CITY OF GREELEY

PROGRESS DRAWINGS

ASHCROFT LIFT STATION

MARCH 2020

PLUMMER

1221 AURARIA PKWY | DENVER, COLORADO 80204
303.300.3464 | TBPE REGISTERED FIRM NUMBER F-13

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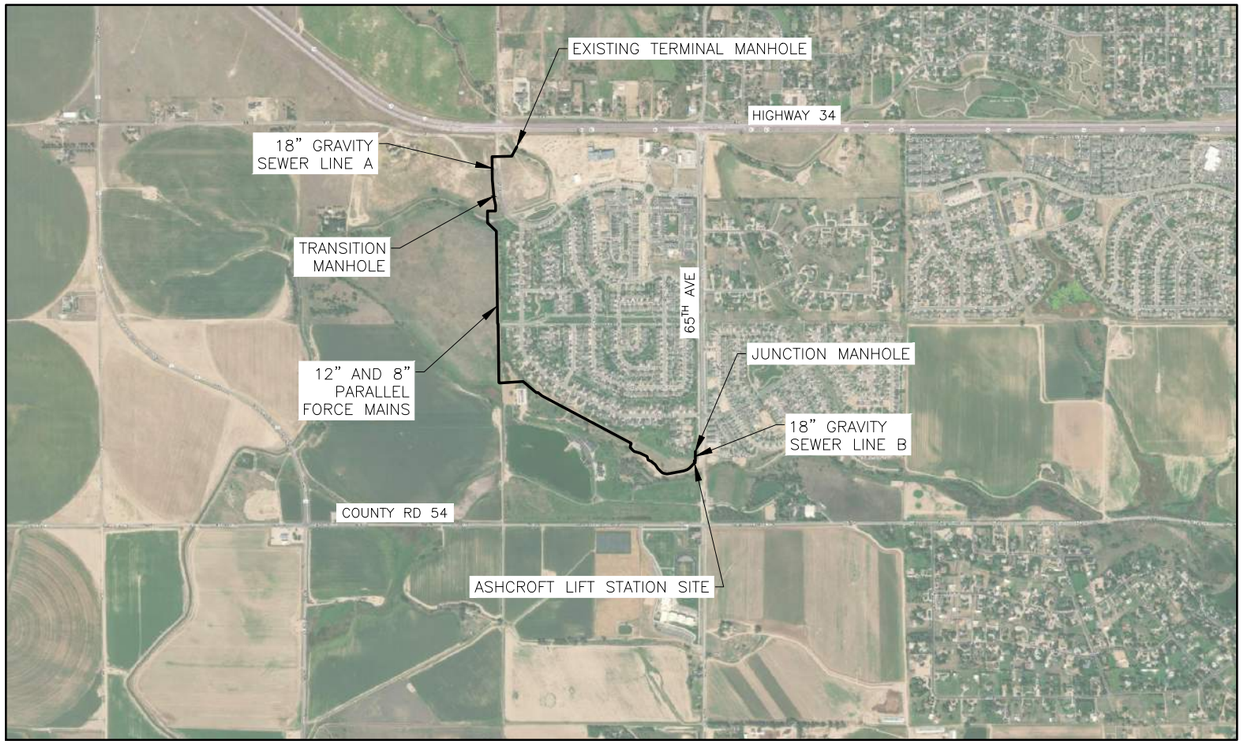
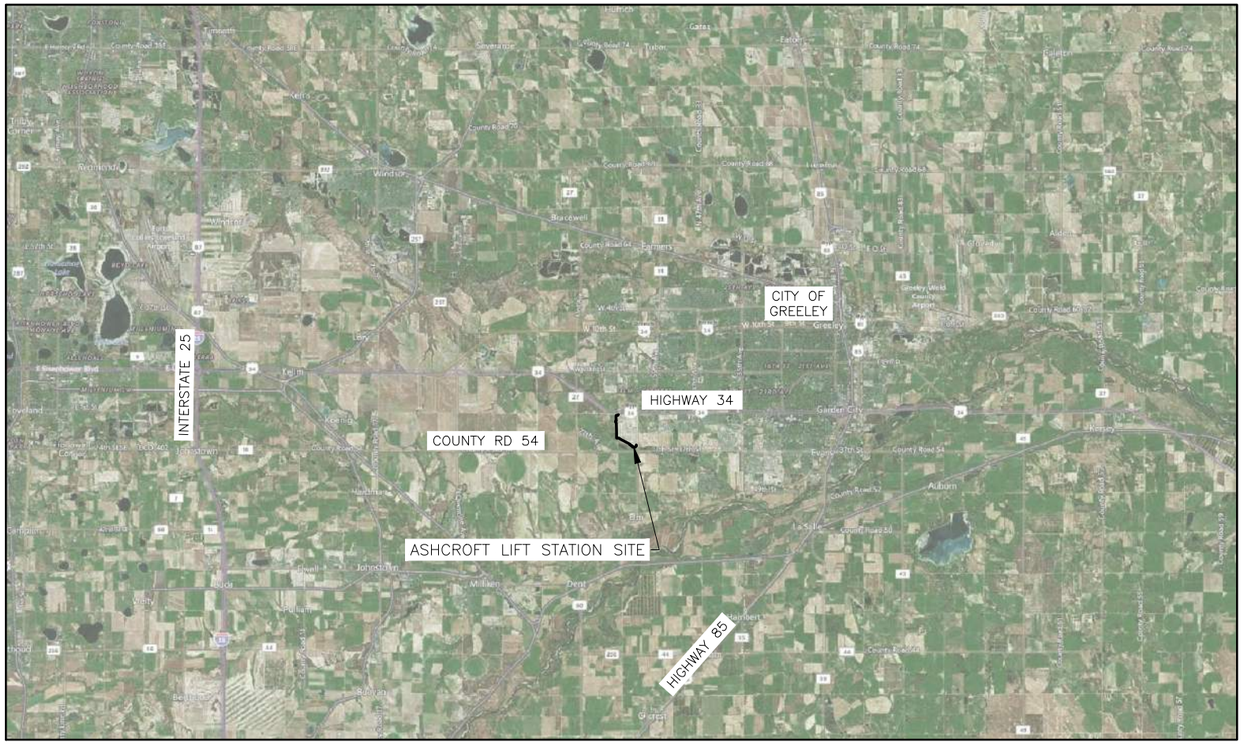


LOCATION MAP



VICINITY MAP

INDEX OF DRAWINGS

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ASHCROFT LIFT STATION

GENERAL
VICINITY MAP, LOCATION MAP AND INDEX OF DRAWINGS

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DESIGNED N. MARTINSON
DRAWN K. RINDT
CHECKED N. MARTINSON
REVIEWED

Seq. X of XX
Dwg. No. G-001
3408-001-01

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GENERAL ABBREVIATION INDEX

L	ANGLE
°C	DEGREES CELSIUS
°F	DEGREES FAHRENHEIT
@	AT
%	PERCENT
AC	ALTERNATING CURRENT
ADD.	ADDENDUM
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
AM	AMMETER
AMP	AMPERE
ANN	ANNUNCIATOR
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
ARCH.	ARCHITECTURE
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AUTO	AUTOMATIC
AUX	AUXILIARY
AVG	AVERAGE
B.C.	BEGINNING OF CURVE
BFV	BUTTERFLY VALVE
BITUM	BITUMINOUS
BLDG	BUILDING
BLKG	BLOCKING
BM	BENCH MARK
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
C/C	CENTER TO CENTER
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
C.I.	CAST IRON
CJ	CONSTRUCTION JOINT
CL	CENTERLINE
CLD	CHLORINE LEAK DETECTOR
CMP	CORRUGATED METAL PIPE
CNDT	CONDUIT
CO	CLEANOUT
CONC.	CONCRETE
CONSTR	CONSTRUCTION
CONT.	CONTINUOUS
CV	CHECK VALVE
CY	CUBIC YARDS
D	PENNY (NAIL MEASURE)
DB	DECIBEL
DDCV	DOUBLE DISK CHECK VALVE
DEG	DEGREE
DEMO	DEMOLITION
DEPT	DEPARTMENT
DET	DETAIL
DIP	DUCTILE IRON
DIAG	DIAGONAL
DIA OR Ø	DIAMETER
DIM	DIMENSION
DIST	DISTANCE
DL	DUMMY LEG
DN	DOWN
D.O.R.	DIRECTION OF ROTATION
DWG	DRAWING
DWL	DOWEL
E	EAST
EA.	EACH
ECC	ECCENTRIC
EF	EACH FACE
EL	ELEVATION
ELEV	ELEVATION
ENGR.	ENGINEER
EST.	ESTIMATE
ETM	ELAPSED TIME METER
EX	EXISTING
EXC	EXCAVATED
EXF	EXHAUST FAN
EXIST.	EXISTING
EXP JT	EXPANSION JOINT
EXT	EXTERIOR
EW	EACH WAY
E.C.	END OF CURVE
E.O.C.	END OF CURB
F	FORWARD OR FLASHER
FD	FLOOR DRAIN
FF	FINISHED FLOOR
FH	FIRE HYDRANT
FL	FLOW LINE
FLEX.	FLEXIBLE
FLG	FLANGE
FPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FEET, FOOT
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GLV	GLOBE VALVE
GND	GROUND
GPH	GALLON PER HOUR
GPM	GALLON PER MINUTE
GV	GATE VALVE
H	HORN
HC	HOSE CONNECTION
HDG	HOT DIPPED GALVANIZED
HP	HIGH POINT
HP	HORSE POWER
HORIZ	HORIZONTAL
HR	HOUR
HWL	HIGH WATER LEVEL
HWY	HIGHWAY
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH, INCHES
INST	INSTANTANEOUS
INTR	INTERIOR
IP	IRON PIPE
IPS	IRON PIPE SIZE
JB	JUNCTION BOX
JCT	JUNCTION
JT	JOINT
KO	KNOCKOUT
KGV	KNIFE GATE VALVE
L	LEFT
LAB	LABORATORY
LB	POUND(S)
LF	LINEAR FEET
LP	LIGHT POLE
LTD	LIMITED
LTG	LIGHTING
M	MOTOR
MATL	MATERIAL
MAX	MAXIMUM
MB	MOTOR BEARING
MBD	MANUAL BALANCING DAMPER
MBR	MEMBRANE BIOREACTOR
MCC	MOTOR CONTROL CENTER
ME	MIST ELIMINATOR
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLDG	MOLDING
MLO	MAIN LUGS ONLY
MODIF	MODIFICATION
MOV	MOTORIZED VALVE OPERATOR
MV	MUD VALVE
N	NITROGEN, NORTH, NEUTRAL
NA	NON-AUTOMATIC
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NPS	NATIONAL PIPE STRAIGHT
NTS	NOT TO SCALE
OB	OUTBOARD
OD	OUTSIDE DIAMETER
OPNG	OPENING
OPP	OPPOSITE
ORP	OXIDATION REDUCTION OTENTIAL
OSA	OUTSIDE AIR
OXY	OXYGEN
OZ	OUNCE(S)
P	PHOSPHORUS
PE	PLAIN END
PER	PERFORATE, PERFORATED
PES	PRE-NEGOTIATED EQUIPMENT SUPPLIER
PI	POINT OF INTERSECTION, PRESSURE INDICATOR
PL	PLATE
℄	PROPERTY LINE
POS	POLYMER SOLUTION
PVN	PINCH VALVE
PR	PAIR
PERFAB	PREFABRICATED
P.O.B.	POINT OF BEGINNING
P.O.E.	POINT OF END
PROP	PROPOSED
PRV	PRESSURE REDUCING VALVE
PRD	PRESSURE REDUCING DAMPER
PSF	POUNDS PER SQUARE FOOT
PCI	PRIMARY CLARIFIER INFLUENT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PV	PLUG VALVE
PVMT	PAVEMENT
Qpk	PEAK FLOW
Qd	DESIGN FLOW
RA	RETURN AIR
RAD	RADIUS
RED	REDUCER
RE:	REFER, REFERENCE
REINF	REINFORCING
REQ'D	REQUIRED
REV	REVISE, REVISION
RFG	ROOFING
RGS	RIGID GALVANIZED STEEL
RPM	REVOLUTIONS PER MINUTE
RT	RIGHT
R.O.W.	RIGHT OF WAY
R.R.	RAILROAD
S	SOUTH
SAN	SANITARY
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SECT	SECTION
SF	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SLV	SLEEVE
SOV	SOLENOID VALVE
SPEC	SPECIFICATION
SQ IN	SQUARE INCH
SQ	SQUARE
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
STL	STEEL
ST	STREET
SURF	SURFACE
S	SOLENOID VALVE
SYM	SYMBOL
SYS	SYSTEM
SW	SWITCH
T&B	TOP AND BOTTOM
TC	TOP OF CONCRETE
TD	TIME DELAY
TDC	TIME DELAY CLOSING
TDD	TIME DELAY OPENING
TEMP	TEMPORARY
TG	TOP OF GRATE
THD	THREADED
THK	THICK
THRU	THROUGH
TOS	TOP OF SLAB
TOW	TOP OF WALL
TSS	TOTAL SUSPENDED SOLIDS
TYP	TYPICAL
UNK	UNKOWN
UV	ULTRAVIOLET LIGHT
VERT	VERTICAL
VF	VARIABLE FREQUENCY
VOL	VOLUME
VOR	VALVE OPEN RELAY
VP	VAPOR PROOF
VRD	VACUUM RELIEF DAMPER
VTR	VENT TO ROOF
W	WEST, WATT(S), WIRE
W/	WITH
W/O	WITHOUT
WI	WROUGHT IRON
WLD	WELDED
WP	WEATHER PROOF
WT	WEIGHT
WS	WATERSTOP
WSE	WATER SURFACE ELEVATION
YD	YARD

PROCESS ABBREVIATION INDEX

AB	AERATION BASIN
ABB	AERATION BASIN BLOWER
AIT	ANALYTICAL INSTRUMENT TRANSMITTER
ALUM	ALUM
APRV	AIR PRESSURE RELEASE VALVE
ASB	AIR SPARGE BLOWER
ASPH	ASPHALT
BBS	BYPASS BAR SCREEN
BFP	BELT FILTER PRESS
BFV	BUTTERFLY VALVE
BLDG.	BUILDING
BSC	BAR SCREEN CONVEYOR
BTS	BLENDED THICKENED SLUDGE
CL2	CHLORINE
CS	CHLORINE SOLUTION
D	DRAIN
DDCV	DOUBLE DOOR CHECK VALVE
EA	EXHAUST AIR
EFF	EFFLUENT
FA	FOUL AIR
FC	FINAL (SECONDARY) CLARIFIER
FCE	FINAL CLARIFIER EFFLUENT
FE	FILTER EFFLUENT
FILL	FILL PIPE
FILT	FILTRATE
FIT	FLOW INDICATING TRANSMITTER
GBD	GRIT BASIN DRIVE
GBT	GRAVITY BELT THICKENER
GP	GRIT PUMP
GRU	GRIT REMOVAL UNIT
GS	GRIT SLURRY
GV	GATE VALVE
HPA	HIGH PRESSURE AIR
HW	HOT WATER
LE	LEVEL ELEMENT
LIT	LEVEL INDICATING TRANSMITTER
LPA	LOW PRESSURE AIR
LSH	LEVEL SWITCH HIGH
M	MOTOR
MCC	MOTOR CONTROL CENTER
ML	MIXED LIQUOR
MSS	MECHANICAL STEPPING SCREEN
NaHSO3	SODIUM BISULFITE
NaOCl	SODIUM HYPOCHLORITE
NG	NATURAL GAS
NPW	NON-POTABLE WATER
OF	OVERFLOW
PADB	PRIMARY AEROBIC DIGESTER BLOWER
PC	PRIMARY CLARIFIER
PDB	POSITIVE DISPLACEMENT BLOWER
PFB	PEAK FLOW BASIN
PFM	PARSHALL FLUME FLOW METER
PFP	POLYMER FEED PUMP
PI	PRESSURE INDICATOR
PLC	PROGRAMMABLE LOGIC CONTROLLER
PMX	POLYMER MIXER
POL	NEAT POLYMER (FROM STORAGE)
PS	POLYMER SOLUTION (AFTER BLENDING)
PSB	PEAK SHAVING BASIN
PW	POTABLE WATER
PWP	PLANT WATER PUMP
RAS	RETURN ACTIVATED SLUDGE
RS	RAW SEWAGE
RW	REUSE
S	SOLENOID VALVE
SA	SAMPLE
SC	SCUM
SCR	SCREENINGS
SG	SLIDE GATE
SP	SUMP PUMP
STA.	STATION
SW	SEAL WATER
SWPT	SEAL WATER PRESSURE TANK
TASP	THICKENED ACTIVATED SLUDGE PUMP
TI	TEMPERATURE INDICATOR
TO	THICKENER OVERFLOW
TWAS	THICKENED WASTE ACTIVATED SLUDGE
UV	ULTRAVIOLET UNIT
WAS	WASTE ACTIVATED SLUDGE
WASP	WASTE ACTIVATED SLUDGE PUMP
WBFV	WAFER BUTTERFLY VALVE

PIPING MATERIAL INDEX

ABS	ACRYLONITRILE BUTADIENE STYRENE
BS	BLACK STEEL
BR	BRASS
CCFRP	CENTRIFUGALLY CAST FIBERGLASS PIPE
CH	CHROME IRON ALLOY
CI	CAST IRON PIPE (GRAY IRON)
CLDI	CEMENT LINED DUCTILE IRON
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CARBON STEEL
CU	COPPER TUBING
DIP	DUCTILE IRON PIPE
DIPP	DUCTILE IRON PIPE W/ POLY. WRAP
DT	DRAIN TILE
FRP	FIBERGLASS REINFORCED PLASTIC
GL	GLASS LINED PIPE
GS	GALVANIZED STEEL PIPE
HDPE	HIGH-DENSITY POLYETHYLENE
PE	POLYETHYLENE PIPE
PET	POLYETHYLENE TUBING
PP	PERFORATED PVC PIPE
PVC	POLYVINYL CHLORIDE (PVC PIPE)
RCP	REINFORCED CONCRETE
RCC	REINFORCED CONCRETE CYLINDER
RS	RUBBER LINED STEEL PIPE
STL	STEEL PIPE
SS	STAINLESS STEEL
SST	STAINLESS STEEL TUBING
VC	VITRIFIED CLAY

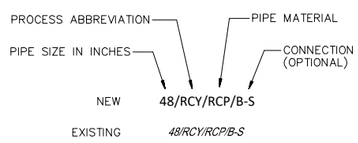
PIPING CONNECTION INDEX

B	BELL
BF	BLIND FLANGE
BW	BUTT WELD
C	COUPLED
CONN.	CONNECTION
EJ	EXPANSION JOINT
FCA	FLANGE COUPLING ADAPTER
FLG	FLANGE
FS	FIXED SUPPORT
G	GROOVED
MJ	MECHANICAL JOINT
NPT	NATIONAL PIPE TAPERED THREAD
PE	PLAIN END
S	SPIGOT
SC	SCREWED
SS	SLIDING SUPPORT
SV	SOLVENT WELD
SW	SOCKET WELD
T	THREADED

