DCX7

TENANT IMPROVEMENT

SCOPE OF WORK:

- 8,569 SF OF GROUND FLOOR TENANT IMPROVEMENT INCLUDING RESTROOMS, BREAK ROOM, OPEN OFFICE, CONFERENCE ROOM, TRAINING ROOM, LOCKER ROOMS, & STORAGE ROOM
- 213,766 SF WAREHOUSE IMPROVEMENT
- 9 DOCK DOORS AND LEVELERS AT EXISTING DOCK DOORS OR OPENINGS AS REQUIRED
- SCRUBBER DUMP AREA
- 10 NEW OPENINGS FOR DELIVERY VAN LOADING ACCESS

SEPERATE PERMIT:

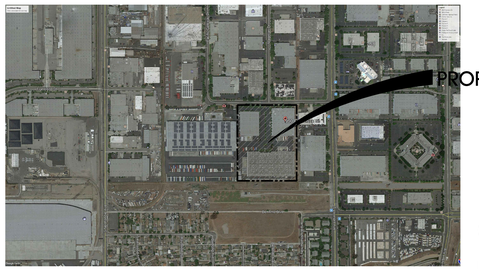
- RACKING LAYOUT/STORAGE
- FIRE PROTECTION SYSTEMS
- MECHANICAL, ELECTRICAL, AND PLUMBING
- CIVIL & SITE IMPROVEMENTS
- OFF-SITE PARKING

Torrance, CA

ARCHITECTURAL

STRUCTURAL

SHEET INDEX



VICINITY MAP

HPA architecture

hpa, inc.
18831 bardeen avenue - ste.
#100 irvine, ca
92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

LICENSED ARCHITECT — MICHAEL LEE — C-22270 — 08-31-21 RENEWAL DATE — STATE OF CALIFORNIA

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: TITLE SHEET

Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

Sheet:

TI-A0.1

OWNER:
UNIRE GROUP
1000 EAST IMPERIAL HIGHWAY, STE 205
BREA, CA 92821
PHONE: (562) 284-5004
CONTACT: PAUL SINGH

STRUCTURAL:
HSA
1906 W. GARVEY AVE. SUITE 200
WEST COVINA, CA 91790
(714) 522-0030
(714) 270-5050 FAX
CONTACT: DARIN FONG

MECHANICAL:
RPM ENGINEERS
102 DISCOVERY
IRVINE, CA 92618
(949) 450-1229
CONTACT: EUSIO KIM

ARCHITECT:
HPA, INC.
18831 BARDEEN AVE., SUITE 100
IRVINE, CA 92612
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PLUMBING:
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IRVINE, CA 92618
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CONTACT: EUSIO KIM

FIRE PROTECTION
(E) NFPA-13
SPRINKLERS THROUGHOUT

CONTRACTOR:

ELECTRICAL:
RPM ENGINEERS
102 DISCOVERY
IRVINE, CA 92618
(949) 450-1229
CONTACT: EUSIO KIM

PROJECT REPRESENTATIVES

BUILDING & PLANNING DEPT.
PLAN CHECK NO. : TBD
PERMIT APPLICATION NO. : TBD

OWNER / APPLICANT :
UNIRE GROUP
1000 EAST IMPERIAL HIGHWAY, STE 205
BREA, CA 92821
PHONE: (562) 284-5004
CONTACT: PAUL SINGH

APPLICANT'S REPRESENTATIVE :
HPA, INC.
18831 BARDEEN AVE., SUITE 100
IRVINE, CA 92612
PHONE: (949) 862-2138
CONTACT: MATTHEW LEE
MATTHEW@HPARCHS.COM

ASSESSOR'S PARCEL NO. :
7351-034-066, 7351-034-067, 7351-034-068
AND 7351-034-804

ZONING :
ZONE DESIGNATIONS: M3-1
GENERAL LAND USE: HEAVY MANUFACTURING

BUILDING ADDRESS :
BUILDING 1
990 FRANCISCO ST.

BUILDING 2
970 FRANCISCO ST.

BUILDING 3
950 FRANCISCO ST.

GOVERNING CODE :
THIS PROJECT SHALL COMPLY WITH:
2017 LOS ANGELES BUILDING CODE (LADBS), WHICH ADOPTS THE 2016 CBC, 2016 CMC, 2016 CPC, 2016 CALIFORNIA FIRE CODE (CFC), 2016 NFPA 13-FIRE SPRINKLER, 2016 NFPA 72 - FIRE ALARM, 2016 NEC., 2016 CALIF. ENERGY STANDARDS W/ 2014 L.A.B.C. AMENDMENTS

CODE ANALYSIS :
2016 CALIFORNIA BUILDING CODE/2017 L.A.B.C.

CONCRETE TILT-UP BUILDING

(E) BUILDING OCCUPANCY:	S-1, B-1
(N) BUILDING OCCUPANCY:	S-1, B-1, S-2
OCCUPANCY SEPARATION:	NONE
CONSTRUCTION TYPE:	III-B
NUMBER OF STORIES:	1
BLDG. HEIGHT ALLOWED PER CBC 503	55'
AUTOMATIC FIRE SPRINKLER	YES
ALLOWABLE HEIGHT (W/ AUTOMATIC SPRINKLER)	75' (CBC 504.2)
ACTUAL PARAPET	32' TO 35'
ACTUAL AREA	222,335 SF
(E) ACTUAL AREA (BASIC)	BUILDING 1 S-1=84,240 SF BUILDING 2 S-1=157,166 SF BUILDING 3 S-1=60,420 SF
(N) ACTUAL AREA (BASIC)	NO CHANGE TO BUILDING FOOTPRINT.

(N)OCCUPANT LOAD:

- (N) 'B' LOCKERS	(368 SF @ 100 SF)	4
- (N) 'B' TRAINING ROOM	(792 SF @ 100 SF)	8
- (N) 'B' BREAK-ROOM	(4,144 SF @ 100 SF)	42
- (N) 'B' PICK-UP AREA	(751 SF @ 100 SF)	8
- (N) 'B' MOTHER'S ROOM	(90 SF @ 100 SF)	1
- (N) 'B' CONTEMPLATION	(53 SF @ 100 SF)	1
- (N) 'B' HR OFFICE	(108 SF @ 100 SF)	2
- (N) 'B' MANAGER OFFICE	(180 SF @ 100 SF)	2
- (N) 'B' OPEN OFFICE	(501 SF @ 100 SF)	6
- (N) 'B' OFFICE	(63 SF @ 100 SF)	1
- (N) 'B' CONFERENCE ROOM	(342 SF @ 15 SF)	23
- (N) 'S-1' STORAGE	(63 SF @ 500 SF)	1
- (N) 'S-1" WAREHOUSE	(146,048 SF @ 500 SF)	293
- TOTAL OCCUPANT LOAD		391
NUMBER OF EXITS REQUIRED:		3
WIDTH OF EXITS REQUIRED:	(294 'S' OCCUPANTS X.2) =	58.8"
	(99 'B' OCCUPANTS X.2) =	19.8"
	TOTAL=	78.6"
NUMBER OF EXITS PROVIDED:		17
WIDTH OF EXITS PROVIDED:		544"

NOTES:

LEGAL DESCRIPTION :

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF LOS ANGELES, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 1:
PARCELS A, B AND C, AS SHOWN ON PARCEL MAP NO. 4760, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP FILED IN BOOK 129, PAGE 23 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

APN: 7351-034-066, 7351-034-067 AND 7351-034-068

PARCEL 2:
THAT PORTION OF DRILL TRACK NO. 4 AS DESCRIBED IN THAT CERTAIN GRANT OF EASEMENT FROM CADILLAC FAIRVIEW/CALIFORNIA, INC., A CALIFORNIA CORPORATION, TO SOUTHERN PACIFIC TRANSPORTATION COMPANY, A DELAWARE CORPORATION RECORDED APRIL 4, 1977 AS INSTRUMENT NO. 77-338683 OFFICIAL RECORDS, LYING WITH LOT 5 OF TRACT NO. 32036, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 851, PAGES 12, 13 AND 14 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

NOTE: SAID LAND IS NOW DESCRIBED AS A PORTION OF PARCELS C AND D OF PARCEL MAP NO. 3209, AS PER MAP FILED IN BOOK 68, PAGES 69 AND 70, OF PARCEL MAPS; PARCELS A AND C PARCEL MAP NO. 4760, FILED IN BOOK 129, PAGE 23 OF PARCEL MAPS AND PARCEL A OF PARCEL MAP L.A. NO. 3331, FILED IN BOOK 76, PAGE 14 OF PARCEL MAPS, ALL RECORDS OF LOS ANGELES COUNTY, CALIFORNIA.

APN: 7351-034-804

PROJECT DATA :

SITE AREA	
Net:	
in s.f.	492,606 s.f.
in acres	11.31 ac
EXISTING BUILDING AREA	
Office	4,608 s.f.
Manufacturing	217,727 s.f.
TOTAL	222,335 s.f.
PROPOSED BUILDING AREA	
Office	8,569 s.f.
Warehouse	213,766 s.f.
TOTAL	222,335 s.f.
COVERAGE	45.13%
EXISTING PARKING	
Standard Parking (9' x 19')	154 stalls
ADA Parking (9' x 19')	4 stalls
Van Accessible (12' x 19')	2 stalls
TOTAL	160 stalls
PROPOSED PARKING REQUIRED	
Office excess 25% GFA @1/500 s.f.	17 stalls
Warehouse: 1st 10K @ 1/500 s.f.	20 stalls
above 10K @ 1/5000 s.f.	41 stalls
TOTAL	78 stalls
PROPOSED PARKING PROVIDED	
Standard Parking (9' x 19')	224 stalls
Delivery Van Parking (11' x 27')	65 stalls
ADA Parking (9' x 19')	5 stalls
Van Accessible (12' x 19')	2 stalls
TOTAL	296 stalls
PROPOSED OFFSITE PARKING PROVIDED	
Delivery Van Parking (11' x 27')	607 stalls
ADA Parking (9' x 19')	7 stalls
Van Accessible (12' x 19')	2 stalls
TOTAL	616 stalls
TOTAL PARKING PROVIDED	912
MAXIMUM FLOOR AREA RATIO	
F.A.R. - n/a	
MAXIMUM BLDG. HEIGHT ALLOWED	
Height - 75 ft.	
ZONING ORDINANCE FOR THE CITY	
RESTRICTED LIGHT INDUSTRIAL (MR2-1)	

PROJECT DATA & CODE SUMMARY

GENERAL NOTES - SHELL

1. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS TO INCLUDE ALL LABOR, MATERIALS AND SERVICES NECESSARY FOR COMPLETION OF ALL WORK SHOWN, PRESCRIBED, OR REASONABLY IMPLIED BUT NOT LIMITED TO THAT EXPLICITLY INDICATED IN THE CONTRACT DOCUMENTS.

2. ALL WORK SHALL CONFORM TO ALL APPLICABLE BUILDING CODES, ORDINANCES, AND REGULATIONS AS ADOPTED BY LOCAL AUTHORITIES HAVING JURISDICTION.

3. DIMENSIONS ON DRAWINGS ARE SHOWN TO CENTER LINE OF COLUMNS AND TO FACE OF CONCRETE OR FACE OF STUD AT WALLS AND PARTITIONS UNLESS NOTED OTHERWISE.

4. DO NOT SCALE DRAWINGS.

5. STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, CIVIL, AND LANDSCAPE DRAWINGS ARE SUPPLEMENTAL TO THE ARCHITECTURAL DRAWINGS. THE CONTRACTOR SHALL REVIEW ALL PLANS AND DRAWINGS. IN THE EVENT OF CONFLICTING STATEMENTS, INSUFFICIENT INFORMATION, OR ERRORS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT AND OBTAIN CLARIFICATION BEFORE ANY WORK IS BEGUN. WORK INSTALLED WHERE CONFLICTING CONDITIONS EXIST SHALL BE CORRECTED AT CONTRACTOR'S EXPENSE.

6. DIMENSIONS, DETAILS, NOTES, AND/OR SYMBOLS THAT APPLY TO ONE UNIT, APPLY TO ALL UNITS IN LIKE SITUATIONS UNLESS NOTED OTHERWISE.

7. DETAILS NOTED AS 'TYPICAL' SHALL APPLY IN ALL LIKE CONDITIONS UNLESS SPECIFICALLY SHOWN OR NOTED OTHERWISE. WHERE NO SPECIFIC DETAIL IS SHOWN, THE FRAMING OR CONSTRUCTION SHALL BE IDENTICAL OR SIMILAR TO THAT INDICATED FOR LIKE CASES OF CONSTRUCTION IN THIS PROJECT.

8. WHENEVER AN ARTICLE, DEVICE, OR PIECE OF EQUIPMENT IS SHOWN, INDICATED, OR REFERRED TO ON THE DRAWINGS OR IN THESE NOTES IN THE SINGULAR NUMBER, SUCH REFERENCES APPLY TO AS MANY SUCH ARTICLES AS ARE REQUIRED TO COMPLETE THE INSTALLATION.

9. THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB SITE PRIOR TO BEGINNING CONSTRUCTION AND SHALL REPORT ANY DISCREPANCIES OR UNIDENTIFIED CONDITIONS TO THE ARCHITECT FOR RESOLUTION BEFORE ANY WORK IS BEGUN.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS, METHODS, TECHNIQUES AND PROCEDURES EMPLOYED IN THE PERFORMANCE OF WORK IN, ON, OR ABOUT THE JOB SITE; THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL WORK PERFORMED BY SUBCONTRACTORS.

11. ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK ON, OR RELATED TO THIS PROJECT SHALL CONDUCT THEIR OPERATIONS SO THAT ALL EMPLOYEES ARE PROVIDED A SAFE PLACE TO WORK AND THE PUBLIC IS PROTECTED, AND SHALL COMPLY WITH THE "OCCUPATIONAL SAFETY AND HEALTH ACT" OF THE U.S. DEPARTMENT OF LABOR AND WITH ANY AND ALL OTHER APPLICABLE STATE AND/OR LOCAL SAFETY REGULATIONS. THE CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE SAFETY CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS THE OWNER AND ARCHITECT FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH PERFORMANCE OF WORK ON THIS PROJECT.

12. THE STRUCTURE IS DESIGNED AS A STABLE UNIT AFTER ALL COMPONENTS ARE IN PLACE. THE CONTRACTOR SHALL PROVIDE ALL SHORING AND BRACING NECESSARY TO ENSURE THE STABILITY OF ANY AND ALL PARTS OF THE BUILDING DURING CONSTRUCTION.

13. UNLESS SPECIFICALLY SHOWN OR NOTED ON THE DRAWINGS, NO STRUCTURAL MEMBER SHALL BE CUT, NOTCHED, BORED, OR OTHERWISE MODIFIED WITHOUT PERMISSION/ACCEPTANCE OF THE STRUCTURAL ENGINEER OF RECORD.

14. WHETHER OR NOT DETAILED ON DRAWINGS, THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL STIFFENERS, BRACING, BACK-UP PLATES, AND SUPPORTING BRACKETS REQUIRED FOR THE INSTALLATION OF ALL CASEWORK AND OF ALL WALL-MOUNTED OR SUSPENDED MECHANICAL, ELECTRICAL, OR MISCELLANEOUS EQUIPMENT, INCLUDING PLYWOOD BACKBOARDS FOR TELEPHONE AND ELECTRICAL EQUIPMENT ROOMS.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING APPROVAL AND PERMITS FOR ALL DESIGN/BUILD SYSTEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SYSTEMS MEETING ALL APPLICABLE CODE REQUIREMENTS.

16. ANY MODIFICATIONS TO THE BUILDING SHELL RESULTING FROM DESIGN/BUILD REQUIREMENTS SHALL BE REPORTED TO THE OWNER AND ARCHITECT ALONG WITH ANY REQUIRED COSTS OR SAVINGS PRIOR TO CONSTRUCTION. ANY MODIFICATIONS NOT REPORTED WILL BE THE CONTRACTOR'S RESPONSIBILITY FOR COORDINATION, CODE CONFORMANCE, AND COST.

17. NEITHER THE ARCHITECT'S REVIEW NOR APPROVAL OF SHOP DRAWINGS SHALL RELIEVE THE GENERAL CONTRACTOR FROM RESPONSIBILITY FOR DEVIATIONS FROM DRAWINGS OR SPECIFICATIONS UNLESS HE HAS CALLED THE ARCHITECTS ATTENTION (IN WRITING) TO SUCH DEVIATIONS AT THE TIME OF SUBMISSION, NOR SHALL IT RELIEVE HIM OF RESPONSIBILITY FOR ERRORS OF ANY SORT IN THE SHOP DRAWINGS.

18. INSTALLATION OF GLASS SHALL CONFORM TO FEDERAL SPECIFICATION 16-CFR-1201 AND ALL LOCAL CODES AND ORDINANCES. GLASS SUBJECT TO HUMAN IMPACT SHALL COMPLY WITH U.S. CONSUMER PRODUCT SAFETY STANDARDS. CERTIFICATE SHALL ACCOMPANY PRODUCT STATING DATE AND PLACE OF MANUFACTURE.

19. REFER TO THE CIVIL ENGINEER'S DRAWINGS FOR LOCATIONS OF EXISTING UTILITY LINES. LOCATIONS OF ALL UTILITIES SHOWN ARE APPROXIMATE AND THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATION AND TRENCHING TO AVOID INTERCEPTING EXISTING PIPING OR CONDUITS.

20. THE CONTRACTOR SHALL SUBMIT A SOILS REPORT AND A COMPACTION REPORT TO THE BUILDING DEPARTMENT FOR APPROVAL PRIOR TO FOUNDATION INSPECTIONS.

21. THE CONTRACTOR IS RESPONSIBLE TO VERIFY LOCATION OF ALL SITE UTILITIES AND TO COORDINATE AND AVOID CONFLICT IN THE LOCATIONS OF NEW UNDERGROUND AND SITE UTILITIES. THE CONTRACTOR SHALL INCLUDE ALL NECESSARY FEES, METERS, AND CONNECTIONS IN HIS BID.

22. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND THE ARCHITECT SHOULD UNIDENTIFIED FIELD CONDITIONS BE DISCOVERED.

23. ON A SET OF DRAWINGS FURNISHED BY THE ARCHITECT AND AT THE CONTRACTOR'S EXPENSE, THE CONTRACTOR SHALL KEEP AN UP-TO-DATE RECORD OF "AS BUILT" CONDITIONS OF THE WORK. UPON COMPLETION OF THE WORK, THAT SET SHALL BE RETURNED TO THE ARCHITECT COMPLETELY AND NEATLY POSTED SHOWING ALL ADDITIONS, DELETIONS, CORRECTIONS, AND REVISIONS OF THE ACTUAL CONSTRUCTION OF THE PROJECT. THIS SHALL INCLUDE REVISIONS IDENTIFIED IN RFI'S, ASI'S ADDENDUMS AND FIELD CHANGES. RECORD DRAWINGS SHALL BE SIGNED BY SUBCONTRACTORS REPRESENTING ALL MAJOR TRADES FOR THE PROJECT AS WELL AS THE GENERAL CONTRACTOR.

24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, MOUNTING, AND DISPLAYING ARCHITECT'S JOB SIGN. CONTRACTOR SHALL RETURN JOB SIGN TO ARCHITECT UPON COMPLETION OF PROJECT IN GOOD CONDITION OR PROVIDE A REPLACEMENT OR THE COST OF A REPLACEMENT.

25. ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS, AND THOSE SHOWN ON THE RECORDS EXAMINED, ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE OWNER BY ACCEPTING THESE PLANS OR PROCEEDING WITH IMPROVEMENTS PURSUANT THERETO, AGREES TO ASSUME LIABILITY AND TO HOLD HPA INC. HARMLESS FOR ANY DAMAGES RESULTING FROM THE EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED BY HPA INC., NOT INDICATED ON THE RECORDS EXAMINED, LOCATED AT VARIANCE W/ THOSE REPORTED, OR SHOWN ON RECORDS EXAMINED. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES FOUND AT THE SITE. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE OWNER(S) OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.

PARTITIONS

1. ALL STUDS AT NON-BEARING INTERIOR PARTITIONS SHALL BE STEEL 3-5/8" WIDE X 20 GAUGE OR 2 X 4 DF#2 (MIN.) AT 16" O.C. UNLESS NOTED OTHERWISE.

2. PROVIDE AND INSTALL HEAVIER GAUGE STUDS, STIFFENERS, BRACING, BACK-UP PLATES, ETC., AS REQUIRED AT STUD WALLS FOR SUPPORT OF TOILET ROOM FIXTURES OR OTHER EQUIPMENT.

3. SEE WALL LEGENDS OR CALLOUTS ON PLANS FOR GYPSUM BOARD THICKNESS AND FIRE RATING AND FOR INSULATION AS REQUIRED.

4. ALL WALL GYPSUM BOARD USED IN JANITOR'S ROOMS AND TOILET ROOMS SHALL BE WATER RESISTANT.

STAIRS, EXITS & OCCUPANT LOADS

1. REQUIRED EXIT DOORS

   A. EXCEPT AS SPECIALLY PERMITTED BY SECTION CBC 1008.1.9 EGRESS DOORS SHALL BE READILY OPENABLE FROM THE EGRESS SIDE WITHOUT USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORTS. LOCKS AND LATCHES SHALL BE PERMITTED TO PREVENT OPERATION OF DOORS WHERE CONDITIONS PER CBC SECTION 1008.1.9.3.

   B. THERE SHALL BE A FLOOR OR LANDING ON EACH SIDE OF A DOOR. SUCH FLOOR OR LANDING SHALL BE LEVEL EXCEPT FOR EXTERIOR LANDINGS, WHICH ARE PERMITTED TO HAVE A SLOPE NOT TO EXCEED 2%. THRESHOLD AT DOORWAYS WHALL NOT EXCEED ½" EXCEPT DWELLING UNITS SLIDING DOOR PER CBC SECTION 1008.1.7.

   C. DOORS SHALL SWING IN THE DIRECTION OF EGRESS TRAVEL WHERE SERVING AN OCCUPANT LOAD OF 50 OR MORE PERSONS OR A GROUP H OCCUPANCY PER CBC SECTION 1008.1.2

   D. DOORS SERVING A GROUP H OCCUPANCY AND DOORS SERVING ROOMS OR SPACES WITH AN OCCUPANT LOAD OF 50 OR MORE IN A GROUP A OCCUPANCY, ASSEMBLY AREA NOT CLASSIFIED AS AN ASSEMBLY OCCUPANCY, E, I-2 OR I-2.1 OCCUPANCIES SHALL NOT BE PROVIDED WITH LATCH OR LOCK UNLESS IT IS PANIC HARDWARE OR FIRE EXIT HARDWARE PER CBC SECTION 1008.1.10.

   E. SHALL BE NOT LESS THAN 32" CLEAR WIDTH, THE MAXIMUM WIDTH OF A SWINGING SINGLE LEAF DOOR SHALL BE 48" NOMINAL AND THE HEIGHT OF DOORS OPENINGS SHALL NOT BE LESS THAN 44" PER CBC SECTION 1008.1.1.

2. LANDING AT DOORS: LANDINGS SHALL HAVE A WIDTH NOT LESS THAN THE WIDTH OF THE STAIRWAY OR THE DOOR, WHICHEVER IS GREATER. DOORS IN THE FULLY OPENED POSITION SHALL NOT REDUCE A REQUIRED DIMENSION BY MORE THAN 7". WHEN A LANDING SERVES AN OCCUPANT LOAD OF 50 OR MORE, DOOR IN ANY POSITION SHALL NOT REDUCE THE LANDING TO LESS THAN ONE-HALF IT'S REQUIRED WIDTH. LANDINGS SHALL HAVE A LENGTH MEASURED IN THE DIRECTIO OF TRAVEL OF NOT LESS THAN 44" PER CBC 1008.1.6

3. ILLUMINATED EXIT SIGNS SHALL BE PROVIDED WHERE REQUIRED BY, AND IN ACCORDANCE WITH APPLICABLE LAWS. REFER TO CBC SECTION 1024.

4. ALL REQUIRED EXITS AND EXIT ACCESS DOORS SHALL HAVE EXIT SIGNS READILY VISIBLE FROM ANY DIRECTION OF EGRESS TRAVEL PER CBC SECTION 1011.1

5. CORRIDORS SHALL BE FIRE RESISTANCE RATED IN ACCORDANCE WITH CBC TABLE 1018.1. THE CORRIDOR WALLS REQUIRED TO BE FIRE RATED SHALL COMPLY WITH SECTION 703 FOR RATED CONSTRUCTION. FOR FIRE PARTITIONS, A FIRE -RESISTANCE RATING IS NOT REQUIRED FOR CORRIDORS IN A GROUP B OCCUPANCY WHEN THE SPACE COMPLIES WITH CBC TABLE 1015.1 REQUIRING ONLY A SINGLE MEAN OF EGRESS.

6. DEAD ENDS: WHEN MORE THAN ONE EXIT OR EXIT ACCESS DOORWAY IS REQUIRED EXIT ACCESS SHALL BE ARRANGED SUCH THAT THERE ARE NO DEAD ENDS IN CORRIDORS MORE THAN 20 FEET IN LENGTH PER CBC SECTION 1018.4.

   A. IN GROUP B, E, F, M, R-1, R-2, R-2.1, R-4, S AND U OCCUPANCIES WHERE BUILDING IS EQUIPPED THROUGH OUT WITH AN AUTOMATIC SPRINKLER IN ACCORDANCE WITH CBC SECTION 903.3.1.1, THE LENGTH OF DEAD END CORRIDORS SHALL NOT EXCEED 50 FEET PER CBC SECTION 1018.4 EXCEPTION 2.

   B. A DEAD END CORIDOR SHALL NOT BE LIMITED IN LENGTH WHERE THE LENGTH OF DEAD END CORRIDOR IS LESS THAN 2.5 TIMES THE LEAST WIDTH OF THE DEAD END CORRIDOR PER CBC SECTION 1018.4 EXCEPTION 3.

MECHANICAL, PLUMBING & ELECTRICAL

1. PROVIDE AND LOCATE, AFTER APPROVAL BY ARCHITECT, ACCESS DOORS OR PANELS IN CEILING AND WALL CONSTRUCTION AS REQUIRED BY INSTALLATION OF MECHANICAL, FIRE SPRINKLER, PLUMBING, AND ELECTRICAL WORK IN ADDITION TO THOSE SHOWN ON THE DRAWINGS.

2. CONTRACTOR SHALL VERIFY SIZE AND LOCATIONS OF ALL MECHANICAL EQUIPMENT PLATFORMS AND BASES AS WELL AS POWER AND WATER OR DRAIN INSTALLATIONS WITH EQUIPMENT MANUFACTURERS PRIOR TO PROCEEDING WITH THE WORK. CHANGES TO ACCOMMODATE FIELD CONDITIONS OR CONTRACTORS SUBSTITUTIONS SHALL BE MADE WITHOUT ADDITIONAL CHARGE TO OWNER.

3. MECHANICAL AND ELECTRICAL CONTRACTORS SHALL VERIFY SIZE, SHAPE, AND LOCATION OF HOUSEKEEPING PADS FOR THEIR EQUIPMENT. ANY FIELD CHANGES SHALL BE MADE WITHOUT ADDITIONAL CHARGE TO THE OWNER.

4. WHERE RESTROOMS ARE PROVIDED, MECHANICAL VENTILATION SHALL BE PROVIDED TO ENSURE AN AIR CHANGE EVERY FIVE MINUTES.

5. IN WAREHOUSE AREAS, PROVIDE VENTILATION TO ENSURE MINIMUM CODE REQUIRED AIR CHANGES PER HOUR ARE MET. REFER ROOF PLAN FOR VENTED SKYLIGHTS / SMOKE HATCHES.

FIRE PROTECTION

1. PROVIDE FIRE PROTECTION FOR BUILDING UNDER CONSTRUCTION PER REQUIREMENTS OF LOCAL GOVERNING AGENCIES.

2. PROVIDE AND INSTALL MATERIALS FOR FIRE PROTECTION OF THE STRUCTURAL ASSEMBLIES OF THIS BUILDING TYPE, AS REQUIRED BY THE BUILDING CODE.

3. WHERE REQUIRED BY CODE, CORRIDORS, ELEVATOR LOBBIES, AND ELECTRICAL ROOMS SHALL BE OF ONE-HOUR CONSTRUCTION THROUGHOUT.

4. DOORS OPENING INTO ONE-HOUR FIRE-RESISTIVE CORRIDORS SHALL BE PROTECTED WITH SMOKE AND DRAFT CONTROL FIRE ASSEMBLIES HAVING A MINIMUM 20-MINUTE RATING WITH SELF-CLOSERS.

5. EXIT STAIR ENCLOSURES SHALL BE OF MIN. ONE-HOUR FIRE-RESISTIVE CONSTRUCTION. ALL DOORS OPENING INTO STAIR ENCLOSURES SHALL BE PROTECTED BY ONE-HOUR SELF-CLOSING FIRE RATED ASSEMBLIES.

6. PROVIDE AND INSTALL FIRE DAMPERS WHERE AIR DUCTS PENETRATE FIRE-RATED WALLS OR CEILINGS WHERE REQUIRED BY CODE OR LOCAL GOVERNING AGENCY.

7. WHERE NONCOMBUSTIBLE CONDUIT, PIPES, OR VENTS PENETRATE A FIRE-RATED ASSEMBLY PROVIDE AND INSTALL APPROVED FIRE-RATED SEALANT OF MINERAL WOOL FIBER TO DRAFTSTOP AND MAINTAIN THE FIRE SAFE INTEGRITY OF THE ASSEMBLY.

8. RETURN AIR PLENUMS BETWEEN FLOOR OR ROOF ASSEMBLIES AND SUSPENDED CEILINGS BELOW SHALL MEET THE FOLLOWING REQUIREMENTS.

   A. SHALL HAVE NO EXPOSED MATERIALS WITHIN THE PLENUM WITH A FLAME SPREAD RATING MORE THAN 25 AND A SMOKE DEVELOPED RATING MORE THAN 50.

   B. ALL WIRING IN PLENUMS SHALL BE IN NONCOMBUSTIBLE CONDUIT.

   C. WHERE GYPSUM PRODUCTS ARE EXPOSED WITHIN THE PLENUM, AIR TEMPERATURE SHALL BE RESTRICTED TO A RANGE OF NOT LESS THAN 50 NOR MORE THAN 125 DEGREES FAHRENHEIT, AND MOISTURE CONTENT CONTROLLED, SO THAT THESE PRODUCTS ARE NOT ADVERSELY AFFECTED.

   D. ALL EXPOSED COMBUSTIBLE FRAMING MEMBERS AND FINISH SURFACES WITHIN RETURN AIR PLENUMS SHALL BE COVERED WITH A MINIMUM OF ONE LAYER 1/2" TYPE 'X' GYPSUM BOARD SECURELY NAILED OR OTHERWISE FASTENED PER APPLICABLE CODE. PROVIDE AND INSTALL ALL FURRING AND BLOCKING AND TAPE JOINTS AS REQUIRED.

   E. FIRE-RETARDANT WOOD PER BUILDING CODE MAY BE EXPOSED WITHOUT COVER IN RETURN AIR PLENUMS WHEN APPROVED BY BUILDING OFFICIAL.

9. FIREBLOCKING AND DRAFTSTOPPING SHALL BE INSTALLED IN COMBUSTIBLE CONCEALED LOCATION IN ACCORDANCE WITH CBC SECTION 703.1.1.

   A. IN OTHER THAN HIGH-RISE BUILDINGS, GROUP A,E,H,I AND L OCCUPANCIES AND OTHER APPLICATIONS LISTED IN SECTION 1.11 REGULATED BY THE OFFICE OF STATE FIRE MARSHAL, DRAFTSTOPPING IS NOT REQUIRED IN BUILDINGS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH CBC SECTION 903.3.1.1

10. INTERIOR WALL AND CEILING FINISHES SHALL BE OF THE FOLLOWING FLAME SPREAD CLASSIFICATION:

	FLAME SPREAD	SMOKE-DEVELOPED
CLASS A	0-25	0-450
CLASS B	26-75	0-450
CLASS C	76-200	0-450

11. INTERIOR FINISH REQUIREMENT BY OCCUPANCY PER CBC 803.9

		SPRINKLERED	NONSPRINKLERED
A-1 A-2	EXIT ENCLOSURE & EXIT PASSAGEWAY	CLASS B	CLASS A
	CORRIDORS	CLASS B	CLASS A
	ROOMS & ENCLOSED SPACES	CLASS C	CLASS B
A-3 A-4 A-5	EXIT ENCLOSURE & EXIT PASSAGEWAY	CLASS B	CLASS A
	CORRIDORS	CLASS B	CLASS A
	ROOMS & ENCLOSED SPACES	CLASS C	CLASS C
B E M R-1	EXIT ENCLOSURE & EXIT PASSAGEWAY	CLASS B	CLASS A
	CORRIDORS	CLASS C	CLASS B
	ROOMS & ENCLOSED SPACES	CLASS C	CLASS C
F	EXIT ENCLOSURE & EXIT PASSAGEWAY	CLASS C	CLASS B
	CORRIDORS	CLASS C	CLASS C
	ROOMS & ENCLOSED SPACES	CLASS C	CLASS C
H	EXIT ENCLOSURE & EXIT PASSAGEWAY	CLASS B	CLASS A
	CORRIDORS	CLASS B	CLASS A
	ROOMS & ENCLOSED SPACES	CLASS C	CLASS B
S	EXIT ENCLOSURE & EXIT PASSAGEWAY	CLASS C	CLASS B
	CORRIDORS	CLASS C	CLASS B
	ROOMS & ENCLOSED SPACES	CLASS C	CLASS C

12. WHERE REQUIRED OR SPECIFIED, PROVIDE AND INSTALL AN AUTOMATIC FIRE SPRINKLER SYSTEM AND ALARM. SPRINKLER SYSTEM PLANS SHALL BE SUBMITTED TO ARCHITECT FOR REVIEW AND APPROVAL OF SYSTEM LAYOUT AND HEADS PRIOR TO SUBMITTAL TO LOCAL AGENCIES FOR REVIEW AND ACCEPTANCE PRIOR TO INSTALLATION. SEPARATE PLAN CHECK AND PERMITS ARE REQUIRED. ANY CHANGES TO ACCOMMODATE FIELD CONDITIONS SHALL BE RESUBMITTED AT THE CONTRACTORS EXPENSE WITH NO ADDITIONAL CHARGE TO OWNER. WHERE ENUNCIATOR PANELS, ALARMS, ETC. ARE REQUIRED IN AN EXPOSED LOCATION, CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS & CABINET/COVER PLATE FINISHES TO ARCHITECT FOR REVIEW AND ACCEPTANCE PRIOR TO INSTALLATION.

13. PROVIDE PORTABLE FIRE EXTINGUISHERS OF TYPE, QUANTITY, AND LOCATION DETERMINED BY FIRE DEPARTMENT INSPECTOR AND PER CBC SECTION 906 (TABLE 906.1).

14. PROVIDE AND INSTALL WET OR DRY STANDPIPES AS REQUIRED BY CODE AND THE LOCAL FIRE DEPARTMENT.

15. PROVIDE AND INSTALL OUTSIDE GAS SHUT-OFF VALVE AND SIGNS IDENTIFYING MAIN GAS AND ELECTRICAL SHUT-OFFS PER DIRECTION OF LOCAL FIRE DEPARTMENT.

16. PROVIDE SMOKE DETECTORS, DUCT DETECTORS AND OTHER SUCH DETECTION DEVICES PER CBC SECTION 907 AND GOVERNING AUTHORITIES HAVING JURISDICTION.

17. PROVIDE ALL PAINTING OR MARKING, INCLUDING BUT NOT LIMITED TO, RED CURBS OR ROOF ADDRESSES AS REQUIRED BY FIELD INSPECTOR OR LOCAL GOVERNING JURISDICTION.

18. ALL FIRE-RATED DOORS SHALL HAVE GASKETS AT HEAD & JAMBS TO PROVIDE SMOKE SEAL.

19. ON SITE FIRE HYDRANTS AND UNDERGROUND MAINS SHALL BE SUBMITTED TO THE GOVERNING JURISDICTION BY THE FIRE PROTECTION SYSTEM CONTRACTOR FOR REVIEW AND APPROVAL.

20. AUTOMATIC SPRINKLER SYSTEMS AUTOMATIC SPRINKLER SYSTEMS SHALL BE MONITORED BY AN APPROVED SUPERVISING STATION PER CBC SECTION 903.4.1.

21. ALL DETAILS OF THE FIRE ALARM, FIRE SPRINKLERS, FIRE PUMP, SMOKE CURTAINS OR UNDERGROUND FIRE MAINS ARE CONSIDERED NOT WITHIN THE SCOPE OF THIS CONSTRUCTION PLAN REVIEW. DETAILS, PLANS OF THESE MUST BE SUBMITTED FOR REVIEW UNDER SEPARATE FIRE DEPARTMENT CONSTRUCTION PERMIT PRIOR TO INSTALLATION.

22. PROVIDE MASTER KEY KNOX-BOX AT EACH BUILDING ENTRY IN ACCORDANCE WITH FIRE DEPARTMENT. REFER TO THE SITE PLANS FOR LOCATIONS

23. PROVIDE A KNOX-BOX AT EACH SWING AND ROLLING GATE.

24. BUILDING ADDRESS SHALL BE OF A SIZE AS TO BE VISIBLE AND LEGIBLE FROM THE STREET FRONTING THE PROPERTY, PER LOCAL GOVERNING ORDINANCES.

25. TRASH ENCLOSURES OR COMPACTORS LOCATED ADJACENT TO BUILDING SHALL BE FIRE SPRINKLERED. SEE FIRE PROTECTION PLANS.

DISABLED ACCESSIBILITY

ACCESS FOR PERSONS WITH DISABILITIES SHALL COMPLY WITH CHAPTER 11A AND 11B FOR ACCESSIBILITY. ALL EXITS REQUIRED BY CHAPTER 10 MUST BE ACCESSIBLE BY PERSONS WITH DISABILITIES OR THAT A SAFE AREA FOR EVACUATION ASSISTANCE IS REQUIRED.

1. PARKING STALLS:

   A. CAR AND VAN PARKING SPACES SHALL BE 216" (18') LONG MINIMUM. CAR PARKING SPACES SHALL BE MINIMUM 108" (9') WIDE AND A VAN PARKING SHALL BE 144" (12') WIDE MINIMUM PER CBC SECTION 11B-502.2.

   B. VAN PARKING SPACES SHALL BE PERMITTED TO BE 108" (9') PROVIDED A 96" (8') ACCESS AISLE IS PROVIDED PER CBC SECTION 11B-502.2 EXCEPTION.

   C. ACCESS AISLES MAY BE BETWEEN TWO STALLS AND SERVE BOTH PER CBC SECTION 11B-502.3.

   D. PARKING SPACES AND ACCESS AISLES SERVING THEM SHALL COMPLY WITH CBC SECTION 11B-302. ACCESS AISLES SHALL BE AT THE SAME LEVEL AS THE PARKING SPACES THEY SERVE. CHANGES IN LEVEL ARE NOT PERMITTED. EXCEPTION: MAXIMUM SLOPE: 2% (1:48) IN ANY DIRECTION PER CBC SECTION 11B-502.4

2. PARKING STALL MARKING:

   A. EACH ACCESSIBLE CAR AND VAN SPACE SHALL HAVE A SURFACE IDENTIFICATION COMPLYING WITH EITHER CBC SECTIONS 11B-502.6.4.1 OR 11B-502.6.4.2.

      (1). THE PARKING SPACE SHALL BE MARKED WITH AN "INTERNATIONAL SYMBOL OF ACCESSIBILITY" IN WHITE ON A BLUE BACKGROUND A MINIMUM 36"W x 36"H, MAXIMUM 6" FROM CENTERLINE OF THE PARKING SPACE, PARALLEL TO THE LENGTH OF THE PARKING SPACE AND IT'S LOWER CORNER AT OR LOWER SIDE ALIGNED WITH, THE END OF THE PARKING SPACE [SECTION 11B-502.6.4.1].

      (2) THE PARKING SPACE SHALL BE OUTLINED OR PAINTED BLUE AND SHALL BE MARKED BY THE "INTERNATIONAL SYMBOL OF ACCESSIBILITY" WITH A MINIMUM 36"W x 36"H IN WHITE OR A SUITABLE CONTRASTING COLOR [SECTION 11B-502.6.4.2].

   B. EACH ACCESSIBLE PARKING SPACE SHALL BE IDENTIFIED WITH A REFLECTORIZED SIGN WITH A MINIMUM AREA OF 70 SQUARE INCHES AND SHALL BE PERMANENTLY POSTED IMMEDIATELY ADJACENT TO THE PARKING SPACE OR WITHIN THE PROJECTED PARKING SPACE WIDTH AT THE HEAD OF THE PARKING SPACE. WHEN IN A PATH OF TRAVEL, SHALL BE POSTED AT A MINIMUM HEIGHT OF 80" FROM THE BOTTOM OF THE SIGN TO THE PARKING SPACE FINISHED GRADE. SIGNS MAY ALSO BE CENTERED ON THE WALL AT THE INTERIOR END OF THE PARKING SPACE. CBC SECTION 11B-502.6

3. UNAUTHORIZED VEHICLE SIGN:
   AN ADDITIONAL SIGN SHALL ALSO BE POSTED IN A CONSPICUOUS PLACE AT EACH ENTRANCE TO OFF-STREET PARKING FACILITIES OR IMMEDIATELY ADJACENT TO AND VISIBLE FROM EACH ACCESSIBLE STALL OR SPACE. THE SIGN SHALL NOT BE LESS THAN 17" X 22" IN SIZE WITH LETTERING NOT LESS THAN 1" IN HEIGHT, AND SHALL CLEARLY AND CONSPICUOUSLY STATE THE FOLLOWING:

   "UNAUTHORIZED VEHICLES PARKED IN DESIGNATED ACCESSIBLE SPACES NOT DISPLAYING DISTINGUISHING PLACARDS OR SPECIAL LICENCE PLATES ISSUED FOR PERSONS WITH DISABILITIES WILL BE TOWED AWAY AT THE OWNER'S EXPENSE. TOWED VEHICLES MAY BE RECLAIMED AT _____ OR BY TELEPHONING _____."

   PROVIDE ADDITIONAL SIGNAGE BELOW THE 70 SQUARE INCH SIGN FOR THE SYMBOL OF ACCESSIBILITY STATING: A. "MINIMUM FINE $250" PER CBC SECTION 11B-502.6.2.

   GENERAL CONTRACTOR TO OBTAIN & PROVIDE LOCATION & PHONE NUMBER(S) ON SIGN.

4. RAMPS ON ACCESSIBLE ROUTES:

   A. TOP LANDINGS SHALL BE 60" (5') WIDE MINIMUM PER CBC SECTION 11B-405.7.2.1 AND BOTTOM LANDING SHALL EXTEND 72" (6') MINIMUM IN THE DIRECTION OF RAMP RUN PER CBC SECTION 11B-405.7.3.1.

   B. RAMPS SHALL HAVE A MAXIMUM 2% (1:48) SLOPE PER CBC SECTION 11B-405.7.1.

   C. CURB RAMP FLARED SIDES: MAXIMUM 10% (1:10) SLOPE PER CBC SECTION 11B-406.2.2.

   D. CURB RAMPS SHALL HAVE A 12" WIDE GROOVED BORDER AT TOP OF RAMP AND ALONG THE OUTSIDE EDGES OF THE FLARED SIDES WITH 1/4" WIDE x 1/4" DEEP AT 3/4" ON CENTER PER CBC SECTION 11B-406.5.11..

5. RAMPS TO BUILDING SHALL COMPLY WITH CBC SECTION 11B-405.

   A. THE MINIMUM CLEAR WIDTH SHALL BE 48" PER CBC SECTION 11B-405.5.

   B. SLOPE SHALL BE 1:12 MAXIMUM WITH A MAXIMUM 2.0% (1:48) CROSS SLOPE PER CBC SECTION 11B-405.2 & 11B-405.3.

   C. HANDRAILS SHALL BE PROVIDED AT EACH SIDE OF THE RAMPS PER CBC SECTION 11B-505. HEIGHT OF HANDRAIL SHALL BE ±34" MINIMUM AND 38" MAXIMUM VERTICALLY ABOVE WALKING SURFACE PER CBC SECTION 11B-505.4.

   D. WARNING CURB 6" HIGH REQUIRED WHERE DROP-OFF AT SIDE EXCEEDS 4".

   E. REQUIRED RAMPS SHALL HAVE A CURB AT LEAST 2" HIGH, OR BARRIER ON EACH SIDE OF RAMP LANDING THAT PREVENTS THE PASSAGE OF A 4" DIAMETER SPHERE PER CBC SECTION 11B-405.9.2.

   F. LANDINGS:

      1.) TOP: MINIMUM 60" SQUARE OR 42"+ DOOR WIDTH LONG BY 60" WIDE WHERE DOOR ENCROACHES PER CBC SECTION 11B-405.7.2.1 & 11B-405.7.5.

      2.) INTERMEDIATE: 60" LONG AT STRAIGHT RAMP, 72" LONG AT CHANGE IN DIRECTION OVER 30 DEGREES MAXIMUM CHANGE IN ELEVATION BETWEEN LANDINGS TO BE 30" PER CBC SECTION 11B-405.7.4.

6. STAIRS AND HANDRAILS PER BUILDING CODE WITH THE FOLLOWING FEATURES:

   A. TREADS: SMOOTH WITH ROUNDED OR CHAMFERED EDGES AT TOP AND BOTTOM OF NOSING.

   B. NOSING: TO EXTEND A MAXIMUM OF 1" BEYOND FACE OF RISER.

   C. RISERS: TO BE CLOSED. 7" MAXIMUM HEIGHT.

   D. HANDRAILS: HANDRAIL HEIGHT FOR PERSONS WITH DISABILITIES IS 34" TO 38" ABOVE NOSING. EXTEND 12" BEYOND TOP NOSING, 12" PLUS ONE TREAD WIDTH BEYOND BOTTOM NOSING AT EACH FLIGHT. RETURN EXTENSION TO FACE OF INTERSECTING WALL WHERE IT WOULD BE HAZARDOUS IF STRAIGHT.

   E. PROVIDE A 2" WIDE STRIP OF EQUALLY SLIP-RESISTANT MATERI

CITY OF LOS ANGELES
DEPARTMENT OF BUILDING AND SAFETY

INFORMATION BULLETIN / PUBLIC - BUILDING CODE

REFERENCE NO.: LABC Sec.11B-208,11B-228.3,11B-502, 11B-812,1113A,1138A — Effective: 01/01/2017
DOCUMENT NO.: P/BC 2017-084 — Revised: 07/01/2018
Previously Issued As: P/BC 2014-084

ACCESSIBILITY DETAILS FOR PARKING

WHERE ACCESSIBLE PARKING IS REQUIRED.

Where parking spaces are provided, parking spaces shall be provided in accordance with *Section 11B-208*.

Exception: Parking spaces used exclusively for buses, trucks, other delivery vehicles, or vehicular impound shall not be required to comply with *Section 11B-208* provided that lots accessed by the public are provided with a passenger drop-off and loading zone complying with *Section 11B-503*.

Minimum number. Parking spaces complying with *Section 11B-502* shall be provided in accordance with Table *11B-208.2* except as required by *Sections 11B-208.2.1, 11B-208.2.2*, and *11B-208.2.3*. Where more than one parking facility is provided on a site, the number of accessible spaces provided on the site shall be calculated according to the number of spaces required for each parking facility.

Hospital outpatient facilities. Ten percent of patient and visitor parking spaces provided to serve hospital outpatient facilities, *and free-standing buildings providing outpatient clinical services of a hospital*, shall comply with *Section 11B-502*.

Rehabilitation facilities and outpatient physical therapy facilities. Twenty percent of patient and visitor parking spaces provided to serve rehabilitation facilities specializing in treating conditions that affect mobility and outpatient physical therapy facilities shall comply with *Section 11B-502*.

Residential facilities. Parking spaces provided to serve residential facilities shall comply with *Section 11B-208.2.3*.

Parking for guests, employees, and other non-residents. Where parking spaces are provided for persons other than residents, parking shall be provided in accordance with Table 11B-208.2.

Requests for accessible parking spaces. When assigned parking is provided, designated accessible parking for the adaptable residential dwelling units shall be provided on requests of residents with disabilities on the same terms and with the full range of choices (e.g., off-street parking, carport or garage) that are available to other residents.

Van parking spaces. For every six or fraction of six parking spaces required by Section 11B-208.2 to comply with Section 11B-502, at least one shall be a van parking space complying with Section 11B-502.

Location. Parking facilities shall comply with Section 11B-208.3.

General. Parking spaces complying with Section 11B-502 that serve a particular building or facility shall be located on the shortest accessible route from parking to an entrance complying with Section 11B-206.4. Where parking serves more than one accessible entrance, parking spaces complying with Section 11B-502 shall be dispersed and located on the shortest accessible route to the accessible entrances. In parking facilities that do not serve a particular building or facility, parking spaces complying with Section 11B-502 shall be located on the shortest accessible route to an accessible pedestrian entrance of the parking facility.

Exceptions:
1. All van parking spaces shall be permitted to be grouped on one level within a multi-story parking facility.
2. Parking spaces shall be permitted to be located in different parking facilities if substantially equivalent or greater accessibility is provided in terms of distance from an accessible entrance or entrances, parking fee, and user convenience.

TOTAL NUMBER OF PARKING SPACES PROVIDED IN PARKING FACILITY	MINIMUM NUMBER OF REQUIRED ACCESSIBLE PARKING SPACES
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1000	2 percent of total
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000

TABLE 11B-208.2 PARKING SPACES

PASSENGER DROP-OFF AND LOADING ZONES

General. Passenger drop-off and loading zones shall comply with Section 11B-503.

Vehicle pull-up space. Passenger drop-off and loading zones shall provide a vehicular pull-up space 96 inches wide minimum and 20 feet long minimum.

Access aisle. Passenger drop-off and loading zones shall provide access aisles complying with Section 11B-503 adjacent and parallel to the vehicle pull-up space. Access aisles shall adjoin an accessible route and shall not overlap the vehicular way.

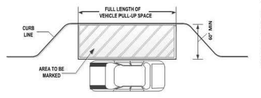


FIGURE 11B-503.3
PASSENGER DROP-OFF AND LOADING ZONE ACCESS AISLE

Width. Access aisles serving vehicle pull-up spaces shall be 60 inches wide minimum.

Length. Access aisles shall extend the full length of the vehicle pull-up spaces they serve.

Marking. Access aisles shall be marked with a painted borderline around their perimeter. The area within the borderlines shall be marked with hatched lines a maximum of 36 inches on center in a color contrasting with that of the aisle surface.

Floor and ground surfaces. Vehicle pull-up spaces and access aisles serving them shall comply with Section 11B-302. Access aisles shall be at the same level as the vehicle pull-up space they serve. Changes in level are not permitted.
Exception: Slopes not steeper than 1:48 shall be permitted.

Vertical clearance. Vehicle pull-up spaces, access aisles serving them, and a vehicular route from an entrance to the passenger loading zone and from the passenger drop-off and loading zone to a vehicular exit shall provide a vertical clearance of 114 inches minimum.

Identification. Each passenger loading zone designated for persons with disabilities shall be identified with a reflectorized sign complying with Section 11B-703.5. It shall be permanently posted immediately adjacent to and visible from the passenger loading zone stating "Passenger Loading Zone Only" and including the International Symbol of Accessibility complying with Section 11B-703.7.2.1 in white on a dark blue background.

Medical care and long-term care facilities. At least one passenger drop-off and loading zone complying with Section 11B-503 shall be provided at an accessible entrance to licensed medical care and licensed long-term care facilities where the period of stay may exceed twenty-four hours.

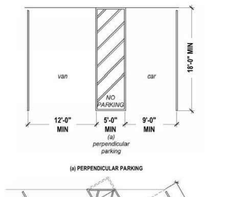


FIGURE 11B-502.2 VEHICLE PARKING SPACES

Valet parking. Parking facilities that provide valet parking services shall provide at least one passenger loading zone complying with Section 11B-503. The parking requirements of Section 11B-208.1 apply to facilities with valet parking.

Mechanical access parking garages. Mechanical access parking garages shall provide at least one passenger loading zone complying with Section 11B-503 at vehicle drop-off and vehicle pick-up areas.

PARKING SPACES

General. Car and van parking spaces shall comply with Section 11B-502. Where parking spaces are marked with lines, width measurements of parking spaces and access aisles shall be made from the centerline of the markings.
Exception: Where parking spaces or access aisles are not adjacent to another parking space or access aisle, measurements shall be permitted to include the full width of the line defining the parking space or access aisle.

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.

Vehicle spaces. Car and van parking spaces shall be 216 inches (18 feet) long minimum. Car parking spaces shall be 108 inches (9 feet) wide minimum and van parking spaces shall be 144 inches (12 feet) wide minimum, shall be marked to define the width, and shall have an adjacent access aisle complying with Section 11B-502.3.
Exception: Van parking spaces shall be permitted to be 108 inches (9 feet) wide minimum where the access aisle is 96 inches (8 feet) wide minimum.

Access aisle. Access aisles serving parking spaces shall comply with Section 11B-502.3. Access aisles shall adjoin an accessible route. Two parking spaces shall be permitted to share a common access aisle.

Width. Access aisles serving car and van parking spaces shall be 60 inches (5 feet) wide minimum.

Length. Access aisles shall extend the full required length of the parking spaces they serve.

Marking. Access aisles shall be marked with a blue painted borderline around their perimeter. The area within the blue borderlines shall be marked with hatched lines a maximum of 36 inches (3 feet) on center in a color contrasting with that of the aisle surface, preferably blue or white. The words "NO PARKING" shall be painted on the surface within each access aisle in white letters a minimum of 12 inches (1 foot) in height and located to be visible from the adjacent vehicular way. Access aisle markings may extend beyond the minimum required length.

Location. Access aisles shall not overlap the vehicular way. Access aisles shall be permitted to be placed on either side of the parking space except for van parking spaces which shall have access aisles located on the passenger side of the parking spaces.

Floor or ground surfaces. Parking spaces and access aisles serving them shall comply with Section 11B- 302. Access aisles shall be at the same level as the parking spaces they serve. Changes in level are not permitted.
Exception: Slopes not steeper than 1:48 shall be permitted.

Vertical clearance. Parking spaces, access aisles and vehicular routes serving them shall provide a vertical clearance of 98 inches (2489 mm) minimum.

Identification. Parking space identification signs shall include the International Symbol of Accessibility complying with Section 11B-703.7.2.1. Signs identifying van parking spaces shall contain additional language or an additional sign with the designation "van accessible." Signs shall be 60 inches (5 feet) minimum above the finish floor or ground surface measured to the bottom of the sign.
Exception: Signs located within an accessible route shall be a minimum of 80 inches (6 feet, 8 inches) above the finish floor or ground surface measured to the bottom of the sign.

Finish and size. Parking identification signs shall be reflectorized with a minimum area of 70 square inches.

Minimum fine. Additional language or an additional sign below the International Symbol of Accessibility shall state "Minimum Fine $250."

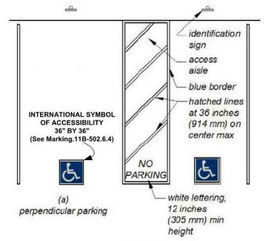
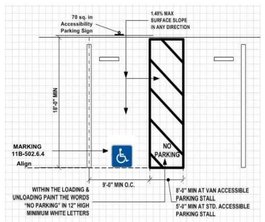


FIGURE 11B-502.3.3
PERPENDICULAR PARKING IDENTIFICATION



VAN PARKING SPACES SHALL BE PERMITTED TO BE 108 INCHES (9 FEET) WIDE MINIMUM WHERE THE ACCESS AISLE IS 96 INCHES (8 FEET) WIDE MINIMUM.

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.

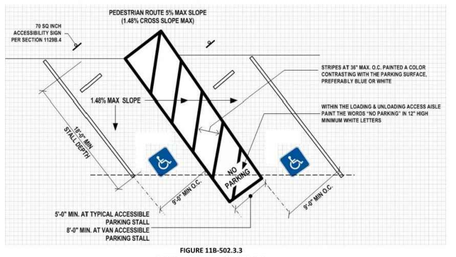


FIGURE 11B-502.3.3
ANGLED PARKING IDENTIFICATION

Location. A parking space identification sign shall be visible from each parking space. Signs shall be permanently posted either immediately adjacent to the parking space or within the projected parking space width at the head end of the parking space. Signs may also be permanently posted on a wall at the interior end of the parking space.

Marking. Each accessible car and van space shall have surface identification complying with either Sections 11B-502.6.4.1 or 11B-502.6.4.2.

The parking space shall be marked with an International Symbol of Accessibility complying with Section 11B-703.7.2.1 in white on a blue background a minimum 36 inches wide by 36 inches high. The centerline of the International Symbol of Accessibility shall be a maximum of 6 inches from the centerline of the parking space, its sides parallel to the length of the parking space and its lower corner at, or lower side aligned with, the end of the parking space length.

The parking space shall be outlined or painted blue and shall be marked with an International Symbol of Accessibility complying with Section 11B-703.7.2.1 a minimum 36 inches wide by 36 inches high in white or a suitable contrasting color. The centerline of the International Symbol of Accessibility shall be a maximum of 6 inches from the centerline of the parking space, its sides parallel to the length of the parking space and its lower corner at, or lower side aligned with, the end of the parking space.

Relationship to accessible routes. Parking spaces and access aisles shall be designed so that cars and vans, when parked, cannot obstruct the required clear width of adjacent accessible routes.

11B-502.7.1 Arrangement. Parking spaces and access aisles shall be designed so that persons using them are not required to travel behind parking spaces other than to pass behind the parking space in which they parked.

11B-502.7.2 Wheel stops. A curb or wheel stop shall be provided if required to prevent encroachment of vehicles over the required clear width of adjacent accessible routes.

11B-502.8 Additional signage. An additional sign shall be posted either;

1) In a conspicuous place at each entrance to an off-street parking facility or
2) Immediately adjacent to on-site accessible parking and visible from each parking space.

11B-502.8.1 Size. The additional sign shall not be less than 17 inches wide by 22 inches high.

11B-502.8.2 Lettering. The additional sign shall clearly state in letters with a minimum height of 1 inch the following:
"Unauthorized vehicles parked in designated accessible spaces not displaying distinguishing placards or special license plates issued for persons with disabilities will be towed away at the owner's expense. Towed vehicles maybe reclaimed at: _____ or by telephoning _____."
Blank spaces shall be filled in with appropriate information as a permanent part of the sign. (NOTE: **Towing Co.'s Name** and **Telephone Number** must be noted on the detail sheet/s on the plans).

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.

ACCESSIBLE PARKING SIGN INSTALLED AT EACH SPACE

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.

Electrical Vehicle Charging Stations

Electric vehicle charging stations (EVCS) shall comply with Section 11B-812 as required by Section 11B-228.3. Where vehicle spaces and access aisles are marked with lines, measurements shall be made from the centerline of the markings.

Exception: 11B-812.1

Operable parts shall comply with Section 11B-309.

Future installation of Electric Vehicle (EV) Chargers serving Covered Multifamily Dwellings shall be on accessible route per 1113A and shall be in compliance with section 1138A reach range requirements

Floor or ground surfaces. Vehicle spaces and access aisles serving them shall comply with Section 11B-302. Access aisles shall be at the same level as the vehicle space they serve. Changes in level, slopes exceeding 1:48, and detectable warnings shall not be permitted in vehicle spaces and access aisles.

Vertical clearance. Vehicle spaces, access aisles serving them, and vehicular routes serving them shall provide a vertical clearance of 98 inches (2489 mm) minimum. Where provided, overhead cable management systems shall not obstruct required vertical clearance.

Accessible route to building or facility.
EVCS complying with Section 11B-812 that serve a particular building or facility shall be located on an accessible route to an entrance complying with Section 11B-206.4. Where EVCS do not serve a particular building or facility, EVCS complying with Section 11B-812 shall be located on an accessible route to an accessible pedestrian entrance of the EV charging facility.

Exception: 11B-812.5.1

Accessible route to EV charger. An accessible route complying with Section 11B-402 shall connect the vehicle space and the EV charger which serves it.

Relationship to accessible routes. Vehicle spaces and access aisles shall be designed so that when the vehicle space is occupied the required clear width of adjacent accessible routes is not obstructed. A curb, wheel stop, bollards, or other barrier shall be provided if required to prevent encroachment of vehicles over the required clear width of adjacent accessible routes.

Arrangement. Vehicle spaces and access aisles shall be designed so that persons using them are not required to travel behind vehicle spaces or parking spaces other than the vehicle space in which their vehicle has been left to charge.
Exceptions: 11B-812.5.4

Obstructions. EVCS shall be designed so accessible routes are not obstructed by cables or other elements.

Vehicle spaces. Vehicle spaces serving van accessible, standard accessible, ambulatory and drive-up EVCS shall be 216 inches (5486 mm) long minimum and shall com ply with Sections 11B-812.6.1 through 11B-812.6.4 as applicable. All vehicle spaces shall be marked to define their width.

Exceptions: 11B-812.6

Van accessible. Vehicle spaces serving van accessible EVCS shall be 144 inches (3658 mm) wide minimum and shall have an adjacent access aisle complying with Section 11B-812.7.

Standard accessible. Vehicle spaces serving standard accessible EVCS shall be 108 inches (2743 mm) wide minimum and shall have an adjacent access aisle complying with Section 11B-812.7.

Ambulatory. Vehicle spaces serving ambulatory EVCS shall be 120 inches (3048 mm) wide minimum and shall not be required to have an adjacent access aisle.
Drive-up. Vehicle spaces serving drive-up EVCS shall be 204 inches (5182 mm) wide minimum and shall not be required to have an adjacent access aisle.

Access aisle. Access aisles shall adjoin an accessible route. Two vehicle spaces shall be permitted to share a common access aisle. Access aisles shall be 60 inches (1524 mm) wide minimum and shall extend the full required length of the vehicle spaces they serve.

Location. Access aisles at vehicle spaces shall not overlap the vehicular way and may be placed on either side of the vehicle space they serve except for van accessible spaces which shall have access aisles located on the passenger side of the vehicle spaces.

Marking. Access aisles at vehicle spaces shall be marked with a painted borderline around their perimeter. The area within the borderlines shall be marked with hatched lines a maximum of 36 inches (914 mm) on center. The color of the borderlines, hatched lines, and letters shall contrast with that of the surface of the access aisle. The blue color required for identification of access aisles for accessible parking shall not be used. Access aisle markings may extend beyond the minimum required length.

Lettering. The words "NO PARKING" shall be painted on the surface within each access aisle in letters a minimum of 12 inches (305 mm) in height and located to be visible from the adjacent vehicular way.

Identification signs. EVCS identification signs shall be provided in compliance with Section 11B-812.8.

Four or fewer. Where four or fewer total EVCS are provided, identification with an International Symbol of Accessibility (ISA) and sign identifying van accessible spaces shall not be required.

Five to twenty-five. Where five to twenty-five total EVCS are provided, one van accessible EVCS shall be identified by an ISA complying with Section 11B-703.7.2.1. The required standard accessible EVCS shall not be required to be identified with an ISA.

Twenty-six or more. Where twenty-six or more total EVCS are provided, all required van accessible and all required standard accessible EVCS shall be identified by an ISA complying with Section 11B-703.7.2.1.

Ambulatory. Ambulatory EVCS shall not be required to be identified by an ISA.

Drive-up. Drive-up EVCS shall not be required to be identified by an ISA.

Finish and size. Identification signs shall be reflectorized with a minimum area of 70 square inches (45 161 mm2).

Location. Required identification signs shall be visible from the EVCS it serves. Signs shall be permanently posted either immediately adjacent to the vehicle space or within the projected vehicle space width at the head end of the vehicle space. Signs identifying van accessible vehicle spaces shall contain the designation "van accessible." Signs shall be 60 inches (1525 mm) minimum above the finish floor or ground surface measured to the bottom of the sign. Signs located within an accessible route shall be 80 inches (2032 mm) minimum above the finish floor or ground surface measured to the bottom of the sign. Signs may also be permanently posted on a wall at the interior end of the vehicle space.

Surface marking. EVCS vehicle spaces shall provide surface marking stating "EV CHARGING ONLY" in letters 12 inches (305 mm) high minimum. The centerline of the text shall be a maximum of 6 inches (152 mm) from the centerline of the vehicle space and its lower corner at, or lower side aligned with, the end of the parking space length.

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.

Electric vehicle chargers
EV chargers shall comply with Section 11B-812.10.*Operable parts and charging cord storage shall comply with Section 11B-309.*

Point-of-sale devices. Where provided, point-of-sale devices shall comply with Sections 11B-707.2, 11B-707.3, 11B-707.7.2, and 11B-07.9.

Location. EV chargers shall be adjacent to, and within the projected width of, the vehicle space being served.

Exceptions:11B-812.10.4

TABLE 11B-208.3.2.1
ELECTRIC VEHICLE CHARGING STATIONS FOR PUBLIC USE AND COMMON USE

TOTAL NUMBER OF EVCS AT A FACILITY[1]	MINIMUM NUMBER (by type) OF EVCS REQUIRED TO COMPLY WITH SECTION 11B-812[1]		
	Van Accessible	Standard Accessible	Ambulatory
1 to 4	1	0	0
5 to 25	1	1	0
26 to 50	1	1	1
51 to 75	1	2	2
76 to 100	1	3	3
101 and over	1, plus 1 for each 300, or fraction thereof, over 100	3, plus 1 for each 60, or fraction thereof, over 100	3, plus 1 for each 50, or fraction thereof, over 100

1. Where an EV charger can simultaneously charge more than one vehicle, the number of EVCS provided shall be considered equivalent to the number of electric vehicles that can be simultaneously charged.

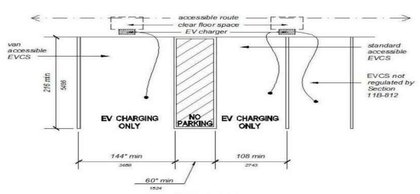


FIGURE 11B-812.9.
SURFACE MARKING

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.

INFORMATION BULLETIN / PUBLIC - BUILDING CODE

REFERENCE NO.: LABC Sec.11B-403,404,405, 408,504,505,802 — Effective: 01/01/2017
DOCUMENT NO.: P/BC 2017-085 — Revised:
Previously Issued As: P/BC 2014-085

ACCESSIBILITY DETAILS FOR RAMPS, STAIRS & ELEVATORS

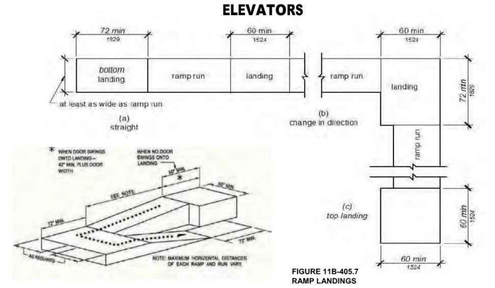
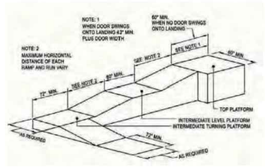
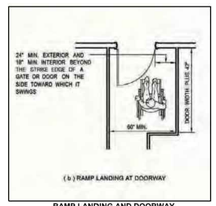


FIGURE 11B-405.7
RAMP LANDINGS

RAMP WITH INTERMEDIATE SWITCH-BACK PLATFORM



RAMP WITH TURNING PLATFORM



RAMP LANDING AND DOORWAY

THESE DIAGRAMS ILLUSTRATE THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

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MECHANICAL	RPM
PLUMBING	RPM
ELECTRICAL	RPM
LANDSCAPE	HUNTER
FIRE PROTECTION	-
SOILS ENGINEER	-

Title: ADA NOTES

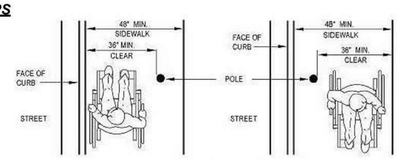
Project Number: 19415
Drawn by: DH
Date: 11/27/2019
Revision:

Sheet:
TI-A0.3.1

CITY OF LOS ANGELES
DEPARTMENT OF BUILDING AND SAFETY

THESE DIAGRAMS ILLUSTRATE THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

RAMPS



SIDEWALK OBSTRUCTIONS

11B-505.10.1 TOP AND BOTTOM EXTENSION AT RAMPS. Ramp handrails shall extend horizontally above the landing for 12 inches beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or landing surface, or shall be continuous to the handrail of an adjacent ramp run.

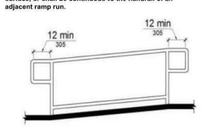


FIGURE *11B*-505.10.1
TOP AND BOTTOM HANDRAIL EXTENSION AT RAMPS

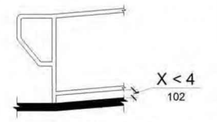
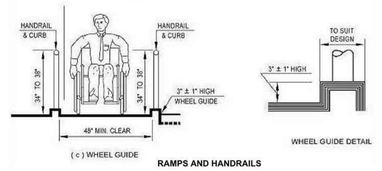


FIGURE *11B*-405.9.2
CURB OR BARRIER EDGE PROTECTION



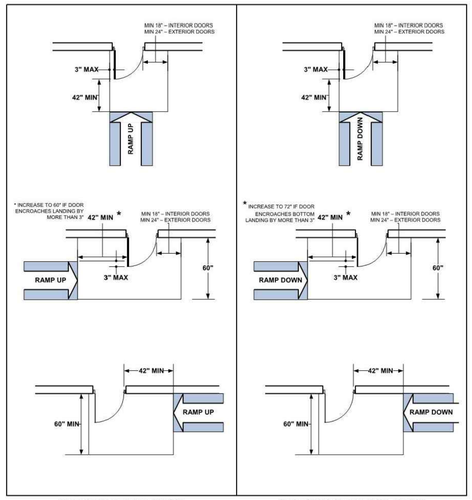
(c) WHEEL GUIDE

WHEEL GUIDE DETAIL

RAMPS AND HANDRAILS

THESE DIAGRAMS ILLUSTRATE THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

DOORWAYS AT RAMP LANDINGS

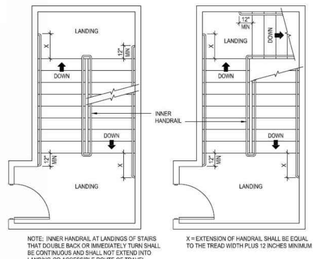


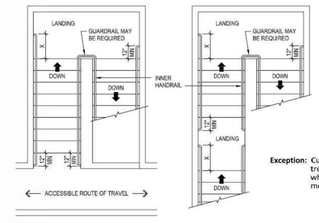
DOORWAYS AT TOP LANDING SPACE OF A RAMP

DOORWAYS AT BOTTOM LANDING SPACE OF A RAMP

THESE DIAGRAMS ILLUSTRATE THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

STAIRWAYS





Exception: Curved stairways with winder treads are permitted at stairs which are not part of a required means of egress.

11B-504 STAIRWAYS

THESE DIAGRAMS ILLUSTRATE THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

STAIRS

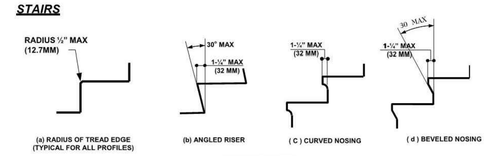


FIGURE 11B-504.5
STAIR NOSINGS

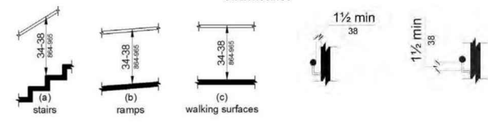


FIGURE 11B-505.4
HANDRAIL HEIGHT

FIGURE 11B-505.5
HANDRAIL CLEARANCE

FIGURE 11B-505.6
HORIZONTAL PROJECTIONS BELOW GRIPPING SURFACE

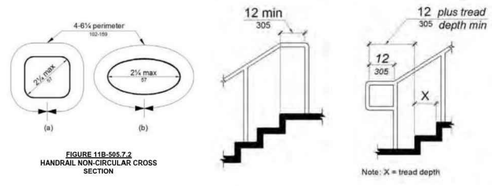


FIGURE 11B-505.7.2
HANDRAIL NON-CIRCULAR CROSS SECTION

FIGURE 11B-505.10.2
TOP HANDRAIL EXTENSION AT STAIRS

FIGURE 11B-505.10.3
BOTTOM HANDRAIL EXTENSION AT STAIRS

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ELEVATORS

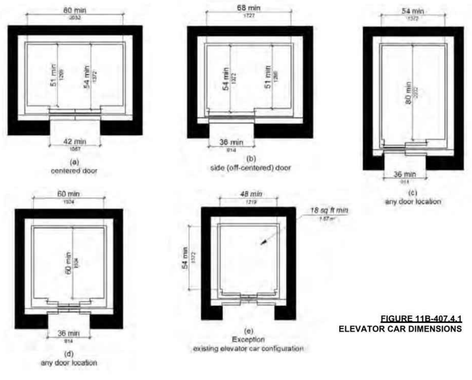

FIGURE 11B-407.4.1
ELEVATOR CAR DIMENSIONS

TABLE 11B-407.4.1
ELEVATOR CAR DIMENSIONS

MINIMUM DIMENSIONS				
DOOR LOCATION	DOOR CLEAR WIDTH	INSIDE CAR, SIDE TO SIDE	INSIDE CAR, BACK WALL TO FRONT RETURN	INSIDE CAR, BACK WALL TO INSIDE FACE OF DOOR
Centered	42 inches	80 inches	51 inches	54 inches
Side (off-centered)	36 inches	68 inches	51 inches	54 inches
Any	36 inches	54 inches	80 inches	80 inches
Any	36 inches	60 inches	60 inches	60 inches

1. A tolerance of minus 5/8 inch (15.9 mm) is permitted.
2. Other car configurations that provide a turning space complying with *Section 11B*-304 with the door closed shall be permitted.

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ELEVATORS

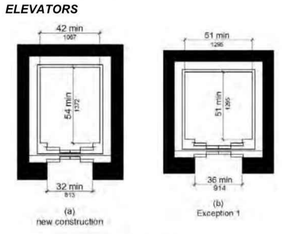


FIGURE *11B*-408.4.1
LIMITED-USE/LIMITED-APPLICATION (LULA) ELEVATOR CAR DIMENSIONS

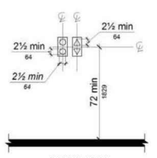


FIGURE 11B-407.2.2.2
VISIBLE HALL SIGNALS

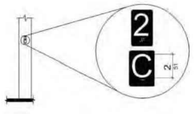


FIGURE 11B-407.2.3.2
CAR DESIGNATIONS ON JAMBS OF DESTINATION-ORIENTED ELEVATOR HOISTWAY ENTRANCES

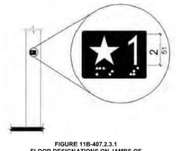


FIGURE 11B-407.2.3.1
FLOOR DESIGNATIONS ON JAMBS OF ELEVATOR HOISTWAY ENTRANCE

Door and signal timing. The minimum acceptable time from notification that a car is answering a call or notification of the car assigned at the means for the entry of destination information until the doors of that car start to close shall be calculated from the following equation:

T* = *D*/(1.5 ft/s)** or ***T* = *D*/(455 mm/s)** = 5 seconds minimum where ***T equals the total time in seconds and ***D*** equals the distance (in feet or millimeters) from the point in the lobby or corridor 60 inches (*1524* mm) directly in front of the farthest call button controlling that car to the centerline of its hoistway door. (11B-407.3.4)

Exceptions:
1. For cars with in-car lanterns, T shall be permitted to begin when the signal is visible from the point 60 inches (*1524* mm) directly in front of the farthest hall call button and the audible signal is sounded.
2. Destination-oriented elevators shall not be required to comply with *Section 11B*-407.3.4.

Door delay. Elevator doors shall remain fully open in response to a car call for 5 seconds minimum. (11B-407.3.5)

INFORMATION BULLETIN / PUBLIC - BUILDING CODE
REFERENCE NO.: LABC Sec. 11B-304,305,404 Effective: 01/01/2017
DOCUMENT NO.: **P/BC 2017-086** Revised: 07/01/2018
Previously Issued As: P/BC 2014-086

ACCESSIBILITY DETAILS
FOR DOORS, MANEUVERING SPACES & ROUTES

UNLESS SPECIFICALLY STATED OTHERWISE, FIGURES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. (11B-104.3 FIGURES)

(a) 60 INCHES DIAMETER SPACE

(b) T-SHAPED SPACE FOR 180° TURNS

WHEELCHAIR TURNING SPACE

FIGURE *11B*-304.3.2
T-SHAPED TURNING SPACE

Convention	Description
36 / 914	dimension showing English units (in inches unless otherwise specified) above the line and SI units (in millimeters unless otherwise specified) below the line
6 / 152	dimension for small measurements
33-36 / 838-914	dimension showing a range with minimum - maximum
min	minimum
max	maximum
>	greater than
≥	greater than or equal to
<	less than
≤	less than or equal to
	boundary of clear floor space or maneuvering clearance
	centerline
	a permitted element or its extension
	direction of travel or approach
	a wall, floor, ceiling or other element cut in section or plan
	a highlighted element in elevation or plan
	location zone of element, control or feature

FIGURE 11B-104
GRAPHIC CONVENTION FOR FIGURES

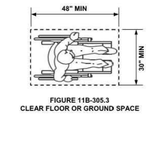


FIGURE 11B-305.3
CLEAR FLOOR OR GROUND SPACE

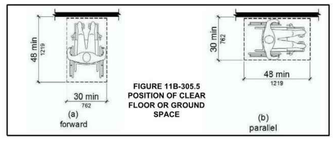
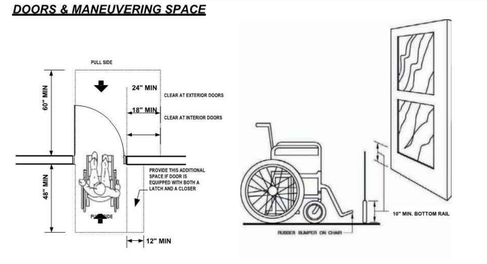


FIGURE 11B-305.5
POSITION OF CLEAR FLOOR OR GROUND SPACE

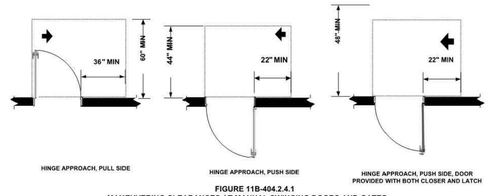
THESE DIAGRAMS ILLUSTRATE THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

DOORS & MANEUVERING SPACE



FRONT APPROACH

DOOR CONSTRUCTION



HINGE APPROACH, PULL SIDE

HINGE APPROACH, PUSH SIDE

HINGE APPROACH, PUSH SIDE, DOOR PROVIDED WITH BOTH CLOSER AND LATCH

FIGURE 11B-404.2.4.1
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES

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LICENSED ARCHITECT ROBERT MICHAEL HOSKINS STATE OF CALIFORNIA
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08-31-21
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Phase 1

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STRUCTURAL	HSA
MECHANICAL	RPM
PLUMBING	RPM
ELECTRICAL	RPM
LANDSCAPE	HUNTER
FIRE PROTECTION	-
SOILS ENGINEER	-

Title: ADA NOTES

Project Number: 19415
Drawn by: DH
Date: 11/27/2019
Revision:

Sheet:
TI-A0.3.2

CITY OF LOS ANGELES
DEPARTMENT OF BUILDING AND SAFETY

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DOORS & MANEUVERING SPACE

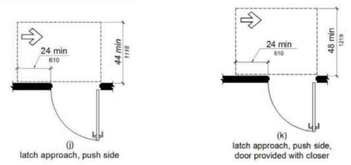

FIGURE *11B*-404.2.4.1—continued
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES

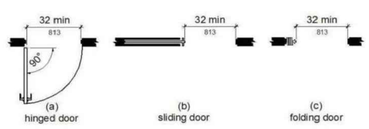

FIGURE 11B-404.2.3
CLEAR WIDTH OF DOORWAYS

TABLE 11B-404.2.4.1
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES

TYPE OF USE		MINIMUM MANEUVERING CLEARANCE	
APPROACH DIRECTION	DOOR or GATE SIDE	PERPENDICULAR TO DOORWAY	PARALLEL TO DOORWAY (beyond latch side unless noted)
From front	Pull	60 inches	18 inches[5]
From front	Push	48 inches	0 inches[1]
From hinge side	Pull	60 inches	36 inches
From hinge side	Push	44 inches	22 inches[3]
From latch side	Pull	60 inches	24 inches
From latch side	Push	44 inches	24 inches

1. ADD 12 INCHES IF CLOSER AND LATCH ARE PROVIDED.
2. ADD 4 INCHES IF CLOSER AND LATCH ARE PROVIDED.
3. BEYOND HINGE SIDE.
4. ADD 4 INCHES IF CLOSER IS PROVIDED.
5. ADD 6 INCHES AT EXTERIOR SIDE OF EXTERIOR DOORS.

THESE DIAGRAMS ILLUSTRATE THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

DOORS & MANEUVERING SPACE

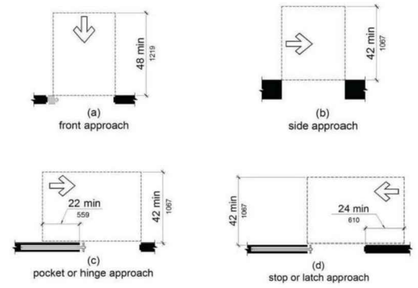

FIGURE 11B-404.2.4.2
MANEUVERING CLEARANCES AT DOORWAYS WITHOUT DOORS, SLIDING DOORS, GATES, AND FOLDING DOORS

TABLE 11B-404.2.4.2
MANEUVERING CLEARANCES AT DOORWAYS WITHOUT DOORS OR GATES
MANUAL SLIDING DOORS AND MANUAL FOLDING DOORS

	MINIMUM MANEUVERING CLEARANCE	
Approach direction	Perpendicular to doorway	Parallel to doorway (beyond stop/latch side unless noted)
From Front	48 inches	0 inches
From Side[1]	42 inches	0 inches
From pocket/hinge side	42 inches	22 inches
From stop/latch side	42 inches	24 inches

1. Doorway with no door only.
2. Beyond pocket/hinge side

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DOORS & MANEUVERING SPACE

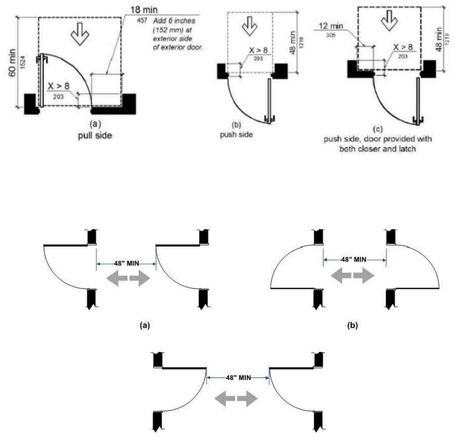


FIGURE 11B-404.2.6
DOORS IN SERIES AND GATES IN SERIES

THESE DIAGRAMS ILLUSTRATE THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

ACCESSIBLE ROUTES

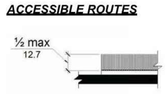


FIGURE *11B*-302.2
CARPET PILE HEIGHT

FIGURE *11B*-303.2
VERTICAL CHANGE IN LEVEL

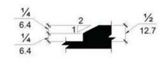
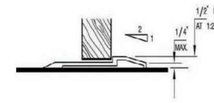
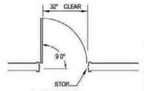


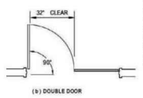
FIGURE *11B*-303.3
BEVELED CHANGE IN LEVEL

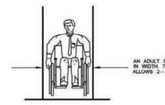


11B-404.2.5
THRESHOLDS, IF PROVIDED AT DOORWAYS, SHALL BE 1/2 INCH HIGH MAXIMUM. RAISED THRESHOLDS AND CHANGES IN LEVEL AT DOORWAYS SHALL COMPLY WITH SECTIONS 11B-302 AND 11B-303.



11B-404.2.3
Door openings shall provide a clear width of 32 inches minimum. Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees. Openings more than 24 inches deep shall provide a clear opening of 36 inches minimum. There shall be no projections into the required clear opening width lower than 34 inches above the finish floor or ground. Projections into the clear opening width between 34 inches and 80 inches above the finish floor or ground shall not exceed 4 inches.





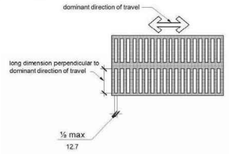
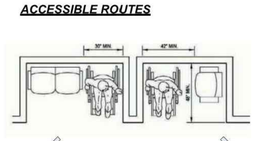


FIGURE *11B*-302.3
ELONGATED OPENINGS IN FLOOR OR GROUND SURFACES

THESE DIAGRAMS ILLUSTRATE THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

ACCESSIBLE ROUTES



11B-403.5.1
SEE CLEAR WIDTH AND EXCEPTIONS REQUIREMENTS

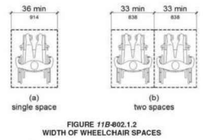


FIGURE *11B*-802.1.2
WIDTH OF WHEELCHAIR SPACES

FIGURE *11B*-802.1.3
DEPTH OF WHEELCHAIR SPACES

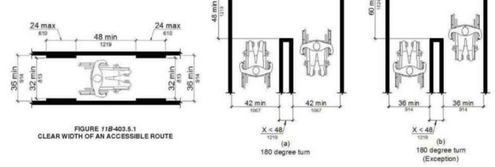
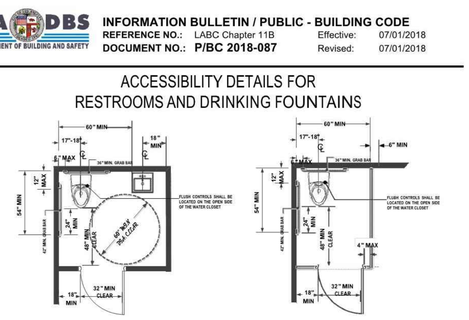


FIGURE *11B*-403.5.1
CLEAR WIDTH OF AN ACCESSIBLE ROUTE

FIGURE *11B*-403.5.2
CLEAR WIDTH AT TURN

INFORMATION BULLETIN / PUBLIC - BUILDING CODE
REFERENCE NO.: LABC Chapter 11B Effective: 07/01/2018
DOCUMENT NO.: P/BC 2018-087 Revised: 07/01/2018

ACCESSIBILITY DETAILS FOR RESTROOMS AND DRINKING FOUNTAINS



Doors shall not swing into the clear floor space or clearance required for any fixture. Other than the door to the accessible water closet compartment, a door in any position, may encroach into the turning space by 12 inches (305 mm) maximum. (11B-603.2.3)
Exceptions: (2) Where the toilet room or bathing room is for individual use and a clear floor space complying with Section 11B-305.3 is provided within the room beyond the arc of the door swing, doors shall be permitted to swing into the clear floor space or clearance required for any fixture.

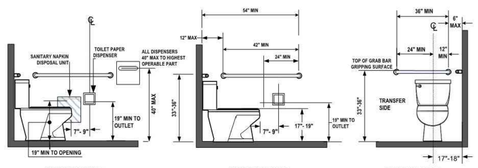


FIGURE 11B-604.7.1
DISPENSER OUTLET LOCATION

FIGURE 11B-604.7.2
DISPOSAL UNIT LOCATION

FIGURE 11B-604.5.1
SIDE WALL GRAB BAR AT WATER CLOSETS

FIGURE 11B-604.5.2
REAR WALL GRAB BAR AT WATER CLOSETS

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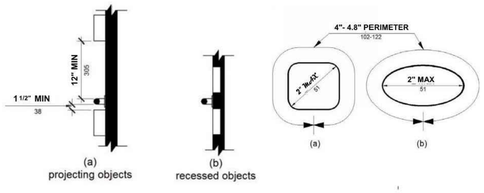


FIGURE *11B*-609.3
SPACING OF GRAB BARS

FIGURE *11B*-609.2.2
GRAB BAR NON-CIRCULAR CROSS SECTION

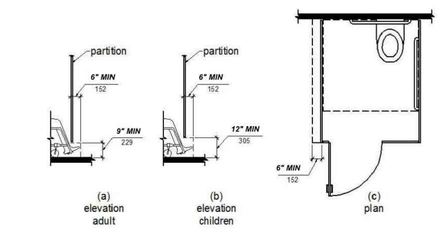
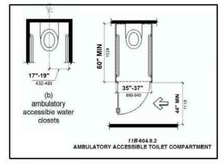


FIGURE *11B*-604.8.1.4
WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT TOE CLEARANCE

THESE DIAGRAMS ILLUSTRATE THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.



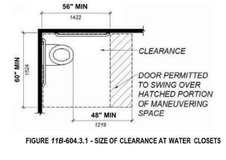


FIGURE *11B*-604.3.1 - SIZE OF CLEARANCE AT WATER CLOSETS

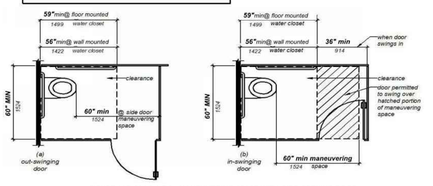


FIGURE 11B-604.8.1.1.2 - MANEUVERING SPACE WITH SIDE-OPENING DOOR

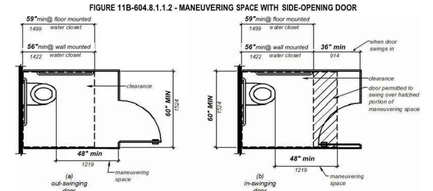


FIGURE 11B-604.8.1.1.3 - MANEUVERING SPACE WITH END-OPENING DOOR

HPA architecture
hpa, inc.
18831 bardeen avenue, - ste. #100
irvine, ca
92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

LICENSED ARCHITECT — ROBERT MICHAEL — C-22270 — 08-31-21 RENEWAL DATE — STATE OF CALIFORNIA

Owner:

20730 PRAIRIE ST.
CHATSWORTH, CA 91311

Project:
DAX3

Phase 1

20730 PRAIRIE ST.
CHATSWORTH. CA 91311

Consultants:

CIVIL	RA SMITH
STRUCTURAL	HSA
MECHANICAL	RPM
PLUMBING	RPM
ELECTRICAL	RPM
LANDSCAPE	HUNTER
FIRE PROTECTION	-
SOILS ENGINEER	-

Title: ADA NOTES

Project Number: 19415
Drawn by: DH
Date: 11/27/2019
Revision:

Sheet:
TI-A0.3.3

CITY OF LOS ANGELES
DEPARTMENT OF BUILDING AND SAFETY

THESE DIAGRAMS ILLUSTRATE THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

SINK / URINAL

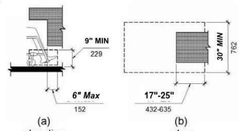


FIGURE 11B-306.2 - TOE CLEARANCE

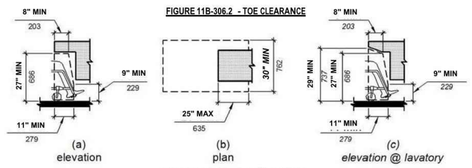


FIGURE 11B-306.3 - KNEE CLEARANCE

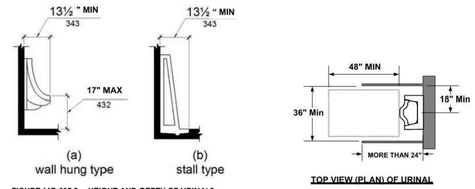


FIGURE 11B-605.2 - HEIGHT AND DEPTH OF URINALS

TOP VIEW (PLAN) OF URINAL

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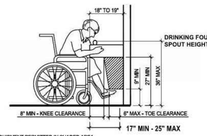


SEE FIGURE 11B-306.2 "TOE CLEARANCE"

SPOUT HEIGHT AND KNEE CLEARANCE AT DRINKING FOUNTAINS

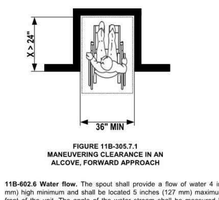
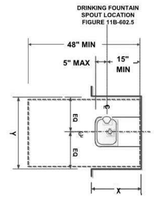


FIGURE 11B-305.7.1
MANEUVERING CLEARANCE IN AN ALCOVE, FORWARD APPROACH



CLEAR FLOOR SPACE AT "HI AND LOW" DRINKING FOUNTAIN WITHIN ALCOVES

NOTE:
IF X = 18" MIN. ALCOVE DEPTH, THEN Y = 32" MIN.
IF ALCOVE DEPTH (X) IS GREATER THAN 24", THEN ALCOVE WIDTH (Y) MUST BE MINIMUM OF 36" CLEAR.

11B-602.6 Water flow. The spout shall provide a flow of water 4 inches (102 mm) high minimum and shall be located 5 inches (127 mm) maximum from the front of the unit. The angle of the water stream shall be measured horizontally relative to the front face of the unit. Where spouts are located less than 3 inches (76 mm) of the front of the unit, the angle of the water stream shall be 30 degrees maximum. Where spouts are located between 3 inches (76 mm) and 5 inches (127 mm) maximum from the front of the unit, the angle of the water stream shall be 15 degrees maximum.

11B-602.7 Drinking fountains for standing persons. Spout outlets of drinking fountains for standing persons shall be 38 inches (965 mm) minimum and 43 inches (1092 mm) maximum above the finish floor or ground.

11B-602.8 Depth. Wall- and post-mounted cantilevered drinking fountains shall be 18 inches (457 mm) minimum and 19 inches (483 mm) maximum in depth.

11B-602.9 Pedestrian protection. All drinking fountains shall either be located completely within alcoves, positioned completely between wing walls, or otherwise positioned so as not to encroach into pedestrian ways. The protected area within which a drinking fountain is located shall be 32 inches (813 mm) wide minimum and 18 inches (457 mm) deep minimum, and shall comply with Section 11B-305.7. When used, wing walls or barriers shall project horizontally at least as far as the drinking fountain and to within 6 inches (152 mm) vertically from the floor or ground surface.

INFORMATION BULLETIN / PUBLIC - BUILDING CODE

REFERENCE NO.: LABC Sec. 11B-226.4, 307,308, 309,704,902 **Effective:** 01/01/2017

DOCUMENT NO.: **P/BC 2017-089** **Revised:** 01/29/2018

Previously Issued As: P/BC 2014-089

ACCESSIBILITY DETAILS FOR OBSTRUCTIONS, REACH RANGES, TELEPHONES & BABY CHANGING STATIONS

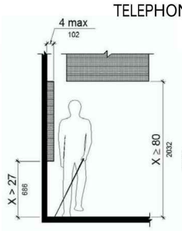


FIGURE 11B-307.2
LIMITS OF PROTRUDING OBJECTS

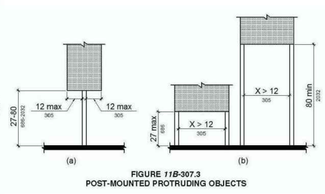


FIGURE 11B-307.3
POST-MOUNTED PROTRUDING OBJECTS

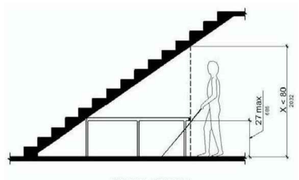
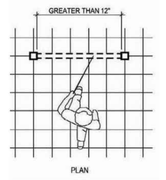


FIGURE 11B-307.4
VERTICAL CLEARANCE



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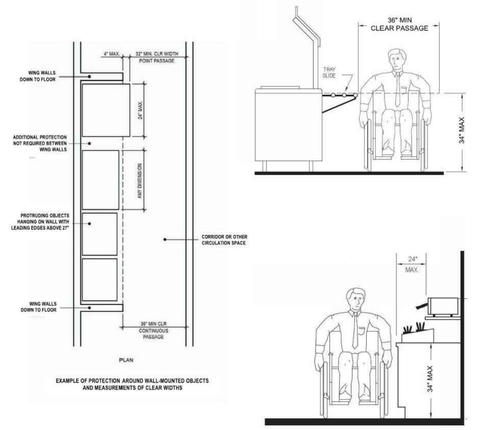

EXAMPLE OF PROTECTION AROUND WALL-MOUNTED OBJECTS AND MEASUREMENTS OF CLEAR WIDTHS

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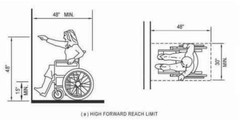
REACH RANGE



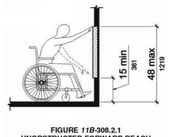
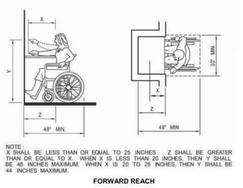


FIGURE 11B-308.2.1
UNOBSTRUCTED FORWARD REACH



NOTE:
X SHALL BE LESS THAN OR EQUAL TO 25 INCHES. Z SHALL BE GREATER THAN OR EQUAL TO X. WHEN X IS LESS THAN 20 INCHES, THEN Y SHALL BE 48 INCHES MAXIMUM. WHEN X IS 20 TO 25 INCHES, THEN Y SHALL BE 44 INCHES MAXIMUM.

FORWARD REACH

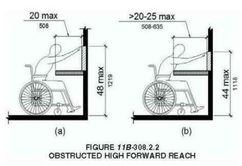


FIGURE 11B-308.2.2
OBSTRUCTED HIGH FORWARD REACH

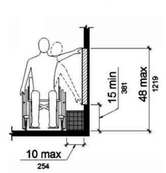


FIGURE 11B-308.3.1
UNOBSTRUCTED SIDE REACH

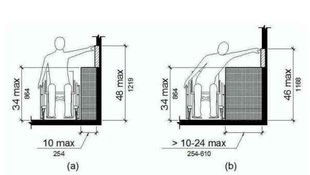


FIGURE 11B-308.3.2
OBSTRUCTED HIGH SIDE REACH

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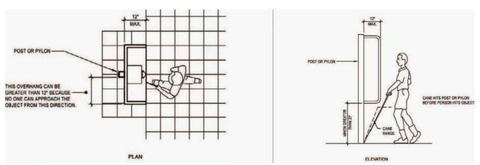
TELEPHONES



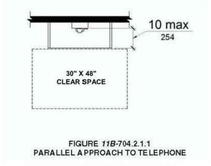


FIGURE 11B-704.2.1.1
PARALLEL APPROACH TO TELEPHONE

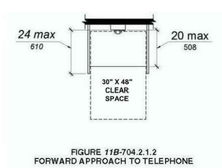
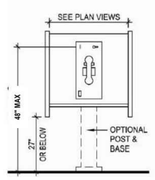
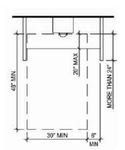


FIGURE 11B-704.2.1.2
FORWARD APPROACH TO TELEPHONE

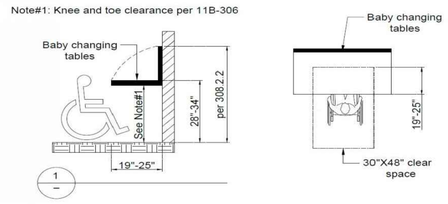


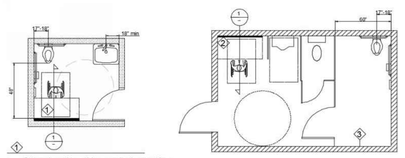


THESE DIAGRAMS ILLUSTRATES THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

BABY CHANGING TABLES

Note#1: Knee and toe clearance per 11B-306





- Baby changing tables can be located in a Unisex (single-user or family) restroom.
- Baby changing tables when deployed shall not obstruct the required width of an accessible route (11B-226.4)

② Baby changing tables can be located in a common use area of a multiple accommodation toilet facility. When deployed it shall not obstruct the required width of an accessible route. (11B-226.4)

③ Baby changing tables shall not be located in an accessible toilet compartments within a multiple accommodation toilet facility.

Note:When a sign is provided to indicate the location of baby diaper changing station is shall comply with raised character,brail and visual character (11B-703). See Sign info bulletin IB P/BC 2017-091 for additional info.

INFORMATION BULLETIN / PUBLIC - BUILDING CODE

REFERENCE NO.: LABC Sec:11B-406,705 **Effective:** 01/01/2017

DOCUMENT NO.: **P/BC 2017-090** **Revised:**

Previously Issued As: P/BC 2014-090

ACCESSIBILITY DETAILS FOR CURBS, BLENDED TRANSITIONS, ISLANDS AND DETECTABLE WARNINGS

GENERAL. Curb ramps, blended transitions and islands on accessible routes shall comply with Section 11B- 406. Curb ramps may be perpendicular, parallel, or a combination of perpendicular and parallel.

LANDINGS. Landings shall be provided at the tops of curb ramps and blended transitions. The landing clear length shall be 48 inches (1219 mm) minimum. The landing clear width shall be at least as wide as the curb ramp, excluding any flared sides, or the blended transition leading to the landing. **The slope of the landing in all directions shall be 1:48 maximum.**

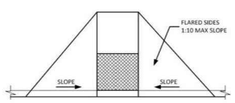


FIGURE 11B-406.2.2
SIDES OF CURB RAMPS

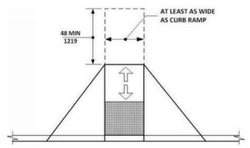


FIGURE 11B-406.5.3
LANDINGS AT THE TOP OF CURB RAMPS

TURNING SPACE. A turning space 48 inches (1219 mm) minimum by 48 inches (1219 mm) minimum shall be provided at the bottom of the curb ramp. The slope of the turning space in all directions shall be **1:48 max.**

LOCATION. Curb ramps and the flared sides of curb ramps shall be located so that they do not project into vehicular traffic lanes, parking spaces, or parking access aisles. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides.

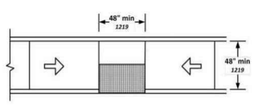


FIGURE 11B-406.3.2
PARALLEL CURB RAMPS

THESE DIAGRAMS ILLUSTRATES THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

HPA architecture

hpa, inc.
18831 bardeen avenue, - ste. #100
irvine, ca
92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

LICENSED ARCHITECT ROBERT MICHAEL KOCH STATE OF CALIFORNIA
C-22270
08-31-21
RENEWAL DATE

Owner:

20730 PRAIRIE ST.
CHATSWORTH, CA 91311

Project:
DAX3

Phase 1

20730 PRAIRIE ST.
CHATSWORTH. CA 91311

Consultants:

C I V I L	RA SMITH
STRUCTURAL	HSA
MECHANICAL	RPM
PLUMBING	RPM
ELECTRICAL	RPM
LANDSCAPE	HUNTER
FIRE PROTECTION	-
SOILS ENGINEER	-

Title: ADA NOTES

Project Number: 19415
Drawn by: DH
Date: 11/27/2019
Revision:

Sheet:
TI-A0.3.4

CITY OF LOS ANGELES
DEPARTMENT OF BUILDING AND SAFETY

THESE DIAGRAMS ILLUSTRATES THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

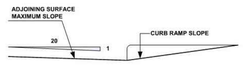


FIGURE 11B-406.5.8
COUNTER SLOPE OF SURFACES ADJACENT TO CURB RAMPS

Counter slope of adjoining gutters and road surfaces immediately adjacent to and within 24 inches (610 mm) of the curb ramp shall not be steeper than 1:20. The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.**11B-406.5.8**

Clear space at diagonal curb ramps. The bottom of diagonal curb ramps shall have a clear space 48 inches (1219 mm) minimum outside active traffic lanes of the roadway. Diagonal curb ramps provided at marked crossings shall provide the 48 inches (1219 mm) minimum clear space within the markings.**11B-406.5.9**

Diagonal curb ramps. Diagonal or corner type curb ramps with returned curbs or other well-defined edges shall have the edges parallel to the direction of pedestrian flow. Diagonal curb ramps with flared sides shall have a segment of curb 24 inches (610 mm) long minimum located on each side of the curb ramp and within the marked crossing. **FIGURE 11B-406.5.10**

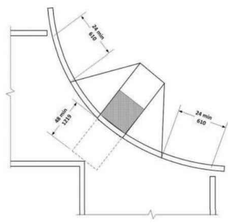


FIGURE 11B-406.5.10
DIAGONAL OR CORNER TYPE CURB RAMPS

11B-406.6 Islands. Raised islands in crossings shall be cut through level with the street or have curb ramps at both sides. The clear width of the accessible route at islands shall be 60 inches (1524 mm) wide minimum. Where curb ramps are provided, they shall comply with Section 11B-406. Landings complying with Section 11B-406.5.3 and the accessible route shall be permitted to overlap. Islands shall have detectable warnings complying with Section 11B-705.

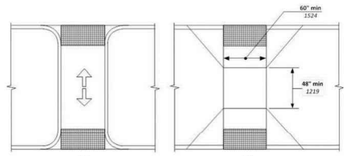
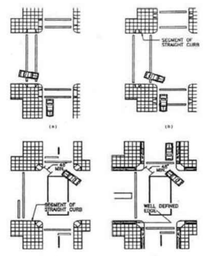


FIGURE 11B-406.6
ISLANDS IN CROSSINGS

THESE DIAGRAMS ILLUSTRATES THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

CURB RAMP



CURB RAMPS
AT MARKED CROSSING

CURB SECTIONS

THESE DIAGRAMS ILLUSTRATES THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

DETECTABLE WARNING SURFACE

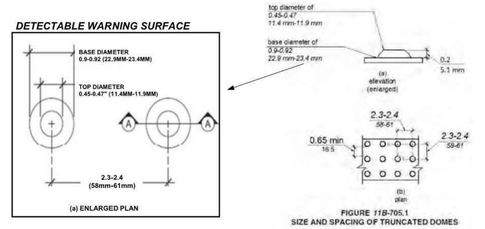


FIGURE 11B-705.1
SIZE AND SPACING OF TRUNCATED DOMES

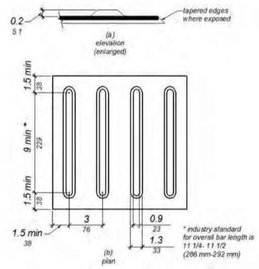


FIGURE 11B-705.2
DETECTABLE DIRECTIONAL TEXTURE

Detectable warnings shall consist of a surface of truncated domes and shall comply with Section 11B-705.

11B-705.1.1.3 Contrast. Detectable warning surfaces shall contrast visually with adjacent walking surfaces either light-on-dark, or dark-on-light. The material used to provide contrast shall be an integral part of the surface. Contrast shall be determined by:
Contrast = [(B1-B2)/B1] × 100 percent where B1 = light reflectance value (LRV) of the lighter area and B2 = light reflectance value (LRV) of the darker area.

Exception: Where the detectable warning surface does not adequately contrast with adjacent surfaces, a 1 inch (25 mm) wide black strip shall separate yellow detectable warning from adjacent surfaces.

11B-705.1.1.4 Resiliency. Detectable warning surfaces shall differ from adjoining surfaces in resiliency or sound-on-cane contact.

Exception: Detectable warning surfaces at curb ramps, islands or cut-through medians shall not be required to comply with Section 11B- 705.1.1.4

11B-705.1.1.5 Color. Detectable warning surfaces shall be yellow conforming to FS 33538 of Federal Standard 595C.

Exception: Detectable warning surfaces at curb ramps, islands or cut-through medians shall not be required to comply with Section 11B- 705.1.1.5.

11B-705.2 Detectable directional texture. Detectable directional texture at transit boarding platforms shall comply with Figure 11B-705.2 and shall be 0.1 inch (2.5 mm) in height that tapers off to 0.04 inch (1.0 mm), with bars raised 0.2 inch (5.1 mm) from the surface. The raised bars shall be 1.3 inches (33 mm) wide and 3 inches (76 mm) from center-to center of each bar. This surface shall differ from adjoining walking surfaces in resiliency or sound-on-cane contact. The color shall be yellow conforming to Federal Color No. 33538. This surface will be placed directly behind the yellow detectable warning texture specified in Section 11B- 705.1.2.1, aligning with all doors of the transit vehicles where passengers will embark. The width of the directional texture shall be equal to the width of the transit vehicle's door opening. The depth of the texture shall not be less than 36 inches (914 mm).

INFORMATION BULLETIN / PUBLIC - BUILDING CODE
REFERENCE NO.: LABC Sec.11B-703 Effective: 01/01/2017
DOCUMENT NO.: **P/BC 2017-091** Revised: 07/01/2018
Previously Issued As: P/BC 2014-091

ACCESSIBILITY DETAILS FOR SIGNS

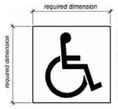


FIGURE 11B-703.7.2.1
INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA)

The International Symbol of Accessibility shall comply with Figure 11B-703.7.2.1. The symbol shall consist of a white figure on a blue background. The blue shall be FS 15090 in Federal Standard 595C. A border may be provided inside or outside of the minimum required (ISA) dimension.

FIGURE 11B-703.7.2.2
INTERNATIONAL SYMBOL OF TTY

11B-703.7.2.2 International Symbol of TTY. The International Symbol of TTY shall comply with Figure 11B-703.7.2.2

FIGURE 11B-703.7.2.3
VOLUME CONTROL TELEPHONE

Volume control telephones. Telephones with a volume control shall be identified by a pictogram of a telephone handset with radiating sound waves on a square field such as show in Figure 11B-703.7.2.3

Assistive listening systems. Assistive listening systems shall be identified by the International Symbol of Access for Hearing Loss complying with Figure 11B-703.7.2.4

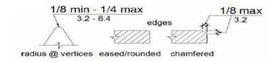


FIGURE 11B-703.7.2.6.4
EDGES AND VERTICES ON GEOMETRIC SYMBOLS

THESE DIAGRAMS ILLUSTRATES THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

11B-703 Signs

11B-703.1 General. Signs shall comply with Section 11B- 703. Where both visual and tactile characters are required, either one sign with both visual and tactile characters, or two separate signs, one with visual, and one with tactile characters, shall be provided.

11B-703.1.1 Plan review and inspection. Signs as specified in Section 11B-703, or in other sections of this code, when included in the construction of new buildings or facilities, or when included, altered or replaced due to additions, alterations or renovations to existing buildings or facilities, and when a permit is required, shall comply with Sections 11B-703.1.1.1 and 11B-703.1.1.2.

11B-703.1.1.1 Plan review. Plans, specifications or other information indicating compliance with these regulations shall be submitted to the enforcing agency for review and approval.

11B-703.1.1.2 Inspection. Signs and identification devices shall be field inspected after installation and approved by the enforcing agency prior to the issuance of a final certificate of occupancy per Chapter 1, Division II, Section 111, or final approval where no certificate of occupancy is issued. The inspection shall include, but not be limited to, verification that Braille dots and cells are properly spaced and the size, proportion and type of raised characters are in compliance with these regulations.

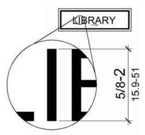


FIGURE *11B-703.2.5*
HEIGHT OF RAISED CHARACTERS

TABLE 11B-703.3.1
BRAILLE DIMENSIONS

MEASUREMENT RANGE	MINIMUM IN INCHES MAXIMUM IN INCHES
Dot base diameter	0.059 – 0.063
Distance between two dots in the same cell	0.100
Distance between corresponding dots in adjacent cells	0.300
Dot height	0.025 – 0.037
Distance between corresponding dots from one cell directly below	0.395 – 0.400

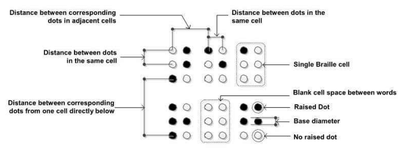


FIGURE 11B-703.3.1
BRAILLE MEASUREMENT

THESE DIAGRAMS ILLUSTRATES THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

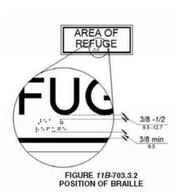


FIGURE *11B-703.3.2*
POSITION OF BRAILLE

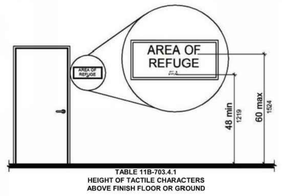


TABLE 11B-703.4.1
HEIGHT OF TACTILE CHARACTERS
ABOVE FINISH FLOOR OR GROUND

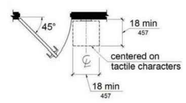
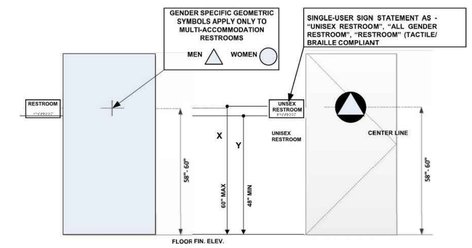


FIGURE *11B-703.4.2*
LOCATION OF TACTILE SIGNS AT DOORS

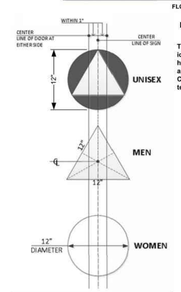
THESE DIAGRAMS ILLUSTRATES THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

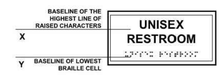
TOILETS AND BATHING FACILITIES GEOMETRIC SYMBOLS



NOTE: PICTOGRAMS NOT REQUIRED

The provisions of CBC Chapter 11B require that a sanitary facility that is not specifically identified as for "men" or "women" (referred to in Chapter 11B as a "unisex" facility) have a geometric symbol on the door that is an equilateral triangle superimposed onto a circle. The "unisex" symbol is the only specific indicator required to be provided by Chapter 11B for a toilet facility that is available for use by all individuals. No pictogram, text, or braille is required on the symbol. (See attachment, Exhibit A.)





TACTILE / RAISED CHARACTER & GD-II BRAILLE SIGN

11B-703.4.1 Height above finish floor or ground.

Tactile characters on signs shall be located 48 inches (1219 mm) minimum above the finish floor or ground surface, measured from the baseline of the lowest Braille cells and 60 inches (1524 mm) maximum above the finish floor or ground surface, measured from the baseline of the highest line of raised characters. Exception: Tactile characters for elevator car controls shall not be required to comply with Section 11B- 703.4.1. 1

THESE DIAGRAMS ILLUSTRATES THE SPECIFIC REQUIREMENTS OF THESE REGULATIONS AND ARE INTENDED ONLY AS AN AID FOR BUILDING DESIGN AND CONSTRUCTION.

IDENTIFICATION OF ALL GENDER SINGLE-USER TOILET FACILITIES
Compliant with the California Building Code (CBC) Chapter 11B

EXHIBIT A - Door Symbol (required by the CBC)

This image represents the door symbol that is required by CBC 11B-216.8 to identify an all-gender/unisex single-user toilet facility. The symbol must comply with the requirements of CBC 11B-703.7.2.6.3. No pictogram, text, or braille is required on the symbol.

EXHIBIT B - Designation sign on wall

Designation signs are not required to be provided by the CBC or the 2010 ADAS. If provided, a designation sign adjacent to the door must comply with the scoping requirements of CBC 11B-216.2, and the technical requirements for raised characters (CBC 11B-703.2), braille (CBC 11B-703.3), visual characters (CBC 11B-703.5), and requirements for installation height and location (CBC 11B-703.4). No pictogram is required. The following signs illustrate acceptable examples for designation sign text:

HPA architecture
hpa, inc.
18831 bardeen avenue, - ste. #100
irvine, ca
92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

LICENSED ARCHITECT ROBERT MICHAEL KAUS STATE OF CALIFORNIA
C-22270
08-31-21
RENEWAL DATE

Owner:

20730 PRAIRIE ST.
CHATSWORTH, CA 91311

Project:
DAX3

Phase 1

20730 PRAIRIE ST.
CHATSWORTH. CA 91311

Consultants:

CIVIL	RA SMITH
STRUCTURAL	HSA
MECHANICAL	RPM
PLUMBING	RPM
ELECTRICAL	RPM
LANDSCAPE	HUNTER
FIRE PROTECTION	-
SOILS ENGINEER	-

Title: ADA NOTES

Project Number: 19415
Drawn by: DH
Date: 11/27/2019
Revision:

Sheet:
TI-A0.3.5

CITY OF LOS ANGELES
DEPARTMENT OF BUILDING AND SAFETY

INFORMATION BULLETIN / PUBLIC - BUILDING CODE
REFERENCE NO: Various — EFFECTIVE: 01-01-2017
DOCUMENT NO: P/BC 2017-143 — REVISED: 07-01-2018
PREVIOUSLY ISSUED AS: N/A

GENERAL NOTES FOR COMMERCIAL ACCESSIBILITY

NOTE: Code references are to the 2017 edition of the Los Angeles Building Code

The State of California delegates authority to the local jurisdiction to ensure compliance with Title 24, Part 2 of the California Code of Regulations. The following general notes indicate specific areas of Title 24, Part 2 which are applicable to your project. Please be aware that the owner(s) of the building and his/her consultants are responsible for compliance with the most current Federal Regulations contained in the Americans with Disabilities Act (ADA) and Fair Housing Act (FHA). Where the ADA & FHA requirements exceed those contained in Title 24, Part 2, it is the responsibility of the owners and their consultants to ensure compliance with the most current ADA & FHA regulations, as the City is not authorized to review plans or inspect projects for ADA & FHA compliance.

The following, applicable, general notes shall be provided on the plans.

A. APPLICATION AND ADMINISTRATION

1. Public accommodations shall maintain in operable working condition those features of facilities and equipment that are required to be accessible to and useable by persons with disabilities. Isolated or temporary interruptions in service or accessibility due to maintenance or repairs shall be permitted. **§11B-108**

B. BUILDING BLOCKS

FLOOR OR GROUND SURFACES

1. Floor and ground surfaces shall be stable, firm, and slip resistant. **§11B-302.1**
2. Carpet or carpet tile shall be securely attached and shall have a firm cushion, pad, or backing or no cushion or pad. Carpet or carpet tile shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. Pile height shall be ½ inch maximum. **§11B-302.2, Figure 11B-302.2**

CHANGES IN LEVEL

3. Vertical changes in level for floor or ground surfaces may be ¼ inch high maximum and without edge treatment. Changes in level greater than ¼ inch and not exceeding ½ inch in height shall be beveled with a slope not steeper than 1:2. **§11B-303, Figures 11B-303.2 & 11B-303.3**
4. Changes in level greater than ½ inch in height shall be ramped and shall comply with the requirements of 11B-405 Ramps or 11B-406 Curb Ramps as applicable. **§11B-303**
5. Abrupt changes in level exceeding 4 inches in a vertical dimension between walks, sidewalks or other pedestrian ways and adjacent surfaces or features shall be identified by warning curbs at least 6 inches in height above the walk or sidewalk surface or by guards or handrails with a guide rail centered 2 inches minimum and 4 inches maximum above the surface of the walk or sidewalk. These requirements do not apply between a walk or sidewalk and an adjacent street or driveway. **§11B-303.5**

TURNING SPACE

6. Circular turning spaces shall be a space of 60 inches diameter minimum and may include knee and toe clearance complying with 11B-306 Knee and Toe Clearance. **§11B-304.3.1**
7. T-Shaped turning spaces shall be a T-shaped space within a 60 inch square minimum with arms and base 36 inches wide minimum. Each arm of the T shall be clear of obstructions 12 inches minimum in each direction and the base shall be clear of obstructions 24 inches minimum. **§11B-304.3.2, Figure 11B-304.3.2**

KNEE AND TOE CLEARANCE

8. For lavatories and built-in dining and work surfaces required to be accessible, toe clearance shall be provided that is 30 inches in width and 9 inches in height above the finish floor or ground for a depth of 19 inches minimum. **§11B-306.2.1**

9. Toe clearance shall extend 19 inches maximum under lavatories for toilet and bathing facilities and 25 inches maximum under other elements. **§11B-306.2.2**
10. At lavatories in toilet and bathing facilities, knee clearance shall be provided that is 30 inches in width for a depth of 11 inches at 9 inches above the finish floor or ground and for a depth of 8 inches at 27 inches above the finish floor or ground increasing to 29 inches high minimum above the finish floor or ground at the front edge of a counter with a built-in lavatory or at the front edge of a wall-mounted lavatory fixture. **§11B-306.3.3, Figure 11B-306.3(c)**
11. At dining and work surfaces required to be accessible, knee clearance shall be provided that is 30 inches in width at 27 inches above the finish floor or ground for a depth of at least 19 inches. **§11B-306.3**

PROTRUDING OBJECTS

12. Except for handrails, objects with leading edges more than 27 inches and less than 80 inches above the finish floor or ground shall protrude no more than 4 inches horizontally into the circulation path. Handrails may protrude 4½ inches maximum. **§11B-307.2, Figure 11B-307.2**
13. Freestanding objects mounted on posts or pylons shall overhang circulation paths no more than 12 inches when located from 27 to 80 inches above the finish floor or ground. **§11B-307.3, Figure 11B-307.3(a)**
14. Protruding objects shall not reduce the clear width required for accessible routes. **§11B-307.5**
15. Lowest edge of a sign or other obstruction, when mounted between posts or pylons separated with a clear distance greater than 12 inches, shall be less than 27 inches or more than 80 inches above the finish floor or ground. **§11B-307.3, Figure 11B-307.3(b)**
16. Vertical clearance shall be at least 80 inches high on circulation paths except at door closers and door stops, which may be 78 inches minimum above the finish floor or ground. **§11B-307.4**
17. Guardrails or other barriers with a leading edge located 27 inches maximum above the finish floor or ground shall be provided where the vertical clearance on circulation paths is less than 80 inches high. **§11B-307.4, Figure 11B-307.4**
18. Where a guy support is used within either the width of a circulation path or 24 inches maximum outside of a circulation path, a vertical guy brace, sidewalk guy or similar device shall be used to prevent a hazard or an overhead obstruction. **§11B-307.4.1, Figure 11B-307.4.1**

REACH RANGES

19. Electrical controls and switches intended to be used by the occupant of a room or area to control lighting and receptacle outlets, appliances or cooling, heating and ventilating equipment shall be located within allowable reach ranges. Low reach shall be measured to the bottom of the outlet box and high reach shall be measured to the top of the outlet box. **§11B-308.1.1**
20. Electrical receptacle outlets on branch circuits of 30 amperes or less and communication system receptacles shall be located within allowable reach ranges. Low reach shall be measured to the bottom of the outlet box and high reach shall be measured to the top of the outlet box. **§11B-308.1.2.**
21. High forward reach that is unobstructed shall be 48 inches maximum and the low forward reach shall be 15 inches minimum above the finish floor or ground. **§11B-308.2.1, Figure 11B-308.2.1**
22. High forward reach shall be 48 inches maximum where the reach depth is 20 inches or less and 44 inches maximum where the reach depth exceeds 20 inches. High forward reach shall not exceed 25 inches in depth. **§11B-308.2.2, Figure 11B-308.2.2**
23. High side reach shall be 48 inches maximum and the low side reach shall be 15 inches minimum above the finish floor where the side reach is unobstructed or the depth of any obstruction does not exceed 10 inches. **§11B-308.3.1, Figure 11B-308.3.1**
24. High side reach shall be 46 inches maximum above the finish floor or ground where the high side reach is over an obstruction more than 10 inches but not more than 24 inches in depth. **§11B-308.3.2, Figure 11B-308.3.2**
25. Obstructions for high side reach shall not exceed 34 inches in height and 24 inches in depth. **§11B-308.3.2, Figure 11B-308.3.2**

26. Obstructed high side reach for the top of washing machines and clothes dryers shall be permitted to be 36 inches maximum above the finish floor. **§11B-308.3.2**
27. Obstructed high side reach for the operable parts of fuel dispensers shall be permitted to be 54 inches maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs. **§11B-308.3.2**

OPERABLE PARTS

28. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. Force required to activate operable parts shall be 5 pounds maximum. **§11B-309.4**

C. ACCESSIBLE ROUTES

DETECTABLE WARNINGS AND DETECTABLE DIRECTIONAL TEXTURE

1. Detectable warning surfaces shall be yellow and approximate FS 33538 of Federal Standard 595C. **§11B-705.1.1.3.1**
2. Detectable warning surfaces shall provide a 70 percent minimum visual contrast with adjacent walking surfaces. Contrast in percent shall be determined by:

   Contrast percent = [(B1-B2)/B1] x 100 where

   B1 = light reflectance value (LRV) of the lighter area and

   B2 = light reflectance value (LRV) of the darker area

   §11B-705.1.1.3.2 (See exception)

DOORS, DOORWAYS, AND GATES

3. Doors, doorways, and gates providing user passage shall be provided in accordance with 11B-206.5 Doors, Doorways, and Gates. **§11B-206.5**
4. Doors, doorways and gates that are part of an accessible route shall comply with 11B-404 Doors, Doorways, and Gates. **§11B-404.1**
5. Door openings shall provide a clear width of 32 inches minimum. Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees. Openings more than 24 inches deep shall provide a clear opening of 36 inches minimum. There shall be no projections into the required clear opening width lower than 34 inches above the finish floor or ground. Projections into the clear opening width between 34 inches and 80 inches above the finish floor or ground shall not exceed 4 inches. **§11B-404.2.3**
6. Swinging doors and gates shall have maneuvering clearances complying with Table 11B-404.2.4.1. **§11B-404.2.4.1**
7. Doorways less than 36 inches wide without doors or gates, sliding doors, or folding doors shall have maneuvering clearances complying with Table 11B-404.2.4.2. **§11B-404.2.4.2**
8. Maneuvering clearances for forward approach shall be provided when any obstruction within 18 inches of the latch side an interior doorway, or within 24 inches of the latch side of an exterior doorway, projects more than 8 inches beyond the face of the door, measured perpendicular to the face of the door or gate. **§11B-404.2.4.3**
9. Thresholds, if provided at doorways, shall be ½ inch high maximum. Raised thresholds and changes in level at doorways shall comply with 11B-302 Floor or Ground Surfaces and 11B-303 Changes in Level. **§11B-404.2.5**
10. Handles, pulls, latches, locks, and other operable parts on doors and gates shall comply with 11B-309.4 Operation. Operable parts of such hardware shall be 34 inches minimum and 44 inches maximum above the finish floor or ground. Where sliding doors are in the fully open position, operating hardware shall be exposed and usable from both sides. **§11B-404.2.7**
11. The force for pushing or pulling open a door or gate other than fire doors shall be as follows: **§11B-404.2.9**
    a. Interior hinged doors and gates: 5 pounds maximum.
    b. Sliding or folding doors: 5 pounds maximum.

    c. Required fire doors: the minimum opening force allowable by the appropriate administrative authority, not to exceed 15 pounds.
    d. Exterior hinged doors: 5 pounds maximum.
12. Swinging door and gate surfaces within 10 inches of the finish floor or ground measured vertically shall have a smooth surface on the push side extending the full width of the door or gate. Parts creating horizontal or vertical joints in these surfaces shall be within 1/16 inch of the same plane as the other and be free of sharp or abrasive edges. Cavities created by added kick plates shall be capped. **§11B-404.2.10**

RAMPS

13. Ramp runs shall have a running slope not steeper than 1:12 (8.33%). **§11B-405.2**
14. Cross slope of ramp runs shall not be steeper than 1:48 (2.083%). **§11B-405.3**
15. Floor or ground surfaces of ramp runs shall comply with 11B-302 Floor or Ground Surfaces. Changes in level other than the running slope and cross slope are not permitted on ramp runs. **§11B-405.4**
16. The clear width of a ramp run shall be 48 inches minimum. **§11B-405.5**
17. The rise for any ramp run shall be 30 inches maximum. **§11B-405.6**
18. Ramps shall have landings at the top and the bottom of each ramp run. **§11B-405.7**
19. Landings shall comply with 11B-302 Floor or Ground Surfaces. Changes in level are not permitted. **§11B-405.7.1**
20. The landing clear width shall be at least as wide as the widest ramp run leading to the landing. **§11B-405.7.2**
21. Top landings shall be 60 inches wide minimum. **§11B-405.7.2.1**
22. The landing clear length shall be 60 inches long minimum. **§11B-405.7.3**
23. Bottom landings shall extend 72 inches minimum in the direction of ramp run. **§11B-405.7.3.1**
24. Ramps that change direction between runs at landings shall have a clear landing 60 inches minimum by 72 inches minimum in the direction of downward travel from the upper ramp run. **§11B-405.7.4**
25. Where doorways are located adjacent to a ramp landing, maneuvering clearances required by 11B-404.2.4 and 11B-404.3.2 shall be permitted to overlap the required landing area. Doors, when fully open, shall not reduce the required ramp landing width by more than 3 inches. Doors, in any position, shall not reduce the minimum dimension of the ramp landing to less than 42 inches. **§11B-405.7.5**
26. Ramp runs shall have compliant handrails per 11B-505 Handrails. **§11B-405.8**
27. Edge protection complying with 11B-405.9.2 Curb or Barrier shall be provided on each side of ramp runs and at each side of ramp landings. **§11B-405.9 (See exceptions)**
28. A curb, 2 inches high minimum, or barrier shall be provided that prevents the passage of a 4 inch diameter sphere, where any portion of the sphere is within 4 inches of the finish floor or ground surface. To prevent wheel entrapment, the curb or barrier shall provide a continuous and uninterrupted barrier along the length of the ramp. **§11B-405.9.2**
29. Landings subject to wet conditions shall be designed to prevent the accumulation of water. **§11B-405.10**

HANDRAILS

30. Handrails shall be provided on both sides of stairs and ramps. **§11B-505.2**
31. Handrails shall be continuous within the full length of each stair flight or ramp run. Inside handrails on switchback or dogleg stairs and ramps shall be continuous between flights or runs. **§11B-505.3**
32. Top of gripping surfaces of handrails shall be 34 inches minimum and 38 inches maximum vertically above walking surfaces, stair nosings, and ramp surfaces. Handrails shall be at a consistent height above walking surfaces, stair nosings, and ramp surfaces. **§11B-505.4**
33. Clearance between handrail gripping surfaces and adjacent surfaces shall be 1½ inches minimum. Handrails may be located in a recess if the recess is 3 inches maximum deep and 18 inches minimum clear above the top of the handrail. **§11B-505.5**

34. Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. The bottoms of handrail gripping surfaces shall not be obstructed for more than 20 percent of their length. Where provided, horizontal projections shall occur 1½ inches minimum below the bottom of the handrail-gripping surface. **§11B-505.6**
35. Handrail gripping surfaces with a circular cross section shall have an outside diameter of 1¼ inches minimum and 2 inches maximum. **§11B-505.7.1**
36. Handrail gripping surfaces with a non-circular cross section shall have a perimeter dimension of 4 inches minimum and 6¼ inches maximum, and a cross-section dimension of 2¼ inches maximum. **§11B-505.7.2**
37. Handrail gripping surfaces shall extend beyond and in the same direction of stair flights and ramp runs in accordance with Section 11B-505.10 Handrail Extensions. **§11B-505.10**
38. Ramp handrails shall extend horizontally above the landing for 12 inches minimum beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent ramp run. **§11B-505.10.1**
39. At the top of a stair flight, handrails shall extend horizontally above the landing for 12 inches minimum beginning directly above the first riser nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight. **§11B-505.10.2**
40. At the bottom of a stair flight, handrails shall extend at the slope of the stair flight for a horizontal distance equal to one tread depth beyond the last riser nosing. The horizontal extension of a handrail shall be 12 inches long minimum and a height equal to that of the sloping portion of the handrail as measured above the stair nosings. Extension shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight. **§11B-505.10.3**

STAIRWAYS

41. A stair is defined as a change in elevation, consisting of one or more risers. **§11B-202**
42. All steps on a flight of stairs shall have uniform riser heights and uniform tread depths. Risers shall be 4 inches high minimum and 7 inches high maximum. Treads shall be 11 inches deep minimum. Curved stairways with winder treads are permitted at stairs which are not part of a required means of egress. (See exception) **§11B-504.2**
43. Open risers are not permitted. **§11B-504.3 (See exceptions)**
44. Interior stairs shall have the upper approach and lower tread marked by a stripe providing clear visual contrast. Exterior stairs shall have the upper approach and all treads marked by a stripe providing clear visual contrast. The stripe shall be a minimum of 2 inches wide to a maximum of 4 inches wide placed parallel to, and not more than 1 inch from, the nose of the step or upper approach. The stripe shall extend the full width of the step or upper approach and shall be of material that is at least as slip resistant as the other treads of the stair. A painted stripe shall be acceptable. Grooves shall not be used to satisfy this requirement. **§11B-504.4.1**
45. The radius of curvature at the leading edge of the tread shall be ½ inch maximum. Nosings that project beyond risers shall have the underside of the leading edge curved or beveled. Risers shall be permitted to slope under the tread at an angle of 30 degrees maximum from vertical. The permitted projection of the nosing shall extend 1¼ inches maximum over the tread below. **§11B-504.5 (See exception for existing buildings)**
46. Stairs shall have handrails complying with Section 11B-505 Handrails. **§11B-504.6**
47. Stair treads and landings subject to wet conditions shall be designed to prevent the accumulation of water. **§11B-504.7**
48. Floor identification signs required by Chapter 10, Section 1022.9 complying with Sections 11B-703.1 Signs General, 11B-703.2 Raised Characters, 11B-703.3 Braille and 11B-703.5 Visual Characters shall be located at the landing of each floor level, placed adjacent to the door on the latch side, in all enclosed stairways in buildings two or more stories in height to identify the floor level. At the exit discharge level, the sign shall include a raised five pointed star located to the left of the identifying floor level. The outside diameter of the star shall be the same as the height of the raised characters. **§11B-504.8**

CURB RAMPS, BLENDED TRANSITIONS AND ISLANDS

49. Perpendicular ramp runs shall have a running slope not steeper than 1:12 (8.33%). **§11B-406.2.1**
50. For perpendicular ramps, where provided, curb ramp flares shall not be steeper than 1:10. **§11B-406.2, Figure 11B-406.2.2**
51. The running slope of the curb ramp segments shall be in-line with the direction of sidewalk travel. Ramp runs shall have a running slope not steeper than 1:12 (8.33%). **§11B-406.3.1, Figure 11B-406.3.2**
52. A turning space 48 inches minimum by 48 inches minimum shall be provided at the bottom of the curb ramp. The slope of the turning space in all directions shall be 1:48 maximum (2.083%). **§11B-406.3.2**
53. Blended transition ramps hall have a running slope not steeper than 1:20 (5%). **§11B-406.4.1**
54. Curb ramps and the flared sides of curb ramps shall be located so that they do not project into vehicular traffic lanes, parking spaces, or parking access aisles. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides. **§11B-406.5.1**
55. The clear width of curb ramp runs (excluding any flared sides), blended transitions, and turning spaces shall be 48 inches minimum. **§11B-406.5.2**
56. Landings shall be provided at the tops of curb ramps and blended transitions (parallel curb ramps shall not be required to comply). The landing clear length shall be 48 inches minimum. The landing clear width shall be at least as wide as the curb ramp, excluding any flared sides, or the blended transition leading to the landing. The slope of the landing in all directions shall be 1:48 (2.083%) maximum. **§11B-406.5.3**
57. Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush. **§11B-406.5.6**
58. The cross slope of curb ramps and blended transitions shall be 1:48 (2.083%) maximum. **§11B-406.5.7**
59. Counter slopes of adjoining gutters and road surfaces immediately adjacent to and within 24 inches of the curb ramp shall not be steeper than 1:20 (5%). The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level. **§11B-406.5.8**
60. The bottom of diagonal curb ramps shall have a clear space 48 inches minimum outside active traffic lanes of the roadway. Diagonal curb ramps provided at marked crossings shall provide the 48 inches minimum clear space within the markings. **§11B-406.5.9**
61. Curb ramps and blended transitions shall have detectable warnings complying with 11B-705 Detectable Warnings. **§11B-406.5.12**
62. Raised islands in crossings shall be cut through level with the street or have curb ramps at both sides. The clear width of the accessible route at islands shall be 60 inches wide minimum. Where curb ramps are provided, they shall comply with 11B-406 Curb Ramps, Blended Transitions and Islands. Landings complying with 11B-406.5.3 Landings and the accessible route shall be permitted to overlap. Islands shall have detectable warnings complying with 11B-705 Detectable Warnings and Detectable Directional Texture. **§11B-406.6, Figure 11B-406.6**

D. GENERAL SITE AND BUILDING ELEMENTS

1. Where parking spaces are provided, accessible parking spaces shall be provided in number and kind required per Section 11B-208 Parking Spaces. **§11B-208.1**
2. Where passenger loading zones, drop-off zones, and/or bus stops are provided, accessible passenger loading zones, drop-off zones, and/or bus stops are required.
3. Where Electric vehicle charging stations (EVCS) are provided, they shall comply with Section 11B-812 as required by Section 11B-228.3.
4. EVCS complying with Section 11B-812 that serve a particular building or facility shall be located on an accessible route to an entrance complying with Section 11B-206.4. Where EVCS do not serve a particular building or facility, EVCS complying with Section 11B-812 shall be located on an accessible route to an accessible pedestrian entrance of the EV charging facility.

