

**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 EXECUTED, BUT WITHOUT GUARANTEE OF ACCURACY. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT JOB SITE AND SHALL REPORT ANY DISCREPANCIES 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 ADDENDA.
  - 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.
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 NEW (N) 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 DEMOLITION, 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 ACTIVITIES 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 WRITING 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 BARS NOT PERMITTED.) BARRICADES AT WORK AREAS, DISTRICT APPROVED STORAGE AREAS AND WHEREVER NECESSARY TO MAINTAIN A SAFE PASSAGE AND SAFE ENVIRONMENT.

# MOORPARK COLLEGE LION ENCLOSURE

7075 CAMPUS ROAD  
MOORPARK, CALIFORNIA 93021

## VENTURA COUNTY COMMUNITY COLLEGE DISTRICT

**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 ARCHITECT 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: 3,000 PSI AT 28 DAYS  
B) FOUNDATIONS: 3,000 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 OWNER.
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	UTILITY PLAN
C4	EROSION & SEDIMENT CONTROL PLAN
ARCHITECTURAL	
A1.00	OVERALL SITE PLAN
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 EXTERIOR 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 ELECTRICAL SITE PLAN
E140	SITE ELECTRICAL DEMOLITION PLAN
E200	ELECTRICAL SINGLE LINE AND LIGHT POLE DETAIL
E201	PANEL SCHEDULES
E401	ENLARGED ELECTRICAL PLAN - LION ENCLOSURE
E500	DETAILS
E600	ELECTRICAL DETAILS
E601	ELECTRICAL DETAILS
E602	ELECTRICAL DETAILS
E603	ELECTRICAL DETAILS
E604	ELECTRICAL DETAILS
E605	ELECTRICAL DETAILS
Grand total: 40	

**SUMMARY OF SCOPE OF WORK**

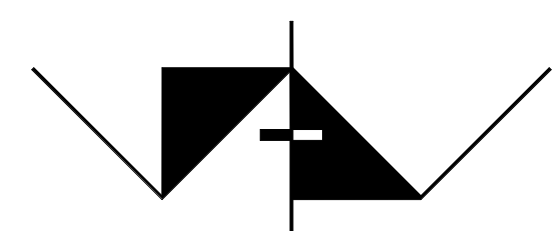
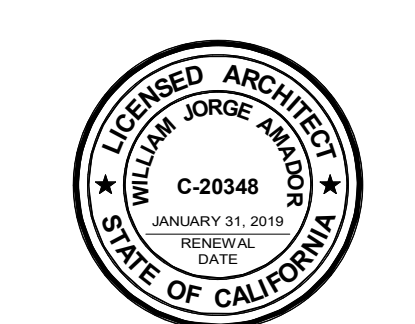

1. SELECTIVE DEMOLITION TO CLEAR SITE
2. INSTALL NEW STORM WATER UNDERGROUND DRAIN LINES & CONNECT TO AN EXISTING CATCH BASIN
3. CONSTRUCT NEW LION HABITAT INCLUDING OUTDOOR MESH ENCLOSURE AND ROOFED BEDROOM AREA
4. CONSTRUCT NEW CMU SCREEN WALL, CONCRETE PAVING, SECURITY FENCING AND VISITOR RAILING/BARRIER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

**OWNER**

VENTURA COUNTY COMMUNITY COLLEGE DISTRICT

**DESIGN TEAM**

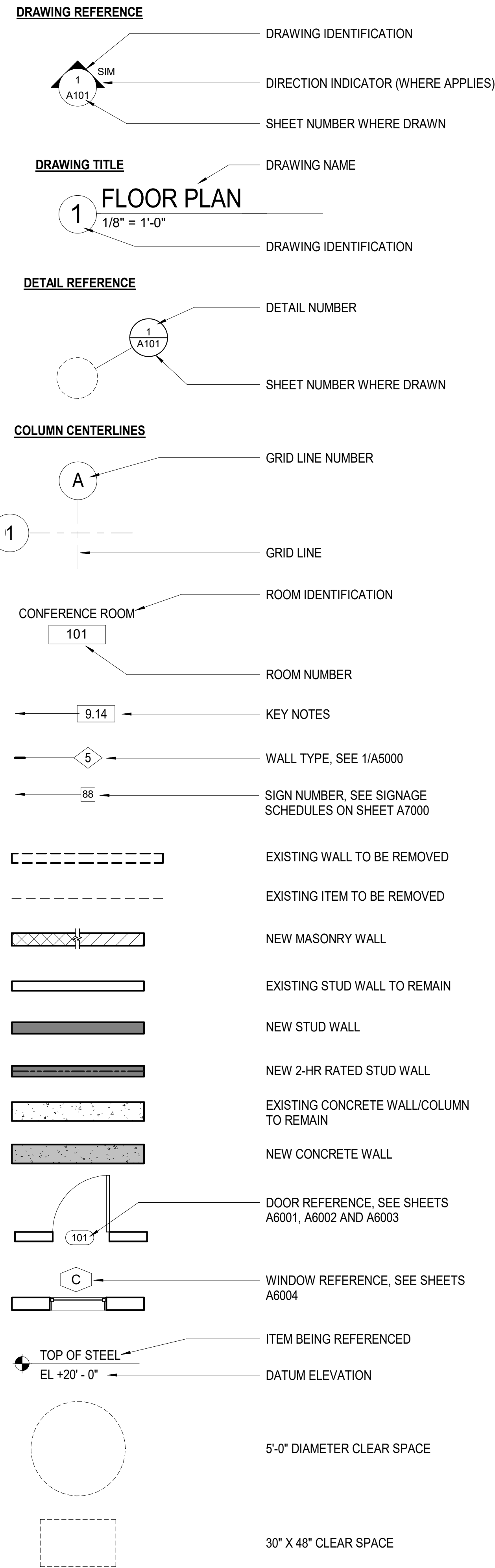
<b>ARCHITECT</b> AMADOR WHITTLE ARCHITECTS, INC. 28328 AGOURA ROAD, #203 AGOURA HILLS, CALIFORNIA 93021 (805) 530-3938	<b>CIVIL ENGINEER</b> LACHAINE & ASSOCIATES, INC. 240 E. HWY 246, SUITE 104 BUPELLTON, CALIFORNIA 93427 (805) 686-1954
<b>ELECTRICAL ENGINEER</b> LUCCI & ASSOCIATES, INC. 3251 CORTE MALPASO, SUITE 511 CAMARILLO, CALIFORNIA 93012 (805) 389-6520	<b>STRUCTURAL ENGINEER</b> ORION STRUCTURAL GROUP, INC. 223 E. THOUSAND OAKS BOULEVARD, SUITE 304 THOUSAND OAKS, CALIFORNIA 91360 (805) 390-9242

 <b>AMADOR WHITTLE ARCHITECTS, INC.</b>	 <small>28328 AGOURA ROAD, SUITE 203 AGOURA HILLS, CA 91301 (805) 530-3938, (818) 874-0071</small>
<h3>LION ENCLOSURE</h3> <p>EXOTIC ANIMAL TRAINING &amp; MANAGEMENT 7075 CAMPUS ROAD MOORPARK, CA 93021</p> <p><b>BID SET</b></p>	
<small>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.</small>	
REVISIONS  07/11/19    ADDENDUM #1	DATE: 06/24/19
DRAWN: SN	CHECK: WJA
JOB NO: 18-MPC-30	
<h2>TITLE SHEET, GENERAL NOTES</h2>	
<h1 style="font-size: 48px;">G0.00</h1>	
<small>IF THIS SHEET IS NOT 36" X 24", IT IS NOT FULL SIZE. SCALE DRAWINGS ACCORDINGLY</small>	

# ABBREVIATIONS

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

# LEGEND



# 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:

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

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.

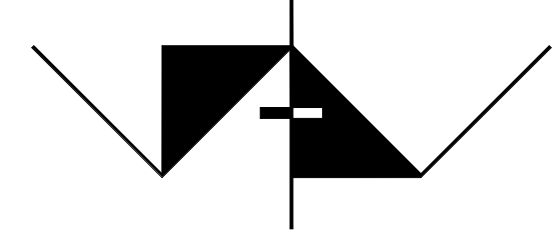
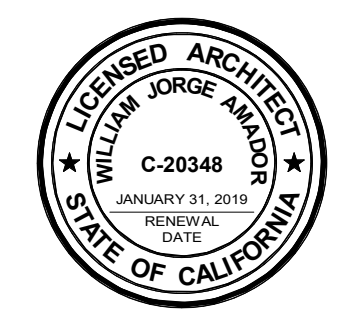

8) NO FOOD ALLOWED PAST THE PICNIC AREA AT THE FRONT OF THE ZOO. IT IS IMPERATIVE THAT ALL FOOD WRAPPINGS AND TRASH BE DISPOSED OF PROPERLY IN A TRASH RECEPTACLE. THIS IS TO ELIMINATE THE POSSIBILITY OF TRASH BLOWING INTO AN ANIMAL ENCLOSURE. ANIMALS WILL EAT THESE ITEMS, WHICH CAN RESULT IN SERIOUS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

 <b>AMADOR WHITTLE ARCHITECTS, INC.</b>	 <small>28328 AGOURA ROAD, SUITE 203 AGOURA HILLS, CA 91301 (805) 530-3938, (818) 874-0071</small>
<h2>LION ENCLOSURE</h2> <p>EXOTIC ANIMAL TRAINING &amp; MANAGEMENT 7075 CAMPUS ROAD MOORPARK, CA 93021</p> <p><b>BID SET</b></p>	
<small>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.</small>	
REVISIONS  07/11/19 ADDENDUM #1	DATE: 06/24/19
	DRAWN: Author
	CHECK: Checker
	JOB NO: 18-MPC-30
<h2>ABBREVIATIONS &amp; SYMBOLS, CONTRACTOR'S GUIDELINES</h2> <small>IF THIS SHEET IS NOT 36" X 24", IT IS NOT FULL SIZE. SCALE DRAWINGS ACCORDINGLY.</small>	
<h1>G0.01</h1>	

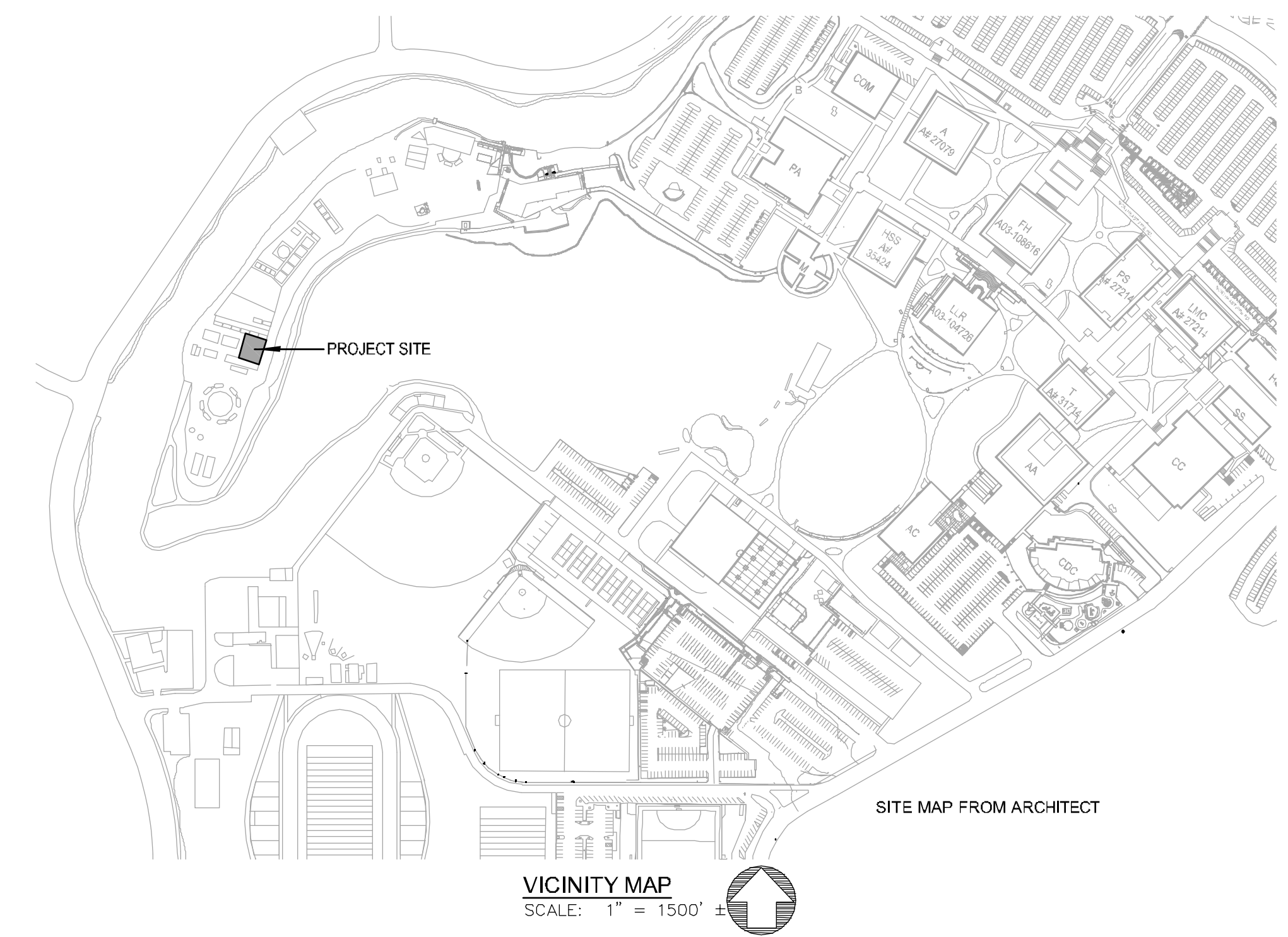


# GRADING AND DRAINAGE PLANS

## FOR

### MOORPARK COLLEGE MCC LION INCLOSURE

#### APN 500-0-281-515



**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.

**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 Association 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  
 LIDS: VEGETATIVE DRAINAGE SWALES, OR EXEMPT.

