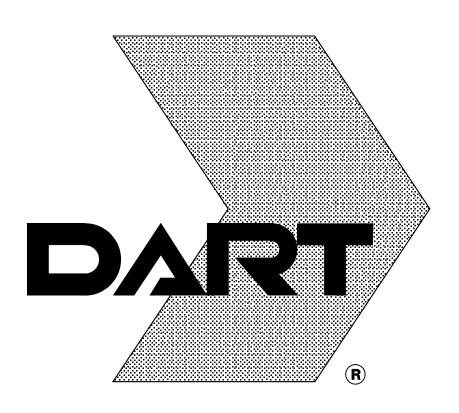
IRVING/DFW CORRIDOR
BELT LINE ROAD TO TERMINAL A STATION
CONTRACT NO. C-1018691-01
LINE SECTION I-3
STA. 462+38.00 TO STA. 768+95.00
NORMAL CONTROL LINES

FINAL



DWG No.

SSSSDGNSSPECIFICATIONSSE SSSSSYTIMESSSSSS	SSPRFSS	
--	---------	--

B 10-16-12 60% SUBMIT

001 002 003	GC1 - 1001 GC2 - 1002	E
002		
		E
	GC3-1003	E
004	GC3 - 1004	E
005	BC8-1005	E
	BC8-1006	E
		E
		E
		E
		E
		E
		E
		E
		E
		E
		E
		E
		E
		E
		E
		E
	500 1021	
-		
USU		
	006 007 008 009 010 011 012 013 014 015 016 017 018 019 020 021 022 023 024 025 026 027 028 029 030 031 032 033 034 035 036 037 038 039 040 041 042 043 044 045 046 047 048 049 050	007 BC8-1007 008 BC8-1008 009 BC8-1009 010 BC8-1010 011 BC8-1011 012 BC8-1012 013 BC8-1013 014 BC8-1014 015 BC8-1015 016 BC8-1016 017 BC8-1017 018 BC8-1019 020 BC8-1020 021 BC8-1021 022 023 024 025 026 027 028 029 030 031 032 033 033 034 035 036 037 038 039 040 041 042 043 044 045 046 047 048 049 049

THE FOLLOWING LIST OF SPECIFICATIONS *LATEST VERSION* WERE APPLIED FROM DART SYSTEMS STANDARDS SPECIFICATIONS, EXHIBIT I, ATTACHMENT 10 FOR NOMRAL CONTROL LINES, REVERSE CONTROL LINES, AND HIGHWAY CROSSING DIAGRAM DRAWINGS TO THE DESIGN OF SYSTEMS CONTAINED IN THIS SPECIFIC DOCUMENT. INED IN THIS SPECIFIC DOCUMENT.

