

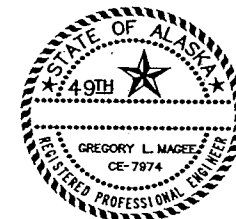
TOO'GHA INC. – TANANA, ALASKA

WATER DISTRIBUTION & WASTEWATER COLLECTION SYSTEM

MAY 2001

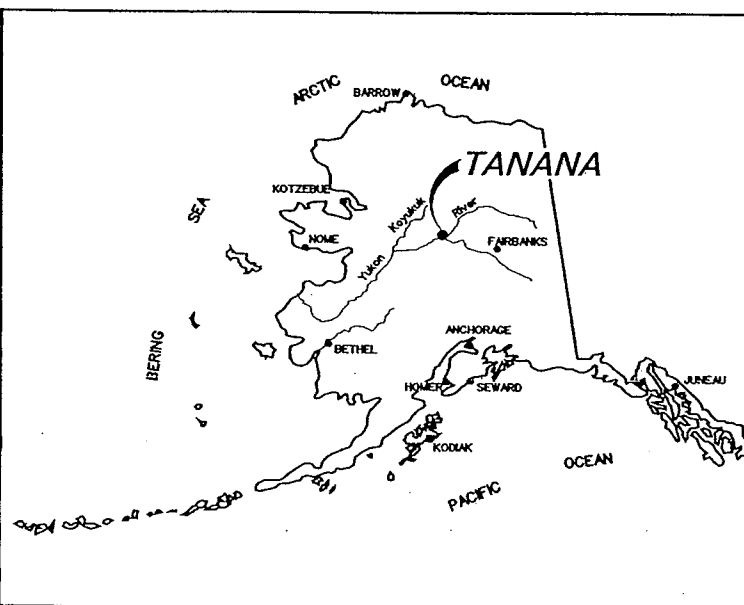
ISSUED FOR CONSTRUCTION

In Cooperation with the State of Alaska
Department of Environmental Conservation
Village Safe Water Program



PROJECT MANAGER

NOTES:
1. FIELD NOTES SHOULD BE RESEARCHED
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Location Map

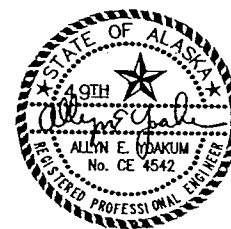
MONTGOMERY WATSON



IN ASSOCIATION WITH
EDC, INC.
213 W. Firewood Ln.
Anchorage, AK 99503

Consultant

RECORD DRAWING CERTIFICATE



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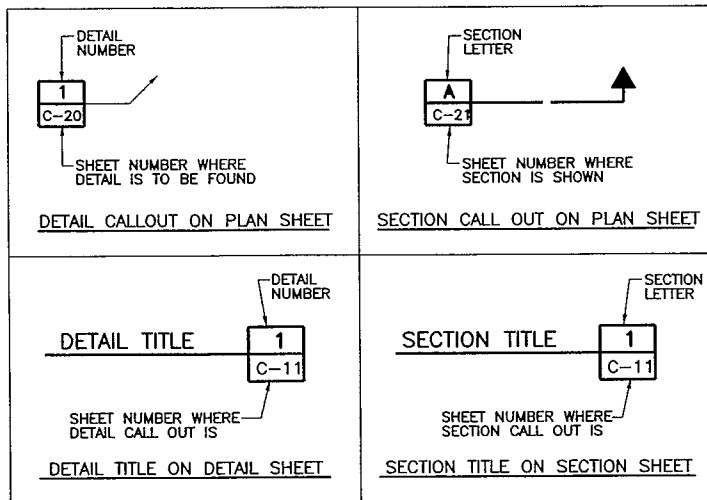
NAME ALLYN E. TOAKUM DATE 6/16/06

Project Number (Consultant) 1189078.010102 (VSW) 82704
VSW Project Engineer LYNN MARINO
Construction Foreman JEROME WILBER / EARL THEROUX
Final Design (Date) 7-14-00
ADEC Approval (Date) 9-27-00
Construction Period (From) 2001 (To) 2005
As-Builts (Date) 2005, 2006

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DETAIL AND SECTION CALLOUT EXPLANATION



LIST OF ABBREVIATIONS

ABS	ACRYLONITRILE BUTADIENE STYRENE
BOP	BOTTOM OF PIPE
CL	CENTER LINE
CI	CAST IRON
CO	CLEAN OUT
DI	DUCTILE IRON
DIA	DIAMETER
E	EAST, EASTING
EL	ELEVATION
EQ	EQUAL
EXIST	EXISTING
F	FUEL LINE
FF EL	FINISH FLOOR ELEVATION
FM	FORCE MAIN
GRND	GROUND
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
ID	INSIDE DIAMETER
INV	INVERT
LB	POUND
LF	LINEAR FOOT
LS	LIFT STATION
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
N	NORTH, NORTHING
NO	NUMBER
OD	OUTSIDE DIAMETER
PPM	PARTS PER MILLION
PSI	POUNDS PER SQUARE INCH
S	SEWER, SLOPE, SOUTH
SDR	STANDARD DIMENSION RATIO
SIM	SIMILAR
SQ FT	SQUARE FEET
STA	STATION
T	TELEPHONE LINE
TH	TEST HOLE
TYP	TYPICAL
W	WATER LINE, WEST
W/	WITH
WHS/R	WASTE HEAT SUPPLY AND RETURN
WTP	WATER TREATMENT PLANT
SEE ELECTRICAL SHEET E-1 FOR ELECTRICAL ABBREVIATIONS AND LEGEND	

SUMMARY OF WORK

THIS PROJECT INCLUDES PIPED WATER DISTRIBUTION AND WASTEWATER COLLECTION SYSTEMS FOR THE TOWNSITE OF TANANA, WEST OF EAMOLE STREET. THE WATER DISTRIBUTION SYSTEM CONSISTS OF 2 CIRCULATING LOOPS. THE WASTEWATER COLLECTION SYSTEM CONSISTS OF GRAVITY SEWER, 3 LIFT-STATIONS, AND A SEWER FORCEMAIN TO THE EXISTING LAGOON. WORK PRIOR TO THIS PHASE INCLUDED THE WATER TREATMENT / LAUNDRY FACILITY, A RESERVOIR, AND WATER DISTRIBUTION PUMPS WITHIN THE FACILITY. THIS WORK PHASE COMPLETES THE CIRCULATING WATER TRANSMISSION LINE BETWEEN THE WELL (CONSTRUCTED IN 1998) AND THE WATER TREATMENT PLANT FACILITY.

GENERAL NOTES:

- ALL CONSTRUCTION SHALL BE DONE IN A WORKMANLIKE MANNER AND IN CONFORMANCE WITH APPLICABLE CODES, AND ADEC REGULATIONS AND PERMIT CONDITIONS.
- THE SURVEY FOR THIS PROJECT WAS PREPARED BY MANLEY LAND SURVEYORS, INC. DATED SEPTEMBER 1997. THE BASIS OF HORIZONTAL CONTROL IS A PAIR OF BLM MONUMENTS, LOCATED ON THE NORTHEAST AND SOUTHEAST CORNERS OF LOT 1 OF THE U.S. SURVEY NO. 10815, ALASKA. JUNE 2, 1994, MARKING THE LENGTH OF 207.9 FEET AND BEARING OF N 0°03' E. COORDINATES ARE SET TO N 10,000.00, E 10,000.00 AT THE SOUTHEAST CORNER MONUMENT. BASIS OF VERTICAL CONTROL IS THE TBM LOCATED AT TOP OF A SPIKE IN THE POWER POLE LOCATED NEAR INTERSECTION OF MILL STREET AND THIRD AVENUE TAKEN AS ELEVATION 96.56 FEET ABOVE AN ASSUMED ELEVATION. HORIZONTAL AND VERTICAL CONTROL SHALL BE RE-ESTABLISHED PRIOR TO START OF CONSTRUCTION.
- RECORD DRAWINGS - THE PROJECT FOREMAN SHALL BE RESPONSIBLE FOR MAINTAINING A CLEAN SET OF DRAWINGS AT THE PROJECT OFFICE FOR RECORD INFORMATION. ALL REQUIRED INFORMATION SHALL BE RECORDED NEAT AND LEGIBLE IN RED PENCIL DAILY. THE PROJECT FOREMAN SHALL RECORD ON THE RECORD DRAWINGS ALL INFORMATION LISTED IN PARAGRAPH VIII.B. OF ADEC VSW SANITATION FACILITIES CONSTRUCTION PROJECT SUPERINTENDENT'S MANUAL DATED JULY 1998. ALL ELEVATIONS AND DISTANCES SHOWN ON THE PLANS SHALL BE MARKED R (RECORD) OR F.C. (FIELD CHANGED) WITH THE CORRECT VALUE INSERTED. ALL SURVEY NOTES SHALL BE KEPT IN GOOD QUALITY FIELD BOOKS SUBMITTED TO THE OWNER WITH THE RECORD DRAWINGS AT THE END OF THE PROJECT.
- UTILITY EASEMENTS - ALL WATER AND SEWER MAIN LINES SHALL BE INSTALLED WITHIN PUBLIC RIGHTS-OF-WAY OR DEDICATED UTILITY EASEMENTS. ALL TEMPORARY CONSTRUCTION EASEMENTS NEEDED SHALL BE THE RESPONSIBILITY OF THE OWNER.
- HISTORICAL PRESERVATION - SHOULD ANY ARCHAEOLOGICAL, CULTURAL OR PALEONTOLOGICAL RESOURCES BE DISCOVERED AS A RESULT OF CONSTRUCTION ACTIVITY, WORK THAT WOULD DISTURB SUCH RESOURCES WILL BE STOPPED AND THE STATE HISTORIC PRESERVATION OFFICE AND THE TANANA TRIBAL COUNCIL BE CONTACTED IMMEDIATELY.
- GENERAL RESTORATION - THE AREAS IMPACTED BY CONSTRUCTION SHALL BE RETURNED TO PRE-CONSTRUCTION CONDITION OR BETTER. DISTURBED AREAS OUTSIDE THE TRAVELED WAY SHALL BE GROOMED AND SEEDED TO MATCH SURROUNDING TERRAIN. DISTURBED AREAS WITHIN THE TRAVELED WAY SHALL BE RESURFACED PER THE DRAWINGS. CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE AREA AND DISPOSED AS DIRECTED BY THE OWNER. DUE CARE AND CAUTION SHALL BE TAKEN TO AVOID DISTURBING PERSONAL PROPERTY.
- BARRICADES AND WARNING SIGNS SHALL BE PROVIDED TO ADVISE RESIDENTS OF ROAD CLOSURES, DETOURS, AND HAZARDOUS OPEN TRENCH CONDITIONS.
- SEEDING - ALL DISTURBED AREAS OUTSIDE TRAVELED WAYS SHALL BE FERTILIZED AND SEEDED UPON COMPLETION OF FINAL GRADING. AN 8-32-16 (NITROGEN-PHOSPHORUS-POTASSIUM) FERTILIZER MIX SHALL BE APPLIED AT A RATE OF 15 POUNDS PER 1,000 SQUARE FEET AND WORKED INTO SURFACE SOILS. SEED SHALL BE 95 PERCENT PURE WITH A MINIMUM GERMINATION RATE OF 85 PERCENT AND SHALL CONFORM TO THE FOLLOWING:

NAME	APPLICATION RATE IN LB/1,000 SQ.FT.
ARCTARED RED FESCUE	1.5
"NUGGET" BLUEGRASS	1.0

SEED SHALL BE UNIFORMLY MIXED AND MECHANICALLY SPREAD. SEEDING SHALL BE PERFORMED NO EARLIER THAN MAY 15TH AND NO LATER THAN AUGUST 15TH. SEEDING SHALL NOT BE PERFORMED DURING WINDY CONDITIONS OR WHEN CLIMATIC OR GROUND CONDITIONS WOULD HINDER PLACEMENT OR PROPER GROWTH.

EARTH WORK

- WORK PRIOR TO EXCAVATION - CLEARING AND GRUBBING OF CERTAIN AREAS PRIOR TO EXCAVATION MAY BE NECESSARY. DISPOSE OF VEGETATION AND ORGANIC MATERIAL AS DIRECTED BY THE OWNER.
- SAFETY CONSIDERATIONS - SIDEWALLS OF TRENCHES OR EXCAVATIONS SHALL BE SLOPED OR SUFFICIENTLY BRACED IN CONFORMANCE WITH ALASKA DEPARTMENT OF LABOR STANDARDS TO PROVIDE A SAFE WORKING ENVIRONMENT. ALL TRENCHES SHALL BE BACKFILLED OR COVERED BEFORE WORK IS STOPPED FOR THE DAY. OPEN EXCAVATIONS SHALL BE ADEQUATELY SIGNED AND BARRICADED TO WARN RESIDENTS OF THE HAZARD. TAKE ALL REASONABLE AND PRACTICAL MEASURES TO PROTECT PUBLIC HEALTH AND SAFETY AND PRIVATE PROPERTY.
- SURFACE WATER/GROUNDWATER CONTROL - TRENCH BOTTOM SHALL BE MAINTAINED IN RELATIVELY DRY CONDITION DURING THE PIPE LAYING OPERATION. SURFACE DRAINAGE SHALL BE DIRECTED AWAY FROM THE TRENCH THROUGH USE OF DIVERSION BERMS OR OTHER APPROPRIATE MEASURES. USE OF PUMPING EQUIPMENT MAY BE REQUIRED IN SOME AREAS FOR TRENCH DEWATERING. DISCHARGE FROM DEWATERING OPERATIONS SHALL BE RETURNED TO NATURAL DRAINAGE ROUTES. SETTLING PITS, STRAW DIKES, OR OTHER APPROPRIATE MEASURES SHALL BE TAKEN TO PREVENT HIGHLY TURBID WATERS FROM ENTERING EXISTING LAKES, STREAMS, OR WETLANDS.

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- EXCAVATED UNUSABLE MATERIAL - DISPOSAL OF UNUSABLE EXCAVATED MATERIAL SHALL BE AS DIRECTED BY OWNER.
- OVER EXCAVATION - OVER EXCAVATION SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE DRAWINGS WHENEVER ICE RICH FROZEN SOILS, SATURATED THAWED SOILS OR ORGANIC RICH SOILS ARE ENCOUNTERED WITHIN THE LIMITS OF EXCAVATION.

PIPE TRENCH MATERIAL SPECIFICATION

LEVELING COURSE: SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE DESIGNATION	% PASSING BY WEIGHT
1-1/2"	100
1"	70-100
3/4"	69-90
3/8"	50-80
#4	30-65
#8	25-55
#40	10-30
#200	4-10

PIPE BEDDING MATERIAL: GRAVEL AND COARSE SAND WITH 1" MAXIMUM PARTICLE SIZE AND 6% MAXIMUM PASSING THE NO. 200 SIEVE.

SELECT MATERIAL: GRAVEL AND COARSE SAND WITH 3" MAXIMUM PARTICLE SIZE AND 6% MAXIMUM PASSING THE NO. 200 SIEVE.

NON-CLASSIFIED MATERIAL: MAY CONSIST OF EXCAVATED NATIVE MATERIAL PROVIDED IT IS FREE OF CONSTRUCTION DEBRIS, BOULDERS OR COBBLES, ORGANIC AND FROZEN MATERIALS.

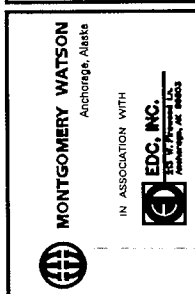
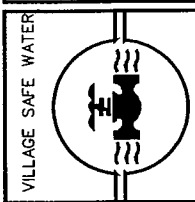
EXTERIOR PIPING

- GRADE AND ALIGNMENT - SURVEYING EQUIPMENT SHALL BE USED TO TRANSFER GRADES FROM ESTABLISHED CONTROL POINTS.
- QUALIFIED PERSONNEL SHALL OPERATE SURVEY EQUIPMENT AND MAINTAIN SURVEY NOTES TO BE SUBMITTED TO THE OWNER WITH THE RECORD DRAWINGS AT THE END OF THE PROJECT.
- PIPE SHALL BE LIFTED AND PLACED USING PIPE SLINGS LOCATED TO PREVENT DAMAGE TO THE PIPE. THE PIPE SLINGS SHALL BE CONSTRUCTED OF NYLON OR OTHER SUITABLE MATERIALS WHICH WILL NOT GOUGE, TEAR, PUNCTURE, SCRATCH OR OTHERWISE DAMAGE THE OUTER JACKET OR THE PROTECTIVE COATING OF THE PIPE AS IT IS HANDLED OR INSTALLED. CHAINS, CHOKERS OR SIMILAR LIFTING DEVICES SHALL NOT BE USED.
- ONCE THE PIPE IS LOWERED INTO THE TRENCH IT SHALL BE INSPECTED FOR DAMAGE TO THE OUTER JACKET OR PROTECTIVE COATING. ANY DAMAGE TO THE OUTER JACKET SHALL BE REPAIRED USING HEAT SHRINK WRAP. ANY DAMAGE TO THE PROTECTIVE COATING SHALL BE REPAIRED IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS.
- PIPE LAYING - ALL PIPE SHALL BE LAID IN REASONABLY CLOSE CONFORMANCE TO LINES AND GRADES SHOWN ON THE DRAWINGS. A CLEAN PIPE SHALL BE LAID, NO TRASH OR DEBRIS SHALL BE ALLOWED TO ENTER THE PIPE. OPEN ENDS OF PIPE AND FITTINGS SHALL BE PLUGGED AT ALL TIMES WHEN WORK IS NOT IN PROGRESS.
- FLUSHING - ALL UTILITY LINES SHALL BE FLUSHED PRIOR TO PRESSURE TESTING TO REMOVE ANY FOREIGN MATTER.
- WATER LINE TESTING - THE WATERLINE SHALL BE HYDROSTATICALLY TESTED TO 75 PSI WITH NO LEAKS. THE TEST SECTION SHALL BE COMPLETELY FILLED WITH CLEAN WATER, MAKING SURE TO BLEED OFF ANY TRAPPED AIR. FOR THE INITIAL EXPANSION PHASE, MAKEUP WATER SHALL BE ADDED AS REQUIRED TO MAINTAIN THE TEST PRESSURE FOR THREE HOURS. FOR THE TEST PHASE, THE TEST PRESSURE IS REDUCED BY 10 PSI. IF THE PRESSURE REMAINS STEADY (WITHIN 5% OF THE TARGET VALUE) FOR AN HOUR, NO LEAKAGE IS INDICATED.
- THE GRAVITY SEWER LINES AND FORCEMAIN SEWER LINES SHALL BE PRESSURE TESTED TO ENSURE WATER-TIGHTNESS PER THE WATER LINE TESTING PROCEDURE UPON COMPLETION OF CONSTRUCTION (ADEC REQUIREMENT FOR WAIVER OF WATER AND SEWER LINE MINIMUM SEPARATION DISTANCE).
- WATER LINE DISINFECTION - PRIOR TO BEING PLACED IN SERVICE, ALL POTABLE WATER PIPING SHALL BE DISINFECTED WITH A 20 PPM SOLUTION OF CHLORINE. AFTER DISINFECTION, FLUSH THE LINES WITH POTABLE WATER.

UTILITY CONTACTS

- CITY OF TANANA ----- (907)366-7159
- TANANA POWER CO. INC. /
YUKON TELEPHONE CO. INC.
LOCAL: RALPH ELLER ---- (907)366-7190
WASILLA: DON ELLER ---- (907)373-6007
- TANANA NATIVE COUNCIL ----- (907)366-7113
- TOO'GHA INC. ----- (907)366-7209

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DATE 6/16/06
NAME 11414 B. Bakun

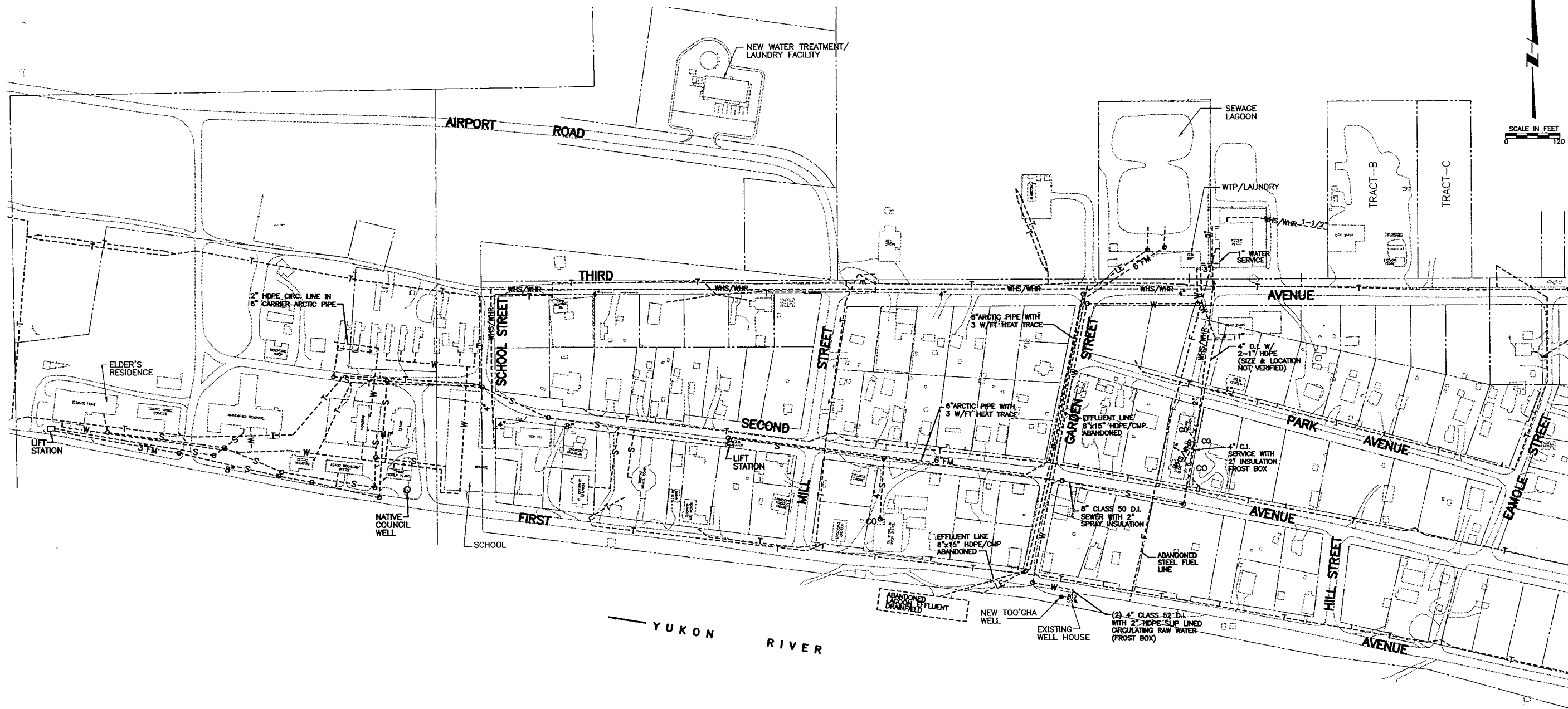


TOO'GHA INC. - TANANA, ALASKA
WATER DISTRIBUTION &
WASTEWATER COLLECTION SYSTEM
GENERAL NOTES

REVISION	BY	DATE
AGENCY REVIEW	MT	7/14/06
ISSUED FOR CONSTRUCTION	MT	5/20/07
RECORD DRAWING	MT	4/20/08
RECORD DRAWING	AY	5/20/08

Project No. 189078.00002	Date JULY 14, 2006	Designed MT	Drawn LF	Approved GH
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Sheet No. G-1
SHEET OF



LEGEND:

- S--- SEWER LINE
---FM--- FORCE MAIN SEWER
---W--- WATER LINE
---F--- FUEL LINE
---LE--- LAGOON EFFLUENT LINE
---T--- TELEPHONE LINE
---WHS/WHR--- WASTE HEAT SUPPLY/RETURN
- LIFT STATION
○ WELL
● MANHOLE
∞ CLEAN OUT
NEW HOUSE

NOTE:

THIS MAP REFLECTS EXISTING UTILITY INFORMATION AS OF JUNE 2000. MAPPING OF THE EXISTING PIPED UTILITIES RESULTED FROM REVIEW OF HISTORICAL RECORDS. DATA GAPS WERE FOUND BASED ON LIMITED INFORMATION OR INFORMATION NOT FOUND. APPROXIMATIONS AND ASSUMPTIONS WERE MADE IN THOSE CASES. VERIFICATION IS ADVISED TO CONFIRM ACCURACY.

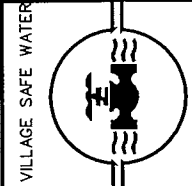
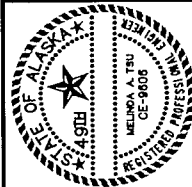
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REVISION	BY	DATE
AGENCY REVIEW	MT	7/4/00
ISSUED FOR CONSTRUCTION	MT	5/2001
RECORD DRAWING	MT	4/2005
RECORD DRAWING	AY	5/2006

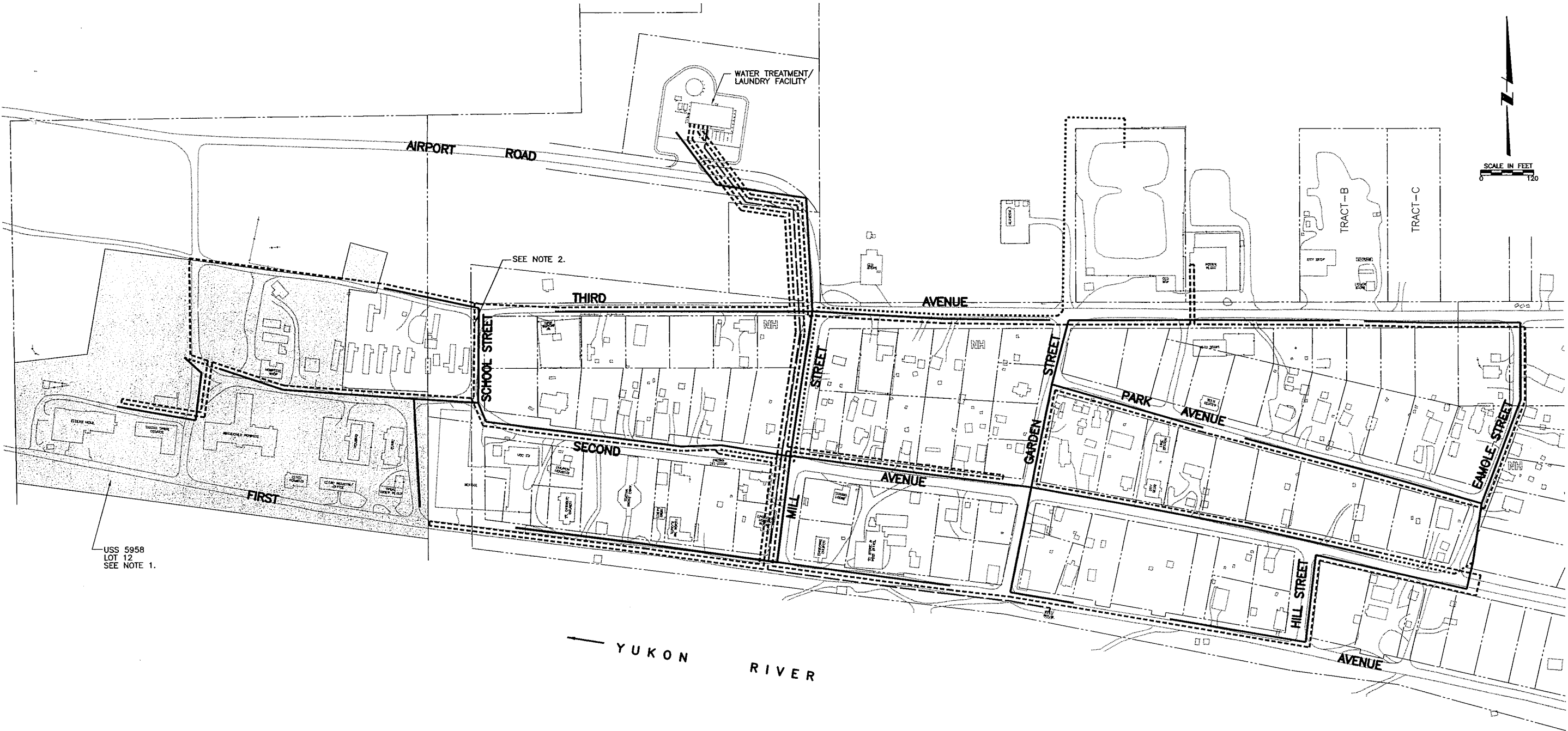
Project No. 189078.010102	Date JULY 14, 2000	Designed MT	Drawn LF	Approved GH
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TOO'GHA INC. - TANANA, ALASKA
WATER DISTRIBUTION & WASTEWATER COLLECTION SYSTEM
EXISTING UTILITIES

MONTGOMERY WATSON
ANCHORAGE, ALASKA
IN ASSOCIATION WITH
EDC, INC.
ANCHORAGE, ALASKA



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NAME: Alyssa E. Pakula
DATE: 9/16/06



NOTE:
WATER AND SEWER MAINS WILL SHARE A COMMON TRENCH WHENEVER POSSIBLE. HOWEVER, INDIVIDUAL PIPES ARE SHOWN SEPARATE FOR CLARITY ON THIS MAP.

- NOTES:**
1. THE UTILITY ALIGNMENTS THROUGH THE FORMER ALASKA AREA NATIVE HEALTH SERVICE (AANHS) HOSPITAL COMPLEX (PROPERTY USS 5958, LOT 12) ENTERS KNOWN AREAS OF PETROLEUM-CONTAMINATED SOILS AS REPORTED IN "SITE INVESTIGATION REPORT PHASE II AANHS HOSPITAL, TANANA, ALASKA," MARCH 1997, ECOLOGY AND ENVIRONMENT, INC. UTILITY CONSTRUCTION WITHIN THIS AREA SHALL BE DEFERRED UNTIL REMEDIATION WORK IS COMPLETED.
 2. CONSTRUCT WATER LINE SEGMENT SHOWN ON C-LINE ALIGNMENT AS TEMPORARY WATER LINE ROUTING. THIS LINE SHALL LATER BE ABANDONED UPON COMPLETION OF THE WEST LOOP AFTER REMEDIATION WORK IN AANHS COMPLEX IS COMPLETED.

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TOO'GHA INC. - TANANA, ALASKA
WATER DISTRIBUTION & WASTEWATER COLLECTION SYSTEM
WATER AND SEWER KEY MAP

- LEGEND:**
- SEWER LINE
 - FORCE MAIN SEWER
 - WATER LINE
 - WATER TRANSMISSION LINE
 - NEW HOUSE

RECORD DRAWING CERTIFICATE

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NAME: Alyssa E. Yeaton DATE: 6/16/06

VILLAGE SAFE WATER

MONTGOMERY WATSON
Anchorage, Alaska
IN ASSOCIATION WITH
EDC, INC.
EAST TOWN, ALASKA

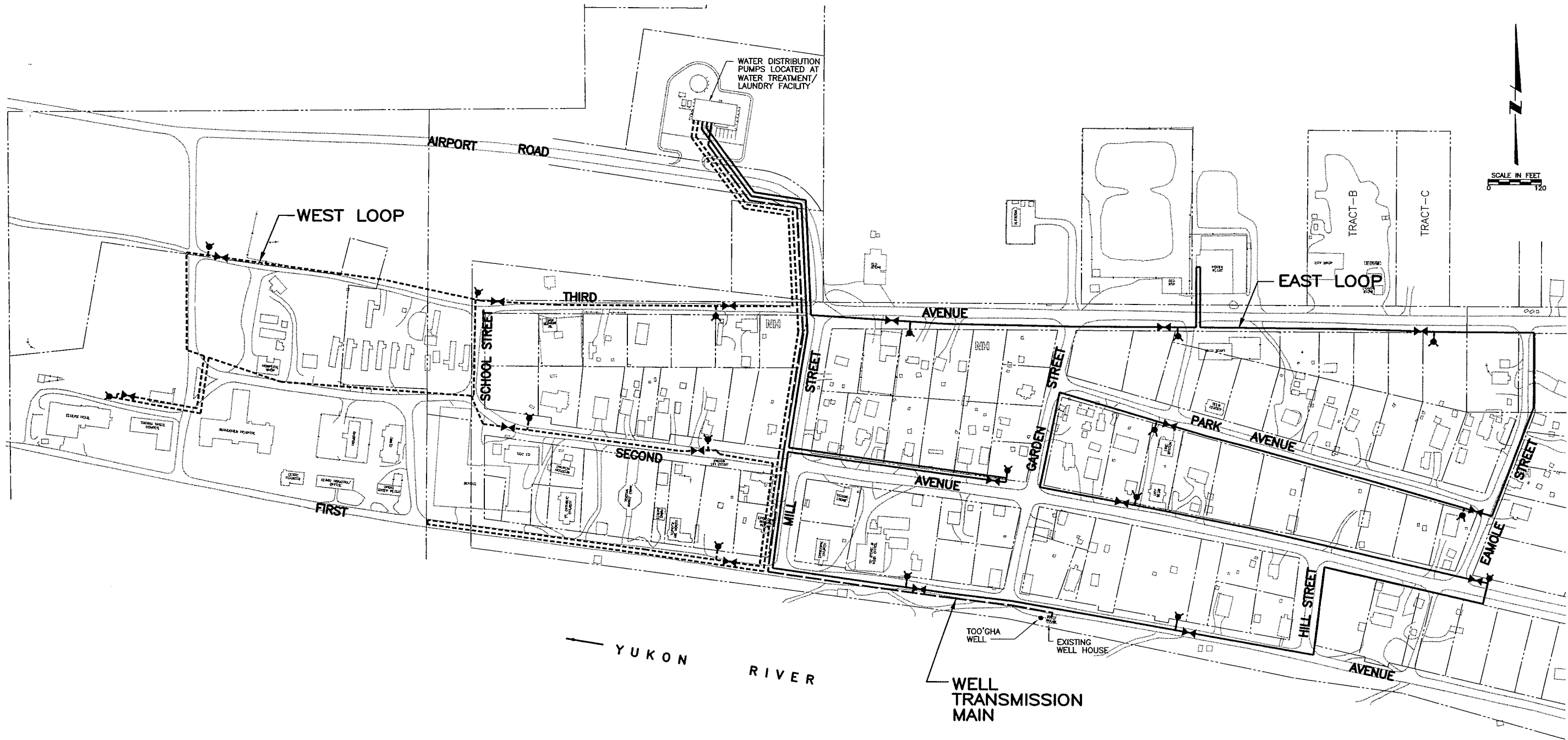
TOO'GHA INC. - TANANA, ALASKA
WATER DISTRIBUTION & WASTEWATER COLLECTION SYSTEM

WATER AND SEWER KEY MAP

REVISION	BY	DATE
AGENCY REVIEW	MT	7/14/06
ISSUED FOR CONSTRUCTION	MT	5/2/06
RECORD DRAWING	MT	4/2/06
RECORD DRAWING	AY	5/2/06

Project No.	Date	Designed	Drawn	Approved
189078.010102	JULY 14, 2006	MT	LF	GM

Sheet No. **G-3** OF



NOTE:
WATER AND SEWER MAINS WILL SHARE
A COMMON TRENCH WHENEVER POSSIBLE.
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INFORMATION PROVIDED HEREIN
IS ACCURATE TO THE BEST OF
MY KNOWLEDGE.
NAME *Ally E. York* DATE *4/14/06*

MONTGOMERY WATSON
Anchorage, Alaska
IN ASSOCIATION WITH
EDC, INC.
ELECTRIC DESIGN CONSULTANTS

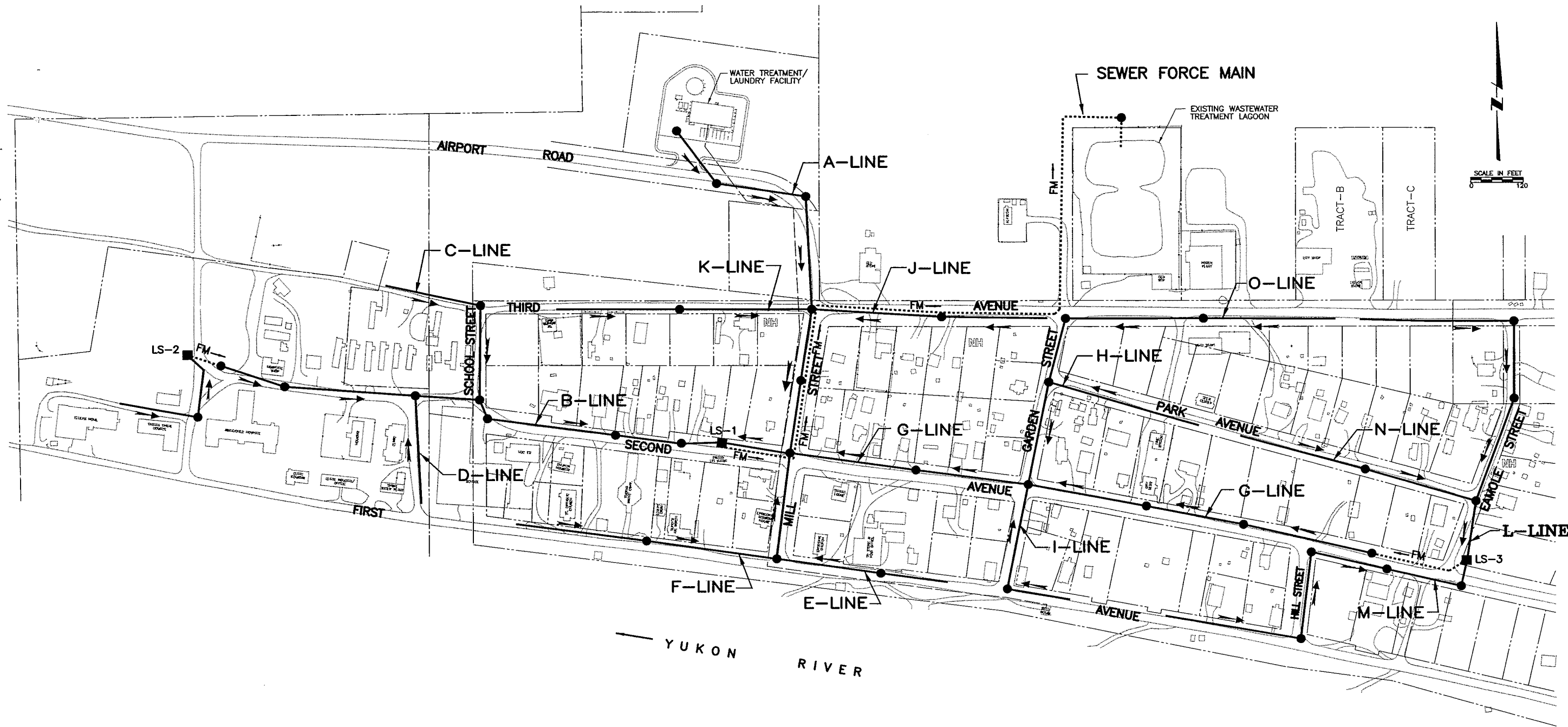
TOO'GHA INC. - TANANA, ALASKA
WATER DISTRIBUTION &
WASTEWATER COLLECTION SYSTEM

WATER KEY MAP

REVISION	BY	DATE
AGENCY REVIEW	MT	7/14/00
ISSUED FOR CONSTRUCTION	MT	5/2001
RECORD DRAWING	MT	4/2005
RECORD DRAWING	AY	5/2006

Project No. 1189078.010102	Date JULY 14, 2000	Designed MT	Drawn LF	Approved GM
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Sheet No. **G-5**
SHEET OF



NOTE:
WATER AND SEWER MAINS WILL SHARE A COMMON TRENCH WHENEVER POSSIBLE. HOWEVER, INDIVIDUAL PIPES ARE SHOWN SEPARATE FOR CLARITY ON THIS MAP.

- LEGEND:
- LIFT STATION
 - SEWER MANHOLE
 - SEWER FLOW DIRECTION
 - FM → SEWER FORCE MAIN FLOW DIRECTION
 - 🏠 NEW HOUSE

NOTE:
THE DIFFERENT LINE TYPES ARE SHOWN TO DISTINGUISH EACH SEWER LINE FROM ADJACENT SEWER LINES.