**GEOTECHNICAL SPECIFICATIONS:**

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

**SURVEY:**

TOPOGRAPHIC SURVEY IS SHOWN AS BACKGROUND ON SHEETS C2 THRU C4.

**EARTHWORK ESTIMATE & DATA (DOES NOT INCLUDE FOOTINGS)**

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% ±)

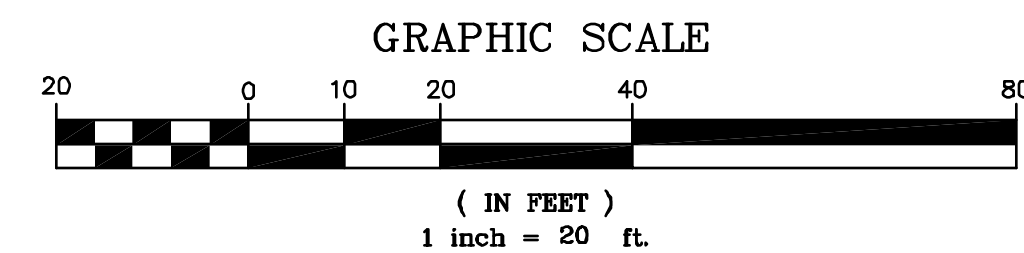
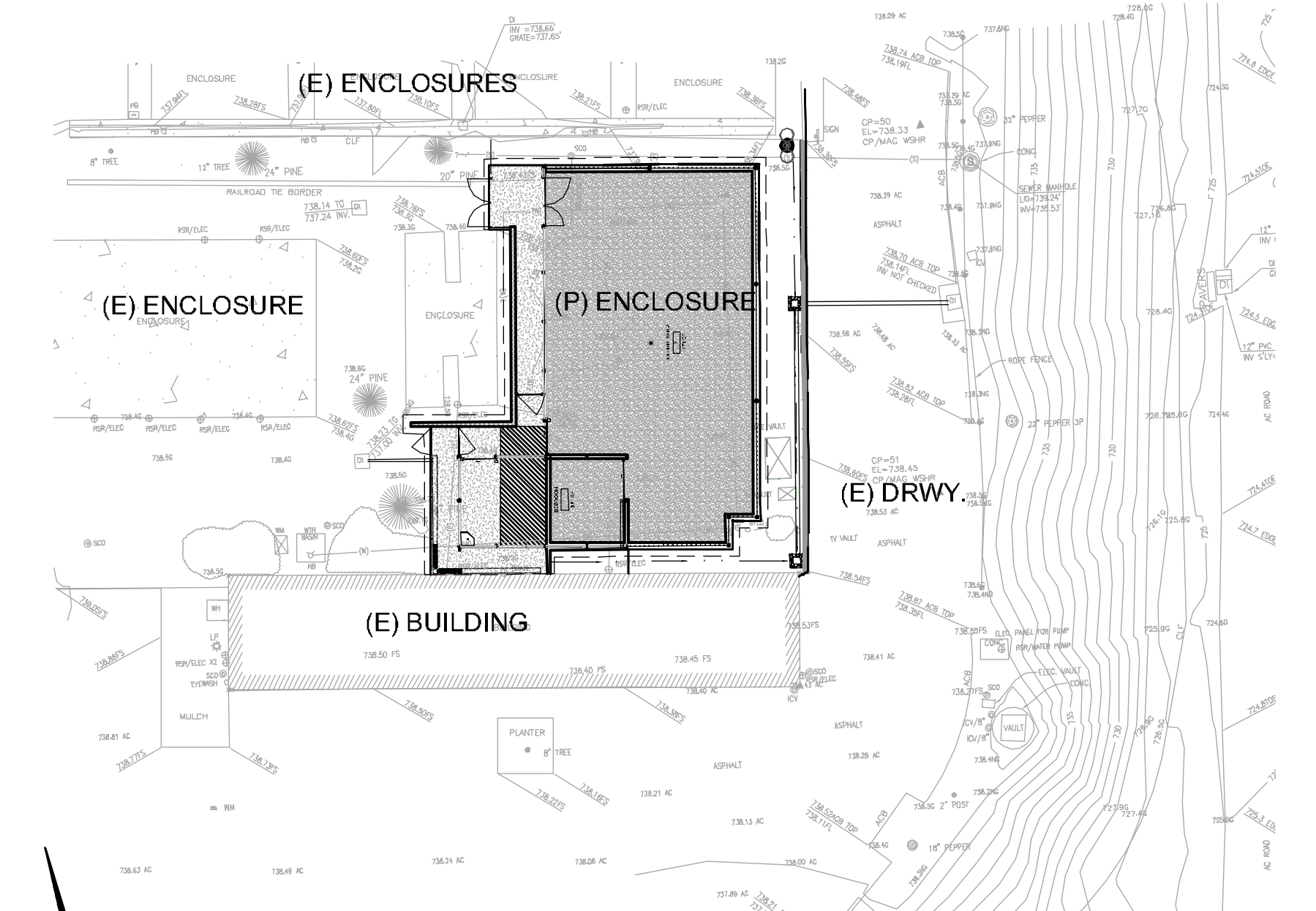
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FILL: 10 CUBIC YARDS	

**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.



**INDEX OF SHEETS**

- C1 GRADING COVER SHEET
- C2 GRADING AND DRAINAGE PLAN
- C3 PROPOSED DEMOLITION AND UTILITY PLAN
- C4 EROSION & SEDIMENT CONTROL PLAN



6/24/19	DRL	BID SET	DESCRIPTION
7/11/19	DRL	ADDENDUM No. 1, DG FLOOR OVER AGG BASE, MOVE COLUMNS, MOVE DOWNSPOUT, MOVE CURB AT BEDROOM, EDIT NOTES ACCORDINGLY.	
REV	DATE	BY	DESCRIPTION

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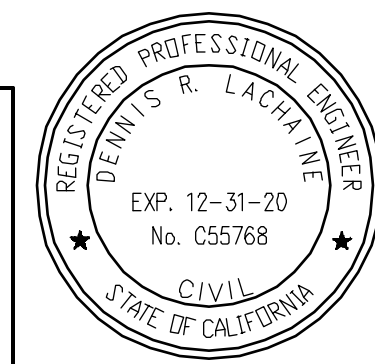
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 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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*  
 DENNIS R. LACHAINE, P.E. 7/11/19 DATE



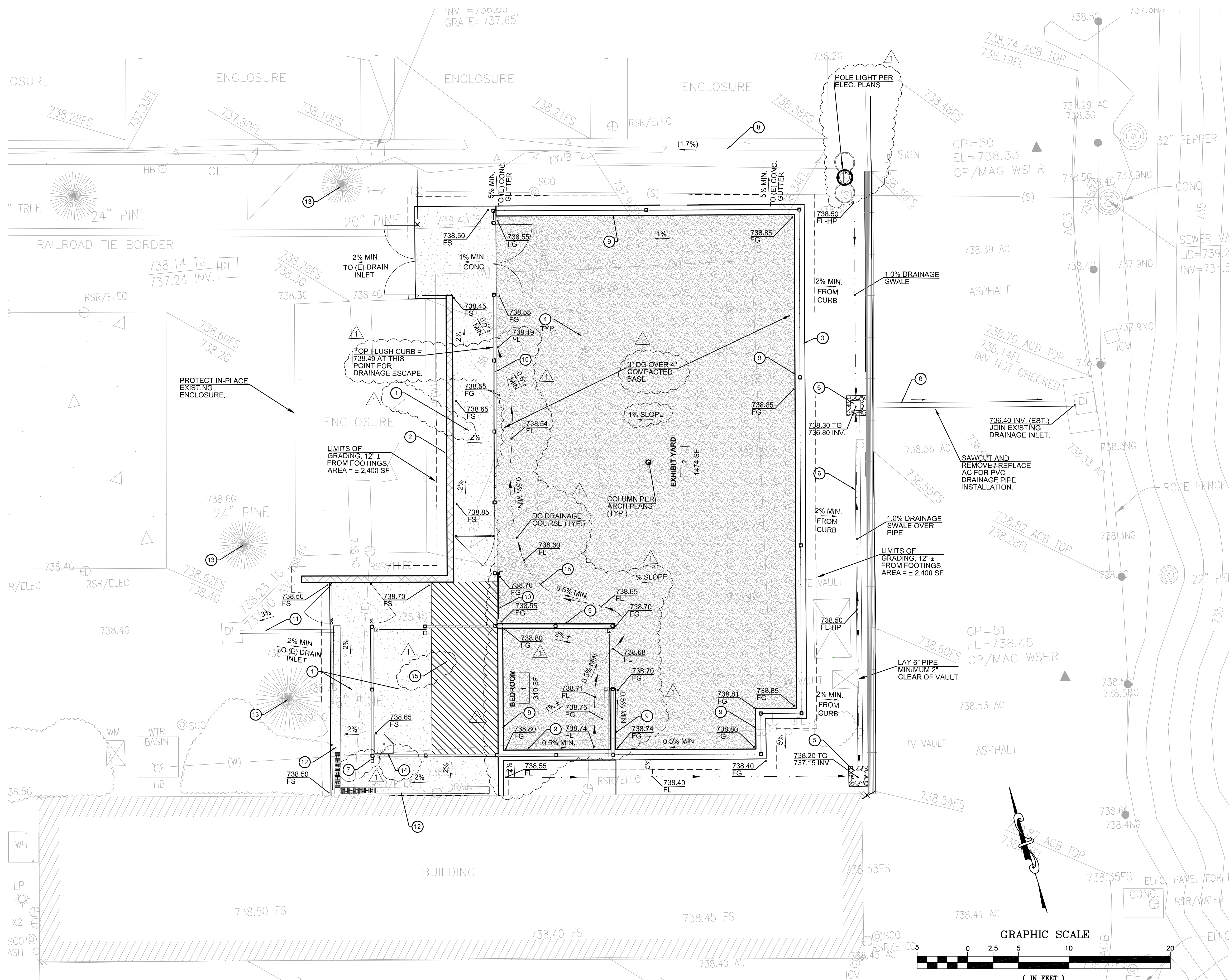
MOORPARK COMMUNITY COLLEGE:  
 REVIEWED BY: \_\_\_\_\_  
 \_\_\_\_\_ Date

**GRADING COVER SHEET**

MOORPARK COMMUNITY COLLEGE LION ENCLOSURE

L&A PROJECT No.  
 18-339  
 SHEET **C1**





**CONSTRUCTION NOTES**

- 1 CONCRETE SLAB PER STRUCTURAL PLANS, 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.
- 2 CMU WALLS. SEE STRUCTURAL PLANS.
- 3 MINIMUM 18 INCH BUILDING FOOTING EMBEDMENT, SEE 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 SEE STRUCTURAL PLANS.
- 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.
- 14 DRINKING TROUGH. SEE ARCH. PLANS.
- 15 2" TOPPING SLAB. SEE STRUCTURAL PLANS.
- 16 DRAINAGE COURSE FROM EXHIBIT YARD AND BEDROOM

