Merritt College Landscape Horticulture Complex N&T Project #22003	
ADDENDUM #01	Date: 8/17/2022

NOLL & TAM ARCHITECTS

General: *The following instructions, substitutions, alterations, changes, clarifications, additions, and/or deletions are hereby made a part of the Contract Documents and modify the original Documents dated March 03, 2022. The changes documented in this addendum have precedence over all previous contract documents and shall be taken into consideration in preparation of your bid. It is the responsibility of all bidders to notify all subcontractors of all changes contained in this addendum. All other conditions shall remain the same.*

All bidders shall acknowledge receipt and acceptance of this addendum on the bid form.

Documents Issued / Attachments:

Item	Reference	Description
1	S1.01	Addition of requirement to provide Class C concrete fill at the bottom of all footings.
2	13 34 13, E2.32, E5.01	Completed description of Additive Alternate 2: Additional Greenhouse Equipment.
3	09 30 00	Reconciliation of specifications and drawings regarding interior and exterior tile patterns. All tile to use stacked bond pattern.
4	C2.1, C3.1, C3.2	Clarification of retaining wall type at northwest of site, near Wheelbarrow Enclosure. Retaining wall to be soldier pile piers with lagging, detailed on S4.03.
5	08 80 00	Clarification of Glazing types and thicknesses to be used at Sectional Doors.
6	09 90 00	Clarification of ceiling panel type to receive flat paint finish.
7	10 14 00	Clarification of material to be used for recycled rubber bulletin boards.
8	T2.01, T4.01	Clarification of select conduit number, size and spacing and to pathway diagram
9	E2.51	Clarification of Sheet Note #6
10	L8.00, L8.01, L8.02	Quantities of bulbs clarified, and planting quantities updated to conform to clarified plant spacing.
11	L2.00, L7.00	Mineral mulch at bioretention areas clarified and replacement product for mineral mulch elsewhere identified in lieu of unavailable product.

GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE 2019 CALIFORNIA BUILDING CODE AND THE SPECIFICATIONS.
2. THESE NOTES SHALL APPLY TO ALL STRUCTURAL DRAWINGS UNLESS OTHERWISE NOTED OR SHOWN.
3. FEATURES OF CONSTRUCTION SHOWN ARE TYPICAL AND SHALL APPLY GENERALLY THROUGHOUT SIMILAR CONDITIONS. ALL DETAILS REFERENCED, AND DETAILS NOT REFERENCED ON PLANS, SHALL BE CONSIDERED TYPICAL AND APPLY TO ALL SIMILAR CONDITIONS OF THE CONSTRUCTION.
4. UNLESS SHOWN OTHERWISE, DETAILS SHOWN ON "TYPICAL DETAIL" SHEETS SHALL BE USED WHEREVER APPLICABLE. SPECIFIC DETAILS ON THE STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER "TYPICAL DETAILS". SPECIFIC NOTES ON STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER NOTES SHOWN IN "GENERAL NOTES".
5. THE STRUCTURAL DRAWINGS SHOW STRUCTURAL FEATURES. EXACT CONFIGURATION OF INTERIOR PARTITION WALLS IS SHOWN ON ARCHITECTURAL DRAWINGS AND IS NOT NECESSARILY ALL SHOWN ON THE STRUCTURAL DRAWINGS. PROVIDE ANCHORAGE, INSERTS, ANCHOR BOLTS, ETC. FOR STRUCTURAL CONNECTIONS OF TOP, SIDES AND BOTTOM OF ALL PARTITION WALLS AS LOCATED ON THE ARCHITECTURAL DRAWINGS.
6. REFER TO THE ARCHITECTURAL DRAWINGS AND THE SPECIFICATIONS FOR THE FOLLOWING: FLOOR FINISHES; DEPRESSIONS AND CURBS ON FLOORS; OPENINGS REQUIRED FOR WINDOWS, DOORS, DUCTS, VENTS, PLUMBING, ETC.; FLASHING, INSERTS, ANCHORAGES, HANGERS ETC., EMBEDDED IN OR ATTACHED TO THE STRUCTURE; ROADWAY, WALKS, PAVING, STAIRS, RAMPS, TERRACES, EXTERIOR GRADES, ELEVATIONS OF ROOF SURFACE AND LOCATIONS OF DRAINS AND PARTITION WALLS.
7. THE CONTRACTOR SHALL COMPARE THE STRUCTURAL DRAWINGS WITH ARCHITECTURAL, PLUMBING, MECHANICAL, CIVIL, AND ELECTRICAL DRAWINGS AS TO ALL LAYOUTS, DIMENSIONS AND ELEVATIONS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT FOR PROPER ADJUSTMENT BEFORE PROCEEDING WITH THE WORK.
8. IN THE EVENT THAT CERTAIN FEATURES OF THE CONSTRUCTION ARE NOT FULLY SHOWN ON THE DRAWINGS OR CALLED FOR IN THE GENERAL NOTES OR SPECIFICATIONS, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SHOWN FOR SIMILAR CONDITIONS.
9. BEAMS, JOISTS AND ANY OTHER STRUCTURAL ELEMENTS SHALL NOT BE CUT OR PENETRATED, EXCEPT AS SHOWN IN STRUCTURAL DETAILS OR AS APPROVED BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.
10. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN FIELD PRIOR TO POURING CONCRETE; ANY DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
11. FEATURES OF EXISTING CONSTRUCTION SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD AND DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS, METHODS, TECHNIQUES AND SEQUENCES OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PROGRAMS AND PROCEDURES DURING CONSTRUCTION.
13. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ADEQUATELY SHORE AND BRACE BUILDING AS REQUIRED DURING CONSTRUCTION.
14. THE CONTRACTOR SHALL FOLLOW ALL INSTRUCTIONS, RECOMMENDATIONS AND SAFETY PRECAUTIONS PROVIDED BY THE MANUFACTURER OR SUPPLIER OF ANY MATERIAL OR PRODUCT NOTED IN GENERAL NOTES OR DRAWINGS.
15. SEE ARCHITECTURAL DRAWINGS FOR DETAILS ON REQUIRED VENTILATION OF ROOF JOISTS, FLOOR JOISTS, AND ATTIC SPACES.
16. GRADES SHOWN ON STRUCTURAL DRAWINGS ARE APPROXIMATE AND FOR GENERAL REFERENCE ONLY.
17. MECHANICAL UNIT LOCATIONS SHOWN ON STRUCTURAL DRAWINGS ARE SCHEMATIC ONLY. GENERAL CONTRACTOR TO COORDINATE STRUCTURAL TRADES WITH MECHANICAL CONTRACTOR TO DETERMINE EXACT LOCATION OF UNITS AND SUPPORTING STRUCTURE.
18. DO NOT SCALE DRAWINGS.

DESIGN CRITERIA

1. VERTICAL LOADS:
   - A. DEAD LOADS:

i. ROOF DEAD LOAD:	PER LOADING DIAGRAM (INCLUDES 5 PSF FOR WEIGHT OF SOLAR PANELS AND SUPPORTS OVER ENTIRE ROOF.)

   - B. LIVE LOADS:

i. ROOF LIVE LOAD:	PER LOADING DIAGRAM
C. SPRINKLER DESIGN LOADS:	250LBS + WEIGHT OF WATER FILLED PIPE

2. LATERAL LOADS:
   - A. WIND DESIGN LOADS – PER CBC SECTION 1609A:

BASIC WIND SPEED	95 MPH
EXPOSURE CATEGORY	C
INTERNAL PRESSURE COEFFICIENT	+/- 0.18
EXTERIOR COMPONENTS & CLADDING PRESSURE	43 PSF FOR ROOF (STRENGTH) 25 PSF FOR WALLS (STRENGTH)

   - B. SEISMIC DESIGN – PER CBC SECTION 1613A:

RISK CATEGORY	II
SEISMIC DESIGN CATEGORY	E
SITE CLASS	C
MAPPED SHORT PERIOD ACCELERATION	Ss = 2.48 g
SITE COEFFICIENT	Fa = 1.2
DESIGN SHORT PERIOD ACCELERATION	SDS = 1.59 g
MAPPED ONE SECOND PERIOD ACCELERATION	S1 = 0.95 g
SITE COEFFICIENT	Fv = 1.4
DESIGN ONE SECOND ACCELERATION	SD1 = 0.71 g
IMPORTANCE FACTOR	I = 1.0
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE

WORKSHOP/STORAGE BUILDING:

FUNDAMENTAL PERIOD	T = 0.200 SECONDS
BASIC LATERAL FORCE RESISTING SYSTEMS – LIGHT-FRAMED WALLS W/ WOOD STRUCTURAL PANELS STEEL SPECIAL CANTILEVER COLUMNS	
RESPONSE MODIFICATION FACTOR	R = 6.5, 2.5 (RESPECTIVELY)
SEISMIC RESPONSE COEFFICIENT, (SDS*I/R)	Cs = 0.25, 0.64 (RESPECTIVELY)
BASE SHEAR, V= Cs * W = (0.25)*W, (0.64)*W AT STRENGTH LEVEL (RESPECTIVELY)	
MAX BUILDING DRIFT	2.96"
HORIZONTAL STRUCTURAL IRREGULARITY	TYPE 2 - REENTRANT CORNER

HEAD HOUSE BUILDING:

FUNDAMENTAL PERIOD	T = 0.186 SECONDS
BASIC LATERAL FORCE RESISTING SYSTEMS – LIGHT-FRAMED WALLS W/ WOOD STRUCTURAL PANELS	
RESPONSE MODIFICATION FACTOR	R = 6.5
SEISMIC RESPONSE COEFFICIENT, (SDS*I/R)	Cs = 0.25
BASE SHEAR, V= Cs * W = (0.25)*W AT STRENGTH LEVEL	
MAX BUILDING DRIFT	4.56"

CLASS LAB 3 BUILDING:

FUNDAMENTAL PERIOD	T = 0.193 SECONDS
BASIC LATERAL FORCE RESISTING SYSTEMS – LIGHT-FRAMED WALLS W/ WOOD STRUCTURAL PANELS	
RESPONSE MODIFICATION FACTOR	R = 6.5
SEISMIC RESPONSE COEFFICIENT, (SDS*I/R)	Cs = 0.25
BASE SHEAR, V= Cs * W = (0.25)*W AT STRENGTH LEVEL	
MAX BUILDING DRIFT	2.48"

CLASS LAB 2 BUILDING:

FUNDAMENTAL PERIOD	T = 0.193 SECONDS
BASIC LATERAL FORCE RESISTING SYSTEMS – LIGHT-FRAMED WALLS W/ WOOD STRUCTURAL PANELS	
RESPONSE MODIFICATION FACTOR	R = 6.5
SEISMIC RESPONSE COEFFICIENT, (SDS*I/R)	Cs = 0.25
BASE SHEAR, V= Cs * W = (0.25)*W AT STRENGTH LEVEL	
MAX BUILDING DRIFT	2.84"

CLASS LAB 1 & STUDENT/FACULTY BUILDINGS:

FUNDAMENTAL PERIOD	T = 0.193 SECONDS
BASIC LATERAL FORCE RESISTING SYSTEMS – LIGHT-FRAMED WALLS W/ WOOD STRUCTURAL PANELS	
RESPONSE MODIFICATION FACTOR	R = 6.5
SEISMIC RESPONSE COEFFICIENT, (SDS*I/R)	Cs = 0.25
BASE SHEAR, V= Cs * W = (0.25)*W AT STRENGTH LEVEL	
MAX BUILDING DRIFT	3.56"
HORIZONTAL STRUCTURAL IRREGULARITY	TYPE 2 - REENTRANT CORNER

3. ALLOWABLE SOIL PRESSURES:

DEAD LOAD	2,500	PSF
DEAD + LIVE LOADS	3,000	PSF
DEAD + LIVE + LATERAL LOADS	4,000	PSF

FOUNDATION NOTES

1. THE SOIL REPORT APPLICABLE TO THIS PROJECT SITE IS BY TERRAPHASE ENGINEERING INC. (PROJECT NUMBER 0034.011.0001, REPORT DATED AUGUST 7, 2020) AND IS AVAILABLE FOR REVIEW AT THE ARCHITECT'S OFFICE. THE CONTRACTOR SHALL READ THE SOIL REPORT PREPARED FOR THIS PROJECT SITE AND SHALL BE RESPONSIBLE FOR PERFORMING ALL WORK DESCRIBED THEREIN. FOOTINGS SHALL BEAR ON UNDISTURBED NATURAL SOIL, OVER-EXCAVATED AND RECOMPACTED NATIVE SOIL, OR ENGINEERED FILL PER GEOTECHNICAL REPORT.
2. FOR BIDDING PURPOSES, THE ELEVATION OF THE BOTTOM OF FOOTINGS SHALL BE AS INDICATED ON THE FOUNDATION PLANS AND ON DETAILS. THESE FOOTING DEPTHS ARE MINIMUM AND SHALL IN NO CASE BE LESS THAN 24 INCHES. SLOPE BOTTOM OF FOOTINGS AT 1:10 MAXIMUM SLOPE AS REQUIRED TO SUIT GRADING AND ADJACENT FOOTING CONDITIONS. STEP BOTTOM OF FOOTINGS PER TYPICAL DETAIL FOR GREATER INCLINATIONS.
3. SOIL BEARING PRESSURES UNDER FOOTINGS AS DESIGNED DO NOT EXCEED ALLOWABLE SOIL PRESSURES DEFINED IN DESIGN CRITERIA ABOVE.
4. WHERE FOUNDATION WALL BACKFILL IS NECESSARY, THE BACKFILL SHALL BE PLACED SIMULTANEOUSLY ON EACH SIDE OF WALL, AND THE LEVEL ON ONE SIDE SHALL NOT EXCEED THE OTHER SIDE BY MORE THAN 6 INCHES DURING THIS OPERATION.
5. FOOTINGS SHALL BE CENTERED UNDER BEARING WALLS ABOVE UNLESS OTHERWISE NOTED.
6. SEE ARCHITECTURAL, PLUMBING, MECHANICAL, ELECTRICAL AND ANY OTHER INCLUDED DRAWINGS, AND CONSULT WITH THE RESPECTIVE TRADES FOR VERIFICATION OF ALL ITEMS SHOWN OR NOT SHOWN ON STRUCTURAL PLANS PRIOR TO POURING CONCRETE FOOTINGS AND FLOOR SLABS. PIPES OR ELECTRICAL CONDUITS SHALL NOT ROUTE UNDER FOOTINGS WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER. IN ALL CASES, PIPES AND CONDUITS SHALL BE EMBEDDED IN TRENCHES FILLED WITH LEAN CONCRETE AND SPACED A MINIMUM 3 DIAMETERS BETWEEN EACH PIPE OR CONDUIT BASED ON THE LARGEST DIAMETER.
7. VERIFY LOCATIONS FOR OPENINGS OR PENETRATIONS THROUGH CONCRETE, CONCRETE CURBS, FLOOR DEPRESSIONS, FLOOR SLOPES AND DRAINS, INSERTS, ETC.
8. OVEREXCAVATE FOOTING DEPTHS BY 2 INCH MINIMUM AND PROVIDE CLASS C CONCRETE FILL AT THE BOTTOM OF ALL FOOTINGS.

FOUNDATION NOTES - SOLDIER PILE SITE RETAINING WALLS

1. THE FOUNDATION SYSTEM FOR THE SITE RETAINING WALL IS A SOLDIER PILE AND DRILLED PIER SYSTEM.
2. FOR BIDDING PURPOSES, THE DEPTH OF DRILLED PIERS SHALL BE AS SHOWN ON THE DRAWINGS. THESE PIER DEPTHS ARE MINIMUM AND SHALL BE VERIFIED BY THE GEOTECHNICAL ENGINEER IN THE FIELD. IN NO CASE SHALL PIER DEPTHS BE LESS THAN 4'-0".
3. DESIGN PASSIVE PRESSURE IS 130 PCF OVER 2 PIER DIAMETERS WHERE PIERS ARE MORE THAN 2x PIER DIAMETER APART AND OVER 3 PIER DIAMETERS WHERE PIERS ARE MORE THAN 3x PIER DIAMETER APART.
4. MAINTAIN PROPER ALIGNMENT OF STEEL SOLDIER PIES WTHIN 1/2 INCH IN 10 FEET VERTICALLY.

CONCRETE NOTES

1. ALL CONCRETE SHALL BE REINFORCED UNLESS NOTED "NOT REINFORCED".
2. SEE THE CALIFORNIA BUILDING CODE AND THE SPECIFICATIONS FOR THE REQUIREMENTS IN THE PRODUCTION, TESTING AND INSTALLATION OF CONCRETE.
3. SEE ARCHITECTURAL DRAWINGS FOR THE LOCATION AND EXTENT OF EXTERIOR WALKS AND PAVEMENTS AND FOR REINFORCEMENT REQUIREMENTS.
4. REINFORCEMENT SHALL BE PER ASTM A615, GRADE 60 (UNLESS NOTED OTHERWISE IN DRAWINGS) WITH BAR MARKS LEGIBLY ROLLED INTO THE SURFACE INDICATING SIZE, TYPE OF STEEL, AND YIELD STRENGTH DESIGNATION.
5. REINFORCEMENT FOR WELDING SHALL BE PER ASTM A706, GRADE 60 WITH BAR MARKS LEGIBLY ROLLED INTO THE SURFACE INDICATING SIZE, TYPE OF STEEL, AND YIELD STRENGTH DESIGNATION.
6. CONCRETE SHALL CONFORM TO THE FOLLOWING CLASSES:

CONCRETE CLASS	USE	28 DAY STRENGTH (PSI)	MAX AGGREGATE SIZE (IN)	CONCRETE WEIGHT (PCF)	MAX W/C RATIO %	MIN/MAX FLYASH %
A	FOUNDATIONS	4000	1	145	0.50	30/50
B	WALLS (CIP)	4000	1	145	0.50	30/50
C	LEAN FILL	1000	3/4	145	0.60	25/50
D	SLABS-ON-GRADE	4000	3/4	145	0.43	15/25

7. PORTLAND CEMENT SHALL BE PROPORTIONED IN ACCORDANCE WITH ASTM C94, TYPE I OR II.
8. PROVIDE 15 MIL VAPOR BARRIER CONFORMING TO ASTM E 1745 CLASS A UNDER ALL SLABS ON GRADE, UNLESS NOTED OTHERWISE IN DRAWINGS.
9. REPLACE CEMENT CONTENT WITH FLYASH CONFORMING TO ASTM C618 CLASS C OR F, OR GROUND GRANULATED BLAST FURNACE SLAG CONFORMING TO ASTM 989, CLASS 100 OR 120, PER TABLE ABOVE.
10. REINFORCEMENT, ANCHOR BOLTS, PIPE SLEEVES, AND OTHER INSERTS SHALL BE POSITIVELY SECURED IN PLACE BEFORE CONCRETE IS POURED. "WET-SETTING" WILL NOT BE ALLOWED.
11. REINFORCING BARS WELDED TO STRUCTURAL STEEL SHALL BE SUPPLIED BY REINFORCING BAR SUB-CONTRACTOR AND ALL WELDING SHALL BE DONE BY STRUCTURAL STEEL SUB-CONTRACTOR.
12. BAR COVERAGE TO FACE OF BAR, EXCEPT AS OTHERWISE SHOWN, SHALL BE:

3"	WHERE CONCRETE IS POURED AGAINST EARTH OR AGAINST GROUND CONTACT
2"	FOR BARS LARGER THAN #5, WHERE CONCRETE SURFACES ARE EXPOSED TO EARTH OR TO WEATHER AFTER REMOVAL OF FORMS.
1-1/2"	FOR #5 BARS OR SMALLER, WHERE CONCRETE SURFACES ARE EXPOSED TO EARTH OR TO WEATHER AFTER REMOVAL OF FORMS
1-1/2"	FOR COLUMN SPIRAL TIES*
1"	FOR WALL BARS (DOUBLE MAT)*
3/4"	FOR STRUCTURAL SLAB BARS, TOP AND BOTTOM*

*UNLESS GOVERNED ABOVE BY EXPOSURE OR NOTED ON DETAILS

13. INTERIOR SLAB ON GROUND SHALL BE REINFORCED AS SHOWN ON STRUCTURAL PLANS. LOCATIONS OF CONSTRUCTION JOINTS OTHER THAN SHOWN ON DRAWINGS MUST BE APPROVED BY THE ARCHITECT.
14. ALL CONCRETE CURBS ARE 6 INCHES HIGH UNLESS OTHERWISE NOTED.
15. HOLES FOR GROUTED ANCHORS SHALL BE DRILLED WITH ROTARY HAMMER OR OTHER SUITABLE METHODS TO ENSURE EXISTING REINFORCEMENT IS NOT DAMAGED. HOLE DIAMETER SHALL BE 1/8" GREATER THAN ANCHOR ROD DIAMETER, UNLESS OTHERWISE NOTED. GROUT SHALL BE NON-SHRINK EPOXY. LOCATE EXISTING REINFORCING BARS PRIOR TO DRILLING HOLES. DO NOT DAMAGE EXISTING REINFORCING. METHOD OF LOCATING EXISTING REINFORCING BARS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. ALL MIS-DRILLED OR UNACCEPTABLE HOLES SHALL BE GROUTED SOLID.
16. TERMINATION OF REINFORCEMENT:
    - A. TERMINATE ALL BARS IN LAPS, 90 DEGREE BENDS, OR DOWELS INTO FOOTINGS OR PERPENDICULAR WALLS OR COLUMNS.
    - B. BEND TOP FOOTING BARS DOWN TO BOTTOM REINFORCING.
    - C. BEND BOTTOM FOOTING BARS UP WITH STANDARD 90 DEGREE BENDS.
    - D. END WALLS WITH HORIZONTAL BARS BENT DOWN OR HORIZONTAL OR BENT INTO PERPENDICULAR WALLS, COLUMNS OR CORNERS.
    - E. PROVIDE DOWELS INTO FOOTINGS FOR WALLS AND COLUMNS OF THE SAME BAR SIZE AND SPACING AS IN WALLS AND COLUMNS. LAP DOWELS PER THE LAP SCHEDULE AT THE BASE OF THE WALL OR COLUMN.
    - F. ALL REINFORCEMENT SHALL LAP PER THE LAP SPLICE SCHEDULE. LAP NO MORE THAN EVERY OTHER BAR AT A SINGLE LOCATION (50% BARS), STAGGER LAPS 5’-0”.
    - G. REINFORCEMENT LAPS MAY BE MADE WITH MECHANICAL COUPLERS, TYPE 1, WHICH CAN ACHIEVE 125% OF BAR STRENGTH OR GREATER. SUBMIT ICC EVALUATION REPORT TO STRUCTURAL ENGINEER FOR REVIEW.
17. ROUGHEN SURFACES AND KEY JOINTS AT HARDENED CONCRETE. ROUGHEN ALL SURFACES AT COLD JOINTS TO ¼ INCH AMPLITUDE UNLESS NOTED OTHERWISE IN DETAILS. ROUGHEN ALL JOINTS:
    - A. PROVIDE 1.5” X 3.5” KEY JOINTS AT BOTTOM OF WALLS AND AT ENDS OF WALLS AT COLUMNS, CROSS WALLS OR CORNERS.
    - B. PROVIDE 1.5” X 3.5” X 10” KEY JOINTS AT GRADE BEAMS.
    - C. ROUGHEN SURFACES AT TOPS OF FOOTINGS BELOW WALLS AND COLUMNS.
    - D. A ROUGHEN SURFACES AT TOPS OF ALL WALLS, COLUMNS AND JOINTS WITHIN ELEMENTS

CONCRETE MASONRY UNIT NOTES

1. CONCRETE BLOCKS SHALL CONFORM TO REQUIREMENTS OF ASTM C90 GRADE N SPECIFICATION FOR HOLLOW LOAD BEARING LIGHTWEIGHT CONCRETE MASONRY UNITS. THE REQUIRED ULTIMATE COMPRESSIVE STRENGTH (f'm) OF THE CONCRETE BLOCK ASSEMBLY IS 2000 PSI.
2. MORTAR SHALL CONFORM TO ASTM C270 PROPORTION SPECIFICATION TYPE S OR ASTM C387, TYPE S.
3. MORTAR SHALL TEST NOT LESS THAN 1800 PSI AT 28 DAYS.
4. GROUT SHALL CONFORM TO ASTM C476.
5. GROUT SHALL TEST NOT LESS THAN 2000 PSI AT 28 DAYS.
6. REINFORCEMENT SHALL BE PER ASTM A615-60. LAP ALL REINFORCING BARS 48 DIAMETERS AT SPLICES. MAINTAIN 1" MINIMUM CLEAR BETWEEN PARALLEL BARS (EXCEPT AT SPLICES), AND 1/2" CLEAR BETWEEN BAR AND ANY SURFACE OF A MASONRY UNIT.
7. ALL MASONRY BLOCK CELLS SHALL BE FILLED SOLID WITH GROUT.
8. ALL HORIZONTAL BARS SHALL BE PLACED IN BOND BEAM UNITS.
9. LAY ALL CONCRETE BLOCK UNITS IN RUNNING BOND.
10. CONCRETE MASONRY UNIT CONSTRUCTION SHALL HAVE SPECIAL INSPECTION.
11. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF DECORATIVE CONCRETE MASONRY UNITS.

CARPENTRY NOTES

1. SILLS ON CONCRETE OR MASONRY SHALL BE PRESSURE TREATED DOUGLAS FIR LARCH 3x THICK AT ALL EXTERIOR WALLS AND INTERIOR SHEAR WALLS NOTED ON PLAN. ALL OTHER SILLS ON CONCRETE OR MASONRY MAY BE PRESSURE TREATED DOUGLAS FIR LARCH 2x THICK. THEY SHALL BE ANCHORED WITH 3/4” DIAMETER MACHINE BOLTS WITH 7" EMBEDMENT (UNLESS NOTED OTHERWISE). AT SHEAR WALLS, BOLTS SHALL HAVE NUT, CUT WASHER AND BEARING PLATE THAT EXTENDS TO 1/2" OR CLOSER TO SHEATHING-SEE SHEAR WALL SCHEDULE AND DETAILS. AT NON-SHEAR WALLS, BEARING PLATE IS NOT REQUIRED. LOCATE BOLTS 6" MINIMUM AND 12" MAXIMUM (UNLESS NOTED OTHERWISE) FROM EACH END OF EACH STICK AND NOT OVER 48" ON CENTER BETWEEN. SEE SHEAR WALL SCHEDULE OR PLANS FOR SPECIFIC SPACING OF ANCHOR BOLTS WHICH MAY BE NOTED AS LESS THAN 48" ON CENTER. THERE SHALL BE AT LEAST 2 BOLTS IN EACH STICK. WHERE NOTCHES FOR PIPES, ETC., EXCEED 1/3 THE WIDTH OF THE SILL, PLACE A BOLT WITHIN 6" OF EACH SIDE OF NOTCH. TIEDOWN BOLTS SHALL NOT BE CONSIDERED AS SILL BOLTS.
2. FRAMING LUMBER: DOUGLAS FIR-LARCH, MANUFACTURED AND GRADED IN ACCORDANCE WITH THE WEST COAST LUMBER INSPECTION BUREAU "STANDARD GRADING RULES NO. 17", LATEST EDITION INCLUDING ALL SUPPLEMENTS.
3. STRUCTURAL LIGHT FRAMING:

STRUCTURAL LIGHT FRAMING:	NO. 1, 2" TO 4" THICK
BEAMS:	NO. 1, FREE OF HEART CENTER, 5" AND THICKER
POSTS:	NO. 1
STUDS:	2x4 OR 3x4 – NO. 2 2x6 AND LARGER - NO. 2

4. ALL FRAMING LUMBER SHALL BE HAVE A MAXIMUM MOISTURE CONTENT OF 19 PERCENT AT TIME OF INSTALLATION. LUMBER USED IN WALLS AND FLOORS SHALL HAVE A MAXIMUM MOISTURE CONTENT OF 19% AT THE TIME OF CLOSURE.
5. PIPES EXCEEDING ONE-THIRD OF THE PLATE WIDTH SHALL NOT BE PLACED IN PARTITIONS USED AS BEARING OR SHEAR WALLS, UNLESS OTHERWISE DETAILED OR COMPLETELY FURRED CLEAR OF THE STUDS. PIPES SHALL PASS THROUGH THE CENTER OF THE PLATES USING A NEATLY BORED HOLE. NO NOTCHING WILL BE ALLOWED.
6. LAG SCREWS SHALL BE SCREWED (NOT DRIVEN) INTO PLACE. DRILL HOLES SAME DIAMETER AND DEPTH AS SHANK. THEN DRILL HOLE 60-70% OF DIAMETER AT BASE OF THREAD FOR THE THREADED PORTION. USE STEEL PLATE WASHERS AS REQUIRED FOR THE SAME BOLT SIZE.
7. BOLTS IN WOOD SHALL BE MACHINE BOLTS UNLESS OTHERWISE NOTED. ALL MACHINE BOLTS SHALL HAVE CUT THREADS.
8. BOLT HOLES IN WOOD AND STEEL SHALL BE THE DIAMETER OF THE BOLT PLUS 1/16".
9. PROVIDE PLATE WASHER UNDER HEAD AND NUT OF BOLT WHERE BEARING IS AGAINST WOOD. LENGTH OF THREAD SHALL BE SUCH THAT THREADS DO NOT BEAR AGAINST WOOD. ALL NUTS SHALL BE TIGHTENED WHEN PLACED AND RE-TIGHTENED AT COMPLETION OF THE JOB IMMEDIATELY BEFORE CLOSING WITH FINISH CONSTRUCTION.
10. CONNECTORS FOR WOOD CONSTRUCTION NOTED ON PLANS AND DETAILS SHALL BE SIMPSON COMPANY STRONG-TIE CONNECTORS OR APPROVED EQUAL.
11. STUDS SHALL BE ONE PIECE BETWEEN FLOORS AND FROM FLOOR TO ROOF. ALIGN CENTERLINE OF STUDS WITH CENTERLINE OF FLOOR JOISTS. ALIGN CENTERLINE OF STUDS FOR FULL HEIGHT OF STRUCTURE TYPICAL.
12. ALL POSTS SHALL BE FULL HEIGHT FROM FOUNDATION TO ROOF. WHERE POSTS ARE DISCONTINUOUS AT JOIST SPACE AND/OR FROM TOP OF BEAMS/HEADERS TO LOWER TOP PLATE, BLOCK THIS SPACE WITH STUD POST.
13. JOISTS SUPPORTING MECHANICAL EQUIPMENT SHALL BE DOUBLE JOISTS (DJ) UNLESS NOTED OTHERWISE.
14. FASTENERS PENETRATING PRESSURE-PRESERVATIVE TREATED AND FIRE-RETARDANT TREATED WOOD SHALL BE HOT-DIPPED GALVANIZED PER ASTM A153, CLASS D.

