ALASKA RAILROAD CORPORATION
ITG FTTB
SEWARD ALASKA
P.O.# 117533

PROJECT LOCATION:
SEWARD

ADDED BORES C-3.0 & C-4.0 AND TABBING UPDATED

REVISED MANHOLE MANUFACTURER G-2.0 & G-2.1
G-3.0 TO G-6.0
C-1.0 TO C-4.0

DRAWING INDEX

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ALASKA RAILROAD CORPORATION
TempTel, Inc.
A Subsidiary of Mid-State Consultants, Inc.
1. Call 1-800-478-3123 for location of other utilities prior to digging. Caution: buried power, gas, telephone, communication, and highway control cables. Known to exist in the area to be excavated. Numerous existing utilities may exist along the proposed FOC route. Existing utilities have not been delineated on the plan sheets due to the unavailability of record information. Verify location by obtaining utility locate services prior to beginning construction. Coordinate with field engineer as necessary. Conduits between proposed FOC alignment and existing utilities. Use extreme caution when required. Pothole prior to commencing work.

2. Verify horizontal and vertical locations of all utilities encountered during construction, record locations and changes to utilities in survey notes and on as-built drawings.

3. Conduit shall be cut off one foot inside each handhole. Ends of the conduit shall be sealed with a waterproof blanket plug which can be removed. The conduit shall be installed centered installed under the underground utility marking tape. The contractor shall obtain the approval of the engineer prior to excavating. If allowed, the contractor shall install a set of red line markup drawings on the site. C.O.D. approval shall be obtained prior to increasing wetland impact. Conduit splices between handholes shall be connected and sealed with couplers and shrink wrap.

4. Plowable underground utility marking tape shall be “safety alert orange”. 5.0 MIL, thick with a tensile strength of 28 LBS (5,000PSI).

5. One cable of 24 strand single mode fiber optic cable shall be installed in the 1 1/2” H.D.P.E. conduit. FOC shall be located in one continuous layout in a single spool. 100 feet of FOC shall be coiled in each intermediate handhole as specified on plans.

6. Verify that quality assurance has made O.T.D.R. readings on reel before taking to the field if required.

7. During O.T.D.R. operations use caution to ensure that minimum radius is not violated. That kinking does not occur, and that the cable is not crushed. Do not leave ground laid out. Unattended bending radius of fiber optic cable varies per type of fiber optic cable.

8. Trench for the duct shall be excavated or plowed with a minimum of 42 inches cover provided over the top of the duct. Underground utility marking tape shall be installed approximately one foot below the ground surface ( 8 " inches). When rock is encountered it shall be sawn or ripped to a depth of 16 inches and a 2 inch slab of sand bedding shall be installed. Sand back fill shall be placed over the duct. Road and railroad crossings, and unstable areas will require a minimum of 48 inches of cover from the duct to the toe of embankment. See drawings and details for additional requirements.

9. At all trench road crossings, the excavated native soil may be placed back in the trench as back fill in 6 inch lifts, compacted to 95% minimum of the maximum standard density, unless directed otherwise by the engineer. Trenched excavations outside of road prisms shall be back filled with native material in 12 inch lifts compacted to approximately 95% relative density. Do not drop back fill onto the duct. Silt conduit shall be installed at road crossings. See drawings and details for additional remarks.

10. Boring shall be done by crew and equipment approved by the engineer. The bore shall not descend at a rate of more than 30 degrees. The contractor shall follow all applicable A.D.E.C. regulations on boring and the use of bentonite. Bore occurring under road or railroad prisms shall be 4 feet below the ditch (TOE of embankment) bottom for road crossings. Bore of existing driveways/roads of 50 feet or less may be done with a “hole hog” and do not require hand holes at their termination points. Bore under rivers shall be min. 10’ below scour line.

11. Cable bores shall be routed below existing utility lines. All utility lines located shall be requested by the contractor, and the depth of the lines shall be determined by phoebling or from information obtained from the local agencies.

12. Sign and flag work locations within or adjacent to highway/roadway ROW in accordance with state & borough safety procedures. Traffic control & safety plans will have to be prepared by the contractor & submitted to ADEC for approval prior to start of construction.

13. The wrap F.O.C. cable designation tags in each hand hole over cable. Minimum 1 per hole under clamp in aerial build.

14. Conduit ends must be capped at all times, with blank plugs.

15. Return all excavated areas or areas disturbed by construction back to as good or better than original condition. Do not disturb lot lines or survey markers. All survey stakes & lathe placed by the contractor are to be removed and cleaned up prior to completion of construction.