6/24/19	DRL	BID SET
7/11/19	DRL	ADDENDUM No. 1, DG FLOOR OVER AGG BASE, MOVE COLUMNS, MOVE DOWNSPOUT, MOVE CURB AT BEDROOM, EDIT NOTES ACCORDINGLY.
REV	DATE	BY
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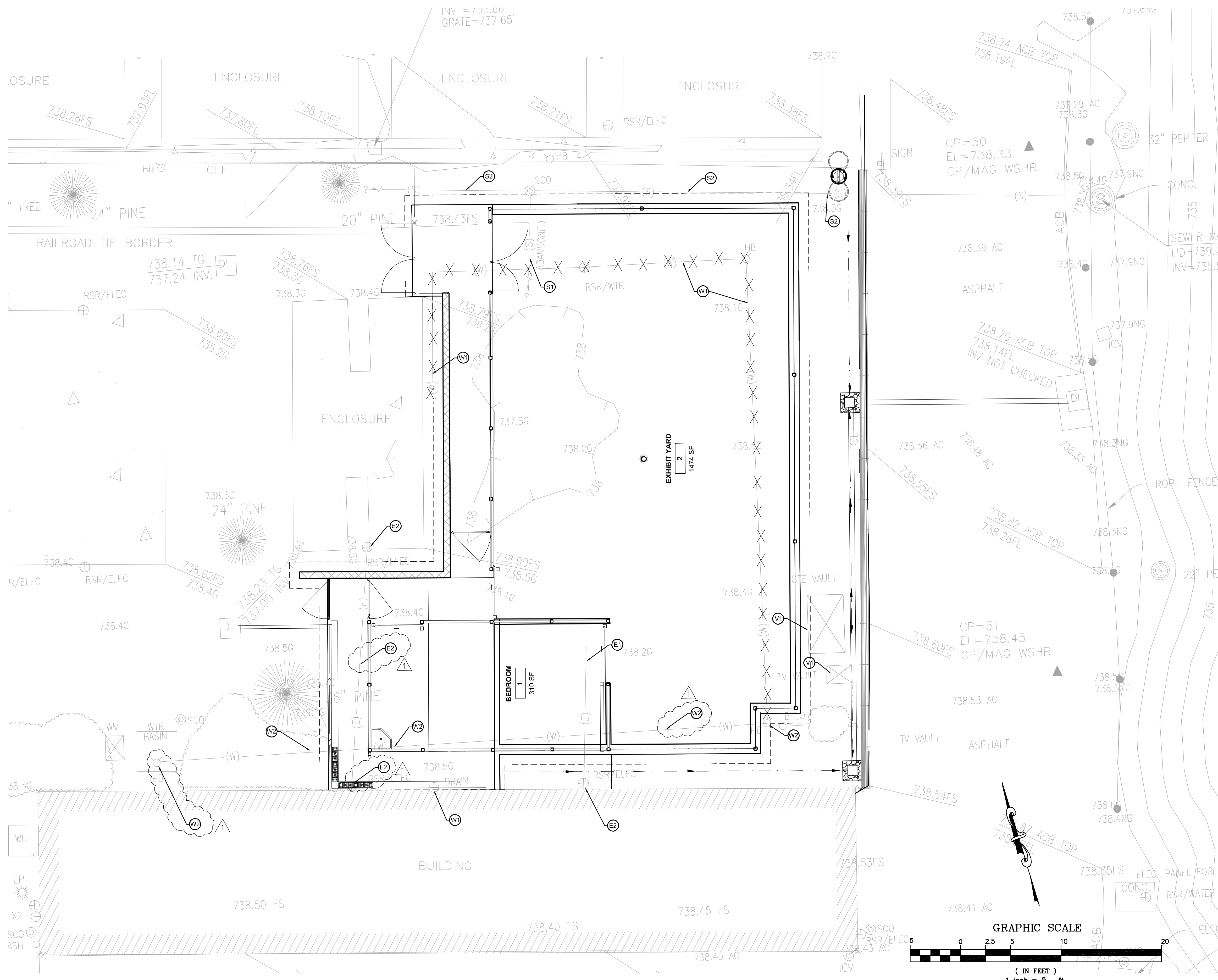


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Date \_\_\_\_\_

**GRADING AND DRAINAGE PLAN**  
MOORPARK COMMUNITY COLLEGE LION ENCLOSURE

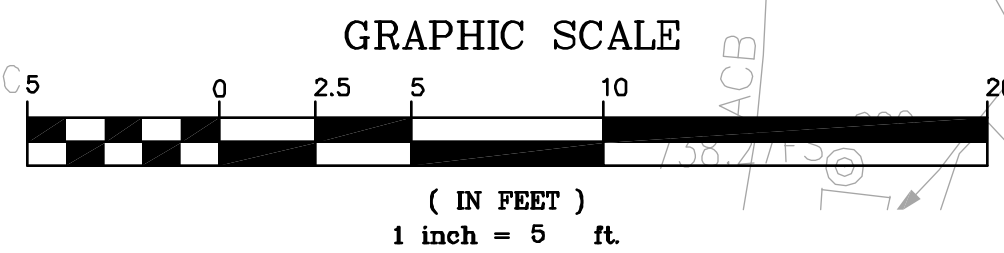
L&A PROJECT No. 18-339  
SHEET C2





- UTILITY NOTES:**
- (W1) LOCATE AND REMOVE EXISTING WATER PIPES THAT ARE UNDER PROPOSED WORK AREA. ISOLATE WATER LINES THAT ARE TO REMAIN AND CAP OFF WHERE NEEDED.
  - (W2) EXISTING HOSE BIB AND UNDERGROUND WATER PIPES TO REMAIN. PROTECT IN PLACE.
  - (E1) LOCATE, ISOLATE AND REMOVE EXISTING ELECTRICAL WITHIN THE WORK AREA.
  - (E2) PROTECT EXISTING ELECTRICAL RISER AND UNDERGROUND CONDUIT.
  - (V1) PROTECT EXISTING VAULT AT GRADE.
  - (S1) REMOVE ABANDONED PORTION OF SEWER PIPE THAT IS UNDER PROPOSED CONCRETE SLAB.
  - (S2) PROTECT IN PLACE, PORTIONS OF SEWER PIPE.

EXISTING UTILITIES SHOWN ARE APPROXIMATE AND CONTRACTOR SHALL POthOLE TO CONFIRM EXISTENCE AND LOCATIONS.



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REVIEWED BY: \_\_\_\_\_  
Date \_\_\_\_\_

**PROPOSED DEMOLITION AND UTILITY PLAN**  
MOORPARK COMMUNITY COLLEGE LION ENCLOSURE

L&A PROJECT No. 18-339  
SHEET C3



**Erosion Control Notes**

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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

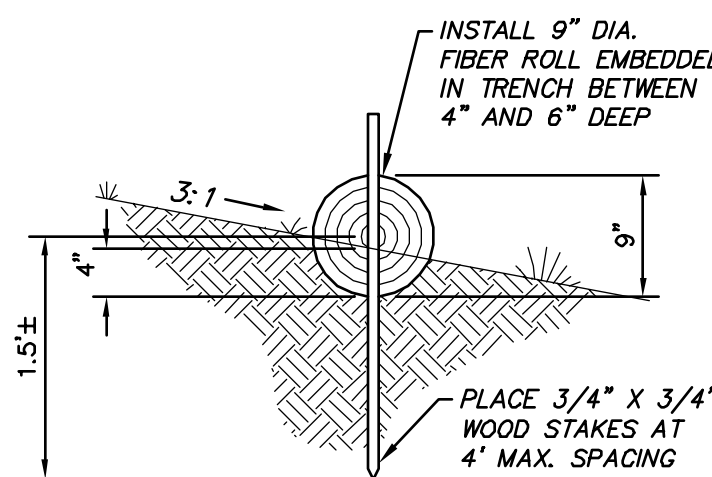
**Targeted Constituents:**  
Sediment, Nutrients, Trash, Metals, Bacteria, Oil and Grease, Organics

(WATER TRUCK DETAIL NOT SHOWN)

**A Catch Basin/Inlet Protection**

- Notes:
- Catch Basin/Inlet protection shall be installed wherever there is a potential of stormwater or non-stormwater being discharged into it.
  - Inlet protection is required along with other pollution prevention measures such as: erosion control, soil stabilization, and measures to prevent tracking onto paved surfaces.
  - Modify inlet protection as needed to avoid creating traffic hazards.
  - Include inlet protection measures at hillside v-ditches and misc. drainage swales.
  - 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.
  - Damaged bags shall be replaced immediately.
  - Additional sandbag sediment traps shall be placed at intervals as indicated on site plan.

**B Fiber Roll**



**C Stabilized Construction Entrance**

- Notes:
- 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.
  - Stabilized construction entrance shall be:
    - 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.
    - A series of steel plates with "rumble strips", and/or min 4" coarse aggregate with length, width & thickness as needed to adequately prevent any tracking onto paved surfaces.
  - Adding a wash rack with a sediment trap large enough to collect all wash water can greatly improve efficiency.
  - All vehicles accessing the construction site shall utilize the stabilized construction entrance sites.

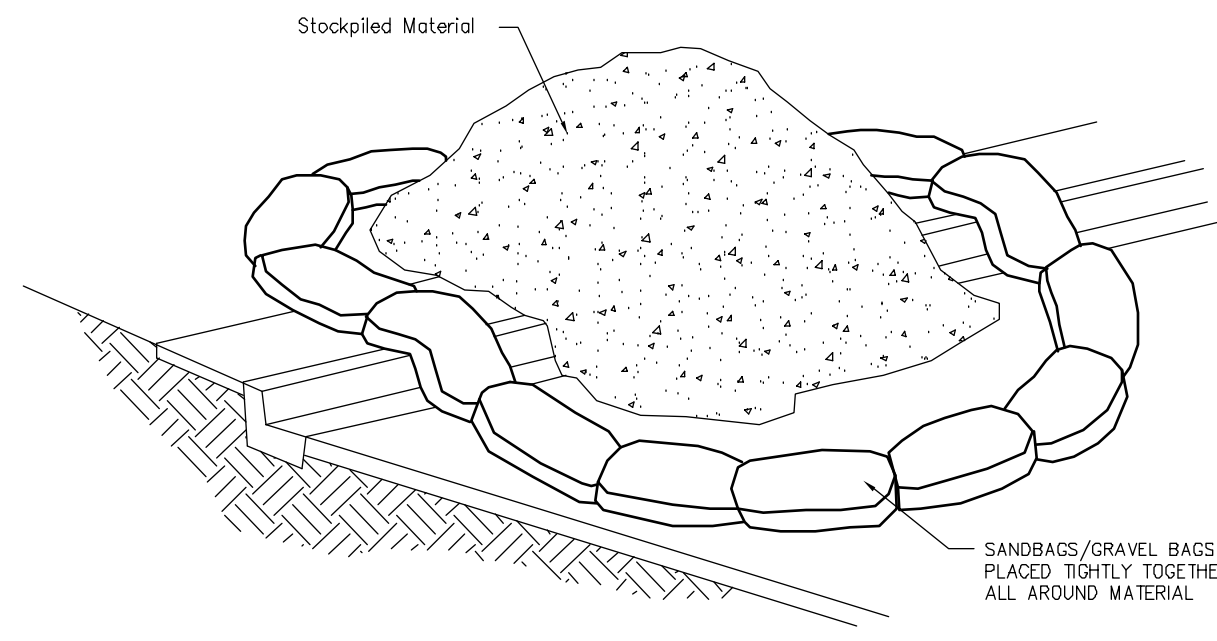
**Street Maintenance**

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

**D Erosion Control**

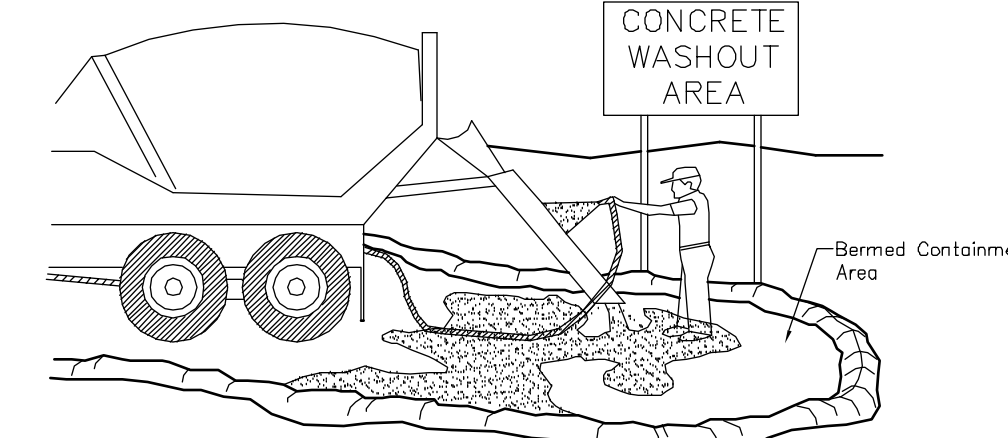
- Notes:
- Soil/Slope stabilization practices shall be designed to preserve existing vegetation where feasible and to revegetate open areas as soon as feasible after grading. These control practices shall include temporary seeding, permanent seeding, mulching, sod stabilization, vegetative buffer strips,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

