STATEMENT OF WORK

THE SCOPE OF THIS PROJECT IS COMPRISED OF THE DEMOLITION AND REBUILD OF AN EXISTING LAUNCH PAD, GRADING, PAVING, SITE FENCING, DRAINAGE AND DELUGE CONTAINMENT SYSTEM, RELATED TO THE AREA 3 LAUNCH PAD C AT ALASKA AEROSPACE CORPORATION'S PACIFIC SPACEPORT COMPLEX-ALASKA.

CIVIL GENERAL NOTES

1. AFTER THE CONCLUSION OF CONSTRUCTION THE CONTRACTOR SHALL SUBMIT RED LINED DRAWINGS TO REFLECT THE AS-BUILT CONDITION TO THE ALASKA AEROSPACE CORPORATION (AAC) CONTRACTING OFFICERS' TECHNICAL REPRESENTATIVE (COTR) TO BE USED TO DEVELOP RECORD DOCUMENTS.
2. COMPLY WITH APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.
3. COMPLY WITH PERMIT CONDITIONS AND POST A COPY OF PROJECT PERMITS ONSITE ON A WEATHERPROOF DISPLAY BOARD.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATIONS AND CRITICAL ELEVATIONS OF UTILITIES AND COORDINATE WITH THE APPROPRIATE AUTHORITIES AND UTILITY OWNERS PRIOR TO CONSTRUCTION. UTILITY CONFLICTS OR DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION.
5. NOTIFY THE AAC COTR FOR EXISTING UTILITY COORDINATION/VERIFICATION IN THE AREA AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING HORIZONTAL AND VERTICAL CONTROL FOR SITE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF SURVEY MONUMENTATION. DISTURBED SURVEY MONUMENTATION SHALL BE REPLACED BY A SURVEYOR LICENSED IN THE STATE OF ALASKA.
7. DURING PHASES OF CONSTRUCTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SAFETY MARKINGS, BARRICADES, AND TEMPORARY FENCING TO MAINTAIN JOBSITE SAFETY.
8. CONTRACTOR SHALL CONTRACT A CERTIFIED CONSTRUCTION MATERIALS TESTING LABORATORY TO PROVIDE MATERIALS AND DENSITY TESTING IN ACCORDANCE WITH ADOT STANDARDS. TESTING REPORTS SHALL BE PROVIDED TO THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.
9. AREAS OUTSIDE THE LIMITS OF CONSTRUCTION THAT ARE DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO COST TO THE OWNER.
10. TRAFFIC CONTROL DEVICES SHALL MEET THE REQUIREMENTS OF THE ALASKA DOT & PF. (DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES)
11. EXISTING OFFSITE DRAINAGE PATTERNS SHALL BE MAINTAINED DURING CONSTRUCTION.
12. COORDINATE WITH THE OWNER'S REPRESENTATIVE TO MINIMIZE THE EXTENT OF CLEARED AND DISTURBED AREAS IN CONFORMANCE WITH THE CONSTRUCTION PLANS.
13. DRAINAGE PIPES WITHIN THE PROJECT BOUNDARY SHALL BE CLEANED OF SAND, SILT, DEBRIS, ETC. DURING AND AT THE END OF CONSTRUCTION TO MAINTAIN POSITIVE DRAINAGE.
14. EXISTING SITE SECURITY MUST NOT BE COMPROMISED. THE CONTRACTOR SHALL COORDINATE REMOVAL OF EXISTING FENCING AND INSTALLATION OF FENCING TO MAINTAIN SECURITY.
15. THE CONTRACTOR IS RESPONSIBLE FOR AROUND-THE-CLOCK MAINTENANCE OF TRAFFIC BOTH ONSITE AND ON ADJOINING ROADWAYS DURING CONSTRUCTION. MAINTENANCE OF TRAFFIC AND ASSOCIATED NOTIFICATIONS SHALL COMPLY WITH ALASKA DOT & PF REQUIREMENTS.

SITE CLEARING

1. REMOVE TREES, SHRUBS, GRASS AND OTHER VEGETATION, IMPROVEMENTS, OR OBSTRUCTIONS, WITHIN AREA OF WORK, TO PERMIT INSTALLATION OF CONSTRUCTION. REMOVE SIMILAR ITEMS ELSEWHERE ON SITE OR PREMISES AS SPECIFICALLY INDICATED.
2. TOPSOIL IS DEFINED AS FRIABLE CLAY LOAM SURFACE SOIL, BROWN FIBROUS PEAT AS DEFINED IN THE GEOTECHNICAL ENGINEERING REPORT BY R & M CONSULTANTS, INC., DATED JUNE 15, 2009.
3. STRIP TOPSOIL TO DEPTHS ENCOUNTERED IN A MANNER TO PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL OR OTHER OBJECTIONABLE MATERIAL
4. CONTRACTOR SHALL BE RESPONSIBLE TO ADHERE TO THE PROVISIONS FOR PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE AS CONTAINED IN SECTION 107, PARAGRAPH 107.1.11 OF THE ALASKA DOT AND PUBLIC FACILITIES STANDARDS FOR HIGHWAY CONSTRUCTION, 2017.

EARTHWORK

1. THE PROJECT GEOTECHNICAL REPORT WAS PERFORMED BY R & M CONSULTANTS, INC., DATED JUNE 15, 2009. THE BORING LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS INDICATED, AND IT IS NOT WARRANTED THAT THEY ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES. THE CONTRACTOR SHALL COMPLY WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
2. COMPLY WITH APPLICABLE REQUIREMENTS OF NFPA 495 - EXPLOSIVE MATERIALS CODE.
3. SUBMIT MATERIAL TEST REPORTS, MATERIAL CERTIFICATES, AND COMPACTION TEST REPORTS, SIGNED AND SEALED BY AN ALASKA LICENSED PROFESSIONAL ENGINEER, TO THE ENGINEER OF RECORD & OWNER'S REPRESENTATIVE. NOT PERFORMED.
4. MATERIALS:

   SAND:

   DEFINED AS "BEACH SAND" ORIGINATING FROM THE BOAT BAY MATERIAL SITE.

