MOORPARK COLLEGE
LION ENCLOSURE
7075 CAMPUS ROAD
MOORPARK, CALIFORNIA 93021
VENTURA COUNTY COMMUNITY COLLEGE DISTRICT

GENERAL NOTES

1. INTERPRETATION OF CONSTRUCTION DOCUMENTS
   A. ALL INFORMATION DEPICTED IN THESE DRAWINGS AND RELATIVE TO EXISTING CONDITIONS IS BASED ON THE BEST AVAILABLE DATA AT THE TIME THESE CONSTRUCTION DOCUMENTS WERE BEING EXCECUTED, BUT WITHOUT GUARANTEE OF ACCURACY. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT JOB SITE AND SHALL REPORT ANY DISCREPANICES TO ARCHITECT PRIOR TO COMMENCING ANY WORK.

   B. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS INCURRED RESULTING FROM THE REMOVAL OR REPLACEMENT OF WORK INSTALLED WITHOUT PROPER COORDINATION TO ALL OTHER TRADES, AND/OR PRIOR TO OBTAINING CLARIFICATION FROM THE ARCHITECT WHERE CONFLICTING INFORMATION EXISTS ON THE DRAWINGS.

   C. THE CONTRACTOR SHALL FURNISH ALL BIDDERS WITH A COMPLETE SET OF CONSTRUCTION DOCUMENTS, INCLUDING BUT NOT LIMITED TO DRAWINGS, SPECIFICATIONS AND ADDENDUMS.

   D. ALL BIDS AND LINE ITEM COSTS SUBMITTED BY THE CONTRACTOR IN CONJUNCTION WITH HIS SUBCONTRACTORS ARE CONSIDERED TO INCLUDE COMPLETE COORDINATION BETWEEN THE VARIOUS DISCIPLINES AS WELL AS ALL OTHER REQUIREMENTS OF THESE CONSTRUCTION DOCUMENTS, INCLUDING BUT NOT LIMITED TO CODE AND PUBLIC UTILITY REQUIREMENTS. FURTHER, WHERE THERE ARE CONFLICTING SOLUTIONS IN THE CONSTRUCTION DOCUMENTS AND BID OR LINE ITEM COST IS SUBMITTED BY THE CONTRACTOR WITHOUT ANY FORMAL WRITTEN REQUEST FOR CLARIFICATION PRIOR TO BID OPENING, ALL SUCH ITEMS WILL BE CONSIDERED TO INCLUDE THE MOST EXPENSIVE OF THE POSSIBLE SOLUTIONS DEPICTED IN THE CONSTRUCTION DOCUMENTS.

   E. MODIFICATIONS OF DETAILS OF CONSTRUCTION SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE ARCHITECT AND DSA.

2. CONTRACTOR SHALL VISIT THE SITE TO INVESTIGATE AND VERIFY ALL DIMENSIONS AND EXISTING SITE CONDITIONS AT JOB SITE PRIOR TO START OF WORK.
3. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT. COORDINATE WITH EXISTING CONDITIONS WHERE INSUFFICIENT DETAIL DIMENSIONS ARE AVAILABLE. ALL DIMENSIONS ARE TO FINISHED FACE OF CONSTRUCTION OR CENTERLINE OF COLUMNS UNLESS NOTED OTHERWISE. DIMENSIONS NOTED AT "CLR" (CLEAR) ARE NOT ADJUSTABLE WITHOUT ARCHITECT'S APPROVAL.
4. DIMENSIONS SHOWN SHALL HAVE PREFERENCE OVER SCALE.
5. ALL ITEMS INCLUDING BUILDINGS SHOWN ARE EXISTING (E) UNLESS NOTED NEW (N); EXCEPT FOR THE DETAIL SHEETS WHERE ITEMS SHOWN ARE NEW UNLESS NOTED EXISTING (E).
6. CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES TO PROTECT EXISTING PIPELINES AND UTILITIES THAT ARE TO REMAIN IN SERVICE. CONTRACTOR SHALL VERIFY THAT THOSE PIPELINES AND UTILITIES TO BE REMOVED HAVE BEEN DISCONNECTED, SHUT DOWN OR ABANDONED PRIOR TO ATTEMPTING REMOVAL OR DEMOLITION IN A MANNER TO AVOID ANY DISRUPTION OF EXISTING FACILITIES.
7. CONTRACTOR SHALL PROTECT ALL SURFACES & FIXTURES TO REMAIN DURING DEMOLITION AND CONSTRUCTION.
8. ALL DAMAGE DONE TO EXISTING CONSTRUCTION AS A RESULT OF DEMOLITION OR INSTALLATION SHALL BE COMPLETELY REPAIRED BY CONTRACTOR AT OR NO COST TO OWNER. REPAIRED WORK SHALL MATCH EXISTING CONSTRUCTION.
10. "DEMOLISH" AND "REMOVE" SHALL MEAN TO DEMOLISH, REMOVE FROM THE SITE AND DISPOSE OF IN A LEGAL MANNER UNLESS NOTED OTHERWISE. TERMINATE PIPING BELOW SUBSTRATE FOR PATCHING UNO. ELECTRICAL WIRE DISCONNECT SHALL BE AT THE SOURCE OF POWER.
11. PRODUCTS STORED FOR USE IN CONSTRUCTION SHALL BE STORED IN A MANNER SUCH THAT NO MATERIALS ARE DAMAGED AND PUBLIC SAFETY IS MAINTAINED AS INDICATED ON DRAWINGS.
12. CONTRACTOR SHALL THOROUGHLY CLEAN AND SECURE THE AREA OF CONSTRUCTION AFTER EACH DAY OF WORK. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL CONSTRUCTION DEBRIS OFF SITE.
13. LOCATIONS OF STRUCTURES, UNDERGROUND PIPELINES AND UTILITIES WERE OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF ALL PIPELINES AND UTILITIES BEFORE COMMENCING DEMOLITON, EARTHWORK OR CONSTRUCTION WORK.
14. GENERAL CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS PRIOR TO START OF CONSTRUCTION. ALL QUESTIONS SHALL BE SENT TO ARCHITECT.
15. ALL WORK, INCLUDING REMOVAL OF EXISTING WORK, SHALL BE PERFORMED IN A MANNER THAT MINIMIZES THE AMOUNT OF NOISE, DUST, TRAFFIC AND/OR OTHER FORMS OF DISTURBANCES IN COMPLIANCE WITH ALL APPLICABLE CODES AND ORDINANCES SO THAT THE PUBLIC, STUDENTS AND STAFF, AS WELL AS OTHER OCCUPIED AREAS OF THE SCHOOL ARE SUBJECTED TO AS LITTLE DISRUPTION AS REASONABLY POSSIBLE.
16. ROUTES OF INGRESS AND EGRESS FOR MATERIALS AND WORKMEN, AND LIMITS OF THE PROJECT AREA WILL BE DESIGNATED BY THE OWNER. THE CONTRACTOR SHALL CONFINE HIS ACTIVITES WITHIN SUCH LIMITS. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ADEQUATE SAFETY AND DUST BARRIERS IN THE SITE, ACROSS CORRIDORS AND ELSEWHERE AS REQUIRED.
17. SHUT DOWN OF EXISTING AND OPERATING PLUMBING, MECHANICAL AND ELECTRICAL SYSTEMS OR PORTIONS THEREOF SHALL BE COORDINATED IN ADVANCE WITH THE OWNER.
18. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN ON THE ARCHITECTURAL DRAWINGS WITH THE SPECIFICATIONS AND THE WORK SHOWN ON THE MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS. ANY DISCREPANCIES FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IN WRITIING BEFORE PROCEEDING WITH ANY RELATED WORK.
19. GENERAL CONTRACTOR SHALL PROVIDE TEMPORARY EIGHT (8) FEET HIGH CHAIN LINK FENCE EMBEDDED BELOW GRADE AS NECESSARY FOR STABILITY. (ON GRADE POST BASES NOT PERMITTED.) BARRICADES AT WORK AREAS, DISTRICT APPROVED STORAGE AREAS AND WHEREVER NECESSARY TO MAINTAIN A SAFE PASSAGE AND SAFE ENVIRONMENT.

GENERAL NOTES

20. BEFORE PROCEEDING WITH THE CORING OR CUTTING OF WALLS AND FLOORS, ETC., THE CONTRACTOR SHALL PREPARE LAYOUT OF CUTTING OR CORING AND SHALL HAVE THE APPROVAL BY THE STRUCTURAL ENGINEER AND THE D.S.A. FIELD DISTRICT ENGINEER IN ORDER TO PROCEED WITH THE CUTTING OR CORING.
21. SAW-CUT EXISTING A.C. PAVING AND/OR CONCRETE FLOOR SLAB AS REQUIRED FOR NEW PIPE INSTALLATION AND NEW DEPRESSED CONCRETE SLAB, AND REPAIR TO MATCH EXISTING.
22. STRENGTH OF CONCRETE:
    A) SLABS ON EARTH, SIDEWALKS AND CURBS: 2,500 PSI AT 28 DAYS
    B) FOUNDATIONS: 2,500 PSI AT 28 DAYS
23. THE CONTRACTOR SHALL NOT COMMENCE THE WORK, IN PART OR IN FULL, PRIOR TO OBTAINING THE NOTICE-TO-PROCEED (NTP) FROM LAUSD.
24. IN CASE OF CONFLICT, THE MORE EXPENSIVE CONSTRUCTION MEANS AND METHOD SHALL BE USED.

APPLICABLE CODES

LIST OF 2016 CALIFORNIA CODE OF REGULATIONS (C.C.R.):
APPLICABLE CODES AS OF JANUARY 1, 2017

PART 1-	2016 CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE, TITLE 24 C.C.R.
PART 2-	2016 CALIFORNIA BUILDING CODE, TITLE 24 C.C.R. (2015 INTERNATIONAL BUILDING CODE OF THE INTERNATIONAL CODE COUNCIL, WITH CALIFORNIA AMENDMENTS)
PART 3-	2016 CALIFORNIA ELECTRICAL CODE, TITLE 24 C.C.R. (2014 NATIONAL ELECTRICAL CODE OF THE NATIONAL FIRE PROTECTION ASSOCIATION, NFPA)
PART 4-	2016 CALIFORNIA MECHANICAL CODE, TITLE 24 C.C.R. (2015 UNIFORM MECHANICAL CODE OF THE INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS, IAPMO)
PART 5-	2016 CALIFORNIA PLUMBING CODE, TITLE 24 C.C.R. (2015 UNIFORM PLUMBING CODE OF THE INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS, IAPMO)
PART 6-	2016 CALIFORNIA ENERGY CODE, TITLE 24 C.C.R.
PART 7-	CURRENTLY VACANT
PART 8-	2016 CALIFORNIA HISTORICAL BUILDING CODE, TITLE 24 C.C.R.
PART 9-	2016 CALIFORNIA FIRE CODE, TITLE 24 C.C.R. (2015 INTERNATIONAL FIRE CODE OF THE INTERNATIONAL CODE COUNCIL)
PART 10-	2016 CALIFORNIA EXISTING BUILDING CODE (2015 INTERNATIONAL EXISTING BUILDING CODE OF THE INTERNATIONAL CODE COUNCIL, WITH AMENDMENTS)
PART 11-	2016 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN CODE), TITLE 24 C.C.R.
PART 12-	2016 CALIFORNIA REFERENCE STANDARDS CODE, TITLE 24 C.C.R.

PARTIAL LIST OF APPLICABLE STANDARDS

2016 CALIFORNIA BUILDING CODE (FOR SFM) REFERENCED STANDARDS CHAP. 35

NFPA 13	AUTOMATIC SPRINKLER SYSTEMS (CALIFORNIA AMENDED)	2016 EDITION
NFPA 14	STANDPIPE SYSTEMS (CALIFORNIA AMENDED)	2016 EDITION
NFPA 17	DRY CHEMICAL EXTINGUISHING SYSTEMS	2017 EDITION
NFPA 17a	WET CHEMICAL EXTINGUISHING SYSTEMS	2017 EDITION
NFPA 20	STATIONARY PUMPS	2016 EDITION
NFPA 24	PRIVATE FIRE SERVICE MAINS (CALIFORNIA AMENDED)	2016 EDITION
NFPA 72	NATIONAL FIRE ALARM CODE (CALIFORNIA AMENDED) (NOTE: SEE UL STANDARD 1971 FOR "VISUAL DEVICES")	2016 EDITION
NFPA 80	FIRE DOOR AND OTHER OPENING PROTECTIVES	2016 EDITION
NFPA 253	CRITICAL RADIANT FLUX OF FLOOR COVERING SYSTEMS	2015 EDITION
NFPA 2001	CLEAN AGENT FIRE EXTINGUISHING SYSTEMS	2015 EDITION

DEPARTMENT OF JUSTICE REGULATIONS FOR TITLE II OF THE AMERICANS WITH DISABILITIES ACT OF 1990 WITH REVISED REGULATIONS AS PUBLISHED IN THE FEDERAL REGISTER ON SEPTEMBER 15, 2010, EFFECTIVE MARCH 15, 2012. TITLED ADA STANDARDS FOR ACCESSIBLE DESIGN.

DRAWING LIST

SHT NO.	DRAWING TITLE
GENERAL	
G0.00	TITLE SHEET, GENERAL NOTES
G0.01	ABBREVIATIONS & SYMBOLS, CONTRACTOR'S GUIDELINES
CIVIL	
C1	GRADING COVER SHEET
C2	GRADING AND DRAINAGE PLAN
C3	DEAILS AND UTILITY PLAN
C4	EROSION & SEDIMENT CONTROL PLAN
ARCHITECTURAL	
A1.00	OVERALL SITEPLAN
A1.01	ENLARGED SITE PLAN
A1.02	DEMOLITION PLAN
A1.03	FLOOR & ROOF PLANS
A1.04	ENCLOSURE ELEVATIONS
A1.05	SECTIONS
A1.06	LION BEDROOM RCP AND SECTION
A1.07	LION BEDROOM ELEVATIONS
A5.01	DETAILS
A5.02	DETAILS
A5.03	DETAILS
STRUCTURAL	
S0.00	STRUCTURAL GENERAL NOTES
S0.01	STRUCTURAL GENERAL NOTES
S0.10	TYPICAL DETAILS - CONCRETE
S0.11	TYPICAL DETAILS - CONCRETE
S0.20	TYPICAL DETAILS - STEEL
S1.00	FOUNDATION PLAN
S1.10	ROOF FRAMING PLAN
S2.00	STRUCTURAL ELEVATIONS

DRAWING LIST

SHT NO.	DRAWING TITLE
S3.00	STRUCTURAL DETAILS - FOUNDATION LEVEL
S3.10	STRUCTURAL DETAILS - FRAMING LEVEL
ELECTRICAL	
E100	GENERAL NOTES, ABBREVIATIONS, SYMBOLS & DRAWING LIST
E120	ENLARGED ELCTRICAL SITE PLAN
E140	SITE ELECTRICAL DEMOLITION PLAN
E200	ELECTRICAL SINGLE LINE AND LIGHT POLE DETAIL
E201	PANEL SCHEDULES
E401	ENLARGED ELECTRICAL PLAN - LION ENCLOSURE
E600	ELECTRICAL DETAILS
E601	ELECTRICAL DETAILS
E602	ELECTRICAL DETAILS
E603	ELECTRICAL DETAILS
E604	ELECTRICAL DETAILS
E605	ELECTRICAL DETAILS

Grand total: 39

SUMMARY OF SCOPE OF WORK

1. SELECTIVE DEMOLITION TO CLEAR SITE
2. INSTALL NEW STORM WATER UNDERGROUND DRAIN LINES & CONNECT TO AN EXISTING CATCH BASIN
3. CONSTRUCT NEW LION HABITAT INCLUDING OUTDOOR MESH ENCLOSURE AND ROOFED BEDROOM AREA
4. CONSTRUCT NEW CMU SCREEN WALL, CONCRETE PAVING, SECURITY FENCING AND VISITOR RAILING/BARRIER
5. PROVIDE NEW LIGHTING, RESISTANCE SLAB HEATING INSTALLATION AND CONVENIENCE POWER OUTLETS

OWNER

VENTURA COUNTY COMMUNITY COLLEGE DISTRICT

DESIGN TEAM

ARCHITECT
AMADOR WHITTLE ARCHITECTS, INC.
28328 AGOURA ROAD, #203
AGOURA HILLS, CALIFORNIA 93021
(805) 530-3938

CIVIL ENGINEER
LACHAINE & ASSOCIATES, INC.
240 E. HWY 246, SUITE 104
BUELLTON, CALIFORNIA 93427
(805) 686-1954

ELECTRICAL ENGINEER
LUCCI & ASSOCIATES, INC.
3251 CORTE MALPASO, SUITE 511
CAMARILLO, CALIFORNIA 93012
(805) 389-6520

STRUCTURAL ENGINEER
ORION STRUCTURAL GROUP, INC.
223 E. THOUSAND OAKS BOULEVARD, SUITE 304
THOUSAND OAKS, CALIFORNIA 91360
(805) 390-9242

AMADOR WHITTLE
ARCHITECTS, INC.

LICENSED ARCHITECT
WILLIAM JORGE AMADOR
C-20348
JANUARY 31, 2019
RENEWAL DATE
STATE OF CALIFORNIA

28328 AGOURA ROAD, SUITE 203
AGOURA HILLS, CA 91301
(805) 530-3938 , (818) 874-0071

LION ENCLOSURE

EXOTIC ANIMAL TRAINING & MANAGEMENT
7075 CAMPUS ROAD
MOORPARK, CA 93021

BID SET

NOTE: THIS SHEET IS ONE OF A SET OF DOCUMENTS WHICH INCLUDES, BUT IS NOT LIMITED TO, DRAWINGS AND SPECIFICATIONS ADDRESSING ALL TRADES. GENERAL CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL BIDDERS WITH A FULL SET OF CONSTRUCTION DOCUMENTS. ALL BIDDERS SHALL REVIEW THE ENTIRE SET OF DOCUMENTS. IF THERE IS A CONFLICT BETWEEN DISCIPLINES, THE MOST EXPENSIVE OPTION SHALL BE BID.

REVISIONS	DATE: 06/24/19
	DRAWN: SN
	CHECK: WJA
	JOB NO: 18-MPC-30

TITLE SHEET, GENERAL NOTES

IF THIS SHEET IS NOT 36" X 24", IT IS NOT FULL SIZE, SCALE DRAWINGS ACCORDINGLY

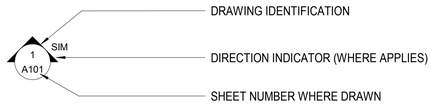
G0.00
___ OF ___

ABBREVIATIONS

&	AND
(E)	EXISTING
@	AT
A.B.	ANCHOR BOLT
A.C.	ASPHALTIC CONCRETE
A.F.F.	ABOVE FINISH FLOOR
A/C	AIR CONDITIONER
ACOUST	ACOUSTICAL
AL.	ALUMINUM
ALUM	ALUMINUM
ARCH	ARCHITECTURAL
BLDG	BUILDING
BLK	BLOCK OR BLOCKING
BOT	BOTTOM
C.I.	CAST IRON
C.J.	CEILING JOIST
C.L.	CHAIN LINK
C.L.F.	CHAIN LINK FENCE
C.M.U.	CONCRETE MASONRY UNIT
CAB	CABINET
CLG	CEILING
CLR	CLEAR
CO	CASED OPENING
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
d	PENNY
D.F	DOUGLAS FIR
DBL	DOUBLE
DEMO	DEMOLITION
DET	DETAIL
DIA.	DIAMETER
DIM	DIMENSION
DIV	DIVISION
DR	DOOR
DS	DOWNSPOUT
DWG	DRAWING
E.J.	EXPANSION JOINT
EA	EACH
ELEC	ELECTRICAL
EQ	EQUAL
EQUIP	EQUIPMENT
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
F.F.	FINISH FLOOR
F.G	FINISH GRADE
F.R.	FIRE RATED, FIRE RESISTANT
FD	FLOOR DRAIN
FIN	FINISH
FLR	FLOOR
FLR'G	FLOORING
FR.	FRAME
FT	FOOT OR FEET
FTG	FOOTING
G.I.	GALVANIZED IRON
G.W.B.	GYPSUM WALLBOARD
GA	GAUGE
GALV	GALVANIZED
GEN	GENERAL
GYP	GYPSUM
HDR	HEADER
HI	HIGH
HT	HEIGHT
IN	INCHES
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
LBS	POUNDS
M.O.	MASONRY OPENING
M.R.	MOISTURE RESISTANT
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
N.I.C.	NOT IN CONTRACT AND NOT PART OF THIS APPLICATION
N.T.S.	NOT TO SCALE
N/A	NOT AVAILABLE
NO., #	NUMBER
O.C.	ON CENTER
OPNG	OPENING
OPP	OPPOSITE
PT	POINT
PWD	PLYWOOD
R	RISER
R.C.P.	REFLECTED CEILING PLAN
R.D.	ROOF DRAIN
R.O.	ROUGH OPENING
REF	REFERENCE
REFL	REFLECTED
REINF	REINFORCING
REQ'D	REQUIRED
REV	REVISION
RM	ROOM
S.F.	SQUARE FEET
S.S.	STAINLESS STEEL
SCHED	SCHEDULE
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SQ	SQUARE
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
SUSP	SUSPEND, SUSPENDED
T & G	TONGUE AND GROOVE
T.O.C.	TOP OF CURB
T.O.P.	TOP OF PLATE
T.O.P.	TOP OF PARAPET
T.O.W.	TOP OF WALL
TEL	TELEPHONE
THK	THICK
TYP	TYPICAL
U.L.	UNDERWRITERS LABORATORIES
U.N.O.	UNLESS NOTED OTHERWISE
V.I.F.	VERIFY IN FIELD
VERT	VERTICAL
W.H.	WATER HEATER
W.R.	WATER RESISTANCE
W.W.M.	WELDED WIRE MESH
W/	WITH
WD	WOOD
WDW	WINDOW

LEGEND

DRAWING REFERENCE



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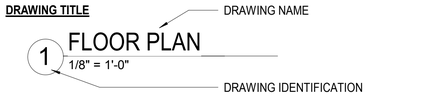

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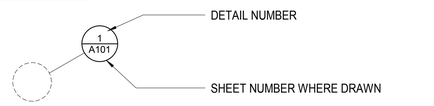
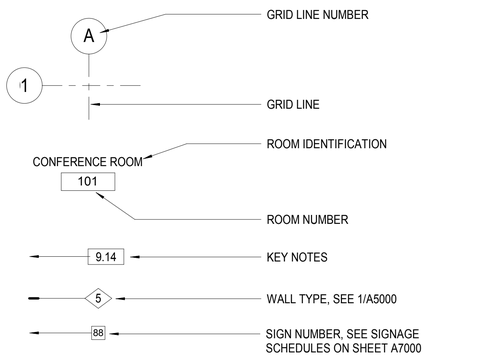


COLUMN CENTERLINES



GUIDELINES FOR CONTRACTORS WORKING IN AND AROUND AMERICA'S TEACHING ZOO (ATZ).

FOR ANY QUESTIONS, CALL: (805) 378-1441

DUE TO THE UNIQUE NATURE OF THIS WORKING ENVIRONMENT IT IS IMPORTANT TO MAKE YOU AWARE OF GUIDELINES THAT MUST BE ADHERED TO WHILE WORKING ON ZOO GROUNDS AND AROUND THE PERIMETER OF AMERICA'S TEACHING ZOO.

WE WILL DO OUR BEST TO WORK WITH YOU TO ACCOMMODATE YOUR NEEDS, BUT PLEASE UNDERSTAND THAT THIS ENVIRONMENT WILL PRESENT CHALLENGES THAT YOU MOST LIKELY HAVE NOT ENCOUNTERED ON ANY OTHER CONSTRUCTION SITE. EXCELLENT COMMUNICATION BETWEEN THE CONSTRUCTION CREW AND ATZ STAFF IS THE KEY TO OUR ABILITY TO HELP YOU KEEP THE PROJECT ON TRACK. THE SOONER WE KNOW ABOUT AN ACCOMMODATION YOU WILL NEED, THE BETTER WE WILL BE ABLE TO RESPOND.

THE CONTRACTOR FOR THIS PROJECT IS RESPONSIBLE FOR INSURING THAT THE SUB CONTRACTORS AND THEIR EMPLOYEES ARE AWARE OF, AND ADHERE TO, THE FOLLOWING GUIDELINES;

1) THE ZOO IS OPEN DURING THE FOLLOWING TIMES:

WEEKDAY	**WEEKENDS**
7:00 AM TO 5 PM (MAY 21-AUG. 16, 2019)	
6:30 AM TO 5 PM (AUG. 19 - DEC. 18 2019)	8 AM TO 5 PM (11:00-5:00 OPEN TO PUBLIC)

IF CONSTRUCTION WORKERS NEED TO BE IN THE ZOO, OR WORKING OUTSIDE THE ZOO IN CLOSE PROXIMITY TO THE ZOO PERIMETER FENCE DURING TIMES OTHER THAN THOSE LISTED ABOVE, ARRANGEMENTS MUST BE MADE WITH ZOO STAFF AT LEAST 48 HOURS IN ADVANCE.

2) WEEKDAYS ANIMAL SHOWS/TOURS
WILDLIFE THEATER JUST INSIDE THE ZOO FROM 10:00-11:30, AND LARGE SCHOOL GROUPS OF CHILDREN TOURING THE ZOO BETWEEN 9:30-12:30. DATES OF SCHEDULED SHOWS WILL BE PROVIDED EVERY FEW WEEKS TO HELP YOU MINIMIZE DISRUPTION TO THE SHOWS.

3) IF WORKING ON ZOO GROUNDS SOMEONE FROM THE CONSTRUCTION CREW MUST USE THE INTERCOM AT THE ZOO VEHICLE GATE (INSTRUCTIONS ARE ON THE INTERCOM), OR INTERCOM NEXT TO THE FRONT GATE/PUBLIC ENTRANCE TO NOTIFY ZOO STAFF THAT YOU ARE HERE SO WE CAN OPEN THE GATE FOR YOU. EACH DAY WHEN WORK HAS ENDED YOU WILL NEED TO NOTIFY STAFF SO THAT WE CAN OPEN THE GATE FOR YOU.

4) SPEED LIMIT FOR DRIVING IN THE ZOO IS 5 MPH. IT IS IMPERATIVE THAT ALL CONSTRUCTION VEHICLES ADHERE TO THE SPEED LIMIT AT ALL TIMES FOR THE SAFETY OF EVERYONE. IN ADDITION, IT IS IMPORTANT TO STOP AND CHECK AROUND BLIND CORNERS BEFORE PROCEEDING.

5) SHOULD A MEETING OCCUR BETWEEN A CONSTRUCTION WORKER AND STUDENT WITH AN ANIMAL, THE STUDENT WITH THE ANIMAL HAS THE RIGHT OF WAY. IF A STUDENT WORKING WITH AN ANIMAL TELLS YOU TO DO SOMETHING, DO IT IMMEDIATELY AND WITHOUT QUESTION. OTHERWISE YOU MAY COMPROMISE THE SAFETY OF THE STUDENT, ANIMAL, YOURSELF, OR ANYONE ELSE AROUND. USUALLY, YOU WILL ONLY BE DELAYED A FEW MINUTES AT MOST.

6) NO INTERACTION WITH THE ANIMALS UNLESS APPROVED BY ZOO STAFF.

7) NO SMOKING ON ZOO GROUNDS.

8) NO FOOD ALLOWED PAST THE PICNIC AREA AT THE FRONT OF THE ZOO. IT IS IMPERATIVE THAT ALL FOOD WRAPPINGS AND TRASH BE DISPOSED OF PROPERLY IN A TRASH RECEPTACLE. THIS IS TO ELIMINATE THE POSSIBILITY OF TRASH BLOWING INTO AN ANIMAL ENCLOSURE. ANIMALS WILL EAT THESE ITEMS, WHICH CAN RESULT IN SERIOUS MEDICAL COMPLICATIONS RESULTING IN EXPENSIVE MEDICAL TREATMENT.

9) COORDINATION BETWEEN A ZOO STAFF MEMBER AND CONTRACTOR IS NECESSARY FOR CONSTRUCTION WORKER ENTRY INTO ANY ANIMAL AREA OUTSIDE THE PUBLIC ACCESS AREA. PUBLIC ACCESS IS LIMITED TO THE ZOO'S ASPHALT ROAD ON THE CAMPUS SIDE. THE ROAD ALONG THE BACK OF THE ZOO ON COLLINS RD. SIDE IS OUTSIDE THE PUBLIC ACCESS AREA.

10) THE ZOO'S PERIMETER FENCE MUST BE INTACT AND SECURE AT THE END OF EVERY DAY. USDA REGULATIONS REQUIRE THAT THE BOTTOM OF THE FENCE IS NO MORE THAN 3 INCHES ABOVE THE GROUND AND THAT THERE ARE NO GAPS OR HOLES IN THE FENCE LARGER THAN 3 INCHES.

11) PARKING SPACES ON THE NE (COLLINS SIDE) ARE AVAILABLE FOR CONSTRUCTION WORKERS IF PARKING OUTSIDE THE ZOO.

ATZ APPRECIATES YOUR HELP IN KEEPING OUR STUDENTS, ANIMALS AND STAFF SAFE WHILE THIS CONSTRUCTION PROJECT IS IN PROGRESS AND WILL DO OUR BEST TO MAKE ACCOMMODATIONS NEEDED TO HELP YOU KEEP TO THE TIMELINE FOR PROJECT.

AMADOR WHITTLE
ARCHITECTS, INC.

LICENSED ARCHITECT
WILLIAM JORGE AMADOR
C-20348
JANUARY 31, 2019
RENEWAL DATE
STATE OF CALIFORNIA

28328 AGOURA ROAD, SUITE 203
AGOURA HILLS, CA 91301
(805) 530-3938 , (818) 874-0071

LION ENCLOSURE

EXOTIC ANIMAL TRAINING & MANAGEMENT
7075 CAMPUS ROAD
MOORPARK, CA 93021

BID SET

NOTE: THIS SHEET IS ONE OF A SET OF DOCUMENTS WHICH INCLUDES, BUT IS NOT LIMITED TO, DRAWINGS AND SPECIFICATIONS ADDRESSING ALL TRADES. GENERAL CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL BIDDERS WITH A FULL SET OF CONSTRUCTION DOCUMENTS. ALL BIDDERS SHALL REVIEW THE ENTIRE SET OF DOCUMENTS. IF THERE IS A CONFLICT BETWEEN DISCIPLINES, THE MOST EXPENSIVE OPTION SHALL BE BID.

REVISIONS	DATE: 06/24/19
	DRAWN: Author
	CHECK: Checker
	JOB NO: 18-MPC-30

ABBREVIATIONS & SYMBOLS, CONTRACTOR'S GUIDELINES

IF THIS SHEET IS NOT 36" X 24", IT IS NOT FULL SIZE; SCALE DRAWINGS ACCORDINGLY

G0.01

___ OF ___

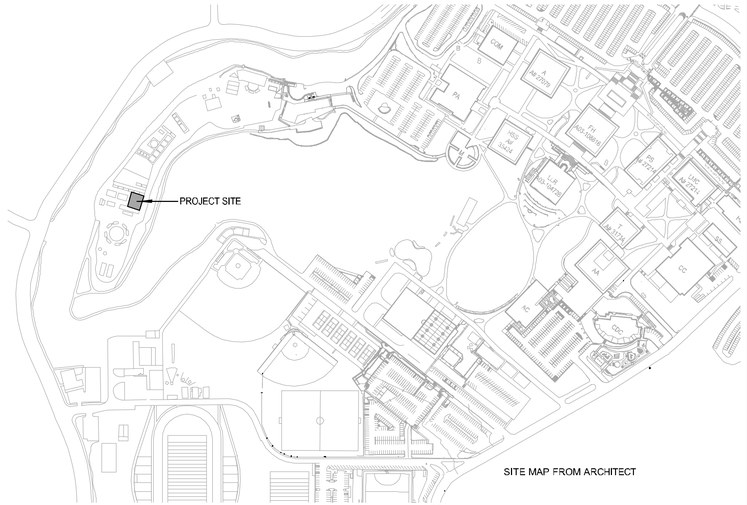
GRADING AND DRAINAGE PLANS

FOR

MOORPARK COLLEGE

MCC LION INCLOSURE

APN 500-0-281-515



SITE MAP FROM ARCHITECT

VICINITY MAP
SCALE: 1" = 1500' ±

APPLICABLE CODES (THIS PROJECT):

Part 1	2016 California Building Standards Administrative Code, Title 24 C.C.R.
Part 2	2016 California Building Code, Title 24 C.C.R. (2015 International Building Code of the International Code Council, with California Amendments)
Part 3	2016 California Electrical Code, Title 24 C.C.R. (2014 National Electrical Code of the National Fire Protection Association, NFPA)
Part 4	2016 California Mechanical Code, Title 24 C.C.R. (2015 Uniform Mechanical Code of the International Association of Plumbing and Mechanical Officials, IAPMO)
Part 5	2016 California Plumbing Code, Title 24 C.C.R. (2015 Uniform Plumbing Code of the International Associate of Plumbing and Mechanical Officials, IAPMO)
Part 9	2016 California Fire Code, Title 24 C.C.R. (2015 International Fire Code of the International Code Council)

SITE AREAS:

GRADING DISTURBED AREA = 0.1 ACRES

NEW OR REPLACED IMPERVIOUS AREA = 2,000 SF

EXISTING IMPERVIOUS AREA TO REMOVE = 0 SF

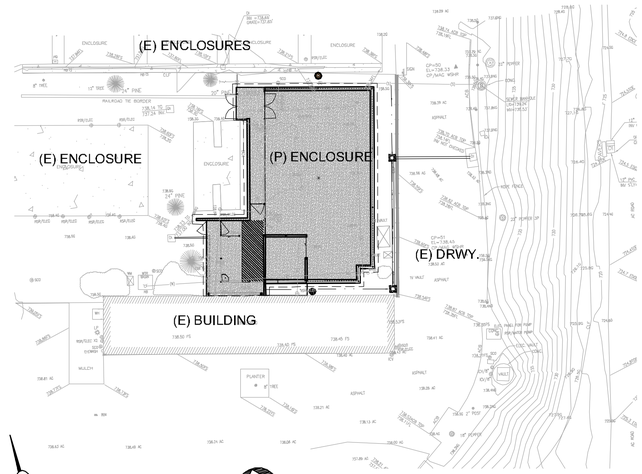
NET INCREASE IN IMPERVIOUS AREA = 2,000 SF

DRAINAGE :

LESS THAN 2,500 SF IMPERVIOUS
LID'S : VEGETATIVE DRAINAGE SWALES. OR EXEMPT.

GEOTECHNICAL SPECIFICATIONS:

ALL WORK SHALL BE DONE IN CONFORMANCE WITH THE RECOMMENDATIONS CONTAINED IN THE FOLLOWING GEOTECHNICAL ENGINEERING REPORTS:



SITE MAP
SCALE: 1" = 20'

GENERAL REQUIREMENTS OF CONTRACTOR:

1. CONTRACTOR SHALL MAINTAIN A COMPLETE AND ACCURATE RECORD OF ALL CHANGES OF CONSTRUCTION FROM THAT SHOWN IN THESE PLANS AND SPECIFICATIONS FOR THE PURPOSE OF PROVIDING A BASIS FOR CONSTRUCTION-RECORD DRAWINGS. NO CHANGES SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER AND THE AGENCY HAVING JURISDICTION. UPON COMPLETION OF THE PROJECT, CONTRACTOR SHALL DELIVER RECORD OF ALL CONSTRUCTION CHANGES TO THE ENGINEER ALONG WITH A LETTER WHICH DECLARES THAT OTHER THAN THESE NOTED CHANGES THE PROJECT WAS CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
CAUTION: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THESE PLANS MUST BE APPROVED IN WRITING BY THE PREPARER.

2. CONTRACTOR SHALL NOTIFY THE ENGINEER BY TELEPHONE AND IN WRITING UPON DISCOVERY OF, AND BEFORE DISTURBING, ANY PHYSICAL CONDITIONS DIFFERING FROM THOSE REPRESENTED BY APPROVED PLANS AND SPECIFICATIONS.

3. CONTRACTOR AGREES THAT, IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONALS HARMLESS FROM ALL LIABILITY AND CLAIMS, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONALS.

4. GRADING OR OTHER CONSTRUCTION WORK OFFSITE IS NOT PROPOSED AND IS NOT PERMITTED.

5. CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR PROTECTION OF PUBLIC AND PRIVATE PROPERTY IN THE VICINITY OF THE JOB SITE AND FURTHER AGREES TO, AT CONTRACTOR'S EXPENSE, REPAIR OR REPLACE TO ORIGINAL CONDITION ALL EXISTING IMPROVEMENTS WITHIN OR IN THE VICINITY OF THE JOB SITE WHICH ARE NOT DESIGNATED FOR REMOVAL AND WHICH ARE DAMAGED OR REMOVED AS A RESULT OF CONTRACTOR'S OPERATIONS.

6. AN EFFORT HAS BEEN MADE TO DEFINE THE LOCATION OF EXISTING UNDERGROUND FACILITIES WITHIN THE JOB SITE, HOWEVER, ALL EXISTING UTILITY AND OTHER UNDERGROUND STRUCTURES MAY NOT BE SHOWN ON THESE PLANS AND THEIR LOCATION, WHERE SHOWN, IS APPROXIMATE. IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND FACILITIES INCLUDING SERVICE CONNECTIONS WHICH MAY AFFECT OR BE AFFECTED BY HIS OPERATIONS.
UPON LEARNING OF THE EXISTENCE AND LOCATION OF ANY UNDERGROUND FACILITIES NOT SHOWN OR SHOWN INACCURATELY ON THESE PLANS OR NOT PROPERLY MARKED BY THE UTILITY OWNER, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY OWNER AND THE ENGINEER BY TELEPHONE AND IN WRITING.

7. NO CONSTRUCTION SHALL COMMENCE WITHOUT APPROVED PLANS. THE COLLEGE REPRESENTATIVE IN CHARGE SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO STARTING OF CONSTRUCTION.

8. ON-SITE HAZARDS TO PUBLIC SAFETY SHALL BE SHIELDED BY CONSTRUCTION FENCING. FENCING SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL SUCH TIME THAT THE PROJECT IS COMPLETED AND ACCEPTED.

EROSION CONTROL

SEE EROSION AND SEDIMENT CONTROL PLANS.
EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES MUST BE IN PLACE AND FUNCTIONAL PRIOR ANY QUALIFYING STORM EVENT. FAILURE TO MAINTAIN EROSION CONTROL MAY CAUSE INSPECTIONS TO BE DELAYED UNTIL EROSION CONTROL MEASURES ARE IN PLACE AND FUNCTIONAL.

EARTHWORK ESTIMATE & DATA

AREA OF SOIL DISTURBANCE = 5,000 SF ± = 0.1 ACRES
MAXIMUM VERTICAL FILL = 1.0 FEET
MAXIMUM VERTICAL CUT = 1.0 FEET
MAXIMUM PROPOSED CUT SLOPE GRADE = 50% (2:1)
MAXIMUM PROPOSED FILL SLOPE GRADE = 50% (2:1)
GRADE OF EXISTING SLOPES, APPROX. 50:1 (2% ±)

CUT:	20 CUBIC YARDS
FILL:	10 CUBIC YARDS
EXPORT:	10 CY

NOTE:
EXACT SHRINKAGE, CONSOLIDATION AND SUBSIDENCE FACTORS AND LOSSES DUE TO CLEARING OPERATIONS ARE NOT INCLUDED. ESTIMATED EARTHWORK QUANTITIES ARE BASED ON THE DIFFERENCE BETWEEN EXISTING GROUND SURFACE AND PROPOSED FINISH GRADES AND COULD VARY ACCORDING TO THESE FACTORS. CONTRACTOR SHALL CONFIRM EXISTING TOPOGRAPHY, SHALL REVIEW THE SITE AND THE GEOTECHNICAL REPORT(S), AND SHALL PERFORM AN INDEPENDENT QUANTITY TAKEOFF AND BID ACCORDINGLY.

DISTURBED AREA DISCLAIMER

THE TOTAL ESTIMATED DISTURBED AREA OF GRADING AND CONSTRUCTION FOR THESE PLANS IS LESS THAN 1.0 ACRE.

GRAPHIC SCALE

20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

INDEX OF SHEETS

C1 GRADING COVER SHEET
C2 GRADING AND DRAINAGE PLAN
C3 DETAILS, AND UTILITY PLAN
C4 EROSION & SEDIMENT CONTROL PLAN

BID SET 06-24-19

REV	DATE	BY	DESCRIPTION
	6/21/19	DRL	LION INCLOSURE CIVIL REVIEW SET
	6/24/19	DRL	BID SET

SCALE:
HOR. AS SHOWN
VER. AS SHOWN

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

DESIGNED SWL
DRAWN SWL
CHECKED DRL

LACHAINE & ASSOCIATES, INC.
CONSULTING ENGINEERING SERVICES
240 E. HWY. 246, SUITE 104, BUELLTON, CA 93427
TELEPHONE (805) 686-1954 FAX. (805) 690-7760
DENNIS R. LACHAINE, P.E. 6/24/19 DATE

REGISTERED PROFESSIONAL ENGINEER
DENNIS R. LACHAINE
EXP. 12-31-20
No. C55768
CIVIL
STATE OF CALIFORNIA

MOORPARK COMMUNITY COLLEGE:

REVIEWED BY:

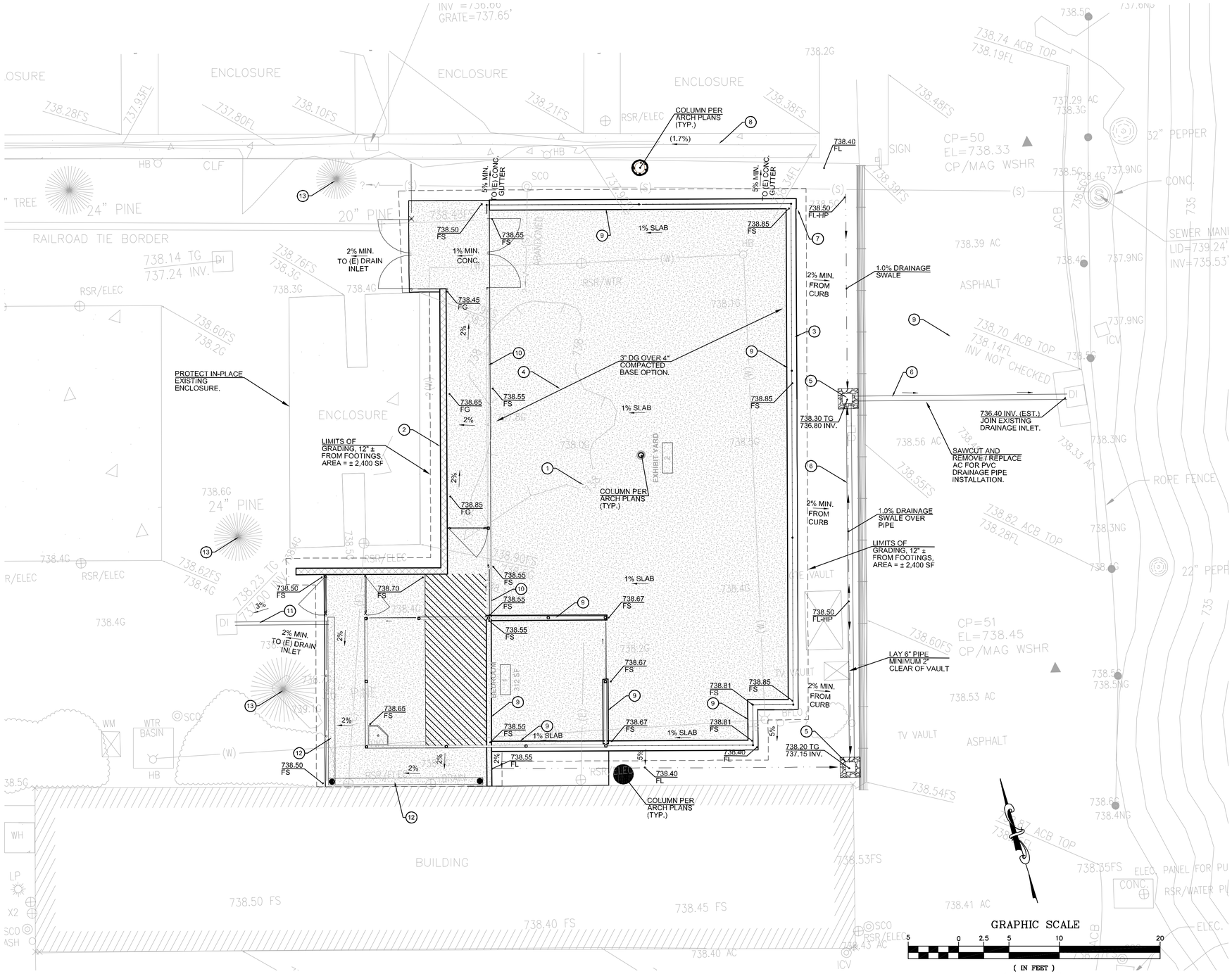
Date

GRADING COVER SHEET

MOORPARK COMMUNITY COLLEGE LION ENCLOSURE

L&A PROJECT No. 18-339

SHEET C1



GRAPHIC SCALE

5 0 2.5 5 10 20

(IN FEET)

1 inch = 5 ft.

CONSTRUCTION NOTES

1. BUILDING SLAB, 4" CONCRETE WITH WELDED WIRE FABRIC (6X6 WWF (6-INCH SPACING BOTH DIRECTIOSN OF 6 GUAGE WIRE EACH WAY), WITH 2" THICK TOPPING SLAB, OVER 6" CLASS 2 AGGREGATE BASE OVER SCARIFY AND RECOMPACT 12" NATIVE SOIL, ALL COMPACTED TO 90% OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D1557. ALSO SEE STRUCTURAL PLANS. STRUCTURAL PLANS WILL PREVAIL IF DETAILS SHOWN. OPTIONALLY, 3" D.G. OVER 4" COMPACTED AGG BASE, WITH SIDEWALKS TO REMAIN CONCRETE.
2. SHORT WALLS. SEE ARCHITECT'S PLANS.
3. MINIMUM 18 INCH BUILDING FOOTING EMBEDMENT, SEE STRUCTURAL PLANS. REFER TO SOILS REPORT FOR FOOTING REQUIREMENTS NOT SHOWN IN STRUCTURAL PLANS.
4. AREAS TO RECEIVE FILL SHALL BE CLEARED OF ALL VEGETATION. AREAS OF FILL WILL BE OVER-EXCAVATED TO 18" BELOW BOTTOM OF PROPOSED SLAB, OR TO LIMITS REQUIRED BY SOILS ENGINEER.
5. 12 x 12 CONCRETE CATCH BASIN WITH STEEL GRATE (BROOKS, MID-STATE CONCRETE, OR EQ.)
6. 6" PVC PIPE @ 1.0 % SLOPE.
7. TYPICAL ROOF DOWN SPOUT PER ARCHITECT PLANS. DRAINAGE SHALL BE PER 4" PVC PIPES AT 2% SLOPE. CONNECT TO SITE DRAIN PIPES WHEN POSSIBLE.
8. EXISTING CONCRETE DRAINAGE SWALE, PROTECT AND USE AS PARTIAL SITE DRAINAGE.
9. 4" HIGH CONCRETE CURB.
10. FLUSH CONCRETE CURB.
11. CONNECT 4" PVC DRAIN PIPE FROM TRENCH DRAIN TO EXISTING DRAIN INLET AT 2% MINIMUM GRADIENT.
12. INSTALL TRENCH DRAIN PER ARCHITECT'S PLAN. INSIDE GRADIENT = 1.0 % MINIMUM.
13. PROTECT IN-PLACE EXISTING TREES.

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REGISTERED PROFESSIONAL ENGINEER DENNIS R. LACHAINE EXP. 12-31-20 No. C55768 CIVIL STATE OF CALIFORNIA

MOORPARK COMMUNITY COLLEGE:

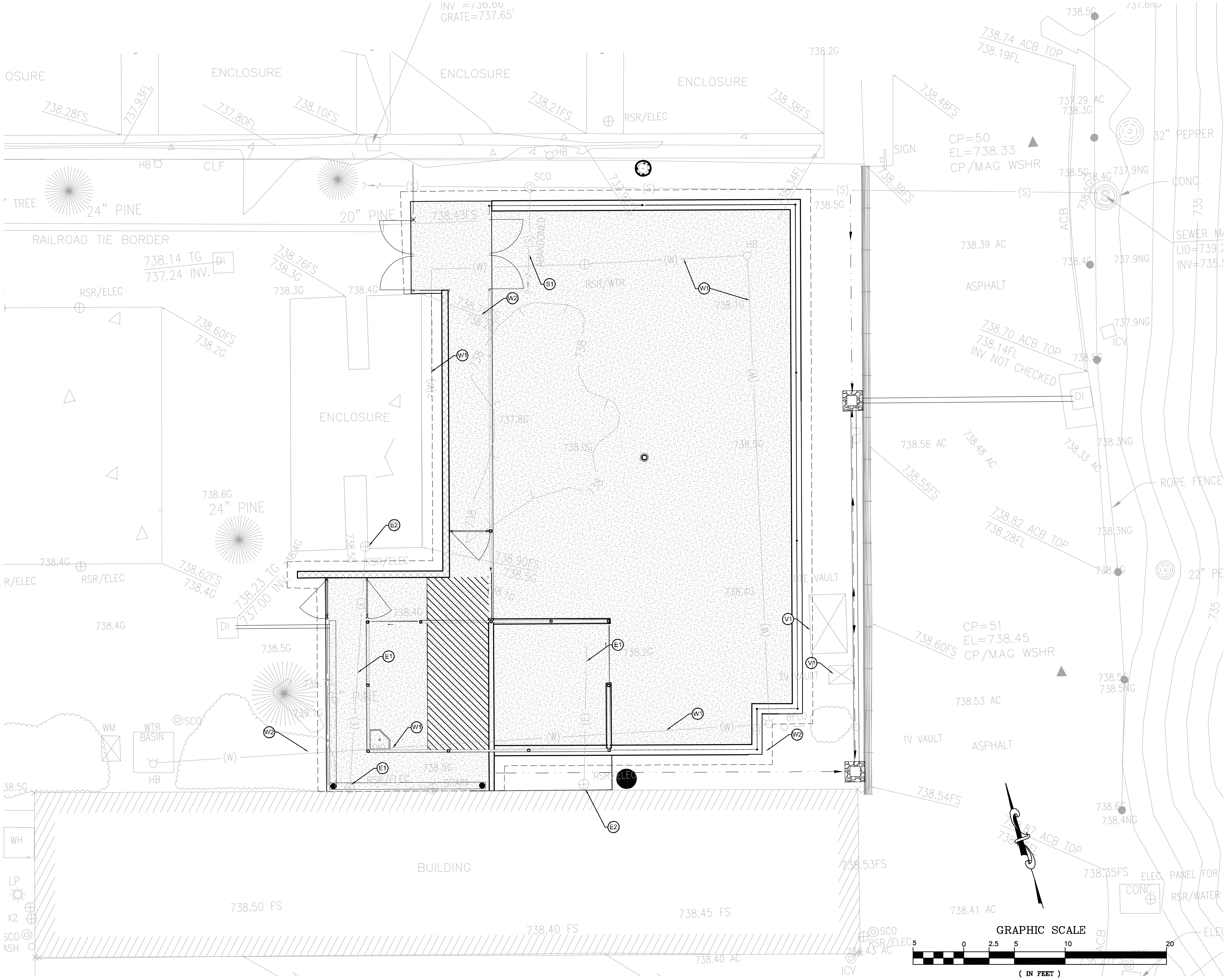
REVIEWED BY: _____ Date

GRADING AND DRAINAGE PLAN

MOORPARK COMMUNITY COLLEGE LION ENCLOSURE

L&A PROJECT No. 18-339

SHEET C2



UTILITY NOTES:

- (W1) LOCATE AND REMOVE EXISTING WATER PIPES THAT ARE UNDER PROPOSED WORK AREA.
- (W2) ARCHITECT TO SHOW NEW WATER SPIGOT LOCATIONS, MINIMUM ONE ON EACH SIDE OF BUILDING.
- (E1) LOCATE, ISOLATE AND REMOVE EXISTING ELECTRICAL WITHIN THE WORK AREA.
- (E2) PROTECT EXISTING ELECTRICAL RISER, REFER TO ELECTRICAL PLAN FOR NEW CONDUIT LAYOUT.
- (V1) PROTECT EXISTING VAULT AT GRADE.
- (S1) REMOVE ABANDONED PORTION OF SEWER PIPE THAT IS UNDER PROPOSED CONCRETE SLAB.