**E Material Storage**



- Notes:
- 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.
  - 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**



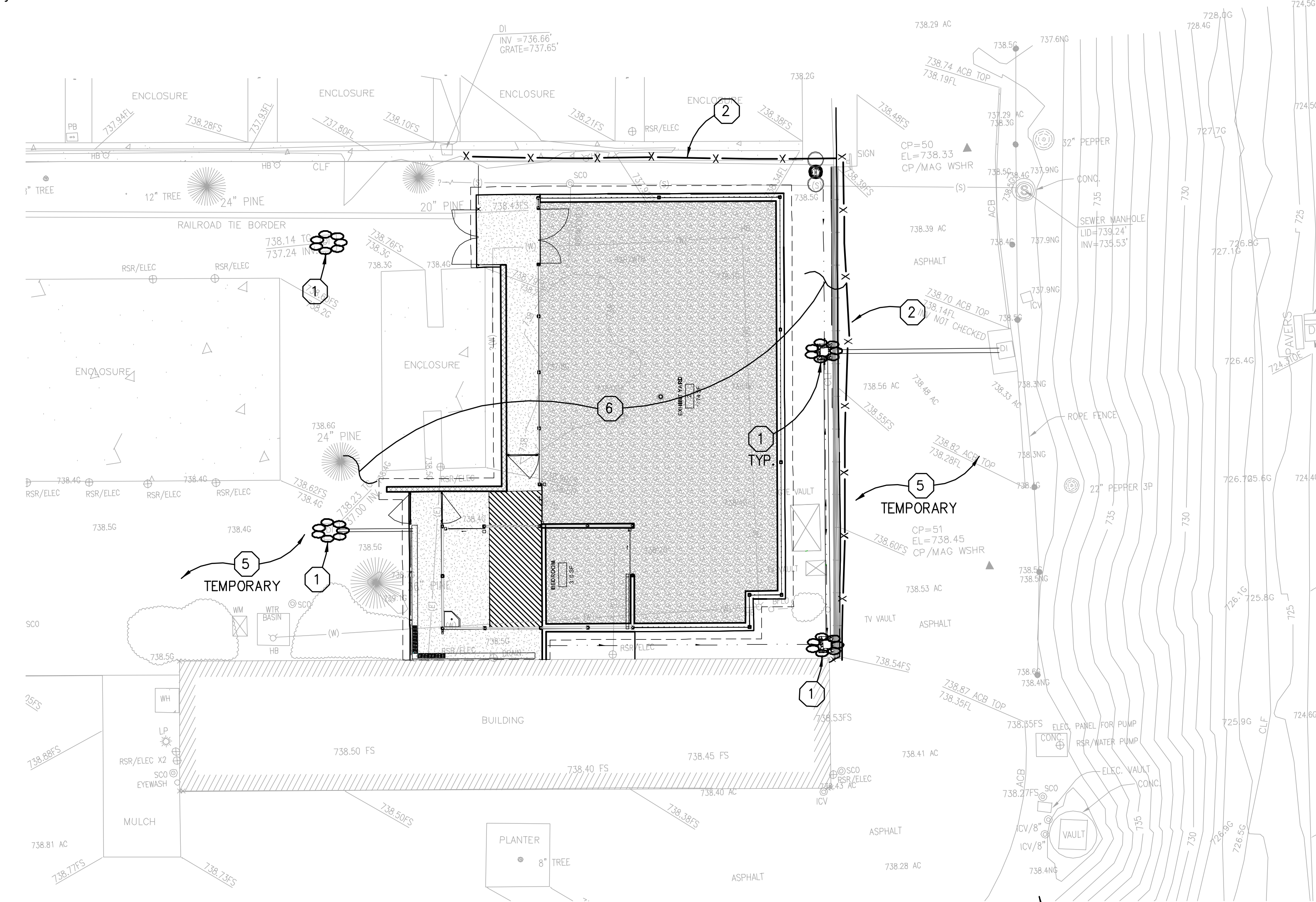
- Notes:
- Excess and waste concrete shall not be washed into the street or into a drainage system.
  - For washout of concrete and mortar products, a designated containment facility of sufficient capacity to retain liquid and solid waste shall be provided on site.
  - Slurry from concrete and asphalt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

**G Vehicle/Equipment Fueling**

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

**H Equipment Repair/Maintenance**

- Notes:
- 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.
  - 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.
  - Designate on-site vehicle and equipment maintenance areas, away from storm drain inlets and watercourses.
  - Always use secondary containment, such as a drain pan or drop cloth, to catch spills and leaks when removing or changing fluids.
  - Legally dispose of used oils, fluids, and lubricants.
  - Provide spill containment dikes or secondary containment around stored oil, fuel, and chemical drums.
  - Maintain an adequate supply of absorbent spill cleanup materials in designated area.



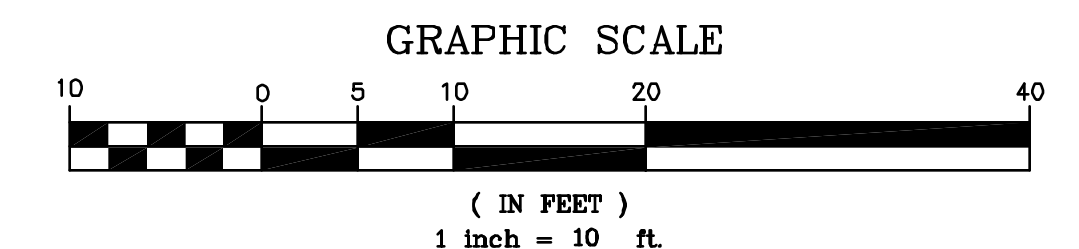
**EROSION CONTROL NOTES**

- INSTALL GRAVELBAGS AROUND DRAINAGE INLETS.
- INSTALL FIBER ROLL (STRAW WADDLE) PER EROSION CONTROL NOTES "B" ON HEREON.
- PROVIDE STABILIZED CONSTRUCTION ENTRANCE PER NOTES "C" ON HEREON. (LOCATION TBD)
- NOT USED.
- EQUIPMENT STAGING AREA.
- DUST CONTROL PER WE-1 HEREON

**LEGEND**

- X - X - FIBER ROLL / STRAW WADDLE
- OOOOO GRAVEL BAGS

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



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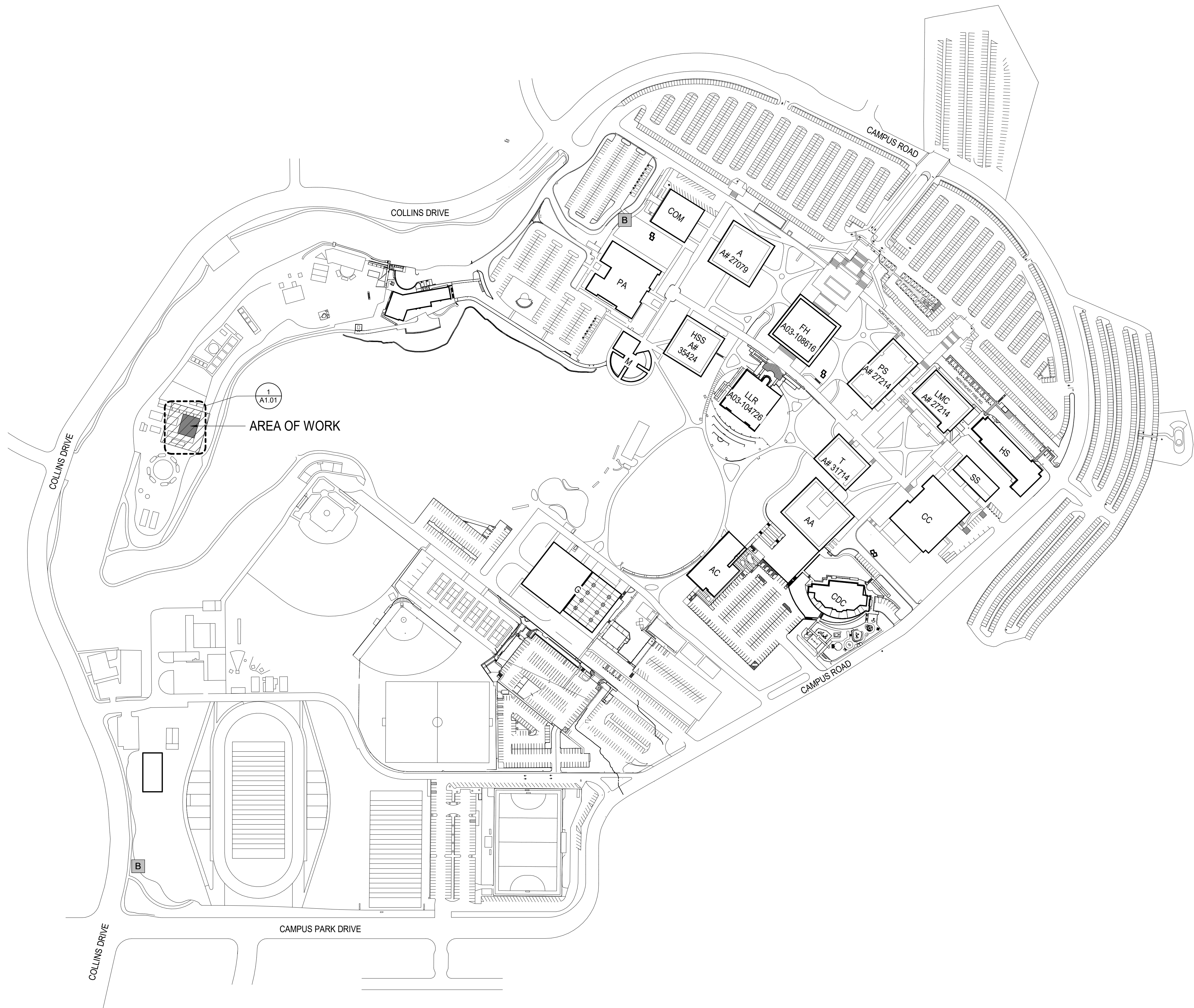
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**EROSION AND SEDIMENT CONTROL PLAN**

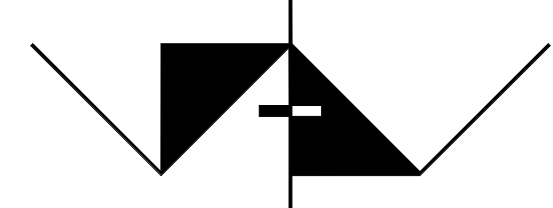
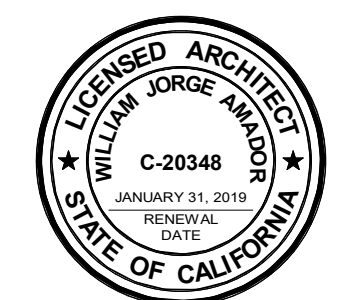