   STRUCTURAL FILL:

   AGGREGATE BASE COURSE CONFORMING TO SECTION 703-2.03 OF THE ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION FOR D-1 BASE COURSE OR 8" MINUS PIT RUN. BOTH D-1 BASE COURSE AND 8" MINUS PIT RUN SHALL HAVE A MAXIMUM 6% BY WEIGHT PASSING THE NO. 200 SIEVE AND A MAXIMUM 65% BY WEIGHT PASSING THE NO. 4 SIEVE.
5. THE TERM "BEDROCK" AS USED IN THESE DRAWINGS SHALL MEAN THE MODERATELY WEATHERED ROCK OF THE NARROW CAPE FORMATION AS DEFINED IN TABLE 6 OF THE REFERENCED GEOTECHNICAL REPORT.
6. EXCAVATIONS BELOW SLABS-ON-GRADE AND SPREAD FOOTINGS SHALL BE MADE TO BEDROCK.
7. STRUCTURAL FILL TO BE USED BELOW SLABS AND LAUNCH PADS SHALL CONFORM TO THE DEFINITIONS AND REQUIREMENTS IN THE ABOVE-REFERENCED GEOTECHNICAL REPORT.
8. STRUCTURAL FILL SHALL BE COMPACTED TO 95 PERCENT MAXIMUM DENSITY PER ASTM D 1557 (MODIFIED PROCTOR TEST) IN 9 INCH MAXIMUM LIFTS.
9. SOIL MATERIAL CLASSIFICATION GROUPS GC, SC, ML, MH, CL, CH, OL, OH AND PT SHALL NOT BE USED UNDER STRUCTURES.
10. DEWATER SITE AS NECESSARY TO PREVENT SURFACE, SUBSURFACE OR GROUND WATER FROM ENTERING EXCAVATIONS.
11. COMPLY WITH LOCAL CODES, ORDINANCES, AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION TO MAINTAIN STABLE EXCAVATIONS.
12. PROVIDE APPROVED BORROW SOIL MATERIALS FROM OFF-SITE WHEN SUFFICIENT APPROVED SOIL MATERIALS ARE NOT AVAILABLE FROM EXCAVATIONS.
13. SILT FENCE: GEOTEXTILES FOR SEDIMENT CONTROL SHALL BE IN ACCORDANCE WITH SECTION 633 OF THE ADOT/PF STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.
14. PROTECT SUBGRADES AND FOUNDATION SOILS AGAINST FREEZING TEMPERATURES OR FROST. PROVIDE PROTECTIVE INSULATING MATERIALS.
15. PROVIDE EROSION CONTROL MEASURES TO PREVENT EROSION OR DISPLACEMENT OF SOILS AND DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND WALKWAYS.
16. PREVENT SURFACE WATER AND SUBSURFACE OR GROUNDWATER FROM ENTERING EXCAVATIONS, FROM PONDING ON PREPARED SUBGRADES, AND FROM FLOODING THE PROJECT SITE AND SURROUNDING AREA.
17. PROTECT SUBGRADES, EXPOSED BEDROCK, AND FOUNDATION SOILS FROM SOFTENING AND DAMAGE BY CONSTRUCTION ACTIVITIES, CONSTRUCTION EQUIPMENT, AND RAIN OR WATER ACCUMULATION. NECESSARY REMEDIAL WORK SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.
18. EXCAVATIONS FOR FOOTINGS AND FOUNDATIONS: DO NOT DISTURB BOTTOM OF EXCAVATION. EXCAVATE BY HAND TO FINAL GRADE AND COMPACT TO 95 PERCENT MAXIMUM DENSITY PER ASTM D 1557 BEFORE PLACING CONCRETE REINFORCEMENT. TRIM BOTTOMS TO REQUIRED LINES AND GRADES TO LEAVE SOLID BASE TO RECEIVE OTHER WORK.
19. EXCAVATION FOR UNDERGROUND TANKS, BASINS, AND MECHANICAL OR ELECTRICAL APPURTENANCES: EXCAVATE TO ELEVATIONS AND DIMENSIONS INDICATED WITHIN A TOLERANCE OF PLUS OR MINUS 0.10 FOOT. DO NOT DISTURB BOTTOM OF EXCAVATIONS INTENDED FOR BEARING SURFACE. COMPACT UNDERLYING SOIL TO 95 PERCENT MAXIMUM DENSITY PER ASTM D 1557 PRIOR TO STRUCTURE/EQUIPMENT INSTALLATION.
20. EXCAVATE UTILITY TRENCHES TO INDICATED SLOPES, LINES, DEPTHS AND INVERT ELEVATIONS SHOWN ON THE PROJECT PLANS. EXCAVATE TRENCHES TO ALLOW INSTALLATION OF TOP OF PIPE BELOW FROST LINE.
21. TRENCH BOTTOMS: EXCAVATE AND SHAPE TRENCH BOTTOMS TO PROVIDE UNIFORM BEARING AND SUPPORT OF PIPES AND CONDUIT. PROVIDE A MINIMUM 6" OF BEDDING SURROUNDING PIPING AND CONDUIT. SHAPE SUBGRADE TO PROVIDE CONTINUOUS SUPPORT FOR BELLS, JOINTS, AND BARRELS OR PIPES FOR JOINTS, FITTINGS AND BODIES OF CONDUIT. REMOVE STONES AND SHARP OBJECTS TO AVOID POINT LOADING.
   - 21.1. FOR PIPES AND CONDUIT 6 INCHES OR LARGER IN NOMINAL DIAMETER, SHAPE BOTTOM OF TRENCH TO SUPPORT BOTTOM 90 DEGREES OF PIPE CIRCUMFERENCE. FILL DEPRESSIONS WITH TAMPED SAND BACKFILL.
   - 21.2. WHERE ENCOUNTERING ROCK OR ANOTHER UNYIELDING BEARING SURFACE, CARRY TRENCH EXCAVATION 6 INCHES BELOW INVERT ELEVATION TO RECEIVE BEDDING COURSE.
   - 21.3. CONDUIT BEDDING SHALL BE COMPRISED OF BEACH SAND. OTHER UTILITIES/PIPING SHALL UTILIZE D-1 AGGREGATE BASE COURSE FOR BEDDING.
22. RECONSTRUCT SUBGRADES DAMAGED BY FREEZING TEMPERATURES, FROST, RAIN, ACCUMULATED WATER, OR CONSTRUCTION ACTIVITIES, AS DIRECTED BY THE OWNER'S REPRESENTATIVE, AT NO ADDITIONAL COST TO THE OWNER.
23. STOCKPILE EXCAVATED MATERIALS ACCEPTABLE FOR BACKFILL AND FILL SOIL MATERIALS, INCLUDING ACCEPTABLE BORROW MATERIALS. STOCKPILE SOIL MATERIALS WITHOUT INTERMIXING. PLACE, GRADE, AND SHAPE STOCKPILES TO DRAIN SURFACE WATER.
24. CONTRACTOR SHALL PROVIDE DETECTABLE WARNING TAPE MADE FROM ACID- AND ALKALI-RESISTANT POLYETHYLENE FILM TO MARK AND IDENTIFY UNDERGROUND UTILITIES. TAPE SHALL BE 6 INCHES WIDE AND 4 MILS THICK, CONTINUOUSLY INSCRIBED WITH A DESCRIPTION OF THE UTILITY, WITH A METALLIC CORE ENCASED IN A PROTECTIVE JACKET FOR CORROSION PROTECTION, DETECTABLE BY METAL DETECTOR WHEN TAPE IS BURIED UP TO 12" DEEP OVER NON FERROUS PIPE. PROVIDE TAPE COLORS TO MATCH UTILITIES AS FOLLOWS:
   - 24.1. RED:....................ELECTRIC
   - 24.2. ORANGE:...........FIBER AND OTHER COMMUNICATIONS
   - 24.3. BLUE:.................WATER SYSTEMS
25. UTILITY TRENCH BACKFILL: PLACE AND COMPACT INITIAL BACKFILL OF SATISFACTORY SOIL MATERIAL OR SUBBASE MATERIAL, FREE OF PARTICLES LARGER THAN 1 INCH, TO A HEIGHT OF 12 INCHES OVER THE UTILITY PIPE OR CONDUIT.
26. CAREFULLY COMPACT MATERIAL UNDER PIPE HAUNCHES AND BRING BACKFILL EVENLY UP ON BOTH SIDES AND ALONG THE FULL LENGTH OF UTILITY PIPING OR CONDUIT TO AVOID DAMAGE OR DISPLACEMENT OF UTILITY SYSTEM.
27. PLACE AND COMPACT FINAL BACKFILL OF SATISFACTORY SOIL MATERIAL TO FINAL SUBGRADE.
28. WHEN SUBGRADE OR EXISTING GROUND SURFACE TO RECEIVE FILL HAS A DENSITY LESS THAN THAT REQUIRED FOR FILL, BREAK UP GROUND SURFACE TO DEPTH REQUIRED, PULVERIZE, MOISTURE-CONDITION OR AERATE SOIL AND RECOMPACT TO REQUIRED DENSITY.
29. PROTECT NEWLY GRADED AREAS FROM TRAFFIC, FREEZING AND EROSION. KEEP FREE OF TRASH AND DEBRIS.
30. DISPOSAL: TRANSPORT SURPLUS SATISFACTORY SOIL TO DESIGNATED STORAGE ON THE OWNER'S PROPERTY. STOCKPILE OR SPREAD SOIL AS DIRECTED BY THE OWNER'S REPRESENTATIVE. REMOVE WASTE MATERIAL, INCLUDING UNSATISFACTORY SOIL, TRASH AND DEBRIS AND LEGALLY DISPOSE OF IT OFF THE OWNER'S PROPERTY.
31. EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE PORTIONS OF SECTION 203 OF THE ALASKA DOT AND PUBLIC FACILITIES STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