BID SET 06-24-19

REV	DATE	BY	DESCRIPTION
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EXP. 12-31-20
No. C55768
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STATE OF CALIFORNIA

MOORPARK COMMUNITY COLLEGE:
REVIEWED BY:
Date

UTILITY PLAN

MOORPARK COMMUNITY COLLEGE LION ENCLOSURE

L&A PROJECT No. 18-339
SHEET C3

Erosion Control Notes

1. Erosion control measures for wind, water, material stockpiles, and tracking shall be implemented on all projects at all times and shall include source control, including protection of stockpiles, protection of slopes, protection of all disturbed areas, protection of accesses, and perimeter containment measures. Erosion control shall be placed prior to the commencement of grading and site disturbance activities unless the Public Works Department determines temporary measures to be unnecessary based upon location, site characteristics or time of year. The intent of erosion control measures shall be to keep all generated sediments from entering a swale, drainage way, watercourse, atmosphere, or migrate onto adjacent properties or onto the public right-of-way.

2. Site inspections and appropriate maintenance of all erosion control measures/devices shall be conducted and documented at all times during construction and especially prior to, during, and after rain events.

3. The developer shall be responsible for the placement and maintenance of all erosion control measures/devices as specified by the approved plan until such time that the project is accepted as complete by the Public Works Department or until released from the Conditions of Approval of their General Permit. Erosion control measures/devices may be relocated, deleted or additional measures/devices may be required depending on the actual conditions encountered during construction. Additional erosion control measures/devices shall be placed at the discretion of the Engineer of Work, County Inspector, SWPPP Monitor, or RWQCB Inspector. Guidelines for determining appropriate erosion control devices shall be included in the plans with additional measures/devices noted from the appendix of the Public Improvement Standards.

4. Erosion control devices shall be the first order of work and shall be in place at all times during construction. Additional measures/devices shall be available during the rainy season (between October 15 and April 15) or anytime when the rain probability exceeds 30%. These measures/devices shall be available, installed, and/or applied after each area is graded and no later than five (5) working days after completion of each area.

5. The Contractor, Developer, and Engineer of Work shall be responsible to review the project site prior to October 15 (rainy season) and to coordinate an implementation plan for wet weather erosion control devices. A locally based standby crew for emergency work shall be available at all times during the rainy season (October 15 through April 15). Necessary materials shall be available and stock piled at convenient locations to facilitate rapid construction or maintenance of temporary devices when rain is imminent.

6. In the event of a failure, the developer and/or his representative shall be responsible for cleanup and all associated costs or damage. In the event that damage occurs within the right-of-way and the County is required to perform cleanup, the owner shall be responsible for County reimbursement of all associated costs or damage.

7. In the event of failure and/or lack of performance by the owner and/or contractor to correct erosion control related problems the Public Works Department may revoke all active permits and recommend that County Code Enforcement provide a written notice or stop work order in accordance with Section 22.52.140 [23.10] of the Land Use Ordinance.

8. Permanent erosion control shall be placed and established with 90% coverage on all disturbed surfaces other than paved or gravel surfaces, prior to final inspection. Permanent erosion control shall be fully established prior to final acceptance. Temporary erosion control measures shall remain in place until permanent measures are established.

9. The County Air Pollution Control District (APCD) may have additional project specific erosion control requirements. The Contractor, Developer, and Engineer of Work shall be responsible for maintaining self-regulation of these requirements.

10. All projects involving site disturbance of one acre or greater shall comply with the requirements of the National Pollutant Discharge Elimination System (NPDES). The developer shall submit a Notice of intent (NOI) to comply with the General Permit for Construction Activity with the Regional Water Quality Control Board (RWQCB). The developer shall provide the County with the Waste Discharge Identification Number (WDID #) or with verification that an exemption has been granted by RWQCB. WDID No.: .
Person to contact 24 hours a day in the event there is an erosion control/sedimentation problem (Storm Water Compliance Officer): Name
Local Phone No:

DUST CONTROL

WIND EROSION CONTROL: WE-1 (CASQA)

January 2003 California Stormwater BMP Handbook 1 of 5
www.cabmphandbooks.com

Description and Purpose:
Wind erosion or dust control consists of applying water or other dust palliatives as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.

Suitable Applications:
Wind erosion control BMPs are suitable during the following construction activities:
.. Construction vehicle traffic on unpaved roads
.. Drilling and blasting activities
.. Sediment tracking onto paved roads
.. Soils and debris storage piles
.. Batch drop from front-end loaders
.. Areas with unstabilized soil
.. Final grading/site stabilization

Limitations:
.. Watering prevents dust only for a short period and should be applied daily (or more often) to be effective.
.. Over watering may cause erosion.

Objectives:
EC Erosion Control
SE Sediment Control ..
TC Tracking Control
WE Wind Erosion Control ..
NS Non-Stormwater Management Control
WM Waste Management and Materials Pollution Control

Targeted Constituents:
Sediment, Nutrients, Trash, Metals, Bacteria, Oil and Grease, Organics

(WATER TRUCK DETAIL NOT SHOWN)

A

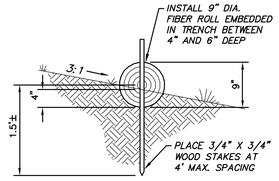
Catch Basin/Inlet Protection

Notes:

1. Catch Basin/Inlet protection shall be installed wherever there is a potential of stormwater or non-stormwater being discharged into it.
2. Inlet protection is required along with other pollution prevention measures such as; erosion control, soil stabilization, and measures to prevent tracking onto paved surfaces.
3. Modify inlet protection as needed to avoid creating traffic hazards.
4. Include inlet protection measures at hillside v-ditches and misc. drainage swales.
5. Inlet protection shall be inspected and accumulated sediments removed. Sediment shall be disposed of properly and in a manner that assures that the sediment does not enter the storm drain system
6. Damaged bags shall be replaced immediately.
7. Additional sandbag sediment traps shall be placed at intervals as indicated on site plan.

B

Fiber Roll



C

Stabilized Construction Entrance

Notes:

1. Sediments and other materials shall not be tracked from the site by vehicle traffic. The construction entrance roadways shall be stabilized so as to prevent sediments from being deposited into the public roads. Depositions must be swept up immediately and may not be washed down by rain or other means into the storm drain system.
2. Stabilized construction entrance shall be:
   a. *Located at any point where traffic will be entering or leaving a construction site to or from a public right of way, street, alley, and sidewalk or parking area.*
   b. *A series of steel plates with "rumble strips", and/or min 4" coarse aggregate with length, width & thickness as needed to adequatly prevent any tracking onto paved surfaces.*
3. Adding a wash rack with a sediment trap large enough to collect all wash water can greatly improve efficiency.
4. All vehicles accessing the construction site shall utilize the stabilized construction entrance sites.

Street Maintenance

1. Remove all sediment deposited on paved roadways immediately.
2. Sweep paved areas that receive construction traffic whenever sediment becomes visible.
3. Pavement washing with water is prohibited if it results in a discharge to the storm drain system.

D

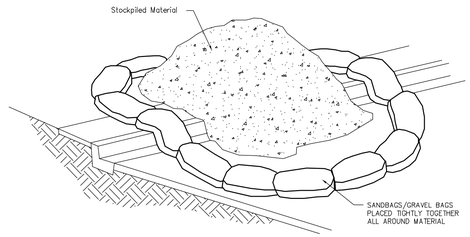
Erosion Control

Notes:

1. Soil/Slope stabilization practices shall be designed to preserve existing vegetation where feasible and to revegetate open areas as soon as feasible after grading. These control practices shall include temporary seeding, permanent seeding, mulching, sod stabilization, vegetative buffer strips, protection of trees, or other soil stabilization practices.
2. Soil stabilization shall be implemented on all inactive disturbed areas from November 1 thru April 15 and on all disturbed areas during a rain event or potential rain.
3. Stabilization practices shall control/prevent erosion from the forces of wind and water.
4. Stabilization practices shall be implemented in conjunction with sediment trapping/filtering practices and practices to reduce the tracking of sediment onto paved roads.
5. When using straw mulching, the minimum application shall be 2 tons/acre. Mulch must be anchored immediately to minimize loss by wind or water.
6. When using hydroseeding/mulching, the minimum application of wood fiber shall be 1,500 lbs/acre, that does not contain more than 50 percent newsprint.
7. For seeding recommendations, contact: USDA, Natural Resources Conservation Service.

E

Material Storage

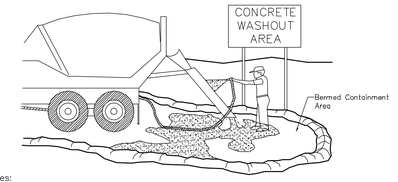


Notes:

1. Dirt and other construction related materials placed in the street or on other impervious surfaces must be contained with sandbags or other measures to prevent transport to the stormdrain system.
2. Any construction material stored or stockpiled on-site shall be protected from being transported by the force of wind or water.

F

Concrete Waste Management



Notes:

1. Excess and waste concrete shall not be washed into the street or into a drainage system.
2. For washout of concrete and mortar products, a designated containment facility of sufficient capacity to retain liquid and solid waste shall be provided on site.
3. Slurry from concrete and asphalt saw cutting shall be vacuumed or contained, dried, picked up and disposed of properly.

G

Vehicle/Equipment Fueling

Notes:

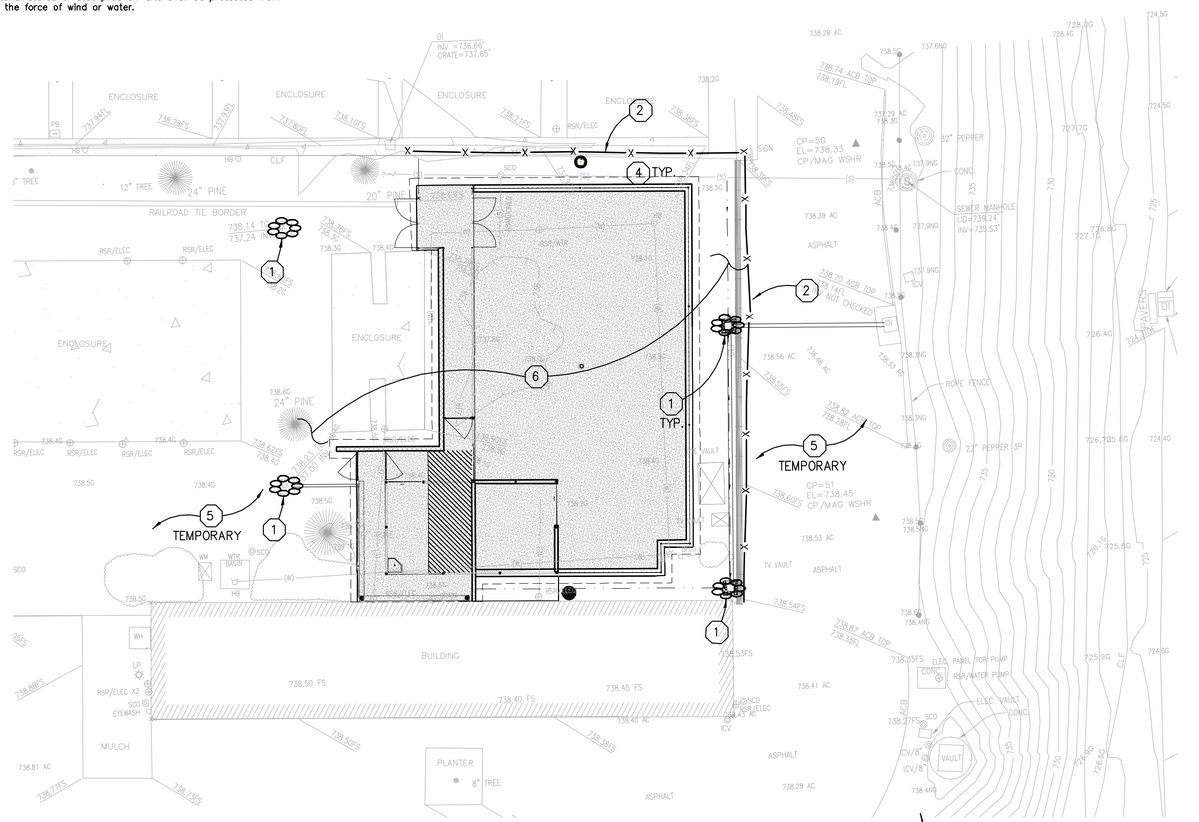
1. Fueling shall be performed in a designated area, away from drainage courses.
2. Absorbent cleanup material shall be on site and used immediately in the event of a spill.

H

Equipment Repair/Maintenance

Notes:

1. Leaking vehicles and equipment shall not be allowed on-site. Equipment and vehicles shall be inspected frequently for leaks and shall be repaired immediately. Clean up spills and leaks promptly with absorbent materials; do not flush with water.
2. Vehicles and equipment shall be maintained, and repaired on-site only in designated areas. Prevent run-on and run-off from designated areas. Containment devices shall be provided and areas shall be covered if necessary.
3. Designate on-site vehicle and equipment maintenance areas, away from storm drain inlets and watercourses.
4. Always use secondary containment, such as a drain pan or drop cloth, to catch spills and leaks when removing or changing fluids.
5. Legally dispose of used oils, fluids, and lubricants.
6. Provide spill containment dikes or secondary containment around stored oil, fuel, and chemical drums.
7. Maintain an adequate supply of absorbent spill cleanup materials in designated area.



EROSION CONTROL NOTES

1. INSTALL GRAVELBAGS AROUND DRAINAGE INLETS.
2. INSTALL FIBER ROLL (STRAW WADDLE) PER EROSION CONTROL NOTES "B" ON HEREON.
3. PROVIDE STABILIZED CONSTRUCTION ENTRANCE PER NOTES "C" ON HEREON. (LOCATION TBD)
4. HYDROSEED OR PROVIDE PERMANENT LANDSCAPING. (IF REQUIRED)
5. EQUIPMENT STAGING AREA.
6. DUST CONTROL PER WE-1 HEREON

LEGEND

— X —— X — FIBER ROLL / STRAW WADDLE

GRAVEL BAGS

NOTE:

CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MONITORING THE APPROVED EROSION & SEDIMENTATION CONTROL PLAN.

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

BID SET 06-24-19

REV	DATE	BY	DESCRIPTION
	6/21/19	DRL	LION INCLOSURE CIVIL REVIEW SET
	6/24/19	DRL	BID SET

SCALE:
HOR. AS SHOWN
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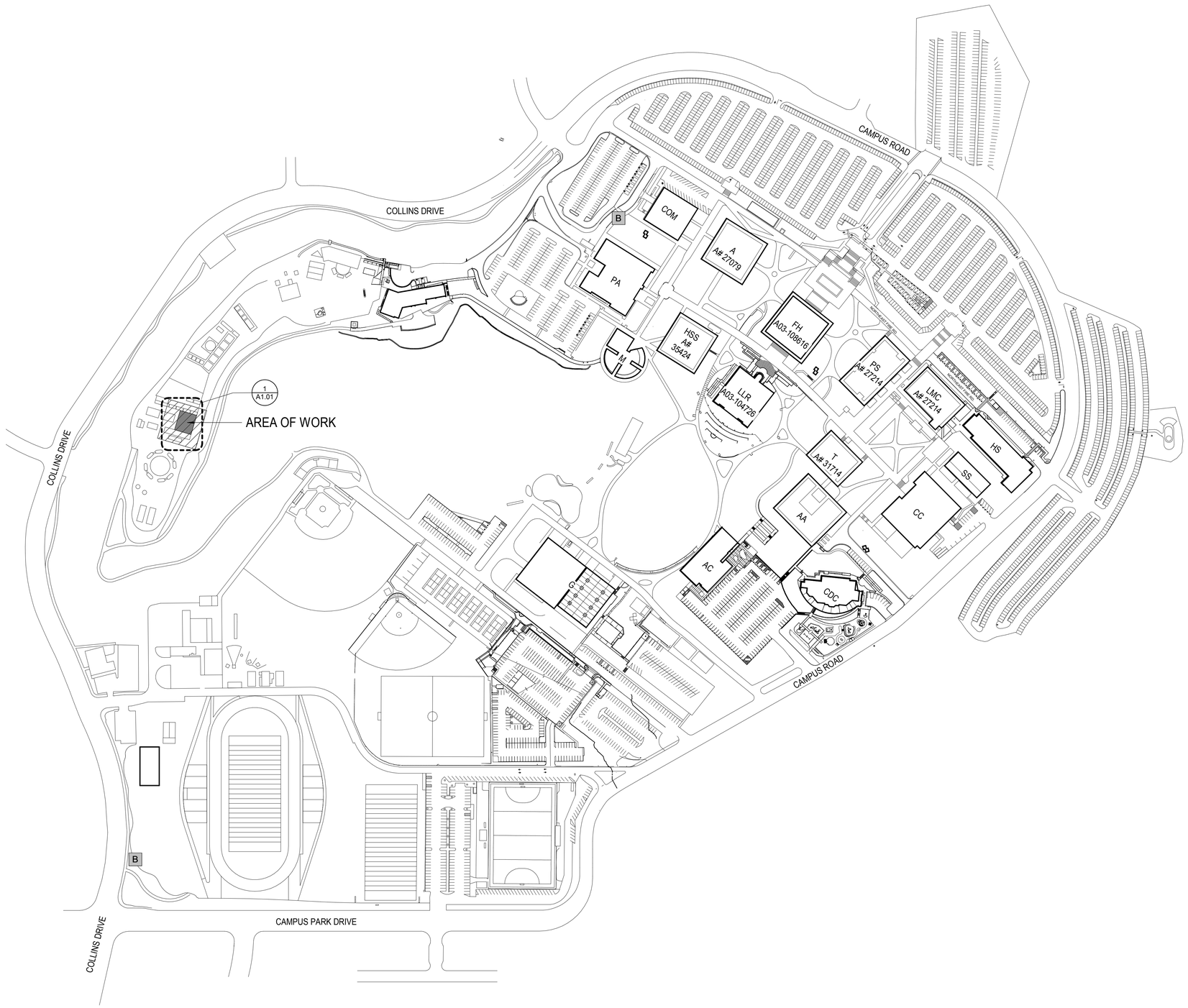
MOORPARK COMMUNITY COLLEGE:
REVIEWED BY:
Date

EROSION AND SEDIMENT CONTROL PLAN

MOORPARK COMMUNITY COLLEGE LION ENCLOSURE

L&A PROJECT No. 18-339

SHEET C4



1 CAMPUS SITE PLAN
1" = 160'-0"

0' 80' 160' 320' 640'

NORTH

AMADOR WHITTLE
ARCHITECTS, INC.

LICENSED ARCHITECT
WILLIAM JORGE AMADOR
C-20348
JANUARY 31, 2019
RENEWAL DATE
STATE OF CALIFORNIA

28328 AGOURA ROAD, SUITE 203
AGOURA HILLS, CA 91301
(805) 530-3938 , (818) 874-0071

LION ENCLOSURE

EXOTIC ANIMAL TRAINING & MANAGEMENT
7075 CAMPUS ROAD
MOORPARK, CA 93021

BID SET

NOTE: THIS SHEET IS ONE OF A SET OF DOCUMENTS WHICH INCLUDES, BUT IS NOT LIMITED TO, DRAWINGS AND SPECIFICATIONS ADDRESSING ALL TRADES. GENERAL CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL BIDDERS WITH A FULL SET OF CONSTRUCTION DOCUMENTS. ALL BIDDERS SHALL REVIEW THE ENTIRE SET OF DOCUMENTS. IF THERE IS A CONFLICT BETWEEN DISCIPLINES, THE MOST EXPENSIVE OPTION SHALL BE BID.

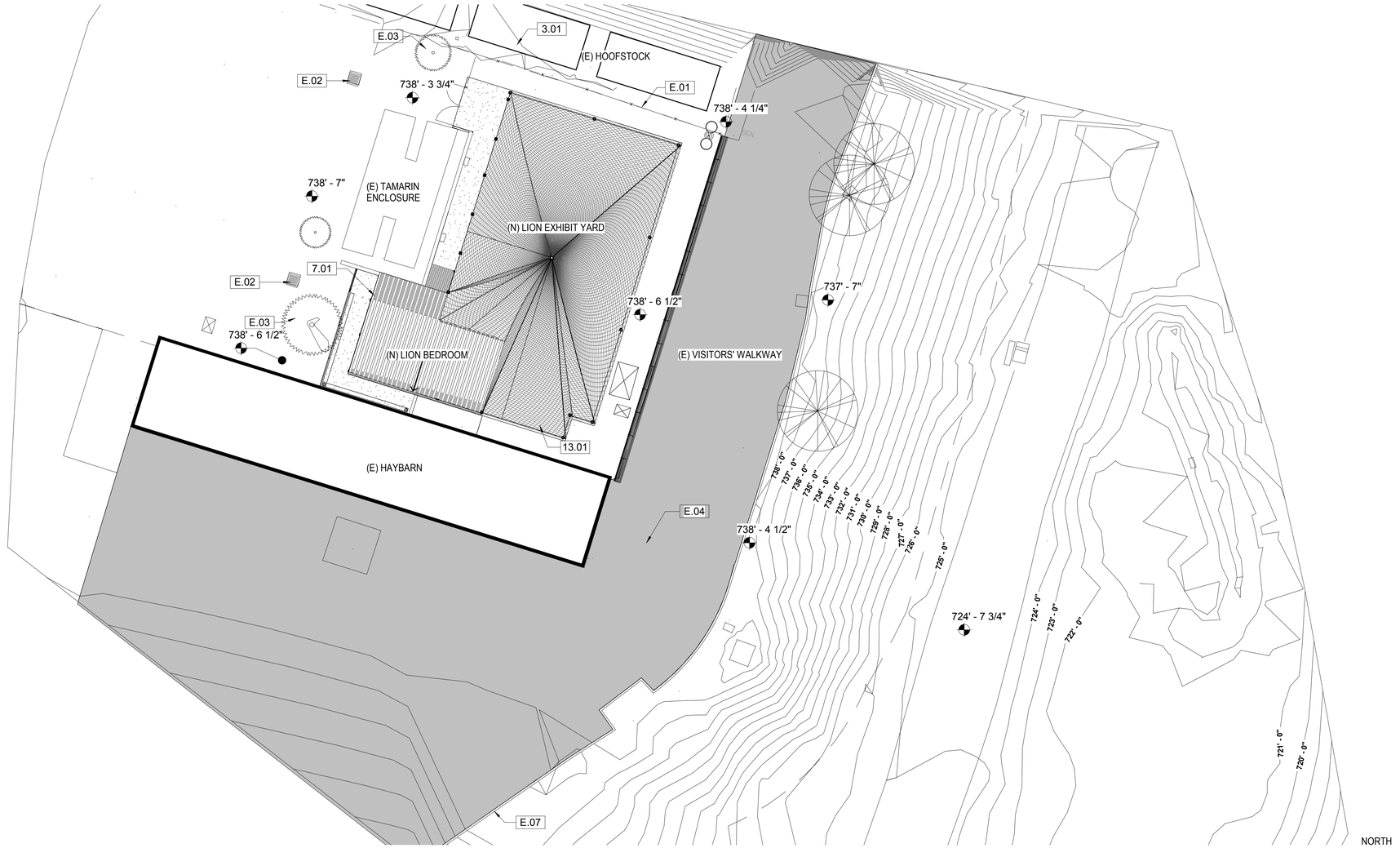
REVISIONS	DATE: 06/24/19
	DRAWN: JA
	CHECK: WJA
	JOB NO: 18-MPC-30

OVERALL SITEPLAN

IF THIS SHEET IS NOT 36" X 24", IT IS NOT FULL SIZE, SCALE DRAWINGS ACCORDINGLY

A1.00

___ OF ___



1 ENLARGED SITE PLAN
1" = 10'-0"

EXISTING KEYNOTES

E.01	(E) CHAINLINK FENCE
E.02	(E) AREA DRAIN
E.03	(E) TREE TO REMAIN
E.04	(E) ASPHALT PAVING
E.07	(E) ASPHALT CURB

KEYNOTES

3.01	CONCRETE SLAB
7.01	CORRUGATED STEEL ROOF
13.01	CABLE WOVEN MESH NETTING

AMADOR WHITTLE
ARCHITECTS, INC.

LICENSED ARCHITECT
WILLIAM JORGE AMADOR
C-20348
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ENLARGED SITE PLAN

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A1.01

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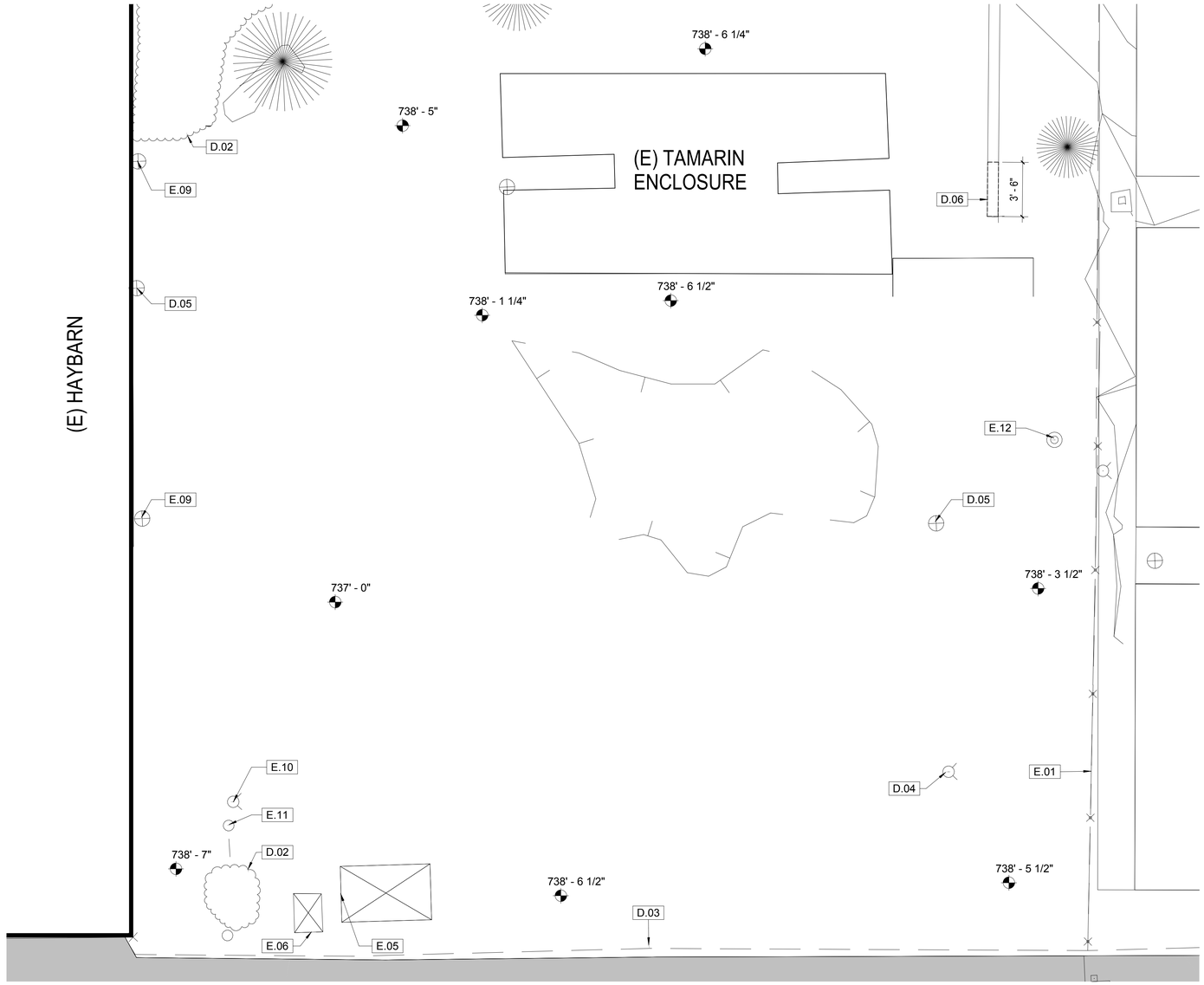

1 DEMOLITION PLAN

1/4" = 1'-0"

DEMOLITION KEYNOTES

D.02	DEMOLISH (E) SHRUB
D.03	DEMOLISH (E) CHAINLINK FENCE
D.04	DEMOLISH (E) HOSE BIB
D.05	CAP AND REMOVE (E) WATER PIPE
D.06	DEMOLISH A PORTION OF (E) RAILROAD TIE

EXISTING KEYNOTES

E.01	(E) CHAINLINK FENCE
E.05	(E) UTILITIY VAULT TO REMAIN
E.06	(E) TV VAULT TO REMAIN
E.09	(E) ELECTRICAL CONDUIT TO REMAIN
E.10	(E) HOSE BIB TO REMAIN
E.11	(E) BACKFLOW TO REMAIN
E.12	(E) SEWER CLEANOUT TO REMAIN

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A1.02

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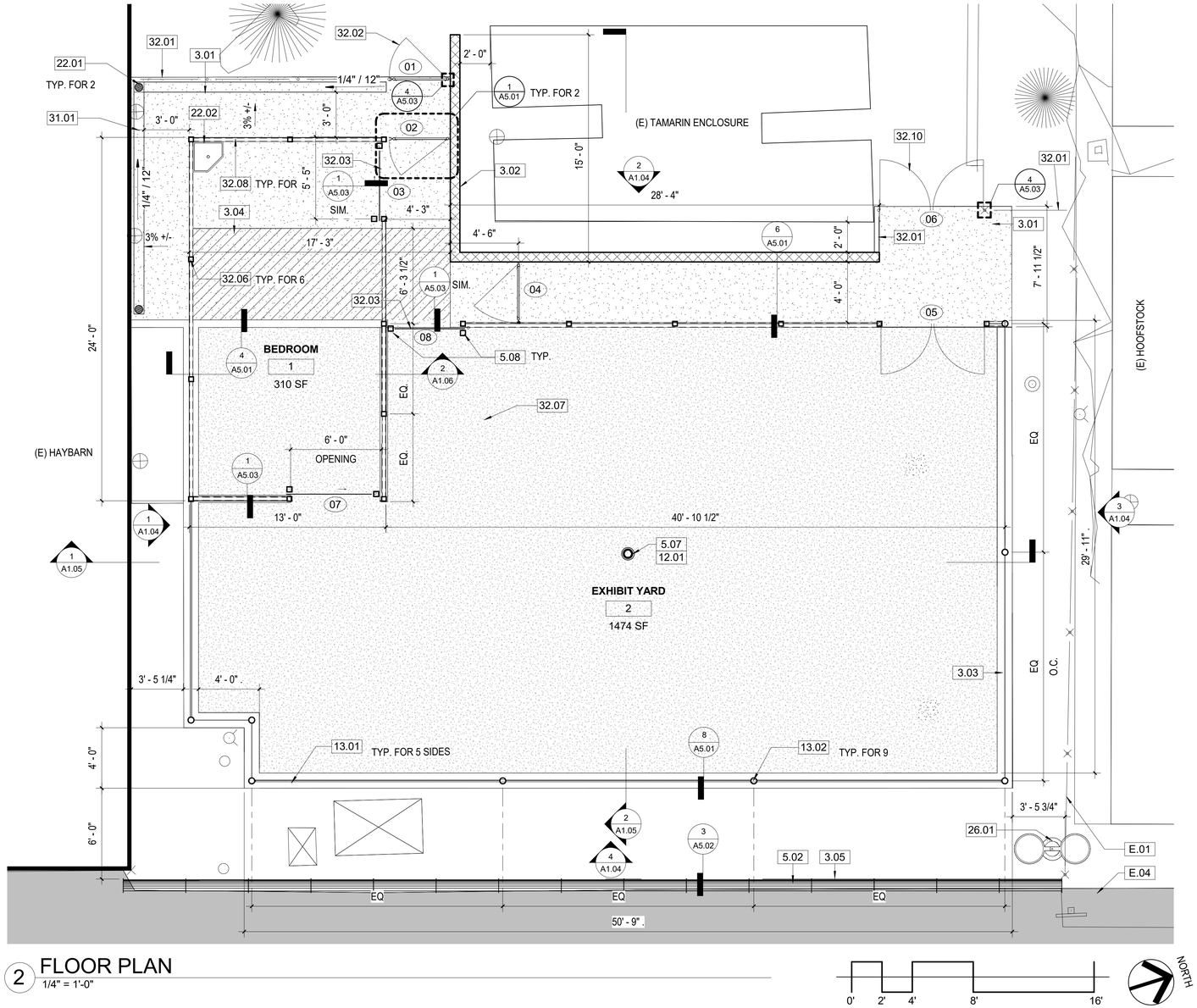
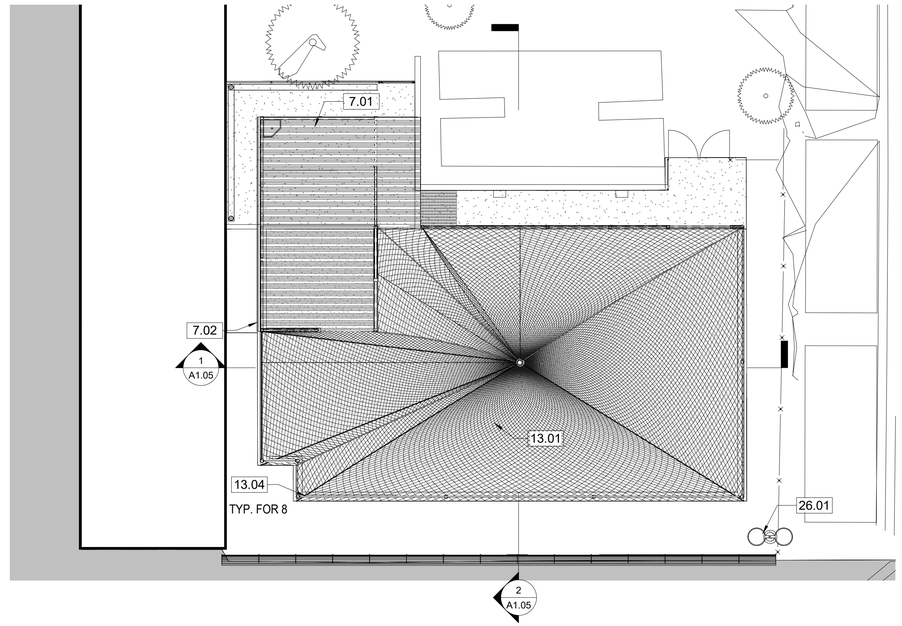
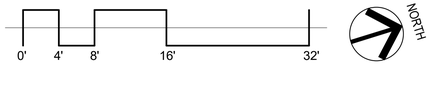


2 FLOOR PLAN
1/4" = 1'-0"



1 ROOF PLAN
1/8" = 1'-0"



GATES SCHEDULE

GATE NUMBER	Type Mark	REMARKS
01	A	3'-8" W x 6'-10" H; SINGLE SWING GATE; CHAINLINK FABRIC
02	B	3'-8" W x 7'-10" H; SINGLE SWING GATE; WELDED WIRE MESH
03	B	5'-0" W x 6'-10" H; SINGLE SLIDING GATE; WELDED WIRE MESH
04	B	3'-8" W x 7'-10" H; SINGLE SWING GATE; WELDED WIRE MESH
05	B	7'-0" W x 10' -0" H; DOUBLE SWING GATE; WELDED WIRE MESH
06	A	7'-0" W x 8'-0" H; DOUBLE SWING GATE; CHAINLINK FABRIC
07	B	6'-0" W x 9'-0" H; SINGLE SLIDING GATE; WELDED WIRE MESH
08	B	5'-0" W x 7'-0" H; SINGLE SLIDING GATE; WELDED WIRE MESH

LEGEND:

- DECOMPOSED GRANITE
- 4" CONCRETE SLAB
- 2 1/2" CONCRETE TOPPING SLAB WITH ELECTRIC RESISTIVE HEATING ELEMENT OVER 4" CONCRETE SLAB
- (E) ASPHALT

EXISTING KEYNOTES

E.01	(E) CHAINLINK FENCE
E.04	(E) ASPHALT PAVING

KEYNOTES

3.01	CONCRETE SLAB
3.02	CMU BLOCK WALL SEE 5/A5.01
3.03	4" CONCRETE CURB
3.04	HEATED CONCRETE SLAB SEE ELECTRIC DRAWINGS
3.05	6" CONCRETE CURB
5.02	48" GUARDRAIL
5.07	6" Ø KINGPOST
5.08	HSS 3" x 3" x 3/16" SLIDING GATE POST
7.01	CORRUGATED STEEL ROOF
7.02	GUTTER
12.01	SCRATCH POST OFOI
13.01	CABLE WOVEN MESH NETTING
13.02	CABLE WOVEN MESH NETTING POST W/ LACING RODS

KEYNOTES

13.04	SUPPORT CABLE FOR WOVEN MESH
22.01	DRAIN W/ MESH SCREEN SEE 6/A5.01
22.02	DRINKING TROUGH
26.01	POLE LIGHT WITH CONCRETE BASE SEE ELECTRIC DRAWINGS
31.01	SWALE SEE CIVIL DRAWINGS
32.01	CHAINLINK FENCE
32.02	WELDED WIRE MESH SWING GATE
32.03	WELDED WIRE MESH SLIDING GATE
32.06	CHAINLINK FENCE STEEL POST
32.07	3" DECOMPOSED GRANITE OVER 4" BASE
32.08	WELDED WIRE MESH PANEL
32.10	8' HIGH CHAINLINK DOUBLE GATE

GENERAL NOTES

1. ALL GALVANIZED STEEL COLUMNS, RECTANGULAR MESH, FASTENERS, STEEL ROOF DECK, PUBLIC RAILING/BARRIER ETC. IS TO BE FIELD PAINTED BLACK AFTER INSTALLATION IS COMPLETE IN ACCORDANCE WITH SPECIFICATION SECTION 09 9000
2. HAND-WOVEN STAINLESS STEEL MESH, LACING WIRE, GALVANIZED SUPPORT CABLES AND CONNECTING HARDWARE SHALL BE BLACK OXIDE FINISH
3. CMU SHALL BE PRECISION GRADE, COLOR TO BE OAK WITH MATCHING COLORED GROUT

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FLOOR & ROOF PLANS

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A1.03

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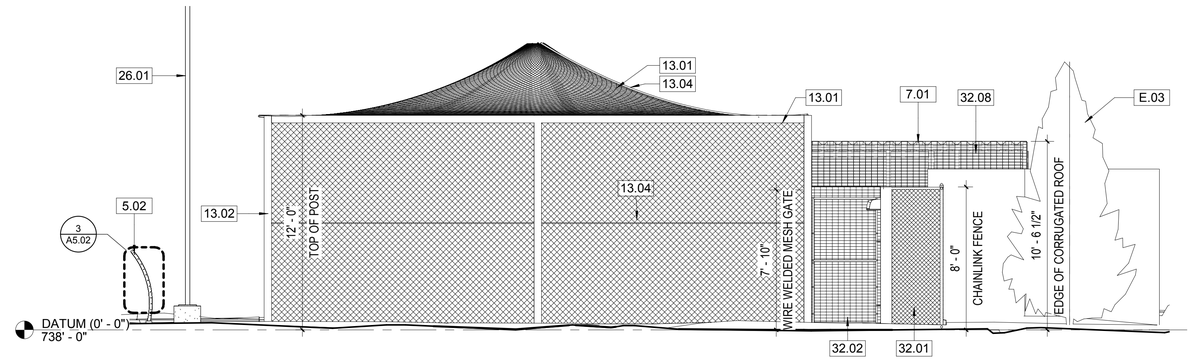
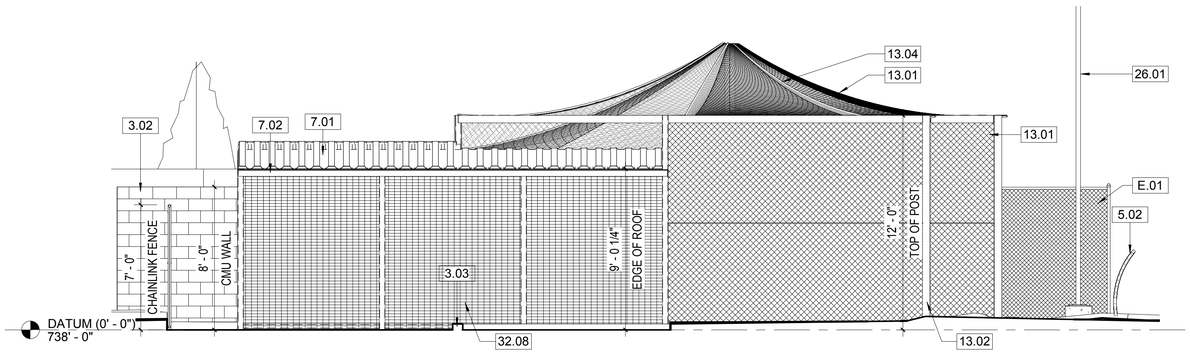


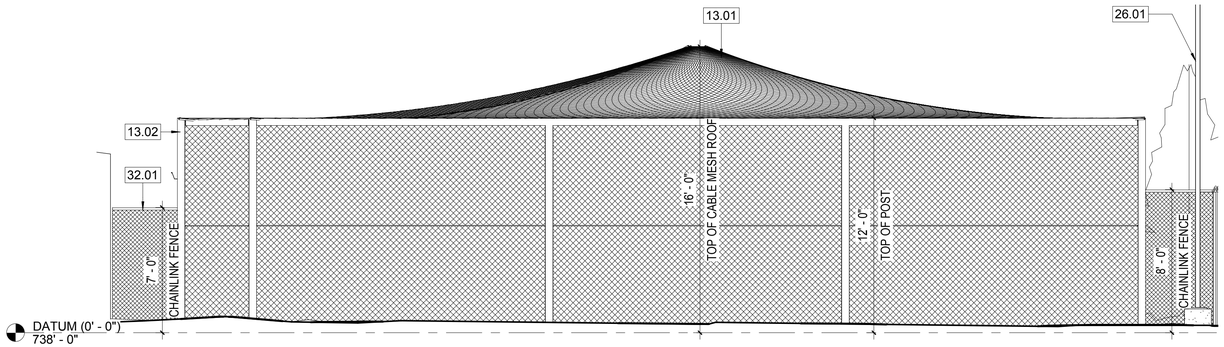
3 EAST ELEVATION

1/4" = 1'-0"



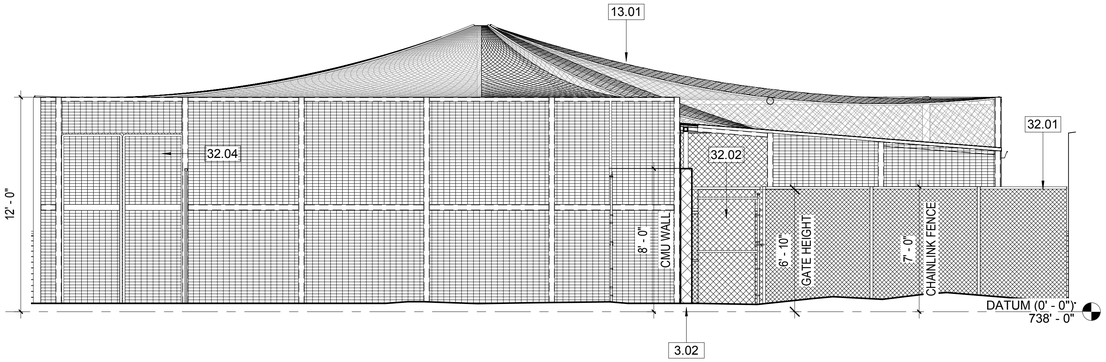
1 WEST ELEVATION

1/4" = 1'-0"



4 SOUTH ELEVATION

1/4" = 1'-0"



2 NORTH ELEVATION

1/4" = 1'-0"

EXISTING KEYNOTES

E.01	(E) CHAINLINK FENCE
E.03	(E) TREE TO REMAIN

KEYNOTES

3.02	CMU BLOCK WALL SEE 5/A5.01
3.03	4" CONCRETE CURB
5.02	48" GUARDRAIL
7.01	CORRUGATED STEEL ROOF
7.02	GUTTER
13.01	CABLE WOVEN MESH NETTING
13.02	CABLE WOVEN MESH NETTING POST W/ LACING RODS
13.04	SUPPORT CABLE FOR WOVEN MESH
26.01	POLE LIGHT WITH CONCRETE BASE SEE ELECTRIC DRAWINGS
32.01	CHAINLINK FENCE
32.02	WELDED WIRE MESH SWING GATE
32.04	WELDED WIRE MESH SERVICE GATE
32.08	WELDED WIRE MESH PANEL

GENERAL NOTES

1. DATUM 0' - 0" = 738' - 0" - SEE CIVIL PLAN SHEET C2 FOR GRADE INFO

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ENCLOSURE ELEVATIONS

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A1.04

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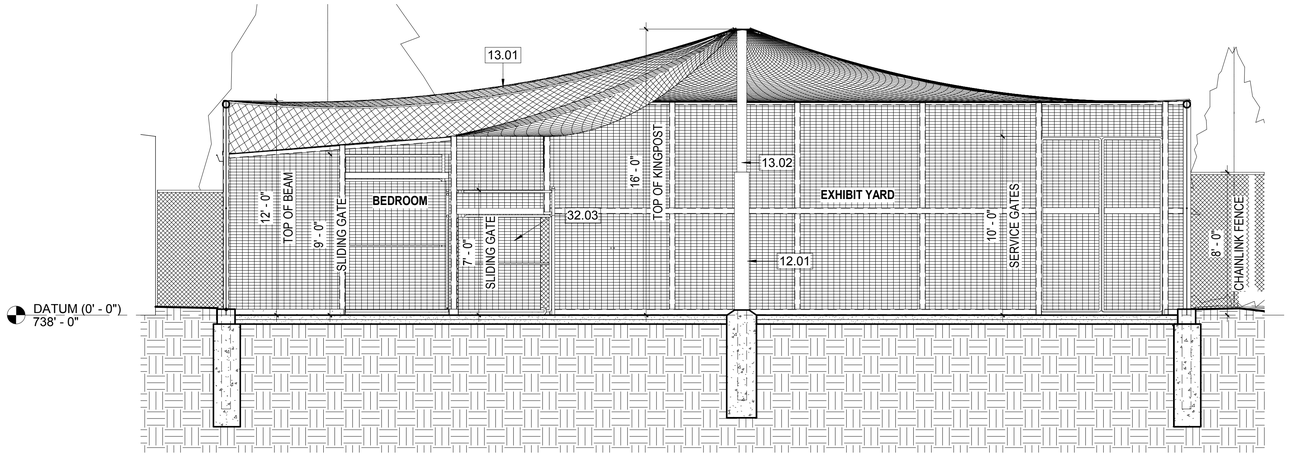
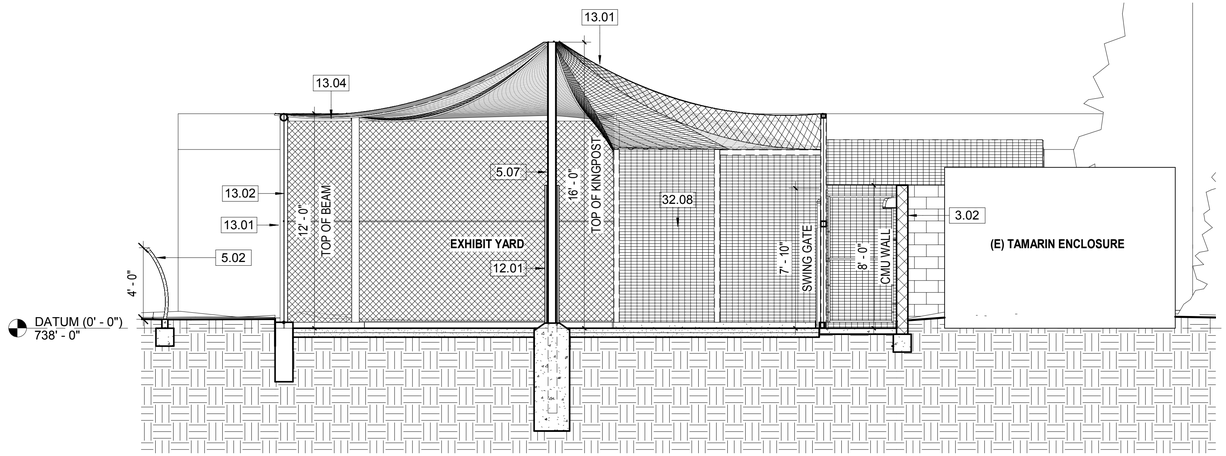