SHEATHING NOTES

1. ROOF, FLOORS, ALL EXTERIOR WALLS AND INTERIOR SHEAR WALLS (WHERE NOTED ON STRUCTURAL PLANS) SHALL BE SHEATHED WITH DOUGLAS FIR SHEATHING WITH EXTERIOR GLUE AS FOLLOWS:

ROOF:	19/32" T&G APA STRUCTURAL I RATED PLYWOOD, 40/20, EXPOSURE 1
BREEZEWAY:	15/32" T&G APA STRUCTURAL I RATED (5-PLY) PLYWOOD, 40/20, EXPOSURE 1
COVERED WALKWAY:	15/32" T&G APA STRUCTURAL I RATED (5-PLY) PLYWOOD, 40/20, EXPOSURE 1
PASSAGEWAY:	15/32" T&G APA STRUCTURAL I RATED (5-PLY) PLYWOOD, 40/20, EXPOSURE 1
WALLS:	1/2", APA STRUCTURAL I RATED SHEATHING, 48/24, EXPOSURE 1

2. SHEATHING SHALL BE PLYWOOD.
3. ALL EXTERIOR WALLS SHALL BE SHEATHED.
4. ALL SHEATHING USED STRUCTURALLY SHALL EXTEND CONTINUOUSLY BEHIND ALL FINISH. WHERE IT IS TO BE PLASTERED, IT SHALL BE PROTECTED BY AN UNBROKEN LAYER OF MOISTURE-TIGHT PAPER UNDER LATHING.
5. IN GENERAL, SHEETS SHALL BE 4'-0" x 8'-0". MINIMUM SHEET DIMENSION IS 24 INCHES, UNLESS ALL EDGES ARE FULLY SUPPORTED BY FRAMING MEMBERS OR BLOCKING. THE LONG DIMENSION MAY BE LAID EITHER HORIZONTALLY OR VERTICALLY AT WALLS. ROOF AND FLOOR SHEETS SHALL BE LAID WITH FACE PLIES ACROSS JOISTS OR FRAMING MEMBERS AND WITH END JOINTS STAGGERED 4'-0". USE PLYCLIPS HALFWAY BETWEEN EACH SUPPORT AT UNBLOCKED ROOFS. ALL SHEATHING JOINTS SHALL BE ACCURATELY CENTERED ON SUPPORTING ELEMENTS. ROOF AND FLOOR SHEATHING MAY BE UNBLOCKED. GLUE FLOOR SHEATHING TO ALL SUPPORTS INCLUDING BLOCKING, WHERE NOTED, WITH AN ADHESIVE RECOMMENDED BY THE AMERICAN PLYWOOD ASSOCIATION FOR THIS PURPOSE.

NAILING NOTES

1. ALL NAILS SHALL BE COMMON WIRE NAILS. WHERE NAILS TEND TO SPLIT THE WOOD, NAIL HOLES SHALL BE PRE-DRILLED.
2. PROVIDE MINIMUM NAILING REQUIREMENTS AS SET FORTH IN FASTENING SCHEDULE SHEET S1.04.
3. PLYWOOD NAILING:
   AT ROOF: 10d @ 4" ON CENTER, UNLESS NOTED OTHERWISE, ALONG SUPPORTED PANEL EDGES AND WHERE NOTED ON PLANS AND DETAILS AS EDGE NAILING (EN) AND 10d @ 12" ON CENTER ALONG INTERMEDIATE FRAMING MEMBERS. SEE PLANS FOR LOCATION OF BLOCKED DIAPHRAGMS.
   AT WALLS: SEE SHEAR WALL SCHEDULE.
4. MAINTAIN ACCURATE NAIL SPACING AS INDICATED. NAIL SPACING CLOSER THAN SPECIFIED WILL BE CAUSE FOR REJECTION OF THE WORK.
5. NAILS PENETRATING PRESSURE-PRESERVATIVE TREATED AND FIRE-RETARDANT TREATED WOOD SHALL BE HOT-DIPPED GALVANIZED PER ASTM A153, CLASS D.

STRUCTURAL GLUED LAMINATED MEMBER NOTES

1. ALL STRUCTURAL GLUED LAMINATED MEMBERS SHALL BE COMBINATION 24F-V4 DF/DF (COMBINATION 24F-V8 DF/DF FOR CONTINUOUS OR CANTILEVER SPANS) FABRICATED AND ERECTED IN ACCORDANCE WITH ANSI/ASTM STANDARD A190.1 AND ASTM D3737.
2. ADHESIVE SHALL BE EXTERIOR TYPE ADHESIVE MEETING REQUIREMENTS OF U.S. COMMERCIAL STANDARD PS-56 AND ASTM 2559.
3. THE FABRICATOR SHALL FURNISH AITC CERTIFICATES AND A LAMINATING REPORT TO THE STRUCTURAL ENGINEER AND THE BUILDING INSPECTION DEPARTMENT PRIOR TO FRAMING INSPECTION.

ENGINEERED LUMBER NOTES

1. ALL TIMBERSTRAND LAMINATED STRAND LUMBER MEMBERS (LSL), MICROLLAM LAMINATED VENEER LUMBER (LVL), AND PARALLAM PARALLEL STRAND LUMBER (PSL), SHALL BE AS MANUFACTURED BY WEYERHAEUSER AND SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH ICC ES ESR-1387.
2. TIMBERSTRAND MEMBERS (LSL) SHALL HAVE THE FOLLOWING PROPERTIES:

ALLOWABLE FLEXURAL STRESS:	2325	PSI
ALLOWABLE SHEAR STRESS:	310	PSI
MODULUS OF ELASTICITY:	1,550,000	PSI

3. MICROLLAM MEMBERS (LVL) SHALL HAVE THE FOLLOWING PROPERTIES:

ALLOWABLE FLEXURAL STRESS:	2600	PSI
ALLOWABLE SHEAR STRESS:	285	PSI
MODULUS OF ELASTICITY:	2,000,000	PSI

4. PARALLAM MEMBERS (PSL) SHALL HAVE THE FOLLOWING PROPERTIES:

ALLOWABLE FLEXURAL STRESS:	2900	PSI
ALLOWABLE SHEAR STRESS:	290	PSI
MODULUS OF ELASTICITY:	2,200,000	PSI

5. DO NOT USE PARALLAM, MICROLLAM OR TIMBERSTRAND MEMBERS WHERE THEY MAY BE EXPOSED TO THE WEATHER. PROTECT THESE MEMBERS FROM MOISTURE UNTIL CLOSED IN WITH FINISH CONSTRUCTION.

STRUCTURAL SHEET LIST

SHEET NUMBER	SHEET NAME
S1.01	GENERAL NOTES
S1.02	GENERAL NOTES CONTINUED AND ABBREVIATIONS
S1.03	ROOF LOADING DIAGRAMS
S1.04	FASTENING SCHEDULE
S2.31	WEST BUILDINGS - FOUNDATION / FIRST FLOOR FRAMING PLAN
S2.32	EAST BUILDINGS - FOUNDATION / FIRST FLOOR FRAMING PLAN
S2.41	WEST BUILDINGS - ROOF FRAMING PLAN
S2.42	EAST BUILDINGS - ROOF FRAMING PLAN
S3.01	WALL FRAMING ELEVATIONS - WEST BUILDING WORKSHOP/STORAGE
S3.02	WALL FRAMING ELEVATIONS - WEST BUILDING - HEAD HOUSE
S3.03	WALL FRAMING ELEVATIONS - EAST BUILDING - CLASS LAB 1
S3.04	WALL FRAMING ELEVATIONS - EAST BUILDING - STUDENT/FACULTY
S3.05	WALL FRAMING ELEVATIONS - EAST BLDG- CLASS LAB 2
S3.06	WALL FRAMING ELEVATIONS - EAST BLDG- CLASS LAB 3
S4.01	TYPICAL CONCRETE DETAILS
S4.02	TYPICAL CONCRETE DETAILS
S4.03	TYPICAL SITE WALL DETAILS
S4.04	TYPICAL CMU/TRASH/SOIL BIN DETAILS
S4.05	FOUNDATION DETAILS
S5.01	TYPICAL WOOD DETAILS
S5.02	TYPICAL WOOD DETAILS
S5.03	TYPICAL WOOD DETAILS
S5.04	ENLARGED PLAN DETAILS
S6.01	TRUSS ELEVATIONS AND DETAILS
S6.02	TRUSS ELEVATIONS AND DETAILS
S6.03	ROOF FRAMING DETAILS
S6.04	ROOF FRAMING DETAILS
S6.05	ROOF FRAMING DETAILS
S7.01	STEEL FRAMING DETAILS
S8.01	ANCHORAGE OF EQUIPMENT

APPROVALS

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-119409 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/14/2022

NOLL & TAM ARCHITECTS
729 Heinz Avenue
Berkeley, CA 94710
tel 510.542.2200
fax 510.542.2201

SEAL

No. S03527
STEPHEN R. DeJESSE

STRUCTURAL ENGINEERS
1629 Telegraph Ave
Suite 300
Oakland, CA 94612
tel: 510.834.1629
ida-se.com

IDA PROJECT NUMBER: 20012

PROJECT TITLE

Peralta Community College District
MERRITT LANDSCAPE HORTICULTURE COMPLEX

12500 Campus Drive
Oakland, CA 94616

BID SET

ISSUE DATE **03/03/2022**

N&T JOB NUMBER **22003**

REVISIONS

#	DATE	DESCRIPTION
1	08.17.2022	ADDENDUM 1, ITEM 1

DRAWN BY **AI** CHECKED BY **SDJ**

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

S1.01

SECTION 13 34 13 - GREENHOUSES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Greenhouses

1. Design and calculations prepared and sealed by a Structural Engineer licensed in the State of California.

2. Greenhouse structures and enclosures.

B. Accessories including but not limited to:

1. Vents.

2. Fans.

3. Motors.

4. Evaporative pads.

5. Shutters.

6. Heating systems.

7. Environmental controls.

8. Growth lights.

9. Plant watering systems.

10. Bench Systems.

C. Glazing.

D. **Refer to PART 4 for description of additional equipment to be provided as Alternate Bid 2.**

1.02 RELATED SECTIONS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Section 03 30 00 – Cast-In-Place Concrete: Cast-in-place concrete foundations, slabs, and walls.

C. Section 07 92 00 – Joint Sealers.

D. Section 08 43 13 – Aluminum-Framed Entrances and Storefront: Aluminum-framed entrances.

E. Section 08 71 00 - Door Hardware: Hardware for aluminum-framed entrances.

F. Section 08 80 00 - Glazing: Plastic glazing for interior gate and screen.

G. Division 21, 22 and 23 – Fire Protection, Plumbing and Mechanical: Provision of and connection to services not specified in this section.

H. Division 26 and 27 – Electrical and Telecommunications: Provision of and connection to services not specified in this section.

1.03 REFERENCES

A. AAMA 611 – Voluntary Specification for Anodized Architectural Aluminum.

B. ASCE 7 - American Society of Civil Engineers Standard Minimum Design Loads for Buildings and Other Structures.

C. ASTM A 36/A 36M – Standard Specification for Carbon Structural Steel.

D. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes

E. ASTM B 308/b 308M – Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Profiles.

F. ASTM C 864 – Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.

G. AWS D1 – Structural Welding Code.

H. California Code of Regulation Title 24 Part 2, California Building Code - most current Edition.

I. NGMA - National Greenhouse Manufacturer’s Association, Standards - most current Edition.

1.04 DESIGN CRITERIA

A. Structural calculations for greenhouses have been signed and sealed by Structural Engineer licensed in the State of California.

B. Structural Performance: Except as noted, and at the minimum, conform to the requirements and recommendations of both the “Standard for Design Loads in Greenhouse Structures”

and its “Commentary” published by the National Greenhouse Manufacturers Association, (NGMA Standards).

C. Greenhouse frame shall be designed in accordance with the American Institute of Steel Construction Specifications, American Iron and Steel Institute Specifications and the California Building Code.

D. Design Loads

1. Design structure to carry the following loads:

a. Dead Load: Structure and Equipment

b. Ground Snow Load: 0 lbs./sq. ft.

c. Wind Speed: 92 mph, exp. C

d. Special Loads: (If Applicable) : Not Applicable

e. Applicable Building Code is the California Building Code and ASCE 7.

1) Load Combinations per ASCE 7:

(a) Allowable Strength Design:

(1) D + Lr

(2) D + W

(3) 0.6D + W

(4) D + 0.7E

(5) D + 0.75Lr + 0.75W

(6) D + 0.75Lr + 0.75(0.7E)

(b) Load and Resistance Factor Design:

(1) D + 1.6Lr

(2) 0.9D + 1.6W

(3) 0.9D + 1.0E

(4) 1.2D + 1.6Lr + 0.8W

(5) 1.2D + 1.6W + 0.5Lr

(6) 1.2D + 1.0E + 0.2S

2. Engineering Certification

   a. Provide written structural analysis prepared and certified by a Structural Engineer licensed in the State of California, that the greenhouse meets the above-specified loads.

1.05 SUBMITTALS

A. General: Comply with provisions of Division 01 of these specifications.

B. Product data: Within 30 days after award of the contract, submit Manufacturer's product specifications, technical product data, standard data, and installation recommendations for each component.

C. Shop drawings: Submit shop drawings for fabrication and installation of greenhouse, including the following:

   1. Elevations.

   2. Detail section of typical framing members.

   3. Hardware, mounting heights.

   4. Anchorage and reinforcements.

   5. Glazing details.

   6. Placement of all components for heating, cooling, and ventilation.

1.06 GENERAL

A. Design Submittal included in Construction Documents: For systems indicated to comply with performance requirements and design criteria, all applicable codes and standards, and approval by the Architect, including analysis data signed and sealed by the qualified Structural engineer licensed in the State of California responsible for their preparation.

   1. Detail fabrication, assembly, and connections of aluminum-framed systems.

   2. Detail all connections to building structure.

   3. Structural design calculations based on the design criteria shown in the structural drawings.

B. It is the intent of this portion of the specifications to include the furnishing and erection of the greenhouse superstructure including all glazing, equipment and ventilation as shown on

plans and/or hereinafter described such work to be the responsibility of the Greenhouse Manufacturer. Greenhouse installation is the responsibility of the Greenhouse Manufacturer and shall be included with bid on bid day. Material only bids will not be accepted. Bids received after the bid date shall be considered non-responsive and shall not be accepted.

C. It is not the intent of this portion of the specifications to cover concrete, grouting, masonry work, plumbing, electrical work (power and control wiring), utility connections, final cleaning of glazing or counter flashing. This portion of the work shall be the responsibility of the General Contractor or his selected Subcontractors other than the Greenhouse Manufacturer.

D. No masonry or foundation installation shall be made prior to approval of greenhouse drawings. Approved greenhouse drawings shall be used to make all masonry and foundation installations. Dimensions may vary slightly from contract drawings to accommodate manufacturer's standard, but total area shall not be less than 98% of that shown.

E. Related Work Specified Elsewhere:

1. Concrete floors, grouting of sills and base plates, and masonry walls: Division 03 and 04.

2. Doors and door hardware: Division 08.

3. Plumbing rough-in work and hook-up of greenhouse plumbing systems, and downspouts described in this section: Division 22.

4. Electrical power wiring, environmental control system wiring, lighting, conduit and hook-ups of greenhouse electrical equipment provided under this section: Division 26.

1.07 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer shall have a minimum of 5 years experience in fabrication and erection of glazed structures for similar projects.

B. Installer Qualifications: Greenhouse installer shall have a minimum of 5 years experience in the erection of glazed structures for similar projects.

C. Structural Engineer Qualifications: A Structural engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of kind indicated. Engineering services are defined as those performed for installations of greenhouse systems that are similar to those indicated for this Project in material, design, and extent.

D. Engineering Responsibility: Prepare data for greenhouse systems, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in

assemblies similar to those indicated for this Project.

1.08 DELIVERY, STORAGE AND HANDLING

A. Protect materials during delivery, storage and handling to comply with manufacturer's directions and as required to prevent damage or deterioration.

1.09 COORDINATION

A. Pre-Construction Conferences: Coordination meetings are required and should be scheduled in advance of installation of services and features that must be integrated in the greenhouse structures.

1. Coordination meeting is required to locate and coordinate with fire protection, plumbing, electrical and low voltage work above and below grade. Identify all points of entry and support. Provide appropriate details for each service type. Notify the Architect of any conflicts or discrepancies.

2. Coordination is required with structural concrete wall supporting the greenhouse structure. Coordinate location of all doors and other wall openings.

3. Coordination is required with Irrigation work specified in Division 32.

PART 2 PRODUCTS

2.01 GREENHOUSE MANUFACTURER

A. Basis of Design: Vail, Steel Greenhouse by Nexus Greenhouse Corporation., 10983 Leroy Dr., Northglenn, CO 80233. Tel. (800) 228-9639, ext 536 . Fax. (303)457-2801. Email. bids@nexuscorp.com.

B. Must be a member, in good standing, of the National Greenhouse Manufacturer's Association (NGMA).

2.02 GREENHOUSE

A. Components

1. Primary structural members shall be fabricated from square galvanized steel tubing with a minimum 45,000 p.s.i. yield strength. No roll formed sections allowed.

2. Aluminum extrusions used for bars, vents and other secondary framing members shall be 6063-T6 alloy.

3. Roof trusses shall be factory welded using square galvanized tubing. Minimum sizing are 2" square, 15 ga. top chord, 2" square, 15 ga. bottom chord and 1 ½" square, 18 ga. secondary web members. Welds will be re-galvanized with a flame spray process.

No painting of welded areas.

4. Columns shall be fabricated from minimum 4” square galvanized steel tubing.

5. Truss to column connection will be made with a column cap and gutter saddle assembly made from Tenzaloy, a high strength alloy.

6. Roof purlins shall be fabricated from 2” square 15 ga. galvanized steel tubing as a minimum. The purlins shall have a swaged end for a continuous purlin connection. Purlins shall be bolted to truss top chords. No screw attachments are allowed.

7. Gutters shall be galvanized steel with a baked-on enamel paint on the exterior side as an extra coating. The gutter will be designed for water drainage only. No fixed truss or bow attachments are allowed.

8. Horizontal and vertical framing shall be fabricated from 2” square, 16 ga. tube minimum.

9. Glazing extrusions for structured sheeting shall be made of aluminum and consistent with manufacturer’s standard shapes. A two-piece gasketed extrusion shall be used on roof areas and a one-piece extrusion on vertical areas. Extrusions are complete with necessary accessories for greenhouse construction.

2.03 MATERIALS

A. Steel:

1. Square Galvanized Tubing: ASTM A500

2. Sheets: Roll Formed ASTM A36

3. Plates: ASTM A36

B. Aluminum:

1. Extrusions: Alloy 6063-T6 or 6063-HS

2. Sheet: Alloy 3003-H14.

3. Plates: Alloy 6061-T6 or 6063-HS.

C. Fasteners:

1. Bolts: ASTM A307

2. Self Drill Screws: AISI C 1022

3. Self Tapping Cap Screws: AISI C 1018SS

4. Anchor Bolts: Refer to Division 03.

D. Glazing

1. Glazing panels shall be **self-extinguishing** polycarbonate, acheiving a CC-1 classification via ASTM D-635.

   a. twin wall construction

   b. 8 mm thick

   c. clear color

   d. condensation control on interior surface

   e. 10 year warranty

2. Panels shall be furnished in continuous sections on each slope of the roof and on sidewall and gable end areas.

E. Glazing System

1. Glazing extrusions for structured sheeting shall be made of aluminum and consistent with Manufacturer's standard shapes.

2. A two piece gasketed aluminum extrusion shall be used on roof areas. Glazing caps shall be gasketed and extend in one piece from the eave to the ridge. One piece, non-gasketed, aluminum extrusions may be used on vertical areas.

3. Extrusions are to be provided and installed complete with necessary accessories for greenhouse construction.

F. Glazing Seals for Polycarbonate Covering:

1. External glazing tape shall be applied to the polycarbonate sheets as recommended by Manufacturer.

2. EPDM rubber gasket of type recommended by Manufacturer shall be installed in the glazing caps.

3. GE silicone sealant or equivalent shall be applied in accordance with Manufacturer's recommendations.

G. Greenhouse Doors and Frames: Refer to Division 8.

H. Insect Screens: Provide aluminum frames with woven aluminum insect screen, 18x16 mesh with brushes at vent rack arm locations.

2.04 MECHANICAL EQUIPMENT

A. Vents: Provide sash of size indicated on drawings, designed to open out in a continuous operation from end to end and with a weather tight hinge and weather tight fit between sash and vent header.

West Greenhouses		
H600		
	1EA	Double motorized ridge vent
	2EA	EDDG style sidewall vents
H601		
	1EA	Double motorized ridge vent
	2EA	EDDG style sidewall vents
East Greenhouses		
H500	1EA	Double motorized ridge vent
H501	1EA	Double motorized ridge vent
H502	1EA	Double motorized ridge vent

B. Vent Motors : Motors to operate each vent indicated on drawings and as recommended by Manufacturer.

C. Exhaust Fans : Fans will use heavy duty totally enclosed motors and be AMCA approved.

West Greenhouses		
H600		
	1EA	American Coolair AL30K aluminum, slant wall housing, one speed
	1EA	American Coolair AL30K aluminum, slant wall housing, two speed
H601		
	1EA	American Coolair AL30K aluminum, slant wall housing, one speed
	1EA	American Coolair AL30K aluminum, slant wall housing, two speed
East Greenhouses		
H500		
	1EA	American Coolair AL30K aluminum, slant wall housing, one speed
	1EA	American Coolair AL30K aluminum, slant wall

		housing, two speed
H501		
	1EA	American Coolair AL30K aluminum, slant wall housing, one speed
	1EA	American Coolair AL30K aluminum, slant wall housing, two speed
H502		
	1EA	American Coolair AL30K aluminum, slant wall housing, one speed
	1EA	American Coolair AL30K aluminum, slant wall housing, two speed

D. Evaporative Pad System: The evaporative pad system will consist of pads made of cross fluted cellulose paper, a distribution pipe with deflectors, a **stainless steel** return system and a sump pump adequate for the systems length.

West Greenhouses		
H600	1EA	4’ x 16’ American Coolair PVC evaporative pad system with motorized intake shutters
H601	1EA	4’ x 16’ American Coolair PVC evaporative pad system with motorized intake shutters
East Greenhouses		
H500	1EA	3’ x 16’ American Coolair PVC evaporative pad system with motorized intake shutters
H501	1EA	3’ x 16’ American Coolair PVC evaporative pad system with motorized intake shutters
H502	1EA	3’ x 16’ American Coolair PVC evaporative pad system with motorized intake shutters

E. Horizontal Airflow Fans : Mechanically operated fans indicated on drawings and as recommended by Manufacturer.

West Greenhouses		
H600	3EA	Schaefer 12” haf fans
H601	3EA	Schaefer 12” haf fans
East Greenhouses		
H500	2EA	Schaefer 12” haf fans
H501	2EA	Schaefer 12” haf fans
H502	2EA	Schaefer 12” haf fans

F. Heating Systems (If applicable to project requirements):

West Greenhouses		
H600	NONE	
H601	NONE	
East Greenhouses		
H500	2EA	Modine HER 150 Electric Unit Heaters, 208v, 3 phase
H501	2EA	Modine HER 150 Electric Unit Heaters, 208v, 3 phase
H502	2EA	Modine HER 150 Electric Unit Heaters, 208v, 3 phase

G. Energy/Shade Curtains: A truss to truss, push/pull system using a rack and pinion drive will be used. The curtain will have a slope/flat/slope profile following the roofline and creating an “attic” space above the middle of the house for energy efficiency. The curtain is to be supported by guidewires, not suspension hooks. No wire or cable drives are allowed.

West Greenhouses		
H600	SYSTEM	Motorized shade system with Aluminet 50% ICFR Fire Retardant 4855 shade cloth
H601	SYSTEM	Motorized shade system with Aluminet 50% ICFR Fire Retardant 4855 shade cloth
East Greenhouses		
H500	SYSTEM	Motorized shade system with Aluminet 50% ICFR Fire Retardant 4855 shade cloth
H501	SYSTEM	Motorized shade system with Aluminet 50% ICFR Fire Retardant 4855 shade cloth
H502	SYSTEM	Motorized shade system with Aluminet 50% ICFR Fire Retardant 4855 shade cloth

H. Environmental Controls/Computers: Wadsworth Control Systems Seed Controller with custom contactor panel, wiring diagram, Seed software, ethernet alarm manager, outdoor weather station, one day on site training.

I. Growth Lights:

West Greenhouses		
H600	NONE	

H601	NONE	
East Greenhouses		
H500	16EA	PARsource Photobio*T Duo LED lights, 277v, 600w
H501	27EA	PARsource Photobio*T Duo LED lights, 277v, 600w
H502	27EA	PARsource Photobio*T Duo LED lights, 277v, 600w

J. Plant Watering Systems:

West Greenhouses		
H600	SYSTEM	Bench mounted drip irrigation system
H601	SYSTEM	Bench mounted drip irrigation system
East Greenhouses		
H500	SYSTEM	Bench mounted irrigation system and overhead misting system
H501	SYSTEM	Bench mounted irrigation system and overhead misting system
H502	SYSTEM	Bench mounted irrigation system and overhead misting system

K. Bench Systems: Benches as indicated on drawings. Benches will have leg supports made from 1-½" square-galvanized tubing spaced on 6'-0" intervals. The bench tops will consist of extruded aluminum perimeter sides (1" or 3" tall) with 1" square, 18 ga. cross pieces on 2'-0" centers. Covering will be hot dipped ¾", 13 gauge expanded metal.

1. All bench heights: 32".

2. Stationary Benches: Legs and top support rails shall be inset a minimum of 3" on each side and 6" on the ends to facilitate easier movement down aisles.

3. Rolling Benches: Legs and top support rails shall be inset a minimum of 3" on each side and 6" on the ends to facilitate easier movement down aisles. Two runs of 1.315" roller pipe (14 ga.) to allow for top and aisle movement.

West Greenhouses		
H600		
	7EA	6' x 16' rolling top benches
	7EA	20" x 5' stationary top benches
H601		

	7EA	6’ x 16’ rolling top benches
	7EA	20” x 5’ stationary top benches
East Greenhouses		
H500		
	1EA	6’ x 13’ stationary top benches
	2EA	6’ x 16’ stationary top benches
	5EA	33" x 3' stationary top benches
	8EA	33” x 6’ stationary top benches
	3EA	16" x 6' stationary top benches
H501		
	4EA	6’ x 16’ rolling top benches
	2EA	33” x 3’ stationary top benches
	2EA	33" x 6' stationary top benches
	3EA	16" x 6' stationary top benches
H502		
	3EA	6’ x 16’ rolling top benches
	1EA	6’ x 13’ stationary top benches
	2EA	33” x 3’ stationary top benches
	2EA	33" x 6' stationary top benches
	5EA	16" x 6' stationary top benches

2.05 FABRICATION

A. Fabricate components in accordance with shop drawings. Shop fabricate to greatest extent practical to minimize field cutting, splicing, and assembly.

B. Welding:

1. Comply with recommendations of American Welding Society.

2. Welds shall be re-galvanized with a flame spray process, no painting of welded areas.

C. Fabricate components to allow for accurate fit of joints and corners.

PART 3 EXECUTION

3.01 PREPARATION

A. Examine areas and conditions under which greenhouse work is to be installed. Notify Contractor in writing of conditions detrimental to proper and timely installation of work.

B. Coordinate and furnish anchorages, setting diagrams, templates and directions for installation of anchorages. Coordinate delivery of such items to project site.

3.02 ERECTION

A. Drilling and setting of anchor bolts is to be by Division 03.

B. Erect greenhouse and related components in accordance with Manufacturer's written instructions and final shop and erection drawings.

C. Greenhouse Installer is responsible for all unloading of greenhouse materials, systems, equipment and to provide any lift or installation equipment required.

D. Greenhouse Installer shall have not less than 5 years experience installing work of similar size and scope.

3.03 INSTALLATION OF EQUIPMENT

A. General: Install equipment in accordance with Manufacturer's installation instructions and recognized industry practices to insure intended function.

B. Equipment will be installed in place by the Greenhouse Installer.

C. All mechanical connections (electrical or plumbing) will be performed by electrical, plumbing, or mechanical contractors.

3.04 WARRANTY

A. Structural: All products manufactured by Greenhouse Manufacturer shall be new and guaranteed free from defects in material and workmanship for one year from customer receipt. (Manufacturer shall submit warranty for approval with bid.)

PART 4 - BID ALTERNATE

4.01 ALTERNATE BID 2

A. Greenhouse H502 - Additive Alternate

~~**1. Bottom heat at benches**~~

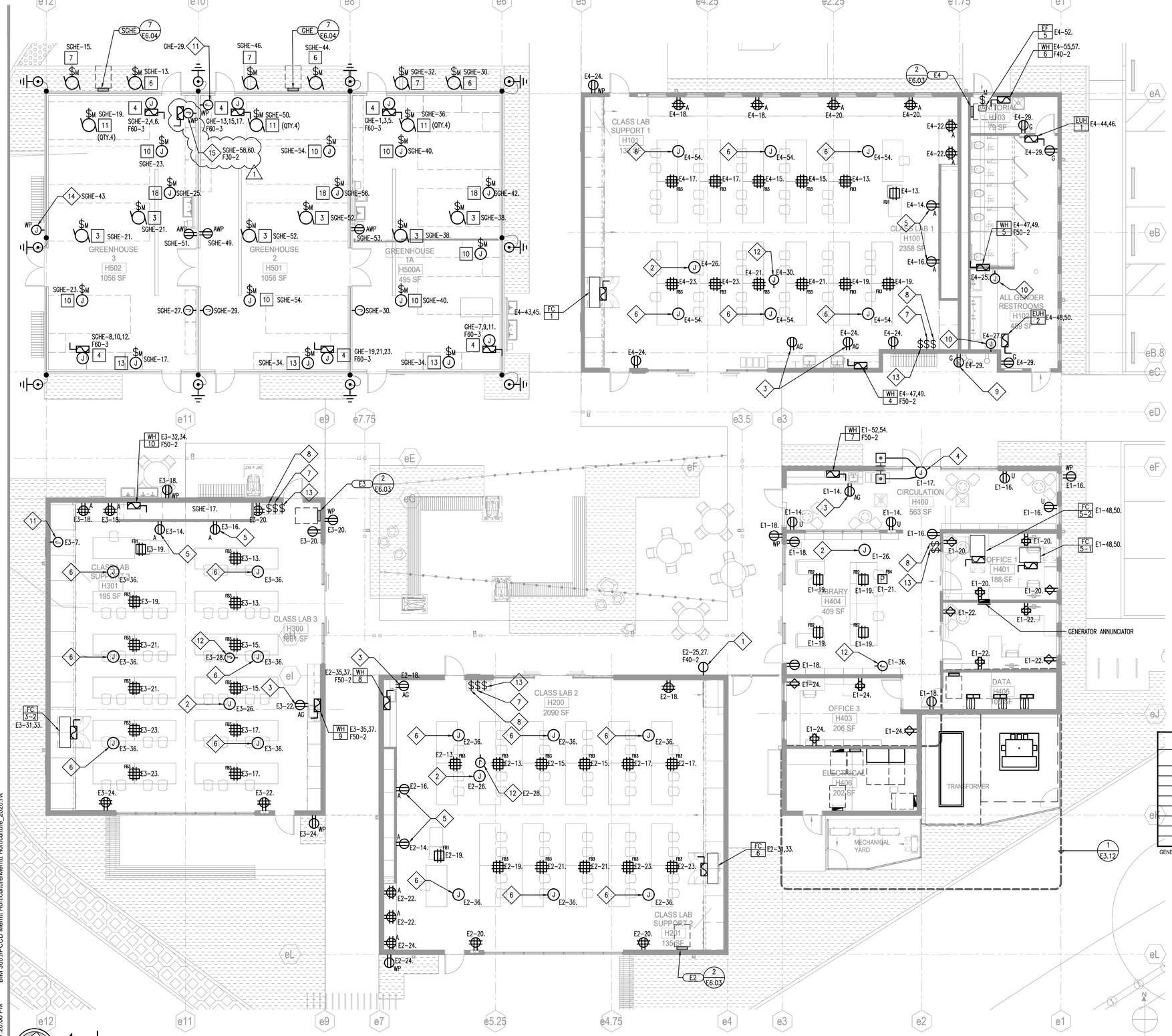
1. At all bench tops in H502: custom sized closed-loop hot water recirculating pipe mats bonded to mesh matrix, with integrated temperature sensors, remote media sensors, and control manifolds compatible with commercial-grade electric water heaters.

a. Basis of Design: BioTherm Upstart Rootzone Heating Kit or approved equal.