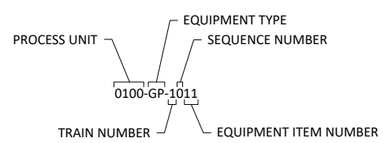
EQUIPMENT TYPE ABBREVIATION INDEX

AB	AERATION BASIN	FM	FLOATING MIXER	PRP	POLYMER RECIRCULATION PUMP
ABB	AERATION BASIN BLOWER	GBD	GRIT BASIN DRIVE	PSW	PUMP, SEAL WATER
AC	AIR COMPRESSOR	GBFP	GRAVITY BELT FILTER PUMP	PWP	PLANT WATER PUMP
AE	ANALYTICAL ELEMENT	GBT	GRAVITY BELT THICKENER	RASP	RAS PUMP
AIT	ANALYTICAL INSTRUMENT TRANSMITTER	GBTP	GRAVITY BELT THICKENER FEED PUMP	RCP	RECIRCULATION PUMP
APRV	AIR PRESSURE RELEASE VALVE			RLP	RE-LIFT PUMP
ART	AIR RECEIVER TANK	GDC	GRIT DEWATERING CLASSIFIER	RWP	RAW WASTEWATER PUMP
ASB	AIR SPARGE BLOWER	GP	GRIT PUMP	RV	RECIRCULATING VALVE
ASPH	ASPHALT	GV	GATE VALVE	S	SOLENOID VALVE
AVV	AIR / VACUUM VALVE (SEWAGE)	HSC	HYDRAULIC SYSTEM CENTER	SC	SCREW CONVEYOR
BC	BELT CONVEYOR	IS	INFLUENT SCREEN	SCC	SYSTEM CONTROL CENTER
BCR	BRIDGE CRANE	ISC	INFLUENT SCREEN COMPACTOR	SCP	SCUM PUMP
BFBP	BELT FILTER PRESS BOOSTER PUMP	IVD	INLET VANE DAMPER	SG	SLIDE GATE
		LE	LEVEL ELEMENT	SGR	SLUDGE GRINDER
BFF	BIO FILTER FAN MOTOR	LG	LEVELING GATE	SL	SLUICE GATE
BFP	BELT FILTER PRESS	LIT	LEVEL INDICATING TRANSMITTER	SMX	SUBMERSIBLE MIXER
BFPC	BELT FILTER PRESS CONVEYOR			SP	SUMP PUMP
BFPP	BELT FILTER PRESS PUMP	LSH	LEVEL SWITCH HIGH	SRP	SOLIDS REMOVAL PUMP
BFV	BUTTERFLY VALVE	LVR	LOUVER	SRS	SEPTAGE RECEIVING STATION
BIF	BIOFILTER	M	MOTOR	SSC	SOLIDS SCREW CONVEYOR
BIS	BIOSCRUBBER	MBD	MANUEL BALANCING DAMPER	SSW	SCREENINGS SLUICEWAY
BL	BLOWER	MCC	MOTOR CONTROL CENTER	STA.	STATION
BLDG.	BUILDING	ME	MIST ELIMINATOR	STP	SLUDGE TRANSFER PUMP
BLM	BLOWER MOTOR	MHST	MONORAIL HOIST	SUP	SUMP PUMP
BP	BOOSTER PUMP	MPM	METERING PUMP	SWP	SCREENING WASH/PRESS
BPD	BELT FILTER PRESS BELT DRIVE	MS	MANUAL SCREEN	SWPT	SEAL WATER PRESSURE TANK
BPHU	BELT FILTER PRESS HYDRAULIC UNIT	MX	MIXER	TASP	THICKENED ACTIVATED SLUDGE PUMP
		NFP	NUTRIENT FEED PUMP	TI	TEMPERATURE INDICATOR
BTD	BUBBLE TIGHT DAMPER	NP	NON-POTABLE WATER PUMP	TNK	TANK
BTS	BLENDED THICKENED STORAGE	PDB	POSITIVE DISPLACEMENT BLOWER	TWAP	THICKENING WAS PUMP
BWP	BACKWASH PUMP			UV	ULTRA-VIOLET LIGHT DISINFECTION EQUIPMENT
CFP	CHEMICAL FEED PUMP	PDC	POWER DISTRIBUTION CENTER		
CM	CLARIFIER DRIVE	PDI	PRESSURE DIFFERENTIAL INDICATOR	UVB	ULTRA-VIOLET LIGHT DISINFECTION BANK
CMP	COMPRESSOR				
COMB	COMBUSTIBLE GAS SENSOR	PDIT	PRESSURE DIFFERENTIAL INDICATING TRANSMITTER	VF	VENT FAN
CSC	CARBON SCRUBBER			VGU	VORTEX GRIT UNIT
DDCV	DOUBLE DOOR CHECK VALVE	PFM	PARSHALL FLUME FLOW METER	VSM	VERTICAL SHAFT MOUNTED MIXER
DR	DRIVE MOTOR	PFP	POLYMER FEED PUMP		
EF	EXHAUST FAN	PI	PRESSURE INDICATOR	WASP	WAS PUMP
EFF	EFFLUENT FILTER	PLC	PROGRAMMABLE LOGIC CONTROLLER	WBFV	WAFFER BUTTERFLY VALVE
FAB	FOUL AIR BLOWER			WG	WEIR GATE
FC	FINAL (SECONDARY) CLARIFIER	PMU	POLYMER MIXING UNIT	WWP	WASH WATER PUMP
FE	FLOW ELEMENT	PMX	POLYMER MIXER		
FIT	FLOW INDICATING				

PIPE CALLOUT FORMAT



EQUIPMENT CALLOUT FORMAT



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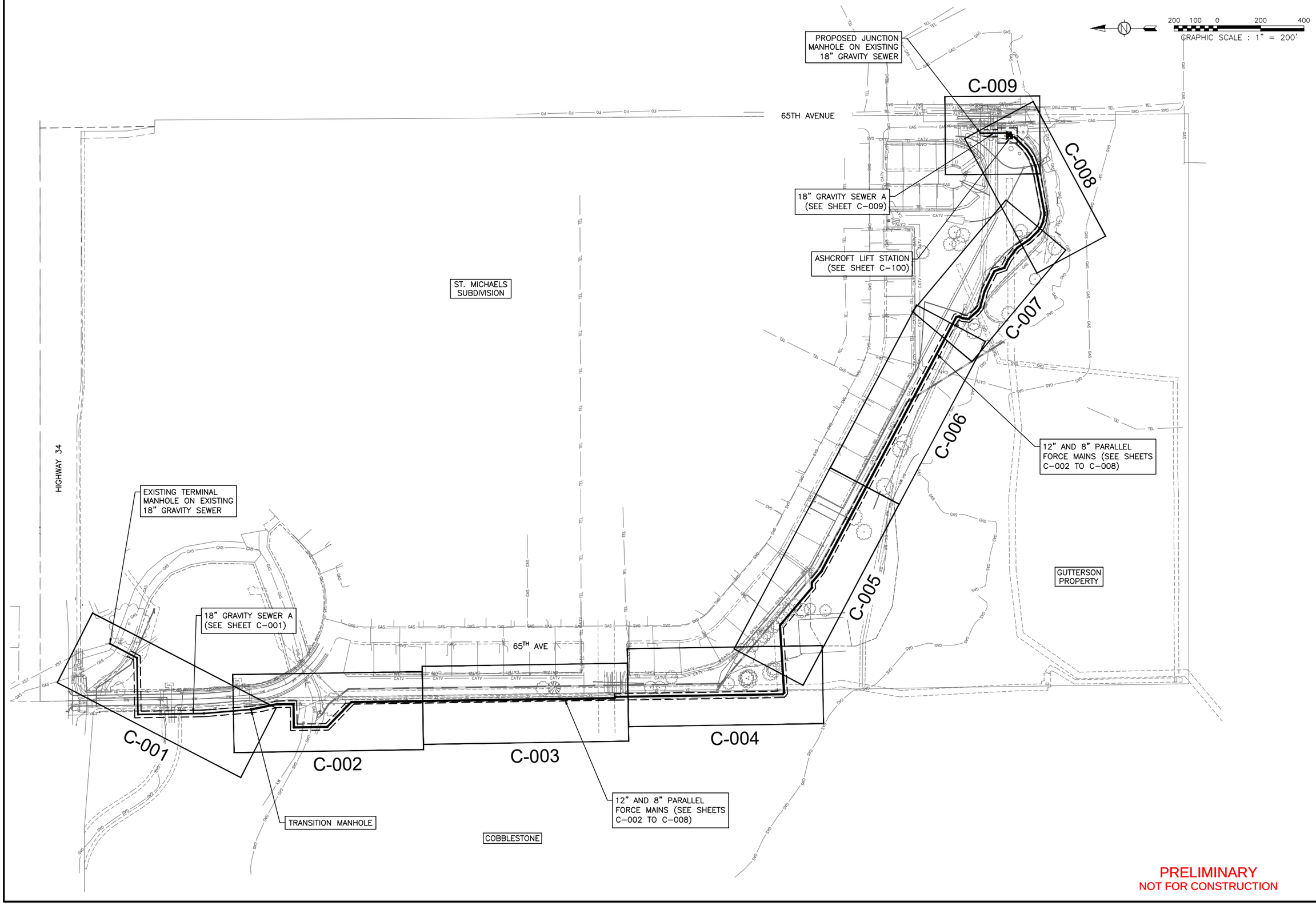

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GENERAL

OVERALL SITE PLAN AND KEY MAP

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DESIGN SUMMARY

INITIAL INFLUENT FLOW (PHASE 1):

MAX MONTH AVERAGE FLOW (MMAF):	0.07 MGD (48 GPM)
PEAK HYDRAULIC CAPACITY (FIRM CAPACITY):	0.19 MGD (135 GPM)

PROJECTED BUILD-OUT INFLUENT FLOW (PHASE 2):

MAX MONTH AVERAGE FLOW (MMAF):	1.02 MGD (705 GPM)
PEAK HYDRAULIC CAPACITY (FIRM CAPACITY):	2.84 MGD (1,974 GPM)

EMERGENCY STORAGE CAPACITY:

REQUIRED VOLUME:	N/A (OVERFLOW BY GRAVITY TO CITY OF EVANS)

MAJOR EQUIPMENT AND PROCESS SUMMARY

SUBMERSIBLE PUMPS

EQUIPMENT TAG NUMBER(S):	P-210, P-220, P-230(FUTURE)
QUANTITY:	3 (1 INSTALLED DUTY, 1 INSTALLED STAND-BY, 1 FUTURE)
	SELF PRIMING CENTRIFUGAL
MFR / MODEL:	GORMAN RUPP T-SERIES W/ AUTOSTART
RATED MINIMUM REQUIRED CAPACITY (EACH):	1,974 GPM @ 185' TDH
	MOTOR 125 HP / 1800 RPM / 3 PH / 60 HZ / 480 V
CONTROLS:	LOCAL CONTROL PANEL HAND/OFF/AUTO

PRIMARY ELECTRICAL

PROVIDER:	XCEL ENERGY
SERVICE SIZE:	XXXAMP, 480V, 3PH, 60Hz

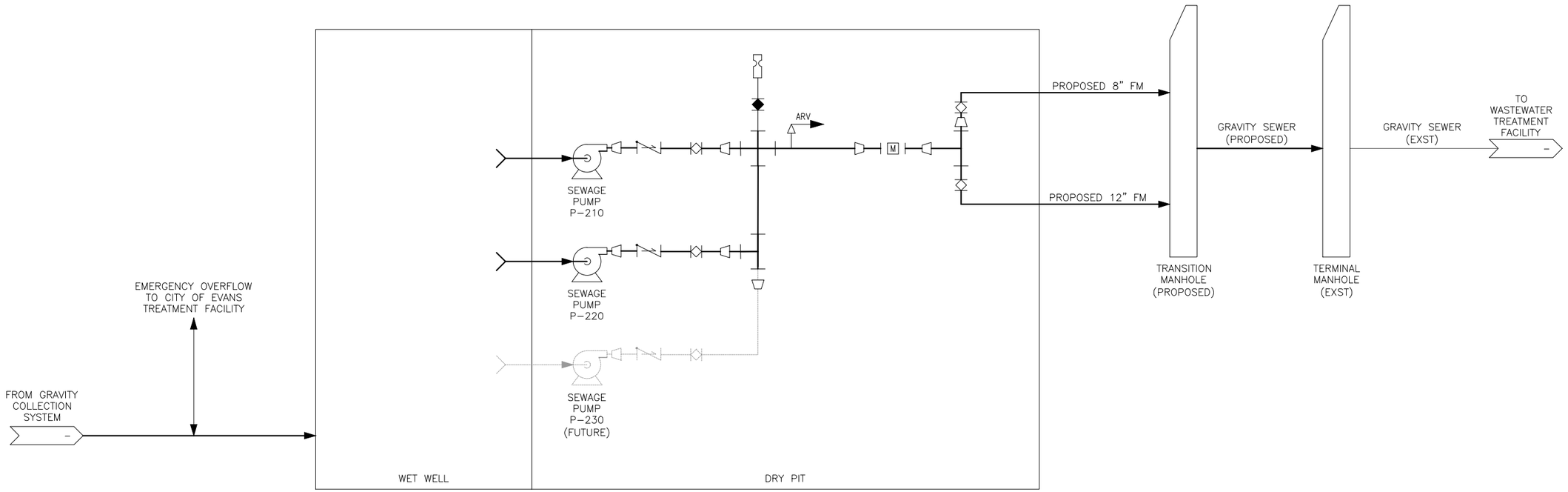
EMERGENCY BACKUP SYSTEM (SECONDARY POWER SOURCE)

EQUIPMENT TAG NUMBER(S):	EG-800, EG-900 (AS PART OF THE GORMAN RUPP AUTOSTART SYSTEM
QUANTITY:	2 (1 INSTALLED DUTY, 1 FUTURE)
FUEL SOURCE:	NATURAL GAS

PROCESS FLOW DIAGRAM LEGEND

CLOSED OPEN

- PLUG VALVE
- SWING CHECK VALVE
- WET PIT
- SELF PRIMING PUMPS
- CAM LOCK
- PRIMARY PROCESS FLOW LINE
- SECONDARY PROCESS FLOW LINE
- ELECTROMAGNETIC FLOW METER



PROCESS FLOW DIAGRAM

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ASHCROFT LIFT STATION

GENERAL
DESIGN CRITERIA AND PROCESS FLOW DIAGRAM

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED N. MARTINSON
DRAWN K. RINDT
CHECKED N. MARTINSON
REVIEWED

Seq. X of XX
Dwg. No. G-004
3408-001-01

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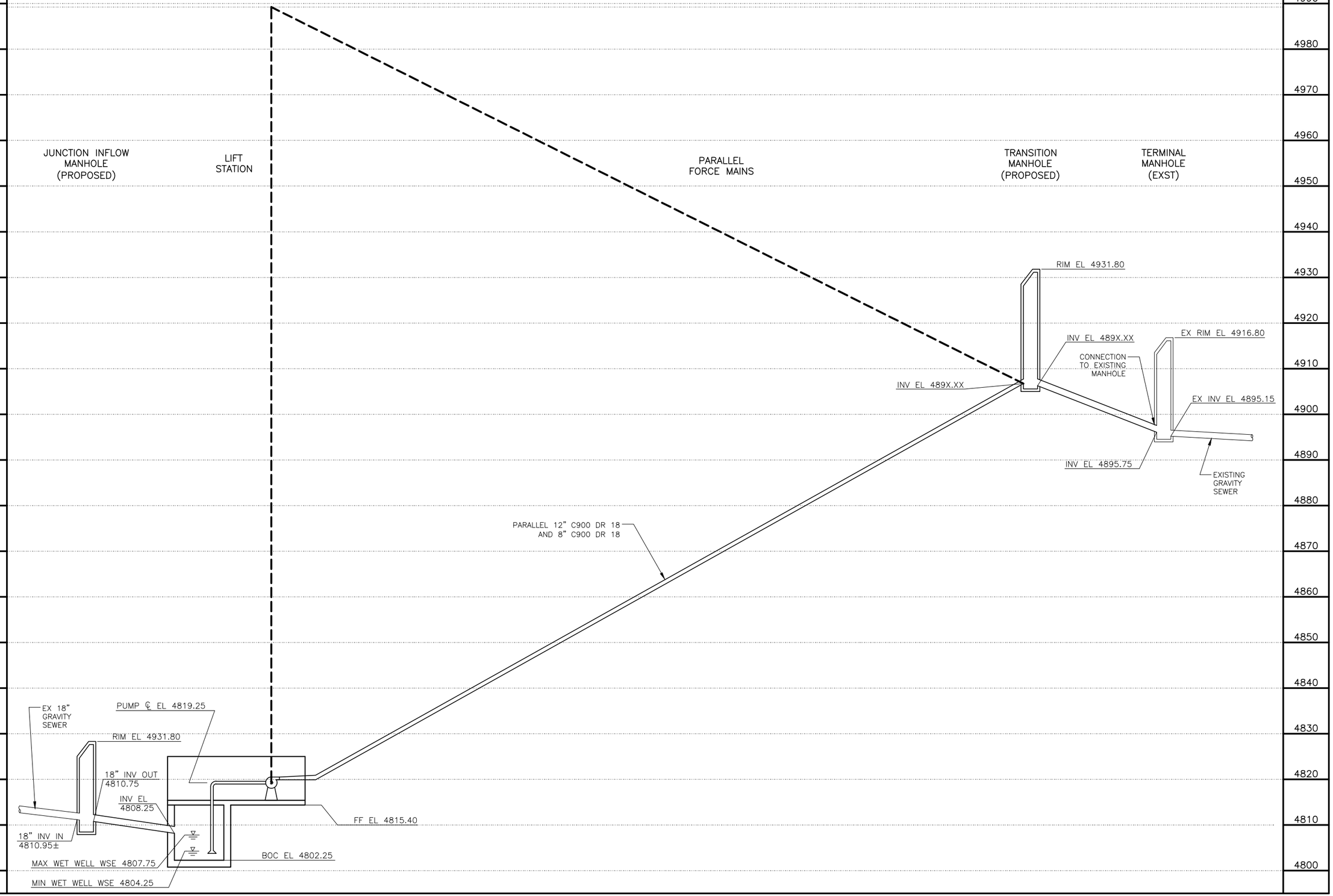


