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P0728-C700-DU-018WP04.RFC.R1

DU-018

Skanska Shimmick Herzog
A Joint Venture in Association with LAN | TY Lin

SSH JV

UPRR Industrial Lead Bridge Retaining Wall/Sound Wall Design Unit 018 – Work Package 04 RFC Revision 1

SVBX C700

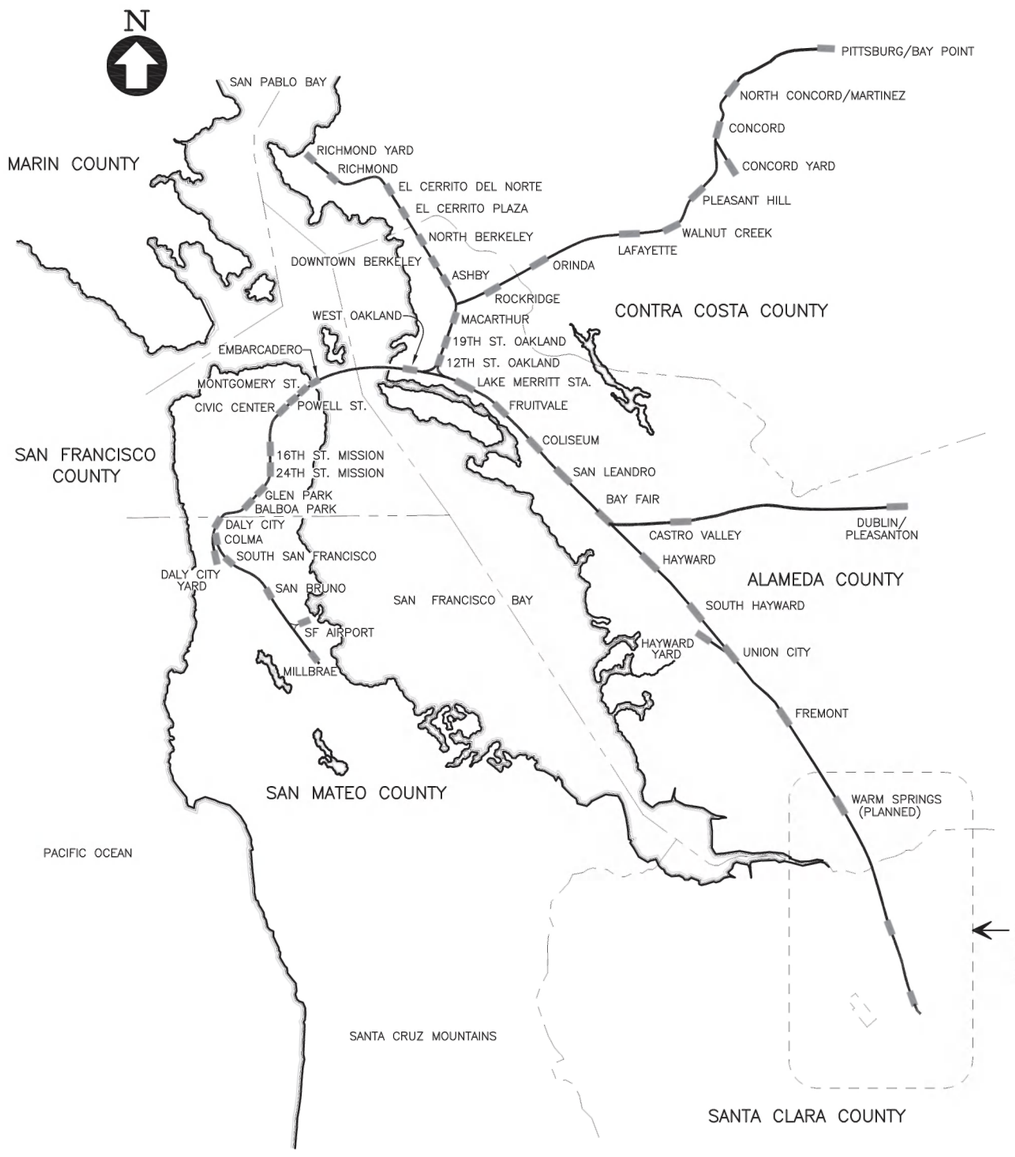
Friday, June 07, 2013

HALF SIZE
COPY

Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY

TY·LIN INTERNATIONAL
engineers | planners | scientists

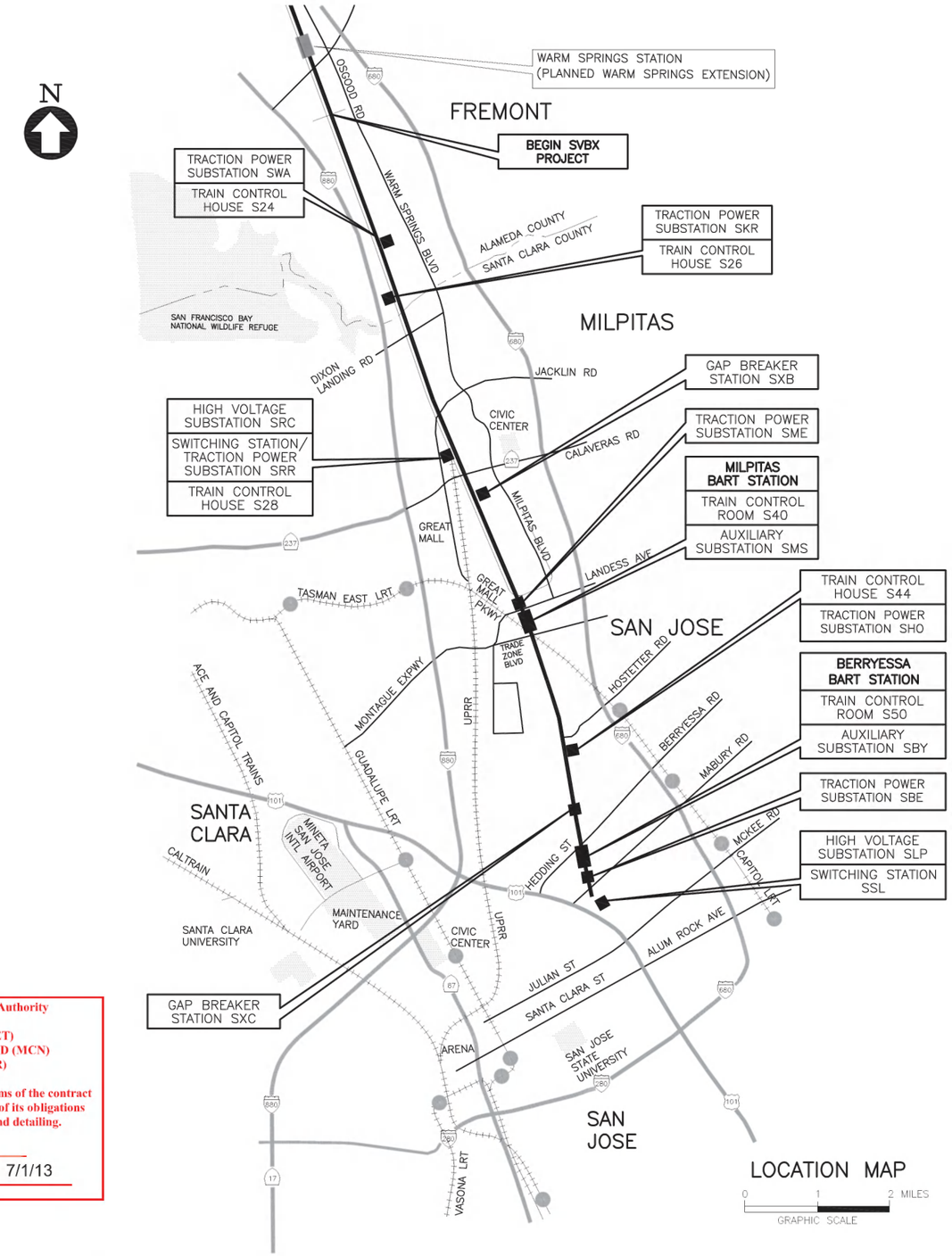
B1306-F578



KEY PLAN

2 1 0 2 4 6 8 10 MILES

GRAPHIC SCALE



LOCATION MAP

0 1 2 MILES

GRAPHIC SCALE

Santa Clara Valley Transportation Authority

✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

Any action shown above is subject to the terms of the contract and does not relieve the Contractor of any of its obligations under the contract, including design and detailing.

Contract No.: DB11002F

By: _____ Date: 7/1/13

REV	DATE	BY	SUB	APP	DESCRIPTION
0	20121102				READY FOR CONSTRUCTION

DESIGNED BY R. BANKS
DRAWN BY J. HUMBLE
CHECKED BY D. CLARY
IN CHARGE K. ANDERSON
DATE 20121102

PROFESSIONAL ENGINEER — JEFFREY ANDERSON — No. 53893 — Exp. 12/31/13 — CIVIL — STATE OF CALIFORNIA

SUBMITTED: Skanska Shimmick Herzog — 1436 California Circle, Milpitas, California 95035 — A Joint Venture; Lockwood, Andrews & Newnam, Inc. — A LEO A DALY COMPANY

APPROVED: Lockwood, Andrews & Newnam, Inc. — A LEO A DALY COMPANY; T·Y·LIN INTERNATIONAL

VTA BART SILICON VALLEY

BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS, AND SYSTEMS

TITLE SHEET

CADD FILENAME: C700-S-RR-X031.dwg
SIZE: D — SCALE: NOT TO SCALE
CONTRACT NO.: C700 — REV.: 0
AREA CODE: RR — SHEET NO.: X031 — PAGE NO.: 0001

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PAGE NO.	DWG NO.	REV NO.	TITLE

FRONT END

GENERAL

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0002	RR-X032	2	INDEX OF DRAWINGS
0003	RR-X230	0	GENERAL ABBREVIATIONS SHEET 1 OF 4
0004	RR-X231	0	GENERAL ABBREVIATIONS SHEET 2 OF 4
0005	RR-X232	0	GENERAL ABBREVIATIONS SHEET 3 OF 4
0006	RR-X233	0	GENERAL ABBREVIATIONS SHEET 4 OF 4

RETAINING WALL/SOUND WALL

PAGE NO.	DWG NO.	REV NO.	TITLE
0007	LS-S100	1	UPRR RETAINING WALL GENERAL PLAN NO. 1 SHEET 1 OF 8
0008	LS-S101	1	UPRR RETAINING WALL GENERAL PLAN NO. 2 SHEET 2 OF 8
0009	LS-S102	1	UPRR RETAINING WALL GENERAL PLAN NO. 3 SHEET 3 OF 8
0010	LS-S103	1	UPRR RETAINING WALL GENERAL PLAN NO. 4 SHEET 4 OF 8
0011	LS-S104	1	UPRR RETAINING WALL GENERAL PLAN NO. 5 SHEET 5 OF 8
0012	LS-S105	1	UPRR RETAINING WALL GENERAL PLAN NO. 6 SHEET 6 OF 8
0013	LS-S106	1	UPRR RETAINING WALL GENERAL PLAN NO. 7 SHEET 7 OF 8
0014	LS-S107	2	UPRR RETAINING WALL GENERAL PLAN NO. 8 SHEET 8 OF 8
0015	LS-S110	2	UPRR RETAINING WALL SOUNDWALL DETAILS
0016	LS-S220	2	UPRR SOUND WALL GENERAL PLAN
0017	LS-S221	2	UPRR SOUND WALL SOUND WALL DETAILS
0018	L5-S285A	0	UPRR RETAINING WALL/SOUND WALLS LOG OF TEST BORINGS 1 OF 6
0019	L5-S286A	0	UPRR RETAINING WALL/SOUND WALLS LOG OF TEST BORINGS 2 OF 6
0020	L5-S287A	0	UPRR RETAINING WALL/SOUND WALLS LOG OF TEST BORINGS 3 OF 6
0021	L5-S288A	0	UPRR RETAINING WALL/SOUND WALLS LOG OF TEST BORINGS 4 OF 6
0022	L5-S289A	0	UPRR RETAINING WALL/SOUND WALLS LOG OF TEST BORINGS 5 OF 6
0023	L5-S290A	0	UPRR RETAINING WALL/SOUND WALLS LOG OF TEST BORINGS 6 OF 6
0024	L5-S291A	0	TRACKWAY LOG OF TEST BORINGS, SHEET 1 OF 17
0025	L5-S292A	0	TRACKWAY LOG OF TEST BORINGS, SHEET 2 OF 17
0026	L5-S293A	0	TRACKWAY LOG OF TEST BORINGS, SHEET 3 OF 17
0027	L5-S294A	0	TRACKWAY LOG OF TEST BORINGS, SHEET 4 OF 17
0028	L5-S295A	0	TRACKWAY LOG OF TEST BORINGS, SHEET 5 OF 17
0029	L5-S296A	0	TRACKWAY LOG OF TEST BORINGS, SHEET 6 OF 17
0030	L5-S297A	0	TRACKWAY LOG OF TEST BORINGS, SHEET 7 OF 17
0031	L5-S298A	0	TRACKWAY LOG OF TEST BORINGS, SHEET 8 OF 17

Santa Clara Valley Transportation Authority

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By: _____ Date: 7/1/13

REV	DATE	BY	SUB	APP	DESCRIPTION
2	20130416				RFC REV 1
1	20130114				AMENDMENT 01 TO RFC
0	20121102				READY FOR CONSTRUCTION

DESIGNED BY R. BANKS
DRAWN BY R. LOPEZ
CHECKED BY D. CLARY
IN CHARGE K. ANDERSON
DATE 20130416

REGISTERED PROFESSIONAL ENGINEER ANDY FIELDS No. 53893 Exp. 12/31/13 CIVIL STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle
Milpitas, California 95035
A Joint Venture

SUBMITTED Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY

APPROVED Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY / T·Y·LIN INTERNATIONAL

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS, AND SYSTEMS
DESIGN UNIT 018 – WORK PACKAGE 04
RETAINING WALL/SOUND WALL
INDEX OF DRAWINGS

CADD FILENAME C700-S-RR-X032.dwg
SIZE D | SCALE NOT TO SCALE
CONTRACT NO. C700 | REV. 2
AREA CODE RR | SHEET NO. X032 | PAGE NO. 0002

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AGENCIES, ORGANIZATIONS ETC.

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ACFC & WCD	ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
ACI	AMERICAN CONCRETE INSTITUTE
ACWD	ALAMEDA COUNTY WATER DISTRICT
AGA	AMERICAN GAS ASSOCIATION
AIR	AIR PRODUCTS
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APCO	ASSOCIATED PUBLIC SERVICE COMMUNICATIONS OFFICERS
API	AMERICAN PETROLEUM INSTITUTE
AREMA	AMERICAN RAILWAY ENGINEERING AND MAINTENCE-OF-WAY ASSOCIATION
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AT&T	AMERICAN TELEPHONE & TELEGRAPH
AWS	AMERICAN WELDING SOCIETY
BART	SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT
BNSF	BURLINGTON NORTHERN SANTA FE
B OF A	BANK OF AMERICA
CALTRANS	CALIFORNIA DEPARTMENT OF TRANSPORTATION
CGS	CALIFORNIA GEOLOGICAL SURVEY
CHEV	CHEVRON CORPORATION
COF	CITY OF FREMONT
COM	CITY OF MILPITAS
COMCAST	COMCAST CABLE COMMUNICATIONS
CPUC	CALIFORNIA PUBLIC UTILITY COMMISSION
CPUC GO	CALIFORNIA PUBLIC UTILITY COMMISSION GENERAL ORDER
CSC	CITY OF SANTA CLARA
CSJ	CITY OF SAN JOSE
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
FDX	FEDERAL EXPRESS
FGCS	FEDERAL GEODETIC CONTROL SUBCOMMITTEE
ICG	ICG COMMUNICATIONS, INC.
JPB	PENINSULA CORRIDOR JOINT POWERS BOARD
KND, KM	KINDER MORGAN, INC.
L3, LVL3	LEVEL 3 COMMUNICATIONS
MCI	MCI TELECOMMUNICATIONS
MCWD	MILPITAS CITY WATER DISTRICT
MFN	METROMEDIA FIBER NETWORK, INC.
MFS	METROPOLITAN FIBER SYSTEMS
MSD	MILPITAS SANITARY DISTRICT
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION AGENCY
NOAA	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
OWT	ONE WORLD TELECOMMUNICATIONS
PG&E	PACIFIC GAS & ELECTRIC COMPANY
QWEST	QWEST COMMUNICATIONS, INC.
SBC	SBC COMMUNICATIONS, INC. (NOW AT&T)
SBWR	SOUTH BAY WATER RECYCLING (CSJ)
SCC	SANTA CLARA COUNTY
SCCTA	SANTA CLARA COUNTY TRANSPORTATION AGENCY
SCSD	SANTA CLARA SEWER DISTRICT
SCVWD	SANTA CLARA VALLEY WATER DISTRICT
S.F.	SAN FRANCISCO
SFWD	SAN FRANCISCO WATER DEPARTMENT
SJSU	SAN JOSE STATE UNIVERSITY
SJWC	SAN JOSE WATER COMPANY
SPR	SPRINT NEXTEL CORPORATION
SPTC	SOUTHERN PACIFIC TRANSPORTATION COMPANY
SVBX	BART SILICON VALLEY BERRYESSA EXTENSION PROJECT
SVE	SILICON VALLEY ELECTRIC
SVP	SILICON VALLEY POWER
SVRT	SILICON VALLEY RAPID TRANSIT PROJECT
TBE	TAMPA BAY ENGINEERING
TCI	TCI CABLE VISION OF CALIFORNIA
WIL	WILLIAM TEL. COMMUNICATIONS
UL	UNDERWRITERS LABORATORY
UPRR	UNION PACIFIC RAILROAD COMPANY
USC&GS	UNITED STATES COAST AND GEODETIC SURVEY
USD	UNION SANITARY DISTRICT
USPS	UNITED STATES POSTAL SERVICE
VRZ	VERIZON COMMUNICATIONS
VTA, SCVTA	SANTA CLARA VALLEY TRANSPORTATION AUTHORITY
XO	XO COMMUNICATIONS

– SPECIAL CHARACTERS –

℄	CENTER LINE
&	AND
ø	DIAMETER
°F	TEMPURATURE – FARENHEIT SCALE
@	AT (ITEM SPACINGS ONLY, IE #8@12")
L	ANGLE (MEMBER SIZE IE L4X4X5/16)
01,02	VITAL REPEATER
2/C	TWO-CONDUCTOR CABLE
3/C	THREE-CONDUCTOR CABLE

– A –

A	AMPERE, AMBER
AFF	ABOVE FINISHED FLOOR
A/D	ANALOG-TO-DIGITAL CONVERTER
AATC	ADVANCED AUTOMATIC TRAIN CONTROL
AAV	AUTOMATIC AIR VENT
AB	AGGREGATE BASE, ANCHOR BOLT, ARRESTOR BLOCK
ABM	AIR-BLOWN MORTAR
ABN	ABANDON(ED)
ABS	ACRYLONITRILE-BUTADIENE-STYRENE, AUTOMATIC BLOCK SIGNAL
ABT	ANCHOR BOLT
ABUT	ABUTMENT
AC	AIR COMPRESSOR, AIR CURTAIN, AIR CONDITIONING, ASPHALT CONCRETE, ALTERNATING CURRENT
ACB	AIR CIRCUIT BREAKER
ACCP	AIR CONDITIONING CONTROL PANEL
ACD	ACCESS DOOR
ACI	AUTOMATIC CALLER IDENTIFICATION
ACK	ACKNOWLEDGE
ACO	ALTERNATING CURRENT OUTPUT
ACOUS	ACOUSTICAL
ACP	ASBESTOS CEMENT PIPE, AC PANEL, AUXILIARY CONTROL PANEL,
ACR	AUXILIARY COMM ROOM
ACS	ACCESS CONTROL SYSTEM
ACTR	ACOUSTICAL TREATMENT
ACU	AIR CONDITIONING UNIT
ACWP	ASBESTOS CEMENT WATER PIPE
AD	AREA DRAIN, ADDENDUM
ADD'L	ADDITIONAL
ADJ	ADJACENT, ADJUSTABLE
ADM	ADD/DROP MULTIPLEXER
AEI	AUTOMATIC ELECTRONIC IDENTIFICATION (SYSTEM)
AF	AIR FILTER, AUDIO FREQUENCY, ANTI-FREEZE REEL
AFC	AUTOMATIC FARE COLLECTION
AFF	ABOVE FINISH FLOOR
AFM	ADD FARE MACHINE
AG	ABOVE GROUND
AH, AHD	AHEAD
AHU	AIR HANDLING UNIT
AI	ADDITIONAL INFO, ANALOG INPUT
AL	ALARM
ALIGN	ALIGNMENT
ALUM	ALUMINUM
ALCU	AUTOMATIC LEVEL CONTROL UNIT
ALT	ALTERNATE, ALTERNATIVE
AM	AMMETER, AMPLITUDE MODULATION
AMB	AMBIENT
AMP	AMPLIFIER
ANCH	ANCHOR
ANN	ANNUNCIATOR
ANS	AMBIENT NOISE SENSOR
ANT	ANTENNA
AO	ANALOG OUTPUT
AOV	ANGLE OF VIEW
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
APN	ASSESSOR PARCEL NUMBER
APP	APPROACH
APPROX	APPROXIMATE
APT	ACOUSTICAL PANEL CEILING
ARA	AREA OF RESCUE ASSISTANCE
ARCH	ARCHITECTURAL
ARS	ACCELERATION RESPONSE SPECTRUM
ARV	AIR RELEASE VALVE
AS	AGGREGATE SUBBASE, AMMETER SWITCH
ASPH	ASPHALT
ASR	APPROACH LOCKING STICK RELAY, AUTOMATIC SPRINKLER RISER
AT	AMMETER TRANSDUCER
ATC	AUTOMATIC TRAIN CONTROL
ATO	AUTOMATIC TRAIN OPERATION
ATP	AUTOMATIC TRAIN PROTECTION
ATR	AIR TEMPERATURE RISE
ATS	AUTOMATIC TRANSFER SWITCH
ATTS	AUXILIARY TRAIN TRACKING SYSTEM
AUX	AUXILIARY
AVE	AVENUE
AVG	AVERAGE
AVI	AUTOMATIC VEHICLE IDENTIFICATION
AVV	AIR VACUUM VALVE
AWG	AMERICAN WIRE GAUGE

– B –

B	DC VOLTAGE – POSITIVE
B, BOT	BOTTOM
B/O	BOTTOM OF
B12	POS. 12VDC
B28	POS. 28VDC
BAT	BATTERY
BB	BACK BONE, BEGINNING OF BRIDGE
BBC	BILL-TO-BILL CHANGER
BC	BARE COPPER, BOTTOM OF CURB, BEGIN CURVE
BCM	BILL CHANGE MACHINE
BCR	BEGIN CURB RETURN
BCU	BARE COPPER
BD	BALANCING DAMPER, BY-PASS DAMPER, BOARD
BDA	BI-DIRECTIONAL AMPLIFIER
BDD	BACKDRAFT DAMPER
BER	BIT ERROR RATE
BFD	BLACK ROLL FIBER DUCT
BFP	BACK FLOW PREVENTER
BFS	BART FACILITY STANDARD
BGS	BELOW GROUND SURFACE
BHP	BRAKE HORSE POWER
BIT	BINARY DIGIT
BITUM	BITUMINOUS
BK	BACK
BKF	BACKFILL
BKR	BREAKER
BLDG	BUILDING
BLKG	BLOCKING
BLKS	BLOCKS
BLS	BLUE LIGHT STATION, BLUE LIGHT SWITCH STATION
BLVD	BOULEVARD
BM	BEAM, BENCHMARK
BO	BLOW OFF
BOC	BOTTOM OF CONCRETE
BOD	BOTTOM OF DUCT
BORI	BIDIRECTIONAL OPTICAL RF INTERFACE
BOS	BOTTOM OF SLAB
BOW	BACK OF WALK
BP	BART POLICE
BPS	BITS PER SECOND
BR	BRIDGE
BRG(S)	BEARING(S)
BRKR	BREAKER
BRR	BROKEN RAIL RELAY
BS	BOTTOM OF SLOPE
BSI	BAYSTATE SUBSURFACE INVESTIGATION
BSS	BUS SIGNAL SYSTEM
BTM	BUS TRANSFER MACHINE
BTS	BASE TRANSCEIVER STATION
BTS	BASE TRANSCEIVER STATION
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BV	BUTTERFLY VALVE
BVC	BEGIN VERTICAL CURVE
BW	BARBED WIRE, BACK OF WALK, BANDWIDTH
BX	AC VOLTAGE
BX12	POSITIVE 12V AC

– C –

C	CELSIUS, CONDUIT, COIL, COMBINER, CONDUCTOR, COVER
C&G	CURB AND GUTTER
C/B	COVER BOARD
C/R	CONTACT RAIL
C/W	COMPLETE WITH
CA	COMPRESSED AIR, COMPRESSED AIR REEL, CABLE
CAB	CABINET, TRAIN SPEED SIGNAL
CAL	CALIPER
CAP	CAPACITOR, CAPACITY, CORRUGATED ALUMINUM PIPE
CAT	CATEGORY (AS IN CAT 5 CABLE)
CATV, CTV	CABLE TELEVISION
CB	CATCH BASIN, CIRCUIT BREAKER, CONVERTER BLOCK
CC	CENTRAL CONTROL/CONTROLLER, COOLING COIL, CENTER OF CIRCULAR CURVE
C-C	CENTER TO CENTER
CCF	CENTRAL CONTROL FACILITY (REMOTELY LOCATED)
CCN	COMMUNICATIONS CABLE NETWORK
CCP	CENTRAL CONTROL PANEL
CCS	CENTRAL CONTROL SYSTEM
CCS83	CALIFORNIA COORDINATE SYSTEM 1983 (RELATES TO NAD83)
CCTL	CORROSION CONTROL TEST LEADS
CCTV	CLOSED CIRCUIT TV CAMERA, CLOSED CIRCUIT TELEVISION
CD	CONDENSATE DRAIN, CONCRETE DUCT
CDB	CENTRAL DISPLAY BOARD
CEC	CALIFORNIA ELECTRICAL CODE
CEG	CEILING EXHAUST GRILLE
CEM	CEMENT
CER	CERAMIC
CF	CUBIC FOOT/FEET, CONTROL RELAY, FORWARD (SUPPLY)
CF/DA	CALL FORWARD/DON'T ANSWER (TELEPHONE FEATURE)
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFT	CONTACT FIBER TRANSCEIVER
CG	CENTER OF GRAVITY, CEILING GRILLE, CHASSIS GREASE REEL
CH	CHANNEL
CH BK	CHANNEL BANK
CHFU	CONTROL FUSE – HV SIDE
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CI	CAST IRON
CIC	COMMUNICATIONS INTERFACE CABINET
CIP	CAST IRON PIPE, CAST IN PLACE
CJ	CONSTRUCTION JOINT, CONTROL JOINT
CKT	CIRCUIT
CL	CEMENT LINED, CENTERLINE, CHAIN LINK
CL&C	CEMENT LINED AND COATED
CLF	CHAIN LINK FENCE
CLG	CEILING
CLKG	CAULKING
CLO	CLOSET
CLR	CLEAR, CLEARANCE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CND	CONDUIT
CNTL	CONTROL
CNTR	COUNTER
CO	CLEANOUT, COUNTY, CROSSOVER, CONVENIENCE OUTLET, CARBON MONOXIDE SENSOR, CONDUIT ONLY
CO1	SUPERVISORY CENTRAL CONTROL BOARD
COAX	COAXIAL CABLE
COL(S)	COLUMN(S)
COMM	COMMUNICATION(S)
COMP	COMPUTER, COMPOSITE
COMPT	COMPARTMENT
CONC	CONCRETE
COND	CONDENSATE, CONDENSING, CONDITIONED
CONN	CONNECT, CONNECTION
CONST	CONSTRUCT, CONSTRUCTION
CONT	CONTINUOUS, CONTINUATION
CONV	CONVENTIONAL
COORD	COORDINATE
CORP	CORPORATION
CORR	CORRIDOR
CORS	CONTINUOUSLY OPERATING REFERENCE STATIONS
CP	CONCRETE PIPE, CONTROL POINT, COMPLETE PENETRATION, CROSS PASSAGE, CONTROL PANEL
CPB	CORRIDOR PROTECTION BARRIER
CPC	CALIFORNIA PLUMBING CODE
CPL	CONDUIT, PLASTIC
CPLG	COUPLING
CPP	CORRUGATED PLASTIC PIPE
CPT	CARPET
CPU	CENTRAL PROCESSING UNIT
CPU/PD	CENTRAL PROCESSOR UNIT/POLYNOMIAL DIVIDER
CR	CARD READER, CROWN, CONTACT RAIL
CRD	CEILING RETURN DIFFUSER
CRG	CEILING RETURN GRILLE
CRK	CREEK
CRT	CATHODE RAY TUBE
CS	CONTACT SWITCH, CONTROL SWITCH, POINT OF CHANGE FROM CIRCULAR CURVE TO SPIRAL
CSA	CONSTRUCTION STAGING AREA
CSAR	CAB STEERING RELAY A
CSB	CUSTOMER SERVICE BUILDING
CSBR	CAB STEERING RELAY B
CSD	CEILING SUPPLY DIFFUSER
CSEX	CODE SYSTEM EMULATOR, EXTENDED
CSP	CORRUGATED STEEL PIPE
CSR	CAB STEERING RELAY, CEILING SUPPLY REGISTER
CSU	CHANNEL SERVICE UNIT
CT	CERAMIC TILE, CURRENT TRANSFORMER, COURTESY TELEPHONE, COURT
CTC	CENTRALIZED TRAIN CONTROL, COMMUNICATIONS TERMINAL CABINET
CTCSS	CONTINUOUS TONE CODED SQUELCH SYSTEM
CTR	CENTER, COMMUNICATIONS TERMINATION ROOM
CTSK	COUNTERSUNK
CU	CONDENSING UNIT, COPPER
CULV	CULVERT
CV	CHECK VALVE, CURVE
CW	COLD WATER, CREOSOTED WOOD
CWR	CONTINUOUS WELDED RAIL
CX	CURRENT SENSOR
CXFU	CONTROL FUSE – LV SIDE
CY	CUBIC YARD(S)

– D –

D	DEPTH, DRAIN, DRAINAGE
D/A	DIGITAL-TO-ANALOG CONVERTER
D/F	DISTRICT FURNISHED
D/L	DOWN LINK
DA	DISTRIBUTION AMPLIFIER
DACS	DIGITAL ACCESS AND CROSS CONNECT
DAS	DATA ACQUISITION SYSTEM
DB	DRY BULB, DUCTBANK
dB	DECIBEL
DBC	DIRECT BURIED CABLE
DBL	DOUBLE
DBO	DOUBLE BREAK OUTPUT
DC	DIRECT CURRENT, DEGREE OF CURVE
DCC	DATA COMMUNICATIONS CHANNEL
DCN	DATA COMMUNICATIONS NETWORK
DCP	DAMPER CONTROL PANEL
DD	DOWN DRAIN
DDCVA	DOUBLE DETECTOR CHECK VALVE
DDS	DYNAMIC (TRAIN) DESTINATION SIGN
DEG	DUCT EXHAUST GRILLE, DEGREE
DEL	DELINEATORS, DELETE
DEPT	DEPARTMENT
DET	DETAIL, DETOUR, DETECTOR
DF	DIRECT FIXATION, DRINKING FOUNTAIN, DEGREES FAHENHEIT
DFE	DISTRICT FURNISHED EQUIPMENT
DFM	DISTRICT FURNISHED MATERIAL, DISTRIBUTION FEEDER MAIN
DG	DOOR GRILLE
DGAC	DENSE GRADED ASPHALT CONCRETE
DI	DUCTILE IRON, DIGITAL INPUT, DRAINAGE INLET, DIRECT INPUT
DIA	DIAMETER
DIAG	DIAGONAL
DID	DIRECT INWARD DIALING
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DIPIS	DOOR INTERLOCK PROTECTION ISOLATION SCHEME
DIR	DIRECT, DIRECTION
DISP	DISPENSER
DIST	DISTRIBUTION, DISTRICT, DISTANCE
DL	DEAD LOAD, DOOR LOUVER
DMH	DRAINAGE MANHOLE
DMOD	DEMODULATE
DMP	DESIGNATED MATCHING PRODUCT
DN	DOWN
DO	DIGITAL OUTPUT, DOOR OPENING, DITTO
DOD	DIRECT OUTWARD DIALING,
DP	DIFFERENTIAL PRESSURE, DISTRIBUTION PANEL
DR	DOOR, DRIVE
DRWY	DRIVEWAY
DS	DISCONNECT SWITCH, DOWNSPOUT, DESK SET UNIT
DS0	DIGITAL SIGNAL (LEVEL 0)
DS1	DIGITAL SIGNAL (LEVEL 1)
DSM	DEEP SOIL MIX
DSS	DESTINATION SIGN SYSTEM
DSU	DESTINATION SIGN UNIT, DATA SERVICE UNIT
DSX	DIGITAL CROSSCONNECT
DTMF	DUAL TONE MULTIFREQUENCY
DTR	DETOUR
DTS	DATA TRANSMISSION SYSTEM, DIGITAL TRANSMISSION SYSTEM
DTSJ	DOWNTOWN SAN JOSE
DW	DOMESTIC WATER
DWG(S)	DRAWING(S)
DX	DIRECT EXPANSION

