PERALTA COMMUNITY COLLEGE DISTRICT
MERRITT COLLEGE
CHILD DEVELOPMENT CENTER

12500 CAMPUS DRIVE, OAKLAND, CA 94619

INCREMENT - 1
DSA APPLICATION NO. 01-119166 INC 01

ADDENDUM NO. 4

MAY 11, 2022

AE3 PARTNERS
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NO.	ISSUE/REVISION	YYYY-MM-DD
0	DSA SUBMITTAL	09-30-2020
2	DSA BACKCHECK	08-06-2021
3	DSA BACKCHECK	09-07-2021
4	ADDENDUM NO. 1	04-15-2022
5	ADDENDUM NO. 4	05-11-2022

KEY PLAN

N

PROFESSIONAL SEALS

LICENSED ARCHITECT
DOUGLAS A. DAVIS
No. C-26407
EXP. 08-31-23
STATE OF CALIFORNIA

PROJECT

PERALTA COMMUNITY COLLEGE DISTRICT
MERRITT COLLEGE
CHILD DEVELOPMENT CENTER
INCREMENT 1

PROJECT ADDRESS

12500 CAMPUS DR
OAKLAND, CA 94619

SHEET TITLE

COVER SHEET

DRAWN BY	REVIEWED BY	SHEET NUMBER
JT	Approver	S/G-000

PROJECT NUMBER: 2019025

DATE: 09/07/2021

TREE REMOVAL AND PRESERVATION LIST

TAG #	BOTANICAL NAME	COMMON NAME	PRESERVE (P)/ REMOVE (R)
1	EUCALYPTUS SIDEROXYLON	EUCALYPTUS	P
2	PLATANUS ACERIFOLIA	LONDON PLANE TREE	P
3	PLATANUS ACERIFOLIA	LONDON PLANE TREE	P
4	PLATANUS ACERIFOLIA	LONDON PLANE TREE	P
5	PLATANUS ACERIFOLIA	LONDON PLANE TREE	P
6	PLATANUS ACERIFOLIA	LONDON PLANE TREE	P
7	PLATANUS ACERIFOLIA	LONDON PLANE TREE	P
8	PINUS RADIATA	MONTEREY PINE	P
9	PINUS RADIATA	MONTEREY PINE	P
10	PINUS RADIATA	MONTEREY PINE	P
11	SEQUOIA SEMPERVIRENS	COAST REDWOOD	R
12	PINUS RADIATA	MONTEREY PINE	R
13	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
14	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
15	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
16	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
17	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
18	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
19	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
20	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
21	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
22	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
23	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
24	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
25	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
26	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
27	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
28	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
29	-		
30	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
31	QUERCUS AGRIFOLIA	COAST LIVE OAK	P
32	EUCALYPTUS SIDEROXYLON	EUCALYPTUS	P
33	PINUS RADIATA	MONTEREY PINE	P
34	PINUS RADIATA	MONTEREY PINE	P
35	PINUS RADIATA	MONTEREY PINE	P
36	PINUS RADIATA	MONTEREY PINE	P
37	QUERCUS AGRIFOLIA	COAST LIVE OAK	R
38	PLATANUS ACERIFOLIA	LONDON PLANE TREE	R
39	PLATANUS ACERIFOLIA	LONDON PLANE TREE	P
40	PINUS RADIATA	MONTEREY PINE	P
41	PINUS RADIATA	MONTEREY PINE	P
42	PINUS RADIATA	MONTEREY PINE	R
43	PINUS RADIATA	MONTEREY PINE	R
44	PINUS RADIATA	MONTEREY PINE	R
45	-		
46	PINUS RADIATA	MONTEREY PINE	R
47	PINUS RADIATA	MONTEREY PINE	R
48	PINUS RADIATA	MONTEREY PINE	R
49	PLATANUS ACERIFOLIA	LONDON PLANE TREE	P
50	PLATANUS ACERIFOLIA	LONDON PLANE TREE	P
51	PLATANUS ACERIFOLIA	LONDON PLANE TREE	P
52	PLATANUS ACERIFOLIA	LONDON PLANE TREE	P
53	PLATANUS ACERIFOLIA	LONDON PLANE TREE	P
54	PLATANUS ACERIFOLIA	LONDON PLANE TREE	P

TREE PRESERVATION GUIDELINES

THE GOAL OF TREE PRESERVATION IS NOT MERELY TREE SURVIVAL DURING DEVELOPMENT BUT MAINTENANCE OF TREE HEALTH AND BEAUTY FOR MANY YEARS. TREES RETAINED ON SITES THAT ARE EITHER SUBJECT TO EXTENSIVE INJURY DURING CONSTRUCTION OR ARE INADEQUATELY MAINTAINED BECOME A LIABILITY RATHER THAN AN ASSET. THE RESPONSE OF INDIVIDUAL TREES WILL DEPEND ON THE AMOUNT OF EXCAVATION AND GRADING, THE CARE WITH WHICH DEMOLITION IS UNDERTAKEN, AND THE CONSTRUCTION METHODS.

THE FOLLOWING RECOMMENDATIONS WILL HELP REDUCE IMPACTS TO TREES FROM DEVELOPMENT AND MAINTAIN AND IMPROVE THEIR HEALTH AND VITALITY THROUGH THE CLEARING, GRADING AND CONSTRUCTION PHASES.

DESIGN RECOMMENDATIONS

1. HAVE THE VERTICAL AND HORIZONTAL LOCATIONS OF ALL THE TREES IDENTIFIED FOR PRESERVATION ESTABLISHED AND PLOTTED ON ALL PLANS. FORWARD THESE PLANS TO THE CONSULTING ARBORIST FOR REVIEW AND COMMENT.
2. ANY PLAN AFFECTING TREES SHOULD BE REVIEWED BY THE CONSULTING ARBORIST WITH REGARD TO TREE IMPACTS. THESE INCLUDE, BUT ARE NOT LIMITED TO, IMPROVEMENT PLANS, UTILITY AND DRAINAGE PLANS, GRADING PLANS, LANDSCAPE AND IRRIGATION PLANS AND DEMOLITION PLANS.
3. A TREE PROTECTION ZONE MUST BE ESTABLISHED FOR TREES TO BE PRESERVED, IN WHICH NO DISTURBANCE IS PERMITTED. FOR DESIGN PURPOSES, THE TREE PROTECTION ZONE SHALL BE THE DRIPLINE IN ALL DIRECTION. NO GRADING, EXCAVATION, CONSTRUCTION OR STORAGE OF MATERIALS SHALL OCCUR WITHIN THAT ZONE, ONCE TREES HAVE BEEN LOCATED AND PLOTTED ON PLANS AND A FINAL DETERMINATION OF WHICH TREES WILL BE PRESERVED IS MADE, SPECIFIC TREE PROTECTION ZONES WILL BE IDENTIFIED FOR EACH TREE TO BE PRESERVED.
4. TREE PRESERVATION GUIDELINES PREPARED BY THE CONSULTING ARBORIST SHOULD BE INCLUDED ON ALL PLANS.
5. NO UNDERGROUND SERVICES INCLUDING UTILITIES, SUB-DRAINS, WATER OR SEWER SHALL BE PLACED IN THE TREE PROTECTION ZONE. TO MINIMIZE IMPACTS TO TREES, LOCATE UNDERGROUND SERVICES TO PROVIDE AS MUCH ROOM AS POSSIBLE FROM TREES IDENTIFIED FOR PRESERVATION.
6. ANY HERBICIDES PLACED UNDER PAVING MATERIALS MUST BE SAFE FOR USE AROUND TREES AND LABELED FOR THAT USE.
7. IRRIGATION SYSTEMS MUST BE DESIGNED TO AVOID TRENCHING WITHIN THE TREE PROTECTION ZONE.
8. DO NOT APPLY LIME TO SOIL FOR STABILIZATION WITHIN 25' OF TREES TO BE PRESERVED. LIME IS TOXIC TO TREE ROOTS.

PRE-CONSTRUCTION TREATMENTS AND RECOMMENDATIONS

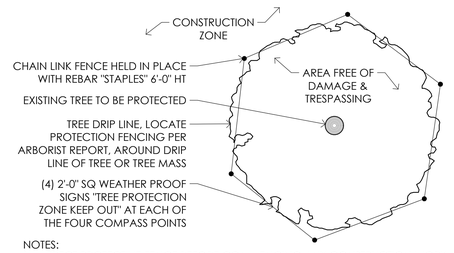
1. THE DEMOLITION CONTRACTOR AND CONSTRUCTION SUPERINTENDENT SHALL MEET WITH THE CONSULTING ARBORIST BEFORE BEGINNING WORK TO DISCUSS WORK PROCEDURES AND TREE PROTECTION.
2. FENCE ALL TREES TO BE RETAINED TO COMPLETELY ENCLOSE THE TREE PROTECTION ZONE PRIOR TO DEMOLITION, GRUBBING OR GRADING. FENCES SHALL BE 6' CHAIN LINK HELD IN PLACE WITH REBAR 'STAPLES'. FENCES ARE TO REMAIN UNTIL ALL GRADING AND CONSTRUCTION IS COMPLETED. PLACE WEATHER PROOF SIGNS, 2' X 2', ON THE FENCING THAT READ "TREE PROTECTION ZONE KEEP OUT" (EG. ONE SIGN FOR EACH OF THE FOUR COMPASS POINTS).
3. WHERE POSSIBLE, CAP AND ABANDON ALL EXISTING UNDERGROUND UTILITIES WITHIN THE TPZ IN PLACE. REMOVAL OF UTILITY BOXES BY HAND IS ACCEPTABLE BUT NO TRENCHING SHOULD BE PERFORMED WITHIN THE TPZ IN AN EFFORT TO REMOVE UTILITIES, IRRIGATION LINES, ETC.
4. TREE(S) TO BE REMOVED THAT HAVE BRANCHES EXTENDING INTO THE CANOPY OF TREE(S) TO REMAIN MUST BE REMOVED BY A QUALIFIED ARBORIST AND NOT BY DEMOLITION OR CONSTRUCTION CONTRACTORS. THE QUALIFIED ARBORIST SHALL REMOVE THE TREE IN A MANNER THAT CAUSES NO DAMAGE TO THE TREE(S) AND UNDERSTORY TO REMAIN. STUMPS SHALL BE GROUND BELOW GRADE.
5. ANY BRUSH CLEARING REQUIRED WITHIN THE TREE PROTECTION ZONE SHALL BE ACCOMPLISHED WITH HAND-OPERATED EQUIPMENT.
6. ANY WORK WITHIN THE TREE PROTECTION ZONE SHALL BE APPROVED AND MONITORED BY THE CONSULTING ARBORIST.
7. PRUNE TREES TO BE PRESERVED TO PROVIDE ADEQUATE CLEARANCE AND CORRECT ANY EXISTING DEFECTS IN STRUCTURE. ALL PRUNING SHALL BE COMPLETED BY A CERTIFIED ARBORIST OR TREE WORKER AND ADHERE TO THE LATEST EDITION OF THE ANSI Z133 AND A300 STANDARDS AS WELL AS THE *BEST MANAGEMENT PRACTICES -- TREE PRUNING* PUBLISHED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE.
8. ALL TREE WORK SHALL COMPLY WITH THE MIGRATORY BIRD TREATY ACT AS WELL AS CALIFORNIA FISH AND WILDLIFE CODE 3503-3513 TO NOT DISTURB NESTING BIRDS. TO THE EXTENT FEASIBLE TREE PRUNING AND REMOVAL SHOULD BE SCHEDULED OUTSIDE OF THE BREEDING SEASON. BREEDING BIRD SURVEYS SHOULD BE CONDUCTED PRIOR TO TREE WORK. QUALIFIED BIOLOGISTS SHOULD BE INVOLVED IN ESTABLISHING WORK BUFFERS FOR ACTIVE NESTS.
9. APPLY AND MAINTAIN 4-6" OF WOOD CHIP MULCH WITHIN THE TREE PROTECTION ZONE.

RECOMMENDATIONS FOR TREE PROTECTION DURING CONSTRUCTION

1. PRIOR TO BEGINNING WORK, ALL CONTRACTORS WORKING IN THE VICINITY OF TREES TO BE PRESERVED ARE REQUIRED TO MEET WITH THE CONSULTING ARBORIST AT THE SITE TO REVIEW ALL WORK PROCEDURES, ACCESS ROUTES, STORAGE AREAS AND TREE PROTECTION MEASURES.
2. IF INJURY SHOULD OCCUR TO ANY TREE DURING CONSTRUCTION, IT SHOULD BE EVALUATED AS SOON AS POSSIBLE BY THE CONSULTING ARBORIST SO THAT APPROPRIATE TREATMENTS CAN BE APPLIED.
3. FENCES HAVE BEEN ERECTED TO PROTECT TREES TO BE PRESERVED. FENCES DEFINE A SPECIFIC TREE PROTECTION ZONE FOR EACH TREE OR GROUP OF TREES. FENCES ARE TO REMAIN UNTIL ALL SITE WORK HAS BEEN COMPLETED. FENCES MAY NOT BE RELOCATED OR REMOVED WITHOUT PERMISSION OF THE CONSULTING ARBORIST.
4. CONSTRUCTION TRAILERS, TRAFFIC, AND STORAGE AREAS MUST REMAIN OUTSIDE FENCED AREAS AT ALL TIMES.
5. PRIOR TO GRADING, PAD PREPARATION, EXCAVATION FOR FOUNDATIONS/FOOTINGS/WALLS, TRENCHING, TREES MAY REQUIRE ROOT PRUNING OUTSIDE THE TREE PROTECTION ZONE BY CUTTING ALL ROOTS CLEANLY TO THE DEPTH OF THE EXCAVATION. ROOTS SHALL BE CUT BY MANUALLY DIGGING A TRENCH AND CUTTING EXPOSED ROOTS WITH A SAW, WITH A VIBRATING KNIFE, ROCK SAW, NARROW TRENCHER WITH SHARP BLADES, OR OTHER APPROVED ROOT PRUNING EQUIPMENT. THE CONSULTING ARBORIST WILL IDENTIFY WHERE ROOT PRUNING IS REQUIRED AND MONITOR ALL ROOT PRUNING ACTIVITIES.
6. ANY ROOTS DAMAGED DURING GRADING OR CONSTRUCTION SHALL BE EXPOSED TO SOUND TISSUE AND CUT CLEANLY WITH A SAW.
7. ALL UNDERGROUND UTILITIES, DRAIN LINES OR IRRIGATION LINES SHALL BE ROUTED OUTSIDE THE TREE PROTECTION ZONE. IF LINES MUST TRAVERSE THROUGH THE PROTECTION AREA, THEY SHALL BE TUNNELED OR BORED UNDER THE TREE AS DIRECTED BY THE CONSULTING ARBORIST.
8. NO MATERIALS, EQUIPMENT, SPOIL, WASTE OR WASH-OUT WATER MAY BE DEPOSITED, STORED, OR PARKED WITHIN THE TREE PROTECTION ZONE (FENCED AREA).
9. ANY ADDITIONAL TREE PRUNING NEEDED FOR CLEARANCE DURING CONSTRUCTION MUST BE PERFORMED BY A QUALIFIED ARBORIST AND NOT BY CONSTRUCTION PERSONNEL.
10. IF TEMPORARY HAUL OR ACCESS ROADS MUST PASS OVER THE ROOT AREA OF TREES TO BE RETAINED, A ROAD BED OF 6" OF MULCH OR GRAVEL SHALL BE CREATED TO PROTECT THE SOIL. THE ROAD BED MATERIAL SHALL BE REPLENISHED AS NECESSARY TO MAINTAIN A 6" DEPTH.