MOORPARK COMMUNITY COLLEGE LION ENCLOSURE

L&A PROJECT No.	18-339
SHEET	C4

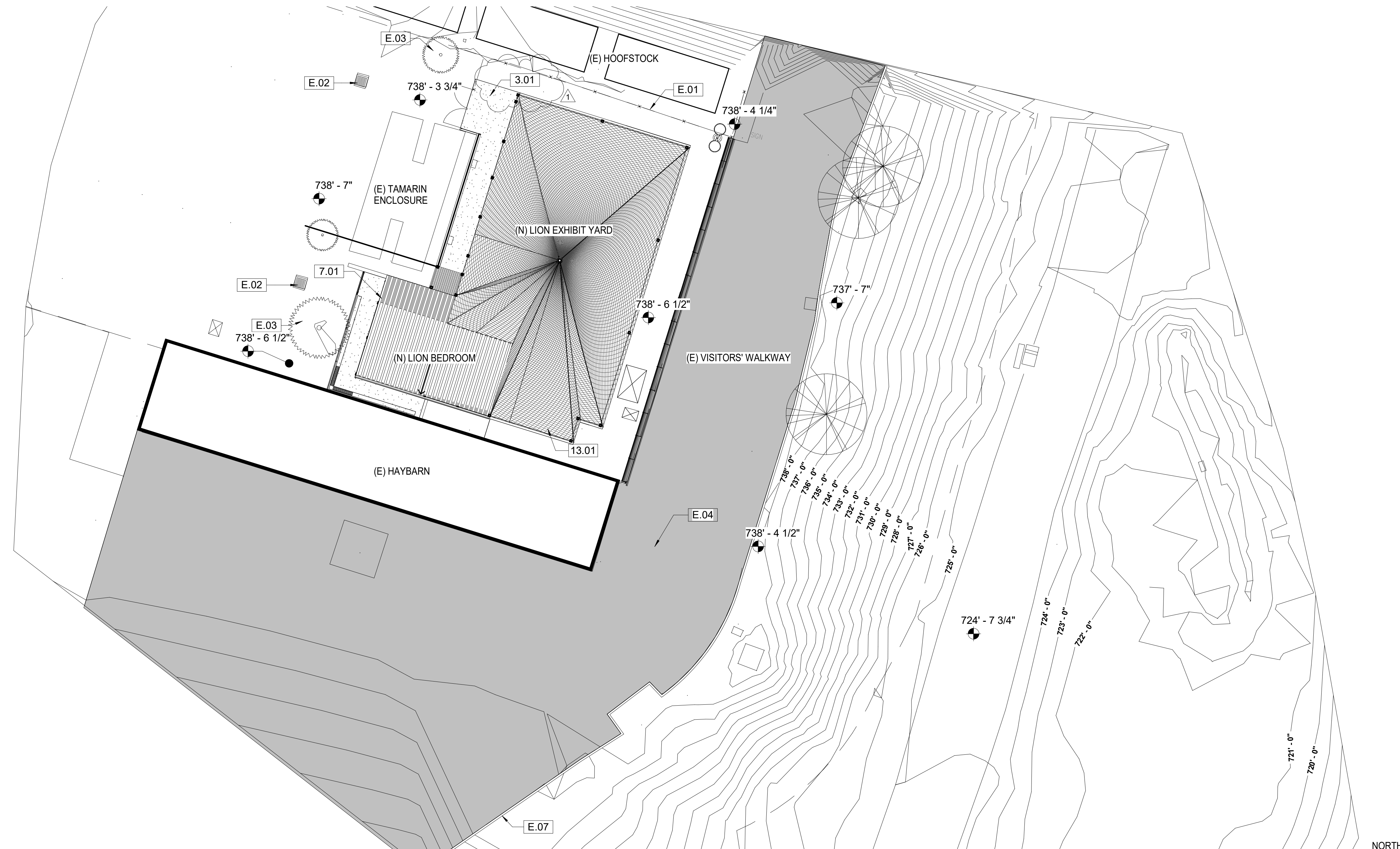




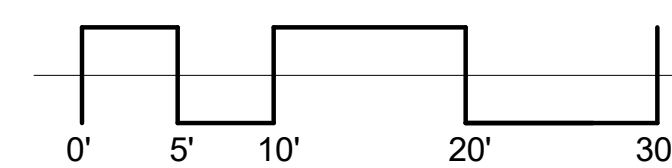
1 CAMPUS SITE PLAN  
1" = 160'-0"

 <b>AMADOR WHITTLE</b> ARCHITECTS, INC.	 28328 AGOURA ROAD, SUITE 203 AGOURA HILLS, CA 91301 (805) 530-3938, (818) 874-0071
<b>LION ENCLOSURE</b>  EXOTIC ANIMAL TRAINING & MANAGEMENT 7075 CAMPUS ROAD MOORPARK, CA 93021  <b>BID SET</b>	
<small>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.</small>	
REVISIONS     	DATE: 06/24/19 DRAWN: JA CHECK: WJA JOB NO: 18-MPC-30
<b>OVERALL SITE PLAN</b> <b>A1.00</b> <small>IF THIS SHEET IS NOT 36" X 24", IT IS NOT FULL SIZE. SCALE DRAWINGS ACCORDINGLY.</small>	





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



**EXISTING KEYNOTES**

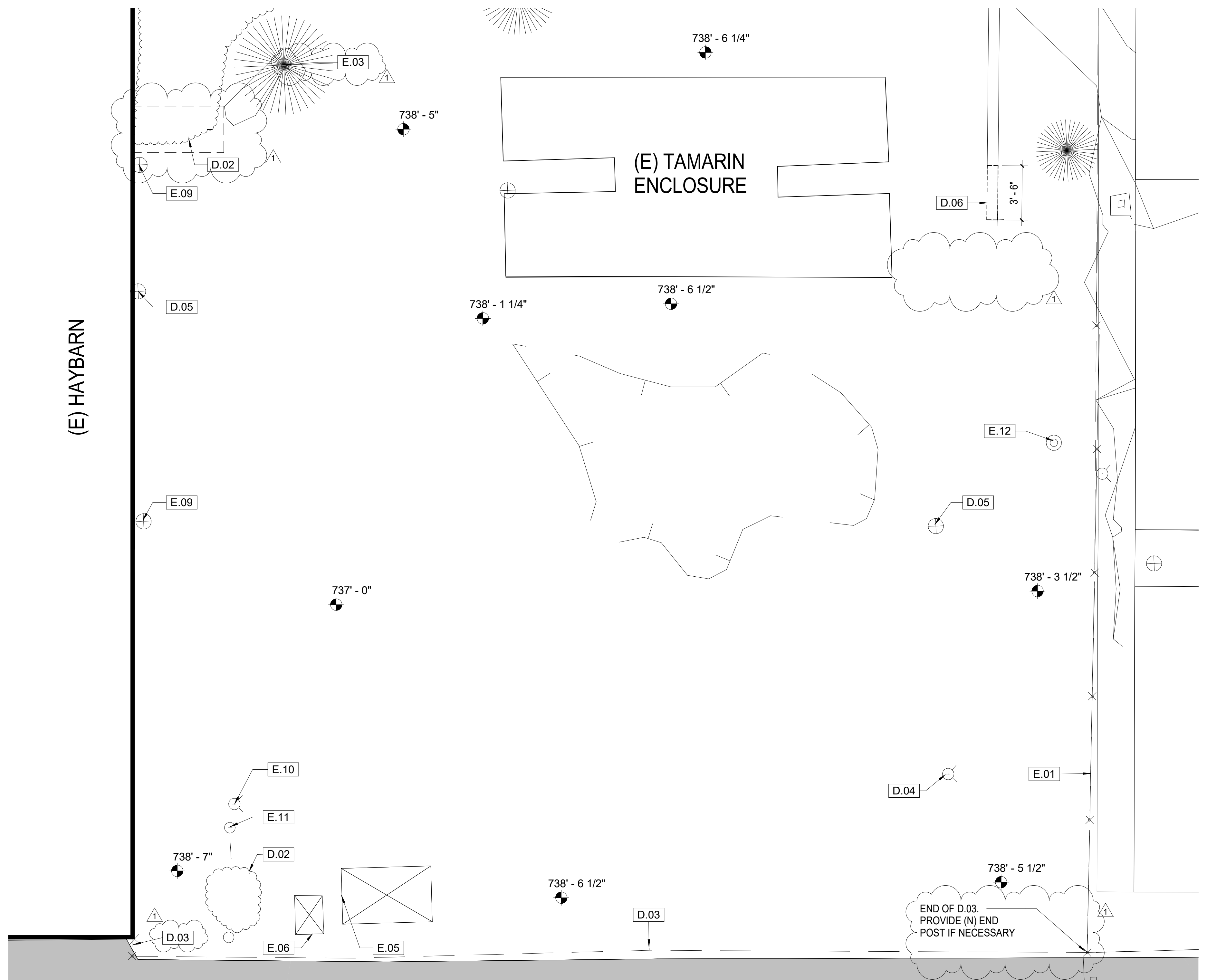
- E.01 (E) CHAINLINK FENCE
- E.02 (E) AREA DRAIN
- E.03 (E) TREE TO REMAIN
- E.04 (E) ASPHALT PAVING
- E.07 (E) ASPHALT CURB

**KEYNOTES**

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

 <b>AMADOR WHITTLE</b> <b>ARCHITECTS, INC.</b>	 <small>28328 AGOURA ROAD, SUITE 203          AGOURA HILLS, CA 91301          (805) 530-3938, (818) 874-0071</small>
<p><b>LION ENCLOSURE</b></p> <p>EXOTIC ANIMAL TRAINING &amp; MANAGEMENT          7075 CAMPUS ROAD          MOORPARK, CA 93021</p> <p><b>BID SET</b></p>	
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<small>REVISIONS</small> 07/11/19 ADDENDUM #1	<small>DATE: 06/24/19</small> <small>DRAWN: Author</small> <small>CHECK: Checker</small> <small>JOB NO: 18-MPC-30</small>
<p><b>ENLARGED SITE PLAN</b></p> <p style="font-size: 24px; font-weight: bold;">A1.01</p> <p style="font-size: 8px;">IF THIS SHEET IS NOT 36" X 24", IT IS NOT FULL SIZE. SCALE DRAWINGS ACCORDINGLY.</p>	





**1 DEMOLITION PLAN**  
1/4" = 1'-0"

**DEMOLITION KEYNOTES**

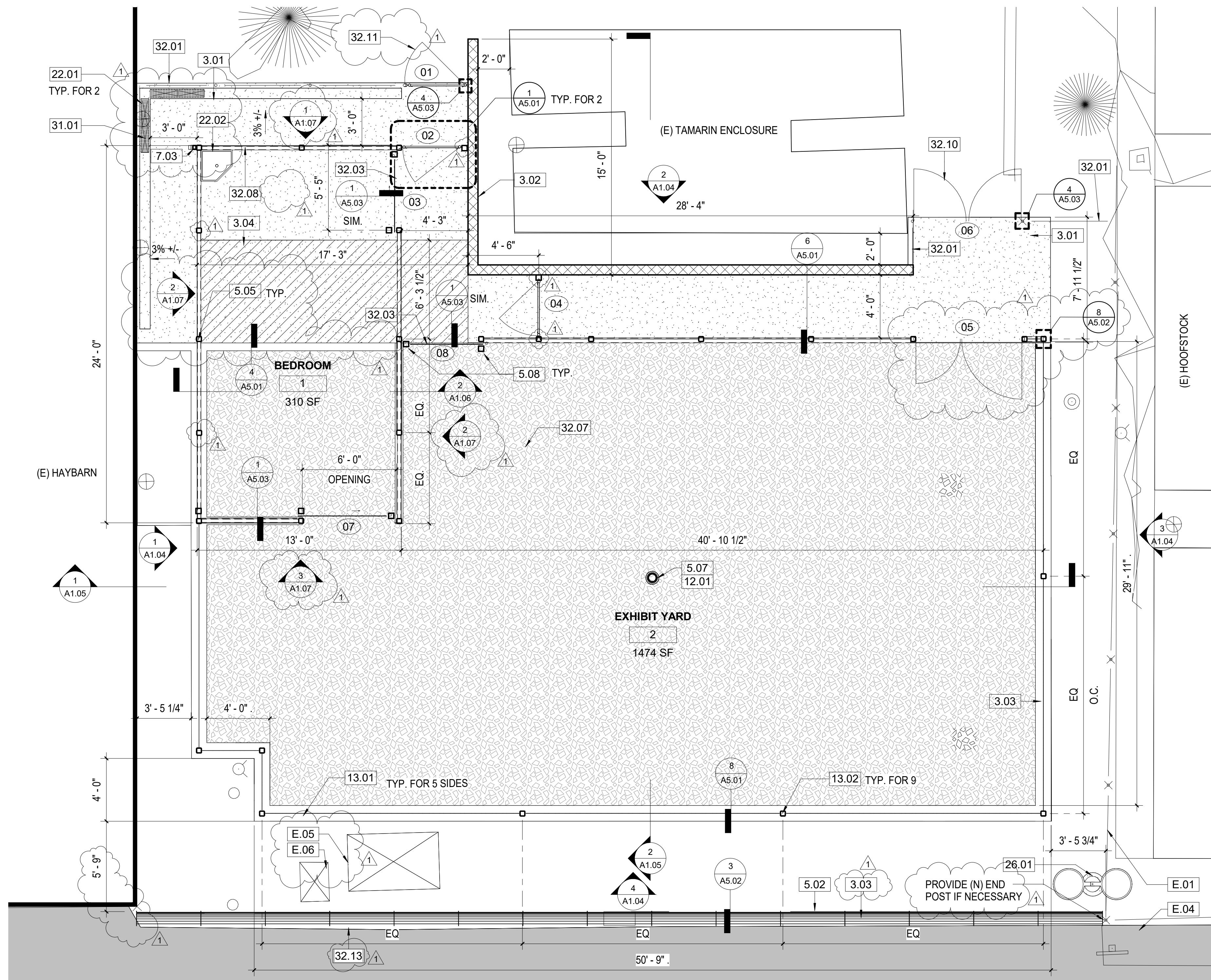
- D.02 DEMOLISH (E) SHRUB
- D.03 DEMOLISH (E) CHAINLINK FENCE
- D.04 DEMOLISH (E) HOSE BIB
- D.05 CAP AND REMOVE (E) WATER PIPE
- D.06 DEMOLISH A PORTION OF (E) RAILROAD TIE