SURVEY

1. EXISTING SITE CONDITIONS SHOWN ARE BASED ON A TOPOGRAPHIC SURVEY BY WILLMAN LAND SURVEYING, DATED 04-13-23. THE CONTRACTOR SHALL FIELD VERIFY EXISTING SITE INFORMATION SHOWN ON THE SURVEY PRIOR TO CONSTRUCTION.
   - a. VERTICAL CONTROL: ELEVATIONS ARE BASED ON NAVD 88 DATUM.
   - b. HORIZONTAL CONTROL: BASED UPON NAD83 ALASKA STATE PLANE, ZONE 5, US FOOT.
2. THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING HORIZONTAL AND VERTICAL CONTROL FOR SITE CONSTRUCTION AND SHALL HIRE A SURVEYOR LICENSED IN THE STATE OF ALASKA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF SURVEY MONUMENTATION. DISTURBED SURVEY MONUMENTATION SHALL BE REPLACED BY A SURVEYOR LICENSED IN THE STATE OF ALASKA AT THE CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS INCLUDING THE SIZES, LOCATIONS AND ELEVATIONS OF ITEMS THAT AFFECT THE WORK. PRIOR TO THE START OF WORK, REPORT VARIATIONS TO THE OWNER'S REPRESENTATIVE.

UTILITIES

1. PROVIDE THE FOLLOWING TYPES OF PIPES AND TUBES, AS APPLICABLE.
   - a. DUCTILE-IRON PIPE: AWWA C151, CLASSES 150, 200 AND 250.
   - b. LINING: AWWA C104, CEMENT MORTAR, SEAL COATED.
   - c. GASKETS, GLANDS, BOLTS AND NUTS: AWWA C110. FUEL RESISTANT TYPE.
   - d. PIPE MARKING: NSF 14, "NSF-PW" OR "NSF-PVC CTO ONLY."
2. GATE VALVES SHALL BE NONRISING STEM, AWWA C509, RESILIENT SEATED; BRONZE STEM, CAST-IRON OR DUCTILE-IRON BODY AND BONNET, STEM NUT, 200-PSIG WORKING PRESSURE, FLANGED ENDS.
3. DUCTILE-IRON PIPE SHALL BE INSTALLED ACCORDING TO AWWA C600 AND AWWA M41.
4. MAINTAIN A MINIMUM 5' OF COVER ABOVE DUCTILE IRON PIPING

CONCRETE

1. CONCRETE WORK SHALL COMPLY WITH PROVISIONS OF ACI 318-19, ACI 315-18, AND ACI 301-16, AND THE INTERNATIONAL BUILDING CODE 2021.
2. CONCRETE SHALL BE NORMAL WEIGHT CONCRETE EXCEPT AS NOTED. ALL CONCRETE STRENGTHS (AT 28 DAYS) SHALL BE AS FOLLOWS:

   FOUNDATIONS & SLABS ON GRADE ------------------------ 4500 PSI
3. CALCIUM CHLORIDE SHALL NOT BE USED IN ANY FORM.
4. CONCRETE PROTECTION FOR REINFORCING BARS:

STRUCTURAL ELEMENT	CLEAR COVER
SLABS (CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH)	3 INCHES

REINFORCING STEEL SHALL BE PLACED WITHIN TOLERANCES SPECIFIED IN SECTIONS 7.5.2.1 AND 7.5.3.3 IN ACI 315-18.

5. DEFORMED REBAR (TYP UNO): ------------------------ FY = 60 KSI (A615, GRADE 60)

   WELDABLE DEFORMED REBAR (WHERE INDICATED): ------------------ FY = 60 KSI (A706, GRADE 60)

   REINFORCING LAP SPLICE TABLE:
6. TOP BARS ARE HORIZONTAL REINFORCEMENT PLACED SO THAT MORE THAN 12" OF FRESH CONCRETE IS CAST BELOW THE BAR.

