

# MERRILL F. WEST HIGH SCHOOL TENNIS COURT REPAIRS

1775 Lowell Avenue  
TRACY, CA 95376



DSA

ENGINEER:



ENGINEER:

## ABBREVIATIONS

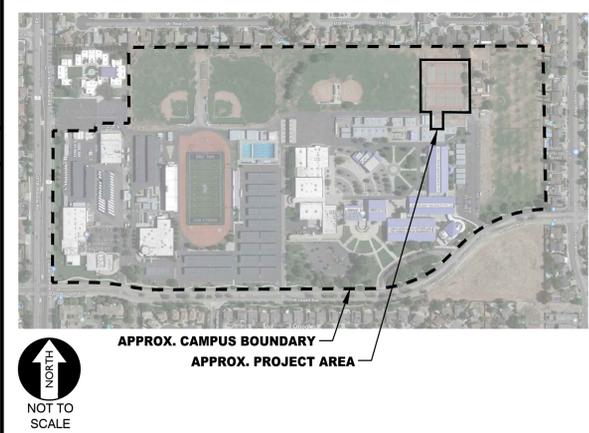
NOTE: NOT ALL ABBREVIATIONS MAY BE USED ON THESE PLANS.

AB	AGGREGATE BASE	JP	JOINT UTILITY POLE
AC	ASPHALTIC CONCRETE	LF	LINE IN FEET
AD	AREA DRAIN	LIP	LIP OF GUTTER
APN	ASSESSOR'S PARCEL NUMBER	LT	LEFT
ARV	AIR RELEASE VALVE	MS	MOWSTRIP
ASB	AGGREGATE SUB-BASE	NTS	NOT TO SCALE
BO	BLOW-OFF VALVE	OH	OVERHEAD UTILITY
BV	BUTTERFLY VALVE	PCC	PORTLAND CEMENT CONCRETE
BW	BACK OF WALK	PD	PLANTER DRAIN
C/L	CENTERLINE	PIV	POST INDICATOR VALVE
CB	CATCH BASIN	PL	PROPERTY LINE
CL	CLASS	PP	POWER POLE
CMP	CORRUGATED METAL PIPE	PUE	PUBLIC UTILITY EASEMENT
CATV	CABLE TELEVISION	PVC	POLYVINYL CHLORIDE
CO	CLEANOUT	RCP	REINFORCED CONCRETE PIPE
COMM	COMMUNICATION	R	RADIUS
CONC.	CONCRETE	RM	MANHOLE RIM ELEVATION
CONST.	CONSTRUCT	RP	REDUCED PRESSURE BACKFLOW PREVENTER
CR	CURB RETURN	RW	RIGHT OF WAY
CS	CONCRETE SURFACE	SCH	SCHEDULE
DC	DOUBLE CHECK VALVE	SD	STORM DRAIN
DDC	DOUBLE DETECTOR CHECK VALVE	SDMH	STORM DRAIN MANHOLE
DG	DECOMPOSED GRANITE	SG	SUBGRADE ELEVATION
DI	DROP INLET	si	SIDE INLET
DIA	DIAMETER	SS	SANITARY SEWER
DIP	DUCTILE IRON PIPE	SSMH	SANITARY SEWER MANHOLE
DWG	DRAWING	STD	STANDARD
DS	DOWNSPOUT	S/W	SIDEWALK
E	ELECTRIC	T	TELEPHONE
EP	EDGE OF PAVEMENT	TC	TOP OF CURB
ESMT	EASEMENT	TD	TRENCH DRAIN
EX	EXISTING	TDCB	TRENCH DRAIN CATCH BASIN
FS	FIRE SERVICE LINE	TP	TELEPHONE POLE
FDC	FIRE DEPARTMENT CONNECTION	TRW	TOP OF RETAINING WALL
FL	FLOWLINE	TSW	TOP OF SEAT WALK
FM	SANITARY SEWER FORCE MAIN	TW	TOP OF WALK ELEVATION
FF	FINISHED FLOOR ELEVATION	U	UTILITY
FH	FIRE HYDRANT	UG	UNDERGROUND
G	GAS	UN	UNLESS OTHERWISE NOTED
GR	GRATE ELEVATION	VCP	VITRIFIED CLAY PIPE
GRD	GRADE ELEVATION	W	WATER
GV	GATE VALVE	W/O	WITHOUT
HB	HOSE BIB	WV	WATER VALVE
HBD	HEADER BOARD		
HDPE	HIGH DENSITY POLYETHYLENE PIPE		
HP	HIGH POINT		
INV	PIPE INVERT ELEVATION		

## VICINITY MAP



## SITE MAP



## PROJECT NARRATIVE

REMOVAL AND REPLACEMENT OF PORTIONS OF EXISTING TENNIS COURT PAVING AND THE RE-SURFACING OF THE ENTIRE TENNIS COURT SURFACING WITH NEW STRIPING AND NEW POSTS AND NETS AND SOME NEW PERIMETER FENCING, AND ALSO THE INSTALLATION OF NEW TENNIS COURT LIGHTING AND ELECTRICAL SYSTEMS, AND NEW CCTV CAMERAS.

RE-CONNECTION OF EXISTING CONTAINER FRIDGE TO NEW ELECTRICAL SERVICE AND PROVISION OF POWER TO NEW LIGHTING AND OUTLETS FOR SPECIAL PROGRAM FACILITY.

RE-CONSTRUCTION OF AGRICULTURAL AREA WITH NEW FENCING AND GATES AND PLANTING AREAS.

## APPLICABLE REGULATIONS

N/A

## GENERAL NOTES

- THE TYPES, LOCATIONS, SIZES, AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE PLANS WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS AND DEPTHS OF SUCH UNDERGROUND UTILITIES. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES. HOWEVER, WARREN CONSULTING ENGINEERS CAN ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF ITS DELINEATION OF SUCH UNDERGROUND UTILITIES, NOR FOR THE EXISTENCE OF OTHER BURIED OBJECTS OR UTILITIES WHICH MAY BE ENCOUNTERED BUT WHICH ARE NOT SHOWN ON THESE PLANS. THE CONTRACTOR OR ANY SUBCONTRACTOR FOR THIS CONTRACT SHALL NOTIFY MEMBERS OF UNDERGROUND SERVICE ALERT (USA) TWO (2) WORKING DAYS IN ADVANCE OF PERFORMING ANY EXCAVATION WORK BY CALLING TOLL FREE 1-800-227-2600, OR 811.
- WARREN CONSULTING ENGINEERS, INC. (WCE) ASSUMES NO RESPONSIBILITY FOR ERRORS IN PHYSICAL LOCATION OF IMPROVEMENTS, HORIZONTAL OR VERTICAL, IF STAKED BY OTHERS. IN ADDITION, ANY SUCH ERRORS IN PHYSICAL LOCATION MAY AFFECT THE INTENDED DESIGN OF SUCH IMPROVEMENTS AND WCE CANNOT BE HELD RESPONSIBLE FOR SUCH CONDITIONS WHICH ARE A RESULT OF ERRORS IN SURVEYING, OR IMPROPER CONSTRUCTION.
- IF SUBSURFACE CULTURAL RESOURCES, REMAINS, AND/OR ARTIFACTS ARE UNCOVERED DURING PROJECT CONSTRUCTION, ALL WORK IN THE VICINITY SHALL BE STOPPED UNTIL SUCH ITEMS CAN BE ASSESSED BY AN APPROPRIATE MEMBER OF THE COUNTY ENVIRONMENTAL IMPACT SECTION STAFF.
- CONTRACTOR AGREES THAT HE/SHE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
- THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FROM THE STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL SAFETY FOR ALL EXCAVATIONS OF 5 FEET OR MORE IN DEPTH.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ALL NECESSARY PRE-BID AND PRE-CONSTRUCTION SITE INSPECTION, AND/OR OBSERVATIONS ON THE SITE TO PRE-DETERMINE ALL HIS/HER MEANS AND METHODS NECESSARY TO COMPLETE THE IMPROVEMENTS SHOWN ON THESE PLANS AND PER THE PROJECT SPECIFICATIONS. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE, AND INCLUDE IN HIS/HER CONTRACT, ALL MEANS AND METHODS NECESSARY TO PERFORM A COMPLETE AND ACCEPTABLE JOB.
- WHERE IMPROVEMENTS LIE WITHIN AN EXISTING DEVELOPED AREA, CONTRACTOR SHALL USE CAUTION WHEN ACCESSING THE SITE THROUGH THESE EXISTING IMPROVEMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO PROTECT ANY SUCH EXISTING IMPROVEMENTS OUTSIDE THE PROJECT BOUNDARY, OR EXISTING IMPROVEMENTS WITHIN THE BOUNDARY WHICH ARE TO REMAIN. PROPER PRECAUTIONS SHALL BE PROVIDED AND MAINTAINED THROUGHOUT CONSTRUCTION. ANY DAMAGE SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO KEEP DETAILED RECORDS OF MINOR CHANGES OR ADJUSTMENTS MADE DURING CONSTRUCTION (WHICH WERE NOT FORMALLY ISSUED). UPON PROJECT COMPLETION, THESE RECORDS AND/OR INFORMATION SHALL BE PROVIDED TO THE OWNER AND WARREN CONSULTING ENGINEERS, INC. UNLESS ANOTHER SET OF PLANS IS A REQUIREMENT OF THE CONTRACT. IF AS-BUILT PLANS ARE A REQUIREMENT OF THE CONTRACT, REFER TO SPECIFICATIONS FOR AS-BUILT DELIVERABLE REQUIREMENTS.
- IN VEHICULAR PATHWAYS, EXISTING ASPHALTIC AND/OR CONCRETE SURFACES SHALL BE CUT TO A NEAT AND STRAIGHT LINE, PARALLEL OR PERPENDICULAR TO THE VEHICULAR TRAVELED PATH. THIS IS TYPICALLY THE ROADWAY CENTERLINE, BUT MAY VARY. THAT SAWCUT EDGE SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION SO A CLEAN EDGE REMAINS FOR PATCH BACK. IF EDGE IS DAMAGED, A NEW SAW CUT WILL BE REQUIRED. THE EXPOSED EDGE SHALL BE "TACKED" WITH EMULSION PRIOR TO PAVING.
- NO BURNING OR BLASTING SHALL BE ALLOWED ONSITE UNLESS SPECIFICALLY ADDRESSED ON PLANS, OR SPECIFICALLY APPROVED AND COORDINATED WITH THE ARCHITECT, ENGINEER, AND LOCAL AGENCY OR OTHER ADMINISTRATIVE AUTHORITY.
- SUBGRADE AND RESULTING FINISHED GRADE SHALL BE CONSTRUCTED SMOOTH AND UNIFORM BETWEEN SPOT ELEVATIONS, CONTOURS OR OTHER STRUCTURE ELEVATIONS SHOWN ON GRADING OR OTHER PLANS. NO MOUNDS, RUTS, DEPRESSIONS OR OTHER GRADING DEFICIENCIES WILL BE ALLOWED UNLESS SPECIFICALLY SHOWN ON PLANS.
- ON NEW WATER SYSTEMS, SERVICE LATERALS SHALL BE MADE USING APPROPRIATE "TEE" AND "WYE" FITTINGS. SADDLE TAPS WILL ONLY BE ALLOWED WHEN MAKING CONNECTIONS TO EXISTING WATER MAINS.
- CURING COMPOUND SHALL BE APPLIED IN A CONTINUOUS SOLID WET FLOWING COAT. ANY "SPOTTY" APPLICATIONS SHALL BE RECOATED IMMEDIATELY. APPLICATION SHALL BE INSPECTED BY PROJECT INSPECTOR DURING APPLICATION.
- EMBEDMENT OF FEATURES IN CONCRETE PAVING, CURBS, OR WALLS, SUCH AS SQUARE OR ROUND TUBING, POSTS, OR COLUMNS, STEEL BOLTED PLATES, OR OTHER STRUCTURES, SHALL REQUIRE ADDITIONAL SCORE OR EXPANSION JOINTS TO PREVENT CRACKING. THESE ADDITIONAL JOINTS MAY OR MAY NOT BE SPECIFICALLY SHOWN ON PLANS BUT SHALL BE PROVIDED BY THE CONTRACTOR.
- EMBEDMENT OF FEATURES IN CONCRETE PAVING, CURBS, OR WALLS, SUCH AS SQUARE OR ROUND TUBING, POSTS, OR COLUMNS, STEEL BOLTED PLATES, OR OTHER STRUCTURES, SHALL REQUIRE A MINOR ADJUSTMENT OF REBAR WITHIN CONCRETE TO ALLOW FOR SUCH STRUCTURE. THAT REBAR ADJUSTMENT MAY NOT BE SPECIFICALLY SHOWN ON PLANS.
- NO MORE THAN 1 GALLON OF WATER PER YARD OF CONCRETE CAN BE ADDED TO THE TRUCK AFTER ARRIVAL TO PROJECT SITE. THE ADDITION OF WATER CAN ONLY BE ADDED UNDER THE SUPERVISION OF THE CONCRETE INSPECTOR OR LABORATORY TECHNICIAN.
- WHEN PUMPING CONCRETE FOR PLACEMENT, ABSOLUTELY NO WATER IS TO BE ADDED TO PUMP HOPPER. ANY WATER ADDED TO HOPPER WILL BE REASON FOR CONCRETE REJECTION AT THE CONTRACTORS EXPENSE.
- ALL CONTRACTION/CONSTRUCTION JOINTS "CJ" SHALL BE 1/4" THE SLAB THICKNESS DEEP, BUT NO LESS THAN 1" FOR CONTROLLING OF CRACKING. CONTRACTOR SHALL EXERCISE CAUTION WHEN FINAL TROWELING OF CONCRETE SO AS NOT TO FILL IN THESE JOINTS WITH CONCRETE CREAM. ANY CRACKS OUTSIDE OF JOINTS WHICH WERE CONSTRUCTED LESS THAN 1" DEEP, SHALL BE CAUSE FOR CONCRETE SLAB(S) TO BE REMOVED AND REPLACE AT CONTRACTORS EXPENSE.
- ANY SCREENED BOARDS SET WITHIN CONCRETE SLABS SHALL BE AN "OVERHEAD SCREEN" SO THERE IS NO INTERFERENCE WITH THE PLACEMENT AND ALIGNMENT OF SLAB REINFORCING.
- 3-1/2" FELT JOINTS WILL NOT BE ACCEPTED. PROVIDE A FULL 4" FELT JOINT FOR 4" SLAB CONSTRUCTION, AND A 6" FELT JOINT FOR A 6" SLAB CONSTRUCTION.
- SHOULD ANY SHRINKAGE CRACKS OCCUR OUTSIDE OF EITHER THE EXPANSION JOINTS OR CRACK CONTROL JOINTS, THEN THE CONCRETE SLAB SHALL BE SAWCUT AT THE NEAREST JOINTS ON EACH SIDE OF THE CRACK AND THE CONCRETE SECTION SHALL BE REMOVED AND REPLACED. NEW CONCRETE SHALL BE DOWELED INTO EXISTING CONCRETE PER DRAWING DETAIL.
- ALL AREAS DISTURBED BY GRADING OPERATIONS WHETHER SHOWN ON THE DRAWINGS OR NOT SHALL BE HYDRO SEEDED UNLESS OTHERWISE NOTED. HYDRO SEEDING SHALL CONFORM TO LOCAL CITY/COUNTY STANDARDS.
- REPAIR OR PATCHING OF GALVANIZED METALS, SUCH AS AFTER WELDING GALVANIZED COMPONENTS, SHALL BE MADE USING A ZINC COMPOSITION "HOT STICK" APPLICATION PER ASTM A 780-01. GALVANIZING PAINTS WILL NOT BE ALLOWED.

## STATEMENTS:

N/A

## APPLICABLE CODES & STANDARDS

- BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.
- 2019 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R. (2012 INTERNATIONAL BUILDING CODE VOLUME 1-2 AND 2013 CALIFORNIA AMENDMENTS)
- 2019 CALIFORNIA PLUMBING CODE (CBC), PART 5, TITLE 24 C.C.R. (2012 UNIFORM PLUMBING CODE AND 2013 CALIFORNIA AMENDMENTS)
- 2019 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 C.C.R. (2012 INTERNATIONAL FIRE CODE AND 2013 CALIFORNIA AMENDMENTS)
- 2019 GREEN CALIFORNIA BUILDING STANDARDS, CALGREEN CODE, TITLE 24, PART 11
- 2019 CALIFORNIA REFERENCE STANDARDS, PART 12, TITLE 24 C.C.R.
- TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

## DEFERRED APPROVALS

N/A

## SYMBOLS LEGEND

NOTE: NOT ALL SYMBOLS MAY BE USED ON THESE PLANS.

	STORM DRAIN LINE (SIZE AND FLOW SHOWN)		WATER LINE & SIZE
	STORM DRAIN MANHOLE (SDMH)		FIRE LINE & SIZE
	CATCH BASIN (CB)		DOMESTIC WATER LINE & SIZE
	DROP INLET (DI)		RECLAIMED WATER LINE & SIZE
	AREA DRAIN (AD)		IRRIGATION SERVICE LINE & SIZE
	PLANTER DRAIN (PD) OR FLOOR DRAIN (FD)		NON POTABLE WATER LINE & SIZE
	STORM DRAIN CLEANOUT		FIRE SPRINKLER SVC. LINE & SIZE
	ELEVATION		GATE VALVE
	FINISHED FLOOR ELEVATION		WATER METER
	BUILDING PAD ELEVATION		FIRE HYDRANT ASSEMBLY
	CONCRETE SIDEWALK		FIRE DEPARTMENT CONNECTION
	GRADED DIRECTION FOR DRAINAGE FLOW		DETECTOR CHECK VALVE
	SWALE		DOUBLE DETECTOR CHECK VALVE
	SLOPE		REDUCED PRESSURE BACKFLOW PREVENTER
	TREE TO BE REMOVED		BUTTERFLY VALVE
	TREE TO REMAIN		AIR RELEASE VALVE + SIZE
	RETAINING WALL		BLOW-OFF VALVE + SIZE
	OVERLAND RELEASE PATH		POST INDICATOR VALVE
	SANITARY SEWER LINE (SIZE AND FLOW SHOWN)		
	SANITARY SEWER MANHOLE (SSMH)		
	SEWER CLEANOUT		
	SEWER FLUSHER BRANCH		

## SHEET INDEX

NO.	SHEET DESCRIPTION
CIVIL	
C0.0	COVER SHEET
C0.1	TOPOGRAPHIC SURVEY
C1.1	DEMOLITION PLAN
C2.1	GRADING AND CONSTRUCTION PLAN
C2.2	GRADING AND CONSTRUCTION PLAN
C2.3	GRADING AND CONSTRUCTION PLAN
C2.4	GRADING AND CONSTRUCTION PLAN
C2.6	DRAINAGE PLAN
C2.7	UTILITY PLAN
C3.1	SURFACING, STRIPING AND EQUIPMENT PLAN
C4.1	DETAILS AND SECTIONS
C4.2	DETAILS AND SECTIONS
C4.2	DETAILS AND SECTIONS

## ELECTRICAL

E0.1	ELEC. ABBEV. NOTES AND SHEET INDEX
E0.2	ELECTRICAL SYMBOL LEGEND
E0.3	ELECTRICAL SPECIFICATIONS
E0.4	ELECTRICAL SPECIFICATIONS
E0.5	ELECTRICAL SPECIFICATIONS
E1.1	ELECTRICAL SITE PLAN
E1.2	ELECTRICAL ENLARGED PLAN
E5.1	ELECTRICAL ON-LINE DIAGRAM
E6.1	ELECTRICAL PANEL SCHEDULES
E7.1	ELECTRICAL DETAILS
E7.2	ELECTRICAL DETAILS
E7.3	ELECTRICAL DETAILS

## OWNER/USER

OWNER: TRACY UNIFIED SCHOOL DISTRICT  
1875 W. LOWELL AVENUE  
TRACY, CA 95376  
PHONE: (209) 830-3200  
FAX: (209) 830-3204

DISTRICT CONTACT:  
JAIME QUINTANA  
DIRECTOR OF FACILITIES AND PLANNING  
(209) 830-3245  
JQUINTANA@TUSD.NET

USER: MERRILL F. WEST HIGH SCHOOL  
1775 Lowell Ave.  
Tracy, CA 95376  
PHONE: (209) 830-3370  
FAX: (209) 830-3371

## PROJECT TEAM

CIVIL: WARREN CONSULTING ENGINEERS, INC.  
1117 WINDFIELD WAY, SUITE 110  
EL DORADO HILLS, CA 95762  
PHONE: (916) 985-1870  
FAX: (916) 985-1877

## REVISIONS

NO.	DESCRIPTION

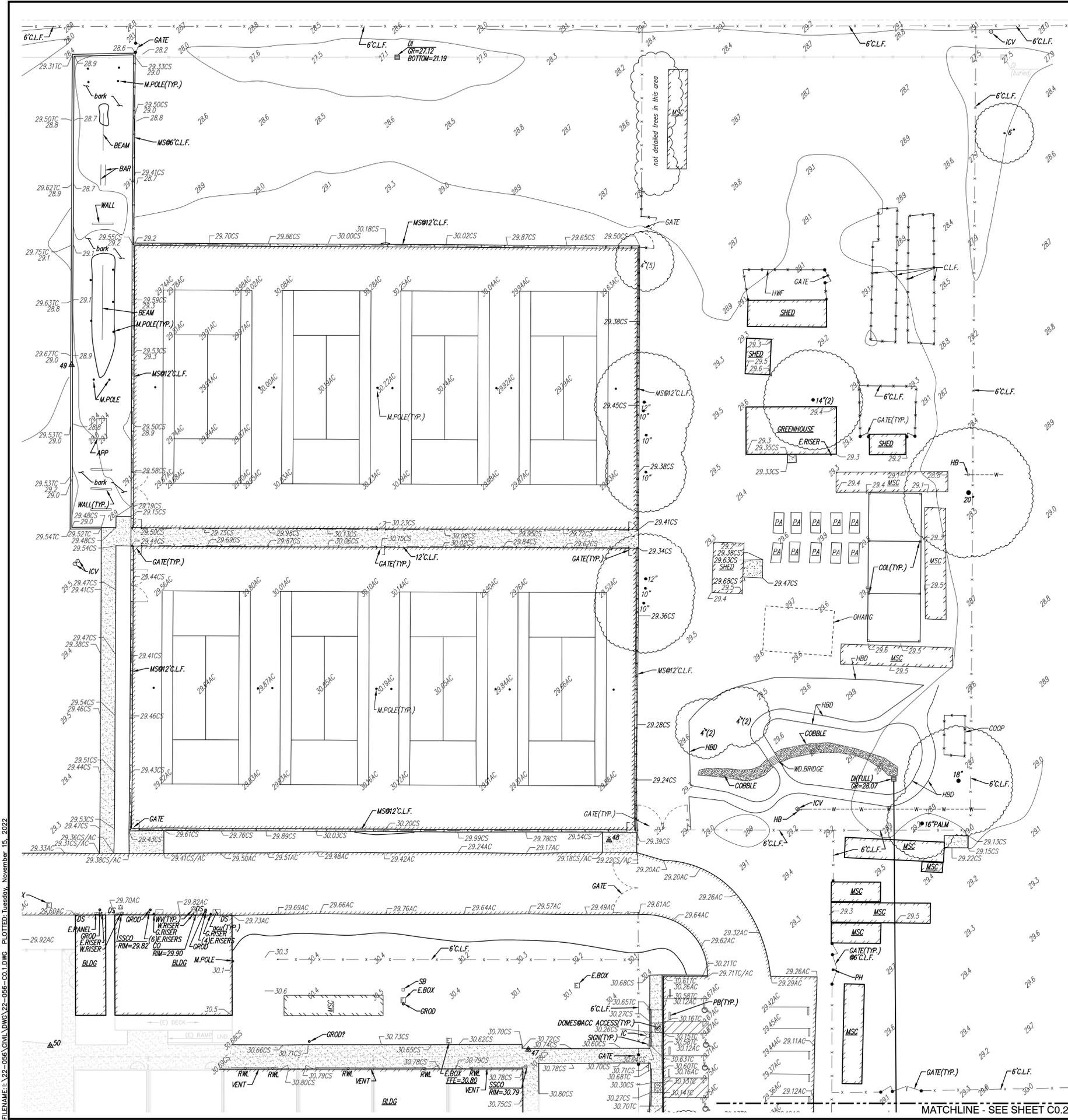
## BID SET

SHEET TITLE:

COVER SHEET

SHEET NO.

C0.0



**EXISTING TOPOGRAPHY**

- = PROPERTY LINE
- = CENTERLINE
- - - = easement
- = PROPERTY CORNER FOUND AS NOTED
- = PROPERTY CORNER NOTHING FOUND OR SET
- △123 = TEMPORARY BENCHMARK (SEE TBM LIST FOR INFO)
- = SWALE OR DRAINAGE FLOW
- = DRAINAGE FLOW
- = FENCE (TYPE NOTED)
- = TREE (SIZE/TYPE INDICATED)
- = SLOPE
- = CONTOUR
- = CONCRETE SURFACE
- = EDGE OF ASPHALT
- = EDGE OF BUILDING
- = SIGN
- = POST OR BOLLARD
- 99.9 = GROUND ELEVATION
- 99.99 = HARD SURFACE ELEVATION

**EXISTING UTILITIES**

- 12"SD --- = storm drain line (size & direction of flow)
- 12"SD --- = storm drain line (record information)
- 12"SD --- = storm drain line (UNDERGROUND LOCATING)
- = storm drain manhole
- = storm drain cleanout
- = drop inlet
- = AREA DRAIN
- = RAIN WATER LEADER
- = DS = downspout
- 12"SS --- = sanitary sewer line (size & direction of flow)
- 12"SS --- = sanitary sewer line (record information)
- 12"SS --- = sanitary sewer line (UNDERGROUND LOCATING)
- = sanitary sewer manhole
- = sanitary sewer cleanout
- W --- = water line (size indicated)
- W --- = water line (record information)
- W --- = water line (UNDERGROUND LOCATING)
- = water manhole
- = water valve
- = water meter
- = water box
- = IRRIGATION CONTROL VALVE
- = FIRE HYDRANT
- = backflow preventer
- = SPRINKLER
- = hose bibb
- OH-E --- = OVERHEAD ELECTRIC LINE
- E --- = UNDERGROUND ELECTRIC LINE
- E --- = UNDERGROUND ELECTRIC LINE (record information)
- E --- = UNDERGROUND ELECTRIC LINE (UNDERGROUND LOCATING)
- = ELECTRIC MANHOLE
- = UTILITY POLE (WITH GUY WIRE)
- = ELECTRIC METER
- = ELECTRIC BOX
- = STREET LIGHTING BOX
- = SIGNAL LIGHT
- = FLOOD LIGHT
- = ELECTRICAL OUTLET
- G --- = GAS LINE (SIZE INDICATED)
- G --- = GAS LINE (record information)
- G --- = GAS LINE (UNDERGROUND LOCATING)
- = GAS MANHOLE
- = GAS VALVE
- = GAS METER
- t --- = telephone line
- t --- = telephone line (record information)
- t --- = telephone line (UNDERGROUND LOCATING)
- t --- = STORM DRAIN BOX
- = TRAFFIC SIGNAL BOX

**ABBREVIATIONS**

- NOTE: NOT ALL ABBREVIATIONS MAY BE USED ON THESE PLANS.
- ac asphaltic concrete
  - ACC ACCESSIBLE
  - acu air conditioning unit
  - ad area drain
  - apn assessor's parcel number
  - arv air release valve
  - bball basketball pole
  - BRM BRASS CAP MONUMENT
  - bfp back flow preventer
  - BL BLOCK
  - blgd building
  - BOLL BOLLARD
  - bov blow-off valve
  - BR BRICK
  - B.W.F. BARBED WIRE FENCE
  - C COMMUNICATION
  - C.A. CATV
  - CIP CAPPED IRON PIPE
  - C.L.F. CHAIN LINK FENCE
  - cmp corrugated metal pipe
  - co cleanout
  - COL COLUMN
  - conc concrete
  - cond condensate
  - cpt control point found
  - cps control point set
  - CS CONCRETE SURFACE
  - D DEPTH
  - ddc double detector check valve
  - df drinking fountain
  - dg decomposed granite
  - di drop inlet
  - diam diameter
  - dry dry
  - ds downspout
  - dwg drawing
  - E ELECTRIC
  - esmt edge of pavement
  - ex easement
  - fo fire alarm
  - ftc fire department connection
  - ff finished floor elevation
  - fh fire hydrant
  - FL flowline
  - fo fiber optic
  - fs fire service
  - G GAS
  - GB GRADE BREAK
  - Gr grate
  - grb GROUND ROD BOX
  - ground ground rod
  - gv gas valve
  - HB HOSE BIBB
  - HBD HEADER BOARD
  - HP high PRESSURE
  - HR HANDRAIL
  - HVE HIGH VOLTAGE ELECTRIC
  - HWG HOSE WIRE FENCE
  - ICP irrigation control PANEL
  - icv irrigation control valve
  - inv pipe invert elevation
  - irr irrigation
  - ip joint utility pole
  - it trench
  - LANDING
  - LE low voltage ELECTRIC
  - ME METAL
  - mh manhole
  - MS MOW STRIP
  - MSC METAL STORAGE CONTAINER
  - not to scale
  - OH OVERHEAD
  - OHANG OVERHANG
  - OIP OPEN IRON PIPE
  - OSP OLD STEEL POST HOLE
  - OSP property line
  - PA PARKING AREA
  - PB PARKING BUMPER
  - PH POSTHOLE
  - piv post indicator valve
  - pp power pole
  - prkg parking
  - pue public utility easement
  - pv PAVERS
  - pvc polyvinyl chloride
  - R RUBBER
  - rim manhole rim elevation
  - right of way
  - RP REDUCED PRESSURE BACKFLOW PREVENTER
  - RWALL RETAINING WALL
  - RAW RAW WATER LEADER
  - rd road
  - sd storm drain
  - sdmh storm drain manhole
  - SIG SIGNAL
  - SL STREET LIGHT
  - slb street light box
  - ss sanitary sewer
  - ssco sanitary sewer cleanout
  - ssm sanitary sewer manhole
  - STL STEEL
  - T TELEPHONE
  - tball tether ball pole
  - TBM TEMPORARY BENCHMARK
  - tc top of curb
  - TOW top of wall
  - tp telephone pole
  - trw top of retaining wall
  - ug underground
  - UNK UNKNOWN
  - vball volleyball
  - W WATER
  - w/o without
  - w/g wood
  - w.i.f. wrought iron fence
  - WR.F. WOOD RAIL FENCE
  - TRF TRANSFORMER
  - xwalk crosswalk

**BASIS OF BEARINGS:**

A LINE BEARING N00°04'30"W BETWEEN A FOUND 2" DISK IN CENTERLINE MONUMENT BOX AT LINCOLN BOULEVARD AND LOWELL AVENUE, AND A FOUND 2" DISK IN CENTERLINE MONUMENT BOX AT LINCOLN BOULEVARD AND MICHELLE AVENUE PER TRACT MAP 1001 NEWPORT PLACE.

NOTE: EXISTING UTILITIES BASED ON VISIBLE SURFACE STRUCTURES ONLY. SEE SHEET C0.2 FOR BENCHMARKS

A.P.N.	232-130-100
BENCHMARK NO.	CITY OF TRACY GPS #17 ELEV. 44.80
FOUND 2" DISK IN STANDARD MONUMENT BOX ON THE CENTERLINE OF CORRAL HOLLOW ROAD AT THE NORTH LINE OF 11TH STREET.	

DSA

ENGINEER:

WARREN CONSULTING ENGINEERS, INC.  
1117 WINDFIELD WAY, SUITE 110  
EL DORADO HILLS, CA 95761 (916) 985-1870

ENGINEER:

OWNER:

Tracy Unified School District  
1875 W. Lowell Avenue  
Tracy, CA 95376  
Phone: (209) 830-3200

Merrill F. West  
High School  
Tennis Court  
Repairs

1775 Lowell Ave.  
Tracy, CA 95376

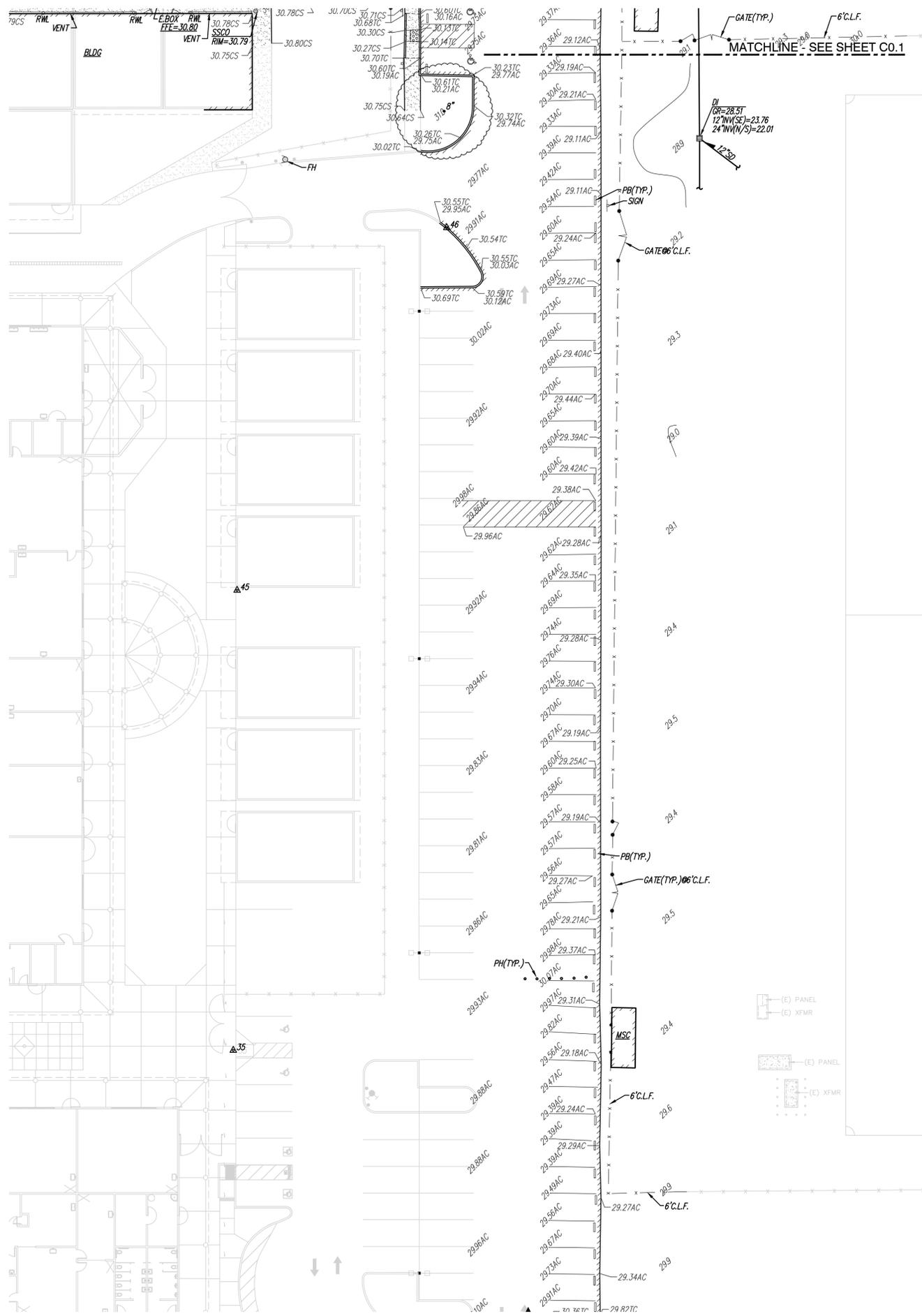
REVISIONS	
NO.	DESCRIPTION

DRAWN:	SMN	SCALE:	AS NOTED
CHECKED:	AT	PROJECT NO.:	22-056
DESIGNED:	SMN/AT	DATE:	11-11-2022

**BID SET**

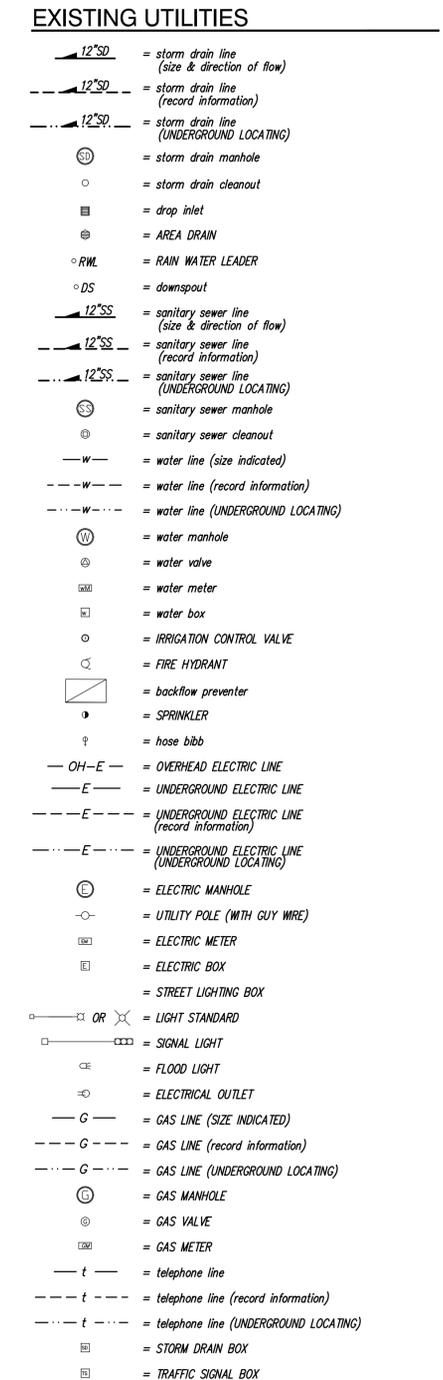
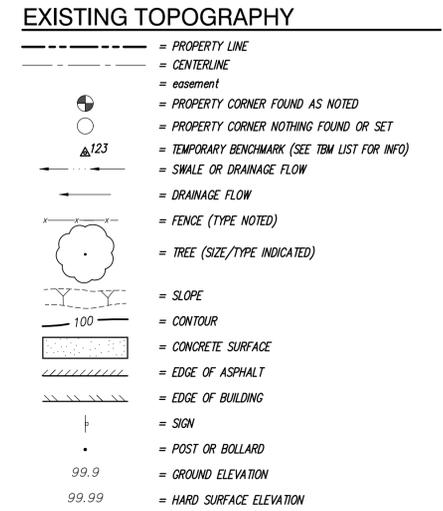
SHEET TITLE:  
**TOPOGRAPHIC SURVEY**

SHEET NO.  
**C0.1**



### TBM LIST

NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
7	CPS CHISELED "+"	9737.66	9660.01	31.38
8	CPS CHISELED "+"	9705.38	9632.86	31.34
9	CPS CHISELED "+"	9726.18	10121.78	29.46
10	CPS CHISELED "+"	9502.70	9715.56	31.00
11	CPS CHISELED "+"	9352.98	10524.82	32.56
12	CPS CHISELED "+"	9316.05	11033.28	32.95
13	CPS CHISELED "+"	9366.42	10878.78	33.45
14	CPS CHISELED "+"	9551.45	11085.88	31.27
15	CPS CHISELED "+"	9660.52	11319.74	31.36
24	CPS CHISELED "+"	9737.66	9660.01	31.38
25	CPS CHISELED "+"	9705.38	9632.86	31.34
26	CPS CHISELED "+"	9726.18	10121.78	29.46
27	CPS CHISELED "+"	9502.70	9715.56	31.00
28	CPS CHISELED "+"	9352.98	10524.82	32.56
29	CPS CHISELED "+"	9316.05	11033.28	32.95
30	CPS CHISELED "+"	9366.42	10878.78	33.45
31	CPS CHISELED "+"	9551.45	11085.88	31.27
32	CPS CHISELED "+"	9660.52	11319.74	31.36
35	CPF CHISELED "+"	9828.10	11202.80	30.42
36	CPS CHISELED "+"	9517.02	10079.80	29.41
37	CPS CHISELED "+"	10164.27	9897.11	29.89
38	CPS CHISELED "+"	10088.49	9719.15	29.84
39	CPS CHISELED "+"	9748.24	9751.02	29.93
40	CPS CHISELED "+"	9552.89	9927.71	29.77
41	CPS CHISELED "+"	9762.21	10041.21	29.91
42	CPS CHISELED "+"	9590.66	10320.21	30.62
43	CPS CHISELED "+"	9379.14	10276.72	32.70
44	CPS CHISELED "+"	9347.32	10013.22	31.26
45	CPS CHISELED "+"	9982.86	11204.10	30.31
46	CPS CHISELED "+"	10104.80	11274.96	30.56
47	CPS CHISELED "+"	10184.64	11211.43	30.72
48	CPS CHISELED "+"	10269.01	11244.09	29.36
49	CPS CHISELED "+"	10460.45	11026.73	29.68
50	CPS CHISELED "+"	10186.24	11018.11	31.04
51	CPS CHISELED "+"	10303.67	10501.08	28.93



### ABBREVIATIONS

NOTE: NOT ALL ABBREVIATIONS MAY BE USED ON THESE PLANS.