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By: [signature] CSSP Date: 7/1/13

NOTES:

1. ABBREVIATIONS SHOULD ONLY BE USED WHEN SPACE LIMITATIONS ON THE DRAWING DOES NOT ALLOW FOR THE FULL TEXT.
2. SOME ABBREVIATIONS ARE CONSIDERED COMMON OR WIDESPREAD AND CAN BE USED UNIVERSALLY. I.E., TYP FOR TYPICAL; UNO FOR UNLESS NOTED OTHERWISE.
3. ABBREVIATIONS WITH MULTIPLE DEFINITIONS SHOULD BE READ IN RELATION TO THE ITEM, AND DISCIPLINE OF THE DRAWING ON WHICH IT OCCURS.
4. ABBREVIATIONS MAY BE COMBINED WHEN NEEDED I.E. DIP-CL (DUCTILE IRON PIPE, CEMENT LINED), NS&FS (NEAR SIDE AND FAR SIDE)

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REGISTERED PROFESSIONAL ENGINEER — ANDREW J. FOX — No. 53893 — Exp. 12/31/13 — CIVIL — STATE OF CALIFORNIA

Skanska Shimmick Herzog — 1436 California Circle, Milpitas, California 95035 — A Joint Venture

SUBMITTED: Lockwood, Andrews & Newnam, Inc. — A LEO A DALY COMPANY — [signature]

APPROVED: Lockwood, Andrews & Newnam, Inc. — A LEO A DALY COMPANY — T·Y·LIN INTERNATIONAL — [signature]

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS, AND SYSTEMS

GENERAL ABBREVIATIONS
SHEET 1 OF 4

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– E –

E	EAST, SUPERELEVATION IN INCHES
E&M	EAR AND MOUTH
Ea	ACTUAL SUPERELEVATION
EA	EACH, EXHAUST AIR
EAD	EXHAUST AIR DAMPER
EAT	ENTERING AIR TEMPERATURE
EB	EASTBOUND, END OF BRIDGE, EAST BANK, ELECTRICAL BOX
EBH	ELECTRICAL BASEBOARD HEATER
EBO	EMERGENCY BARRIER OVERRIDE
EBP	EMERGENCY BACKUP PANEL
EC	END CURVE
ECB	EMERGENCY CALL BOX
ECC	ELECTRIC CABINET CONVECTOR
ECH	ELECTRIC CABINET HEATER
ECR	END CURB RETURN
EDACS	ENHANCED DIGITAL ACCESS COMMUNICATIONS SYSTEM
EDF	ELECTRIC DRINKING FOUNTAIN
EE	EACH END, EMERGENCY EXIT
EERMS	ELEVATOR AND ESCALATOR REMOTE MONITORING SYSTEM
EF	EACH FACE, EXHAUST FAN
EFF	EFFICIENCY
EG	EXISTING GROUND
EHC	ELECTRIC HEATING COIL
EHH	ELECTRICAL HANDHOLE
EIO	ETHERNET INPUT OUTPUT
EIP	ELEVATOR INTERFACE PANEL
EJ	EXPANSION JOINT
EJEC	EJECTION / EJECTOR
EL	ELEVATION
ELB	ELBOW
ELEC	ELECTRIC, ELECTRICAL
ELEV	ELEVATOR
E'LY	EASTERLY
EM, EMER	EMERGENCY, EMERGENCY MODE, EMERGENCY COMMAND
EM TRIP	EMERGENCY TRIP
EMB	EMBANKMENT
EMBED	EMBEDMENT
EMCC	EMERGENCY MOTOR CONTROL CENTER
EMH	ELECTRICAL MANHOLE
EMI	ELECTROMAGNETIC INTERFERENCE
EMP	EMERGENCY MANAGEMENT PANEL
ENC	ENCASED
ENCL	ENCLOSURE
ENGR	ENGINEER
ENT	ENTRANCE
EOB	END OF BRIDGE
EOL	END OF LINE
EOP	END OF PLATFORM
EOS	ELECTRIC OPERATING SWITCH
EOT	END OF TRACK
EP	EDGE OF PAVEMENT
EPB	ELECTRICAL PULL BOX, EMPTY PULL BOX
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EPD	EXTERNAL PRESSURE DROP
EPOCH DATE	A SPECIFIC INSTANT IN TIME THE DATE, EXPRESSED IN DECIMAL YEARS
EPR	EXIT PROHIBIT RELAY, ETHYLENE PROPYLENE RUBBER INSULATED CABLE
EQ	EQUAL, EQUATION
EQUIP	EQUIPMENT
ER	EXHAUST REGISTER
ES	EDGE OF SHOULDER, END SYSTEM, EMERGENCY SHOWER
ESC	EMERGENCY SUPPLY CLOSET, ESCALATOR, ESCAPE
ESMT	EASEMENT
ESP	EXTERNAL STATIC PRESSURE
ESS	ESSENTIAL
EST	ESTIMATE
ET	EMERGENCY TELEPHONE, EMERGENCY TRIP, EXPANSION TANK
ETC	ETCETERA
ETM	EMERGENCY TRIP MODULE
ETP	EMERGENCY TRIP PANEL
ETS	ELECTROLYSIS TEST STATION, EMERGENCY TRIP STATION
ETTS	EMERGENCY TRANSFER TRIP STATION
ETW	EDGE OF TRAVELED WAY
EUH	ELECTRIC UNIT HEATER
EV	ELECTRICAL VAULT
EVC	END VERTICAL CURVE
EW	EACH WAY, EMERGENCY EYE WASH
EWL	END WALL
EWT	ENTERING WATER TEMPERATURE
EXC	EXCAVATION
EXH	EXHAUST
(E), EX, EXIST	EXISTING
EXP	EXPANSION
EXP JT	EXPANSION JOINT
EXPO	EXPOSED
EXPWY	EXPRESSWAY
EXT	EXTERIOR, EXTENDED
EXTR	EXTRACTOR

– F –

F	FARENHEIT, FUSE, FUEL
FA	FIRE ALARM, FREE AREA
FACP	FIRE ALARM CONTROL PANEL
FAFM	FUTURE ADD FARE MACHINE
FAI	FRESH AIR INTAKE
FAWS	FIRE ALARM WORK STATION
FB	FLAT BAR, FACE OF BUILDING
FC	FAN COIL, FLEXIBLE CONNECTION, FORWARD CURVE, FACE OF CURB
f'c	SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE
f'ci	COMPRESSIVE STRENGTH OF CONCRETE AT TIME OF INITIAL PRESTRESS
FCD	FLOW CONTROL DEVICE
FCM	FRACTURE CRITICAL MEMBER
FCO	FLOOR CLEAN OUT
FCP	FIRE CONTROL PANEL
FD	FLOOR DRAIN, FRENCH DRAIN, FAN DAMPER, FIBER DUCT
FDC	FIRE DEPARTMENT CONNECTION
FDCP	FAN DAMPER CONTROL PANEL
FDCR	FAN DAMPER CLOSE RELAY
FDDI	FIBER DISTRIBUTED DATA INTERFACE
FDN	FOUNDATION, FIRE LINE GOING DOWN
FDP	FIBER DISTRIBUTION PANEL, FIRE DAMPER WITH ACCESS PANEL
FDS	FAN DAMPER SECTION
FDSC	FAN DAMPER SECTION CLOSE RELAY
FDSO	FAN DAMPER SECTION OPEN RELAY
FE	FIELD EQUIPMENT
FE(C)	FIRE EXTINGUISHER (CABINET)
FECR	FLASHING LAMP CHECK RELAY
FF	FILTER FABRIC
FF(E)	FINISH FLOOR (ELEVATION)
FG	FINISHED GRADE, FARE GATE
FGA	FARE GATE ARRAY
FGC	FARE GATE CABINET
FH	FIRE HYDRANT, FLAT HEAD
FHC	FIRE HOSE CABINET
FHV	FIRE HOSE VALVE
FIN	FINISHED
FIT	FURNISH INSTALL TERMINATE, FURNISH INSTALL TEST
FIV	FIRE ISOLATION VALVE
FL	FLOW LINE
FLA	FULL LOAD AMPERES
FLC	FULL LOAD CURRENT
FLEX	FLEXIBLE
FLR	FLOOR, FLASHING LAMP RELAY
FM	FACTORY MUTUAL, FORCED MAIN, FREQUENCY MODULATION
FMT	FAN MOTOR TROUBLE
FND	FOUND
FO	FIBER OPTIC CABLE
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY, FIBER OPTIC MODEM
FOS	FACE OF STUDS
FOT	FIBER OPTIC TERMINAL
FO–TN	FIBER OPTIC TUNNEL INTERFACE
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FPRF	FIREPROOF
FPS	FEET PER SECOND
FR	FRAME
FRE	FAN RUNNING (EXHAUST)
FRG	FLOOR RETURN GRILLE
FR GRD	FRAME GROUND
FRP	FIBER REINFORCED POLYMER
FRRC	FIRE–RADIO REMOTE CONTROL UNIT
FRS	FAN RUNNING (SUPPLY)
FS	FAR SIDE, FIRE SERVICE, FULL SIZE, FLOOR SINK, FLOW SWITCH, FINISHED SURFACE
FSD	COMBINATION FIRE SMOKE DETECTOR
FSK	FREQUENCY SHIFT KEYING
FSV	FIRE SPRINKLER VALVE
FT	FOOT (FEET), FIRE TELEPHONE COMPUTERFAULT TOLERANT COMPUTER
FTG	FOOTING
FTLT	FREIGHT LIFT
FTVM	FUTURE TICKET VENDING MACHINE
FU	FIXTURE UNIT
FUELL	FUEL LINE
FURR	FURRING
FUT	FUTURE
FV	FLOW VENTURI, FACE VELOCITY
FW	FACE OF WALL, FIRE WATER
FWD	FORWARD
FWY	FREEWAY
FXO	FOREIGN EXCHANGE, OFFICE END
FXS	FOREIGN EXCHANGE. STATION END

– G –

g	ACCELERATION OF GRAVITY
G	GAS LINE, GENERATOR SET, GREEN NATURAL GAS
G/L	GROUND LINE
GA	GAGE, GAUGE, GATE
GAL	GALLON(S)
GALV	GALVANIZED
Gb	GIGABIT
GB	GROUND BUS, GYPSUM BOARD, GRADE BREAK, GRAB BAR, GAP BREAKER
GBS	GAP BREAKER STATION, GROUND BREAKER STATION
Gbs	GIGABITS PER SECOND
GCL	GRADING CONTROL LINE
GCT	GROUNDED CURRENT TRANSFORMER
GDR	GUARD RAILING
GE	GREEN ASPECT LAMP, GROOVED END
GFCI	GROUND FAULT CURRENT INTERRUPTING
GFI	GROUND FAULT INTERRUPTOR
GFRC	GLASS FIBER REINFORCED CONCRETE
GG	GATE VALVE, GROUND GRID
GHH	GAS HANDHOLE
GHz	GIGAHERTZ
GIGA	ONE BILLION
GIL	GREEN INDICATION LIGHT
GIP	GALVANIZED IRON PIPE
GL	GLASS
GLV	GLOBE VALVE
GLZ	GLAZING
GM	GAS METER, GUIDE MARKER
GMH	GAS MANHOLE (REGULATOR VAULT)
GMU	GLASS MASONRY UNIT
GND	GROUND
GO	GREASE OIL REEL
GP	GRADING PLANE
GPM	GALLONS PER MINUTE
GPS	GLOBAL POSITIONAL SYSTEM, GLOBAL POSITIONING SATELLITE
GR	GRATE, GUARD RAILING, GROUND ROD, GATE RELAY
GRD	GRADE
GRL	GRILLE
GRS	GALVANIZED RIGID STEEL
GRSC	GALVANIZED RIGID STEEL CONDUIT
GSP	GALVANIZED STEEL PIPE
GTH	GRAND TOTAL HEAT
GTS	GROUND TEST STATION
GUH	GAS UNIT HEATER
GV	GAS VALVE, GRAVITY VENT, GATE VALVE
GYP	GYPSUM

– H –

H	HEIGHT, HORIZONTAL, HOT, HUMIDSTAT
HB	HOSE BIBCOCK
HC	HEATING COIL
HCR	HUMIDITY CONTROLLER
HD	HEAD
HDD	HORIZONTAL DIRECTIONAL DRILLING
HDN	HOPPER DRAIN
HDPE	HIGH DENSITY POLYETHYLENE
HDR	HEADER
HDW	HARDWARE
HEX	HEXAGON, HEXAGONAL
HF	HIGH FREQUENCY
HH	HANDHOLE
HI	HIGH
HM	HOLLOW METAL
HMAC	HOT MIX ASPHALT CONCRETE
H–O–A	HAND–OFF–AUTO
HOR	HORIZONTAL
HP	HIGH PRESSURE, HIGH POINT, HORSEPOWER, HEAT PUMP
HPGN	HIGH PRECISION GEODETIC NETWORK
HR	HANDRAIL, HOUR
HS	HIGH STRENGTH, HAND SWITCH
HSC	HEAT STORAGE CABINET
HSE	HOUSE
HSG	HOUSING
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HV	HEATING VENTILATING UNIT, HIGH VOLTAGE, HOSE VALVE
HVA	HOSE VALVE, ANGLE GLOBE TYPE
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
HVS	HOSE VALVE, STRAIGHTWAY GATE TYPE
HVSS	HIGH VOLTAGE SUBSTATION
HW	HARD WIRED, HEADWALL, HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HWY	HIGHWAY
HYD	FIRE HYDRANT
Hz, HZ	HERTZ (CYCLES PER SECOND)

– I –

I, INTLK	INTERLOCK
I/F	INTERFACE
I/L	INTERLOCKING
I/O	INPUT/OUTPUT
IC	INTERCOM, INTERFACE CABINET, INTERRUPTING CAPACITY
ICM	INTERFACE CONTROL MANUAL
ICS	INTEGRATED COMPUTER SYSTEM, INTEGRATED CONTROL SYSTEM
ICS–V	INTEGRATED COMPUTER SYSTEM – VENTILATION
ICT	PHASE CURRENT TRANSFORMER
ID	IDENTIFICATION, INSIDE DIAMETER
IDF	INTERMEDIATE DISTRIBUTION FRAME
IDS	INTRUSION DETECTION SYSTEM
IE	INVERT ELEVATION
IEE	INGRESS/EGRESS EASEMENT
IIH	CURRENT INDICATION HIGH
IIHH	CURRENT INDICATION HIGH HIGH
IIL	CURRENT INDICATION LOW
IJ(P)	INSULATED JOINT (PLUG)
ILD	INJECTION LASER DIODE
ILI	FAN LOW CURRENT
ILK	INTERLOCK OR INTERLOCKING
IMC	INTEGRATED MULTISITE CONTROLLER
IME	INSTALLATION AND MAINTENANCE EASEMENT
IN	INCH, INCHES
IN. WC	INCHES OF WATER COLUMN
INCL	INCLUDING
INFO	INFORMATION
INS	INSULATED
INST	INSTANTANEOUS
INSUL	INSULATION, INSULATOR
INT	INTERIOR OR INTAKE
INV	INVERT
IP	INTERNET PROTOCOL, IRON PIPE
IPS	IRON PIPE SIZE
IP–G	IRON PIPE GAS
IR	INSIDE RADIUS
IRAT	INTEGRATED REMOTE ATO TERMINAL
IRR	IRRIGATION
ISDN	INTEGRATED SERVICES DIGITAL NETWORK
ISU	INTERFACE AND SIGNALING UNIT
IT	CURRENT TRANSMITTER, INDUSTRY TRACK
ITL	INDUSTRY LEAD TRACK
IVS	INTELLIGENT VIDEO SURVEILLANCE
IW	INDUSTRIAL WASTE

– J –

JAN, JC	JANITOR (CLOSET)
JAL	LOSS OF POWER ALARM
JB, JBOX	JUNCTION BOX
JC	JOINT COMM. DUCT STRUCTURE
JCT	JUNCTION
JKFLD	JACKFIELD
JMP	JUMPER
JP	JOINT POLE
JPL	JOINT POLE LINES
JT(S), J/T	JOINT(S), JOINT TRENCH, LOSS OF POWER TRANSMITTER
JUE	JOINT UTILITY EASEMENT

– K –

K, k	KILO (ONE THOUSAND), KIP(S)
kA	KILOAMPERE
Kbps, Kb/s	KILOBITS PER SECONDS
KC	MANUAL TIMER
KCMIL	THOUSAND CIRCULAR MILS
kHz	KILOHERTZ
km	KILOMETER
KOP	KNOCKOUT PANEL
KQI	ELAPSED TIME INDICATOR
KS	KITCHEN SINK
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
kV	KILO VOLT (ONE THOUSAND VOLTS)
kVA	KILO VOLT AMPERS
KVAR	KILOVOLT AMPERES REACTIVE
KVM	KEYBOARD VIDEO MONITOR
kW	KILOWATT
KWD	KILOWATT DEMAND
kWH	KILOWATT HOUR

– L –

L	LENGTH, LONG, LOUVER, LIQUID
(L)	LINED
L/G	LIP OF GUTTER
L/O	LAYOUT
LA	LANDSCAPE ARCHITECT, LIGHTNING ARRESTER
LAC	LEFT ACTIVE CHANNEL
LAM	LAMINATE
LAN	LOCAL AREA NETWORK
LAT	LATERAL, LEAVING AIR TEMPERATURE
LAV	LAVATORY
LB(S)	POUND(S)
LC	LANDSCAPE CONTRACTOR, LEFT CABLE, LOCAL CONTROL
LCD	LIQUID CRYSTAL DISPLAY
LCN	LOCAL COMMUNICATIONS NETWORK
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LD	LASER DIODE
LE	LANDSCAPE EASEMENT, LUNAR ASPECT LAMP
LED	LIGHT EMITTING DIODE
LF	LINEAR FOOT (FEET)
LG	LONG, LIP OF GUTTER
LH	LEFT HAND, LAVATORY HANDICAP
LIP	LOCAL INSTRUMENT PANEL
LKGL	LOOKING GLASS
LKR	LOCKER
LL	LIVE LOAD
LLDL	LOW LEVEL DATA LINK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LMA	LAKE MERRITT ADMINISTRATION BUILDING
LMR	LOAD MEASURING RESISTOR
LOC	LOCATION
LOL	LAYOUT LINE
LONGIT	LONGITUDINAL
LP	LOW POINT
LPG	LIQUIFIED PETROLEUM GAS
LR	LONG RADIUS
LRA	LOCKED ROTOR AMPS
LRT	LIGHT RAIL TRANSIT
LS	LIMIT SWITCH
LSR	SWITCH COMPLETION LOCK STORAGE RELAY
LSW1A	ACTUATOR NO.1 BLADE LIMIT SWITCH – A
LWS1B	ACTUATOR NO.1 BLADE LIMIT SWITCH – B
LT	LEFT, LIGHT, LIGHT REEL
LTE	LINE TERMINATING EQUIPMENT
LTG	LIGHTING
LV	LOW VOLTAGE
LVL	LEVEL
LWD	LARGE WOODY DEBRIS
LWP	LOW WORKING POINT
LWT	LEAVING WATER TEMPERATURE
LYL	LOWER YARD LEAD

– M –

M	MAIN CONTACTOR, METER, MEDIUM LOADING, MOTOR
MAE	MAINTENANCE EASEMENT
MCTB	MOTOR CONTROL TERMINAL BOX
M & E	MAINTENANCE & ENGINEERING
mA	MILLIAMPERE
MAINT	MAINTENANCE
MAP	MIMIC ANNUNCIATION PANEL
MAR	MARBLE
MAT'L	MATERIAL
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBF	MEASURED BOARD FEET
MBGR	METAL BEAM GUARD RAIL
MBH	THOUSANDS BTU PER HOUR
MBTH	MOTOR BEARING TEMPERATURE HIGH
Mbps, Mb/s	MEGA BIT PER SECOND
MC	MEDIA CONVERTER, MULTI–COUPLER, MEDIA CONVERTER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CONTROL PANEL
MCR	MINI CARRIER REMOTE
MD	MOTORIZED DAMPER
MDF	MAIN DISTRIBUTION FRAME
MECH	MECHANICAL
MED	MEDIAN, MEDIUM
MEGA	ONE MILLION
MEM	MEMBRANE
MF	MAIN CONTACTOR, FORWARD (EXHAUST)
MFR	MANUFACTURER
MFU	MAIN LINE FUSE
MG	MILLION GALLON
MH	MANHOLE
MHz	MEGAHERTZ
MIN	MINIMUM
MISC	MISCELLANEOUS
ML	MAIN LINE TRACK
mm	MILLIMETER
MM	MULTI–MODE (FIBER CABLE)
MMR	MOTOR MASTER RELAY
MO	MASONRY OPENING, MOTOR OVERLOAD, MOTOR OIL REEL
MOD	MODIFY, MODIFIED, MODULATE, MOTOR OPERATED DAMPER
MODEM	MODULATOR/DEMODULATOR
MOM	MOMENTARY
MON	MONUMENT
MOS	MANUAL OPERATING SWITCH, MOTOR OPERATED SWITCH
MOW, MW	MAINTENANCE–OF–WAY
MP	MILE POST
MPH	MILES PER HOUR
MPR	MOTOR PROTECTION RELAY, MULTIFUNCTION PROTECTION RELAY
MPTB	MOTOR POWER TERMINAL BOX
MR	MAIN CONTACTOR REVERSE (SUPPLY), MULTI–RATIO
MS	MOP SINK, MOTOR STARTER
MSE	MECHANICALLY STABILIZED EARTH
MSG	MESSAGE
MSK	MINIMUM SHIFT KEY
MSL	MEAN SEA LEVEL
MSM	MULTILOOP SUPERVISORY MODULE
MT	MAGNETIC TESTING, MAIN TRACK, MAINTENANCE TELEPHONE
MTD	MOUNTED
MTL	MATERIAL, METAL
MTR	METER, METERING, MOTOR
MTS	MANUAL TRANSFER SWITCH
MTU	MASTER TERMINAL UNIT
MUL	MULLION
MULT	MULTIPLE
MUX	MULTIPLEX, MULTIPLEXER
mV	MILLIVOLT
MVA	MEGAVOLT AMPERE
MVDTR	MAINTENANCE VEHICLE DETECTION RELAY
MW	MEGAWATT
MWT	MOTOR WINDING TEMPERATURE HIGH
MYL	MILPITAS YARD LEAD

Santa Clara Valley Transportation Authority
✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

Any action shown above is subject to the terms of the contract and does not relieve the Contractor of any of its obligations under the contract, including design and detailing.

Contract No.: DB11002F
By: [signature] Date: 7/1/13

REV	DATE	BY	SUB	APP	DESCRIPTION
0	20121102				READY FOR CONSTRUCTION

DESIGNED BY R. BANKS
DRAWN BY M. HALL
CHECKED BY D. CLARY
IN CHARGE K. ANDERSON
DATE 20121102

PROFESSIONAL ENGINEER — REGISTERED — No. 53893 — Exp. 12/31/13 — CIVIL — STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle
Milpitas, California 95035
A Joint Venture

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BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS, AND SYSTEMS

GENERAL ABBREVIATIONS
SHEET 2 OF 4

CADD FILENAME: C700–S–RR–X231.dwg
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– N –

N	NORTH, NEUTRAL
(N)	NEW
N/A	NOT APPLICABLE
N/R	NON–RELATED
N12	NEGATIVE 12V DC
N28	NEGATIVE 28V DC
NAD27	NORTH AMERICAN DATUM OF 1927 (HORIZONTAL)
NAD83	NORTH AMERICAN DATUM OF 1983 (HORIZONTAL)
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
NB	NEGATIVE BUS, NORTH BOUND
NC	NOISE CRITERIA, NORMALLY CLOSED
NE	NORTHEAST
NEC	NATIONAL ELECTRIC CODE
NEG	NEGATIVE
NEG RET	NEGATIVE RETURN
NE'LY	NORTHEASTERLY
NGS	NATIONAL GEODETIC SURVEY
NIC	NOT IN CONTRACT
NIT	NITROGEN GAS LINE
NK	NECK
N'LY	NORTHERLY
nm	NANOMETER
NMC	NON–METALLIC CONDUIT
NMS	NETWORK MANAGEMENT SYSTEM
NO	NORMALLY OPEN, NUMBER
NO(S)	NUMBERS
NOM	NOMINAL
NON–ESS	NON–ESSENTIAL
NOR	NORMAL
NOTC	NORMALLY OPEN TIME CLOSED
NS	NEAR SIDE
NTS	NOT TO SCALE
NV	NON–VITAL
NVI	NON–VITAL INPUT
NVO	NON–VITAL OUTPUT
NVR	NETWORK VIDEO RECORDER
NW	NORTHWEST
NWCR	SWITCH NORMAL CORRESPONDENCE RELAY
NW'LY	NORTHWESTERLY
NWPR	NORMAL SWITCH REPEATER RELAY
NX	AC VOLTAGE
NX12	12VAC
NXTGEN	ARCHITECTURE OF BART'S NEXT GENERATION EQUIPMENT

– O –

O	OPTICAL
O/	OVER
O/L	OVERLOAD
O/C	OVERCURRENT
OA	OVERALL, OUTSIDE AIR
OAD	OUTSIDE AIR DAMPER
OADM	OPTICAL ADD/DROP MULTIPLEXER
OAMP	OPERATIONS ALARMS MAINTENANCE PROVISIONING
OC	ON CENTER, OVERCROSSING, OPTICAL CARRIER
OC1	51.84 Mb/s OPTICAL CARRIER LEVEL 1
OC192	9.92 Gb/s OPTICAL CARRIER LEVEL 192
OC1–OC192	OPTICAL CARRIER LEVEL 1 THRU OPTICAL CARRIER LEVEL 192
OC3	Mb/s OPTICAL CARRIER LEVEL 3
OC48	Gb/s OPTICAL CARRIER LEVEL 48
OCC	OPERATIONAL CONTROL CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFD	OVERFLOW DRAIN
OFR	ON–FREQUENCY REPEATER
OG	ORIGINAL GROUND
OH	OVERHEAD, OVERHEAD LINE
OHE	OVERHEAD ELECTRICAL LINE
OHE/T	OVERHEAD ELECTRICAL AND TELEPHONE
OHT	OVERHEAD TELEPHONE LINE
OHTV	OVERHEAD TV LINE
OL	OVERLOAD CONTACT
OPNG	OPENING
OPP	OPPOSITE
OPP HND	OPPOSITE HAND
OPT	OPTION, OPTIMAL
OPX	OFF–PREMISE EXTENSION
OS	OPERATING SYSTEM
OSA	OUTSIDE AIR
OSI	OPEN SYSTEMS INTERCONNECTION
OSP	OUTSIDE PLANT
OSYT	NEWHALL YARD CONTROL TOWER
OTDR	OPTICAL TIME DOMAIN REFLECTOMETER
OTE	OVER TRACK EXHAUST
OTM	OTHER TRACK MATERIAL
OTN	OPTICAL TRANSPORT NETWORK
OV	OUTLET VELOCITY, OUTSIDE VELOCITY
OVC	OVERCROSSING

– P –

P	POWER LINE, PAINT, NON–VITAL REPEATER
P LAM	PLASTIC LAMINATE
P&S	POWER AND SUPPORT
P&W	POWER AND WAY
P.B., PB	PULLBOX OR PUSH BUTTON
P/L	PROPERTY LINE
P/O	PART OF
PA	PUBLIC ADDRESS
PABX, PBX	PRIVATE AUTOMATIC BRANCH EXCHANGE
PAE	PEDESTRIAN ACCESS EASEMENT
PART	PARTNERS
PATS	PROPERTY ACQUISITION TRACKING SYSTEM
PB	PULL BOX, PUSH BUTTON
PC	PERSONAL COMPUTER, PRECAST, PRECAST CONCRETE, POINT OF CURVATURE, POINT OF CHANGE FROM TANGENT TO CIRCULAR CURVE
PCC	PORTLAND CEMENT CONCRETE, POINT OF COMPOUND CURVATURE
PCF	POINT OF CURVATUREM, POUND PER CUBIC FOOT
PCM	PARKING CONTROL MACHINE, PULSE CODE MODULATION
PCR	PORTAL COMMUNICATIONS ROOM
PCTL	PRECAST TUNNEL LINING
PCVC	POINT OF COMPOUND VERTICAL CURVE
PD	PRESSURE DROP, PUMP DISCHARAGE
PDN	PLANTER DRAIN
PDU	PROTOCOL DATA UNIT
PE	POLYETHYLENE PIPE, PNEUMATIC–ELECTRIC
PED	PEDESTRIAN
PERF	PERFORATED
PERM	PERMEABLE
PERM MTL	PERMEABLE MATERIAL
PET, PETRO, PT	PETROLEUM LINE
PF	POINT OF FROG
PG	PROFILE GRADE
PGA	PEAK GROUND ACCELERATION
PGL	PROFILE GRADE LINE
PGT	PRIME GROUND TERMINAL
PH	PHASE, POTHOLE
PH, ø	PHASE
PI	POINT OF INFLECTION, POINT OF INTERSECTION
PIDS	PORTAL INTRUSION DETECTION SYSTEM
PIN	PROPERTY IDENTIFICATION NUMBER
PITO	POINT OF INTERSECTION OF TURNOUT
PIV	POST INDICATOR VALVE
PIVC	POINT OF INTERSECTION OF TWO PROFILE TANGENTS
PL	PIPE LINE, PLATE, PROPERTY LINE, PLATFORM, PLASTIC
PLAS	PLASTER
PLC	PROGRAMMABLE LOGIC CONTROLLER, PLASTIC COATED
PLP	PLASTIC PIPE
PLUM	PLUMBING
PLY	PLYWOOD
PM	POST MILE
PNL	PANEL
PNEU	PNEUMATIC
POC	PEDESTRIAN OVERCROSSING, POINT ON CIRCULAR CURVE
POE	POINT OF EQUATION, POWER OVER ETHERNET
POS	POSITIVE OR POSITION, POINT ON SPIRAL
POT	POINT ON TANGENT
POVC	POINT ON VERTICAL CURVE
POVT	POINT ON VERTICAL TANGENT
PP	POWER POLE, NON–VITAL REPEATER
PPL	PREFORMED PERMEABLE LINER
PPP	PERFORATED PLASTIC PIPE
PPTIM	PLC PANEL TERMINAL INTERFACE MODULE
PR	PAIR(S), PRESSURE
PRC	POINT OF REVERSE CURVATURE
PRI	PRIMARY
PRKG	PARKING
PROP	PROPERTY, PROPOSED
PROT	PROTECTOR
PRS	PAIRS
PRV	PRESSURE REDUCING VALVE
PRVAL	PRESSURE RELIEF VALVE
PRVC	POINT ON REVERSE VERTICAL CURVE
ps	PICO SECOND
PS	POINT OF SWITCH, POSITION SWITCH, POWER SUPPLY, PUMP STATION, PRE–STRESSED
PS/L	PROTECTOR SHELF/L BLOCK
PSE	PUBLIC SERVICE EASEMENT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PSTN	PUBLIC SWITCHED TELEPHONE NETWORK
PSUE	PUBLIC SERVICE UTILITY EASEMENT
PT	POINT, POINT OF TANGENT, POINT OF CHANGE FROM CIRCULAR CURVE TO TANGENT, POTENTIAL TRANSFORMER, PORCELAIN TILE, PETROLEUM
PTD/R	PAPER TOWEL DISPENSER & RECEPTACLE
PTEAC	PERMIT TO ENTER AND CONSTRUCT
PTM	PLATFORM TRIP MODULE
PTS	PLATFORM TRIP STATION
PTT	PUSH TO TALK
PTZ	PAN, TILT AND ZOOM
PU	POWER UNIT
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE (CONDUIT) OR (PIPE), POINT OF VERTICAL CURVE
PVI	POST VALVE INDICATOR
PVMT	PAVEMENT
PWR	POWER