BASIC TECHNICAL REQUIREMENTS - SIGNAL SYSTEM
BLOCK DESIGN CRITERIA - SIGNAL SYSTEM
DRAWINGS - SIGNAL SYSTEM
EXTERNAL CABLE - SIGNAL SYSTEM
POWER CABLE - SIGNAL SYSTEM
POWER SWITCH-AND-LOCK MOVEMENTS - SIGNAL SYSTEM
EMBEDDED POWER SWITCH-AND-LOCK MOVEMENTS - SIGNAL SYSTEM
SIGNAL AND INDICATORS - SIGNAL SYSTEM
AUDIO FREQUENCY MAIN LINE TRACK CIRCUITS - SIGNAL SYSTEM
POWER FREQUENCY TRACK CIRCUITS - SIGNAL SYSTEM
TRAIN-TO-WAYSIDE COMMUNICATIONS - SIGNAL SYSTEM
CAB SIGNAL AND B-POINT LOOPS - SIGNAL SYSTEM
IMPEDENCE BONDS - SIGNAL SYSTEM
TRAIN STOPS - SIGNAL SYSTEM
TRAIN STOPS - SIGNAL SYSTEM
RAIL BONDING - SIGNAL SYSTEM
AUTOMATIC HIGHWAY CROSSING WARNING SYSTEM - SIGNAL SYSTEM 16902 16904 16908 16909 16911 16914 16917 16918 16919 16920 16922 16923 16924 16930 16932 16935 16938 16939 16940 16953 16955 16957 16958 16969 16969 16972 16976 AUTOMATIC HIGHWAY CROSSING WARNING SYSTEM - SIGNAL SYSTEM AUTOMATIC HIGHWAY CHOSSING WARNING SYSTEM
POWER SYSTEM - SIGNAL SYSTEM
INSTRUMENT HOUSES - SIGNAL SYSTEM
WAYSIDE CASES - SIGNAL SYSTEM
JUNCTION BOXES - SIGNAL SYSTEM
INSTRUMENT RACKS - SIGNAL SYSTEM
INTERNAL WIRE AND CABLE - SIGNAL SYSTEM
PILIC COMMETCINES - SIGNAL SYSTEM PLUG CONNECTORS - SIGNAL SYSTEM RELAYS - SIGNAL SYSTEM RELAYS - SIGNAL SYSTEM
VITAL MICROPROCESSOR INTERLOCKING SYSTEM - SIGNAL SYSTEM
TRANSFORMERS - SIGNAL SYSTEM
LOCAL CONTROL PANELS - SIGNAL SYSTEM
EVENT RECORDERS - SIGNAL SYSTEM
GROUNDING OF EQUIPMENT - SIGNAL SYSTEM
ELECTROMAGNETIC COMPATIBILITY - SIGNAL SYSTEM
RELIABILITY AND MAINTAINABILITY - SIGNAL SYSTEM
WAYSIDE SIGNS - SIGNAL SYSTEM
MISCELLANEOUS COMPONENTS AND PRODUCTS - SIGNAL SYSTEM
MISCELLANEOUS COMPONENTS AND PRODUCTS - SIGNAL SYSTEM
TEST AND INSPECTION - SIGNAL SYSTEM

TEST AND INSPECTION - SIGNAL SYSTEM

FINAL

02-12-13 100% DESIGN 01-15-13 95% SUBMITTAL 10-16-12 60% SUBMITTAL STN AE AP JLB
STN AE AP JLB
STN AE AP JLB

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF :

ROBERT D. PASCOE, P.E. 79901

IT IS NOT TO BE USED FOR CONSTRUCTION.
BIDDING. OR PERMIT PURPOSES. BY ENG CHK APP



STANTEC CONSULTING SERVICES INC. 61 Commercial Street Rochester, N.Y. 14614 Tel:(585) 475-1440 Fax: (585) 272-1814 Stantec www.stontec.com