E. PLUMBING FIXTURES AND FACILITIES

DRINKING FOUNTAINS

1. Drinking fountains shall comply with Sections 11B-307 Protruding Objects and 11B-602 General Requirements. **§11B-602.1**
2. Units shall have a clear floor or ground space complying with Section 11B-305 Clear Floor or Ground Space positioned for a forward approach and centered on the unit. Knee and toe clearance complying with Section 11B-306 Knee and Toe Clearance shall be provided. **§11B-602.2**
3. Spout outlets shall be 36 inches maximum above the finish floor or ground. **§11B-602.4**
4. The spout shall be located 15 inches minimum from the vertical support and 5 inches maximum from the front edge of the unit, including bumpers. **§11B-602.5**
5. The spout shall provide a flow of water 4 inches high minimum and shall be located 5 inches maximum from the front of the unit. The angle of the water stream shall be measured horizontally relative to the front face of the unit. Where spouts are located less than 3 inches from the front of the unit, the angle of the water stream shall be 30 degrees maximum. Where spouts are located between 3 inches and 5 inches maximum from the front of the unit, the angle of the water stream shall be 15 degrees maximum. **§11B-602.6**
6. Spout outlets of drinking fountains for standing persons shall be 38 inches minimum and 43 inches maximum above the finish floor or ground. **§11B-602.7**
7. Wall and post-mounted cantilevered drinking fountains shall be 18 inches minimum and 19 inches maximum in depth. **§11B-602.8**
8. All drinking fountains shall either be located completely within alcoves, positioned completely between wing walls, or otherwise positioned so as not to encroach into pedestrian ways. The protected area within such a drinking fountain is located shall be 32 inches wide minimum and 18 inches deep minimum, and shall comply with Section 11B-305.7 Maneuvering Clearance. When used, wing walls or barriers shall protect horizontally at least as far as the drinking fountain and to within 6 inches vertically from the floor or ground surface. **§11B-602.9**

TOILET AND BATHING ROOM CLEARANCES

9. Doors to unisex toilet rooms and unisex bathing rooms shall have privacy latches. **§11B-213.2.1**
10. Mirrors located above the lavatories or countertops shall be installed within the bottom edge of the reflecting surface 40 inches maximum above the finish floor or ground. Mirrors not located above the lavatories or countertops shall be installed with the bottom edge of the reflecting surface 35 inches maximum above the finish floor or ground. **§11B-603.3**
11. Coat hooks shall be located within one of the reach ranges specified in Section 11B-308. Shelves shall be located 40 inches minimum and 48 inches maximum above the finish floor. Medicine cabinets shall be located with a usable shelf no higher than 44 inches maximum above the finish floor. **§11B-603.4**
12. Where towel or sanitary napkin dispensers, waste receptacles, or other accessories are provided in toilet facilities, at least one of each type shall be located on an accessible route. All operable parts, including coin slots, shall be 40 inches maximum above the finish floor. Baby changing stations are not required to comply with Section 11B-603.5 (See exception) **§11B-603.5**

WATER CLOSETS AND TOILET COMPARTMENTS

13. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with Section 11B-309.4 Operation except they shall be located 44 inches maximum above the floor. Flush controls shall be located on the open side of the water closet except in ambulatory accessible compartments complying with Section 11B-604.8.2 Ambulatory Accessible Compartments. **§11B-604.6**
14. Toilet paper dispensers shall comply with Section 11B-309.4 Operation and shall be 7 inches minimum and 9 inches maximum in front of the water closet measured to the centerline of the dispenser. The outlet of the dispenser shall be below the grab bar, 19 inches minimum above the finish floor and shall not be located behind the grab bars. Dispensers shall not be of a type that control delivery or that does not allow continuous paper flow. **§11B-604.7**
15. Sanitary napkin disposal units, if provided, shall comply with Section 11B-309.4 and shall be wall mounted and located on the sidewall between the rear wall of the toilet and the toilet paper dispenser, adjacent to the

toilet paper dispenser. The disposal unit shall be located below the grab bar with the opening of the disposal unit 19 inches minimum (483 mm) above the finish floor. **§11B-604.7.2**

16. Urinals shall be the stall-type or the wall-hung type with the rim 17 inches maximum above the finish floor or ground. Urinals shall be 13½ inches deep minimum measured from the outer face of the urinal rim to the back of the fixture. **§11B-605.2**
17. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with Section 11B-309 Operable Parts except that the flush control shall be mounted at a maximum height of 44 inches above the finish floor. **§11B-605.4**
18. For lavatories and sinks, a clear floor space complying with Section 11B-305 Clear Floor or Ground Surfaces, positioned for a forward approach, and knee and toe clearance complying with Section 11B-306 Knee and Toe Clearance shall be provided. **§11B-606.2**
19. Lavatories and sinks shall be installed with the front of the higher of the rim or counter surface 34 inches maximum above the finish floor or ground. **§11B-606.3**

SIGNS RELATED TO TOILETS AND BATHING FACILITIES

20. Entrances leading to toilet rooms and bathing rooms complying with 11B-603 Toilet and Bathing Rooms shall be identified by a geometric symbol complying with 11B-703.7.2.6 Toilet and Bathing Room Geometric Symbols. Where existing toilet rooms or bathing rooms do not comply with 11B-603 Toilet and Bathing Rooms, directional signs indicating the location of the nearest compliant toilet room or bathing room within the facility shall be provided. Signs shall comply with 11B-703.5 Visual Characters and shall include the International Symbol of Accessibility complying with 11B-703.7.2.1 ISA. Where existing toilet rooms or bathing rooms do not comply with 11B-603 Toilet and Bathing Rooms, the toilet rooms or bathing rooms complying with 11B-603 Toilet and Bathing Rooms shall be identified by the International Symbol of Accessibility complying with 11B-703.7.2.1 ISA. Where clustered single user toilet rooms or bathing facilities are permitted to use exceptions to 11B-213.2 Toilet and Bathing Rooms, toilet rooms or bathing facilities complying with 11B-603 Toilet and Bathing Rooms shall be identified by the International Symbol of Accessibility complying with 11B-703.7.2.1 ISA unless all toilet rooms and bathing facilities comply with 11B-603 Toilet and Bathing Rooms. Existing buildings that have been remodeled to provide specific toilet rooms or bathing rooms for public use that comply with these building standards shall have the location of and the directions to these rooms posted in or near the building lobby or entrance on a sign complying with 11B-703.5 Visual Characters, including the International Symbol of Accessibility complying with 11B-703.7.2.1 ISA. **§11B-216.8**
21. Pictograms shall comply with the following:
    a. Pictograms shall have a field height of 6 inches minimum. Characters and Braille shall not be located in the pictogram field. **§11B-703.6.1**
    b. Pictograms and their field shall have a non-glare finish. Pictograms shall contrast with their field with either a light pictogram on a dark field or a dark pictogram on a light field. **§11B-703.6.2**
    c. Pictograms shall have text descriptors located directly below the pictogram field. Text descriptors shall comply with 11B-703.2 Raised Characters, 11B-703.3 Braille and 11B-703.4 Installation Height and Location. **§11B-703.6.3**
    d. The installation height and location of Pictogram signs shall be per **§11B-703.4.1.**
22. Symbols shall comply with the following:
    a. Doorways leading to toilet rooms and bathing rooms shall be identified by a geometric symbol complying with 11B-703.7.2.6 Toilet and Bathing Facilities Geometric Symbols. The symbol shall be mounted at 58 inches minimum and 60 inches maximum above the finish floor or ground surface measured from the centerline of the symbol. Where a door is provided, the symbol shall be mounted within 1 inch of the vertical centerline of the door. **§11B-703.7.2.6 (See exception)**
    b. A triangle symbol shall be located at entrances to men's toilet and bathing facilities and it shall be identified by an equilateral triangle, ¼ inch thick with edges 12 inches long and a vertex pointing upward. The triangle symbol shall contrast with the door, either light on a dark background or dark on a light background. **§11B-703.7.2.6.1**

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ELECTRICAL	RPM
LANDSCAPE	HUNTER
FIRE PROTECTION	-
SOILS ENGINEER	-

Title: ADA NOTES

Project Number: 19415
Drawn by: DH
Date: 11/27/2019
Revision:

Sheet:
TI-A0.3.6

CITY OF LOS ANGELES
DEPARTMENT OF BUILDING AND SAFETY

c. A circle symbol shall be located at entrances to women's toilet and bathing facilities and it shall be identified by a circle, ¼ inch thick and 12 inches in diameter. The circle symbol shall contrast with the door, either light on a dark background or dark on a light background. **§11B-703.7.2.6.2**

d. A combined circle and triangle symbol shall be located at entrances to unisex toilet and bathing facilities and it shall be shall be identified by a circle, ¼ inch thick and 12 inches in diameter with a ¼ inch thick triangle with a vertex pointing upward superimposed on the circle and within the 12-inch diameter. The triangle symbol shall contrast with the circle symbol, either light on a dark background or dark on a light background. The circle symbol shall contrast with the door, either light on a dark background or dark on a light background. **§11B-703.7.2.6.3**

WASHING MACHINE AND CLOTHES DRYERS

23. Washing machines and clothes dryer's operable parts must comply with Section 11B-309 Operable Parts. **§11B-611.3**
24. Top loading machines shall have the door to the laundry compartment located 36 inches maximum above the finish floor. Front loading machines shall have the bottom of the opening to the laundry compartment located 15 inches minim and 36 inches maximum above the finish floor. **§11B-611.4**

F. COMMUNICATION ELEMENTS AND FEATURES

FIRE ALARM SYSTEMS

1. Where fire alarm systems and carbon monoxide alarm systems provide audible alarm coverage, alarms shall comply with 11B-215 Fire Alarm Systems. **§11B-215.1 (See exception)**
2. Alarms in public use areas and common use areas shall comply with 702 Chapter 9, Section 907.5.2.3.1. **§11B-215.2**
3. Where employee work areas have audible alarm coverage, the wiring system shall be designed so that visible alarms complying with 702 Chapter 9, Section 907.5.2.3.2 can be integrated into the alarm system. **§11B-215.3**
4. Fire alarm systems shall have permanently installed audible and visible alarms complying with NFPA 72 (1999 or 2002 edition) (incorporated by reference, see "Referenced Standards" in Chapter 1), except that the maximum allowable sound level of audible notification appliances complying with section 4-3.2.1 of NFPA 72 (1999 edition) shall have a sound level no more than 110 dB at the minimum hearing distance from the audible appliance. In addition, alarms in guest rooms required to provide communication features shall comply with sections 4-3 and 4-4 of NFPA 72 (1999 edition) or sections 7.4 and 7.5 of NFPA 72 (2002 edition), and Chapter 9, Sections 907.5.2.1 and 907.5.2.3. **§11B-702.1**

ASSISTIVE LISTENING SYSTEMS

5. Assistive listening systems shall be provided in assembly areas, including conference and meeting rooms, used for the purpose of entertainment, educational or civic gatherings, or similar purposes. **§202, §11B-219.2**

   Note: Assembly areas include, but are not limited to, classrooms, lecture halls, courtrooms, public meeting rooms, public hearing rooms, legislative chambers, motion picture houses, auditoria, theaters, playhouses, dinner theaters, concert halls, centers for the performing arts, amphitheaters, arenas, stadiums, grandstands, or convention centers. **§202, §11B-219.2**
6. Assistive listening system shall provide an amplification system utilizing transmitters, receivers, and coupling devices to bypass the acoustical space between a sound source and a listener by means of induction loop, radio frequency, infrared, or direct-wired equipment. **§202**
7. Where a building contains more than one assembly area under one management, the total number of required receivers may be calculated using the total number of seats in the assembly areas provided that all receivers are usable with all systems. **§11B-219.3 (See exception)**
8. Twenty-five percent minimum of receivers provided for assistive listening systems, but no fewer than two, shall be hearing-aid compatible except when all seats in an assembly area are served by means of an induction loop. **§11B-219.3**

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9. When assistive-listening systems are limited to specific areas or seats, such areas or seats shall be within a 50-foot viewing distance of the stage or playing area and shall have a complete view of the stage or playing area. **§11B-219.4**
10. Permanently installed assistive-listening systems are required in areas if (1) they have fixed seating and (2a) they accommodate at least 50 persons or (2b) they have audio-amplification systems, except those used exclusively for paging and/or background music. **§11B-219.2, §11B-219.5**
11. Portable assistive-listening systems may serve more than one conference or meeting rooms if an adequate number of electrical outlets or other supplementary wiring is provided and permanently installed systems are not required. **§11B-219.5**
12. Receivers required for use with an assistive listening system shall include a 1/8 inch standard mono jack. **§11B-706.2**
13. Receivers required to be hearing aid compatible shall interface with telecoils in hearing aids through the provision of neck loops. **§11B-706.3**
14. Assistive listening systems shall be capable of providing a sound pressure level from 110 – 118 dB with a dynamic range on the volume control of 50 dB. **§11B-706.4**
15. Signal-to-noise ratio for internally generated noise in assistive listening systems shall be 18 dB minimum. **§11B-706.5**
16. Peak clipping shall not exceed 18 dB of clipping relative to the peaks of speech. **§11B-706.6**

TWO-WAY COMMUNICATION SYSTEMS

17. Two-way communication systems that are provided to gain admittance to a building or facility or to restricted areas within a building or facility shall provide both audible and visual signals. Handset cords, if provided, shall be 29 inches long minimum. **§11B-230.1, §11B-708**
18. Common use or public use system interface of communications systems between a residential dwelling unit and a site, building, or floor entrance shall include the capability of supporting voice and TTY communication with the residential dwelling unit interface. **§11B-708.4.1**
19. Residential dwelling unit system interface of communications systems between a residential dwelling unit and a site, building, or floor entrance shall include a telephone jack capable of supporting voice and TTY communication with the common use or public use system interface. **§11B-708.4.2**

TELEPHONES

20. Where coin-operated public pay telephones, coin less public pay telephones, public closed-circuit telephones, public courtesy phones, or other types of public telephones are provided, public telephones shall be provided in accordance with 11B-217 Telephones for each type of public telephone provided. For purposes of this section, a bank of telephones shall be considered to be two or more adjacent telephones. **§11B-217.1**
21. Except drive-up only public telephones, where public telephones are provided, wheelchair accessible telephones complying with 11B-704.2 shall be provided in accordance with Table 11B-217.2. **§11B-217.2**
22. All public telephones shall have volume controls complying with 11B-704.3. **§11B-217.3**
23. TTYs complying with 11B-704.4 shall be provided in accordance with 11B-217.4.
24. Where a bank of telephones in the interior of a building consists of three or more public pay telephones, at least one public pay telephone at the bank shall be provided with a shelf and an electrical outlet in accordance with 11B-704.5. **§11B-217.5 (See exception)**

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities.

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Owner:

20730 PRAIRIE ST.
CHATSWORTH, CA 91311

Project:
DAX3

Phase 1

20730 PRAIRIE ST.
CHATSWORTH. CA 91311

Consultants:

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PLUMBING	RPM
ELECTRICAL	RPM
LANDSCAPE	HUNTER
FIRE PROTECTION	-
SOILS ENGINEER	-

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CITY OF LOS ANGELES
DEPARTMENT OF BUILDING AND SAFETY

FORM GRN 1

STORM WATER POLLUTION CONTROL
(2017 Los Angeles Green Building Code)

Storm Water Pollution Control Requirements for Construction Activities
Minimum Water Quality Protection Requirements for All Construction Projects

The following notes shall be incorporated in the approved set of construction/grading plans and represents the minimum standards of good housekeeping which must be implemented on all construction projects.

Construction means constructing, clearing, grading or excavation that result in soil disturbance. Construction includes structure teardown (demolition). It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility; emergency construction activities required to immediately protect public health and safety; interior remodeling with no outside exposure of construction material or construction waste to storm water; mechanical permit work; or sign permit work. (Order No. 01-182, NPDES Permit No. CAS004001 – Part 5: Definitions)

1. Eroded sediments and pollutants shall be retained on site and shall not be transported from the site via sheet flow, swales, area drains, natural drainage or wind.
2. Stockpiles of earth and other construction-related materials shall be covered and/or protected from being transported from the site by wind or water.
3. Fuels, oils, solvents and other toxic materials must be stored in accordance with their listing and shall not contaminate the soil nor the surface waters. All approved toxic storage containers are to be protected from the weather. Spills must be cleaned up immediately and disposed of properly and shall not be washed into the drainage system.
4. Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained on the project site.
5. Excess or waste concrete may not be washed into the public way or any drainage system. Provisions shall be made to retain concrete waste on-site until it can be appropriately disposed of or recycled.
6. Trash and construction –related solid wastes must be deposited into a covered receptacle to prevent contamination of storm water and dispersal by wind.
7. Sediments and other materials shall not be tracked from the site by vehicle traffic. The construction entrance roadways must be stabilized so as to inhibit sediments from being deposited into the street/public ways. Accidental depositions must be swept up immediately and may not be washed down by rain or by any other means.
8. Retention basins of sufficient size shall be provided to retain storm water runoff on-site and shall be properly located to collect all tributary site runoff.
9. Where retention of storm water runoff on-site is not feasible due to site constraints, runoff may be conveyed to the street and the storm drain system provided that an approved filtering system is installed and maintained on-site during the construction duration.

FORM GRN 10

2017 Los Angeles Green Building Code

MANDATORY REQUIREMENTS CHECKLIST
ADDITIONS AND ALTERATIONS TO NON-RESIDENTIAL BUILDINGS
(COMPLETE AND INCORPORATE THIS FORM INTO THE PLANS)

Permit # 19016 20000 31237 Date: 11-26-2019

ITEM #	CODE SECTION	REQUIREMENT	REFERENCE SHEET (Sheet # or N/A)	COMMENTS (e.g. note #, detail # or reason for N/A)
		PLANNING AND DESIGN		
1	5.106.1	**Storm water drainage and retention during construction**	A0.38	GRN 1
2	5.106.4.1.1	**Short-term bicycle parking (≥ 10 vehicular parking spaces)**	N/A	N/A
3	5.106.4.1.2	**Long-term bicycle parking (≥ 10 vehicular parking spaces)**	N/A	N/A
4	5.106.5.2	**Designated parking (≥ 10 vehicular parking spaces)**	N/A	N/A
5	5.106.10	**Grading and Paving**	N/A	CIVIL SEPERATE PERMIT
		WATER EFFICIENCY & CONSERVATION		
6	5.303.1.1	**Additions in excess of 50,000 sq ft**	N/A	(E) BLDG.
7	5.303.1.2	**Excess consumption**	N/A	PLUMB. SEPERATE PERMIT
8	5.303.2	**Water reduction**	TI-A0.3.8	GRN 18N
9	5.303.3	**Water conserving plumbing fixtures and fittings**	TI-A0.3.8	GRN 17
10	5.303.3.3	**Showerheads**	N/A	NOT IN PROJECT SCOPE
11	5.304.1	**Outdoor water use in landscape areas**	N/A	N/A
12	5.304.3	**Irrigation controller and sensor application**	N/A	N/A
13	5.304.4	**Outdoor water use meters**	N/A	N/A
14	5.304.5	**Exterior faucets**	N/A	PLUMB. SEPERATE PERMIT
15	5.305.1	**Graywater ready**	N/A	NOT IN PROJECT SCOPE
16	5.305.2	**Recycled water supply to fixtures**	N/A	NOT IN PROJECT SCOPE
		MATERIAL CONSERVATION & RESOURCE EFFICIENCY		
17	5.407.1	**Weather protection**	A2.1	(E) OPENING
18	5.407.2.1	**Sprinklers**	LI-1	SEE LANDSCAPING
19	5.407.2.2.1	**Nonabsorbent floor and wall finishes**	TI-A5.1A-C	FINISH SCHED.
20		**Exterior door protection**	#4 & #6/AD.2	ARCH. DETAILS
21	5.407.2.2.2	**Flashing**	#4 & #6/AD.2	ARCH. DETAILS
22	5.408.1	**Construction waste diversion**	TI-A2.1D	FACT SHEET
23	5.408.2	**Universal Waste**	TI-A0.3.9	ARCH. PLAN
24	5.408.3	**Excavated soil and land clearing debris**	N/A	CIVIL SEPERATE PERMIT

FORM GRN 10

2017 Los Angeles Green Building Code

ITEM #	CODE SECTION	REQUIREMENT	REFERENCE SHEET (Sheet # or N/A)	COMMENTS (e.g. note #, detail # or reason for N/A)
25	5.410.1	**Recycling by occupants (additions that are > 30% of existing floor area)**	TI-A1.1	SITE PLAN
26	5.410.4	**Testing, adjusting and balancing**	N/A	COMMISSIONING PROVIDEI
27	5.410.4.2	– **Systems**	N/A	COMMISSIONING PROVIDEI
28	5.410.4.3	– **Procedures**	N/A	COMMISSIONING PROVIDEI
29	5.410.4.3.1	– **HVAC balancing**	N/A	COMMISSIONING PROVIDEI
30	5.410.4.4	– **Reporting**	N/A	COMMISSIONING PROVIDEI
31	5.410.4.5	– **Operation and maintenance manual**	N/A	COMMISSIONING PROVIDEI
32	5.410.4.5.1	– **Inspections and reports**	N/A	COMMISSIONING PROVIDEI
		ENVIRONMENTAL QUALITY		
33	5.503.1	**Fireplace and Woodstoves**	N/A	NOT IN PROJECT SCOPI
34	5.504.1.3	**Temporary ventilation**	N/A	NOT IN PROJECT SCOPI
35	5.504.3	**Covering of duct openings and protection of mechanical equipment during construction**	A0.3.10/MECH	NOTES
36	5.504.4	**Finish material pollutant control**	TI-A5.1A-C	FINISH SCHED.
37	5.504.4.1	– **Adhesives, sealants, and caulks**		
38	5.504.4.3	– **Paints and coatings**		
39	5.504.4.3.1	– **Aerosol paints and coatings**		
40	5.504.4.3.2	– **Verification**	A0.3.10	NOTES
41	5.504.4.4	**Carpet systems**	TI-A5.1A-C	FINISH SCHED.
42	5.504.4.4.1	**Carpet cushion**	TI-A5.1A-C	FINISH SCHED.
43	5.504.4.5	**Composite wood products**	TI-A5.1A-C	FINISH SCHED.
44	5.504.4.6	**Resilient flooring systems**	TI-A5.1A-C	FINISH SCHED.
45	5.504.5.3	**Filters**	A0.3.10/MECH	NOTES
46	5.504.7	**Environmental tobacco smoke (ETS) control**	A0.3.10/MECH	NOTES
47	5.505.1	**Indoor moisture control**	A0.3.10/MECH	NOTES
48	5.506.2	**Carbon dioxide (CO_2) monitoring**	A0.3.10/MECH	NOTES
49	5.507.4.1	**Exterior noise transmission prescriptive method**	N/A	NOT IN PROJECT SCOPE
50		– **Exterior noise transmission for roof**	N/A	NOT IN PROJECT SCOPE
51		– **Exterior noise transmission for walls**	N/A	NOT IN PROJECT SCOPE
52		– **Exterior noise transmission for windows**	N/A	NOT IN PROJECT SCOPE
53	5.507.4.2	**Exterior noise transmission performance method**	N/A	NOT IN PROJECT SCOPE
54	5.507.4.3	**Interior sound transmission**	TI-A2.1	FLOOR PLANS
55	5.508.1	**Ozone depletion and greenhouse gas reductions**	N/A	NOT IN PROJECT SCOPE
56	5.508.2	**Supermarket refrigerant leak reduction**	N/A	NOT IN PROJECT SCOPE

FORM GRN 11

VOC AND FORMALDEHYDE LIMITS
2017 Los Angeles Green Building Code
(Incorporate this form into the plans)

The tables below are taken from the 2017 Los Angeles Green Building Code
Tables 4.504.1, 4.504.2, 4.504.3, 4.504.5, 5.504.4.1, 5.504.4.2, 5.504.4.3, 5.504.4.5

VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[1,3]
Grams of VOC per Liter of Coating,
Less Water and Less Exempt Compounds

COATING CATEGORY[2,3]	CURRENT LIMIT
Flat coatings	50
Nonflat coatings	100
Nonflat-high gloss coatings	150
Specialty Coatings	
Aluminum roof coatings	400
Basement specialty coatings	400
Bituminous roof coatings	50
Bituminous roof primers	350
Bond breakers	350
Concrete curing compounds	350
Concrete/masonry sealers	100
Driveway sealers	50
Dry fog coatings	150
Faux finishing coatings	350
Fire resistive coatings	350
Floor coatings	100
Form-release compounds	250
Graphic arts coatings (sign paints)	500
High temperature coatings	420
Industrial maintenance coatings	250
Low solids coatings[1]	120
Magnesite cement coatings	450
Mastic texture coatings	100
Metallic pigmented coatings	500
Multicolor coatings	250
Pretreatment wash primers	420
Primers, sealers, and undercoaters	100
Reactive penetrating sealers	350
Recycled coatings	250
Roof coatings	50
Rust preventative coatings	250
Shellacs	
Clear	730
Opaque	550
Specialty primers, sealers and undercoaters	100
Stains	250
Stone consolidants	450
Swimming pool coatings	340
Traffic marking coatings	100
Tub and tile refinish coatings	420
Waterproofing membranes	250
Wood coatings	275
Wood preservatives	350
Zinc-rich primers	340

[1] Grams of VOC per liter of coating, including water and including exempt compounds.
[2] The specified limits remain in effect unless revised limits are listed in subsequent columns in the table.
[3] Values in this table are derived from those specified by the California Air Resources Board, Architectural Coatings Suggested Control Measure, February 1, 2008. More information is available from the Air Resources Board.

FORMALDEHYDE LIMITS[1]
Maximum Formaldehyde Emissions in Parts per Million.

PRODUCT	CURRENT LIMIT
Hardwood plywood veneer core	0.05
Hardwood plywood composite core	0.05
Particleboard	0.09
Medium density fiberboard	0.11
Thin medium density fiberboard[2]	0.13

[1] Values in this table are derived from those specified by the California Air Resources Board, Air Toxics Control Measure for Composite Wood as tested in accordance with ASTM E 1333. For additional information, see California Code of Regulations, Title 17, Sections 93120 through 93120.12.
[2] This medium density fiberboard has a maximum thickness of $\frac{5}{16}$ inches (8 mm).

SEALANT VOC LIMIT
Less Water and Less Exempt Compounds in Grams per Liter

SEALANTS	CURRENT VOC LIMIT
Architectural	250
Marine deck	760
Nonmembrane roof	300
Roadway	250
Single-ply roof membrane	450
Other	420
SEALANT PRIMERS	
Architectural	
Nonporous	250
Porous	775
Modified bituminous 500	500
Marine deck	760
Other	750

Note: For additional information regarding methods to measure the VOC content specified in these tables, see South Coast Air Quality Management District Rule 1168.

ADHESIVE VOC LIMIT[1,2]
Less Water and Less Exempt Compounds in Grams per Liter

ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesive	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Drywall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single-ply roof membrane adhesives	250
Other adhesives not specifically listed	50
SPECIALTY APPLICATIONS	
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Contact adhesive	80
Special purpose contact adhesive	250
Structural wood member adhesive	140
Top and trim adhesive	250
SUBSTRATE SPECIFIC APPLICATIONS	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	50
Wood	30
Fiberglass	80

[1] If an adhesive is used to bond dissimilar substrates together, the adhesive with the highest VOC content shall be allowed.
[2] For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168, http://www.arb.ca.gov/DRDB/SC/CURHTML/R1168.PDF.

FORM GRN 15

2017 Los Angeles Green Building Code

GREEN BUILDING CODE PLAN CHECK NOTES
NON-RESIDENTIAL BUILDINGS

1. State on plans that the outdoor lighting systems shall be designed and installed to comply with all of the following:
   a. The minimum requirements in California Energy Code for Lighting Zones 1-4
   b. Backlight, Uplight and Glare (BUG) ratings as defined in IESNA TM-15-11
   c. Allowable BUG ratings not exceeding those shown in on Table 5.106.8. (5.106.8)
2. Separate submeters shall be installed in any building or new space within a building that is 10,000 square feet or greater. (5.303.1.2)
3. New plumbing fixtures and fittings shall not exceed the maximum allowable flow rate specified in Section 5.303.3. (5.303.3)
4. When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80psi, or the shower shall be designed to only allow one showerhead to be in operation at a time. (5.303.3.3)
5. For projects that include landscape work, the *Landscape Certification*, Form GRN 12, shall be completed prior to final inspection approval. (5604.4.c)
   (SlaveAssembly Bill No. 1881)
6. Installed automatic irrigation system controllers are weather- or soil-based controllers. (WMELO, § 492.7)
7. Weather-resistant exterior wall and foundation envelope shall be detailed in conformance with Los Angeles Building Code Section 1403.2 and California Energy Code Section 150. (5.407.1)
8. Automatic landscape irrigators shall be installed such that it doesn't spray on the structure. (5.407.2.1)
9. New exterior entries and openings subject to foot traffic shall be protected against wet conditions using features such as overhangs, awnings and/or recesses for a combined depth over the entry of at least 4 feet. (5.407.2.2.1)
10. Nonabsorbent interior floor and wall finishes shall be used within at least two feet around and perpendicular to new exterior entries and/or opening subject to foot traffic. (5.407.2.2.1)
11. Exterior entries shall have flashing integrated with the drainage plane. (5.407.2.2.2)
12. Only a City of Los Angeles certified hauler will be used for hauling of construction waste. (5.408.1)
13. 100% of excavated soil and vegetation resulting from land clearing shall be reused or recycled. (5.408.3)
14. A final report for the testing and adjusting of all new systems shall be completed and provided to the field inspector prior to final approval. This report shall be signed by the individual responsible for performing these services. (5.410.4.4)
15. For all new equipment, an *Operation & Systems Manual* shall be provided to the owner and the field inspector at the time of final inspection. (5.410.4.5)
16. All new gas fireplaces must be direct-vent, sealed combustion type. Wood burning fireplaces are prohibited per AQMD Rule 445. (5.503.1, AQMD Rule 445)
17. If the new HVAC system is used during construction, use return air filters with a MERV of 8. Replace all filters immediately prior to occupancy. (5.504.1.3)
18. All new ducts and other new related air distribution components openings shall be covered with tape, plastic, or sheetmetal until the final startup of the heating, cooling and ventilating equipment. (5.504.3)
19. Architectural paints and coatings, adhesives, caulks and sealants shall comply with the Volatile Organic Compound (VOC) limits listed in Tables 5.504.4.1-5.504.4.3. (5.504.4.1- 5.504.4.3)
20. The *VOC Content Verification Checklist*, Form GRN 2, shall be completed and verified prior to final inspection approval. The manufacturer's specifications showing VOC content for all applicable products shall be readily available at the job site and be provided to the field inspector for verification. (5.504.4.3.2)
21. All new carpet installed in the building interior meets the testing and product requirements of one of the following:
   a. Carpet and Rug Institute 's Green Label Plus Program
   b. California Department of Public Health's Specification 01350
   c. NSF/ANSI 140 at the Gold level
   d. Scientific Certifications Systems Indoor Advantage™ Gold (5.504.4.4)
22. All new carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program. (5.504.4.4.1)
23. New hardwood plywood, particle board, and medium density fiberboard composite wood products used in the interior or exterior of the building shall meet the formaldehyde limits. (5.504.4.5, TI-A04.4.5)
24. The *Formaldehyde Emissions Verification Checklist*, Form GRN 3, shall be completed prior to final inspection approval. The manufacturer's specifications showing formaldehyde content for all applicable wood products shall be readily available at the job site and be provided to the field inspector for verification. (5.504.4.5)
25. 80% of the total area receiving new resilient flooring shall comply with one or more of the following:
   a. VOC emission limits defined in the CHPS High Performance Products Database
   b. Certified under UL GREENGUARD Gold
   c. Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program
   d. Meet the California Department of Public Health's Specification 01350 (5.504.4.6)
26. Mechanically ventilated buildings shall have air filter with a Minimum Efficiency Reporting Value (MERV) of 8 or higher. However, buildings within 1,000 feet of a freeway shall provide regularly occupied areas of the building with a MERV 13 filter. Filters shall be installed prior to occupancy and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual. (5.504.5.3)
27. Designated outdoor smoking area shall be at least 25 feet from an outdoor air intake or operable windows. (5.504.7)
28. Ventilated spaces in buildings shall meet the minimum requirements of Section 121 of the California Energy Code and Chapter 4 of the California Code of Regulations, Title 8. (5.505.1)
29. Buildings that use Demand Control Ventilation shall have CO_2 sensors and ventilation controls installed in accordance with the requirements of the current edition of the California Energy Code, CCR, Title 24, Part 6, Section 121(c). (5.506.2)
30. The HVAC, refrigeration, and fire suppression equipment shall not contain CFC or Halons. (5.508.1)
31. Retail food stores of 8,000 sq. ft. or more of conditioned area that have a commercial refrigeration system with a global warming potential (GWP) of 150 or greater shall have leak reduction measures in accordance with LAGBC Section 5.508.2. Separate mechanical plan check is required. (5.508.2)

FORM GRN 17

PLUMBING FIXTURE FLOW RATES
Non-Residential Occupancies
2017 Los Angeles Green Building Code
(Incorporate this form into the plans)

SECTION 5.303.2
WATER REDUCTION FIXTURE FLOW RATES

FIXTURE TYPE	MAXIMUM ALLOWABLE FLOW RATE
Showerheads	1.8 gpm @ 80 psi
Lavatory faucets, residential	1.2 gpm @ 60 psi[1,3]
Lavatory Faucets, nonresidential	0.4 gpm @ 60 psi[1,3]
Kitchen faucets	1.5 gpm @ 60 psi[2,4,5]
Wash fountains	1.8 gpm for every 20 in. of rim space @60 psi
Metering faucets	0.2 gallons/cycle
Metering faucets for wash fountains	0.2 gpm for every 20 in. of rim space @ 60 psi
Gravity tank type water closets	1.28 gallons/flush[6]
Flushometer tank water closets	1.28 gallons/flush[6]
Flushometer valve water closets	1.28 gallons/flush[6]
Urinals	0.125 gallons/flush
Clothes Washers	ENERGY-STAR certified
Dishwashers	ENERGY-STAR certified

[1] Lavatory faucets shall not have a flow rate less than 0.8 gpm at 20 psi.
[2] Kitchen faucets may temporarily increase flow above the maximum rate, but not above 2.2gpm @ 60psi and must default to a maximum flow rate of 1.8 gpm @ 60psi.
[3] Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.
[4] Kitchen faucets with a maximum 1.8 gpm flow rate may be installed in buildings that have water closets with a maximum flush rate of 1.06 gallons/flush installed throughout
[5] This requirement does not apply to faucets in commercial kitchens.
[6] Includes single and dual flush water closets with an effective flush of 1.28 gallons or less.
   Single Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is the average flush volume when tested in accordance with ASME A112.19.233.2.
   Dual Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is defined as the composite, average flush volume of two reduced flushes and one full flush. Flush volumes will be tested in accordance with ASME A112.19.2 and ASME A112.19.14.

FORM GRN 18N

2017 Los Angeles Green Building Code

WATER CONSERVATION ORDINANCE NOTES
NON-RESIDENTIAL BUILDINGS

1. For new buildings or additions exceeding 50,000 ft², install a separate water meter or sub-meter for the following areas:
   A. For each individual leased, rented, or other tenant space within the building projected to consume more than 100 gpd (380 L/day).
   B. Where potable water is used for industrial/process uses, for water supplied to the following subsystems:
      a. Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s).
      b. Makeup water for evaporative coolers greater than 6 gpm (0.04 L/s).
      c. Steam and hot-water boilers with energy input more than 500,000 Btu/h (147 kW).
   C. For each building that uses more than 100 gpd on a parcel containing multiple buildings. (5.303.1.1)
2. Provide a 20% reduction in the overall potable water use for each building. The reduction shall be based on the maximum allowable water use per plumbing fixture and fittings as required by the Los Angeles Plumbing Code. New projects having a water supply of 2"or less and additions and alterations projects may use the prescriptive method outlined in this section. (5.303.2)
3. A water budget for landscape irrigation use that conforms to the California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO) is required for new landscape areas of 500 sqft or more.
   The following methods to reduce potable water use in landscape areas include, but are not limited to, use of captured rainwater, recycled water, graywater, or water treated for irrigation purposes and conveyed by a water district or public entity. (5.304.1, 5.304.2)
4. New buildings on a site with 1,000 square feet or more of cumulative landscape area shall have separate meters or submeters for outdoor water use. (5.304.4)
5. Additions and alterations on a site with 1,000 square feet of cumulative landscape area which require water service upgrade shall have separate meters or submeters for outdoor water use. (5.304.4)
6. Locks shall be installed on all publicly accessible exterior faucets and hose bibs. (5.304.5)
7. Except as provided in this section, for sites with over 500 square feet of landscape area, alternate waste piping shall be installed to permit discharge from the clothes washer, bathtub, showers, and bathroom/restrooms wash basins to be used for a future graywater irrigation system (5.305.1)
8. Except as provided in this section, where City-recycled water is available within 300 feet of the property line, water closets, urinals, floor drains, and process cooling and heating in the building shall be supplied from recycled water and shall be installed in accordance with the Los Angeles Plumbing Code. (5.305.2)
9. Cooling towers shall comply with one of the following:
   A. Shall have a minimum of 6 cycles of concentration (blowdown)
   B. A minimum of 50% of the makeup water supply to the cooling towers shall come from non-potable water sources, including treated backwash. (5.305.3)
10. Develop and construct a system for onsite reuse of the groundwater where groundwater is being extracted and discharged. Alternatively, the groundwater may be discharged to the sewer. (5.305.4)
11. Provide a hot water system complying with one of the following:
   A. The hot water system shall not allow more than 0.6 gallons of water to be delivered to any fixture before hot water arrives.
   B. Where a hot water recirculation or electric resistance heat trace wire system is installed, the branch from the recirculating loop or electric resistance heat trace wire to the fixture shall contain a maximum of 0.6 gallons. (Los Angeles Plumbing Code Section 610.4.1)

ENVIRONMENTAL QUALITY:

1. IF THE HVAC SYSTEM IS USED DURING CONSTRUCTION, USE RETURN AIR FILTERS WITH A MERV OF 8. REPLACE ALL FILTERS IMMEDIATELY PRIOR TO OCCUPANCY.
2. ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, OR SHEET METAL UNTIL THE FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT.
3. ARCHITECTURAL PAINTS AND COATINGS, ADHESIVES, CAULKS AND SEALANTS SHALL COMPLY WITH THE VOLATILE ORGANIC COMPOUND (VOC) LIMITS LISTED IN TABLES 5.504.4.1– 5.504.4.3. *
4. THE VOC CONTENT VERIFICATION CHECKLIST, FORM GRN 2, SHALL BE COMPLETED AND VERIFIED PRIOR TO FINAL INSPECTION APPROVAL. THE MANUFACTURER 'S SPECIFICATIONS SHOWING VOC CONTENT FOR ALL APPLICABLE PRODUCTS SHALL BE READILY AVAILABLE AT THE JOB SITE AND BE PROVIDED TO THE FIELD INSPECTOR FOR VERIFICATION.
5. ALL NEW CARPET INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE TESTING AND PRODUCT REQUIREMENTS OF ONE OF THE FOLLOWING:
   I. CARPET AND RUG INSTITUTE 'S GREEN LABEL PLUS PROGRAM
   II. CALIFORNIA DEPARTMENT OF PUBLIC HEALTH ' S SPECIFICATION 01350
   III. NSF/ANSI 140 AT THE GOLD LEVEL OR HIGHER
   IV. SCIENTIFIC CERTIFICATIONS SYSTEMS SUSTAINABLE CHOICE
   V. COMPLIANT WITH THE COLLABORATIVE FOR HIGH PERFORMANCE SCHOOLS CALIFORNIA (CA–CHPS) CRITERIA INTERPRETATION FOR EQ 7.0 AND 7.1 AND LISTED IN THE CHPS HIGH PERFORMANCE PRODUCT DATABASE.
6. ALL NEW CARPET CUSHION INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE REQUIREMENTS OF THE CARPET AND RUG INSTITUTE GREEN LABEL PROGRAM.
7. NEW HARDWOOD PLYWOOD, PARTICLE BOARD, AND MEDIUM DENSITY FIBERBOARD COMPOSITE WOOD PRODUCTS USED IN THE INTERIOR OR EXTERIOR OF THE BUILDING SHALL MEET THE FORMALDEHYDE LIMITS LISTED IN TABLE 5.504.4.5. 8 THE FORMALDEHYDE EMISSIONS VERIFICATION CHECKLIST, FORM GRN 3, SHALL BE COMPLETED PRIOR TO FINAL INSPECTION APPROVAL. THE MANUFACTURER 'S SPECIFICATIONS SHOWING FORMALDEHYDE CONTENT FOR ALL APPLICABLE WOOD PRODUCTS SHALL BE READILY AVAILABLE AT THE JOB SITE AND BE PROVIDED TO THE FIELD INSPECTOR FOR VERIFICATION.
9. 80% OF THE TOTAL AREA RECEIVING RESILIENT FLOORING SHALL COMPLY WITH ONE OR MORE OF THE FOLLOWING:
   I. CERTIFIED AS A CHPS LOW–EMITTING MATERIAL IN THE CHPS HIGH PERFORMANCE PRODUCTS DATABASE
   II. CERTIFIED UNDER UL GREENGUARD GOLD
   III. CERTIFIED UNDER THE RESILIENT FLOOR COVERING INSTITUTE (RFCI) FLOORSCORE PROGRAM
   IV. MEET THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH'S SPECIFICATION 01350
10. AN AIR FILTER WITH A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8 OR HIGHER SHALL BE INSTALLED IN THE MECHANICAL SYSTEM FOR OUTSIDE AND RETURN AIR PRIOR TO OCCUPANCY.
11. THE BUILDING SHALL MEET OR EXCEED THE PROVISIONS FOR MECHANICAL VENTILATION OF SECTION 1203 OF THE LOS ANGELES BUILDING CODE.
12. BUILDINGS THAT USE DEMAND CONTROL VENTILATION SHALL HAVE CO2 SENSORS AND VENTILATION CONTROLS INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE CALIFORNIA ENERGY CODE, CCR, TITLE 24, PART 6 SECTION 121(C).
13. WOOD BURNING FIREPLACES AND OTHER WOOD BURNING DEVICES ARE PROHIBITED.
14. DESIGNATED OUTDOOR SMOKING AREA SHALL BE AT LEAST 25 FEET FROM AN OUTDOOR AIR INTAKE OR OPERABLE WINDOWS.
15. THE BUILDING SHALL MEET OR EXCEED THE PROVISIONS FOR MECHANICAL VENTILATION OF SECTION 1203 OF THE LOS ANGELES BUILDING CODE.
16. BUILDINGS THAT USE DEMAND CONTROL VENTILATION SHALL HAVE CO2 SENSORS AND VENTILATION CONTROLS INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE CALIFORNIA ENERGY CODE, CCR. TITLE 24 PART 6 SECTION 121(c).

GENERAL NOTES:

1. THE CONSTRUCTION SHALL NOT RESTRICT A FIVE FOOT CLEAR AND UNOBSTRUCTED ACCESS TO ANY WATER OR POWER DISTRIBUTION FACILITIES (POWER POLES, PULL–BOXES, TRANSFORMERS, VAULTS, PUMPS, VALVES, METERS, APPURTENANCES, ETC.) OR TO THE LOCATION OF THE HOOK–UP. THE CONSTRUCTION SHALL NOT BE WITHIN TEN FEET OF ANY POWER LINES – WHETHER OR NOT THE LINES ARE LOCATED ON THE PROPERTY. FAILURE TO COMPLY MAY CAUSE CONSTRUCTION DELAYS AND/OR ADDITIONAL EXPENSES.
2. AN APPROVED DOUBLE CHECK DETECTOR ASSEMBLY OR REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION DEVICE SHALL BE INSTALLED ON THE FUEL GAS LINE ON THE DOWN STREAM SIDE OF THE UTILITY METER AND BE RIGIDLY CONNECTED TO THE EXTERIOR OF THE BUILDING OR STRUCTURE CONTAINING THE FUEL GAS PIPING. (PER ORDINANCE 170,158) (INCLUDES COMMERCIAL ADDITIONS AND TI WORK OVER $10,000) SEPARATE PLUMBING PERMIT IS REQUIRED.
3. PROVIDE ULTRA FLUSH WATER CLOSETS FOR ALL NEW CONSTRUCTION. EXISTING SHOWER HEADS AND TOILETS MUST BE ADAPTED TO LOW WATER CONSUMPTION.
4. A COPY OF THE EVALUATION REPORT AND/OR CONDITIONS LISTING SHALL BE MADE AVAILABLE AT THE JOB SITE.
5. THIS BUILDING MUST BE EQUIPPED WITH AN AUTOMATIC FIRE EXTINGUISHING SYSTEM, COMPLYING WITH (NFPA–13/NFPA–13R); THE SPRINKLER SYSTEM SHALL BE APPROVED BY PLUMBING DIVISIONS PRIOR TO INSTALLATION. (903.2).
6. EXIT SIGNS SHALL BE INTERNALLY & EXTERNALLY ILLUMINATED.
7. EXISTING SIGNS ILLUMINATED BY AN EXTERNALLY SOURCE SHALL HAVE AN INTENSITY OF NOT LESS THAN 5 FOOT CANDLES (54LUX).
8. INTERNALLY ILLUMINATED SIGN SHALL BE LISTED AND LABELED AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND SECTION 2702.
9. EXIT SIGNS SHALL BE ILLUMINATED AT ALL TIMES.
10. EXIT SIGNS SHALL BE CONNECTED TO AN EMERGENCY POWER SYSTEM THAT WILL PROVIDE AN ILLUMINATION OF NOT LESS THAN 90 MIN. IN CASE OF PRIMARY POWER LOSS. (1011.6.3)
11. EGRESS DOORS SHALL BE READILY OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT. SEE 1008.1.9 FOR EXCEPTIONS.
12. DOOR HANDLES, LOCK AND OT

CITY OF LOS ANGELES
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Our mission is to provide the highest level of safety, and to protect public health and the environment from toxic harm.

Fact Sheet, January 2010

Universal Waste Fact Sheet

California's Universal Waste Rule allows individuals and businesses to transport, handle and recycle certain common hazardous wastes, termed universal wastes, in a manner that differs from the requirements for most hazardous wastes. The more relaxed requirements for managing universal wastes were adopted to ensure that they are managed safely and are not disposed of in the trash.

What are Universal Wastes?

Universal wastes are hazardous wastes that are widely produced by households and many different types of businesses. Universal wastes include televisions, computers and other electronic devices as well as batteries, fluorescent lamps, mercury thermostats, and other mercury containing equipment, among others.

The hazardous waste regulations (Cal. Code Regs, tit. 22, div. 4.5, ch. 11 section 66261.9) identify seven categories of hazardous wastes that can be managed as universal wastes. Any unwanted item that falls within one of these waste streams can be handled, transported and recycled following the simple requirements set forth in the universal waste regulations (UWR) (Cal. Code Regs, tit. 22, div. 4.5, ch. 23)

Universal wastes are:

1. Electronic devices: Includes any electronic device that is a hazardous waste (with or without a Cathode Ray Tube (CRT)), including televisions, computer monitors, cell phones, VCRs, computer CPUs and portable DVD players.
2. Batteries: Most household-type batteries, including rechargeable nickel-cadmium batteries, silver button batteries, mercury batteries, alkaline batteries and other batteries that exhibit a characteristic of a hazardous waste
3. Electric lamps: Fluorescent tubes and bulbs, high intensity discharge lamps, sodium vapor lamps and electric lamps that contain added mercury, as well as any other lamp that exhibits a characteristic of a hazardous waste. (e.g., lead).
4. Mercury-containing equipment: Thermostats, mercury switches, mercury thermometers, pressure or vacuum gauges, dilators and weighted tubing, mercury rubber flooring, mercury gas flow regulators, dental amalgams, counterweights, dampers and mercury added novelties such as jewelry, ornaments and footwear.
5. CRTs: The glass picture tubes removed from devices such as televisions and computer monitors.
6. CRT glass: A cathode ray tube that has been accidently broken or processed for recycling.
7. Non-empty aerosol cans

Universal Wastes may not be disposed of in the trash!

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Regulatory Standards for Universal Waste

The UWR has separate requirements for each of the three types of regulated entities:

1. Universal waste handlers
2. Universal waste transporters
3. Destination Facilities

Universal Waste Handlers

A universal waste handler is a generator of universal waste or the owner or operator of a facility that receives universal waste from another universal waste handler, accumulates universal waste, and sends universal waste to another universal waste handler, a facility that accepts hazardous waste, or a foreign country.

A universal waste handler may be:

1. A person (e.g., a household or business) who generates universal waste but does not accept universal waste from others
2. A person who accepts and accumulates universal waste generated by others at his or her facility
3. A person who accepts universal waste generated by others and conducts certain treatment and recycling activities allowed by the universal waste handler regulations

Management Requirements for Universal Waste Handlers (Cal. Code Regs, tit. 22, sections 66273.30-66273.39; additional requirements for handlers who conduct authorized treatment, Cal. Code Regs, tit. 22, sections 66273.70- 77)

- Do not dispose of universal waste or treat universal waste except as provided for in the regulations
- Notify DTSC and/or obtain an EPA identification number
- Use proper containment—non-leaking, compatible containers
- Segregate universal waste in distinct areas
- Determine if materials generated when handling/recycling are hazardous wastes
- Comply with applicable requirements for hazardous waste
- If applicable, comply with zoning requirements when storing universal wastes
- Have spill kits readily available to deal with accidental spills (mercury-containing devices)
- Use proper labeling and markings
- Accumulate universal waste no longer than one year

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- Provide personnel training to personnel who manage universal waste, or who supervise personnel who manage universal waste and keep training records
- Respond to releases of universal waste or its contents; determine if spill residuals are hazardous waste
- Track shipments by keeping records of what was received and shipped (name, address, quantities) for three years

Universal Waste Transporters

A universal waste transporter is a person engaged in the offsite transportation of universal waste by air, rail, highway or water. A universal waste transporter may be:

1. Universal waste handler carrying universal waste in his or her own vehicle
2. A package shipping service (e.g., US Postal Service; FedEx, UPS)
3. A commercial carrier (e.g., a trucking company, a hauler specializing in universal waste, or the operator of a destination facility that offers a universal waste pick-up service)
   - If you do not own or operate a facility that accepts, generates, accumulates, or stores universal waste, but you pick up and transport universal waste (e.g., electronic devices from office complexes) to a recycling or collection facility, you are a universal waste transporter. Universal waste transporters do not need to notify DTSC or submit annual reports for their transportation activities.
   - Universal waste transporters may store universal waste at a transfer facility for up to 10 days (depending on local zoning). A universal waste transporter who exceeds this limit is considered a universal waste handler and is subject to the handler requirements summarized above.

Destination Facilities

A destination facility is a fully-regulated hazardous waste facility that treats, disposes of, or recycles a specific type of universal waste. Examples of destination facilities are hazardous waste recycling facilities and hazardous waste landfills. A destination facility shall manage the universal waste in accordance with the requirements and conditions in its hazardous waste facility permit, unless authorized by section 66273.60 of title 22 of the California Code of Regulations to manage it pursuant to the reduced requirements applicable to universal waste handlers. A destination facility is required to follow certain rules for shipping universal wastes off-site and for rejecting shipments that contain universal waste and is required to keep records of all shipments received for three years. A facility that only accepts and accumulates universal waste is not a destination facility. Such a facility is regulated as a universal waste handler.

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Households and Conditionally Exempt Small Quantity Universal Waste Generators (CESQUWG)

Two categories of universal waste handlers—households and CESQUWGs—are exempt from most of the requirements of the universal waste regulations provided they comply with certain conditions. Handlers who qualify for these exemptions are not required:

- To obtain an EPA ID number or otherwise notify DTSC;
- To keep records of shipments or provide annual reports to DTSC; or
- To label their universal waste.

A household is defined to include a single detached residence (e.g., a house) or a single unit of a multiple residence unit (e.g., an apartment or condominium). Households that generate hazardous wastes other than universal wastes (e.g., paints and motor oil) can visit DTSC's household hazardous waste Web page (http://www.dtsc.ca.gov/HazardousWaste/UniversalWaste/HHW.cfm) for information on how to properly dispose of them.

A Conditionally Exempt Small Quantity Universal Waste Generator (CESQUWG) is a universal waste generator who produces less than 100 kilograms (220 pounds) of RCRA hazardous waste, including universal waste that is RCRA universal waste and less than 1 kilogram of acutely hazardous waste in a calendar month. (RCRA hazardous waste is hazardous waste that is regulated under the hazardous waste regulations adopted by the U.S. Environmental Protections Agency.)

Pursuant to section 66273.8 of title 22 of the California Code of Regulations, a generator who meets the definition of a household or a CESQUWG is exempt from universal waste handler requirements provided he or she:

1) Does not dispose of universal waste;
2) Relinquishes universal waste only to another universal waste handler, a universal waste transporter, a destination facility, or a curbside household hazardous waste collection program; and
3) Does not conduct treatment of universal waste, except for limited activities enumerated in the regulations (e.g., removing batteries, light bulbs, or mercury switches). This exemption applies only to universal waste generated by the household (e.g. light bulbs, computers, televisions, thermostats, cell phones, etc.), not to universal waste accepted from other people.

Where can I send universal wastes?

A handler may not send universal waste to a municipal solid waste (garbage) landfill or a non-hazardous waste recycling center. All handlers of universal waste must relinquish their universal waste to one of the following:

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1. Another handler (typically a business that specializes in collecting, storing, accumulating and shipping universal wastes). Examples:
   - A household hazardous waste facility
   - A "Take-it-Back Partner" such as a retailer or manufacturer
   - A collection event
2. A universal waste transporter. Examples:
   - A curbside HHW collection program
   - A package service (e.g., postal service, UPS)
   - A destination facility that offers a pick-up service
3. A universal waste destination facility (generally, a facility with a permit to treat, store, or dispose of hazardous waste).

Search engines available to find locations accepting universal waste in your area: E-Recycle.org; Earth911.org; CalRecycle database; DTSC map; HHW list;

For more information, see DTSC's Universal Waste Web page at:
http://www.dtsc.ca.gov/HazardousWaste/UniversalWaste/index.cfm

Contact your DTSC regulatory assistance officer at: (800) 728-6942

STATE OF CALIFORNIA

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Project:
DAX3

Phase 1

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Consultants:

C I V I L	RA SMITH
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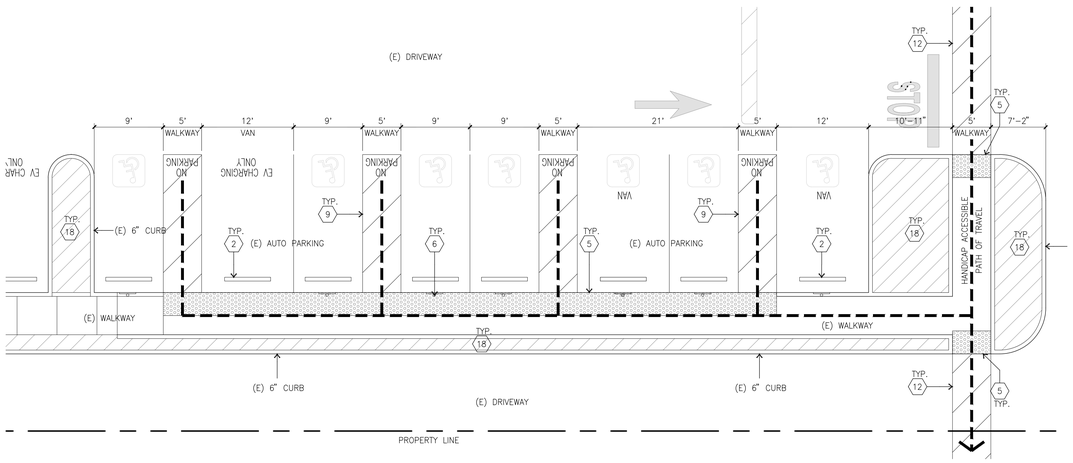
MECHANICAL	RPM
PLUMBING	RPM
ELECTRICAL	RPM
LANDSCAPE	HUNTER
FIRE PROTECTION	-
SOILS ENGINEER	-

Title: GREEN BUILDING NOTES

Project Number: 19415
Drawn by: DH
Date: 11/27/2019
Revision:

Sheet:

TI-A0.3.9



ENLARGED SITE PLAN B
scale: 1/8" = 1'-0"

SCALE: 1/8" = 1'-0"
0 8' 16' 24'
TRUE NORTH

SITE PLAN KEYNOTES

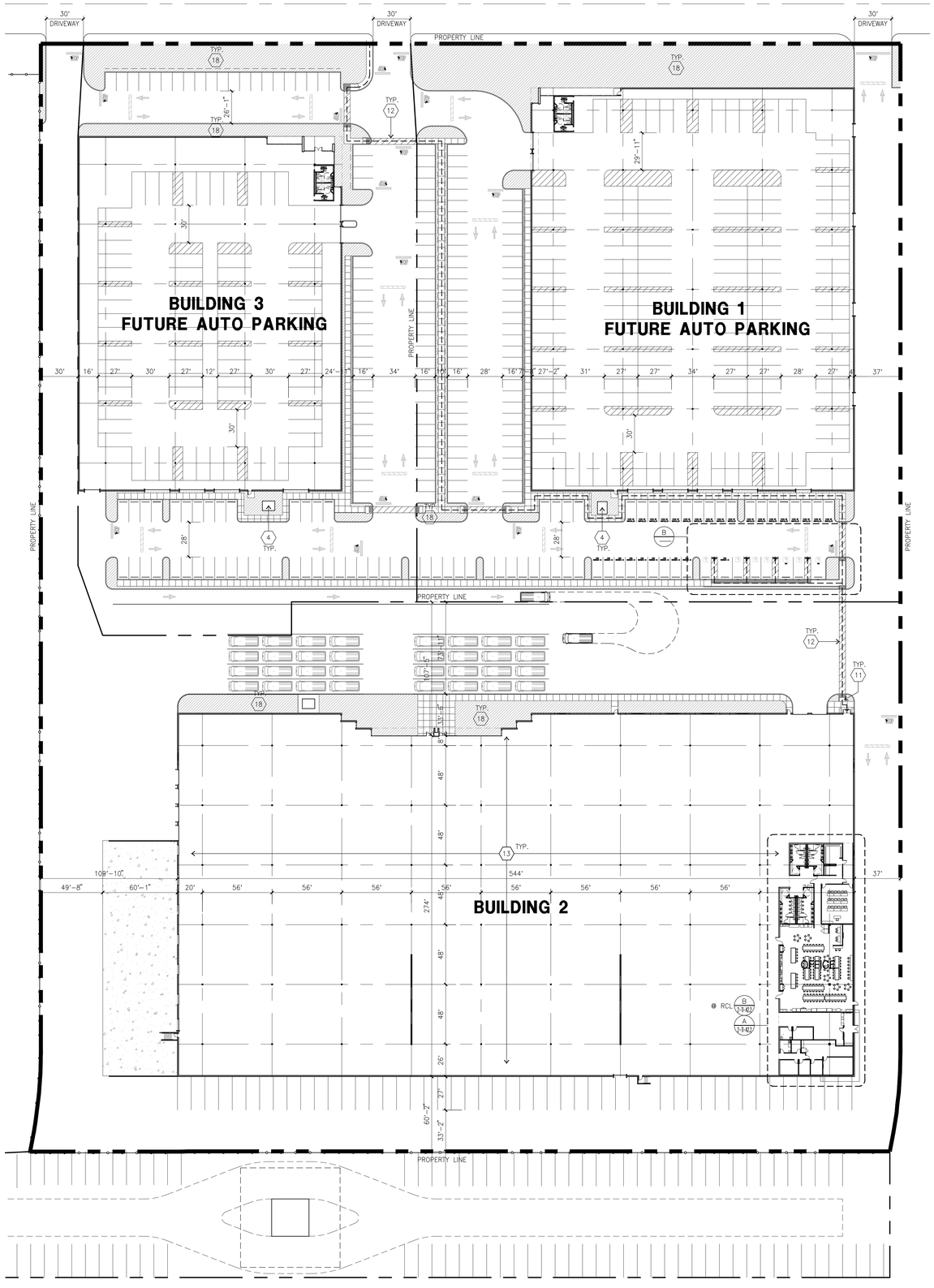
1. PROVIDE 23,120 SF VAN LOADING CANOPY WITH FIRE PROTECTION PER CODE REQUIREMENTS – SEE STRUCTURAL DRAWINGS.
2. PROVIDE CONCRETE WHEEL STOPS.
3. PROVIDE NEW CITY STANDARD CURBS CONSTRUCTION AND SIZE. SEE CIVIL AND LANDSCAPE DRAWINGS.
4. PROTECT IN-PLACE EXISTING SITE UTILITIES, TRANSFORMER, FDC, PIVs, ETC.
5. ZERO CURB FOR ACCESSIBLE ACCESS.
6. EXISTING ACCESSIBLE STALLS TO REMAIN PER PERMIT NUMBERS: BLD2019-02941 & BLD2019-04107.
7. PROVIDE GRADE LEVEL RAMP WITH RETAINING WALL AND BOLLARDS AT THE BOTTOM, SEE ARCHITECTURAL DETAIL C/TI-A3.3 & STRUCTURAL DETAILS 5/SD-1.
8. FIRE TRUCK HAMMERHEAD TURN PER CITY OF ANAHEIM STANDARDS.
9. ALL PARKING STRIPING TO BE PER CITY OF ANAHEIM STANDARD – SEE DETAIL 8/TI-AD.7.
10. ACCESSIBLE STALLS WITH PAVEMENT SYMBOL, ALL REQUIRED SIGNAGE PER CODE, TRUNCATED DOMES, ETC AND ALL REQUIRED COMPONENTS TO COMPLY WITH CODE REQUIREMENTS.
11. EXISTING ACCESSIBLE CONCRETE RAMP TO PUBLIC WALK TO REMAIN.
12. SITE AREA PAVEMENT STRIPING PER CITY OF ANAHEIM STANDARDS.
13. EXISTING CONCRETE SLAB TO REMAIN. PATCH/REPAIR WHERE WORK OCCURS.
14. EXTERIOR LIGHT POLES, SEE 7/AD.5 & ELECTRICAL DRAWINGS.
15. EXISTING POLE SIGN TO REMAIN.
16. EXISTING MONUMENT SIGN TO REMAIN.
17. WALL MOUNTED LIGHTING FIXTURES, SEE ELECTRICAL SHEETS.
18. LANDSCAPE, SEE LANDSCAPE PLANS.
19. REMOVABLE BOLLARDS FOR FIRE ACCESS ONLY TO COMPLY FIRE DEPARTMENT REQUIREMENTS AND STANDARDS.
20. BICYCLE RACK, **SEE DETAIL X/AD.X.**
21. PROTECT IN-PLACE EXISTING FIRE HYDRANT.
22. PROVIDE STEEL FENCE PER PERMIT BLD2019-02243
23. PROVIDE STEEL FENCE AT **8' HIGH PER CITY OF ANAHEIM STANDARDS. SEE DETAIL 9/AD.7.**

SITE PLAN GENERAL NOTES

1. THE SITE PLAN BASED ON THE SOILS REPORT PREPARED BY:
2. IF SOILS ARE EXPANSIVE IN NATURE, USE STEEL REINFORCING FOR ALL SITE CONCRETE.
3. ALL DIMENSIONS ARE TO THE FACE OF CONCRETE WALL, FACE OF CONCRETE CURB OR GRID LINE U.N.O.
4. SEE "C" PLANS FOR ALL CONCRETE CURBS, GUTTERS AND SWALES.
5. THE ENTIRE PROJECT SHALL BE PERMANENTLY MAINTAINED WITH AN AUTOMATIC IRRIGATION SYSTEM.
6. SEE "C" DRAWINGS FOR POINT OF CONNECTIONS TO OFF-SITE UTILITIES. CONTRACTOR SHALL VERIFY ACTUAL UTILITY LOCATIONS.
7. PROVIDE POSITIVE DRAINAGE AWAY FROM BLDG. SEE "C" DRAWINGS.
8. CONTRACTOR TO REFER TO "C" DRAWINGS FOR ALL HORIZONTAL CONTROL DIMENSIONS. SITE PLANS ARE FOR GUIDANCE AND STARTING LAYOUT POINTS.
9. SEE "C" DRAWINGS FOR FINISH GRADE ELEVATIONS.
10. CONCRETE SIDEWALKS TO BE A MINIMUM OF 4" THICK W/ TOOLED JOINTS AT 6' O.C. EXPANSION/CONSTRUCTION JOINTS SHALL BE A MAXIMUM 12' EA. WAY. EXPANSION JOINTS TO HAVE COMPRESSIVE EXPANSION FILLER MATERIAL OF 1/4". FINISH TO BE A MEDIUM BROOM FINISH U.N.O.
11. PAINT CURBS AND PROVIDE SIGNS TO INFORM OF FIRE LANES AS REQUIRED BY FIRE DEPARTMENT.
12. CONSTRUCTION DOCUMENTS PERTAINING TO THE LANDSCAPE AND IRRIGATION OF THE ENTIRE PROJECT SITE SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND APPROVED BY PUBLIC FACILITIES DEVELOPMENT PRIOR TO ISSUANCE OF BUILDING PERMITS.
13. PRIOR TO FINAL CITY INSPECTION, THE LANDSCAPE ARCHITECT SHALL SUBMIT A CERTIFICATE OF COMPLETION TO PUBLIC FACILITIES DEVELOPMENT.
14. ALL LANDSCAPE AND IRRIGATION DESIGNS SHALL MEET CURRENT CITY STANDARDS AS LISTED IN GUIDELINES OR AS OBTAINED FROM PUBLIC FACILITIES DEVELOPMENT.
15. ALL VERTICAL MOUNTING POLES OF CHAIN LINK FENCING SHALL BE CAPPED.
16. LANDSCAPED AREAS SHALL BE DELINEATED WITH A MINIMUM SIX INCHES (6") HIGH CURB.

SITE PLAN LEGEND

- STANDARD PARKING STALLS CITY OF ANAHEIM
- LANDSCAPED AREA
- PAVEMENT STRIPING AREA
- ACCESSIBLE PARKING STALL PER CITY OF ANAHEIM STANDARDS
- ACCESSIBLE VAN PARKING STALLS PER CITY OF ANAHEIM STANDARDS
- PATH OF TRAVEL



OVERALL SITE PLAN A
scale: 1" = 40'-0"

SCALE: 1" = 40'-0"
0 40' 80' 120'
TRUE NORTH

CAUTION : IF THIS SHEET IS NOT A 30" X 42" IT IS A REDUCED PRINT

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LICENSED ARCHITECT — ROBERT MICHAEL JACOBS — C-22276 — 08-31-21 RENEWAL DATE — STATE OF CALIFORNIA

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

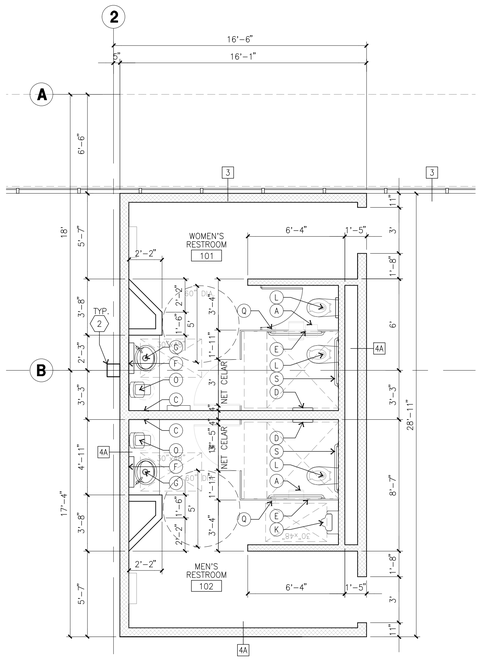
Title: Overall Site Plan

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

TI-A1.1



ENLARGED FLOOR PLAN @ RESTROOM

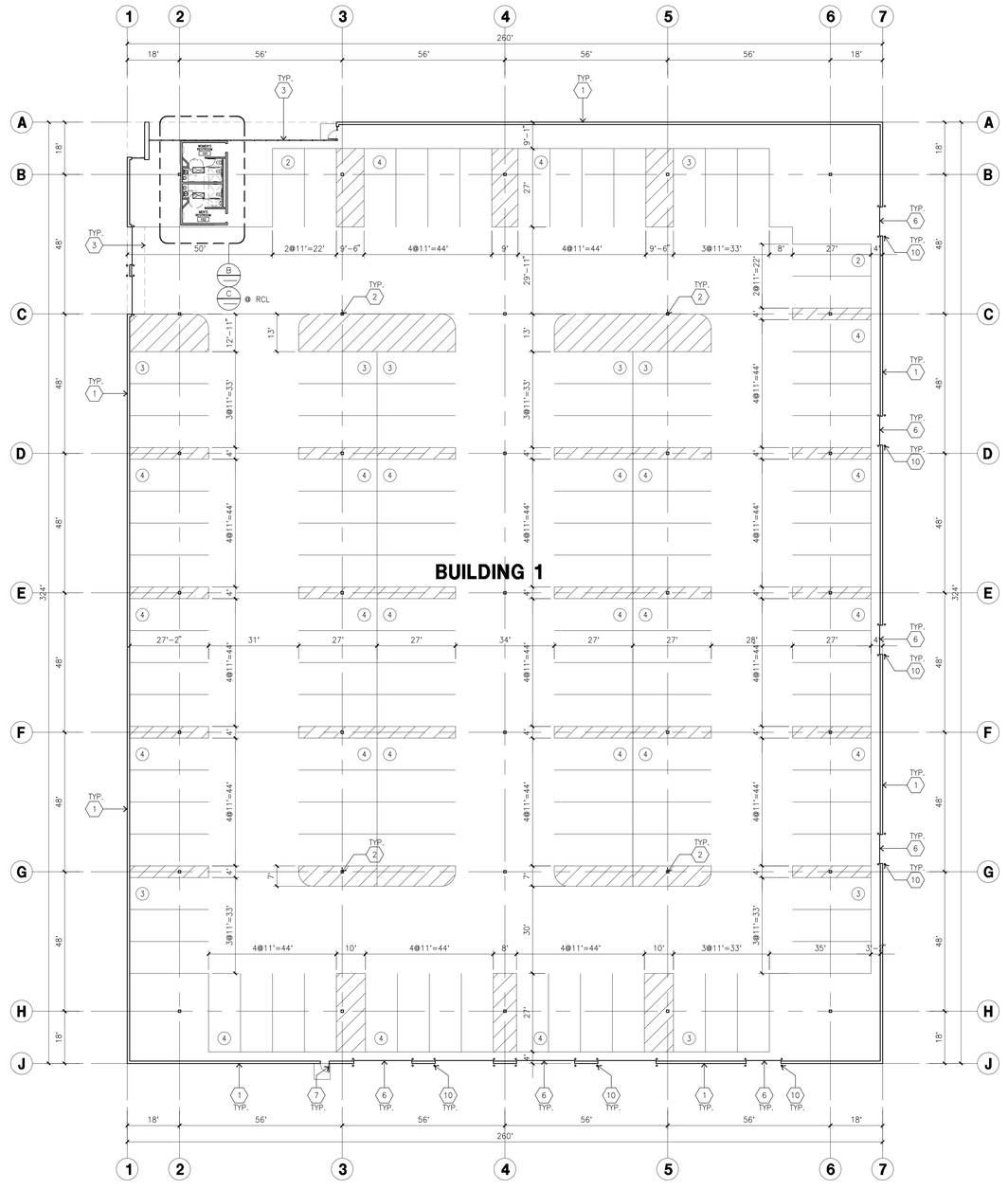
scale: 1/4" = 1'-0"

B

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

0 4' 8' 12'

TRUE NORTH



OVERALL FLOOR PLAN

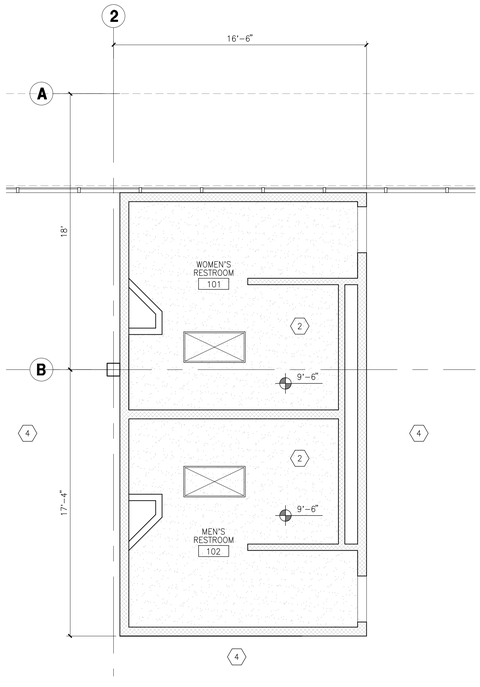
scale: 1" = 20'-0"

A

SCALE: 1" = 20'-0"

0 20' 40' 60'

TRUE NORTH



ENLARGED RCL @ RESTROOM

scale: 1/4" = 1'-0"

C

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

0 4' 8' 12'

TRUE NORTH

KEYNOTES - FLOOR PLAN

1. EXISTING CONCRETE TILT-UP PANEL.
2. EXISTING STRUCTURAL STEEL COLUMN.
3. EXISTING TYPICAL STOREFRONT SYSTEM WITH GLAZING.
4. EXISTING OVERHEAD DOOR TO REMAIN.
5. PROVIDE MAXIMUM OCCUPANT LOAD SIGNAGE, SEE DETAIL ON SHEET TI-A2.0.1.
6. EXISTING GRADE LEVEL DOOR TO REMAIN
7. EXISTING HOLLOW METAL EXTERIOR MAN DOOR.
8. TELEVISION MONITORS AND BRACKETS SUPPLIED AND INSTALLED BY TENANT'S A/V CONTRACTOR. VERIFY SIZES AND LOCATION WITH TENANT FOR RECESS IN PARTITION. SEE DETAIL 3/TI-AD.3.
9. 5% OF THE TOTAL SEATING CAPACITY TO BE ALLOTTED FOR PERSONS WITH DISABILITIES WITH ISA, CLR. REQT'S AND ALL REQUIRED BY CODE TO COMPLY.
10. CONC. FILLED GUARD POST. 6" DIA. U.N.O.. 42"H.
11. EXISTING EXTERIOR ROOF DRAIN TO REMAIN.
12. EXISTING STAIRS TO REMAIN – NO CHANGE.
13. EXISTING FIRE RISER, FIELD VERIFY.
14. TENANT PROVIDED AND INSTALLED MANUALLY PULL-DOWN PROJECTOR SCREEN
15. PROVIDE OCCUPANT LOAD SIGNAGE
16. PROVIDE CORNER GUARDS, TYPICAL.
17. INFILL EXISTING DOOR OPENING WITH STUCCO TO MATCH EXISTING WALL TEXTURE OVER EXTERIOR PLYWOOD SHEATHING OVER METAL STUDS WITH INSULATION.
18. PROVIDE 5% OF TOTAL LOCKER UNITS TO BE ACCESSIBLE TO COMPLY WITH ACCESSIBILITY REQUIREMENTS.

WALL LEGEND - ALL FLOOR PLANS

1. EXISTING CONCRETE TILT-UP WALL
2. CONCRETE TILT-UP WALL WITH NEW FURRING SEE DETAIL 11/TI-AD.1
3. EXISTING STOREFRONT SYSTEM.
3A. NEW STOREFRONT SYSTEM TO MATCH EXISTING
4. 8" WALL STUD FULL HEIGHT WALL TO UNDERSIDE OF STRUCTURE
4A. METAL STUD WALL SEE BELOW SEE 2/AD.6-1 FOR MORE DETAIL INFO
5. 8'-0"H SECURITY GALVAZINED CHAIN LINK FENCING
   A. SAME AS 5 EXTEND 9" A.F.F.

1 WINDOW TYPE. REFER TO SHEET A5.2 FOR MORE INFORMATION

FEC FIRE EXTINGUISHER CABINET

GENERAL NOTES - REFLECTED CEILING PLAN

1. ALL DRYWALL LIGHTS TO BE RECESSED TYPE.
2. ALL LIGHTS & SPRINKLER HEADS TO BE CENTER OF TILE PATTERN
3. ALL ROOMS TO HAVE EQUAL TILE PERIMETERS, U.N.O.
4. CONTRACTOR RESPONSIBLE FOR COORDINATION OF ALL LIGHTS, SPRINKLERS, & MECHANICAL REGISTER, DIFFUSERS AND GRILLS.
5. FOR DRYWALL STUD FRAMING SEE DETAIL SHEET TI-AD.1
6. PROVIDE WINDOW SHADE @ ALL OFFICE & WAREHOUSE OFFICE WINDOW(INTERIOR AND EXTERIOR GLAZING)LOCATIONS
7. PROVIDE CLIP HOLD DOWNS AT GRID TO LIMIT ANY INFILTRATION AND EXFILTRATION.
8. EXCEPT WHERE RIGID BRACES ARE USED TO LIMIT LATERAL DEFLECTIONS, SPRINKLER HEADS AND OTHER PENETRATIONS SHALL A 2" OVERSIZE RING, SLEEVE, OR ADAPTER THROUGH THE CEILING TILE TO ALLOW FOR FREE MOVEMENT OF AT LEAST 1" IN ALL HORIZONTAL DIRECTIONS. ALTERNATIVI A SWING JOINT THAT CAN ACCOMODATE 1" OF CEILING MOVEMENT IN ALL HORIZONTAL DIRECTIONS IS PERMITTED TO BE PROVIDED AT THE TOP OF THE SPRINKLER HEAD EXTENSION.

KEYNOTES - REFLECTED CEILING PLAN

1. 2' X 4' SUSPENDED HEAVY DUTY T-BAR GRID ACOUSTICAL TILE CEILING SYSTEM. SEE DETAIL 17/TI-AD.2
2. 1 LAYER 5/8" TYPE "X" GYP. BD. ATTACHED TO UNDERSIDE OF CEILING
3. GYP. BOARD SOFFIT FOR UPPER CASEWORK.
4. OPEN TO ROOF FRAMING ABOVE
5. THE CEILING IN THIS ROOM TO BE PROVIDED WITH ONE LAYER OF 6-1/ SONOBATT INSULATION.

PLUMBING FIXTURE NOTES

A. PARTITION MOUNTED TOILET SEAT COVER DISPENSER TISSUE DISPENSER , NAPKIN DISPOSAL
B. RECESSED MOUNTED TOILET SEAT COVER DISPENSER AND TOILET TISSUE DISPENSER B-3547
C. TOWEL DISPENSER / WASTE RECEPTICAL B-3944
D. RECESSED MOUNTED TOILET SEAT COVER DISPENSER AND TOILET TISSUE DISPENSER WITH SANITARY DISPOSAL B-3547
E. BAKED ENAMEL PARTITION, WALL HUNG W/STAINLESS STEEL HARDWARE.
F. MIRROR – FIELD DIMENSION. B-290 @ WALL HUNG LAV.– 24"X48"
G. COUNTERTOP MOUNTED LAVATORY
H. WALL HUNG LAVATORY, SEE PLUMBING DRAWINGS
J. MOP AND BROOM HOLDER W/ SHELF. B-239X34
K. URINAL SEE PLUMBING DRAWINGS
L. FLOOR MOUNTED WATER CLOSET, SEE PLUMBING DRAWINGS
M. MOP SINK, SEE PLUMBING.
N. SOAP DISPENSER. COUNTERTOP MOUNTED.
O. SOAP DISPENSER. WALL MOUNTED B-2111
P. LAMINATE PARTITION, WALL HUNG W/ STAINLESS STEEL HARDWARE AT OFFICE RESTROOMS.
Q. FLOOR DRAIN. SEE PLUMBING PLAN.
R. SAME AS "A" WITHOUT NAPKIN DISPOSAL.
S. L-SHAPED GRAB BARS 1 1/4" DIA. W/SATIN FINISH
T. COAT HOOKS, LOCATED WITHIN REACH RANGE SPECIFIED IN SECTION 11B-308. SEE TI-A0.3
U. ELECTRICAL WATER HEATER.
V. 18"X54" MIRROR WITH BOTTOM EDGE OF THE REFLECTIVE SURFACE 20" MAX. ABOVE FINISH FLOOR (2016 CBC 11B-803.6).
W. 48"X20" BENCH WITH BACK SUPPORT. SEE BENCH BACK SUPPORT DETAIL PER 11B-903.4 BENCH SHALL COMPLY TO 2016 CBC 11B-903.
X. DRINKING FOUNTAIN.

LEGEND - REFLECTED CEILING PLAN

- 2' X 4' SECOND LOOK TEGULAR EDGE CEILING. SEE RCL PLAN FOR
- 5/8" GYP. BD. UNDER CEILING JOISTS SEE RCL PLAN FOR CEILING H
- 2'-0" X 4'-0" RECESSED FLORESCENT LIGHT FIXTURE, SEE ELECTRICAL DRAWINGS.
- 1'-0" X 4'-0" FLUORESCENT LIGHT FIXTURE, SEE ELECTRICAL DRAWI
- EMERGENCY EXIT LIGHTS

CAUTION : IF THIS SHEET IS NOT A 30" X 42" IT IS A REDUCED PRINT

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LICENSED ARCHITECT — MICHAEL LAMB — C-22276 — 08-31-21 RENEWAL DATE — STATE OF CALIFORNIA

Owner:

Project:

TORRANCE DCX 7

950 FRANCISCO ST. TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

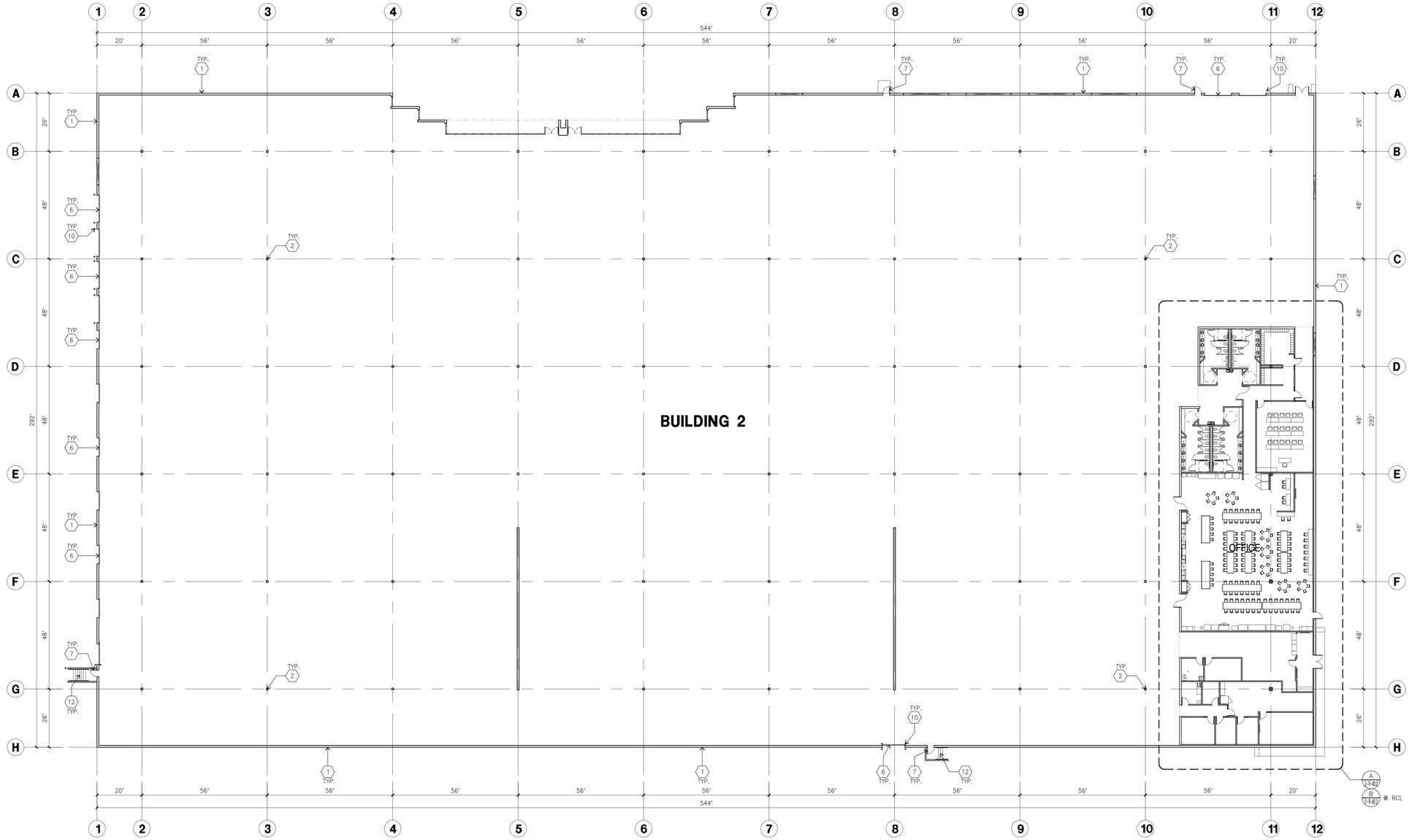
Title: Building 1 Overall Floor Plan

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

TI-A2.1



OVERALL FLOOR PLAN A

scale: 1" =20'-0"

SCALE: 1" = 20'-0"

0 20' 40' 60'

TRUE NORTH

KEYNOTES - FLOOR PLAN

1. EXISTING CONCRETE TILT-UP PANEL.
2. EXISTING STRUCTURAL STEEL COLUMN.
3. EXISTING TYPICAL STOREFRONT SYSTEM WITH GLAZING.
4. EXISTING OVERHEAD DOOR TO REMAIN.
5. PROVIDE MAXIMUM OCCUPANT LOAD SIGNAGE, SEE DETAIL ON SHEET TI-A2.0.1.
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15. PROVIDE OCCUPANT LOAD SIGNAGE
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WALL LEGEND - ALL FLOOR PLANS

- 1 — EXISTING CONCRETE TILT-UP WALL
- 2 — CONCRETE TILT-UP WALL WITH NEW FURRING SEE DETAIL 11/TI-AD.1
- 3 — EXISTING STOREFRONT SYSTEM.
- 3A — NEW STOREFRONT SYSTEM TO MATCH EXISTING
- 4 — 8" WALL STUD FULL HEIGHT WALL TO UNDERSIDE OF STRUCTURE
- 4A — METAL STUD WALL SEE BELOW SEE 2/AD.6-1 FOR MORE DETAIL INFO
- 5 — 8'-0"H SECURITY GALVAZINED CHAIN LINK FENCING
  A. SAME AS [5] EXTEND 9' A.F.F.

◇1 WINDOW TYPE. REFER TO SHEET A5.2 FOR MORE INFORMATION

[FEC] FIRE EXTINGUISHER CABINET

GLAZING LEGEND

◇A TEMPERED VISION GLASS

◇B TEMPERED SIDELIGHT

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LICENSED ARCHITECT — ROBERT MICHAEL JACOBS — C-22276 — 08-31-21 RENEWAL DATE — STATE OF CALIFORNIA

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

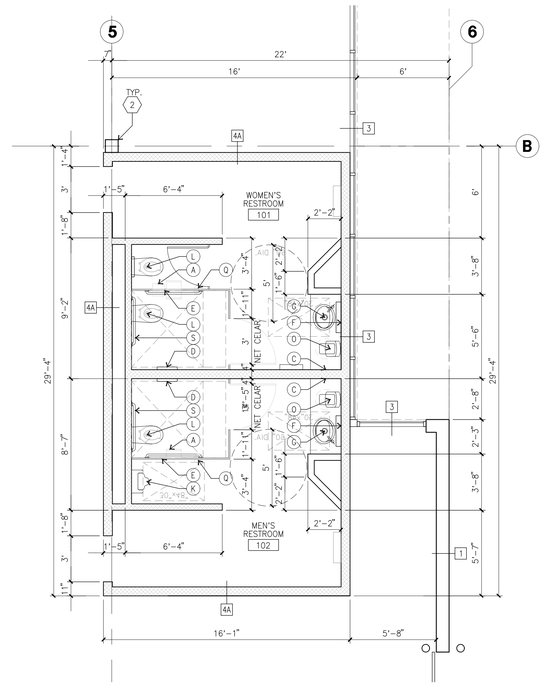
Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: Building 2 Overall Floor Plan

Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

Sheet:

TI-A2.2



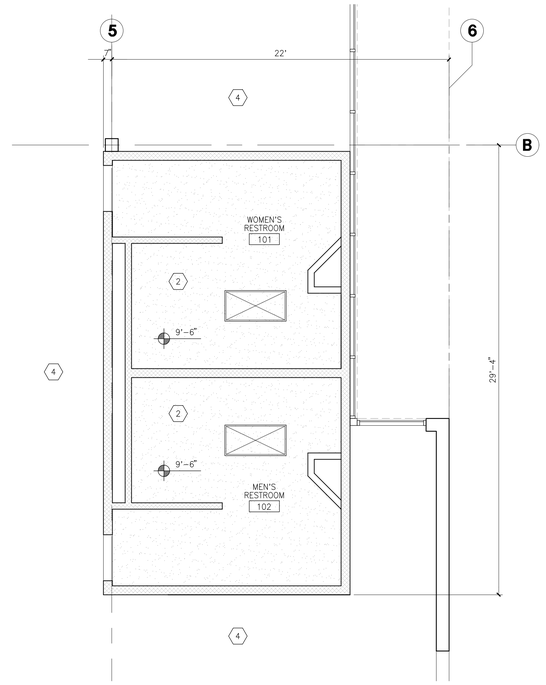
ENLARGED FLOOR PLAN @ RESTROOM

scale: 1/4" = 1'-0"

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

0 4' 8' 12'

TRUE NORTH



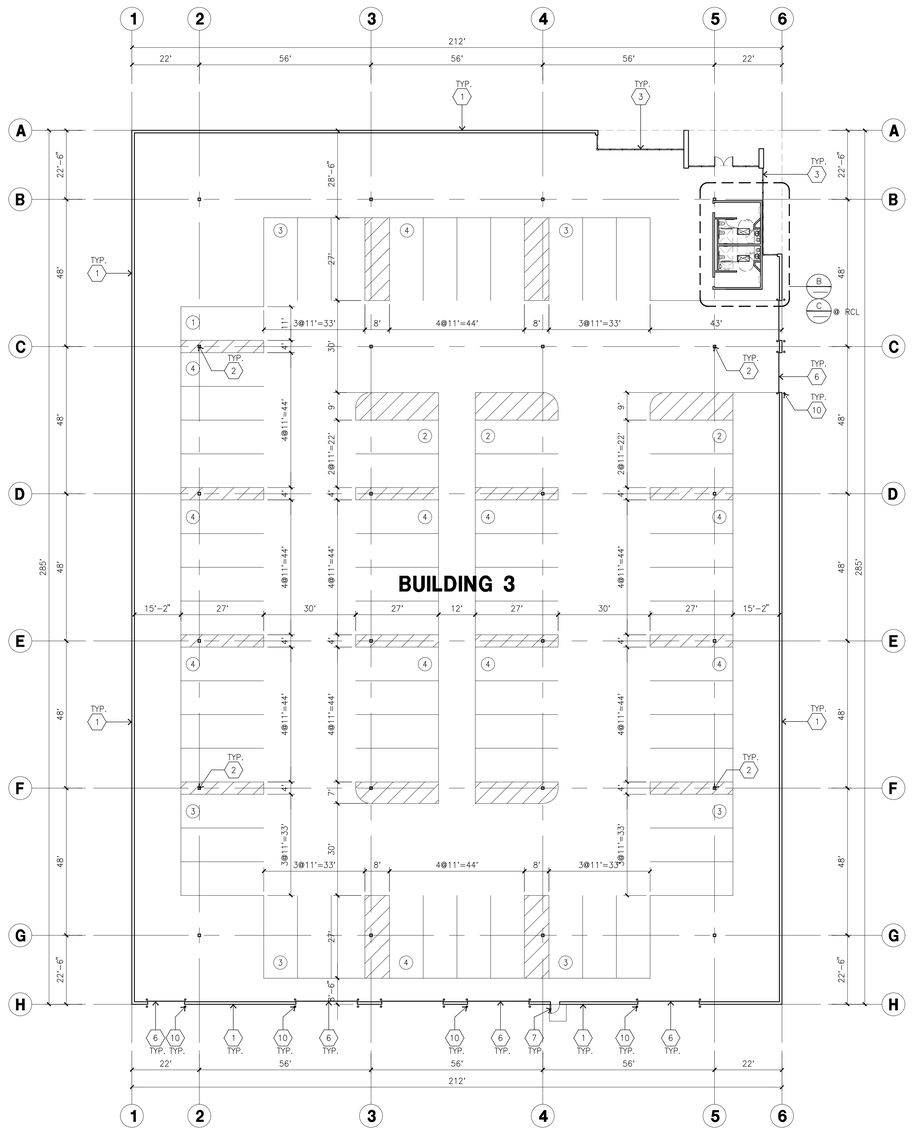
ENLARGED RCL @ RESTROOM

scale: 1/4" = 1'-0"

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

0 4' 8' 12'

TRUE NORTH



OVERALL FLOOR PLAN

scale: 1"=20'-0"

SCALE: 1" = 20'-0"

0 20' 40' 60'

TRUE NORTH

KEYNOTES - FLOOR PLAN

1. EXISTING CONCRETE TILT-UP PANEL.
2. EXISTING STRUCTURAL STEEL COLUMN.
3. EXISTING TYPICAL STOREFRONT SYSTEM WITH GLAZING.
4. EXISTING OVERHEAD DOOR TO REMAIN.
5. PROVIDE MAXIMUM OCCUPANT LOAD SIGNAGE, SEE DETAIL ON SHEET TI-A2.0.1.
6. EXISTING GRADE LEVEL DOOR TO REMAIN
7. EXISTING HOLLOW METAL EXTERIOR MAN DOOR.
8. TELEVISION MONITORS AND BRACKETS SUPPLIED AND INSTALLED BY TENANT'S A/V CONTRACTOR. VERIFY SIZES AND LOCATION WITH TENANT FOR RECESS IN PARTITION. SEE DETAIL 3/TI-AD.3.
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WALL LEGEND - ALL FLOOR PLANS

1. EXISTING CONCRETE TILT-UP WALL
2. CONCRETE TILT-UP WALL WITH NEW FURRING SEE DETAIL 11/TI-AD.1
3. EXISTING STOREFRONT SYSTEM.
3A. NEW STOREFRONT SYSTEM TO MATCH EXISTING
4. 8" WALL STUD FULL HEIGHT WALL TO UNDERSIDE OF STRUCTURE
4A. METAL STUD WALL SEE BELOW SEE 2/AD.6-1 FOR MORE DETAIL INFO
5. 8'-0"H SECURITY GALVAZINED CHAIN LINK FENCING
   A. SAME AS 5 EXTEND 9" A.F.F.

1 WINDOW TYPE. REFER TO SHEET A5.2 FOR MORE INFORMATION

FEC FIRE EXTINGUISHER CABINET

GENERAL NOTES - REFLECTED CEILING PLAN

1. ALL DRYWALL LIGHTS TO BE RECESSED TYPE.
2. ALL LIGHTS & SPRINKLER HEADS TO BE CENTER OF TILE PATTERN
3. ALL ROOMS TO HAVE EQUAL TILE PERIMETERS, U.N.O.
4. CONTRACTOR RESPONSIBLE FOR COORDINATION OF ALL LIGHTS, SPRINKLERS, & MECHANICAL REGISTER, DIFFUSERS AND GRILLS.
5. FOR DRYWALL STUD FRAMING SEE DETAIL SHEET TI-AD.1
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KEYNOTES - REFLECTED CEILING PLAN

1. 2' X 4' SUSPENDED HEAVY DUTY T-BAR GRID ACOUSTICAL TILE CEILING SYSTEM. SEE DETAIL 17/TI-AD.2
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3. GYP. BOARD SOFFIT FOR UPPER CASEWORK.
4. OPEN TO ROOF FRAMING ABOVE
5. THE CEILING IN THIS ROOM TO BE PROVIDED WITH ONE LAYER OF 6-1/ SONOBATT INSULATION.

LEGEND - REFLECTED CEILING PLAN

- 2' X 4' SECOND LOOK TEGULAR EDGE CEILING. SEE RCL PLAN FOR
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- 2'-0" X 4'-0" RECESSED FLORESCENT LIGHT FIXTURE, SEE ELECTRICAL DRAWINGS.
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PLUMBING FIXTURE NOTES

A. PARTITION MOUNTED TOILET SEAT COVER DISPENSER TISSUE DISPENSER , NAPKIN DISPOSAL
B. RECESSED MOUNTED TOILET SEAT COVER DISPENSER AND TOILET TISSUE DISPENSER B-3547
C. TOWEL DISPENSER / WASTE RECEPTICAL B-3944
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E. BAKED ENAMEL PARTITION, WALL HUNG W/STAINLESS STEEL HARDWARE.
F. MIRROR – FIELD DIMENSION. B-290 @ WALL HUNG LAV.- 24"X48"
G. COUNTERTOP MOUNTED LAVATORY
H. WALL HUNG LAVATORY, SEE PLUMBING DRAWINGS
J. MOP AND BROOM HOLDER W/ SHELF. B-239X34
K. URINAL SEE PLUMBING DRAWINGS
L. FLOOR MOUNTED WATER CLOSET, SEE PLUMBING DRAWINGS
M. MOP SINK, SEE PLUMBING.
N. SOAP DISPENSER. COUNTERTOP MOUNTED.
O. SOAP DISPENSER. WALL MOUNTED B-2111
P. LAMINATE PARTITION, WALL HUNG W/ STAINLESS STEEL HARDWARE AT OFFICE RESTROOMS.
Q. FLOOR DRAIN. SEE PLUMBING PLAN.
R. SAME AS "A" WITHOUT NAPKIN DISPOSAL.
S. L-SHAPED GRAB BARS 1 1/4" DIA. W/SATIN FINISH
T. COAT HOOKS, LOCATED WITHIN REACH RANGE SPECIFIED IN SECTION 11B-308. SEE TI-A0.3
U. ELECTRICAL WATER HEATER.
V. 18"X54" MIRROR WITH BOTTOM EDGE OF THE REFLECTIVE SURFACE 20" MAX. ABOVE FINISH FLOOR (2016 CBC 11B-803.6).
W. 48"X20" BENCH WITH BACK SUPPORT. SEE BENCH BACK SUPPORT DETAIL PER 11B-903.4 BENCH SHALL COMPLY TO 2016 CBC 11B-903.
X. DRINKING FOUNTAIN.

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LICENSED ARCHITECT MICHAEL LAMOTHE C-22276 08-31-21 RENEWAL DATE STATE OF CALIFORNIA

Owner:

Project:

TORRANCE DCX 7

950 FRANCISCO ST. TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
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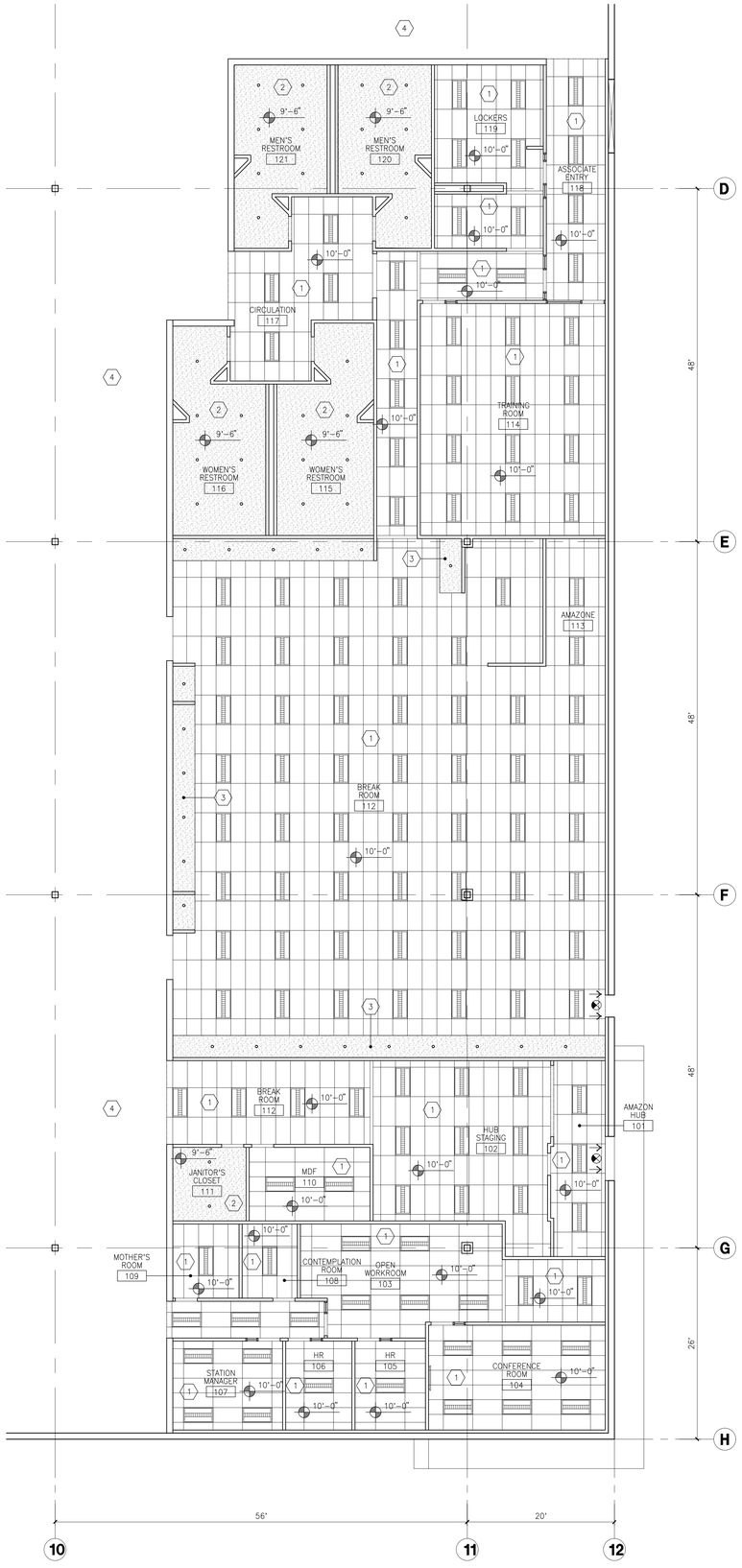
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: Building 3 Overall Floor Plan

Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

Sheet:

TI-A2.3



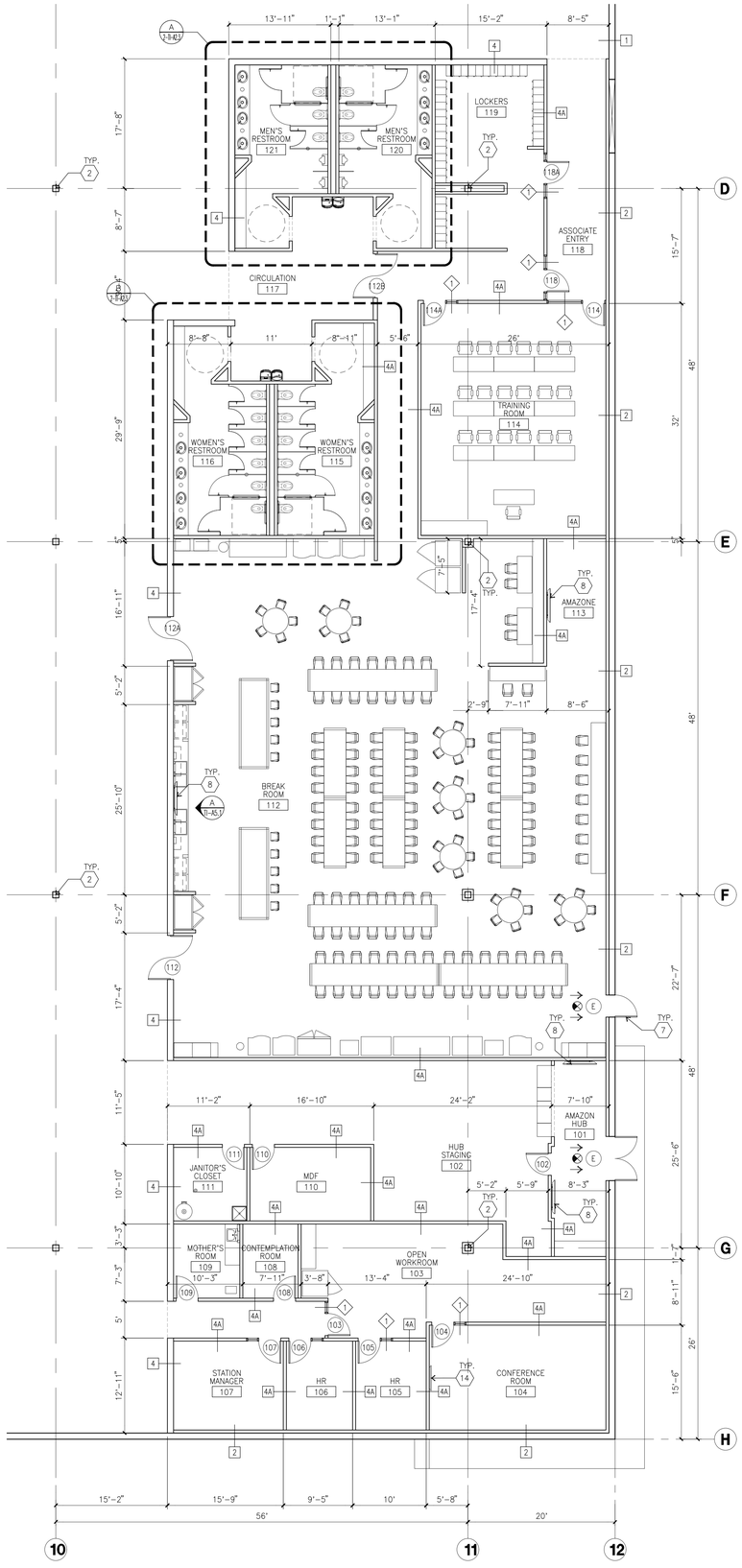
ENLARGED RCL PLAN B

scale: 1/8" = 1'-0"

SCALE: 1/8" = 1'-0"

0 8' 16' 24'

TRUE NORTH



ENLARGED FLOOR PLAN A

scale: 1/8" = 1'-0"

SCALE: 1/8" = 1'-0"

0 8' 16' 24'

TRUE NORTH

KEYNOTES - FLOOR PLAN

1. EXISTING CONCRETE TILT-UP PANEL.
2. EXISTING STRUCTURAL STEEL COLUMN.
3. EXISTING TYPICAL STOREFRONT SYSTEM WITH GLAZING.
4. EXISTING OVERHEAD DOOR TO REMAIN.
5. PROVIDE MAXIMUM OCCUPANT LOAD SIGNAGE, SEE DETAIL ON SHEET TI-A2.0.1.
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WALL LEGEND - ALL FLOOR PLANS

1. EXISTING CONCRETE TILT-UP WALL
2. CONCRETE TILT-UP WALL WITH NEW FURRING SEE DETAIL 11/TI-AD.1
3. EXISTING STOREFRONT SYSTEM.
3A. NEW STOREFRONT SYSTEM TO MATCH EXISTING
4. 8" WALL STUD FULL HEIGHT WALL TO UNDERSIDE OF STRUCTURE
4A. METAL STUD WALL SEE BELOW SEE 2/AD.6-1 FOR MORE DETAIL INFO
5. 8'-0"H SECURITY GALVAZINED CHAIN LINK FENCING
   A. SAME AS 5 EXTEND 9' A.F.F.

1 WINDOW TYPE. REFER TO SHEET A5.2 FOR MORE INFORMATION

FEC FIRE EXTINGUISHER CABINET

GLAZING LEGEND

A TEMPERED VISION GLASS

B TEMPERED SIDELIGHT

GENERAL NOTES - REFLECTED CEILING PLAN

1. ALL DRYWALL LIGHTS TO BE RECESSED TYPE.
2. ALL LIGHTS & SPRINKLER HEADS TO BE CENTER OF TILE PATTERN
3. ALL ROOMS TO HAVE EQUAL TILE PERIMETERS, U.N.O.
4. CONTRACTOR RESPONSIBLE FOR COORDINATION OF ALL LIGHTS, SPRINKLERS, & MECHANICAL REGISTER, DIFFUSERS AND GRILLS.
5. FOR DRYWALL STUD FRAMING SEE DETAIL SHEET TI-AD.1
6. PROVIDE WINDOW SHADE @ ALL OFFICE & WAREHOUSE OFFICE WINDOW(INTERIOR AND EXTERIOR GLAZING)LOCATIONS
7. PROVIDE CLIP HOLD DOWNS AT GRID TO LIMIT ANY INFILTRATION AND EXFILTRATION.
8. EXCEPT WHERE RIGID BRACES ARE USED TO LIMIT LATERAL DEFLECTIONS, SPRINKLER HEADS AND OTHER PENETRATIONS SHALL A 2" OVERSIZE RING, SLEEVE, OR ADAPTER THROUGH THE CEILING TILE TO ALLOW FOR FREE MOVEMENT OF AT LEAST 1" IN ALL HORIZONTAL DIRECTIONS. ALTERNATIVI A SWING JOINT THAT CAN ACCOMODATE 1" OF CEILING MOVEMENT IN ALL HORIZONTAL DIRECTIONS IS PERMITTED TO BE PROVIDED AT THE TOP OF THE SPRINKLER HEAD EXTENSION.

KEYNOTES - REFLECTED CEILING PLAN

1. 2' X 4' SUSPENDED HEAVY DUTY T-BAR GRID ACOUSTICAL TILE CEILING SYSTEM. SEE DETAIL 17/TI-AD.2
2. 1 LAYER 5/8" TYPE "X" GYP. BD. ATTACHED TO UNDERSIDE OF CEILING
3. GYP. BOARD SOFFIT FOR UPPER CASEWORK.
4. OPEN TO ROOF FRAMING ABOVE
5. THE CEILING IN THIS ROOM TO BE PROVIDED WITH ONE LAYER OF 6-1/ SONOBATT INSULATION.

LEGEND - REFLECTED CEILING PLAN

- 2' X 4' SECOND LOOK TEGULAR EDGE CEILING. SEE RCL PLAN FOR
- 5/8" GYP. BD. UNDER CEILING JOISTS SEE RCL PLAN FOR CEILING H
- 2'-0" X 4'-0" RECESSED FLORESCENT LIGHT FIXTURE, SEE ELECTRICAL DRAWINGS.
- 1'-0" X 4'-0" FLUORESCENT LIGHT FIXTURE, SEE ELECTRICAL DRAWI
- EMERGENCY EXIT LIGHTS

CAUTION : IF THIS SHEET IS NOT A 30" X 42" IT IS A REDUCED PRINT

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LICENSED ARCHITECT MICHAEL LAMOTTE C-22276 08-31-21 RENEWAL DATE STATE OF CALIFORNIA

Owner:

Project:

TORRANCE DCX 7

950 FRANCISCO ST. TORRANCE, CA

Consultants:

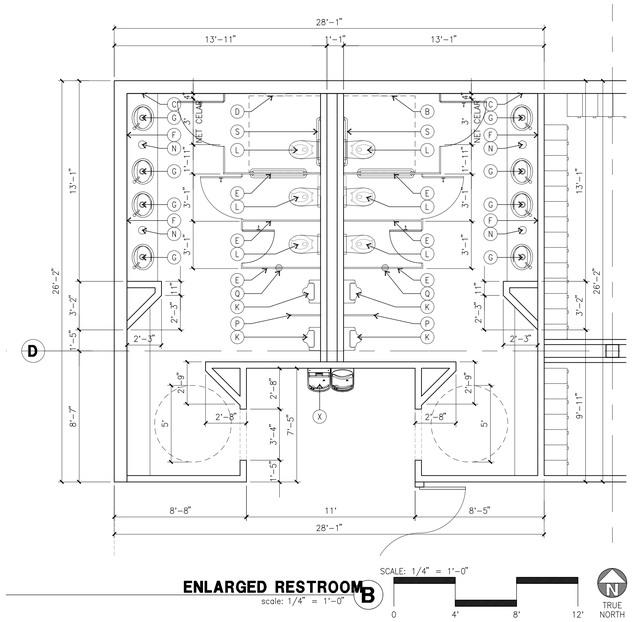
Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: Building 2 Enlarged Floor Plan

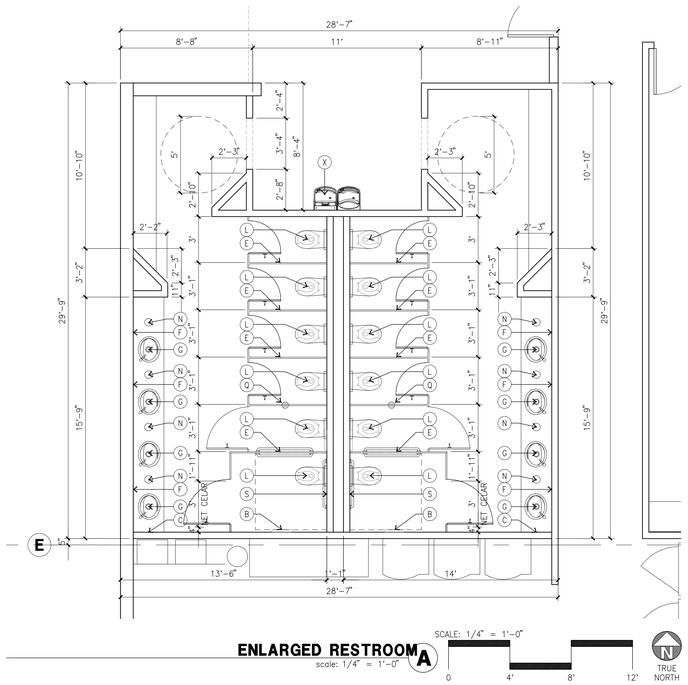
Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

Sheet:

TI-A2.4



ENLARGED RESTROOM B
scale: 1/4" = 1'-0"



ENLARGED RESTROOM A
scale: 1/4" = 1'-0"

SCALE: 1/4" = 1'-0"
0 4' 8' 12'
TRUE NORTH

PLUMBING FIXTURE NOTES

- (A) PARTITION MOUNTED TOILET SEAT COVER DISPENSER TISSUE DISPENSER , NAPKIN DISPOSAL
- (B) RECESSED MOUNTED TOILET SEAT COVER DISPENSER AND TOILET TISSUE DISPENSER B-3547
- (C) TOWEL DISPENSER / WASTE RECEPTICAL B-3944
- (D) RECESSED MOUNTED TOILET SEAT COVER DISPENSER AND TOILET TISSUE DISPENSER WITH SANITARY DISPOSAL B-3547
- (E) BAKED ENAMEL PARTITION, WALL HUNG W/STAINLESS STEEL HARDWARE.
- (F) MIRROR - FIELD DIMENSION. B-290 @ WALL HUNG LAV.- 24"X48"
- (G) COUNTERTOP MOUNTED LAVATORY
- (H) WALL HUNG LAVATORY, SEE PLUMBING DRAWINGS
- (J) MOP AND BROOM HOLDER W/ SHELF. B-239X34
- (K) URINAL SEE PLUMBING DRAWINGS
- (L) FLOOR MOUNTED WATER CLOSET, SEE PLUMBING DRAWINGS
- (M) MOP SINK, SEE PLUMBING.
- (N) SOAP DISPENSER. COUNTERTOP MOUNTED.
- (O) SOAP DISPENSER. WALL MOUNTED B-2111
- (P) LAMINATE PARTITION, WALL HUNG W/ STAINLESS STEEL HARDWARE AT OFFICE RESTROOMS.
- (Q) FLOOR DRAIN. SEE PLUMBING PLAN.
- (R) SAME AS "A" WITHOUT NAPKIN DISPOSAL.
- (S) L-SHAPED GRAB BARS 1 1/4" DIA. W/SATIN FINISH
- (T) COAT HOOKS, LOCATED WITHIN REACH RANGE SPECIFIED IN SECTION 11B-308. SEE TI-A0.3
- (U) ELECTRICAL WATER HEATER.
- (V) 18"X54" MIRROR WITH BOTTOM EDGE OF THE REFLECTIVE SURFACE 20" MAX. ABOVE FINISH FLOOR (2016 CBC 11B-803.6).
- (W) 48"X20" BENCH WITH BACK SUPPORT. SEE BENCH BACK SUPPORT DETAIL PER 11B-903.4 BENCH SHALL COMPLY TO 2016 CBC 11B-903.
- (X) DRINKING FOUNTAIN.