2. Hybrid Electric Commercial Water Heater - 65 Gallon capacity, 4,200 BTU/H, 208-240 Volt / 1-Phase, 3.8 UEF or greater. To include integrated remote control, customizable energy efficient operation modes, leak sensor and alarm, shutoff valve, DSA approved seismic restraint and UL certified termination kit. Energy-Star and Title 24 Compliant. 3-year warranty.

a. Basis of Design: Rheem Light Duty Hybrid Electric Commercial Water Heater HPLD65 or approved equal.

END OF SECTION



GENERAL SHEET NOTES

A. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF RECEPTACLES, VOICE/DATA OUTLETS AND ELECTRICAL DEVICES WITH ARCHITECT PRIOR TO INSTALLATION.

B. IN FINISHED AREAS RUN ALL CONDUITS CONCEALED U.O.N. PAINT ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT, REER TO ARCHITECT SPECIFICATIONS FOR PAINTING REQUIREMENTS.

C. REFER TO SINGLE LINE DIAGRAMS, EQUIPMENT SCHEDULES, AND DETAILS FOR ADDITIONAL INFORMATION.

D. PROVIDE 120V–24V TRANSFORMERS AS REQUIRED TO POWER VAV POWER SUPPLIES, BMS CONTROL PANELS, RESTROOM PLUMBING CONTROLS, ACCESS CONTROL SYSTEMS, AND FIRE SMOKE DAMPERS. PROVIDE CIRCUIT FROM NEAREST PANEL, U.O.N. REFER TO PANEL SCHEDULES FOR ADDITIONAL INFORMATION.

E. SIZE FUSES FOR ALL MECHANICAL EQUIPMENT PER APPROVED MANUFACTURERS SHOP DRAWINGS.

F. REFER TO DATA/TELECOM, AUDIO VISUAL, AND SECURITY PLANS FOR ALL ITEMS, LOCATIONS, DEVICES AND EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND JUNCTION BOXES.

G. NO CONDUITS, CONDUCTORS OR PENETRATIONS SHALL BE ALLOWED TO BE ROUTED THROUGH GREENHOUSE STRUCTURAL COMPONENTS.

H. WITHIN GREENHOUSE, ALL BOXES AND CONDUITS SHALL BE PVC COATED, WET LOCATION LISTED. ALL ENCLOSURES SHALL BE NEMA 4X.

I. COORDINATE EXPOSED CONDUIT ROUTING WITH ARCHITECT PRIOR TO COMMENCEMENT OF WORK. PROVIDE DETAILED SHOP DRAWINGS FOR ALL EXPOSED CONDUIT RUNS FOR REVIEW.

SHEET NOTES

1. 40AMP RECEPTACLE FOR EVENT POWER IN WEATHERPROOF IN–USE ENCLOSURE.
2. 120V POWER FOR MOTORIZED WINDOW SHADE.
3. MOUNT TO FACE OF CABINET.
4. 120V FOR DOOR OPERATOR. PROVIDE COMPLETE CONNECTION TO ACTUATOR PUSH PLATE
5. FOR SHORT THROW PROJECTOR. REFER TO TECHNOLOGY DRAWINGS FOR ADDITIONAL INFORMATION.
6. 120V FOR CEILING FAN
7. CEILING FAN SPEED CONTROLLER
8. MOTORIZED WINDOW SHADE SWITCH
9. FOR DRINKING FOUNTAIN
10. 120V FOR FUTURE HAND DRYER
11. FOR FIRE SPRINKLER RISER
12. 120V FOR WINDOW ACTUATOR. REFER TO ARCHITECTURAL PLANS FOR LOCATION AND QTY OF ACTUATORS. INSTALL BOX BELOW CLERESTORY WINDOW SIL
13. OPEN/CLOSE LINE VOLTAGE SWITCH FOR WINDOW ACTUATORS, LEVITON 5657–2W OR APPROVED.
14. FOR SEED CONTROLLER. COORDINATE ROUGH IN REQUIREMENT WITH MANUFACTURER INSTALLATION INSTRUCTIONS. PROVIDE COMPLETE CONNECTIONS FOR AN OPERATIONAL SYSTEM.
15. FOR UNDER–BENCH WATER HEATER. COORDINATE EXACT ROUGH–IN LOCATION WITH ARCHITECT.

GREENHOUSE 1 (H500) & 2 (H501) & 3 (H502)

EQUIPMENT TAG	#	DESCRIPTION	VOLTAGE	PHASE	AMP
6		1SPD EXHAUST	120	1	5.4
7		2SPD EXHAUST	120	1	6.5
13		EVAP SYSTEM PUMP	120	1	5
11		MOTORIZED INTAKE SHUTTER	120	1	0.02
4		UNIT HEATER ELECTRIC	208	3	42.2
3		RIDGE VENT MOTOR	120	1	2.8
10		HAF FAN	120	1	1.5
18		SHDE SYSTEM MOTOR	120	1	2.8

GENERAL MATRIX NOTE:
1 PROVIDE COMPLETE CONNECTIONS FOR AN OPERABLE SYSTEM
2 COORDINATE DEVICE QUANTITY WITH APPROVED GREENHOUSE SHOP DRAWINGS

1 POWER PLAN - EAST BUILDING GROUP
SCALE: 1/8" = 1'-0"

APPROVALS

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-119409 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/14/2022

NOLL & TAM ARCHITECTS
729 Heinz Avenue
Berkeley, CA 94710
tel 510.542.2200
fax 510.542.2201

RIJA
5515 Doyle Street, #7
Emeryville, CA 94608
www.rijainc.com
RIJA Job #: 2020011

SEAL

REGISTERED PROFESSIONAL ENGINEER
RAY A. JACHON
No. E19586
Exp. 06–30–23
ELECTRICAL
STATE OF CALIFORNIA

Date Signed: 8/17/22

PROJECT TITLE

Peralta Community College District
Merritt Landscape Horticulture Complex

12500 Campus Drive
Oakland, CA 94616

BID SET

ISSUE DATE	03/03/2022
N&T JOB NUMBER	22003

REVISIONS

	DATE	DESCRIPTION
1	8/17/2022	ADDENDUM 1, ITEM 2

DRAWN BY CAD | CHECKED BY RAJ

SHEET TITLE
POWER PLAN - EAST BUILDING GROUP

SHEET NUMBER
E2.32

4/3/2020 7:20:00 PM BIM 360://PCCD Merritt Horticulture/Merritt Horticulture_2020.rvt

PANELBOARD SGHE

VOLTAGE:	208/120 V	PHASE A:	22594 VA 188.3 A
PHASE/WIRE:	3 PH 4W	PHASE B:	28272 VA 235.6 A
MAIN AMPS:	300 A	PHASE C:	24990 VA 208.3 A
BUS AMPS:	400 A		
AIC RATING	22000 A	CONNECTED:	75856 VA 210.7 A
MOUNTING:	SURFACE	DEMAND:	81044 VA 225.1 A

NOTES	LOAD DESCRIPTION	φ	VA		BKR	CKT	CKT	BKR	VA		φ	LOAD DESCRIPTION	NOTES
	04 - UNIT HEATER H502	A	5064	H	60/3	1	2	20/2	C	1200	B	GROW LIGHTS H502	1
	-	B	5064	H	-	3	4	-	C	1200	C	-	-
	-	C	5064	H	-	5	6	20/2	C	1200	A	GROW LIGHTS H502	1
	04 - UNIT HEATER H502	A	5064	H	60/3	7	8	-	C	1200	B	-	-
	-	B	5064	H	-	9	10	20/2	C	1200	C	GROW LIGHTS H502	1
	-	C	5064	H	-	11	12	-	C	1200	A	-	-
	06 - 1SPD EF H502	A	648	G	20/1	13	14	20/2	C	1200	B	GROW LIGHTS H502	1
	07 - 2SPD EF H502	B	780	G	20/1	15	16	-	C	1200	C	-	-
	13 - EVAP PAD H502	C	600	G	20/1	17	18	20/2	C	1200	A	GROW LIGHTS H502	1
	11 - INTAKE SHUTTER H502	A	10	G	20/1	19	20	-	C	1200	B	-	-
	03 - RIDGE VENT MTR H502	B	672	G	20/1	21	22	20/2	C	1200	C	GROW LIGHTS H502	1
	10 - VK 12 HAF FAN H502	C	540	G	20/1	23	24	-	C	1200	A	-	-
	18 - SHADE SYSTEM H502	A	336	G	20/1	25	26	20/2	C	900	B	GROW LIGHTS H502	1
	IRRIGATION H500	B	100	G	20/1	27	28	-	C	900	C	-	-
	IRRIGATION H501	C	100	G	20/1	29	30	20/1	G	648	C	06 - 1SPD EF H500	
	IRRIGATION H502	A	100	G	20/1	31	32	20/1	G	780	A	07 - 2SPD EF H500	
	EXIT / EMERG LTG	B	276	G	20/1	33	34	20/1	G	600	B	13 - EVAP PAD H500	
	SPARE	C			20/1	35	36	20/1	G	10	C	11 - INTAKE SHUTTER H500	
	SGHW	A	3446	S	100/3	37	38	20/1	G	672	A	03 - RIDGE VENT MTR H500	
	-	B	5660	S	-	39	40	20/1	G	540	B	10 - VK 12 HAF FAN H500	
	-	C	3424	S	-	41	42	20/1	G	336	C	18 - SHADE SYSTEM H500	
	SEED CONTROLLER	A	500	G	20/1	43	44	20/1	G	648	A	06 - 1SPD EF H501	
	SPARE	B			20/1	45	46	20/1	G	780	B	07 - 2SPD EF H501	
	SPARE	C			20/1	47	48	20/1	G	600	C	13 - EVAP PAD H501	
	R - GENERAL	A	180	R	20/1	49	50	20/1	G	10	A	11 - INTAKE SHUTTER H501	
	R - GENERAL	B	180	R	20/1	51	52	20/1	G	672	B	03 - RIDGE VENT MTR H501	
	R - GENERAL	C	180	R	20/1	53	54	20/1	G	540	C	10 - VK 12 HAF FAN H501	
	SPACE	A				55	~~56~~	~~20/1~~	~~G~~	~~336~~	~~A~~	~~18 - SHADE SYSTEM H501~~	
	SPACE	B				57	58	30/2	WH	2184	B	UNDER BENCH WATER HTR	
	SPACE	C				59	60	-	WH	2184	C	-	
	SPACE	A				61	62				A	SPACE	
	SPACE	B				63	64				B	SPACE	
	SPACE	C				65	66				C	SPACE	
	SPACE	A				67	68				A	SPACE	
	SPACE	B				69	70				B	SPACE	
	SPACE	C				71	72				C	SPACE	
	SPACE	A				73	74				A	SPACE	
	SPACE	B				75	76				B	SPACE	
	SPACE	C				77	78				C	SPACE	
	SPACE	A				79	80				A	SPACE	
	SPACE	B				81	82				B	SPACE	
	SPACE	C				83	84				C	SPACE	

1 (revision)

GENERAL NOTES
a.
b.
c.

SCHEDULE NOTES
1.
2.
3.

LOAD TYPE	LOAD DESCRIPTION	CONNECTED (kVA)	SUBFED (kVA)	TOTAL BY TYPE (kVA)	DEMAND FACTOR (kVA)	DEMAND BY TYPE (kVA)
G	GENERAL	11.83	11.99	23.82	100%	23.82
L	LIGHTING	0.00	0.18	0.18	125%	0.23
R	RECEPTACLES	0.54	0.36	0.90	100%/50%	0.90
K	KITCHEN	0.00	0.00	0.00	100%	0.00
H	HEATING	30.38	0.00	30.38	100%	30.38
M	MOTORS	0.00	0.00	0.00	100%	0.00
LM	LARGEST MOTOR	0.00	0.00	0.00	125%	0.00
WH	WATER HEATER	4.37	0.00	4.37	125%	5.46
C	CONTINUOUS	16.20	0.00	16.20	125%	20.25

PANELBOARD SGHW

VOLTAGE:	208/120 V	PHASE A:	3446 VA 28.7 A
PHASE/WIRE:	3 PH 4W	PHASE B:	5660 VA 47.2 A
MAIN AMPS:	60 A	PHASE C:	3424 VA 28.5 A
BUS AMPS:	100 A		
AIC RATING	22000 A	CONNECTED:	12530 VA 34.8 A
MOUNTING:	SURFACE	DEMAND:	12576 VA 34.9 A

NOTES	LOAD DESCRIPTION	φ	VA		BKR	CKT	CKT	BKR	VA		φ	LOAD DESCRIPTION	NOTES
	09 - 1SPD EF H601	A	1080	G	30/1	1	2	30/1	G	1080	A	09 - 1SPD EF H600	
	08 - 2SPD EF H601	B	1680	G	30/1	3	4	30/1	G	1680	B	08 - 2SPD EF H600	
	14 - EVAP PAD H601	C	600	G	20/1	5	6	20/1	G	600	C	14 - EVAP PAD H600	
	12 - INTAKE SHUTTER H601	A	13	G	20/1	7	8	20/1	G	13	A	12 - INTAKE SHUTTER H600	
	03 - RIDGE VENT MTR H601	B	672	G	20/1	9	10	20/1	G	672	B	03 - RIDGE VENT MTR H600	
	17 - SIDEWALL VENT MTR H601	C	972	G	20/1	11	12	20/1	G	972	C	17 - SIDEWALL VENT MTR H600	
	10 - VK 12 HAF FAN H601	A	540	G	20/1	13	14	20/1	G	540	A	10 - VK 12 HAF FAN H600	
	18 - SHADE SYSTEM H601	B	336	G	20/1	15	16	20/1	G	336	B	18 - SHADE SYSTEM H600	
	R - GENERAL	C	180	R	20/1	17	18	20/1	G	100	C	IRRIGATION H600	
	R -GENERAL	A	180	R	20/1	19	20	20/1			A	SPARE	
	IRRIGATION H601	B	100	G	20/1	21	22	20/1	L	184	B	EXIT / EMER LTG	
	SPARE	C			20/1	23	24	20/1			C	SPARE	
	SPARE	A			20/1	25	26	20/1			A	SPARE	
	SPARE	B			20/1	27	28	20/1			B	SPARE	
	SPARE	C			20/1	29	30	20/1			C	SPARE	
	SPARE	A			20/1	31	32				A	SPACE	
	SPARE	B			20/1	33	34				B	SPACE	
	SPARE	C			20/1	35	36				C	SPACE	
	SPACE	A				37	38				A	SPACE	
	SPACE	B				39	40				B	SPACE	
	SPACE	C				41	42				C	SPACE	

GENERAL NOTES
a.
b.
c.

SCHEDULE NOTES
1.
2.
3.

LOAD TYPE	LOAD DESCRIPTION	CONNECTED (kVA)	SUBFED (kVA)	TOTAL BY TYPE (kVA)	DEMAND FACTOR (kVA)	DEMAND BY TYPE (kVA)
G	GENERAL	11.99	0.00	11.99	100%	11.99
L	LIGHTING	0.18	0.00	0.18	125%	0.23
R	RECEPTACLES	0.36	0.00	0.36	100%/50%	0.36
K	KITCHEN	0.00	0.00	0.00	100%	0.00
H	HEATING	0.00	0.00	0.00	100%	0.00
M	MOTORS	0.00	0.00	0.00	100%	0.00
LM	LARGEST MOTOR	0.00	0.00	0.00	125%	0.00
WH	WATER HEATER	0.00	0.00	0.00	125%	0.00
C	CONTINUOUS	0.00	0.00	0.00	125%	0.00

PANELBOARD GHE

VOLTAGE:	208/120 V	PHASE A:	29556 VA 246.3 A
PHASE/WIRE:	3 PH 4W	PHASE B:	29556 VA 246.3 A
MAIN AMPS:	400 A	PHASE C:	27556 VA 229.6 A
BUS AMPS:	400 A		
AIC RATING	22000 A	CONNECTED:	86668 VA 240.7 A
MOUNTING:	SURFACE	DEMAND:	93118 VA 258.7 A

NOTES	LOAD DESCRIPTION	φ	VA		BKR	CKT	CKT	BKR	VA		φ	LOAD DESCRIPTION	NOTES
	04 - UNIT HEATER H500	A	5064	H	60/3	1	2	20/2	C	1200	A	GROW LIGHTS H500	1
	-	B	5064	H	-	3	4	-	C	1200	B	-	-
	-	C	5064	H	-	5	6	20/2	C	1200	C	GROW LIGHTS H500	1
	04 - UNIT HEATER H500	A	5064	H	60/3	7	8	-	C	1200	A	-	-
	-	B	5064	H	-	9	10	20/2	C	1200	B	GROW LIGHTS H500	1
	-	C	5064	H	-	11	12	-	C	1200	C	-	-
	04 - UNIT HEATER H501	A	5064	H	60/3	13	14	20/2	C	1200	A	GROW LIGHTS H500	1
	-	B	5064	H	-	15	16	-	C	1200	B	-	-
	-	C	5064	H	-	17	18	20/2	C	1200	C	GROW LIGHTS H501	1
	04 - UNIT HEATER H501	A	5064	H	60/3	19	20	-	C	1200	A	-	-
	-	B	5064	H	-	21	22	20/2	C	1200	B	GROW LIGHTS H501	1
	-	C	5064	H	-	23	24	-	C	1200	C	-	-
1	GROW LIGHTS H501	A	900	L	20/2	25	26	20/2	C	1200	A	GROW LIGHTS H501	1
-	-	B	900	L	-	27	28	-	C	1200	B	-	-
	FIRE SPRINKLER	C	100	G	20/1	29	30	20/2	C	1200	C	GROW LIGHTS H501	1
	SPARE	A			20/1	31	32	-	C	1200	A	-	-
	SPARE	B			20/1	33	34	20/2	C	1200	B	GROW LIGHTS H501	1
	SPARE	C			20/1	35	36	-	C	1200	C	-	-
	SPARE	A			20/1	37	38	20/2	C	1200	A	GROW LIGHTS H501	1
	SPARE	B			20/1	39	40	-	C	1200	B	-	-
	SPARE	C			20/1	41	42	20/1			C	SPARE	

GENERAL NOTES
a.
b.
c.

SCHEDULE NOTES
1. PROVIDE GFCI CIRCUIT BREAKER
2.
3.

LOAD TYPE	LOAD DESCRIPTION	CONNECTED (kVA)	SUBFED (kVA)	TOTAL BY TYPE (kVA)	DEMAND FACTOR (kVA)	DEMAND BY TYPE (kVA)
G	GENERAL	0.10	0.00	0.10	100%	0.10
L	LIGHTING	1.80	0.00	1.80	125%	2.25
R	RECEPTACLES	0.00	0.00	0.00	100%/50%	0.00
K	KITCHEN	0.00	0.00	0.00	100%	0.00
H	HEATING	60.77	0.00	60.77	100%	60.77
M	MOTORS	0.00	0.00	0.00	100%	0.00
LM	LARGEST MOTOR	0.00	0.00	0.00	125%	0.00
WH	WATER HEATER	0.00	0.00	0.00	125%	0.00
C	CONTINUOUS	24.00	0.00	24.00	125%	30.00

PANELBOARD GHW

VOLTAGE:	208/120 V	PHASE A:	10800 VA 90 A
PHASE/WIRE:	3 PH 4W	PHASE B:	7300 VA 60.8 A
MAIN AMPS:	100 A	PHASE C:	7200 VA 60 A
BUS AMPS:	400 A		
AIC RATING	22000 A	CONNECTED:	25300 VA 70.3 A
MOUNTING:	SURFACE	DEMAND:	31600 VA 87.8 A

NOTES	LOAD DESCRIPTION	φ	VA		BKR	CKT	CKT	BKR	VA		φ	LOAD DESCRIPTION	NOTES
	R - HEAT MAT	A	1800	C	20/1	1	2	20/1	C	1800	A	R - HEAT MAT	
	R - HEAT MAT	B	1800	C	20/1	3	4	20/1	C	1800	B	R - HEAT MAT	
	R - HEAT MAT	C	1800	C	20/1	5	6	20/1	C	1800	C	R - HEAT MAT	
	R - HEAT MAT	A	1800	C	20/1	7	8	20/1	C	1800	A	R - HEAT MAT	
	R - HEAT MAT	B	1800	C	20/1	9	10	20/1	C	1800	B	R - HEAT MAT	
	R - HEAT MAT	C	1800	C	20/1	11	12	20/1	C	1800	C	R - HEAT MAT	
	R - HEAT MAT	A	1800	C	20/1	13	14	20/1	C	1800	A	R - HEAT MAT	
	FIRE SPRINKLER	B	100	G	20/1	15	16	20/1			B	SPARE	
	SPARE	C			20/1	17	18	20/1			C	SPARE	
	SPARE	A			20/1	19	20	20/1			A	SPARE	
	SPARE	B			20/1	21	22	20/1			B	SPARE	
	SPARE	C			20/1	23	24	20/1			C	SPARE	
	SPARE	A			20/1	25	26	20/1			A	SPARE	
	SPARE	B			20/1	27	28	20/1			B	SPARE	
	SPARE	C			20/1	29	30	20/1			C	SPARE	
	SPACE	A				31	32				A	SPACE	
	SPACE	B				33	34				B	SPACE	
	SPACE	C				35	36				C	SPACE	
	SPACE	A				37	38				A	SPACE	
	SPACE	B				39	40				B	SPACE	
	SPACE	C				41	42				C	SPACE	

GENERAL NOTES
a.
b.
c.

SCHEDULE NOTES
1.
2.
3.

LOAD TYPE	LOAD DESCRIPTION	CONNECTED (kVA)	SUBFED (kVA)	TOTAL BY TYPE (kVA)	DEMAND FACTOR (kVA)	DEMAND BY TYPE (kVA)
G	GENERAL	0.10	0.00	0.10	100%	0.10
L	LIGHTING	0.00	0.00	0.00	125%	0.00
R	RECEPTACLES	0.00	0.00	0.00	100%/50%	0.00
K	KITCHEN	0.00	0.00	0.00	100%	0.00
H	HEATING	0.00	0.00	0.00	100%	0.00
M	MOTORS	0.00	0.00	0.00	100%	0.00
LM	LARGEST MOTOR	0.00	0.00	0.00	125%	0.00
WH	WATER HEATER	0.00	0.00	0.00	125%	0.00
C	CONTINUOUS	25.20	0.00	25.20	125%	31.50

PANELBOARD E4

VOLTAGE:	208/120 V	PHASE A:	14834 VA 123.6 A
PHASE/WIRE:	3 PH 4W	PHASE B:	14737 VA 122.8 A
MAIN AMPS:	150 A	PHASE C:	14038 VA 117 A
BUS AMPS:	225 A		
AIC RATING	22000 A	CONNECTED:	43609 VA 121.1 A
MOUNTING:	SURFACE	DEMAND:	49325 VA 137 A

NOTES	LOAD DESCRIPTION	φ	VA		BKR	CKT	CKT	BKR	VA		φ	LOAD DESCRIPTION	NOTES
	LTG - SITE	A	262	L	20/1	1	2	20/1			A	SPARE	
	LTG - CLASS LAB	B	937	L	20/1	3	4	20/1			B	SPARE	
	LTG - JANI, RESTRM	C	248	L	20/1	5	6	20/1			C	SPARE	
	SPARE	A		L	20/1	7	8	20/1			A	SPARE	
	SPARE	B			20/1	9	10	20/1			B	SPARE	
	SPARE	C			20/1	11	12	20/1			C	SPARE	
	R - CLASS 1 FLOOR BOX	A	720	R	20/1	13	14	20/1	R	1000	A	R - PROJECTOR	
	R - CLASS 1 FLOOR BOX	B	720	R	20/1	15	16	20/1	R	1000	B	R - PROJECTOR	
	R - CLASS 1 FLOOR BOX	C	720	R	20/1	17	18	20/1	R	720	C	R - CLASS 3	
	R - CLASS 1 FLOOR BOX	A	720	R	20/1	19	20	20/1	R	720	A	R - CLASS 3	
	R - CLASS 1 FLOOR BOX	B	720	R	20/1	21	22	20/1	R	720	B	R - CLASS 3	
	R - CLASS 1 FLOOR BOX	C	720	R	20/1	23	24	20/1	R	720	C	R - CLASS 3	
	HAND DRYER	A	500	G	20/1	25	26	20/1	R	500	A	MOTORIZED SHADE	
	HAND DRYER	B	500	G	20/1	27	28	20/1	M	1176	B	MOTORIZED GATE	
	R - RESTROOM	C	720	R	20/1	29	30	20/1	G	288	C	WINDOW ACTUATOR	
	SPARE	A			20/1	31	32	20/1			A	SPARE	
	SPARE	B			20/1	33	34	20/1			B	SPARE	
	SPARE	C			20/1	35	36	20/1			C	SPARE	
	SPARE	A			20/1	37	38	20/1			A	SPARE	
	SPARE	B			20/1	39	40	20/1			B	SPARE	
	SPARE	C			20/1	41	42	20/1			C	SPARE	
	FC-1	A	740	M	15/2	43	44	20/2	H	998	A	EUH-1	
	-	B	740	M	-	45	46	-	H	998	B	-	
	WH-4	C	3952	WH	50/2	47	48	20/2	H	998	C	EUH-2	
	-	A	3952	WH	-	49	50	-	H	998	A	-	
	WH-5	B	3952	WH	50/2	51	52	20/1	M	50	B	EF-3	
	-	C	3952	WH	-	53	54	20/1	M	1000	C	CEILING FANS	
	WH-6	A	3224	WH	40/2	55	56	20/1	G	500	A	BMS CONTROL	1
	-	B	3224	WH	-	57	58	20/1			B	SPARE	
	SPARE	C			20/1	59	60	20/1			C	SPARE	

GENERAL NOTES
a. EATON PRL1A WITH 3 BREAKER BLOCKS (12-30-18) OR APPROVED
b. PROVIDE 3 FUTURE METERING DEVICE SPACES
c.

SCHEDULE NOTES
1. FIELD COORDINATE WITH DIV 25
2.
3.

LOAD TYPE	LOAD DESCRIPTION	CONNECTED (kVA)	SUBFED (kVA)	TOTAL BY TYPE (kVA)	DEMAND FACTOR (kVA)	DEMAND BY TYPE (kVA)
G	GENERAL	1.79	0.00	1.79	100%	1.79
L	LIGHTING	1.45	0.00	1.45	125%	1.81
R	RECEPTACLES	10.42	0.00	10.42	100%/50%	10.21
K	KITCHEN	0.00	0.00	0.00	100%	0.00
H	HEATING	3.99	0.00	3.99	100%	3.99
M	MOTORS	3.71	0.00	3.71	100%	3.71
LM	LARGEST MOTOR	0.00	0.00	0.00	125%	0.00
WH	WATER HEATER	22.26	0.00	22.26	125%	27.82
C	CONTINUOUS	0.00	0.00	0.00	125%	0.00

PANELBOARD T1

VOLTAGE:	208/120 V	PHASE A:	6100 VA 50.8 A
PHASE/WIRE:	3 PH 4W	PHASE B:	4600 VA 38.3 A
MAIN AMPS:	100 A	PHASE C:	4500 VA 37.5 A
BUS AMPS:	225 A		
AIC RATING	22000 A	CONNECTED:	15200 VA 42.2 A
MOUNTING:	SURFACE	DEMAND:	12700 VA 35.3 A

NOTES	LOAD DESCRIPTION	φ	VA		BKR	CKT	CKT	BKR	VA		φ	LOAD DESCRIPTION	NOTES
	AC-1	A	100	M	15/2	1	2	20/1	R	1500	A	R - RACK 1	
	-	B	100	M	-	3	4	20/1	R	1500	B	R - RACK 1	
	SPARE	C			20/1	5	6	20/1	R	1500	C	R - RACK 2	
	SPARE	A			20/1	7	8	20/1	R	1500	A	R - RACK 2	
	SPARE	B			20/1	9	10	20/1	R	1500	B	R - RACK 3	
	SPARE	C			20/1	11	12	20/1	R	1500	C	R - RACK 3	
	SPARE	A			20/1	13	14	20/1	R	1500	A	R - ACCESS CNTRL	
	SPARE	B			20/1	15	16	20/1	R	1500	B	R - INTRUSION	
	SPARE	C			20/1	17	18	20/1	R	1500	C	R - NETWORK DEMARC	
	SPARE	A			20/1	19	20	20/1	R	1500	A	R - NETWORK DEMARC	
	SPARE	B			20/1	21	22	20/1			B	SPARE	
	SPARE	C			20/1	23	24	20/1			C	SPARE	
	SPARE	A			20/1	25	26	20/1			A	SPARE	
	SPARE	B			20/1	27	28	20/1			B	SPARE	
	SPARE	C			20/1	29	30	20/1			C	SPARE	
	SPARE	A			20/1	31	32	20/1			A	SPARE	
	SPARE	B			20/1	33	34	20/1			B	SPARE	
	SPARE	C			20/1	35	36	20/1			C	SPARE	
	SPARE	A			20/1	37	38	20/1			A	SPARE	
	SPARE	B			20/1	39	40	20/1			B	SPARE	
	SPARE	C			20/1	41	42	20/1			C	SPARE	

GENERAL NOTES
a.
b.
c.