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DATE: 4/16/04 BY: E. Yeakum

STATE OF ALASKA
JULIA A. WATSON
REGISTERED PROFESSIONAL ENGINEER
NO. 4581
EXPIRATION DATE 12/31/06

VILLAGE SAFE WATER

STATE OF ALASKA
JULIA A. WATSON
REGISTERED PROFESSIONAL ENGINEER
NO. 4581
EXPIRATION DATE 12/31/06

MONTGOMERY WATSON
Anchorage, Alaska

IN ASSOCIATION WITH
EDC, INC.
Fairbanks, Alaska

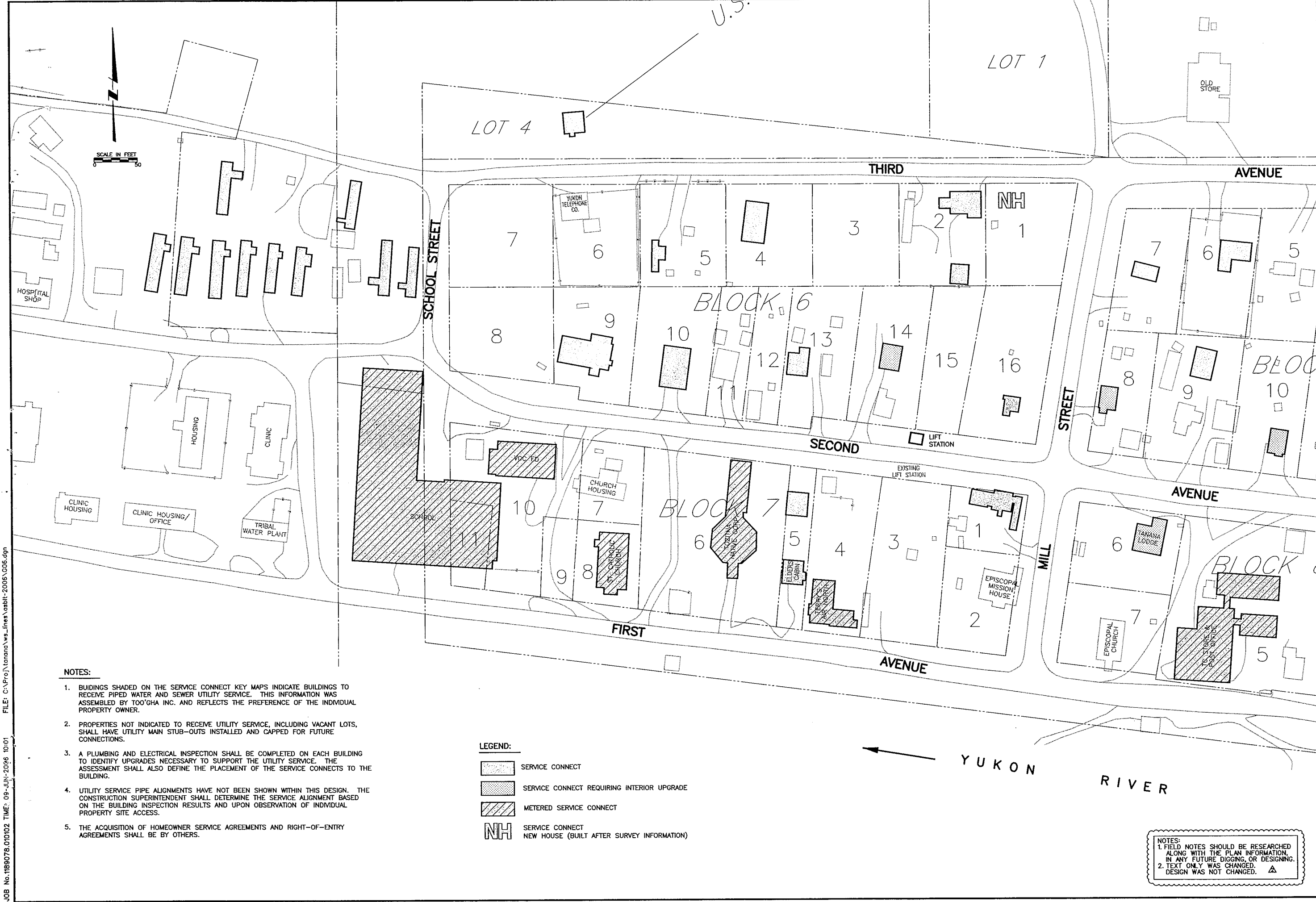
TOO'GHA INC. - TANANA, ALASKA
WATER DISTRIBUTION & WASTEWATER COLLECTION SYSTEM

SEWER KEY MAP

REVISION	BY	DATE
AGENCY REVIEW	MT	7/14/00
ISSUED FOR CONSTRUCTION	MT	5/20/01
RECORD DRAWING	MT	4/20/05
RECORD DRAWING	AY	5/20/06

Project No.	Date	Designed	Drawn	Approved
1189078.010102	JULY 14, 2000	MT	LF	GM

Sheet No. **G-4** OF



RECORD DRAWING CERTIFICATE
THESE DRAWINGS REFLECT
RECORDED INFORMATION OBTAINED
DURING CONSTRUCTION.
INFORMATION PROVIDED HEREIN
IS ACCURATE TO THE BEST OF
MY KNOWLEDGE.
Allyne E. Jackson
NAME
6/16/06
DATE

MONTGOMERY WATSON
Anchorage, Alaska
IN ASSOCIATION WITH
EDC, INC.
Anchorage, Alaska

TOO'GHA, INC. - TANANA, ALASKA
WATER DISTRIBUTION & SYSTEM
WASTEWATER COLLECTION SYSTEM
UTILITY SERVICE CONNECT
KEY MAP (WEST SIDE)

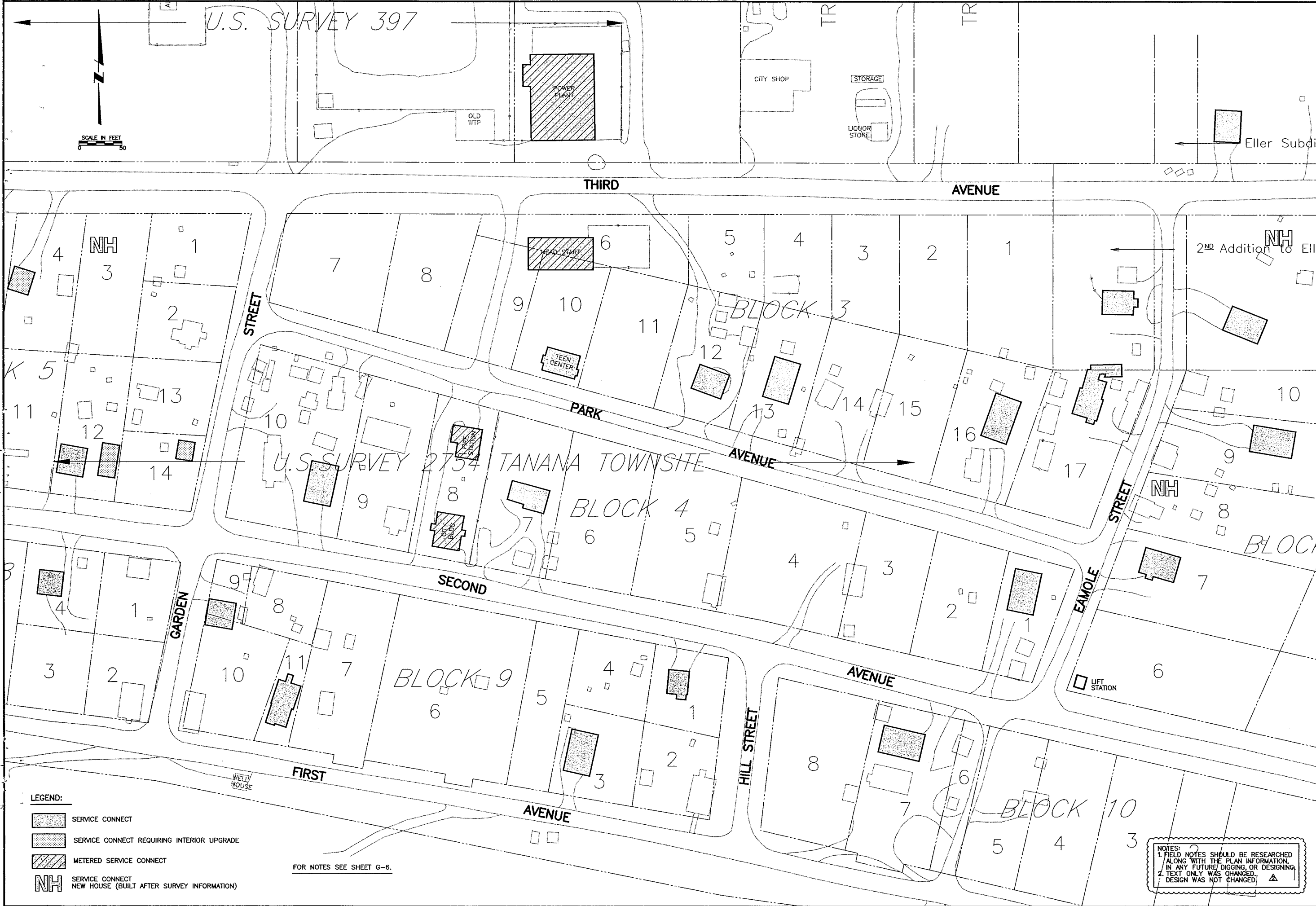
REVISION	BY	DATE
AGENCY REVIEW	MT	7/14/00
ISSUED FOR CONSTRUCTION	MT	5/2001
RECORD DRAWING	MT	4/2005
RECORD DRAWING	AY	5/2006

Project No. 1189078.010102
Date JULY 14, 2000
Designed MT
Drawn LF
Approved GM

Sheet No. G-6
SHEET OF

NOTES:
1. FIELD NOTES SHOULD BE RESEARCHED
ALONG WITH THE PLAN INFORMATION,
IN ANY FUTURE DIGGING OR DESIGNING.
2. TEXT ONLY WAS CHANGED.
DESIGN WAS NOT CHANGED.

FILE: C:\ProJ\Tanana\w_s_lines\asbit-2006\G07.dgn
JOB No. 1189078.010102 TIME: 09-JUN-2006 10:01



LEGEND:

- SERVICE CONNECT
- SERVICE CONNECT REQUIRING INTERIOR UPGRADE
- METERED SERVICE CONNECT
- SERVICE CONNECT NEW HOUSE (BUILT AFTER SURVEY INFORMATION)

FOR NOTES SEE SHEET G-6.

NOTES:
1. FIELD NOTES SHOULD BE RESEARCHED ALONG WITH THE PLAN INFORMATION, IN ANY FUTURE DIGGING OR DESIGNING.
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3. DESIGN WAS NOT CHANGED.

RECORD DRAWING CERTIFICATE

THESE DRAWINGS REFLECT RECORDED INFORMATION OBTAINED DURING CONSTRUCTION. INFORMATION PROVIDED HEREIN IS ACCURATE TO THE BEST OF MY KNOWLEDGE.

NAME: *Allysa E. Yeargan* DATE: *6/16/06*

STATE OF ALASKA
4910
REGISTERED PROFESSIONAL ENGINEER
No. 10000

VILLAGE SAFE WATER

STATE OF ALASKA
4910
REGISTERED PROFESSIONAL ENGINEER
No. 10000

MONTGOMERY WATSON
Anchorage, Alaska

IN ASSOCIATION WITH

EDC, INC.
10000
10000

TOO'GHA, INC. - TANANA, ALASKA
WATER DISTRIBUTION & WASTEWATER COLLECTION SYSTEM

UTILITY SERVICE CONNECT KEY MAP (EAST SIDE)

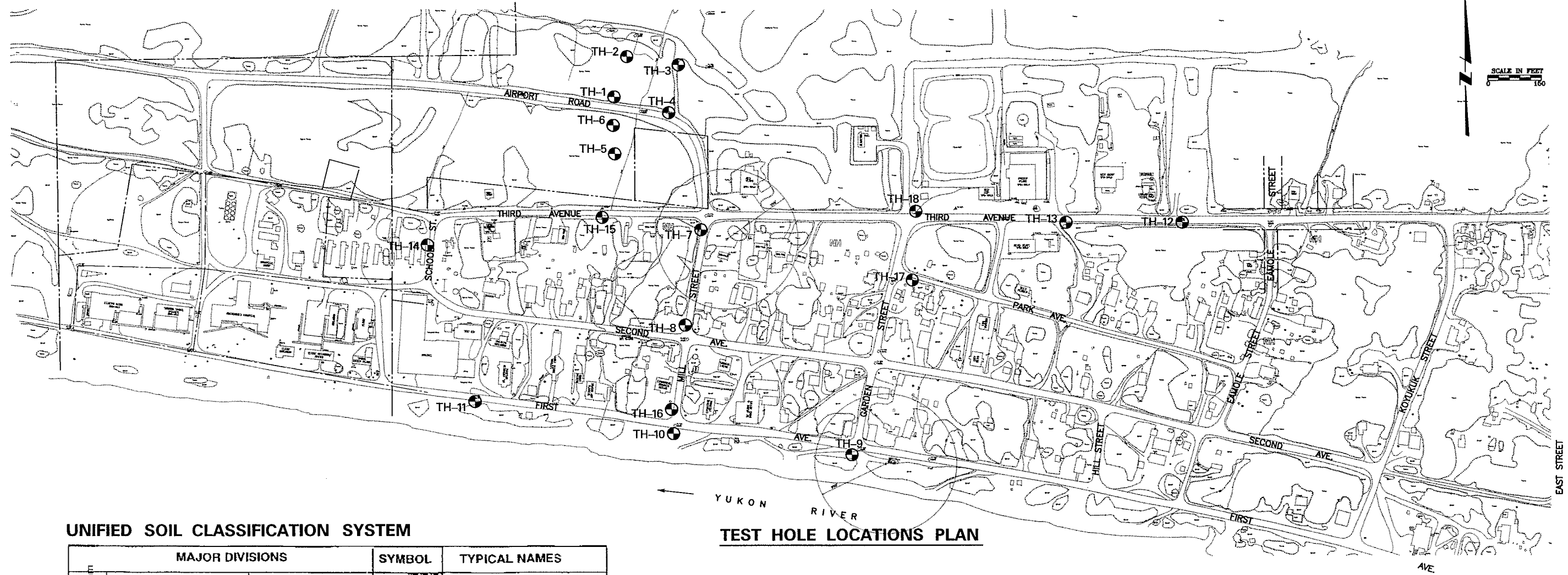
REVISION	DATE	BY
AGENCY REVIEW	MT 7/14/00	
ISSUED FOR CONSTRUCTION	MT 5/20/01	
RECORD DRAWING	MT 4/20/05	
RECORD DRAWING	AY 5/2/06	

Project No.	Date	Designed	Drawn	Approved
1189078.010102	JULY 14, 2000	MT	LF	GM

Sheet No. **G-7**

SHEET OF

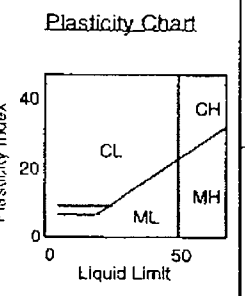
JOB No.1189078.010102 TIME: 09-JUN-2006 10:23 FILE: C:\Program Files\Tandem\ws_lines\testbit-2006\G08.dgn



TEST HOLE LOCATIONS PLAN

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			SYMBOL	TYPICAL NAMES	
COARSE GRAINED SOILS More than 50% larger than #200 sieve, >0.075 mm	GRAVELS More than half of the coarse fraction is larger than #4 sieve size, > 4.75 mm.	Clean gravels with little or no fines	GW	Well graded gravels, sandy gravel	
			GP	Poorly graded gravels, sandy gravel	
		Gravels with more than 12% fines	GM	Silty gravels, silt sand gravel mixtures	
			GC	Clayey gravels, clay sand gravel mixtures	
	SANDS More than half of the coarse fraction is smaller than #4 sieve size	Clean sands with little or no fines	SW	Well graded sand, gravelly sand	
			SP	Poorly graded sands, gravelly sand	
		Sands with more than 12% fines	SM	Silty sand, silt gravel sand mixtures	
			SC	Clayey sand, clay gravel sand mixtures	
FINE GRAINED SOILS >50% finer than #200 sieve, 0.075 mm	Plasticity Chart Liquid Limit		ML	Inorganic silt and very fine sand, rock flour	
			CL	Inorganic clay, gravelly and sandy clay, silty clay	
	SILTS and CLAYS Liquid limit greater than 50		OL	Organic silts and clay of low plasticity	
			MH	Inorganic silt	
			CH	Inorganic clay, fat clay	
			OH	Organic silt and clay of high plasticity	
	HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soil



ICE CLASSIFICATION SYSTEM

GROUP	ICE VISIBILITY	DESCRIPTION	SYMBOL
N	Segregated ice not visible by eye	Poorly bonded or friable	Nf
		Well bonded	Nb
V	Segregated ice is visible by eye and is one inch or less in thickness	No excess ice	Nbn
		Excess microscopic ice	Nbe
		Individual ice crystals or inclusions	Vx
		Ice coatings on particles	Vc
		Random or irregularly oriented ice	Vr
ICE	Ice greater than one inch in thickness	Stratified or distinctly oriented ice	Vs
		Ice with soil inclusions	ICE + soil type
		Ice without soil inclusions	ICE

NOTES:
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Duane Miller & Associates
Arctic & Geotechnical Engineering

RECORD DRAWING CERTIFICATE

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NAME: Allyne Yates DATE: 6/16/06

VILLAGE SAFE WATER

MONTGOMERY WATSON
Anchorage, Alaska

IN ASSOCIATION WITH

EDC, INC.
Anchorage, Alaska

TOO'GHA, INC. - TANANA, ALASKA
WATER DISTRIBUTION & WASTEWATER COLLECTION SYSTEM

SOIL TEST HOLE KEY MAP

BY DATE	MT 7/14/00	MT 5/2001	MT 4/2006	AT 5/2006
REVISION	AGENCY REVIEW	ISSUED FOR CONSTRUCTION	RECORD DRAWING	RECORD DRAWING

Project No. 1189078.010102

Date JULY 14, 2000

Designed MT

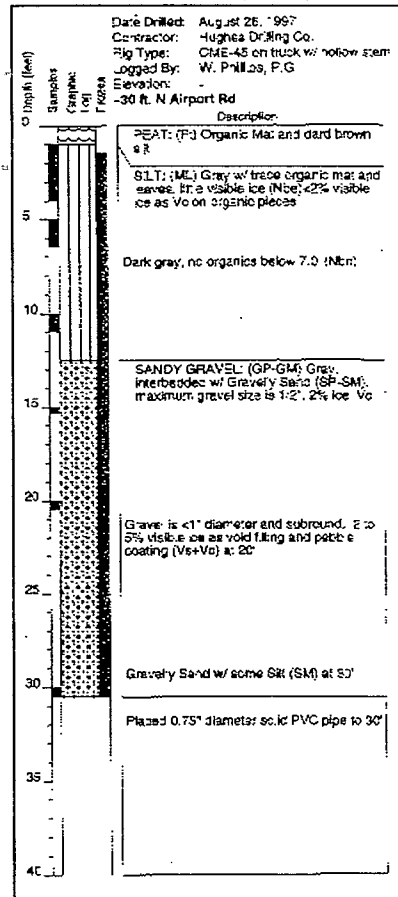
Drawn LF

Approved GM

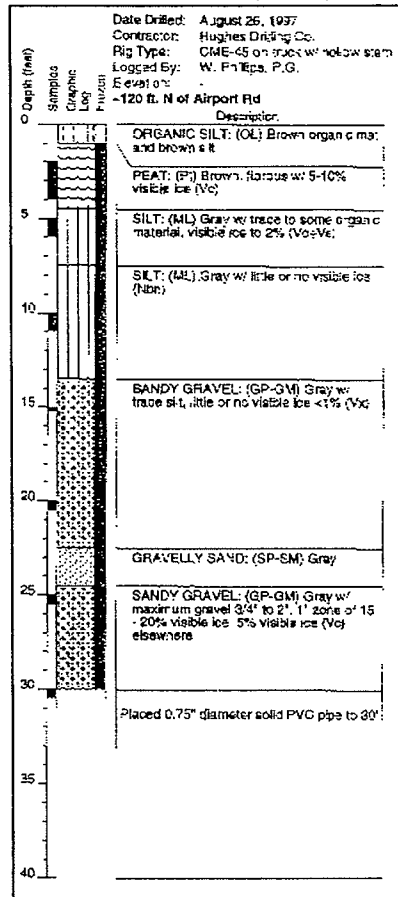
Sheet No. G-8

SHEET OF

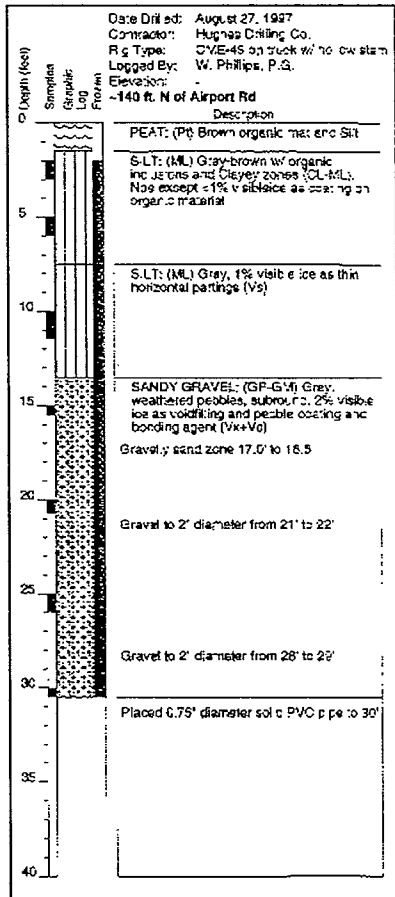
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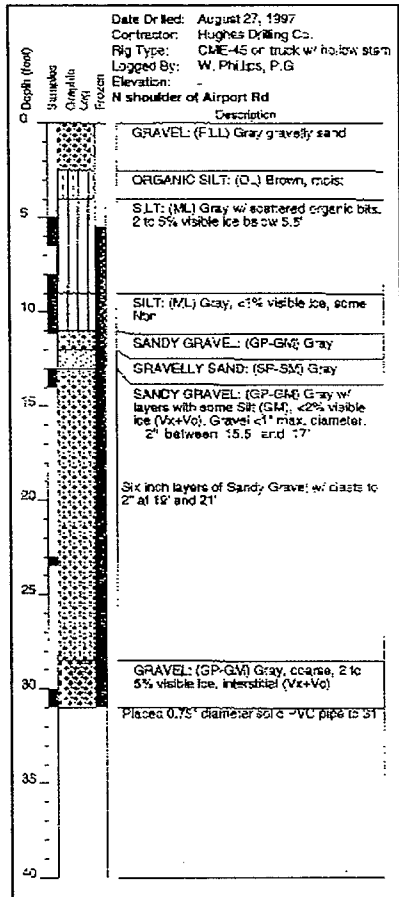
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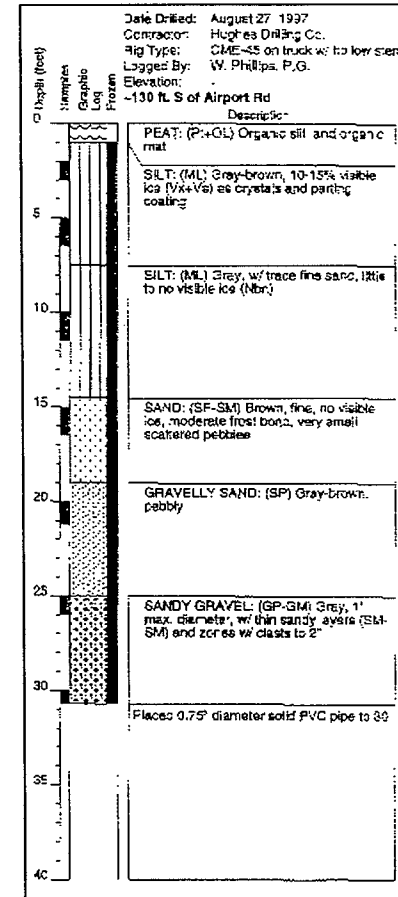
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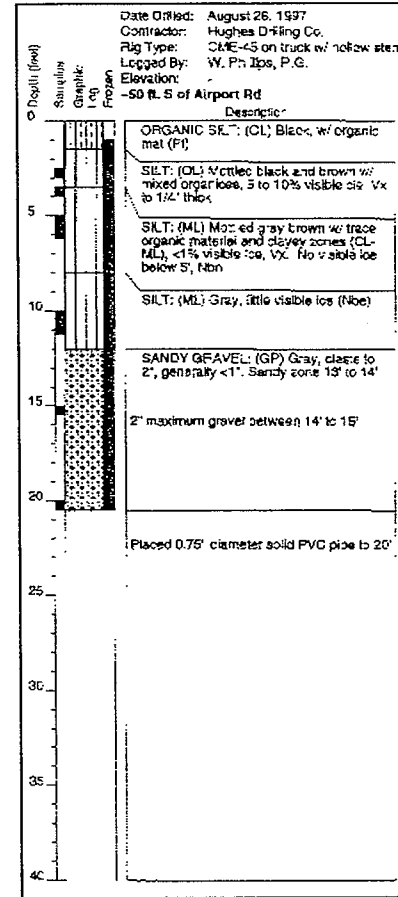
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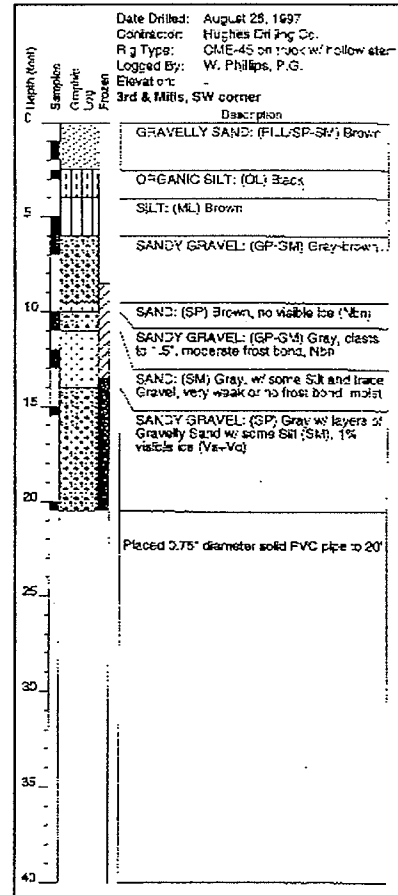
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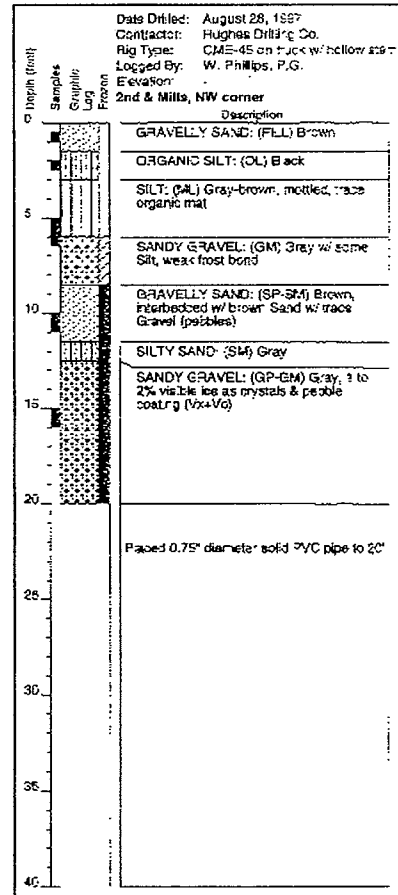
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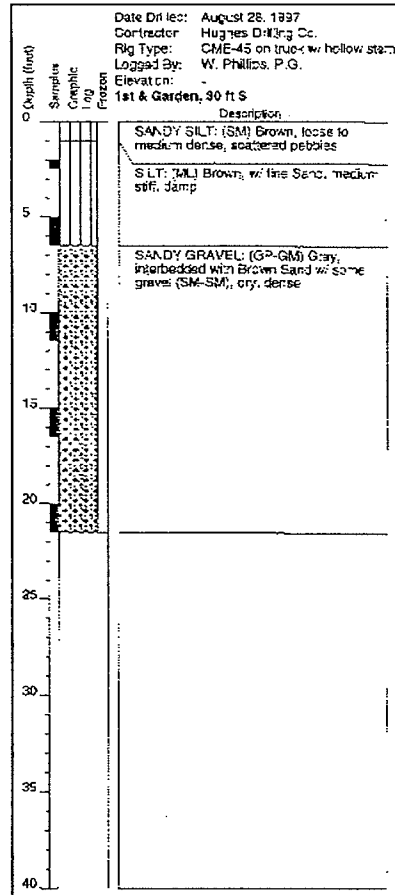
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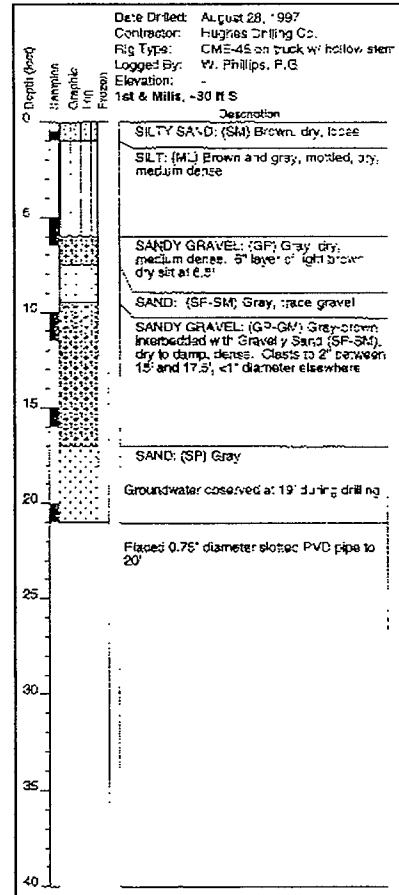
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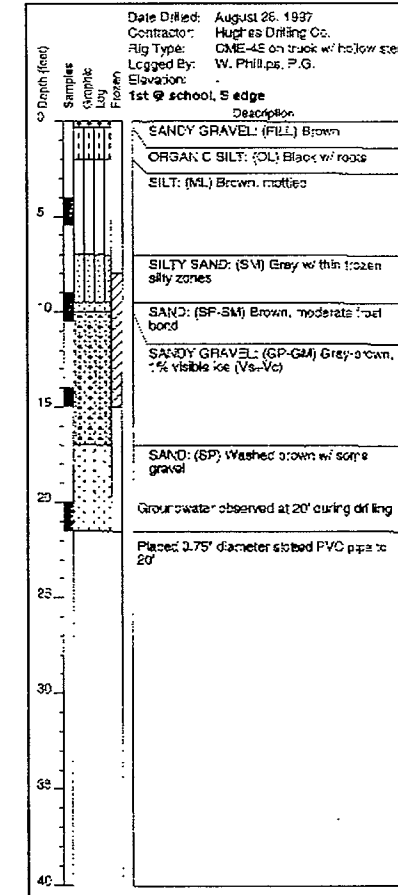
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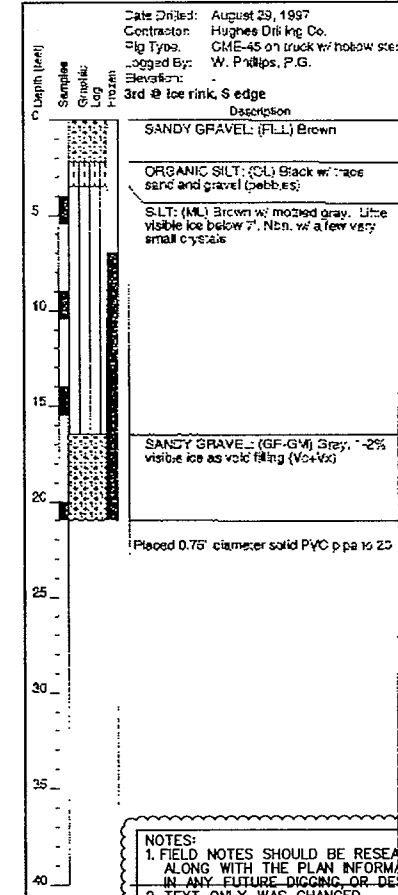
TEST HOLE 10 (TH-10)



TEST HOLE 11 (TH-11)

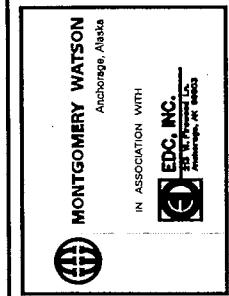
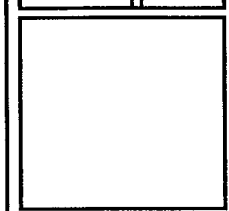
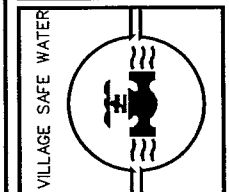


TEST HOLE 12 (TH-12)



NOTES:
1. FIELD NOTES SHOULD BE RESEARCHED ALONG WITH THE PLAN INFORMATION, IN ANY FUTURE DIGGING OR DESIGNING.
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RECORD DRAWING CERTIFICATE
THESE DRAWINGS REFLECT
RECORDED INFORMATION OBTAINED
DURING CONSTRUCTION.
INFORMATION PROVIDED HEREIN
IS ACCURATE TO THE BEST OF
MY KNOWLEDGE.
NAME: Alyse Yackum
DATE: 4/10/08



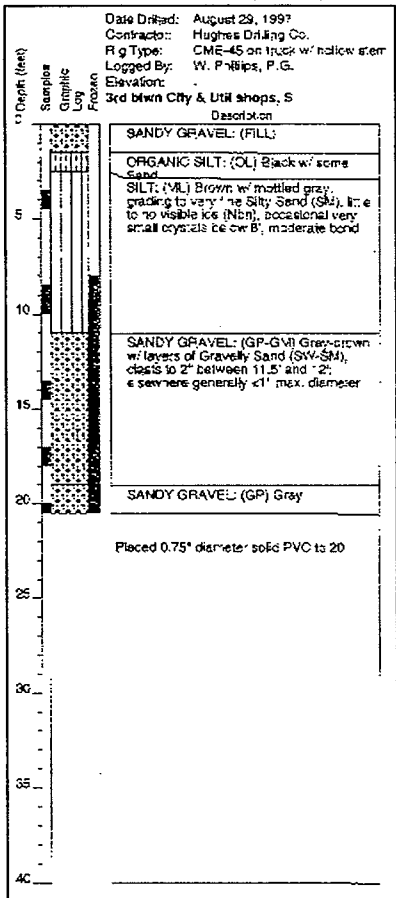
TOO'GHA, INC. - TANANA, ALASKA
WATER DISTRIBUTION &
WASTEWATER COLLECTION SYSTEM
SOIL TEST HOLE LOGS
(TH1 - TH12)

REVISION	DATE	BY
AGENCY REVIEW	MT 7/14/00	MT
ISSUED FOR CONSTRUCTION	MT 5/2001	MT
RECORD DRAWING	MT 4/2003	MT
RECORD DRAWING	AT 5/2006	AT

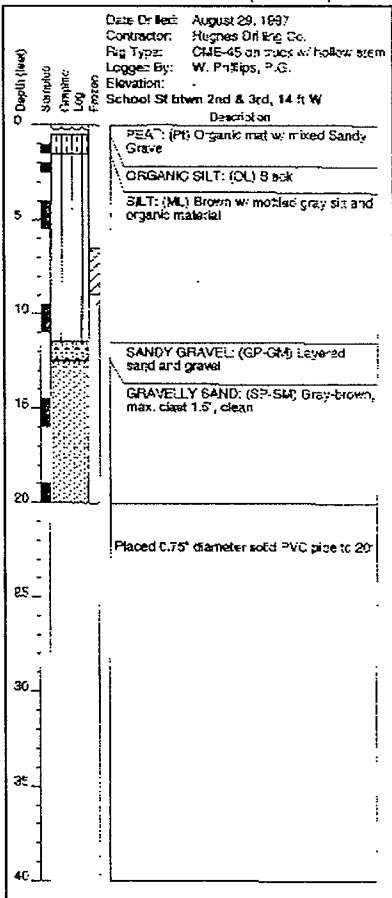
Project No.	189078.00002
Date	JULY 14, 2000
Designed	MT
Drawn	LF
Approved	GM

Sheet No. G-9
SHEET OF

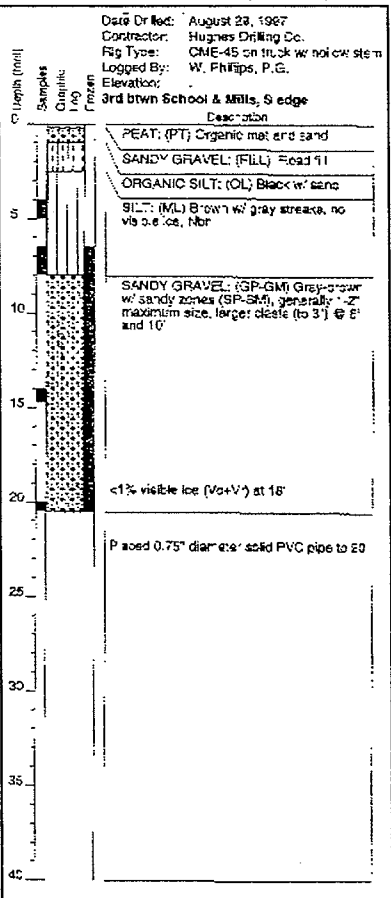
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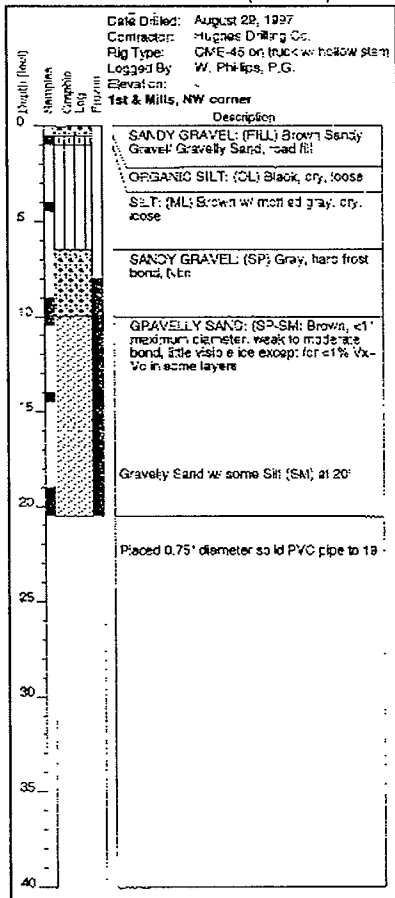
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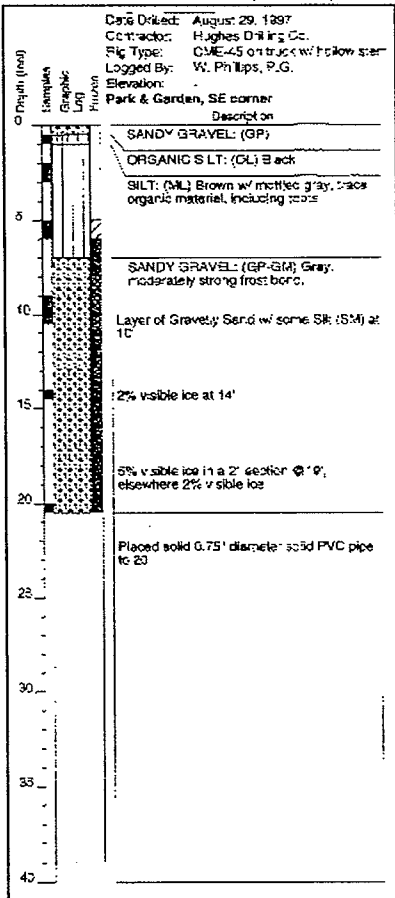
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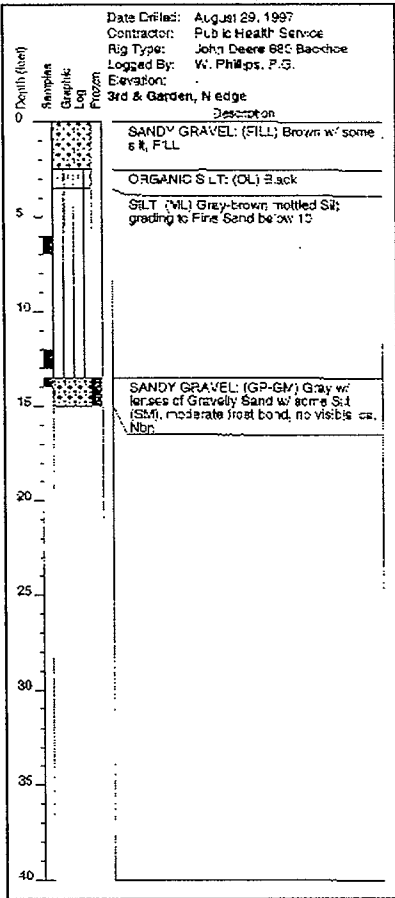
TEST HOLE 16 (TH-16)



TEST HOLE 17 (TH-17)



TEST HOLE 18 (TH-18)



NOTES:
1. FIELD NOTES SHOULD BE RESEARCHED ALONG WITH THE PLAN INFORMATION, IN ANY FUTURE DIGGING, OR DESIGNING.
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RECORD DRAWING - CERTIFICATE
THESE DRAWINGS REFLECT
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INFORMATION PROVIDED HEREIN
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MY KNOWLEDGE.
NAME: *Allen E. Parker* DATE: *6/16/06*