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LICENSED ARCHITECT
ROBERT MICHAEL JOHNSON
C-22276
08-31-21
RENEWAL DATE
STATE OF CALIFORNIA

Owner:

Project:

TORRANCE
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Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: Building 2 Enlarged Restroom

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

TI-A2.5

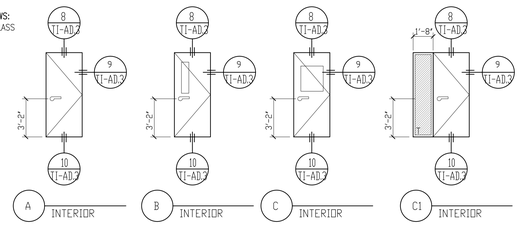
DOOR SCHEDULE

DOOR NO.	ROOM NAME	TYPE	HARDWARE	WIDTH	HEIGHT	THICKNESS	MATERIAL	FINISH	FRAME MATERIAL	FRAME FINISH	REMARKS
WAREHOUSE OFFICE											
E	EXISTING										
102	HUB STAGING	A		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
103	OPEN WORKROOM	A		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
104	CONFERENCE ROOM	C1		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
105	HR	C1		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
106	HR	C1		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
107	STATION MANAGER	C1		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
108	CONTEMPLATION ROOM	A		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
109	MOTHER'S ROOM	A		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
110	MDF	A		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
111	JANITOR'S CLOSET	A		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
112	BREAK ROOM	A		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
112A	BREAK ROOM	A		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
112B	BREAK ROOM	A		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
114	TRAINING ROOM	A		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
114A	TRAINING ROOM	C1		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
118	ASSOCIATE ENTRY	C1		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	
118A	ASSOCIATE ENTRY	C1		3'-0"	7'-0"	1 3/4"	BIRCH	PLAIN SLICED	TIMELY	ALUMATONE	

VISUAL DOOR TYPE

EXISTING & NEW EXTERIOR WINDOWS:
INSULATED TEMPERED VISION GLASS
U-FACTOR – 0.28
SHGC – 0.22

EXISTING EXTERIOR DOORS:
U-FACTOR – 0.5



DOOR NOTES

1. ALL EXIT DOORS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.
2. NOT USED
3. TYPE OF LOCK OR LATCH
   EXIT DOORS SHALL BE OPENABLE FROM INSIDE WITHOUT THE USE OF A KEY OR AND SPECIAL KNOWLEDGE OR EFFORT BY PANIC HARDWARE OR LEVER HARDWARE
   EXCEPTION: IN GROUP B OCCUPANCIES, KEY LOCKING HARDWARE MAY BE USED ON THE MAIN EXIT WHEN THE MAIN EXIT CONSISTS OF A SINGLE DOOR OR PAIR OF DOORS IF THERE IS A READILY VISIBLE, DURABLE SIGN ON OR ADJACENT TO THE DOOR STATING "THIS DOOR TO REMAIN UNLOCKED WHEN THE BUILDING IS OCCUPIED" THE SIGN SHALL BE IN LETTERS NOT LESS THAN 1" HIGH ON A CONTRASTING BACKGROUND.
4. DEADBOLTS SHALL CONTAIN HARDENED INSERTS OR EQUIVALENT.
5. STRAIGHT DEADBOLTS SHALL HAVE A MIN. 1" THROW WITH A MIN. 5/8" EMBEDMENT.
6. HOOK OR EXPANDING LUG DEADBOLTS SHALL HAVE A MIN. 3/4" THROW.
7. ALL LOCKS WHICH AUTOMATICALLY ACTIVATE 2 OR MORE DEADBOLTS SHALL EMBED MIN. 1/2" BUT NEED NOT EXCEED 1/4" INTO HOLDING DEVICE.
8. PIN TYPE HINGES ACCESSIBLE FROM THE EXTERIOR SHALL HAVE NON-REMOVABLE PINS.
9. ACCESSIBLE MORTISE OR RIM TYPE CYLINDER LOCKS INSTALLED IN HOLLOW METAL DOORS SHALL BE PROTECTED BY CYLINDER GUARDS IF THE CYLINDER PROJECTS BEYOND THE FACE OF THE DOOR.
10. PROVIDE TWO PADLOCK AND HASP AT BOTH JAMBS OF EACH TRUCK DOOR.
11. EXITS SHALL BE ILLUMINATED AT ANY TIME BUILDING IS OCCUPIED, WITH LIGHT HAVING AN INTENSITY OF NOT LESS THAN 1 FOOT CANDLE AT FLOOR LEVEL.
12. ALL FIRE-RATED DOORS SHALL HAVE COMPLETE EQUALLY-RATED ASSEMBLIES INCLUDING FRAMES, SMOKE SEALS, CLOSERS, ETC.
13. ALL INTERIOR DOORS SHALL HAVE SILENCERS.
14. LOCATE HINGE SIDE OF ROUGH DOOR OPENING 4" FROM ADJACENT PERPENDICULAR WALL FRAMING UNLESS DIMENSIONED OTHERWISE.
15. MANUALLY OPERATED EDGE- OR SURFACE-MOUNTED FLUSH BOLTS AND SURFACE BOLTS ARE PROHIBITED. WHEN EXIT DOORS ARE USED IN PAIRS AND APPROVED AUTOMATIC FLUSH BOLTS ARE USED, THE DOOR LEAF HAVING THE AUTOMATIC FLUSH BOLTS SHALL HAVE NO DOOR KNOB OR SURFACE-MOUNTED HARDWARE. THE UNLATCHING OF ANY LEAF SHALL NOT REQUIRE MORE THAN ONE OPERATION.
16. ALL HARDWARE SHALL BE LEVER TYPE EXCEPT MAIN ENTRANCE PROPERLY LABELED, OR WHERE PANIC HARDWARE OCCURS.
17. LATCHING AND LOCKING DOORS THAT ARE HAND ACTIVED AND WHICH ARE IN A PATH OF TRAVEL SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE, BY PANIC BARS, PUSH-PULL ACTIVATING BARS, OR OTHER HARDWARE DESIGNED TOPROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPERATING HARDWARE.
18. THE FLOOR OR LANDING SHALL BE NOT MORE THAN 1/2" LOWER THAN THE THRESHOLLD OF THE DOORWAY.
19. MAXIMUM EFFORT TO OPERATE EXTERIOR AND INTERIOR DOORS SHALL NOT EXCEED 5 POUNDS, WITH SUCH PULL OR PUSH EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED TO MEET THE ABOVE STANDARDS. WHEN FIRE DOORS ARE REQUIRED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED TO THE MINIMUM ALLOWABLE BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY, NOT TO EXCEED 15 POUNDS.
20. WHEN THE DOOR HAS A CLOSER, THEN THE SWEEP PERIOD OF THE CLOSER SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 70 DEGREES, THE DOOR WILL TAKE AT LEAST 3 SECONDS TO MOVE TO A POINT 3" FROM THE LATCH, MEASURED TO THE LANDING EDGE OF THE DOOR.
21. ALL EXTERIOR DOORS OTHER THAN GARAGE DOORS SHALL BE SOLID-CORE NOT LESS THAN 1 3/8 INCHES THICK OR UTILIZE MULTIPLE-GLAZED PANELS CONSISTING OF NOT LESS THAN DUAL PANE
22. ALL FREEZER ROLL UP/DOOR WILL HAVE WINDOW.
23. DOCK DOORS. PROVIDE OVERHEAD SLIDE BOLT AT 54" A.F.F. TO CLEAR PROTECTOR.
24. ALL STOREFRONT AND MAN DOORS TO BE KEYED TO A SINGLE PROLOGIS MASTER. KEY TO BE PROVIDED BY PROLOGIS
25. NO EXTERIOR HARDWARE ON WAREHOUSE MAN DOORS EXCEPT AT RAMPS, UTILITY ROOMS AND ONE DOOR NEAR CENTER OF DOCK. THUMB TWIST BOLT WITH LEVER ACTION HANDLE INTERIOR ONLY

HARDWARE SCHEDULE

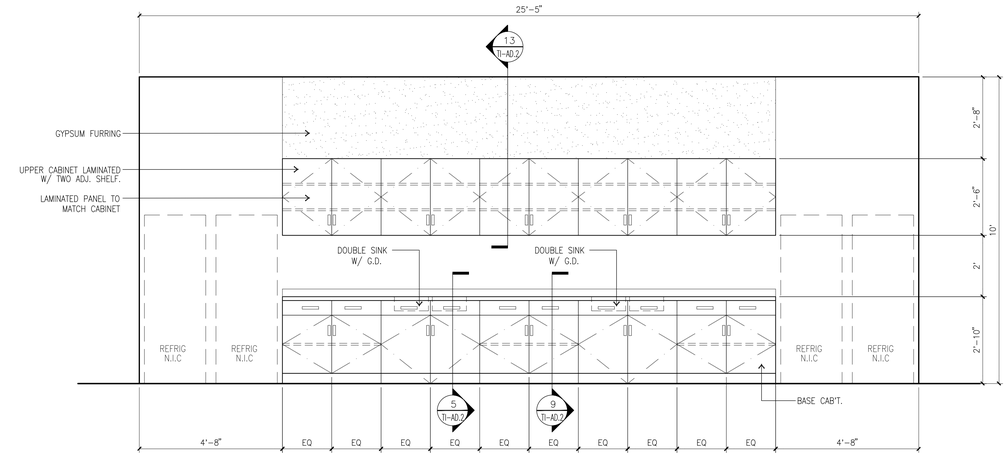
FINISH SCHEDULE

RM.#	ROOM NAME	FLOORING		BASE		WAINSCOT				MILLWORK	WALLS (per true north)				CEILING		REMARKS
		FIELD	ACCENT	MATERIAL	HT.	FIELD	HT.	ACCENT	HT.	MATERIAL	NORTH	EAST	SOUTH	WEST	FINISH	HT.	
OFFICE AREA - FIRST FLOOR																	
101	AMAZON HUB	SC-1	CPT-2	VB-3	4"						PT-1	PT-1	PT-1	PT-1	ACT-1	10'- 0"	CPT-2 Entry mat at the entry door area(6'x9' size approx.) see plan for info.
102	HUB STAGING	SC-1		VB-3	4"						PT-1	PT-1	PT-1	PT-1	ACT-1	10'- 0"	
103	OPEN WORKROOM	CPT-1		VB-1	4"						PT-1	PT-1	PT-1	PT-1	ACT-1	10'- 0"	
104	CONFERENCE ROOM	CPT-1		VB-1	4"						PT-1	PT-1	PT-3	PT-1	ACT-1	10'- 0"	Provide continuous Chair Rail. See plans for info.
105	HR	CPT-1		VB-1	4"						PT-1	PT-1	PT-2	PT-1	ACT-1	10'- 0"	Provide continuous Chair Rail. See plans for info.
106	HR	CPT-1		VB-1	4"						PT-1	PT-1	PT-2	PT-1	ACT-1	10'- 0"	Provide continuous Chair Rail. See plans for info.
107	HR	CPT-1		VB-1	4"						PT-1	PT-1	PT-2	PT-1	ACT-1	10'- 0"	Provide continuous Chair Rail. See plans for info.
108	CONTEMPLATION ROOM	CPT-1	*CT-3	VB-1	4"						PT-14	PT-14	PT-14	PT-15	ACT-1	10'- 0"	Wudu Area-Procelian Tile(CT-3), Non-Wudu Area-carpet(CPT-1)
109	MOTHER'S ROOM	CPT-1		VB-1	4"						PT-14	PT-15	PT-14	PT-14	ACT-1	10'- 0"	
110	MDF	SC-1		VB-3	4"						PT-1	PT-1	PT-1	PT-1	ACT-1	10'- 0"	CPT-2 Entry mat at the entry door area(6'x9' size approx.) see plan for info.
111	JANITOR'S CLOSET	EPXY-1		VB-2	4"	FRP-1	4'-0"				PT-8	PT-8	PT-8	PT-8	ACT-1	10'- 0"	FRP1 to 5'-0" A.F.F., P1 above.
112	BREAKROOM	SC-2		VB-3	4"						PT-14	PT-15	PT-14	PT-14	ACT-1	10'- 0"	Provide microw ave base cabinets w ith Solid Surface Countertop at 34" a.f.f. (SS-1). No doors or draw ers. No overhead mounted w all cabinets are required Provide 48"W open area below sinks for accessibilty w ith solid surface removable skirt (PL-1) Provide 8"metal stud furring behind base cabinets to 56 1/2"(microw ave shelf w ill sit on depth of furring) Provide continuous 20"D microw ave shelf full length of base cabinets at 86" a.f.f. (SS-1)
113	AMAZONE	SC-2		VB-3	4"						PT-14	PT-15	OPEN	PT-14	ACT-1	10'- 0"	
114	TRAINING ROOM	CPT-1		VB-1	4"						PT-1	PT-1	PT-3	PT-1	ACT-1	10'- 0"	Provide w ood chair rail at 36" a.f.f. (ST-1)
115	WOMEN'S RESTROOM - A	CT-3		CT-4	6"	CT-1	7'-2"	CT-2		SS-1, TP-1	PT-8	PT-8	PT-8	PT-8	GWB/ PT-8	9'- 6"	Provide continuous 24" D. Solid Surface countertop w ith under mount sinks(SS/1) No doors or draw ers. No overhead mounted w all cabinets are required
116	WOMEN'S RESTROOM - B	CT-3		CT-4	6"	CT-1	7'-2"	CT-2		SS-1, TP-1	PT-8	PT-8	PT-8	PT-8	GWB/ PT-8	9'- 6"	Provide continuous 24" D. Solid Surface countertop w ith under mount sinks(SS/1) No doors or draw ers. No overhead mounted w all cabinets are required
117	CIRCULATION	SC-1		VB-3	4"						PT-1	PT-1	PT-1	PT-1	ACT-1	10'- 0"	
118	ASSOCIATE ENTRY	SC-1		VB-3	4"						PT-1	PT-1	PT-1	PT-1	ACT-1	10'- 0"	
119	LOCKER AREA	SC-1		VB-3	4"						PT-15	PT-14	PT-14	PT-15	ACT-1	10'- 0"	
120	MEN'S RESTROOM - A	CT-3		CT-4	6"	CT-1	7'-2"	CT-2		SS-1, TP-1	PT-8	PT-8	PT-8	PT-8	GWB/ PT-8	9'- 6"	Provide continuous 24" D. Solid Surface countertop w ith under mount sinks(SS/1) No doors or draw ers. No overhead mounted w all cabinets are required
121	MEN'S RESTROOM - B	CT-3		CT-4	6"	CT-1	7'-2"	CT-2		SS-1, TP-1	PT-8	PT-8	PT-8	PT-8	GWB/ PT-8	9'- 6"	Provide continuous 24" D. Solid Surface countertop w ith under mount sinks(SS/1) No doors or draw ers. No overhead mounted w all cabinets are required

FINISH LEGEND

MARK	BASIS OF DESIGN	DESCRIPTION	RAL	COMMENTS
ACOUSTICAL CEILING TILE				
ACT-1	ARMSTRONG	24" X 48"	-	
ACT-2	ARMSTRONG	24" X 24"	-	
ACT-3	ARMSTRONG	24" X 24"	-	NOT USED
ACT-4	ARMSTRONG	24" X 48" FIRE RATED	-	
ACT-5	ARMSTRONG	24" X 24" GRID, SQUARES/RECTANGLES	-	FORMATIONS CEILING CLOUD
INTERIOR PAINT				
PT-1	BENJAMIN MOORE	#2121-70 'CHATILLY LACE'	9016	GENERAL WALL COLOR FOR OFFICE, RECRUITING, AMCARE, FIRST-AID, TRAINING, UTILITY, STORAGE, ENTRY VESTIBULES, ENCLOSED STAIRS, ERC, ELECTRICAL ROOM, & MAIN ENTERANCE
PT-2	BENJAMIN MOORE	#AC-17 'SEA PINE'	460 60 05	ACCENT WALL IN PRIVATE OFFICES & SECURITY DESK
PT-3	BENJAMIN MOORE	#AF-375 'RATTAN'	090 70 30	ACCENT WALL IN TRAINING ROOMS & CONFERENCE ROOMS
PT-4	BENJAMIN MOORE	#2140-60 'MOONSHINE'	9002	HM DOORS & FRAMES
PT-5	SHERWINN WILLIAMS	ACRYLIC DRYFALL - COLOR TO BE FLAT WHITE	-	EXPOSED STRUCTURE AND DUCTWORK; LOCKERS CEILING
PT-6	SHERWINN WILLIAMS	ACRYLIC DRYFALL - COLOR TO BE FLAT BLACK	-	NOT USED
PT-7	BENJAMIN MOORE	#AC-26 'OZARK SHADOWS'	100 70 05	ACCENT WALL IN AMCARE OFFICE & AMCARE WAITING ROOM; DEMARC ROOM DOOR & FRAME; MDF DOOR & FRAME
PT-8	SHERWINN WILLIAMS	EPOXY - SEMI GLOSS, COLOR MATCH 'PT-1'	9016	MAIN ENTRY; ALL RESTROOMS, JANITORS, IDF & SHOVEL CLOSETS; CORRIDORS; WAREHOUSE SIDE OF ALL PARTITION, PT-8 UP TO 12' A.F.F. AND PT-1 FROM 12' TO DECK AT LEVEL 1 AND PT-8 FULL HEIGHT AT ALL OTHER LEVELS
PT-9	BENJAMIN MOORE	SAFETY YELLOW	1018	COLUMNS, RAILS, TOE PLATES, FIRE RISER PROTECTION; INTERIOR SIDE OF WAREHOUSE EXIT DOORS AND FRAMES
PT-10	BENJAMIN MOORE	SAFETY RED	3024	COLUMNS, SPRINKLER STAND PIPES AND INTERIOR SIDE OF WAREHOUSE EXIT DOORS & FRAMES
PT-11	BENJAMIN MOORE	WHITE	-	COLUMNS
PT-12	SHERWINN WILLIAMS	SW4031 'STRUCTURAL GRAY'	7037	INTERIOR STAIR STRUCTURE
PT-13	SHERWINN WILLIAMS	SW7016 'MINDFUL GRAY'	7044	NOT USED
PT-14	SHERWINN WILLIAMS	SW7008 'ALABASTER'	9010	LOCKER ROOMS, BREAKROOM, VENDING, MOTHERS ROOM
PT-15	SHERWINN WILLIAMS	SW7650 'ELLIE GRAY'	7038	ACCENT WALL FOR LOCKER ROOMS, BREAKROOM, VENDING, MOTHERS ROOM
PT-16	SHERWINN WILLIAMS	SW6952 'BLUE CLICK'	240 80 20	BREAK ROOM CLOUDS
PT-17	SHERWINN WILLIAMS	SW6958 'DYNAMIC BLUE'	260 40 45	ACCENT WALL IN BREAK ROOM
PT-18	SHERWINN WILLIAMS	SW6898 'SOCIAL BUTTERFLY'	075 80 60	BREAK ROOM CLOUDS
PT-19	SHERWINN WILLIAMS	SW7648 'BIG CHILL'	9018	BREAK ROOM CEILING
PT-20	BENJAMIN MOORE	#2149-70 'WHITE CHOCOLATE'	9010	NOT USED
PT-21	SHERWINN WILLIAMS	SW6518 'SKI SLOPE'	9002	CAREER CHOICE CLASSROOM
PT-22	SHERWINN WILLIAMS	SW6523 'DENIM'	5023	ACCENT WALL IN CAREER CHOICE CLASSROOM
PT-23	SHERWINN WILLIAMS	DRY ERASE	-	
PT-24	ARMSTRONG	SKY (SK)	-	REMOTE BREAK AT TRUCKER LOUNGE
PT-25	ARMSTRONG	TANGERINE (TG)	-	REMOTE BREAK AT TRUCKER LOUNGE
PT-26	ARMSTRONG	LAGOON (LA)	-	REMOTE BREAK AT TRUCKER LOUNGE
PT-27	BENJAMIN MOORE	FLAT WHITE	-	INTERIOR FACE OF CONCRETE PANELS
PT-28	BENJAMIN MOORE/SHERWINN WILLIAMS	RGB 0, 168, 255; PANTONE 2995 C 'PRIME BLUE"	5012	ACCENT WALL AT MAIN ENTRY (FULL HEIGHT); 2' WIDE STRIPE AT OPEN CUBICLE AREA 1' FROM CEILING
CERAMIC TILE				
CT-1	DALTILE - SEMI-GLOSS/MATTE	4" X 4" WALL TILE: #0100 'WHITE'		MAPEI #00 GROUT
CT-2	DALTILE - SEMI-GLOSS/MATTE	4" X 4" WALL TILE: C012 'MUSTARD'		MAPEI #00 GROUT
CT-3	DALTILE 'HOUTE MONDE'	12" X 24" FLOOR TILE 'WHMOS		MAPEI #11 'SAHARA BEIGE' GROUT
CT-4	DALTILE 'HOUTE MONDE'	6" X 12" COVE BASE AND CORNER TRIM		MAPEI #11 'SAHARA BEIGE' GROUT
SEALED CONCRETE				
SC-1		SEALED CONCRETE WITH CLEAR SEALER		
SC-2		POLISHED CONCRETE WITH CLEAR SEALER		

EPOXY FLOOR COATING				
EPX-1	SHERWINN WILLIAMS	SILVER GRAY		JANITORS AND SCRUBBER DUMP FLOORS
EPX-2	SHERWINN WILLIAMS	STEEL GRAY		BATTERY CHARGING
	VINYL FLOOR TILE			
VCT-1	ARMSTRONG	IMPERIAL TEXTURE STANDARD EXCELON - #51810 'WASHED LINEN'		
VINYL BASE				
VB-1	JOHNSONITE	4" COVE BASE #47 'BROWN'		
VB-2	JOHNSONITE	4" COVE BASE #23 'VAPOR GRAY'		
VB-3	JOHNSONITE	4" COVE BASE #48 'GREY'		
TRANSITION STRIPS				
TS-1	JOHNSONITE	RRS-XX-C, #47 BROWN		
TS-2	JOHNSONITE	EG-XX-H, #47 BROWN		
TS-3	JOHNSONITE	CTA-XX-K, #47 BROWN		
TS-4	JOHNSONITE	RRS-XX-C, #23 VAPOR GRAY		
TS-5	SCHLUTER	RENO-V		STAINLESS STEEL
TS-6	SCHLUTER	RENO-U		STAINLESS STEEL
TS-7	JOHNSONITE	EG-XX-H, #48 GREY		
CARPET				
CPT-1	SHAW	STYLE: BLOG NUMBER: 5A125 COLOR: GRANITE NUMBER: 25500		
CPT-2	MATWORKS	DIAMOND MATT II.: 'CHARCOAL'		DIRECT GLUE DOWN IN SLAB RECESS WITH SCHLUTER SCHIENE TRIM
CPT-3	NOTRAX	FRAILER #SMDN4 'BLACK'		
CPT-4	MANNINGTON	STYLE: TERRAIN II NUMBER: COLOR: CATCHER NUMBER: 34012		QUARTER TURN TILE LAYOUT
SOLID SURFACE COUNTERTOP				
SS-1	CORIAN	COLOR - 'SILVER BIRCH'		1/2" SOILD SURFACE COUNTERTOP W/ UNDERMOUNT SINK. PROVIDE 1/2" SOLID SURFACE APRON AND 4" SIDE & BACKSPLASH.
SS-2	CORIAN	COLOR - 'OAT'		1/2" SOILD SURFACE COUNTERTOP W/ UNDERMOUNT SINK. PROVIDE 1/2" SOLID SURFACE APRON AND FULL HEIGHT BACKSPLASH.
PLASTIC LAMINATE				
PL-1	FORMICA	NATURAL CANVAS - #7022-58		
PL-2	FORMICA	DOVER WHITE - #7197-58		
PL-3	FORMICA	ALMOND - #920-58		
PL-4	FORMICA	WHEAT STRAND - #6212-58		
PL-5	FORMICA	NEUTRAL WEFT - #5875-58		
PL-6	FORMICA	STORM - #912-58		
PL-7	FORMICA	CARDBOARD SOLIDZ - #7813-58		
PL-8	FORMICA	GRAPHITE - #837-58		
PL-9	FORMICA	SARUM GREY - #2770-58		
HORIZONTAL BLINDS				
HB-1	LEVELOR	1" BLIND - COLOR SELECTED BY ARCHITECT		
HB-2	HUNTER DOUGLAS	ROLLER SHADE – GLACIER SCREEN HD 1003 – 'BRONZE'		16' TALL CURTAIN WALLS AT THE OFFICE CORNERS/STOREFRONT
FRP WALL PANEL				
FRP-1	CRANE	EMBOSSED - #85 'WHITE'		PROVIDE ALL MOLDINGS & TRIM
ELEVATOR CAB FINISHES				
EL-1	SCHINDLER	STAINLESS STEEL #4		DOOR AND FRAME
EL-2	SCHINDLER	STAINLESS STEEL #4		HANDRAIL
EL-3	SCHINDLER	STAINLESS STEEL #4 W/ SPOT LED		CAB CEILING
EL-4	SCHINDLER	WALL LAMINATE		TORONTO GREY
VCT-1	ARMSTRONG	IMPERIAL TEXTURE STANDARD EXCELON - #51810 'WASHED LINEN'		FLOORING



INTERIOR CABINET ELEVATION @ WAREHOUSE BREAK ROOM #112 (A)
scale: 1/2" = 1'-0"

CAUTION : IF THIS SHEET IS NOT A 30" X 42" IT IS A REDUCED PRINT

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email: hpa@hparchs.com

LICENSED ARCHITECT MICHAEL LAMB C-22276 08-31-21 RENEWAL DATE STATE OF CALIFORNIA

Owner:

Project:
TORRANCE
DCX 7
950 FRANCISCO ST.
TORRANCE, CA

Consultants:

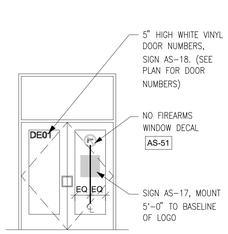
Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: Door and Hardware schedule

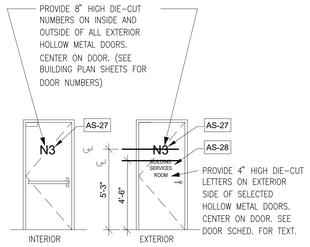
Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

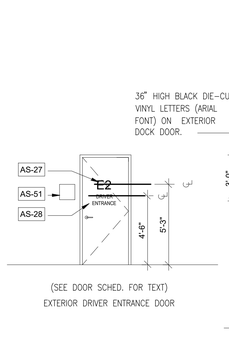
Sheet:
TI-A5.1



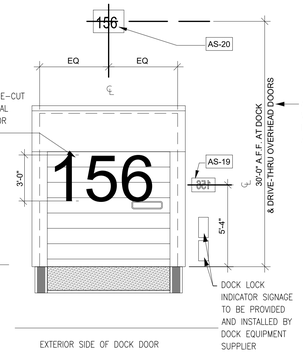
TYPICAL MAIN ENTRANCE DOOR SIGNAGE PLACEMENT



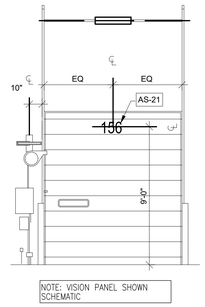
TYPICAL SERVICE DOOR



(SEE DOOR SCHED. FOR TEXT)
EXTERIOR DRIVER ENTRANCE DOOR



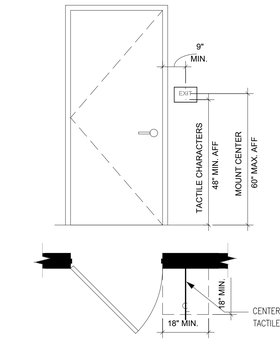
EXTERIOR SIDE OF DOCK DOOR



INTERIOR SIDE OF DOCK DOOR

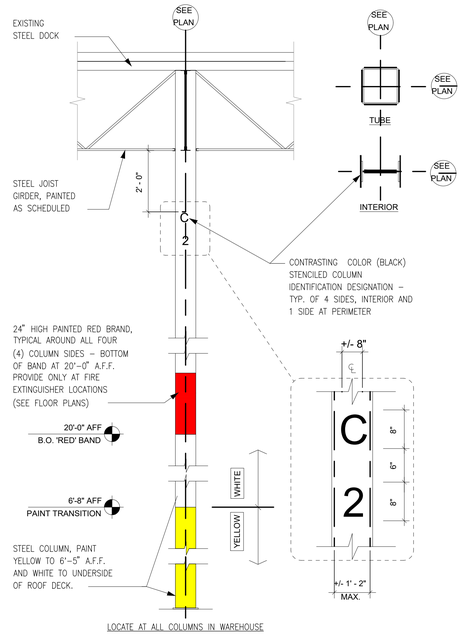
DOOR SIGN PLACEMENT DETAILS

SCALE: 1/4" = 1'-0" — 1



TYPICAL SIGN MOUNTING

SCALE: 1/2" = 1'-0" — 2

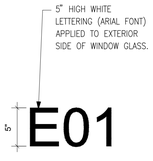


COLUMN IDENTIFICATION DETAIL (AG-9)

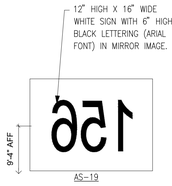
SCALE: 1/2" = 1'-0" — 3

AS-15
21 3/4" X 19 1/4"
TENANT SIGNAGE – PICK UP ENTRANCE. PRINTED VINYL, ARIAL FONT. ON SELECTED EXTERIOR DOORS. CENTER ON DOOR, MOUNT 5'-0" TO BASELINE OF "TENANT" LOGO

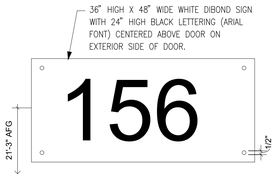
AS-17
21 3/4" X 19 1/4"
TENANT SIGNAGE – ASSOCIATE ENTRANCE. PRINTED VINYL, ARIAL FONT. ON SELECTED EXTERIOR DOORS. CENTER ON DOOR, MOUNT 5'-0" TO BASELINE OF "TENANT" LOGO



AS-18
5" TALL CHARACTERS
TENANT SIGNAGE – WINDOW GLASS NUMBERS WHITE LETTERING APPLIED TO WINDOW GLASS, CORRESPOND TO DOOR NUMBER. TYPICAL AT ALL GLASS ENTRY DOORS. (SEE BUILDING PLAN SHEETS FOR DOOR NUMBERS)



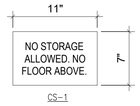
AS-19
16" X 12" TENANT SIGNAGE – MIRRORED DOCK NUMBERS WHITE SIGN WITH 6" HIGH MIRROR IMAGE BLACK NUMBERS (ARIAL FONT). TYPICAL AT ALL DOCK POSITIONS; DRIVER'S SIDE OF DOCK DOORS. MOUNT DIRECTLY TO EXTERIOR BUILDING FACADE. (SEE BUILDING PLAN SHEETS FOR DOOR NUMBERS)



AS-20
36" X 48" TENANT SIGNAGE – DOCK NUMBERS WHITE DIBOND SIGN WITH 24" TALL BLACK NUMBERS (ARIAL FONT). TYPICAL ABOVE ALL DOCK DOORS AND SPACES ALONG FENCE. MOUNTED DIRECTLY TO EXTERIOR BUILDING FACADE, CENTERED ABOVE DOCK DOOR. (SEE BUILDING PLAN SHEETS FOR DOOR NUMBERS)

DOOR SIGNS

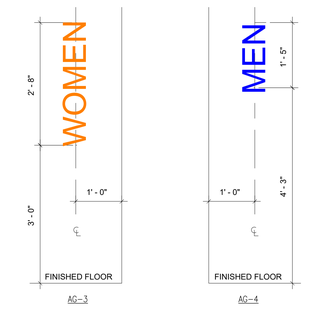
SCALE: NTS — 4



CS-1
PROVIDE SIGN AT WAREHOUSE SIDE OF WALLS WHICH DO NOT EXTEND TO UNDERSIDE OF DECK. PROVIDE ATLEAST ONE SIGN PER WALL, LOCATED 16'-0" O.C. AND BOTTOM OF SIGN AT 12'-0" A.F.F. BLACK CHARACTERS ON WHITE BACKGROUND. TEXT TO BE 1" MIN ARIAL FONT.
(NO STORAGE SIGN)

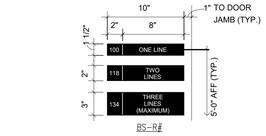
NO STORAGE

SCALE: NTS — 5

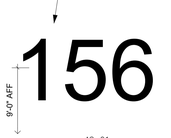


AG-3
TENANT GRAPHICS – WOMEN WALL TEXT
6" X 2'-8" TYPICAL AT WOMEN'S TOILET ROOM ENTRANCE. ORANGE VINYL ADHESIVE–APPLIED GRAPHIC.

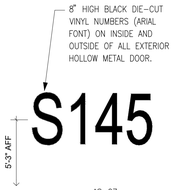
AG-4
TENANT GRAPHICS – MEN WALL TEXT
6" X 1'-5" TYPICAL AT MEN'S TOILET ROOM ENTRANCE.. BLUE VINYL ADHESIVE–APPLIED GRAPHIC.



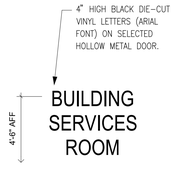
BS-R#
BUILDING SIGNS – TYPICAL ROOM NAME/# SIGN TEMPLATE SIZE VARIES; 10" X 1.5", 10" X 2", 10" X 3" BLACK PLASTIC (FIELD) BACKGROUND WITH WHITE EMBLEMS AND 5/8" HIGH WHITE LETTERING IN ARIAL FONT OR SIMILAR. (NOTE: EMBLEMS AND LETTERING MUST BE RAISED OR DEPRESSED MIN. 1/16" TYPICAL.) MOUNT ON WALL (NOT SIDELITE) NEAR CORRESPONDING DOOR ACCORDING TO LOCAL CODE. DO NOT USE CHANNEL AND INSERT TYPE SIGN. SEE DOOR SCHEDULE FOR ROOM NAME AND NUMBERS



AS-21
20" X 10" TENANT SIGNAGE – DOCK DOOR NUMBERS (INTERIOR) 10" TALL BLACK VINYL NUMBERS (ARIAL FONT) ON INTERIOR SIDE OF DOCK DOORS. TYPICAL AT ALL DOCK DOORS. CENTER ON DOOR, MOUNT HORIZONTAL CENTER TO 9'-0" A.F.F. (SEE BUILDING PLAN SHEETS FOR DOOR NUMBERS)



AS-27
8" TALL CHARACTERS TENANT SIGNAGE – EXTERIOR HOLLOW METAL DOOR NUMBERS BLACK DIE CUT VINYL CHARACTERS, ARIAL FONT. INSIDE AND OUTSIDE OF ALL EXTERIOR HOLLOW METAL DOORS. CENTER ON DOOR, MOUNT HORIZONTAL CENTER TO 5'-3" A.F.F. (SEE BUILDING PLAN SHEETS FOR DOOR NUMBERS)



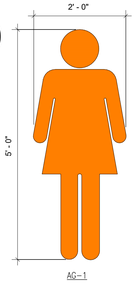
AS-28
4" TALL CHARACTERS TENANT SIGNAGE – HOLLOW METAL DOOR NUMBERS BLACK DIE CUT VINYL CHARACTERS, ARIAL FONT. ON SELECTED HOLLOW METAL DOOR. CENTER ON DOOR, MOUNT HORIZONTAL CENTER TO 4'-6" A.F.F. (SEE DOOR SCHEDULE FOR TEXT)

AS-51
12" DIA. CIRCLE TENANT SIGNAGE – NO FIREARMS MUST BE POSTED AT ALL EXTERIOR ENTRANCES TO ANY BUILDINGS. MUST BE POSTED AT EYE LEVEL OF ADULTS (4'–6" A.F.G.). MUST BE NOT MORE THAN 12" TO THE RIGHT OR LEFT OF EACH ENTRANCE.

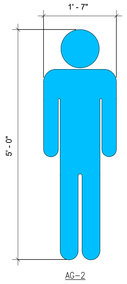
AG-F
FIRE EXTINGUISHER 3" X 14" VINYL GRAPHIC LOCATE AS NEEDED. PROVIDED BY TENANT, INSTALLED BY G.C.

FIRE EXTING. (AG-F)

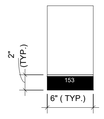
SCALE: NTS — 6



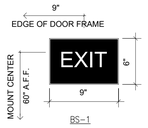
AG-1
4" TALL CHARACTERS
TENANT GRAPHICS – WOMEN
SYMBOL 2'–0" X 5'–0" TYPICAL AT WOMEN'S TOILET ROOM ENTRANCE. ORANGE VINYL ADHESIVE–APPLIED GRAPHIC.



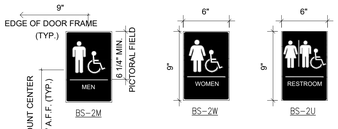
AG-2
4" TALL CHARACTERS
TENANT GRAPHICS – MEN
SYMBOL 1'–7" X 5'–0" TYPICAL AT MEN'S TOILET ROOM ENTRANCE.BLUE VINYL ADHESIVE–APPLIED GRAPHIC.



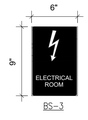
NOTE: IN LOCATIONS WHERE ADA PICTORIAL SIGN IS SPECIFIED, NO ADDITIONAL NAME PLATE SIGNAGE IS NEEDED. FOR THESE ROOMS, SUPPLY A 2" X 6" ROOM NUMBER SIGN, WHICH WILL ABUT TO THE BOTTOM OF THE ADA SIGN, MAKING IT APPEAR TO BE A SINGLE SIGN.



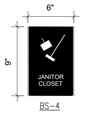
BS-1
BUILDING SIGNS – EXIT 9"W X 6"H BLACK PLASTIC (FIELD) BACKGROUND WITH WHITE EMBLEMS AND 2" HIGH WHITE LETTERING. (NOTE: EMBLEMS AND LETTERING MUST BE RAISED OR DEPRESSED MIN 1/16" TYPICAL) PROVE (1) SIGN PER EXIT DOOR COMPLYING WITH ANSI A117.1. SIGN TO HAVE RAISED AND BRAILLE CHARACTERS. MOUNT NEAR CORRESPONDING DOOR ACCORDING TO LOCAL CODE.



BS-2M BS-2W BS-2U
BUILDING SIGNS – TOILET ROOMS 6"W X 9"H BLACK PLASTIC (FIELD) BACKGROUND WITH WHITE EMBLEMS AND 5/8" MIN. TO 2" MAX. HIGH WHITE LETTERING. (NOTE: EMBLEMS AND LETTERING MUST BE RAISED OR DEPRESSED MIN 1/16" TYPICAL.) PROVE (1) SIGN PER TOILET ROOM COMPLYING WITH ANSI A117.1. SIGN TO HAVE RAISED AND BRAILLE CHARACTERS AND PICTORAL SYMBOL OF ACCESSIBILITY. MOUNT NEAR CORRESPONDING DOOR ACCORDING TO LOCAL CODE.



BS-3
BUILDING SIGNS– ELECTRICAL ROOM 6"W X 9"H TYPICAL AT ALL UTILITY ROOMS. MOUNT NEAR CORRESPONDING DOOR ACCORDING TO LOCAL CODE.



BS-4
BUILDING SIGNS – JANITOR'S CLOSET 6"W X 9"H TYPICAL AT ALL JANITOR'S CLOSETS. MOUNT NEAR CORRESPONDING DOOR ACCORDING TO LOCAL CODE.

BS-5
BUILDING SIGNS – MAX OCCUPANCY 6"W X 9"H ONE PER ASSEMBLY SPACE. MOUNT NEAR CORRESPONDING DOOR ACCORDING TO LOCAL CODE.

BS-8
BUILDING SIGNS – DRINKING FOUNTAIN 6"W X 9"H ONE PER DRINKING FOUNTAIN. (LOCATE PER PLUMBING SHEETS) MAY REQUIRE BRACKET MOUNT. MOUNT NEAR DRINKING FOUNTAIN ACCORDING TO LOCAL CODE.

NOTE:
1. BLACK PLASTIC (FIELD) BACKGROUND WITH WHITE EMBLEMS AND 5/8" MIN. TO 2" MAX. HIGH WHITE LETTERING. (NOTE: EMBLEMS AND LETTERING MUST BE RAISED OR DEPRESSED MIN 1/16" TYPICAL)
2. MOUNT CENTER OF SIGN 60" AFF VERTICALLY, AND 9" FROM EDGE OF DOOR FRAME HORIZONTALLY.
3. PICTOGRAMS SHALL HAVE A FIELD 6" MINIMUM IN HEIGHT.

SIGNS

SCALE: 1 1/2" = 1'-0" — 7

GRAPHICS

SCALE: 3/4" = 1'-0" — 8

SIGNAGE AT EXTERIOR DOCK

SCALE: NTS — 9

SIGNAGE AT EMERGENCY EXIT DOOR

SCALE: NTS — 10

AG-A
AVAILABLE DOCK DOOR
55" X 11.75"
VINYL GRAPHIC VERIFY WITH CONSTRUCTION MANAGER FOR LOCATIONS.
PROVIDED BY TENANT, INSTALLED BY G.C.

AVAILABLE DOCK (AG-A)

SCALE: NTS — 11

DOCK LOCK INDICATOR SIGN
18" X 36"
PROVIDE SIGN AT BUILDING EXTERIOR AT EACH DOCK DOOR. SIGN TO BE PROVIDED AND INSTALLED BY G.C.

DOCK LOCK INDICATOR

SCALE: NTS — 12

VINYL GRAPHICS GENERAL NOTES

DOOR SIGNS:
SEE DOOR SIGN PLACEMENT DETAIL ON THIS SHEET FOR MOUNTING HEIGHTS.

SPECIFICATIONS:
SEE WORLDWIDE REAL ESTATE SIGNAGE STANDARDS (REV. 10) FOR COLOR GENERAL NOTES AND ADDITIONAL SIGNAGE COLORS.

DESCRIPTION:
CUSTOM CUT VINYL GRAPHICS, ATTACHED TO FIRST SURFACE OF EXTERIOR GLASS.

GRAPHICS AND TYPOGRAPHY:
SIGN GRAPHICS ARE HEAVY DUTY '3M' VINYL. LOGO IS A HIGH RESOLUTION DIGITAL PRINT ON PERMANENT ADHESIVE PRESSURE SENSITIVE VINYL SUBSTRATE WITH LUSTER OVER LAMINATE, CUT TO SHAPE FROM VECTOR FILE. COPY IS MATTE WHITE VINYL.

INSTALLATION:
LOCATIONS ARE GENERALLY NOTED ON THE ATTACHED LOCATION PLANS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL INSTALLATION CONDITIONS PRIOR TO FABRICATION. THE INSTALLATION METHODS AND DETAILS FOR EACH LOCATION SHALL BE ILLUSTRATED IN THE SUBMITTED SHOP DRAWINGS. FINAL LOCATION WILL BE APPROVED ON SITE BY THE TENANT REPRESENTATIVE.

SUBMITTALS:
THE FOLLOWING SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION – (3) SETS OF SHOP DRAWINGS AND (3) 6" X6" VINYL SAMPLES OF EACH SIGN FACE COLOR. SEE GENERAL CONSTRUCTION AND INSTALLATION SPECIFICATIONS FOR ADDITIONAL SUBMITTALS.

SIGNAGE GENERAL NOTES
1. FINAL QUANTITES SHALL BE COORDINATED AND VERIFIED IN FIELD.
2. ADDITIONAL SIGNAGE NOT SHOWN ON GRAPHICS PLAN MAY BE REQUIRED PER LOCAL CODE AND/OR AHJ. SUB-CONTRACTOR SHALL COORDINATE WITH LOCAL AHJ AND PROVIDE AS REQUIRED.
3. MOUNT SIGNAGE ACCORDING TO LOCAL CODES.
4. ALL PERMANENT SIGNAGE TO ACCESSIBLE AREAS TO HAVE RAISED BRAILLE CHARACTERS PER ANSI 117.1–2003
5. TYPICAL SIGN FONT IS SET IN ARIAL.
6. SEE DOOR SCHEDULE FOR DOOR SIGNAGE REQUIRED TEXT.

IC1 White — Hex #ffffff, RGB 255/ 255/ 255, CMYK 0/ 0/ 0/ 0, Pantone White

IC2 Black — Hex #000000, RGB 0/ 0/ 0, CMYK 75/ 68/ 67/ 90, Pantone BlackC

IC3 Orange — Hex #FF9900, RGB 255/ 153/ 0, CMYK 0/ 47/ 100/ 0, Pantone 137U, Pantone 1375C

IC6 Blue — Hex #146EB4, RGB 20/ 100/ 180, CMYK 88/ 55/ 2/ 0, Pantone 300 U

C7 Blue — Scotchcal Prime Blue (Pantone 2995C)(RAL 5012)

CAUTION : IF THIS SHEET IS NOT A 30" X 42" IT IS A REDUCED PRINT

HPA architecture
hpa, inc.
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LICENSED ARCHITECT – MICHAEL J. LOMBARDO – C-22276 – 08-31-21 RENEWAL DATE – STATE OF CALIFORNIA

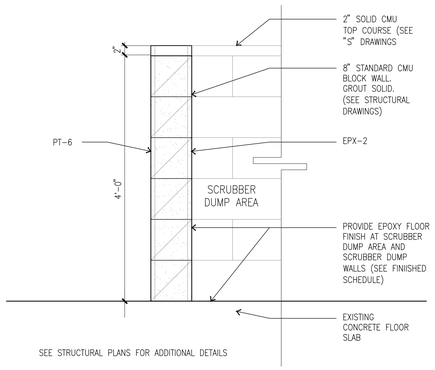
Owner:

Project:
TORRANCE DCX 7
950 FRANCISCO ST. TORRANCE, CA

Consultants:

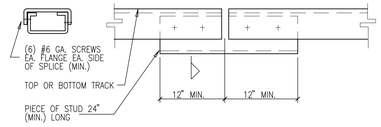
Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:	DETAILS
Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	
Sheet:	TI-A6.1

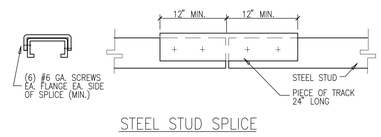


SCRUBBER DUMP PARTITION 17

SCALE: N.T.S. DFP-036A



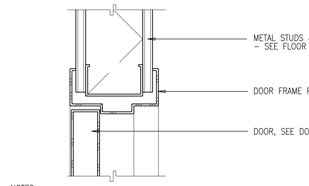
STEEL TRACK SPLICE



STEEL STUD SPLICE

TRACK SPLICE 13

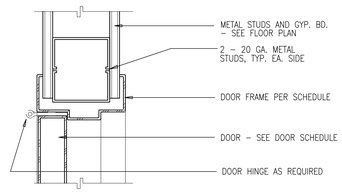
SCALE: NONE 40114



NOTES:
1. SEE DOOR SCHEDULE FOR DOOR THICKNESS, FIRE RATING, AND FINISH.
2. REFER TO DOOR SCHEDULE FOR FINISH HARDWARE SCHEDULE.
3. PROVIDE 3/32" CLEARANCE BETWEEN DOOR AND HEAD.
4. ROUGH OPENING SHALL BE 1" OVER DOOR HEIGHT.

INTERIOR DOOR HEAD 9

SCALE: 3"=1'-0"

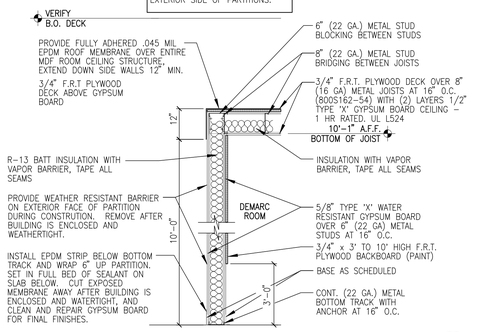


NOTES:
1. SEE DOOR SCHEDULE FOR DOOR THICKNESS, FIRE RATING, AND FINISH.
2. REFER TO SPECS. FOR FINISH HARDWARE SCHEDULE.
3. PROVIDE A 3 DEGREE BEVEL AT BOTH SIDES OF DOOR AND PROVIDE 3/32" CLEARANCE BETWEEN DOOR AND JAMB, EACH SIDE.
4. ROUGH OPENING SHALL BE 1 1/4" OVER DOOR WIDTH.

INTERIOR DOOR JAMB 10

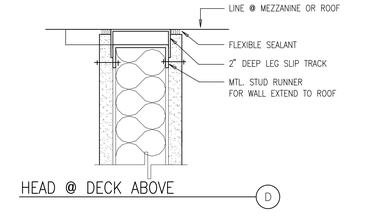
SCALE: 3"=1'-0" 30216A

SPECIAL PROJECT NOTE–
PROTECT DEMARK ROOM STRUCTURE AND FINISHES FROM WEATHER DURING SHELL BUILDING CONSTRUCTION (TYP.).
PROVIDE (1) LAYER 5/8" EXTERIOR GRADE TYPE–X GYPSUM BOARD ON EXTERIOR SIDE OF PARTITIONS.

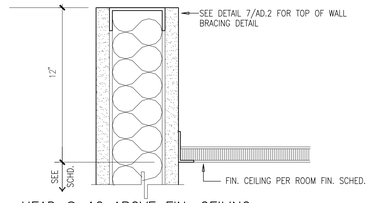


DEMARC ROOM PARTITION 1 HOUR RATED 6

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

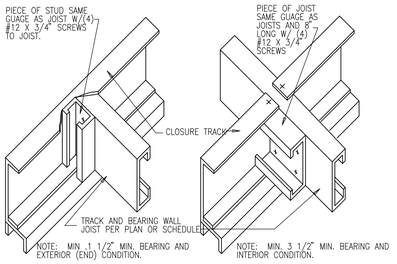


HEAD @ DECK ABOVE D



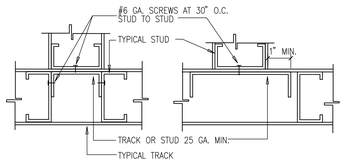
HEAD @ 12 ABOVE FIN. CEILING C

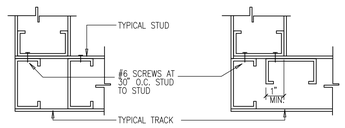
SEE DETAIL 3/AD.2 FOR WALL BRACING

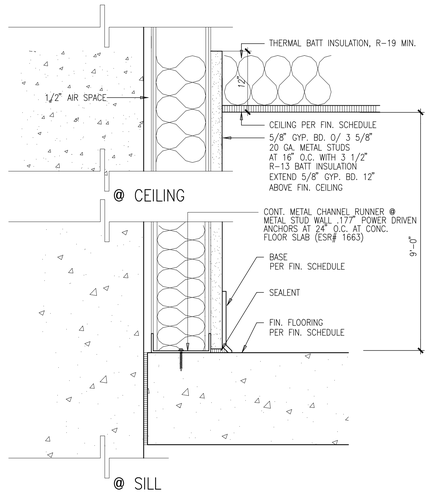


JOIST TO BEARING WALL 18

SCALE: NONE 40112

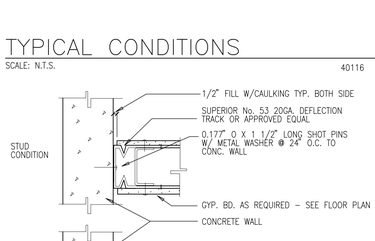






FURRING WALL DETAIL 11

NTS 30216A

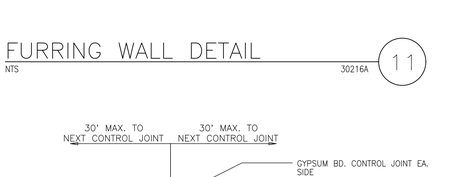


TYPICAL CONDITIONS 14

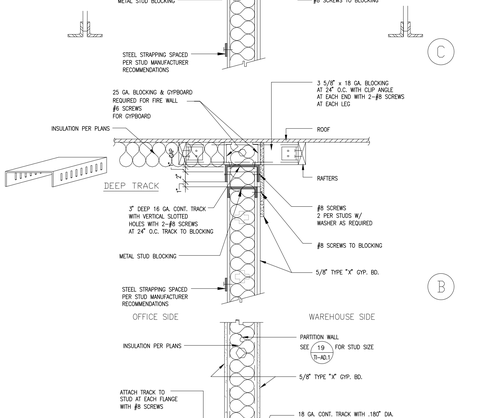
SCALE: N.T.S. 40116

NOTES:
1. CONTROL JOINTS SHALL BE INSTALLED AT MAXIMUM 30 FEET O.C. BOTH WAYS
2. BOARD JOINTS SHALL NOT OCCUR WITHIN 12" OF THE CORNERS OF DOOR FRAMES UNLESS CONTROL JOINTS ARE INSTALLED AT THE CORNERS.

NO FIRE RATED CONDITION



ON HOUR RATED WALL



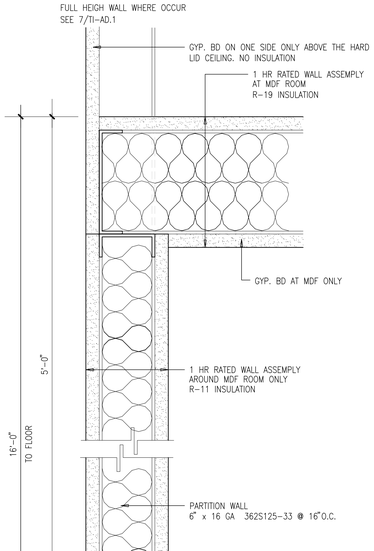
FULL HT. WALL @ ROOF STRUCT 7

NTS

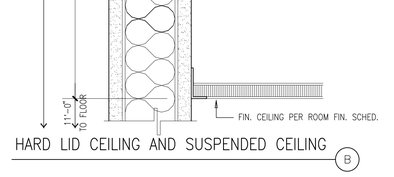
NOTES:
1. SEE DOOR SCHEDULE FOR DOOR THICKNESS, FIRE RATING, AND FINISH.

INTERIOR DOOR SILL 8

SCALE: 3"=1'-0"



HARD LID CEILING AND SUSPENDED CEILING B



NOTES:
1. SEE FLOOR PLANS FOR LOCATION OF WALL INSULATION.
2. REFER TO CBC SECTION 720 AND TABLE 720.1 FOR FIRERESISTIVE STANDARDS WHERE REQ. ON PLAN
3. USE ONLY #6 SCREWS

STANDARD PARTITION 4

SCALE: 3" = 1'-0" DFP–036A

PARTITION SCHEDULE

SIZE	MAXIMUM PARTITION HT. SPACING	MAXIMUM PARTITION HT. HEIGHT	MAXIMUM PARTITION HT. SPACING	MAXIMUM PARTITION HT. HEIGHT
362S125–18	16"	12'–1"	24"	9'–8"
362S125–33	16"	17'–5"	24"	15'–3"
600S125–33	16"	39'–9"	–	–

NOTES:
1. STEEL STUDS SHALL BE MANUFACTURED BY A SSMA MEMBER IN CONFORMANCE WITH ICC ER 4943–P.
2. STEEL STUDS SHALL BE OF 33 KSI STEEL EXCEPT 16 GA. AND THICKER SHALL BE 50 KSI STEEL (YIELD STRENGTH).
3. DRYWALL FINISH IS BOTH SIDES OF WALL OR MUST BE BLOCKED/STRAPPED PER DETAIL '5'.

PARTITION STUD SCHEDULE 19

SCALE: NONE 40110

SUSPENDED CEILING SUPPORT JOIST SCHEDULE

SPAN FT	SINGLE CEILING @ 4'–0" O.C.	BACK TO BACK CEILING JOIST @ 4'–0" O.C. W/ #8 SCREWS @ 6" O.C. STAGGERED
8	450S162–43	
12	600S162–54	2–450S162–43
16	600S200–68	2–550S162–43
20	800S200–68	2–600S200–68
24	1200S162–68	2–800S250–68
28	1200S162–97	2–1000S200–68
32		2–1200S200–68

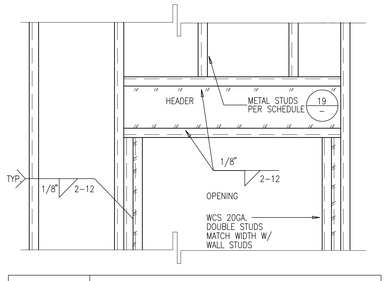
NOTES:
1. STEEL STUDS SHALL BE MANUFACTURED BY A SSMA MEMBER IN CONFORMANCE WITH ICC ER 4943–P.
2. STEEL STUDS SHALL BE OF 33 KSI STEEL EXCEPT 16 GA. (54 MIL) AND THICKER SHALL BE 50 KSI STEEL (YIELD STRENGTH).
3. CEILINGS TO BE SUSPENDED GRID SYSTEM WITH LIGHT FIXTURES ONLY. SHEATHING SHALL NOT BE APPLIED TO THE TOP OF JOISTS.
4. CEILINGS TO HAVE SUFFICIENT TOTAL ACCESS FROM BELOW, SUCH THAT ACCESS IS NOT REQUIRED WITHIN THE SPACE ABOVE THE CEILING.

SUSPENDED CEILING JOIST SCHEDULE 20

SCALE: NONE 40109

STUD @ CONC. WALL 15

SCALE: NONE 40117



SPAN	SIZE
4'–0"	4WCS20 — SIZE OF WALL & 20 GA.
6'–0"	6WCS20 — SIZE OF WALL & 20 GA.
8'–0"	6WCS18 — SIZE OF WALL & 20 GA.

TYPICAL PARTITION HEADER 16

SCALE: NONE 40111

GYPSUM BOARD CONTROL JOINT 12

SCALE: 3"=1'-0"

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LICENSED ARCHITECT ROBERT MICHAEL JACOBS C–22276 08-31-21 RENEWAL DATE STATE OF CALIFORNIA

Owner:

Project:

TORRANCE DCX 7

950 FRANCISCO ST. TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: details

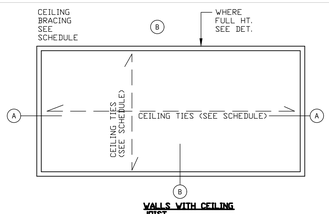
Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

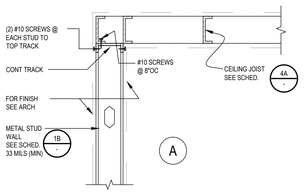
Sheet:

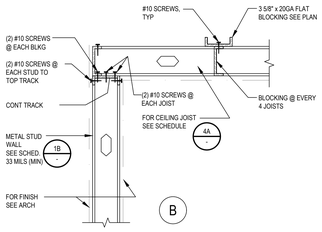
TI-AD.1

CAUTION : IF THIS SHEET IS NOT A 30" X 42" IT IS A REDUCED PRINT



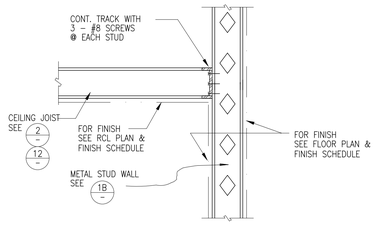
WALLS WITH CEILING JOIST





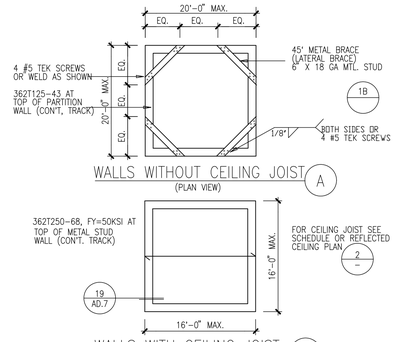
DRY WALL CEILING DETAIL 14

SCALE: NONE



JOIST TO STUD FRAMING 12

SCALE: NONE

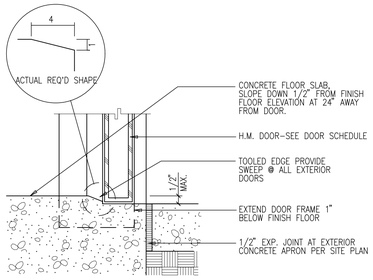


TOP OF WALL BRACING 9

SCALE: NONE

40113

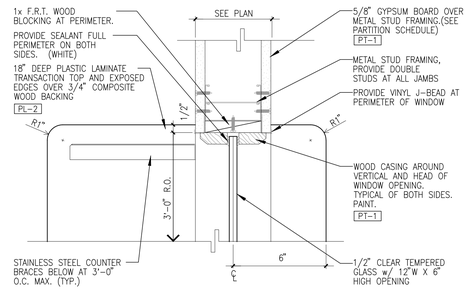
KING STUDS	SPAN	HEADER SIZE
[1/ TO MATCH 1/ WALL	4'-0"	362S 162-33 INT. 362S 162-43 DEMISING — SIZE OF WALL AND 33 MILS
[1/ INT. PARTITION	6'-0"	362S 162-33 INT. — SIZE OF WALL AND 33 MILS
[2/ DEMISING WALL	6'-0"	600S 162-43 DEMISING — SIZE OF WALL AND 33 MILS
][2/ DEMISING WALL][2/ INT. PARTITION	8'-0"	600S 162-33 INT. 600S 162-43 DEMISING — SIZE OF WALL AND 33 MILS
3	12'-0"	800S 162-43 INT. 800S 162-54 (50 KSI) DEMISING — SIZE OF WALL AND 43 MILS
3	16'-0"	800S 162-54 INT. 800S 162-68 (50 KSI) DEMISING — SIZE OF WALL AND 54 MILS
3	20'-0"	1000S 168-54 INT. 1000S 200-97 (50 KSI) DEMISING — SIZE OF WALL AND 54 MILS



NOTES:
1. THRESHOLDS SHALL CONFORM TO SECTION 11B-302.2, FIGURE 11B-302.2.
2. WEATHER STOP AT THRESHOLD

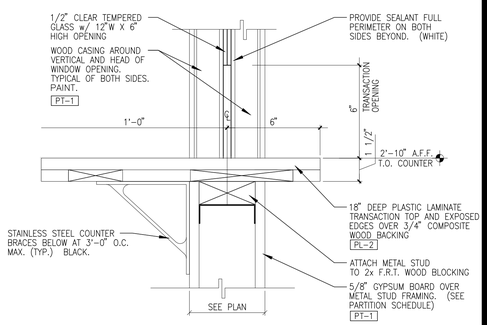
H.M. DOOR SILL @ CONCRETE WALK FOR REFERENCE ONLY 6

SCALE: 3"=1'-0"



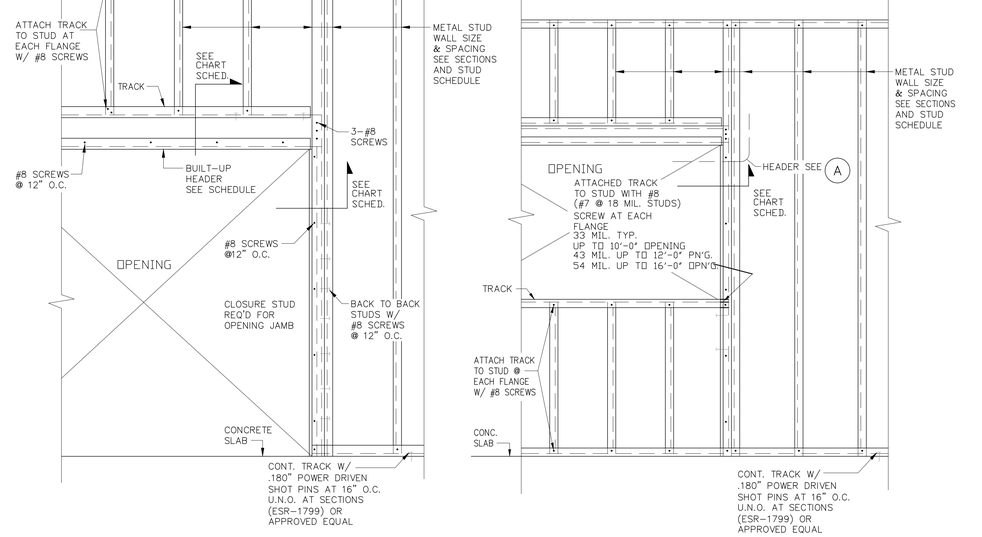
JAMB DETAIL 1

SCALE: 3" = 1'-0"



SILL DETAIL 2

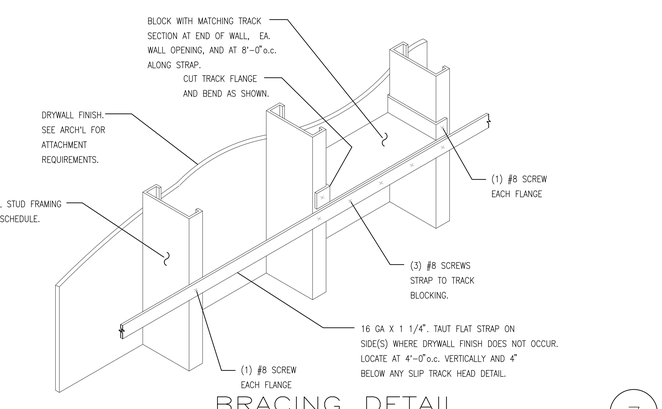
SCALE: 3" = 1'-0"



TYPICAL PARTITION HEADER 10

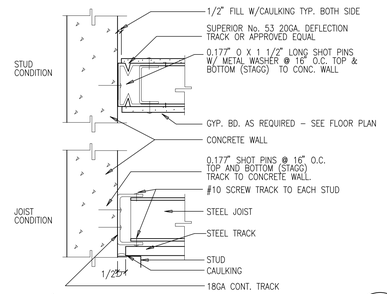
SCALE: NONE

40111



BRACING DETAIL 7

SCALE: NTS



STUD/JOIST @ CONC. WALL 3

SCALE: NONE

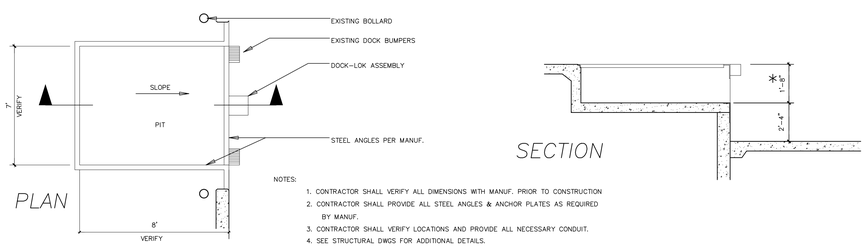
CEILING JOIST SCHEDULE (GYPBOARD CEILING)

MAXIMUM SPAN	SSMA STUD DESIGNATION	SPACING	TRACK BLOCKING
14'-0"	600S125-33	16"o.c.	4'-0"o.c.
20'-0"	800S137-43	16"o.c.	4'-0"o.c.

NOTES:
1. STEEL STUDS SHALL BE MANUFACTURED BY A SSMA MEMBER IN CONFORMANCE WITH ICC ESR 3064P.
2. STEEL STUDS SHALL BE OF 33 KSI STEEL U.N.O. CONFORMING TO BUILDING CODE.
3. USE 362T125-43 FOR CEILING TIES WITH 2-#8 SCREWS AT EACH CEILING JOIST.
4. STUD TRACKS SHALL BE UNPUNCHED STUDS OF SAME GUAGE AS STUD U.N.O.
5. GYPSUM BOARD IS ON ONE SIDE OF CEILING U.N.O.
6. DESIGN LOAD: DEAD LOAD = 5 PSF & LIVE LOAD = 10 PSF, TOTAL DEFLECTION LIMIT = L/360

CEILING JOIST SCHEDULE 16

SCALE: N.T.S.

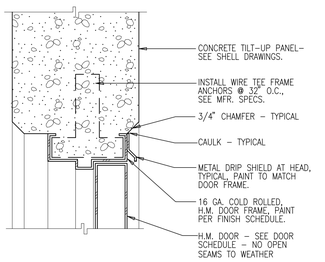


NOTES:
1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH MANUF. PRIOR TO CONSTRUCTION
2. CONTRACTOR SHALL PROVIDE ALL STEEL ANGLES & ANCHOR PLATES AS REQUIRED BY MANUF.
3. CONTRACTOR SHALL VERIFY LOCATIONS AND PROVIDE ALL NECESSARY CONDUIT.
4. SEE STRUCTURAL DWGS FOR ADDITIONAL DETAILS.

DOCK LEVELER 11

SCALE: 3" = 1'-0"

40107



NOTES:
1. PER C.B.C. SECTION 1008.1, EVERY REQUIRED EXIT DOORWAY SHALL HAVE A MIN. WIDTH 3'-0" AND MIN. HEIGHT 6'-8", WHEN INSTALLED, EXIT DOOR MUST HAVE A CLEAR OPENING WIDTH OF 32" MIN.
2. SEE SHELL DRAWINGS FOR ADDITIONAL DETAILS.
3. PROVIDE WOOD BLOCKING WHERE DOOR CLOSER AND HINGES OCCUR AT HEAD AND JAMB.
4. COMPLETLY WEATHERSTOP HEAD JAMBS & THRESHOLD AT ALL EXTERIOR DOORS.

H.M. DOOR HEAD / JAMB FOR REFERENCE ONLY 4

SCALE: 3"=1'-0"

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LICENSED ARCHITECT MICHAEL C-22276 08-31-21 RENEWAL DATE STATE OF CALIFORNIA

Owner:

20730 PRAIRIE ST.
CHATSWORTH, CA 91311

Project:
DAX3

Phase 1

20730 PRAIRIE ST.
CHATSWORTH. CA 91311

Consultants:

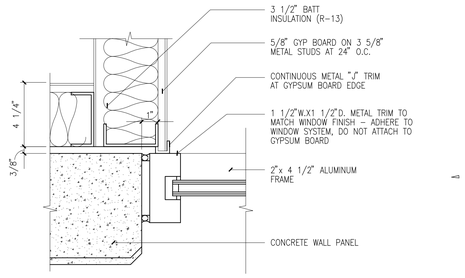
CIVIL	RA SMITH
STRUCTURAL	HSA
MECHANICAL	RPM
PLUMBING	RPM
ELECTRICAL	RPM
LANDSCAPE	HUNTER
FIRE PROTECTION	-
SOILS ENGINEER	-

Title: details

Project Number:	19415
Drawn by:	DH
Date:	11/27/2019
Revision:	

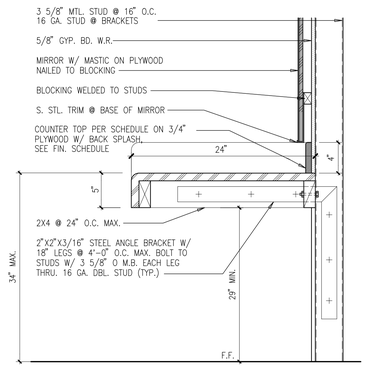
Sheet:

TI-AD.2



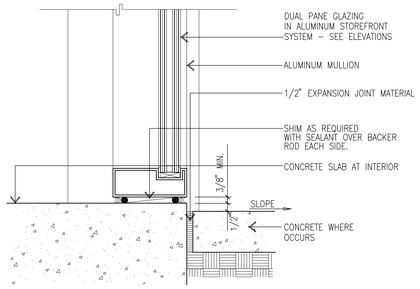
STOREFRONT HEAD/JAMB/SILL

SCALE: 3"=1'-0" — 9



LAVATORY COUNTER

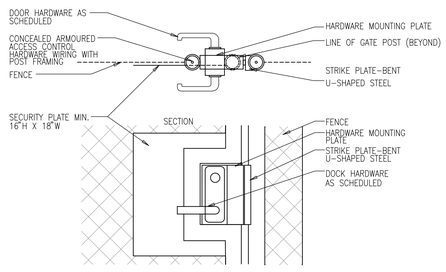
SCALE: 1 1/2" = 1'-0" — 5



NOTES:
1. SEE CHAPTER 24 OF IBC. FOR MINIMUM FRAME LAP OVER GLASS EDGE, MINIMUM GLASS EDGE CLEARANCE, AND REQUIRED GLASS SUPPORTS.
2. SLOPE CONCRETE WALK AT EXTERIOR AWAY FROM BUILDING AT MAX. 2%.
3. SILL FURRING DOES NOT OCCUR @ ALL STOREFRONT LOCATIONS – SEE FLOOR PLAN.
4. EDGE OF CONC. SLAB NOT NECESSARILY FACE OF PANEL.

STORE FRONT

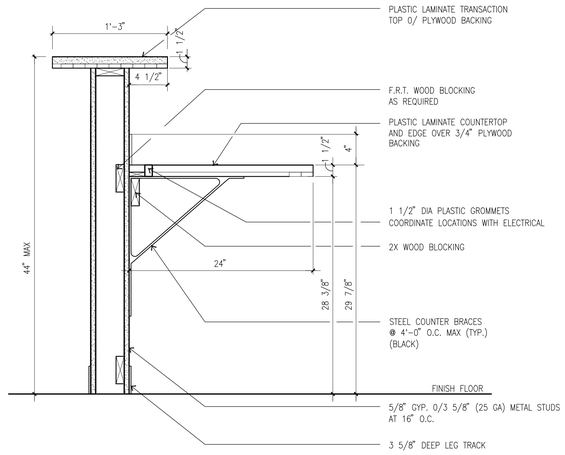
SCALE: 3"=1'-0" DFP-036B — 10



ELEVATION

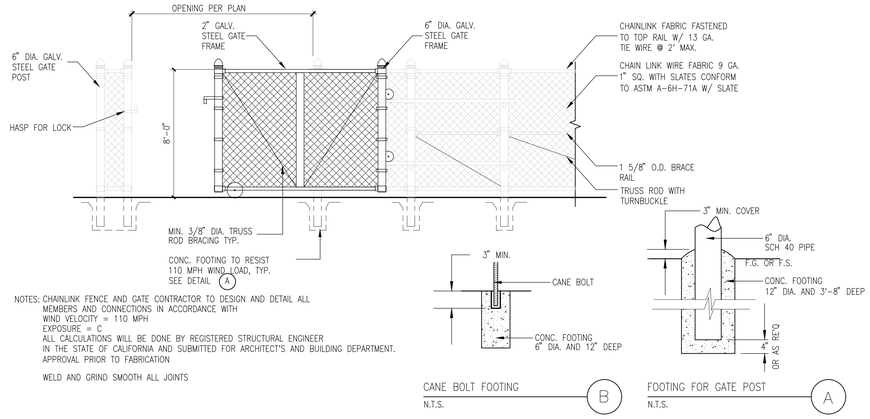
GATE HARDWARE DETAIL

SCALE: N.T.S. — 6



SECURITY DESK SECTION

SCALE: 1 1/2" = 1'-0" — 2



NOTES: CHAINLINK FENCE AND GATE CONTRACTOR TO DESIGN AND DETAIL ALL MEMBERS AND CONNECTIONS IN ACCORDANCE WITH
WIND VELOCITY = 110 MPH
EXPOSURE = C
ALL CALCULATIONS WILL BE DONE BY REGISTERED STRUCTURAL ENGINEER IN THE STATE OF CALIFORNIA AND SUBMITTED FOR ARCHITECT'S AND BUILDING DEPARTMENT. APPROVAL PRIOR TO FABRICATION

WELD AND GRIND SMOOTH ALL JOINTS

CANE BOLT FOOTING

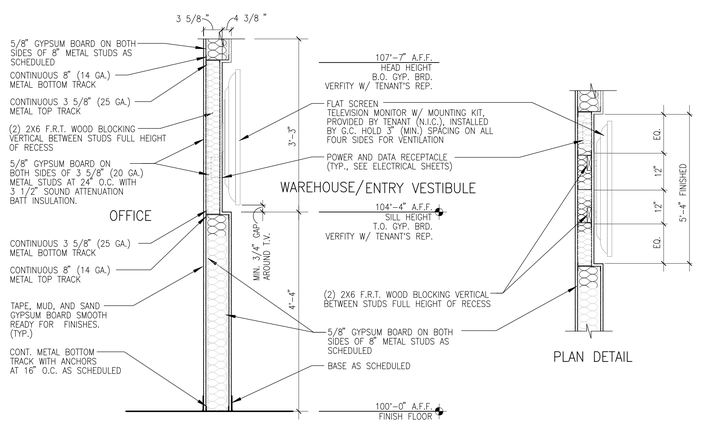
N.T.S. — B

FOOTING FOR GATE POST

N.T.S. — A

FENCE AND SLIDING GATE

SCALE: 1/8"=1'-0" — 7



WALL SECTION AT RECESSED TV

SCALE: N.T.S. — 3

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HPA architecture

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LICENSED ARCHITECT — ROBERT MICHAEL JACOBS — C-22276 — 08-31-21 RENEWAL DATE — STATE OF CALIFORNIA

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

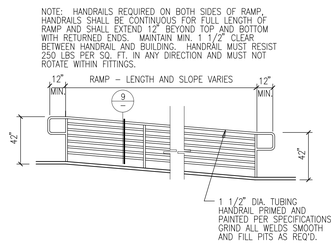
Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:	details
Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

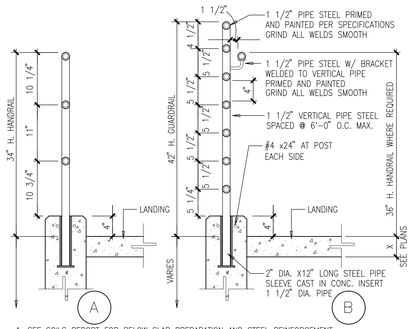
Sheet:

TI-AD.3



TYPICAL GUARDRAIL @ RAMP

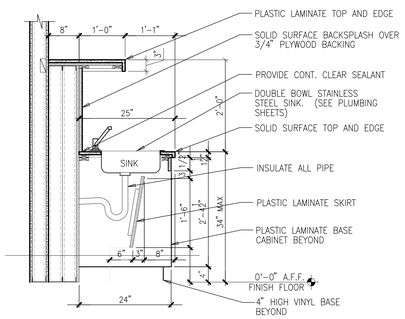
SCALE: 1/4" = 1'-0" 12



1. SEE SOILS REPORT FOR BELOW SLAB PREPARATION AND STEEL REINFORCEMENT RECOMMENDATIONS.
2. SEE STRUCTURAL DRAWINGS FOR STEEL REINFORCING REQUIRMENTS

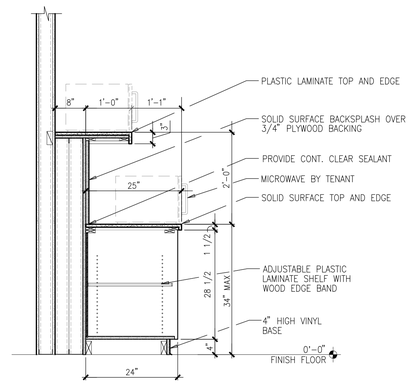
GUARDRAIL/HANDRAIL

SCALE: 1/4" = 1'-0" 9



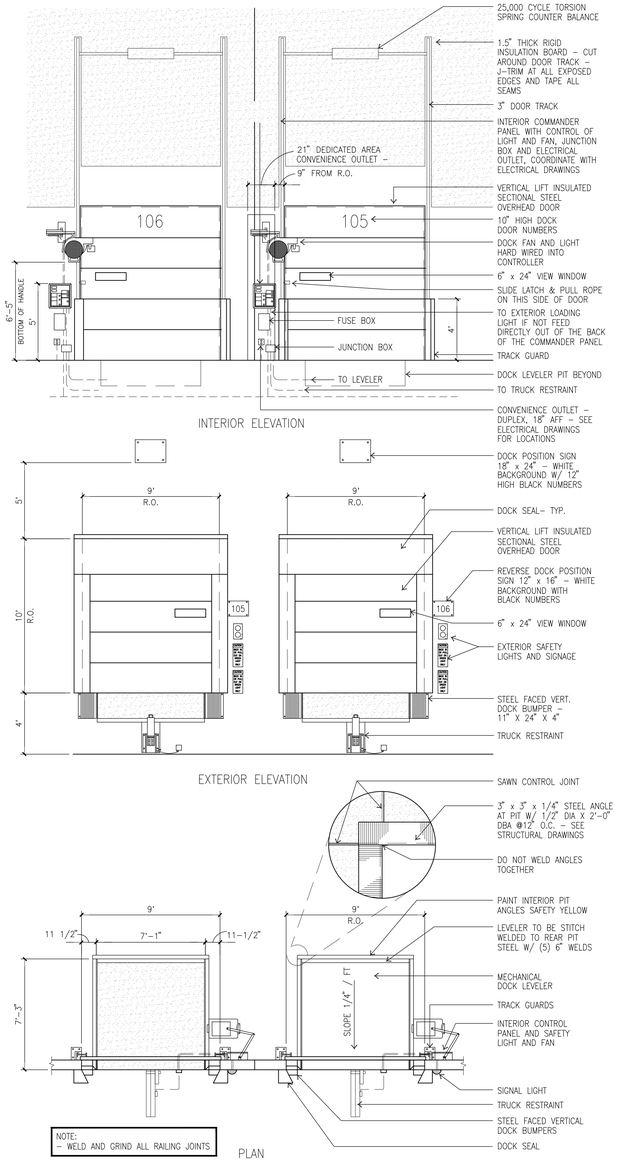
LAVATORY COUNTER DETAIL

SCALE: 1/4" = 1'-0" 6



COUNTER DETAIL

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



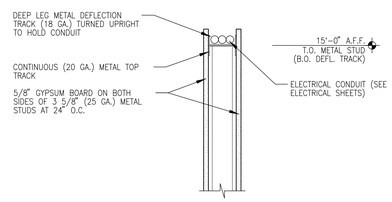
INTERIOR ELEVATION

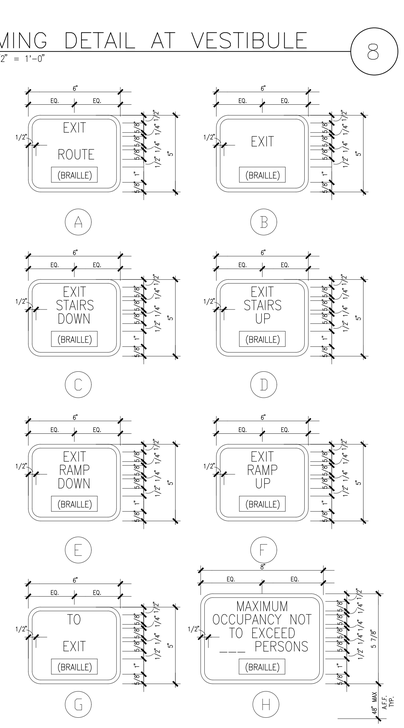
EXTERIOR ELEVATION

PLAN

DOCK EQUIPMENT DETAILS

SCALE: 3" = 1'-0" 40107 10

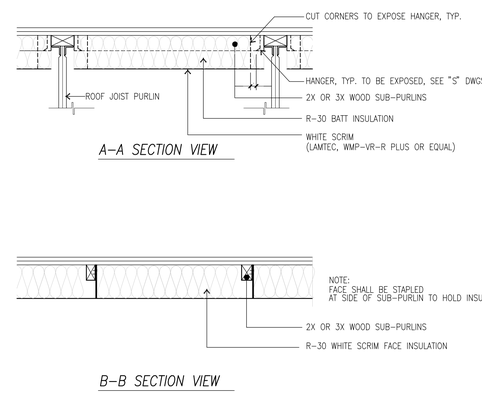


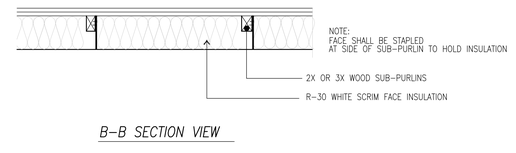


TACTILE EGRESS SIGNAGE

FRAMING DETAIL AT VESTIBULE

SCALE: 1 1/2" = 1'-0" 8



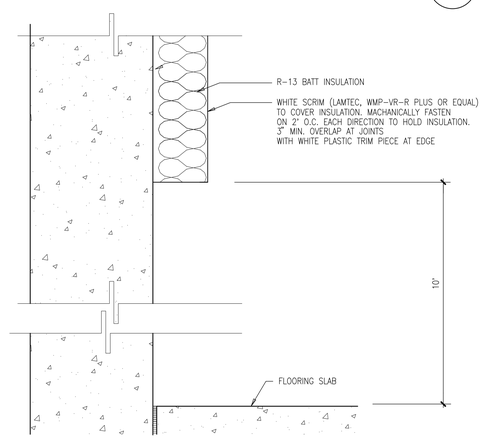


ROOF INSULATION

SCALE: 1" = 1'-0" 2

INSULATION

EXTERIOR WALL: WHITE SCRIM OVER R-13 BATT INSULATION ON INTERIOR FACE OF WALL FROM FLOOR TO UNDER ROOF DECK SEE DETAIL B ON SAME SHEET
ROOF: WHITE SCRIM OVER R-30 FACE BATT INSULATION UNDER ROOF DECK SEE DETAIL C ON SAME SHEET



INSULATION @ CONC. PANEL (TO ROOF DECK)

SCALE: 3" = 1'-0" 1

CAUTION : IF THIS SHEET IS NOT A 30" X 42" IT IS A REDUCED PRINT

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LICENSED ARCHITECT ROBERT MICHAEL LAMOUREUX C-22270 08-31-21 RENEWAL DATE STATE OF CALIFORNIA

Owner:

Project:

TORRANCE DCX 7

950 FRANCISCO ST. TORRANCE, CA

Consultants:

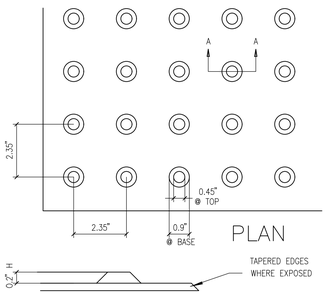
Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: DETAILS

Project Number: 19436
Drawn by: ML
Date: 10/24/19
Revision:

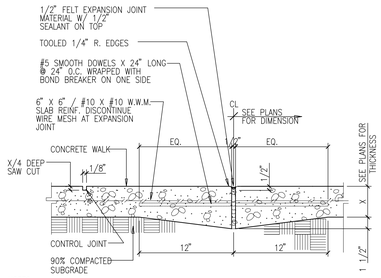
Sheet:

TI-AD.4



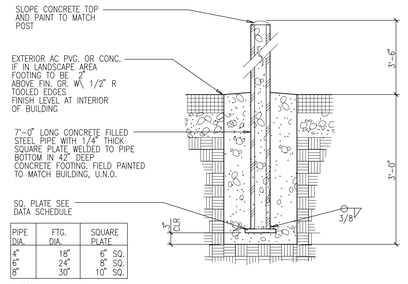
NOTES:
1. SEE SECTION 11B-705.1. FOR ADDITIONAL REQUIREMENT OF DETECTABLE WARNING SURFACE W/ TRUNCATED DOMES
2. TRUNCATED DOMES MATERIAL TO BE CONCRETE DARK GRAY PAVERS.

TRUNCATED DOMES 17
SCALE: N.T.S.



NOTES:
1. SEE SOILS REPORT FOR BELOW SLAB PREPARATION.
2. EXPANSION JOINTS SHALL BE AT 12'-0" O.C. MAX. EACH WAY.
3. TYPICAL CONTROL JOINT SHALL BE STRAIGHT AND @ 90 DEGREE ANGLES TO EACH OTHER.

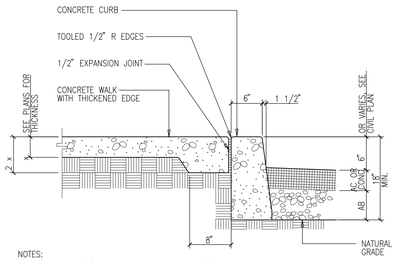
EXPANSION/CONTROL JOINT @ CONC. WALK 13
SCALE: 1 1/2"=1'-0" 10203A



PIPE DIA.	FTG. DIA.	SQUARE PLATE
4"	18"	6" SQ.
6"	24"	8" SQ.
8"	30"	10" SQ.

NOTES:
1. UNLESS NOTED OTHERWISE, USE 6" DIA. GUARD POST, TYPICAL
2. PROVIDE GUARD POSTS @ 3'-0" O.C. AROUND TRANSFORMER PAD AT 2'-0" FROM EDGE OF PAD. VERIFY WITH CITY/ELECTRIC COMPANY STANDARDS,SEE SITE PLAN FOR LOCATION
3. PROVIDE 2 GUARDPOSTS 2'-6" IN FRONT OF FIRE HYDRANTS NOT PROTECTED BY CONCRETE CURB 5'-0" APART, VERIFY WITH LOCAL FIRE DEPARTMENT STANDARDS. SEE SITE PLAN FOR LOCATION.
4. PROVIDE 1 GUARDPOST 18" IN FRONT END TRUCK WELL RAMP WALL., SEE SITE PLAN FOR LOCATIONS.

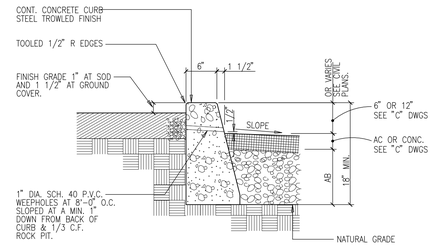
STEEL PIPE GUARD POST 9
SCALE: 3/4"=1'-0" 10401A



NOTES:
1. PROVIDE 1/2" EXPANSION JOINTS AT 16'-0" O.C. MAXIMUM AND AT CURVE TANGENTS AND CORNERS.
2. SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
3. SEE SOILS REPORT FOR STEEL REINFORCING RECOMMENDATIONS.
4. SEE SOILS REPORT FOR BELOW SLAB PREPARATION.
5. CONSTRUCT SLAB PER STRUCTURAL ENGINEERS RECOMMENDATION.

REFER TO CIVIL DRAWINGS FOR ACTUAL CONSTRUCTION DETAILS REQUIREMENTS IN THIS DETAIL ARE MIN. REQUIREMENTS

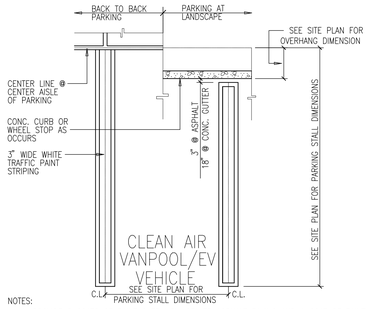
CONCRETE CURB @ WALK 5
SCALE: 1"=1'-0" 10102A



NOTES:
1. PROVIDE 1/2" EXPANSION JOINTS AT 16'-0" O.C. MAXIMUM AND AT CURVE TANGENTS AND CORNERS.
2. FINISH BACK SIDE OF CURB A MINIMUM OF 3" DOWN FROM TOP.
3. SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
4. SEE SOILS REPORT FOR STEEL REINFORCING RECOMMENDATIONS.

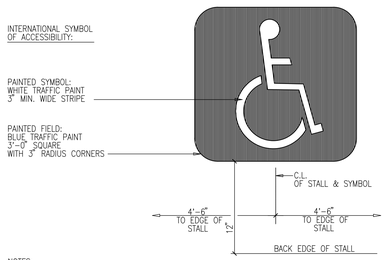
REFER TO CIVIL DRAWINGS FOR ACTUAL CONSTRUCTION DETAILS REQUIREMENTS IN THIS DETAIL ARE MIN. REQUIREMENTS

CONCRETE CURB @ LANDSCAPE 1
SCALE: 1"=1'-0" 10101A



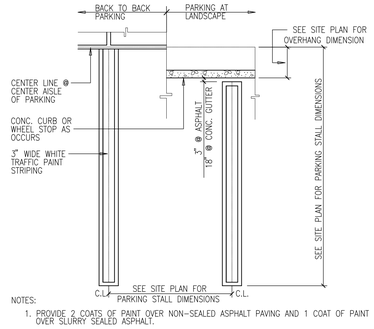
NOTES:
1. PROVIDE 2 COATS OF PAINT OVER NON-SEALED ASPHALT PAVING AND 1 COAT OF PAINT OVER SLURRY SEALED ASPHALT.
2. VERIFY STRIPING REQUIREMENTS W/ CITY, & PROVIDE ACCORDINGLY
3. PROVIDE 4" WIDE STRIPPING AT ALL TRUCK STALLS

CLEAN AIR/VANPOOL/EV VEHICLE PARKING 18
SCALE: 1"=1'-0" 11203B



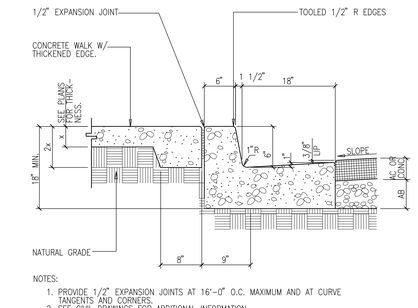
NOTES:
1. SEE SITE PLAN FOR HANDICAPPED PARKING LOCATIONS.
2. SIGNAGE SHALL CONFORM TO SEC. 4.30 OF THE AMERICANS WITH DISABILITIES ACT.

PARKING STALL ACCESSIBLE SYM. 14
NO SCALE 10503



NOTES:
1. PROVIDE 2 COATS OF PAINT OVER NON-SEALED ASPHALT PAVING AND 1 COAT OF PAINT OVER SLURRY SEALED ASPHALT.
2. VERIFY STRIPING REQUIREMENTS W/ CITY, & PROVIDE ACCORDINGLY
3. PROVIDE 4" WIDE STRIPPING AT ALL TRUCK STALLS

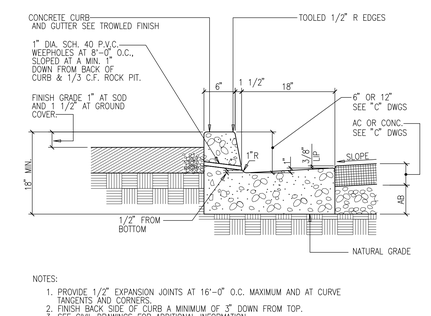
PARKING LOT STRIPES 10
SCALE: 1/4"=1'-0" 10301A



NOTES:
1. PROVIDE 1/2" EXPANSION JOINTS AT 16'-0" O.C. MAXIMUM AND AT CURVE TANGENTS AND CORNERS.
2. SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
3. SEE SOILS REPORT FOR STEEL REINFORCING RECOMMENDATIONS.

REFER TO CIVIL DRAWINGS FOR ACTUAL CONSTRUCTION DETAILS REQUIREMENTS IN THIS DETAIL ARE MIN. REQUIREMENTS

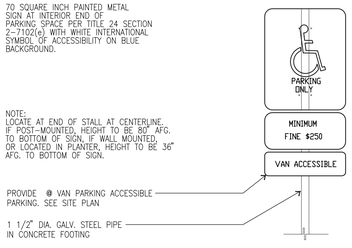
CONC. CURB & GUTTER AT WALK 6
SCALE: 1"=1'-0" 10104A



NOTES:
1. PROVIDE 1/2" EXPANSION JOINTS AT 16'-0" O.C. MAXIMUM AND AT CURVE TANGENTS AND CORNERS.
2. FINISH BACK SIDE OF CURB A MINIMUM OF 3" DOWN FROM TOP.
3. SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
4. SEE SOILS REPORT FOR STEEL REINFORCING RECOMMENDATIONS.

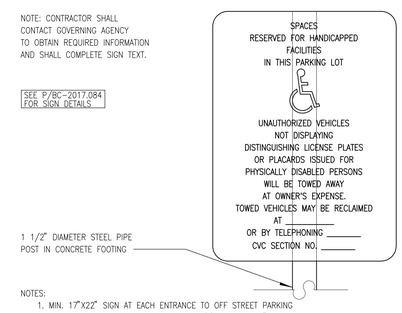
REFER TO CIVIL DRAWINGS FOR ACTUAL CONSTRUCTION DETAILS REQUIREMENTS IN THIS DETAIL ARE MIN. REQUIREMENTS

CONCRETE CURB and GUTTER 2
SCALE: 1"=1'-0" 10103A



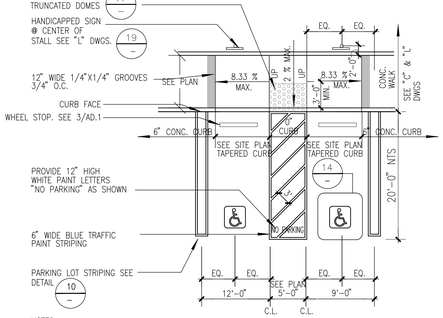
NOTES:
1. SEE SITE PLAN FOR HANDICAPPED PARKING LOCATIONS.

ACCESSIBLE PARKING STALL 19
SCALE: 1/8"=1'-0" HC-PARK4



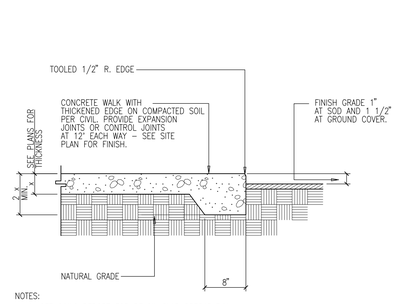
NOTES:
1. MIN. 17"X22" SIGN AT EACH ENTRANCE TO OFF STREET PARKING FACILITY PER TITLE 24 SECTION 2-7102(e) WITH MIN. 1" HIGH TEXT. SIGNS SHALL BE PERMANENTLY AFFIXED REFLECTORIZED SIGN OF PORCELAIN ON STEEL WITH BEADED TEXT OR EQUAL MOUNTED AT A HEIGHT OF 80" ABOVE FINISHED GRADE, TO BOTTOM OF SIGN.
2. SINAGE SHALL CONFORM TO SEC. 4.30 OF THE AMERICANS WITH DISABILITIES ACT.

ACCESIBLE ENTRY SIGN 15
SCALE: N.T.S. DHC-0003



NOTES:
1. SURFACE SLOPES SHALL NOT EXCEED REQUIREMENTS CAL ACS SEE 3106A(E)
2. SEE ARCHITECTURAL DETAIL FOR PRECAST CONCRETE WHEEL STOP AS REQUIRED BY SITE PLAN
3. PAINT "NO PARKING" IN 12" HIGH WHITE LETTERS IN THE ACCESSIBLE PARKING UNLOADING ZONE.

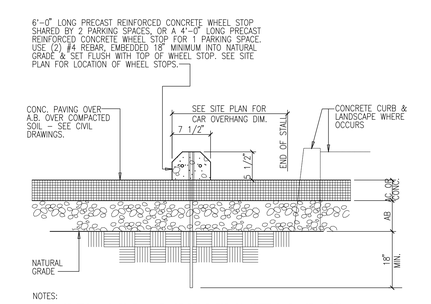
ACCESSIBLE PARKING STALL 11
SCALE: 1/8"=1'-0" HC-PARK4



NOTES:
1. SEE SOILS REPORT FOR BELOW SLAB PREPARATION.

REFER TO CIVIL DRAWINGS FOR ACTUAL CONSTRUCTION DETAILS REQUIREMENTS IN THIS DETAIL ARE MIN. REQUIREMENTS

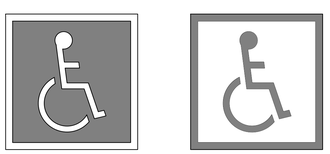
CONCRETE WALK AT LANDSCAPING 7
SCALE: 1"=1'-0" 10201A



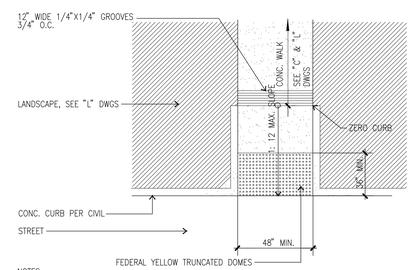
NOTES:
1. USE EPOXY ADHESIVE IN LIEU OF REBAR FOR CONCRETE SLAB INSTALLATION. WITH OWNERS APPROVAL

REFER TO CIVIL DRAWINGS FOR ACTUAL CONSTRUCTION DETAILS REQUIREMENTS IN THIS DETAIL ARE MIN. REQUIREMENTS

PRE-CAST CONC. WHEEL STOP 3
SCALE: 1"=1'-0" 10106A

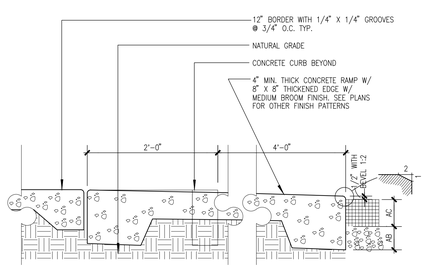


INTERNATIONAL ACCESSIBILITY SYMBOL 20
SCALE: 1"=1'-0"



NOTES:
1. SURFACE SLOPES SHALL NOT EXCEED 8.33%
2. DETECTABLE WARNINGS SHALL BE PROVIDED AT EACH CURB RAMP IN ACCORDANCE WITH 2016 CBC SECTION 11B 705

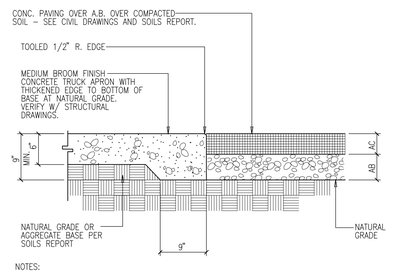
ACCESSIBLE ROUTE OF TRAVEL TYP. AT CURB. 16
SCALE: 1/8"=1'-0"



NOTES:
1. FOR ADDITIONAL NOTES, SEE DETAILS 5 6
2. SLOPE TO BE 1:20 MAX.

REFER TO CIVIL DRAWINGS FOR ACTUAL CONSTRUCTION DETAILS REQUIREMENTS IN THIS DETAIL ARE MIN. REQUIREMENTS

CONCRETE WALK RAMP 12
SCALE: 1 1/2"=1'-0" DHC-0006



NOTES:
1. SEE SOILS REPORT FOR BELOW SLAB PREPARATION AND STEEL REINFORCING REQUIREMENTS.

REFER TO CIVIL DRAWINGS FOR ACTUAL CONSTRUCTION DETAILS REQUIREMENTS IN THIS DETAIL ARE MIN. REQUIREMENTS

CONCRETE SLAB AT A.C. PAVING 8
SCALE: 1"=1'-0" 10202B

NOT USED 4
SCALE: N.T.S. REDWD001

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REGISTERED PROFESSIONAL ENGINEER — RA SMITH — C-29451 — 09-31-21 — CIVIL — STATE OF CALIFORNIA

Owner:

20730 PRAIRIE ST.
CHATSWORTH, CA 91311

Project:
DAX3

Phase 1

20730 PRAIRIE ST.
CHATSWORTH. CA 91311

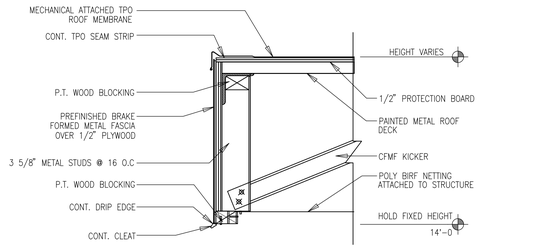
Consultants:

CIVIL	RA SMITH
STRUCTURAL	HSA
MECHANICAL	RPM
PLUMBING	RPM
ELECTRICAL	RPM
LANDSCAPE	HUNTER
FIRE PROTECTION	-
SOILS ENGINEER	-

Title: DETAILS

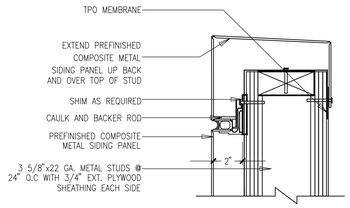
Project Number: 19415
Drawn by: DH
Date: 11/27/2019
Revision:

Sheet:
TI-AD.5



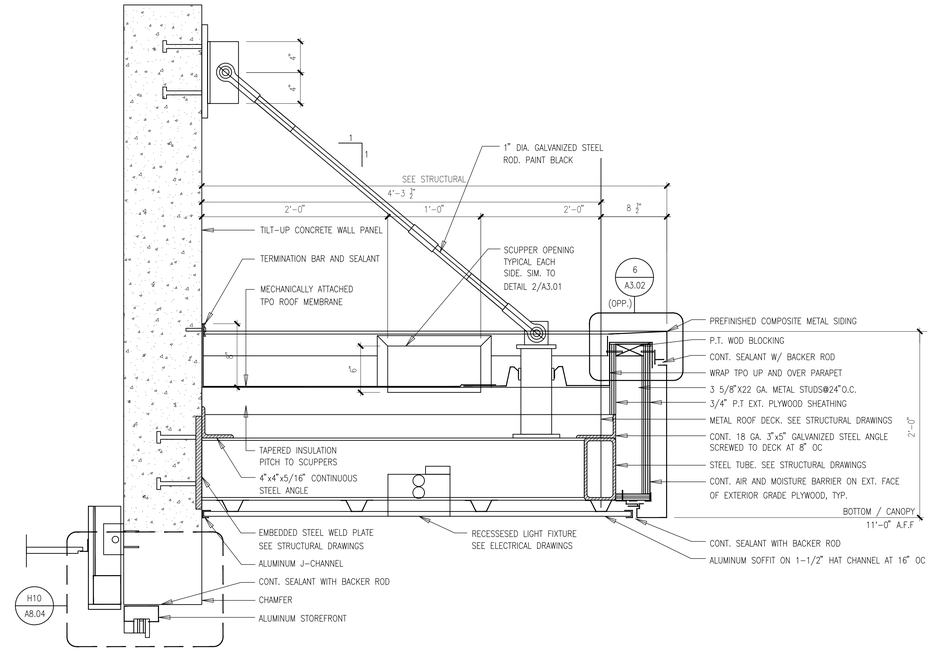
SOFFIT DETAIL AT LOADING CANOPY ENDS 9

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



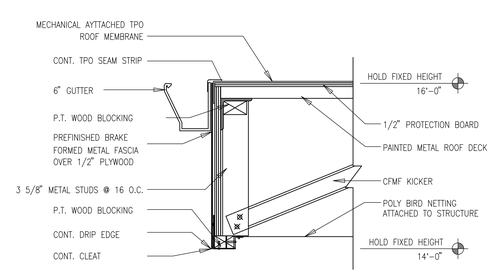
ENTRY CANOPY PARAPET DETAIL 6

SCALE: 3"=1'-0"



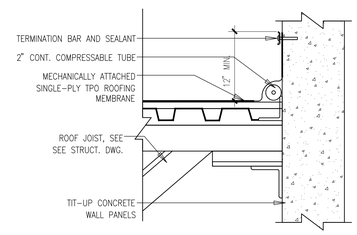
ENTRY CANOPY 3

1 1/2-1'-0"



SOFFIT DETAIL AT LOADING CANOPY 8

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



SOFFIT DETAIL AT EXTERIOR WALL 5

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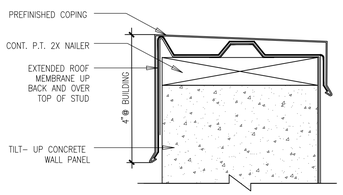

TYP. PARAPET 2

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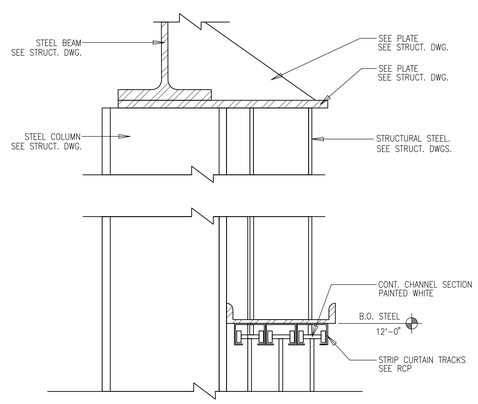
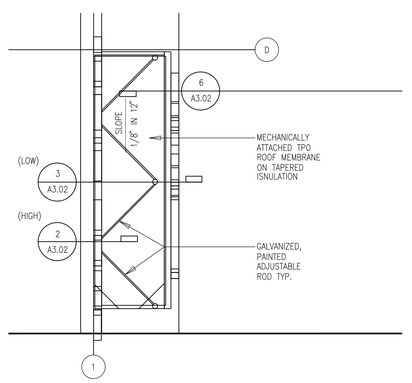


CANOPY SOFFIT AT EXTERIOR PANELS 4

SCALE: 3"=1'-0"



ASSOCIATE ENTRY CANOPY ROOF PLAN 1

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

CAUTION : IF THIS SHEET IS NOT A 30" X 42" IT IS A REDUCED PRINT

HPA architecture

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LICENSED ARCHITECT ROBERT MICHAEL MOODY C-22276 08-31-21 RENEWAL DATE STATE OF CALIFORNIA

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

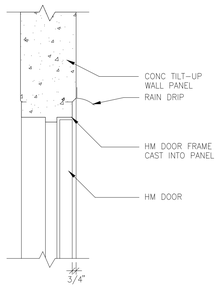
Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

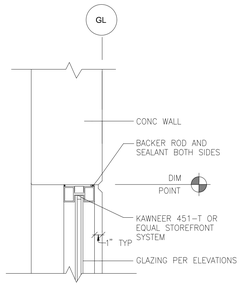
Title: DETAILS

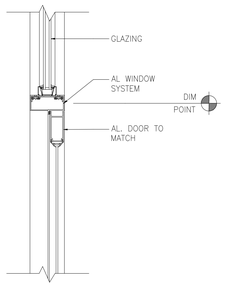
Project Number: 19436
Drawn by: ML
Date: 10/24/19
Revision:

Sheet:

TI-AD.6







TYP. HM DOOR HEAD 1
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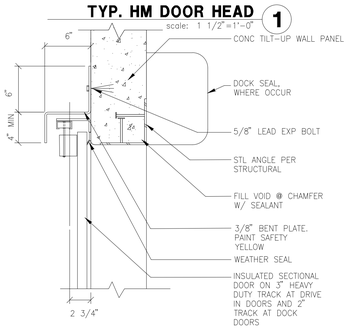

WINDOW HEAD 2
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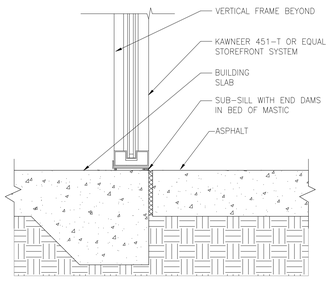
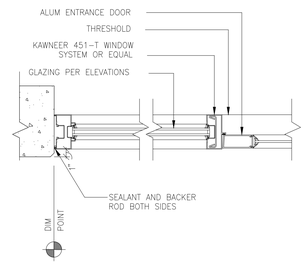
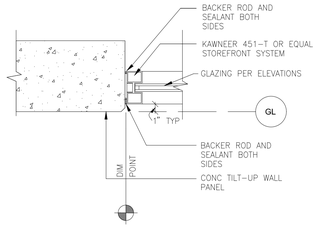


ALUM. STOREFRONT HEAD 3
scale: 1 1/2"=1'-0"





SECTIONAL DOOR JAMB 7
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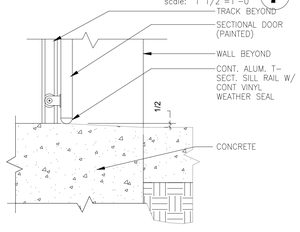

ALUM. STOREFRONT HEAD SILL 8
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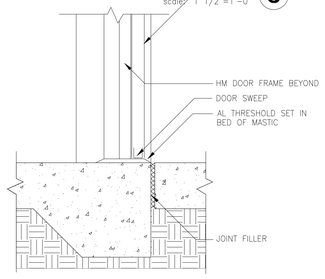

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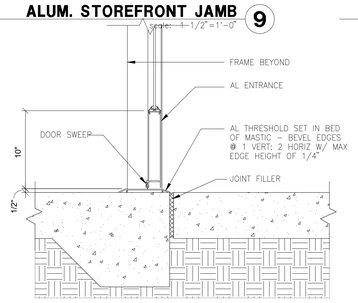

WINDOW JAMB 10
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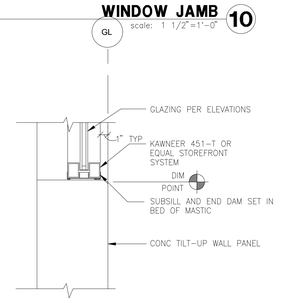
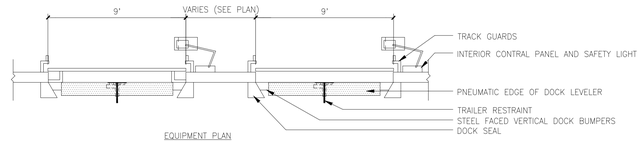
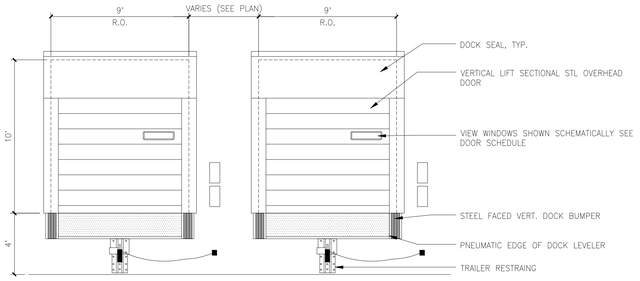
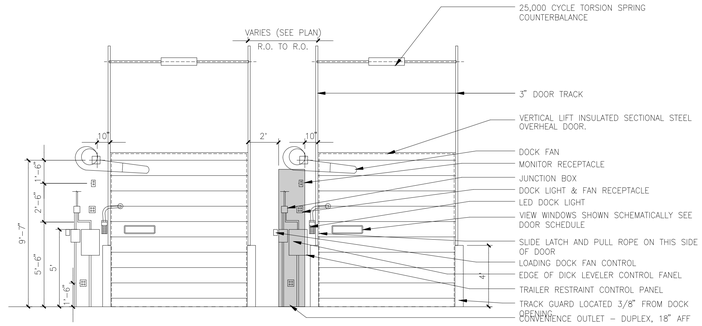




EQUIPMENT PLAN



EXTERIOR ELEVATION



INTERIOR ELEVATION

SILL @ O.H. DOOR 13
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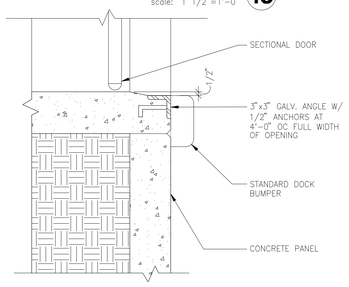

TYP. HM DOOR SILL 14
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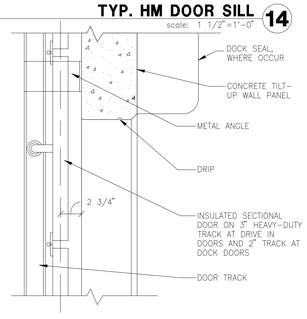

ALUM. STOREFRONT DOOR SILL 15
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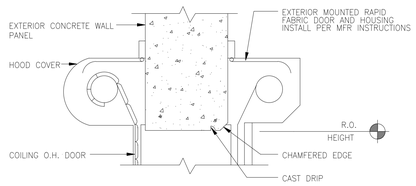
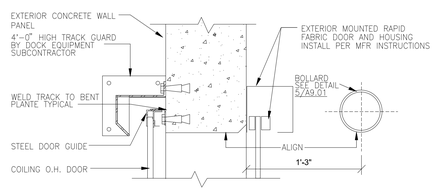


WINDOW SILL 16
scale: 1 1/2"=1'-0"



OVERHEAD DOOR AND RELATED EQUIPMENT 17
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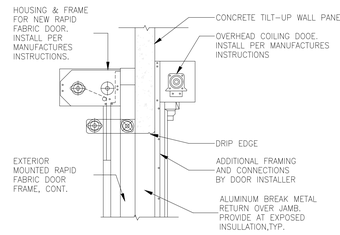

CONCRETE DOCK EDGE 19
scale: 1 1/2"=1'-0"

SECTIONAL DOOR HEAD 20
scale: 1 1/2"=1'-0"

HEAD @ COILING O.H. DOOR (H6) 21
scale: 1 1/2"=1'-0"

JAMB @ COILING O.H. DOOR (J6) 22
scale: 1 1/2"=1'-0"

FABRIC OVERHEAD DOOR HEAD 24
scale: 1/2"=1'-0"

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email: hpa@hparchs.com

LICENSED ARCHITECT ROBERT MICHAEL JACOBS C-22276 08-31-21 RENEWAL DATE STATE OF CALIFORNIA

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

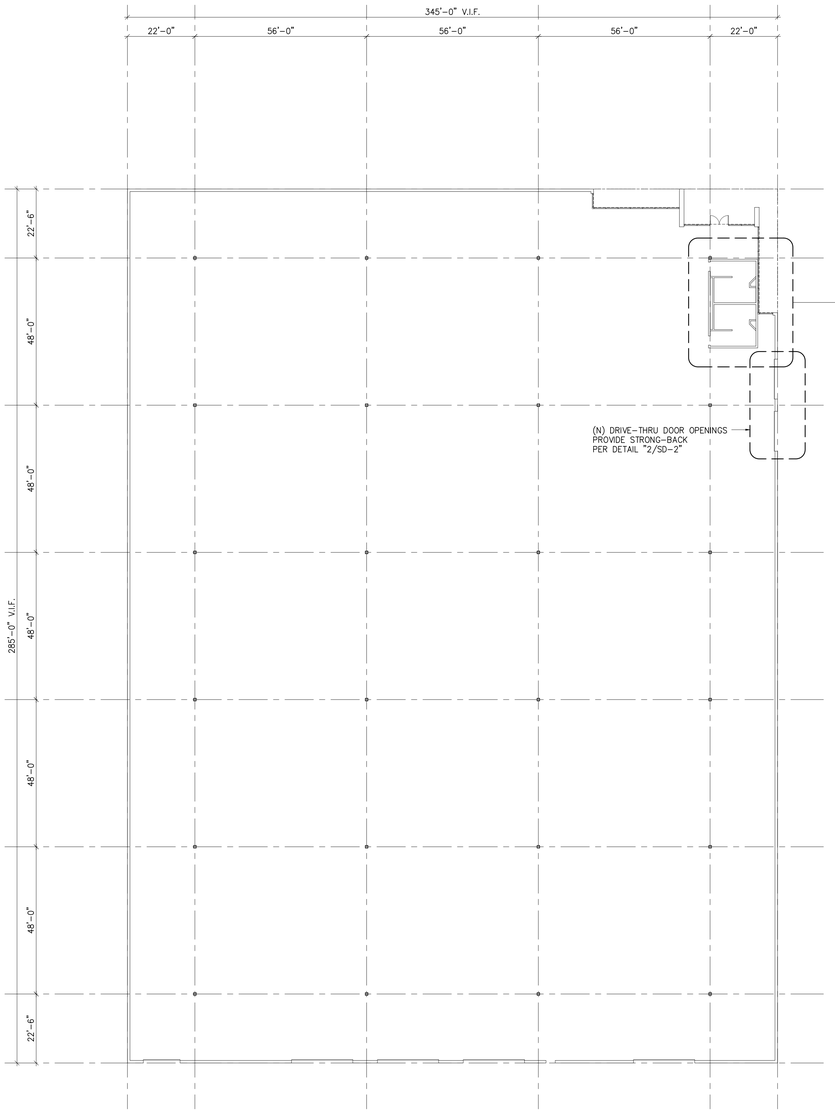
Title:
DETAILS

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

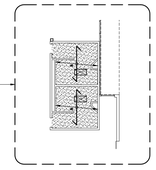
Sheet:

TI-AD.7



CEILING PLAN

SCALE: 1" = 20'-0"



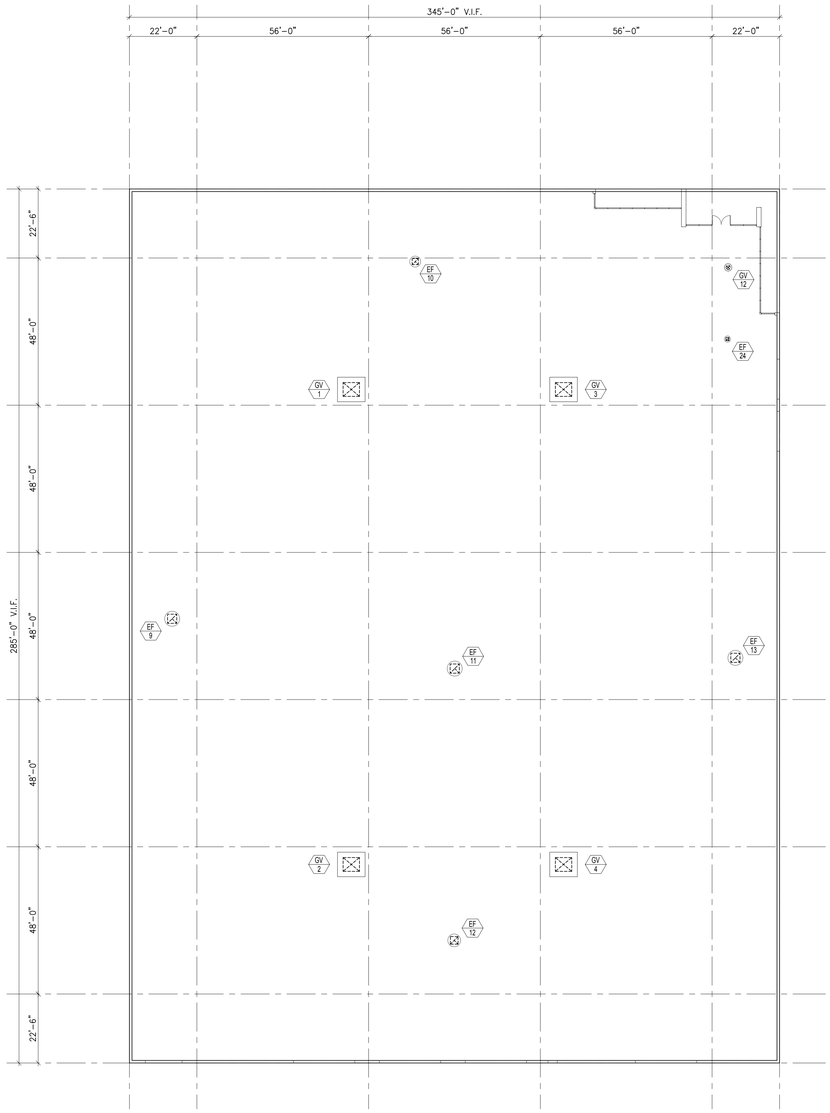
SEE SHEET "S-1.3" FOR CEILING NOTES AND LEGENDS.

PARKING GARAGE WEST OVERALL FLOOR PLAN

SCALE: 1" = 20'-0"

PLAN NORTH

SEE SHEET "S-1" FOR FOUNDATION NOTES AND LEGENDS.



PARKING GARAGE WEST OVERALL ROOF PLAN

SCALE: 1" = 20'-0"

PLAN NORTH

MECH. UNIT SCHEDULE

UNIT NO.	OPER. WT. (LBS)
EF 9	370
EF 10	190
EF 11, EF 13	350
EF 12	250
EF 24	70
GV 1 THRU GV 4	430
GV 12	40

NOTE:
VERIFY WEIGHT OF MECH. UNITS W/ LATEST MECH. & ARCH'TL DWG'S.

SEE SHEET "S-2" FOR ROOF NOTES AND LEGENDS.

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email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

HSA & ASSOCIATES, INC.
CONSULTING STRUCTURAL ENGINEERS
1906 W. Garvey Ave. S.
Suite 200
West Covina, CA. 91790
Tel: (626) 521-9931

HSA PROJECT NO. : 19-197

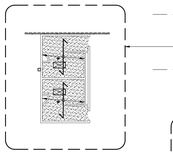
REGISTERED PROFESSIONAL ENGINEER
RAFAEL W. GUTIERREZ
S 5092
EXP. 06-30-21
12-16-19
STRUCTURAL
STATE OF CALIFORNIA

Title: PARKING GARAGE - WEST

Project Number: 19436
Drawn by: ML
Date: 10/24/2019
Revision:

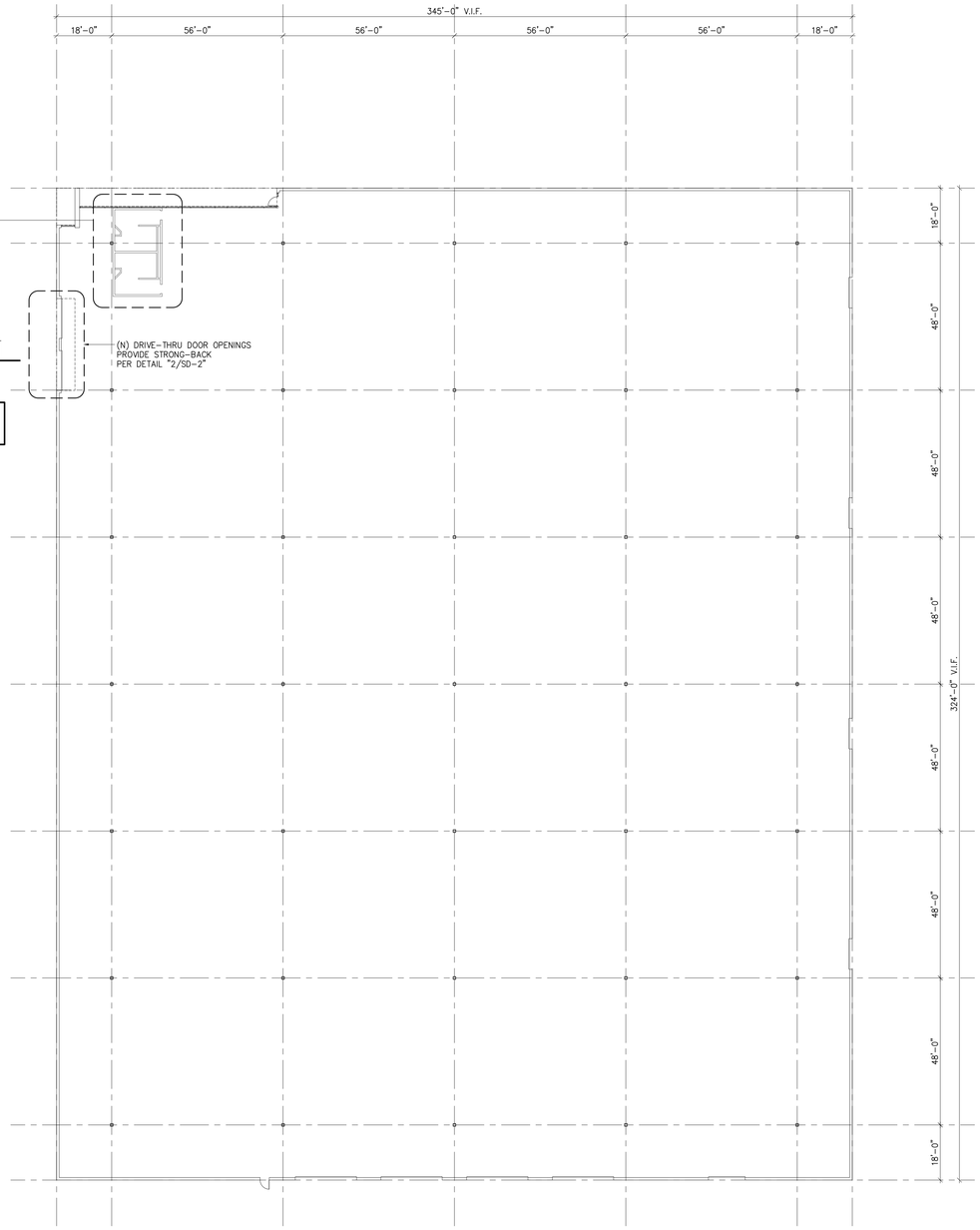
Sheet:

S-1.1



CEILING PLAN
SCALE: 1" = 20'-0"

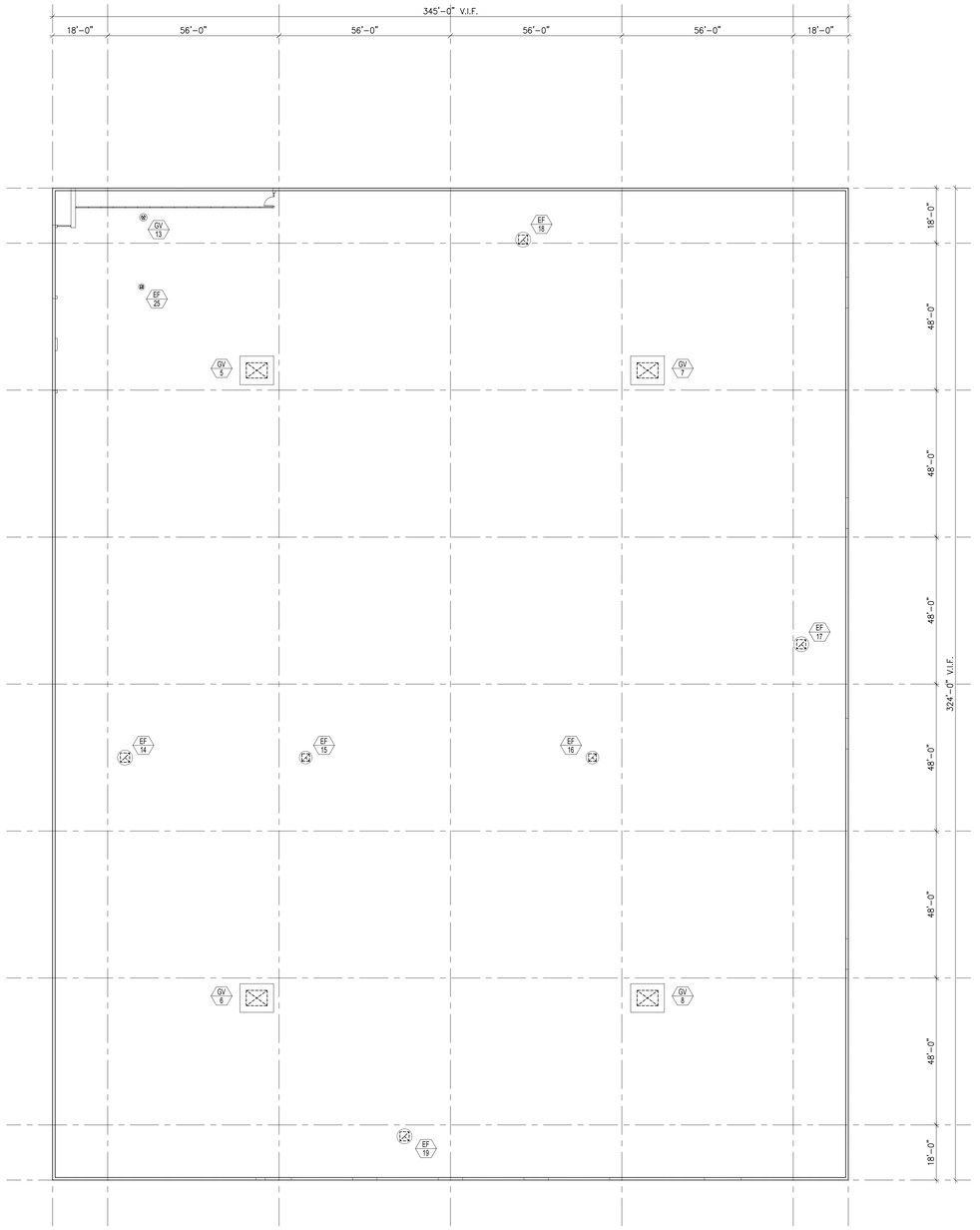
SEE SHEET "S-1.3" FOR CEILING NOTES AND LEGENDS.



PARKING GARAGE EAST OVERALL FLOOR PLAN
SCALE: 1" = 20'-0"

PLAN NORTH

SEE SHEET "S-1" FOR FOUNDATION NOTES AND LEGENDS.



PARKING GARAGE EAST OVERALL ROOF PLAN
SCALE: 1" = 20'-0"

PLAN NORTH

MECH. UNIT SCHEDULE

UNIT NO.	OPER. WT. (LBS)
EF 14 / EF 17	370
EF 15 / EF 16	280
EF 18 / EF 19	350
EF 25	70
GV 5 THRU GV 8	560
GV 13	40

NOTE:
VERIFY WEIGHT OF MECH. UNITS W/ LATEST MECH. & ARCHT'L DWG'S.

SEE SHEET "S-2" FOR ROOF NOTES AND LEGENDS.

HPA architecture

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fax: 949•863•0851
email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

-HSA-
HSA & ASSOCIATES, INC.
CONSULTING STRUCTURAL ENGINEERS
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Tel: (626) 521-9931

HSA PROJECT NO. : 19-197

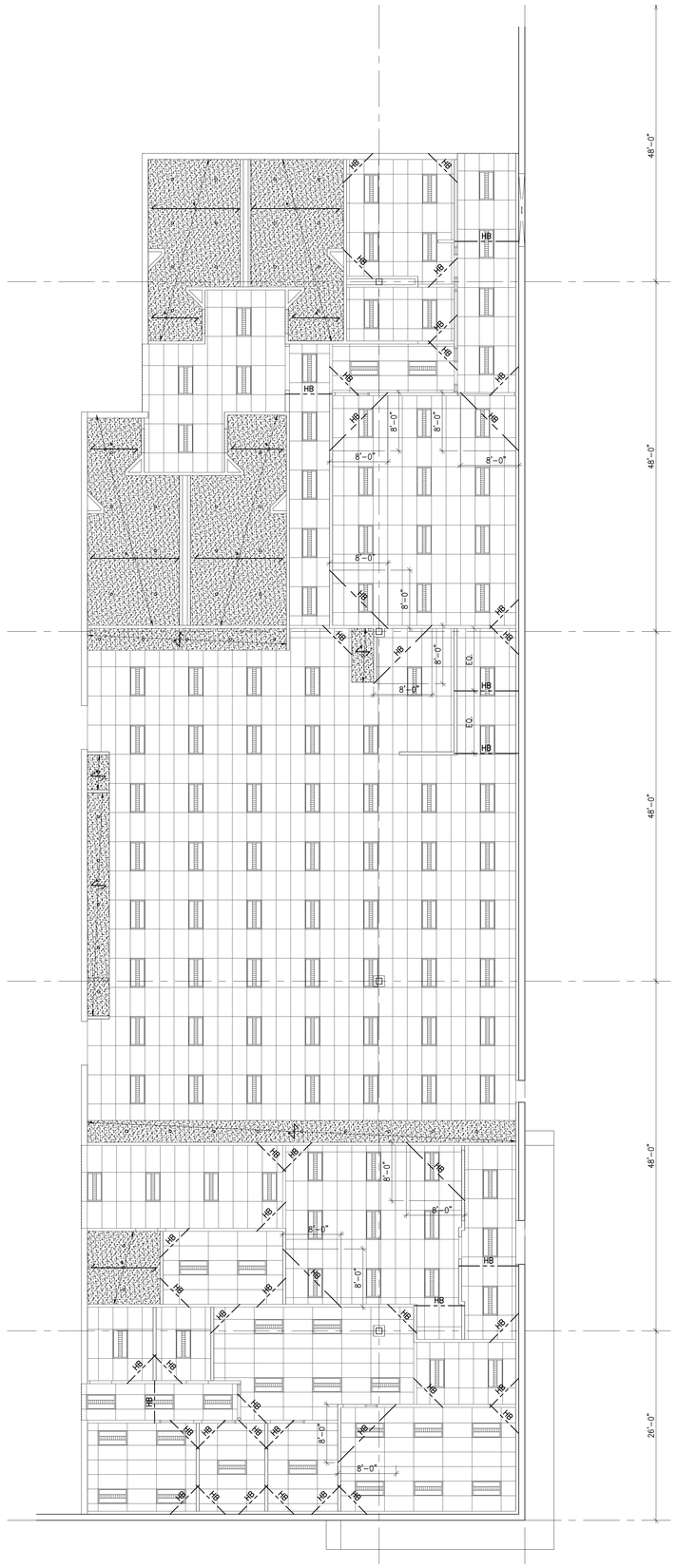
REGISTERED PROFESSIONAL ENGINEER
RAFAEL W. GUTIERREZ
S 5092
EXP. 06-30-21
12-16-19
STRUCTURAL
STATE OF CALIFORNIA

Title: PARKING GARAGE - EAST

Project Number: 19436
Drawn by: ML
Date: 10/24/2019
Revision:

Sheet:

S-1.2



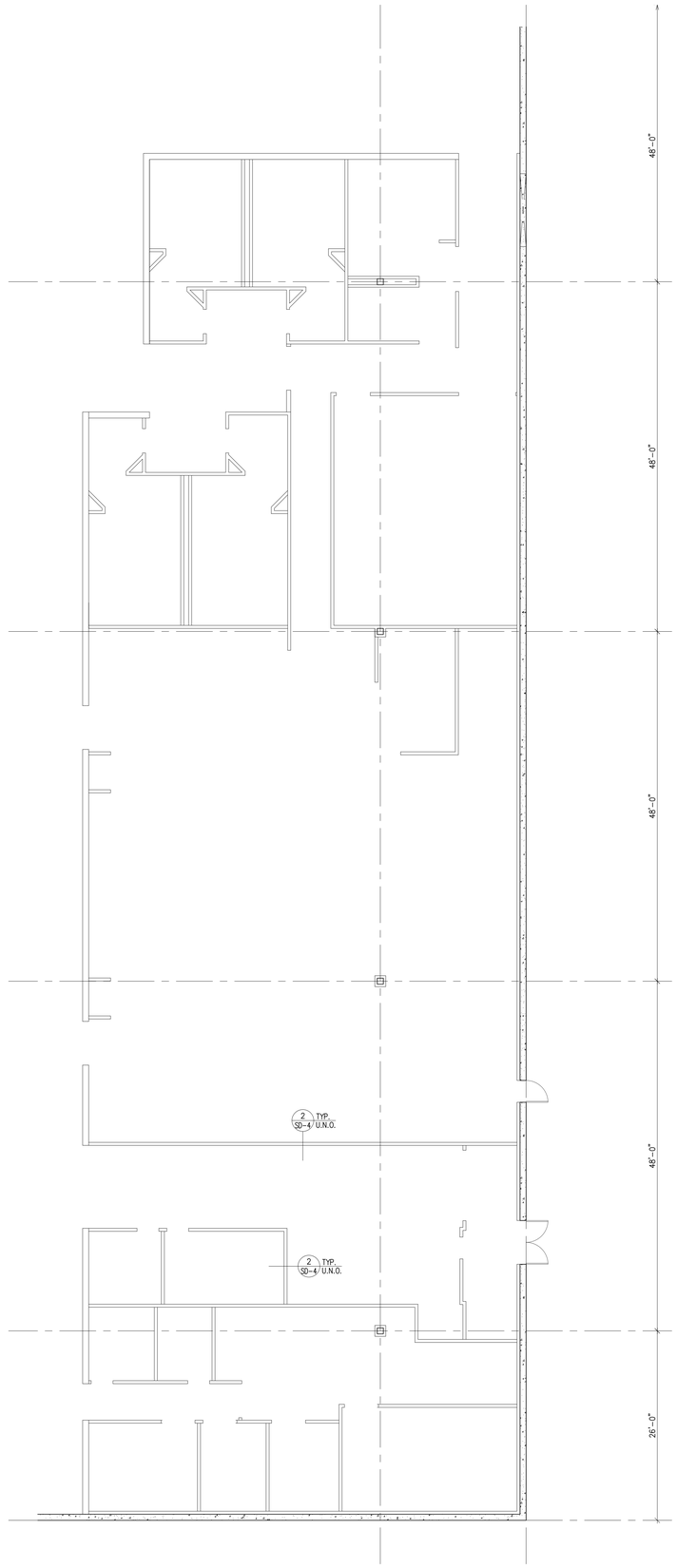
1. SEE SHEET "SD-4" FOR METAL STUD PARTITION WALLS AND FRAMING DETAILS. TYP. U.N.O.
2. SEE ARCHITECTURAL DRAWING FOR CEILING JOIST FRAMING PLAN. & FOR STRUCTL DET., SEE 7/SD-4
3. FOR HEADER DETAIL, SEE DETAIL 3/SD-4
4. FOR WALL BRACE DETAIL SEE DETAIL 4/SD-4
5. FOR T-BAR CEILING STRUT DETAIL & SCHED. SEE SHEET "SD-5" TYPICAL U.N.O.

LEGEND:

- * = DENOTES CEILING JOIST FOR SIZES SEE DET. 1B/SD-4
- = DENOTES CEILING JOIST AREA
- HB = DENOTES HORIZONTAL BRACE SEE DET. 4/SD-4

B ENLARGED REFLECTED CEILING PLAN

SCALE: 1/8" = 1'-0"



NOTE:
FOR TYPICAL METAL STUD DETAILS SEE SHEET "SD-4"

LEGEND:

- = DENOTES NEW PARTITION WALLS FOR HT. OF WALLS SEE ARCH. DWG'S FOR DETAILS, SEE 2/SD-4
- = DENOTES EXISTING CONCRETE WALLS.