REYES, PARSONS a Joint Venture

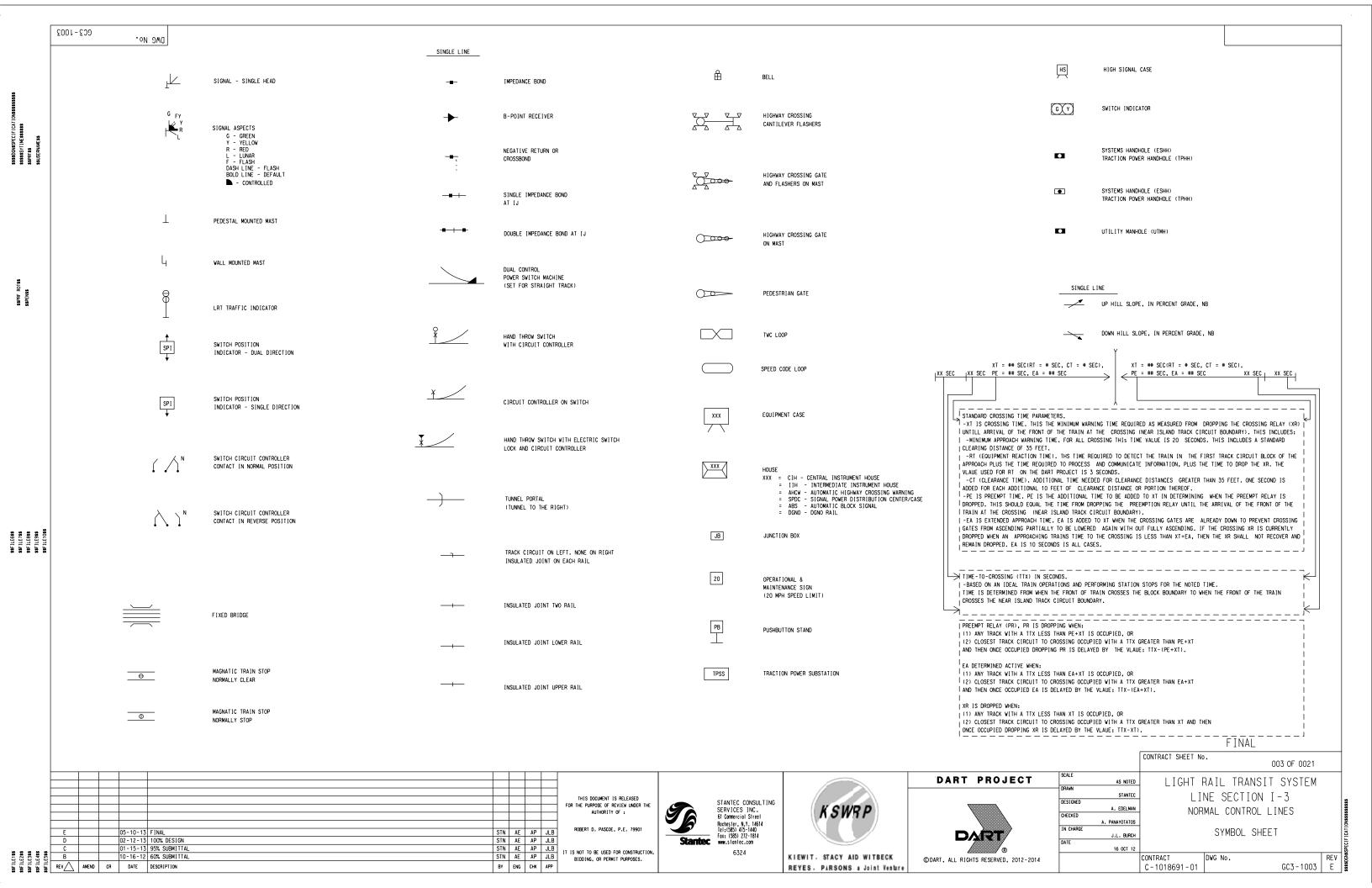
©DART, ALL RIGHTS RESERVED, 2012-2014

DART PROJECT

	SCALE		Г
		AS NOTED	
_	DRAWN		
		STANTEC	
	DESIGNED		
		A. EDELMAN	
	CHECKED		
		A. PANAYOTATOS	
	IN CHARGE		
		J.L. BURCH	
	DATE		
		16 OCT 12	
			6