VILLAGE SAFE WATER

MONTGOMERY WATSON
Anchorage, Alaska
IN ASSOCIATION WITH
EDC, INC.
REGISTERED PROFESSIONAL ENGINEER

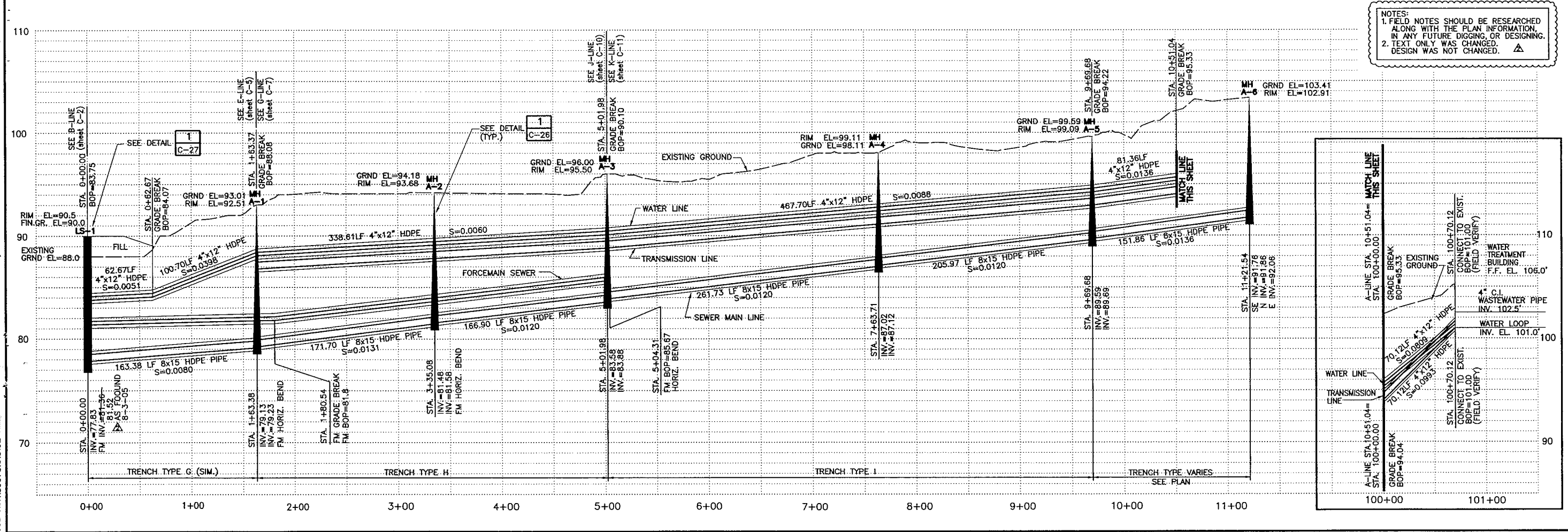
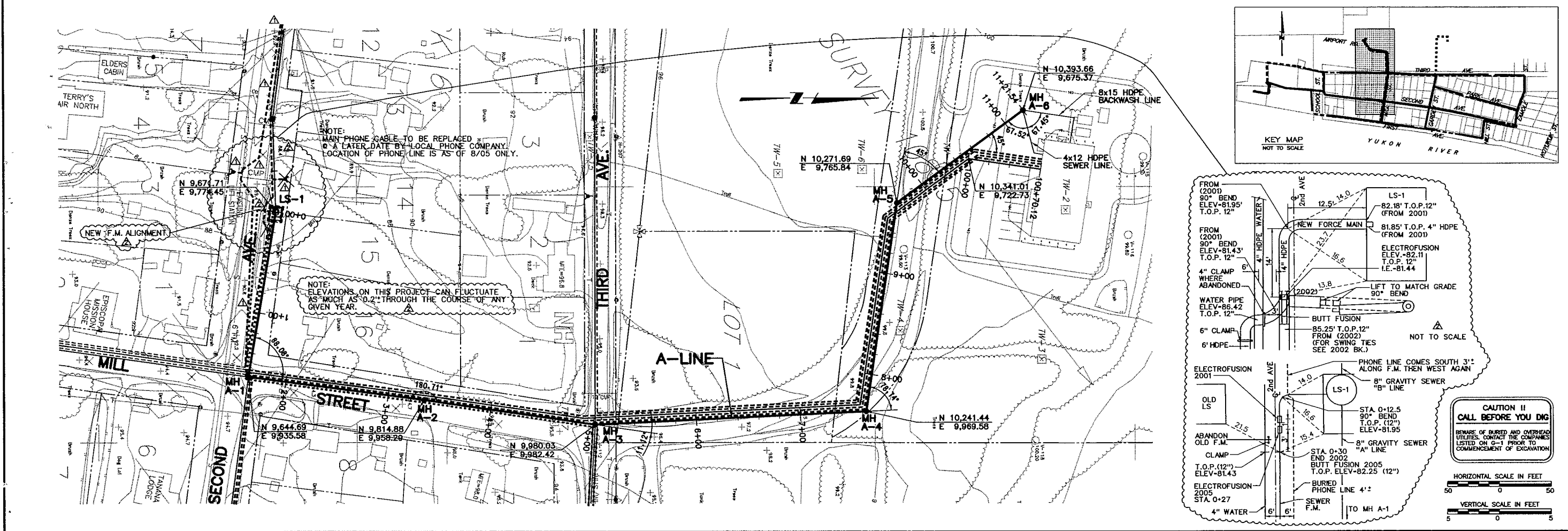
TOO'GHA INC. - TANANA, ALASKA
WATER DISTRIBUTION &
WASTEWATER COLLECTION SYSTEM
SOIL TEST HOLE LOGS
(TH13 - TH18)

REVISION	BY	DATE
AGENCY REVIEW	MT	7/16/06
ISSUED FOR CONSTRUCTION	MT	5/20/01
RECORD DRAWING	MT	4/20/05
RECORD DRAWING	AT	5/20/06

Project No. 189078.010102
Date: JULY 14, 2006
Designed: MT
Drawn: LF
Approved: GM

Sheet No. **G-10**
SHEET OF

JOB No.1189078.010102 TIME: 09-JUN-2006 10:25 FILE: C:\Pro\Tanana\ws_lines\cabit-2006\CO1.DGN



RECORD DRAWING CERTIFICATE

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DATE 5/16/06

NAME Allen E. Yaker

VILLAGE SAFE WATER

TOO'GHA INC. - TANANA, ALASKA

WATER DISTRIBUTION & WASTEWATER COLLECTION SYSTEM

A - LINE SEWER AND WATER PLAN AND PROFILE

REVISION	BY	DATE
1	MT	7/14/00
2	MT	5/20/01
3	MT	4/20/05
4	LF	5/20/06

Project No. 1189078.010102

Date JULY 14, 2006

Designed MT

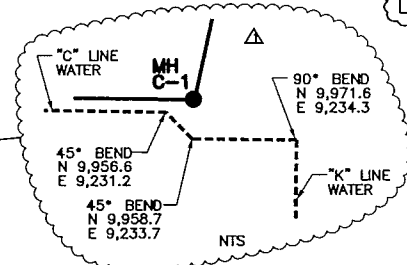
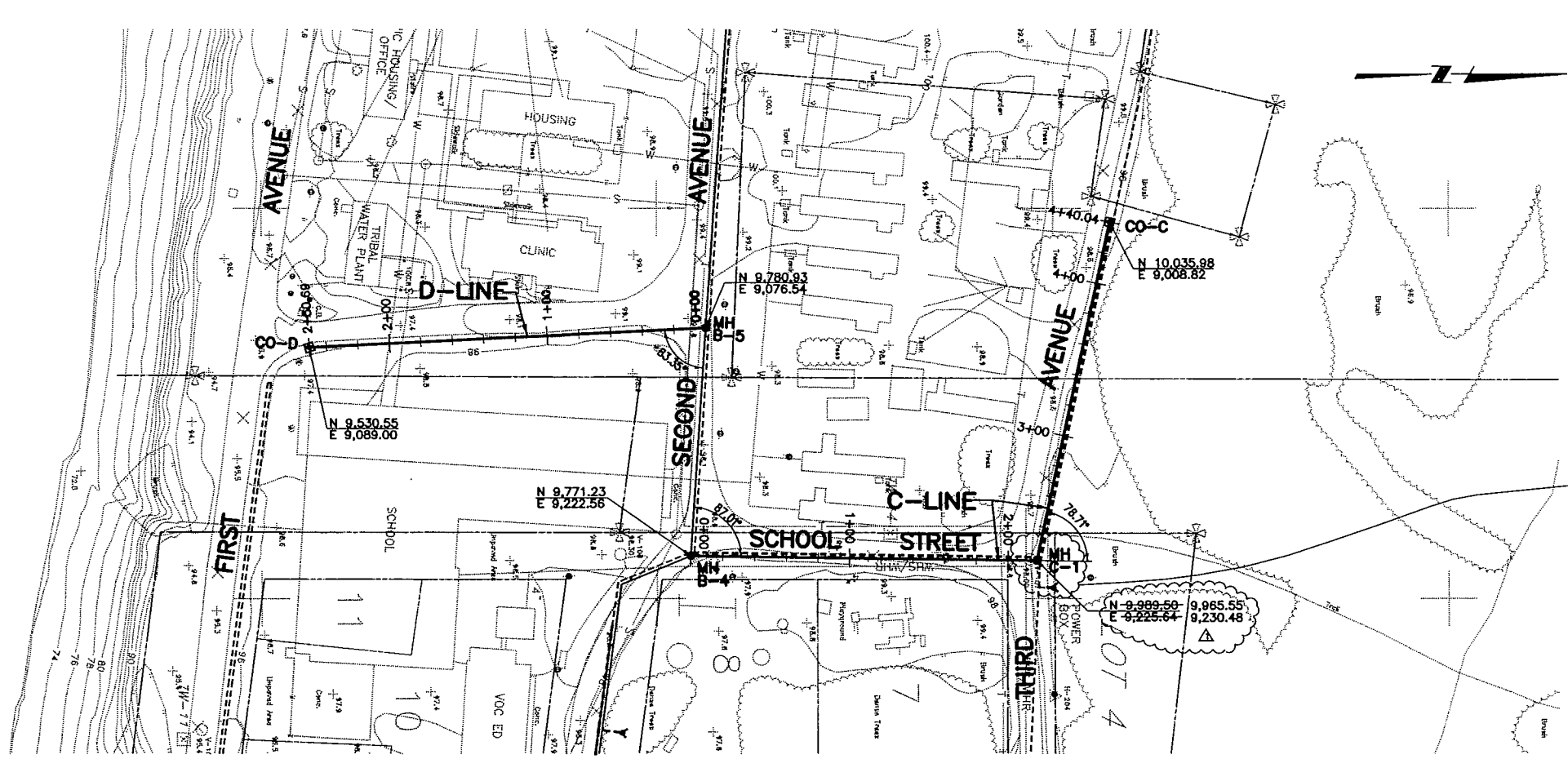
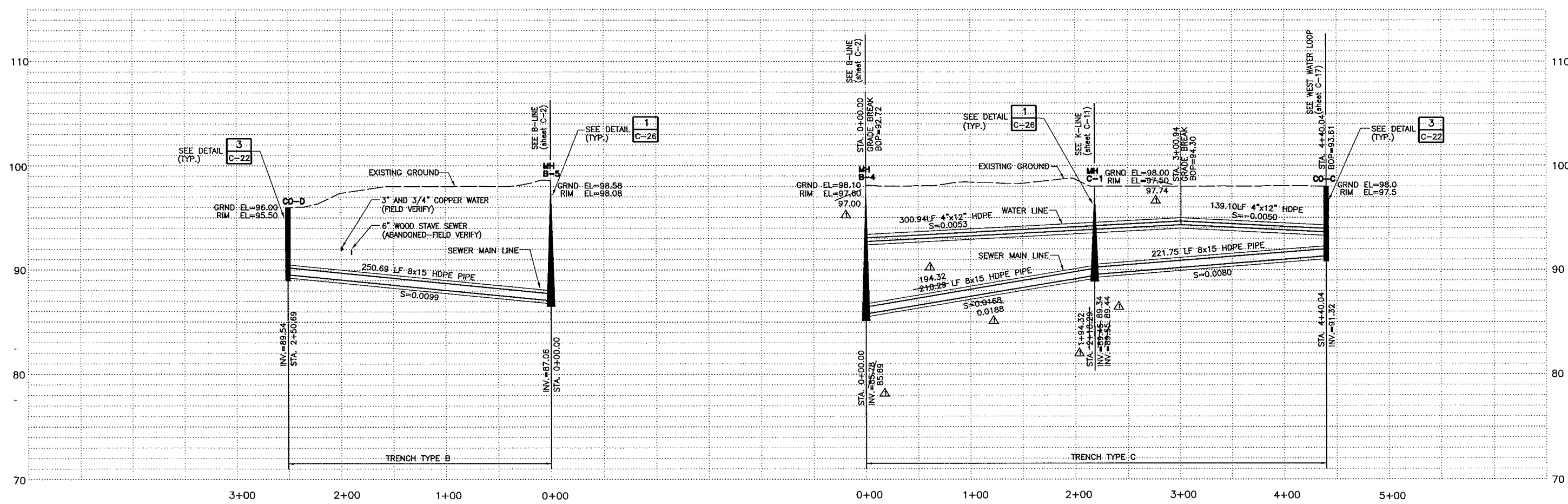
Drawn LF

Approved GM

Sheet No. C-1

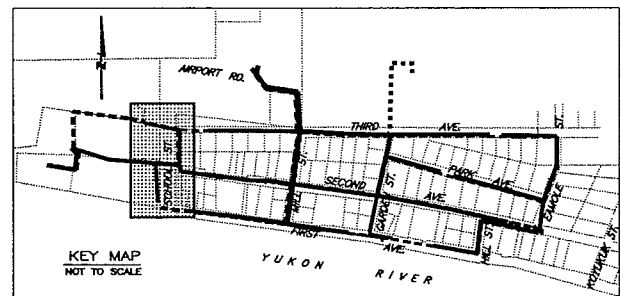
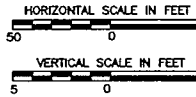
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NOTES:
1. FIELD NOTES SHOULD BE RESEARCHED
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IN ANY FUTURE DIGGING, OR DESIGNING.
2. TEXT ONLY WAS CHANGED.
DESIGN WAS NOT CHANGED.

CAUTION !!
CALL BEFORE YOU DIG
BEWARE OF BURIED AND OVERHEAD
UTILITIES. CONTACT THE COMPANIES
LISTED ON G-1 PRIOR TO
COMMENCEMENT OF EXCAVATION



RECORD DRAWING CERTIFICATE

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RECORDED INFORMATION OBTAINED
DURING CONSTRUCTION.
INFORMATION PROVIDED HEREIN
IS ACCURATE TO THE BEST OF
MY KNOWLEDGE.

Ally E. Jackson
DATE: 6/16/06

STATE OF ALASKA
REGISTERED PROFESSIONAL ENGINEER
No. 4918
JULY 14, 2000

STATE OF ALASKA
REGISTERED PROFESSIONAL ENGINEER
No. 4918
JULY 14, 2000

VILLAGE SAFE WATER

STATE OF ALASKA
REGISTERED PROFESSIONAL ENGINEER
No. 4918
JULY 14, 2000

STATE OF ALASKA
REGISTERED PROFESSIONAL ENGINEER
No. 4918
JULY 14, 2000

MONTGOMERY WATSON
Anchorage, Alaska

IN ASSOCIATION WITH
EDC, INC.
ELECTRIC DESIGN CONSULTANTS

TOO'GHA, INC. - TANANA, ALASKA
WATER DISTRIBUTION & SYSTEM
WASTEWATER COLLECTION SYSTEM
C - LINE AND D - LINE
SEWER AND WATER
PLAN AND PROFILE

REVISION	BY	DATE
1	MT	7/14/00
2	MT	5/2001
3	MT	4/2005
4	AY	5/2006

Project No.	1189078.010102
Date	JULY 14, 2000
Designed	MT
Drawn	LF
Approved	CM

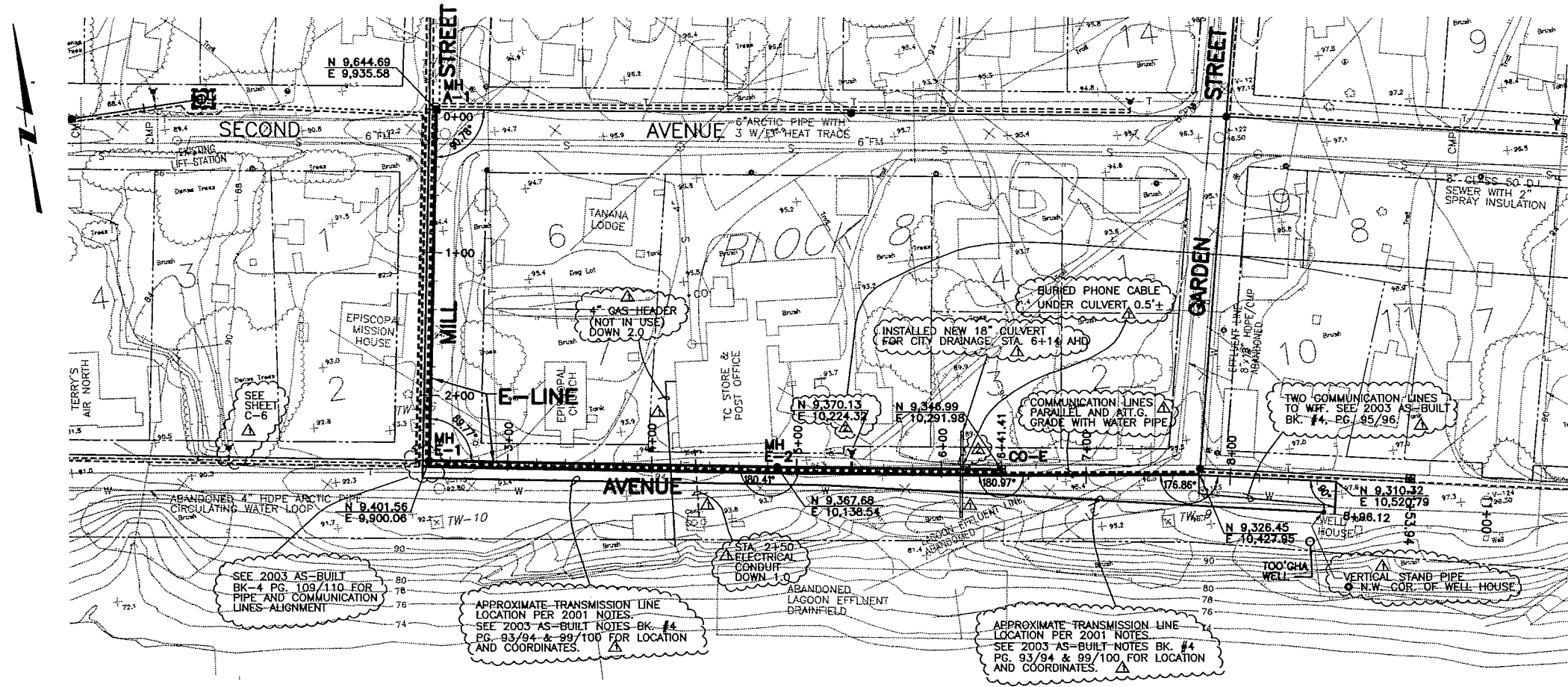
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C-4

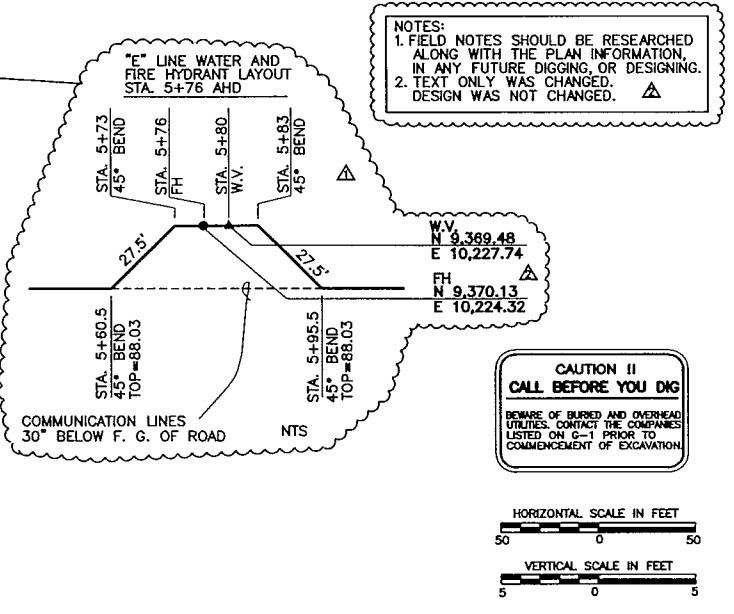
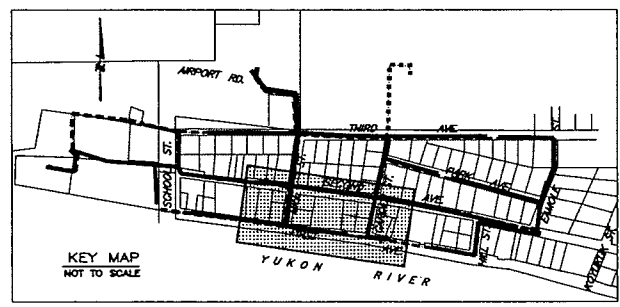
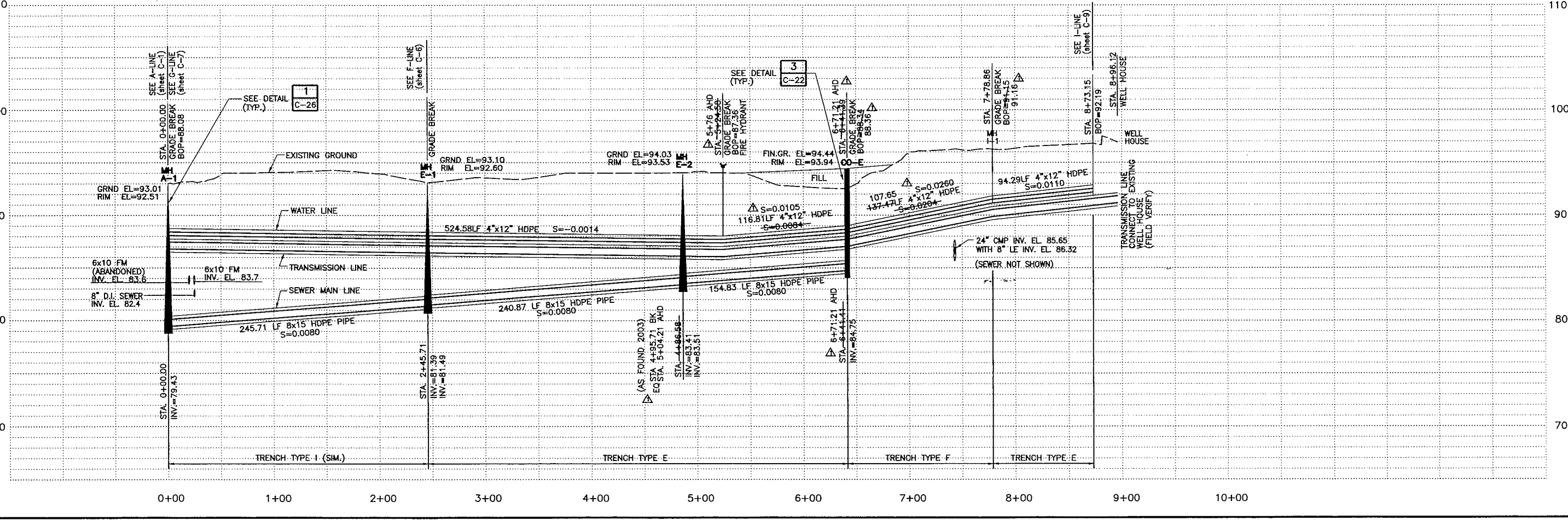
OF

FILE: C:\Proj\Tandem\ws_lines\asbit-2006\005.DGN

JOB No.1189078.010102 TIME: 09-JUN-2006 10:35



NOTE: STATIONS SHOWN ARE AS FOUND IN 2003. INVERTS, RIMS, AND COORDINATES WILL NEED TO BE VERIFIED (E-LINE).



RECORD DRAWING CERTIFICATE

THESE DRAWINGS REFLECT RECORDED INFORMATION OBTAINED DURING CONSTRUCTION. INFORMATION PROVIDED HEREIN IS ACCURATE TO THE BEST OF MY KNOWLEDGE.

DATE: 4/16/06

NAME: Alyssa E. Johnson

PROJECT: TANDEN WATER DISTRIBUTION & WASTEWATER COLLECTION SYSTEM

DESIGNED: MT

DRAWN: LF

APPROVED: CM

SHEET No. C-5

SHEET OF

TOUGH INC. - TANANA, ALASKA

WATER DISTRIBUTION & WASTEWATER COLLECTION SYSTEM

E-LINE & F-LINE

TRANSMISSION LINE (south end)

SEWER AND WATER

PLAN AND PROFILE

MONTGOMERY WATSON

Anchorage, Alaska

IN ASSOCIATION WITH

EDC, INC.

1111 E. 10th Ave.

ANCHORAGE, ALASKA 99501

ALASKA REGISTERED PROFESSIONAL ENGINEER

NO. 10000

EXPIRATION DATE 12/31/06

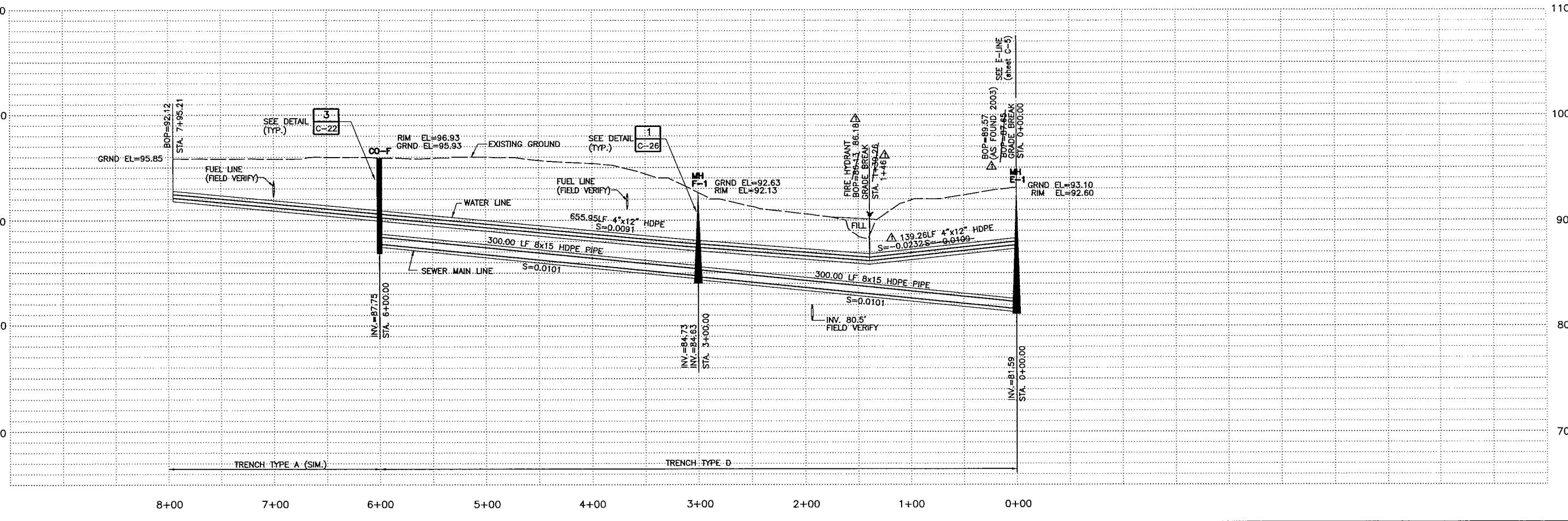
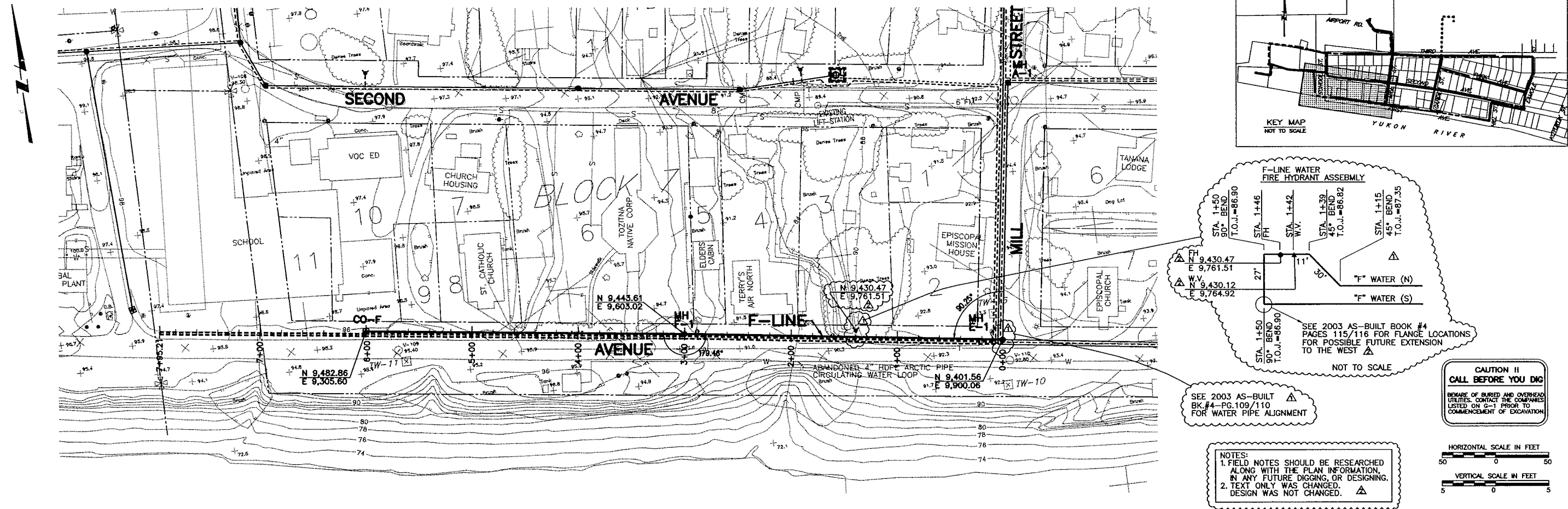
ALASKA REGISTERED PROFESSIONAL ENGINEER

NO. 10000

EXPIRATION DATE 12/31/06

FILE: C:\Proj\tonano\wa_lines\asbit-2008\006.DGN

JOB No.1189078.010102 TIME: 09-JUN-2006 10:37



RECORD DRAWING CERTIFICATE

THESE DRAWINGS REFLECT RECORDED INFORMATION OBTAINED DURING CONSTRUCTION. INFORMATION PROVIDED HEREIN IS ACCURATE TO THE BEST OF MY KNOWLEDGE.

NAME

DATE

Allyn E. Tolson

6/16/06

STATE OF ALASKA

REGISTERED PROFESSIONAL ENGINEER

NO. 1454

EXPIRATION DATE 12/31/2008

VILLAGE SAFE WATER

STATE OF ALASKA

REGISTERED PROFESSIONAL ENGINEER

NO. 1454

EXPIRATION DATE 12/31/2008

MONTGOMERY WATSON

ANCHORAGE, ALASKA

IN ASSOCIATION WITH

EDC, INC.

ANCHORAGE, ALASKA

TOO'GHA INC. - TANANA, ALASKA

WATER DISTRIBUTION & WASTEWATER COLLECTION SYSTEM

F - LINE SEWER AND WATER

PLAN AND PROFILE

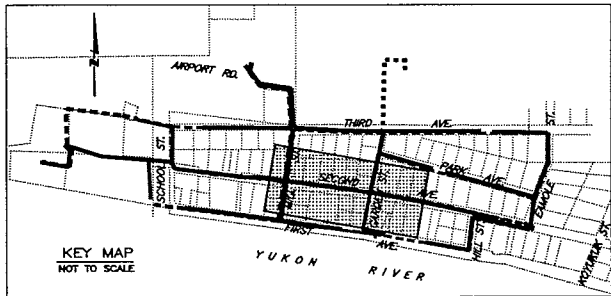
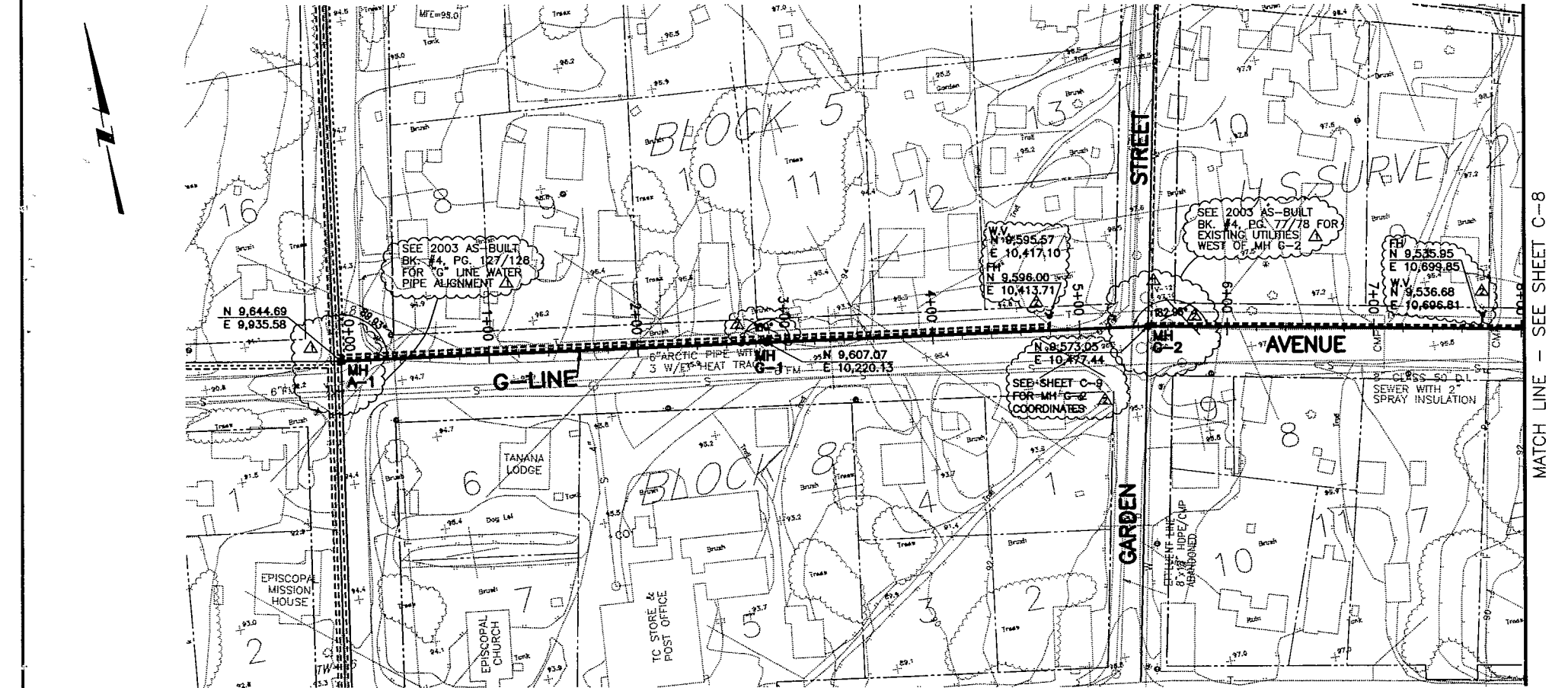
REVISION	BY	DATE
AGENCY REVIEW	MT	7/14/00
ISSUED FOR CONSTRUCTION	MT	5/2001
RECORD DRAWING	MT	4/2005
RECORD DRAWING	AY	5/2006

Project No.	1189078.010102
Date	JULY 14, 2000
Designed	MT
Drawn	LF
Approved	GM

Sheet No.

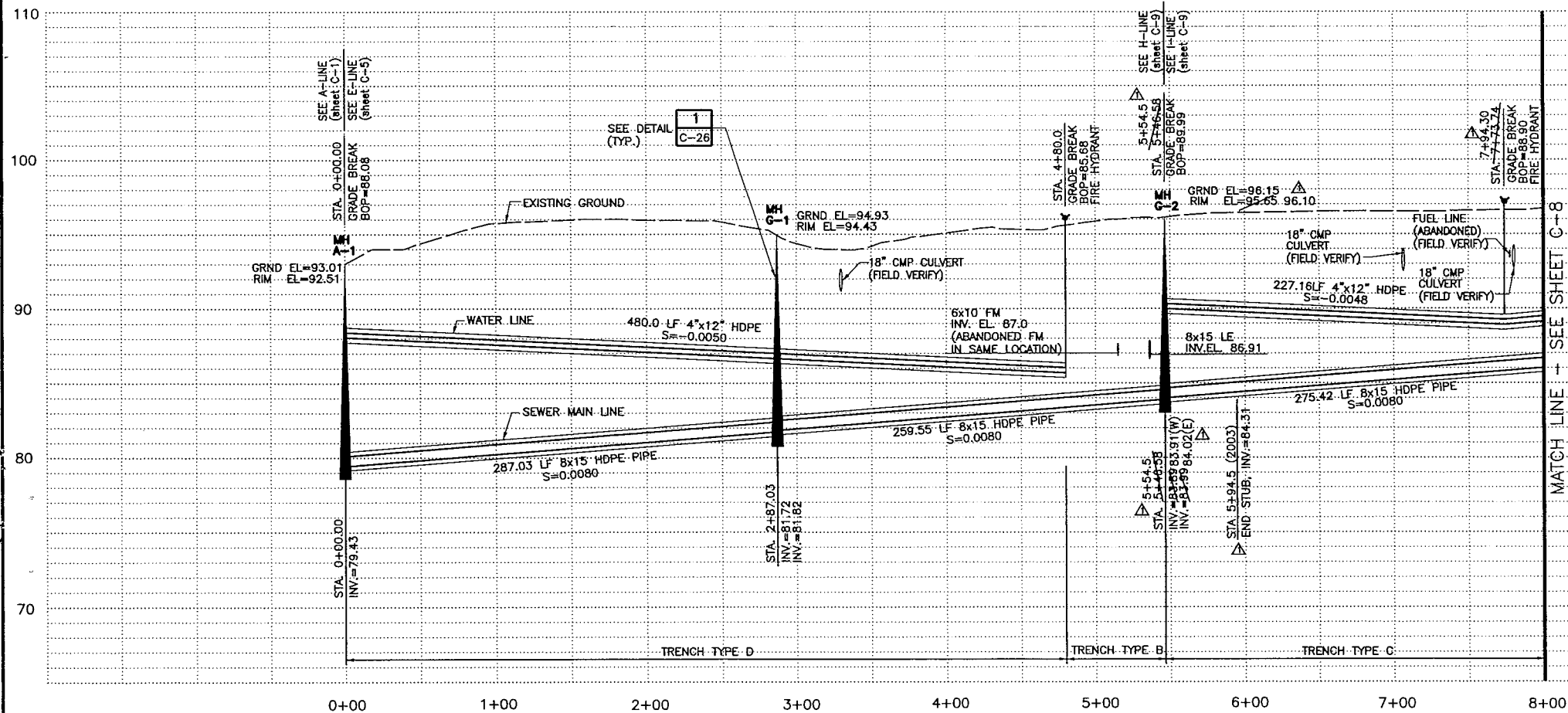
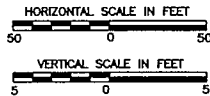
C-6

SHEET OF



NOTES:
1. FIELD NOTES SHOULD BE RESEARCHED
ALONG WITH THE PLAN INFORMATION.
IN ANY FUTURE DIGGING OR DESIGNING.
2. TEXT ONLY WAS CHANGED.
DESIGN WAS NOT CHANGED.

CAUTION !!
CALL BEFORE YOU DIG
BEWARE OF BURIED AND OVERHEAD
UTILITIES. CONTACT THE COMPANIES
LISTED ON G-1 PRIOR TO
COMMENCEMENT OF EXCAVATION



RECORD DRAWING CERTIFICATE

THESE DRAWINGS REFLECT
RECORDED INFORMATION OBTAINED
DURING CONSTRUCTION.
INFORMATION PROVIDED HEREIN
IS ACCURATE TO THE BEST OF
MY KNOWLEDGE.