16. All areas disturbed by construction activity will have to be reseded.
SECTION BM92 1.25
BURIED CONDUIT ASSEMBLY UNITS

CONSISTS OF ONE (1) FOOT (.305 M) OF BURIED CONDUIT PLAINED OR TRENCHED IN PLACE. THIS UNIT INCLUDES ALL MATERIAL AND LABOR FOR INSTALLING, RIPPING (WHERE NECESSARY AS DETERMINED BY THE ENGINEER), AND BACKFILLING, EXCEPT AS SPECIFICALLY PROVIDED FOR IN OTHER UNITS. WHERE THE CABLE IS PLAINED, RIPPing MAY BE NECESSARY TO PROVIDE A RIPPED PATH TO ALLOW PLACEMENT AT THE REQUIRED DEPTH. ANY RIPPING MORE THAN ONE RIPPED PASS THIS UNIT ALSO CONSISTS OF SETTING UP THE CONDUIT WITHIN THE MANHOLE AND HANDHOLE, PLACING CONDUIT COUPLING SEALS OR PLUGS, ALL AS REQUIRED IN ACCORDANCE WITH THE DETAILED PLANS AND SPECIFICATIONS. THIS UNIT INCLUDES ALL MATERIAL AND LABOR REQUIRED IN THE REPAIR AND/OR REPLACEMENT OF STREETS, ROADS, SIDEWALKS, DRAWS, FENCES, GROUNDS, AND THE INSTALLATION OF UNDERGROUND POWER AND TELECOMMUNICATIONS FACILITIES AND ANY OTHER PROPERTY DAMAGED BY THE EXCAVATING. THE ENGINEER SHALL BE CARLON PART NUMBER 150-2.1.4, SMOOTH INSIDE AND OUTSIDE, INSIDE AND OUTSIDE, ORANGE DUCT.

OPTIONS DESIGNATED BY THE FOLLOWING SUFFIXES APPLY:

A DESCRIPTION
A1 200' CABLE COIL IN SPICE MANHOLE
A2 100' CABLE COIL IN SPICE MANHOLE
A3 50' CABLE COIL IN SPICE MANHOLE
A4 25' CABLE COIL IN SPICE MANHOLE
A5 10' CABLE COIL IN SPICE MANHOLE
A6 5' CABLE COIL IN SPICE MANHOLE
A7 2' CABLE COIL IN SPICE MANHOLE
A8 1' CABLE COIL IN SPICE MANHOLE
A9 0.5' CABLE COIL IN SPICE MANHOLE
A10 0.25' CABLE COIL IN SPICE MANHOLE
A11 0.1' CABLE COIL IN SPICE MANHOLE
A12 0.05' CABLE COIL IN SPICE MANHOLE
A13 0.01' CABLE COIL IN SPICE MANHOLE

NOTE 1: TREES THAT ARE FELLING THAT ARE 6'' DIAMETER AT BREAST HEIGHT OR GREATHER SHALL NOT BE ALLOWED UNDER THIS UNIT TO PROTECT THE GROUND SURFACE. THE WARNING SIGN WILL BE PROVIDED BY THE CONTRACTOR.

NOTE 2: OF THE GROUND SURFACE SHALL BE KEPT TO A MINIMUM AND THE CABLE PLOWING AND SUB-BASE MATERIALS SUCH AS CONCRETE, BRUSH, ROOTS SHALL NOT BE ALLOWED UNDER THIS UNIT TO PROTECT THE GROUND SURFACE.

Fiber optic cable assembly units

Each fiber optic cable assembly unit is listed in accordance with the number of optical fibers specified. The following illustration indicates the method of designating the material required. UFO 24 an underground filled fiber optic cable with 24 fibers.

SECTION BM92
MISCELLANEOUS ASSEMBLY UNITS

BM53 WARNING SIGN ASSEMBLY UNIT

CONSISTS OF ONE (1) STAKE MOUNTED WARNING SIGN, IN PLACE AS SHOWN ON THE CONSTRUCTION DRAWINGS. THIS UNIT INCLUDES ALL LABOR AND MATERIAL TO INSTALL THE WAVE MOUNTED STAKING SIGN (SEE DETAIL SPECIFIED BY THE ENGINEER). THE WARNING SIGN WILL BE PROVIDED BY THE CONTRACTOR.