– Q –

QR	SEQUENTIAL DETECTION RELAY
QS	QUEUING SPACE
QT	QUARRY TILE
QTY	QUANTITY

– R –

R	RADIUS, RESISTOR, RISER, RING, ROUTER
(R)	RELOCATE OR REMOVE AND SALVAGE
R NO.	RACK NUMBER
R/C	RATE OF CHANGE
R/R	RUNNING RAIL
R/W	RIGHT–OF–WAY
R1	RING 1
RA	RETURN AIR
RAA	RESCUE ASSISTANCE AREA
RAC	RIGHT ACTIVE CHANNEL
RAD	RETURN AIR DAMPER, RADIUS
RAT	REMOTE ATO TERMINAL
RB	RESILIENT RUBBER BASE
RBC	REINFORCED BOX CULVERT
RBM	RAILBOUND MANGANESE FROG
RC	REINFORCED CONCRETE, REMOTE CONTROL, RIGHT CABLE
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RCR	ROUTE CHECK RELAY
RCV	RECEIVE
RCVR, REC	RECEIVER
RD	ROAD, ROOF DRAIN, ROUND
RDC	RADIO DISTRIBUTION CABINET
RDWY	ROADWAY
RE	RED ASPECT LAMP
RECT	RECTIFIER, RECTANGULAR
REF	REFERENCE
REINF	REINFORCED, REINFORCING, REINFORCEMENT
REL	RELOCATE
REM	REMOTE
REQ, REQD	REQUIRED
RES	RESISTOR
RESIL	RESILIENT
RET	RETURN
REV	REVISION, REVERSE
RF	RADIO FREQUENCY, RETURN FAN
RGB	RED, GREEN. BLUE VIDEO COLORS
RGS	RIGID GALVANIZED STEEL
RH	RADIANT HEATER, RIGHT HAND, RELATIVE HUMIDITY
RIDS	RAILROAD INTRUSION DETECTION SYSTEM
RIL	RED INDICATION LIGHT
RIM	TOP OF XMH
RIO	REMOTE INPUT/OUTPUT
RJ	AUDIO FREQ. TRACK INTERMEDIATE TRACK RELAY
RL	REFRIGERANT LIQUID
RLA	RATED LOAD AMPS
RLY	RELAY
RM	ROOM
RN	REFERENCE NORTH
RNS	RUNNING RAIL NEGATIVE RETURN SWITCH
RO	ROUGH OPENING
ROW	RIGHT–OF–WAY
RP	REFERENCE POINT
RPM	REVOLUTIONS PER MINUTE
RPTR	REPEATER
RR	RAILROAD
RS	REFRIGERANT SUCTION, RIPARIAN SETBACK
RSC	RIGID STEEL CONDUIT
RSP	ROCK SLOPE PROTECTION
RSR	RESTRICTED SPEED RELAY
RST	RESILIENT TILE
RT	RIGHT, ROUTE, RANDOM TWIST
RTAC	ROOF TOP AIR CONDITIONING UNIT
RTD	RESISTANCE TEMPERATURE DETECTOR
RTE	ROUTE
RTU	REMOTE TERMINAL UNIT
RV	ROOF VENTILATOR
RW	RECLAIMED WATER, RETAINING WALL
RWCR	SWITCH REVERSE CORRESPONDENCE RELAY
RWE	ROADWAY EASEMENT
RWL	RAIN WATER LEADER
RWLOL	RETAINING WALL LAYOUT LINE
RWPR	REVERSE SWITCH REPEATER RELAY
RX, RCV (R)	RECEIVE (R)

– S –

S	SOUTH, SLOPE
SO.	SOUTH
S.I.C.	SUPPORT IN PLACE
S1	SVRT MAIN LINE TRACK (SB)
S2	SVRT MAIN LINE TRACK (NB)
S3	SVRT POCKET OR STORAGE TRACK
Sa	SPECTRAL ACCELERATION
SA	SUPPLY AIR, SURGE ARRESTER
SAB	STATION AGENTS BOOTH
SAN	SANITARY
SAR	SOUND ATTENUATOR
SAT	SATURATION
SB	SOUTH BOUND
SBGR	STEEL BEAM GUARDRAIL
SBO	SINGLE BREAK OUTPUT
SC	SOLID CORE, POINT OF CHANGE FROM SPIRAL TO CIRCULAR CURVE
SCAC	SELF CONTAINED AIR CONDITIONER
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCD	SEAT COVER DISPENSER, SMOKE CONTROL DAMPER
SCS	SMOKE CONTROL SENSOR
SCH	SCHEDULE
SCHP	SELF CONTAINED HEAT PUMP
SCN	SYSTEMWIDE CABLE NETWORK
SCTB	SHORT CIRCUITING TERMINATION BLOCK
SD	SOAP DISPENSER, STORM DRAIN, TUNNEL ISOLATION DAMPER, SUBWAY DAMPER
SDCB	STORM DRAIN CATCH BASIN OR DRAINAGE INLET
SDE	STORM DRAIN EASEMENT
SDMH	STORM DRAIN MANHOLE
SDP	SPLITTER DAMPER, SMOKE/FIRE DAMPER WITH ACCESS PANEL
SE	SOUTHEAST
SEC	SECOND, SECONDARY
SECT	SECTION, SECTIONALIZING
SE'LY	SOUTHEASTERLY
SES	SECTIONALIZING STATION
SF	SQUARE FEET, SUPPLY FAN
SG	SUBGRADE, SUPPLY GRILLE
SH	SHIELD, SHUNT
SHG	SHOWER GANG
SHH	SHOWER HANDICAP
SHC	SENSIBLE HEATING CAPACITY
SHL	SHOULDER
SHR	SHOWER
SHT	SHEET
SIG	SIGNAL
SIM	SIMILAR
SJW TEST	SAN JOSE WATER CO TEST STATION
SL	STREET LIGHT
SLC	LEFT CIRCUIT (34.5KV TPSS)
SLPA	SIGNAGE/LIGHTING/PUBLIC ADDRESS SPEAKERS
SLR	SEALER
SLV	SHORT LEG VERTICAL
S'LY	SOUTHERLY
SM	SINGLE MODE (FIBER CABLE), SOLID MANGANESE FROG, SWITCH MACHINE
SMF	SINGLE MODE FIBER
SMH	SANITARY MANHOLE
SND	SANITARY NAPKIN DISPENSER
SNF	SWING NOSE FROG, MOVABLE POINT FROG
SNR	SANITARY NAPKIN RECEPTACLE
SNT	STATION NETWORK TERMINAL
SOE	SUPPORT OF EXCAVATION
SOL	SOLENOID
SOM	SOMASTIC COATED PIPE
SONET	SYNCHRONOUS OPTICAL NETWORK
SORS	SEQUENTIAL OCCUPANCY RELEASE SYSTEM
SOV	SHUT–OFF VALVE
SP	STEEL PIPE, SUMP PUMP, STATIC PRESSURE, SPARE, SPLICE
SP1, SP2	BART SPUR TRACK
SPA	SPACES, SPACING
SPD	SANITARY PRESSURE DISCHARGE
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION
SPECS	SPECIFICATIONS
SPK	SPEAKER
SPO	POINT OF ORIGIN OF COMPOUND SPIRAL
SPRK	SPRINKLER
SPRR COMM	SOUTHERN PACIFIC RAILROAD COMMUNICATION
SPSC	SWITCH POWER SUPPLY CABINET, SWITCH MACHINE POWER SUPPLY CABINET
SPST	SINGLE POLE SINGLE THROW
SPT	SPRINT COMMUNICATIONS
SPTC	SOLDIER PILE TREMIE CONCRETE
SPWG	STATIC PRESSURE WATER GAUGE
SQ	SQUARE
SQ.FT.	SQUARE FOOT (FEET)
SQYD,SY	SQUARE YARD
SR	SUPPLY REGISTER
SRC	RIGHT CIRCUIT (34.5KV TPSS)
SS	SELECTOR SWITCH, STAINLESS STEEL, SANITARY SEWER, SUBSTATION, POINT OF CHANGE FROM ONE SPIRAL TO ANOTHER
SSCO	SANITARY SEWER CLEANOUT
SSE	SUBSURFACE EASEMENT, SANITARY SEWER EASEMENT
SSK	SERVICE SINK
SSMH, SMH	SANITARY SEWER MANHOLE
SSR	SOUTH STICK RELAY
SSS	SYSTEM SELECTOR SWITCH
SST	SOAP STONE
ST	STREET, SAINT, POINT OF CHANGE FROM SPIRAL TO TANGENT, STONE TILE
STA	ALIGNMENT STATION, STATION, STATIONING
STBY	STANDBY
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STE	SPECIAL TEST EQUIPMENT
STIFF	STIFFENER
STL	STEEL
STOPR	STOP SPEED COMMAND RELAY
STOR	STORAGE
STR	STAIR, STRANDED
STRUC	STRUCTURAL, STRUCTURE
STS	SYNCHRONOUS TRANSPORT SIGNAL
SUB	SUBSTATION
SUPP	SUPPLY
SUSP	SUSPENDED
SV	TUNNEL VENTILATION FAN, SOLID VEE FROG, SHEET VINYL
SVC	SERVICE
SVR	SERVER
SW	SIDEWALK, SOUNDWALL, SOUTHWEST, SWITCH
SWAC POR	SWITCH MACHINE POWER OFF
SWBD	SWITCH BOARD
SWGR	SWITCH GEAR
SWL	SOUNDWALL
SW'LY	SOUTHWESTERLY
SWR	SYSTEMWIDE RACEWAY
SWS	SWITCHING STATION
SWT PT	SWITCH POINT
SY	SQUARE YARD
SYM	SYMMETRICAL
SYS	SYSTEM(S)

Santa Clara Valley Transportation Authority

✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

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Contract No.: DB11002F
By: _____ Date: 7/1/13

REV	DATE	BY	SUB	APP	DESCRIPTION
0	20121102				READY FOR CONSTRUCTION

DESIGNED BY R. BANKS
DRAWN BY M. HALL
CHECKED BY D. CLARY
IN CHARGE K. ANDERSON
DATE 20121102

REGISTERED PROFESSIONAL ENGINEER — JEFFREY A. ANDERSON — No. 53893 — Exp. 12/31/13 — CIVIL — STATE OF CALIFORNIA

Skanska Shimmick Herzog — 1436 California Circle, Milpitas, California 95035 — A Joint Venture

SUBMITTED: Lockwood, Andrews & Newnam, Inc. — A LEO A DALY COMPANY

APPROVED: Lockwood, Andrews & Newnam, Inc. — A LEO A DALY COMPANY — T·Y·LIN INTERNATIONAL

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS, AND SYSTEMS

GENERAL ABBREVIATIONS
SHEET 3 OF 4

CADD FILENAME C700–S–RR–X232.dwg
SIZE D | SCALE NOT TO SCALE
CONTRACT NO. C700 | REV. 0
AREA CODE RR | SHEET NO. X232 | PAGE NO. 0005

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– T –

t	THICKNESS
T	TELEPHONE, COMMUNICATION LINE, TOP, TRANSFORMER, TREAD, TIP, TRANSDUCER, THERMOSTAT
T&B	TOP & BOTTOM
T&P	TEMPERATURE AND PRESSURE RELIEF VALVE
T.O., T/O	TURNOUT
T/	TOP OF
T/C, T.C.	TRAIN CONTROL
T/P	TOP OF PAVEMENT, TOP OF PIPE
T/R	TOP OF RAIL
T/W	TOP OF WALL
T1	T1 TELEPHONE CARRIER TRANSMISSION FORMAT AND EQUIPMENT
TA	TRUNK AMPLIFIER
TAH	TEMPERATURE ALARM HIGH
TAN	TANGENT
TB	TERMINAL BOX, TERMINAL BLOCKS, TEST BORING
TBD	TO BE DETERMINED
TBDC	TO BE DETERMINED BY THE CONTRACTOR
TBL	TROUBLE
TBM	TUNNEL BORING MACHINE
TBP	TERMINATION BLOCK POST
TC	TIME CLOCK, TOP OF CURB, TRAIN CONTROL, TERMINAL CABINET, TEMPERATURE CONTROLLER
TC/C	TRAIN CONTROL & COMMUNICATIONS
TCB	TRAIN CONTROL BUILDING
TCC	TOTAL COOLING CAPACITY
TCE	TEMPORARY CONSTRUCTION EASEMENT
TCH	TRAIN CONTROL HOUSE
TCP	TEMPERATURE CONTROL PANEL, TRANSPORT CONTROL PROTOCOL
TCR	TRAIN CONTROL ROOM
TCS	TELEMETRY CABLE SPLICE
TCSA	TEMPORARY CONSTRUCTION STAGING AREA
TCT	TRACK CIRCUIT TUNING
TD	TRENCH DRAIN, TUNNEL DAMPER,
TDA	TIRE DERIVED AGGREGATE
TDC	TIME DELAY CLOSE
TDCR	TUNNEL DAMPER CLOSE RELAY
TDD	TELECOMMUNICATIONS DEVICE FOR THE DEAF
TDDO	TIME DELAY DROPOUT
TDF	TIME DELAY DE–ENERGIZING RELAY
TDO	TIME DELAY OPEN
TDOR	TUNNEL DAMPER OPEN RELAY
TDPU	TIME DELAY PICK UP
TDR	TIME DELAY DE–ENERGIZING RELAY
TE	TEMPERATURE ELEMENT, THREADED END
TEB	MOTOR BEARING TEMPERATURE (RTD'S)
TEH	TEMPERATURE ELEMENT MOTOR ENCLOSURE SPACE HEATER
TEL	BURIED TEL, TELEPHONE
TELCO	TELEPHONE COMPANY
TELECOM	TELECOMMUNICATIONS
TELVLT	TELEPHONE VAULT
TEMP	TEMPERATURE, TEMPORARY
TER	TIMER RELAY, TERRATZO
TEW	MOTOR WINDING TEMPERATURE (RTD'S)
TF	TRACK FEET, TRANSFER (ATO TO MANUAL OR MANUAL TO ATO), FORWARD CURRENT CONDUCTION
TFD	TUNNEL VENTILATION FAN DAMPER
TFE	TETRAFLUOROETHYLENE
TG	TOP OF GRATE (ELEVATION), TRANSFER GRILLE
TH	TEST HOLE (SUBSURFACE INVESTIGATION)
THH	TELEPHONE HAND HOLE
THK	THICK, THICKNESS
THR	TOTAL HEAT REJECTION
THRU	THROUGH
TI	TEMPERATURE INDICATION
TICHL	TEMPERATURE INDICATION CONTROL (HIGH/LOW)
TIEE	TEMPORARY INGRESS/EGRESS EASEMENT
TIH	TEMPERATURE INDICATION HIGH FOR MOTOR ENCLOSURE OR BEARINGS
TIM	TENANT IMPROVEMENT, TRAIN INFORMATION MONITOR
TL	TREE LIGHTING
TLC	TRIP LOGIC CIRCUIT
TM	TERMINAL ZONE
TMH	TELEPHONE MANHOLE
TN	TRUE NORTH
T.O.	TORQUE OIL REEL
TOC	TOP OF CONCRETE
TOD	TRANSIT ORIENTED DEVELOPMENT
TOF	TOP OF FOOTING
TOL	TOLERANCE
TOS	TOP OF STRUCTURE (STEEL, SLAB)
TOT	TOTAL
TOW	TOP OF WALL
TP	TRACTION POWER, TWISTED PAIR, TRAP PRIMER, TEST PIT, TRANSMISSION PRESSURE
TPD	TOILET PAPER DISPENSER
TPSS	TRACTION POWER SUB STATION
TR	TRACK RELAY, TREAD
TRACS	TRUNKED RADIO AND COMMUNICATIONS SYSTEMS
TRANS	TRANSFORMER, TRANSITION, TRANSVERSE
TR–FO	TRUNKED RADIO FIBER OPTIC INTERFACE
TRK	TRACK
TS	POINT OF CHANGE FROM TANGENT TO SPIRAL, TRAFFIC SIGNAL, TUBE SECTION, TUBE STEEL, TEST SWITCH
TSL	TRAFFIC SIGNAL
TSP	TOTAL STATIC PRESSURE
TT	TRANSFER TRIP
TTC	TRANSFER TRIP CABINET
TV	TELEVISION, TURNING VANE
TVE	TUNNEL VENTILATION EQUIPMENT
TVF	TUNNEL VENTILATION FAN
TVM(S)	TICKET VENDING MACHINE(S)
TVS	TUNNEL VENTILATION SHAFT
TW	TRAVELED WAY
TWA	TRANSPARENT WALL ASSEMBLY
TWC	TRAIN–TO–WAYSIDE COMMUNICATIONS
TWPR	TWISTED PAIR
TWR	TOWER
TX, XMT	TRANSMIT
TYP	TYPICAL

– U –

<U>	UPGRADE
U	UNBALANCED SUPERELEVATION (IN INCHES), TURN–BACK
U/L	UP LINK
UA	COMMON ALARM
UB	UTILITY BOX
UBC	UNIFORM BUILDING CODE
UC	UNDERCUT, UNDERCROSSING
UCD	UNDER CAR DELUGE
UD	UNDERDRAIN
UDF	UNITED DEFENSE
UE	UTILITY EASEMENT
UG	UNDERGROUND
UH	UNIT HEATER
UHF	ULTRA HIGH FREQUENCY
UHH	UNIT HEATER HYDRONIC
UMC	UNIFORM MECHANICAL CODE
UNF	UNFINISHED
UNK	UNKNOWN
UNO	UNLESS NOTED OTHERWISE
UP	UPWARD, UTILITY POLE
UPC	UNIFORM PLUMBING CODE
UPRR–OHE	OVERHEAD SIGNAL/COMM LINE
UPS	UNINTERRUPTIBLE POWER SUPPLY
UR	URINAL
URH	URINAL HANDICAP
US	TURN–BACK. THE ROUTE INTO THE TM ZONE, WHEN TURN–BACK, IS ALIGNED, UNITED STATES, COMMON TROUBLE
UT	ULTRASONIC TESTING
UTC	UNSHIELDED TWISTED PAIR
UTIL	UTILITY
UTP	UNSHIELDED TWISTED PAIR CABLE
UV	ULTRA VIOLET, UNDERVOLTAGE
UWP	UPPER WORKING POINT

– V –

V	VENT, VOLTS, DESIGN VELOCITY (MPH)
VA	VOLT AMPERES
VAC	VOLTS ALTERNATING CURRENT, VACUUM
VAR	VOLT–AMPERE REACTIVE, VARIES
VAV	VARIABLE AIR VOLUME, VARIABLE AIR DAMPER
VB	VACUUM BREAKER
VC	VERTICAL CURVE, VITRIFIED CLAY, VIDEO CARD
VCD	VITRIFIED CLAY DUCT
VCN	VERTICAL CIRCULATION NODE
VCP	VENTILATION CONTROL PANEL, VITRIFIED CLAY PIPE
VCT	VINYL COMPOSITION TILE
VCTB	VINYL COVERED TACK BOARD
VD	VOLUME DAMPER, VIBRATION DETECTOR
VDA	VIDEO DISTRIBUTION AMPLIFIER
VDC	VOLTS DIRECT CURRENT
VE	MOTOR VIBRATION DETECTOR, VIBRATION ELEMENT
VEL	VELOCITY
VENT	VENTILATION
VERT	VERTICAL
VEST	VESTIBULE
VF	VOICE FREQUENCY
VFD	VARIABLE FREQUENCY DRIVE
VHF	VERY HIGH FREQUENCY
VI	VIBRATION INDICATOR
VIB	MOTOR VIBRATION
VIH	VIBRATION INDICATION HIGH
VM	VOLTMETER
VMS	VARIABLE MESSAGE SIGN, VISUAL MESSAGING SYSTEM
VMTF	VIBRATION MITIGATION TRACK FORM
VOL	VOLUME
VOX	VOICE OPERATED TRANSMITTER
VPI	GENERAL RAILWAY SIGNAL'S VITAL PROCESSOR INTERLOCKING SYSTEM
VR	SPEED CODE APPLICATION RELAY, VIDEO REPEATER
VRD	VITAL RELAY DRIVER, VPI VITAL RELAY DRIVER RELAY
VRD01R	FIRST REPEATER OF VRD
VS	VOLTMETER SWITCH
VSC	VITAL SERIAL CONTROLLER
VT	VOLTMETER TRANSDUCER, VOLTAGE TRANSFORMER
VTR	VENT THRU ROOF
VZ	VENT ZONE

– W –

W	WIDTH, WATER, WEST, WATT
W/	WITH
W/O	WITHOUT
WAC	WALL MOUNTED AIR CONDITIONING UNIT
WAO	WORK AREA OUTLET
WB	WESTBOUND, WEST BANK, WET BULB
WC	WATER CLOSET
WCO	WALL CLEAN OUT
W.PR.	WATER COLUMN
WDG'	WINDING
WDM	WAVE DIVISION MULTIPLEXER
WEG	WALL EXHAUST GRILLE
WG	WATER GAUGE, WAVEGUIDE
WGT	WEIGHT
WGV	WATER GATE VALVE
WH	WEEP HOLE, WATER HEATER
WHA	WATER HAMMER ARRESTOR
WIDS	WAYSIDE INTRUSION DETECTION SYSTEM
WL	WALL LOUVER, WATER LINE
W'LY	WESTERLY
WM	WATER MAIN, WATER METER
WMH	WATER MANHOLE
WMS	WIRE MESH SCREEN
WO	WHERE OCCURS, WASTE OIL REEL
WP	WORK POINT, WEATHER PROOF
WPF	WATERPROOF, WATERPROOFING
WR	SWITCH CONTROL RELAY
WRG	WALL RETURN GRILLE
WRR	WALL RETURN REGISTER
WSP	WELDED STEEL PIPE, WET STANDPIPE
WSR	WALL SUPPLY REGISTER
WSX	WARM SPRINGS EXTENSION
WT	WEIGHT
WTG	WALL TRANSFER GRILLE
WTM	WAYSIDE TRIP MODULE
WV	WATER VALVE
WW	WIREWAY, WING WALL
WWF	WELDED WIRE FABRIC

– X –

X ,	
X–OVER	CROSSOVER (TRACK)
X/O	CROSSOVER
XCVR	TRANSCEIVER
XFMR	TRANSFORMER
XING	CROSSING
XL	INTERLOCKING ZONE
XMT, XMIT	TRANSMIT
XMTR	TRANSMITTER
XSR	DIRECTIONAL ROUTE LOCKING RELAY
XT	X–TERMINAL COMPUTER

– Y –

Y	OVERLAP, YARD
Y&S	YARDS AND SHOPS
YAH	TORQUE ALARM (HIGH)
YCT	YARD CONTROL TOWER
YE	YELLOW ASPECT LAMP
YL	INDICATOR LIGHT
YSH	TORQUE SWITCH (HIGH)
YT	YARD TRACK

– Z –

Z	ZONE
ZIC	POSITION INDICATOR CLOSED
ZIO	POSITION INDICATOR OPEN
ZSC	POSITION SWITCH CLOSED
ZSCA	POSITION SWITCH CLOSED ALARM
ZSO	POSITION SWITCH OPEN

ADDITIONAL HORIZONTAL AND VERTICAL ALIGNMENT NOMENCLATURE

k_1	TANGENT DISTANCE OF SHIFTED PC REFERRED TO THE TS
k_2	TANGENT DISTANCE OF SHIFTED PT REFERRED TO THE ST
Lc	TOTAL LENGTH OF CIRCULAR CURVE FROM PC TO PT OR SC TO CS
Lsc	LENGTH OF COMPOUND SPIRAL FROM CS TO SC
Ls_1	LENGTH OF SPIRAL FROM TS TO SC
Ls_2	LENGTH OF SPIRAL FROM CS TO ST
pc	OFFSET BETWEEN CIRCLES AT POINT OF COMPOUND CURVATURE
p_1	OFFSET FROM INITIAL TANGENT TO PC OF THE SHIFTED CIRCLE OF SPIRALIZED CURVE
p_2	OFFSET FROM INITIAL TANGENT TO PT OF THE SHIFTED CIRCLE OF SPIRALIZED CURVE
Rc	RADIUS OF CIRCULAR CURVE
Ts_1	TANGENT DISTANCE FROM TS TO PI
Ts_2	TANGENT DISTANCE FROM ST TO PI
TS	POINT OF CHANGE FROM TANGENT TO SPIRAL
Xs_1	TANGENT DISTANCE AT THE SC
Xs_2	TANGENT DISTANCE AT THE CS
Ys_1	TANGENT OFFSET AT THE SC
Ys_2	TANGENT OFFSET AT THE CS
Δ	TOTAL CENTRAL ANGLE OF THE SPIRALIZED CURVE
Δc	CENTRAL ANGLE OF CIRCULAR CURVE (Lc) FROM SC TO CS
Δc_1	CENTRAL ANGLE OF FIRST CIRCULAR CURVE OF COMPOUND CURVATURE
Δc_2	CENTRAL ANGLE OF SECOND CIRCULAR CURVE OF COMPOUND CURVATURE
θs_1	CENTRAL ANGLE OF SPIRAL LENGTH Ls_1 OR SPIRAL ANGLE OF FIRST SPIRAL IN SPIRALIZED CURVE
θs_2	CENTRAL ANGLE OF SPIRAL LENGTH Ls_2 OR SPIRAL ANGLE OF SECOND SPIRAL IN SPIRALIZED CURVE
θs_3	CENTRAL ANGLE OF COMPOUND SPIRAL OR COMPOUND SPIRAL ANGLE FROM CS TO SC
#10	TRACK TURNOUT DESIGNATION
#15 EQ	EQUALATERAL TURNOUT

Santa Clara Valley Transportation Authority

✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

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Contract No.: DB11002F
By: _____ Date: 7/1/13

REV	DATE	BY	SUB	APP	DESCRIPTION
0	20121102				READY FOR CONSTRUCTION

DESIGNED BY R. BANKS
DRAWN BY M. HALL
CHECKED BY D. CLARY
IN CHARGE K. ANDERSON
DATE 20121102

REGISTERED PROFESSIONAL ENGINEER — RICHARD A. BANKS — No. 53893 — Exp. 12/31/13 — CIVIL — STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle, Milpitas, California 95035
A Joint Venture

SUBMITTED: Lockwood, Andrews & Newnam, Inc. — A LEO A DALY COMPANY

APPROVED: Lockwood, Andrews & Newnam, Inc. — A LEO A DALY COMPANY — T·Y·LIN INTERNATIONAL

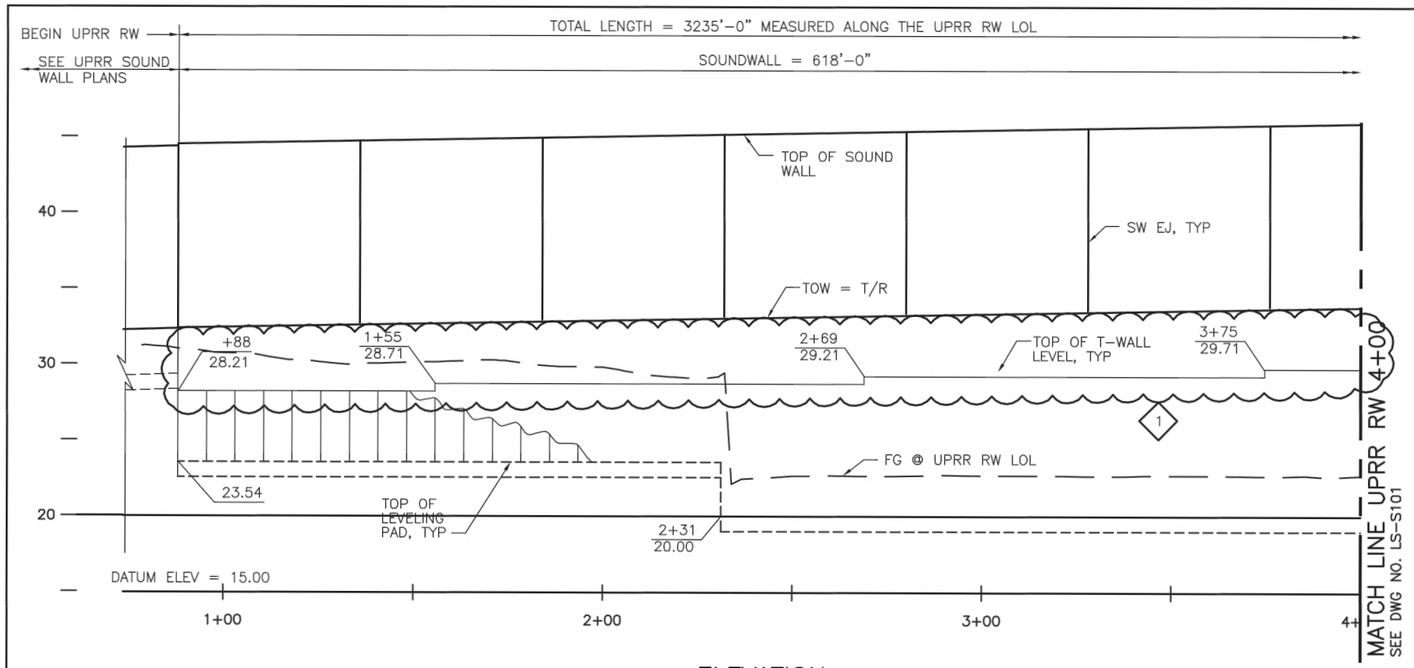
VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS, AND SYSTEMS

GENERAL ABBREVIATIONS
SHEET 4 OF 4

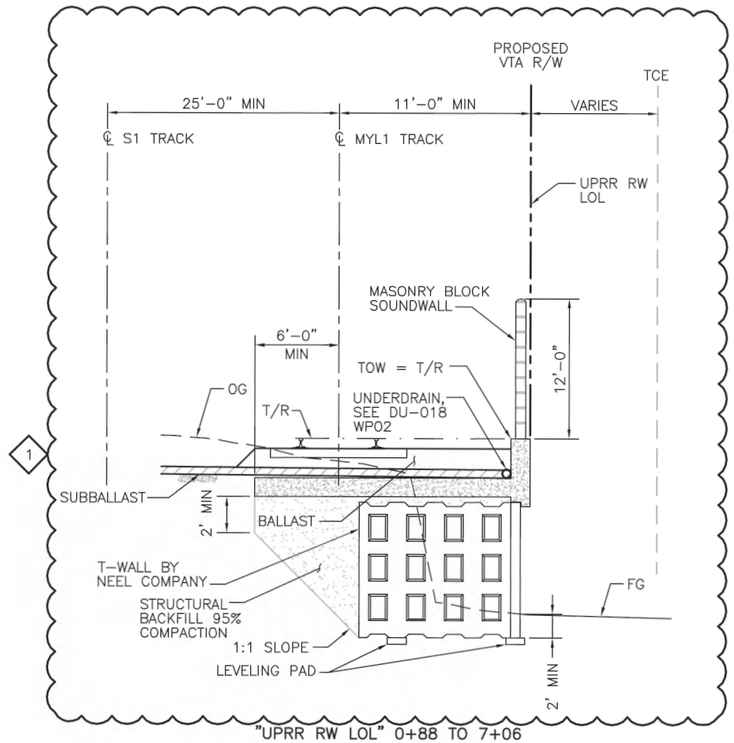
CADD FILENAME C700–S–RR–X233.dwg
SIZE D | SCALE NOT TO SCALE
CONTRACT NO. C700 | REV. 0
AREA CODE RR | SHEET NO. X233 | PAGE NO. 0006

BPlanz: Nov 02, 2012 – 3:47pm C:\projectwise\bperez\dms76619\C700-S-RR-X233.dwg



ELEVATION

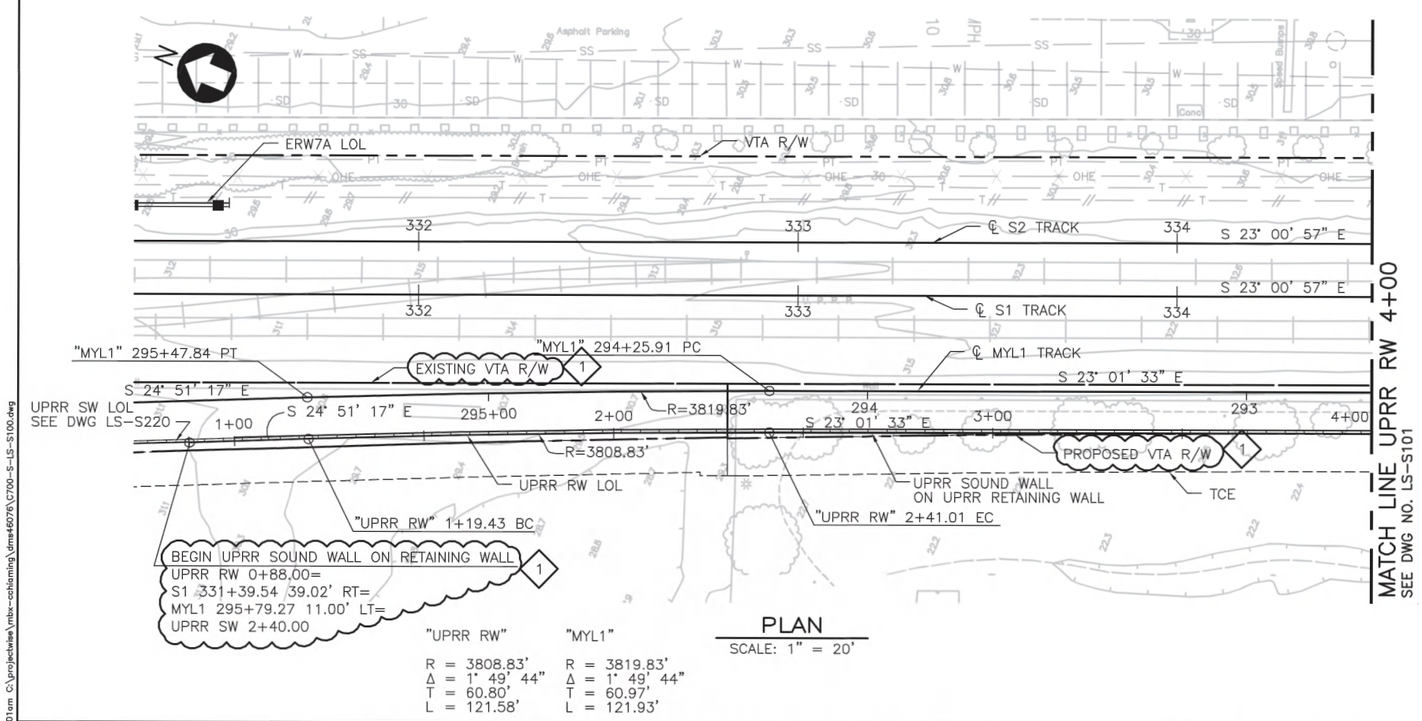
SCALE: 1" = 20' (H)
1" = 5' (V)



"UPRR RW LOL" 0+88 TO 7+06

TYPICAL SECTION

NTS



PLAN

SCALE: 1" = 20'

"UPRR RW"	"MYL1"
R = 3808.83'	R = 3819.83'
Δ = 1° 49' 44"	Δ = 1° 49' 44"
T = 60.80'	T = 60.97'
L = 121.58'	L = 121.93'

NOTES:

1. FOR SOUNDWALL DETAILS SEE SHEET S110.
2. CONTRACTOR SHALL PROTECT EXISTING UTILITIES.
3. SUBGRADE WILL BE VERIFIED BY GEOTECHNICAL ENGINEER OF RECORD OR DESIGNEE.
4. THE MAJORITY OF THE SETTLEMENT IS EXPECTED TO OCCUR DURING THE EARTH WORK AND THE CONSTRUCTION OF THE T-WALLS. A WAITING PERIOD OF 15 DAYS IS RECOMMENDED AFTER THE WALLS ARE COMPLETED TO MINIMIZE POTENTIAL SETTLEMENT. SETTLEMENT SHOULD BE VERIFIED AT LEAST WITH SURVEY RESULTS. THE RECOMMENDED 15-DAY WAITING PERIOD MAY BE SHORTENED BASED ON THE SETTLEMENT MONITORING RESULTS AFTER REVIEWED BY THE GEOTECHNICAL ENGINEER OF RECORD PRIOR TO THE CONSTRUCTION OF THE TRACKS.
5. FOR TRACK DETAILS SEE DU-018 WP02.