A ENLARGED GROUND FLOOR PLAN

SCALE: 1/8" = 1'-0"

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email: hpa@hparchs.com

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HSA & ASSOCIATES, INC.
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Tel: (626) 521-9931

HSA PROJECT NO. : 19-197

REGISTERED PROFESSIONAL ENGINEER
R. W. [illegible]
S 5092
EXP. 06-30-21
12-16-19
STRUCTURAL
STATE OF CALIFORNIA

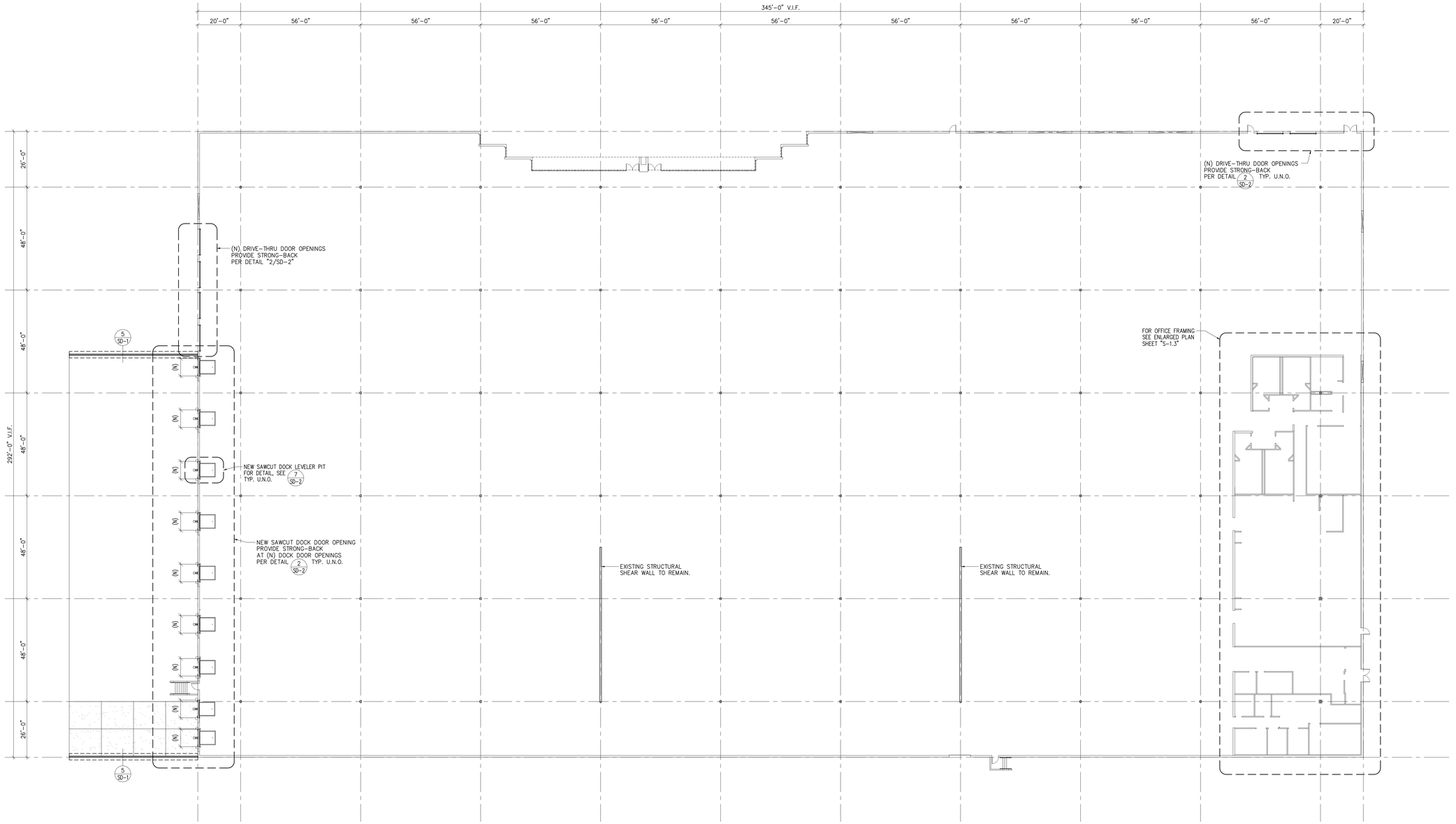
Title: (E) ENLARGED GROUND AND CEILING PLAN - MAIN BUILDING

Project Number:	19436
Drawn by:	ML
Date:	10/24/2019

Revision:

Sheet:

S-1.3



OVERALL FLOOR PLAN - MAIN BUILDING

SCALE: 1" = 20'-0"

PLAN NORTH

FOUNDATION NOTES:

1. FOR GENERAL NOTES SEE SHEET "SD-0.0".
2. (E) = EXISTING OPENING
   (N) = NEW OPENING
3. SEE ARCHITECTURAL, ELECTRICAL, PLUMBING MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF SLAB DEPRESSION AND OPENINGS REQUIRED FOR DUCTS, PIPES SLEEVES, ELECTRICAL CONDUITS AND OTHER EMBEDDED IN CONCRETE, UNLESS NOTED OTHERWISE.
4. CONTRACTOR SHALL VERIFY BOTTOM OF PANEL WITH THE LATEST GRADING PLAN.
5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH THE LATEST ARCHITECTURAL AND STRUCTURAL DRAWINGS.
6. SEE DETAIL "5A/SD-2" FOR TYPICAL EDGE OF SLAB.
7. CONTRACTOR REFER TO DETAILS "7/SD-2" & SHEET "SD-4" FOR SAW-CUT OPENING OF FUTURE DOCK LEVELER.
8. ALL FOUNDATION EXCAVATIONS SHALL BE INSPECTED AND APPROVED BY THE SOILS ENGINEER OF RECORD PRIOR TO THE PLACEMENT OF ANY REINFORCING STEEL. A WRITTEN REPORT PREPARED BY THE SOILS ENGINEER OF RECORD STATING THE RESULTS OF THE SOILS ENGINEER'S INSPECTION SHALL BE PROVIDED TO THE CITY INSPECTOR PRIOR TO THE PERFORMANCE OF ANY FOUNDATION INSPECTION. EXCAVATION SHALL BE MADE IN COMPLIANCE WITH CAL/OSHA REGULATIONS.
9. THE FINAL COMPACTION REPORT AND SOIL ENGINEER EXCAVATION INSPECTION REPORT MUST BE SUBMITTED TO THE BUILDING INSPECTOR PRIOR TO FOUNDATION INSPECTION AND THAT CITY INSPECTOR MUST INSPECT EXCAVATIONS BEFORE POURING ANY CONCRETE.
10. PRIOR TO THE CONTRACTOR REQUESTING A FOUNDATION INSPECTION, THE SOILS ENGINEER SHALL ADVISE THE BUILDING OFFICIAL IN WRITING THAT:
    A) THE UTILITY TRENCHES, IF ANY, HAVE BEEN PROPERLY BACKFILLED AND COMPACTED.
    B) THE FOUNDATION EXCAVATION WAS MADE TO COMPLY WITH THE RECOMMENDATION FOR EXPANSIVE CHARACTERISTICS AND BEARING CAPACITY.
11. CONTRACTOR TO RE-RUN SAW BLADE THROUGH CONTROL JOINTS FOR PROPER CLEAN-OUT AT END OF PROJECT.
12. ALL (E) FOOTINGS TO BE FIELD VERIFIED ENGINEER OF RECORD TO BE CONTACTED IMMEDIATELY IF (E) FOOTING DIMENSIONS DIFFER FROM AS-BUILT DRAWINGS.
13. FLOOR INFILL FOR EXACT LOCATION SEE ARCH. DWG'S FOR DETAIL, SEE 8/SD-2

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HSA PROJECT NO. : 19-197

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RICHARD R. W. HSA
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Title: OVERALL FLOOR PLAN - MAIN BUILDING

Project Number: 19436
Drawn by: ML
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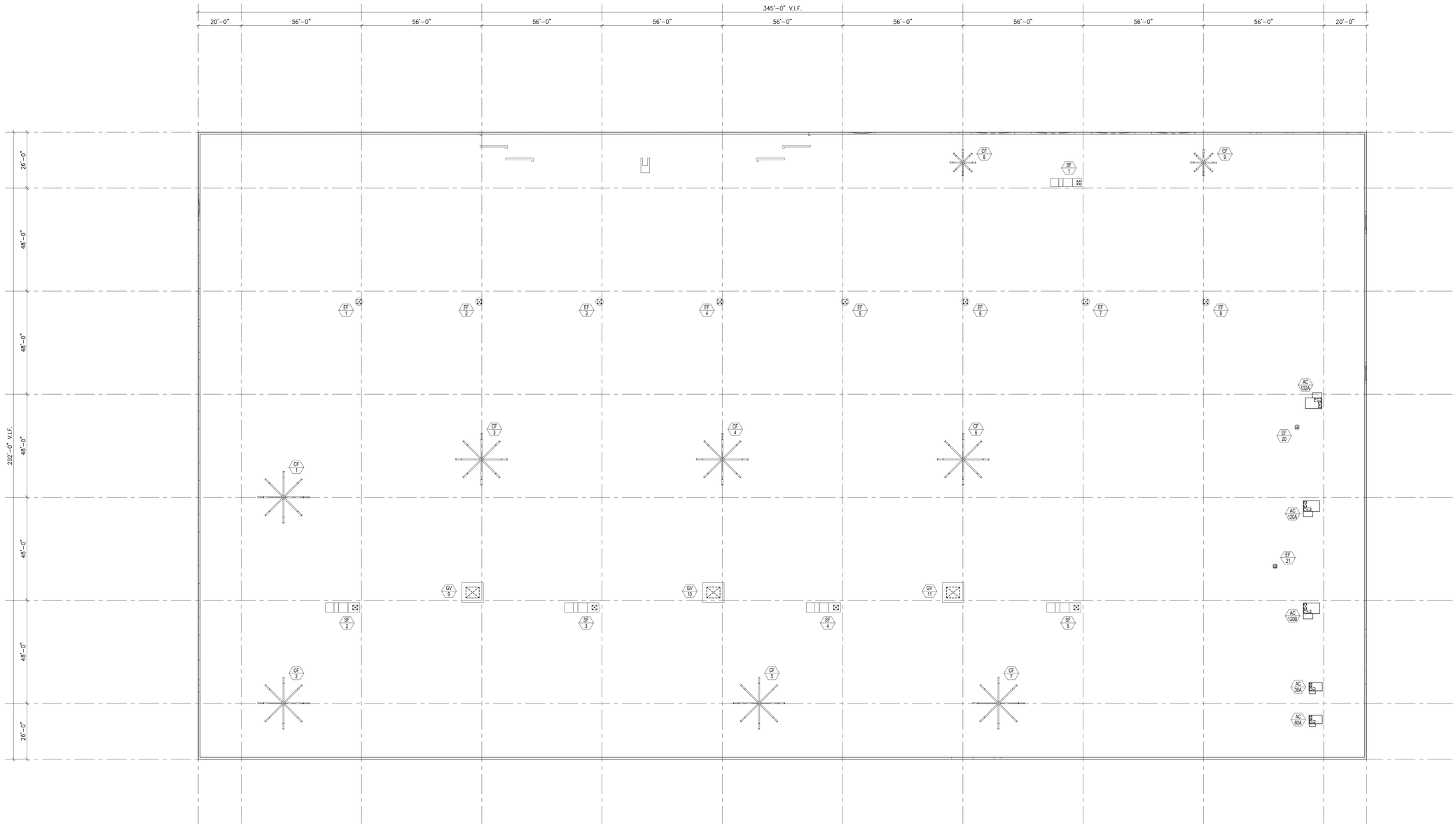
Revision:

Sheet: S-1



OVERALL ROOF PLAN - MAIN BUILDING

SCALE: 1" = 20'-0"

PLAN NORTH

NOTE:

1. FOR GENERAL NOTES SEE SHEET "SD-0.0".
2. SEE ARCHT'L AND MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECH. EQUIPMENTS FOR DETAIL SEE 1/SD-3 2/SD-3
3. SEE SPRINKLER DRAWINGS FOR EXACT LOCATION & WEIGHT OF SPRINKLER MAINS
4. ADEQUACY OF SUPPORTS FOR SPRINKLER SYSTEM DESIGN LOADS SHALL BE REVISED AND APPROVED BY ENGINEER OF RECORD PRIOR TO FIELD INSTALLATION AND INSPECTION.

LEGENDS:

DENOTES EXHAUST FAN
VERIFY LOCATIONS & NO. OF UNITS W/ LATEST ARCHT'L DWG'S & MECH DWG'S. SEE DETAIL 2/SD-3

NEW "BIG ASS" FAN
VERIFY LOCATIONS
W/ LATEST ARCHT'L DWG'S & MECH DWG'S. SEE DETAIL 5/SD-3

MECH. UNIT SCHEDULE

UNIT NO.	OPER. WT. (LBS)
AC 36A	700
AC 60A	800
AC 102A	1380
AC 120A / AC 120B	1530
EF 1 THRU EF 8	180
EF 20 / EF 21	100
SF 1	1220
SF 2 THRU SF 5	1750
GV 9 THRU GV 11	540
CF 1 THRU CF 9	–

NOTE:
VERIFY WEIGHT OF MECH. UNITS W/ LATEST MECH. & ARCHT'L DWG'S.

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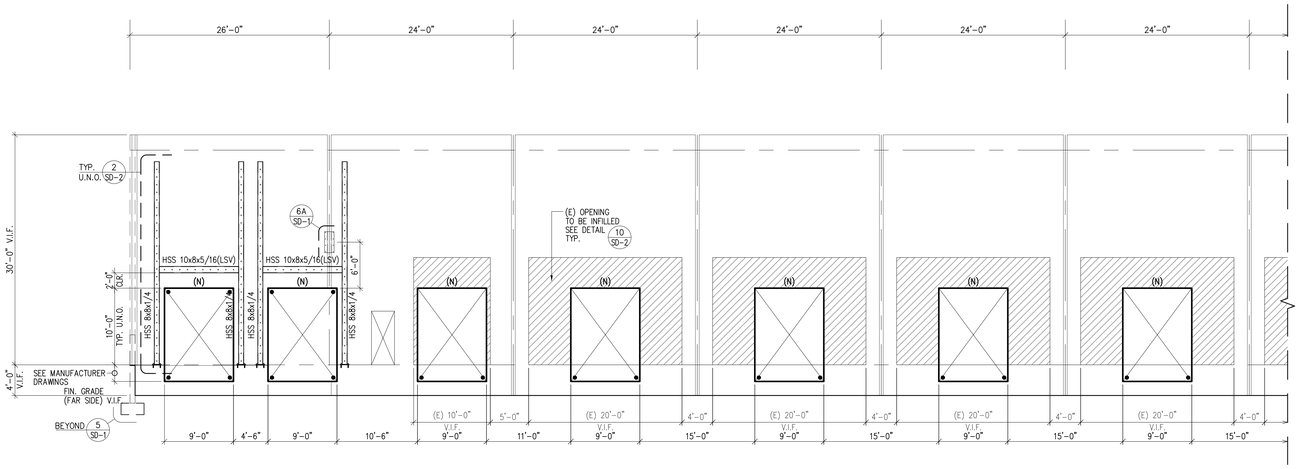
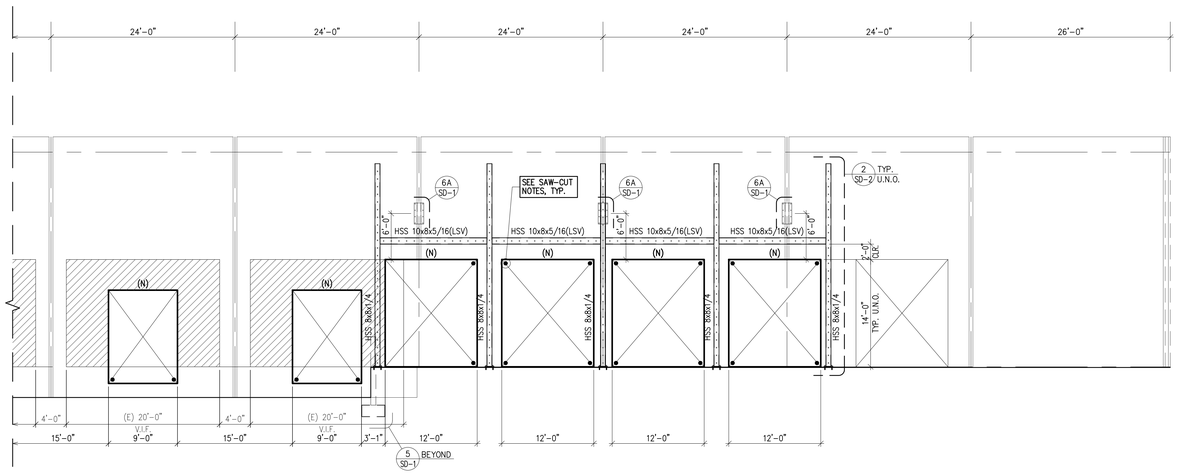
Title: OVERALL ROOF PLAN - MAIN BUILDING

Project Number: 19436
Drawn by: ML
Date: 10/24/2019
Revision:

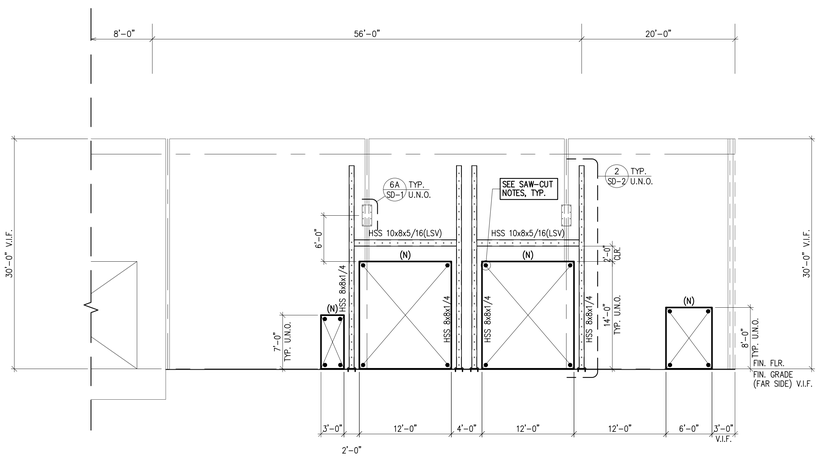
Sheet: S-2



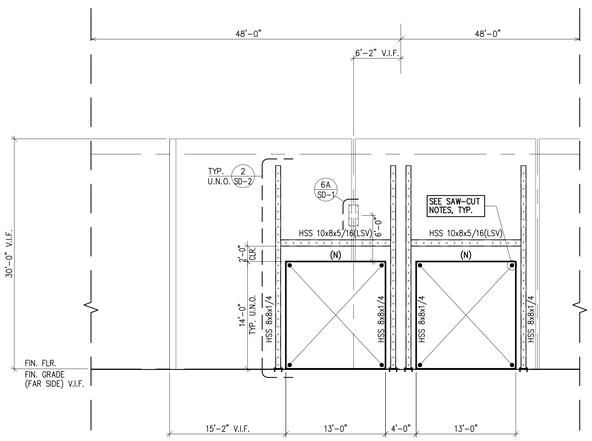
MAIN BUILDING
PARTIAL EXISTING WEST PANEL ELEVATIONS
SCALE: 1/8" = 1'-0"



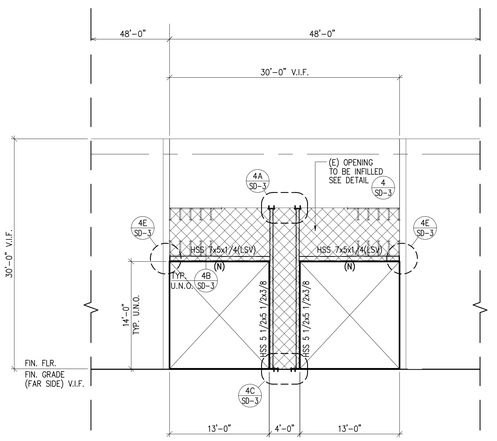
MAIN BUILDING
PARTIAL EXISTING WEST PANEL ELEVATIONS
SCALE: 1/8" = 1'-0"



MAIN BUILDING
PARTIAL EXISTING NORTH PANEL ELEVATIONS
SCALE: 1/8" = 1'-0"



PARKING GARAGE - WEST
PARTIAL EXISTING EAST PANEL ELEVATIONS
SCALE: 1/8" = 1'-0"



PARKING GARAGE - EAST
PARTIAL EXISTING WEST PANEL ELEVATIONS
SCALE: 1/8" = 1'-0"

NOTES:

1. (E) = EXISTING OPENING
   (N) = NEW OPENING
   • = CORE SLEEVES
2. PANELS ARE VIEWED FROM INTERIOR.

LEGEND:

DENOTES (E) OPENING TO BE INFILLED SEE DETAIL 10 SD-2

TYPICAL SAW-CUT NOTES:

SEQUENCE OF WORK:

1. CORE SLEEVES ON EACH CORNER BEFORE SAW-CUTTING EXISTING CONCRETE WALL. NO OVERCUTTING SHALL BE ALLOWED. OTHER METHODS OF CUTTING MAY BE ACCEPTABLE WITH REVIEW AND APPROVAL FROM ENGINEER OF RECORD.
2. ALL DIMENSIONS SHALL BE VERIFIED WITH CONTRACTOR PRIOR TO SAW CUTTING OF OPENING.
3. INSTALL STITCH PLATE & STEEL FRAMING BEFORE SAW-CUTTING OPENINGS.

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HSA PROJECT NO. : 19-197

REGISTERED PROFESSIONAL ENGINEER R. W. [illegible] S 5092 EXP. 06-30-21 12-16-19 STRUCTURAL STATE OF CALIFORNIA

Title: (E) PANEL ELEVATIONS - MAIN BUILDING

Project Number: 19436
Drawn by: ML
Date: 10/24/2019
Revision:

Sheet:

S-3

GENERAL

1. "CODE" WHERE REFERRED TO HERE IN REFERS TO CALIFORNIA BUILDING CODE (CBC) 2016 EDITION.
2. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CODE. AND ALL APPLICABLE LOCAL AND STATE CODES AND ORDINANCES.
3. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE DRAWINGS AND SPECIFICATIONS. ANY CHANGES OR SUBSTITUTIONS MADE MUST BE APPROVED BY THE BUILDING OFFICIAL, AS WELL AS THE ENGINEER OF RECORD, PRIOR TO INSTALLATION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING DURING CONSTRUCTION AND SHALL PROVIDE ADEQUATE SHORING, BRACING AND GUYS DURING CONSTRUCTION. SAFETY AND BRACING REQUIREMENTS SHALL BE IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND SHALL CHECK ALL DIMENSIONS BEFORE COMMENCING WORK AND REPORT ANY DISCREPANCIES.
6. SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS REQUIRED FOR DUCTS, PIPES AND FOR ALL PIPE SLEEVES, ELECTRICAL CONDUITS AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE OR OTHERWISE INCORPORATED IN STRUCTURAL WORK.
7. IN ALL CASES WHERE A CONFLICT MAY OCCUR, SUCH AS BETWEEN ITEMS COVERED IN SPECIFICATIONS AND NOTES ON THE DRAWINGS OR BETWEEN GENERAL NOTES AND SPECIFIC DETAILS, THE ENGINEER SHALL BE NOTIFIED AND HE WILL INTERPRET THE INTENT OF THE CONTRACT DOCUMENTS.
8. WHERE CONSTRUCTION MATERIALS ARE TEMPORARILY STORED ON ROOF OR FLOOR FRAMING, THEY SHALL BE DISTRIBUTED SO THAT THE LOAD DOES NOT EXCEED THE DESIGN LIVE LOAD.
9. THE GEOTECHNICAL REPORT IS CONSIDERED A PART OF THESE PLANS. A COPY SHALL BE KEPT AT THE JOB SITE AT ALL TIMES. ANY SUGGESTED "SHOULD" ACTION GIVEN IN THE GEOTECHNICAL REPORT SHALL BE TAKEN AS A DIRECTIVE "SHALL".
10. CONTRACTOR WILL SET UP A PRE-CONSTRUCTION MEETINGS WITH ARCHITECT, STRUCTURAL ENGINEER AND GEOTECHNICAL ENGINEER PRIOR TO START OF CONSTRUCTION.
11. SHOP DRAWINGS
    ALL SHOP DRAWING SUBMITTAL BY CONTRACTOR SHOULD BE SUBMITTED ON HARDCOPIES/PRINTS. ELECTRONIC COPY OF THE SHOP DRAWINGS VIA E-MAIL WILL BE ACCEPTABLE TOO.

DESIGN CRITERIA

SEISMIC

OCCUPANCY CATEGORY	= II
SEISMIC DESIGN CATEGORY	= D
REDUNDANCY FACTOR,	ρ = 1.0
SEISMIC IMPORTANCE FACTOR,	I_E = 1.0
S_S = 1.923g S_{DS} = 1.282g	
S_1 = 0.682g S_{D1} = 0.682g	

WIND

ULTIMATE WIND SPEED (V_{ULT})	= 110 MPH
NOMINAL WIND SPEED (V_{ASD})	= 85 MPH
WIND EXPOSURE	= C
IMPORTANCE FACTOR (I_w)	= 1.0

FOUNDATION

1. THE FOUNDATION DESIGN IS BASED ON THE MINIMUM SOIL BEARING PRESSURE PER 2016 CBC.
2. ALL FOOTINGS EXCAVATIONS SHALL BE INSPECTED BY THE GEOTECHNICAL ENGINEER AND BUILDING DEPARTMENT PRIOR TO POURING CONCRETE.
3. THE ALLOWABLE SOIL BEARING VALUE USED FOR THE DESIGN OF FOOTINGS UPON COMPACTED EARTH AND 18" BELOW LOWEST FINISHED GRADE IS 1500 PSF.

CONCRETE

1. CEMENT: TYPE II CONFORMING TO ASTM C150 AND SHALL BE TESTED.
2. ALL CONCRETE AGGREGATES UNLESS OTHERWISE NOTED ON PLANS, SHALL BE REGULAR WEIGHT HARD ROCK TYPE (150 LB/ CU. FT.) AND SHALL CONFORM TO ASTM C33. CONCRETE SHALL HAVE PROVEN SHRINKAGE CHARACTERISTICS OF LESS THAN 0.05% ULTIMATE AT 28 DAYS AS PER ASTM C157. DO NOT CHANGE SOURCE OF AGGREGATE DURING COURSE OF WORK WITHOUT PRIOR WRITTEN ACCEPTANCE OF THE ARCHITECT.
3. STRENGTHS: ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE f'c = * SEE BELOW.
4. VIBRATION: VIBRATION OF CONCRETE SHALL BE IN ACCORDANCE WITH GENERAL PROVISIONS OUTLINED IN PORTLAND CEMENT ASSOCIATION SPECIFICATION ST26.
5. CURING: CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION FOR A MINIMUM OF FIVE DAYS AFTER ITS PLACEMENT. FOR CONCRETE OTHER THAN SLAB ON GRADE, APPROVED CURING COMPOUNDS MAY BE IN LIEU OF MOIST CURING. IF APPROVED BY THE OWNER AND ARCHITECT.
6. STRENGTH TESTS OF CONCRETE SHALL BE REQUIRED AS PER CBC SECTION 1903, ACI 318-14 SECTION 26.12 AND AS OUTLINED IN SPECIFICATION REPORTS SHALL BE FORWARDED TO THE STRUCTURAL ENGINEER. A MINIMUM OF ONE TEST (6x12 IN. CYLINDER) AT 7 DAYS AND 2 TESTS (6x12 IN. CYLINDERS) OR 3 TESTS (4x8 IN. CYLINDERS) AT 28 DAYS ARE REQUIRED FOR ALL CONCRETE SAMPLES TAKEN IN ACCORDANCE WITH (1) THROUGH (3): (1) AT LEAST ONCE A DAY. (2) AL LEAST ONCE FOR EACH 150 CU. YDS OF CONCRETE (3) AT LEAST ONCE FOR EACH 5,000 SQ. FT. OF SURFACE AREA FOR SLABS OR WALLS.
7. REINFORCING STEEL, ANCHOR BOLTS, DOWELS, INSERTS, ETC. SHALL BE SECURELY TIED IN PLACE PRIOR TO POURING CONCRETE.
8. LOCATION OF CONSTRUCTION AND POUR JOINTS SHALL BE APPROVED BY THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO POURING CONCRETE.
9. NO FLY ASH SHALL BE USED IN CONCRETE.
10. CONCRETE FORM WORK TOLERANCES SHALL BE IN ACCORDANCE WITH CBC AND ACI STANDARDS
11. GROUT UNDER PRECAST CONCRETE PANELS SHALL HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH TO MATCH PANEL OF HIGHEST STRENGTH.
12. HOT AND COLD WEATHER CONCRETING:
    A. HOT WEATHER CONCRETING: WHEN THE TEMPERATURE RISES ABOVE 80°F AND ESPECIALLY WHEN THE RELATIVE HUMIDITY FALLS BELOW 25%, THE CONTRACTOR SHOULD FOLLOW HOT WEATHER CONCRETING IN ACCORDANCE WITH ACI 305R (LATEST EDITION) DURING HOT WEATHER. BE PREPARED TO USE FOG SPRAY OR OTHER PRECAUTIONS ACCEPTABLE TO ARCHITECT WHEN RATE OF EVAPORATION EQUALS OR EXCEEDS 0.2 POUNDS PER SQUARE FOOT PER HOUR. REFER TO SURFACE EVAPORATION CHART ON THIS SHEET TO ESTIMATE RATE OF SURFACE UNDER EVAPORATION.
    B. COLD WEATHER CONCRETE: ADEQUATE EQUIPMENT SHALL BE PROVIDED FOR HEATING CONCRETE MATERIALS AND PROTECTING CONCRETE DURING FREEZING OR NEAR FREEZING WEATHER. ALL CONCRETE MATERIALS AND ALL REINFORCEMENT FORMS, FILLERS AND GROUND WITH WHICH THE CONCRETE IS TO COME IN CONTACT SHALL BE FREE FROM FROST. FROZEN MATERIAL OR MATERIALS CONTAINING ICE SHALL NOT BE USED. COLD WEATHER CONDITIONS WILL DONE IN ACCORDANCE WITH ACI 306R (LATEST EDITION).

CONCRETE MIX DESIGN

	USE	DESIGN	MIX DESIGN (f'c MIN. AT 28 DAYS)	MIX DESIGN (f'c MIN. AT 56 DAYS)	SLUMP	AGGREGATE LARGEST SIZE IN GRADATION	INSPECTION
1.	FOOTINGS	2500 PSI	3000 PSI	–	4" ± 1" MAX.	1½"	NO
2.	MISCELLANEOUS	2500 PSI	3000 PSI	–	4" ± 1" MAX.	1"	NO
3.	CONCRETE TRUCK COURT SLAB	3000 PSI	3000 PSI	–	4" ± 1" MAX.	1½"	YES

A. MIX DESIGN SHOWN ABOVE ARE FOR NEGLIGIBLE SULFATE EXPOSURE (S0). THE GEOTECHNICAL ENGINEER SHALL PROVIDE SULFATE EXPOSURE OF THE SITE.

B. REQUIREMENTS FOR CONCRETE BY SULFATE EXPOSURE PER ACI 318, TABLE 19.3.2.1

SULFATE EXPOSURE	MAX WATER/CEMENT	CEMENT TYPE	f'c MIN.
S0 (NEGLIGIBLE)	N/A	II	2500 PSI
S1 (MODERATE)	0.50	II	4000 PSI
S2 (SEVERE)	0.45	V	4500 PSI
S3 (VERY SEVERE)	0.45	V PLUS POZZOLONE OR SLAG	4500 PSI

CONCRETE SLAB ON GRADE

1. SUBGRADE:
   A. TOP 12" OF PAD TO BE COMPACTED TO 95% OPTIMUM DENSITY WITH MAXIMUM 1% VARIANCE. CERTIFICATION MUST BE 24 HOURS BEFORE POURING CONCRETE. THE SUBGRADE BELOW THIS SHOULD BE COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT RECOMMENDATIONS.
   B. FINISH SUBGRADE PAD ELEVATIONS BEFORE CONCRETE POUR TO BE WITHIN 0 INCH ABOVE OR 1/2 INCH BELOW REQUIRED ELEVATION.
   C. PAD MUST BE MOIST PRIOR TO CONCRETE POUR AND BE FREE OF DEBRIS.
2. CONCRETE MIX AND MATERIALS:
   A. MIX DESIGNS FOR SLAB CONCRETE SHOULD BE PREPARED BY REGISTERED ENGINEER AND MUST BE APPROVED BY THE ARCHITECT/ENGINEER. MIX DESIGN SHOULD INCLUDE PROPORTIONS FOR EACH MATERIAL.
   B. CEMENT SHALL BE TYPE II U.N.O. AND TESTED PER ASTM STANDARDS. TEST RESULTS SHALL BE SUBMITTED TO THE ENGINEER/ARCHITECT ALONG WITH MIX DESIGN.
   C. NO FLY ASH SHALL BE USED IN CONCRETE.
   D. CONCRETE MUST BE BATCHED FROM THE SAME CONCRETE BATCHING PLANT AND FROM THE SAME AGGREGATE STROKE FOR ALL SLAB CONCRETE.
   E. SLUMP SHALL NOT VARY MORE THAN 1/2 INCH FROM TRUCK TO TRUCK.
   F. AGGREGATE: UNLESS CONCRETE IS TO BE PUMPED INCORPORATE A PERCENTAGE OF 1 1/2" MAXIMUM SIZE AGGREGATE IN MIX.
3. CONCRETE CURING:
   A. ALL CURING TO BE DONE SHALL BE WET CURING BY USING BURLENE FOR A MINIMUM OF 7 DAYS FROM THE TIME CONCRETE IS POURED.
4. QUALITY CONTROL:
   A. CONCRETE TRUCKS OR CRANES WILL NOT BE PERMITTED ON SLAB AT ANYTIME.
   B. WITHIN 2 WEEKS AFTER COMPLETION OF SLAB INSTALLATION, THE TESTING AGENCY WILL ISSUE A FINAL REPORT CERTIFYING COMPLIANCE OF THE FLOOR SLAB INSTALLATION WITH THE SPECIFIED TOLERANCES.
5. PERIODIC SPECIAL INSPECTION REQUIRED FOR ALL SLAB ON GRADE.

REINFORCING STEEL

1. A. ALL REINFORCING STEEL TO CONFORM TO ASTM SPECIFICATION A615 GRADE 60 UNLESS NOTED OTHERWISE ON PLANS.
   B. DEFORMATIONS SHALL BE IN ACCORDANCE WITH ASTM A615.
   C. ALL REINFORCEMENT TO BE WELDED SHALL CONFORM TO ASTM A706
2. UNLESS OTHERWISE NOTED, ALL REINFORCING STEEL SHALL BE LAPPED A MINIMUM OF 64d (#3 THRU #6) AND $80d_b$ (#7 THRU #11). ALL SPLICES SHALL BE LOCATED AS DETAILED IN PLANS.
3. CERTIFICATION AND TESTING OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF ASTM STANDARDS.
4. ALL REINFORCING STEEL SHALL BE SUPPORTED AND TIED IN CONFORMANCE WITH "THE MANUAL OF REINFORCING STEEL PRACTICE FOR REINFORCED CONCRETE STRUCTURES" LATEST EDITION.
5. PROVIDE THE FOLLOWING MINIMUM PROTECTIVE COVERING OF CONCRETE UNLESS OTHERWISE NOTED:
   DEPOSITED AGAINST EARTH 3" CLEAR
   IN CONTACT WITH EARTH (FORMED) 2" CLEAR
6. WELDED WIRE REINFORCEMENT SHALL BE DEFORMED BARS CONFORMING TO ASTM A 1064 (GRADE 80)

STRUCTURAL STEEL

1. STRUCTURAL STEEL AND MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 U.N.O.
   ALL STEEL BENT PLATES, CHANNELS AND ANGLES SHALL BE ASTM A36 WITH MAXIMUM Fy=46 KSI AND MAXIMUM Fu=80 KSI.
   STEEL W- SHAPES SHALL CONFORM TO ASTM A992 U.N.O.
   STEEL RECTANGULAR AND SQUARE H.S.S. SHALL CONFORM TO ASTM A500, GRADE B, Fy=46 KSI U.N.O.
   STEEL ROUND H.S.S. SHALL CONFORM TO ASTM A500, GRADE B, Fy=42 KSI U.N.O.
   STEEL PIPE SHALL CONFORM TO ASTM A53, GRADE B, Fy=35 KSI U.N.O.
2. ALL WELDING IS TO COMPLY WITH A.W.S. SPECIFICATIONS AND IS TO BE DONE BY WELDERS APPROVED BY THE DEPARTMENT OF BUILDING AND SAFETY. ALL WELDING WILL BE DONE BY ELECTRONIC ARC PROCESS USING E70XX ELECTRODES AND SHALL BE PERFORMED WITH APPROVED ELECTRODES AS REQUIRED BY THE AISC SPECIFICATION. WELDS ARE DESIGNED AT FULL STRESS AND MUST BE DONE IN THE SHOP OF A LICENSED FABRICATOR EXCEPT WHERE OTHERWISE NOTED ON PLANS. SPECIAL INSPECTION IS REQUIRED FOR FIELD WELDS.
3. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED BY A LICENSED FABRICATOR, APPROVED BY THE BUILDING DEPARTMENT AND IN CONFORMANCE WITH THE AISC SPECIFICATION FOR FABRICATION.
4. SHOP DRAWINGS FOR ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER. APPROVAL MUST BE OBTAINED PRIOR TO FABRICATION.
5. ALL GROUT UNDER STEEL BEARING PLATES SHALL BE SOLID DRY PACK OR NON-SHRINK GROUT PLACED AS DIRECTED BY THE MANUFACTURER. MINIMUM COMPRESSIVE STRENGTH SHALL BE 4000 PSI AT 28 DAYS.
6. AT RECESSED EMBEDED PLATES, TACK WELD WIRE FABRIC TO ALL EMBEDS AND FILL WITH NON-SHRINK GROUT.
7. ALL BOLTS SHALL CONFORM TO ASTM A307 UNLESS NOTED OTHERWISE.
8. HIGH STRENGTH BOLTS WHERE SPECIFIED SHALL CONFORM TO ASTM A325 U.N.O. AND INSTALLATION SHALL BE INSPECTED BY A REGISTERED DEPUTY INSPECTOR APPROVED BY THE BUILDING DEPARTMENT
9. NUTS FOR STRUCTURAL STEEL BOLTS SHALL CONFORM TO ASTM A563.
10. WASHERS FOR STRUCTURAL STEEL BOLTS SHALL CONFORM TO ASTM F436.
11. THREADED RODS SHALL CONFORM TO ASTM A36.
12. ANCHOR BOLTS FOR BUCKLING-RESTRAINED BRACE FRAME SHALL CONFORM TO ASTM F1554 GR.105
13. LIGHT GAUGE STRUCTURAL STEEL MEMBERS SHALL CONFORM TO ASTM A1011.
14. ALL EXPOSED STEEL SHALL BE PAINTED WITH SHOP PRIMER.
15. SEE ROOF FRAMING PLAN FOR BAR JOIST SPECIFICATIONS.
16. THE USE OF ROLLED STEEL SECTION AND/OR BOLTS MANUFACTURED OUTSIDE THE UNITED STATES WILL REQUIRE VERIFICATION THAT THE PRODUCTS COMPLY WITH APPLICABLE ASTM STANDARDS. MILL CERTIFICATES WILL BE REQUIRED FOR ALL STEEL. STEEL GRADES OTHER THAN ASTM A36 WILL REQUIRE TESTING BY AN APPROVED LABORATORY. ALL FOREIGN BOLTS MUST BE APPROVED BY COUNTY BUILDING AND SAFETY PRIOR TO THEIR USE.

EPOXY WORK

1. ALL ANCHORS TO BE A307 ALL THREAD BOLTS MIN. EMBEDMENT = 4" MIN. U.N.O. FOR ALL WALL.
   A. USE HIT-RE 500-V3 ADHESIVE (ESR 3814) (LARR 26028) OR APPROVED EQUAL FOR CONCRETE U.N.O.
   B. USE HILTI HY-270 ADHESIVE (ESR-4143) OR APPROVED EQUAL FOR FULLY GROUTED MASONRY U.N.O.
2. ALL THE EPOXY WORK WILL REQUIRE SPECIAL AND CONTINUOUS INSPECTION BY A CITY APPROVED DEPUTY INSPECTOR.

STRUCTURAL LUMBER

1. ALL HORIZONTAL LOAD CARRYING MEMBERS AND POSTS SHALL BE DOUGLAS FIR-LARCH.
   SAWN LUMBER (4x AND SMALLER) SHALL HAVE A MOISTURE CONTENT NOT MORE THAN 19% AT TIME OF FABRICATION.
   A. 2 x 4 GRADE NO. 1
   B. 2 x 6 GRADE NO. 1 TYPICAL U.N.O.
   C. 4 x 6 GRADE NO. 1 TYPICAL U.N.O.
   D. POST GRADE NO. 1 TYPICAL U.N.O.
2. STUDS, PLATES, SILLS, AND BLOCKING SHALL BE DOUGLAS FIR-LARCH, CONSTRUCTION GRADE OR BETTER.
3. SILLS UNDER BEARING AND NON-BEARING STUD PARTITIONS SHALL BE PRESSURE TREATED DOUGLAS FIR BOLTED TO CONCRETE WITH 3/4" DIA. x 8" EMBED. ANCHOR BOLTS SPACED NOT MORE THAN 4'-0" O.C. UNLESS NOTED OTHERWISE. THERE SHALL BE ONE BOLT WITHIN 9" OF EACH END OF EACH SILL PIECE. MINIMUM OF 2 BOLTS PER PIECE.
4. BRIDGING SHALL BE PROVIDED AS PER CODE.
5. STANDARD STEEL WASHERS SHALL BE USED ON ALL HEADS AND NUTS BEARING ON WOOD.
6. FRAMING MEMBERS SHALL NOT BE NOTCHED IN ANY MANNER EXCEPT WHERE SPECIFICALLY DETAILED OR APPROVED BY THE ARCHITECT/ENGINEER AND BUILDING OFFICIAL.
7. MINIMUM NAILING FOR ALL WOOD MEMBERS SHALL BE AS PER CODE, UNLESS SPECIFICALLY NOTED. ALL NAILS SHALL BE COMMON WIRE NAILS U.N.O. NAILING FOR ROOF AND FLOOR SHEATHING SHALL HAVE EXACTLY 1 1/2" PENETRATION INTO FRAMING MEMBERS.
8. STRUCTURAL SHEATHING SHALL BE APA RATED, STRUCTURAL I, THICKNESS AS NOTED ON PLANS WITH EXTERIOR GLUE CONFORMING TO PRODUCT STANDARD PS1-09. OSB SHALL CONFORM TO PS2-04. EACH SHEET SHALL BE IDENTIFIED BY A REGISTERED STAMP OR BRAND. USE MINIMUM 5-PLY FOR SHEAR WALL .
9. EDGES OF ALL OPENINGS THROUGH THE ROOF SHALL BE NAILED PER BOUNDARY NAIL SPACING OF THE DIAPHRAGM NAILING REQUIREMENTS.
10. ALL WOOD BEARING ON CONCRETE OR MASONRY WITHIN 48" FROM FINISH FLOOR SHALL BE PRESSURE TREATED DOUGLAS FIR OR REDWOOD.
11. JOISTS HANGERS AND OTHER CONNECTIONS SHALL BE SIMPSON TYPE OR EQUAL AND INSTALLED PER THE APPROVED ICC REPORT.
12. INDIVIDUAL PIECES OF SHEATHING SHALL NOT BE LESS THAN 1'-0" IN THEIR SHORTEST PLAN DIRECTION, NOR LESS THAN 8 SQ. FT. IN AREA. ALL SHEATHING EDGES SHALL BE SUPPORTED WITH BLOCKING AND EDGE NAILING.
13. ALL GLU LAMINATED MEMBERS SHALL BE IN ACCORDANCE WITH AITC A190.1

STATEMENT OF SPECIAL INSPECTION AND STRUCTURAL TEST

1. THIS SECTION APPLIES TO THE STRUCTURAL PORTIONS OF THE PROJECT REQUIRING SPECIAL INSPECTION. THE SPECIAL INSPECTOR'S DUTIES ARE AS DESCRIBED IN SEC. 1704.2 AND 1704.3 OF CBC COPIES OF TEST RESULTS AND FINAL REPORTS SHALL BE FURNISHED TO THIS ENGINEER IN ADDITION TO OTHER NORMAL DISTRIBUTIONS WITHIN ONE WEEK OF TEST OR INSPECTION.
2. ALL TESTS AND INSPECTIONS SHALL BE PERFORMED BY AN INDEPENDENT TESTING AND INSPECTION AGENCY EMPLOYED BY THE OWNER OR ARCHITECT AND NOT THE CONTRACTOR PER CBC SECTION 1703. JOB SITE VISITS BY THE STRUCTURAL ENGINEER DO NOT CONSTITUTE A SPECIAL INSPECTION. THE FIRM PROVIDING SPECIAL INSPECTION SHALL BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
   (NOTE: FOUNDATION INSPECTIONS LISTED BELOW ARE PROVIDED BY AN INSPECTOR DESIGNATED BY OTHERS)
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE TEST AND INSPECTION FIRM WITH A SCHEDULE TO FACILITATE THE PROPER COORDINATION OF WORK.
4. SPECIAL INSPECTION FOR SEISMIC RESISTANCE FOR DESIGN CATEGORY C,D,E & F SHALL BE DONE IN ACCORDANCE TO SECTION 1705.12
5. PORTIONS OF WORK REQUIRING SPECIAL INSPECTION:

	YES	NO	N/A
I. FOUNDATION:			
A. COMPACTED FILL, GRADING AND EXCAVATIONS	■	☐	☐
B. CONTINUOUS INSPECTION OF PILE DRIVING AND/OR DRILLING OF CAISSONS.	☐	☐	■
C. SEE CBC TABLE 1705.3 BELOW FOR ANY ADDITIONAL REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION			
II. CONCRETE:			
A. CONTINUOUS INSPECTION AND TEST CYLINDERS FOR STRUCTURAL CONCRETE EXCEPT FOUNDATION CONCRETE OF 2500 PSI OR LESS	■	☐	☐
B. CONTINUOUS INSPECTION FOR SLAB-ON-GRADE CONCRETE	■	☐	☐
C. TEST CYLINDERS FOR SLAB-ON-GRADE CONCRETE	■	☐	☐
D. SEE CBC TABLE 1705.3 BELOW FOR ANY ADDITIONAL REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION			
E. SHRINKAGE TESTS PER ASTM C157 SLAB ON GRADE, SLAB ON METAL DECK, APRON SLAB, TILT-UP PANELS & SITE PANELS	■	☐	☐
III. REINFORCING STEEL:			
A. PLACING OF REINFORCING	■	☐	☐
B. SAMPLING AND TESTING OF STEEL (MILL REPORTS AND IDENTIFICATION OF STEEL)	■	☐	☐
C. SEE CBC TABLE 1705.3 BELOW FOR ANY ADDITIONAL REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION			
IV. MASONRY:			
A. CONTINUOUS INSPECTION	■	☐	☐
B. MASONRY PRISM TESTING PER ASTM C 1314 AND 2105.3	☐	■	☐
C. SEE TABLE 3.1.2 OF TMS 602-13/ACI 530.1-13/ASCE 5-13 BELOW FOR ANY ADDITIONAL REQUIRED VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION			
V. STRUCTURAL STEEL:			
A. MILL REPORTS AND IDENTIFICATION OF STEEL (AFFIDAVIT OF COMPLIANCE)	■	☐	☐
B. SAMPLING AND TESTING OF SPECIMENS	■	☐	☐
C. SEE TABLES N5.4-1 THRU N5.4-3 AND TABLES N5.6-1 THRU N5.6-3 OF AISC 360-10 FOR ALL STRUCTURAL STEEL.			
D. SEE TABLES J6-1 THRU J6-3, TABLES J7-1 THRU J7-3 AND TABLE J8-1 OF AISC 341-10 FOR ALL SEISMIC RESISTING STRUCTURAL STEEL ELEMENTS IN SEISMIC DESIGN CATEGORIES C,D,E & F.			
E. SPECIAL INSPECTIONS AND QUALIFICATION OF WELDING SPECIAL INSPECTORS FOR COLD-FORMED STEEL FLOOR AND ROOF DECK SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF SDI QA/QC.			
F. SPECIAL INSPECTIONS OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS SHALL BE IN ACCORDANCE WITH TABLE 1705.2.3.			
VI. WELDING:			
A. ALL STRUCTURAL WELDING (INCLUDES DECKING AND WELDED STUDS), EXCEPT WELDING IN APPROVED SHOPS PER CBC 1704.2.5.1	■	☐	☐
B. ULTRASONIC TESTING OF FULL PENETRATION WELD CONNECTIONS AT MOMENT FRAMES, BRACED FRAMES, BEAM SPLICES, AND FIELD WELDS.	■	☐	☐
C. STRUCTURAL LIGHT GAGE METAL FRAME WELDING	☐	☐	■
D. REINFORCING STEEL WELDING PER AISC 360-10 AND AISC 341-10	■	☐	☐
E. SEE TABLES N5.4-1 THRU N5.4-3 OF AISC 360-10 FOR ANY ADDITIONAL REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION			
F. SEE TABLES J6-1 THRU J6-3 OF AISC 341-10 FOR ANY ADDITIONAL REQUIRED VERIFICATION AND INSPECTION OF WELDING FOR SEISMIC DESIGN CATEGORY C,D,E & F.			
VII. BOLTING:			
A. HIGH STRENGTH BOLT A325SC & A490SC (TORQUE VERIFICATION)	■	☐	☐
B. HIGH STRENGTH BOLT A325N & A490N (SNUG CONTACT OF PLYS)	■	☐	☐
C. EXPANSION/ADHESIVE ANCHORS IN CONCRETE OR MASONRY	■	☐	☐
D. ANCHOR BOLTS AT CONCRETE WALLS AND BRACED FRAMES, (BOLT INSTALLATION AND CONCRETE PLACEMENT)	■	☐	☐
E. SEE TABLES N5.6-1 THRU N5.6-3 OF AISC 360-10 FOR ANY ADDITIONAL REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION.			
F. SEE TABLES J7-1 THRU J7-3 OF AISC 341-10 FOR ANY ADDITIONAL REQUIRED VERIFICATION AND INSPECTION OF BOLTING FOR SEISMIC DESIGN CATEGORY C,D,E & F.			
VIII. INSULATING CONCRETE FILL: TEST CYLINDERS AND INSPECTIONS	☐	☐	■
IX. APA RATED SHEATHING DIAPHRAGM WITH NAILING ZONE "B" TO "G" AND PLYWOOD SHEAR WALLS. INSPECTION OF SHEATHING, NAIL DIAMETER & LENGTH, NAILING LINES, NAIL SPACING, AND FRAMING WIDTH AT NAIL DIAMETER & LENGTH, NAILING LINES, NAIL SPACING, AND FRAMING WIDTH AT ADJOINING EDGES, PANEL, EDGES, VERIFY APA STAMP, DRAG STRUTS, SILL ANCHORAGE AND HOLDDOWN ANCHORS	■	☐	☐

6. APPROVED FABRICATORS: (MUST SUBMIT CERTIFICATE OF COMPLIANCE) FOR ALL OFFSITE FABRICATION SUCH AS STRUCTURAL STEEL, GLU-LAMS. PRECAST CONCRETE ETC. ■ ☐ ☐
7. STRUCTURAL OBSERVATIONS REQUIRED. ■ ☐ ☐
   AS BY THIS ENGINEER OR THE BUILDING DEPARTMENT.
   THE OWNER SHALL EMPLOY AN ENGINEER APPROVED BY THIS ENGINEER TO PERFORMED STRUCTURAL OBSERVATION AS DEFINED IN CBC SECTION 1704.6
8. EACH CONTRACTOR OR SUB-CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A WIND OR SEISMIC FORCE RESISTING SYSTEM,/ COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON SUCH SYSTEM OR COMPONENT. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS.

STRUCTURAL OBSERVATION NOTES PER CBC SECTION 1704.6

1. THE FOLLOWING ITEMS REQUIRE STRUCTURAL OBSERVATION BY A LICENSED ENGINEER OR ARCHITECT.
   A. FOUNDATION REINFORCEMENT PLACEMENT (FIRST POUR AND RANDOM INTERMITTENT POURS)
2. THE OWNER SHALL EMPLOY THE ENGINEER OR ARCHITECT RESPONSIBLE FOR THE STRUCTURAL DESIGN OR ANOTHER ENGINEER OR ARCHITECT DESIGNATED BY THE ENGINEER OR ARCHITECT RESPONSIBLE FOR THE STRUCTURAL DESIGN TO PERFORM STRUCTURAL OBSERVATION AS DEFINED IN CBC SECTION 220.
3. OBSERVED DEFICIENCIES SHALL BE REPORTED IN WRITING TO THE OWNER'S REPRESENTATIVE, SPECIAL INSPECTOR, CONTRACTOR AND THE BUILDING OFFICIAL.
4. THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT THAT THE SITE VISITS HAVE BEEN MADE AND IDENTIFYING ANY REPORTED DEFICIENCIES THAT, TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED.
5. IT IS NOT REQUIRED TO OBSERVE THE ELEMENTS NOTED IN "1A" THRU "1G" ABOVE FOR EACH INDIVIDUAL BUILDING.

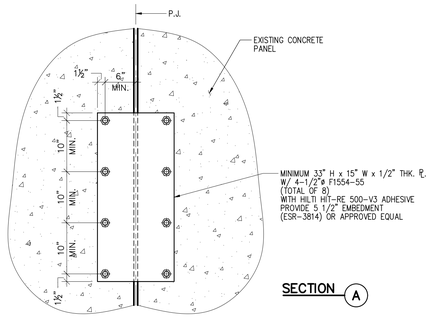
TABLE 1705.2.3 (CBC-2016)
REQUIRED SPECIAL INSPECTIONS OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD[a]
1. INSTALLATION OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS.			
a. END CONNECTIONS – WELDING OR BOLTED.	—	X	SJI SPECIFICATIONS LISTED IN SECTION 2207.1.
b. BRIDGING – HORIZONTAL OR DIAGONAL	—		
1. STANDARD BRIDGING.	—	X	SJI SPECIFICATIONS LISTED IN SECTION 2207.1.
2. BRIDGING THAT DIFFERS FROM THE SJI SPECIFICATIONS LISTED IN SECTION 2207.1.		X	

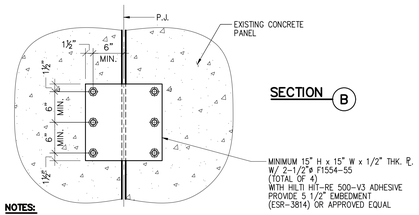
FOR SI: 1 INCH=25.4 mm.
a: WHERE APPLICABLE, SEE ALSO SECTION 1705.12, SPECIAL INSPECTION FOR SEISMIC RESISTANCE.

TABLE 1705.3 (CBC-2016)
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARDS[a]	IBC REFERENCE
1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT.	—	X	ACI 318:CH. 20, 25.2 25.3, 26.5.1-26.5.3	1908.4
2. REINFORCING BAR WELDING: a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706; b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND c. INSPECT ALL OTHER WELDS.	— X	X X	AWS D1.4 ACI 318: 26.5.4	—
3. INSPECTION OF ANCHORS CAST IN CONCRETE.	—	X	ACI 318:17.8.2	—
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS[b] a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.	X	ACI 318: 17.8.2.4 X ACI 318:17.8.2		—
5. VERIFYING USE OF REQUIRED DESIGN MIX.	—	X



SECTION (A)



SECTION (B)

NOTES:

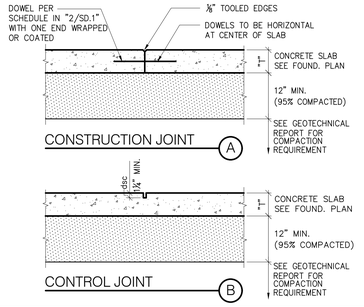
CONTRACTOR TO INSTALL ALL THREAD ROD INTO EXISTING PANEL PRIOR TO FABRICATION OF PLATE EDGE SPACING AND ROD SPACING PROVIDED ARE MINIMUM DISTANCE REQUIRED AND MAYBE INCREASED UP TO 3" TO AVOID CONFLICT WITH EXISTING REBARS IN EXISTING PANEL.

DETAIL 6

DETAIL 4

DOWEL SCHEDULE

SLAB THICKNESS	CONSTRUCTION JOINT		CONTROL JOINT	
	SMOOTH ROUND DOWEL	DIAMOND LOAD PLATE DOWEL	SMOOTH ROUND DOWEL	TRAPEZOIDAL PD[3] DOWEL
5" TO 6½"	¾" DIA. X 16" LONG @ 12" O.C.	¼" X 4½" X 4½" @ 18" O.C.	¾" DIA. X 16" LONG @ 12" O.C.	⅜" X 2" X 12" @ 18" O.C.
7" TO 8"	1" DIA. X 16" LONG @ 12" O.C.	⅜" X 4½" X 4½" @ 18" O.C.	1" DIA. X 16" LONG @ 12" O.C.	½" X 2½" X 12" @ 18" O.C.



NOTE:

(1) CONTROL JOINTS TO BE PERPENDICULAR TO CONSTRUCTION JOINTS AND SPACING IN EACH DIRECTION BETWEEN JOINTS SHALL NOT EXCEED 15'-0". SEE FOUNDATION PLAN FOR TYPICAL JOINT SPACING.

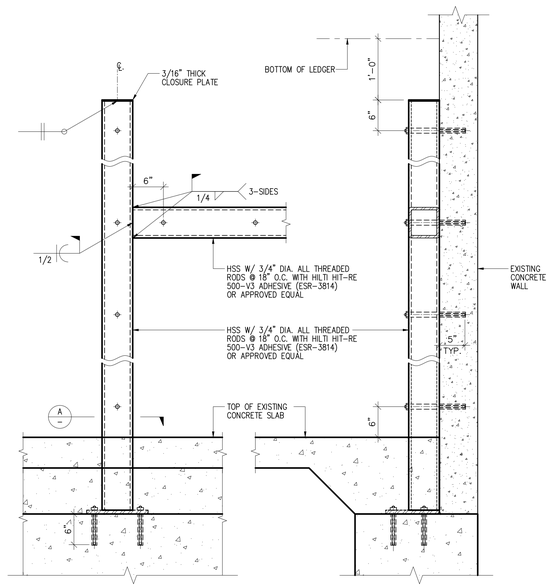
(2) AS AN ALTERNATE AT CONSTRUCTION JOINT, USE DIAMOND SHAPE PLATE DOWEL, SEE SCHEDULE

(3) SEE GEOTECHNICAL REPORT FOR SUBGRADE REQUIREMENT.

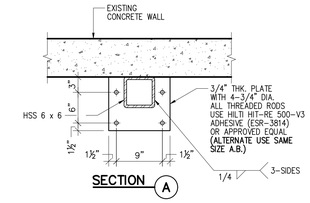
(4) dsc = DENOTES REQUIRED DEPTH OF SAWCUT

SLAB THK.	(4) dsc
6"	1¼"
6½"	1¾"
7"	1½"

CONSTRUCTION & CONTROL JOINT (TRUCK COURT SLAB) 4

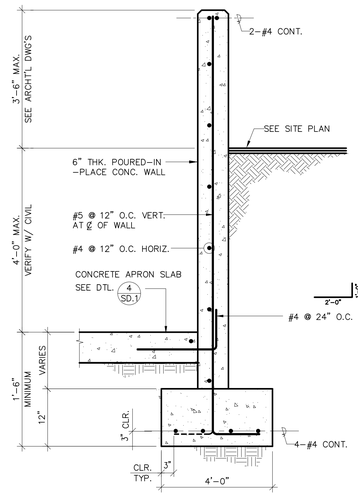


FRONT ELEVATION **SIDE ELEVATION**



SECTION (A)

DETAIL 1



DETAIL 2

DETAIL 5

DETAIL 3

HPA architecture

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Consultants:

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CONSULTING STRUCTURAL ENGINEERS
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HSA PROJECT NO. : 19-197

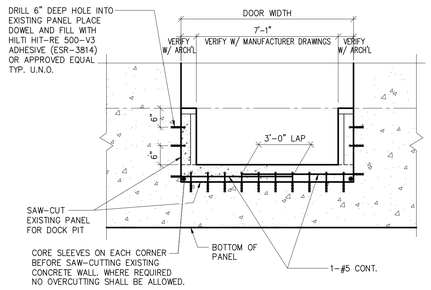
REGISTERED PROFESSIONAL ENGINEER
MARK R. W. GRAF
S 5068
EXP. 06-30-21
12-16-19
STRUCTURAL
STATE OF CALIFORNIA

Title: FOUNDATION DETAILS

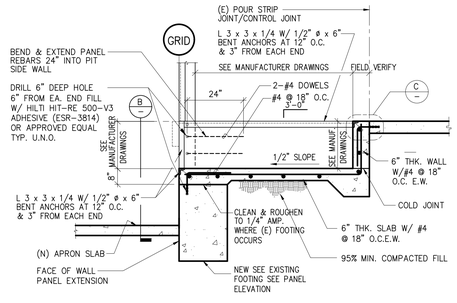
Project Number: 19436
Drawn by: ML
Date: 10/24/2019
Revision:

Sheet:

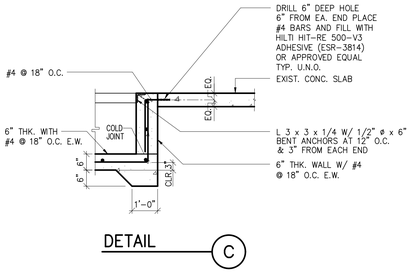
SD-1



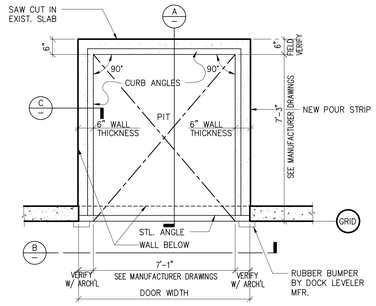
ELEVATION B



SECTION A



DETAIL C



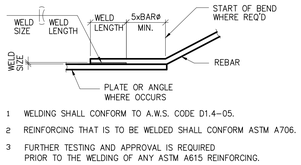
PLAN

NOTE:
CONSTRUCTION OF PIT SHALL BE IN ACCORDANCE W/ THE DOCK LEVELER'S DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS OF DOCK LEVELER W/ DOCK LEVELER MFR. PRIOR TO CONSTRUCTION PIT. FOR LOCATION OF DOCK LEVELERS, SEE FLOOR PLAN.

DOCK LEVELER PIT DETAIL | 7

DETAIL | 1

REBAR SIZE	WELD SIZE	WELD LENGTH
#3	3/16"	2"
#4	1/4"	3"
#5	5/16"	4"
#6	3/8"	4"
#7	7/16"	5"
#8	1/2"	6"
#9	9/16"	6"
#10	5/8"	7"

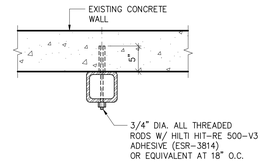


1 WELDING SHALL CONFORM TO A.W.S. CODE D1.4-05.

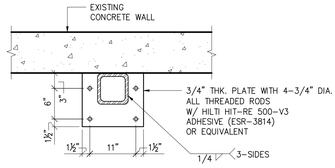
2 REINFORCING THAT IS TO BE WELDED SHALL CONFORM ASTM A706.

3 FURTHER TESTING AND APPROVAL IS REQUIRED PRIOR TO THE WELDING OF ANY ASTM A615 REINFORCING.

TYPICAL REINFORCING WELDING | 4

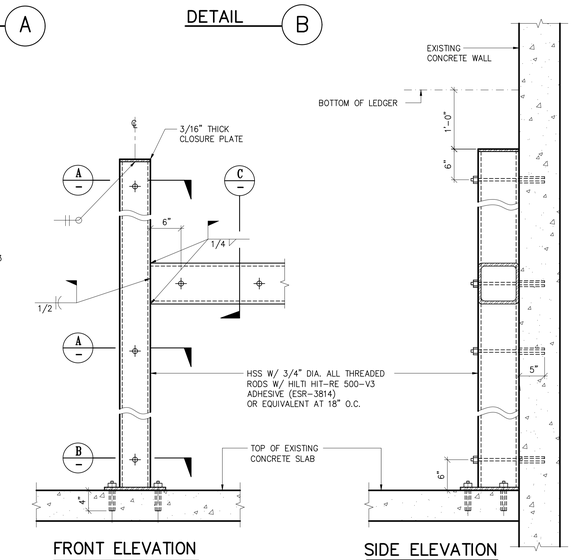


DETAIL A



DETAIL B

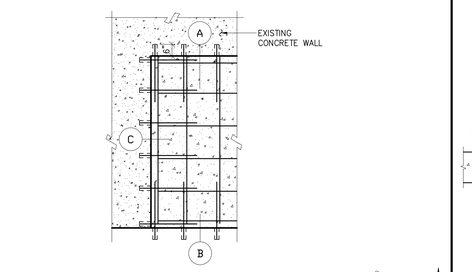
DETAIL C

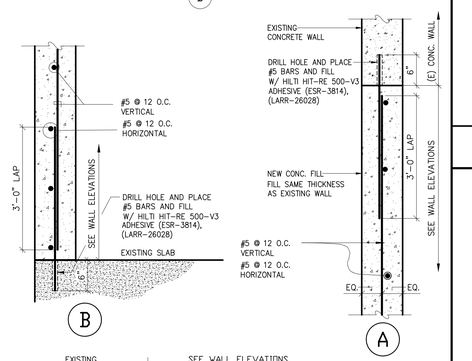


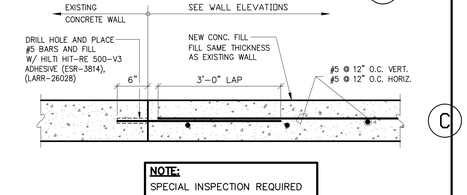
FRONT ELEVATION

SIDE ELEVATION

DETAIL | 2

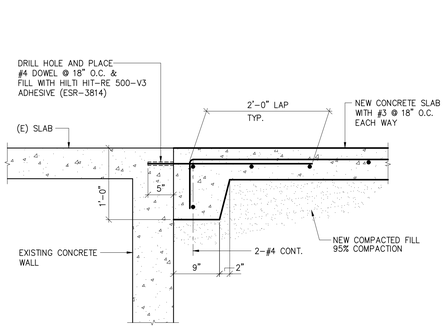




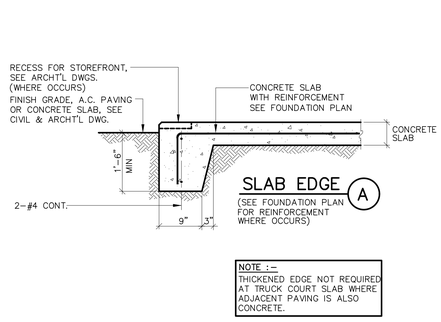


NOTE:
SPECIAL INSPECTION REQUIRED

DETAIL | 10



DETAIL | 8



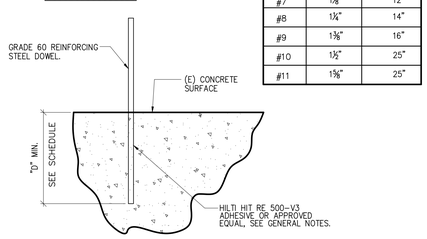
SLAB EDGE A
(SEE FOUNDATION PLAN FOR REINFORCEMENT WHERE OCCURS)

NOTE :-
THICKENED EDGE NOT REQUIRED AT TRUCK COURT SLAB WHERE ADJACENT PAVING IS ALSO CONCRETE.

CONCRETE SLAB EDGE | 5

NOTES:
1. SURFACE OF DRILLED HOLES SHALL BE CLEANED BY WIRE BRUSH. ALL DUST AND FRAGMENTS SHALL THAN BE CLEANED OUT BY BY COMPRESSED AIR.
2. LOCATE & AVOID (E) REINFORCEMENT BEFORE DRILLING.

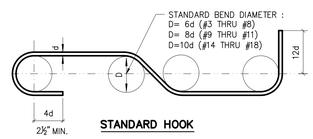
DOWEL SIZE	HOLE DIA. (MIN.)	"D" DEPTH (INCHES)
#3	3/8"	5"
#4	1/4"	6½"
#5	7/8"	8"
#6	1"	10"
#7	1⅛"	12"
#8	1¼"	14"
#9	1⅜"	16"
#10	1½"	25"
#11	1⅝"	25"



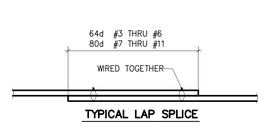
REBAR DEVELOPMENT LENGTH SCHEDULE

DETAIL | 9

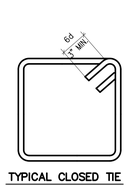
DETAIL | 6



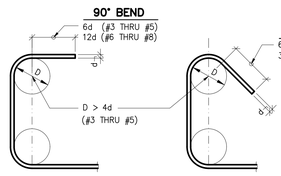
STANDARD HOOK



TYPICAL LAP SPLICE



TYPICAL CLOSED TIE



STIRRUPS AND TIE HOOKS

NOTE:
1. "d" IS NOMINAL DIAMETER OF BAR IN INCHES.
2. ALL SPLICES U.N.O. ON DRAWNGS SHALL BE STAGGERED 24".

TYP. REBAR, HOOK, BENT AND LAP SPLICE | 3

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Consultants:

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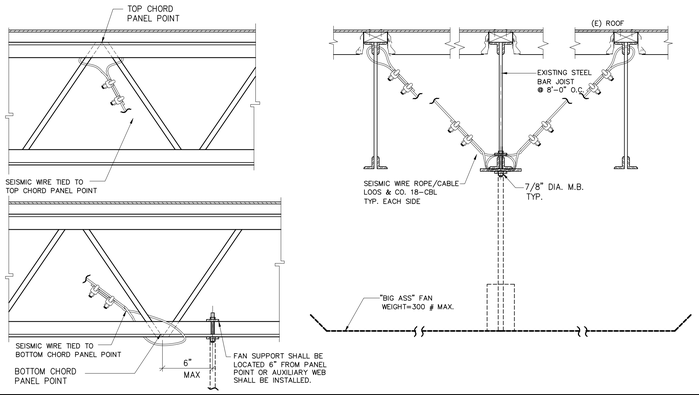
HSA PROJECT NO. : 19-197

REGISTERED PROFESSIONAL ENGINEER RAFAEL R. WOLF S 5092 EXP. 06-30-21 12-16-19 STRUCTURAL STATE OF CALIFORNIA

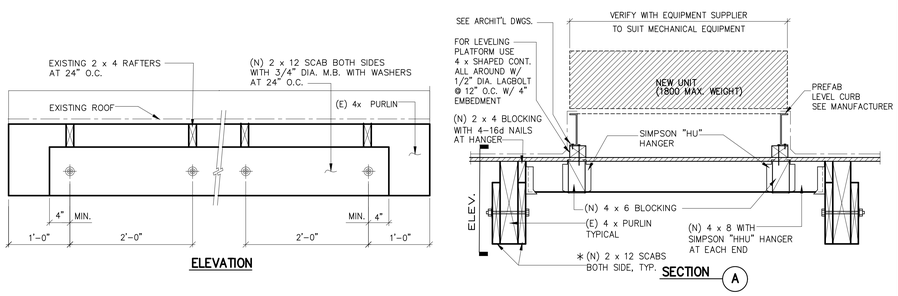
Title: DETAILS

Project Number: 19436
Drawn by: ML
Date: 10/24/2019
Revision:

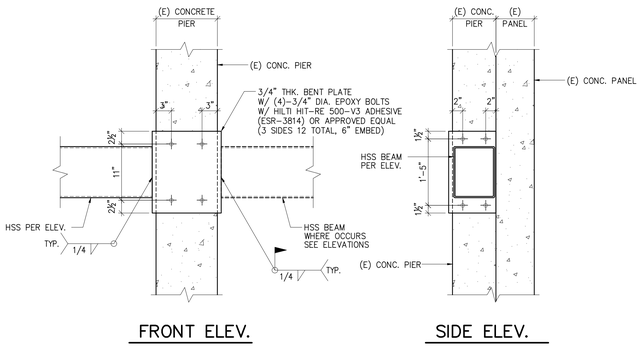
Sheet: SD-2



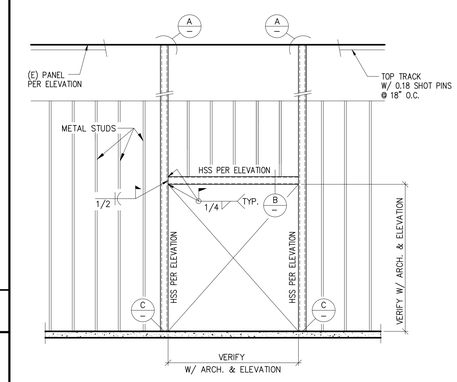
DETAIL | 5



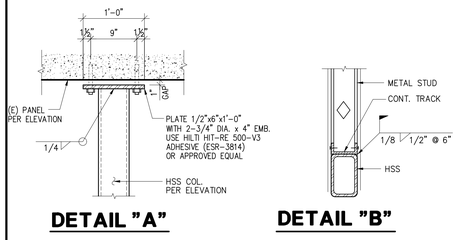
DETAIL | 6



DETAIL | 7

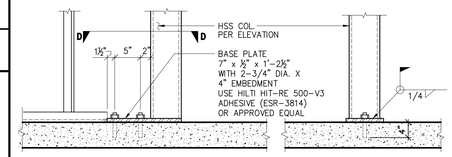


ELEVATION

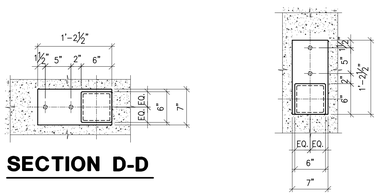


DETAIL "A"

DETAIL "B"

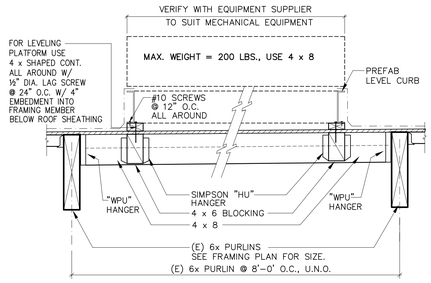


DETAIL "C"



SECTION D-D **SECTION E-E**

DETAIL | 4



NOTES: 1. FOR EXHAUST FAN PLATFORM ALTERNATE, SEE DETAIL 2/A

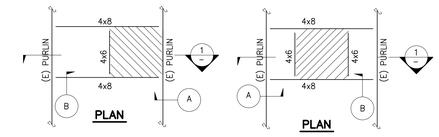
SECTION AT MECH'L PLATFORM (A)

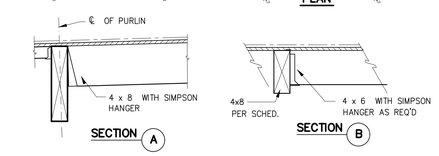
NOTE:

1. ALL NEW AND EXISTING CONDITION AND DIMENSIONS SHALL BE VERIFIED ON THE JOB SITE (ALSO WITH THE MECHANICAL CONTRACTOR) PRIOR TO CONSTRUCTION OF ROOF OPENINGS.
2. DO NOT BREAK ROOF FRAMING MEMBERS WITH EXISTING STEEL STRAPS.

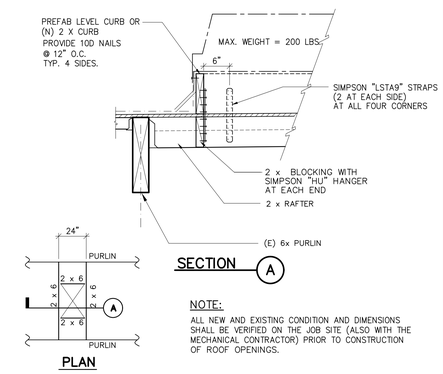
SEQUENCE:

- EXPOSE & CUT PORTION OF EXISTING SHEATHING TO ALLOW DIRECT NAILING OF JOIST HGR. TO EXISTING NAILER
- INSTALL NEW 4X- W/ HANGERS AT EACH END AND NAIL AS REQUIRED.
- NAIL NEW PLYWOOD SHEATHING TO FILL VOID AND RE PATCH ROOFING AS REQUIRED .





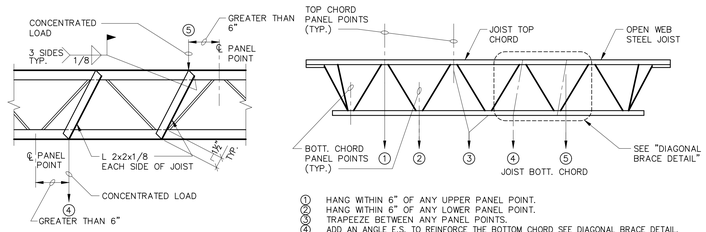
MECHANICAL PLATFORM DETAIL | 1



NOTE:

ALL NEW AND EXISTING CONDITION AND DIMENSIONS SHALL BE VERIFIED ON THE JOB SITE (ALSO WITH THE MECHANICAL CONTRACTOR) PRIOR TO CONSTRUCTION OF ROOF OPENINGS.

EXHAUST FAN PLATFORM DETAIL | 2



NOTES:

1) WHERE CONCENTRATED LOADS ARE SUPPORTED BY JOISTS CHORDS AND ARE LOCATED MORE THAN 6" FROM A PANEL POINT, REINFORCE THE JOIST WITH AN ADDED ANGLE EA. SIDE OF JOIST EXTENDING FROM THE POINT LOAD TO THE NEAREST PANEL POINT ON THE OPPOSITE CHORD.
2) REMOVE LOAD FROM JOIST PRIOR TO WELDING ANGLE.

① HANG WITHIN 6" OF ANY UPPER PANEL POINT.
② HANG WITHIN 6" OF ANY LOWER PANEL POINT.
③ TRAPEZE BETWEEN ANY PANEL POINTS.
④ ADD AN ANGLE E.S. TO REINFORCE THE BOTTOM CHORD SEE DIAGONAL BRACE DETAIL.
⑤ ADD AN ANGLE E.S. TO REINFORCE THE TOP CHORD SEE DIAGONAL BRACE DETAIL.

NOTES:

1) DO NOT CUT OR DRILL ANY JOIST MEMBER.
2) THIS DETAIL IS APPLICABLE TO SUPPORTING MECH. EQUIPMENT, SPRINKLER PIPES, ETC.
3) JOIST MANUFACTURER TO ACCOUNT FOR ABOVE LOADING ON JOIST DESIGN.
4) ALL FIELD WELDING REQUIRES SPECIAL INSPECTION BY A DEPUTY INSPECTOR.

ALLOWABLE METHODS & LOCATIONS
FOR SUPPORTING ADDITIONAL LOADS
FROM OPEN WEB STEEL JOIST

AUXILIARY WEB DETAIL

DETAIL | 3

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HSA PROJECT NO. : 19-197

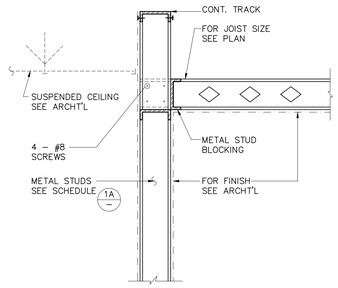
REGISTERED PROFESSIONAL ENGINEER
RAFAEL A. VILLALOBOS
S 30988
EXP. 06-30-21
12-16-19
STRUCTURAL
STATE OF CALIFORNIA

Title: DETAILS

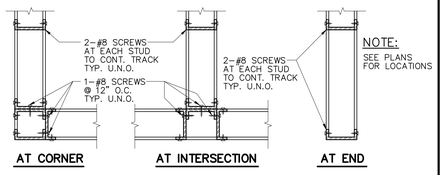
Project Number: 19436
Drawn by: ML
Date: 10/24/2019
Revision:

Sheet:

SD-3



DETAIL | 9

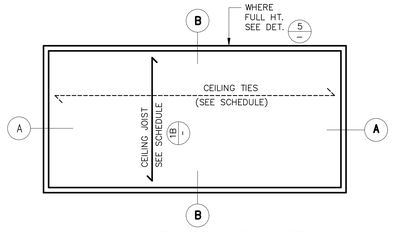


DETAIL | 10

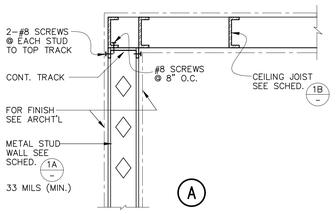
NOTE: –

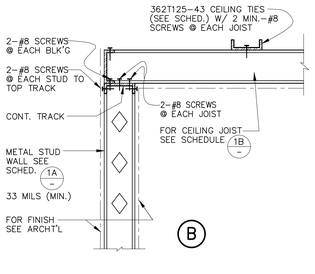
PROVIDE GAP AS SHOWN AT FULL HEIGHT DEMISING WALLS ONLY. FILL JOINT PER ARCHIT'L.

DETAIL | 11

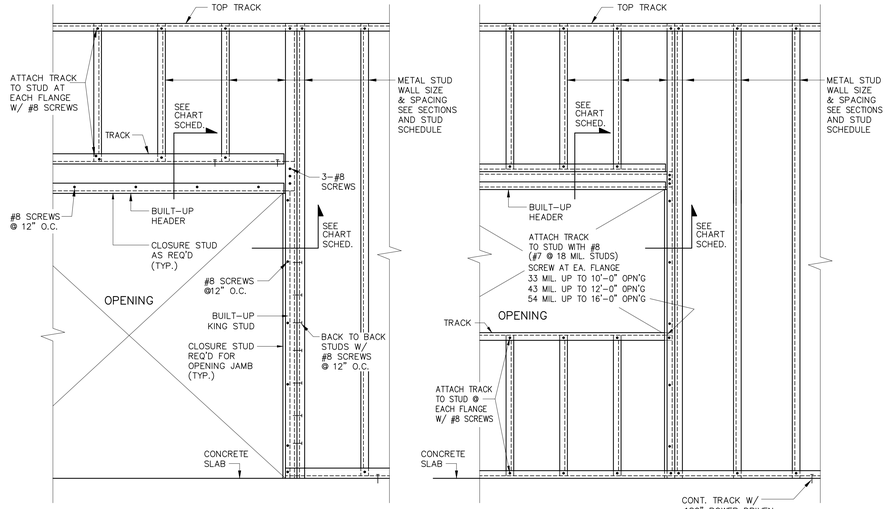


WALLS WITH CEILING JOIST



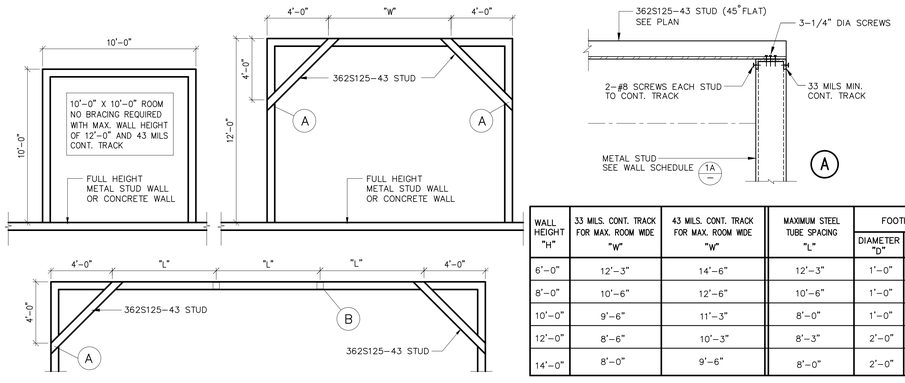


DETAIL (DRY WALL CEILING) | 7

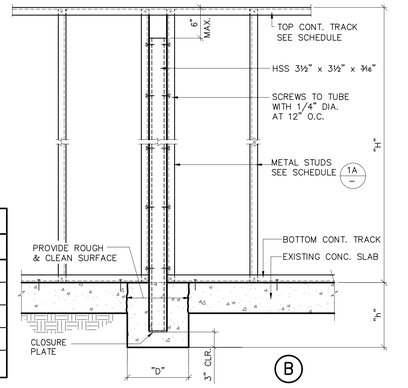


KING STUDS	SPAN	HEADER SIZE
1/ TO MATCH WALL	4'–0"	362S 162–33 INT. 362S 162–43 DEMISING — SIZE OF WALL AND 33 MILS
1/ PARTITION WALL 2/ DEMISING WALL	6'–0"	362S 162–33 INT. — SIZE OF WALL AND 33 MILS 600S 162–43 DEMISING — SIZE OF WALL AND 33 MILS
2	8'–0"	600S 162–33 INT. 600S 162–43 DEMISING — SIZE OF WALL AND 33 MILS
3	12'–0"	800S 162–43 INT. 800S 162–54 (50 KSI) DEMISING — SIZE OF WALL AND 43 MILS
3	16'–0"	800S 162–54 INT. 800S 162–68 (50 KSI) DEMISING — SIZE OF WALL AND 54 MILS

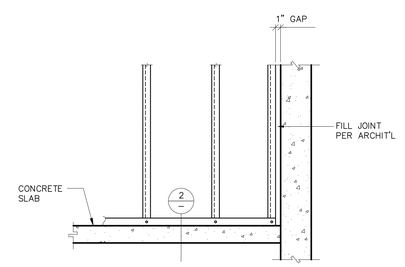
DETAIL (PARTIAL HEADER DETAIL) | 3



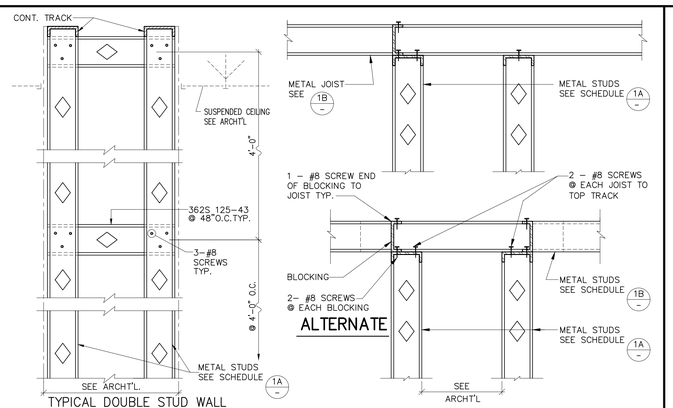
WALL HEIGHT "H"	33 MILS. CONT. TRACK FOR MAX. ROOM WIDE "W"	43 MILS. CONT. TRACK FOR MAX. ROOM WIDE "W"	MAXIMUM STEEL TUBE SPACING "L"	FOOTING DIAMETER "D"	FOOTING DEPTH "h"
6'–0"	12'–3"	14'–6"	12'–3"	1'–0"	1'–0"
8'–0"	10'–6"	12'–6"	10'–6"	1'–0"	1'–0"
10'–0"	9'–6"	11'–3"	8'–0"	1'–0"	1'–0"
12'–0"	8'–6"	10'–3"	8'–3"	2'–0"	3'–0"
14'–0"	8'–0"	9'–6"	8'–0"	2'–0"	3'–6"



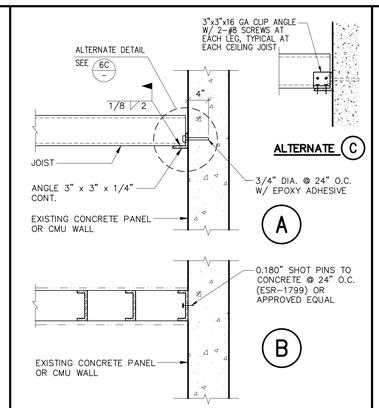
WALL PARTITION BRACE LAYOUT (WALLS WITHOUT CEILING JOISTS) | 4



DETAIL | 12



DETAIL | 8



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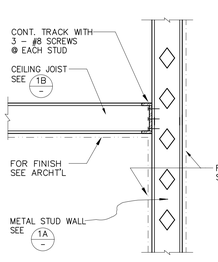
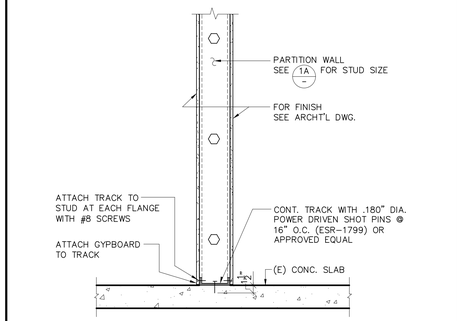


JOIST TO STUD DETAIL | 5



NOTE: AT FULL HEIGHT WALL USE MINIMUM 18 GA BOTTOM TRACK

PARTITION WALL DETAIL | 2

INTERIOR PARTITIONS (NON–LOAD BEARING)

1. BUILDING CODE USED IS IBC 2015 / AISI S100–2016 / CBC 2016.
2. ALL THE METAL STUDS USED SHALL BE 33 KSI U.N.O. CONFORMING TO BUILDING CODE. ALL THE METAL STUDS SHALL CONFORM TO STEEL STUD MANUF'S ASSOC., (SSMA) ICC–ESR 3064P
3. THE BRIDGING, BLOCKING OR END BEARING STIFFENERS SHALL BE AS REQUIRED BY THE MANUFACTURER UNLESS NOTED OTHERWISE ON THE DRAWINGS.
4. DRYWALL(GYPBOARD) FINISH IS ON BOTH SIDES OF WALL OR MUST BE BLOCKED/STRAPPED BY THE MANUFACTURER U.N.O.
5. UNLESS OTHERWISE NOTED ON THE PLANS, USE THE FOLLOWING GUIDELINE FOR STUD SIZE & SPACING FOR INTERIOR PARTITIONS.
6. TOP TRACK SIZE WILL BE MIN. 33MIL FOR PARTITION U.N.O.
7. DESIGN LOAD: LATERAL LOAD = 5 PSF, DEFLECTION LIMIT = L/120
8. SEE ARCHT'L FOR STUD WIDTH REQUIRED FOR FULL HEIGHT DEMISING WALL (8" STUDS MIN)

A

METAL STUDS	SIZE (SSMA DESIGNATION)	MAXIMUM SPACING	MAXIMUM HEIGHT
3–5/8" X 25 GA	362S125–18	16"	11'–9"
3–5/8" X 20 GA	362S125–33	16"	18'–9"
6" X 20 GA	600S125–33	16"	25'–0"
8" X 18 GA	800S137–43	24"	32'–0"
8" X 18 GA	800S200–43	24"	37'–0"
8" X 14 GA	800S200–68 (50KSI)	24"	46'–0"

CEILING JOISTS (GYPBOARD CEILING)

1. BUILDING CODE USED IS IBC 2015 / AISI S100–2016 / CBC 2016.
2. ALL THE METAL STUDS USED SHALL BE 33 KSI U.N.O. CONFORMING TO BUILDING CODE.
3. STUD TRACKS SHALL BE UNPUNCHED STUDS OF SAME GAUGE AS STUD UNLESS NOTED OTHERWISE.
4. 362T125–43 CEILING TIES (SEE SCHEDULE) WITH 2 – #8 SCREWS AT EACH JOIST.
5. GYPBOARD IS ON ONE SIDE OF CEILING U.N.O.
6. DESIGN LOAD: DEAD LOAD = 5 PSF & LIVE LOAD = 10 PSF, TOTAL DEFLECTION LIMIT = L/360

B

NO STORAGE LOAD ALLOWED

SIZE (SSMA DESIGNATION)	MAXIMUM SPACING	MAXIMUM SPAN	CEILING TIES (BRACING) MAX. SPACING (7/–)
** 362S125–18 (25 GA)	16"	6'–0"	4'–0"
362S125–33 (20 GA)	16"	9'–6"	4'–0"
600S125–33 (20 GA)	16"	14'–0"	4'–0"
800S137–43 (18 GA)	16"	20'–6"	4'–0"

** WEB STIFFENER TO BE REQUIRED AT SUPPORTS. USE STUD SEGMENT OR MIN. 25GA. CLIP ANGLE.

EXAMPLE:

MEMBER DEPTH:
(Example: 6"=600 x 1/100 inches)
All member depths are taken in 1/100 inches
For all "T" sections member depth is the inside to insided dimension.

FLANGE WIDTH:
(Example: 1 5/8" = 1.625"=162 x 1/100 inches)
All flange widths are taken in 1/100 inches

600 S 162 - 54

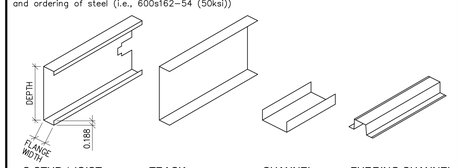
STYLE:
(Example: Stud or Joist section = S)
The four alpha characters utilized by the designator system are:

S = Stud or Joist Sections
T = Track Sections
U = Channel Sections
F = Furring Channel Sections

MATERICAL THICKNESS:
(Example: 0.054 in. = 54 mils: 1 mil = 1/1000 in.)
designator system are:

Material thickness is the minimum base metal thickness in mils. Minimum base metal thickness represents 95% of the design thickness.

Note: For those sections where two different yield strengths (33 ksi and 50 ksi) are shown, the yield strenth use in the design, if greater than 33 ksi, needs to be identified on the design and ordering of steel (i.e., 600s162–54 (50ksi))



DETAIL | 1

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irvine, ca
92612
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fax: 949•863•0851
email: hpa@hparchs.com

Owner:

Project:

TORRANCE DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

HSA & ASSOCIATES, INC.
CONSULTING STRUCTURAL ENGINEERS
1900 N. Gateway Ave. S., Suite 200
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Tel: (626) 521–9931

HSA PROJECT NO. : 19-197

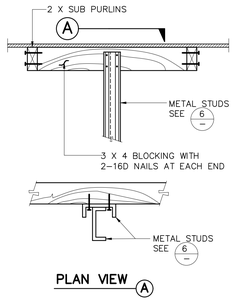
REGISTERED PROFESSIONAL ENGINEER — ARTHUR W. HSU — S 5093 — EXP. 06-30-21 — 12-16-19 — STRUCTURAL — STATE OF CALIFORNIA

Title: METAL STUD DETAILS

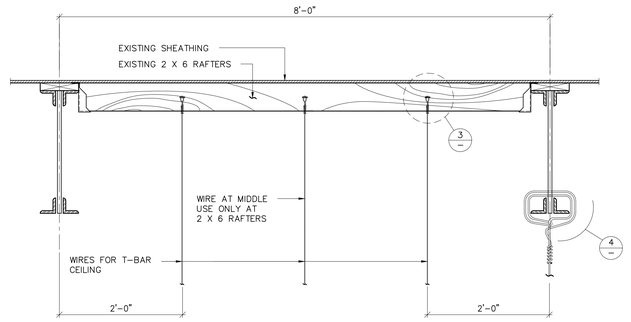
Project Number: 19436
Drawn by: ML
Date: 10/24/2019
Revision:

Sheet:

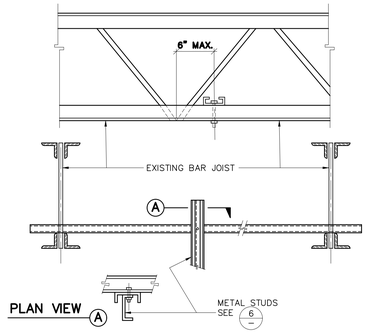
SD-4



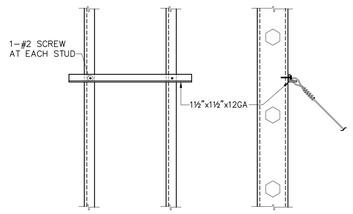
DETAIL (T-BAR CEILING) 7



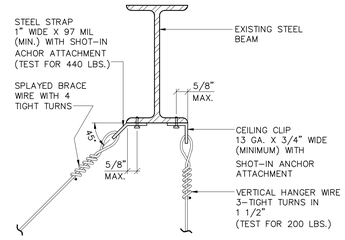
WIRE LOCATIONS 1



CEILING STRUT DETAILS 8



WIRE AT METAL STUDS 5



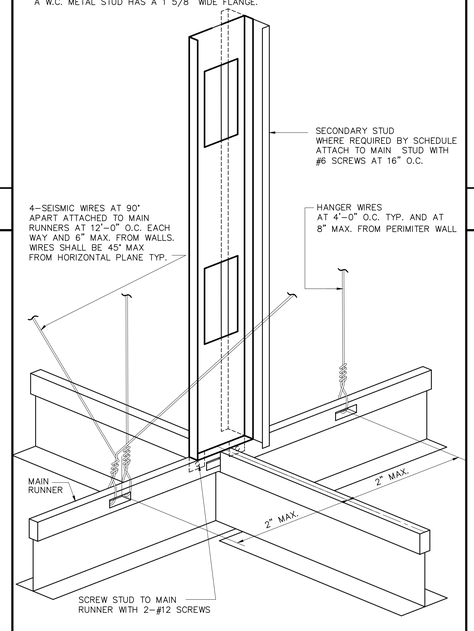
WIRE AT STEEL BEAM 2

SCHEDULE

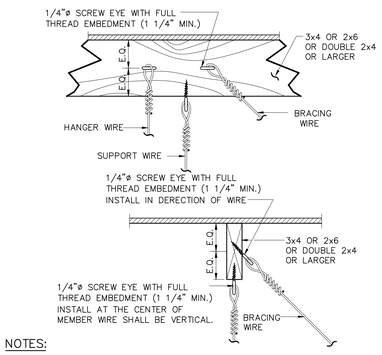
METAL STUDS	SIZE (SSMA DESIGNATION)	MAX. HT. OF COMPRESSION STRUT	
		SINGLE STUD [	DOUBLE STUD [ ]
2 1/2" x 20 GA.	250S125–33	7'–0"	16'–6"
3 5/8" x 20 GA.	362S125–33	–	23'–0"
3 5/8" x 18 GA.	362S137–43	8'–0"	23'–6"
6" x 20 GA.	600S125–33	–	36'–0"
6" x 18 GA.	600S137–43	–	37'–0"
8" x 18 GA.	800S137–43	–	47'–6"

NOTES:

1. FOR DOUBLE STUD ATTACH WEB TO FLANGE WITH NO. 6 SCREW @ 16" O.C. U.B.C.
   A S.S. METAL STUD HAS A 1 1/4" WIDE FLANGE
   A W.C. METAL STUD HAS A 1 5/8" WIDE FLANGE.



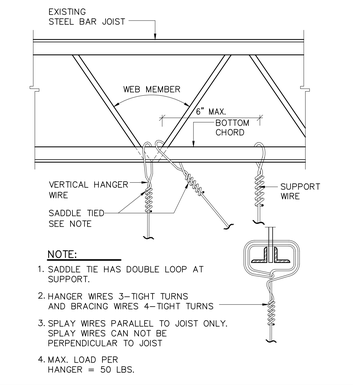
T-BAR CEILING STRUT DETAIL & SCHED. 6



NOTES:

1. NO PIPES, CEILING ,DUCTS ETC. WILL BE SUPPORTED FROM THE 2x4 RAFTER
2. ONLY T BAR CEILING HANGER CAN BE SUPPORTED FROM THE BOTTOM OF 3x4 OR 2x6 MEMBERS
3. MAX. LOAD PER HANGER = 50 LBS.

WIRE AT RAFTERS 3



NOTE:

1. SADDLE TIE HAS DOUBLE LOOP AT SUPPORT.
2. HANGER WIRES 3–TIGHT TURNS AND BRACING WIRES 4–TIGHT TURNS
3. SPLAY WIRES PARALLEL TO JOIST ONLY. SPLAY WIRES CAN NOT BE PERPENDICULAR TO JOIST
4. MAX. LOAD PER HANGER = 50 LBS.

WIRE AT STEEL BARJOIST 4

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HSA PROJECT NO. : 19-197

REGISTERED PROFESSIONAL ENGINEER — RICHARD R. W. HSU — S 5068 — EXP. 06-30-21 — 12-16-19 — STRUCTURAL — STATE OF CALIFORNIA

Title: T-BAR CEILING DETAILS

Project Number: 19436
Drawn by: ML
Date: 10/24/2019
Revision:

Sheet:

SD-5

A. SCOPE
1. INSTALL NEW ROOFTOP PACKAGED UNITS, FANS, GRAVITY VENTS, AIR DISTRIBUTION, AND CONTROLS.
2. METAL DUCTWORK, ELBOWS, AND ALL FITTINGS.
3. DIFFUSERS, REGISTERS, GRILLES.
4. DUCT INSULATION.
5. HVAC CONTROL SYSTEMS.
6. TESTING AND BALANCING.
7. PERMITS AND INSPECTIONS.

B. RELATED WORK SPECIFIED IN OTHER SECTIONS
1. DISCONNECT SWITCHES AND LINE VOLTAGE CONNECTIONS (BY ELECTRICAL).
2. ALL LINE VOLTAGE WIRING AND CONDUIT (BY ELECTRICAL).

C. DRAWINGS
1. BECAUSE OF THE SMALL SCALE OF THESE DRAWINGS, IT IS NOT ALWAYS POSSIBLE TO INDICATE ALL OFFSET, FITTINGS, AND ACCESSORIES WHICH MAY BE REQUIRED. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL EXISTING CONDITIONS BEFORE SUBMITTING HIS BID. NO ADDITIONAL COMPENSATION WILL BE MADE FOR EXTRA DUE TO CONTRACTOR'S FAILURE TO VISIT THE JOB SITE AND/OR FAILURE TO DETERMINE ALL EXISTING CONDITIONS BEFORE SUBMITTING HIS BID.
2. ALL APPLIANCES DESIGNED TO BE FIXED IN POSITION SHALL BE SECURELY FASTENED IN PLACE.

D. CODE REQUIREMENTS
1. ALL WORK COVERED BY THIS SECTION OF THE SPECIFICATION SHALL CONFORM TO LATEST REQUIREMENTS OF THE NFPA, CBC, LOCAL BODY HAVING JURISDICTION.
2. MECHANICAL, PLUMBING, AND ELECTRICAL ENGINEERING AND INSTALLATION SHALL COMPLY WITH THE 2016 CMC, 2016 CPC, AND 2016 CEC EDITION OF THE CODES.

E. FEES, PERMITS, AND INSPECTIONS
1. CONTRACTOR MUST OBTAIN AND PAY FEES FOR PERMITS, LICENSES, INSPECTIONS, ETC., WHICH ARE REQUIRED BY ANY LEGALLY CONSTITUTED AUTHORITY.
2. THE CONTRACTOR SHALL NOT ALLOW OR CAUSE ANY OF HIS WORK TO BE COVERED UP OR CLOSED IN UNTIL IT HAS BEEN INSPECTED, TESTED, AND APPROVED BY ALL AUTHORITIES HAVING JURISDICTION. SHOULD ANY OF HIS WORK BE COVERED UP OR CLOSED IN BEFORE SUCH INSPECTION, HE SHOULD, AT HIS OWN EXPENSE, UNCOVER THE WORK TO THE SATISFACTION OF THE INSPECTION PARTY. ALL RELATED REPAIR WORK COST SHALL BE BORNE BY THIS CONTRACTOR.

F. SITE CONDITIONS
1. CONTRACTOR SHALL ACQUAINT HIMSELF WITH THE SITE CONDITIONS AND VERIFY IN FIELD THE EXACT LOCATIONS OF ALL UNDERGROUND AND ABOVE GROUND PIPING.

G. PRODUCTS
1. HVAC CONTROLS: THERMOSTATS SHALL BE VENSTAR T4800 OR EQUIVALENT WITH 7-DAY PROGRAMMABLE AUTO-CHANGEOVER FEATURES AND DEMAND RESPONSE. MOUNT THERMOSTATS BETWEEN 3 TO 4 FT. ABOVE FINISHED FLOOR. HVAC EQUIPMENT SHALL BE BACNET READY FOR BUILDING AUTOMATION SYSTEM.
2. RIGID DUCTWORK: PROVIDE GALVANIZED STEEL DUCT, TRANSVERSE JOINTS ON ALL SUPPLY AND RETURN AIR DUCTS INSTALLED IN LOCATIONS WHERE AIR LEAKAGE WOULD BE NON-BENEFICIAL TO THE OCCUPIED AREA SHALL BE SEALED WITH 6 OZ. CANVAS SECURED IN PLACE WITH AN APPROVED LAGGING ADHESIVE, EC800 OR EQUAL DUCT SEALING COMPOUND OR DUCT TAPE.
3. FLEXIBLE DUCTWORK: THERMAFLEX M-KE OR APPROVED EQUAL AND SHALL CONFORM TO NFPA BULLETIN #90-A. INSTALLATION OF FACTORY-MADE FLEXIBLE AIR DUCTS AND CONNECTORS SHALL ONLY BE ALLOWED AT ENTRANCE TO DIFFUSER, SHALL BE NO MORE THAN 5 FEET IN LENGTH, AND SHALL NOT BE USED IN LIEU OF RIGID ELBOWS OR FITTINGS PER CMC 603.4.1.
4. DUCT MATERIALS: MATERIALS EXPOSED WITHIN DUCTS OR PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME-SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPMENT RATING OF NOT MORE THAN 50 WHEN TESTED AS A COMPOSITE PER APPLICABLE TESTING STANDARD, CMC 602.2.
5. DUCT SUPPORTS AND HANGERS: RECTANGULAR DUCTS WITH A MAXIMUM SIDE NOT EXCEEDING 30" SHALL HAVE 1" WIDE 18 GAUGE METAL STRAPS. SUPPORT DUCT ON OPPOSITE SIDES WITH SHEET METAL SCREWS TO THE SIDES AND BOTTOM. ROUND DUCTS SHALL HAVE 1" WIDE STRAPS OF THE SAME GAUGE AS THE DUCTS. BRACE AND GUY TO PREVENT LATERAL AN HORIZONTAL MOVEMENT. VERTICAL DUCTS SHALL BE SUPPORTED BY GALVANIZED STEEL ANGLES AND SECURED TO THE DUCTS AND WALL SUPPORTS. SUPPORTS TO HAVE A MAXIMUM SPACING OF 12' PER SMACNA STANDARDS AND CHAPTER 6 OF THE 2016 CMC.
6. VOLUME DAMPERS: PROVIDE SINGLE BLADE VOLUME DAMPERS IN DUCTS CONSTRUCTED OF 22 GAUGE GALVANIZED STEEL FOR DUCTS SMALLER THAN 11 INCHES, 20 GAUGE FOR DUCTS SMALLER THAN 21 INCHES, AND 18 GAUGE FOR DUCTS LARGER THAN 21 INCHES. PROVIDE LOCKING HARDWARE AS REQUIRED. PROVIDE AND INSTALL ON ALL SUPPLY, RETURN, AND EXHAUST DUCTS AS SHOWN ON THE DRAWINGS.
7. FLEXIBLE CONNECTIONS: PROVIDE FLEXIBLE CONNECTIONS BETWEEN AIR MOVING EQUIPMENT AND DUCTWORK.
8. DUCT INSULATION: ALL CONCEALED DUCTS SHALL BE WRAPPED WITH FLEXIBLE GLASS FIBER INSULATION EQUIVALENT TO R-4.2 IN SEMI-CONDITIONED SPACES AND R-8 IN NON-CONDITIONED SPACES. INSULATION NOT REQUIRED ON LINED DUCTS AND DUCTS EXPOSED TO CONDITIONED SPACE. INSTALL INSULATION ONLY AFTER DUCTWORK HAS BEEN INSPECTED AND APPROVED.
9. DUCT OPENINGS: MECHANICAL CONTRACTOR SHALL COORDINATE LOCATION OF ALL DUCT PENETRATIONS OF STRUCTURE WITH GENERAL CONTRACTOR.
10. T-BAR CEILING SUPPLY DIFFUSERS: PRICE MODEL PDS (STEEL, PERFORATED, FRAME TYPE 3 FOR T-BAR) OR EQUAL WITH STANDARD B12 WHITE FINISH.
11. T-BAR CEILING RETURN REGISTERS (DUCTED): PRICE MODEL PDR (STEEL, PERFORATED, FRAME TYPE 3 FOR T-BAR) OR EQUAL WITH STANDARD B12 WHITE FINISH.
12. DUCT DETECTORS: SYSTEM SENSOR D4120 4-WIRE PHOTOELECTRIC DUCT SMOKE DETECTOR OR SIMILAR. SMOKE DETECTION FOR THE DUCT SYSTEM WHERE REQUIRED BY THE MECHANICAL CODE SHALL BE DESIGNED AND INSTALLED PER THE REQUIREMENTS SET FORTH IN NFPA 72 2013 EDITION.

H. EQUIPMENT SUBMITTALS
EQUIPMENT SUBMITTALS FOR MECHANICAL EQUIPMENT SHALL BE SUBMITTED TO ARCHITECT AND ENGINEER FOR APPROVAL PRIOR TO ORDERING AND SHIPPING OF SUCH EQUIPMENT.

I. TESTING
1. AFTER COMPLETION OF WORK, TEST AND BALANCE HVAC SYSTEM TO CONFORM TO THE AIR VOLUME INDICATED ON THE DRAWINGS. PROVIDE ALL TESTING APPARATUS NECESSARY TO PERFORM ALL TESTS. WHERE REQUIRED, PROVIDE LARGER OR SMALLER PULLEYS FOR BELT-DRIVEN FANS AT NO ADDITIONAL COSTS TO OWNER.
2. THE CONTRACTOR SHALL PERFORM THE SPECIFIED TESTS AND BALANCE ALL QUANTITIES TO WITHIN 5% OF THE INDICATED VALUES. IF SYSTEM CANNOT OBTAIN SPECIFIED AIRFLOW, DESIGN ENGINEER SHALL BE NOTIFIED.

J. OPERATING INSTRUCTIONS
1. PREPARE THREE MANUALS WHICH INCLUDE:
a. PART NUMBERS OF ALL REPLACEMENT PARTS.
b. OILING AND LUBRICATION INSTRUCTIONS.
c. AIR FLOW AND AIR BALANCE REPORTS.
2. A MAINTENANCE SCHEDULE WHICH SHALL LIST ALL REQUIRED MAINTENANCE ON ALL EQUIPMENT FURNISHED UNDER THIS SECTION OF THE SPECIFICATIONS.

K. GUARANTEE
1. THE CONTRACTOR SHALL GUARANTEE ALL WORK DONE HEREUNDER AGAINST FAILURE DUE TO DEFECTIVE MATERIALS AND/OR FAULTY WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE COMPLETED PROJECT BY THE OWNER. IF, DURING THIS PERIOD, ANY MATERIALS OR APPARATUS PROVE TO BE DEFECTIVE OR ANY PART OF THE SYSTEM FAIL TO FUNCTION PROPERLY, THE CONTRACTOR SHALL CORRECT THE DEFECTS WITHOUT EXPENSE TO THE OWNER. IF A CONTINUAL PROBLEM EXISTS, IT SHALL BE CORRECTED AND THE GUARANTEE SHALL COMMENCE WHEN COMPLETE.

NOTES & SPECIFICATIONS | 5

M-1.0:	HVAC SCHEDULES, NOTES, AND SPECIFICATIONS
M-1.1:	HVAC DETAILS
M-1.2:	CO SYSTEM DETAILS
M-1.3:	CO SYSTEM DETAILS
M-2.1A:	HVAC PLAN
M-2.1B:	HVAC PLAN
M-2.2:	HVAC PLAN
M-2.3:	HVAC PLAN
M-3.1:	ROOF PLAN
M-3.2:	ROOF PLAN
M-3.3:	ROOF PLAN
T24-1:	TITLE 24 FORMS AND NOTES
T24-2:	TITLE 24 FORMS AND NOTES

SHEET INDEX | 6

SYMBOL	ABBREVIATION	DESCRIPTION
	AD, AP	ACCESS DOOR, ACCESS PANEL
	AFF	ABOVE FINISHED FLOOR
	BDD	BACKDRAFT DAMPER
	--	BRANCH DUCT
CAP	CAP	CAP DUCTWORK
CD	CD	CONDENSATE DRAIN
CDWS, CDWR	CDWS/R	CONDENSER WATER SUPPLY, RETURN
	CU	CONDENSING UNIT
CHWS, CHWR	CHWS/R	CHILLED WATER SUPPLY, RETURN
CO	CO	CARBON MONOXIDE SENSOR
CO2	CO2	CARBON DIOXIDE SENSOR
	DCV	DEMAND CONTROL VENTILATION
	DL	DOOR LOUVER
	EA	EXHAUST AIR
EAR, EAG	EXHAUST AIR REGISTER, GRILLE	
	EC	EVAPORATIVE COOLER
	EF	EXHAUST FAN
	EH	ELECTRIC HEATER
	FC	FAN COIL
	FDD	FAULT DETECTION AND DIAGNOSTICS
FS	FLOOR SINK	
	GA	GAUGE
	GF	GAS FURNACE
	GV	GRAVITY VENT
	HP	HEATPUMP, HORSEPOWER
HWS, HWR	HWS/R	HEATING HOT WATER SUPPLY, RETURN
	SFD	SMOKE FIRE DAMPER
	SF	SUPPLY FAN
	OBD	OPPOSED BLADE DAMPER
	OSA	OUTSIDE AIR
POC	POC	POINT OF CONNECTION
	RA	RETURN AIR
RAR, RAG	RETURN AIR REGISTER, GRILLE	
RL, RS	RL, RS	REFRIGERANT LIQUID, SUCTION
	RTU	ROOFTOP UNIT
SZ	--	SENSOR AND ZONE NO.
	SA	SUPPLY AIR
SAR, SAG	SUPPLY AIR REGISTER, GRILLE	
SD	SD	SMOKE DETECTOR
SLD	SLD	SOUND LINED DUCTWORK
S.O.V.	SHUT-OFF VALVE	
S.P.	STATIC PRESSURE	
$	--	SWITCH
TZ	T-STAT	THERMOSTAT AND ZONE NO.
TAB	TESTING, ADJUSTING, AND BALANCING	
TG	TRANSFER GRILLE	
TYP.	TYPICAL	
UC	DOOR UNDERCUT	
VAV	VARIABLE AIR VOLUME	
VAV BOX	VAV BOX	
VAV DIFFUSER	VAV DIFFUSER	
	VD	VOLUME DAMPER
	VFD	VARIABLE FREQUENCY DRIVE
	VIF	VERIFY IN FIELD
	VRF	VARIABLE REFRIGERANT FLOW
	WAC	WALL MOUNTED AC UNIT
	WSHP	WATER SOURCE HEAT PUMP
XAC, XHP	EXISTING AC, EXISTING HEATPUMP	
ZD	ZONE DAMPER	
(E) / (N) / (R)	EXISTING / NEW / REPLACE	

(E) FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR
(M) FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
(MP) FURNISHED BY MECHANICAL AND INSTALLED BY ELECTRICAL CONTRACTOR
(P) FURNISHED AND INSTALLED BY PLUMBING CONTRACTOR

CEILING DIFFUSER, RAR, AND EAR NOTATION: NECK SIZE (IN DIA.) / AIR QUANTITY (CFM)

LINEAR SUPPLY AIR REGISTER NOTATION: NO. OF SLOT(S) WIDTH (IN.) / AIR QUANTITY PER FEET (CFM) / TOTAL LENGTH (FT.)

MECHANICAL LEGEND | 3

PERFORM TESTING AND ADJUSTING PROCEDURES IN ACCORDANCE WITH INDUSTRY BEST PRACTICES AND APPLICABLE NATIONAL STANDARDS ON EACH SYSTEM. (CG 5.410.3)

BEFORE A NEW SPACE-CONDITIONING SYSTEM SERVING A BUILDING OR SPACE IS OPERATED FOR NORMAL USE, THE SYSTEM SHALL BE BALANCED IN ACCORDANCE WITH THE PROCEDURES DEFINED BY THE TESTING, ADJUSTING AND BALANCING BUREAU NATIONAL STANDARDS; THE NATIONAL ENVIRONMENTAL BALANCING BUREAU PROCEDURAL STANDARDS; OR ASSOCIATED AIR BALANCE COUNCIL NATIONAL STANDARDS. (CG 5.410.4.3.1)

AFTER COMPLETION OF TESTING, ADJUSTING AND BALANCING, PROVIDE A FINAL REPORT OF TESTING SIGNED BY THE INDIVIDUAL RESPONSIBLE FOR PERFORMING THESE SERVICES. (CG 5.410.4.4)

PROVIDE THE BUILDING OWNER WITH DETAILED OPERATING AND MAINTENANCE INSTRUCTIONS AND COPIES OF GUARANTIES AND WARRANTIES FOR EACH SYSTEM PRIOR TO FINAL INSPECTION. (CG 5.410.4.5)

INCLUDE A COPY OF ALL INSPECTION VERIFICATIONS AND REPORTS REQUIRED BY THE ENFORCING AGENCY WITH THE FINAL REPORT TO THE BUILDING OWNER. (CG 703.1)

AT THE TIME OF ROUGH INSTALLATION OR DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HEATING AND COOLING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF DUST OR DEBRIS WHICH MAY COLLECT IN THE SYSTEM. (CG 5.504.3)

ADHESIVES AND SEALANTS USED ON THE PROJECT SHALL MEET THE REQUIREMENTS OF THE FOLLOWING STANDARDS. (CG 5.504.4.1)

A. ADHESIVES, ADHESIVE BONDING PRIMERS, ADHESIVE PRIMERS, SEALANTS, SEALANT PRIMERS AND CAULKS SHALL COMPLY WITH LOCAL OR REGIONAL AIR POLLUTION CONTROL OR AIR QUALITY MANAGEMENT DISTRICT RULES WHERE APPLICABLE OR SCAQMD RULE 1168 VOC LIMITS, AS SHOWN IN TABLES 5.504.4.1 AND 5.504.4.2.

B. AEROSOL ADHESIVES AND SMALLER UNIT SIZES OF ADHESIVES AND SEALANT OR CAULKING COMPOUNDS (IN UNITS OF PRODUCT, LESS PACKAGING, WHICH DO NOT WEIGH MORE THAN ONE POUND AND DO NOT CONSIST OF MORE THAN 16 FLUID OUNCES) SHALL COMPLY WITH STATEWIDE VOC STANDARDS AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS, OF CALIFORNIA CODE OF REGULATIONS, TITLE 17, COMMENCING WITH SECTION 94507.

FOR MECHANICALLY OR NATURALLY VENTILATED SPACES IN BUILDINGS, MEET THE MINIMUM REQUIREMENTS OF SECTION 121 OF THE CALIFORNIA ENERGY CODE, CCR, TITLE 24, PART 6 AND CHAPTER 4 OF CCR, TITLE 8 OR THE APPLICABLE LOCAL CODE, WHICHEVER IS MORE STRINGENT. (CG 5.506.1)

IN MECHANICAL VENTILATED BUILDINGS, PROVIDE REGULARLY OCCUPIED AREAS OF THE BUILDING WITH AIR FILTRATION MEDIA FOR OUTSIDE AND RETURN AIR PRIOR TO OCCUPANCY THAT PROVIDES AT LEAST A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF AT LEAST 8. (CG 5.404.5.3)

INSTALLATIONS OF HVAC, REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT SHALL COMPLY WITH THE FOLLOWING:

A. INSTALL HVAC AND REFRIGERATION EQUIPMENT THAT DOES NOT CONTAIN CHLOROFLUOROCARBONS (CFCs).

B. INSTALL HVAC AND REFRIGERATION EQUIPMENT THAT DOES NOT CONTAIN HALONS.

CAL GREEN SECTION 702.1 REQUIRES HVAC SYSTEM INSTALLERS TO BE TRAINED AND CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS INCLUDING DUCTS AND EQUIPMENT BY A NATIONALLY OR REGIONALLY RECOGNIZED TRAINING OR CERTIFICATION PROGRAM. UNCERTIFIED PERSONS MAY PERFORM HVAC INSTALLATIONS WHEN UNDER THE DIRECT SUPERVISION AND RESPONSIBILITY OF A PERSON TRAINED AND CERTIFIED TO INSTALL HVAC SYSTEMS OR CONTRACTOR LICENSED TO INSTALL HVAC SYSTEMS. EXAMPLES OF ACCEPTABLE HVAC TRAINING AND CERTIFICAITON PROGRAMS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

A. STATE CERTIFIED APPRENTICESHIP PROGRAMS.

B. PUBLIC UTILITY TRAINING PROGRAMS.

C. TRAINING PROGRAMS SPONSORED BY TRADE, LABOR OR STATEWIDE ENERGY CONSULTING OR VERIFICATION ORGANIZATIONS.

D. PROGRAMS SPONSORED BY MANUFACTURING ORGANIZATIONS.

E. OTHER PROGRAMS ACCEPTABLE TO THE ENFORCING AGENCY.

SPECIAL INSPECTORS MUST BE QUALIFIED AND ABLE TO DEMONSTRATE COMPETENCE IN THE DISCIPLINE THEY ARE INSPECTING.
(CG 702.2)

CALGREEN NOTES | 4

ROOFTOP PACKAGED UNITS WITH GAS HEATING

UNIT NO.	TONS	MANUFACTURER & MODEL NO.	COOLING CAP. BTU/HR.	SEER [EER]	HEATING CAP. BTU/HR. IN/OUT	AFUE	AIR QUANTITY CFM	AIR QUANTITY E.S.P. (IN.)	ELECTRICAL MCA	ELECTRICAL FUSE	ELECTRICAL VOLTAGE	OPER. WT. (LBS.)	FILTERS (MERV-8)	REMARKS
AC 120A ~ AC 120B	10	CARRIER 48HCED12	115,000	[11.5]	180,000 / 148,000	82%	4,000	0.8	26	30	460V. 3ø	1,530	4-20"x20"x2"	SEE NOTES: 1, 2, 3, 5, 6, 7, 9.
AC 102A	8.5	CARRIER 48HCDD09	97,000	[12.0]	125,000 / 103,000	82%	3,400	0.8	22	25	460V. 3ø	1,380	4-20"x20"x2"	SEE NOTES: 1, 2, 3, 5, 6, 7, 8.
AC 80A	5	CARRIER 48GCDM06	60,000	16.0	67,000 / 53,000	80%	2,000	0.8	13	20	460V. 3ø	800	4-16"x16"x2"	SEE NOTES: 1, 3, 4, 5, 6, 7.
AC 35A	3	CARRIER 48GCDM04	35,250	16.0	67,000 / 53,000	81%	1,200	0.8	10	15	460V. 3ø	700	2-16"x25"x2"	SEE NOTES: 1, 3, 4, 6, 7.

INTERLOCK AC120A, AC120B FOR GLOBAL SHUTDOWN UPON SMOKE DETECTION.

NOTES:
1. FACTORY CURB.
2. 2-SPEED INDOOR FAN MOTOR.
3. ECONOMIZER W/ DRY BULB SENSOR AND FDD.
4. BAROMETRIC RELIEF.
5. DEMAND CONTROL VENTILATION W/ CO2 SENSOR.
6. DUCT SMOKE DETECTOR.
7. BACNET CONTROL. COORDINATE W/ BMS VENDOR.
8. POWER EXHAUST PROVIDED BY MICROMETL. REQUIRES SEPARATE POWER CONNECTION. 460V 3ø, 1 HP, FLA: 2.5, MCA: 3.1, MOCP: 5.6. OPER. WT. = 270#.
9. POWER EXHAUST PROVIDED BY MICROMETL. REQUIRES SEPARATE POWER CONNECTION. 460V 3ø, 2 HP, FLA: 4.0, MCA: 5.0, MOCP: 9.0. OPER. WT. = 330#.

OUTDOOR CONDENSING HEATPUMP UNITS

UNIT NO.	TONS	MANUFACTURER & MODEL NO.	COOLING CAP. BTU/HR.	SEER	HEATING CAP. BTU/HR.	HSPF	ELECTRICAL MCA	ELECTRICAL FUSE	ELECTRICAL VOLTAGE	OPER. WT. (LBS.)	REMARKS
CU 1A ~ CU 1B	3	LG LSU363HLV	34,000	17.5	38,000	10	19	30	208V. 1ø	130	MOUNTED ON PAD ON ROOF. CONDENSING UNIT FOR DUCTLESS WALL MOUNT UNIT IN LT. ROOM.

DUCT FREE WALL MOUNT EVAPORATOR

UNIT NO.	MANUFACTURER & MODEL NO.	AIR QUANTITY MAX CFM	AIR QUANTITY E.S.P.	ELECTRICAL HP	ELECTRICAL MCA	ELECTRICAL FUSE	ELECTRICAL VOLTAGE	OPER. WT. (LBS.)	REFRIGERANT PIPING	MAX PIPE LENGTH (FT.)	REMARKS
WAC 1A ~ WAC 1B	LG LSN363HLV	953	--	POWERED FROM OUTDOOR UNIT				40	3/8"RL, 3/8"RS	164	WALL MOUNTED EVAPORATOR SERVING LT. ROOM WITH CONDENSATE PUMP. REFRIGERANT PIPING SHALL BE SIZED PER THE MANUFACTURER'S RECOMMENDATION. LOCKOUT HEATING (FOR COOLING ONLY).
P 1A ~ P 1B	LITTLE GIANT EC-400	--	--	1/30	0.24	--	120V. 1ø	1.2	-------		CONDENSATE PUMP MOUNTED ON WALL. INLET SHALL BE BELOW COIL DRAIN OUTLET. PIPING SHOULD BE FLEXIBLE TUBING OR PIPE.

GAS-HEATED SUPPLY FANS

UNIT NO.	MANUFACTURER & MODEL NO.	CFM	EXT. S.P.	SERVING	ELECTRICAL HP	ELECTRICAL MCA	ELECTRICAL FUSE	ELECTRICAL VOLTAGE	OPER. WT. (LBS.)	WINTER DESIGN (°F)	LAT (°F)	HEATING INPUT/OUTPUT (MBTUH)	ROOF OPENING	REMARKS
SF 1	GREENHECK DGX-115-H22	4,000	0.5"	WAREHOUSE	3	6.3	15	460V. 3ø	1,220	35	70	155.0/142.6	22"x18"	100% OSA, DIRECT GAS-FIRED HEATING. FACTORY CURB. 2" MERV-8 FILTER. REMOTE CONTROL VFD. BIRDSCREEN. SMOKE DETECTOR. INSULATED. 4-WAY DIFFUSER. OUTLET DAMPER.
SF 2 ~ SF 5	GREENHECK DGX-120-H32	8,000	0.5"	WAREHOUSE	5	9.8	15	460V. 3ø	1,750	35	70	309.9/285.1	28"x26"	100% OSA, DIRECT GAS-FIRED HEATING. FACTORY CURB. 2" MERV-8 FILTER. REMOTE CONTROL VFD. BIRDSCREEN. SMOKE DETECTOR. INSULATED. 4-WAY DIFFUSER. OUTLET DAMPER.

ADDITIONAL REMARKS:
1. BACNET CONTROL COMPATIBLE. INTEGRATE W/ BUILDING AUTOMATION SYSTEM.

EXHAUST FANS

UNIT NO.	MANUFACTURER & MODEL NO.	AIR QUANTITY CFM	AIR QUANTITY RPM	AIR QUANTITY S.P. (IN.)	ELECTRICAL HP [WATTS]	ELECTRICAL VOLTAGE	OPER. WT. (LBS.)	ROOF OPENING [WALL OPENING]	SERVICE	REMARKS
EF 1 ~ EF 8	GREENHECK CUBE-240	5,250	797	0.7	1-1/2	460V. 3ø	180	26½"x26½"	DRIVE AISLE	ROOF MOUNTED UPBLAST FAN. FACTORY CURB. BACKDRAFT DAMPER. VFD. CONTROL BY CO SYSTEM. SEE SEQUENCE OF OPERATION FOR SETPOINTS.
EF 9	GREENHECK CUBE-360	11,200	584	1.0	5	460V. 3ø	370	38½"x38½"	PARKING GARAGE WEST	ROOF MOUNTED UPBLAST FAN. FACTORY CURB. BACKDRAFT DAMPER. VFD. CONTROL BY CO SYSTEM. SEE SEQUENCE OF OPERATION FOR SETPOINTS.
EF 10	GREENHECK CUBE-240	5,600	827	0.7	2	460V. 3ø	190	26½"x26½"	PARKING GARAGE WEST	ROOF MOUNTED UPBLAST FAN. FACTORY CURB. BACKDRAFT DAMPER. VFD. CONTROL BY CO SYSTEM. SEE SEQUENCE OF OPERATION FOR SETPOINTS.
EF 11 ~ EF 13	GREENHECK CUBE-360	9,600	550	1.0	3	460V. 3ø	350	38½"x38½"	PARKING GARAGE WEST	ROOF MOUNTED UPBLAST FAN. FACTORY CURB. BACKDRAFT DAMPER. VFD. CONTROL BY CO SYSTEM. SEE SEQUENCE OF OPERATION FOR SETPOINTS.
EF 12	GREENHECK CUBE-300	8,000	642	0.7	2	460V. 3ø	250	32½"x32½"	PARKING GARAGE WEST	ROOF MOUNTED UPBLAST FAN. FACTORY CURB. BACKDRAFT DAMPER. VFD. CONTROL BY CO SYSTEM. SEE SEQUENCE OF OPERATION FOR SETPOINTS.
EF 14 ~ EF 17	GREENHECK CUBE-360	13,040	636	1.0	5	460V. 3ø	370	38½"x38½"	PARKING GARAGE EAST	ROOF MOUNTED UPBLAST FAN. FACTORY CURB. BACKDRAFT DAMPER. VFD. CONTROL BY CO SYSTEM. SEE SEQUENCE OF OPERATION FOR SETPOINTS.
EF 15 ~ EF 16	GREENHECK CUBE-300	8,200	651	0.7	3	460V. 3ø	280	32½"x32½"	PARKING GARAGE EAST	ROOF MOUNTED UPBLAST FAN. FACTORY CURB. BACKDRAFT DAMPER. VFD. CONTROL BY CO SYSTEM. SEE SEQUENCE OF OPERATION FOR SETPOINTS.
EF 18 ~ EF 19	GREENHECK CUBE-360	9,760	651	0.7	3	460V. 3ø	350	38½"x38½"	PARKING GARAGE EAST	ROOF MOUNTED UPBLAST FAN. FACTORY CURB. BACKDRAFT DAMPER. VFD. CONTROL BY CO SYSTEM. SEE SEQUENCE OF OPERATION FOR SETPOINTS.
EF 20	GREENHECK GB-161	2,140	1155	0.8	3/4	120V. 1ø	100	18½"x18½"	RESTROOMS, LOCKER	ROOF MOUNTED CENTRIFUGAL FAN. FACTORY CURB. BACKDRAFT DAMPER. INTERLOCK WITH 7-DAY PROGRAMMABLE TIME CLOCK.
EF 21	GREENHECK GB-141	1,600	1304	0.8	3/4	120V. 1ø	100	18½"x18½"	RESTROOMS, LOCKER	ROOF MOUNTED CENTRIFUGAL FAN. FACTORY CURB. BACKDRAFT DAMPER. INTERLOCK WITH 7-DAY PROGRAMMABLE TIME CLOCK.
EF 22	GREENHECK SP-A190	150	1400	0.3	[47]	120V. 1ø	20	----	JANITOR	CEILING MOUNTED FAN. BACKDRAFT DAMPER. SPEED CONTROLLER. INTERLOCK WITH LIGHT SWITCH CONTROL.
EF 23	GREENHECK SP-A90	70	900	0.3	[15]	120V. 1ø	15	----	MOTHER'S RM	CEILING MOUNTED FAN. BACKDRAFT DAMPER. SPEED CONTROLLER. INTERLOCK WITH LIGHT SWITCH CONTROL.
EF 24 ~ EF 25	GREENHECK GB-101	500	1229	0.5	1/4	120V. 1ø	70	14½"x14½"	PARKING GARAGE R.R.	ROOF MOUNTED CENTRIFUGAL FAN. FACTORY CURB. BACKDRAFT DAMPER. INTERLOCK WITH 7-DAY PROGRAMMABLE TIME CLOCK.

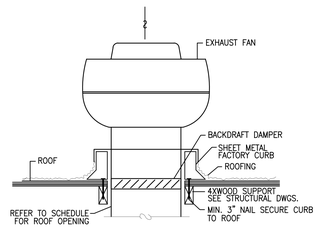
GRAVITY VENTILATOR

UNIT NO.	MANUFACTURER & MODEL NO.	AIR QUANTITY CFM	AIR QUANTITY S.P. (IN.)	THROAT OPENING	CURB DIMENSION	OPER. WT. (LBS.)	REMARKS
GV 1 ~ GV 4	GREENHECK FGI	11,000	0.05	54"x64"	60"x70"	430	ROOF MOUNTED INTAKE GRAVITY VENTILATOR FOR PARKING GARAGE WEST. FACTORY CURB. BIRDSCREEN.
GV 5 ~ GV 8	GREENHECK FGI	15,500	0.05	60"x82"	66"x88"	560	ROOF MOUNTED INTAKE GRAVITY VENTILATOR FOR PARKING GARAGE EAST. FACTORY CURB. BIRDSCREEN.
GV 9 ~ GV 11	GREENHECK FGI	14,000	0.05	60"x74"	66"x80"	540	ROOF MOUNTED INTAKE GRAVITY VENTILATOR FOR PARKING GARAGE RESTROOMS. FACTORY CURB. BIRDSCREEN.
GV 12 ~ GV 13	GREENHECK GRSI	500	0.05	16"ø	24½"x24½"	40	ROOF MOUNTED INTAKE GRAVITY VENTILATOR FOR PARKING GARAGE RESTROOMS. FACTORY CURB. BIRDSCREEN.

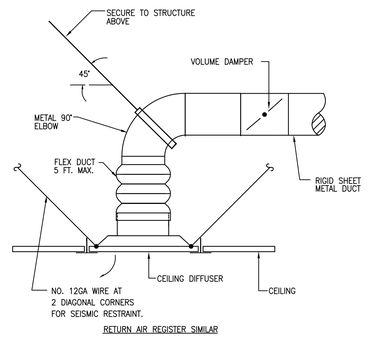
CEILING FANS

UNIT NO.	MANUFACTURER & MODEL NO.	FAN DIAM (FT.)	ELECTRICAL RPM	ELECTRICAL HP	ELECTRICAL FLA	ELECTRICAL FUSE	ELECTRICAL VOLTAGE	OPER. WT. (LBS.)	SERVICE	REMARKS
CF 1 ~ CF 7	BIG ASS FANS PF8-24	24	60	2.0	4.4	10	460V. 3ø	270	WAREHOUSE	BACNET CONTROL. INTEGRATE W/ BLDG AUTOMATION SYSTEM. PROVIDE LOCAL CONTROL/ OVERRIDE SWITCH. MOUNT FAN AS HIGH AS POSSIBLE.
CF 8 ~ CF 9	BIG ASS FANS PF8-12	12	135	1.5	3.5	10	460V. 3ø	200	WAREHOUSE	BACNET CONTROL. INTEGRATE W/ BLDG AUTOMATION SYSTEM. PROVIDE LOCAL CONTROL/ OVERRIDE SWITCH. MOUNT FAN AS HIGH AS POSSIBLE.

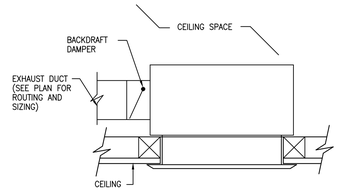
ADDITIONAL REMARKS:
1. THE HVLS FAN SHALL BE CENTERED APPROXIMATELY BETWEEN FOUR ADJACENT SPRINKLERS.
2. THE VERTICAL CLEARANCE FROM THE HVLS FAN TO SPRINKLER DEFLECTOR SHALL BE A MIN OF 3 FT
3. ALL FAN PARTS MUST BE GREATER THAN 2 FT AWAY FROM ALL OBSTRUCTIONS.
4. FAN MOUNTED AT SAME LEVEL OR HIGHER THAN DIFFUSER MUST BE AT LEAST 24 FT AWAY FROM THE DIFFUSER.
5. ALL HVLS FANS SHALL BE INTERLOCKED TO SHUT DOWN IMMEDIATELY UPON RECEIVING A WATER FLOW SIGNAL FROM THE ALARM SYSTEM IN ACCORDANCE W/ THE REQUIREMENTS OF NFPA72.
6. VERIFY EXTENSION TUBE LENGTH AND MOUNTING BRACKET W/



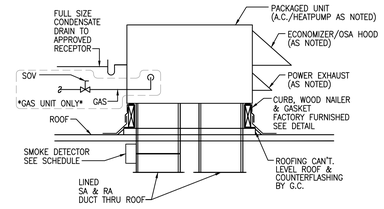
UPBLAST EXHAUST FAN | 12



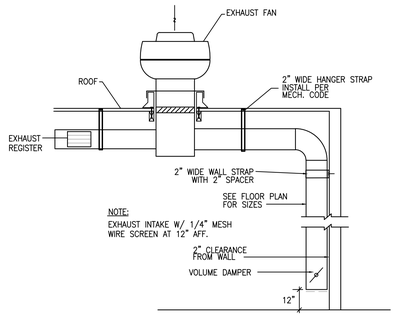
LAY-IN CEILING DIFFUSER | 9



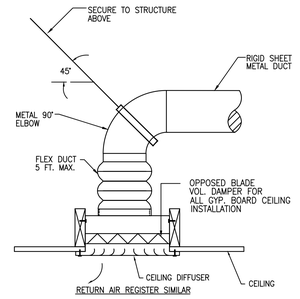
CEILING EXHAUST FAN | 5



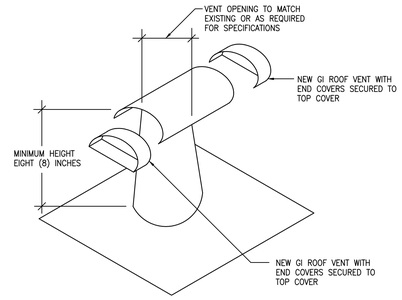
ROOFTOP PACKAGED UNIT | 1



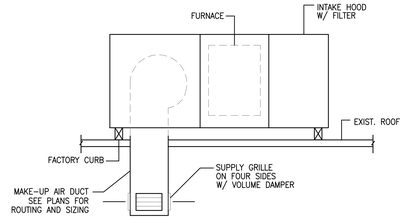
GARAGE EXHAUST INLETS HIGH/LOW | 13



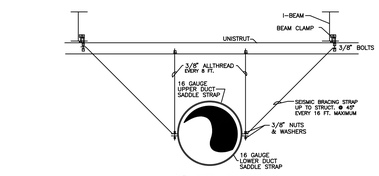
HARD-LID CEILING DIFFUSER | 10



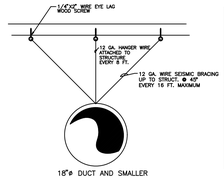
ROOF CAP TERMINATION | 6



GAS-HEATED SUPPLY FAN | 2



20"ø DUCT AND LARGER



18"ø DUCT AND SMALLER

ROUND DUCT GAUGE (SPIRAL SEAM)

POSITIVE PRESSURE (+2" W.G.)	
DUCT DIAMETER, IN.	GAUGE
<=8"ø	28
9"ø–14"ø	28
15"ø–26"ø	26
27"ø–36"ø	24
NEGATIVE PRESSURE (–2" W.G.)	
<=15"ø	28
16"ø–17"ø	26
18"ø–23"ø	24
24"ø–30"ø	22

PER SMACNA STANDARDS

A. VERTICAL DUCTS

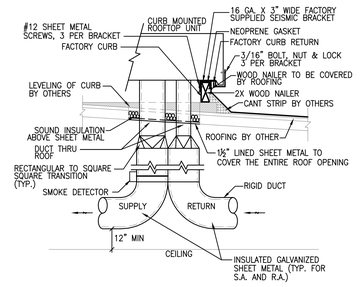
MAX SIDE OF RECTANGULAR DUCT	METAL STRAP OR ANGLE BRACKET	MAX DIAMETER OF ROUND DUCTS	STRAP
24"	1"X⅛" STRAP	10"	0.047" (18GA) GAL. STEEL 2" WIDE
36"	1" X 1" X ⅛" ANGLE	20"	0.058" (16GA) GAL. STEEL 2" WIDE
48"	1½" X 1½" X ⅛" ANGLE	40"	⅛"STEEL X 1½"

B. HORIZONTAL DUCTS

MAX SIDE OF RECTANGULAR DUCT	METAL STRAP OR ANGLE BRACKET	MAX DIAMETER OF ROUND DUCTS	STRAP
18"	1" X 18 GA	10"	SAME GAGE AS GAL. STEEL DUCT, 1" WIDE OR 18GA GAL. STEEL WIRE ON 10' CENTERS
30"	1" X 18 GA		
48"	1" X ⅛"	20"	SAME GAGE AS GAL. STEEL DUCT, 1" WIDE OR 8GA GAL. STEEL WIRE TIED TO 1" GAL. STEEL BAND AROUND DUCT ON 10' CENTERS
60"	1" X ⅛"	40"	
80"	1" X ⅛"		

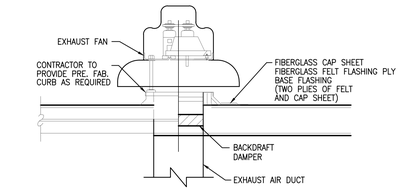
*DUCT MATERIAL AND GAGE SHOULD BE COMPLY WITH CHAPTER 6 OF CALIFORNIA MECHANICAL CODE AND CONSTRUCTED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS -- METAL AND FLEXIBLE.