BM55 SPLICE LOCATION ASSEMBLY UNIT

CONSISTS OF ONE (1) STAKE MOUNTED SPLICE LOCATION SIGN, IN PLACE, AS SHOWN ON THE CONSTRUCTION DRAWINGS. THIS UNIT INCLUDES ALL LABOR AND MATERIAL TO INSTALL THE STAKE MOUNTED SPLICE LOCATION SIGN (SEE DETAIL SPECIFIED BY THE ENGINEER). THE WARNING SIGN WILL BE PROVIDED BY THE CONTRACTOR.

BM65 UNDERGROUND PIPE BORE ASSEMBLY UNIT

CONSISTS OF ONE (1) STEEL PIPE BORE ASSEMBLY, HIGH DENSITY POLYETHYLENE PIPE (HDPE) PIPE, WITH THE INSIDE DIAMETER IN INCHES (METERS) SPECIFIED IN PARENTHESSES. INSTALLED IN PLACE. THIS UNIT INCLUDES BORING OF PIPE AND ANY EXCAVATION, BACKFILLING AND TAMPING NECESSARY FOR THE INSTALLATION OF THE PIPE. THE PIPE SHALL BE INSTALLED AT THE DEPTH SPECIFIED BY THE ENGINEER. THE SHALLOW BORING PROBLEMS TO AVOID DAMAGE TO THE CONDUIT OR OUTER JACKET OF THE BURIED CABLE DURING ITS INSTALLATION IN THIS UNIT. THE CONTRACTOR WILL BE COMPENSATED FOR LABOR AND MATERIAL FOR THE BURIED CONDUIT AND CABLE UNDER SEPARATE UNITS.

OPTIONS DESIGNATED BY THE FOLLOWING SUFFIXES APPLY:

SUFFIX DESCRIPTION
S1 DIAMETER BORING REQUIRED
S2 BREAST HEIGHT OR GREATER THAN 400 FEET
S3 ROCK BORE

BM71 ROCK EXCAVATING UNIT


BM72 ASPHALT ASSEMBLY UNIT

CONSISTS OF LABOR AND MATERIAL NECESSARY TO REMOVE AND RESTORE ONE (1) LINEAL FOOT (.305 M) OF ASPHALT PAVEMENT (WHERE THE REMOVAL DOES NOT NECESSITATE THE BREAKING UP OF CONCRETE MEASURED COIL IN HAFER OF THE CURB). ANY TRENCHING WHICH MAY BE NECESSARY FOR THE INSTALLATION OF BURIED CONDUIT IS INCLUDED IN THIS UNIT. ALL SPECIAL CONDITION OR INSTRUCTIONS CONCERNING THE RIGHT-OF-WAY CLEARING ON THE CONSTRUCTION DRAWINGS). THE CLEARING WIDTH SHALL BE OF SUFFICIENT SIZE TO PERMIT THE INSTALLATION OF THE CABLE PLOWING AND CABLE REEL INSTALLATION EQUIPMENT, WITH A MINIMUM CLEARING WIDTH OF 12 FEET. DISRUPTION OF THE GROUND SURFACE SHALL BE KEPT TO A MINIMUM AND THE CABLE PLOWING OPERATION WILL FOLLOW THE TERRAIN OF THE EXISTING GROUND, GRUBBING OF ROOTS SHALL NOT BE ALLOWED UNDER THIS UNIT TO PROTECT THE GROUND SURFACE.

CODE DISPOSITION
A REMOVED MECHANICALLY CLEARED WITH A HYDRA AX
B REMOVED FROM THE VICINITY OF THE RIGHT-OF-WAY
C PILED ON ONE SIDE OF THE RIGHT-OF-WAY IN SUCH MANNER AS TO NOT OBSTRUCT ROADS, DITCHES, ETC.

ISSUED FOR CONSTRUCTION 06/06/2000

ALASKA RAILROAD CORPORATION
FIBER PROJECT
APPROVED NATIVE BACKFILL, (SEE NOTE) MEDIUM SAND OR GRAVEL COMPACTED 90%

1 LAYER OF TYPAR

2" PEA GRAVEL

EXISTING GRADE

BACKFILL NOTE:
BACKFILL MAY NOT CONTAIN ORGANICS OR OTHER DELETERIOUS MATERIALS, SHALL NOT CONTAIN SATURATED SOILS, AND SHALL BE FREE DRAINING MATERIALS

HDPE HANDHOLE SECTION SIDE VIEW

SCALE: 3/8" = 1'-0"

YELLOW PLACE CARD

CABLE RACK SUPPORTS (TYP)
PULLING EYE

12" SECTION OF 2" HDPE CONDUIT UNDER EDGE OF HANDHOLE (TYP).