Allyn E. Yakovlev
NAME
DATE

STATE OF ALASKA
REGISTERED PROFESSIONAL ENGINEER
No. 6542
EXPIRATION DATE 12/31/2008

VILLAGE SAFE WATER

STATE OF ALASKA
REGISTERED PROFESSIONAL ENGINEER
No. 9808
EXPIRATION DATE 12/31/2008

MONTGOMERY WATSON
Anchorage, Alaska

IN ASSOCIATION WITH
EDC, INC.
Anchorage, Alaska

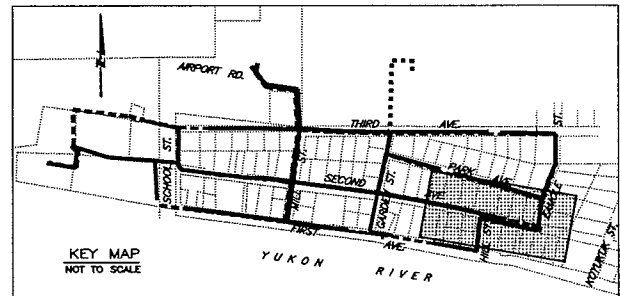
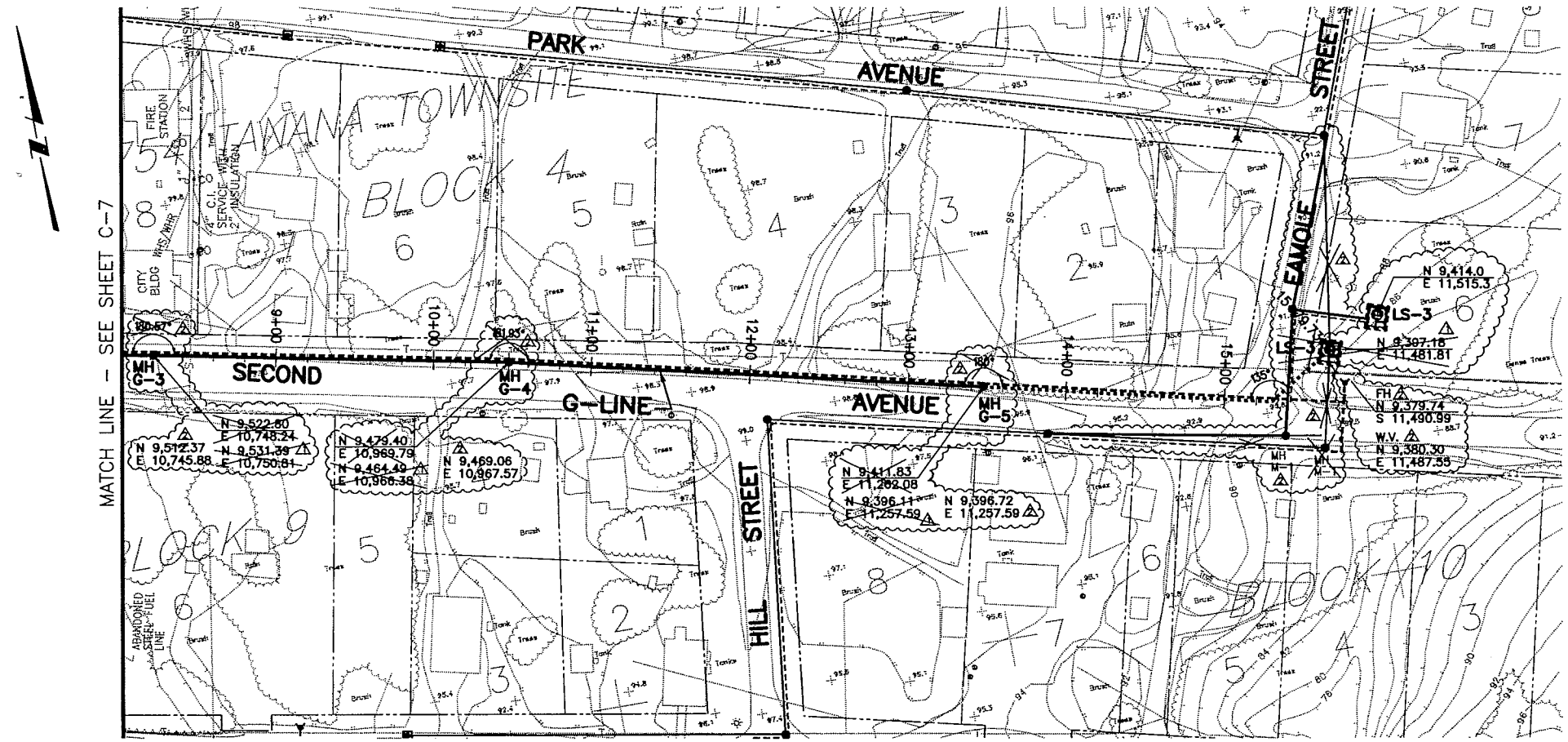
TOO'GHA INC. - TANANA, ALASKA
WATER DISTRIBUTION &
WASTEWATER COLLECTION SYSTEM

G - LINE SEWER AND WATER
PLAN AND PROFILE

REVISION	BY	DATE
AGENCY REVIEW	MT	7/14/00
ISSUED FOR CONSTRUCTION	MT	5/2001
RECORD DRAWING	MT	4/2005
RECORD DRAWING	AY	5/2006

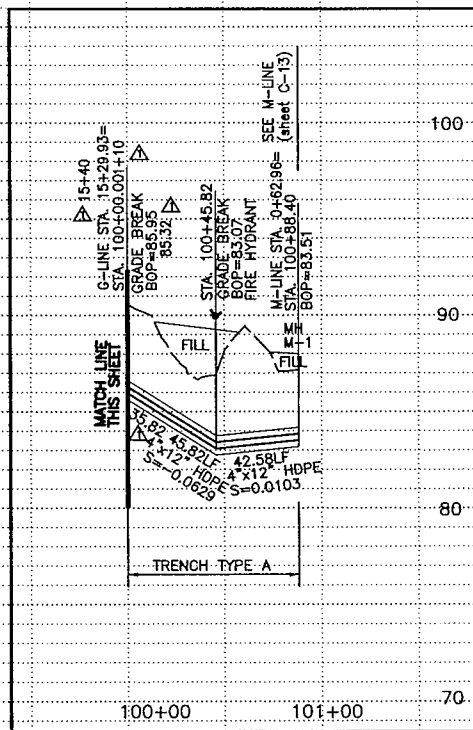
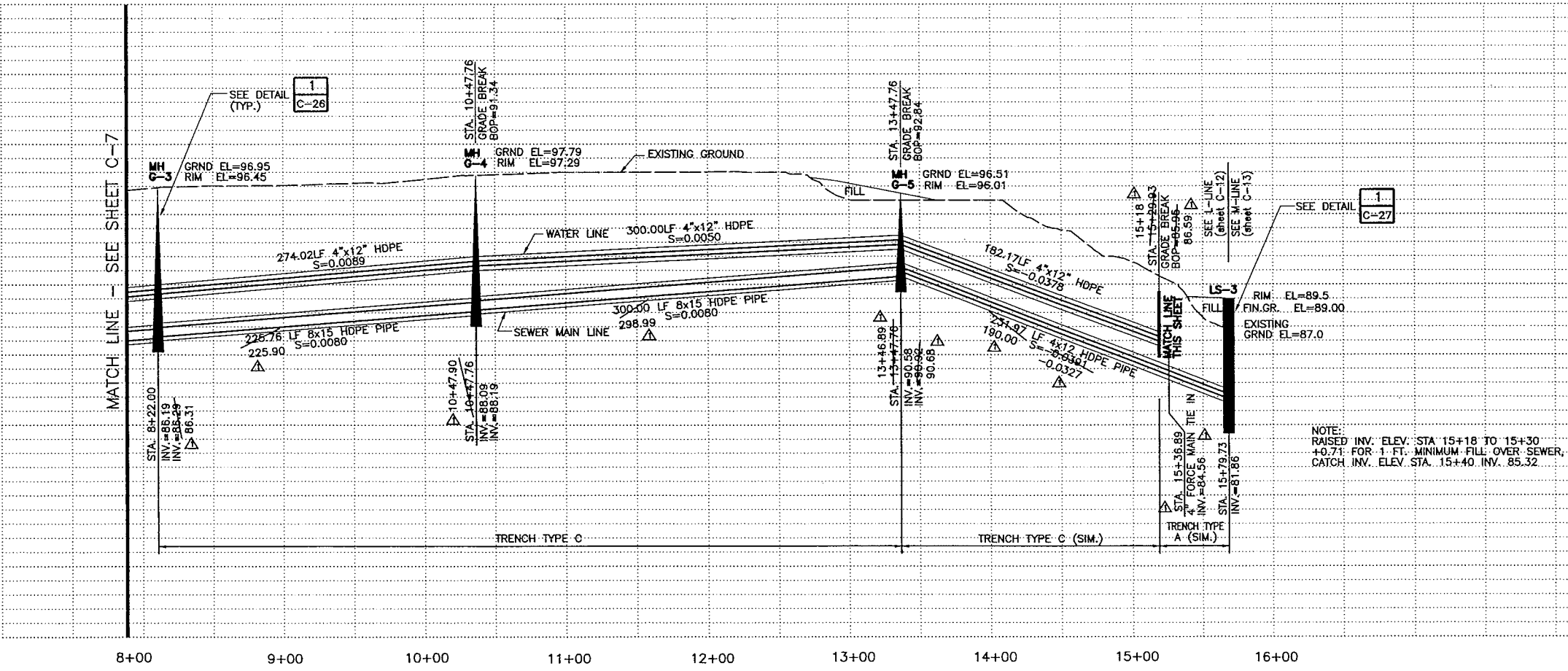
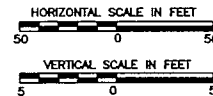
Project No.	Date	Designed	Drawn	Approved
189078.010102	JULY 14, 2000	MT	LF	CM

Sheet No. C-7
SHEET OF



NOTES:
1. FIELD NOTES SHOULD BE RESEARCHED
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DESIGN WAS NOT CHANGED.

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UTILITIES. CONTACT THE COMPANIES
LISTED ON G-1 PRIOR TO
COMMENCEMENT OF EXCAVATION.



RECORD DRAWING CERTIFICATE

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MY KNOWLEDGE.

Allyne E. Jackson 6/14/06
NAME DATE

STATE OF ALASKA
DIVISION OF HIGHWAYS
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA
DIVISION OF HIGHWAYS
REGISTERED PROFESSIONAL ENGINEER

VILLAGE SAFE WATER

STATE OF ALASKA
DIVISION OF HIGHWAYS
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA
DIVISION OF HIGHWAYS
REGISTERED PROFESSIONAL ENGINEER

MONTGOMERY WATSON
Anchorage, Alaska

IN ASSOCIATION WITH
EDC, INC.
ELECTRIC DESIGN CONSULTANTS

TOO'GHA, INC. - TANANA, ALASKA
WATER DISTRIBUTION & WATER
WASTEWATER COLLECTION SYSTEM

G - LINE SEWER AND WATER
PLAN AND PROFILE

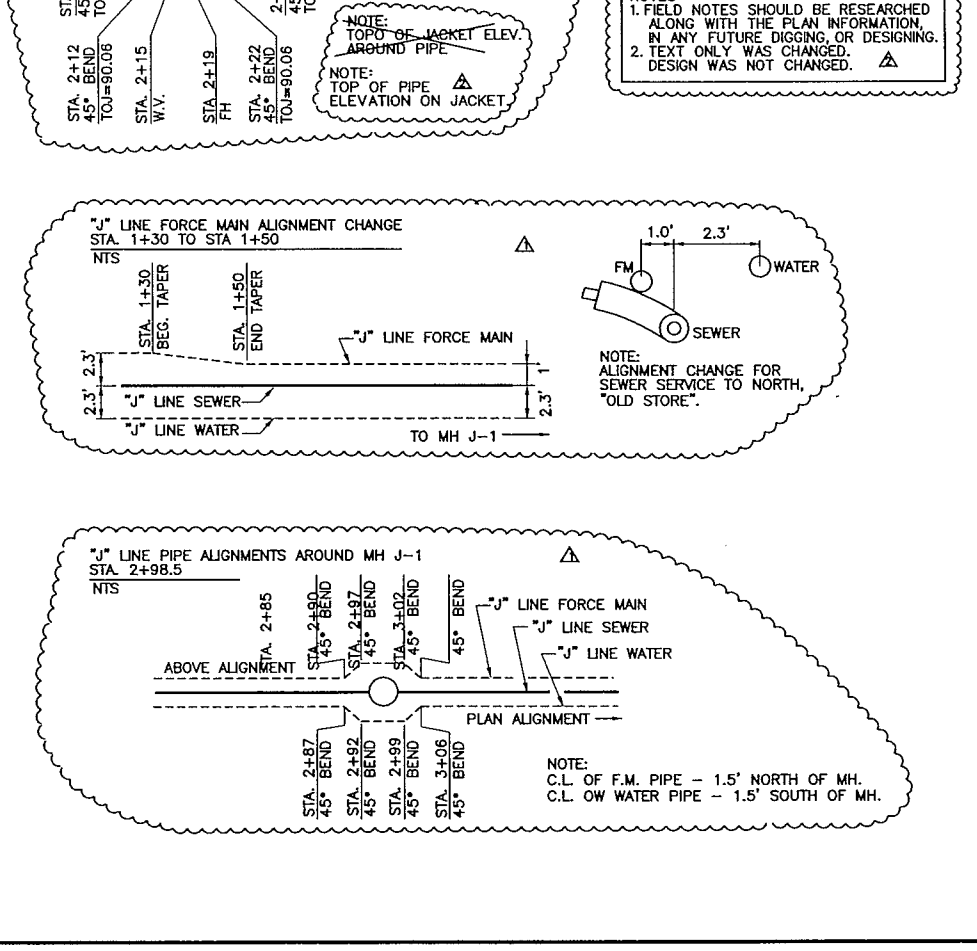
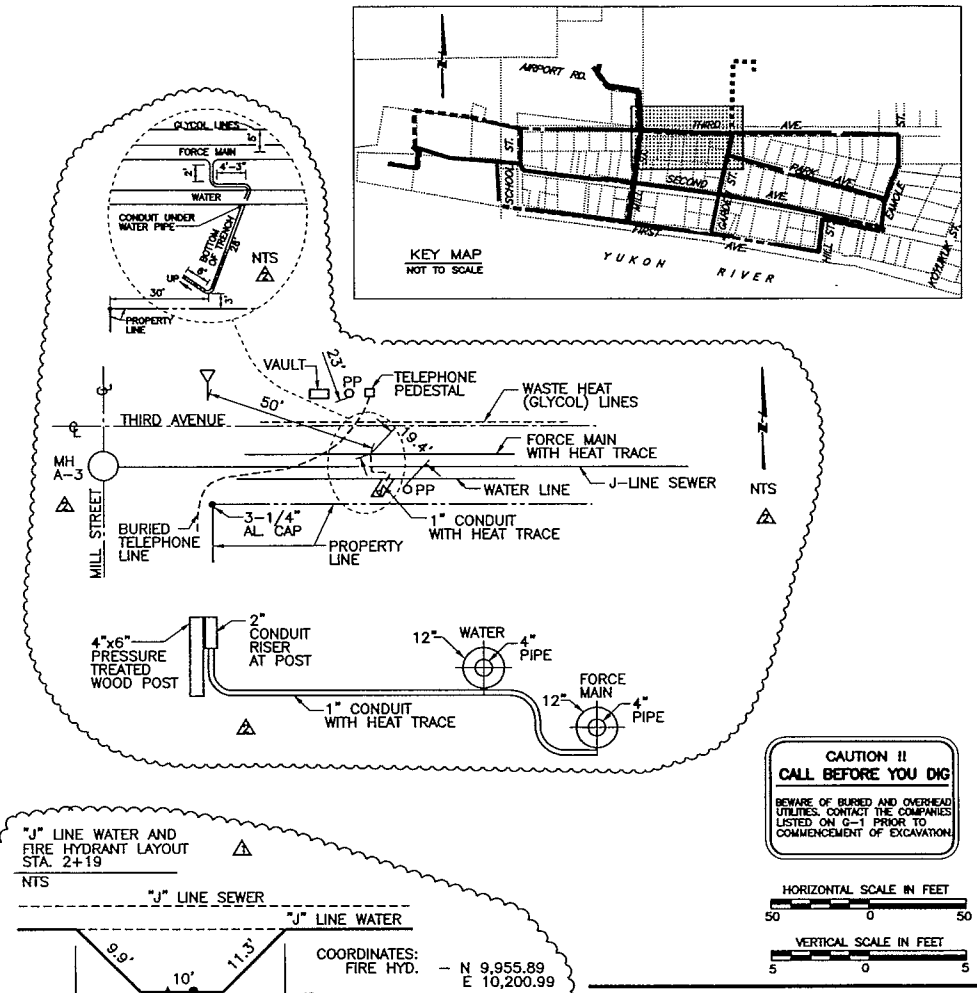
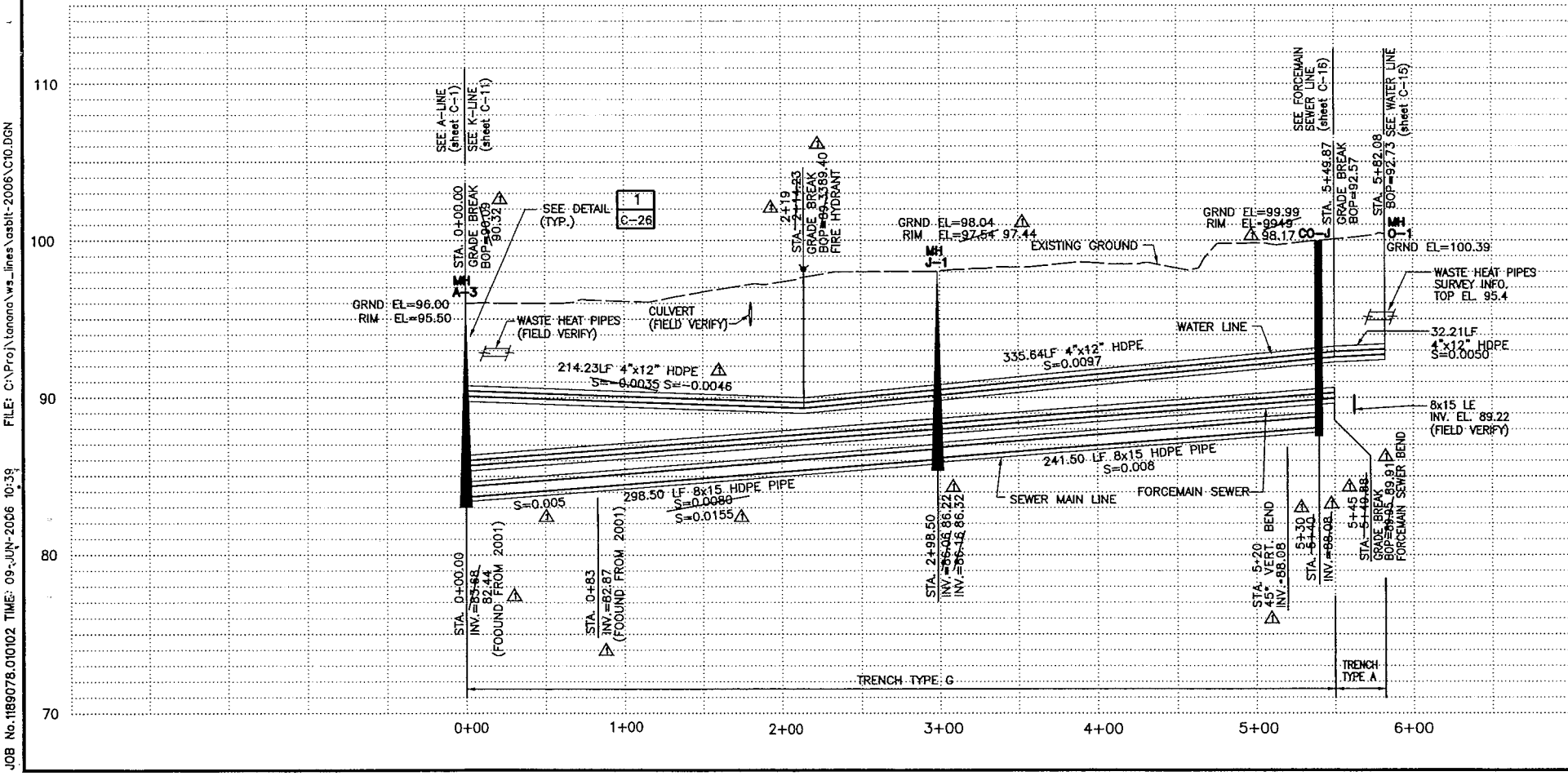
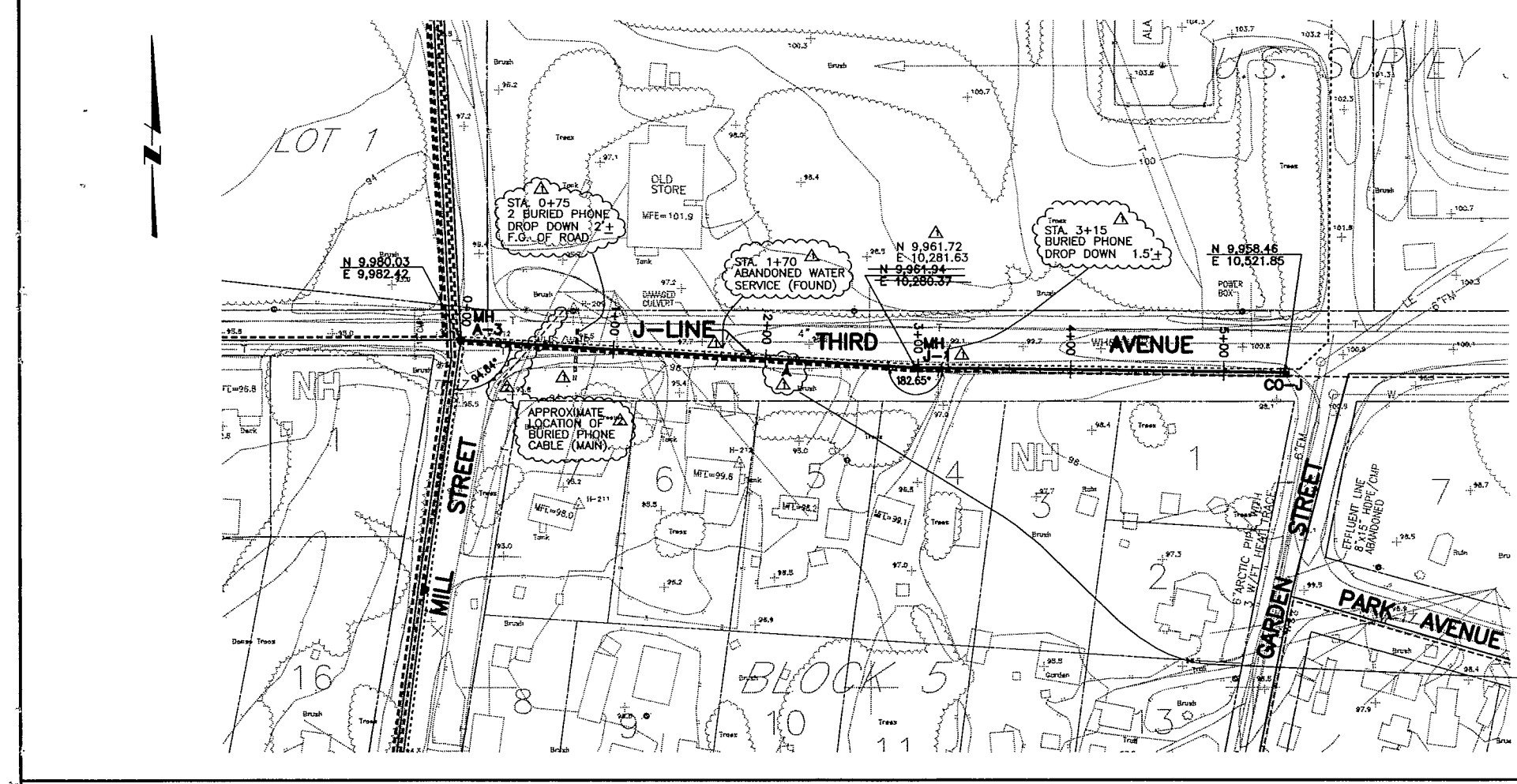
REVISION	BY	DATE
AGENCY REVIEW	MT	7/14/00
ISSUED FOR CONSTRUCTION	MT	5/2001
RECORD DRAWING	MT	4/2005
RECORD DRAWING	AY	5/2006

Project No.	Date	Designed	Drawn	Approved
189078.010102	JULY 14, 2000	MT	LF	GM

Sheet No. **C-8**
SHEET OF

FILE: C:\Proj\tanana\ws_lines\asit-2006\C10.DGN

JOB No.1189078.010102 TIME: 09-JUN-2006 10:39



RECORD DRAWING CERTIFICATE

THESE DRAWINGS REFLECT RECORDED INFORMATION OBTAINED DURING CONSTRUCTION. INFORMATION PROVIDED HEREIN IS ACCURATE TO THE BEST OF MY KNOWLEDGE.

DATE: 5/14/06

NAME: Alyse Seakum

PROJECT: 1189078.010102

DATE: JULY 14, 2006

DESIGNED: MT

DRAWN: LF

APPROVED: GM

SHEET No. C-10

SHEET OF

MONTGOMERY WATSON

Anchorage, Alaska

IN ASSOCIATION WITH

EDC, INC.

225 W. W. P. Bldg. 2nd Fl.

ANCHORAGE, ALASKA 99501

TOO'GHA, INC. - TANANA, ALASKA

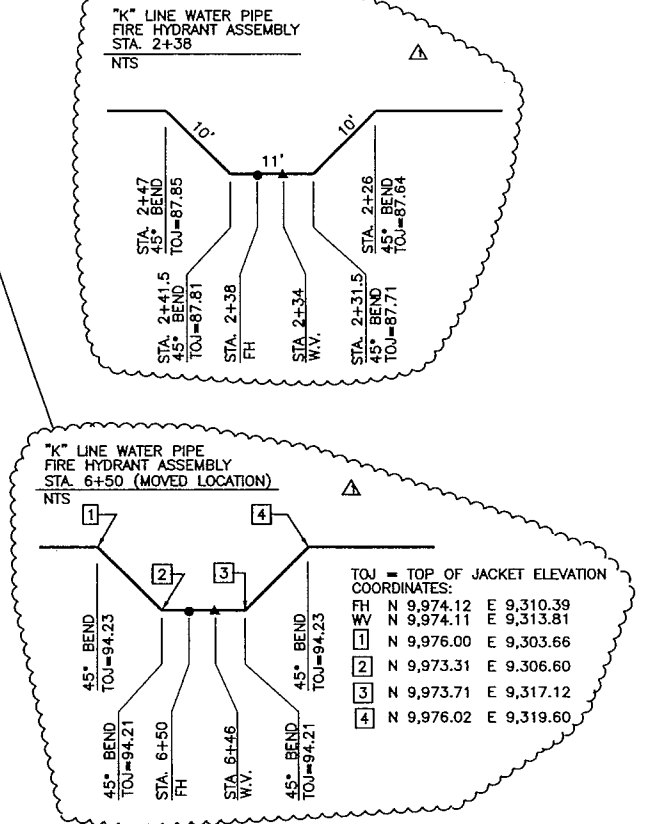
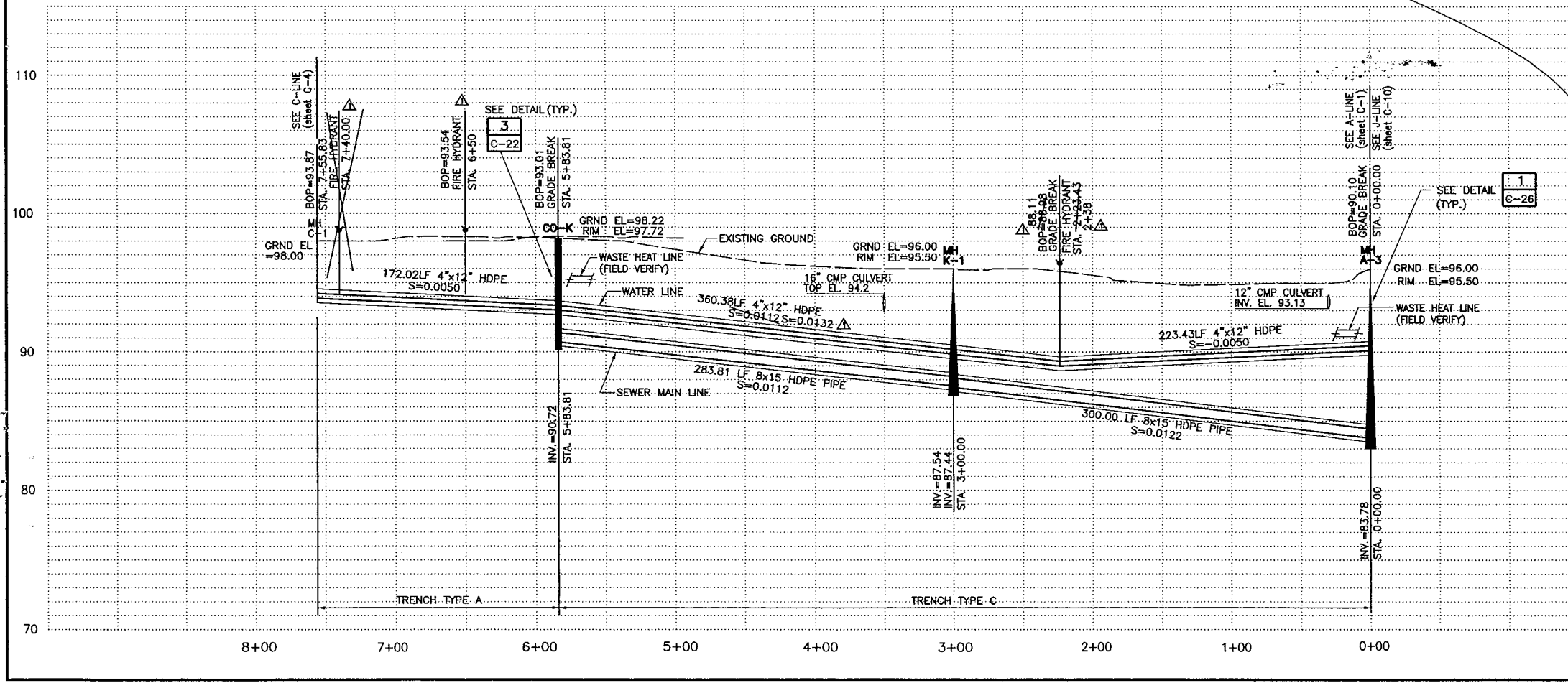
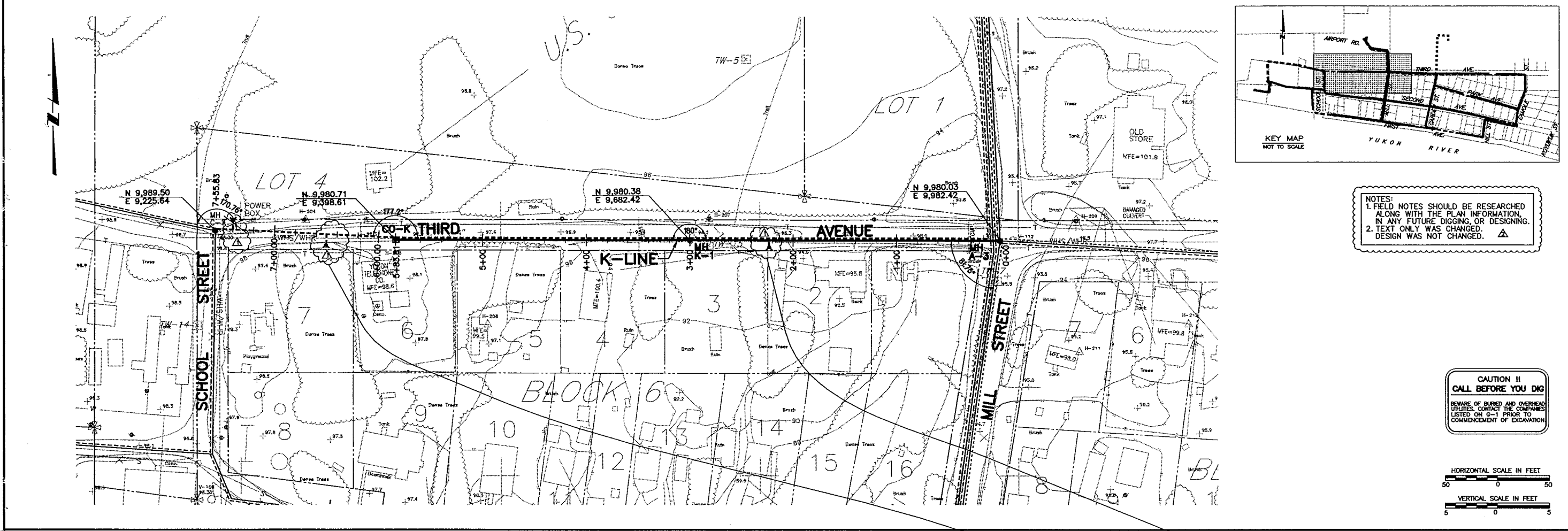
WATER DISTRIBUTION & SYSTEM

WASTEWATER COLLECTION SYSTEM

J - LINE SEWER AND WATER

PLAN AND PROFILE

FILE: C:\Proj\Tanana\ws_lines\asb11-2006\11.DGN JOB No.1189078.010102 TIME: 09-JUN-2006 10:39



RECORD DRAWING CERTIFICATE

THESE DRAWINGS REFLECT RECORDED INFORMATION OBTAINED DURING CONSTRUCTION. INFORMATION PROVIDED HEREIN IS ACCURATE TO THE BEST OF MY KNOWLEDGE.

NAME: Allyn E. Baker DATE: 4/10/06

VILLAGE SAFE WATER

STATE OF ALASKA
MELINDA A. TSU
CE-9600
REGISTERED PROFESSIONAL ENGINEER

CAUTION !!
CALL BEFORE YOU DIG

BEWARE OF BURIED AND OVERHEAD UTILITIES. CONTACT THE COMPANIES LISTED ON C-1 PRIOR TO COMMENCEMENT OF EXCAVATION.

HORIZONTAL SCALE IN FEET
0 50

VERTICAL SCALE IN FEET
0 5

MONTGOMERY WATSON
Anchorage, Alaska

IN ASSOCIATION WITH
EDC, INC.
1500 W. 10TH AVE.
ANCHORAGE, ALASKA 99501

TOOGLIA INC. - TANANA, ALASKA
WATER DISTRIBUTION & SYSTEM
WASTEWATER COLLECTION SYSTEM

K - LINE SEWER AND WATER
PLAN AND PROFILE

REVISION	BY	DATE
1	MT	7/14/00
2	MT	5/20/01
3	MT	4/20/05
4	MT	5/20/06

Project No. 1189078.010102

Date: JULY 14, 2006

Designed: MT

Drawn: LF

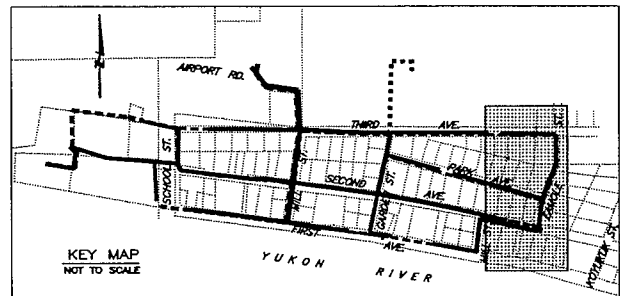
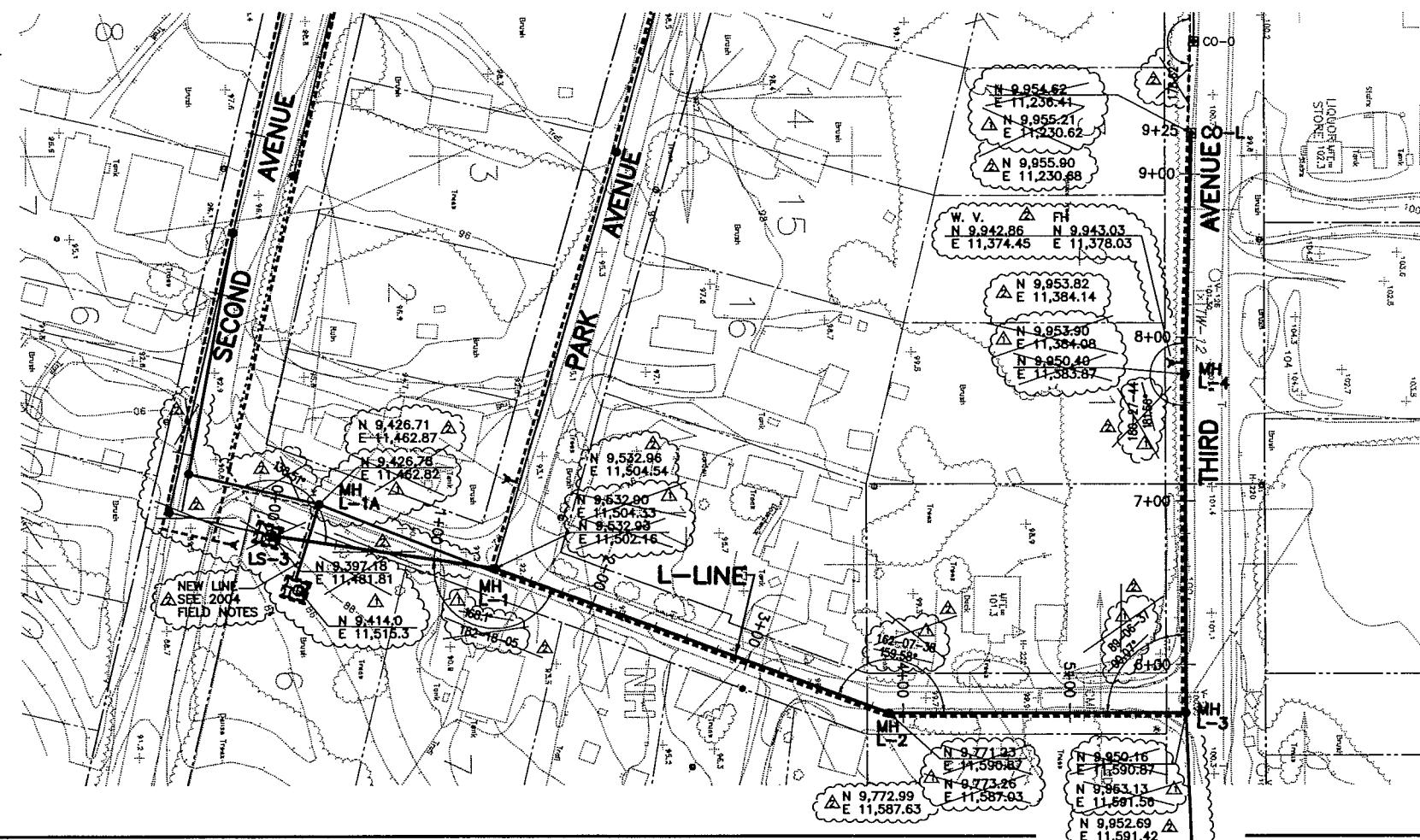
Approved: GM

Sheet No. C-11

SHEET OF

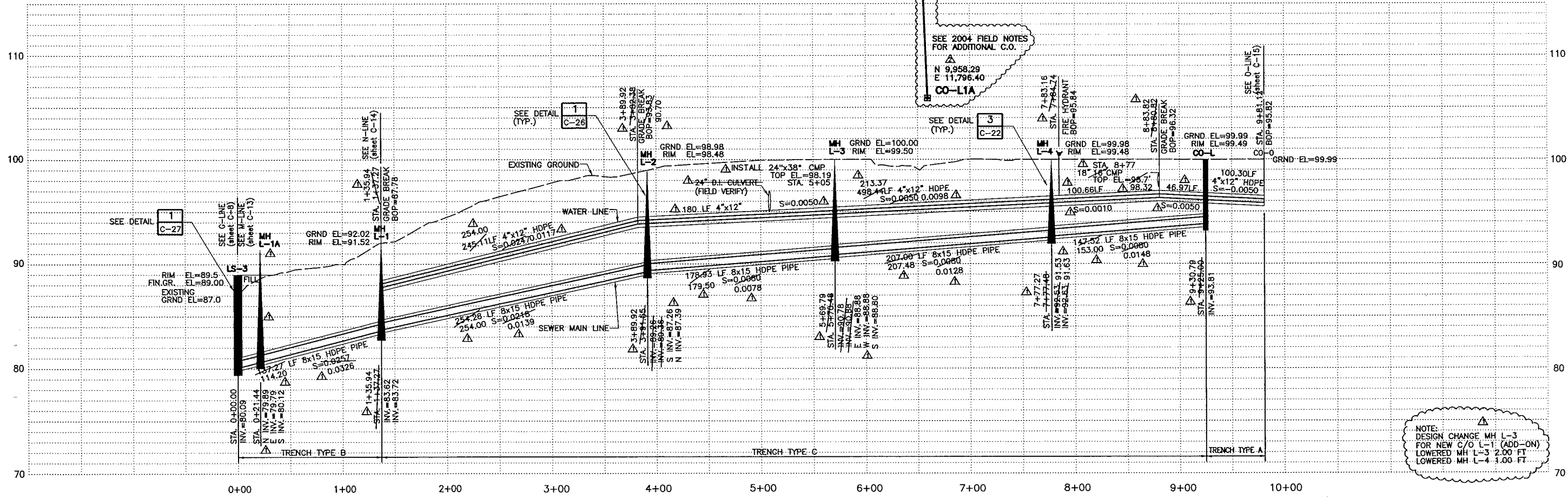
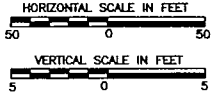
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JOB No.1189078.010102 TIME: 09 JUN 2006 10:39



NOTES:
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UTILITIES. CONTACT THE COMPANIES
LISTED ON C-1 PRIOR TO
COMMENCEMENT OF EXCAVATION.



NOTE:
DESIGN CHANGE MH L-3
FOR NEW C/O L-1: (ADD-ON)
LOWERED MH L-3 2.00 FT
LOWERED MH L-4 1.00 FT

RECORD DRAWING CERTIFICATE

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INFORMATION PROVIDED HEREIN
IS ACCURATE TO THE BEST OF
MY KNOWLEDGE.