1 SECTION A
1/4" = 1'-0"



2 SECTION B
1/4" = 1'-0"

KEYNOTES

3.02	CMU BLOCK WALL SEE 5/A5.01
5.02	48" GUARDRAIL
5.07	6" Ø KINGPOST
12.01	SCRATCH POST OFOI
13.01	CABLE WOVEN MESH NETTING
13.02	CABLE WOVEN MESH NETTING POST W/ LACING RODS
13.04	SUPPORT CABLE FOR WOVEN MESH
26.01	POLE LIGHT WITH CONCRETE BASE SEE ELECTRIC DRAWINGS
32.03	WELDED WIRE MESH SLIDING GATE
32.08	WELDED WIRE MESH PANEL

GENERAL NOTES

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SECTIONS

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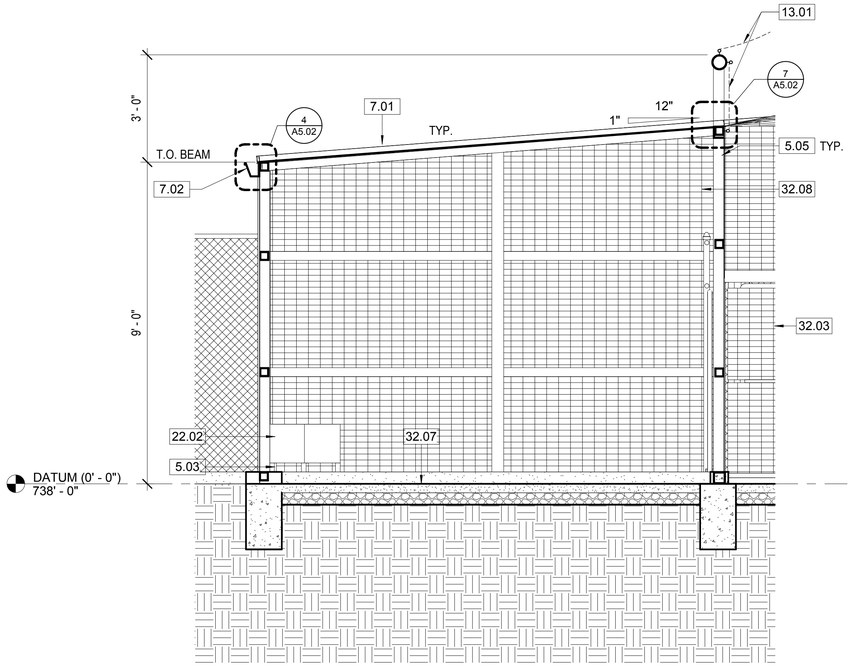
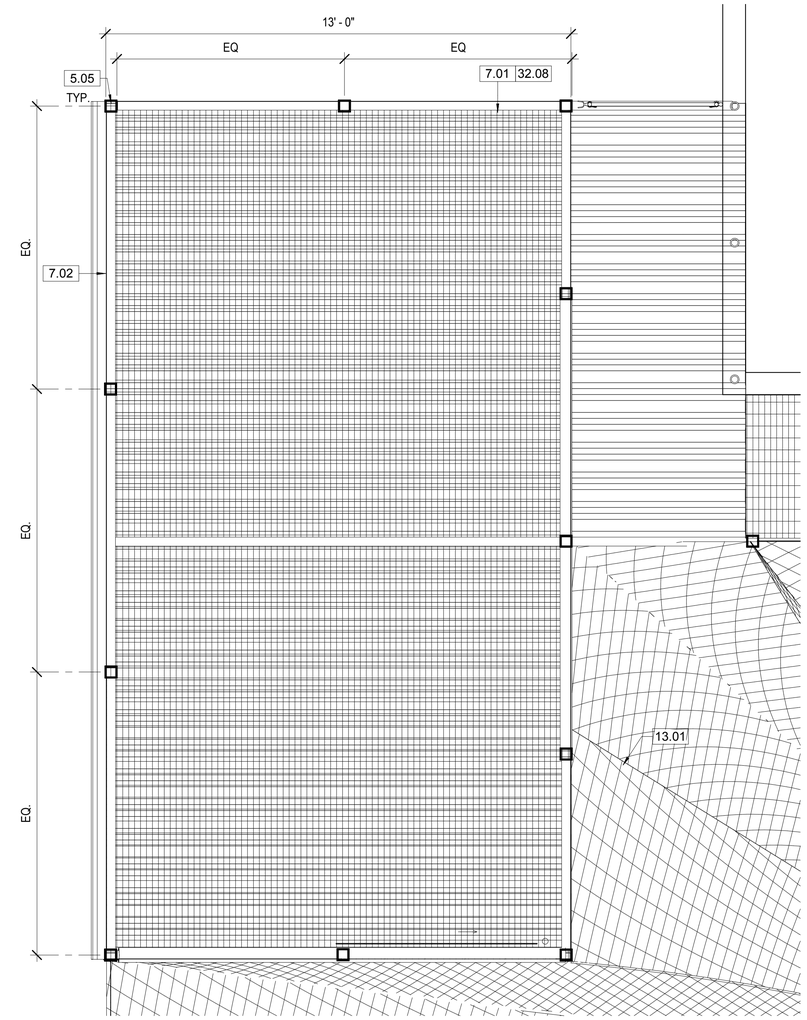
A1.05

___ OF ___



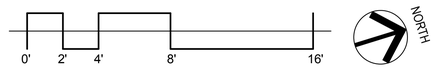
2 LION BEDROOM CROSS SECTION

1/2" = 1'-0"



1 LION BEDROOM RCP

1/2" = 1'-0"



KEYNOTES

5.03	2" X 2" WELDED GALV. STEEL SUPPORT FRAME ANCHORED TO FLOOR SLAB
5.05	3" Ø STEEL TUBE COLUMN
7.01	CORRUGATED STEEL ROOF
7.02	GUTTER
13.01	CABLE WOVEN MESH NETTING
22.02	DRINKING TROUGH
32.03	WELDED WIRE MESH SLIDING GATE
32.07	3" DECOMPOSED GRANITE OVER 4" BASE
32.08	WELDED WIRE MESH PANEL

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LION BEDROOM RCP AND SECTION

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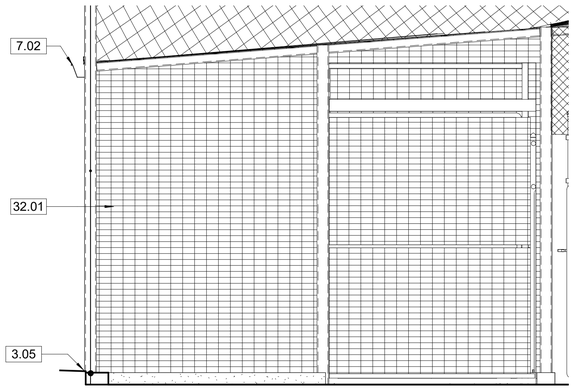
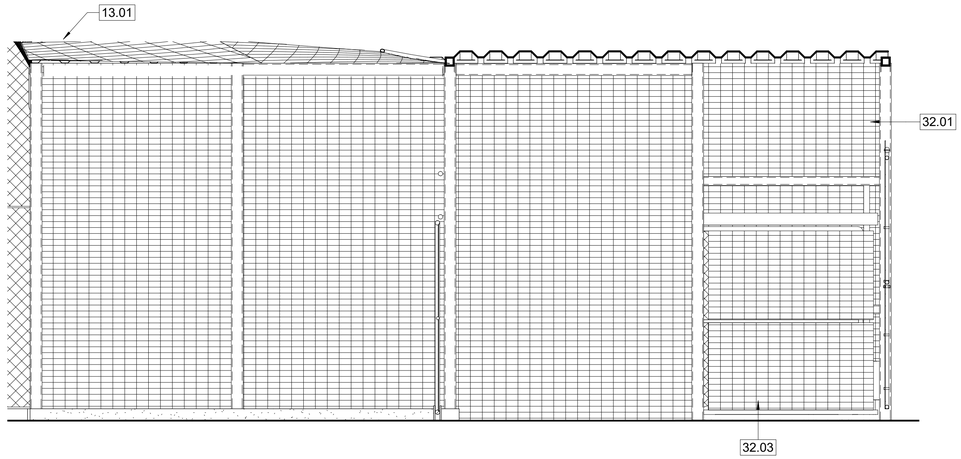
A1.06

___ OF ___



3 SOUTH ELEVATION
1/2" = 1'-0"



2 EAST ELEVATION
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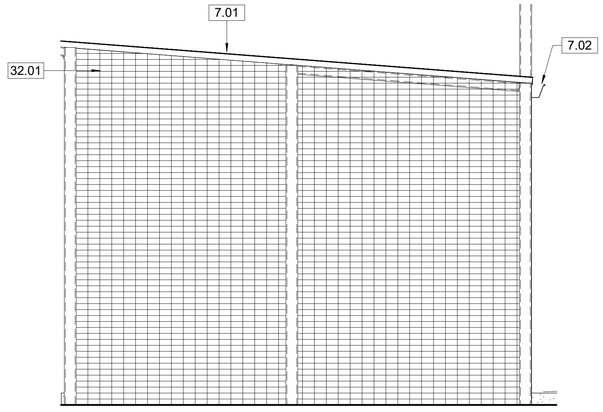

1 NORTH ELEVATION
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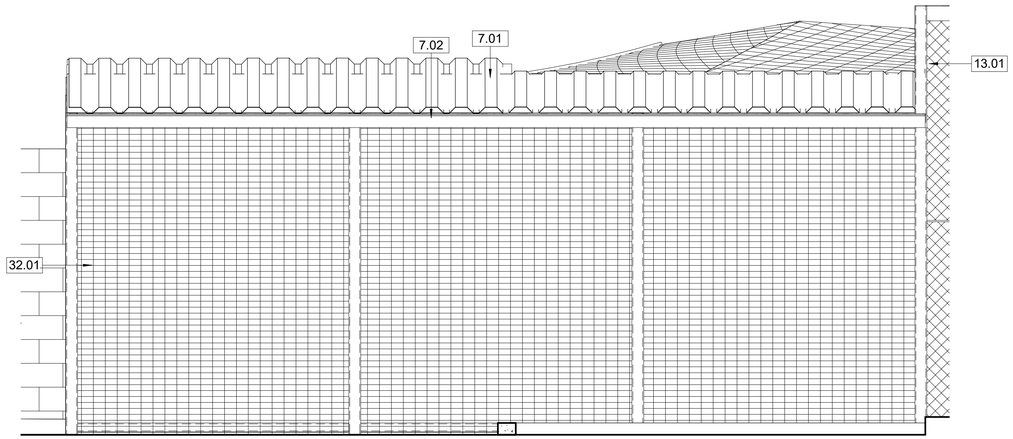

4 WEST ELEVATION
1/2" = 1'-0"

KEYNOTES

3.05	6" CONCRETE CURB
7.01	CORRUGATED STEEL ROOF
7.02	GUTTER
13.01	CABLE WOVEN MESH NETTING
32.01	CHAINLINK FENCE
32.03	WELDED WIRE MESH SLIDING GATE

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LION BEDROOM ELEVATIONS

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A1.07

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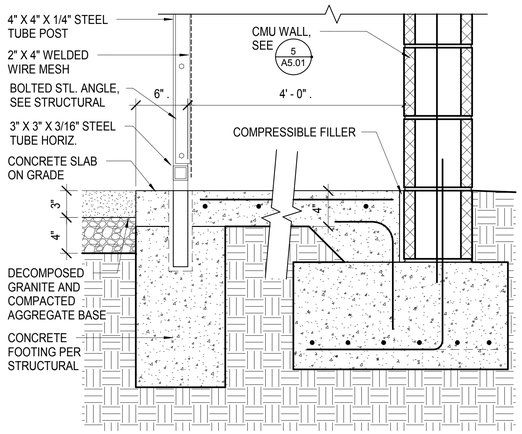
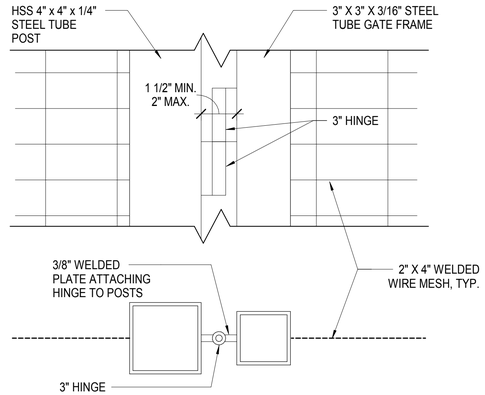


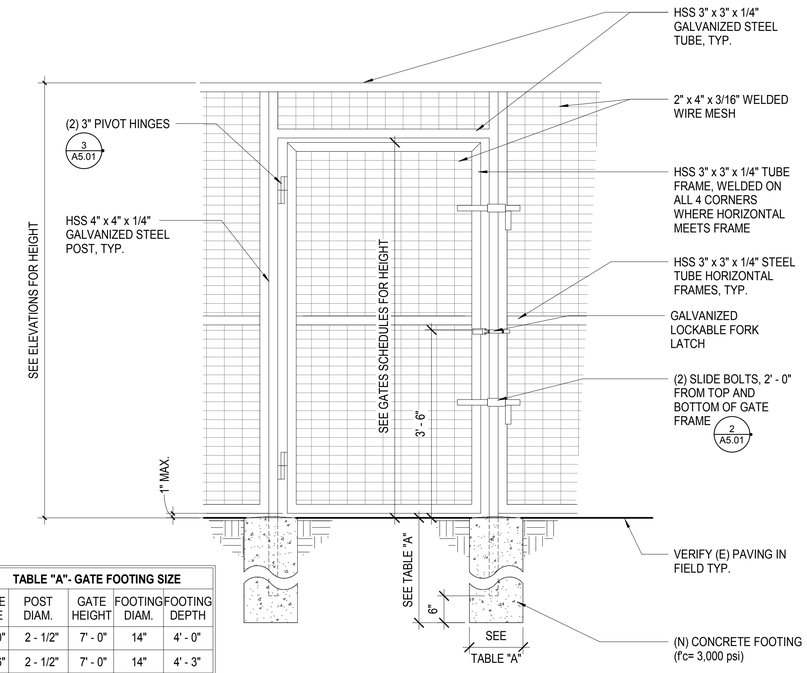
6 CONCRETE SLAB DETAIL

1 1/2" = 1'-0"



3 GATE "B" HINGE DETAIL

3" = 1'-0"



NOTES :

1. ENTIRE ASSEMBLY TO BE HOT DIPPED GALVANIZED AFTER FABRICATION

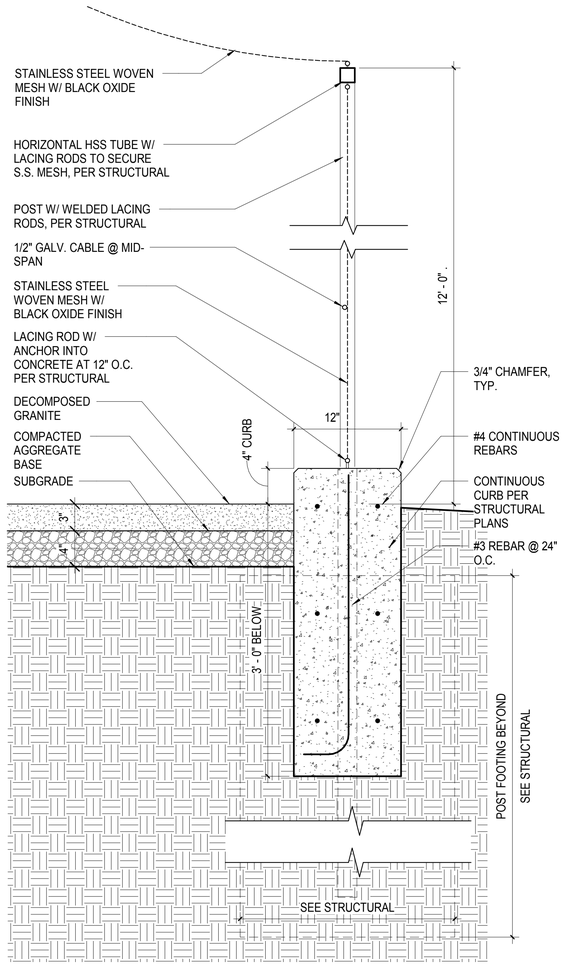
2. ALL WELDS TO BE GROUND SMOOTH

TABLE "B"- GATE FABRIC MATERIAL

TYPE	MATERIAL	SPACING / GAUGE
A	CHAINLINK	2" SPACING / 9 GA.
B	WELDED WIRE MESH	2" x 4" x 3/16"

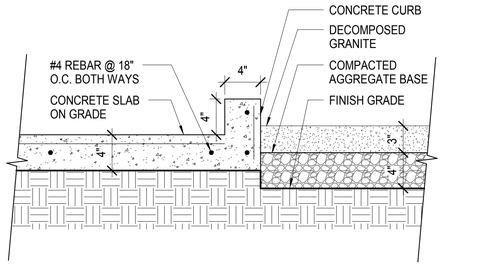
TABLE "A"- GATE FOOTING SIZE

GATE SIZE	POST DIAM.	GATE HEIGHT	FOOTING DIAM.	FOOTING DEPTH
3' - 0"	2 - 1/2"	7' - 0"	14"	4' - 0"
3' - 6"	2 - 1/2"	7' - 0"	14"	4' - 3"
4' - 0"	2 - 1/2"	7' - 0"	14"	4' - 6"



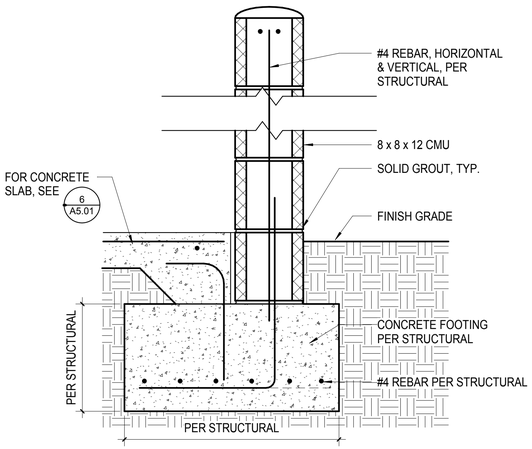
8 WOVEN MESH CURB DETAIL

1 1/2" = 1'-0"



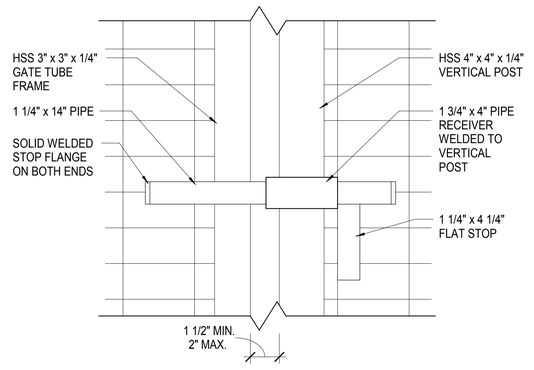
4 CONCRETE CURB DETAIL

1 1/2" = 1'-0"



5 CMU WALL DETAIL

1 1/2" = 1'-0"



1 GATE "A" DETAIL

3/4" = 1'-0"

2 SLIDE BOLT DETAIL

3" = 1'-0"

AMADOR WHITTLE
ARCHITECTS, INC.

LICENSED ARCHITECT
WILLIAM JORGE AMADOR
C-20348
JANUARY 31, 2019
RENEWAL DATE
STATE OF CALIFORNIA

28328 AGOURA ROAD, SUITE 203
AGOURA HILLS, CA 91301
(805) 530-3938 , (818) 874-0071

LION ENCLOSURE

EXOTIC ANIMAL TRAINING & MANAGEMENT
7075 CAMPUS ROAD
MOORPARK, CA 93021

BID SET

REVISIONS	DATE: 06/24/19
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	CHECK: Checker
	JOB NO: 18-MPC-30

DETAILS

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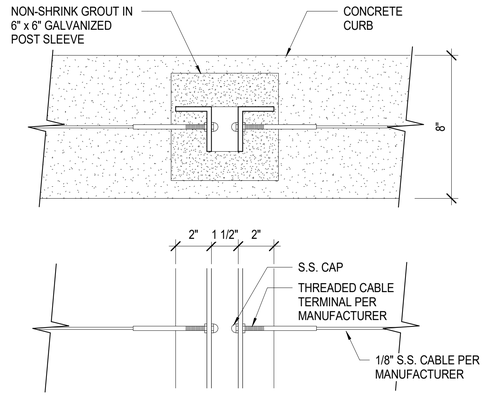
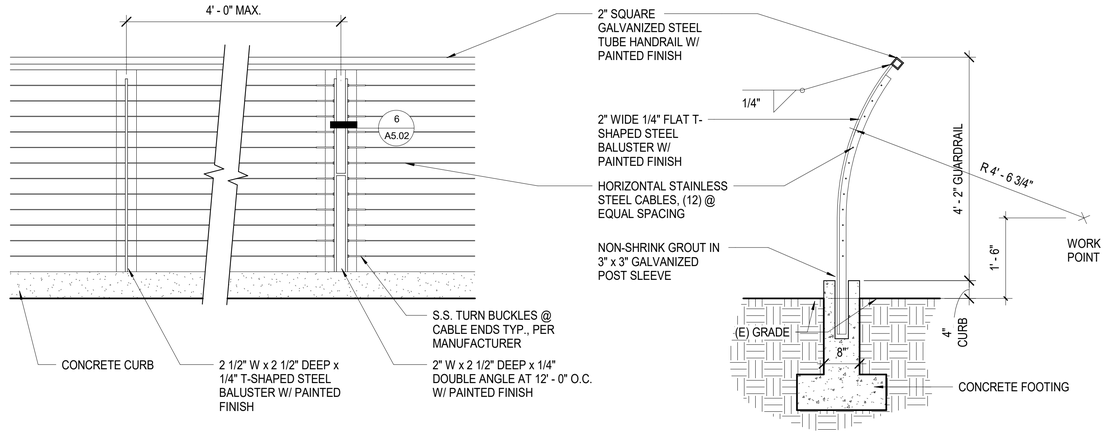
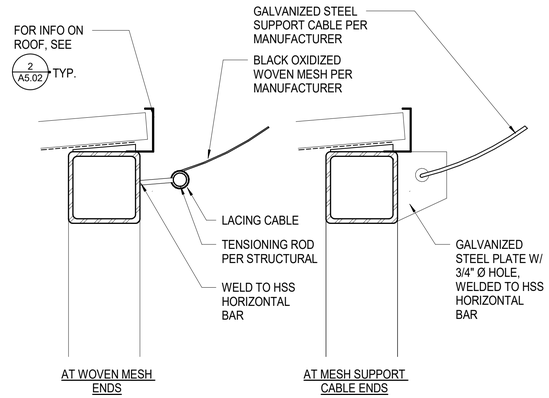


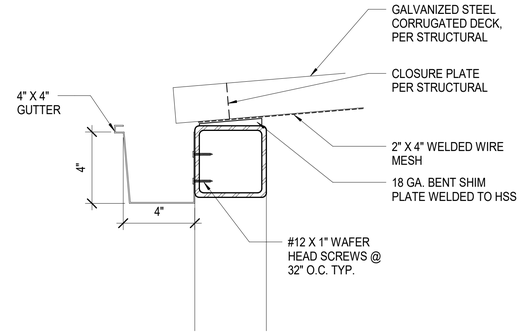
6 GUARDRAIL DETAIL
3" = 1'-0"



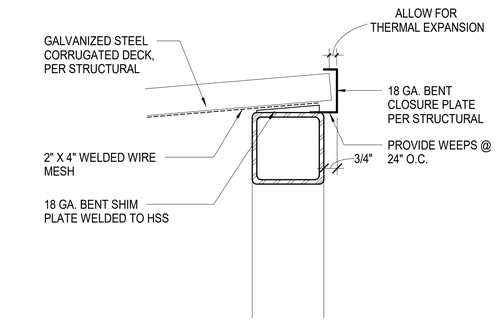
3 GUARDRAIL DETAIL
3/4" = 1'-0"



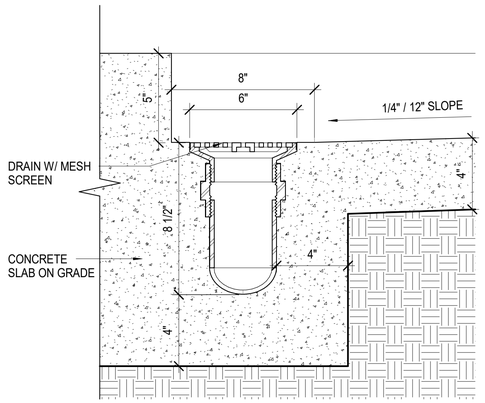
7 WOVEN MESH TO HSS TUBE DETAIL
3" = 1'-0"



4 ROOF AND GUTTER DETAIL
3" = 1'-0"



2 ROOF EDGE DETAIL - RAKE SIM.
3" = 1'-0"



5 SWALE DRAIN DETAIL
3" = 1'-0"

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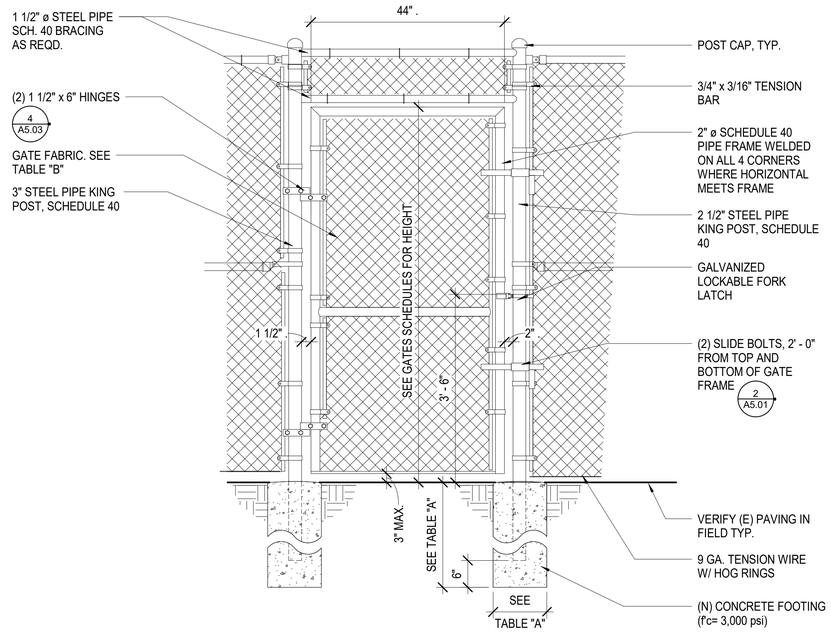
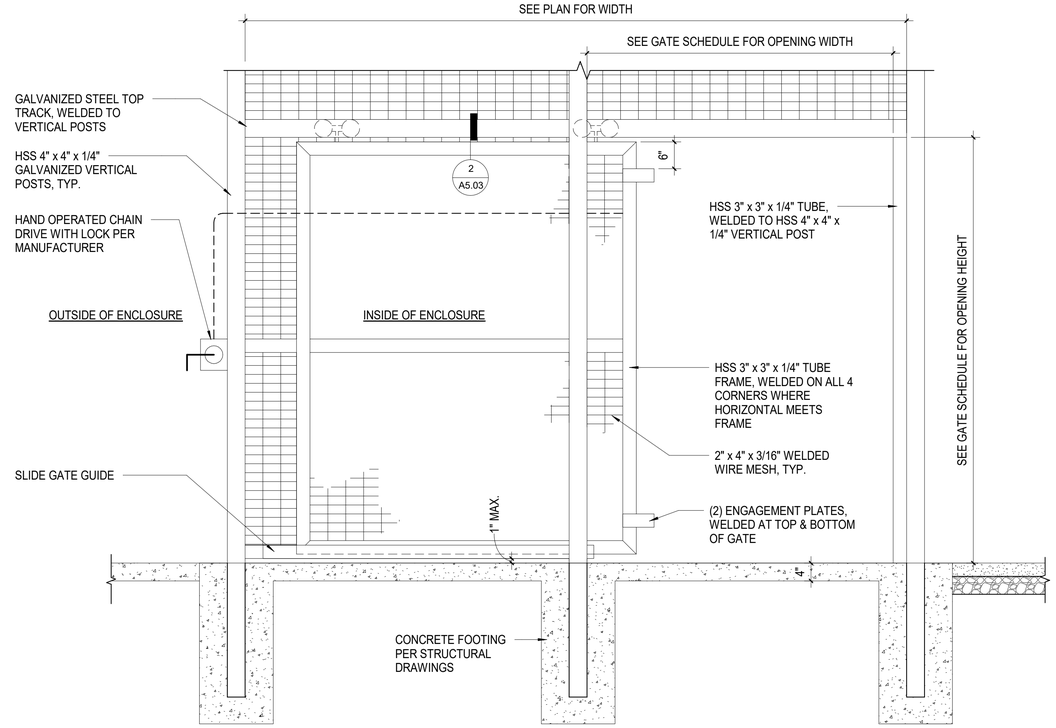
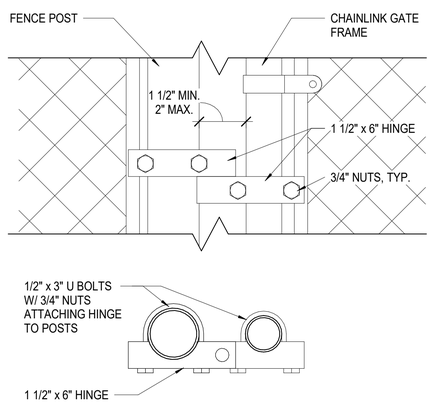


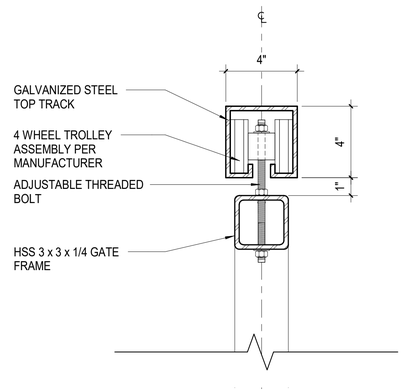
3 GATE TYPE "A" DETAIL
3/4" = 1'-0"



1 SLIDING GATE PLAN & ELEVATION
3/4" = 1'-0"



4 CHAINLINK GATE TYPE "A" HINGE DETAIL
3" = 1'-0"



2 SLIDING GATE TRACK DETAIL
3" = 1'-0"

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MASONRY

1. BLOCK SHALL BE MEDIUM WEIGHT (115 PCF) CONFORMING TO ASTM- C-90 GRADE N-I. USE UNITS OPEN ONE END, AND BOND BEAM UNITS AT HORIZONTAL REINFORCING. WHEN BLOCKS ARE EXPOSED OBTAIN APPROVAL OF SUBMITTAL FROM ARCHITECT. UNITS SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH AS REQUIRED TO MEET THE MASONRY COMPRESSIVE STRENGTH OF MASONRY f'm SPECIFIED ON THE PLANS AS FOLLOWS:

   A. 1,900 PSI FOR SPECIFIED f'm UP TO 1,500 PSI
   B. 2,800 PSI FOR SPECIFIED f'm UP TO 2,000 PSI
   C. 3,150 PSI FOR SPECIFIED f'm UP TO 2,500 PSI
   D. 4,800 PSI FOR SPECIFIED f'm UP TO 3,000 PSI

2. MIN. SPECIFIED COMPRESSIVE STRENGTH SHALL BE f'm = 1,500 PSI, UNLESS OTHERWISE SPECIFIED ON THE PLANS.

3. CEMENT: ASTM C-150, LOW ALKALI, TYPE I OR II PORTLAND CEMENT. (MASONRY CEMENT AND PLASTIC CEMENT SHALL NOT BE USED)

4. MORTAR:
   A. CONFORMING TO ASTM C-270, TYPE [S].
   B. MIX PROPORTIONS SHALL CONFORM TO ASTM C-270.
   C. AGGREGATED SHALL CONFORM TO ASTM C-144.

5. GROUT:
   A. CONFORMING TO ASTM C-476.
   B. ATTAINS THE MASONRY COMPRESSIVE STRENGTH f'm OR 2,000 PSI AT 28 DAYS, WHICHEVER IS GREATER.
   C. MIX PROPORTIONS SHALL CONFORM TO ASTM C-476
   D. AGGREGATES SHALL CONFORM TO ASTM C-404
   E. USE COARSE GROUT IN GROUT SPACES 2 INCHES OR MORE IN WIDTH AND CELLS TO BE GROUTED SOLID.

6. ADMIXTURES: DO NOT USE ANY ADMIXTURES IN MORTAR OR GROUT WITHOUT APPROVAL BY THE ARCHITECT.

7. MEASURE MATERIALS FOR MORTAR AND GROUT IN CALIBRATED DEVICES. SHOVEL MEASUREMENTS ARE NOT ACCEPTABLE.

8. ADJUST THE WATER CONTENT OF THE MORTAR AND GROUT MIXES TO PROVIDE PROPER WORKABILITY UNDER EXISTING FIELD CONDITIONS WITHOUT SEGREGATION.

9. REINFORCING STEEL:
   A. REBAR: ASTM A-615, GRADE 60 (FY=60KSI).
   B. JOINT REINFORCEMENT: ASTM A-951

10. LAP REINFORCING STEEL AT SPLICES WITH A MINIMUM 48 BAR DIAMETERS, UNLESS NOTED OTHERWISE. WHERE CLEAR DISTANCE BETWEEN BARS AT ADJACENT SPICES IS 3 INCHES OR LESS, INCREASE LAP LENGTH 30% UNLESS SPLICES ARE STAGGERED AT LEAST 24 BAR DIAMETERS.

11. DOWELS FOR WALLS AND COLUMNS SHALL MATCH SIZE AND SPACING OF WALL AND COLUMN REINFORCING STEEL.

12. MASONRY WORK SHALL CONFORM TO THE LATEST ADOPTED EDITION OF THE CBC. AND THE 2016 MSJC SPECIFICATIONS.

13. CONCRETE BLOCK UNITS ARE TO BE STAGGERED & TO HAVE VERTICAL CONTINUITY OF CELLS UNOBSTRUCTED.

14. IF WORK IS STOPPED AN HOUR OR LONGER, PROVIDE HORIZONTAL CONSTRUCTION JOINT BY STOPPING GROUT 1 ½" BELOW TOP OF MASONRY UNIT.

15. SPECIAL INSPECTION IS REQUIRED FOR ALL MASONRY WORK.

16. GROUT ALL MASONRY WALLS SOLID. GROUTING LIFTS SHALL NOT EXCEED 5'-0" IN HEIGHT IN ACCORDANCE WITH 2008 MSJC SPECIFICATIONS.

17. THE CLEAR DISTANCE BETWEEN THE SURFACE OF A BAR AND ANY SURFACE OF A MASONRY UNIT SHALL BE NOT LESS THAN ¼" FOR FINE GROUT AND NOT LESS THAN ½" FOR COURSE GROUT.

18. SECURE REBAR AGAINST DISPLACEMENT PRIOR TO GROUTING AT INTERVALS NOT GREATER THAN 200 BAR DIAMETERS.

19. TERMINATE HORIZONTAL BARS WITH A STANDARD HOOK AT THE JAMBS OF WALL OPENINGS.

20. VERIFY SPECIFIED COMPRESSIVE STRENGTH OF MASONRY IN ACCORDANCE WITH ONE OF THE FOLLOWING METHODS: MASONRY PRISM TESTING, MASONRY PRISM TEST RECORD OR UNIT STRENGTH METHOD. FIVE MASONRY PRISM TESTS SHALL BE BUILT AND TESTED PRIOR TO CONSTRUCTION. THREE MASONRY PRISM TESTS (PER 5,000 SQ. FT. OF FLOOR AREA, 3 MIN.) SHALL BE BUILT AND TESTED DURING CONSTRUCTION WHEN FULL STRESSES ARE USED IN DESIGN.

FOUNDATIONS

1. THE DESIGN OF THE FOUNDATION SYSTEM IS BASED UPON THE CRITERIA AND RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL INVESTIGATION REPORT TITLED:

   PREPARED BY:

   PROJECT NUMBER:

2. THE GEOTECHNICAL INVESTIGATION REPORT AND ITS RECOMMENDATIONS SHALL BE FOLLOWED AND SHALL BE CONSIDERED MINIMUM REQUIREMENTS UNLESS MORE STRINGENT REQUIREMENTS ARE PRESENTED IN THE SPECIFICATIONS OR ON THE DRAWINGS.

3. PER GEOTECHNICAL INVESTIGATION REPORT, THE ALLOWABLE SOIL BEARING PRESSURES ARE AS FOLLOWS:

   A. CONTINUOUS FOOTING: 1,500 PSF

   B. ISOLATED SPREAD FOUNDATIONS: 1,500 PSF

   C. BEARING VALUES MAY BE INCREASED BY ONE-THIRD WHEN TRANSIENT LOADS SUCH AS WIND AND/OR SEISMIC ARE INCLUDED.

4. REMOVE LOOSE SOIL AND STANDING WATER FROM FOUNDATION EXCAVATIONS PRIOR TO PLACING CONCRETE. THE GEOTECHNICAL ENGINEER SHALL INSPECT AND APPROVE ALL EXCAVATIONS, SOIL COMPACTION WORK PRIOR TO PLACEMENT OF ANY REBAR OR CONCRETE, SHORING INSTALLATIONS, BACKFILL MATERIALS AND BACK FILLING PROCEDURES.

5. LOCATE AND PROTECT EXISTING UTILITIES TO REMAIN DURING AND/OR AFTER CONSTRUCTION.

6. REMOVE ABANDONED FOOTINGS, UTILITIES, ETC. WHICH INTERFERE WITH NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED.

7. NOTIFY THE OWNER'S REPRESENTATIVE IF ANY BURIED STRUCTURES NOT INDICATED, SUCH AS CESSPOOLS, CISTERNS, FOUNDATIONS, ETC., ARE FOUND.

8. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, UNDERPINNING AND PROTECTION OF EXISTING CONSTRUCTION.

9. PLACE BACKFILL BEHIND RETAINING WALLS AFTER CONCRETE OR MASONRY HAS ATTAINED FULL DESIGN STRENGTH. BRACE BUILDING AND PIT WALLS BELOW GRADE FROM LATERAL LOADS UNTIL ATTACHED FLOORS AND SLABS ON GRADE ARE COMPLETE AND HAVE ATTAINED FULL DESIGN STRENGTH.

10. THE CONTRACTOR SHALL PROVIDE CARE IN DRILLING, PLACEMENT OF STEEL REINFORCEMENT, AND POURING OF CONCRETE TO AVOID DISTURBANCE OF PILE BORING WALLS. THE STEEL REINFORCEMENT CAGE SHALL BE INSTALLED AND CONCRETE SHALL BE PLACED INTO THE PILE HOLE IMMEDIATELY AFTER THE HOLE IS DRILLED. PILE HOLES SHALL NOT BE LEFT OPEN OVERNIGHT. WHERE PILE SPACING IS LESS THAN THREE DIAMETERS, DRILLING SHALL NOT BE CARRIED OUT BEFORE THE PREVIOUSLY POURED PILE CONCRETE HAS SET FOR AT LEAST TWENTY FOUR HOURS.

11. IN THE EVENT OF SOIL OR WATER SEEPAGE INTO THE PILE EXCAVATION, CASING AND/OR THE USE OF "POLYMER-SLURRY" DRILLING FLUID MAY BE REQUIRED IF CAVING IS ENCOUNTERED BELOW THE WATER SEEPAGE LEVEL, IN ORDER TO ACHIEVE THE REQUIRED DEPTH, AND MAINTAIN AN OPEN EXCAVATION TO ALLOW FOR THE PLACEMENT OF REINFORCING STEEL AND CONCRETE. CASING SHALL BE PULLED AS THE PILE EXCAVATION IS FILLED WITH CONCRETE, MAINTAINING AT LEAST FIVE FEET OF CONCRETE HEAD INSIDE THE CASING. CONCRETE SHALL BE PLACED AND VIBRATED THROUGHOUT THE FULL LENGTH OF THE PILE SO THAT VOIDS DO NOT EXIST IN EITHER THE PILE BASE OR THE SHAFT. PLACEMENT PROCEDURES SHALL BE USED TO ENSURE THAT AGGREGATE SEGREGATION DOES NOT OCCUR.

GENERAL

1. ALL NEW CONSTRUCTION SHALL COMPLY WITH THE CONTRACT DOCUMENTS AND THE 2016 CALIFORNIA BUILDING CODE.

2. REFERENCE TO CODES, RULES, REGULATIONS, STANDARDS, MANUFACTURER'S INSTRUCTIONS OR REQUIREMENTS OF REGULATORY AGENCIES IS TO THE LATEST PRINTED EDITION OF EACH IN EFFECT AT THE DATE OF SUBMISSION OF BID UNLESS THE DOCUMENT DATE IS SHOWN.

3. TYPICAL DETAILS AND GENERAL NOTES APPLY TO ALL PARTS OF THE WORK EXCEPT WHERE SPECIFICALLY DETAILED OR UNLESS NOTED OTHERWISE (U.N.O.)

4. THE STRUCTURAL DRAWINGS ILLUSTRATE THE NEW STRUCTURAL MEMBERS. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR NON-STRUCTURAL ITEMS WHICH REQUIRE SPECIAL PROVISIONS DURING THE CONSTRUCTION OF THE STRUCTURAL MEMBERS.

5. REFER TO ARCHITECTURAL DRAWINGS FOR FLOOR DEPRESSIONS, EDGE OF SLAB, OPENINGS, SLOPES, DRAINS, CURBS, PADS, EMBEDDED ITEMS, NON-BEARING PARTITIONS, ETC. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR SLEEVES, OPENINGS, AND HANGERS FOR PIPES, DUCTS AND EQUIPMENT.

6. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND SHALL VERIFY ALL DIMENSIONS AND CONDITIONS WHICH IMPACT THE WORK. FIELD VERIFY SIZES, ELEVATIONS, HOLE LOCATIONS, ETC. PRIOR TO FABRICATION.

7. DRAWING DIMENSIONS ARE TO FACE OF STRUCTURE, JOINT CENTERLINE OR COLUMN GRID CENTERLINE UNLESS NOTED OTHERWISE. DO NOT SCALE THE DRAWINGS.

8. CONTRACTOR SHALL CAREFULLY REVIEW THE DRAWINGS TO IDENTIFY THE SCOPE OF WORK REQUIRED. VISIT THE SITE TO RELATE THE SCOPE OF WORK TO EXISTING CONDITIONS AND DETERMINE THE EXTENT TO WHICH THOSE CONDITIONS AND PHYSICAL SURROUNDINGS WILL IMPACT THE WORK.

9. EXISTING CONDITIONS AS SHOWN ON THESE PLANS ARE FOR REFERENCE ONLY. CONTRACTOR IS REQUIRED TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL REPORT CONDITIONS THAT CONFLICT WITH THE CONTRACT DOCUMENTS TO THE OWNER'S REPRESENTATIVE. DO NOT DEVIATE FROM THE CONTRACT DOCUMENTS WITHOUT WRITTEN DIRECTION FROM THE OWNER'S REPRESENTATIVE.

10. THE CONTRACTOR SHALL RESOLVE ANY CONFLICTS ON THE DRAWINGS OR IN THE SPECIFICATIONS WITH THE DESIGN TEAM BEFORE PROCEEDING WITH THE WORK.

11. ANY DEVIATION, MODIFICATION & SUBSTITUTION FROM THE APPROVED SET OF STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR REVIEW/APPROVAL PRIOR TO ITS USE OR INCLUSION ON THE SHOP DRAWINGS & PRIOR TO PROCEEDING WITH THE WORK.

12. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SHORES, BRACES, GUYS, HOIST BEAM, REQUIRED TO SUPPORT ALL LOADS TO WHICH THE BUILDING STRUCTURE AND COMPONENTS, SOILS, OTHER STRUCTURES AND UTILITIES MAY BE SUBJECTED DURING CONSTRUCTION. SHORING SYSTEMS SHALL BE DESIGNED AND STAMPED BY A CIVIL ENGINEER LICENSED IN THE STATE OF CALIFORNIA. VISITS TO THE SITE BY THE OWNER'S REPRESENTATIVE WILL NOT INCLUDE OBSERVATION OF THE ABOVE NOTED ITEMS.

13. THE CONTRACTOR SHALL PROVIDE MEANS, METHOD, TECHNIQUES, SEQUENCE AND PROCEDURE OF CONSTRUCTION AS REQUIRED. SITE VISITS PERFORMED BY THE OWNER'S REPRESENTATIVE DO NOT INCLUDE INSPECTIONS OF MEANS AND METHODS OF CONSTRUCTION PERFORMED BY CONTRACTOR.

14. THE CONTRACTOR SHALL PROTECT ALL WORK, MATERIALS AND EQUIPMENT FROM DAMAGE AND SHALL PROVIDE PROPER STORAGE FACILITIES FOR MATERIALS AND EQUIPMENT DURING CONSTRUCTION.

15. A COPY OF ANY REQUIRED ICC-ES REPORT AND/OR CONDITIONS OF LISTING SHALL BE MADE AVAILABLE AT THE JOB SITE.

16. ATTACHMENT OF NON-STRUCTURAL COMPONENTS SPECIFIED BY OTHERS TO STRUCTURAL ELEMENTS SHALL BE SPECIFIED BY THE NON-STRUCTURAL COMPONENT DESIGNER/SPECIFIER/INSTALLER. DESIGNER OF NON-STRUCTURAL ELEMENTS SHALL AT A MINIMUM SPECIFY THE CONNECTION TO THE STRUCTURE INCLUDING BUT NOT LIMITED TO: ANY TYPE OF CONNECTING HARDWARE, WIRE, HANGERS, FASTENERS, CLIPS, UNISTRUT MEMBERS. NON STRUCTURAL ELEMENTS SHALL INCLUDE, BUT NOT LIMITED TO: MEP AND HVAC EQUIPMENT & THEIR SUPPORTING PADS, PLATFORMS, FRAMES, ETC.; DUCTWORK, PIPES, CONDUITS, ARTWORK, GRILLES, GRATING, METAL SCREENS, ELEVATOR RAILS, STONE FINISH TILES, STONE CAPS, BRICK VENEER.

17. ALLOW FOURTEEN WORKING DAYS FOR PROCESSING SHOP DRAWINGS AND SUBMITTALS AFTER RECEIPT.

DESIGN CRITERIA

1. BUILDING SHALL COMPLY WITH THE 2016 CALIFORNIA BUILDING CODE.

2. VERTICAL LIVE LOADS:
   A. ROOF 20 PSF

3. LATERAL LOADS:
   A. WIND:
      BASIC WIND SPEED: 115 MPH
      WIND IMPORTANCE FACTOR, Iw: 1.0
      EXPOSURE TYPE: C

   B. SEISMIC:
      SITE CLASS: D
      RISK CATEGORY: I
      SEISMIC DESIGN CATEGORY: D
      SEISMIC IMPORTANCE FACTOR, Ie: 1.0
      Ss =
      S1 = Fa =
      Fv = Sds =
      Sd1 =
      R = (STEEL CANTILEVER COLUMN SYSTEM)
      RHO = 1.0
      CS = 0.396 (ASD) 0.544 (LRFD)

      EQUIVALENT STATIC FORCE METHOD USED FOR DESIGN.

AMADOR WHITTLE
ARCHITECTS, INC.

REGISTERED PROFESSIONAL ENGINEER
WILL A. LAMBERT
No. 5430
Exp. 06/30/2020
STRUCTURAL
STATE OF CALIFORNIA

OSG# 18843

Orion
Structural
Orion Structural Group, Inc.
221 East Thousand Oaks Blvd,
Suite 304
Thousand Oaks, California
91360 - 7734
Phone: 805.390.9242

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GENERAL NOTES

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REINFORCEMENT

1. ALL TYPICAL REINFORCING BARS SHALL CONFORM TO ASTM A-615, GRADE 60, UNLESS NOTED OTHERWISE ON THE DRAWINGS (#3 BARS MAY BE GRADE 40 FOR AVAILABILITY)

   A. SPIRALS SHALL BE COLD DRAWN BARS CONFORMING TO ASTM A-82. REINFORCING FOR DIAPHRAGMS AND FOUNDATIONS MAY BE GRADE 75 IN LIEU OF GRADE 60, AT THE CONTRACTOR'S OPTION. MAINTAIN OVERALL CAPACITY OF ELEMENTS WHERE GRADE 75 REINFORCING IS PROPOSED FOR USE. IN GENERAL, REDUCE REQUIRED STEEL AREA IN PROPORTION TO RATIO OF YIELD STRENGTH. MAINTAIN BAR SPACING SHOWN ON PLANS, DETAILS, AND SCHEDULES.
   B. MOMENT FRAME LONGITUDINAL REBARS, SHEAR WALL VERTICAL REBARS, AND COUPLING BEAM LONGITUDINAL REBARS SHALL BE ASTM A-706 [Fy=60 KSI].
   C. SMOOTH DOWELS IN SLAB ON GRADE: ASTM A36, 36 KSI

2. WELDING OF REINFORCEMENT (INCLUDING TACK WELDING) SHALL NOT BE DONE UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS. WHERE SHOWN ON THE DRAWINGS, THE FOLLOWING SHALL APPLY:

   A. WELDED REBAR SHALL COMPLY WITH ASTM A-706 [Fy=60 KSI]
   B. WELDING SHALL CONFORM TO AWS D1.4
   C. USE E90XX ELECTRODES

3. WELDED WIRE FABRIC SHALL BE MADE OF COLD DRAWN WIRE AND SHALL CONFORM TO ASTM A-185 [Fy=65 KSI]. MINIMUM LAP AT SPLICES OF 12 INCHES. PROVIDE MESH IN FLAT SHEETS ONLY. ROLLED MESH IS NOT ACCEPTABLE. OFFSET END-LAPS IN ADJACENT SHEETS TO PREVENT CONTINUOUS LAPS.

4. REINFORCING STEEL SHALL HAVE THE FOLLOWING CONCRETE COVER. SEE ACI FOR TOLERANCES:

A. CONCRETE POURED AGAINST EARTH	3"
B. FORMED CONCRETE IN CONTACT WITH EARTH	2"
C. CONCRETE EXPOSED TO WEATHER (#6 AND LARGER)	2"
D. CONCRETE EXPOSED TO WEATHER (#5 AND SMALLER)	1 ½"
E. SLABS (INCLUDING SLAB SUPPORTING EARTH), WALLS, AND JOISTS NOT EXPOSED TO WEATHER (#11 AND SMALLER)	1"
F. OTHER CONCRETE NOT EXPOSED TO WEATHER	1 ½"

5. #5 AND LARGER REINFORCING BARS SHALL NOT BE SPLICED EXCEPT AS LOCATED AND DETAILED ON THE DRAWINGS. #4 AND SMALLER BARS WITH LENGTHS NOT SHOWN SHALL BE CONTINUOUS. PROVIDE CLASS 'B' SPLICE UNLESS NOTED OTHERWISE. ALL BARS IN MASONRY SHALL BE CONTINUOUS, LAPPING 48 BAR DIAMETERS, 2'-0" MINIMUM. HORIZONTAL WALL SPLICES SHALL BE STAGGERED. VERTICAL BARS SHALL NOT BE SPLICED EXCEPT AT HORIZONTAL SUPPORTS, SUCH AS FLOOR OR ROOF, UNLESS DETAILED OTHERWISE. ALL BARS ENDING AT THE FACE OF A WALL, COLUMN, OR BEAM SHALL EXTEND TO WITHIN 2" OF THE FAR FACE AND HAVE A 90 DEGREE HOOK, UNLESS OTHERWISE SHOWN.