SCHEDULE NOTES
1.
2.
3.

LOAD TYPE	LOAD DESCRIPTION	CONNECTED (kVA)	SUBFED (kVA)	TOTAL BY TYPE (kVA)	DEMAND FACTOR (kVA)	DEMAND BY TYPE (kVA)
G	GENERAL	0.00	0.00	0.00	100%	0.00
L	LIGHTING	0.00	0.00	0.00	125%	0.00
R	RECEPTACLES	15.00	0.00	15.00	100%/50%	12.50
K	KITCHEN	0.00	0.00	0.00	100%	0.00
H	HEATING	0.00	0.00	0.00	100%	0.00
M	MOTORS	0.20	0.00	0.20	100%	0.20
LM	LARGEST MOTOR	0.00	0.00	0.00	125%	0.00
WH	WATER HEATER	0.00	0.00	0.00	125%	0.00
C	CONTINUOUS	0.00	0.00	0.00	125%	0.00

SGHE	GHE	E4
SGHW	GHW	T1

APPROVALS

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-119409 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/14/2022

NOLL & TAM ARCHITECTS
729 Heinz Avenue
Berkeley, CA 94710
tel 510.542.2200
fax 510.542.2201

RIJA
5515 Doyle Street, #7
Emeryville, CA 94608
www.rijainc.com
RIJA Job #: 2020011

SEAL

REGISTERED PROFESSIONAL ENGINEER
RAJA JOSHI
No. E19586
Exp. 06-30-23
ELECTRICAL
STATE OF CALIFORNIA

Date Signed:
8/17/22

PROJECT TITLE

Peralta Community College District
Merritt Landscape Horticulture Complex

12500 Campus Drive
Oakland, CA 94616

BID SET

ISSUE DATE 03/03/2022
N&T JOB NUMBER 22003

REVISIONS

#	DATE	DESCRIPTION
1	8/17/2022	ADDENDUM 1, ITEM 2

DRAWN BY CAD | CHECKED BY RAJ

SHEET TITLE
SCHEDULES

SHEET NUMBER
E5.03

BIM 360://PCCD Merritt Horticulture/Merritt Horticulture_2020.rvt
4/3/2020 7:20:00 PM

SECTION 09 30 00 - TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for wall applications.

B. Cementitious backer board for exterior substrate.

C. Ceramic accessories.

D. Ceramic trim.

E. Non-ceramic trim.

F. Exterior tile assemblies.

1.02 RELATED REQUIREMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Section 07 27 26 - Sheet-Applied Membrane Air Barriers, Vapor Impermeable: Air barrier at walls to receive exterior tile.

C. Section 07 62 00 – Sheet Metal flashing and Trim: Exterior sheet metal wall covering.

D. Section 07 92 00-Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.

E. Section 07 92 00-Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.

F. Section 07 92 00 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.

G. Section 09 29 00 - Gypsum Board: Tile backer board for interior wall tile.

H. Section 12 36 00 - Countertops: Solid surface, stainless steel, and concrete countertops.

I. Section 22 30 00 - Plumbing Systems

J. Section 22 40 00 - Plumbing Fixtures: Sinks, lavatories, and fittings.

1.03 REFERENCE STANDARDS

A. ANSI A108/A118/A136 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium) 2019.

B. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar 2017.

C. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar 2017.

D. ANSI A108.1c - Contractor's Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar 1999 (Reaffirmed 2021).

E. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive 2019.

F. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar 2020.

G. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy 1999 (Reaffirmed 2019).

H. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout 1999 (Reaffirmed 2019).

I. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout 1999 (Reaffirmed 2019).

J. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework 2017.

K. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units 2018.

L. ANSI A108.12 - American National Standard for Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar 1999 (Reaffirmed 2019).

M. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone 2005 (Reaffirmed 2021).

N. ANSI A118.4 - American National Standard Specifications for Modified Dry-Set Cement Mortar 2012 (Revised).

O. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation 2010 (Reaffirmed 2016).

P. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation 2010 (Reaffirmed 2016).

Q. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units 1999 (Reaffirmed 2016).

R. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes For Thin-Set Ceramic Tile And Dimension Stone Installation 2014.

S. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation 2014.

T. ANSI A118.15 - American National Standard Specifications for Improved Modified Dry-Set Cement Mortar 2012.

U. ANSI A137.1 - American National Standard Specifications for Ceramic Tile 2021.

V. ASTM C373 - Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products 2018.

W. ASTM C1178/C1178M - Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel 2018.

X. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2021.

Y. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2016a.

Z. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation 2019.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by affected installers.

1.05 SUBMITTALS

A. CALGreen Submittals: Provide the following:

1. Product Data for CALGreen 5.504.4.1 – Finish Material Pollutant Control; Adhesives, Sealants, and Caulks: For adhesives, sealants, and caulks, including printed statement of VOC content and chemical components.

2. Refer to Section 01 81 13 - Sustainable Design Requirements: Requirements for low-emitting materials.

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.

D. Setting and Grouting Systems: Indicate TCNA installation system for each type of tile and setting assembly.

E. Samples: Mount tile and apply grout on two plywood panels, minimum 18 by 18 inches in size illustrating pattern, color variations, and grout joint size variations.

F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

G. Installer's Qualification Statement:

1. Submit documentation of completion of apprenticeship and certification programs.

H. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.

I. Maintenance Materials: Furnish the following for District's use in maintenance of project.

1. Extra Tile: 1 percent of each size, color, and surface finish combination.

1.06 QUALITY ASSURANCE

A. Maintain one copy of and ANSI A108/A118/A136 and TCNA (HB) on site.

B. Installer Qualifications:

1. Company specializing in performing tile installation, with minimum of five years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.08 FIELD CONDITIONS

A. Do not install solvent-based products in an unventilated environment.

B. Maintain ambient and substrate temperature above 50 degrees F and below 100 degrees F during installation and curing of setting materials.

PART 2 PRODUCTS

2.01 TILE

A. Manufacturers:

1. Crossville: www.crossville.com.
2. or equal.

B. Glazed Interior Wall Tile, Type WT1: ANSI A137.1 standard grade.

1. Moisture Absorption: <20.0% percent as tested in accordance with ASTM C373.
2. Size: 4 inch x 12 inch, nominal.
3. Surface Finish: Glazed Satin
4. Color(s): As indicated on drawings..
5. ~~Pattern: Running bond.~~ Pattern: Stacked bond
6. Trim: Schluter Systems as indicated in the drawings.
7. Trim Units: Matching bullnose and base shapes in sizes coordinated with field tile
8. Products:
   a. Crossville Corporation; Color by Numbers: www.crosssville.com
   b. or equal.

C. Porcelain Stone Textured Exterior Tile: ANSI A137.1 standard grade.

1. Moisture Absorption: 0 to 0.2 percent as tested in accordance with ASTM C373.
2. Frost resistant as tested in accordance with ASTM C1026
3. Size: 12 in by 24 in inch, nominal.
4. Thickness: 3/8 inch.

5. Surface Finish: Unpolished, textured.

6. Color(s): As indicated on drawings.

7. ~~Pattern: Running bond.~~ Pattern: Stacked bond

8. Products:

    a. Crossville; Basalt: www.crossville.com.

    b. or equal.

2.02 TRIM AND ACCESSORIES

A. Ceramic Trim: Matching bullnose, double bullnose, cove base, and cove ceramic shapes in sizes coordinated with field tile.

1. Manufacturers: Same as for tile.

B. Non-Ceramic Trim: Satin Nickel Anodized Aluminum, style and dimensions to suit application, for setting using tile mortar or adhesive.

1. Applications:

    a. Thresholds at door openings.

    b. Floor to wall joints.

2. Manufacturers:

    a. Schluter-Systems: www.schluter.com/#sle.

2.03 SETTING MATERIALS

A. Provide setting and grout materials from same manufacturer.

B. Manufacturers:

1. ARDEX Engineered Cements: www.ardexamericas.com/#sle.

2. Custom Building Products: www.custombuildingproducts.com/#sle.

3. LATICRETE International, Inc: www.laticrete.com/#sle.

4. or equal.

C. Latex-Portland Cement Mortar Bond Coat: ANSI A118.4.

1. Applications: Use this type of bond coat where indicated and where no other type of bond coat is indicated.

2. Products:

   a. ARDEX Engineered Cements; ARDEX X 5: www.ardexamericas.com/#sle.

   b. Custom Building Products; ProLite Premium Rapid Setting Large Format Tile Mortar, with Multi-Surface Bonding Primer: www.custombuildingproducts.com/#sle.

   c. LATICRETE International, Inc[<>]: www.laticrete.com/#sle.

   d. or equal.

2.04 GROUTS

A. Manufacturers:

1. ARDEX Engineered Cements: www.ardexamericas.com/#sle.

2. Custom Building Products: www.custombuildingproducts.com/#sle.

3. LATICRETE International, Inc; LATICRETE PERMACOLOR Grout: www.laticrete.com/#sle.

4. or equal.

B. High Performance Polymer Modified Grout: ANSI A118.7 polymer modified cement grout.

1. Applications: Use this type of grout at walls .

2. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.

3. Color(s): As selected by Architect from manufacturer's full line.

4. Products:

   a. ARDEX Engineered Cements; ARDEX FL: www.ardexamericas.com/#sle.

   b. Custom Building Products; Prism Color Consistent Grout: www.custombuildingproducts.com/#sle.

   c. LATICRETE International, Inc; LATICRETE PERMACOLOR Grout: www.laticrete.com/#sle.

2.05 MAINTENANCE MATERIALS

A. Tile Sealant: Gunnable, silicone, siliconized acrylic, or urethane sealant; moisture and mildew resistant type.

1. Applications: Between tile and plumbing fixtures.

2. Color(s): As selected by Architect from manufacturer's full line.

3. Products:

a. ARDEX Engineered Cements; ARDEX SX: www.ardexamericas.com/#sle.

b. Custom Building Products; Commercial 100% Silicone Caulk: www.custombuildingproducts.com/#sle.

c. LATICRETE International, Inc; LATICRETE LATASIL: www.laticrete.com/#sle.

2.06 ACCESSORY MATERIALS

A. Waterproofing Membrane for Exterior Tile: Specifically designed for bonding to cementitious substrate under thick mortar bed or thin-set tile; complying with ANSI A118.10.

1. Fluid or Trowel Applied Type:

a. Material: Synthetic rubber.

b. Thickness: 25 mils, minimum, dry film thickness.

c. Products:

1) LATICRETE International, Inc; LATICRETE HYDRO BAN: www.laticrete.com/#sle.

2) Merkrete, by Parex USA, Inc; Merkrete Hydro Guard 2000: www.merkrete.com/#sle.

3) USG Corporation; Durock Brand Liquid Waterproofing Membrane: www.usg.com/#sle.

B. Exterior Tile Backer Board: Cementitious type complying with ANSI A118.9; high density, glass fiber reinforced, thickmesses as indicated on details; 2 inch wide coated glass fiber tape for joints and corners.

1. Products:

a. Custom Building Products; WonderBoard Lite Backerboard: www.custombuildingproducts.com/#sle.

b. United States Gypsum: USG Durock with Edgeguard: www.usg.com/#sle

C. Interior Tile Backer Board: See Section 09 29 00 - Gypsum Board.

D. Mesh Tape: 2 inch wide self-adhesive fiberglass mesh tape.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Install interior tile backer board in accordance with Section 09 29 00 - Gypsum Board.

C. Install exterior backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to a feather edge.

3.03 INSTALLATION - GENERAL

A. Install tile and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.13, manufacturer's instructions, and TCNA (HB) recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly.

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

E. Form internal angles square and external angles bullnosed or with metal trim as detailed.

F. Install ceramic accessories rigidly in prepared openings.

G. Install non-ceramic trim in accordance with manufacturer's instructions.

H. Keep control and expansion joints free of mortar, grout, and adhesive.

I. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

J. Grout tile joints unless otherwise indicated.

K. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 INSTALLATION - WALL TILE

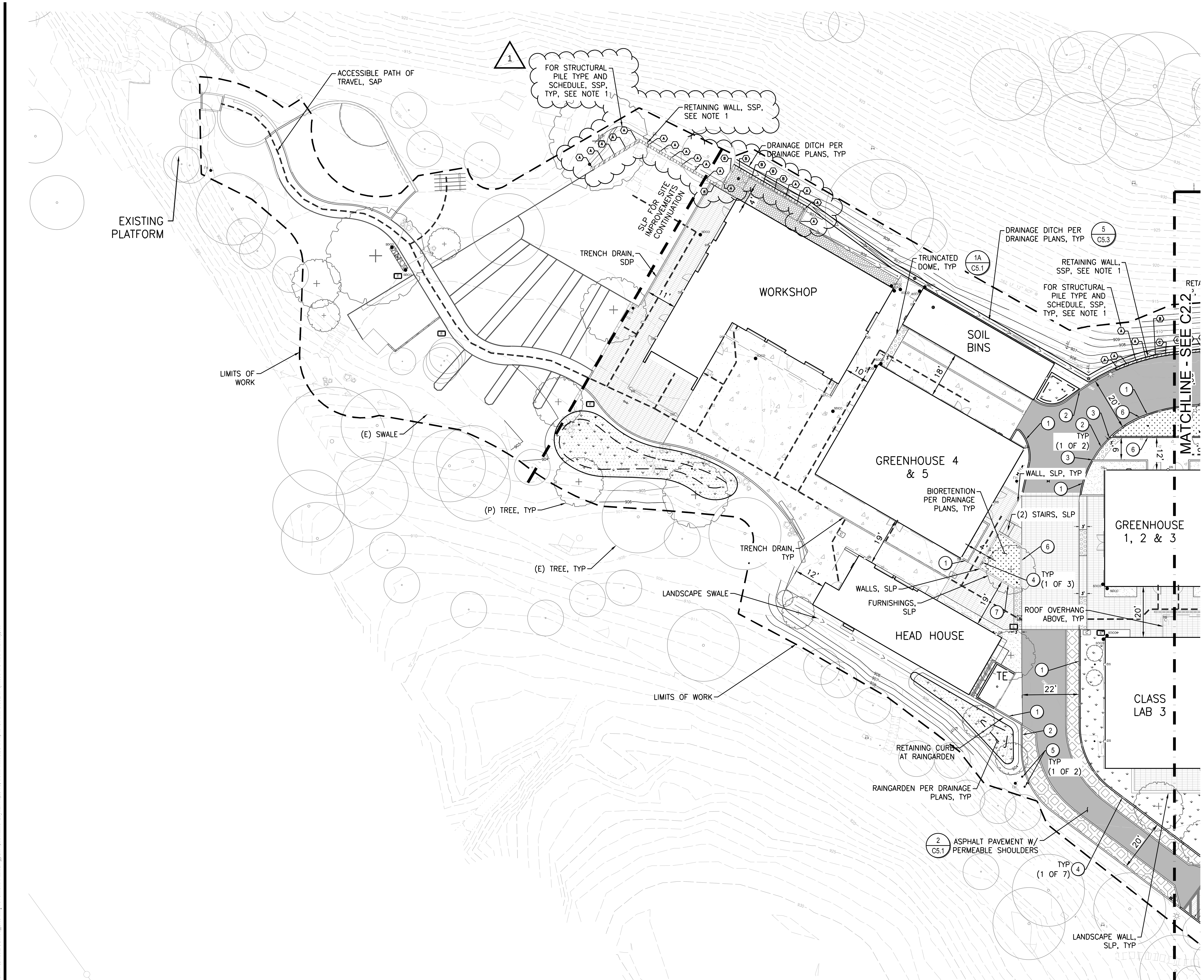
A. On exterior walls over cementitious backer units on studs, install in accordance with TCNA (HB) Method 244E with sheet applied membrane air barrier..

B. Over interior coated glass mat backer board on studs, install in accordance with TCNA (HB) Method W245.

3.05 CLEANING

A. Clean tile and grout surfaces.

END OF SECTION



SITE LEGEND

	LIMITS OF WORK
	DETECTABLE WARNING SURFACE 36" WIDE UON
	WHEELSTOP
	EDGE OF PAVEMENT
	FLUSH CURB, SLP
	VERTICAL CURB
	FLOWLINE
	VEHICULAR ASPHALT SEE DETAIL 2/C5.1
	VEHICULAR CONCRETE, SLP
	PERMEABLE PAVERS, SLP
	CONCRETE PAVERS, SLP
	RETAINING WALL, SSP
	RAINGARDEN SEE DETAIL 1/C5.4
	BIORETENTION SEE DETAIL 6/C5.4
	TREATMENT LANDSCAPE
	MULCH, SLP
	PERMEABLE PAVING, SLP
	GRAVEL, SLP
	LANDSCAPE, SLP
	ACCESSIBLE PATH OF TRAVEL, SAP
	STRUCTURAL PILE, TYP, SEE NOTE 1

KEYNOTES

1	VERTICAL CURB SEE DETAIL 3/C5.1
2	FLUSH CURB, SLP
3	TAPER VERTICAL CURB DOWN TO FLUSH CURB WITHIN 12"
4	CURB OPENING, APPROXIMATE WHERE SHOWN SEE DETAIL 2/C5.2
5	BOLLARD SEE DETAIL 1/C5.2
6	VERTICAL RETAINING CURB SEE DETAIL 4/C5.2

NOTES:
1. RETAINING WALL PILES AND CALLOUTS ARE SHOWN FOR REFERENCE ONLY. SEE STRUCTURAL PLAN 8/S4.03 FOR PILE TYPE, SCHEDULE AND INSTALLATION.
2. SEE ARCHITECTURAL PLAN G1.11 FOR ACCESSIBILITY NOTES.

NORTH

0 10' 20' 40'

APPROVALS

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-119409 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/14/2022

NOLL & TAM ARCHITECTS
729 Heinz Avenue
Berkeley, CA 94710
tel 510.542.2200
fax 510.542.2201

SEAL

FOR DSA APPROVAL

SHERWOOD DESIGN ENGINEERS
625 2nd Street, Suite 202
Petaluma, CA 94952
www.sherwoodengineers.com

PROJECT TITLE

Peralta Community College District
MERRITT COLLEGE NEW LANDSCAPE HORTICULTURE COMPLEX

12500 Campus Drive
Oakland, CA 94619

BID SET

ISSUE DATE 03/03/2021

N&T JOB NUMBER 22003

REVISIONS

#	DATE	DESCRIPTION
1	08.17.2022	ADDENDUM 1, ITEM 4

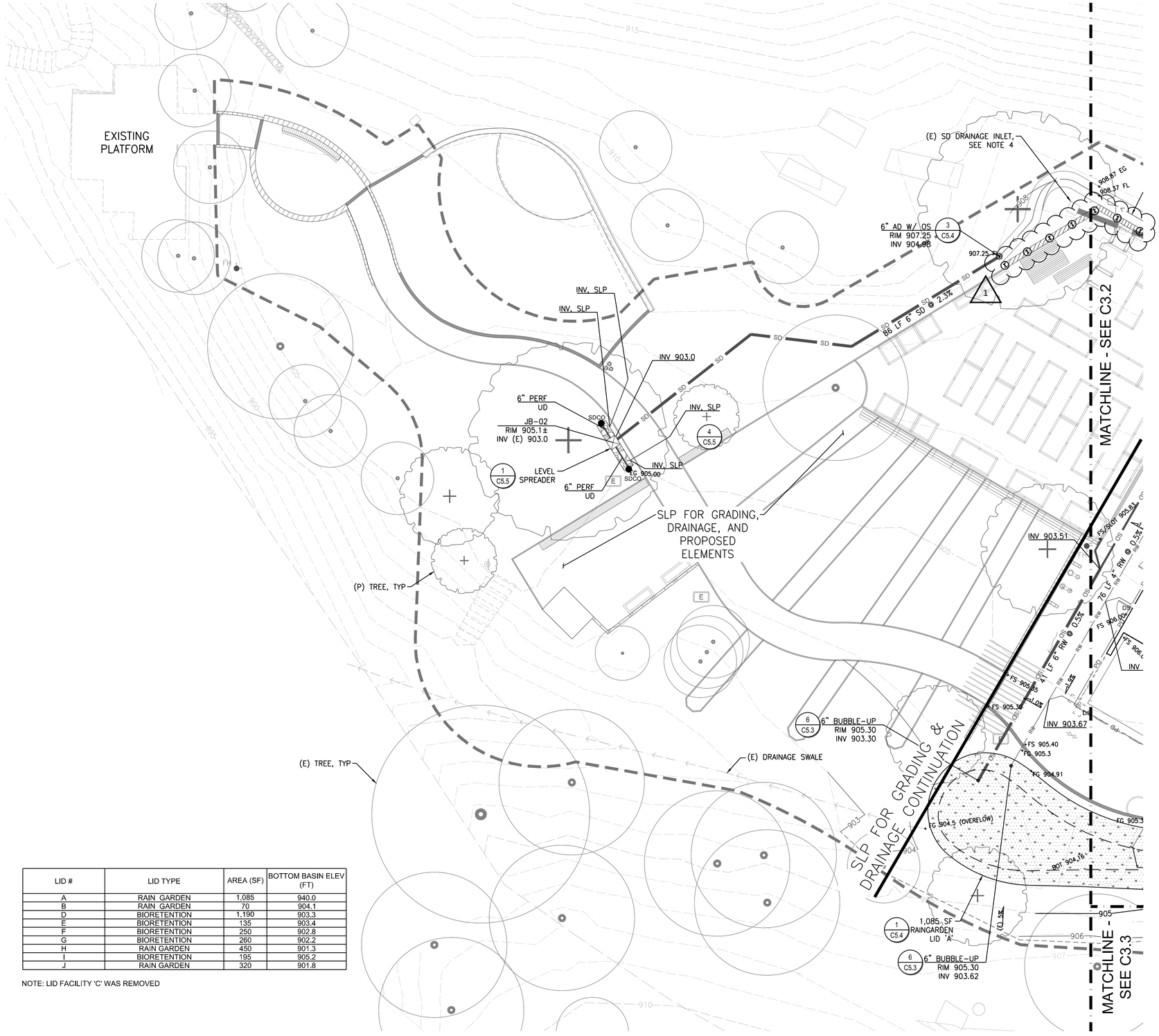
DRAWN BY MR CHECKED BY LC

SHEET TITLE

SITE PLAN

SHEET NUMBER

C2.1



LID #	LID TYPE	AREA (SF)	BOTTOM BASIN ELEV (FT)
A	RAIN GARDEN	1,085	940.0
B	RAIN GARDEN	70	904.1
D	BIORETENTION	1,190	903.3
E	BIORETENTION	135	903.4
F	BIORETENTION	250	902.8
G	BIORETENTION	260	902.2
H	RAIN GARDEN	450	901.3
I	BIORETENTION	195	905.2
J	RAIN GARDEN	320	901.8

NOTE: LID FACILITY 'C' WAS REMOVED

LEGEND

- LIMITS OF GRADING
- GB — GRADE BREAK
- 102 — (P) MINOR CONTOUR
- 100 — (P) MAJOR CONTOUR
- 102 — (E) MINOR CONTOUR
- 100 — (E) MAJOR CONTOUR
- LIMITS OF WORK
- SAWCUT
- X.X% — SLOPE
- (P) CURB CUT
- (P) AREA DRAIN
- (P) DRAIN INLET
- (P) TRENCH DRAIN
- (P) SLOT DRAIN
- SD — (P) SD MANHOLE
- SDCO — (P) SD CLEAN OUT SEE DETAIL 2/C5.5
- DS — (P) DOWNSPOUT SEE DETAIL 4/C5.4
- (P) ROCK INLET/OUTLET PROTECTION
- SD — (E) STORM DRAIN PIPE
- SD SD — (P) STORM DRAIN PIPE
- UD UD — (P) PERFORATED UNDER DRAIN
- PD PD — (P) PERIMETER DRAIN
- DRAINAGE ARROW
- (E) FLOWLINE
- (P) FLOWLINE
- (P) RAINGARDEN
- (P) BIORETENTION
- (P) TREATMENT LANDSCAPE

DRAINAGE NOTES

1. CONTRACTOR TO PROVIDE STORM DRAIN PIPES OF SIZE, LENGTH AND SLOPE INDICATED ON THE DRAWINGS. UNLABELED PIPES ARE 6-INCHES DIAMETER FOR STORM DRAIN LINES & 4-INCHES DIAMETER FOR RAIN WATER LINES AT 2% MINIMUM SLOPE, LENGTH AS SCALED, UNLESS OTHERWISE NOTED.
   RAIN GARDENS AND BIORETENTION BASINS SHALL BE CONSTRUCTED PER DETAILS PROVIDED AND CONSTRUCTED TO SHAPE, DIMENSIONS AND DETENTION VOLUMES INDICATED. PONDING SURFACE DEPTHS AND FREEBOARD REQUIRE LEVEL GRADES AT TOP AND TOE OF BASIN EMBANKMENTS. NO ADJUSTMENTS TO GRADES ARE ALLOWED WITHOUT EXPRESS WRITTEN DIRECTION FROM THE ENGINEER.
2. SOILS INCORPORATED INTO RAIN GARDENS AND BIORETENTION BASINS SHALL BE AS SPECIFIED AND APPROVED BY THE ENGINEER WITHOUT EXCEPTION.
3. THE CONTRACTOR IS RESPONSIBLE TO OPERATE AND MAINTAIN ALL DRAINAGE STRUCTURES AND FEATURES UNTIL FINAL ACCEPTANCE BY THE OWNER. FEATURES SUCH AS RAIN GARDENS AND OTHER LOW-IMPACT DEVELOPMENT (LID) ELEMENTS SHALL NOT BE USED FOR IMPOUNDMENT OR EROSION/SEDIMENT CONTROL DURING CONSTRUCTION UNLESS THOROUGHLY PROTECTED FROM SILT-UP OR CLOGGING. CLEAN UP OR REPLACEMENT OF SOILS IMPACTED BY CONSTRUCTION ACTIVITIES OR RUNOFF PRIOR TO HAND-OVER SHALL BE REPLACED PER ORIGINAL DESIGN AT THE CONTRACTOR'S EXPENSE.
4. VERIFY LOCATION OF EXISTING STORM DRAINS TO ASSURE THERE ARE NO CONFLICTS. COORDINATE WITH CIVIL ENGINEER IF EXISTING STORM DRAIN LOCATION, INVERTS OR SLOPES VARY FROM PLANS.

ACCESIBILITY NOTES

1. ALL SITE WORK SHALL BE IN CONFORMANCE WITH THE AMERICANS WITH DISABILITIES ACT.
2. A 1:48 MAXIMUM SLOPE LANDING SHALL BE PROVIDED AT PRIMARY ENTRANCES OF THE BUILDINGS. THE LANDINGS SHALL HAVE A MINIMUM DEPTH OF 60" WHEN THE DOOR OPENS INTO THE BUILDING OR 42" PLUS THE WIDTH OF THE DOOR WHEN THE DOOR OPEN ONTO THE LANDING.
3. CROSS SLOPE ON ANY SIDEWALK OR RAMP SHALL BE 1:48 MAXIMUM.
4. CURB RAMPS SHALL NOT EXCEED A SLOPE OF 1:12 (8.33%).
5. SLOPES WITHIN ACCESSIBLE PARKING STALLS AND ACCESS AISLES SHALL BE 1:48 MAXIMUM IN ANY DIRECTION.
6. PROVIDE FLUSH TRANSITIONS AT ADJACENT SURFACES.