Ally E. Tabor 6/14/06
NAME DATE

STATE OF ALASKA
REGISTERED PROFESSIONAL
ENGINEER
No. 6342

STATE OF ALASKA
REGISTERED PROFESSIONAL
ENGINEER
No. 9908
WELDON A. TRU

MONTGOMERY WATSON
Anchorage, Alaska

IN ASSOCIATION WITH
EDC, INC.
150 W. 4th Avenue, Suite 1000
Anchorage, Alaska 99501

TOO'GHA, INC. - TANANA, ALASKA
WATER DISTRIBUTION & SYSTEM
WASTEWATER COLLECTION SYSTEM

L - LINE SEWER AND WATER
PLAN AND PROFILE

REVISION	BY	DATE
AGENCY REVIEW	MT	7/14/00
ISSUED FOR CONSTRUCTION	MT	5/2001
RECORD DRAWING	MT	4/2005
RECORD DRAWING	AY	5/2006

Project No. 1189078.010102

Date JULY 14, 2000

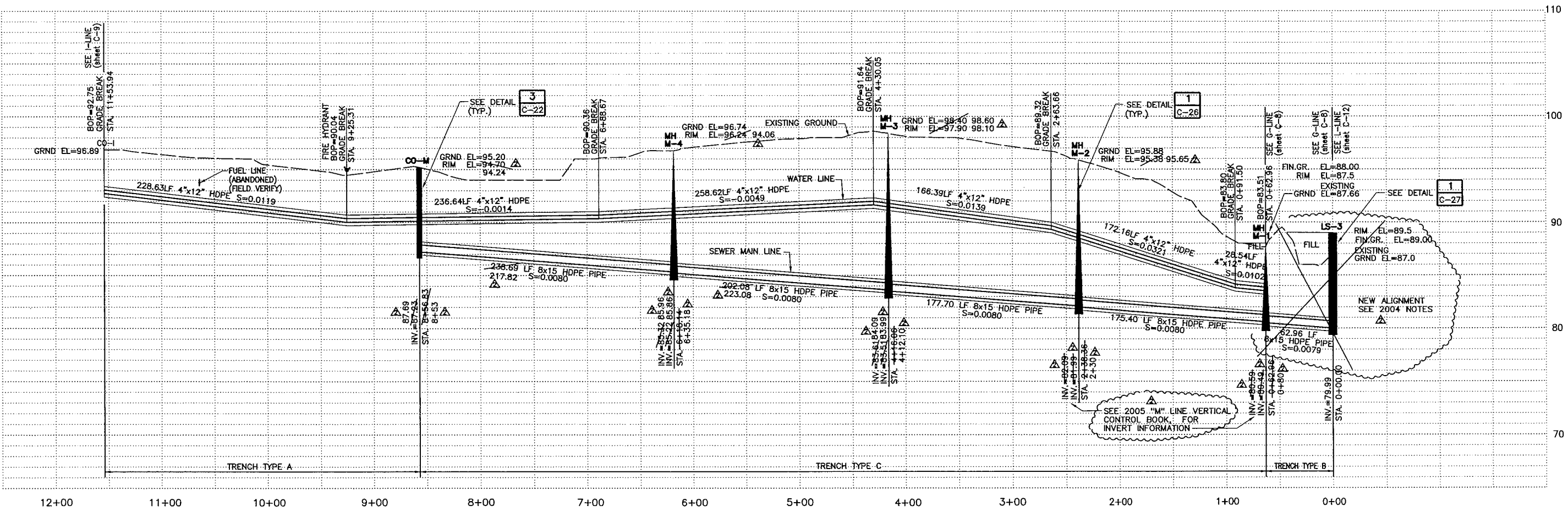
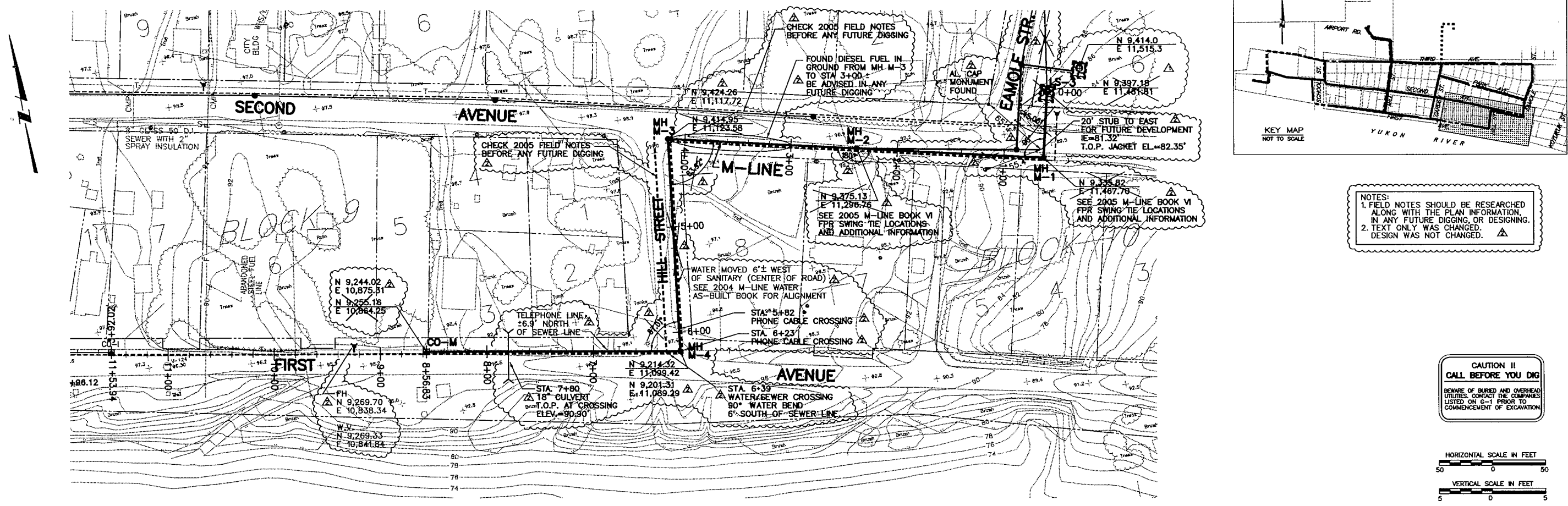
Designed MT

Drawn LF

Approved GM

Sheet No. C-12
SHEET OF

JOB No.1185078.010102 TIME: 09-JUN-2006 10:40 FILE: C:\Proj\Tanana\ws_lines\asb11-2006\013.DGN



RECORD DRAWING CERTIFICATE

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Wally E. York
DATE: 6/14/06

VILLAGE SAFE WATER

TOO'GHA INC. - TANANA, ALASKA
WATER DISTRIBUTION & WASTEWATER COLLECTION SYSTEM
M - LINE SEWER AND WATER PLAN AND PROFILE

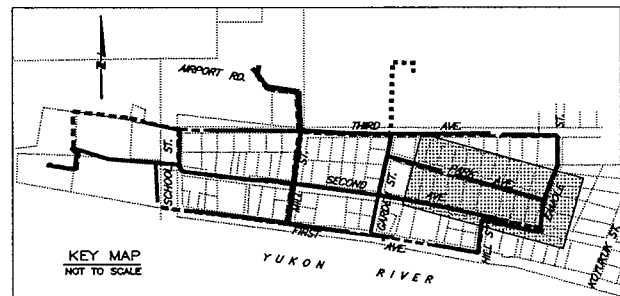
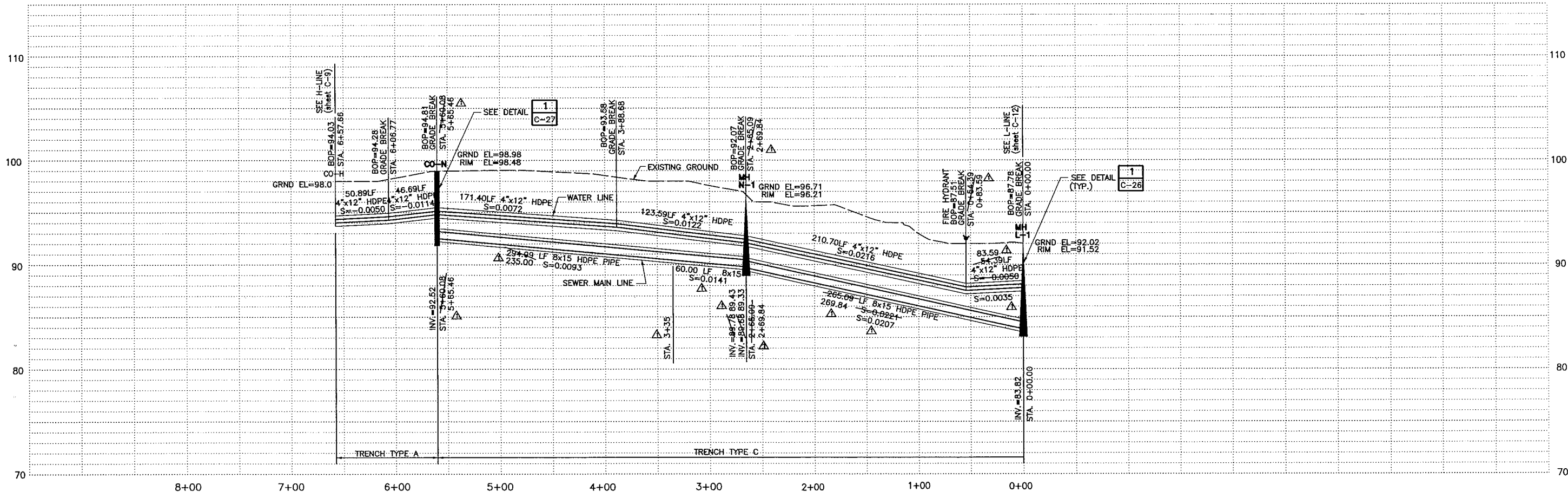
REVISION	BY	DATE
1	MT	7/14/00
2	MT	5/20/01
3	MT	4/20/05
4	AY	5/20/06

Project No. 1185078.010102
Date: JULY 14, 2000
Designed: MT
Drawn: LF
Approved: CM

Sheet No. C-13
SHEET OF

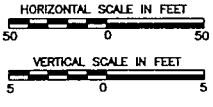
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JOB No.1189078.010102 TIME: 09-JUN-2006 10:40



NOTES:
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CAUTION !!
CALL BEFORE YOU DIG
BEWARE OF BURIED AND OVERHEAD
UTILITIES. CONTACT THE COMPANIES
LISTED ON C-1 PRIOR TO
COMMENCEMENT OF EXCAVATION



RECORD DRAWING CERTIFICATE
THESE DRAWINGS REFLECT
RECORDED INFORMATION OBTAINED
DURING CONSTRUCTION.
INFORMATION PROVIDED HEREIN
IS ACCURATE TO THE BEST OF
MY KNOWLEDGE.
Allan E. Yocum 4/16/06
DATE

VILLAGE SAFE WATER

MONTGOMERY WATSON
Anchorage, Alaska

IN ASSOCIATION WITH
EDC, INC.
200 W. Packer Ave.
Anchorage, AK 99501

TOO'GHA, INC. - TANANA, ALASKA
WATER DISTRIBUTION & SYSTEM
WASTEWATER COLLECTION SYSTEM
N - LINE WATER AND SEWER
PLAN AND PROFILE

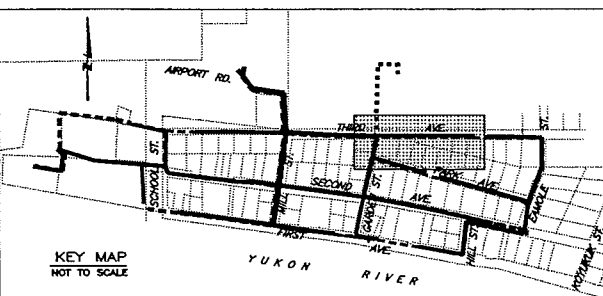
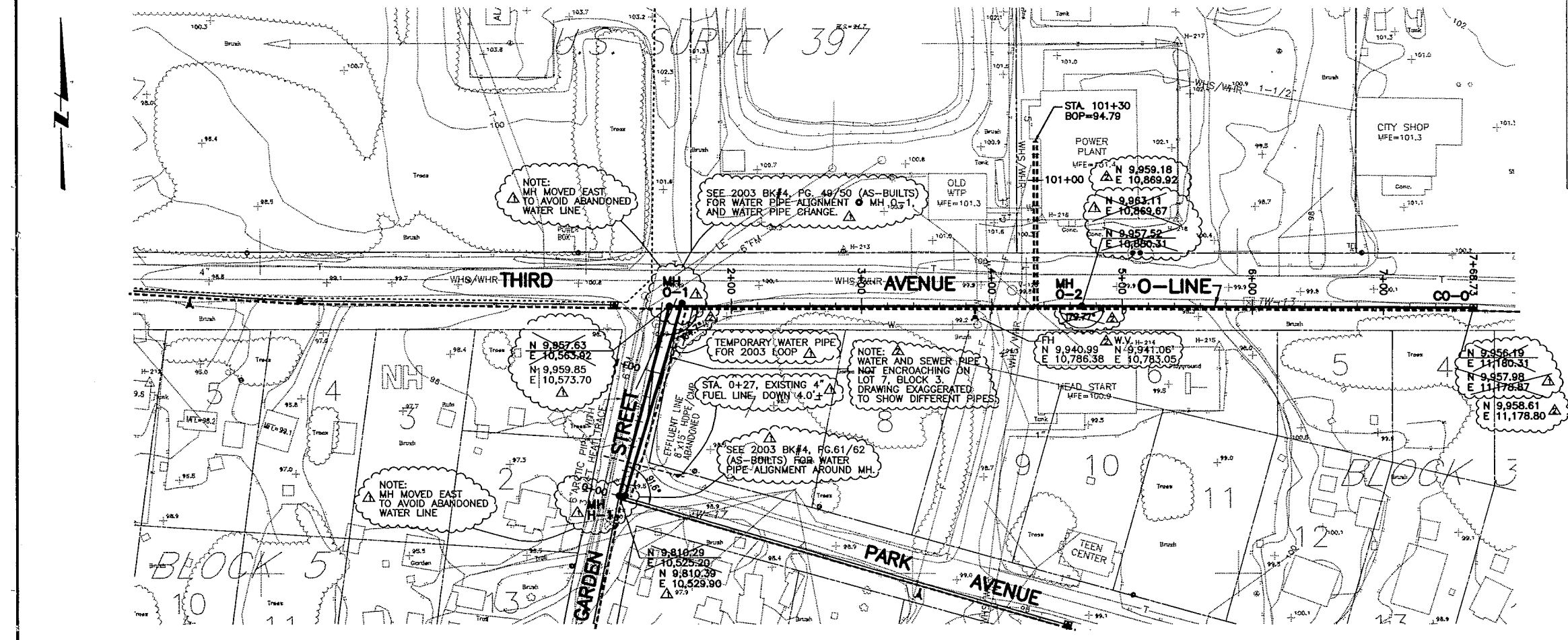
REVISION	BY	DATE
AGENCY REVIEW	MT	7/14/00
ISSUED FOR CONSTRUCTION	MT	5/2001
RECORD DRAWING	MT	4/2005
RECORD DRAWING	AY	5/2006

Project No. 1189078.010102	Designed MT	Drawn LF	Approved GM
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Sheet No. C-14	SHEET OF
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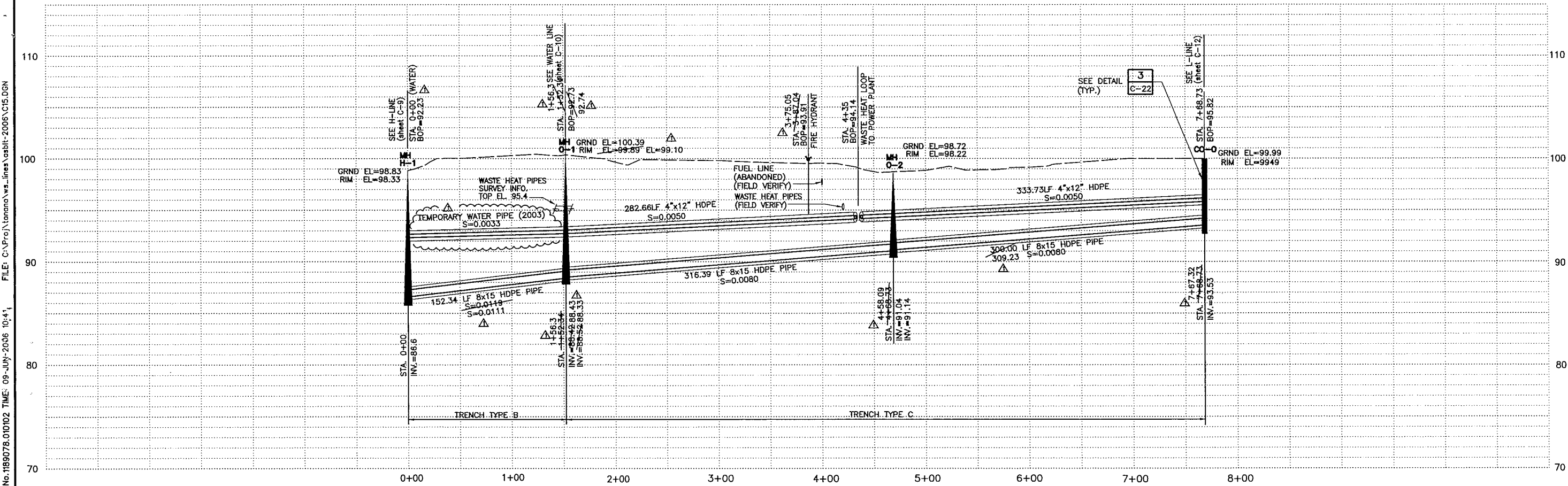
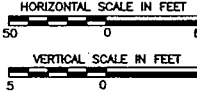
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JOB No.189078.010102 TIME: 09-JUN-2006 10:44



NOTES:
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COMMENCEMENT OF EXCAVATION.



RECORD DRAWING CERTIFICATE

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MT KNOWLEDGE.

Allyn E. Isakson 4/16/06
NAME DATE

VILLAGE SAFE WATER

OF ALASKA
REGISTERED PROFESSIONAL ENGINEER
KELNDA A. TSU
CE-9808

MONTGOMERY WATSON
Anchorage, Alaska

IN ASSOCIATION WITH
EDC, INC.
100 W. 1st Avenue, Suite 200
Anchorage, Alaska 99501

TOO'GHA, INC. - TANANA, ALASKA
WATER DISTRIBUTION & SYSTEM
WASTEWATER COLLECTION SYSTEM

O - LINE SEWER AND WATER
PLAN AND PROFILE

REVISION	BY	DATE
AGENCY REVIEW	MT	7/11/00
ISSUED FOR CONSTRUCTION	MT	5/2001
RECORD DRAWING	MT	4/2005
RECORD DRAWING	AY	5/2006

Project No. 189078.010102

Date JULY 14, 2000

Designed MT

Drawn LF

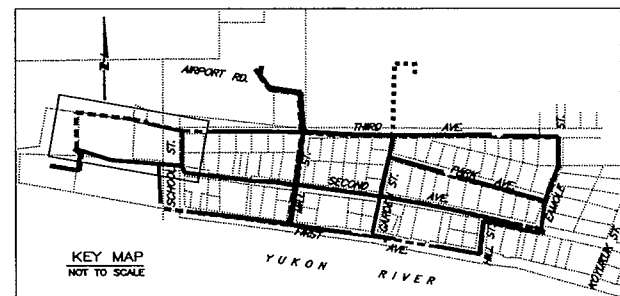
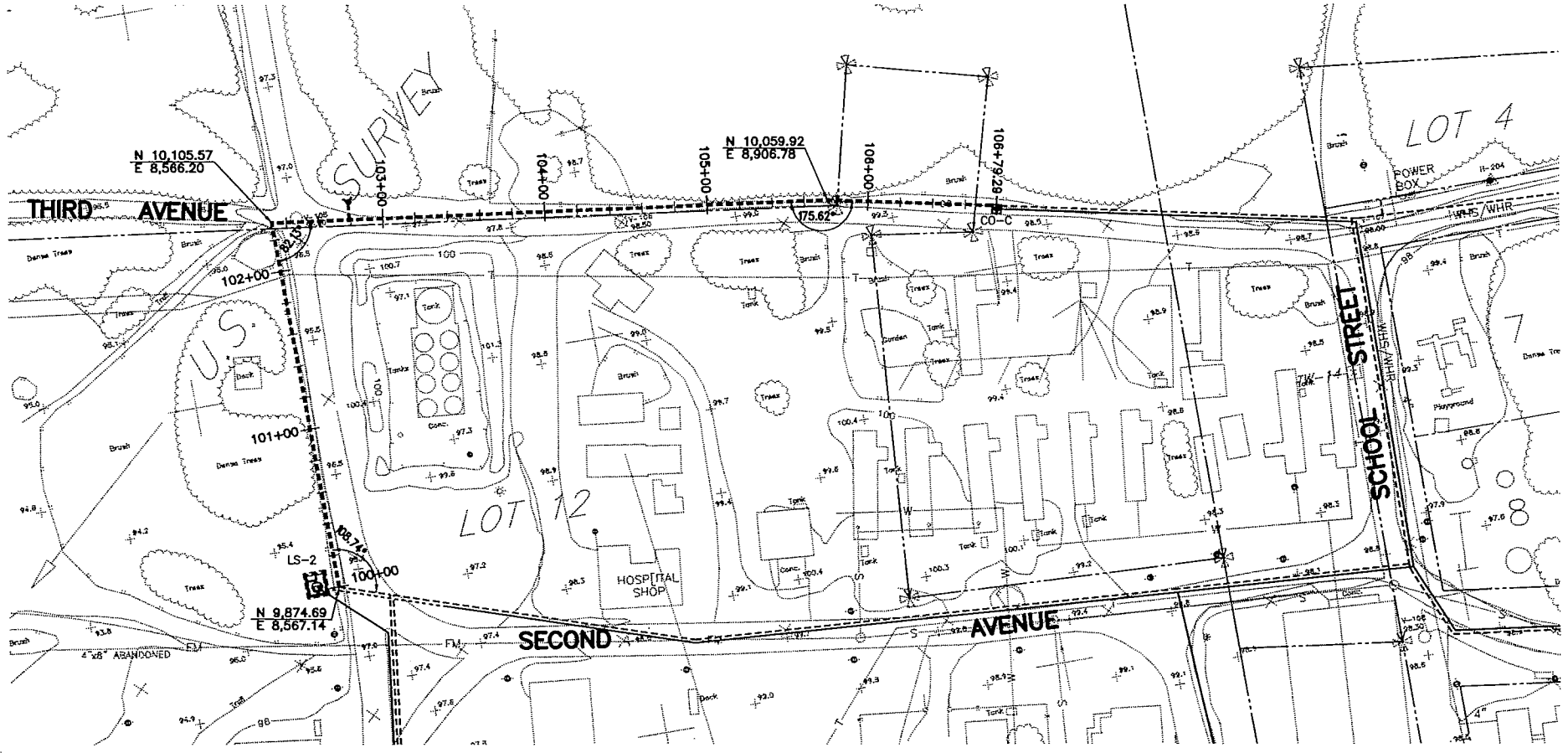
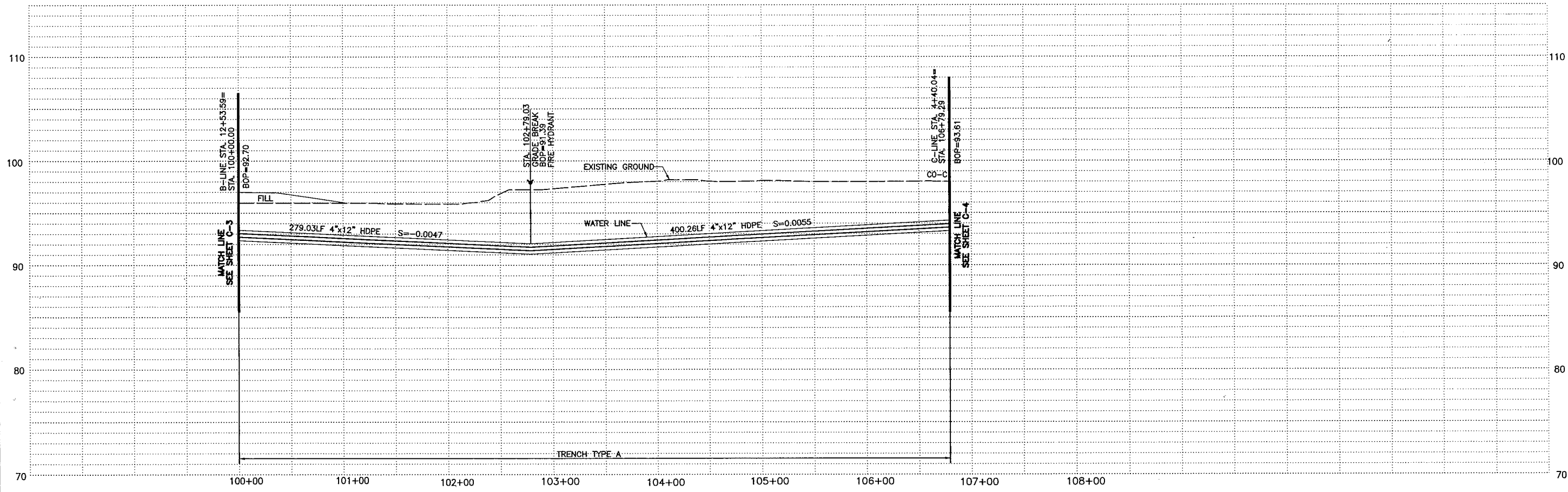
Approved OM

Sheet No. C-15

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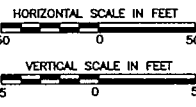
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JOB No.1189078.010102 TIME: 09-JUN-2006 10:41



NOTES:
1. FIELD NOTES SHOULD BE RESEARCHED
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CAUTION !!
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UTILITIES. CONTACT THE COMPANIES
LISTED ON C-1 PRIOR TO
COMMENCEMENT OF EXCAVATION



RECORD DRAWING CERTIFICATE
THESE DRAWINGS REFLECT
RECORDED INFORMATION OBTAINED
DURING CONSTRUCTION.
INFORMATION PROVIDED HEREIN
IS ACCURATE TO THE BEST OF
MY KNOWLEDGE.
Allyn E. Todman
DATE 4/10/06

STATE OF ALASKA
ALYNN E. TODMAN
MECHANICAL ENGINEERING
LICENSE NO. 4910
EXPIRATION DATE 12/31/06

STATE OF ALASKA
WENDY A. TSU
MECHANICAL ENGINEERING
LICENSE NO. 4908
EXPIRATION DATE 12/31/06

STATE OF ALASKA
EDC, INC.
MECHANICAL ENGINEERING
LICENSE NO. 4909
EXPIRATION DATE 12/31/06

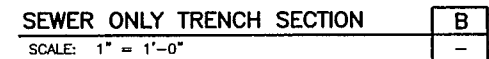
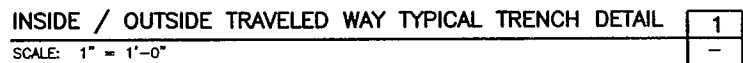
STATE OF ALASKA
MONTGOMERY WATSON
MECHANICAL ENGINEERING
LICENSE NO. 4907
EXPIRATION DATE 12/31/06

TOO'GHA INC. - TANANA, ALASKA
WATER DISTRIBUTION &
WASTEWATER COLLECTION SYSTEM
WEST WATER LOOP
(between B-line and C-line)
PLAN AND PROFILE

REVISION	BY	DATE
AGENCY REVIEW	MT	7/7/00
ISSUED FOR CONSTRUCTION	MT	5/20/01
RECORD DRAWING	MT	4/20/06
RECORD DRAWING	AY	5/20/06

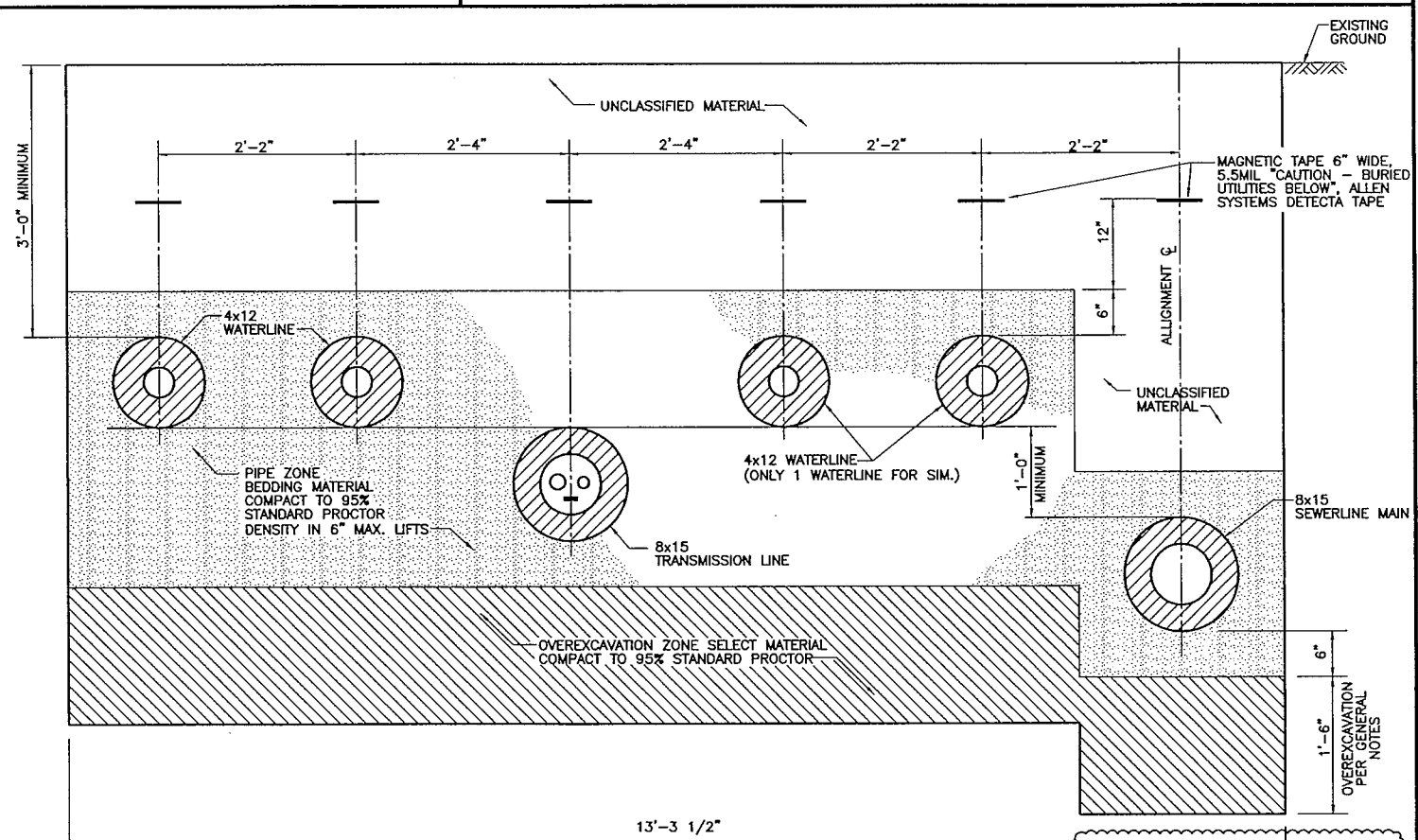
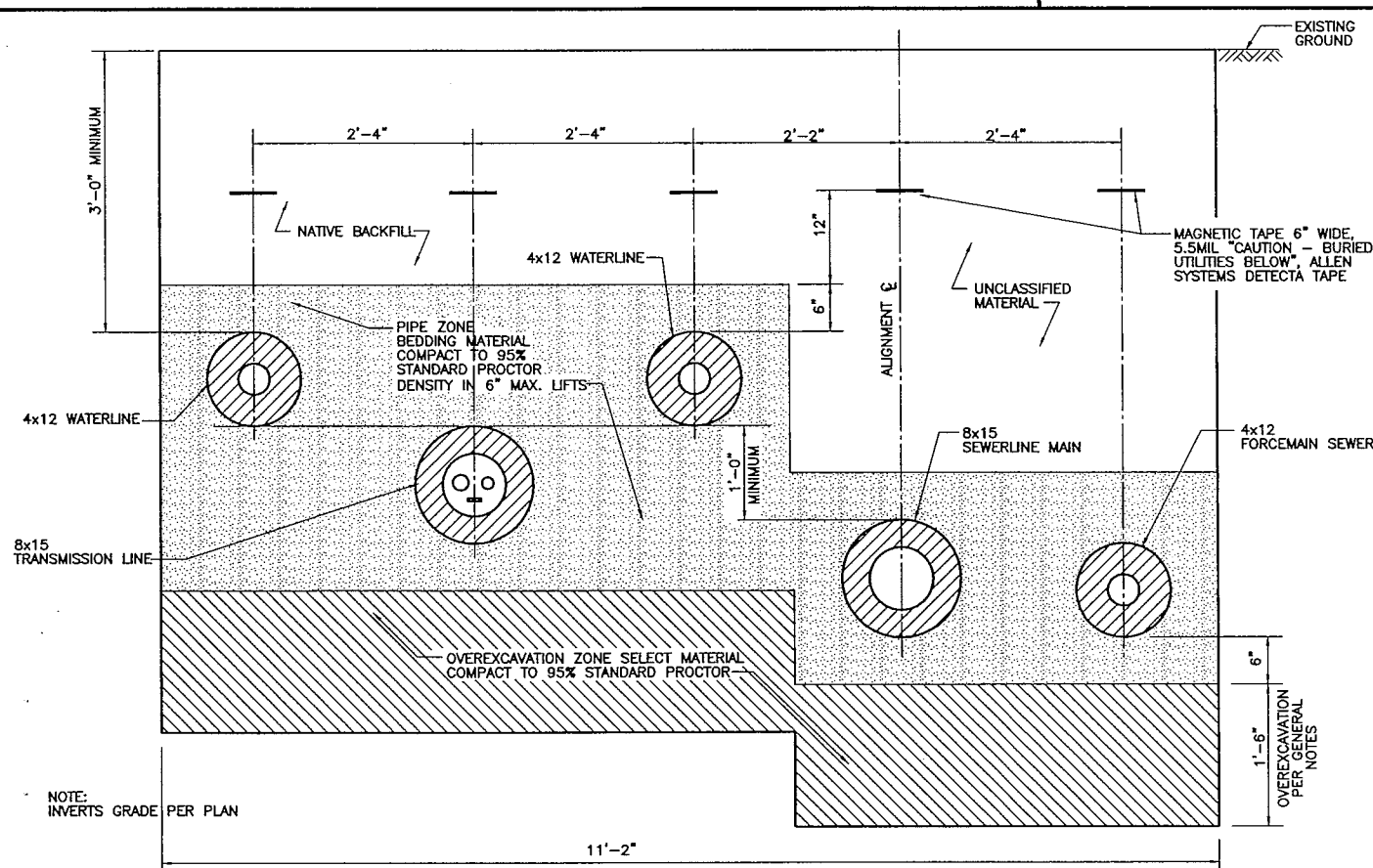
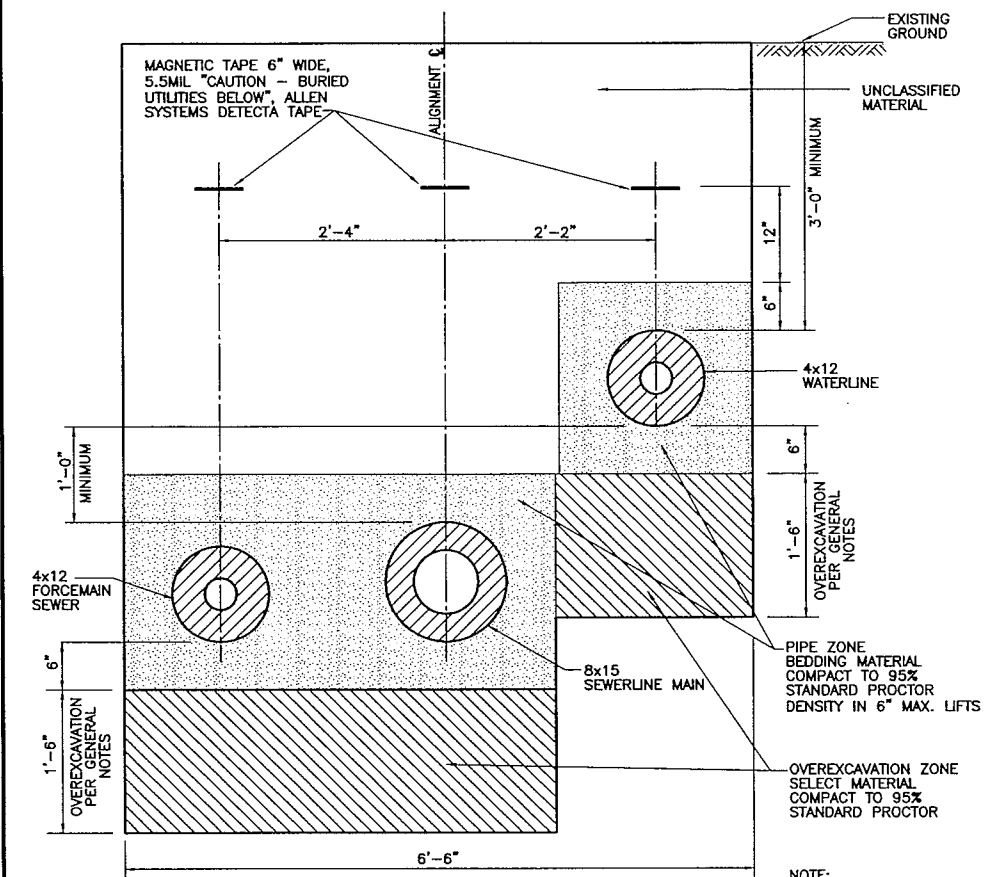
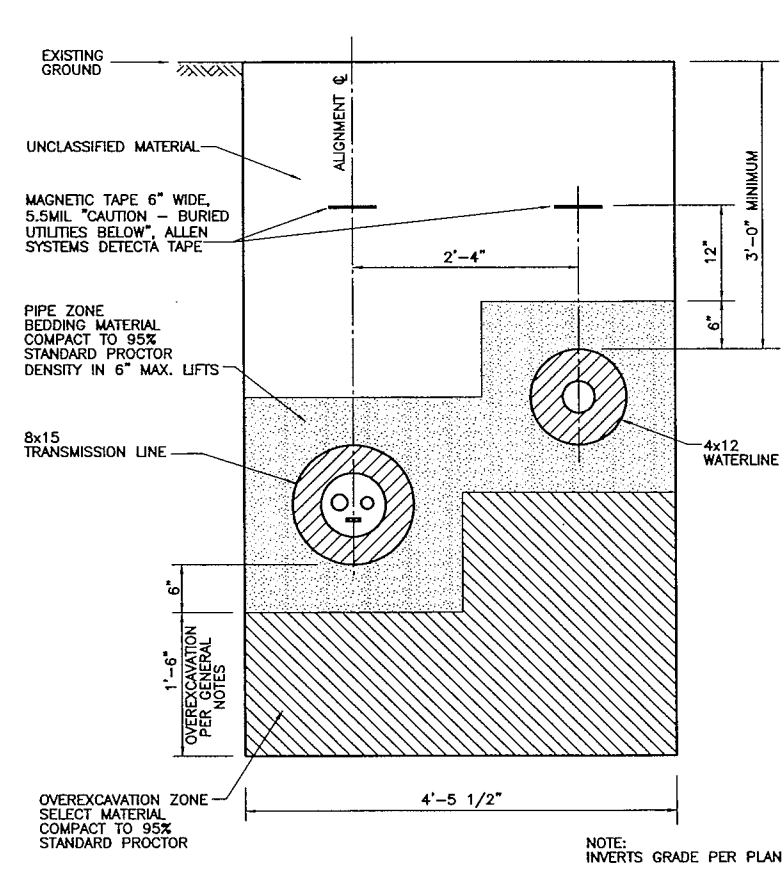
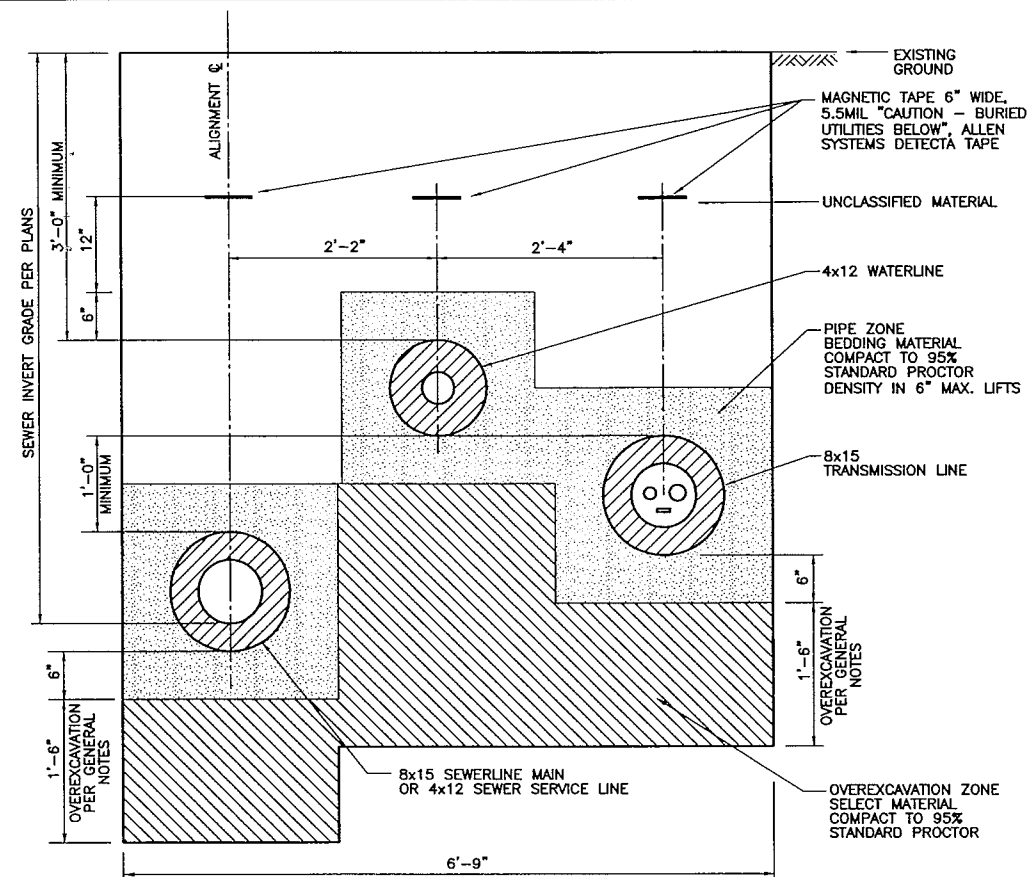
Project No. 1189078.010102	Designed MT	Drawn LF	Approved GM
Date JULY 14, 2000			

Sheet No. C-17
SHEET OF



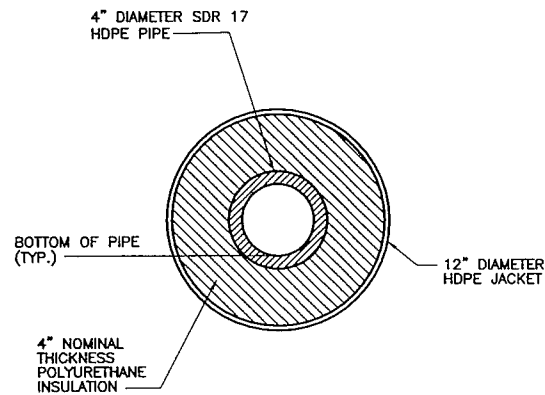
TRENCH SECTION SHEET NOTES

1. REFER TO DETAIL 1/C-18 FOR TRENCH CONSTRUCTION REQUIREMENTS INSIDE OR OUTSIDE OF TRAVELED WAY. THIS INFORMATION IS NOT SHOWN ON TRENCH SECTIONS "A" THROUGH "I" FOR CLARITY.
2. SEE GENERAL NOTES ON G-1 FOR TRENCH REQUIREMENTS AND PIPE TRENCH MATERIAL SPECIFICATIONS.
3. PLAN AND PROFILE REFERENCE ALIGNMENT IS BASED ON CENTER OF SEWER LINE ALIGNMENT AS INDICATED IN SECTION DETAILS.