Santa Clara Valley Transportation Authority

✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

Any action shown above is subject to the terms of the contract and does not relieve the Contractor of any of its obligations under the contract, including design and detailing.

Contract No.: DB11002F
By: _____ Date: 7/1/13

20' 0' 20' 40'
GRAPHIC SCALE

REV	DATE	BY	SUB	APP	DESCRIPTION
1	20130416				RFC REV 1
0	20121116				READY FOR CONSTRUCTION

DESIGNED BY C. SONG
DRAWN BY C. CHI
CHECKED BY R. KWOK
IN CHARGE O. LI
DATE 20130416

REGISTERED PROFESSIONAL ENGINEER CON M. SONG No. C31895 Exp. 12/31/14 CIVIL STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle
Milpitas, California 95035
A Joint Venture

T·Y·LIN INTERNATIONAL
SUBMITTED

Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY
T·Y·LIN INTERNATIONAL
APPROVED

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR RETAINING WALL
GENERAL PLAN NO. 1
SHEET 1 OF 8

CADD FILENAME C700-S-LS-S100.dwg
SIZE D | SCALE AS NOTED
CONTRACT NO. C700 | REV. 1
AREA CODE LS | SHEET NO. S100 | PAGE NO. 0007

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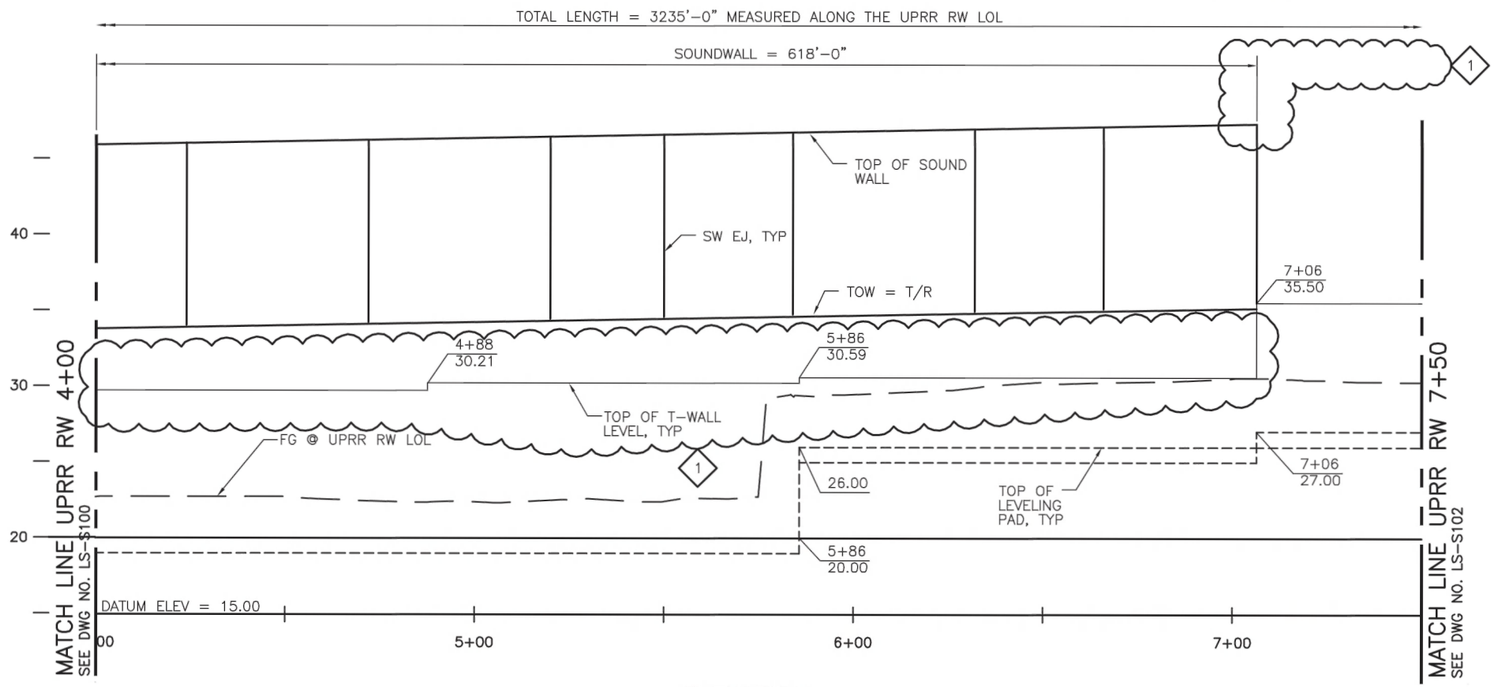
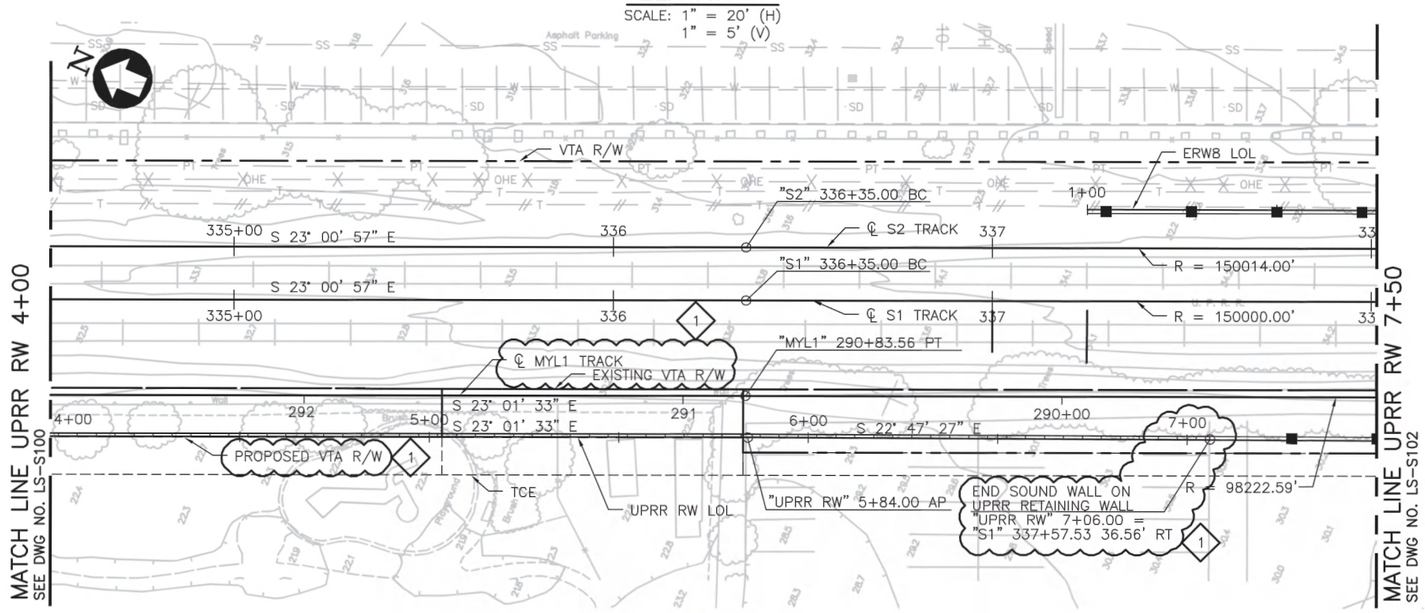


ELEVATION

SCALE: 1" = 20' (H)
1" = 5' (V)



PLAN

SCALE: 1" = 20'

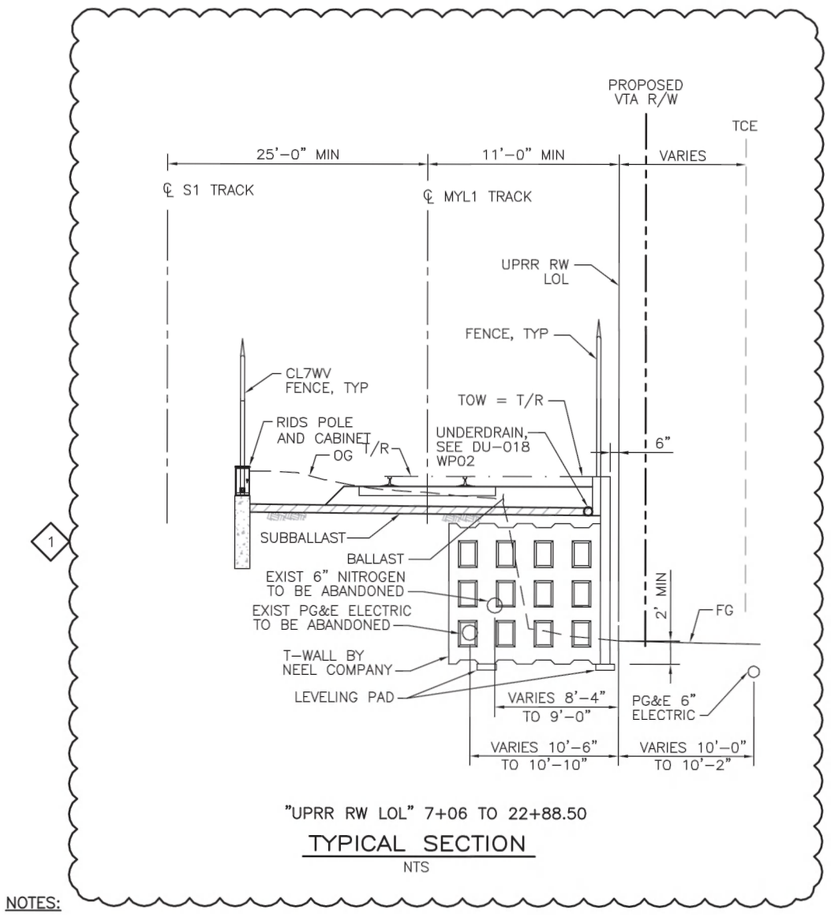
"MYL1"	"S1"	"S2"
R = 98222.59'	R = 150000.00'	R = 150014.00'
Δ = 0° 08' 31"	Δ = 0° 05' 33"	Δ = 0° 05' 33"
T = 121.62'	T = 121.16'	T = 121.17'
L = 243.29'	L = 242.31'	L = 242.33'

Santa Clara Valley Transportation Authority

✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

Any action shown above is subject to the terms of the contract and does not relieve the Contractor of any of its obligations under the contract, including design and detailing.

Contract No.: DB11002F
By: [signature] Date: 7/1/13



"UPRR RW LOL" 7+06 TO 22+88.50

TYPICAL SECTION

NTS

NOTES:

1. FOR SOUNDWALL DETAILS SEE SHEET S110.

20' 0' 20' 40'
GRAPHIC SCALE

REV	DATE	BY	SUB	APP	DESCRIPTION
1	20130416				RFC REV 1
0	20121116				READY FOR CONSTRUCTION

DESIGNED BY C. SONG
DRAWN BY C. CHI
CHECKED BY R. KWOK
IN CHARGE O. LI
DATE 20130416

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER M. CONNOR No. C31895 Exp. 12/31/14 CIVIL STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle
Milpitas, California 95035
A Joint Venture

T·Y·LIN INTERNATIONAL
SUBMITTED

Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY
T·Y·LIN INTERNATIONAL
APPROVED

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR RETAINING WALL
GENERAL PLAN NO. 2
SHEET 2 OF 8

CADD FILENAME C700-S-LS-S101.dwg
SIZE D | SCALE AS NOTED
CONTRACT NO. C700 | REV. 1
AREA CODE LS | SHEET NO. S101 | PAGE NO. 0008

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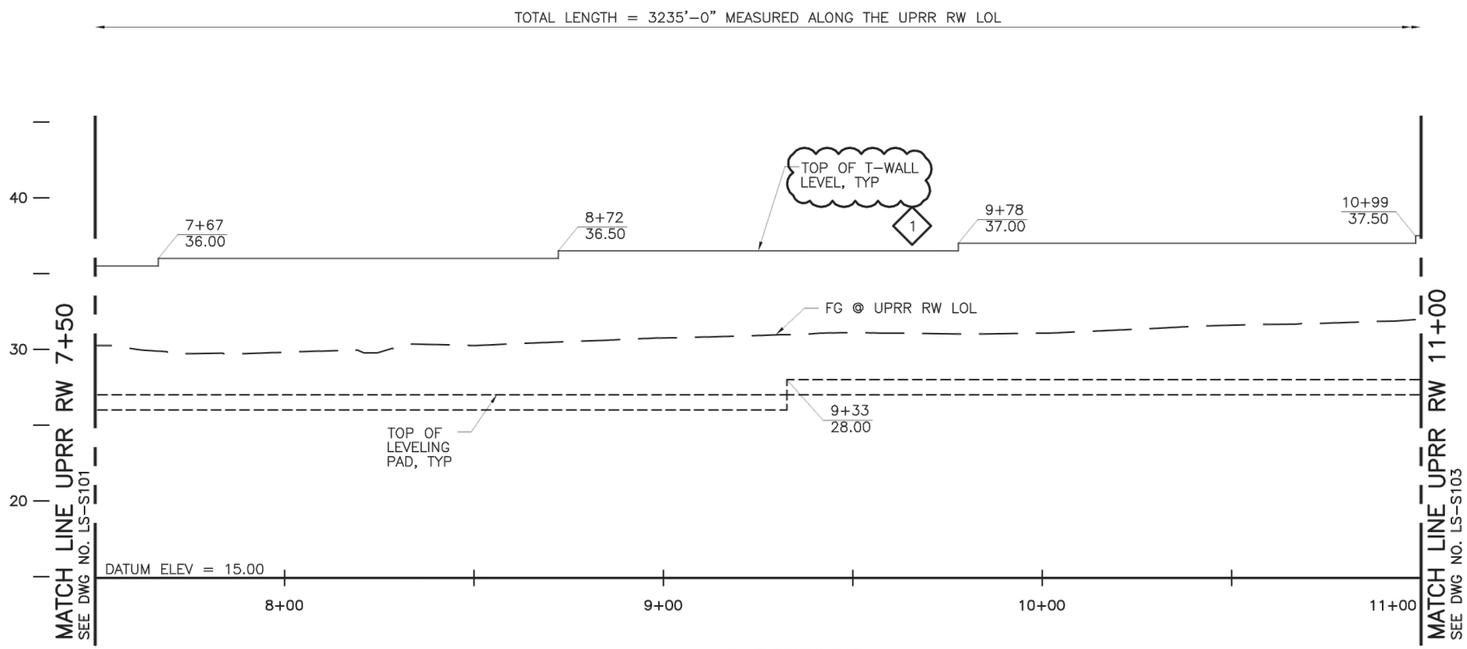
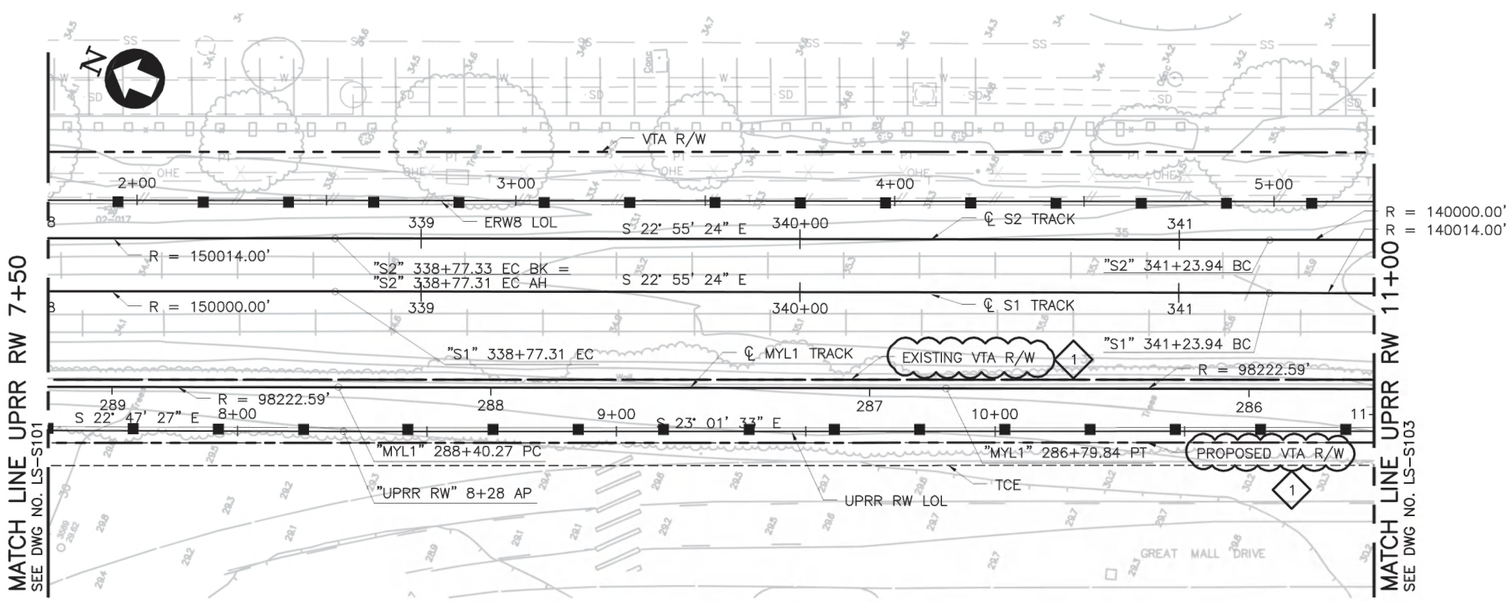


ELEVATION

SCALE: 1" = 20' (H)
1" = 5' (V)



PLAN

SCALE: 1" = 20'

"MYL1"	"S1"	"S1"	"S2"	"S2"
R = 98222.59'	R = 150000.00'	R = 140014.00'	R = 150014.00'	R = 140000.00'
Δ = 0° 08' 31"	Δ = 0° 05' 33"	Δ = 0° 06' 09"	Δ = 0° 05' 33"	Δ = 0° 06' 09"
T = 121.65'	T = 121.16'	T = 125.20'	T = 121.17'	T = 125.19'
L = 243.29'	L = 242.31'	L = 250.39'	L = 242.33'	L = 250.37'

Santa Clara Valley Transportation Authority

✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

Any action shown above is subject to the terms of the contract and does not relieve the Contractor of any of its obligations under the contract, including design and detailing.

Contract No.: DB11002F
By: _____ Date: 7/1/13

20' 0' 20' 40'
GRAPHIC SCALE

REV	DATE	BY	SUB	APP	DESCRIPTION
1	20130416				RFC REV 1
0	20121116				READY FOR CONSTRUCTION

DESIGNED BY C. SONG
DRAWN BY C. CHI
CHECKED BY R. KWOK
IN CHARGE O. LI
DATE 20130416

REGISTERED PROFESSIONAL ENGINEER — CLINTON M. ... No. C31895 Exp. 12/31/14 CIVIL STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle Milpitas, California 95035
A Joint Venture

T·Y·LIN INTERNATIONAL
SUBMITTED

Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY
T·Y·LIN INTERNATIONAL
APPROVED

BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR RETAINING WALL
GENERAL PLAN NO. 3
SHEET 3 OF 8

CADD FILENAME C700-S-LS-S102.dwg
SIZE D | SCALE AS NOTED
CONTRACT NO. C700 | REV. 1
AREA CODE LS | SHEET NO. S102 | PAGE NO. 0009

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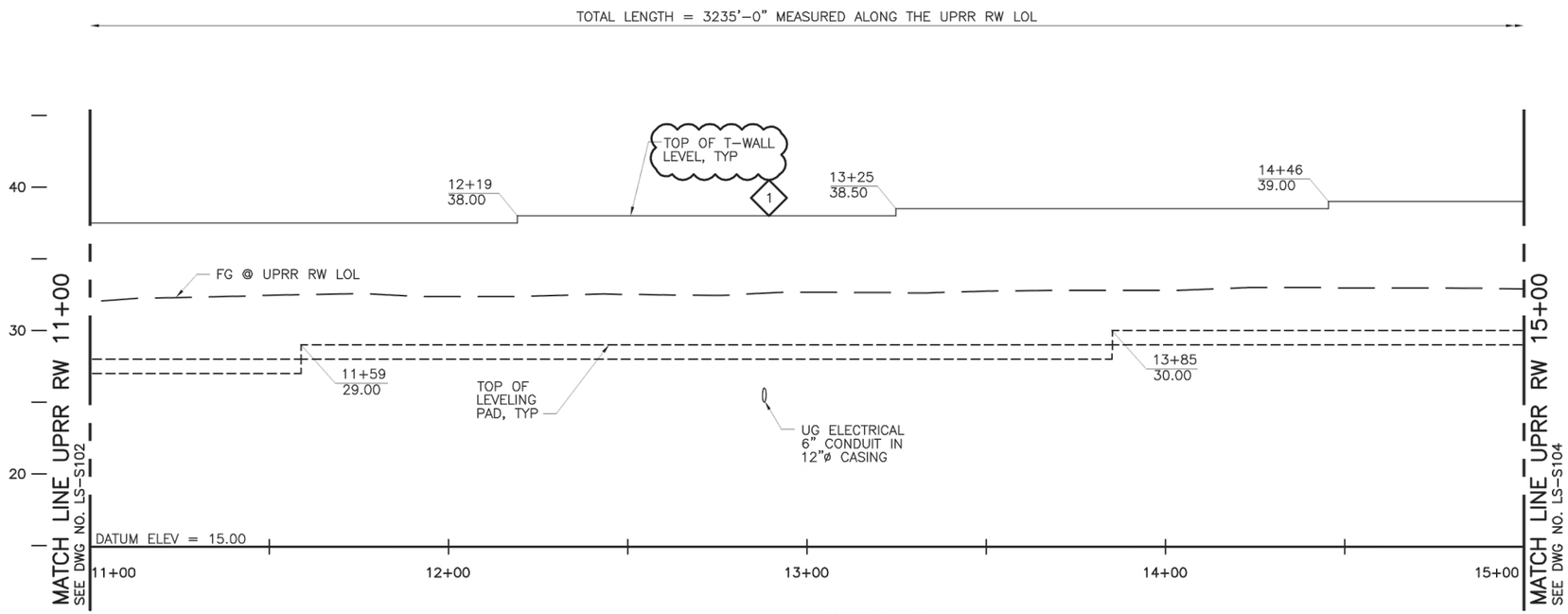
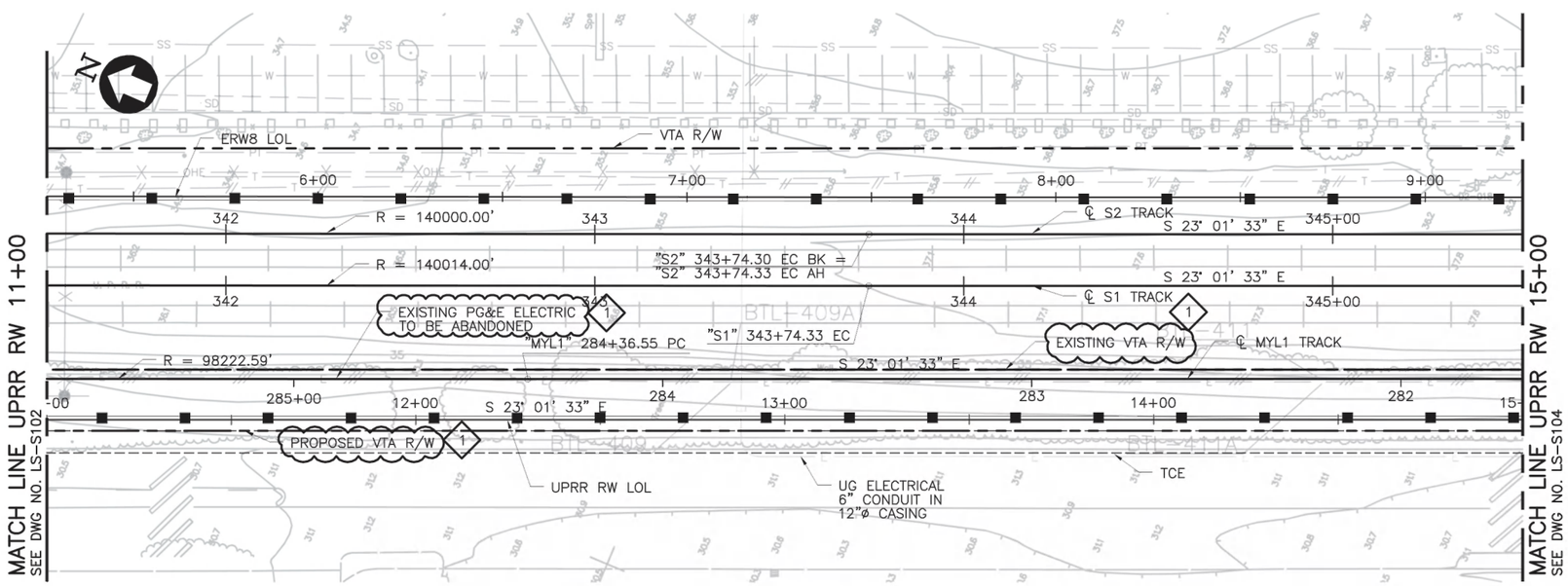


ELEVATION

SCALE: 1" = 20' (H)
1" = 5' (V)



PLAN

SCALE: 1" = 20'

"MYL1"	"S1"	"S2"
R = 98222.59'	R = 140014.00'	R = 140000.00'
Δ = 0° 08' 31"	Δ = 0° 06' 09"	Δ = 0° 06' 09"
T = 121.65'	T = 125.20'	T = 125.19'
L = 243.29'	L = 250.39'	L = 250.37'

Santa Clara Valley Transportation Authority

✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

Any action shown above is subject to the terms of the contract and does not relieve the Contractor of any of its obligations under the contract, including design and detailing.

