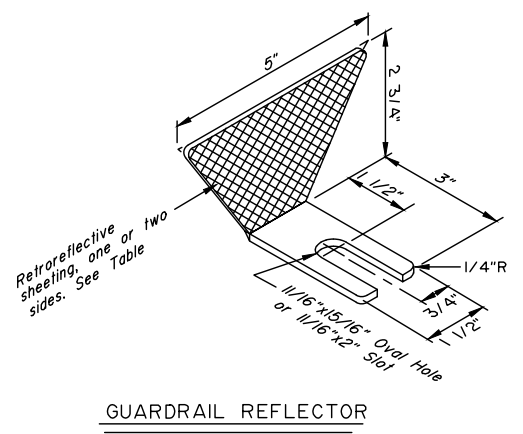
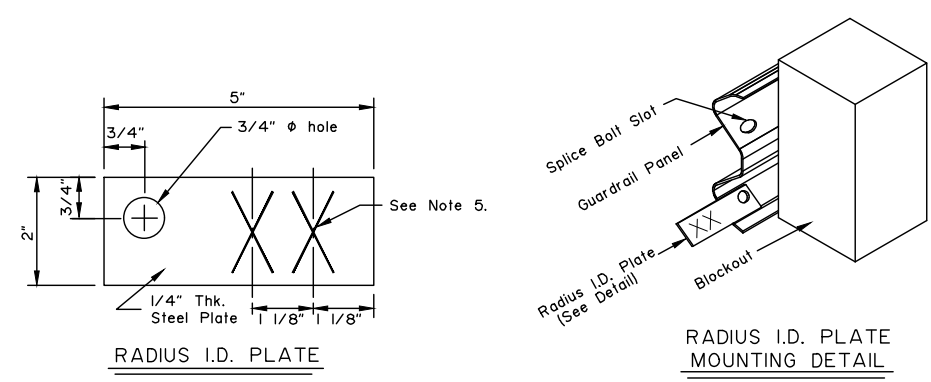
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	V4	V11

G-00.04 SHEET
4 of 5



- GENERAL NOTES:**
- Cable Anchor Plate may be formed in single unit or welded fabrication.
 - Anchor Cable Assembly must conform to AASHTO M 30 with Type II Wire Rope.
 - 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.
 - 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.
 - 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 1/2" and a max. width of 3/4". Galvanize the plate after the digits are marked.
 - All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition. Designators given when possible in parentheses.

Note: Drawing not to scale



Guardrail Reflector Table

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

REVISIONS		
Date	Description	By
3/15/99	Delete BCT Hardware	KJS
1/16/17	Change ASTM in Note 3	LRG
12/22/17	No changes this sht.	LRG

State of Alaska DOT&PF
**STANDARD GUARDRAIL
HARDWARE
(MISCELLANEOUS)**

G-00.04

STANDARD DRAWING
G-00.04 (4 OF 4)