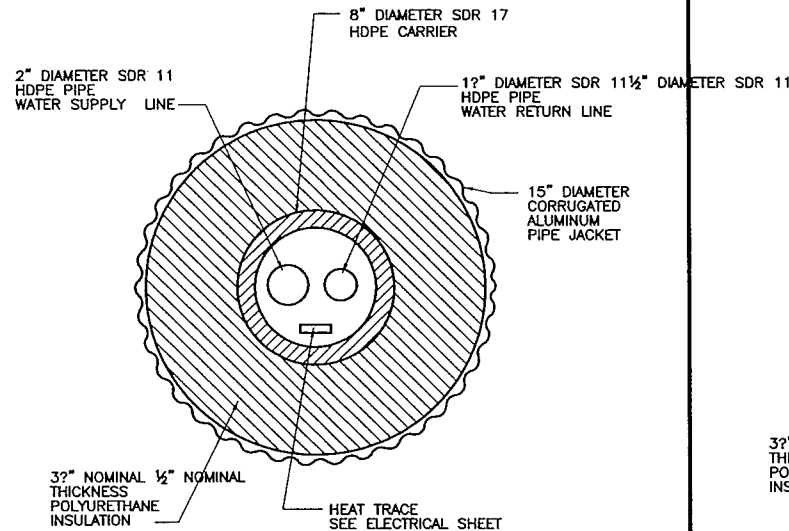
NOTES:

1. FIELD NOTES SHOULD BE RESEARCHED ALONG WITH THE PLAN INFORMATION, IN ANY FUTURE DIGGING, OR DESIGNING.
2. TEXT ONLY WAS CHANGED. DESIGN WAS NOT CHANGED. 



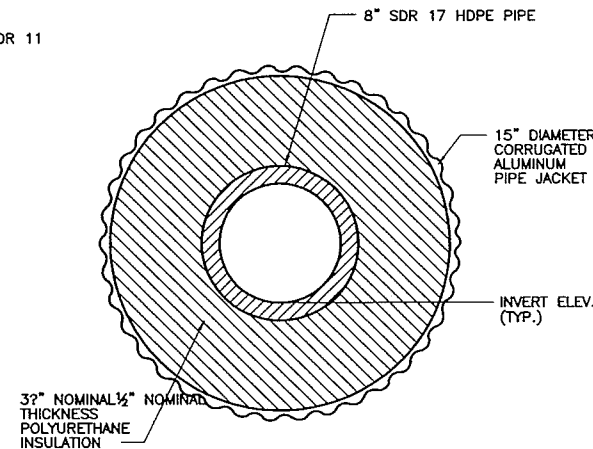
WATER MAIN PIPE SECTION
NOT TO SCALE

1
—



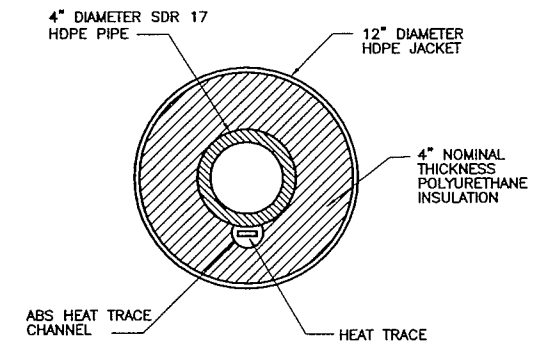
WATER TRANSMISSION PIPE SECTION
NOT TO SCALE

2
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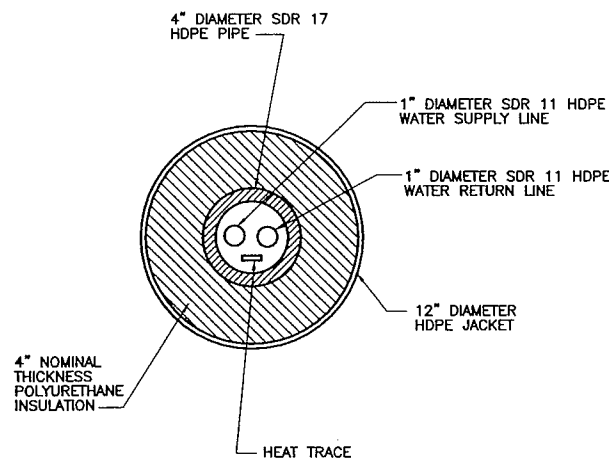
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3
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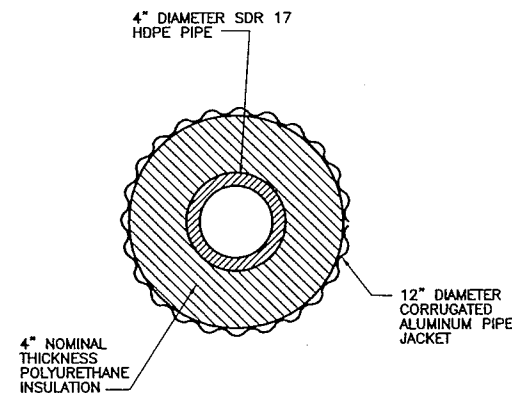
FORCE MAIN SEWER PIPE SECTION
NOT TO SCALE

4
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WATER SERVICE CARRIER PIPE SECTION
NOT TO SCALE

5
—



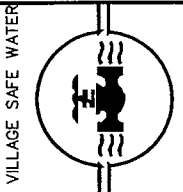
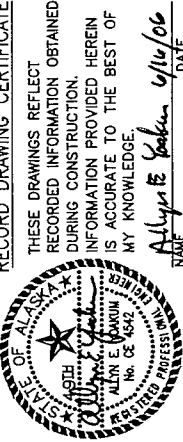
SEWER SERVICE PIPE SECTION
NOT TO SCALE

6
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PIPE MATERIAL SPECIFICATIONS

- CORE PIPE: HIGH-DENSITY POLYETHYLENE (HDPE), CELL CLASSIFICATION PE345434C PER ASTM D3350, DRISCO 1000, OR APPROVED EQUAL.
- INSULATION: RIGID CLOSED-CELL POLYURETHANE FOAM, WITH DENSITY 2.5-3.5 POUNDS PER CUBIC FEET.
- HDPE JACKET: HDPE, CELL CLASSIFICATION PE345434C PER ASTM D3350, 150 MIL MINIMUM THICKNESS.
- ALUMINUM JACKET: CORRUGATED ALUMINUM, MEETING AASHTO SPECIFICATION M196 AND FEDERAL SPECIFICATION WW-P-402, 16 GAUGE.
- HEAT TRACE CHANNEL: FULLY ENCLOSED CHANNEL, ACRYLONITRILE BUTADIENE STYRENE (ABS) OR HDPE MATERIAL.
- HEAT SHRINK WRAP: 36-INCH WIDE WRAP AND CLOSURE STRIP, CANUSAWRAP WTC-B-900-BK, OR APPROVED EQUAL. WRAP DIMENSION SHALL BE THE ACTUAL PIPE DIAMETER PLUS A 4-INCH OVERLAP.
- POLYMER COATING: TWO COMPONENT, 100 MIL MINIMUM THICKNESS, 100% SOLIDS POLYUREA ELASTOMER, POLYSHILD SS-100 HI-E, OR APPROVED EQUAL.

NOTES:
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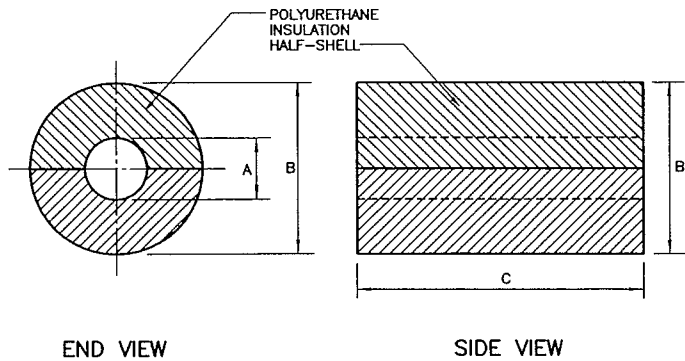


TOUGH INC. - TANANA, ALASKA
WATER DISTRIBUTION & SYSTEM
WASTEWATER COLLECTION SYSTEM
PIPE SECTIONS

REVISION	BY	DATE
AGENCY REVIEW	MT	7/14/08
ISSUED FOR CONSTRUCTION	MT	5/20/01
RECORD DRAWING	MT	4/20/05
RECORD DRAWING	AY	5/20/06

Project No. 1189078.010102	Date JULY 14, 2008	Designed MT	Drawn LF	Approved GM
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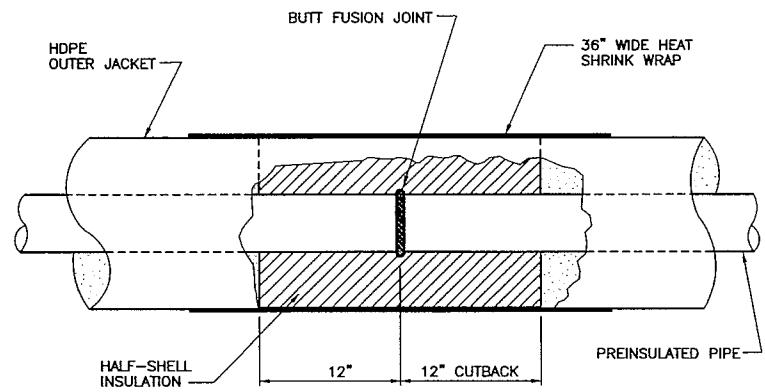
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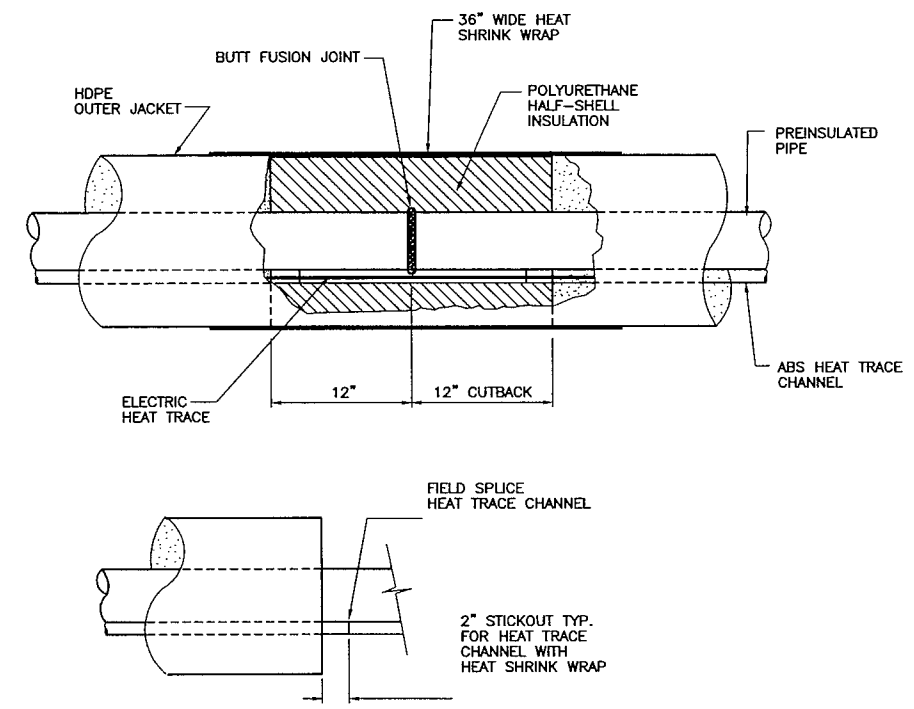
HALF SHELL	A	B	C
4x12	4 1/2"	13"	24"
8x15	8 1/2"	15"	24"

- NOTE:
1. SEE FORCE MAIN SEWER JOINT DETAIL FOR HEAT TRACE CONDUIT CUTOUT REQUIREMENTS.
 2. MANUFACTURER SHALL SUPPLY HALF-SHELLS PRECUT TO DIMENSIONS SHOWN.

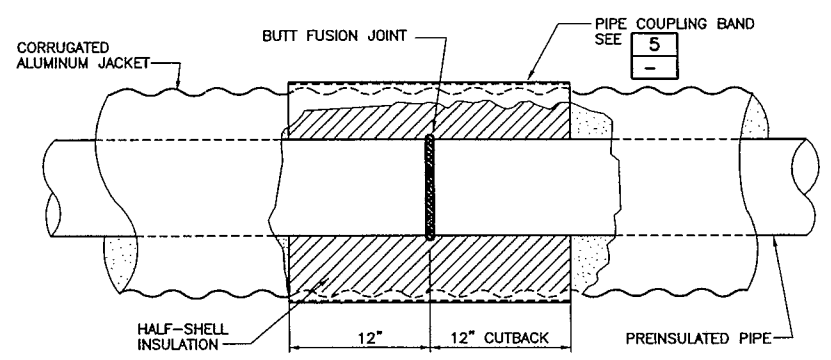
INSULATION HALF-SHELL DETAIL 1
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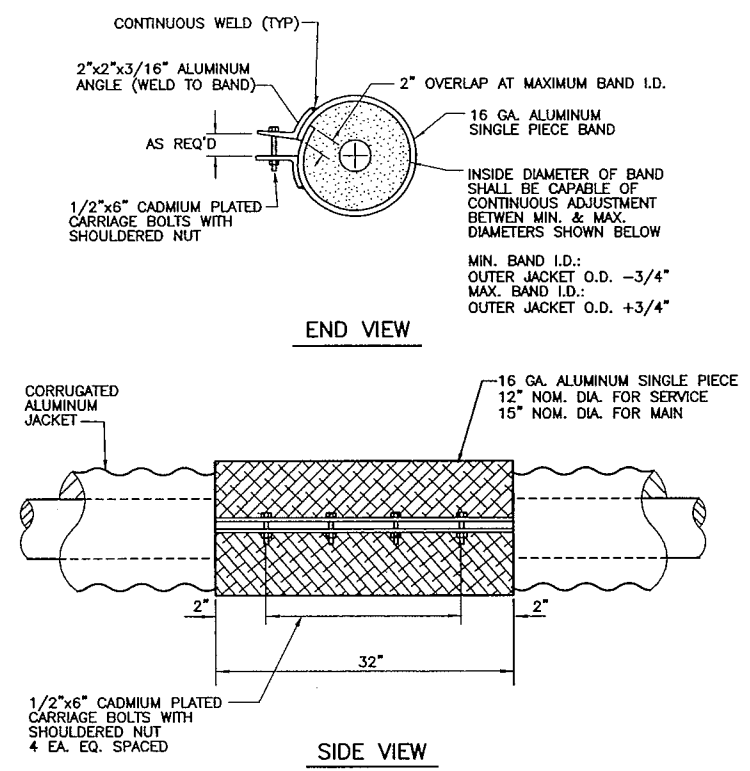
WATER LINE JOINT DETAIL 2
NOT TO SCALE



FORCE MAIN SEWER JOINT DETAIL 3
NOT TO SCALE



GRAVITY SEWER AND TRANSMISSION LINE JOINT DETAIL 4
NOT TO SCALE



PIPE COUPLING BAND DETAIL 5
NOT TO SCALE

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 NAME: Allen E. Johnson DATE: 6/14/06

VILLAGE SAFE WATER

TOUGH INC. - TANANA, ALASKA
 WATER DISTRIBUTION & WASTEWATER COLLECTION SYSTEM
 PIPE JOINT DETAILS

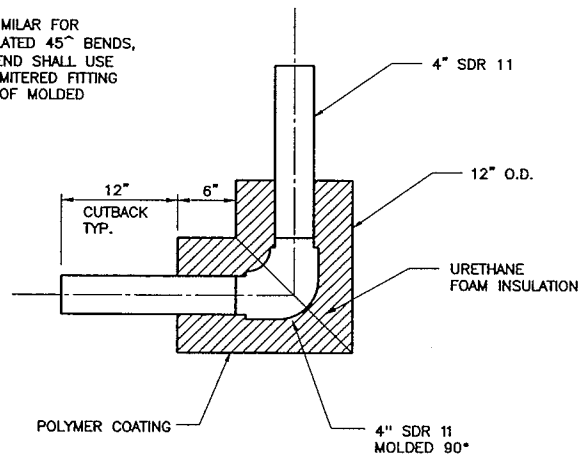
MONTGOMERY WATSON
 Anchorage, Alaska
 IN ASSOCIATION WITH
 EDC, INC.
 EDC, INC. is a member of the EDC Group.

REVISION	BY	DATE
AGENCY REVIEW	MT	7/11/00
ISSUED FOR CONSTRUCTION	MT	5/2001
RECORD DRAWING	MT	4/2005
RECORD DRAWING	AY	5/2006

Project No. 1189078.010102	Date JULY 14, 2000	Designed MT	Drawn LF	Approved GM
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Sheet No. C-21
SHEET OF

DETAIL SIMILAR FOR
PREINSULATED 45° BENDS,
22.5° BEND SHALL USE
SDR 11 MITERED FITTING
INSTEAD OF MOLDED

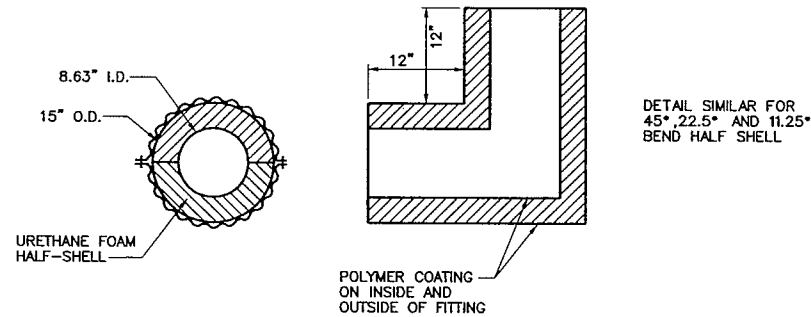
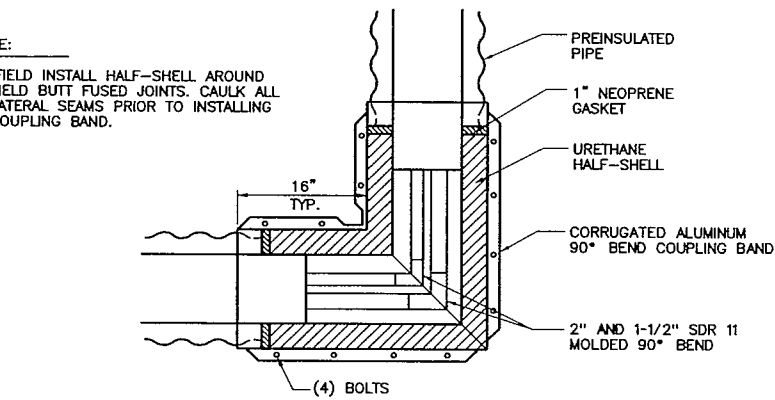


WATER MAIN 90° BEND DETAIL
NOT TO SCALE

1
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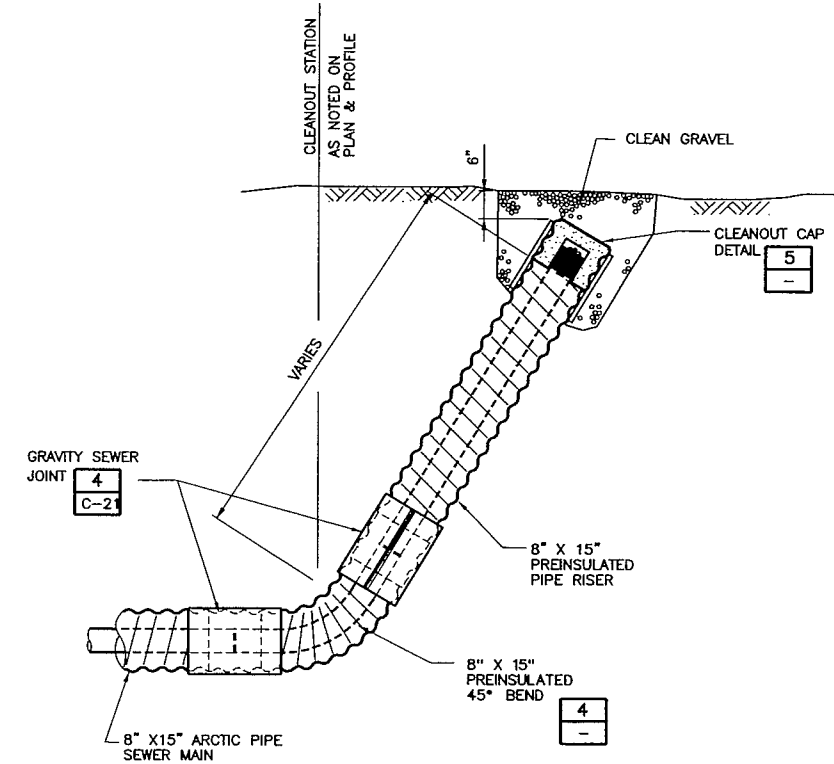
NOTE:

1. FIELD INSTALL HALF-SHELL AROUND
FIELD BUTT FUSED JOINTS. CAULK ALL
LATERAL SEAMS PRIOR TO INSTALLING
COUPLING BAND.



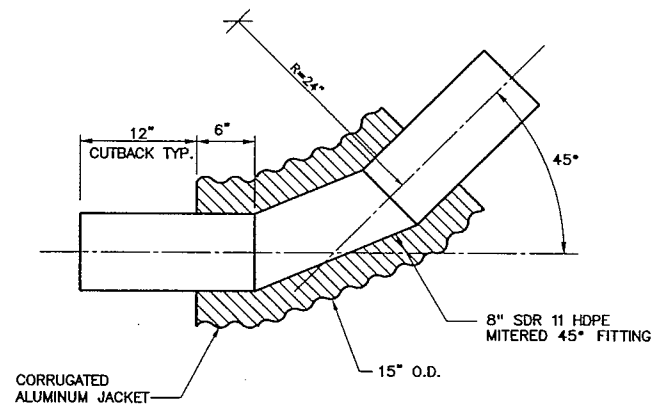
TRANSMISSION LINE 90° BEND DETAIL
NOT TO SCALE

2
—



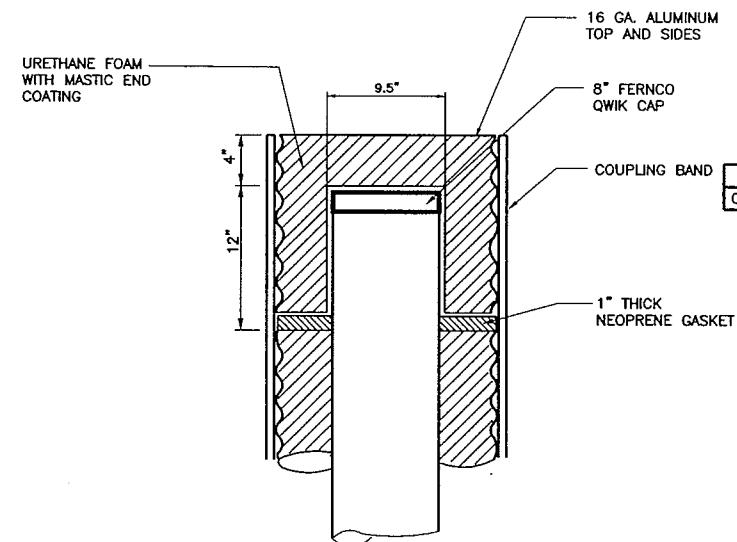
GRAVITY SEWER MAIN CLEANOUT DETAIL
NOT TO SCALE

3
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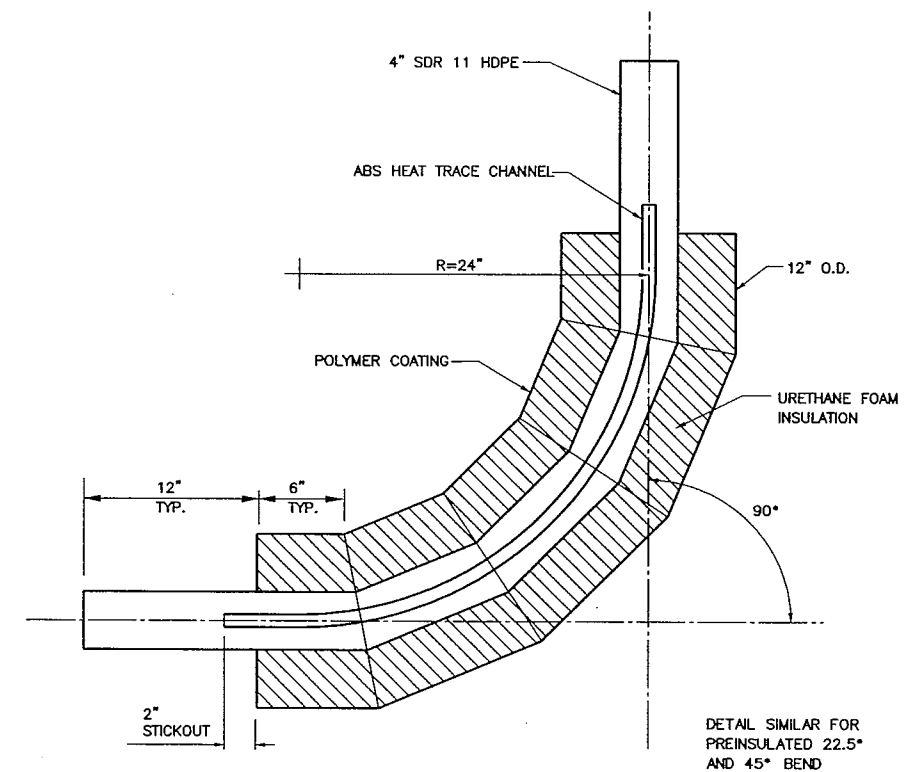
GRAVITY SEWER MAIN 45° BEND DETAIL
NOT TO SCALE

4
—



SEWER MAIN CLEANOUT CAP DETAIL
NOT TO SCALE

5
—

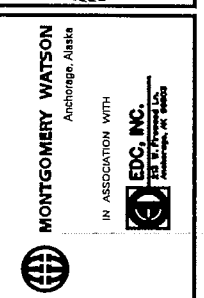
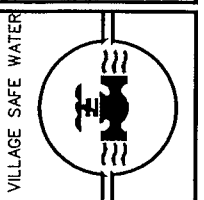


FORCEMAIN SEWER 90° BEND DETAIL
NOT TO SCALE

6
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DURING CONSTRUCTION. HEREIN
INFORMATION PROVIDED HEREIN
IS ACCURATE TO THE BEST OF
MY KNOWLEDGE.
NAME Allyne Jackson DATE 6/16/06

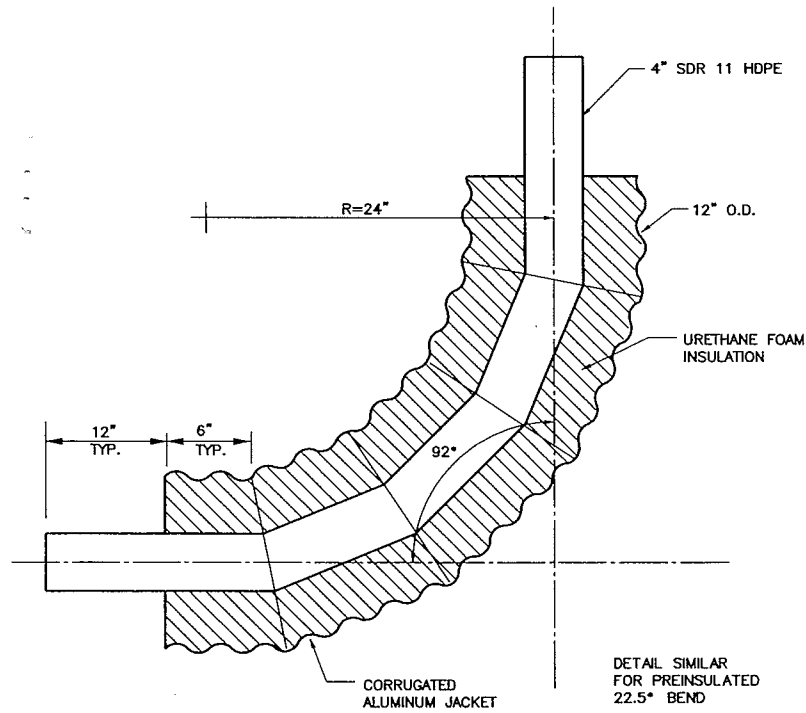


TOUGH INC. - TANANA, ALASKA
WATER DISTRIBUTION &
WASTEWATER COLLECTION SYSTEM
MAINLINE PIPE FITTING
DETAILS

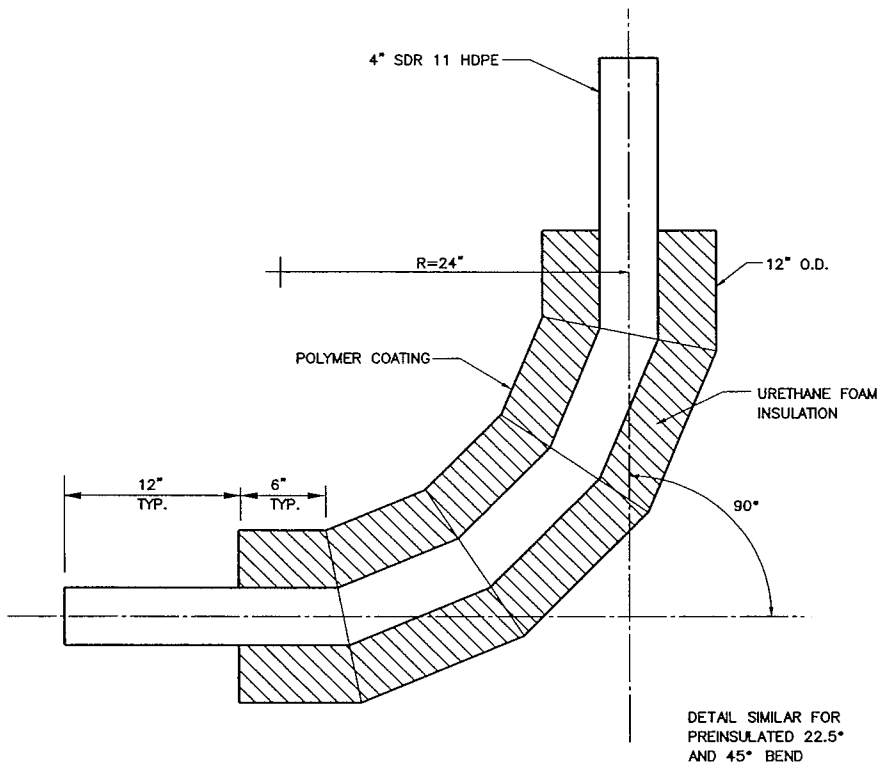
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AGENCY REVIEW	MT	7/14/05
ISSUED FOR CONSTRUCTION	MT	5/20/01
RECORD DRAWING	MT	4/20/05
RECORD DRAWING	AY	5/20/06

Project No.	1189078.010102
Date	JULY 14, 2006
Designed	MT
Drawn	LF
Approved	GM

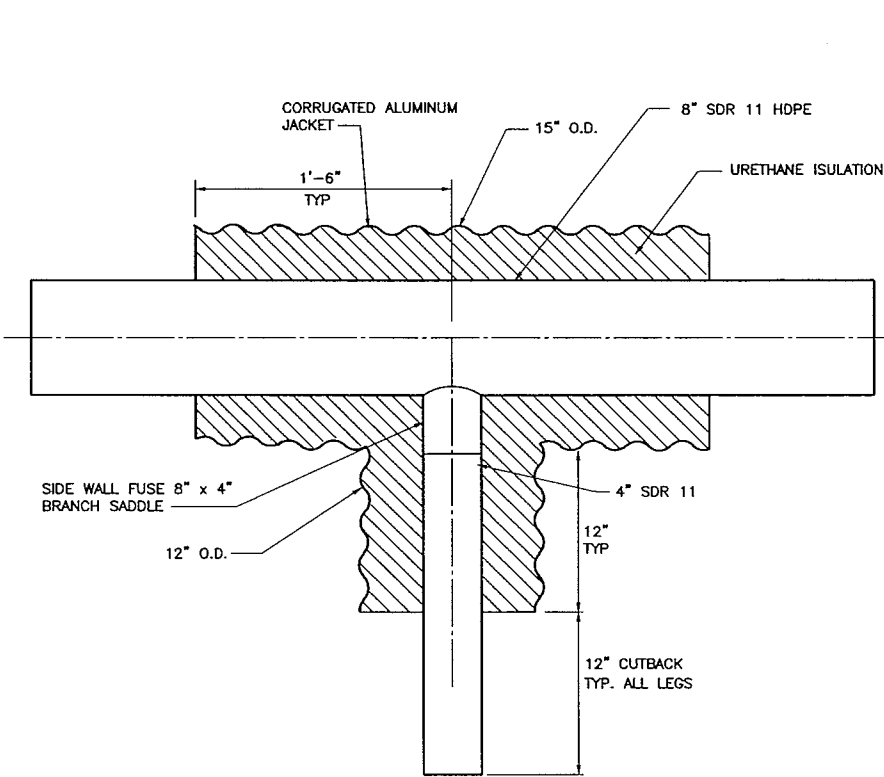
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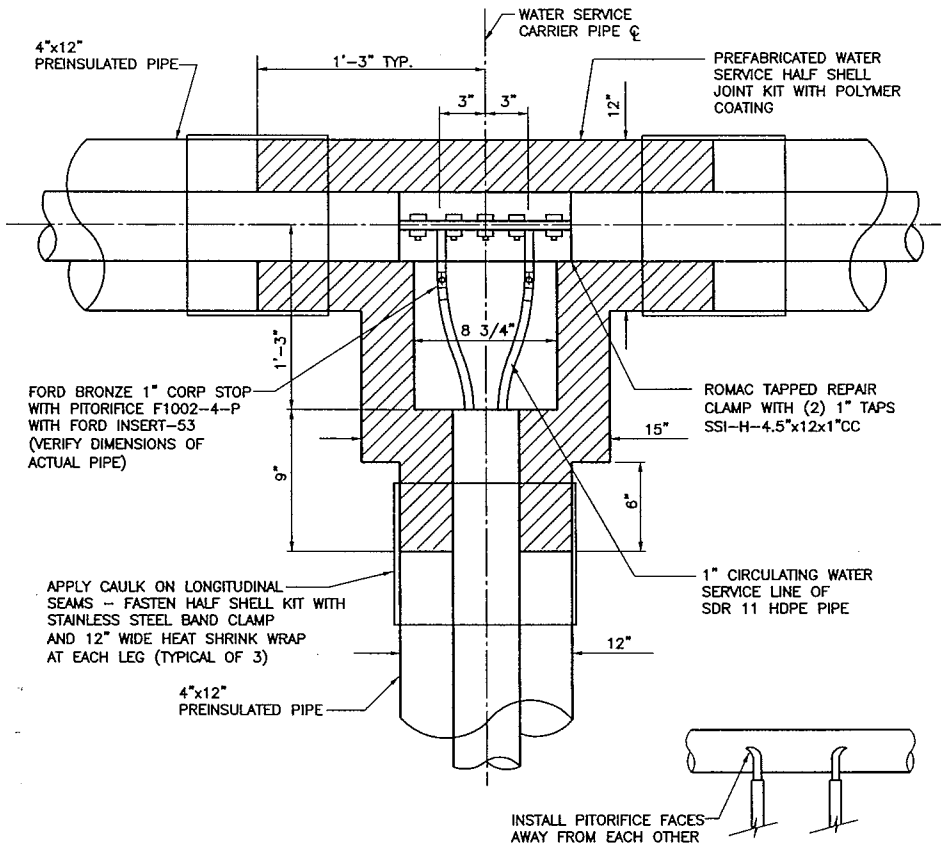
SEWER SERVICE LINE 92° BEND DETAIL
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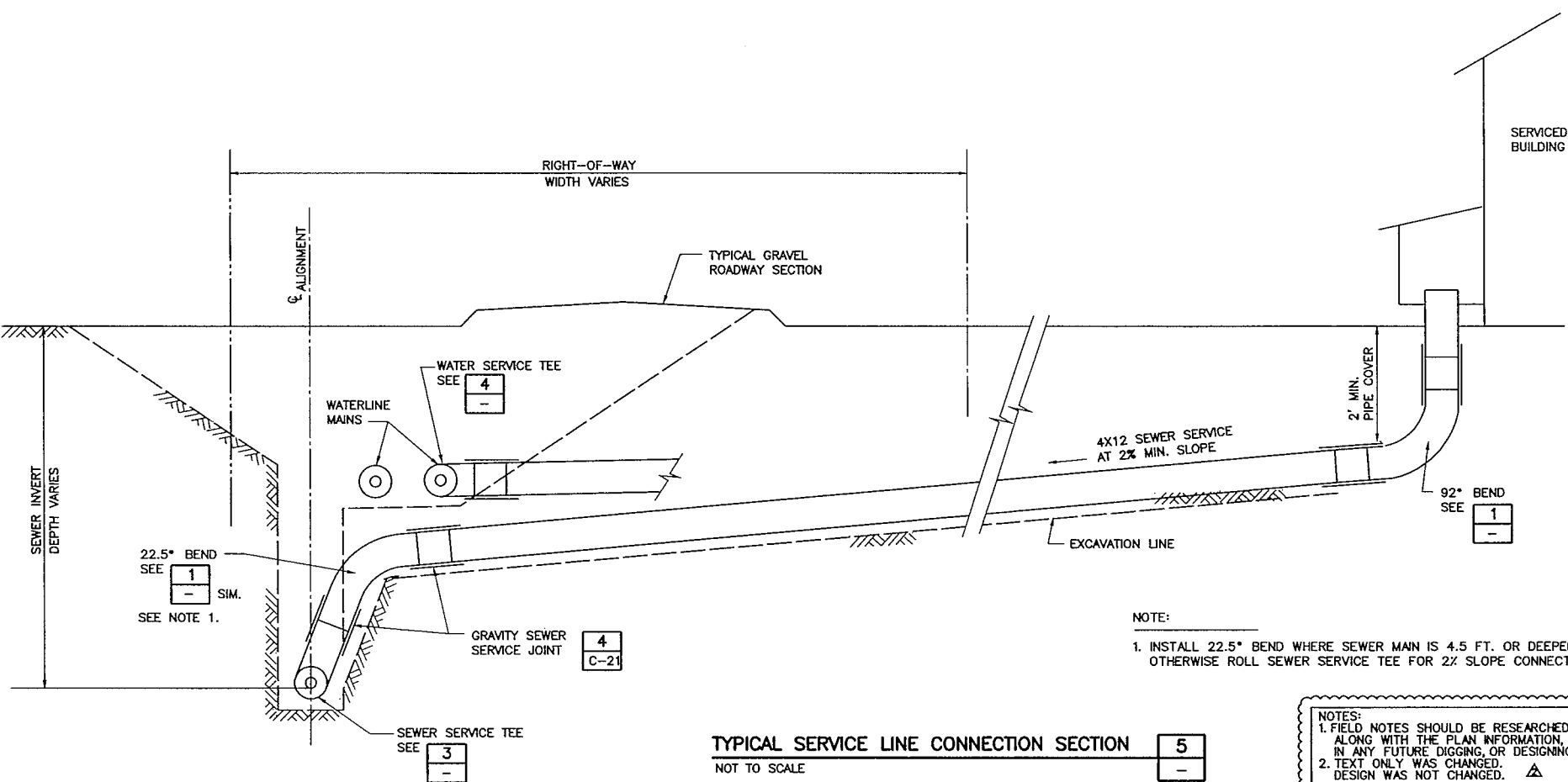
WATER SERVICE LINE 90° BEND DETAIL
NOT TO SCALE