MAINTENANCE OF IMPACTED TREES

TREES PRESERVED AT THE CHILD DEVELOPMENT CENTER SITE MAY EXPERIENCE A PHYSICAL ENVIRONMENT DIFFERENT FROM THAT PRE-DEVELOPMENT. AS A RESULT, TREE HEALTH AND STRUCTURAL STABILITY SHOULD BE MONITORED. OCCASIONAL PRUNING, FERTILIZATION, MULCH, PEST MANAGEMENT, REPLANTING AND IRRIGATION MAY BE REQUIRED. IN ADDITION, PROVISIONS FOR MONITORING BOTH TREE HEALTH AND STRUCTURAL STABILITY FOLLOWING CONSTRUCTION MUST BE MADE A PRIORITY. AS TREES AGE, THE LIKELIHOOD OF FAILURE OF BRANCHES OR ENTIRE TREES INCREASES. THEREFORE, ANNUAL INSPECTION FOR STRUCTURAL CONDITION IS RECOMMENDED.



NOTES:
1. ERECT PROTECTIVE FENCE BEFORE COMMENCING ANY CONSTRUCTION WORK
2. DO NOT STORE MATERIALS OR EQUIPMENT WITHIN PROTECTIVE FENCE
3. SEE LANDSCAPE PLANS FOR LOCATIONS OF EXISTING TREES TO BE PROTECTED

1 TREE PROTECTION ZONE FENCING
SCALE: N.T.S.

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5	ADDENDUM NO. 4	05-11-2022

KEY PLAN

PROFESSIONAL SEAL
LICENSED LANDSCAPE ARCHITECT
AMY C CUPPLES
4488
09/07/2021
Renewal 8/31/2023
STATE OF CALIFORNIA

PROJECT
PERALTA COMMUNITY COLLEGE DISTRICT
MERRITT COLLEGE
CHILD DEVELOPMENT CENTER
INCREMENT 1

PROJECT ADDRESS
12500 CAMPUS DR
OAKLAND, CA 94619

SHEET TITLE
TREE REMOVAL AND PRESERVATION PLAN

DRAWN BY	REVIEWED BY	SHEET NUMBER
CK	AC	S/L-102

PROJECT NUMBER 2019025

DATE 09/07/2021

0 10 20 30

EXISTING QUERCUS AGRIFOLIA TO BE SAVED AND PROTECTED

BIO-RETENTION AREA, S.C.D.

EXISTING TREES TO BE SAVED AND PROTECTED, TYP

EXISTING TREE #23 QUERCUS AGRIFOLIA TO BE SAVED AND PROTECTED

300 SF (98 OCCUPANTS @ 3 SF/PERSON)

300 SF (98 OCCUPANTS @ 3 SF/PERSON)

±6,880 SF

±6,011 SF

30 x 48

54 SF

30 x 48

EXISTING TREE #12 PINUS RADIATA TO BE REMOVED

ALL BENCHES ARE MOVABLE, ALLOWING FOR MINIMUM 5% ACCESSIBLE DINING AND WORK SPACE AT THE OUTDOOR TABLES

RFI 024

EXISTING TREES #42, 43, 44, 47 AND 48 PINUS RADIATA TO BE REMOVED

EXISTING TREE #11 SEQUOIA SEMPERVIRENS TO BE REMOVED AND TRUNK WOOD SALVAGED FOR REUSE

BIO-RETENTION AREA, S.C.D.

ARCING SHRUB ROWS

4' MIN.

LOADING ZONE NO PARKING

TRASH ENCLOSURE, S.A.D.

30 x 48

FLUSH TRANSITION FROM CONCRETE TO GRANITECRETE PAVING, SEE 1 S/L501

30 x 48

EXISTING TREES IN EXISTING GRATES TO REMAIN AND PROTECT, TYP

30X48 LEVEL AREA, S.C.D. FOR GRADING, TYP.

BIO-RETENTION AREA, S.C.D.

EXISTING TREES IN DECOMPOSED GRANITE PAVING, TYP. PROTECT

NEW 12'-0" WIDE CONCRETE SIDEWALK

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KEY PLAN

PROFESSIONAL SEAL

LICENSED LANDSCAPE ARCHITECT
AMY C CUPPLES
4488
09/07/2021
8/31/2023
STATE OF CALIFORNIA

PROJECT
PERALTA COMMUNITY COLLEGE DISTRICT
MERRITT COLLEGE
CHILD DEVELOPMENT CENTER
INCREMENT 1

PROJECT ADDRESS
12500 CAMPUS DR
OAKLAND, CA 94619

SHEET TITLE
LANDSCAPE SITE PLAN

DRAWN BY	REVIEWED BY	SHEET NUMBER
CK	AC	S/L-201

PROJECT NUMBER 2019025

DATE 09/07/2021

LAYOUT NOTES:

1. ALL DIMENSIONS, UNLESS OTHERWISE INDICATED, ARE TO FACE OF WALL OR STRUCTURE..
2. WRITTEN DIMENSIONS ALWAYS TAKE PRECEDENCE OVER SCALED DIMENSIONS. IF THERE IS A CONFLICT, NOTIFY THE DISTRICT AND LANDSCAPE ARCHITECT FOR CLARIFICATION.
3. SAW CUT EXISTING CONCRETE PAVING OR CURBS AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION. ARCHITECT TO APPROVE LOCATIONS OF SAW CUTS PRIOR TO CUTTING.
4. INSTALL NEW EXPANSION JOINTS WITHOUT DOWELS AT ALL LOCATIONS WHERE CONCRETE PAVING ABUTS WALLS OR OTHER VERTICAL SURFACES.
5. INSTALL EXPANSION JOINTS WITH DOWELS EVERYWHERE ELSE.
6. SEE CIVIL DRAWINGS FOR GRADING AND DRAINAGE, AND FOR VEHICULAR PAVING AND CONCRETE SIDEWALK PAVING.
7. SEE ARCHITECTURAL DRAWINGS FOR BUILDING MODIFICATIONS.
8. REFER TO ELECTRICAL DRAWINGS FOR EXTERIOR LIGHTING CONNECTIONS.
9. THIS PLAN DOES NOT REPRESENT A PROPERTY LINE SURVEY. PROPERTY LINES SHOWN HEREON MAY NOT REPRESENT THE TRUE POSITION OF THE LINE.
10. EXISTING FEATURES AND TOPOGRAPHIC INFORMATION HAVE BEEN TAKEN FROM A SURVEY PROVIDED BY AE3 ARCHITECTS. KELLER MITCHELL & CO. LANDSCAPE ARCHITECTURE ASSUMES NO LIABILITY REGARDING THE ACCURACY OF THE EXISTING FEATURES OR TOPOGRAPHIC INFORMATION SHOWN.

NOTE: REFER TO L-002 FOR MATERIALS SCHEDULE

LEGEND

- A1 — CONCRETE PAVING
- A2 — CONCRETE PAVING WITH INTEGRAL COLOR
- A3 — GRANITECRETE CRUSHED ROCK PAVING
- A4 — CRUSHED ROCK MULCH

ALIGN

UTILITY COVER, S.C.D.

DRAIN INLET, S.C.D.

EJ	EXPANSION JOINT
EQ	EQUAL
F.D.C.	FIRE DEPARTMENT CON.
N.I.C.	NOT IN CONTRACT
P.A.	PLANTING AREA
S.A.D.	SEE ARCHITECTURAL DWG
S.C.D.	SEE CIVIL DRAWINGS
S.E.D.	SEE ELECTRICAL DRAWINGS
S.S.D.	SEE STRUCTURAL DWGS.
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED

0 10 20 30

11 S/L-501 RAILING AT WALKWAY
4 S/L-501 CONCRETE PAVING
8 S/L-501 RAMP WITH HANDRAIL
7 S/L-501 STAIRS WITH HANDRAIL
2 S/L-501 19" HT. LIGHT BOLLARD FOOTING -S.E.D. FOR FIXTURE, TYP.
39" HT. LIGHT BOLLARD FOOTING - S.E.D FOR FIXTURE — 3 S/L-501
RAMP ENLARGED PLAN — 10 S/L-501
PARKING LIGHT FOOTING, S.E.D. FOR FIXTURE — X S/L-501
ACCESSIBLE PARKING, SC.D.
RFI 024
7 S/L-501 BIKE LOCKER
1 S/L-501 GRANITECRETE CRUSHED STONE PAVING
ACCESSIBLE PARKING, SC.D.
ASPHALT PAVING, S.C.D.
2 S/L-501 19" HT. LIGHT BOLLARD FOOTING - S.E.D. FOR FIXTURE
4 S/L-501 CONCRETE PAVING
10 S/L-501 BOULDERS
BIKE RACK 6 S/L-502
LOADING ZONE NO PARKING
TRASH ENCLOSURE, S.A.D.
TRUNCATED DOMES, S.C.D.
BIO-RETENTION AREA, S.C.D.
11&12 S/L-501 PAVER BAND AT LABYRINTH
3 S/L-501 CONCRETE SEAT WALL WITH MARBLE INSET
1 S/L-501 GRANITECRETE CRUSHED STONE PAVING
3 S/L-501 CONCRETE SEAT WALL WITH MARBLE INSET
4 S/L-501 CONCRETE PAVING
4 S/L-701 TREE PLANTING WITH CRUSHED ROCK MULCH
LIGHT BOLLARD, TYP., S.E.D.
P.A.
UP
5'-0" TYP.
6'-7"
4'-9"
4'-6"
7'-0"
8'-5"
8'-0"
6'-0" TYP.
6'-0" U.O.N.

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INCREMENT 1

PROJECT ADDRESS
12500 CAMPUS DR
OAKLAND, CA 94619

SHEET TITLE
ENTRY AREA ENLARGEMENT PLAN

DRAWN BY	REVIEWED BY	SHEET NUMBER
CK	AC	S/L-401

PROJECT NUMBER 2019025

DATE 09/07/2021

(3) RHA CAL
(9) WES MUN
(1) CEA YP
(1) CEA YP
(3) CIS HYB
(1) CEA YP
(1) RHA CAL
(1) CEA YP
(1) CEA YP
(3) RHA CAL
(2) GIN BIL
NATIVE MOW
FREE SOD
(27) WES MUN
(6) CIS HYB
(329) FES GLA
BIOFILTRATION
SOD
(13) LOM BRE
(16) ANI BG
(11) ECH ELE
(7) ANI BG
(3) WES MUN
DECORATIVE ROCK MULCH
WITH WEED BARRIER
(NEAR FRONT ENTRY
AROUND BOULDERS AND
ALONG FRONT WALK)
(7) ANI BG
(5) ECH ELE
(9) ANI BG
(3) WES MUN
(13) WES MUN
(7) CIS HYB
(3) RHA CAL
FRONT ENTRY
(37) CHO TEC
BIOFILTRATION
SOD
(1) WES MUN
(4) WES MUN
EXISTING TREES ALONG
CURB TO REMAIN
NATIVE MOW FREE SOD
(4) LAG IND
(10) OLE LO
(5) LAG IND
(12) OLE LO
(9) OLE LO
(4) LAG IND
DROPOFF
AREA
(12) OLE LO
(5) LAG IND
NATIVE MOW
FREE SOD
(3) QUE AGRI
(3) QUE WIS
(2) QUE SUB
NATIVE EROSION
CONTROL MIX
NATIVE EROSION
CONTROL MIX
LOADING ZONE
(NO PARKING)
RFI 002
NOTE: REFER TO L-604 FOR PLANTS SCHEDULE
0 10 20 30

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NO.	ISSUE/REVISION	YYYY-MM-DD
	STATE CHANCELLOR'S OFFICE SUBMITTAL	02-21-2020
1	DSA SUBMITTAL	09-30-2020
2	DSA BACKCHECK	08-06-2021
3	DSA BACKCHECK	09-07-2021
5	ADDENDUM NO. 4	05-11-2022

KEY PLAN

PROFESSIONAL SEAL
LICENSED LANDSCAPE ARCHITECT
AMY C CUPPLES
4488
09/07/2021
8/31/2023
STATE OF CALIFORNIA

PROJECT
PERALTA COMMUNITY COLLEGE DISTRICT
MERRITT COLLEGE
CHILD DEVELOPMENT CENTER
INCREMENT 1

PROJECT ADDRESS
12500 CAMPUS DR
OAKLAND, CA 94619

SHEET TITLE
ENTRY AREA PLANTING PLAN

DRAWN BY	REVIEWED BY	SHEET NUMBER
CK	AC	S/L-601

PROJECT NUMBER
2019025

DATE
09/07/2021

PLANTS SCHEDULE NOTES:

1. MOST PROPOSED PLANT SPECIES ARE CLASSIFIED AS HAVING LOW WATER NEEDS IN THIS REGION AND WILL REQUIRE LITTLE IRRIGATION ONCE ESTABLISHED. PLANTS HAVE BEEN SELECTED BASED ON THEIR CLIMACTIC ORIGIN. MOST ARE NATIVE TO MEDITERRANEAN CLIMATE REGIONS, AND ALL ARE WELL ADAPTED TO LOCAL CLIMATE CONDITIONS.

2. WATER REQUIREMENTS ARE BASED ON WUCOLS 4TH EDITION (WATER USE CLASSIFICATIONS OF LANDSCAPE SPECIES), JANUARY 2014.
   H = HIGH
   VL = VERY LOW
   L = LOW
   M = MEDIUM

3. ALL PROPOSED PLANT SPECIES HAVE BEEN CHECKED AGAINST THE CAL-IPC INVENTORY OF INVASIVE AND "WATCH" PLANTS THAT ARE A HIGH RIST OF BECOMING INVASIVE IN THE FUTURE. NONE APPEAR ON THAT LIST AS ON JULY 2020.