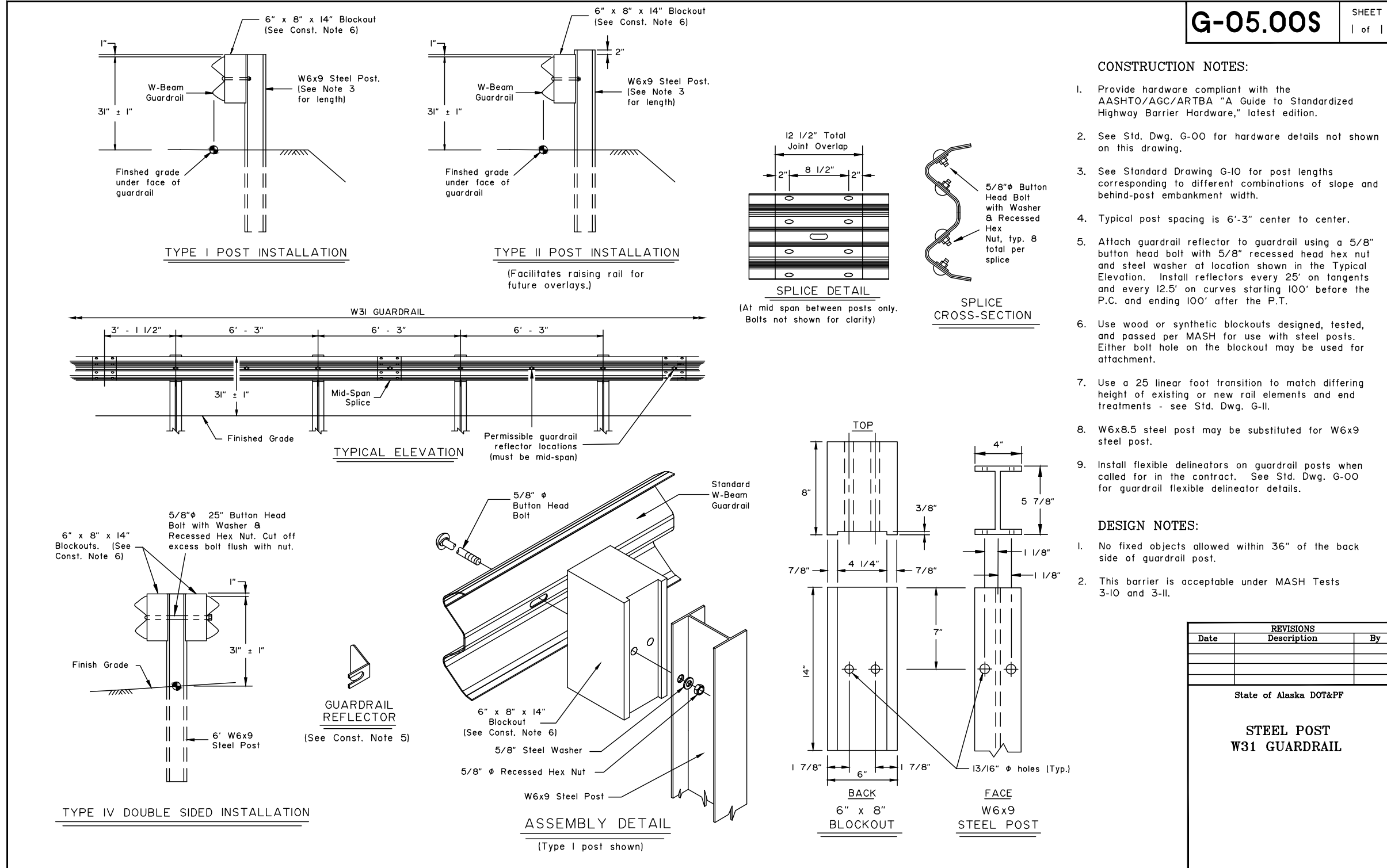


PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AECC605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	V5	V11

G-05.00S

SHEET
| of |



REVISIONS		
Date	Description	By

State of Alaska DOT&PF

**STEEL POST
W31 GUARDRAIL**

G-05.00S

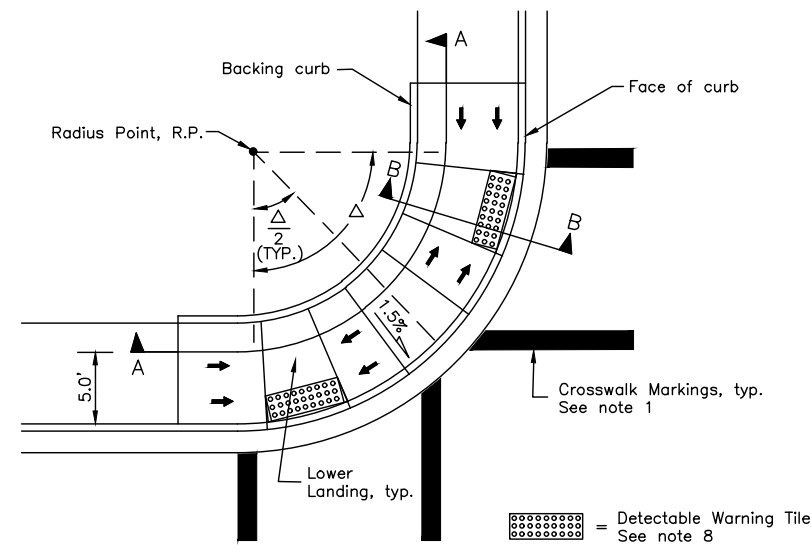
STANDARD DRAWING
G-05.00S



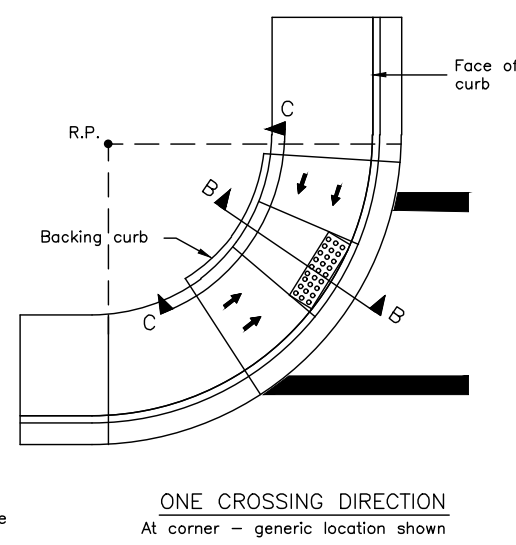
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	V6	V11