Contract No.: DB11002F

By: _____ Date: 7/1/13
Engr

20' 0' 20' 40'
GRAPHIC SCALE

REV	DATE	BY	SUB	APP	DESCRIPTION
1	20130416				RFC REV 1
0	20121116				READY FOR CONSTRUCTION

DESIGNED BY C. SONG
DRAWN BY C. CHI
CHECKED BY R. KWOK
IN CHARGE O. LI
DATE 20130416

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER M. ... No. C31895 Exp. 12/31/14 CIVIL STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle
Milpitas, California 95035
A Joint Venture

T·Y·LIN INTERNATIONAL
SUBMITTED

Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY
T·Y·LIN INTERNATIONAL
APPROVED

BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR RETAINING WALL
GENERAL PLAN NO. 4
SHEET 4 OF 8

CADD FILENAME C700-S-LS-S103.dwg
SIZE D | SCALE AS NOTED
CONTRACT NO. C700 | REV. 1
AREA CODE LS | SHEET NO. S103 | PAGE NO. 0010

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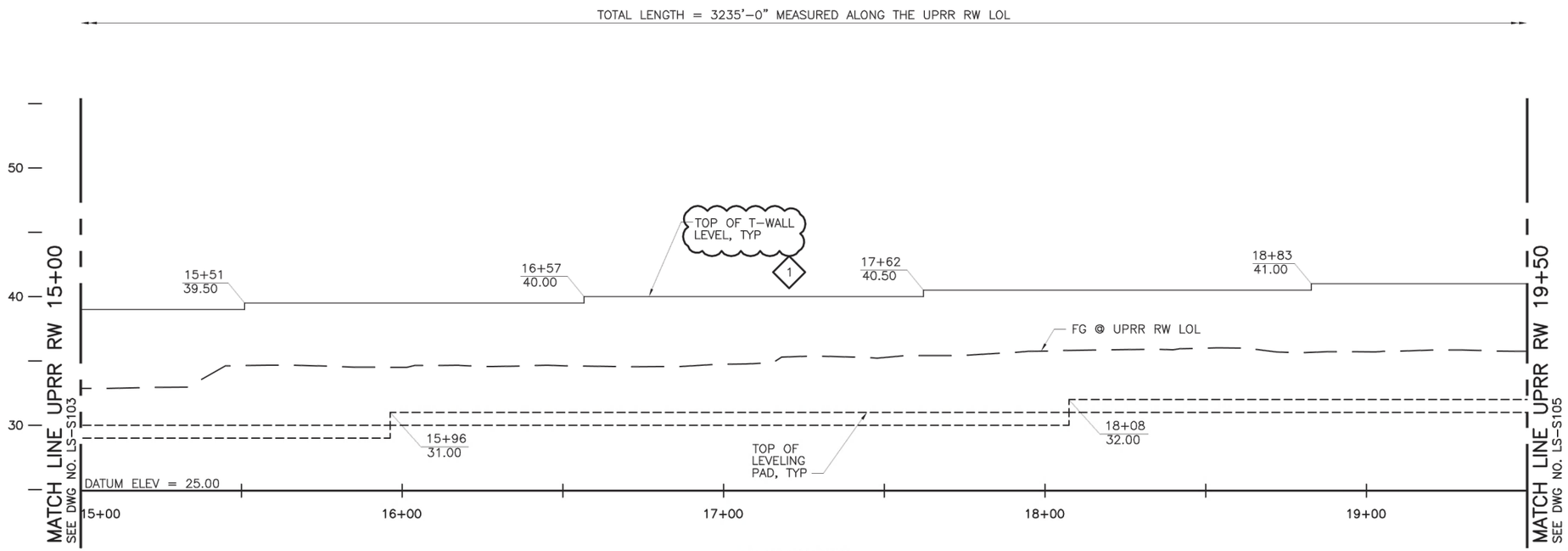
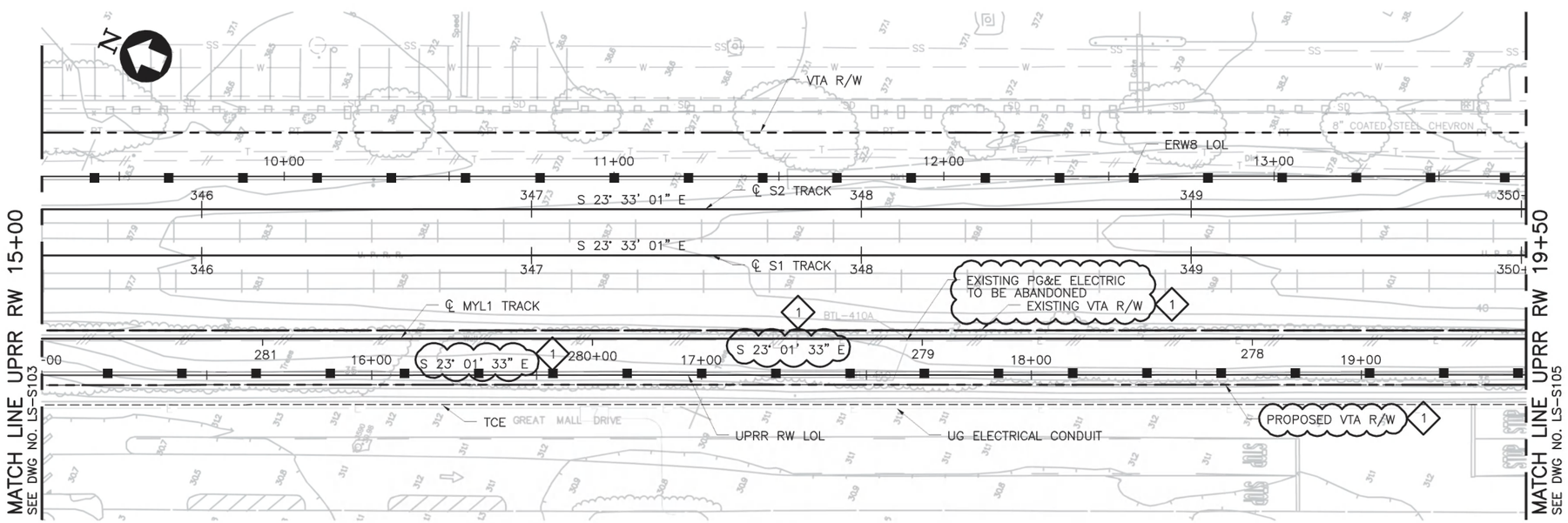


ELEVATION

SCALE: 1" = 20' (H)
1" = 5' (V)



PLAN

SCALE: 1" = 20'

Santa Clara Valley Transportation Authority

✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

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Contract No.: DB11002F

By: _____ Date: 7/1/13

20' 0' 20' 40'
GRAPHIC SCALE

REV	DATE	BY	SUB	APP	DESCRIPTION
1	20130416				RFC REV 1
0	20121116				READY FOR CONSTRUCTION

DESIGNED BY C. SONG
DRAWN BY C. CHI
CHECKED BY R. KWOK
IN CHARGE O. LI
DATE 20130416

REGISTERED PROFESSIONAL ENGINEER — CHRISTON M. ... No. C31895 Exp. 12/31/14 CIVIL STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle
Milpitas, California 95035
A Joint Venture

T·Y·LIN INTERNATIONAL
SUBMITTED

Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY
T·Y·LIN INTERNATIONAL
APPROVED

BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR RETAINING WALL
GENERAL PLAN NO. 5
SHEET 5 OF 8

CADD FILENAME C700-S-LS-S104.dwg
SIZE D | SCALE AS NOTED
CONTRACT NO. C700 | REV. 1
AREA CODE LS | SHEET NO. S104 | PAGE NO. 0011

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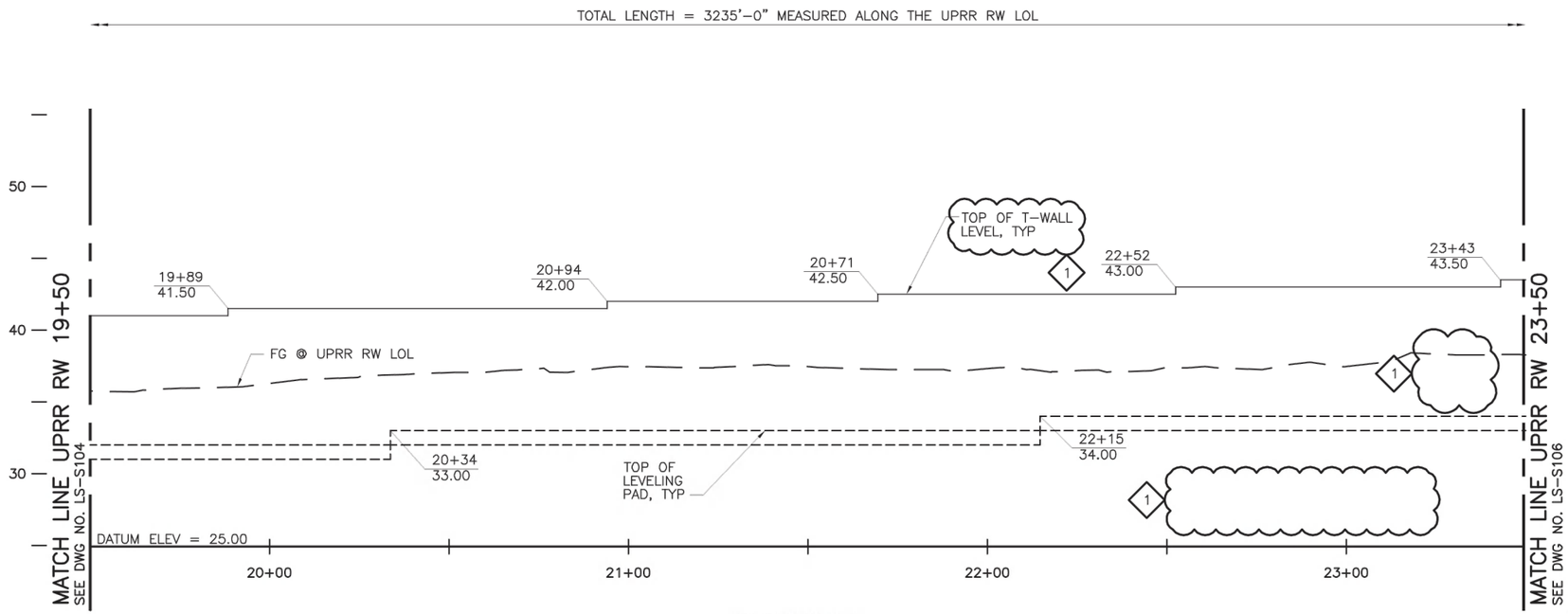
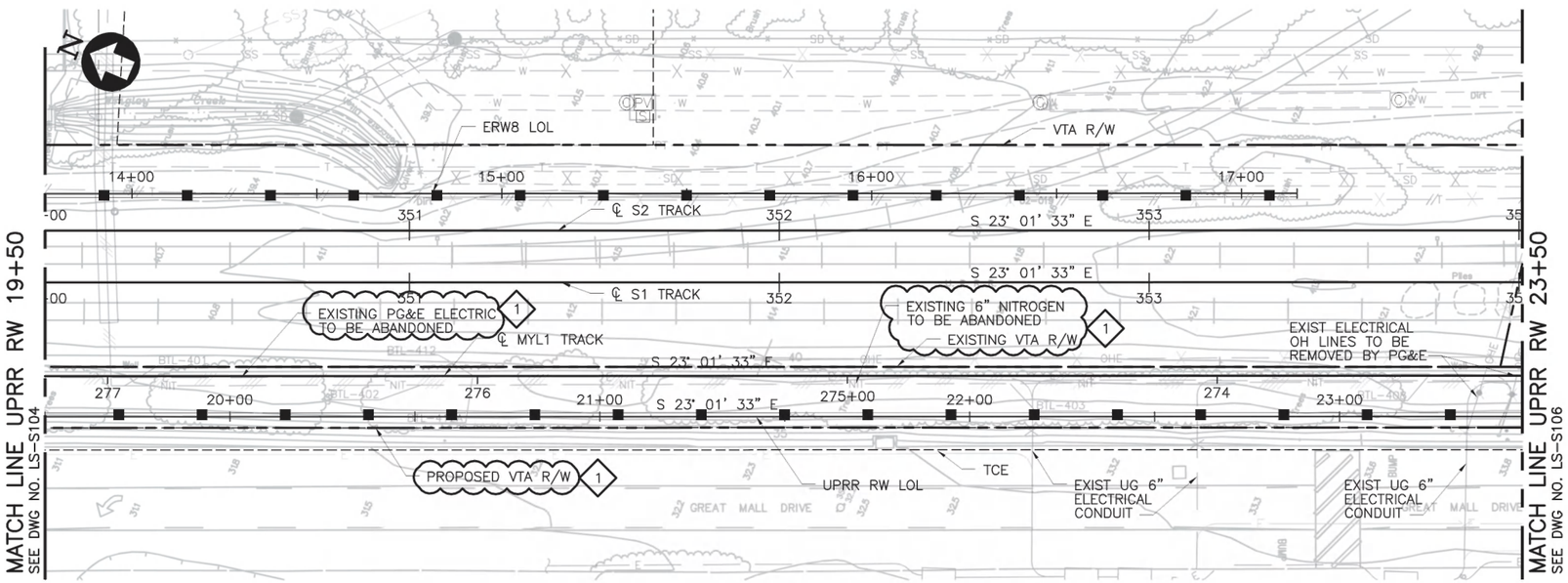


ELEVATION

SCALE: 1" = 20' (H)
1" = 5' (V)



PLAN

SCALE: 1" = 20'

Santa Clara Valley Transportation Authority

✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

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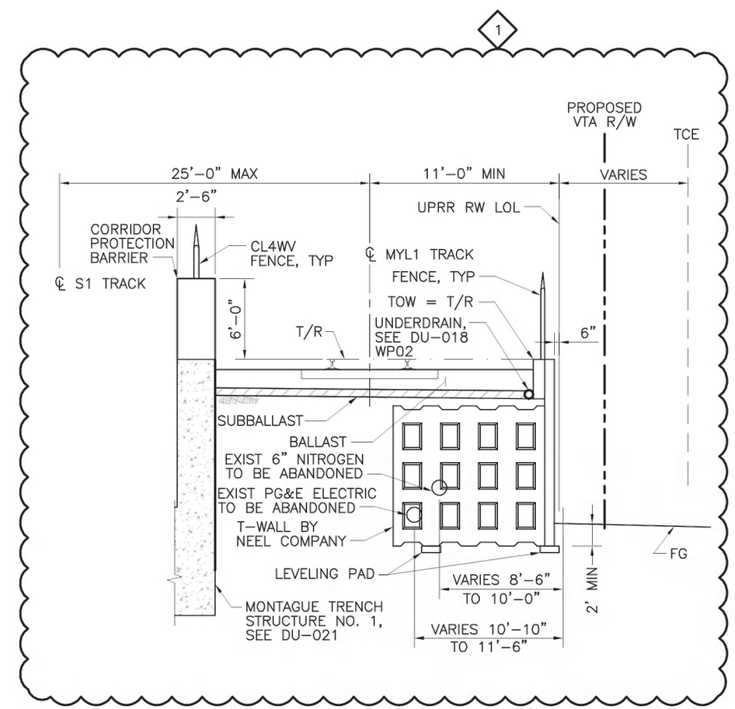
Contract No.: DB11002F

By: [signature] Date: 7/1/13



"UPRR RW LOL" 22+88.50 TO 32+11

TYPICAL SECTION

NTS

20' 0' 20' 40'
GRAPHIC SCALE

REV	DATE	BY	SUB	APP	DESCRIPTION
1	20130416				RFC REV 1
0	20121116				READY FOR CONSTRUCTION

DESIGNED BY C. SONG
DRAWN BY C. CHI
CHECKED BY R. KWOK
IN CHARGE O. LI
DATE 20130416

PROFESSIONAL ENGINEER — CHON M. CHI — No. C31895 — Exp. 12/31/14 — CIVIL — STATE OF CALIFORNIA

Skanska Shimmick Herzog — 1436 California Circle, Milpitas, California 95035 — A Joint Venture

T·Y·LIN INTERNATIONAL — SUBMITTED

Lockwood, Andrews & Newnam, Inc. — A CH2M HILL COMPANY — T·Y·LIN INTERNATIONAL — APPROVED

VTA BART SILICON VALLEY

BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR RETAINING WALL
GENERAL PLAN NO. 6
SHEET 6 OF 8

CADD FILENAME C700-S-LS-S105.dwg
SIZE D — SCALE AS NOTED
CONTRACT NO. C700 — REV. 1
AREA CODE LS — SHEET NO. S105 — PAGE NO. 0012

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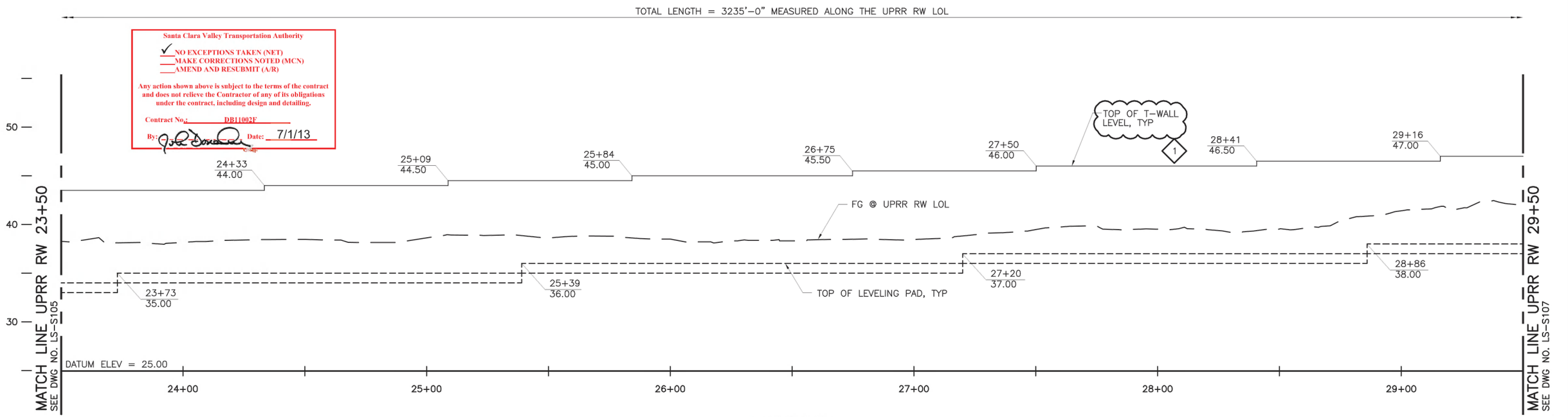
Santa Clara Valley Transportation Authority

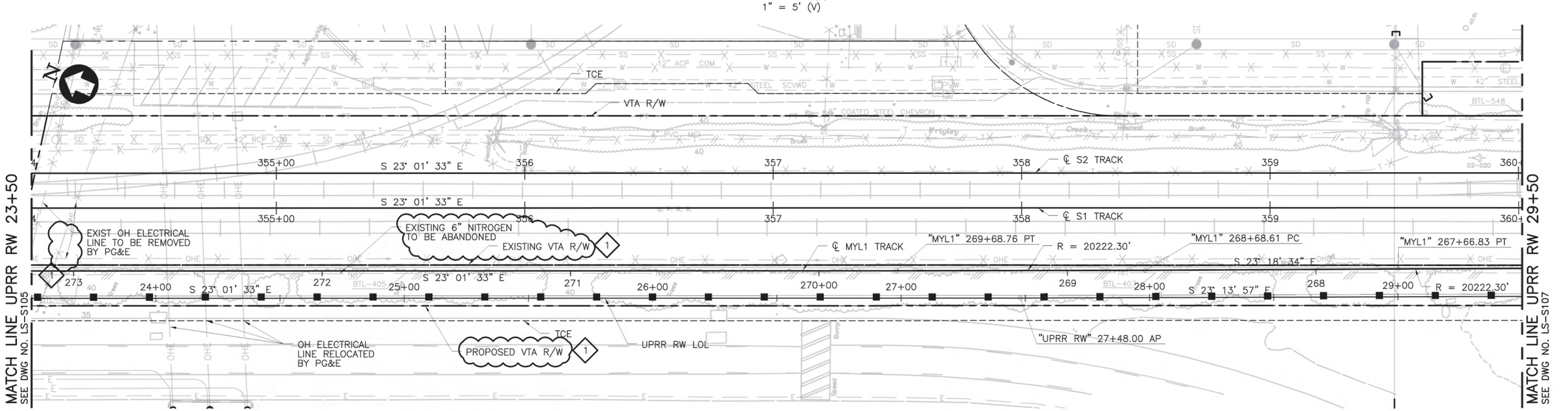
✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

Any action shown above is subject to the terms of the contract and does not relieve the Contractor of any of its obligations under the contract, including design and detailing.

Contract No.: DB11002F
By: Date: 7/1/13



ELEVATION
SCALE: 1" = 20' (H)
1" = 5' (V)



"MYL1"

R = 20222.30'
Δ = 0° 17' 01"
T = 50.07'
L = 100.15'

PLAN
SCALE: 1" = 20'

20' 0' 20' 40'
GRAPHIC SCALE

REV	DATE	BY	SUB	APP	DESCRIPTION
1	20130416				RFC REV 1
0	20121116				READY FOR CONSTRUCTION

DESIGNED BY C. SONG
DRAWN BY C. CHI
CHECKED BY R. KWOK
IN CHARGE O. LI
DATE 20130416

REGISTERED PROFESSIONAL ENGINEER — CLAYTON M. BAKER — No. C31895 — Exp. 12/31/14 — CIVIL — STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle
Milpitas, California 95035
A Joint Venture

T·Y·LIN INTERNATIONAL
SUBMITTED

Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY
T·Y·LIN INTERNATIONAL
APPROVED

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR RETAINING WALL
GENERAL PLAN NO. 7
SHEET 7 OF 8

CADD FILENAME C700-S-LS-S106.dwg
SIZE D | SCALE AS NOTED
CONTRACT NO. C700 | REV. 1
AREA CODE LS | SHEET NO. S106 | PAGE NO. 0013

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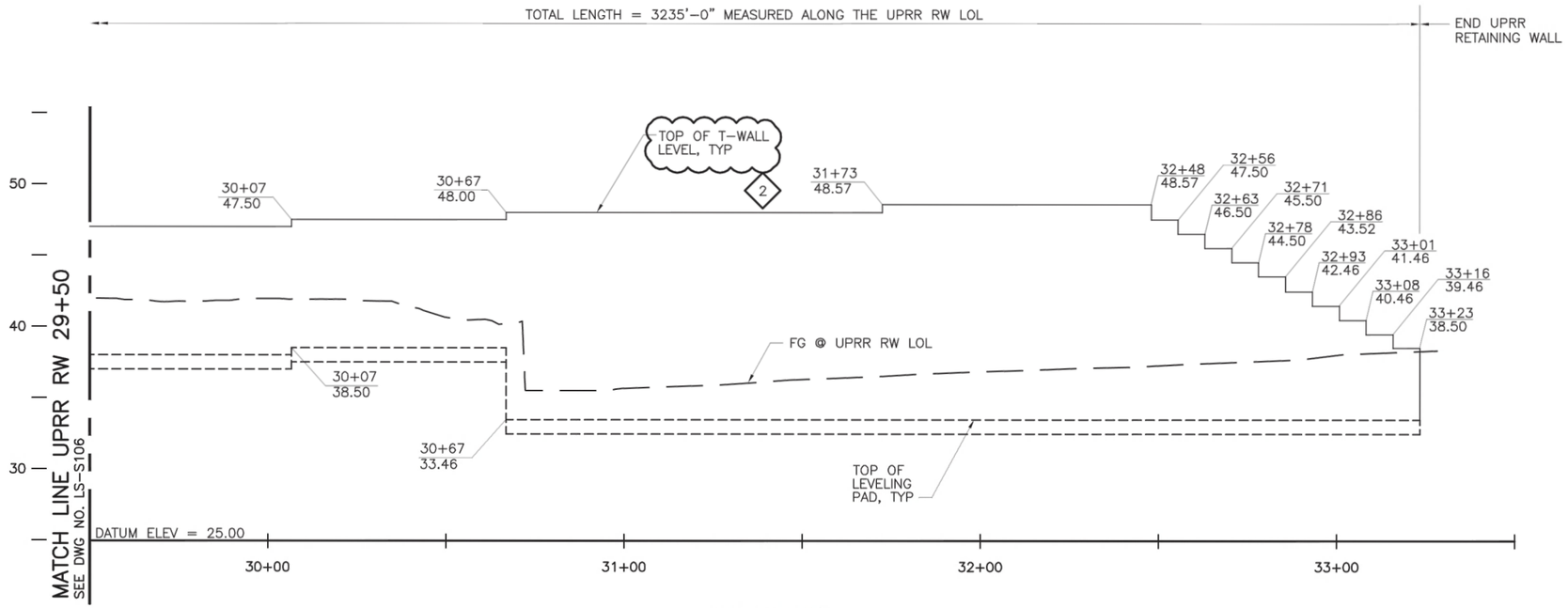
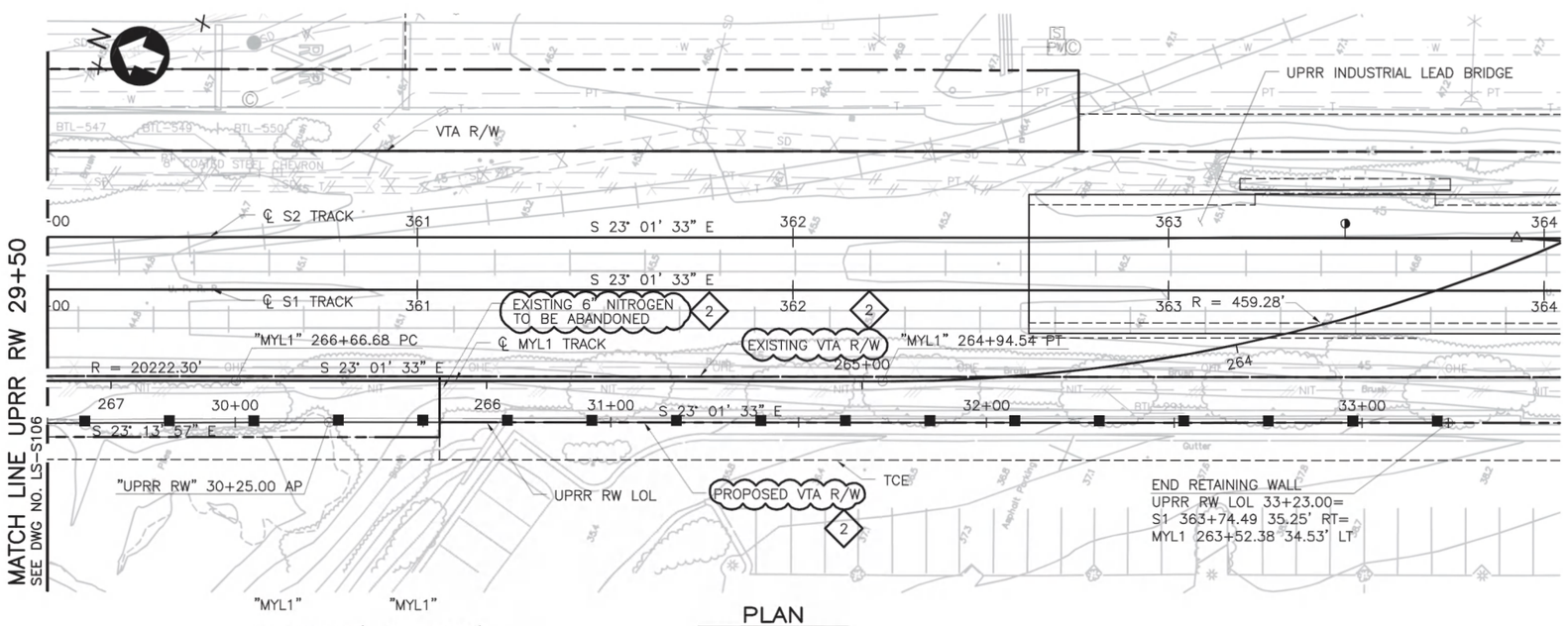


ELEVATION

SCALE: 1" = 20' (H)
1" = 5' (V)



PLAN

SCALE: 1" = 20'

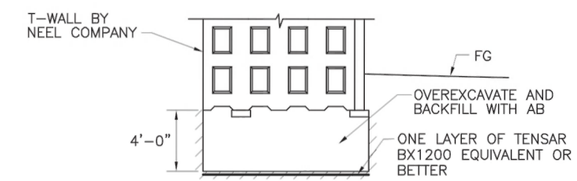
Santa Clara Valley Transportation Authority

✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

Any action shown above is subject to the terms of the contract and does not relieve the Contractor of any of its obligations under the contract, including design and detailing.

Contract No.: DB11002F

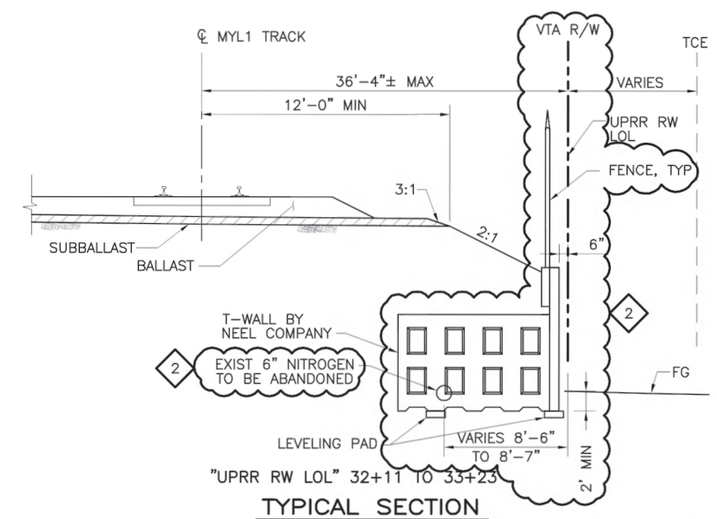
By: _____ Date: 7/1/13



"UPRR RW LOL" 30+67 TO 33+23

GROUND IMPROVEMENT

NTS



"UPRR RW LOL" 32+11 TO 33+23

TYPICAL SECTION

NTS

20' 0' 20' 40'
GRAPHIC SCALE

REV	DATE	BY	SUB	APP	DESCRIPTION
2	20130416				RFC REV 1
1	20130114				ADDED GROUND IMPROVEMENT
0	20121116				READY FOR CONSTRUCTION

DESIGNED BY C. SONG
DRAWN BY C. CHI
CHECKED BY R. KWOK
IN CHARGE O. LI
DATE 20130416

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER M. GOLDEN No. C31895 Exp. 12/31/14 CIVIL STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle Milpitas, California 95035
A Joint Venture

T·Y·LIN INTERNATIONAL
SUBMITTED

Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY
T·Y·LIN INTERNATIONAL
APPROVED

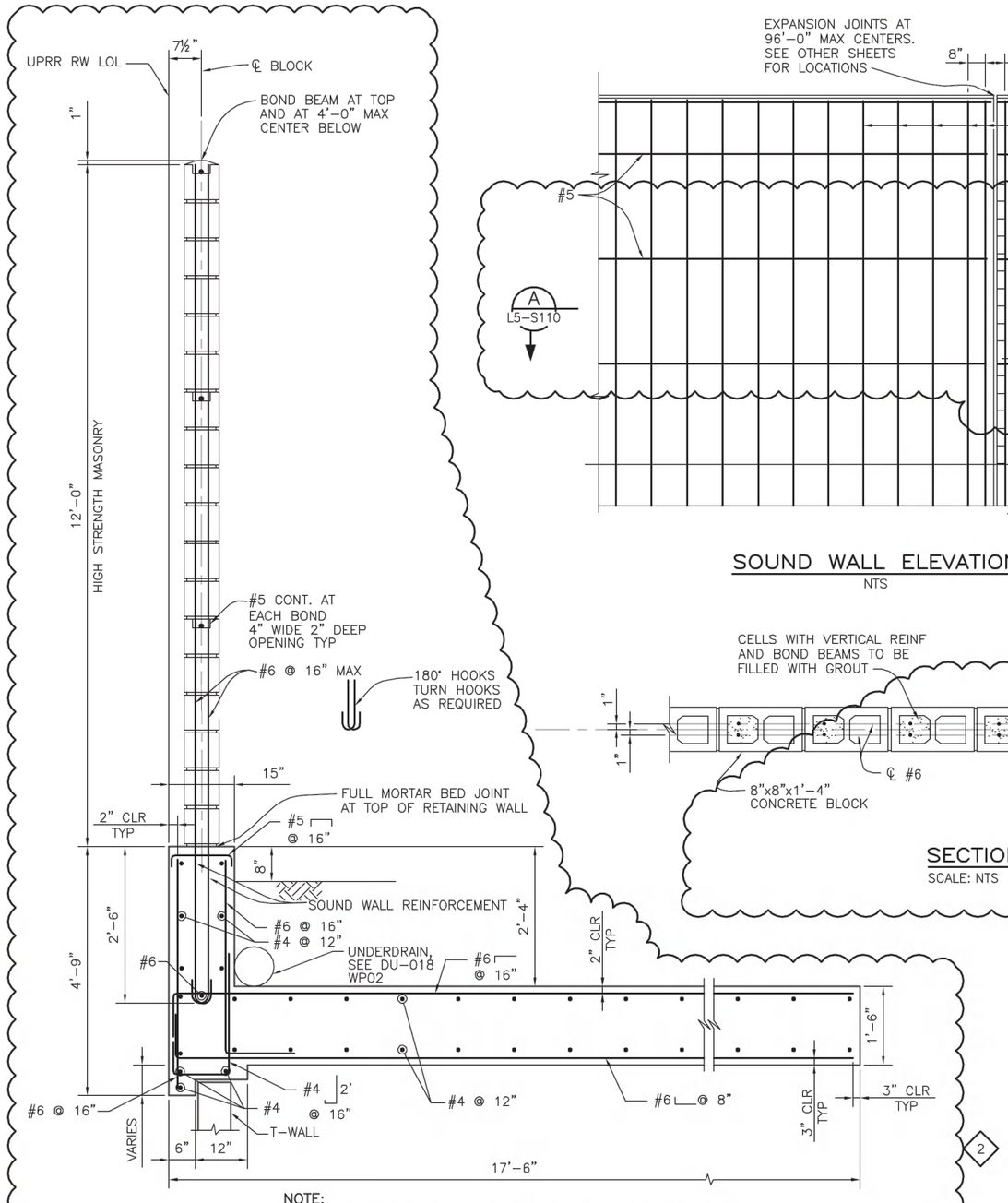
VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR RETAINING WALL
GENERAL PLAN NO. 8
SHEET 8 OF 8

CADD FILENAME C700-S-LS-S107.dwg
SIZE D | SCALE AS NOTED
CONTRACT NO. C700 | REV. 2
AREA CODE LS | SHEET NO. S107 | PAGE NO. 0014

cchi Jun 04, 2013 - 3:32pm C:\projectwise\wbz-cchiaming\dms46076\C700-S-LS-S107.dwg

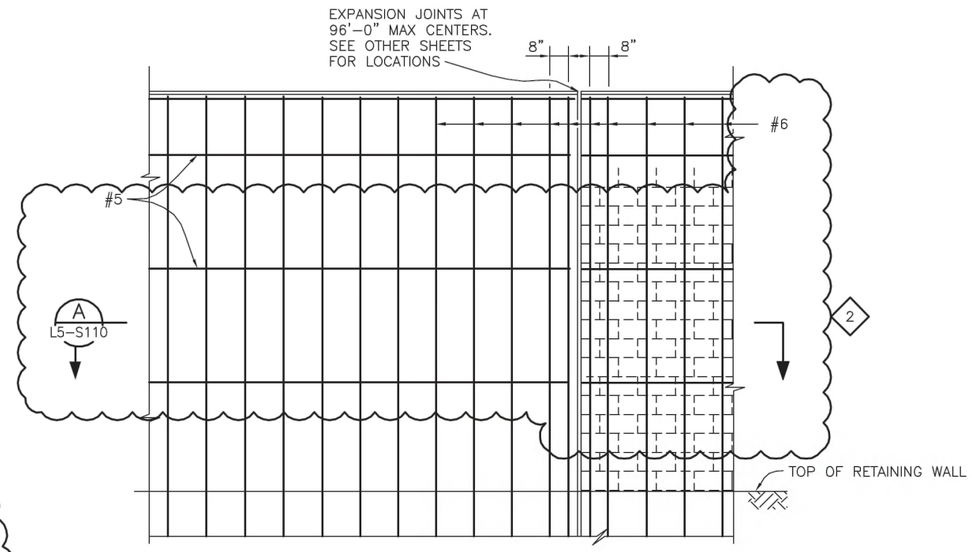


NOTE:

BALLAST MIN 8" DEPTH FROM BOTTOM OF TIE TO TOP OF SLAB.