2019 CALGREEN - 5.106.12 SHADETREES (DSA-SS)

SURFACE PARKING AREAS: 897.75 S.F.
SHADE TREE SHADING OF SURFACE PARKING: 891.62 S.F.
PERCENT SHADING: 66% (PERCENT REQUIRED 50%)

LANDSCAPE AREA: 40,533.65 S.F.
TREE SHADING OF LANDSCAPE AREA: 18,291.55 S.F.
PERCENT SHADING: 45% (PERCENT REQUIRED 20%)

HARDSCAPE AREA: 17,355.00 S.F.
TREE SHADING OF HARDSCAPE AREA: 4,589.97 S.F.
PERCENT SHADING: 26% (PERCENT REQUIRED 20%)

NOTE: TREE SIZES ARE BASED ON WESTERN SUNSET GARDEN BOOK OR BOETHING TREELAND FARMS. TREE SHADING IS DETERMINED AT NOON ON THE SUMMER SOLSTICE.

PLANTING NOTES:

RFI 019

1. LOOSEN COMPACTED SOIL IN AREAS TO BE PLANTED TO A DEPTH OF 10". REFER TO SPECIFICATIONS.
2. REMOVE ALL LIME TREATED SOIL FROM PLANTING AREAS. REFER TO SPECIFICATIONS.
3. SUBMIT SOIL AND SOIL AMENDMENT TEST REPORT FOR ARCHITECTS REVIEW PRIOR TO PURCHASE OF PLANTS. REFER TO SPECIFICATIONS.
4. FURNISH ALL NEW PLANTING AREAS WITH MULCH 3" DEEP, EXCEPT WHERE NOTED ON SHEET S/L-601 TO USE A DECORATIVE ROCK MULCH INSTEAD. REFER TO SPECIFICATIONS.
5. INSTALL ROOT BARRIER ALONG PAVING EDGE OF ALL NEW TREES PLANTED WITHIN 5' OF PAVING. DO NOT WRAP ROOT BARRIER AROUND ROOTBALL. SEE SPECIFICATIONS.
6. ALL NEW PLANTING AREAS SHALL RECEIVE AUTOMATIC IRRIGATION. SEE IRRIGATION SHEETS.
7. DO NOT PLANT NEW TREES DIRECTLY ABOVE UNDERGROUND SITE UTILITY LINES AND PIPING.
8. IF FEASIBLE, SCHEDULE INSTALLATION OF THE NATIVE EROSION CONTROL MIX FOR LATE FALL OR AS SOON AS GRADING OF THE HILLSIDE IS COMPLETE.

QTY.	SYMB.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	H2O REQ'S	CA NATIVE	BIO-SWALE	NOTES
	TREES								
9	CER OCC	CERCIS OCCIDENTALIS	WESTERN REDBUD	24" BOX	-	L	N		MULTI
7	GIN BIL	GINKGO BILOBA 'AUTUMN GOLD'	AUTUMN GOLD GINKGO	24" BOX	-	M	N		STANDARD
18	LAG HYB	LAGERSTROEMIA HYBRID	CRAPE MYRTLE	24" BOX	-	M	N		STANDARD
4	QUE AGR	QUERCUS AGRIFOLIA	COAST LIVE OAK	36" BOX	-	L	Y		STANDARD
2	QUE SUB	QUERCUS SUBER	CORK OAK	36" BOX	-	L	Y		MULTI
3	QUE WIS	QUERCUS WISLIZENI	INTERIOR LIVE OAK	36" BOX	-	VL	Y		MULTI
	SHRUBS								
39	ANI BG	ANIGOZANTHOS 'BUSH GOLD'	BUSH GOLD KANGAROO PAW	1 GAL	2' O.C.	L	N	HIGH	
16	CIS HYB	CISTUS X HYBRIDUS (COBARIENSIS)	WHITE ROCKROSE	1 GAL	5' O.C.	L	N	NO	
43	OLE LO	OLEA EUROPAEA 'MONTRA'	LITTLE OLLIE DWARF OLIVE	5 GAL	5' O.C.	VL	N	NO	
10	RHA CAL	RHAMNUS CALIFORNICA 'MOUND SAN BRUNO'	COFFEEBERRY	15 GAL	8' O.C.	L	Y	NO	
	PERENNIAL & GROUNDCOVERS								
5	CEA YP	CEANOTHUS 'YANKEE POINT'	YANKEE POINT CALIFORNIA LILAC	5 GAL	8' O.C.	L	Y	NO	
24	DYM MAR	DYMONDIA MARGARETAE	DYMONDIA	1 GAL	4' O.C.	L	N	NO	
16	ECH ELE	ECHEVERIA ELEGANS	MEXICAN SNOWBALLS	1 GAL	18" O.C.	L	N	NO	
33	SEN MAN	SENECIO MANDRALISCAE	KLEINIA	1 GAL	3' O.C.	L	N	NO	
33	SEN SER	SENECIO SERPENS	BLUE CHALKSTICKS	1 GAL	2' O.C.	L	N	NO	
23	SEN VIT	SENECIO VITALIS	NARROW LEAF BLUE CHALKSTICKS	1 GAL	3' O.C.	L	N	NO	
56	WES MUN	WESTRINGIA 'MUNDI'	LOW COAST ROSEMARY	1 GAL	5' O.C.	L	N	HIGH	
	GRASSES & RUSHES								
396	CAR DIV	CAREX DIVULSA	BERKELEY SEDGE	1 GAL	18" O.C.	L	N	YES	
37	CHO TEC	CHONDROPETALUM TECTORUM	CAPE REED	1 GAL	24" O.C.	L	N	YES	
329	FES GLA	FESTUCA GLAUCA	BLUE FESCUE	1 GAL	18" O.C.	L	N		
13	LOM BRE	LOMANDRA LONGIFOLIA 'BREEZE'	DWARF MAT RUSH	1 GAL	24" O.C.	L	N	NO	
	TEXTURAL PLANTS & POLLINATORS								
26	ASC SPE	ASCLEPIAS SPECIOSA	SHOWY MILKWEED	1 GAL	24" O.C.	L	Y	NO	
29	PEN HET	PENSTEMON HETEROPHYLUS X 'MARGARITA BOP'	BLUE BEARDTONGUE	1 GAL	24" O.C.	L	Y	NO	
35	SAL PUR	SALVIA OFFICINALIS 'PURPUREA'	PURPLE SAGE	1 GAL	24" O.C.	L	N	NO	
8	VER LIL	VERBENA LILACINA 'DE LA MINA'	CEDROS ISLAND VERBENA	1 GAL	36" O.C.	L	Y	NO	
11	ZAU CAL	ZAUSCHNERIA CALIFORNICA	CALIFORNIA FUCHSIA	1 GAL	4' O.C.	L	Y	NO	
	SOD								
505 SF		BOLERO PLUS - 90% BOLERO DWARF FESCUE/ 10% BLUEGRASS (AVAILABLE FROM DELTA BLUEGRASS COMPANY OR APPROVED EQUAL/ WWW.DELTABLUEGRASS.COM)				H	N	NO	
6,500 SF		NATIVE MOW FREE - IDAHO FESCUE/ MOLATE FESCUE/ WESTERN MOKELUMNE FESCUE (AVAILABLE FROM DELTA BLUEGRASS COMPANY OR APPROVED EQUAL/ WWW.DELTABLUEGRASS.COM)				M	Y	NO	
		BIOFILTRATION SOD - NASELLA PULCHRA, FESTUCA RUBRA, HORDEUM CALIFORNICUM, HORDEUM BRACHYANTHERUM (AVAILABLE FROM DELTA BLUEGRASS COMPANY OR APPROVED EQUAL/ WWW.DELTABLUEGRASS.COM)				M	Y	YES	
	HYDROSEED MIX								
8,800 SF		NATIVE EROSION CONTROL MIX (AVAILABLE FROM PACIFIC COAST SEED OR APPROVED EQUAL / WWW.PCSEED.COM): - BROMUS CARINATUS (CALIFORNIA BROME) - ELYMUS GLAUCUS (BLUE WILDRYE) - FESTUCA MICROSTACHYS (THREE WEEKS FESCUE) - TRIFOLIUM WILDENOVII (TOMCAT CLOVER)							

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5	ADDENDUM NO. 4	05-11-2022

KEY PLAN

PROFESSIONAL SEAL

LICENSED LANDSCAPE ARCHITECT
AMY C CUPPLES
4488
09/07/2021
8/31/2023
STATE OF CALIFORNIA

PROJECT
PERALTA COMMUNITY COLLEGE DISTRICT
MERRITT COLLEGE
CHILD DEVELOPMENT CENTER
INCREMENT 1

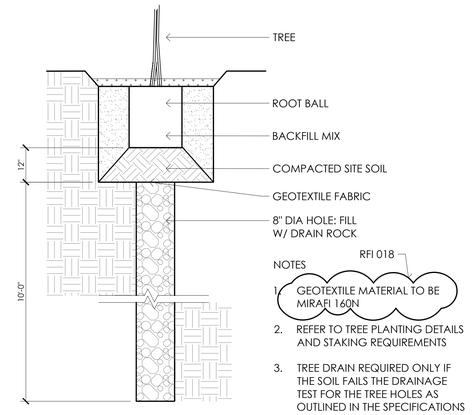
PROJECT ADDRESS
12500 CAMPUS DR
OAKLAND, CA 94619

SHEET TITLE
PLANTS SCHEDULE AND NOTES

DRAWN BY	REVIEWED BY	SHEET NUMBER
CK	AC	S/L-604

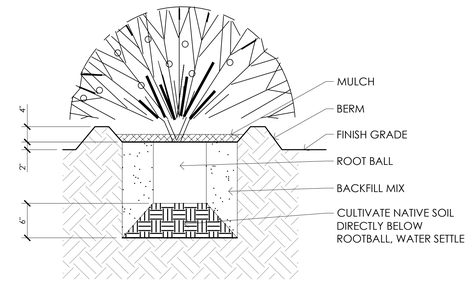
PROJECT NUMBER 2019025

DATE 09/07/2021



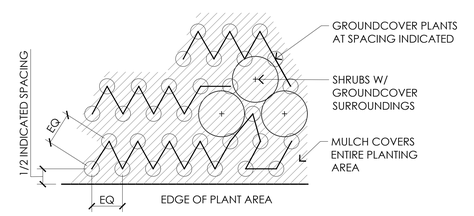
3 TREE DRAIN AT POOR DRAINAGE AREA

SCALE: 3/4" = 1'-0"



2 SHRUB PLANTING

SCALE: 3/4" = 1'-0"



1 GROUNDCOVER PLANTING

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

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3	DSA BACKCHECK	09-07-2021
5	ADDENDUM NO. 4	05-11-2022

KEY PLAN

PROFESSIONAL SEAL

LICENSED LANDSCAPE ARCHITECT
AMY C CUPPLES
4488
09/07/2021
8/31/2023
STATE OF CALIFORNIA

PROJECT
PERALTA COMMUNITY COLLEGE DISTRICT
MERRITT COLLEGE
CHILD DEVELOPMENT CENTER
INCREMENT 1

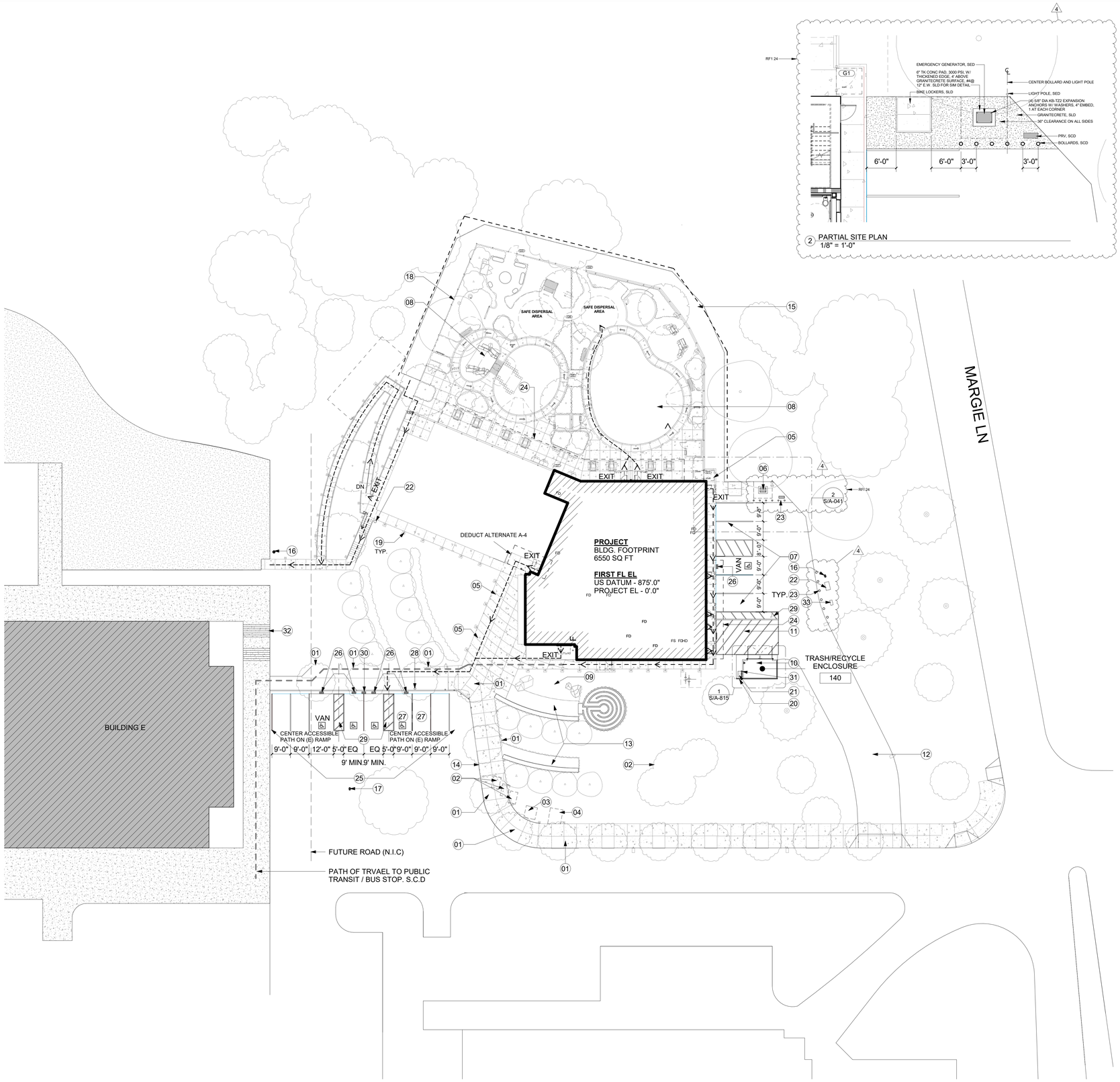
PROJECT ADDRESS
12500 CAMPUS DR
OAKLAND, CA 94619

SHEET TITLE
PLANTING DETAILS

DRAWN BY	REVIEWED BY	SHEET NUMBER
CK	AC	S/L-702

PROJECT NUMBER
2019025

DATE
09/07/2021



1 SITE PLAN
1" = 20'-0"

2 PARTIAL SITE PLAN
1/8" = 1'-0"

GENERAL NOTES

1. REFER TO LANDSCAPE PLANS FOR PLAYGROUND LAYOUT, PLANTING LOCATIONS AND LANDSCAPE DETAILS.
2. REFER TO CIVIL ENGINEERING PLANS FOR GRADING DETAILS.
3. PROTECT ALL TREES EXCEPT FOR THOSE SPECIFICALLY LISTED FOR REMOVAL IN LANDSCAPE AND CIVIL DRAWINGS.
4. DIRECTIONAL SIGNAGE LOCATIONS THROUGH CAMPUS SEE CIVIL DRAWINGS CAMPUS ACCESS PLAN S/C-003.