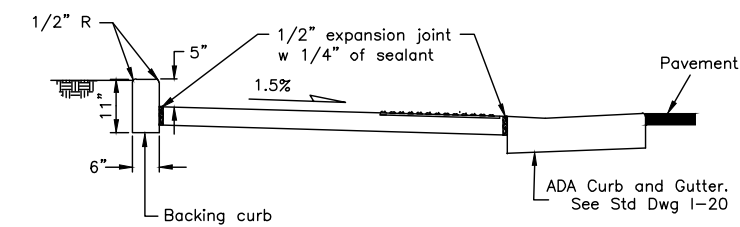
I-21.10 SHEET
1 of 1



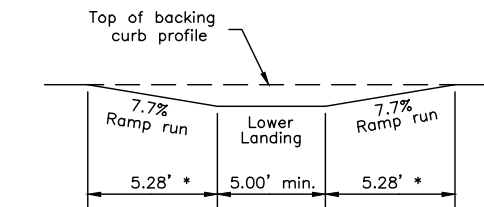
TWO CROSSING DIRECTIONS
At corner



ONE CROSSING DIRECTION
At corner - generic location shown

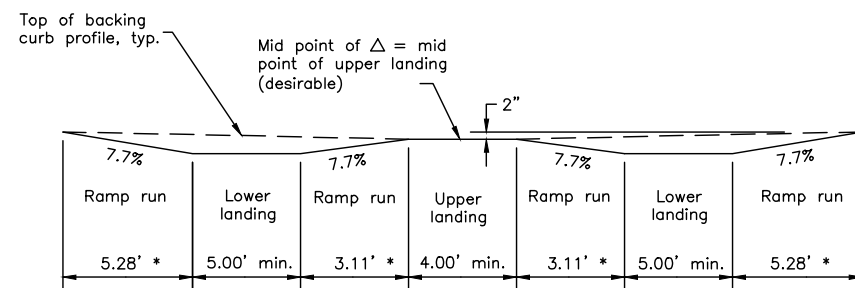


SECTION B-B



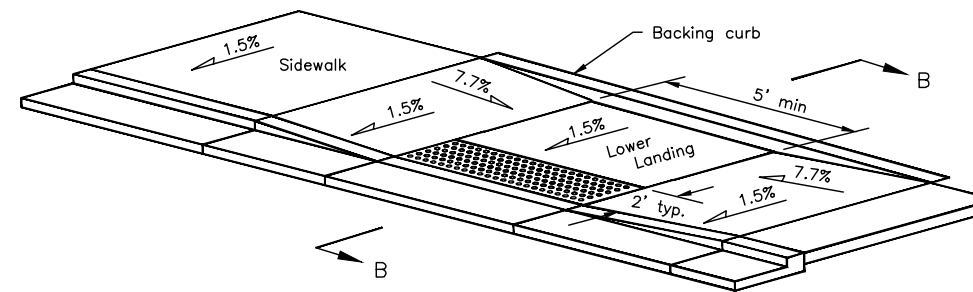
* See Note 5

PROFILE C-C



* See Note 5

PROFILE A-A



MID-BLOCK

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. Align truncated dome pattern in the predominant direction of wheelchair travel to permit wheels to roll between domes.
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.

DESIGN NOTES

1. Parallel curb ramps are typically used when the sidewalk is at least 4' wide but can not be constructed wide enough for perpendicular ramps.
2. When one curb ramp is installed in a curb radius to serve both directions of pedestrian traffic, construct it in accordance with the One Crossing Direction detail.
3. Locate lower landings within the inner edges of marked crosswalks or, if crosswalks are not marked, within the area a standard marked crosswalk would enclose. See Standard Drawing T-23 for standard crosswalk layout.
4. Avoid drainage grates within marked crosswalks or, if crosswalks aren't marked, within the area a standard marked crosswalk would enclose. If a drainage grate is located directly in the pedestrian accessible route (e.g. a wheel chair must pass over it), install a grate meeting the requirements of Section 302.3 of the 2006 ADA Standards.
5. These details are compliant with the 2006 ADA Standards for Transportation Facilities.

REVISIONS		
Date	Description	By
5/31/12	ADA Updates	JCJ
3/31/15	Slopes and cross slope	JCJ
7/1/16	2006 ADA Stds Update	LRG

State of Alaska DOT&PF
3132 Channel Dr., Juneau, AK
Phone: (907) 465-2960

PARALLEL CURB RAMP

I-21.10

STANDARD DRAWING
I-21.10



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	V7	V11

S-00.11

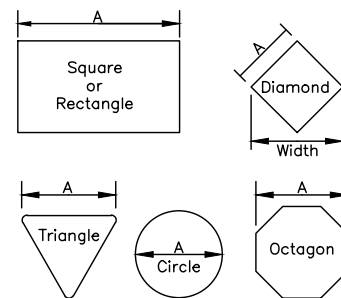
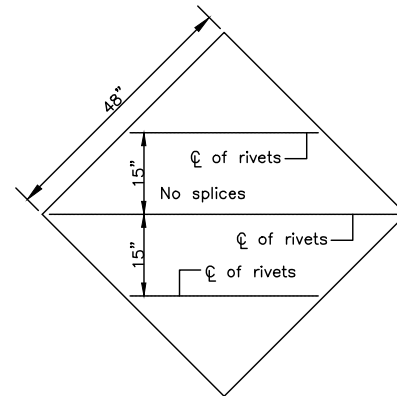
Sign Width (feet)	No. of Posts	Distance Between Posts	Sign Overhang	Post Type				Notes
				P.S.T.	Wood	Steel Tube	W-Shape	
0.5 to 4.0	1	-	0.5W	X	X	X		See Note 2.
4.5 to 10.0	2	0.6W	0.2W	X	X	X		See Note 3.
10.5 to 11.0	2	6	Varies	X	X	X		See Note 3.
11.5 to 13.0	2	8	Varies				X	
13.5 to 20.0	2	0.6W	0.2W				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	

GENERAL NOTES

- See the standard specifications for the aluminum alloys that you may use for sign sheeting and wind framing members.
- Fabricate all signs from 0.125" thick aluminum sheeting.
- 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.
- 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.
- 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.
- Use 3/16" diameter rivets conforming to aluminum alloy 6061-T6 for cold driven rivets, or aluminum alloy 6061-T43 for hot driven rivets.
- 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.
- 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.
- Do not use round pipes for sign supports.