DUCT SUPPORT AND GAUGE | 11

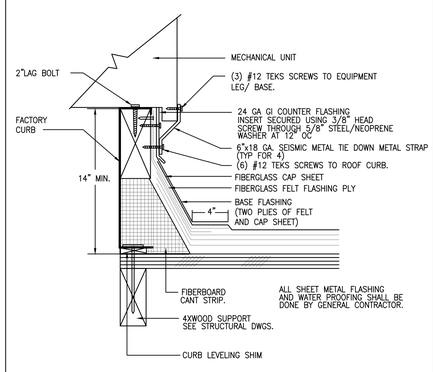


NOTE:
DUCT SMOKE DETECTOR SHALL BE LOCATED WHERE IT CAN BE ACCESSIBLE.

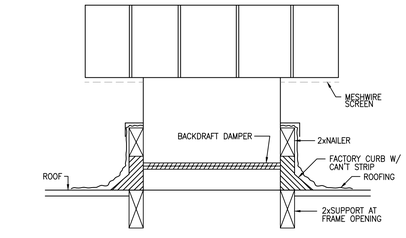
ROOF PENETRATION DETAIL | 7



EXHAUST FAN | 3



ROOF CURB DETAIL | 8



GRAVITY VENT | 4

HPA architecture

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fax: 949•863•0851
email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
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Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: HVAC DETAILS

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

M-1.1

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e-mail: johnny@rpmpe.com

REGISTERED PROFESSIONAL ENGINEER
No. 30465
Exp.12-31-19
MECHANICAL
STATE OF CALIFORNIA

12/09/2019

RPM #19-755 12/09/19

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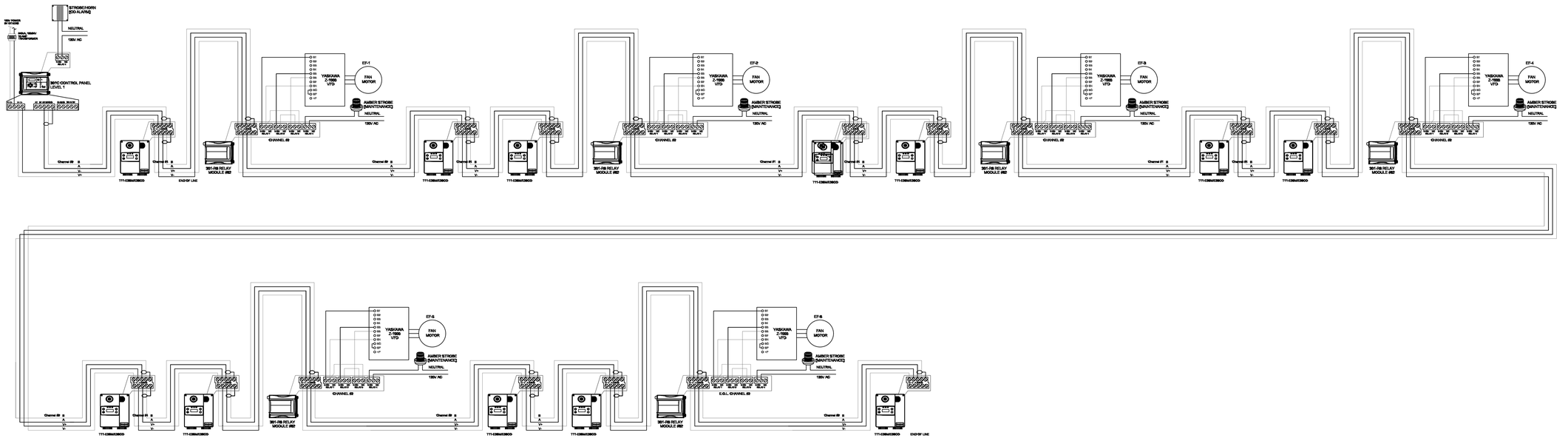

PARKING LEVEL

CONTRACTOR TO COORDINATE FINAL CO SYSTEM LAYOUT, SEQUENCE OF OPERATION, AND COMPONENTS WITH MANUFACTURER'S REPRESENTATIVE. FOR QUESTIONS PLEASE CONTACT:
DENNY QUAN (HALDEMAN): 562-237-3395
dquan@haldemaninc.com
ALEX MUNOZ (HALDEMAN): 213-999-3160
amunoz@haldemaninc.com

TYPICAL 301-R8 RELAY MODULE		
relay 1:	LOW SPEED FAN	
relay 2:	MEDIUM SPEED FAN	
relay 3:	HIGH SPEED FAN	
relay 4:	SPARE	
relay 5:	SPARE	
relay 6:	SPARE	
relay 7:	SPARE	
relay 8:	SPARE	

Honeywell
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RPM
Engineers, Inc.
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e-mail: johnny@rpmpe.com

12/09/2019

REGISTERED PROFESSIONAL ENGINEER
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Exp.12-31-19
MECHANICAL
STATE OF CALIFORNIA

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Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: CO SYSTEM DETAILS

Project Number: 19436
Drawn by: ML
Date: 10/24/19
Revision:

Sheet:

M-1.2

RPM #19-755 12/09/19

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CITY OF LOS ANGELES
CALIFORNIA

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LOS ANGELES, CA 90012
FRANK M. BUSH
GENERAL MANAGER
SUPERINTENDENT OF BUILDING
OSAMA YOUNAN, P.E.
EXECUTIVE OFFICER

Honeywell Analytics
405 Barclay Blvd.
Lincolnshire, IL 60069
Attn: Charlene Numrych

RESEARCH REPORT NO.: 500237
Date: October 29, 2018
Expires: October 29, 2019

GENERAL APPROVAL– Single and Multi-Station *Carbon Monoxide Detection Systems* – Manufactured by Honeywell Analytics. – E3Point Series, 301 C Series – 301C controller, E3SA, E3AR, E3SB and E3SM monitors – Rated 24VAC, 60HZ, 1PH, 0.5 Ampere and Sensor Model E3SRMCO.

DETAILS
This approval is for fire, shock, and electrical hazards only and does not address those aspects of detection of gases the device is designed or calibrated to detect.

CONDITIONS OF APPROVAL
The installation and use of the carbon monoxide detection system is approved when the following provisions are met:

1. Each Carbon Monoxide Controller shall be plainly and permanently marked in letter heights not smaller than 1/8 inch on a contrasting background where readily visible with the following:
   - A. Manufacturer's name,
   - B. Model designation,
   - C. Serial Number,
   - D. Electrical rating, in Volts, Amperes and Frequency,
   - E. "NOT SUITABLE FOR HAZARDOUS LOCATIONS",
   - F. "For Carbon Monoxide Detection Only.",
   - G. "For use with Honeywell Analytics Carbon Monoxide Sensors ONLY",
   - I. "The installation of this *CO Detection System* shall be based on the conditions of approval listed in Research Report (RR) #500237. Not valid if RR is not current. For a copy of the RR visit www.LADBS.org or call 213-482-6721."

LADBS G-5 (Rev.11/23/2016) AN EQUAL EMPLOYMENT OPPORTUNITY - AFFIRMATIVE ACTION EMPLOYER

2. Each Carbon Monoxide Sensor shall be plainly and permanently marked on a contrasting background where readily visible with the following:
   - A. Manufacturer's name,
   - B. Model designation,
   - C. Electric rating,
   - D. Manufactured date,
   - E. "Carbon Monoxide Sensor"
   - F. "For use with Honeywell Analytics, Controllers ONLY."
   - G. "This CO Sensor must be replaced within 6 years of the manufactured date."
3. The final installation of this Carbon Monoxide detection system, including secondary wiring from controller to sensors shall comply with requirements of "Class 1" in approved raceways or conduits.
4. This CO detection system shall be installed, calibrated, and maintained by qualified personnel in accordance with the manufacturer's instructions and shall comply with the applicable provisions of the Los Angeles City Codes (Building, Electrical, Mechanical and Fire).
5. Plans for the installation of the carbon monoxide detection system shall be submitted to and approved by the Mechanical Plan Check and the Electrical Plan Check prior to each installation.
6. The performance and sensitivity of this carbon monoxide detection system must be evaluated, and tested by an approved recognized (NRTL) testing agency.
7. An electrical permit shall be obtained prior to installation or relocation of this equipment in the City of Los Angeles.
8. The installation and performance of this Carbon Monoxide detection system shall comply with the applicable provisions of the Los Angeles City Codes (Building, Electrical, Mechanical and Fire) and California Title-24 Part 6.
9. The maximum allowable concentration level of the Carbon Monoxide shall be in compliance with the requirements of California Title-24 Part 6 and OSHA-recommended limits.
10. This Carbon Monoxide sensor shall be replaced by qualified personnel within 6 years of the manufactured date, in accordance with the manufacturer's instructions.
11. The audible device shall have a different tone from life safety devices.
12. The Carbon Monoxide detection system shall be serviced by qualified personnel at least once a year and it shall always be in optimum operating condition. The building owner shall maintain all service records and make them available to the Department of Building and Safety for inspection when requested.
13. A part, when replaced, shall be of the identical original approved manufactured part and rating, unless otherwise approved by the Los Angeles City Electrical Testing Laboratory.
14. This approval shall be void if the product is modified without prior authorization from the Los Angeles City Electrical Testing Laboratory.
15. A copy of this conditional approval letter and the electrical permit shall be made available at each installation site.

DISCUSSION

The product covered in this Research Report is a *Carbon Monoxide* (CO) *Detection System* for use in non-hazardous locations such as commercial buildings and parking garages. This equipment monitors the concentration level of carbon monoxide in the surrounding air.

When the (CO) level exceeds allowable values, set by California Title-24 Part 6 and OSHA, the CO detection system, activates the building's ventilation system. If the concentration of (CO) rises above the recommended upper limits set by California Title-24 Part 6 and OSHA, an audible and visual alarm will be activated.

An on-board microcomputer supervises and verifies the operation of the system and displays the status to the indicator lights. If a malfunction occurs, the ventilation system is activated and a fault warning signal is activated.

When the system is installed in accordance with the provisions of this General Approval, it should meet the minimum safety standards of the Los Angeles City Electrical Code.

For this General Approval to be valid on any installation in the City of Los Angeles, an engineer or inspector of the Department of Building and Safety may make a determination that all conditions of the General Approval required to provide equivalency have been met.

This General Approval is in accordance with Section 93.0303 of the Electrical Code pertaining to "New Materials and Methods of Construction", and does not waive the requirements of the City of Los Angeles Building Code.

The General Approval is neither a product endorsement nor a certification of function of accuracy of the approved item.

PICTURES:

APPROVED BY:

Esteban Claro
Electrical Engineer Associate II
Electrical Testing Laboratory
201 N. Figueroa St., Suite 500
Los Angeles, CA 90012
(213) 202-9987 Tel
(213) 482-6534 Fax

www.LADBS.org

Honeywell

301C-24 SPECIFICATIONS

Controller

General Specification	
Use	Controller for centralized gas detection monitoring with real-time gas reading, selective alarm activation and low cost installation
Power Requirement	17-27 VAC, 24-38 VDC, 500mA
Size	11 (W) x 8 (H) x 2.8 (D) in. (28 x 20.3 x 7 cm)
Weight	2.4 lbs. (1.1 kg)
Network Capacity	Three RS-485 channels for up to 96 transmitter inputs
Digital Communication	Optional BACnet/IP interface, BTL listed as a smart sensor
Communication Line Lengths	Up to 2,000 ft. (609 m) per channel T-Tap: 65 ft. (20 m), maximum per T-Tap 130 ft. (40 m), maximum for all T-Tap combined
Relay Output	5 A, 30 VDC or 250 VAC (resistive load)
Alarm Levels	Four fully programmable alarm levels
Time Delays	0, 30 sec, 45 sec, 1-99 minutes before and after alarm
Outputs	4 DPDT relays (alarms and/or fault); 65dBA buzzer
Events	Flexible programming that can include: alarms, gas concentrations, faults, real time clock, voting, optional outlier detection, and time since calibration
Display	Large 122 x 32 dot matrix display
Operating Humidity Range	0 to 95% RH (non-condensing)
Operating Temperature Range	-4° to 122°F (-20° to 50°C)
Security	Password protection for tamper resistance
Zoning	Up to 126 programmable zones
Optional Memory	2GB removable SD Card for configuration, readings, and events
Ratings and Certification	
Certified to	For USA: Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use - Part 1: General Requirements (ANSI/UL 61010-1, 2nd Edition, Dated July 12, 2004 Including Revisions Through October 28, 2008) For Canada: Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use - Part 1: General Requirements (CAN/CSA C22.2 No. 61010-1-04, 2nd Edition, Dated July 12, 2004 Including General Instruction 1 – October 2008 (Reaffirmed 2009))
Certified by	Intertek
Designed to comply with	IEC 61010-1:2010 (Third Edition) California Title 24, Part 6, and associated administrative regulations In Part 1

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Please Note
Although every effort has been made to ensure accuracy in this publication, no responsibility can be accepted for errors or omissions. Data may change, as well as legislation, and you are strongly advised to obtain copies of the most recently issued regulations, standards, and guidelines. This publication is not intended to form the basis of a contract.

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Honeywell

Print Form

301R PRODUCT SUBMITTAL

ORDERING INFORMATION

301R Relay Module

☐ VA301R-8 8 DPDT relays
☐

301R - SPECIFICATIONS

Power requirements:	17 - 24 Vac, 24 - 38 Vdc, 250 mA
Temperature range:	0° to 40°C (32° to 104°F)
Humidity range:	0 to 95% RH non-condensing
Standard outputs:	8 DPDT relays
Relay Specifications:	5A, 30Vdc or 250 Vac (resistive load)
Visual indicators:	Power: Green LED Transmission: Amber LED
Communication:	Modbus RTU or ISM wireless
Length of lines:	Up to 609 m (2,000 ft) per channel
Wireless range	30 m (98.5 ft)
Dimensions (HxWxD)	20.39 x 27.94 x 6.79 cm (8.03" in x 11" x 2.67")
Weight	0.390 Kg (0.77 lbs)
Enclosure	NEMA 4X ABS - polycarbonate
Certifications	UL 1244 Fourth Edition CSA C22.2 No. 205-M1983 (R1999)

Duct Mounting

Special Duct Mount Installation

This option works best for airflows between 500-4000 ft/min. The E3Point must be duct mounted using the custom box provided with the duct mount version. All of the components housed within the box are factory assembled.

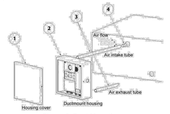

Figure 2. Duct Mounting

1. Select the location for the unit.
2. Measure and mark the holes for intake and exhaust tubes.
3. Drill the holes for the sampling tubes (making sure holes are large enough for plug).
4. Affix intake and exhaust tubes to the mounting box.
5. Insert the tubes into the holes on the ducting.
6. Screw the mounting box onto the duct.
7. Remove the desired knock out (depending on where cables will enter box) and affix appropriate conduit.
8. Run wiring through the conduit and duct mount box to the unit. Connect wires according to the Wiring Details.
9. Screw cover onto the E3Point and replace the cover on the mounting box.

Ensure to orient the air holes on the air intake tube to face the airflow.

Wiring

Guidelines

Electrical wiring must comply with all applicable codes. Operating conditions and site equipment that may be involved should be discussed with local operating personnel to determine if any special needs should be considered.

Ground the shield at the main control panel. Connect the shield wire in the sensor terminal block labeled ***shield***. Tape all exposed shield wire at the sensor to insulate it from the enclosure.

Electrical Power: 24 VDC/VAC nominal, 0.35 amp maximum. Either AC or DC may be connected to the terminal block.

Output: Circuit board mounted sensor provides a linear 4-20 mA output. Monitoring equipment may have a maximum impedance of 500 ohms.

Wire: Signal wiring should be done with #20-24 AWG shielded twisted pair cable Belden 9841 or similar. Network units should have no more than 2,000 ft (600 m) of #22 AWG wire. Smaller gauge sizes are limited by the same resistance limit. Power wiring should be sized by local codes, but never less than #20 AWG. 120 VAC wiring should be #14 or #12 AWG.

Wiring Diagram

Circuit Board Connections

- Connect the power wiring to terminal J1
- Connect Communication wiring to terminal J2
- Connect external device (ventilator, strobe, etc.) to relay terminal J5

Main Circuit Board Connections

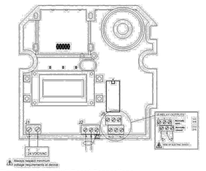

Figure 3. Main Circuit Board Connections

E³Point PRODUCT SUBMITTAL

Toxic and Combustible Gas Detector Network Platform (BACnet MS-TP, Modbus)

ORDERING INFORMATION

Single-Gas, Surface-Mount
Base unit only; sensor cartridge sold separately

Model Number	Order Number	Description
☐ E3SM	1309A0047	E³Point, Surface-mount, Modbus/BACnet Selectable, 24Vac/dc, -40 to 50°C (-40 to 122°F)

Duct Mount

Part Number	Order Number	Description
☐ E3DM	1309A0051	E³Point, Duct-mount, Modbus/BACnet Selectable, 24Vac/dc, -40 to 50°C (-40 to 122°F)

Sensor Cartridges

Model Number	Order Number	Description
☐ E3SCO	1309A0038	CO Cartridge -20 to 50°C (-4 to 122°F), Carbon Monoxide
☐ E3NO2	1309A0037	NO_2 Cartridge -40 to 50°C (-40 to 122°F), Nitrogen Dioxide
☐ E3H2S	1309A0035	H_2S Cartridge -40 to 50°C (-40 to 122°F), Hydrogen Sulfide
☐ E3H2	1309A0039	H_2 Cartridge -40 to 50°C (-40 to 122°F), Hydrogen
☐ E3O2	1309A0036	O_2 Cartridge -40 to 50°C (-40 to 122°F), Oxygen
☐ E3M	1309A0040	CH_4 Cartridge -40 to 50°C (-40 to 122°F), Methane
☐ E3P	1309A0041	C_3H_8 Cartridge -40 to 50°C (-40 to 122°F), Propane

EXAMPLES OF HOW TO ORDER
To order a network version, surface-mount, Modbus/BACnet Selectable, H_2S detector, -40 to 50°C (-40 to 122°F): Order E3SM (1309A0047) + E3H2S (1309A0035)

To order a network version, duct-mount, Modbus/BACnet Selectable, NO_2 detector, -40 to 50°C (-40 to 122°F): Order E3DM (1309A0051) + E3NO2 (1309A0037)

SPECIFICATIONS

General Specifications

Uses
Wall or duct-mounted, BAS or controller networkable gas detector for monitoring carbon monoxide (CO), nitrogen dioxide (NO_2), hydrogen sulfide (H_2S), oxygen (O_2), methane (CH_4), hydrogen (H_2) and propane (C_3H_8).

Size	20.56 x 14.90 x 6.72cm (8.09 x 5.87 x 2.65") (H x W x D)
Power Requirement	24 Vac nominal (17-27Vac), 50/60 Hz, 0.35A; 24 Vdc nominal (20-38Vdc)
Relay Output	1 DPDT relay, 5A @ 250Vac; 5A @ 30Vdc
Communications	RS485 Modbus; BACnet MS-TP master
Operating Environment	Commercial, Indoor, Extreme Temperature Environments
Operating Temperature	H_2S, NO_2, O_2, C H_4, H_2, C_3H_8: -40 to 50°C (-40 to 122°F) CO: -20 to 50°C (-4 to 122°F); future available CO version: -40 to 50°C (-40 to 122°F)
Display	8 character, 2 line backlit LCD
Visual Indicators	Green LED: Power Amber LED 1: Alarm/Fault Amber LED 2: Alarm/Fault
Audible Alarm	>85 dBA at 3 m (10 ft)
Accuracy	+/- 3% of full scale @ 25C

Gases Detected, Detection Ranges and Alarm Levels

Gas	Resolution	Range	Alarm A	Alarm B	Alarm C
CO (Carbon monoxide)	1 ppm	0-250 ppm	25 ppm	200 ppm	225 ppm
H_2S (Hydrogen sulfide)	0.1 ppm	0-50 ppm	10 ppm	15 ppm	20 ppm
NO_2 (Nitrogen dioxide)	0.1 ppm	0-10 ppm	0.7 ppm	2 ppm	9 ppm
O_2 (Oxygen)	0.1% vol.	0-25% vol.	19.5% vol.	22% vol.	22.5% vol.
H_2 (Hydrogen)	0.5% LEL	0-100% LEL	25% LEL	50% LEL	90% LEL
CH_4 (Methane)	0.5% LEL	0-100% LEL	25% LEL	50% LEL	90% LEL
C_3H_8 (Propane)	0.5% LEL	0-100% LEL	25% LEL	50% LEL	90% LEL

Enclosure	Polycarbonate
Certification	CSA C22.2 No. 61010-1, cULus UL 61010-1; FCC part 15; ICES-003 Issue 4

E³Point
Toxic & Combustible Gas Monitor

CO, NO2, H2S, H2, O2, CH4, C3H8

Make your operation run more intelligently to protect people, property and your bottom line. Protect parking structures, loading docks, transport terminals, hospital/ambulance bays, car washes, battery charging rooms and hydrogen tanks, commercial kitchens, indoor stadiums, outbuildings and more.

Note: Non-branded versions of this product are available upon request.

Flexible Operation
- Comes in standalone, standalone with remote (dual gas mode) or network versions
- Connects to analog or digital systems
- Works with virtually any BAS including BACnet or Modbus
- Wall or duct mount
- Factory-calibrated cartridges

Cost Effective
- Saves energy through Demand Control Ventilation (DCV)
- Simplifies installation/ maintenance through plug-n-play sensor
- Remote sensor option provides dual gas monitoring
- Optimizes BAS, fire, ventilation & other security systems

Versatile Communications
- Works through BAS to improve fault diagnostics and collect data on gas concentration levels, sensor condition, etc.
- Couple with 301C to log data and daisy-chain up to 96 E³Point units

Range of Accessories
- Factory-calibrated replacement cartridges
- Power Transformer
- Vandal-resistant steel wire detector guards
- Tamper-proof screws
- Horns and strobes

Applications
- Parking Structure
- Loading Dock Transport Terminal
- Golf Cart Maintenance
- Maintenance Garage
- Hospital/Ambulance Bay
- Fire/Police Station
- Car Wash
- Boiler Rooms
- Battery Charging Rooms
- H2 & Hydrogen Tanks
- Commercial Kitchen

Certifications
- Intertek: UL 61010-1:2012 Ed.3+R29 Apr2016 and CSA C22.2#61010-1-12:2012 Ed.3+U1; U2 CoLA (City of Los Angeles) aproved for CO detection in commercial buildings and parking garages

Click here to access BACnetListing

Sensor Cartridge

Remote Sensor

Advanced Sensing Technology
- Detects CO, NO2, O2, H2, H2S, CH4, C3H8
- Advanced electrochemical (for toxic gases) or catalytic bead (for combustible gases)
- Patented Reflex® and smart cartridge technologies

Wall Mounting

Mounting is usually done on concrete walls or columns, but the unit can be mounted on any vertical surface. The housing is designed with spacers on the back to allow moisture to flow behind the housing without affecting the unit.
- Mounting holes are located inside the housing. Open the unit to access mounting holes.
- Drill and mark the holes, as shown:
  - Width 11.1 cm (4 3/8") apart (if mounting directly to wall)
  - Height 8.3 cm (3.281") for electrical boxes

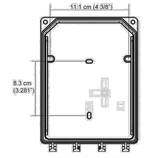

Figure 1. Unit Dimensions

- Pre-drill mounting holes from the back of the unit as needed.
- Securely mount the unit using the appropriate screws and anchors. The unit is designed to use #6 screws. Tighten to 8.7 in-lb (1 Nm) maximum.
- Close the unit cover and tighten screws to 29.7 in-lb (3 Nm).
- Do not remove PC board when removing knockouts.
- Knockout on back is not for conduit entry.

General Mounting Considerations:
- Must be easily accessible for calibration and maintenance.
- Mount the sensor close to the potential leak source for fastest possible leak detection.
- If personnel protection is the primary application, mount in the "breathing zone" (1–1.5m from the ground, within the range of a person's respiration area).
- Protect the sensor from water, excessive humidity, and washdown.
- Take air movement and ventilation patterns into account.
- To prevent electrical interference, keep sensor and wire runs away from mercury vapor lights, variable speed drives, and radio repeaters.
- Protect the sensor from physical damage (fork lifts, etc.).
- Do not mount the sensor over a door in a refrigerated area.
- For highly critical locations, more than one sensor should be installed in each room.

Very Important:
- **Never** mount the sensor flat on a ceiling.
- **Never** mount the sensor on a vibrating surface.

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Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: CO SYSTEM DETAILS

Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

Sheet:
M-1.3

RPM #19-755 12/09/19

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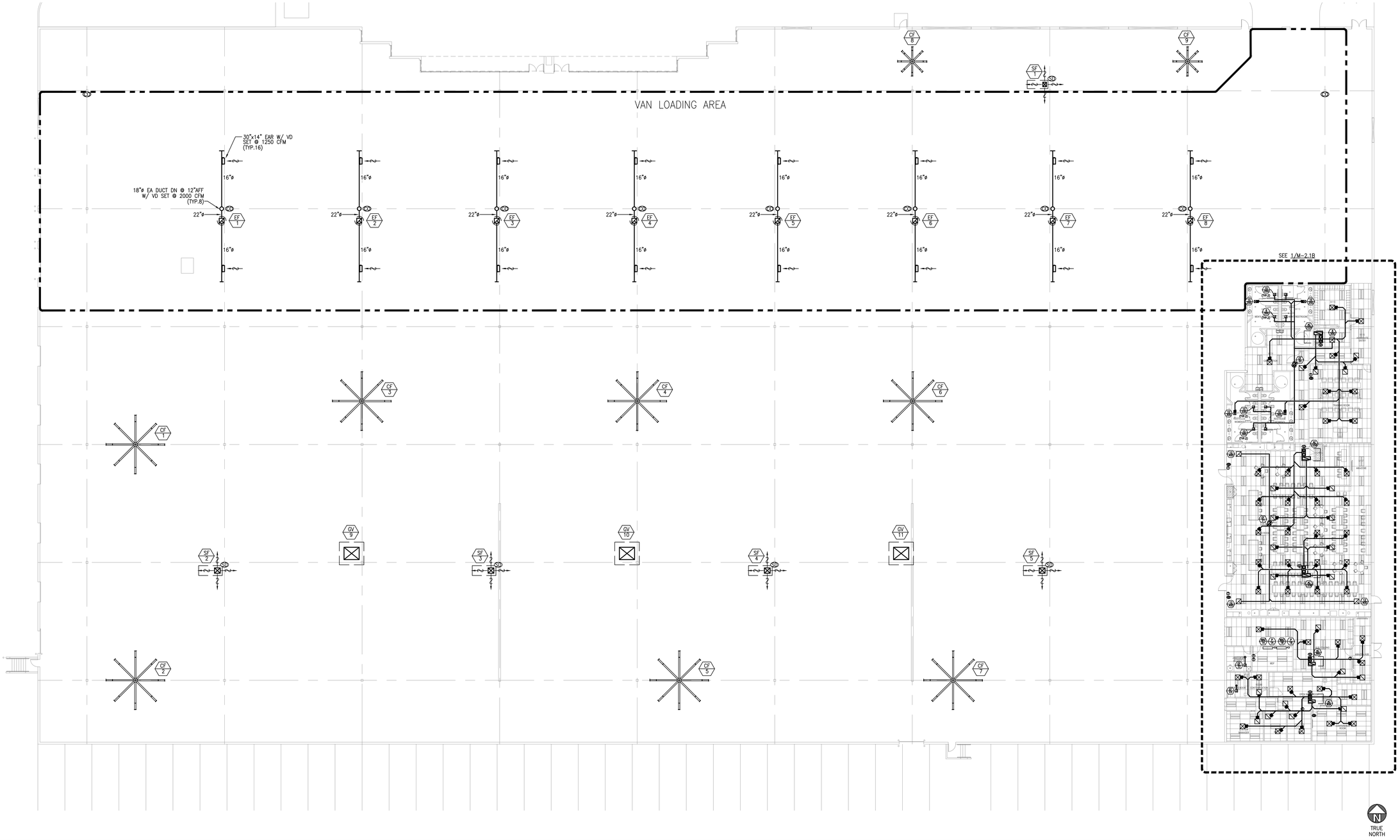


HVAC PLAN - MAIN BLDG

SCALE 1/16"=1'-0" | 1

SEQUENCE OF OPERATION FOR PARKING GARAGE EXHAUST FANS

1. EF1, EF4, EF7 SHALL BE ENERGIZED AND OPERATE AT 60% OF ITS RATED CFM DURING NORMAL OPERATING HOURS (0.15 CFM/SF FOR PARKING GARAGE).
2. EF2, EF3, EF5, EF6, EF8 SHALL BE ENERGIZED WHEN CO SENSORS DETECT 15 PPM OR ABOVE AND OPERATE AT 60% OF THEIR RATED CFM DURING NORMAL OPERATING HOURS. EF1, EF4, EF7 SHALL CONTINUE OPERATING AT 60% OF THEIR RATED CFM.
3. EF1 THRU EF8 SHALL RAMP UP TO 100% OF THEIR FULL CAPACITY WHEN CO SENSORS DETECT 25 PPM OR ABOVE.
4. AUDIBLE AND VISIBLE ALARMS SHALL GO OFF WHEN CO LEVELS HIT 200 PPM.

PARKING GARAGE VENTILATION CALCULATION

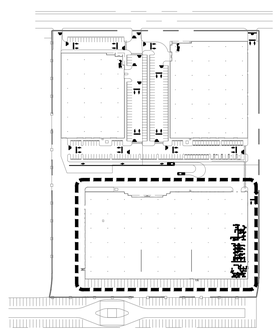
PARKING GARAGE FLOOR AREA (SQ. FT.) = 48,000
EXHAUST RATE PER 2016 CMC TABLE 403.7 = 0.75 CFM/SF
(PARKING GARAGE)

REQUIRED VENTILATION = 36,000 CFM
PROPOSED VENTILATION = 36,000 CFM

MAKE-UP AIR BY ROOF MOUNTED GRAVITY VENTILATORS

NOTES

3



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KEY PLAN

SCALE N.T.S | 2

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REGISTERED PROFESSIONAL ENGINEER No. 30465 Exp. 12-31-19 MECHANICAL STATE OF CALIFORNIA

12/09/2019

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Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

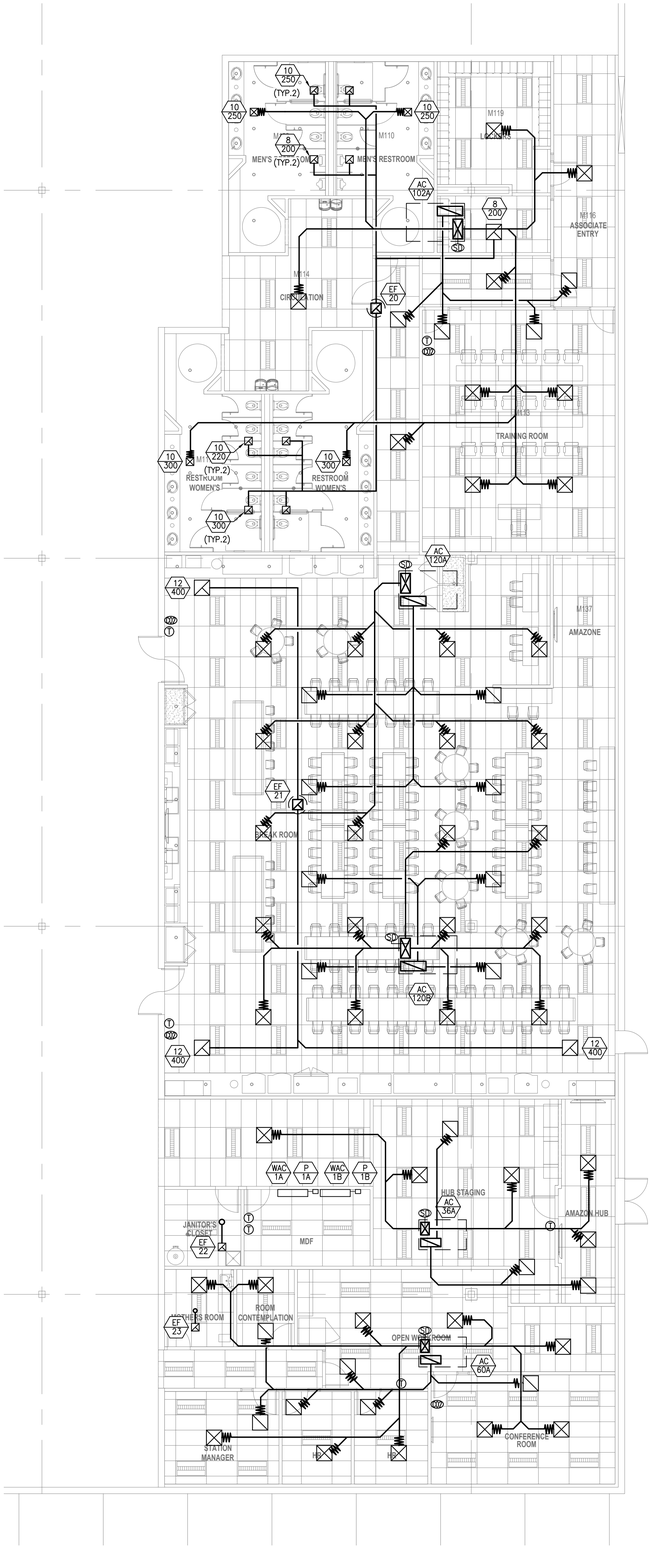
Title: HVAC PLAN

Project Number: 19436
Drawn by: ML
Date: 10/24/19
Revision:

Sheet:

M-2.1A

RPM #19-755 12/09/19



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HVAC PLAN

SCALE 1/8"=1'-0"

2

GENERAL NOTES

1. CAP/ABANDON ALL EXISTING UNITS ON ROOF. IF NEW UNIT LOCATIONS OVERLAP WITH EXISTING UNIT, DEMO EXISTING UNIT AND PROVIDE NEW UNIT CURB, AND PATCH ROOF AS REQUIRED.
2. ALL EXHAUST OPENINGS SHALL BE MIN. 10' AWAY FROM ANY OSA INTAKE.
3. OUTDOOR AIR INTAKE OPENINGS SHALL BE COVERED WITH A SCREEN HAVING NOT LESS THAN ¼" OPENINGS AND NO MORE THAN ½" OPENINGS.
4. GUARDS ARE NOT REQUIRED FOR MECHANICAL EQUIPMENT THAT ARE MORE THAN 10' AWAY FROM ROOF EDGE. CBC 1015.6.

KEYED NOTES

1. DEMISING WALL U-FACTOR NO GREATER THAN 0.151 FOR METAL FRAMED WALLS (R-22 @ 24"OC OR R-13 W/R-2 CONTINUOUS @ 16"OC); 0.099 FOR WOOD FRAMED WALLS (R-13 @ 24"OC OR R-15 @ 16"OC).
2. R-19 BATT INSULATION BELOW ROOF SURFACE.
3. R-13 BATT INSULATION IN ALL FURRED OUT EXTERIOR WALLS.
4. 19"x13"SA & 31"x13"RA LINED DUCTS UTR TO UNIT ABOVE.
5. 30"x15"SA & 39"x14"RA LINED DUCTS UTR TO UNIT ABOVE.
6. 35"x29"SA & 50"x15"RA LINED DUCTS UTR TO UNIT ABOVE.
7. 22"ø EA DUCT UTR TO FAN ABOVE.
8. 14"ø EA DUCT UTR TO FAN ABOVE.
9. 10"ø EA DUCT UTR TO FAN ABOVE.
10. 8"ø EA DUCT UTR W/ CAP TERMINATION.
11. 6"ø EA DUCT UTR W/ CAP TERMINATION.

NOTES | 1

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Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: HVAC PLAN

Project Number:	19436
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RPM #19-755 12/09/19

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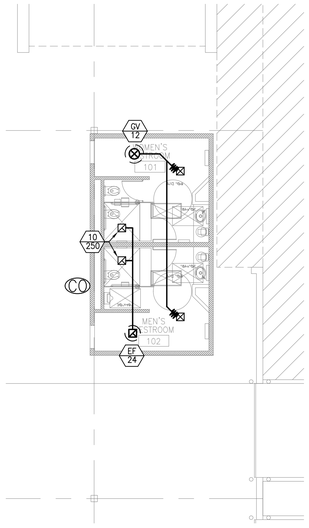

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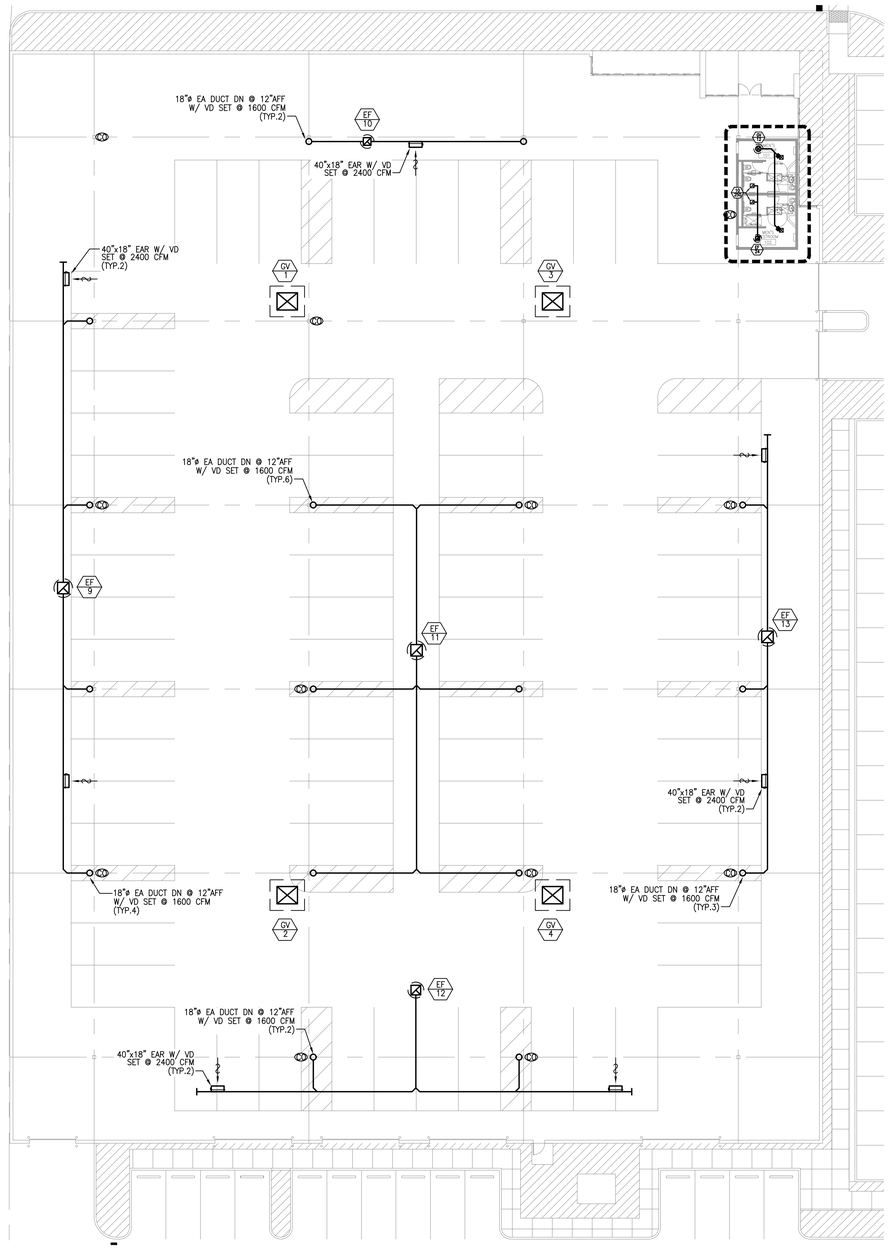
HVAC PLAN - RESTROOMS | SCALE 1/8"=1'-0" | 3



PARKING GARAGE VENTILATION CALCULATION

PARKING GARAGE FLOOR AREA (SQ. FT.) = 58,500
EXHAUST RATE PER 2016 CMC TABLE 403.7 (PARKING GARAGE) = 0.75 CFM/SF

REQUIRED VENTILATION = 43,875 CFM
PROPOSED VENTILATION = 44,000 CFM

MAKE-UP AIR BY ROOF MOUNTED GRAVITY VENTILATORS

SEQUENCE OF OPERATION FOR PARKING GARAGE EXHAUST FANS

1. EF9, EF12 SHALL BE ENERGIZED AND OPERATE AT 60% OF ITS RATED CFM DURING NORMAL OPERATING HOURS (0.15 CFM/SF FOR PARKING GARAGE).
2. EF10, EF11, EF13 SHALL BE ENERGIZED WHEN CO SENSORS DETECT 15 PPM OR ABOVE AND OPERATE AT 60% OF THEIR RATED CFM DURING NORMAL OPERATING HOURS. EF9, EF12 SHALL CONTINUE OPERATING AT 60% OF THEIR RATED CFM.
3. EF9 THRU EF12 SHALL RAMP UP TO 100% OF THEIR FULL CAPACITY WHEN CO SENSORS DETECT 25 PPM OR ABOVE.
4. AUDIBLE AND VISIBLE ALARMS SHALL GO OFF WHEN CO LEVELS HIT 200 PPM.

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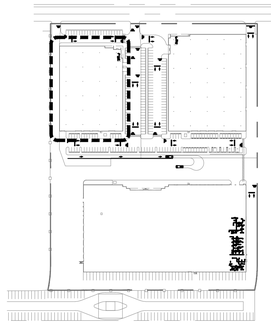
HVAC PLAN - PARKING GARAGE WEST | SCALE 1/16"=1'-0" | 1



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KEY PLAN | SCALE N.T.S | 2

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Electrical:	RPM
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Fire Protection:	-
Soils Engineer:	-

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Drawn by: ML
Date: 10/24/19
Revision:

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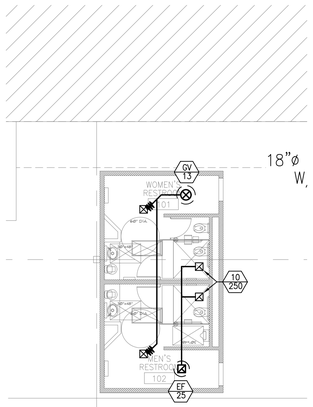
RPM #19-755 12/09/19



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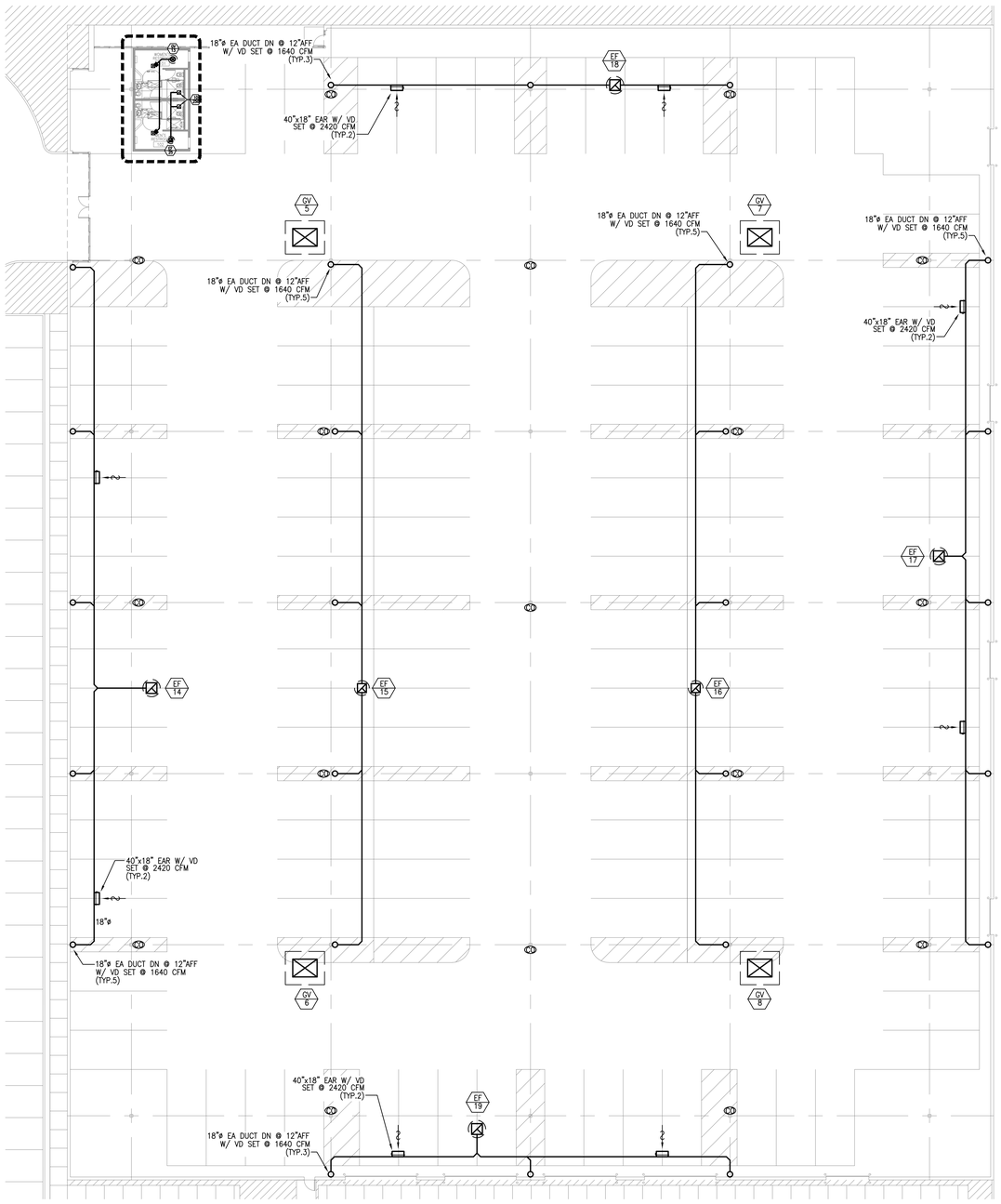
HVAC PLAN - RESTROOMS | SCALE 1/8"=1'-0" | 3



PARKING GARAGE VENTILATION CALCULATION

PARKING GARAGE FLOOR AREA (SQ. FT.) = 82,400
EXHAUST RATE PER 2016 CMC TABLE 403.7 = 0.75 CFM/SF
(PARKING GARAGE)

REQUIRED VENTILATION = 61,800 CFM
PROPOSED VENTILATION = 62,000 CFM

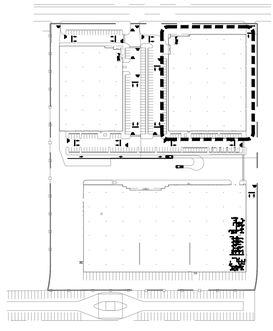
MAKE-UP AIR BY ROOF MOUNTED GRAVITY VENTILATORS

SEQUENCE OF OPERATION FOR PARKING GARAGE EXHAUST FANS

1. EF17, EF19 SHALL BE ENERGIZED AND OPERATE AT 60% OF ITS RATED CFM DURING NORMAL OPERATING HOURS (0.15 CFM/SF FOR PARKING GARAGE).
2. EF14, EF15, EF16, EF18 SHALL BE ENERGIZED WHEN CO SENSORS DETECT 15 PPM OR ABOVE AND OPERATE AT 60% OF THEIR RATED CFM DURING NORMAL OPERATING HOURS. EF17, EF19 SHALL CONTINUE OPERATING AT 60% OF THEIR RATED CFM.
3. EF14 THRU EF19 SHALL RAMP UP TO 100% OF THEIR FULL CAPACITY WHEN CO SENSORS DETECT 25 PPM OR ABOVE.
4. AUDIBLE AND VISIBLE ALARMS SHALL GO OFF WHEN CO LEVELS HIT 200 PPM.

TRUE NORTH

HVAC PLAN - PARKING GARAGE EAST | SCALE 1/16"=1'-0" | 1



TRUE NORTH

KEY PLAN | SCALE N.T.S | 2

RPM
Engineers, Inc.
102 DISCOVERY
Irvine, Ca. 92618
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Fax: 949-450-1454
Contact: Johnny Loi
e-mail: johnny@rpmpe.com

REGISTERED PROFESSIONAL ENGINEER
No. 30465
Exp.12-31-19
MECHANICAL
STATE OF CALIFORNIA

12/09/2019

HPA architecture

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Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

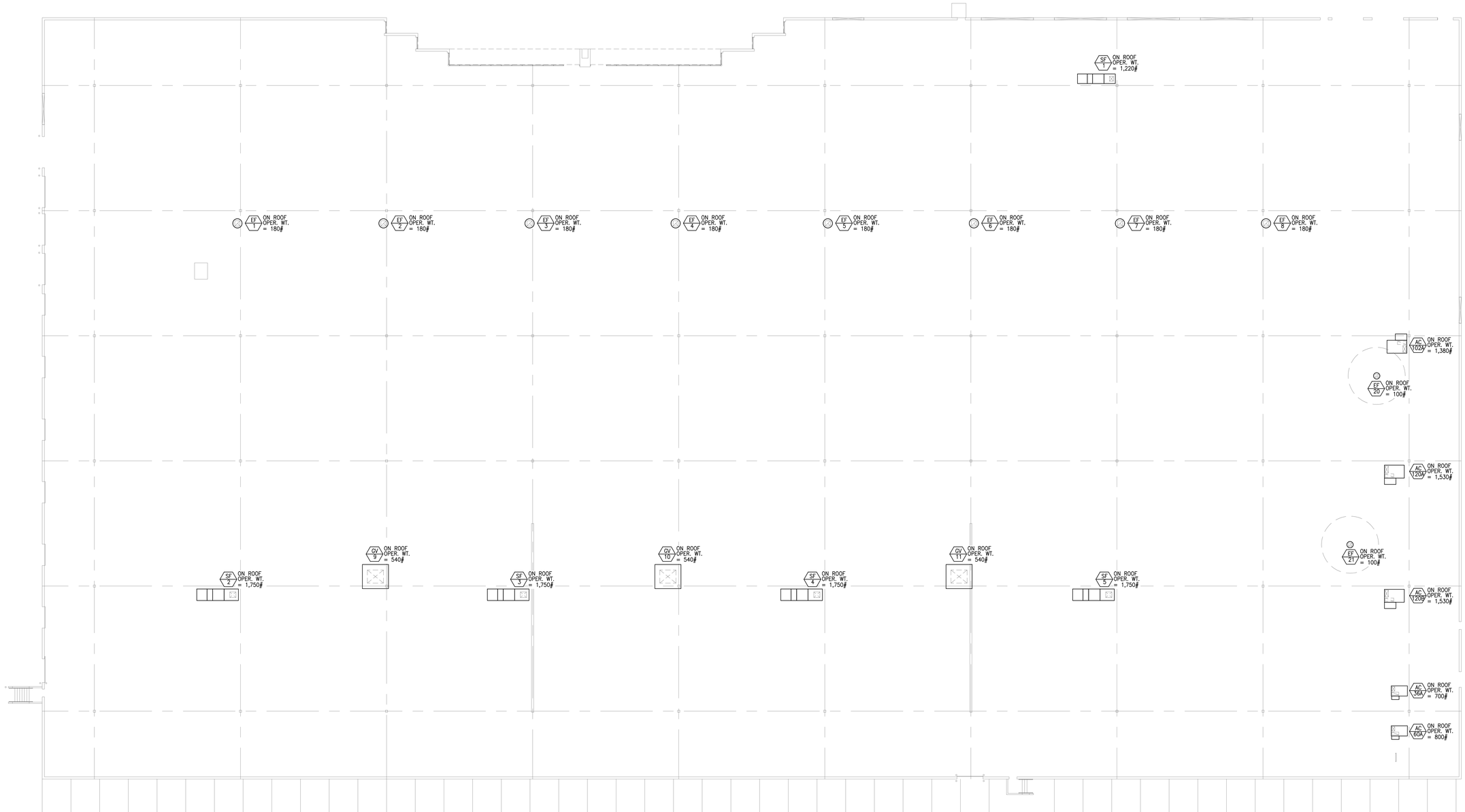
Title: HVAC PLAN

Project Number: 19436
Drawn by: ML
Date: 10/24/19
Revision:

Sheet:

M-2.3

RPM #19-755 12/09/19



ROOF HVAC EQUIPMENT PLAN - MAIN BLDG

SCALE	
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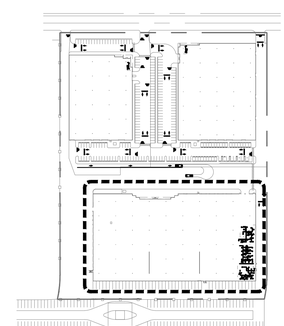

TRUE NORTH

KEY PLAN

SCALE	
N.T.S	2

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Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: ROOF PLAN

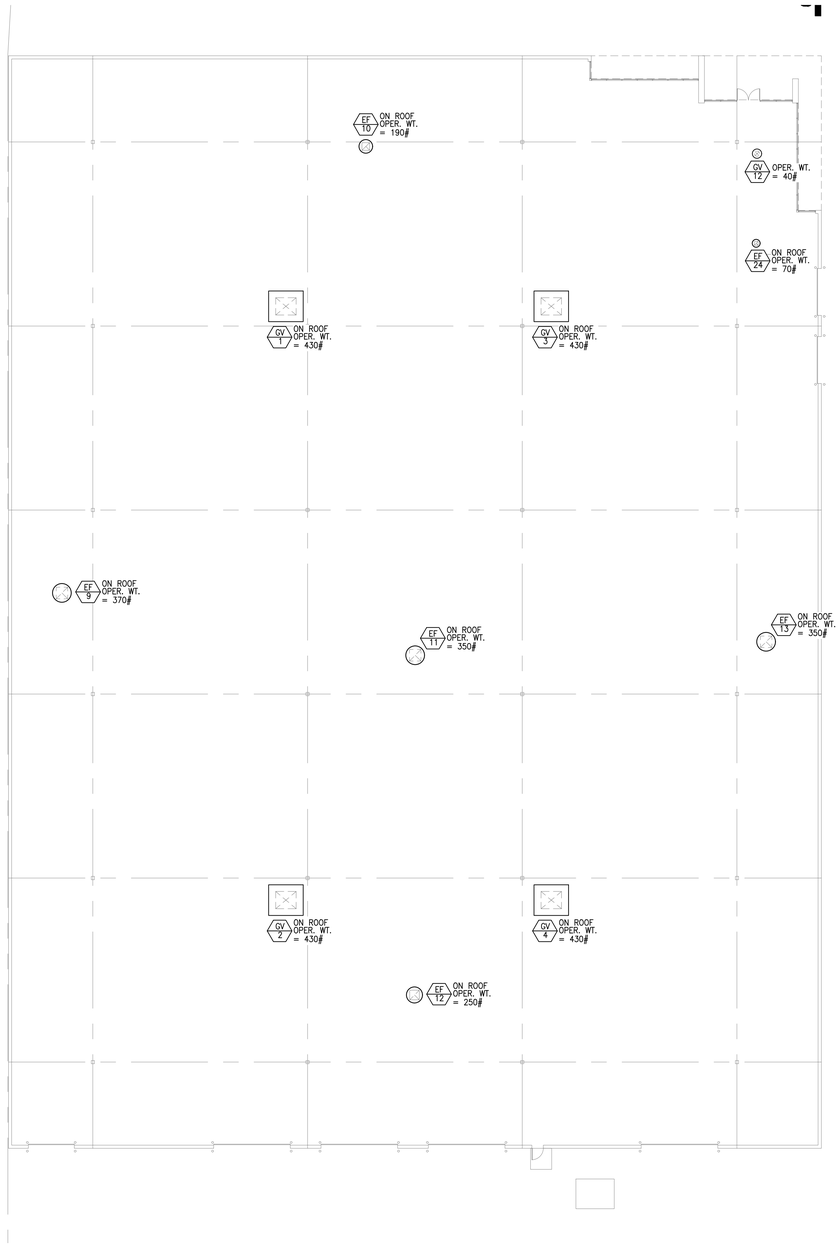
Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

M-3.1

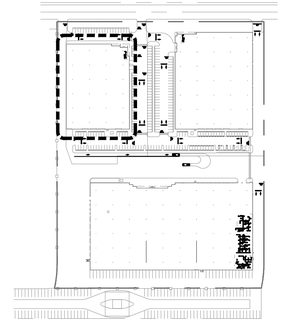
RPM #19-755 12/09/19



TRUE NORTH

ROOF HVAC EQUIPMENT PLAN - PARKING GARAGE WEST

SCALE 1/16"=1'-0" | 1



TRUE NORTH

KEY PLAN

SCALE N.T.S | 2

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Owner:

Project:

TORRANCE
DCX 7

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TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: ROOF PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

M-3.2

RPM #19-755 12/09/19

CAUTION : IF THIS SHEET IS NOT A 30" X 42" IT IS A REDUCED PRINT

PARKING GARAGE VENTILATION CALCULATION

PARKING GARAGE FLOOR AREA (SQ. FT.) = 115,500
EXHAUST RATE PER 2016 CMC TABLE 403.7 = 0.75 CFM/SF
(PARKING GARAGE)

REQUIRED VENTILATION = 86,625 CFM
PROPOSED VENTILATION = 87,000 CFM

MAKE-UP AIR BY ROOF MOUNTED GRAVITY VENTILATORS

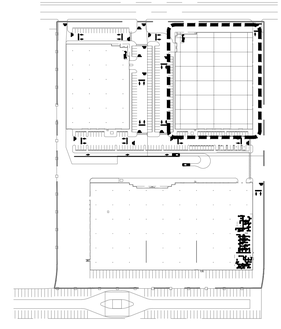
SEQUENCE OF OPERATION FOR PARKING GARAGE EXHAUST FANS

1. EF1, EF4, EF8 SHALL BE ENERGIZED AND OPERATE AT 60% OF ITS RATED CFM DURING NORMAL OPERATING HOURS (0.15 CFM/SF FOR PARKING GARAGE).
2. EF2, EF3, EF5, EF6, EF7 SHALL BE ENERGIZED WHEN CO SENSORS DETECT 15 PPM OR ABOVE AND OPERATE AT 60% OF THEIR RATED CFM DURING NORMAL OPERATING HOURS. EF6 SHALL CONTINUE OPERATING AT 60% OF THEIR RATED CFM.
3. EF1 THRU EF8 SHALL RAMP UP TO 100% OF THEIR FULL CAPACITY WHEN CO SENSORS DETECT 25 PPM OR ABOVE.
4. AUDIBLE AND VISIBLE ALARMS SHALL GO OFF WHEN CO LEVELS HIT 200 PPM.

TRUE NORTH

ROOF HVAC EQUIPMENT PLAN - PARKING GARAGE EAST

SCALE 1/16"=1'-0" 1



TRUE NORTH

KEY PLAN

SCALE N.T.S 2

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12/09/2019

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Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: ROOF PLAN

Project Number: 19436
Drawn by: ML
Date: 10/24/19
Revision:

Sheet:

M-3.3

RPM #19-755 12/09/19

ADMINISTRATIVE REQUIREMENTS

A. The person with overall responsibility for construction or the person responsible for the installation of regulated features, materials, components, or manufactured devices shall make post, or make available with the building permit(s) issued for the building, the required Installation Certificate(s) for features, materials, components, or manufactured devices regulated by the Appliance Efficiency Regulations or Part 6. Such installation Certificate(s) shall be made available to the enforcement agency for all appropriate inspections. These certificates shall:

1) Identify features, materials, components, or manufactured devices required to verify compliance with the Appliance Efficiency Regulations and Part 6.

2) Include a statement indicating that the features, materials, components, or manufactured devices conform to the Appliance Efficiency Regulations and Part 6 and the requirements for such features, materials, components, or manufactured devices given in the plans and specifications approved by the local enforcement agency.

3) State the number of the building permit under which the construction or installation was performed. Sec. 10–103 (a) 3A

B. Within 90 days after issuance of certificate of occupancy, record drawings shall be provided to the owner. If any characteristic is materially changed before final construction and installation such that the building may no longer comply with Part 6, the building must be brought into compliance and so indicated on amended plans and Certificate of Compliance that shall be submitted for plan approval. Sec. 10–103 (a) 2B

C. The builder shall provide the building owner or the person(s) responsible for building maintenance (in case of multi–tenant or centrally operated buildings) at occupancy the following:

1) Operating information: The appropriate certificate(s) of compliance and a list of the features, materials, components, and mechanical devices installed in the building and instruction on how to operate them efficiently.

2) Maintenance information: Required routine maintenance actions shall be clearly stated and incorporated on a readily accessible label. The label may be limited to identifying the operation and maintenance manual.

3) Ventilation information: A description of the quantities of outdoor and recirculated air that the ventilation system are designed to provide to each area. Sec. 10–103 (b) 2, 3 & 4

D. Testing and adjusting of new systems is required for all additions 1000 square feet or greater, and/or building alterations with valuation $200,000 or above, or new buildings less than 10,000 square feet. Provide the following note on the plans:
"Prior to permit being finalized, a complete report of the testing and adjusting shall be provided to the owner or owner's representative."

E. All new building systems and components covered by Sections 110.0, 120.0, 130.0, and 140.0 shall be included in the scope of the commissioning requirements in Section 120.8 excluding covered processes.

MANDATORY MEASURES:

A. Manufactured fenestration products and exterior doors shall:

1) Have a temporary label meeting the requirements of Sec. 10–111 (a) 1, not to be removed before inspection by the enforcement agency, listing the certified U–factor, SHGC, and Visible Transmittance (VT) certifying that the air leakage requirements of Sec. 116 (a) 1 are met for each product line; and

2) Have a permanent label meeting the requirement of Sec. 10–111 (a) 2 if the product is rated using NFRC procedures. Sec. 110.6 (a)

B. Field fabricated fenestration and field–fabricated exterior doors shall be caulked between the fenestration products or exterior door and the building, and shall be weather stripped. EXCEPTION: Unframed glass doors and fire doors. Sec. 110.6 (b)

C. Joints, penetrations, and other openings in the building envelope that are potential sources of air leakage shall be caulked, gasketed, weather stripped, or otherwise sealed to limit infiltration and exfiltration. Sec. 110.7

D. The opaque portions of walls that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable requirements of Items 1 through 7 in Sec. 120.7 (b)

E. No mechanical equipment nor plumbing vents shall be located within the designated "Solar Zone" areas. Sec. 110.10 (b) 1–B

F. All insulating material shall be installed in compliance with the flamespread rating and smoke density requirements of the CBG. Sec. 110.8 (c)

G. Any roofing product used as a cool roof shall be certified and labeled in accordance with the requirements of Sec. 10–113 by the Cool Roof Rating Council (CRRC) and meet conditions set in Sec. 110.8 (i).

H. All unitary systems not controlled by ECMS shall have setback thermostats; capable to program temperature setpoints for at least four periods within a 24 hr period. Sec. 110.2 (2) (c)

I. Heat pumps with supplementary electric resistance heaters shall have controls:

1) That prevent supplementary heater operation when the heating load can be met by the heat pump alone; and

2) In which the cut–on temperature for compression heating is higher than the cut–on temperature for supplementary heating, and the cut–off temperature for compression heating is higher than the cut–off temperature for supplementary heating. Sec. 110.2 (b)

J. The lesser of the minimum rate of outdoor air required by Sec. 120.1 (b) 2, or three complete air changes shall be supplied to the entire building during the one–hour period immediately before the building is normally occupied. Sec. 120.1 (c) 2

K. All mechanical ventilation and space–conditioning systems shall be installed with ductwork, dampers, and controls to allow outside air rates to be operated at the lower of (1) the minimum levels specified in Section 120.1(b) or (2) the rate required for make–up of exhaust systems that are required for an exempt or covered process for control of odors, or for the removal of contaminants within the space. All variable air volume space–conditioning systems shall include controls that maintain measured outside air ventilation rates within 10 percent of the required outside air ventilation rate at both full and reduced supply airflow conditions. Sec. 120.1 (e)

L. Hotel/motel guest room thermostats shall have numeric temperature setpoints in °F and °C; and setpoint stops accessible only to authorized personnel such that guest room occupants cannot adjust the setpoint more than ±5 °F (±3 °C). Sec. 120.2 (c)

M. All air distribution system ducts and plenums, including, but not limited to, building cavities, mechanical closets, air–handler boxes and support platforms used as ducts or plenums, shall be installed, sealed, and insulated to meet the requirements of the 2016 California Mechanical Code and SMACNA –006–2006 HVAC Duct Construction Standards. Supply air and return air ducts conveying heated or cooled air shall be insulated to a minimum installed level of R–8, unless ducts are in conditioned space. Sec. 120.4 (a)

N. The thermostatic controls for HVAC systems shall meet the following requirements as applicable:

1) Each space conditioning zone shall be controlled by an individual thermostatic control that responds to temperature within the zone and meets the applicable requirements of Section (b).

2) Each thermostatic control required by Section (a) shall be capable of being set locally or remotely by adjustment or selection of sensors to control:

a) Comfort heating down to 55 °F or lower.

b) Comfort cooling up to 85 °F or higher.

c) Both heating and cooling, the thermostatic controls shall be capable of providing a temperature range or dead band of at least 5 °F within which the supply of heating and cooling energy to the zone is shut off or reduced to a minimum. Sec. 120.2 (a) & (b)

O. Outdoor air supply and exhaust equipment shall be installed with dampers that automatically close upon fan shutdown. Sec. 120.2 (f)

P. Demand Control Ventilation devices (CO_2 sensors) shall be installed in accordance with Sec. 120.1 (c) 4. Sec. 120.1 (c) 4

Q. Each space conditioning system shall be installed with controls that comply with the following:

1) Capable of automatically shutting off the system during periods of non–use and shall have:

a) An automatic time switch control device complying with Sec. 110.9, with an accessible manual override that allows operation of the system for up to 4 hours; or

b) An occupancy sensor; or

c) A four–hour timer that can be manually operated.
EXCEPTION: Mechanical systems serving retail stores and associated malls, restaurants, grocery stores, churches, and theaters equipped with 7–day programmable timers.

2) Automatically restart and temporarily operate the system as required to maintain:

a) A setback heating thermostat setpoint, if the system provides mechanical heating; EXCEPTION: Area with the design winter outdoor temperature of greater than 32 °F.

b) A setup cooling thermostat setpoint, if the system provides mechanical cooling. EXCEPTION: Area with the design summer outdoor temperature of less than 100 °F.

3) Maintenance room less than 1000 ft², classrooms greater than 750 ft² and conference, convention, auditorium, and meeting center rooms greater than 750 ft² that do not have processes or operations that generate dusts, fumes, vapors, or gases shall be equipped with occupant sensor(s) to accomplish the following during unoccupied periods:

a) Automatically setup the operating cooling temperature set point by 2 °F or more and setback the operating heating temperature set point by 2 °F or more; and

b) Automatically reset the minimum required ventilation rate with an occupant sensor ventilation control device according to Section 120.1 (c) 5.

EXCEPTION TO SECTIONS 120.2 (e) 3: If Demand Control Ventilation is implemented as required by Section 120.1 (c) 3 and 120.1 (4). Sec. 120.2 (e)

R. The piping for all space conditioning and service water heating systems shall be insulated in accordance with TABLE 120.3–A. Sec. 120.3

S. Water heating systems shall be equipped with automatic temperature controls capable of adjustment from the lowest to the highest acceptable temperature settings for the intended use as listed in Table 2, Chapter 49 of the ASHRAE Handbook, HVAC Applications Volume. Sec. 110.3 (a) 1

T. Service water heating systems and equipment shall meet the applicable requirements of the Appliance Efficiency Regulations as required by Sec. 110.1. Sec. 110.3 (b)

U. Service hot water systems with circulating pumps or with electrical heat trace systems shall be capable of automatically turning off the system. Sec. 110.3 (c) 2

V. Lavatories in public restrooms shall have controls that limit the water supply temperature to 110 °F. Sec. 110.3 (c) 3

AIR CONDITIONING SYSTEM (HVAC) COMPLIANCE:

A. Duct systems used with blower type equipment which are portions of a heating, cooling, absorption, evaporative cooling or outdoor air ventilation system shall be sized in accordance with Chapter 6 of the California Mechanical Code.

Project Name:	DCX7	NRCC-PRF-01-E	Page 9 of 20
Project Address:	950 Francisco St Torrance 90502	Calculation Date/Time:	13:26, Mon, Dec 09, 2019
Compliance Scope:	ExistingAlteration	Input File Name:	t24_19-755.cibd16x

M. HVAC SYSTEM SUMMARY (see NRCC-PRF-MCH-DETAILS for more information) — **§ 110.1 / § 110.2**

Dry System Equipment [1] (Fan & Economizer info included below in Table N) — Confirmed: Pass ☐ Fail ☐

1. Equip Name	2. Equip Type	3. System Type (Simple [2] or Complex [3])	4. Qty	5. Total Heating Output (kBtu/h)	6. Supp Heat Source (Y/N)	7. Supp Heat Output (kBtuh)	8. Total Cooling Output (kBtu/h)	9. Efficiency: Cooling	9. Efficiency: Heating	10. Acceptance Testing Required? (Y/N) [4]	11. Status [5]
CU/WAC1	SZHP (CRAC)	Simple	1	40	No	0	33	SEER-17.50 / EER-8.18	HSPF-10.00	Yes	N

[1] *Dry System Equipment includes furnaces, air handling units, heat pumps, etc.*
[2] *Simple Systems must complete NRCC-CVR-03-E commissioning design review form*
[3] *Complex Systems must complete NRCC-CVR-04-E commissioning design review form*
[4] *A summary of which acceptance tests are applicable is provided in NRCC-PRF-MCH-DETAILS*
[5] *Status: N - New, A – Altered, E – Existing*

Wet System Equipment Section Does Not Apply	

Discrepancy between modeled and designed equipment sizing? (if "Yes", see Table F. "Additional Remarks" for an explanation)	No

N. ECONOMIZER & FAN SYSTEMS SUMMARY[1] — **§ 140.4** — Confirmed: Pass ☐ Fail ☐

1. Equip Name	2. Outside Air	3. Supply Fan: CFM	3. Supply Fan: HP	3. Supply Fan: BHP	3. Supply Fan: TSP (inch WC)	3. Supply Fan: Control	4. Return Fan: CFM	4. Return Fan: HP	4. Return Fan: BHP	4. Return Fan: TSP (inch WC)	4. Return Fan: Control	5. Economizer Type (if present)
AC120AB	1038	4000	2.300	2.300	2.19	VariableSpeedDrive	NA	NA	NA	NA	NA	FixedDryBulb
AC102A	778	3400	1.600	1.600	1.79	VariableSpeedDrive	NA	NA	NA	NA	NA	FixedDryBulb
AC60A	360	2000	0.900	0.900	1.71	ConstantVolume	NA	NA	NA	NA	NA	FixedDryBulb
AC36A	214	1200	0.460	0.460	1.22	ConstantVolume	NA	NA	NA	NA	NA	FixedDryBulb
CU/WAC1	25	953	0.200	0.200	0.67	ConstantVolume	NA	NA	NA	NA	NA	NoEconomizer

[1] *Mechanical ventilation calculations and exhaust fans are included in the NRCC-PRF-MCH-DETAILS section*

Project Name:	DCX7	NRCC-PRF-01-E	Page 10 of 20
Project Address:	950 Francisco St Torrance 90502	Calculation Date/Time:	13:26, Mon, Dec 09, 2019
Compliance Scope:	ExistingAlteration	Input File Name:	t24_19-755.cibd16x

O. EQUIPMENT CONTROLS — **§ 120.2** — Confirmed: Pass ☐ Fail ☐

1. Equip Name	2. Equip Type	3. Controls
AC120AB	SZVAVAC	1 Zones With CO2Sensor Vent. Control Fixed DryBulb Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery
AC102A	SZVAVAC	1 Zones With CO2Sensor Vent. Control Fixed DryBulb Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery
AC60A	SZAC	1 Zones With CO2Sensor Vent. Control Fixed DryBulb Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery
AC36A	SZAC	No DCV Controls Fixed DryBulb Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery
CU/WAC1	SZHP	No DCV Controls No Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery

P. SYSTEM DISTRIBUTION SUMMARY — **§ 120.4/ § 140.4(l)** — Confirmed: Pass ☐ Fail ☐

Dry System Distribution

1. Equip Name	2. Equip Type	3. Duct Leakage and Sealing Required per 140.4(l)	4. Duct Leakage will be verified per NA1 and NA2	5. Ducts: Insulation R-Value	5. Ducts: Location	6. Status [1]
AC120AB	SZVAVAC	No	No	4.2	Other	N
AC102A	SZVAVAC	No	No	4.2	Other	N
AC60A	SZAC	No	No	4.2	Other	N
AC36A	SZAC	No	No	4.2	Other	N
CU/WAC1	SZHP	No	No	4.2	Other	N

Status: N – New, E – Existing

Does the Project Include Zonal Systems? (if "Yes", see NRCC-PRF-MCH-DETAILS for system information)	No
Does the Project Include a Solar Hot Water System? (if "Yes", see NRCC-PRF-MCH-DETAILS for system information)	No
Multifamily or Hotel/ Motel Occupancy? (if "Yes", see NRCC-PRF-MCH-DETAILS for DHW system information)	No

Q. INDOOR CONDITIONED LIGHTING GENERAL INFO (see NRCC-PRF-LTI-DETAILS for more info)[2] — **§ 140.6** — Confirmed: Pass ☐ Fail ☐

1. Occupancy Type [1]	2. Conditioned Floor Area [2] (ft²)	3. Installed Lighting Power (Watts)	4. Lighting Control Credits (Watts)	5. Additional (Custom) Allowance: Area Category Footnotes (Watts)	5. Additional (Custom) Allowance: Tailored Method (Watts)
Dining Area	4,150	4,150	0	0	0
Convention, Conference, Multipurpose and Meeting Center Areas	1,142	1,370	0	0	0
Locker/Dressing Room	370	259	0	0	0
Corridors, Restrooms, Stairs, and Support Areas	2,151	1,291	0	0	0
Office (Greater than 250 square feet in floor area)	1,258	944	0	0	0

Project Name:	DCX7	NRCC-PRF-01-E	Page 11 of 20
Project Address:	950 Francisco St Torrance 90502	Calculation Date/Time:	13:26, Mon, Dec 09, 2019
Compliance Scope:	ExistingAlteration	Input File Name:	t24_19-755.cibd16x

Q. INDOOR CONDITIONED LIGHTING GENERAL INFO (see NRCC-PRF-LTI-DETAILS for more info)[2] — **§ 140.6** — Confirmed: Pass ☐ Fail ☐

1. Occupancy Type [1]	2. Conditioned Floor Area [2] (ft²)	3. Installed Lighting Power (Watts)	4. Lighting Control Credits (Watts)	5. Additional (Custom) Allowance: Area Category Footnotes (Watts)	5. Additional (Custom) Allowance: Tailored Method (Watts)
Retail Merchandise Sales, Wholesale Showroom	1,070	1,284	0	0	0
Computer Room	165	132	0	0	0
Building Totals:	**10,306**	**9,430**	**0**	**0**	**0**

[1] *See Table 140.6-C*
[2] *See NRCC-LTI-03-E for unconditioned spaces*
[3] *Lighting information for existing spaces modeled is not included in the table*

R. INDOOR CONDITIONED LIGHTING SCHEDULE (Adapted from NRCC-LTI-01-E)[3] — **§ 130.0**

This Section Does Not Apply

[3] *If lighting power densities were used in the compliance model Building Departments will need to check prescriptive forms for Luminaire Schedule details.*

S1. COVERED PROCESS SUMMARY – ENCLOSED PARKING GARAGES — **§ 140.9**

This Section Does Not Apply

S2. COVERED PROCESS SUMMARY – COMMERCIAL KITCHENS — **§ 140.9**

This Section Does Not Apply

S3. COVERED PROCESS SUMMARY – COMPUTER ROOMS — **§ 140.9**

Computer Room System Name	Cooling Capacity (tons)	Economizer Type	Fan Power (watts)	Confirmed: Pass	Confirmed: Fail
CU/WAC1	2.8	None	0.17	☐	☐

S4. COVERED PROCESS SUMMARY – LABORATORY EXHAUSTS — **§ 140.9**

This Section Does Not Apply

Project Name:	DCX7	NRCC-PRF-01-E	Page 5 of 20
Project Address:	950 Francisco St Torrance 90502	Calculation Date/Time:	13:26, Mon, Dec 09, 2019
Compliance Scope:	ExistingAlteration	Input File Name:	t24_19-755.cibd16x

H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRCV) – Documentation Author to indicate which Certificates must be submitted for the features to be recognized for compliance (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify). See Tables G. and H. in MCH and LTI Details Sections for Acceptance Tests and forms by equipment.

Building Component	Compliance Forms *(required for submittal)*	Confirmed: Pass	Confirmed: Fail
Envelope	☒ NRCI-ENV-01-E - For all buildings	☐	☐
	☒ NRCA-ENV-02-F- NFRC label verification for fenestration	☐	☐
Mechanical	☒ NRCI-MCH-01-E - For all buildings with Mechanical Systems	☐	☐
	☐ NRCA-MCH-02-A- Outdoor Air	☐	☐
	☒ NRCA-MCH-03-A – Constant Volume Single Zone HVAC	☐	☐
	☐ NRCA-MCH-04-H- Air Distribution Duct Leakage	☐	☐
	☒ NRCA-MCH-05-A- Air Economizer Controls	☐	☐
	☒ NRCA-MCH-06-A- Demand Control Ventilation	☐	☐
	☐ NRCA-MCH-07-A – Supply Fan Variable Flow Controls	☐	☐
	☐ NRCA-MCH-08-A- Valve Leakage Test	☐	☐
	☐ NRCA-MCH-09-A – Supply Water Temp Reset Controls	☐	☐
	☐ NRCA-MCH-10-A- Hydronic System Variable Flow Controls	☐	☐
	☐ NRCA-MCH-11-A – Auto Demand Shed Controls	☐	☐
	☒ NRCA-MCH-12-A- Packaged Direct Expansion Units	☐	☐
	☐ NRCA-MCH-13-A- Air Handling Units and Zone Terminal Units	☐	☐
	☐ NRCA-MCH-14-A- Distributed Energy Storage	☐	☐
	☐ NRCA-MCH-15-A – Thermal Energy Storage	☐	☐
	☐ NRCA-MCH-16-A- Supply Air Temp Reset Controls	☐	☐
	☐ NRCA-MCH-17-A – Condensate Water Temp Reset Controls	☐	☐
	☐ NRCA-MCH-18-A- Energy Management Controls Systems	☐	☐
	☐ NRCV-MCH-04-H- Duct Leakage Test	☐	☐

Project Name:	DCX7	NRCC-PRF-01-E	Page 6 of 20
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Building Component	Compliance Forms *(required for submittal)*	Confirmed: Pass	Confirmed: Fail
Plumbing	☐ NRCI-PLB-01-E - For all buildings with Plumbing Systems	☐	☐
	☐ NRCI-PLB-02-E - required on central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-03-E - Single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-21-E - HERS verified central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-22-E - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCV-PLB-21-H- HERS verified central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCV-PLB-22-H - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-STH-01-E - Any solar water heating	☐	☐
Indoor Lighting	☐ NRCI-LTI-01-E - For all buildings	☐	☐
	☐ NRCI-LTI-02-E - Lighting control system, or for an Energy Management Control System (EMCS)	☐	☐
	☐ NRCI-LTI-03-E - Line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting	☐	☐
	☐ NRCI-LTI-04-E - Two interlocked systems serving an auditorium, a convention center, a conference room, or a theater	☐	☐
	☐ NRCI-LTI-05-E - Lighting Control Credit Power Adjustment Factor (PAF)	☐	☐
	☐ NRCI-LTI-06-E - Additional wattage installed in a video conferencing studio	☐	☐
	☐ NRCA-LTI-02-A - Occupancy sensors and automatic time switch controls.	☐	☐
	☒ NRCA-LTI-03-A - Automatic daylighting controls	☐	☐
	☐ NRCA-LTI-04-A - Demand responsive lighting controls	☐	☐
Outdoor Lighting	☐ NRCI-LTO-01-E – Outdoor Lighting	☐	☐
	☐ NRCI-LTO-02-E- EMCS Lighting Control System	☐	☐
	☐ NRCA-LTO-02-A - Outdoor Lighting Control	☐	☐
Sign Lighting	☐ NRCI-LTS-01-E – Sign Lighting	☐	☐
Electrical	☐ NRCI-ELC-01-E - Electrical Power Distribution	☐	☐
Photovoltaic	☐ NRCI-SPV-01-E Photovoltaic Systems	☐	☐

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Building Component	Compliance Forms *(required for submittal)*	Confirmed: Pass	Confirmed: Fail
Covered Process	☐ NRCI-PRC-01-E Covered Processes	☐	☐
	☐ NRCA-PRC-01-F- Compressed Air Systems	☐	☐
	☐ NRCA-PRC-02-F- Kitchen Exhaust	☐	☐
	☐ NRCA-PRC-03-F- Garage Exhaust	☐	☐
	☐ NRCA-PRC-04-F- Refrigerated Warehouse- Evaporator Fan Motor Controls	☐	☐
	☐ NRCA-PRC-05-F- Refrigerated Warehouse- Evaporative Condenser Controls	☐	☐
	☐ NRCA-PRC-06-F- Refrigerated Warehouse- Air Cooled Condenser Controls	☐	☐
	☐ NRCA-PRC-07F- Refrigerated Warehouse- Variable Speed Compressor	☐	☐
	☐ NRCA-PRC-08-F- Electrical Resistance Underslab Heating System	☐	☐

I. ENVELOPE GENERAL INFORMATION (See NRCC-PRF-ENV-DETAILS for more information) — Confirmed: Pass ☐ Fail ☐

1.	Total Conditioned Floor Area	10,306 ft²	5.	Number of Floors Above Grade	1
2.	Total Unconditioned Floor Area	0 ft²	6.	Number of Floors Below Grade	0
3.	Addition Conditioned Floor Area	0 ft²			
4.	Addition Unconditioned Floor Area	0 ft²			

7. Opaque Surfaces & Orientation	8. Total Gross Surface Area	9. Total Fenestration Area	10. Window to Wall Ratio
North Wall	0 ft²	0 ft²	00.0%
East Wall	5,646 ft²	0 ft²	00.0%
South Wall	1,827 ft²	0 ft²	00.0%
West Wall	0 ft²	0 ft²	00.0%
Total	**7,473 ft²**	**0 ft²**	**00.0%**
Roof	10,306 ft²	0 ft²	00.0%

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J. FENESTRATION SUMMARY — **§ 110.6**

This Section Does Not Apply

K. OPAQUE SURFACE ASSEMBLY SUMMARY — **§ 120.7/ § 140.3** — Confirmed: Pass ☐ Fail ☐

1. Surface Name	2. Surface Type	3. Area (ft²)	4. Framing Type	5. Cavity R-Value	6. Continuous R-Value	7. U-Factor / F-Factor / C-Factor	8. Status [1]
R-19 Roof4	Roof	10306	Wood	19	NA	U-Factor: 0.052	A
Slab On Grade6	UndergroundFloor	10306	NA	0	NA	F-Factor: 0.730	E
10 Concrete w/R-13B	ExteriorWall	7473	Metal	13	NA	U-Factor: 0.181	A
R-0 Wall17	InteriorWall	373	Wood	0	NA	U-Factor: 0.411	A

[1] *Status: N – New, A – Altered, E – Existing*

L. ROOFING PRODUCT SUMMARY — **§ 140.3** — Confirmed: Pass ☐ Fail ☐

1. Product Type	2. Product Density (lb/ft²)	3. Aged Solar Reflectance	4. Thermal Emittance	5. SRI	6. Cool Roof Credit	7. Roofing Product Description
R-19 Roof4	5.773	0.08	0.75	NA	No	NA

M. HVAC SYSTEM SUMMARY (see NRCC-PRF-MCH-DETAILS for more information) — **§ 110.1 / § 110.2**

Dry System Equipment [1] (Fan & Economizer info included below in Table N) — Confirmed: Pass ☐ Fail ☐

1. Equip Name	2. Equip Type	3. System Type (Simple [2] or Complex [3])	4. Qty	5. Total Heating Output (kBtu/h)	6. Supp Heat Source (Y/N)	7. Supp Heat Output (kBtuh)	8. Total Cooling Output (kBtu/h)	9. Efficiency: Cooling	9. Efficiency: Heating	10. Acceptance Testing Required? (Y/N) [4]	11. Status [5]
AC120AB	SZVAVAC (Packaged3Phase)	Complex	2	148	No	0	110	EER-11.5	AFUE-82.0	Yes	N
AC102A	SZVAVAC (Packaged3Phase)	Complex	1	103	No	0	93	EER-12.0	AFUE-82.0	Yes	N
AC60A	SZAC (Packaged3Phase)	Simple	1	53	No	0	58	SEER-16.00 / EER-12.00	AFUE-81.0	Yes	N
AC36A	SZAC (Packaged3Phase)	Simple	1	53	No	0	34	SEER-16.00 / EER-12.00	AFUE-81.0	Yes	N

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A. PROJECT GENERAL INFORMATION

1.	Project Location (city)	Torrance	8.	Standards Version	Compliance2016
2.	CA Zip Code	90502	9.	Compliance Software (version)	EnergyPro 7.2
3.	Climate Zone	6	10.	Weather File	TORRANCE_722955_CZ2010.epw
4.	Total Conditioned Floor Area in Scope	10,306 ft²	11.	Building Orientation (deg)	(N) 0 deg
5.	Total Unconditioned Floor Area	0 ft²	12.	Permitted Scope of Work	ExistingAlteration
6.	Total # of Stories (Habitable Above Grade)	1	13	Building Type(s)	Nonresidential
7.	Total # of dwelling units	0	14	Gas Type	NaturalGas

B. COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft²-yr) — **§ 140.1**

BUILDING COMPLIES

1. Energy Component	2. Standard Design (TDV)	3. Proposed Design (TDV)	4. Compliance Margin (TDV)	5. Percent Better than Standard
Space Heating	11.62	1.43	10.19	87.7%
Space Cooling	102.39	60.05	42.34	41.4%
Indoor Fans	36.73	85.40	-48.67	-132.5%
Heat Rejection	--	--	--	--
Pumps & Misc.	1.82	--	1.82	--
Domestic Hot Water	27.25	27.25	--	0.0%
Indoor Lighting	99.42	99.42	--	0.0%
COMPLIANCE TOTAL	**279.23**	**273.55**	**5.68**	**2.0%**
Receptacle	111.40	111.40	0.0	0.0%
Process	68.80	68.80	0.0	0.0%
Other Ltg	--	--	--	--
Process Motors	--	--	--	--
TOTAL	**459.43**	**453.75**	**5.7**	**1.2%**

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C. PRIORITY PLAN CHECK/ INSPECTION ITEMS (in order of highest to lowest TDV energy savings)

1st	Space Cooling: Check envelope and mechanical	*Compliance Margin By Energy Component (from Table B column 4)*
2nd	Space Heating: Check envelope and mechanical	Space Cooling, Space Heating, Pumps & Misc., Heat Rejection, Domestic Hot Water, Indoor Lighting, Indoor Fans; Penalty; Energy Credit
3rd	Pumps & Misc.: Check mechanical	
4th	Heat Rejection: Check envelope and mechanical	
5th	Domestic Hot Water: Check mechanical	
6th	Indoor Lighting: Check lighting	
7th	Indoor Fans: Check envelope and mechanical	

D. EXCEPTIONAL CONDITIONS

The building does not include service water heating. Verify that service water heating is not required and is not included in the design.

E. HERS VERIFICATION

This Section Does Not Apply

F. ADDITIONAL REMARKS

None Provided

CA Building Energy Efficiency

ENVELOPE MANDATORY MEASURES: NONRESIDENTIAL — ENV-MM

Project Name: DCX7 — Date: 12/9/2019

DESCRIPTION

Building Envelope Measures:

§110.8(a):	Installed insulating material shall have been certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20 Chapter 4, Article 3.
§110.8(c):	All Insulating Materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 2602 and 707 of Title 24, Part 2.
§110.8(g):	Heated slab floors shall be insulated according to the requirements in Table 110.8-A.
§110.7(a):	All Exterior Joints and openings in the building that are observable sources of air leakage shall be caulked, gasketed, weatherstripped or otherwise sealed.
§110.6(a):	Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft.² of window area, 0.3 cfm/ft.² of door area for residential doors, 0.3 cfm/ft.² of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft.² for nonresidential double doors (swinging).
§110.6(a):	Fenestration U-factor shall be rated in accordance with NFRC 100, or the applicable default U-factor.
§110.6(a):	Fenestration SHGC shall be rated in accordance with NFRC 200, or NFRC 100 for site-built fenestration, or the applicable default SHGC.
§110.6(b):	Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).
§120.7(a):	The opaque portions of the roof/ceiling that separates conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: **Metal Building-** The weighted average U-factor of the roof assembly shall not exceed 0.098. **Wood Framed and Others-** The weighted average U-factor of the roof assembly shall not exceed 0.075.
§120.7(b):	The opaque portions of walls that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-factor as follows: **Metal Building-** The weighted average U-factor of the wall assembly shall not exceed 0.113. **Metal Framed-** The weighted average U-factor of the wall assembly shall not exceed 0.151. **Light Mass Walls-** A 6 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.440. **Heavy Mass Walls-** An 8 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.690. **Wood Framed and Others-** The weighted average U-factor of the wall assembly shall not exceed 0.110. **Spandrel Panels and Opaque Curtain Wall-** The weighted average U-factor of the spandrel panels and opaque curtain wall assembly shall not exceed 0.280. **Demising Walls-**. The opaque portions of framed demising walls shall meet the requirements of Item A or B below: A. Wood framed walls shall be insulated to meet a U-factor not greater than 0.099. B. Metal Framed walls shall be insulated to meet a U-factor not greater than 0.151.
§120.7(c):	The opaque portions of floors and soffits that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: **Raised Mass Floors-** Shall have a minimum of 3 inches of lightweight concrete over a metal deck or the weighted average U-factor of the floor assembly shall not exceed 0.269. **Other Floors-**The weighted average U-factor of the floor assembly shall not exceed 0.071.

B. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY — § 140.4

1. System ID	2. System Type	3. Qty	4. Rated Capacity (kBtu/h) Heating	4. Rated Capacity (kBtu/h) Cooling	5. Economizer	6. Zone Name	7. Airflow (cfm) Design	7. Airflow (cfm) Min.	7. Airflow (cfm) Min. Ratio	8. Fan BHP	8. Fan Cycles	8. Fan ECM Motor	Confirmed Pass	Confirmed Fail
1-AC120AB-Trm	VAV/NoReheatBox	2	NA	NA	NA	1-AC120AB	8000	4600	0.57	NA	NA	☐	☐	☐
4-AC102A-m/entry-Trm	VAV/NoReheatBox	1	NA	NA	NA	4-AC102A-m/entry	2202	1101	0.50	NA	NA	☐	☐	☐
3-AC102A-locker-Trm	VAV/NoReheatBox	1	NA	NA	NA	3-AC102A-locker	379	189	0.50	NA	NA	☐	☐	☐
2-AC102A-training-Trm	VAV/NoReheatBox	1	NA	NA	NA	2-AC102A-training	819	410	0.50	NA	NA	☐	☐	☐
6-AC60A-conference-Trm	Uncontrolled	1	NA	NA	NA	6-AC60A-conference	428	NA	0.00	NA	NA	☐	☐	☐
5-AC60A-office-Trm	Uncontrolled	1	NA	NA	NA	5-AC60A-office	1573	NA	0.00	NA	NA	☐	☐	☐
7-AC36A-Trm	Uncontrolled	1	NA	NA	NA	7-AC36A	1200	NA	0.00	NA	NA	☐	☐	☐
8-CU/WAC1-Trm	Uncontrolled	1	NA	NA	NA	8-CU/WAC1	953	NA	0.00	NA	NA	☐	☐	☐

C. EXHAUST FAN SUMMARY

This Section Does Not Apply

D. DHW EQUIPMENT SUMMARY – *(Adapted from NRCC-PLB-01)*

This Section Does Not Apply

E. MULTI-FAMILY CENTRAL DHW SYSTEM DETAILS

This Section Does Not Apply

F. SOLAR HOT WATER HEATING SUMMARY (Adapted from NRCC-STH-01)

This Section Does Not Apply

G. MECHANICAL HVAC ACCEPTANCE TESTS & FORMS *(Adapted from 2016-NRCC-MCH-01-E)* — § RA4

Declaration of Required Acceptance Certificates (NRCA) – Acceptance Certificates that may be submitted. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).

Test Description: Equipment Requiring Testing or Verification	# of units	MCH-04A Outdoor Air	MCH-04A Single Zone Unitary	MCH-04A Air Dist. Ducts	MCH-04A Economizer Controls	MCH-04A DCV	MCH-07A Supply Fan VAV	MCH-08A Valve Leakage	MCH-09A Supply Water Temp. Reset	MCH-09A Ind. Variable Flow Control	MCH-11A Auto Demand Shed Control	MCH-12A FDD for DX Units	MCH-13A Auto FDD for AV & Zone	MCH-14A Dist. Energy Exchange - DX AC	MCH-15A TES Systems	MCH-16A Supply Air Temp. Reset	MCH-17A Condenser Water Reset Controls	MCH-18A ECMS	Confirmed Pass	Confirmed Fail
AC120AB	2	X	--	--	X	X	--	--	--	--	--	X	--	--	--	--	--	--	☐	☐
AC102A	1	X	--	--	X	X	--	--	--	--	--	X	--	--	--	--	--	--	☐	☐
AC60A	1	X	X	--	X	X	--	--	--	--	--	X	--	--	--	--	--	--	☐	☐
AC36A	1	X	X	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	☐	☐
CU/WAC1	1	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	☐	☐

H. EVAPORATIVE COOLER SUMMARY

This Section Does Not Apply

NRCC-PRF-LTI-DETAILS -SECTION START-

A. INDOOR CONDITIONED LIGHTING CONTROL CREDITS (Adapted from NRCC-LTI-02-E) — § 140.6

This Section Does Not Apply

B. INDOOR CONDITIONED LIGHTING MANDATORY LIGHTING CONTROLS (Adapted from NRCC-LTI-02-E) — § 130.1

This Section Does Not Apply

§130.1(b) = Manual area controls; §130.1(b) + Multi Level; §130.1(c) = Auto Shut-Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Responsive

C. TAILORED METHOD CONDITIONED LIGHTING POWER ALLOWANCE SUMMARY AND CHECKLIST (Adapted from NRCC-LTI-04-E) — § 140.6

General lighting power (see Table D)	0
General lighting power from special function areas (see Table E)	NA
Additional "use it or lose it" (See Table G)	0
Total watts	0

D. GENERAL LIGHTING POWER (Adapted from NRCC-LTI-04-E) — § 140.6-D

This Section Does Not Apply

E. GENERAL LIGHTING FROM SPECIAL FUNCTION AREAS (Adapted from NRCC-LTI-04-E) — § 140.6(c) 3H

Room Number	Primary Function Area	Illuminance Value (LUX)	Room Cavity Ratio (Table G)	Allowed LPD	Floor Area (ft²)	Allowed Watts	Confirmed Pass	Confirmed Fail
NA	NA	NA	NA	NA	NA	NA	☐	☐

Note: Tailored Method for Special Function Areas is not currently implemented

F. ROOM CAVITY RATIO (Adapted from NRCC-LTI-04-E)

Rectangular Spaces

Room Number	Task/Activity Description	Room Length (ft)	Room Width (ft)	Room Cavity Height (ft)	RCR	Confirmed Pass	Confirmed Fail
NA	NA	NA	NA	NA	NA	☐	☐

Non-Rectangular Spaces

This Section Does Not Apply

Note: All applicable spaces are listed under the Non-Rectangular Spaces table

G. ADDITIONAL "USE IT OR LOSE IT" (Adapted from NRCC-LTI-04-E)

1. Wall Display	2. Combined Floor Display and Task Lighting	3. Combined Ornamental and Special Effects Lighting	4. Very Valuable Merchandise	Allowed Watts	Confirmed Pass	Confirmed Fail
0	0	0	0	0	☐	☐

5. Wall Display

This Section Does Not Apply

6. Floor Display and Task Lighting

This Section Does Not Apply

7. Combined Ornamental and Special Effects Lighting

This Section Does Not Apply

8. Very Valuable Merchandise

This Section Does Not Apply

H. INDOOR & OUTDOOR LIGHTING ACCEPTANCE TESTS & FORMS (Adapted from NRCC-LTI-01-E and NRCC-LTO-01-E) — § 130.4

Declaration of Required Acceptance Certificates (NRCA) –Acceptance Certificates that must be verified in the field. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).

Test Description: Equipment Requiring Testing or Verification	# of units	Indoor NRCA-LTI-02-A Occ Sensors / Auto Time Switch	Indoor NRCA-LTI-03-A Auto Daylight	Indoor NRCA-LTI-04-A Demand Responsive	Outdoor NRCA-LTO-02-A Outdoor Controls	Confirmed Pass	Confirmed Fail
Occupant Sensors	0	☐	☐	☐	☐	☐	☐
Automatic Time Switch	0	☐	☐	☐	☐	☐	☐
Automatic Daylighting	0	☐	☒	☐	☐	☐	☐
Demand Responsive	0	☐	☐	☐	☐	☐	☐
Outdoor Controls	0	☐	☐	☐	☐	☐	☐

T. UNMET LOAD HOURS

Thermal Zone Name	Cooling Unmet Load Hour Limit for Thermal Zone	Proposed Cooling Unmet Load Hours	Heating Unmet Load Hour Limit for Thermal Zone	Proposed Heating Unmet Load Hours
2-AC102A-training	150	2112.75	150	0
6-AC60A-conference	150	1825.25	150	53.5

U. ENERGY USE SUMMARY

Energy Component	Standard Design Site (MWh)	Proposed Design Site (MWh)	Margin (MWh)	Standard Design Site (MBtu)	Proposed Design Site (MBtu)	Margin (MBtu)
Space Heating	0.0	--	--	71.4	8.6	62.8
Space Cooling	29.8	14.6	15.2	--	--	--
Indoor Fans	14.6	41.0	-26.4	--	--	--
Heat Rejection	--	--	--	--	--	--
Pumps & Misc.	1.1	--	--	--	--	--
Domestic Hot Water	--	--	--	194.9	194.9	0.0
Indoor Lighting	44.6	44.6	0.0	--	--	--
COMPLIANCE TOTAL	**90.1**	**100.2**	**-10.1**	**266.3**	**203.5**	**62.8**
Receptacle	52.4	52.4	0.0	--	--	--
Process	30.2	30.2	0.0	--	--	--
Other Ltg	--	--	--	--	--	--
Process Motors	--	--	--	--	--	--
TOTAL	**172.7**	**182.8**	**-10.1**	**266.3**	**203.5**	**62.8**

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT — § 10-103

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: MARICE E. YEE	Signature:
Company: RPM Engineers, Inc.	Signature Date: 12/9/2019
Address: 102 Discovery	CEA Identification (If applicable):
City/State/Zip: Irvine CA 92618	
Phone: (949) 450-1229	

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am licensed in the State of California as a civil engineer, mechanical engineer, electrical engineer, or I am a licensed architect.
2. I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code by section 5537.2 or 6737.3 to sign this document as the person responsible for its preparation; and that I am a licensed contractor performing this work.
3. I affirm that I am eligible under Division 3 of the Business and Professions Code to sign this document because it pertains to a structure or type of work described as exempt pursuant to Business and Professions Code Sections 5537, 5538 and 6737.1.

Responsible Envelope Designer Name: Robert Michael Jacob	Signature:
Company: HPA, Inc.	Date Signed: 12/9/2019
Address: 18831 Bardeen Ave, Ste #100	Declaration Statement Type: 1
City/State/Zip: Irvine CA 92612	Title: ARCHITECT — License #: C22276
Phone: 949-863-1770	
Responsible Lighting Designer Name: Lan V. Nguyen	**Signature: NOT IN SCOPE**
Company: RPM Engineers, Inc.	
Address: 102 Discovery	Date Signed:
City/State/Zip: Irvine CA 92618	Declaration Statement Type:
Phone: 949-450-1229	Title: — License #: E15596
Responsible Mechanical Designer Name: Maurice E. Yee	Signature:
Company: RPM Engineers, Inc.	Date Signed: 12/9/2019
Address: 102 Discovery	Declaration Statement Type: 1
City/State/Zip: Irvine CA 92618	Title: MECHANICAL ENGINEER — License #: M30465
Phone: 949-450-1229	

NRCC-PRF-ENV-DETAILS -SECTION START-

A. OPAQUE SURFACE ASSEMBLY DETAILS

1. Surface Name	2. Surface Type	3. Description of Assembly Layers	4. Notes	Confirmed Pass	Confirmed Fail
R-19 Roof4	Roof	Asphalt shingles - 1/4 in. Vapor permeable felt - 1/8 in. Plywood - 1/2 in. Wood framed roof, 24in. OC, 5.5in., R-19 Gypsum Board - 1/2 in.		☐	☐
Slab On Grade6	UndergroundFloor	Slab Type = UnheatedSlabOnGrade Insulation Orientation = None Insulation R-Value = R0		☐	☐
10 Concrete w/R-138	ExteriorWall	Concrete - 140 lb/ft3 - 10 in. Metal framed wall, 24in. OC, 3.5in., R-13 Gypsum Board - 5/8 in.		☐	☐
R-0 Wall17	InteriorWall	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Wood framed wall, 16in. OC, 3.5in., R-0 Gypsum Board - 1/2 in.		☐	☐

B. OVERHANG DETAILS (Adapted from NRCC-ENV-02-E)

This Section Does Not Apply

C. OPAQUE DOOR SUMMARY

1. Opaque Door Assembly Name / Tag or I.D.	2. Door Type	3. Certification Method	4. Operation	5. Area	6. Overall U-factor	7. Status[1]	Confirmed Pass	Confirmed Fail
Hollow Metal Door10	MetalUninsulatedDoubleLayerDoor	DefaultPerformance	Swinging	72	0.700	A	☐	☐

[1] *Status: N - New, A – Altered, E – Existing*

NRCC-PRF-MCH-DETAILS -SECTION START-

A. MECHANICAL VENTILATION AND REHEAT *(Adapted from 2016-NRCC-MCH-03-E)* — Confirmed Pass ☐ Fail ☐

CONDITIONED ZONE NAME	1. DESIGN AIR FLOWS: HEATING/COOLING SYSTEM ID	DESIGN PRIMARY AIR FLOW (CFM)	DESIGN PRIMARY AIR FLOW/ MINIMUM AIR FLOW (CFM)	MINIMUM PRIMARY AIR FLOW FRACTION	MAXIMUM HEATING AIR FLOW (CFM)	MAXIMUM HEATING AIR FLOW FRACTION	MIN. OUTDOOR AIR FLOW (CFM)	2. VENTILATION (§ 120.1): CONDITIONED AREA (ft2)	MIN. VENTILATION RATE (CFM/ft2)	DESIGN MAX. OCC (PEOPLE)	MIN. VENTILATION RATE (CFM/PERSON)	DESIGN VENT. AIR FLOW (CFM)	TRANSFER AIR FLOW (CFM)	DCV (Y/N)	Operable Window/Doors (Y/N)	Pass	Fail
1-AC120AB	AC120AB	8,000	4,600	0.57	NA	NA	N	AC120AB	4,150	0.50	138.3 a	15.00	2,075	NA	Y	NA	☐	☐
2-AC102A-training	AC102A	819	410	0.50	NA	NA	N	AC102A	800	0.50	26.67	15.00	400	400	NA	Y	NA	☐	☐
3-AC102A-locker	AC102A	379	189	0.50	NA	NA	N	AC102A	370	0.15	3.70	15.00	56	56	NA	N	NA	☐	☐
4-AC102A-m/entry	AC102A	2,202	1,101	0.50	NA	NA	N	AC102A	2,151	0.15	10.76	30.00	323	323	NA	N	NA	☐	☐
5-AC60A-office	AC60A	1,573	NA	0.00	NA	NA	N	AC60A	1,258	0.15	6.29	30.00	189	189	NA	N	NA	☐	☐
6-AC60A-conference	AC60A	428	NA	0.00	NA	NA	N	AC60A	342	0.50	11.40	15.00	171	171	NA	Y	NA	☐	☐
7-AC36A	AC36A	1,200	NA	0.00	NA	NA	N	AC36A	1,070	0.20	8.92	24.00	214	214	NA	N	NA	☐	☐
8-CU/WAC1	CU/WAC1	953	NA	0.00	NA	NA	N	CU/WAC1	165	0.15	0.25	100.00	25	25	NA	N	NA	☐	☐
								TOTAL	10,306		206.33		3,453	3,453	NA			☐	☐

RPM Engineers, Inc.
102 DISCOVERY
Irvine, Ca. 92618
Tel: 949-450-1229 (208)
Fax: 949-450-1454
Contact: Johnny Lai
e-mail: johnnyl@rpmpe.com

REGISTERED PROFESSIONAL ENGINEER — MARICE E. YEE — No. 30465 Exp.12-31-19 — MECHANICAL — STATE OF CALIFORNIA

12/09/2019

HPA architecture
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18831 bardeen avenue - ste. #100 irvine, ca 92612
tel: 949•863•1770
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Owner:

Project:

TORRANCE
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950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: TITLE 24 FORMS AND NOTES

Project Number: 19436
Drawn by: ML
Date: 10/24/19
Revision:

Sheet:

T24-2

RPM #19-755 — 12/09/19

TITLE 24 ELECTRICAL POWER DISTRIBUTION NOTE

THIS PROJECT IS A TENANT IMPROVEMENT PROJECT WHICH DOES NOT INSTALL AN ENTIRELY NEW POWER DISTRIBUTION, OR COMPLETELY REPLACE AN EXISTING POWER DISTRIBUTION SYSTEM THEREFORE THE FOLLOWING ITEMS DO NOT APPLY PER 2016 NONRESIDENTIAL COMPLIANCE MANUAL SECTION 8.6 ADDITIONS AND ALTERATIONS:

1. SERVICE ELECTRICAL METERING.
2. SEPARATION OF ELECTRICAL CIRCUIT FOR ELECTRICAL ENERGY MONITORING
3. CIRCUIT CONTROLS FOR 120V RECEPTACLES AND CONTROLLED RECEPTACLES.

TITLE 24 GENERAL NOTE

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH FINAL INSPECTION AND APPLICABLE ACCEPTANCE REQUIREMENT PROCEDURES. INCLUDE ALL COSTS IN THE BASE BID. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO CONSTRUCTION INSPECTION, MEASUREMENTS, MONITORING, FUNCTIONAL TESTING, CALIBRATING, ETC. CONTRACTOR SHALL ASSUME THE ROLE OF "FIELD TECHNICIAN" AND "RESPONSIBLE PERSON" AS DEFINED IN STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL SECTION 13.2.2.

COMPLIES WITH STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS SECTIONS 10-103(a)3A AND 10-103(a)3B AND SECTION 130.4.

COMPLIES WITH STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL CHAPTER 13.

COMPLIES WITH STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS RESIDENTIAL COMPLIANCE MANUAL CHAPTER 2.

PROVIDE COMPLETED INSTALLATION CERTIFICATE(S) AND CERTIFICATED(S) OF ACCEPTANCE AS REQUIRED TO THE SATISFACTION OF THE ENFORCEMENT AGENCY.

EXTERIOR LIGHTING FIXTURE SCHEDULE

Schedule

Symbol	Label	Catalog Number	Description	Lamp	Number Lamps	Lumens per Lamp	LLF	Wattage
⊠	SA1	VLL-PLED-III-W-80LED-1050mA-NW MM511 POLE MT AT 25 ft AFG 22.5 FT POLE 30 IN BASE	CAST BLACK PAINTED FINNED METAL HOUSING, CAST BLACK PAINTED METAL DRIVER COVER, 4 CIRCUIT BOARDS EACH WITH 20 LEDS, 1 CLEAR PLASTIC OPTIC BELOW EACH LED, 1 FORMED SEMI-SPECULAR METAL OPTIC MOUNTING PLATE BELOW EACH CIRCUIT BOARD.	EIGHTY WHITE LIGHT EMITTING DIODES (LEDS). VERTICAL BASE-UP POSITION. PRORATED BASED ON RZRG-120LED ITL & WORSE CASE RZR-80PLED ITL. VOLTAGE (120VAC, 60Hz) TO THE DRIVERS.	80	337	0.9	256.4
□	W1	VLL-PLED-IV-FT-80LED-700mA-NAnW WALL MT AT 25 FT AFG	CAST BLACK PAINTED FINNED METAL HOUSING, CAST BLACK PAINTED METAL DRIVER COVER, 4 CIRCUIT BOARDS EACH WITH 20 LEDS, 1 CLEAR PLASTIC OPTIC BELOW EACH LED, 1 FORMED SEMI-SPECULAR METAL OPTIC MOUNTING PLATE BELOW EACH CIRCUIT BOARD.	EIGHTY WHITE LIGHT EMITTING DIODES (LEDS), VERTICAL BASE-UP POSITION. VOLTAGE (120VAC, 60Hz) TO THE DRIVER.	80	247	0.9	173.6
□	W2	VLL-PLED-III-W-80LED-700mA-NW -MM511 WALL MT AT 25 FT AFG	CAST BLACK PAINTED FINNED METAL HOUSING, CAST BLACK PAINTED METAL DRIVER COVER, 4 CIRCUIT BOARDS EACH WITH 20 LEDS, 1 CLEAR PLASTIC OPTIC BELOW EACH LED, 1 FORMED SEMI-SPECULAR METAL OPTIC MOUNTING PLATE BELOW EACH CIRCUIT BOARD.	EIGHTY WHITE LIGHT EMITTING DIODES (LEDS), VERTICAL BASE-UP POSITION. PRORATED BASED ON RZRS-120LED ITL & WORSE CASE RZR-80PLED ITL, VOLTAGE (120VAC, 60Hz) TO THE DRIVERS.	80	254	0.9	173.6
□	SA2	VLL-PLED-III-80LED-700mA-NW-HS MM511 POLE MT AT 25 FT AFG 22.5 FT POLE 30 IN BASE	CAST BLACK PAINTED FINNED METAL HOUSING, CAST BLACK PAINTED METAL DRIVER COVER, 4 CIRCUIT BOARDS EACH WITH 20 LEDS, 1 CLEAR PLASTIC OPTIC BELOW EACH LED, 1 MOLDED BLACK PLASTIC HOUSE SIDE SHIELD BELOW EACH OPTIC, 1 FORMED SEMI-SPECULAR METAL OPTIC MOUNTING PLATE BELOW EACH CIRCUIT BOARD.	EIGHTY WHITE LIGHT EMITTING DIODES (LEDS). VERTICAL BASE-UP POSITION. PRORATED BASED ON 120LED ITL & WORSE CASE RZR-80PLED ITL. PR - LUMEN OUTPUT PRORATED FROM UPDATED TESTING (04/17).	80	198	0.9	173.6

DEMOLITION NOTES

1. MAKE ALL NECESSARY ALTERATIONS TO COORDINATE AND CONNECT THE EXISTING WITH THE NEW ELECTRICAL WORK TO THE END THAT WHEN THE WORK IS COMPLETE, THE ENTIRE ELECTRICAL INSTALLATION, EXISTING AND NEW, SHALL BE IN COMPLETE OPERATING CONDITION. THE DRAWINGS INDICATE THE WORK WHICH IS TO BE IN PLACE AT THE COMPLETION OF THE INSTALLATION.
2. EXCEPT WHERE SPECIFICALLY NOTED TO THE CONTRARY, ALL EXISTING FIXTURES, SWITCHES, AND OTHER MATERIALS OR EQUIPMENT THAT IS REPLACED WITH NEW AND IS NOT INDICATED TO BE REUSED SHALL BE TURNED OVER TO THE OWNER OR BE DISPOSED OF AS DIRECTED BY THE OWNER.
3. EXISTING MATERIAL TO REMAIN UPON COMPLETION IS INDICATED ON DRAWINGS AS EXISTING. CONDUIT AND WIRING IS EXISTING TO THEIR RESPECTIVE SOURCE. ALTHOUGH NOT INDICATED ON THE DRAWINGS, THIS MAY REQUIRE THE TEMPORARY REMOVAL OR RE-ROUTING OF CONDUITS AND REPLACING EXISTING WIRING WITH NEW DURING THE COURSE OF CONSTRUCTION WORK.
4. FURNISH AND INSTALL NEW BLANK PLATES FOR ALL REMOVED OUTLETS, SWITCHES, LIGHT FIXTURES, ETC., WHEN THE OUTLET BOX IS TO REMAIN.
5. REMOVE ALL EXISTING CONDUCTORS AND EXPOSED CONDUITS ABANDONED BACK TO PANEL BOARD. LABEL NEW PANEL DIRECTORY AS "SPARE".
6. MAINTAIN CONTINUITY OF ALL ELECTRICAL SYSTEMS, EQUIPMENT, ETC., REMAINING IN OPERATION WHICH IS BEING FED BY AN ABANDONED OUTLET. MAINTAINING CONTINUITY SHALL CONSIST OF RE-ROUTING OF CONDUIT AND WIRING, AS REQUIRED TO SUIT THE EXISTING CONDITIONS.
7. DASHED J-BOX DENOTES APPROXIMATE LOCATION OF EXISTING BOXES IN ACCESSIBLE CEILING SPACE. ALL CONDUIT SHOWN FROM J-BOX IS NEW UNLESS SHOWN OTHERWISE AS DASHED.
8. EXISTING LOADS SHOWN ON PANEL SCHEDULES ARE BASED ON ASSUMPTIONS MADE BY FIELD VISIT. NOTIFY ENGINEER AT ONCE IF LOADS EXCEED 16 AMPS ON ANY 20 AMP 1 POLE CIRCUIT.
9. REVIEW ARCHITECT'S DEMO DRAWINGS FOR LOCATION OF WALLS BEING REMOVED UNDER THIS SCOPE OF WORK AND REMOVE ALL CONDUIT AND WIRING BACK TO LAST DEVICE LEFT IN SERVICE. DO NOT LEAVE ABANDONED.
10. REVIEW ARCHITECT'S DEMO DRAWINGS FOR LOCATION AND QUANTITY OF EXISTING FLOOR BOX LOCATIONS BEING REMOVED UNDER THIS SCOPE OF WORK. REMOVE FLOOR BOXES AND ALL WIRING BACK TO LAST DEVICE LEFT IN SERVICE. DO NOT LEAVE ABANDONED.

RPM ENGINEERS,INC. SHALL NOT BE HELD RESPONSIBLE FOR ELECTRICAL CHANGE ORDERS THAT MAY OCCUR SHOULD FINAL BIDS AND/OR CONSTRUCTION BASED ON THESE DOCUMENTS BE STARTED PRIOR TO ELECTRICAL PLAN CHECK APPROVAL.

ALL WORK TO COMPLY WITH THE 2016 CBC, CPC AND CMC AND THE 2016 CEC (2014 NEC) WITH STATE AND LOCAL AMENDMENTS.

CONDUCTORS

ALL CONDUCTORS SHALL BE COPPER AS FOLLOWS:

#12 AWG AND SMALLER – SOLID, THHN/THWN-2

#10 AWG AND LARGER – STRANDED, THWN-2, THHN OR XHHW

ALL TERMINATIONS AND CONDUCTOR SIZES ARE BASED ON 75°C TEMPERATURE RATING

ALL EQUIPMENTS SHALL BE U.L. LISTED AND INSTALLED ACCORDING TO THE LISTING.

IMPORTANT BID NOTE

REFER TO ARCHITECTURAL, MECHANICAL AND PLUMBING DRAWINGS FOR ADDITIONAL NOTES, SPECIFICATIONS, DETAILS, CONTROLS, ETC. THAT FORM A PART OF THIS CONTRACT. ANY CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND CLARIFIED BY THEM FOR INCLUSION IN BASE BID. THIS REQUIREMENT WILL BE STRICTLY ENFORCED. NO CHANGE ORDERS WILL BE ALLOWED SHOULD THIS CONTRACTOR FAIL TO PERFORM THIS FUNCTION.

a. LIGHTING STANDARDS REQUIRE A SEPARATE PERMIT.
b. ALL SIGN REQUIRE SEPARATE PERMITS AND APPROVALS.
c. ALL EQUIPMENT SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY.

THE USE OF CONDUITS

IMC: INTERMEDIATE METAL CONDUIT
RMC: RIGID METAL CONDUIT
FMC: FLEXIBLE METAL CONDUIT
LFMC: LIQUIDTIGHT FLEXIBLE METAL CONDUIT
RNC: RIGID NONMETALLIC CONDUIT
LFNC: LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT
EMT: ELECTRICAL METALLIC TUBING

OUTDOORS
1. EXPOSED CONDUIT: IMC, RMC, RNC (TYPE EPC-40-PVC AND EPC-80-PVC)
2. CONCEALED CONDUIT, ABOVE GROUND: IMC, EMT, RNC (TYPE EPC-40-PVC)
3. UNDERGROUND CONDUIT: RNC, TYPE EPC-40 OR 80, DIRECT BURIED
4. CONNECTION TO VIBRATING EQUIPMENT: LFMC, LFNC

INDOORS
1. EXPOSED, NOT SUBJECT TO PHYSICAL DAMAGE: EMT, FMC, RNC
2. EXPOSED AND SUBJECT TO PHYSICAL DAMAGE: RMC, IMC
3. CONCEAL IN WALL AND CEILING: EMT, FMC
4. DAMP OR WET LOCATION: RMC, IMC
5. CONNECTION TO VIBRATING EQUIPMENT: FMC, LFMC
6 UNDERGROUND CONDUIT: RNC, TYPE EPC-40 OR 80, DIRECT BURIED CONCEALED IN FLOOR

INSTALL FITTINGS, SPECIAL DEVICES AND MATERIAL, WHICH MAY BE REQUIRED FOR THE PROPER INSTALLATION OF THE CONDUIT SYSTEM.

NOTES:

a) ELECTRICAL RECEPTACLE OUTLETS ON BRANCH CIRCUITS OF 30 AMPERES OR LESS AND COMMUNICATION SYSTEM RECEPTACLES SHALL BE LOCATED NO MORE THAN 48" MEASURED FROM TOP OF THE RECEPTACLE OUTLET BOX OR RECEPTACLE HOUSING NOR LESS THAN 15" MEASURED FROM THE BOTTOM OF THE RECEPTACLE OUTLET BOX OR RECEPTACLE HOUSING TO THE LEVEL OF THE FINISH FLOOR OR WORKING PLATFORM.

b) CONTROL SWITCHES INTENDED TO BE USED BY THE OCCUPANT OF THE ROOM OR AREA TO CONTROL LIGHTING AND RECEPTACLE OUTLETS, APPLIANCES OR COOLING, HEATING AND VENTILATING EQUIPMENT SHALL BE LOCATED NO MORE THAN 48" MEASURED FROM TOP OF OUTLET BOX NOR LESS THAN 15" MEASURED FROM THE BOTTOM OF THE OUTLET BOX TO THE LEVEL OF THE FINISH FLOOR OR WORKING PLATFORM.

LIGHTING PLAN NOTES: (TYPICAL FOR ALL SHEETS)

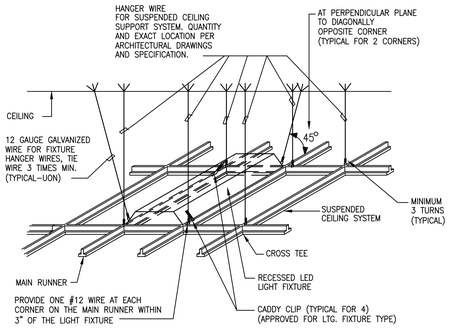
1. MULTI-LEVEL LIGHTING CONTROLS ARE NOT REQUIRED FOR SPACES LESS THAN 100 SQ.FT. [CEC 130.1(B)]
2. MULTI-LEVEL LIGHTING CONTROLS ARE NOT REQUIRED FOR SPACES 100 SQ.FT. OR LARGER WITH A LIGHTING POWER DENSITY LESS OF 0.5 WATTS/SF OR SMALLER. [CEC 130.1(B)]
3. PARTIAL ON/OFF SENSING CONTROLS SHALL BE INSTALLED IN CORRIDORS AND STAIRWAYS AND REDUCE LIGHTING POWER BY AT LEAST 50% WHEN SPACE IS UNOCCUPIED. [CEC 130.1(C)(6)(C)]
4. AUTOMATIC DAYLIGHTING CONTROLS ARE NOT REQUIRED IF THE GENERAL LIGHTING POWER IN THE SKYLIT DAYLIT ZONE AND PRIMARY DAYLIT ZONE IS LESS THAN 120 WATTS. [CEC 130.1(D)(2)]
5. SECONDARY DAYLIGHTING CONTROLS ARE NOT REQUIRED IF THE GENERAL LIGHTING IN SECONDARY DAYLIT ZONE ZONE IS LESS THAN 120 WATTS. [CEC 140.6]
6. OBTAIN AN APPROVAL OF EXACT LOCATION OF ALL NEW SWITCHES/SENSORS WITH THE ARCHITECT PRIOR TO ROUGH-IN. NO EXCEPTIONS.

LIGHTING FIXTURE SCHEDULE

TYPE	LAMPS	VOLTS	DESCRIPTION	MANUFACTURER
EM A 42	(1) 42W LED 4000'K	120/277	RECESSED 2'X4' INDIRECT/DIRECT LED FIXTURE WITH 0-10V LED DRIVER. SUBSCRIPT 'EM' DENOTES FIXTURE SHALL BE EQUIPPED WITH 10W, 90 MINUTE BATTERY PACK. BATTERY PACK MUST BE TITLE 20 COMPLIANT.	LITHONIA #2BLT4-48L-ADP-EZ1-LP840-(E10WLCP) METALUX #244C-LD5-48-UNV-L840-CD1-U-() (OR APPROVED EQUAL)
EM B 32	(1) 32W LED 4000'K	120/277	SURFACE MOUNTED 1'X4' WRAPAROUND LED FIXTURE WITH 0-10V DIMMING DRIVER. SUBSCRIPT 'EM' DENOTES FIXTURE SHALL BE EQUIPPED WITH 10W, 90 MINUTE BATTERY PACK. BATTERY PACK MUST BE TITLE 20 COMPLIANT.	LITHONIA #LBL4-40L-EZ1-LP840-(E10WLCP) METALUX #SNLED-LD4-41SL-LW-UNV-L940-CD1-U (OR APPROVED EQUAL)
EM C 23	(1) 20.5W LED 4000'K	120/277	RECESSED 6"DIA OPEN LED DOWN LIGHT FIXTURE WITH 0-10V DIMMING DRIVER. SUBSCRIPT 'EM' DENOTES FIXTURE SHALL BE EQUIPPED WITH 10W, 90 MINUTE BATTERY PACK. BATTERY PACK MUST BE TITLE 20 COMPLIANT.	LITHONIA #LDN6-40-15-L06-MVOLT-(ELSD) (OR APPROVED EQUAL)
EM D1 77	(1) 69W LED 4000'K	120/277	PENDANT MOUNTED 8' LED STRIP FIXTURE, WITH END OF ROW MOTION SENSOR SUBSCRIPT 'EM' DENOTES FIXTURE SHALL BE EQUIPPED WITH 10W, 90 MINUTE BATTERY PACK. BATTERY PACK MUST BE TITLE 20 COMPLIANT.	LITHONIA # METALUX #8TSNLED-LD5-81SL-LW-UNV-LB-(EL14W)-ERMS360-L840-CD1-U (OR APPROVED EQUAL)
EM D2 77	(1) 69W LED 4000'K	120/277	PENDANT MOUNTED 8' LED STRIP FIXTURE, WITH MIDDLE OF ROW MOTION SENSOR SUBSCRIPT 'EM' DENOTES FIXTURE SHALL BE EQUIPPED WITH 10W, 90 MINUTE BATTERY PACK. BATTERY PACK MUST BE TITLE 20 COMPLIANT.	LITHONIA # METALUX #8TSNLED-LD5-81SL-LW-UNV-LB-(EL14W)-MRMS360-L840-CD1-U (OR APPROVED EQUAL)
X 5	L.E.D.	120/277	UNIVERSAL MOUNTING L.E.D. EXIT SIGN WITH GREEN LETTER AND 90 MINUTE BATTERY PACK.	LITHONIA #LQM-S-3-G-120/277-ELN COOPER #APX7R (OR APPROVED EQUAL)
EM G 25	(1) 25W LED 4000'K	120/277	WALL MOUNTED ABOVE DOOR LED FIXTURE EQUIPPED WITH 90 MINUTE BATTERY PACK.	CGT DESIGN #ALAMEDA AM9-WT-LED40-CT4-277-BZ (EM)-BZ

LIGHTING FIXTURE NOTES

1. ALL EQUIPMENT TO BE U.L. LISTED.
2. LIGHTING FIXTURES IN CONTACT WITH INSULATION TO BE U.L. LISTED FOR THERMAL BARRIER OR PROVIDE 3" MINIMUM CLEARANCE.
3. FIXTURES INSTALLED IN FIRE RATED CEILINGS SHALL BE INSTALLED IN AN APPROVED FIRE RESISTIVE MANNER CONSISTENT WITH RATING OF CEILING.
4. FOR FIXTURE EXACT LOCATIONS, REFER TO LATEST ARCHITECTURAL REFLECTED CEILING PLAN.
5. CONFIRM ALL LIGHTING FIXTURE SPECIFICATIONS WITH ARCHITECT PRIOR TO ORDER.
6. ALL EM BATTERIES SHALL BE TITLE 20 COMPLIANT.