SEWER SERVICE TEE DETAIL
NOT TO SCALE



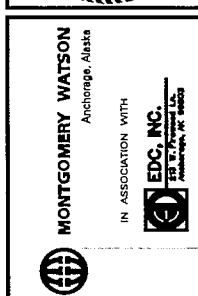
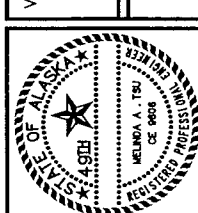
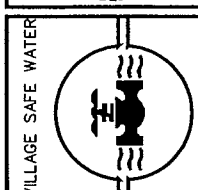
WATER SERVICE TEE DETAIL
NOT TO SCALE



TYPICAL SERVICE LINE CONNECTION SECTION
NOT TO SCALE

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MY KNOWLEDGE.
NAME: *Allyne Baker* DATE: *6/16/06*



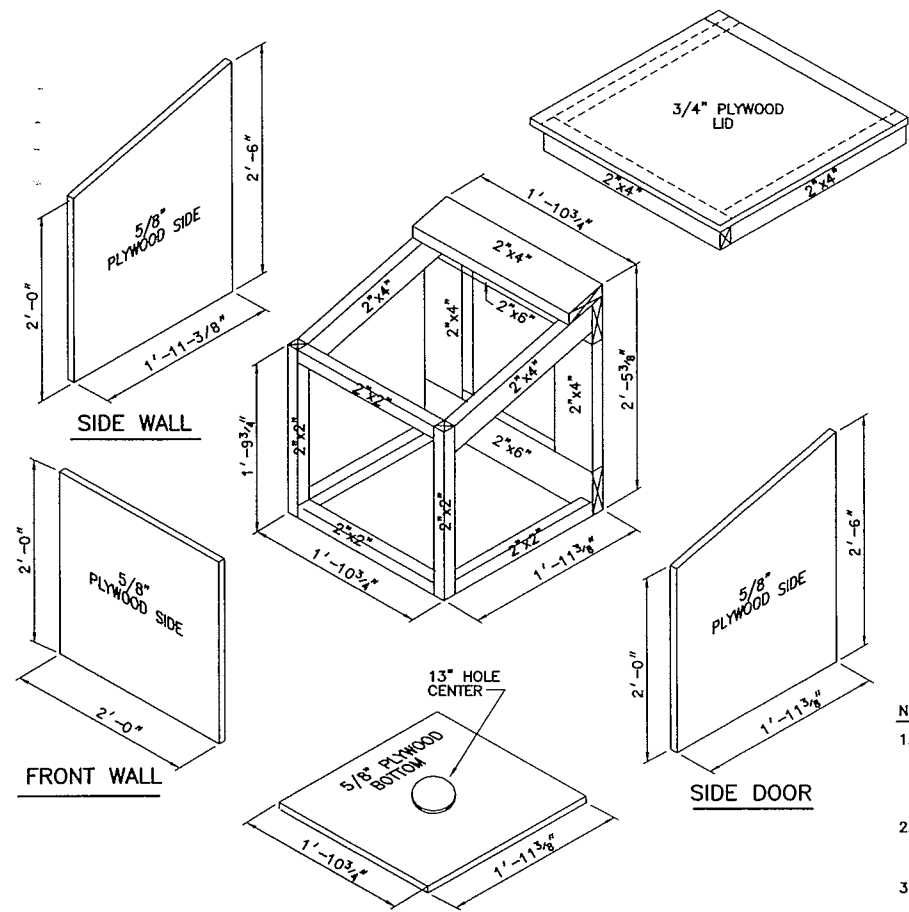
TOO'GHA INC. - TANANA, ALASKA
WATER DISTRIBUTION &
WASTEWATER COLLECTION SYSTEM
SERVICE LINE PIPE FITTING
DETAILS

REVISION	BY	DATE
1	MT	7/14/00
2	MT	5/2001
3	MT	4/2005
4	AY	5/2006

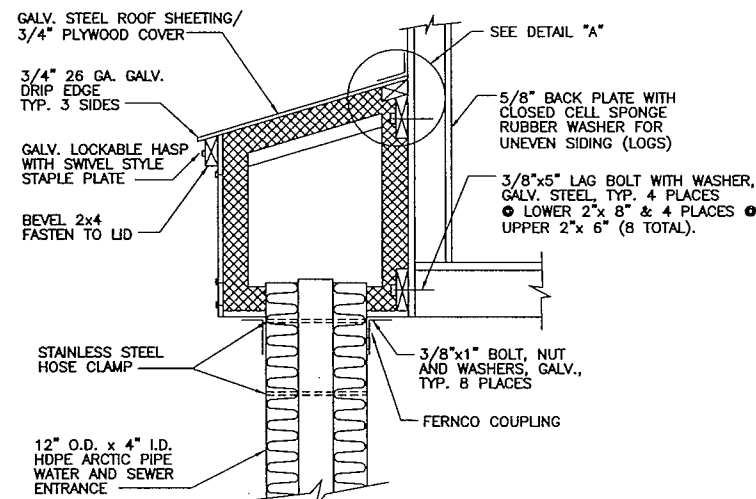
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Date	JULY 14, 2000
Designed	MT
Drawn	LF
Approved	GM

Sheet No. **C-23**
SHEET OF

JOB No.1189078.010102 TIME: 09-JUN-2006 10:45:11 FILE: C:\Proj\Tanana\ws_lines\asblt-2006\C24.DGN



EXPLODED VIEW

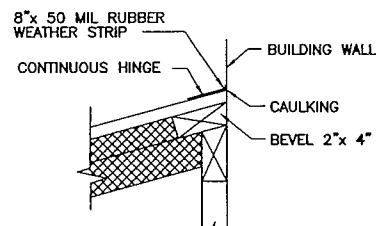


CROSS SECTION

ARCTIC BOX DETAILS

1

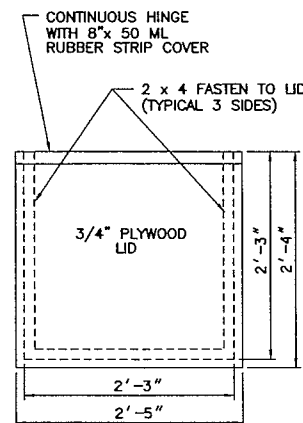
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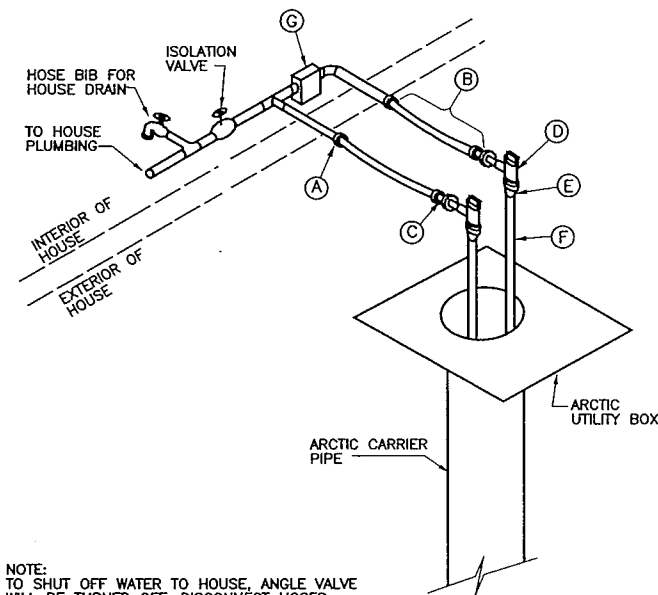
DETAIL A

NOTES:

1. ARCTIC BOX SHALL BE LINED WITH 2 EACH 1-1/2" LAYERS OF POLYSTYRENE BOARD INSULATION, WESTERN INSULFOAM II 35 PSI OR EQUAL, TYPICAL, COVER, BOTTOM, AND 4 SIDES.
2. SECURE GALV. STEEL ROOFING AND DRIP EDGE TO 3/4" PLYWOOD COVER WITH 3/4" SELF TAPPING ROOFING SCREWS.
3. ATTACH PLYWOOD SIDES AND BOTTOM TO 2"x2" AND 2"x4" FRAME WITH NO. 8 x 2-1/2" CORROSION RESISTANT DRY WALL SCREWS. PREDRILL AS NECESSARY TO AVOID SPLITTING OF FRAME.
4. CAULK ALL EXPOSED SEAMS WITH SILICONE CAULK, "G.E. 50 YEAR WINDOW AND DOOR SEALANT", OR EQUAL.
5. HOUSE PLUMBING CONNECTIONS WITHIN ARCTIC BOX ARE NOT SHOWN.
6. FILL ARCTIC BOX WITH UNFACED FIBERGLASS BATT INSULATION WHEN HOUSE PLUMBING CONNECTIONS ARE COMPLETE.



LID PLAN VIEW



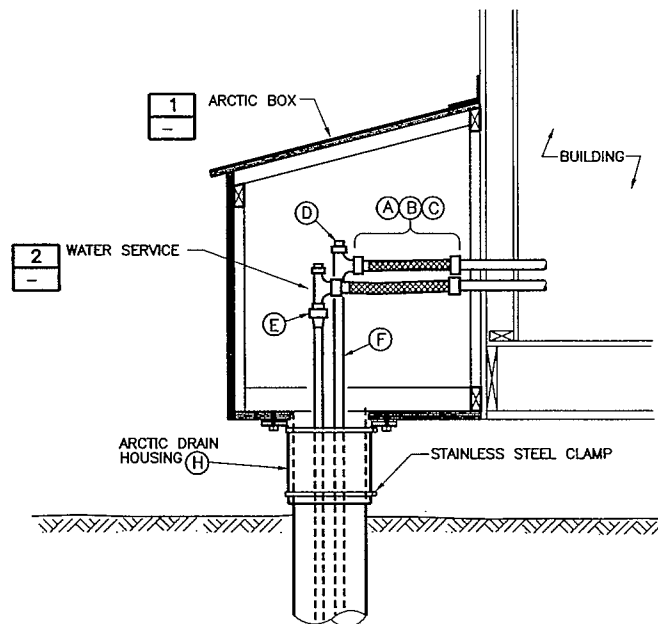
NOTE:
TO SHUT OFF WATER TO HOUSE, ANGLE VALVE WILL BE TURNED OFF. DISCONNECT HOSES FROM HOUSE PLUMBING, REMOVE ONE HOSE FROM ANGLE VALVE AND CONNECT REMAINING HOSE TO THE ANGLE VALVE (MAKE A LOOP). ANGLE VALVES ARE THEN TURNED BACK ON AND LOCKED IN OPEN POSITION.

WATER SERVICE PIPING DETAIL

2

NOT TO SCALE

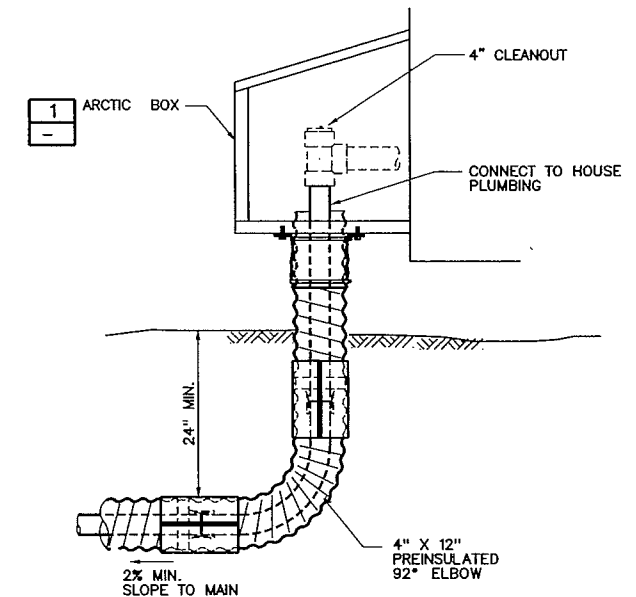
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WATER SERVICE BUILDING CONNECTION

3

NOT TO SCALE



SEWER SERVICE BUILDING CONNECTION

4

NOT TO SCALE

MATERIALS REQUIRED

- A. HOUSE PIPING ADAPTER: 1" COPPER PIPE TYPICAL WITH QEST MALE COUPLING ADAPTER 1"x1" MIPT WITH BRASS BODY AND CONE AND RING. FOR COPPER PIPE A NIBCO SWEAT COPPER ADAPTER #604/704, 1" C x 1" MIPT MAY BE SUBSTITUTED FOR THE QEST FITTING.
- B. CONNECTION HOSE: 1" I.D. FOOD GRADE HOSE; DAYCO 37317-1002 OR EQUAL, TWO PLY, 150 PSI, -40 F TO 180 F, FDA APPROVED. CUT TO LENGTH IN FIELD.
- BOTH ENDS SHALL BE FITTED WITH BRASS LONG SHANK INSERTS WITH 1" FIPT FEMALE SWIVEL NUT WITH GASKETS, DIXON #BLS848 OR EQUAL. EACH INSERT FITTING SHALL BE SECURED WITH 2 EA. ADJUSTABLE STAINLESS STEEL CLAMPS, DIXON #HS20 WORM GEAR CLAMPS, GRIP 13/16" TO 1-3/4", OR BAND-IT JR., TYPE 201, 1-1/2" x 1/2" x 0.30".
- C. BRASS NIPPLE: 1" MIPT x 1-1/2" MIPT.
- D. ANGLE BALL SERVICE VALVE: FORD ANGLE BALL VALVE AV11-444W, 1" FIPT x 1" FIPT, 150 PSI WORKING PRESSURE. "W" INDICATES PADLOCK WINGS ONLY.
- E. PACK JOINT COUPLING: FORD PACK JOINT C86-44, 1" PEP x 1" MIPT. PROVIDE FORD STAINLESS STEEL INSERT STIFFENER #72 FOR 1" SDR 11, IPS HDPE, 1.075" I.D.
- F. HDPE PIPE: DRISCOPEPE 8600 HDPE, 1" IPS, SDR 11, 160 PSI, 1.075 I.D., NSF APPROVED.
- G. INSTALL CIRCULATING PUMP, IF LINE IS GREATER THAN 90 FEET, GRUNFOS UP15-42SU, OR EQUAL. ASSURE THAT PUMP IS INSTALLED SO THAT FLOW DIRECTION IS COMPATIBLE WITH MAIN LINE PITTOFFICE CIRCULATION DIRECTION.
- H. ARCTIC DRAIN HOUSING - FERCO OR PROCESS TECHNOLOGY MODEL 325. FIT INSIDE RUBATEX DONUTS, 1" x 13", 4-1/2" ID.

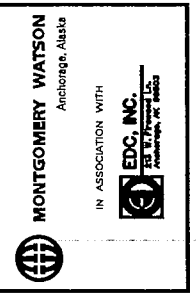
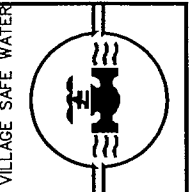
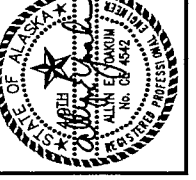
TOUGH INC. - TANANA, ALASKA
WATER DISTRIBUTION &
WASTEWATER COLLECTION SYSTEM
SERVICE CONNECT
DETAILS

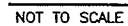
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AGENCY REVIEW	MT	7/14/08
ISSUED FOR CONSTRUCTION	MT	5/20/07
RECORD DRAWING	MT	4/20/05
RECORD DRAWING	AY	5/20/06

Project No. 1189078.010102	Drawn	GM
Date JULY 14, 2000	Designed	LF
	Drawn	GM

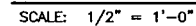
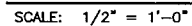
Sheet No. C-24
SHEET OF

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MY KNOWLEDGE.
NAME: Alyse Jackson
DATE: 4/20/05





1. ORIENTATION OF FORCE MAIN SHOWN ROTATED 90° FOR CLARITY. SEE SHEET NOTE 1.
2. LOCATE FLOATS AWAY FROM PUMP INLET.

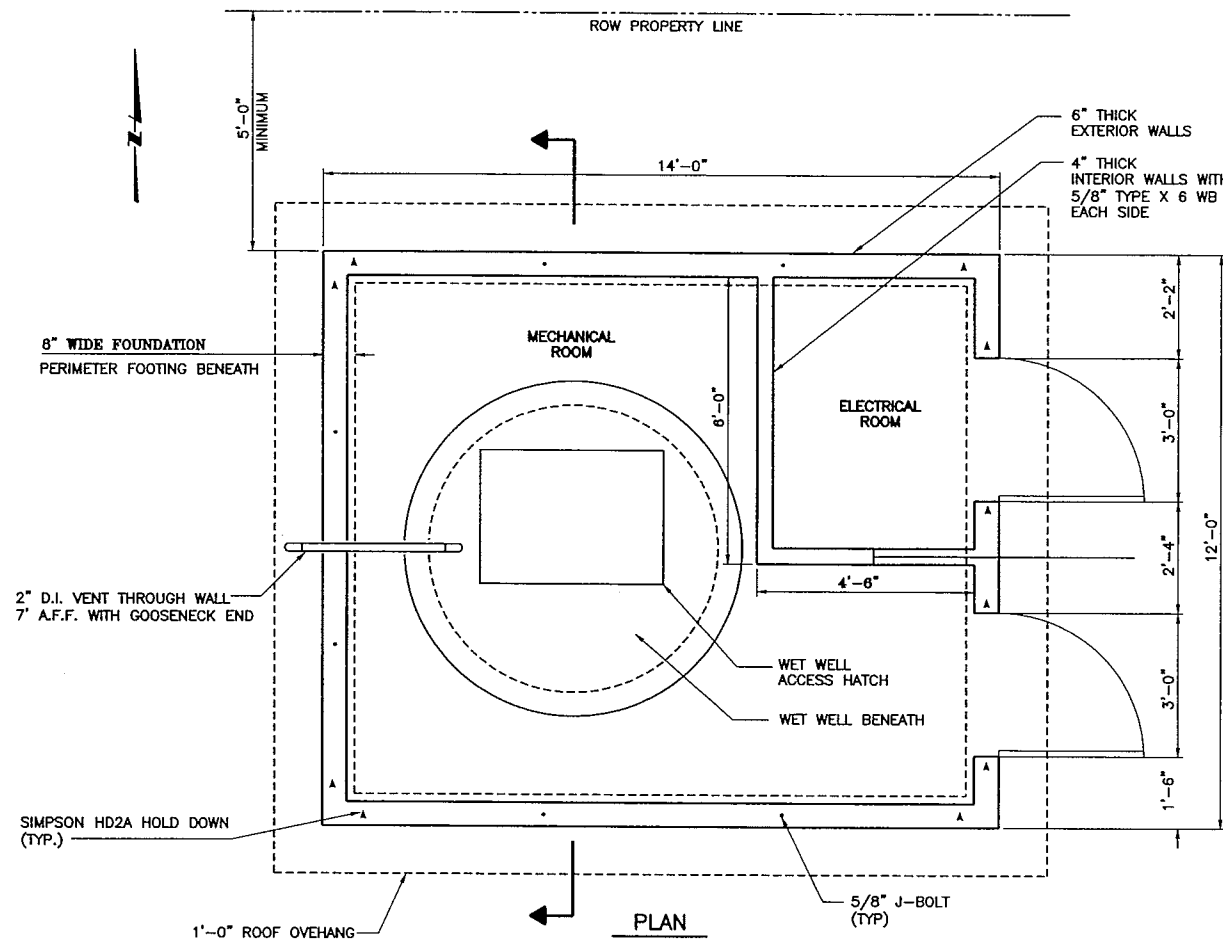


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1. SEE PLAN AND PROFILE SHEETS FOR SEWER AND FORCEMAIN PIPE ALIGNMENT INFORMATION OF EACH LIFT STATION.
2. ALL 4" DUCTILE IRON FLANGED FITTINGS SHALL BE PER AWWA C110. FLANGE ADAPTERS SHALL BE SERIES 2100 MEGAFLANGE ADAPTER AS PRODUCED BY EBAA, INC. OR APPROVED EQUAL.

- Sheet No. **C-27**
SHEET _____ OF _____

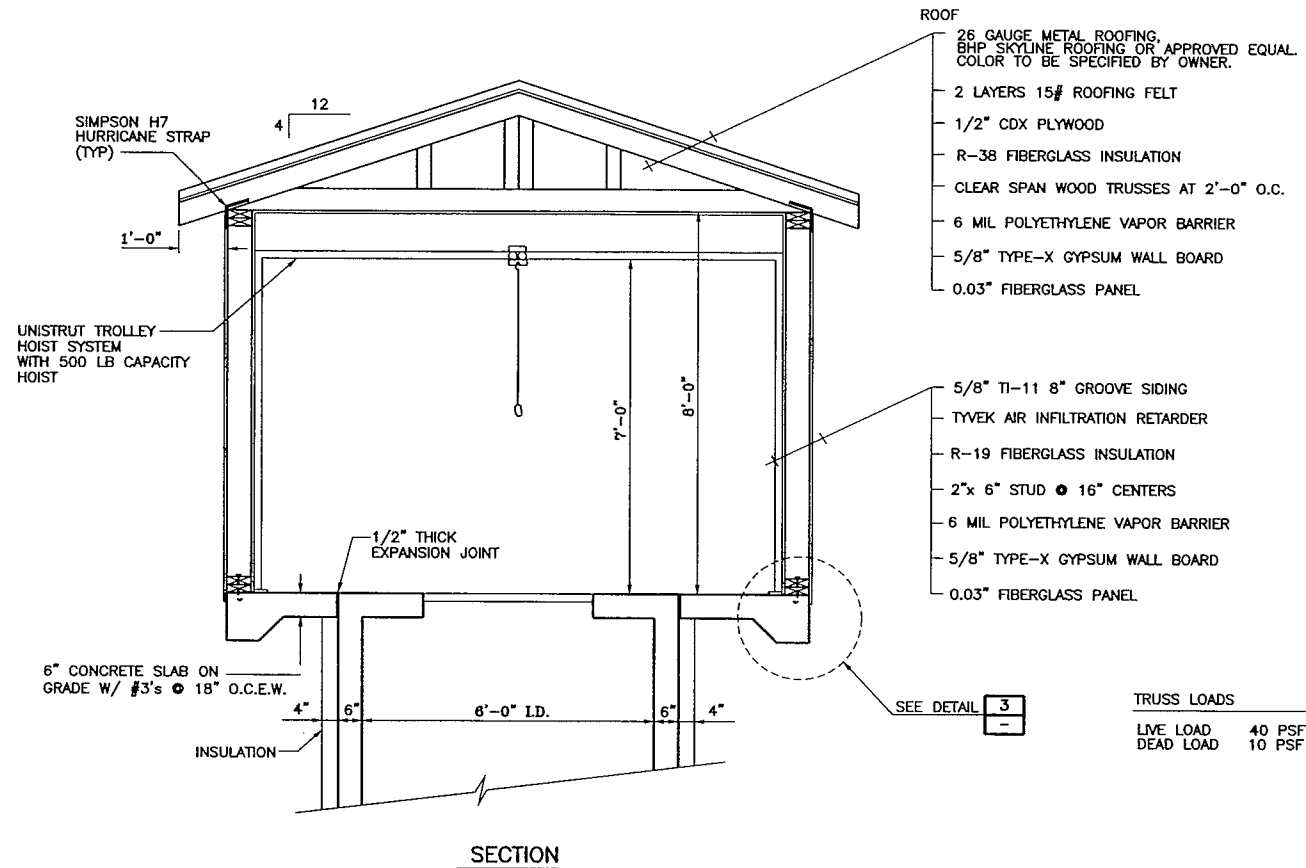
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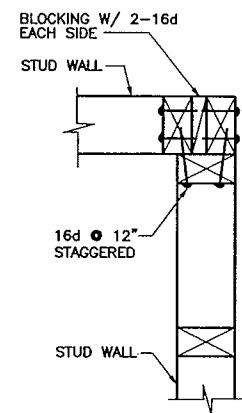
PLAN

LIFT STATION BUILDING

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

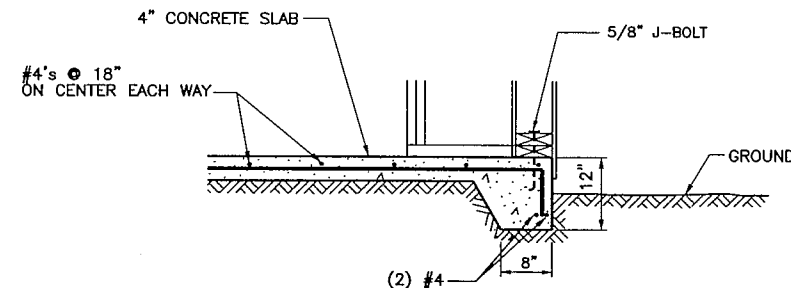


SECTION



PLAN AT CORNER
NOT TO SCALE

2
1



CONCRETE SLAB DETAIL
NOT TO SCALE

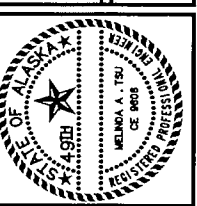
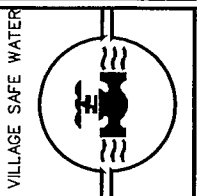
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1

NOTES:

- EXTERIOR PAINT SHALL BE TWO COATS EXTERIOR LATEX ENAMEL. COLOR SHALL BE AS SPECIFIED BY THE OWNER.
- DOOR SHALL BE 3' x 6'-8" x 1-3/4" FLUSH METAL, INSULATED, AND SHALL BE SHOP PRIMED AND PAINTED. DOOR PAINT SHALL BE TWO COATS EXTERIOR ENAMEL. COLOR SHALL BE AS SPECIFIED BY THE OWNER.
- DOOR HARDWARE (EACH DOOR)
 - 3 EA BUTTS - STANLEY CB1961 4.5 x 4.5 x NRP
 - 1 PASSAGE LOCK SET - CORBIN RUSSWIN CL3610
 - 1 SET WEATHERSTRIP - PEMKO S88D
 - 1 DOOR SWEEP - PEMKO 18062CP
 - 1 THRESHOLD - PEMKO 253 x 3AFG
- INSTALL SOLID BLOCKING FOR MOUNTING PANELS AND EQUIPMENT WHERE REQUIRED.
- INTERIOR FINISH SHALL BE TEXTURED FIBER GLASS (FRP) 0.03" LAMINATED TO 5/8" FIRE RATED GYPSUM BOARD, AS MFG. BY NUDO PANELS, OR EQUAL.
- STRUCTURAL GRADE LUMBER SHALL COMPLY WITH THE NATIONAL LUMBER MANUFACTURERS ASSOCIATION "NATIONAL SPECIFICATIONS FOR STRESS GRADE LUMBER". LUMBER SHALL BE HEM-FIR #2 OR BETTER, SINGLE MEMBER. ALL LUMBER EXPOSED TO WEATHER OR IN CONTACT WITH SOIL SHALL BE PRESSURE TREATED WITH AN APPROVED WOOD PRESERVATIVE.
- PLYWOOD PANELS SHALL BE STAMPED WITH APA GRADE TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION AND SHALL MEET U.S. PRODUCT STANDARDS P.S. 1-74. ALL PLYWOOD SHALL HAVE EXTERIOR GLUE.
- ROOF SHEATHING SHALL BE APA CD EXPOSURE. INSTALL FACE GRAIN PERPENDICULAR TO SUPPORTS. STAGGER END PANEL JOINTS. NAIL AT 6" ON CENTER ALL SUPPORTED PANEL EDGES AT 12" ON CENTER AT INTERMEDIATE SUPPORTS UNLESS OTHERWISE NOTED. ALL NAILS SHALL BE 8d COMMON NAILS.

NOTES:
1. FIELD NOTES SHOULD BE RESEARCHED
ALONG WITH THE PLAN INFORMATION.
IN ANY FUTURE DIGGING OR DESIGNING.
2. TEXT ONLY WAS CHANGED.
DESIGN WAS NOT CHANGED. A

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INFORMATION PROVIDED HEREIN
IS ACCURATE TO THE BEST OF
MY KNOWLEDGE.
NAME: *Ally E. Jordan* DATE: *4/14/06*



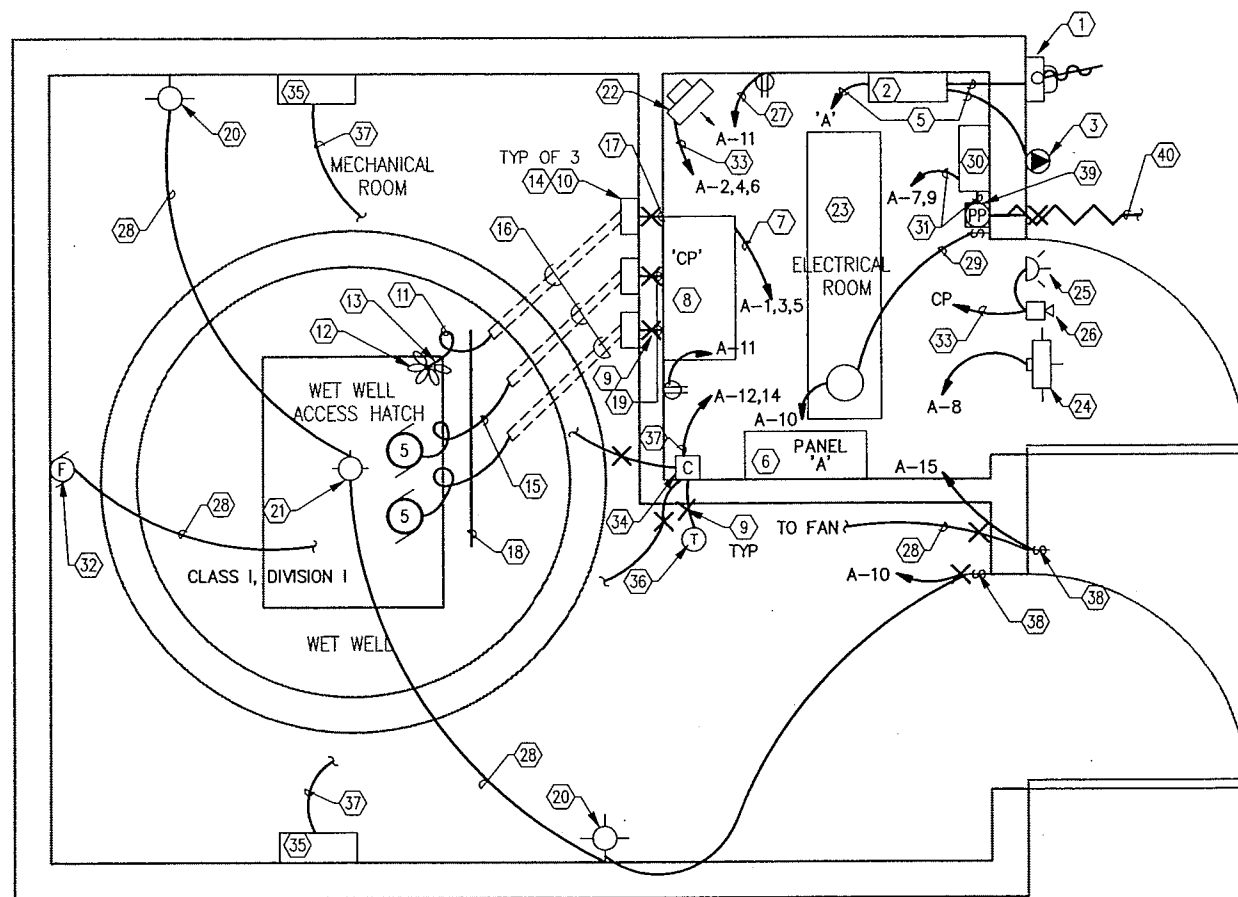
MONTGOMERY WATSON
Anchorage, Alaska
IN ASSOCIATION WITH
EDC, INC.
ESTABLISHED 1988
REGISTERED PROFESSIONAL ENGINEER

TOO'GHA, INC. - TANANA, ALASKA
WATER DISTRIBUTION &
WASTEWATER COLLECTION SYSTEM
LIFT STATION
BUILDING DETAILS

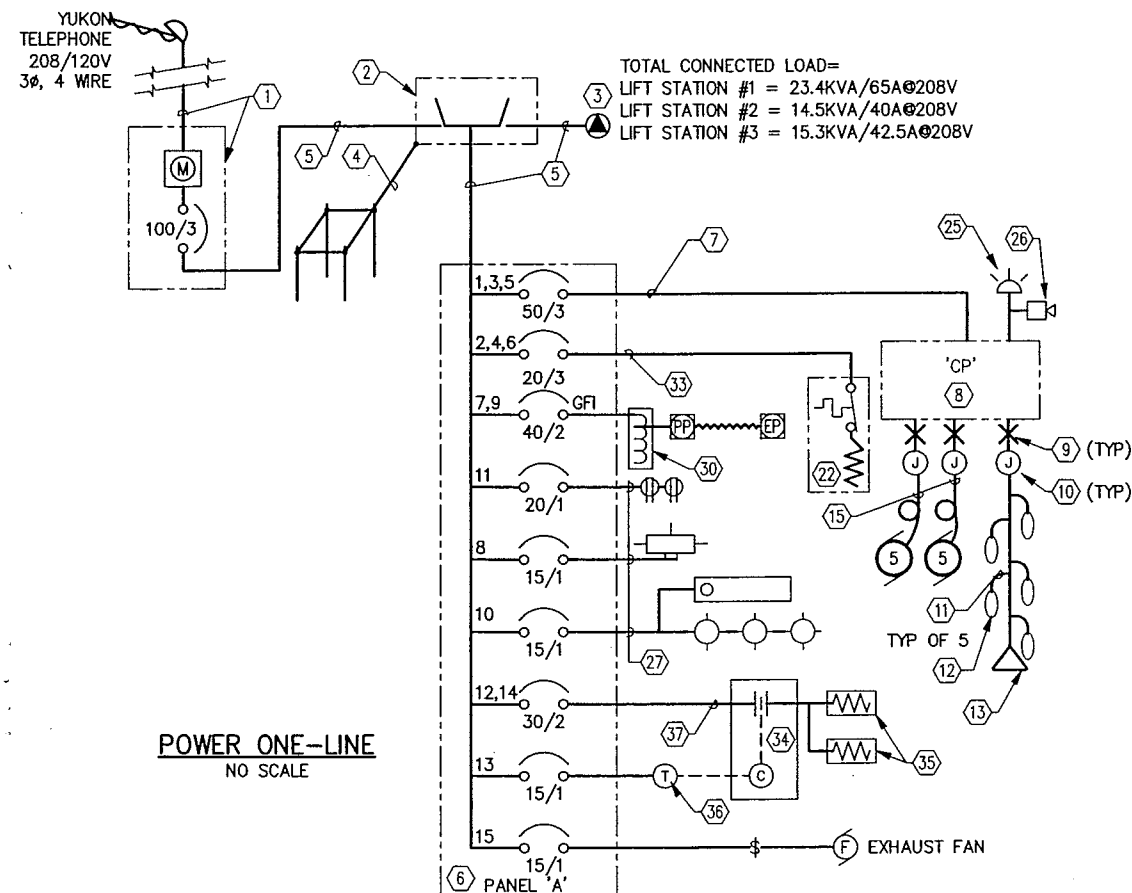
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AGENCY REVIEW	MT	7/14/09
ISSUED FOR CONSTRUCTION	MT	5/20/01
RECORD DRAWING	MT	4/20/05
RECORD DRAWING	AY	5/20/06

Project No. 1189078.010102	Designated	MT	Drawn	LF	Approved	GM
Date JULY 14, 2002						

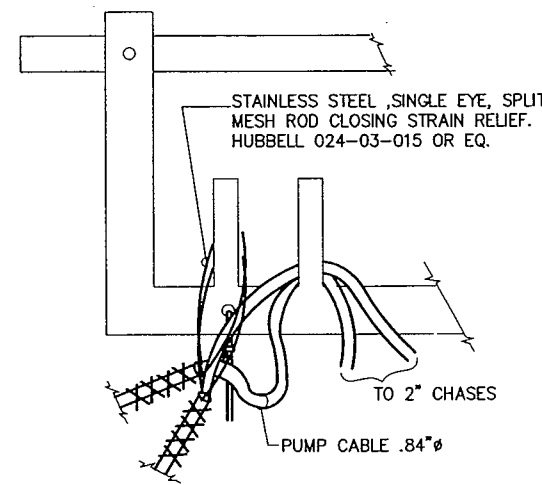
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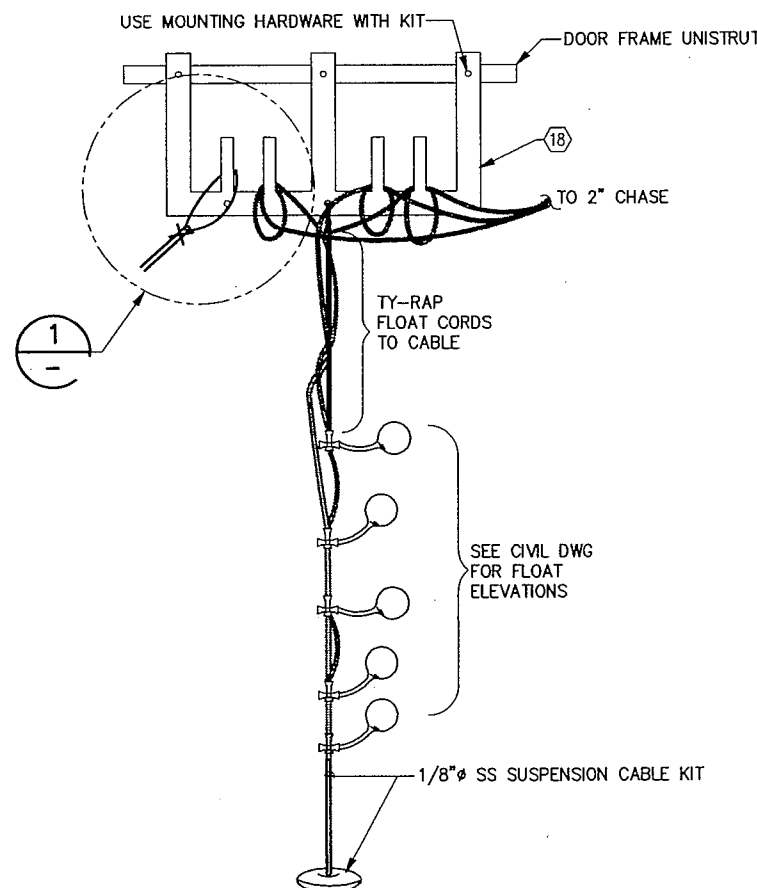
FLOOR PLAN



POWER ONE-LINE
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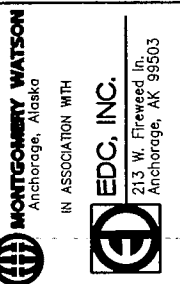
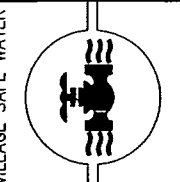
1 MOTOR CABLE SUPPORT DETAIL
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2 FLOAT SUPPORT DETAIL
NO SCALE

- NOTES
- 3Ø, 4 WIRE, 208/120V, 100A METER MAIN COMBO, LOCKABLE WITH 2" GRC RISER/WEATHERHEAD AND 4#2 XHHW. COORDINATE SERVICE & METERBASE REQUIREMENTS W/YP&T.
 - NEMA 1 ENCLOSED, 100 AMP, 240 VOLT, 2P2T MANUAL TRANSFER SWITCH W/ S/N. SQUARE D #82253. BOND NEUTRALS AT THIS POINT.
 - 100A, 600V, MOTOR INLET WITH MATCHING CONNECTOR BODY CROUSE HINDS NPQ1038/NPR10366, AND AJC57 BACK BOX.
 - #6 BCU BONDED TO 4EA. 5/8" x 8' CU CLAD GROUND RODS (LOCATED AROUND BLDG. PERIMETER, CONNECTED BY #2 BCU & BURIED NOT LESS THAN 2-1/2 FEET) & TO MAIN DISCONNECT & EQUIPMENT ENCLOSURES.
 - 2"C, 4#2 (3H,N), 1#6 (G)
 - 208V, THREE PHASE, 4 WIRE, 100A, MLO, 30 SPACE, NEMA 12 PANELBOARD. SQUARE D #NQ0D430L100CU.
 - 5#8 (3H,N,G) IN 1" EMT.
 - CONTROL PANEL. SEE SHEET E4 FOR SCHEMATIC.
 - SEAL-OFF FITTING CROUSE-HINDS TYPE EYS. SEAL AROUND CONDUIT TO MAINTAIN VAPOR TIGHT BARRIER BETWEEN HAZARDOUS & NON-HAZARDOUS LOCATIONS.
 - EXPLOSION PROOF JUNCTION BOX. FOR TRANSITIONING FROM SOW CORD TO INDIVIDUAL CONDUCTORS. KILLARK EXB OR EQUAL. WALL MOUNT J-BOX AT 48" AFF.
 - 18/2 TYPE SO-W FLOAT SWITCH CORD.
 - LIQUID LEVEL FLOATS, INSTALL FLOATS ON SINGLE WEIGHTED CABLE (ITEM 13) AT ELEVATIONS PROVIDED BY FIELD ENGINEER. FLOATS EQUAL TO CONSOLIDATED LS-A4.
 - WEIGHTED 1/8"SS CABLE SUPPORT FOR FLOAT MOUNTING. SECURE TO HATCH FRAME. EQUAL TO CONSOLIDATED #CBM. SEE DETAIL 2.
 - EXPLOSION PROOF CORD GRIP FOR CONNECTIONS AT J-BOX (NOTE #10). KILLARK ZE SERIES.
 - 3/C#8 W/GND, 2#14 TYPE SO-W EXTRA HARD USAGE CORD.
 - 2" GRC CHASE IN SLAB. PROVIDE GROUNDING BUSHING AT EITHER END. EXTEND TO 6" BEHIND HATCH OPENING IN WETWELL & UP WALL TO BELOW J-BOX (NOTE #10). SLOPE TO DRAIN TOWARD WET WELL.
 - 3/4"C, 10#14 (FLOAT SIGNALS). LABEL CONDUIT "INTRINSICALLY SAFE"
 - PROVIDE CABLE/CORD HANGER, FLYGT # 14589405 OR EQUAL SEE DETAIL 1 & 2.
 - 3/4"C, 3#10 & 2#14.
 - 100W INCANDESCENT, EXPLOSION PROOF LIGHT. WALL MOUNT, 8'AFF. CROUSE-HINDS BX240.
 - 100W INCANDESCENT, EXPLOSION PROOF LIGHT, CEILING MOUNT W/GUARD CROUSE-HINDS # EVCX240.
 - ELECTRIC UNIT HEATER, 208V, 3Ø, 1.5KW W/ INTEGRAL THERMOSTAT, KING ELECTRICAL MFG # KPB2406.
 - 2 LAMP, 4', WRAP-AROUND FLUORESCENT FIXTURE SURFACE MOUNT. LITHONIA LB 332 120.
 - 70W HPS WALLPACK WITH BLACK DIE CAST ALUMINUM HOUSING, PRISMATIC GLASS REFRACTOR. GASKETED AND EQUIPPED COLD WEATHER BALLAST, AND PHOTOELECTRIC CONTROL. LITHONIA TWH70S120PE. LOCATE A 3' MINIMUM ABOVE DOOR.
 - ALARM STROBE BEACON, 120VAC, WEATHERPROOF, SURFACE MOUNT ABOVE DOOR. FEDERAL MODEL FB2PST OR APPROVED EQUAL.
 - ALARM HORN, 120VAC, WEATHERPROOF, SURFACE MOUNT ABOVE DOOR. FEDERAL MODEL 350-WB OR EQ.
 - 1/2"C, 3#12 (H,N,G)
 - 1/2"C, 3#12 (SWITCHLEG,N,G).
 - 1/2"C, 3#12 (H,SWITCHLEG,G)
 - 208:240V BUCK BOOST TRANSFORMER
 - 3/4"C, 3#8 (2H,G)
 - EXPLOSION PROOF EXHAUST FAN, 120V, 1Ø, PENN MODEL #BX12Q, 1/6HP TO SWITCH ON W/ LIGHT
 - 3/4"C, 4#12.
 - CONTACTOR, 4-POLE, 30A, 208V, NEMA 12 RATED WITH 120V COIL SQUARE D # LA40V02 OR EQUAL.
 - 208V, 3KW, SINGLE-PHASE, EXPLOSION-PROOF HEATER, WALL MOUNT, CHROMALOX #TEP-3 OR EQUAL.
 - THERMOSTAT, EXPLOSION-PROOF SPST 120V, CHROMALOX #WR-80EP OR EQUAL.
 - 1/2 "C, 3#10 (2H,G).
 - SNAP SWITCH, 120V, 20A, SINGLE POLE, BRYANT #4901 IN EXPLOSION-PROOF ENCLOSURE, CROUSE-HINDS #EFS 1129 OR EQUAL.
 - HEAT TRACE POWER POINT IN CAST WEATHERPROOF JUNCTION BOX.
 - HEAT TRACE ROUTED IN CONDUIT BELOW GRADE TO FORCE MAIN.