SIGN POST SPACING NOTES:

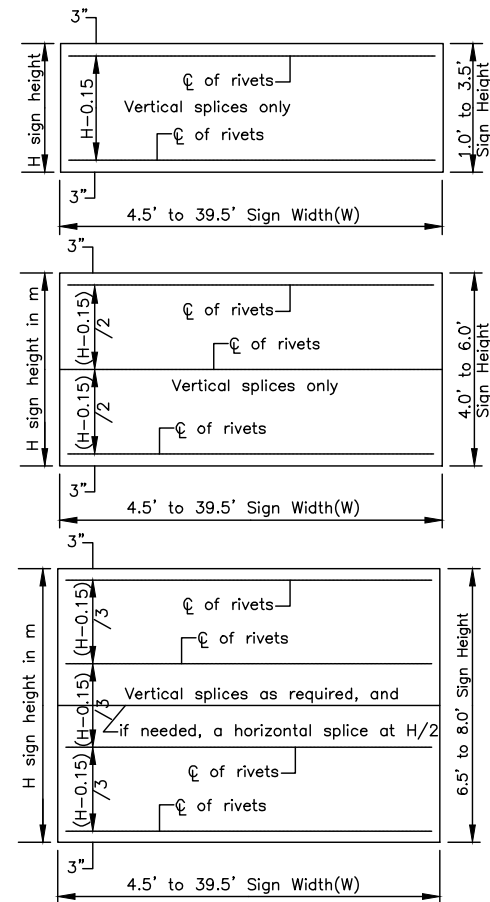
- Install sign support in accordance with the table above, unless otherwise required by plans or specifications.
- Exceptions:
 - Use one post for all E5-1 gore signs, regardless of width.
 - Use one 2.5" P.S.T. for all STOP signs, with or without street name signs.
- Supports placed within 7' of each other must be acceptable for that use. See Standard Drawing S-30 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'.
- See Standard Drawing S-31 for frangible couplings, hinges, and foundations for tube and W-shape sign supports.



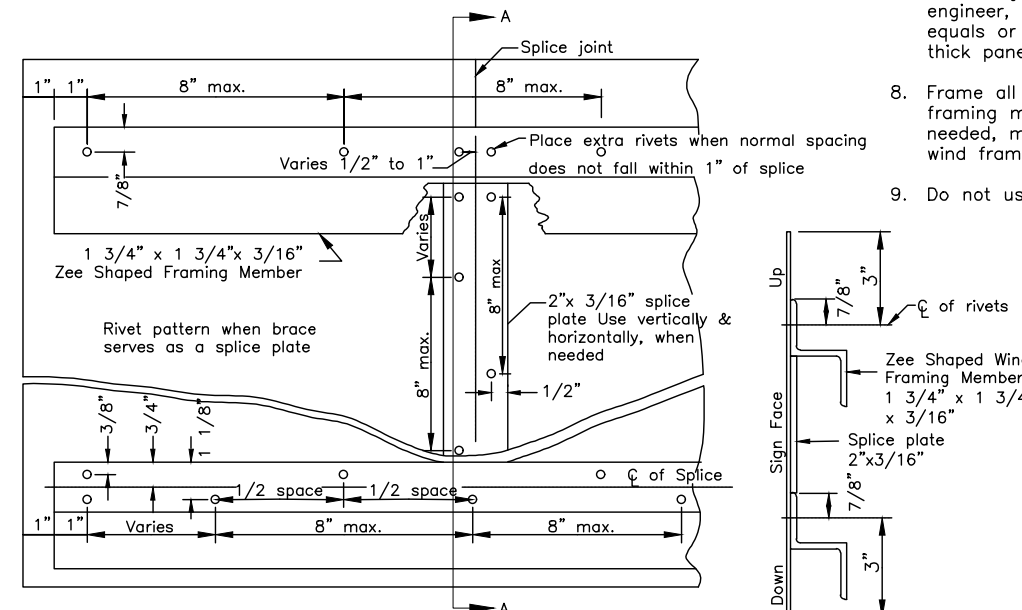
Maximum size unframed signs using 0.125" thick aluminum sheeting.	
Sign Shape	A
Squares, Shields, and Route Markers	48"
Rectangles	48"
Diamonds	48"
Triangles	48"
Rounds and Octagons	48"

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

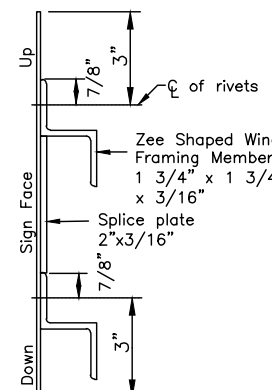
LIGHT SIGNS



WIND FRAMING LOCATIONS



RIVET DETAIL FOR ZEE SHAPED WIND FRAMING & SPLICE PLATE



SECTION A-A

REVISIONS		
Date	Description	By
4/28/10	Delete pipe, rev notes	RJS

Sheet 1 of 1
 State of Alaska
 Department of Transportation
 & Public Facilities
**SIGN FRAMING AND
 POST SPACING**