CONTRACT SHEET No. 002 **OF** 0021 LIGHT RAIL TRANSIT SYSTEM LINE SECTION I-3 NORMAL CONTROL LINES INDEX SHEET

CONTRACT DWG No. REV GC2-1002 C-1018691-01



The content of the	MPH
Part	MPH
Part	MPH
Part	
Part	
MINE	
MINE	
Part	
# 1	
# 1	
Part	
Part	
No. 100	
Part	
Part	
Part	
No.	
No.	
C COMDUCTOR, CONDUIT CATP CAREWAY POLE KOMIL FENDANC CIRCULAR MILLS KOMIL FENDANC CIRCULAR MILLS KOMIL FENDANC CIRCULAR MILLS KOMIL FENDANC TO THROUT TOR TOP OF RAIL CHIT CLEMANCE POINT CENTRAL INSTRUMENT HOUSE LB LOCAL BATTERY TOR THROUT TOR TOP OF RAIL COM COMEN COMEN COMEN COMEN COMEN COMEN COMEN COMENICATION STIRAL MAG MAGETIC TOR THROUT OF TAKIN TO MASSISE COMMUNICATIONS COM COMMUNICATION S STORAL MARKER MAS MATHAN ALCARALE SPEED TYP TYPICAL CSSH COMMUNICATION S STORAL MARKER MAX MATHAN ALCARALE SPEED TYP TYPICAL CSSH COMMUNICATION S STORAL MARKER MAX MATHAN ALCARALE SPEED TYP TYPICAL CSSH COMMUNICATION S STORAL MARKER MAX MATHAN ALCARALE SPEED TYP TYPICAL CSSH COMMUNICATION S STORAL MARKER MAX MATHAN ALCARALE SPEED TYP TYPICAL CSSH COMMUNICATION S STORAL MARKER MAX MATHAN ALCARALE SPEED TYP TYPICAL CSSH COMMUNICATION S STORAL MARKER MAX MATHAN ALCARALE SPEED TYP TYPICAL CSSH COMMUNICATION S STORAL MARKER MAX MATHAN ALCARALE SPEED TYP TYPICAL CSSH COMMUNICATION S STORAL MARKER MAX MATHAN ALCARALE SPEED TYP TYPICAL CSSH COMMUNICATION S STORAL MARKER MAX MATHAN ALCARALE SPEED TYP TYPICAL THROUGH LEEPTITICATION SYSTEM TRAINSTORER TRAINSTORE	
CATP CATEMAPY POLE CHANKE POINT CLEAR MULES CO CLA-ON, CUT-OUT CLEAR MULES CO CLA-ON, CUT-OUT COM COMMON CO	
CIH CENTRAL INSTRUMENT HOUSE LB LOCAL BATTERY TO FIRST TO O' O' RAIL CLPT CLEARANCE POINT LK LOCK 1PSS TRACTION POWER SUBSTATION COM COMMEN COM COMMEN COM COMMEN COM COMMEN COM COMMEN COM COMMENICATIONS AS MAXIMMA ALLOWARE SPEED MAS MAXIMMA ALLOWARE SPEED MAS MAXIMMA ALLOWARE SPEED TY TYPICAL CSSH COMMUNICATION & SIGNAL MANHOLE MAS MAXIMMA ALLOWARE SPEED MAX MAXIMMA MINIMM CSSH COMMUNICATION & SIGNAL MANHOLE MIN MINIMM MINIMM CSS CIVIL SPEED INSTITCTION ME MOWALE POINT FROG CS CIVIL SPEED RESTRICTION ME MOWALE POINT FROG ME CENTER LINE DACT DIGITAL ALARM CONTRIC TRANSMITTER MA MORNAL APPROACH, NOT APPLICABLE DACT DIGITAL ALARM CONTRIC TRANSMITTER MA MORNAL APPROACH, NOT APPLICABLE DET DIGITAL ALARM CONTRIC TRANSMITTER MA MORNAL APPROACH, NOT APPLICABLE DET DIGITAL ALARM CONTRIC TRANSMITTER