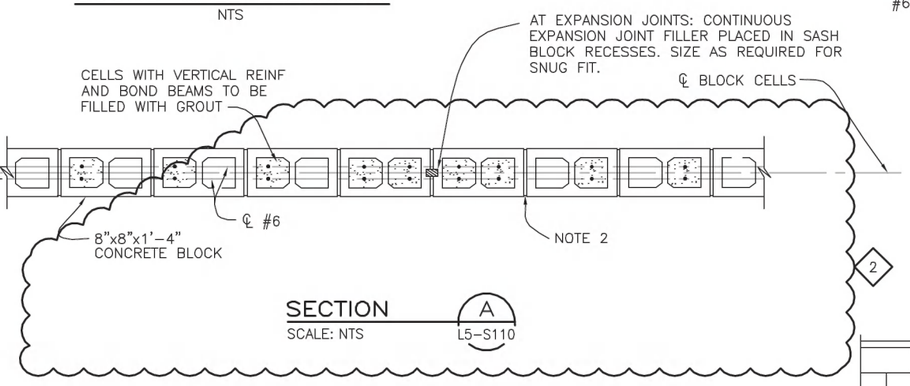
MOMENT SLAB AT T-WALL SECTION (1 / L5-S110)

SCALE: NTS



SOUND WALL ELEVATION

NTS



SECTION (A / L5-S110)

SCALE: NTS

NOTES:

1. WHEN BLOCKS ARE LAID IN STACKED BOND, LADDER TYPE, GALVANIZED JOINT REINFORCEMENT SHALL BE PROVIDED. A MINIMUM OF 2 – 9 GAUGE WIRES CONTINUOUS AT 4'-0" MAXIMUM TO BE USED. LOCATE REINFORCEMENT IN JOINTS THAT ARE AT THE APPROXIMATE MIDPOINT BETWEEN BOND BEAMS
2. HORIZONTAL JOINTS SHALL BE TOOLED CONCAVE OR MAY BE WEATHERED VERTICAL JOINTS SHALL BE TOOLED CONCAVE OR MAY BE RAKED
3. PER APPROVED AIP CMU SHALL BE SPLIT FACE WITH EARTH TONES – BROWN 2 COLORS, DARKER CAP MEDIUM WALL AREA, DARK BROWN GROUT, REFER TO SPECIFICATION 04 22 00 CONCRETE MASONRY

DESIGN NOTES

DESIGN

BART FACILITIES STANDARDS R2.1, AREMA 2012 (2)

DESIGN WIND LOAD

45 psf (2)

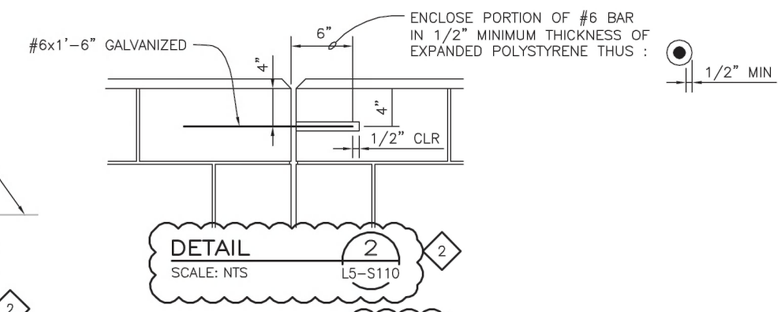
DESIGN SEISMIC LOAD

0.53 Dead load (2)

HIGH STRENGTH CONCRETE MASONRY

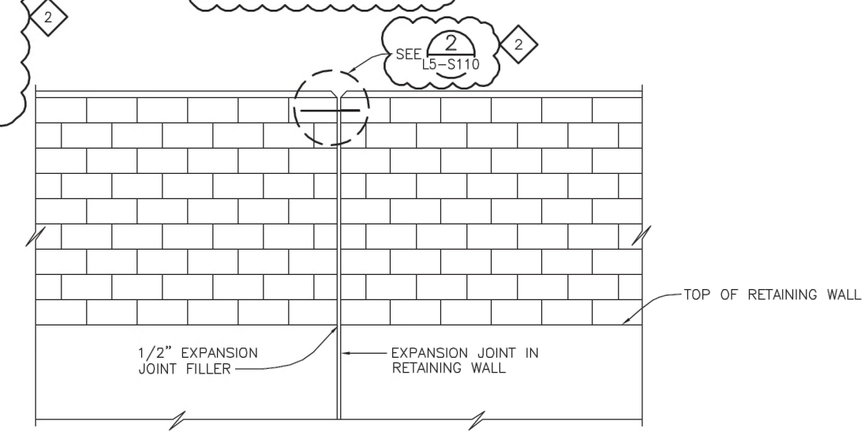
f'm = 2500 psi
fb = 830 psi
fs = 24,000 psi
n = 15.5

(2)



DETAIL (2 / L5-S110)

SCALE: NTS



ALIGNMENT KEY DETAIL

NTS

Santa Clara Valley Transportation Authority

✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

Any action shown above is subject to the terms of the contract and does not relieve the Contractor of any of its obligations under the contract, including design and detailing.

Contract No.: DB11002F

By: [signature] Date: 7/1/13

REV	DATE	BY	SUB	APP	DESCRIPTION
2	20130416				RFC REV 1
1	20130114				ADDED NOTE 3 FOR WALL FINISH
0	20121116				READY FOR CONSTRUCTION

DESIGNED BY C. SONG
DRAWN BY C. CHI
CHECKED BY R. KWOK
IN CHARGE O. LI
DATE 20130416

REGISTERED PROFESSIONAL ENGINEER — CON M. No. C31895 Exp. 12/31/14 CIVIL — STATE OF CALIFORNIA

Skanska Shimmick Herzog — 1436 California Circle, Milpitas, California 95035 — A Joint Venture

T·Y·LIN INTERNATIONAL — SUBMITTED

Lockwood, Andrews & Newnam, Inc. — T·Y·LIN INTERNATIONAL — APPROVED

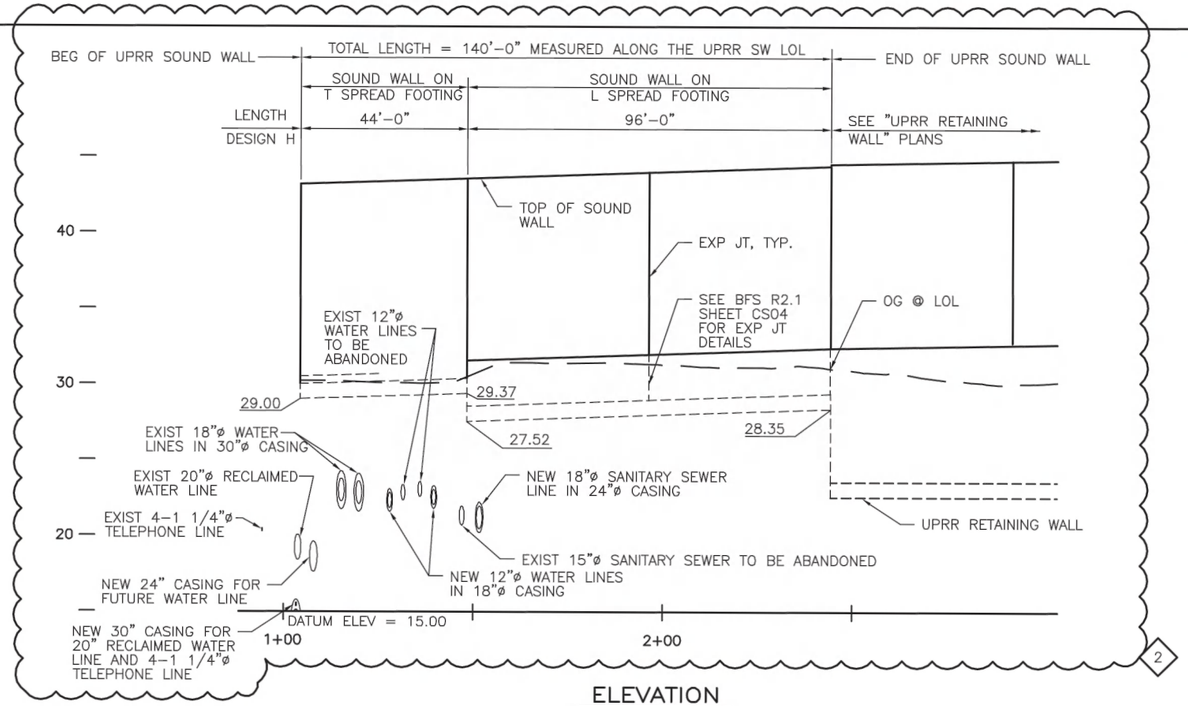
VTA BART SILICON VALLEY — BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR RETAINING WALL SOUNDWALL DETAILS

CADD FILENAME C700-S-LS-S110.dwg
SIZE D | SCALE AS NOTED
CONTRACT NO. C700 | REV. 2
AREA CODE LS | SHEET NO. S110 | PAGE NO. 0015

cobi Jun 13, 2013 – 9:29am C:\projectwise\mbx-cobiaming\dms46076\C700-S-LS-S110.dwg



ELEVATION

SCALE: 1" = 20' (H)
1" = 5' (V)

Santa Clara Valley Transportation Authority

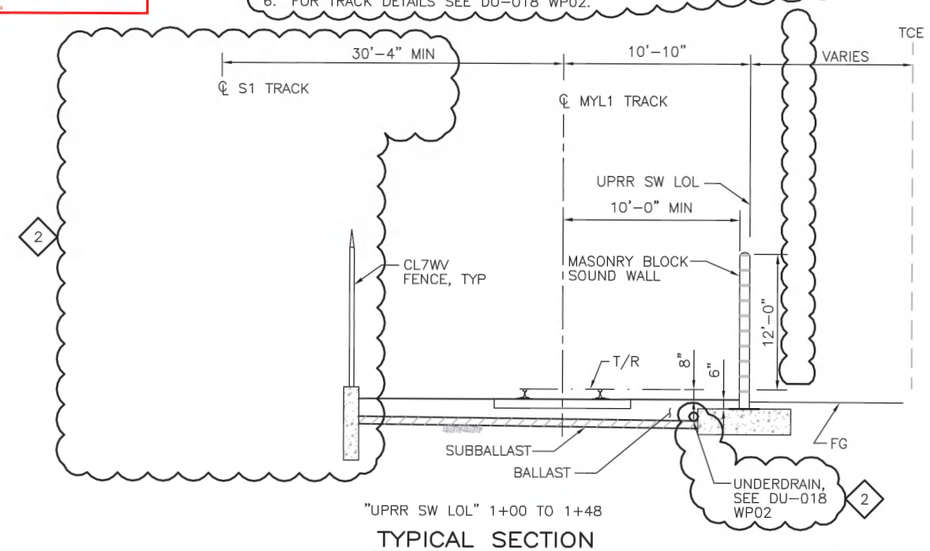
✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

Any action shown above is subject to the terms of the contract and does not relieve the Contractor of any of its obligations under the contract, including design and detailing.

Contract No.: DB11002F
By: [signature] Date: 7/1/13

NOTES:

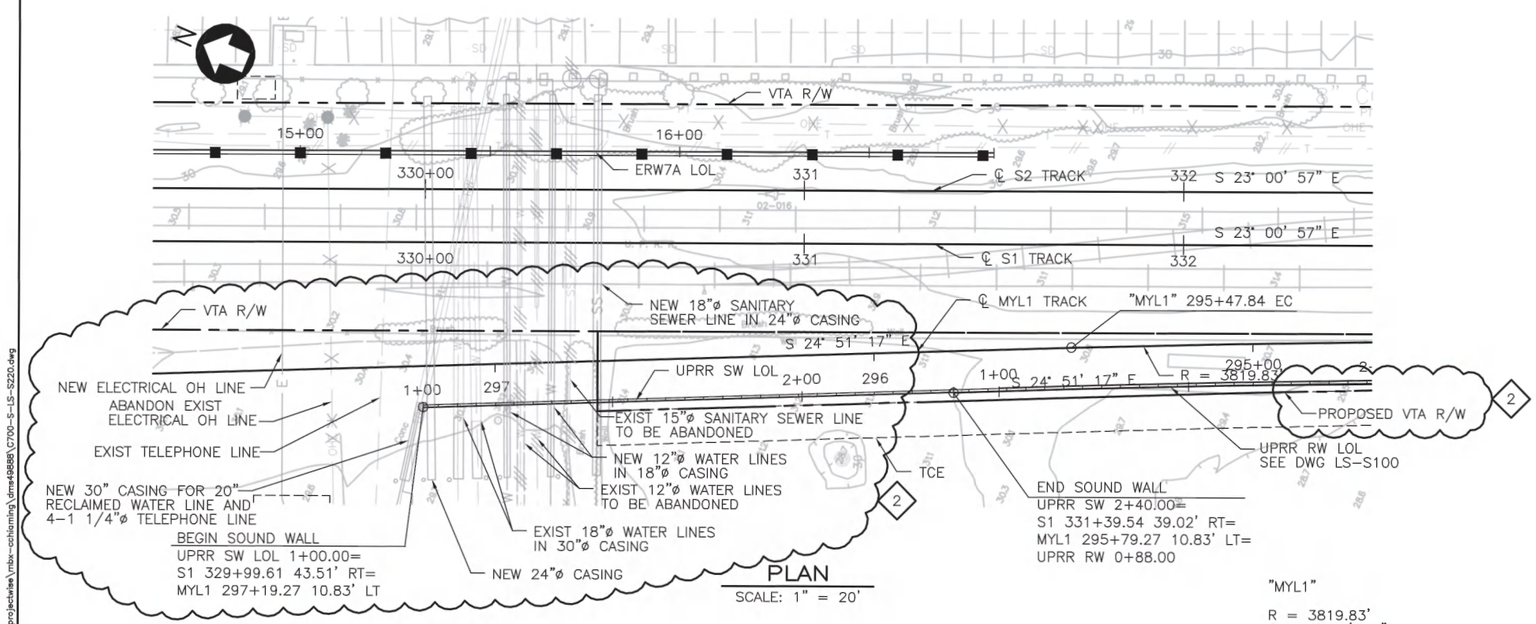
1. FOR SOUND WALL REINFORCEMENT AND DETAILS NOT SHOWN, SEE SHEET LS-S221.
2. CONTRACTOR SHALL NOTIFY UTILITY OWNERS BEFORE COMMENCING WORK.
3. SOUND WALL HEIGHT IS IS MEASURED FROM TOP OF RAIL.
4. CONTRACTOR SHALL PROTECT EXISTING UTILITIES.
5. SUBGRADE WILL BE VERIFIED BY GEOTECHNICAL ENGINEER OF RECORD OR DESIGNEE.
6. FOR TRACK DETAILS SEE DU-018 WP02.



"UPRR SW LOL" 1+00 TO 1+48

TYPICAL SECTION

NTS

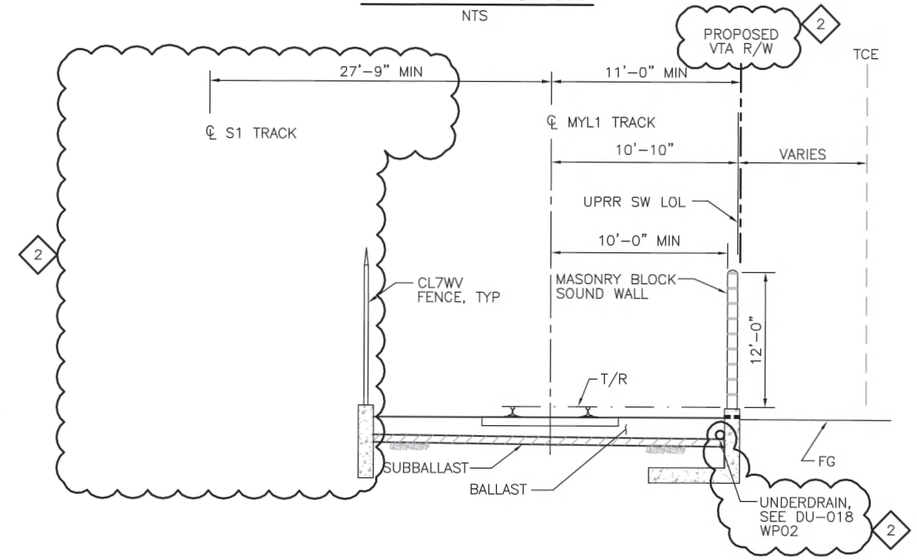


PLAN

SCALE: 1" = 20'

"MYL1"

R = 3819.83'
Δ = 1° 49' 44"
T = 60.97'
L = 121.93'



"UPRR SW LOL" 1+48 TO 2+40

TYPICAL SECTION

NTS

20' 0' 20' 40'
GRAPHIC SCALE

REV	DATE	BY	SUB	APP	DESCRIPTION
2	20130416				RFC REV 1
1	20130114				REVISED ANNOTATION ON TYPICAL SECTION
0	20121116				READY FOR CONSTRUCTION

DESIGNED BY C. SONG
DRAWN BY C. CHI
CHECKED BY R. KWOK
IN CHARGE O. LI
DATE 20130416

REGISTERED PROFESSIONAL ENGINEER CHUN M. SONG No. C31895 Exp. 12/31/14 CIVIL STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle Milpitas, California 95035
A Joint Venture

T·Y·LIN INTERNATIONAL
SUBMITTED

Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY
T·Y·LIN INTERNATIONAL
APPROVED

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR SOUND WALL
GENERAL PLAN

CADD FILENAME C700-S-LS-S220.dwg
SIZE D
SCALE AS NOTED
CONTRACT NO. C700
REV. 2
AREA CODE LS
SHEET NO. S220
PAGE NO. 0016

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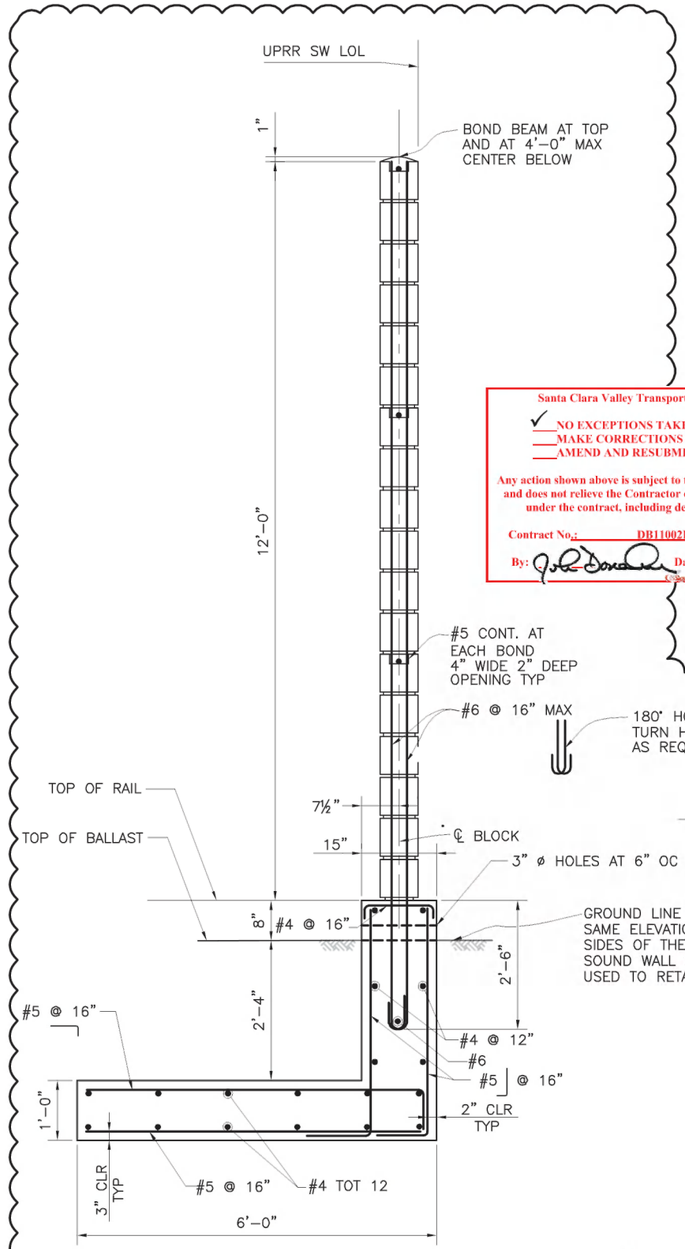
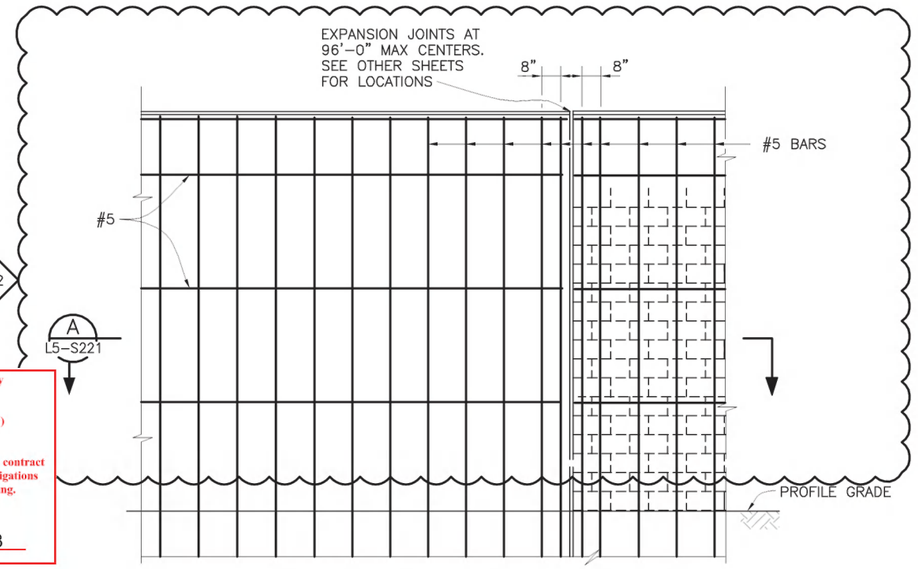


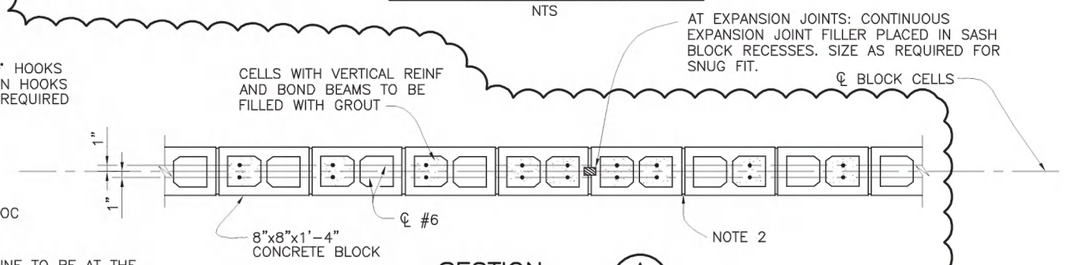
SOUND WALL L SPREAD FOOTING SECTION (1 / L5-S221)

SCALE: NTS



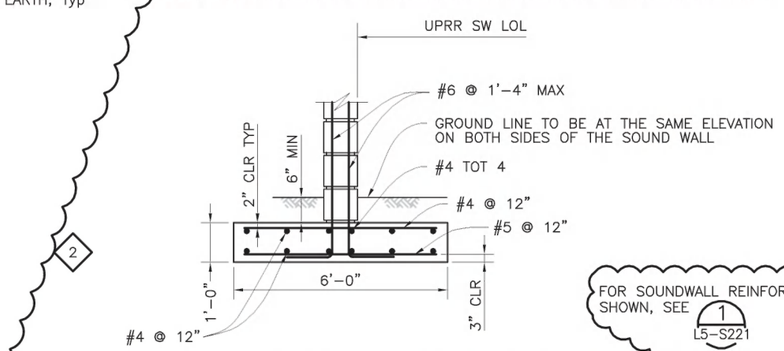
SOUND WALL ELEVATION

NTS



SECTION (A / L5-S221)

SCALE: NTS



SOUND WALL T SPREAD FOOTING SECTION

NTS

FOR SOUNDWALL REINFORCING NOT SHOWN, SEE (1 / L5-S221)

NOTES:

1. WHEN BLOCKS ARE LAID IN STACKED BOND, LADDER TYPE, GALVANIZED JOINT REINFORCEMENT SHALL BE PROVIDED. A MINIMUM OF 2 – 9 GAUGE WIRES CONTINUOUS AT 4'-0" MAXIMUM TO BE USED. LOCATE REINFORCEMENT IN JOINTS THAT ARE AT THE APPROXIMATE MIDPOINT BETWEEN BOND BEAMS
2. HORIZONTAL JOINTS SHALL BE TOOLED CONCAVE OR MAY BE WEATHERED VERTICAL JOINTS SHALL BE TOOLED CONCAVE OR MAY BE RAKED
3. PER APPROVED AIP CMU SHALL BE SPLIT FACE WITH EARTH TONES – BROWN 2 COLORS, DARKER CAP MEDIUM WALL AREA, DARK BROWN GROUT, REFER TO SPECIFICATION 04 22 00 CONCRETE MASONRY

DESIGN NOTES

DESIGN

BFS R2.1

DESIGN WIND LOAD

16 psf

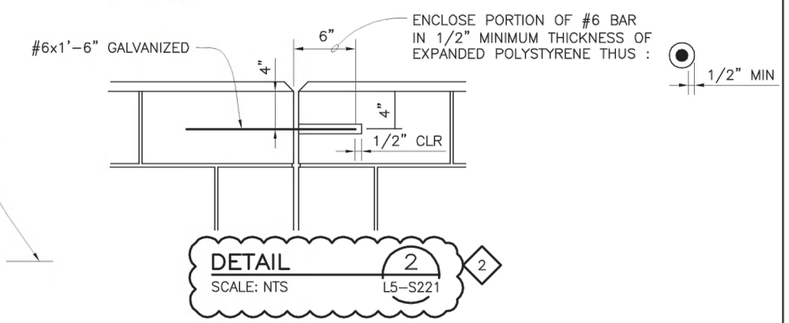
DESIGN SEISMIC LOAD

0.53 Dead load (2)

CONCRETE MASONRY

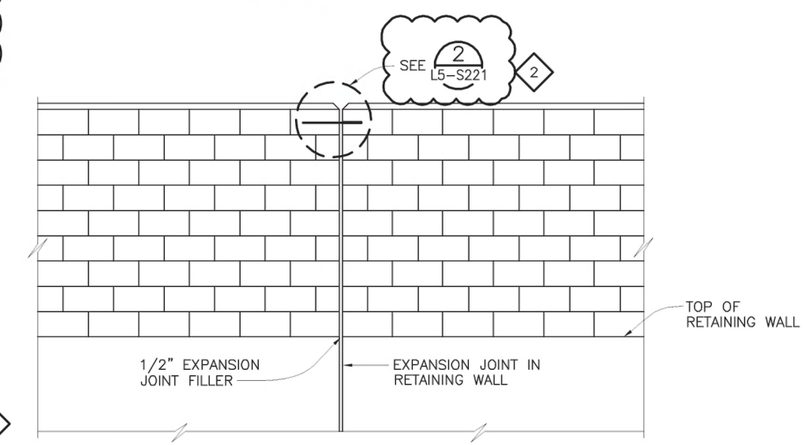
REGULAR STRENGTH

f'm = 1500 psi
f_b = 495 psi
fs = 24,000 psi
n = 25.8



DETAIL (2 / L5-S221)

SCALE: NTS



ALIGNMENT KEY DETAIL

NTS

20' 0' 20' 40'

GRAPHIC SCALE

REV	DATE	BY	SUB	APP	DESCRIPTION
2	20130416				RFC REV 1
1	20130114				ADDED NOTE 3 FOR WALL FINISH
0	20121116				READY FOR CONSTRUCTION

DESIGNED BY C. SONG
DRAWN BY C. CHI
CHECKED BY R. KWOK
IN CHARGE O. LI
DATE 20130416

REGISTERED PROFESSIONAL ENGINEER CHARLES CON M. CHI No. C31895 Exp. 12/31/14 CIVIL STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle Milpitas, California 95035
A Joint Venture

T·Y·LIN INTERNATIONAL
SUBMITTED

Lockwood, Andrews & Newnam, Inc. A CH2M HILL COMPANY
T·Y·LIN INTERNATIONAL
APPROVED

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR SOUND WALL
SOUND WALL DETAILS

CADD FILENAME C700-S-LS-S221.dwg
SIZE D | SCALE AS NOTED
CONTRACT NO. C700 | REV. 2
AREA CODE LS | SHEET NO. S221 | PAGE NO. 0017

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Santa Clara Valley Transportation Authority
✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)
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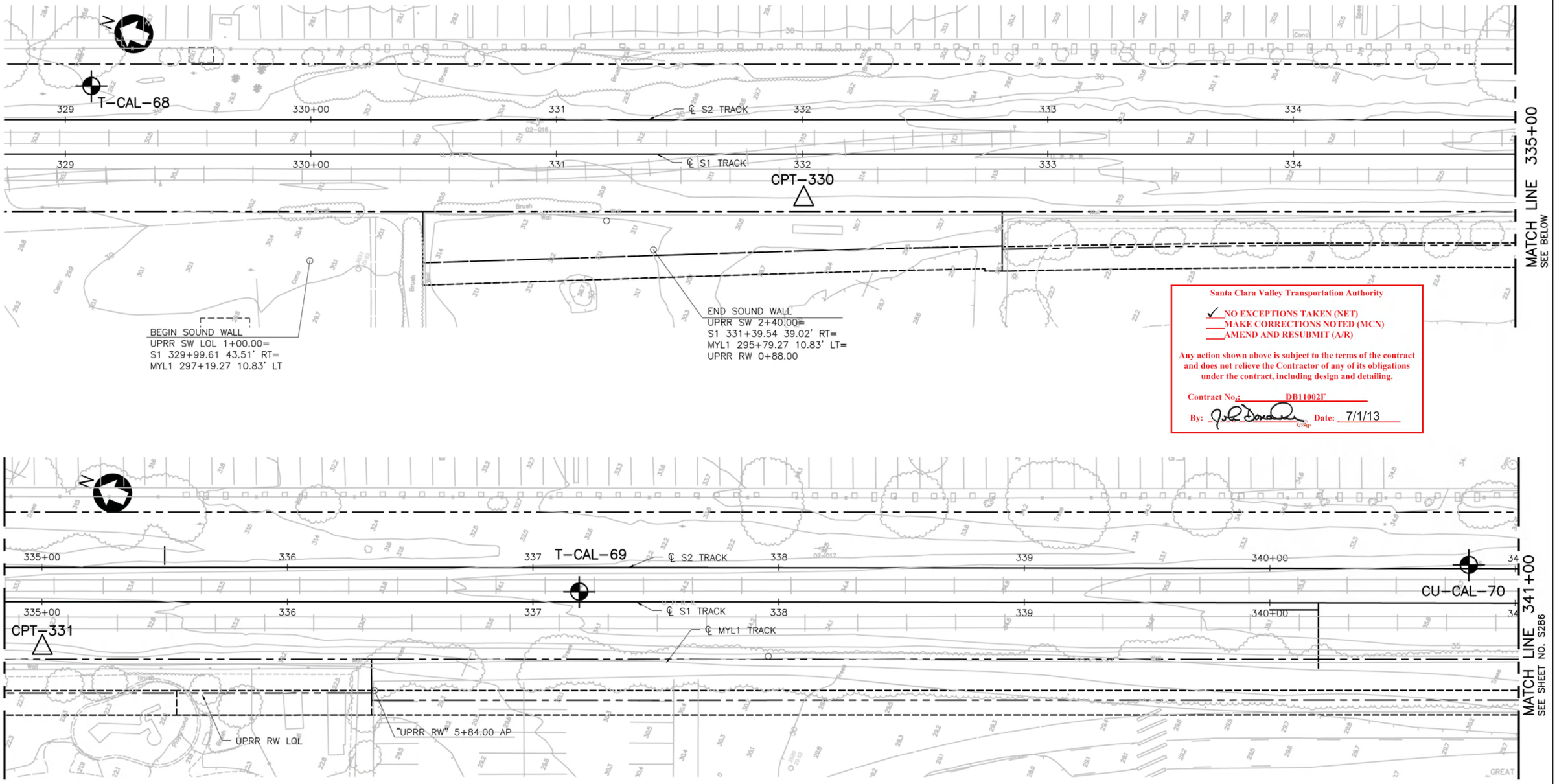
Contract No.: DB11002F
By: Date: 7/1/13