ac	asphaltic concrete
acc	ACCESSIBLE
acu	air conditioning unit
ad	area drain
apn	assessor's parcel number
arv	air release valve
bball	basketball pole
BCM	BRASS CAP MONUMENT
bfl	back flow preventer
BL	BLOCK
blgd	building
BOLL	BOLLARD
bov	blow-off valve
BR	BRICK
B.W.F.	BARBED WIRE FENCE
C	COMMUNICATION
C/V	CABLE TELEVISION
CIP	CAPPED IRON PIPE
C.L.F.	CHAIN LINK FENCE
cmp	concrete metal pipe
co	cleanout
COL	COLUMN
conc	concrete
cond	condensate
cpf	control point found
cps	control point set
CS	CONCRETE SURFACE
D	DEPTH
ddc	double detector check valve
df	drinking fountain
dg	decomposed granite
di	drop inlet
dia	diameter
dry	dry
ds	downspout
dwg	drawing
E	ELECTRIC
ep	edge of pavement
esmt	easement
ex	existing
fa	fire alarm
fd	fire department connection
fl	finished floor elevation
fh	fire hydrant
FL	flowline
fo	fiber optic
fs	fire service
G	GRADE BREAK
GB	GRADE
Gr	grate
GRD	GROUND ROD BOX
grd	ground rod
gv	gas valve
HB	HOSE BIBB
HBD	HEADER BOARD
HP	HIGH PRESSURE
HR	HANDRAIL
HVE	HIGH VOLTAGE ELECTRIC
HWF	HOG WIRE FENCE
ICP	irrigation control PANEL
icv	irrigation control valve
inv	pipe invert elevation
irr	irrigation
jp	joint trench
L	LANDING
LV	low voltage ELECTRIC
M	METAL
mh	manhole
MS	MOW STRIP
MSC	METAL STORAGE CONTAINER
nts	not to scale
oh	OVERHEAD
OHANG	OVERHANG
OIP	OPEN IRON PIPE
OSPH	OLD STEEL POST HOLE
p/A	property line
PA	PAVING AREA
PB	PARKING BUMPER
PH	POSTHOLE
piv	post indicator valve
pp	power pole
prkg	parking
pue	public utility easement
PV	PAVERS
pvc	polyvinyl chloride
R	RUBBER
rim	manhole rim elevation
row	right of way
RP	REDUCED PRESSURE BACKFLOW PREVENTER
RWALL	RETAINING WALL
RWL	RAW WATER LEADER
sd	storm drain
sdmh	storm drain manhole
SIG	SIGNAL
SL	STREET LIGHT
slb	street light box
ss	sanitary sewer
ssco	sanitary sewer cleanout
ssmh	sanitary sewer manhole
STL	STEEL
T	TELEPHONE
tball	tether ball pole
TBM	TEMPORARY BENCHMARK
tc	top of curb
TOW	top of wall
tp	telephone pole
trw	top of retaining wall
ug	underground
UNK	UNKNOWN
vball	volleyball
W	WATER
w/o	without
w/d	WOOD
w.i.f.	wrought iron fence
W.R.F.	WOOD RAIL FENCE
XFRMR	TRANSFORMER
xwalk	crosswalk

ENGINEER:

WARREN CONSULTING ENGINEERS, INC.  
1117 WINDFIELD WAY, SUITE 110  
EL DORADO HILLS, CA 95762 | (916) 985-1870

ENGINEER:

OWNER:

Tracy Unified School District  
1875 W. Lowell Avenue  
Tracy, CA 95376  
Phone: (209) 830-3200

Merrill F. West  
High School  
Tennis Court  
Repairs

1775 Lowell Ave.  
Tracy, CA 95376

### REVISIONS

NO.	DESCRIPTION

DRAWN: SMN	SCALE: AS NOTED
CHECKED: AT	PROJECT NO. 22-056
DESIGNED: SMN/AT	DATE: 11-11-2022

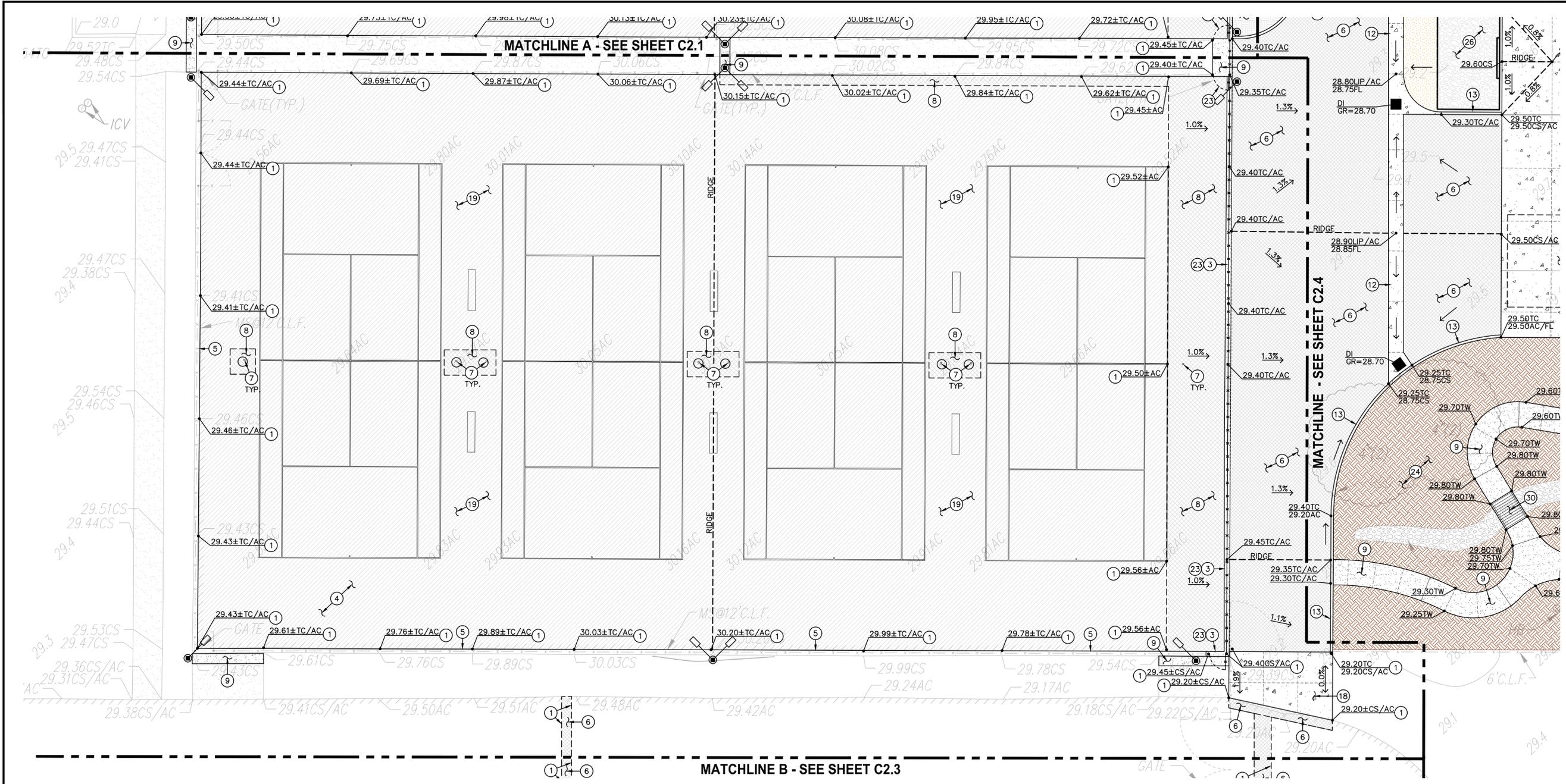
**BID SET**

SHEET TITLE:  
**TOPOGRAPHIC SURVEY**

SHEET NO.  
**C0.2**





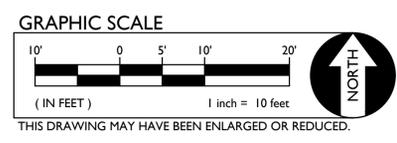


**1 GRADING AND CONSTRUCTION PLAN**

SCALE 1" = 10'-0"

**GRADING NOTES**

1. MATCH EXISTING GRADE/ELEVATION. WHEN MATCHING NEW SLABS TO EXISTING, DOWEL SLABS PER THE DETAIL PROVIDED AT 24" O.C.
2. CONSTRUCT CONCRETE BARRIER CURB PER THE DETAIL PROVIDED.
3. CONSTRUCT 12" WIDE CONCRETE APRON AT FENCING PER THE DETAIL PROVIDED.
4. PLACE TWO LIFT TENNIS COURT PAVING, 1.5" THICK SURFACE COURSE WITH 3/8" TYPE "A" PG 64-28 POLYMER MODIFIED AC, OVER 2.5" THICK BASE COURSE OF 3/4" TYPE "A" PG 64-28 POLYMER MODIFIED AC WITH FORTI-FI (OR APPROVED EQUAL) AC REINFORCEMENT, OVER 24" CLASS II AB ON GEOGRID, TENSAR TX140 (OR APPROVED EQUAL) ON PREPARED SUBGRADE. SUBGRADE PREPARED IN ACCORDANCE WITH SPECIFICATIONS SECTION 31 00 00. ASPHALT SHALL BE PER SECTION 32 12 00. SEE STRIPING AND SURFACING PLAN FOR TENNIS COURT SURFACING.
5. PRESSURE WASH SURFACE OF EXISTING CONCRETE APRON CLEAN OF DIRT, DEBRIS AND EXISTING SURFACING.
6. PLACE 3" TYPE A ASPHALT PAVING (1/2" MAX) OVER 24" CLASS II AB ON GEOGRID, TENSAR TX140 (OR APPROVED EQUAL) ON PREPARED SUBGRADE. SUBGRADE PREPARED IN ACCORDANCE WITH SPECIFICATIONS SECTION 31 00 00. ASPHALT SHALL BE PER SECTION 32 12 00.
7. SEE SURFACING, STRIPING AND EQUIPMENT PLAN FOR GAME EQUIPMENT.
8. GRIND EXISTING ASPHALT PAVING 1.5" MIN. THICK. APPLY TACK COAT AND 1.5" ASPHALT OVERLAY WITH 3/8" TYPE "A" PG 64-28 POLYMER MODIFIED AC. ASPHALT SHALL BE PER SECTION 32 12 00. SEE STRIPING AND SURFACING PLAN FOR TENNIS COURT SURFACING.
9. PLACE 5" CONCRETE PAVING OVER 4" CLASS II AB ON SCARIFIED AND RE-COMPACTED SUBGRADE. PLACE CONCRETE PAVING PER THE TYPICAL DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 31 00 00 FOR SUBGRADE PREPARATION, SECTION 32 16 00 FOR CONCRETE PAVING.
10. PLACE 6" CLASS II AB PAD ON SCARIFIED AND COMPACTED SUBGRADE PER SECTION 31 00 00.
11. CONSTRUCT CONCRETE CURB PER THE DETAIL PROVIDED.
12. CONSTRUCT 36" WIDE CONCRETE VALLEY GUTTER PER THE DETAIL PROVIDED.
13. CONSTRUCT CONCRETE FLUSH CURB PER THE DETAIL PROVIDED.
14. CONSTRUCT ELECTRICAL EQUIPMENT PAD, SEE ELECTRICAL PLANS.
15. CONSTRUCT 12" WIDE CONCRETE APRON AT EDGE OF EXISTING BUILDING, SHED OR GREENHOUSE AS SHOWN.
16. ROLL TOP OF CURB DOWN TO FLUSH OVER 12 INCHES DISTANCE.
17. PATCH BACK AND REPAIR EXISTING SURFACING, PLANTING, GRAVEL OR OTHER SURFACING. PLACE 4" LAYER NEW WALK-ON MULCH.
18. PLACE 6" CONCRETE PAVING OVER 8" CLASS II AB ON SCARIFIED AND RE-COMPACTED SUBGRADE. PLACE CONCRETE PAVING PER THE TYPICAL DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 31 00 00 FOR SUBGRADE PREPARATION, SECTION 32 16 00 FOR CONCRETE PAVING.
19. NOT USED.
20. CONSTRUCT CONCRETE CURB GUTTER WITH VARIABLE HEIGHT CURB REVEAL PER THE GRADES PROVIDED.
21. PROVIDE AND INSTALL PRE-MANUFACTURED AND PRE-FINISHED 4'X8' WOOD PLANTER BOXES PER THE DETAIL PROVIDED.
22. SET METAL STORAGE CONTAINER ON PAVING AS INDICATED.
23. SEE FENCING PLAN FOR NEW FENCING.
24. EXISTING GARDEN PLANTING TO BE MAINTAINED TO THE GREATEST EXTENT POSSIBLE. REPAIR ANY DAMAGE AND PLACE MULCH ALONG EDGES OF NEW WALK TO MATCH EXISTING.
25. EXISTING SHADE STRUCTURE TO REMAIN. PROTECT FROM DAMAGE.
26. EXISTING RELOCATED WOOD STORAGE SHED SET ON 6" THICK CLASS II AB PAD COMPACTED TO 95% OVER 12" DEEP SCARIFIED AND RE-COMPACTED SUBGRADE PER 31 00 00.
27. PLACE 6" LAYER COMPACTED DECOMPOSED GRANITE SURFACING OVER 12" DEEP SCARIFIED AND RE-COMPACTED SUBGRADE PER SPECIFICATIONS SECTIONS 31 00 00 AND 32 15 40.  
NOTE: THIS LAYER IS INTENDED AS A BASE SURFACING. FINAL ANIMAL ENCLOSURE SURFACING (I.E. MULCH, RUBBER MATS, ETC.) TO BE PROVIDED BY AGG. PROGRAM.
28. EXISTING SHED/GREENHOUSE OR OTHER STRUCTURE TO REMAIN. PROTECT FROM DAMAGE.
29. CONSTRUCT AGG YARD MATERIAL STORAGE AREA PER THE DETAIL PROVIDED.
30. PROVIDE AND INSTALL 6' LONG 5' WIDE LANDSCAPE BRIDGE PER THE DETAIL PROVIDED.



ENGINEER:  
**WCE**  
WARREN CONSULTING ENGINEERS, INC.  
1117 WINDFIELD WAY, SUITE 110  
EL DORADO HILLS, CA 95762 | (916) 985-1870

ENGINEER:  
**TRACY**  
UNIFIED SCHOOL DISTRICT  
Tracy Unified School District  
1875 W. Lowell Avenue  
Tracy, CA 95376  
Phone: (209) 830-3200

REGISTERED PROFESSIONAL ENGINEER  
**ANTHONY J. TASSANO**  
NO. C74698  
OF CALIFORNIA  
11/15/2022

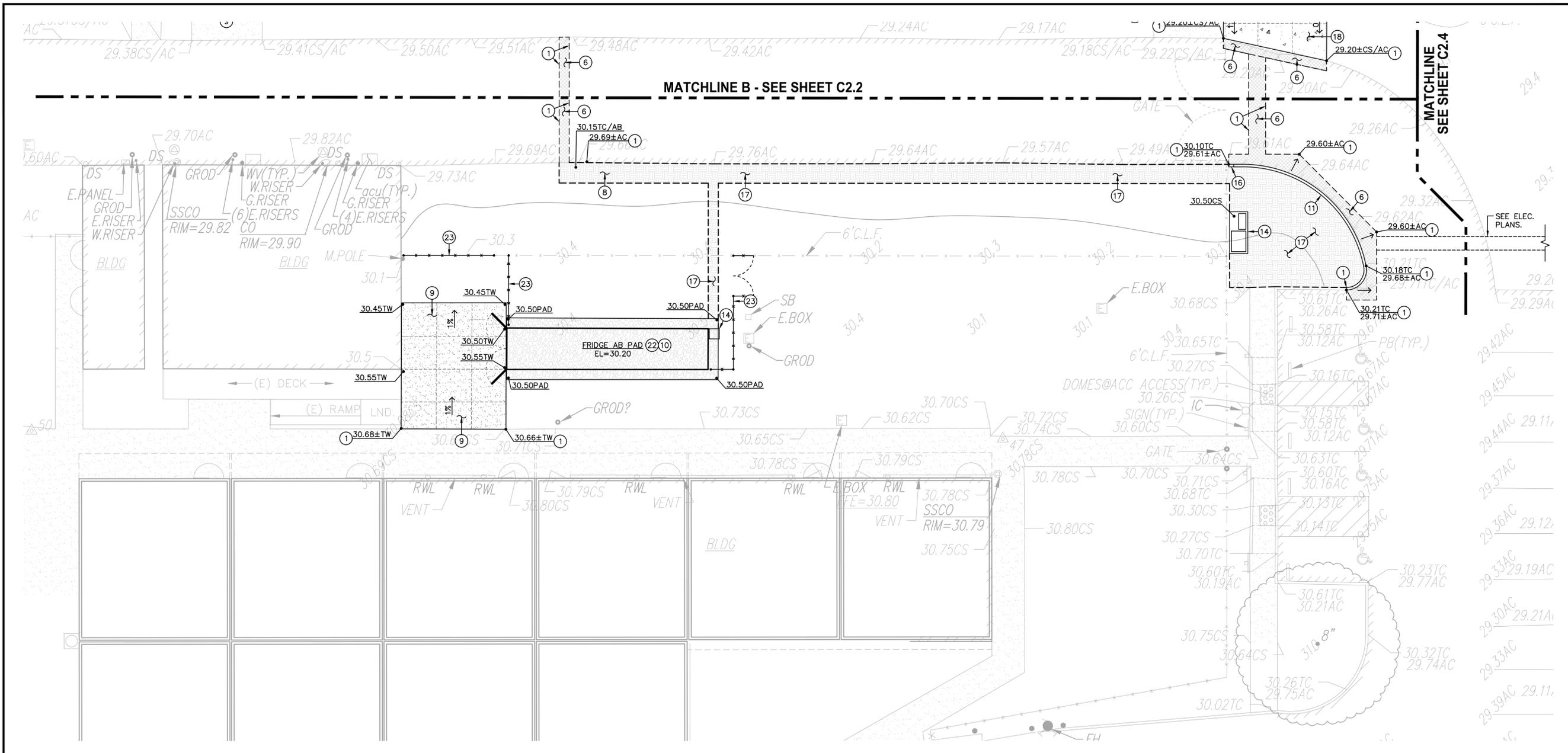
**Merrill F. West**  
High School  
Tennis Court  
Repairs  
1775 Lowell Ave.  
Tracy, CA 95376

REVISIONS	
NO.	DESCRIPTION

DRAWN: SMN	SCALE: AS NOTED
CHECKED: AT	PROJECT NO. 22-056
DESIGNED: SMN/AT	DATE: 11-11-2022

**BID SET**  
SHEET TITLE:  
**GRADING AND CONSTRUCTION PLAN**  
SHEET NO.  
**C2.2**

FILENAME: I:\22-056\CIVIL\DWG\22-056-C2.1.DWG PLOTTED: Tuesday, November 15, 2022



**1 GRADING AND CONSTRUCTION PLAN**

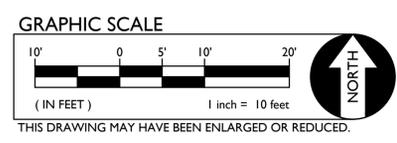
SCALE 1" = 10'-0"

- GRADING NOTES**
- MATCH EXISTING GRADE/ELEVATION. WHEN MATCHING NEW SLABS TO EXISTING, DOWEL SLABS PER THE DETAIL PROVIDED AT 24" O.C.
  - CONSTRUCT CONCRETE BARRIER CURB PER THE DETAIL .
  - CONSTRUCT 12" WIDE CONCRETE APRON AT FENCING PER THE DETAIL PROVIDED. .
  - PLACE TWO LIFT TENNIS COURT PAVING, 1.5" THICK SURFACE COURSE WITH 3/8" TYPE "A" PG 64-28 POLYMER MODIFIED AC, OVER 2.5" THICK BASE COURSE OF 3/4" TYPE "A" PG 64-28 POLYMER MODIFIED AC WITH FORTI-FI (OR APPROVED EQUAL) AC REINFORCEMENT, OVER 24" CLASS II AB ON GEOGRID, TENSAR TX140 (OR APPROVED EQUAL) ON PREPARED SUBGRADE. SUBGRADE PREPARED IN ACCORDANCE WITH SPECIFICATIONS SECTION 31 00 00. ASPHALT SHALL BE PER SECTION 32 12 00. SEE STRIPING AND SURFACING PLAN FOR TENNIS COURT SURFACING. .
  - PRESSURE WASH SURFACE OF EXISTING CONCRETE APRON CLEAN OF DIRT, DEBRIS AND EXISTING SURFACING.
  - PLACE 3" TYPE A ASPHALT PAVING (1/2" MAX) OVER 24" CLASS II AB ON GEOGRID, TENSAR TX140 (OR APPROVED EQUAL) ON PREPARED SUBGRADE. SUBGRADE PREPARED IN ACCORDANCE WITH SPECIFICATIONS SECTION 31 00 00. ASPHALT SHALL BE PER SECTION 32 12 00.
  - SEE SURFACING, STRIPING AND EQUIPMENT PLAN FOR GAME EQUIPMENT.

- GRIND EXISTING ASPHALT PAVING 1.5" MIN. THICK. APPLY TACK COAT AND 1.5" ASPHALT OVERLAY WITH 3/8" TYPE "A" PG 64-28 POLYMER MODIFIED AC. ASPHALT SHALL BE PER SECTION 32 12 00. SEE STRIPING AND SURFACING PLAN FOR TENNIS COURT SURFACING. .
- PLACE 5" CONCRETE PAVING OVER 4" CLASS II AB ON SCARIFIED AND RE-COMPACTED SUBGRADE. PLACE CONCRETE PAVING PER THE TYPICAL DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 31 00 00 FOR SUBGRADE PREPARATION, SECTION 32 16 00 FOR CONCRETE PAVING. .
- PLACE 6" CLASS II AB PAD ON SCARIFIED AND COMPACTED SUBGRADE PER SECTION 31 00 00.
- CONSTRUCT CONCRETE CURB PER THE DETAIL PROVIDED. .
- CONSTRUCT 36" WIDE CONCRETE VALLEY GUTTER PER THE DETAIL PROVIDED. .
- CONSTRUCT CONCRETE FLUSH CURB PER THE DETAIL PROVIDED. .
- CONSTRUCT ELECTRICAL EQUIPMENT PAD, SEE ELECTRICAL PLANS.
- CONSTRUCT 12" WIDE CONCRETE APRON AT EDGE OF EXISTING BUILDING, SHED OR GREENHOUSE AS SHOWN. .
- ROLL TOP OF CURB DOWN TO FLUSH OVER 12 INCHES DISTANCE.
- PATCH BACK AND REPAIR EXISTING SURFACING, PLANTING, GRAVEL OR OTHER SURFACING. PLACE 4" LAYER NEW WALK-ON MULCH.

- PLACE 6" CONCRETE PAVING OVER 8" CLASS II AB ON SCARIFIED AND RE-COMPACTED SUBGRADE. PLACE CONCRETE PAVING PER THE TYPICAL DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 31 00 00 FOR SUBGRADE PREPARATION, SECTION 32 16 00 FOR CONCRETE PAVING. .
  - NOT USED.
  - CONSTRUCT CONCRETE CURB GUTTER WITH VARIABLE HEIGHT CURB REVEAL PER THE GRADES PROVIDED. .
  - PROVIDE AND INSTALL PRE-MANUFACTURED AND PRE-FINISHED 4'x8' WOOD PLANTER BOXES PER THE DETAIL PROVIDED. .
  - SET METAL STORAGE CONTAINER ON PAVING AS INDICATED.
  - SEE FENCING PLAN FOR NEW FENCING.
  - EXISTING GARDEN PLANTING TO BE MAINTAINED TO THE GREATEST EXTENT POSSIBLE. REPAIR ANY DAMAGE AND PLACE MULCH ALONG EDGES OF NEW WALK TO MATCH EXISTING.
  - EXISTING SHADE STRUCTURE TO REMAIN. PROTECT FROM DAMAGE.
  - EXISTING RELOCATED WOOD STORAGE SHED SET ON 6" THICK CLASS II AB PAD COMPACTED TO 95% OVER 12" DEEP SCARIFIED AND RE-COMPACTED SUBGRADE PER 31 00 00.
  - PLACE 6" LAYER COMPACTED DECOMPOSED GRANITE SURFACING OVER 12" DEEP SCARIFIED AND RE-COMPACTED SUBGRADE PER SPECIFICATIONS SECTIONS 31 00 00 AND 32 15 40. .
- NOTE: THIS LAYER IS INTENDED AS A BASE SURFACING. FINAL ANIMAL ENCLOSURE SURFACING (I.E. MULCH, RUBBER MATS, ETC.) TO BE PROVIDED BY AGG. PROGRAM.

- EXISTING SHED/GREENHOUSE OR OTHER STRUCTURE TO REMAIN. PROTECT FROM DAMAGE.
- CONSTRUCT AGG YARD MATERIAL STORAGE AREA PER THE DETAIL PROVIDED. .
- PROVIDE AND INSTALL 6' LONG 5' WIDE LANDSCAPE BRIDGE PER THE DETAIL PROVIDED. .



DSA

ENGINEER:  
  
 WARREN CONSULTING ENGINEERS, INC.  
 1117 WINDFIELD WAY, SUITE 110  
 EL DORADO HILLS, CA 95762 | (916) 985-1870

ENGINEER:

OWNER:  
  
**TRACY**  
 UNIFIED SCHOOL DISTRICT  
 Tracy Unified School District  
 1875 W. Lowell Avenue  
 Tracy, CA 95376  
 Phone: (209) 830-3200

  
 ANTHONY J. TASSANO  
 NO. C74656  
 11/15/2022

**Merrill F. West  
 High School  
 Tennis Court  
 Repairs**  
 1775 Lowell Ave.  
 Tracy, CA 95376

REVISIONS	
NO.	DESCRIPTION

DRAWN: SMN	SCALE: AS NOTED
CHECKED: AT	PROJECT NO. 22-056
DESIGNED: SMN/AT	DATE: 11-11-2022

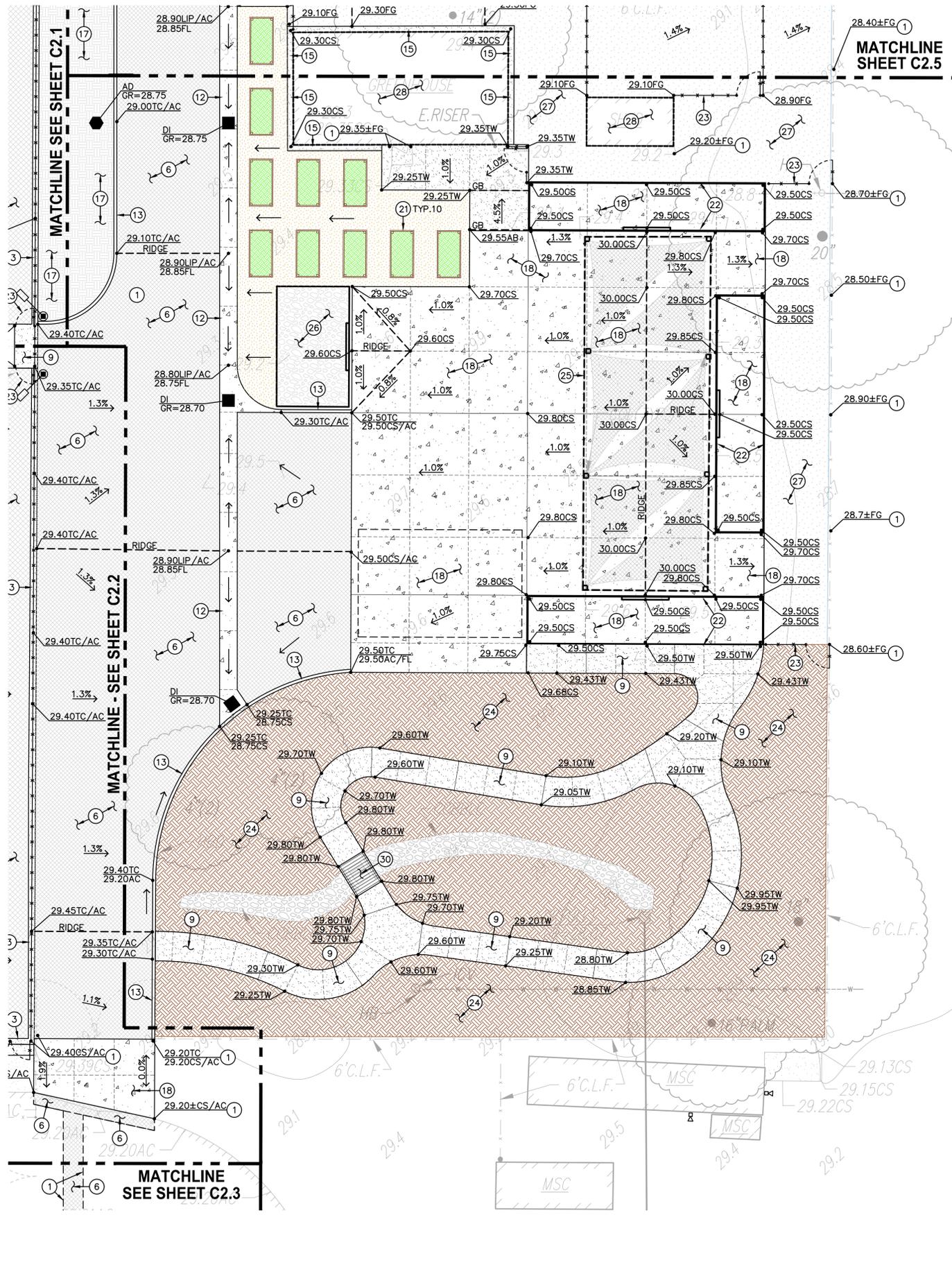
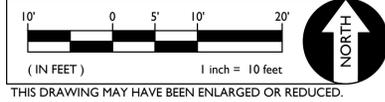
**BID SET**

SHEET TITLE:  
**GRADING AND  
 CONSTRUCTION  
 PLAN**

SHEET NO.  
**C2.3**

FILENAME: I:\22-056\Civil\DWG\22-056-C2.1.DWG PLOTTED: Tuesday, November 15, 2022

GRAPHIC SCALE



GRADING NOTES

1. MATCH EXISTING GRADE/ELEVATION. WHEN MATCHING NEW SLABS TO EXISTING, DOWEL SLABS PER THE DETAIL PROVIDED AT 24" O.C.
2. CONSTRUCT CONCRETE BARRIER CURB PER THE DETAIL PROVIDED.
3. CONSTRUCT 12" WIDE CONCRETE APRON AT FENCING PER THE DETAIL PROVIDED.
4. PLACE TWO LIFT TENNIS COURT PAVING, 1.5" THICK SURFACE COURSE WITH 3/8" TYPE "A" PG 64-28 POLYMER MODIFIED AC, OVER 2.5" THICK BASE COURSE OF 3/4" TYPE "A" PG 64-28 POLYMER MODIFIED AC WITH FORTI-FI (OR APPROVED EQUAL) AC REINFORCEMENT, OVER 24" CLASS II AB ON GEOGRID, TENSAR TX140 (OR APPROVED EQUAL) ON PREPARED SUBGRADE. SUBGRADE PREPARED IN ACCORDANCE WITH SPECIFICATIONS SECTION 31 00 00. ASPHALT SHALL BE PER SECTION 32 12 00. SEE STRIPING AND SURFACING PLAN FOR TENNIS COURT SURFACING.
5. PRESSURE WASH SURFACE OF EXISTING CONCRETE APRON CLEAN OF DIRT, DEBRIS AND EXISTING SURFACING.
6. PLACE 3" TYPE A ASPHALT PAVING (1/2" MAX) OVER 24" CLASS II AB ON GEOGRID, TENSAR TX140 (OR APPROVED EQUAL) ON PREPARED SUBGRADE. SUBGRADE PREPARED IN ACCORDANCE WITH SPECIFICATIONS SECTION 31 00 00. ASPHALT SHALL BE PER SECTION 32 12 00.
7. SEE SURFACING, STRIPING AND EQUIPMENT PLAN FOR GAME EQUIPMENT.
8. GRIND EXISTING ASPHALT PAVING 1.5" MIN. THICK. APPLY TACK COAT AND 1.5" ASPHALT OVERLAY WITH 3/8" TYPE "A" PG 64-28 POLYMER MODIFIED AC. ASPHALT SHALL BE PER SECTION 32 12 00. SEE STRIPING AND SURFACING PLAN FOR TENNIS COURT SURFACING.
9. PLACE 5" CONCRETE PAVING OVER 4" CLASS II AB ON SCARIFIED AND RE-COMPACTED SUBGRADE. PLACE CONCRETE PAVING PER THE TYPICAL DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 31 00 00 FOR SUBGRADE PREPARATION, SECTION 32 16 00 FOR CONCRETE PAVING.
10. PLACE 6" CLASS II AB PAD ON SCARIFIED AND COMPACTED SUBGRADE PER SECTION 31 00 00.
11. CONSTRUCT CONCRETE CURB PER THE DETAIL PROVIDED.
12. CONSTRUCT 36" WIDE CONCRETE VALLEY GUTTER PER THE DETAIL PROVIDED.
13. CONSTRUCT CONCRETE FLUSH CURB PER THE DETAIL PROVIDED.
14. CONSTRUCT ELECTRICAL EQUIPMENT PAD, SEE ELECTRICAL PLANS.
15. CONSTRUCT 12" WIDE CONCRETE APRON AT EDGE OF EXISTING BUILDING, SHED OR GREENHOUSE AS SHOWN.
16. ROLL TOP OF CURB DOWN TO FLUSH OVER 12 INCHES DISTANCE.
17. PATCH BACK AND REPAIR EXISTING SURFACING, PLANTING, GRAVEL OR OTHER SURFACING. PLACE 4" LAYER NEW WALK-ON MULCH.
18. PLACE 6" CONCRETE PAVING OVER 8" CLASS II AB ON SCARIFIED AND RE-COMPACTED SUBGRADE. PLACE CONCRETE PAVING PER THE TYPICAL DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 31 00 00 FOR SUBGRADE PREPARATION, SECTION 32 16 00 FOR CONCRETE PAVING.
19. NOT USED.
20. CONSTRUCT CONCRETE CURB GUTTER WITH VARIABLE HEIGHT CURB REVEAL PER THE GRADES PROVIDED.
21. PROVIDE AND INSTALL PRE-MANUFACTURED AND PRE-FINISHED 4'X8' WOOD PLANTER BOXES PER THE DETAIL PROVIDED.
22. SET METAL STORAGE CONTAINER ON PAVING AS INDICATED.
23. SEE FENCING PLAN FOR NEW FENCING.
24. EXISTING GARDEN PLANTING TO BE MAINTAINED TO THE GREATEST EXTENT POSSIBLE. REPAIR ANY DAMAGE AND PLACE MULCH ALONG EDGES OF NEW WALK TO MATCH EXISTING.
25. EXISTING SHADE STRUCTURE TO REMAIN. PROTECT FROM DAMAGE.
26. EXISTING RELOCATED WOOD STORAGE SHED SET ON 6" THICK CLASS II AB PAD COMPACTED TO 95% OVER 12" DEEP SCARIFIED AND RE-COMPACTED SUBGRADE PER 31 00 00.
27. PLACE 6" LAYER COMPACTED DECOMPOSED GRANITE SURFACING OVER 12" DEEP SCARIFIED AND RE-COMPACTED SUBGRADE PER SPECIFICATIONS SECTIONS 31 00 00 AND 32 15 40.  
NOTE: THIS LAYER IS INTENDED AS A BASE SURFACING. FINAL ANIMAL ENCLOSURE SURFACING (I.E. MULCH, RUBBER MATS, ETC.) TO BE PROVIDED BY AGG. PROGRAM.
28. EXISTING SHED/GREENHOUSE OR OTHER STRUCTURE TO REMAIN. PROTECT FROM DAMAGE.
29. CONSTRUCT AGG YARD MATERIAL STORAGE AREA PER THE DETAIL PROVIDED.
30. PROVIDE AND INSTALL 6' LONG 5' WIDE LANDSCAPE BRIDGE PER THE DETAIL PROVIDED.

1 GRADING AND CONSTRUCTION PLAN

SCALE 1" = 10'-0"

DSR

ENGINEER:

ENGINEER:

OWNER:

Tracy Unified School District  
1875 W. Lowell Avenue  
Tracy, CA 95376  
Phone: (209) 830-3200

Merrill F. West  
High School  
Tennis Court  
Repairs

1775 Lowell Ave.  
Tracy, CA 95376

REVISIONS	
NO.	DESCRIPTION

DRAWN: SMN	SCALE: AS NOTED
CHECKED: AT	PROJECT NO. 22-056
DESIGNED: SMN/AT	DATE: 11-11-2022

ISSUANCE:

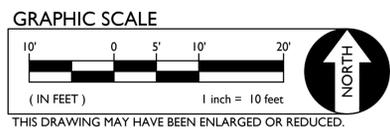
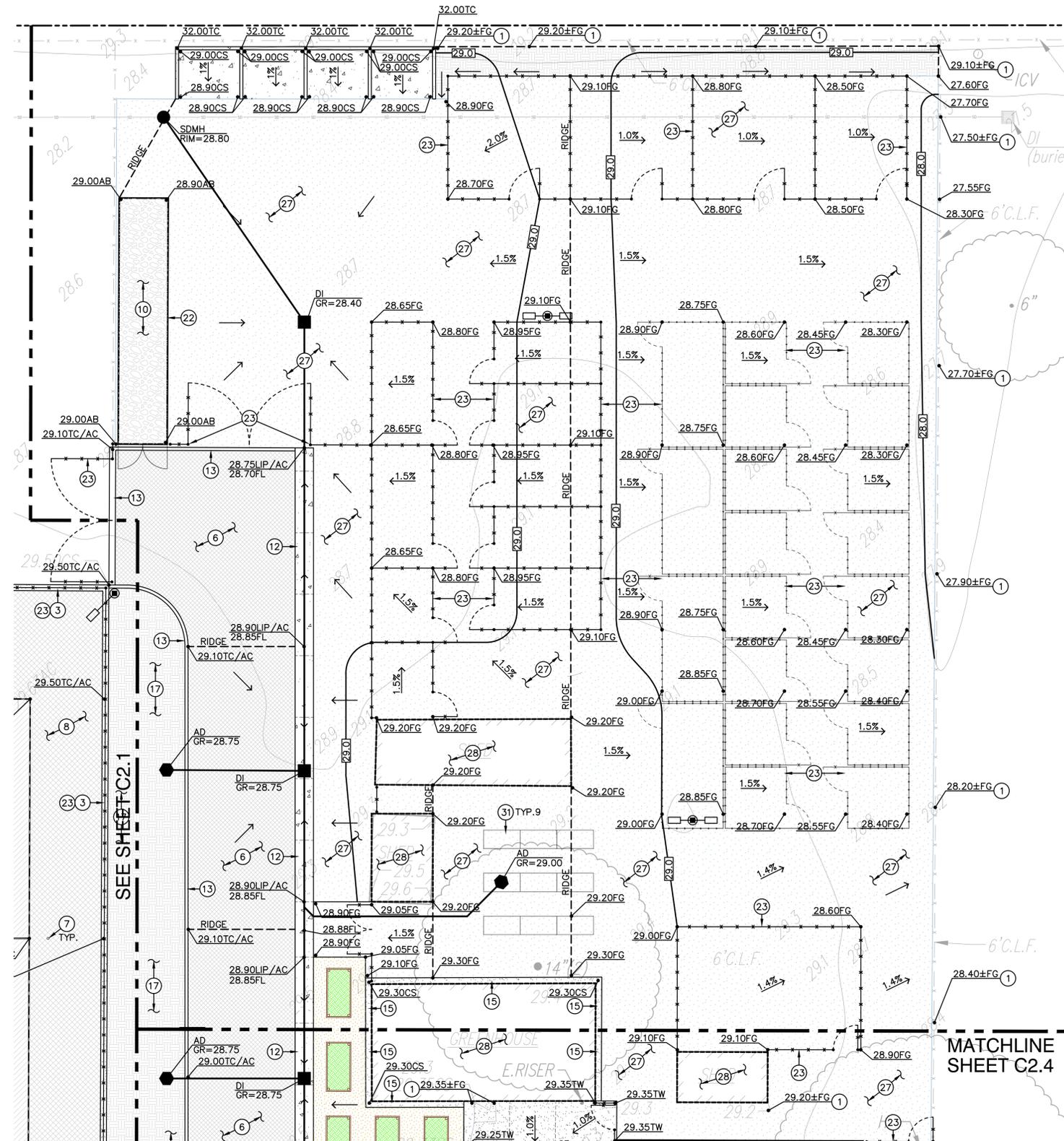
**BID SET**

SHEET TITLE:

**GRADING AND CONSTRUCTION PLAN**

SHEET NO. **C2.4**

FILENAME: I:\22-056\Civil\DWG\22-056-C2.4.DWG PLOTTED: Tuesday, November 15, 2022



**1 GRADING AND CONSTRUCTION PLAN**

SCALE 1" = 10'-0"

- GRADING NOTES**
- MATCH EXISTING GRADE/ELEVATION. WHEN MATCHING NEW SLABS TO EXISTING, DOWEL SLABS PER THE DETAIL PROVIDED AT 24" O.C.
  - CONSTRUCT CONCRETE BARRIER CURB PER THE DETAIL PROVIDED. 3 C4.1
  - CONSTRUCT 12" WIDE CONCRETE APRON AT FENCING PER THE DETAIL PROVIDED. 1 C4.2
  - PLACE TWO LIFT TENNIS COURT PAVING, 1.5" THICK SURFACE COURSE WITH 3/8" TYPE "A" PG 64-28 POLYMER MODIFIED AC, OVER 2.5" THICK BASE COURSE OF 3/4" TYPE "A" PG 64-28 POLYMER MODIFIED AC WITH FORTI-FI (OR APPROVED EQUAL) AC REINFORCEMENT, OVER 24" CLASS II AB ON GEGRID, TENSAR TX140 (OR APPROVED EQUAL) ON PREPARED SUBGRADE. SUBGRADE PREPARED IN ACCORDANCE WITH SPECIFICATIONS SECTION 31 00 00. ASPHALT SHALL BE PER SECTION 32 12 00. SEE STRIPING AND SURFACING PLAN FOR TENNIS COURT SURFACING. 8 C4.2
  - PRESSURE WASH SURFACE OF EXISTING CONCRETE APRON CLEAN OF DIRT, DEBRIS AND EXISTING SURFACING.
  - PLACE 3" TYPE A ASPHALT PAVING (1/2" MAX) OVER 24" CLASS II AB ON GEGRID, TENSAR TX140 (OR APPROVED EQUAL) ON PREPARED SUBGRADE. SUBGRADE PREPARED IN ACCORDANCE WITH SPECIFICATIONS SECTION 31 00 00. ASPHALT SHALL BE PER SECTION 32 12 00.
  - SEE SURFACING, STRIPING AND EQUIPMENT PLAN FOR GAME EQUIPMENT.
  - GRIND EXISTING ASPHALT PAVING 1.5" MIN. THICK. APPLY TACK COAT AND 1.5" ASPHALT OVERLAY WITH 3/8" TYPE "A" PG 64-28 POLYMER MODIFIED AC. ASPHALT SHALL BE PER SECTION 32 12 00. SEE STRIPING AND SURFACING PLAN FOR TENNIS COURT SURFACING.
  - PLACE 5" CONCRETE PAVING OVER 4" CLASS II AB ON SCARIFIED AND RE-COMPACTED SUBGRADE. PLACE CONCRETE PAVING PER THE TYPICAL DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 31 00 00 FOR SUBGRADE PREPARATION, SECTION 32 16 00 FOR CONCRETE PAVING. 1 2 C4.1 4 C4.1
  - PLACE 6" CLASS II AB PAD ON SCARIFIED AND COMPACTED SUBGRADE PER SECTION 31 00 00. 10 C4.1
  - CONSTRUCT CONCRETE CURB PER THE DETAIL PROVIDED. 10 C4.1
  - CONSTRUCT 36" WIDE CONCRETE VALLEY GUTTER PER THE DETAIL PROVIDED. 6 C4.1
  - CONSTRUCT CONCRETE FLUSH CURB PER THE DETAIL PROVIDED. 11 C4.1
  - CONSTRUCT ELECTRICAL EQUIPMENT PAD, SEE ELECTRICAL PLANS.
  - CONSTRUCT 12" WIDE CONCRETE APRON AT EDGE OF EXISTING BUILDING, SHED OR GREENHOUSE AS SHOWN. 2 C4.2
  - ROLL TOP OF CURB DOWN TO FLUSH OVER 12 INCHES DISTANCE.
  - PATCH BACK AND REPAIR EXISTING SURFACING, PLANTING, GRAVEL OR OTHER SURFACING. PLACE 4" LAYER NEW WALK-ON MULCH. 10 C4.1
  - PLACE 6" CONCRETE PAVING OVER 8" CLASS II AB ON SCARIFIED AND RE-COMPACTED SUBGRADE. PLACE CONCRETE PAVING PER THE TYPICAL DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 31 00 00 FOR SUBGRADE PREPARATION, SECTION 32 16 00 FOR CONCRETE PAVING. 1 2 C4.1 4 C4.1 5 C4.1
  - NOT USED.
  - CONSTRUCT CONCRETE CURB GUTTER WITH VARIABLE HEIGHT CURB REVEAL PER THE GRADES PROVIDED. 10 C4.1
  - PROVIDE AND INSTALL PRE-MANUFACTURED AND PRE-FINISHED 4'X8' WOOD PLANTER BOXES PER THE DETAIL PROVIDED. 3 C4.2
  - SET METAL STORAGE CONTAINER ON PAVING AS INDICATED.
  - SEE FENCING PLAN FOR NEW FENCING.
  - EXISTING GARDEN PLANTING TO BE MAINTAINED TO THE GREATEST EXTENT POSSIBLE. REPAIR ANY DAMAGE AND PLACE MULCH ALONG EDGES OF NEW WALK TO MATCH EXISTING.
  - EXISTING SHADE STRUCTURE TO REMAIN. PROTECT FROM DAMAGE.
  - EXISTING RELOCATED WOOD STORAGE SHED SET ON 6" THICK CLASS II AB PAD COMPACTED TO 95% OVER 12" DEEP SCARIFIED AND RE-COMPACTED SUBGRADE PER 31 00 00.
  - PLACE 6" LAYER COMPACTED DECOMPOSED GRANITE SURFACING OVER 12" DEEP SCARIFIED AND RE-COMPACTED SUBGRADE PER SPECIFICATIONS SECTIONS 31 00 00 AND 32 15 40. 1 2 C4.1 4 C4.1
  - NOTE: THIS LAYER IS INTENDED AS A BASE SURFACING. FINAL ANIMAL ENCLOSURE SURFACING (I.E. MULCH, RUBBER MATS, ETC.) TO BE PROVIDED BY AGG. PROGRAM.
  - EXISTING SHED/GREENHOUSE OR OTHER STRUCTURE TO REMAIN. PROTECT FROM DAMAGE.
  - CONSTRUCT AGG YARD MATERIAL STORAGE AREA PER THE DETAIL PROVIDED. 4 C4.2
  - PROVIDE AND INSTALL 6' LONG 5' WIDE LANDSCAPE BRIDGE PER THE DETAIL PROVIDED. 5 C4.2
  - RELOCATE PLANTING TABLES TO NEW LOCATION SHOWN.