HYDRAULIC PROFILE

VERT SCALE: 1" = 5'; HORIZ SCALE: NTS

PRELIMINARY
NOT FOR CONSTRUCTION

PLUMMER
1221 AURARIA PKWY | DENVER, COLORADO 80204
303.300.3464 | TBPE REGISTERED FIRM NUMBER F-13

NO.	DATE	REVISION	BY

CITY OF GREELEY
ASHCROFT LIFT STATION

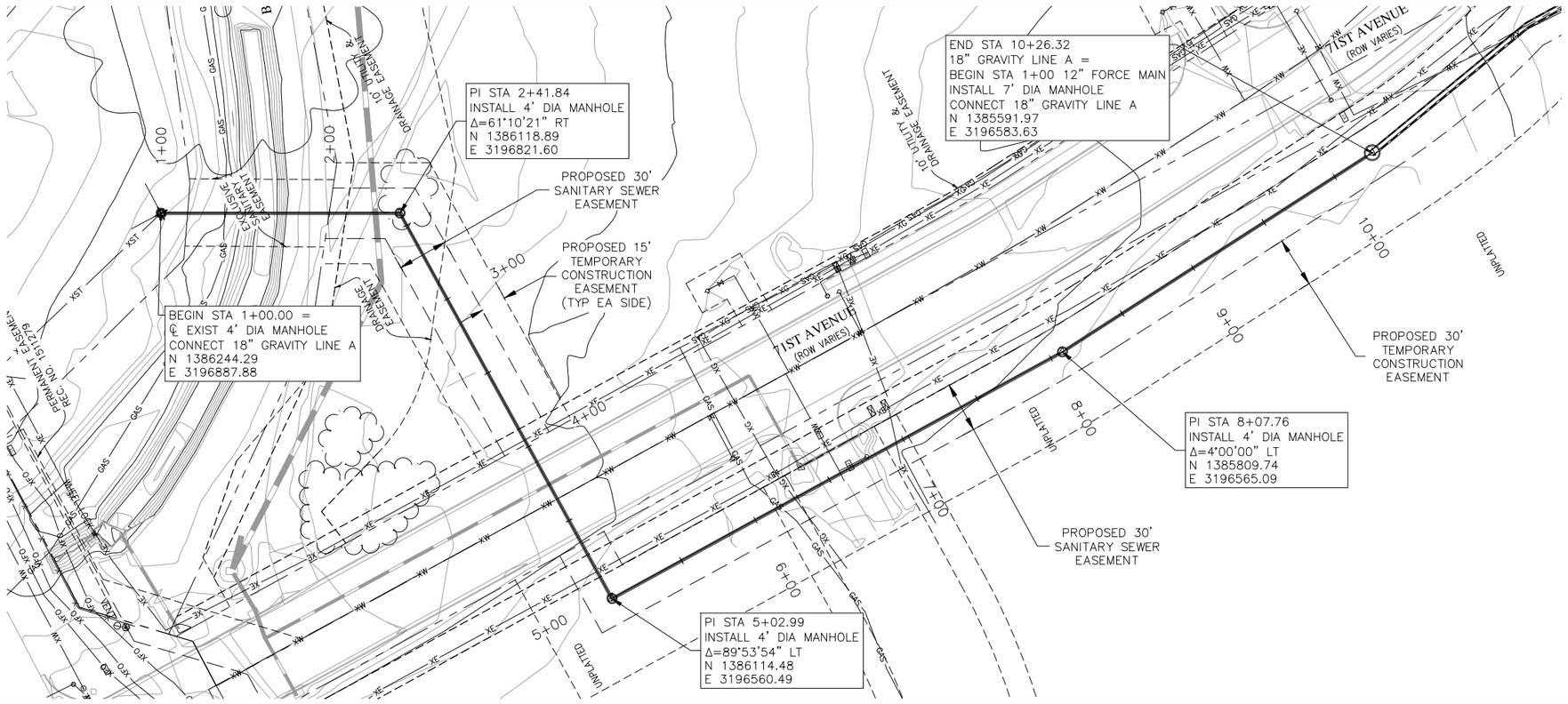
GENERAL
HYDRAULIC PROFILE

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED N. MARTINSON
DRAWN K. RINDT
CHECKED N. MARTINSON
REVIEWED

Seq. X of XX
Dwg. No. G-005
3408-001-01

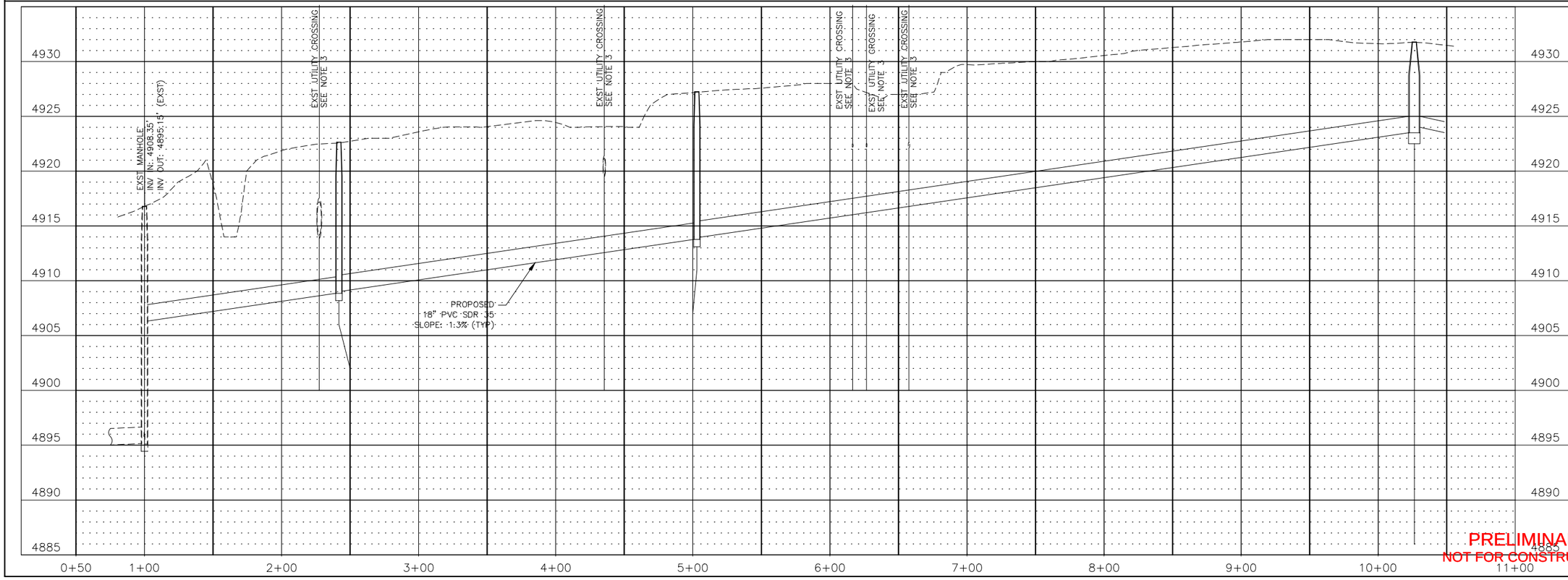
PRINTED: 2/25/2020 6:38 PM V:\Projects\3408\001-01\2-0 Wrk Prod\2-1 ACAD\SHEETFILES\G-005.dwg SAVED: 2/25/2020 6:33 PM SAVED BY: Rellis USER: Ellis, Ron



40 20 0 40 80
HORIZ. SCALE : 1" = 40'
5 2.5 0 5 10
VERT. SCALE : 1" = 5'

NOTES:

1. CONTRACTOR SHALL VERIFY VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES AND STRUCTURES PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
2. CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORT FOR EXISTING OVERHEAD UTILITIES AND FOR UNDERGROUND UTILITIES THAT WILL BE CROSSED UNDER.
3. EXISTING UTILITES SHOWN ARE A QUALITY B LEVEL OF INVESTIGATION. POT-HOLING WITH TEST HOLES HAS NOT YET BEEN COMPLETED.



PRELIMINARY
NOT FOR CONSTRUCTION

PLUMMER
1221 AURARIA PKWY | DENVER, COLORADO 80204
303.300.3464 | TBPE REGISTERED FIRM NUMBER F-13

NO.	DATE	REVISION	BY

CITY OF GREELEY
ASHCROFT LIFT STATION

PIPELINE PLAN AND PROFILE
18-INCH GRAVITY LINE A
STA 1+00 TO STA 10+26.32

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

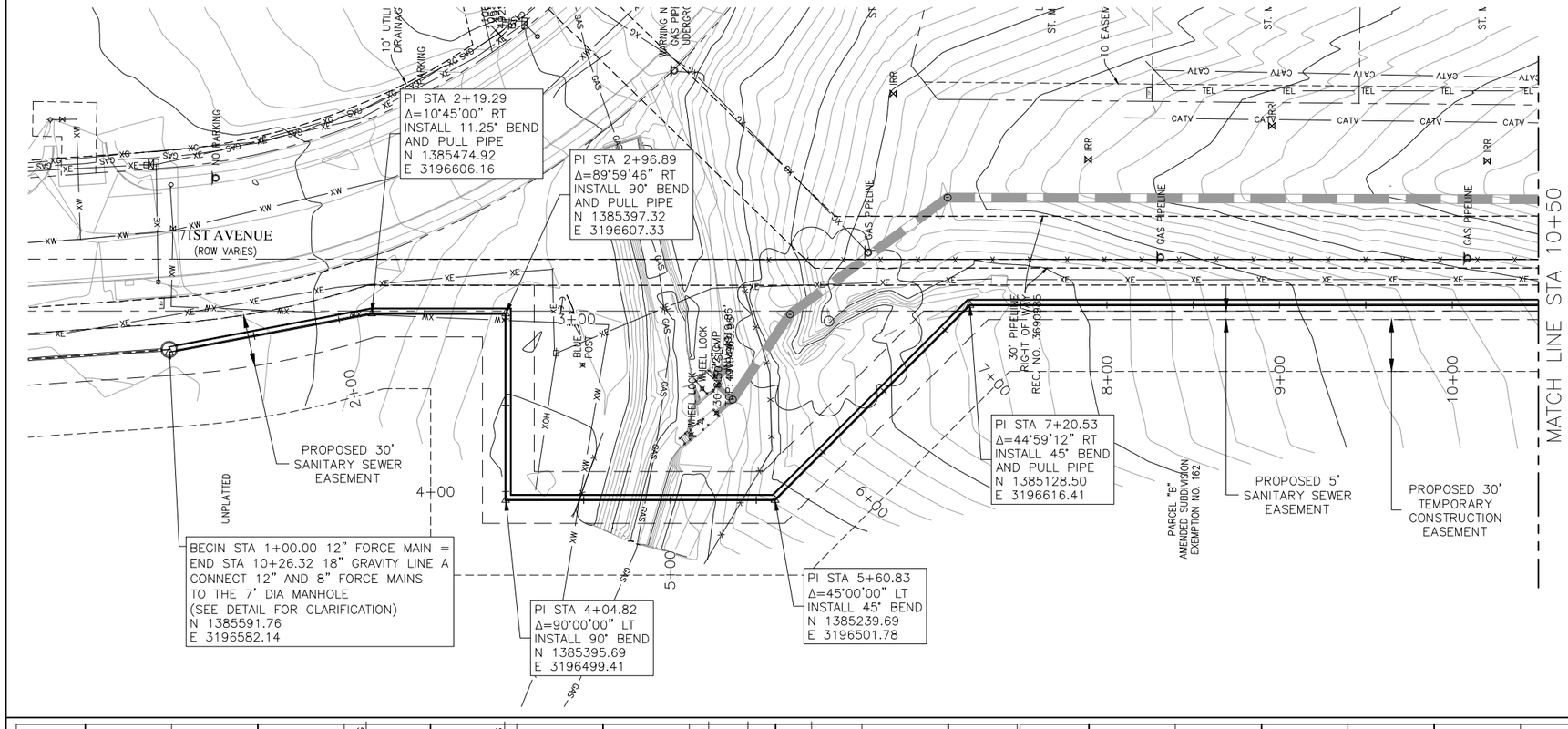
DESIGNED
DRAWN
CHECKED
REVIEWED

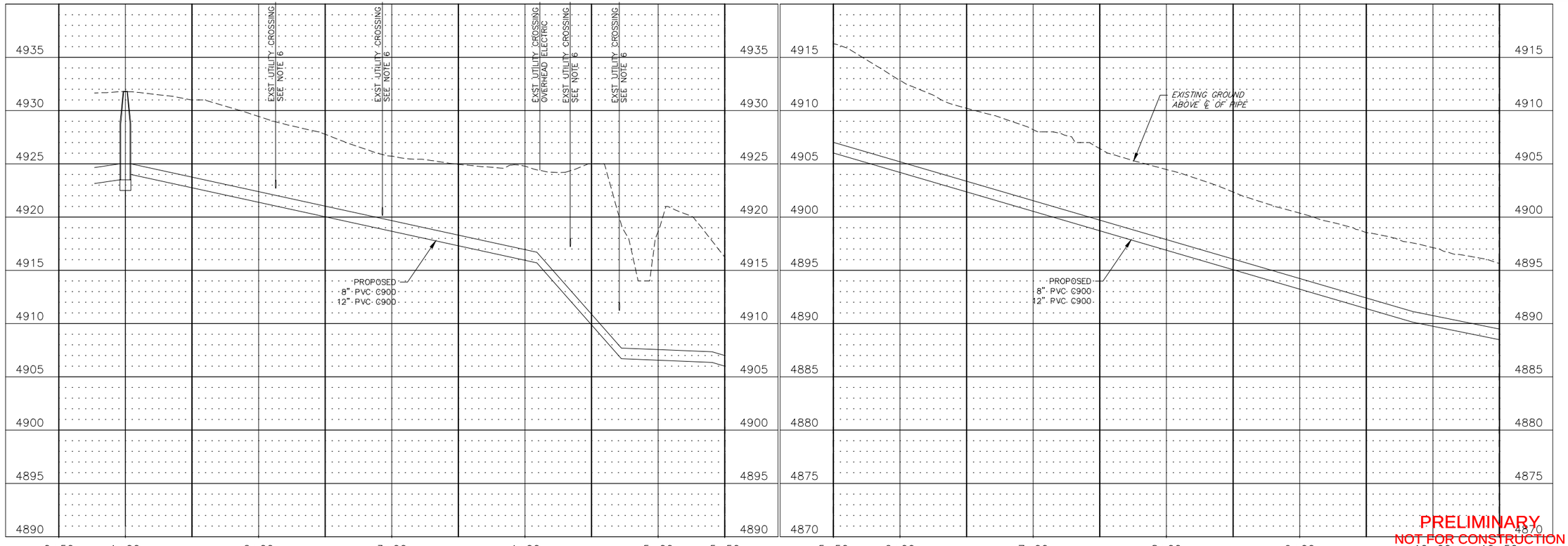
Seq. X of XX

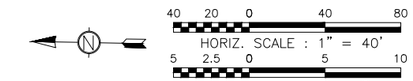
Dwg. No. C-001

3408-001-01

PRINTED: 3/3/2020 7:49 AM V:\Projects\3408\001-01\2-0 Wrk Prod\2-1 ACAD\SHEETFILES\C-001.dwg SAVED: 3/3/2020 7:16 AM SAVED BY: Nmartinson USER: Martinson, Nathan







NOTES:

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3. PIPELINE STATIONING ON THIS SHEET APPLIES TO THE PROPOSED 12" FORCE MAIN AND IS MEASURED ALONG THE CENTERLINE OF SAID 12" PIPE.
4. THE PROPOSED 8" FORCE MAIN SHALL BE INSTALLED 3 FEET LEFT OF AND PARALLEL TO THE PROPOSED 12" FORCE MAIN.
5. THE PROFILE DEPICTS TOP OF PIPE ELEVATIONS FOR THE PROPOSED 12" FORCE MAIN. THE 8" FORCE MAIN SHALL BE INSTALLED 18" BELOW THE INVERT ELEVATIONS OF SAID 12" PIPE. MAINTAIN A MINIMUM OF 18" BETWEEN 12" PIPE INVERT AND THE 8" TOP OF PIPE ALONG THE FULL LENGTH OF THE FORCE MAIN.
6. EXISTING UTILITIES SHOWN ARE A QUALITY B LEVEL OF INVESTIGATION. POT-HOLING WITH TEST HOLES HAS NOT YET BEEN COMPLETED.

PLUMMER
1221 AURARIA PKWY | DENVER, COLORADO 80204
303.300.3464 | TBPE REGISTERED FIRM NUMBER F-13

NO.	DATE	REVISION	BY

CITY OF GREELEY
ASHCROFT LIFT STATION

PIPELINE PLAN AND PROFILE
12-INCH & 8-INCH FORCE MAINS
STA 1+00 TO STA 10+50

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED
DRAWN
CHECKED
REVIEWED

Seq. X of XX

Dwg. No. C-002

3408-001-01

PRELIMINARY
NOT FOR CONSTRUCTION

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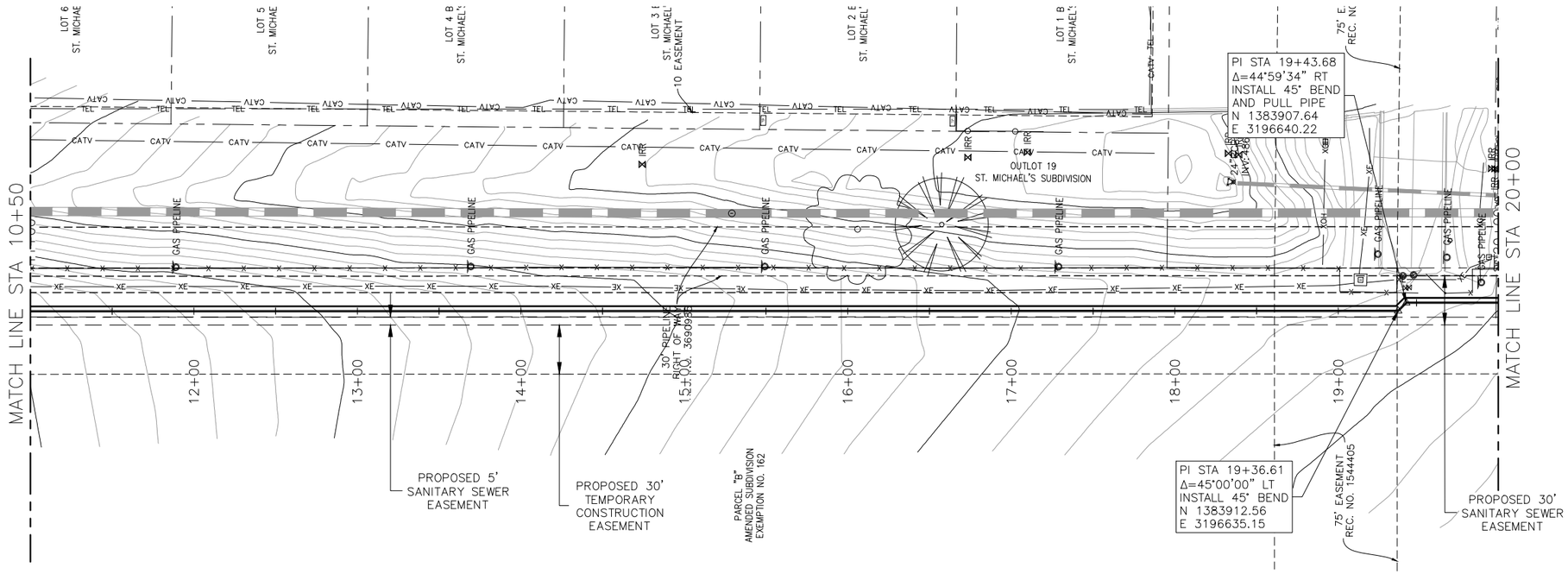

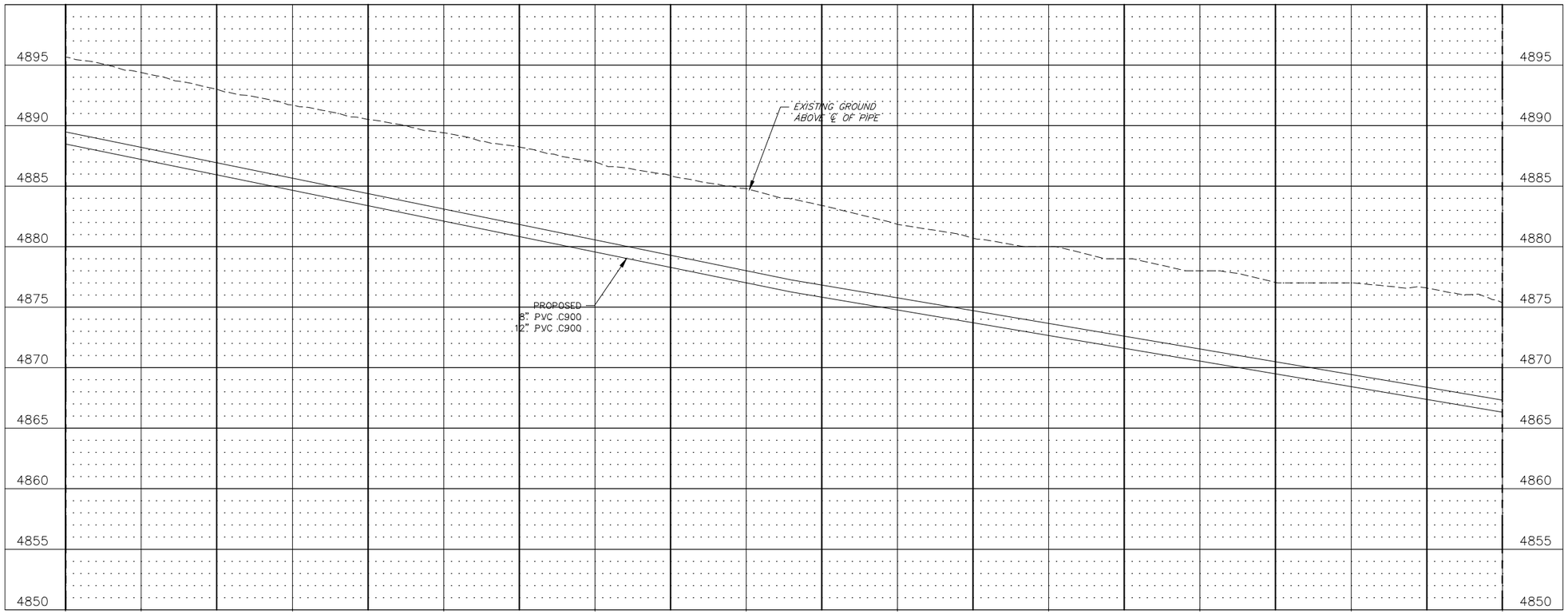

40 20 0 40 80
HORIZ. SCALE : 1" = 40'
5 2.5 0 5 10
VERT. SCALE : 1" = 5'

NOTES:

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PRELIMINARY
NOT FOR CONSTRUCTION