FIXTURE MOUNTING DETAIL 1

SCALE: NONE

ELECTRICAL SYMBOL LIST

SYMBOL	DESCRIPTION
←	HOMERUN TO PANEL OR EQUIPMENT AS NOTED
———	CONDUIT RUN CONCEALED IN WALL OR ABOVE FINISHED CEILING OR AS NOTED
- - - -	CONDUIT IN OR UNDER, OR UNDERGROUND, 3/4" MINIMUM SIZE.
——/——	CONDUIT RUN WITH EQUIPMENT GROUNDING CONDUCTOR, SAME SIZE AS CIRCUIT CONDUCTORS, OR AS NOTED.
——/IG——	CONDUIT RUN WITH ISOLATED GROUNDING CONDUCTOR, SAME SIZE AS CIRCUIT CONDUCTORS, OR AS NOTED.
	BRANCH CIRCUIT WIRING, 2#12 IN 1/2" CONDUIT AS NOTED OR SYMBOLIZED
—/—	1/2"C.-3 #12
—//—	1/2"C.-4#12
—///	3/4"C.-5#12
—///—	3/4"C.-6 #12
—////—	3/4"C.-7 #12
—/////—	3/4"C.-8#12
—EM—	1/2" CONDUIT WITH EMERGENCY CIRCUIT
—X—	EXISTING CONDUIT AND WIRE TO REMAIN
—R—	EXISTING CONDUIT AND WIRE TO BE REMOVED
A	ELECTRICAL PANELBOARD, AS DESIGNATED, FLUSH OR SURFACE MOUNTED AS INDICATED
A	LETTERED BALLOON INDICATING PANELBOARD OR EQUIPMENT DESIGNATION
	DUPLEX/TELE RECEPTACLE FLUSH IN FLOOR BOX WITH DUPLEX HINGE COVERS
	DUPLEX RECEPTACLE IN WALL, +18" OR AS NOTED
	SPLIT CIRCUIT DUPLEX RECEPTACLE, UPPER RECEPTACLE SHALL BE OCCUPANCY CONTROLLED. CONTROLLED RECEPTACLE SHALL BE CLEARLY MARKED, +18" OR AS NOTED
	SHOW WINDOW DUPLEX RECEPTACLE MOUNTED IN CEILING
	GFCI DUPLEX RECEPTACLE IN WALL, +42" OR AS NOTED
	TWO-GANG DUPLEX RECEPTACLE (QUADPLEX) IN WALL, +18" OR AS NOTED
	DUPLEX RECEPTACLE (20 AMP) +18" OR AS NOTED (ON A SEPARATE CIRCUIT)
	GFCI DUPLEX RECEPTACLE IN WALL, +42" OR AS NOTED (ON A SEPARATE CIRCUIT)
	SPECIAL RECEPTACLE TYPE AS DESIGNATED, +18" OR AS NOTED
	FLUSH POKE THRU COMBINATION TELEPHONE, DATA AND POWER WITH FLEX FEED TO ELECTRIFIED PARTITION SYSTEM. PROVIDE (2) 1-1/4"C.O. FROM TELEPHONE/DATA J-BOX TO ACCESSIBLE CEILING SPACE
	WALL MOUNTED J-BOXES @ +18" FOR HARDWIRE POWER/TELEPHONE/DATA CONNECTION TO ELECTRIFIED PARTITION SYSTEM. PROVIDE (2) 1-1/4"C.O. FROM TELEPHONE/DATA J-BOX TO ACCESSIBLE CEILING SPACE
J	JUNCTION BOX, ABOVE CEILING, OR AS REQUIRED TO SUIT THE APPLICATION
J	APPROXIMATE LOCATION EXISTING J-BOX IN ACCESSIBLE CEILING SPACE
	J-BOX MOUNTED TO UNDERSIDE FACE OF SLAB BELOW
	0-60 MINUTE EXHAUST FAN TIMER. LOCATE PER MECHANICAL DRAWINGS.
$	SINGLE POLE SWITCH, +42" OR AS NOTED
$S	SINGLE POLE SENTRY SWITCH, +42" OR AS NOTED
$RL	PROJECTION SCREEN RAISE/LOWER SWITCH, F.B.O., INSTALLED BY ELECTRICAL
	TELEPHONE OUTLET IN WALL, +18" OR AS NOTED SINGLE GANG OUTLET BOX WITH 3/4" CONDUIT AND PULL WIRE TO ACCESSIBLE CEILING SPACE.
	DATA OUTLET IN WALL +18" OR AS NOTED. SINGLE GANG OUTLET BOX WITH 3/4" CONDUIT AND PULL WIRE TO ACCESSIBLE CEILING SPACE.
	COMBINATION TELEPHONE/DATA OUTLET BOX, +18" OR AS NOTED. SINGLE GANG OUTLET BOX WITH 3/4" CONDUIT AND PULL WIRE TO ACCESSIBLE CEILING SPACE.
	DISCONNECT SWITCH, FUSED AS NOTED ON PLAN
	EXHAUST FAN, F.B.M., WIRED BY ELECTRICAL
OS	CEILING MOUNTED 360 DEGREE MOTION SENSOR WITH SWITCH PACK (nLIGHT #nCM 9) SUBSCRIPT 'EX' DENOTES EXTENDED RANGE NCM 10 MODEL.
OS D	CEILING MOUNTED DUAL TECH 360 DEGREE MOTION SENSOR WITH SWITCH PACK (nLIGHT #nCM PDT9) SUBSCRIPT 'EX' DENOTES EXTENDED RANGE NCM 10 MODEL.
OSP	CEILING MOUNTED 360 DEGREE MOTION SENSOR AND PHOTOCELL WITH SWITCH PACK (nLIGHT #nCM 9 ADCX) SUBSCRIPT 'EX' DENOTES EXTENDED RANGE NCM 10 MODEL.
OSP D	CEILING MOUNTED 360 DEGREE DUAL TECH MOTION SENSOR AND PHOTOCELL WITH SWITCH PACK (nLIGHT #nCM 9 ADCX PDT9) SUBSCRIPT 'EX' DENOTES EXTENDED RANGE NCM 10 MODEL.
CH	WALL MOUNTED LOW VOLTAGE SWITCH WITH ON/OFF & DIMMING (nLIGHT #nPODM *P DX)
	WALL MOUNTED LINE VOLTAGE ON/OFF SWITCH WITH PIR MOTION SENSOR (SENSORSWITCH #WSX).
F	WALL MOUNTED LINE VOLTAGE 2 CHANNEL ON/OFF SWITCH WITH ON/OFF & MOTION SENSOR. SWITCH CONTROLS LIGHTING LOAD & EXHAUST FAN, WHERE MINIMUM FAN RUN-TIME CAN BE SET. (SENSORSWITCH #WSX 2P FAN)
OS	WALL MOUNTED SINGLE/DUAL DIMMING LEVEL MOTION SENSOR (nLIGHT #nWSX LV-DX)
OS D	WALL MOUNTED SINGLE/DUAL DIMMING LEVEL DUAL TECHNOLOGY MOTION SENSOR (nLIGHT #nWSX PDT LV-DX)
	WALL MOUNTED MULTI-ZONE DIGITAL DISPLAY LIGHTING CONTROLLER. (nLIGHT #nPOD GFX)
	WALL MOUNTED 2 HOUR BY PASS TIMER (TORK #A500 SERIES)
#	REFERENCE TO PLAN NOTES
S	MANUAL MOTOR RATED SWITCH LOCATED @ EQUIPMENT
AV	AUDIO/VIDEO CONNECTIONS FOR TV/PROJECTOR. VERIFY EXACT MOUNTING LOCATION.
CR	CARD READER OUTLET IN WALL +48" OR AS NOTED. SINGLE GANG OUTLET BOX WITH 3/4" CONDUIT AND PULL WIRE TO ACCESSIBLE CEILING SPACE.
H	BUILDING STANDARD WALL MOUNTED MAGNETIC DOOR HOLDER
LS	BUILDING STANDARD LIFE SAFETY SPEAKER
SD	BUILDING STANDARD SMOKE DETECTOR
T	ELECTRONIC PROGRAMMABLE THERMOSTAT OUTLET IN WALL +48" OR AS NOTED. SINGLE GANG WITH 3/4" WITH PULL WIRE TO +6" ABOVE ACCESSIBLE CEILING SPACE.
• DN	CONDUIT STUBBED DOWN
o UP	CONDUIT STUBBED UP
$EXH	EXHAUST FAN SWITCH, +48" OR AS NOTED ON MECHANICAL DRAWINGS
JM	FLEXIBLE WIRING SYSTEM JUNCTION MODULE
CM	FLEXIBLE WIRING SYSTEM CONVERSION MODULE
A	DENOTES LIGHTING FIXTURE SCHEDULE, LUMINAIRE TYPE DESIGNATION LETTER
54	DENOTES LIGHTING FIXTURE SCHEDULE, LUMINAIRE WATTAGE
(E)	DENOTES EXISTING TO REMAIN
(N)	DENOTES NEW TO MATCH EXISTING
(R)	DENOTES EXISTING RELOCATED DEVICE AT NEW LOCATION
(ER)	DENOTES EXISTING DEVICE TO BE RELOCATED
(NL)	DENOTES FIXTURE SHALL BE EQUIPPED WITH 90 MINUTE BATTERY PACK

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Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:

ELECTRICAL SYMBOL LIST
LTG SCHEDULE
DETAILS AND NOTES

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

E-1.0

RPM #19-755 12/09/19

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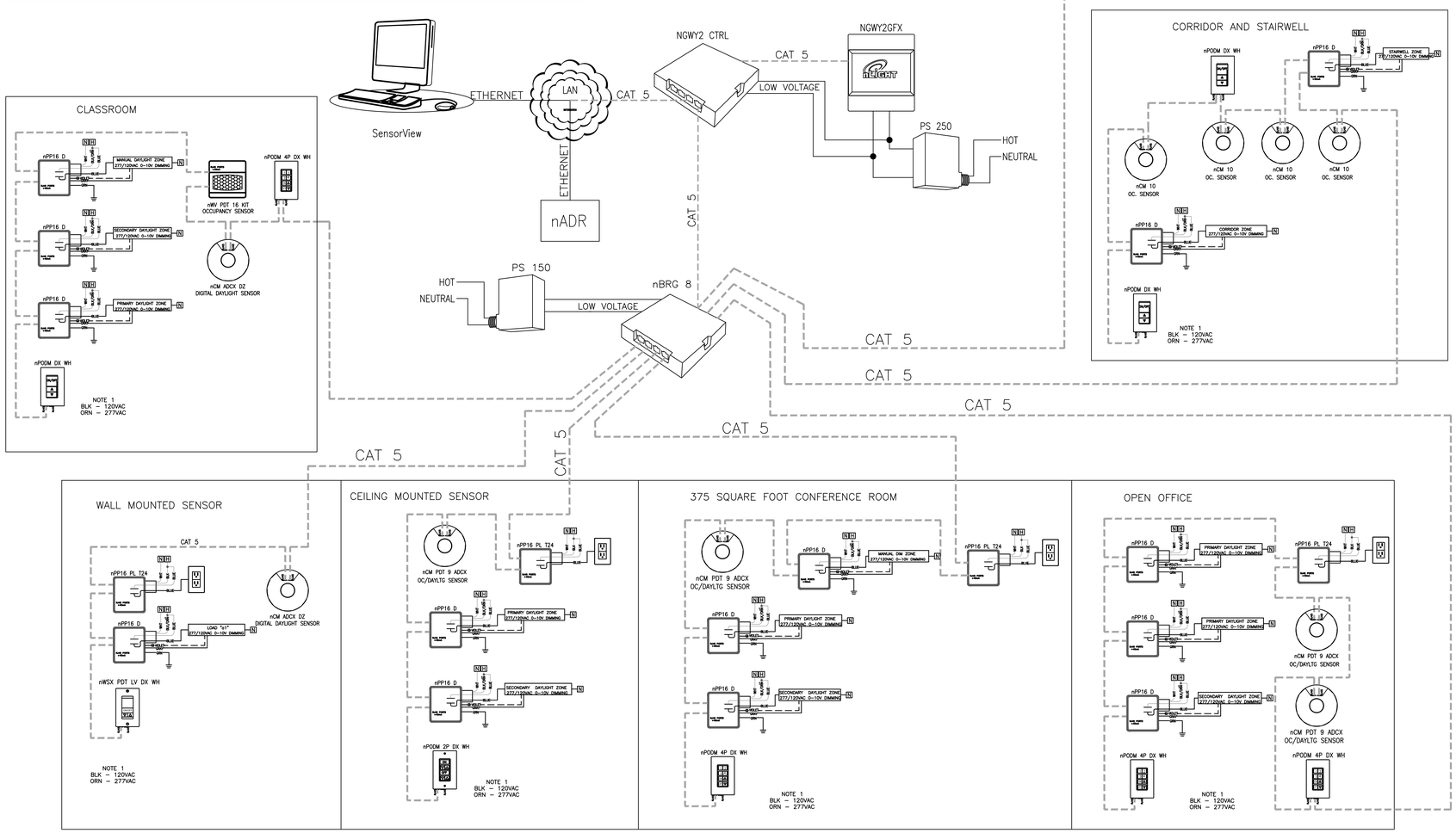
12/09/2019

NOTES

1) IF TOTAL BUILDING SQUARE FOOTAGE IS >10,000 SQ.FT. AUTOMATIC DEMAND RESPONSE IS REQUIRED FOR 2016 T24. *per section 130.1(E)

2) PRODUCTS CAN MEET ANY AND ALL T24 REQUIREMENTS, MUST BE CONFIGURED APPROPRIATELY. FOR HELP WITH A 2016 T24 LAYOUT CONTACT – PERFORMANCE LIGHTING SYSTEMS AT (949)878–9000

PRODUCT #	DESCRIPTION
nADR	AUTOMATED DEMAND RESPONSE
nGWY 2 KIT	NGATEWAY2 KIT CONSISTS OF A NGWY2 CTRL UNIT, A NGATEWAY2 GFX, ONE PS 250 (250 MA POWER SUPPLY), SENSORVIEW SOFTWARE MAX DEVICES 1500
nBRG 8	BRIDGE–8 PORT WITH 150 MA POWER SUPPLY
nPODM 2P DX WH	2 CHANNEL ON/OFF TOGGLE WITH DIMMING
nPODM 4P DX WH	4 CHANNEL ON/OFF TOGGLE WITH DIMMING
nPP16 D	16 AMP RELAY PACK WITH 0–10V DIMMING CONTROL; CHASE NIPPLE MOUNTING
nPP16 PL T24	16 AMP RELAY PACK FOR PLUG LOAD CONTROL; CHASE NIPPLE MOUNTING
nCM ADCX DZ	AUTOMATIC DIMMING CONTROL PHOTOCELL– CEILING MOUNT, LOW VOLTAGE DUAL ZONE (NO WIRES)
nCM PDT 9	STANDARD RANGE 360° SENSOR–CEILING MOUNT, LOW VOLTAGE, DUAL TECHNOLOGY (PDT)
nCM PDT 10	EXTENDED RANGE 360° SENSOR–CEILING MOUNT, LOW VOLTAGE, DUAL TECHNOLOGY (PDT)



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Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:

LIGHTING CONTROL WIRING DIAGRAM

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

E-1.1

RPM #19–755 12/09/19

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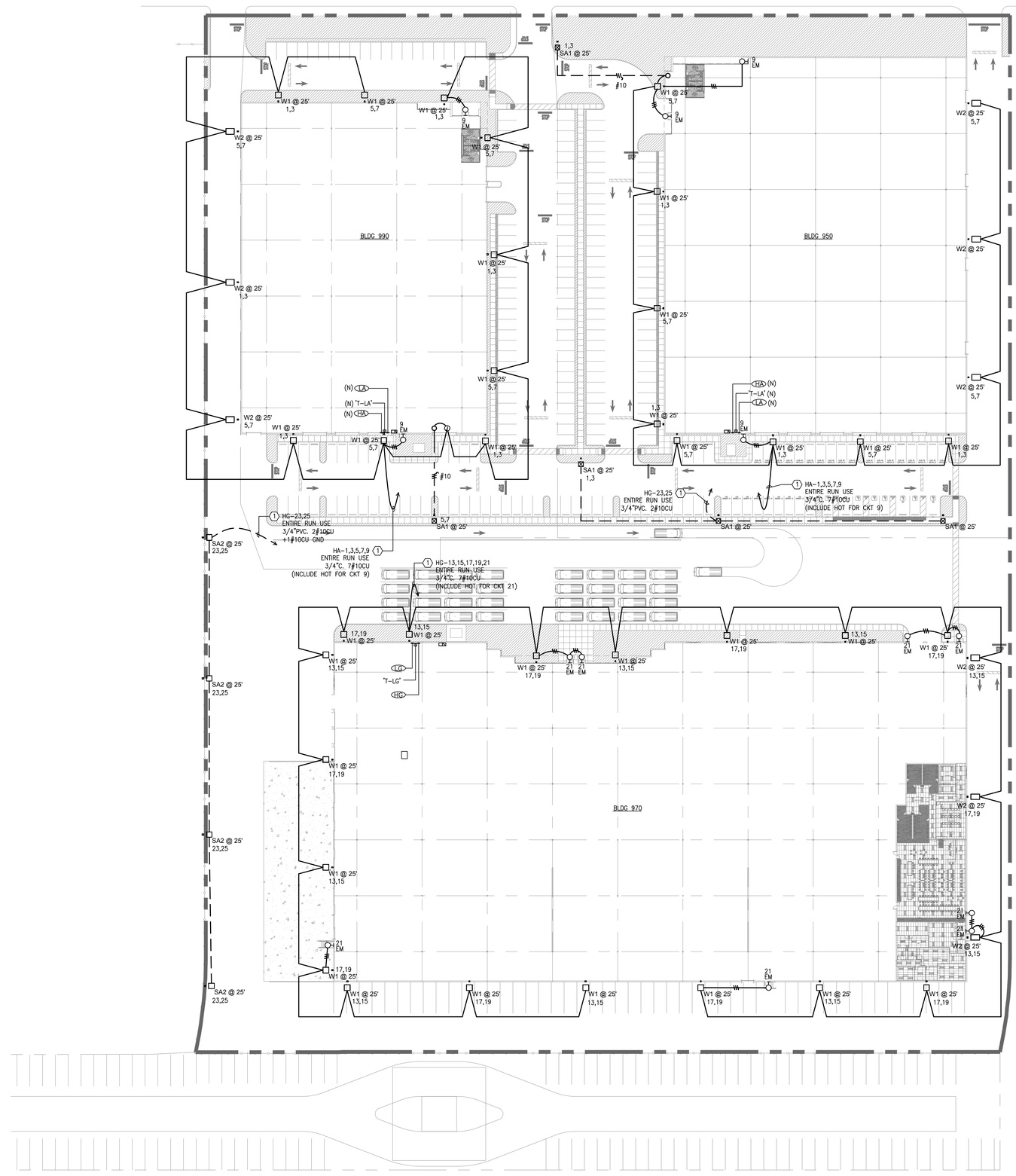


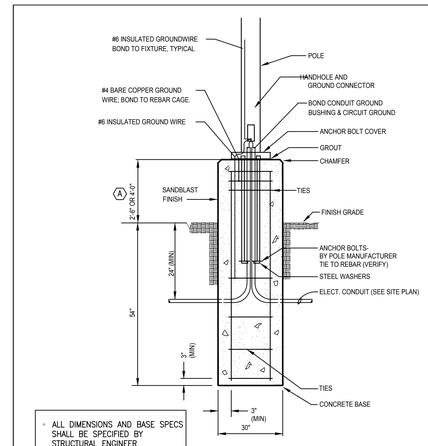
SITE PLAN GENERAL NOTES:

1. CONTACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING OR CONDUITS, ETC, AND TO PREVENT HAZARDS TO PERSONNEL AND/OR DAMAGE TO EXISTING UNDERGROUND UTILITILIES OR STRUCTURES WHETHER OR NOT SHOWN AND INSTALLED BY ANY OTHER CONTRACTS. THE ENGINEER IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE THE NECESSARY ELEMENTS FOR CONSTRUCTION SAFETY.
2. CALL UNDERGROUND ALERT BEFORE YOU DIG 1-800-227-2600. CALL YOUR LOCAL OFFICE AT LEAST TWO DAYS BEFORE YOU DIG.
3. ALL UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 80, MINIMUM 3/4"C. RUN CODE SIZE INSULATED EQUIPMENT GROUND CONDUCTOR.
4. MINIMUM CONDUCTOR SIZE SHALL BE #10 AWG.
5. ALL ELECTRICAL DEVICES/EQUIPMENT MOUNTED OUTDOOR SHALL BE WEATHERPROOF (NEMA 3R)
6. ALL FUTURE AND SPARE CONDUITS SHALL BE PROVIDED WITH A NYLON PULL STRING.
7. PRIOR TO TRENCHING, COORDINATE WITH MECHANICAL, CIVIL, LANDSCAPE AND IRRIGATION SITE DRAWINGS.
8. UNLESS SPECIFICALLY DIMENSIONED, ALL PANEL AND CONDUIT LOCATIONS ARE FOR DIAGRAMMATIC PURPOSED ONLY AND ARE SUBJECT TO PLACEMENT FOR FIELD CONDITIONS.
9. CONDUITS TO BE MINIMUM 24" BELOW GRADE.
10. PROVIDE EASILY IDENTIFIABLE MARKERS AT ALL CONDUIT STUBS.

NOTE:
UTILITY DESIGN AND UTILITY COMPANY COORDINATION IS NOT PART OF RPM ENGINEERS SCOPE OF WORK; INFORMATION IS SHOWN FOR REFERENCE ONLY. CONFIRM ALL REQUIREMENTS WITH SCE/UTILITY CONSULTANT CONST. DOCS

KEYNOTES:

1 DENOTES CIRCUITS TO BE TIMECLOCK CONTROLLED THRU HOUSE LIGHTING CONTROL PANEL.



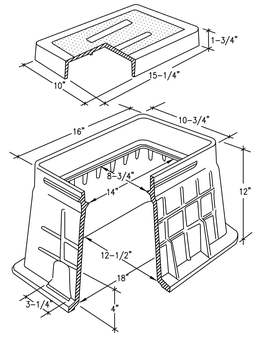
ALL DIMENSIONS AND BASE SPECS SHALL BE SPECIFIED BY STRUCTURAL ENGINEER

A TOP OF CONCRETE BASE TO BE 2'-6" OR 4'-0" ABOVE FINISHED GRADE IN HARDSCAPE AREAS, DEPENDING ON AREA. SEE E-1.0 FOR MORE DETAILS.

ANCHOR BOLT AND BASE PLATE SHALL BE BY POLE MANUF. COORDINATE ALL REQUIREMENTS WITH POLE MANUFACTURER.

POLE BASE DETAIL 2

SCALE: NONE (NOTE: POLE BASE DETAIL IS INTENDED FOR REFERENCE ONLY, SEE STRUCTURAL DRAWINGS FOR APPROVED DETAIL)



PULL BOX NOTES

1. P/B TO BE CHRISTY FIBERLITE FL9 BOX WITH "LIGHTING" ENGRAVED ON LID.
2. ALL BOXES SHALL BE SET ON A MINIMUM 8" GRAVEL BASE WITH 1/2" DIAMETER GRAVEL.
3. ALL INCIDENTAL CONCRETE SHALL BE REMOVED FROM BOXES.
4. ALL CONDUITS SHALL HAVE RIGID STEEL RISERS TERMINATING 4" BELOW THE COVER OF THE PULLBOX.
5. THE RIGID STEEL SHALL BE WRAPPED W/ 2" HALF-LAPPED 3M INSULATING TAPE OR APPROVED BITUMINOUS COATING (ALL SURFACES). SUBMIT METHOD FOR APPROVAL.
6. ALL SPLICES WITHIN PULL BOX TO BE MADE WITH WIRE NUTS AND (3) FULL RAPS OF RUBBER TAPE, (3) FULL RAPS OF BLACK #88 TAPE AND (3) COATS OF SCOTCHCOAT WATERPROOF RESIN. PROVIDE A MINIMUM OF 18" OF CONDUCTOR BEYOND CONDUITS PER C.O.I. EL NOTE #17.
7. PROVIDE IDENTIFYING TAGS ON ALL POWER AND COMMUNICATION CONDUCTORS IN PULL BOXES.
8. CONDUITS TO HAVE BELL ENDS AND BE SEALED WITH DUX SEAL.

PULL BOX DETAIL 3

SCALE: NONE

SITE PLAN 1"=40'-0" 1

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12/09/2019

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Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: SITE PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet: E-2.0

RPM #19-755 12/09/19

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Schedule

Symbol	Label	QTY	Catalog Number	Description	Lamp	Number Lamps	Lumens per Lamp	LLF	Wattage	Polar Plot
	SA1	5	VLL-PLED-III-W-80LED-1050mA-NW MM511 POLE MT AT 25 ft AFG 22.5 FT POLE 30 IN BASE	CAST BLACK PAINTED FINNED METAL HOUSING, CAST BLACK PAINTED METAL DRIVER COVER, 4 CIRCUIT BOARDS EACH WITH 20 LEDS, 1 CLEAR PLASTIC OPTIC BELOW EACH LED, 1 FORMED SEMI-SPECULAR METAL OPTIC MOUNTING PLATE BELOW EACH CIRCUIT BOARD.	EIGHTY WHITE LIGHT EMITTING DIODES (LEDS), VERTICAL BASE-UP POSITION. PRORATED BASED ON RZRG-120LED ITL & WORSE CASE RZR-80PLED ITL. VOLTAGE (120VAC, 60Hz) TO THE DRIVERS.	80	337	0.9	256.4	Max: 25510cd
	W1	34	VLL-PLED-IV-FT-80LED-700mA-NwW WALL MT AT 25 FT AFG	CAST BLACK PAINTED FINNED METAL HOUSING, CAST BLACK PAINTED METAL DRIVER COVER, 4 CIRCUIT BOARDS EACH WITH 20 LEDS, 1 CLEAR PLASTIC OPTIC BELOW EACH LED, 1 FORMED SEMI-SPECULAR METAL OPTIC MOUNTING PLATE BELOW EACH CIRCUIT BOARD.	EIGHTY WHITE LIGHT EMITTING DIODES (LEDS), VERTICAL BASE-UP POSITION. VOLTAGE (120VAC, 60Hz) TO THE DRIVER.	80	247	0.9	173.6	Max: 16117cd
	W2	9	VLL-PLED-III-W-80LED-700mA-NW- MM511 WALL MT AT 25 FT AFG	CAST BLACK PAINTED FINNED METAL HOUSING, CAST BLACK PAINTED METAL DRIVER COVER, 4 CIRCUIT BOARDS EACH WITH 20 LEDS, 1 CLEAR PLASTIC OPTIC BELOW EACH LED, 1 FORMED SEMI-SPECULAR METAL OPTIC MOUNTING PLATE BELOW EACH CIRCUIT BOARD.	EIGHTY WHITE LIGHT EMITTING DIODES (LEDS), VERTICAL BASE-UP POSITION. PRORATED BASED ON RZRG-120LED ITL & WORSE CASE RZR-80PLED ITL. VOLTAGE (120VAC, 60Hz) TO THE DRIVERS.	80	254	0.9	173.6	Max: 19206cd
	SA2	4	VLL-PLED-III-80LED-700mA-NW-HS MM511 POLE MT AT 25 FT AFG 22.5 FT POLE 30 IN BASE	CAST BLACK PAINTED FINNED METAL HOUSING, CAST BLACK PAINTED METAL DRIVER COVER, 4 CIRCUIT BOARDS EACH WITH 20 LEDS, 1 CLEAR PLASTIC OPTIC BELOW EACH LED, 1 MOLDED BLACK PLASTIC HOUSE SIDE SHIELD BELOW EACH OPTIC, 1 FORMED SEMI-SPECULAR METAL OPTIC MOUNTING PLATE BELOW EACH CIRCUIT BOARD.	EIGHTY WHITE LIGHT EMITTING DIODES (LEDS), VERTICAL BASE-UP POSITION. PRORATED BASED ON 120LED ITL & WORSE CASE RZR-80PLED ITL. PR - LUMEN OUTPUT PRORATED FROM UPDATED TESTING (04/17).	80	198	0.9	173.6	Max: 20863cd

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
LOADING	X	2.2 fc	4.4 fc	1.5 fc	2.9:1	1.5:1
SITE	+	2.3 fc	6.6 fc	1.0 fc	6.6:1	2.3:1

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Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
SITE PHOTOMETRIC STUDY

Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

Sheet:

E-2.1

RPM #19-755 12/09/19

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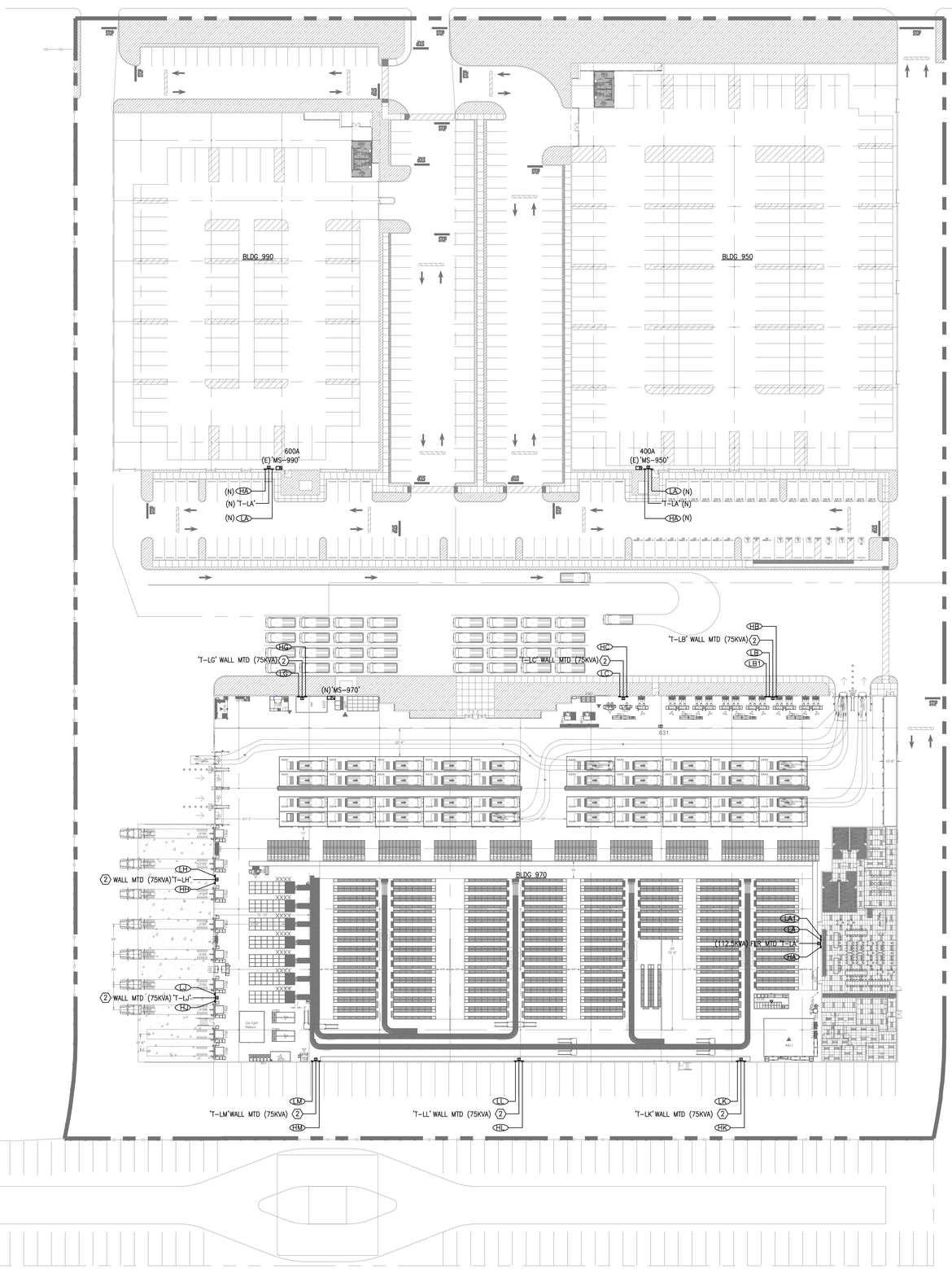
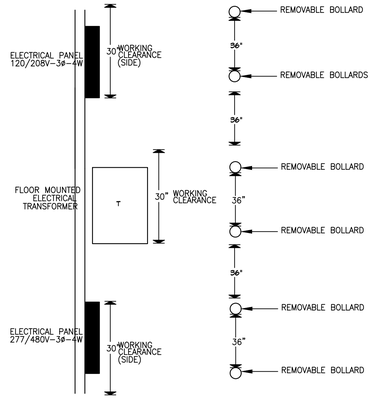
12/09/2019

SITE PHOTOMETRIC STUDY | 1"=40'-0" | 1

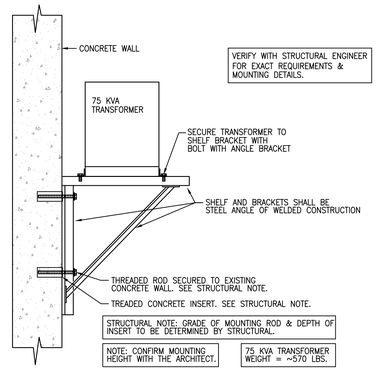




PANEL AND TRANSFORMER PROTECTION DETAIL FOR PANELS/TRANSFORMERS AND CLEARANCE REQUIREMENTS

NOT TO SCALE

REQUIRED FOR ALL PANELS/TRANSFORMERS/ DISTRIBUTION BOARDS SHOWN ONTHESE PLANS.



TRANSFORMER WALL MOUNTING DETAIL 2

SCALE: NONE FOR REFERENCE ONLY

KEYNOTES

1. NOT USED
2. DENOTES WALL MOUNTED TRANSFORMER. CONFIRM EXACT DETAIL WITH STRUCTURAL.

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Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
OVERALL ELECTRICAL PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

E-2.2

RPM #19-755 12/09/19

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OVERALL ELECTRICAL PLAN | 1"=40'-0" | 1

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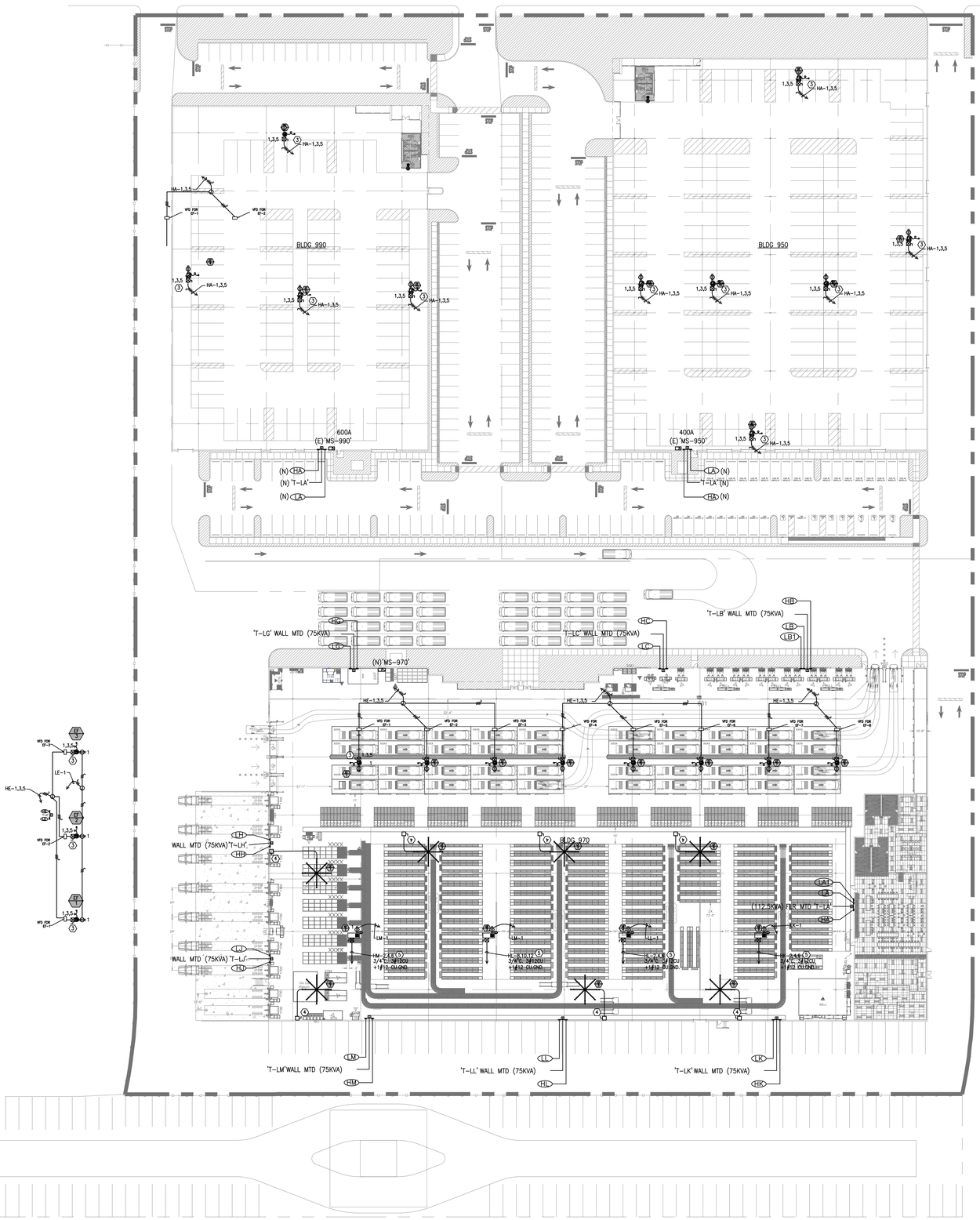

ROOF TOP NOTES:

1. ALL EQUIPMENT INDICATED ON ROOF IS WEATHERPROOF.
2. ALL OVERCURRENT PROTECTION TO BE SIZED PER EQUIPMENT NAMEPLATES.
3. ROUTE ALL CONDUITS TO ROOF-TOP UNITS WITHIN ROOF-TOP UNITS AND HORIZONTALLY THROUGH ATTIC SPACE.
4. VERIFY EXACT LOCATION OF EQUIPMENT WITH MECHANICAL DRAWINGS.
5. ELECTRICAL EQUIPMENT SHALL BE LISTED BY A CITY RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE DEPARTMENT.
6. NO PIPING, DUCTS OR EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE LOCATED WITHIN THE DEDICATED SPACE ABOVE THE ELECTRICAL EQUIPMENT.
7. OBTAIN AN APPROVAL OF EXACT LOCATION OF ALL NEW SWITCHES WITH THE ARCHITECT AT SITE PRIOR TO ROUGH-IN. NO EXCEPTIONS.
8. ALL PANELS SHOWN ON ROOF PLAN ARE FOR LOCATION REFERENCE ONLY. NO PANELS ARE LOCATED ON THE ROOF.

GENERAL NOTES

1. OBTAIN AN APPROVAL OF EXACT LOCATION OF ALL NEW/RELOCATED SWITCHES WITH THE ARCHITECT AT SITE PRIOR TO ROUGH-IN. NO EXCEPTIONS.
2. UPON COMPLETION OF DEMO AND PRIOR TO START OF NEW WORK, VERIFY IN FIELD AND EVERY ATTEMPT HAS BEEN MADE TO UTILIZE EXISTING LIGHTING CIRCUIT TO IT'S FULLEST. RE-WORK AND RE-USE EXISTING LIGHTING CIRCUITRY WHEREVER POSSIBLE. PROVIDE NEW COMPONENT, J-BOX, WIRE, CONDUIT, ETC. IF NEEDED SO THAT CIRCUITRY IS MAINTAINED AND FIXTURES ARE CONTROLLED, PLACED AND CONNECTED AS SHOWN AFTER ALL WORK IS COMPLETE.

MINIMUM WIRE SIZE OF #10CU SHALL BE USED FOR WIRING SHOWN ON THIS PLAN

COORDINATE ALL WORK RELATED TO BUILDING MANAGEMENT SYSTEM WITH BMS CONTRACTOR. PROVIDE ANY ADDITIONAL CONDUITS FOR LOW VOLTAGE AS REQUIRED.

WAREHOUSE KEYNOTES

1. PROVIDE 1/2"C.O. FOR CONTROL WIRING. SEE MECHANICAL DRAWINGS FOR REQUIREMENTS AND LOCATIONS.
2. WEATHER RESISTANCE GFCI RECEPTACLE WITH EXTRA DUTY WEATHER PROOF COVER FOR HVAC SERVICE. MOUNT WITHIN 25' OF HVAC UNIT.
3. PROVIDE W.P. 30AS/15AF/3P FUSIBLE DISCONNECT SWITCH AND MAKE CONNECTION TO UNIT. CONFIRM EXACT LOCATION AND ELECTRICAL REQUIREMENTS WITH SUPPLIER PRIOR TO ROUGH-IN.
4. PROVIDE 30AS/10AF/3P FUSIBLE DISCONNECT SWITCH AND MAKE CONNECTION TO UNIT. CONFIRM EXACT LOCATION AND ELECTRICAL REQUIREMENTS WITH SUPPLIER PRIOR TO ROUGH-IN.
5. PROVIDE W.P. 30AS/25AF/3P FUSIBLE DISCONNECT SWITCH AND MAKE CONNECTION TO UNIT. CONFIRM EXACT LOCATION AND ELECTRICAL REQUIREMENTS WITH SUPPLIER PRIOR TO ROUGH-IN.

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Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
WAREHOUSE HVAC PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:
E-2.3

RPM #19-755 12/09/19

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REGISTERED PROFESSIONAL ENGINEER LAN V. NGUYEN No. 015596 Exp. 12-31-2019 ELECTRICAL STATE OF CALIFORNIA
12/09/2019

WAREHOUSE HVAC PLAN | 1"=40'-0" | 1

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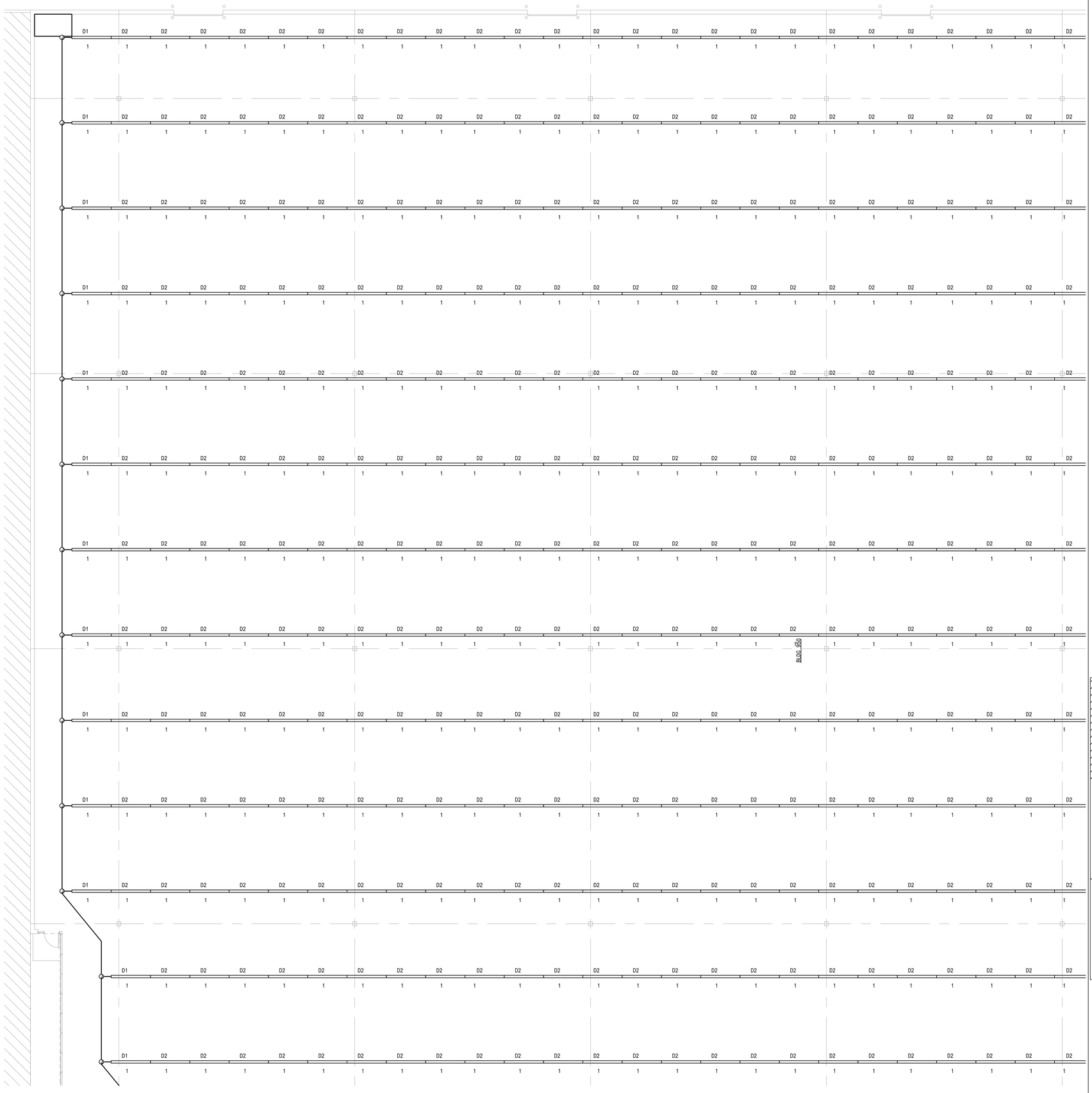

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ELECTRICAL LIGHTING PLAN | 1/8"=1'-0" | 1 | KEY PLAN

RPM
Engineers, Inc.
100 DISCOVERY
Irvine, Ca. 92618
Tel: 949-450-0289 (214)
Fax: 949-450-1454
Contact: Euiso Kim
e-mail: euisok@rpmpe.com

REGISTERED PROFESSIONAL ENGINEER
LAN V. NGUYEN
No. 015596
Exp. 12-31-2019
ELECTRICAL
STATE OF CALIFORNIA
12/09/2019

HPA architecture

hpa, inc.
18831 bardeen avenue - ste.
#100 irvine, ca
92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

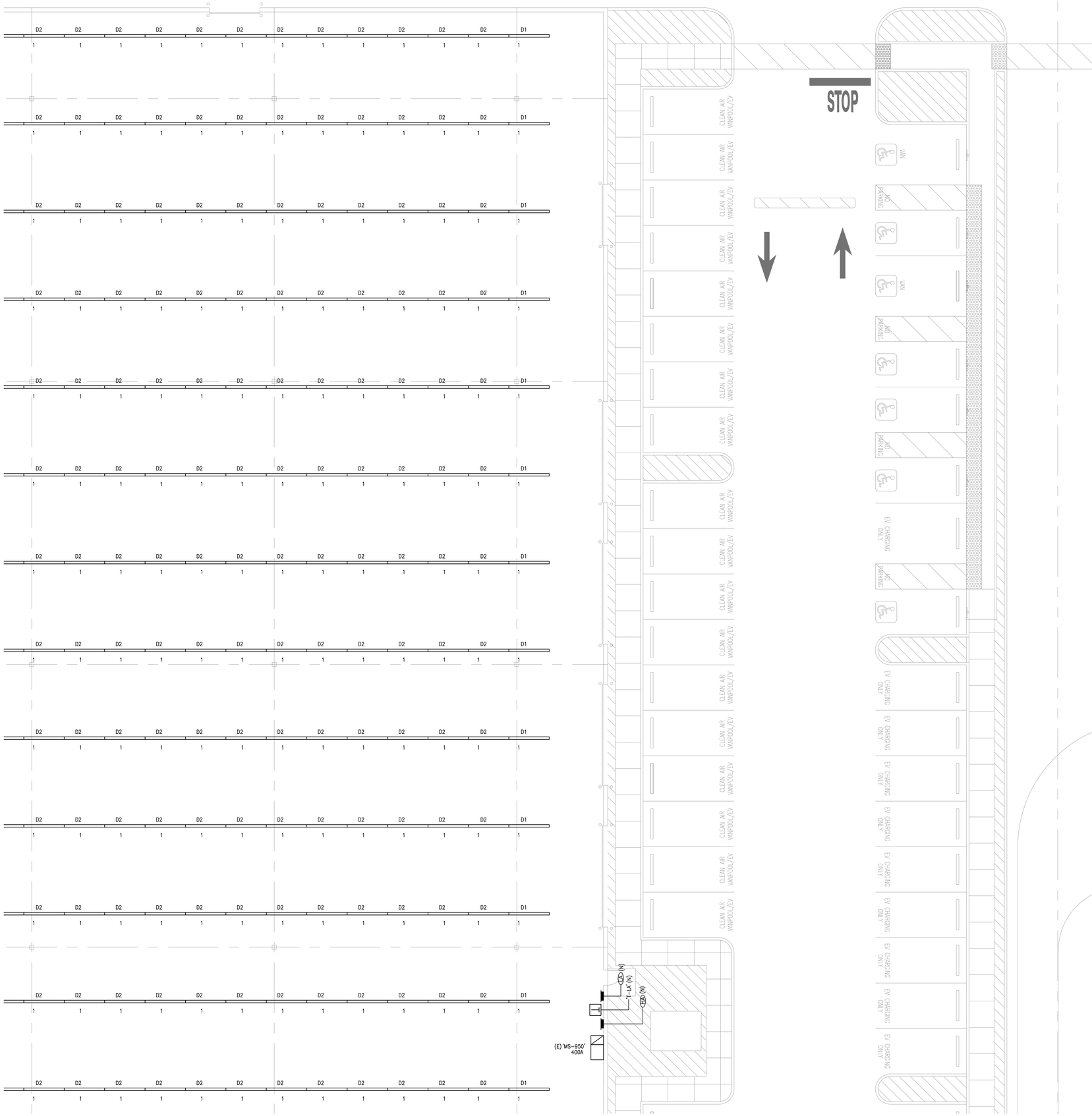
Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
LIGHTING PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

Sheet:
E-3.0

RPM #19-755 12/09/19



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hpa, inc.
18831 bardeen avenue - ste. #100 irvine, ca 92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
LIGHTING PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

E-3.1

RPM #19-755 12/09/19

ELECTRICAL LIGHTING PLAN | 1/8"=1'-0" | 1 | KEY PLAN

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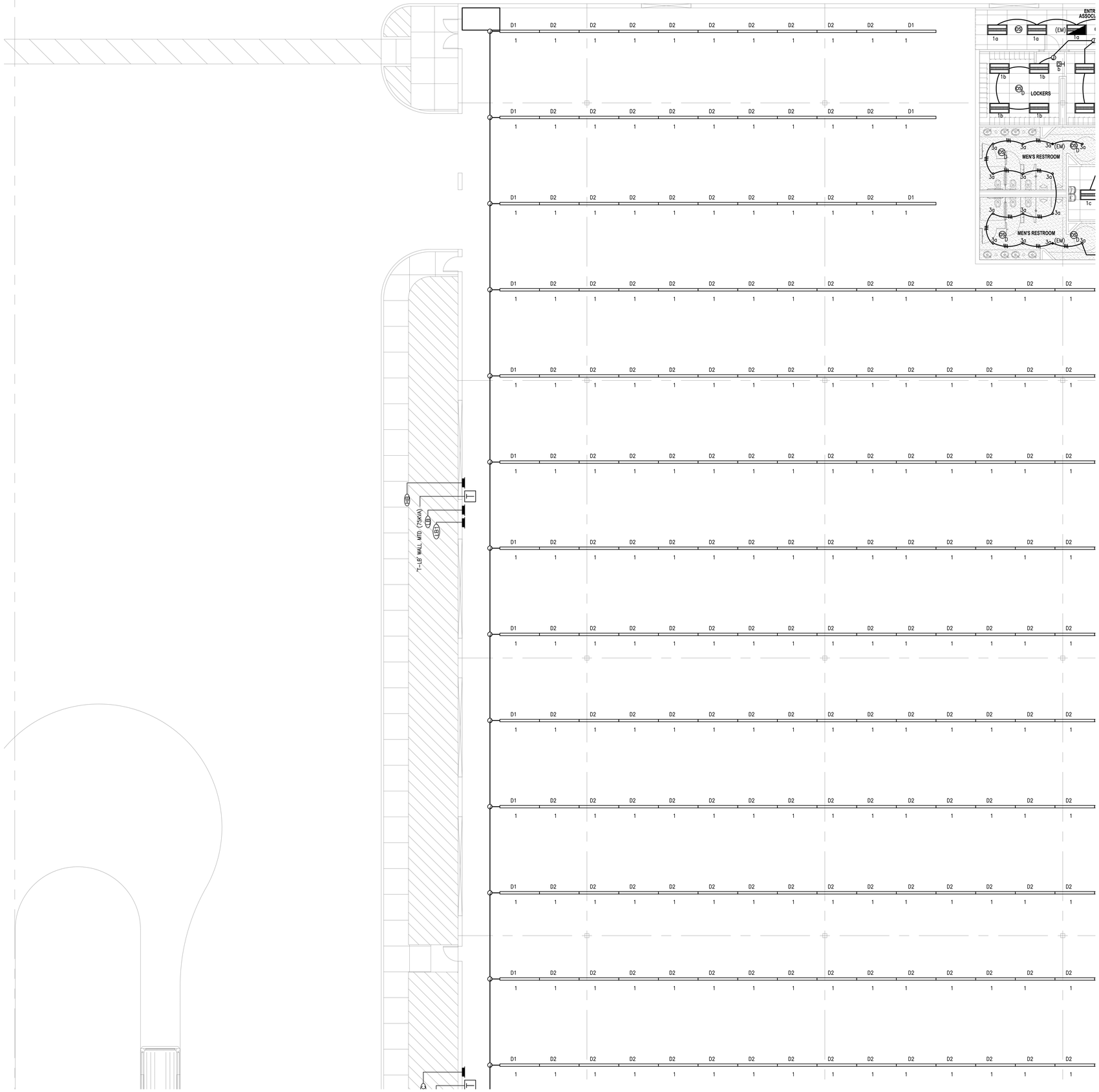
102 DISCOVERY
Irvine, Ca. 92618
Tel: 949-450-2220 (214)
Fax: 949-450-1454
Contact: Euiso Kim
e-mail: euisok@rpmpe.com

REGISTERED PROFESSIONAL ENGINEER LAN V. NGUYEN No. 015596 Exp.12-31-2019 ELECTRICAL STATE OF CALIFORNIA

12/09/2019



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ELECTRICAL LIGHTING PLAN | 1/8"=1'-0" | 1

KEY PLAN

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Engineers, Inc.
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Irvine, Ca. 92618
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Fax: 949-460-1454
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e-mail: euisok@rpmpe.com

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LAN V. NGUYEN
No. 015596
Exp. 12-31-2019
ELECTRICAL
STATE OF CALIFORNIA
12/09/2019

HPA architecture

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email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
LIGHTING PLAN

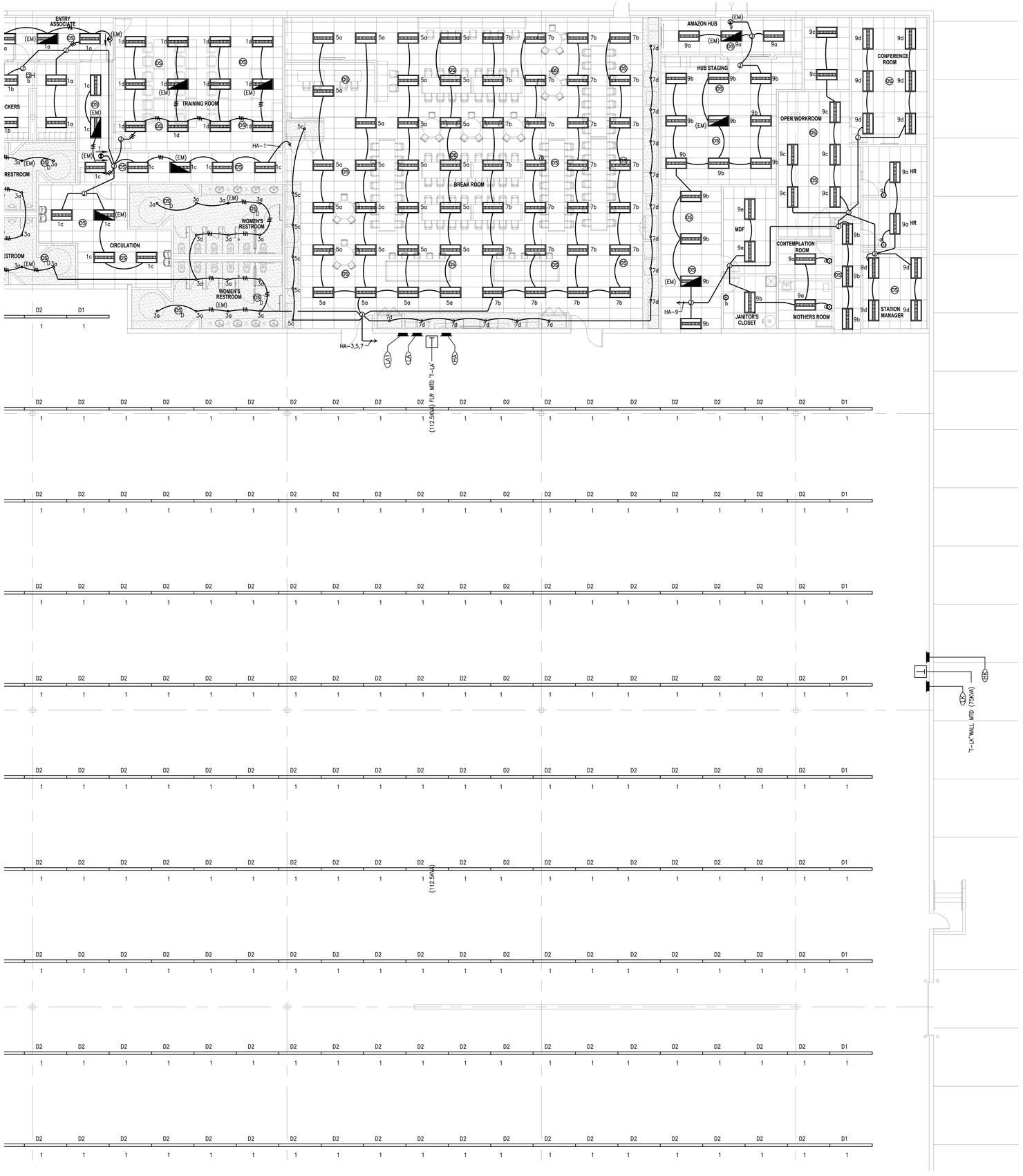
Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

E-3.2

RPM #19-755 12/09/19



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Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
LIGHTING PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

E-3.3

ELECTRICAL LIGHTING PLAN | 1/8"=1'-0" | 1 | KEY PLAN

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REGISTERED PROFESSIONAL ENGINEER
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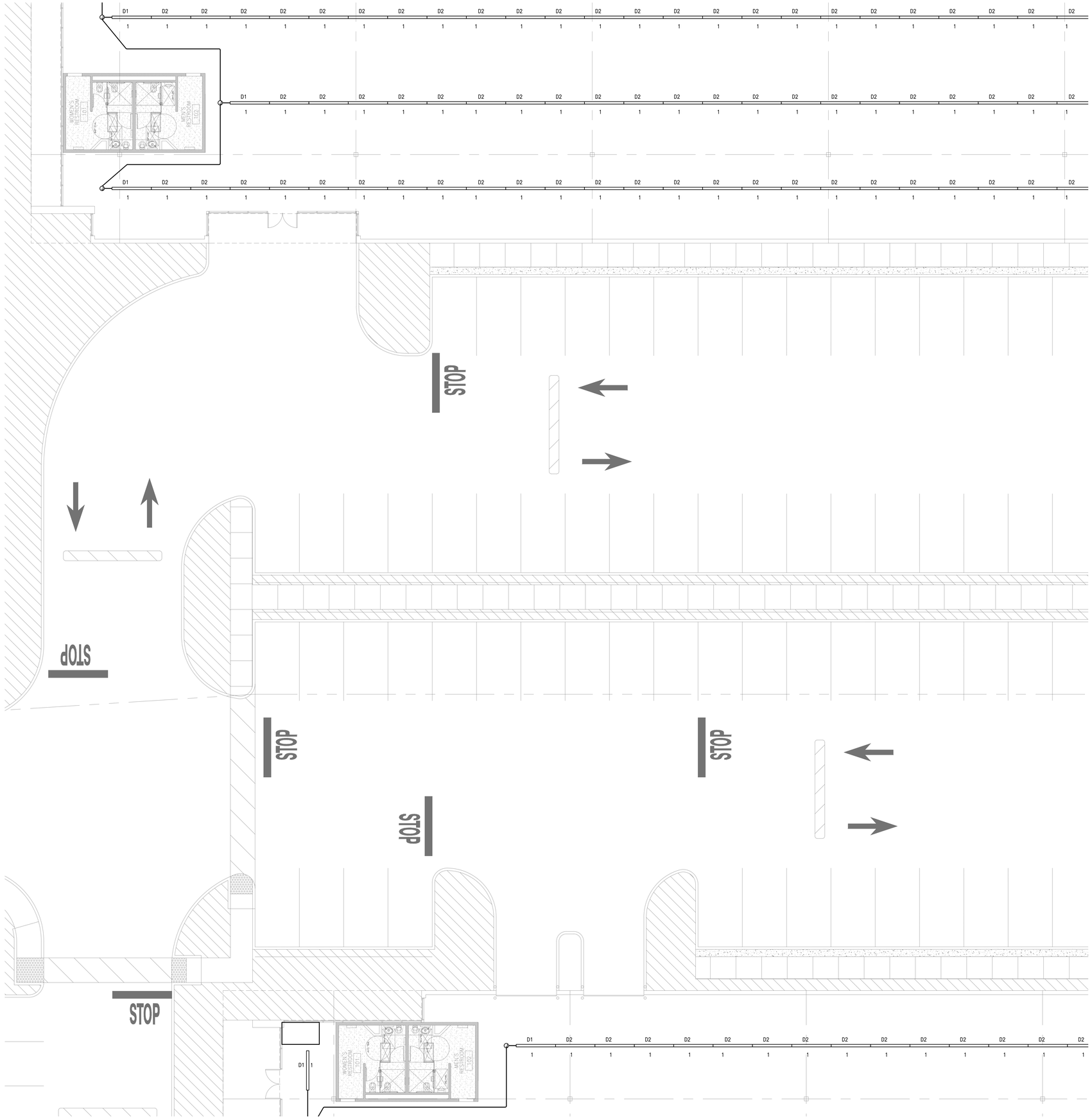

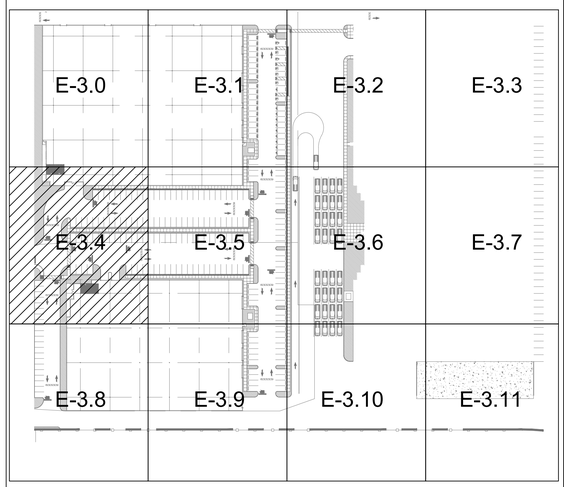

ELECTRICAL LIGHTING PLAN | 1/8"=1'-0" | 1

KEY PLAN

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Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: **LIGHTING PLAN**

Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

Sheet: E-3.4

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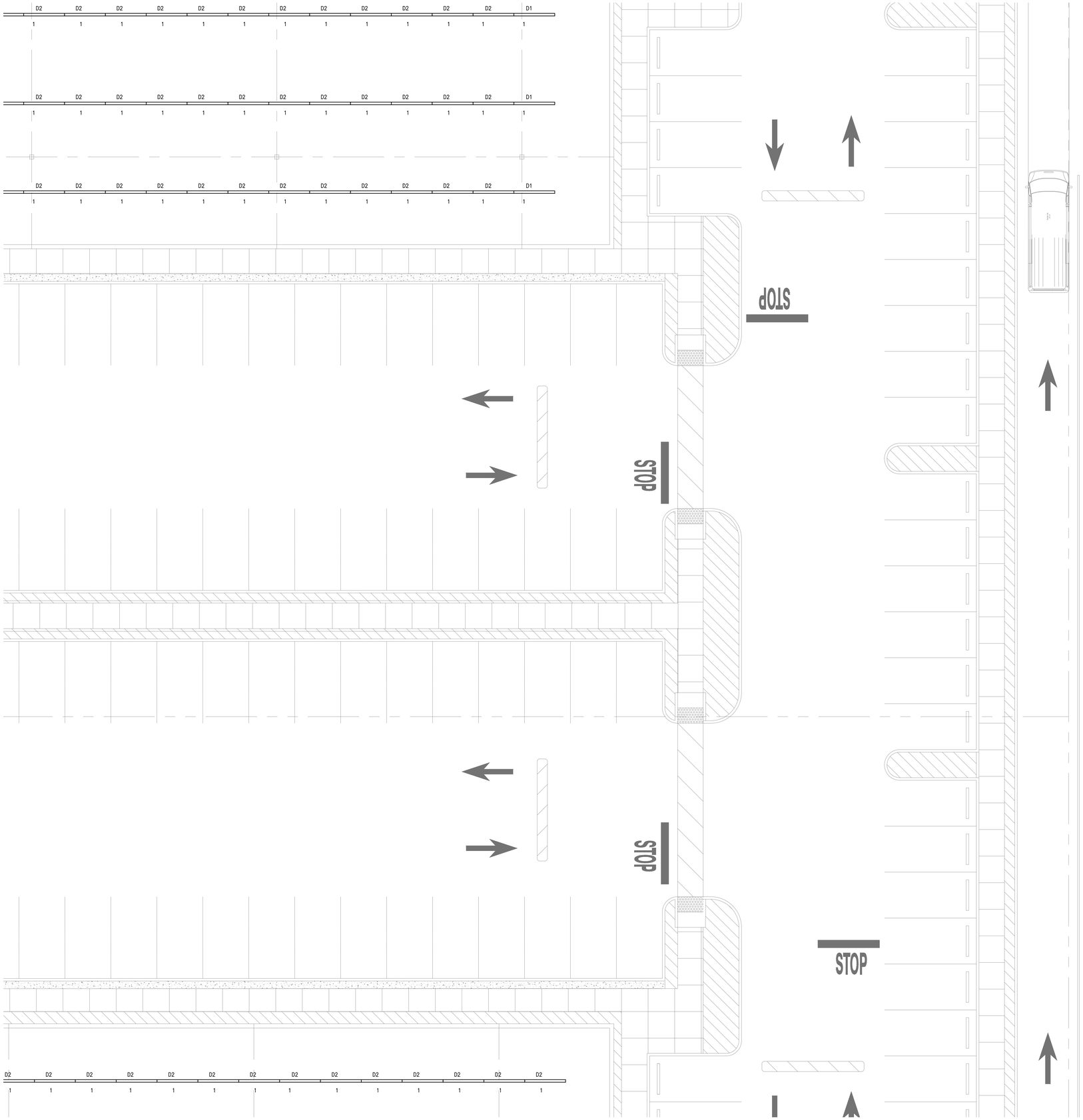
REGISTERED PROFESSIONAL ENGINEER
LAN V. NGUYEN
No. 015596
Exp.12-31-2019
ELECTRICAL
STATE OF CALIFORNIA

12/09/2019

RPM #19-755 12/09/19



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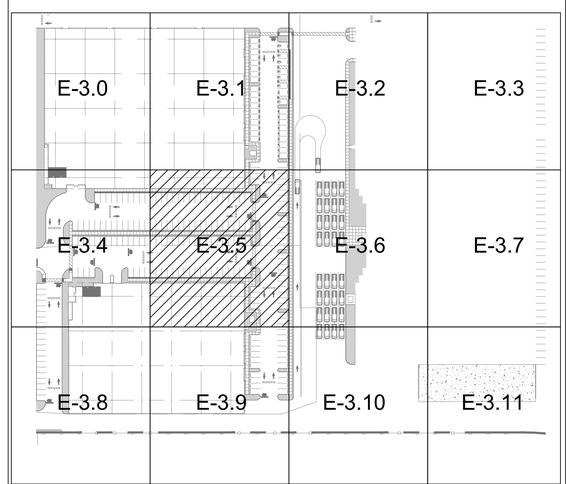

ELECTRICAL LIGHTING PLAN | 1/8"=1'-0" | 1 | KEY PLAN

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ELECTRICAL
STATE OF CALIFORNIA

12/09/2019

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Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
LIGHTING PLAN

Project Number:	19436
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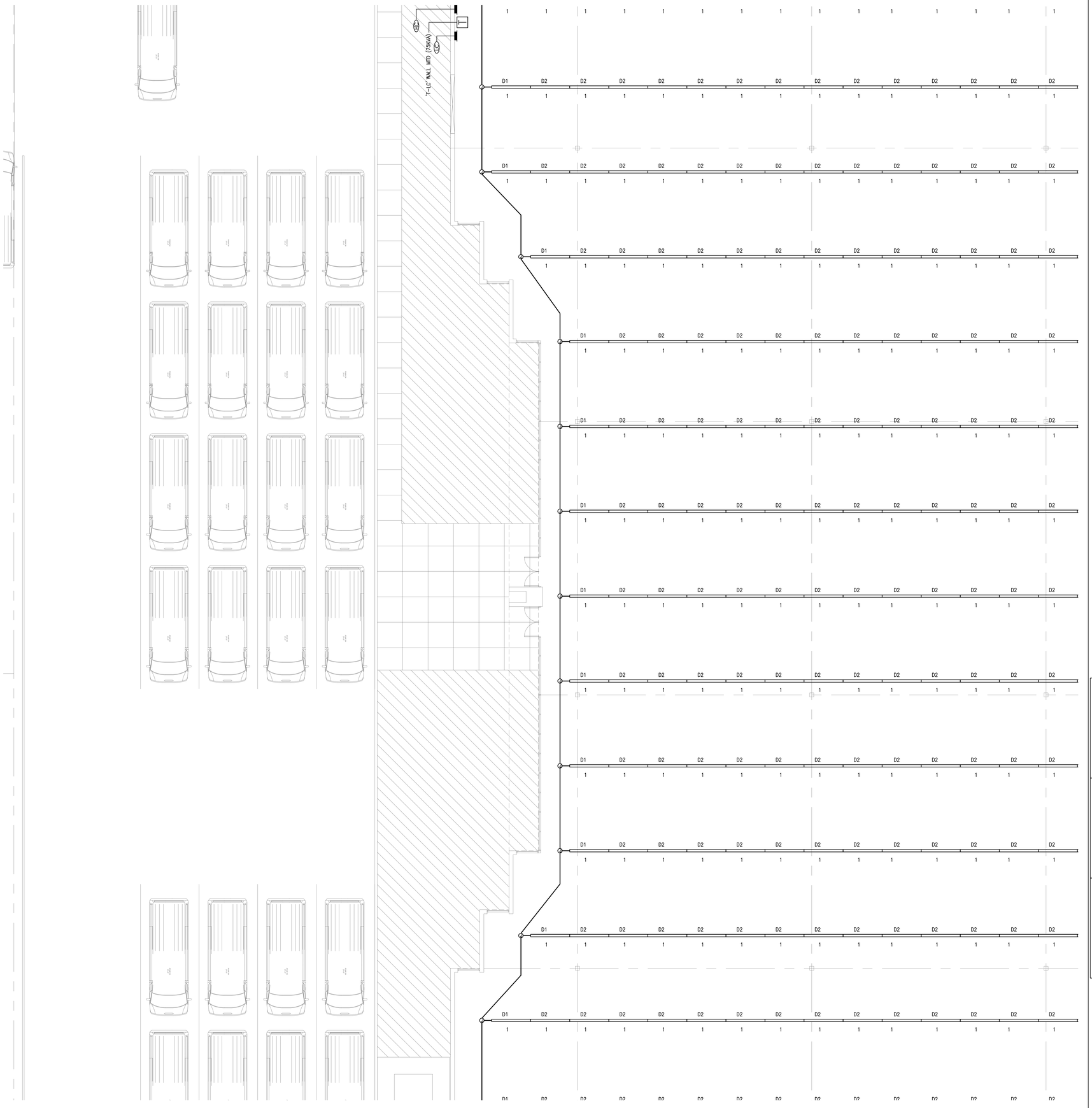

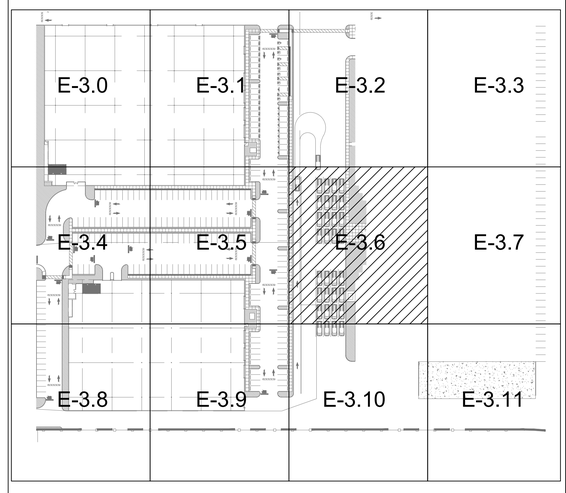

ELECTRICAL LIGHTING PLAN | 1/8"=1'-0" | 1 | KEY PLAN

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email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
LIGHTING PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

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RPM #19-755 12/09/19

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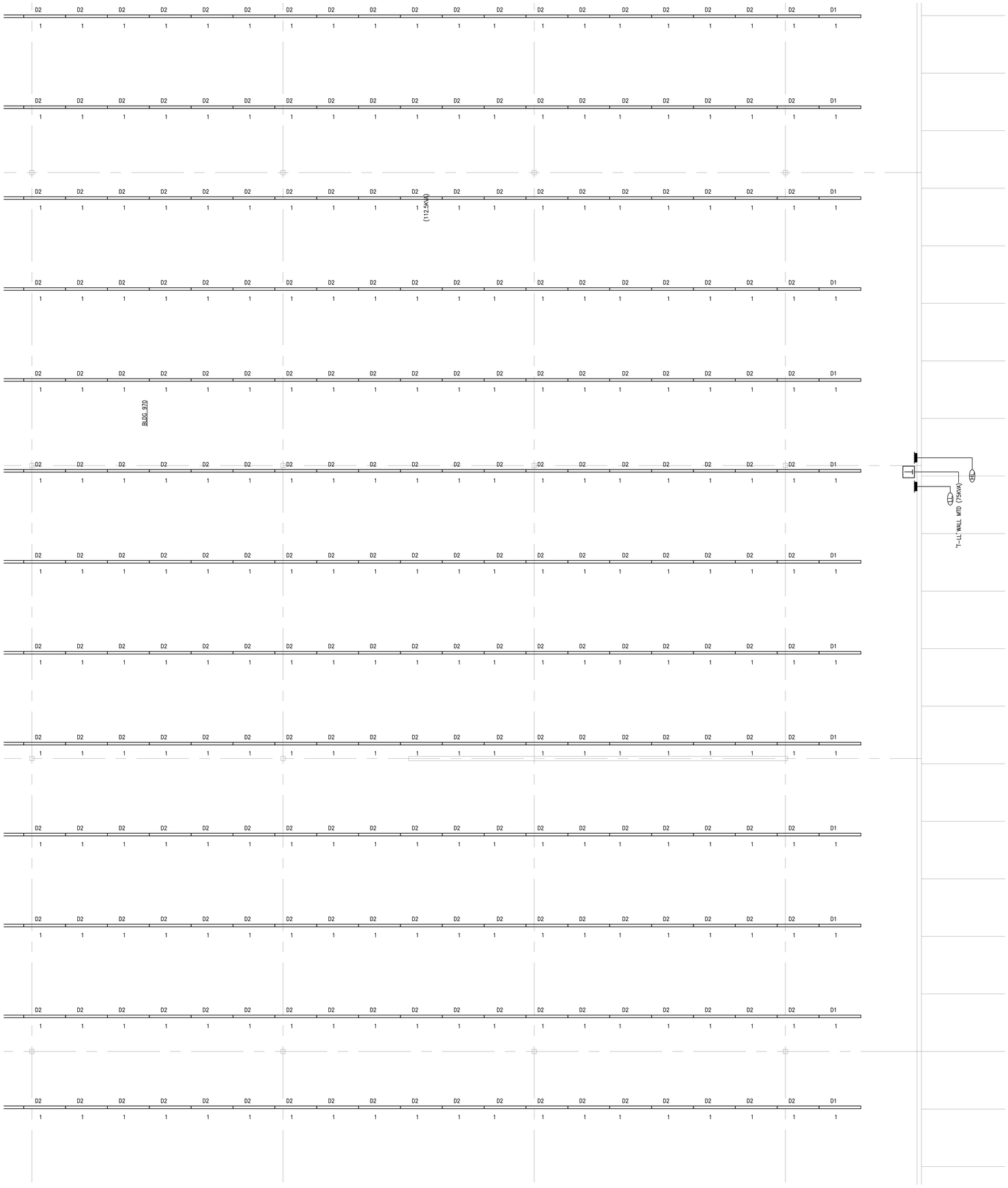

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ELECTRICAL LIGHTING PLAN | 1/8"=1'-0" | 1 | KEY PLAN

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STATE OF CALIFORNIA
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Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
LIGHTING PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

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E-3.7

RPM #19-755 12/09/19

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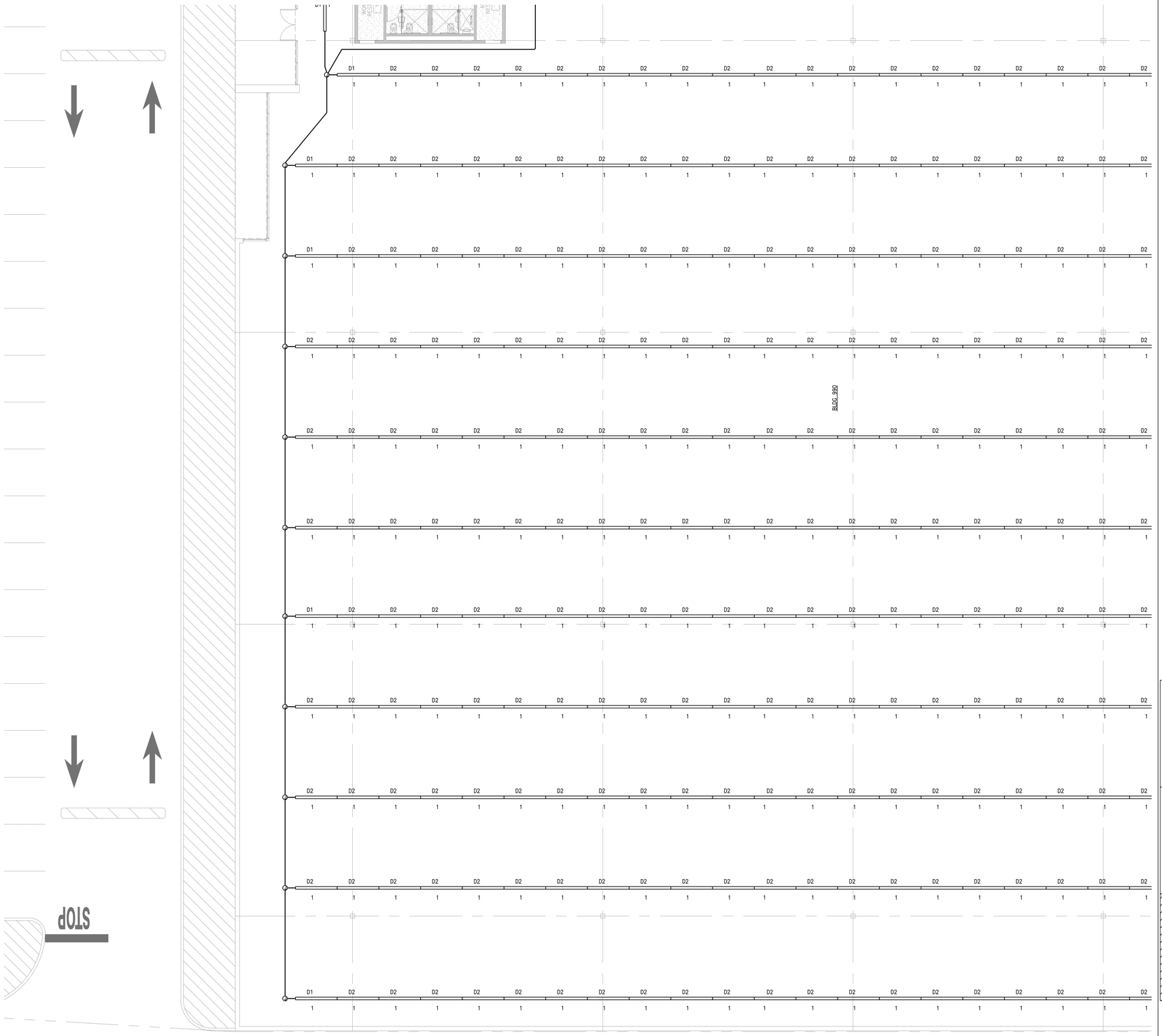

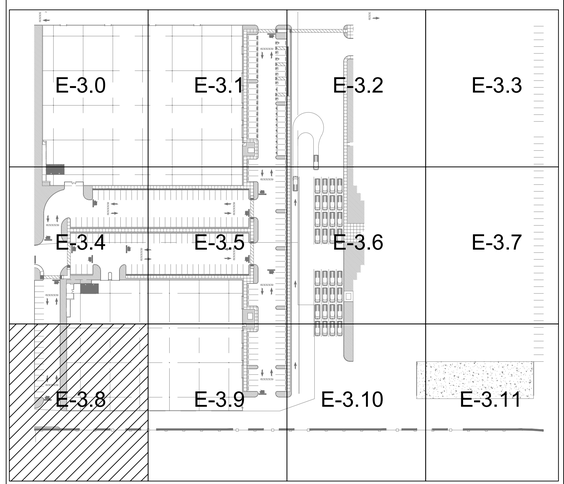

ELECTRICAL LIGHTING PLAN | 1/8"=1'-0" | 1

KEY PLAN

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Irvine, Ca. 92618
Tel: 949-450-1229 (214)
Fax: 949-450-1454
Contact: Euiso Kim
e-mail: euisok@rpmpe.com

REGISTERED PROFESSIONAL ENGINEER
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No. 015596
Exp.12-31-2019
ELECTRICAL
STATE OF CALIFORNIA
12/09/2019

HPA architecture

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fax: 949•863•0851
email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
LIGHTING PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

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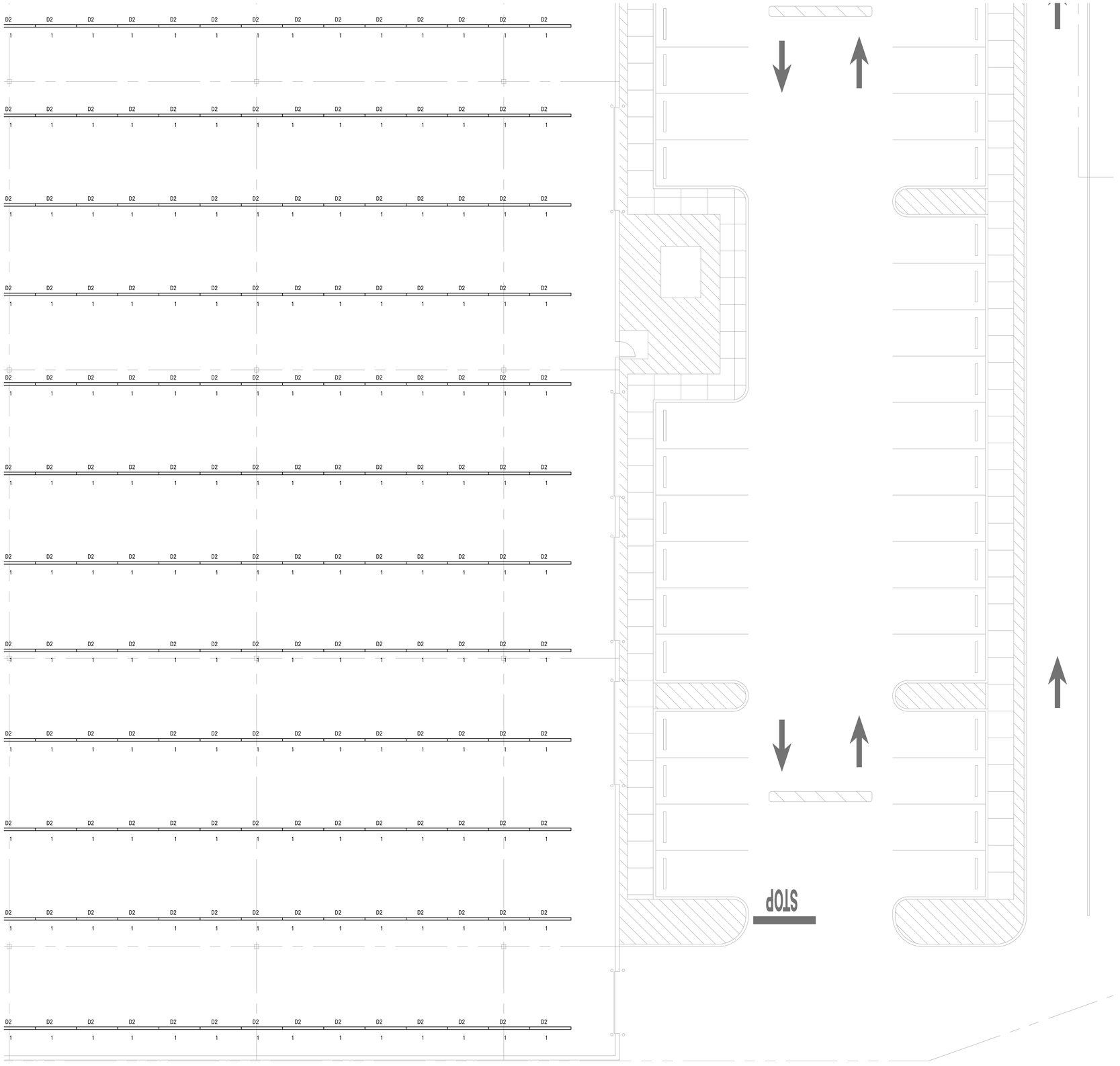
E-3.8

RPM #19-755 12/09/19



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ELECTRICAL LIGHTING PLAN | 1/8"=1'-0" | 1 | KEY PLAN

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fax: 949•863•0851
email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
LIGHTING PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

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E-3.9

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Fax: 949-450-1454
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e-mail: euisok@rpmpe.com

REGISTERED PROFESSIONAL ENGINEER
LAM V. NGUYEN
No. 015596
Exp. 12-31-2019
ELECTRICAL
STATE OF CALIFORNIA
12/09/2019

RPM #19-755 12/09/19

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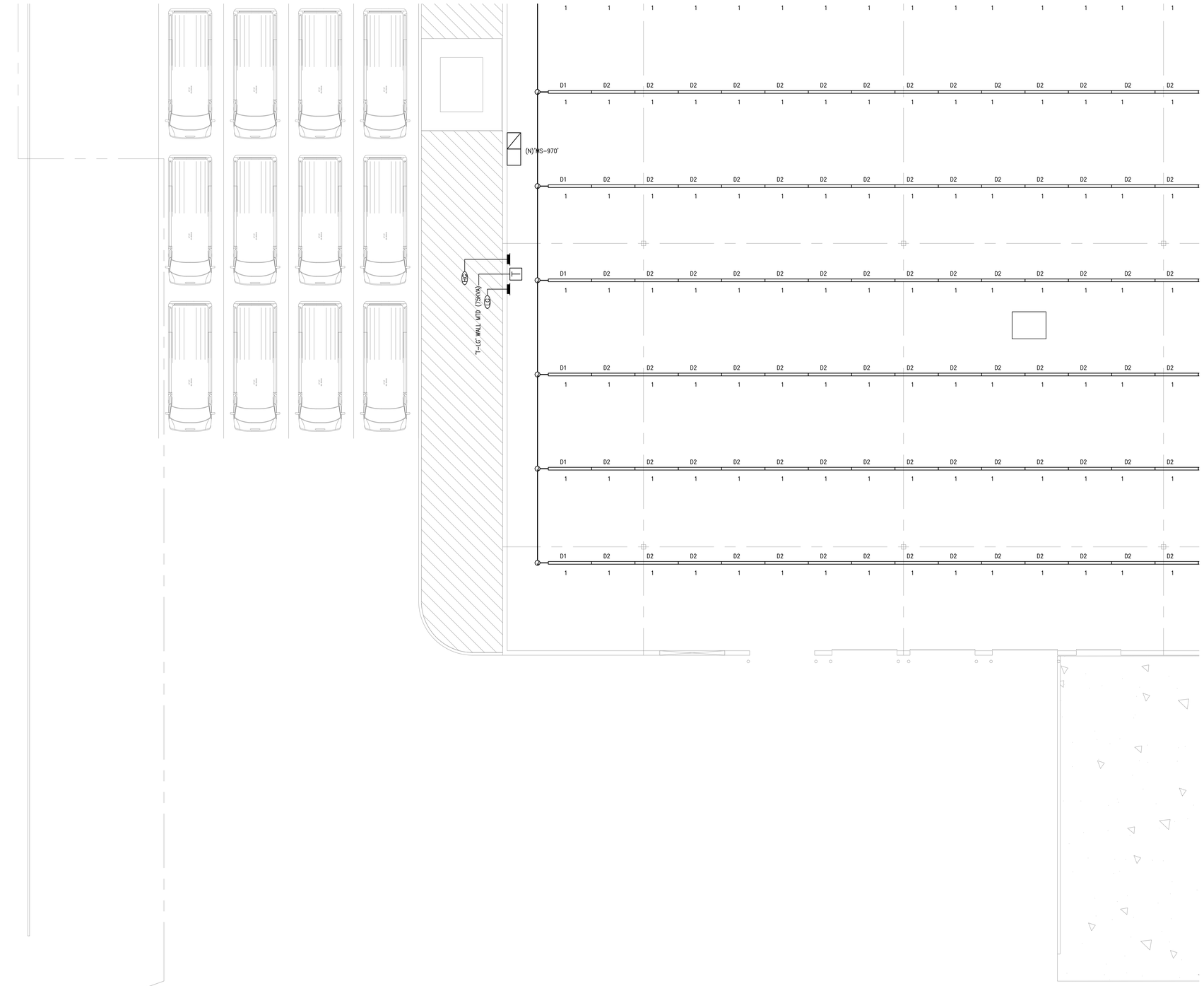

ELECTRICAL LIGHTING PLAN | 1/8"=1'-0" | 1

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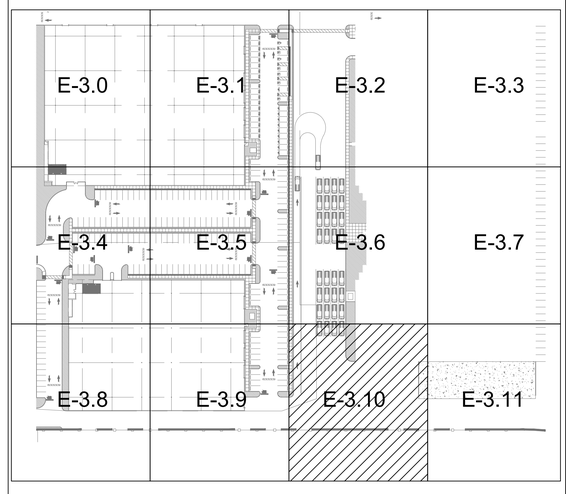

KEY PLAN

HPA architecture

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fax: 949•863•0851
email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
LIGHTING PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

E-3.10

RPM #19-755 12/09/19

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ELECTRICAL
STATE OF CALIFORNIA
12/09/2019

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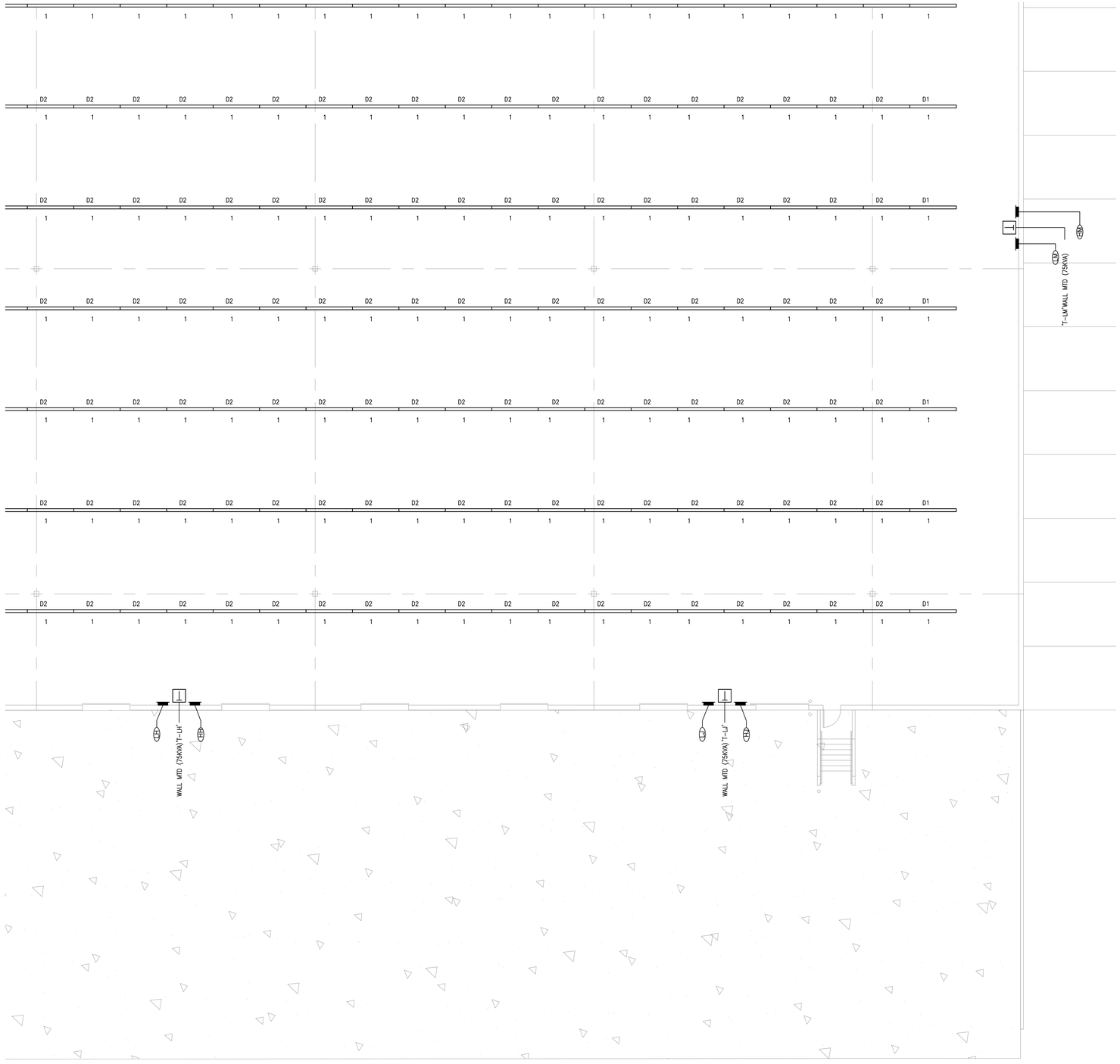

ELECTRICAL LIGHTING PLAN | 1/8"=1'-0" | 1

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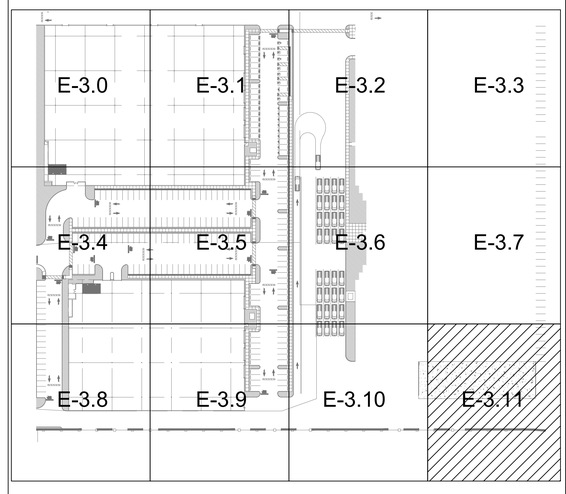

KEY PLAN

RPM
Engineers, Inc.
103 DISCOVERY
Irvine, Ca. 92618
Tel: 949-450-0289 (254)
Fax: 949-450-1454
Contact: Euiso Kim
e-mail: euisok@rpmpe.com

REGISTERED PROFESSIONAL ENGINEER
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ELECTRICAL
STATE OF CALIFORNIA
12/09/2019

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#100 irvine, ca
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email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
LIGHTING PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

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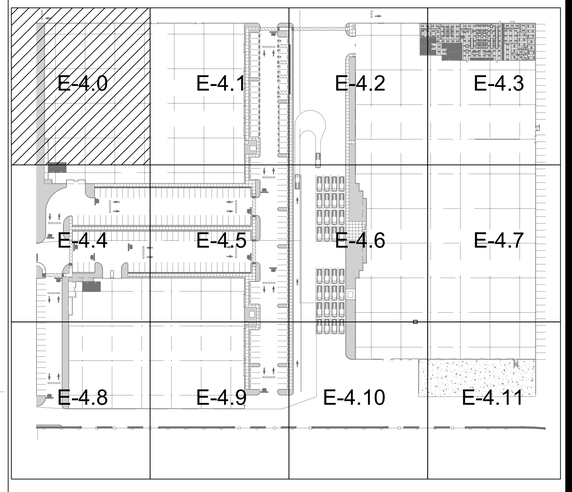

KEY PLAN

ELECTRICAL POWER PLAN | 1/8"=1'-0" | 1

HPA architecture

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tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
POWER PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

E-4.0

RPM #19-755 12/09/19

RPM Engineers, Inc.
103 DISCOVERY
Irvine, Ca. 92618
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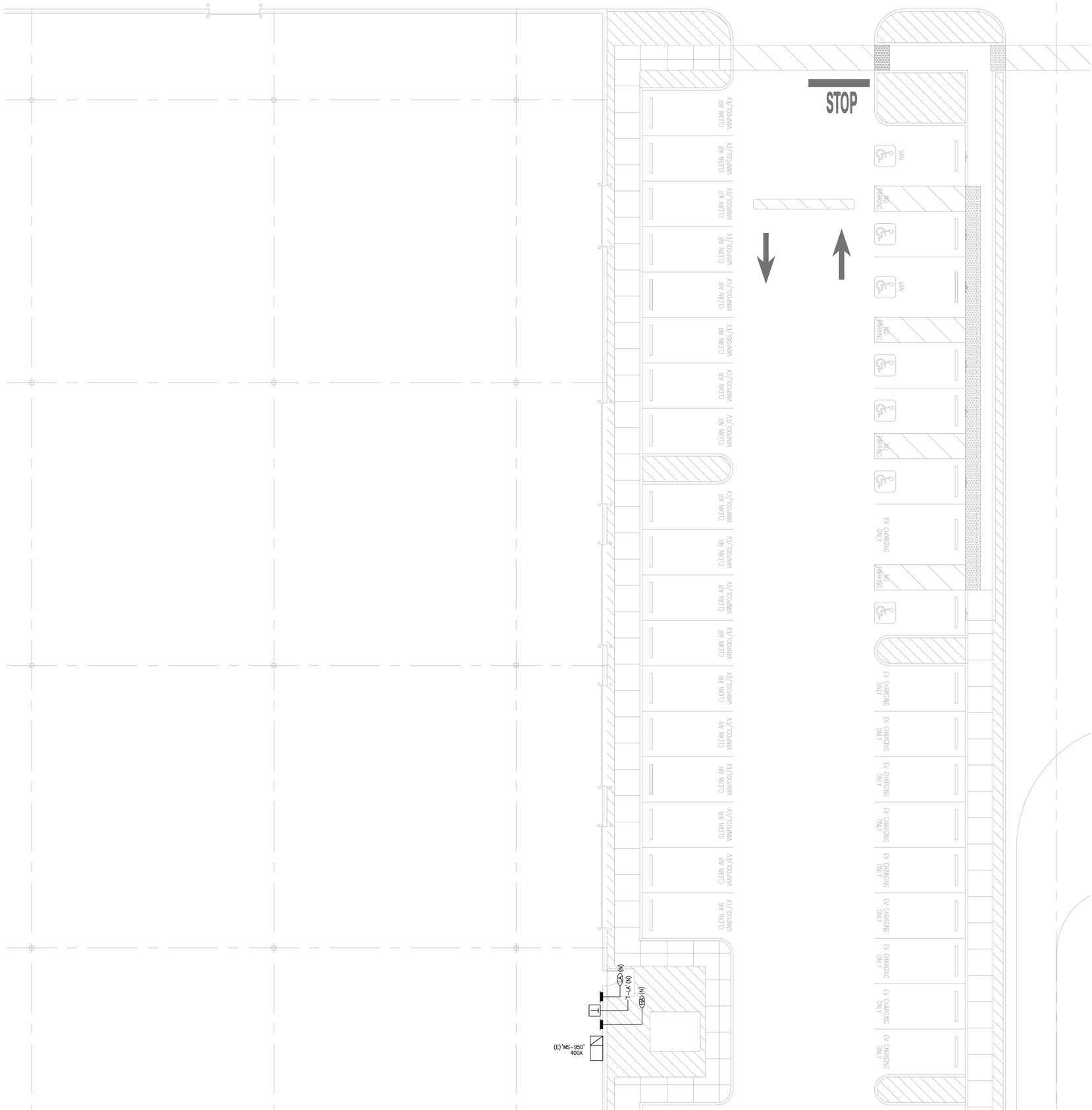
Fax: 949-450-1454
Contact: Euiso Kim
e-mail: euisok@rpmpe.com

REGISTERED PROFESSIONAL ENGINEER
LAN V. NGUYEN
No. 015596
Exp. 12-31-2019
ELECTRICAL
STATE OF CALIFORNIA
12/09/2019



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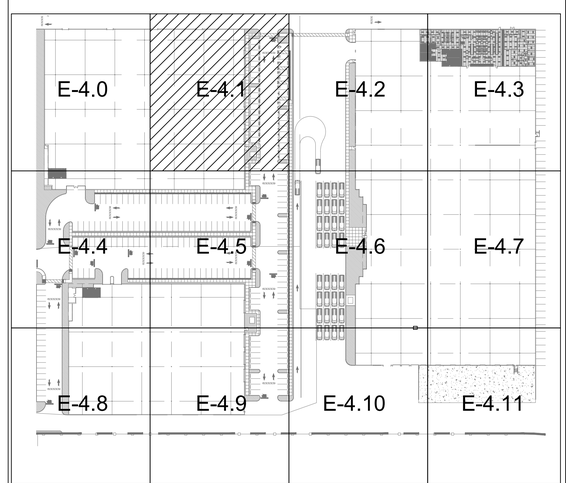

HPA architecture

hpa, inc.
18831 bardeen avenue - ste. #100 irvine, ca 92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
POWER PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

E-4.1

RPM #19-755 12/09/19

ELECTRICAL POWER PLAN | 1/8"=1'-0" | 1 | KEY PLAN

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ELECTRICAL
STATE OF CALIFORNIA
12/09/2019

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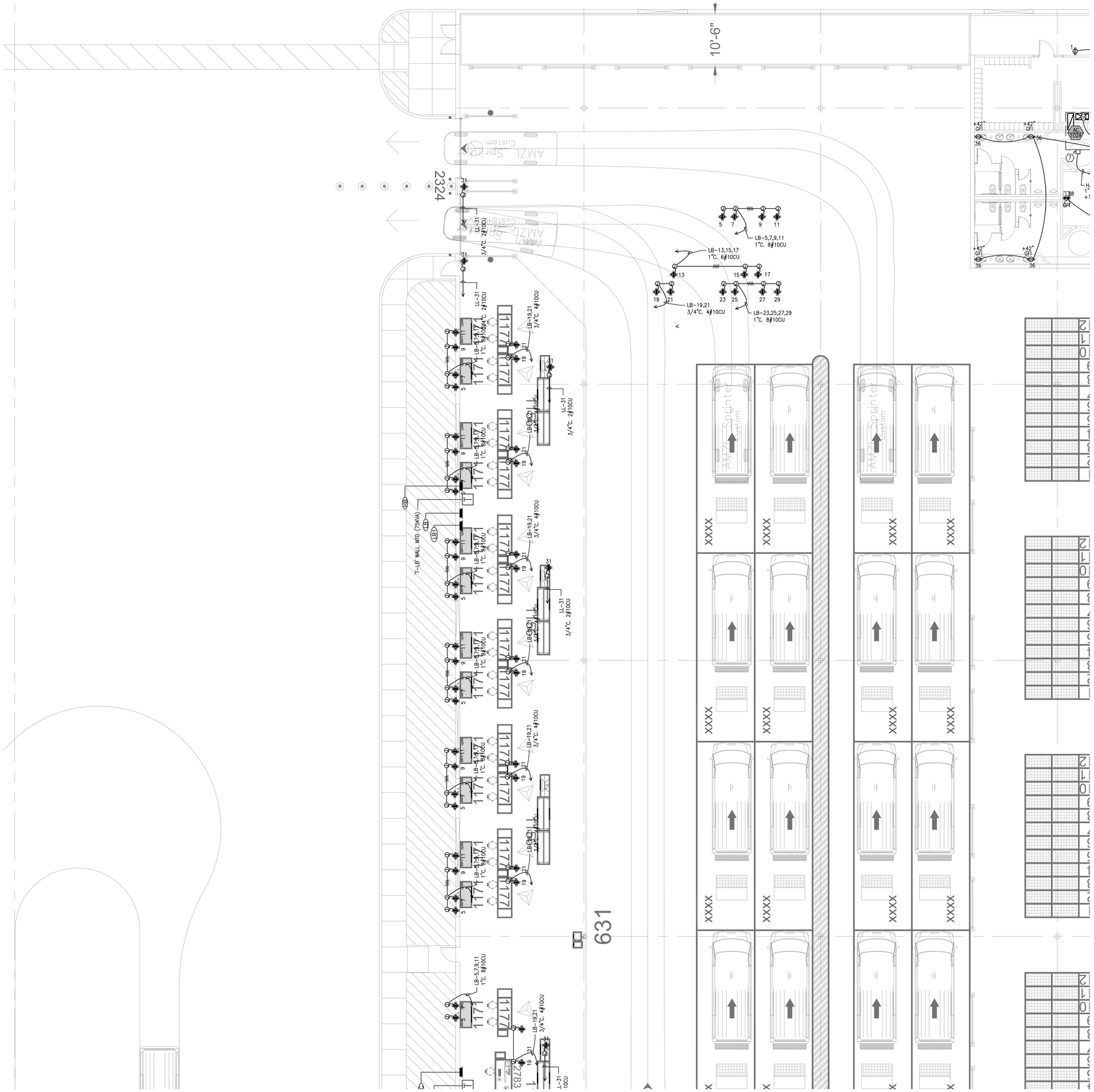

ELECTRICAL POWER PLAN | 1/8"=1'-0" | 1

KEY PLAN

RPM
Engineers, Inc.
102 DISCOVERY
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Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
POWER PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:
E-4.2

RPM #19-755 12/09/19

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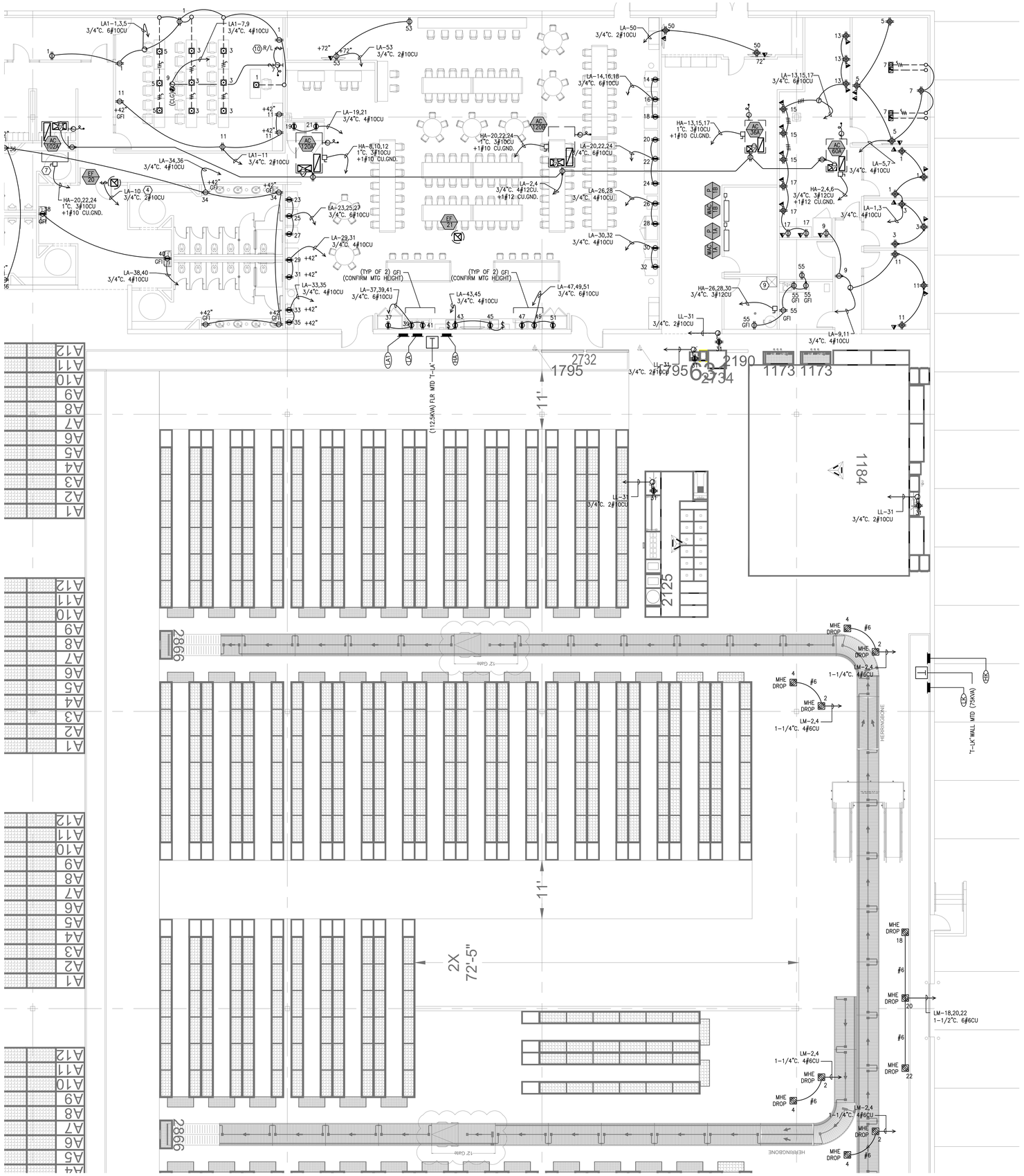

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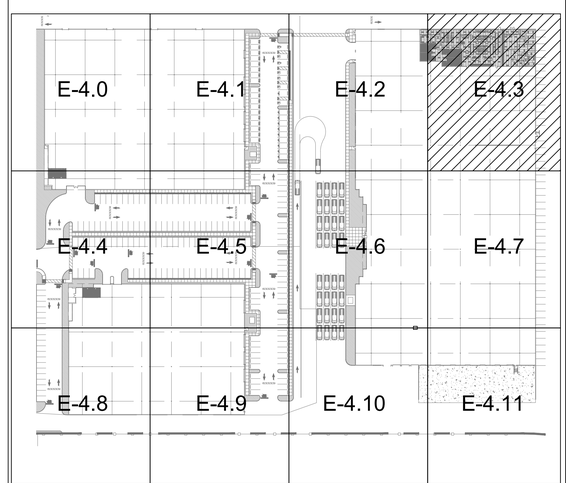

ELECTRICAL POWER PLAN | 1/8"=1'-0" | 1

KEY PLAN

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Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
POWER PLAN

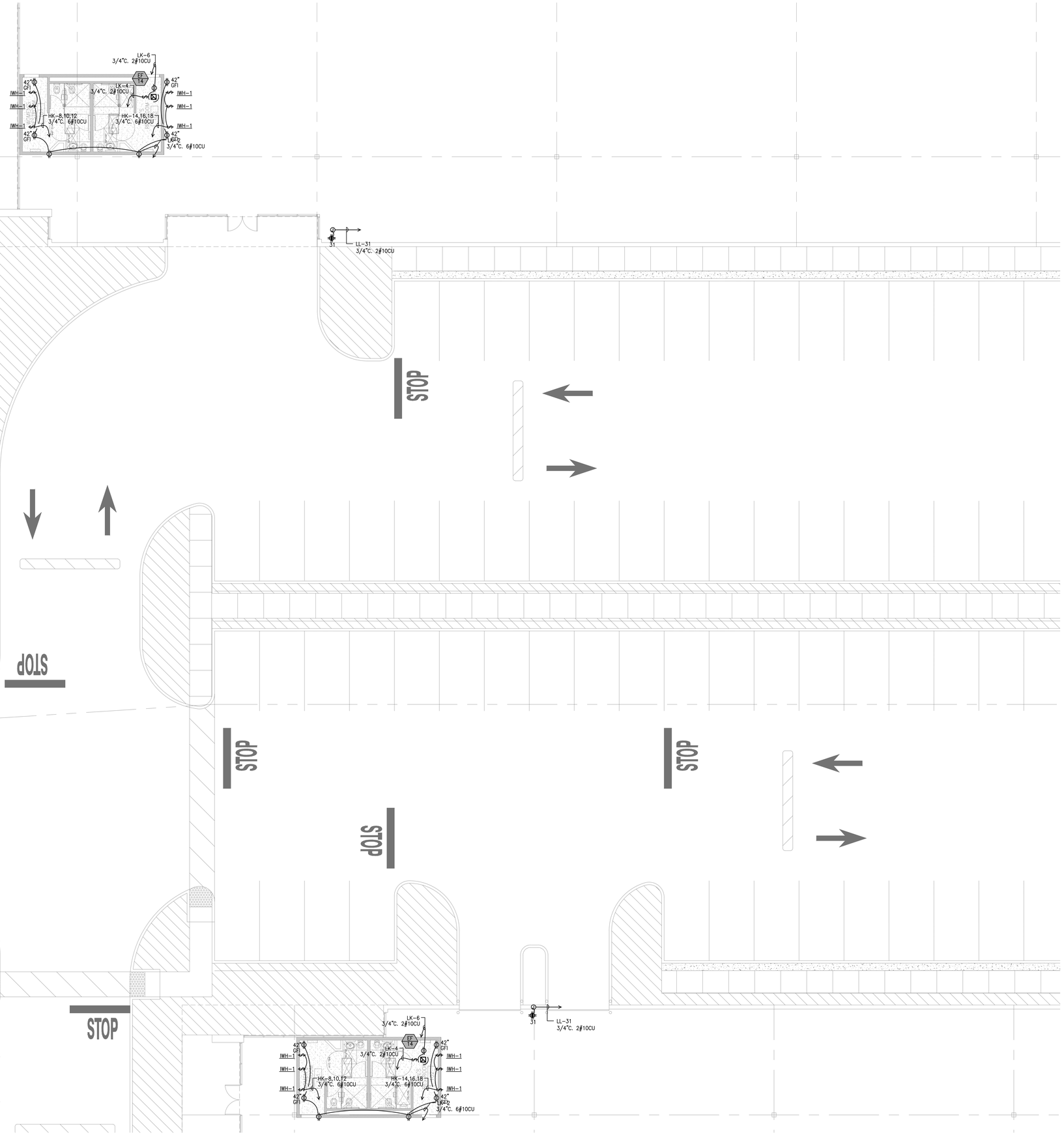
Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

E-4.3

RPM #19-755 12/09/19



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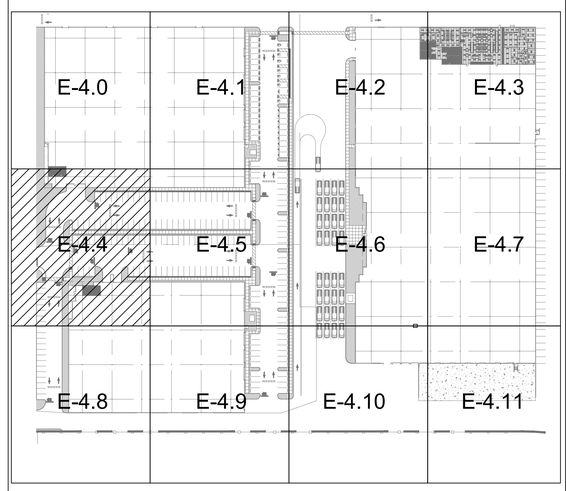

ELECTRICAL POWER PLAN | 1/8"=1'-0" | 1

KEY PLAN

HPA architecture

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Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title: **POWER PLAN**

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

E-4.4

RPM
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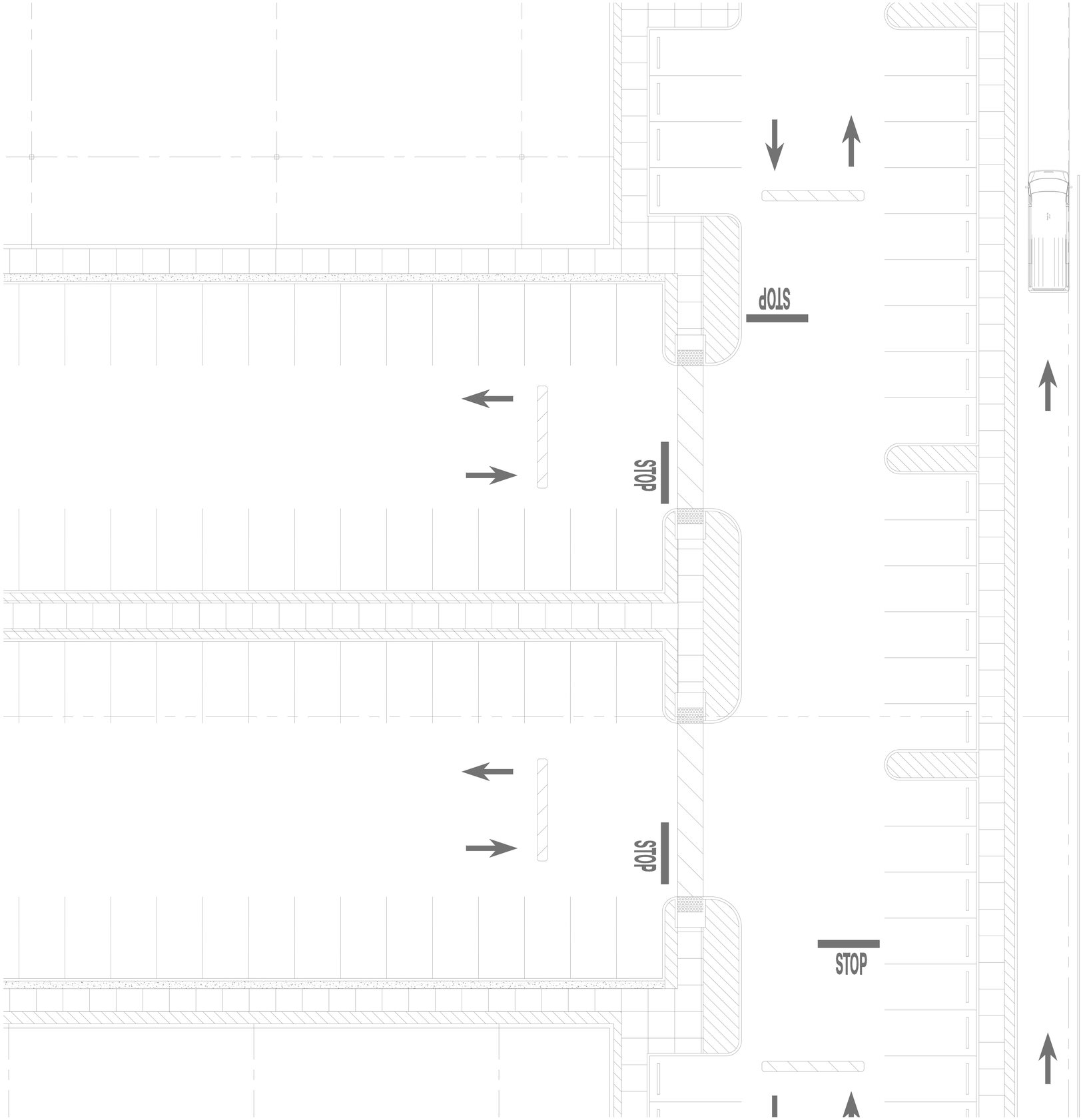
No. 015596
Exp.12-31-2019
ELECTRICAL
STATE OF CALIFORNIA
12/09/2019

RPM #19-755 12/09/19



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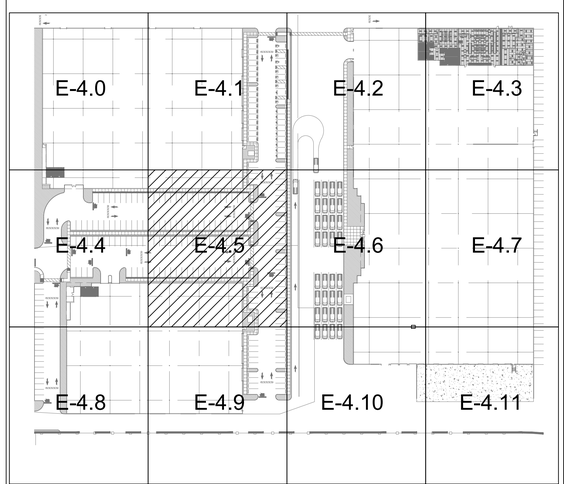

ELECTRICAL POWER PLAN | 1/8"=1'-0" | 1 | KEY PLAN

RPM
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TORRANCE
DCX 7

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TORRANCE, CA

Consultants:

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Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
POWER PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

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RPM #19-755 12/09/19

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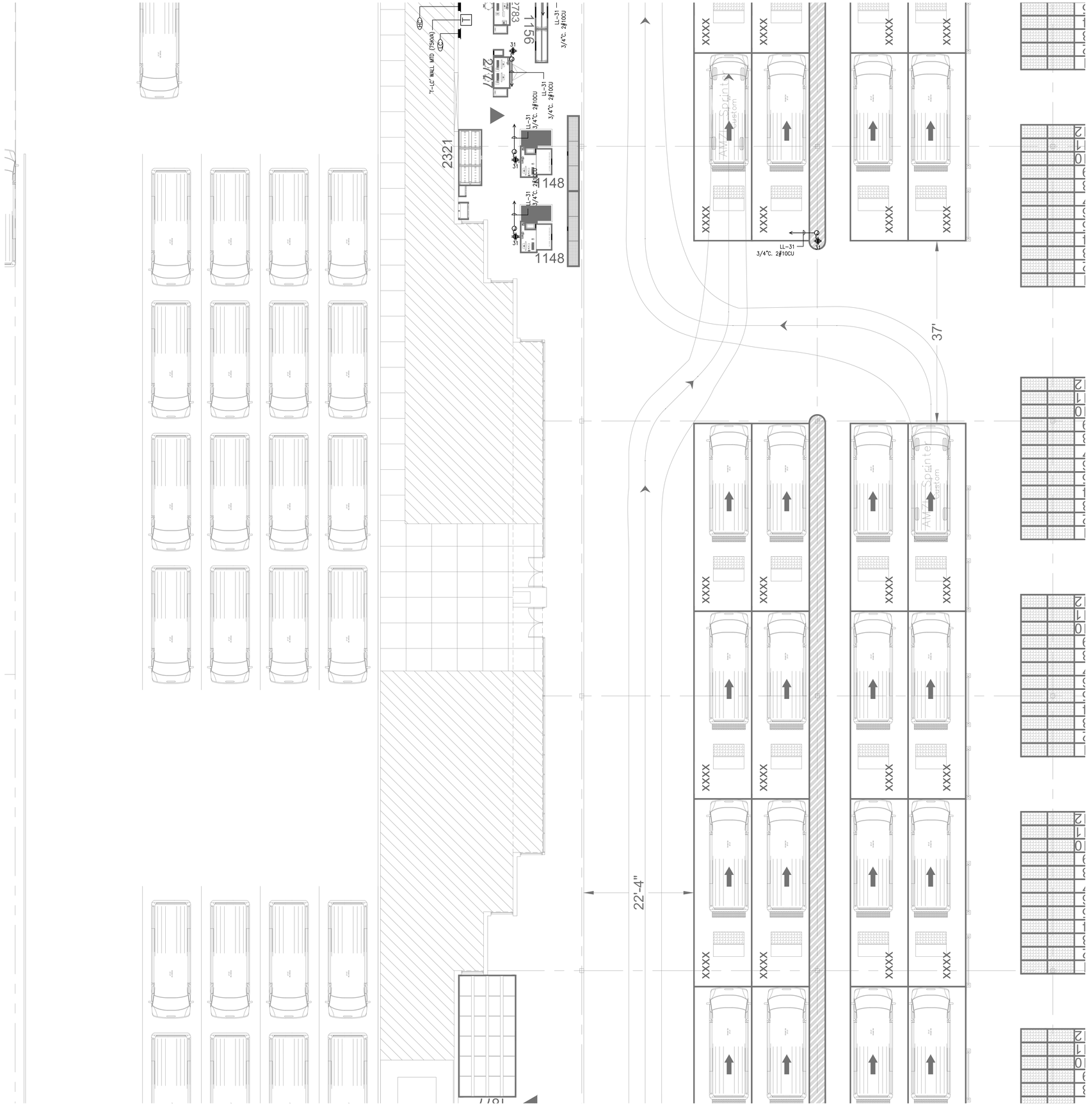

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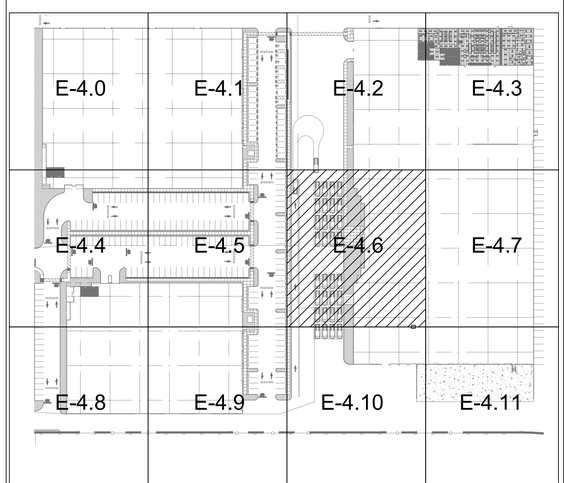

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Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
POWER PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

Sheet:

E-4.6

RPM #19-755 12/09/19

ELECTRICAL POWER PLAN 1/8"=1'-0" 1

KEY PLAN

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Fax: 949-450-1454
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e-mail: euisok@rpmpe.com

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LAN V. NGUYEN
No. 015596
Exp.12-31-2019
ELECTRICAL
STATE OF CALIFORNIA

12/09/2019

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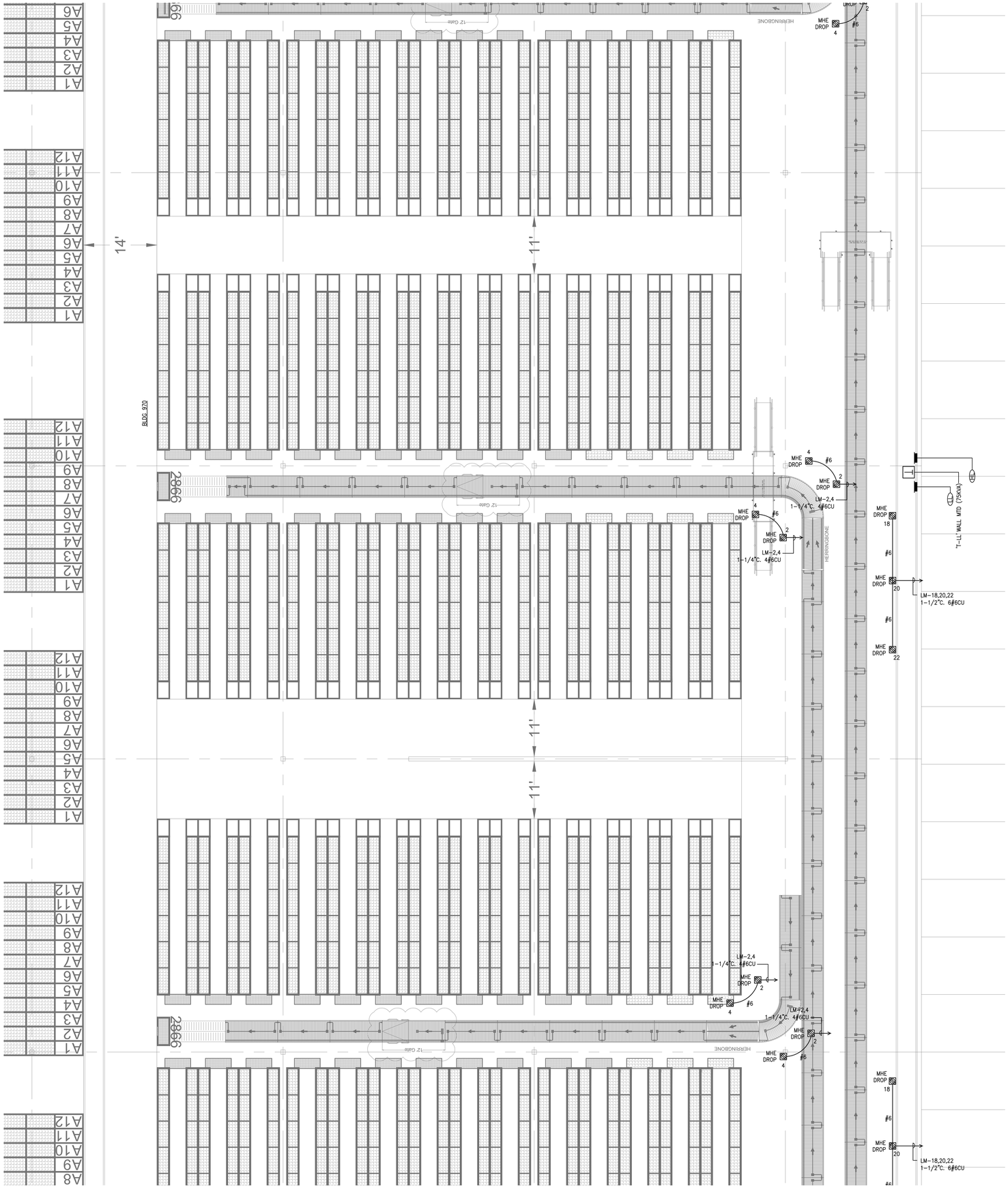

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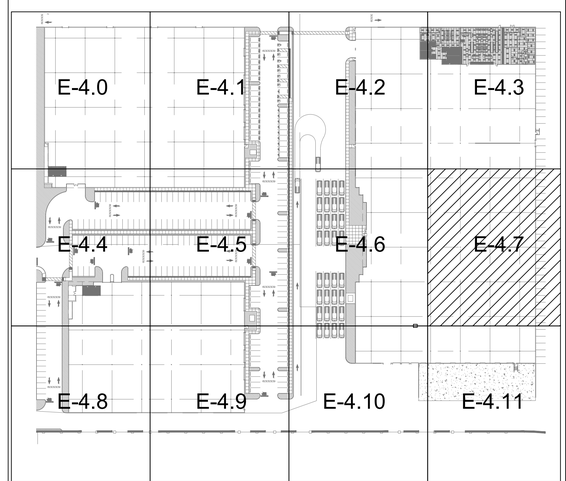

ELECTRICAL POWER PLAN | 1/8"=1'-0" | 1

KEY PLAN

RPM
Engineers, Inc.
102 DISCOVERY
Irvine, Ca. 92618
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Exp. 12-31-2019
ELECTRICAL
STATE OF CALIFORNIA

12/09/2019

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email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
POWER PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

Sheet:

E-4.7

RPM #19-755 12/09/19

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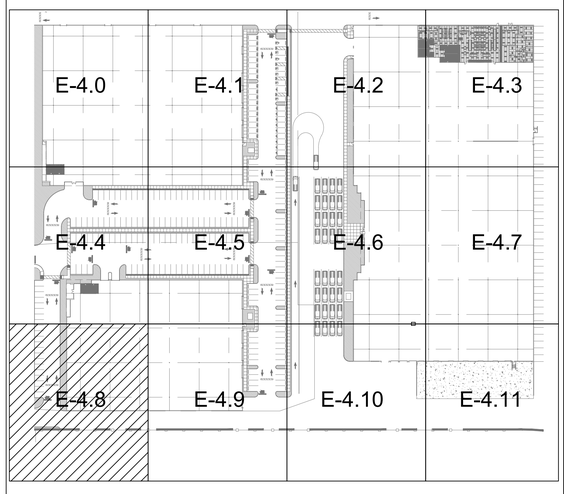

KEY PLAN

ELECTRICAL POWER PLAN | 1/8"=1'-0" | 1

HPA architecture

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tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
POWER PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

Sheet:

E-4.8

RPM #19-755 12/09/19

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Exp. 12-31-2019
ELECTRICAL
STATE OF CALIFORNIA
12/09/2019

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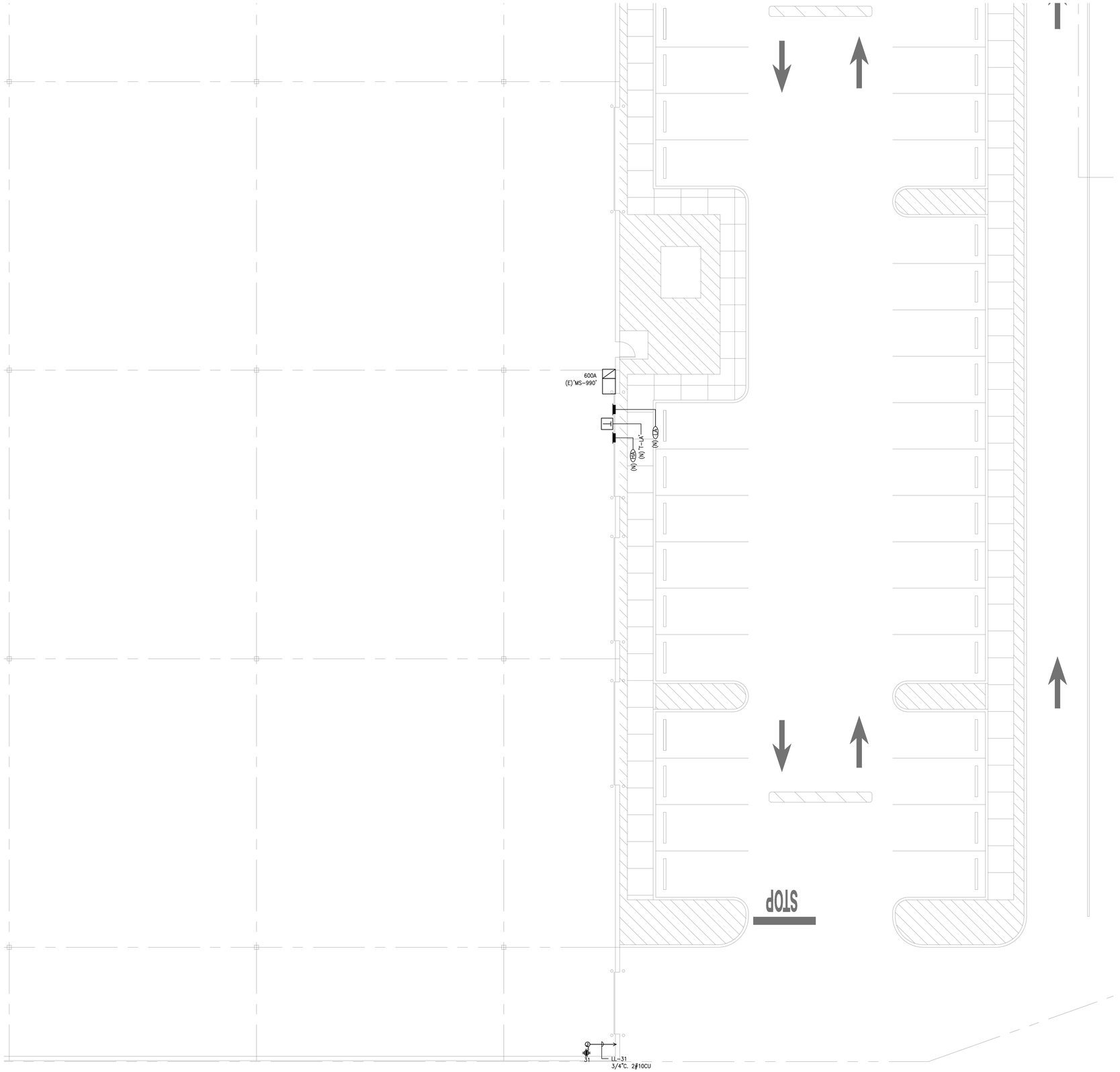

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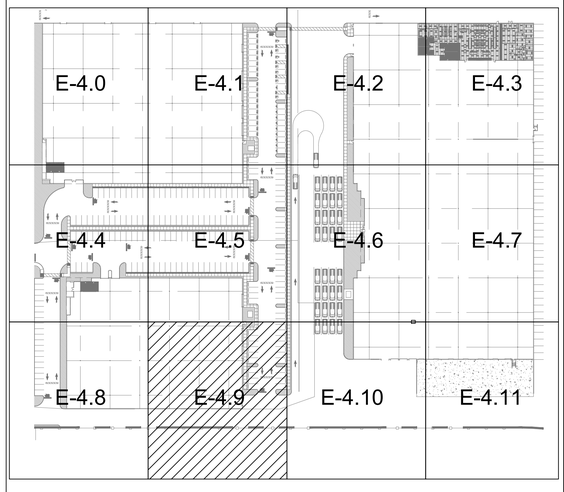

ELECTRICAL POWER PLAN | 1/8"=1'-0" | 1 | KEY PLAN

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Owner:

Project:

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DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
POWER PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

E-4.9

RPM Engineers, Inc.
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ELECTRICAL
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12/09/2019

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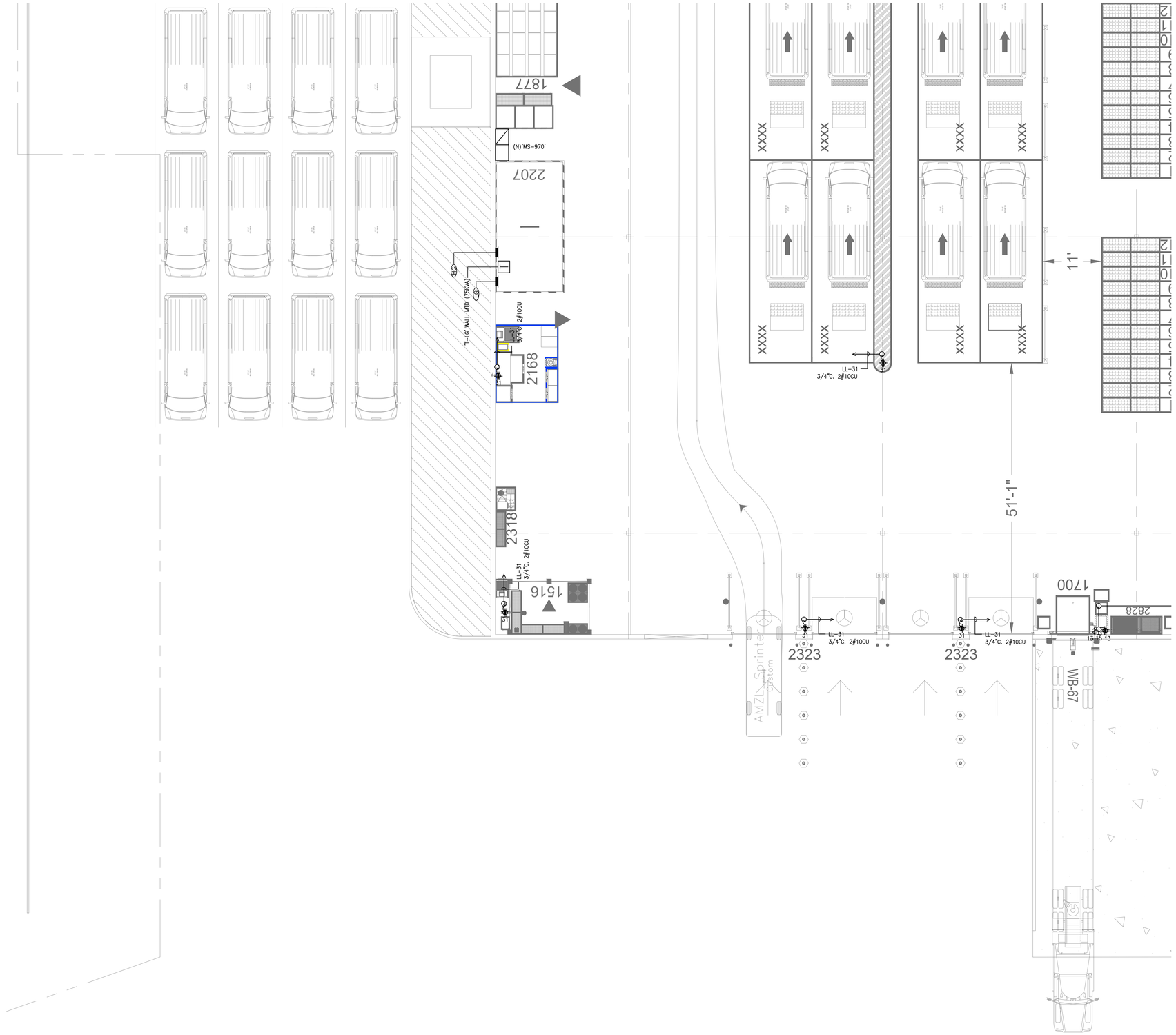

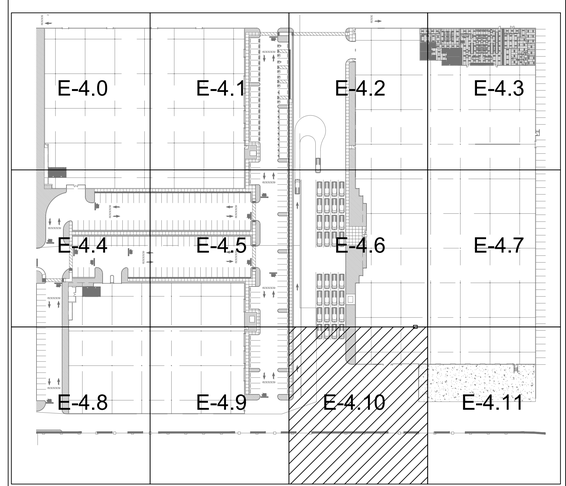

ELECTRICAL POWER PLAN | 1/8"=1'-0" | 1

KEY PLAN

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Irvine, Ca. 92618
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Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
POWER PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

E-4.10

RPM #19-755 12/09/19

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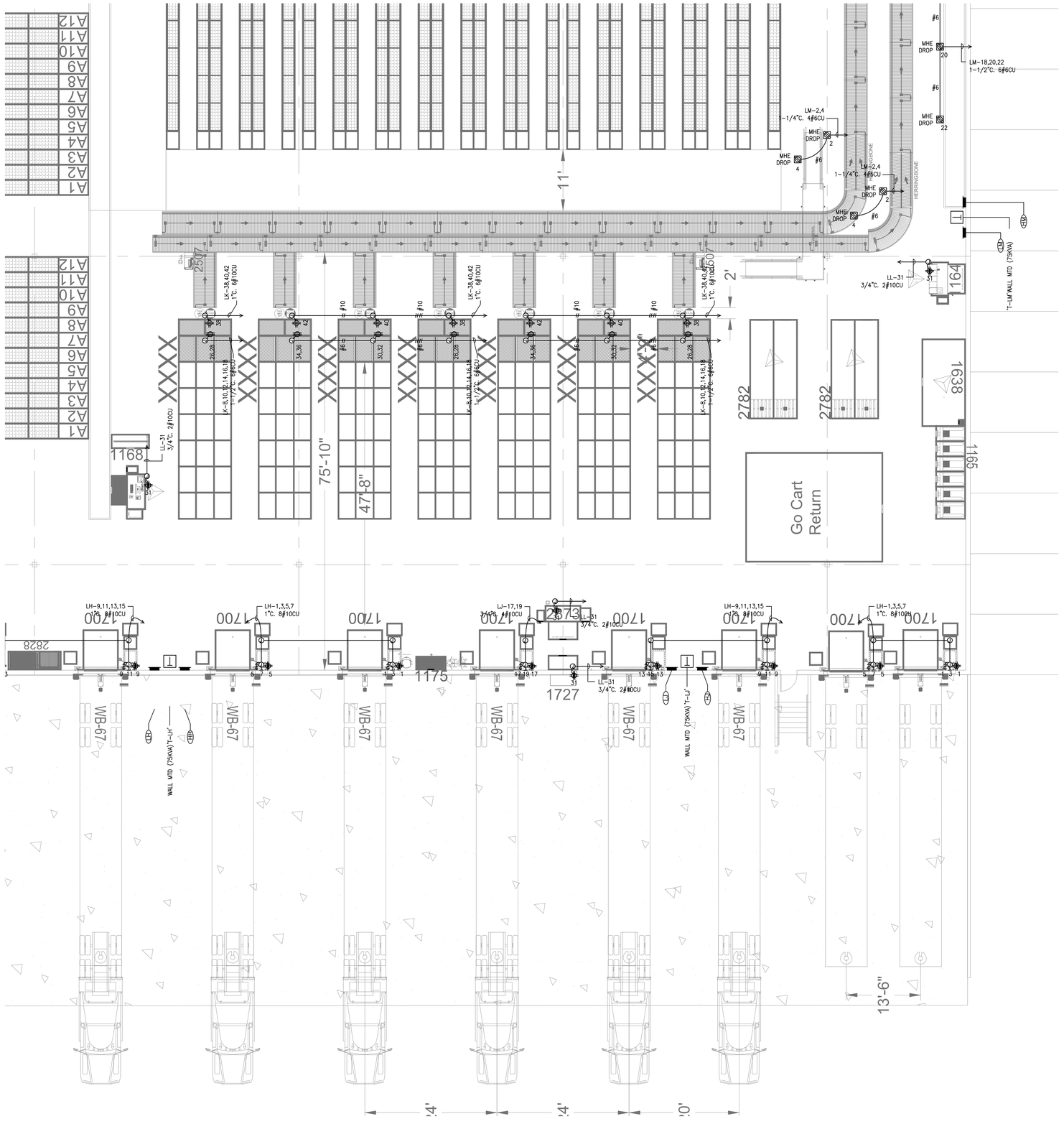

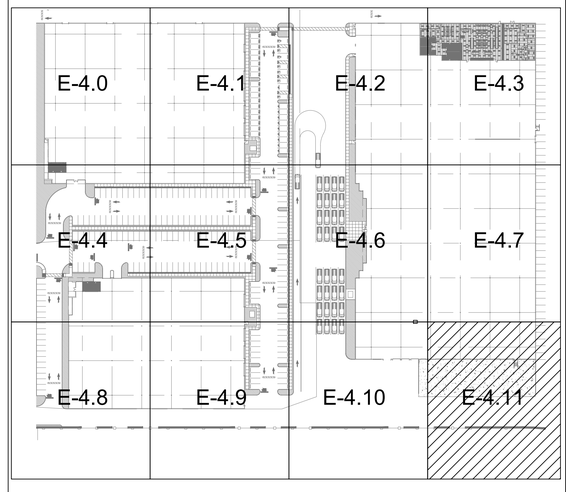

ELECTRICAL POWER PLAN | 1/8"=1'-0" | 1 | KEY PLAN

HPA architecture

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Project:

TORRANCE
DCX 7

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TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
POWER PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

RPM
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ELECTRICAL
STATE OF CALIFORNIA
12/09/2019

Sheet:

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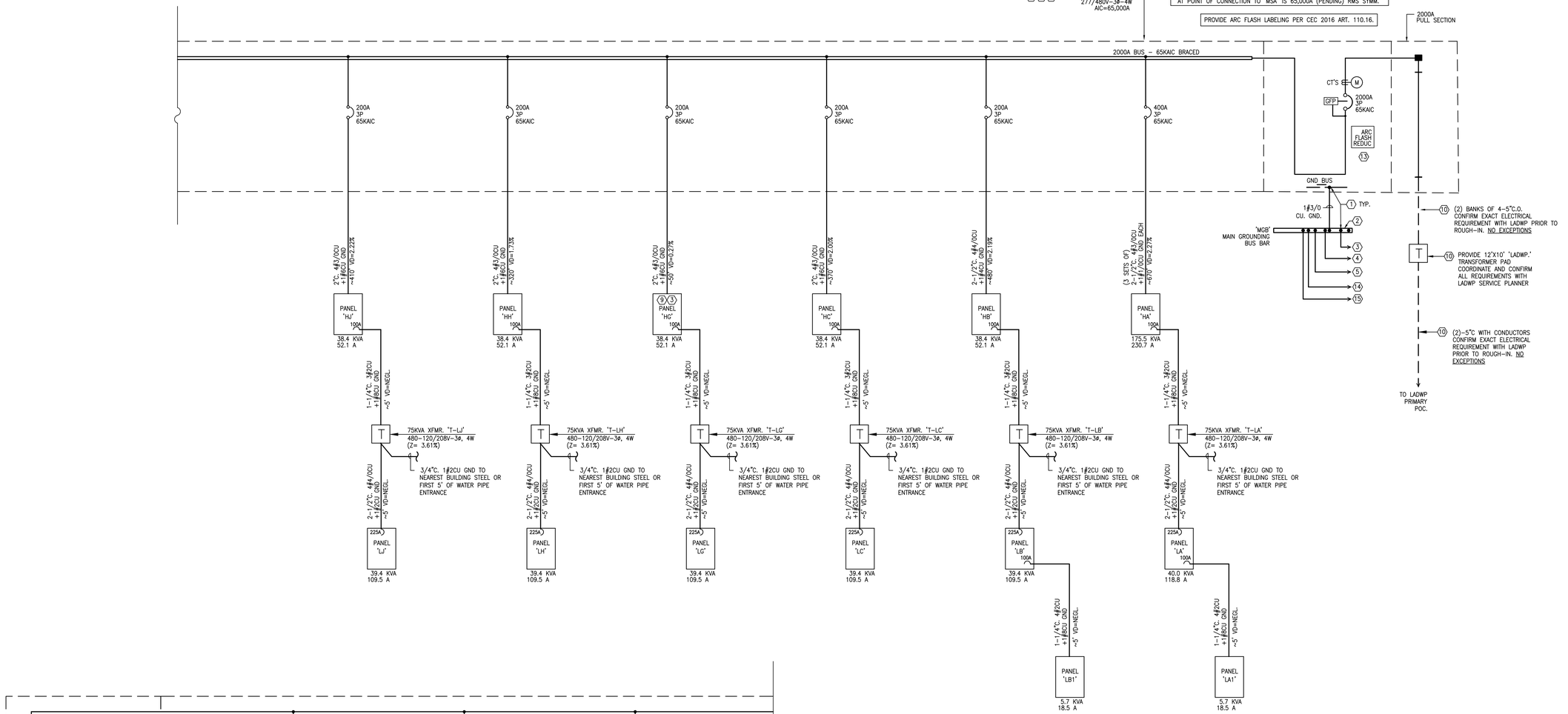

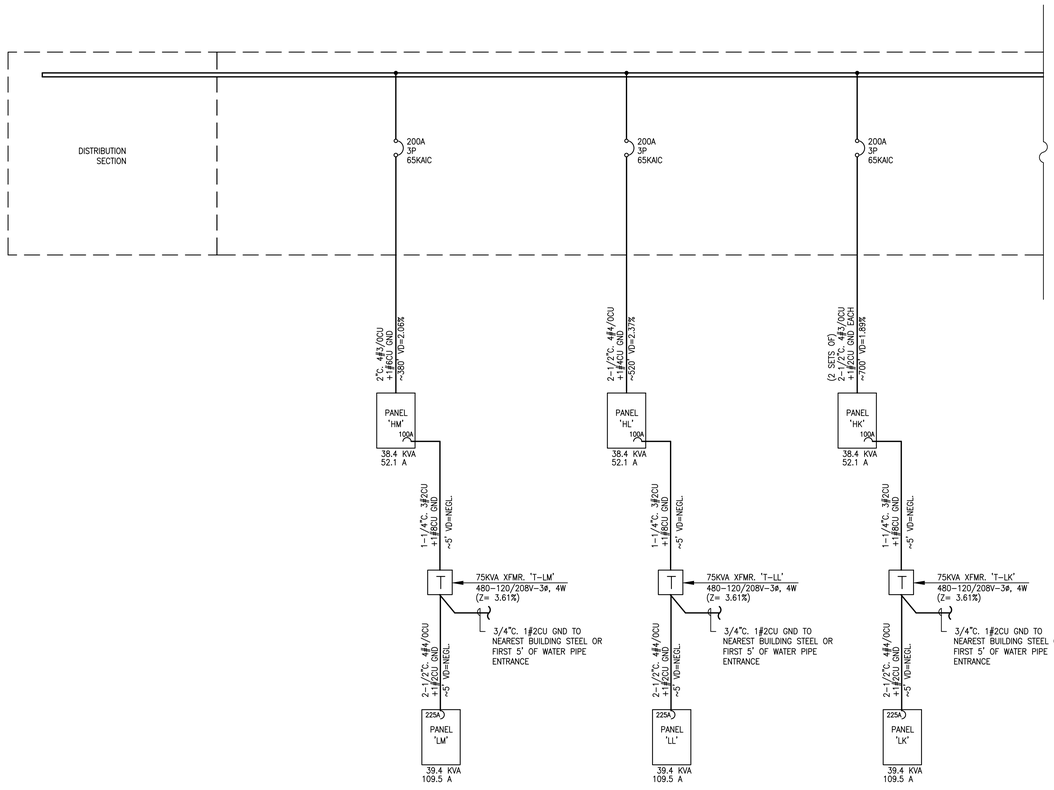

SINGLE LINE GENERAL NOTES:

1. ALL CIRCUIT BREAKERS (MAIN SWITCHBOARD, DISTRIBUTION PANELS, PANELBOARDS) SHALL BE SERIES RATED FOR 65,000 AIC, UNLESS OTHERWISE NOTED.
2. EQUIPMENT ENCLOSURES SHALL BE CLEARLY MARKED "CAUTION-SERIES RATED SYSTEM - 65,000 AMPS AVAILABLE (SEE SINGLE LINE DIAGRAM). IDENTIFIED REPLACEMENT COMPONENTS REQUIRED.", IN COMPLIANCE WITH 2016 CEC SECTION 110-22. END-USE EQUIPMENT SHALL ALSO BE MARKED WITH THE HIGHER SERIES COMBINATION INTERRUPTING RATING AS PER 2016 CEC SECTION 240-83(c).
3. ALL FEEDERS INDICATED ARE COPPER "THWN/THHN".
4. FUSES SHALL BE PROVIDED WITH REJECTION TYPE FUSE HOLDERS.
5. SERIES COMBINATION INTERRUPTING RATING SHALL NOT BE USED WHEN THE SECOND DEVICE IN THE SERIES IS SUBJECTED TO A TOTAL CONNECTED FULL LOAD MOTOR CURRENT OF MORE THAN 1% OF ITS AIC RATING.
6. MOTOR CIRCUIT PROTECTORS SHALL NOT BE USED AS PART OF A SERIES COMBINATION INTERRUPTING RATING.
7. ELECTRICAL EQUIPMENT SHALL BE LISTED BY A CITY RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE DEPARTMENT.
8. NO PIPING, DUCTS OR EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE LOCATED WITHIN THE DEDICATED SPACE ABOVE THE ELECTRICAL EQUIPMENT.
9. MAIN SERVICE WILL NOT ENERGIZED PRIOR TO THE BUILDING INSPECTOR'S RECEIPT OF A THIRD PARTY "NRTL" TESTING LABORATORY PERFORMANCE TEST CERTIFICATION FOR THE SERVICE GROUND FAULT PROTECTION. NEC 230-95
10. FEEDER LENGTHS SHOWN ARE UTILIZED FOR VOLTAGE DROP CALCULATIONS ONLY. CONTRACTOR VERIFY ACTUAL LENGTH OF FEEDER REQUIRED FOR A FULLY FUNCTIONAL SYSTEM.