KEY NOTES

01 (E) TREE, PROTECT IN PLACE; MATCH (E) METAL GRATE FLUSH WITH SIDEWALK, WHERE OCCURS
02 (E) UTILITY BOX; ADJUST ELEVATION FLUSH TO (N) SIDEWALK
03 (E) HIGH VOLTAGE MANHOLE; ADJUST ELEVATION FLUSH TO (N) SIDEWALK
04 (E) UTILITY ON CONCRETE PAD
05 (N) PEDESTRIAN WALKWAY AND SIDEWALK
06 EMERGENCY GENERATOR, S.E.D
07 5 (N) PARKING STALLS, S.C.D
08 PLAY AREA, S.L.D.
09 PLAY AREA BY FRONT DOOR, S.L.D.
10 TRASH ENCLOSURE
11 COMMERCIAL LOADING, S.C.D
12 SERVICE VEHICLE DRIVEWAY
13 SEAT CURB
14 DROP OFF CURB
15 CLEAR ZONE
16 (N) FIRE HYDRANT, S.C.D
17 (E) FIRE HYDRANT, S.C.D
18 FENCE
19 LIGHT BOLLARDS, SEE ELECTRICAL DRAWINGS FOR ADDITIONAL LIGHTING
20 CMU WALL
21 GAS METER VALVE, S.C.D
22 FDC, S.C.D
23 BOLLARDS WITH NO LIGHTS, S.C.D
24 CANOPY ABOVE
25 RESTRIPE PARKING SPACES
26 ACCESSIBLE PARKING SPACE SIGN, SEE 4/S/A-801
27 FUTURE EV SPACES
28 CONDUIT STUB UP FOR FUTURE EV STATION 12" VAULT, S.E.D
29 "NO PARKING" IN 12" HIGH WHITE LETTERS AT EACH ACCESS AISLE
30 TOW AWAY SIGN. SEE DETAIL 5 - S/A-801
31 EMERGENCY GAS SHUTOFF VALVE SIGN. SEE DETAIL 20 - S/A-922
32 (E) EXTERIOR STAIRS
33 PRV, SCD

LEGEND

PROPOSED PROJECT AREA. BUILDING FOOTPRINT

ADJACENT BUILDINGS NOT IN SCOPE

PATH OF EXIT TRAVEL

KEY PLAN

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2	DSA BACKCHECK	08-06-2021
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KEY PLAN

N

PROFESSIONAL SEAL

LICENSED ARCHITECT DOUGLAS A. DAVIS No. C-26417 EXP. 08-31-23 STATE OF CALIFORNIA

PROJECT

PERALTA COMMUNITY COLLEGE DISTRICT

MERRITT COLLEGE

CHILD DEVELOPMENT CENTER

INCREMENT 1

PROJECT ADDRESS

COLOR CODED DIAGRAMS FOR STATE CHANCELLOR'S OFFICE - DSA APPROVED DRAWINGS
12500 CAMPUS DR
OAKLAND, CA 94619

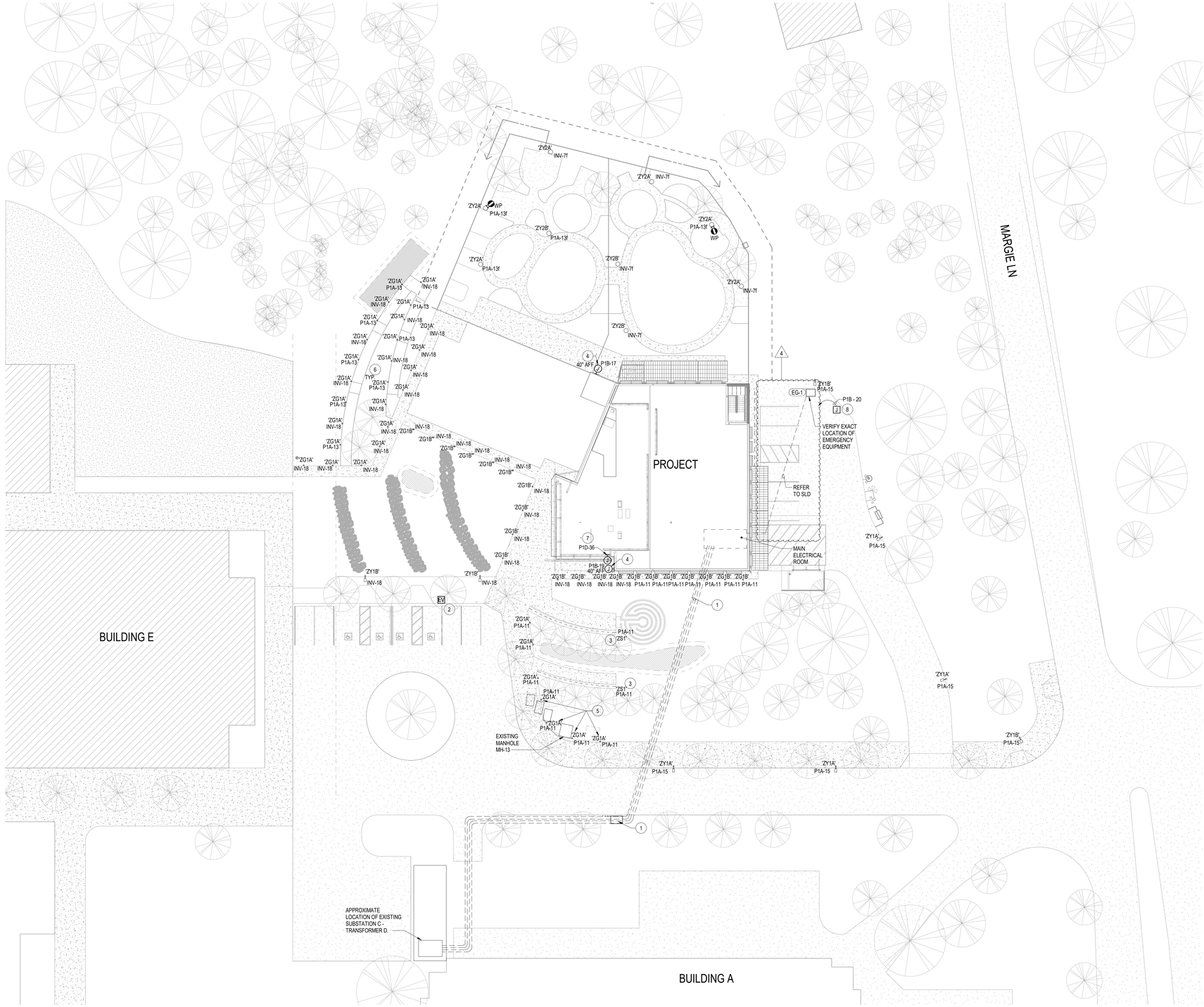
SHEET TITLE

SITE PLAN

DRAWN BY	REVIEWED BY	SHEET NUMBER
PI	MW	S/A-041

PROJECT NUMBER 2019025

DATE 09/07/2021



1 ELECTRICAL POWER SITE PLAN
1" = 20'-0"

GENERAL NOTES

A. ELECTRICAL PLANS ARE DIAGRAMMATIC IN NATURE AND INDICATE GENERAL LOCATION OF EQUIPMENT. EXACT LOCATION WILL BE COORDINATED IN FIELD DURING CONSTRUCTION.

B. ALL ELECTRICAL EQUIPMENT, FIXTURES AND DEVICES INSTALLED OUTDOORS SHALL BE LISTED FOR OUTDOOR USE AND RATED NEMA 3R.

SHEET NOTES

1. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL (6) 4"C-4#500KCMIL + 1#3/0 E.G. FROM EXISTING SUBSTATION C - TRANSFORMER D TO MAIN SWITCHBOARD. COORDINATE ROUTING WITH CIVIL AND PROVIDE PULLBOXES AS REQUIRED.
2. STUB-UP (2) 1-1/4"C CONDUIT FOR FULL CIRCUIT LEVEL 2 DUAL CHARGER FROM PANEL EV LOCATED IN MAIN ELECTRICAL ROOM. LABEL CONDUIT ENDPOINTS AS "EV READY"
3. PROVIDE 120V POWER CONNECTION TO THE REMOTE DRIVER. LOCATE IN ACCESSIBLE LOCATION. REFER EQUIPMENT INSTALLATION REQUIREMENTS PRIOR TO ROUGH IN. SEE LANDSCAPE DRAWINGS FOR BENCH DETAILS.
4. PROVIDE 120V POWER CONNECTION FOR BLUE PHONE. COORDINATE EXACT LOCATION WITH THE ARCHITECT PRIOR TO ROUGH-IN.
5. COORDINATE IN-FIELD, THE EXACT LOCATION OF CONDUIT ENTRY/EXIT TO AVOID CLASHING WITH LIGHTING FIXTURE INSTALLATION.
6. COORDINATE EXACT LOCATION WITH THE LANDSCAPE CONSTRUCTION DOCUMENTS PRIOR TO ROUGH-IN.
7. PROVIDE 120V POWER CONNECTION FOR AUTOMATIC DOOR OPERATOR BOLLARD. COORDINATE EXACT LOCATION WITH THE ARCHITECT PRIOR TO ROUGH-IN. COORDINATE ADDITIONAL INSTALLTION AND LOW VOLTAGE WIRE REQUIREMENTS FOR THE DOOR OPERATOR WITH THE MANUFACTURER PRIOR TO ROUGH-IN.
8. 120V POWER CONNECTION FOR IRRIGATION CONTROLLER. COORDINATE EXACT LOCATION WITH LANDSCAPE DRAWINGS PRIOR TO ROUGH-IN.

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D	50% CONSTRUCTION DOCUMENTS	07-02-2020
1	DSA SUBMITTAL	09-30-2020
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5	ADDENDUM NO. 4	05-11-2022

KEY PLAN

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PROFESSIONAL SEALS

PROJECT
PERALTA COMMUNITY COLLEGE DISTRICT
MERRITT COLLEGE
CHILD DEVELOPMENT CENTER
INCREMENT 1

PROJECT ADDRESS
12500 CAMPUS DR
OAKLAND, CA 94619

SHEET TITLE
ELECTRICAL SITE PLAN

DRAWN BY	REVIEWED BY	SHEET NUMBER
Author	Approver	S/E-100

PROJECT NUMBER 2019025

DATE 09/07/2021

ELECTRICAL FEEDER TABLE

3 WIRE + GROUND						4 WIRE + GROUND						GROUND					
FEEDER CODE	CONDUIT	PHASE	NEUTRAL	EQUIP. GROUND		FEEDER CODE	CONDUIT	PHASE	NEUTRAL	EQUIP. GROUND	ISOLATED GROUND	FEEDER CODE	CONDUIT	PHASE	NEUTRAL	EQUIP. GROUND	ISOLATED GROUND
F320	(1)3/4	3#12	-	1#12	-	F420	(1)3/4	3#12	1#12	1#12	-	FG12	(1)3/4	-	-	1#12	-
F330	(1)3/4	3#10	-	1#10	-	F430	(1)3/4	3#10	1#10	1#10	-	FG10	(1)3/4	-	-	1#10	-
F340	(1)1	3#8	-	1#10	-	F440	(1)1	3#8	1#8	1#10	-	-	-	-	-	-	-
F350	(1)1	3#6	-	1#8	-	F450	(1)1 1/4	3#6	1#6	1#8	-	FG08	(1)3/4	-	-	1#8	-
F370	(1)1 1/4	3#4	-	1#8	-	F470	(1) 1 1/4	3#4	1#4	1#8	-	-	-	-	-	-	-
F390	(1) 1 1/4	3#2	-	1#8	-	F490	(1) 1 1/2	3#2	1#2	1#8	-	-	-	-	-	-	-
F3125	(1) 1 1/2	3#1	-	1#6	-	F4125	(1) 2	3#1	1#1	1#6	-	FG06	(1)3/4	-	-	1#6	-
F3150	(1) 1 1/2	3#1/0	-	1#6	-	F4150	(1)2	3#1/0	1#1/0	1#6	-	-	-	-	-	-	-
F3175	(1) 2	3#2/0	-	1#6	-	F4175	(1)2	3#2/0	1#2/0	1#6	-	-	-	-	-	-	-
F3200	(1)2	3#3/0	-	1#6	-	F4200	(1)2 1/2	3#3/0	1#3/0	1#6	-	-	-	-	-	-	-
F3225	(1)2	3#4/0	-	1#4	-	F4225	(1)2 1/2	3#4/0	1#4/0	1#4	-	FG04	(1)1	-	-	1#4	-
F3250	(1)2 1/2	3#250	-	1#4	-	F4250	(1)3	3#250	1#250	1#4	-	-	-	-	-	-	-
F3300	(1)3	3#350	-	1#4	-	F4300	(1)3	3#350	1#350	1#4	-	-	-	-	-	-	-
F3350	(1)4	3#500	-	1#2	-	F4350	(1)4	3#500	1#500	1#2	-	FG02	(1)1	-	-	1#2	-
F3400	(2)2	6#3/0	-	2#2	-	F4400	(2)2 1/2	6#3/0	2#3/0	2#2	-	-	-	-	-	-	-
F3450	(2)2 1/2	6#4/0	-	2#1	-	F4450	(2)2 1/2	6#4/0	2#4/0	2#1	-	FG01	(1)1	-	-	1#1	-
F3500	(2)2 1/2	6#250	-	2#1	-	F4500	(2)3	6#250	2#250	2#1	-	-	-	-	-	-	-
F3600	(2)3	6#350	-	2#1	-	F4600	(2)3	6#350	2#350	2#1	-	-	-	-	-	-	-
F3700	(2)3	6#500	-	2#1/0	-	F4700	(2)4	6#500	2#500	2#1/0	-	FG1/0	(1)1	-	-	1#1/0	-
F3800	(3)3	9#350	-	3#1/0	-	F4800	(3)3	9#350	3#350	3#1/0	-	-	-	-	-	-	-
F31000	(3)4	9#500	-	3#2/0	-	F41000	(3)4	9#500	3#500	3#2/0	-	FG2/0	(1)1	-	-	1#2/0	-
F31200	(4)3	12#350	-	4#3/0	-	F41200	(4)3	12#350	4#350	4#3/0	-	FG3/0	(1)1	-	-	1#3/0	-
F31500	(5)3	15#350	-	4#4/0	-	F41500	(5)3	15#350	5#350	4#4/0	-	FG4/0	(1)1	-	-	1#4/0	-
F31600	(5)3	15#500	-	5#4/0	-	F41600	(5)4	15#500	5#500	5#4/0	-	-	-	-	-	-	-
F32000	(6)4	18#500	-	6#250	-	F42000	(6)4	18#500	6#500	6#250	-	FG250	(1)1 1/4	-	-	1#250	-