PLUMMER
1221 AURARIA PKWY | DENVER, COLORADO 80204
303.300.3464 | TBPE REGISTERED FIRM NUMBER F-13

NO.	DATE	REVISION	BY

CITY OF GREELEY
ASHCROFT LIFT STATION

PIPELINE PLAN AND PROFILE
12-INCH & 8-INCH FORCE MAINS
STA 10+50 TO STA 20+00

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED
DRAWN
CHECKED
REVIEWED

Seq. X of XX
Dwg. No. C-003
3408-001-01

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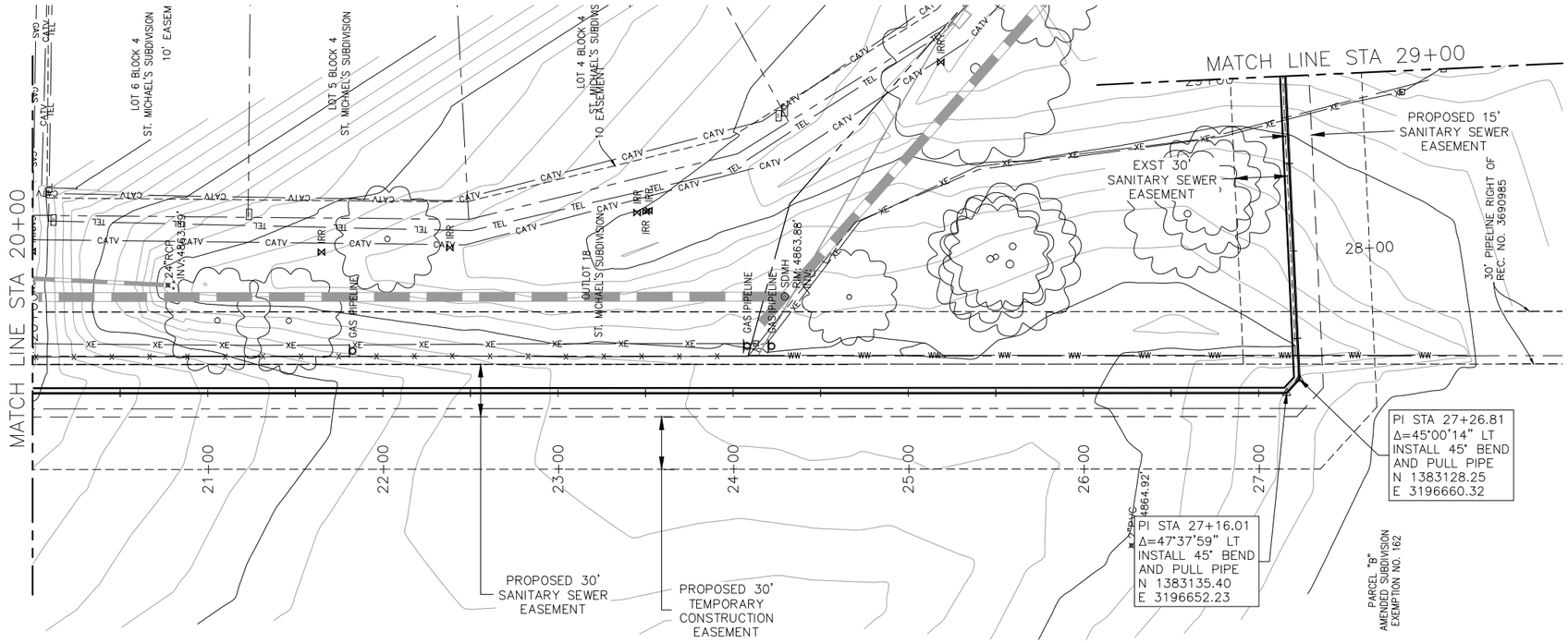

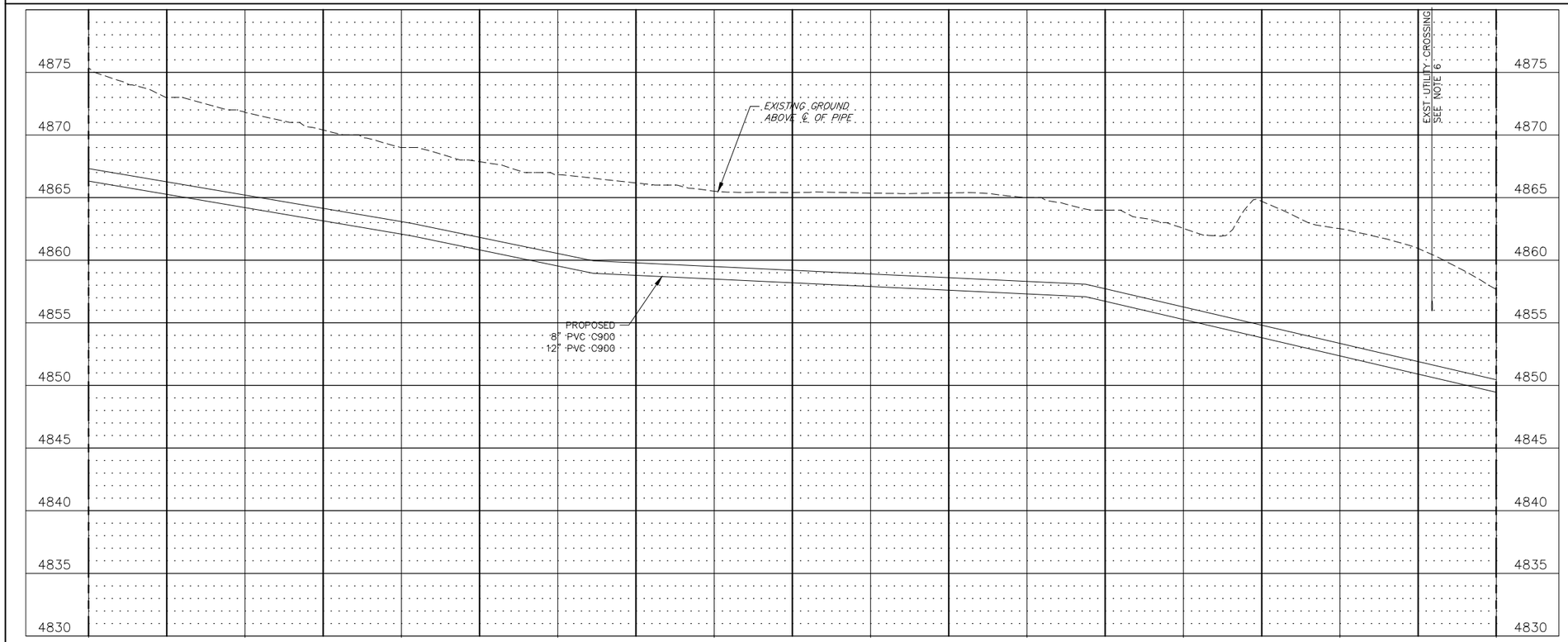

40 20 0 40 80
HORIZ. SCALE : 1" = 40'
5 2.5 0 5 10
VERT. SCALE : 1" = 5'

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PRELIMINARY
NOT FOR CONSTRUCTION

PLUMMER
1221 AURARIA PKWY | DENVER, COLORADO 80204
303.300.3464 | TBPE REGISTERED FIRM NUMBER F-13

NO.	DATE	REVISION	BY

CITY OF GREELEY
ASHCROFT LIFT STATION

PIPELINE PLAN AND PROFILE
12-INCH & 8-INCH FORCE MAINS
STA 20+00 TO STA 29+00

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED
DRAWN
CHECKED
REVIEWED

Seq. X of XX
Dwg. No. C-004
3408-001-01

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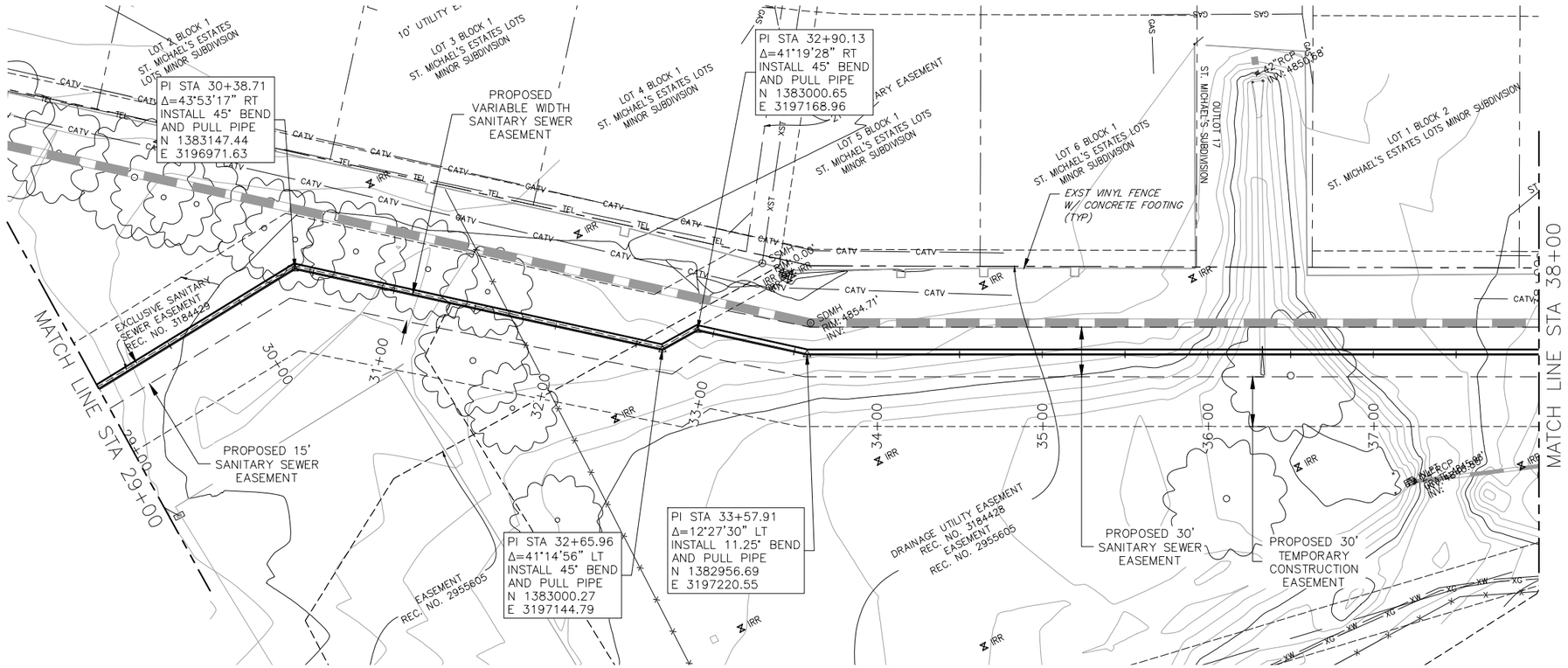

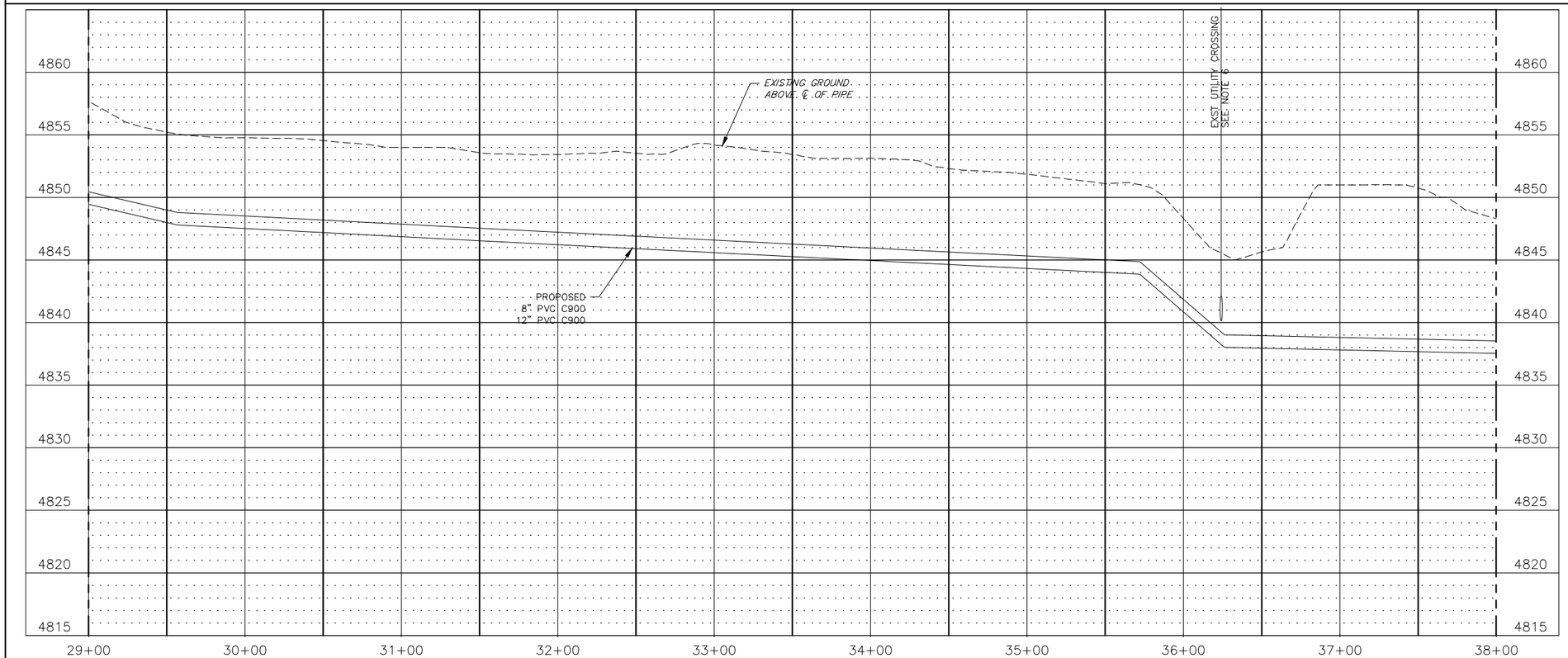

40 20 0 40 80
HORIZ. SCALE : 1" = 40'
5 2.5 0 5 10
VERT. SCALE : 1" = 5'

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PRELIMINARY
NOT FOR CONSTRUCTION

PLUMMER
1221 AURARIA PKWY | DENVER, COLORADO 80204
303.300.3464 | TBPE REGISTERED FIRM NUMBER F-13

NO.	DATE	REVISION	BY

CITY OF GREELEY
ASHCROFT LIFT STATION

PIPELINE PLAN AND PROFILE
12-INCH & 8-INCH FORCE MAINS
STA 29+00 TO STA 38+00

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED
DRAWN
CHECKED
REVIEWED

Seq. X of XX
Dwg. No. C-005
3408-001-01

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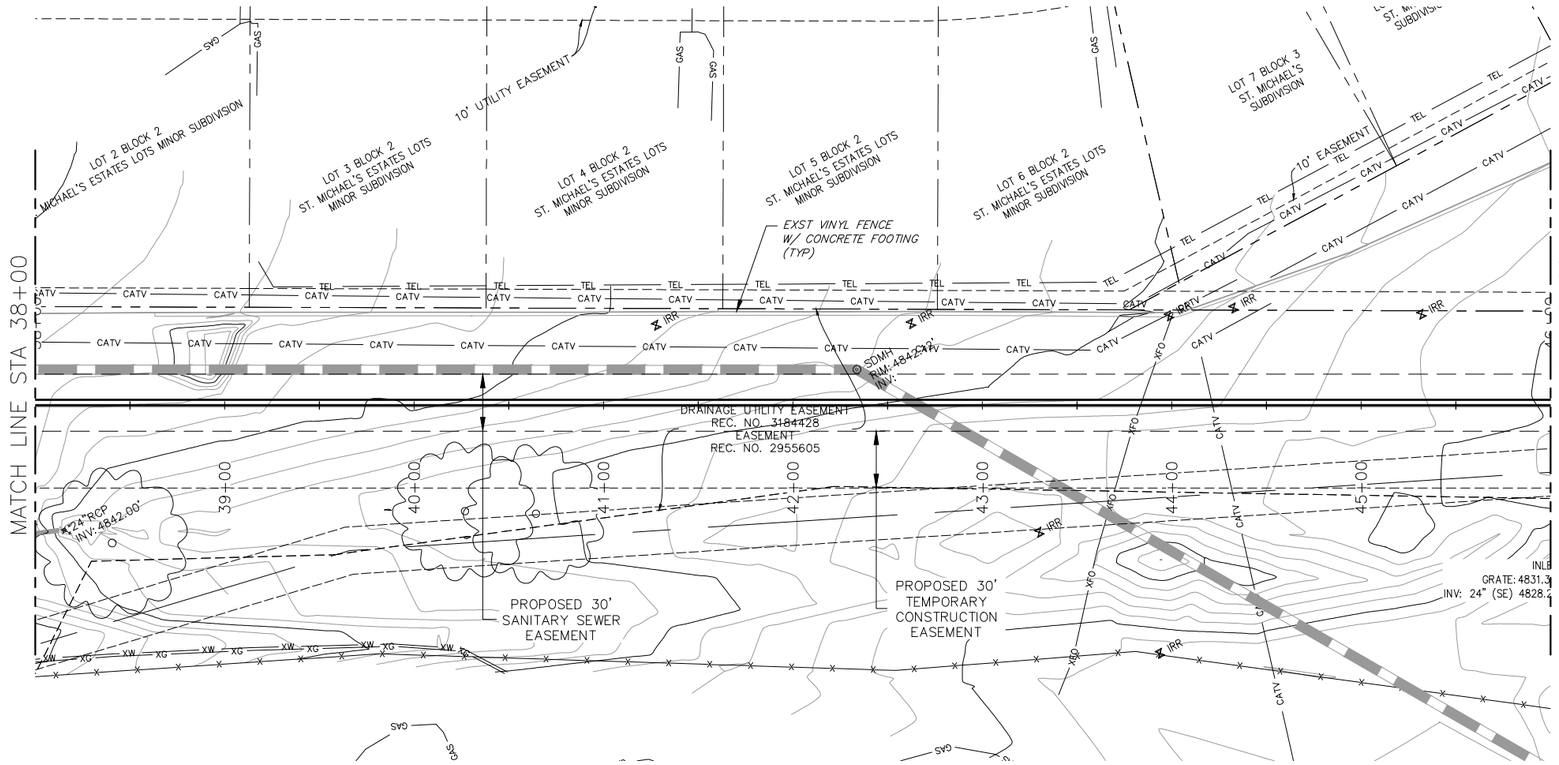

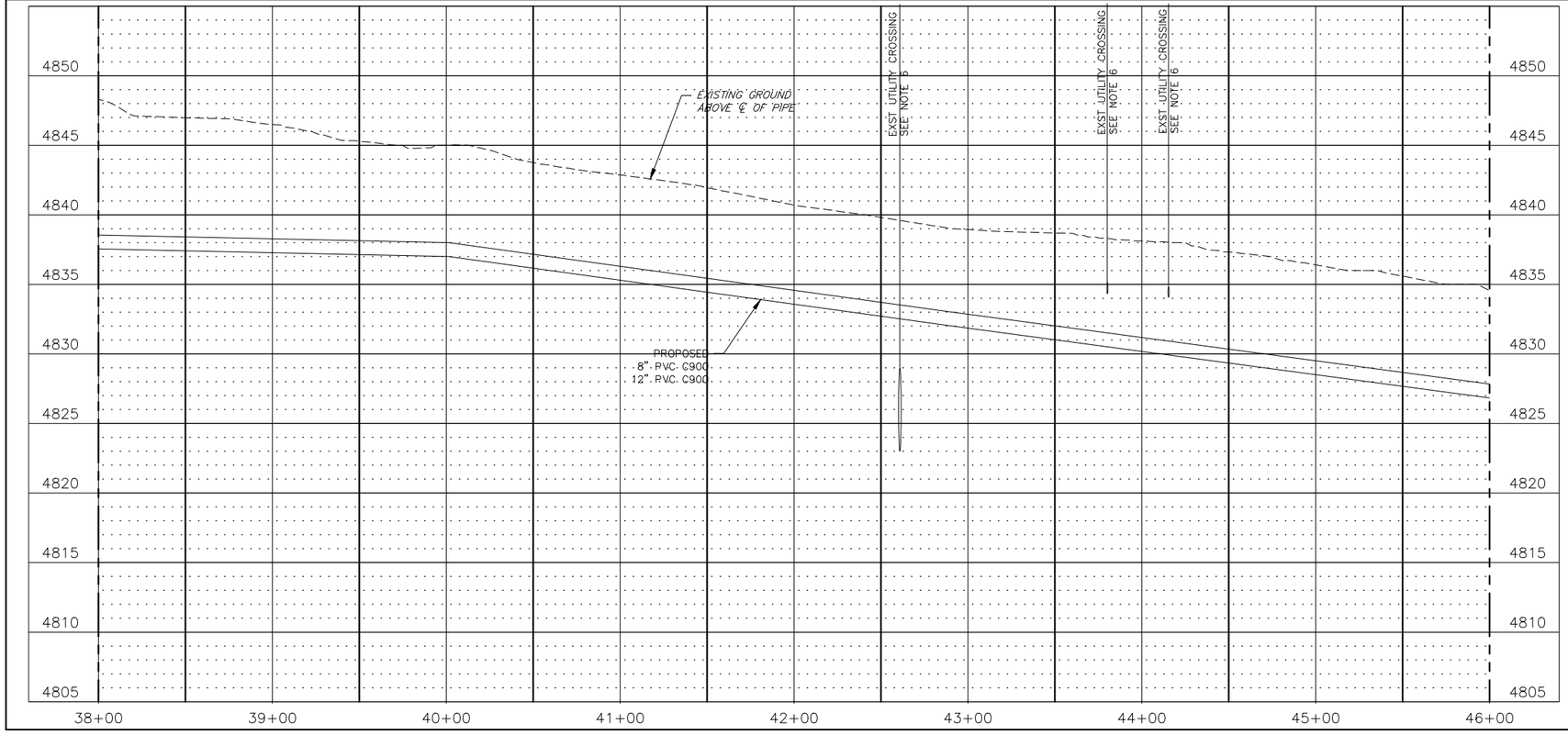

40 20 0 40 80
HORIZ. SCALE : 1" = 40'
5 2.5 0 5 10
VERT. SCALE : 1" = 5'