6. BARS SHALL BE FIRMLY SUPPORTED AND ACCURATELY PLACED AS REQUIRED BY THE ACI STANDARDS, USING TIE AND SUPPORT BARS IN ADDITION TO REINFORCEMENT SHOWN WHERE NECESSARY FOR FIRM AND ACCURATE PLACING. PROVIDE DOWELS TO MATCH ALL REINFORCEMENT AT POUR JOINTS, UNLESS SHOWN OR NOTED OTHERWISE. ALL DOWELS AND BOLTS SHALL BE ACCURATELY SET IN PLACE BEFORE PLACING CONCRETE. NO WELDING OF REINFORCEMENT (INCLUDING TACK WELDING) SHALL BE DONE UNLESS SHOWN ON THE DRAWINGS OR APPROVED BY THE ENGINEER. ALL SLAB AND BEAM REINFORCEMENT SHALL BE CHAIRED UP.

7. IN WALL REINFORCING, CURTAINS CONTAINING VERTICAL AND HORIZONTAL BARS OF THE SAME SIZE, VERTICAL BARS SHALL BE PLACED CLOSEST TO THE WALL SURFACE. IN CURTAINS WHICH VERTICAL AND HORIZONTAL BARS ARE OF DIFFERENT SIZES OR SPACING, THE LAYER WITH THE MOST STEEL SHALL BE PLACED CLOSEST TO THE NEAR SURFACE.

8. DRAWINGS SHOW TYPICAL REINFORCING CONDITIONS. CONTRACTOR SHALL PREPARE DETAILED PLACEMENT DRAWINGS OF ALL CONDITIONS SHOWING QUANTITY, SPACING, SIZES, CLEARANCES, LAPS, INTERSECTIONS, AND COVERAGE REQUIRED BY THE STRUCTURAL DETAILS, APPLICABLE CODE, AND TRADE STANDARDS. CONTRACTOR SHALL NOTIFY REINFORCING INSPECTOR OF ANY ADJUSTMENTS FROM TYPICAL CONDITIONS WHICH ARE PROPOSED IN PLACEMENT DRAWINGS TO FACILITATE FIELD PLACEMENT OF REINFORCING STEEL AND CONCRETE.

9. ALL PRINCIPAL REBAR SHALL TERMINATE WITH A STANDARD HOOK MINIMUM UNLESS SPECIFICALLY DETAILED OTHERWISE. REBAR BENDS SHALL BE MADE COLD. REBAR SHALL NOT BE BENT AFTER ANY PORTION OF THE BAR IS ENCASED IN CONCRETE.

10. ALL LAP SPLICES ARE CLASS 'B' LAP SPLICES UNLESS NOTED OTHERWISE.

11. ALL WALL FOOTING REINFORCEMENT SHALL BEND AROUND ALL CORNERS AND EXTEND 36 BAR DIAMETERS OR 18 INCHES WHICHEVER IS LARGER. UNLESS NOTED OTHERWISE.

12. ALL SLABS ON GRADE LESS THAN 6" IN THICKNESS SHALL BE REINFORCED WITH #4 REBARS AT 16 INCHES ON CENTERS EACH WAY, UNLESS NOTED OTHERWISE. PROVIDE ONE (1) LAYER OF 6X6/W2.9XW2.9 WELDED WIRE FABRIC CONTINUOUS FOR EVERY 3" ARCHITECTURAL CONCRETE FILLS ABOVE THE STRUCTURAL SLAB.

13. ALL MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT PADS LESS THAN 4" THICK SHALL BE REINFORCED WITH AT LEAST ONE (1) LAYER OF 6X6/W2.9XW2.9 WELDED WIRE FABRIC AND HAVE HOOKED DOWELS (#3 AT 12' ON CENTERS) INTO THE STRUCTURAL SLAB. UNLESS NOTED OTHERWISE. FOR PADS GREATER THAN 4 INCHES THICK, USE REINFORCING AS SHOWN IN THE TYPICAL DETAILS.

14. ADDITIONAL REINFORCEMENT SHALL BE PROVIDED AROUND ALL SLAB AND WALL OPENINGS INCLUDING DIAGONAL BARS WITHOUT EXCEPTION.

15. ALL STRUCTURAL CONCRETE ELEMENTS REQUIRE REINFORCEMENT SINCE NO PLAIN CONCRETE ELEMENTS ARE USED. ALL CONCRETE SLABS SHALL HAVE A MINIMUM REINFORCEMENT PERCENTAGE OF 0.0018 EACH WAY CONTINUOUS.

CONCRETE

1. CONCRETE IS REINFORCED AND CAST-IN-PLACE UNLESS OTHERWISE NOTED. WHERE REINFORCING IS NOT SPECIFICALLY SHOWN OR WHERE DETAILS ARE NOT GIVEN, PROVIDE REINFORCING SIMILAR TO THAT SHOWN FOR SIMILAR CONDITIONS, SUBJECT TO REVIEW BY THE OWNER'S REPRESENTATIVE.

2. ALL STRUCTURAL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AND A MAX WATER CEMENT RATIO W/C AS FOLLOWS: ALL CONCRETE U.N.O.: 3000 PSI NORMAL WEIGHT, W/C = 0.5

3. ALL STRUCTURAL CONCRETE MIXES SHALL BE DESIGNED BY AN APPROVED LABORATORY AND SHALL BE STAMPED AND SIGNED BY A CIVIL ENGINEER LICENSED IN CALIFORNIA.

CONCRETE, CONT'D.

4. CONCRETE MIXES SHALL BE PREPARED WITH TYPE II/V PORTLAND CEMENT CONFORMING TO ASTM C150. CONCRETE MIX DESIGNS CONTAINING FLY ASH MAY BE USED WHERE CONCRETE IS NOT VISUALLY EXPOSED.°FLY ASH SHALL CONFORM WITH ASTM C618 AND MAY REPLACE UP TO 20% PORTLAND CEMENT BY VOLUME.

5. NORMAL WEIGHT CONCRETE AGGREGATES SHALL CONFORM TO ASTM C33. LIGHT WEIGHT CONCRETE AGGREGATES SHALL CONFORM TO ASTM C330.

6. NO MORE THAN ONE GRADE OF CONCRETE SHALL BE ON THE JOB SITE AT ANY ONE TIME.

7. THOROUGHLY CLEAN AND ROUGHEN ALL HARDENED CONCRETE AND MASONRY SURFACES TO RECEIVE NEW CONCRETE. INTERFACE SHALL BE ROUGHENED TO A FULL AMPLITUDE OF 1/4" UNLESS NOTED OTHERWISE.

8. KEY AND DOWEL POUR JOINTS AS SHOWN ON THE PLANS. ANY DEVIATION FROM POUR JOINTS SHOWN ON THE PLANS MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE.

9. NON-SHRINK CEMENT GROUT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 7000 PSI.

10. DEFECTIVE CONCRETE (VOIDS, ROCK POCKETS, HONEYCOMBS, CRACKING, ETC.) SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE OWNER'S REPRESENTATIVE.

STRUCTURAL STEEL

1. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF AISC SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, AND THE LATEST EDITION OF AISC SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS. WHERE THE STRUCTURAL STEEL IS EXPOSED, FABRICATION AND ERECTION SHALL ALSO BE IN ACCORDANCE WITH AISC CODE OF STANDARD PRACTICE FOR ARCHITECTURALLY EXPOSED STRUCTURAL STEEL.

2. STRUCTURAL STEEL SHALL CONFORM TO ASTM DESIGNATION AS INDICATED BELOW (U.N.O.):

A. ALL WIDE FLANGE SHAPES	A992, GRADE 50
B. STEEL ANGLES	A36
C. ALL PLATES	A36
D. HSS (RECTANGULAR AND SQUARE)	A500, GRADE B
E. HSS (ROUND)	A500, GRADE B
F. PIPE COLUMNS	A53, GRADE B
G. CHANNELS (C AND MC SECTIONS)	A36
H. ALL OTHER STRUCTURAL SECTIONS	A572, GRADE 50
I. STEEL TO STEEL CONNECTION BOLTS	A325X
J. ANCHOR BOLTS	F1554 GR36 OR A36
K. THREADED RODS AND HANGER RODS	A36 OR A307-SI
L. NUTS FOR BOLTS AND MACHINE BOLTS	A563
M. HARDENED WASHERS	F436
N. UNHARDENED WASHERS	F844
O. PLAIN WASHERS	ANSI B18.22.1
P. BEVELED WASHERS	ANSI B18.23.1

3. ALL STEEL SHALL BE PROVIDED BY A CITY OF LOS ANGELES LICENSED FABRICATOR.

4. WHEN FABRICATING SIMPLY SUPPORTED BEAMS, PLACE NATURAL CAMBER UP.

5. SPLICE MEMBERS ONLY WHERE INDICATED.

6. HIGH STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF AISC SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS. HIGH STRENGTH BOLTS SHALL BE BEARING TYPE WITH THREADS EXCLUDED FROM THE FROM THE SHEAR PLANES (I.E. A325-X) UNLESS NOTED OTHERWISE.

7. ALL BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF TWO BOLTS UNLESS SHOWN OTHERWISE. MINIMUM SIZE OF BOLTS FOR STRUCTURAL STEEL CONNECTIONS SHALL BE 3/4" DIA. EXCEPT WHEN OTHERWISE SHOWN OR NOTED.

8. ALL HOLES SHALL BE STANDARD DIAMETER U.N.O.

9. ALL FLANGE STIFFENER PLATES SHALL BE ORIENTED SO THAT ROLLING DIRECTION OF PLATE IS PARALLEL WITH DIRECTION OF PRINCIPAL STRESS.

10. AFTER FABRICATION, ALL STEEL SHALL BE CLEANED FREE OF RUST, LOOSE MILL SCALE AND OIL.

11. PROVIDE FILLS AT SPLICES OF PARTS HAVING MORE THAN 1/8" DIFFERENCE IN THICKNESS.

12. PROVIDE BEVELED WASHERS ON ALL CONNECTIONS WHERE SLOPE SURFACE EXCEEDS 1:20.

13. HEADED ANCHOR STUDS AND THREADED STUDS SHALL BE NELSON GRANULAR FLUX-FILLED, AND SHALL BE MADE FROM COLD FINISHED LOW CARBON STEEL, CONFORMING TO A-108, GRADES 1015 - 1020 WITH A MINIMUM TENSILE STRENGTH OF 60,000 PSI. (COLA RR 2724). STUD WELDING INSPECTION AND TESTING SHALL CONFORM TO AWS D1.1.

14. DEFORMED BAR ANCHOR STUDS SHALL BE NELSON D2L GRANULAR FLUX-FILLED REBAR STUDS OR APPROVED EQUAL, AND SHALL BE MADE OF LOW CARBON COLD ROLLED STEEL WITH A MINIMUM TENSILE STRENGTH OF 80,000 PSI. STUD WELDING INSPECTION AND TESTING SHALL CONFORM TO AWS D1.1.

15. HOT DIP GALVANIZE IN ACCORDANCE WITH ASTM A123 AND ASTM A153 STRUCTURAL STEEL AND FASTENERS THAT ARE PERMANENTLY EXPOSED TO THE WEATHER. REPAIR GALVANIZING AFTER WELDING IN ACCORDANCE WITH ASTM A780.

16. THE FULL DESIGN AND LOAD CARRYING CAPACITY OF THE STEELWORK SHALL NOT BE IMPAIRED DUE TO FABRICATION, SHIPMENT, OR ERECTION PROCEDURES, THROUGHOUT THE COMPLETE PROCESS. THE STABILITY OF ALL INDIVIDUAL MEMBERS AND ASSEMBLIES SHALL BE MAINTAINED.

17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES WITH RELATION TO TEMPERATURE DIFFERENTIALS AND WELD SHRINKAGE.

18. ALL ADDITIONAL STEEL REQUIRED FOR ERECTION PURPOSES SHALL BE PROVIDED AT NO ADDITIONAL COST AND SHALL BE REMOVED UNLESS APPROVED BY THE OWNER'S REPRESENTATIVE IN WRITING.

19. ALL SHEET METAL SCREWS TO BE MANUFACTURED BY ITW BUILDEX ICC ESR-1976/3223, HILTI ICC ESR-3332/2196, OR PRIMESOURCE ICC ESR-1408. TO BE INSTALLED PER ICC-ES REPORT AND MANUFACTURES SPECIFICATIONS.

20. ALL SHEET METAL SCREWS SHALL EXTEND THROUGH METAL FRAMING AND STRUCTURAL STEEL A MINIMUM OF ¼" OR 3 EXPOSED THREADS, WHICHEVER IS GREATER.

STRUCTURAL STEEL WELDING

1. ALL WELDING SHALL BE IN STRICT CONFORMANCE WITH THE LATEST EDITION OF AWS D1.1 AND THE 2016 CALIFORNIA BUILDING CODE.

2. ALL WELDING ELECTRODES (FILLER METAL) SHALL BE E7XXX (70 KSI), U.N.O., AND SHALL BE LOW HYDROGEN TYPES. FIELD WELDING OF FULL AND PARTIAL PENETRATION WELDS OF THE STEEL MOMENT FRAME CONNECTIONS BETWEEN MOMENT FRAME BEAMS AND MOMENT FRAME COLUMNS SHALL BE BY SHIELDED METAL ARC PROCESS USING LOW HYDROGEN ELECTRODES

3. ALL WELDS SHALL HAVE A FILLER METAL WITH CHARPY V-NOTCH TOUGHNESS OF 20 FT/LBS AVERAGE AT -20 DEGREES FAHRENHEIT AND 40 FT/LBS @ 70 DEGREES FAHRENHEIT. CERTIFY CONFORMANCE TO CHARPY V-NOTCH TOUGHNESS REQUIREMENTS WITH TESTS BY AN INDEPENDENT TESTING LABORATORY.

4. LENGTHS OF WELDS ARE EFFECTIVE LENGTHS AS SPECIFIED IN THE APPLICABLE CODE. WHERE LENGTH OF WELD IS NOT SHOWN IT SHALL BE FULL LENGTH OF JOINT. ALL BUTT WELDS SHALL BE FULL PENETRATION, UNLESS NOTED OTHERWISE.

5. CONTRACTOR SHALL PROVIDE FIELD WELDING AS REQUIRED FOR CONSTRUCTION. WHERE FIELD WELDING IS NOTED, THE DESIGNATION IS GIVEN AS A SUGGESTED CONSTRUCTION PROCEDURE ONLY.

6. ALL SHOP WELDS SHALL BE PERFORMED BY A LOS ANGELES CITY LICENSED FABRICATOR.

7. ALL WELDERS SHALL BE QUALIFIED FOR THE WORK THEY WILL BE DOING & SHALL HAVE CURRENT CERTIFICATIONS BY AWS & THE CITY OF LOS ANGELES.

8. FACES OF FILLET WELDS EXPOSED TO VIEW SHALL HAVE AS-WELDED SURFACES THAT ARE REASONABLY SMOOTH AND UNIFORM. NO FINISHING OR GRINDING SHALL BE REQUIRED, EXCEPT WHERE CLEARANCES OR FIT OF OTHER ITEMS MAY SO NECESSITATE.

9. ALL PARTIAL AND FULL PENETRATION WELDS WHICH ARE EXPOSED TO VIEW SHALL BE GROUND SMOOTH AND FLUSH WITH FINISH SURFACE OF STEEL. HOLES SHALL BE FILLED WITH WELD METAL OR BODY SOLDER AND SMOOTHED BY GRINDING OR FILING.

10. CLEAN GROOVE PREPARATION THERMAL CUTS BY GRINDING.

11. WELDS SHALL BE TERMINATED AT THE END OF A JOINT IN A MANNER THAT WILL ENSURE SOUND WELDS. WHENEVER NECESSARY THIS SHALL BE DONE BY USE OF EXTENSION BARS AND RUN OFF TABS.

12. ALL WELDED JOINTS SHALL BE PRE-QUALIFIED PER THE LATEST EDITION OF AWS D1.1. NON PRE- QUALIFIED WELDED JOINTS SHALL BE QUALIFIED BY TEST & PROCEDURE QUALIFICATION TEST RECORD INCLUDED PER THE LATEST EDITION OF AWS D1.1.

AMADOR WHITTLE
ARCHITECTS, INC.

REGISTERED PROFESSIONAL ENGINEER
WILL A. LAMBERT
No. 5430
Exp. 06/30/2020
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STATE OF CALIFORNIA

OSG# 18843

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LION ENCLOSURE

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BID SET

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REVISIONS	DATE: 06/24/19
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GENERAL NOTES

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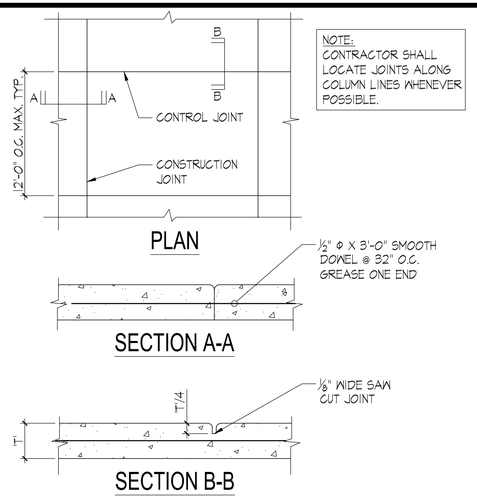
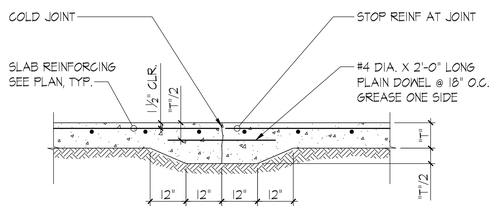


TYPICAL SLAB ON GRADE DETAIL

SCALE: 1"=1'-0" | 10

CONTROL JOINT (WHERE CONTINOUS POUR IS USED) — A



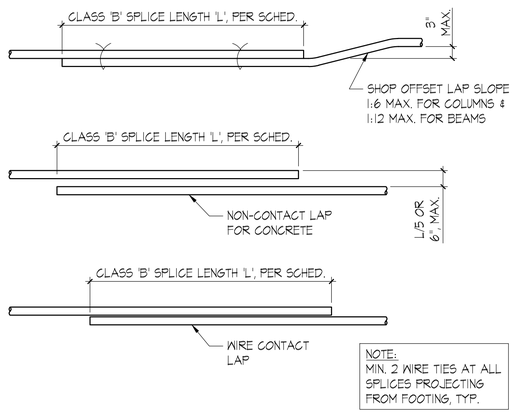
TYPICAL CONSTRUCTION JOINT — B

NOTE:

1. CONTROL JOINTS TO BE LOCATED AT COLUMN CENTER LINES AND AT 12'-6" O.C. MAX.
2. IF SAW-CUT CONTROL JOINT TO BE USED, SAW-CUT WITHIN 24 HOURS OF POUR.
3. SEE PLAN FOR "T".

JOINTS AT SLAB ON GRADE

NOT TO SCALE | 12



NOTES:

1. TOP BARS ARE HORIZONTAL REINFORCING WITH MORE THAN 12" OF CONCRETE BELOW BARS.
2. BOTTOM BARS INCLUDE ALL VERTICALS, ALL HORIZONTAL WALL REINFORCING, AND HORIZONTAL REINFORCING WITH LESS THAN 12" OF CONCRETE BELOW BARS.
3. A. USE CLASS B SPLICES U.N.O., ADJACENT BAR SPLICES SHALL BE STAGGERED THE GREATER OF THE LENGTH OF SPLICE OR 2'-0".
   B. USE CLASS C SPLICES WHERE NOTED.
   C. USE CLASS C SPLICES WHERE MORE THAN 44% OF BARS ARE TO BE SPLICED IN ONE LOCATION.
4. SMALLER BAR LAP LENGTH SHALL BE USED WHEN SPLICING DIFFERENT SIZE BARS.
5. INCREASE SPLICE LENGTH BY 33% FOR LIGHTWEIGHT CONCRETE.

BAR DEVELOPMENT LENGTH (Ld) SCHEDULE

BAR SIZE	Fc' = 2500 psi		Fc' = 3000 psi		Fc' = 4000 psi		Fc' = 4500 psi	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	24"	18"	22"	17"	19"	15"	18"	15"
#4	32"	24"	29"	22"	25"	19"	24"	27"
#5	39"	30"	36"	28"	31"	24"	30"	23"
#6	47"	36"	43"	33"	37"	29"	35"	27"
#7	69"	53"	63"	48"	54"	42"	51"	40"
#8	78"	60"	72"	55"	62"	48"	59"	45"
#9	88"	68"	81"	62"	70"	54"	66"	51"
#10	98"	75"	90"	69"	78"	60"	73"	56"
#11	108"	83"	98"	76"	85"	66"	80"	62"

CLASS 'B' SPLICE LENGTH

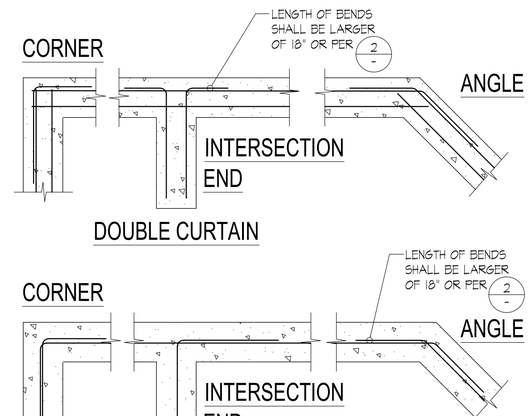
BAR SIZE	Fc' = 2500 psi		Fc' = 3000 psi		Fc' = 4000 psi		Fc' = 4500 psi	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	31"	24"	28"	22"	25"	20"	23"	20"
#4	41"	32"	38"	29"	33"	25"	31"	24"
#5	51"	39"	47"	36"	41"	31"	38"	30"
#6	61"	47"	56"	43"	49"	37"	46"	35"
#7	89"	69"	81"	63"	71"	54"	67"	51"
#8	102"	78"	93"	72"	81"	62"	76"	59"
#9	115"	88"	105"	81"	91"	70"	86"	66"
#10	127"	98"	116"	90"	101"	78"	95"	73"
#11	140"	108"	128"	98"	111"	85"	104"	80"

NOTES:

1. MINIMUM SPLICE LENGTH FOR BARS WITH CLASS 'B' SPLICE PER ACI-318-14, SECTION 12.2.
2. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" CONCRETE CAST IN THE MEMBER BELOW THE REINFORCEMENT.
3. THESE BAR DEVELOPMENT LENGTH APPLY TO REGULAR OR NORMAL WEIGHT CONCRETE, MULTIPLY THE SPECIFIED DEVELOPMENT LENGTH BY 1.33 FOR LIGHT WEIGHT CONCRETE.
4. ALL DETAILING OF REINFORCEMENT SHALL COMPLY WITH THESE SCHEDULES UNLESS SPECIFICALLY DETAILED ON THE DRAWINGS.

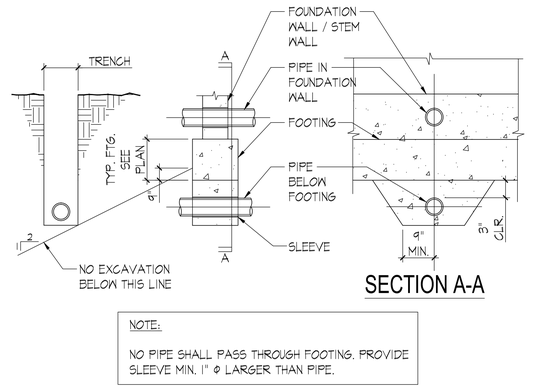
TYP. REINF. DEVELOPMENT LENGTH & LAP SPLICE SCHEDULE

NOT TO SCALE | 9



REBAR AT INTERSECTION

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

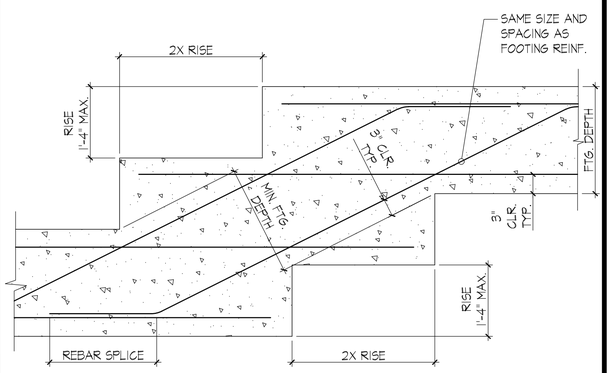


NOTE:

NO PIPE SHALL PASS THROUGH FOOTING. PROVIDE SLEEVE MIN. 1" Φ LARGER THAN PIPE.

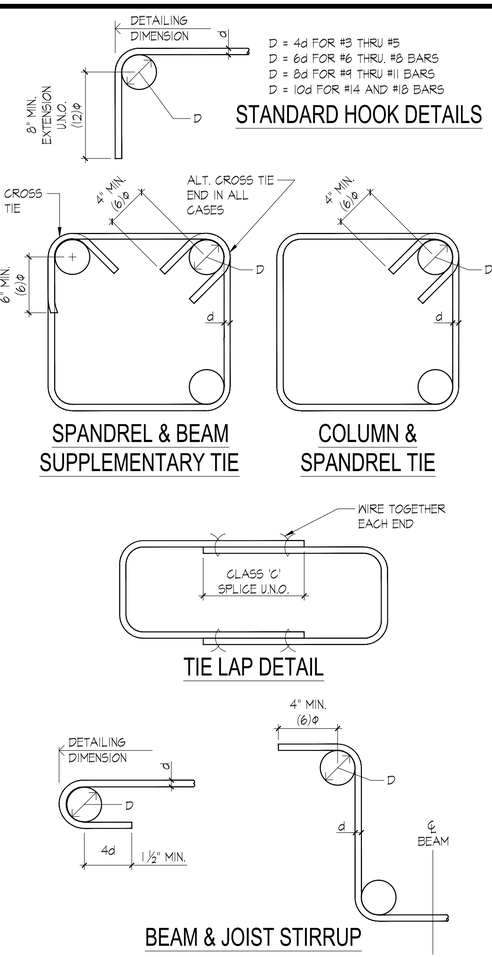
PIPE AT FOOTING

SCALE: 1"=1'-0" | 5



TYPICAL STEPPED FOOTING

SCALE: 1"=1'-0" | 3



TYPICAL STANDARD HOOK DETAIL

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

AMADOR WHITTLE ARCHITECTS, INC.

REGISTERED PROFESSIONAL ENGINEER — WILL A. LAMBERT — No. 5430 — Exp. 06/30/2020 — STRUCTURAL — STATE OF CALIFORNIA

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BID SET

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TYPICAL DETAILS

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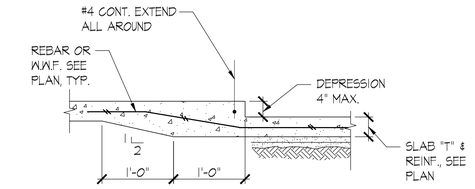
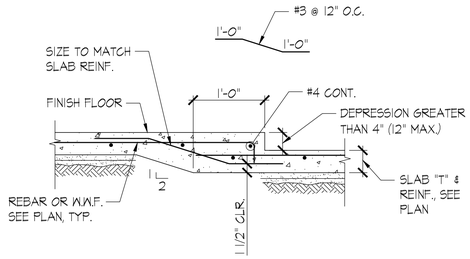
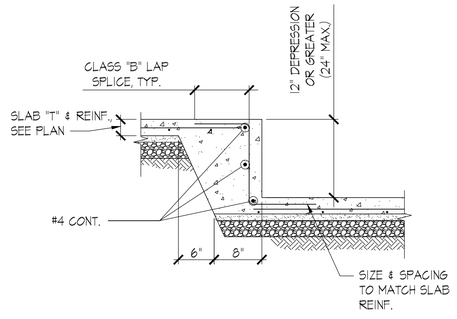
S0.10 ___ OF ___

SCALE: 1"=1'-0" | 10

NOT TO SCALE | 12

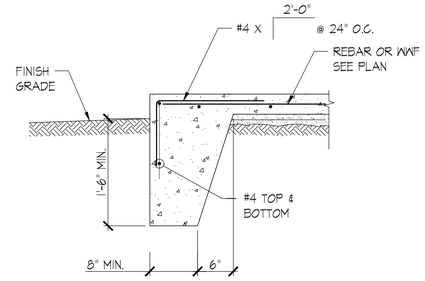






SLAB ON GRADE DEPRESSION | SCALE: 1"=1'-0" | 5

NOT TO SCALE | 9



SLAB ON GRADE EDGE DETAIL | SCALE: 1"=1'-0" | 4

SCALE: 1"=1'-0" | 3

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

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TYPICAL DETAILS

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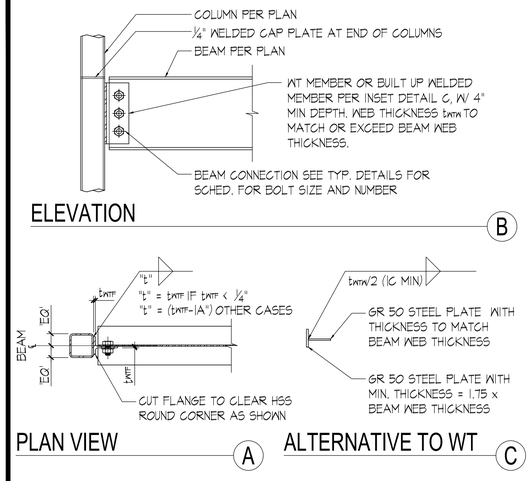
S0.11

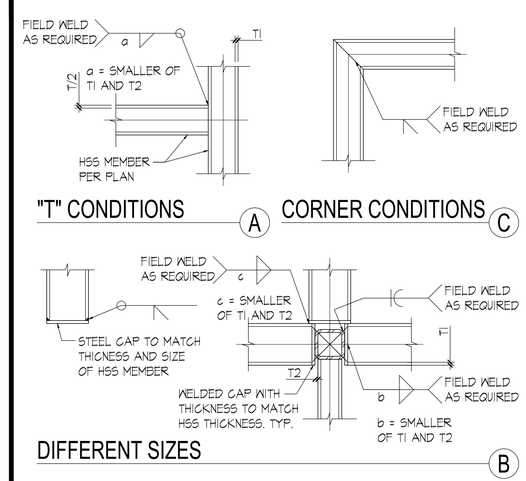
___ OF ___

SCALE: 1"=1'-0" 10

SCALE: 1"=1'-0" 5

SCALE: 1"=1'-0" 2





TYP. BEAM TO COLUMN CONNECTION SCALE: 1"=1'-0" 4

HSS MEMBERS CONNECTION SCALE: 1"=1'-0" 4

NOT TO SCALE 12

NOT TO SCALE 9

SCALE: 1"=1'-0" 3

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ARCHITECTS, INC.

REGISTERED PROFESSIONAL ENGINEER
WILL A. LAMBERT
No. 5430
Exp. 06/30/2020
STRUCTURAL
STATE OF CALIFORNIA

OSG# 18843

Orion
Structural

Orion Structural Group, Inc.
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91360 - 7734
Phone: 805.390.9242

LION ENCLOSURE

EXOTIC ANIMAL TRAINING & MANAGEMENT
7075 CAMPUS ROAD
MOORPARK, CA 93021

BID SET

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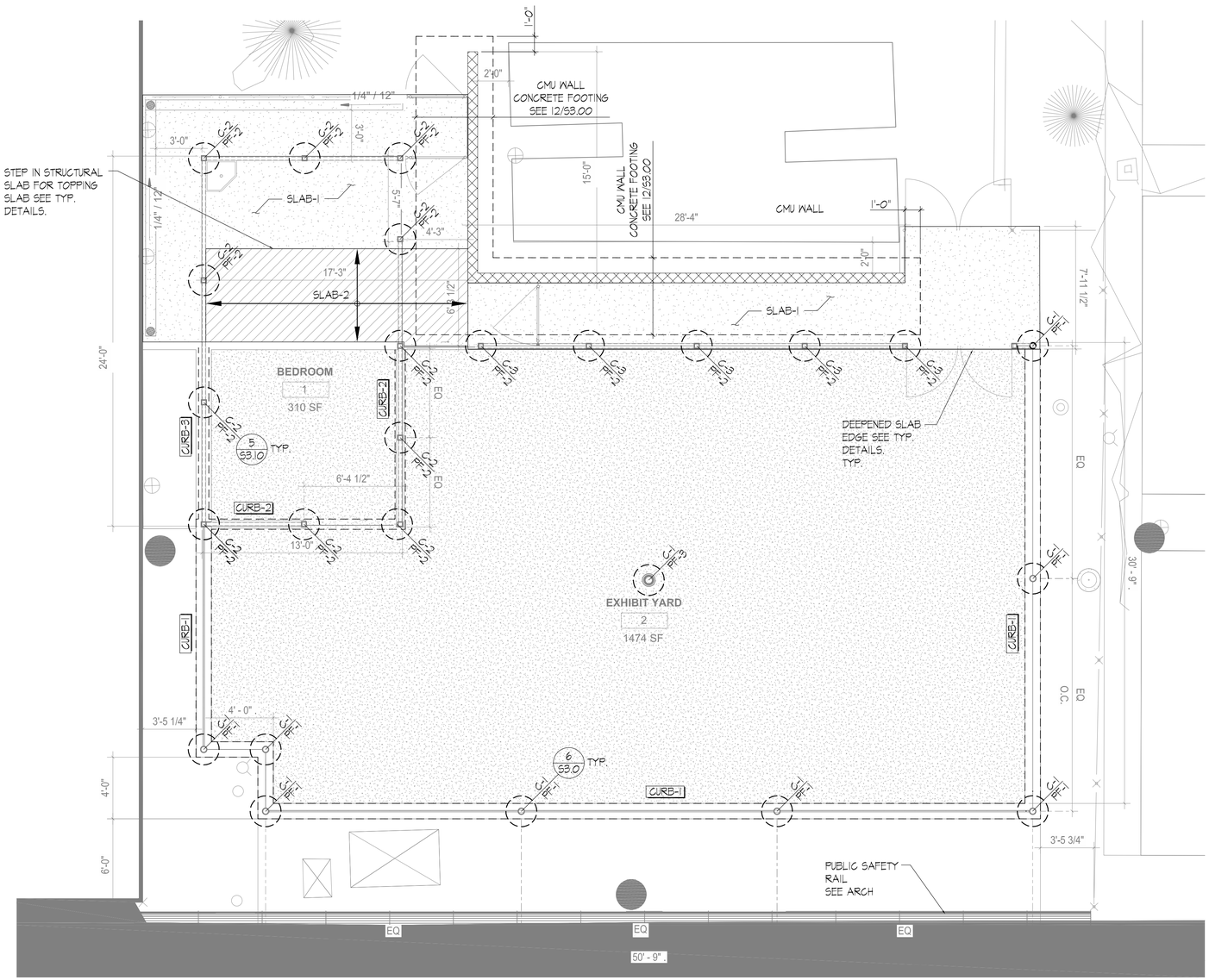
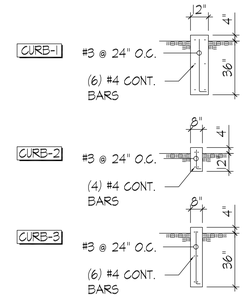


1 FLOOR PLAN
1/4" = 1'-0"

CURB SCHEDULE



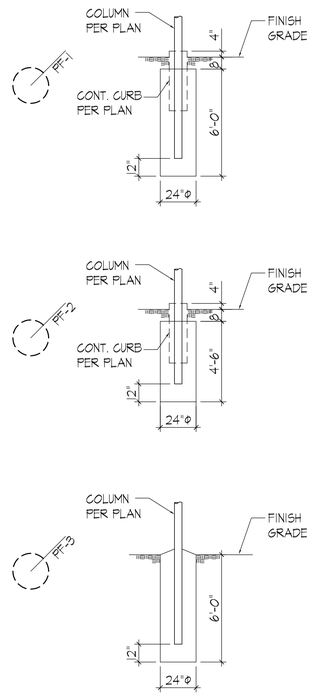
COLUMN SCHEDULE

C1 — INDICATES 5" STD PIPE COLUMN

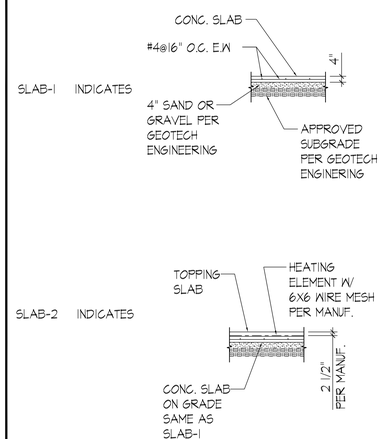
C2 — INDICATES HSS 4X4X¼" STEEL COLUMN

C3 — INDICATES 4" STD PIPE COLUMN

POLE FOOTING SCHEDULE



SLAB SCHEDULE



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FOUNDATION PLAN

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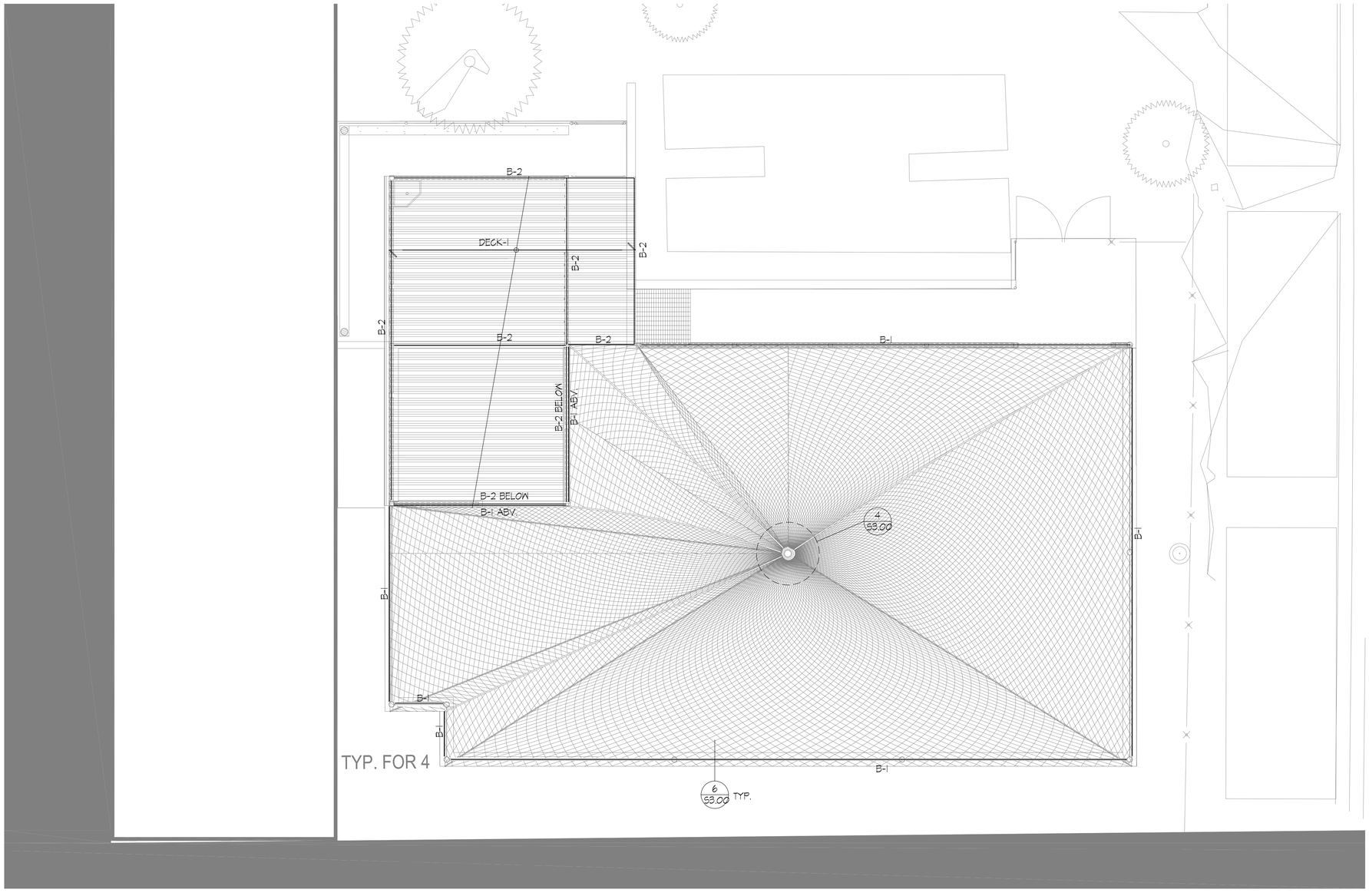
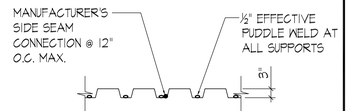


COLUMN SCHEDULE

DECK-1 — INDICATES 16GA TYPE 'N' DECK



B-1 — INDICATES 5" STD PIPE BEAM

B-2 — INDICATES HSS 3X3X¼" TUBE BEAM

2 ROOF FRAMING PLAN

1/8" = 1'-0"

0' 4' 8' 16' 32'

NORTH

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ROOF FRAMING PLAN

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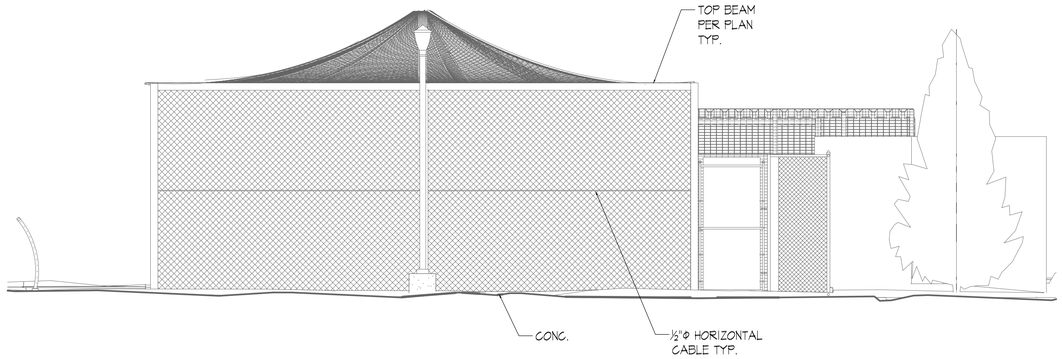
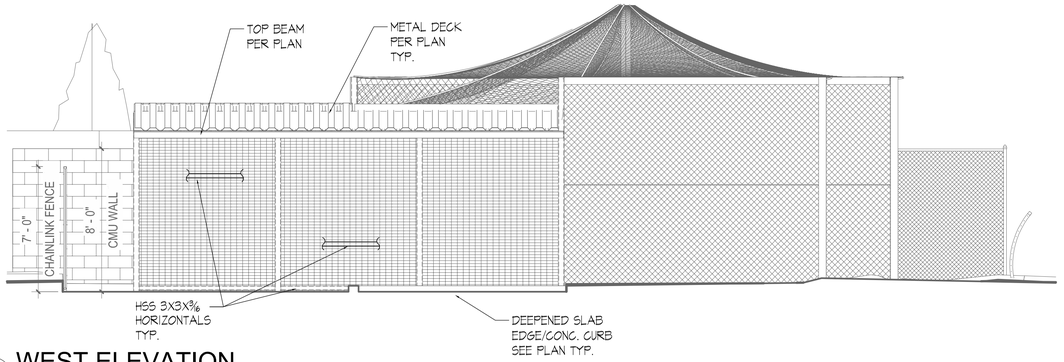
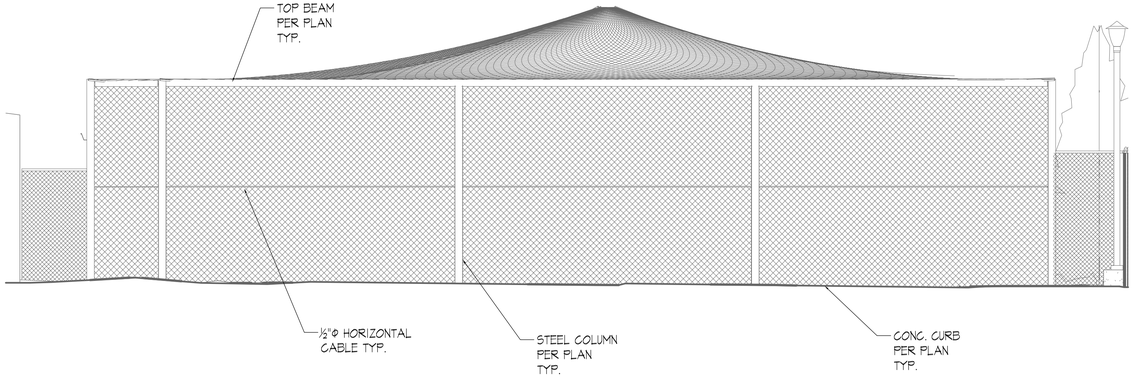


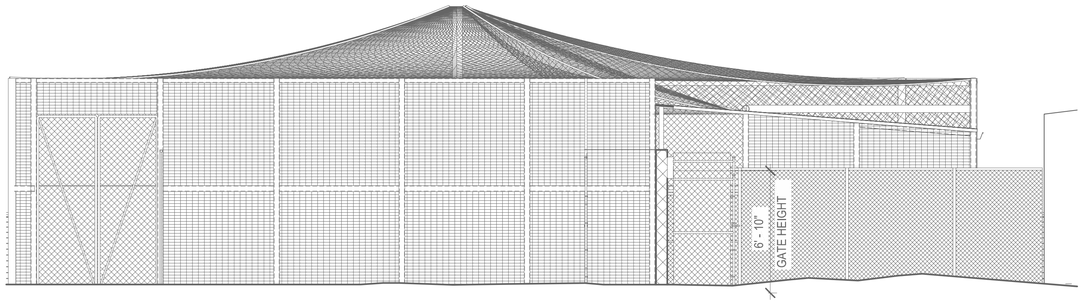
3 EAST ELEVATION
1/4" = 1'-0"



1 WEST ELEVATION
1/4" = 1'-0"



4 SOUTH ELEVATION
1/4" = 1'-0"



2 NORTH ELEVATION
1/4" = 1'-0"

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STRUCTURAL ELEVATIONS

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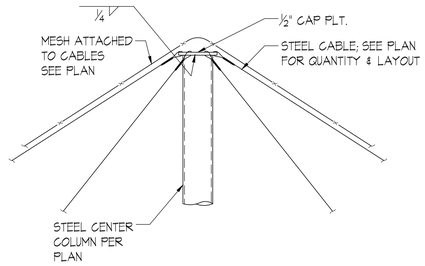
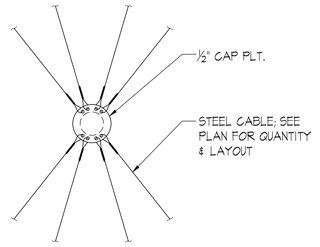


ELEVATION VIEW — A

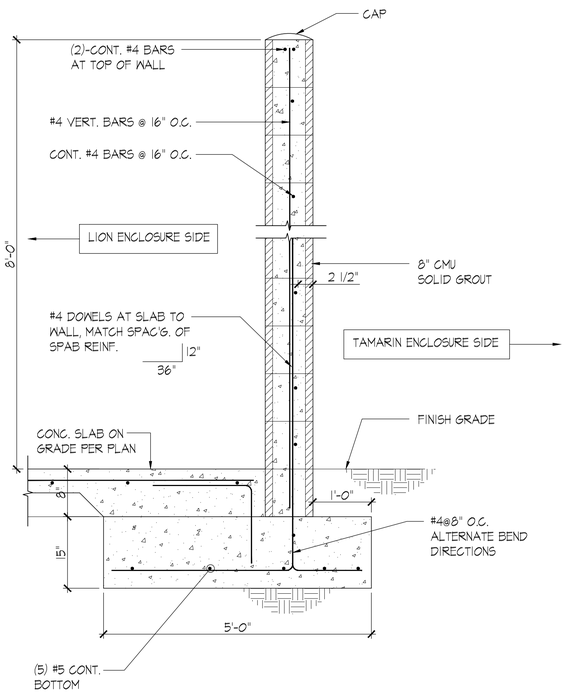


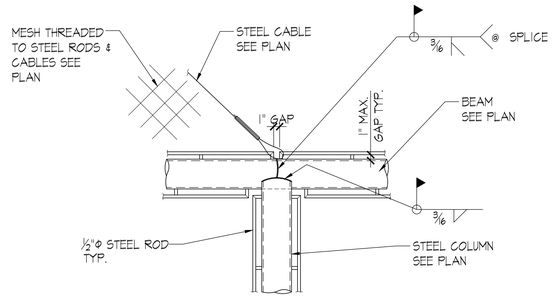
PLAN VIEW — B

STEEL BEAM CONN. AT WOOD POST — 1" = 1'-0" — 10

ENCLOSURE CENTER COLUMN TOP — 1" = 1'-0" — 4

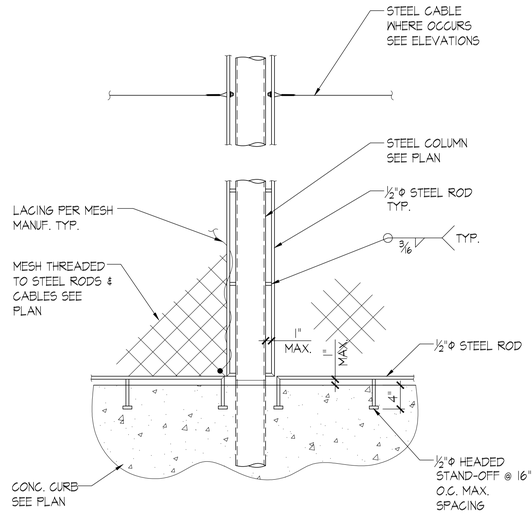
1" = 1'-0" — 1





ELEVATION VIEW @ TOP — C

PLAN VIEW @ COLUMN — D



CMU WALL — NTS — 12

1" = 1'-0" — 9

ENCLOSURE PERIMETER COLUMN — 1" = 1'-0" — 6

1" = 1'-0" — 2

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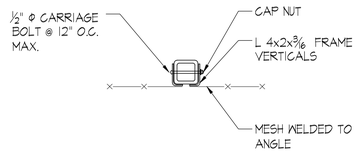
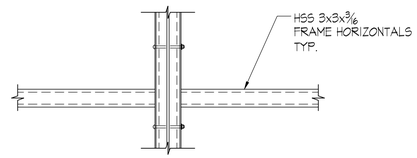
1" = 1'-0" | 10

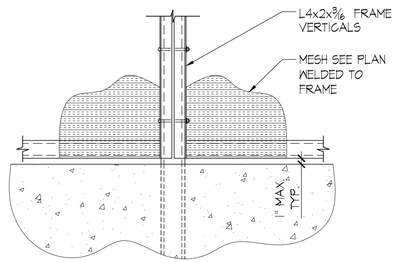
1" = 1'-0" | 7



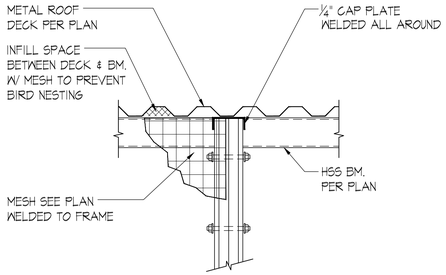
PLAN VIEW C



ELEVATION VIEW @ INTERMEDIATE HORIZ. B



ELEVATION VIEW @ BASE A

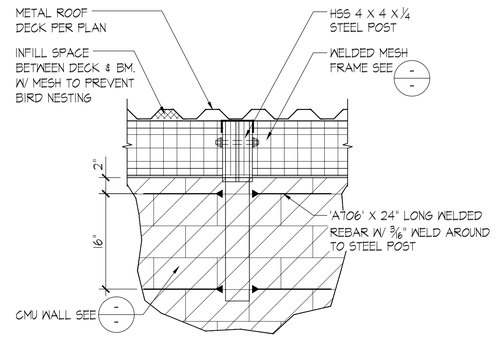


ELEVATION VIEW @ TOP D

1" = 1'-0" | 8

BEDROOM COLUMN 1" = 1'-0" | 5

BEDROOM COLUMN TOP CONNECTION 1" = 1'-0" | 1



NTS | 12

1" = 1'-0" | 9

1" = 1'-0" | 6

1" = 1'-0" | 2

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S3.10

___ OF ___

TIME: 3:28 pm DATE: 22 June 2019 PATHNAME: G:\18\612\EL\Sheets DRAWING FILENAME: 18612E100 DRAFTER: cm04

GENERAL NOTES

A. GENERAL

1. **SCOPE**
THE DRAWINGS AND THESE GENERAL NOTES DESCRIBE THE SCOPE OF WORK AND SYSTEMS. THE MATERIAL REQUIRED FOR THE WORK SHALL BE CONTRACTOR FURNISHED AND CONTRACTOR INSTALLED, UNLESS SPECIFICALLY NOTED OTHERWISE. THE WORK INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING PRINCIPAL SYSTEMS AND EQUIPMENT.