LAP SPLICE LENGTH (4500 PSI CONCRETE) - NORMAL WEIGHT, NO EPOXY

	LEAST CONCRETE COVER AT BAR	BAR SIZES (#) 3	4	5	6	7	8	9	10	11
TOP BARS	3"	15"	20"	24"	29"	42"	48"	55"	65"	80"
TOP BARS	2"	15"	20"	24"	29"	46"	61"	77"	97"	120"
TOP BARS	1 1/2"	15"	20"	25"	36"	62"	81"	102"	130"	160"
TOP BARS	3/4"	18"	32"	50"	73"	106"	121"	136"	153"	170"
OTHER	3"	12"	15"	19"	23"	33"	37"	42"	50"	62"
OTHER	2"	12"	15"	19"	23"	36"	47"	59"	75"	92"
OTHER	1 1/2"	12"	15"	20"	28"	48"	62"	79"	100"	123"
OTHER	3/4"	14"	25"	39"	56"	81"	93"	105"	118"	131"

7. IT IS PERMITTED TO SUBSTITUTE MECHANICAL SPLICES (MEETING THE REQUIREMENTS OF SECTION 25.5.7 IN ACI 318-19) FOR LAP SPLICES AT NO ADDITIONAL COST. MECHANICAL SPLICES SHALL DEVELOP 125% (MIN) OF THE YIELD STRENGTH OF THE REBAR IN TENSION OR COMPRESSION.
8. REINFORCEMENT SHALL BE BENT COLD. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT UNLESS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. HOOKS SHALL BE ACI STANDARD HOOKS IN ACCORDANCE WITH CHAPTER 7 IN ACI 318. SEE REQUIRED EMBEDMENT CHARTS BELOW.

DEFORMED REBAR TYPE	MINIMUM INSIDE DIAMETER OF BEND #3	#4	#5	#6	#7	#8	#9	#10	#11
STIRRUPS & TIES	1.5"	2"	2.5"	NA	NA	NA	NA	NA	NA
OTHER BARS	2.25"	3"	3.75"	4.5"	5.25"	6"	9"	10.25"	11.5"

DESCRIPTION	ACI MINIMUM STANDARD HOOK EXTENSION LENGTHS #3	#4	#5	#6	#7	#8	#9	#10	#11
STIRRUPS & TIES 90° BEND PLUS	2.5"	3"	3.75"	NA	NA	NA	NA	NA	NA
STIRRUPS & TIES 135° BEND PLUS	2.5"	3"	3.75"	NA	NA	NA	NA	NA	NA
OTHER BARS 90° BEND PLUS	4.5"	6"	7.5"	9"	10.5"	12"	13.75"	15.5"	17"
OTHER BARS 180° BEND PLUS	2.5"	2.5"	2.5"	3"	3.5"	4"	4.75"	5.25"	5.75"

REQUIRED EMBEDMENT DEPTH OF STANDARD ACI HOOKS INTO CONCRETE

CONCRETE TYPE		BAR SIZES (#) 3	4	5	6	7	8	9	10	11
NORMAL WEIGHT	4500 PSI	8"	10"	12"	15"	17"	19"	22"	25"	27"

9. REINFORCING FOR CONTINUOUS FOUNDATIONS SHALL BE CONTINUOUS AT CORNERS AND INTERSECTIONS. PROVIDE CORNER LAP BARS AT CORNERS AND INTERSECTIONS. CORNER BARS SHALL HAVE LAP LENGTHS EQUAL TO THE STRAIGHT BAR LAP LENGTHS ON BOTH ENDS OF THE CORNER BARS. WHERE CONTINUOUS FOUNDATIONS INTERSECT COLUMN FOUNDATIONS, REBAR FROM CONTINUOUS FOUNDATION SHALL BE CONTINUOUS THROUGH 6'-0" AND SMALLER COLUMN FOUNDATIONS, AND SHALL EITHER BE CONTINUOUS THROUGH, OR EXTEND A MINIMUM OF 2'-6" (BUT NOT LESS THAN THE STRAIGHT BAR DEVELOPMENT LENGTH) INTO COLUMN FOUNDATIONS LARGER THAN 6'-0" WIDE.
10. AT THE TIME CONCRETE IS PLACED, REINFORCEMENT SHALL BE FREE FROM MUD, OIL OR OTHER NONMETALLIC COATINGS THAT DECREASE BOND.

STRUCTURAL STEEL:

1. DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE AISC STEEL CONSTRUCTION MANUAL, 14TH EDITION. THE STRUCTURAL FRAME FABRICATOR SHALL BE AISC CERTIFIED FOR STEEL BUILDING STRUCTURES (STD) OR INCLUDE, AT THE FABRICATORS EXPENSE, INSPECTION SERVICES NECESSARY TO INSURE THAT THE SHOP PROCEDURES AND FABRICATION COMPLIES WITH DRAWINGS AND SPECIFICATIONS. SPECIFICALLY, BOLTED AND WELDED CONNECTIONS FOR TRUSSES, MOMENT CONNECTIONS AND VERTICAL BRACED FRAME COMPONENTS SHALL BE INSPECTED AND TESTED BY A CERTIFIED TESTING AGENCY RETAINED BY THE FABRICATOR. COMPLIANCE REPORTS SHALL BE SENT TO THE STRUCTURAL ENGINEER OF RECORD.
2. PROVIDE 3" MINIMUM CONCRETE COVER AROUND STEEL BELOW GRADE OR COATED WITH ASPHALTIC OR BITUMASTIC PAINT.
3. STRUCTURAL STEEL SHALL HAVE THE FOLLOWING ASTM SPECIFICATION AND YIELD STRENGTHS UNO:

   PLATE STEEL ———————————————— FY = 36 KSI (A36)
4. DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO THE LATEST EDITION OF THE AISC STEEL CONSTRUCTION MANUAL.
5. WELDING ELECTRODES SHALL BE E70XX, UNO. WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS AND SHALL CONFORM TO AWS D1.1/D1.1M STRUCTURAL WELDING CODE - STEEL, LATEST EDITION.
6. FILLET WELDS SHALL BE 3/16" UNO, BUT NOT LESS THAN AISC MINIMUM, SEE CHART BELOW:

MINIMUM SIZE FOR FILLET WELDS

MATERIAL THICKNESS OF THINNER PART JOINED (INCHES)	MINIMUM SIZE OF FILLET WELD (INCHES)
TO 1/4" INCLUSIVE	1/8"
OVER 1/4" TO 1/2"	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4"	5/16"