HDPE HANDHOLE SECTION FRONT VIEW

SCALE: 3/8" = 1'-0"

DUCTILE IRON LID RATED 56,200 lb

EXISTING GRADE

HDPE HANDHOLE SECTION PLAN VIEW

SCALE: 1/2" = 1'-0"

BA 22 CENTERED ON H.H.

FOC CONDUIT

FOC LINE

BHF-2T KIT DETAIL

BHF-2T KIT INCLUDES

BA 22 WOOD POST
BM 11 YELLOW SNOW MARKER
BM 53 BLANK SIGN PLACARD

BHF-2T KIT INCLUDES

BA 22 WOOD POST
BM 11 YELLOW SNOW MARKER
BM 53 BLANK SIGN PLACARD

ALASKA RAILROAD CORPORATION

FIBER PROJECT

BHF-2T KIT DETAIL

G-3.0

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**CONSTRUCTION NOTE**
ROUTE 1.25" HDPE DUCT TO A THROUGH-FLOOR PENETRATION IN THE SOUTHEAST CORNER OF THE TELECOM HUT. HAND DIGGING REQUIRED IN THIS AREA.

**CONSTRUCTION NOTE**
PLACE CABLE 5 FEET OFF EDGE OF PAVEMENT AND NO CLOSER THAN 5 FEET FROM EXISTING STRUCTURE NEAR WO 7.

**CONSTRUCTION NOTE**
EXISTING BURIED UTILITIES ARE KNOWN TO BE IN THE PROJECT ROUTE, HOWEVER THE LOCATIONS ARE NOT KNOWN. CALL FOR LOCATES IN ADVANCE AND PROCEED WITH CAUTION.

**CONSTRUCTION NOTE**
WO 9 - INSTALL NEMA 4 BOX ON BUILDING WALL AND DRILL SERVICE ENTRANCE HOLE.

**CONSTRUCTION NOTE**
PLACE CABLE 5 FEET OFF EDGE OF PAVEMENT AND NO CLOSER THAN 5 FEET FROM EXISTING STRUCTURE NEAR WO 7.

**CONSTRUCTION NOTE**
EXISTING BURIED UTILITIES ARE KNOWN TO BE IN THE PROJECT ROUTE, HOWEVER THE LOCATIONS ARE NOT KNOWN. CALL FOR LOCATES IN ADVANCE AND PROCEED WITH CAUTION.
TYPICAL AKRR TRACK CROSSING

SCALE: NTS

VARES

6' MIN. TO BASE OF RAILS

EXISTING AKRR TRACKS

CARBONITE MARKER (TYP)

APPROXIMATE
HANDHOLE LOCATION

1.25" DUCTS

4" SDR11 HPF DUCT

3' MIN.

6' MIN. TO BASE OF RAILS

EXISTING GROUND

EXISTING AKRR TRACKS

CARBONITE MARKER (TYP)

AKRR TRACK CROSSING

@ APPROX STA 18+98

SCALE: NTS

6' MIN. TO BASE OF RAILS

1.25" DUCTS

4" SDR11 HPF DUCT

3' MIN.
**CONSTRUCTION NOTE**

WO 7 - INSTALL NEMA 4 BOX ON BUILDING WALL AND DRILL SERVICE ENTRANCE HOLE.

**CONSTRUCTION NOTE**

PLACE CABLE 5 FEET OFF EDGE OF PAVEMENT.

**CONSTRUCTION NOTE**

FROM STATION 48+20 TO 58+20 EXISTING VEGETATION MAY ENCROACH INTO THE FIBER CONSTRUCTION PATH. VEGETATION SHALL BE CUT TO GROUND LEVEL AS REQUIRED TO ALLOW PASSAGE OF EQUIPMENT. VEGETATION IS NOT TO BE "RUN OVER". VEGETATIVE CUTTINGS TO BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.

**CONSTRUCTION NOTE**

USE CAUTION - EXISTING BURIED ELECTRIC IN THE PROJECT AREA.

**CONSTRUCTION NOTE**

PLACE CABLE 5 FEET OFF EDGE OF PAVEMENT.

**CONSTRUCTION NOTE**

FROM STATION 48+20 TO 58+20 EXISTING VEGETATION MAY ENCROACH INTO THE FIBER CONSTRUCTION PATH. VEGETATION SHALL BE CUT TO GROUND LEVEL AS REQUIRED TO ALLOW PASSAGE OF EQUIPMENT. VEGETATION IS NOT TO BE "RUN OVER". VEGETATIVE CUTTINGS TO BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.

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