DSR

ENGINEER:

ENGINEER:

OWNER:

Tracy Unified School District  
1875 W. Lowell Avenue  
Tracy, CA 95376  
Phone: (209) 830-3200

**Merrill F. West  
High School  
Tennis Court  
Repairs**

1775 Lowell Ave.  
Tracy, CA 95376

REVISIONS	
NO.	DESCRIPTION

DRAWN: SMN	SCALE: AS NOTED
CHECKED: AT	PROJECT NO. 22-056
DESIGNED: SMN/AT	DATE: 11-11-2022

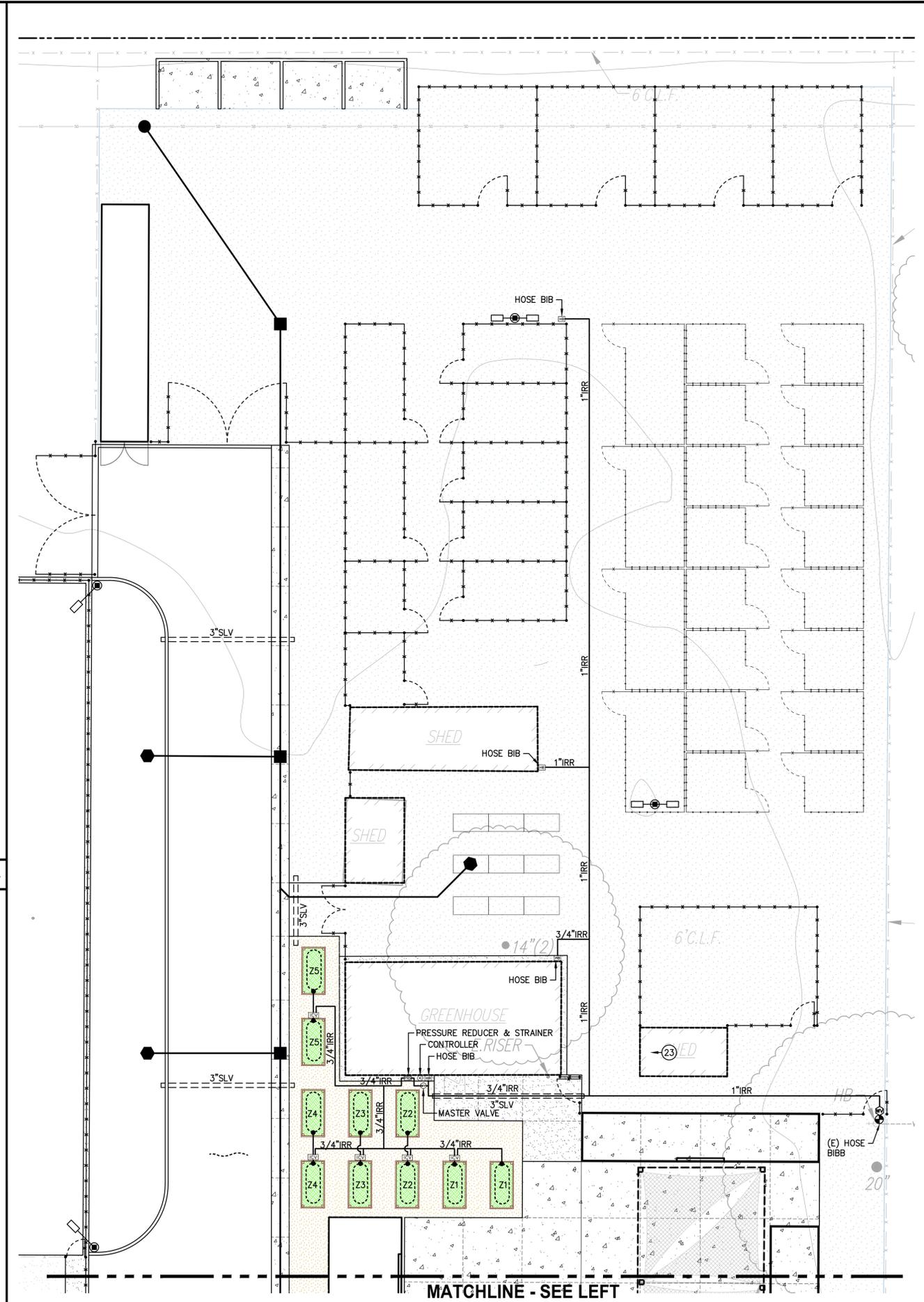
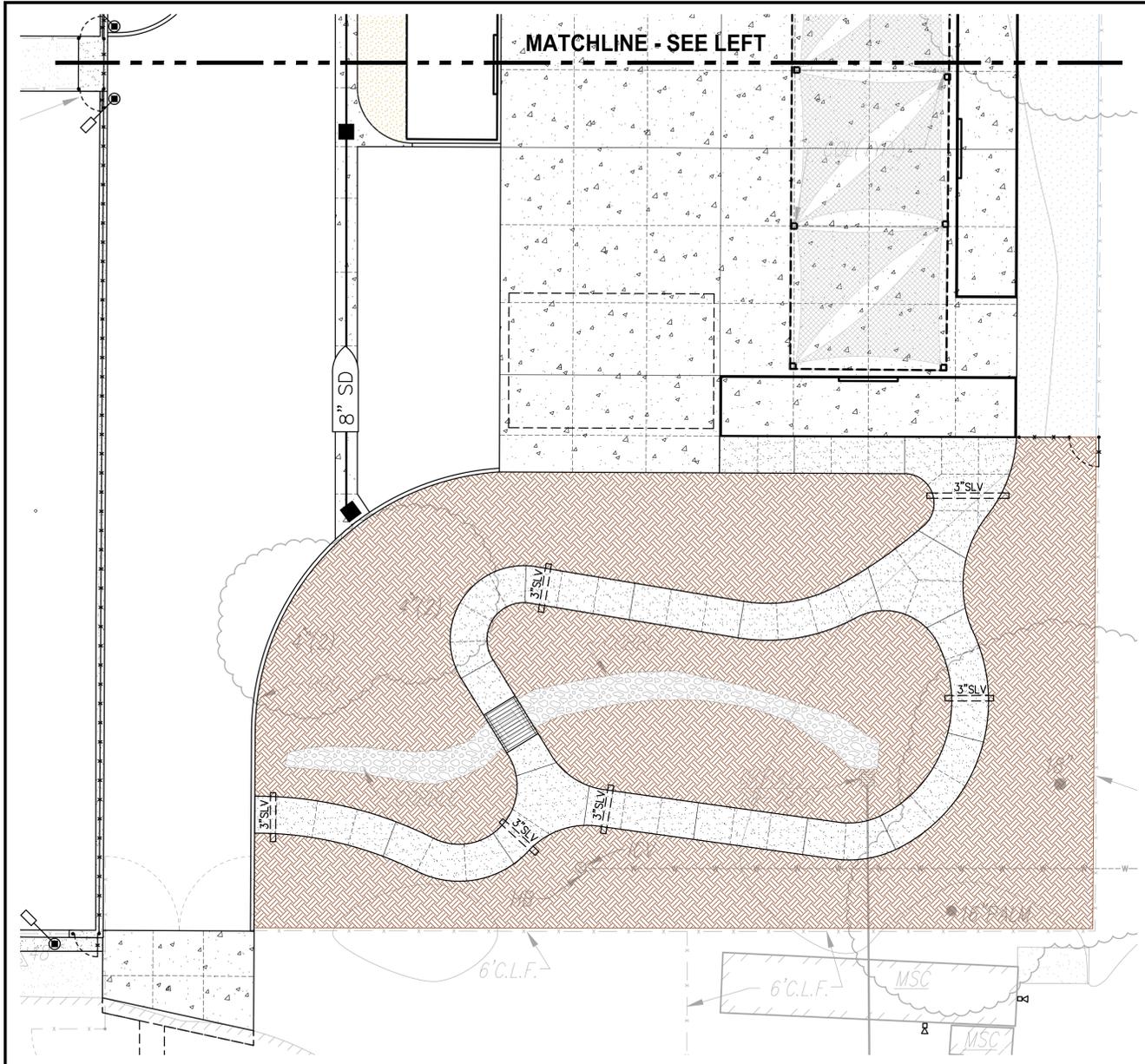
**BID SET**

SHEET TITLE:  
**GRADING AND CONSTRUCTION PLAN**

SHEET NO.  
**C2.5**

FILENAME: I:\22-056\Civil\DWG\22-056-C2.1.DWG PLOTTED: Tuesday, November 15, 2022





**2 UTILITY PLAN**

SCALE 1" = 10'-0"

**SPRINKLER IRRIGATION NOTES**

1. DETERMINE LOCATION OF UNDERGROUND UTILITIES. DAMAGE CAUSED BY INSTALLATION OF THIS WORK SHALL BE REPAIRED TO SATISFACTION OF GOVERNING AGENCY OR OWNER AT NO ADDITIONAL COST TO THE CONTRACT.
2. ALL LOCAL CODES AND ORDINANCES SHALL BE COMPLIED WITH. IF THERE IS A CONFLICT, NOTIFY OWNER IS REPRESENTATIVE IMMEDIATELY.
3. LAYOUT ALL WORK PRIOR TO TRENCHING OPERATIONS TO DETERMINE IF MINOR MODIFICATIONS OR ADJUSTMENTS WILL BE REQUIRED.
4. COORDINATE ALL WORK WITH OTHER TRADES SO PROGRESS OF WORK IS NOT INTERRUPTED AND CAN BE COMPLETED IN A TIMELY MANNER
5. NO PLANTING SHALL BE STARTED UNTIL ALL SPRINKLER WORK HAS BEEN TESTED AND APPROVED IN PRESENCE OF OWNER'S REPRESENTATIVE.

**IRRIGATION LEGEND**

SYMBOL	DESCRIPTION:	SYMBOL	DESCRIPTION:
●	POINT OF CONNECTION: N/A - NO NEW IRRIGATION SYSTEMS	—	1/2" STUB UP WITHIN PLANTER BOX FOR DRIP SYSTEM WITH 1/2" NPT THREAD AND 1/2" NPT x DRIP BARB ADAPTOR
⊕	NEW IRRIGATION GATE VALVE, SIZE AS NOTED, IN 14"x19" BOX.	⊕	AIR ADMITTANCE VALVE PER THE DETAIL (5) C4.3
⊙	EXISTING IRRIGATION CONTROLLER, FIELD VERIFY VALVE IS OPERATING, REPLACE IF INOPERABLE.		
⊕	IRRIGATION CONTROL VALVE AND 9" ROUND VALVE BOX. (2) C4.3		
⊕	DRIP SYSTEM PRESSURE REDUCING VALVE AND STRAINER, (25 PSI) (3) C4.3		
---	POLY DRIP IRRIGATION LINE, RAIN BUG SYSTEM BY RAINBIRD		
---	PVC SCH 40 IRRIGATION WATER LINE, 15"-18" COVER. SIZE AS NOTED (1) C4.3		
---	PVC SCH 40 IRRIGATION WATER LINE, 15"-18" COVER. SIZE AS NOTED, WITH PVC SLEEVE (SIZE AS NOTED). SLEEVE TO BE AT LEAST 2X LINE SIZE. (1) C4.3 (4) C4.3		
---	PVC SCH 40 SLEEVE FOR FUTURE, WITH SIZE. (4) C4.3		
⊕	HOSE BIBB PER THE DETAIL PROVIDED. (6) C4.3		
⊕	NEW IRRIGATION MASTER VALVE, SIZE AS NOTED, IN 14"x19" BOX.		

**1 UTILITY PLAN**

SCALE 1" = 10'-0"

FILENAME: I:\22-056-CIVIL\DWG\22-056-C2.7.DWG PLOTTED: Tuesday, November 15, 2022

DSR

ENGINEER:



WARREN CONSULTING ENGINEERS, INC.  
1117 WINDFIELD WAY, SUITE 110  
EL DORADO HILLS, CA 95762 | (916) 985-1870

ENGINEER:

OWNER:



**TRACY**  
UNIFIED SCHOOL DISTRICT  
Tracy Unified School District  
1875 W. Lowell Avenue  
Tracy, CA 95376  
Phone: (209) 830-3200



REGISTERED PROFESSIONAL ENGINEER  
ANTHONY J. TASSANO  
NO. C74656  
11/15/2022

**Merrill F. West  
High School  
Tennis Court  
Repairs**

1775 Lowell Ave.  
Tracy, CA 95376

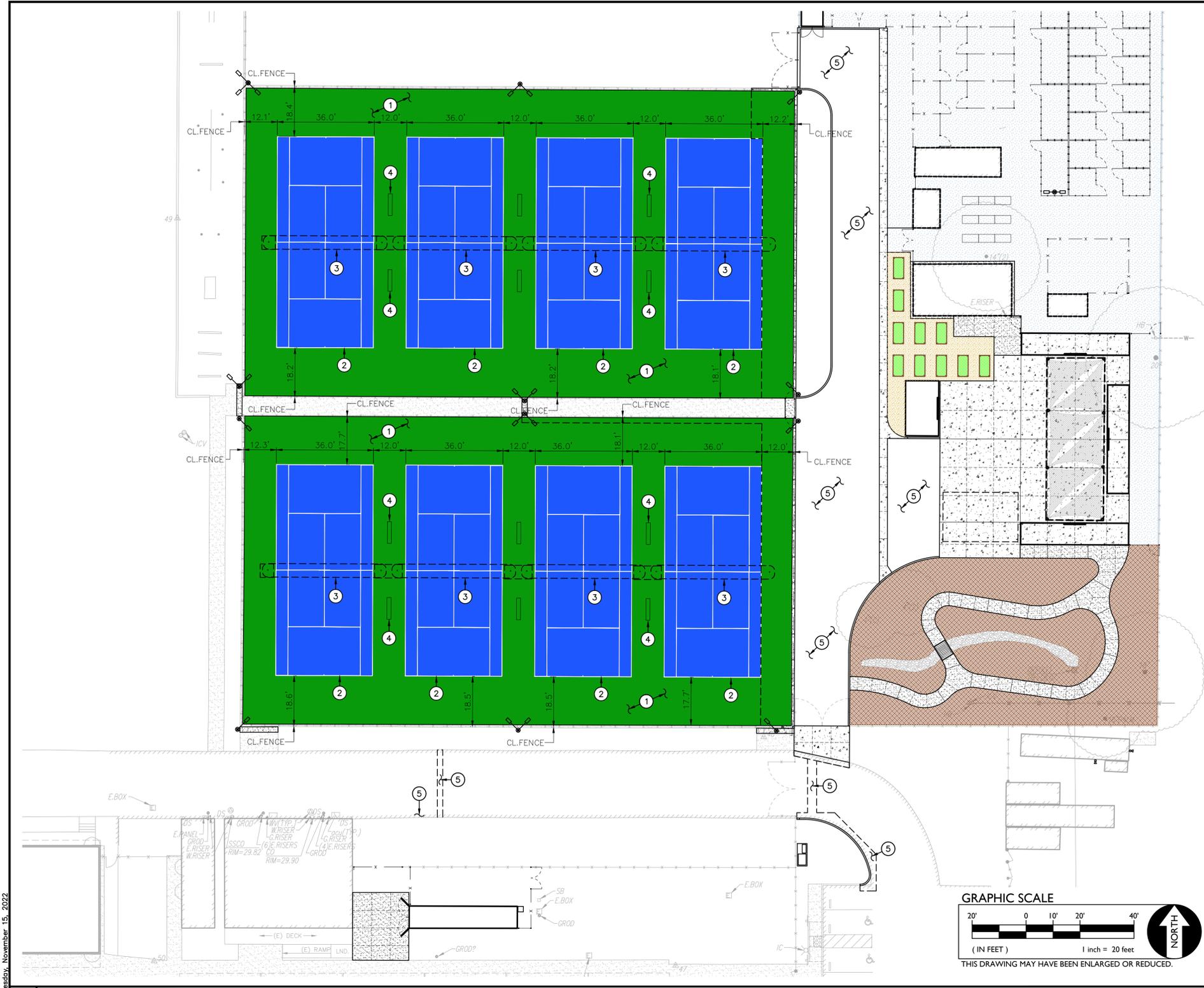
REVISIONS	
NO.	DESCRIPTION

DRAWN: SMN	SCALE: AS NOTED
CHECKED: AT	PROJECT NO. 22-056
DESIGNED: SMN/AT	DATE: 11-11-2022

**BID SET**

SHEET TITLE:  
**UTILITY PLAN**

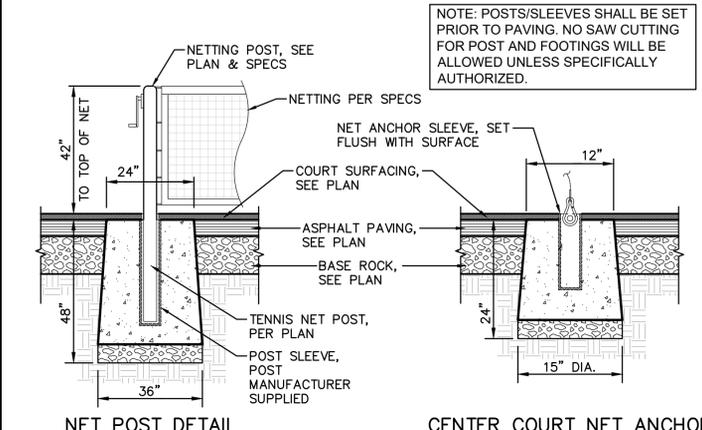
SHEET NO.  
**C2.7**



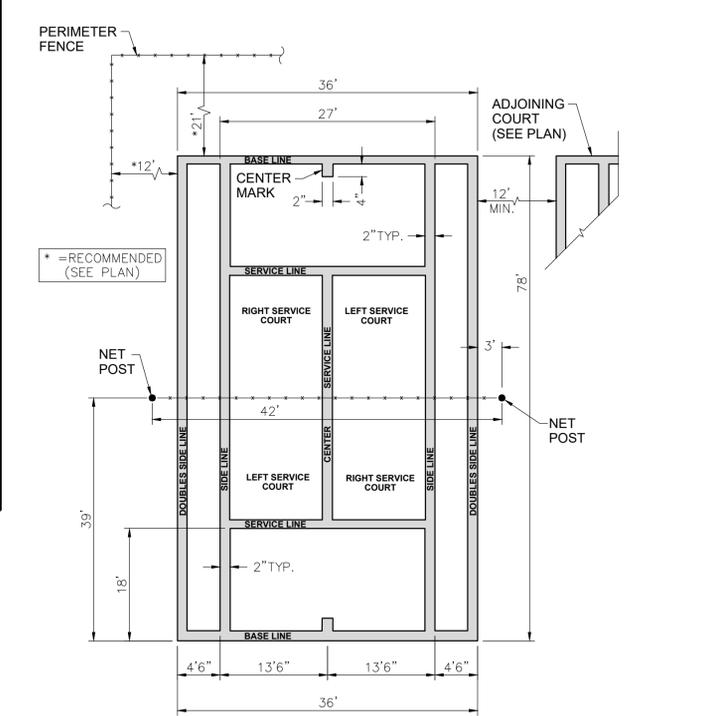
**1 SURFACING AND EQUIPMENT PLAN** SCALE 1" = 20'-0"

**STRIPING & EQUIPMENT PLAN**

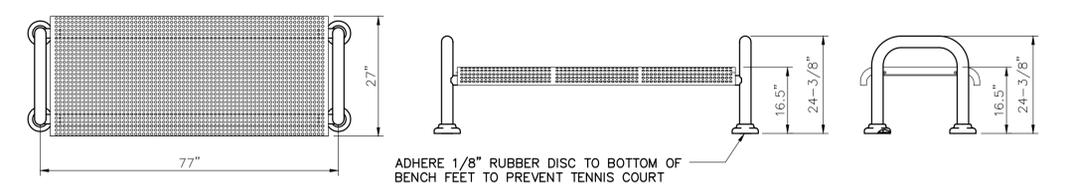
- # STRIPING NOTES**
1. PROVIDE AND INSTALL COMPLETE PLEXI TENNIS COURT SURFACING SYSTEM OR APPROVED EQUAL. INSTALLATION SHALL INCLUDE MIN. 2 COATS SANDED PLEXI ACRYLIC RE-SURFACER AND 2 COATS PLEXIPAVE SAND FORTIFIED COLOR. PROVIDE ALTERNATE INNER COURT COLORING AS INDICATED BELOW. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH CALIFORNIA SPORT SURFACES INSTALLATION RECOMMENDATIONS.
    - INNER COURT, DARK BLUE\*
    - OUTER COURT, MEDIUM GREEN\*
  2. PROVIDE COURT LINE STRIPING WITH "PLEXIPAVE", WHITE, OR APPROVED EQUAL, STRIPE 2" WIDE.
  3. PROVIDE AND INSTALL TENNIS COURT NETTING SYSTEM, EDWARDS, WIMBLEDON 3" SQUARE POST SYSTEM, OR APPROVED EQUAL, WITH CENTER COURT NET ANCHOR, COLOR GREEN WITH GROUND SLEEVE INSTALLATION. SEE MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION.
  4. PROVIDE AND LOCATE 6' LONG BACKLESS BENCH, WABASH VALLEY CONTEMPORARY SERIES, ROUND PERFORATED, OWNER TO SELECT COLOR. ADHERE 1/8" RUBBER DISC TO BOTTOM OF BENCH FEET TO PREVENT TENNIS COURT SURFACING DAMAGE, SEE DETAIL PROVIDED.
  5. FOLLOWING PAVEMENT PATCH BACK ALONG NEW CONCRETE APRON, APPLY 2 COATS PAVEMENT SEALER PER SPECS, OVERLAP 12" ONTO EXISTING PAVING.



**1 TENNIS NET POST DETAIL** NO SCALE



**2 TYPICAL TENNIS COURT LAYOUT** NO SCALE



**3 TENNIS COURT BENCH** NO SCALE  
 WABASH VALLEY CONTEMPORARY SERIES, ROUND PERFORATED OR APPROVED EQUAL OR SIMILAR APPEARANCE AND FINISH.

DSR

ENGINEER:

WARREN CONSULTING ENGINEERS, INC.  
 1117 WINDFIELD WAY, SUITE 110  
 EL DORADO HILLS, CA 95762 | (916) 985-1870

ENGINEER:

OWNER:

Tracy Unified School District  
 1875 W. Lowell Avenue  
 Tracy, CA 95376  
 Phone: (209) 830-3200

Merrill F. West  
 High School  
 Tennis Court  
 Repairs  
 1775 Lowell Ave.  
 Tracy, CA 95376

REVISIONS	
NO.	DESCRIPTION

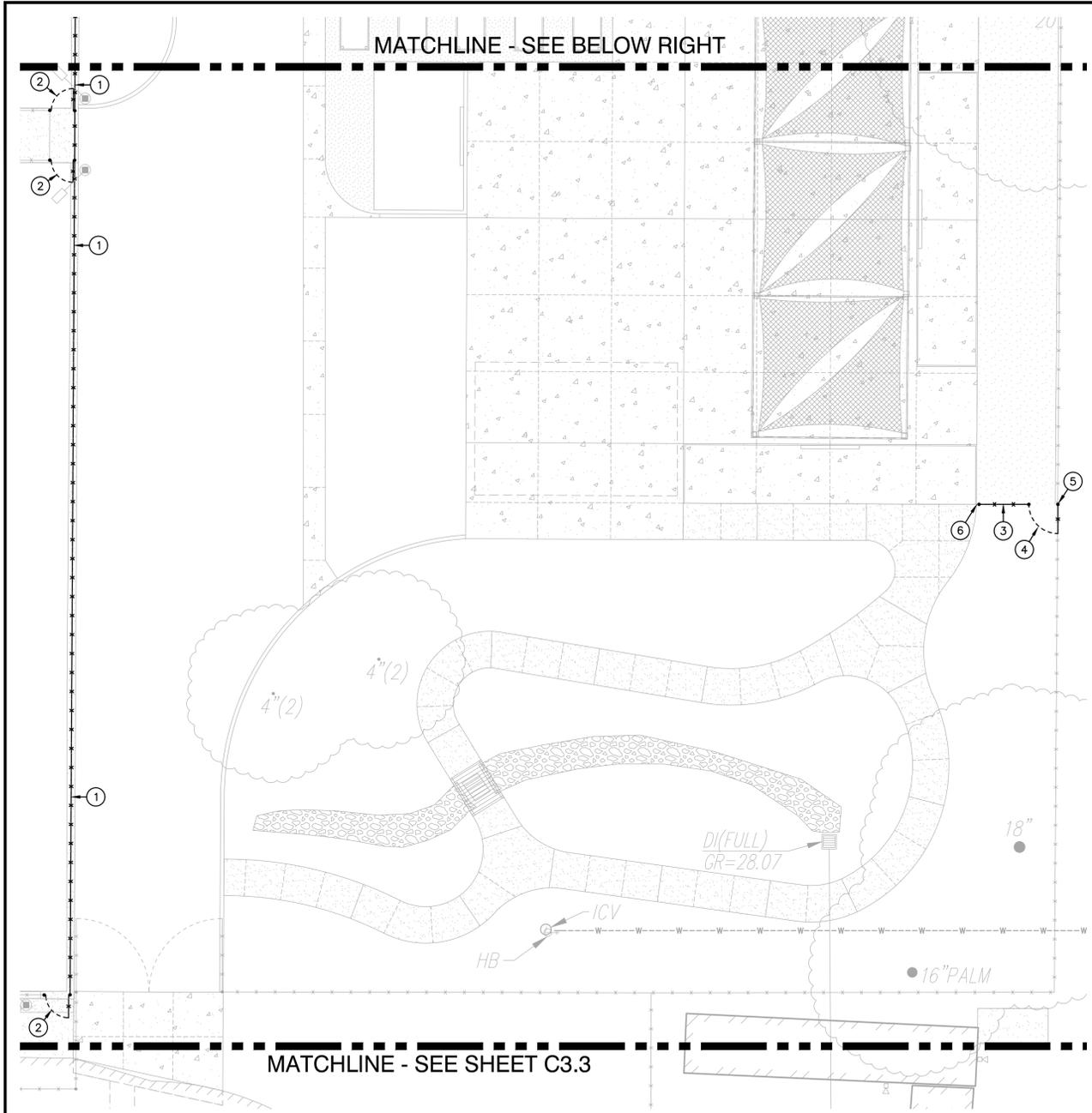
DRAWN: SMN      SCALE: AS NOTED  
 CHECKED: AT      PROJECT NO. 22-056  
 DESIGNED: SMN/AT      DATE: 11-11-2022  
 ISSUANCE:

**BID SET**

SHEET TITLE:  
**SURFACING,  
 STRIPING AND  
 EQUIPMENT  
 PLAN**

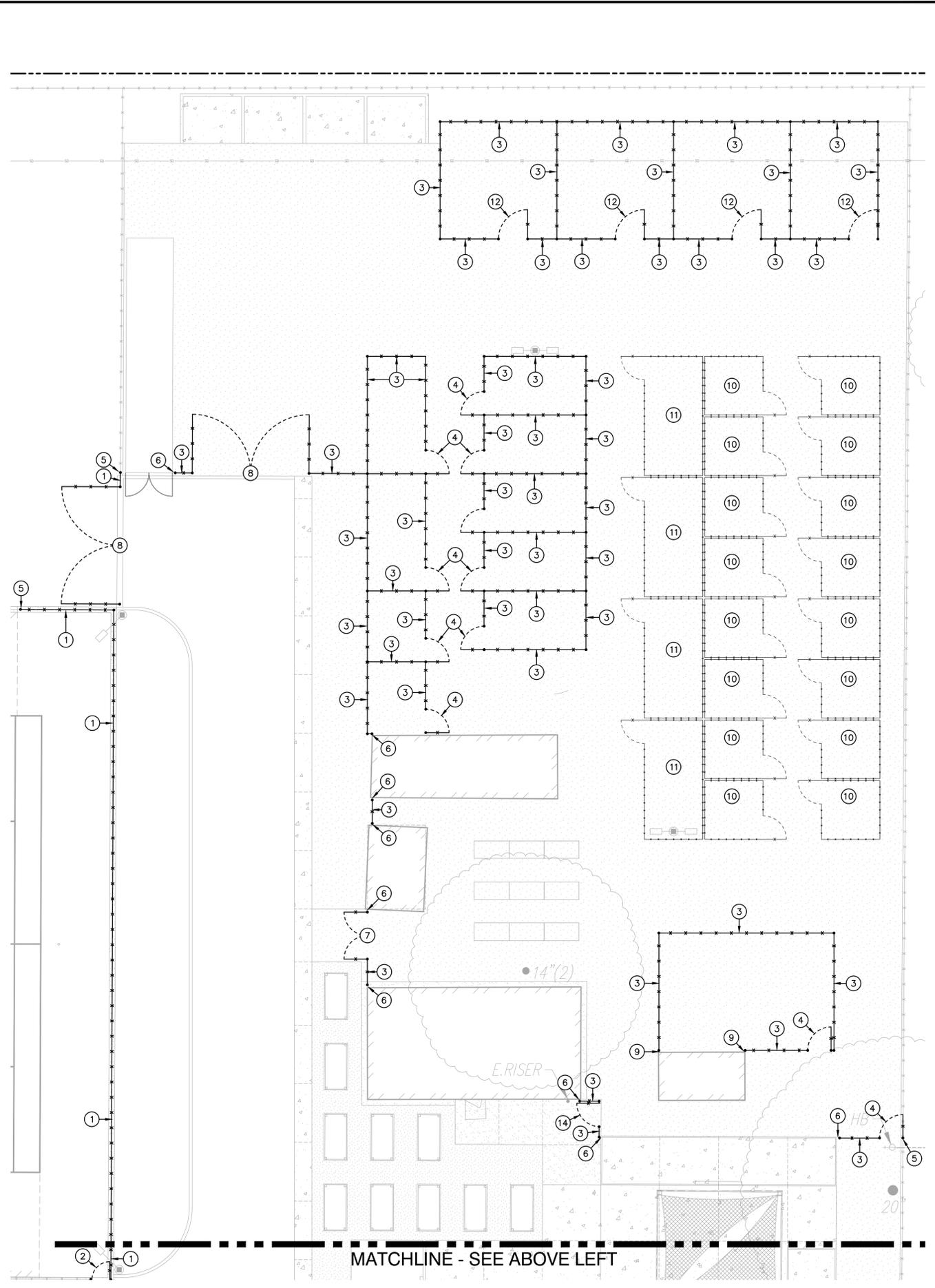
SHEET NO.  
**C3.1**

FILENAME: I:\22-056\CIVIL\DWG\22-056-C3.1.DWG PLOTTED: Tuesday, November 15, 2022



**1 FENCING PLAN** SCALE 1" = 10'-0"

- FENCING NOTES**
- REMOVE EXISTING 12' TALL CHAIN LINK MESH AND HARDWARE, INSTALL NEW POSTS FOR 12' TALL FENCING AND RE-INSTALL FENCING MESH IN ACCORDANCE WITH SPECIFICATION SECTION 32 31 13. (8 C4.1)
  - REMOVE AND RE-INSTALL EXISTING GATE WITH REVERSE SWING AS SHOWN.
  - PROVIDE AND INSTALL 6' TALL GALVANIZED CHAIN LINK FENCING, PER THE DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 32 31 13. REFER TO GRADING PLAN FOR FOUNDATION CONDITION, I.E. SLAB EDGE, CONCRETE APRON, ETC. (8 C4.1)
  - PROVIDE AND INSTALL 6' TALL, 4' SWING (NOM.), GALVANIZED CHAIN LINK MAINTENANCE ACCESS GATE, PER THE DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 32 31 13. REFER TO GRADING PLAN FOR FOUNDATION CONDITION, I.E. SLAB EDGE, CONCRETE APRON, ETC. (9 C4.1) (12 C4.1)
  - CONNECT TO EXISTING CHAIN LINK FENCING. INSTALL NEW POST AT LOCATION SHOWN AND TIE BOTH NEW AND EXISTING FENCING.
  - SET POST TO ALLOW FOR NO LESS THAN 2" CLEAR FROM WALL OR STRUCTURE AS SHOWN, BUT NO GREATER THAN 4". POST MAY BE SET FURTHER AWAY IF WELDED CLOSURE PANEL PROVIDED TO REDUCE GAP.
  - PROVIDE AND INSTALL 6' TALL, 8' WIDE DOUBLE SWING (NOM.), GALVANIZED CHAIN LINK MAINTENANCE ACCESS GATE, PER THE DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 32 31 13. REFER TO GRADING PLAN FOR FOUNDATION CONDITION, I.E. SLAB EDGE, CONCRETE APRON, ETC. (9 C4.1) (12 C4.1)
  - PROVIDE AND INSTALL 6' TALL, 20' WIDE DOUBLE SWING (NOM.), GALVANIZED CHAIN LINK MAINTENANCE ACCESS GATE, PER THE DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 32 31 13. REFER TO GRADING PLAN FOR FOUNDATION CONDITION, I.E. SLAB EDGE, CONCRETE APRON, ETC. (9 C4.1) (12 C4.1)
  - AFTER SETTING POST NEAR BUILDING, WALL OR STRUCTURE AS SHOWN, PROVIDE WELDED CLOSURE PANEL TO REDUCE GAP TO LESS THAN 2"
  - PROVIDE AND INSTALL 8'X8' UNIVERSAL POULTRY CAGE, RUGGED RANCH MODEL METALCOOPDLX, OR APPROVED EQUAL.
  - PROVIDE AND INSTALL 8'X16' UNIVERSAL POULTRY CAGE, RUGGED RANCH MODEL METALCOOPDLX WITH 8' EXTENSION KIT, OR APPROVED EQUAL.
  - PROVIDE AND INSTALL 6' TALL, 5' SWING (NOM.), GALVANIZED CHAIN LINK MAINTENANCE ACCESS GATE, PER THE DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 32 31 13. REFER TO GRADING PLAN FOR FOUNDATION CONDITION, I.E. SLAB EDGE, CONCRETE APRON, ETC. (9 C4.1) (12 C4.1)
  - REMOVE AND REPLACE EXISTING FENCING TO ALLOW NEW TRENCHING OR OTHER WORK. REPLACE BACK WHEN COMPLETE. REPLACE ANY BROKEN HARDWARE.
  - PROVIDE AND INSTALL 6' TALL x 4' SWING (NOM.), GALVANIZED CHAIN LINK ACCESSIBLE GATE WITH LATCH, CLOSER AND PANIC HARDWARE PER THE DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 32 31 13. REFER TO GRADING PLAN FOR FOUNDATION CONDITION, I.E. SLAB EDGE, CONCRETE APRON, ETC. (6 C4.2) (7 C4.2)
- GRAPHIC SCALE**  
 10' 0 5' 10' 20'  
 (IN FEET) 1 inch = 10 feet  
 THIS DRAWING MAY HAVE BEEN ENLARGED OR REDUCED.



**1 FENCING PLAN** SCALE 1" = 10'-0"

FILENAME: I:\22-056\CIVIL\DWG\22-056-C3.2.DWG PLOTTED: Tuesday, November 15, 2022

DSR

ENGINEER:



WARREN CONSULTING ENGINEERS, INC.  
 1117 WINDFIELD WAY, SUITE 110  
 EL DORADO HILLS, CA 95762 | (916) 985-1870

ENGINEER:

OWNER:



**TRACY**  
 UNIFIED SCHOOL DISTRICT  
 Tracy Unified School District  
 1875 W. Lowell Avenue  
 Tracy, CA 95376  
 Phone: (209) 830-3200



REGISTERED PROFESSIONAL ENGINEER  
 ANTHONY J. TASSANO  
 No. C74656  
 11/15/2022

**Merrill F. West  
 High School  
 Tennis Court  
 Repairs**

1775 Lowell Ave.  
 Tracy, CA 95376

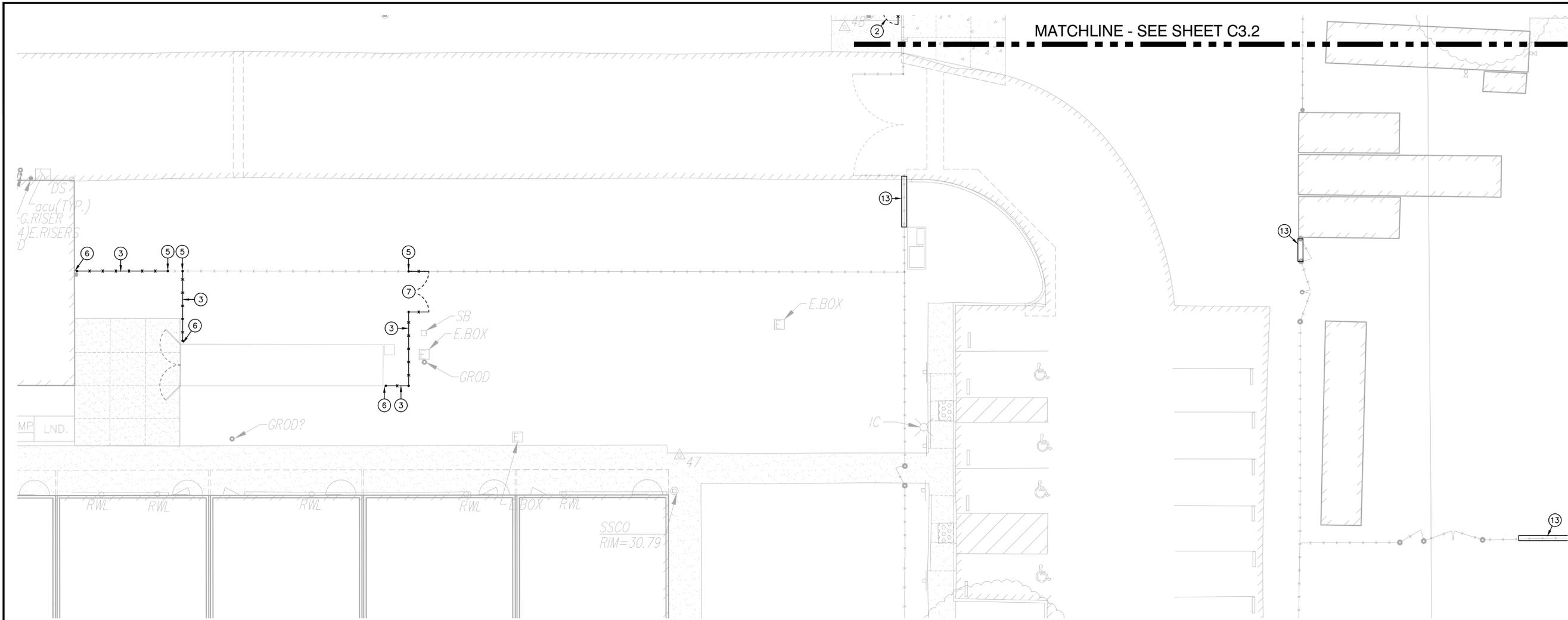
REVISIONS	
NO.	DESCRIPTION

DRAWN: SMN	SCALE: AS NOTED
CHECKED: AT	PROJECT NO. 22-056
DESIGNED: SMN/AT	DATE: 11-11-2022
ISSUANCE:	

**BID SET**

SHEET TITLE:  
**FENCING PLAN**

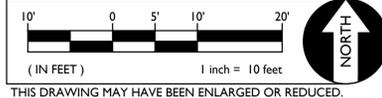
SHEET NO.  
**C3.2**



**1 FENCING PLAN**

SCALE 1" = 10'-0"

**GRAPHIC SCALE**



THIS DRAWING MAY HAVE BEEN ENLARGED OR REDUCED.