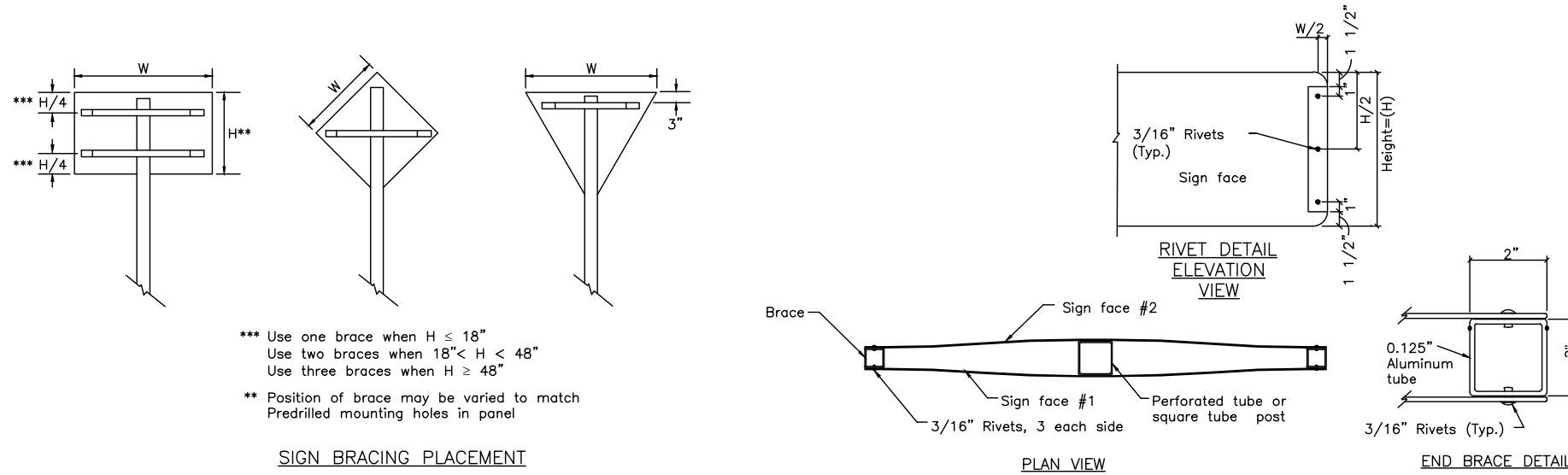
S-00.11

STANDARD DRAWING
 S-00.11



NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	V8	V11

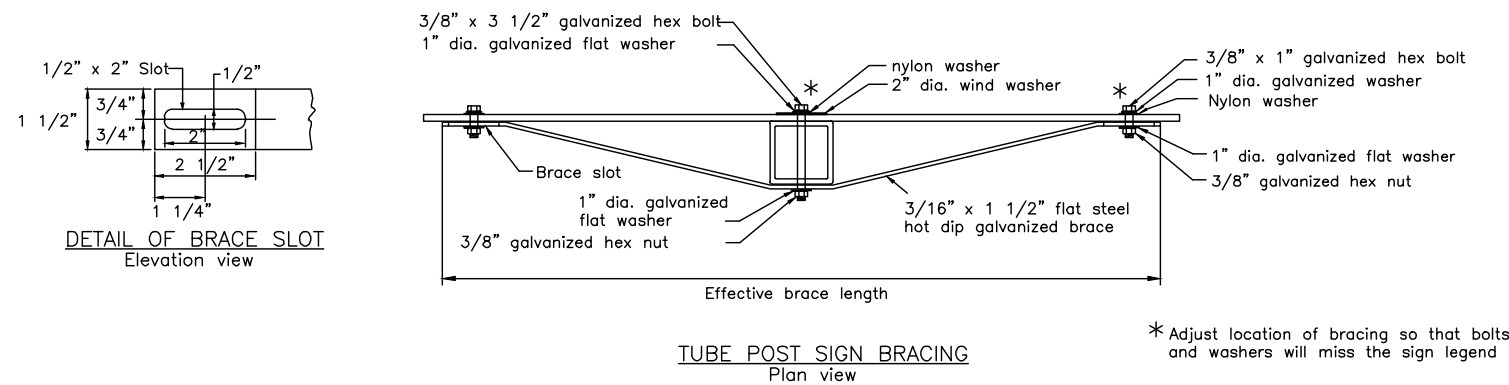
S-01.01



*** 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
 Pre-drilled mounting holes in panel

SIGN BRACING PLACEMENT

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



TUBE POST SIGN BRACING
Plan view

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

REVISIONS		
Date	Description	By
1/16/17	Bolt size & type	LRG

State of Alaska DOT&PF
 BRACING FOR SIGNS MOUNTED
 ON SINGLE POST

DRAWING NOT TO SCALE

S-01.01

STANDARD DRAWING
 S-01.01

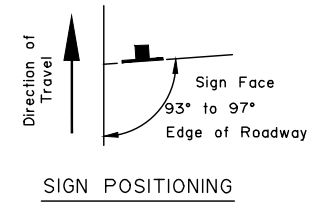
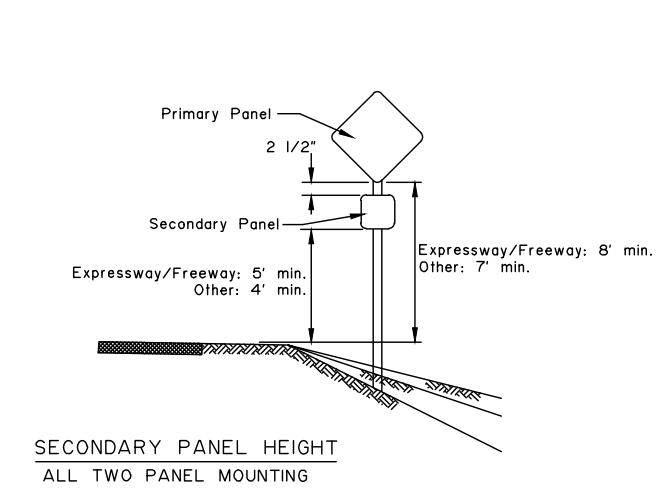
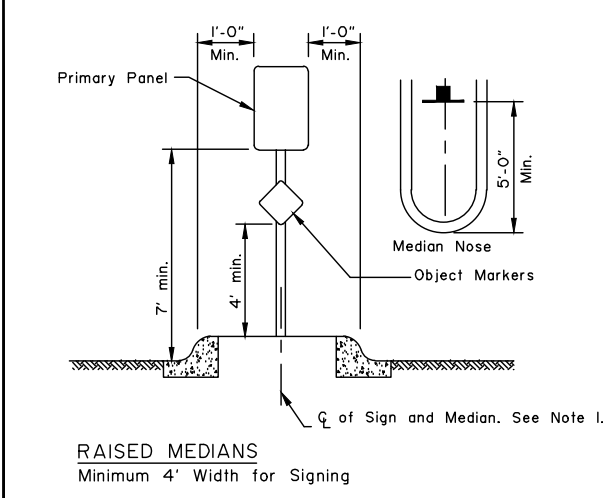