7. THE FABRICATOR SHALL FURNISH A STRUCTURAL SUBMITTAL WHICH SHALL BE CHECKED BY THE CONTRACTOR FOR COMPLETENESS AND CONTENT PRIOR TO SUBMITTAL TO THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW. THE SUBMITTAL SHOULD INCLUDE FABRICATION AND ERECTION DRAWINGS. FABRICATION SHALL NOT COMMENCE UNTIL THIS REVIEW IS COMPLETED.
8. CUTS, HOLES AND THEIR REINFORCEMENT (REQUIRED BY OTHER TRADES) SHALL BE SHOWN ON THE STRUCTURAL STEEL SHOP DRAWINGS AND SHALL BE MADE IN THE SHOP. FIELD BURNING OF HOLES & CUTS IN STRUCTURAL STEEL SHALL NOT BE PERMITTED EXCEPT BY WRITTEN PERMISSION FROM THE STRUCTURAL ENGINEER OF RECORD, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
9. SIZE AND SHAPE OF STRUCTURAL STEEL SHALL BE AS SHOWN ON DRAWINGS. SUBSTITUTES MAY BE USED IF PRE-APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD.
10. WELDING WORK SHALL FOLLOW INFORMATION IN AN APPROVED WELDING PROCEDURE SPECIFICATION SUPPORTED BY A PRE-QUALIFICATION RECORD, FOLLOWING REQUIREMENTS IN THE CURRENT BUILDING CODE ADOPTED VERSION OF THE AMERICAN WELDING SOCIETY (AWS) D1.1 - STRUCTURAL WELDING CODE STEEL. WELDING WORK SHALL BE PERFORMED BY WELDERS CERTIFIED TO PERFORM WELDING WORK IN ACCORDANCE WITH THE GOVERNING WPS.
11. STEEL SHALL BE HOT DIPPED GALVANIZED

LEGEND

DESCRIPTION	NEW	EXISTING
STORM DRAIN		
POWER/COMMUNICATIONS VAULT		
CONTOUR	150	165
SPOT ELEVATION	155.50	
FENCE		
SILT FENCE	SF	
DEMOLITION		
STOCK PILE		
CONCRETE		
AGGREGATE SURFACE		
RIP RAP		

ABBREVIATIONS

NOTE: ALL ABBREVIATIONS SHOWN MAY NOT APPEAR IN THE DRAWINGS.

AAC	ALASKA AEROSPACE CORPORATION
ADD	ADDITIVE, ADDENDUM
ADJ	ADJACENT
ADOT/PF	ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
AFUB	ANTENNA FIELD UTILITY BUILDING
ALT	ALTERNATE
AL	ALUMINUM
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
ASPH CONC	ASPHALTIC CONCRETE
ASSY	ASSEMBLY
@	AT
AVG	AVERAGE
BL	BASE LINE
BRG	BEARING
BM	BENCH MARK
BH	BORE HOLE
BIT	BITUMINOUS
BLK	BLOCK
BO	BLOW OFF
BOT	BOTTOM
BLDG	BUILDING
D	CENTRAL ANGLE
CL	CENTERLINE
CLF	CHAIN LINK FENCE
CV	CHECK VALVE
CHD	CHORD
CO	CLEANOUT, CHANGE ORDER
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CJ	CONSTRUCTION JOINT
CONT	CONTINUOUS
CONTR	CONTRACTOR
COTR	CONTRACTING OFFICERS' TECHNICAL REPRESENTATIVE
COORD	COORDINATE
CPEP	CORRUGATED POLYETHYLENE PIPE
CU FT	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CU IN	CUBIC INCH
CY	CUBIC YARD
CRV	CURVE
DEPT	DEPARTMENT
DET	DETAIL
DIAG	DIAGONAL
DIA	DIAMETER
DIM	DIMENSION
DIV	DIVISION
DBL	DOUBLE
DS	DOWNSPOUT
DWG	DRAWING
DIP	DUCTILE IRON PIPE
DOT	DEPARTMENT OF TRANSPORTATION
EA	EACH
E	EAST
ELEC	ELECTRIC
EL	ELEVATION
EQUIP	EQUIPMENT
EXIST	EXISTING
EJ	EXPANSION JOINT
FT	FEET
FPS	FEET PER SECOND
FF	FINISH FLOOR
FHA	FIRE HYDRANT ASSEMBLY
FLXFL	FLANGED JOINT BY FLANGED JOINT
FLXPE	FLANGED JOINT BY PLAIN END
FLR	FLOOR
FL	FLOW LINE
FTG	FOOTING
FM	FORCE MAIN
FDN	FOUNDATION
FUT	FUTURE
GCI	GCI COMMUNICATION CORPORATION
GPD	GALLONS PER DAY
GPS	GALLONS PER SECOND
GALV	GALVANIZED
GIP	GALVANIZED IRON PIPE
GSP	GALVANIZED STEEL
GV	GATE VALVE
GEN	GENERAL
GRD	GRADE
GND	GROUND
HDCP	HANDICAP
HD	HEAD
HDPE	HIGH DENSITY POLYETHYLENE
HDR	HEADER
HP	HIGH POINT, HORSEPOWER
HORIZ	HORIZONTAL
HB	HOSE BIB
ID	INSIDE DIAMETER
IN	INCH
INFO	INFORMATION
INV	INVERT
IPF	INTEGRATION AND PROCESSING FACILITY
IW	INDUSTRIAL WASTE
JT	JOINT
JB	JUNCTION BOX
KEA	KODIAK ELECTRIC ASSOCIATION
LAT	LATITUDE
L	LENGTH
LONG	LONGITUDE
LF	LINEAR FEET
LP1	LAUNCH PAD 1
LP2	LAUNCH PAD 2 (SUBORBITAL)
LP3	LAUNCH PAD 3
LP	LOW POINT
LSA	LIFE SUPPORT AREA
MAINT	MAINTENANCE
MSF	MAINTENANCE SUPPORT FACILITY
MFR	MANUFACTURER
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MJxMJ	MECHANICAL JOINT BY MECHANICAL JOINT
MJxPE	MECHANICAL JOINT BY PLAIN END
MIN	MINIMUM
MISC	MISCELLANEOUS
N	NORTH
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NO	NUMBER
NWI	NATIONAL WETLANDS INVENTORY
OC	ON CENTER
OPNG	OPENING
ORIG	ORIGINAL
OD	OUTSIDE DIAMETER
OH	OVERHEAD
PVMT	PAVEMENT
PPF	PAYLOAD PROCESSING FACILITY
PERF	PERFORATED
PExPE	PLAIN END BY PLAIN END
PNT	POINT
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENCY
PVI	POINT OF VERTICAL INTERSECTION
PVC	POLYVINYL CHLORIDE PIPE
PIV	POST INDICATOR VALVE
PSCA	PACIFIC SPACEPORT COMPLEX ALASKA
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
P	POWER
PP	POWER POLE
PCV	PRESSURE CONTROL VALVE
R	RADIUS
RCC	RANGE CONTROL CENTER
RED	REDUCER
REF	REFERENCE, REFUSAL
REINF	REINFORCED
REQ'D	REQUIRED
REV	REVISED, REVISION
RD	ROAD
RMSF	ROCKET MOTOR STORAGE FACILITY
RREB	RANGE RADIO EQUIPMENT BUILDING
RSF	ROCKET STAGING FACILITY
RT	RIGHT
SAN	SANITARY
SS	SANITARY SEWER
SCAT	SPACECRAFT AND ASSEMBLIES TRANSFER STRUCTURE
SCHED	SCHEDULE
SECT	SECTION
SH	SHEET
SLP	SLOPE
S	SOUTH
SPEC	SPECIFICATION
SQ	SQUARE
SF	SQUARE FEET
STA	STATION
STD	STANDARD
SQ IN	SQUARE INCH
STL	STEEL
STOR	STORAGE
SD	STORM DRAIN
SURF	SURFACE
SYM	SYMBOL
SYS	SYSTEM
TAN	TANGENT
TEL	TELEPHONE
TEMP	TEMPORARY
THK	THICK
THRU	THROUGH
TYP	TYPICAL
UGE	UNDERGROUND ELECTRICAL
UNO	UNLESS NOTED OTHERWISE
USCG	UNITED STATES COAST GUARD
UTIL	UTILITY
VERT	VERTICAL
VOL	VOLUME
VPF	VEHICLE PROCESSING FACILITY
W	WATER
WM	WATER METER, WATER MAIN
W/	WITH
W/O	WITHOUT