NOTES:

A. CONDUIT SIZES ARE MINIMUM. USE 1" COUNT MINIUM FOR UNDERGROUND WORK.

B. ABOVE 86 DEG. F (30 DEG. C) AMBIENT INCREASE WIRE SIZE PER NATIONAL ELECTRICAL CODE (NEC).

C. DERATE WIRE SIZE PER NEC FOR:
* MORE THAN (3) CURRENT-CARRYING WIRES IN CONDUIT
* CONDUIT FILL

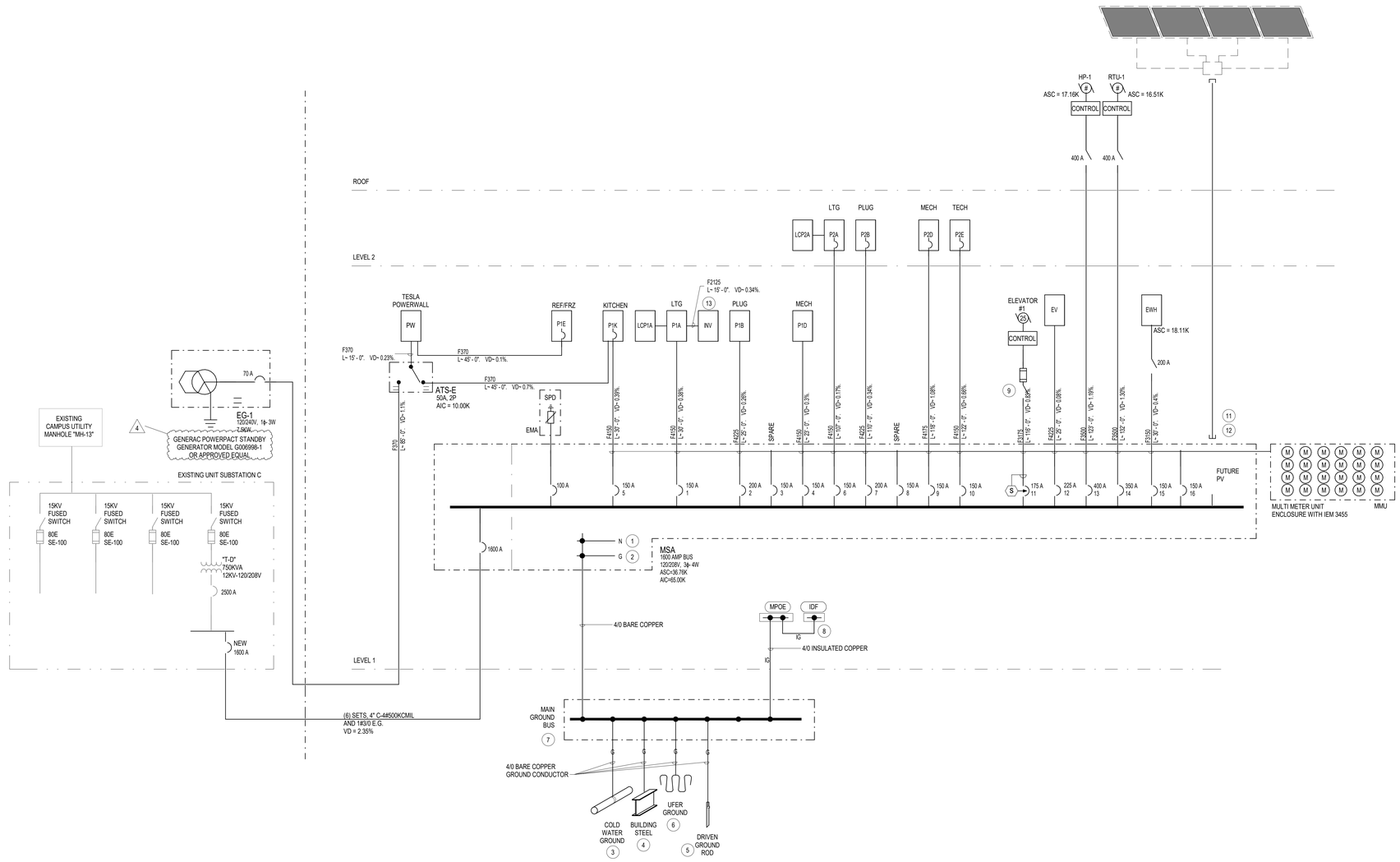
MSA

VOLTS: 120/208 **LOCATION:** ELECTRICAL 136 **MAIN AMPS:** 1600 A
PHASES: 3 **SUPPLY FROM:** **BUS AMPS:** 1600 A
WIRES: 4 **AIC:** 65.00K **ENCLOSURE:**
MOUNTING: FLOOR **ASC:** 36.76K

CKT	CIRCUIT DESCRIPTION	Ø A	Ø B	Ø C	BRKR
1	P1A	2.72 kVA	2.08 kVA	5.32 kVA	150 A 3P
2	P1B	10.66 kVA	9.62 kVA	9.88 kVA	200 A 3P
3	P1C	13.27 kVA	12.45 kVA	13.27 kVA	150 A 3P
4	P1D	9.86 kVA	9.86 kVA	11.59 kVA	150 A 3P
5	P1K	6.82 kVA	3.69 kVA	3.60 kVA	150 A 3P
6	P2A	1.93 kVA	0.90 kVA	0.90 kVA	150 A 3P
7	P2B	7.14 kVA	6.66 kVA	4.98 kVA	150 A 3P
8	P2C	4.16 kVA	4.04 kVA	4.13 kVA	150 A 3P
9	P2D	10.24 kVA	9.00 kVA	8.79 kVA	150 A 3P
10	P2E	7.14 kVA	6.00 kVA	7.62 kVA	150 A 3P
11	ELEVATOR	9.38 kVA	9.38 kVA	9.38 kVA	175 A 3P
12	EV	7.20 kVA	7.20 kVA	0.00 kVA	225 A 3P
13	HP-1	38.26 kVA	38.26 kVA	38.26 kVA	400 A 3P
14	RTU-1	38.98 kVA	38.98 kVA	38.98 kVA	350 A 3P
15	EWH-1	12.00 kVA	12.00 kVA	12.00 kVA	150 A 3P
16					
17					
18					
19					
20					
		179.75 kVA	170.13 kVA	168.70 kVA	
		Ø A	Ø B	Ø C	

LOAD CLASSIFICATION	CONNECTED...	DEMAND...	DEMAND LOAD
L - LIGHTING LOAD	13843 VA	125%	17304 VA
R - RECEPTACLE	67200 VA	100% / 50%	38600 VA
M - MOTOR	312912 VA	125% / 100%	342149 VA
K - KITCHEN EQUIPMENT	13372 VA	65%	8692 VA

PANEL TOTALS	
TOTAL CONNECTED LOAD:	518.58 KVA
TOTAL CONNECTED CURRENT:	1,439.4 A
TOTAL ESTIMATED DEMAND LOAD:	521.60 KVA
TOTAL ESTIMATED DEMAND...	1,447.8 A



1 ELECTRICAL POWER SINGLE LINE DIAGRAM
12" = 1'-0"

GENERAL NOTES

A. CONDUIT AND FEEDER SIZES ARE MINIMUM. USE 1" CONDUIT MINIMUM FOR UNDERGROUND INSTALLATIONS.

B. DERATE WIRE SIZE PER NEC FOR NUMBER OF CURRENT CARRYING WIRES AND FOR AMBIENT TEMPERATURE OF 86°F.

C. FEEDERS SHOWN ARE COPPER CONDUCTORS WITH THHN/THWN INSULATION TYPE UNLESS NOTED OTHERWISE.

D. FEEDER LENGTH AND VOLTAGE DROP CALCULATIONS ARE FOR ESTIMATING VOLTAGE DROP AND SHORT CIRCUIT COORDINATION PURPOSE ONLY. CONTRACTOR SHALL USE ACTUAL FEEDER LENGTHS TO CALCULATE ACTUAL VOLTAGE DROP AND SHORT CIRCUIT VALUES.

E. THE SHORT CIRCUIT WITHSTAND/INTERRUPTING RATING OF SWITCHBOARDS, PANELS, AUTOMATIC TRANSFER SWITCHES, CIRCUITS BREAKERS AND FUSES ARE BASED UPON ESTIMATED FEEDER LENGTHS AND GENERIC EQUIPMENT VALUES. ACTUAL SHORT CIRCUIT VALUES SHALL BE BASED ON THE CONTRACTOR'S FAULT AND COORDINATION STUDY. ALL EQUIPMENT RATINGS SHALL BE MINIMUM 10% ABOVE CONTRACTOR CALCULATED VALUES. NOTIFY ARCHITECT IF CALCULATED VALUES EXCEED INTERRUPTING CAPACITY AND MAKE RECOMMENDATIONS FOR CORRECTING DEFICIENCIES. DO NOT RELEASE ELECTRICAL EQUIPMENT FOR FABRICATION PRIOR TO RECEIPT OF APPROVED SHORT CIRCUIT STUDY.

F. THE CONTRACTOR SHALL PROVIDE AND INSTALL PERMANENTLY ATTACHED ARC FLASH HAZARD LABELS FOR ALL POWER DISTRIBUTION EQUIPMENT (CEC 110.16). LABELS SHALL BE PROFESSIONALLY PRINTED AND INCLUDE THE FOLLOWING INFORMATION:

1. NOMINAL SYSTEM VOLTAGE
2. ARC FLASH BOUNDARY
3. AT LEAST ONE OF THE FOLLOWING:
   a. AVAILABLE INCIDENT ENERGY AND THE CORRESPONDING WORKING DISTANCE, OR THE ARC FLASH PPE CATEGORY IN TABLE 130.7(C)(15)(a) OR TABLE 130.7(C)(15)(b) FOR THE EQUIPMENT, BUT NOT BOTH.
   b. MINIMUM ARC RATING OF CLOTHING
   c. SITE-SPECIFIC LEVEL OF PPE.

G. ALL EQUIPMENT BUSSING SHALL BE COPPER.

H. ALL LUGS SIZED FOR FEEDERS. REFER TO SINGLE LINE DIAGRAM FOR FEEDER INFORMATION.

SHEET NOTES

1. NEUTRAL BUS LINK.
2. NEUTRAL AND GROUND BUSES.
3. PROVIDE CONNECTION TO METALLIC COLD WATER PIPE 2-1/2" OR LARGER. LOCATE CONNECTION PER NATIONAL ELECTRICAL CODE (NEC) REQUIREMENTS WITHIN 5 FOOT OF ENTRANCE TO BUILDING AND MINIMUM 10 FOOT LENGTH OF PIPE IN EARTH.
4. PROVIDE EXOTHERMIC CONNECTION TO BUILDING STEEL COLUMN OR REBAR.
5. PROVIDE CONNECTION TO DRIVEN GROUND ROD(S). PROVIDE ADDITIONAL GROUND RODS AS REQUIRED TO CONFORM WITH SPECIFIED RESISTANCE LEVELS. MINIMUM SPACE BETWEEN RODS IS 20 FEET.
6. UFER GROUND. PROVIDE MINIMUM 50 FEET OF BARE COPPER CABLE EMBEDDED IN BUILDING FOUNDATION IN CONTACT WITH EARTH AND BELOW WATERPROOF MEMBRANE.
7. GROUND BUS LOCATED OVER DOOR IN ALL ELECTRICAL ROOMS OR CLOSETS.
8. TECHNICAL GROUND BUS LOCATED OVER DOOR IN ALL IDF, MDF AND AV ROOMS OR CLOSETS.
9. COORDINATE FUSE SIZE WITH ELEVATOR SUPPLIER.
10. TYPE 2 SURGE PROTECTION DEVICES. MINIMM SINGLE PULSE SURGE CURRENT WITHSTAND RATING PER PHASE SHALL NOT BE LESS THAN 320KA.
11. PROVIDE FULLY RATED TAP FOR FUTURE PHOTOVOLTAIC SYSTEM. TAP SHALL BE LABELED "PHOTOVOLTAIC SYSTEM DUAL POWER SUPPLY. ELECTRIC SHOCK HAZARD DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE LINE SIDE AND LOAD SIDES MAY BE ENERGIZED."
12. PROVIDE SPARE CONDUIT WITH PULL STRING. LABEL BOTH ENDS WITH LOCAION OF OPPOSITE END AND ADD PLACARD " FUTURE PHOTOVOLTAIC SYSTEM".
13. LIFE SAFETY INVERTER TO PROVIDE A MINIMUM OF 90 MINUTES BATTERY RUN TIME AT FULL LOAD, AND SHALL BE COMPATIBLE FOR MAGNETIC AND ELECTRONIC BALLASTS, INCANDESCENT LED AND HID LAMPS. INVERTER SHALL BE PROVIDED WITH INTERNAL MAINTENANCE BYPASS. REFER TO PANEL SCHEDULE FOR LOADS.