NOTES:

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PRELIMINARY
NOT FOR CONSTRUCTION

PLUMMER
1221 AURARIA PKWY | DENVER, COLORADO 80204
303.300.3464 | TBPE REGISTERED FIRM NUMBER F-13

NO.	DATE	REVISION	BY

CITY OF GREELEY
ASHCROFT LIFT STATION

PIPELINE PLAN AND PROFILE
12-INCH & 8-INCH FORCE MAINS
STA 38+00 TO STA 46+00

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED
DRAWN
CHECKED
REVIEWED

Seq. X of XX
Dwg. No. C-006
3408-001-01

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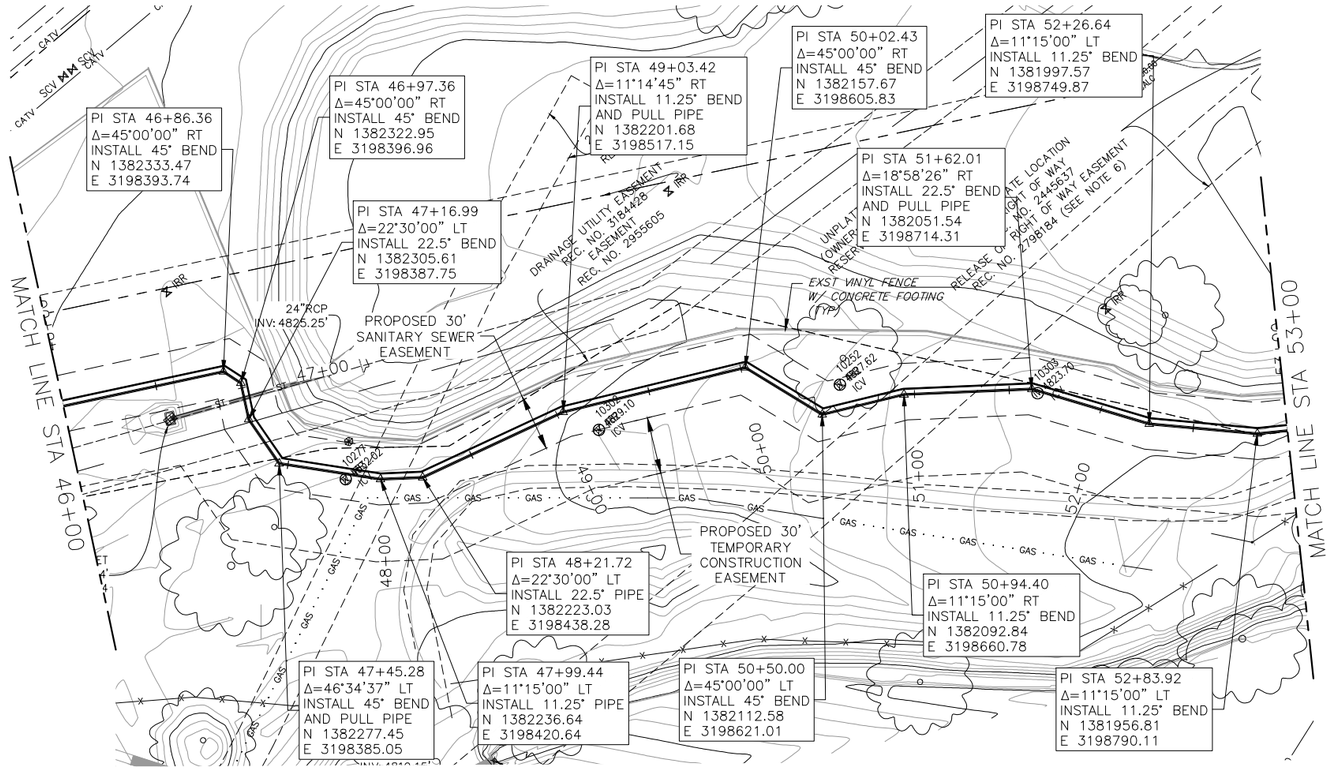

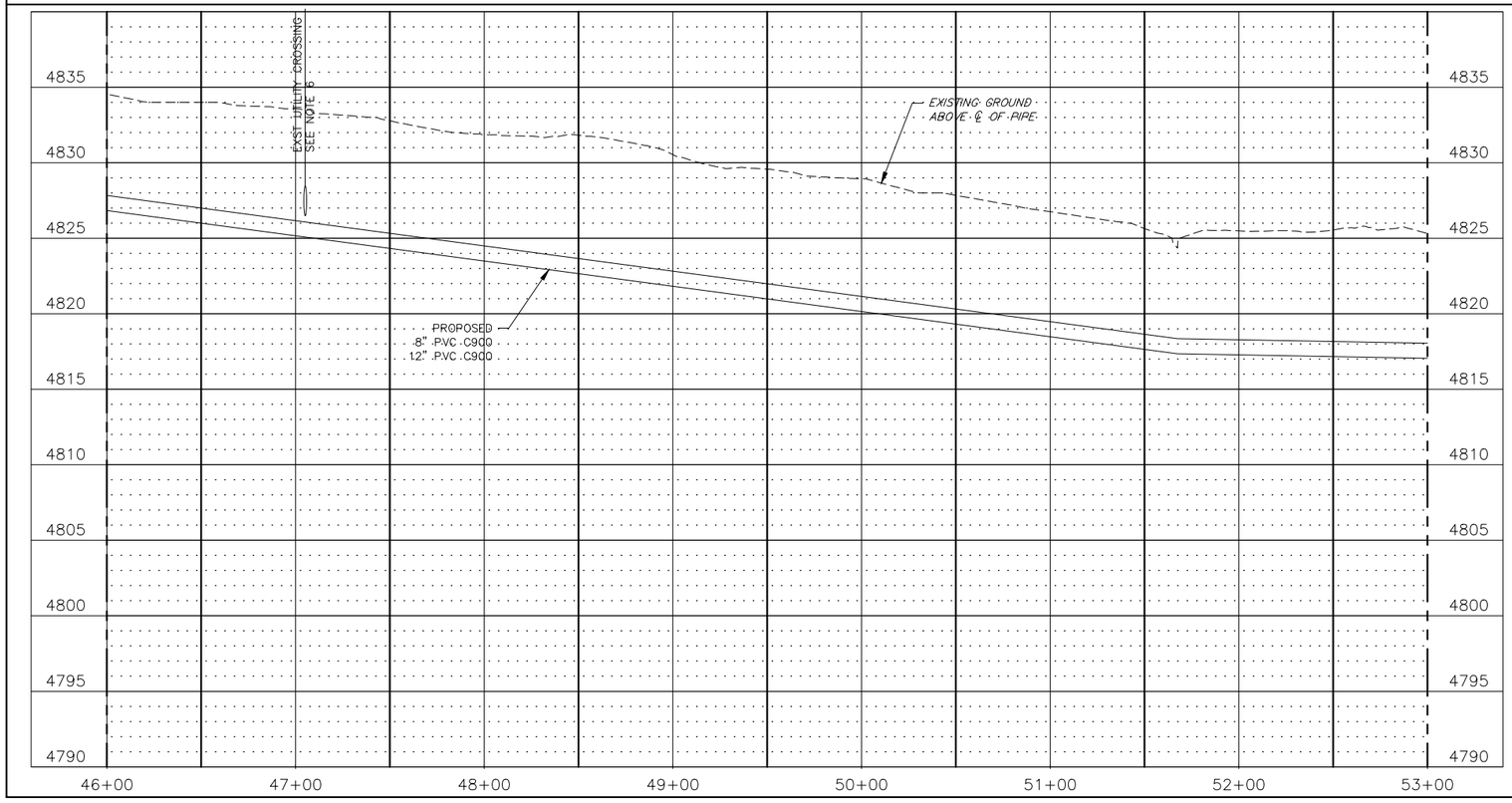

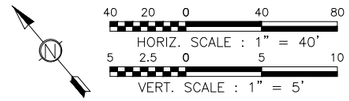

NOTES:

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PRELIMINARY
NOT FOR CONSTRUCTION

PLUMMER
1221 AURARIA PKWY | DENVER, COLORADO 80204
303.300.3464 | TBPE REGISTERED FIRM NUMBER F-13

NO.	DATE	REVISION	BY

CITY OF GREELEY
ASHCROFT LIFT STATION

PIPELINE PLAN AND PROFILE
12-INCH & 8-INCH FORCE MAINS
STA 46+00 TO STA 53+00

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED
DRAWN
CHECKED
REVIEWED

Seq. X of XX

Dwg. No. C-007

3408-001-01

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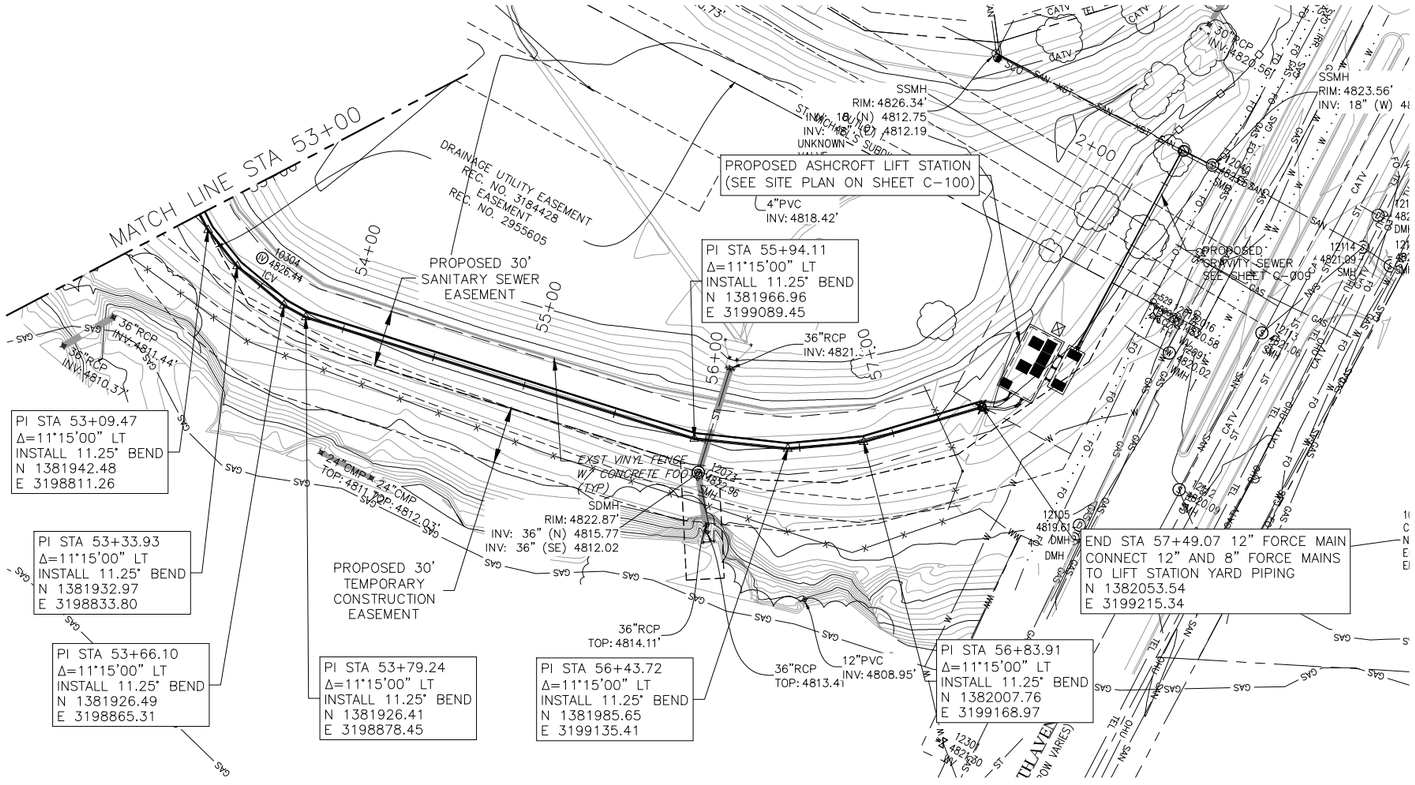

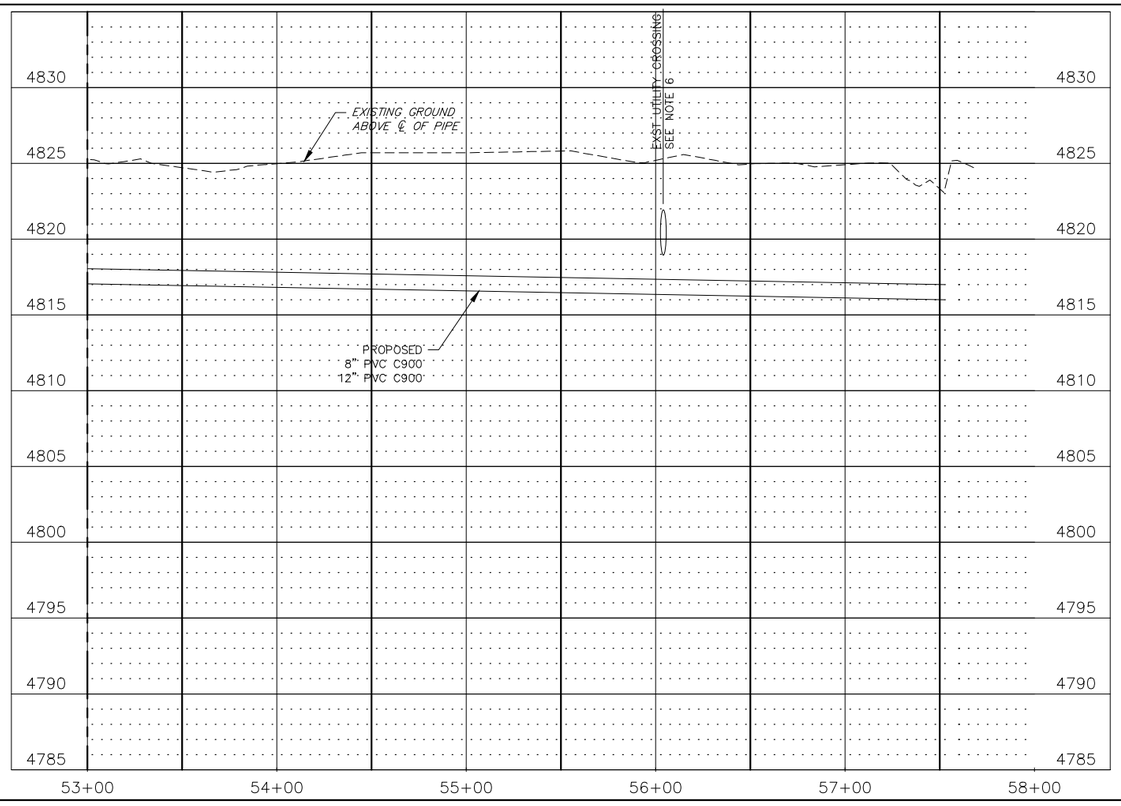

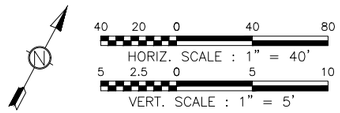

NOTES:

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PRELIMINARY
NOT FOR CONSTRUCTION

PLUMMER
1221 AURARIA PKWY | DENVER, COLORADO 80204
303.300.3464 | TBPE REGISTERED FIRM NUMBER F-13

NO.	DATE	REVISION	BY

CITY OF GREELEY
ASHCROFT LIFT STATION

PIPELINE PLAN AND PROFILE
12-INCH & 8-INCH FORCE MAINS
STA 53+00 TO STA 57+XX.XX

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED
DRAWN
CHECKED
REVIEWED

Seq. X of XX

Dwg. No. C-008

3408-001-01

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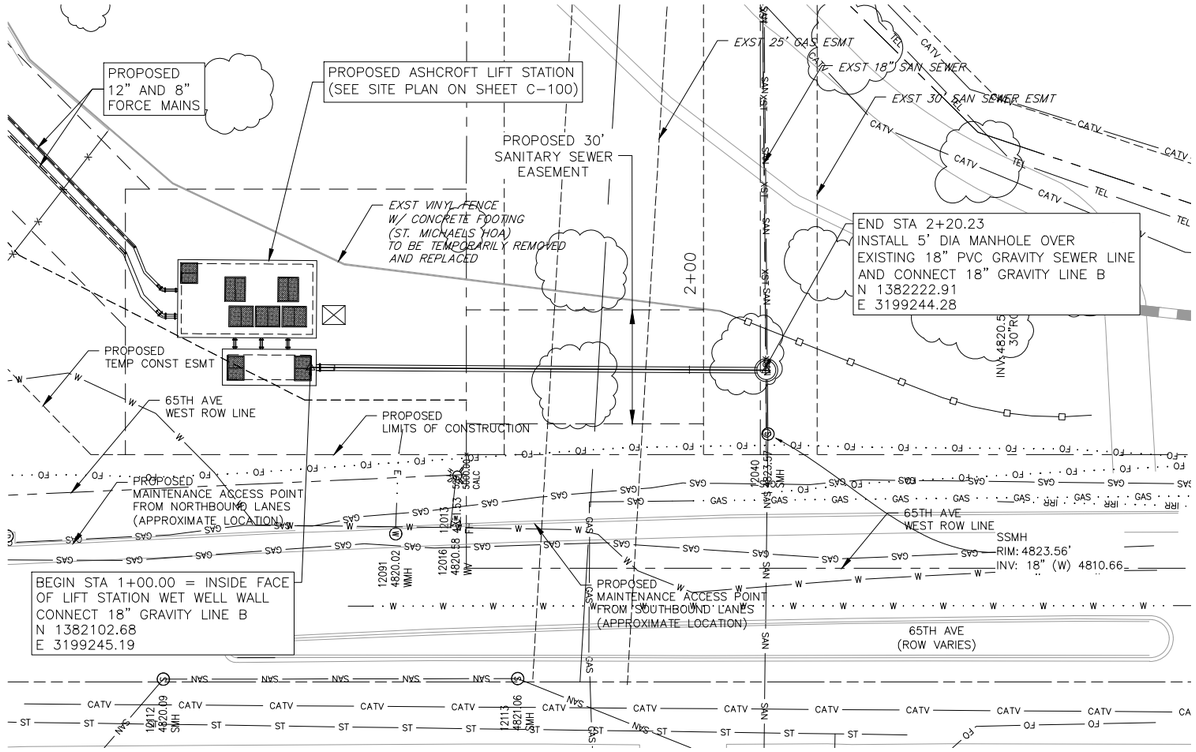

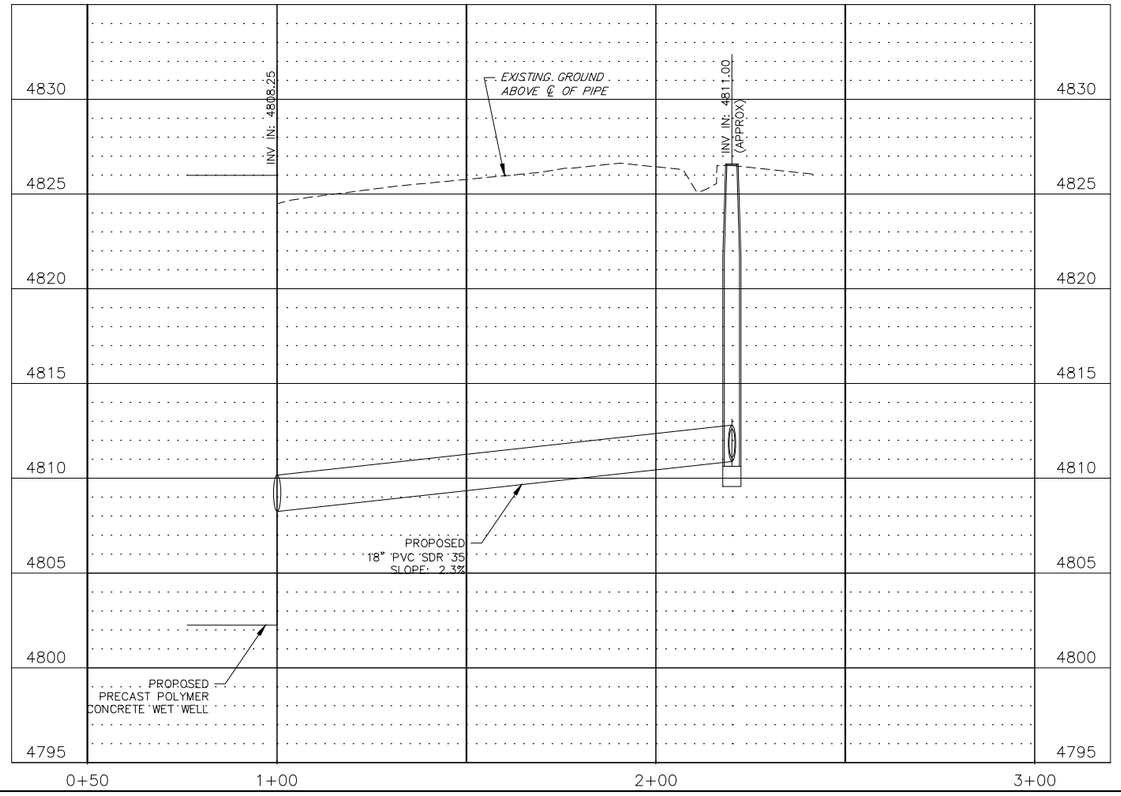

20 10 0 20 40
HORIZ. SCALE : 1" = 20'
4 2 0 4 8
VERT. SCALE : 1" = 4'

NOTES:

1. CONTRACTOR SHALL VERIFY VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES AND STRUCTURES PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
2. CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORT FOR EXISTING OVERHEAD UTILITIES AND FOR UNDERGROUND UTILITIES THAT WILL BE CROSSED UNDER.
3. EXISTING UTILITIES SHOWN ARE A QUALITY B LEVEL OF INVESTIGATION. POT-HOLING WITH TEST HOLES HAS NOT YET BEEN COMPLETED.