2. **PERMITS AND CHARGES**
OBTAIN AND PAY FOR ALL NECESSARY CONSTRUCTION PERMITS, INSPECTION FEES, AND OTHER CHARGES BY AGENCIES HAVING JURISDICTION.

3. **REGULATIONS AND CODES**
PROVIDE AND INSTALL ALL MATERIALS IN CONFORMANCE WITH THE 2016 C.E.C., CALIFORNIA ADMINISTRATIVE CODE TITLE 8, AND OTHER CODES AND REGULATIONS HAVING JURISDICTION. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE REQUIREMENTS OF THE INSPECTING AUTHORITY AND THE MANUFACTURERS RECOMMENDATIONS.

4. **VERIFYING EXISTING CONDITIONS**
BEFORE SUBMITTING BID, BECOME THOROUGHLY FAMILIAR WITH ACTUAL EXISTING CONDITIONS AT THE BUILDING. THE INTENT OF THE WORK IS SHOWN ON THE DRAWINGS AND DESCRIBED HEREINAFTER. BY THE ACT OF SUBMITTING A BID PROPOSAL FOR THE WORK, THE CONTRACTOR SHALL BE DEEMED TO HAVE MADE SUCH STUDY AND EXAMINATION AND TO ACCEPT ALL CONDITIONS PRESENT AT THE SITE. NO REQUEST FOR ADDITIONAL PAYMENT WILL BE CONSIDERED AS VALID, DUE TO FAILURE TO ALLOW FOR CONDITIONS WHICH MAY EXIST.

5. **COORDINATION**
COORDINATE ALL WORK WITH OTHER TRADES. OBTAIN ALL DRAWINGS THAT WILL REQUIRE COORDINATION AND PROVIDE ALL ELECTRICAL CONNECTION REQUIRED WHETHER SHOWN ON ELECTRICAL DRAWINGS OR NOT. ELECTRICAL EQUIPMENT LOCATIONS INDICATED ARE SHOWN DIAGRAMMATICALLY, EXACT LOCATION SHALL BE VERIFIED. SCALING OFF OF DRAWINGS SHALL BE DONE AT CONTRACTORS RISK. DO NOT SCALE DEVICES, LIGHTING FIXTURES OR ANY EQUIPMENT FROM PLANS. LIGHTING FIXTURE QUANTITIES AND LENGTHS SHALL BE CONTRACTORS RESPONSIBILITY. FIXTURES ARE SHOWN FOR CIRCUITING ONLY. CONTRACTOR TO VERIFY SIZES & QUANTITIES PRIOR TO BID.

6. **SERVICE CONTINUITY**
UNINTERRUPTED EXISTING ELECTRICAL POWER SHALL BE MAINTAINED TO OTHER TRADES FOR TEMPORARY POWER AREAS OF THE SITE DURING CONSTRUCTION. PROVIDE ANY TEMPORARY SERVICES AS MAY BE REQUIRED. IDENTIFY AT BID TIME, ALL WORK TO BE DONE ON PREMIUM TIME AND THE TOTAL OVERTIME MAN-HOURS REQUIRED FOR COMPLETION.

7. **AS BUILT**
PROVIDE RECORD DRAWINGS IN ACAD TO THE OWNER WITH ALL CHANGES NOTED THEREON AT THE COMPLETION OF THE PROJECT. RECORD DRAWINGS SHALL BE SIGNED AND DATED BY CONTRACTOR PRIOR TO RELEASE OF FINAL RETENTION OF ALL MONIES.

8. **GUARANTEE**
CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE ALL LABOR AND MATERIALS ON ALL WORK AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR.

9. **SHOP DRAWINGS**
SUBMIT SHOP DRAWINGS AND MATERIAL LIST FOR REVIEW PRIOR TO COMMENCING ANY WORK. ALL EQUIPMENT TO BEAR U.L. LABEL OR THAT OF ANOTHER ACCEPTABLE TESTING LABORATORY. SHOP DRAWINGS MUST BE STAMPED BY THE CONTRACTOR FOR CONFORMANCE PRIOR TO SUBMITTAL. SUBMIT THREE HARD COPY SETS OF SHOP DRAWINGS FOR REVIEW PRIOR TO PURCHASING ALL BREAKER MOUNTING HARDWARE, DISCONNECT SWITCHES, FUSES, CONTROLLERS, LIGHTING FIXTURES, LIGHT SWITCHES, RECEPTACLES, ETC.

10. **CONTRACTOR BID**
CONTRACTOR'S BID SHALL BE BASED ON ALL WORK SHOWN ON THE PLANS AND AS SPECIFIED. IF CONTRACTOR PROPOSES TO SUBSTITUTE FOR EQUIPMENT SPECIFIED, HE SHALL SUBMIT HIS REQUEST FOR CONSIDERATION OF THE OWNER AND ENGINEER PRIOR TO BID IN WRITING. ALL SUBSTITUTIONS MUST BE REVIEWED BY THE ENGINEER IN WRITING. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR COMPLYING WITH THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS, AND THE CONTRACTOR SHALL BE RESPONSIBLE AT HIS OWN EXPENSE FOR ANY CHARGES RESULTING FROM HIS PROPOSED SUBSTITUTIONS WHICH AFFECT OTHER PARTS OF HIS OWN WORK, THE OWNER, ENGINEER OF RECORD OR THE WORK OF OTHER CONTRACTORS.

B. MATERIAL AND INSTALLATION
ALL WORK AND MATERIAL SHALL CONFORM TO THE LATEST RULES OF THE GOVERNING ELECTRICAL CODE AND INSTALLATION SHALL BE OF THE LATEST INDUSTRY STANDARDS OF WORKMANSHIP.

ALL MATERIALS SHALL BE NEW AND LISTED FOR THE APPLICATION BY UNDERWRITERS LABORATORY (U.L.).

1. **CONDUITS**
CONDUIT SHALL BE EMT, PVC, IMC, RIGID OR FLEXIBLE STEEL TYPE. CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH UL-1. A GROUND WIRE IS REQUIRED IN ALL FLEXIBLE CONDUIT AND UNDERGROUND CONDUIT. BUSHINGS SHALL BE INSTALLED ON ALL COMMUNICATION, TELEPHONE & SPEAKER CONDUITS. PROVIDE 3/16" NYLON PULL STRING IN ALL EMPTY CONDUITS. NO MC, BX OR AC90 SHALL BE PERMITTED. FLEXIBLE STEEL CONDUIT RUNS SHALL BE LIMITED TO A MAXIMUM LENGTH OF 6 FOOT. ALL CONNECTIONS SHALL BE COMPRESSION & NOT SCREW TYPE.

2. **SWITCHES AND RECEPTACLES**
PROVIDE 20AMP NEMA RATED SWITCHES AND RECEPTACLES (ALL SHALL BE WET LOCATION GFCI TYPE) OF SPECIFICATION GRADE. ALL SWITCHES SHALL BE RATED FOR 120 AND/OR 277 VOLT AND RECEPTACLES SHALL BE NEMA 5-20R.

3. **FEEDERS AND BRANCH CIRCUITS IDENTIFICATION**
IDENTIFY FEEDERS WITH THE CORRESPONDING CIRCUIT DESIGNATION AT THE OVER-CURRENT DEVICE, LOAD END, AND IN PULL BOXES WITH E-Z CODE OR OTHER APPROVED WIRE MARKER. IDENTIFY BRANCH CIRCUITS WITH I.D. MARKERS, THE CORRESPONDING CIRCUIT DESIGNATION AT THE OVER-CURRENT DEVICE, AT ALL SPLICES, IN JUNCTION BOXES, AND IN OUTLETS. USE PLASTIC COATED SELF-STICKING MARKERS SUCH AS THOMAS & BETTS E-Z CODE FOR IDENTIFICATION OF CONDUCTORS. IDENTIFY SIGNAL & COMMUNICATION CABLES AT TERMINAL AND OUTLET UNIQUELY WITH PERMANENT LABELING.

4. **CONDUCTORS**
DELIVER ALL CONDUCTORS TO THE JOB SITE IN ORIGINAL UNBROKEN CARTON OR REEL, PROPERLY TAGGED WITH U.L. LABEL, SIZE, TYPE, MANUFACTURER, TRADE NAME AND THE DATE OF MANUFACTURE. (MUST BE MANUFACTURED WITHIN 6 MONTHS) PROVIDE COPPER CONDUCTORS #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS. PROVIDE STRANDED COPPER CONDUCTORS FOR ALL WIRING. USE CONDUCTORS WITH 90°C THHN/THWN 600 VOLTS INSULATION, UNLESS OTHERWISE NOTED. CONDUCTOR SIZE NO. 1 AWG AND SMALLER WITH 90 DEGREE C INSULATION ARE TO USE THE 60 DEGREE COLUMN OF THE CODE, TABLE 310-16, TO DETERMINE AMPACITY. CONDUCTORS #1/0 AWG AND LARGER WITH 75 DEGREE AND 90 DEGREE INSULATION ARE TO USE THE 75 DEGREE COLUMN OF CODE, TABLE 310-16, TO DETERMINE AMPACITY. (110.14C) WHERE THE NUMBER OF CONDUCTORS IN A RACEWAY OR CABLE EXCEEDS THREE, THE ALLOWABLE AMPACITY OF EACH CONDUCTOR SHALL BE REDUCED PER TABLE 310.15(B)(3)(a).

5. **LIGHTING FIXTURES**
PROVIDE LIGHTING FIXTURES WITH ELECTRONIC DRIVERS PER SCHEDULE. NO SUBSTITUTIONS OF FIXTURES SHALL BE PROVIDED WITHOUT THE APPROVAL OF THE ENGINEER -OF-RECORD.

6. **PANELBOARDS (SQUARE D)**
DISTRIBUTION AND LIGHTING PANELBOARDS WITHIN PROJECT AREA SHALL BE OF THE COPPER BUS SINGLE PHASE, THREE WIRE OR THREE PHASE, FOUR WIRE DISTRIBUTED PHASING TYPE. CIRCUITING SHALL BE ARRANGED TO PROVIDE, AS NEARLY AS POSSIBLE, AN EVENLY BALANCED LOAD ON ALL PHASES. PANELBOARDS SHALL BE BOLT-ON CIRCUIT BREAKER TYPE. AVAILABLE FAULT CURRENT IS STATED ON PANELBOARD SCHEDULE. PROVIDE PANEL IDENTIFICATION NAMEPLATE (ENGRAVED ON-ADHESIVE 1/2" MINIMUM LETTERS) AND TYPEWRITTEN LIST OF CIRCUITS IN THE DIRECTORY FRAME.

7. **ELECTRICAL CERTIFICATION**
"ELECTRICIANS" PERFORMING WORK ON THIS PROJECT SHALL BE CURRENTLY CERTIFIED IN ACCORDANCE WITH THE STATE OF CALIFORNIA AB931 AND THE DIVISION OF APPRENTISHIP STANDARDS SECTION 3099.

C. DEMOLITION
1. NOTIFY THE OWNER IMMEDIATELY WHEREVER EXISTING EQUIPMENT IS ENCOUNTERED WHICH MUST BE RELOCATED DUE TO THE NEW CONSTRUCTION, AND WHICH IS NOT INDICATED ON THE PLANS.
2. ALL REMOVED MATERIALS AND EQUIPMENT WHICH ARE SALVAGEABLE SHALL REMAIN THE PROPERTY OF THE OWNER. DELIVER SUCH SALVAGED MATERIALS AND EQUIPMENT ON THE PREMISES AS DIRECTED BY OWNER, AND NEATLY PILE OR STORE THEM AND PROTECT FROM DAMAGE. REMOVE FROM PREMISES AND DISPOSE OF ALL MATERIALS CONSIDERED BY THE OWNER TO BE SCRAP.
3. ALL DEVICES, CIRCUITS CONDUCTORS, FEEDERS ETC., WHEN NOTED TO BE REMOVED, SHALL BE REMOVED TO THE LAST ACTIVE DEVICE. ALL OVER-CURRENT PROTECTION AND DISCONNECT DEVICES NO LONGER UTILIZED BUT REMAINING AS LAST ACTIVE DEVICE SHALL BE LABELED AS 'SPARE'. COORDINATE ALL OUTAGES WITH OWNERS REPRESENTATIVE.
4. DISCONNECT AND MAKE SAFE ALL ELECTRICAL SYSTEMS ON SITE AND IN WALL, FLOORS, AND CEILINGS SCHEDULED FOR REMOVAL.
5. REMOVE, RELOCATE, AND EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTION.
6. REMOVE ABANDONED WIRING TO SOURCE OF SUPPLY AND RE-LABEL DEVICES AS SPARES.
7. REMOVE ABANDONED CONDUIT, INCLUDING ABANDONED CONDUIT ABOVE ACCESSIBLE CEILING FINISHES. CUT CONDUIT FLUSH WITH WALLS AND FLOOR, AND PATCH SURFACES.
8. DISCONNECT ABANDONED OUTLETS AND REMOVE DEVICES. REMOVE ABANDONED OUTLETS IF CONDUIT SERVICING THEM IS ABANDONED AND REMOVE. PROVIDE BLANK COVER FOR ABANDONED OUTLETS WHICH ARE NOT REMOVED.
9. DISCONNECT AND REMOVE ABANDONED LUMINAIRES. REMOVE BRACKETS, STEMS, HANGERS, AND OTHER
10. REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING DEMOLITION AND EXTENSION WORK
11. MAINTAIN ACCESS TO EXISTING ELECTRICAL INSTALLATIONS WHICH REMAIN ACTIVE. MODIFY INSTALLATION OR PROVIDE ACCESS PANEL AS APPROPRIATE.
12. BEGINNING OF DEMOLITION MEANS CONTRACTOR ACCEPTS EXISTING CONDITIONS.

D. EXECUTION
1. CAREFULLY PROTECT ALL WALLS, TRIM, FLOORS, EQUIPMENT UTILITY LINES AND MATERIALS. WHEN WORKING ON FINISHED SURFACES, LIMIT DAMAGE TO THE CONFINES AS MUCH AS POSSIBLE AND RESTORE TO THE ORIGINAL CONDITION ALL SURFACES WHICH ARE DAMAGED BECAUSE OF THE INSTALLATION OF THIS WORK.
2. EQUIPMENT, MATERIALS AND SUPPLIES REMOVED FOR PROTECTION SHALL BE REPLACED IN ORIGINAL LOCATIONS. ANY MATERIALS DAMAGED SHALL BE REPLACED WITH NEW MATERIALS OF LIKE KIND AND QUALITY.
3. DO ALL DRILLING, CUTTING, CHANNELING AND PATCHING REQUIRED TO INSTALL ELECTRICAL WORK AS INDICATED OR HEREIN SPECIFIED. M ALL HOLES, CURBS, ETC., IN FLOORS, CEILINGS AND WALLS SHALL BE PATCHED, UNLESS INDICATED OTHERWISE. PAINT ALL NEW ELECTRICAL RACEWAYS, CABINETS, ENCLOSURES AND FITTINGS PENETRATING INTO FIRE RATED ENVELOPES, SPACES, ETC.
4. ALL CONDUIT RUNS SHALL BE CONCEALED, UNLESS SHOWN OTHERWISE. PROVIDE A PULL WIRE IN ALL EMPTY CONDUITS.
5. EXISTING CONDITION SHOWN IS FROM AVAILABLE RECORD DRAWINGS AND VISUAL FIELD SURVEY AND SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ACTUAL EXISTING CONDITION AT SITE.
6. ALL WORK SHOWN IS NEW UNLESS SPECIALLY INDICATED AS EXISTING (X). ALL ELECTRICAL EQUIPMENT MOUNTING AND ANCHORAGE MUST CONFORM WITH LOCAL AND STATE SEISMIC CODES.

E. TELEPHONE SYSTEMS
PROVIDE RACEWAYS, AND ALL MATERIAL INCLUDING PULLING CABLE IN EACH RACEWAY AS REQUIRED FOR THE TELEPHONE SYSTEM PER THE TELEPHONE REQUIREMENTS. ALL CAT 6 CABLES SHALL BE TESTED & MEET CURRENT BICSI STANDARDS, A TEST REPORT SIGNED BY A RCCD SHALL BE PROVIDED WITH THE DOCUMENTATION.

F. GROUNDING & BONDING
FURNISH AND INSTALL COMPLETE BONDING AND GROUNDING SYSTEM AS REQUIRED BY CODES. CONTINUITY OF GROUNDING SHALL BE MAINTAINED MECHANICALLY AND ELECTRICALLY THROUGHOUT THE SYSTEM. A GREEN GROUNDING CODE SIZED CONDUCTOR SHALL BE CARRIED IN ALL CONDUITS.

G. INSTALLATION
1. IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS THAT A COMPLETE AND WORKABLE ELECTRICAL INSTALLATION BE PROVIDED FOR ALL THE EQUIPMENT DESCRIBED OR SHOWN AS BEING IN THIS CONTRACT. TOWARD THIS END FURNISH ALL LABOR AND TOOLS NECESSARY AND FURNISH AND INSTALL ALL APPARATUS, MATERIALS AND EQUIPMENT IN A FASHION COMPLYING WITH ALL APPLICABLE CODES, INCLUDING ITEMS REQUIRED BUT NOT NORMALLY SHOWN, SUCH AS LAMPS, COUPLINGS, HANGERS, BRACKETS, CLAMPS, BOXES, CONNECTORS AND HARDWARE. REFER ALSO TO WRITTEN SPECIFICATIONS FOR GENERAL, MECHANICAL AND ELECTRICAL SECTIONS.
2. PROCURE ALL PERMITS FROM LEGALLY CONSTITUTED AUTHORITIES, ARRANGE FOR ALL INSPECTIONS AND PAY ALL COSTS FOR FEES AND TESTS IN CONNECTION THEREWITH. COMPLY WITH CODES: NOTHING IN THESE PLANS AUTHORIZES DEVIATION FROM APPLICABLE CODES.
3. DETERMINE EXACT ROUTING OF CONCEALED FEEDERS AND BRANCH HOMERUNS IN COOPERATION WITH OTHER TRADES TO SIMPLIFY INSTALLATION WHEREVER POSSIBLE BUT SUBJECT TO APPROVAL OF ARCHITECT FOR VISUAL AND STRUCTURAL REASONS.
4. PROVIDE A CODE APPROVED DISCONNECT SWITCH OR BREAKER WITHIN SIGHT OF EVERY MOTOR AND FEED MOTORS NOT EQUIPPED WITH "BUILT IN" PROTECTION THROUGH A MAGNETIC OR MANUAL STARTER WITH OVERLOAD HEATERS SIZED TO COMPLY WITH MOTOR MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE CODES.
5. FOR CONNECTIONS TO EXHAUST FANS, PUMPS, COMPRESSORS, SPACE HEATERS, WATER HEATERS, AQUASTATS, SOLENOID VALVES AND OTHER MECHANICAL EQUIPMENT AND FOR CONDUITS AND WIRE REQUIRED BUT NOT NECESSARILY SHOWN ON THESE DRAWINGS REFER TO MECHANICAL PLANS AND DETERMINE EXACT LOCATIONS UNDER DIRECTION OF HEATING AND VENTILATING CONTRACTOR.
6. DO NOT RUN ANY CONDUIT IN SLAB IF ITS OUTSIDE DIAMETER EXCEEDS 1/3 THE THICKNESS OF THE SLAB. LOCATE CONDUITS WITHIN THE MIDDLE OF THE SLAB. WHERE CONDUITS ARE GROUPED IN PARALLEL RUNS, SPACE THEM 3" OR MORE APART. WHERE CONDUITS CROSS EACH OTHER, THICKEN SLAB PROPORTIONATELY OVER A HORIZONTAL AREA EQUAL TO TEN TIMES THE DIAMETER OF THE LARGEST CONDUIT. REFER ALSO TO DETAILS SHOWN.
7. SIZE OUTLET BOXES IN CONFORMITY WITH CODE FOR NUMBER AND GAUGE OF CONDUCTORS THEREIN, EXCEPT WHERE NOTED TO BE LARGER. MINIMUM BOX SIZE SHALL BE 4" SQUARE BY 1-1/2" DEEP.
8. ALL ELECTRICAL WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING AND REPAIRING. ALL CONDUIT SHALL BE CONCEALED WHERE POSSIBLE. EXPOSED CONDUIT SHALL BE IN STRAIGHT LINES PARALLEL WITH, OR AT RIGHT ANGLES TO, COLUMN LINES OR BEAMS AND SEPARATED BY AT LEAST THREE (3) INCHES FROM WATER LINES WHENEVER THEY RUN LONG SIDE OR ACROSS SUCH LINES. CONDUIT SHALL NOT BE RUN BELOW CABLE TRAYS OR LIGHT FIXTURES WITHOUT SPECIFIC APPROVAL OF THE OWNERS REPRESENTATIVE. HANGERS SHALL BE FASTENED TO STEEL, CONCRETE OR MASONRY, BUT NOT TO PIPING. HANGERS AND SUPPORT SYSTEMS ARE AN INTEGRAL PART OF THE VISUAL ENVIRONMENT. ALL HANGERS AND SUPPORTS EXPOSED TO PUBLIC VIEW MUST BE SHOWN IN DETAIL ON PLANS SUBMITTED TO ENGINEER FOR APPROVAL OF APPEARANCE. ALL HANGERS MUST BE UNIFORMLY SPACED AND NEATLY INSTALLED WITH NO EXCESS MATERIAL BEYOND WHAT IS REQUIRED FOR THE SUPPORT FUNCTION. CONTRACTOR SHALL SELECT ACCESSORIES AND HARDWARE WITH A SMOOTH, NEAT FINISHED APPEARANCE AND PAINT ALL EXPOSED CONDUIT HANGERS TO MATCH THE ADJACENT FINISHES.
9. ALL RECEPTACLES SHALL BE MOUNTED BETWEEN 18" AND 48" PER ADA REQUIREMENTS UNLESS NOTED OTHERWISE, MEASURED FROM BOTTOM & TOP OF BOX RESPECTIVELY.
10. ALL SWITCHES SHALL BE MOUNTED 36" TO 48" MEASURED FROM BOTTOM & TOP OF BOX RESPECTIVELY.
11. PANEL CIRCUIT DIRECTORY SHALL COMPLY WITH CEC 408.4.
12. PROVIDE 90% COMPACTION OR SAND SLURRY OVER ALL UNDERGROUND CONDUITS, USE ONLY CLEAN FILL.

H. ADDITIONAL NOTES
1. MARKING - UNDERGROUND SYSTEM SHALL BE LEGIBLY MARKED "UNDERGROUND SYSTEM" AT THE SOURCE OR FIRST DISCONNECTING MEANS OF THE SYSTEM. THE MARKING SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. (250.21)(C)
2. ALL INSTALLED MATERIALS AND EQUIPMENT SHALL BE LISTED U.L., NRTL OR LISTED AND APPROVED BY AN APPROVED TESTING LABORATORY.
3. ALL NEW OVERCURRENT DEVICES INSTALLED IN EXISTING PANELS/SWITCHBOARDS SHALL MATCH THE MAKE, MODEL AND INTERRUPTING CAPACITY OF THE EXISTING OVERCURRENT DEVICES.
4. PROVIDE LOCAL DISCONNECTS FOR ALL HARDWIRED EQUIPMENT THAT IS NOT "WITHIN SIGHT" OF THE SOURCE PANEL.
5. THE IDENTIFICATION OF EVERY CIRCUIT OF A PANEL BOARD AND SWITCHBOARD SHALL BE LEGIBLY IDENTIFIED AS TO ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE AND SHALL INCLUDE SUFFICIENT DETAIL TO ALLOW EACH CIRCUIT TO BE DISTINGUISHED FROM ALL OTHERS. 2016 C.E.C 408.4 - PROVIDE MORE DETAIL ON PANEL SCHEDULE CIRCUIT DESCRIPTIONS.
6. A SINGLE RECEPTACLE INSTALLED ON AN INDIVIDUAL BRANCH CIRCUIT SHALL HAVE AN AMPERE RATING OF NOT LESS THAN THAT OF THE BRANCH CIRCUIT. INDICATE THE RECEPTACLE RATING. (210.21(B)(1))
7. PROVIDE RECEPTACLE OUTLETS WHEREVER CORD CONNECTED EQUIPMENT WILL BE USED. (210.50(B))
8. WHERE THE DISCONNECTS ARE NOT PROVIDED WITHIN SIGHT FROM THE EQUIPMENT IT SUPPLIES, THE SWITCH OR CIRCUIT BREAKER MUST INCLUDE PROVISIONS FOR ADDING A LOCK, AND THESE PROVISIONS MUST REMAIN WITH THE EQUIPMENT. THESE LOCKING PROVISIONS HAVE TO BE PART OF THE EQUIPMENT, EITHER INHERENT TO THE EQUIPMENT DESIGN OR AS A ACCESSORY FEATURE THAT CAN BE INSTALLED ON THE EQUIPMENT. [410.141(B), 422.31(B), 424.19, 440.14 EXCEPTION NO. 1, 600.6(A)(2)(3), 620.51(A) EXCEPTION NO. 1, 620.53, 620.55]
9. STANDARD NON-LOCKING STRAIGHT-BLADE RECEPTACLES IN 120- AND 250-VOLT CONFIGURATION AT WET/DAMP LOCATION ARE REQUIRED TO BE LISTED WEATHER-RESISTANT TYPE. [CEC 406.8(A)].

SYMBOLS

- WP GFCI RECEPTACLE AT 18" AFF
- GFCI RECEPTACLE AT 42" AFF
- DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, WALL MOUNTED @ +18"AFF
- SPECIAL OUTLET, TYPE AS REQUIRED BY EQUIPMENT.
- J — JUNCTION BOX (CEILING MTD.) SIZE PER TABLE AND NEC ARTICLE 370
- J — JUNCTION BOX (WALL MTD.) SIZE PER TABLE AND NEC ARTICLE 370
- T — THERMOSTAT - 36" TO 48" AFF, BOTTOM & TOP OF BOX RESPECTIVELY
- BRANCH CIRCUIT PANELBOARD - 240/120V, 1Ø, 3W OR 3Ø, 3W, 240VAC OR 120/208VAC, 3Ø, 4W.
- 4'X8'X3/4" TELEPHONE BACKBOARD, MARINE PLYWOOD AND PAINTED WITH FIRE RESISTANT PAINT, PER OWNERS REPRESENTATIVE.
- CONDUIT RUN CONCEALED ABOVE CEILING OR IN WALLS,
- CONDUIT RUN CONCEALED BELOW FLOOR OR UNDERGROUND
- —E— EMERGENCY CIRCUIT
- FLEXIBLE CONDUIT (WITH GROUND CONDUCTOR, PROVIDE LIQUID TIGHT CONDUIT IN ALL EXPOSED AREAS)
- —T— LOW VOLTAGE CABLE & CONDUIT 3/4"C-1#CAT6 U.O.N.
- #10 — HASH MARKS INDICATE QUANTITY OF #12 CONDUCTORS. NO HASH MARKS INDICATE (2)#12AWG. (PROVIDE GROUND CONDUCTOR IN ALL CONDUITS.) WHERE NO NUMBER IS INDICATED, THE CONDUCTORS ARE #12AWG(MIN.) CONDUIT SIZE IS AS REQUIRED BY ELECTRICAL CODE. (3/4" CONDUIT MINIMUM).
- 2LA 1-3-5,7 — INDICATES A HOMERUN TO PNL 2LA, CKTS 1-3-5 WITH SHARED NEUTRAL & CKT 7 WITH DEDICATED NEUTRAL.
- 3/4"C-2#12 & 1#12 GND
- 3/4"C-3#12 & 1#12 GND
- 3/4"C-4#12 & 1#12 GND
- 3/4"C-5#12 & 1#12 GND
- #10 3/4"C-2#10 & 1#10 GND
- #10 3/4"C-3#10 & 1#10 GND
- #10 3/4"C-4#10 & 1#10 GND
- #10 3/4"C-5#10 & 1#10 GND

  1" CONDUIT MINIMUM IF UNDERGROUND (CONTRACTOR TO PROVIDE DEDICATED NEUTRALS FOR CIRCUITS WHICH DO NOT HAVE COMMON CIRCUIT HANDLE TIES ON BREAKERS FEEDING THE CIRCUITS)
- 1 — SEE KEY NOTE #1 AS INDICATED ON DRAWING
- $P — SWITCH WITH PILOT LIGHT @ 42"AFF
- $3ab — 3-WAY SWITCH, a & b INDICATES LIGHT FIXTURE TO BE SWITCHED (EACH A 3-WAY) MOUNTED @ 42" AFF
- $ — SWITCH MOUNTED @ +42" AFF
- $M — MOTOR RATED SWITCH
- $a, b, c, d — CIRCUIT SWITCH LEGS — WALL SWITCHES
- 60AS 35AF 3P — DISCONNECT SWITCH, 60AMP SWITCH, 35 AMP FUSE, 3 POLE W/ OVERCURRENT PROTECTION U.O.N.
- M — 100A UTILITY METER (OR AS NOTED)
- 3P 100AS 60AF — FUSED DISCONNECT SWITCH 100AMP SWITCH RATING WITH 60 AMP FUSES, 3 POLE
- 200AF 150AT 3P — MOLDED CASE CIRCUIT BREAKER 200 AMP FRAME, 150 AMP TRIP RATING, 3 POLE
- J CAM — CCTV-VERIFY MOUNTING LOCATION AND REQUIREMENTS WITH CLIENT/OWNER.

COLOR CODE FOR CONDUCTORS

PROVIDE CONDUCTOR COLOR CODE AS FOLLOWS:
120/208VAC, 3Ø, 4W: BLUE, BLACK, RED FOR PHASE CONDUCTORS AND WHITE FOR NEUTRAL, GREEN FOR GROUND.

LIST OF DRAWINGS

SHEET	DESCRIPTION	SHEET	DESCRIPTION
E100	GENERAL NOTES, ABBREVIATIONS, SYMBOLS & DRAWING LIST	E600	ELECTRICAL DETAILS
E120	ENLARGED ELECTRICAL SITE PLAN	E601	ELECTRICAL DETAILS
E140	SITE ELECTRICAL DEMOLITION PLAN	E602	ELECTRICAL DETAILS
E200	ELECTRICAL SINGLE LINE AND LIGHT POLE DETAIL	E603	ELECTRICAL DETAILS
E201	PANEL SCHEDULES	E604	ELECTRICAL DETAILS
E401	ENLARGED ELECTRICAL PLAN - LION ENCLOSURE	E605	ELECTRICAL DETAILS

SCOPE OF WORK

PROVIDE NW POWER AND LIGHTING FOR NEW LION HABITAT AT MOORPARK COLLEGE

APPLICABLE CODES AND STANDARDS

1. 2016 CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 1
2. 2016 CALIFORNIA BUILDING CODE (CBC) CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 2 (2015 INTERNATIONAL BUILDING CODE (IBC) W/CALIFORNIA AMENDMENTS)
3. 2016 CALIFORNIA ELECTRICAL CODE (CEC) CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 3 (2014 NATIONAL ELECTRICAL CODE (NEC) W/CALIFORNIA AMENDMENTS)
4. 2016 CALIFORNIA ENERGY CODE CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 6
5. 2016 CALIFORNIA FIRE CODE (CFC) CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 9 (2015 INTERNATIONAL FIRE CODE (IFC) W/CALIFORNIA AMENDMENTS)
6. 2016 CALIFORNIA REFERENCED STANDARDS CODE CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 12
7. AMERICANS WITH DISABILITIES ACT (ADA) TITLE II - ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES (ADAG) 1990 STATE FIRE MARSHAL REGULATIONS AND AMENDMENTS TO-DATE
8. CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, CALIFORNIA STATE ACCESSIBILITY STANDARDS CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 19
9. 2016 CALIFORNIA GREEN BUILDING STANDARDS CODE (CAL GREEN), PART II, TITLE 24 C.C.R.
10. 2016 CALIFORNIA MECHANICAL CODE (CMC) CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 4 (2015 UNIFORM MECHANICAL CODE (UMC) W/CALIFORNIA AMENDMENTS)
11. 2016 CALIFORNIA PLUMBING CODE (CPC) CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 5 (2015 UNIFORM PLUMBING CODE (UPC) W/CALIFORNIA AMENDMENTS)
12. 2013 TITLE 19 CALIFORNIA CODE OF REGULATIONS (CCR) PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS
13. 2016 NFPA 72 NATIONAL FIRE ALARM CODE

ABBREVIATIONS

A	AMPERES	FS	SHALLOW FLOOR BOX	P	POWER OR POLE
AF	AMP FRAME/AMP FUSE	FT	FEET	PBO	PROVIDED BY OTHERS
AFC	AVAILABLE FAULT CURRENT	GC	GENERAL CONTRACTOR	PNL	PANEL
AFF	ABOVE FINISHED FLOOR	GFI	GROUND FAULT INTERRUPTER	(R)	REMOVED
AIC	AMP INTERRUPTING CURRENT	GND	GROUND	RGS	RIGID GALVANIZED STEEL CONDUIT
ARCH	ARCHITECT	HP	HORSEPOWER	RM	ROOM
AS	AMP SWITCH	ID	IDENTIFICATION	SN	SYSTEM NEUTRAL
ASTM	AMERICAN SOCIETY OF TESTING MATERIAL(S)	IG	ISOLATED GROUND	SPD	SURGE PROTECTION DEVICE
AT	AMP TRIP	JB	JUNCTION BOX	TC	TIME CLOCKS
AWG	AMERICAN WIRE GAGE	K	KILO	TTB	TELEPHONE TERMINAL BOARD
BKBD	BACKBOARD	KVA	KILO VOLT AMPS=1000VA	TTC	TELEPHONE TERMINAL CABINET
C	CONDUIT OR CEILING	LC	LIGHTING CONTACTOR	TR	TRANSFORMER
CB	CIRCUIT BREAKER	LCL	LONG CONTINUOUS LOAD	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
CONT	CONTINUATION	LV	LOW VOLTAGE	TYP	TYPICAL
CKT	CIRCUIT	M	METER	UG	UNDERGROUND
CLG	CEILING	MC	METAL CLAD	UL	UNDERWRITERS LABORATORY
CO	CONDUIT ONLY	MIN.	MINIMUM	UON	UNLESS OTHERWISE NOTED
CTV	CABLE TELEVISION	MTD	MOUNTED	UNSW	UNSWITCHED
(CU)	COPPER	MTB	MAIN TELEPHONE BACKBOARD	V	VOLTS/VOLTAGE
CW	COLD WATER PIPE	MTG	MOUNTING	VA	VOLT AMPS
DIS	DISCONNECT	MV	MEDIUM VOLTAGE	VD	VOLTAGE DROP
DS	DISCONNECT SWITCH	MH	METAL HALIDE	W	WATTS/WATTAGE OR WIRE
DWG	DRAWING	MFG	MANUFACTURER	WP	WEATHERPROOF
ECD	ELECTRICAL CONTRACTOR	NEC	NATIONAL ELECTRICAL CODE	W/	WITH
EM	EMERGENCY LIGHT/FEEDER	(N)	NEW	(X)	EXISTING
EMT	ELECTRICAL METAL TUBING	NIC	NOT IN CONTRACT	Φ	PHASE
EOR	ENGINEER OF RECORD	NL	NIGHT LIGHT		
EPR	ETHYLENE PROPYLENE RUBBER	NO	NORMALLY OPEN		
(F)	FRONT	NC	NORMALLY CLOSED		
		OH	OVERHEAD		

DERATING TABLE

NEC #310-8 ADJUSTMENT FACTORS

(a) MORE THAN THREE CURRENT-CARRYING CONDUCTORS IN A RACEWAY OR CABLE. WHERE THE NUMBER OF CURRENT-CARRYING CONDUCTORS IN A RACEWAY OR CABLE EXCEEDS THREE, THE ALLOWABLE AMPACITIES SHALL BE REDUCED AS SHOWN IN THE FOLLOWING TABLE:

NUMBER OF CURRENT-CARRYING CONDUCTORS	PERCENT OF VALUES IN TABLES AS ADJUSTED FOR AMBIENT TEMPERATURE IF NECESSARY
4 THROUGH 6	80
7 THROUGH 9	70
10 THROUGH 20	50
21 THROUGH 30	45
31 THROUGH 40	40
41 AND ABOVE	35

WHERE SINGLE CONDUCTORS OR MULTICONDUCTOR CABLES ARE STACKED OR BUNDLED LONGER THAN 24 INCHES (610 mm) WITHOUT MAINTAINING SPACING AND ARE NOT INSTALLED IN RACEWAYS, THE ALLOWABLE AMPACITY OF EACH CONDUCTOR SHALL BE REDUCED AS SHOWN IN THE ABOVE TABLE.

EXCEPTION NO. 1: WHERE CONDUCTORS OF DIFFERENT SYSTEMS, AS PROVIDED IN SECTION 300-3, ARE INSTALLED IN A COMMON RACEWAY OR CABLE, THE DERATING FACTORS SHOWN ABOVE SHALL APPLY TO THE NUMBER OF POWER AND LIGHTING (ARTICLES 210, 215, 220, AND 230) CONDUCTORS ONLY.

EXCEPTION NO. 2: FOR CONDUCTORS INSTALLED IN CABLE TRAYS, THE PROVISIONS OF SECTION 318-11 SHALL APPLY.

EXCEPTION NO. 3: DERATING FACTORS SHALL NOT APPLY TO CONDUCTORS IN NIPPLES HAVING A LENGTH NOT EXCEEDING 24 INCHES (610mm).

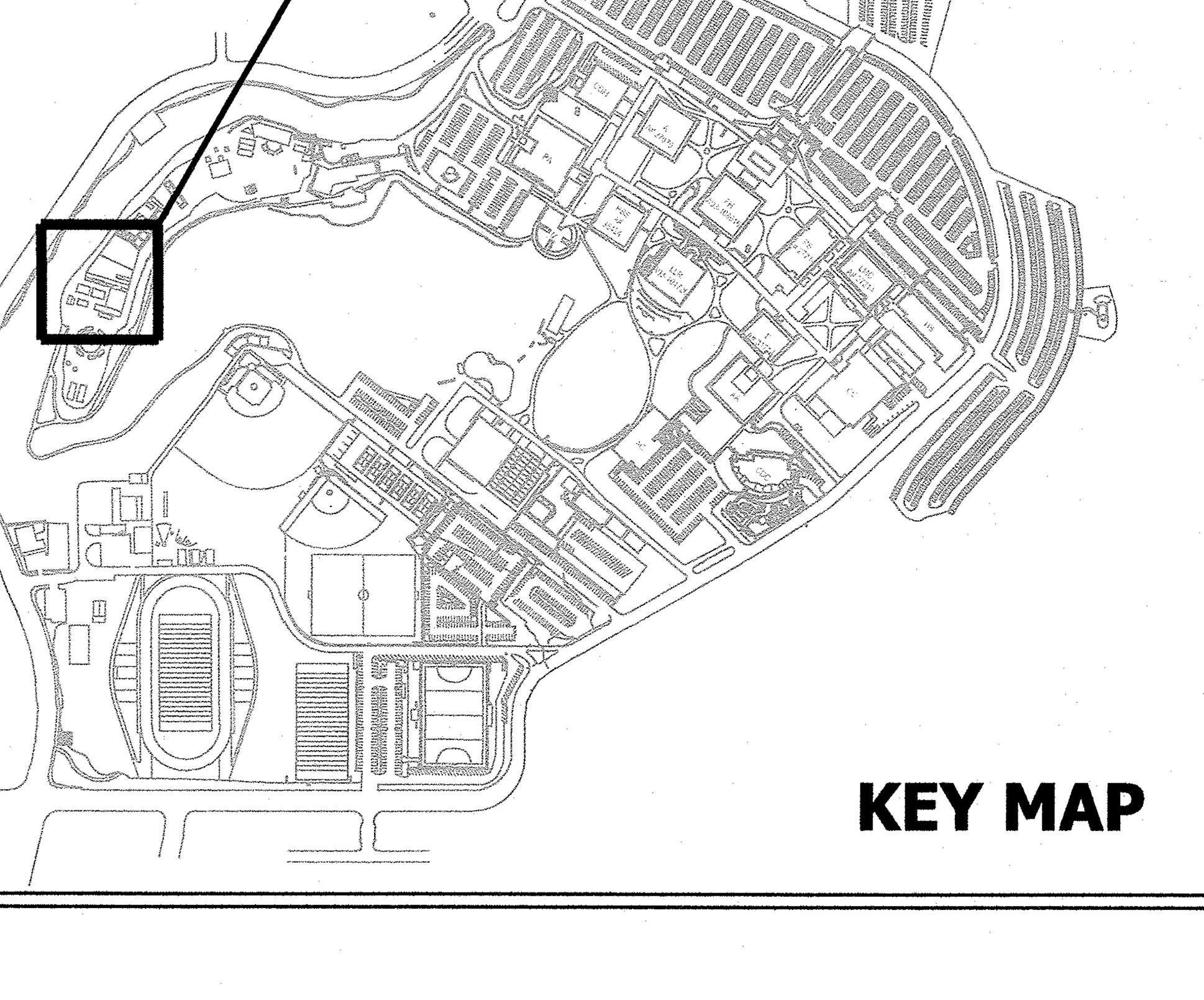
EXCEPTION NO. 4: DERATING FACTORS SHALL NOT APPLY TO UNDERGROUND CONDUCTORS ENTERING OR LEAVING AN OUTDOOR TRENCH IF THOSE CONDUCTORS HAVE PHYSICAL PROTECTION IN THE FORM OF RIGID METAL CONDUIT, INTERMEDIATE METAL CONDUIT, OR RIGID NONMETALLIC CONDUIT HAVING A LENGTH NOT EXCEEDING 10 FEET (3.05m) ABOVE GRADE AND THE NUMBER OF CONDUCTORS DOES NOT EXCEED FOUR.

EXCEPTION NO. 5: FOR OTHER LOADING CONDITIONS, ADJUSTMENT FACTORS AND AMPACITIES SHALL BE PERMITTED TO BE CALCULATED UNDER SECTION 310-15(b)

(FNC): SEE APPENDIX B, TABLE B-310-11 FOR ADJUSTMENT FACTORS FOR MORE THAN THREE CURRENT-CARRYING CONDUCTORS IN A RACEWAY OR CABLE WITH LOAD DIVERSITY.

(b) MORE THAN ONE CONDUIT, TUBE, OR RACEWAY. SPACING BETWEEN CONDUITS, TUBING, OR RACEWAYS SHALL BE MAINTAINED.

PROJECT AREA



KEY MAP

N

REVISIONS | BY

REGISTERED PROFESSIONAL ENGINEER KENNETH W. LUCCI No. E 8340 Exp. 09/30/2020 ELECTRICAL STATE OF CALIFORNIA

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SHEET TITLE: GENERAL NOTES, ABBREVIATIONS, SYMBOLS AND DRAWING LIST

PROJECT: LION ENCLOSURE
EXOTIC ANIMAL TRAINING AND MANAGEMENT
7075 CAMPUS ROAD
MOORPARK,CA 93021

DRAWN: M. WATERS
CHECKED: K. LUCCI
DATE: 06-19-2019
SCALE: AS NOTED
JOB NO. 18612
SHEET: E100
OF: SHEETS:

BID SET 06-24-19

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Jun 22, 2019, 3:28pm
Attached XREFS:
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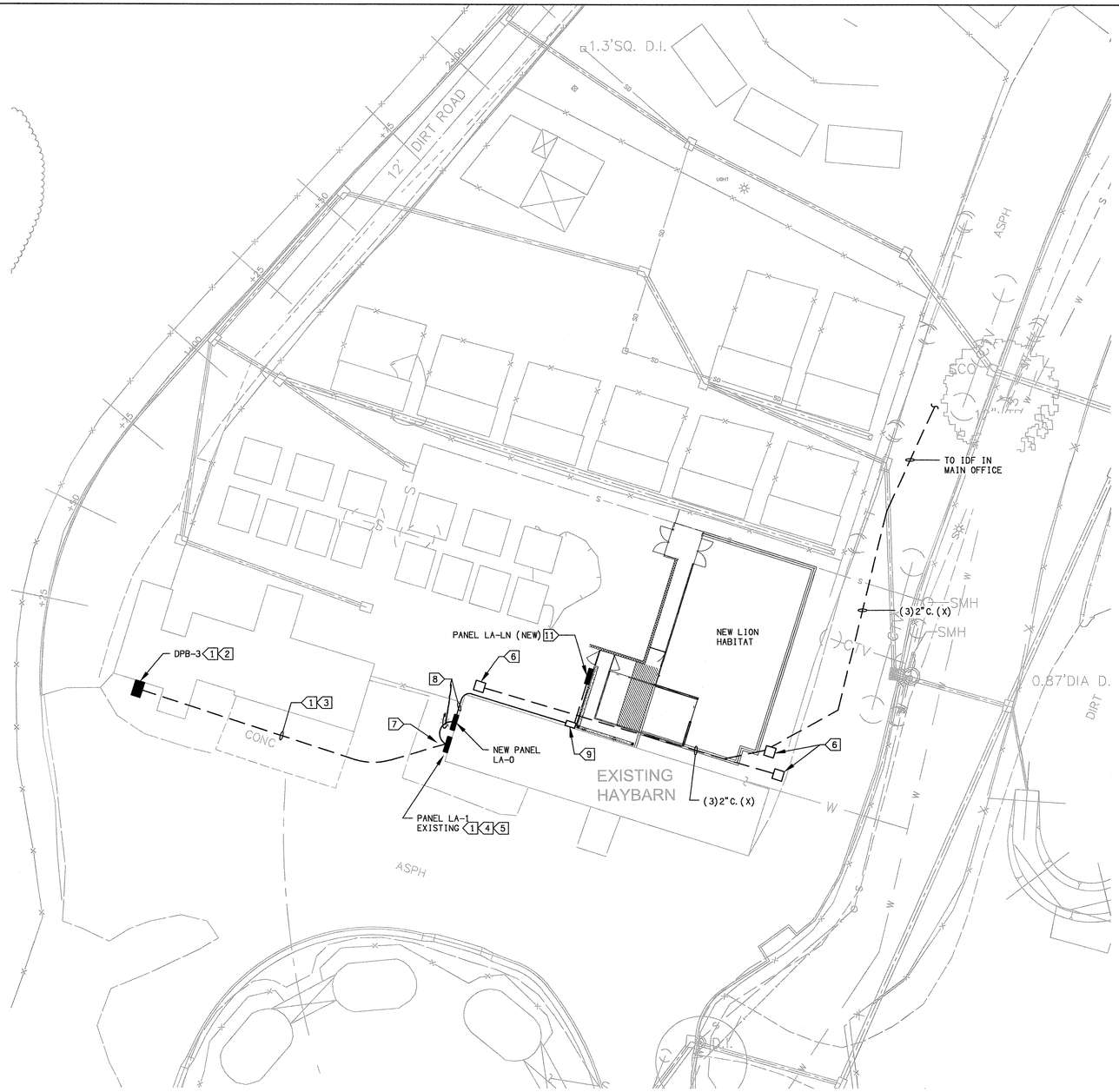

1/16" = 1'-0"
0' 8' 16' 32'

ENLARGED SITE ELECTRICAL PLAN

SCALE: 1/16"=1'-0"

1 / E120

N

SHEET NOTES:

1. VERIFY LOCATION OF ALL BUILDINGS AND APPENDITURES ON ARCHITECTURAL AND CIVIL PLANS.
2. CONTRACTOR SHALL VERIFY LOCATION AND REQUIREMENTS OF ALL ELECTRICAL DEVICES PRIOR TO BID. ROUGH-IN AND INSTALLATION.
3. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO ANY TRENCHING. CONTRACTOR SHALL PROTECT ALL EXISTING/REMAINING UNDERGROUND UTILITY SYSTEMS IN PLACE. CONTRACTOR SHALL REPAIR ANY UTILITY SYSTEM DAMAGED DURING CONSTRUCTION.
4. ALL CONDUIT 90° CONDUIT BENDS AND RISERS SHALL BE PVC SCHEDULE 80.
5. ALL SERVICE ENTRANCE EQUIPMENT SHOP DRAWINGS SHALL BE SUBMITTED TO THE LOCAL UTILITY COMPANY FOR APPROVAL, WITH WRITTEN APPROVAL RECEIVED PRIOR TO SUBMISSION TO ELECTRICAL ENGINEER FOR APPROVAL.
6. MINIMUM CONDUIT BURIAL DEPTH IS 24".
7. CONTRACTOR TO PROVIDE GROUND CONDUCTORS IN ALL CONDUITS.
8. 1" CONDUIT MINIMUM UNDERGROUND.
9. COORDINATE WORK WITH OTHER TRADES. OBTAIN ALL DRAWINGS THAT WILL REQUIRE COORDINATION AND PROVIDE ALL ELECTRICAL CONNECTIONS, DEVICES, AND WIRING REQUIRED WHETHER SHOWN ON ELECTRICAL DRAWINGS OR NOT.
10. CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES AS REQUIRED TO INSTALL CONDUCTORS PER CONDUCTOR MANUFACTURERS RECOMMENDATIONS, PER THE NATIONAL ELECTRICAL CODE AND PER LOCAL AUTHORITIES HAVING JURISDICTION.