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NO.	ISSUE/REVISION	YYYY-MM-DD
A	50% DESIGN DEVELOPMENT	09-27-2019
B	100% DESIGN DEVELOPMENT	11-08-2019
C	STATE CHANCELLOR'S OFFICE SUBMITTAL	02-21-2020
D	50% CONSTRUCTION DOCUMENTS	07-02-2020
1	DSA SUBMITTAL	09-30-2020
2	DSA BACKCHECK	08-06-2021
3	DSA BACKCHECK	09-07-2021
4	ADDENDUM NO. 1	04-15-2022
5	ADDENDUM NO. 4	05-11-2022

KEY PLAN

N

PROFESSIONAL SEALS

PROJECT
PERALTA COMMUNITY COLLEGE DISTRICT
MERRITT COLLEGE
CHILD DEVELOPMENT CENTER
INCREMENT 1

PROJECT ADDRESS
12500 CAMPUS DR
OAKLAND, CA 94619

SHEET TITLE
ELECTRICAL FEEDER SCHEDULE AND SINGLE LINE DIAGRAMS

DRAWN BY	REVIEWED BY	SHEET NUMBER
Author	Approver	S/E-601

PROJECT NUMBER 2019025

DATE 09/07/2021

SECTION 10 2239

FOLDING PANEL PARTITIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Horizontal folding panel partitions.

1.02 REFERENCE STANDARDS

A. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2014.

B. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2013.

C. ASTM E557 - Standard Guide for Architectural Design and Installation Practices for Sound Isolation between Spaces Separated by Operable Partitions 2012.

D. ASTM F793/F793M - Standard Classification of Wall Coverings by Use Characteristics 2015.

1.03 SUBMITTALS

A. Action Submittals:

1. Product Data: Provide data on partition materials, operation, hardware and accessories, electric operating components, track switching components, and colors and finishes available.
2. Shop Drawings: Indicate opening sizes, track layout, details of track and required supports, static and dynamic loads, location and details of pass door and frame, adjacent construction and finish trim, stacking depth, and diagrams for power, signal, and control wiring.
3. Samples for Selection: Submit three samples of full manufacturer's color range for selection of colors.
4. Samples for Review: Submit six samples of surface finish, 12 by 12 inches (300 by 300 mm) size, illustrating quality, colors selected, texture, and weight.

B. Informational Submittals:

1. Certificates: Certify that partition system meets or exceeds specified acoustic requirements.
2. Manufacturer's Instructions: Indicate special procedures.
3. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods. Describe cleaning materials detrimental to finish surfaces and hardware finish.

1.04 SUSTAINABILITY SUBMITTALS

A. LEED Submittals: Provide special submittals conforming to Section 018113 Sustainable Design Requirements.

B. CAL-Green documentation and verification data as specified in Section 018114 Sustainable Design Requirements - CAL-Green, for the following measures:

1. 4.504.2.1 and 5.504.4.1 Adhesives and sealants.
2. 4.504.2.2 and 5.504.4.3 Paints and coatings.
3. 4.504.2.3 and 5.504.4.3.1 Aerosol paints and coatings.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified this Section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of this Section with minimum five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until installation.

1.07 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Correct defective Work within five year period after Date of Substantial Completion.

C. Provide two year manufacturer warranty against defects in material and workmanship, excluding abuse.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Protectively package and sequence panels in order for installation. Clearly mark packages and panels with numbering system used in shop drawings. Do not use permanent markings on panels.

1.09 FIELD MEASUREMENTS

A. Verify partition openings and storage arrangements by field measurements before fabrication, and indicate measurements on shop drawings.

1.10 MAINTENANCE MATERIALS

A. Furnish extra panel finish materials, matching installed materials, in quantity to cover both sides of two typical panels when installed.

B. Package maintenance materials with protective covering for storage, .identified with descriptive labels.

1.11 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of operable panel partitions that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
   a. Faulty operation of operable panel partitions.
   b. Deterioration of metals, metal finishes, and other materials beyond normal use.
2. Warranty Period: Two years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design Manufacturer Folding Panel Partitions - Horizontal Opening:

1. Advanced Equipment Corporation: www.advancedequipment.com.
2. Other Acceptable Manufacturers:
   a. Hufcor, Inc: www.hufcor.com.
   b. Modernfold, a DORMA Group Company: www.modernfold.com.
   c. Panelfold, Inc: www.panelfold.com.

2.02 FOLDING PANEL PARTITIONS - HORIZONTAL OPENING

A. Folding Panel Partitions: Side opening; paired panels; side stacking; manually operated.

B. Panel Construction:

1. Frame: 16 gage, 0.0598 inch (1.52 mm) thick formed sheet steel frame top, bottom, jambs, and intermediates; welded construction, with acoustical insulation fill.
2. Substrate: Gypsum board.
3. Panel Substrate Facing: Steel sheet, manufacturer's standard thickness laminated to gypsum board panel.
4. Aluminum, clear anodized vertical edge trim that overlaps the panel face and secures finish at vertical edge.
5. Hinges: SOSS Invisible laminated hinge with antifriction segments mounted between each heat-treated link, attached directly to panel frame. Welded internal hinge bracket shall support the hinge and allow for adjustment of hinge plates.
6. Panel Properties:
   a. Thickness With Finish: 3-1/2 inches (88.90 mm).
   b. Width: Standard width.
   c. Acoistical Ratings: 54 STC.

C. Panel Finishes:

1. Facing: Vinyl coated fabric.

D. Panel Seals:

1. Panel to Panel Seals: Grooved and gasketed astragals, with continuous flexible ribbed vinyl seal fitted to panel edge construction; color to match panel finish.
2. Acoustic Seals: Flexible acoustic seals at jambs, meeting mullions, ceilings, retractable floor and ceiling seals, and above track to structure acoustic seal.
3. Vertical Interlocking Sound Seals between Panels: Roll-formed steel astragals, with tongue and groove configuration in each panel edge.
4. Horizontal Top Seals: Fixed, flexible multi-fin.
5. Manual Bottom Seals: 2 inch (50.8 mm) nominal operating clearance with an operating range of plus 1/2 inch (12.70 mm) to minus 1-1/2 inch (38 mm) which drop as panels are positioned. Extended seal shall exert nominal 120 pounds (265 kg) downward force to the floor throughout operating range.

E. Suspension System:

1. Track: Composite track, aluminum case with steel running surface.
   a. Track soffit trim shall be integral to track.
   b. Track brackets interlock with top flange of track and attach to structure with pairs of 1/2-inch diameter steel threaded rod. Track joints aligned by concealed, steel dowels.
   c. Pendant Bolt: 5/8-inch diameter and attach to panel through a steel plate mounted internally with panel frame.
   d. Carriers: Four, ball-bearing, steel wheels.
2. Product:
   a. Advanced Equipment Corporation; No. 2.

2.03 MATERIALS

A. Aluminum Extrusions: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

B. Vinyl Coated Fabric: ASTM F793 Category VI, polyvinyl fluoride (PVC) finish for washability and improved flame retardance; color as selected by Architect from manufacturer's standard range.

2.04 PARTITION FABRICATION

A. Panel Construction: Provide top reinforcement as required to support panel from suspension components and provide reinforcement for hardware attachment. Fabricate panels with tight hairline joints and concealed fasteners. Fabricate panels so that finished in-place partition is rigid, level, plumb, aligned, with uniform appearance, free of warp, bow, twist, deformation, and surface irregularities.

B. Dimensions: Fabricate operable panel partitions to form an assembled system of dimensions indicated on Drawings, and verified by field dimensions.

C. Trim Finish: Manufacturer’s standard aluminum trim; clear anodized.

D. Hardware: Manufacturer's standard as required to operate panel partitions and accessories, with protective finish.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine flooring, structural support, and opening, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of operable panel partitions.

B. Verify that field measurements are as indicated.

C. Verify that required utilities are available, of the correct characteristics, in proper location, and ready for use.

D. Verify track supports are laterally braced and will permit track to be level within 1/4 inch (6.4 mm) of required position and parallel to the floor surface.

E. Verify floor flatness of 1/8 inch in 10 feet (3 mm in 3 m), non-cumulative.

F. Verify wall plumbness of 1/8 inch in 10 feet (3 mm in 3 m), non-cumulative.

G. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Install partition in accordance with manufacturer's instructions and ASTM E557.

B. ~~Install electric operator, wiring, and controls. Locate control station(s) as indicated.~~ (RFI 14)

C. Fit and align partition assembly and pocket doors level and plumb.

D. Lubricate moving components.

E. Install acoustic sealant to achieve required acoustic performance.

F. ~~Coordinate electrical connections.~~ (RFI 14)

3.03 ADJUSTING

A. Adjust partition assembly to provide smooth operation from stacked to full open position. Do not over-compress acoustic seals.

B. Visually inspect partition in full extended position for light leaks to identify a potential acoustical leak.

C. Verify that safety devices are properly functioning.

D. Broken, cracked, chipped, deformed, or unmatched panels are not acceptable.

E. Broken, cracked, deformed, or unmatched gasketing or gasketing with gaps at butted ends is not acceptable.

F. Light-Leakage Test: Illuminate one side of partition installation and observe vertical joints and top and bottom seals for voids. Adjust partitions for alignment and full closure of vertical joints and full closure along top and bottom seals. Perform test and make adjustments before NIC testing.

3.04 FIELD QUALITY CONTROL

A. NIC Testing: Engage a qualified testing agency to perform tests and inspections.

1. Testing Methodology: Perform testing of installed operable panel partition for noise isolation according to ASTM E 336, determined by ASTM E 413, and rated for not less than **NIC 45** (RFI15) ~~indicated.~~ Adjust and fit partitions to comply with NIC test method requirements.
2. An operable panel partition installation will be considered defective if it does not pass tests and inspections.
3 Prepare test and inspection reports.

3.05 CLEANING

A. Clean finish surfaces and partition accessories.

3.06 CLOSEOUT ACTIVITIES

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain operable panel partitions.

B. Demonstrate operation of partition and identify potential operational problems.

END OF SECTION

SECTION 32 8400

IRRIGATION SYSTEM

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Order and furnish all labor, materials, supplies, tools and transportation and perform all operations in connection with and reasonably incidental to complete installation of the automatic sprinkler irrigation systems as shown on the drawings.
   1. Trenching, stockpiling, excavation, backfill materials and refilling trenches.
   2. Furnishing materials and installation for complete system including piping, backflow prevention assembly, valves, fittings, sprinkler heads, automatic controls and final adjustment of heads to insure complete and uniform coverage.
   3. Line voltage connections to the irrigation controllers and low voltage control wiring from controllers to remote control valves.
   4. Replacement of unsatisfactory materials.
   5. Clean-up, inspection and approval.
   6. All work of every description mentioned in the specification and/or addenda thereto, and all other labor, and materials reasonably incidental to the satisfactory completion of the work, including clean-up of the site, as directed by the Architect.
   7. Tests.
   8. Record drawings.

B. Work not included.
   1. Irrigation water stub-out
   2. 120 volt A.C. electrical stub-out to controller location.

C. Where new paving and/or other improvements change the shape and /or size of existing planters, Contractor shall modify existing irrigation to provide complete and uniform coverage of the remaining landscape. Modification to the existing irrigation systems shall use equipment matching the existing equipment: spray irrigation with spray irrigation, drip irrigation with drip irrigation, etc.

1.02 GENERAL REQUIREMENTS

A. OSHA Compliance: All articles and services covered by this specification shall meet or exceed the safety standards established under the Federal Occupational Safety and Health Act of 1970, together with all amendments in effect as of the date of this specification.

B. Codes and Standards: Comply with all applicable codes and standards.
   1. All work and materials shall be in full accordance with the latest rules and regulations of the National Electric Code; the Uniform Plumbing Code, published by the Western Plumbing Officials Association; and other State or local laws or regulations. Nothing in these Drawings or Specifications is to be construed to permit work not conforming to these codes.
   2. When the Specifications call for materials or construction of a better quality or larger size than required by above-mentioned rules and regulations, the provision of the Specifications shall take precedence over the requirements of the said rules and regulations.
   3. The Contractor shall furnish without any extra charge any additional material and labor when required by the compliance with these rules and regulations, though the work may not be mentioned in these particular Specifications or shown on the Drawings.
   4. The Contractor shall erect and maintain barricades, guards, warning signs, and lights as necessary or required by OSHA regulations for the protection of the public or workers.
   5. Any existing buildings, equipment, piping, pipe covering sewers, sidewalks, landscaping, etc., damaged by the Contractor during the course of this work shall be replaced or repaired by the Contractor in a manner satisfactory to Architect and at Contractor's expense, and before final payment is made. The Contractor shall be responsible for damage caused by

leaks in the piping systems being installed or having been installed by him. He shall repair, at his own expense, all damage so caused, in a manner satisfactory to Architect.

6. The Contractor shall pay for all permits, licenses, and fees required.

1.03 SUPERVISION AND WORKMANSHIP

A. The Contractor, personally or through an authorized and competent representative, shall supervise the work constantly, and shall as far as possible keep the same foreman and workers on the job from commencement to completion. The workmanship of the entire job must in every way be first class, and only experienced and competent workers will be allowed on the job.

1.04 LAYOUT OF WORK

A. The Contractor shall stake out the irrigation system as shown on the Drawings. These areas shall be checked by the Contractor and Architect before construction is started. Any changes, deletions or additions shall be determined at this check.

1.05 INSTRUCTION

A. After the system has been installed and approved, Contractor shall instruct the Owner's Representative in complete operation and maintenance of the irrigation system

1.06 SUBMITTAL

A. Submit catalog information on all materials which are to be used in the installation. Product and specified options must be highlighted on the catalog information. No substitution will be permitted without prior written approval by the Irrigation Consultant. Complete submittal approval must be obtained prior to construction.

B. Record Drawings:

1. The Contractor shall maintain in good order in the field office one complete set of black line prints of all sprinkler drawings which form a part of the contract, showing all water lines, sprinklers, valves, controllers and stub-outs. In the event any work is not installed as indicated on the Drawings, such work shall be corrected and dimensioned accurately from the building walls.
2. All underground stub-outs for future connections and valves shall be located and dimensioned accurately from building walls on all record drawings.
3. Upon completion of the work, obtain reproducible prints from Architect and neatly correct the prints to show the as-built conditions.

PART 2 MATERIALS

2.01 PIPE AND FITTINGS

A. Mainlines (constant pressure) shall be polyvinylchloride (PVC) 1120- Schedule 40 plastic pipe with Schedule ~~80~~ **40 (RFI 20)** solvent-weld fittings.

B. Lateral lines (non-pressure): 3/4" and larger shall be 1120-Schedule 40 PVC plastic pipe. All lateral lines shall be connected with Schedule 40, Type 1, Grade 1, PVC solvent weld fittings.

C. Connections between mainlines and RCVs shall be of Schedule 80 PVC (threaded both ends) nipples and fittings.

D. Risers shall be as follows: Schedule 80 PVC threaded nipples and Schedule 40 PVC ells as shown in the construction details. Offset risers shall be King Bros. model FR-500 flex-risers.

2.02 BACKFLOW PREVENTION DEVICE

A. Backflow prevention device shall be the reduced pressure type with gate valves, check valves, test cocks, reduced pressure chamber and air vent. Install 12" above finish grade.