MA MORNAL APPROACH, NOT APPLICABLE MY VITAL MIGROPROCESSOR INTERLOCKING SYSTEM DET DIGITAL ALARM CONTRIC TRANSMITTER MA MORNAL APPROACH, NOT APPLICABLE MY VITAL MIGROPROCESSOR INTERLOCKING SYSTEM DET DIGITAL ALARM CONTRIC TRANSMITTER MA MORNAL APPROACH, NOT APPLICABLE MY VITAL MIGROPROCESSOR INTERLOCKING SYSTEM DET DIGITAL ALARM CONTRIC TRANSMITTER MA MORNAL APPROACH, NOT APPLICABLE MY VITAL MIGROPROCESSOR INTERLOCKING SYSTEM DET DIGITAL ALARM CONTRIC TRANSMITTER MA MORNAL APPROACH, NOT APPLICABLE MY VITAL MIGROPROCESSOR INTERLOCKING SYSTEM MY MASS TRANSCORMER TRANSFORMER TRANSFORMER	
CLPT CLEARNCE POINT LKK LOCK TPSS TRACTION POWER SUBSTATION CO CALL-ON, CUT-OUT LRV LIGHT RAIL VEHICLE TS TRAIN STOP, TANGENT TO SPIRAL CON COMMON COMMON TO TRAIN TO WARSIDE COMMUNICATIONS COMMON COMMON SIGNAL MAN POLCE CS CAB SIGNAL, CURVE TO SPIRAL CSSH COMMONICATION & SIGNAL, HANDHOLE MAX MAXIMAM ALLOWABLE SPEED TYP CSSH COMMONICATION & SIGNAL, HANDHOLE MAX MAXIMAM MAXIMAM CSSH COMMONICATION & SIGNAL, MAN POLCE MH MAN POLCE CSSH CIVIL SPEED RESTRICTION MPF MOWRELE POINT FROG CSSR CIVIL SPEED RESTRICTION MPF MOWRELE POINT FROG CENTER LINE MPH MILES PER HOURR WHIS VITAL MICROPROCESSOR INTERLOCKING SYSTEM MESS PER HOURR WHIS VITAL MICROPROCESSOR INTERLOCKING SYSTEM TRAINSTOMER TRAINSTOMER TRAINSTOMER TRAINSTOMER	
CO CALL-ON, CUT-OUT LEV LIGHT RAIL VEHICLE IS TRAIN STOP, TAMGENT TO SPIRAL. COM COMMON COMMUNICATIONS COM COMMUNICATIONS COMMUNICATION & SIGNAL, HADDHOLE AND COMMUNICATION & SIGNAL, HADDHOLE MAS MAXIMUM ALLOWABLE SPEED MAX MAXIMUM CSIGH COMMUNICATION & SIGNAL HADDHOLE MIN MANDLE CSIGH COMMUNICATION & SIGNAL MADHOLE MIN MANDLE CSIGH COMMUNICATION & SIGNAL MADHOLE MIN MINIMUM MINIMUM MINIMUM MINIMUM MILES PER HOUR MINIMUM M	
COM COMMONICATIONS MAG MAGNETIC TV TVISIED COMMUNICATIONS COMM COMMUNICATIONS MAG MAGNETIC TV TVISIED CS CAB SIGNAL, CURVE TO SPIRAL MAS MAXIMUM ALLOWABLE SPEED TYP TYPICAL CSH COMMANICATION & SIGNAL HANDHOLE MAX MAXIMUM CSH COMMANICATION & SIGNAL MANDHOLE MAY MAXIMUM CSH COMMANICATION & SIGNAL MANDHOLE MAY MAXIMUM CSH COMMANICATION & SIGNAL MANDHOLE MAY MIN MINIMUM CSR CIVIL SPEED LIMIT MIN MINIMUM CSR CIVIL SPEED RESTRICTION MPF MOVABLE POINT FROG V VOLTS, VITAL CCR CENTER LINE MPH MILES PER HOUR VMIS VITAL MICROPROCESSOR INTERLOCKING SYSTEM DACT DIGITAL ALARM CONTROL TRANSMITTER NA NORMAL APPROACH, NOT APPLICABLE DC DIRECT CURRENT NB NORTH BOUND NORTH BOUND DC DIRECT CURRENT NB NORTH BOUND NORTH BOUND DC DIRECT CURRENT NB NORTH BOUND SYSTEM NC NORTH BOUND NORTH BOUND NORTH BOUND NC NORTH BOUND SYSTEM NC NORTH BOUND SYSTEM TRANSFORMER TRANSFORMER	