**FENCING NOTES**

1. REMOVE EXISTING 12' TALL CHAIN LINK MESH AND HARDWARE, INSTALL NEW POSTS FOR 12' TALL FENCING AND RE-INSTALL FENCING MESH IN ACCORDANCE WITH SPECIFICATION SECTION 32 31 13. (8) C4.1
2. REMOVE AND RE-INSTALL EXISTING GATE WITH REVERSE SWING AS SHOWN.
3. PROVIDE AND INSTALL 6' TALL GALVANIZED CHAIN LINK FENCING, PER THE DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 32 31 13. REFER TO GRADING PLAN FOR FOUNDATION CONDITION, I.E. SLAB EDGE, CONCRETE APRON, ETC. (8) C4.1
4. PROVIDE AND INSTALL 6' TALL, 4' SWING (NOM.), GALVANIZED CHAIN LINK MAINTENANCE ACCESS GATE, PER THE DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 32 31 13. REFER TO GRADING PLAN FOR FOUNDATION CONDITION, I.E. SLAB EDGE, CONCRETE APRON, ETC. (9) C4.1 (12) C4.1
5. CONNECT TO EXISTING CHAIN LINK FENCING. INSTALL NEW POST AT LOCATION SHOWN AND TIE BOTH NEW AND EXISTING FENCING.
6. SET POST TO ALLOW FOR NO LESS THAN 2" CLEAR FROM WALL OR STRUCTURE AS SHOWN, BUT NO GREATER THAN 4". POST MAY BE SET FURTHER AWAY IF WELDED CLOSURE PANEL PROVIDED TO REDUCE GAP.
7. PROVIDE AND INSTALL 6' TALL, 8' WIDE DOUBLE SWING (NOM.), GALVANIZED CHAIN LINK MAINTENANCE ACCESS GATE, PER THE DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 32 31 13. REFER TO GRADING PLAN FOR FOUNDATION CONDITION, I.E. SLAB EDGE, CONCRETE APRON, ETC. (9) C4.1 (12) C4.1
8. PROVIDE AND INSTALL 6' TALL, 20' WIDE DOUBLE SWING (NOM.), GALVANIZED CHAIN LINK MAINTENANCE ACCESS GATE, PER THE DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 32 31 13. REFER TO GRADING PLAN FOR FOUNDATION CONDITION, I.E. SLAB EDGE, CONCRETE APRON, ETC. (9) C4.1 (12) C4.1
9. AFTER SETTING POST NEAR BUILDING, WALL OR STRUCTURE AS SHOWN, PROVIDE WELDED CLOSURE PANEL TO REDUCE GAP TO LESS THAN 2"
10. PROVIDE AND INSTALL 8'X8' UNIVERSAL POULTRY CAGE, RUGGED RANCH MODEL METALCOOPDLX, OR APPROVED EQUAL.
11. PROVIDE AND INSTALL 8'X16' UNIVERSAL POULTRY CAGE, RUGGED RANCH MODEL METALCOOPDLX WITH 8' EXTENSION KIT, OR APPROVED EQUAL.
12. PROVIDE AND INSTALL 6' TALL, 5' SWING (NOM.), GALVANIZED CHAIN LINK MAINTENANCE ACCESS GATE, PER THE DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 32 31 13. REFER TO GRADING PLAN FOR FOUNDATION CONDITION, I.E. SLAB EDGE, CONCRETE APRON, ETC. (9) C4.1 (12) C4.1
13. REMOVE AND REPLACE EXISTING FENCING TO ALLOW NEW TRENCHING OR OTHER WORK. REPLACE BACK WHEN COMPLETE. REPLACE ANY BROKEN HARDWARE.
14. PROVIDE AND INSTALL 6' TALL x 4' SWING (NOM.), GALVANIZED CHAIN LINK ACCESSIBLE GATE WITH LATCH, CLOSER AND PANIC HARDWARE PER THE DETAILS PROVIDED. REFER TO SPECIFICATIONS SECTION 32 31 13. REFER TO GRADING PLAN FOR FOUNDATION CONDITION, I.E. SLAB EDGE, CONCRETE APRON, ETC. (6) C4.2 (7) C4.2

DSA

ENGINEER:

ENGINEER:

OWNER:

Tracy Unified School District  
1875 W. Lowell Avenue  
Tracy, CA 95376  
Phone: (209) 830-3200

**Merrill F. West  
High School  
Tennis Court  
Repairs**

1775 Lowell Ave.  
Tracy, CA 95376

REVISIONS	
NO.	DESCRIPTION

DRAWN: SMN	SCALE: AS NOTED
CHECKED: AT	PROJECT NO. 22-056
DESIGNED: SMN/AT	DATE: 11-11-2022

ISSUANCE:

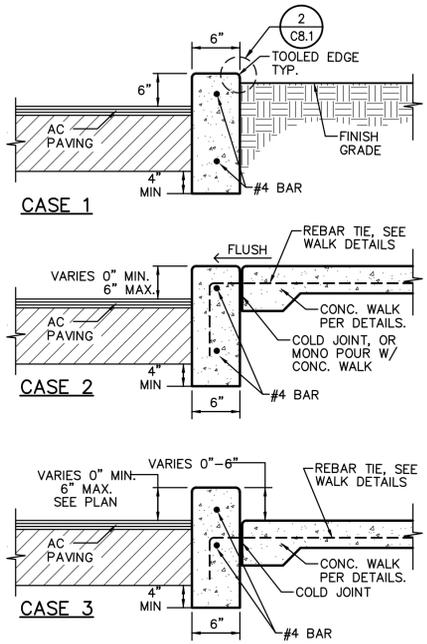
**BID SET**

SHEET TITLE:

**FENCING PLAN**

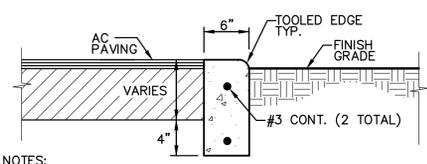
SHEET NO.

**C3.3**



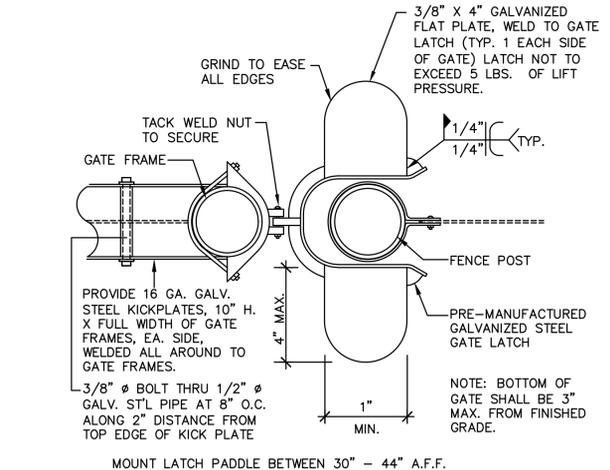
PROVIDE EXPANSION JOINTS AT 20' ON CENTER AND TOOLED CONTROL JOINTS EVERY 10' BETWEEN, OR WHEN ADJOINING CONCRETE WALKS, MATCH WALK JOINTING.

**10**  
**C4.1** CONCRETE CURB NO SCALE

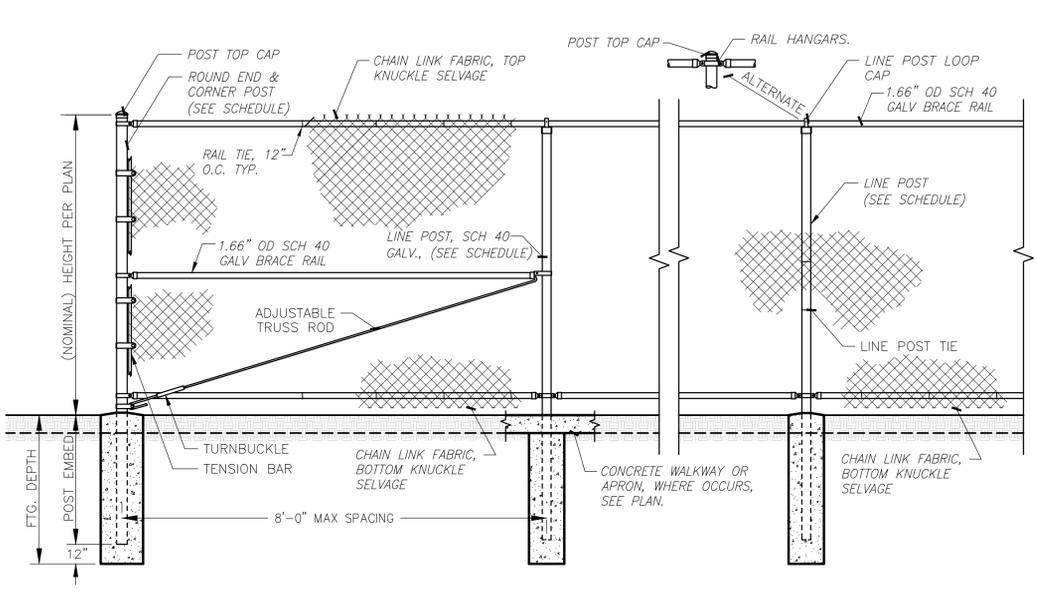


**NOTES:**  
1. PROVIDE FELT EXPANSION JOINTS (E.J.) AT 60 FEET O.C. PROVIDE CONTROL JOINTS AT 10 FEET O.C., EXCEPT WHEN PLACING ADJACENT TO CONCRETE WALKS THE EXPANSION JOINTS SHALL ALIGN WITH THE EXPANSION JOINTS SHOWN FOR THE CONCRETE WALKS.  
2. AT E.J. USE 1/2"x24" SMOOTH DOWELS, ALIGN WITH REBAR, GREASE 1/2 THE LENGTH BEFORE CONCRETE PLACEMENT.

**11**  
**C4.1** FLUSH CONCRETE CURB NO SCALE



**12**  
**C4.1** GATE LATCH/KICKPLATE ACCESSIBLE NO SCALE



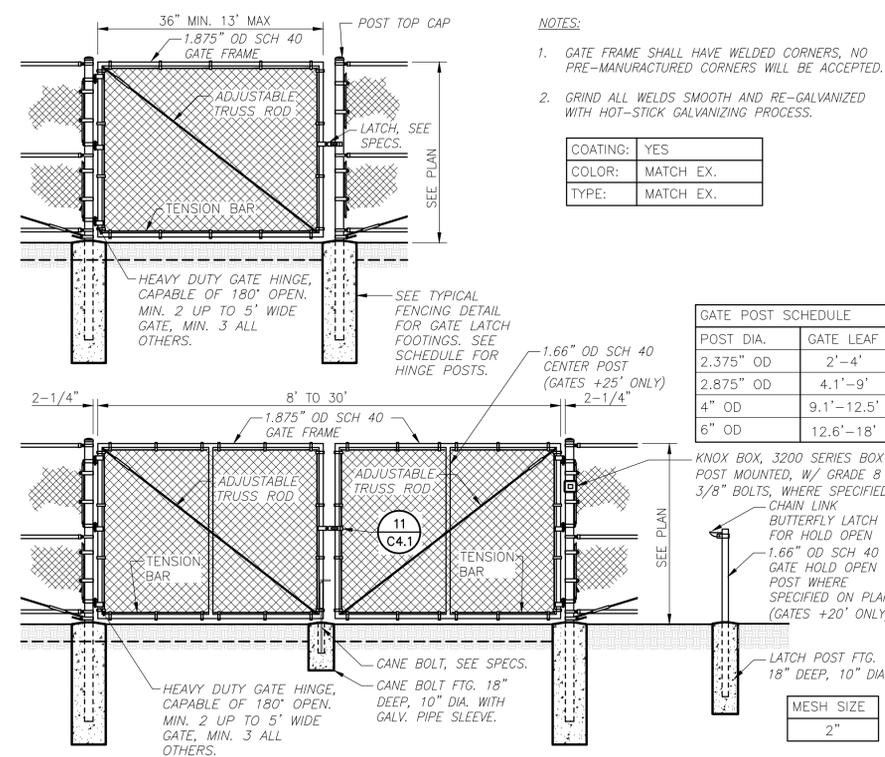
FENCING POST & FOOTING SCHEDULE:

FENCE HEIGHT	LINE POST	COR./TERM.	TYPE	POST EMBED	DEPTH	DIA. (MIN)
4'	2.375"OD	2.875"OD	SCH 40	18"	24"	8"
6'	2.875"OD	3.50"OD	SCH 40	24"	30"	10"
8'	2.875"OD	3.50"OD	SCH 40	30"	42"	12"
12'	3.50"OD	4"OD	SCH 40	36"	48"	12"

MESH SIZE

MESH SIZE	2"
COATING:	YES
COLOR:	MATCH EX.
TYPE:	MATCH EX.

**8**  
**C4.1** TYPICAL CHAIN LINK FENCING NO SCALE



**NOTES:**  
1. GATE FRAME SHALL HAVE WELDED CORNERS, NO PRE-MANUFACTURED CORNERS WILL BE ACCEPTED.  
2. GRIND ALL WELDS SMOOTH AND RE-GALVANIZED WITH HOT-STICK GALVANIZING PROCESS.

COATING: YES  
COLOR: MATCH EX.  
TYPE: MATCH EX.

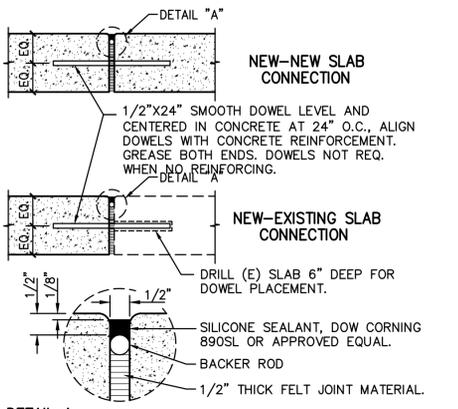
GATE POST SCHEDULE

POST DIA.	GATE LEAF
2.375" OD	2'-4"
2.875" OD	4.1'-9"
4" OD	9.1'-12.5'
6" OD	12.6'-18'

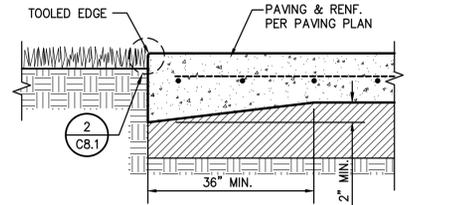
MESH SIZE

MESH SIZE	2"
-----------	----

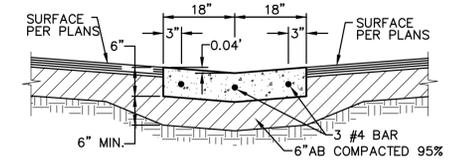
**9**  
**C4.1** TYPICAL CHAIN LINK GATES MAINTENANCE ACCESS GATES ONLY, SEE PLAN. NO SCALE



**DETAIL A**  
**4**  
**C4.1** EXPANSION JOINT NO SCALE

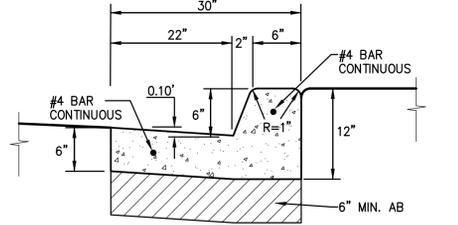


**5**  
**C4.1** THICK CONC. EDGE TRAFFIC RATED CONCRETE PAVING NO SCALE



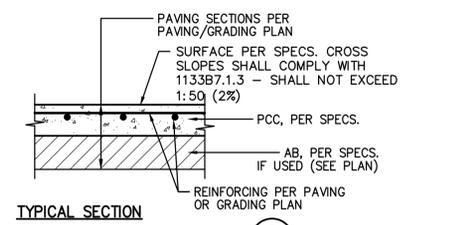
**NOTES:**  
1. PROVIDE FELT EXPANSION JOINTS (E.J.) AT 60 FEET O.C. SEAL E.J. WITH APPROVED JOINT SEALANT. PROVIDE CONTROL JOINTS AT 10 FEET O.C.  
2. AT E.J. USE 1/2"x24" SMOOTH DOWELS, ALIGN WITH REBAR, GREASE 1/2 THE LENGTH BEFORE CONCRETE PLACEMENT.

**6**  
**C4.1** CONCRETE VALLEY GUTTER NO SCALE

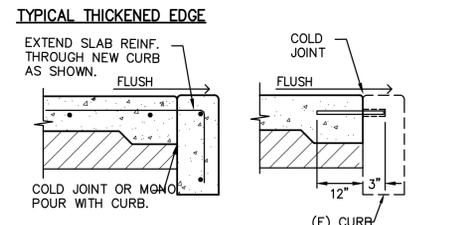


**NOTES:**  
1. PROVIDE FELT EXPANSION JOINTS (E.J.) AT 20 FEET O.C. PROVIDE CONTROL JOINTS AT 10 FEET O.C., EXCEPT WHEN PLACING ADJACENT TO CONCRETE WALKS THE EXPANSION JOINTS SHALL ALIGN WITH THE EXPANSION JOINTS SHOWN FOR THE CONCRETE WALKS. SEAL E.J. WITH APPROVED JOINT SEALANT.  
2. AT E.J. USE 1/2"x24" SMOOTH DOWELS, ALIGN WITH REBAR, GREASE 1/2 THE LENGTH BEFORE CONCRETE PLACEMENT.

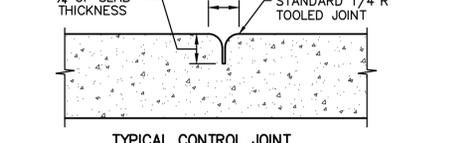
**7**  
**C4.1** CONCRETE CURB AND GUTTER NO SCALE



**TYPICAL SECTION**

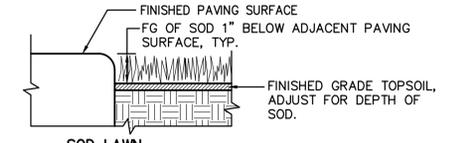
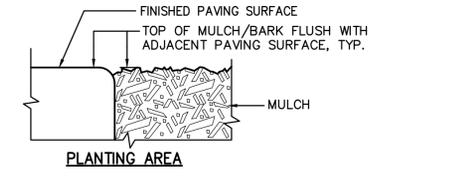


**TYPICAL THICKENED EDGE**



**TYPICAL EXPANSION JOINT AT CURB**

**1**  
**C4.1** CONCRETE SIDEWALK NO SCALE

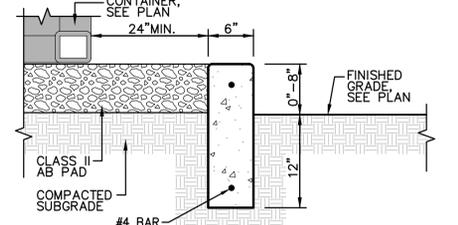


**SOD LAWN**



**SEED LAWN**

**2**  
**C4.1** PAVING EDGE DETAIL NO SCALE



**3**  
**C4.1** AB EDGE CURB NO SCALE

DSA

ENGINEER:  
**WCE**  
WARREN CONSULTING ENGINEERS, INC.  
1117 WINDFIELD WAY, SUITE 110  
EL DORADO HILLS, CA 95762 | (916) 985-1870

ENGINEER:

OWNER:  
**TRACY**  
UNIFIED SCHOOL DISTRICT  
Tracy Unified School District  
1875 W. Lowell Avenue  
Tracy, CA 95376  
Phone: (209) 830-3200

REGISTERED PROFESSIONAL ENGINEER  
ANTHONY J. TASSANO  
NO. C74698  
STATE OF CALIFORNIA  
11/15/2022

Merrill F. West  
High School  
Tennis Court  
Repairs  
1775 Lowell Ave.  
Tracy, CA 95376

REVISIONS

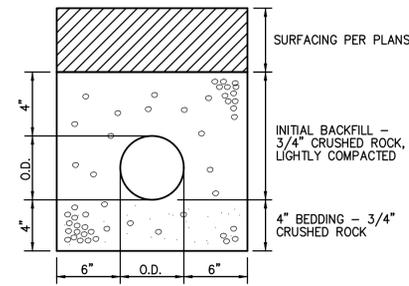
NO.	DESCRIPTION

DRAWN: SMN SCALE: AS NOTED  
CHECKED: AT PROJECT NO. 22-056  
DESIGNED: SMN/AT DATE: 11-11-2022

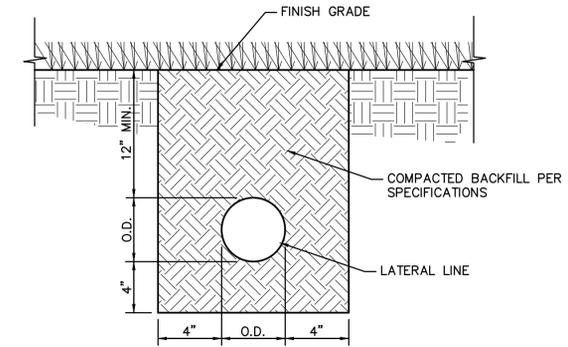
**BID SET**  
SHEET TITLE:  
**DETAILS AND SECTIONS**  
SHEET NO.  
**C4.1**



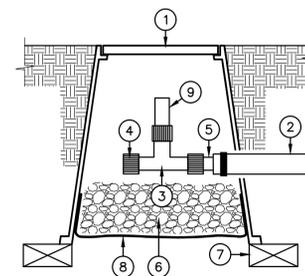
FILENAME: I:\22-056\CIVIL\DWG\22-056-C4.1.DWG PLOTTED: Tuesday, November 15, 2022



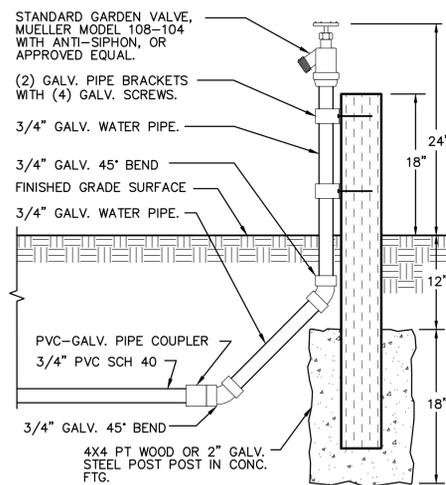
4 IRRIGATION SLEEVE  
C4.3 NO SCALE



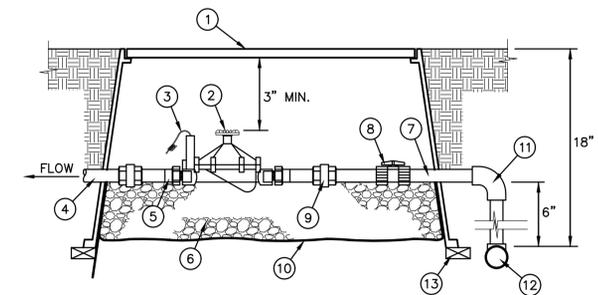
1 IRRIGATION TRENCH  
C4.3 NO SCALE



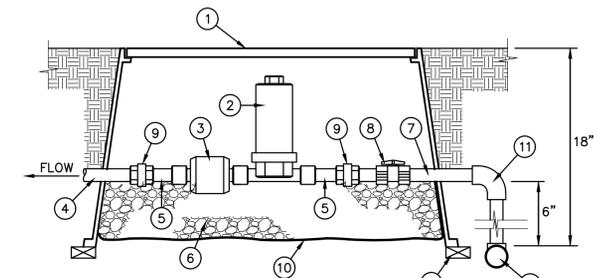
5 AIR ADMITTANCE  
C4.3 NO SCALE



6 HOSE BIB  
C4.3 NO SCALE



2 REMOTE CONTROL VALVE  
C4.3 NO SCALE



3 DRIP PRESSURE REDUCER VALVE  
C4.3 NO SCALE

- LEGEND**
- 1 6" ROUND VALVE BOX
  - 2 DRIP LINE
  - 3 THREADED TEE
  - 4 PVC CAP
  - 5 THREADED X DROP BARB ADAPTOR
  - 6 6" PEA GRAVEL SUMP OR 1/2" CRUSHED
  - 7 CONCRETE BRICK FOOTERS, MIN. 3
  - 8 FILTER FABRIC
  - 9 AIR ADMITTANCE VALVE

- LEGEND**
- 1 RECTANGULAR VALVE BOX
  - 2 REMOTE CONTROL VALVE
  - 3 SOLENOID
  - 4 PVC LATERAL
  - 5 THREAD MALE ADAPTER
  - 6 6" PEA GRAVEL SUMP
  - 7 SCH. 40 PVC
  - 8 BRASS BALL VALVE
  - 9 PVC UNION
  - 10 FILTER FABRIC
  - 11 SCH. 40 SXS ELL
  - 12 SCH. 40 MAINLINE
  - 13 PVC LATERAL

- NOTES:**
- \* USE TEFLON TAPE ON ALL THREADED MANIFOLD COMPONENTS.
  - \* USE A PVC BALL VALVE WITH EVERY VALVE.
  - \* LINE SUMP WITH FILTER FABRIC AND LEAVE EXPOSED OVER GRAVEL 2" MIN.
  - \* METALLIC SHALL ALWAYS BE FEMALE WHEN THREADED CONNECTION TO PVC.

DSA

ENGINEER:

WARREN CONSULTING ENGINEERS, INC.  
1117 WINDFIELD WAY, SUITE 110  
EL DORADO HILLS, CA 95762 | (916) 985-1870

ENGINEER:

OWNER:

Tracy Unified School District  
1875 W. Lowell Avenue  
Tracy, CA 95376  
Phone: (209) 830-3200

Merrill F. West  
High School  
Tennis Court  
Repairs

1775 Lowell Ave.  
Tracy, CA 95376

REVISIONS	
NO.	DESCRIPTION

DRAWN: SMN	SCALE: AS NOTED
CHECKED: AT	PROJECT NO. 22-056
DESIGNED: SMN/AT	DATE: 11-11-2022

ISSUANCE:

**BID SET**

SHEET TITLE:

**DETAILS AND SECTIONS**

SHEET NO.

**C4.3**

**UNDERGROUND TRENCHING NOTES**

1. UNDERGROUND TRENCHING:
  - A. USE EXTREME CAUTION WHEN DIGGING TO AVOID BURIED ELECTRICAL CABLES. CALL UNDERGROUND SERVICE ALERT (U.S.A.) 800-227-2600, 48 HOURS BEFORE DIGGING
  - B. BEFORE START OF ANY UNDERGROUND TRENCHING FOR CONDUIT RUNS, THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH ALL PLANS OF OTHER TRADES (ARCHITECTURAL, CIVIL, LANDSCAPE), AND SITE CONDITIONS TO AVOID CONFLICT.
  - C. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS. COORDINATE WITH CIVIL, LANDSCAPE, AND ARCHITECTURAL SITE PLAN PRIOR TO THE TRENCHING, ETC. AND THE INSTALLATION OF THE ELECTRICAL SYSTEM.
  - D. ALL UNDERGROUND CONDUITS SHALL BE SCHEDULE 40 PVC, UL LISTED FOR DIRECT BURIAL, AND TERMINATED WITH FACTORY END BELL FITTINGS. ALL ELBOWS, BENDS AND TURNS TRANSITIONING TO GRADE SHALL BE INSTALLED USING PER MANUFACTURED 40-MIL PVC COATED GALVANIZED STEEL ELBOWS AND OFFSETS.
  - E. ALL UNDERGROUND SERVICE CONDUITS SHALL BE SEALED TO COMPLY WITH CEC 230.8.
  - F. PROVIDE 24" MINIMUM COVERAGE FOR UNDERGROUND CONDUITS, UNLESS OTHERWISE NOTED. THE EXCEPTION IS FOR PG&E SERVICE CONDUITS WHICH SHALL HAVE A 36" MINIMUM BURIAL DEPTH AND BE INSTALLED WITH A RED OXIDE CONCRETE CAP. MAINTAIN 12" MINIMUM SEPARATION BETWEEN THE POWER AND LOW VOLTAGE SYSTEM UNDERGROUND CONDUITS. TRENCHES SHALL ALL BE INSTALLED WITH A RED POLYETHYLENE WARNING RIBBON LABELED "ELECTRICAL", LOCATED 8" BELOW GRADE IN THE TRENCH.
  - G. PROVIDE UNDERGROUND TRACER WHERE NON-METAL CONDUITS ARE INSTALLED.
  - H. PROVIDE PARTEX IDENTIFICATION TAGS TO IDENTIFY UNDERGROUND CIRCUITS.
  - I. ALL UNDERGROUND SPLICES SHALL BE MADE WATERPROOF BY PROVIDING WITH "SPlice-KOTE" SPLICE KITS OR OTHER ACCEPTED METHODS. ALL FUSEHOLDERS SHALL BE WATERTIGHT.
  - J. ALL UNDERGROUND RACEWAYS SHALL BE PROVIDED WITH A #8 AWG MINIMUM SIZE COPPER EQUIPMENT GROUNDING CONDUCTOR, WHETHER SHOWN ON PLAN OR NOT, UNLESS OTHERWISE NOTED.
  - K. THE CONTRACTOR SHALL BE RESPONSIBLE UNDER THIS CONTRACT TO REPAIR AND REPLACE ANY AND ALL DAMAGES TO EXISTING PCC WALKS, AC PAVING, UTILITIES, TREES, TURF, PLANTED AREAS, AND OTHER FACILITIES RESULTING FROM THIS PROJECT. WHEN CUTTING OR TRENCHING THROUGH EXISTING CONCRETE SIDEWALKS, DRIVEWAYS, AND WALKWAYS, THE CONTRACTOR SHALL BE REQUIRED TO COMPLETELY REPLACE ENTIRE SECTIONS OF CONCRETE PANELS FROM SCOREMARK TO SCOREMARK AFFECTED BY THE CONSTRUCTION WORK. ALL SIDEWALKS, DRIVEWAYS, AND WALKWAYS SHALL BE REPLACED TO MATCH ADJACENT CONDITION AND AS DIRECTED BY THE ARCHITECT.

**GENERAL NOTES**

ALL GENERAL NOTES SHOWN BELOW ARE NOT NECESSARILY USED ON PLANS IF NOT REQUIRED.

1. THESE GENERAL NOTES ARE INTENDED TO ASSIST THE CONTRACTOR IN THE EXECUTION OF THE ELECTRICAL WORK AND TO BE INCLUDED IN CONJUNCTION WITH THE CONTRACT DOCUMENT DRAWINGS AND SPECIFICATION REQUIREMENTS. SOME OF THE GENERAL NOTES ARE EXCERPTS FROM THE SPECIFICATION.
2. PROCURE PERMITS AND LICENSES REQUIRED. PAY ALL NECESSARY FEES AND ARRANGE FOR INSPECTIONS REQUIRED BY LOCAL CODES, ORDINANCES AND UTILITY COMPANIES.
3. COORDINATE ALL ELECTRICAL SERVICES WITH THE RESPECTIVE UTILITY COMPANIES AND PROVIDE ALL TRENCHING, CONDUITS, WIRING, METER FACILITIES, AND OUTLETS REQUIRED BY THEM.
4. WORKMANSHIP SHALL BE OF THE HIGHEST QUALITY. DEFECTIVE EQUIPMENT OR EQUIPMENT DAMAGED IN THE COURSE OF INSTALLATION OR TEST SHALL BE REPLACED OR REPAIRED IN A MANNER MEETING WITH THE ACCEPTANCE OF THE ARCHITECT.
5. INSTALL ALL EQUIPMENT, CONDUITS, OUTLETS, AND FIXTURES IN STRICT ACCORDANCE WITH THE CURRENT EDITION OF ALL APPLICABLE CODES (CEC, STATE, COUNTY, AND CITY).
6. DO NOT SCALE PLANS FOR FIXTURES, DEVICES, OR APPLIANCE LOCATIONS. USE FIGURED DIMENSIONS IF GIVEN OR CHECK MECHANICAL AND ARCHITECTURAL PLANS. ALSO REFER TO ACTUAL ON-SITE CONDITIONS.
7. ALL MATERIAL AND EQUIPMENT IS TO BE LISTED AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND CEC 110.3.
8. ALL ELECTRICAL DEVICES, EQUIPMENT, FIXTURES, CONDUITS AND WIRING SHOWN ON THESE PLANS ARE NEW, UNLESS OTHERWISE NOTED.
9. OUTLET BOXES INSTALLED IN FIRE WALLS SHALL BE ONE-PIECE STEEL AND INSTALLED IN SEPARATE (STAGGERED) STUD PENETRATIONS, MINIMUM 24 INCHES HORIZONTAL SEPARATION. FIRE WALLS SHALL BE MADE IN ACCORDANCE WITH CBC AND ELECTRICAL CODES.
10. THE FINAL LOCATION OF ALL OUTLETS SHALL BE VERIFIED WITH THE ARCHITECT AND/OR OWNER AT TIME OF CONSTRUCTION.
11. ALL OUTDOOR ELECTRICAL EQUIPMENT SHALL BE WEATHER-PROTECTED.
12. CONTRACTOR SHALL VERIFY THAT ALL LIGHTING FIXTURES, CEILING TRIMS, AND FRAMES ARE COMPATIBLE WITH CEILING SYSTEM INSTALLED.
13. CONTRACTOR SHALL COORDINATE LIGHT FIXTURE LOCATIONS AND INSTALLATIONS WITH THE MECHANICAL CONTRACTOR. MAINTAIN REQUIRED CLEARANCES (MINIMUM 3 INCHES, PER CEC 410.116) BETWEEN THE LIGHT FIXTURES AND MECHANICAL DUCTS OR EQUIPMENT FOR PROPER OPERATION, INSTALLATION AND/OR REMOVAL OF FIXTURES.
14. BEFORE SUBMITTING FOR ARCHITECT'S REVIEW AND PLACING ORDER FOR THE LIGHT FIXTURES, THE CONTRACTOR SHALL VERIFY THE VOLTAGE OF ALL THE LIGHTING FIXTURES TO MATCH THE VOLTAGE OF THE SERVICE PANEL, WHETHER THE VOLTAGE FOR THE LIGHT FIXTURES ARE SHOWN ON THE PLAN OR NOT.
15. PLACEMENT AND CIRCUITING OF EXIT SIGNS AND EGRESS LIGHTING SHALL COMPLY WITH CBC REQUIREMENTS.
16. ALL CONDUIT SHALL BE ROUTED CONCEALED UNLESS NOTED ON PLAN OR ACCEPTED BY THE ARCHITECT.
17. PROVIDE ALL NECESSARY SLEEVES AND INSERTS FOR ALL WORK PASSING THROUGH OR ATTACHING TO WALLS, FLOORS, OR CEILINGS.
18. ALL WIRING SHALL BE INSTALLED IN RIGID METALLIC CONDUIT, UNLESS OTHERWISE NOTED. CONDUITS INSTALLED CONCEALED IN WALL AND CEILING MAY BE EMT WITH STEEL COMPRESSION TYPE FITTINGS. PVC WHERE INSTALLED UNDERGROUND AND/OR UNDER SLAB. ALL EXPOSED CONDUITS SHALL BE RIGID STEEL CONDUITS WITH THREADED TYPE FITTINGS. INSTALL ALL CONDUITS IN ACCORDANCE WITH CEC STANDARDS OF INSTALLATION.
19. ELECTRICAL NON-METALLIC TUBING (ENT) AND MC CABLE ARE NOT PERMITTED TO BE USED FOR THIS PROJECT, NO EXCEPTIONS.
20. WHERE EXISTING CONDUITS, CONCEALED OR EXPOSED, AND (WIREFORM) SURFACE RACEWAY IS NOT IN PLACE AS SHOWN ON PLANS, PROVIDE NEW CONDUITS AND (WIREFORM) SURFACE RACEWAY FOR THE NEW WORK. VERIFY EXISTING CONDITION ON SITE AND PROVIDE ALL NECESSARY NEW MATERIAL, APPARATUS, AND WORK THAT IS REQUIRED TO BE INCLUDED IN THE BID PACKAGE.
21. CONDUCTORS, #8 AND LARGER, SHALL BE STRANDED COPPER WITH THNN/THWN INSULATION, UNLESS OTHERWISE NOTED.
22. PROVIDE WORKING CLEARANCE PER CEC 110.26 FOR SERVICE PANEL, SUBPANELS, MOTOR DISCONNECT SWITCHES, CONTROL SECTIONS, HVAC EQUIPMENT, APPLIANCES, ETC.
23. PROVIDE A WARNING LABEL (SIGN) CLEARLY VISIBLE TO QUALIFIED PERSONS TO COMPLY WITH NEC AND CEC 110.16 OF POTENTIAL ELECTRIC ARC FLASH HAZARDS AT SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS AND MOTOR CONTROL CENTERS THAT ARE LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE WHILE ENERGIZED. SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED WITH THE MAXIMUM AVAILABLE FAULT CURRENT PER CEC SECTION 110.24(A).
24. BUILDING SERVICE AND SUBPANELS TO COMPLY WITH CEC 110.9 AND 110.10 INTERRUPTING RATING AND BRACING. PROVIDE A.I.C. CALCULATIONS FOR SUBPANELS IF INTERRUPTING RATING TO BE USED IS LOWER THAN MAIN SERVICE RATING.
25. ALL APPLIANCES SHALL COMPLY WITH CEC ARTICLE 422. APPLIANCE CONTROL AND PROTECTION PER CEC 422-III; BRANCH CIRCUITS PER 422-II.
26. BUILDING EXPANSION JOINTS MAY OR MAY NOT BE INDICATED ON THE ELECTRICAL DRAWINGS. VERIFY THE LOCATIONS OF ALL APPLICABLE BUILDING EXPANSION JOINTS WITH THE ARCHITECTURAL DRAWINGS. WIRING METHODS ACROSS EXPANSION JOINTS SHALL INCLUDE USE OF FLEXIBLE FITTINGS OR OTHER DEVICES AS APPROPRIATE TO EACH APPLICATION. IN NO CASE SHALL CONDUIT CROSS SUCH A JOINT IN BUILDING CONSTRUCTION WITHOUT USE OF THE APPROPRIATE WIRING METHODS.
27. CONTRACTOR SHALL SIZE ALL THE INTERIOR AND EXTERIOR BUILDING PULL BOXES AND UNDERGROUND PULL BOXES PER CEC 314.16 AND COMPLY WITH CEC 314.28 FOR INSTALLATION OF RACEWAYS AND WIRING AS REQUIRED BY CODE, UNLESS OTHERWISE NOTED.
28. WHERE ACCESSIBILITY IS NOT AVAILABLE TO ELECTRICAL OUTLETS, DEVICES AND/OR EQUIPMENT, COORDINATE WITH THE ARCHITECT FOR PROVISIONS TO PROVIDE ACCESSIBILITY TO THEM.
29. CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE MECHANICAL DRAWINGS AND PROVIDING ALL CONDUITS, CONTROL WIRING, AND POWER WIRING SHOWN ON THE MECHANICAL DRAWINGS THAT IS NOT SHOWN ON THE ELECTRICAL PLANS.
30. CONTRACTOR SHALL REFER TO THE MECHANICAL DRAWINGS AND COORDINATE FOR THE EQUIPMENT LOCATIONS. COORDINATE ROOF PENETRATION WITH THE MECHANICAL CONTRACTOR FOR MECHANICAL CONNECTIONS. ENTER ROOF MOUNTED UNITS THROUGH EQUIPMENT MOUNTING CURES WHERE POSSIBLE. VERIFY ON-SITE.
31. PROVIDE CONVENIENCE OUTLET WITHIN 25 FEET OF MECHANICAL EQUIPMENT PER U.M.C. WHERE LOCATED OUTSIDE, PROVIDE WEATHER PROOF AND GFCI CONVENIENCE OUTLET. SECURE ROOF MOUNTED OUTLET TO THE MECHANICAL EQUIPMENT. VERIFY LOCATION IN FIELD WITH THE MECHANICAL CONTRACTOR.
32. VERIFY SINGLE-POINT CONNECTIONS TO ROOF MOUNTED HVAC UNITS WITH MECHANICAL CONTRACTOR ON-SITE PRIOR TO ELECTRICAL ROUGH-IN. PROVIDE DUAL DISCONNECTS IF TWO-POINT CONNECTION IS REQUIRED, WHETHER SHOWN ON PLANS OR NOT.
33. SWITCH DEVICES CONTROLLING MECHANICAL EQUIPMENT SHALL BE OF SIZE AND TYPE REQUIRED AND SHALL BE SERVED WITH QUANTITY OF WIRES AS REQUIRED. REFER TO DIVISION 15 MECHANICAL PLANS AND SPECIFICATIONS.
34. COORDINATE THE HVAC EQUIPMENT FOR FUSES REQUIRED. WHERE FUSES ARE REQUIRED, VERIFY FUSE SIZE ON-SITE AND PROVIDE FOR HVAC EQUIPMENT PER UNIT NAMEPLATE SPECIFICATIONS.
35. MOTOR DISCONNECT SWITCHES SHALL COMPLY WITH CEC 430-IX AND 440-II.
36. MOTOR STARTERS FOR HVAC EQUIPMENT ARE PROVIDED BY MECHANICAL CONTRACTOR AND CONNECTED BY ELECTRICAL CONTRACTOR, UNLESS NOTED OTHERWISE.
37. ALL CONNECTIONS FROM THE DISCONNECT SWITCHES TO HVAC UNITS SHALL BE COPPER CONDUCTORS. MOTOR DISCONNECT SWITCHES SHALL COMPLY WITH CEC 430-VII, 430-VIII, AND 440-II.
38. CONTRACTOR TO VERIFY LOCATION AND HEIGHT OF ALL MECHANICAL OR FIXTURE EQUIPMENT OUTLETS WITH SUPPLIER PRIOR TO ANY ROUGH-IN WORK. PROVIDE ALL RUNS AND CONNECTIONS TO EQUIPMENT.
39. ALL TERMINATION PROVISIONS OF EQUIPMENT, INCLUDING CIRCUITS RATED 100 AMPERES OR LESS, SHALL BE RATED AT 60 DEGREE, CENTIGRADE PER CEC 110.14(c).
40. ALL LIGHT FIXTURES INSTALLED OVER FOOD HANDLING OR FOOD PREPARATION AREAS, OPEN FOOD STORAGE, AND UTENSIL WASHING AREAS SHALL BE OF SHATTERPROOF CONSTRUCTION OR SHALL BE PROTECTED WITH SHATTERPROOF SHIELDS AND SHALL BE READILY CLEANABLE.
41. ALL CONDUITS SHALL BE CONCEALED BELOW SLAB, IN WALLS AND/OR ABOVE CEILINGS EXCEPT IN ELECTRICAL ROOMS, MECHANICAL ROOMS, AND OTHER SIMILAR UTILITY ROOMS AS APPROVED BY THE ARCHITECT. NO CONDUIT SHALL BE EXPOSED ON EXTERIOR BUILDING SURFACES WITHOUT PRIOR APPROVAL FROM THE ARCHITECT.
42. PROVIDE A CODE SIZED GROUND CONDUCTOR IN ALL CONDUITS WHETHER INDICATED ON PLANS OR NOT.