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ALASKA AEROSPACE CORPORATION

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ARCH/ENGR OF RECORD
BRPH

DESIGNED BY
BRPH

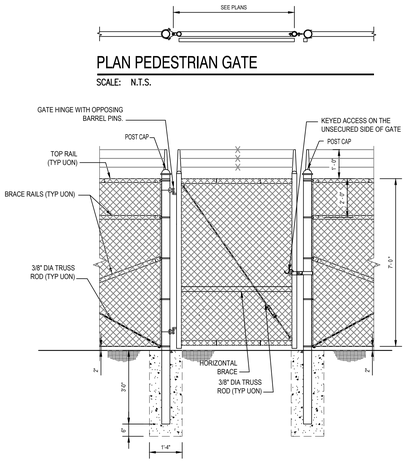
DRAWN BY
BRPH

PROJECT NUMBER
C06885.030.00

DATE
05/09/2024

TITLE
CIVIL GENERAL NOTES, LEGEND & ABBREVIATIONS

DRAWING NO.
C-001



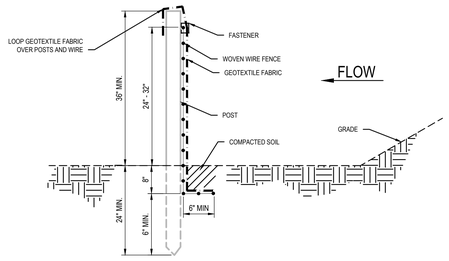
PLAN PEDESTRIAN GATE

SCALE: N.T.S.

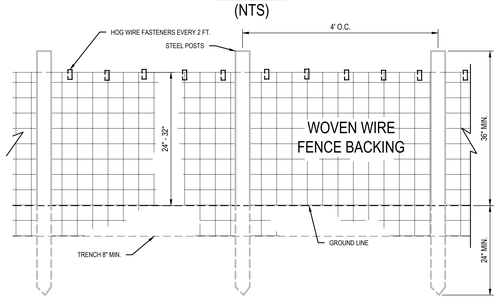
7 PEDESTRIAN GATE DETAIL

C-141 C-501 N.T.S.

NOTE: STANDARD LOCKABLE GATE HASP PROVIDED.



SIDE VIEW
(NTS)



FRONT VIEW
(NTS)

NOTES:
1. WOVEN WIRE FENCE SHALL BE A MINIMUM 14 GAUGE, 6" x 6"
2. WOVEN WIRE FENCING SHALL BE FASTENED TO THE UPSTREAM SIDE OF POSTS BY STAPLES OR WIRE TIES.
3. GEOTEXTILE FABRIC SHALL BE SECURELY FASTENED TO THE WOVEN WIRE FENCING.
4. MACHINE TRENCHED GEOTEXTILE SHALL BE TRENCHED VERTICAL AT LEAST 8" DEEP.

8 SILT FENCING DETAIL

C-101 C-500 N.T.S.

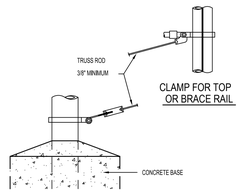
NOTE: BY PHASE 1 CIVIL WORKS CONTRACTOR.

CHAIN LINK FENCING NOTES

1. FABRIC: THE STANDARD FENCE FABRIC SHALL BE GALVANIZED ZINC WIRE CHAIN LINK WITH MESH OPENINGS NOT LARGER THAN TWO INCHES PER SIDE AND A TWISTED AND BARBED SELVAGE AT TOP AND BOTTOM.
2. FABRIC TIES: ONLY 11-GAUGE STEEL TIES SHALL BE USED. COATING OR PLATING WILL BE ELECTROLYTICALLY COMPATIBLE WITH THE FENCE FABRIC TO INHIBIT CORROSION.
3. REINFORCEMENT: TENSION WIRES SHALL BE INSTALLED AND INTERWOVEN (OR AFFIXED WITH FABRIC TIES) ALONG THE TOP & BOTTOM OF THE FENCE FOR STABILIZATION OF THE FENCE FABRIC.
4. FENCE HEIGHT: CHAIN LINK FABRIC SHALL BE 7' HIGH WITH AN ADDITIONAL 1' IN HEIGHT COMPOSED OF 3 STRANDS OF BARBED WIRE.
5. GROUND CLEARANCE: BOTTOM OF THE FENCE FABRIC SHALL BE WITHIN TWO INCHES OF FIRM GRADE.
6. TOP GUARDS: A TOP GUARD IS AN OVERHANG OF BARBED WIRED ALONG THE TOP OF A FENCE, FACING OUTWARD (AWAY FROM PROTECTED SITE) AND UPWARD AT APPROX. 45 ANGLE. TOP GUARD SUPPORTING ARMS WILL BE PERMANENTLY AFFIXED TO THE TOP OF FENCE POSTS TO INCREASE THE OVERALL HEIGHT OF THE FENCE AT LEAST 1 FOOT. THREE STRANDS OF 12-GAUGE BARBED WIRE, EQUALLY SPACED, SHALL BE INSTALLED ON THE SUPPORTING ARMS.
7. FENCE POSTS: SHALL BE ASTM F1043 OR F1083 ROUND PIPE AND SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS. FENCE POST SPACING AND SIZE (DIAMETER) SHALL BE DETERMINED IN ACCORDANCE WITH CHAIN LINK FENCE MANUFACTURERS' INSTITUTE (WLG 2445). SPACING SHALL NOT EXCEED 10'-0" OC. SIZE (DIAMETER) SHALL NOT BE LESS THAN THAT SPECIFIED.