2.03 FLOW SENSOR

A. Flow sensor shall be Creative Sensor Technology as listed on the Drawings.

2.04 GATE VALVES

A. 2 1/2" and smaller shall be bronze construction with operating wheel and screwed connections. Install in 9" diameter plastic valve box as detailed.

2.05 PRESSURE GAUGES

A. Pressure gauges shall be hermetically sealed, water tight, dust proof, with shatterproof face (2" diameter) and 1/4" standard pipe thread brass connection. Irro-meter model 7-100 or approved equal.

2.06 QUICK COUPLING VALVES

A. Quick coupling valves shall be as listed on the Drawings.

2.07 REMOTE CONTROL VALVES

A. Remote control valves shall be globe pattern with plastic body and bonnet, flow stem and manual bleed petcock. Sizes of remote control valves shall be as listed on the Drawings.

2.08 BOXES FOR REMOTE CONTROL VALVES

A. Rain Bird VB black plastic valve box with black plastic lid. Lid shall be marked: "Irrigation Control Valve".

2.09 FILTER

A. Emitter filter shall be part of drip valve assembly as listed on the Drawings.

2.10 CONTROLLER

A. The standard centralized irrigation system controller shall be the *Rainmaster*® Evolution™ DX3 Central Control System currently utilized by the district. The controller shall have enough stations to control all valves indicated on the Plans including those designated for future extensions, plus a minimum of two spare stations.

B. Cabinet: The cabinet for the centralized irrigation system controller and components shall be a vandal and weather-resistant stainless steel pedestal cabinet with integral locking mechanism. The cabinet shall fully enclose all controller components, accessories and terminal connections. ~~For irrigation systems which utilize reclaimed water, an adhesive- backed sticker with purple background and white letters shall be placed on the inside cabinet door.~~ (**RFI 20**) The CONTRACTOR shall provide one of the following cabinets.
   1. V.I.T. Products, Inc., Strong Box® Model SB-16SS.
   2. Rainmaster® Evolution™ stainless steel pedestal enclosure.
   3. Approved equal.

C. Communication Accessories: The centralized irrigation system controller must be equipped with cellular communication accessories capable of remote data transmitted with the *Rainmaster*® Evolution™ DX3 Central Control System.

2.11 CONTROL WIRE, DECODERS AND GROUNDING

A. Control wire shall be copper with U.L. approval for direct burial in ground, size #14-1. Common ground wire shall have white insulating jacket; control wire shall have insulating jacket of color other than white. Splices shall be made with TW-SPLICE 14 seal packs.

B. Decoders and grounding plates shall be per Drawings and *Rainmaster*® specifications.

2.12 RAIN SWITCH

A. Rain switch shall be as listed on the Drawings.

2.13 SPRINKLER HEADS

A. All sprinkler heads shall be as listed on the Drawings.

2.14 SUB-SURFACE DRIP

A. Sub-surface drip irrigation shall be Rain Bird XFS-CV dripline, flush valves, air-vacuum relief valves, fittings and all other components specified and detailed on the drawings.

2.15 MISCELLANEOUS INSTALLATION MATERIALS

A. Solvent cement and primer for solvent weld joints shall be of make and type approved by manufacturer(s) of pipe and fittings. Cement shall be maintained at proper consistency throughout use.

B. Pipe joint compound shall be non-hardening, non-toxic materials designed specifically for use on threaded connections in water carrying pipe. Performance shall be same as Permatex No. 51.

2.16 MISCELLANEOUS EQUIPMENT

A. Provide all equipment called for by the Drawings.

B. Provide to the Owner, at completion of Maintenance Period, three (3) each of all operating and servicing keys and wrenches required for complete maintenance and operation of all heads and valves. Include all wrenches necessary for complete disassembly of all heads and valves.

PART 3 INSTALLATION

3.01 PREPARATION

A. Schedule and coordinate placement of materials and equipment in manner to effect the earliest completion of work in conformance with construction and progress schedule.

3.02 HANDLING AND STORAGE

A. Protect work and materials from damage during construction and storage as directed by Architect.

B. Handle plastic pipe carefully; especially protect it from prolonged exposure to sunlight.

3.03 LAYOUT

A. Lay out work as accurately as possible in accordance with diagrammatic drawings.

B. Where site conditions do not permit location of piping, valves and heads where shown, notify Architect immediately and determine relocation in joint conference.

C. Run pipelines and automatic control wiring in common trenches wherever practical.

3.04 EXCAVATION AND TRENCHING

A. Excavation shall be in all cases ample in size to permit the pipes to be laid at the elevations intended and to permit ample space for joining.

B. Make trenches for pipelines deep enough to provide minimum cover from finish grade as follows:
   1. 18" minimum cover over mainlines to control valves and quick coupling valves.
   2. 18" minimum cover over control wires from controller to valves.
   3. 12" minimum cover over RCV controlled lateral lines to sprinkler heads.
   4. 4” cover over drip tubing.

C. Restore surfaces, existing underground installations, etc., damaged or cut as a result of excavations, to original conditions in manner approved by Architect.

D. Where other utilities interfere with irrigation trenching and pipe work, adjust the trench depth as instructed by Architect.

3.05 ASSEMBLING PIPELINES

A. All pipe shall be assembled free from dirt and pipe scale. Field cut ends shall be reamed only to full pipe diameter with rough edges and burrs removed.

B. Solvent Weld Joint:
1. Prepare joint by first making sure the pipe end is square, then deburring the pipe end and cleaning pipe and fitting of dirt, dust, and moisture.
2. Dry-insert pipe into fitting to check for missizing. Pipe should enter fitting 1/3 to 2/3 depth of socket.
3. Coat the inside socket surface of the fitting and the fitting and the male end of the pipe with P-70 primer (manufactured by Weld-On). Then without delay, apply Weld-On 711 cement liberally to the male end of the pipe and also apply Weld-On 711 cement lightly to the inside of the socket. At this time, apply a second coat of cement to the pipe end.
4. Insert pipe immediately into fitting and turn 1/4 turn to distribute cement and remove air bubbles. The pipe must seat to the bottom of the socket and fitting. Check alignment of the fitting. Pipe and fitting shall be aligned properly without strain to either.
5. Hold joint still for approximately thirty (30) seconds and then wipe the excess cement from the pipe and fitting.
6. Cure joint a minimum of thirty (30) minutes before handling and at least six (6) hours before allowing water in the pipe.

C. Threaded Joint:
1. Field threading of plastic pipe or fittings is not permitted. Factory-formed threads only will be permitted.
2. Factory-made nipples shall be used wherever possible. Field-cut threads in metallic pipe will be permitted only where absolutely necessary. When field threading, cut threads accurately on axis with sharp dies.
3. All threaded joints shall be made up with pipe joint compound. Apply compound to male threads only.
4. Where assembling metallic pipe to metallic fitting or valve, no more than three (3) full threads shall show when joint is made up.
5. Where assembling to threaded plastic fitting, take up joint no more than one full turn beyond hand tight.
6. Where assembling soft metal (brass or copper) or plastic pipe, use strap type friction wrench only; do not use metal-jawed wrench.

D. Connection at Drip Tubing:
1. Connections shall be made with fittings specifically designed for use with Rain Bird XFS-CV drip tubing. Follow manufacturer’s requirements for installation.

E. Cap or plug openings as pipeline is assembled to prevent entrance of dirt or obstructions. Remove caps or plugs only when necessary to continue assembly.

F. Where pipes or control wires pass through sleeves, provide removable non-decaying plug at ends of sleeve to prevent entrance of earth.

3.06 REMOTE CONTROL VALVES

A. Install where shown on Drawings and group together where practical. Limit one remote control valve per box – No Exceptions.

B. Locate valve boxes 12" from and perpendicular to walk edges, buildings, and walls. Provide 12" between valve boxes where valves are grouped together.

C. Thoroughly flush mainline before installing valve.

D. Install in shrub or ground cover areas where possible.

E. Label control line wire at each valve with a 2 1/4" x 3/4" polyurethane I.D. tag, indicating identification number of valve (controller and station number). Attach label to control wire.

F. Install decoders per manufacturer's instructions.

3.07 AUTOMATIC CONTROL WIRE

A. Run lines along mains wherever practical. Tie wires in bundles with pipe wrapping tape at 10' intervals and allow slack for contraction between strappings.

B. Loop a minimum of three (3) feet of extra wire in each valve box; both control wire and ground wire.

C. Connections shall be made by crimping bare wires with brass connectors and sealing with 3M DBR/Y-6 sealer packs.

D. Splicing will be permitted only on runs exceeding 2500'. Locate all splices at valve locations within valve boxes.

E. Where control lines pass under paving, they shall pass through Schedule 40 electrical PVC conduit.

F. Install wire, decoders, grounding, etc. in strict accordance with manufacturer's two-wire installation instructions.

3.08 AUTOMATIC CONTROLLER

A. Provide and install automatic irrigation controller in approximate locations shown on Drawings. The exact location will be determined on the site by Architect. Provide conduit and wire and connect to 120 volt switch accessible to controller for ease of maintenance.

B. Connect control lines to controller in sequential arrangement according to assigned identification number of valve. Each control line wire shall be labeled at controller with a permanent non-fading label indicating station number of valve controlled. Attach label to control wire.

C. Provide, program and install *Rainmaster*® decoders for two-wire control system.

3.09 SPRINKLER HEADS AND QUICK COUPLING VALVES

A. Thoroughly flush lines before installing heads or QCVs.

B. Locate heads and QCVs as shown in the Drawings and Details.

C. Adjust sprinkler heads for proper distribution and trim.

3.10 DRIPLINE AND FITTINGS

A. Install as indicated on the Drawings.

B. Install tubing at a uniform depth of 4 inches **of soil**.

C. Use only special tools manufactured or recommended by the drip equipment manufacturer for installation of tubing and fittings.

D. Thoroughly flush lines.

3.11 TESTING

A. Perform test as specified below. Remake any faulty joints with all new materials. Use of cement or caulking to seal leaks is absolutely prohibited. The Contractor shall:
   1. Notify Architect at least three (3) days in advance of testing.

2. Perform testing at his own expense.
3. Center load piping with small amount of backfill to prevent arching or slipping under pressure. No fitting shall be covered.
4. Apply the following tests after weld plastic pipe joints have cured at least 24 hours.
   a. Test live (constant pressure) and QCV lines hydrostatically at 125 PSI minimum. Lines will be approved or not approved as such results may indicate. The Contractor shall make tests and repairs as necessary until test conditions are met.
   b. Test RCV controlled lateral lines with water at line pressure and visually inspect for leaks. Retest after correcting defects.

3.12 BACKFILLING

A. Backfill only after piping has been tested, inspected and approved.

B. Backfill material shall be the earth excavated from the trenches, free from rocks, concrete chunks, and other foreign or coarse materials. Carefully select backfill that is to be placed next to plastic pipe to avoid any sharp objects which may damage the pipe.

C. All pipe under asphalt paving shall be backfilled with 4" of clean sand on all sides of pipe.

D. Place backfill materials in 6" layers and compact by jetting or tamping to a minimum compaction of 90 percent of original soil density.

E. Dress off areas to finish grades and remove excess soil, rocks or debris remaining after backfill is completed.

F. If settlement occurs along trenches, and adjustments in pipes, valves and sprinkler heads, soil, sod or paving are necessary to bring the system, soil, sod or paving to the proper level or the permanent grade, the Contractor, as part of the Work under this contract, shall make all adjustments without extra cost to the Owner.

3.13 GUARANTEE

A. It shall be the responsibility of the Contractor to fill and repair all depressions and replace all necessary lawn and planting due to the settlement of irrigation trenches for one year following completion and acceptance of the job.

B. The Contractor shall also guarantee all materials, equipment and workmanship furnished by him to be free of all defects of workmanship and materials, and shall agree to replace at his expense, at any time within one year after installation is accepted, any and all defective parts that may be found.

3.14 CLEAN-UP

A. Clean-up shall be made as each portion of work progresses. Refuse and excess dirt shall be removed from the site, all walks and paving shall be broomed or washed down, and any damage sustained on the work of others shall be repaired to original conditions.

3.15 FINAL REVIEW PRIOR TO ACCEPTANCE

A. A Operate each system in its entirety at time of final review. Any items deemed not acceptable shall be reworked to the satisfaction of the irrigation consultant. Contact Landscape Architect at least 3 working days prior in advance to coordinate inspection.

B. Final review shall take place after submission of all specified lists, record drawings, and manuals.

C. Prior to approval of recycled water service, the prevailing water district shall perform a system inspection and cross connection test. Contractor shall assist the District inspector as necessary during the inspection and make necessary corrections to the irrigation systems as identified by the inspector.

3.16 INSPECTIONS

A. The contractor shall be subject to inspections at any and all times by authorized representatives of the Owner.

3.17 MAINTENANCE

A. The contractor is to make all repairs and maintain the entire sprinkler system from the times of installation through the landscape maintenance period.

END OF SECTION

GUARANTEE FOR IRRIGATION SYSTEM

WE HEREBY GUARANTEE THAT THE IRRIGATION SYSTEM WE HAVE FURNISHED AND INSTALLED IS FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP, AND THE WORK HAS BEEN COMPLETED IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. WE AGREE TO REPAIR OR REPLACE ANY DEFECTS IN MATERIAL OR WORKMANSHIP, ANY SETTLING OF BACKFILLED TRENCHES, WHICH MAY DEVELOP DURING THE PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE AND ALSO TO REPAIR OR REPLACE ANY DAMAGE CAUSED BY ANY DEFECTS IN THE IRRIGATION SYSTEM OR RESULTING FROM THE REPAIRING OR REPLACING OF SUCH DEFECTS AT NO ADDITIONAL COST TO THE OWNER. ORDINARY WEAR AND TEAR, UNUSUAL ABUSE OR NEGLECT ARE EXCEPTED. WE SHALL MAKE SUCH REPAIRS OR REPLACEMENTS, INCLUDING COMPLETE RESTORATION OF ALL DAMAGED PLANTING, PAVING, OR OTHER IMPROVEMENTS OF ANY KIND, WITHIN A REASONABLE TIME, AS DETERMINED BY THE OWNER, AFTER RECEIPT OF WRITTEN NOTICE. IN THE EVENT OF OUR FAILURE TO MAKE SUCH REPAIRS OR REPLACEMENTS WITHIN A REASONABLE TIME AFTER RECEIPT OF WRITTEN NOTICE FROM THE OWNER, WE AUTHORIZE THE OWNER TO PROCEED TO HAVE SAID REPAIRS OR REPLACEMENTS MADE AT OUR EXPENSE AND WE WILL PAY THE COSTS AND CHARGES THEREFORE UPON DEMAND.