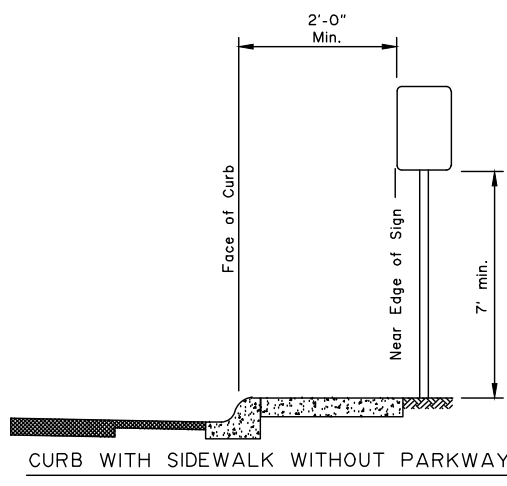
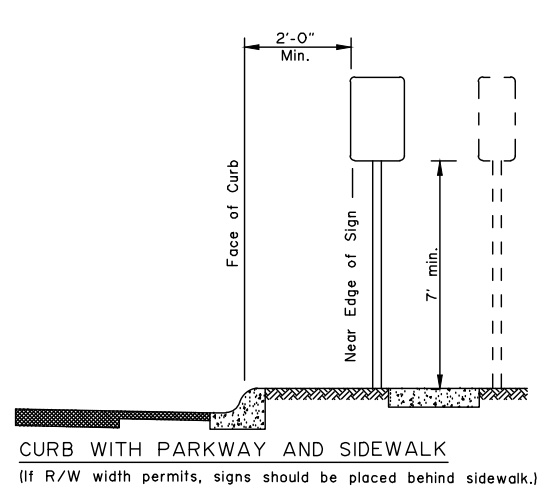
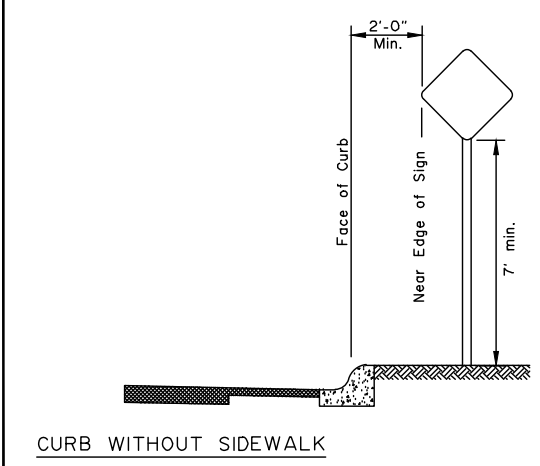
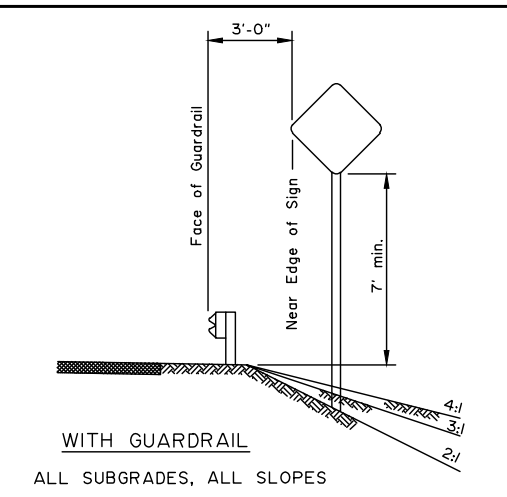
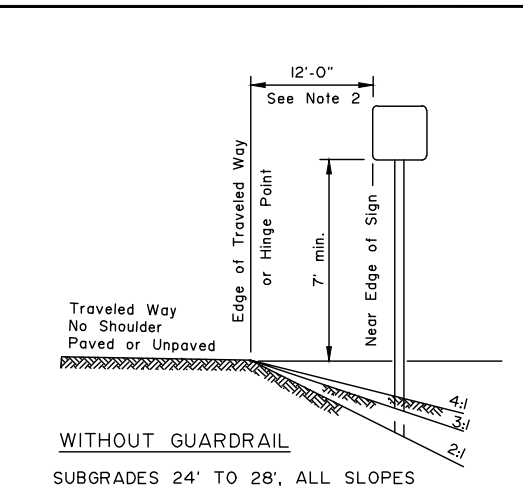
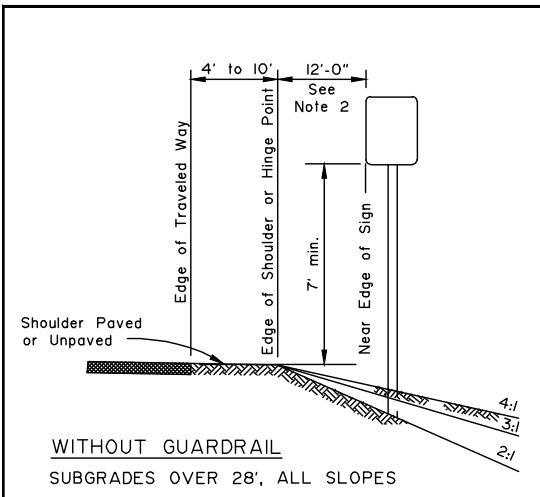


NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	V9	V11

S-05.01

GENERAL NOTES

1. Unless shown otherwise on the plans, the standard sign offset is 12'. The minimum is 6'.
2. If signs extend over sidewalks, the minimum vertical clearance is 7'-0".
3. Add 6" to mounting height on unpaved roads.
4. If signs extend over bike paths, the minimum vertical clearance is 8' 0".
5. 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.
6. When multiple hinged sign supports are used, mount hinges at least 7' above the ground.