GROUND FAULT RELAY SETTINGS:
a. TO MINIMIZE NUISANCE TRIPPING OF THE MAIN AND FEEDER BREAKER, THE CONTRACTOR SHALL ADJUST THE GROUND FAULT RELAY SETTINGS FOR ALL THE GFP DEVICES TO BE HIGHER THAN ALL DOWNSTREAM GFP AND NON-GFP DEVICES. THE GROUND FAULT CURRENT PICK-UP AND TIME DELAY SETTINGS SHALL BE ADJUSTED, PER THE MANUFACTURERS RECOMMENDATIONS, RESULTING FROM A CONTRACTOR/MANUFACTURER PREPARED COORDINATION STUDY - WHICH SHALL BE DOCUMENTED IN THE SHOP DRAWING SUBMITTAL.

b. DURING THE CONSTRUCTION PHASE OF THE PROJECT, ALL GROUND FAULT RELAYS SHALL BE SET AT THE SHORTEST AVAILABLE TIME DELAY.

c. AFTER ALL SETTINGS HAVE BEEN ADJUSTED, THE CONTRACTOR SHALL HAVE THE GROUND FAULT SYSTEM TESTED BY AN INDEPENDENT TESTING AGENCY PER NEC 230.95 (c). THIS TEST SHALL BE PERFORMED IN THE PRESENCE OF THE LOCAL AUTHORITY HAVING JURISDICTION AND THE TEST RESULTS SHALL BE DELIVERED TO THE ENGINEER OF RECORD.

SINGLE LINE DIAGRAM KEY NOTES

(1) THIS GROUNDING CONNECTION SHALL BE MADE BY MEANS OF IRREVERSIBLE COMPRESSION TYPE CONNECTORS LISTED FOR THE PURPOSE OF THE EXOTHERMIC WELDING PROCESS.

(2) PROVIDE MAIN GROUND BUS BAR "MGB1": WALL MOUNTED 1/4"X4"X36"L. GROUND BAR WITH INSULATED STAND OFFS AND PRE-DRILLED WITH 1/4" HOLES. LOCATE THIS MAIN GROUND BUS ADJACENT TO THE MAIN SWBD.

(3) 1#3/0 CU. GND. THE CONNECTION SHALL BE MADE WITHIN THE FIRST FIVE FEET OF THE WATER PIPE ENTRANCE TO THE BUILDING.

(4) 1#3/0 CU. GND. CONNECTION TO CONCRETE ENCASED UFER ELECTRODE PER CEC 250.52(3)

(5) PROVIDE 1"C-1#1/0 AWG CU GND. TO BUILDING MAIN TELEPHONE AND CATV BACKBOARDS.

(6) FAULT CURRENT SHORT CIRCUIT VALUE SHOWN PROVIDED BY LADWP SERVICE PLANNER AND WORSE LADWPNARIO VALUE. CONFIRM AVAILABLE FAULT CURRENT WITH SERVICE PLANNER PRIOR TO ORDERING THIS EQUIPMENT.

(7) DENOTES FEEDER (AND BRANCH) MAXIMUM COMBINED VOLTAGE DROP NOT TO EXCEED 5.00%. PER 2016 BUILDING ENERGY EFFICIENT STANDARDS 130.5 (c) (FEEDER LENGTH SHOWN IS FOR VOLTAGE DROP CALCULATIONS PURPOSE ONLY). VERIFY IN FIELD LENGTH OF FEEDER AND BEST METHOD OF ROUTING. THIS CONDITION MUST BE MET PRIOR TO BID AND CONSTRUCTION.

(8) NOT USED.

(9) PROVIDE PANEL SERIES RATING PER PANEL SCHEDULE SPECIFICATION. SEE PANEL SCHEDULES.

(10) CAREFULLY COORDINATE ALL ASPECTS OF THIS INSTALLATION WITH LADWP COMPANY AND COMPLY WITH ALL LADWP STANDARDS.

(11) THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO SUBMIT SHOP DRAWINGS OF THE SERVICE EQUIPMENT TO THE ELECTRICAL INSPECTOR AND LADWP UTILITY CO. FOR REVIEW.

(12) FUTURE SOLAR PROVISION. PROVIDE (2) 4" CONDUIT WITH PULL STRING WITH WEATHERPROOF HEAD IN ROOF STRUCTURE OVER ELECTRICAL ROOM. COORDINATE EXACT CONDUIT STUB-UP LOCATION WITH ARCHITECT.

(13) PROVIDE ARC FLASH REDUCTION DEVICE FOR ALL SERVICE MAIN OVERCURRENT DEVICE RATED OR CAN BE ADJUSTED TO 1200A OR HIGHER. PER NEC 240.87

(14) 1#3/0 CU GND CONNECTION TO BUILDING FOOTER/FOUNDATION REINFORCING STEEL.

(15) 1#3/0 CU GND CONNECTION TO AVAILABLE BUILDING STEEL.

(16) PROVIDE NAME PLATE MARKED "CAUTION-SERIES RATED COMBINATION SYSTEM RATED 65,000A AVAILABLE. IDENTIFIED REPLACEMENT COMPONENT REQUIRED". PANELBOARD BRANCH CIRCUIT BREAKERS SHALL BE EATON TYPE "GHB" AND SHALL BE SERIES RATED WITH UPSTREAM FEEDER BREAKER EATON TYPE "FDC".

(17) ROUTE TO MAIN GROUNDING BUS BAR 'MGB1'. RUN CONDUIT UNDERGROUND BELOW FIRE RATED WALLS.

RPM
Engineers, Inc.
102 DISCOVERY
Irvine, Ca. 92618
Tel: 949-450-9229 (214)
Fax: 949-450-1454
Contact: Euiso Kim
e-mail: euisok@rpmpe.com

REGISTERED PROFESSIONAL ENGINEER LAN V. NGUYEN No. 015596 Exp.12-31-2019 ELECTRICAL STATE OF CALIFORNIA

12/09/2019

HPA architecture
hpa, inc.
18831 bardeen avenue - ste. #100 irvine, ca 92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

Owner:

Project:

TORRANCE DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
SINGLE LINE DIAGRAM

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:
E-5.0

RPM #19-755 12/09/19

CAUTION : IF THIS SHEET IS NOT A 30" X 42" IT IS A REDUCED PRINT

PANEL: **HC** PANELVOLTAGE: 277/480 3P, 4W CIRCUIT CODE: N : NON-CONTINUOUS
LOCATION: WAREHOUSE BUS: 200A L : LONG-CONTINUOUS
MOUNTING: SURFACE MAIN: M.L.O.
AIC RATING: 14,000A

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	CO	DE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	TYPE CNT. L	R	M	CO	DE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1	1078			WAREHOUSE LIGHTING	L				14	20	1	X			15	3				N		CF-19	969			2
3		1463		WAREHOUSE LIGHTING	L				19	20	1		X		--	--				N		----		969		4
5			1078	WAREHOUSE LIGHTING	L				14	20	1			X	--	--				N		----			969	6
7	1078			WAREHOUSE LIGHTING	L				14	20	1	X			25	3				1	N	SF-1	3905			8
9		1078		WAREHOUSE LIGHTING	L				14	20	1		X		--	--				N		----		3905		10
11			1078	WAREHOUSE LIGHTING	L				14	20	1			X	--	--				N		----			3905	12
13	1078			WAREHOUSE LIGHTING	L				14	20	1	X										SPACE				14
15		1078		WAREHOUSE LIGHTING	L				14	20	1		X									SPACE				16
17				SPACE										X								SPACE				18
19				SPACE								X										SPACE				20
21				SPACE									X									SPACE				22
23				SPACE										X								SPACE				24
25				SPACE								X										SPACE				26
27				SPACE									X									SPACE				28
29				SPACE										X								SPACE				30
31				SPACE								X										SPACE				32
33				SPACE									X									SPACE				34
35				SPACE										X								SPACE				36
37				SPACE								X			100	3				1	N	XFMR "T-LC"	5000			38
39				SPACE									X		--	--				--	N	----		5000		40
41				SPACE										X	--	--				--	N	----			4680	42
	3234	3619	2156	PHASE TOTALS																		PHASE TOTALS	9874	9874	9554	

Total Phase A:	13108
Total Phase B:	13493
Total Phase C:	11710

CONNECTED VA (CODE N):	29302
CONNECTED VA (CODE L):	9009
CONNECTED VA (CODE R):	
CONNECTED VA (CODE K):	
TOTAL CONNECTED KVA:	38.4
DEMAND KVA:	
TOTAL ADJUSTED KVA:	38.4
TOTAL PANEL AMPS:	48.8
AMPS W/LCL:	52.1

PANEL: **LC** PANELVOLTAGE: 120/208 3P, 4W CIRCUIT CODE: N : NON-CONTINUOUS
LOCATION: WAREHOUSE BUS: 225A L : LONG-CONTINUOUS
MOUNTING: SURFACE MAIN: 225A R : DEMANDABLE RECEPTACLES
AIC RATING: 10,000A K : KITCHEN

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	CO	DE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	TYPE CNT. L	R	M	CO	DE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				2
3		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				4
5			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				6
7	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				8
9		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				10
11			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				12
13	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				14
15		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				16
17			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				18
19	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				20
21		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				22
23			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				24
25	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				26
27		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				28
29			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				30
31	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				32
33		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				34
35			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				36
37	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				38
39		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				40
41			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				42
43	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				44
45		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				46
47			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				48
49	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				50
51		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				52
53			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				54
55	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				56
57		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				58
59			180	ROOFTOP REC	R		1			20	1			X								SPACE				60
	5000	5000	4680	PHASE TOTALS																		PHASE TOTALS				

Total Phase A:	5000
Total Phase B:	5000
Total Phase C:	4680

CONNECTED VA (CODE N):	14500
CONNECTED VA (CODE L):	
CONNECTED VA (CODE R):	180
CONNECTED VA (CODE K):	
TOTAL CONNECTED KVA:	14.7
DEMAND KVA:	
TOTAL ADJUSTED KVA:	14.7
TOTAL PANEL AMPS:	40.9
AMPS W/LCL:	40.9

PANEL: **HG** PANELVOLTAGE: 277/480 3P, 4W CIRCUIT CODE: N : NON-CONTINUOUS
LOCATION: WAREHOUSE BUS: 200A L : LONG-CONTINUOUS
MOUNTING: SURFACE MAIN: M.L.O.
AIC RATING: 65,000A SERIES RATED

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	CO	DE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	TYPE CNT. L	R	M	CO	DE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1	2437			CF-13,14	N		2			15	3	X			20	1	16			L		WAREHOUSE LIGHTING	1232			2
3		2437		----	N		--			--	--		X		20	1	16			L		WAREHOUSE LIGHTING		1232		4
5			2437	----	N		--			--	--			X	20	1	16			L		WAREHOUSE LIGHTING			1232	6
7	3905			SF-5	N		1			25	3	X			20	1	16			L		WAREHOUSE LIGHTING	1232			8
9		3905		----	N		--			--	--		X		20	1	16			L		WAREHOUSE LIGHTING		1232		10
11			3905	----	N		--			--	--			X	20	1	16			L		WAREHOUSE LIGHTING			1232	12
13	726			BLDG LTG	L			5	20	2	X				20	1	16			L		WAREHOUSE LIGHTING	1232			14
15		726		----	L			--	--	--		X			20	1	16			L		WAREHOUSE LIGHTING		1232		16
17			570	BLDG LTG	L			4	20	2			X		20	1	16			L		WAREHOUSE LIGHTING			1232	18
19	570			----	L			--	--	--	--	X			20	1	16			L		WAREHOUSE LIGHTING	1232			20
21		550		MANDOOR LTG	L			22	20	1		X			20	1	16			L		WAREHOUSE LIGHTING		1232		22
23				SITE LTG	L			4	20	2			X		20	1	16			L		WAREHOUSE LIGHTING			1232	24
25				----	L			--	--	--	--	X			20	1	16			L		WAREHOUSE LIGHTING	1232			26
27				SPACE										X	20	1	16			L		WAREHOUSE LIGHTING		1232		28
29				SPACE								X										SPACE				30
31				SPACE									X									SPACE				32
33				SPACE								X										SPACE				34
35				SPACE									X									SPACE				36
37				SPACE										X	100	3				1	N	XFMR "T-LG"	10180			38
39				SPACE								X			--	--				--	N			8400		40
41				SPACE										X	--	--				--	N	----			8000	42
R	7638	7618	6912	PHASE TOTALS																		PHASE TOTALS	16340	14560	12928	

Total Phase A:	23978
Total Phase B:	22178
Total Phase C:	----

CONNECTED VA (CODE N):	45606
CONNECTED VA (CODE L):	20390
CONNECTED VA (CODE R):	
CONNECTED VA (CODE K):	
TOTAL CONNECTED KVA:	66.0
DEMAND KVA:	
TOTAL ADJUSTED KVA:	66.0
TOTAL PANEL AMPS:	86.6
AMPS W/LCL:	93.4

PANEL: **LG** PANELVOLTAGE: 120/208 3P, 4W CIRCUIT CODE: N : NON-CONTINUOUS
LOCATION: WAREHOUSE BUS: 225A L : LONG-CONTINUOUS
MOUNTING: SURFACE MAIN: 225A R : DEMANDABLE RECEPTACLES
AIC RATING: 10,000A K : KITCHEN

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	CO	DE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	TYPE CNT. L	R	M	CO	DE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1	180			ROOFTOP REC	R		1			20	1	X			30	1	1			N		MHE CONVEYER DROP REC	2000			2
3		400		**YARD MARSHALL LTG & REC**	**N**		**2**	**1**	**20**	**1**		X			30	1	1			N		MHE CONVEYER DROP REC		2000		4
5				SPACE									X		30	1	1			N		MHE CONVEYER DROP REC			2000	6
7				SPACE								X			30	1	1			N		MHE CONVEYER DROP REC	2000			8
9				SPACE									X		30	1	1			N		MHE CONVEYER DROP REC		2000		10
11				SPACE										X	30	1	1			N		MHE CONVEYER DROP REC			2000	12
13				SPACE								X			30	1	1			N		MHE CONVEYER DROP REC	2000			14
15				SPACE									X		30	1	1			N		MHE CONVEYER DROP REC		2000		16
17				SPACE										X	30	1	1			N		MHE CONVEYER DROP REC			2000	18
19				SPACE								X			30	1	1			N		MHE CONVEYER DROP REC	2000			20
21				SPACE									X		30	1	1			N		MHE CONVEYER DROP REC		2000		22
23				SPACE										X	30	1	1			N		MHE CONVEYER DROP REC			2000	24
25				SPACE								X			30	1	1			N		MHE CONVEYER DROP REC	2000			26
27				SPACE									X									SPACE				28
29				SPACE										X								SPACE				30
31				SPACE								X										SPACE				32
33				SPACE									X									SPACE				34
35				SPACE										X								SPACE				36
37				SPACE								X										SPACE				38
39				SPACE									X									SPACE				40
41				SPACE										X								SPACE				42
	180	400		PHASE TOTALS																		PHASE TOTALS	10000	8000	8000	

Total Phase A:	10180
Total Phase B:	8400
Total Phase C:	8000

CONNECTED VA (CODE N):	26400
CONNECTED VA (CODE L):	
CONNECTED VA (CODE R):	180
CONNECTED VA (CODE K):	
TOTAL CONNECTED KVA:	26.6
DEMAND KVA:	
TOTAL ADJUSTED KVA:	26.6
TOTAL PANEL AMPS:	84.9
AMPS W/LCL:	84.9

PANEL: **HB** PANELVOLTAGE: 277/480 3P, 4W CIRCUIT CODE: N : NON-CONTINUOUS
LOCATION: WAREHOUSE BUS: 200A L : LONG-CONTINUOUS
MOUNTING: SURFACE MAIN: M.L.O.
AIC RATING: 14,000A

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	CO	DE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	TYPE CNT. L	R	M	CO	DE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1	1078			WAREHOUSE LIGHTING	L				14	20	1	X			15	3				N		CF-1,20	3102			2
3		1463		WAREHOUSE LIGHTING	L				19	20	1		X		--	--				N		----		3102		4
5			1078	WAREHOUSE LIGHTING	L				14	20	1			X	--	--				N		----			3102	6
7	1078			WAREHOUSE LIGHTING	L				14	20	1	X			25	3				1	N	SF-2	3905			8
9		1078		WAREHOUSE LIGHTING	L				14	20	1		X		--	--				N		----		3905		10
11			1078	WAREHOUSE LIGHTING	L				14	20	1			X	--	--				N		----			3905	12
13	1078			WAREHOUSE LIGHTING	L				14	20	1	X										SPACE				14
15		1078		WAREHOUSE LIGHTING	L				14	20	1		X									SPACE				16
17				SPACE										X								SPACE				18
19				SPACE								X										SPACE				20
21				SPACE									X									SPACE				22
23				SPACE										X								SPACE				24
25				SPACE								X										SPACE				26
27				SPACE									X									SPACE				28
29				SPACE										X								SPACE				30
31				SPACE								X										SPACE				32
33				SPACE									X									SPACE				34
35				SPACE										X								SPACE				36
37				SPACE								X										SPACE				38
39				SPACE									X									SPACE				40
41				SPACE										X								SPACE				42
	5000	5000	4500	PHASE TOTALS																		PHASE TOTALS	3500	3500	3500	

Total Phase A:	8500
Total Phase B:	8500
Total Phase C:	8000

CONNECTED VA (CODE N):	25000
CONNECTED VA (CODE L):	
CONNECTED VA (CODE R):	
CONNECTED VA (CODE K):	
TOTAL CONNECTED KVA:	25.0
DEMAND KVA:	
TOTAL ADJUSTED KVA:	25.0
TOTAL PANEL AMPS:	69.5
AMPS W/LCL:	69.5

PANEL: **LB** PANELVOLTAGE: 120/208 3P, 4W CIRCUIT CODE: N : NON-CONTINUOUS
LOCATION: WAREHOUSE BUS: 225A L : LONG-CONTINUOUS
MOUNTING: SURFACE MAIN: 225A R : DEMANDABLE RECEPTACLES
AIC RATING: 10,000A K : KITCHEN

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	CO	DE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	TYPE CNT. L	R	M	CO	DE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				2
3		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				4
5			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				6
7	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				8
9		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				10
11			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				12
13	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				14
15		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				16
17			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				18
19	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				20
21		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				22
23			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				24
25	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				26
27		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				28
29			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				30
31	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				32
33		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				34
35			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				36
37	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				38
39		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				40
41			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				42
43	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				44
45		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				46
47			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				48
49	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				50
51		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				52
53			500	DEVICE CHARGING QUAD	N		2			20	1			X								SPACE				54
55	500			DEVICE CHARGING QUAD	N		2			20	1	X										SPACE				56
57		500		DEVICE CHARGING QUAD	N		2			20	1		X									SPACE				58
59				SPACE										X	--	--				--	N	----		3500		60
	5000	5000	4500	PHASE TOTALS																		PHASE TOTALS	3500	3500	3500	

Total Phase A:	8500
Total Phase B:	8500
Total Phase C:	8000

CONNECTED VA (CODE N):	25000
CONNECTED VA (CODE L):	
CONNECTED VA (CODE R):	
CONNECTED VA (CODE K):	
TOTAL CONNECTED KVA:	25.0
DEMAND KVA:	
TOTAL ADJUSTED KVA:	25.0
TOTAL PANEL AMPS:	69.5
AMPS W/LCL:	69.5

PANEL: **LB1** PANELVOLTAGE: 120/208 3P, 4W CIRCUIT CODE: N : NON-CONTINUOUS
LOCATION: WAREHOUSE BUS: 100A L : LONG-CONTINUOUS
MOUNTING: SURFACE MAIN: M.L.O. R : DEMANDABLE RECEPTACLES
AIC RATING: 10,000A K : KITCHEN

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	CO	DE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	TYPE CNT. L	R	M	CO	DE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1				SPACE								X			20	1	2			N		DEVICE CHARGING QUAD	500			2
3				SPACE									X		20	1	2			N		DEVICE CHARGING QUAD		500		4
5				SPACE										X	20	1	2			N		DEVICE CHARGING QUAD			500	6
7				SPACE								X			20	1	2			N		DEVICE CHARGING QUAD	500			8
9				SPACE									X		20	1	2			N		DEVICE CHARGING QUAD		500		10
11				SPACE										X	20	1	2			N		DEVICE CHARGING QUAD			500	12
13				SPACE								X			20	1	2			N		DEVICE CHARGING QUAD	500			14
15				SPACE									X		20	1	2			N		DEVICE CHARGING QUAD		500		16
17				SPACE										X	20	1	2			N		DEVICE CHARGING QUAD			500	18
19				SPACE								X			20	1	2			N		DEVICE CHARGING QUAD	500			20
21				SPACE									X		20	1	2			N		DEVICE CHARGING QUAD		500		22
23				SPACE										X	20	1	2			N		DEVICE CHARGING QUAD			500	24
25				SPACE								X			20	1	2			N		DEVICE CHARGING QUAD	500			26
27				SPACE									X		20	1	2			N		WH QUAD		500		28
29				SPACE										X	20	1	2			N		WH QUAD			500	30
31				SPACE								X			20	1	2			N		WH QUAD	500			32
33				SPACE									X		20	1	2			N		WH QUAD		500		34
35				SPACE										X	20	1	2			N		WH QUAD			500	36
37				SPACE								X			20	1	2			N		WH QUAD	500			38
39				SPACE									X		20	1	2			N		WH QUAD		500		40
41				SPACE										X	20	1	2			N		WH QUAD			500	42
				PHASE TOTALS																		PHASE TOTALS	3500	3500	3500	

Total Phase A:	3500
Total Phase B:	3500
Total Phase C:	3500

CONNECTED VA (CODE N):	10500
CONNECTED VA (CODE L):	
CONNECTED VA (CODE R):	
CONNECTED VA (CODE K):	
TOTAL CONNECTED KVA:	10.5
DEMAND KVA:	
TOTAL ADJUSTED KVA:	10.5
TOTAL PANEL AMPS:	29.2
AMPS W/LCL:	29.2

PANEL: **HA** PANELVOLTAGE: 277/480 3P, 4W CIRCUIT CODE: N : NON-CONTINUOUS
LOCATION: WAREHOUSE NEAR OFFICE BUS: 400A L : LONG-CONTINUOUS
MOUNTING: SURFACE MAIN: M.L.O.
AIC RATING: 14,000A

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	CO	DE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	TYPE CNT. L	R	M	CO	DE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1	1242			OPNE OFFV/BRK RM LTG	L		3		26	20	1				20	3				1	N	'AC-60A'	3601			2
3		1494		BRK RM LTG	L		3		32	20	1	X			--	--				--	N	----		3601		4
5			1770	TRAIN/RR LTG	L		5		56	20	1		X		--	--				--	N	----			3601	6
7				SPACE						30	3			X						1	N	'AC-120A'	7202			8
9				SPACE								X			--	--				--	N	----		7202		10
11				SPACE									X		--	--				--	N	----			7202	12
13	2770			'AC-36A'	N		1			15	3	X			30	3				1	N	'AC-120B'	7202			14

PANEL: HL

PANELVOLTAGE: 277/480 3P, 4W
LOCATION: WAREHOUSE — BUS: 200A
MOUNTING: SURFACE — MAIN: M.L.O.
AIC RATING: 14,000A
CIRCUIT CODE: N: NON-CONTINUOUS; L: LONG-CONTINUOUS

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	WIRE CODE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	L	TYPE CNT. R	M	WIRE CODE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1	1309			WAREHOUSE LIGHTING	L			17	20	1	X			20	3			1	N	CF-7,8,11	3656			2
3		1309		WAREHOUSE LIGHTING	L			17	20	1		X		--	--			--	N	----		3656		4
5			1309	WAREHOUSE LIGHTING	L			13	20	1			X	--	--			--	N	----			3656	6
7	1309			WAREHOUSE LIGHTING	L			17	20	1	X									SPACE				8
9		1309		WAREHOUSE LIGHTING	L			17	20	1		X								SPACE				10
11			1309	WAREHOUSE LIGHTING	L			17	20	1			X							SPACE				12
13	1309			WAREHOUSE LIGHTING	L			17	20	1	X									SPACE				14
15		1309		WAREHOUSE LIGHTING	L			17	20	1		X								SPACE				16
17			1309	WAREHOUSE LIGHTING	L			17	20	1			X							SPACE				18
19	1309			WAREHOUSE LIGHTING	L			17	20	1	X									SPACE				20
21		1309		WAREHOUSE LIGHTING	L			17	20	1		X								SPACE				22
23			1309	WAREHOUSE LIGHTING	L			17	20	1			X							SPACE				24
25	1309			WAREHOUSE LIGHTING	L			17	20	1	X									SPACE				26
27		1309		WAREHOUSE LIGHTING	L			17	20	1		X								SPACE				28
29			1309	WAREHOUSE LIGHTING	L			17	20	1			X							SPACE				30
31				SPACE							X									SPACE				32
33				SPACE								X								SPACE				34
35				SPACE									X							SPACE				36
37				SPACE							X			100	3			1	N	XFMR 'T-LH'	11640			38
39				SPACE								X		--	--			--	N	----		11400		40
41				SPACE									X	--	--			--	N	----			11100	42
	6545	6545	6545	PHASE TOTALS																PHASE TOTALS	15296	15056	14756	

Total Phase A: 21841
Total Phase B: 21601
Total Phase C: 21301

CONNECTED VA (CODE N):	45108
CONNECTED VA (CODE L):	19635
CONNECTED VA (CODE R):	
CONNECTED VA (CODE K):	
TOTAL CONNECTED KVA:	64.8
DEMAND KVA:	
TOTAL ADJUSTED KVA:	64.8
TOTAL PANEL AMPS:	78.1
AMPS W/LCL:	84.1

PANEL: HJ

PANELVOLTAGE: 277/480 3P, 4W
LOCATION: WAREHOUSE — BUS: 200A
MOUNTING: SURFACE — MAIN: M.L.O.
AIC RATING: 14,000A
CIRCUIT CODE: N: NON-CONTINUOUS; L: LONG-CONTINUOUS

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	WIRE CODE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	L	TYPE CNT. R	M	WIRE CODE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1				SPACE							X			15	3			1	N	CF-18	1218			2
3				SPACE								X		--	--			--	N	----		1218		4
5				SPACE									X	--	--			--	N	----			1218	6
7				SPACE							X			25	3			1	N	SF-6	3509			8
9				SPACE								X		--	--			--	N	----		3509		10
11				SPACE									X	--	--			--	N	----			3509	12
13				SPACE							X									SPACE				14
15				SPACE								X								SPACE				16
17				SPACE									X							SPACE				18
19				SPACE							X									SPACE				20
21				SPACE								X								SPACE				22
23				SPACE									X							SPACE				24
25				SPACE							X									SPACE				26
27				SPACE								X								SPACE				28
29				SPACE									X							SPACE				30
31				SPACE							X									SPACE				32
33				SPACE								X								SPACE				34
35				SPACE									X							SPACE				36
37				SPACE							X			100	3			1	N	XFMR 'T-LJ'	3500			38
39				SPACE								X		--	--			--	N	----		3000		40
41				SPACE									X	--	--			--	N	----			3180	42
				PHASE TOTALS																PHASE TOTALS	8227	7727	7907	

Total Phase A: 8227
Total Phase B: 7727
Total Phase C: 7907

CONNECTED VA (CODE N):	23861
CONNECTED VA (CODE L):	
CONNECTED VA (CODE R):	
CONNECTED VA (CODE K):	
TOTAL CONNECTED KVA:	23.9
DEMAND KVA:	
TOTAL ADJUSTED KVA:	23.9
TOTAL PANEL AMPS:	28.8
AMPS W/LCL:	28.8

PANEL: HH

PANELVOLTAGE: 277/480 3P, 4W
LOCATION: WAREHOUSE — BUS: 200A
MOUNTING: SURFACE — MAIN: M.L.O.
AIC RATING: 14,000A
CIRCUIT CODE: N: NON-CONTINUOUS; L: LONG-CONTINUOUS

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	WIRE CODE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	L	TYPE CNT. R	M	WIRE CODE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1				SPACE										15	3			2	N	CF-16,17	2437			2
3				SPACE										--	--			--	N	----		2437		4
5				SPACE										--	--			--	N	----			2437	6
7				SPACE										25	3			1	N	SF-5	3905			8
9				SPACE										--	--			--	N	----		3905		10
11				SPACE										--	--			--	N	----			3905	12
13				SPACE																SPACE				14
15				SPACE																SPACE				16
17				SPACE																SPACE				18
19				SPACE																SPACE				20
21				SPACE																SPACE				22
23				SPACE																SPACE				24
25				SPACE																SPACE				26
27				SPACE																SPACE				28
29				SPACE																SPACE				30
31				SPACE																SPACE				32
33				SPACE																SPACE				34
35				SPACE																SPACE				36
37				SPACE										100	3			1	N	XFMR 'T-LH'	3000			38
39				SPACE										--	--			--	N	----		3180		40
41				SPACE										--	--			--	N	----			2860	42
				PHASE TOTALS																PHASE TOTALS	9342	9522	9202	

Total Phase A: 9342
Total Phase B: 9522
Total Phase C: 9202

CONNECTED VA (CODE N):	28066
CONNECTED VA (CODE L):	
CONNECTED VA (CODE R):	
CONNECTED VA (CODE K):	
TOTAL CONNECTED KVA:	28.1
DEMAND KVA:	
TOTAL ADJUSTED KVA:	28.1
TOTAL PANEL AMPS:	33.9
AMPS W/LCL:	33.9

PANEL: LL

PANELVOLTAGE: 120/208 3P, 4W
LOCATION: WAREHOUSE — BUS: 225A
MOUNTING: SURFACE — MAIN: 225A
AIC RATING: 10,000A
CIRCUIT CODE: N: NON-CONTINUOUS; L: LONG-CONTINUOUS; R: DEMANDABLE RECEPTACLES; K: KITCHEN

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	WIRE CODE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	L	TYPE CNT. R	M	WIRE CODE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1	540			ROOF TOP REC	R	3		20	1	X				30	1		1		N	MHE CONVEYER DROP REC	1500			2
3		1000		CONVEYER 30A TWISTLOCK	N	1		30	2		X			30	1		1		N	MHE CONVEYER DROP REC		1500		4
5			1000	---	N	--		--	--			X		30	1		1		N	MHE CONVEYER DROP REC			1500	6
7	1000			CONVEYER 30A TWISTLOCK	N	1		30	2	X				30	1		1		N	MHE CONVEYER DROP REC	1500			8
9		1000		---	N	--		--	--		X			30	1		1		N	MHE CONVEYER DROP REC		1500		10
11			1000	CONVEYER 30A TWISTLOCK	N	1		30	2			X		30	1		1		N	MHE CONVEYER DROP REC			1500	12
13	1000			---	N	--		--	--	X				30	1		1		N	MHE CONVEYER DROP REC	1500			14
15		700		CONVEYER PFLEX	N	2		20	1		X			30	1		1		N	MHE CONVEYER DROP REC		1500		16
17			700	CONVEYER PFLEX	N	2		20	1			X		30	1		1		N	MHE CONVEYER DROP REC			1500	18
19	700			CONVEYER PFLEX	N	2		20	1	X				30	1		1		N	MHE CONVEYER DROP REC	1500			20
21		1000		CONVEYER 30A TWISTLOCK	N	1		30	2		X			30	1		1		N	MHE CONVEYER DROP REC		1500		22
23			1000	---	N	--		--	--			X								SPACE				24
25	1000			CONVEYER 30A TWISTLOCK	N	1		30	2	X										SPACE				26
27		1000		---	N	--		--	--		X									SPACE				28
29			1000	CONVEYER 30A TWISTLOCK	N	1		30	2			X								SPACE				30
31	1000			---	N	--		--	--	X										SPACE				32
33		1000		CONVEYER 30A TWISTLOCK	N	1		30	2		X									SPACE				34
35			1000	---	N	--		--	--			X								SPACE				36
37	500			WH QUAD	N	2		20	1	X										SPACE				38
39		700		CONVEYER PFLEX	N	2		20	1		X									SPACE				40
41			700	CONVEYER PFLEX	N	2		20	1			X								SPACE				42
43				SPACE							X									SPACE				44
45		1000		CONVEYER 30A TWISTLOCK	N	1		30	2	X										SPACE				46
47			1000	---	N	--		--	--		X									SPACE				48
49	1000			CONVEYER 30A TWISTLOCK	N	1		30	2	X										SPACE				50
51		1000		---	N	--		--	--		X									SPACE				52
53			700	CONVEYER PFLEX	N	2		20	1		X									SPACE				54
55	700			CONVEYER PFLEX	N	2		20	1	X										SPACE				56
57		500		WH QUAD	N	2		20	1		X									SPACE				58
59				SPACE								X								SPACE				60
	7140	8400	8100	PHASE TOTALS																PHASE TOTALS	4500	3000	3000	

Total Phase A: 11640
Total Phase B: 11400
Total Phase C: 11100

CONNECTED VA (CODE N):	33600
CONNECTED VA (CODE L):	
CONNECTED VA (CODE R):	540
CONNECTED VA (CODE K):	
TOTAL CONNECTED KVA:	34.2
DEMAND KVA:	
TOTAL ADJUSTED KVA:	34.2
TOTAL PANEL AMPS:	95.0
AMPS W/LCL:	95.0

PANEL: LJ

PANELVOLTAGE: 120/208 3P, 4W
LOCATION: WAREHOUSE — BUS: 225A
MOUNTING: SURFACE — MAIN: 225A
AIC RATING: 10,000A
CIRCUIT CODE: N: NON-CONTINUOUS; L: LONG-CONTINUOUS; R: DEMANDABLE RECEPTACLES; K: KITCHEN

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	WIRE CODE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	L	TYPE CNT. R	M	WIRE CODE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1	500			DOCK LT & QUAD	N	1			20	1	X									SPACE				2
3		500		DOCK CTRL	N	2			20	1		X								SPACE				4
5			500	DOCK LT & QUAD	N	1			20	1			X							SPACE				6
7	500			DOCK CTRL	N	2			20	1	X									SPACE				8
9		500		DOCK LT & QUAD	N	1			20	1		X								SPACE				10
11			500	DOCK CTRL	N	2			20	1			X							SPACE				12
13	500			DOCK LT & QUAD	N	1			20	1	X									SPACE				14
15		500		DOCK CTRL	N	2			20	1		X								SPACE				16
17			500	DOCK LT & QUAD	N	1			20	1			X							SPACE				18
19	500			DOCK CTRL	N	2			20	1	X									SPACE				20
21		500		DOCK LT & QUAD	N	1			20	1		X								SPACE				22
23			500	DOCK CTRL	N	2			20	1			X							SPACE				24
25	500			DOCK LT & QUAD	N	1			20	1	X									SPACE				26
27		500		DOCK CTRL	N	2			20	1		X								SPACE				28
29			500	DOCK LT & QUAD	N	1			20	1			X							SPACE				30
31	500			DOCK CTRL	N	2			20	1	X									SPACE				32
33		500		WH QUAD	N	2			20	1		X								SPACE				34
35			500	WH QUAD	N	2			20	1			X							SPACE				36
37	500			WH QUAD	N	2			20	1	X									SPACE				38
39				SPACE								X								SPACE				40
41			180	ROOFTOP REC	R	1			20	1			X							SPACE				42
	3500	3000	3180	PHASE TOTALS																PHASE TOTALS				

Total Phase A: 3500
Total Phase B: 3000
Total Phase C: 3180

CONNECTED VA (CODE N):	9500
CONNECTED VA (CODE L):	
CONNECTED VA (CODE R):	180
CONNECTED VA (CODE K):	
TOTAL CONNECTED KVA:	9.7
DEMAND KVA:	
TOTAL ADJUSTED KVA:	9.7
TOTAL PANEL AMPS:	29.2
AMPS W/LCL:	29.2

PANEL: LH

PANELVOLTAGE: 120/208 3P, 4W
LOCATION: WAREHOUSE — BUS: 225A
MOUNTING: SURFACE — MAIN: 225A
AIC RATING: 10,000A
CIRCUIT CODE: N: NON-CONTINUOUS; L: LONG-CONTINUOUS; R: DEMANDABLE RECEPTACLES; K: KITCHEN

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	WIRE CODE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	L	TYPE CNT. R	M	WIRE CODE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1	500			DOCK LT & QUAD	N	1			20	1	X									SPACE				2
3		500		DOCK CTRL	N	2			20	1		X								SPACE				4
5			500	DOCK LT & QUAD	N	1			20	1			X							SPACE				6
7	500			DOCK CTRL	N	2			20	1	X									SPACE				8
9		500		DOCK LT & QUAD	N	1			20	1		X								SPACE				10
11			500	DOCK CTRL	N	2			20	1			X							SPACE				12
13	500			DOCK LT & QUAD	N	1			20	1	X									SPACE				14
15		500		DOCK CTRL	N	2			20	1		X								SPACE				16
17			500	DOCK LT & QUAD	N	1			20	1			X							SPACE				18
19	500			DOCK CTRL	N	2			20	1	X									SPACE				20
21		500		DOCK LT & QUAD	N	1			20	1		X								SPACE				22
23			500	DOCK CTRL	N	2			20	1			X							SPACE				24
25	500			DOCK LT & QUAD	N	1			20	1	X									SPACE				26
27		500		DOCK CTRL	N	2			20	1		X								SPACE				28
29			500	DOCK LT & QUAD	N	1			20	1			X							SPACE				30
31	500			WH QUAD	N	2			20	1	X									SPACE				32
33		500		WH QUAD	N	2			20	1		X								SPACE				34
35				SPACE								X								SPACE				36
37				SPACE							X									SPACE				38
39				SPACE								X								SPACE				40
41				SPACE									X							SPACE				42
	3000	3000	2500	PHASE TOTALS																PHASE TOTALS				

Total Phase A: 3000
Total Phase B: 3180
Total Phase C: 2860

CONNECTED VA (CODE N):	8860
CONNECTED VA (CODE L):	
CONNECTED VA (CODE R):	180
CONNECTED VA (CODE K):	
TOTAL CONNECTED KVA:	9.1
DEMAND KVA:	
TOTAL ADJUSTED KVA:	9.1
TOTAL PANEL AMPS:	26.5
AMPS W/LCL:	26.5

PANEL: HM

PANELVOLTAGE: 277/480 3P, 4W
LOCATION: WAREHOUSE — BUS: 200A
MOUNTING: SURFACE — MAIN: M.L.O.
AIC RATING: 14,000A
CIRCUIT CODE: N: NON-CONTINUOUS; L: LONG-CONTINUOUS

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	WIRE CODE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	L	TYPE CNT. R	M	WIRE CODE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1	1771			WAREHOUSE LIGHTING	L			23	20	1	X			15	3			1	N	CF-3,4	2437			2
3		1309		WAREHOUSE LIGHTING	L			25	20	1		X		--	--			--	N	---		2437		4
5			1309	WAREHOUSE LIGHTING	L			25	20	1			X	--	--			--	N	---			2437	6
7	1309			WAREHOUSE LIGHTING	L			25	20	1	X			25	3			1	N	SF-3	3905			8
9		1309		WAREHOUSE LIGHTING	L			25	20	1		X		--	--			--	N	---		3905		10
11			1309	WAREHOUSE LIGHTING	L			25	20	1			X	--	--			--	N	---			3905	12
13	1309			WAREHOUSE LIGHTING	L			25	20	1	X									SPACE				14
15		1309		WAREHOUSE LIGHTING	L			25	20	1		X								SPACE				16
17			1309	WAREHOUSE LIGHTING	L			25	20	1			X							SPACE				18
19	1309			WAREHOUSE LIGHTING	L			25	20	1	X									SPACE				20
21		1309		WAREHOUSE LIGHTING	L			25	20	1		X								SPACE				22
23				SPACE									X							SPACE				24
25				SPACE							X									SPACE				26
27				SPACE								X								SPACE				28
29				SPACE									X							SPACE				30
31				SPACE							X									SPACE				32
33				SPACE								X								SPACE				34
35				SPACE									X							SPACE				36
37				SPACE							X			100	3			1	N	XFMR 'T-LM'	11440			38
39				SPACE								X		--	--			--	N	---		11200		40
41				SPACE									X	--	--			--	N	---			9400	42
	5698	5236	3927	PHASE TOTALS																PHASE TOTALS	17782	17542	15742	

Total Phase A: 23480
Total Phase B: 22778
Total Phase C: 19669

CONNECTED VA (CODE N):	51066
CONNECTED VA (CODE L):	14861
CONNECTED VA (CODE R):	
CONNECTED VA (CODE K):	
TOTAL CONNECTED KVA:	66.0
DEMAND KVA:	
TOTAL ADJUSTED KVA:	66.0
TOTAL PANEL AMPS:	84.8
AMPS W/LCL:	90.0

PANEL: HK

PANELVOLTAGE: 277/480 3P, 4W
LOCATION: WAREHOUSE — BUS: 200A
MOUNTING: SURFACE — MAIN: M.L.O.
AIC RATING: 14,000A
CIRCUIT CODE: N: NON-CONTINUOUS; L: LONG-CONTINUOUS

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	WIRE CODE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	L	TYPE CNT. R	M	WIRE CODE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1	1309			WAREHOUSE LIGHTING	L			17	20	1	X			15	3			2	N	CF-12,15	2437			2
3		1309		WAREHOUSE LIGHTING	L			17	20	1		X		20	1			1	N	WH-1		2437		4
5			1001	WAREHOUSE LIGHTING	L			13	20	1			X	--	--			--	N	----			2437	6
7	1309			WAREHOUSE LIGHTING	L			17	20	1	X			20	1			1	N	WH-1	4150			8
9		1309		WAREHOUSE LIGHTING	L			17	20	1		X		20	1			1	N	WH-1		4150		10
11			1309	WAREHOUSE LIGHTING	L			17	20	1			X	20	1			1	N	WH-1			4150	12
13	1309			WAREHOUSE LIGHTING	L			17	20	1	X			20	1			1	N	WH-1	4150			14
15		1309		WAREHOUSE LIGHTING	L			17	20	1		X		20	1			1	N	WH-1		4150		16
17			1309	WAREHOUSE LIGHTING	L			17	20	1			X	20	1			1	N	WH-1			4150	18
19	1309			WAREHOUSE LIGHTING	L			17	20	1	X									SPACE				20
21		1309		WAREHOUSE LIGHTING	L			17	20	1		X								SPACE				22
23			1309	WAREHOUSE LIGHTING	L			17	20	1			X							SPACE				24
25	1309			WAREHOUSE LIGHTING	L			17	20	1	X									SPACE				26
27		1309		WAREHOUSE LIGHTING	L			17	20	1		X								SPACE				28
29				SPACE									X							SPACE				30
31				SPACE							X									SPACE				32
33				SPACE								X								SPACE				34
35				SPACE									X							SPACE				36
37	200			WH RR LTG	L			5	20	1	X			100	3			1	N	XFMR 'T-LK'	16380			38
39		4160		IWH-1 @ WH RR	N	1			20	1		X		--	--			--	N	---		14496		40
41			4160	IWH-1 @ WH RR	N	1			20	1			X	--	--			--	N	---			13180	42
	6745	10705	9088	PHASE TOTALS																PHASE TOTALS	27117	25233	23917	

Total Phase A: 33862
Total Phase B: 35938
Total Phase C: 33005

CONNECTED VA (CODE N):	84587
CONNECTED VA (CODE L):	18218
CONNECTED VA (CODE R):	
CONNECTED VA (CODE K):	
TOTAL CONNECTED KVA:	102.9
DEMAND KVA:	
TOTAL ADJUSTED KVA:	102.9
TOTAL PANEL AMPS:	124.0
AMPS W/LCL:	130.1

PANEL: LK

PANELVOLTAGE: 120/208 3P, 4W
LOCATION: WAREHOUSE — BUS: 225A
MOUNTING: SURFACE — MAIN: 225A
AIC RATING: 10,000A
CIRCUIT CODE: N: NON-CONTINUOUS; L: LONG-CONTINUOUS; R: DEMANDABLE RECEPTACLES; K: KITCHEN

CKT NO	VA LOAD A	VA LOAD B	VA LOAD C	LOAD DESCRIPTION	WIRE CODE	TYPE CNT. M	R	L	C.B. TR	P	BUS A	B	C	C.B. TR	P	L	TYPE CNT. R	M	WIRE CODE	LOAD DESCRIPTION	VA LOAD A	VA LOAD B	VA LOAD C	CKT NO
1	1000			CONVEYER 30A TWISTLOCK	N	

STATE OF CALIFORNIA

INDOOR LIGHTING POWER ALLOWANCE

CEC-NRCC-LTI-03-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 4 of 4)
Project Name: DLX8	Date Prepared: 11/04/19

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: LAN V NGUYEN	Documentation Author Signature:
Company: RPM ENGINEERS INC.	Signature Date: 11/04/19
Address: 102 DISCOVERY	CEA Certification Identification (if applicable): E-15596
City/State/Zip: IRVINE, CA 92618	Phone: 949-450-1229

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: LAN V NGUYEN	Responsible Designer Signature:
Company : RPM ENGINEERS INC.	Date Signed: 11/04/19
Address: 102 DISCOVERY	License: E-15596
City/State/Zip: IRVINE, CA 92618	Phone: 949-450-1229

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016

STATE OF CALIFORNIA

INDOOR LIGHTING LIGHTING CONTROLS

CEC-NRCC-LTI-02-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 3 of 3)
Project Name: DLX8	Date Prepared: 11/04/19

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: LAN V NGUYEN	Documentation Author Signature:
Company: RPM ENGINEERS INC.	Signature Date: 11/04/19
Address: 102 DISCOVERY	CEA Certification Identification (if applicable): E-15596
City/State/Zip: IRVINE, CA 92618	Phone: 949-450-1229

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: LAN V NGUYEN	Responsible Designer Signature:
Company : RPM ENGINEERS INC.	Date Signed: 11/04/19
Address: 102 DISCOVERY	License: E-15596
City/State/Zip: IRVINE, CA 92618	Phone: 949-450-1229

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

STATE OF CALIFORNIA

INDOOR LIGHTING

CEC-NRCC-LTI-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 5of6)
Project Name: DLX8	Date Prepared: 11/04/19

A Separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
☒ CONDITIONED SPACE ☐ UNCONDITIONED SPACE

H. Indoor Lighting Schedule and Field Inspection Energy Checklist

Luminaire Schedule		Installed Watts					Location	Field Inspector [1]	
01	02	03	04		05	06	07	08	
			How wattage was determined						
Name or Item Tag	Complete Luminaire Description (i.e, 3 lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per Luminaire	CEC Default from NA8	According to §130.0(c)	Number Luminaires	Total Installed Watts in this area (H03 xH05)	Primary Function area in which these luminaires are installed	Pass	Fail
A	2'X4' RECESSED LED	42	☐	☒	69	2,898	OPEN OFFICE/BREAK ROOM	○	○
C	6" RECESSED LED	23	☐	☒	46	1,058	RESTROOM	○	○
			☐	☐				○	○
			☐	☐				○	○
			☐	☐				○	○
			☐	☐				○	○
			☐	☐				○	○
			☐	☐				○	○
			☐	☐				○	○
INSTALLED WATTS PAGE TOTAL:						3,956	Enter sum total of all pages into NRCC-LTI-01-E; Page 2	3,956	

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016

STATE OF CALIFORNIA

INDOOR LIGHTING

CEC-NRCC-LTI-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page1 of 6)
Project Name: DLX8	Date Prepared: 11/04/19

A. General Information

Climate Zone : 6	Conditioned Floor Area : 11,834 SF Unconditioned Floor Area : 346,970 SF					
Building Type:	☒	Nonresidential	☐	High-Rise Residential	☐	Hotel/Motel
☐ Schools	☐	Relocatable Public Schools	☒	Conditioned Spaces	☒	Unconditioned Spaces
Phase of Construction:	☐	New Construction	☐	Addition	☒	Alteration
Method of Compliance:	☐	Complete Building	☒	Area Category	☐	Tailored
Project Address: 515 E. DYER ROAD. SANTA ANA,CA 92707						

B. Lighting Compliance Documents (select yes for each document included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the Nonresidential Manual published by the California Energy Commission.

YES	NO	COMP. DOC.	TITLE
⊗	○	NRCC-LTI-01-E	Certificate of Compliance. All Pages required on plans for all submittals.
⊗	○	NRCC-LTI-02-E	Lighting Controls, Certificate of Compliance, and PAF Calculation. All Pages required on plans for all submittals.
⊗	○	NRCC-LTI-03-E	Indoor Lighting Power Allowance
○	⊗	NRCC-LTI-04-E	Tailored Method Worksheets
⊗	○	NRCC-LTI-05-E	Line Voltage Track Lighting Worksheets
○	⊗	NRCC-LTI-06-E	Indoor Lighting Existing Conditions

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016

STATE OF CALIFORNIA

INDOOR LIGHTING

CEC-NRCC-LTI-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 5of6)
Project Name: DLX8	Date Prepared: 11/04/19

A Separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
☐ CONDITIONED SPACE ☒ UNCONDITIONED SPACE

H. Indoor Lighting Schedule and Field Inspection Energy Checklist

Luminaire Schedule		Installed Watts					Location	Field Inspector [1]	
01	02	03	04		05	06	07	08	
			How wattage was determined						
Name or Item Tag	Complete Luminaire Description (i.e, 3 lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per Luminaire	CEC Default from NA8	According to §130.0(c)	Number Luminaires	Total Installed Watts in this area (H03 xH05)	Primary Function area in which these luminaires are installed	Pass	Fail
D1	LED HIGHBAY	77	☐	☒	137	10,549	RETAIL LTG	○	○
D2	LED STRIPLIGHT	77	☐	☒	1921	147,917	RETAIL & GENERAL LTG	○	○
			☐	☐				○	○
			☐	☐				○	○
			☐	☐				○	○
			☐	☐				○	○
			☐	☐				○	○
			☐	☐				○	○
			☐	☐				○	○
INSTALLED WATTS PAGE TOTAL:						158,466	Enter sum total of all pages into NRCC-LTI-01-E; Page 2	158,466	

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016

STATE OF CALIFORNIA

INDOOR LIGHTING POWER ALLOWANCE

CEC-NRCC-LTI-03-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 1 of 4)
Project Name: DLX8	Date Prepared: 11/04/19

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☒ CONDITIONED spaces ☐ UNCONDITIONED spaces ☐

A. SUMMARY TOTALS OF LIGHTING POWER ALLOWANCE S

If using Complete Building Method for compliance, use only the total in column (a) as total allowed building watts.
If using Area Category Method, Tailored Method, or a combination of Area Category and Tailored Method for compliance, use only the total in column (b) as the total allowed building watts

	(a)		(b)
01 Complete Building Method Allowed Watts. Documented in section B of NRCC- LTI- 03 - E (below on this page)			
02 Area Category Method Allowed Watts. Documented in section C - 1 of NRCC - LTI- 03 - E (below on this page)			10,392
03 Tailored Method Allowed Watts. Documented in section A of NRCC - LTI - 04 - E			
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC - - LTI 01, Page 2, Row 1			10,392

☐ Check here if building contains both conditioned and unconditioned areas.

B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE

01	02		03		04
TYPE OF BUILDING (From §140.6 Table 14 0.6 - B)	WATTS PER ft ^{2}	X	COMPLETE BLDG. AREA	=	ALLOWED WATTS
Total Area:					
Total Watts. Enter Total Watts into section A, row 1 (Above on this page)					

C - 1 AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES	Watts
Total from section C - 2.	10,392
Total from section C - 3.	
Total Watts. Enter Total Watts into section A, row 2 (Above on this page).	10,392
For Alterations Only Reduced lighting power option (Total Allowed Watts x 0.85). Enter this value into section A, row 2 if using this option.	

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016

STATE OF CALIFORNIA

INDOOR LIGHTING

CEC-NRCC-LTI-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 6 of 6)
Project Name: DLX8	Date Prepared: 11/04/19

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: LAN V NGUYEN	Documentation Author Signature:
Company: RPM ENGINEERS INC.	Signature Date: 11/04/19
Address: 102 DISCOVERY	CEA Certification Identification (if applicable): E-15596
City/State/Zip: IRVINE, CA 92618	Phone: 949-450-1229

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: LAN V NGUYEN	Responsible Designer Signature:
Company : RPM ENGINEERS INC.	Date Signed: 11/04/19
Address: 102 DISCOVERY	License: E-15596
City/State/Zip: IRVINE, CA 92618	Phone: 949-450-1229

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016

STATE OF CALIFORNIA

INDOOR LIGHTING

CEC-NRCC-LTI-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E .
Indoor Lighting	(Page 2 of 6)
Project Name: DLX8	Date Prepared: 11/04/19

C. Summary of Allowed Lighting Power

Conditioned and Unconditioned space Lighting must not be combined for compliance

	Indoor Lighting Power for Conditioned Spaces		Watts	Indoor Lighting Power for Unconditioned Spaces		Watts
01	Installed Lighting NRCC-LTI-01-E, Table H, page 5	+	3,956	Installed Lighting NRCC-LTI-01-E, Table H, page 5	+	158,466
02	Portable Only for Offices NRCC-LTI-01-E, Table G, page 4	+	–			–
03	Minus Lighting Control Credits NRCC-LTI-02-E, page 2	-	–	Minus Lighting Control Credits NRCC-LTI-02-E, page 2	-	–
04	Adjusted Installed Lighting Power (row 1 plus 2 minus row 3)	=	3,956	Adjusted Installed Lighting Power (row 1 minus row 3)	=	158,466
	Complies ONLY if Installed d Allowed (Box 04 < Box 05)			Complies ONLY if Installed d Allowed (Box 04 < Box 05)		
05	Allowed Lighting Power Conditioned NRCC LTI - 03 - E,-page 1 Alterations with replacement luminaires that have at least 50/35% lower power compared to the original existing luminaires, may instead use the allowed wattage from NRCC-LTI-06, page 2		10,392	Allowed Lighting Power Unconditioned NRCC-LTI-03-E, page 1 Alterations with replacement luminaires that have at least 50/35% lower power compared to the original existing luminaires, may instead use the allowed wattage from NRCC-LTI-06, page 2		208,182

D. Declaration of Required Certificates of Installation

Declare by selecting yes for all of the Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)

YES	NO	Form/Title	
⊗	○	NRCI-LTI-01-E - Must be submitted for all buildings	☐ Field Inspector
⊗	○	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐ Field Inspector
⊗	○	NRCI-LTI-03-E - Must be submitted for a line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting, to be recognized for compliance.	☐ Field Inspector
○	⊗	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐ Field Inspector
○	⊗	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐ Field Inspector
○	⊗	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐ Field Inspector

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016

STATE OF CALIFORNIA

INDOOR LIGHTING POWER ALLOWANCE

CEC-NRCC-LTI-03-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 1 of 4)
Project Name: DLX8	Date Prepared: 11/04/19

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☐ CONDITIONED spaces ☐ UNCONDITIONED spaces ☒

A. SUMMARY TOTALS OF LIGHTING POWER ALLOWANCE S

If using Complete Building Method for compliance, use only the total in column (a) as total allowed building watts.
If using Area Category Method, Tailored Method, or a combination of Area Category and Tailored Method for compliance, use only the total in column (b) as the total allowed building watts

	(a)		(b)
01 Complete Building Method Allowed Watts. Documented in section B of NRCC- LTI- 03 - E (below on this page)			
02 Area Category Method Allowed Watts. Documented in section C - 1 of NRCC - LTI- 03 - E (below on this page)			208,182
03 Tailored Method Allowed Watts. Documented in section A of NRCC - LTI - 04 - E			
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC - - LTI 01, Page 2, Row 1			208,182

☐ Check here if building contains both conditioned and unconditioned areas.

B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE

01	02		03		04
TYPE OF BUILDING (From §140.6 Table 14 0.6 - B)	WATTS PER ft ^{2}	X	COMPLETE BLDG. AREA	=	ALLOWED WATTS
Total Area:					
Total Watts. Enter Total Watts into section A, row 1 (Above on this page)					

C - 1 AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES	Watts
Total from section C - 2.	208,182
Total from section C - 3.	
Total Watts. Enter Total Watts into section A, row 2 (Above on this page).	208,182
For Alterations Only Reduced lighting power option (Total Allowed Watts x 0.85). Enter this value into section A, row 2 if using this option.	

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016

STATE OF CALIFORNIA

INDOOR LIGHTING POWER ALLOWANCE

CEC-NRCC-LTI-03-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 2 of 4)
Project Name: DLX8	Date Prepared: 11/04/19

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☒ CONDITIONED spaces ☐ UNCONDITIONED spaces ☐

C-2 AREA CATEGORY METHOD GENERAL LIGHTING POWER ALLOWANCE

- Do not include portable lighting for offices. Portable lighting for offices shall be documented only in Section G of NRCC-LTI-01-E.
- Separately list lighting for each primary function area as defined in §100.1 of the Standards.

01		02		03		04
AREA CATEGORY (From §14 0.6 Table 14 0.6- C)		WATTS				ALLOWED
Location in Building	Primary Function Area per Table 140.6 - C	PER ft ^{2}	X	AREA (ft)^2	=	WATTS
PRIVATE OFFICES	OFFICE<250SF	1.0		358		358
OPEN OFFICE	OFFICE>250SF	.75		657		492
STORAGE & RESTROOM	STORAGE & RESTROOM	0.6		2030		1218
CLASSROOM	CLASS/LECTURE/TRAINING	1.2		758		909
CONFERENCE ROOM	MULTIPURPOSE ROOM	1.2		531		637
VESTIBLUE	LOBBY	.8		573		544
BREAK ROOM	LOUNGE	.9		6,927		6,234
		TOTALS		11,834		
Enter sum total Area Category allowed watts into section C-1 of NRCC-LTI-03-E (this compliance document)						10,392 WATTS

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016

STATE OF CALIFORNIA

INDOOR LIGHTING LIGHTING CONTROLS

CEC-NRCC-LTI-02-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 1 of 3)
Project Name: DLX8	Date Prepared: 11/04/19

A. Mandatory Lighting Control Declaration Statements (Indicate if the measure applies by checking yes or no below.)

YES	NO	Control Requirements
⊗	○	Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with Section 110.9.
⊗	○	Lighting shall be controlled by a lighting control system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with Section 130.4(b).
○	⊗	One or more Track Lighting Integral Current Limiters shall be installed which have been certified to the Energy Commission in accordance with §110.9 and §130.0. Additionally, an Installation Certificate shall be submitted in accordance with Section 130.4(b).
○	⊗	A Track Lighting Supplementary Overcurrent Protection Panel shall be installed in accordance with Section 110.9 and Section 130.0. Additionally, an Installation Certificate shall be installed in accordance with Section 130.4(b).
⊗	○	All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with Section 130.1.
⊗	○	All luminaires shall be functionally controlled with manual ON and OFF lighting controls in accordance with Section 130.1(a).
⊗	○	General lighting shall be separately controlled from all other lighting systems in an area. Floor and wall display, window display, case display, ornamental, and special effects lighting shall each be separately controlled on circuits that are 20 amps or less. When track lighting is used, general, display, ornamental, and special effects lighting shall each be separately controlled; in accordance with Section 130.1(a)4.
⊗	○	The general lighting of any enclosed area 100 square feet or larger, with a connected lighting load that exceeds 0.5 watts per square foot shall meet the multi-level lighting control requirements in accordance with Section 130.1(b).
⊗	○	All installed indoor lighting shall be equipped with controls that meet the applicable Shut-OFF control requirements in Section 130.1(c).
○	⊗	Lighting in all Daylit Zones shall be controlled in accordance with the requirements in Section 130.1(d) and daylit zones are shown on the plans.
○	⊗	Lighting power in buildings larger than 10,000 square feet shall be capable of being automatically reduced in response to a Demand Responsive Signal in accordance with Section 130.1(e).
⊗	○	Before an occupancy permit is granted for a newly constructed building or area, or a new lighting system serving a building, area, or site is operated for normal use, indoor lighting controls serving the building, area, or site shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with Section 130.4.(a). The controls required to meet the Acceptance Requirements include automatic daylight controls, automatic shut-OFF controls, and demand responsive controls.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

STATE OF CALIFORNIA

INDOOR LIGHTING

CEC-NRCC-LTI-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 3 of 6)
Project Name: DLX8	Date Prepared: 11/04/19

E. Declaration of Required Certificates of Acceptance

Declare by selecting yes for all of the Certificates of Acceptance that will be submitted. (Retain copies and verify forms are completed and signed.)

YES	NO	FORM/TITLE	
⊗	○	NRCA- LTI- 02 - A- Must be submitted for occupancy sensors and automatic time switch controls.	☐ Field Inspector
○	⊗	NRCA- LTI- 03 - A- Must be submitted for automatic daylight controls.	☐ Field Inspector
○	⊗	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐ Field Inspector
○	⊗	NRCA-LTI-05-A - Must be submitted for institutional tuning power adjustment factor (PAF).	

A Separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for: ☒ CONDITIONED SPACE ☐ UNCONDITIONED SPACE

F. Indoor Lighting Schedule and Field Inspection Energy Checklist

- ☐ The actual indoor lighting power listed on the next 2 pages includes all installed permanent and planned portable lighting systems.
- ☐ When Complete Building Method is used for compliance, list each different type of luminaire on separate lines.
- ☐ When Area Category Method or Tailored Method is used for compliance, list each different type of luminaire by each different function area on separate lines
- ☐ Also include track lighting in schedule, and submit the track lighting compliance document (NRCC-LTI-05-E) when line-voltage track lighting is installed.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016

STATE OF CALIFORNIA

INDOOR LIGHTING POWER ALLOWANCE

CEC-NRCC-LTI-03-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 2 of 4)
Project Name: DLX8	Date Prepared: 11/04/19

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☐ CONDITIONED spaces UNCONDITIONED spaces ☒

C-2 AREA CATEGORY METHOD GENERAL LIGHTING POWER ALLOWANCE

- Do not include portable lighting for offices. Portable lighting for offices shall be documented only in Section G of NRCC-LTI-01-E.
- Separately list lighting for each primary function area as defined in §100.1 of the Standards.

01		02		03		04
AREA CATEGORY (From §14 0.6 Table 14 0.6- C)		WATTS				ALLOWED
Location in Building	Primary Function Area per Table 140.6 - C	PER ft ^{2}	X	AREA (ft)^2	=	WATTS
WAREHOUSE	STORAGE	0.6		346,970		208,182
		TOTALS		346,970		
Enter sum total Area Category allowed watts into section C-1 of NRCC-LTI-03-E (this compliance document)						208,182 WATTS

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016

STATE OF CALIFORNIA

INDOOR LIGHTING POWER ALLOWANCE

CEC-NRCC-LTI-03-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 3 of 4)
Project Name: DLX8	Date Prepared: 11/04/19

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☒ CONDITIONED spaces ☐ UNCONDITIONED spaces ☐

C-3 AREA CATEGORY METHOD ADDITIONAL LIGHTING WATTAGE ALLOWANCE (from Table 140.6-C Footnotes)

01	02	03 [2]	04	05	06	07
Primary Function	Sq Ft or Linear ft [1]	Additional Watts Allowed	Wattage Allowance (02 x 03)	Description(s) and Quantity of Special Luminaire Types in each Primary Function Area	Total Design Watts [3]	ALLOWED WATTS Smaller of 04 or 06
TOTALS Enter into TOTAL AREA CATEGORY METHOD ADDITIONAL ALLOWANCES Section C - 1						1977

1. Use linear feet only for additional allowance for white board or chalk board. All other additional Area Category allowances shall use watts per square foot.
2. Additional watts are available only when allowed according to the footnotes on bottom of Table 140.6-C, which include: Specialized task work; Ornamental lighting; Precision commercial and industrial work; Per linear foot of white board or chalk board; Accent, display and feature lighting; and Videoconferencing studio lighting..
3. Luminaire classification and wattage shall be determined in accordance with §130.0(c) of the Standards.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016

STATE OF CALIFORNIA

INDOOR LIGHTING LIGHTING CONTROLS

CEC-NRCC-LTI-02-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)
Project Name: DLX8	Date Prepared: 11/04/19

A separate document must be filled out for Conditioned and Unconditioned Spaces. This page is used only for the following:
☒ CONDITIONED SPACES ☐ UNCONDITIONED SPACES

B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or leave empty if Exempted)							PAF Credit Calculation [2]			✓ if Acceptance Test Required	Field Inspector	
										Watts of Controlled Lighting	PAF	Control Credit (11 x 12)			
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Type/ Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)					Pass	Fail
RESTROOM & STORAGE	OCCUPANCY/ON/OFF SWITCH	2	X		X								☐	○	○
ELEC CLOSET	TIME CLOCK	1	X		X								☐	○	○
RETAIL	DIMMER/STEP DIMMING	11		X									☐	○	○
													☐	○	○
													☐	○	○
													☐	○	○
													☐	○	○
Control Credit PAGE TOTAL (Sum of Column 13):												–			
IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column 13):												–			
												Enter Control Credit total into NRCC-LTI-01-E; Page 1.			

1. §130.1(a) = Manual area controls; §130.0(b) = Multi Level ; §130.1(c) = Auto Shut - Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Responsive; §140.6(d) = Additional lighting controls installed to earn a PAF; §140.6(d) = Prescriptive Secondary Sidelit Daylight Controls.
2. Check Table 140.6-A for correct Factor. PAFs shall not be traded between conditioned and unconditioned spaces. As a condition to earn a PAF, an Installation Certificate is also required to be filled out, signed, and submitted.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

STATE OF CALIFORNIA

INDOOR LIGHTING

CEC-NRCC-LTI-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 4 of 6)
Project Name: DLX8	Date Prepared: 11/04/19

G. Installed Portable Luminaires in Offices Exception to Section 140.6(a)

- This section shall be filled out ONLY for portable luminaires in offices (As defined in §100.1). All other planned portable luminaires shall be documented on next page of of this compliance document.
- This section is used to determine if greater than 0.3 watts of portable lighting is planned for any office
- Fill out a separate line for each different office. Small offices that are typical (having the same general and portable lighting) may be grouped together. This allowance shall not be traded between offices having different lighting systems.

Office Portable Luminaire Schedule	Office Installed Portable Luminaire W/ft ^{2}							Office Location	Field Inspector	
01	02	03	04	05	06	07	08	09	10	
Complete Luminaire Description (i.e., LED, under cabinet, furniture mounted direct/indirect)	Watts per Luminaire	Number of Luminaires	Installed portable luminaire watts in this office (G02 x G03)	Square feet of this office	Watts per square foot (G04/G05)	If G06 d 0.3, enter zero; If G06 > 0.3, (G06-0.3)	(G05 x G07)	Identify Office area in which these portable luminaires are installed	Pass	Fail
N/A									○	○
									○	○
									○	○
									○	○
									○	○
Total installed portable luminaire watts that are greater than 0.3 W/ft ^{2} per office:								Enter sum total of all pages into NRCC-LTI-01-E; Page 2		

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016

HPA
architecture

hpa, inc.
18831 bardeen avenue - ste.
#100 irvine, ca
92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:

INDOOR TITLE
24 FORMS

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

E-6.0

RPM
Engineers, Inc.
102 DISCOVERY
Irvine, Ca. 92618
Tel 949-450-1229 (214)
Fax: 949-450-1454
Contact: Euiso Kim
e-mail: euisok@rpmpe.com

LAN V. NGUYEN
No. 015596
Exp.12-31-2019
ELECTRICAL

12/09/2019

RPM #19-755 12/09/19

CAUTION : IF THIS SHEET IS NOT A 30" X 42" IT IS A REDUCED PRINT

STATE OF CALIFORNIA

OUTDOOR LIGHTING POWER ALLOWANCES

CEC-NRCC-LTO-03-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-03-E
Outdoor Lighting Power Allowances	(Page 4 of 4)
Project Name: DLX8	Date Prepared: 11/04/19

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT			
1. I certify that this Certificate of Compliance documentation is accurate and complete.			
Documentation Author Name:	LAN V NGUYEN	Documentation Author Signature:	
Company:	RPM ENGINEERS INC.	Signature Date:	11/04/19
Address:	102 DISCOVERY	CEA Certification Identification (if applicable):	E-15596
City/State/Zip:	IRVINE, CA 92618	Phone:	949-450-1229

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	LAN V NGUYEN	Responsible Designer Signature:	
Company :	RPM ENGINEERS INC.	Date Signed:	11/04/19
Address:	102 DISCOVERY	License:	E-15596
City/State/Zip:	IRVINE, CA 92618	Phone:	949-450-1229

STATE OF CALIFORNIA

OUTDOOR LIGHTING EXISTING CONDITIONS

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-04-E
Outdoor Lighting Existing Conditions	(Page 1 of 3)
Project Name: DLX8	Date Prepared: 11/04/19

A. General Information

Project Address:

1. Sum total of original, existing luminaires in the hardscape area =		2. Sum total of luminaires being added or altered =		3. Percentage of existing luminaires being altered ((Box 2 / B o x 1) x 100%) =	

Note (s):

If the alteration increases the total connected lighting load, STOP. Projects that increase the connected lighting load must use 2016-NRCC-LTO-03 to determine the lighting power allowance, and do NOT use this form.

If the total number of added or altered luminaires is less than five (5), or less than 10% of the existing luminaires, STOP. Outdoor lighting projects modifying less than five luminaires, or less than 10% of the existing luminaires, do not require compliance documentation (NRCC-LTO compliance documents) provided that they do not increase the total connected load.

STATE OF CALIFORNIA

OUTDOOR LIGHTING EXISTING CONDITIONS

CEC-NRCC-LTO-04-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-04-E
Outdoor Lighting Existing Conditions	(Page 2 of 3)
Project Name: DLX8	Date Prepared: 11/04/19

B. Existing Luminaire Schedule

Name of the space with the alteration:

01	02	03	04		05	06
			How Wattage was Determined			
Name or Item Tag	Luminaire Description	Wattage per Luminaire	CEC default from NA8	According to §130.0(c)	Quantity of Luminaires	Total Wattage (Quantity x Wattage per Luminaire) (Cell 03 x Cell 05)
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
Total Installed Watts:						

Allowed Lighting Power

If the percentage of existing luminaires being altered (from Box 3, page 1) is less than 50%, then enter the Total Installed Watts in the box to the right.

If the percentage of existing luminaires being altered is 50% or more, multiply the Total Installed Watts by a multiplier of 0.60 and enter the adjusted value in the box to the right.

Enter this value in compliance document NRCC-LTO-01-E, Table C, cell 01 (Allowed Outdoor Lighting Wattage). Alternatively, NRCC-LTO-03-E can be used to determine the Allowed Outdoor Lighting Wattage based on the square footage of each hardscape area and the specific applicatio n of the lighting.

Watts

STATE OF CALIFORNIA

OUTDOOR LIGHTING EXISTING CONDITIONS

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-04-E
Outdoor Lighting Existing Conditions	(Page 3 of 3)
Project Name: DLX8	Date Prepared: 11/04/19

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT			
1. I certify that this Certificate of Compliance documentation is accurate and complete.			
Documentation Author Name:	LAN V NGUYEN	Documentation Author Signature:	
Company:	RPM ENGINEERS INC.	Signature Date:	11/04/19
Address:	102 DISCOVERY	CEA Certification Identification (if applicable):	E-15596
City/State/Zip:	IRVINE, CA 92618	Phone:	949-450-1229

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	LAN V NGUYEN	Responsible Designer Signature:	
Company :	RPM ENGINEERS INC.	Date Signed:	11/04/19
Address:	102 DISCOVERY	License:	E-15596
City/State/Zip:	IRVINE, CA 92618	Phone:	949-450-1229

STATE OF CALIFORNIA

OUTDOOR LIGHTING CONTROLS

CEC-NRCC-LTO-02-E (Revised 08/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-02-E
Outdoor Lighting Controls	(Page 3 of 3)
Project Name: DLX8	Date Prepared: 11/04/19

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT			
1. I certify that this Certificate of Compliance documentation is accurate and complete.			
Documentation Author Name:	LAN V NGUYEN	Documentation Author Signature:	
Company:	RPM ENGINEERS INC.	Signature Date:	11/04/19
Address:	102 DISCOVERY	CEA Certification Identification (if applicable):	E-15596
City/State/Zip:	IRVINE, CA 92618	Phone:	949-450-1229

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1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	LAN V NGUYEN	Responsible Designer Signature:	
Company :	RPM ENGINEERS INC.	Date Signed:	11/04/19
Address:	102 DISCOVERY	License:	E-15596
City/State/Zip:	IRVINE, CA 92618	Phone:	949-450-1229

STATE OF CALIFORNIA

OUTDOOR LIGHTING POWER ALLOWANCES

CEC-NRCC-LTO-03-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-03-E
Outdoor Lighting Power Allowances	(Page 1 of 4)
Project Name: DLX8	Date Prepared: 11/04/19

A. OUTDOOR LIGHTING POWER ALLOWANCE SUMMARY

1.General Hardscape Lighting Power Allowance (Site Total from Section B of NRCC - LTO- 03- E) 1. 17,945

2.Additional Specific use it or lose it Lighting Power Allowances listed in each of these cells shall be identical to total allowed watts determined in Section C-1 to C-4 of NRCC-LTO-03-E.

PER APPLICATION from Section C-1		PER UNIT LENGTH (SALES FRONTAGE) from Section C-2		PER HARDSCAPE AREA (ORNAMENTAL LIGHTING) from Section C-3		PER SPECIFIC AREA from Section C-4.		
452 W	+	0 W	+	0 W	+	0 W	=	2. 572 W

3. Sum Total ALLOWED Outdoor Lighting Wattage (add rows 1 and 2) 3. 18,517

B. GENERAL HARDSCAPE LIGHTING POWER ALLOWANCE FROM TABLE 140. 7- A

Area Wattage Allowance (AWA)				Linear Wattage Allowance (LWA)			Initial Wattage Allowance (IWA)	Total General Hardscape Lighting Allowance
01	02	03	04	05	06	07	08	09
Name of Area	Illuminated Hardscape Area	AWA Per Square Foot	AWA (B02 x B03)	Perimeter Length of General Hardscape	LPA per Linear Foot	LWA (B05 x B06)	IWA (Watts)	B04 + B07 + B08
PARKING & OUTDOOR	371,558	0.04	14,862	7,322	0.35	2,563	520 W	17,945
							TOTAL	17,945

STATE OF CALIFORNIA

OUTDOOR LIGHTING POWER ALLOWANCES

CEC-NRCC-LTO-03-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-03-E
Outdoor Lighting Power Allowances	(Page 2 of 4)
Project Name: DLX8	Date Prepared: 11/04/19

C. ADDITIONAL USE IT OR LOSE IT OUTDOOR LIGHTING POWER ALLOWANCES FOR SPECIFIC APPLICATIONS

☐ The additional specific outdoor lighting power allowance shall be the smaller of the allowed lighting power or the actual lighting power used.

☐ Use Outdoor Lighting Zone (OLZ) that is documented on page 1 of NRCC-LTO-01-E to calculate the specific wattage allowances.

C- 1. WATTAGE ALLOWANCE PER APPLICATION Table 140.7 - B

☒ Available only for qualifying locations, which include Building Entrances or Exits; Primary Entrances to Senior Care Facilities, Police Stations, Hospitals, Fire Stations, and Emergency Vehicle Facilities; Drive Up Windows; Vehicle Service Station Uncovered Fuel Dispenser, ATM Machine Lighting

☐ If more than one luminaire type is used per location, use multiple rows for that location

01	02	03	04	05	06	07	08	09	10
	ALLOTTED WATTS			DESIGN WATTS					
Name of Location for Which Allowance is Claimed	Number of Qualifying Locations	Wattage Allowance per Qualifying Location	Allotted Watts (02 x 03)	Luminaire Code or Symbol	Luminaire Description	Luminaire Quantity	Watts per Luminaire	Design Watts (07 x 08)	Allowed Watts (smaller of 04 or 09)
BLDG EXITS	22	35	770	MD	LED WALL MOUNT	22	26	572	572
Sum total allowance per application on this site:									

C-2. WATTAGE ALLOWANCE PER UNIT LENGTH (Sales Frontage) from Table 140.7-B

☐ If more than one luminaire type is used per location, use multiple rows for that location

01	02	03	04	05	06	07	08	09	10
	ALLOTTED WATTS			DESIGN WATTS					
Name of Location for Which Allowance is Claimed	Linear Feet of Sales Frontage	Wattage Allowance per Linear Foot	Allotted Watts (02 x 03)	Luminaire Code or Symbol	Luminaire Description	Luminaire Quantity	Watts per Luminaire	Design Watts (07 x 08)	Allowed Watts (smaller of 04 or 09)
Sum total allowance for sales frontage on the site:.									

STATE OF CALIFORNIA

OUTDOOR LIGHTING POWER ALLOWANCES

CEC-NRCC-LTO-03-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-03-E
Outdoor Lighting Power Allowances	(Page 3 of 4)
Project Name:	Date Prepared:

C- 3. WATTAGE ALLOWANCE PER SQUARE FOOT OF HARDSCAPE AREA (Ornamental Lighting) Table 140.7 - B

- Allowance for the total site illuminated hardscape area. Luminaires qualifying for this allowance shall be rated for 100 watts or less as determined in accordance with Section 130.0(c), and shall be post-top luminaires, lanterns, pendant luminaires, or chandeliers.
- If more than one luminaire type is used per location, use multiple rows for that location

01	02	03	04	05	06	07	08	09	10
	ALLOTTED WATTS			DESIGN WATTS					
Name of area for which ornamental allowance is claimed	Square Feet of Hardscape	Wattage Allowance per Square Foot	Allotted Watts (02 x 03)	Luminaire Code or Symbol	Luminaire Description	Luminaire Quantity	Watts per Luminaire	Design Watts (07 x 08)	Allowed Watts (smaller of 04 or 09)
								0	
								0	
								0	
Sum t otal allowance for ornamental lighting on the site:.									

C-4. WATTAGE ALLOWANCE PER SQUARE FOOT OF SPECIFIC AREA - Table 140.7-B

- Allowances for Building Facades; Outdoor Sales Lots; Vehicle Service Station Hardscape; Vehicle Service Station Canopies; Sales Canopies; Non-sales Canopies; Tunnels; Guard Stations; Student Pick-up/Drop-off zone: Outdoor Dining; Special Security Lighting for Retail Parking and Pedestrian Hardscape.
- If more than one luminaire type is used per location, use multiple rows for that location

01	02	03	04	05	06	07	08	09	10
	ALLOTTED WATTS			DESIGN WATTS					
Name of Location for Which Allowance is Claimed	Illuminated Area of Application	Wattage Allowance per Square Foot	Allotted Watts (02 x 03)	Luminaire Code or Symbol	Luminaire Description	Luminaire Quantity	Watts per Luminaire	Design Watts (07 x 08)	Allowed Watts (smaller of 04 or 09)
Sum t otal allowance for specific area on the site:									

STATE OF CALIFORNIA

OUTDOOR LIGHTING

CEC-NRCC-LTO-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 3 of 4)
Project Name:	Date Prepared:

I. Outdoor Lighting Schedule and Field Inspection Energy Checklist

Luminaire Schedule		Installed Watts					Location	Cutoff	Field Inspector	
01	02	03	04		05	06	07	08	09	
			How wattage was determined							
Name or Item Tag	Complete Luminaire Description	Watts per Luminaire	CEC Default from NA8	According to §130.0(c)	Number of Luminaires	Total Installed Watts in this area (03 x 05)	Primary Function area in which these luminaires are installed (Outdoor Lighting Zone)	BUG Rating	Pass	Fail
			☐	☐				UH: UL: FVH: BVH: FH: BH:	○	○
			☐	☐				UH: UL: FVH: BVH: FH: BH:	○	○
			☐	☐				UH: UL: FVH: BVH: FH: BH:	○	○
INSTALLED WATTS PAGE TOTAL:							Enter sum total of all pages (Sum Total INSTALLED Outdoor lighting wattage) into NRCC-LTO-01-E; Page 1			

STATE OF CALIFORNIA

OUTDOOR LIGHTING

CEC-NRCC-LTO-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 4 of 4)
Project Name: DLX8	Date Prepared: 11/04/19

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT			
1. I certify that this Certificate of Compliance documentation is accurate and complete.			
Documentation Author Name:	LAN V NGUYEN	Documentation Author Signature:	
Company:	RPM ENGINEERS INC.	Signature Date:	11/04/19
Address:	102 DISCOVERY	CEA Certification Identification (if applicable):	E-15596
City/State/Zip:	IRVINE, CA 92618	Phone:	949-450-1229

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	LAN V NGUYEN	Responsible Designer Signature:	
Company :	RPM ENGINEERS INC.	Date Signed:	11/04/19
Address:	102 DISCOVERY	License:	E-15596
City/State/Zip:	IRVINE, CA 92618	Phone:	949-450-1229

STATE OF CALIFORNIA

OUTDOOR LIGHTING CONTROLS

CEC-NRCC-LTO-02-E (Revised 08/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-02-E
Outdoor Lighting Controls	(Page 1 of 3)
Project Name: DLX8	Date Prepared: 11/04/19

A. Mandatory Outdoor Lighting Control Declaration Statements

Check all that apply:

- ☒ Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with §110.9(a).
- ☒ Lighting shall be controlled by a lighting control system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with §130.4(b).
- ☒ All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with §130.0(d).
- ☒ Part-Night Outdoor Lighting Controls, as defined in Section 100.1(b), shall meet the requirements in Section 110.9(b)5.
- ☒ All outdoor incandescent luminaires rated over 100 watts, determined in accordance with Section 130.0(c), shall be controlled by a motion sensor.
- ☒ All outdoor luminaires rated for use with lamps greater than 150 lamp watts, determined in accordance with Section 130.0(c), shall comply with Uplight and Glare requirements in accordance with Section 130.2(b)
- ☒ All installed outdoor lighting shall be controlled by a photocontrol or outdoor astronomical time-switch control, or other control capable of automatically switching OFF in accordance with Section 130.2(c)1.
- ☒ All installed outdoor lighting shall be circuited and independently controlled from other electrical loads by an automatic scheduling control in accordance with Section 130.2(c)2.
- ☒ All installed outdoor lighting, where the bottom of the luminaire is mounted 24 feet or less above the ground, shall be controlled with automatic lighting controls in accordance with Section 130.2(c)3.
- ☒ For Outdoor Sales Frontage, an automatic lighting control shall be installed in accordance with Section 130.2(c)4.
- ☒ For Building Facade, Ornamental Hardscape and Outdoor Dining lighting, an automatic lighting control shall be installed in accordance with Section 130.2(c)5
- ☒ Before an occupancy permit is granted for the newly constructed building or for the addition, or for any altered outdoor lighting controls, shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with §130.4.(a). Outdoor lighting controls shall comply with the applicable requirements of Section 130.2(c) and Reference Nonresidential Appendix NA7.8.

STATE OF CALIFORNIA

OUTDOOR LIGHTING CONTROLS

CEC-NRCC-LTO-02-E (Revised 08/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-02-E
Outdoor Lighting Controls	(Page 2 of 3)
Project Name: DLX8	Date Prepared: 11/04/19

B. Mandatory Outdoor Lighting Control Schedule and Field Inspection Checklist

Outdoor Lighting Control Schedule			Standards Complying With (ü all that apply, or leave empty if Exempted)						ü if Acceptance Test Required	Field Inspector	
01	02	03	04	05	06	07	08	09	10	11	
Location and Application of Luminaires Being Controlled	Type/ Description of Lighting Control (i.e. outdoor motion sensor, outdoor photocontrol, outdoor astronomical time-switch control, automatic scheduling control, part-night outdoor lighting control)	# of Units	§130.2(a) INCAN > 100W MOTION CTR	§130.2(c)1 DAYLIGHT CONTROL	§130.2(c)2 INDEPENDENT AUTO CONTROL	§130.2(c)3 <24'AFF MTD HEIGHT CONTROL	§130.2(c)4 SALES NIGHT/ MOTION CONTL.	§130.2(c)5 FACADE, ORNAMEN HARDSACPE, DINN.		Pass	Fail
PARKING & BLDG PERIMETER	TIME-CLOCK	1			✓				☐	○	○
									☐	○	○
									☐	○	○
									☐	○	○
									☐	○	○
									☐	○	○
									☐	○	○
									☐	○	○
									☐	○	○
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									☐	○	○
									☐	○	○
									☐	○	○
									☐	○	○
									☐	○	○
									☐	○	○

STATE OF CALIFORNIA

OUTDOOR LIGHTING

DLX8

CEC-NRCC-LTO-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 1 of 4)
Project Name: DLX8	Date Prepared: 11/04/19

A. General Information

Project Address : 515 E. DYER ROAD. SANTA ANA,CA 92707	Total Illuminated Hardscape Area : 371,558 SF

Phase of Construction: ☒ New Construction ☐ Addition ☐ Alteration

Outdoor Lighting Zone (LZ) ☐ LZ-1 ☐ LZ-2 ☒ LZ-3 ☐ LZ-4

I have confirmed with the AHJ which LZ applies to this site. For default lighting zone designations, see Title 24 Part 6, §10-114

B. Lighting Compliance Documents (check box for each document included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents , refer to the Nonresidential Manual published by the California Energy Commission.

☒	NRCC-LTO-01-E	Certificate of Compliance
☒	NRCC-LTO-02-E	Outdoor Lighting Controls Certificate of Compliance
☒	NRCC-LTO-03-E	Outdoor Lighting Power Allowance Certificate of Compliance
☒	NRCC-LTO-04-E	Outdoor Lighting Existing Conditions Certificate of Compliance

C. Summary of Allowed Outdoor Lighting Power		Watts
01	Sum Total ALLOWED Outdoor Lighting Wattage from NRCC - LTO- 03 - E, page 1 Alterations with NO increase of connected lighting load may instead use the allowed wattage from NRCC - LTO- 04, page 2	18,517 W
Complies ONLY if Installed (Box 02) d Allowed (Box 01)		
02	Sum Total INSTALLED Outdoor Lighting Wattage from NRCC-LTO-01-E, page 3.	13,557

D. Declaration of Required Installation Certificates

Declare by checking all Installation Certificates that will be submitted. (Retain copies and verify compliance documents are completed and signed.)

☒ NRCI-LTO-01-E - Must be submitted for all buildings	☐ Field Inspector
☒ NRCI-LTO-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐ Field Inspector

E. Declaration of Required Certificates of Acceptance

Declare by checking all of the Certificates of Acceptance that will be submitted. (Retain copies and verify compliance documents are completed and signed.)

☒ NRCA-LTO-02-A - Must be submitted for outdoor lighting controls.	☐ Field Inspector

F. Schedule of Luminaires Exempt from the Outdoor Lighting Power Requirements in §140.7

01	02
Name or Symbol	Description of exempt luminaire in accordance with the exemptions

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STATE OF CALIFORNIA

OUTDOOR LIGHTING

CEC-NRCC-LTO-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 2 of 4)
Project Name: DLX8	Date Prepared: 11/04/19

G. Schedule of Luminaires Exempt from the Cutoff Requirements in §130.2(b)

01	02
Name or Symbol	Description of exempt luminaire in accordance with the exemptions

H. Schedule of Luminaires Exempt from the Outdoor Lighting Control Requirements in §130.2(c)

01	02
Name or Symbol	Description of exempt luminaire in accordance with the exemptions

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STATE OF CALIFORNIA

OUTDOOR LIGHTING

CEC-NRCC-LTO-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 3 of 4)
Project Name: DLX8	Date Prepared: 11/04/19

I. Outdoor Lighting Schedule and Field Inspection Energy Checklist

Luminaire Schedule		Installed Watts					Location	Cutoff	Field Inspector	
01	02	03	04		05	06	07	08	09	
			How wattage was determined							
Name or Item Tag	Complete Luminaire Description	Watts per Luminaire	CEC Default from NA8	According to §130.0(c)	Number of Luminaires	Total Installed Watts in this area (03 x 05)	Primary Function area in which these luminaires are installed (Outdoor Lighting Zone)	BUG Rating	Pass	Fail
W1	WALL MOUNTED LED FIXTURE WITH 1050mA DRIVER MOUNTING @ 22.5' A.F.G.	285	☐	☒	19	5,415	BUILDING PERIMETER LIGHTING	UH: UL: FVH: BVH: FH: BH:	○	○
S1	POLE MOUNTED LED FIXTURE WITH 1050mA DRIVER, TYPE 4 DISTRIBUTION MOUNTING @ 30' A.F.G.	285	☐	☒	22	6,270	PARKING LOT LIGHTING	UH: UL: FVH: BVH: FH: BH:	○	○
S3	POLE MOUNTED LED FIXTURE WITH 1050mA DRIVER, TYPE 3 WIDE DISTRIBUTION MOUNTING @ 30' A.F.G.	624	☐	☒	3	1872	PARKING LOT LIGHTING	UH: UL: FVH: BVH: FH: BH:	○	○
INSTALLED WATTS PAGE TOTAL:						13,557	Enter sum total of all pages (Sum Total INSTALLED Outdoor lighting wattage) into NRCC-LTO-01-E; Page 1		13,557	

HPA architecture

hpa, inc.
18831 bardeen avenue - ste.
#100 irvine, ca
92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:

INDOOR TITLE
24 FORMS

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

RPM
Engineers, Inc.
102 DISCOVERY
Irvine, Ca. 92618
Tel 949-450-1229 (214)
Fax 949-450-1454
Contact: Euiso Kim
e-mail: euisok@rpmpe.com

REGISTERED PROFESSIONAL ENGINEER
LAN V. NGUYEN
No. 015596
Exp.12-31-2019
ELECTRICAL
STATE OF CALIFORNIA
12/09/2019

Sheet:

E-6.1

RPM #19-755 12/09/19

CAUTION : IF THIS SHEET IS NOT A 30" X 42" IT IS A REDUCED PRINT

THE CONTRACTOR SHALL VISIT SITE PRIOR TO BIDDING TO VERIFY LOCATION, ELEVATIONS, AND SIZES OF ALL EXISTING PLUMBING AND INFORM THE ARCHITECT OF ANY DISCREPANCIES.

FOR EXACT SPECIFICATIONS, MOUNTING HEIGHTS, AND LOCATIONS OF ALL PLUMBING FIXTURES, REFER TO ARCHITECTURAL DRAWINGS.

ACCURATE AS-BUILT DRAWINGS SHALL BE MADE DURING CONSTRUCTION AND SUBMITTED FOR APPROVAL UPON COMPLETION OF INSTALLATION.

ALL HOT WATER PIPING SHALL BE INSULATED PER CPC 609.11.ALSO SEE CALIFORNIA ENERGY CODE TABLE 120.3-A.

WATER HEATERS SHALL BE CERTIFIED BY ITS MANUFACTURER TO COMPLY WITH THE EFFICIENCY STANDARDS OF THE CALIFORNIA ENERGY COMMISION, 2016 EDITION.

THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, EQUIPMENT, TRANSPORTATION AND SERVICES NECESSARY FOR COMPLETION OF THE WORK. ALL MATERIALS AND WORK SHALL COMPLY WITH APPLICABLE CODES AND GOVERNING REGULATIONS AND MEET THE APPROVAL OF THE LOCAL AND STATE JURISDICTION.

THESE DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH ALL OTHER TRADES. THIS INCLUDES COORDINATING THE LOCATION AND SIZE OF ALL OPENINGS, LOCATIONS OF EQUIPMENT PAD, AND CHANGES OF ELEVATIONS.

LAVATORIES IN PUBLIC RESTROOMS SHALL COMPLY WITH SEC 407.4 CPC 2016 SELF-CLOSING OR SELF-CLOSING METERING FAUCETS SHALL BE INSTALLED ON LAVATORIES INTENDED TO SERVE THE TRANSIENT PUBLIC, SUCH AS THOSE IN, BUT NOT LIMITED TO, SERVICE STATIONS, TRAIN STATIONS, AIRPORTS, RESTAURANTS AND CONVENTION HALLS.

SLOPE ALL SEWER PIPING MINIMUM OF 2%.

SLOPE ALL CONDENSATE DRAIN PIPING MINIMUM OF 1%.

ALL CONCEALED PIPING SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE 2016

ALL FAUCETS SHALL COMPLY WITH CALIFORNIA PROPOSITON 65 AND SHALL BE CERTIFIED TO NSF STANDARD 61 SECTION 9 FOR DRINKING WATER COMPONENTS

SUPPORT SUSPENDED PIPING IN ACCORDANCE WITH CPC 313.3 AND TABLE 313.6. SWAY BRACE SUSPENDED PIPING IN ACCORDANCE WITH NFPA #13, 4-6.4.3.5.

ALL REQUIRED CLEANOUTS SHALL BE INSTALLED AS PER SECTION 707.0 AND 719.0 OF THE CALIFORNIA PLUMBING CODE 2016

ALL PLUMBING VENTS SHALL TERMINATE NOT LESS TEN (10) FEET FROM OR AT LEAST THREE (3) FEET ABOVE ANY DOOR, OPENING, FRESH AIR INTAKE OR VENT SHAFT.

ALL CLEANOUTS SHALL BE INSTALLED WHERE READILY ACCESSIBLE. COORDINATE ALL CLEANOUT LOCATIONS WITH EQUIPMENT, CABINETS, ETC., AND THE ARCHITECT PRIOR TO ANY INSTALLATION.

COORDINATE ALL ROOF PENETRATIONS FOR MECHANICAL EQUIPMENT CONNECTIONS WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.

THIS PROJECT SHALL COMPLY WITH THE 2016 EDITIONS OF THE CALIFORNIA PLUMBING CODE AND CALGREEN.

ALL TRENCHES DEEPER THAN THE FOOTING OF ANY BUILDING OR STRUCTURE AND PARALLELING THE SAME SHALL BE AT LEAST FORTY-FIVE (45) DEGREES THERE FROM. (SEC. 313.3 CPC)

VENTS LESS THAN SIX (6) INCHES ABOVE THE FLOOD LEVEL RIM OF THE FIXTURE SHALL BE INSTALLED WITH APPROVED DRAINAGE FITTINGS, MATERIAL AND GRADE TO THE DRAIN.

INSTALLATION OF SOIL OR DRAIN PIPES IN FOOD STABLISHMENTS WILL COMPLY WITH SECTION 318.0 CPC

LAVATORY FAUCETS IN RESTROOMS SHALL BE THE SELF CLOSING TYPE AND SHALL NOT EXCEED A WATER FLOW OF 0.20 GAL/USE AND 110°F DEGREE.

POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE.

PROVIDE 12 INCH MINIMUM CLEARANCE BETWEEN THE LOWEST PORTION OF THE REDUCED PRESSURE BACK FLOW ASSEMBLY AND THE GRADE.

ALL EXPOSED GAS PIPING SHALL BE PROTECTED AGAINST CORROSION BY COATING OR WRAPPING WITH AN INERT MATERIAL APPROVED FOR SUCH APPLICATIONS. Sec. 1210.2

ALL GAS PRESSURE REGULATORS SHALL BE VENTED SEPARATELY TO THE OUTSIDE.

COMBUSTIBLE PIPING INSTALLATIONS SHALL BE INSTALLED PER CHAPTER OF THE CALIFORNIA PLUMBING CODE FOR FIRES STOP PROTECTION.

NO PIPING SHALL BE INSTALLED IN OR ON THE GROUND UNDER ANY BUILDING, STRUCTURE, OR FOUNDATION UNLESS INSTALLED IN GAS TIGHT CONDUIT IF PROTECTION TERMINATES OUTSIDE.

THIS PROJECT SHALL COMPLY WITH THE 2016 EDITIONS OF THE CALIFORNIA PLUMBING CODE.

PLUMBING NOTES | 7

WASTE & VENT DRAIN PIPING (ABOVE GRADE)
SHALL BE AB&I SERVICE WEIGHT CAST IRON NO-HUB SOIL PIPE AND FITTINGS WITH NO-HUB CLAMPS TO CONFORM TO CISPI STANDARD 301.04a & 310.04 AND CLEARLY MARKED WITH THE CAST IRON SOIL PIPE INSTITUTE TRADEMARK, MANUFACTURER'S NAME AND COUNTRY OF ORIGIN.

WASTE & VENT DRAIN PIPING (BELOW GRADE)
SOIL, WASTE & VENT DRAIN PIPING SHALL BE SCHEDULE 40 ABS PIPE OR SCHEDULE 40 PVC SOLID CORE AND FITTINGS WITH CEMENTED JOINTS.

WATER PIPING
SHALL BE TYPE "L" ABOVE GRADE, HARD DRAWN COPPER TUBING, WITH WROUGHT COPPER FITTINGS, SOLDER ALL JOINTS WITH LEAD-FREE SOLDER.

CONDENSATE DRAIN PIPING
SHALL BE TYPE "DWV" HARD DRAWN COPPER TUBING WITH WROUGHT COPPER FITTINGS, 50-50 SOLDERED JOINTS. INSULATE ALL CONDENSATE DRAIN PIPING WITHIN BUILDING INTERIOR.

GAS PIPING (ABOVE GRADE)
SHALL BE SCHEDULE 40 BLACK STEEL WITH WOG BLACK BANDED MALLEABLE IRON THREADED FITTINGS.

PIPE MATERIAL | 8

9

SYMBOL	ABBREVIATION	DESCRIPTION
	POC	POINT OF CONNECTION
	S OR W	SOIL OR WASTE ABOVE FLOOR
W	S OR W	SOIL OR WASTE BELOW GRADE OR FLOOR
V	V	VENT
CW	CW	COLD WATER
HW	HW	HOT WATER
HWR	HWR	HOT WATER RETURN
DN	DN	PIPE DOWN
VTR	VTR	VENT THRU ROOF
COTG	COTG	CLEANOUT TO GRADE
FCO	FCO	FLOOR CLEANOUT
WCO	WCO	WALL CLEANOUT
CD	CD	CONDENSATE DRAIN
G	G	NATURAL GAS (7"W.C. LOW PRESSURE)
MPG	MPG	MEDIUM PRESSURE GAS (5 PSI) OR (1 PSI)
GW	GW	GREASE WASTE
IW	IW	INDUSTRIAL WASTE
ICW	ICW	INDUSTRIAL COLD WATER
IHW	IHW	INDUSTRIAL HOT WATER
GPR	GPR	GAS PRESSURE REGULATOR
AF	AF	ABOVE FLOOR
AP	AP	ACCESS PANEL
BG	BG	BELOW GRADE
BF	BF	BELOW FLOOR
(E)	(E)	EXISTING
FFE	FFE	FINISH FLOOR ELEVATION
HDR	HDR	HEADER
IE	IE	INVERT ELEVATION
IW	IW	INDIRECT WASTE
SOV	SOV	SHUT-OFF VALVE
TP	TP	TRAP PRIMER LINE
CFH	CFH	CUBIC FEET PER HOUR
BTU/ HR	BTU/ HR	BRITISH UNITS PER HOUR
TDL	TDL	TOTAL DEVELOPED LENGTH
WHA	WHA	WATER HAMMER ARRESTER
PSI	PSI	POUNDS PER SQUARE INCH
(V.I.F.)	(V.I.F.)	VERIFY IN FIELD (FOR EXACT LOCATION)
WFU	WFU	WATER FIXTURE UNITS
DFU	DFU	DRAINAGE FIXTURE UNITS
DOM.	DOM.	DOMESTIC
T&P	T&P	TEMPERATURE & PRESSURE RELIEF
OFD	OFD	OVERFLOW DRAIN
CP	CP	CIRCULATING PUMP
GPR	GPR	GAS PRESSURE REGULATOR

PLUMBING LEGEND | 4

A. SYSTEM DATA:
1. MAXIMUM WATER SUPPLY PRESSURE = 86 PSI
2. MINIMUM WATER SUPPLY PRESSURE = 76 PSI
DEMAND = 138 FU (FLUSH VALVE) = 74 GPM

B. FIXED PRESSURE LOSSES:
(EXIST) 1. (E)2" WATER METER = 3 PSI
WILKINS 975XL (EXIST) 2. (E)2" BACKFLOW PREVENTER = 13.5 PSI
(NEW) 3. (N)3" CW LOSS, 600 ' X 0.8 PS/100'= 4.8 PSI
4. MINIMUM PRESSURE AVAILABLE @ PRV = 59.5 PSI
WILKINS 500XL-HLR (NEW) 5. PRV SET FOR 80 PSI. PRV LOSS = 3.5 PSI
6. PRESSURE AVAILABLE @ PRV OUTLET = 56 PSI
7. STATIC PRESSURE: 10' FT. X 0.43 = 4.3 PSI
C. MINIMUM PRESSURE REQUIRED = 25 PSI
D. AVAILABLE PRESSURE FOR PIPING LOSSES = 26.7 PSI
E. MAXIMUM DEVELOPED PIPE LENGTH:
1. MEASURED LENGTH = 650 FT.
2. FITTINGS ALLOWANCE = X 1.20
TOTAL = 780 FT.
F. ALLOWABLE FRICTION LOSS PER 100 FT. OF PIPE:
1. 26.7 PSI / 780 FT. X 100' = 3.4 PSI
G. PIPE SIZING TABLE:
1. PIPING USED = TYPE "L" COPPER
2. MAXIMUM VELOCITY ALLOWED: CW = 8 FPS, HW = 5 FPS

PIPE SIZE (INCH)	CW FLOW RATE (GPM)	CW MAX FIXTURE UNITS FV	CW MAX FIXTURE UNITS TANK	HW FLOW RATE (GPM)	HW MAX FU
1/2	0	---	0	0	0
3/4	4	---	4	4	4
1	9	---	12	9	12
1-1/4	17	---	24	17	24
1-1/2	27	10	46	27	46
2	34	63	155	48	119
2-1/2	100	245	380	74	245
3	155	596	665	105	406

WATER PRESSURE CALCULATIONS | 5

FIXTURE UNIT COUNT, (FU)

AMAZON T.I.	QUANTITY	CPC 2016 PUBLIC USE PER TABLE 702.1 AND APPENDIX 'A' TABLE A 103.1			
FIXTURE TYPE		(WFU'S) WATER FIXTURE UNITS		(DFU'S) DRAINAGE FIXTURE UNITS	
WATER CLOSET (FLUSH VALVE)	18	x 5 (EA)	= 90	x 4 (EA)	= 72
URINALS (FLUSH VALVE)	4	x 4 (EA)	= 16	x 2 (EA)	= 8
LAVATORY	16	x 1 (EA)	= 16	x 1 (EA)	= 16
MOP SINK	1	x 3 (EA)	= 3	x 3 (EA)	= 3
SINK	3	x 1.5 (EA)	= 4.5	x 2 (EA)	= 6
1st HOSE BIB	1	x 2.5 (EA)	= 2.5	x 0 (EA)	= 0
ADD'L HOSE BIB	1	x 1 (EA)	= 1	x 0 (EA)	= 0
DRINKING FOUNTAIN	4	x 0.5 (EA)	= 2	x 0.5 (EA)	= 2
WATER COOLERS	6	x 0.5 (EA)	= 3	x 0.5 (EA)	= 3
FLOOR DRAINS (EMERGENCY)	7	x 0 (EA)	= 0	x 0 (EA)	= 0
CATCH BASIN (SCRUBBER DUMP)	1	x 0 (EA)	= 0	x 8 (EA)	= 8
FLOOR SINK (ICE MAKER)	1	x 0 (EA)	= 0	x 2 (EA)	= 2
		TOTAL →	138	→	120
		GPM →	74		

FIXTURE UNIT COUNT, (FU) | 6

WATER CLOSET (WC-1) (ADA COMPLIANT)
KOHLER K-4325 "KINGSTON" HIGH EFFICIENCY, 1.28 GPF WALL MOUNTED VITREOUS CHINA, SIPHON JET ACTION ELONGATED BOWL. SLOAN OPTIMA PLUS 8111-1.28, 1.28 GPF, EXPOSED BATTERY SENSOR FLUSH VALVE WITH VACUUM BREAKER. OLSONITE 10CC OPEN FRONT SOLID PLASTIC WHITE SEAT. PROVIDE JOSAM (SINGLE) OR 12724 WALL CARRIER. MOUNT AT ADA USE HEIGHT.

WATER CLOSET (WC-2): (STANDARD HEIGHT)
KOHLER K-4325 "KINGSTON" HIGH EFFICIENCY, 1.28 GPF WALL MOUNTED VITREOUS CHINA, SIPHON JET ACTION ELONGATED BOWL. SLOAN OPTIMA PLUS 8111-1.28, 1.28 GPF, EXPOSED BATTERY SENSOR FLUSH VALVE WITH VACUUM BREAKER. OLSONITE 10CC OPEN FRONT SOLID PLASTIC WHITE SEAT. PROVIDE JOSAM (SINGLE) OR 12724 WALL CARRIER. MOUNT AT STANDARD USE HEIGHT.

URINAL (U-1): (ADA COMPLIANT)
KOHLER K-5452-ET "DEXTER", 0.125 GPF ULTRA HIGH EFFICIENCY, WALL HUNG, VITREOUS CHINA WASHOUT FLUSH ACTION. SLOAN OPTIMA PLUS 8186-0.125, EXPOSED BATTERY SENSOR VALVE WITH VACUUM BREAKER. MOUNT AT ADA COMPLIANT HEIGHT.

LAVATORY (L-1): (ADA COMPLIANT)
SLOAN SS-3001 OVAL UNDER COUNTER MOUNT LAVATORY, 19½"x16½" VITREOUS CHINA. CHICAGO FAUCETS EQ-A12A-1.5ABCP BATTERY SENSOR FAUCET WITH 0.5 GPM VANDAL RESISTANT SPRAY HEAD, SINGLE SUPPLY, THERMOSTATIC MIXING VALVE SET TO 105°F (ASSE 1070). CHROME PLATED GRID DRAIN AND TAILPIECE, 17 GAUGE CHROME PLATED TUBULAR BRASS P-TRAP, MCGUIRE LFH3165LKSS20 ANGLE STOPS AND SUPPLIES. COVER HOT WATER, TRAP, AND DRAIN PIPING WITH INSULATION TO PROTECT THE HANDICAPPED.

SINK (S-1):
ELKAY LRAD191865-PD, 19"x18"x6-1/2" DEEP, 18 GAUGE, TYPE 304 STAINLESS STEEL, ADA COMPLIANT, SINGLE COMPARTMENT SINK WITH SINGLE HOLE LEDGE DRILLING, CHICAGO FAUCETS 431ABCP, CHROME, SINGLE LEVER KITCHEN FAUCET, 1.5 GPM. MCGUIRE LFH3165LKSS20 ANGLE STOPS AND SUPPLIES, 17 GAUGE TUBULAR BRASS CHROME PLATED P-TRAP & CONTINUOUS DRAIN.

SINK (S-2):
ELKAY LRAD3319155-PD 33"x19"x5-1/2" DEEP, TOP MOUNT, 18 GAUGE TYPE 304 STAINLESS STEEL, ADA COMPLIANT DOUBLE COMPARTMENT SINK WITH 3-HOLE LEDGE DRILLING. CHICAGO FAUCETS 431ABCP 1.5 GPM CHROME SINGLE LEVER KITCHEN FAUCET. MCGUIRE LFH3165LKSS20 ANGLE STOPS AND SUPPLIES, 17 GAUGE TUBULAR BRASS CHROME PLATED P-TRAP & CONTINUOUS DRAIN.

GARBAGE DISPOSER (GD-1):
IN-SINK-ERATOR "PRO 750" EVOLUTION SERIES 3/4 HP, 120V., 60~, 1725 RPM.

RECESSED WATER BOX (RWB-1): (REFRIGERATOR)
GUY GRAY MODEL M1B1HA, 1/4 TURN VALVE WITH WATER HAMMER ARRESTER.

MOP SINK (MS-1):
CECO #871, 28"x28" ACID-RESISTING ENAMELED CAST IRON, CHICAGO 897-CP, WALL MOUNTED FAUCET WITH HOSE END, VACUUM BREAKER, WALL BRACE, BUCKET HOOK AND INTEGRAL STOPS, WITH FLAT CHROME STRAINER 871-3" P-TRAP. B-872 COATED RIM GUARD.

DRINKING FOUNTAIN (DF-1):
OASIS PGEBBFSL DUAL PURPOSE STANDING AND WHEELCHAIR LEVEL HI-LO UNITS, WITH BOTTLE FILLER, REFRIGERATED. PROVIDE STOP, SUPPLY, AND 8 GAUGE TUBULAR BRASS CHROME PLATED P-TRAP. MOUNT AT HANDICAP USE HEIGHT.

ELECTRIC WATER HEATER (WH-1):
RHEEM ELDS30, 30 GALLON, 6 KW, 480V., 3ø ELECTRIC WATER HEATER, 41 G.P.H. RECOVERY AT 60°F RISE 355 POUNDS OPERATING WEIGHT, COMPLETE WITH INSULATED STEEL JACKET, GLASS-LINED TANK, DRAIN VALVE WITH HOSE CONNECTION, TEMPERATURE CONTROLS. MANUFACTURER'S CERTIFICATION OF COMPLIANCE FOR TITLE 24 SHALL BE CAPABLE OF ADJUSTMENT FROM THE LOWEST TO HIGHEST TEMPERATURE SETTINGS FOR THE INTENDED USE AS LISTED IN TABLE 2 OF ASHRAE 2007 HANDBOOK AND PRODUCT DIRECTORY, HVAC APPLICATIONS VOLUME, CHAPTER 49.

CIRCULATING PUMP (CP-1):
BELL & GOSSET MODEL#. PL-36B, PART# 1012311LF,
3/4"FLANGE CONNECTION LEAD FREE, BRONZE BODY.
115v., 1/6 HP, FLA: 2.1, 5 GPM, AT 25' TDH. WITH AUTOMATIC TIMER KIT #TC-1

BALANCING VALVE (BV-1):
CIRCUITSOLVER CSUA-3/4-120, THERMOSTATIC BALANCING VALVE, SET TO 120°F.

FLOOR DRAIN (FD-1):
JOSAM 30000-5A CAST IRON BODY WITH FLASHING CLAMP, 5" ROUND NICKEL BRONZE STRAINER.

FLOOR SINK (FS-1)
CECO #906-2", 12"x12"x6" DEEP, ACID-RESISTING ENAMEL ON CAST IRON, NO-HUB OUTLET. PROVIDE PART GRATE FOR DISCHARGE PIPES.

TRAP PRIMER (TP-1):
MIFAB M2-5000-NPB, TRAP SEAL PRIMER, LEAD FREE. SERVES UP TO 3 DRAINS.

HOSE BIBB (HB-1):
WOODFORD B24-P-3/4. HOSE BIBB WITH NON-REMOVEABLE VACUUM BREAKER, ASSE 1011.

SAND AND OIL INTERCEPTOR (SOI-1):
JENSEN PRECAST KJP-320SO, 320 GALLON, 2-COMPARTMENT CONCRETE STRUCTURE, H-20 TRAFFIC RATED, 24" CAST IRON FRAME AND COVER WITH GASKET, GAS TIGHT, RISERS AS NEEDED. JENSEN 2432-X SAMPLE BOX, 24" WIDE WITH FRAME AND COVER AND GASKET, H-20 TRAFFIC RATED.

CATCH BASIN (CB-1):
MEA-JOSAM CATCH BASIN 20"x24" #PPCB-2024-DI WITH DUCTILE IRON FRAME ON TOP BOX IS MADE OF GRP MATERIAL. CHANNEL CUTOUT PROFILE(S) TO BE DONE ON SITE. DOES NOT INCLUDE OUTLET PART.

SEDIMENT BUCKET PART OF (CB-1):
SEDIMENT BUCKET TO FIT INSIDE OF PPCB-2024 CATCH BASIN. USE TWO SEDIMENT BUCKETS IN EVERY CATCH BASIN. STAINLESS STEEL MATERIAL

GAS PRESSURE REGULATOR (GPR-1):
AMERICAN METER CO. 3/4" 1800C SERIES, MODEL 1843C REGULATOR WITH 5/16" ORIFICE AND 6" TO 12" PRESSURE SPRING 70017P137. 5PSI W/ 1.5 PSI INLET PRESSURE TO STANDARD LOW PRESSURE OUTLET. 325 CFH MAXIMUM CAPACITY. WITH OVERPRESSURE SHUT-OFF AND 3/4" OR 1" NPT VENT. UNIT SHALL BE LISTED PER CSA Z21.30.

GAS PRESSURE REGULATOR (GPR-1):
AMERICAN METER CO. 3/4" 1800C SERIES, MODEL 1843C REGULATOR WITH 5/16" ORIFICE AND 6" TO 12" PRESSURE SPRING 70017P137. 5PSI W/ 1.5 PSI INLET PRESSURE TO STANDARD LOW PRESSURE OUTLET. 500 CFH MAXIMUM CAPACITY. WITH OVERPRESSURE SHUT-OFF AND 3/4" OR 1" NPT VENT. UNIT SHALL BE LISTED PER CSA Z21.30.

MIXING VALVE (TMV-1): (SET TO 105°F MAX)
POINT OF USE THERMOSTATIC MIXING VALVE BRADLEY #S59-400A, SET TO 105°F, 110° MAX, LEAD FREE BRONZE BODY, MINIMUM FLOW: 0.5 GPM, ASSE 1070.

DUAL CHECK VALVE (DCV-1): (ICE MACHINE)
WATTS NO. SD-3 SIZE 3/8", ASSE 1022 APPROVED DUAL CHECK WITH ATMOSPHERIC PORT DESIGN FOR PROTECTION OF THE WATER SUPPLY FROM CARBON DIOXIDE GAS & CARBONATED WATER. 316 STAINLESS STEEL BODY CONSTRUCTION.