**EXISTING KEYNOTES**

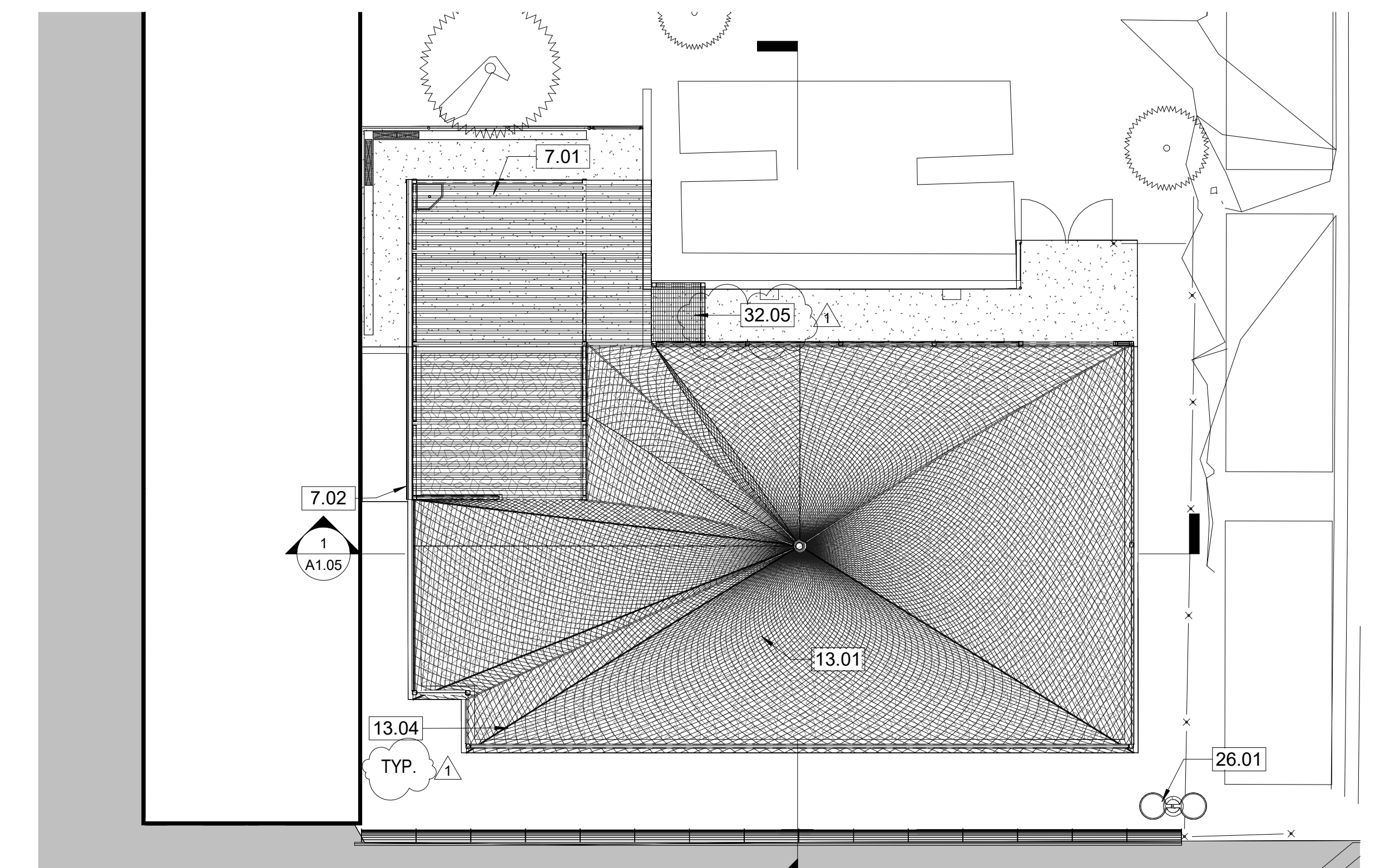
- E.01 (E) CHAINLINK FENCE
- E.03 (E) TREE TO REMAIN
- E.05 (E) UTILITY VAULT TO REMAIN
- E.06 (E) TV VAULT TO REMAIN
- E.09 (E) ELECTRICAL CONDUIT TO REMAIN
- E.10 (E) HOSE BIB TO REMAIN
- E.11 (E) BACKFLOW TO REMAIN
- E.12 (E) SEWER CLEANOUT TO REMAIN

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<b>LION ENCLOSURE</b>	
<small>EXOTIC ANIMAL TRAINING &amp; MANAGEMENT          7075 CAMPUS ROAD          MOORPARK, CA 93021</small>	
<b>BID SET</b>	
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<b>DEMOLITION PLAN</b>	
<b>A1.02</b>	
<small>IF THIS SHEET IS NOT 36" X 24", IT IS NOT FULL SIZE. SCALE DRAWINGS ACCORDINGLY.</small>	





**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; UNEVEN DOUBLE SWING GATE WITH 4' AND 3' DOORS; 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

- GENERAL NOTES**
- 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
  - HAND-WOVEN STAINLESS STEEL MESH, LACING WIRE, GALVANIZED SUPPORT CABLES AND CONNECTING HARDWARE SHALL BE BLACK OXIDE FINISH
  - CMU SHALL BE PRECISION GRADE, COLOR TO BE OAK BY ANGELUS BLOCK WITH MATCHING COLORED GROUT, OR EQUAL

**EXISTING KEYNOTES**

- E.01 (E) CHAINLINK FENCE
- E.04 (E) ASPHALT PAVING
- E.05 (E) UTILITY VAULT TO REMAIN
- E.06 (E) TV VAULT TO REMAIN

**KEYNOTES**

- 3.01 CONCRETE SLAB
- 3.02 CMU BLOCK WALL SEE 5/A5.01
- 3.03 4" HIGH CONCRETE CURB
- 3.04 HEATED CONCRETE SLAB SEE ELECTRIC DRAWINGS
- 5.02 48" GUARDRAIL
- 5.05 STEEL TUBE COLUMN
- 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
- 7.03 DOWNSPOUT
- 12.01 SCRATCH POST OFOI

**KEYNOTES**

- 13.01 CABLE WOVEN MESH NETTING
- 13.02 CABLE WOVEN MESH NETTING POST W/ LACING RODS
- 13.04 SUPPORT CABLE FOR WOVEN MESH
- 22.01 TRENCH DRAIN, SEE 5/A5.02
- 22.02 DRINKING TROUGH, SEE DETAIL 5/A5.03
- 26.01 POLE LIGHT WITH CONCRETE BASE SEE ELECTRIC DRAWINGS
- 31.01 SWALE SEE CIVIL DRAWINGS
- 32.01 CHAINLINK FENCE
- 32.03 WELDED WIRE MESH SLIDING GATE
- 32.05 WELDED WIRE MESH ROOF
- 32.07 3" DECOMPOSED GRANITE OVER 4" BASE
- 32.08 WELDED WIRE MESH PANEL
- 32.10 8" HIGH CHAINLINK DOUBLE GATE
- 32.11 CHAINLINK SWING GATE
- 32.13 SAWCUT & PATCH A.C. PAVING - SEE DETAIL 3/A5.02

**AMADOR WHITTLE ARCHITECTS, INC.**

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**

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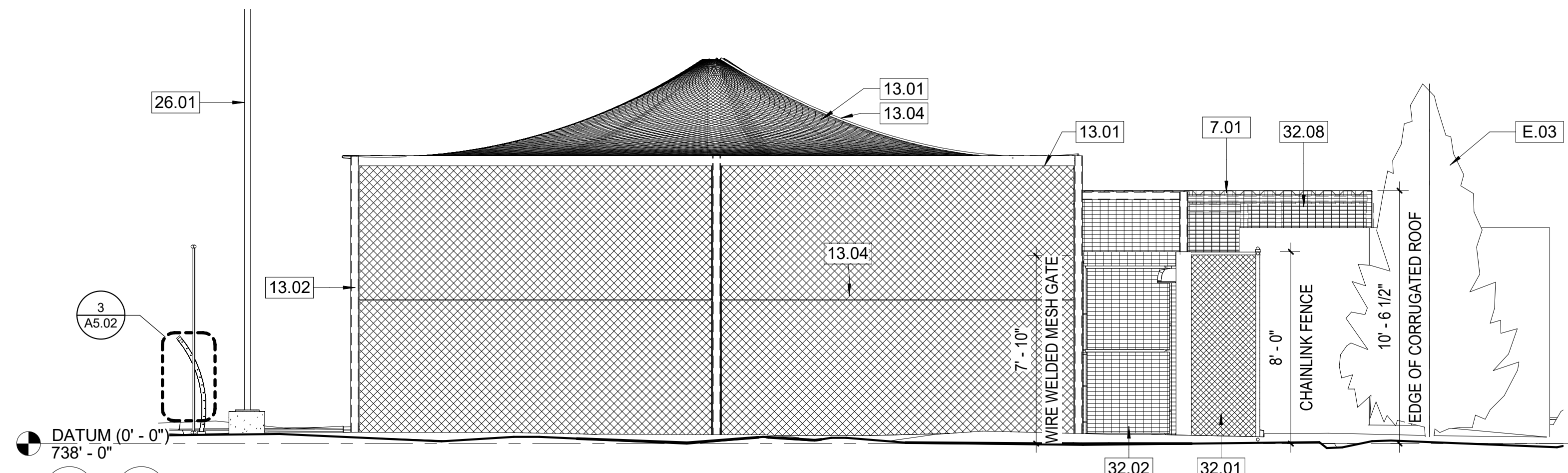
**FLOOR & ROOF PLANS**

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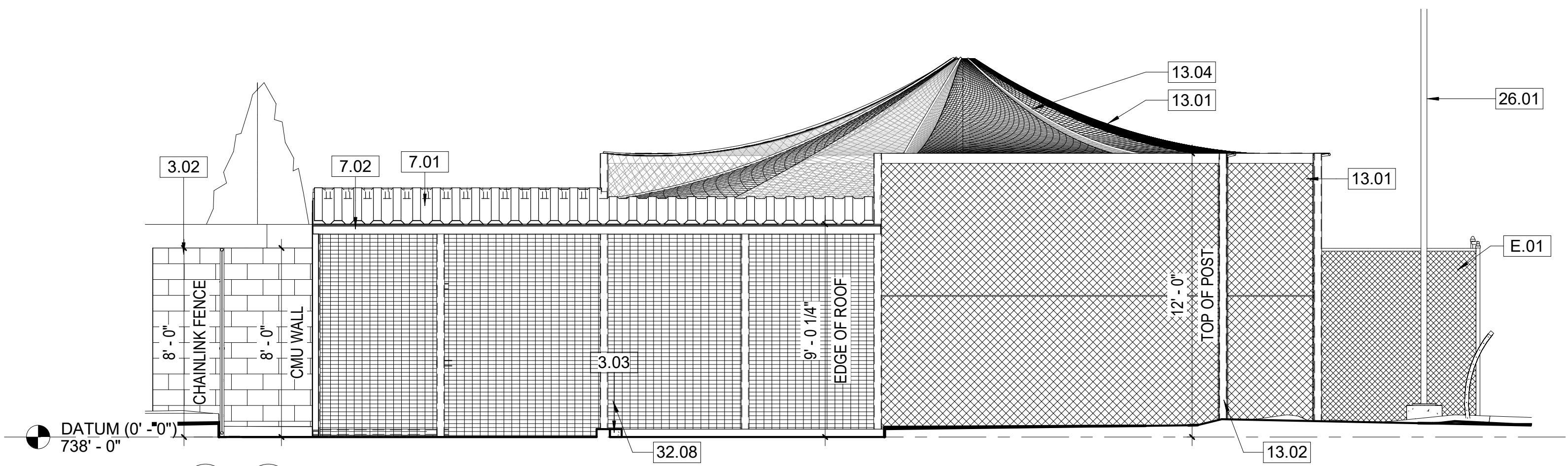
**A1.03**