COMM COMMUNICATIONS MAG MACNETIC TV TVISIED CS CAB SIGNAL, CURVE TO SPIRAL MAS MAXIMUM ALLOWABLE SPEED TYP CAL CSSH COMMUNICATION & SIGNAL HANDHOLE MAX MAXIMUM CSM COMMUNICATION & SIGNAL MANDOLE SHIP MANDOLE SHIP MANDOLE SHIP MANDOLE SIGNAL MANDOLE SIGNAL MANDOLE SHIP MANDOLE S	
CS CAB SIGNAL, CURVE TO SPIRAL MAS MAXIMUM ALLOWABLE SPEED TYP TYPICAL CSHH COMMUNICATION & SIGNAL MANHOLE MAX MAXIMUM MANHOLE CSH COMMUNICATION & SIGNAL MANHOLE MH MANHOLE CSH COMMUNICATION & SIGNAL MANHOLE MH MANHOLE CSL CIVIL SPEED INIT MIN MINIMUM CSR CIVIL SPEED RESTRICTION MPF MOVABLE POINT FROG Q. CENTER LINE DACT DIGITAL ALARM CONTROL TRANSMITTER NA NORMAL APPROACH, NOT APPLICABLE DC DIRECT CURRENT DC DIRECT CURRENT NB NORTH BOUND NORTH BOUND NORTH BOUND NORTH BOUND NORTH BOUND NOT NOT IN CONTRACT NOT IN CONTRACT NOT IN CONTRACT NOT IN CONTRACT XFMR TRANSFORMER	
CSH COMMUNICATION & SIGNAL HANDHOLE MAX MAXIMUM CSM COMMUNICATION & SIGNAL MANHOLE MH MANHOLE CSL CIVIL SPEED LIMIT MIN MINIMUM CSR CIVIL SPEED RESTRICTION MPF MOVABLE POINT FROG Q CENTER LINE DACT DIGITAL ALARM CONTROL TRANSMITTER NA NORMAL APPROACH, NOT APPLICABLE DC DIRECT CURRENT NB NORTH BOUND NORMAL APPROACH, NOT APPLICABLE NB NORTH BOUND NOT IN CONTRACT NIC NOT IN CONTRACT XFMR TRANSFORMER	
CSMH COMMUNICATION & SIGNAL MANHOLE MH MANHOLE CSL CIVIL SPEED LIMIT MIN MINIMUM CSR CIVIL SPEED RESTRICTION MPF MOVABLE POINT FROG VMC1S, VITAL Q CENTER LINE MPH MILES PER HOUR WPH WISH WITH MICROPROCESSOR INTERLOCKING SYSTEM DACT DIGITAL ALARM CONTROL TRANSMITTER NA NORMAL APPROACH, NOT APPLICABLE DC DIRECT CURRENT NB NORTH BOUND WEST BOUND DET DETECTOR DET DETECTOR DR DERAL NIC NOT IN CONTRACT NIC NOT IN CONTRACT NEW MITH MANSFORMER XFMR TRANSFORMER	
CSL CIVIL SPEED LIMIT MIN MINIMUM CSR CIVIL SPEED RESTRICTION MPF MOVABLE POINT FROG V VOLTS, VITAL Q CENTER LINE MPH MILES PER HOUR VMIS VITAL MICROPROCESSOR INTERLOCKING SYSTEM DACT DIGITAL ALARM CONTROL TRANSMITTER NA NORMAL APPROACH, NOT APPLICABLE DC DIRECT CURRENT NB NORTH BOUND WB WEST BOUND DET DETECTOR DR DETAIL DIS DATA DEMONSHISSION SYSTEM NIC NOT IN CONTRACT XEMR TRANSFORMER	