NORTH

0 5' 10' 20'

APPROVALS

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-119409 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/14/2022

NOLL & TAM ARCHITECTS
729 Heinz Avenue
Berkeley, CA 94710
tel 510.542.2200
fax 510.542.2201

SEAL

FOR DSA APPROVAL

SHERWOOD DESIGN ENGINEERS
625 2nd Street, Suite 202
Petaluma, CA 94952
www.sherwoodengineers.com

PROJECT TITLE

Peralta Community College District
MERRITT COLLEGE NEW LANDSCAPE HORTICULTURE COMPLEX

12500 Campus Drive
Oakland, CA 94619

BID SET

ISSUE DATE	03/03/2021
N&T JOB NUMBER	22003

REVISIONS

Δ	DATE	DESCRIPTION
1	08.17.2022	ADDENDUM 1, ITEM 4

DRAWN BY MR | CHECKED BY LC

SHEET TITLE

GRADING AND DRAINAGE PLAN

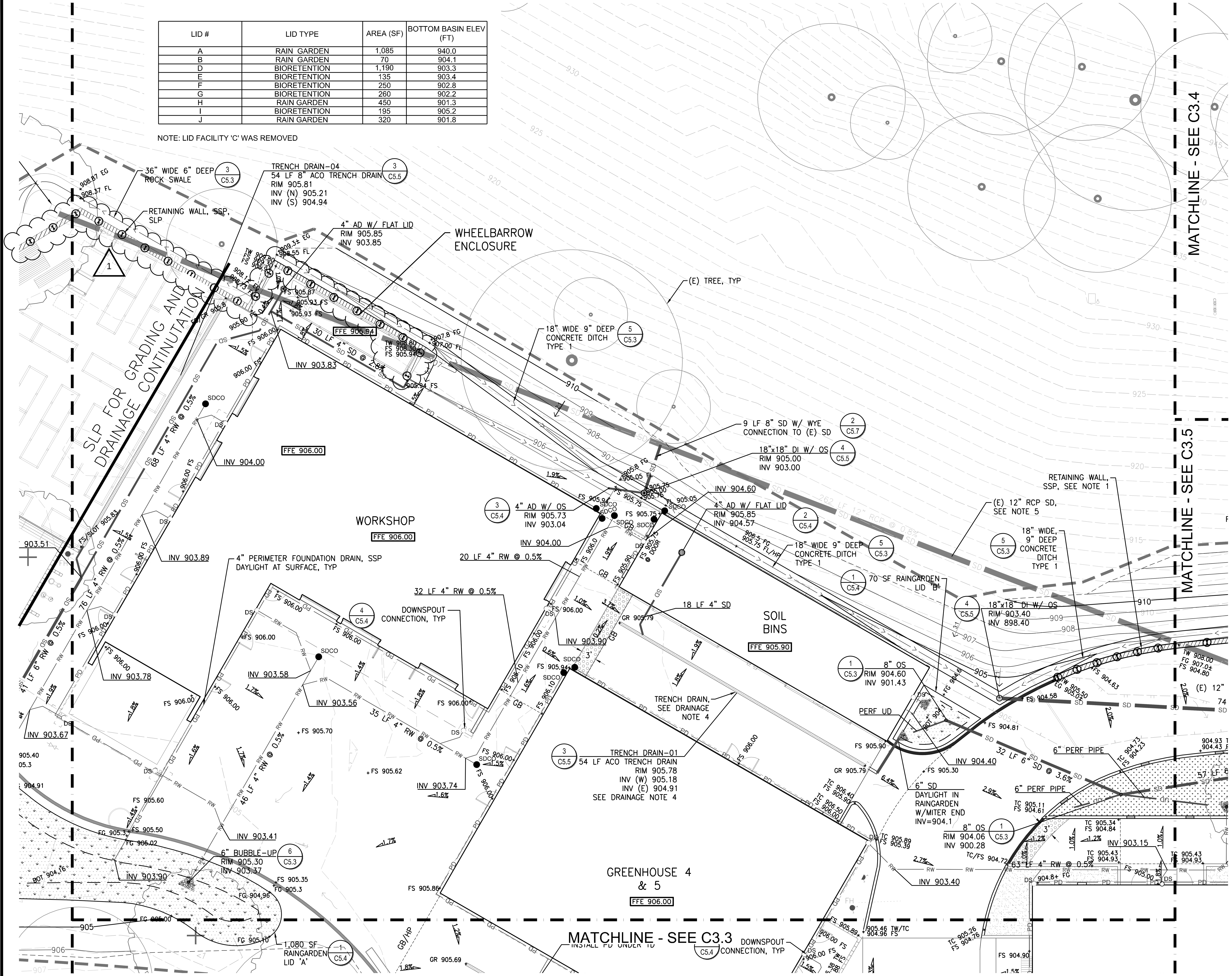
SHEET NUMBER

C3.1

P:\2019\19-009-Merritt_Hort\PD_Design\01_CAD Sheets\C3.00_Grading and Drainage.dwg C3.1 Lorraine Cuffaro 8/14/2022 12:19:05 PM - 1:1

LID #	LID TYPE	AREA (SF)	BOTTOM BASIN ELEV (FT)
A	RAIN GARDEN	1,085	940.0
B	RAIN GARDEN	70	904.1
D	BIORETENTION	1,190	903.3
E	BIORETENTION	135	903.4
F	BIORETENTION	250	902.8
G	BIORETENTION	260	902.2
H	RAIN GARDEN	450	901.3
I	BIORETENTION	195	905.2
J	RAIN GARDEN	320	901.8

NOTE: LID FACILITY 'C' WAS REMOVED



LEGEND

- LIMITS OF GRADING
- GRADE BREAK
- (P) MINOR CONTOUR
- (P) MAJOR CONTOUR
- (E) MINOR CONTOUR
- (E) MAJOR CONTOUR
- LIMITS OF WORK
- SAWCUT
- SLOPE
- (P) CURB CUT
- (P) AREA DRAIN
- (P) DRAIN INLET
- (P) TRENCH DRAIN
- (P) SLOT DRAIN
- (P) SD MANHOLE
- (P) SD CLEAN OUT SEE DETAIL 2/C5.5
- (P) DOWNSPOUT SEE DETAIL 4/C5.4
- (P) ROCK INLET/OUTLET PROTECTION
- (E) STORM DRAIN PIPE
- (P) STORM DRAIN PIPE
- (P) PERFORATED UNDER DRAIN
- (P) PERIMETER DRAIN
- DRAINAGE ARROW
- (E) FLOWLINE
- (P) FLOWLINE
- (P) RAINGARDEN
- (P) BIORETENTION
- (P) TREATMENT LANDSCAPE

DRAINAGE NOTES

1. CONTRACTOR TO PROVIDE STORM DRAIN PIPES OF SIZE, LENGTH AND SLOPE INDICATED ON THE DRAWINGS. UNLABELED PIPES ARE 6-INCHES DIAMETER FOR SD LINES & 4-INCHES DIAMETER FOR RW LINES AT 2% MINIMUM SLOPE, LENGTH AS SCALED, UNLESS OTHERWISE NOTED. RAIN GARDENS AND BIORETENTION BASINS SHALL BE CONSTRUCTED PER DETAILS PROVIDED AND CONSTRUCTED TO SHAPE, DIMENSIONS AND DETENTION VOLUMES INDICATED. PONDING SURFACE DEPTHS AND FREEBOARD REQUIRE LEVEL GRADES AT TOP AND TOE OF BASIN EMBANKMENTS. NO ADJUSTMENTS TO GRADES ARE ALLOWED WITHOUT EXPRESS WRITTEN DIRECTION FROM THE ENGINEER.
2. SOILS INCORPORATED INTO RAIN GARDENS AND BIORETENTION BASINS SHALL BE AS SPECIFIED AND APPROVED BY THE ENGINEER WITHOUT EXCEPTION.
3. THE CONTRACTOR IS RESPONSIBLE TO OPERATE AND MAINTAIN ALL DRAINAGE STRUCTURES AND FEATURES UNTIL FINAL ACCEPTANCE BY THE OWNER. FEATURES SUCH AS RAIN GARDENS AND OTHER LOW-IMPACT DEVELOPMENT (LID) ELEMENTS SHALL NOT BE USED FOR IMPOUNDMENT OR EROSION/SEDIMENT CONTROL DURING CONSTRUCTION UNLESS THOROUGHLY PROTECTED FROM SILT-UP OR CLOGGING. CLEAN UP OR REPLACEMENT OF SOILS IMPACTED BY CONSTRUCTION ACTIVITIES OR RUNOFF PRIOR TO HAND-OVER SHALL BE REPLACED PER ORIGINAL DESIGN AT THE CONTRACTOR'S EXPENSE.
4. 54 LF. 8" TD WITH 1/2 METER SECTION AT UPSTREAM END; 1/2 METER CB AT DOWNSTREAM END. BEGIN WITH SHALLOWEST AVAILABLE TD UNIT AT UPSTREAM END.
5. VERIFY LOCATION OF EXISTING STORM DRAINS TO ASSURE THERE ARE NO CONFLICTS. COORDINATE WITH CIVIL ENGINEER IF EXISTING STORM DRAIN LOCATION, INVERTS OR SLOPES VARY FROM PLANS.

ACCESIBILITY NOTES

1. ALL SITE WORK SHALL BE IN CONFORMANCE WITH THE AMERICANS WITH DISABILITIES ACT.
2. A 1:48 MAXIMUM SLOPE LANDING SHALL BE PROVIDED AT PRIMARY ENTRANCES OF THE BUILDINGS. THE LANDINGS SHALL HAVE A MINIMUM DEPTH OF 60" WHEN THE DOOR OPENS INTO THE BUILDING OR 42" PLUS THE WIDTH OF THE DOOR WHEN THE DOOR OPEN ONTO THE LANDING.
3. CROSS SLOPE ON ANY SIDEWALK OR RAMP SHALL BE 1:48 MAXIMUM.
4. CURB RAMPS SHALL NOT EXCEED A SLOPE OF 1:12 (8.33%).
5. SLOPES WITHIN ACCESSIBLE PARKING STALLS AND ACCESS AISLES SHALL BE 1:48 MAXIMUM IN ANY DIRECTION.
6. PROVIDE FLUSH TRANSITIONS AT ADJACENT SURFACES.

NORTH

0 5' 10' 20'

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12500 Campus Drive
Oakland, CA 94619

BID SET

ISSUE DATE 03/03/2021
N&T JOB NUMBER 22003

REVISIONS

#	DATE	DESCRIPTION
1	08.17.2022	ADDENDUM 1, ITEM 4

DRAWN BY MR CHECKED BY LC

SHEET TITLE

GRADING AND DRAINAGE PLAN

SHEET NUMBER

C3.2

SECTION 08 80 00 - GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Insulating glass units.

B. Glazing units.

C. Plastic sheet glazing units.

D. Glazing compounds and accessories.

1.02 RELATED REQUIREMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Section 06 41 00 - Architectural Wood Casework : Cabinets with requirements for glass doors.

C. Section 07 92 00 - Joint Sealants: Sealants for other than glazing purposes.

D. Section 08 11 13 - Hollow Metal Doors and Frames: Glazed borrowed lites.

E. Section 08 14 16 - Flush Wood Doors: Glazed lites in doors.

F. Section 08 32 03 - Sliding and Folding Walls and Doors: Glazing furnished as part of wall and door assemblies. Alternate Bid

G. Section 08 36 13 - Sectional Doors: Glazing furnished as part of door assembly.

H. Section 08 43 13 - Aluminum-Framed Storefronts: Glazing furnished as part of storefront assembly, and windows within storefront system.

I. Section 08 43 14 - Aluminum Thermal Sliding Doors:Glazing furnished as part of door assembly.

J. Section 08 62 00 - Unit Skylights: Glazing furnished as part of skylight assembly.

K. Section 10 28 00 - Commercial Toilet Accessories: Standard metal-framed mirrors.

L. Section 13 34 13 - Greenhouses: Glazing for greenhouses.

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials Current Edition.

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test 2015 (Reaffirmed 2020).

C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.

D. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers 2005 (Reapproved 2019).

E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.

F. ASTM C1036 - Standard Specification for Flat Glass 2021.

G. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.

H. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass 2019.

I. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016.

J. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass 2021a.

K. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings 2016.

L. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation 2010.

M. GANA (GM) - GANA Glazing Manual 2008.

N. GANA (SM) - GANA Sealant Manual 2008.

O. GANA (LGRM) - Laminated Glazing Reference Manual 2009.

P. IGMA TM-3000 - North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial & Residential Use 1990 (2016).

Q. NFRC 100 - Procedure for Determining Fenestration Product U-factors 2017.

R. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence 2014, with Errata (2017).

S. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems 2017.

1.04 SUBMITTALS

A. CALGreen Submittals: Provide the following:

1. Product Data for CALGreen 5.504.4.1 – Finish Material Pollutant Control; Adhesives, Sealants, and Caulks: For adhesives, sealants, and caulks, including printed statement of VOC content and chemical components.

B. Product Data on Insulating Glass Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.

C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

D. Samples: Submit two samples 6 by 6 inch in size of glass units.

E. Certificate: Certify that products of this section meet or exceed specified requirements.

F. Manufacturer's qualification statement.

G. Installer's qualification statement.

H. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in District's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with GANA (GM), GANA (SM), GANA (LGRM), and IGMA TM-3000 for glazing installation methods. Maintain one copy on site.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years of documented experience.

1. Provide certified glass products through ANSI accredited certifications that include plant audits and independent laboratory performance testing.

a. Insulating Glass Certification Council (IGCC).

b. Safety Glazing Certification Council (SGCC).

C. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

1. Provide company, field supervisors, and installers that hold active ANSI accredited certifications in appropriate categories for work specified.

a. North American Contractor Certification (NACC) for glazing contractors.

b. Equivalent independent third-party ANSI accredited certification.

1.06 FIELD CONDITIONS

A. Do not install glazing when ambient temperature is less than 40 degrees F.

B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

A. Insulating Glass Units: Provide a ten (10) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.

B. Laminated Glass: Provide a ten (10) year manufacturer warranty to include coverage for delamination, including providing products to replace failed units.

C. Polycarbonate Sheet Glazing: Provide a five (5) year manufacturer warranty to include coverage for breakage, coating failure, abrasion resistance, including providing products to replace failed units.

PART 2 PRODUCTS

2.01 GENERAL PRODUCT REQUIREMENTS

A. Refer to Section 01 81 13 - Sustainable Design Requirements: Requirements for low-emitting materials, Adhesives and Sealants.

2.02 MANUFACTURERS

A. Float Glass Manufacturers:

1. Guardian Glass, LLC: www.guardianglass.com/#sle.

2. Pilkington North America Inc: www.pilkington.com/na/#sle.

3. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.

B. Laminated Glass Manufacturers:

1. Viracon, Architectural Glass segment of Apogee Enterprises, Inc: www.viracon.com/#sle.

C. Plastic Sheet Glazing Manufacturers:

1. Covestro LLC; Makrolon UV: www.sheets.covestro.com/#sle.
2. Palram: www.palram.com/#sle.
3. Plazit Polygal, the Plastic Sheets Group: www.polygal-northamerica.com/#sle.

2.03 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.

1. Design Pressure:
   a. Positive Design Pressure: 25 psf.
   b. Negative Design Pressure: 25 psf.
2. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
3. Seismic Loads: Design and size glazing components to withstand seismic loads and sway displacement in accordance with the requirements of ASCE 7
4. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges under specified design load to less than 1/175 of glass edge length or 3/4 inch whichever is lesser per IBC 2018, 2403.3
5. Glass thicknesses listed are minimum.

B. Vapor Retarder and Air Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure vapor retarder and air barrier.

C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:

1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
3. Solar Optical Properties: Comply with NFRC 300 test method.

2.04 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.

1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.

2. Kind HS - Heat-Strengthened Type: Complies with ASTM C1048.

3. Kind FT - Fully Tempered Type: Complies with ASTM C1048.

4. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.

5. Impact Resistant Safety Glass: Complies with ANSI Z97.1 - Class B, or 16 CFR 1201 - Category I criteria.

6. Tinted Type: ASTM C1036, Class 2 - Tinted, Quality - Q3, with color and performance characteristics as indicated.

7. Thicknesses: As indicated; provide greater thickness as required for exterior glazing wind load design.

B. Laminated Glass: Float glass laminated in accordance with ASTM C1172.

1. Laminated Safety Glass: Complies with ANSI Z97.1 - Class B or 16 CFR 1201 - Category I impact test requirements.

2. Polyvinyl Butyral (PVB) Interlayer: 0.030 inch thick, minimum.

2.05 INSULATING GLASS UNITS

A. Manufacturers:

1. Fabricator certified by glass manufacturer for type of glass, coating, and treatment involved and capable of providing specified warranty.

2. AGC Glass North America, Inc: www.agcglass.com/#sle.

3. Guardian Glass, LLC: www.guardianglass.com/#sle.

4. Pilkington North America Inc: www.pilkington.com/na/#sle.

5. Viracon, Apogee Enterprises, Inc: www.viracon.com/#sle.

6. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.

B. Insulating Glass Units: Types as indicated.

1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
3. Metal Edge Spacers: Aluminum, bent and soldered corners.
4. Spacer Color: Black.
5. Edge Seal:
    a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
6. Color: Black.
7. Purge interpane space with dry air, hermetically sealed.
8. Capillary Tubes: Provide tubes from air space for insulating glass units without inert type gas that have a change of altitude greater than 2500 feet between point of fabrication and point of installation to permit pressure equalization of air space.
    a. Capillary Tubes: Tubes to remain open and be of length and material type in accordance with insulating glass fabricator's requirements.

C. Insulating Glass Units for Storefront, Windows and Sliding Doors: Vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
2. Basis of Design: Vitro Architectural Glass Solarban 70 Solargray + Clear.
3. Space between lites filled with argon.
4. Outboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
    a. Tint: Gray.
    b. Coating: Self-cleaning type, on #1 surface.
    c. Coating: Low-E (solar control type), on #2 surface.
5. Inboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
    a. Tint: Clear.

6. Total Thickness: 1 inch.
7. Thermal Transmittance (U-Value): 0.28, nominal.
8. Visible Light Transmittance (VLT): 32% percent, nominal.
9. Shading Coefficient: 0.23, nominal.
10. Solar Heat Gain Coefficient (SHGC): 0.19, nominal.
11. Visible Light Reflectance, Outside: 7% percent, nominal.
12. Glazing Method: Dry glazing method, gasket glazing.

D. Insulating Glass Units for Unit Skylights: Vision glass, double glazed.

1. Applications: Skylights above non-conditioned exterior walkways.
2. Basis of Design: Vitro Architectural Glass.
3. Space between lites filled with air.
4. Outboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
   a. Tint: Gray.
   b. Coating: Self-cleaning type, on #1 surface.
5. Inboard Lite: Laminated float glass, 1/4 inch thick, minimum.
   a. Tint: Clear.
   b. Interlayer: PVB. Color: White
6. Total Thickness: 1 inch.
7. Glazing Method: Dry glazing method, gasket glazing.

E. Insulating Glass Units for Sectional Doors, and other locations where obscure glass is noted (designated unconditioned spaces): Vision glass, double glazed.

1. Applications: Door panels.
2. Basis of Design: Vitro Architectural Glass.
3. Space between lites filled with air.
4. Outboard Lite: Fully tempered float glass, ~~1/4 inch thick,~~ 3/16 inch thick minimum.

a. Tint (Obscure): Clear, frosted.

5. Inboard Lite: Fully tempered float glass, 3/16 inch thick ~~1/4 inch thick,~~ minimum.

a. Tint: Clear.

6. Total Thickness: 3/4 inch ~~1/2 inch.~~

7. Glazing Method: Dry glazing method, gasket glazing.

2.06 GLAZING UNITS

A. Monolithic Interior Vision Glazing:

1. Applications: Interior glazing unless otherwise indicated.
2. Glass Type: Fully tempered float glass.
3. Tint: Clear.
4. Thickness: 1/4 inch, nominal.
5. Glazing Method: Wet/dry glazing method, preformed tape and sealant.

B. Monolithic Interior Vision Glazing for Cabinet Doors:

1. Applications: Casework.
2. Glass Type: Laminated float glass.
3. Tint: Clear.
4. Thickness: 3/16 inch, nominal.
5. Glazing Method: Cabinet facbricator's standard.

2.07 PLASTIC SHEET GLAZING UNITS

A. Multiwall Standing Seam Polycarbonate Sheet: Ultraviolet (UV) protected.

1. Applications: Horizontal and vertical locations as indicated on drawings.
2. Type: Cellular (multiwall structure) sheet.
3. Tint: Clear. UV protective film on one side.
4. Multiwall Thickness: Nominal 5/16 inch overall, with polycarbonate joiner along both sides.

5. Width: 48 inch and 72 inch sheets cut to lengths and widths to minimize seams.
6. NFPA Class A Rated when tested in accordance with ASTM E84:
    a. Flamespread: 0
    b. Smoke Developed: 60
7. Glazing Method: As required for application indicated on drawings.
8. Manufacturers:
    a. PlazitPolygal: www.plazit-polygal.com/#sle.

2.08 GLAZING COMPOUNDS

A. Type GC-1 - Glazing Putty: Polymer modified latex recommended by manufacturer for outdoor use, knife grade consistency; gray color.

B. Type GC-2 - Butyl Sealant: Single component; ASTM C920 Grade NS, Class 12-1/2, Uses M and A, Shore A hardness of 10 to 20; black color.

C. Type GC-3 - Polysulfide Sealant: Two component; chemical curing, non-sagging type; ASTM C920 Type M, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

D. Type GC-4 - Polyurethane Sealant: Single component, chemical curing, non-staining, non-bleeding; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 20 to 35; color as selected.

E. Type GC-5 - Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; non-bleeding, non-staining; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

F. Manufacturers:
    1. BASF Corporation: www.basf.com/#sle.
    2. Bostik Inc: www.bostik-us.com/#sle.
    3. Dow Corning Corporation: www.dowcorning.com/construction/#sle.
    4. Pecora Corporation: www.pecora.com/#sle.
    5. Tremco Commercial Sealants & Waterproofing; Proglaze SSG: www.tremcosealants.com/#sle.

2.09 ACCESSORIES

A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.

B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Minimum 3 inch long by one half the height of the glazing stop by thickness to suit application, self adhesive on one face.

C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.

1. Width: As required for application.

2. Thickness: As required for application.

3. Spacer Rod Diameter: As required for application.

4. Manufacturers:

a. Pecora Corporation: www.pecora.com/#sle.

b. Tremco Global Sealants: www.tremcosealants.com/#sle.

D. Glazing Splines: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

B. Verify that the minimum required face and edge clearances are being provided.

C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

D. Verify that sealing between joints of glass framing members has been completed effectively.

E. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.

D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.

E. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.

F. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, etc.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.

B. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 INSTALLATION - WET/DRY GLAZING METHOD (PREFORMED TAPE AND SEALANT)

A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.

B. Cut glazing tape to length and set against permanent stops, 3/16 inch below sight line. Seal corners by butting tape and dabbing with butyl sealant.

C. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.

D. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

E. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane or glass unit.

F. Install removable stops, with spacer strips inserted between glazing and applied stops 1/4 inch below sight lines.

1. Place glazing tape on glazing pane of unit with tape flush with sight line.

G. Fill gap between glazing and stop with butyl type sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch below sight line.

H. Apply cap bead of butyl type sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.06 INSTALLATION - PLASTIC GLAZING

A. Cut panels to fit frames snugly and neatly.

B. Do not crush or dent multi-wall galzing materials.

C. Utilize matching plastic extrusions where required to produce panel widths indicated on drawings. Locate joints symmetrically.

D. Where aluminum trim is indicated, provide clear anodized finished profiles pre-drilled for fasteners to bind panel edges and provide attachment to framing.

3.07 FIELD QUALITY CONTROL

A. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.

B. Monitor and report installation procedures and unacceptable conditions.

3.08 CLEANING

A. See Section 01 74 19 - Construction Waste Management and Disposal, for additional requirements.

B. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

C. Remove non-permanent labels immediately after glazing installation is complete.

D. Clean glass and adjacent surfaces after sealants are fully cured.

E. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.09 PROTECTION

A. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION

SECTION 09 90 00 - PAINTING

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes surface preparation and field painting and finishing of exposed exterior and interior items and surfaces.

1.02 RELATED SECTIONS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Related Sections:

1. Section 01 81 13 - Sustainable Design Requirements: Requirements for low-emitting materials.
2. Section 04 22 00 - Concrete Unit Masonry: Integral water repellent in unit masonry.
3. Division 05: Shop priming or shop finishing of metal fabrications as specified.
4. Section 06 20 00 - Finish Carpentry: Shop finishing of interior woodwork.
5. Section 07 46 46 - Fiber-Cement Panels: Factory priming of soffit panels.
6. Section 07 46 49 - Poly-Ash Siding and Trim: Factory priming of siding.
7. Section 07 92 00 - Joint Sealants.
8. Section 08 14 16 - Flush Wood Doors: Shop priming of flush wood doors.
9. Section 08 16 13 - Fiberglass Doors: Factory finishing of fiberglass doors.
10. Section 08 36 13 - Sectional Doors: Factory finishing of sectional doors.
11. Section 09 24 00 - Portland Cement Plaster: Integrally colored plaster finish coat.
12. Section 09 29 00 - Gypsum Board: Finish levels for gypsum board.

1.03 SYSTEM DESCRIPTION

A. "Paint": As used herein, means coating systems materials including primers, emulsions, epoxy, enamels, sealers, fillers, and other applied materials whether used as prime, intermediate, or finish coats (Refer to ASTM D16).

B. Painting and coating products must comply with Green Seal standards in accordance with EPA Reference Test Method 24 and CFR Title 40, Part 60, Appendix A.

C. Paint exposed surfaces whether or not colors are designated, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Architect will select from standard colors or finishes available.

1. Prepare, prime, and paint existing and new surface-mounted electrical raceway covers, including plastic and metal covers.

D. Surfaces Not to be Painted:

1. Exterior cast-in-place concrete and concrete masonry unless otherwise indicated.

2. Stainless-steel fabrications.

3. Exposed galvanized steel fabrications, including exterior backsplash panels, corner guards, gates and galvanized gate infill panels.

4. Factory-finished items specified in various Sections.

5. Prefinished items and floor coverings.

6. Painting specified elsewhere and included in respective Sections, including but not necessarily limited to, shop priming.

7. Code-Required Labels: Keep equipment identification and fire rating labels free of paint.

8. Surfaces concealed in walls and above ceilings except as specifically indicated otherwise.

9. Ducts, piping, conduit, and equipment concealed in walls and ceilings, unless specifically indicated otherwise.

1.04 REFERENCES

A. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2016.

B. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers; 2017, v1.2.

C. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board; 2008.

D. EN 15804 - Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products; 2013.

E. ISO 14025 - Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures; 2006.

F. ISO 14040 - Environmental management -- Life cycle assessment -- Principles and framework; 2006.

G. ISO 14044 - Environmental management -- Life cycle assessment -- Requirements and guidelines; 2006.

H. ISO 21930 - Sustainability in buildings and civil engineering works -- Core rules for environmental product declarations of construction products and services; 2017.

I. SCAQMD Rule 1113 - Architectural Coatings; 1977 (Amended 2016).

J. SSPC-SP 6 - Commercial Blast Cleaning; 2007.

K. SSPC-SP 10 - Near-White Blast Cleaning; 2007.

L. CFR - Code of Federal Regulations Title 40, Part 60 - Protection of Environment, Standards of Performance for New Stationary Sources.

M. Factory Mutual - FM Certification of intumescent paint.

N. Green Seal - GS 11 Green Seal Standard for Paints, Coatings, Stains and Sealers.

O. Green Seal - GC-03 Green Seal Standard for Anti-Corrosive Paints.

P. USGBC LEED - LEED v4.1 Green Building Rating System for [New Construction and Major Renovation.

Q. UL - Underwriters Laboratories Inc. - UL Spot clearinghouse for standards, certifications and Environmental Product Declarations.

1.05 SUBMITTALS

A. CALGreen Submittals:

1. Product Data for CALGreen 5.504.4.3 - Finish Material Pollutant Control, Paints and Coatings: Product data and material safety data sheets (MSDS) for coatings, including printed statement of chemical composition and VOC content of each product used.

2. Product Data Sheets for each product to be used as proof that each product meets the requirements of either Green Seal’s GS-11 or GC-03 documents.

3. Field Verification of on-site product containers: If required by Authority Having Jurisdiction.

B. Product Data: For each product indicated including primers.

1. Provide manufacturer's technical information including label analysis and instructions for handling, storage, and application of each material proposed for use.

2. List each material and cross reference the specific coating, finish system, and application. Identify each material by the manufacturer's catalog number and general classification.

C. Samples: For each type of paint system and in each color and gloss of topcoat indicated.

1. Submit Samples on rigid backing, 8-1/2 inches by 11 inches.

2. Step coats on Samples to show each coat required for system.

3. Label each coat of each Sample.

4. Label each Sample for location and application area.

5. Do not commence finish painting until approved samples are on file at the job site.

1.06 QUALITY ASSURANCE

A. Applicator's Qualifications, General: Engage an experienced applicator who has completed painting system applications similar in material and extent.

B. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use thinners approved by paint manufacturer, and use within recommended limits.

C. Coordination of Work: Review other Sections in which prime paints are to be provided to ensure compatibility of coatings system for various substrates. Upon request, furnish information or characteristics of finish materials to be used.

D. Requirements of Regulatory Agencies: Comply with applicable rules and regulations of governing agencies for air quality control.

1. CALGreen: Comply with current applicable regulations of the local air quality district, California Air Resources Board (CARB).

2. Regulatory changes may affect the formulation, availability, or use of specified coatings. Confirm availability of coatings to be used prior to start of painting.

E. Benchmark Samples (Mockups):

1. Provide a full-coat benchmark finish sample for each type of coating and substrate required until required sheen, color and texture is obtained. Simulate finished lighting conditions for review of in-place work.

2. Final colors to be approved by the Architect after a maximum of 3 adjustments to each color at no additional cost.

3. Poly-Ash Siding: Provide samples on full width siding boards at least 8 ft. in length. Apply over factory-primed suface utilizing proposed application method. Final color to be approved by the Architect after a maximum of 2 adjustments at no additional cost.

4. Wood specified to receive stain finishes: Provide samples on full width boards at least 8 ft. in length. Apply over prepared suface utilizing proposed application method. Final color to be approved by the Architect after a maximum of 2 adjustments at no additional cost.

5. Wall Surfaces: Provide samples at least 100 sq. ft. in area. Apply over specified undercoat utilizing proposed application method for each type of finish.

6. Accent Wall Colors: Paint 3-feet by 5-feet mockup of each accent wall color on wall indicated on finish plan. Paint colors provided in the mockups shall indicate approximate color ranges. Final colors to be approved by the Architect after a maximum of 2 adjustments to each color at no additional cost.

7. Small Areas and Items: Architect will designate items or areas required.

8. Final approval of colors will be from benchmark samples.

1.07 PROJECT CONDITIONS

A. Acceptance at Site: Deliver materials to the job site in manufacturer’s original, unopened packages and containers bearing manufacturer’s name and label and the following information:

1. Product name or title of material.

2. Product description (generic classification or binder type).

3. Manufacturer’s stock number and date of manufacture.

4. Contents by volume for pigment and vehicle constituents.

5. Thinning instructions.

6. Application instructions.

7. Color name and number

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain storage containers in a clean condition, free of foreign materials and residue.

C. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F.

D. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

E. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers. Notify Architect of any existing deteriorated or defective conditions prior to painting and in a timely manner as to not affect the schedule.

F. Provide barrier coats over incompatible primers or remove and reprime.

G. Visually inspect existing exterior and interior sealant at locations listed below and all other locations where it has been installed. Remove and correct deteriorated sealant. Refer to Section 07 92 00.

1. Exterior: Perimeter of door and window openings, flashing, and control joints.

2. Interior: Perimeter of door and window openings and casework.

H. Notify Architect of any existing deteriorated or defective conditions prior to painting, in a timely manner as to not affect the schedule. Do not proceed until unsatisfactory conditions are corrected.

1.08 EXTRA MATERIALS

A. Upon completion of the work of this Section, remove excess material from the site. No attic stock is required

PART 2 - PRODUCTS

2.01 SUSTAINABLE MATERIAL REQUIREMENTS

A. CALGreen: Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Coatings Suggested Control Measure, as shown in Table 5.504.4.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 5.504.4.3, shall be determined by classifying the coating as a Flat, Nonflat, or Nonflat-High Gloss coating, based on its gloss, as defined in Subsections 4.21, 4.36 and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in Table 5.504.4.3 shall apply.

B. Aerosol paints and coatings. Aerosol paints and coatings shall meet the PWMIR Limits for VOC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8 Rule 49.

C. Refer to Section 01 81 13 - Sustainable Design Requirements for low-emitting materials requirements.

2.02 MANUFACTURERS

A. Owner's Standards Program: Where applicable, provide products under the terms and conditions of the Owner's standards program; no substitutions.

B. Manufacturers: Products of the following manufacturers are listed in other Part 2 articles and use the abbreviated names shown in parentheses:

1. Benjamin Moore & Co. (Benjamin Moore).
2. Devoe
3. Duckback Products, Inc. (Duckback).
4. Dunn - Edwards Corporation (Dunn - Edwards).
5. PPG Paints.
6. Samuel Cabot, Inc. (Cabot).
7. Sherwin-Williams Co., The (Sherwin-Williams).
8. Tnemec Company, Inc. (Tnemec).
9. Thermory USA. (Thermory)
10. Timber Pro
11. Zinsser

C. Subject to compliance with requirements, provide the named products or comparable products by an accepted equal manufacturer.

2.03 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide primers and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application,

as demonstrated by manufacturer based on testing and field experience.

B. Material Quality: Provide manufacturer's top-of-the-line-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

C. Colors:

1. Exterior Colors: To be selected.

2. Interior Colors: To be selected.

2.04 PREPARATORY COATS

A. Crack Fillers: Factory-formulated acrylic emulsion crack fillers compatible with substrate and finish-coat materials indicated.