PLAN AT BANDS

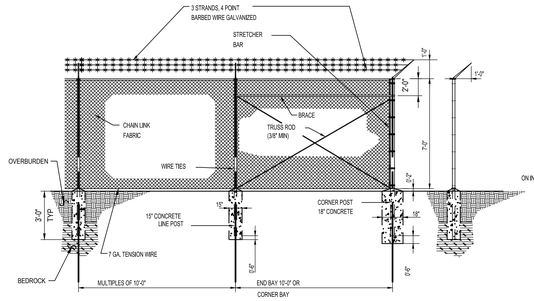
BAND FOR WIRE STRETCHING



CLAMP FOR TOP OR BRACE RAIL

TRUSS ROD AND BAND

NOTE:
FABRIC TIES, CLAMPS OR BANDS MUST COMPLETELY ENCIRCLE POST OR COLUMN AND ENDS SHALL BE SECURELY FASTENED TOGETHER

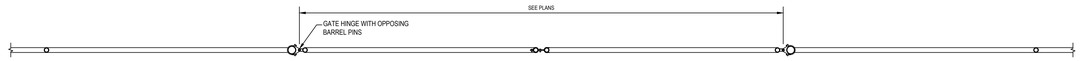


NOTES:
1. CONCRETE SHALL BE 4,500 PSI COMPRESSIVE STRENGTH.
2. GALVANIZED STEEL WOVEN WIRE FABRIC TO BE STRETCHED TAUT WITH STRETCHER BARS & STRAPS AND FASTENED TOP & BOTTOM AND AT LINE POSTS WITH GALV PIG RING TIES.
3. INSTALL TEMPORARY GUYS OR BRACES AS REQUIRED TO HOLD POSTS IN PROPER POSITION UNTIL CONCRETE HAS SET SUFFICIENTLY TO HOLD POSTS.

CHAIN LINK FENCE W/ BARBED WIRE

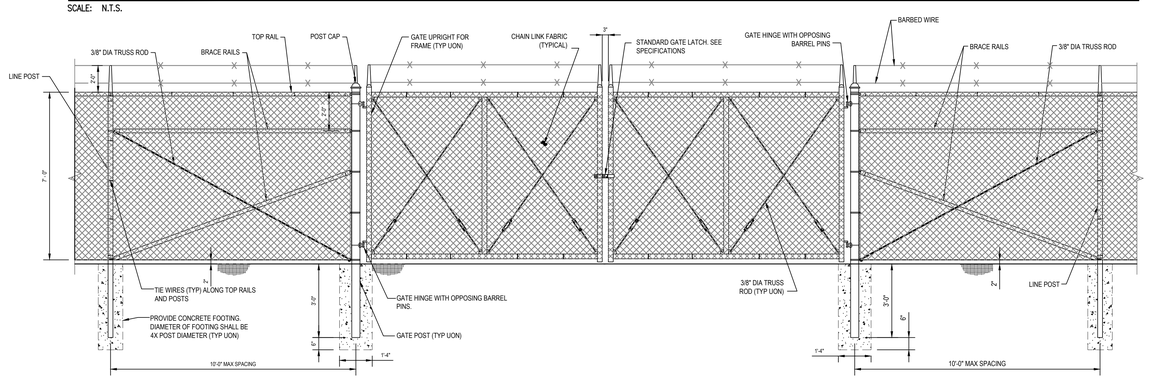
5 CHAIN LINK FENCING DETAILS

C-141 C-501 N.T.S.



PLAN - DOUBLE SWING GATE

SCALE: N.T.S.



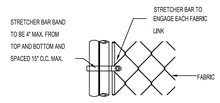
TYPICAL DOUBLE SWING GATE ELEVATION

SCALE: N.T.S.

NOTES:
1. FOR STRUCTURAL PERFORMANCE OF CHAIN LINK FENCE, FOUNDATIONS AND GATE FRAMEWORKS, CONTRACTOR SHALL PROVIDE SHOP DRAWINGS SIGNED AND SEALED BY AN ALASKA REGISTERED P.E., NOT PERFORMED.

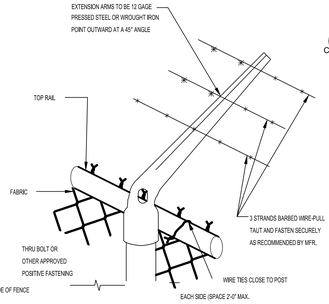
6 DOUBLE LEAF SWING GATE DETAIL

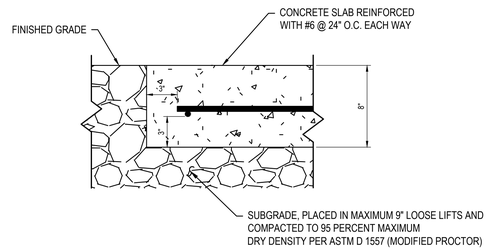
C-141 C-501 N.T.S.



DETAIL - END OR GATE POST

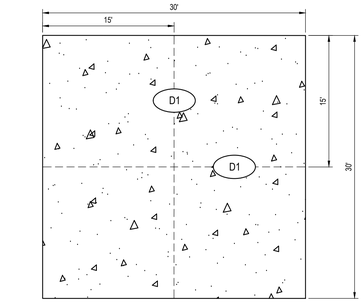
WIRE TIES FOR POSTS





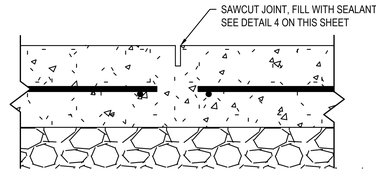
1 PROPELLANT STORAGE SLAB DETAIL

C-141 C-501 N.T.S.