PROJECT: _____

LOCATION: _____

CONTRACTOR: _____

LICENSE NO: _____

ADDRESS: _____

TELEPHONE: _____

GUARANTEE TO: _____

_____

_____

_____

_____

DATE OF ACCEPTANGE: _____

AUTHORIZED REPRESENTATIVE: _____

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SECTION 33 4300

BIO TREATMENT SOIL MIX

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes the following:
   1. Scarification of Subgrade
   2. Installation of import bioswale soil.

1.02 RELATED WORK

A. Section 31 2000 – Earth Moving

B. Section 32 1313 – Site Concrete

C. Section 32 9300 – Planting

1.03 REFERENCES

A. Seal of Testing Assurance (STA)

1.04 QUALITY ASSURANCE

A. Provide written laboratory tests on any required import topsoil, prepared by a reputable firm experienced in the field of soils and plant nutrition.

B. The laboratories must be STA Certified.

C. All tests will be paid for by the Owner, but the cost of re-testing of topsoil required because of rejected topsoil submittals will be deducted from the amount due the Contractor under this Section.

D. Soils for biotreatment or bioretention areas shall meet two objectives:
   1. Be sufficiently permeable to infiltrate runoff at a minimum rate of 5” per hour during the life of the facility
   2. Have sufficient moisture retention to support healthy vegetation

1.05 SUBMITTALS

A. Source of supply of proposed import bioswale soil.

B. Submittal Requirements – The applicant shall submit to the Architect for approval:
   1. A minimum one-gallon size sample of mixed bio treatment soil mix.
   2. Certification from the soil supplier or an accredited laboratory that the Bioretention Soil meets the requirements of this guideline specification.
   3. Grain size analysis results of the fine sand component performed in accordance with ASTM D 422, Standard Test Method for Particle Size Analysis of Soils or Caltrans Test Method (CTM) C202.
   4. Quality analysis results for compost performed in accordance with Seal of Testing Assurance (STA) standards, as specified in 1.04.
   5. Organic content test results of mixed Bioretention Soil. Organic content test shall be performed in accordance with by Testing Methods for the Examination of Compost and Composting (TMECC) 05.07A, “Loss-On-Ignition Organic Matter Method”.
   6. Grain size analysis results of compost component performed in accordance with ASTM D 422, Standard Test Method for Particle Size Analysis of Soils.
   7. A description of the equipment and methods used to mix the sand and compost to produce Bio Treatment Soil Mix.
   8. Provide the name of the testing laboratory(s) and the following information:

a. Contact person(s)
b. Address(s)
c. Phone contact(s)
d. E-mail address(s)
e. Qualifications of laboratory(s), and personnel including date of current certification by USCC, ASTM, Caltrans or approved equal

C. Tests must be conducted within 120 days prior to the delivery date of the bioretention soil to the project site. Batch-specific test results and certification shall be required for projects installing more than 100 cubic yards of bioretention soil.

1.06 PROJECT CONDITIONS

A. Do not do subgrade preparation, or topsoil installation until construction work is completed in the area to be planted and the subgrade for topsoil is approved by the Architect.

B. Protect utilities, paving, and other structures from damage caused by topsoil operations.

C. Do not purchase or deliver any required import topsoil to the site without the written approval or the proposed topsoil by the Architect.

PART 2 PRODUCTS

2.01 IMPORT BIOSWALE SOIL

A. Furnish and install sufficient topsoil to complete the work as indicated on the Drawings and herein specified.

B. Bioretention soils shall meet the following criteria.
1. General Requirements – Bioretention soil shall:
2. Achieve a long-term, in-place infiltration rate of at least 5 inches per hour.
3. Support vigorous plant growth.
4. Consist of the following mixture of fine sand and compost, measured on a volume basis:
   60%-70% Sand
   30%-40% Compost
5. Sand for Bioretention Soil
   a. Sand shall be free of wood, waste, coating such as clay, stone dust, carbonate, etc., or any other deleterious material. All aggregate passing the No. 200 sieve shall be nonplastic.
   b. Sand for Bioretention Soils shall be analyzed by an accredited lab using #200, #100, #40 or #50, #30, #16, 38, #4, and 3/8-inch sieves (ASTM D 422, CTM 202 or as approved by municipality), and meet the following gradation:

Sieve Size	Percent Passing (by weight)	
	Min	*Max*
3/8 inch	100	100
#4	90	100
#8	70	100
#16	40	95
#30	15	70
#40 or #50	5	55
#100	0	15
#200	0	5

   c. Note: All sands complying with ASTSM C33 for fine aggregate comply with the above gradation requirements.
6. Composted Material – Compost shall be a well decomposed, stable, weed free organic matter source derived from waste materials including yard debris, wood wastes or other organic materials not including manure or biosolids meeting the standards developed by the US Composting Council (USCC). The product shall be certified through the USCC Seal of Testing Assurance (STA) Program (a compost testing and information disclosure program).

7. Compost Quality Analysis by Laboratory – Before delivery of the soil, the supplier shall submit a copy of lab analysis performed by a laboratory that is enrolled in the US Composting Council's Compost Analysis Proficiency (CAP) program and using approved Test Methods for the Examination of Composting and Compost (TMECC). The lab report shall verify:
    a. Organic Matter Content: 35% - 75% by dry wt.
    b. Carbon and Nitrogen Ratio: C:N < 25:1 and C:N > 15:1
    c. Maturity/Stability – Any one of the following is required to indicate stability:
        1) Oxygen Test < 1.3 O2 /unit TS /hr
        2) Specific oxy. Test < 1.5)2 /unit BVS /hr
        3) Respiration test < 8 mg CO_2 /g OM/day
        4) Dewar test < 20 Temp./ rise (˚C) e.
        5) Solvita® > 5 Index value
    d. Toxicity – Any one of the following measures is sufficient to indicate non-toxicity:
        1) NH_4- : NO_3-N < 3
        2) Ammonium < 500 ppm, dry basis
    e. Seed Germination > 80% of control
    f. Plant Trials > 5 Index value
    g. Solvita® > 5 Index value
    h. Nutrient Content – Provide analysis detailing nutrient content including N-P-K, Ca, Na, Mg, S, and B.
    i. Total Nitrogen content 0.9% or above preferred.
    j. Boron: Total shall be < 80 ppm.
    k. Salinity: Must be reported; < 6.0 mmhos/cm
    l. pH shall be between 6.2 – 8.2. May vary with plant species.
8. Compost Quality Analysis by Compost Supplier – Before delivery of the compost to the soil supplier the Compost Supplier shall verify the following:
    a. Feedstock materials shall be specified and include one or more of the following: Landscaping/yard trimmings, grass clippings, food scraps, and agricultural crop residues.
    b. Maturity/Stability: Shall have a dark brown color and a soil-like odor. Compost exhibiting a sour or putrid smell or containing recognizable grass or leaves, or is hot (120 deg) upon delivery or rewetting is not acceptable.
    c. Weed seed/pathogen destruction: Provide proof of process to further reduce pathogens (PFRP). For example, turned windrows must reach min. 55C for 15 days with at least 5 turnings during that period.
9. Compost for Bioretention Soil Texture – Compost for bioretention soils shall be analyzed by an accredited lab using #200, ¼ inch, ½ inch, and 1-inch sieves (ASTM D 422 or as approved by municipality), and meet the following gradation:

Sieve Size	Percent Passing (by weight)	
	Min	*Max*
1 inch	99	100
1/2 inch	90	100
1/4 inch	40	90
#200	1	10

10. Bulk density shall be between 500 and 1100 dry lbs/cubic yard.
11. Moisture content shall be between 30% - 55% of dry solids.
12. Inerts – Compost shall be relatively free of inert ingredients, including glass, plastic and paper, < 1% by weight or volume.
13. Select Pathogens – Salmonella < 3 MPN/4grams of TS, or Coliform Bacteria < 10000 MPN/gram.
14. Trace Contaminants Metals (Lead, Mercury, Etc.) – Product must meet US EPA, 40 CFR 503 regulations.
15. Compost Testing – The compost supplier will test all compost products within 120 calendar days prior to application. Samples will be taken using the STA sample collection protocol. (The sample collection protocol can be obtained from the U.S. Composting Council, 4250

Veterans Memorial Highway, Suite 275, Holbrook, NY 11741 Phone: 631-737-4931, www.compostingcouncil.org). The sample shall be sent to an independent STA Program approved lab. The compost supplier will pay for the test.

C. Verification of alternative bioretention soil mixes
   1. Bioretention soils not meeting the above criteria shall be evaluated on a case by case basis. Alternative bioretention soil shall meet the following specification: “Soils for bioretention facilities shall be sufficiently permeable to infiltrate runoff at a minimum rate of 5 inches per hour during the life of the facility, and provide sufficient retention of moisture and nutrients to support healthy vegetation.”
   2. The following steps shall be followed by municipalities to verify that alternative soil mixes meet the specification:
      a. General Requirements – Bioretention soil shall achieve a long-term, in-place infiltration rate of at least 5 inches per hour. Bioretention soil shall also support vigorous plant growth. The applicant refers to the entity proposing the soil mixture for approval.
      b. Submittals – The applicant must submit to the municipality for approval:
         1) A minimum one-gallon sample of mixed bioretention soil.
         2) Certification from the soil supplier or an accredited laboratory that the Bioretention Soil meets the requirements of this guideline specification.
         3) Certification from an accredited geotechnical testing laboratory that the Bioretention Soil has an infiltration rate between 5 and 12 inches per hour as tested according to Section 1.b.(2)(ii).
         4) Organic content test results of mixed Bioretention Soil. Organic content test shall be performed in accordance with by Testing Methods for the Examination of Compost and Composting (TMECC) 05.07A, “Loss-On-Ignition Organic Matter Method”.
         5) Grain size analysis results of mixed bioretention soil performed in accordance with ASTM D 422, Standard Test Method for Particle Size Analysis of Soils.
         6) A description of the equipment and methods used to mix the sand and compost to produce Bioretention Soil.
         7) The name of the testing laboratory(s) and the following information:
            a) Contact person(s)
            b) Address(s)
            c) Phone contact(s)
            d) E-mail address(s)
            e) Qualifications of laboratory(s), and personnel including date of current certification by STA, ASTM, or approved equal
      c. Bioretention Soil
         1) Bioretention Soil Texture – Bioretention Soils shall be analyzed by an accredited lab using #200, and ½” inch sieves (ASTM D 422 or as approved by municipality), and meet the following gradation:

Sieve Size	Percent Passing (by weight)	
	Min	*Max*
1/2 inch	97	100
#200	2	5

         2) Bioretention Soil Permeability Testing – Bioretention Soils shall be analyzed by an accredited geotechnical lab for the following tests:
            a) Moisture – Density relationships (compaction tests) shall be conducted on bioretention soil. Bioretention soil for the permeability test shall be compacted to 85 to 90 percent of the maximum dry density (ASTM D1557).
            b) Constant head permeability testing in accordance with ASTM D2434 shall be conducted on a minimum of two samples with a 6-inch mold and vacuum saturation.

~~D. Mulch for Bioretention Basins~~ (RFI 22)
   ~~1. Three (3) inches of compost mulch (also called aged mulch) is to be applied after planting for the purpose of retaining moisture, preventing erosion and minimizing weed growth. Compost~~

~~mulch is to be obtained through soil suppliers or directly from commercial recycling yards.~~ (RFI 22)

2. ~~Compost mulch shall be a well decomposed, weed free organic matter source~~. (RFI 22)

PART 3 EXECUTION

3.01 INSPECTION

A. Examine the substrate in which the work is to be performed. Do not proceed until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. All scaled dimensions are approximate. Before proceeding with any work, carefully check and verify all dimensions and quantities and immediately inform the Architect of any discrepancy between the Drawings and/or specifications and the actual conditions. No work shall be done in any area where there is such a discrepancy until review for same has been given by the Architect.

B. Coordination: Coordinate work with other trades to insure proper sequencing fitting of construction.

3.03 SUBGRADE PREPARATION

A. Grades:
   1. Subgrades have been established under work of another Section to within 1 inch, plus or minus, of required grades. Subgrades are 6-inches below finished grades, plus or minus 1-inch, allowing for 6-inches of topsoil and soil amendments.
   2. Verify that subgrades are within 1” plus or minus, of required subgrades.
   3. Notify the Architect prior to commencing soil preparation work if existing grades are not satisfactory, or assume responsibility for conditions as they exist.

B. Weed and Debris Removal: All ground areas to receive topsoil shall be cleaned of all weeds and debris prior to any subgrade preparation or topsoiling. Weeds and debris shall be disposed of off the site.

C. Do not perform any subgrade preparation work in areas where soil is contaminated with cement, plaster, paint, or other construction debris. Bring such areas to the attention of the Architect and do not proceed until the contaminated soil is removed and replaced.

D. Moisture Content: Soil shall not be worked when moisture content is so great that excessive compaction will occur, nor when it is so dry that dust will form in the air or that clods will not break readily. Water shall be applied, if necessary, to bring soil to optimum moisture content for tilling and planting.

E. Soil Loosening: Soil subgrade in all areas to receive topsoil shall be ripped or cultivated to the depths specified below. Water shall be added, and ripping or cultivating shall be continued until the entire specified depth is loose and friable. All debris, pavement, concrete, and rocks over 2 inches in diameter shall be removed from the site.
   1. All areas to be topsoiled: 10 inches deep.

3.04 INSTALLATION OF BIOSWALE SOIL

A. Do not install bioswale soil until preparation of subgrade has been approved by the Architect.

B. Moisture Content: Do not work topsoil when moisture content is so great that excessive compaction will occur, nor when it is so dry that dust will form, nor when clods will not break readily. Water shall be applied, if necessary, to bring soil to an optimum moisture content for tilling and planting.

C. Remove noxious weeds, rocks over 2 inches in diameter, and debris from topsoil, and dispose of off the site.

D. Thickness of bioswale soil shall conform to those indicated on the site grading plans and specified herein.

E. Place topsoil and bring to a smooth even grade. Soil shall be thoroughly water settled and high and low areas regraded until the grade of all planting areas conforms to finished grade indicated on the Site Grading Plans to within plus or minus 1”.

~~**3.05 INSTALLATION OF COMPOST MULCH**~~ (RFI 22)

~~A. Compost mulch shall be uniformly applied over the entire area at an average depth of 3 inches as soon as possible after weed removal and planting.~~ (RFI 22)

~~B. Avoid placing mulch against trunk or stem of any planting material.~~ (RFI 22)

~~C. Water thoroughly before and after mulching to saturate the root zone and entire mulch layer~~ (RFI 22)

~~D. All stones, roots or other debris shall be removed from the surface of the mulched areas.~~ (RFI 22)

END OF SECTION