B. Typical Exterior Primers: Exterior latex-based primers of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.

1. Ferrous-Metal, Zinc-Coated Metal, and Aluminum Substrates NOT Indicated to Receive High Performance Coating: Rust-inhibitive acrylic metal primer.

a. Benjamin Moore; P04 Super Spec HP.

b. Dunn - Edwards; BLPR00 BLOC-RUST or ULGM00 Ultrashield Galvanized Metal

c. Sherwin-Williams; B66-310 ProCryl Universal Metal Primer.

d. PPG Pitt-Tech Plus Direct to Metal Primer & Flat Finish 4020PF

2. Ferrous-Metal, Zinc-Coated Metal, and Aluminum Substrates Indicated to Receive High Performance Coating: Rust-inhibitive low-VOC epoxy primer manufactured by same manufacturer and compatible with high performance coating system.

a. Tnemec, L69.

b. Devoe, Devran 203.

c. PPG, Amercoat 68HS.

3. Wood Substrates indicated to receive semi-transparent or semi-solid stain finish.

a. No primer required.

4. Poly-Ash Siding and Trim; Fiber-Cement Panels.

a. Factory primed.

C. Typical Interior Primers: Interior latex-based primers of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.

1. Gypsum Board Substrates: Zero VOC primer/sealer.

a. Benjamin Moore; 372 Eco Spec WB.

b. Dunn - Edwards; VNSL00 Vinylastic Select.

c. Sherwin-Williams; B28 ProMar 200 Zero.

2. Ferrous-Metal, Zinc-Coated Metal, and Aluminum Substrates: Rust-inhibitive acrylic metal primer.

a. Benjamin Moore; P04 Super Spec HP.

b. Dunn - Edwards; BLPR00 BLOC-RUST or ULGM00 Ultrashield Galvanized Metal.

c. Sherwin-Williams; B66-310 ProCryl Universal Metal Primer.

d. PPG Pitt-Tech Plus Direct to Metal Primer & Flat Finish 4020 PF.

3. Wood Substrates for Opaque Finish (Smooth or Synthetic): Acrylic stain blocking primer.

a. Benjamin Moore; 046 Fresh Start.

b. Dunn - Edwards; BIPR00 BLOCK-IT.

4. Exterior Wood Substrates: To receive stain finishes.

a. Preparatory Coats: Follow stain manufacturer's published recommendations.

b. Primer: Not required

2.05 EXTERIOR FINISH COATS

A. Exterior Flat Acrylic Paint (fiber cement soffit panels):

1. Benjamin Moore; 105 MoorLife.

2. Dunn - Edwards; EVSH10 Evershield.

3. Sherwin-Williams; K32 Duration Flat.

B. Exterior Low-Luster Acrylic Enamel:

1. Benjamin Moore; 103 MoorGuard.
2. Dunn - Edwards; EVSH30 Evershield.
3. Sherwin-Williams; K33 Duration Satin.

C. Exterior Semi-Gloss Acrylic Enamel:

1. Benjamin Moore; 096 MoorGlo.
2. Dunn - Edwards; EVSH50-0 Evershield.
3. Sherwin-Williams; K34 Duration Gloss.

D. Exterior High Performance Topcoats (exterior exposed steel structural framing) :

1. Intermediate Coat: Epoxy intermediate coat as recommended by manufacturer for intended applications.
2. Topcoats: Semi-gloss, acrylic polyurethane enamel.
   a. Devoe; Devthane 378H.
   b. PCI; PC3v100.
   c. Tnemec; Series 1075 Endurashield.
   d. PPG PMC Amershield VOC Aliphatic Polyurethane Coating.
   e. US Coatings; UreGrip 3310VOC
3. OPTION to provide Polysiloxane High Performance Coating system:
   a. PPG Paints Amercoat 68HS Zinc Rich Primer. 2-5 mils DFT.
   b. PPG Paints PSX-805 Polysiloxane Satin Finish 3-6 mils DFT.

E. Exterior Semi-Transparent Wood Stain Finish (exposed structural framing; gate infill panels):

1. For Semi-Transparent Wood Finish: Exterior waterborne wood stain.
   a. Basis of Design:
      1) Cabot; Semi-Transparent Acrylic Siding Stain 1300 Series: VOC<100g/L; approximately 25% solids by volume.
   b. Acceptable Products:

1) Duckback; Superdeck Semi-Transparent Waterborne Stain, 2400 Series.

2) Sherwin-Williams; Superdeck Semi-Transparent Acrylic Stain.

F. Exterior Semi-Solid Wood Stain Finish (Poly-Ash Siding and Trim):

1. For Semi-Solid Wood Finish: Exterior penetrating natural linseed oil-based low VOC wood stain.

a. Basis of Design:

1) Cabot; Semi-Solid Penetrating Deck and Siding Stain 17406 Series: VOC<250g/L; approximately 20% solids by volume.

G. Exterior Wood Finish for Benches

1. Waterborne transparent finish.

a. Cleaner/Neutralizer; Thermory Cutek Quickclean.

b. Penetrating Wood Stabilizer; Thermory Cutek Extreme.

2.06 INTERIOR FINISH COATS

A. Interior Flat Zero VOC/Low Odor Acrylic Paint (acoustic ceiling panels and exposed interior roof structure):

1. Benjamin Moore; 373 Eco Spec WB.

2. Dunn-Edwards; SZRO10.

3. Sherwin-Williams; B05 Harmony Flat.

B. Interior Low-Sheen (Eggshell) Zero VOC/Low Odor Acrylic Enamel:

1. Benjamin Moore; 374 Eco Spec WB.

2. Dunn-Edwards; SWLL30.

3. Sherwin-Williams; B09 Harmony Eggshell.

C. Interior Semi-gloss Zero VOC/Low Odor Acrylic Enamel:

1. Benjamin Moore; 376 Eco Spec WB.

2. Dunn-Edwards; SWLL50.

3. Sherwin-Williams; B10 Harmony Gloss.

D. Interior Wood Bio-Based Stain Finish:

1. Bio-based oil wood stain: Timber Pro; Log & Siding Formula, Smooth

2. Sealer: Timber Pro Crystal Urethane Interior waterborne sealer.

E. Interior Satin Wood Varnish: Waterborne, acrylic/urethane. Finish coat for relocated hardwood casework and wood countertops.

1. Gemini; HPURE-0030 HYDROPURE Clear Urethane Satin Finish.

2. Rust-Oleum; Varathane Diamond 2002.

3. Sherwin-Williams; Minwax Polyurethane Varnish Satin.

4. PPG Deft Clear Polyurethane Interior Water Based Acrylic Satin DFT159.

PART 3 - EXECUTION

3.01 APPLICATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application.

B. Quality Control

1. Touch-up shop-applied prime coats which have been damaged, and touch-up bare areas prior to start of finish coats application.

2. Slightly vary the color of succeeding coats.

a. Do not apply additional coats until the completed coat has been inspected and approved.

b. Only the inspected and approved coats of paint will be considered in determining the number of coats applied.

3. Sand and dust between coats to remove defects visible to the unaided eye from a distance of 5 feet.

C. Drying

1. Allow sufficient drying time between coats, modifying the period as recommended by the material manufacturer to suite adverse weather conditions.

2. Consider paint as dry for re-coating when the paint feels firm; does not deform or feel sticky under moderate pressure of the thumb, and when the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

3. Protect newly painted surfaces from contact with door seals and similar compressible materials that may adhere to paint and peel it.

D. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

E. Remove factory-finished hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.

F. Factory primed hardware

1. Paint prime coated hardware to match adjacent surfaces.

2. Paint metal portions of head seals, jamb seals, and astragal seals to match the color of the door frame unless otherwise directed by the Architect.

G. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.

1. Provide barrier coats over incompatible primers or remove and reprime.

2. Gypsum Board: Refer to Section 09 29 00 - Gypsum Board for finishing of new surfaces. Allow to dry completely before priming.

3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.

a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.

b. Prime or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides.

c. Rough Sawn Wood Surfaces Exposed to View: Fill holes and defects. Lightly sand but maintain rough sawn appearance to match existing.

d. Unless specifically approved by the Architect, do not proceed with painting of wood surfaces until the moisture content of the wood is 12 percent or less as measured by a moisture meter approved by the Architect.

4. Relocated hardwood cabinets and countertops, previously finished: Repair gouges and similar damage with wood filler tinted to match existing finish. Clean and lightly sand all exposed cabinet and countertop surfaces, including interior face of doors and drawers. Apply one coat transparent polyurethane finish.

5. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's recommendations. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by paint manufacturer, and touch up with same primer as the shop coat.

6. Galvanized Surfaces: Where galvanized surfaces are indicated to receive paint, clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

H. Material Preparation:

1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.

2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.

I. Exposed Surfaces: Include areas visible when permanent or built-in fixtures, grilles, convector covers, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.

1. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.

2. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.

3. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.

4. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.

5. Paint all gypsum board ceiling, wall, and soffit surfaces above ceilings which can be viewed through open or “gapped” ceiling systems.

J. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

1. Brush Applications

a. Brush out and work the brush coats onto the surface in an even film.

b. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, and other surface imperfections will not be acceptable.

2. Spray Application

a. Except as specifically otherwise approved by the Architect, confine spray application to metal framework and similar surfaces where hand brush work would be inferior.

b. Where spray application is used, apply each coat to provide the hiding equivalent of brush coats.

c. Do not double back with spray equipment to build up film thickness of 2 coats in 1 pass.

d. Protect all adjacent surfaces, etc. from over spray.

3. Rough Sawn Wood: Back roll and back brush for a uniform finish.

K. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide total dry film thickness of the entire system as recommended by manufacturer.

1. Slightly vary the color of succeeding coats.

2. Do not apply additional coats until the completed coat has been inspected and approved.

3. Only the inspected and approved coats of paint will be considered in determining the number of coats applied.

L. Exposed Mechanical and Electrical Items: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.

1. Finish electric panels, access doors, conduits, pipes, ducts, grilles, registers, vents, and items of similar nature to match the adjacent wall and ceiling surfaces, or as directed.

2. Paint visible duct surfaces behind vents, registers, and grilles flat black. Apply 2 coats of heat resistant paint.

3. Exposed Pipe and Duct Insulation

   a. Apply 1 coat of latex paint on insulation which has been sized or primed under other Sections; apply 2 coats on such surfaces when unprepared.

   b. Match color of adjacent surfaces.

   c. Remove band before painting, and replace after painting.

M. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

N. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.

1. Omit primer over metal surfaces that have been shop primed and touchup painted.

O. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

1. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance.

3.02 CLEANING AND PROTECTING

A. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.

B. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.

C. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.

1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.03 WASTE MANAGEMENT

A. Set aside extra paint for future color matches, or reuse by Owner. Where paint recycling is available, collect all waste paint by type and provide for delivery to recycling or collection facility.

B. Close and seal tightly all partly used paint and finish containers and store protected in well ventilated fire-safe area at moderate temperature.

C. Place empty containers of solvent based paints in areas designated for hazardous materials.

D. Do not dispose of paints or solvents by pouring on the ground. Place in designated containers for proper disposal.

3.04 EXTERIOR PAINT SCHEDULE

A. Metal Doors and Frames, and Other Non-Prefinished Miscellaneous Metal:

1. Ferrous Metal:

a. Acrylic Finish: Two finish coats over a primer.

1) Primer: Exterior primer as specified for substrate indicated (not required on shop-primed items).

2) Finish Coats: Exterior semi-gloss acrylic enamel.

2. Zinc-Coated Metal:

a. Acrylic Finish: Two finish coats over a primer.

1) Primer: Exterior primer as specified for substrate indicated (not required on shop-primed items).

2) Finish Coats: Exterior semi-gloss acrylic enamel.

B. Exposed structural steel, and items noted on drawings to receive High-Performance Coating:

1. Exterior High-Performance Finish: Two finish coats over primer.

a. Primer: Low VOC epoxy primer shop-applied in applicable Division 05 Section.

b. Intermediate Coat: Epoxy intermediate coat as recommended by manufacturer of high-performance topcoat for intended application.

c. Topcoat: Semi-gloss acrylic polyurethane.

C. Miscellaneous wood trim indicated to receive opaque (paint) finish:

1. Surfaces to receive Flat Finish:

a. General: Acrylic finish, two finish coats over a primer.

b. Primer: Exterior zero VOC/low odor primer as specified for substrate indicated.

c. Finish Coats: Exterior low-sheen, VOC/low odor acrylic paint.

D. Wood breezway soffit, gate infill panels, and miscellaneous wood indicated to receive semi-transparent stain finish:

1. Surfaces to receive Stain Finish:

a. General: Semi-Transparent stain finish.

b. Finish Coats: Exterior low-sheen, VOC/low odor stain.

E. Poly-Ash composite siding and trim:

1. Surfaces to receive Penetrating Stain Finish:

a. General: Semi-Solid stain finish over pre-primed composite material:

b. Finish Coats: Exterior low-sheen, penetrating stain.

F. Fiber cement panels and trim:

1. Surfaces to receive Flat Finish:

a. General: Acrylic finish, two finish coats over primer.

b. Primer: Factory primed.

c. Finish Coats: Exterior low-sheen, VOC/low odor acrylic paint.

G. Wood Benches:

1. All bench surfaces: Top, bottom, edges and ends to receive waterborne transparent finish:

a. General: Apply cleaner/neutralizer prior to finish sanding.

b. Penetrating Wood Stabilizer: Two finish coats.

3.05 INTERIOR PAINT SCHEDULE

A. Gypsum Board Ceilings and ~~Acoustic Panel~~s: Adhesive-Applied Acoustic Panels:

1. Ceilings to receive Flat Finish:

a. General: Acrylic finish, two finish coats over a primer.

b. Primer: Interior zero VOC/low odor primer as specified for substrate indicated.

c. Finish Coats: Interior flat zero VOC/low odor acrylic paint.

B. Gypsum Board Walls and Ceilings

1. Walls and Ceilings to receive Low-Luster (Eggshell) Finish:

a. General: Acrylic finish, two finish coats over a primer.

b. Primer: Primer: Interior zero VOC/low odor primer as specified for substrate indicated.

c. Finish Coats: Interior low-luster (eggshell) zero VOC/low odor acrylic enamel.

2. Walls and Ceilings to receive Semi-Gloss Finish:

a. General: Acrylic finish, two finish coats over a primer.

b. Primer: Primer: Interior zero VOC/low odor primer as specified for substrate indicated.

c. Finish Coats: Interior semi-gloss zero VOC/low odor acrylic enamel.

C. Metal Doors and Frames, and Other Non-Prefinished Miscellaneous Metal, including Exposed Piping, Conduits, Ductwork, and Other Items:

1. Ferrous Metal:

a. Acrylic Finish: Two finish coats over a primer.

1) Primer: Interior primer as specified for substrate indicated (not required on shop-primed items).

2) Finish Coats: Interior semi-gloss zero VOC/low odor acrylic enamel.

2. Zinc-Coated Metal:

a. Acrylic Finish: Two finish coats over a primer.

1) Primer: Interior primer as specified for substrate indicated (not required on shop-primed items).

2) Finish Coats: Interior semi-gloss zero VOC/low odor acrylic enamel.

D. Typical Exposed Steel Items not indicated to be Painted with Interior HighPerformance Topcoats including exposed interior structural steel; and items specified in Section 05 50 00 “Metal Fabrications”:

1. Acrylic-Enamel Finish: Two finish coats over a primer.

a. Primer: Interior primer as specified for substrate indicated.

b. Finish Coats: Interior semi-gloss zero VOC/low odor acrylic enamel.

E. Wood - Flat Finish (Interior Exposed Roof Structure)

1. Flat Finish: Two finish coats over a primer.

a. Primer: Interior zero VOC primer as specified for substrate indicated.

b. Finish Coats: Interior flat zero VOC/low odor acrylic paint.

F. Wood - Opaque Enamel Finish:

1. Acrylic-Enamel Finish: Two finish coats over a primer.

a. Primer: Interior primer as specified for substrate indicated.

b. Finish Coats: Interior semi-gloss zero VOC/low odor acrylic enamel.

G. Wood - Transparent Finish (plywood wainscot panels; wood slatwall and paneling; miscellaneous trim:

1. Transparent stain and sealer:

a. Wood Stain: One coat bio-based stain.

b. Wood Sealer: One coat urethane sealer.

H. Wood - Transparent Finish for relocated wood casework and tops:

1. Transparent finish:

a. One-coat waterborne varnish.

END OF SECTION 09 90 00

SECTION 10 14 00 - SIGNAGE

PART 1 GENERAL

1.01 SUMMARY

A. The work included under this section consists of furnishing all products, materials, finishes, supplies, equipment, tools and transportation, and performing all labor and services necessary for, required in connection with, or properly incidental to furnishing and installing signage as described in this section of the specifications, shown on the accompanying drawings, or reasonably implied therefrom, except as hereinafter specifically excluded.

B. Work Summary:
   1. Create final production artwork and layouts for each sign face.
   2. Furnish materials and labor associated with fabricating and finishing all signs.
   3. Provide packaging and transportation of all signs to the project site.
   4. Furnish material and labor required for installation of signage.
   5. All code required signage shall be field inspected per CBC 11B-703.1.1.2

1.02 SUBMITTALS

A. Color Samples: Submit three sets of 6"x6" samples of each color for approval. See design drawings for colors and materials.

B. Product Data Sheets. Supply product data sheets for all products used in the manufacture and installation of signage.

C. Contractor shall be responsible for the structural design of freestanding signs, internal illumination, and methods for fastening and installation.

D. Applicable Standards and Publications: Unless otherwise specified or shown, signage shall conform to the following standards and publications:
   1. ANSI A-117.1 and the Americans with Disabilities Act (ADA).
   2. ATBCB Design Guidelines for Signage in relation to the Americans with Disabilities Act.
   3. California Building Code (CBC), 2019, Sections 11B-216 and 11B-701-703.
   4. California Grade 2 Braille shall be used whenever Braille symbols are specifically required. Refer to CBC Section 11B-703.

E. ANSI A-117.1 and the Americans with Disabilities Act (ADA).

F. ATBCB Design Guidelines for Signage in relation to the Americans with Disabilities Act.

G. California Building Code (CBC), 2019, Sections 11B-216 and 11B-701-703.

H. California Grade 2 Braille shall be used whenever Braille symbols are specifically required. Refer to CBC Section 11B-703.

I. Contractor shall be responsible for the quality of materials and workmanship of any firm acting as the Contractor's subcontractor.

J. Welding, where required, shall be in accordance with procedures specified in American Welding Society Standards using procedures, materials, and equipment of the type required for the work.

1.03 GUARANTEE

A. At a minimum, the Contractor shall warrant that all work installed under this Contract is free of defect and will remain in good working order for a period of one year for all surface improvements and five years for all underground work. If warranties specified elsewhere in these documents are for a longer period of time than that specified in this section, the longer warranties shall apply.

B. Manufacturer's Standard Product Warranties:

1. Plastic Elements: Manufacturer's warranty against yellowing, cracking, crazing, or other visible and performance defects for a period of 5 years from the date of installation.

2. Paint Coating: Acrylic polyurethane coating manufacturer's 5-year warranty against defects in materials.

PART 2 CODE REQUIRED SIGNAGE

2.01 TYPES OF SIGNS

A. Room Identification: Interior and exterior signs identifying permanent rooms and spaces shall comply with CBC Sections 11B-703.1, 11B-703.2, 11B-703.3 and 11B-703.5. Where pictograms are provided as designations of permanent rooms and spaces, the pictograms shall comply with CBC Section 11B-703.6 and shall have text descriptors complying with CBC Sections 11B-703.2 and 11B-703.5.

B. Egress Signage: Signs for means of egress shall comply with CBC Section 11B-216.4.

C. Directional & Informational: Signs that provide direction to or information about interior and exterior spaces and facilities of the site shall comply with CBC Section 11B-703.5.

D. Toilet Room Signage: Signage for toilet rooms shall comply with CBC 11B-216.8.

E. Assistive Listening Systems: Signage for assistive listening systems shall comply with CBC 11B-216.10

2.02 RAISED CHARACTERS: Raised characters shall comply with CBC Section 11B-703.2 and shall be duplicated in Braille complying with CBC Section 11B-703.3. Raised characters shall be installed in accordance with CBC Section 11B-703.4.

2.03 BRAILLE. Braille shall be contracted (Grade 2) and shall comply with CBC Sections 11B-703.3 and 11B-703.4.

2.04 INSTALLATION HEIGH AND LOCATION. Signs with tactile characters shall comply with CBC Section 11B-703.4.

2.05 VISUAL CHARACTERS. Visual characters shall comply with CBC Section 11B-703.5.

2.06 PICTOGRAMS. Pictograms shall comply with CBC Section 11B-703.6.

2.07 SYMBOLS OF ACCESSIBILITY. Symbols of accessibility shall comply with CBC Section 11B-703.7.

2.08 BACKGROUNDS: All sign backgrounds to have a non-glare finish.

PART 3 PRODUCTS

3.01 MATERIALS

A. Acrylic Sheet. Cast methyl methacrylate monomer plastic conforming to ASTM D788, Sign Grade; “Plexiglas SQ” by Altuglas or equal, unless otherwise recommended by fabricator. Sizes and thicknesses as shown.

B. Silicone adhesive to be Dow Corning or approved equal, clear unless otherwise specified.

C. Adhesive tapes to be 3M or approved equal.

D. Paint products to be low VOC Matthews Acrylic Polyurethane or approved equal in colors specified. All finishes to be non-glare. Provide primer as recommended by coating manufacturer for each type of substrate.

E. Screen-printing enamel to be Nazdar or approved equal.

F. Engraving substrate to be Rowmark or approved equal. www.rowmark.com

G. Aluminum Sheet and Plate: ASTM B209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 5005-H32.

H. Vinyl opaque film with pressure-sensitive adhesive backing, suitable for exterior applications, to be 3M or approved equal.

I. Sealant: As required to prevent light and water leakage. No exposed sealant shall be allowed except as indicated on the reviewed shop drawings.

J. LED lighting components to be Bitro Group or approved equal. Light color temp to be warm white, 2,700˚K to 3,000˚K

K. Metal wire mesh to be stainless steel Type 304, welded 3"x3" mesh with 2.8120" square openings, 0.188" dia. wire and 87% open space. McNichols item 3823190041 or approved equal.

L. Recycled Rubber Bulletin Boards, using 90% recycled materials, custom sized to fit sign type to be Ghent Recycled Rubber Bulletin Board or approved equal.

PART 4 EXECUTION

4.01 GENERAL

A. Form work to required shapes and sizes, with true curve lines and angles. Provide necessary flanges, lugs and brackets for assembly of units. Use concealed fasteners whenever and wherever possible.

B. Shop fabricate so far as practicable. Joints shall be fastened flush to conceal reinforcement, or welded where thickness or section permits.

C. Contact surfaces of connected members must be assembled so joints will be tight and practically unnoticeable, with minimal use of filling compound.

D. Signs shall have fine, even texture and be flat and sound. Lines and miters sharp, arises

E. unbroken, profiles accurate and ornament true to pattern. Plane surfaces to be smooth flat and without oil-canning, free of rack and twist. Restore texture to filed or cut areas.

F. Level or straighten wrought work. Members shall have sharp lines and angles and smooth surfaces.

G. Extruded members to be free from extrusion marks. Square turns and corners sharp, curves true.

H. Form joints exposed to weather to exclude water.

I. Finish hollow signs with matching material on all faces, tops, bottoms and ends. Edge joints shall be tightly mitered to give appearance of solid material.

J. All painted surfaces shall be properly primed. Finish coating of paint to have complete coverage with no light or thin applications allowing substrate or primer to show. Finished surface shall be smooth, free of scratches, gouges, drips, bubbles, thickness variations, foreign matter and other imperfections.

K. Movable parts, including hardware, are be cleaned and adjusted to operate as designed without binding of deformation of members. Doors and covers shall be centered in openings or frames. All contact surfaces fit tight and even without forcing or warping components.

L. All fasteners to be non-corrosive.

M. Security head screw to be used for all fasteners. Contractor to coordinate type of security screws used with campus facilities department.

4.02 CUTTING & FINISHING

A. All materials shall be cut with proper equipment using sharp blades. Shapes shall have square corners, straight edges and shall be sized as shown in the design drawings. Blade/cutter marks and scratches will not be accepted.

B. Materials shall be prepared and primed according to product manufacture's instructions before painting.

C. Finishes shall be applied according to product manufacturer's instructions, then properly cured and protected after application.

4.03 APPLICATION OF GRAPHICS

A. All graphics shall be cut, etched and/or printed to comply with the specified typeface and graphic shapes. Graphics and type shall be clean and crisp without deformation of characters, ticks, gaps or irregularities.

B. Finished surfaces shall be protected from damage during application of graphics.

4.04 PACKAGING

A. Completed signs shall be packed for shipment to the project site to protect from damage.

B. Pre-assemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for re-assembly and coordinated installation.

PART 5 INSTALLATION

5.01 GENERAL

A. Protect products against damage during field handling and installation. Protect adjacent existing and newly placed construction, landscaping and surrounding wall and/or building finishes as necessary to prevent damage during installation. Paint and touch up any exposed fasteners and connecting hardware to match color and finish of surrounding surface.

B. All exterior signs to be staked by contractor for owner’s approval prior to sign installation or excavation.

C. Contractor will be responsible for verifying that, at each sign location, there are no utility lines that will be affected by installation of signs. Any damage during installation of signs to utilities will be the sole responsibility of the Contractor to correct and repair.

D. Furnish inserts and anchoring devices which must be set in concrete or other material for installation of signs. Provide setting drawings, templates, instructions and directions for installation of anchorage devices, which may involve other trades.
E. Mount signs in proper alignment, level and plumb. When exact position, angle, height or location is in doubt, contact Designer for clarification.
F. Remove or correct signs or installation work Owner determines as unsafe or as an unsafe condition.

5.02 CLEANING & ADJUSTING

A. Return items that cannot be refinished in the field to the shop. Make required alterations and refinish entire unit, or provide new units.
B. Verify gaskets and flanges interface properly to provide a lightproof installation at monument sign.
C. After installation, clean soiled signs surfaces according to manufacturer's instructions. Protect from damage until acceptance by University.
D. At completion of sign installation, clean exposed sign surfaces. Clean and repair any adjoining surfaces and landscaping that became soiled or damaged as a result of installation of signs.

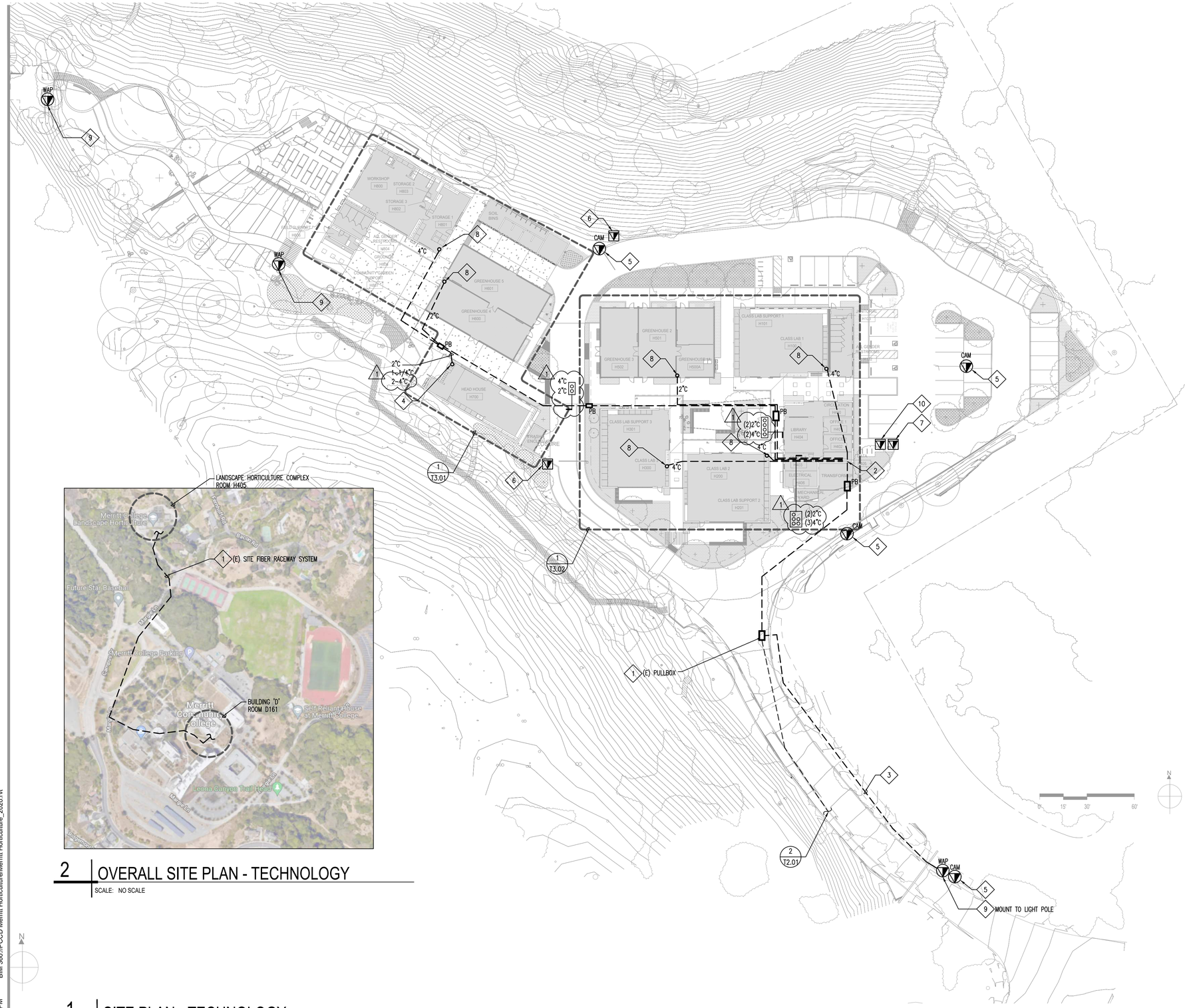
5.03 PUNCHLIST & PROJECT CLOSEOUT

A. Sign contractor shall review all installed work with the Client or Client's representative and make all required punchlist corrections. Once complete, the sign contractor shall back-check all punchlist items and receive Client's final approval of installation.

5.04 RECORD DOCUMENTS

A. As-Built Drawings
B. The Contractor shall submit to the University’s Representative, 10 calendar days after Final Completion, fully updated As-built Drawings and Shop Drawings for review.
C. The As-Built Drawings and Shop Drawings shall be in PDF format. Email is acceptable.