**ELECTRICAL ABBREVIATIONS**

SYMBOL	DESCRIPTIONS
A/AMP	AMPERES
AC	ALTERNATING CURRENT
AF	ABOVE FINISHED FLOOR
AF	ABOVE FINISHED CEILING
AFG	ABOVE FINISHED GRADE
AIC	AMPERES INTERRUPTING CAPACITY (SYMMETRICAL)
C	CONDUIT
CCT	CIRCUIT
CKT	CIRCUIT
DC	DIRECT CURRENT
(E)	EXISTING TO REMAIN
EC	EMPTY CONDUIT
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE METALLIC CONDUIT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND/G	GROUND
HP	HORSEPOWER
IG	ISOLATED GROUND
J-BOX	JUNCTION BOX
KVA	KILOVOLT-AMPS
KW	KILOWATTS
LTG	LIGHTING
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
MTD	MOUNTED
(N)	NEW
N	NEUTRAL CONDUCTOR (GROUNDED CIRCUIT CONDUCTOR)
N.I.E.S.	NOT IN ELECTRICAL SCOPE OR SPECIFICATIONS
NL	NIGHT LIGHT
PH/P	PHASE OR POLE
PNL	PANELBOARD
PVC	POLYVINYL CHLORIDE CONDUIT (SCHEDULE 40)
(R)	RELOCATE/RELOCATED
RECEP	RECEPTACLE
RGSC	RIGID GALVANIZED STEEL CONDUIT
U	UNSWITCHED
UNO	UNLESS NOTED OTHERWISE
V	VOLTAGE OR VOLTS
W	WATTS
WP	WEATHERPROOF
WPU	WEATHERPROOF WHILE IN USE
(X)	REMOVE
XFMR	TRANSFORMER

**EQUIPMENT ANCHORAGE NOTES**

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS.

- A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
- B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL. RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

**PIPING AND DUCTWORK DISTRIBUTION SYSTEM BRACING NOTES**

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PRE-APPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP MD PP E OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT  
   SPECIFIC NOTES AND DETAILS.

MP MD PP E OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL  
   (OPM#) #0043-13.

**ELECTRICAL SHEET INDEX**

SHEET NO.	SHEET TITLE
E0.1	ELECTRICAL ABBREVIATIONS NOTES AND SHEET INDEX
E0.2	ELECTRICAL SYMBOL LEGEND
E0.3	ELECTRICAL SPECIFICATIONS
E0.4	ELECTRICAL SPECIFICATIONS
E0.5	ELECTRICAL SPECIFICATIONS
E1.1	ELECTRICAL SITE PLAN
E1.2	ELECTRICAL ENLARGED PLAN
E5.1	ELECTRICAL ONE LINE DIAGRAM
E6.1	ELECTRICAL PANEL SCHEDULES
E7.1	ELECTRICAL DETAILS
E7.2	ELECTRICAL DETAILS
E7.3	ELECTRICAL DETAILS

DSA

ENGINEER:



ENGINEER:



OWNER:



**Merrill F. West  
High School  
Tennis Court  
Repairs**

1775 Lowell Ave.  
Tracy, CA 95376

**REVISIONS**

NO.	DESCRIPTION

DRAWN: BS SCALE: AS NOTED

CHECKED: RZ PROJECT NO. 22-056

DESIGNED: RN DATE: 11-11-2022

ISSUANCE:

**BID SET**

SHEET TITLE:  
**ELECTRICAL  
ABBREVIATIONS  
NOTES AND  
SHEET INDEX**

SHEET NO.

**E0.1**

FILENAME: P:\PROJECT FILES\2022 LP PROJECTS\22-2022 WCE TUSD-MERRILL WEST HS TENNIS COURT\LP CAD\222022-ED.2 (SYMBOL LEGEND).DWG PLOTTED: Friday, November 18, 2022

## ELECTRICAL SYMBOL LEGEND

ALL SYMBOLS SHOWN IN THIS LEGEND ARE NOT NECESSARILY USED ON PLANS IF NOT REQUIRED.

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
<b>POWER</b>					
	MAIN SWITCHBOARD OR DISTRIBUTION BOARD, PAD OR FLOOR MOUNTED AS NOTED.		<b>CIRCUITS</b>		<b>TAGS</b>
	RECESSED MOUNTED LIGHTING OR DISTRIBUTION PANEL		STUB		KEYNOTE SHOWN ON SAME SHEET
	SURFACE MOUNTED LIGHTING OR DISTRIBUTION PANEL		CONTINUATION		FEEDER DESIGNATION TAG
	RECESSED TERMINAL CABINET WITH 3/4" PLYWOOD BACKBOARD, DUPLEX RECEPTACLE & #6 CU GND, UNO.		CONDUIT RISER - UP		FOOD SERVICE EQUIPMENT DESIGNATION TAG
	SURFACE MOUNTED TERMINAL CABINET WITH 3/4" PLYWOOD BACKBOARD, DUPLEX RECEPTACLE & #6 CU GND, UNO.		CONDUIT DROP - DOWN		DETAIL DESIGNATION: TOP LETTER INDICATES DETAIL, BOTTOM LETTER/NUMBER INDICATES SHEET
	DISTRIBUTION TRANSFORMER, MOUNTING AND SIZE AS NOTED		CONDUIT CONCEALED IN CEILING OR WALL.		MECHANICAL EQUIPMENT I.D. TAG - MP&S
	NON-FUSED DISCONNECT SWITCH		CONDUIT CONCEALED IN UNDERFLOOR OR UNDERGROUND	<b>ONE LINE DIAGRAM</b>	
	ENCLOSED CIRCUIT BREAKER DISCONNECT SWITCH		EXISTING CONDUIT TO REMAIN.		PANEL IDENTIFICATION
	FUSED DISCONNECT SWITCH; SIZE DISCONNECT AND FUSES PER UNIT LABEL		CONDUIT & CONDUCTORS FOR LOW VOLTAGE MOTION SENSORS		CIRCUIT BREAKER
	NON-FUSED / FUSED DISCONNECT; SEE DISCONNECT SWITCH SCHEDULE		EXISTING CONDUIT & CONDUCTORS TO REMAIN FOR LOW VOLTAGE MOTION SENSORS		FUSED SWITCH
	MOTOR STARTER/CONTROLLER		EXISTING CONDUIT AND/OR CONDUCTORS TO BE REMOVED. UNDERGROUND CONDUIT MAY BE ABANDONED IN PLACE.		GROUND FAULT CIRCUIT INTERRUPTER
	COMBINATION CIRCUIT BREAKER DISCONNECT/MOTOR STARTER.		HOMERUN TO PANELBOARD OR TERMINAL CABINET WITH CONDUCTORS AS NOTED		GROUND
	COMBINATION FUSIBLE DISCONNECT/MOTOR CONTROLLER; PROVIDE FUSES PER MANUFACTURER'S REQUIREMENTS. N.F. INDICATES NON-FUSED.		<b>CIRCUIT CONDUCTORS:</b> LONG DASH INDICATES NEUTRAL CONDUCTOR; SHORT DASHES INDICATE PHASE CONDUCTORS; CURVED DASH INDICATES EQUIPMENT GROUNDING CONDUCTOR; ADDITIONAL CURVED DASH INDICATES ISOLATED GROUNDING CONDUCTOR. NUMBER BY DASHES INDICATE WIRE GAUGE OTHER THAN 12 AWG CU. NO DASHES INDICATE #12 CU, #12 CU GND, IN 1/2" CONDUIT. OTHERS AS NOTED ON PLAN. <b>NOTE:</b> PROVIDE A CODE SIZED EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS FOR THIS PROJECT, WHETHER SHOWN ON PLAN OR NOT.		UNDERGROUND TERMINATION SERVICE LUG
	MOTOR		FLEXIBLE CONDUIT, 6"-0" LONG MAX. WITH #12 CU GROUND UNO.		UTILITY METER
	POWER POINT OF CONNECTION		<b>LEADERS</b>		UTILITY METER WITH CURRENT TRANSFORMER COMPARTMENT METER SOCKET
	DUPLEX RECEPTACLE OUTLET 20A, 125V, @ +16" TO BOTTOM OF BOX, UNO. SPLIT-WIRED CIRCUIT, TOP RECEPTACLE SWITCHED CONTROLLED.		BRACKET		TRANSFORMER WITH GROUND
	DUPLEX RECEPTACLE OUTLET 20A, 125V, @ +16" TO BOTTOM OF BOX, UNO.		LEADERS		UFER GROUND
	DUPLEX RECEPTACLE OUTLET 20A, 125V, WITH "LC" LOCKING COVER @ +16" TO BOTTOM OF BOX, UNO.		<b>LIGHTING</b>		BOND TO COLD WATER PIPE, GAS PIPE, BUILDING STEEL
	DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP AND/OR SINK BACKSPLASH. PROVIDE 44" MAX. TO TOP OF BOX AT AREAS WITH FORWARD APPROACH KNEE CLEARANCE, OR PROVIDE 46" MAX. TO TOP OF BOX AT AREAS WITH PARALLEL APPROACH. (CBC 11B-30B).		LED LUMINAIRE - T-BAR LAY-IN		AUTOMATIC TRANSFER SWITCH
	ISOLATED GROUND DUPLEX RECEPTACLE, 20A, 125V @ +16" TO BOTTOM OF BOX, UNO.		LED LUMINAIRE - RECESSED IN GYPBOARD		NEUTRAL LINK
	DEDICATED DUPLEX RECEPTACLE OUTLET 20A, 125V, @ +16" TO BOTTOM OF BOX, UNO.		LED LUMINAIRE - SURFACE		SURGE PROTECTION DEVICE
	GFCI DUPLEX RECEPTACLE OUTLET 20A, 125V, WITH "LC" LOCKING COVER @ +16" TO BOTTOM OF BOX, UNO.		LED LUMINAIRE - SUSPENDED		
	GFCI DUPLEX RECEPTACLE OUTLET MOUNTED ABOVE COUNTER TOP AND/OR SINK BACKSPLASH. PROVIDE 44" MAX. TO TOP OF BOX AT AREAS WITH FORWARD APPROACH KNEE CLEARANCE, OR PROVIDE 46" MAX. TO TOP OF BOX AT AREAS WITH PARALLEL APPROACH. (CBC 11B-30B).		LED STRIP LIGHT - SURFACE OR SUSPENDED		
	ISOLATED GROUND GFCI DUPLEX RECEPTACLE 20A, 125V, @ +16" TO BOTTOM OF BOX, UNO.		DOWNLIGHT LUMINAIRE - RECESSED		
	DEDICATED GFCI DUPLEX RECEPTACLE OUTLET 20A, 125V, @ +16" TO BOTTOM OF BOX, UNO.		WALLWASH LUMINAIRE - RECESSED		
	SPECIAL RECEPTACLE OUTLET, SIZE AND NEMA CONFIGURATION AS NOTED, MOUNTED @ +16" TO BOTTOM OF BOX, UNO.		LUMINAIRE - SURFACE		
	FLOOR MOUNTED DUPLEX RECEPTACLE, 20A, 125V FLUSH IN FINISHED FLOOR		LUMINAIRE - WALL		
	FLOOR MOUNTED DOUBLE DUPLEX RECEPTACLE, 20A, 125V FLUSH IN FINISHED FLOOR		LUMINAIRE - PENDANT		
	CEILING MOUNTED DUPLEX RECEPTACLE, 20A, 125V		TRACK LIGHT - SUSPENDED OR SURFACE MOUNTED		
	CEILING MOUNTED DOUBLE DUPLEX RECEPTACLE, 20A, 125V		CONTINUOUS LINEAR LED TAPE OR LED COVE LIGHT		
	THERMAL OVERLOAD SWITCH		HATCHED LUMINAIRE WITH "EM" ABBREVIATION INDICATES AN EMERGENCY LUMINAIRE WITH EMERGENCY POWER CONNECTION (VIA INVERTER OR LED EMERGENCY DRIVER OR EMERGENCY GENERATOR).		
	MOTOR RATED SWITCH		SINGLE FACE EXIT SIGN. SEE LIGHTING FIXTURE SCHEDULE FOR SPECIFICATION.		
	WALL MOUNTED JUNCTION BOX - SIZE AS REQUIRED BY CODE.		DOUBLE FACE EXIT SIGN. SEE LIGHTING FIXTURE SCHEDULE FOR SPECIFICATION.		
	CEILING MOUNTED JUNCTION BOX - SIZE AS REQUIRED BY CODE.		DIRECTIONAL ARROW AS INDICATED ON PLANS. (CEILING OR WALL)		
	FLOOR MOUNTED JUNCTION BOX - SIZE AS REQUIRED BY CODE.		COMBINATION EMERGENCY EXIT SIGN WITH DUAL HEAD LIGHTS WITH EMERGENCY BATTERY BACK-UP.		
	PLUGMOLD		BATTERY POWERED EMERGENCY EGRESS LUMINAIRE - SURFACE MOUNTED		
	POWER POLE		SPOT/FLOOD LUMINAIRE - GROUND MOUNTED. FOR BLDG WALL MOUNTED AS WELL.		
	FLOOR MOUNTED COMBO DUPLEX RECEPTACLE / TELEPHONE/DATA		EXTERIOR POLE FIXTURE - SINGLE HEAD		
	FLOOR MOUNTED COMBO DOUBLE DUPLEX RECEPTACLE / TELEPHONE/DATA		EXTERIOR POLE FIXTURE - TWIN HEAD		
	PRODUCTION LIGHTING DEVICE		EXTERIOR PATHWAY POST TOP POLE FIXTURE		
			BOLLARD FIXTURE		
			STEP LUMINAIRE		
			<b>LIGHTING CONTROLS</b>		
			SINGLE POLE TOGGLE SWITCH, 20A, 120-277V @ +46" TO TOP OF BOX, UNO.		
			THREE WAY TOGGLE SWITCH 20A, 120-277V @ +46" TO TOP OF BOX, UNO.		
			SUBSCRIPTS "a,b,c" DESIGNATE THE QUANTITY OF SWITCHES AT EACH LOCATION (TYPICAL FOR ALL SWITCH TYPES).		
			SINGLE POLE KEYED BARREL SWITCH 20A, 120-277 @ +46" TO TOP OF BOX, UNO.		
			PUSH BUTTON		
			WALL DIMMER SEE CONTROL DRAWINGS FOR TYPE.		
			DIGITAL WALL CONTROL OVERRIDE SWITCH. RUN CABLING BACK TO LIGHTING CONTROL PANEL.		
			OCCUPANCY SENSOR. SEE OCCUPANCY SENSOR & CONTROL SCHEDULE AND CONTROL DRAWINGS. TYPE		
			CORNER MOUNT MOTION SENSOR. DUAL TECHNOLOGY, PIR OR ULTRASONIC. SEE OCCUPANCY SENSOR & CONTROL SCHEDULE AND CONTROL DRAWING. TYPE		
			PHOTOCONTROL DAYLIGHT SENSOR. SEE OCCUPANCY SENSOR & CONTROL SCHEDULE AND CONTROL DRAWINGS. TYPE		

DSA

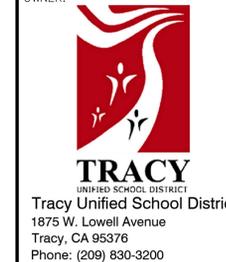
ENGINEER:



ENGINEER:



OWNER:



**Merrill F. West**  
High School  
Tennis Court  
Repairs

1775 Lowell Ave.  
Tracy, CA 95376

**REVISIONS**

NO.	DESCRIPTION

DRAWN: BS	SCALE: AS NOTED
CHECKED: RZ	PROJECT NO. 22-056
DESIGNED: RN	DATE: 11-11-2022

ISSUANCE:

**BID SET**

SHEET TITLE:

**ELECTRICAL  
SYMBOL  
LEGEND**

SHEET NO.

**E0.2**

FILENAME: P:\PROJECT FILES\2022 LP PROJECTS\22-2022 WCE-TENNIS-MERRILL WEST HS TENNIS COURT\LP CAD\222022-E0.3 (SPEC) DWG - PLOTTED: Friday, November 18, 2022

ELECTRICAL SPECIFICATIONS

PART 1 \_ GENERAL

1.01 SCOPE OF WORK

- A. FURNISH ALL NECESSARY LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS REQUIRED TO INSTALL A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM ACCORDING TO THE INTENT OF THIS SPECIFICATION WHETHER ITEMIZED OR NOT.
- B. EXAMINE THE MECHANICAL PLANS AND SPECIFICATIONS FOR MECHANICAL EQUIPMENT AND PROVIDE ALL STARTERS, CIRCUIT BREAKERS, SWITCHES, PUSH BUTTONS, AND APPURTENANCES, WHICH ARE NOT SPECIFIED TO BE WITH THE MECHANICAL EQUIPMENT. ERECT ALL ELECTRICAL EQUIPMENT NOT DEFINITELY STATED TO BE ERECTED BY OTHERS, FURNISH AND INSTALL CONDUIT, WIRE, AND CABLE AND MAKE CONNECTIONS REQUIRED TO PLACE ALL EQUIPMENT IN COMPLETE OPERATION.
- C. THE GENERAL EXTENT OF THE ELECTRICAL WORK INCLUDES, AMONG OTHERS, THE FURNISHING AND INSTALLING OF THE FOLLOWING ITEMS:
  1. PRIMARY AND SECONDARY SERVICE FACILITIES INCLUDING TRANSFORMER PADS, PRIMARY CONDUIT AND TRENCHING, SECONDARY CONDUIT, TRENCHING AND CONDUCTORS, AND MAIN SWITCHBOARD INCLUDING FACILITIES FOR METERING, DISTRIBUTION PANELS, AND PANELBOARDS.
  2. LIGHTING AND POWER INSTALLATION, INCLUDING FIXTURES, RECEPTACLE OUTLETS, SWITCHING, AND CIRCUITS AS INDICATED ON THE DRAWINGS.
  3. ALL SUPPORTS, BASES, ANCHORS, SLEEVES, HANGERS AND THE LIKE, ALL ELECTRICAL WORK SHOWN AND/OR SPECIFIED, NOT PARTICULARLY MENTIONED ABOVE.
  4. COMPLETE GROUNDING AND BONDING SYSTEMS.
  5. TELEPHONE (MPOE) SERVICE ENTRANCE CONDUIT, BACKBOARDS, AND INTERCONNECTING CONDUIT.
  6. CABLE TELEVISION SERVICE ENTRANCE CONDUIT, BACKBOARD OR CABINET, AND INTERCONNECTING CONDUIT.
  7. THE CONTRACTOR WILL COORDINATE WITH THE LOCAL UTILITY COMPANIES FOR VERIFICATION OF THEIR REQUIREMENTS PRIOR TO BID CLOSURE AND PRIOR TO INSTALLATION. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY VOLTAGE, PHASE, CONDUIT SIZE; TYPE AND QUANTITY, WIRE SIZE; TYPE AND QUANTITY, AND THE LOCATION OF ALL EQUIPMENT REQUIRED FOR THIS PROJECT.
  8. STANDBY EMERGENCY POWER GENERATOR, CONCRETE PAD, AND AUTO-TRANSFER SWITCH.
  9. POWER CONNECTION TO HVAC AND PLUMBING EQUIPMENT.
- 1.02 RELATED WORK INCLUDED IN OTHER DIVISIONS
  - A. FINISH PAINTING EXCEPT FACTORY APPLIED FINISHES AND REPAIR OF FACTORY FINISHES SHALL BE PROVIDED IN ACCORDANCE WITH APPROPRIATE SECTIONS OF THIS SPECIFICATION. COORDINATE "PAINTING" REQUIREMENTS OF THIS DIVISION WITH OTHER TRADES AS REQUIRED TO ASSURE TIMELY AND SATISFACTORY COMPLETION OF REQUIRED WORK. IN FINISHED AREAS, ALL EXPOSED RACEWAY, BOXES, GALVANIZED STEEL BOX COVERS (WHERE ALLOWED), AND OTHER ELECTRICAL "STRUCTURE" SHALL BE FINISHED TO MATCH ADJACENT STRUCTURES. VERIFY THAT ALL RACEWAY OPENINGS ARE CLOSED AND BOX COVERS ARE IN PLACE PRIOR TO FINISHING WORK DONE BY OTHERS.
  - B. EXAMINE THE DRAWINGS AND SPECIFICATIONS FOR MECHANICAL EQUIPMENT AND PROVIDE ELECTRICAL INSTALLATION FOR HEATING, VENTILATION, AND AIR CONDITIONING EQUIPMENT, MOTORS, PUMPS, ASSOCIATED MOTOR STARTERS, AND CONTROLS AS DESCRIBED IN 1.15 EQUIPMENT IDENTIFICATION.
  - C. EXAMINE THE DRAWINGS AND SPECIFICATIONS OF OTHER TRADES FOR ELECTRICAL EQUIPMENT WHICH MAY NOT BE SHOWN ON THE PLANS TO INCLUDE AND PROVIDE ELECTRICAL INSTALLATIONS AS DESCRIBED IN OTHER TRADES WORK, I.E. MODULAR OFFICE SYSTEM FURNITURE, INFORMATION TECHNOLOGY (IT.) SYSTEM EQUIPMENT, AUDIO/VIDEO SYSTEMS EQUIPMENT, ETC.
  - D. EXAMINE THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ELECTRICAL APPLIANCES AND EQUIPMENT WHICH MAY NOT BE SHOWN ON THE PLANS TO INCLUDE AND PROVIDE ELECTRICAL INSTALLATIONS AS DESCRIBED IN THE ARCHITECTURAL DIVISION OF WORK.
  - E. EXAMINE THE ARCHITECTURAL DRAWINGS AND PROVIDE ALL CONSTRUCTION NECESSARY TO MAINTAIN THE INTEGRITY OF THE FIRE RATED BARRIERS.
  - F. EXAMINE THE ARCHITECTURAL DRAWINGS AND COORDINATE WITH THE ARCHITECT TO PROVIDE ACCESS DOORS, WHETHER SHOWN ON DRAWINGS OR NOT, WHERE FLOORS, WALLS, OR CEILING MUST BE PENETRATED FOR ACCESS TO ELECTRICAL EQUIPMENT, OUTLET BOXES, DEVICES, ETC., AND AS SPECIFIED IN THIS SPECIFICATION.
  - G. PROVIDE AND INSTALL, AS PART OF THE WORK DESCRIBED IN THIS DIVISION, ALL POWER AND CONTROL WIRING FED FROM A SOURCE OF 30 VOLTS OR MORE (I.E. ALL WIRING EXCEPT TEMPERATURE CONTROL WIRING) FOR MECHANICAL EQUIPMENT DESCRIBED IN 1.15 EQUIPMENT IDENTIFICATION.

1.03 APPLICATION OF OTHER DIVISIONS

- A. WHERE CARPENTRY, MASONRY, CONCRETE WORK, PAINTING, ETC., IS REQUIRED IN THE INSTALLATION OF EQUIPMENT SPECIFIED UNDER THIS DIVISION, THE WORK SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE DIVISION OF THESE SPECIFICATIONS. THIS WORK COULD INCLUDE FOR EXAMPLE: WORK ASSOCIATED WITH PANELBOARD INSTALLATION, EQUIPMENT PADS OR BASES, SUPPORT STRUCTURES, ETC.
- 1.04 DRAWINGS AND SPECIFICATIONS
  - A. THE INFORMATION PRESENTED IN THESE SPECIFICATIONS AND ON THE DRAWINGS IS INTENDED TO DESCRIBE THE UTILITARIAN AND PHYSICAL ASPECTS OF THE SYSTEMS SHOWN AS WELL AS THE QUALITY OF THE ENTIRE INSTALLATION. ALL INFORMATION IS AS COMPLETE AND THOROUGH AS POSSIBLE, BUT EVERY CONDITION OR SITUATION CANNOT BE ANTICIPATED. EXACT LOCATIONS, DIMENSIONS, ELEVATIONS, ETC. MUST BE DETERMINED "ON THE JOB" WITH CAREFUL ATTENTION TO THE "INTENT" OF THE DRAWINGS AND SPECIFICATIONS.
  - B. THE ABOVE PARAGRAPH SHALL NOT BE CONSTRUED AS TO ALLOW SIGNIFICANT DEVIATION FROM EITHER THE DRAWINGS OR SPECIFICATIONS WITHOUT PRIOR APPROVAL OF THE ARCHITECT, BUT MINOR CHANGES IN CONDUIT ROUTING OR EQUIPMENT LOCATIONS MAY BE REQUIRED OR DESIRED DUE TO SPECIFIC CONDITIONS ENCOUNTERED. THIS WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE SPECIFICATIONS AND NO "EXTRA CHARGES" ARE TO BE CREATED FOR ANY UNANTICIPATED LABOR OR MATERIAL.
  - C. ANY ERROR OR OMISSIONS OF DETAIL IN EITHER THE DRAWINGS OR THE SPECIFICATIONS SHALL NOT RELIEVE THE CONTRACTOR FROM CORRECTLY INSTALLING ALL MATERIALS NECESSARY FOR COMPLETE AND OPERATING ELECTRICAL SYSTEMS.
  - D. CONTRACTOR SHALL INSPECT THE SITE AND VERIFY ALL MEASUREMENTS AND CONDITIONS. NO EXTRA COMPENSATION WILL BE ALLOWED BECAUSE OF DIFFERENCES BETWEEN WORK SHOWN ON THE DRAWINGS AND MEASUREMENTS AT THE SITE.
  - E. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE, BUT THE LOCATIONS OF DEVICES, EQUIPMENT, OUTLETS, AND LIGHTING FIXTURES ARE SHOWN APPROXIMATELY WHERE INSTALLATIONS ARE INTENDED. ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND OTHER DRAWINGS SHALL BE EXAMINED, NOTING ALL CONDITIONS THAT MAY AFFECT THIS WORK. REPORT CONFLICTING CONDITIONS TO THE ARCHITECT/ENGINEER FOR ADJUSTMENT BEFORE PROCEEDING WITH THE WORK. SHOULD THE CONTRACTOR PROCEED WITH WORK WITHOUT REPORTING THE MATTER, HE DOES SO ON HIS OWN RESPONSIBILITY AND SHALL ALTER WORK IF DIRECTED BY THE ARCHITECT/ENGINEER AT HIS OWN EXPENSE.
  - F. EXAMINE THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND MANUFACTURER'S DRAWINGS FOR VARIOUS EQUIPMENT IN ORDER TO DETERMINE EXACT ROUTING AND FINAL TERMINATIONS FOR ALL CONDUITS AND CABLES. CONDUITS SHALL BE STUBBED UP AS NEAR AS POSSIBLE TO EQUIPMENT ENCLOSURE.
  - G. ALL EQUIPMENT SHALL BE LOCATED AND INSTALLED SO THAT IT WILL BE READILY ACCESSIBLE FOR OPERATION AND MAINTENANCE. THE OWNER RESERVES THE RIGHT TO REQUIRE MINOR CHANGES IN LOCATION OF OUTLETS OR EQUIPMENT, PRIOR TO ROUGH IN WITHOUT INCURRING ANY ADDITIONAL COST OR CHARGES.
  - H. IF SIGNIFICANT DEPARTURES FROM THE DRAWINGS OR SPECIFICATIONS ARE CONSIDERED NECESSARY BY THE CONTRACTOR, DETAILS OF THE CHANGES AND THE REASONS THEREFORE SHALL BE SUBMITTED TO THE ARCHITECT WITHIN THIRTY DAYS AFTER AWARD OF CONTRACT. PRIOR WRITTEN ACCEPTANCE OF THE ARCHITECT IS REQUIRED FOR THESE DEPARTURES.
  - I. CLARIFICATION OF PLANS AND SPECIFICATIONS FOR THE PURPOSE OF FACILITATING CONSTRUCTION, BUT NOT INVOLVING ADDITIONAL LABOR AND MATERIALS, MAY BE PREPARED DURING CONSTRUCTION BY THE ARCHITECT/ENGINEER. SAID REVISED PLANS AND SPECIFICATIONS SHALL BECOME A PART OF THE CONTRACT. THE CONTRACTOR SHALL CONFORM TO THE REVISED PLANS AND SPECIFICATIONS AT NO ADDITIONAL COST TO THE OWNER.
  - J. WHERE EXISTING UNDERGROUND OR OTHERWISE CONCEALED FACILITIES ARE INDICATED ON THE DRAWINGS, THESE ARE LOCATED AS WELL AS CAN BE DETERMINED FROM AVAILABLE INFORMATION. THE CONTRACTOR IS REQUIRED TO VERIFY ACTUAL LOCATIONS AS NECESSARY FOR THIS CONSTRUCTION.

1.05 CODES AND STANDARDS

- A. ALL WORK SHALL CONFORM TO THE FOLLOWING CODES:
  1. 2019 CALIFORNIA ELECTRICAL CODE (CEC).
  2. TITLE 24 \_ STATE OF CALIFORNIA ADMINISTRATIVE CODE
  3. UNIFORM BUILDING CODE \_ CURRENT EDITION
  4. CITY OR COUNTY ELECTRICAL CODE AS APPLICABLE
  5. APPLICABLE REGULATIONS OF LOCAL UTILITY COMPANIES
  6. E.U.S.E.R.C. STANDARDS
  7. ANY ADDITIONAL CODES EFFECTIVE AT THE JOB SITE
- B. FURNISH WITHOUT EXTRA CHARGE ANY ADDITIONAL MATERIAL AND LABOR WHICH MAY BE REQUIRED FOR COMPLIANCE WITH THESE LAWS, RULES, AND REGULATIONS, EVEN THROUGH THE WORK IS NOT MENTIONED IN THESE PARTICULAR SPECIFICATIONS.
- C. APPLY AND PAY FOR ALL PERMITS REQUIRED BY ANY OF THE LEGALLY CONSTITUTED PUBLIC AUTHORITIES FOR THE INSTALLATION OR CONSTRUCTION OF THE WORK INCLUDED UNDER THIS SPECIFICATION.
- D. ARRANGE AND PAY FOR ANY INSPECTIONS OR EXAMINATIONS SO REQUIRED AND DELIVER CERTIFICATES OF ALL SUCH INSPECTIONS TO THE OWNER. WHEN THESE SPECIFICATIONS CALL FOR MATERIALS OR CONSTRUCTION OF A BETTER QUALITY OR LARGER SIZES THAN REQUIRED BY THE ABOVE MENTIONED RULES AND REGULATIONS, THE PROVISIONS OF THE SPECIFICATIONS SHALL TAKE PRECEDENCE.

1.06 EXAMINATION OF THE SITE

- A. THE CONTRACTOR IS REQUIRED TO VISIT THE SITE OF CONSTRUCTION PRIOR TO BID TO DETERMINE EXISTING CONDITIONS AND THEIR EFFECT UPON THE WORK HE WILL BE REQUIRED TO PERFORM. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ANY EXTRA EXPENSES INCURRED BY FAILURE TO DETECT AND EVALUATE ALL EXISTING CONDITIONS THAT WILL AFFECT HIS WORK TO BE INCLUDED IN THE BID TO ACCOMPLISH THIS CONTRACT DOCUMENT'S GOAL.

1.07 COORDINATION WITH OTHER TRADES

- A. EXAMINE THE ELECTRICAL DRAWINGS AND REFER TO THE DRAWINGS AND SPECIFICATIONS DESCRIBING OTHER WORK TO BE ACCOMPLISHED. VERIFY AND COORDINATE PRIOR TO BID. CONTINUE TO COORDINATE WORK, PLANNING AND ALL WORK IN THE FIELD TO AVOID CONFLICTS, ERRORS, AND/OR DELAYS. NO COMPENSATION WILL BE ALLOWED FOR EXTRA WORK NECESSITATED BY LACK OF COORDINATION.

1.08 STRUCTURAL REQUIREMENTS

- A. SECURE ALL ANCHORS FOR ELECTRICAL EQUIPMENT IN A MANNER, WHICH WILL NOT DECREASE THE STRUCTURAL VALUE OF ANY STRUCTURE TO AN UNSAFE LEVEL. INSTALL ALL EQUIPMENT, FIXTURES, ETC. TO RESIST SEISMIC MOVEMENTS. INFORM THE ARCHITECT IN ADVANCE AND PROVIDE DRAWINGS OF ANY PROPOSED MODIFICATIONS TO THE STRUCTURE THAT INVOLVES CUTTING OR PATCHING OF CONCRETE, MASONRY, STEEL, OR WOOD IN THIS PROJECT.

1.09 MANUFACTURER'S INSTRUCTIONS

- A. FOLLOW THE MANUFACTURER'S INSTRUCTIONS WHEN SPECIFIC INSTALLATION OR CONNECTION DETAILS ARE NOT INDICATED OR SPECIFIED ON THE CONTRACT DOCUMENTS.
- B. NOTIFY THE ARCHITECT/ENGINEER OF CONFLICTS BETWEEN THE MANUFACTURER'S INSTRUCTIONS AND INSTALLATION OR CONNECTION DETAILS PRIOR TO THE INSTALLATION OF MATERIALS.

1.10 SERVICE AND METERING

- A. NEW UNDERGROUND FACILITIES (CONDUIT) SHALL BE PROVIDED FOR THE POWER COMPANY'S PRIMARY LINES.
- B. NEW UNDERGROUND FACILITIES (CONDUIT AND CONDUCTORS) SHALL BE PROVIDED FOR THE POWER COMPANY'S SECONDARY LINES.
- C. PROVIDE TRANSFORMER PADS AND SERVICE AS SHOWN ON PLANS.
- D. PAY ALL COSTS AND POWER COMPANY CHARGES.
- E. POWER IS PROVIDED BY PG&E.
- F. COORDINATE ALL REQUIREMENTS WITH THE UTILITY COMPANY PRIOR TO BID.

1.11 INSPECTION

- A. COOPERATE WITH THE OWNER AND PROVIDE ASSISTANCE AT ALL TIMES FOR THE INSPECTION OF THE ELECTRICAL WORK. REMOVE COVERS, OPERATE MACHINERY, OR PERFORM ANY REASONABLE WORK, WHICH IN THE OPINION OF THE OWNER, WILL BE NECESSARY TO DETERMINE THE QUALITY OR ADEQUACY OF THE WORK.
- B. IF ANY MATERIAL DOES NOT CONFORM TO THESE SPECIFICATIONS, REMOVE THE MATERIALS FROM THE PREMISES, WITHIN THREE DAYS AFTER BEING NOTIFIED BY THE OWNER.
- C. WORK SHALL NOT BE CLOSED IN OR COVERED BEFORE INSPECTION AND APPROVAL BY THE OWNER.

1.12 QUALITY OF MATERIALS

- A. ALL ELECTRICAL MATERIALS USED ON THIS PROJECT SHALL BE NEW AND FREE FROM DEFECTS.
- B. ALL ELECTRICAL MATERIALS USED ON THIS PROJECT SHALL CONFORM WHERE APPLICABLE, TO THE FOLLOWING STANDARDS, UNLESS OTHERWISE NOTED:
  1. NEMA \_ NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
  2. ANSI \_ AMERICAN NATIONAL STANDARDS INSTITUTE
  3. UL \_ UNDERWRITERS LABORATORIES, INC.
- C. EACH TYPE OF MATERIAL SHALL BE OF THE SAME MANUFACTURER AND QUALITY THROUGHOUT THE WORK.