PRELIMINARY
NOT FOR CONSTRUCTION

PLUMMER
1221 AURARIA PKWY | DENVER, COLORADO 80204
303.300.3464 | TBPE REGISTERED FIRM NUMBER F-13

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CITY OF GREELEY
ASHCROFT LIFT STATION

PIPELINE PLAN AND PROFILE
18-INCH GRAVITY LINE B
STA 1+00 TO STA 2+20.06

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED
DRAWN
CHECKED
REVIEWED

Seq. X of XX
Dwg. No. C-009
3408-001-01

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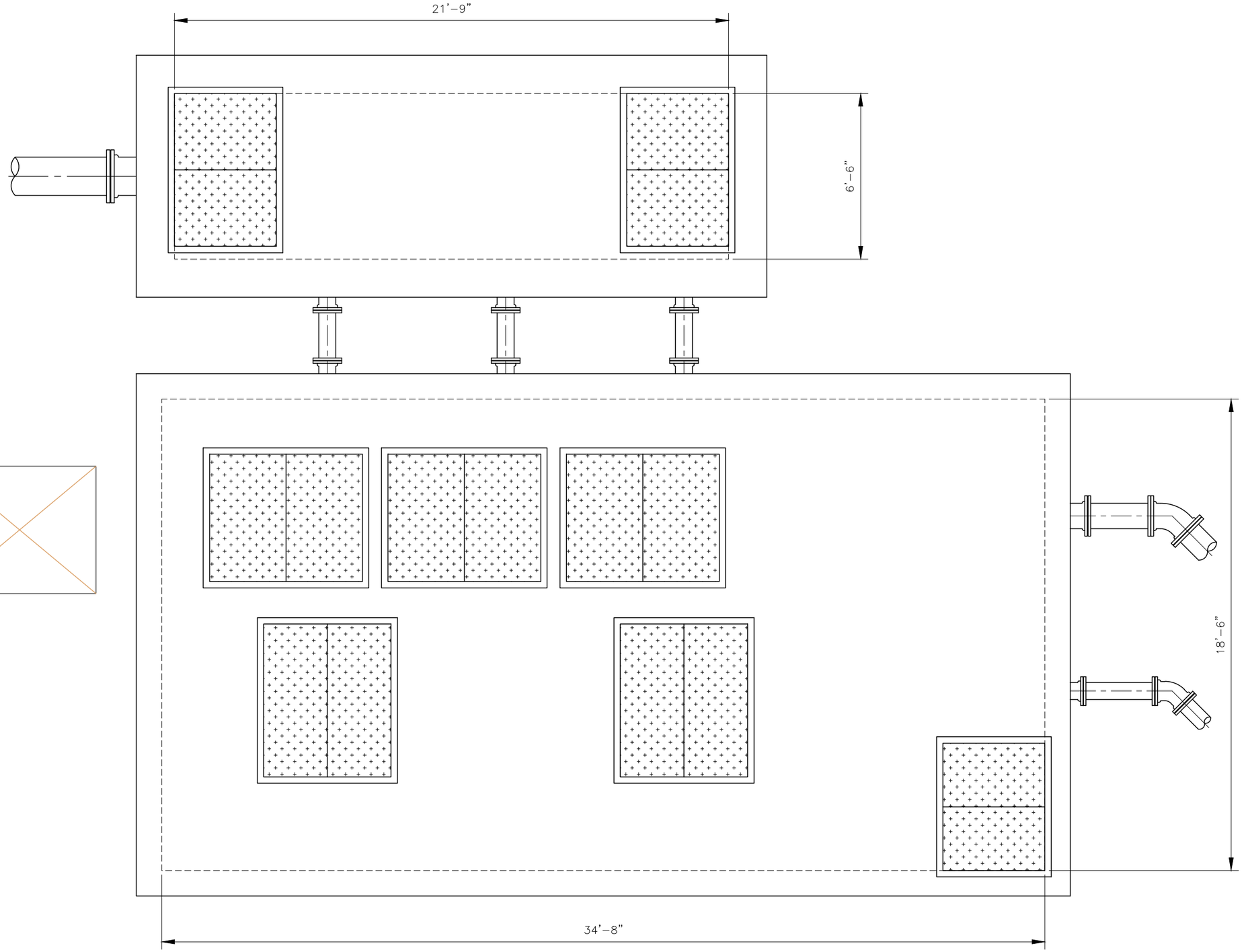

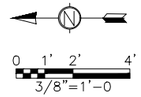

TOP PLAN
SCALE: 1/2"=1'-0"

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CITY OF GREELEY
ASHCROFT LIFT STATION

LIFT STATION
TOP PLAN

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED N. MARTINSON
DRAWN
CHECKED N. MARTINSON
REVIEWED

Seq. X of XX
Dwg. No. M-100
3408-001-01

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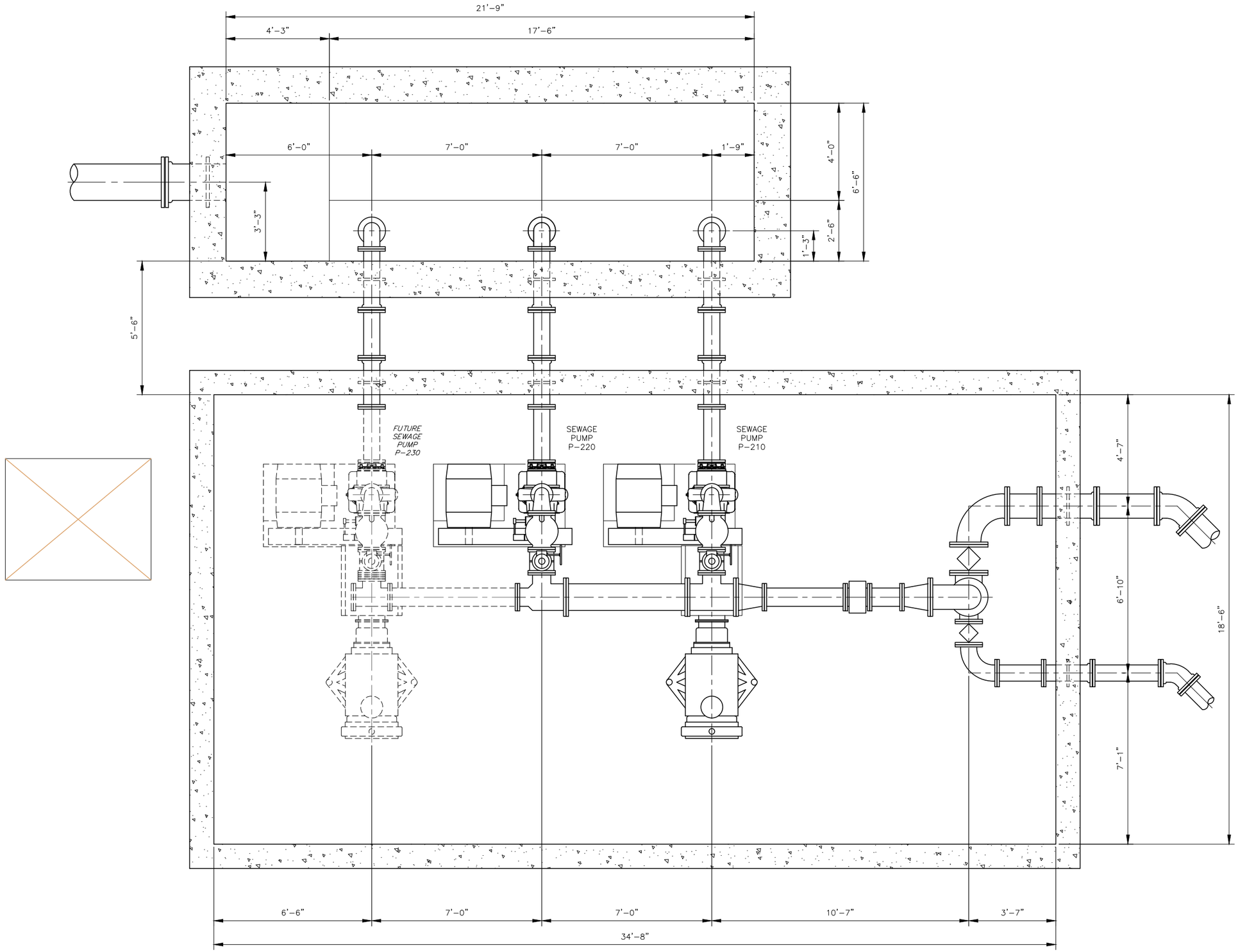

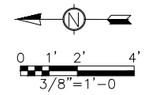

SECTIONAL PLAN AT ELEV. 4824.00

SCALE: 1/2"=1'–0"

PRELIMINARY
NOT FOR CONSTRUCTION

PLUMMER
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CITY OF GREELEY
ASHCROFT LIFT STATION

LIFT STATION
SECTIONAL PLAN AT ELEV. 4824.00

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DESIGNED GUDAL
DRAWN RINDT
CHECKED MARTINSON
REVIEWED

Seq. X of XX
Dwg. No. M–101
3408–001–01

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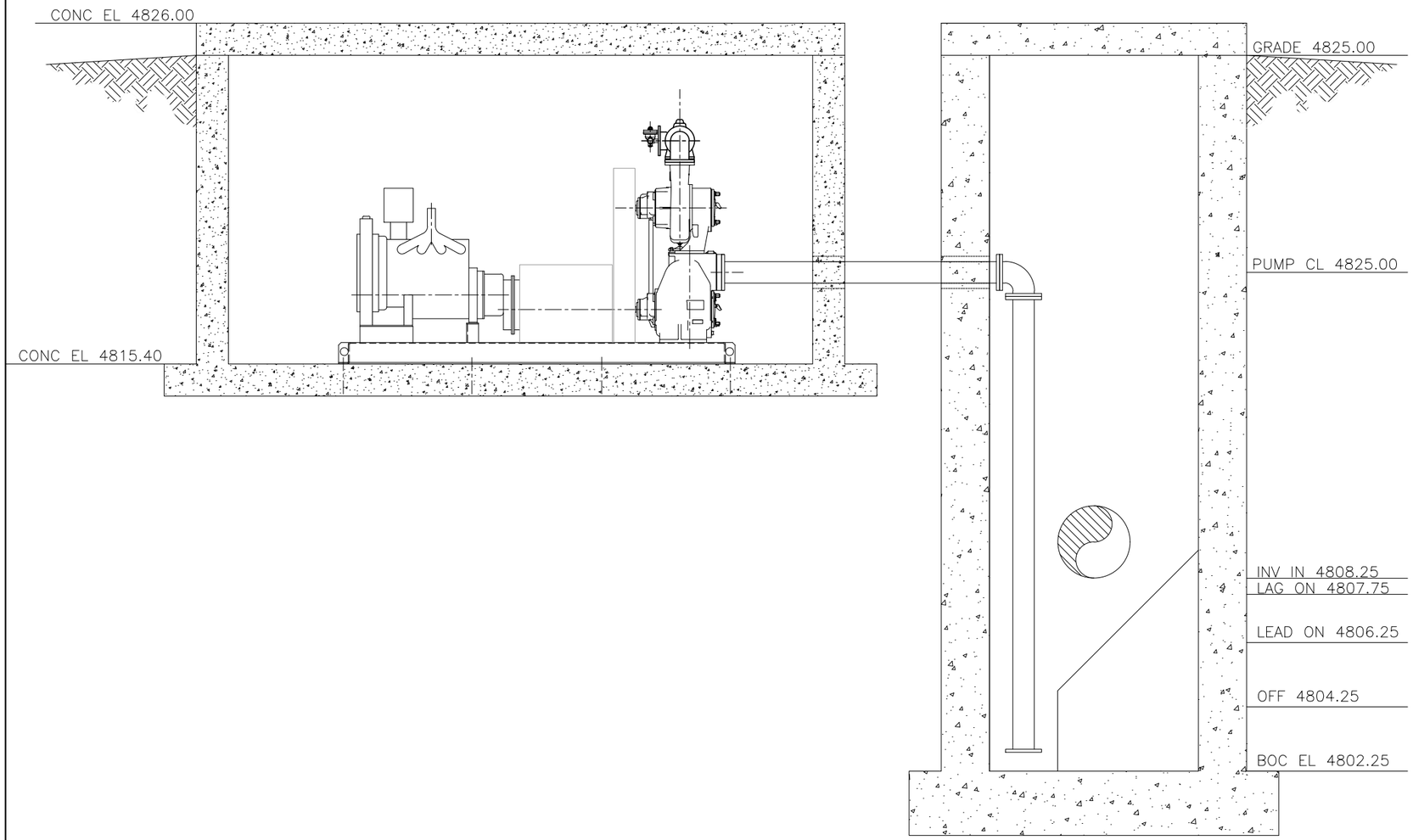

SECTION A
SCALE: 1/2"=1'-0" M-101

PRELIMINARY
NOT FOR CONSTRUCTION

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303.300.3464 | TBPE REGISTERED FIRM NUMBER F-13

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CITY OF GREELEY
ASHCROFT LIFT STATION

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DESIGNED N. MARTINSON
DRAWN
CHECKED N. MARTINSON
REVIEWED

Seq. of

Dwg. No. 3408-001-01

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VALVE AND PIPING SYSTEM SYMBOLS

CLOSED / OPEN

- GATE VALVE
- KNIFE GATE VALVE
- PLUG VALVE
- GLOBE VALVE
- BALL VALVE
- BUTTERFLY VALVE
- NEEDLE VALVE
- SWING CHECK VALVE
- BALL CHECK VALVE
- PILOT OPERATED PRESSURE REDUCING VALVE W/ DOWN STREAM PRESSURE SETTING
- PILOT OPERATED PRESSURE REDUCING VALVE W/ UP STREAM PRESSURE SETTING
- DIAPHRAGM VALVE
- SPRING PRESSURE RELIEF W/ PRESSURE RELIEF
- SLIDE GATE (SG) OR WEIR GATE (WG)
- SLUICE GATE (SLU)
- STOP LOGS (SL)
- WEIR PLATE (WP) OR STOP PLATE (SP)
- MUD & FOOT VALVE

- AIR RELEASE VALVE
- STOP & WASTE VALVE
- TELESCOPING VALVE
- ROTAMETER
- CLEAN OUT
- DRAIN
- FLANGE COUPLING ADAPTOR (FCA)
- RESTRAINED FLANGE COUPLING ADAPTOR (RFCA)
- PULSATION DAMPENER
- STRAINER

INSTRUMENT IDENTIFICATION LETTERS
(INSTRUMENT SOCIETY OF AMERICA)

	FIRST – LETTER		SUCCEEDING – LETTERS		
	MEASURED OR INITIATING VARIABLE		READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONTROL			CONTROL SWITCH	CLOSED
D	USER'S CHOICE	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE	MOMENTARY			MIDDLE, INTERMEDIATE
N	TORQUE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	FAILURE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	COMMAND
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

PROCESS & INSTRUMENTATION LEGEND

- DATA LINK OR SOFTWARE SIGNAL
- ANALOG ELECTRICAL SIGNAL
- DIGITAL ELECTRICAL SIGNAL
- INTERLOCK
- PRIMARY PROCESS FLOW LINE
- SECONDARY PROCESS FLOW LINE
- AIR LINE

P&ID EQUIPMENT SYMBOLS

DRY PIT / WET PIT

- CENTRIFUGAL PUMPS
- SUBMERSIBLE SUMP PUMP
- PROGRESSING CAVITY PUMP
- MULTISTAGE VERTICAL TURBINE PUMP
- ROTARY LOBE PUMP
- CHEMICAL METERING PUMP
- PROPELLER PUMP
- GEAR PUMP OR BLOWER (POSITIVE DISPLACEMENT)
- TURBO BLOWER
- SINGLE – STAGE BLOWER
- MULTI – STAGE BLOWER
- INLINE GRINDER
- HANDLE OR THROTTLE
- MOTOR DRIVER
- STATIC INLINE MIXER

- PROCESS IDENTIFICATION NUMBER
- NUMBER INDICATES SHEET OF PROCESS OR CONTROL CONTINUATION
- PARSHALL FLUME
- ELECTROMAGNETIC FLOW METER
- THERMAL MASS FLOW METER
- PROPELLER FLOWMETER
- DOPPLER FLOW METER
- ANNULAR SEAL
- DIAPHRAGM SEAL
- AUTOMATIC VALVE STATION SOLENOID
- ORIFICE PLATE
- SILENCER
- ORP SENSOR
- PRESSURE ELEMENT
- SUSPENDED SOLIDS METER
- ULTRASONIC LEVEL INDICATOR
- CALIBRATION COLUMN
- MEDIA SCREEN
- CAM LOCK
- SUBMERSIBLE MIXER
- PULSATION DAMPER

COMMON INSTRUMENT DESIGNATIONS

TAG	DESIGNATION
YL	EQUIPMENT RUNNING STATUS
YS	EQUIPMENT IN AUTO OR REMOTE STATUS
YY	EQUIPMENT RUN COMMAND
UA	EQUIPMENT FAULT STATUS
HC	HAND CONTROL
HS	HAND SWITCH
SI	SPEED INDICATION
SC	SPEED COMMAND
PSL	PRESSURE SWITCH LOW
PSH	PRESSURE SWITCH HIGH
FE	FLOW ELEMENT
FIT	FLOW INDICATOR/TRANSMITTER
ZSO	VALVE POSITION FULL OPEN
ZSC	VALVE POSITION FULL CLOSE
ZSI	VALVE POSITION INDICATOR

P&ID INSTRUMENT SYMBOLS

DISCRETE INSTRUMENTS	SHARED DISPLAY, SHARED CONTROL	PROGRAMMABLE LOGIC CONTROL	DATA HIGHWAY NETWORK	
XXXX 000	XXXX 000	XXXX 000	XXXX 000	AT MCC INACCESSIBLE TO OPERATOR
XXXX 000	XXXX 000	XXXX 000	XXXX 000	AT MCC ACCESSIBLE TO OPERATOR
XXXX 000	XXXX 000	XXXX 000	XXXX 000	IN FIELD A LOCAL CONTROL PANEL (LCP) ACCESSIBLE TO OPERATOR
XXXX 000	XXXX 000	XXXX 000	XXXX 000	AT VENDOR SUPPLIED PLC OR INACCESSIBLE TO OPERATOR
XXXX 000	XXXX 000	XXXX 000	XXXX 000	AT CONTROL PANEL (CP) ACCESSIBLE TO OPERATOR

ACTUATOR SYMBOLS

- E XX — ELECTRIC MOTOR
- S — SOLENOID

NOTE:
ON LOSS OF PRIMARY POWER (PNEUMATIC OR ELECTRIC)
FO = FAIL OPEN
FC = FAIL CLOSED
FLP = FAIL TO LAST POSITION

* MANUAL OR CHAIN WHEEL STANDARD UNLESS NOTED OTHERWISE

GENERAL NOTES

1. THIS IS A STANDARD LEGEND, THEREFORE NOT ALL OF THIS INFORMATION MAY BE USED ON THIS PROJECT.
2. P & I D INSTRUMENTATION DETAILS DO NOT REPRESENT INSTRUMENTS AND CONTROLS INTEGRAL TO VENDOR SUPPLIED CONTROL PANELS OR EQUIPMENT. SEE EQUIPMENT SPECIFICATIONS FOR THIS INFORMATION.
3. P & I D DOES NOT REPRESENT CONTROL STRATEGIES OR INTERACTIONS. SECTION 16905, CONTROL NARRATIVES, FOR THIS INFORMATION.
4. P & I D DOES NOT REPRESENT EQUIPMENT HARDWIRED INTERLOCK AND ENABLE CIRCUITRY. SEE MCC ELECTRICAL ELEMENTARY SCHEMATICS FOR THIS INFORMATION.