CSR CIVIL SPEED RESTRICTION MPF MOVABLE POINT FROG V VOLTS, VITAL Q. CENTER LINE MPH MILES PER HOUR VMIS VITAL MICROPROCESSOR INTERLOCKING SYSTEM DACT DIGITAL ALARM CONTROL TRANSMITTER NA NORMAL APPROACH, NOT APPLICABLE DC DIRECT CURRENT NB NORMAL APPROACH, NOT APPLICABLE DET DETECTOR DR DERALL DTS DATA TRANSMISSION SYSTEM NIC NOT IN CONTRACT XFMR TRANSFORMER	
DACT DIGITAL ALARM CONTROL TRANSMITTER NA NORMAL APPROACH, NOT APPLICABLE DC DIRECT CURRENT NB NORTH BOUND DET DETECTOR DR DERAIL DR DERAIL DR DETAIL TRANSMISSION SYSTEM MPH MILES PER HOUR NO NORMAL APPROACH, NOT APPLICABLE W/ WITH WB WEST BOUND XFMR TRANSFORMER	
DC DIRECT CURRENT NB NORTH BOUND WB WEST BOUND DET DETECTOR DR DERAIL DIS DATA TRANSMISSION SYSTEM	
DC DIRECT CURRENT NB NORTH BOUND WB WEST BOUND DET DETECTOR DR DERAIL DIS DATA TRANSPORMER NIC NOT IN CONTRACT XFMR TRANSFORMER	
DET DETECTOR DR DERAIL NIC NOT IN CONTRACT XFMR TRANSFORMER	
NIC NULL OCHHACI DES DATA TRANSFORMER XFMR TRANSFORMER	
DTS DATA TRANSFORMER XFMR TRANSFORMER	
NV NONV] I AL	
XING CROSSING	
E EXISTING, EMBEDDED OG OVERGRADE THE CHEST POWER OF THE CHEST	
EB EAST BOUND EBD EQUIVALENT BRAKING DISTANCE O & M OPERATIONS & MAINTENANCE	
FOC FIND OF CAR SIGNAL	
EOP END OF PLATFORM P POLE YL YARU LEAD	
EQ EQUATION PB, PBT PUSH BUTTON	
ESL, EL ELECTRIC SWITCH LOCK PC POINT OF CURVE	
PFTC POWER FREQUENCY TRACK CIRCUIT PITO POINT OF INTERSECTION OF TURNOUT	
FACP FIRE ALARM CONTROL PANEL PS POINT OF SWITCH	
FAK FIRE ALARM INDICATION PSL POSTED SPEED LIMIT	
FC FREQUENCY CONVERTER PSR PERMANENT SPEED RESTRICTION	
FL FLEET PT POINT OF TANGENT	
FO FIBER OPTIC	FINAL
	CONTRACT SHEET No. 004 OF 0021
DART PROJE	
THIS DOCUMENT IS RELEASED	UKAWN I
	I INF SECTION 1 = 3
Nochecter, N.Y., 14614	DESIGNED A. EDELMAN NICHMAN CONTROL INC.
E 05-10-13 FINAL STN AE AP JLB ROBERT D. PASCOE, P.E. 79901 IEI: 5553 (475-1440)	A. EDELMAN CHECKED A. PANAYOTATOS NORMAL CONTROL LINES
D 02-12-13 100% DESIGN STN AE AP JLB Stantec www.stonlec.com	A. EDELMAN CHECKED A. PANAVOTATOS IN CHARGE J.L. BURCH A. BERCH NORMAL CONTROL LINES ABBREVIATIONS SHEET
C 01-15-13 95% SUBMITTAL STN AE AP JLB BIDDING, OR PERMIT PURPOSES. C 01-15-13 95% SUBMITTAL STN AE AP JLB BIDDING, OR PERMIT PURPOSES. 1 I S NOT TO BE USED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES. 6324	A. EDELMAN CHECKED A. PANAYOTATOS IN CHARGE J.L. BURCH DATE 16 OCT 12