OF

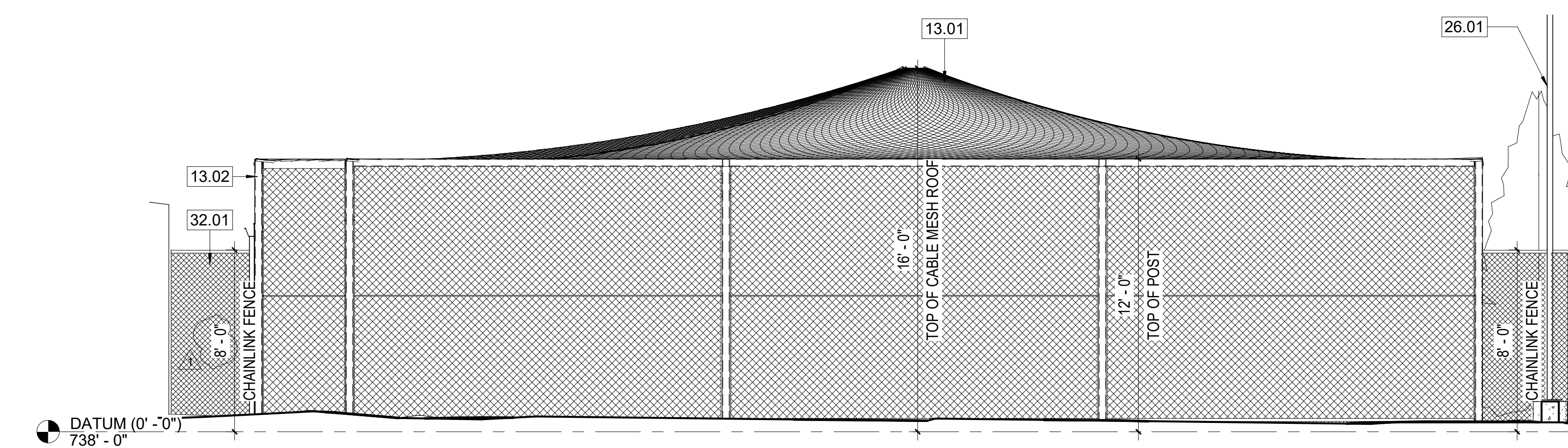




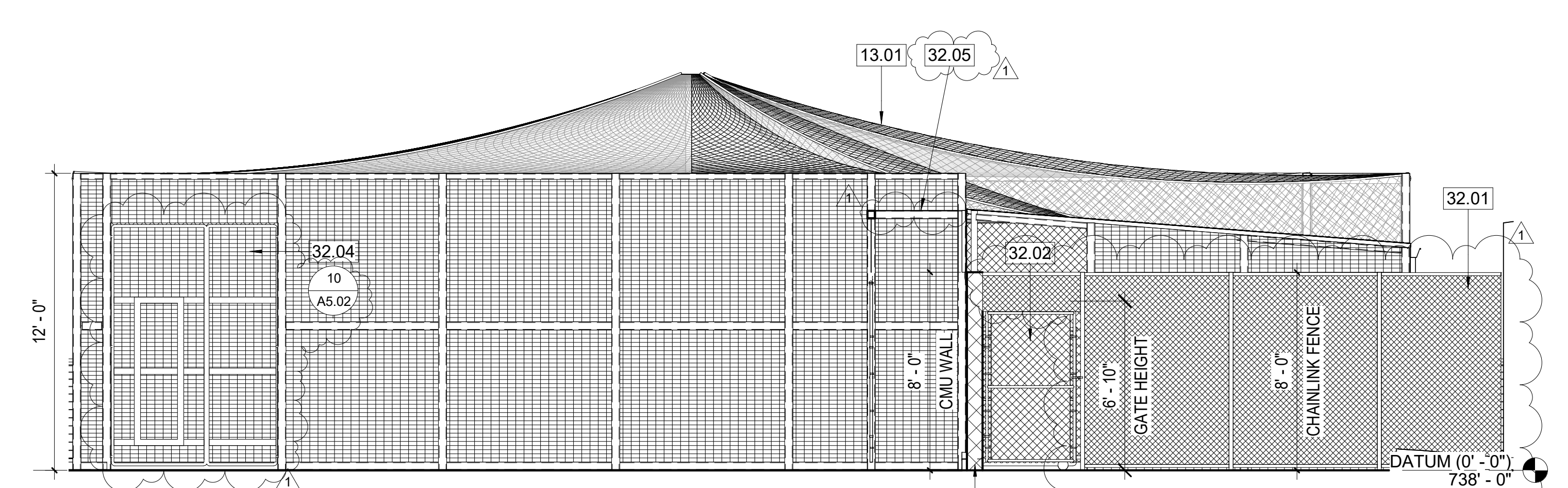
**3 NORTH ELEVATION**  
1/4" = 1'-0"



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



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



**2 WEST ELEVATION (CMU BLOCK WALL OMITTED FOR CLARITY)**  
1/4" = 1'-0"

**EXISTING KEYNOTES**

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

**KEYNOTES**

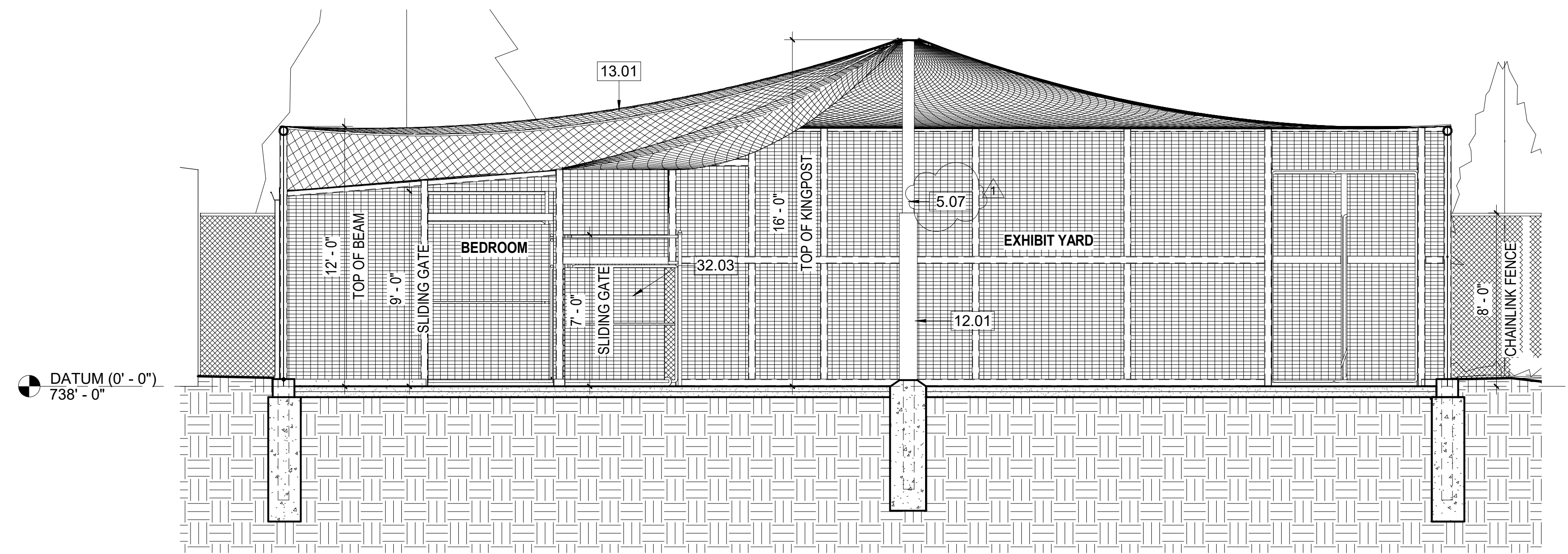
- 3.02 CMU BLOCK WALL SEE 5/A5.01
- 3.03 4" HIGH CONCRETE CURB
- 7.01 CORRUGATED STEEL ROOF
- 7.02 GUTTER
- 13.01 CABLE WOVEN MESH NETTING
- 13.02 CABLE WOVEN MESH NETTING POST W/ LACING RODS
- 13.04 SUPPORT CABLE FOR WOVEN MESH
- 26.01 POLE LIGHT WITH CONCRETE BASE SEE ELECTRIC DRAWINGS
- 32.01 CHAINLINK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

**GENERAL NOTES**

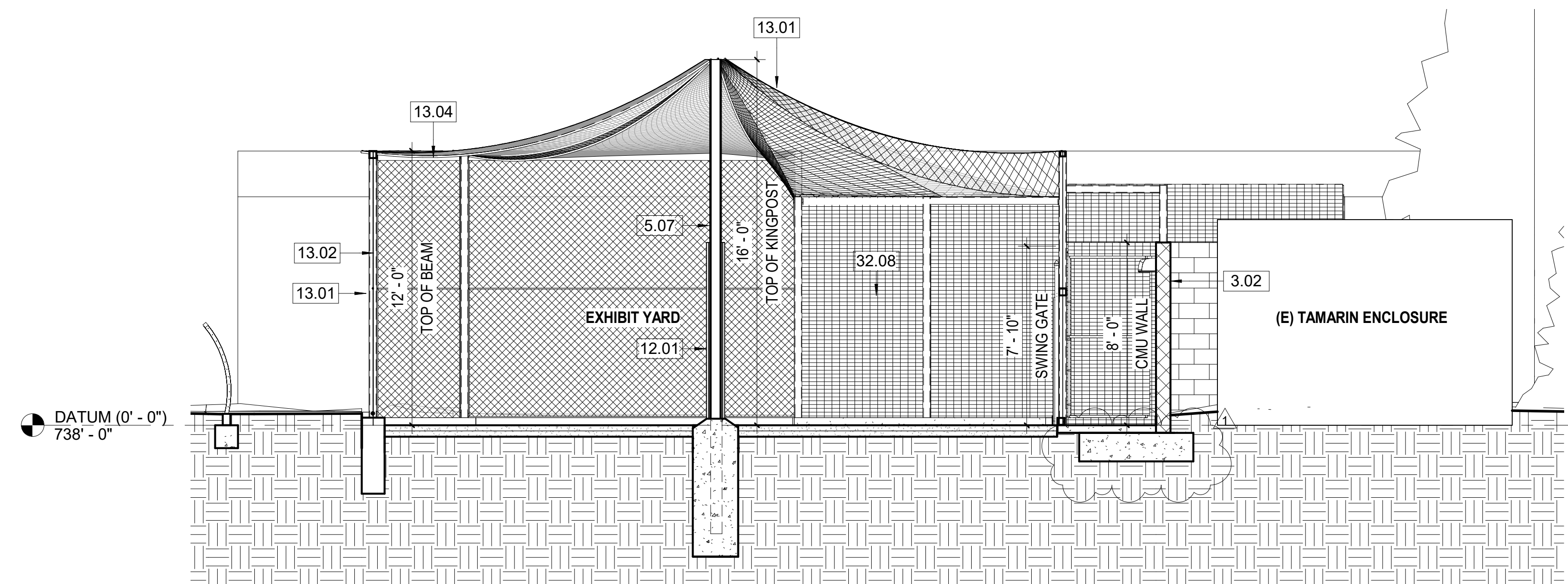
1. DATUM 0' - 0" = 738' - 0" - SEE CIVIL PLAN SHEET C2 FOR GRADE INFO

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<b>LION ENCLOSURE</b>		
EXOTIC ANIMAL TRAINING & MANAGEMENT 7075 CAMPUS ROAD MOORPARK, CA 93021 <b>BID SET</b>		
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REVISIONS  07/11/19    ADDENDUM #1	DATE: 06/24/19 DRAWN: Author CHECK: Checker JOB NO: 18-MPC-30	
<b>ENCLOSURE ELEVATIONS</b>		<b>A1.04</b>
IF THIS SHEET IS NOT 36" X 24", IT IS NOT FULL SIZE. SCALE DRAWINGS ACCORDINGLY.		