Santa Clara Valley Transportation Authority

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Contract No.: DB11002F

By: _____ Date: 7/1/13

LEGEND:

- △ CPT (PERFORMED UNDER C700)
- ⊕ REFERENCE BORINGS (FROM RFP)
- ▲ REFERENCE CPT (FROM RFP)

PLAN

20' 0' 20' 40'

GRAPHIC SCALE

REV	DATE	BY	SUB	APP	DESCRIPTION
0	20121102				READY FOR CONSTRUCTION

DESIGNED BY O. GOUTHIER
DRAWN BY O. GOUTHIER
CHECKED BY F. WANG
IN CHARGE G. PARIKH
DATE 20121102

REGISTERED PROFESSIONAL ENGINEER GARY PARIKH G.E. 666 GEOTECHNICAL STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle
Milpitas, California 95035
A Joint Venture

PARIKH CONSULTANTS, INC.
2380 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SUBMITTED _____

Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY
T·Y·LIN INTERNATIONAL

APPROVED _____

VTA BART SILICON VALLEY

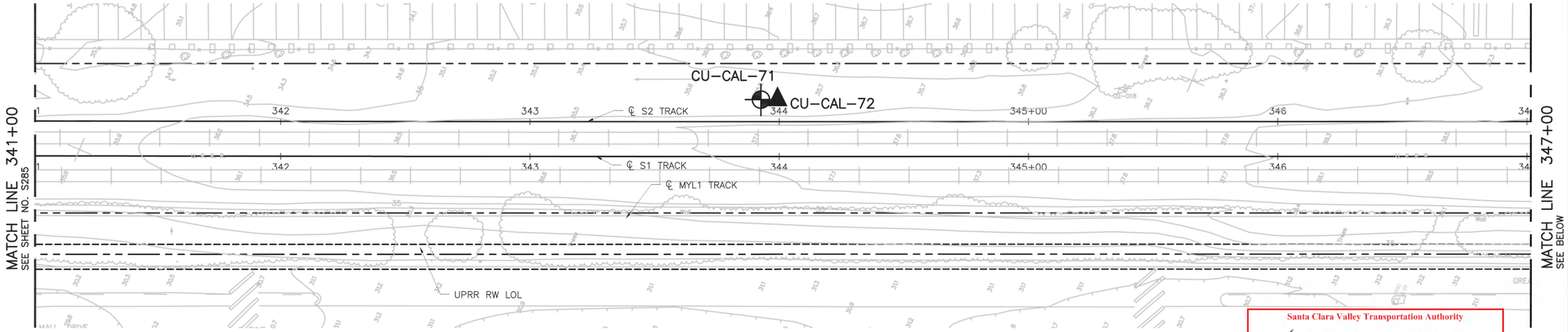
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR RETAINING WALLS/SOUND WALLS
LOG OF TEST BORINGS 1 OF 6

CADD FILENAME C700-S-L5-S285A.dwg
SIZE D | SCALE AS NOTED
CONTRACT NO. C700 | REV. 0
AREA CODE L5 | SHEET NO. S285A | PAGE NO. 0018

Ogouthier Nov 16, 2012 – 10:03am S:\ACAD\2011-120-SKN SVBX VTA\LOTBs\Structures\UPRR Industrial Lead Bridge and Walls\UPRR RW&SW\C700-S-L5-S285A.dwg



Santa Clara Valley Transportation Authority

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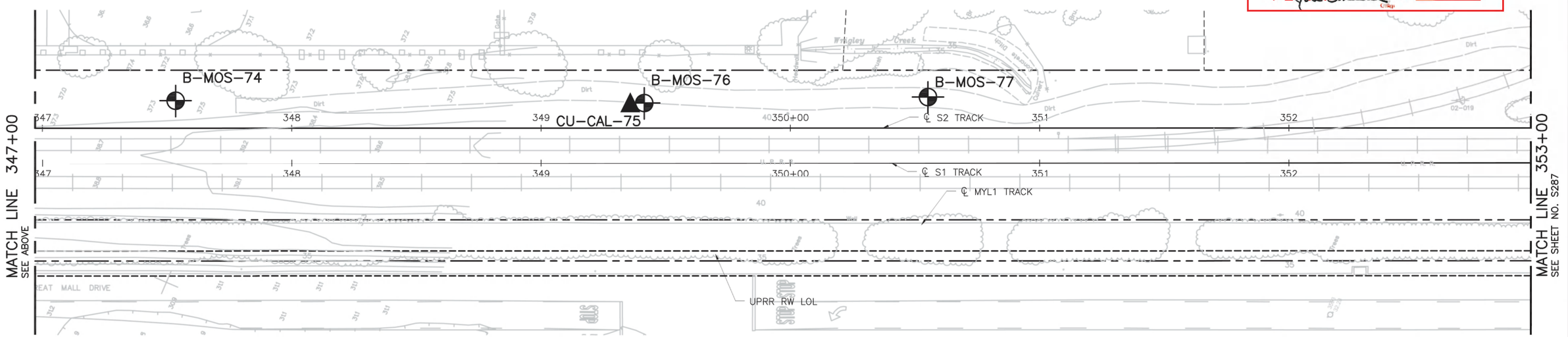
Contract No.: DB11002F

By: [signature] Date: 7/1/13



LEGEND:

- △ CPT (PERFORMED UNDER C700)
- ⊕ REFERENCE BORINGS (FROM RFP)
- ▲ REFERENCE CPT (FROM RFP)

PLAN

20' 0' 20' 40'

GRAPHIC SCALE

REV	DATE	BY	SUB	APP	DESCRIPTION
0	20121102				READY FOR CONSTRUCTION

DESIGNED BY O. GOUTHIER
DRAWN BY O. GOUTHIER
CHECKED BY F. WANG
IN CHARGE G. PARIKH
DATE 20121102

REGISTERED PROFESSIONAL ENGINEER GARY PARIKH G.E. 666 GEOTECHNICAL STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle Milpitas, California 95035
A Joint Venture

PARIKH CONSULTANTS, INC.
2302 OLIVE DRIVE, SUITE A SAN JOSE, CA 95131
SUBMITTED [signature]

Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY
T·Y·LIN INTERNATIONAL
APPROVED [signature]

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR RETAINING WALLS/SOUND WALLS
LOG OF TEST BORINGS 2 OF 6

CADD FILENAME C700-S-L5-S286A.dwg
SIZE D | SCALE AS NOTED
CONTRACT NO. C700 | REV. 0
AREA CODE L5 | SHEET NO. S286A | PAGE NO. 0019

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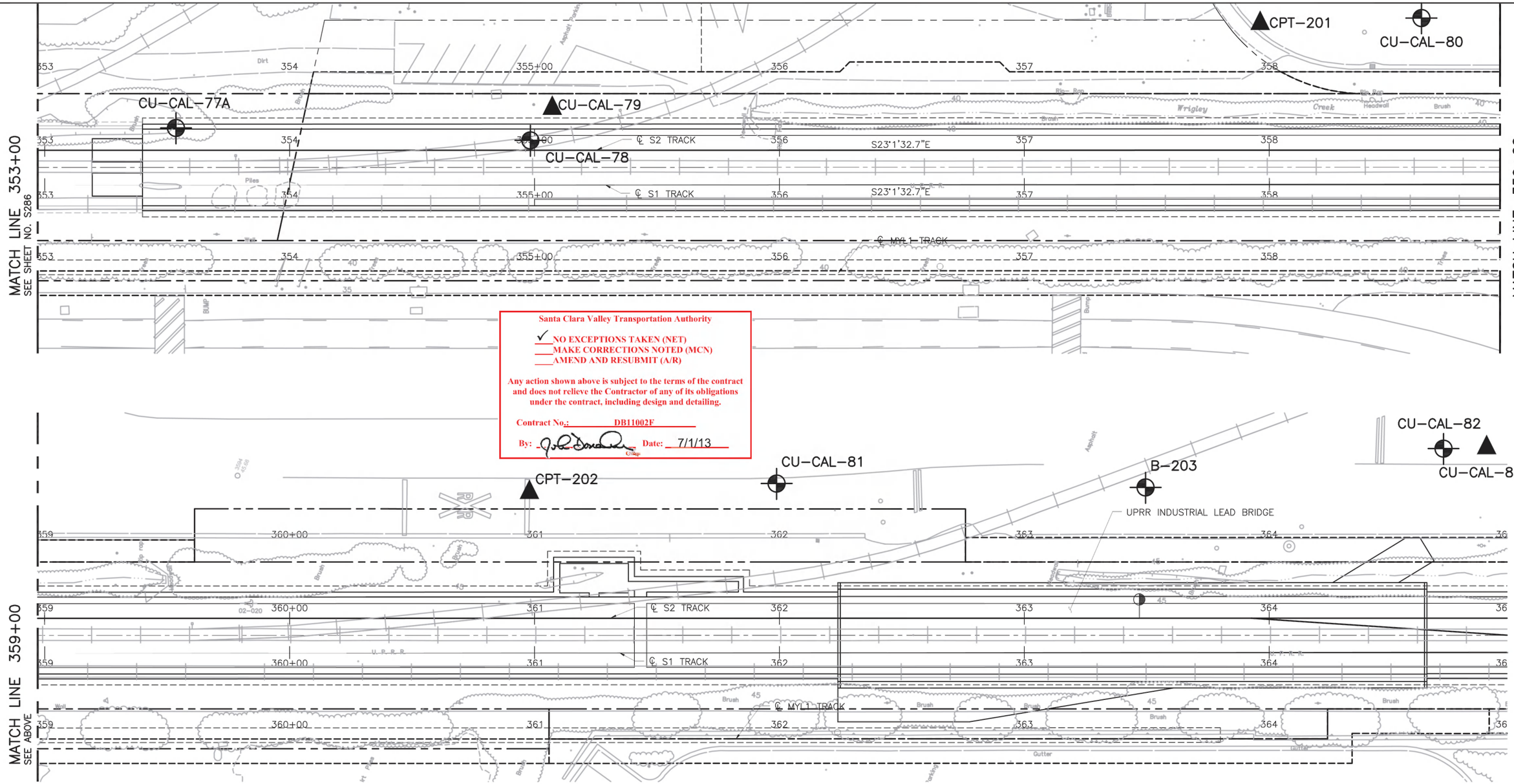

Santa Clara Valley Transportation Authority

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Contract No.: DB11002F

By: _____ Date: 7/1/13

LEGEND:

- △ CPT (PERFORMED UNDER C700)
- ⊕ REFERENCE BORINGS (FROM RFP)
- ▲ REFERENCE CPT (FROM RFP)

PLAN

20' 0' 20' 40'

GRAPHIC SCALE

REV	DATE	BY	SUB	APP	DESCRIPTION
0	20121102				READY FOR CONSTRUCTION

DESIGNED BY O. GOUTHIER
DRAWN BY O. GOUTHIER
CHECKED BY F. WANG
IN CHARGE G. PARIKH
DATE 20121102

REGISTERED PROFESSIONAL ENGINEER GARY PARIKH G.E. 666 GEOTECHNICAL STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle
Milpitas, California 95035
A Joint Venture

PARIKH CONSULTANTS, INC.
2350 QUME DRIVE, SUITE A
SAN JOSE, CA 95131
SUBMITTED

Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY
T·Y·LIN INTERNATIONAL
APPROVED

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR RETAINING WALLS/SOUND WALLS
LOG OF TEST BORINGS 3 OF 6

CADD FILENAME C700-S-LS-S287A.dwg
SIZE D | SCALE AS NOTED
CONTRACT NO. C700 | REV. 0
AREA CODE L5 | SHEET NO. S287A | PAGE NO. 0020

Opcother Nov 16, 2012 – 9:37am S:\ACAD\2011-120-SKN SVBX VTA\LOTBs\Structures\UPRR Industrial Lead Bridge and Walls\UPRR RWA&SW\C700-S-LS-S287A.dwg

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

Santa Clara Valley Transportation Authority

✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

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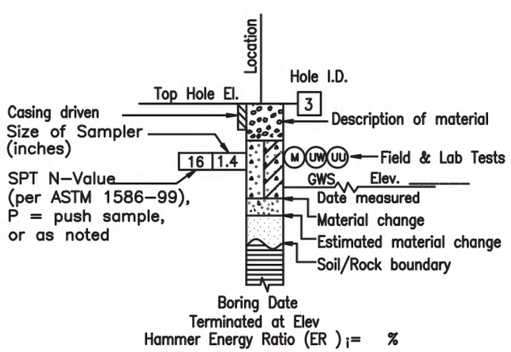
Contract No.: DB11002F

By: _____ Date: 7/1/13

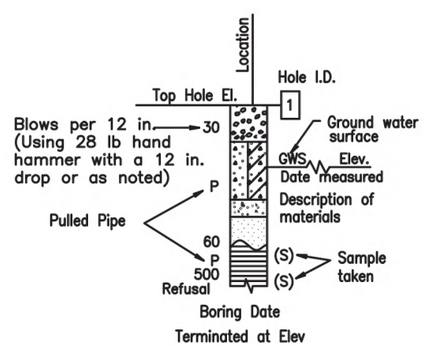
CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
Size	A	Auger Boring (hollow or solid stem bucket)
Size	R RW RC P	Rotary drilled boring (conventional) Rotary drilled with self–casing wire–line Rotary core with continuously–sampled, self–casing wire–line Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1–inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778)
□	O	Other (note on LOTB)
Note: Size in inches.		

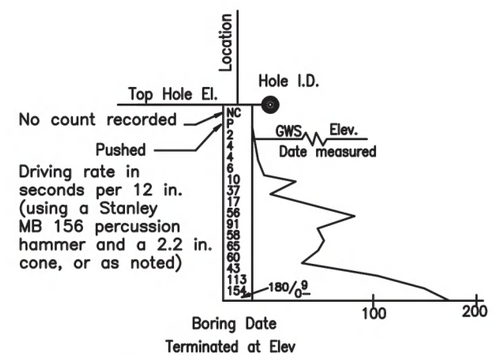
CONSISTENCY OF COHESIVE SOILS				
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 – 0.25	0.25 – 0.5	0.12 – 0.25	0.12 – 0.25
Medium Stiff	0.25 – 0.5	0.5 – 1	0.25 – 0.5	0.25 – 0.5
Stiff	0.5 – 1	1 – 2	0.5 – 1	0.5 – 1
Very Stiff	1 – 2	2 – 4	1 – 2	1 – 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



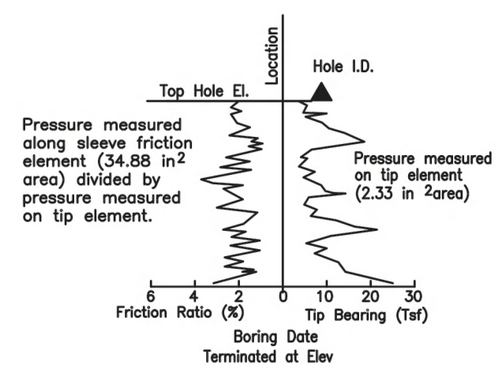
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

REV	DATE	BY	SUB	APP	DESCRIPTION
0	20121102				READY FOR CONSTRUCTION

DESIGNED BY O. GOUHIER
DRAWN BY O. GOUHIER
CHECKED BY F. WANG
IN CHARGE G. PARIKH
DATE 20121102

REGISTERED PROFESSIONAL ENGINEER GARY PARIKH G.E. 666 GEOTECHNICAL STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle Milpitas, California 95035
A Joint Venture

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A SAN JOSE, CA 95131
SUBMITTED _____

Lockwood, Andrews & Newnam, Inc. A URS + BALY COMPANY
T·Y·LIN INTERNATIONAL
APPROVED _____

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR RETAINING WALLS/SOUND WALLS
LOG OF TEST BORINGS 4 OF 6

CADD FILENAME C700–S–L5–S288A.dwg
SIZE D | SCALE AS NOTED
CONTRACT NO. C700 | REV. 0
AREA CODE L5 | SHEET NO. S288A | PAGE NO. 0021

Opquibler Nov 16, 2012 – 9:35am S:\AD\2011-120-SVBX VTA\LOTBs\Structures\UPRR industrial Land Bridge and Walls\UPRR RWASW\C700-S-L5-S288A.dwg

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly-graded SAND Poorly-graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL		
SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

Santa Clara Valley Transportation Authority

✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

Any action shown above is subject to the terms of the contract and does not relieve the Contractor of any of its obligations under the contract, including design and detailing.

Contract No.: DB11002F
By: [signature] Date: 7/1/13

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 in.)
Very Loose	0 – 5
Loose	5 – 10
Medium Dense	10 – 30
Dense	30 – 50
Very Dense	Greater than 50

MOISTURE

Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% – 10%
Little	15% – 25%
Some	30% – 45%
Mostly	50% – 100%

PARTICLE SIZE

Description		Size (in.)
Boulder		Greater than 12
Cobble		3 – 12
Gravel	Coarse	3/4 – 3
	Fine	1/5 – 3/4
Sand	Coarse	1/16 – 1/5
	Medium	1/64 – 1/16
	Fine	1/300 – 1/64
Silt and Clay		Less than 1/300

REV	DATE	BY	SUB	APP	DESCRIPTION
0	20121102				READY FOR CONSTRUCTION

DESIGNED BY O. GOUHIER
DRAWN BY O. GOUHIER
CHECKED BY F. WANG
IN CHARGE G. PARIKH
DATE 20121102

REGISTERED PROFESSIONAL ENGINEER GARY PARIKH G.E. 666 GEOTECHNICAL STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle Milpitas, California 95035
A Joint Venture

PARIKH CONSULTANTS, INC.
2980 OLME DRIVE, SUITE A SAN JOSE, CA 95121
SUBMITTED [signature]

Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY
T·Y·LIN INTERNATIONAL
APPROVED [signature]

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS
UPRR RETAINING WALLS/SOUND WALLS
LOG OF TEST BORINGS 5 OF 6

CADD FILENAME C700-S-L5-S289A.dwg
SIZE D SCALE AS NOTED
CONTRACT NO. C700 REV. 0
AREA CODE L5 SHEET NO. S289A PAGE NO. 0022

Opouthier Nov 16, 2012 – 9:18am S:\ACAD\2011-120-SKN SVBX VTA\LOTB6\Structures\UPRR Industrial Lead Bridge and Walls\UPRR RWSW\C700-S-L5-S289A.dwg

NOTES:

1. STANDARD PENETRATION TEST SAMPLER: I.D. = 1.4"; O.D. = 2"
   MODIFIED CALIFORNIA SAMPLER: I.D. = 2.5"; O.D. = 3"
   SHELBY TUBE SAMPLER: I.D. = 2.875", O.D. = 30"
   HAMMER ASSEMBLY: A 140 LB HAMMER WITH A 30" DROP (AUTOMATIC HAMMER)
2. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

SEE SHEET 1 OF 6 FOR BORING LOCATIONS

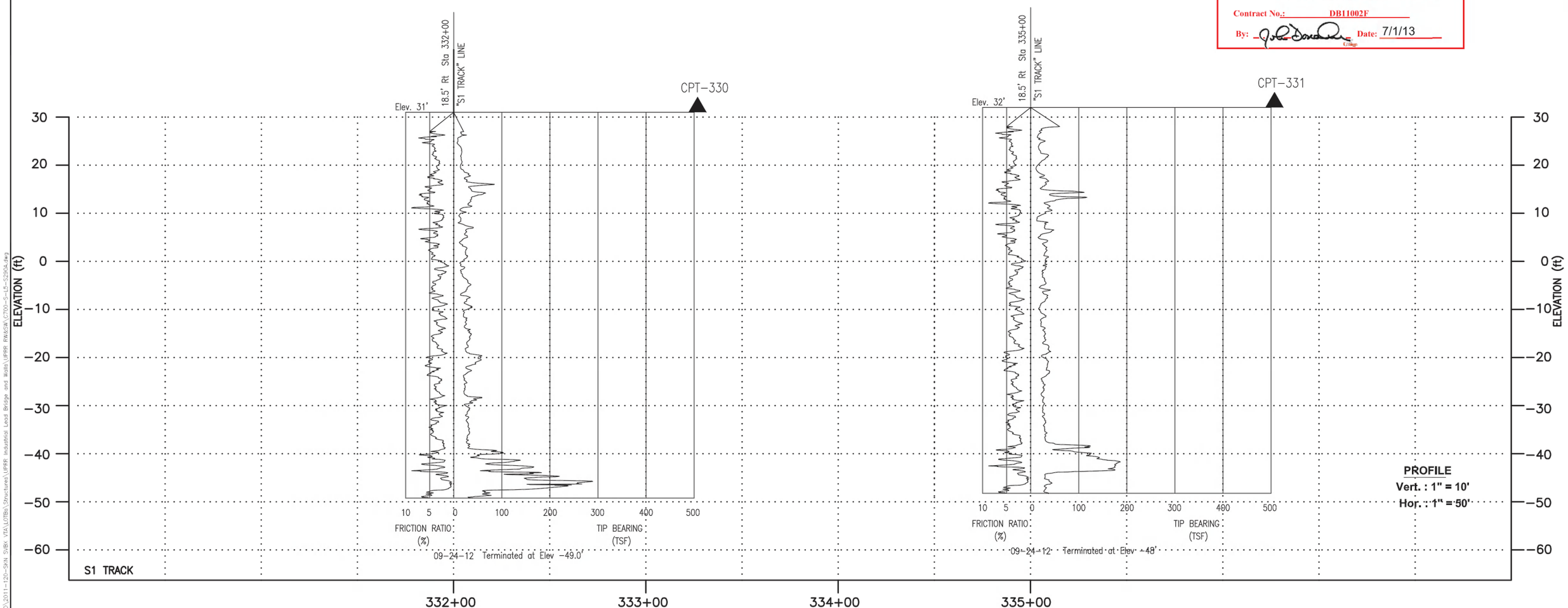
Santa Clara Valley Transportation Authority

✓ NO EXCEPTIONS TAKEN (NET)
___ MAKE CORRECTIONS NOTED (MCN)
___ AMEND AND RESUBMIT (A/R)

Any action shown above is subject to the terms of the contract and does not relieve the Contractor of any of its obligations under the contract, including design and detailing.

Contract No.: DB11002F

By: _____ Date: 7/1/13



REV	DATE	BY	SUB	APP	DESCRIPTION
0	20121102				READY FOR CONSTRUCTION

DESIGNED BY O. GOUHIER
DRAWN BY O. GOUHIER
CHECKED BY F. WANG
IN CHARGE G. PARIKH
DATE 20121102

REGISTERED PROFESSIONAL ENGINEER GARY PARIKH G.E. 666 GEOTECHNICAL STATE OF CALIFORNIA

Skanska Shimmick Herzog
1436 California Circle Milpitas, California 95035
A Joint Venture

PARIKH CONSULTANTS, INC.
2900 GUME DRIVE, SUITE A SAN JOSE, CA 95131
SUBMITTED

Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY
T·Y·LIN INTERNATIONAL
APPROVED

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

UPRR RETAINING WALLS/SOUND WALLS
LOG OF TEST BORINGS 6 OF 6

CADD FILENAME C700-S-L5-S290A.dwg
SIZE D | SCALE AS NOTED
CONTRACT NO. C700 | REV. 0
AREA CODE L5 | SHEET NO. S290A | PAGE NO. 0023

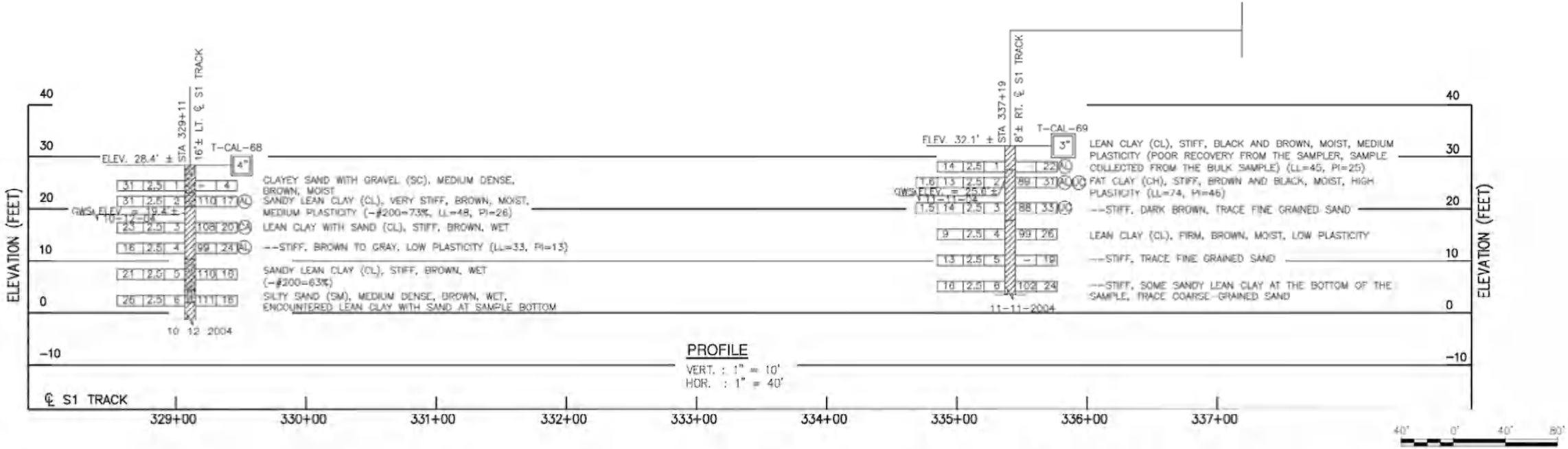
Opouthier Nov 16, 2012 - 9:39am S:\ACAD\2011-120-SVBX VTA\LOTBs\Structures\UPRR Industrial Land Bridge and Walls\UPRR RWA2W\C700-S-L5-S290A.dwg

NOTES:

1. STANDARD PENETRATION TEST SAMPLER: I.D. = 1.4"; O.D. = 2"
   MODIFIED CALIFORNIA SAMPLER: I.D. = 2.5"; O.D. = 3"
   HAMMER ASSEMBLY: A 140 LB HAMMER WITH A 30" DROP (ROPE AND PULLEY)
2. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN

BART SILICON VALLEY BERRYESSA EXTENSION

REFERENCE DRAWING
VTA CONTRACT NO: C700
ISSUE:
DATE: 20121102
VTA FILENAME: C700-S-L5-S291A.pdf
VTA DWG. NO: L5-S291A REV: 0
CONTRACT PAGE NO: 0024
SCALE: AS NOTED



REV	DATE	BY	SUB	APP	DESCRIPTION
P	20110311				REQUEST FOR PROPOSAL

DESIGNED BY L. TRAN
DRAWN BY L. TRAN
CHECKED BY D. WANG
IN CHARGE G. PARIKH
DATE

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SUBMITTED _____

HNTB Corporation Engineers Architects Planners
1798 Technology Drive, Suite 150
San Jose, CA 95110-6925

APPROVED _____

NOT FOR CONSTRUCTION

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

TRACKWAY
LOG OF TEST BORINGS
SHEET 1 OF 17

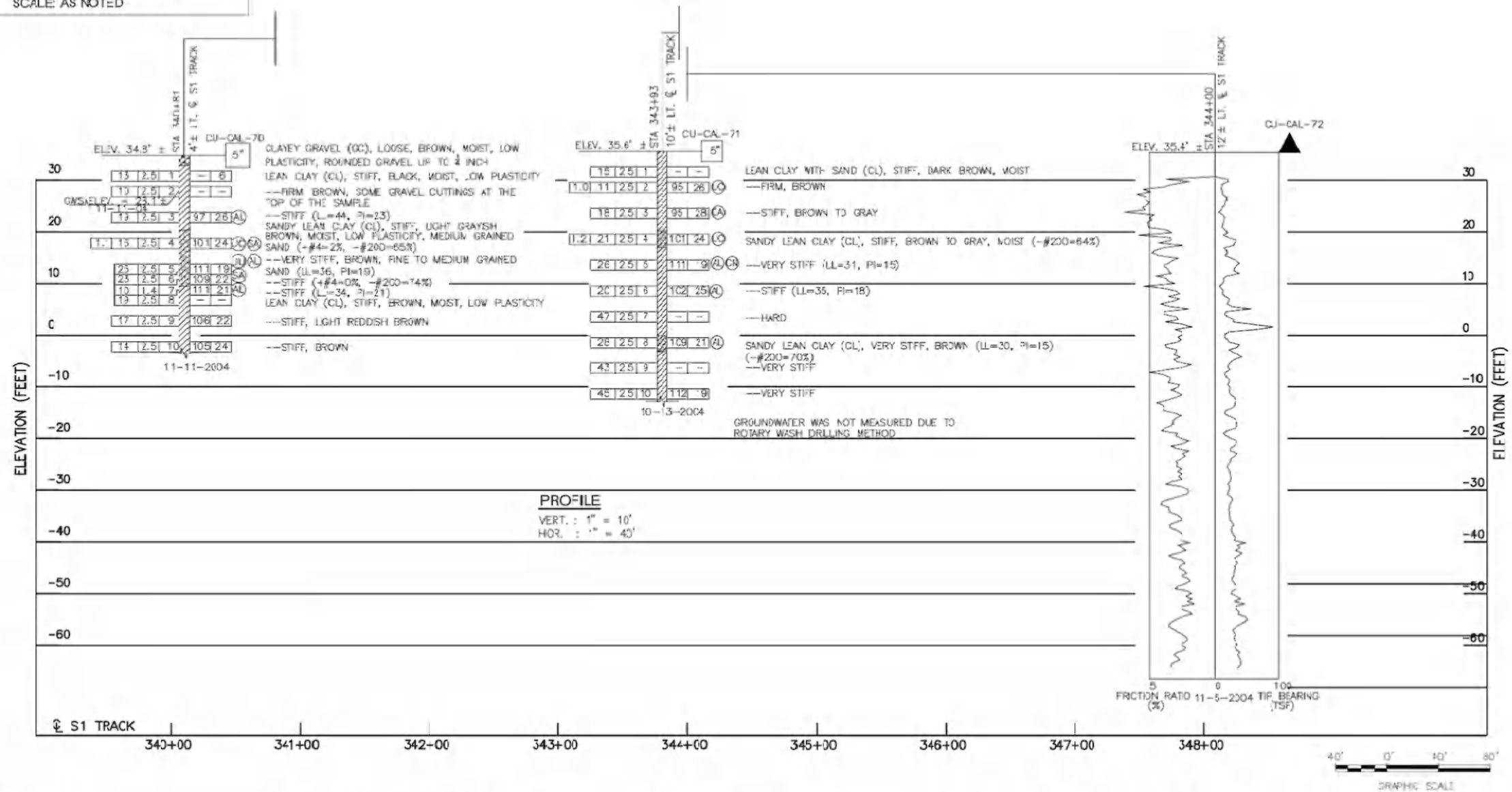
CADD FILENAME C700-S-MI-X501.dwg
SIZE D | SCALE 1"=40'H; 1"=10'V
CONTRACT NO. C700 | REV P
AREA CODE MI | SHEET NO. X501 | PAGE NO.