1.13 SUBMITTAL & SHOP DRAWINGS

- A. SHOP DRAWINGS AND SUPPLEMENTAL DATA WHERE CALLED FOR, SHALL BE PREPARED AND SUBMITTED AS PER GENERAL CONDITIONS. FINAL CORRECTED COPIES OF SCHEDULES AND SHOP DRAWINGS OR SUPPLEMENTAL DATA TO ARCHITECT FOR REVIEW, SHALL BE SUCH AS TO PROVIDE ONE (1) FOR ARCHITECT'S FILES, ONE (1) FOR ELECTRICAL ENGINEER'S FILES, TWO (2) FOR THE OWNER, ONE (1) TO CONTRACTOR'S JOB FILES, AND SUCH ADDITIONAL COPIES AS CONTRACTOR MAY DESIRE FOR HIS OWN OFFICE FILES AND/OR FOR DISTRIBUTION BY HIM TO SUBCONTRACTORS OR VENDORS. EXCEPTIONS SHALL BE AS NOTED IN THE DIVISION 1 SPECIFICATION SECTIONS.
- B. SHOP DRAWINGS AND SUPPLEMENTAL DATA ARE REQUIRED UNLESS SPECIFICALLY NOT REQUESTED BY THE ENGINEER. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL ELECTRICAL EQUIPMENT PERTAINING TO JOB. (NOT LIMITED TO ELECTRICAL EQUIPMENT, LIGHTS, RECEPTACLES, BOXES, ENCLOSURES, CONDUIT, WIRE, ETC.)
- C. THE SHOP DRAWINGS AND SUPPLEMENTAL DATA SHOWN CALLED FOR SHALL BE SUBMITTED AS THE INSTRUMENTS OF THE CONTRACTOR, EVEN THOUGH THEY MAY HAVE BEEN PREPARED BY A SUBCONTRACTOR, SUPPLIER, DEALER, MANUFACTURER, OR BY ANY OTHER PERSON, FIRM OR ORGANIZATION. PRIOR TO SUBMISSION, THE CONTRACTOR SHALL UNDERTAKE HIS OWN REVIEW AND STAMP WITH HIS ACCEPTANCE, THEN SUBMIT TO THE ENGINEER FOR HIS REVIEW. BY ACCEPTING AND SUBMITTING SHOP DRAWINGS AND SUPPLEMENTAL DATA, THE CONTRACTOR REPRESENTS THAT HE HAS DETERMINED AND VERIFIED ALL FIELD MEASUREMENTS, THE PHYSICAL CONSTRUCTION, THE QUALITY OF MATERIALS, THE APPLICABILITY OF CATALOG NUMBERS, AND SIMILAR DATA, OR WILL DO SO, AND THAT HE HAS CHECKED AND COORDINATED EACH SHOP DRAWING WITH THE REQUIREMENTS OF THE TRADES SHALL BE RESOLVED BY THE CONTRACTOR IN THE SHOP DRAWINGS, IF POSSIBLE, BUT IN ANY EVENT PRIOR TO THE ACTUAL CONSTRUCTION.
- D. ALL SHOP DRAWINGS SHALL BE DRAWN ACCURATELY ON PAPER SUITABLE FOR DUPLICATE COPYING BY BLACK OR BLUE LINE PRINTING PROCESSES OR XEROX.
- E. SUPPLEMENTAL DATA SHALL INCLUDE INFORMATION AS NOTED IN THE SPECIFICATION PARAGRAPHS REQUIRING THEM, OR AS REQUESTED BY THE ARCHITECT.
- F. THE ENGINEER WILL REVIEW SHOP DRAWINGS AND SUPPLEMENTAL DATA SUBMITTED BY THE CONTRACTOR ONLY FOR GENERAL DESIGN CONFORMANCE WITH THE CONCEPT OF THE PROJECT AND COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS.
- G. IF MORE THAN ONE (1) SUBMISSION OF SHOP DRAWINGS OR SUPPLEMENTAL DATA IS REQUIRED FOR ANY GIVEN ITEM TO MEET THE PROJECT SPECIFICATIONS, THE COST OF REVIEWING THESE ADDITIONAL SUBMISSIONS SHALL BE CHARGED DIRECTLY AGAINST THE CONTRACTOR AND THE OWNER WILL WITHHOLD THE FUNDS NECESSARY TO COVER THESE COSTS.
- H. SHOP DRAWINGS, IF REQUESTED, MUST BE SUBMITTED TO AND FAVORABLY REVIEWED BY THE ARCHITECT AND/OR ENGINEER BEFORE BEING USED BY THE CONTRACTOR ON THE JOB.
- I. SHOP DRAWINGS DEADLINE: IN ADDITION TO REQUIREMENTS AS ESTABLISHED IN DIVISION 1 OF THE GENERAL CONDITIONS, THE CONTRACTOR SHALL, WITHIN 35 CALENDAR DAYS AFTER THE NOTICE TO PROCEED OF THE CONTRACT, SUBMIT TO THE ARCHITECT FOR APPROVAL THE SHOP DRAWINGS FOR EQUIPMENT AND/OR SPECIALTY ITEMS AS LISTED IN EACH DIVISION OF WORK. THE SHOP DRAWINGS SHALL BE SUBMITTED IN ADDITION TO THE LIST OF MATERIALS REQUIRED BY THE "SPECIFIED ITEMS \_ SUBSTITUTES" PARAGRAPH.
- J. SHOP DRAWINGS DELINEATION: THE SHOP DRAWINGS SHALL BE DRAWN TO SCALE AND SHALL BE COMPLETELY DIMENSIONED, BRINGING THE PLAN TOGETHER WITH SUCH SECTIONS AS ARE NECESSARY TO CLEARLY SHOW CONSTRUCTION DETAIL.
- K. RESPONSIBILITY: THESE SHOP DRAWINGS AND ALL SUPPORTING DATA, CATALOGS, ETC., SHALL BE PREPARED BY THE CONTRACTOR OR HIS SUPPLIERS, BUT SHALL BE SUBMITTED AS THE INSTRUMENTS OF THE CONTRACTOR. THEREFORE, THE CONTRACTOR SHALL CHECK THE DRAWINGS OF HIS SUPPLIERS AS WELL AS HIS OWN DRAWINGS BEFORE SUBMITTING THEM TO THE ARCHITECT. IN PARTICULAR, THE CONTRACTOR SHALL ASCERTAIN THAT THE SHOP DRAWINGS MEET ALL REQUIREMENTS OF THE FINAL DESIGN DRAWINGS AND SPECIFICATIONS AND ALSO CONFORM TO THE STRUCTURAL AND SPACE CONDITIONS. EACH SHOP DRAWING SUBMITTED FOR APPROVAL SHALL BEAR A STAMP CERTIFYING THAT IT HAS BEEN CHECKED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS. IF SUCH SHOP DRAWINGS SHOW VARIATIONS FROM CONTRACT DOCUMENTS, WHETHER BECAUSE OF STANDARD SHOP PRACTICE OR OTHER REASONS, THE CONTRACTOR SHALL MAKE SPECIAL MENTION THEREOF IN HIS LETTER TRANSMITTING THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR OBSERVING THE NEED FOR AND MAKING ANY CHANGES IN THE ARRANGEMENT OF PIPING, CONNECTIONS, WIRING, MANNER OF INSTALLATION ETC., WHICH MAY BE REQUIRED BY THE EQUIPMENT HE PROPOSES TO VERIFY BOTH AS IT PERTAINS TO HIS OWN WORK AND ANY WORK AFFECTED UNDER OTHER PARTS, HEADINGS, OR DIVISIONS OF DRAWINGS, AND SPECIFICATIONS.
- L. IDENTIFICATION: SHOP DRAWINGS SHALL BE ENTITLED WITH THE NAME OF THE PROJECT ON EACH SHEET AND SHALL OTHERWISE BE IDENTIFIED BY LISTING THE PARTICULAR DIVISION, SECTION, ARTICLE OR REFERENCE OF THE WORK PERTAINING. SUBMIT DIFFERENT ITEMS ON SEPARATE SHEETS. ALL SUBMITTALS SHALL BE NUMBERED SERIALLY.
- M. MANNER: FURNISH FOR ARCHITECT'S APPROVAL SEPARATE SHEETS OF SUBMITTAL OF EACH SPECIALTY ITEM IN THE FOLLOWING MANNER:
  1. CATALOG CUTS SHALL BE PHOTOCOPIED OR REPRODUCED IN SOME OTHER ACCEPTABLE MANNER AND SUBMITTED SEVEN (7) COPIES ON ONE SIDE ONLY OF AN 8 1/2" X 11" SHEET, NOTING ONLY THE ITEMS IN QUESTION, TOGETHER WITH THE DESCRIPTIVE (SPECIFICATION) DATA COMPLETE. DRAWINGS SHALL BE SUBMITTED IN OZALID TRANSPARENCY FORM.
  2. EACH SHEET SHALL BE IDENTIFIED WITH THE DIVISION, SECTION, ARTICLE OR REFERENCE IN THE CONTACT DOCUMENTS, WHICH COVERS THE ITEM SUBMITTED FOR APPROVAL.
  3. EACH SHEET SHALL BE IDENTIFIED WITH THE PROJECT NAME AND THE ARCHITECT.
  4. EACH SHEET SHALL BEAR THE CONTRACTOR'S STAMP AND SIGNATURE OF APPROVAL.

1.14 SPECIFIED ITEMS \_ SUBSTITUTES

- A. WHEREVER CATALOG NUMBERS AND SPECIFIC BRANDS OR TRADE NAMES FOLLOWED BY THE DESIGNATION "OR EQUAL" ARE USED IN CONJUNCTION WITH A DESIGNATED MATERIAL, PRODUCT, THICKNESS, OR SERVICE MENTIONED IN THIS SPECIFICATION, THEY ARE USED TO ESTABLISH THE STANDARDS OF QUALITY, UTILITY AND APPEARANCE REQUIRED. SUBSTITUTIONS, WHICH ARE EQUAL IN QUALITY, UTILITY, AND APPEARANCE TO THOSE SPECIFIED, WILL BE APPROVED, SUBJECT TO THE FOLLOWING PROVISIONS: ALL SUBSTITUTIONS MUST BE APPROVED BY THE ARCHITECT AND/OR ENGINEER IN WRITING. FOR THIS PURPOSE, THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT, WITHIN 30 CALENDAR DAYS AFTER THE DATE OF COMMENCEMENT SPECIFIED IN THE NOTICE TO PROCEED, A TYPED WRITTEN LIST CONTAINING A DESCRIPTION OF EACH PROPOSED SUBSTITUTE ITEM OR MATERIAL. THE ARCHITECT MAY INCREASE THE SUBMITTAL PERIOD BEYOND 30 CALENDAR DAYS IF THE SCHEDULE ALLOWS. SUFFICIENT DATA, DRAWINGS, SAMPLES, LITERATURE OR OTHER RELATED INFORMATION THAT WILL DEMONSTRATE TO THE ARCHITECT THAT THE PROPOSED SUBSTITUTE IS EQUAL IN QUALITY, UTILITY, AND APPEARANCE TO THE MATERIAL SPECIFIED SHALL BE APPENDED TO THIS LIST. THE ARCHITECT WILL APPROVE, IN WRITING, SUCH PROPOSED SUBSTITUTION WHICH AFFECT OTHER PARTS OF THE CONTRACTOR'S OWN WORK OR THE WORK OF OTHERS.
- B. FAILURE OF THE CONTRACTOR TO SUBMIT PROPOSED SUBSTITUTIONS FOR APPROVAL IN THE MANNER DESCRIBED ABOVE AND WITHIN THE TIME PRESCRIBED SHALL BE SUFFICIENT CAUSE FOR DISAPPROVAL BY THE ENGINEER OF ANY SUBSTITUTIONS OTHERWISE PROPOSED.
- C. WHEREVER CATALOG NUMBERS AND SPECIFIC BRANDS OR TRADE NAMES NOT FOLLOWED BY THE DESIGNATION "OR EQUAL" MATERIAL, PRODUCT, THING OR SERVICE MENTIONED IN THESE SPECIFICATIONS, NO SUBSTITUTIONS WILL BE ACCEPTED FOR APPROVAL.
- D. WHEREVER MORE THAN ONE MANUFACTURER'S PRODUCT IS SPECIFIED, THE FIRST NAME PRODUCT IS THE BASIS FOR THE PROJECT DESIGN AND THE USE OF ALTERNATIVE NAME MANUFACTURER'S PRODUCTS OR SUBSTITUTES MAY REQUIRE MODIFICATIONS IN THE PROJECT DESIGN AND CONSTRUCTION. IF SUCH ALTERNATIVES ARE PROPOSED BY THE CONTRACTOR AND ARE FAVORABLY REVIEWED BY THE ENGINEER THE CONTRACTOR SHALL ASSUME COSTS REQUIRED TO MAKE NECESSARY REVISIONS AND MODIFICATIONS INCLUDING ADDITIONAL COSTS TO THE OWNER FOR EVALUATIONS OF MODIFICATIONS OF THE PROJECT DESIGN SUBMITTED BY THE CONTRACTOR TO THE ARCHITECT.
- E. WHEN MATERIALS ARE SPECIFIED BY THE FIRST MANUFACTURER'S NAME, AND PRODUCT NUMBER, SECOND MANUFACTURER'S NAME, OR EQUAL, THE SECOND MANUFACTURER'S PRODUCT SHALL BE SUBMITTED IN ACCORDANCE WITH THE ABOVE PARAGRAPH.
- F. IF THE ENGINEER IN THIS REVIEW OF THE LIST OF MATERIALS AND EQUIPMENT REQUIRES REVISIONS OR CORRECTIONS TO BE MADE OR SHOP DRAWINGS AND/OR SUPPLEMENTAL DATA TO BE SUBMITTED, THE CONTRACTOR SHALL PROMPTLY DO SO. IF ANY PROPOSED MATERIAL IS JUDGED BY THE ENGINEER TO BE UNACCEPTABLE, THE SPECIFIED ITEM SHALL BE PROVIDED; FURTHER SUBMISSIONS WILL NOT BE ALLOWED, UNLESS DIRECTED BY THE ENGINEER.
- G. PHYSICAL SAMPLES MAY BE REQUIRED. IF TESTS FOR THE DETERMINATION OF EQUALITY AND UTILITY ARE REQUIRED BY THE ENGINEER THEY SHALL BE MADE BY A TESTING LABORATORY, WITH ACCEPTANCE OF THE TEST PROCEDURE FIRST GIVEN BY THE ENGINEER, AND AT THE EXPENSE OF THE CONTRACTOR.
- H. IN REVIEW OF THE DATA SUBMITTED IN SUPPORT OF SUBSTITUTIONS, THE ENGINEER WILL USE FOR PURPOSES OF COMPARISON ALL OF THE CHARACTERISTICS OF THE SPECIFIED ITEM AS THEY APPEAR IN THE MANUFACTURER'S PUBLISHED DATA EVEN THOUGH ALL OF THE CHARACTERISTICS OF THE SPECIFIED ITEM MAY NOT HAVE BEEN PARTICULARLY MENTIONED IN THE MANUFACTURER'S PUBLISHED DATA. IF MORE THAN TWO SUBMISSIONS OF DATA ARE REQUIRED, THE COST OF REVIEWING THE DATA GOES AGAINST THE CONTRACTOR, AND THE OWNER WILL WITHHOLD THE FUNDS NECESSARY TO COVER THESE COSTS. ONLY ONE (1) SUCH REQUEST MAY BE SUBMITTED. THE ENGINEER'S REJECTION OF ANY SUBSTITUTE SHALL AUTOMATICALLY REQUIRE THE CONTRACTOR TO FURNISH THE SPECIFIED ITEM WITHOUT FURTHER DISCUSSION OR DELAY.

1.15 EQUIPMENT IDENTIFICATION

- A. THE MAIN SWITCHBOARD, AND ALL PANELBOARDS, DISCONNECT SWITCHES, TRANSFORMERS, BOXES, ETC., SHALL BE PROPERLY IDENTIFIED WITH A DESCRIPTIVE NAMEPLATE. NAMEPLATES SHALL BE MADE OF 1/16 INCH LAMINATED PLASTIC WITH BLACK BACKGROUND AND WHITE LETTERS. SIZE OF LETTERS SHALL BE 1/4 INCH HIGH. LETTERS SHALL BE MACHINE ENGRAVED. ALL NAMEPLATES SHALL BE SCREW MOUNTED WITH OVAL HEAD MACHINE SCREWS TAPPED INTO FRONT OF PANEL.
- B. PROVIDE HOLDERS WITH IDENTIFICATION CARDS FILLED OUT IN TYPED WRITTEN FORMAT OF CIRCUIT DESIGNATIONS FOR EACH PANELBOARD.
- C. EACH BRANCH CIRCUIT, CONTROL, AND SIGNAL CONDUCTOR SHALL BE LABELED WITH THE CIRCUIT NUMBER OR TERMINAL NUMBER IT IS CONNECTED TO. USE TAB VINYL OR BRANDY PERMASHIELD MYLAR MARKERS. CONDUCTORS SHALL BE LABELED AT EACH PANELBOARD, SWITCHBOARD, CONTROL CENTER, TERMINAL CABINET, PULL BOX AND EACH POINT OF UTILIZATION SUCH AS FIXTURES, MOTORS, CONTROLS, ETC. LABELING SHALL CORRESPOND TO CONTROL DIAGRAMS WHERE APPLICABLE.

1.16 WARRANTY

- A. GUARANTEE ALL WORK FOR ONE YEAR FROM DATE OF ACCEPTANCE AGAINST ALL DEFECTS IN MATERIAL, EQUIPMENT AND WORKMANSHIP.

1.17 RECORD AS-BUILT DRAWINGS

- A. THE CONTRACTOR SHALL KEEP A SEPARATE SET OF ELECTRICAL DRAWINGS AT THE JOB SITE TO BE USED AS RECORD DRAWINGS. THESE DRAWINGS ARE TO BE KEPT CURRENT AND IN A NEAT AND CLEAN CONDITION AT ALL TIMES. THEY ARE TO BE AVAILABLE FOR INSPECTION BY THE ARCHITECT OR ENGINEER AT ANY TIME DURING SITE VISITATIONS. THESE DRAWINGS SHALL BE "RED LINED" TO INDICATE ALL CHANGES IN EQUIPMENT, DEVICE AND OUTLET LOCATIONS, AND TO INDICATE THE TRUE LOCATIONS OF ALL CONCEALED OR UNDERGROUND WORK WHERE DIFFERENT FROM THAT SHOWN ON THE DRAWINGS. EACH SHEET OF THIS SET SHALL BE CLEARLY AND PERMANENTLY MARKED "RECORD AS-BUILT DRAWINGS".
- B. UPON COMPLETION OF THE PROJECT AND PRIOR TO FINAL PAYMENT, TRANSFER ALL RECORD DRAWINGS INFORMATION TO THE PROVIDED ORIGINAL DRAWINGS. ALL INFORMATION SHALL BE CLEARLY DRAWN WITH "RED" INK. THE DRAWINGS SHALL BE SCANNED, 100% EDITED, AND CONVERTED INTO AN AUTOCAD .DWG VERSION 2000 (OR HIGHER) ELECTRONIC FILE. DELIVER THE ORIGINAL, FINAL SETS AND ELECTRONIC FILES (CD) TO THE ARCHITECT FOR REVIEW AND DELIVERY TO THE DISTRICT'S REPRESENTATIVE/OWNER.

PART 2 \_ PRODUCTS

2.01 MATERIALS

- A. UNLESS SPECIFICALLY INDICATED OTHERWISE, ALL MATERIAL SHALL BE NEW AND FREE FROM DEFECTS; IT SHALL BE LISTED BY UNDERWRITERS LABORATORIES WHERE APPLICABLE. LIKE ITEMS SHALL BE OF THE SAME MANUFACTURER (EXCEPT LIGHTING FIXTURES - WHICH SHALL BE AS SPECIFIED).
- B. EXCEPT AS NOTED OTHERWISE, WHERE MATERIAL OF A PARTICULAR MANUFACTURER IS SPECIFIED, THE INTENT IS TO DESCRIBE THE QUALITY AND FUNCTION OF THE ITEM. THE TERM "OR APPROVED EQUAL" IS IMPLIED. A SUBSTITUTION OF ANY OF THESE ITEMS WILL REQUIRE THAT THE ITEM BE PRESENTED IN A SUBMITTAL WHERE SPECIFICALLY LISTED IN THE "SUBMITTALS" PARAGRAPH ABOVE.

2.02 ENCLOSURES

- A. PROVIDE ENCLOSURES SUITABLE FOR THE SPECIFIC TYPE OF LOCATION IN WHICH THEY ARE INSTALLED.
  1. PROVIDE NEMA 1 OR NEMA 12 BOXES AND ENCLOSURES FOR DRY LOCATIONS. DRY LOCATIONS ARE ALL INDOOR AREAS THAT DO NOT FALL WITHIN THE DEFINITIONS BELOW FOR WET OR DAMP LOCATIONS.
  2. PROVIDE NEMA 3R BOXES AND ENCLOSURES FOR WET LOCATIONS. WET LOCATIONS ARE ALL LOCATIONS EXPOSED TO WEATHER, WHETHER UNDER A ROOF OR NOT.
  3. PROVIDE NEMA 4 BOXES AND ENCLOSURES FOR DAMP LOCATIONS. DAMP LOCATIONS ARE ALL INDOOR SPACES WHOLLY OR PARTIALLY UNDERGROUND OR ANY AREA SUBJECT TO WATER SPRAY.

DSA

ENGINEER:

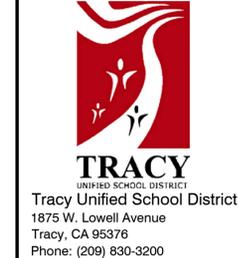


WARREN CONSULTING ENGINEERS, INC. 1117 WINDFIELD WAY, SUITE 110 EL DORADO HILLS, CA 95762 | (916) 985-1870

ENGINEER:



OWNER:



Merrill F. West High School Tennis Court Repairs

1775 Lowell Ave. Tracy, CA 95376

REVISIONS

NO.	DESCRIPTION

DRAWN:	BS	SCALE:	AS NOTED
CHECKED:	RZ	PROJECT NO.:	22-056
DESIGNED:	RN	DATE:	11-11-2022

ISSUANCE:

BID SET

SHEET TITLE:

ELECTRICAL SPECIFICATIONS

SHEET NO.

E0.3

2.03 PANELBOARDS

C. ACCEPTABLE MANUFACTURERS:

- CUTLER HAMMER
- SQUARE D
- SIEMENS

B. PANELBOARDS SHALL BE OF A TYPE AND RATING AS INDICATED ON THE PANEL SCHEDULE(S) ON THE DRAWINGS. THEY SHALL BE DEAD FRONT WITH HARDWARE FOR ACCEPTING MOLDED CASE BOLT-ON CIRCUIT BREAKERS OF THE MAXIMUM SIZE ALLOWABLE IN EACH SPACE. THE ENTIRE ASSEMBLY INCLUDING CIRCUIT BREAKERS SHALL BE RATED FOR NOT LESS THAN THE AVAILABLE SHORT CIRCUIT CURRENT SHOWN ON THE DRAWINGS (22,000 AMPS SYMMETRICAL WHEN NOT OTHERWISE INDICATED).

C. RATINGS:

- SEE PANEL SCHEDULES.
- INTERRUPTING RATING: REFER TO ONE LINE DIAGRAM. COMPLY WITH CEC 110.9 AND 110.10. PROVIDE IAC CALCULATIONS IF REQUIRED.

D. FINISH: ALL PAINTED STEEL WORK SHALL BE TREATED WITH A PRIMER COAT AND FINISH COAT OF THE MANUFACTURER'S STANDARD GRAY COLOR OR ANSI 61.

E. BUSSING:

- BUSSING SHALL BE RECTANGULAR CROSS SECTION COPPER.
- EACH PANELBOARD SHALL BE EQUIPPED WITH A GROUND BUS SECURED TO THE INTERIOR OF THE ENCLOSURE. THE BUS SHALL BE EQUAL TO THE PANELBOARD NEUTRAL BUS AND SHALL HAVE A SEPARATE LUG FOR EACH GROUND CONDUCTOR. NOT MORE THAN ONE CONDUCTOR SHALL BE INSTALLED PER LUG.

F. BREAKERS:

- VOLTAGE 240 VAC OR 480 VAC AS SHOWN ON PLANS.
- INTERRUPTING RATING: SEE PANEL SCHEDULES.
- MANUFACTURER SHALL BE THE SAME AS THE PANELBOARD OR SWITCHBOARD IN WHICH THEY ARE MOUNTED.
- WHERE TWO OR THREE POLE BREAKERS OCCUR IN THE PANELS, THEY SHALL BE COMMON TRIP UNITS. SINGLE POLE BREAKERS WITH TIE BAR BETWEEN HANDLES WILL NOT BE ACCEPTED.
- BREAKERS SHALL HAVE TOGGLE, QUICK MAKE, AND QUICK BREAK OPERATING MECHANISMS WITH TRIP FREE FEATURE TO PREVENT CONTACTS BEING HELD CLOSED AGAINST OVERCURRENT CONDITIONS IN THE CIRCUIT. TRIP POSITION OF THE BREAKERS SHALL BE CLEARLY INDICATED BY MOVEMENT OF THE OPERATING HANDLES TO THE CENTER POSITION.
- HIGH RATED CIRCUIT BREAKERS SHALL BE PROVIDED TO PROTECT ALL FEEDERS AND BRANCH CIRCUITS TO NON-FUSED HVAC AND REFRIGERATION EQUIPMENT AND WHERE REQUIRED BY EQUIPMENT LISTING CONDITIONS.
- NAMEPLATES AND DIRECTORY: EACH PANEL SHALL HAVE A NEATLY TYPED DIRECTORY WITH THE NAME AND NUMBER OF THE ROOM OR THE EQUIPMENT SERVED BY EACH CIRCUIT BREAKER WHICH SHALL CORRESPOND WITH THE FINAL CIRCUIT ARRANGEMENT. SPACES IN DIRECTORIES FOR SPARE CIRCUIT BREAKERS SHALL BE NEATLY MARKED "SPARE" IN PENCIL. THE DIRECTORY SHALL ALSO INDICATE THE PANEL DESIGNATION, VOLTAGE AND PHASE AT THE TOP. EACH DIRECTORY SHALL BE MOUNTED IN METALLIC INDEX CARD HOLDER BEHIND A CLEAR PLASTIC WINDOW.

2.04 DISCONNECT SWITCHES

A. HEAVY-DUTY TYPE SAFETY SWITCHES AS MANUFACTURED BY EATON, SIEMENS, OR SQUARE D. FURNISH WITH ENCLOSURE SUITABLE FOR APPLICATION. PROVIDE FUSED TYPE WHERE INDICATED OR REQUIRED BY CODE.

2.05 MOTOR STARTERS

A. DISCONNECT SWITCH TYPE COMPLETE WITH (3) OVERLOAD RELAYS AND ENCLOSURE SUITABLE FOR APPLICATION. CUTLER\_HAMMER, SIEMENS, OR SQUARE D.

2.06 FUSES

- A. FUSES SHALL BE PROVIDED PER MANUFACTURER'S EQUIPMENT NAMEPLATE FOR ALL FUSE HOLDERS AS SHOWN ON THE DRAWINGS AND AS REQUIRED FOR SUPPLEMENTAL PROTECTION AND SPECIFIED HEREIN. THEY SHALL BE CURRENT-LIMITING, NON-RENEWABLE AS INDICATED ON THE DRAWINGS - FUSETRON OR LIMTRON TYPE MANUFACTURED BY BUSSMAN OR EQUAL. ALL FUSES SHALL BE THE PRODUCT FROM THE SAME MANUFACTURER. PROVIDE (3) SPARE FUSES FOR EACH SIZE AND CLASS OF FUSE USED.
- B. MAIN AND FEEDER PROTECTION:
- WHERE RATING OF PROTECTIVE DEVICE IS GREATER THAN 600 AMPERE, PROVIDE BUSSMAN H-CAP FUSES, CLASS L, CURRENT LIMITING, HAVING AN INTERRUPTING RATING OF 200,000 AMPERE RMS.
  - WHERE RATING OF PROTECTIVE DEVICE IS 600 AMPERE OR LESS, PROVIDE BUSSMAN CLASS R FUSES, CLASS RK1 CURRENT LIMITING FUSES, HAVING AN INTERRUPTING RATING OF 200,000 AMPERE RMS.
- C. MOTOR PROTECTION:
- WHERE RATING OF PROTECTIVE DEVICE IS 600 AMPERE OR LESS, PROVIDE BUSSMAN FUSETRON DUAL-ELEMENT FUSES, CLASS RK5, HAVING AN INTERRUPTING RATING OF 200,000 AMPERE RMS.
  - WHERE FUSES FEEDING MOTORS ARE INDICATED BUT NOT SIZED, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE FUSE SIZE WITH THE MOTOR TO PROVIDE PROPER MOTOR RUNNING PROTECTION.

2.07 RACEWAY AND FITTINGS

A. RIGID STEEL CONDUIT:

- COMPLY WITH UNDERWRITERS LABORATORIES UL 6 SPECIFICATION, ANSI C80.1 AND FEDERAL SPECIFICATION WW\_C\_581E OR LATEST REVISIONS. HOT DIP GALVANIZED ON THE EXTERIOR, ZINC OR ENAMEL ON THE INTERIOR.
- COUPLINGS, LOCKNUTS, AND ALL OTHER FITTINGS SHALL BE GALVANIZED OR SHERARDIZED, WATERPROOF AND THREADED TYPE ONLY. APPLETON, CROUSE\_HINDS OR EQUAL.

B. INTERMEDIATE METALLIC CONDUIT (IMC):

- COMPLY TO PROPOSED UNDERWRITERS LABORATORIES UL 1242 AND FEDERAL SPECIFICATION WW\_C\_581E OR LATEST REVISION. HOT DIPPED GALVANIZED ON THE EXTERIOR, CORROSION INHIBITING COATING ON THE INTERIOR.
- COUPLINGS, LOCKNUTS, AND ALL OTHER FITTINGS SHALL BE GALVANIZED OR SHERARDIZED, WATERPROOF AND THREADED TYPE ONLY. SAME MATERIAL AS CONDUIT. APPLETON, CROUSE\_HINDS OR EQUAL.

C. ELECTRICAL METALLIC TUBING (EMT):

- COMPLY WITH UNDERWRITERS LABORATORIES UL 797, ANSI C80.3 AND FEDERAL SPECIFICATION WW\_C\_563 OR LATEST REVISIONS. EMT SHALL BE GALVANIZED OR SHERARDIZED.
- COUPLINGS AND CONNECTORS FOR EMT SHALL BE GALVANIZED OR CADMIUM PLATED AND SHALL BE OF THE COMPRESSION TYPE REQUIRING THE TIGHTENING OF A NUT ON A GLAND RING OR AN APPROVED STEEL SET SCREW TYPE. APPLETON, CROUSE\_HINDS OR EQUAL. NO DIE CAST TYPE ALLOWED.

D. FLEXIBLE METALLIC CONDUIT:

- GALVANIZED INTERLOCKED SPIRALLY WOUND STEEL STRIP.
- NEOPRENE JACKETED FLEXIBLE METALLIC CONDUIT SHALL BE USED IN ALL MOIST OR WEATHERPROOF LOCATIONS WHERE FLEXIBLE CONDUIT IS REQUIRED.
- FITTINGS SHALL BE HOT DIPPED GALVANIZED COMPRESSION OR CLAMP TYPE. FITTINGS WHICH USE A SCREW TO BIND AGAINST TUBING OR WHICH SCREW INTO THE END OF THE CONDUIT, WILL NOT BE ACCEPTED. FITTINGS FOR NEOPRENE JACKETED FLEXIBLE CONDUIT SHALL BE OF THE SCREW IN TYPE. APPLETON STB SERIES. APPLETON, CROUSE\_HINDS OR EQUAL MAY BE USED.

E. POLYVINYLCHLORIDE (PVC): RIGID HEAVY WEIGHT TYPE, SCHEDULE 40, COMPLETE WITH PVC FITTINGS.

F. ELECTRICAL NON-METALLIC TUBING (ENT): ELECTRICAL NON-METALLIC TUBING (ENT) IS NOT PERMISSIBLE FOR USE ON THIS PROJECT.

G. CONDUIT SUPPORTS:

- PIPE HANGERS FOR INDIVIDUAL CONDUITS SHALL BE THREADED SUSPENSION ROD. THE PIPE RING SHALL BE MALLEABLE IRON, SPLIT AND HINGED, OR SHALL BE SPRINGABLE WROUGHT STEEL. RINGS SHALL BE BOLTED TO OR INTERLOCKED WITH THE SUSPENSION ROD SOCKET.
- PIPE RACKS FOR GROUPS OF PARALLEL CONDUITS SHALL BE CONSTRUCTED OF GALVANIZED STRUCTURAL STEEL PREFORMED CHANNELS OF LENGTH AS REQUIRED,

SUSPENDED ON THREADED RODS AND SECURED THERETO WITH NUTS ABOVE AND BELOW THE CROSS BAR.

3. FACTORY MADE PIPE STRAPS SHALL BE ONE\_HOLE MALLEABLE IRON OR TWO\_HOLE GALVANIZED CLAMPS.

4. STRUT CHANNEL SHALL BE: KINDORF, UNISTRUT, T&B OR EQUAL.

H. OUTLET BOXES: GALVANIZED STEEL. BOXES INSTALLED IN ANY EXTERIOR LOCATION, WHERE EXPOSED TO RAIN OR WHERE EXPOSED TO MOISTURE LADEN ATMOSPHERE SHALL BE CAST SCREW HUB TYPE WITH GASKETED WEATHERPROOF COVERS. BOXES FOR VAPOR PROOF OR EXPLOSION PROOF APPLICATIONS SHALL BE DESIGNED SPECIFICALLY FOR SUCH USE.

1. EACH BOX SHALL BE LARGE ENOUGH TO ACCOMMODATE THE REQUIRED NUMBER AND SIZES OF CONDUITS, WIRES, SPLICES AND DEVICES BUT NOT SMALLER THAN SIZE SHOWN OR SPECIFIED.

I. PULL BOXES AND CABINETS:

- PRE-FABRICATED CONCRETE TYPE, CHRISTY CONCRETE PRODUCTS, BROOKS, OR EQUAL. ALL BOXES SHALL HAVE STANDARD BRASS HOLD-DOWN BOLTS AND HARDWARE. BOXES LOCATED IN PAVED AREAS OR OTHER AREAS OVER WHICH VEHICLES NORMALLY MAY TRAVEL SHALL HAVE TRAFFIC COVERS.
- ALL PULL BOXES AND CABINETS SHALL BE CODE GAUGE GALVANIZED STEEL.

2.08 WIRE AND CABLE

A. LABELING:

MARKED ON 24 INCH CENTERS AS FOLLOWS:

- UNDERWRITERS LABEL
- GAUGE
- VOLTAGE
- KIND OF INSULATION
- NAME OF MANUFACTURER
- TRADE NAME

B. INSULATION:

- ALL CONDUCTORS #10 AND SMALLER, SHALL BE 600 VOLT, TYPE THMN, THW, TW OR THHN UNLESS NOTED OTHERWISE.
- ALL CONDUCTORS FOR UNDERGROUND AND CONDUCTORS #8 AND LARGER SHALL BE 600 VOLT, TYPE XHHW OR THWN UNLESS NOTED OTHERWISE.
- INSULATION TYPE XHHW SHALL BE USED FOR WIRE SIZES #2 AND LARGER.
- ALL CIRCUIT CONDUCTORS INSTALLED WITHIN FLUORESCENT FIXTURE RACEWAYS SHALL BE 600 VOLT, 105-DEGREE TYPE RHH, OR THHN, EXCEPT IN FIXTURES THAT HAVE WIRING RACEWAYS SPECIFICALLY APPROVED FOR 75 DEGREE CENTIGRADE WIRE.

C. GROUNDING WIRE:

- GROUNDING WIRE #1/0 OR LARGER TINNED STRANDED COPPER CABLE. ALL SMALLER GROUND WIRES SHALL BE INSULATED WITH GREEN COLOR INSULATION

D. COLOR CODING OF CONDUCTORS:

- THE GUIDELINES OF THE NEC SHALL BE FOLLOWED WHEN SELECTING WIRE COLORS. GENERALLY, ALL PHASE WIRES FOR POWER CONDUCTORS OF THE SAME SYSTEM MAY BE THE SAME COLOR EXCEPT AS FOLLOWS:

PHASE	120/208 VOLTS	277/480 VOLTS
PHASE A	BLACK	BROWN
PHASE B	RED	ORANGE
PHASE C	BLUE	YELLOW
NEUTRAL	WHITE	GRAY
GROUND	GREEN	GREEN
ISOLATED GROUND	LIGHT GREEN OR LIGHT GREEN WITH WHITE STRIPE	

- THESE COLORS MAY BE THE CONDUCTOR INSULATION COLORS OR THE COLORS MAY BE APPLIED USING INDICATING TAPE MANUFACTURED FOR THE PURPOSE.
- IN ADDITION TO COLOR CODING, ALL POWER, CONTROL, AND ALARM WIRING SHALL BE NUMBERED AND IDENTIFIED BY MEANS OF WIRE MARKERS AT ALL SWITCHBOARDS, PANELBOARDS, AUXILIARY GUTTERS, JUNCTION BOXES, PULL BOXES, RECEPTACLE OUTLETS, LIGHT OUTLETS, DISCONNECT SWITCHES, AND CIRCUIT BREAKERS. THESE MARKERS SHALL CORRESPOND TO NUMBERS ON SHOP DRAWINGS.
- CONDUCTORS IN SIZES UP THROUGH #10 AWG SHALL HAVE SOLID COLOR FINISH AS LISTED ABOVE. NO. EIGHT (#8) AWG AND LARGER SHALL BE CODED BY APPLICATION OF PHASE TAPE FOR MINIMUM OF 6 INCH LENGTH ON CONDUCTOR. CODING SHALL OCCUR ON ALL SPLICES AND TERMINATION AND PULL BOXES.

E. CONDUCTORS:

- UNLESS SPECIFICALLY NOTED OTHERWISE HEREIN, ALL CONDUCTORS FOR GENERAL WIRING SHALL BE A MINIMUM OF 98% CONDUCTIVITY, STRANDED, SOFT DRAWN COPPER.
- CONDUCTORS FOR LIGHTING AND RECEPTACLE BRANCH CIRCUITS NO. 8 AND SMALLER SHALL BE SIMILAR TO THE ABOVE EXCEPT SOLID COPPER MAY BE USED.
- EXCEPT WHERE NOTED ON THE PLANS OR IN THIS SPECIFICATION, THE MINIMUM CONDUCTOR SIZE FOR BRANCH CIRCUITS SHALL BE NO. 12. MINIMUM SIZE MECHANICAL EQUIPMENT CONTROL CIRCUITS WHERE COVERED UNDER THIS SPECIFICATION SHALL BE NO. 14.
- ALUMINUM CONDUCTORS ARE NOT ALLOWED UNLESS SPECIFICALLY CALLED OUT FOR ON DRAWINGS.

F. PULLING LUBRICANT: UL APPROVED.

G. CONNECTIONS:

- NUMBER EIGHT (#8) AND SMALLER, PRE-INSULATED SPRING TYPE CONNECTORS. THREADED OR CRIMP TYPES WILL NOT BE ACCEPTED. USE SCOTCHLOCK, HYDENT, T&B OR EQUAL.
- TERMINALS FOR STRANDED CONDUCTORS NO. 8 AND SMALLER SHALL BE A PRE-INSULATED CRIMP TYPE.
- LUGS AND CONNECTORS FOR CONDUCTORS NO. 6 AND LARGER SHALL BE COMPRESSION TYPES OF ONE PIECE TUBULAR CONSTRUCTION WITH FLAT RECTANGULAR TONGUES. TWO HOLE LUGS SHALL BE USED FOR SIZES 4/0 AND LARGER. FITTINGS FOR COPPER CONDUCTORS SHALL BE TIN-PLATED COPPER. FITTINGS FOR ALUMINUM CONDUCTORS SHALL BE TIN-PLATED ALUMINUM, FACTORY FILLED WITH A CORROSION INHIBITING AND OXIDE PENETRATING COMPOUND.
- CAST RESIN KITS SHALL BE SCOTCHLOCK SEALING PACKS FOR WIRE SIZE TO #10 AND SCOTCHLOCK KITS FOR LARGER SPLICES AS RECOMMENDED BY 3M COMPANY.

2.09 WIRING DEVICES

A. WALL SWITCHES:

- UREA BASE, TOGGLE TYPE WITH 20A 120-277V. A.C. RATING FOR FULL CAPACITY OF CONTACTS FOR INCANDESCENT OR FLUORESCENT LAMP LOADS. SWITCHES SHALL BE BACK AND SIDE WIRED, SELF GROUNDING, CONTACTS SHALL BE SILVER-CADMIUM OXIDE DESIGNED FOR QUIET OPERATION. COMPLY WITH FEDERAL SPECIFICATION W\_S\_896E WITH NEMA WD\_1\_3.02 AND UL 20 TESTS OR LATEST REVISIONS. COLOR AS SELECTED BY ARCHITECT OR OWNER.

2. SCHEDULE OF ACCEPTABLE TYPES:

SWITCH TYPE	COOPER	LEVITON	HUBBELL
TOGGLE SWITCH:			
SINGLE POLE	1221	1221-21	1221
DOUBLE POLE	1222	1222-21	1222
THREE WAY	1223	1223-21	1223
FOUR WAY	1224	1224-21	1224
DECORATOR ROCKER SWITCH:			
SINGLE POLE	7621V	5621-21	DS1201
DOUBLE POLE	7622V		DS2201
THREE WAY	7623V	5623-21	DS3201
FOUR WAY	7624V	5624-21	DS4201
SPECIAL:			
SPOT CNTR OFF	4356	1285	1385
DPDT CNTR OFF	4361	1285	1385
DPDT (2-POS)	1276		

MOMENTARY:	4354	4921	1557
SPOT CNTR OFF			
DOOR JAMB. N.O.	4029	2968	NA
DOOR JAMB. N.C.	4030	2969	NA

3. WEATHERPROOF SWITCH (SP 125V, 10A) - HUBBELL #5121-0, OR ACCEPTED EQUAL, COMPLETE WITH SWITCH AND GASKET.

4. KEY SWITCHES: EQUIVALENT TO LISTED SWITCHES, ACTIVATED WITH REMOVABLE KEY.

5. SWITCH WITH PILOT LIGHT - COOPER #2221FL, OR ACCEPTED EQUAL.

B. CONVENIENCE OUTLETS:

- GROUNDING, 20 AMPERE, 125 VOLT, NEMA 5\_20R CONFIGURATION, NYLON HOUSING, SELF GROUNDING. COMPLY TO FEDERAL SPECIFICATION WL\_C\_596E, NEMA WD1\_4.02 AND UL 498 OR LATEST REVISIONS. COLOR AS SELECTED BY ARCHITECT OR OWNER.

2. SCHEDULE OF APPROVED TYPES:

OUTLET TYPE	COOPER	LEVITON	HUBBELL
20 A, 125 V; HEAVY USE DUPLEX	5362	5362A	5362
20 A, 125 V; DUPLEX	5362	5362A	5352
30 A, 125/250 V	5744N*	278	9430A
50 A, 125/250 V	5754N**	279	9450A
20 A, 125 V; ISOLATED GND	IG5362	5362IG	IG5362
20 A, 125 V; GFI	GF5342	6899GF	GF53522.03

3. WEATHERPROOF RECEPTACLE "GFCI" - HUBBELL #5103-0.

4. WEATHERPROOF AND LOCKABLE RECEPTACLE, WEATHERPROOF WITH PROVISION FOR PADLOCK-BRYANT #63101-PL.

5. WEATHERPROOF RECEPTACLE INTENDED FOR UNATTENDED USE (IRRIGATION CONTROLLER OUTLET, SUMP PUMP OUTLET, ETC) - COVER PLATE SHALL BE PROVIDED WITH A POLYCARBONATE CORD CAP GASKET ENCLOSURE LISTED "SUITABLE FOR WET LOCATIONS WHILE IN USE". USE TAYMAC SAFETY OUTLET ENCLOSURE OR EQUAL.

6. ISOLATED GROUND RECEPTACLE, NEMA 5-20R WITH AN ORANGE COLOR TRIANGLE LOCATED ON THE FACE OF THE RECEPTACLE PER NEC 406.2(D).

C. PLATES: PLATES SHALL BE SUPPLIED FOR EVERY LOCAL SWITCH, RECEPTACLE, ETC. PLATES SHALL BE STAINLESS STEEL OR NYLON TO MATCH WALL FINISH. FURNISH WITH ENGRAVED OR ETCHED DESIGNATIONS UNDER ANY ONE OF THE FOLLOWING CONDITIONS:

- THREE GANG OR LARGER GANG SWITCHES.
- SWITCHES IN LOCATIONS FROM WHICH THE EQUIPMENT OR CIRCUITS CONTROLLED CANNOT BE READILY SEEN.
- WHERE SO INDICATED ON THE DRAWINGS.
- AS REQUIRED ON ALL CONTROL CIRCUIT SWITCHES, SUCH AS HEATER CONTROLS, ETC.
- WHERE RECEPTACLES ARE OTHER THAN STANDARD DUPLEX RECEPTACLES, TO INDICATE VOLTAGE AND PHASE.
- PROVIDE COVER PLATES FOR ALL TELEPHONE AND COMPUTER OUTLETS.