PRELIMINARY
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PLUMMER
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303.300.3464 | TBPE REGISTERED FIRM NUMBER F-13

NO.	DATE	REVISION	BY

CITY OF GREELEY
ASHCROFT LIFT STATION
INSTRUMENTATION
PROCESS & INSTRUMENTATION DIAGRAM LEGEND & SYMBOLS

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DESIGNED GUDAL
DRAWN RINDT
CHECKED MARTINSON
REVIEWED

Seq. of

Dwg. No. I–001

3408–001–01

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PHASE FAILURE LAL 800 DI
ENGINE RUNNING LAL 800 DI
ENGINE FAULT LAL 800 DI
STATION TEMP HIGH LAL 800 DI
STATION TEMP LOW LAL 800 DI
LOW LEVEL LAL 800 DI
HIGH LEVEL LAH 800 DI
WET WELL HIGH ALARM LAH 200 DI
BACKUP FLOATS ACTIVE UA 200 AI
WET WELL LEVEL LI 200 AI
PUMP RUNNING YL 210 DI
PUMP RUNNING YL 220 DI
PUMP FAULT YI 210 DI
PUMP FAULT YI 220 DI
OVER TEMP TAH 200 DI
OVER TEMP TAH 201 DI
SEAL FAILURE YA 200 DI
SEAL FAILURE YA 201 DI
FLOW FI 400 AI
TOTAL FQI 400 DI
SWITCH
INTRUSION ZA 1000 DI
RTU

TSL 800 (x5)

LSHH 201
LSH 201
LSH 200
LSL 200

PT 200
PE 200

HOA HS 200
RESET HC 200
FLOAT RESET HC 201
RUN YL 200
HOA HS 201
RESET HC 202
SOFT START RESET HC 203
RUN YL 204

LCP–200
TYP 3 (1 FUTURE) 200/300
VENDOR PANEL

MS–210
MS–220

NETWORK CAMERA

VALVE VAULT INTRUDER SENSOR ZS–1002

PIT 210
PE 210
PIT 220
PE 220
PIT 230
PE 230
FIT 400
FE 400
ARV

SEWAGE PUMP P–210
SEWAGE PUMP P–220
SEWAGE PUMP P–230 (FUTURE)

TO FORCE MAIN No. 1
TO FORCE MAIN No. 2

EMERGENCY OVERFLOW TO CITY OF EVANS TREATMENT FACILITY

INFLUENT SEWER

WET WELL

PRELIMINARY
NOT FOR CONSTRUCTION

PLUMMER
1221 AURARIA PKWY | DENVER, COLORADO 80204
303.300.3464 | TBPE REGISTERED FIRM NUMBER F-13

NO.	DATE	REVISION	BY

CITY OF GREELEY
ASHCROFT LIFT STATION

INSTRUMENTATION
PROCESS & INSTRUMENTATION DIAGRAM

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DESIGNED A. GUDAL
DRAWN K. RINDT
CHECKED N. MARTINSON
REVIEWED

Seq. of

Dwg. No. I–002

3408–001–01

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ONE-LINE DIAGRAM SYMBOLS

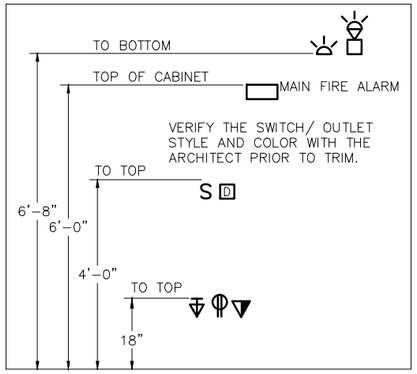
- PANELBOARD
- WEATHERHEAD
- KVA — DRY-TYPE TRANSFORMER
- PADMOUNT UTILITY TRANSFORMER
- SHORT CIRCUIT VALUE
- WIRE SIZE
- (M) — METER AND CTs
- (M) — KW METER
- ATS — TRANSFER SWITCH, SIZE AND NUMBER OF POLES AS SHOWN. ATS-AUTOMATIC
- FUSED DISCONNECT
- NON-FUSED DISCONNECT
- (M) — MOTOR
- CIRCUIT BREAKER
- FUSED SWITCH
- MS — MOTOR STARTER
- GENERATOR
- GROUND
- TRANSFORMER

FIRE ALARM SYMBOLS

- SMOKE DETECTOR
- (H) — THERMAL DETECTOR
- F — MANUAL PULL STATION
- cd — ADA HORN STROBE (WITH cd LEVEL)
- WP — OUTSIDE FIRE ALARM HORN/LIGHT
- WALL MOUNTED STROBE
- C C — CEILING MOUNTED DEVICE
- DUCT SMOKE DETECTOR
- DH — ELECTROMAGNETIC DOOR HOLD OPEN
- FSH — WATER FLOW SWITCH
- TSH — TAMPER SWITCH
- SD — SMOKE DAMPER
- FCP — FIRE ALARM CONTROL PANEL
- ANN — ANNUNCIATOR PANEL
- C — CONTROL MODULE
- M — MONITOR MODULE
- R — SUPERVISORY RELAY
- T — REMOTE TEST STATION
- PROJECTED BEAM DETECTOR
- DAT — DIGITAL COMMUNICATOR
- MAP — FRAMED GRAPHIC WALL MAP

MISCELLANEOUS

TYPICAL MOUNTING HEIGHTS LEGEND



NOTES

1. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND LOCAL ELECTRICAL CODES.
2. ALL JUNCTION BOXES SHALL BE NEMA 4X, 316 STAINLESS STEEL WITH 316 STAINLESS STEEL MOUNTING HARDWARE.
3. MAINTAIN MAXIMUM PRACTICAL OPEN FLOOR SPACE AND WORKING SPACE AROUND EQUIPMENT. ROUTE CONDUITS SO NOT TO CREATE A TRIPPING HAZARD OR INTERFERE WITH OPERATING EQUIPMENT.
4. CONDUITS SHALL BE CONCEALED TO GREATEST EXTENT POSSIBLE, UNLESS OTHERWISE APPROVED BY OWNER.
5. COORDINATE EXACT EQUIPMENT STUB-UP LOCATIONS WITH EQUIPMENT MANUFACTURER, PRIOR TO ROUGH-IN.
6. EXPOSED CONDUITS IN CHEMICAL TANK STORAGE AREAS AND CHEMICAL BUILDINGS SHALL BE PVC COATED ALUMINUM.
7. EXPOSED CONDUITS SHALL BE ALUMINUM. UNDERGROUND CONDUITS SHALL BE CONCRETE ENCASED PVC-40. CONDUITS TURNING UP OUT OF CONCRETE SHALL BE PVC-COATED ALUMINUM. REFER TO SPECIFICATIONS.
8. ALUMINUM CONDUIT OR UNISTRUT SHALL NOT BE IN DIRECT CONTACT WITH CONCRETE GROUT.
9. ALL CONDUIT PENETRATIONS THROUGH MASONRY OR CONCRETE WALLS SHALL BE DONE WITH PVC-COATED ALUMINUM CONDUITS.
10. ALL FASTENERS AND ANCHOR BOLTS SHALL BE STAINLESS STEEL EPOXY TYPE. WASHERS AND NUTS SHALL BE STAINLESS STEEL.
11. THREADED, INSULATED AND GASKETED METALLIC HUBS RATED AS A RAIN-TIGHT CONNECTION SHALL BE USED FOR ALL CONDUITS PENETRATING ALL ENCLOSURES, PANELBOARDS, STARTERS, TERMINATION BOXES, MCC, PLC CABINETS, ETC. BUSHING SHALL BE GROUNDING OR NON-GROUNDING TYPE PER NFPA 70.

ELECTRICAL SYMBOLS

- CEILING MOUNTED JUNCTION BOX
- WALL MOUNTED JUNCTION BOX
- FLOOR MOUNTED JUNCTION BOX
- WM — WIREMOLD SURFACE RACEWAY
- EXTERIOR GROUND FAULT RECEPTACLE
- DUPLEX RECEPTACLE
- FOURPLEX RECEPTACLE
- ABOVE COUNTER MOUNTED RECEPTACLE
- GROUND FAULT RECEPTACLE
- CEILING MOUNTED RECEPTACLE
- FLOOR MOUNTED DUPLEX RECEPTACLE
- FLOOR MOUNTED FOURPLEX RECEPTACLE
- SPECIAL RECEPTACLE
- FLOOR MOUNTED SPECIAL RECEPTACLE
- TELEPHONE OUTLET
- STOP/START STATION
- CONTROL POINT
- W — WALL MOUNTED TELEPHONE OUTLET
- COMBINATION VOICE/DATA
- WALL MOUNTED FLUORESCENT
- HID HIGHBAY LIGHT FIXTURE
- SURFACE MOUNTED WALL LIGHT
- SURFACE 1' X 4' FLUORESCENT
- PRISMATIC LAY-IN FLUORESCENT
- OPEN FLUOR. STRIP LIGHT
- COMBINATION EXIT AND EGRESS LIGHT
- EMERGENCY LIGHTING UNIT
- EXIT — EMERGENCY LIGHTING UNIT
- WALL-MOUNTED STROBE
- EXTERIOR POLE LIGHT
- S_b — SINGLE POLE SWITCH "b" INDICATES SWITCH LEG SHALL CONTROL LIGHT FIXTURES WITH "b" DESIGNATION
- S_3 — 3-WAY SWITCH
- S_4 — 4-WAY SWITCH
- FACP — FIRE ALARM CONTROL PANEL
- 2(3 #3/0, #2G,3"C) — DENOTES A QUANTITY OF TWO(2) 3-INCH CONDUITS EACH CONTAINING THREE NO. 3/0 AWG CONDUCTORS AND ONE NO. 2 AWG GROUND CONDUCTOR
- 2-2/C#16 — DENOTES A QUANTITY OF TWO(2) INSTRUMENT CABLES, EACH CONSISTING OF TWO NO. 16 AWG CONDUCTORS
- 3-4"C — THREE (3)4-INCH CONDUITS
- SURFACE MOUNTED ELECTRICAL CONDUIT RUN EXPOSED OR CONCEALED ON WALLS, CEILINGS, OR FLOORS
- CONDUIT OR DUCTBANK, CONCEALED
- CONDUIT, EXPOSED/SURFACE-MOUNTED, TURNED UPWARD
- CONDUIT, EXPOSED/SURFACE-MOUNTED, TURNED DOWNWARD
- OHE — OVERHEAD ELECTRIC LINE
- UGE — UNDERGROUND ELECTRIC LINE
- CONDUIT STUBBED OUT AND CAPPED
- OHP — OVERHEAD PRIMARY LINE
- UGP — UNDERGROUND PRIMARY LINE
- FLEXIBLE METAL CONDUIT
- FLEXIBLE CONDUIT OR CABLE
- GROUNDING CONNECTION EXOTHERMIC WELD OR COMPRESSION
- GATE FLEXIBLE GROUNDING STRAP
- GROUND ROD CONNECTION 3/4" X 10' LONG
- TEST WELL WITH GROUND ROD CONNECTION 3/4" X 10' LONG
- OHC — OVERHEAD COMMUNICATION LINE
- UGC — UNDERGROUND COMMUNICATION LINE

ELECTRICAL ABREVIATIONS

A	AMP
AC	ABOVE COUNTER
AFF	ABOVE FINISHED FLOOR
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
BKR	BREAKER
BLDG	BUILDING
C	CONDUCTORS, CONDUIT
CB	CIRCUIT BREAKER
CATV	CABLE TELEVISION
CKT	CIRCUIT
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
DISC	DISCONNECT SWITCH
DWG	DRAWING
(E)	EXISTING
EHH	ELECTRICAL HAND HOLE
ELEC	ELECTRICAL
EM	EMERGENCY
EMH	ELECTRICAL MANHOLE
ENCL	ENCLOSURE
EUH	ELECTRIC UNIT HEATER
FDR	FEEDER
FLEX	FLEXIBLE CONDUIT
FO	FIBER OPTIC
GALV	GALVANIZED
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTED
GRD	GROUND
HH	HANDHOLE
HP	HORSEPOWER
I/O	INPUT/OUTPUT
JB,J-BOX	JUNCTION BOX
KVA	KILO VOLT AMPERES
KW	KILOWATTS
KWH	KILOWATT HOUR
LTG	LIGHTING
LTS	LIGHTS
M	MOTOR
MAN	MANUAL
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTION
MFR	MANUFACTURER
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTR	MOTOR
NTS	NOT TO SCALE
OH	OVERHEAD
PB	PULLBOX, PUSHBUTTON
PC	PHOTOCELL
PF	POWER FACTOR
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
REC	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
RL	RELOCATED
RTU	REMOTE TERMINAL UNIT
SCH	SCHEDULE
SEC	SECONDARY
SOV	SOLENOID VALVE
SP	SPARE
SS	STAINLESS STEEL
SW	SWITCH
TB	TERMINAL BLOCK
TSP	TWISTED SHIELDED PAIR
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VAC	VOLTAGE ALTERNATING CURRENT
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS
WP	WEATHERPROOF
WP/GFCI	WEATHER-PROTECTED/GROUND FAULT CURRENT INTERRUPTOR
XFMR	TRANSFORMER
XMTR	TRANSMITTER

- EQUIPMENT REFERENCE
- DETAIL NOTE REFERENCE

PRELIMINARY
NOT FOR CONSTRUCTION

PLUMMER
1221 AURARIA PKWY | DENVER, COLORADO 80204
303.300.3464 | TBPE REGISTERED FIRM NUMBER F-13

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CITY OF GREELEY
ASHCROFT LIFT STATION

ELECTRICAL
LEGEND AND ABBREVIATIONS

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DESIGNED N. TOUSSAINT
DRAWN R. PEMBERTON
CHECKED N. MARTINSON
REVIEWED –

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Dwg. No. E-001
3408-001-01

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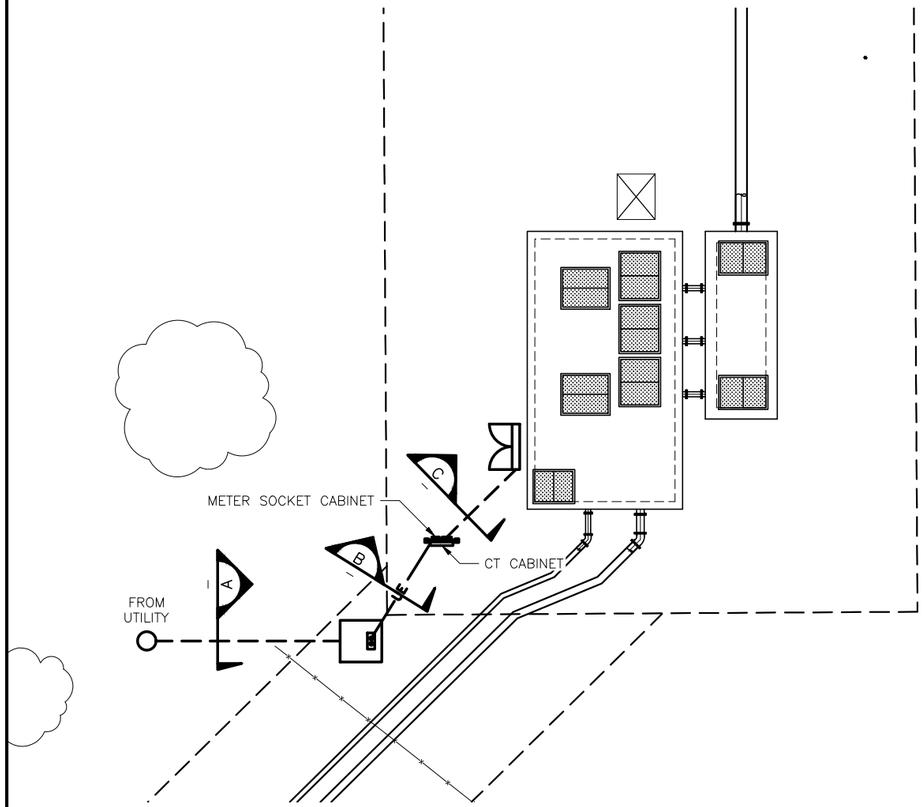
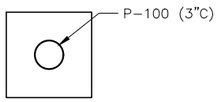


ASHCROFT LIFT STATION

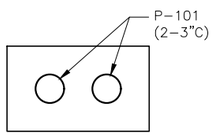
ELECTRICAL SITE PLAN

SCALE: 1"=10'



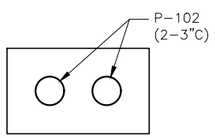
DUCT BANK SECTION A

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



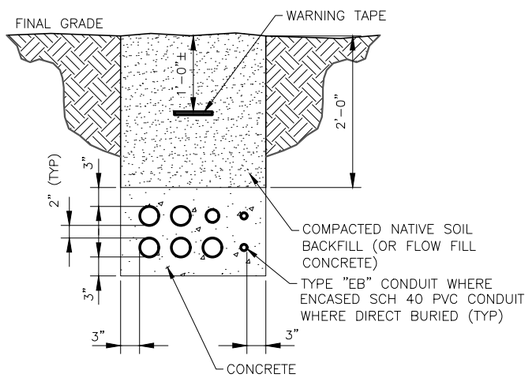
DUCT BANK SECTION B

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



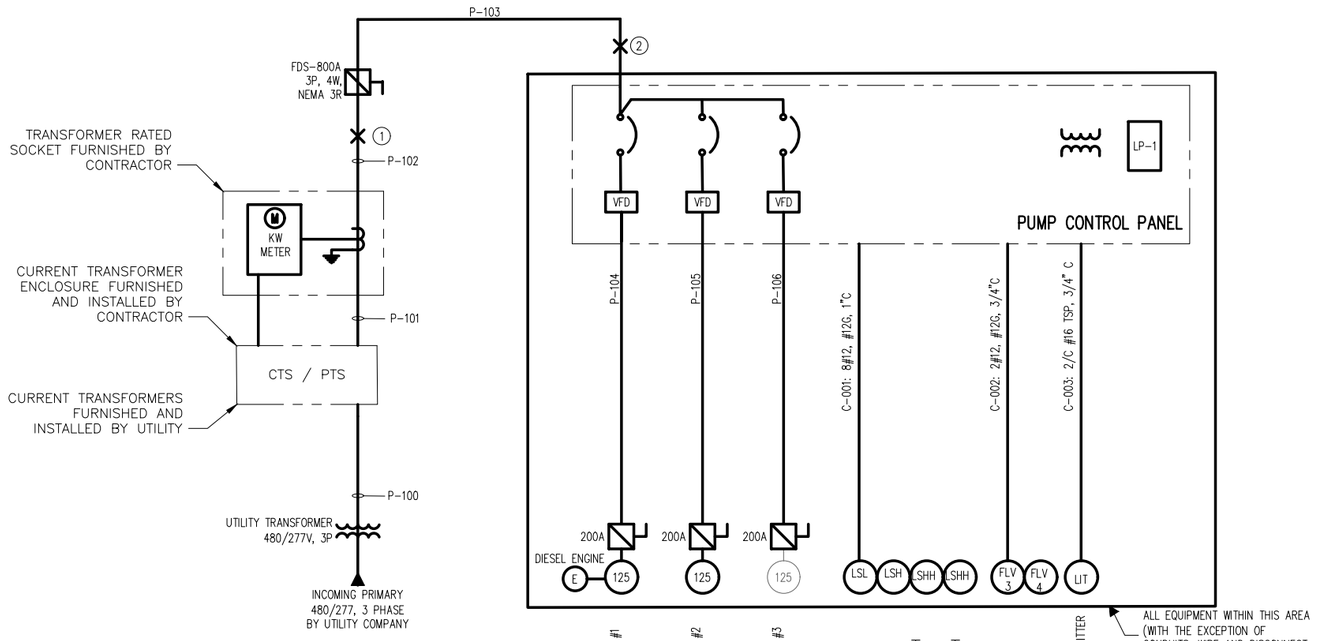
DUCT BANK SECTION C

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



DUCT BANK DETAIL 1

NTS



CITY OF GREELEY ASHCROFT LIFT STATION KAIC RATING 02/20/2020			
	ELECTRICAL EQUIPMENT	L-L KAIC RATING	L-N KAIC RATING
1	DISCONNECT SWITCH	38,327	30,829
2	MAIN PUMP CONTROL PANEL	29,389	21,651