EART SILICON VALLEY BERRYESSA EXTENSION

REFERENCE DRAWING
VTA CONTRACT NO: C700
ISSUE:
DATE: 2012'102
VTA FILENAME: C700-S-L5-S292A.pdf
VTA DWG NO: L5-S292A REV: C
CONTRACT PAGE NO: 0025
SCALE: AS NOTED

NOTES:

1. STANDARD PENETRATION TEST SAMPLER: I.D. = 1.4", O.D. = 2"
   MODIFIED CALIFORNIA SAMPLER I.D. = 2.5"; O.D. = 3"
   HAMMER ASSEMELY: A 140 LB HAMMER WITH A 30" DROP
   (ROPE AND PULLEY)
2. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN



REV	DATE	BY	SUB	APP	DESCRIPTION
P	20110311				REQUEST FOR PROPOSAL

DESIGNED BY L. TRAN
DRAWN BY L. TRAN
CHECKED BY D. WANG
IN CHARGE G. PARKIH
DATE

PARKIH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SUBMITTED

HNTB Corporation Engineers Architects Planners
2171 Technology Drive Suite 450
San Jose CA 95110-1020

APPROVED

NOT FOR CONSTRUCTION

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

TRACKWAY
LOG OF TEST BORINGS
SHEET 2 OF 17

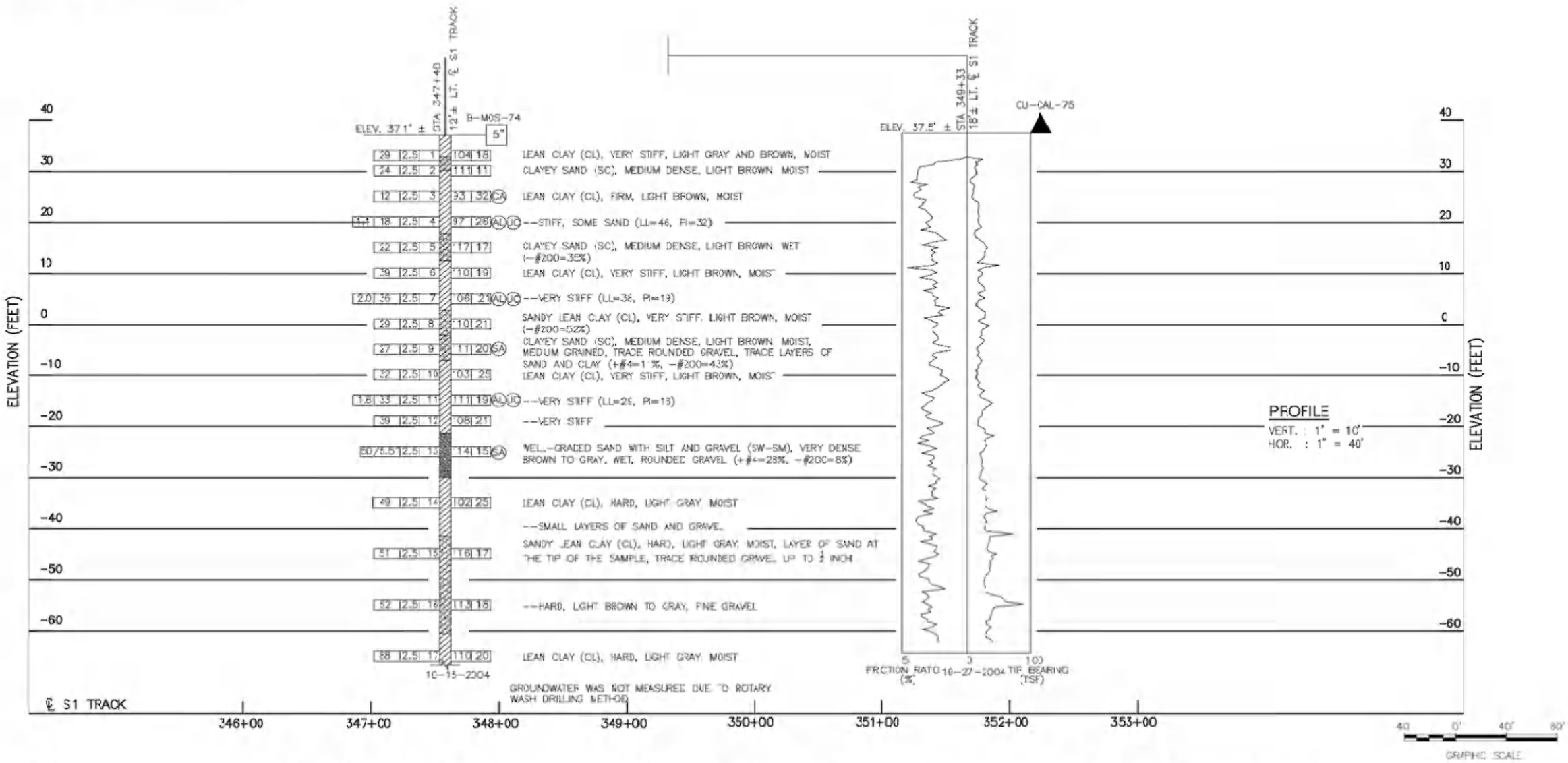
CADD FILENAME: C700-S-MI-X502.dwg
SIZE: D | SCALE: 1"=40'H; 1"=10V
CONTRACT NO: C700 | REV: P
AREA CODE: MI | SHEET NO.: X502 | PAGE NO.

EAR" SILICON VALLEY BERRYESSA EXTENSION

REFERENCE DRAWING
VTA CONTRACT NO: C700
ISSUE:
DATE: 2012'102
VTA FILENAME: C700-S-L5-S293A.pdf
VTA DWG NO: L5-S293A REV: C
CONTRACT PAGE NO: 0026
SCALE: AS NOTED

NOTES:

1. STANDARD PENETRATION TEST SAMPLER: I.D. = 1.4"; O.D. = 2"
   MODIFIED CALIFORNIA SAMPLER: I.D. = 2.5"; O.D = 3"
   HAMMER ASSEMBLY: A 140 LB HAMMER WITH A 30" DROP (ROPE AND PULLEY)
2. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN



REV	DATE	BY	SUB	APP	DESCRIPTION
P	20110311				REQUEST FOR PROPOSAL

DESIGNED BY L. TRAN
DRAWN BY L. TRAN
CHECKED BY D. WANG
IN CHARGE G. PARKH
DATE

REGISTERED PROFESSIONAL ENGINEER — G.E. — GEOTECHNICAL — STATE OF CALIFORNIA

PARKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SUBMITTED

HNTB Corporation
Engineers Architects Planners

APPROVED

NOT FOR CONSTRUCTION

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

TRACKWAY
LOG OF TEST BORINGS
SHEET 3 OF 17

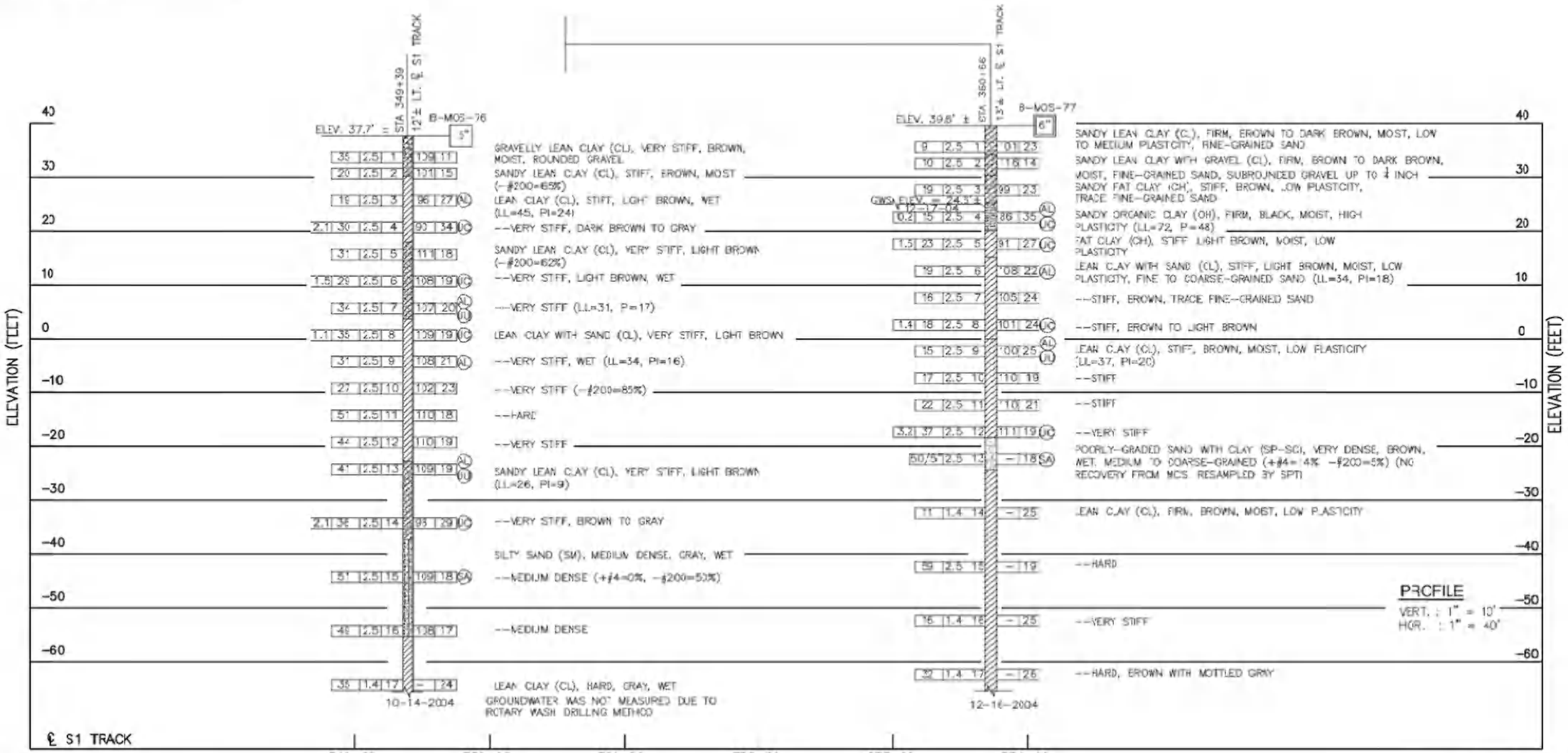
CADD FILENAME: C700-S-MI-X503.dwg
SIZE: D | SCALE: 1"=40'H; 1"=10'V
CONTRACT NO.: C700 | REV: P
AREA CODE: MI | SHEET NO.: X503 | PAGE NO.

EAR' SILICON VALLEY BERRYESSA EXTENSION

REFERENCE DRAWING
VTA CONTRACT NO: C700
ISSUE:
DATE: 2012'102
VTA FILENAME: C700-S-L5-S294A.pdf
VTA DWG NO: L5-S294A REV: C
CONTRACT PAGE NO: 0027
SCALE: AS NOTED

NOTES:

1. STANDARD PENETRATION TEST SAMPLER: I.D. = 1.4"; O.D = 2"
   MODIFIED CALIFORNIA SAMPLER: I.D. = 2.5"; O.D. = 3"
   HAMMER ASSEMBLY: A 140 LB HAMMER WITH A 30" DROP (ROPE AND PULLEY)
2. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN



REV	DATE	BY	SUB	APP	DESCRIPTION
P	20110311				REQUEST FOR PROPOSAL

DESIGNED BY L. TRAN
DRAWN BY L. TRAN
CHECKED BY D. WANG
IN CHARGE G. PARKH
DATE

REGISTERED PROFESSIONAL ENGINEER — GEOTECHNICAL — STATE OF CALIFORNIA

PARKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SUBMITTED

HNTB Corporation
Engineers Architects Planners

APPROVED

NOT FOR CONSTRUCTION

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

TRACKWAY
LOG OF TEST BORINGS
SHEET 4 OF 17

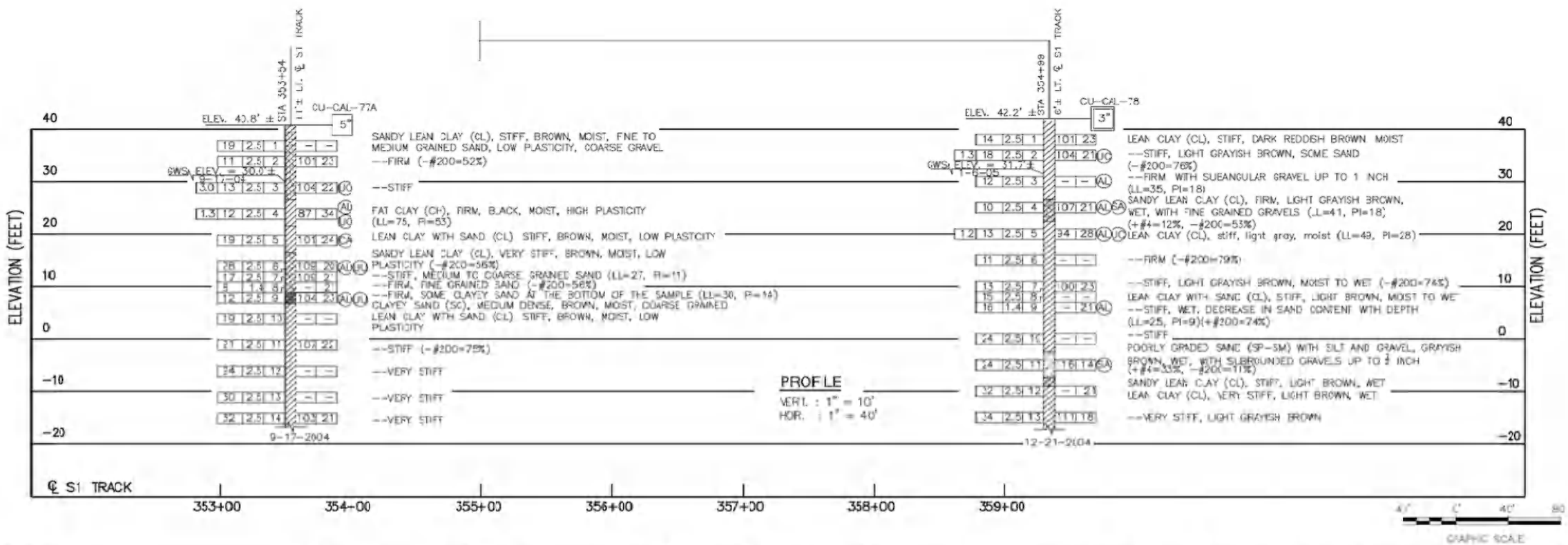
CADD FILENAME C700-S-MI-X504.dwg
SIZE D | SCALE 1"=40'H; 1"=10'V
CONTRACT NO. C700 | REV P
AREA CODE MI | SHEET NO. X504 | PAGE NO

EART SILICON VALLEY BERRYESSA EXTENSION

REFERENCE DRAWING
VTA CONTRACT NO: C700
ISSUE:
DATE: 2012/102
VTA FILENAME: C700-S-L5-S295A.pdf
VTA DWG NO: L5-S295A REV: C
CONTRACT PAGE NO: 0028
SCALE: AS NOTED

NOTES:

1. STANDARD PENETRATION TEST SAMPLER: I.D. = 1.4"; O.D. = 2"
   MODIFIED CALFORNIA SAMPLER: I.D = 2.5"; O.D. = 3"
   HAMMER ASSEMBLY: A 140 LB HAMMER WITH A 30" DROP (ROPE AND PULLEY)
2. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN



REV	DATE	BY	SUB	APP	DESCRIPTION
P	20110311				REQUEST FOR PROPOSAL

DESIGNED BY L. TRAN
DRAWN BY L. TRAN
CHECKED BY D. NANG
IN CHARGE G. PARKH
DATE

PARKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SUBMITTED

HNTB Corporation
Engineers Architects Planners

APPROVED

NOT FOR CONSTRUCTION

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

TRACKWAY
LOG OF TEST BORINGS
SHEET 5 OF 17

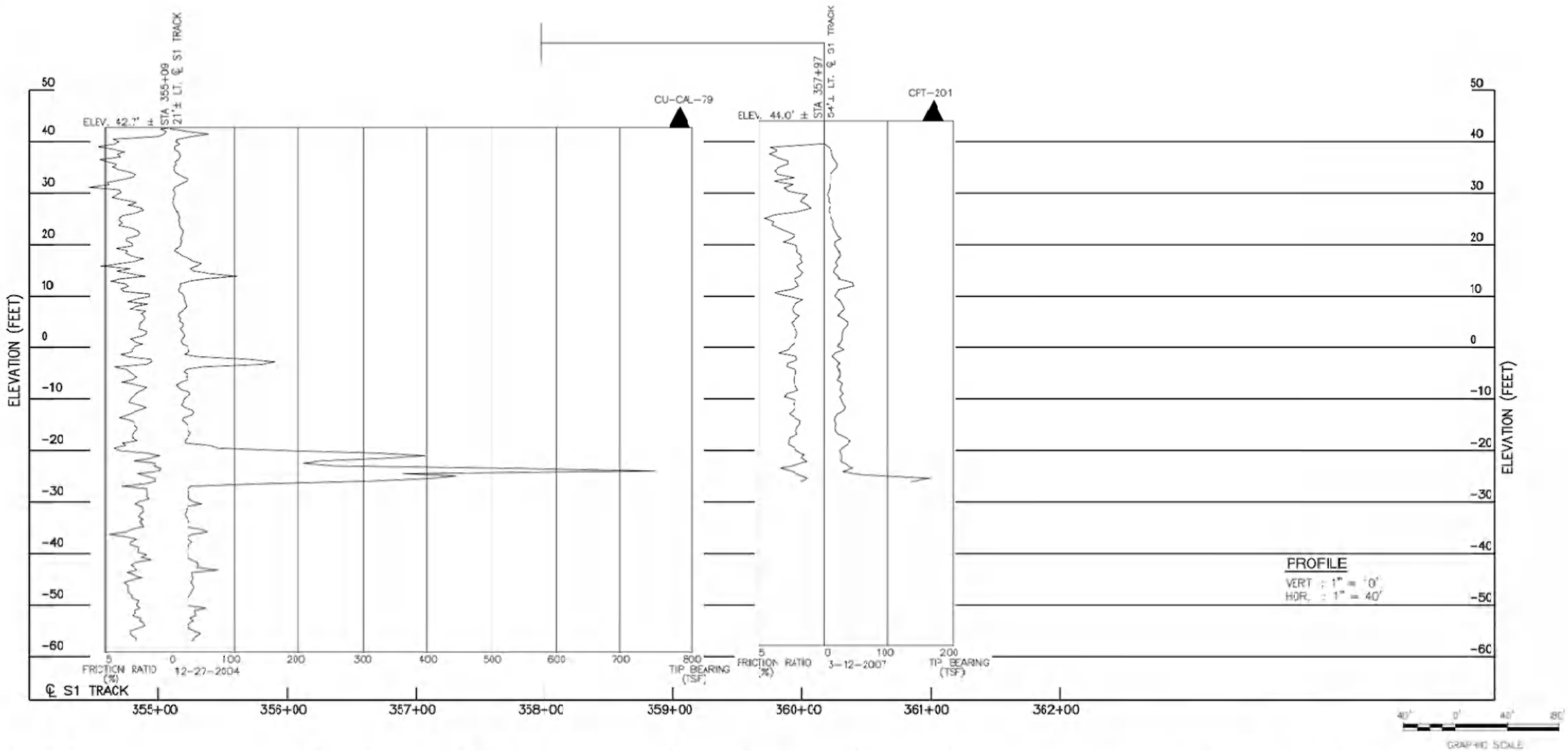
CADD FILENAME C700-S-MI-X505.dwg
SIZE D | SCALE 1"=40'H; 1"=10'V
CONTRACT NO. C700 | REV P
AREA CODE MI | SHEET NO. X505 | PAGE NO.

EART SILICON VALLEY BERRYESSA EXTENSION

REFERENCE DRAWING
VTA CONTRACT NO: C700
ISSUE:
DATE: 2012/102
VTA FILENAME: C700-S-L5-S296A.pdf
VTA DWG NO: L5-S296A REV: C
CONTRACT PAGE NO: 0029
SCALE: AS NOTED

NOTES:

1. STANDARD PENETRATION TEST SAMPLER: I.D. = 1.4"; O.D. = 2"
   MODIFIED CALIFORNIA SAMPLER: I.D. = 2.5"; O.D. = 3"
   HAMMER ASSEMBLY: A 140 LB HAMMER WITH A 30" DROP (ROPE AND PULLEY)
2. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN



REV	DATE	BY	SUB	APP	DESCRIPTION
P	20110311				REQUEST FOR PROPOSAL

DESIGNED BY L. TRAN
DRAWN BY L. TRAN
CHECKED BY D. WANG
IN CHARGE G. PARKH
DATE

PARKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SUBMITTED

HNTB Corporation Engineers Architects Planners
17th Technology Drive Suite 650
San Jose CA 95110-1030

APPROVED

NOT FOR CONSTRUCTION

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

TRACKWAY
LOG OF TEST BORINGS
SHEET 6 OF 17

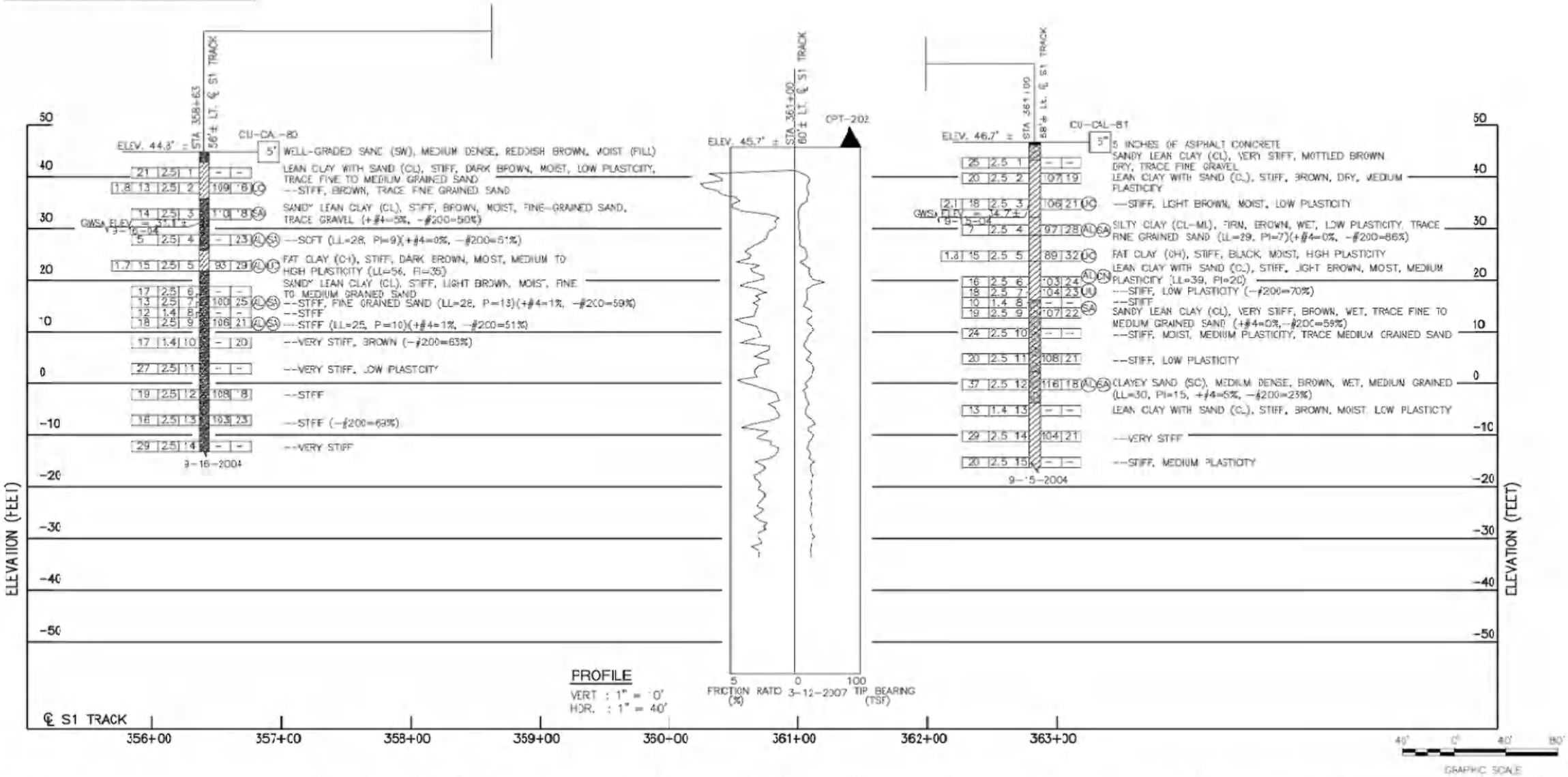
CADD FILENAME: C700-S-MI-X506.dwg
SIZE: D
SCALE: 1"=40'H; 1"=10'V
CONTRACT NO.: C700
REV: P
AREA CODE: MI
SHEET NO.: X506
PAGE NO.

EAR" SILICON VALLEY BERRYESSA EXTENSION

REFERENCE DRAWING
VTA CONTRACT NO: C700
ISSUE:
DATE: 2012'102
VTA FILENAME: C700-S-L5-S297A.pdf
VTA DWG NO: L5-S297A REV: C
CONTRACT PAGE NO: 0030
SCALE: AS NOTED

NOTES:

1. STANDARD PENETRATON TEST SAMPLER: I.D. = 1.4"; O.D. = 2"
   MODIFED CALIFORNIA SAMPLER: I.D. = 2.5"; O.D = 3"
   HAMMER ASSEMBLY: A 140 LB HAMMER WITH A 30" DROP (ROPE AND PULLEY)
2. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN



REV	DATE	BY	SUP	APP	DESCRIPTION
P	20110311				REQUEST FOR PROPOSAL

DESIGNED BY L. TRAN
DRAWN BY L. TRAN
CHECKED BY D. WANG
IN CHARGE G. PARKIH
DATE

REGISTERED PROFESSIONAL ENGINEER — GARY G. PARKIH — G.E. 656 — GEOTECHNICAL — STATE OF CALIFORNIA

PARKIH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SUBMITTED _____

HNTB Corporation Engineers Architects Planners
1111 Tradeway Drive Suite 650
San Jose CA 95110-1020

APPROVED _____

NOT FOR CONSTRUCTION

VTA BART SILICON VALLEY
BART SILICON VALLEY BERRYESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

TRACKWAY
LOG OF TEST BORINGS
SHEET 7 OF 17

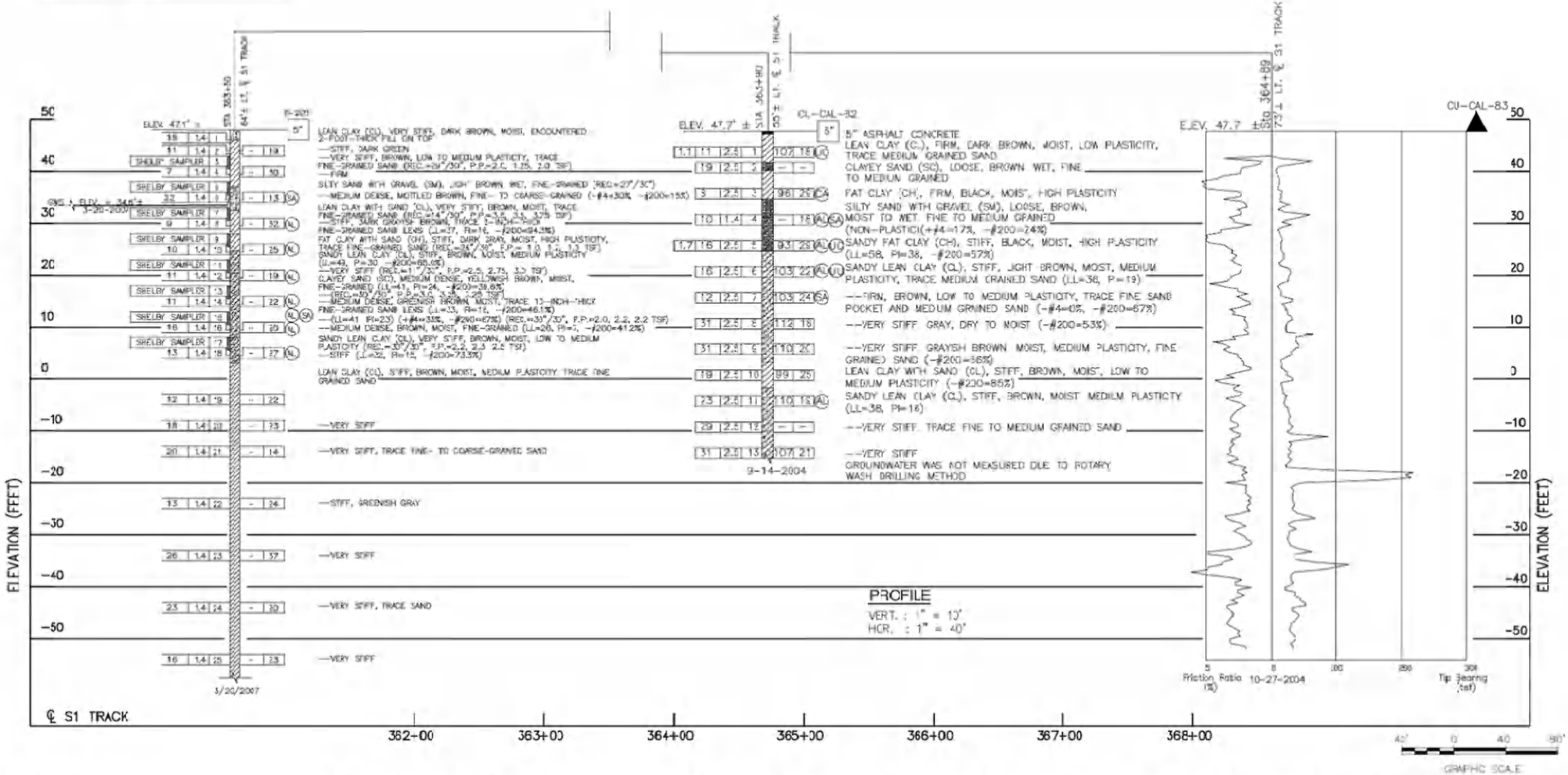
CADD FILENAME: C700-S-MI-X507.dwg
SIZE: D | SCALE: 1"=40'H; 1"=10'V
CONTRACT NO: C700 | REV: P
AREA CODE: MI | SHEET NO.: X507 | PAGE NO.

EAR" SILICON VALLEY BERRYESSA EXTENSION

REFERENCE DRAWING
VTA CONTRACT NO: C700
ISSUE:
DATE: 2012'102
VTA FILENAME: C700-S-L5-S298A.pdf
VTA DWG NO: L5-S298A REV. C
CONTRACT PAGE NO: 0031
SCALE: AS NOTED

NOTES:

1. STANDARD PENETRATION TEST SAMPLER: I.D. = 1.4"; O.D = 2"
   MODIFIED CALIFORNIA SAMPLER: I.D. = 2.5"; O.D. = 3"
   -HAMMER ASSEMBLY: A 140 LB HAMMER WITH A 30" DROP (ROPE AND PULLEY)
2. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN



REV	DATE	BY	SUB	APP	DESCRIPTION
P	20110311				REQUEST FOR PROPOSAL

DESIGNED BY L. TRAN
DRAWN BY L. TRAN
CHECKED BY D. NANG
IN CHARGE G. PARKH
DATE

PARKH CONSULTANTS, INC.
1360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

SUBMITTED

HNTB Corporation Engineers Architects Planners

APPROVED

NOT FOR CONSTRUCTION

BART SILICON VALLEY
BART SILICON VALLEY BERR'ESSA EXTENSION

LINE, TRACK, STATIONS AND SYSTEMS

TRACKWAY
LOG OF TEST BORINGS
SHEET 8 OF 17

CADD FILENAME C700-S-MI-X508.dwg
SIZE D | SCALE 1"=40'H; 1"=10'V
CONTRACT NO. C700 | REV P
AREA CODE MI | SHEET NO. X508 | PAGE NO