KEY NOTES:

1. SEE E200 SINGLE LINE.
2. EXISTING DPB CONTAINING TRANSFORMER AT 480VAC, 1φ, 3 WIRE TO 120/240VAC, 1φ, 3 WIRE PANEL WITH OVERCURRENT PROTECTION RATED AT 300A. REPLACE 100A/2 POLE BREAKER FEEDING LA-1 WITH 200A/2 POLE 10KAIC BREAKER. SCHEDULE OUTAGES WITH OWNER'S REPRESENTATIVE.
3. EXISTING 1-1/2"C. (PVC) SCHEDULE 40 UNDERGROUND FROM DPB-3 TO PANEL LA-1 WITH 3#2 & 1#8 GROUND. REMOVE EXISTING FEEDER & REPLACE WITH 3#3/0 & 1#6 GROUND FROM DPB-3 TO NEW PANEL LA-0.
4. INTERCEPT CONDUIT BELOW PANEL LA-1 & INSTALL NEW WALL MOUNTED INTERCEPT PULLBOX (NEMA 3R 12"X12"X6") & ROUTE NEW CONDUIT/FEEDER FROM PULBOX TO NEW PANEL LA-0. PANEL LA-0 PANEL RATED 200A AT 120/240 VAC, 1φ, 3 WIRE, 42 CIRCUIT NEMA 3R SQUARE D PER E201.
5. BACK FEED PANEL LA-1 PER E200.
6. EXISTING LOW VOLTAGE COMMUNICATION VAULT.
7. NEW PULLBOX PER E200.
8. ROUTE NEW FEEDER PER E200 ON BUILDING.
9. NEW PULLBOX, NEMA 3R 8"X8"X6".
10. NEW UNDERGROUND FEEDER PER E200 & PVC SCHEDULE 80 RISERS.
11. MOUNT ON P2000 UNISTRUT.

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SHEET TITLE: **ENLARGED ELECTRICAL SITE PLAN**

PROJECT:
LION ENCLOSURE
EXOTIC ANIMAL TRAINING AND MANAGEMENT
7075 CAMPUS ROAD
MOORPARK,CA 93021

DRAWN:	M. WATERS
CHECKED:	K. LUCCI
DATE:	06-19-2019
SCALE:	AS NOTED
JOB NO.	18612
SHEET:	E120
OF:	SHEETS: △

BID SET 06-24-19

DRAFTER: cm04 DRAWING FILENAME: 18612E120 PATHNAME: G:\18612\EL\Sheets TIME: 3:28 pm DATE: 22 June 2019

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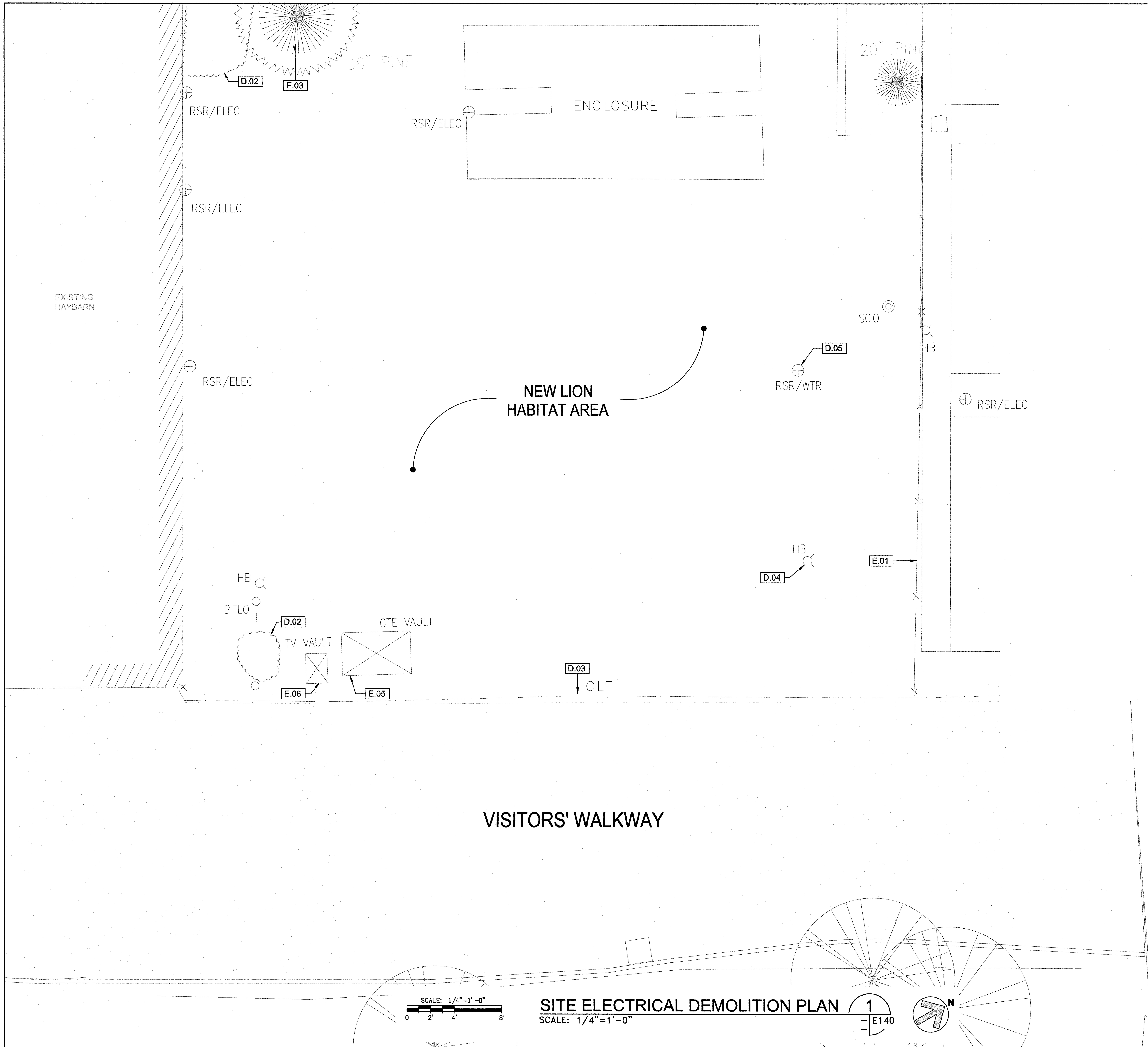
TIME: 3:29 pm DATE: 22 June 2019 PATHNAME: G:\18\612\EL\Sheets DRAWING FILENAME: 18612E140 DRAFTER: cm04



SITE ELECTRICAL DEMOLITION PLAN 1 E140
SCALE: 1/4"=1'-0"

SHEET NOTES:

1. SCOPE: PROVIDE AND PERFORM DEMOLITION, PREPARATORY AND MISCELLANEOUS WORK IN AREAS AS INDICATED AND SPECIFIED, COMPLETE.
2. DEMOLITION AND REMOVAL OF EXISTING ELECTRICAL CONDUIT, WIRING AND EQUIPMENT REQUIRED TO COMPLETE THE PROJECT.
3. PREPARATION OF THE EXISTING BUILDING TO RECEIVE OR CONNECT THE NEW WORK.
4. MISCELLANEOUS DEMOLITION, CUTTING, ALTERATION, AND REPAIR WORK IN THE EXISTING BUILDING NECESSARY FOR THE COMPLETION OF THE ENTIRE PROJECT.
5. DISCONNECTING AND RECONNECTION OF ELECTRICAL EQUIPMENT AS REQUIRED BY THE CONSTRUCTION MODIFICATIONS.
6. EXISTING CONDITIONS: PRIOR TO BID MAKE A DETAILED SURVEY OF THE EXISTING CONDITIONS PERTAINING TO THE WORK. CHECK THE LOCATIONS OF ALL EXISTING STRUCTURES, EQUIPMENT AND WIRING (BRANCH CIRCUITING AND CONTROLS). CHECK FOR ANY HAZARDOUS MATERIALS WHICH MAY REQUIRE SPECIAL HANDLING.
7. SALVAGE AND DISPOSAL: ALL REMOVED MATERIAL OTHER THAN ITEMS TO BE REUSED SHALL BE RETURNED TO THE OWNER OR DISPOSED OF IN ACCORDANCE WITH INSTRUCTIONS FROM THE OWNER'S REPRESENTATIVE. DISPOSAL SHALL BE DONE IN ACCORDANCE WITH EPA AND GOVERNING BODY REQUIREMENTS AND REGULATIONS. CONTRACTOR SHALL PAY ALL FEES AND CHARGES FOR DISPOSAL.
8. SCHEDULE ALL WORK AND OUTAGES WITH TENANTS AND OWNERS WRITTEN APPROVAL.
9. CONTRACTOR SHALL LEAVE ALL CIRCUITS ENERGIZED TO DEVICES IN AREAS OUTSIDE OF DEMOLITION AREA EVEN IF FEEDERS ARE ROUTED THROUGH DEMOLITION AREA.

DEMOLITION KEY NOTES (NOT ELECTRICAL SCOPE)

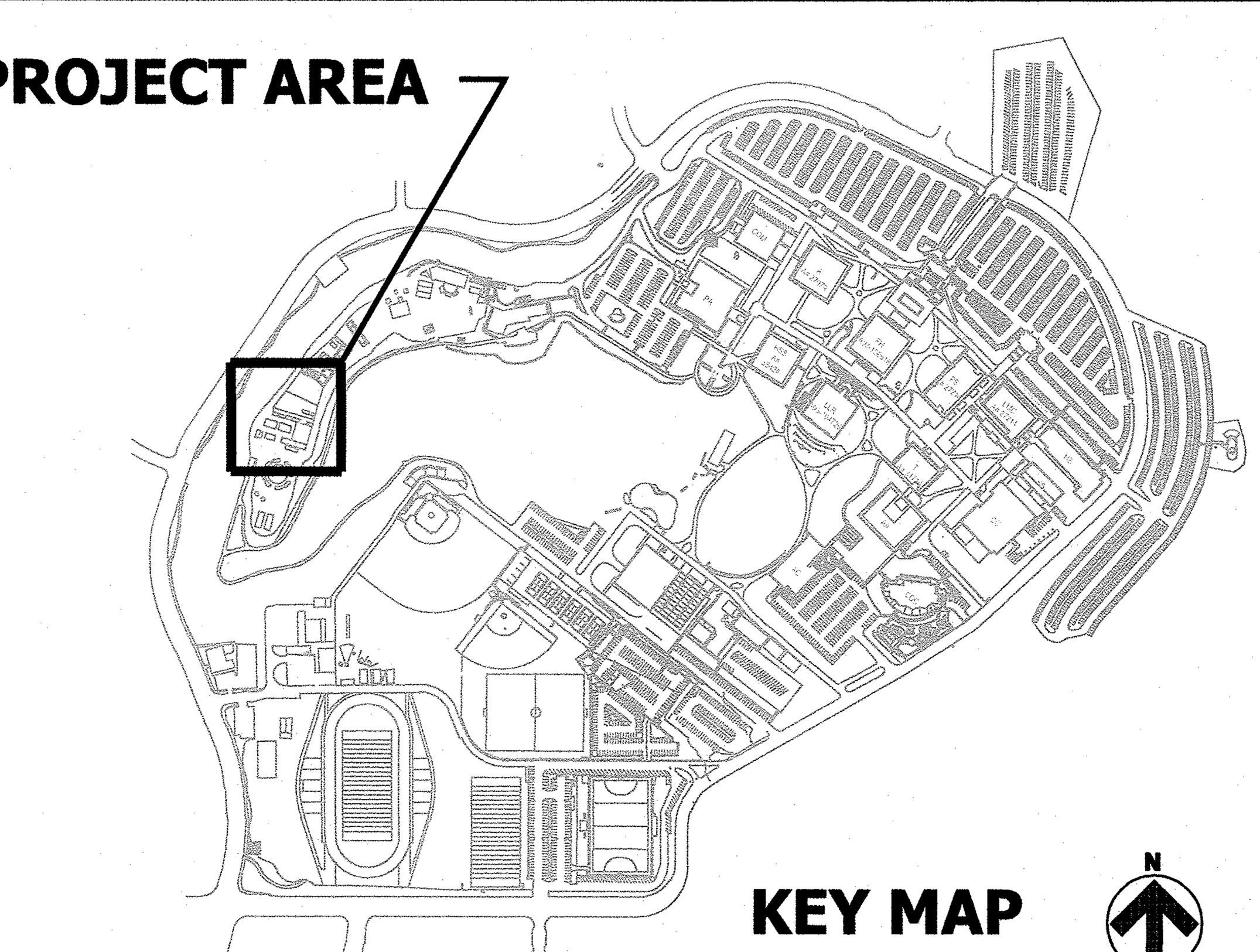
D.02	DEMOLISH (E) SHRUB
D.03	DEMOLISH (E) CHAINLINK FENCE
D.04	DEMOLISH (E) HOSE BIB
D.05	CAP AND REMOVE (E) WATER PIPE

KEY NOTES

EXISTING TO REMAIN:

E.01	(E) CHAINLINK FENCE
E.03	(E) TREE TO REMAIN
E.05	(E) UTILITIY VAULT TO REMAIN
E.06	(E) TV VAULT TO REMAIN

PROJECT AREA



KEY MAP

REVISIONS | BY

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SHEET TITLE: SITE ELECTRICAL DEMOLITION PLAN

PROJECT: LION ENCLOSURE
EXOTIC ANIMAL TRAINING AND MANAGEMENT
7075 CAMPUS ROAD
MOORPARK,CA 93021

DRAWN: M. WATERS
CHECKED: K. LUCCI
DATE: 06-19-2019
SCALE: AS NOTED
JOB NO. 18612
SHEET: E140
OF: SHEETS:

BID SET 06-24-19

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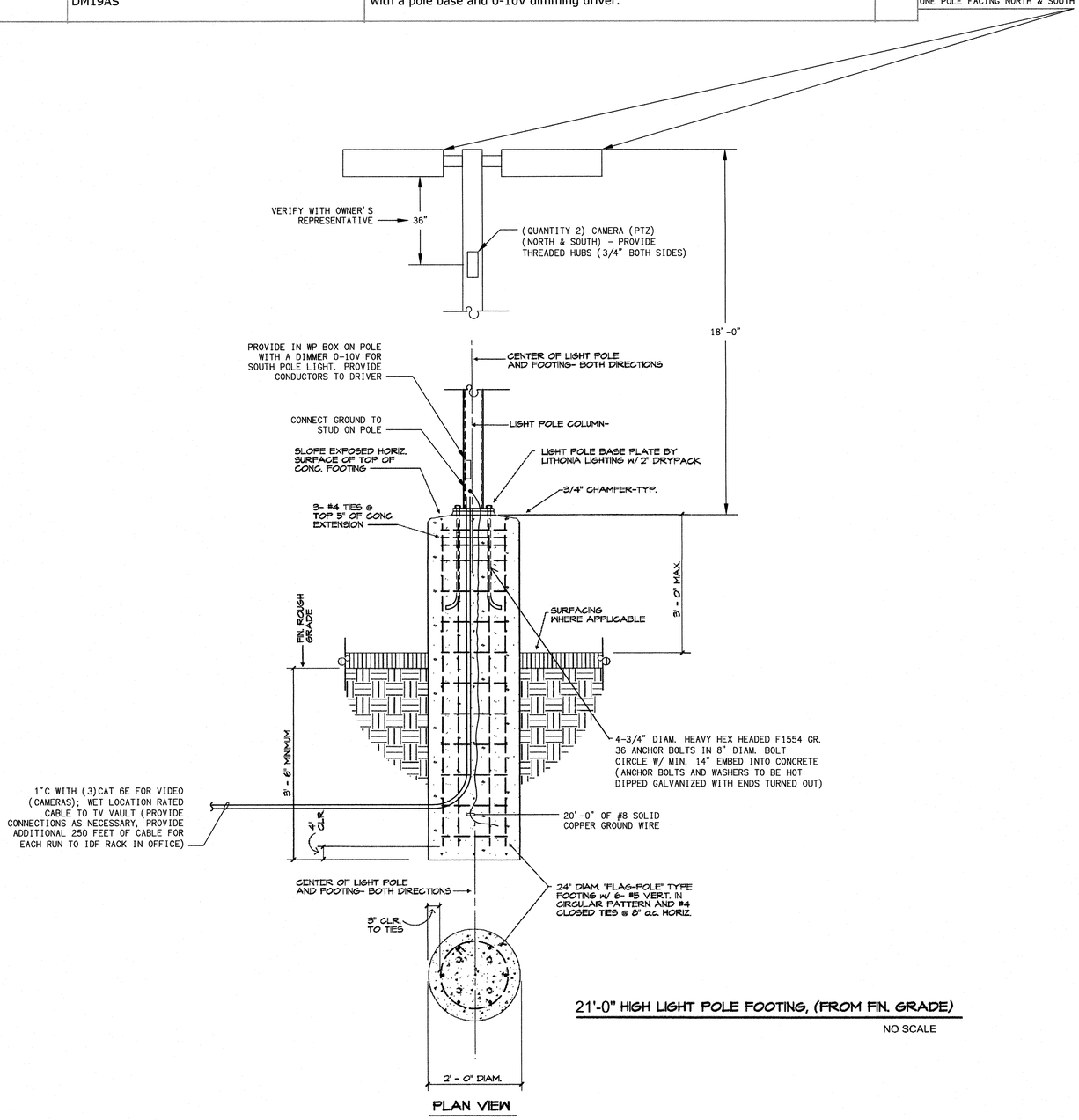
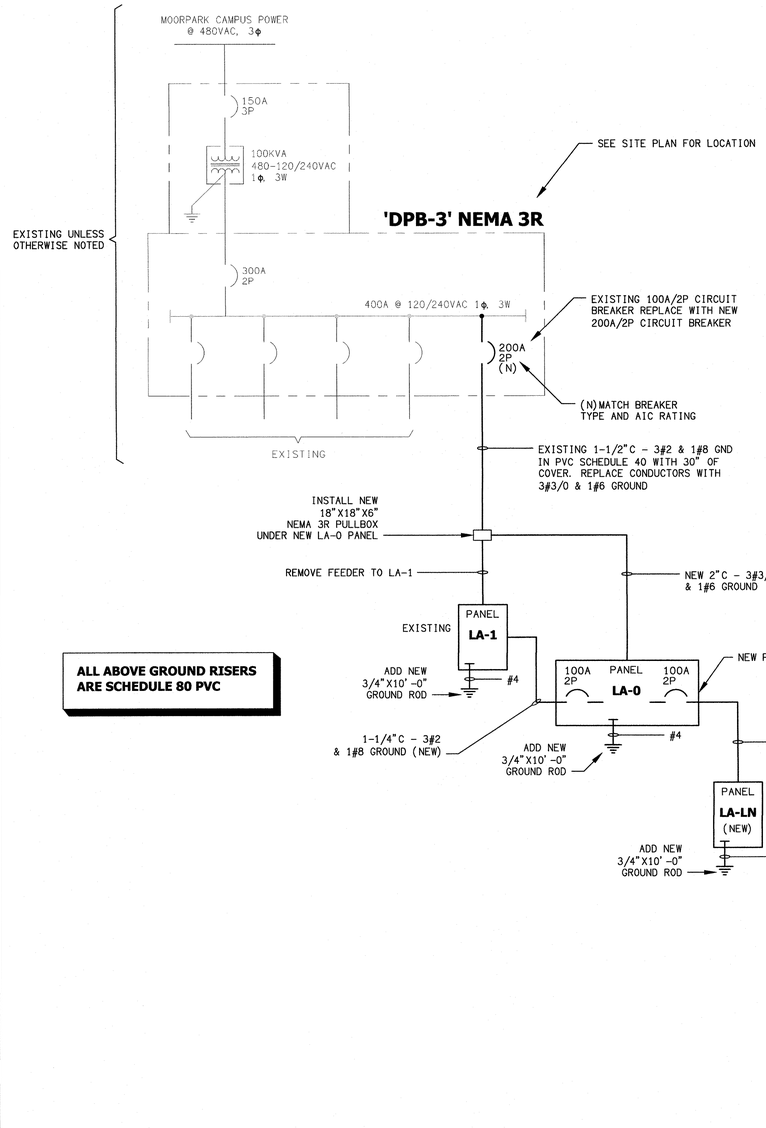
Manufacturer	Catalog Number	Description	Lamp
Lithonia Lighting	DSX1 LED P3 40K T4M MVOLT PIRH, SSS 18FT 4C DM19AS	DSX1 LED P3 35K T4M MVOLT Bi level motion/ambient sensor. Use 18ft pole if using with a pole base and 0-10V dimming driver.	LED



21'-0" HIGH LIGHT POLE FOOTING, (FROM FIN. GRADE)

NO SCALE

LIGHT POLE DETAIL 2
SCALE: NONE
E200



ALL ABOVE GROUND RISERS ARE SCHEDULE 80 PVC

ELECTRICAL SINGLE LINE 1
SCALE: NONE
E200

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SHEET TITLE: ELECTRICAL SINGLE LINE AND LIGHT POLE DETAIL

PROJECT: LION ENCLOSURE
EXOTIC ANIMAL TRAINING AND MANAGEMENT
7075 CAMPUS ROAD
MOORPARK, CA 93021

DRAWN: M. WATERS
CHECKED: K. LUCCI
DATE: 06-19-2019
SCALE: AS NOTED
JOB NO. 18612
SHEET: E200
OF: SHEETS:

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NEW PANEL

PANEL NUMBER LA-LN VOLTAGE 120/240 PHASE 1 WIRE 3
SOURCE LA-O A.I.C. 10,000
PANEL LOCATION OUTSIDE LION HABITAT BUS AMPERE RATING 100

■ NEMA 3R ■ COPPER BUSS
■ MAIN CIRCUIT BREAKER 100
■ SURFACE MOUNTING

LCL	MISC	RECPT	LITE	CIRCUIT DESCRIPTION	LOAD(VA) A	LOAD(VA) B	BRKR POLE	BRKR AMP	CKT	PHASE A	PHASE B	CKT	BRKR AMP	BRKR POLE	LOAD(VA) A	LOAD(VA) B	CIRCUIT DESCRIPTION	MISC	RECPT	LITE	LCL
				RECEPTACLE	180		1	20	1			2	30	1	2000		RADIANT FLOOR				*
						180			3			4	20	1			STAGE				
					180				5			6	20	1	·		SPARE				
						180			7			8	20	1		·					
				SPARE	·				9			10	30		·						
						·			11			12		2		·					
					·				13			14	20		·						
						·			15			16		2		·					
				LIGHT POLE	500				17			18	20		·						
				LIGHT WALL PACK		500			19			20		2		·					
				LIGHT ENTRY	500				21			22	50		·						
						500			23			24		2		·					
				TOTALS	1360	1360									2000		TOTALS				

L.C.L. VOLT AMPS: . PHASE A . PHASE B . .
TOTAL VOLT AMPS: 4720 PHASE A 3360 PHASE B 1360 .
TOTAL AMPS: 20 PHASE A 28 PHASE B 12 .
* 30 MILLIAMP GROUND FAULT BREAKER

EXISTING PANEL (CONNECT TO LA-O PER E200)

PANEL NUMBER LA-1 VOLTAGE 120/240 PHASE 1 WIRE 3
SOURCE DPPB-3 (change to LA-O per E200 A.I.C. 10,000
PANEL LOCATION HAYBARN BUS AMPERE RATING 100

■ NEMA 3R ■ COPPER BUSS
■ MAIN LUGS ONLY
■ SURFACE MOUNTING

LCL	MISC	RECPT	LITE	CIRCUIT DESCRIPTION	LOAD(VA) A	LOAD(VA) B	BRKR POLE	BRKR AMP	CKT	PHASE A	PHASE B	CKT	BRKR AMP	BRKR POLE	LOAD(VA) A	LOAD(VA) B	CIRCUIT DESCRIPTION	MISC	RECPT	LITE	LCL
				EXISTING LOAD	·	·	1	20	1			2	20	1	·		EXISTING LOAD				
						·			3			4				·					
					·				5			6			·						
						·			7			8				·					
					·				9			10			·						
						·			11			12				·					
					·				13			14			·						
						·			15			16				·					
					·				17			18			·						
						·			19			20				·					
					·				21			22			·						
						·			23			24				·					
					·				25			26			·						
						·			27			28				·					
					·				29			30			·						
						·			31			32				·					
					·				33			34			·						
						·			35			36				·					
					·				37			38			·						
						·			39			40				·					
					·				41			42			·						
				TOTALS	·	·									·	·	TOTALS				

L.C.L. VOLT AMPS: . PHASE A . PHASE B . .
TOTAL VOLT AMPS: . PHASE A . PHASE B . .
TOTAL AMPS: . PHASE A . PHASE B . .

NEW

PANEL NUMBER LA-O VOLTAGE 120/240 PHASE 1 WIRE 3
SOURCE DPPB-3 A.I.C. 10,000
PANEL LOCATION _____ BUS AMPERE RATING 200A

■ NEMA 3R ■ COPPER BUSS
■ MAIN CIRCUIT BREAKER 200A
■ SURFACE MOUNTING

LCL	MISC	RECPT	LITE	CIRCUIT DESCRIPTION	LOAD(VA) A	LOAD(VA) B	BRKR POLE	BRKR AMP	CKT	PHASE A	PHASE B	CKT	BRKR AMP	BRKR POLE	LOAD(VA) A	LOAD(VA) B	CIRCUIT DESCRIPTION	MISC	RECPT	LITE	LCL
				PANEL LA-1	3000		2		1			2	100	2	3360		PANEL LA-LN				
						3000		100	3			4				1360					
				SPARE	·		2		5			6	20	1	·		SPARE				
						·		100	7			8				·					
					·		2		9			10			·						
						·		60	11			12				·					
					·		2		13			14			·						
						·		60	15			16				·					
					·		2		17			18			·						
						·		30	19			20				·					
					·		2		21			22			·						
						·		30	23			24				·					
					·		2		25			26			·						
						·		20	27			28				·					
					·		2		29			30			·						
				SPACE		·		20	31			32				·					
					·				33			34			·						
						·			35			36				·					
					·				37			38			·						
						·			39			40				·					
					·				41			42			·						
				TOTALS	·	·									·	·	TOTALS				

L.C.L. VOLT AMPS: . PHASE A . PHASE B . .
TOTAL VOLT AMPS: . 10720 PHASE A . 6360 PHASE B . 4360 .
TOTAL AMPS: . 44 PHASE A . 53 PHASE B . 36 .

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SHEET TITLE: **PANEL SCHEDULES**

PROJECT:
LION ENCLOSURE
EXOTIC ANIMAL TRAINING AND MANAGEMENT
7075 CAMPUS ROAD
MOORPARK, CA 93021

DRAWN: M. WATERS
CHECKED: K. LUCCI
DATE: 06-19-2019
SCALE: AS NOTED
JOB NO. 18612
SHEET:

E201

OF: SHEETS:

BID SET 06-24-19

PATHNAME: G:\18\612\EL\Sheets DATE: 22 June 2019 TIME: 3:29 pm
DRAWING FILENAME: 18612E201
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TIME: 3:29 pm

DATE: 22 June 2019

PATHNAME: G:\18\612\EL\Sheets

DRAWING FILENAME: 18612E401

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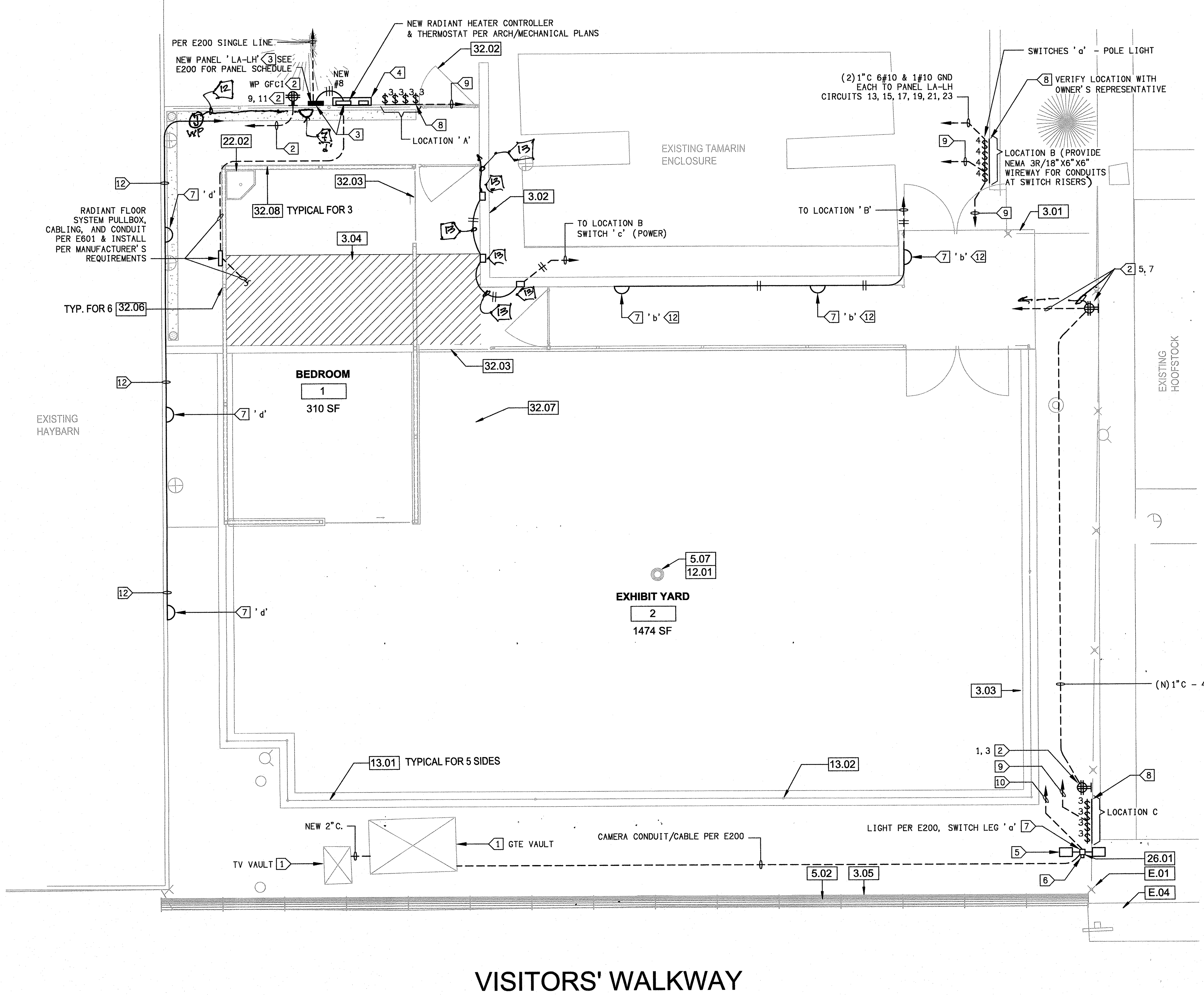

(N)1"C - 4#12 & 1#12 GND

ENLARGED ELECTRICAL PLAN - LION ENCLOSURE

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

1 / E401

EXISTING KEY NOTES

E.01	CHAINLINK FENCE - EXISTING
E.04	ASPHALT PAVING - EXISTING

KEY NOTES (NEW ITEMS)

3.01	CONCRETE SLAB
3.02	CMU BLOCK WALL
3.03	4" CONCRETE CURB
3.04	HEATED CONCRETE SLAB
3.05	6" CONCRETE CURB
5.01	2-3/8" Ø SCHEDULE 40 RIDGE PIPE
5.02	48" GUARDRAIL
7.01	CORRUGATED TIN ROOFING
7.02	GUTTER
13.01	CABLE MESH NETTING
13.02	CABLE MESH NETTING POST W/ LACING RODS
13.04	SUPPORT CABLE FOR MESH
22.01	DRAIN W/ MESH SCREEN SEE 6/A5.01
22.02	DRINKING TROUGH
26.01	LAMP POST WITH CONCRETE BASE
31.01	SWALE
32.01	CHAINLINK FENCE
32.02	CHAINLINK SWING GATE
32.03	CHAINLINK SLIDING GATE
32.04	CHAINLINK SERVICE GATE
32.05	CHAINLINK ROOF
32.06	CHAINLINK FENCE STEEL POST
32.07	DECOMPOSED GRANITE
32.08	CHAINLINK PANEL

SHEET NOTES:

1. CONTRACTOR SHALL VERIFY LOCATION & REQUIREMENTS OF ALL DEVICES REQUIRING ELECTRICAL CONNECTION PRIOR TO BID PROPOSAL, ROUGH-IN AND FINISH.
2. CONTRACTOR SHALL, IN ROUTING ALL CIRCUITS, INCREASE CONDUCTOR & CONDUIT SIZE TO ALLOW FOR VOLTAGE DROP SHOULD THE CONTRACTOR EXCEED ROUTING INDICATED ON DRAWING. ENGINEER OF RECORD MUST BE NOTIFIED PRIOR TO ANY DEVIATIONS FROM APPROVED PLAN CHECK (PERMIT SET) DRAWINGS.
3. COORDINATE WORK WITH OTHER TRADES. OBTAIN ALL DRAWINGS THAT WILL REQUIRE COORDINATION AND PROVIDE ALL ELECTRICAL CONNECTIONS, DEVICES, AND WIRING REQUIRED WHETHER SHOWN ON ELECTRICAL DRAWINGS OR NOT.
4. CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES AS REQUIRED TO INSTALL CONDUCTORS PER CONDUCTOR MANUFACTURERS RECOMMENDATIONS, PER THE NATIONAL ELECTRICAL CODE AND PER LOCAL AUTHORITIES HAVING JURISDICTION.
5. 3/4" CONDUIT MINIMUM U.O.N., 1"C MINIMUM UNDERGROUND. ALL RISERS SHALL BE PVC SCHEDULE 80 OR OCAL.
6. PROVIDE CODE SIZE EQUIPMENT GROUNDING CONDUCTORS IN ALL OCCUPIED CONDUITS.
7. PROVIDE CONTROLS FOR MECHANICAL EQUIPMENT PER MECHANICAL DOCUMENTS. VERIFY LOCATION AND REQUIREMENTS OF MECHANICAL EQUIPMENT ON MECHANICAL DOCUMENTS.
8. VERIFY LOCATION OF ALL DEVICES ON ARCHITECTURAL PLANS.
9. VERIFY THE EXACT ROUTING OF ALL EXPOSED CONDUIT WITH OWNER PRIOR TO INSTALLATION.

CONTRACTOR TO PROVIDE RADIANT FLOOR HEATING SYSTEM PER PLANS. PROVIDE START-UP, TESTING AND TRAINING. RADIANT FLOOR SYSTEM SHALL HAVE FULL 2-YEAR WARRANTY

PROVIDE #8 GROUND TO ALL METAL POSTS IN STRUCTURE AND #4 UFER GROUND AND 3/4"X10'-0" GROUND ROD

KEY NOTES:

1. EXISTING PER E150 DEMOLITION PLAN.
2. NEW (QUANTITY 2) WP GFCI OUTLETS IN ONE 4S CAST ALUMINUM BOX WITH SCHEDULE 80 PVC RISERS (1" CONDUIT HUBS ON BOX) WITH (2) P2000 FRP STRUT IN CONCRETE BASE SUPPORTING THE RECEPTACLE BOX. PROVIDE WP COVER, 1"C - 4#12 & 1#12 GND TO LA-LH CIRCUITS AS NOTED.
3. (2) P2000 FRP STRUT IN CONCRETE BASE SUPPORTING THE BOX. PROVIDE WP COVER.
4. INSTALL IN NEW ENCLOSURE NEMA 3R/4X 36"X30"X12" WITH BACK PANEL, LABEL ENCLOSURE.
5. LOCAL 0-10V DIMMER CONTROL FOR SOUTH FACING FIXTURE.
6. PROVIDE WP JBOX AT 48" AFG IN POLE HANDHOLE FOR LOCAL 5 CONTROL.
7. LITHONIA DSX W1LED 20C 530 40K T3M 120 BBW PE DMG DWAXD (PROVIDE WITH 0-10V DIMMING TO DIMMER SWITCHES TO BE MOUNTED IN 4 ENCLOSURE, LABEL AS TO WHICH DIMMER CONTROLS WHICH LIGHTING FIXTURES) MOUNTED AT 8'-0" A.F.F.
8. MOUNT WP 3 WAY/4 WAY SWITCHES ON UNISTRUT AT 42" A.F.F., LABEL ALL SWITCHES WITH PLASTIC LAMINATE LABELS DESCRIBING AREAS CONTROLLED.
9. BETWEEN LOCATIONS A & B AND LOCATIONS B & C PROVIDE 1"C - 6#10 & 1#10 GROUND (SWITCH LEG 'a' & 'b'); 1"C - 6#10 & 1#10 GROUND (SWITCH LEG 'c' & 'd'), 1"C.O. SPARE.
10. 1"C - 4#10 & 1#10 GROUND TO LOCATION B FOR SWITCHED LEG 'a' AND 1"C.O. SPARE TO B. PROVIDE 1"C & 0-10V CONTROL CABLE TO 4.
11. SWITCH LEG 'a' - POLE LIGHT
SWITCH LEG 'b' - WEST CORRIDOR
SWITCH LEG 'c' - IN BLOCK WALL BY SW ENTRY
SWITCH LEG 'd' - SOUTH WALL
12. 3/4" EMT (1"C PVC SCHEDULE 40 UNDERGROUND) - 2#12 & 1#12 GROUND (WITH 0-10V CONTROL CABLE TO 4) COMPRESSION CONNECTORS, INSTALL UNDER EAVE & PAINT TO MATCH WALL.
13. BEGA 77072 FLUSH IN WALL LUMINAIRE AT 36" A.F.F. WITH REMOTE BACK BOX FOR CABLE ENTRY & MAKE UP. PROVIDE 0-10V DIMMER CABLE TO 4 ENCLOSURE DIMMER SWITCH, LABEL UNIQUELY.

REVISIONS	BY

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SHEET TITLE: **ENLARGED ELECTRICAL PLAN - LION ENCLOSURE**

PROJECT: **LION ENCLOSURE**
EXOTIC ANIMAL TRAINING AND MANAGEMENT
7075 CAMPUS ROAD
MOORPARK, CA 93021

DRAWN: M. WATERS

CHECKED: K. LUCCI

DATE: 06-19-2019

SCALE: AS NOTED

JOB NO. 18612

SHEET: **E401**

OF: SHEETS:

BID SET 06-24-19

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Phase 2 - Preparations 9
Phase 3 - Installation of Mat and/or Cable 12
Phase 4 - Finish Surfaces 16
Phase 5 - Controls and Sensors 18
Troubleshooting 19

Important Safety Information

This is a safety-alert symbol. The safety alert symbol is shown alone or used with a signal word (DANGER, WARNING, or CAUTION), a pictorial and/or a safety message to identify hazards.

When you see this symbol alone or with a signal word on your equipment or in this Manual, be alert to the potential for death or serious personal injury.

This pictorial alerts you to electricity, electrocution, and shock hazards.

⚠ WARNING This symbol identifies hazards which, if not avoided, could result in death or serious injury.

⚠ CAUTION This symbol identifies hazards which, if not avoided, could result in minor or moderate injury.

NOTICE This symbol identifies practices, actions, or failure to act which could result in property damage or damage to the equipment.

⚠ WARNING

As with any electrical product, care should be taken to guard against the potential risk of fire, electric shock, and injury to persons. The following cautions must be observed:

NEVER cut or modify the heating cable. The power lead may be cut shorter if necessary, but never removed from the heating cable.

NEVER overlap or cross over the heating cable on itself, or place heating cable closer than 2 inches from another heating cable or power lead cable.

NEVER pull any of the heating cable or factory splices into any conduit.

NEVER attempt to repair a damaged cable. Contact the factory for assistance.

NEVER install the mat/cable on or under non-masonry stairs or decks made of wooden or composite materials.

NEVER install the mat/cable in the deck around a pool, in-ground hot-tub, or similar

---

ALWAYS de-energize all circuits before installing or servicing.

ALWAYS completely embed the heating cable and factory splices in concrete, sand, or asphalt.

ALWAYS avoid placing the heating cable any closer than 2 inches from other items such as underground cable or piping to keep from overheating them.

ALWAYS keep ends of the power leads dry before, during, and after installation.

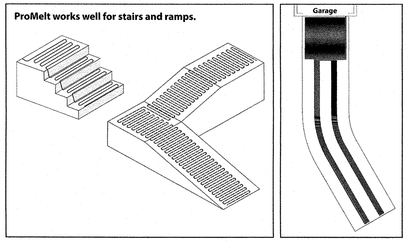
ALWAYS provide ground fault protection (GFEP) for the snow melting system. This may be at the circuit breaker or the control.

ALWAYS pay close attention to voltage and amperage requirements of the circuit breaker, control, and snow melting system.

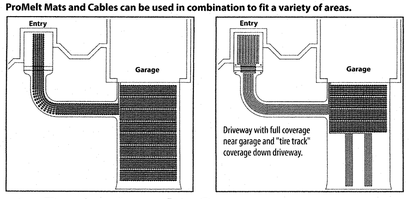
ALWAYS install in accordance with all local codes and the National Electrical Code (ANSI/NFPA 70 especially Article 426) and Section 62 of the Canadian Electrical Code (CEC) Part I.

Some Typical ProMelt Installations

ProMelt works well for stairs and ramps.



ProMelt Mats and Cables can be used in combination to fit a variety of areas.



Phase 1: Designing the System

Heating performance is never guaranteed.

The amount of heat required to melt snow is dependent on many factors such as air and ground temperature, wind speed, solar exposure and humidity. When designing a snow melting system, consider the expected level of performance. Systems can be designed to meet either average, or extreme weather conditions for the installation location. When determining the number of Watts per ft² required, location specific calculations are recommended. The ASHRAE 2007 handbook is a good reference for this, with tables that include flux & Watts/ft² data for locations throughout the USA.

If you have any questions regarding expected performance in your application, please contact the factory.

STEP 1.1

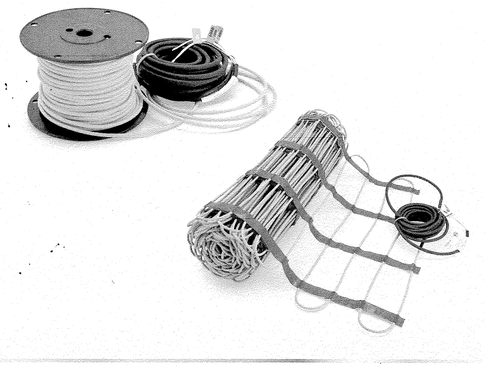
Determine general areas where you want to install ProMelt Mat/Cable

Applications include driveways, walkways, patios, permanent ramps, masonry steps and benches, shipping docks, under garage door seals and more. The ProMelt Mat/Cable can be used anywhere outdoors in residential or commercial locations where snow or ice accumulates. The ProMelt Mat/Cable must be completely embedded in concrete, sand, thick mortar bed, or asphalt.

ProMelt®

Electric Snow Melting Mats & Cables

Installation Manual



Series SM
& SC

⚠ WARNING

Please be aware local codes may require this product and/or the control to be installed or connected by an electrician. Please leave this manual with the end user.

⚠ WARNING

Read this Manual BEFORE using this equipment.

Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment.

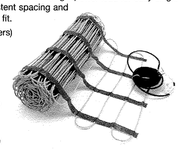
Keep this Manual for future reference.

Welcome to ProMelt Electric Snow Melting

ProMelt products are a simple way to eliminate snow and ice from surfaces. This instruction manual is provided as a guide to installing ProMelt Mat and ProMelt Cable, including design considerations, mat and cable installation, control installation, precautions, and surfacing guidelines.

Specifications for ProMelt Mat:

ProMelt Mat is a complete heating mat consisting of a series resistance heating cable and a single power lead for easy single-point connection. The heating cable is pre-formed into a mat to provide consistent spacing and quick roll-out installation on the job site. The heating mat length cannot be cut to fit.



Sizes: Widths 2, 3 feet (61, 91 centimeters) Lengths 5 up to 56 feet (1.5 to 17 meters)
Voltages: 120, 208, 240, 277 VAC, 1-phase
Watts: 50 W/ft² (170 Btu/h/ft²) and 38 W/ft² (130 Btu/h/ft²)
Maximum heater current: 24 amps (see table 1)
Maximum circuit load: 50 amps
GFEP (ground fault equipment protection) required for each circuit
Listing: UL Listed for U.S. and Canada under UL 515, IEEE 515.1, and CSA C22.2 No. 130-03
Listing file number: E483414
Application: Outdoor use only, embedded in concrete, asphalt, sand (see Step 1.1)
Minimum bend radius: 1 inch (25mm)
Maximum exposure temperature (continuous and storage): 221°F (105°C)
Maximum exposure temperature (short-term for asphalt covering): 285°F (140°C)
Minimum installation temperature: 40°F (4.5°C)
Maximum continuous operating temperature (ambient): 68°F (20°C)

Specifications for ProMelt Cable:

ProMelt Cable is a complete heating cable consisting of a series resistance heating cable and a single power lead for easy single-point connection. The heating cable length cannot be cut to fit.

Voltages: 120, 208, 240, 277 VAC, 1-phase
Watts: 50 W/ft² (170 Btu/h/ft²), spaced at 3 inches on-center. 38 W/ft² (130 Btu/h/ft²), spaced at 4 inches on-center (Cable is designed to operate at approximately 12.5 W/linear foot of cable at rated voltage.)
Maximum heater current: 24 amps (see table 1)
Maximum circuit load: 50 amps
GFEP (ground fault equipment protection) required for each circuit
Listing: UL Listed for U.S. and Canada under UL 515, IEEE 515.1, and CSA C22.2 No. 130-03
Listing file number: E483414
Application: Outdoor use only, embedded in concrete, asphalt, sand (see Step 1.1)
Minimum bend radius: 1 inch (25 mm)
Maximum exposure temperature (continuous and storage): 221°F (105°C)
Maximum exposure temperature (short-term for asphalt covering): 285°F (140°C)
Minimum installation temperature: 40°F (4.5°C)
Maximum continuous operating temperature (ambient): 68°F (20°C)

⚠ WARNING

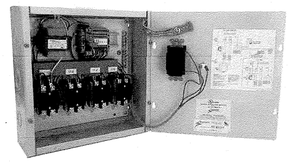
Installation must be performed by qualified persons, in accordance with local codes, ANSI/NFPA 70 (NEC Article 426) and CEC Part 1 Section 62 where applicable. Prior to installation, please consult the local codes in order to understand what is acceptable. To the extent this information is not consistent with local codes, the local codes should be followed. However, electrical wiring is required from a circuit breaker or other electrical circuit to the control. It is recommended that an electrician perform these installation steps. Please be aware local codes may require this product and/or the control to be installed by an electrician.

CP-50, CP-100, CP-200 Specifications		
Terminals		**Wiring Type**
L1, L2 **T1, T2**	120 VAC	Use appropriate branch circuit wire size required by local codes
PM	Class 2,	18-24 AWG (See sensor instructions for size and length limits)
24VAC, COMMON	24 VAC	
X1, X2	Dry Contact, N.O.	
Compatible Sensors	PM-L1 kit PM-L2 kit PM-L3 kit PM-519	
UL Listing	File E483460, UL 508A, CAN/CSA-C22.2 No. 14	
Environment	Indoor, NEMA 1 enclosure, operating temperature 0°F to 100°F (-18°C to 38°C)	

⚠ WARNING: General Safety Instructions

1. **THIS UNIT SHOULD BE INSTALLED ONLY BY QUALIFIED PERSONNEL!**
2. Disconnect all power from the control before opening the front cover plate.

Transformer Colors	
Primary Voltage	**Lead Colors**
120 Volts	Black & White



Each CP series relay panel comes pre-wired to the included transformer, terminal blocks, and the coil terminals on the provided contactors. It is not recommended to unwire, or tamper with existing wiring without pre-authorization from the factory.

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
For more information: Watts.com/prop65

WattsRadiant™
Floor Heating & Snow Melting
A WATTS Brand

USA: Tel: (800) 276-2419 • Fax: (417) 864-8161 • WattsRadiant.com
Canada: Tel: (905) 332-4090 • Fax: (905) 332-7068 • Watts.ca
Latin America: Tel: (52) 81-1001-8600 • Fax: (52) 81-8000-7091 • WattsRadiant.com

IS-WR-PM-ContactorPro-Panels 1618 EDP# 81012456

IS-WR-PM-ContactorPro-Panels

Instructions for Installing ProMelt Contactor Pro Relay Panels

For ProMelt CP-50, CP-100, and CP-200 Panels

⚠ WARNING

THINK SAFETY FIRST

Read this Manual BEFORE using this equipment.
Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment.
Keep this Manual for future reference.

The CP-50, CP-100, and CP-200 are turn-key panels for activating a ProMelt snow melting system when used in conjunction with the ProMelt series of controls. They allow simple connection from the circuit breaker panel and have a manual override timer and heating indicator. Any CP series panel can be used as an "extension" panel that connects to another CP series panel and allows additional circuits to be controlled.

⚠ WARNING

These panels must be installed in accordance with local building codes, the National Electrical Code, or Canadian Electrical Code by qualified persons.

Disconnect power from all circuits prior to making any connections.