REVISIONS		
Date	Description	By
4/3/01	Revised Sign Heights	KJS

Sheet 1 of 1

State of Alaska
Department of Transportation
& Public Facilities

**POST MOUNTED SIGN
OFFSET AND HEIGHT**

S-05.01

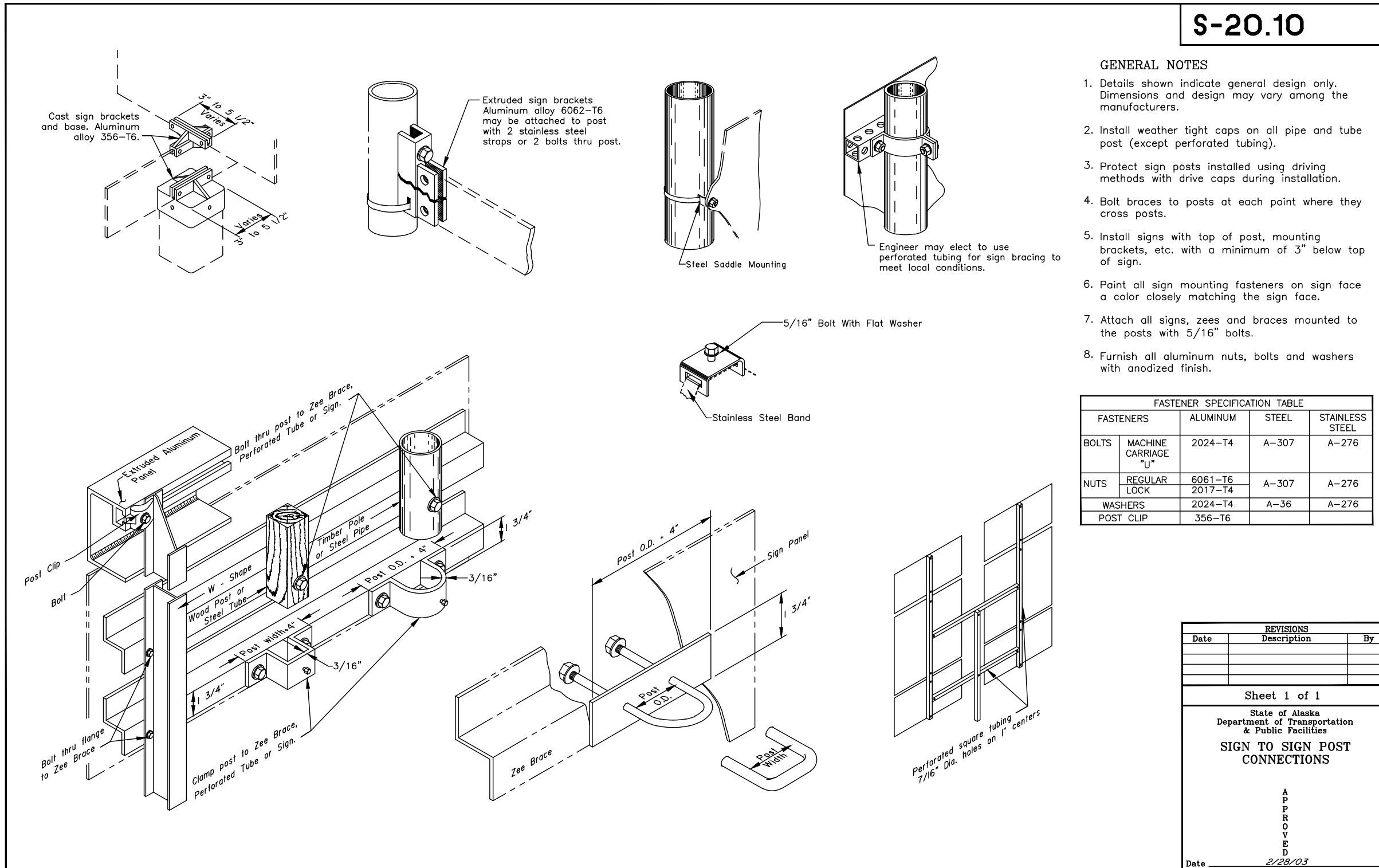
STANDARD DRAWING
S-05.01



PLANS DEVELOPED BY: PDC INC ENGINEERS, LLC. CERT. OF AUTHORIZATION NO.: AECC605, 2700 GAMBELL STREET, SUITE 500, ANCHORAGE, AK 99503, (907)743-3200
P:\2011\11147.01\FB\Segment Improvement Packages\Segment UAF-C\0501_NFHWY00270\UAF-V9 S-05.01.dwg, Jul/03/19 10:55am

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	V10	V11

S-20.10



GENERAL NOTES

1. Details shown indicate general design only. Dimensions and design may vary among the manufacturers.
2. Install weather tight caps on all pipe and tube post (except perforated tubing).
3. Protect sign posts installed using driving methods 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.
8. Furnish all aluminum nuts, bolts and washers with anodized finish.