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DATE: 5/12/06
ENGINEER: [Signature]

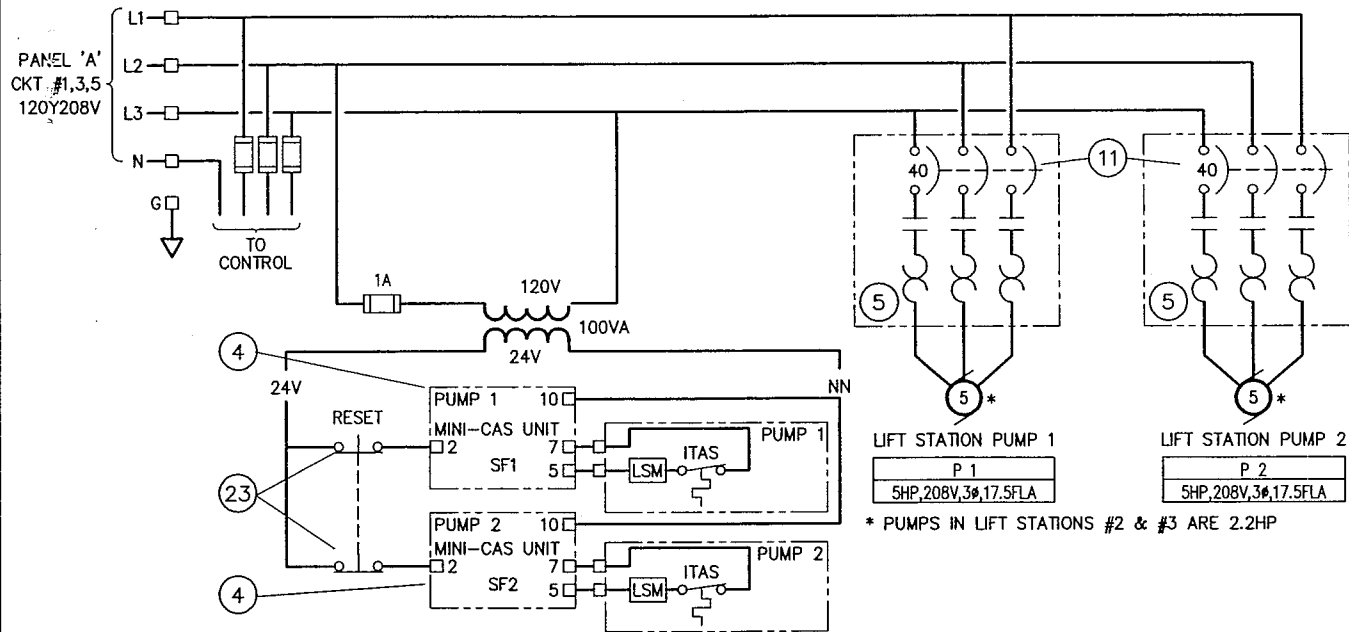


TOO'GHA INC. - TANANA, ALASKA
WATER DISTRIBUTION &
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LIFT STATION
EQUIPMENT PLAN

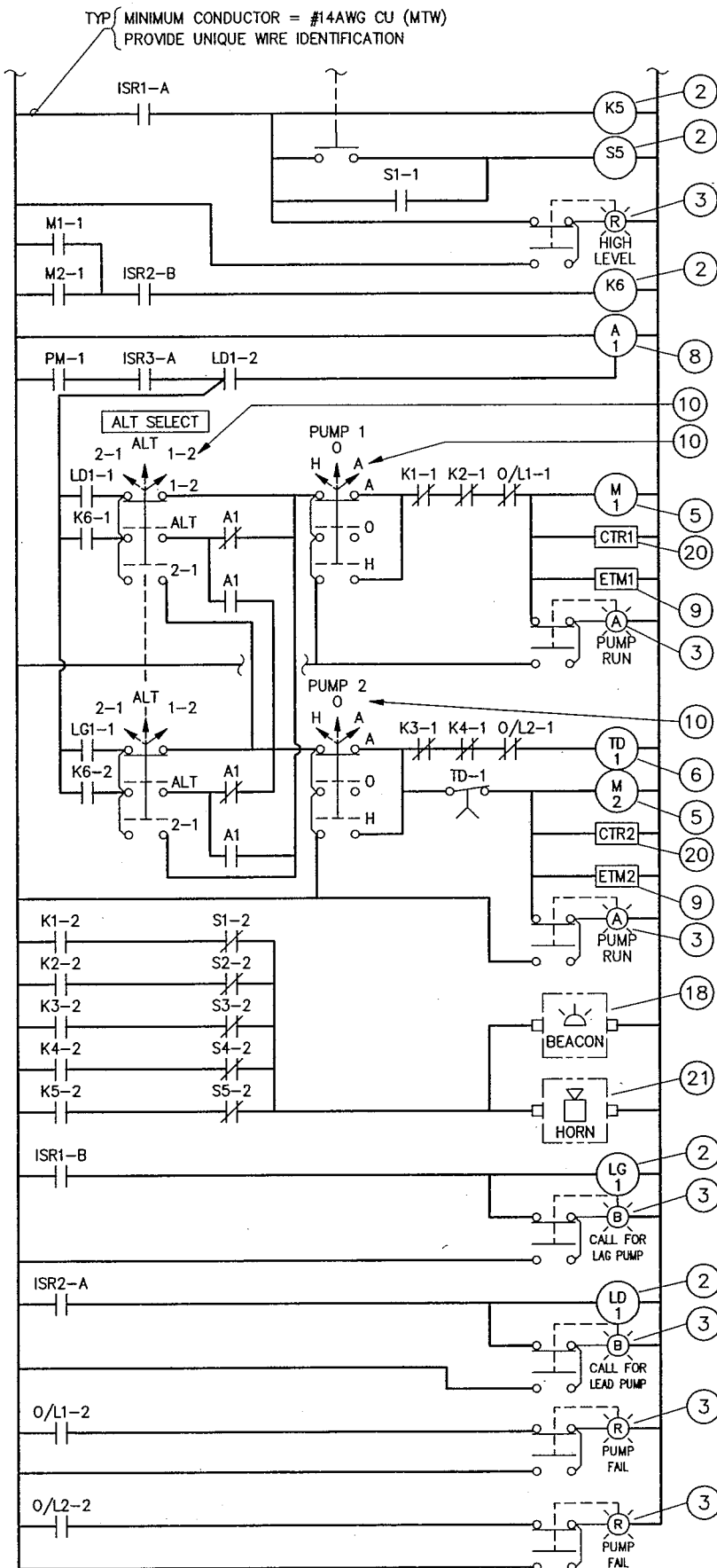
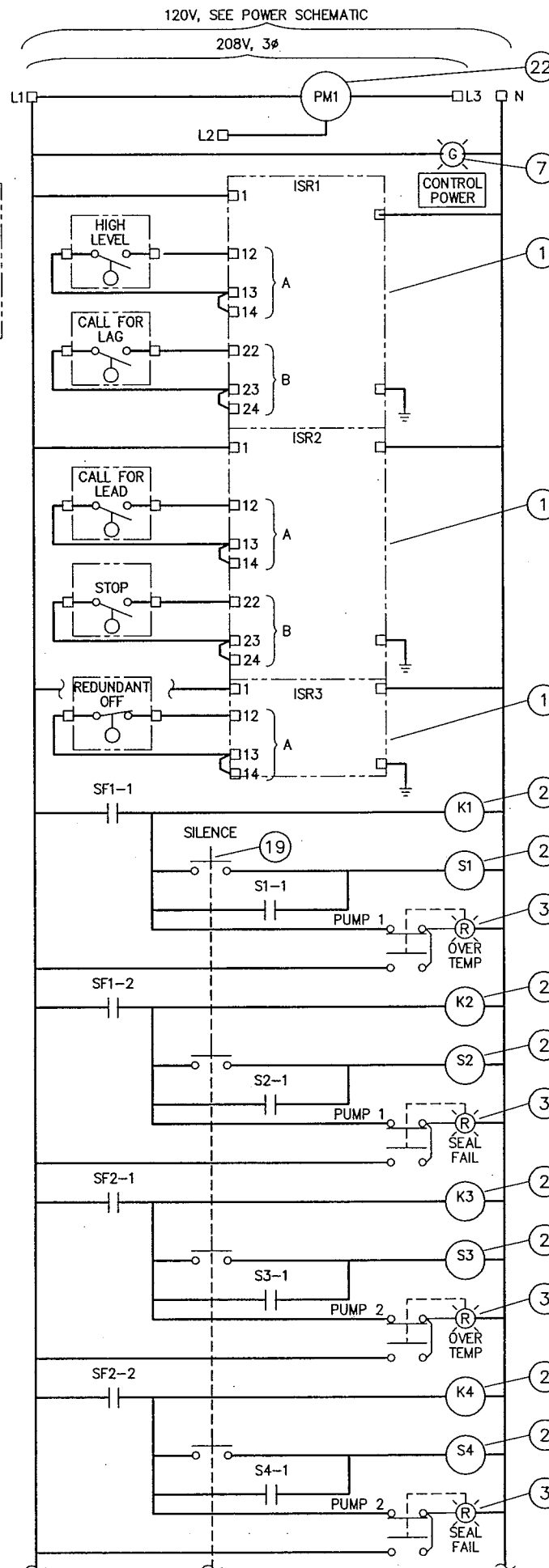
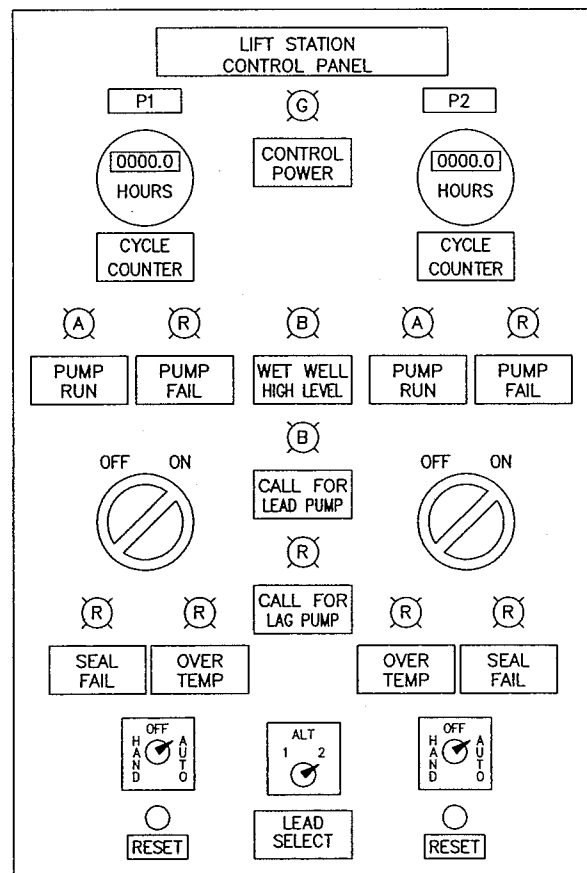
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39	5/12/2006	JHF
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Project No. 1189078.010102
Date: 5/07/2001
Designed: JHF
Drawn: KH
Approved: [Signature]

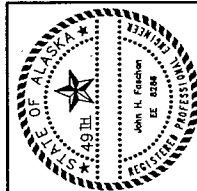
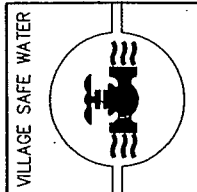
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COMPONENT SCHEDULE	
1	INTRINSICALLY SAFE RELAY 2-CHAN. WARWICK OR EQUAL
2	RELAY, 120V, 3PDT, 11-PIN OCTAL SOCKET MOUNT W/ INDICATING FLAG ALLEN BRADLEY #700-HA33A1
3	PILOT LIGHT, PUSH TO TEST, 120V, LENS TINT AS SHOWN SQUARE D TYPE K 9001 KT (R=R31, G=G31, A=A31, B=B31)
4	FLYGT MINI-CAS PUMP MONITOR RELAY
5	3-POLE MOTORSTARTER, NEMA SIZE 1, 120V COIL SQUARE D 8536 TYPE SC03V08
6	RELAY, 120V, TIME DELAY ON, 2PDT, 8-PIN OCTAL SOCKET MOUNT ALLEN BRADLEY #700 HT 12AA1
7	PILOT LIGHT, 120V, LENS TINT AS SHOWN SQUARE D TYPE K 9001 KP (R=R31, G=G31, A=A31, B=B31)
8	2-PUMP ALTERNATOR, 120V COIL TIME MARK MODEL 261D 120
9	ELAPSED TIME METER, 0-99999.9 HR, 120VAC VEEDER-ROOT #87F1089 TYPE 779536-201
10	3-POSITION SELECTOR SWITCH SQUARE D TYPE SK 9001 SKS42BH2
11	CIRCUIT BREAKER, UNIT MOUNTED W/ THRU THE DOOR OPERATOR SQUARE D 650 TYPE MAG (RATING AND POLES AS SHOWN) SQUARE D 9421 TYPE L OPERATOR
12-17	NOT USED
18	STATIONARY STROBE FEDERAL ELECTRA FLASH 141 WITH RED LEXAN DOME
19	N.O. PUSHBUTTON SQUARE D, TYPE SK 9001 - CONTACT BLOCKS AS REQUIRED
20	CYCLE COUNTER, PANEL MOUNT, RESETABLE, 120V VEEDER-ROOT #81F2992 TYPE 743895-211
21	ALARM HORN, 120V, WEATHER PROOF, FEDERAL 350WB 120
22	VOLTAGE MONITOR, 3-PHASE, 240V, ADJUSTABLE, 2 SEC DELAY TIME MARK 258B
23	N.C. PUSHBUTTON SQUARE D, TYPE SK 9001 - CONTACT BLOCKS AS REQUIRED



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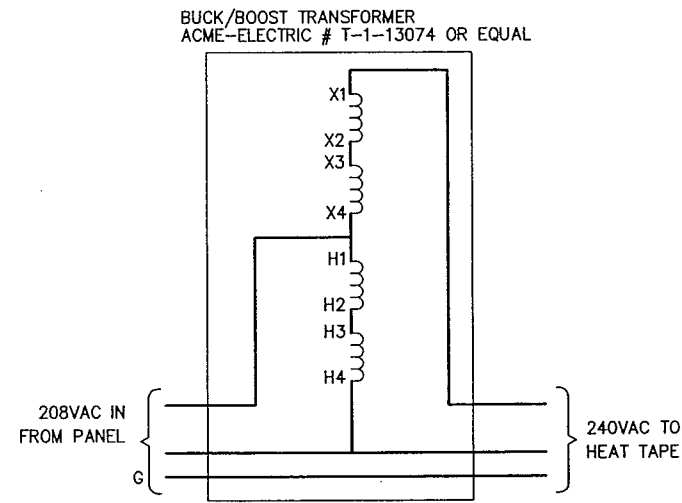


MONTGOMERY WATSON
Anchorage, Alaska
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EDC, INC.
213 W. Fireweed In.
Anchorage, AK 99503

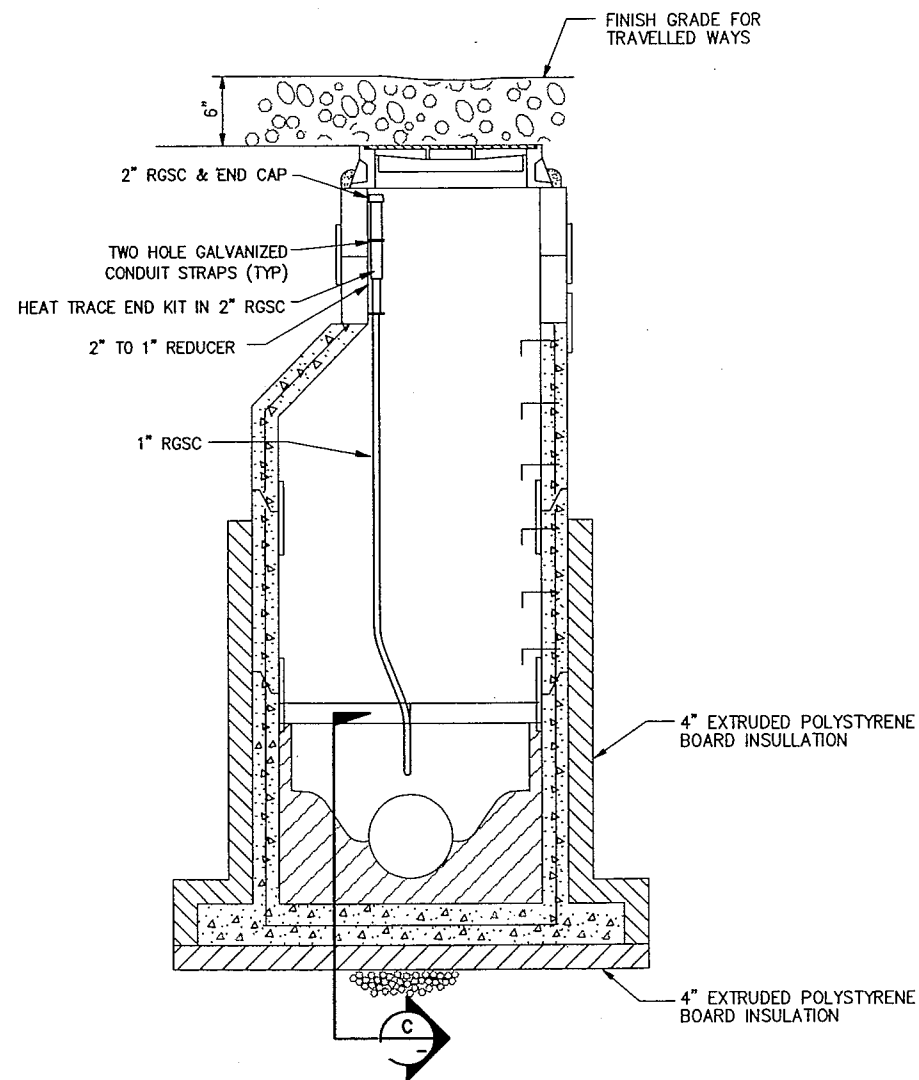
TOO'GHA INC. - TANANA, ALASKA
WATER DISTRIBUTION &
WASTEWATER COLLECTION SYSTEM
CONTROL PANEL LAYOUT
& SCHEMATIC

REVISION	DATE	BY
AGENCY REVIEW	5/7/2000	JEF
ISSUED FOR CONSTRUCTION	5/2001	JEF
RECORD DRAWING	5/2006	JEF

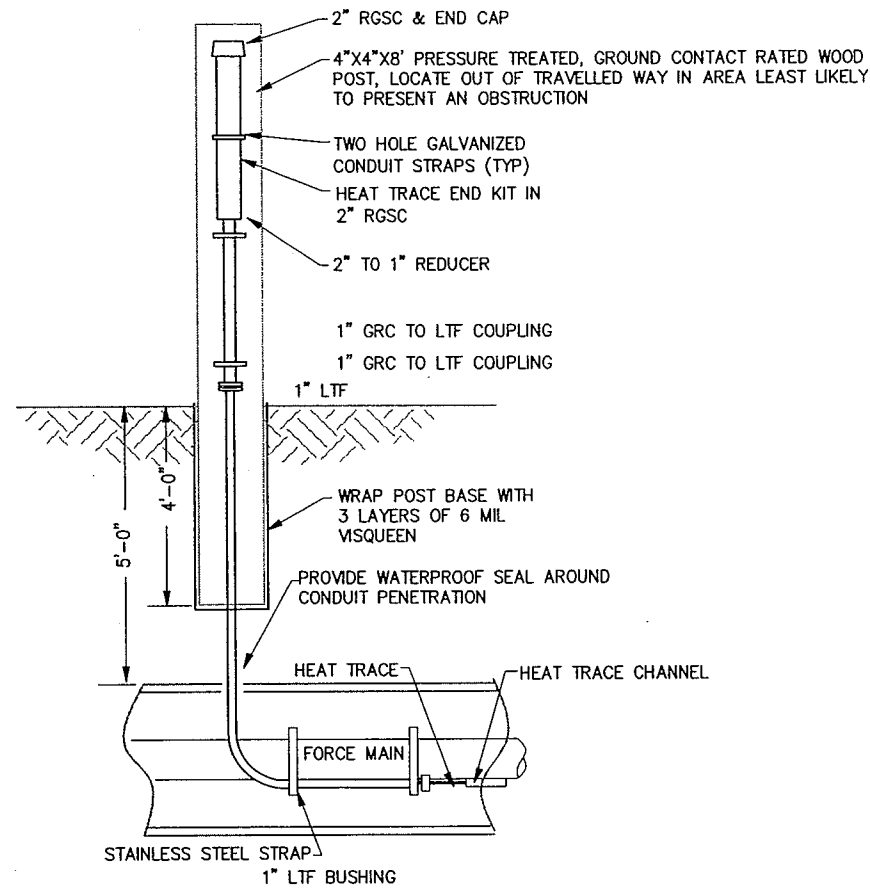
Project No. 1189078.010102
Date: 5/07/2001
Designed: JEF
Drawn: KH
Approved:



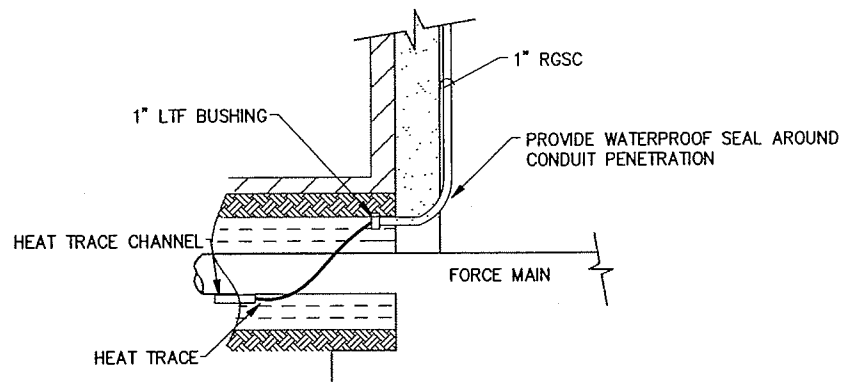
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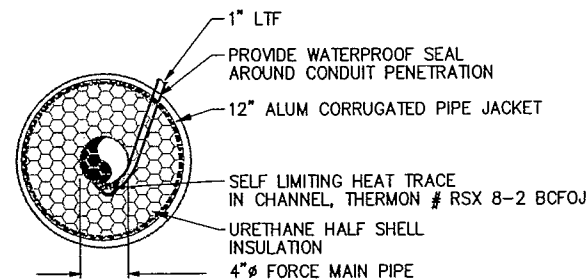
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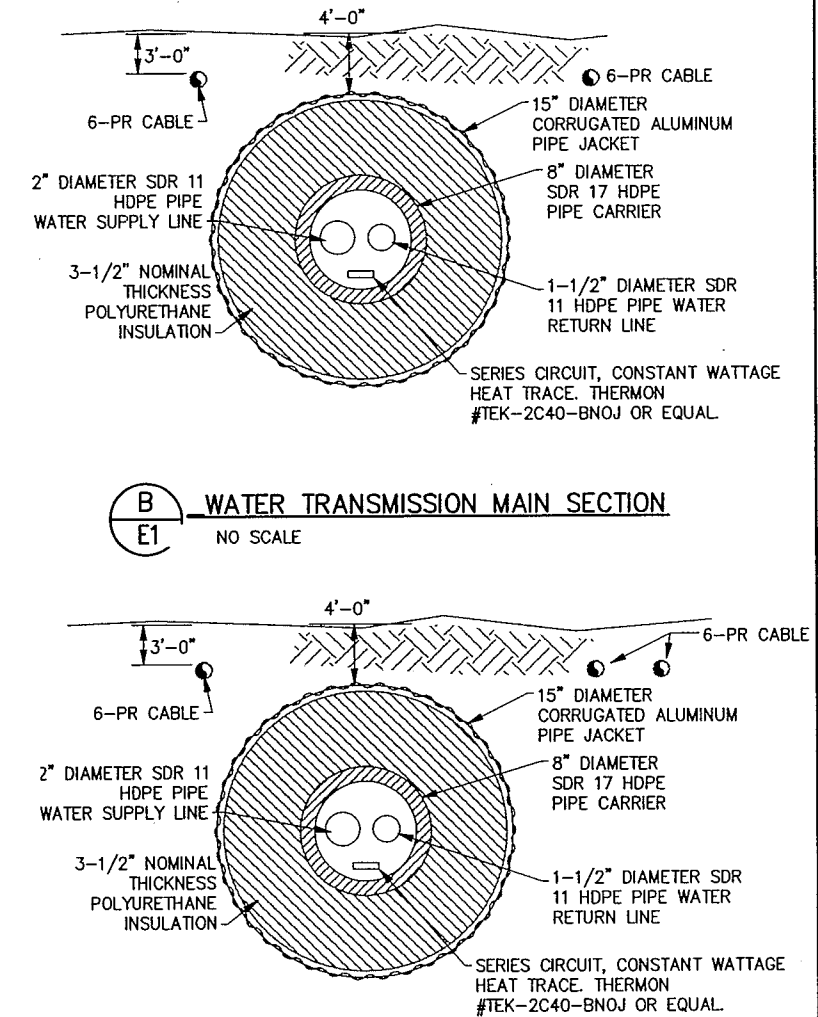
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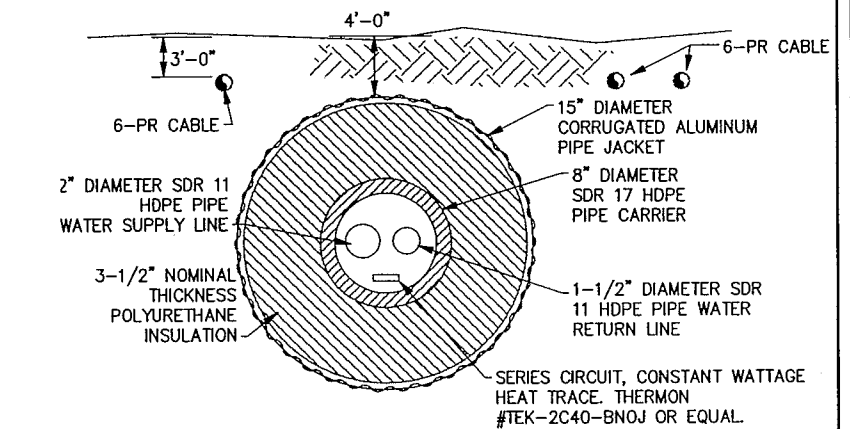
C PENETRATION DETAIL
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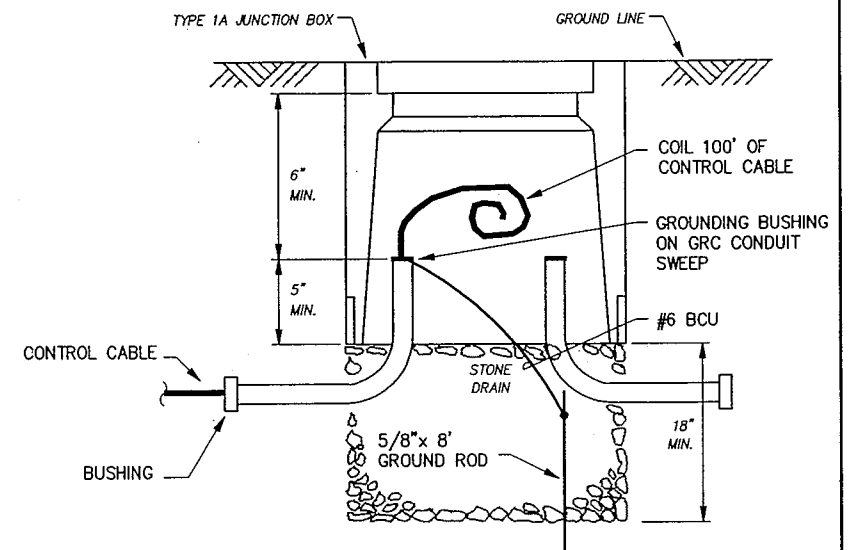
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B WATER TRANSMISSION MAIN SECTION
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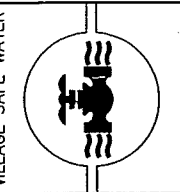


C WATER TRANSMISSION MAIN SECTION
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D JUNCTION BOX DETAIL
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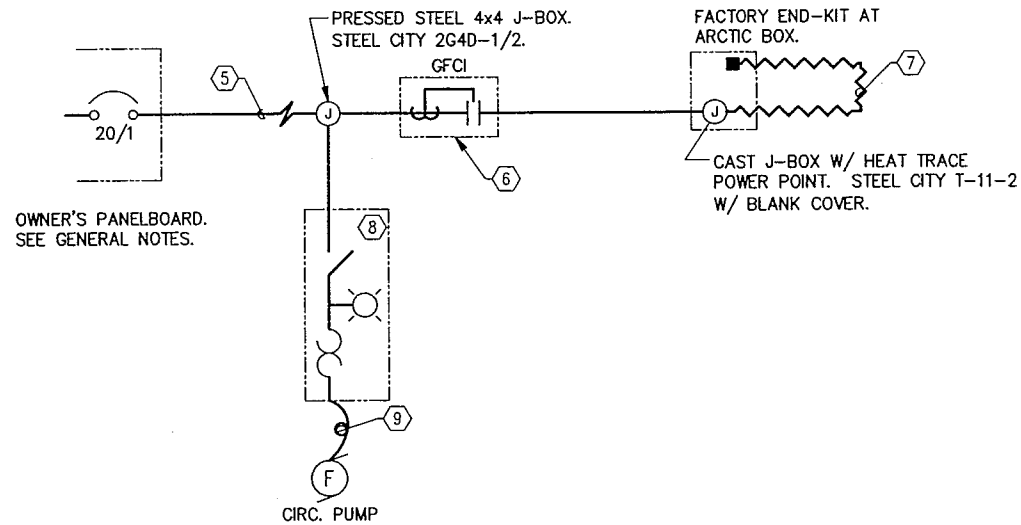
MONTGOMERY WATSON
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TOO'GHA INC.-TANANA, ALASKA
WATER DISTRIBUTION &
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ELECTRICAL DETAILS

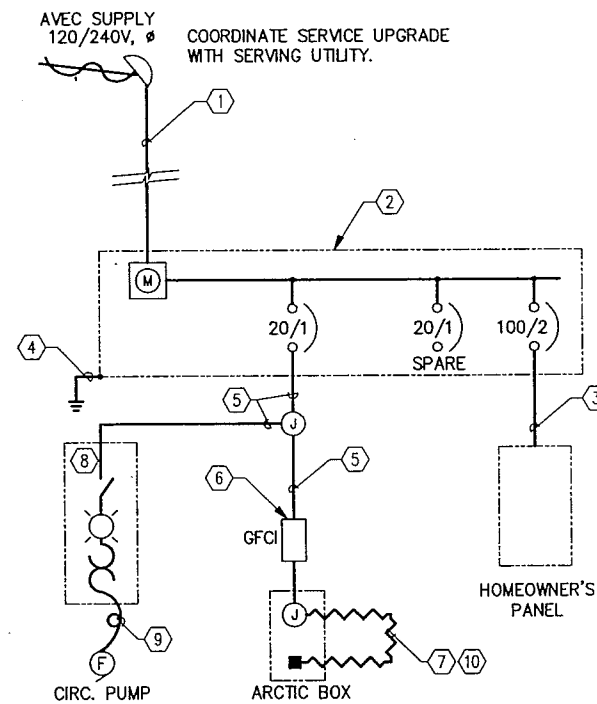
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AGENCY REVIEW	4/17/2000	JHF	4/17/2000
ISSUED FOR CONSTRUCTION	5/2/2001	JHF	5/2/2001
RECORD DRAWING	5/2/2006	JHF	5/2/2006

Project No. 118907B.010102
Date 5/07/2001
Designed JHF
Drawn KH
Approved

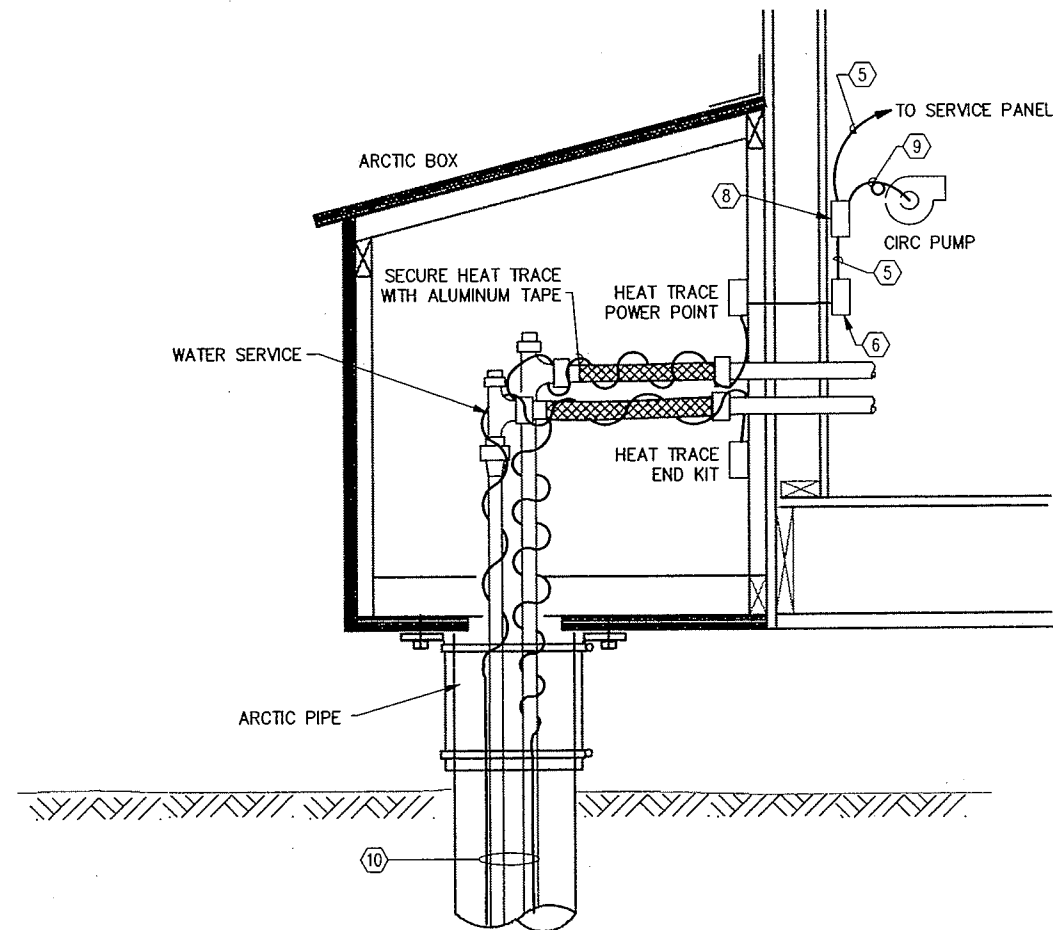
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1 HOUSE SERVICE DETAIL
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2 TYPICAL ONE-LINE DIAGRAM
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3 HOUSE WATER SERVICE HEAT TRACE DETAIL
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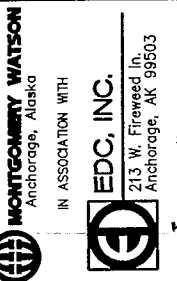
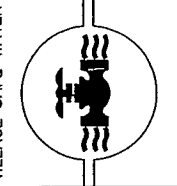
NOTES:

- 1 2" GRC RISER, SLIPFITTER, OFFSET AND HUB. 3#2 XHHW.
- 2 DISCONNECT/REMOVE EXISTING SERVICE. PROVIDE NEW 100A, 120/240V, 1Ø COMBINATION SERVICE ENTRANCE DEVICE. SQUARE D # SC1624M100C.
- 3 1-1/2"C, 3#2 (2H,N) & 1#6 (G)
- 4 VERIFY EXISTING GROUND. MINIMUM #6 BCU TO 5/8"x 8' CU CLAD ROD.
- 5 1/2" EMT, 3#12 XHHW-2 (H,N,G) OR 12/2 W/G NM IF CONCEALED IN DRY LOCATIONS (TYP).
- 6 ARCTIC TRACE C33120SP GFCI MODULE W/ INDICATOR LIGHT
- 7 HEAT TRACE, 3W/FT, ARCTIC TRACE Z120312CBTL W/ COPPER BRAID.
- 8 MANUAL MOTOR STARTER, FRACTIONAL HORSEPOWER, 120V, NEMA 1, W/PILOT LIGHT. SQUARE D #CLASS 2510 # KG1A.
- 9 1/2" LTF, 3#12 (N,G,SWITCHLEG)
- 10 ROUTE HEAT TRACE ALONG HOUSE SERVICE LINE TO WATER MAIN CONNECTION AND BACK TO HOUSE SERVICE.

GENERAL NOTES:

THE PREFERRED METHOD FOR POWERING THE HOUSE SERVICE HEAT TRACE AND WATER CIRCULATION PUMP IS FROM THE HOME OWNER'S EXISTING PANELBOARD. THIS IS PROVIDED THAT THE EXISTING PANELBOARD IS: IN GOOD CONDITION, INSTALLED ACCORDING TO CODE AND HAS A SPARE 20A SINGLE POLE CIRCUIT AVAILABLE. IF THIS IS NOT THE CASE, THE HOME OWNER'S SERVICE SHALL BE UPGRADED PER THE ONE-LINE DIAGRAM ON THIS SHEET.

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ENGINEER: EDC, INC.



TOO'GHA INC. - TANANA, ALASKA
WATER DISTRIBUTION &
WASTEWATER COLLECTION SYSTEM
ELECTRICAL
HOUSE SERVICE DETAILS

REVISION	BY	DATE
AGENCY REVIEW	JHF	7/2/2000
ISSUED FOR CONSTRUCTION	JHF	5/20/01
RECORD DRAWING	JHF	5/2/06

Project No. 1189078.010102	Date: 5/07/2001	Designed: JHF	Drawn: KH	Approved:
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Sheet No. E6
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