⚠ WARNING

- **Do not energize circuits until all connections are made and all ProMelt mats/cables are fully installed and covered as required.** Read and follow the installation instructions for both the ProMelt snow melt mat/cable and the ProMelt sensor for additional information. Mount the panel indoors on a wall or equivalent.
- Do not place in a confined air space where heat is not able to escape, such as a small closet.
- Properly secure the panel to the wall using the mounting holes provided. Wire the panel according to the provided schematics.
- A GFEP (Ground Fault Equipment Protection) type circuit breaker **must be used** to protect each ProMelt circuit. Size circuits for 125% of the load.
- This panel must be bonded to ground, as well as all conduit, junction boxes and other associated items per local code.

Installation

Wiring CP series panels

1. Provide 120, 208, 240, or 277 VAC circuits to the panel contactor(s) **L1 and L2** terminals as required by the rating of the ProMelt snow melting mats/cables connected to this circuit. As shown in the wiring schematics, the panel draws internal power from Contactor **C1** terminals, so make sure power is supplied to this contactor.
2. For 120, 208, and 240 VAC systems, the COM lead from the transformer comes prewired to contactor **C1** terminal **L1**. Connect the transformer lead wire matching the contactor voltage supplied to **C1** terminal **L2**. **Please see transformer color chart, below right.**
3. For 277 VAC systems, a separate 120 VAC circuit will need to be supplied to the transformer 120 VAC and **COM** lead wires directly. This may be a standard 15 A or 20 A circuit.

⚠ CAUTION: Incorrect voltage supplied to the transformer may cause damage, fire, or shock.

4. Use outdoor rated 3-conductor cable to make connections between this panel and the sensor control. See the wiring schematic and instructions provided with the control for proper connections. Connect the control wiring to the terminal block terminals **24VAC, COMMON, and PM**. This will be a Class 2, 24 VAC circuit. See **"Terminal Block Wire Insertion Detail"** on reverse.

The ProMelt Contactor Pro Relay Panel is available in three configurations. CP-50 (single contactor), CP-100 (dual contactors), and CP-200 (quad contactors).

Control Descriptions		
Control	**No. Contactors**	**Max. Amp Load**
Contactor Pro CP-50	1	50

5. Make wire connection between the contactor **T1 and T2** terminals and the ProMelt mats/cables. More than one mat/cable intended to be connected to the same contactor should first be connected together in parallel at a junction box. Then run lead wires to the contactor terminals.

Wiring CP series panels to be "Extension Panels".

A CP series panel can be used in conjunction with another CP series panel to serve as an "extension panel". Follow the steps below for proper installation:

1. Provide 120, 208, 240, or 277 VAC circuits to the panel contactor(s) **L1 and L2** terminals as required by the rating of the ProMelt snow melting mats/cables connected to this circuit.
2. For 120, 208, and 240 VAC systems, the COM lead from the transformer comes prewired to contactor **C1** terminals **L1**. Connect the transformer lead wire matching the contactor voltage supplied to **C1** terminal **L2**. Please see transformer color chart below.
3. Use a 2-conductor cable to make connections between terminals **24VAC and PM** in the "extension" panel and terminals **X1 and X2** in the "main" CP series panel.. This will be a Class 2, 24 VAC circuit.
4. Make wire connection between the contactor **T1 and T2** terminals and the ProMelt mats/cables.

NOTICE

Do not connect a sensor to the "extension" panel. The sensor connected to the "main" panel will operate panels.

Transformer Colors	
Primary Voltage	**Lead Colors**
120 Volts	Black & White

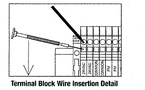
* See "Wiring CP series panels" Section, Step 3 for 277VAC connections.

Operation

Once all wiring connections have been completed, the sensor and ProMelt mats/cables have been fully installed, and any inspections made as required per local code, energize the circuit breaker(s) supplying the panel.

Automatic Operation

This is the recommended mode of operation. The sensor will activate the panel, energize the connected ProMelt mats/cables indicated by the "Heating On" light on the front of the panel.



Terminal Block Wire Insertion Detail

Manual Operation

This mode may be used to briefly test the system or temporarily override the sensor control to complete melting or drying of a snow melted area. If this is required often to help complete the snow melting of an area, it is recommended to adjust the sensor control or consult your system designers for possible improved automatic sensing and control.

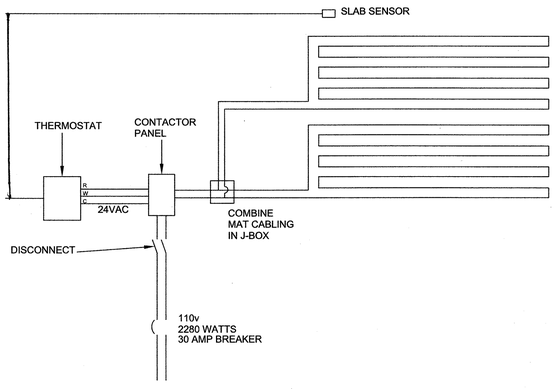
Turn the Timer to the desired time. This overrides the sensor and activates the panel, energizing the connected ProMelt mats/cables, shown by the "Heating On" light.

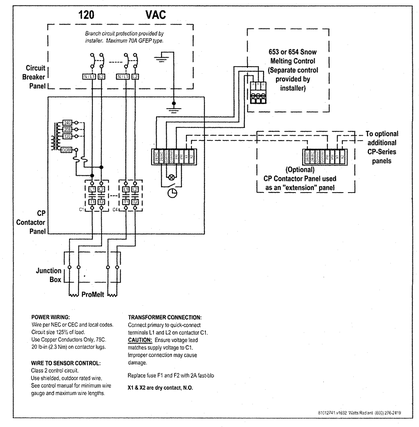
NOTICE

Do not manually energize the ProMelt mats/cables with outdoor temperatures above 68°F (20°C) except for a brief test up to 10 minutes in duration. Damage to the mats/cables or slab/surface materials may result.

(SH 1)

PROMELT MAT. ELECTRIC RADIANT HEAT. TWO 2'x15' MATS
MODEL SM3812001524. ELECTRICAL DATA 110/1/60, 1140 WATTS EACH
CONTACTOR PRO CP-50 PANEL.
TEKMAR RADIANT FLOOR THERMOSTAT 519





CP series of controls can be used directly with any ProMelt cable or mat system. Power is connected directly to each contactor in the control.

Each ProMelt system can be operated by a variety of sensor, including the PM-L1, PM-L2, PM-L3 kits, and the PM-519:
Each ProMelt system can be operated by a variety of sensors, including the PM-1, PM-2, PM-3, and PM-519.

Each sensor option is designed to operate a single system. Use a dedicated sensor and CP Control group for each snow melt zone.

REVISIONS	BY

REGISTERED PROFESSIONAL ENGINEER
KENNETH W. LUCCI
No. E 8340
Exp. 09/30/2020
ELECTRICAL
STATE OF CALIFORNIA

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(805) 389-6520 FAX (805) 389-6519
Web Site http://www.lucciland.com

SHEET TITLE: **ELECTRICAL DETAILS**

PROJECT:
LION ENCLOSURE
EXOTIC ANIMAL TRAINING AND MANAGEMENT
7075 CAMPUS ROAD
MOORPARK, CA 93021

DRAWN: M. WATERS
CHECKED: K. LUCCI
DATE: 06-19-2019
SCALE: AS NOTED
JOB NO. 18612
SHEET: **E600**
OF: SHEETS:

BID SET 06-24-19

PATHNAME: G:\18\612\El\Sheets\18612E600.dwg DRAWING FILENAME: 18612E600 DRAFTER: cm04 DATE: 22 June 2019 TIME: 3:29 pm

G:\18\612\El\Sheets\18612E600.dwg Jun 22, 2019, 3:29pm cm04

Table 3 - Mat/Cable Resistance Log

	Mat/Cable 1	Mat/Cable 2	Mat/Cable 3
Mat/Cable serial number			
Mat/Cable model number			
Mat/Cable voltage			
Factory Mat/Cable resistance range			
OUT OF THE BOX BEFORE INSTALLATION			
Mat/Cable white 1 to white 2			
Mat/Cable white 1 to ground			
Mat/Cable white 2 to ground			
AFTER MAT/CABLE IS SECURED IN PLACE			
Mat/Cable white 1 to white 2			
Mat/Cable white 1 to ground			
Mat/Cable white 2 to ground			
AFTER COVERINGS ARE APPLIED			
Mat/Cable white 1 to white 2			
Mat/Cable white 1 to ground			
Mat/Cable white 2 to ground			
Retain this log to retain the warranty! Do not discard!			

STEP 2.9
Paver or Stone Applications

Follow guidelines recommended by the paver manufacturer. If a coarse of sand is to be used to set the pavers, first lay 3/8 to 1/2 inch sand over the base to help protect the mat/cable against damage.

If this is an outdoor heating application, do not install mat/cable directly in sand or similar. The mat/cable must first be embedded in a concrete slab. Prepare the base according to Step 2.7. The pavers or stone may then be set in sand or mortar on top of this slab.

STEP 2.10
Ceramic or Stone Tile Applications

ProMelt mats or cables can be installed in the structural slab or in a thick mortar bed above a structural slab. In either case, the base material should be prepared according to section 2.7 Concrete Application.

ELECTRICAL

STEP 2.11
Install junction boxes in the location(s) planned during the design process Phase 1 (see Step 1.3).

STEP 2.12
Install conduit and branch circuit wiring from the circuit breaker panel to the control location, and from the control to the junction boxes. Follow local code for wire size, conduit requirements, and proper installation procedure.

STEP 2.13
Install conduit from the junction box to the edge of the slab to be heated. Extend this conduit into the slab edge about 2 to 6 inches and attach a bushing to the end to prevent damaging the mat/cable power leads.

- Follow electrical code for burial depth of the conduit.
- Plan carefully if you are installing edge pavers, edge drainage systems, landscaping, or other items that affect where the conduit comes in.

NOTICE

DO NOT operate the ProMelt system in ambient temperatures above 68°F (20°C), except for a brief test to ensure system is functioning. Heating performance is never guaranteed. The amount of heat added to the area is dependent on many factors such as air and ground temperature, wind speed, solar heat, moisture, etc. If you have any questions regarding expected performance in your application, please contact the factory.

STEP 1.7
Consult with your electrician to make sure the mats/cables, control, and design you have selected will work properly.

- The ProMelt Mat/Cable and its control must be placed on a dedicated power supply from the circuit breaker panel.
- The ProMelt Mat/Cable is a resistance heating system and should be considered as a continuous load for branch circuit sizing purposes.
- The circuit breaker must open all ungrounded conductors at the same time. A GFEP type (typically 30 mA trip) is required to directly protect the ProMelt Mat/Cable.
- Circuit breaker size and circuit wiring should be designed to 125 percent of heating mat/cable load:
  - 20 amp circuit for load up to 16 amps
  - 30 amp circuit for load up to 24 amps
  - 40 amp circuit for load up to 32 amps
  - 50 amp circuit for load up to 40 amps
  - 70 amp circuit for load up to 50 amps
- Follow NEC, CEC, and local code guidelines for branch circuit wiring, conduit, and junction box installations. Outdoor and underground junction boxes and conduit must meet rain tight or watertight requirements as required.

⚠ WARNING

Do not use insulation underneath snow melt or exterior heated areas if vehicular traffic will be present as compression of the insulation may occur over time. Improper type or use may cause cracking of the slab and possible damage to the ProMelt Mat/Cable.

Phase 2: Preparations

Before installing ProMelt, make sure to fully check out the products, and carefully plan your site. The following steps may not necessarily occur in the order shown, depending on contractor and electrician scheduling and variations in site preparation requirements. A good discussion with all parties involved will help eliminate costly errors and damages.

INSPECT MAT/CABLE, CONTROL, and SENSOR

STEP 2.1
Remove the ProMelt Mat/Cable, control, and sensor from their packages. Inspect them for any visible damage and verify everything is the correct size and type according to your plan and order.

⚠ WARNING

Do no attempt to install a damaged product.

STEP 2.2
Record the mat/cable information in Table 3, on the following page. Give this information to the homeowner to keep in a safe place. The mat/cable model number, serial number, voltage, and resistance range are shown on a nameplate label attached to the power leads.

NOTICE

Do not remove this nameplate label. The electrical inspector will need to see this.

STEP 2.3
Use a digital multi-meter to measure the resistance between the conductors of the mat/cable power leads. Record these resistances in **Table 3** under "Out of the box before installation".

The resistance between the white lead wires should be within the resistance range on the nameplate label. If it is a little low, it may be due to low air temperatures or meter calibration. Consult an electrician or the factory if you are in doubt.

STEP 1.4 (ProMelt Cable Only)
Select the cables you need.

WATTAGE: Decide what heat output is required. Your design must consider weather conditions and how critical it is to clear the heated area. Select a cable spacing.

- 3" spacing / 50 watts per square foot (170 Btu/ft²): sufficient to clear most moderate and heavy snowfall rates
- 4" spacing / 38 watts per square foot (130 Btu/ft²): sufficient to clear most light to moderate snowfall rates

SIZE: Select a cable in Table 2 to fit the Heated Area measured in Step 1.2. ProMelt Cable is manufactured in a variety of sizes as shown. If the exact size of cable is not found in the Table, select the next smaller cable size.

AMPS and VOLTS: Pay careful attention to the amps to make sure your controls, circuit breaker panel, and all wiring will have the proper capacity. Design circuit protection and wiring to handle 125 percent of heating cable load:

- 20 amp circuit for load up to 16 amps
- 30 amp circuit for load up to 24 amps
- 40 amp circuit for load up to 32 amps
- 50 amp circuit for load up to 40 amps
- 70 amp circuit for load up to 50 amps

Table 2 (cable sizes)

Site specific design calculations are recommended to ensure the system performs as expected. 38 Watt/ft² spacing is typically used in milder climates. 50 Watt/ft² spacing is better for colder climates & critical melting applications.

120 VAC Cable

Coverage (ft²)						
3" spacing (50 W/ft²)	4" spacing (38 W/ft²)	Length	Model#	Amps	Ohms	Watts
8	10	29'	SC50120008	3.3	31-39	400
15	20	59'	SC50120015	6.3	15-19	750
20	26	78'	SC50120020	8.3	13-17	1000
30	39	118'	SC50120030	12.5	7-9	1500
40	53	158'	SC50120040	16.7	5-7	2000
53	69	208'	SC50120053	22.1	4-6	2650

240 VAC Cable

Coverage (ft²)						
3" spacing (50 W/ft²)	4" spacing (38 W/ft²)	Length	Model#	Amps	Ohms	Watts
15	20	59'	SC50240015	3.1	64-79	750
25	33	98'	SC50240025	5.2	46-57	1250
30	39	118'	SC50240030	6.3	30-38	1500
40	53	158'	SC50240040	8.3	26-33	2000
45	59	178'	SC50240045	9.4	20-25	2250
55	72	218'	SC50240055	11.5	18-23	2750
60	79	238'	SC50240060	12.5	14-18	3000
65	85	257'	SC50240065	13.5	12-16	3250
75	98	297'	SC50240075	15.6	11-15	3750
80	105	317'	SC50240080	16.7	10-13	4000
90	118	357'	SC50240090	18.8	9-12	4500
105	137	417'	SC50240105	21.9	8-11	5250

⚠ WARNING

ProMelt Mat/Cable cannot be installed indoors, in industrial locations, or areas with hazardous classifications. It cannot be used for gutter or pipe freeze protection or roof snow melt. Do not install the mat/cable on or under non-masonry stairs or decks made of wooden or composite materials. Do not install the mat/cable in the deck around a pool, in-ground hot-tub, or similar. See National Electrical Code article 680 and consult your local inspector for further details.

ProMelt Mat/Cable may be used to heat an outdoor area, such as a patio. This application requires special installation considerations and controls. See Step 1.6 for important control details. Only install mat/cable in concrete or mortar slab and then apply finish coverings. Never install directly in sand or similar to avoid poor performance and reduced life of the cable due to poor conductivity of dry sand and higher application temperatures.

STEP 1.2
Measure the area where you want snow melting to occur and make a drawing. Eliminate those areas where ProMelt cannot be installed, keeping in mind the following obstructions and allowances:

- For most applications, the base under the mat/cable must be a minimum of 2 inches of masonry, asphalt, or similar material. The mat/cable must be completely covered by a minimum of 1-1/2 inches of material. (See Phase 4 Finish Surfaces for more details.)
- For a deck or similar elevated application, the mat/cable must have a minimum of 1 inch of masonry below and a minimum of 1 inch of material covering the entire mat/cable. (See Phase 4 Finish Surfaces for more details.)
- Mat/Cable cannot be laid within 6 inches of the edges of slabs. In asphalt, this is increased to 12 inches from the edge where no curb is provided.
- Avoid crossing expansion joints in a slab, unless proper technique and protection steps are followed (see Step 3.14).
- Avoid placing the heating cable any closer than 2 inches from other items such as underground cable or piping to keep from overheating them.
- Allow at least 2 inches between adjacent cables, but not more than 4 inches, between adjacent cables or sections of a mat where the mat tape is cut and turned to fill the area.
- Mat/Cable must be laid such that the surface will not have other obstructions placed on top, capturing heat or allowing potential damage from mounting brackets, bolts, or similar (pedestals, support columns, walls, light posts, hand rails, or similar)

STEP 1.3
Determine where junction box(es) may be placed to receive the ProMelt Mat/Cable power leads. This is important to ensure the mat(s) and/or cable(s) you select fill the area correctly and with the best connection locations.

It is best to locate junction boxes on a wall indoors and within the distance of the power leads on the mat/cable. ProMelt mat/cable comes standard with 20-foot long power leads, but may be custom ordered up to 50 feet long if necessary.

⚠ WARNING

THE HEATING CABLE CANNOT BE CUT TO LENGTH. Order the correct size mat or cable to fit the area. Modifying the heating cable is not allowed and may lead to overheating, damage, and fire hazard.

- The heating cable and factory splices of ProMelt Mat/Cable must be completely embedded in the concrete, sand, or asphalt. Never try to use up excess heating cable in surrounding soil, walls, or other unprotected applications.
- Never overlap the heating cable on itself or place heating cable closer than 2 inches from other heating cable.
- Only the power lead may exit this area. It will be pulled through conduit to protect it up to a junction box. NEVER pull any of the heating cable or factory splices into any conduit.

See typical installations on page 4.

If a junction box must be located outdoors, it is recommended it be installed above grade and be properly Listed for rain tight use outdoors. If it must be installed at or below grade, use properly Listed watertight items and follow box manufacturer guidelines for protection and connection seals.

STEP 2.14
If an in-slab or surface mount sensor is to be embedded in the heated area, install conduit from the control location to the desired slab location. When installing the surface mount sensor in asphalt, it is necessary to encapsulate the sensor housing in a 12"x 12" concrete pad. Follow the sensor instructions for proper placement and connections.

STEP 2.15
Install the circuit breaker size and type as determined earlier in step 1.7 (Designing the System). DO NOT connect the branch wiring to the breaker yet.

STEP 2.16
Label the circuit breaker in the panel which feeds this snow melt mat/cable system with "Snow Melt" or similar.

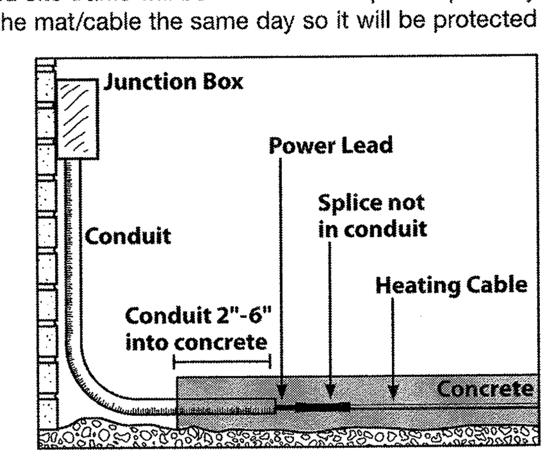
Phase 3: Installation of Mat and/or Cable

The following Steps 3.1 through 3.12 cover installation basics. Steps 3.13 through 3.14 cover some specific applications and their special requirements.

BASIC INSTALLATION

STEP 3.1
Determine a time to install the mat/cable when equipment, heavy tools, and site traffic will be minimal to keep from possibly damaging the product. Be prepared to apply the surfacing courses over the mat/cable the same day so it will be protected from damage.

If installing mat/cable in the upper layer of a two-stage concrete slab or the upper layer of an asphalt application, the mat or cable should be completely ready for the second stage. There is limited time between stages, as the slab should not be allowed to fully cure or the asphalt to completely cool. Therefore, if using ProMelt Cable, you may want to lay it out and tie it to rewire that can be quickly lifted into place after the first stage is laid. This might also be preferable for a mat installation, although if mats are precut and shaped to the area, they generally can be rolled into place fairly quickly.



- If a slab sensor is installed in this second layer, plan ahead so this does not cause the first layer to cure or cool too much.
- Inspect the area and remove any sharp objects.

NOTICE

Install in temperatures at least 40°F (4.5°C).

STEP 3.2
Begin by test-fitting the mat or cable in the area to be heated. For mat, unroll it completely. Turn and flip it by cutting the tape where needed. Make sure it fits the area properly. For cable, make sure it fits the area with no excess cable.

- Mat/cable cannot be laid closer than 6 inches from the edges of slabs. In asphalt, this is increased to 12 inches from the edge where no curb is provided.
- Avoid crossing expansion joints in a slab, unless proper technique and protection steps are followed (see Step 3.14 on page 15).
- Avoid placing the heating cable any closer than 2 inches from other items such as underground cable or piping to keep from overheating them.

⚠ WARNING

ProMelt heating cable CANNOT be cut shorter to fit!

Do not overlap or cross over heating cable on itself.

Do not space heating cable closer than 2 inches.

The heating cable and factory splices must be completely embedded in the concrete, sand or asphalt. Never try to use up excess heating cable in surrounding soil, walls or other unprotected areas.

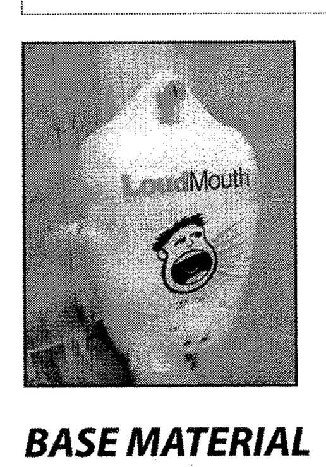
The factory splice and heating cable can not be inside conduit.

The resistance between the white leads and ground lead should be "open", usually indicated by an "OL" or whatever your meter shows when the test leads are not touching anything. If there is any change in the reading, record this information and contact the factory before installing. This could indicate damage, test lead problems, or a number of other issues. Try "pinning" the test leads to the mat/cable lead wires against a hard non-metal surface if your readings fluctuate.

STEP 2.4
Your electrician should perform an insulation resistance test on the mat. A megohmeter (e.g. Megger®) adjusted to a minimum 1000 VDC should give a measured value at least 20 megohm (MΩ). Do not apply over 1500 VDC.

⚠ WARNING

Megohmeters apply high voltage and could shock or cause serious injury if improperly used. Follow megohmeter instructions for safe and proper use.



The LoudMouth™ monitor shown at left will constantly monitor the heating wire during the entire installation process. If the wire is cut or damaged during installation, this device sounds an alarm. The LoudMouth will prevent burying a damaged wire below hardened concrete.

BASE MATERIAL

STEP 2.5
Prepare the site that you want to heat with ProMelt Mat/Cable This includes making sure all utilities and obstructions are accounted for.

STEP 2.6
General

Ensure the base is a smooth, well-compacted and solid base. If the mat/cable is to be placed on existing slab, inspect it for any sharp or loose objects, or other potentially damaging issues.

Ensure proper slope and drainage to avoid water buildup in any heated or surrounding areas. This is especially important for brick paver applications, as melted water may re-freeze and heave surrounding sand and paver areas.

Follow local building codes and construction guidelines for grade requirements and slab thickness in your area. Ensure that the base is at the proper height to allow the total slab thickness needed and that the cable will be embedded at the proper distance below the top surface to avoid damaging the cable. It is very important for the cable to be completely embedded.

STEP 2.7
Concrete Application

For a new pour, attach reinforcement, such as wire mesh or rebar, over the base at the required level below the top surface. You must use "chairs" or other appropriate objects to raise the wire mesh to the correct level. The ProMelt Mat/Cable will be attached to this reinforcement later. It is very important for the cable to be completely embedded in concrete.

⚠ CAUTION

Protect or remove sharp protrusions by bending them over, capping, or cutting. Sharp edges may damage the heating cable.

STEP 2.8
Asphalt Application

Apply a first course over the gravel base and compact it. The ProMelt Mat/Cable will be secured to the top of this later. Allow it to cool enough to work on before installing ProMelt Mat/Cable.

STEP 1.5 (ProMelt Cable only)
If the cable is to be laid on top of an existing slab, select enough Cable Strap to secure the cable to the surface. One box contains 25 ft. of strap, enough to secure about 50 ft² of cable at 4-ft parallel spacing. Cable strap is usually spaced no more than 3 to 4 feet apart.

⚠ WARNING

Always consult your electrician and designers to ensure proper sizing, location, and site capabilities.

STEP 1.6

Select what level of operation is required:

1) **Automatic start / timed stop melting**
   Snow melting system is operated as soon as snow is detected and continues for a pre-set duration. If snow remains on the sensor after the run time has expired, another melting cycle begins.
2) **Automatic start & stop melting with slab temperature control**
   Snow melting system is operated as soon as snow is detected and automatically shuts off when the sensor surface is free of snow or ice. The melting surface is operated using the lowest effective melting temperature to reduce operating costs.
3) **Manual start & stop melting with slab temperature control**
   Snow melting system is manually started at the control or using a remote enable. Snow melting operates for a timed duration or until manually shut off. The melting surface is operated using the lowest effective melting temperature to reduce operating costs.
4) **Outdoor heating**
   The surface temperature where the sensor is installed is controlled by adjusting settings in the PM-519 control. Up and down buttons are used to set the desired temperature or turn outdoor heating off.

Determine Zoning

One Zone. In many instances all the areas can be heated at the same time with one control. The control can be connected to many cables and mats with multiple circuit breakers if needed. One sensor will tell the control when to operate.

Multiple Zones. In some instances it may be preferable to have some areas heated separately from other areas. This could be the case if you want to snowmelt the sidewalks in front of a store automatically first, then melt rear entrance areas manually later. In these cases, each "zone" will require its own control and sensor. Do not try to control multiple zones with one sensor.

Calculate the Amps required for each zone

Total the number of Amps required by cables and mats selected for each zone.

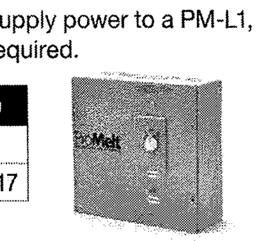
Select a control package

Zones up to 60 Amps can be controlled by an all-in-one control (PM-2C or PM-5). Zones above 60 Amps or with outdoor heating require a ContactorPro Panel and control kit combination.

System Size	Operation	Sensor	Control	Order #	Required
Up to 30 Amp	Automatic start / timed stop melting	Pole-Mount	PM-2C	81011699	-
Up to 60 Amp	Automatic start / timed stop melting	Pole-Mount	PM-5	81014247	-
Any Size	Automatic start & stop melting with slab temperature control	Surface-Mount	PM-L3	81018910	ContactorPro Panel
Any Size	Automatic start / timed stop melting	Pole-Mount	PM-L2	81018911	ContactorPro Panel
Any Size	Manual start & stop melting with slab temperature control	In-Slab	PM-L1	81018912	ContactorPro Panel
Any Size	Outdoor patio heating (no snow melting)	In-Slab	PM-519	81018840	ContactorPro Panel

ContactorPro Panels are selected to match the Amps required. They include a 24 VAC transformer to supply power to a PM-L1, L2, L3 or PM-519 control. If 277 VAC cables are used, a separate power supply for the transformer is required.

ContactorPro Panel	CP-50	CP-100	CP-200
Built-in Amp capacity	50	100	200
Order#	81012215	81012216	81012217



STEP 1.4 (ProMelt Mat Only)
Select the ProMelt Mat(s) you need. (for ProMelt Cable sizes see next page)

WATTAGE: Decide what heat output is required. Your design must consider weather conditions and how critical it is to clear the heated area.

- Mat with 50 watts per square foot heat output are sufficient to clear most moderate and heavy snowfall rates.
- Mat with 38 watts per square foot heat output are sufficient to clear most light to moderate snowfall rates.

SIZE: ProMelt Mat is manufactured in a variety of sizes as shown in Table 1. If the exact size of mat is not found in the Table, select the next smaller mat size.

AMPS and VOLTS: Pay careful attention to the amps to make sure your controls, circuit breaker panel, and wiring will have the proper capacity. Design everything to handle 125 percent of heating mat load:

- 20 amp circuit for load up to 16 amps
- 30 amp circuit for load up to 24 amps
- 40 amp circuit for load up to 32 amps
- 50 amp circuit for load up to 40 amps
- 70 amp circuit for load up to 50 amps

Table 1 (mat sizes)

Site specific design calculations are recommended to ensure the system performs as expected. 38 Watt/ft² mats are typically used in milder climates. 50 Watt/ft² mats are better for colder climates & critical melting applications.

120 VAC ProMelt Mats (38 Watts/ft²)

	Size (L x W)	Ft²	Model#	Amps	Ohms	Watts
2' Wide	5' x 2'	10	SM3812000524	3.2	42-53	380
	10' x 2'	20	SM3812001024	6.3	20-25	760
	15' x 2'	30	SM3812001524	9.5	13-17	1140
	20' x 2'	40	SM3812002024	12.7	7-10	1520
	25' x 2'	50	SM3812002524	15.8	6-8	1900
	30' x 2'	60	SM3812003024	19.0	4-6	2280

240 VAC ProMelt Mats (38 Watts/ft²)

	Size (L x W)	Ft²	Model#	Amps	Ohms	Watts
2' Wide	10' x 2'	20	SM3824001024	3.2	65-81	760
	20' x 2'	40	SM3824002024	6.3	31-39	1520
	30' x 2'	60	SM3824003024	9.5	20-26	2280
	40' x 2'	80	SM3824004024	12.7	14-19	3040
	50' x 2'	100	SM3824005024	15.8	11-15	3800
	60' x 2'	120	SM3824006024	19.0	9-13	4560

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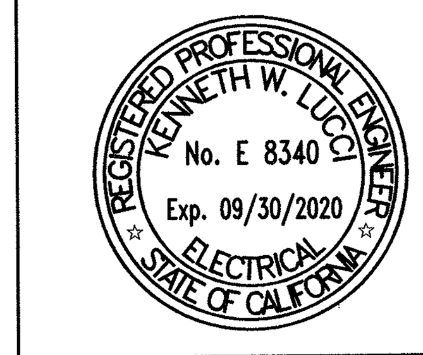

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SHEET TITLE: ELECTRICAL DETAILS

PROJECT: LION ENCLOSURE
EXOTIC ANIMAL TRAINING AND MANAGEMENT
7075 CAMPUS ROAD
MOORPARK, CA 93021

DRAWN: M. WATERS
CHECKED: K. LUCCI
DATE: 06-19-2019
SCALE: AS NOTED
JOB NO. 18612
SHEET:

E601

OF: SHEETS:

BID SET 06-24-19

 L.A.I.# 18612 PAPER SIZE 36"x24"

Troubleshooting

⚠ WARNING

Any electrical troubleshooting work should be performed with the power removed from the circuit, unless otherwise noted.

If not qualified to perform electrical installations, it is strongly recommended that a qualified, licensed electrician be hired to install the heating cables and related electrical components. If problems with the system arise, please consult the troubleshooting guide below. Although this troubleshooting guide is provided to assist with problems experienced with a ProMelt system, results are never guaranteed. Watts Radiant does not assume any liability or responsibility for damage or injury that may occur from using this guide. If problems with the system persist, call the manufacturer (see contact information on the back cover).

Problem	Possible Cause	Solution
Mat/cable resistance measurement is outside the range printed on the nameplate label.	An analog ohmmeter (using a moving needle) was used to take the reading.	Obtain a digital ohmmeter (multi-meter) able to read 0 to 20,000 (20k) ohms (Ω) and re-measure the resistance.
	If measurement shows an open or short circuit, the heating cable has been damaged.	Record resistances between all power lead wires and contact the manufacturer.
	If measurement is just a little low or high, air temperature has affected the resistance.	If possible, place the mat/cable in a room 65-75 °F (18-24°C) and re-measure after an hour.
	The resistance measurement could be from more than one mat/cable.	Disconnect all cables/mats from each other and from controls and re-measure.
	The ohmmeter (multimeter) is set to the wrong scale.	If the ohmmeter (multi-meter) has multiple ranges (e.g. 200Ω, 2kΩ, 20kΩ, 200kΩ, 20MΩ) set the range to 200Ω and re-measure.
Snow/ice is not melting.	Mat/cable has been damaged.	Measure mat/cable resistances (see Phase 2) between all power lead wires as shown in Phase 3 of this manual. If there is an open or short-circuit damage, record these resistances and contact the manufacturer.
	Ground fault has tripped.	Try resetting the ground fault on the circuit breaker ONCE. If it trips again, do not continue to try resetting it. Check for loose wire connections in the breaker panel, junction boxes, controls, etc. Measure mat/cable resistances (see Phase 2) between all power lead wires as shown in Phase 3 of this manual. If there is an open or short-circuit damage, record these resistances and contact the manufacturer.
	Incorrect voltage applied.	Briefly energize the system and use a multi-meter to measure the voltage between power lead wires of the mat/cable. Check voltage ratings for each control and cable to make sure they match. If possible, use an "amp clamp" meter to measure the current into each mat/cable.
	Mats/cables are connected in series.	Multiple mats/cables must be connected in "parallel".
System operates continuously.	Incorrect wiring. Control was "bypassed".	Check wire connections. See wiring instructions with control and in this manual.
	Faulty control. Relay is not opening properly.	Check instructions with the control.

Compact the asphalt with a small power roller or compactor. Avoid using large power rollers which may compress aggregate into the cable. If possible, move the roller perpendicular with the cable direction to help avoid stress on the cable below. Be careful not to stop or start the roller over the mats as this could cause the asphalt to shift, potentially damaging the cables.

- Make sure the heating cable is fully embedded as well as 2 to 6 inches of the conduits enclosing the power lead and slab sensor wiring (if used).
- **DO NOT** energize the ProMelt system until the asphalt is fully cooled and cured per the manufacturer.

STEP 4.6

Use a digital multi-meter to measure the resistance between the conductors of the mat/cable power leads again. Record these resistances in Table 3 under "After coverings are applied".

SPECIAL APPLICATIONS

STEP 3.13

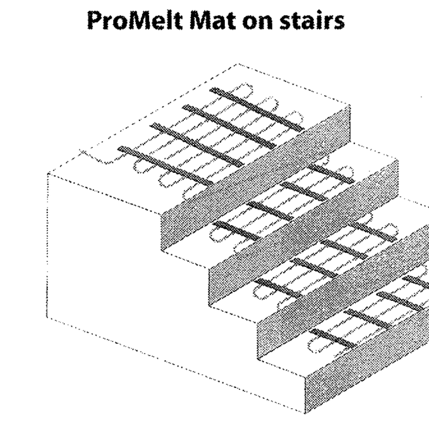
Stairs: If you are installing **ProMelt Mat** onto stairs, carefully cut the tape holding the heating cable. If installing **ProMelt Cable**, skip the previous step. Secure a single run of cable to the side of a riser. Lay 3 or 4 runs of cable on the tread area as needed and continue up each stair. Follow these guidelines:

- Lay cable no greater than 3 inches from the front edge of the finished tread. Otherwise this edge may not snow melt properly.
- Lay cable at least 6 inches from the side edges of the finished tread.
- Account for future hand railings that could be mounted onto the tread, especially in the middle of a long tread if required. Use a marker or indicate on drawings where the railing may be installed safely later.
- Avoid pinching or sharply bending the cable. At the corner of the riser and tread, keep a minimum 1-inch radius bend, but secure it flat enough that the surface concrete or pavers will not pinch the cable.

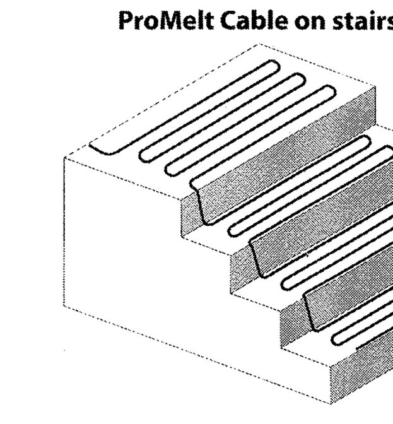
NOTICE

Do not install the mat/cable on or under non-masonry stairs such as wooden or composite construction.

ProMelt Mat on stairs



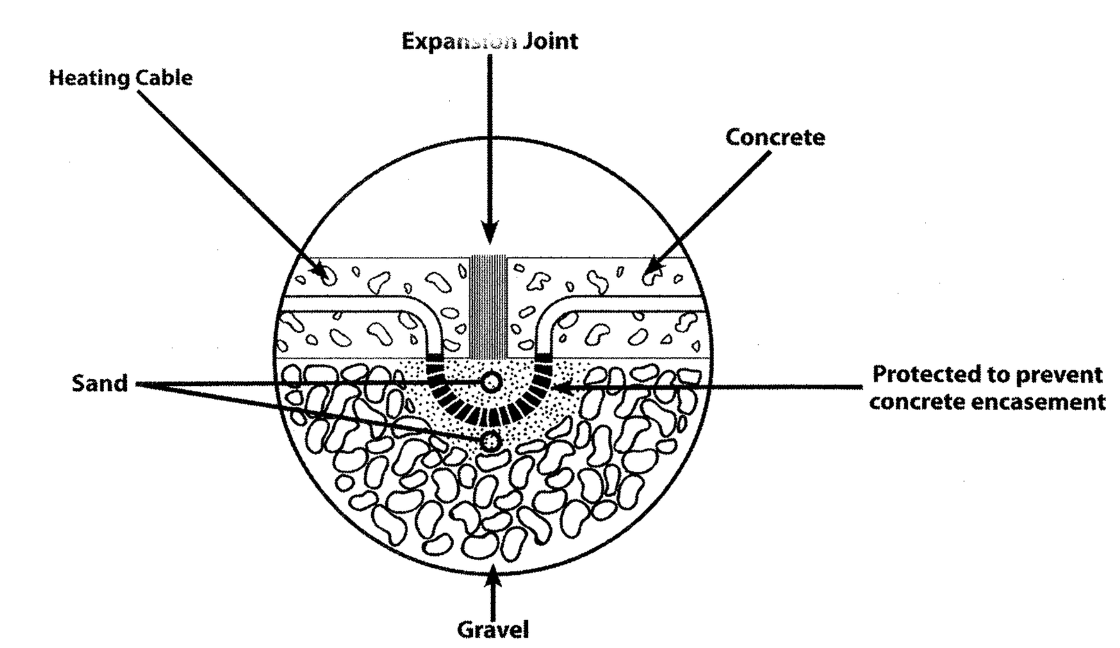
ProMelt Cable on stairs



STEP 3.14

Expansion Joints: ProMelt heating cable must never be run through an expansion joint. Doing so may cause damage to the cable with slab movement. It is recommended to lay the mat so these joints are avoided.

However, if it is necessary, a portion of the heating cable may be dropped into the grade below the expansion joint as shown. Fill around the cable with at least 1 inch thick sand. The loop of heating cable should be long enough to allow flexing, and must not be embedded into the concrete (the sand should protect against this) since this would not allow the cable to flex with slab movement.



- Allow at least 2 inches, but not more than 4 inches, between adjacent mats or sections of a mat where the mat tape is cut and turned to fill the area.
- Do not repeatedly bend the heating cable, and never bend factory splices.

STEP 3.3

Place the power leads of the mat/cable next to the conduit entry. The electrician will pull this through the conduit later. **Make sure it is positioned so that no part of the splice connection or the heating cable will be pulled into the conduit.**

STEP 3.4

Concrete Application

ProMelt Mat: Begin laying out and securing the mat about every 2 feet to the reinforcement mesh or rebar using plastic cable ties around the heating cable. Turn the cable tie ends downward, or trim them so they will not poke up through the surface layers. Do not use metal ties as they may damage the cable.

If installing on top of existing slab, secure the mat by nailing through the tape every 2 feet or so. NEVER strike the heating cable with a hammer.

ProMelt Cable: Begin securing the heating cable at the desired spacing to the reinforcement mesh or rebar using plastic cable ties. These cable ties should be applied at the ends of each run and at every 3 to 4 feet. Turn the cable tie ends downward, or trim them so they will not poke up through the surface layers. Do not use metal ties as they may damage the cable.

If installing on top of existing slab, secure CableStrap to the surface. Use nails or similar, every 6 to 10 inches. CableStrap should be placed at either end of the heated area, and additional straps should be applied every 3 to 4 feet in between to hold the cable in place during surfacing.

NOTICE

Never strike the heating cable with a hammer.

ProMelt Cable: Secure CableStrap to the surface of the slab, using nails spaced every 6 to 10 inches. CableStraps should be placed at either end of the heated area for the initial layout. Additional straps should be placed every 3 to 4 feet to hold the cables in place during application of the thick-set mortar. Minimum 1.25" mortar bed will be installed over the cables.

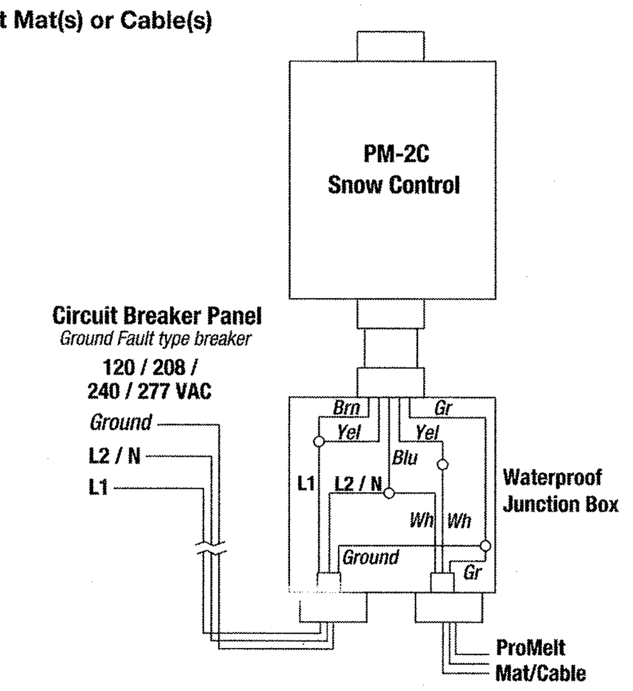
Appendix: Typical Wiring Diagrams

Following are examples of typical wiring connections for the ProMelt systems. Carefully read and follow the instructions given with each control for complete information.

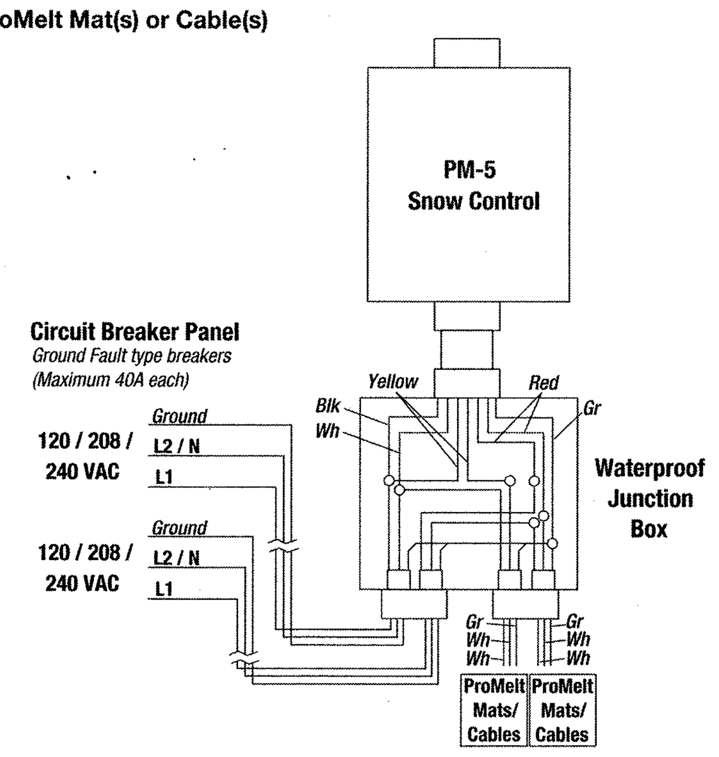
⚠ WARNING

All electrical work must be done by a qualified licensed electrician in accordance with local building and electrical codes, and the National Electrical Code (NEC), especially Article 426 of the NEC, ANSI/NFPA70 and Section 62 of CEC Part 1.

PM-2C Snow Control with ProMelt Mat(s) or Cable(s)



PM-5 Snow Control with ProMelt Mat(s) or Cable(s)



Phase 5: Controls and Sensors

Refer to Typical Wiring Diagrams on pages 20 to 22.

STEP 5.1

De-energize all circuits feeding this system before doing any electrical work.

STEP 5.2

If a surface mount sensor is being installed, uncover the cap or seal on the embedded sensor socket. Feed the sensor leads through the conduit up to the control. Secure the sensor into the socket and finish installation as required by the sensor manufacturer.

STEP 5.3

Make wire connections at junction boxes for the ProMelt Mat/Cable power leads to the power wiring from the control. If the junction box is located outdoors, it is highly recommended to use wet location rated wire nuts or crimps to avoid corrosion.

STEP 5.4

Install the control at its location according to the instructions provided with the control. Make wiring connections to the power source and to the sensor wires and mat/cable lead wires.

⚠ CAUTION

The ground wire supplied with the mat/cable must be connected to a suitable grounding/earthing terminal.

STEP 5.5

After careful inspection of all wiring, connect the power supply wiring to the ground fault type circuit breaker and turn it on.

STEP 5.6

Follow instructions for the control to set it up. The sensor should not allow the system to energize the ProMelt until proper conditions exist. The control may allow you to temporarily test the system for just a few minutes. If you have a clamp-on type electrical test meter, energize the system briefly and verify it is drawing the proper level of current into the mat/cable as planned.

Do not fully energize the ProMelt, except for this brief test, until the concrete and mortar are cured or asphalt is cool. Heating the ProMelt too soon could cause improper curing of the surface materials.

NOTICE

Do not operate the system with air temperatures above 68°F (20°C) except for this brief test. This will stress the materials and reduce the life of the heating cable and may cause damage to the materials and heating cables.

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information: www.watts.com/prop65

Phase 4: Finish Surfaces

STEP 4.1

Before beginning work, inspect the mat/cable for damage and secure any mat/cable that may have come loose.

To avoid burying any possible damage that may have occurred since the mat was laid, the following tests should be performed:

Use a digital multi-meter to measure and record the resistance between the conductors of the mat/cable power leads again (see Step 2.3). If possible, your electrician should perform an insulation resistance test on the mat/cable. A megohmeter (e.g. Megger®) adjusted to a minimum 1000 VDC should give a measured value at least 20 megohm (MΩ). Do not apply over 1500 VDC.

NOTICE

Be prepared to install a marker plate or other identification indicating the presence of ProMelt in the slab. This will help avoid damage from future site work. Install a marker plate where clearly visible in each snow-melted area. A marker plate is placed flush in the wet concrete surface or soft asphalt surface. Other types of surfaces should be made to allow the marker plate to be installed flush with the surface. Do not damage the heating cable.

STEP 4.2

Concrete Application

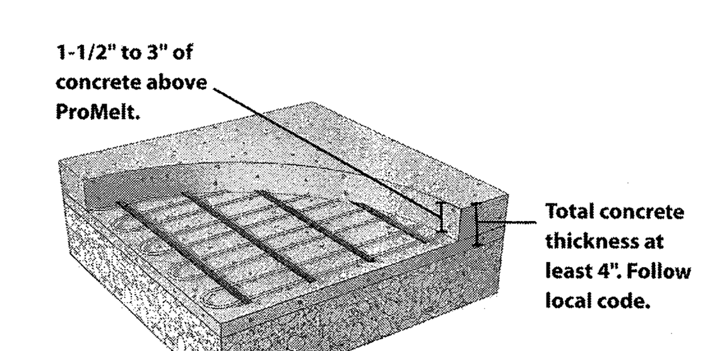
Pour concrete over the base and ProMelt Mat/Cable so that no less than 1-1/2 inches and no more than 3 inches covers the top of the heating cables. The slab should be a minimum of 4 inches thick total. Driveways normally require thicker. Follow building code requirements for required thicknesses.

NOTICE

Do not use sharp tools which could damage the ProMelt. Blunted shovels should allow you to work the concrete carefully into all areas.

- Make sure the heating cable is fully embedded as well as 2 to 6 inches of the conduits enclosing the power lead and slab sensor wiring (if used).

Allow the concrete to fully cure as required by the concrete supplier. Do not energize the ProMelt Mat/Cable except to briefly test it, as this would improperly accelerate the curing and potentially cause concrete damage.



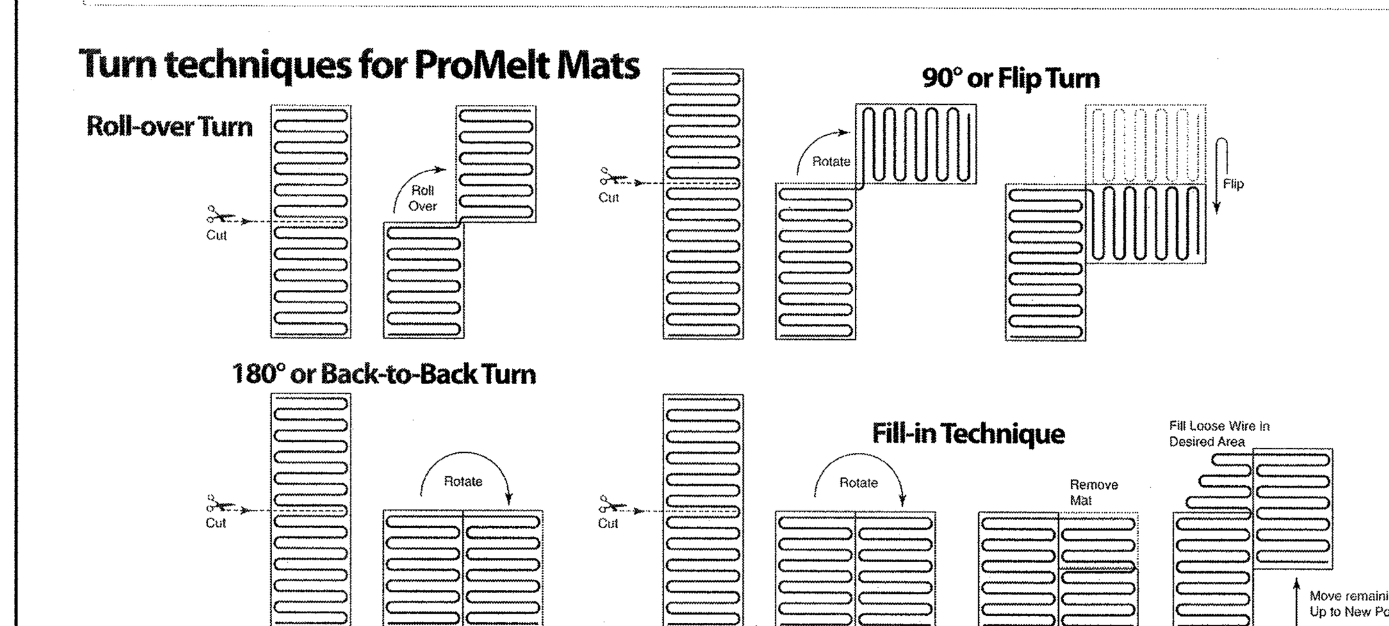
STEP 3.8 (ProMelt Mat Only)

If you need to cut and turn the mat, or fill odd areas, you may use scissors to carefully cut the tape holding the heating cables. Heating cables should be secured at about 3 inches apart, and no less than 2 inches apart.