WATER HAMMER ARRESTERS (WHA):
PRECISION PLUMBING PRODUCTS
3/4" = MODEL# SC-750 (12-32) FIXTURE UNITS
1" = MODEL# SC-1000 (33-60) FIXTURE UNITS

ACCESS PANELS (AP):
JOSAM 58656 SERIES SQUARE STAINLESS STEEL ACCESS FRAME, ANCHOR SLOTS AND HINGED SMOOTH SECURED COVER

PLUMBING FIXTURE SPECIFICATIONS | 3

UNIT NO.	DESCRIPTION	CONNECTION SIZES TRAP	W	V	CW	HW	REMARKS
WC-1	WATER CLOSET	INT.	4"	2"	1"	---	WALL MOUNTED SENSOR F.V. (1.28 GPF) ADA USE HEIGHT
WC-2	WATER CLOSET	INT.	4"	2"	1"	---	WALL MOUNTED SENSOR F.V. (1.28 GPF) STANDARD HEIGHT
U-1	URINAL	INT	2"	2"	3/4"	---	WALL HUNG, SENSOR F.V. (0.125 GPF) ADA-COMPLIANT
L-1	LAVATORY	1½"	2"	2"	½"	½"	UNDER MOUNT (ADA) SENSOR FAUCET 0.20 GAL. PER USE
S-1	SINK	1½"	2"	2"	½"	½"	SINGLE COMPARTMENT COUNTER MOUNTED.
S-2	SINK	1½"	2"	2"	½"	½"	DOUBLE COMPARTMENT COUNTER MOUNTED.
GD-1	GARBAGE DISPOSER	–	–	–	---	---	IN-SINK-ERATOR PRO 750 3/4 HP, 120V., 1ø, 60~ 9.5 AMPS
RWB-1	RECESSED WATER BOX	---	---	---	½"	---	GUY GRAY #M1B1HA, WITH WATER HAMMER ARRESTER.
MS-1	MOP SINK	3"	3"	2"	3/4"	3/4"	FLOOR MOUNT
DF-1	DRINKING FOUNTAIN	1½"	2"	1½"	½"	---	HI-LO DUAL UNIT WALL MOUNT HANDICAP USE
WH-1	ELECTRIC WATER HEATER	---	---	---	1"	1"	30 GAL., 6 KW, 480V. 3ø FLOOR MOUNT
CP-1	HOT WATER CIRCULATION PUMP	---	---	---	---	3/4"	115v., 1/6 HP, FLA: 2.1 AUTOMATIC TIMER KIT #TC-1
BV-1	BALACING VALVE	---	---	---	---	3/4"	CIRCUITSOLVER CSUA-3/4-120 NSF/ANSI 61 CERTIFIED
FD-1	FLOOR DRAIN	2"	2"	2"	---	---	JOSAM #30000-5A, WITH 5" BRONZE TOP, CAST IRON BODY.
FS-1	FLOOR SINK	2"	2"	2"	---	---	WITH TRAP PRIMER.
TP-1	TRAP PRIMER	---	---	---	½"	---	MIFAB M2-5000-NPB
SO-1	SAND & OIL INTERCEPTOR	4"	4"	2"	---	---	JENSEN PRECAST KJP-320SO, 320 GAL., WITH SAMPLE BOX.
CB-1	CATCH BASIN	---	4"	2"	---	---	JOSAM (PRO-PLUS) SERIES PPCB-2024-DI W/ SEDIMENT BUCKET
GPR-1	GAS PRESSURE REGULATOR	---	---	---	---	---	AMERICAN METER 1843C MODEL REGULATOR 325 CFH MAX CAPACITY.
GPR-2	GAS PRESSURE REGULATOR	---	---	---	---	---	AMERICAN METER CO. 1800C SERIES MODEL 1843C 500 CFH MAX CAPACITY
TMV-1	THERMOSTATIC MIXING VALVE	---	---	---	1/2"	1/2"	BRADLEY #S59-400A THERMOSTATIC MIXING VALVE. SET TO 108°F (5 GPM MAX)
DCV-1	DUAL CHECK VALVE (ICE MACHINE)	---	---	---	3/8"	---	WATTS NO. SD-3 DUAL CHECK VALVE ASSE 1022 APPROVED

PLUMBING FIXTURE SCHEDULE | 1

PLUMBING FIXTURES MUST COMPLY WITH THE SPECIFIED CAL GREEN SECTION

TABLE 5.303.2.3.1
FIXTURE FLOW RATES

FIXTURE TYPE	FLOW RATE
SHOWERHEADS	2 GPM @ 80 PSI
LAVATORY FAUCETS NONRESIDENTIAL	0.5 GPM @ 60 PSI
KITCHEN FAUCETS	1.8 GPM @ 60 PSI
WASH FOUNTAINS	1.8 GPC/20 [RIM SPACE(IN.)] @60 PSI
METERING FAUCETS	0.20 GALLONS/CYCLE
METERING FAUCETS (WASH FOUNTAINS)	0.20 GPC/20 [RIM SPACE(IN.)] @60 PSI
GRAVITY TANK TYPE WATER CLOSETS	1.28 GALLONS/FLUSH
FLUSHOMETER TANK WATER CLOSETS	1.28 GALLONS/FLUSH
FLUSHOMETER VALVE WATER CLOSETS	1.28 GALLONS/FLUSH
ELECTROMECHANICAL HYDRAULIC WATER CLOSETS	1.28 GALLONS/FLUSH
URINALS	0.125 GALLONS/FLUSH

CAL GREEN REQUIREMENTS | 2

RPM
Engineers, Inc.
102 DISCOVERY
Irvine, Ca. 92618
Tel: 949-450-1229 (217)
Fax: 949-450-1454
Contact: Jose Beltran
e-mail: joseb@rpmpe.com

REGISTERED PROFESSIONAL ENGINEER
No. 30465
Exp. 12-31-19
MECHANICAL
STATE OF CALIFORNIA
12/09/2019

HPA architecture
hpa, inc.
18831 bardeen avenue - ste. #100 irvine, ca 92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

Owner:

Project:
TORRANCE
DCX 7
950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
PLUMBING NOTES, DETAILS SCHEDULES & SPECIFICATIONS

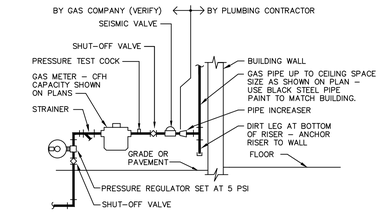
Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:
P-1

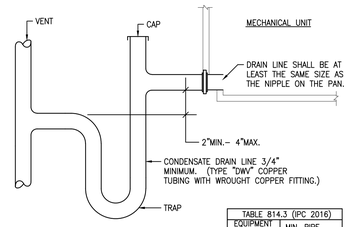
RPM #19-755 12/09/19

CAUTION : IF THIS SHEET IS NOT A 30" X 42" IT IS A REDUCED PRINT



VERIFY REQUIREMENTS FOR METERING AND PIPING WITH GAS COMPANY. CONTRACTOR SHALL PAY ALL GAS COMPANY FEES FOR INSTALLATION. USE WELDED OR SCREWED PIPE AND FITTINGS PER PLUMBING SPECS.

TYPICAL GAS METER DETAIL | 7



NOTE: ALL INTERIOR CONDENSATE DRAIN PIPING SHALL BE INSULATED.

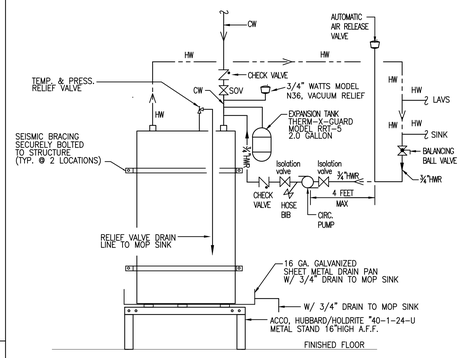
NOTE: DETAIL NOT TO SCALE

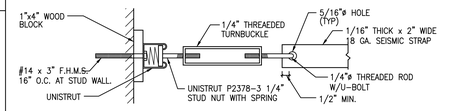
TABLE 814.3 (IPC 2016)

EQUIPMENT CAPACITY (Tons)	MIN. PIPE DRAIN SIZE
Up to 20	3/4"
21–40	1"
41–90	1–1/4"
91–125	1–1/2"
126–250	2"

CONDENSATE DRAIN TRAP | 3

NOTE:
1. WATER HEATER STRAPPING SHALL BE AT POINTS WITHIN THE UPPER ONE–THIRD LOWER ONE–THIRD (1/3) OF ITS VERTICAL DIMENSIONS. AT THE LOWER POINT, A MINIMUM (1/3) AND DISTANCE OF FOUR (4) INCHES SHALL BE MAINTAINED ABOVE THE CONTROLS WITH THE STRAPPING.
2. CALIFORNIA PLUMBING CODE 502.0 PERMIT REQUIRED FOR INSTALLING, REMOVING OR REPLACING A WATER HEATER.
3. HOT WATER CIRCULATING PUMP SHALL COMPLY WITH SECTION 113(c) 5 OF TITLE 24 PART 6 ENERGY EFFICIENCY STANDARDS.

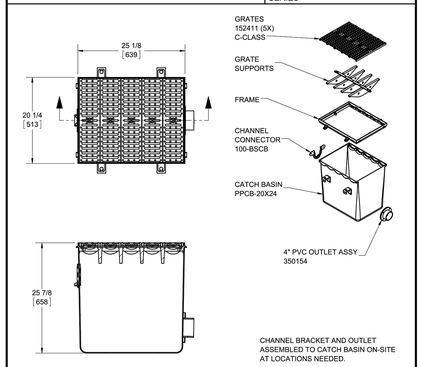




ELECTRIC WATER HEATER FLOOR MOUNT 1 | 1

SPECIFICATION:
JOSAM SERIES PRO-PLUS 100 GLASS REINFORCED POLYESTER CATCH BASIN, C-CLASS IRON FRAME AND GRATES, 100-BSCB CHANNEL CONNECTOR, AND 4" PVC OUTLET ASSEMBLY. GRATES MEET ADA REQUIREMENTS.

PRO-PLUS
CATCH BASIN ASSY
SERIES **350151-C10-DIGR**



CHANNEL BRACKET AND OUTLET ASSEMBLED TO CATCH BASIN ON-SITE AT LOCATIONS NEEDED.

OPTIONS:

-FB	FILTER BASKETS
-SB	SEDIMENT BUCKETS

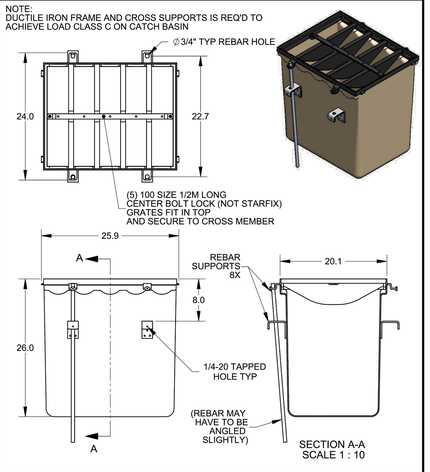
DATE OF LAST CHANGE: 10/26/2017
DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES AND CHANGE WITHOUT NOTICE. WE CAN ASSUME NO RESPONSIBILITY FOR USE OF SUPERSEDED OR VOID DATA.
JOSAM COMPANY MICHIGAN CITY, INDIANA
NOTES

CATCH BASIN W/ SEDIMENT BUCKET (SCRUBBER DUMP) | 12

SPECIFICATION:
MEA-JOSAM CATCH BASIN WITH DUCTILE IRON FRAME ON TOP FOR USE WITH PRO-PLUS 100C (4" INTERNAL WIDTH), 200C (8" INTERNAL WIDTH) AND/OR 300C (12" INTERNAL WIDTH) SERIES TRENCH CHANNELS WITH DUCTILE IRON FRAMES. BOX IS MADE OF GRP MATERIAL. CHANNEL CUTOUT PROFILE(S) TO BE DONE ON SITE. DOES NOT INCLUDE OUTLET PART.

PRO-PLUS
CATCH BASIN WITH DI RAIL 20" X 24"
SERIES **PPCB-2024-DI**

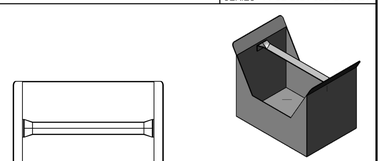
NOTE:
DUCTILE IRON FRAME AND CROSS SUPPORTS IS REQ'D TO ACHIEVE LOAD CLASS C ON CATCH BASIN

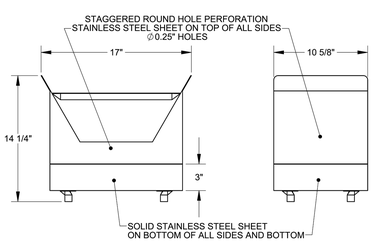


DATE OF LAST CHANGE: 1/11/2012
DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES AND CHANGE WITHOUT NOTICE. WE CAN ASSUME NO RESPONSIBILITY FOR USE OF SUPERSEDED OR VOID DATA.
JOSAM COMPANY MICHIGAN CITY, INDIANA
NOTES

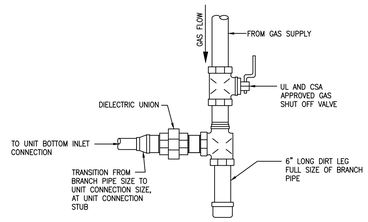
SPECIFICATION:
SEDIMENT BUCKET TO FIT INSIDE OF PPCB-2024 CATCH BASIN. USE TWO SEDIMENT BUCKETS IN EVERY CATCH BASIN. STAINLESS STEEL MATERIAL.

PRO-PLUS
MEA-JOSAM
SERIES **PPCB-2024-SED BUCKET**

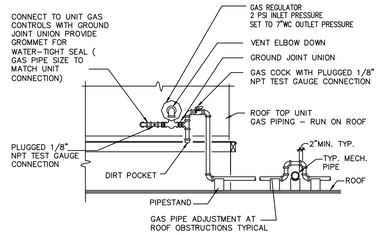




DATE OF LAST CHANGE: 5/20/13
DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES AND CHANGE WITHOUT NOTICE. WE CAN ASSUME NO RESPONSIBILITY FOR USE OF SUPERSEDED OR VOID DATA.
JOSAM COMPANY MICHIGAN CITY, INDIANA
NOTES



GAS PIPING SEDIMENT DETAIL | 8



NOTE:
CONTRACTOR SHALL VERIFY ALL MECHANICAL GAS FIRED EQUIPMENT CONNECTION LOCATIONS IN THE FIELD PRIOR TO INSTALLING ANY GAS PIPE MAINS OR BRANCHES.

A/C UNIT GAS CONNECTION (W/ REGULATOR) | 4

SoCalGas Requirements

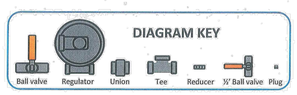
New Construction Pounds Delivery Systems

Step Down Regulator Manifold

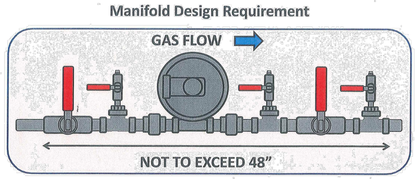
Revision 04/05/2017

Step down regulator manifolds **MUST** be installed in a **SAFE** accessible location (i.e. ground level, permanently installed platform, etc.). Manifold **MUST** be installed NO HIGHER THAN APPROXIMATELY 48" off the flat working surface.

INITIAL GAS TURN-ON CANNOT BE COMPLETED IF THESE SAFETY REQUIREMENTS ARE NOT MET

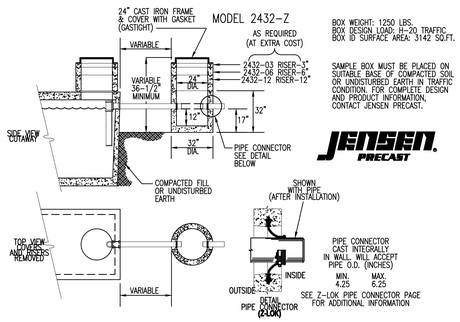


Manifold Design Requirement



THIS DOCUMENT CANNOT BE ALTERED

STEPDOWN REGULATOR MANIFOLD AT GAS METER | 10



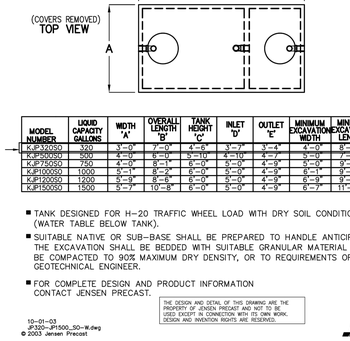
BOX WEIGHT: 1250 LBS.
BOX DESIGN LOAD: H–20 TRAFFIC
BOX ID SURFACE AREA: 3142 SQ.FT.

SAMPLE BOX MUST BE PLACED ON SUITABLE BASE OF COMPACTED SOIL OR UNDISTURBED EARTH IN TRAFFIC CONDITION. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN PRECAST.

JENSEN PRECAST

SAMPLE BOX (SCRUBBER DUMP AREA) | 5

320–1500 GALLON
SAND–OIL INTERCEPTORS
TRAFFIC RATED ACCEPTED BY IAPMO



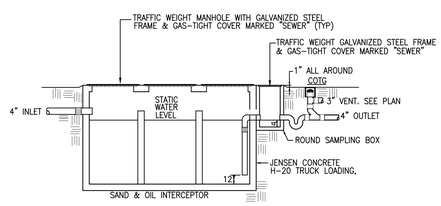
MODEL NUMBER	LIQUID CAPACITY GALLONS	WIDTH "A"	OVERALL LENGTH "B"	TANK HEIGHT "C"	INLET "D"	OUTLET "E"	MINIMUM EXCAVATION WIDTH	MINIMUM EXCAVATION LENGTH	ø DEPTH OF BURY	TANK WEIGHT LBS.
KJP320SO	320	3'–0"	7'–0"	4'–6"	3'–7"	3'–4"	4'–0"	8'–0"	6' MAX.	6,600
KJP500SO	500	4'–0"	8'–0"	5'–10	4'–10"	4'–7"	5'–0"	7'–0"	6' MAX.	8,750
KJP750SO	750	4'–0"	8'–1"	6'–0"	5'–0"	4'–9"	5'–0"	9'–1"	6' MAX.	9,000
KJP1000SO	1000	5'–1"	8'–2"	6'–0"	5'–0"	4'–9"	6'–1"	9'–2"	6' MAX.	11,000
KJP1200SO	1200	5'–9"	8'–8"	6'–0"	5'–0"	4'–9"	6'–9"	9'–8"	6' MAX.	12,600
KJP1500SO	1500	5'–7"	10'–8"	6'–0"	5'–0"	4'–9"	6'–7"	11'–8"	6' MAX.	14,900

- TANK DESIGNED FOR H–20 TRAFFIC WHEEL LOAD WITH DRY SOIL CONDITIONS (WATER TABLE BELOW TANK).
- SUITABLE NATIVE OR SUB–BASE SHALL BE PREPARED TO HANDLE ANTICIPATED LOADS. THE EXCAVATION SHALL BE BEDDED WITH SUITABLE GRANULAR MATERIAL AND SHALL BE COMPACTED TO 90% MAXIMUM DRY DENSITY, OR TO REQUIREMENTS OF THE PROJECT GEOTECHNICAL ENGINEER.
- FOR COMPLETE DESIGN AND PRODUCT INFORMATION CONTACT JENSEN PRECAST.

10–01–03
JP320–JP1500_SO–W.dwg

JENSEN PRECAST

SAND & OIL INTERCEPTOR (KJP320SO) | 2



NOTE:
ENTIRE INSTALLATION SHALL CONFORM TO CITY OF LIVERMORE STANDARDS & IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS & RECOMMENDATIONS.

FOR SCRUBBER DUMP AREA

SAND & OIL INTERCEPTOR (320 GALLONS) | 6

RPM
Engineers, Inc.
102 DISCOVERY
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Fax: 949-450-1454
Contact: Jose Beltran
e–mail: joseb@rpmpe.com

REGISTERED PROFESSIONAL ENGINEER
No. 30465
Exp.12–31–19
MECHANICAL
STATE OF CALIFORNIA

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Owner:

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950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

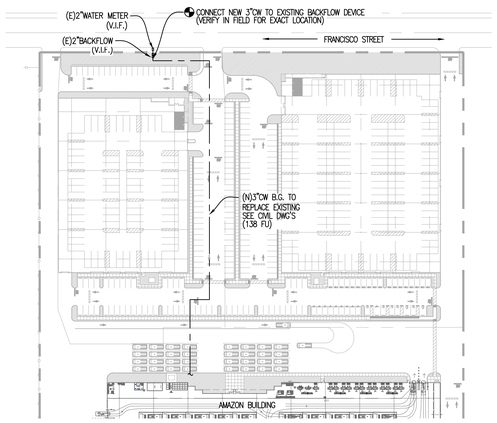
Title:
PLUMBING DETAILS

Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

Sheet:
P1.1

RPM #19–755 12/09/19

CAUTION : IF THIS SHEET IS NOT A 30" X 42" IT IS A REDUCED PRINT



PARTIAL SITE PLAN

SCALE 1"=100'-0" | 2

GENERAL NOTES:

1. GAS PIPING IS SIZED PER CPC 2016
   TABLE 1216.2.1(4) (MEDIUM PRESSURE) SCHEDULE 40 METALLIC PIPE

   FROM GAS METER TO FURTHEST GAS PRESSURE REGULATOR
   GAS: NATURAL (MEDIUM PRESSURE)
   INLET PRESSURE: 5 PSI
   PRESSURE DROP: 3.5 PSI
   SPECIFIC GRAVITY: 0.60
   TOTAL DEV. LENGHT (PIPE RUN) = NOTED ON PLANS

   TABLE 1216.2.1(1) (LOW PRESSURE) SCHEDULE 40 METALLIC PIPE
   FROM REGULATOR TO FURTHEST FIXTURE
   GAS: NATURAL (STANDARD PRESSURE)
   INLET PRESSURE: LESS THAN 2 PSI
   PRESSURE DROP: 0.5 IN. W.C.
   SPECIFIC GRAVITY: 0.60
   TOTAL DEV. LENGHT (PIPE RUN) = NOTED ON PLANS

   NEW GAS LOAD

SF-1	= 1 x 155 CFH	= 155 CFH
SF-2 THRU 5	= 4 x 309.9 CFH	= 1,239.6 CFH
AC-36A	= 1 x 67 CFH	= 67 CFH
AC-60A	= 1 x 67 CFH	= 67 CFH
AC-102A	= 1 x 125 CFH	= 125 CFH
AC-120A/20B	= 2 x 180 CFH	= 360 CFH
TOTAL LOAD		= 2,013.6 CFH
TOTAL DEV. LENGTH (PIPE RUN)		= 840 FEET

2. RUN ALL GAS LINES BELOW ROOF.

GAS KEY NOTES:

(A) (5PSI) MEDIUM PRESSURE GAS UP THRU ROOF TO GAS REGULATOR SIZE AS NOTED.

(B) INSTALL GAS REGULATOR, GPR, ON ROOF NEXT TO A/C UNIT. GAS SYSTEM DESIGN AT 5 PSI WITH A 1.5 PSI DROP. REGULATOR INLET PRESSURE SHALL BE 1.5 PSI & OUTLET SHALL BE 7"W.C. (STANDARD PRESSURE). MEDIUM PRESSURE INLET SIZE AS NOTED. SEE GAS UNIT CONNECTION DETAIL SHEET P1

(C) LOW PRESSURE GAS CONNECTION W/ GAS COCK TO UNIT. SIZED AT 10FT FROM GAS REGULATOR. GAS LINE SIZE AS NOTED.

(D) MEDIUM PRESSURE GAS DN & CONNECT TO GAS METER MANIFOLD. SIZE AS NOTED.

(E) INSTALL SEISMIC ACTUATED GAS SHUT OFF VALVE. SIZE AS NOTED.
PACIFIC SEISMIC PRODUCTS MODEL# 313 (60). SIZE 1½" INSTALL PER MANUFACTURE SPECIFICATIONS.

(F) PROPOSED GAS METER. PLUMBING CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR AND GAS UTILITY COMPANY TO HAVE GAS SERVICE. GAS SERVICE TO BE 5 PSI MEDIUM PRESSURE. TOTAL NEW ADDED LOAD OF 2,013.6 CFH @ 840' TDL TO REMOTE GAS OUTLET.

KEYED NOTES:

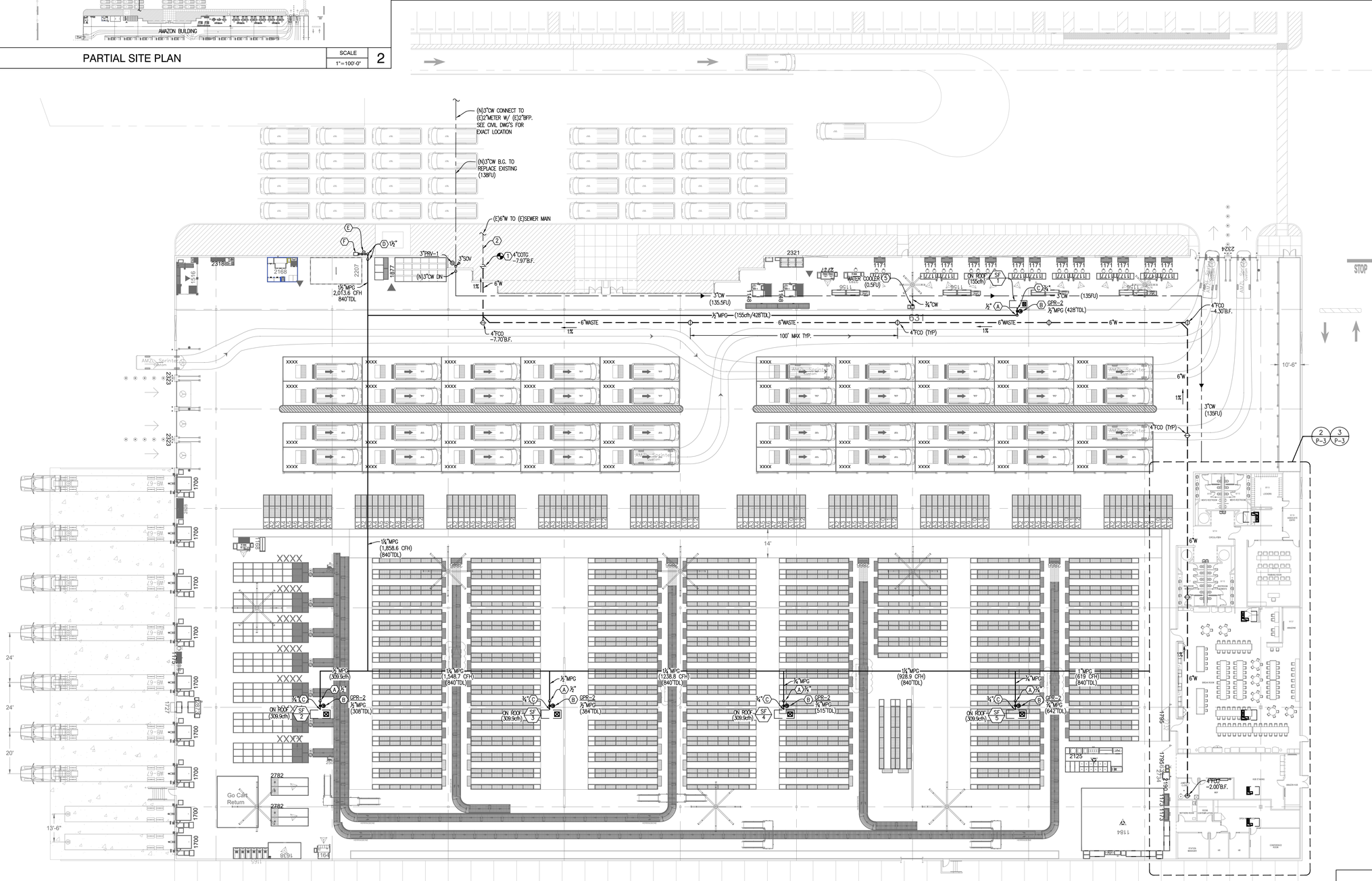
(1) CONNECT TO EXISTING 6"SEWER LINE AT THIS LOCATION. CONTRACTOR SHALL VERIFY IN FIELD FOR EXACT SIZE, DEPTH & LOCATION PRIOR TO CONSTRUCTION.

(2) EXISTING WASTE LINE SHOWN ON THESE PLANS ARE ONLY ASSUMPTIONS & MAY NOT BE IN THIS LOCATION. PRIOR TO BID AND CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING SITE CONDITIONS & PROVIDE ALTERNATE BID PRICE FOR UNDERGROUND CAMERA SEWER PIPE SCOPE TO LOCATE EXISTING SEWER PIPE SIZE, DEPTH & DIRECTION OF FLOW.

(3) EXISTING WATER LINE SHOWN ON THESE PLANS ARE ONLY ASSUMPTIONS & MAY NOT BE IN THIS LOCATION. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS ON SITE PRIOR TO BID AND CONSTRUCTION.

(4) CONNECT TO EXISTING WATER LINE AT THIS LOCATION. CONTRACTOR SHALL VERIFY IN FIELD FOR SIZE & LOCATION PRIOR TO BID AND CONSTRUCTION.

(5) ¾"CW DN TO WATER COOLER. PROVIDE ½"CW SOV AT UNIT CONNECTION.



OVERALL BUILDING PLAN/ PLUMBING SITE PLAN

SCALE 1"=20'-0" | 1

RPM
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e-mail: joseb@rpmpe.com

REGISTERED PROFESSIONAL ENGINEER — No. 30465 Exp.12-31-19 — MECHANICAL — STATE OF CALIFORNIA

12/09/2019

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Project:

TORRANCE DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
OVERALL BUILDING PLAN/ PLUMBING SITE PLAN

Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

Sheet:

P2.0

RPM #19-755 12/09/19

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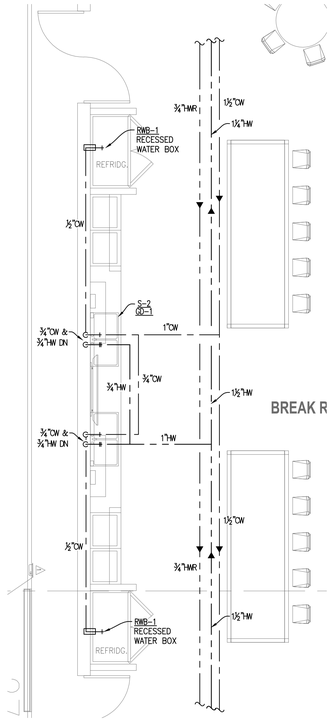
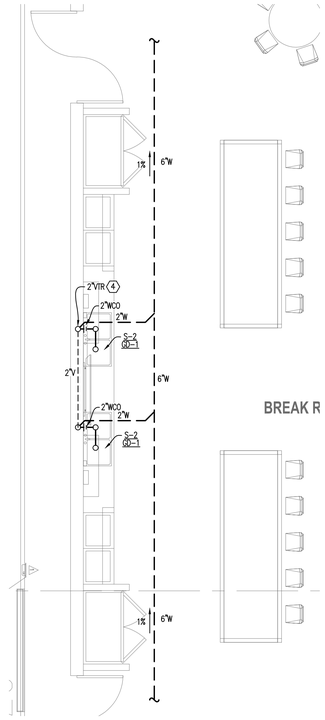
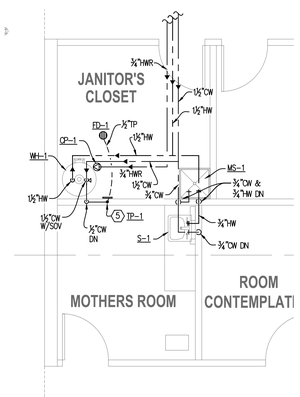


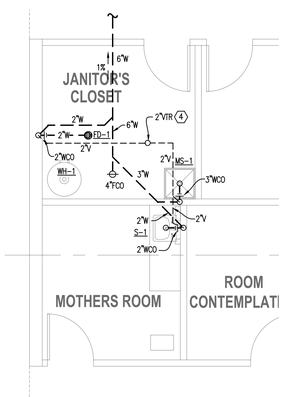
ENLARGE PLUMBING PLAN - WATER | SCALE 1/4"=1'-0" | 3



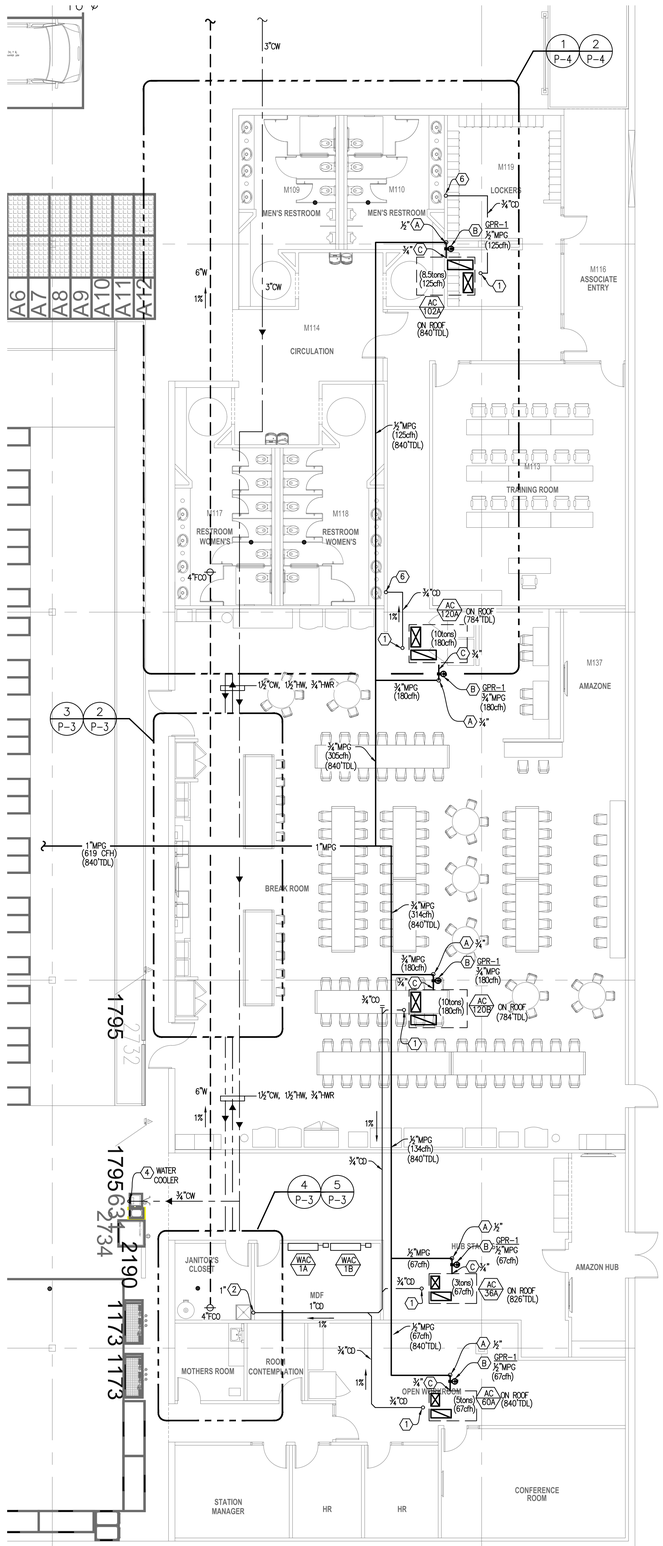
ENLARGE PLUMBING PLAN - WASTE & VENT | SCALE 1/4"=1'-0" | 2



ENLARGE PLUMBING PLAN - WATER | SCALE 1/4"=1'-0" | 5



ENLARGE PLUMBING PLAN - WASTE & VENT | SCALE 1/4"=1'-0" | 4



OVERALL PARTIAL PLUMBING FLOOR PLAN - MAIN OFFICE | SCALE 1/4"=1'-0" | 1

KEYED NOTES:

1. ¾"CD UP THRU ROOF TO MECHANICAL A/C UNIT. PROVIDE CONDENSATE DRAIN AT UNIT CONNECTION. SEE CONDENSATE DRAIN DETAIL SHEET P1.1
2. CONDENSATE DRAIN DN IN WALL & SPILL INTO MOP SINK. PROVIDE 1"MIN AIR GAP. SIZE AS NOTED.
3. CONTRACTOR SHALL MAINTAIN V.T.R. 10'-0"MIN DISTANCE AWAY FROM ALL ROOF TOP A/C UNIT'S FRESH AIR INTAKE.
4. ¾"CW DN TO WATER COOLER. PROVIDE ½"CW SOV AT UNIT CONNECTION.
5. TRAP PRIMER DEVICE, (TP-1) W/ ACCESS PANEL. EXTEND ½"TRAP PRIMER WATER LINE TO DRAIN TRAP.
6. CONDENSATE DRAIN DN IN WALL & CONNECT TO LAVATORY TAILPIECE.

GAS KEY NOTES:

- (A) (5PSI) MEDIUM PRESSURE GAS UP THRU ROOF TO GAS REGULATOR SIZE AS NOTED.
- (B) INSTALL GAS REGULATOR, GPR, ON ROOF NEXT TO A/C UNIT GAS SYSTEM DESIGN AT 5 PSI WITH A 1.5 PSI DROP. REGULATOR INLET PRESSURE SHALL BE 5 PSI & OUTLET SHALL BE 7"W.C. (STANDARD PRESSURE). MEDIUM PRESSURE INLET SIZE AS NOTED. SEE GAS UNIT CONNECTION DETAIL SHEET P1
- (C) LOW PRESSURE GAS CONNECTION W/ GAS COCK TO UNIT. SIZED AT 10FT FROM GAS REGULATOR. GAS LINE SIZE AS NOTED.

GENERAL NOTES:

1. GAS PIPING IS SIZED PER CPC 2016
   TABLE 1216.2.1(4) (MEDIUM PRESSURE) SCHEDULE 40 METALLIC PIPE

   FROM GAS METER TO FURTHEST GAS PRESSURE REGULATOR
   GAS: NATURAL (MEDIUM PRESSURE)
   INLET PRESSURE: 5 PSI
   PRESSURE DROP: 3.5 PSI
   SPECIFIC GRAVITY: 0.60
   TOTAL DEV. LENGHT (PIPE RUN) = NOTED ON PLANS

   TABLE 1216.2.1(1) (LOW PRESSURE) SCHEDULE 40 METALLIC PIPE
   FROM REGULATOR TO FURTHEST FIXTURE
   GAS: NATURAL (STANDARD PRESSURE)
   INLET PRESSURE: LESS THAN 2 PSI
   PRESSURE DROP: 0.5 IN. W.C.
   SPECIFIC GRAVITY: 0.60
   TOTAL DEV. LENGHT (PIPE RUN) = NOTED ON PLANS

   NEW GAS LOAD

SF-1	= 1 x 155 CFH	= 155 CFH
SF-2 THRU 5	= 4 x 309.9 CFH	= 1,239.6 CFH
AC-36A	= 1 x 67 CFH	= 67 CFH
AC-60A	= 1 x 67 CFH	= 67 CFH
AC-102A	= 1 x 125 CFH	= 125 CFH
AC-120A/20B	= 2 x 180 CFH	= 360 CFH
TOTAL LOAD		= 2,013.6 CFH
TOTAL DEV. LENGTH (PIPE RUN)		= 840 FEET

2. RUN ALL GAS LINES BELOW ROOF.

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email: hpa@hparchs.com

Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
OVERALL MAIN OFFICE &
ENLARGE PLUMBING PLANS

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

P3.0

RPM #19-755 12/09/19

RPM
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e-mail: joseb@rpmpe.com

REGISTERED PROFESSIONAL ENGINEER
No. 30465
Exp.12-31-19
MECHANICAL
STATE OF CALIFORNIA

12/09/2019

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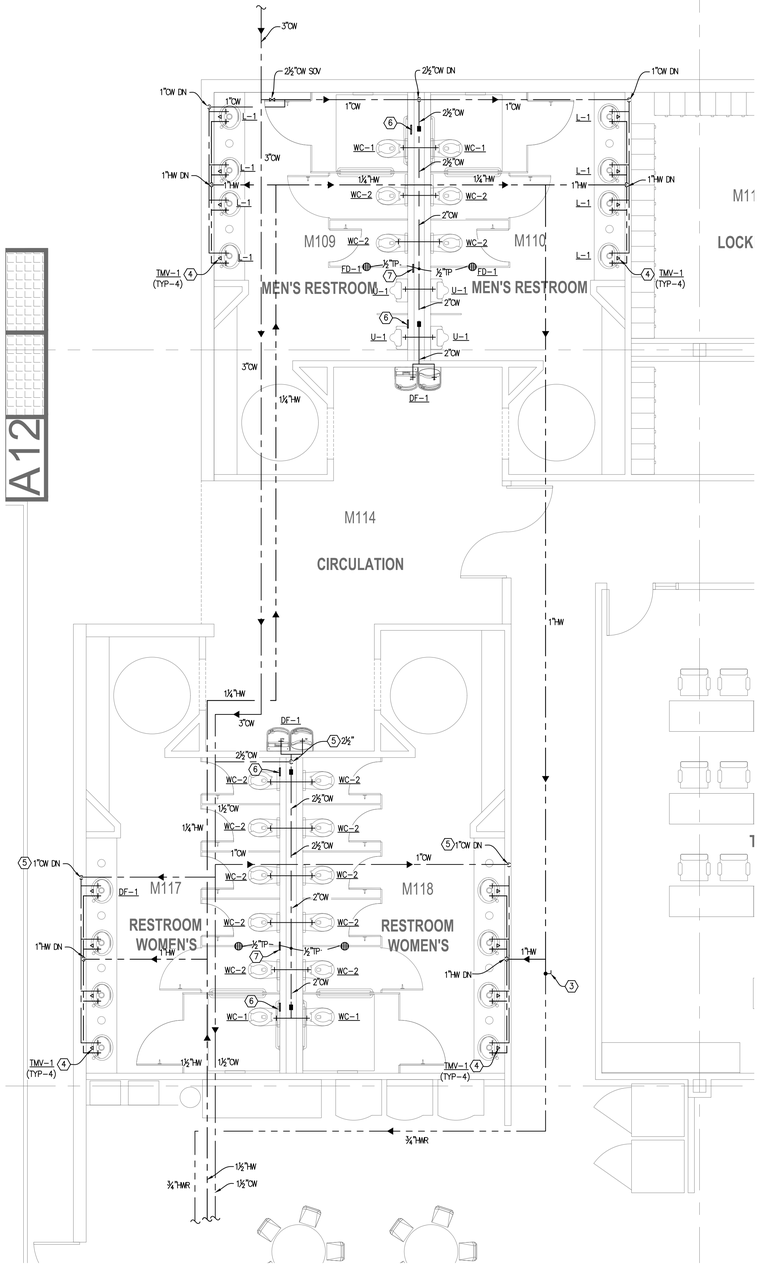
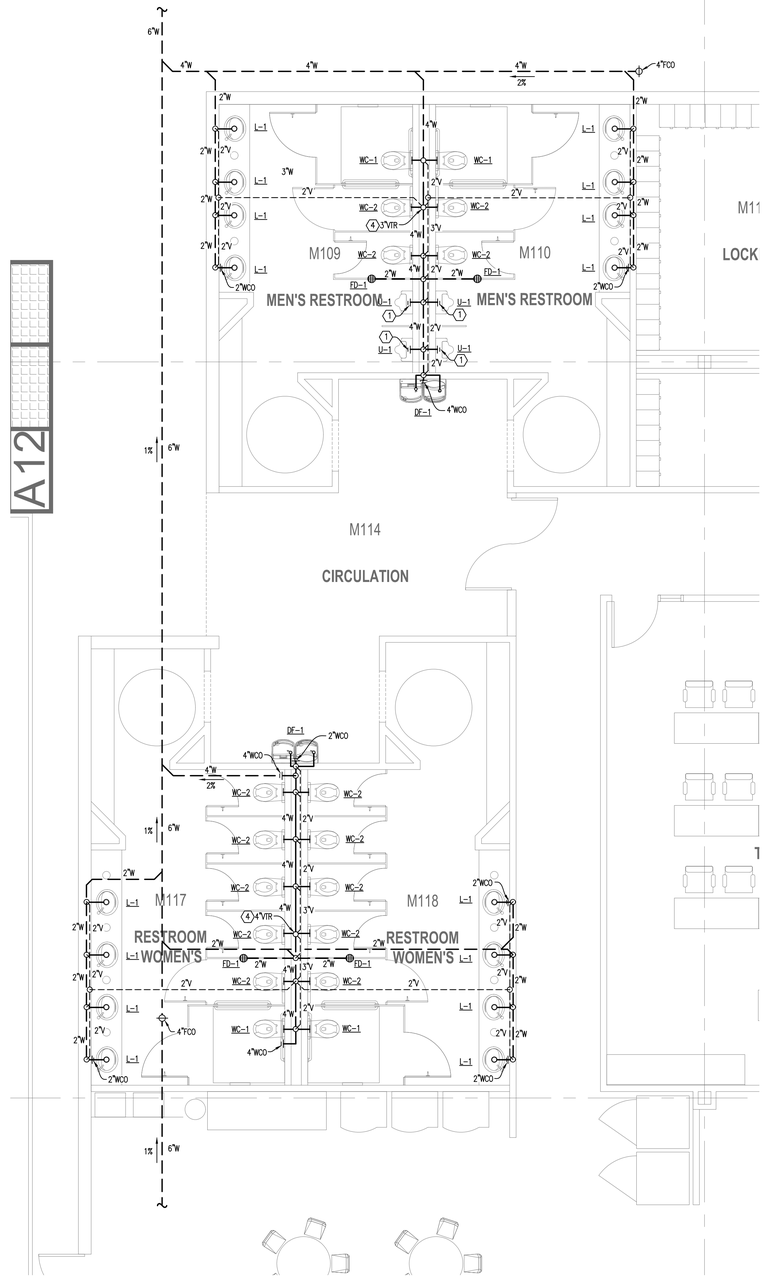


ENLARGE PLUMBING PLAN - WATER - MAIN OFFICE

SCALE 1/4"=1'-0" 2



ENLARGE PLUMBING PLAN - WASTE & VENT - MAIN OFFICE

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

KEYED NOTES:

1. 2"WALL CLEAN-OUT SHALL BE INSTALLED ABOVE THE FIXTURE CONNECTION FITTING, SERVING EACH URINAL, REGARDLESS OF THE LOCATION OF THE URINAL IN THE BUILDING. CPC 2016 707.4
2. CONTRACTOR SHALL MAINTAIN V.T.R. 10'-0"MIN DISTANCE AWAY FROM ALL ROOF TOP A/C UNIT'S FRESH AIR INTAKE.
3. PROVIDE CIRCUIT SOLVER CS-3/4-120, THERMOSTATIC BALANCING VALVE, SET TO 120°F. OR APPROVED EQUAL. PROVIDE ACCESS PANEL OVER HARD LID CEILING.
4. PROVIDE POINT OF USE THERMOSTATIC MIXING VALVE, (TMV-1) & SET TO 105°F MAX.
5. COLD WATER DN IN WALL. PROVIDE SOV AT 5'-0" A.F.F. W/ ACCESS PANEL. WATER LINE SIZE AS NOTED.
6. WATER HAMMER ARRESTER (WHA) W/ ACCESS PANEL.
7. TRAP PRIMER DEVICE, (TP-1) W/ ACCESS PANEL. EXTEND ½"TRAP PRIMER WATER LINE TO DRAIN TRAP.

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Project:

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DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
ENLARGE PLUMBING PLAN - WATER WASTE & VENT

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

P4.0

RPM #19-755 12/09/19

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REGISTERED PROFESSIONAL ENGINEER
No. 30465
Exp. 12-31-19
MECHANICAL
STATE OF CALIFORNIA

12/09/2019

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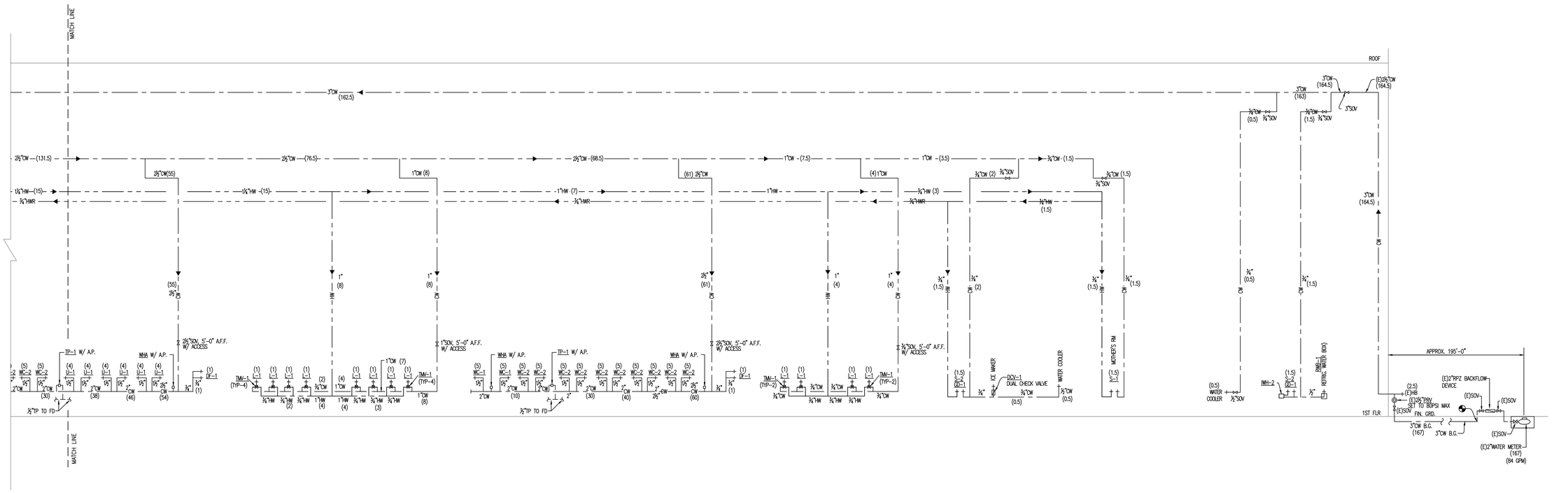
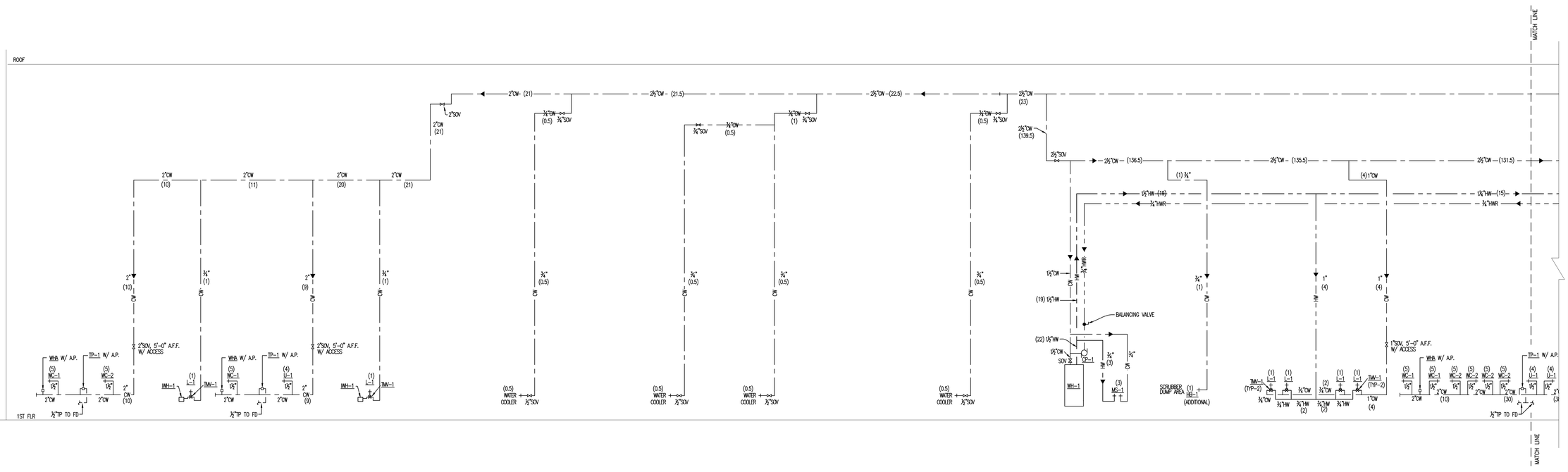


NOTE:
NO. IN ( ) REPRESENTS WATER FIXTURE UNIT VALUE

HOT & COLD RISER DIAGRAM

SCALE	
NONE	1



NOTE:
NO. IN ( ) REPRESENTS WATER FIXTURE UNIT VALUE

HOT & COLD RISER DIAGRAM (CONTINUED)

SCALE	
NONE	2

RPM
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REGISTERED PROFESSIONAL ENGINEER
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12/08/2019

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email: hpa@hparchs.com

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Project:

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DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
PLUMBING RISERS
WATER

Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

Sheet:

P5.0

RPM #19-755 12/08/19

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GENERAL NOTES:

1. GAS PIPING IS SIZED PER CPC 2016
   TABLE 1216.2.1(4) (MEDIUM PRESSURE) SCHEDULE 40 METALLIC PIPE

   FROM GAS METER TO FURTHEST GAS PRESSURE REGULATOR
   GAS: NATURAL (MEDIUM PRESSURE)
   INLET PRESSURE: 5 PSI
   PRESSURE DROP: 3.5 PSI
   SPECIFIC GRAVITY: 0.60
   TOTAL DEV. LENGHT (PIPE RUN) = NOTED ON PLANS

   TABLE 1216.2.1(1) (LOW PRESSURE) SCHEDULE 40 METALLIC PIPE
   FROM REGULATOR TO FURTHEST FIXTURE
   GAS: NATURAL (STANDARD PRESSURE)
   INLET PRESSURE: LESS THAN 2 PSI
   PRESSURE DROP: 0.5 IN. W.C.
   SPECIFIC GRAVITY: 0.60
   TOTAL DEV. LENGHT (PIPE RUN) = NOTED ON PLANS

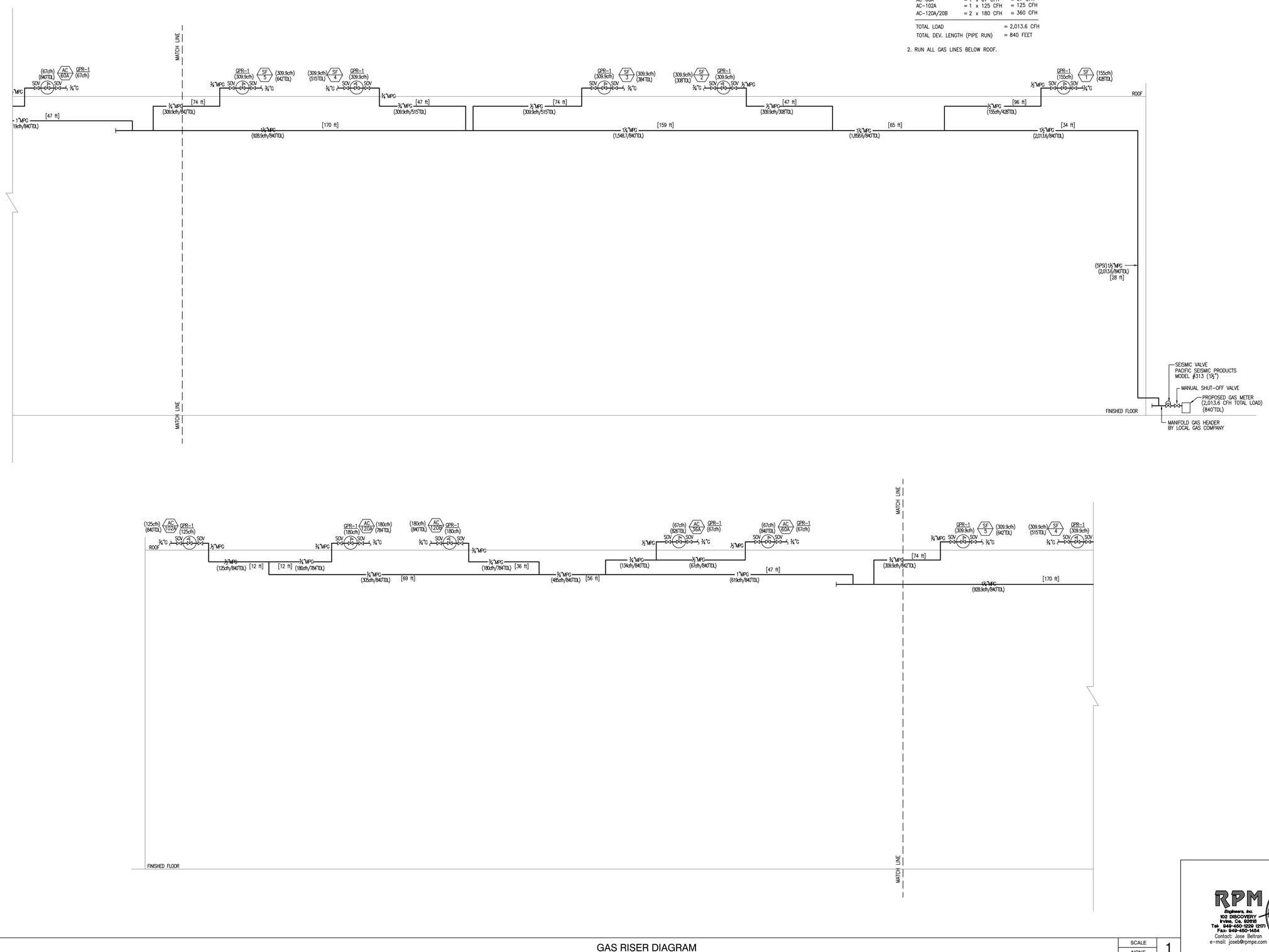
   NEW GAS LOAD

SF-1	= 1 x 155 CFH	= 155 CFH
SF-2 THRU 5	= 4 x 309.9 CFH	= 1,239.6 CFH
AC-36A	= 1 x 67 CFH	= 67 CFH
AC-60A	= 1 x 67 CFH	= 67 CFH
AC-102A	= 1 x 125 CFH	= 125 CFH
AC-120A/20B	= 2 x 180 CFH	= 360 CFH
TOTAL LOAD		= 2,013.6 CFH
TOTAL DEV. LENGTH (PIPE RUN)		= 840 FEET

2. RUN ALL GAS LINES BELOW ROOF.

LEGEND

MEDIUM PRESSURE GAS	——— MPG ———
STANDARD PRESSURE GAS	——— G ———
TDL	TOTAL DEVELOPED LENGHT TO MEDIUM
[XX ft]	SEGMENT PIPE LENGTH
(cfh)	CUBIC FEET / HOUR



GAS RISER DIAGRAM

SCALE	
NONE	1

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REGISTERED PROFESSIONAL ENGINEER — No. 30465 Exp.12-31-19 — MECHANICAL — STATE OF CALIFORNIA

12/09/2019

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email: hpa@hparchs.com

Owner:

Project:

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950 FRANCISCO ST.
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Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
PLUMBING GAS
RISERS

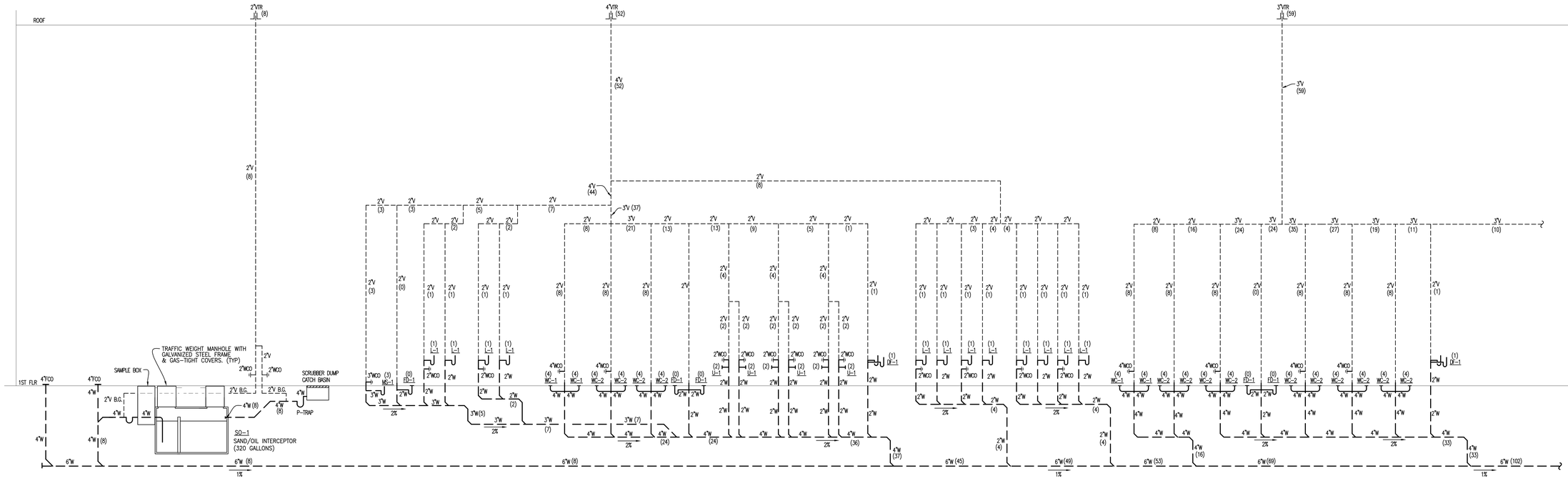
Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

P6.0

RPM #19-755 12/09/19



WASTE & VENT RISER DIAGRAM

SCALE NONE

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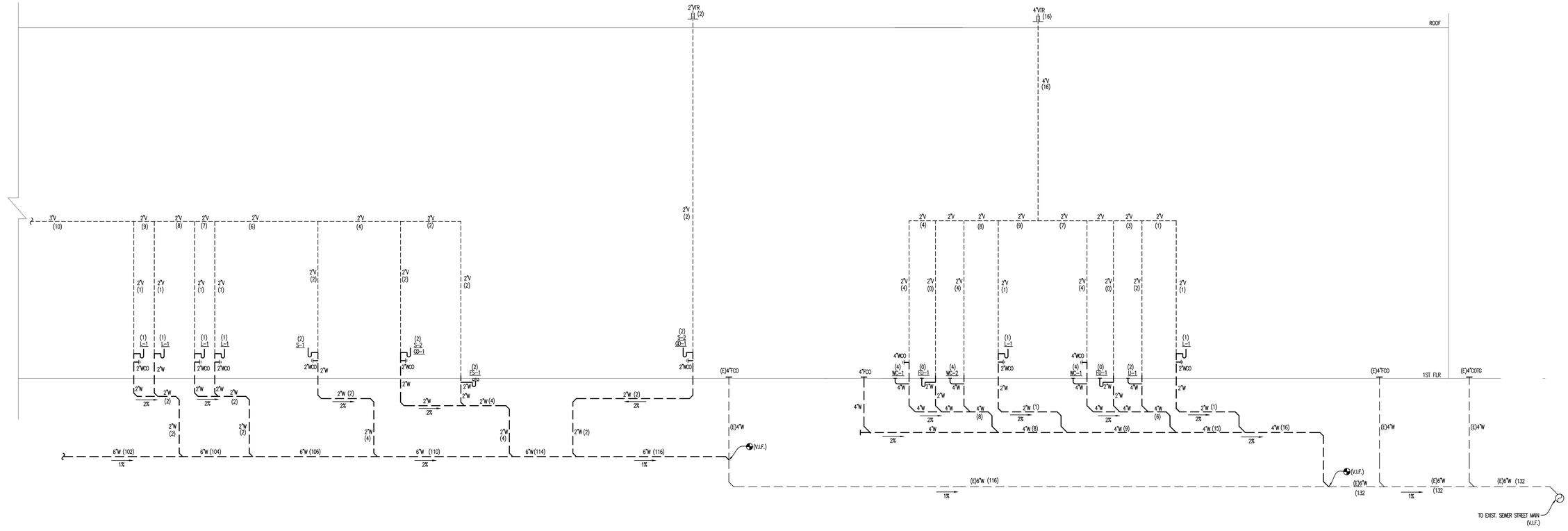

WASTE & VENT RISER DIAGRAM (CONTINUED)

SCALE NONE

2

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REGISTERED PROFESSIONAL ENGINEER — No. 30465 Exp.12-31-19 — MECHANICAL — STATE OF CALIFORNIA

12/08/2019

NOTE: NO. IN ( ) REPRESENTS DRAINAGE FIXTURE UNIT VALUE

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Owner:

Project:

TORRANCE
DCX 7

950 FRANCISCO ST.
TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
PLUMBING RISERS
WASTE & VENT

Project Number:	19436
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Sheet:

P7.0

RPM #19-755 12/08/19

PLUMBING FIXTURES MUST COMPLY WITH THE SPECIFIED CAL GREEN SECTION

TABLE 5.303.2.3.1
FIXTURE FLOW RATES

FIXTURE TYPE	FLOW RATE
SHOWERHEADS	2 GPM @ 80 PSI
LAVATORY FAUCETS NONRESIDENTIAL	0.5 GPM @ 60 PSI
KITCHEN FAUCETS	1.8 GPM @ 60 PSI
WASH FOUNTAINS	1.8 GPC/20 [RIM SPACE(IN.)] @60 PSI
METERING FAUCETS	0.20 GALLONS/CYCLE
METERING FAUCETS (WASH FOUNTAINS)	0.20 GPC/20 [RIM SPACE(IN.)] @60 PSI
GRAVITY TANK TYPE WATER CLOSETS	1.28 GALLONS/FLUSH
FLUSHOMETER TANK WATER CLOSETS	1.28 GALLONS/FLUSH
FLUSHOMETER VALVE WATER CLOSETS	1.28 GALLONS/FLUSH
ELECTROMECHANICAL HYDRAULIC WATER CLOSETS	1.28 GALLONS/FLUSH
URINALS	0.125 GALLONS/FLUSH

GREEN BUILDING REQUIREMENTS 11

THE CONTRACTOR SHALL VISIT SITE PRIOR TO BIDDING TO VERIFY LOCATION, ELEVATIONS, AND SIZES OF ALL EXISTING PLUMBING AND INFORM THE ARCHITECT OF ANY DISCREPANCIES.

FOR EXACT SPECIFICATIONS, MOUNTING HEIGHTS, AND LOCATIONS OF ALL PLUMBING FIXTURES, REFER TO ARCHITECTURAL DRAWINGS.

ACCURATE AS-BUILT DRAWINGS SHALL BE MADE DURING CONSTRUCTION AND SUBMITTED FOR APPROVAL UPON COMPLETION OF INSTALLATION.

ALL HOT WATER PIPING SHALL BE INSULATED PER CPC 609.11.ALSO SEE CALIFORNIA ENERGY CODE TABLE 120.3-A.

WATER HEATERS SHALL BE CERTIFIED BY ITS MANUFACTURER TO COMPLY WITH THE EFFICIENCY STANDARDS OF THE CALIFORNIA ENERGY COMMISION, 2016 EDITION.

THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, EQUIPMENT, TRANSPORTATION AND SERVICES NECESSARY FOR COMPLETION OF THE WORK. ALL MATERIALS AND WORK SHALL COMPLY WITH APPLICABLE CODES AND GOVERNING REGULATIONS AND MEET THE APPROVAL OF THE LOCAL AND STATE JURISDICTION.

THESE DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH ALL OTHER TRADES. THIS INCLUDES COORDINATING THE LOCATION AND SIZE OF ALL OPENINGS, LOCATIONS OF EQUIPMENT PAD, AND CHANGES OF ELEVATIONS.

LAVATORIES IN PUBLIC RESTROOMS SHALL COMPLY WITH SEC 407.4 CPC 2016 SELF-CLOSING OR SELF-CLOSING METERING FAUCETS SHALL BE INSTALLED ON LAVATORIES INTENDED TO SERVE THE TRANSIENT PUBLIC, SUCH AS THOSE IN, BUT NOT LIMITED TO, SERVICE STATIONS, TRAIN STATIONS, AIRPORTS, RESTAURANTS AND CONVENTION HALLS.

SLOPE ALL SEWER PIPING MINIMUM OF 2%.

ALL CONCEALED PIPING SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE 2016

ALL FAUCETS SHALL COMPLY WITH CALIFORNIA PROPOSITION 65 AND SHALL BE CERTIFIED TO NSF STANDARD 61 SECTION 9 FOR DRINKING WATER COMPONENTS

SUPPORT SUSPENDED PIPING IN ACCORDANCE WITH CPC 313.3 AND TABLE 313.6. SWAY BRACE SUSPENDED PIPING IN ACCORDANCE WITH NFPA #13, 4-6.4.3.5.

ALL REQUIRED CLEANOUTS SHALL BE INSTALLED AS PER SECTION 707.0 AND 719.0 OF THE CALIFORNIA PLUMBING CODE 2016

ALL PLUMBING VENTS SHALL TERMINATE NOT LESS TEN (10) FEET FROM OR AT LEAST THREE (3) FEET ABOVE ANY DOOR, OPENING, FRESH AIR INTAKE OR VENT SHAFT.

ALL CLEANOUTS SHALL BE INSTALLED WHERE READILY ACCESSIBLE. COORDINATE ALL CLEANOUT LOCATIONS WITH EQUIPMENT, CABINETS, ETC., AND THE ARCHITECT PRIOR TO ANY INSTALLATION.

COORDINATE ALL ROOF PENETRATIONS FOR MECHANICAL EQUIPMENT CONNECTIONS WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.

THIS PROJECT SHALL COMPLY WITH THE 2016 EDITIONS OF THE CALIFORNIA PLUMBING CODE AND CALGREEN.

ALL TRENCHES DEEPER THAN THE FOOTING OF ANY BUILDING OR STRUCTURE AND PARALLELING THE SAME SHALL BE AT LEAST FORTY-FIVE (45) DEGREES THERE FROM. (SEC. 313.3 CPC)

VENTS LESS THAN SIX (6) INCHES ABOVE THE FLOOD LEVEL RIM OF THE FIXTURE SHALL BE INSTALLED WITH APPROVED DRAINAGE FITTINGS, MATERIAL AND GRADE TO THE DRAIN.

LAVATORY FAUCETS IN RESTROOMS SHALL BE THE SELF CLOSING TYPE AND SHALL NOT EXCEED A WATER FLOW OF 0.20 GAL/USE AND 110°F DEGREE.

POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE.

PROVIDE 12 INCH MINIMUM CLEARANCE BETWEEN THE LOWEST PORTION OF THE REDUCED PRESSURE BACK FLOW ASSEMBLY AND THE GRADE.

THIS PROJECT SHALL COMPLY WITH THE 2016 EDITIONS OF THE CALIFORNIA PLUMBING CODE.

PLUMBING NOTES 7

WASTE & VENT DRAIN PIPING (ABOVE GRADE)
SHALL BE AB&I SERVICE WEIGHT CAST IRON NO-HUB SOIL PIPE AND FITTINGS WITH NO-HUB CLAMPS TO CONFORM TO CISPI STANDARD 301.04a & 310.04 AND CLEARLY MARKED WITH THE CAST IRON SOIL PIPE INSTITUTE TRADEMARK, MANUFACTURER'S NAME AND COUNTRY OF ORIGIN.

WASTE & VENT DRAIN PIPING (BELOW GRADE)
SOIL, WASTE & VENT DRAIN PIPING SHALL BE SCHEDULE 40 ABS PIPE OR SCHEDULE 40 PVC SOLID CORE AND FITTINGS WITH CEMENTED JOINTS.

WATER PIPING
SHALL BE TYPE "L" ABOVE GRADE, HARD DRAWN COPPER TUBING, WITH WROUGHT COPPER FITTINGS, SOLDER ALL JOINTS WITH LEAD-FREE SOLDER.

CONDENSATE DRAIN PIPING
SHALL BE TYPE "DWV" HARD DRAWN COPPER TUBING WITH WROUGHT COPPER FITTINGS, 50-50 SOLDERED JOINTS. INSULATE ALL CONDENSATE DRAIN PIPING WITHIN BUILDING INTERIOR.

PLUMBING LEGEND 4

SYMBOL	ABBREVIATION	DESCRIPTION
	POC	POINT OF CONNECTION
	S OR W	SOIL OR WASTE ABOVE FLOOR
W	S OR W	SOIL OR WASTE BELOW GRADE OR FLOOR
V	V	VENT
CW	CW	COLD WATER
HW	HW	HOT WATER
HWR	HWR	HOT WATER RETURN
DN	DN	PIPE DOWN
	VTR	VENT THRU ROOF
	COTG	CLEANOUT TO GRADE
	FCO	FLOOR CLEANOUT
	WCO	WALL CLEANOUT
CD	CD	CONDENSATE DRAIN
G	G	NATURAL GAS (7"W.C. LOW PRESSURE)
MPG	MPG	MEDIUM PRESSURE GAS (5 PSI) OR (1 PSI)
GW	GW	GREASE WASTE
IW	IW	INDUSTRIAL WASTE
ICW	ICW	INDUSTRIAL COLD WATER
IHW	IHW	INDUSTRIAL HOT WATER
	GPR	GAS PRESSURE REGULATOR
	AF	ABOVE FLOOR
	AP	ACCESS PANEL
	BG	BELOW GRADE
	BF	BELOW FLOOR
	(E)	EXISTING
	FFE	FINISH FLOOR ELEVATION
	HDR	HEADER
	IE	INVERT ELEVATION
	IW	INDIRECT WASTE
	SOV	SHUT-OFF VALVE
	TP	TRAP PRIMER LINE
	CFH	CUBIC FEET PER HOUR
	BTU/ HR	BRITISH UNITS PER HOUR
	TDL	TOTAL DEVELOPED LENGTH
	WHA	WATER HAMMER ARRESTER
	PSI	POUNDS PER SQUARE INCH
	(V.I.F.)	VERIFY IN FIELD (FOR EXACT LOCATION)
	WFU	WATER FIXTURE UNITS
	DFU	DRAINAGE FIXTURE UNITS
	DOM.	DOMESTIC
	T&P	TEMPERATURE & PRESSURE RELIEF
	OFD	OVERFLOW DRAIN
	CP	CIRCULATING PUMP
	GPR	GAS PRESSURE REGULATOR

UNIT NO.	DESCRIPTION	CONNECTION SIZES TRAP	W	V	CW	HW	REMARKS
WC-1	WATER CLOSET	INT.	4"	2"	1"	---	WALL MOUNTED SENSOR F.V. (1.28 GPF) ADA USE HEIGHT
WC-2	WATER CLOSET	INT.	4"	2"	1"	---	WALL MOUNTED SENSOR F.V. (1.28 GPF) STANDARD HEIGHT
U-1	URINAL	INT	2"	2"	3/4"	---	WALL HUNG, SENSOR F.V. (0.125 GPF) ADA-COMPLIANT
L-1	LAVATORY	1½"	2"	2"	½"	½"	UNDER MOUNT (ADA) SENSOR FAUCET 0.20 GAL. PER USE
MS-1	MOP SINK	3"	3"	2"	3/4"	3/4"	FLOOR MOUNT
IWH-1	INSTANTANEOUS WATER HEATER	---	---	---	½"	½"	4.15 KW, 277V., 1ø MICRO PROCESSOR SERIES
FD-1	FLOOR DRAIN	2"	2"	2"	---	---	JOSAM #30000-5A, WITH 5" BRONZE TOP, CAST IRON BODY.
TP-1	TRAP PRIMER	---	---	---	½"	---	MIFAB M2-5000-NPB
TMV-1	THERMOSTATIC MIXING VALVE	---	---	---	1/2"	1/2"	BRADLEY #S59-400A THERMOSTATIC MIXING VALVE, SET TO 105°F (5 GPM MAX)

PLUMBING FIXTURE SCHEDULE 1

WATER CLOSET (WC-1) (ADA COMPLIANT)
KOHLER K-4325 "KINGSTON" HIGH EFFICIENCY, 1.28 GPF WALL MOUNTED VITREOUS CHINA, SIPHON JET ACTION ELONGATED BOWL. SLOAN OPTIMA PLUS 8111-1.28, 1.28 GPF, EXPOSED BATTERY SENSOR FLUSH VALVE WITH VACUUM BREAKER. OLSONITE 10CC OPEN FRONT SOLID PLASTIC WHITE SEAT. PROVIDE JOSAM (SINGLE) OR 12724 WALL CARRIER. MOUNT AT ADA USE HEIGHT.

WATER CLOSET (WC-2): (STANDARD HEIGHT)
KOHLER K-4325 "KINGSTON" HIGH EFFICIENCY, 1.28 GPF WALL MOUNTED VITREOUS CHINA, SIPHON JET ACTION ELONGATED BOWL. SLOAN OPTIMA PLUS 8111-1.28, 1.28 GPF, EXPOSED BATTERY SENSOR FLUSH VALVE WITH VACUUM BREAKER. OLSONITE 10CC OPEN FRONT SOLID PLASTIC WHITE SEAT. PROVIDE JOSAM (SINGLE) OR 12724 WALL CARRIER. MOUNT AT STANDARD USE HEIGHT.

URINAL (U-1): (ADA COMPLIANT)
KOHLER K-5452-ET "DEXTER", 0.125 GPF ULTRA HIGH EFFICIENCY, WALL HUNG, VITREOUS CHINA WASHOUT FLUSH ACTION. SLOAN OPTIMA PLUS 8186-0.125, EXPOSED BATTERY SENSOR VALVE WITH VACUUM BREAKER. MOUNT AT ADA COMPLIANT HEIGHT.

LAVATORY (L-1): (ADA COMPLIANT)
SLOAN SS-3001 OVAL UNDER COUNTER MOUNT LAVATORY, 19⅛"x16⅛" VITREOUS CHINA. CHICAGO FAUCETS EQ-A12A-13ABCP BATTERY SENSOR FAUCET WITH 0.5 GPM VANDAL RESISTANT SPRAY HEAD, SINGLE SUPPLY, THERMOSTATIC MIXING VALVE SET TO 105°F (ASSE 1070). CHROME PLATED GRID DRAIN AND TAILPIECE, 17 GAUGE CHROME PLATED TUBULAR BRASS P-TRAP. MCGUIRE LFH3165LKSS20 ANGLE STOPS AND SUPPLIES. COVER HOT WATER, TRAP, AND DRAIN PIPING WITH INSULATION TO PROTECT THE HANDICAPPED.

INSTANTANEOUS WATER HEATER (IWH-1):
CHRONOMITE M-15-L, 4.15 KW, 277V., 1ø, COMPLETE WITH 1/2 GPM IN-LINE FLOW CONTROL. (ENERGY FACTOR 0.99) MICRO PROCESSOR SERIES SET TO 104° F

FLOOR DRAIN (FD-1):
JOSAM 30000-5A CAST IRON BODY WITH FLASHING CLAMP, 5" ROUND NICKEL BRONZE STRAINER.

TRAP PRIMER (TP-1):
MIFAB M2-5000-NPB, TRAP SEAL PRIMER, LEAD FREE. SERVES UP TO 3 DRAINS.

HOSE BIBB (HB-1):
WOODFORD B24-P-3/4. HOSE BIBB WITH NON-REMOVEABLE VACUUM BREAKER, ASSE 1011.

MIXING VALVE (TMV-1): (SET TO 105°F MAX)
POINT OF USE THERMOSTATIC MIXING VALVE BRADLEY #S59-400A, SET TO 105°F, 110° MAX, LEAD FREE BRONZE BODY, MINIMUM FLOW: 0.5 GPM, ASSE 1070.

WATER HAMMER ARRESTERS (WHA):
PRECISION PLUMBING PRODUCTS
3/4" = MODEL# SC-750 (12-32) FIXTURE UNITS
1" = MODEL# SC-1000 (33-60) FIXTURE UNITS

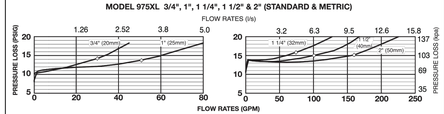
ACCESS PANELS (AP):
JOSAM 58656 SERIES SQUARE STAINLESS STEEL ACCESS FRAME, ANCHOR SLOTS AND HINGED SMOOTH SECURED COVER

PLUMBING FIXTURE SPECIFICATIONS 2

EXIST 2"BACKFLOW

ZURN WILKINS **Model 975XL**
Reduced Pressure Principle Assembly

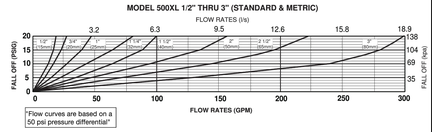
MODEL 975XL 3/4", 1", 1 1/4", 1 1/2" & 2" (STANDARD & METRIC)



EXIST 2"PRV

ZURN WILKINS **Model 500XL**
Water Pressure Reducing Valve with Integral By-pass Check Valve

MODEL 500XL 1/2" THRU 3" (STANDARD & METRIC)



Flow curves are based on a 50 psi pressure differential

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REGISTERED PROFESSIONAL ENGINEER
No. 30465
Exp.12-31-21
MECHANICAL
STATE OF CALIFORNIA
01/08/2020

BFP & PRV FLOW CURVES 3

WATER PRESSURE CALCULATIONS 5

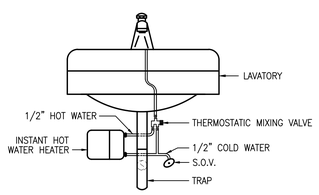
A. SYSTEM DATA:
1. MAXIMUM WATER SUPPLY PRESSURE = 86 PSI
2. MINIMUM WATER SUPPLY PRESSURE = 76 PSI
DEMAND = 23.5 FU (FLUSH VALVE) = 38 GPM

B. FIXED PRESSURE LOSSES:
(EXIST) 1. (E)¾" WATER METER = 0.6 PSI
WILKINS 975XL (EXIST) 2. (E)¾" BACKFLOW PREVENTER = 13 PSI
(EXIST) 3. (E)¾" CW LOSS, 270 ' X 1.8 PSI/100'= 4.86 PSI
4. MINIMUM PRESSURE AVAILABLE @ PRV = 54.54 PSI
WILKINS 500XL-HLR (EXIST) 5. PRV SET FOR 80 PSI. PRV LOSS = 4 PSI
6. PRESSURE AVAILABLE @ PRV OUTLET = 50.54 PSI
7. STATIC PRESSURE: 10' FT. X 0.43 = 4.3 PSI

C. MINIMUM PRESSURE REQUIRED = 25 PSI
D. AVAILABLE PRESSURE FOR PIPING LOSSES = 21.24 PSI
E. MAXIMUM DEVELOPED PIPE LENGTH:
1. MEASURED LENGTH = 100 FT.
2. FITTINGS ALLOWANCE = X 1.20
TOTAL = 120 FT.
F. ALLOWABLE FRICTION LOSS PER 100 FT. OF PIPE:
1. 21.24 PSI / 120 FT. X 100'= 17.7 PSI
G. PIPE SIZING TABLE:
1. PIPING USED = TYPE "L" COPPER
2. MAXIMUM VELOCITY ALLOWED: CW = 8 FPS, HW = 5 FPS

PIPE SIZE (INCH)	CW FLOW RATE (GPM)	CW MAX FIXTURE UNITS FV	CW MAX FIXTURE UNITS TANK	HW FLOW RATE (GPM)	HW MAX FU
1/2	4	---	4	3	3
3/4	12	---	16	7	8
1	20	---	30	12	16
1-1/4	31	14	56	18	28
1-1/2	44	35	103	27	46
2	76	132	254	48	119
2-1/2	115	329	455	74	245

PIPE MATERIAL 8



FOR LAVATORIES

INSTANTANEOUS WATER HEATER #1 9

LAPC 610.4.1.1

THE HOT WATER SYSTEM SHALL NOT ALLOW MORE THAN 0.6 GALLONS OF WATER TO BE DELIVERED TO ANY FIXTURE BEFORE HOT WATER ARRIVES.

LENGTH OF COPPER TYPE L PIPE CONTAINING 0.6 GALLONS OF WATER

Nom. Diameter	1/2"	3/4"	1/2"	1/2"	1/2"
Maximum Length	49' 6"	23' 10"	14' 0"	9' 2"	6' 6"
Gallons per foot	0.012119	0.025142	0.042865	0.065289	0.092413

LAPC 610.4.1.1 10

FIXTURE UNIT COUNT, (FU) 6

FIXTURE UNIT COUNT, (FU)

DCX7 T.I. (Building 1) FIXTURE TYPE	QUANTITY	CPC 2016 PUBLIC USE PER TABLE 702.1 AND APPENDIX 'A' TABLE A 103.1 (WFU'S) WATER FIXTURE UNITS		(DFU'S) DRAINAGE FIXTURE UNITS	
WATER CLOSET (FLUSH VALVE)	3	x 5 (EA)	= 15	x 4 (EA)	= 12
URINALS (FLUSH VALVE)	1	x 4 (EA)	= 4	x 2 (EA)	= 2
LAVATORY	2	x 1 (EA)	= 2	x 1 (EA)	= 2
EXIST. 1st HOSE BIB	1	x 2.5 (EA)	= 2.5	x 0 (EA)	= 0
FLOOR DRAINS (EMERGENCY)	2	x 0 (EA)	= 0	x 0 (EA)	= 0
		TOTAL	23.5		16
		GPM	38		

FIXTURE UNIT COUNT, (FU) 6

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Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
PLUMBING NOTES, DETAILS SCHEDULES & SPECIFICATIONS

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:
P-1

RPM #19-755 (Building 1) 01/08/20

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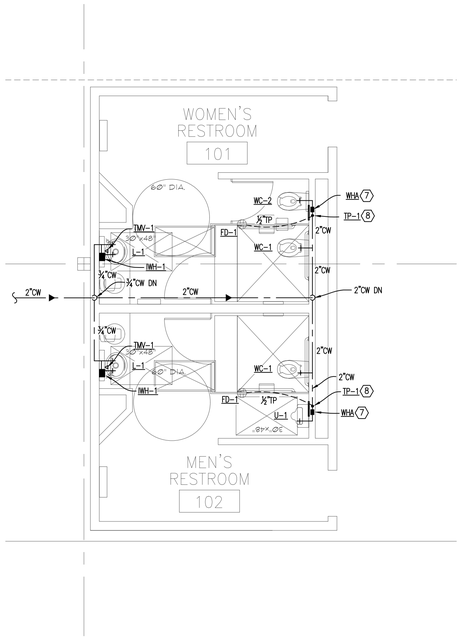
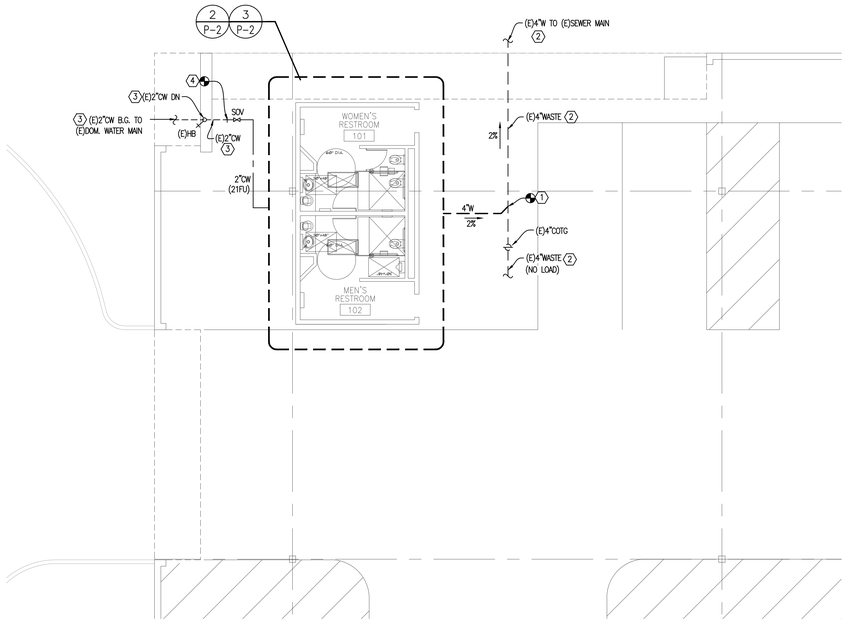


ENLARGE PLUMBING PLAN - WATER | SCALE 1/4"=1'-0" | 2



OVERALL PARTIAL PLUMBING RESTROOM PLAN | SCALE 1/8"=1'-0" | 1

KEYED NOTES:

1. CONNECT TO EXISTING 4"SEWER LINE AT THIS LOCATION. CONTRACTOR SHALL VERIFY IN FIELD FOR EXACT SIZE, DEPTH & LOCATION PRIOR TO CONSTRUCTION.
2. EXISTING WASTE LINE SHOWN ON THESE PLANS ARE ONLY ASSUMPTIONS & MAY NOT BE IN THIS LOCATION. PRIOR TO BID AND CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING SITE CONDITIONS & PROVIDE ALTERNATE BID PRICE FOR UNDERGROUND CAMERA SEWER PIPE SCOPE TO LOCATE EXISTING SEWER PIPE SIZE, DEPTH & DIRECTION OF FLOW.
3. EXISTING WATER LINE SHOWN ON THESE PLANS ARE ONLY ASSUMPTIONS & MAY NOT BE IN THIS LOCATION. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS ON SITE PRIOR TO BID AND CONSTRUCTION.
4. CONNECT TO EXISTING WATER LINE AT THIS LOCATION. CONTRACTOR SHALL VERIFY IN FIELD FOR SIZE & LOCATION PRIOR TO BID AND CONSTRUCTION.
5. CONTRACTOR SHALL MAINTAIN V.T.R. 10'-0"MIN DISTANCE AWAY FROM ALL ROOF TOP A/C UNIT'S FRESH AIR INTAKE.
6. 2"WCO. CLEAN-OUT SHALL BE INSTALLED ABOVE THE FIXTURE CONNECTION FITTING, SERVING EACH URINAL, REGARDLESS OF THE LOCATION OF THE URINAL IN THE BUILDING. CPC 2016 707.4
7. WATER HAMMER ARRESTER, (WHA) ACCESS PANEL.
8. PROVIDE TP-1, TRAP PRIMER DEVICE AND EXTEND ½"TP TO FLOOR DRAIN

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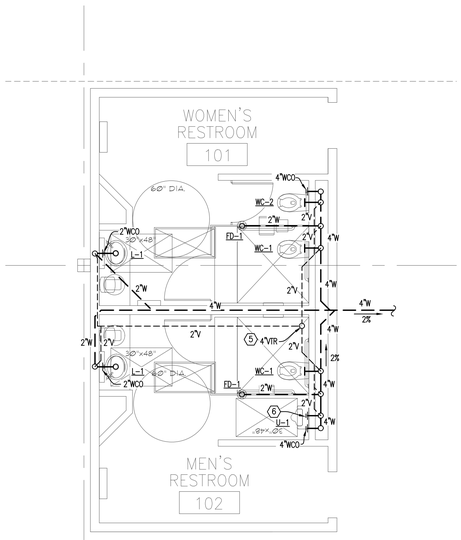
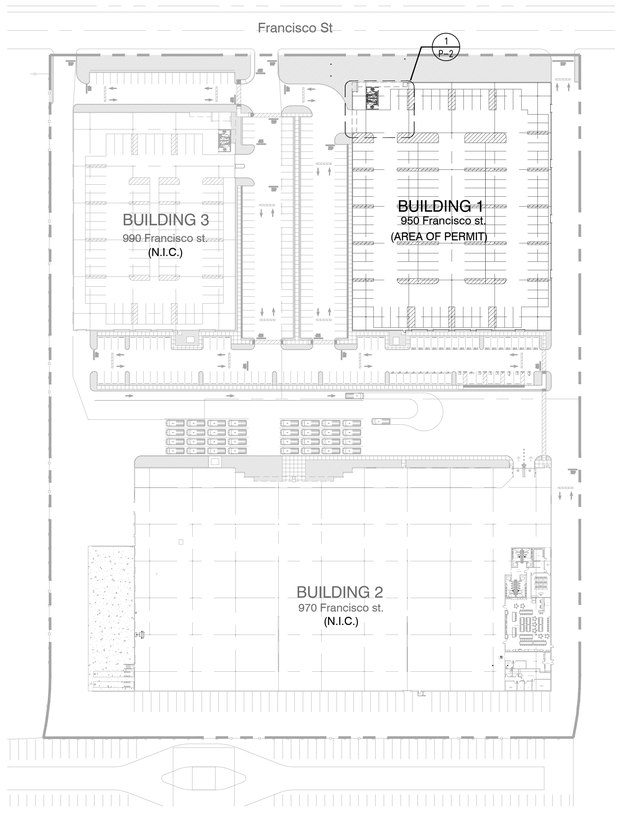


ENLARGE PLUMBING PLAN - WASTE & VENT | SCALE 1/4"=1'-0" | 3



PLUMBING SITE KEY PLAN | SCALE 1"=80'-0" | A

Title:
PLUMBING PLANS

Project Number:	19436
Drawn by:	ML
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P2.0

RPM #19-755 (Building 1) 01/08/20

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STATE OF CALIFORNIA
01/08/2020

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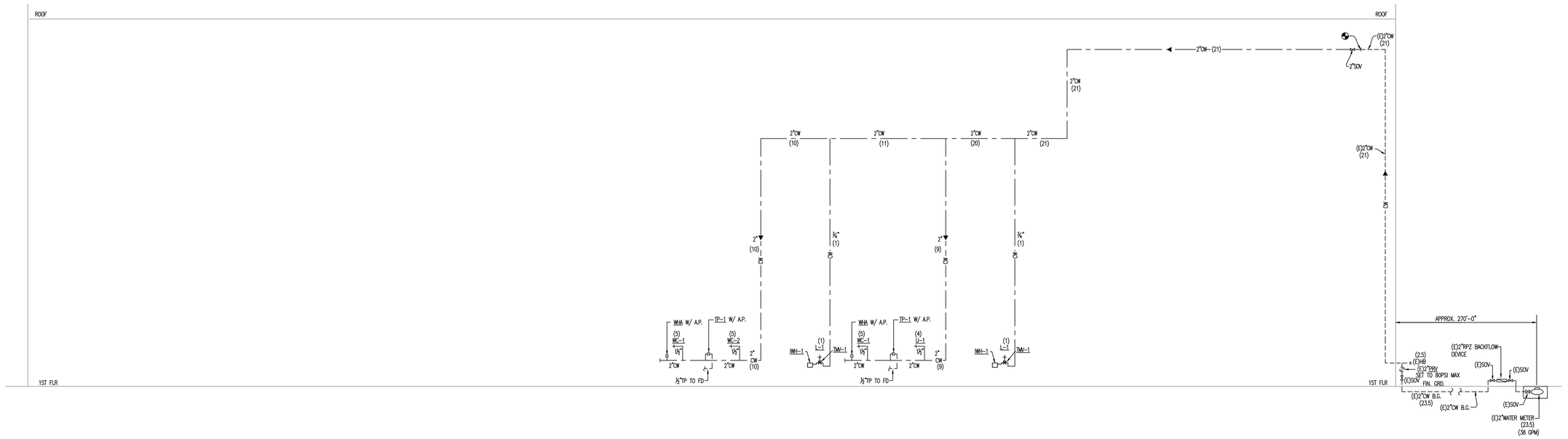
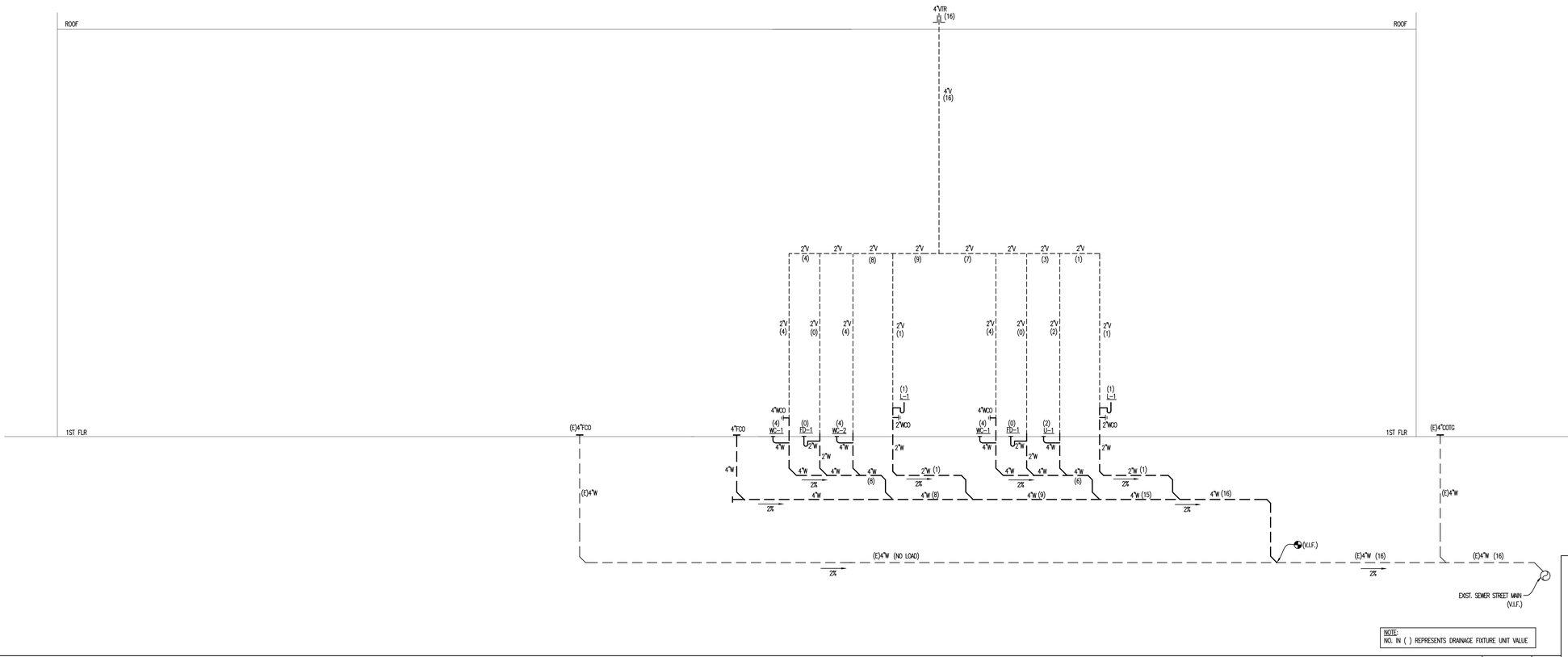


NOTE:
NO. IN ( ) REPRESENTS WATER FIXTURE UNIT VALUE

HOT & COLD RISER DIAGRAM

SCALE NONE | 1



NOTE:
NO. IN ( ) REPRESENTS DRAINAGE FIXTURE UNIT VALUE

WASTE & VENT RISER DIAGRAM

SCALE NONE | 2

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Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
PLUMBING RISERS
WATER, WASTE & VENT

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

P3.0

RPM #19-755 (Building 1) 01/08/20

PLUMBING FIXTURES MUST COMPLY WITH THE SPECIFIED CAL GREEN SECTION

TABLE 5.303.2.3.1
FIXTURE FLOW RATES

FIXTURE TYPE	FLOW RATE
SHOWERHEADS	2 GPM @ 80 PSI
LAVATORY FAUCETS NONRESIDENTIAL	0.5 GPM @ 60 PSI
KITCHEN FAUCETS	1.8 GPM @ 60 PSI
WASH FOUNTAINS	1.8 GPC/20 [RIM SPACE(IN.)] @60 PSI
METERING FAUCETS	0.20 GALLONS/CYCLE
METERING FAUCETS (WASH FOUNTAINS)	0.20 GPC/20 [RIM SPACE(IN.)] @60 PSI
GRAVITY TANK TYPE WATER CLOSETS	1.28 GALLONS/FLUSH
FLUSHOMETER TANK WATER CLOSETS	1.28 GALLONS/FLUSH
FLUSHOMETER VALVE WATER CLOSETS	1.28 GALLONS/FLUSH
ELECTROMECHANICAL HYDRAULIC WATER CLOSETS	1.28 GALLONS/FLUSH
URINALS	0.125 GALLONS/FLUSH

GREEN BUILDING REQUIREMENTS 11

THE CONTRACTOR SHALL VISIT SITE PRIOR TO BIDDING TO VERIFY LOCATION, ELEVATIONS, AND SIZES OF ALL EXISTING PLUMBING AND INFORM THE ARCHITECT OF ANY DISCREPANCIES.

FOR EXACT SPECIFICATIONS, MOUNTING HEIGHTS, AND LOCATIONS OF ALL PLUMBING FIXTURES, REFER TO ARCHITECTURAL DRAWINGS.

ACCURATE AS-BUILT DRAWINGS SHALL BE MADE DURING CONSTRUCTION AND SUBMITTED FOR APPROVAL UPON COMPLETION OF INSTALLATION.

ALL HOT WATER PIPING SHALL BE INSULATED PER CPC 609.11.ALSO SEE CALIFORNIA ENERGY CODE TABLE 120.3-A.

WATER HEATERS SHALL BE CERTIFIED BY ITS MANUFACTURER TO COMPLY WITH THE EFFICIENCY STANDARDS OF THE CALIFORNIA ENERGY COMMISION, 2016 EDITION.

THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, EQUIPMENT, TRANSPORTATION AND SERVICES NECESSARY FOR COMPLETION OF THE WORK. ALL MATERIALS AND WORK SHALL COMPLY WITH APPLICABLE CODES AND GOVERNING REGULATIONS AND MEET THE APPROVAL OF THE LOCAL AND STATE JURISDICTION.

THESE DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH ALL OTHER TRADES. THIS INCLUDES COORDINATING THE LOCATION AND SIZE OF ALL OPENINGS, LOCATIONS OF EQUIPMENT PAD, AND CHANGES OF ELEVATIONS.

LAVATORIES IN PUBLIC RESTROOMS SHALL COMPLY WITH SEC 407.4 CPC 2016 SELF-CLOSING OR SELF-CLOSING METERING FAUCETS SHALL BE INSTALLED ON LAVATORIES INTENDED TO SERVE THE TRANSIENT PUBLIC, SUCH AS THOSE IN, BUT NOT LIMITED TO, SERVICE STATIONS, TRAIN STATIONS, AIRPORTS, RESTAURANTS AND CONVENTION HALLS.

SLOPE ALL SEWER PIPING MINIMUM OF 2%.

ALL CONCEALED PIPING SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE 2016

ALL FAUCETS SHALL COMPLY WITH CALIFORNIA PROPOSITION 65 AND SHALL BE CERTIFIED TO NSF STANDARD 61 SECTION 9 FOR DRINKING WATER COMPONENTS

SUPPORT SUSPENDED PIPING IN ACCORDANCE WITH CPC 313.3 AND TABLE 313.6. SWAY BRACE SUSPENDED PIPING IN ACCORDANCE WITH NFPA #13, 4-6.4.3.5.

ALL REQUIRED CLEANOUTS SHALL BE INSTALLED AS PER SECTION 707.0 AND 719.0 OF THE CALIFORNIA PLUMBING CODE 2016

ALL PLUMBING VENTS SHALL TERMINATE NOT LESS TEN (10) FEET FROM OR AT LEAST THREE (3) FEET ABOVE ANY DOOR, OPENING, FRESH AIR INTAKE OR VENT SHAFT.

ALL CLEANOUTS SHALL BE INSTALLED WHERE READILY ACCESSIBLE. COORDINATE ALL CLEANOUT LOCATIONS WITH EQUIPMENT, CABINETS, ETC., AND THE ARCHITECT PRIOR TO ANY INSTALLATION.

COORDINATE ALL ROOF PENETRATIONS FOR MECHANICAL EQUIPMENT CONNECTIONS WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.

THIS PROJECT SHALL COMPLY WITH THE 2016 EDITIONS OF THE CALIFORNIA PLUMBING CODE AND CALGREEN.

ALL TRENCHES DEEPER THAN THE FOOTING OF ANY BUILDING OR STRUCTURE AND PARALLELING THE SAME SHALL BE AT LEAST FORTY-FIVE (45) DEGREES THERE FROM. (SEC. 313.3 CPC)

VENTS LESS THAN SIX (6) INCHES ABOVE THE FLOOD LEVEL RIM OF THE FIXTURE SHALL BE INSTALLED WITH APPROVED DRAINAGE FITTINGS, MATERIAL AND GRADE TO THE DRAIN.

LAVATORY FAUCETS IN RESTROOMS SHALL BE THE SELF CLOSING TYPE AND SHALL NOT EXCEED A WATER FLOW OF 0.20 GAL/USE AND 110°F DEGREE.

POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE.

PROVIDE 12 INCH MINIMUM CLEARANCE BETWEEN THE LOWEST PORTION OF THE REDUCED PRESSURE BACK FLOW ASSEMBLY AND THE GRADE.

THIS PROJECT SHALL COMPLY WITH THE 2016 EDITIONS OF THE CALIFORNIA PLUMBING CODE.

PLUMBING NOTES 7

WASTE & VENT DRAIN PIPING (ABOVE GRADE)
SHALL BE AB&I SERVICE WEIGHT CAST IRON NO-HUB SOIL PIPE AND FITTINGS WITH NO-HUB CLAMPS TO CONFORM TO CISPI STANDARD 301.04a & 310.04 AND CLEARLY MARKED WITH THE CAST IRON SOIL PIPE INSTITUTE TRADEMARK, MANUFACTURER'S NAME AND COUNTRY OF ORIGIN.

WASTE & VENT DRAIN PIPING (BELOW GRADE)
SOIL, WASTE & VENT DRAIN PIPING SHALL BE SCHEDULE 40 ABS PIPE OR SCHEDULE 40 PVC SOLID CORE AND FITTINGS WITH CEMENTED JOINTS.

WATER PIPING
SHALL BE TYPE "L" ABOVE GRADE, HARD DRAWN COPPER TUBING, WITH WROUGHT COPPER FITTINGS, SOLDER ALL JOINTS WITH LEAD-FREE SOLDER.

CONDENSATE DRAIN PIPING
SHALL BE TYPE "DWV" HARD DRAWN COPPER TUBING WITH WROUGHT COPPER FITTINGS, 50-50 SOLDERED JOINTS. INSULATE ALL CONDENSATE DRAIN PIPING WITHIN BUILDING INTERIOR.

PLUMBING LEGEND 4

SYMBOL	ABBREVIATION	DESCRIPTION
	POC	POINT OF CONNECTION
	S OR W	SOIL OR WASTE ABOVE FLOOR
W	S OR W	SOIL OR WASTE BELOW GRADE OR FLOOR
V	V	VENT
CW	CW	COLD WATER
HW	HW	HOT WATER
HWR	HWR	HOT WATER RETURN
DN	DN	PIPE DOWN
	VTR	VENT THRU ROOF
	COTG	CLEANOUT TO GRADE
	FCO	FLOOR CLEANOUT
	WCO	WALL CLEANOUT
CD	CD	CONDENSATE DRAIN
G	G	NATURAL GAS (7"W.C. LOW PRESSURE)
MPG	MPG	MEDIUM PRESSURE GAS (5 PSI) OR (1 PSI)
GW	GW	GREASE WASTE
IW	IW	INDUSTRIAL WASTE
ICW	ICW	INDUSTRIAL COLD WATER
IHW	IHW	INDUSTRIAL HOT WATER
	GPR	GAS PRESSURE REGULATOR
	AF	ABOVE FLOOR
	AP	ACCESS PANEL
	BG	BELOW GRADE
	BF	BELOW FLOOR
	(E)	EXISTING
	FFE	FINISH FLOOR ELEVATION
	HDR	HEADER
	IE	INVERT ELEVATION
	IW	INDIRECT WASTE
	SOV	SHUT-OFF VALVE
	TP	TRAP PRIMER LINE
	CFH	CUBIC FEET PER HOUR
	BTU/ HR	BRITISH UNITS PER HOUR
	TDL	TOTAL DEVELOPED LENGTH
	WHA	WATER HAMMER ARRESTER
	PSI	POUNDS PER SQUARE INCH
	(V.I.F.)	VERIFY IN FIELD (FOR EXACT LOCATION)
	WFU	WATER FIXTURE UNITS
	DFU	DRAINAGE FIXTURE UNITS
	DOM.	DOMESTIC
	T&P	TEMPERATURE & PRESSURE RELIEF
	OFD	OVERFLOW DRAIN
	CP	CIRCULATING PUMP
	GPR	GAS PRESSURE REGULATOR

UNIT NO.	DESCRIPTION	CONNECTION SIZES TRAP	W	V	CW	HW	REMARKS
WC-1	WATER CLOSET	INT.	4"	2"	1"	---	WALL MOUNTED SENSOR F.V. (1.28 GPF) ADA USE HEIGHT
WC-2	WATER CLOSET	INT.	4"	2"	1"	---	WALL MOUNTED SENSOR F.V. (1.28 GPF) STANDARD HEIGHT
U-1	URINAL	INT	2"	2"	3/4"	---	WALL HUNG, SENSOR F.V. (0.125 GPF) ADA-COMPLIANT
L-1	LAVATORY	1½"	2"	2"	½"	½"	UNDER MOUNT (ADA) SENSOR FAUCET 0.20 GAL. PER USE
MS-1	MOP SINK	3"	3"	2"	3/4"	3/4"	FLOOR MOUNT
IWH-1	INSTANTANEOUS WATER HEATER	---	---	---	½"	½"	4.15 KW, 277V., 1ø MICRO PROCESSOR SERIES
FD-1	FLOOR DRAIN	2"	2"	2"	---	---	JOSAM #30000-5A, WITH 5" BRONZE TOP, CAST IRON BODY.
TP-1	TRAP PRIMER	---	---	---	½"	---	MIFAB M2-5000-NPB
TMV-1	THERMOSTATIC MIXING VALVE	---	---	---	1/2"	1/2"	BRADLEY #S59-400A THERMOSTATIC MIXING VALVE, SET TO 105°F (5 GPM MAX)

PLUMBING FIXTURE SCHEDULE 1

WATER CLOSET (WC-1) (ADA COMPLIANT)
KOHLER K-4325 "KINGSTON" HIGH EFFICIENCY, 1.28 GPF WALL MOUNTED VITREOUS CHINA, SIPHON JET ACTION ELONGATED BOWL. SLOAN OPTIMA PLUS 8111-1.28, 1.28 GPF, EXPOSED BATTERY SENSOR FLUSH VALVE WITH VACUUM BREAKER. OLSONITE 10CC OPEN FRONT SOLID PLASTIC WHITE SEAT. PROVIDE JOSAM (SINGLE) OR 12724 WALL CARRIER. MOUNT AT ADA USE HEIGHT.

WATER CLOSET (WC-2): (STANDARD HEIGHT)
KOHLER K-4325 "KINGSTON" HIGH EFFICIENCY, 1.28 GPF WALL MOUNTED VITREOUS CHINA, SIPHON JET ACTION ELONGATED BOWL. SLOAN OPTIMA PLUS 8111-1.28, 1.28 GPF, EXPOSED BATTERY SENSOR FLUSH VALVE WITH VACUUM BREAKER. OLSONITE 10CC OPEN FRONT SOLID PLASTIC WHITE SEAT. PROVIDE JOSAM (SINGLE) OR 12724 WALL CARRIER. MOUNT AT STANDARD USE HEIGHT.

URINAL (U-1): (ADA COMPLIANT)
KOHLER K-5452-ET "DEXTER", 0.125 GPF ULTRA HIGH EFFICIENCY, WALL HUNG, VITREOUS CHINA WASHOUT FLUSH ACTION. SLOAN OPTIMA PLUS 8186-0.125, EXPOSED BATTERY SENSOR VALVE WITH VACUUM BREAKER. MOUNT AT ADA COMPLIANT HEIGHT.

LAVATORY (L-1): (ADA COMPLIANT)
SLOAN SS-3001 OVAL UNDER COUNTER MOUNT LAVATORY, 19½"x16½" VITREOUS CHINA. CHICAGO FAUCETS EQ-A12A-13ABCP BATTERY SENSOR FAUCET WITH 0.5 GPM VANDAL RESISTANT SPRAY HEAD, SINGLE SUPPLY, THERMOSTATIC MIXING VALVE SET TO 105°F (ASSE 1070). CHROME PLATED GRID DRAIN AND TAILPIECE, 17 GAUGE CHROME PLATED TUBULAR BRASS P-TRAP. MCGUIRE LFH3165LKSS20 ANGLE STOPS AND SUPPLIES. COVER HOT WATER, TRAP, AND DRAIN PIPING WITH INSULATION TO PROTECT THE HANDICAPPED.

INSTANTANEOUS WATER HEATER (IWH-1):
CHRONOMITE M-15-L, 4.15 KW, 277V., 1ø, COMPLETE WITH 1/2 GPM IN-LINE FLOW CONTROL. (ENERGY FACTOR 0.99)
MICRO PROCESSOR SERIES SET TO 104° F

FLOOR DRAIN (FD-1):
JOSAM 30000-5A CAST IRON BODY WITH FLASHING CLAMP, 5" ROUND NICKEL BRONZE STRAINER.

TRAP PRIMER (TP-1):
MIFAB M2-5000-NPB, TRAP SEAL PRIMER, LEAD FREE. SERVES UP TO 3 DRAINS.

HOSE BIBB (HB-1):
WOODFORD B24-P-3/4. HOSE BIBB WITH NON-REMOVEABLE VACUUM BREAKER, ASSE 1011.

MIXING VALVE (TMV-1): (SET TO 105°F MAX)
POINT OF USE THERMOSTATIC MIXING VALVE BRADLEY #S59-400A, SET TO 105°F, 110° MAX, LEAD FREE BRONZE BODY, MINIMUM FLOW: 0.5 GPM, ASSE 1070.

WATER HAMMER ARRESTERS (WHA):
PRECISION PLUMBING PRODUCTS
3/4" = MODEL# SC-750 (12-32) FIXTURE UNITS
1" = MODEL# SC-1000 (33-60) FIXTURE UNITS

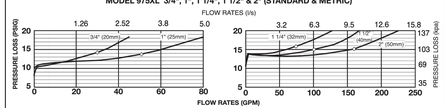
ACCESS PANELS (AP):
JOSAM 58656 SERIES SQUARE STAINLESS STEEL ACCESS FRAME, ANCHOR SLOTS AND HINGED SMOOTH SECURED COVER

PLUMBING FIXTURE SPECIFICATIONS 2

EXIST 2"BACKFLOW

ZURN WILKINS **Model 975XL**
Reduced Pressure Principle Assembly

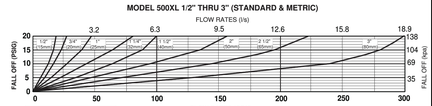
MODEL 975XL 3/4", 1", 1 1/4", 1 1/2" & 2" (STANDARD & METRIC)



EXIST 2"PRV

ZURN WILKINS **Model 500XL**
Water Pressure Reducing Valve with Integral By-pass Check Valve

MODEL 500XL 1/2" THRU 3" (STANDARD & METRIC)



"Flow curves are based on a 50 psi pressure differential"

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01/08/2020

BFP & PRV FLOW CURVES 3

WATER PRESSURE CALCULATIONS 5

A. SYSTEM DATA:
1. MAXIMUM WATER SUPPLY PRESSURE = 86 PSI
2. MINIMUM WATER SUPPLY PRESSURE = 76 PSI
DEMAND = 23.5 FU (FLUSH VALVE) = 38 GPM

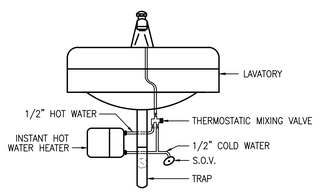
B. FIXED PRESSURE LOSSES:
(EXIST) 1. (E)2" WATER METER = 0.6 PSI
WILKINS 975XL (EXIST) 2. (E)2" BACKFLOW PREVENTER = 13 PSI
(EXIST) 3. (E)2" CW LOSS, 270 ' X 1.8 PSI/100'= 4.86 PSI
4. MINIMUM PRESSURE AVAILABLE @ PRV = 54.54 PSI
WILKINS 500XL-HLR (EXIST) 5. PRV SET FOR 80 PSI. PRV LOSS = 4 PSI
6. PRESSURE AVAILABLE @ PRV OUTLET = 50.54 PSI
7. STATIC PRESSURE: 10' FT. X 0.43 = 4.3 PSI

C. MINIMUM PRESSURE REQUIRED = 25 PSI
D. AVAILABLE PRESSURE FOR PIPING LOSSES = 21.24 PSI
E. MAXIMUM DEVELOPED PIPE LENGTH:
1. MEASURED LENGTH = 100 FT.
2. FITTINGS ALLOWANCE = X 1.20
TOTAL = 120 FT.
F. ALLOWABLE FRICTION LOSS PER 100 FT. OF PIPE:
1. 21.24 PSI / 120 FT. X 100'= 17.7 PSI
G. PIPE SIZING TABLE:
1. PIPING USED = TYPE "L" COPPER
2. MAXIMUM VELOCITY ALLOWED: CW = 8 FPS, HW = 5 FPS

PIPE SIZE (INCH)	CW FLOW RATE (GPM)	CW MAX FIXTURE UNITS FV	TANK	HW FLOW RATE (GPM)	HW MAX FU
1/2	4	---	4	3	3
3/4	12	---	16	7	8
1	20	---	30	12	16
1-1/4	31	14	56	18	28
1-1/2	44	35	103	27	46
2	76	132	254	48	119
2-1/2	115	329	455	74	245

FIXTURE UNIT COUNT, (FU) 6

FIXTURE UNIT COUNT, (FU)				
DCX7 T.I. (Building 3) FIXTURE TYPE	QUANTITY	CPC 2016 PUBLIC USE PER TABLE 702.1 AND APPENDIX 'A' TABLE A 103.1 (WFU'S) WATER FIXTURE UNITS		(DFU'S) DRAINAGE FIXTURE UNITS
WATER CLOSET (FLUSH VALVE)	3	x 5 (EA)	= 15	x 4 (EA) = 12
URINALS (FLUSH VALVE)	1	x 4 (EA)	= 4	x 2 (EA) = 2
LAVATORY	2	x 1 (EA)	= 2	x 1 (EA) = 2
EXIST. 1st HOSE BIB	1	x 2.5 (EA)	= 2.5	x 0 (EA) = 0
FLOOR DRAINS (EMERGENCY)	2	x 0 (EA)	= 0	x 0 (EA) = 0
		TOTAL →	23.5	→ 16
		GPM →	38	



FOR LAVATORIES

INSTANTANEOUS WATER HEATER #1 9

LAPC 610.4.1.1

THE HOT WATER SYSTEM SHALL NOT ALLOW MORE THAN 0.6 GALLONS OF WATER TO BE DELIVERED TO ANY FIXTURE BEFORE HOT WATER ARRIVES.

LENGTH OF COPPER TYPE L PIPE CONTAINING 0.6 GALLONS OF WATER

Nom. Diameter	1/2"	3/4"	1/2"	1/2"	1/2"
Maximum Length	49' 6"	23' 10"	14' 0"	9' 2"	6' 6"
Gallons per foot	0.012119	0.025142	0.042865	0.065289	0.092413

LAPC 610.4.1.1 10

PIPE MATERIAL 8

12

13

14

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Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
PLUMBING NOTES, DETAILS SCHEDULES & SPECIFICATIONS

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:
P-1

RPM #19-755 (Building 3) 01/08/20

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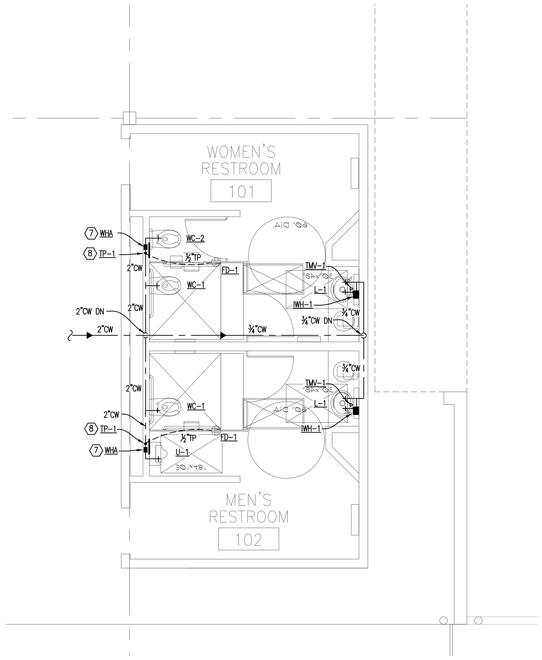
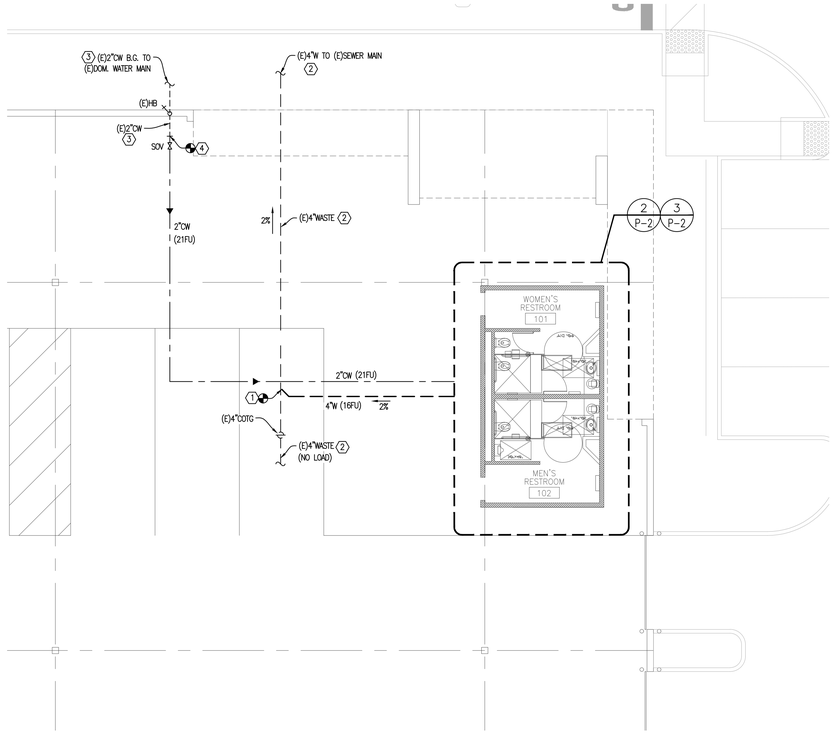


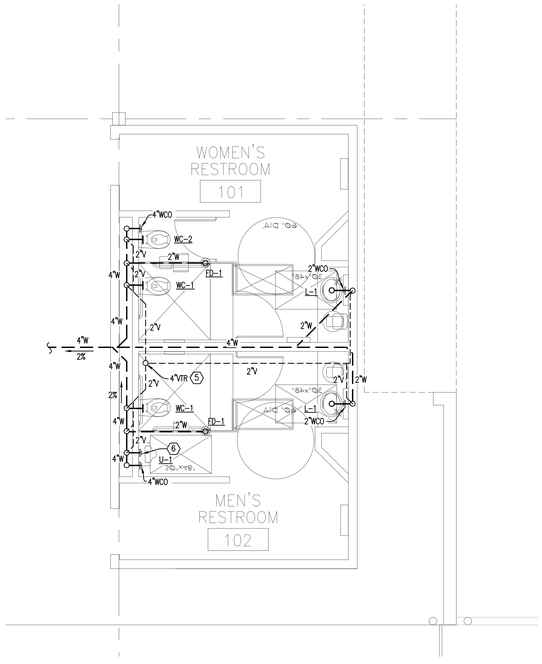
ENLARGE PLUMBING PLAN - WATER | SCALE 1/4"=1'-0" | 2



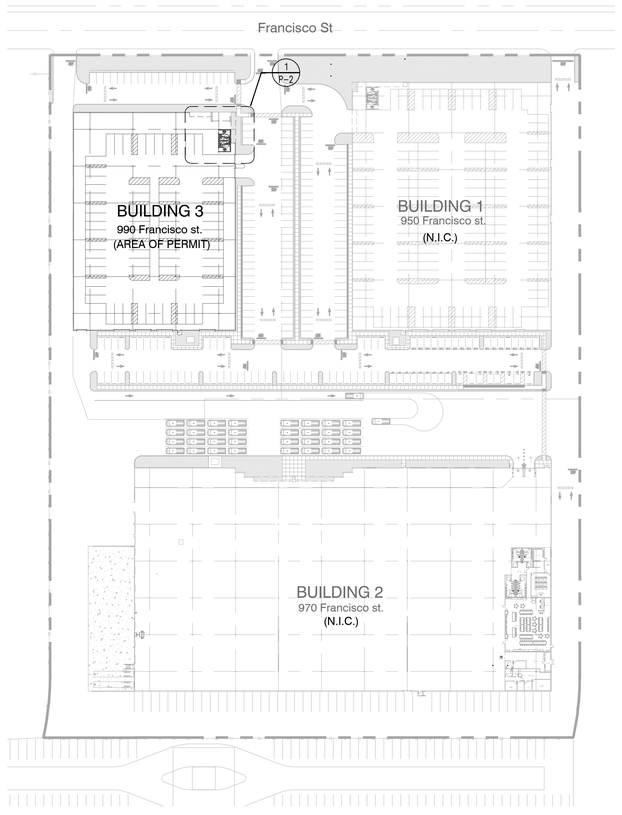
OVERALL PARTIAL PLUMBING RESTROOM PLAN | SCALE 1/8"=1'-0" | 1

KEYED NOTES:

1. CONNECT TO EXISTING 4"SEWER LINE AT THIS LOCATION. CONTRACTOR SHALL VERIFY IN FIELD FOR EXACT SIZE, DEPTH & LOCATION PRIOR TO CONSTRUCTION.
2. EXISTING WASTE LINE SHOWN ON THESE PLANS ARE ONLY ASSUMPTIONS & MAY NOT BE IN THIS LOCATION. PRIOR TO BID AND CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING SITE CONDITIONS & PROVIDE ALTERNATE BID PRICE FOR UNDERGROUND CAMERA SEWER PIPE SCOPE TO LOCATE EXISTING SEWER PIPE SIZE, DEPTH & DIRECTION OF FLOW.
3. EXISTING WATER LINE SHOWN ON THESE PLANS ARE ONLY ASSUMPTIONS & MAY NOT BE IN THIS LOCATION. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS ON SITE PRIOR TO BID AND CONSTRUCTION.
4. CONNECT TO EXISTING WATER LINE AT THIS LOCATION. CONTRACTOR SHALL VERIFY IN FIELD FOR SIZE & LOCATION PRIOR TO BID AND CONSTRUCTION.
5. CONTRACTOR SHALL MAINTAIN V.T.R. 10'-0"MIN DISTANCE AWAY FROM ALL ROOF TOP A/C UNIT'S FRESH AIR INTAKE.
6. 2"WCO. CLEAN-OUT SHALL BE INSTALLED ABOVE THE FIXTURE CONNECTION FITTING, SERVING EACH URINAL, REGARDLESS OF THE LOCATION OF THE URINAL IN THE BUILDING. CPC 2016 707.4
7. WATER HAMMER ARRESTER, (WHA) ACCESS PANEL.
8. PROVIDE TP-1, TRAP PRIMER DEVICE AND EXTEND ½"TP TO FLOOR DRAIN



ENLARGE PLUMBING PLAN - WASTE & VENT | SCALE 1/4"=1'-0" | 3



PLUMBING SITE KEY PLAN | SCALE 1"=80'-0" | A

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Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
PLUMBING PLANS

Project Number:	19436
Drawn by:	ML
Date:	10/24/19

Revision:

Sheet:

P2.0

RPM Engineers, Inc.
102 DISCOVERY
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REGISTERED PROFESSIONAL ENGINEER — No. 30465 Exp.12-31-21 — MECHANICAL — STATE OF CALIFORNIA
01/08/2020

RPM #19-755 (Building 3) 01/08/20

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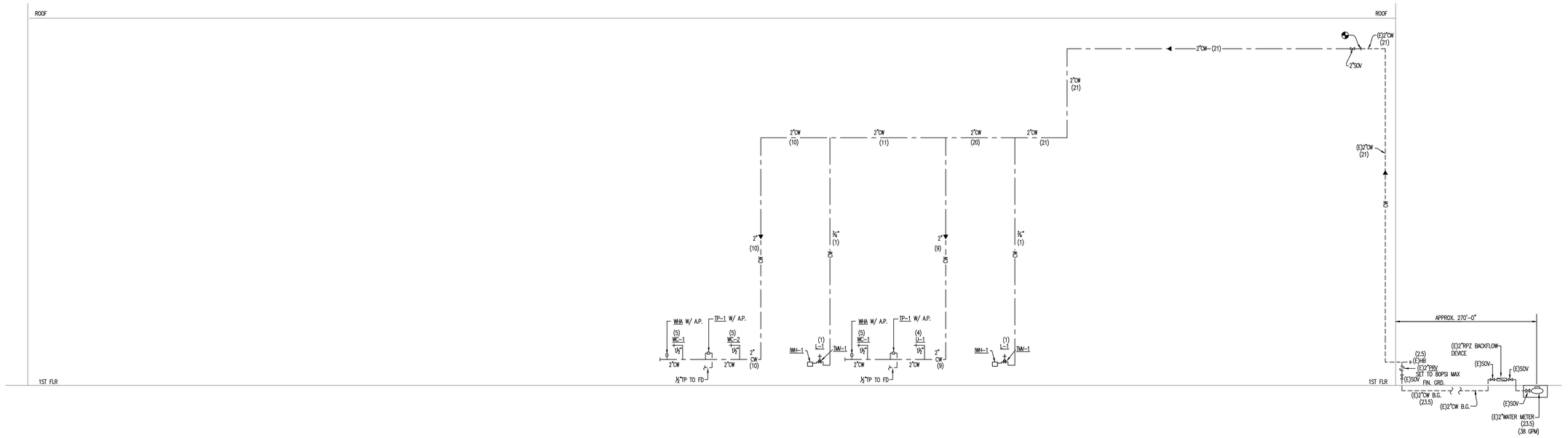
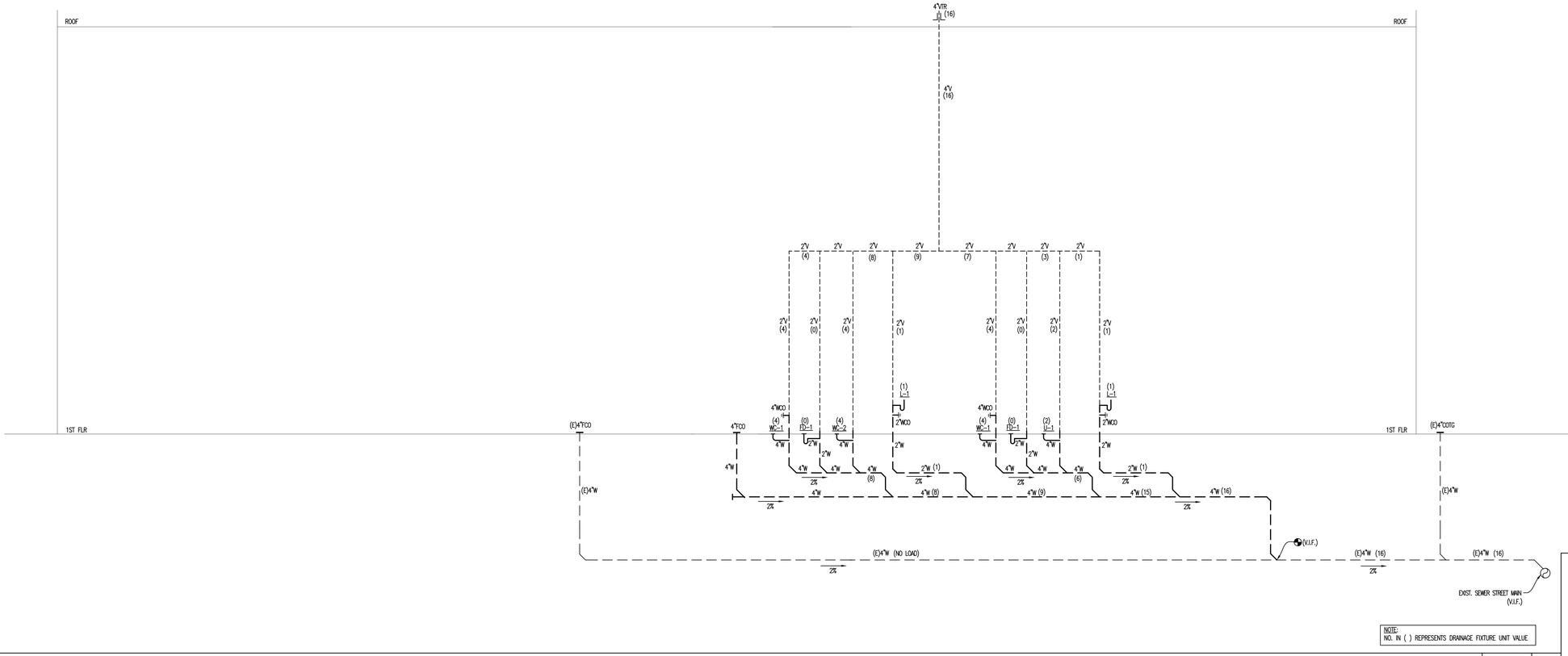


NOTE:
NO. IN ( ) REPRESENTS WATER FIXTURE UNIT VALUE

HOT & COLD RISER DIAGRAM

SCALE	
NONE	1



NOTE:
NO. IN ( ) REPRESENTS DRAINAGE FIXTURE UNIT VALUE

WASTE & VENT RISER DIAGRAM

SCALE	
NONE	2

RPM
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REGISTERED PROFESSIONAL ENGINEER
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MECHANICAL
STATE OF CALIFORNIA
01/08/2020

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Owner:

Project:

TORRANCE
DCX 7

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TORRANCE, CA

Consultants:

Civil:	THIENES
Structural:	HSA
Mechanical:	RPM
Plumbing:	RPM
Electrical:	RPM
Landscape:	HUNTER LANDSCAPE
Fire Protection:	-
Soils Engineer:	-

Title:
PLUMBING RISERS
WATER, WASTE & VENT

Project Number:	19436
Drawn by:	ML
Date:	10/24/19
Revision:	

Sheet:

P3.0

RPM #19-755 (Building 3) 01/08/20

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