END OF SECTION



2 OVERALL SITE PLAN - TECHNOLOGY

SCALE: NO SCALE

1 SITE PLAN - TECHNOLOGY

SCALE: 1/40" = 1'-0"

GENERAL SHEET NOTES

A. EXISTING UNDERGROUND UTILITIES AND STRUCTURES ARE KNOWN TO EXIST ON THE PROJECT SITE. CONTRACTOR TO MAKE USE OF ALL CONSTRUCTION DOCUMENTS TO ASSIST IN LOCATING THE UNDERGROUND UTILITIES AND STRUCTURES. NO REPRESENTATION AS TO ACCURACY OR COMPLETENESS OF THE LOCATION OF THE UNDERGROUND UTILITIES OR STRUCTURE EXISTS.

B. CONTRACTOR TO EXERCISE PRECAUTIONARY MEANS INCLUDING HAND DIGGING OR VACUUM EXCAVATION TO PROTECT THE EXISTING UTILITIES AND STRUCTURES. WHERE EXACT LOCATIONS OF UTILITIES AND STRUCTURE CAN NOT BE DETERMINED, HAND OR VACUUM EXCAVATION MAY BE REQUIRED.

C. COORDINATE CONDUIT TRENCHING WITH OTHER DISCIPLINES TO AVOID CONFLICT. LOCATE PULL BOXES IN PLANTERS WHEREVER POSSIBLE. COORDINATE EXACT PULL BOX LOCATIONS WITH LANDSCAPING. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.

D. PROVIDE TRAFFIC LID WHERE REQUIRED FOR PULL BOXES (CHRISTY BOXES). PULL BOX SIZES SHOWN FOR STRAIGHT PULL APPLICATION ONLY. SIZE PER CEC ARTICLE 314. LABEL "TELECOM"

E. COORDINATE EXACT ROUTING OF UNDERGROUND INFRASTRUCTURE WITH CIVIL DRAWINGS. PROVIDE ADDITIONAL SPLICE/PULL BOXES AS REQUIRED IF CONDUIT BENDS EXCEED THREE 90 DEGREE BENDS (OR 270 DEGREES TOTAL).

F. PROVIDE BLUE PHONES AS DIRECTED BY DISTRICTS PROJECT MANAGER. PROVIDE COMPLETE CONNECTIONS FOR AN OPERABLE SYSTEM.

SHEET NOTES

1. PROVIDE NEW SM FIBER END-TO-END FROM BUILDING D, ROOM D161 EXISTING TERMINATION POINT TO LANDSCAPE HORTICULTURE COMPLEX, ROOM H405 FOR FIBER BACKBONE SYSTEM. REFER TO OVERALL SITE PLAN THIS SHEET AND CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
2. INCOMING SERVICE POINT OF CONNECTION. COORDINATE ALL INCOMING SERVICE WITH DISTRICT. ALL EXISTING CAMPUS NETWORK CONNECTIONS WILL TIE-IN TO THIS LOCATION.
3. 2"C AND FIBER CONNECTIVITY FOR SECURITY AND ACCESS CONTROL SYSTEM. REFER TO T4.01 FOR ADDITIONAL INFORMATION
4. PROVIDE FIBER CONNECTIVITY TO WALL MOUNTED RACK.
5. CAMERA TO BE FURNISHED AND INSTALLED AT LIGHT POLE BY VENDOR. REFER TO 1/E6.05 FOR ADDITIONAL INFORMATION.
6. FOR DATA CONNECTIVITY TO ARM GATE. PROVIDE DETECTOR LOOP PER MANUFACTURER INSTRUCTIONS.
7. FOR EMERGENCY BLUE PHONE STATION. BLUE PHONE BY OTHERS.
8. STUB UP CONDUIT FOR ROUTING OF NETWORK CATEGORY CABLES.
9. PROVIDE MIN. 2"C AND FIBER CONNECTIVITY FOR WIFI FROM HEADHOUSE ROOM H700. DEVICE AND FIBER-TO-COPPER CONVERTER BY VENDOR.
10. FOR RELOCATED TICKET MACHINE.

APPROVALS

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-119409 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 03/14/2022

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RIJA Job #: 2020011

SEAL

REGISTERED PROFESSIONAL ENGINEER
RAY A. JACHON
No. E19586
Exp. 06-30-23
ELECTRICAL
STATE OF CALIFORNIA

Date Signed: 8/18/22

PROJECT TITLE

Peralta Community College District
Merritt Landscape Horticulture Complex

12500 Campus Drive
Oakland, CA 94616

BID SET

ISSUE DATE	03/03/2022
N&T JOB NUMBER	22003

REVISIONS

△	DATE	DESCRIPTION
1	8/17/2022	ADDENDUM 1, ITEM 8

DRAWN BY CAD | CHECKED BY RAJ

SHEET TITLE
SITE PLAN - TECHNOLOGY

SHEET NUMBER
T2.01

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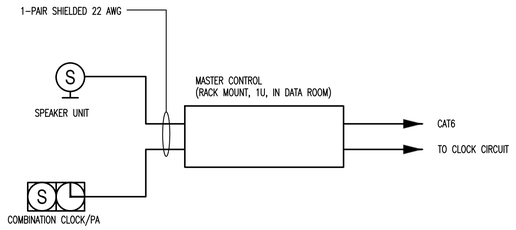


COMBO CLOCK / SPEAKER UNITS	MODEL# LOUDSPEAKER: 8C5PAX CLOCK: BOGEN BCAL (WIRELESS ANALOG) HOUSING: C5/BU/CK1
OUTDOOR PA SPEAKERS	ATLAS IED- APC-30T
GRILLE ASSEMBLY (BAFFLE)	ES8-CK (FLUSH MOUNT ENCLOSURE)
BACK BOX	ERD-8NS, FE9W (SURFACE MOUNT- WP)

NOTE:

1. PROVIDE CLOCK AND SPEAKER UNITS. WIRING AS SHOWN.

2 CLOCK / PA SYSTEM DIAGRAM

SCALE: NTS

GENERAL SHEET NOTES

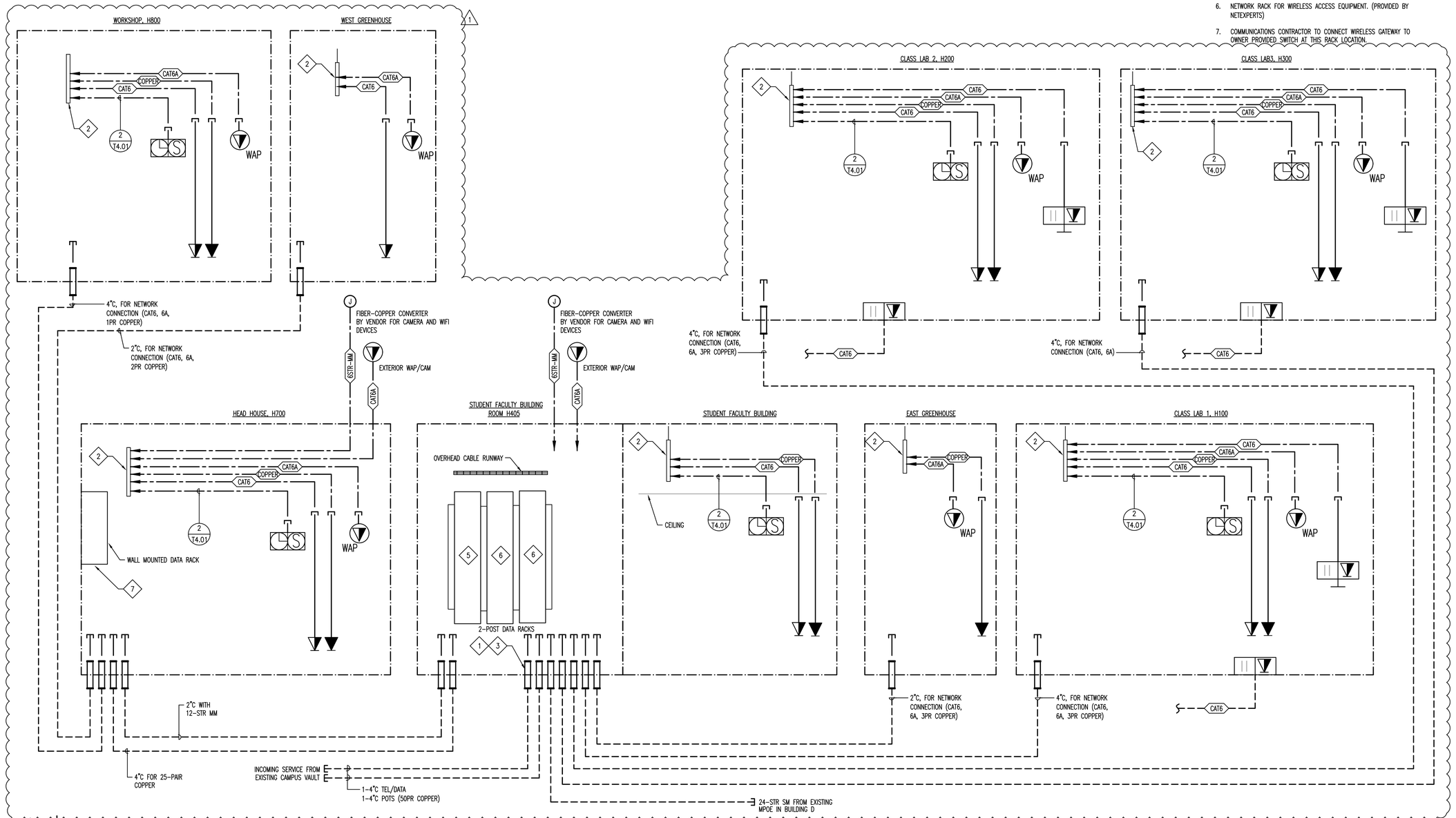
A. PROVIDE SEPARATE PULLBOXES FOR TEL/DATA AND FIRE ALARM SITE INFRASTRUCTURE.

B. PROVIDE PULL STRING FOR ALL SITE INFRASTRUCTURE.

C. PROVIDE PLENUM RATED CABLING AS REQUIRED

SHEET NOTES

1. LOW VOLTAGE SERVICES POINT OF CONNECTION.
2. PROVIDE RACEWAY (CONDUIT, CABLE TRAY, OR J-HOOKS AS REQUIRED).
3. CORE/SLEEVES. COORDINATE LOCATION.
4. NOT USED.
5. NETWORK EQUIPMENT RACK.
6. NETWORK RACK FOR WIRELESS ACCESS EQUIPMENT. (PROVIDED BY NETEXPERTS)
7. COMMUNICATIONS CONTRACTOR TO CONNECT WIRELESS GATEWAY TO OWNER PROVIDED SWITCH AT THIS RACK LOCATION.



1 TECHNOLOGY PATHWAY DIAGRAM

SCALE: NTS

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DRAWN BY CAD | CHECKED BY RAJ

SHEET TITLE
TECHNOLOGY DIAGRAMS

SHEET NUMBER
T4.01

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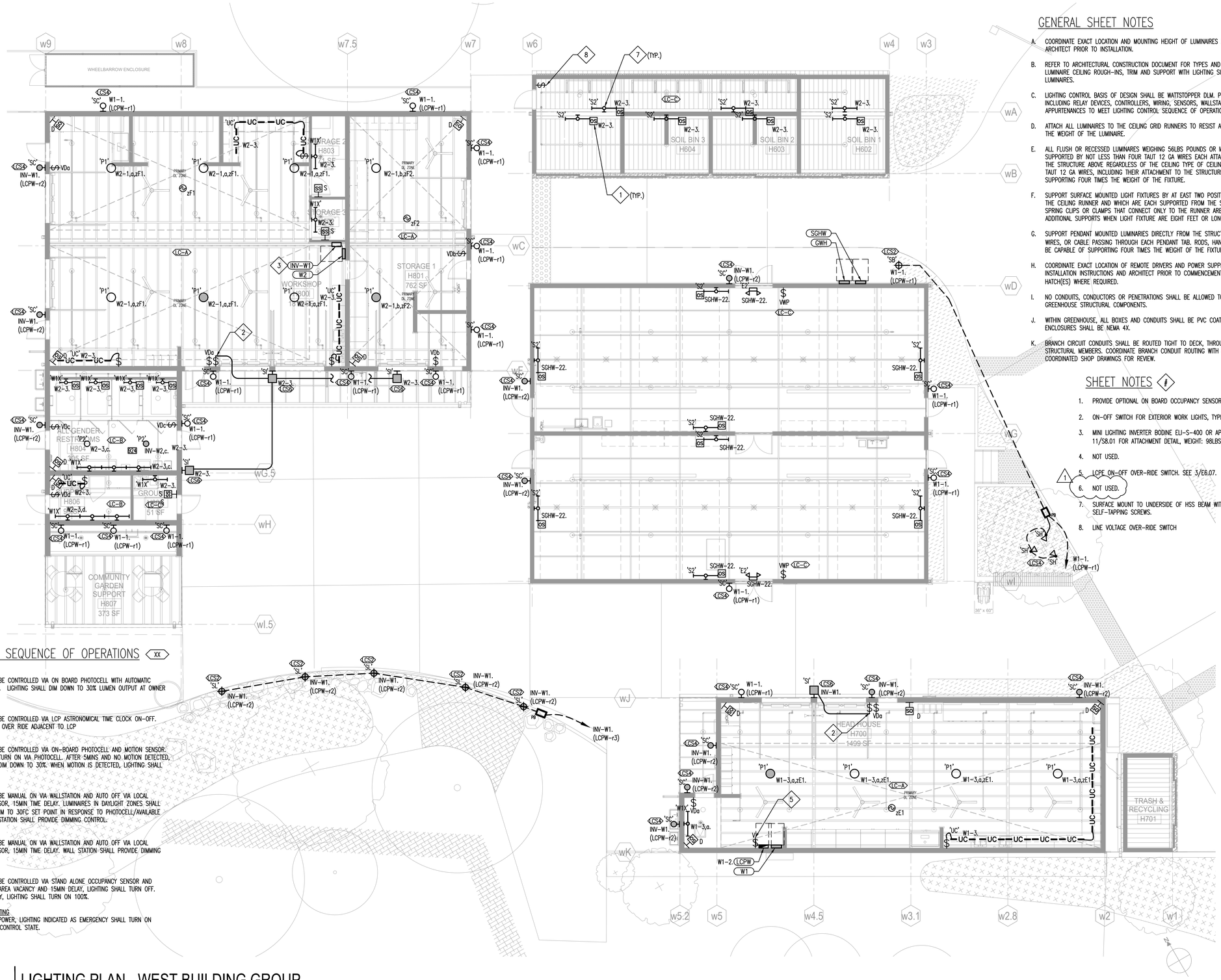

GENERAL SHEET NOTES

A. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF LUMINAIRES AND LIGHTING CONTROLS WITH ARCHITECT PRIOR TO INSTALLATION.

B. REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENT FOR TYPES AND MATERIALS. COORDINATE LUMINAIRE CEILING ROUGH-INS, TRIM AND SUPPORT WITH LIGHTING SUPPLIER PRIOR TO RELEASE OF LUMINAIRES.

C. LIGHTING CONTROL BASIS OF DESIGN SHALL BE WATTSTOPPER DLM. PROVIDE A COMPLETE SYSTEM, INCLUDING RELAY DEVICES, CONTROLLERS, WIRING, SENSORS, WALLSTATIONS, LABOR TO INSTALL, AND APPURTENANCES TO MEET LIGHTING CONTROL SEQUENCE OF OPERATION.

D. ATTACH ALL LUMINAIRES TO THE CEILING GRID RUNNERS TO RESIST A HORIZONTAL FORCE EQUAL TO THE WEIGHT OF THE LUMINAIRE.

E. ALL FLUSH OR RECESSED LUMINARES WEIGHING 56LBS POUNDS OR MORE MUST BE INDEPENDENTLY SUPPORTED BY NOT LESS THAN FOUR TAUT 12 GA WIRES EACH ATTACHED TO THE LUMINAIRE AND TO THE STRUCTURE ABOVE REGARDLESS OF THE CEILING TYPE OF CEILING GRID SYSTEM USED. THE FOUR TAUT 12 GA WIRES, INCLUDING THEIR ATTACHMENT TO THE STRUCTURE ABOVE, MUST BE CAPABLE OF SUPPORTING FOUR TIMES THE WEIGHT OF THE FIXTURE.

F. SUPPORT SURFACE MOUNTED LIGHT FIXTURES BY AT EAST TWO POSITIVE DEVICES WHICH SURROUND THE CEILING RUNNER AND WHICH ARE EACH SUPPORTED FROM THE STRUCTURE ABOVE BY 12 GA WIRE. SPRING CLIPS OR CLAMPS THAT CONNECT ONLY TO THE RUNNER ARE NOT ACCEPTABLE. PROVIDE ADDITIONAL SUPPORTS WHEN LIGHT FIXTURE ARE EIGHT FEET OR LONGER.

G. SUPPORT PENDANT MOUNTED LUMINARIES DIRECTLY FROM THE STRUCTURE ABOVE WITH RODS, HANGER WIRES, OR CABLE PASSING THROUGH EACH PENDANT TAB. RODS, HANGER WIRES AND/OR CABLE, SHALL BE CAPABLE OF SUPPORTING FOUR TIMES THE WEIGHT OF THE FIXTURE.

H. COORDINATE EXACT LOCATION OF REMOTE DRIVERS AND POWER SUPPLIES WITH MANUFACTURER INSTALLATION INSTRUCTIONS AND ARCHITECT PRIOR TO COMMENCEMENT OF WORK. PROVIDE ACCESS HATCH(ES) WHERE REQUIRED.

I. NO CONDUITS, CONDUCTORS OR PENETRATIONS SHALL BE ALLOWED TO BE ROUTED THROUGH GREENHOUSE STRUCTURAL COMPONENTS.

J. WITHIN GREENHOUSE, ALL BOXES AND CONDUITS SHALL BE PVC COATED, WET LOCATION LISTED. ALL ENCLOSURES SHALL BE NEMA 4X.

K. BRANCH CIRCUIT CONDUITS SHALL BE ROUTED TIGHT TO DECK, THROUGH PRE-PUNCHED KNOCKOUTS AT STRUCTURAL MEMBERS. COORDINATE BRANCH CONDUIT ROUTING WITH ARCHITECT, AND PROVIDE COORDINATED SHOP DRAWINGS FOR REVIEW.

SHEET NOTES

1. PROVIDE OPTIONAL ON BOARD OCCUPANCY SENSOR, REFER TO LUMINAIRE SCHEDULE.
2. ON-OFF SWITCH FOR EXTERIOR WORK LIGHTS, TYPE 'SI'.
3. MINI LIGHTING INVERTER BODINE ELI-S-400 OR APPROVED EQUAL. REFER TO 11/S8.01 FOR ATTACHMENT DETAIL, WEIGHT: 98LBS
4. NOT USED.
5. LCPE ON-OFF OVER-RIDE SWITCH. SEE 3/E6.07.
6. NOT USED.
7. SURFACE MOUNT TO UNDERSIDE OF HSS BEAM WITH (2)#12 SELF-DRILLING SELF-TAPPING SCREWS.
8. LINE VOLTAGE OVER-RIDE SWITCH

LIGHTING SEQUENCE OF OPERATIONS (XX)

LCS2
LIGHTING SHALL BE CONTROLLED VIA ON BOARD PHOTOCELL WITH AUTOMATIC PROFILE DIMMING. LIGHTING SHALL DIM DOWN TO 30% LUMEN OUTPUT AT OWNER SPECIFIED TIME.

LCS4
LIGHTING SHALL BE CONTROLLED VIA LCP ASTRONOMICAL TIME CLOCK ON-OFF. PROVIDE MANUAL OVER RIDE ADJACENT TO LCP

LCS6
LIGHTING SHALL BE CONTROLLED VIA ON-BOARD PHOTOCELL AND MOTION SENSOR. LIGHTING SHALL TURN ON VIA PHOTOCELL. AFTER 5MINS AND NO MOTION DETECTED, LIGHTING SHALL DIM DOWN TO 30%. WHEN MOTION IS DETECTED, LIGHTING SHALL TURN ON 100%.

LC-A
LIGHTING SHALL BE MANUAL ON VIA WALLSTATION AND AUTO OFF VIA LOCAL OCCUPANCY SENSOR, 15MIN TIME DELAY. LUMINAIRES IN DAYLIGHT ZONES SHALL CONTINUOUSLY DIM TO 30FC SET POINT IN RESPONSE TO PHOTOCELL/AVAILABLE DAYLIGHT. WALL STATION SHALL PROVIDE DIMMING CONTROL.

LC-B
LIGHTING SHALL BE MANUAL ON VIA WALLSTATION AND AUTO OFF VIA LOCAL OCCUPANCY SENSOR, 15MIN TIME DELAY. WALL STATION SHALL PROVIDE DIMMING CONTROL.

LC-C
LIGHTING SHALL BE CONTROLLED VIA STAND ALONE OCCUPANCY SENSOR AND SWITCH. UPON AREA VACANCY AND 15MIN DELAY, LIGHTING SHALL TURN OFF. UPON OCCUPANCY, LIGHTING SHALL TURN ON 100%.

EMERGENCY LIGHTING
UPON LOSS OF POWER, LIGHTING INDICATED AS EMERGENCY SHALL TURN ON REGARDLESS OF CONTROL STATE.

1 LIGHTING PLAN - WEST BUILDING GROUP
SCALE: 1/8" = 1'-0"

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Date Signed: 8/17/22

PROJECT TITLE

Peralta Community College District
Merritt Landscape Horticulture Complex

12500 Campus Drive
Oakland, CA 94616

BID SET

ISSUE DATE	03/03/2022
N&T JOB NUMBER	22003

REVISIONS

⚠	DATE	DESCRIPTION
1	8/17/2022	ADDENDUM 1, ITEM 9

DRAWN BY CAD | CHECKED BY RAJ

SHEET TITLE
LIGHTING PLAN - WEST BUILDING GROUP

SHEET NUMBER
E2.51

SCHEDULE OF PLANTS

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WATER USAGE
	ACER	1	ACER	GREEN MAPLE	TRANSPLANTED	MEDIUM
	ACE MAC	2	ACER MACROPHYLLUM	BIG LEAF MAPLE	36"BOX	MEDIUM
	ACE PAL	1	ACER PALMATUM `SANGO-KAKU`	SANGO-KAKU JAPANESE MAPLE	TRANSPLANTED	MEDIUM
	ACE RBR	1	ACER RUBRUM	RED MAPLE	TRANSPLANTED	MEDIUM
	CER CAN	1	CERCIS CANADENSIS	EASTERN REDBUD MULTI-TRUNK	48"BOX	MEDIUM
	CIT LIM	2	CITRUS X LIMON	LEMON ESPALIERS	TRANSPLANTED	MEDIUM
	FAG ASP	5	FAGUS SYLVATICA `ASPLENIFOLIA`	CUTLEAF EUROPEAN BEECH	24"BOX	MEDIUM
	GAR ELL	1	GARRYA ELLIPTICA	COAST SILKTASSEL	36"BOX	LOW
	LAG YAR	6	LAGERSTROEMIA FAURIEI `NATCHEZ`	NATCHEZ CRAPE MYRTLE	48"BOX	LOW
	MAG DEN	1	MAGNOLIA DENUDATA	YULAN MAGNOLIA	TRANSPLANTED	MEDIUM
	MAG STE	1	MAGNOLIA STELLATA	STAR MAGNOLIA MULTI-TRUNK	TRANSPLANTED	MEDIUM
	MET GLY	1	METASEQUOIA GLYPTOSTROBOIDES	DAWN REDWOOD	36"BOX	HIGH
	PIS CHI	5	PISTACIA CHINENSIS `KEITH DAVEY`	KEITH DAVEY CHINESE PISTACHE	24"BOX	LOW
	PIS CHI	1	PISTACIA CHINENSIS `KEITH DAVEY`	KEITH DAVEY CHINESE PISTACHE	48"BOX	LOW
	POD MAC	1	PODOCARPUS MACROPHYLLUS `MAKI`	MAKI SHRUBBY YEW PODOCARPUS	TRANSPLANTED	MEDIUM

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WATER USAGE
	QUE HYP	1	QUERCUS HYPOLEUCOIDES	SILVERLEAF OAK	24"BOX	LOW
	QUE HYP	1	QUERCUS HYPOLEUCOIDES	SILVERLEAF OAK	36"BOX	LOW
	QUE TOM	3	QUERCUS TOMENTELLA	ISLAND LIVE OAK	24"BOX	LOW
	STE PSE	4	STEWARTIA PSEUDOCAMELLIA	JAPANESE STEWARTIA	24"BOX	MEDIUM

SHRUBS, VINES AND FERNS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WATER USAGE	
AGA ATT	15	AGAVE ATTENUATA	FOXTAIL AGAVE	15 GAL	LOW	
GAR COA	3	GARRYA ELLIPTICA	COAST SILKTASSEL	15 GAL	LOW	
POL PSE	113	POLYPODIUM PSEUDOAREUM `BLUE RABBIT`S FOOT FERN`	BLUE RABBIT`S FOOT FERN	1 GAL	MEDIUM	
POL MUN	11	POLYSTICHUM MUNITUM	WESTERN SWORD FERN	5 GAL	MEDIUM	
RHA CAL	57	RHAMNUS CALIFORNICA `MOUND SAN BRUNO`	CALIFORNIA COFFEEBERRY	5 GAL	LOW	
ROS OFF	3	ROSMARINUS OFFICINALIS `ARP`	ARP ROSEMARY	5 GAL	LOW	
SAL POZ	26	SALVIA X `POZO BLUE`	POZO BLUE SAGE	5 GAL	LOW	
VIT CHA	3	VITEX AGNUS-CASTUS	CHASTE TREE	15 GAL	LOW	
YUC ROS	4	YUCCA ROSTRATA	BEAKED YUCCA	15 GAL	LOW	
YUC ROS	9	YUCCA ROSTRATA	BEAKED YUCCA	24"BOX	LOW	
PERENNIALS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**WATER USAGE**	**SPACING**
EPI CAN	67	EPILOBIUM 'SILVER SELECT'	CALIFORNIA FUCHSIA	1 GAL	LOW	
SAL MEX	88	SALVIA CHAMAEDRYOIDES	MEXICAN BLUE SAGE	5 GAL	LOW	
SAL BEE	27	SALVIA X `BEE`S BLISS`	BEE`S BLISS SAGE	5 GAL	LOW	
WES FRU	80	WESTRINGIA FRUTICOSA `GREY BOX`	DWARF COAST ROSEMARY	5 GAL	LOW	
ECH ELE	156	ECHEVERIA ELEGANS	MEXICAN SNOWBALL	4"POT	LOW	8" o.c.
HEL NUM	47	HELIANTHEMUM NUMMULARIUM `THE BRIDE`	THE BRIDE SUNROSE	1 GAL	LOW	24" o.c.
IRI BAM	148	IRIS CONFUSA	BAMBOO IRIS	1 GAL	MEDIUM	24" o.c.
IRI PCH	68 30	IRIS PCH HYBRIDS MIX + BLECHNUM SPICANT	PACIFIC COAST HYBRID IRIS DEER FERN	1 GAL 5 GAL	MEDIUM MEDIUM	18" o.c. 24" o.c.
LIB GRA	71	LIBERTIA GRANDIFLORA	NEW ZEALAND IRIS	1 GAL	LOW	24" o.c.
GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**WATER USAGE**	**SPACING**
CAR DIV	315	CAREX DIVULSA	EUROPEAN GREY SEDGE	1 GAL	LOW	
CAR PAN	994 300	CAREX PANSA + ZEPHYRANTHES CANDIDA	CALIFORNIA MEADOW SEDGE RAIN LILY	1 GAL BULB	MEDIUM MEDIUM	24" o.c.
CHO TEC	291	CHONDROPETALUM TECTORUM `EL CAMPO`	EL CAMPO SMALL CAPE REED	5 GAL	LOW	
FES SIS	1,204 400	FESTUCA IDAHOENSIS `SISKIYOU BLUE` + BRODIAEA LAXA	SISKIYOU BLUE FESCUE COMMON TRITELEIA	1 GAL BULB	LOW LOW	30" o.c.
LEY CON	165	LEYMUS CONDENSATUS `CANYON PRINCE`	CANYON PRINCE BLUE RYE	5 GAL	LOW	
LOM LON	345 100	LOMANDRA LONGIFOLIA `NYALLA` + HESPERANTHA COCCINEA	NYALLA DWARF MAT RUSH RIVER LILY	5 GAL BULB	LOW MEDIUM	24" o.c.
TURF SEED MIX - ADD ALT FOR GRASS PAVE	233 SF	SOD, DELTA BLUEGRASS MIX: KOELERIA MACRANTHA, DESCHAMPSIA ELONGATA, FESTUCA CUBRA. BOLERO SEED MIX, DELTA BLUEGRASS		SOD		
GROUND COVERS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**WATER USAGE**	**SPACING**
ARC MIS	17	ARCTOSTAPHYLOS X `PACIFIC MIST`	PACIFIC MIST MANZANITA	5 GAL	LOW	
BUL FAN	137	BULBINE FRUTESCENS `ORANGE`	ORANGE STALKED BULBINE	1 GAL	LOW	
SAR HOO	32	SARCOCOCCA HOOKERIANA VAR. HUMILIS	SWEET BOX	5 GAL	LOW	
TRA ASI	40	TRACHELOSPERMUM ASIATICUM	ASIAN JASMINE	5 GAL	MEDIUM	
ESC CAL	68	ESCHSCHOLZIA CALIFORNICA	CALIFORNIA POPPY	1 GAL	LOW	48" o.c.
FRA CHI	313	FRAGARIA CHILOENSIS	BEACH STRAWBERRY	1 GAL	MEDIUM	18" o.c.
RIB VIB	81	RIBES VIBURNIFOLIUM	EVERGREEN CURRANT	5 GAL	LOW	24" o.c.
SAL SON	13	SALVIA SONOMENSIS	CREEPING SAGE	5 GAL	LOW	24" o.c.