⚠ WARNING

Be careful not to kink or sharply bend the heating cable. A minimum bend radius of 1 inch should be maintained.

Turn techniques for ProMelt Mats



STEP 3.9

Use a digital multi-meter to measure the resistance between the conductors and ground wire of the mat/cable power leads again. Record these resistances in Table 3 under "After mat/cable is secured in place".

STEP 3.10

Feed the power leads through the conduit into the junction box, leaving at least 6 inches of free lead length. Secure the heating cable and splice so that they will not be pulled into the conduit.

Insert a generous amount of electrical conduit sealant into the conduit end around the power leads to prevent water entry

STEP 3.11

If a surface mount sensor is being installed, place the sensor socket according to the instructions included with the sensor. Secure and seal it to the conduit installed earlier. It should be located halfway between heating cables and in an area that is recommended by the sensor manufacturer. Make sure the top of the sensor will be flush with the surface of the finish layer. Make sure it is protected with a cap or seal.

STEP 3.12

Take a photo of the mat/cable installation. This can be very helpful later for utility work, changes to the site, etc. to avoid possible damage. Keep the photos with this installation manual.

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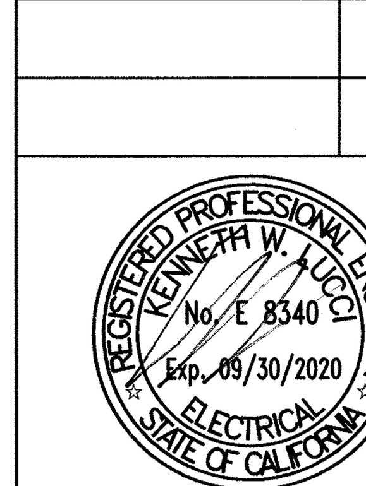

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SHEET TITLE: **ELECTRICAL DETAILS**

PROJECT: LION ENCLOSURE
EXOTIC ANIMAL TRAINING AND MANAGEMENT
7075 CAMPUS ROAD
MOORPARK, CA 93021

DRAWN: M. WATERS
CHECKED: K. LUCCI
DATE: 06-19-2019
SCALE: AS NOTED
JOB NO. 18612
SHEET: **E602**
OF: SHEETS:

BID SET 06-24-19

 L.A.I.# 18612 PAPER SIZE 36"x24"

Materials Required
- 18 AWG LVT Solid Wire (Low Voltage Connections)

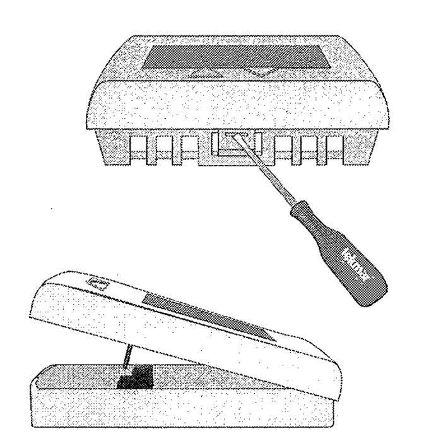
Installation Location

Choose the placement of the thermostats early in the construction process to enable proper wiring during rough-in.

Consider the following:
- Interior Wall.
- Keep dry. Avoid potential leakage onto the control.
- Relative Humidity less than 90%. Non-condensing environment.
- No exposure to extreme temperatures beyond 32-122°F (0-50°C).
- No draft, direct sun, or other cause for inaccurate temperature readings.
- Away from equipment, appliances, or other sources of electrical interference.
- Easy access for wiring, viewing, and adjusting the display screen.
- Approximately 5 feet (1.5 m) off the finished floor.
- The maximum length of wire is 500 feet (150 m).
- Strip wire to 3/8" (10 mm) for all terminal connections.
- Use standard 4 conductor, 18 AWG wire.

Removing The Thermostat Base

To remove the thermostat base:
- Locate the tab on the bottom of the thermostat.
- Push the tab with either your thumb or with a screwdriver.
- Lift the thermostat front away from the thermostat's base.



tekmar®
Radiant Thermostat 519

519_D 03/13
Zoning Replaces: New

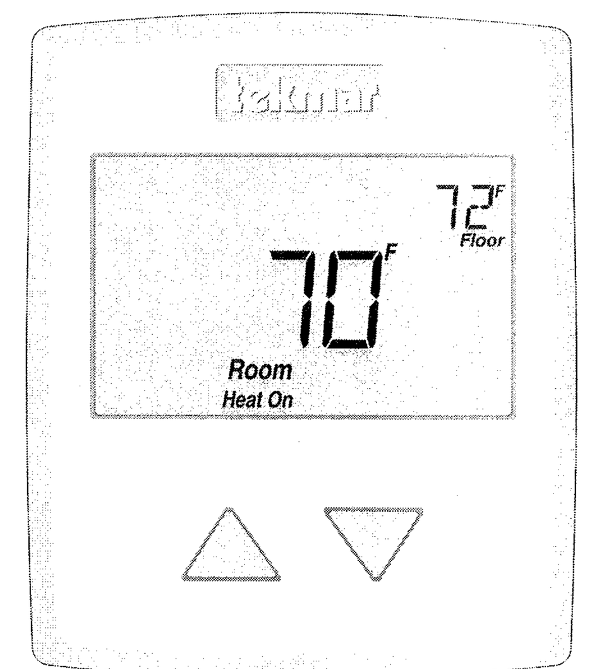
Installation & Operation Manual

Introduction

The Radiant Thermostat 519 accurately controls the room and/or floor temperature for a hydronic heating zone using Pulse Width Modulation (PWM) technology. Simple up and down buttons and a display with large type make this thermostat easy to read and use. A Slab Sensor 079 is included to measure floor temperature to protect the floor from overheating and enhance comfort. This easy to install thermostat is a direct replacement for the tekmar Thermostat 509.

Energy Saving Features
- Auto Heating Cycle

Additional Features
- Radiant Floor Heating
- Pulse Width Modulation
- Floor & Air Temperature Control
- Outdoor & Floor Temperature Display
- Backlight
- Freeze Protection
- Includes Slab Sensor 079



WattsRadiant™
Floor Heating & Snow Melting

Electric Snow Melting Products

10-year Limited Warranty

1. Watts Radiant warrants its electric snow melting mats and cables (the Products) to be free from defects in materials and workmanship under normal usage for ten (10) years from the date of manufacture. Thermostats and controls sold by Watts Radiant are warranted, parts and materials, to be free from defects in material and workmanship for one (1) year from the date of purchase. The sole remedy for such defects in thermostats and controls within the warranty period is product replacement. This Limited Warranty is transferable to subsequent owners.

2. In the event any Products are determined by Watts Radiant to be defective in materials or workmanship within the warranty period, Watts Radiant will refund all or part of the manufacturer's published list price for the Products at the time of purchase.

3. In order to make a claim, you must do the following:
   (a) Provide Watts Radiant with sufficient details relating to the nature of the defect, the manner in which the Products were installed, the history of operation, and any repairs that may have been made.
   (b) At Watts Radiant's discretion and your expense, ship the Products to Watts Radiant or our local representative or distributor.
   (c) Provide proof that the Products were installed in accordance with the applicable Products Installation Manuals and any special written design or installation guidelines by Watts Radiant for this project.
   (d) Provide proof that the Products were installed in accordance with the National Electrical Code (NEC) or the Canadian Electrical Code (CEC),and all applicable local building and electrical codes.
   (e) Provide a retail sales receipt or proof of purchase.

4. Watts Radiant shall not be responsible for the following:
   (a) The costs of any labor or materials required to repair or replace any defective Products or controls that are not authorized in writing by us.
   (b) The costs of any labor or materials required to remove, repair or replace flooring materials.
   (c) Any freight or delivery costs related to the Products, the controls, or any related flooring or electrical products.

5. Watts Radiant assumes no responsibility under this Limited Warranty for any damage to the Products caused by any trades people, visitors on the job site, or damage caused as a result of post-installation work. This Limited Warranty shall be invalidated by any abuse, misuse, misapplication or improper installation of the Products.

6. DUE TO DIFFERENCES IN WALKWAY, DRIVEWAY OR OUTDOOR GROUND SURFACE INSULATION AND VARIATIONS IN CLIMATE AND CONSTRUCTION PRACTICES, WATTS RADIANT MAKES NO REPRESENTATION THAT SURFACES CONTAINING THE PRODUCTS WILL BE FREE FROM SNOW AND/OR ICE.

7. The staff at Watts Radiant is available to answer any questions regarding the proper installation or application of the Products at this toll-free phone number: 800-276-2419. If you are ever in doubt about the correct installation procedure to follow, or if the Products appear to be damaged, you must call us before proceeding with the installation, or proposed repair.

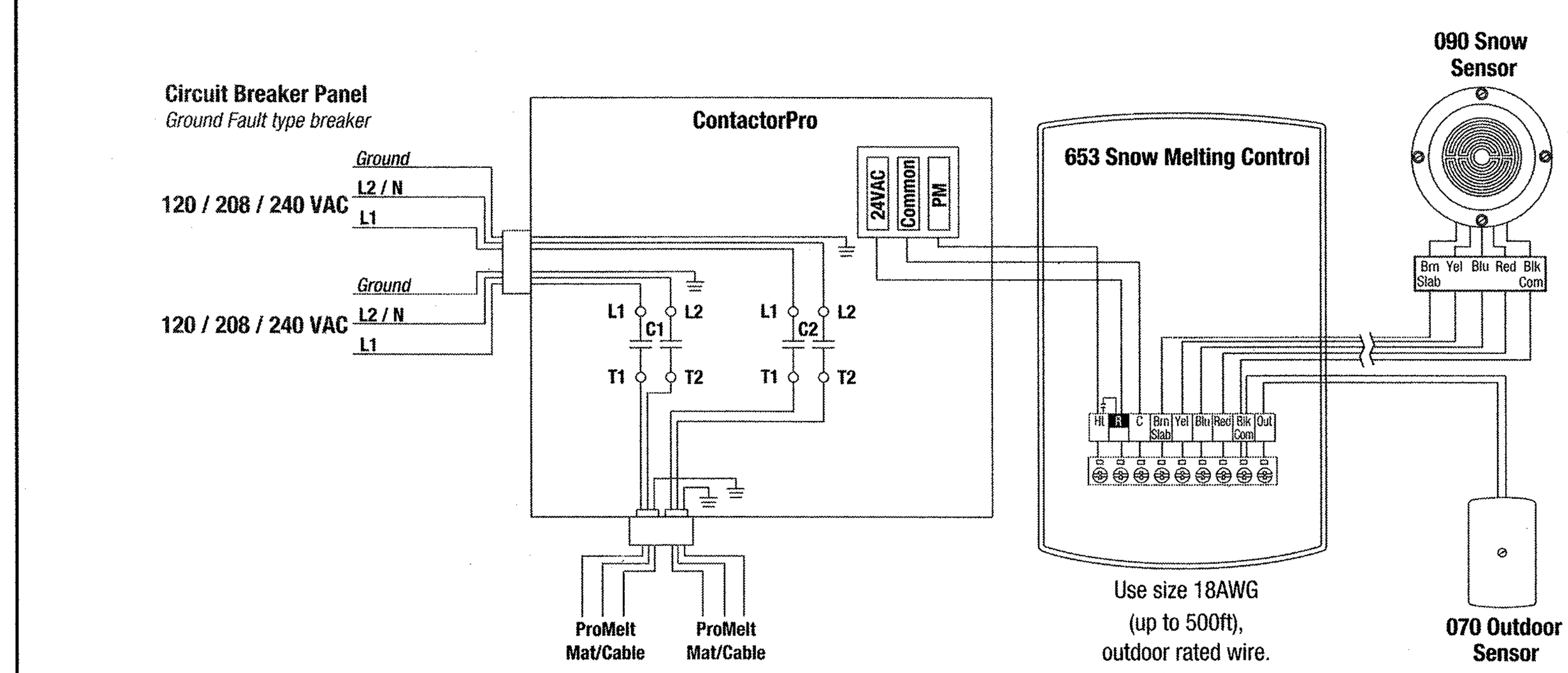
WATTS RADIANT DISCLAIMS ANY WARRANTY NOT PROVIDED HEREIN, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. WATTS RADIANT FURTHER DISCLAIMS ANY RESPONSIBILITY FOR SPECIAL, INDIRECT, SECONDARY, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING FROM OWNERSHIP OR USE OF THESE PRODUCTS, INCLUDING PERSONAL INJURY, INCONVENIENCE, LOSS OF USE OR LOSS OF INCOME. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE FACE OF THIS DOCUMENT. NO AGENT OR REPRESENTATIVE OF WATTS RADIANT HAS ANY AUTHORITY TO EXTEND OR MODIFY THIS WARRANTY UNLESS SUCH EXTENSION OR MODIFICATION IS MADE IN WRITING BY A CORPORATE OFFICER.

Effective: January 1, 2009. This Limited Warranty applies to all Products purchased after this date.

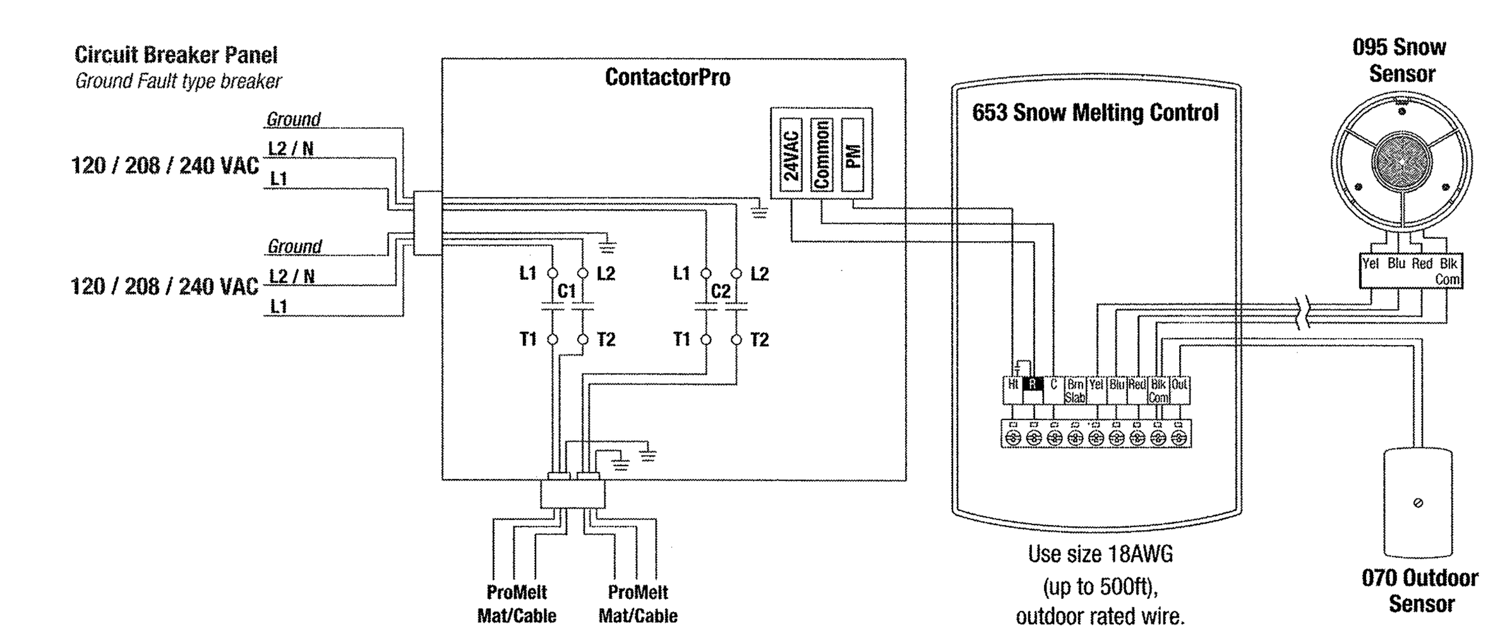
Some states do not allow the exclusion or limitation of incidental or consequential damages and some states do not allow limitations on how long implied warranties may last. Therefore, the above limitations or exclusions may not apply to you. This Limited Warranty gives you specific legal rights and you may also have other rights, which vary from state to state. SO FAR AS IS CONSISTENT WITH APPLICABLE STATE LAW, ANY IMPLIED WARRANTIES THAT MAY NOT BE DISCLAIMED, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO TEN YEARS FROM THE DATE OF MANUFACTURE.

Watts Radiant 4500 E. Progress Place Springfield, MO 65803-8816
800-276-2419 (toll-free phone) **417-864-6108** (phone) **417-864-8161** (fax) **www.wattsradiant.com**

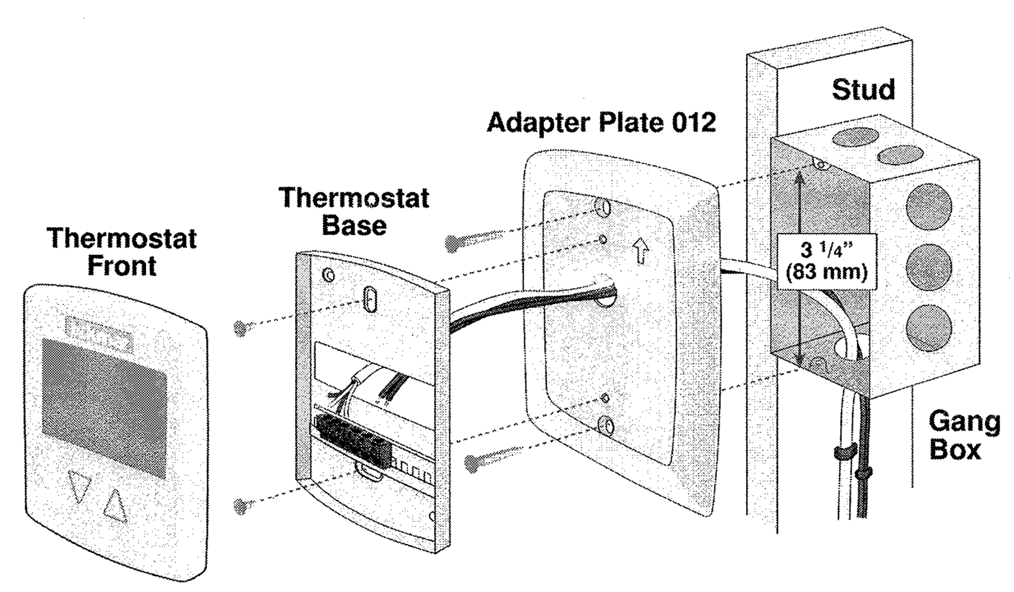
ProMelt Snow Melting Control Kit PM-L3 with ProMelt Mat(s) or Cable(s)



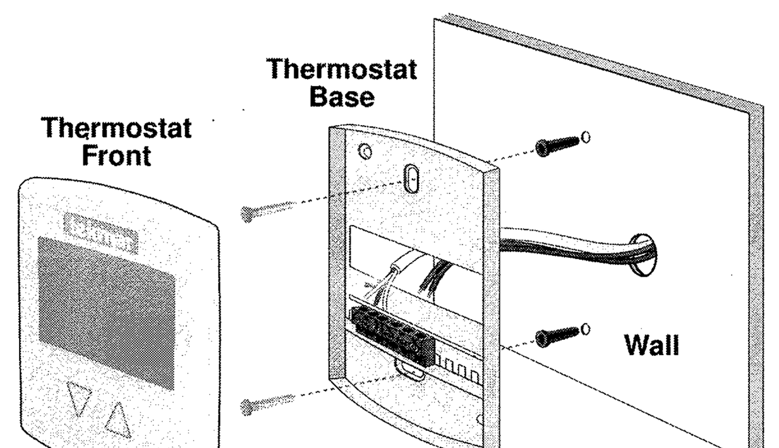
ProMelt Snow Melting Control Kit PM-L2 with ProMelt Mat(s) or Cable(s)



Mounting The Thermostat



If a single gang box is used:
- Adapter Plate 012 is required (sold separately).
- Feed the wiring through the hole in the adaptor plate and the thermostat base.
- Fasten the adaptor plate to the gang box.
- Fasten the base of the thermostat to the adaptor plate.
- Terminate wiring to the wiring strip.
- Push the thermostat front onto the thermostat base.



If mounting directly to the wall:
- Drill holes and install the wall anchors.
- Feed the wiring through the large hole in the thermostat base.
- Fasten the thermostat base to the wall using the wood screws to the wall anchors.
- Terminate wiring to the wiring strip.
- Push the thermostat front onto the thermostat base.

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Getting Started

Congratulations on the purchase of your new tekmar® thermostat.

This manual will step through the complete installation, programming and sequence of operation for this control. At the back, there are tips for control and system troubleshooting.

Installation

Caution

Improper installation and operation of this control could result in damage to the equipment and possibly even personal injury or death. It is your responsibility to ensure that this control is safely installed according to all applicable codes and standards. This electronic control is not intended for use as a primary limit control. Other controls that are intended and certified as safety limits must be placed into the control circuit.

Preparation

Tools Required
- tekmar or jeweller screwdriver
- Phillips head screwdriver
- Wire Stripper

SunTouch Customer Support
USA Toll-free: (888) 432-8932
USA Fax: (417) 831-4067
Canada Toll-free: (888) 208-8927
Canada Fax: (905) 332-7068
Latin America Tel: (52) 81-1001-8600
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suntouch.com

Watts Radiant Customer Support
USA Toll-free: (800) 276-2419
USA Fax: (417) 864-8161
wattsradiant.com
Canada Toll-free: (888) 208-8927
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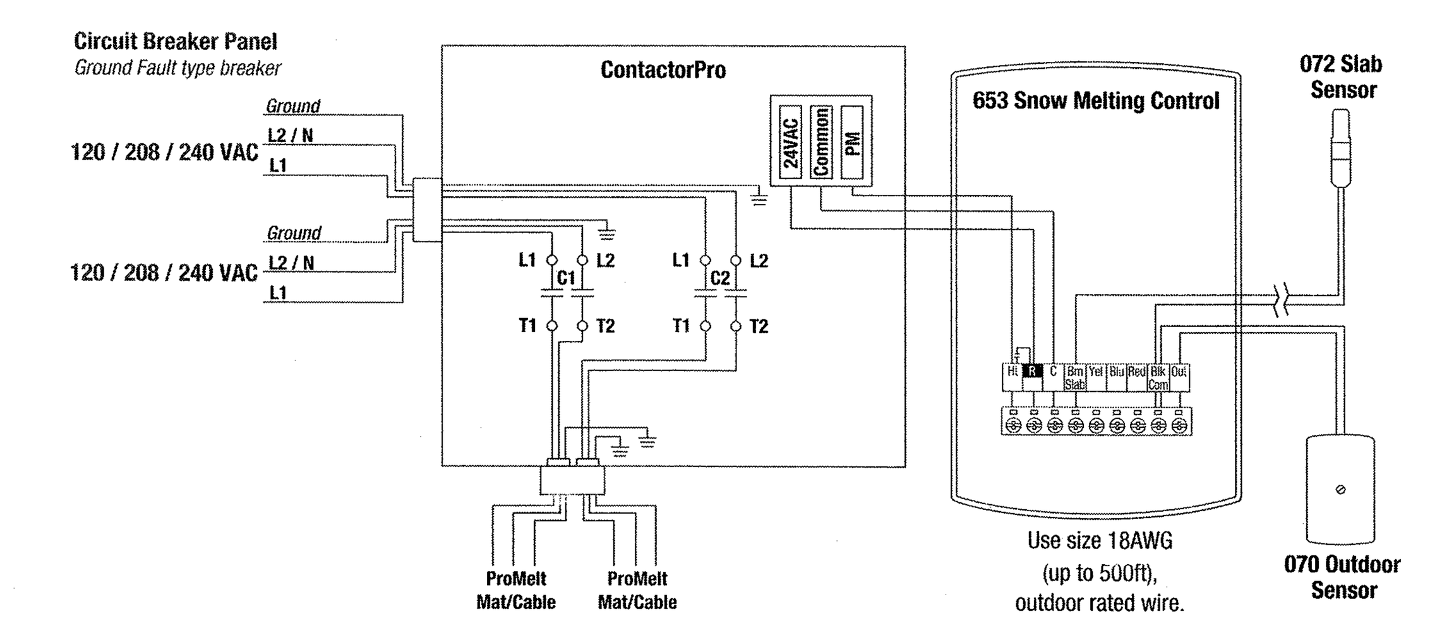
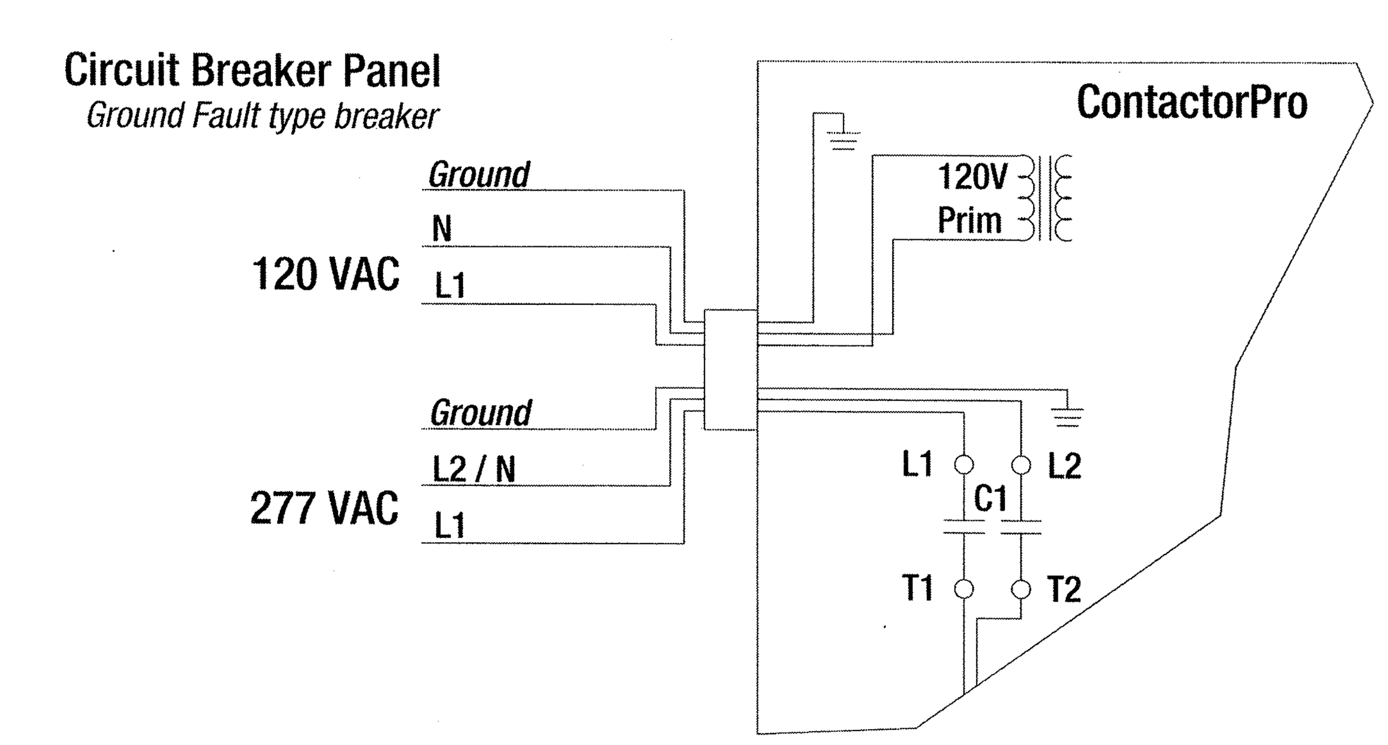
watts.ca

IOM-WR-ProMelt 1630 EDP#81012520

ProMelt Snow Melting Control Kit PM-L1 with ProMelt Mat(s) or Cable(s)



A separate, 120 VAC power supply is required for the ContactorPro internal transformer when using 277 VAC ProMelt Mats or Cables



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SHEET TITLE: **ELECTRICAL DETAILS**

PROJECT: **LION ENCLOSURE**
EXOTIC ANIMAL TRAINING AND MANAGEMENT
7075 CAMPUS ROAD
MOORPARK, CA 93021

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CHECKED: K. LUCCI
DATE: 06-19-2019
SCALE: AS NOTED
JOB NO. 18612
SHEET:

E603

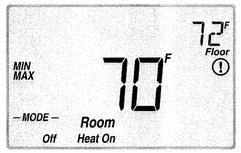
OF: SHEETS:

BID SET 06-24-19

 L.A.I.# 18612 PAPER SIZE 36"x24"

User Interface

Home Screen



Symbols Description

Heat On	**HEAT ON** Heat is turned on.	*MIN*	**MIN** The floor is at or below the floor minimum temperature.
– MODE – Off	**MODE OFF** The heating system is off.	*MAX*	**MAX** The floor has reached the floor maximum temperature.
!	**WARNING SYMBOL** Indicates an error is present.		

Sequence of Operation

Heating Operation

To change the heat temperature setting, push the △ or ▽ button to select a preferred temperature setting. The Heat On symbol is shown on the display when the thermostat is heating. The heat can cycle on and off within +/- 1.5°F (1°C) of the temperature setting.

The floor and air heating can be shut off by holding the ▽ button until Set Room is Off.

To resume heating when the Mode is Off, press the △ button to navigate to the Mode setting, then press the △ button to select Mode Heat. The thermostat will resume heating at the last previously set temperature.

Air Temperature Only

If there is only an air temperature sensor (no floor sensor), the thermostat operates to control your desired air temperature.

Floor Temperature Only

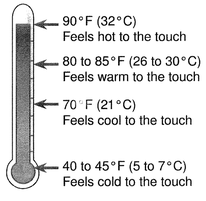
If the air sensor has been disabled, the thermostat will only maintain floor temperature and ignore air temperature. This operation is recommended for areas such as bathrooms to ensure that tile floors are warm to the touch.

Floor and Air Temperature

If the air sensor is turned on and a floor sensor is connected, the thermostat will maintain the desired air temperature as well as a minimum floor temperature.

This operation is recommended for areas with large windows that allow the sun to shine into a room and keep it warm without the need for heat. This can allow the floors to cool off during the afternoon. When the sun goes down, it can take a long time for the floors to get warm again. This may cause the room to cool off too much in the early evening. A floor minimum setting can help with this condition by maintaining a floor minimum temperature. Keep in mind the floor minimum temperature will override the air temperature, and if set too high, may overheat the room.

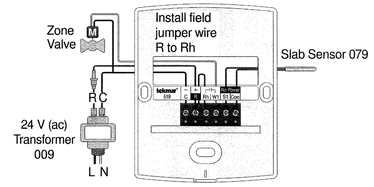
This operation is also recommended for rooms with hardwood floors. Setting floor minimum and maximum temperatures is a way of enhancing the comfort of the living space while protecting floor coverings.



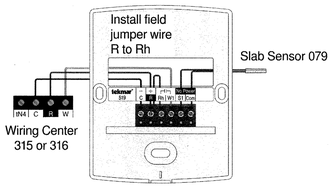
- 90°F (32°C) Feels hot to the touch — Suggested maximum for all floor types other than wood.
- 80 to 85°F (26 to 30°C) Feels warm to the touch — Bathrooms and kitchens. Suggested maximum for wood floors.
- 70°F (21°C) Feels cool to the touch — Rooms with large windows preventing under heating in the evening.
- 40 to 45°F (5 to 7°C) Feels cold to the touch — Freeze protection for garages.

Thermostat Wiring

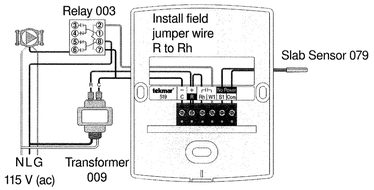
Zone Valve



Wiring Center 315 or 316

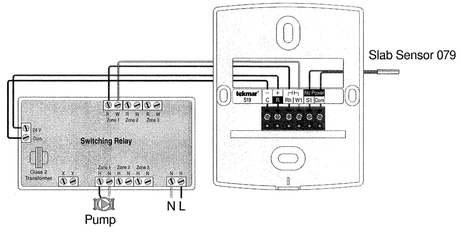


Relay 003



Thermostat Wiring

Switching Relay



Testing the Thermostat Wiring

Testing the Power

If the thermostat display turns on, this indicates that the thermostat is operating correctly and there are no electrical issues. In the event that the display is permanently off:

1. Remove the thermostat front.
2. Use an electrical meter to measure voltage between the R and C wiring terminals. For AC power supplies the voltage should measure between 10 to 30 V (ac). For DC power supplies the voltage should measure between 10 to 30 V (dc).
3. If the voltage on the R and C wire terminations is continuous and the thermostat display is not on, the thermostat may have a fault. Contact your tekmar sales representative for assistance.

If the thermostat display intially powers on but later shuts off intermittantly, there may be a short circuit from the W wire to ground, or the power supply is too small to power the load.

Testing the Heat Zone Output Wiring

1. Touch the △ button and set the heating temperature above the current room temperature. Make sure the display does not flash "Max" if using a floor sensor.
2. When the "Heat On" symbol appears on the display, use an electrical meter to check for voltage on the W and C wires connected to the zone valve, wiring center, relay or switching relay. The electrical meter should read 10 to 30 V (ac) or (dc).
3. If the W and C wire have voltage, check the zone valve, wiring center, relay or pump to determine if the heat device is operating correctly.

Slab Sensor 079 Testing

A good quality test meter capable of measuring up to 5,000 kΩ (1 kΩ = 1000Ω) is required to measure the sensor resistance. In addition to this, the actual temperature must be measured with either a good quality digital thermometer, or if a thermometer is not available, a second sensor can be placed alongside the one to be tested and the readings compared.

First measure the room temperature using the thermometer. Disconnect the Sen and Com wires from the thermostat. Using an electrical meter, measure the resistance of the Sen and Com wires at the thermostat location. Using the temperature versus resistance table, estimate the temperature measured by the sensor. The sensor measurement and thermometer readings should be close. If the test meter reads a very high resistance, there may be a broken wire, a poor wiring connection or a defective sensor. If the resistance is very low, the wiring may be shorted, there may be moisture in the sensor or the sensor may be defective. To test for a defective sensor, measure the resistance directly at the sensor location. Once the test has been completed, reconnect the Sen and Com wires to the thermostat.

Do not apply voltage to the temperature sensor terminals at any time as damage to the sensor may result.

Temperature vs. Resistance Table

Temperature		Resistance	Temperature		Resistance
°F	°C	Ω	°F	°C	Ω
-50	-46	490,813	25	-4	39,913
-45	-43	405,710	30	-1	34,558
-40	-40	336,606	35	2	29,996
-35	-37	280,279	40	4	26,099
-30	-34	234,196	45	7	22,763
-25	-32	196,358	50	10	19,900
-20	-29	165,180	55	13	17,436
-15	-26	139,402	60	16	15,311
-10	-23	118,018	65	18	13,474
-5	-21	100,221	70	21	11,883
0	-18	85,362	75	24	10,501
5	-15	72,918	80	27	9,299
10	-12	62,465	85	29	8,250
15	-9	53,658	90	32	7,334
20	-7	46,218	95	35	6,532

Temperature vs. Resistance Table - Continued

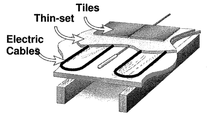
Temperature		Resistance	Temperature		Resistance
°F	°C	Ω	°F	°C	Ω
100	38	5,828	165	74	1,538
105	41	5,210	170	77	1,403
110	43	4,665	175	79	1,281
115	46	4,184	180	82	1,172
120	49	3,760	185	85	1,073
125	52	3,383	190	88	983
130	54	3,050	195	91	903
135	57	2,754	200	93	829
140	60	2,490	205	96	763
145	63	2,255	210	99	703
150	66	2,045	215	102	648
155	68	1,857	220	104	598
160	71	1,689	225	107	553

Slab Sensor 079 Installation

New Installations

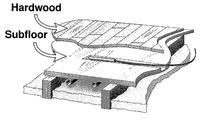
Thin-Set or Thin-Pour Applications

If the floor covering is to be installed over either a thin-set or thin-pour material of sufficient depth, the 079 slab sensor can be placed directly into either the thin-set material or the thin-pour material and covered over. Ensure that the sensor is located in such a position that the attached wire is able to reach to a suitable junction location. Splices within the thin-set or thin-pour should be avoided to ensure trouble free operation. The sensor should be located mid way between the heating elements to ensure a proper temperature reading.



Thin Floor Coverings (less than 3/8" (10 mm))

If a thin floor covering is to be installed directly to the subfloor, a groove 1/8" (4 mm) wide by 1/16" (2 mm) deep can be cut into the surface of the subfloor to accommodate the wire for the sensor. Ensure that the sensor is located in such a position that the attached wire is able to reach to a suitable junction location. Splices under the floor covering should be avoided to ensure trouble free operation. A groove 3/16" (5 mm) wide by 3/16" (5 mm) deep by 1-3/4" (45 mm) long should be cut to accommodate the sensor. The sensor should be located mid way between the heating elements to ensure a proper temperature reading.

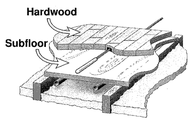


Thick Floor Coverings (greater than 3/8" (10 mm))

If a thick floor covering is to be installed directly to the subfloor, a groove 1/8" (4 mm) wide by 1/16" (2 mm) deep can be cut into the back of the flooring material to accommodate the wire for the sensor. Ensure that the sensor is located in such a position that the attached wire is able to reach to a suitable junction location.

Splices under the floor covering should be avoided to ensure trouble free operation. A groove 3/16" (5 mm) wide by 3/16" (5 mm) deep by 1-3/4" (45 mm) long should be cut to accommodate the sensor. The sensor should be located mid way between the heating elements to ensure a proper temperature reading.

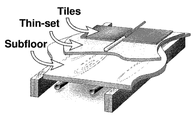
NOTE: If it is not practical to cut a groove in the surface covering, follow the installation method used for thin floor coverings.



Retrofit Installations

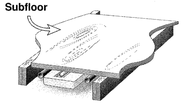
Tile Floor Coverings

If a Slab Sensor 079 is to be installed into an existing tile floor with sufficiently large grout lines, the sensor and wire can be installed in one of the grout lines between the tiles. Select a low traffic area of the floor that is mid way between the heating elements for the sensor location. Ensure that the sensor is located in such a position that the attached wire is able to reach to a suitable junction location. Splices within the grout should be avoided to ensure trouble free operation. Remove the appropriate grout line and place the sensor and wire in the floor. Re-grout the area.



Installing the Sensor to the Bottom of a Subfloor

If the sensor is to be installed to the bottom of a subfloor, cut a piece of 1" (25 mm) thick rigid insulation into a 6" (150 mm) by 6" (150 mm) square. A groove 3/16" (5 mm) wide by 3/16" (5 mm) deep by 1-3/4" (45 mm) long should be cut into the insulation to accommodate the sensor. Place the sensor in the groove and sandwich the sensor between the insulation and the subfloor. Use a suitable fastening method to affix the insulation to the subfloor.



Slab Sensor 079 Wiring

Caution: Do not run sensor wires parallel to telephone or power cables. If the sensor wires are located in an area with strong sources of electromagnetic interference, shielded cable or twisted pair should be used or the wires can be run in a grounded metal conduit.

The Slab Sensor 079 is supplied with 10' (3 m) of cable. If a longer length is required, 24 AWG or larger wire can be spliced onto the two wires from the sensor. The splices should be properly soldered and protected in an accessible junction box. Follow the sensor testing instructions given in this brochure and then connect the wires to the control.

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SHEET TITLE: **ELECTRICAL DETAILS**

PROJECT:
LION ENCLOSURE
EXOTIC ANIMAL TRAINING AND MANAGEMENT
7075 CAMPUS ROAD
MOORPARK,CA 93021

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CHECKED:	K. LUCCI
DATE:	06-19-2019
SCALE:	AS NOTED
JOB NO.	18612
SHEET:	E604
OF:	SHEETS: △

BID SET 06-24-19

PATHNAME: G:\18\612\EL\Sheets DRAWING FILENAME: 18612E604 DRAFTER: KenLucci-New DATE: 23 June 2019 TIME: 11:26 am

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Frequently Asked Questions

Symptom	Look for...	Corrective Action
Display powering on and off.	Measure voltage at wiring terminals R and C.	The power supply transformer may have limited VA capacity. A transformer with a larger VA rating is recommended.
Thermostat does not heat.	Mode Off	Thermostat must be in Mode Heat in order to provide heating.

Technical Data

Radiant Thermostat 519 *One Stage Heat*	
Literature	519_C, 519_D, 519_Q, 519_U
Control	Microprocessor control. This is not a safety (limit) control
Packaged weight	0.6 lb. (290 g)
Dimensions	3-11/16" H x 3" W x 15/16" D (94 x 76 x 24 mm)
Enclosure	White PVC plastic, NEMA Type 1
Approvals	Meets Class B: ICES & FCC Part 15
Ambient conditions	Indoor use only, 32 to 122°F (0 to 50°C), RH ≤90% non-condensing
Power supply	10 to 30 V (ac/dc), 50/60 Hz, 1.8 VA standby, 56 VA max fully loaded, Class 2
Relay	30 V (ac/dc) 2 A, Class 2 circuits
Sensor	NTC thermistor, 10 kΩ @ 77°F (25°C ±0.2°C) ß=3892
– Included	Slab Sensor 079
– Optional	tekmar type # 070, 072, 073, 076, 077, 079, 084

Slab Sensor 079 *10' (3 m) wire*	
Dimensions	3/16" OD x 1-1/2" (5 OD x 38 mm)
Enclosure	316 stainless steel, 10' (3 m) 24 AWG, 300 volt PVC insulated Zipcord
Approvals	CSA C US
Operating range	-58 to 140°F (-50 to 60°C)
Sensor	NTC thermistor, 10 kΩ @ 77°F (25°C ±0.2°C) ß=3892

Programmable Settings

Setting	Display
User settings. Press the △ and ▽ buttons together for 3 seconds to enter and advance to the next setting.	
MODE Select heat or off.	MODE HEAT
Range: HEAT, OFF	Default: HEAT
UNITS Select the temperature units.	UNITS F
Range: °F or °C	Default: °F
LIGHT Select when the display back light should operate. Auto operates the backlight for 30 seconds after a keystroke.	LIGHT AUTO
Range: OFF, AUTO, ON	Default: AUTO
SET FLOOR Set the floor minimum temperature. Available when an auxiliary floor sensor is connected and the built-in room sensor is on.	SET FLOOR 72
Range: OFF, 40 to 122°F (4.5 to 50.0°C)	Default: 72°F (22.0°C)
TYPE Device Type number. Hold the △ button to view the software version.	TYPE 519
ESCAPE Release the △ and ▽ buttons to return to the home screen.	ESCAPE
Installer settings. Press the △ and ▽ buttons together for 5 more seconds.	
AUXILIARY SENSOR Select the type of auxiliary sensor. Available when an auxiliary sensor is automatically detected.	AUX SENSR NONE
Range: **NONE** = no auxiliary sensor, **ROOM** = Indoor Sensor, **FLOR** = Slab Sensor, **OUT** = Outdoor Sensor	Default: OFF
ROOM SENSOR Select if the built-in room temperature sensor is on or off. The built-in room sensor can only be disabled when an auxiliary room or slab sensor is connected.	SENSOR ON
Range: ON or OFF	Default: ON
SET FLOOR MAXIMUM Set the floor maximum temperature in order to protect the floor covering. Suggested settings: Tile = 90°F (32°C), Wood Floor = 85°F (29°C)	SET FLOOR 85
Range: 40 to 122°F (4.5 to 50.0°C), OFF	Default: 85°F (29.5°C)
ESCAPE Release the △ and ▽ buttons to return to the home screen.	ESCAPE

Limited Warranty and Product Return Procedure

Limited Warranty ***The liability of tekmar under this warranty is limited. The Purchaser, by taking receipt of any tekmar product ("Product"), acknowledges the terms of the Limited Warranty in effect at the time of such Product sale and acknowledges that it has read and understands same.***

The tekmar Limited Warranty to the Purchaser on the Products sold hereunder is a manufacturer's pass-through warranty which the Purchaser is authorized to pass through to its customers. Under the Limited Warranty, each tekmar Product is warranted against defects in workmanship and materials if the Product is installed and used in compliance with tekmar's instructions, ordinary wear and tear excepted. The pass-through warranty period is for a period of twenty-four (24) months from the production date if the Product is not installed during that period, or twelve (12) months from the documented date of installation if installed within twenty-four (24) months from the production date.

The liability of tekmar under the Limited Warranty shall be limited to, at tekmar's sole discretion: the cost of parts and labor provided by tekmar to repair defects in materials and / or workmanship of the defective product; or to the exchange of the defective product for a warranty replacement product; or to the granting of credit limited to the original cost of the defective product, and such repair, exchange or credit shall be the sole remedy available from tekmar, and, without limiting the foregoing in any way, tekmar is not responsible, in contract, tort or strict product liability, for any other losses, costs, expenses, inconveniences, or damages, whether direct, indirect, special, secondary, incidental or consequential, arising from ownership or use of the product, or from defects in workmanship or materials, including any liability for fundamental breach of contract.

The pass-through Limited Warranty applies only to those defective Products returned to tekmar during the warranty period. This Limited Warranty does not cover the cost of the parts or labor to remove or transport the defective Product, or to reinstall the repaired or replacement Product, all such costs and expenses being subject to Purchaser's agreement and warranty with its customers.

Any representations or warranties about the Products made by Purchaser to its customers which are different from or in excess of the tekmar Limited Warranty are the Purchaser's sole responsibility and obligation. Purchaser shall indemnify and hold tekmar harmless from and against any and all claims, liabilities and damages of any kind or nature which arise out of or are related to any such representations or warranties by Purchaser to its customers.

The pass-through Limited Warranty does not apply if the returned Product has been damaged by negligence by persons other than tekmar, accident, fire, Act of God, abuse or misuse; or has been damaged by modifications, alterations or attachments made subsequent to purchase which have not been authorized by tekmar; or if the Product was not installed in compliance with tekmar's instructions and / or the local codes and ordinances; or if due to defective installation of the Product; or if the Product was not used in compliance with tekmar's instructions.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHICH THE GOVERNING LAW ALLOWS PARTIES TO CONTRACTUALLY EXCLUDE, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, DURABILITY OR DESCRIPTION OF THE PRODUCT, ITS NON-INFRINGEMENT OF ANY RELEVANT PATENTS OR TRADEMARKS, AND ITS COMPLIANCE WITH OR NON-VIOLATION OF ANY APPLICABLE ENVIRONMENTAL, HEALTH OR SAFETY LEGISLATION; THE TERM OF ANY OTHER WARRANTY NOT HEREBY CONTRACTUALLY EXCLUDED IS LIMITED SUCH THAT IT SHALL NOT EXTEND BEYOND TWENTY-FOUR (24) MONTHS FROM THE PRODUCTION DATE, TO THE EXTENT THAT SUCH LIMITATION IS ALLOWED BY THE GOVERNING LAW.

Product Warranty Return Procedure All Products that are believed to have defects in workmanship or materials must be returned, together with a written description of the defect, to the tekmar Representative assigned to the territory in which such Product is located. If tekmar receives an inquiry from someone other than a tekmar Representative, including an inquiry from Purchaser (if not a tekmar Representative) or Purchaser's customers, regarding a potential warranty claim, tekmar's sole obligation shall be to provide the address and other contact information regarding the appropriate Representative.

Troubleshooting

Error Messages

Error Message	Description
SETUP Err	**SETUP MENU SAVE ERROR** The thermostat failed to read the Programmable Settings from memory and has reloaded the factory default settings. The thermostat stops normal operation until all Programmable Settings are checked except to provide freeze protection.
SENSOR OPEN	**ROOM SENSOR OPEN CIRCUIT ERROR** The built-in air temperature sensor has an open circuit fault. Do not confuse this error with the auxiliary room sensor short circuit error. This error cannot be field repaired. Contact your wholesaler or tekmar sales representative for details on repair procedures.
SENSOR SHRT	**ROOM SENSOR SHORT CIRCUIT ERROR** The built-in air temperature sensor has a short circuit fault. Do not confuse this error with the auxiliary room sensor short circuit error. This error cannot be field repaired. Contact your wholesaler or tekmar sales representative for details on repair procedures.
AUX SENSR OPEN	**AUXILIARY SENSOR OPEN CIRCUIT ERROR** The auxiliary sensor has an open circuit. Check for loose or damaged wires. Locate and repair the problem as described in the Sensor Testing section of this brochure. The error clears after the auxiliary sensor fault is corrected. If the auxiliary sensor was intentionally removed, power the thermostat down and up to clear the error.
AUX SENSR SHRT	**AUXILIARY SENSOR SHORT CIRCUIT ERROR** The auxiliary sensor has a short circuit. Check for damaged wires. Locate and repair the problem as described in the Sensor Testing section of this brochure. The error clears after the auxiliary sensor fault is corrected.

REVISIONS | BY

REGISTERED PROFESSIONAL ENGINEER KENNETH W. LUCCI No. E 8340 Exp. 09/30/2020 ELECTRICAL STATE OF CALIFORNIA

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SHEET TITLE: ELECTRICAL DETAILS

PROJECT: LION ENCLOSURE
EXOTIC ANIMAL TRAINING AND MANAGEMENT
7075 CAMPUS ROAD
MOORPARK, CA 93021

DRAWN: M. WATERS
CHECKED: K. LUCCI
DATE: 06-19-2019
SCALE: AS NOTED
JOB NO. 18612
SHEET: E605
OF: SHEETS:

BID SET 06-24-19

DRAFTER: KenLucci-New DRAWING FILENAME: 18612E605 PATHNAME: G:\18\612\EL\Sheets DATE: 23 June 2019 TIME: 11:28 am