DSA

ENGINEER:



WARREN CONSULTING ENGINEERS, INC.  
1117 WINDFIELD WAY, SUITE 110  
EL DORADO HILLS, CA 95762 | (916) 985-1870

ENGINEER:



OWNER:



Merrill F. West  
High School  
Tennis Court  
Repairs

1775 Lowell Ave.  
Tracy, CA 95376

REVISIONS

NO.	DESCRIPTION

DRAWN: BS SCALE: AS NOTED

CHECKED: RZ PROJECT NO. 22-056

DESIGNED: RN DATE: 11-11-2022

ISSUANCE:

BID SET

SHEET TITLE:

ELECTRICAL SPECIFICATIONS

SHEET NO.

E0.4

FILENAME: P:\1-PROJECT FILES\2022-IP PROJECTS\22-2022 WCE-TUSD-MERRILL WEST HS TENNIS COURT\IP CAD\222022-ED.4 (SPEC) DWG - PLOTTED Friday, November 18, 2022

FILENAME:P:\PROJECT FILES\2022 LP PROJECTS\22-2022 WCE-TUSD-MERRILL WEST HS TENNIS COURT\LP CAD\222022-ED.S (SPEC) DWG - PLOTTED: Friday, November 18, 2022

2.10 LIGHTING FIXTURES AND ACCESSORIES

- B. LIGHT FIXTURES: SUPPLY LIGHT FIXTURES AS INDICATED ON FIXTURE SCHEDULE.
  - 1. MANUFACTURER OF FIXTURES: ALL FIXTURES OF ONE TYPE SHALL BE OF ONE MANUFACTURER AND OF IDENTICAL FINISH AND APPEARANCE.
- C. ACCESSORIES: ALL FIXTURES SHALL BE COMPLETE WITH ACCESSORIES, END REQUIRED FOR THE SPECIFIC INSTALLATION.
- D. LAMPS: SUPPLY LAMPS AS INDICATED ON FIXTURE SCHEDULE.
  - 1. LAMP MANUFACTURER: LAMPS SHALL BE MANUFACTURED BY GENERAL ELECTRIC CO., SYLVANIA, OR EQUAL.
- D. BALLASTS: BALLASTS FOR FLUORESCENT FIXTURES SHALL BE ENERGY EFFICIENT SOLID STATE TYPE, INTEGRAL WITH THE FIXTURE, AND HAVE A HIGH POWER FACTOR (MINIMUM 90% P.F.) HID BALLASTS SHALL BE HIGH POWER FACTOR TYPE. EACH TYPE OF BALLAST SHALL BE UL LISTED (CLASS P) WITH INTEGRAL THERMAL PROTECTION IN BOTH THE CORE AND COIL ASSEMBLY AND THE CAPACITOR ASSEMBLY.
  - 1. BALLASTS SHALL MAINTAIN CONSTANT LIGHT OUTPUT OF ALL RAPID START FLUORESCENT LAMPS OVER OPERATING RANGES OF 90 V TO 145 V (120 V BALLASTS) AND 200 V TO 320 V (277 V BALLASTS). INPUT CURRENT TOTAL HARMONIC DISTORTION CONTENT SHALL BE LESS THAN 10% OF RATED (FUNDAMENTAL) INPUT CURRENT. BALLASTS SHALL WITHSTAND LINE TRANSIENTS AS DEFINED IN ANSI/IEEE C62.41, CATEGORY A. BALLASTS SHALL MEET THE REQUIREMENTS OF FCC, PART 18, CLASS A.
  - 2. BALLASTS SHALL HAVE A SEQUENCED START PROGRESSION WHICH FIRST HEATS CATHODE FILAMENTS AND THEN IGNITES LAMP(S). BALLASTS SHALL OPERATE AT A FREQUENCY ABOVE 20 KHZ. BALLAST CASE TEMPERATURE SHALL NOT EXCEED 25° C TEMPERATURE RISE OVER 40° C AMBIENT.
  - 3. BALLAST NOISE: ALL BALLASTS SOUND LEVELS SHALL NOT EXCEED CLASS A AMBIENT NOISE LEVELS. SOUND RATED 'A' BALLASTS FOUND TO BE NOISY AFTER INSTALLATION, IN THE OPINION OF THE OWNER, SHALL BE REMOVED AND REPLACED.
  - 4. BALLAST MANUFACTURER: BALLASTS SHALL BE AS MANUFACTURED BY GENERAL ELECTRIC CO., UNIVERSAL, ADVANCE OR EQUAL, UNLESS OTHERWISE SPECIFIED ON DRAWINGS.
- E. DIMMABLE LED DRIVERS
  - 1. DIMMING RANGE: CONTINUOUS DIMMING FROM 100 PERCENT TO 10 PERCENT RELATIVE LIGHT OUTPUT UNLESS DIMMING CAPABILITY TO LOWER LEVEL IS INDICATED, WITHOUT FLICKER.
- F. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE FIXTURES WITH CEILING TYPES AND SUPPLY VOLTAGES.
- G. FIXTURES INSTALLED IN RATED CEILINGS SHALL BE LISTED FOR USE IN SUCH CEILINGS.

2.11 LIGHTING CONTROL

- A. REFER TO DRAWINGS FOR SCHEDULES AND/OR SPECIFICATION NOTES.

2.12 OCCUPANCY SENSORS

- A. REFER TO DRAWINGS FOR SCHEDULES AND/OR SPECIFICATION NOTES.

2.13 TERMINAL CABINETS

- A. ALL TERMINAL CABINETS SHALL BE SIZED PER APPLICABLE ELECTRICAL CODE, U.L. LISTED, AND SUITABLE FOR THE CONDITIONS OF INSTALLATION. EACH CABINET SHALL BE PROVIDED HAVING SUFFICIENT VOLUME, PROPER DIMENSIONS, AND GEOMETRY FOR THE DEVICE(S) TO BE INSTALLED AND THE NUMBER OF CONDUITS AND WIRES AT THAT LOCATION.
- B. ALL TERMINAL CABINETS SHALL BE PROVIDED WITH HINGED LOCKABLE DOORS SUITABLE TO THE CONDITIONS OF THE INSTALLATION.
- C. CONSTRUCTION OF TERMINAL AND DEVICE CABINETS SHALL BE SIMILAR TO PANELBOARDS, FLUSH COMBINATION LATCH AND LOCK, RECESSED IN FINISHED AREAS, ETC. ALL LOCKS SHALL BE KEYED ALIKE BUT DIFFERENT FROM PANELBOARDS. ENCLOSURE SHALL BE NEMA 3 (RAIN AND DUST TIGHT) WHERE INSTALLED OUTDOORS UNLESS OTHERWISE SPECIFIED. A "PLAN POUCH" SHALL BE FACTORY ASSEMBLED TO THE INTERIOR OF THE CABINET DOOR SUITABLE FOR HOLDING A PLAN OF THE ASSOCIATED CONTROL SCHEME.
- D. BUILDING SIGNAL TERMINAL CABINET SIZES SHALL BE SUFFICIENT FOR THE RACEWAYS INDICATED ON THE DRAWINGS AND FOR THE TERMINATION AND CONTROL EQUIPMENT REQUIRED. THE CONTRACTOR SHALL SIZE THE CABINETS TO PROVIDE AMPLE WIRING AND TERMINATION SPACE FOR THE EQUIPMENT, WIRES, AND CABLES INDICATED ON THE DRAWINGS. THE SIZES SHALL NOT BE LESS THAN THOSE INDICATED ON THE DRAWINGS. MINIMUM TERMINAL CABINET SIZE FOR ANY LOCATION SHALL BE 24"H X 24"W X 6"D WHERE NOT NOTED OTHERWISE.
- E. A BACKBOARD OF 5/8" MINIMUM PLYWOOD, UNLESS NOTED ON PLANS, OR A METAL EQUIPMENT MOUNTING PANEL PROVIDED BY THE CABINET MANUFACTURER HAVING A SIZE APPROXIMATELY THE SAME AS THE DOOR OPENING SHALL BE INSTALLED WITHIN THE CABINET.
- F. METAL DIVIDERS SHALL BE PROVIDED WHERE INDICATED ON THE DRAWINGS. FINISH SAME AS PANEL INTERIOR.
- G. TERMINAL STRIPS OR BLOCKS SHALL BE DOUBLE ROW STRIP SCREW WITH CLAMP OR TUBE-SCREW TYPE WITH WRITE-ON STRIP DOWN THE CENTER. THEY SHALL ACCEPT WIRE SIZES AS INDICATED ON THE DRAWINGS AND HAVE BARRIERS BETWEEN THE POLES. EXCEPT WHERE NOTED OTHERWISE, PROVIDE AT LEAST 10% SPARE TERMINAL POINTS. PUNCH BLOCKS SHALL BE USED TO TERMINATE COMMUNICATIONS CABLES AND OTHER SMALL SIZE WIRES.
- H. EXCEPT WHERE OTHERWISE SPECIFICALLY NOTED, PROVIDE ALL TERMINAL STRIPS, WIRING CHANNELS, MARKERS, AND OTHER DEVICES AS REQUIRED.

PART 3 - EXECUTION

3.01 EXCAVATION AND BACKFILL

- A. PERFORM EXCAVATION AND BACKFILL REQUIRED FOR ELECTRICAL INSTALLATION. RESTORE ALL SURFACES, ROADWAYS, WALKS, CURBS, WALLS, EXISTING UNDERGROUND INSTALLATIONS, ETC., CUT BY INSTALLATIONS TO ORIGINAL CONDITION IN AN ACCEPTABLE MANNER.
- B. DIG TRENCHES STRAIGHT AND TRUE TO LINE AND GRADE, WITH BOTTOM SMOOTHED OF ANY ROCK POINTS. SUPPORT CONDUIT FOR ENTIRE LENGTH ON UNDISTURBED, ORIGINAL EARTH. MINIMUM CONDUIT DEPTH TO PIPE CROWN SHALL BE 24 INCHES BELOW FINISHED GRADE. CONSULT SERVING UTILITY COMPANIES FOR MINIMUM UTILITY CONDUIT DEPTHS.
- C. BACKFILL AND TAMP IN SIX-INCH LAYERS WITH EARTH FROM EXCAVATION TO FINISH GRADE. MAKE ALLOWANCES FOR SETTLEMENT.

3.02 INSTALLATIONS

- A. CIRCUIT BREAKERS AND FUSES ARE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS. FUSES MUST SEAT SOLIDLY WITH ALL CONTACT SURFACES BEARING EVENLY. REPLACE WARPED, WEAK, OR BROKEN FUSE CLAMP TERMINALS. DO NOT ATTEMPT TO REPAIR OR BEND BACK INTO POSITION.

3.03 SWITCHBOARD INSTALLATION

- A. INSTALL A CONCRETE PAD THAT IS 3 INCHES HIGHER THAN SURROUNDING GRADE OR FLOOR, UNLESS NOTED ON PLAN. INSTALL ANCHORS FOR EACH SECTION PROVIDED. SET THE SWITCHBOARD IN POSITION AND LEVEL THE ENTIRE UNIT. RIGIDLY SECURE THE SWITCHBOARD TO THE PAD AND GROUT AROUND THE BASE AS REQUIRED TO MAKE WATER-TIGHT SEAL. PROVIDE SUPPORT FOR CABLES ENTERING THE SWITCHBOARD AS REQUIRED FROM POINT OF ENTRY TO THE TERMINATION POINT.
- B. WHERE THE SWITCHBOARD IS INSTALLED OUTDOORS AND EXPOSED TO THE WEATHER, FORM A 1/4" MINIMUM DRAIN PATH FROM EACH SECTION OF THE SWITCHBOARD INTERIOR TO GRADE LEVEL BEYOND THE PAD. THIS MAY BE ACCOMPLISHED BY PLACING A 1/4" PLASTIC OR COPPER TUBE WITHIN THE PAD FORM PRIOR TO CONCRETE POUR. SECURE THE TUBE AGAINST MOVEMENT DURING THE POUR. CUT TUBES OFF FLUSH WITH PAD AFTER SWITCHBOARD IS SET.
- C. THE GROUND FAULT COMPONENTS SHALL BE TESTED BY A QUALIFIED TECHNICIAN PRIOR TO ENERGIZING SWITCHBOARD.
- D. NEATLY ARRANGE WIRING WITHIN THE EQUIPMENT. BUNDLE AND WRAP CONDUCTORS #8 AWG AND SMALLER WITH PLASTIC WIRE TIES.
- E. EVERY CONDUIT ENTERING THE SWITCHBOARD SHALL BE IDENTIFIED, AND 100% ACCESSIBLE WITH INSULATED BUSHING INSTALLED.
- F. FIELD ADJUSTMENTS:
  - 1. THE CONTRACTOR SHALL PERFORM FIELD ADJUSTMENTS OF THE PROTECTIVE DEVICES AS REQUIRED TO PLACE THE EQUIPMENT IN FINAL OPERATING CONDITION. THE SETTINGS SHALL BE IN ACCORDANCE WITH THE ACCEPTED SHORT-CIRCUIT STUDY, PROTECTIVE DEVICE EVALUATION STUDY, AND PROTECTIVE DEVICE COORDINATION STUDY.
  - 2. NECESSARY FIELD SETTINGS OF DEVICES, ADJUSTMENTS, AND MINOR MODIFICATIONS TO EQUIPMENT TO ACCOMPLISH CONFORMANCE WITH AN ACCEPTED SHORT CIRCUIT AND PROTECTIVE DEVICE COORDINATION STUDY SHALL BE CARRIED OUT BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

3.04 PANELBOARD INSTALLATION

- A. PANELBOARDS ARE TO BE INSTALLED PLUMB AND RIGIDLY SECURED TO STRUCTURE WITH WOOD SCREWS, MACHINE BOLTS AND CONCRETE ANCHORS, OR MACHINE BOLTS AND LOCKNUTS AS APPLICABLE.
- B. NAME PLATES SHALL BE INSTALLED AS INDICATED IN THIS SECTION.

- C. RECESSED PANELBOARDS SHALL HAVE COVERS FLUSH WITH THE WALL. INSTALL 1-SPARE 3/4" EMPTY CONDUIT FOR EACH (3) SINGLE POLE SPACES OR SPARE CIRCUIT BREAKER POLES. STUB AND CAP IN ACCESSIBLE ATTIC SPACE, ABOVE THE CEILING, OR BELOW THE FLOOR AS APPLICABLE. WHERE BOTH ACCESSIBLE FLOOR AND ATTIC SPACES ARE AVAILABLE, STUB SPARE CONDUITS HALF EACH WAY (ONE EACH WAY MINIMUM). IDENTIFY SPARE CONDUITS. WHERE BUILDING CONSTRUCTION IS FIRE RATED, ENCLOSE RECESSED PANEL IN 5/8" GYPSUM BOARD AS DIRECTED BY THE ARCHITECT.

- D. COORDINATE FRAMING REQUIREMENTS WITH OTHERS TO ACCOMMODATE PANELBOARD LOCATIONS WITHOUT REQUIRING FRAMING MEMBERS TO BE CUT AWAY FOR INSTALLATION. PROVIDE ADEQUATE BLOCKING FOR SURFACE MOUNTED PANELBOARDS AS APPLICABLE.

3.05 RACEWAY INSTALLATION

A. CONDUIT APPLICATION:

- 1. MINIMUM SIZE OF CONDUIT SHALL BE 1/2 INCH. IN NO CASE SHALL THE CONDUIT SIZE BE SMALLER THAN THAT SHOWN ON THE DRAWINGS.
- 2. PVC CONDUIT, MINIMUM SIZE 1", MAY ONLY BE INSTALLED BENEATH GRADE OR IN CONCRETE; A MAXIMUM OF 4 FEET. PVC MAY BE INSTALLED IN ELECTRICAL ROOMS OR CONCEALED IN STUD SPACES WHEN DESIGNATED ON PLANS. PVC SHALL NOT BE INSTALLED IN FIRE RATED AREAS OR WHERE SUBJECT TO MECHANICAL DAMAGE. THE PVC IS TO EXTEND ONLY FROM THE CONCRETE SLAB TO THE BOTTOM OF THE SWITCHBOARD, PANELBOARD, OR SIMILAR EQUIPMENT. (CEC 300.5, CEC 300.50, AND CEC 352).
- 3. ALL CONDUIT RUNS EXPOSED ABOVE GRADE AND BELOW 8 FEET SHALL BE RIGID STEEL OR IMC, EXCEPT AS NOTED IN CONDUIT APPLICATIONS ITEMS 2 AND 4.
- 4. ELECTRICAL METALLIC TUBING (EMT) MAY BE INSTALLED IN PROTECTED ATTIC SPACES AND HOLLOW STUD SPACES. IT MAY BE EXPOSED ON THE SURFACE OF ELECTRICAL AND MECHANICAL ROOMS WHERE DESIGNATED ON THE PLANS.
- 5. FLEXIBLE METALLIC CONDUIT SHALL BE USED ONLY WHERE REQUIRED FOR CONNECTION TO MOTORS, ETC., OR WITH THE APPROVAL OF THE OWNER WHERE ABSOLUTELY NECESSARY DUE TO STRUCTURAL CONDITIONS.
- 6. BOXES INSTALLED INDOORS OR EMBEDDED IN CONCRETE SHALL BE GALVANIZED STEEL TYPE. BOXES INSTALLED EXPOSED OR OUTDOORS SHALL BE GALVANIZED CAST STEEL WITH THREADED HUBS.
- 7. CONDUIT FOR POWER COMPANY 12 KV PRIMARY LINES SHALL BE INSTALLED 54" BELOW GRADE.
- 8. BRANCH CIRCUIT CONDUITS UNDER SLAB SHALL BE SEPARATED BY AT LEAST ONE INCH. IN ALL CASES TWO OR MORE CONDUITS INSTALLED IN A COMMON CONCRETE ENCASMENT SHALL BE SEPARATED BY AT LEAST THREE INCHES.
- 9. CONDUIT SHALL BE SECURELY FASTENED IN PLACE SO THAT ABSOLUTELY NO SHIFTING WILL OCCUR DURING PLACING OF CONCRETE ENCASMENT.
- 10. JOINTS IN ALL CONDUIT INSTALLED IN CONCRETE, OR EXPOSED TO WEATHER, SHALL BE LIQUID AND GAS TIGHT.

B. CONDUIT LOCATION:

- 1. ALL CONDUITS SHALL BE RUN CONCEALED IN ALL FINISHED AREAS.
- 2. EXPOSED CONDUIT SHALL BE NEATLY INSTALLED PARALLEL TO OR AT RIGHT ANGLES TO THE STRUCTURAL MEMBERS.
- 3. EXPOSED CONDUIT STUBBING UP THROUGH THE FLOOR INTO THE BOTTOM OF EXPOSED PANELS, CABINETS OR EQUIPMENT SHALL BE LINED UP, PROPERLY SPACED AND SHALL BE STRAIGHT AND PLUMB. CONDUITS SHALL BE INSTALLED AT SUFFICIENT DEPTH BELOW THE FLOOR TO ELIMINATE ANY PART OF THE BEND ABOVE.
- 4. MAINTAIN 12-INCH SEPARATION BETWEEN POWER AND INTERCOMMUNICATION CABLES.
- 5. CONDUIT SHALL BE KEPT AT LEAST 6" FROM THE COVERING ON HOT WATER PIPES, AND 18" FROM THE COVERING ON FLUES AND BREECHINGS.

C. CONDUIT SUPPORT:

- 1. CONDUIT SHALL BE SUPPORTED WITH FACTORY MADE PIPE STRAPS OR SUSPENDED WITH PIPE HANGERS OR RACKS.
- 2. HANGER STRAPS, RODS, OR PIPE SUPPORTS UNDER WOOD SHALL BE ATTACHED TO THE WOOD STRUCTURE USING BOLTS, LAG BOLTS, OR LAG SCREWS. ATTACH TO TRUSSES USING BEAM CLAMPS.
- 3. CONDUITS, WHICH ARE SUSPENDED ON RODS MORE THAN 2 FEET LONG SHALL BE RIGIDLY BRACED TO PREVENT HORIZONTAL MOTION OR SWAYING.
- 4. CONDUIT SHALL BE SUPPORTED AT INTERVALS NOT EXCEEDING 10 FEET AND IN ALL CASES WITH A SUPPORT NOT MORE THAN 3 FEET FROM THE OUTLET AND AT ANY POINT WHERE IT CHANGES IN DIRECTION.
- 5. PERFORATED STRAP AND PLUMBER'S TAPE SHALL NOT BE USED IN THE SUPPORT OF CONDUITS.
- 6. CONDUIT PLACED AGAINST CONCRETE OR MASONRY ABOVE GROUND SHALL BE FASTENED TO THE CONCRETE WITH PIPE STRAPS OR ONE-SCREW CONDUIT CLAMPS ATTACHED TO THE CONCRETE BY MEANS OF EXPANSION ANCHORS AND SCREWS. EXPANDERS AND SHIELDS SHALL BE STEEL OR MALLEABLE IRON. SIZES OF SHIELDS AND BOLTS SHALL BE SUCH THAT THE PROOF TEST LOAD WILL NOT BE LESS THAN FOUR TIMES THE ACTUAL WORKING LOAD.

D. CONDUIT BENDS:

- 1. FIELD BENDS OR OFFSETS ARE PERMITTED IN 1 INCH AND SMALLER CONDUIT ONLY.
- 2. ELBOWS IN 1-1/4 INCH CONDUIT AND LARGER SIZES SHALL BE FACTORY MADE.
- 3. MINIMUM RADIUS BEND FOR TELEPHONE SERVICE ENTRANCE CONDUIT SHALL BE 36".
- 4. CONDUIT BENDS, OTHER THAN FACTORY ELBOWS, SHALL HAVE A RADIUS OF NOT LESS THAN 10 TIMES THE INTERNAL DIAMETER OF THE CONDUIT.
- 5. 90 DEGREE BENDS IN PVC LARGER THAN 2 INCHES SHALL BE STEEL.
- 6. USE OF A BLOW TORCH TO BEND CONDUIT IS SPECIFICALLY PROHIBITED.

- E. EMPTY CONDUITS: ALL CONDUITS, WHICH ARE INSTALLED AT THIS TIME AND LEFT EMPTY FOR FUTURE USE OR WHERE CONDUCTORS ARE TO BE INSTALLED BY A REPRESENTATIVE OF THE TELEPHONE COMPANY SHALL HAVE A 3/16 INCH POLYPROPYLENE ROPE LEFT IN PLACE FOR FUTURE USE.

F. CONDUIT PROTECTION:

- 1. CAP ALL CONDUIT DURING CONSTRUCTION BY MEANS OF MANUFACTURED SEALS. SWAB OUT ALL CONDUITS BEFORE PULLING IN WIRE.
  - 2. ALL CONDUIT SYSTEMS MUST BE INSTALLED COMPLETE BEFORE CONDUCTORS ARE PULLED IN.
- G. OUTLET BOXES:
- 1. BOXES MUST BE ACCURATELY PLACED FOR FINISH, INDEPENDENTLY AND SECURELY SUPPORTED BY MANUFACTURED BOX HANGERS. FIXTURE OUTLETS SHALL BE LOCATED SYMMETRICALLY.
  - 2. LOCAL SWITCHES SHALL BE LOCATED +46 INCHES ABOVE THE FLOOR (TOP OF BOX) UNLESS OTHERWISE NOTED.
  - 3. CONVENIENCE OUTLETS SHALL BE LOCATED +16 INCHES ABOVE THE FINISHED FLOOR (BOTTOM OF BOX) UNLESS OTHERWISE NOTED.
  - 4. CHANGES IN OUTLET LOCATIONS OF FIXTURES, WALL SWITCHES, RECEPTACLES, AND SPECIAL EQUIPMENT FOUND NECESSARY DUE TO INTERFERENCE WITH STRUCTURE, PIPES, DUCTS, ETC. SHALL BE REPORTED TO THE OWNER FOR APPROVAL.
  - 5. ALL BOXES SHALL BE OF PROPER CODE SIZE FOR THE NUMBER OF WIRES OR CONDUITS PASSING THROUGH OR TERMINATING THEREIN, BUT IN NO CASE SHALL ANY BOX BE LESS THAN 4" SQUARE, UNLESS SPECIFICALLY NOTED AS SMALLER. COVERS SHALL BE OF THE TYPES MOST SUITABLE FOR THE FIXTURE OR DEVICE USED AT THE OUTLET, AND SHALL FINISH FLUSH WITH PLASTER OR OTHER FINISHED SURFACE. APPROVED FACTORY MADE KNOCKOUT SEALS SHALL BE USED IN ALL BOXES WHERE KNOCKOUTS ARE NOT INTACT. BOXES IN CONCRETE SHALL BE A TYPE, WHICH WILL ALLOW THE PLACING OF CONDUIT WITHOUT DISPLACING THE REINFORCING BARS.
  - 6. OUTLET BOXES SHALL BE USED AS PULL BOXES WHEREVER POSSIBLE, AND JUNCTION OR PULL BOXES SHALL BE INSTALLED ONLY AS REQUIRED BY THE SPECIFICATIONS, OR AS DIRECTED.
  - 7. FOR LIGHT OUTLET BOXES USE MINIMUM OF 4" SQUARE, 1-1/2" DEEP, EQUIPPED WITH PLASTER RING AND FIXTURE SUPPORTING DEVICE AS REQUIRED BY THE UNIT.
  - 8. FOR WALL SWITCH OUTLETS, USE 4" BOXES WITH SINGLE OR TWO GANG PLASTER RINGS FOR ONE OR TWO SWITCHES AND SOLID GANG BOXES WITH GANG PLASTER RINGS FOR MORE THAN TWO SWITCHES, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
  - 9. FOR CONVENIENCE OUTLETS, USE 4" BOXES WITH SINGLE GANG PLASTER RING.
  - 10. FOR TELEPHONE OUTLETS, USE 4" BOXES WITH SINGLE GANG PLASTER RING.

3.06 WIRE INSTALLATION

- A. CLEANING: ALL DEBRIS AND MOISTURE SHALL BE REMOVED FROM RACEWAYS, BOXES, AND CABINETS BEFORE INSTALLING WIRE OR CABLE.
- B. PULLING:
  - 1. NO OIL, GREASE OR SIMILAR SUBSTANCES SHALL BE USED TO FACILITATE THE PULLING IN OF CONDUCTORS. USE A UL APPROVED WIRE PULLING COMPOUND.
  - 2. NO WIRE OR CABLE SHALL BE PULLED IN UNTIL ALL CONSTRUCTION, WHICH MIGHT DAMAGE INSULATION OR FILL CONDUIT WITH FOREIGN MATERIAL IS COMPLETED.
  - 3. WIRE SHALL BE PULLED INTO CONDUITS WITH CARE TO PREVENT DAMAGE TO INSULATION. USE BASKET PULLING GRIPS TO AVOID SUFFING OF INSULATION ON CONDUCTORS. NYLON ROPE OR OTHER "SOFT" SURFACE CABLE MUST BE USED FOR PULLING IN CONDUITS OTHER THAN STEEL.
- C. CONNECTIONS:
  - 1. STRANDED CONDUCTORS NO. 8 AND SMALLER SHALL BE TERMINATED WITH TERMINALS OF APPROPRIATE SIZE WHERE CONNECTED TO SCREW TYPE LUSS.
  - 2. JOINTS, SPLICES AND TAPS IN DRY LOCATIONS FOR CONDUCTORS NO. 8 AND SMALLER SHALL BE MADE WITH TWIST ON CONNECTORS SUITABLY SIZED FOR THE NUMBER AND GAUGE OF THE CONDUCTORS.
  - 3. FURNISH AND INSTALL PROPER LUSS IN ALL PANELBOARDS, SWITCHBOARDS, AND GUTTERS AS REQUIRED TO PROPERLY TERMINATE EVERY CABLE. LUSS FOR ALUMINUM CONDUCTORS SHALL BE COMPRESSION TYPE.
  - 4. CONNECTIONS OF ALUMINUM CABLE TO ALUMINUM BUS BARS SHALL BE MADE USING ALL ALUMINUM COMPONENTS (LUSS, WASHER, BOLTS, NUTS). COPPER TO ALUMINUM CONNECTIONS OF BUS BARS AND LUSS SHALL BE MADE USING BELLEVILLE WASHERS AND FLAT WASHERS TO COMPENSATE FOR DIFFERING RATES OF THERMAL EXPANSION.
  - 5. ONLY CRIMPING TOOLS APPROVED BY THE MANUFACTURER OF THE TERMINALS OR LUSS SHALL BE USED.
  - 6. UNINSULATED LUSS AND WIRE ENDS SHALL BE INSULATED WITH LAYERS OF PLASTIC TAPE EQUAL TO INSULATION OF WIRE, WITH ALL IRREGULAR SURFACES PROPERLY PADDED WITH INSULATING PUTTY PRIOR TO APPLICATION OF TAPE.
  - 7. SPLICES IN UNDERGROUND PULL BOXES OR IN OTHER AREAS SUBJECT TO MOISTURE SHALL BE PROVIDED WITH CAST RESIN KITS. PREPARE ALL SPLICES AS HEREBEFORE SPECIFIED BEFORE RESIN KITS ARE APPLIED.

3.07 LIGHTING FIXTURE INSTALLATION

- A. MOUNTING:
  - 1. UNLESS SPECIFICALLY INDICATED OTHERWISE, ALL LIGHTING FIXTURES SHALL BE PLACED SYMMETRICALLY WITH RESPECT TO THE CEILING TILE PATTERN, OR OTHER ARCHITECTURAL CEILING, AND WALL MODULES.
- B. SUPPORT:
  - 1. IN SUSPENDED GRID LAY-INS CEILINGS, IN ADDITION TO SUPPORTING FROM CEILING TEES, SUPPORT ALL LUMINAIRE HOUSINGS FROM STRUCTURAL MEMBERS WITH A MINIMUM OF FOUR NO.12 GALVANIZED WIRES FOR EACH LUMINAIRE.
  - 2. ALL FIXTURE MOUNTING SHALL MEET SEISMIC REQUIREMENTS OF THE STATE OF CALIFORNIA.
  - 3. PROVIDE SUPPORT FOR ALL FIXTURES FROM (OR ON) BUILDING STRUCTURAL WALL MEMBERS. SUPPORT FROM CEILING TILES ONLY IS SPECIFICALLY PROHIBITED.
- C. FIRE PROTECTION:
  - 1. ALL RECESSED FIXTURES SHALL BE PROTECTED FROM CONTACT WITH COMBUSTIBLE BUILDING MATERIALS, SUCH AS WOOD FRAMING MEMBERS AND INSULATION VAPOR BARRIERS, AS REQUIRED BY APPLICABLE CODES.
  - 2. FIXTURES INSTALLED IN RATED 1-HOUR CEILINGS SHALL BE ENCASED BY A 1-HOUR ENCLOSURE TO MAINTAIN THE FIRE INTEGRITY OF THE CEILING. ALL FIXTURE ENCLOSURES WILL COMPLY WITH UL FIRE RESISTANCE DIRECTORY DESIGN REQUIREMENTS.
- D. CLEANING UP: ALL FIXTURES SHALL BE LEFT IN A CLEAN CONDITION, FREE OF DIRT AND DEFECTS, BEFORE ACCEPTANCE BY THE OWNER.

3.08 RECEPTACLE INSTALLATION

- A. ALL RECEPTACLES IN FLUSH TYPE OUTLET BOXES SHALL BE INSTALLED WITH A BONDING JUMPER FOR GROUND BETWEEN THE GROUNDED OUTLET BOX AND THE RECEPTACLE GROUND TERMINAL, EXCEPT WHERE RECEPTACLE IS EQUIPPED WITH A UL APPROVED SELF-GROUNDING DEVICE. GROUNDING THROUGH THE RECEPTACLE MOUNTING STRAPS IS NOT ACCEPTABLE. BONDING JUMPER SHALL BE ATTACHED AT EACH OUTLET TO THE BACK OF THE BOX USING DRILLED AND TAPED HOLES AND WASHED HEAD SCREWS 6/32" OR LARGER. FOR RECEPTACLES IN SURFACE MOUNTED OUTLET BOXES DIRECT METAL TO METAL CONTACT BETWEEN RECEPTACLE MOUNTING STRAP (IF IT IS CONNECTED TO THE GROUNDING CONTACTS) AND OUTLET BOX MAY BE USED.

3.09 TERMINAL CABINET INSTALLATION

- A. CABINETS ARE TO BE INSTALLED PLUMB AND RIGIDLY SECURED TO STRUCTURE WITH WOOD SCREWS, BOLTS AND CONCRETE ANCHORS, OR MACHINE BOLTS AND LOCKNUTS AS APPLICABLE.
- B. RECESSED CABINETS SHALL HAVE COVERS FLUSH WITH THE WALL. WHERE BUILDING CONSTRUCTION IS FIRE RATED, ENCLOSE RECESSED CABINET IN 5/8" GYPSUM BOARD AS DIRECTED BY THE ARCHITECT.
- C. INSTALL (2) 1" EMPTY CONDUITS FROM ALL RECESSED CABINETS TO ACCESSIBLE SPACE ABOVE CEILINGS AND/OR BELOW FLOOR AS APPLICABLE (4 CONDUITS IF BOTH CAVITIES EXIST). IDENTIFY THE EMPTY CONDUITS.
- D. COORDINATE FRAMING REQUIREMENTS WITH OTHERS TO ACCOMMODATE CABINET LOCATIONS WITHOUT REQUIRING FRAMING MEMBERS TO BE CUT AWAY FOR INSTALLATION. PROVIDE ADEQUATE BLOCKING FOR SURFACE MOUNTED CABINETS AS APPLICABLE.
- E. FOR CONTROL EQUIPMENT CABINETS, A DRAWING OF THE CONTROL SCHEME SHALL BE PLACED IN THE DOOR RACK PROVIDED.
- F. ALL CONDUCTORS ENTERING OR LEAVING THE CABINET SHALL BE TERMINATED ON TERMINAL STRIPS OR PUNCH BLOCKS. EACH TERMINAL POINT SHALL BE LABELED, AND ALL WIRES WITHIN THE ENCLOSURE SHALL BE IDENTIFIED WITH BRADY OMNI-GRIP WIRE MARKERS OR OTHER SIMILAR METHOD.
- G. WIRES SHALL BE NEATLY ARRANGED WITHIN THE CABINET AND SECURED WITH TY-RAP OR RUN IN PANDUIT WIRE WAYS AS REQUIRED OR AS INDICATED ON THE DRAWINGS.

3.10 GROUNDING AND BONDING

- A. THE ENTIRE ELECTRICAL RACEWAY SYSTEM SHALL FORM A CONTINUOUS METALLIC ELECTRICAL CONDUCTOR FROM SERVICE POINT TO EVERY OUTLET AND SHALL BE GROUNDED BY CONNECTION TO THE MAIN SERVICE GROUND.
- B. A GROUND WIRE SHALL BE INSTALLED IN ALL PVC AND FLEXIBLE CONDUIT.
- C. ALL RACEWAY SYSTEMS, SUPPORTS, CABINETS, SWITCHBOARDS, CONTROL EQUIPMENT, MOTOR FRAMES, LIGHTING FIXTURES, AND UTILIZATION APPARATUS SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED.
- D. WHERE CABINETS ARE FURNISHED WITH GROUNDING BUS, ALL REQUIRED BONDING CONDUCTORS SHALL CONNECT THERETO, EACH WITH A SEPARATE LUG.
- E. ALL GROUNDING CONDUCTORS ARE TO BE COPPER ONLY. ALUMINUM WILL NOT BE ALLOWED.

3.11 TESTS

- A. UPON COMPLETION OF THE WORK AND ADJUSTMENTS OF ALL EQUIPMENT, ALL SYSTEMS SHALL BE TESTED TO DEMONSTRATE THAT ALL EQUIPMENT FURNISHED, INSTALLED, AND/OR CONNECTED UNDER THE PROVISIONS OF THESE SPECIFICATIONS SHALL FUNCTION IN THE REQUIRED MANNER.
- B. ALL SYSTEMS SHALL TEST FREE FROM SHORT CIRCUITS AND GROUNDS, AND BE FREE FROM MECHANICAL AND ELECTRICAL DEFECTS. ALL CIRCUITS SHALL BE TESTED FOR THE PROPER NEUTRAL CONNECTION, AND ROTATION OF MOTORS.
- C. WHERE TESTS INDICATE FAULTY INSTALLATION OR OTHER DEFECTS, THEY SHALL BE LOCATED, REPAIRED, AND RETESTED AT THE CONTRACTOR'S EXPENSE.

DSA

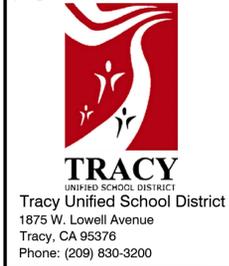
ENGINEER:



ENGINEER:



OWNER:



**Merrill F. West  
High School  
Tennis Court  
Repairs**

1775 Lowell Ave.  
Tracy, CA 95376

REVISIONS	
NO.	DESCRIPTION

DRAWN: BS	SCALE: AS NOTED
CHECKED: RZ	PROJECT NO. 22-056
DESIGNED: RN	DATE: 11-11-2022

ISSUANCE:

**BID SET**

SHEET TITLE:

**ELECTRICAL SPECIFICATIONS**

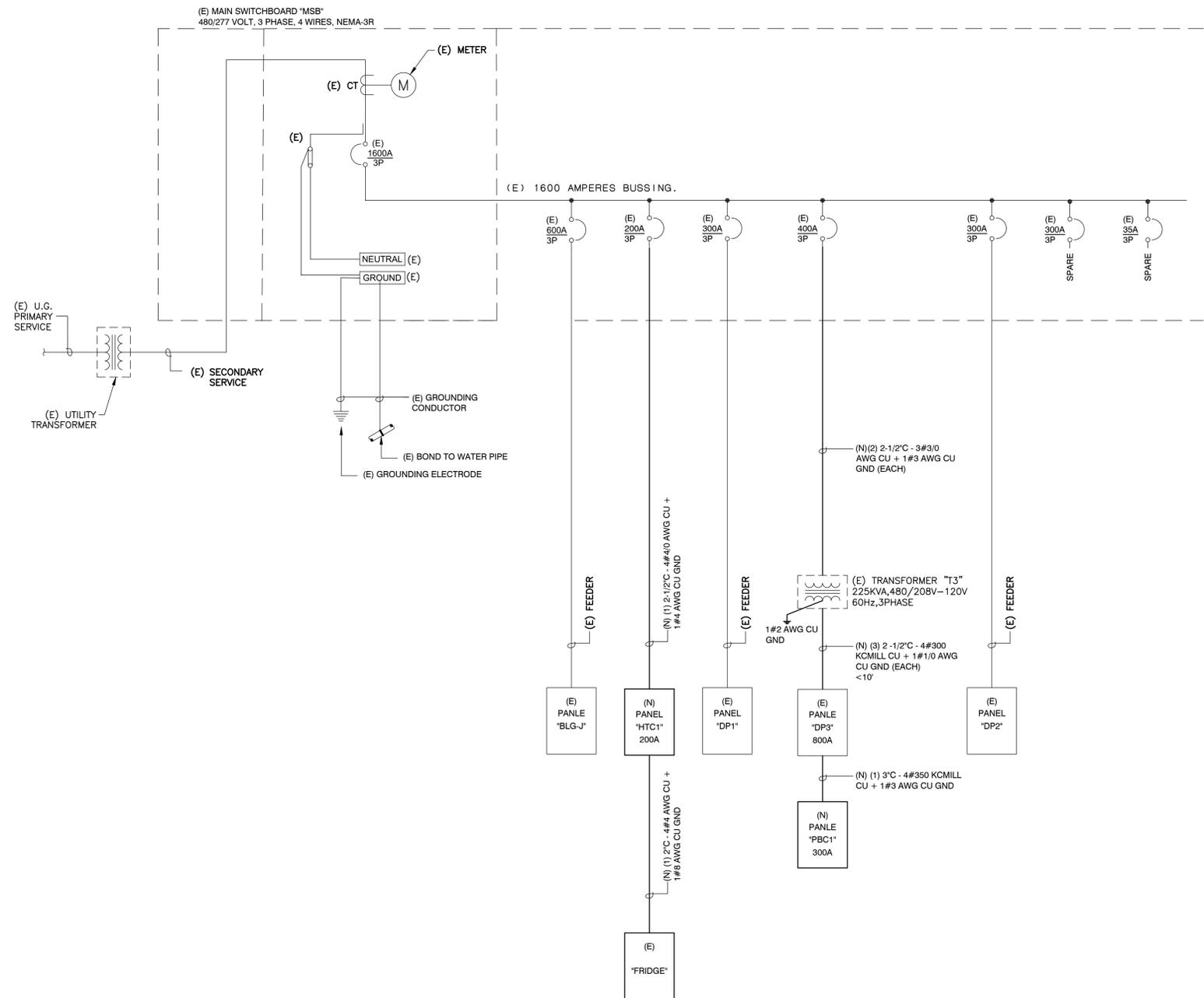
SHEET NO.

**E0.5**





FILENAME: P:\PROJECT FILES\2022 LP PROJECTS\22-2022 WCE TUSD-MERRILL WEST HS TENNIS COURT LP CAD\222022-E5-1 (ONE LINE)DWG - PLOTTED: Friday, November 18, 2022



**GENERAL NOTES**

1. PROVIDE ALL NECESSARY AUXILIARY EQUIPMENT AND ACCESSORIES REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
2. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER, UNLESS SPECIFIED OTHERWISE.
3. FIELD VERIFY ALL EXISTING CONDITIONS, PRIOR TO ANY WORKS, AND REPORT TO ENGINEERS ANY DISCREPANCIES.
4. UNDERGROUND CONDUITS SHALL BE SCH-40 PVC.