FASTENERS		ALUMINUM	STEEL	STAINLESS STEEL
BOLTS	MACHINE CARRIAGE "U"	2024-T4	A-307	A-276
NUTS	REGULAR LOCK	6061-T6 2017-T4	A-307	A-276
WASHERS		2024-T4	A-36	A-276
POST CLIP		356-T6		

REVISIONS		
Date	Description	By

Sheet 1 of 1

State of Alaska
Department of Transportation
& Public Facilities

SIGN TO SIGN POST CONNECTIONS

A
P
P
R
O
V
E
D

Date 2/28/03

S-20.10

STANDARD DRAWING
S-20.10

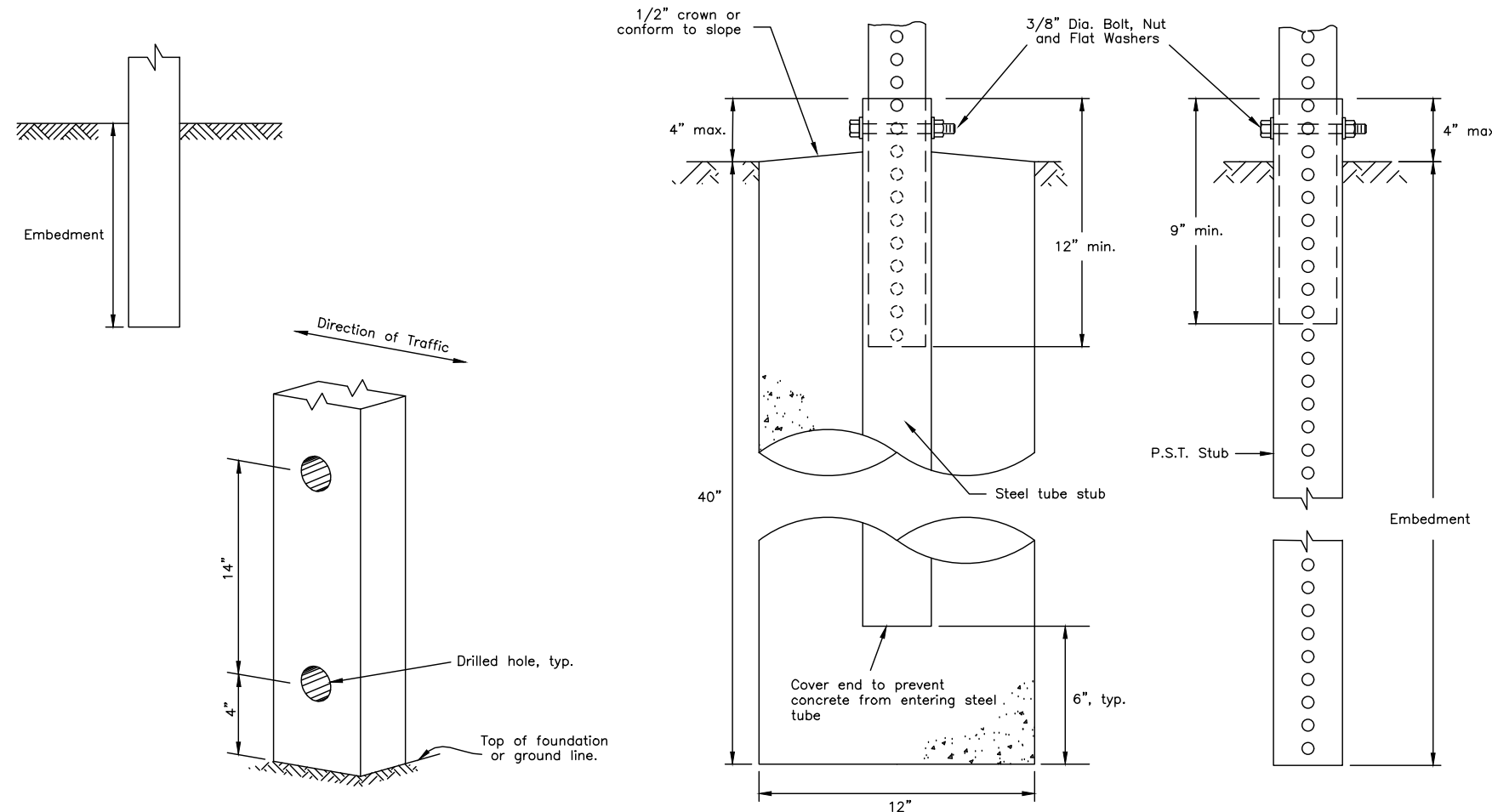


NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	0617012/NFHWY00270	2019	V11	V11

S-30.04

GENERAL NOTES:

1. Refer to Std Dwg 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. Do not install wood posts larger than 6"x8".
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.



WOOD SIGN POSTS			
SIZE	HOLE DIA.	EMBEDMENT*	NO. OF POSTS WITHIN 7 FT. PATH
4"x4"	NONE	36"	2
4"x6"	1 1/2"	36"	2
6"x6"	1 1/2"	40"	1
6"x8"	3"	48"	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"	3'-0"	2
1 3/4" x 1 3/4"	3'-0"	2
2" x 2"	3'-6"	2
2 1/4" x 2 1/4"	4'-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

REVISIONS		
Date	Description	By
4/2/01	Revised PST table Added Note 3	KJS
2/12/02	Revised wood posts	KJS
1/16/17	Rev. note 1, et. al.	LRG

State of Alaska DOT&PF

LIGHT SIGN STRUCTURE POST EMBEDMENT

S-30.04

STANDARD DRAWING
S-30.04