APPROVALS

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-119409 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/14/2022

NOLL & TAM ARCHITECTS
729 Heinz Avenue
Berkeley, CA 94710
tel 510.542.2200
fax 510.542.2201

SEAL

BASE LANDSCAPE ARCHITECTURE
SAN FRANCISCO / PORTLAND
www.baselandscape.com

LICENSED LANDSCAPE ARCHITECT
SABRINA MARIE VOLEJNIKOVA
12.31.2023
11.11.2021
STATE OF CALIFORNIA

PROJECT TITLE

Peralta Community College District
Merritt Landscape Horticulture Complex

12500 Campus Drive
Oakland, CA 94616

BID SET

ISSUE DATE 03/03/2022
N&T JOB NUMBER 22003

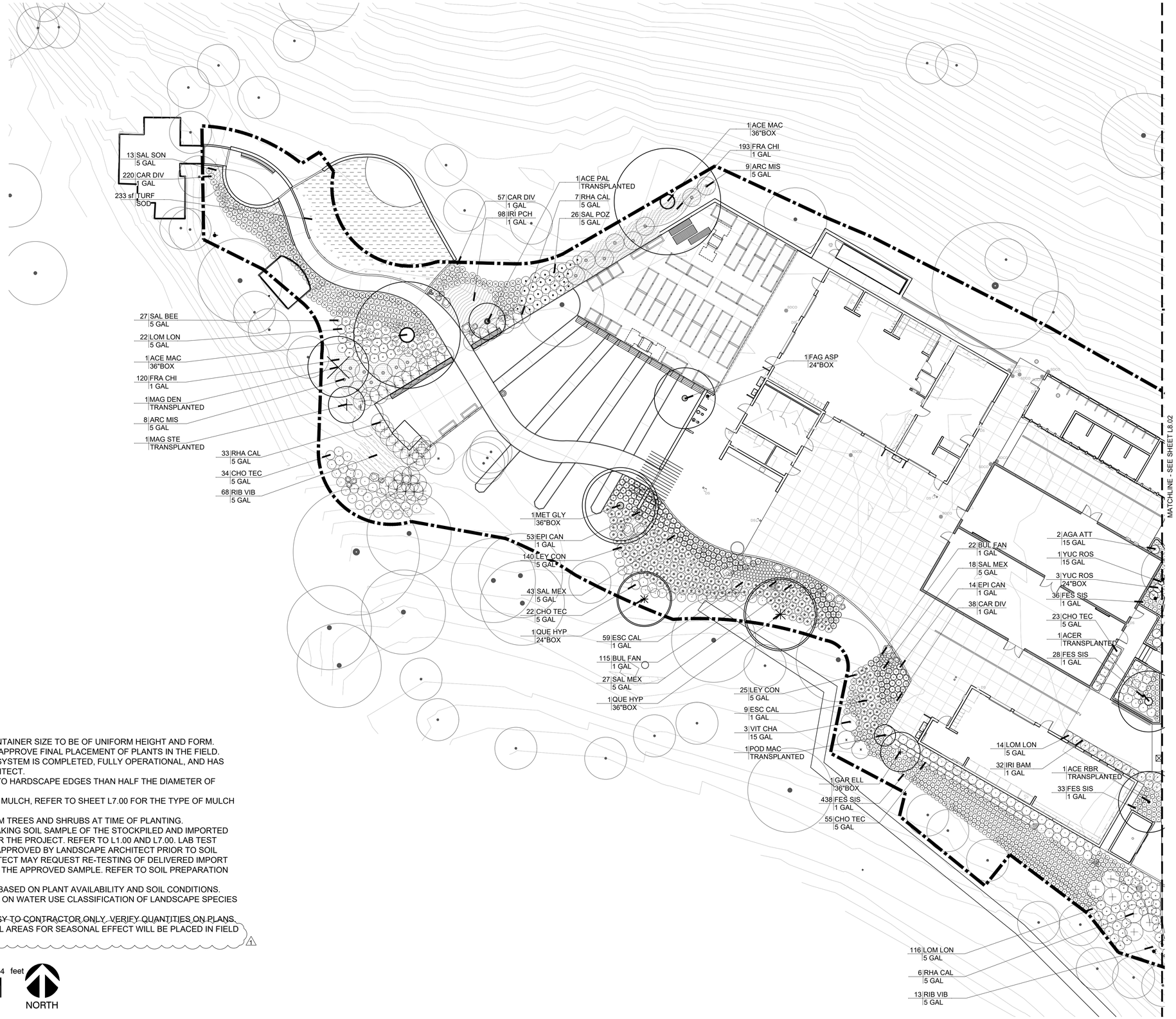
REVISIONS

#	DATE	DESCRIPTION
1	8.17.2022	ADDENDUM 1, ITEM 10

DRAWN BY TY, JR, SV | CHECKED BY SV

SHEET TITLE
PLANT SCHEDULE

SHEET NUMBER
L8.00



NOTES:

1. ALL TREES OF THE SAME SPECIES AND CONTAINER SIZE TO BE OF UNIFORM HEIGHT AND FORM.
2. LANDSCAPE ARCHITECT WILL REVIEW AND APPROVE FINAL PLACEMENT OF PLANTS IN THE FIELD.
3. INSTALL ALL PLANTING AFTER IRRIGATION SYSTEM IS COMPLETED, FULLY OPERATIONAL, AND HAS BEEN REVIEWED BY THE LANDSCAPE ARCHITECT.
4. DO NOT PLANT GROUND COVERS CLOSER TO HARDSCAPE EDGES THAN HALF THE DIAMETER OF PLANT SIZE AT MATURITY.
5. MULCH ALL PLANTING AREAS WITH 3" DEEP MULCH, REFER TO SHEET L7.00 FOR THE TYPE OF MULCH FOR EACH PLANTING AREA.
6. REMOVE NURSERY STAKES AND TAGS FROM TREES AND SHRUBS AT TIME OF PLANTING.
7. THE CONTRACTOR IS RESPONSIBLE FOR TAKING SOIL SAMPLE OF THE STOCKPILED AND IMPORTED SOIL TO BE USED AS PLANTING MEDIUM FOR THE PROJECT. REFER TO L1.00 AND L7.00. LAB TEST RESULTS AND RECOMMENDATIONS TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO SOIL DELIVERY TO SITE. THE LANDSCAPE ARCHITECT MAY REQUEST RE-TESTING OF DELIVERED IMPORT TOPSOIL TO VERIFY ITS CONFORMANCE TO THE APPROVED SAMPLE. REFER TO SOIL PREPARATION SPECIFICATIONS.
8. PLANT SCHEDULE IS SUBJECT TO CHANGE BASED ON PLANT AVAILABILITY AND SOIL CONDITIONS.
9. LISTED WATER REQUIREMENTS ARE BASED ON WATER USE CLASSIFICATION OF LANDSCAPE SPECIES (WUCOLS IV, JANUARY 2014).
10. PLANT QUANTITIES ARE GIVEN AS COURTESY TO CONTRACTOR ONLY. VERIFY QUANTITIES ON PLANS.
11. DRIFTS OF BULBS IN GRASS AND PERENNIAL AREAS FOR SEASONAL EFFECT WILL BE PLACED IN FIELD BY LANDSCAPE ARCHITECT.

1

0 16 32 48 64 feet

1/16" = 1'-0"

NORTH

APPROVALS

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APP: 01-119409 INC:
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LICENSED LANDSCAPE ARCHITECT
SVETLANA MARIE VOLEJNIKOVA
Signature
12.31.2023
Renewal Date
11.11.2021
Date
STATE OF CALIFORNIA

PROJECT TITLE

Peralta Community College District

Merritt Landscape Horticulture Complex

12500 Campus Drive
Oakland, CA 94616

BID SET

ISSUE DATE	03/03/2022
N&T JOB NUMBER	22003

REVISIONS

#	DATE	DESCRIPTION
1	8.17.2022	ADDENDUM 1, ITEM 10

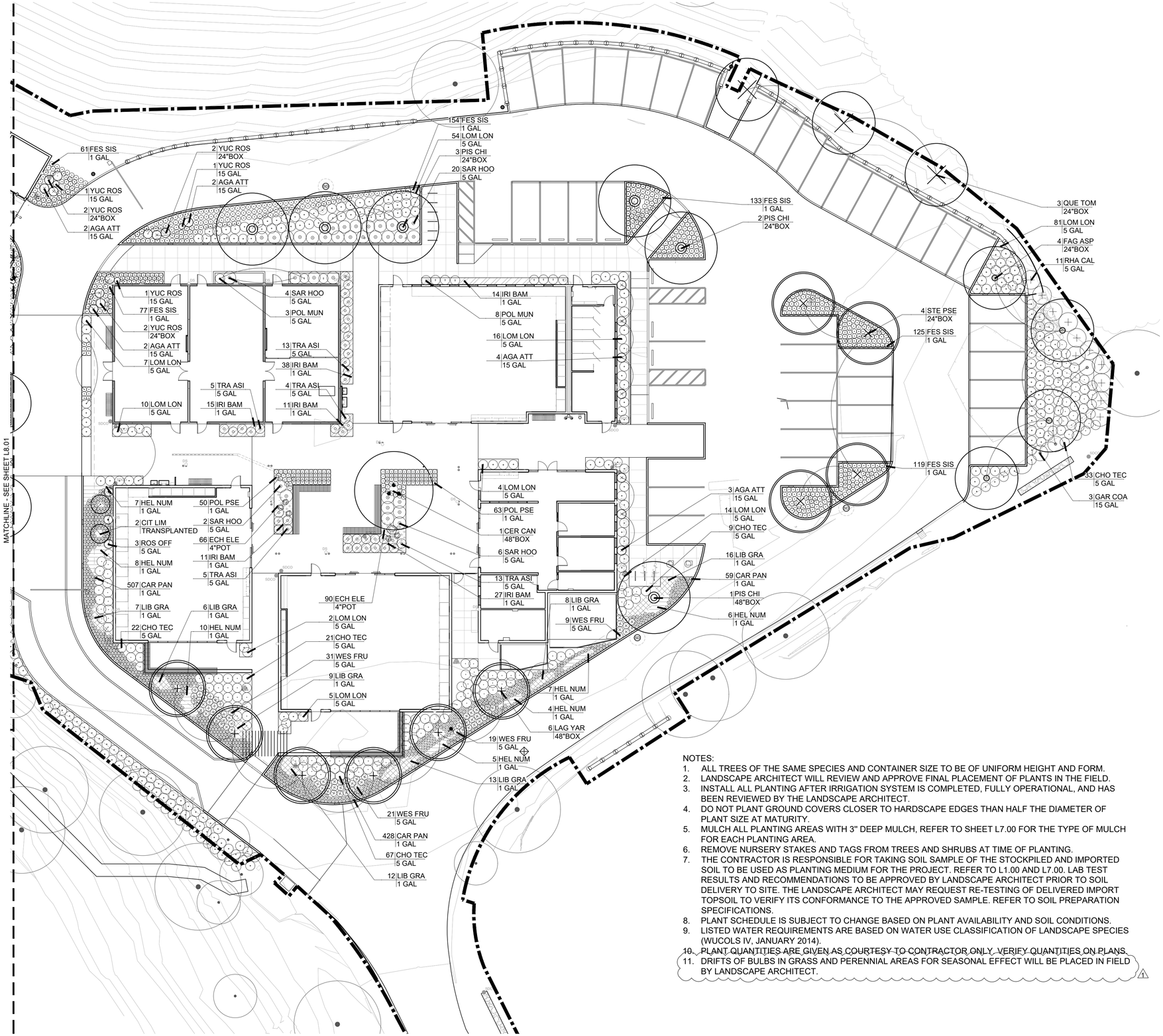
DRAWN BY TY, JR, SV | CHECKED BY SV

SHEET TITLE

PLANTING PLAN WEST

SHEET NUMBER

L8.01



NOTES:

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APPROVALS

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LICENSED LANDSCAPE ARCHITECT
SVETLANA MARIE VOLEJNIKOVA-VOE
Signature 12.31.2023 Renewal Date
11.11.2021 Date
STATE OF CALIFORNIA

PROJECT TITLE

Peralta Community College District
Merritt Landscape Horticulture Complex

12500 Campus Drive
Oakland, CA 94616

BID SET

ISSUE DATE 03/03/2022
N&T JOB NUMBER 22003

REVISIONS

#	DATE	DESCRIPTION
1	8.17.2022	ADDENDUM 1, ITEM 10

DRAWN BY TY, JR, SV | CHECKED BY SV

SHEET TITLE

PLANTING PLAN EAST

SHEET NUMBER

L8.02

SCHEDULE OF MATERIALS AND SITE FURNISHINGS

HIGHLIGHTED NOTES ARE ADD ALTS TO BASE BID

PAVING

SYMBOL	DESCRIPTION	DETAIL	MODEL	MANUFACTURER	MATERIAL	COLOR	FINISH	NOTES	SPEC SECTION	PROD. SBMTL	SHOP DWGS	MOCK-UP
P-01	CONCRETE PAVING, VEHICULAR	1/L5.00	CAST-IN-PLACE CONCRETE		PORTLAND CEMENT	NATURAL	TOP CAST 05 - MICRO ETCH		32 13 14	X		X
P-02	CONCRETE PAVING, PEDESTRIAN	1/L5.00	CAST-IN-PLACE CONCRETE		PORTLAND CEMENT	NATURAL	TOP CAST 05 - MICRO ETCH		32 13 14	X		X
P-03	FLUSH CONCRETE CURB	12/L5.00	CAST-IN-PLACE CONCRETE		PORTLAND CEMENT	NATURAL	TOP CASE 05 - MICRO ETCH		03 30 00	X		
P-04	RAISED CONCRETE CURB		CAST-IN-PLACE CONCRETE		PORTLAND CEMENT	NATURAL	TOP CAST 05 - MICRO ETCH	S.C.D.	03 30 00	X		
P-05	UNIT PAVER, PEDESTRIAN -TYPE A1	4/L5.00	LARGE SCALE CALARC 6 X 24 X 2.5	STEPSTONE, 408.499.8658	CONCRETE	GRANADA WHITE W/SLAG 1401; PORCELAIN W/SLAG 1413; ALMOND W/SLAG 1406	LIGHT SANDBLAST; STACKED BOND AND RUNNING BOND PATTERN	SEE PLANS FOR PATTERNS AND SAND SET & MORTARED INSTALLATION	32 14 00	X		X
P-06	UNIT PAVER, PEDESTRIAN - TYPE A2	4/L5.00	LARGE SCALE CALARC 12 X 24 X 2.5	STEPSTONE, 408.499.8658	CONCRETE	GRANADA WHITE W/SLAG 1401	LIGHT SANDBLAST	SAND SET AND MORTARED INSTALLATION	32 14 00	X		X
P-07	UNIT PAVER, VEHICULAR - TYPE B1	4/L5.00	NARROW MODULAR 6 X 24 X 4	STEPSTONE, 408.499.8658	CONCRETE	GRANADA WHITE W/SLAG 1401; PORCELAIN W/SLAG 1413; ALMOND W/SLAG 1406	LIGHT SANDBLAST; STACKED BOND AND RUNNING BOND PATTERN	SEE PLANS FOR PATTERNS AND SAND SET & MORTARED INSTALLATION	32 14 00	X		X
P-08	CORE GRAVEL PAVING, VEHICULAR	4/L5.01	CORE GRAVEL 65-30	CORE LANDSCAPE PRODUCTS 855.777.2673	HDPE; INFILL WITH 3/8" CRUSHED YOSEMITE TAN FROM LYNGSO	BLACK		ADD ALT: FIRE TRUCK RATED GRASS CRETE, BIODEGRADABLE MOLDED PULP FORMER; 3" AT PARKING, 4" AT ROAD	32 14 43	X		X
P-09	GRANITECRETE PAVING	5/L5.00	PEDESTRIAN PROFILE	GRANITECRETE, 408.858.9635	DECOMPOSED GRANITE FINES IN CEMENTITIOUS BINDER	NATURAL GOLD			32 15 41	X		X
P-10	MULCH SURFACING	1/L5.03	ANGULAR 3/8" TAFFY	LYNGSO, 650.364.1730	CRUSHED STONE	TAN/YELLOW/BUFF		PROVIDE 3" MIN DEPTH, RAKE SMOOTH	32 93 00	X		
P-11	TRUNCATED DOME PAVER	4/L5.00	12" X 12" X 2" NOMINAL	STEPSTONE, 408.499.8658		BRICK RED 1816	LIGHT SAND BLAST	ADJACENT TO UNIT PAVER PAVING	32 17 26 32 14 00	X		X
P-12	TACTILE WARNING STRIP - S.C.D.		SURFACE APPLIED MAT		POLYURETHANE	BRICK RED		AT CONCRETE PAVING	32 17 26	X		
P-13	BOULDERS - TYPE A	6/L7.03	SONOMA FIELD STONE	LYNGSO, 650.364.1730	STONE	NATURAL	NATURAL WITH MOSSES AND LYCHENS	IN BIORETENTION AREAS; SUPPLEMENT TO EXISTING SITE BOULDERS	32 93 00	X		
P-14	BOULDERS - TYPE B	6/L7.03	ROSE GOLD BOULDER	LYNGSO, 650.364.1730	STONE	NATURAL PINKISH		IN MAIN ACADEMIC COURTYARD ONLY	32 93 00	X		
P-15	COBBLES	4/L7.03	SMALL NOIYO COBBLES	WHEELER ZAMARONI, 707.543.8400	STONE	TAN, GRAY	NATURAL	2" TO 6" DIA. IN BIORETENTION AREAS	32 93 00	X		
P-16	PEBBLES		2" - 3" BLACK LA PAZ PEBBLES	LYNGSO, 650.364.1730	STONE	BLACK / DARK GRAY	NATURAL	AT DOWNSPOUTS IN COURTYARD	32 93 00	X		
P-17	WOOD HEADER	7/L5.00							32 15 00	X		
P-18	WOOD LUMBER EDGING	6/L5.00			6 X 6 CONSTRUCTION HEART REDWOOD	NATURAL	NATURAL		06 10 63	X	X	

WALLS AND STAIRS

SYMBOL	DESCRIPTION	DETAIL	MODEL	MANUFACTURER	MATERIAL	COLOR	FINISH	NOTES	SPEC SECTION	PROD. SBMTL	SHOP DWGS	MOCK-UP
W-01	CMU RETAINING WALL	1/L5.02	6" W, 8" H, 16" L	BASALITE, 707.678.7939	CMU BLOCK	225 - LIGHT GRAY	COMB FACE	WITH CMU CAP	04 22 00	X	X	X
W-02	CMU CURVED WALL	2/L5.04	12" W, 8" H, 16" L	BASALITE, 707.678.7939	CMU BLOCK	225 - LIGHT GRAY	COMB FACE	WITH WOOD SLAT SEAT ON LOWER WALL	04 22 00	X	X	X
W-03	CMU LOW WALL, 6" WIDE	3/L5.02	6" W, 8" H, 16" L	BASALITE, 707.678.7939	CMU BLOCK	225 - LIGHT GREY	COMB FACE	WITH CMU CAP	04 22 00	X	X	X
W-04	CMU LOW WALL, 12" WIDE	2/L5.02	12" W, 8" H, 16" L	BASALITE, 707.678.7939	CMU BLOCK	225 - LIGHT GREY	COMB FACE	WITH CMU CAP	04 22 00	X	X	X
W-06	CMU CAP		4" H, 16" L	BASALITE, 707.678.7939	CMU BLOCK	225 - LIGHT GREY	PRECISION	WIDTH TO MATCH CMU WALL: 12" OR 6"	04 22 00	X	X	X
W-07	SITE WALL - S.S.D., S.C.D.		STEEL PILE WITH WOOD LAGGING					PIER TYPE A PER S4.03				
W-08	CONCRETE STAIRS WITH HANDRAILS	3/L5.01	CAST-IN-PLACE CONCRETE		PORTLAND CEMENT	NATURAL	TOP CAST 05 - MICRO ETCH		03 30 00	X	X	

SITE FURNISHING

SYMBOL	DESCRIPTION	DETAIL	MODEL	MANUFACTURER	MATERIAL	COLOR	FINISH	NOTES	SPEC SECTION	PROD. SBMTL	SHOP DWGS	MOCK-UP
S-01	MOVABLE PICNIC TABLE AND BENCHES	5/L5.07	MULTIPLICITY TABLE AND TWO BENCHES	LANDSCAPE FORMS, 800.430.6209	METAL AND THERMALLY MODIFIED ASH	METAL: TBD	POWDERCOATED STEEL	FREE-STANDING, MOVABLE	12 93 00	X		
S-02	WHEELCHAIR ACCESSIBLE RAISED BED	5/L5.03	FORWARD-FACING WHEELCHAIR ACCESSIBLE RAISED GARDEN BED	ACCESSIBLE GARDENS	CEDAR WOOD	NATURAL	NATURAL	PROVIDE REQUIRED TURNING CLEARANCES	12 93 00	X		
S-03	WOOD BENCH - TYPE A		LINK - PIANO KEY STRAIGHT, BACKED, NO ARMS	LANDSCAPE FORMS, 800.430.6206	METAL SUPPORT, WOOD SLAT SEAT	WOOD - NATURAL, METAL - TBD	POWDER COAT	FREE STANDING, THERMALLY MODIFIED ASH	12 93 00	X		
S-04	WOOD BENCH - TYPE B		LINK - PIANO KEY STRAIGHT, BACKLESS, NO ARMS	LANDSCAPE FORMS, 800.430.6206	METAL SUPPORT, WOOD SLAT SEAT	WOOD - NATURAL, METAL - TBD	POWDER COAT	TOP WALL MOUNT SUPPORT	12 93 00	X		
S-05	DRINKING FOUNTAIN	2/L5.01	LK4420EVG	ELKAY, 916.386.7500	STEEL	EVERGREEN	POWDER COAT	ADA COMPLIANT. FRONT APPROACH, TWO-LEVEL BOWL, SURFACE MOUNTED	12 93 00	X		
S-06	BOTTLE FILLER	2/L5.01	LK4410BFEVG	ELKAY, 916.386.7500	STEEL	EVERGREEN	POWDER COAT	ADA COMPLIANT, FRONT APPROACH, SURFACE MOUNTED	12N93 00	X		
S-07	BIKE RACK	2/L5.03	WELLE CIRCULAR WCR02-SQ-SF	BICYCLE PARKING, 800.637.0496	SQUARE STEEL TUBE		GALVANIZED	SURFACE MOUNTED	12 93 00	X		
S-08	GARDEN FOUNTAIN - TYPE A	3/L5.03	BASIN - LARGE / HURRICANE	CONCRETE WORKS, 510.534.7141	PRECAST CONCRETE	TBD	TBD	ADD ALT ONLY. SEE MEP DRAWINGS FOR PLUMBING AND ELECTRICAL CONNECTIONS; EXACT LOCATION TBD	13 12 13	X		
S-09	GARDEN FOUNTAIN - TYPE B	3/L5.03	SWIRL PATTER BASALT	LYNGSO, 650.364.1730	STONE	NATURAL	NATURAL, CARVED	ADD ALT ONLY. SEE MEP DRAWINGS FOR PLUMBING AND ELECTRICAL CONNECTIONS; EXACT LOCATION TBD	13 12 13	X		
S-10	GARDEN FOUNTAIN - TYPE C	3/L5.03	NATURAL BASALT COLUMN, ONE EACH 24" H, 36" H, 48" H	LYNGSO, 650.364.1730	STONE	NATURAL	NATURAL	ADD ALT ONLY. SEE MEP DRAWINGS FOR PLUMBING AND ELECTRICAL CONNECTIONS; EXACT LOCATION TBD	13 12 12	X		
S-11	FESTIVAL STRING LIGHTS - S.A.D. FOR ATTACHMENTS		LITOSPHERE TRUE RGB+E, LIST-BK-24-RGBW-OP-80-24	TIVOLI, 714.957.6101		BLACK CORD & END CAPS, OPAL GLOBE		24 V; LED BULB, 24" O.C.; SUSPENDED ON CATENARY CABLE; PROVIDE TWO STRANDS. S.A.D. FOR DETAIL	DIVISION 26	X		

STRUCTURES AND AMENITIES

SYMBOL	DESCRIPTION	DETAIL	MODEL	MANUFACTURER	MATERIAL	COLOR	FINISH	NOTES	SPEC SECTION	PROD. SBMTL	SHOP DWGS	MOCK-UP
A-01	RAISED VEGETABLE BED	1/L5.03		N/A	THERMALLY MODIFIED ASH	NATURAL	NATURAL	8` L, 4` W, 2` H	06 10 63	X	X	
A-02	WOOD SEAT WITH STORAGE	1/L5.07		N/A	THERMALLY MODIFIED ASH	NATURAL	NATURAL	HINGED TOP, 6` L, 2` W, 1.5` H	06 10 63	X	X	
A-03	OVERHEAD TRELLIS AT CAMPUS ENTRY	1/L5.06		N/A	STEEL, THERMALLY MODIFIED ASH		PAINTED STEEL	FIRE RATED WOOD COMPOSITE	05 50 10; 06 10 63	X	X	
A-04	OVERHEAD TRELLIS	1/L5.05		N/A	STEEL, THERMALLY MODIFIED ASH		PAINTED STEEL	FIRE RATED WOOD COMPOSITE	05 50 10; 06 10 63	X	X	
A-05	STRAW BALE PARTITION	4/L5.02	3-STRINGER 48" L, 24" W, 16" H		STRAW	NATURAL				X		
A-06	STACKED WOOD SEAT WALL	2/L5.07	PIANO KEY SLATS		4 X 4 CONSTRUCTION HEART REDWOOD	NATURAL	NATURAL		06 10 63	X	X	X
A-07	WOOD CAP SEAT	6/L5.02	PIANO KEY AND INLINE SLATS	THERMORY WOOD - MOUNT STORM FOREST PRODUCTS, 707.838.3177	2 X 4 STANDARD STOCK THERMALLY MODIFIED WHITE ASH	BROWN	UNOILED WOOD, PAINTED STEEL, COLOR TBD	MOUNTED TO TOP OF CMU WALLS	06 10 63	X	X	
A-08	CURVED WOOD CAP SEAT	1/L5.04	PIANO KEY SLATS	THERMORY WOOD - MOUNT STORM FOREST PRODUCTS, 707.838.3177	2 X 4 STANDARD STOCK THERMALLY MODIFIED WHITE ASH	BROWN	UNOILED WOOD, PAINTED STEEL, COLOR TBD	MOUNTED TO TOP OF CURVED CMU WALL	06 10 63	X	X	
A-09	WOOD BENCH, CUSTOM	3/L5.07	PIANO KEY AND INLINE SLATS	THERMORY WOOD - MOUNT STORM FOREST PRODUCTS, 707.838.3177	2 X 4 STANDARD STOCK THERMALLY MODIFIED WHITE ASH	BROWN	UNOILED WOOD, PAINTED STEEL, COLOR TBD	FREE-STANDING, IN COURTYARD	06 10 63	X	X	

APPROVALS
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-119409 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 03/14/2022

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SEAL
BASE LANDSCAPE ARCHITECTURE
SAN FRANCISCO / PORTLAND
www.baselandscape.com
LICENSED LANDSCAPE ARCHITECT
STATE OF CALIFORNIA
12.31.2023
11.11.2021

PROJECT TITLE
Peralta Community College District
Merritt Landscape Horticulture Complex

12500 Campus Drive
Oakland, CA 94616

BID SET

ISSUE DATE 03/03/2022
N&T JOB NUMBER 22003
REVISIONS
DATE | DESCRIPTION
8.17.2022 ADDENDUM 1, ITEM 11

DRAWN BY TY, JR, SV | CHECKED BY SV

SHEET TITLE
LANDSCAPE MATERIALS SCHEDULE

SHEET NUMBER
L2.00

LEGEND

- BIORETENTION SOIL, WITH MINERAL MULCH 1-1/2" NOIYO COBBLES BY WHEELER ZAMARONI ⚠1
- AMENDED IMPORT TOPSOIL, 12" DEPTH AT GRADE, FULL DEPTH OF RAISED BEDS IN COMMUNITY GARDEN, AVAILABLE FROM AMERICAN SOILS PRODUCTS OR APPROVED EQUAL
- STOCKPILED NATIVE SOIL, AMENDED TO 6" DEPTH, WITH COMPOST MULCH
- STOCKPILED NATIVE SOIL, AMENDED TO 12" DEPTH, WITH COMPOST MULCH
- UNDISTURBED NATIVE SOIL, SHOWN IN LIMITED AREAS ONLY
- GRAVEL MULCH SURFACING
- SOIL SAMPLING LOCATION

0 30 60 90 120 feet

1" = 30'

NORTH

SOIL SAMPLING METHODOLOGY:

1. COLLECT SOIL SAMPLES FROM EACH LOCATION SHOWN ON PLAN. THE AREA IS TO BE UNIFORM IN COLOR, TEXTURE, DEPTH, AND DRAINAGE WITH THE SAME FERTILIZING PROGRAM AND TYPE OF USE. TEST INDIVIDUALLY AREAS FOR LAWNS, TREES, PERENNIALS, AND CUT AND FILL AREAS. AN AREA CONTAINING MULTIPLE TREES AND SHRUBS CAN BE GROUPED INTO ONE AREA IF THE PLANT APPEARANCE IS THE SAME.
2. TAKE THREE TO FIVE SAMPLINGS FROM ANY ONE OF THE LOCATIONS NOTED AND COMBINE THEM FOR SUBMITTAL TO SOIL TESTING LAB. DO NOT SAMPLE UNUSUAL AREAS SUCH AS BURNED SPOTS OR EXTRA LUSH GROWTH. REMOVE SURFACE LITTER.
3. TAKE SAMPLES FROM THE SURFACE EXTENDING AS DEEP AS THE SOIL WILL BE AMENDED, REFER TO LEGEND, AND AT LEAST TO 3' DEEP IN TREE PLANTING AREAS. DO NOT DISTURB ROOTS OF EXISTING TREES.
4. USE A SOIL PROBE OR SOIL AUGER TO REMOVE A CORE SAMPLE. OTHERWISE USE A SHOVEL TO DIG A HOLE TO THE DESIRED DEPTH. SAMPLE THE SOIL FROM THE SIDE OF THE HOLE BY SCRAPING IT WITH A TROWEL. USE ONLY CLEAN TOOLS WITHOUT RUST. AVOID SAMPLING WHEN SOIL IS TOO WET.
5. PLACE SOIL FROM THE VARIOUS HOLES TAKEN FROM EACH SAMPLED AREA INTO A CLEAN PLASTIC BUCKET. MIX TOGETHER HOMOGENEOUSLY. PLACE TWO TO THREE CUPS OF THE COMPOSITE SAMPLE INTO A LOCK PLASTIC BAG, FOR FIVE BAGS TOTAL.
6. REMOVE EXCESS AIR FROM THE BAG, ZIP LOCK IT, FOLD IT A FEW TIMES, SECURE WITH A RUBBER BAND AND PLACE IT IN A SUITABLE MAILER. ASSIGN EACH BAG A LABEL AND SEND THE SAMPLES TO SOIL TESTING LAB BY MAIL, UPS OR OVERNIGHT CARRIER ALONG WITH A BRIEF DESCRIPTION OF THE SAMPLE AND FUTURE USE OF THE AREA. PROVIDE NAME, PHONE NUMBER, ADDRESS AND EMAIL ADDRESS. SEE SPECIFICATIONS FOR A LIST OF APPROVED SOIL TESTING LABS.

APPROVALS

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SEAL

LICENSED LANDSCAPE ARCHITECT
SVETLANA MARIE VOLEJNIKOVA
Signature
12.31.2023
Renewal Date
11.11.2021
Date
STATE OF CALIFORNIA

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Oakland, CA 94616

BID SET

ISSUE DATE	03/03/2022
N&T JOB NUMBER	22003

REVISIONS

#	DATE	DESCRIPTION
⚠1	8.17.2022	ADDENDUM 1, ITEM 11

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SHEET TITLE

SOILS PLAN

SHEET NUMBER

L7.00