ELECTRICAL ONE-LINE DIAGRAM

ASHCROFT - CITY OF GREELEY LIFT STATION LOAD SCHEDULE

Area	Item Name	Tag	Status	Load Power Information							Protection					
				Volts	Phase	Rating (HP)	KW	FLA (Total)	Standy Power	Utilization (%)	Circuit Breaker	Disc Size	NEMA Rating	VFD or Starter	Starter Size	Starter Location
ASHCROFT LIFT STATION	WETWELL SEWAGE PUMP #1	P-100	NEW	480	3	125.0	93.2	156.0	PRIORITY	100%	200	200	3R	STARTER	5	MCP
	WETWELL SEWAGE PUMP #2	P-101	NEW	480	3	125.0	93.2	156.0	PRIORITY	100%	200	200	3R	STARTER	5	MCP
	WETWELL SEWAGE PUMP #3	P-102	NEW	480	3	125.0	93.2	156.0	STANDBY	50%	200	200	3R	STARTER	5	MCP
MISC. ELECTRICAL	LIGHTING PANEL	LP-1	NEW	480	3		25	22.5	PRIORITY	100%	50	INDIV	3R	N/A	0	
LOAD TOTALS	TOTAL LOAD					375.0	304.6									
	GENERATOR LOAD							490.5								
	SERVICE SIZE															

ASHCROFT LS LOAD SCHEDULE

DUCT BANK NOTES:

1. ALL DUCT BANKS SHALL BE CONCRETE ENCASED EXCEPT IN TURNED AREAS. ENTIRE UNDERGROUND SERVICE ENTRANCE SHALL BE ENCASED. ENCASED CONDUITS SHALL BE TIED TO SPACERS. SURVEY STAKES SHALL BE USED AT EVERY BASE SPACER AS A TIE DOWN TO PREVENT DUCTS FROM FLOATING.
2. DUCT IS TO HAVE A MINIMUM OF 3" (+1",-0") CONCRETE ENVELOPE ABOVE AND BELOW AND 2" MINIMUM IN BETWEEN.
3. CONCRETE SHALL BE PROPERLY VIBRATED WHEN INSTALLED TO ASSURE COMPLETE FLOW UNDER, AROUND AND BETWEEN ALL DUCTS TO ELIMINATE ANY AIR POCKETS.
4. BACK FILL OF TRENCHES IN EXISTING PAVED AREAS SHALL BE DONE WITH NATIVE SOILS MECHANICALLY COMPACTED OR FLOW ABLE FILL THAT WILL SET UP AND PROVIDE COMPACTING FOR QUICK TRENCH CLOSURE.
5. REFER TO ELECTRICAL PLANS FOR QUANTITY OF DUCTS IN EACH TRENCH.
6. ALL RISER CONDUIT BENDS AND ABOVE GROUND CONDUIT SHALL BE RIGID METAL CONDUIT, PROVIDE PVC TO METAL COUPLING AT ENDS OF STRAIGHT UNDERGROUND RUNS.
7. DUCT BANKS SHALL BE DEEPER WHERE INSTALLED UNDER NEW AND EXISTING BUILDINGS. INSTALL SO TOP OF ENCASEMENT IS AT BOTTOM OF FOOTER (OR DEEPER).

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CITY OF GREELEY
ASHCROFT LIFT STATION

ELECTRICAL

SITE PLAN, ONE-LINE DIAGRAM AND LOAD SCHEDULE

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DRAWN R. PEMBERTON
CHECKED N. MARTINSON
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Dwg. No. E-002

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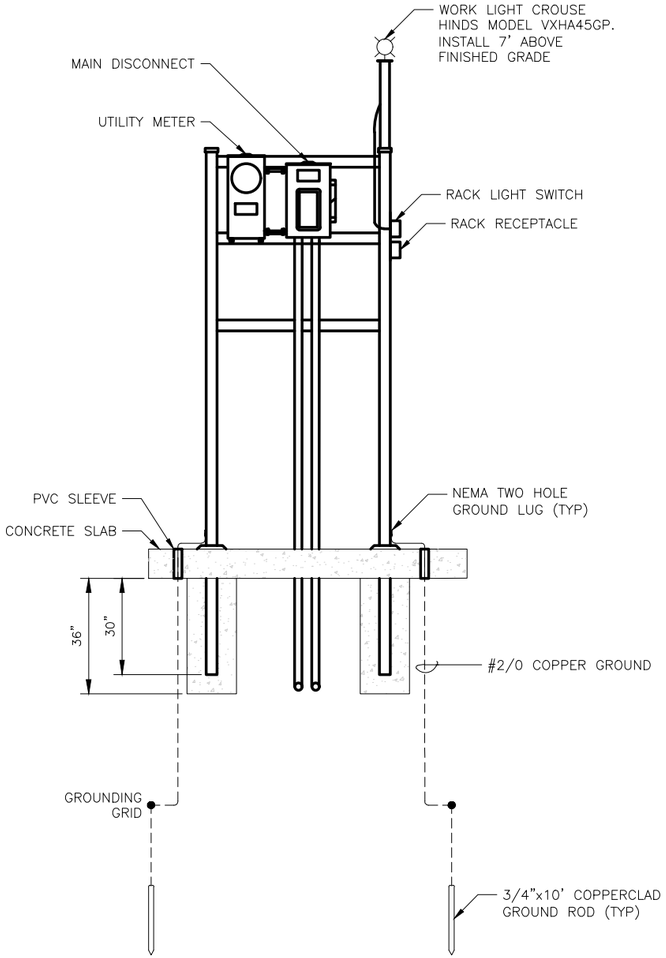
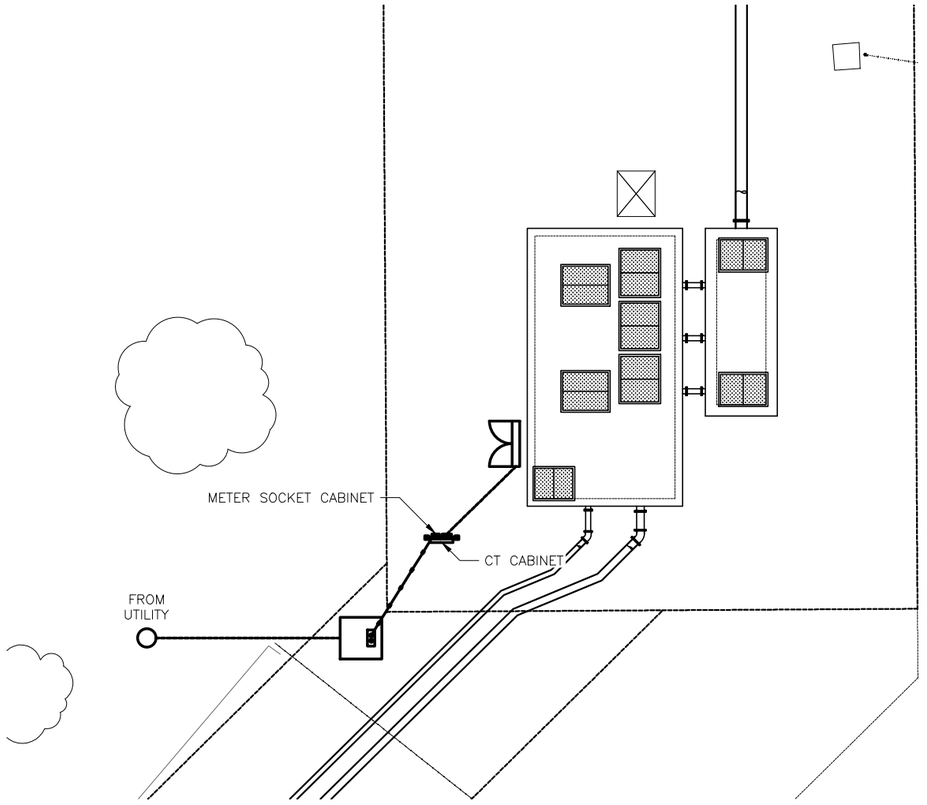


ELECTRICAL RACK DETAIL

SCALE: N.T.S.



ASHCROFT LIFT STATION

CONDUIT PLAN

SCALE: 1"=10'

CITY OF GREELEY - ASHCROFT
CABLE AND CONDUIT SCHEDULE

CONDUIT TYPE	CONDUIT NUMBER	FROM	TO	CONDUIT SIZE	CONDUCTORS (per Conduit)	NEUTRAL	GROUND	VOLTAGE	NOTES
P -	100	UTILITY	UTILITY TRANSFORMER	3"	2 SETS,3-350MCM	1-350MCM	#1	480	
P -	101	UTILITY TRANSFORMER	TRANSFORMER METER SOCKET	2-3"	2 SETS,3-350MCM	1-350MCM	#1	480	
P -	102	TRANSFORMER METER SOCKET	FUSED DISCONNECT SWITCH	2-3"	2 SETS,3-350MCM	1-350MCM	#1	480	
P -	103	FUSED DISCONNECT SWITCH	PUMP CONTROL PANEL	2-3"	2 SETS,3-350MCM	1-350MCM	#1	480	
P -	104	PUMP CONTROL PANEL	WETWELL SEWAGE PUMP #1 (P-100)	2"	3-#3/0		#6	480	
P -	105	PUMP CONTROL PANEL	WETWELL SEWAGE PUMP #2 (P-101)	2"	3-#3/0		#6	480	
P -	106	PUMP CONTROL PANEL	WETWELL SEWAGE PUMP #3 (P-102)	2"	3-#3/0		#6	480	
P -	107	TRANSFORMER DISCONNECT	TRANSFORMER T-1	1.5"	3-#1/0		#12	480	
P -	108	TRANSFORMER T-1	LIGHTING PANEL LP-1	1.5"	3-#1/0		#1/0	480	
C -	001	PUMP CONTROL PANEL	LEVEL FLOAT SWITCHES	1"	8-#12	2-#12	1-#12	24VDC	
C -	002	PUMP CONTROL PANEL	ENGINE FUEL VALVES	3/4"	2-#12				
C -	003	PUMP CONTROL PANEL	SUBMERSIBLE LEVEL TRANSMITTER	3/4"	1-2/C-#18TSP				

CABLE AND CONDUIT SCHEDULE

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CITY OF GREELEY
ASHCROFT LIFT STATION

ELECTRICAL

CONDUIT PLAN, RISER DETAIL AND
CABLE & CONDUIT SCHEDULE

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CHECKED N. MARTINSON
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3408–001–01

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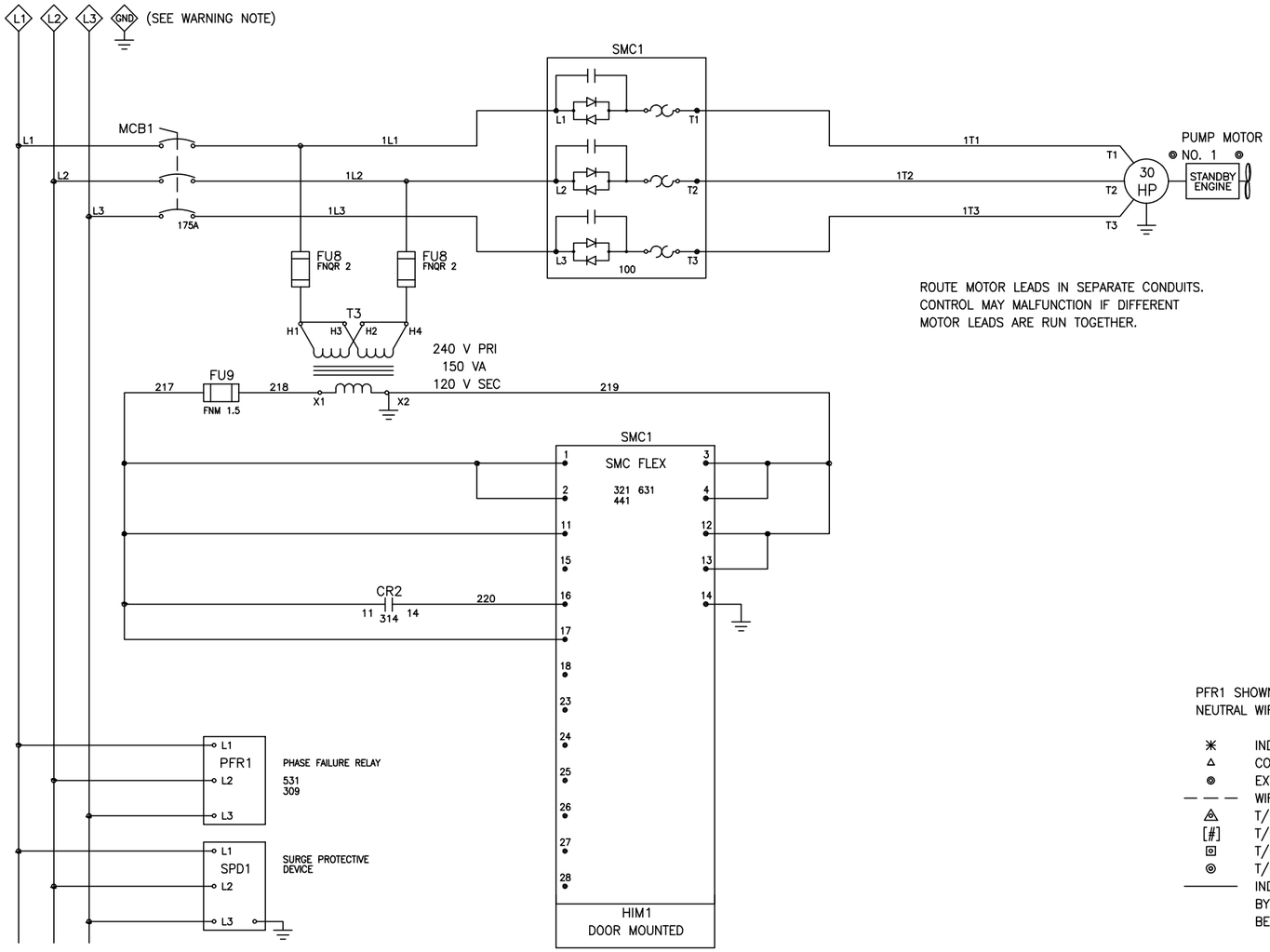

PFR1 SHOWN IN ALARM CONDITION
NEUTRAL WIRE TO BE WHITE IN COLOR

✳	INDICATES ENGINE COMPONENT
△	COMPONENT MTD IN ENG BOX
◎	EXTERNALLY MOUNTED DEVICE
— — —	WIRING BY OTHERS
◬	T/B CONNECTION IN ENGINE BOX
[#]	T/B NUMBER IN ENGINE BOX
⊡	T/B CONNECTION IN G–R PANEL
◎	T/B CONNECTION IN 10X8 J/BOX
———	INDICATES WIRING IS SUPPLIED BY G–R. FINAL CONNECTION TO BE DONE AT INSTALLATION

WETWELL SEWAGE PUMP SCHEMATIC DIAGRAM

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CITY OF GREELEY
ASHCROFT LIFT STATION

ELECTRICAL
PUMP SCHEMATIC DIAGRAM

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CHECKED N. MARTINSON
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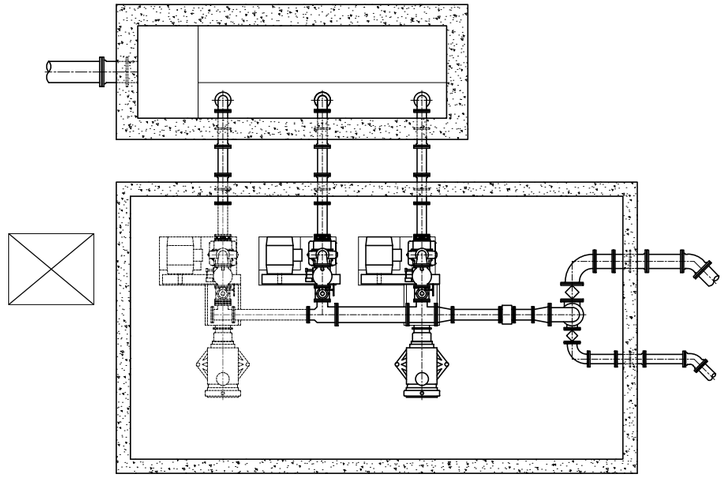
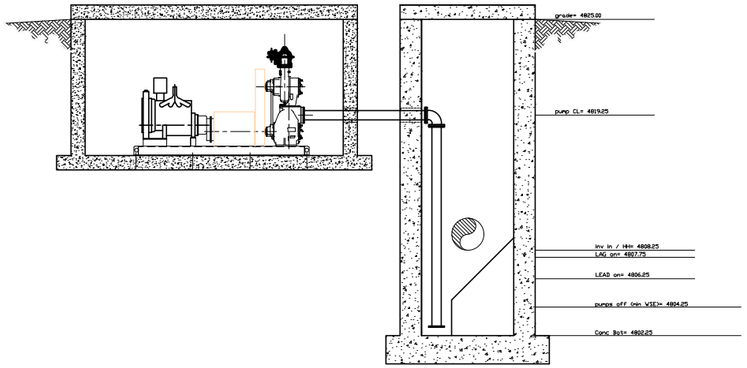
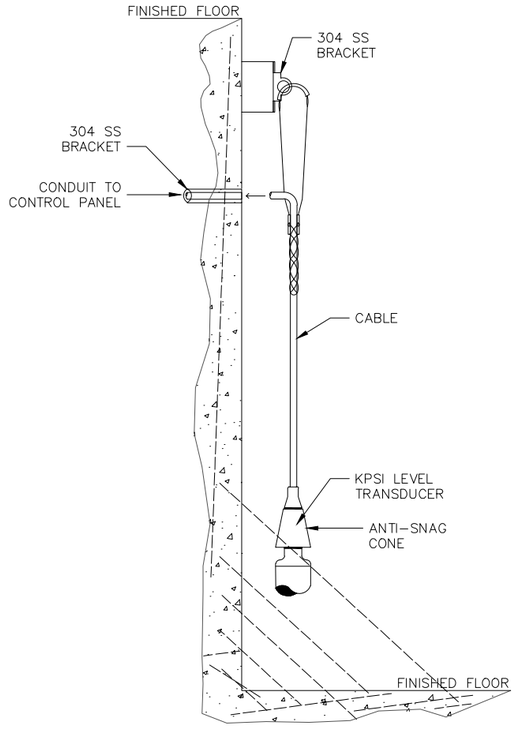


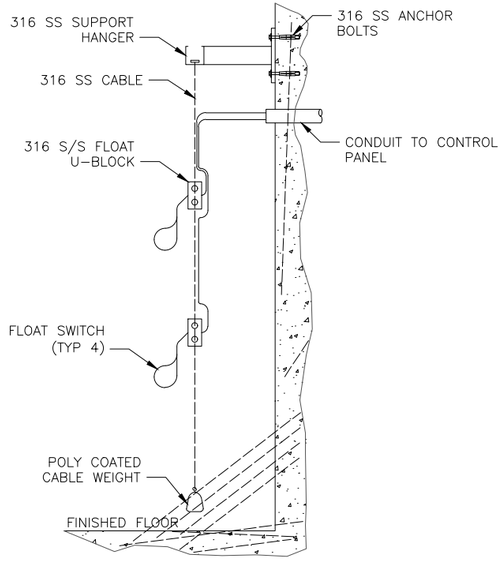
LIFT STATION ELECTRICAL PLAN – ABOVE GRADE (1)
NTS



LIFT STATION ELECTRICAL PLAN – BELOW GRADE (2)
NTS



LEVEL TRANSDUCER DETAIL (3)
NTS



FLOAT SWITCH DETAIL (4)
NTS

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CITY OF GREELEY
ASHCROFT LIFT STATION

ELECTRICAL
MISCELLANEOUS DETAILS

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