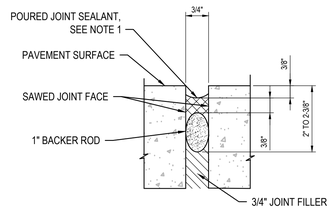
2 FUEL PAD JOINTING PLAN (NIC, FUTURE)

C-141 C-501 N.T.S.



3 PLANE OF WEAKNESS JOINT (D1) DETAIL (NIC, FUTURE)

C-141 C-501 N.T.S.



NOTES:
1. JOINT SEALANT SHALL BE SIKAFLEX-2C BY SIKA, CEILCOTE CJ3 BY INTERNATIONAL, OR EQUIVALENT.

4 JOINT SEAL DETAIL (NIC, FUTURE)

C-501 C-501 N.T.S.

THIS WORK EXCEPT CONCRETE WAS PERFORMED UNDER A SEPARATE FENCING CONTRACT, NOT PART OF THE PHASE 1 CIVIL WORKS.

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REV	DATE	DESCRIPTION

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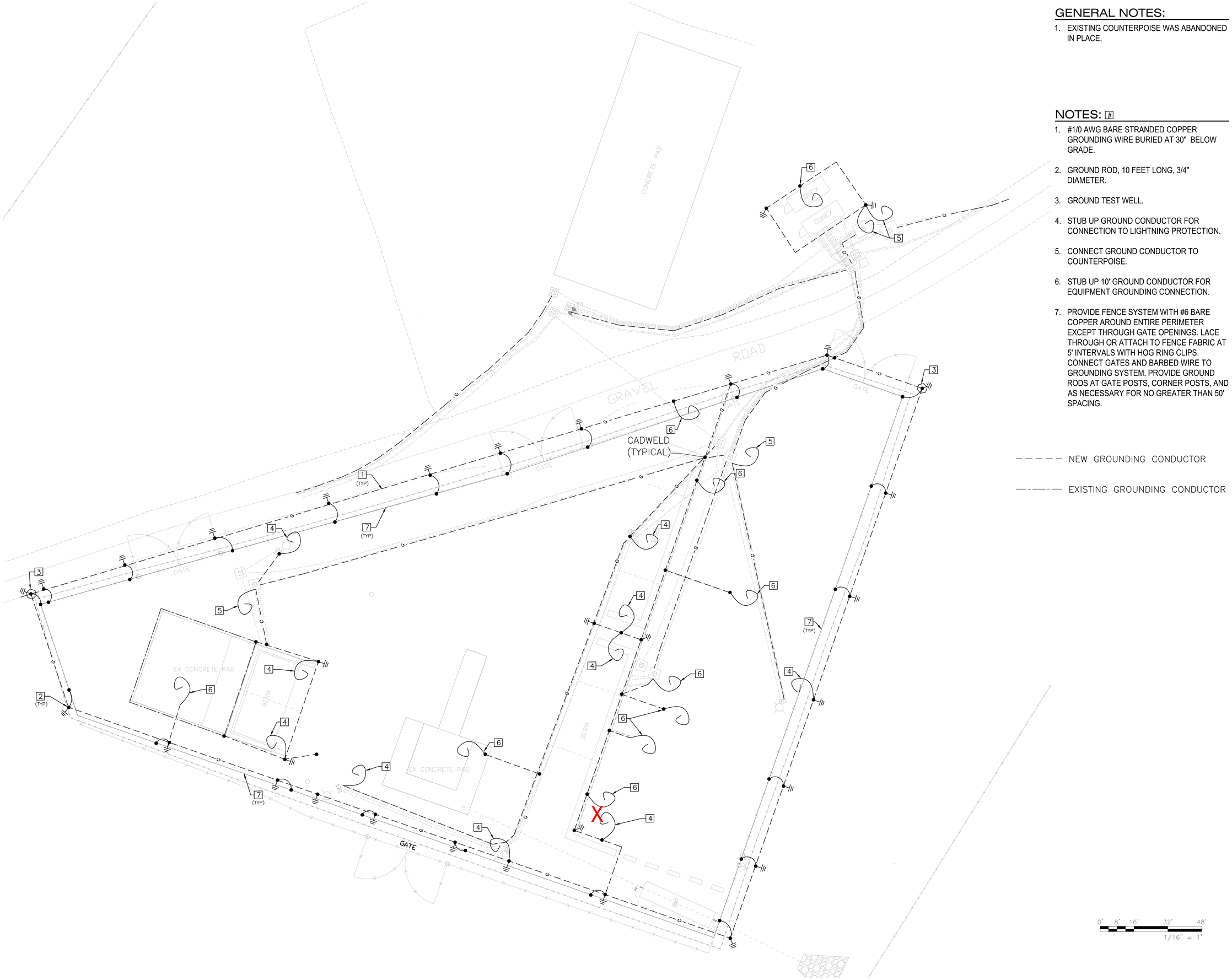
C-501

P:\C06885.030.00_AAC - AREA 3 PAD C REBUILD - ENG SUPPORT\SHEETS\C-501.DWG
9/17/2024 11:59 AM



GENERAL NOTES:

1. EXISTING COUNTERPOISE WAS ABANDONED IN PLACE.

NOTES:

1. #1/0 AWG BARE STRANDED COPPER GROUNDING WIRE BURIED AT 30" BELOW GRADE.
2. GROUND ROD, 10 FEET LONG, 3/4" DIAMETER.
3. GROUND TEST WELL.
4. STUB UP GROUND CONDUCTOR FOR CONNECTION TO LIGHTNING PROTECTION.
5. CONNECT GROUND CONDUCTOR TO COUNTERPOISE.
6. STUB UP 10' GROUND CONDUCTOR FOR EQUIPMENT GROUNDING CONNECTION.
7. PROVIDE FENCE SYSTEM WITH #6 BARE COPPER AROUND ENTIRE PERIMETER EXCEPT THROUGH GATE OPENINGS. LACE THROUGH OR ATTACH TO FENCE FABRIC AT 5' INTERVALS WITH HOG RING CLIPS. CONNECT GATES AND BARBED WIRE TO GROUNDING SYSTEM. PROVIDE GROUND RODS AT GATE POSTS, CORNER POSTS, AND AS NECESSARY FOR NO GREATER THAN 50' SPACING.

NEW GROUNDING CONDUCTOR

EXISTING GROUNDING CONDUCTOR

0' 8' 16' 32' 48'
1/16" = 1'

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ARCH/ENGR OF RECORD
SUSAN M. SCHILLER
PE 101052

DESIGNED BY
SCHILLER
DRAWN BY
BARRIE
PROJECT NUMBER
C06885.030.00
DATE
05/09/2024
TITLE
SITE GROUNDING PLAN

DRAWING NO.
E-101