DSA

ENGINEER:



WARREN CONSULTING ENGINEERS, INC.  
1117 WINDFIELD WAY, SUITE 110  
EL DORADO HILLS, CA 95762 | (916) 985-1870

ENGINEER:



MEP & FS / Sustainability / CxA  
1000 Pleasant Grove Blvd.  
Roseville, CA 95678  
p 916-771-0778  
www.lpeengineers.com  
job #: xxxxxxx

OWNER:



Tracy Unified School District  
1875 W. Lowell Avenue  
Tracy, CA 95376  
Phone: (209) 830-3200



Merrill F. West  
High School  
Tennis Court  
Repairs  
1775 Lowell Ave.  
Tracy, CA 95376

REVISIONS	
NO.	DESCRIPTION

DRAWN: BS	SCALE: AS NOTED
CHECKED: RZ	PROJECT NO. 22-056
DESIGNED: RN	DATE: 11-11-2022

ISSUANCE:  
**BID SET**

SHEET TITLE:  
**ELECTRICAL ONE LINE DIAGRAM**

SHEET NO.  
**E5.1**

FILENAME: P:\PROJECT FILES\2022 LP PROJECTS\22-2022 WCE TUSD-MERRILL WEST HS TENNIS COURT\LP CAD\222022-E6.1 (SCHEDULE).DWG PLOTTED: Friday, November 18, 2022

**(E) PANEL "DP3"**

120/208 Volt, 3 Phase, 4 Wire  
800 Amp BUS CU.  
800 Amp MCB  
Amp MLO

10 KAIC Rating  
FREE MOUNTED ON PIPE  
NEMA 3R Type

CKT.	BKR	DESCRIPTION	PHASE SUMMARY (WATTS)			DESCRIPTION	BKR	CKT.
			A	B	C			
1	[1] 20/1	CONTAINER (EXTERIOR & INTERIOR) LIGHT	500	600		CONTAINER RECEPTACLE	[1] 20/1	2
3	[1] 20/1	TIME SWITCH				FUTURE LIGHTS	[1] 20/1	4
5	100/2	SPARE				FUTURE LIGHTS	[1] 20/1	6
7	-	SPARE				SPACE	PFB	8
9	100/2	SPARE				SPACE	PFB	10
11	-	SPARE				SPACE	PFB	12
13	100/2	SPARE				SPACE	PFB	14
15	-	SPARE				SPACE	PFB	16
17	100/2	SPARE				SPACE	PFB	18
19	-	SPARE				SPACE	PFB	20
21	100/2	SPARE				SPACE	PFB	22
23	-	SPARE				SPACE	PFB	24
25	100/2	SPARE				SPACE	PFB	26
27	-	SPARE				SPACE	PFB	28
29	100/2	SPARE				SPACE	PFB	30
31	-	SPARE				SPACE	PFB	32
33	100/2	SPARE				SPACE	PFB	34
35	-	SPARE				SPACE	PFB	36
37	100/2	SPARE				SPACE	PFB	38
39	-	SPARE				SPACE	PFB	40
41	PFB	SPACE				SPACE	PFB	42
43	PFB	SPACE				SPACE	PFB	44
45	PFB	SPACE				SPACE	PFB	46
47	PFB	SPACE				SPACE	PFB	48

PHASE TOTALS		
A	B	C
29,122	24,993	24,242

DEMAND LOADS	
LIGHTING / CONTINUOUS LOAD x 125%	5,953 Watts
RECEPTACLES / OTHER x 100%	73,595 Watts
LARGEST MOTOR x 25%	90 Watts
TOTAL DEMAND LOADS	79,638 Watts
TOTAL DEMAND AMPS	221 AMPS

PANEL AND CIRCUIT BREAKER NOTES:  
[1] PROVIDE NEW CIRCUIT BREAKER IN SPACES FOR NEW CIRCUIT.  
PROVIDE THE CORRECT SIZE AS SHOWN. MATCH THE EXISTING A.I.C RATING.

**(N) PANEL "PBC1"**

120/208 Volt, 3 Phase, 4 Wire  
300 Amp BUS CU.  
300 Amp MCB  
Amp MLO

10 KAIC Rating  
SURFACE Mounted  
NEMA 3R Type

CKT.	BKR	DESCRIPTION	PHASE SUMMARY (WATTS)			DESCRIPTION	BKR	CKT.
			A	B	C			
1	20/1	RECEPTACLE	720			WELDING PLUG	60/1	2
3	60/1	WELDING PLUG		6,000		WELDING PLUG	60/1	4
5	60/1	WELDING PLUG		6,000		WELDING PLUG	60/1	6
7	60/1	WELDING PLUG	6,000			WELDING PLUG	60/1	8
9	60/1	WELDING PLUG		6,000		WELDING PLUG	60/1	10
11	60/1	WELDING PLUG		6,000		WELDING PLUG	60/1	12
13	20/1	RECEPTACLE TINNES COURT	360			FUTURE TINNES COURT LIGHTS	20/1	14
15	20/1	RECEPTACLE AGG. AREA		1,080		FUTURE TINNES COURT LIGHTS	20/1	16
17	20/1	RECEPTACLE AGG. AREA		1,080		SPACE	20/1	18
19	20/1	SPARE				SPACE	20/1	20
21	20/1	SPARE				SPACE	20/1	22
23	20/1	SPARE				SPACE	20/1	24
25	20/1	SPARE				SPACE	20/1	26
27	20/1	SPARE				SPACE	20/1	28
29	20/1	SPARE				SPACE	20/1	30
31	PFB	SPACE				SPACE	PFB	32
33	PFB	SPACE				SPACE	PFB	34
35	PFB	SPACE				SPACE	PFB	36
37	PFB	SPACE				SPACE	PFB	38
39	PFB	SPACE				SPACE	PFB	40
41	PFB	SPACE				SPACE	PFB	42

PHASE TOTALS		
A	B	C
21,211	27,211	21,211

DEMAND LOADS	
LIGHTING / CONTINUOUS LOAD x 125%	7,991 Watts
RECEPTACLES / OTHER x 100%	63,240 Watts
LARGEST MOTOR x 25%	1,500 Watts
TOTAL DEMAND LOADS	72,731 Watts
TOTAL DEMAND AMPS	202 AMPS

PANEL AND CIRCUIT BREAKER NOTES:  
[1]  
[2]

**NEW PANEL "HTC1"**

277/480 Volt, 3 Phase, 4 Wire  
200 Amp BUS CU.  
200 Amp MCB  
Amp MLO

10 KAIC Rating  
SURFACE Mounted  
NEMA 3R Type

CKT.	BKR	DESCRIPTION	PHASE SUMMARY (WATTS)			DESCRIPTION	BKR	CKT.
			A	B	C			
1	20/1	TENNIS COURT SPORTS LIGHTS	2,664			TENNIS COURT SPORTS LIGHTS	20/1	2
3	20/1	TENNIS COURT SPORTS LIGHTS		2,131		TENNIS COURT SPORTS LIGHTS	20/1	4
5	20/1	TENNIS COURT SPORTS LIGHTS			2,131	TENNIS COURT SPORTS LIGHTS	20/1	6
7	20/1	TENNIS COURT SPORTS LIGHTS	2,131			TENNIS COURT SPORTS LIGHTS	20/1	8
9	20/1	TENNIS COURT SPORTS LIGHTS		2,131		TENNIS COURT SPORTS LIGHTS	20/1	10
11	20/1	TENNIS COURT SPORTS LIGHTS			2,131	TENNIS COURT SPORTS LIGHTS	20/1	12
13	20/1	LIGHTING AGG. AREA	498			SPACE	20/1	14
15	20/1	SPARE				SPACE	20/1	16
17	20/1	SPARE				SPACE	20/1	18
19	20/1	SPARE				(E) REFRIGERATOR	35/3	20
21	20/1	SPARE						22
23	20/1	SPARE						24

PHASE TOTALS		
A	B	C
17,448	16,815	16,815

DEMAND LOADS	
LIGHTING / CONTINUOUS LOAD x 125%	34,751 Watts
RECEPTACLES / OTHER x 100%	23,277 Watts
LARGEST MOTOR x 25%	1,940 Watts
TOTAL DEMAND LOADS	59,967 Watts
TOTAL DEMAND AMPS	72 AMPS

PANEL AND CIRCUIT BREAKER NOTES:  
[1]  
[2]

DSA

ENGINEER:



ENGINEER:



OWNER:



**Merrill F. West**  
High School  
Tennis Court  
Repairs

1775 Lowell Ave.  
Tracy, CA 95376

REVISIONS	
NO.	DESCRIPTION

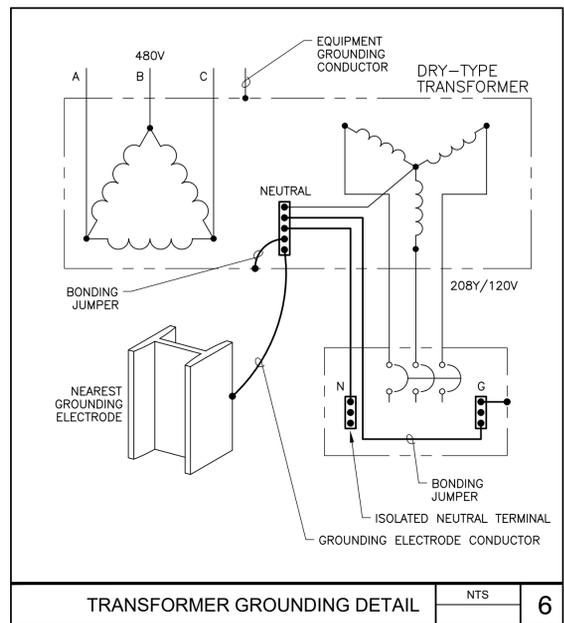
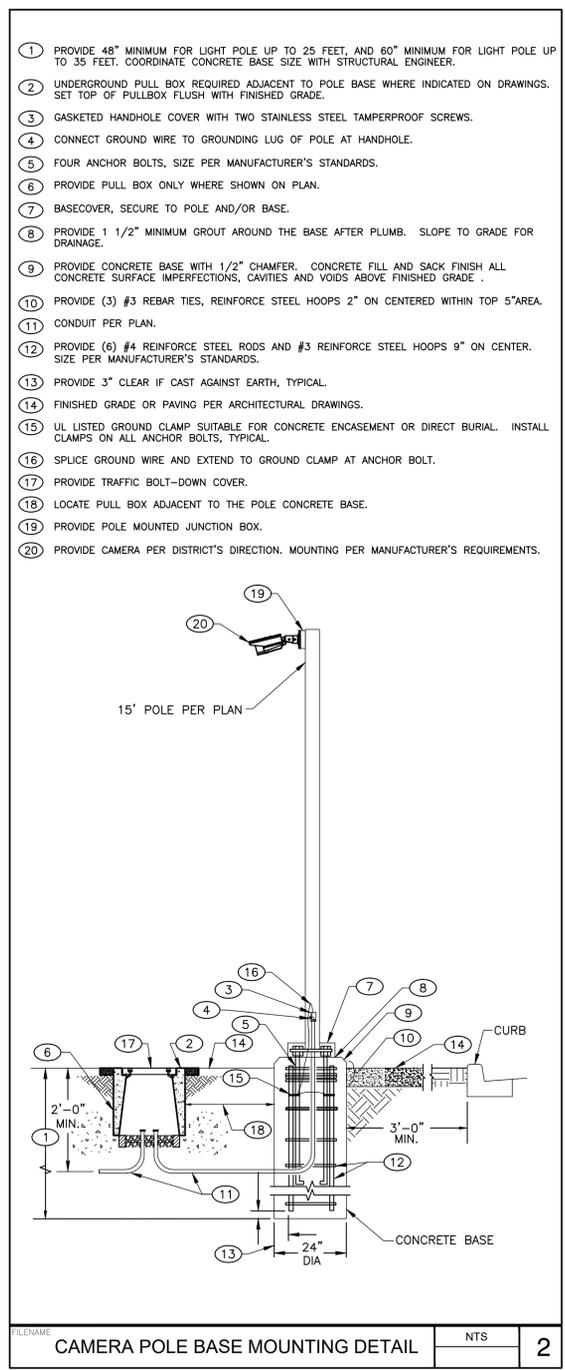
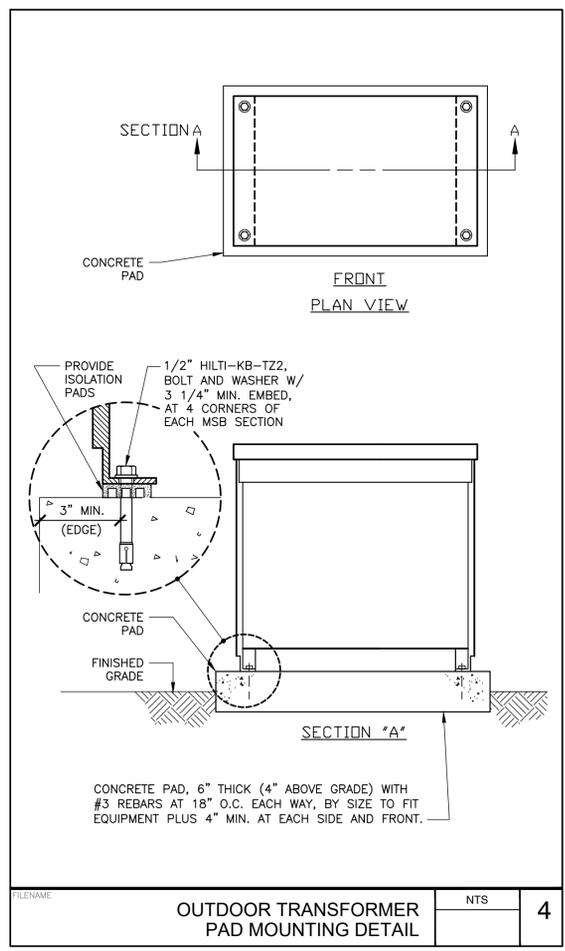
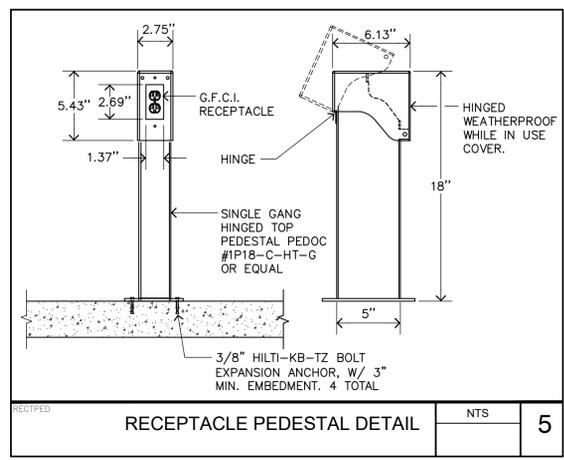
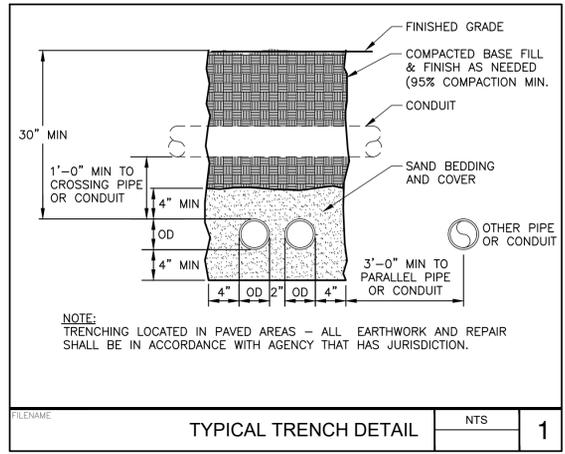
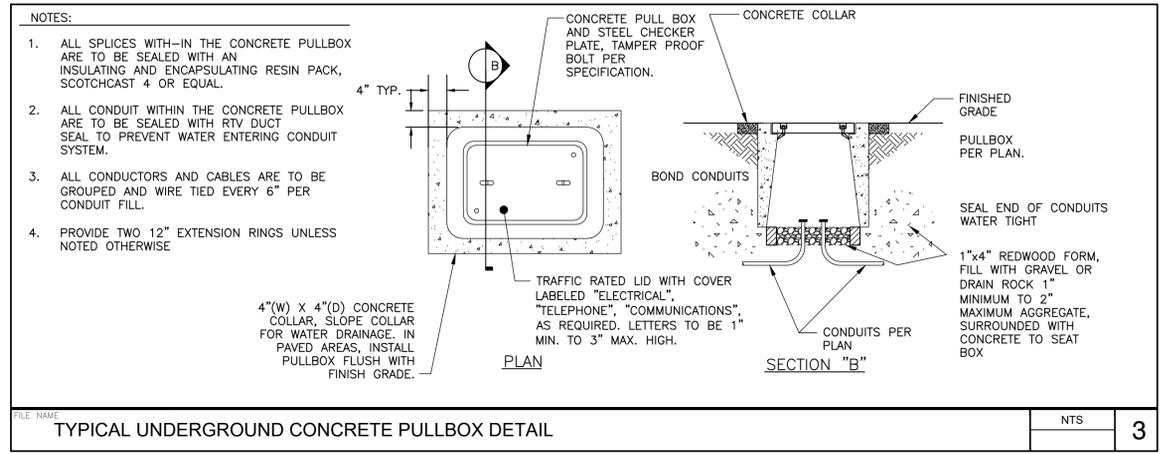
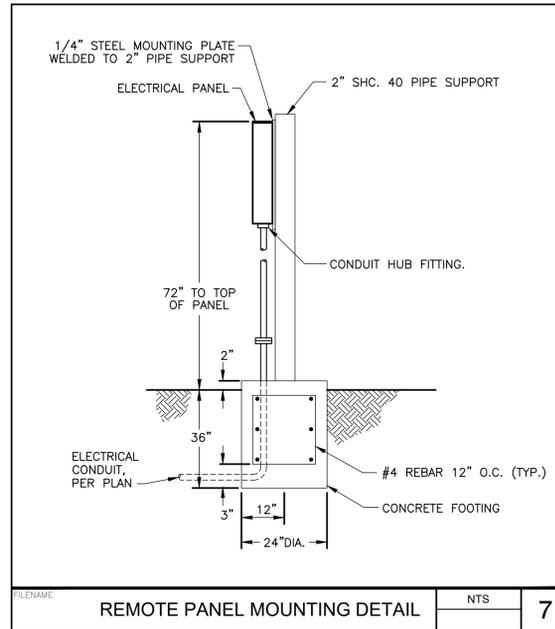
DRAWN: BS	SCALE: AS NOTED
CHECKED: RZ	PROJECT NO. 22-056
DESIGNED: RN	DATE: 11-11-2022

ISSUANCE:

BID SET

SHEET TITLE:  
**ELECTRICAL  
PANEL  
SCHEDULES**

SHEET NO.  
**E6.1**



- PROVIDE 48" MINIMUM FOR LIGHT POLE UP TO 25 FEET, AND 60" MINIMUM FOR LIGHT POLE UP TO 35 FEET. COORDINATE CONCRETE BASE SIZE WITH STRUCTURAL ENGINEER.
- UNDERGROUND PULL BOX REQUIRED ADJACENT TO POLE BASE WHERE INDICATED ON DRAWINGS. SET TOP OF PULLBOX FLUSH WITH FINISHED GRADE.
- GASKETED HANDHOLE COVER WITH TWO STAINLESS STEEL TAMPERPROOF SCREWS.
- CONNECT GROUND WIRE TO GROUNDING LUG OF POLE AT HANDHOLE.
- FOUR ANCHOR BOLTS, SIZE PER MANUFACTURER'S STANDARDS.
- PROVIDE PULL BOX ONLY WHERE SHOWN ON PLAN.
- BASECOVER, SECURE TO POLE AND/OR BASE.
- PROVIDE 1 1/2" MINIMUM GROUT AROUND THE BASE AFTER PLUMB. SLOPE TO GRADE FOR DRAINAGE.
- PROVIDE CONCRETE BASE WITH 1/2" CHAMFER. CONCRETE FILL AND SACK FINISH ALL CONCRETE SURFACE IMPERFECTIONS, CAVITIES AND VOIDS ABOVE FINISHED GRADE.
- PROVIDE (3) #3 REBAR TIES, REINFORCE STEEL HOOPS 2" ON CENTER WITHIN TOP 5" AREA.
- CONDUIT PER PLAN.
- PROVIDE (6) #4 REINFORCE STEEL RODS AND #3 REINFORCE STEEL HOOPS 9" ON CENTER. SIZE PER MANUFACTURER'S STANDARDS.
- PROVIDE 3" CLEAR IF CAST AGAINST EARTH, TYPICAL.
- FINISHED GRADE OR PAVING PER ARCHITECTURAL DRAWINGS.
- UL LISTED GROUND CLAMP SUITABLE FOR CONCRETE ENCASUREMENT OR DIRECT BURIAL. INSTALL CLAMPS ON ALL ANCHOR BOLTS, TYPICAL.
- SPLICE GROUND WIRE AND EXTEND TO GROUND CLAMP AT ANCHOR BOLT.
- PROVIDE TRAFFIC BOLT-DOWN COVER.
- LOCATE PULL BOX ADJACENT TO THE POLE CONCRETE BASE.
- PROVIDE POLE MOUNTED JUNCTION BOX.
- PROVIDE CAMERA PER DISTRICT'S DIRECTION. MOUNTING PER MANUFACTURER'S REQUIREMENTS.

DSA

ENGINEER:

**WCE**

WARREN CONSULTING ENGINEERS, INC.  
1117 WINDFIELD WAY, SUITE 110  
EL DORADO HILLS, CA 95762 | (916) 985-1870

ENGINEER:

**LP** MEP & FS / Sustainability / CxA

1020 Pleasant Grove Blvd.  
Roseville, CA 95678  
p 916-771-0778  
www.lpeengineers.com  
job #: wce022

OWNER:

**TRACY**  
UNIFIED SCHOOL DISTRICT  
Tracy Unified School District  
1875 W. Lowell Avenue  
Tracy, CA 95376  
Phone: (209) 830-3200



Merrill F. West  
High School  
Tennis Court  
Repairs

1775 Lowell Ave.  
Tracy, CA 95376

REVISIONS	
NO.	DESCRIPTION

DRAWN: BS SCALE: AS NOTED

CHECKED: RZ PROJECT NO. 22-056

DESIGNED: RN DATE: 11-11-2022

ISSUANCE:

**BID SET**

SHEET TITLE:

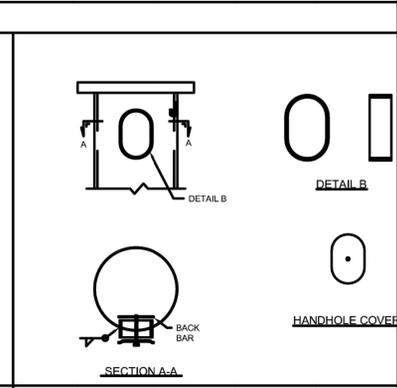
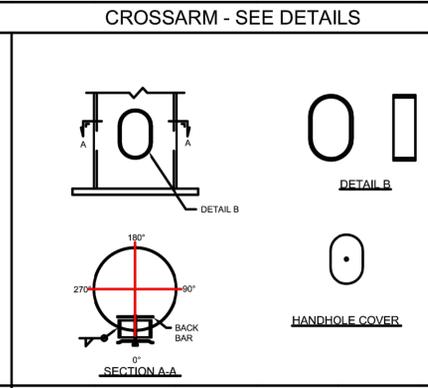
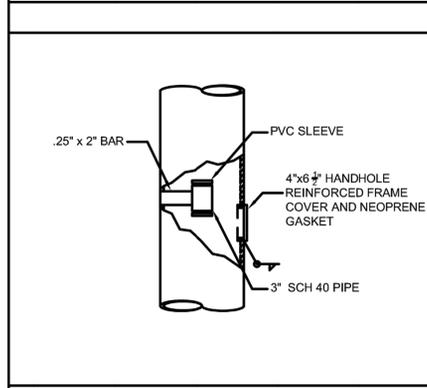
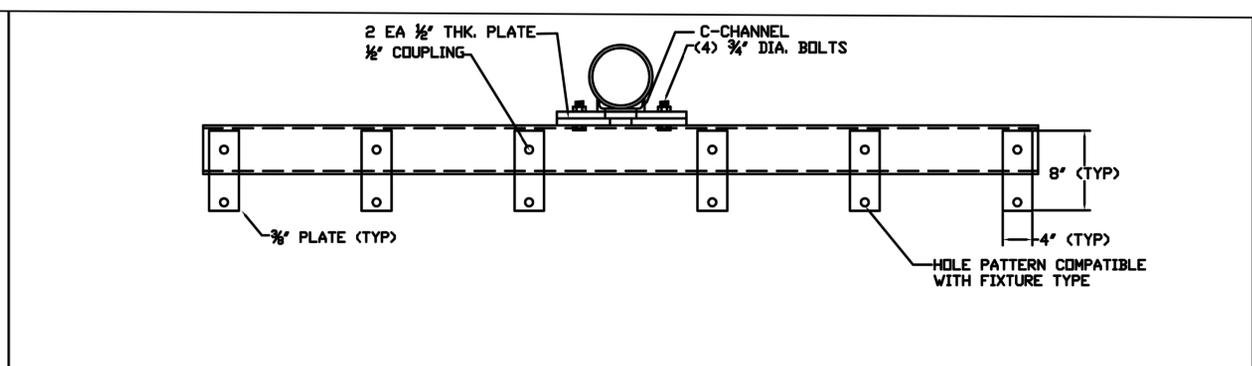
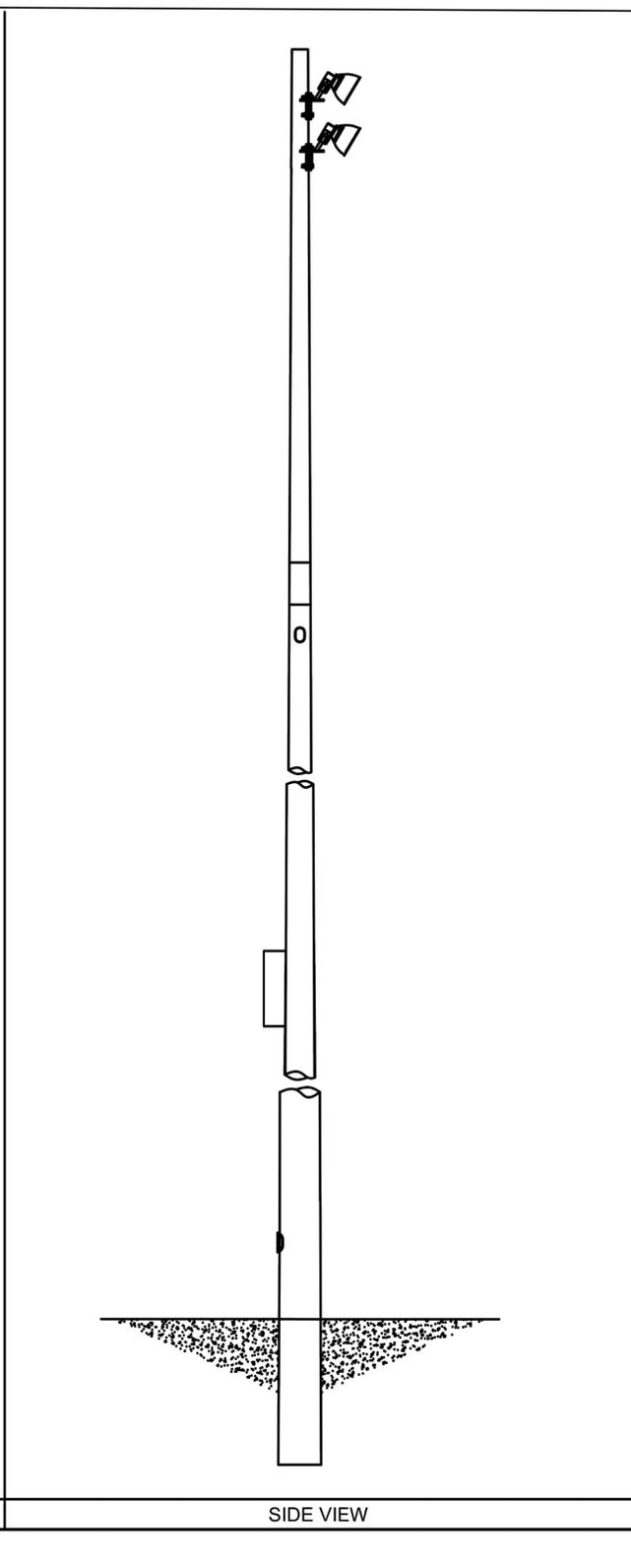
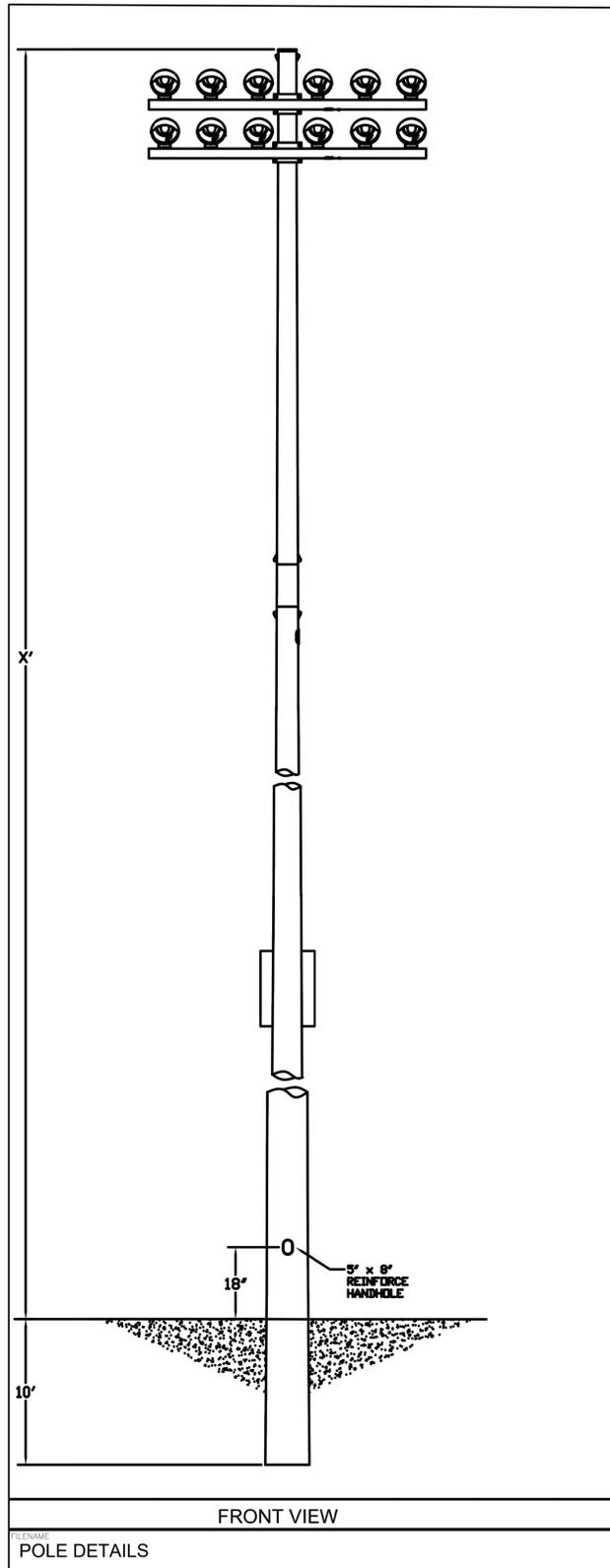
**ELECTRICAL DETAIL**

SHEET NO.

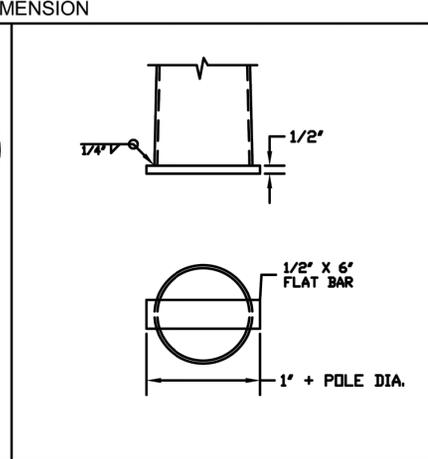
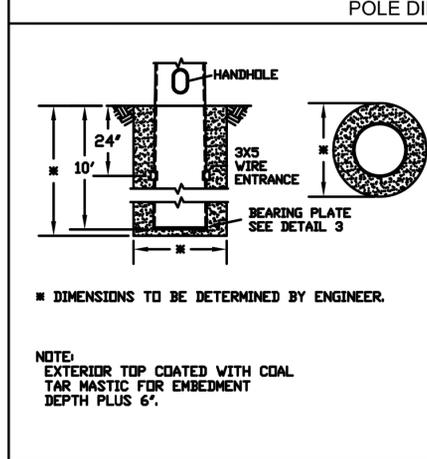
**E7.1**

FILENAME: P:\PROJECT FILES\2022\LP PROJECTS\22-2022 WCE TUSD-MERRILL WEST HS TENNIS COURT\LP CAD\222022-E7.1 (DETAILS).DWG - PLOTTED: Friday, November 18, 2022

FILENAME: P:\PROJECT FILES\2022 LP PROJECTS\22-2022 WCE TUSD-MERRILL WEST HS TENNIS COURT\LP CAD\222022-E7.2 (DETAILS).DWG PLOTTED: Friday, November 18, 2022



	BASE OD (in)	TOP OD (in)	WALL THC	LENGHT (ft)	WEIGHT (lbs)
TOP	X	X	.188	X	X
BOTTOM	X	X	.188	X	X



COMPONENT	SPECIFICATION
POLE TOP	ASTM A572 GR. 65
POLE BOTTOM	ASTM A572 GR. 65
MISC. STEEL	ASTM A36

GENERAL NOTES:  
 1. ALL HARDWARE TO BE GALVANIZED TO ASTM A153.  
 2. POLE ASSEMBLY TO BE GALVANIZED TO ASTM A123.  
 3. ALL WELDING TO CONFORM TO AWS D1.1 MOST RECENT EDITION.  
 4. DESIGN INCORPORATE GUST FACTOR PER REF CODE.  
 5. REFER TO GENERAL INSTALLATION INSTRUCTIONS PRIOR TO ASSEMBLY.

FINISH:	WIND SPEED:	DESIGN CRITERIA
<input checked="" type="checkbox"/> GALVANIZED	<input type="checkbox"/> 80 MPH <input type="checkbox"/> 110 MPH	<input type="checkbox"/> AASHTO LTS3 <input type="checkbox"/>
<input type="checkbox"/> PAINTED	<input type="checkbox"/> 90 MPH <input type="checkbox"/> 120 MPH	<input checked="" type="checkbox"/> AASHTO LTS 6 <input type="checkbox"/>
<input type="checkbox"/> PAINTED & GALV	<input type="checkbox"/> 100 MPH <input type="checkbox"/> 130 MPH	<input type="checkbox"/> IBC <input type="checkbox"/>

NTS	1
-----	---

DSR

ENGINEER:  

 WARREN CONSULTING ENGINEERS, INC.  
 1117 WINDFIELD WAY, SUITE 110  
 EL DORADO HILLS, CA 95762 | (916) 985-1870

ENGINEER:  

 MEP & FS / Sustainability / C&A  
 1208 Pleasant Grove Blvd.  
 Roseville, CA 95678  
 p 916-771-0778  
 www.lpeengineers.com  
 Job #: xxxxxxx

OWNER:  

 Tracy Unified School District  
 1875 W. Lowell Avenue  
 Tracy, CA 95376  
 Phone: (209) 830-3200

Merrill F. West  
 High School  
 Tennis Court  
 Repairs  
 1775 Lowell Ave.  
 Tracy, CA 95376

REVISIONS	
NO.	DESCRIPTION

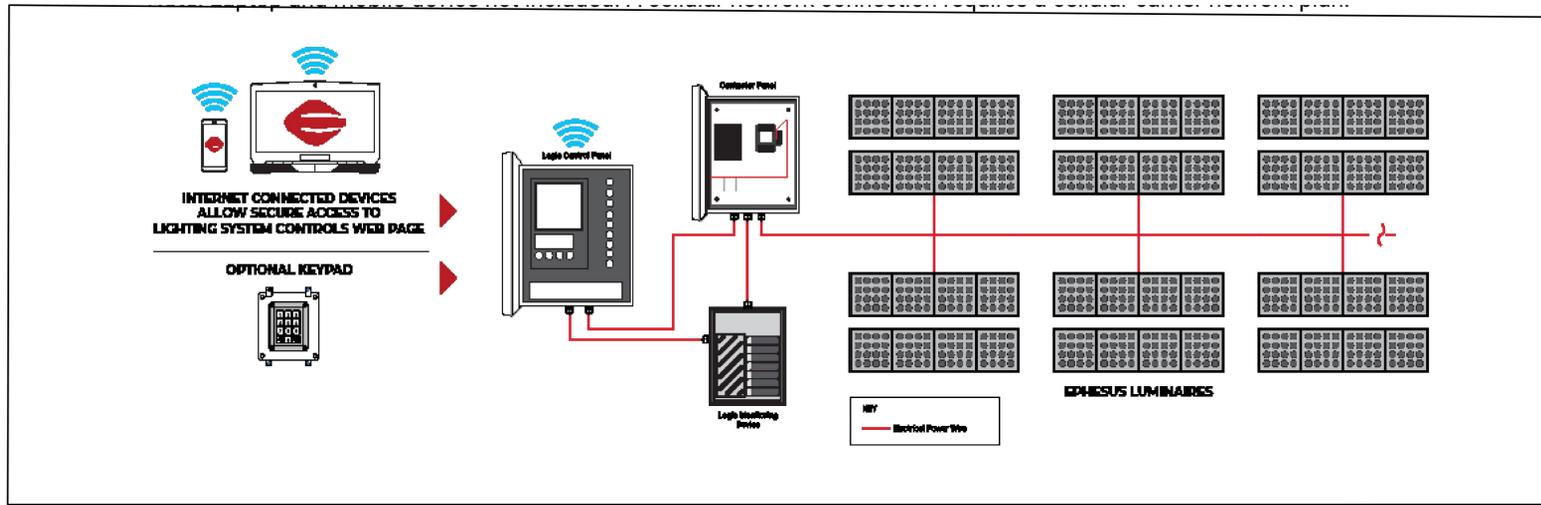
DRAWN: BS	SCALE: AS NOTED
CHECKED: RZ	PROJECT NO. 22-056
DESIGNED: RN	DATE: 11-11-2022

ISSUANCE: **BID SET**

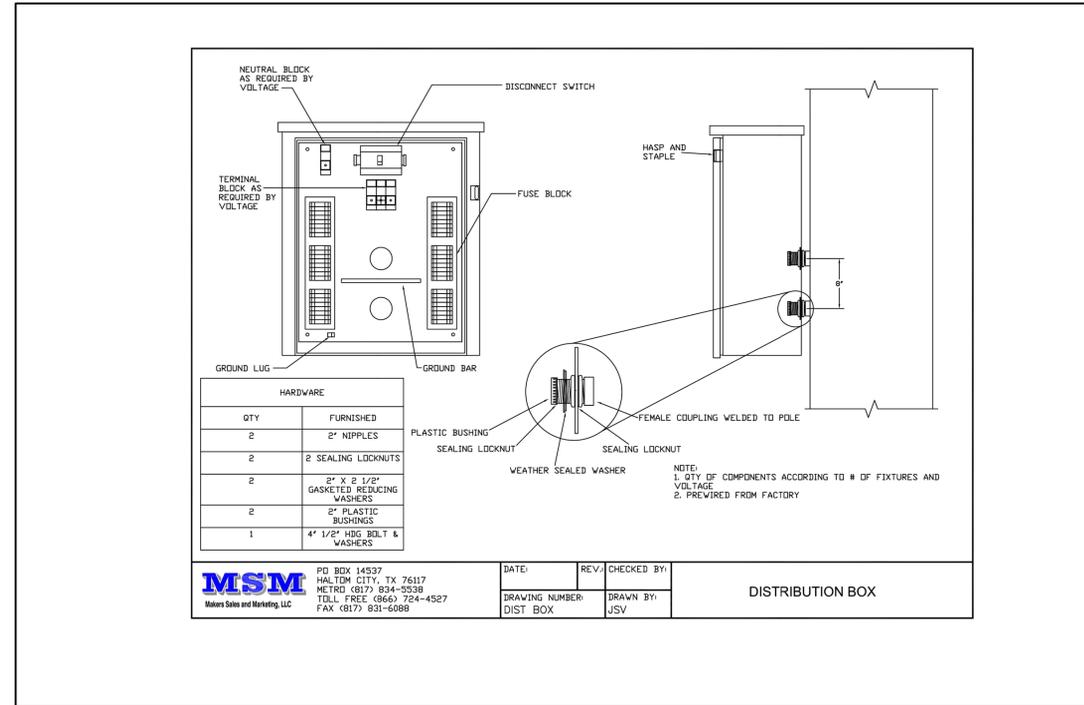
SHEET TITLE: **ELECTRICAL DETAIL**

SHEET NO. **E7.2**

FILENAME: P:\PROJECT FILES\2022 LP PROJECTS\22-2022 WCE TUSD-MERRILL WEST HS TENNIS COURT LP CAD\222022-E7.3 (DETAILS).DWG PLOTTED: Friday, November 18, 2022



FILENAME: CONTROLS PROTOCOL: CONTACTOR CONTROLS  
 NTS 1



FILENAME: DISTRIBUTION BOX  
 NTS 2

DSA

ENGINEER:  
**WCE**  
 WARREN CONSULTING ENGINEERS, INC.  
 1117 WINDFIELD WAY, SUITE 110  
 EL DORADO HILLS, CA 95762 | (916) 985-1870

ENGINEER:  
**LP** MEP & FS / Sustainability / CxA  
 1000 Pleasant Grove Blvd.  
 Roseville, CA 95678  
 p 916-771-0778  
 www.lpeengineers.com  
 Job #: xxxxxxx

OWNER:  
**TRACY**  
 UNIFIED SCHOOL DISTRICT  
 Tracy Unified School District  
 1875 W. Lowell Avenue  
 Tracy, CA 95376  
 Phone: (209) 830-3200



Merrill F. West  
 High School  
 Tennis Court  
 Repairs  
 1775 Lowell Ave.  
 Tracy, CA 95376

REVISIONS	
NO.	DESCRIPTION

DRAWN: BS	SCALE: AS NOTED
CHECKED: RZ	PROJECT NO. 22-056
DESIGNED: RN	DATE: 11-11-2022

ISSUANCE:  
**BID SET**  
 SHEET TITLE:  
**ELECTRICAL  
 DETAIL**  
 SHEET NO.  
**E7.3**