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



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

**KEYNOTES**

- 3.02 CMU BLOCK WALL SEE 5/A5.01
- 5.07 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
- 32.03 WELDED WIRE MESH SLIDING 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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**LION ENCLOSURE**

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7075 CAMPUS ROAD  
MOORPARK, CA 93021

**BID SET**

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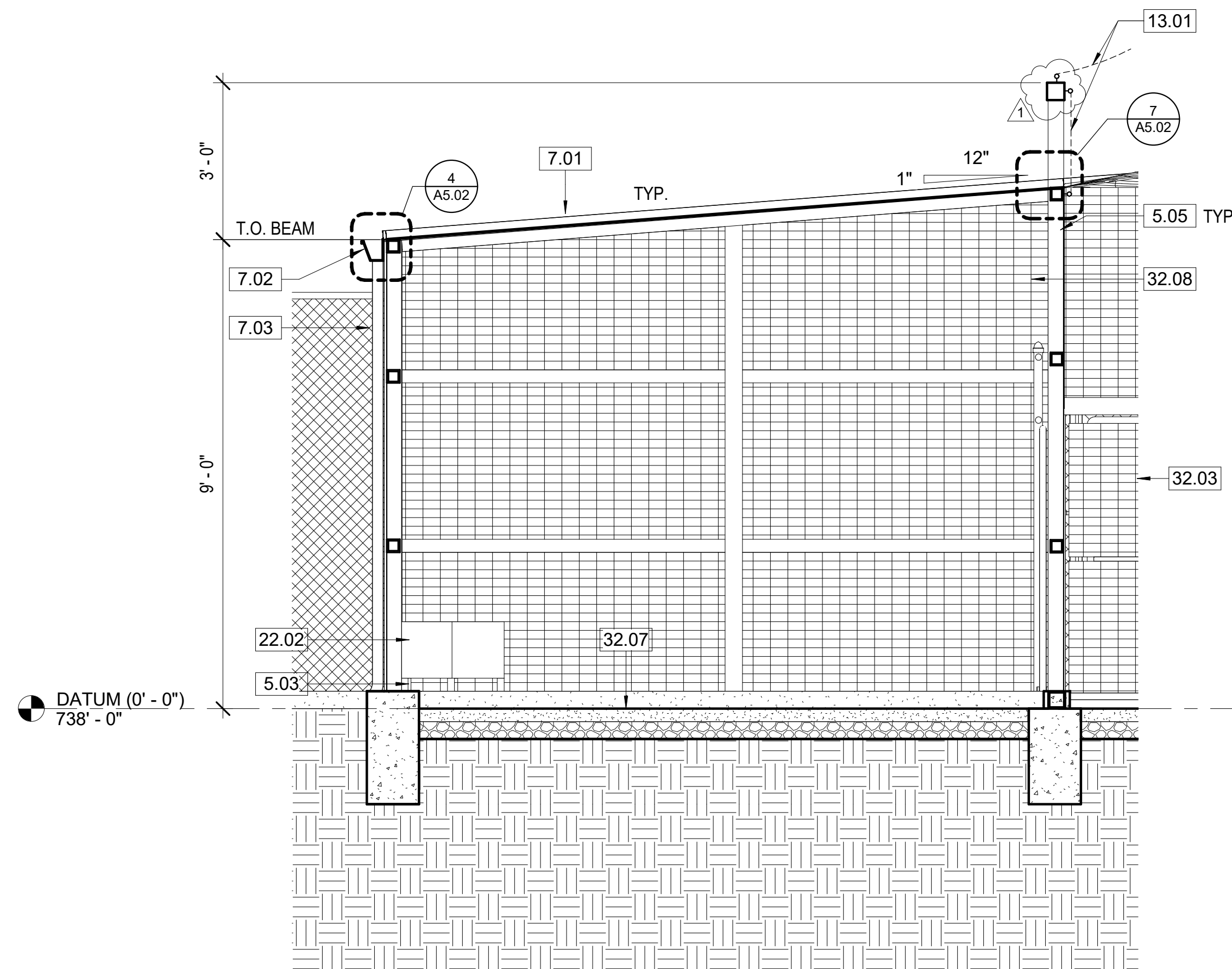
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			DRAWN: Author
			CHECK: Checker
			JOB NO: 18-MPC-30

**SECTIONS**

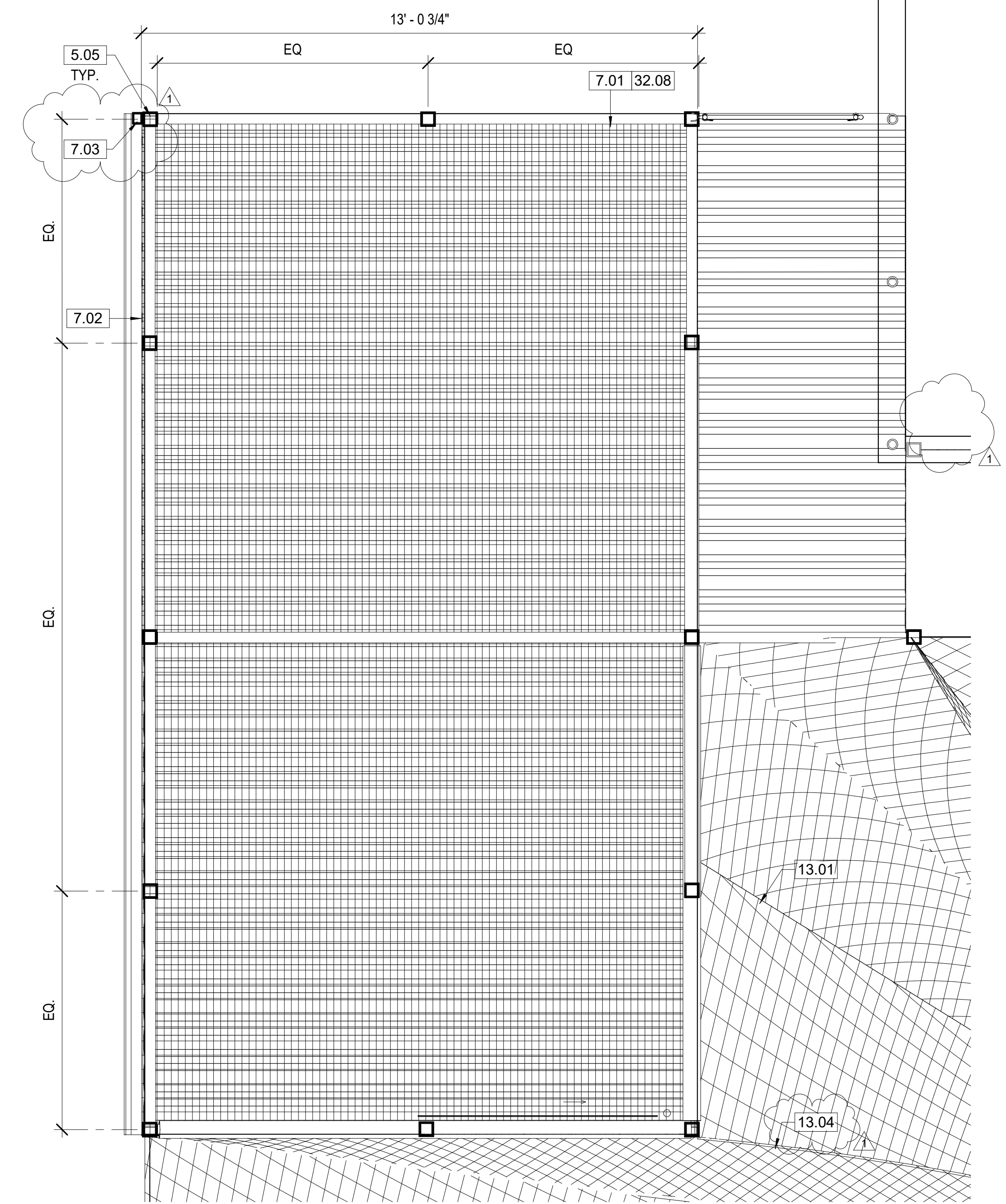
**A1.05**

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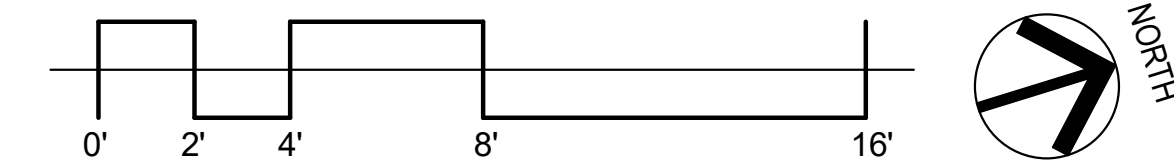




**2 LION BEDROOM CROSS SECTION**  
1/2" = 1'-0"



**1 LION BEDROOM RCP**  
1/2" = 1'-0"

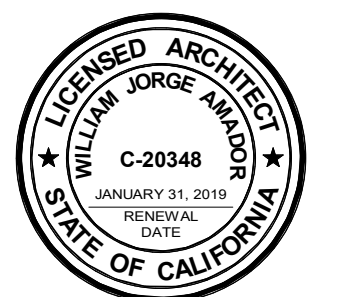


**KEYNOTES**

- 5.03 2" X 2" WELDED GALV. STEEL SUPPORT FRAME ANCHORED TO FLOOR SLAB
- 5.05 STEEL TUBE COLUMN
- 7.01 CORRUGATED STEEL ROOF
- 7.02 GUTTER
- 7.03 DOWNSPOUT
- 13.01 CABLE WOVEN MESH NETTING
- 13.04 SUPPORT CABLE FOR WOVEN MESH
- 22.02 DRINKING TROUGH, SEE DETAIL 5/A5.03
- 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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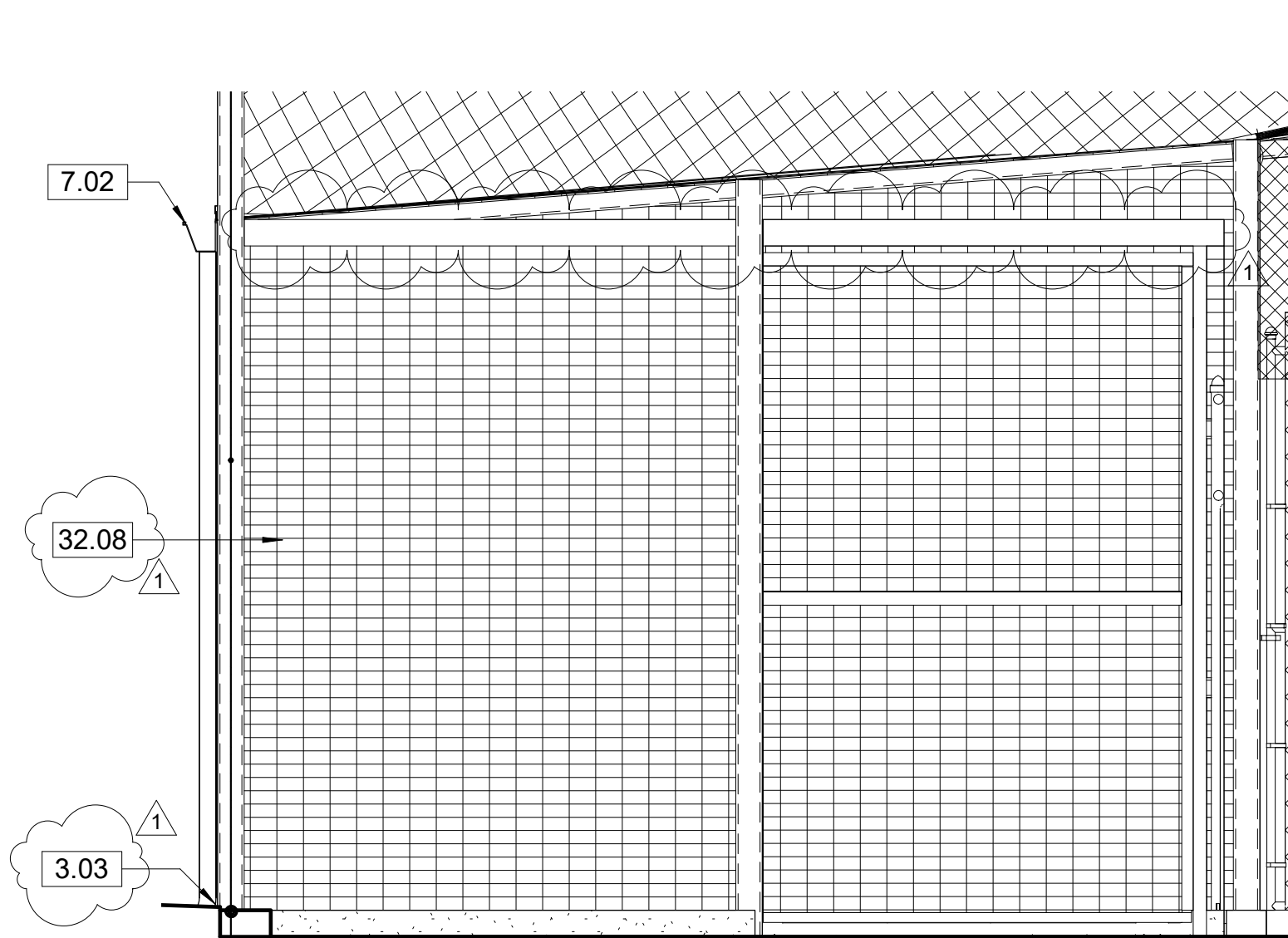
**LION BEDROOM RCP AND SECTION**

**A1.06**

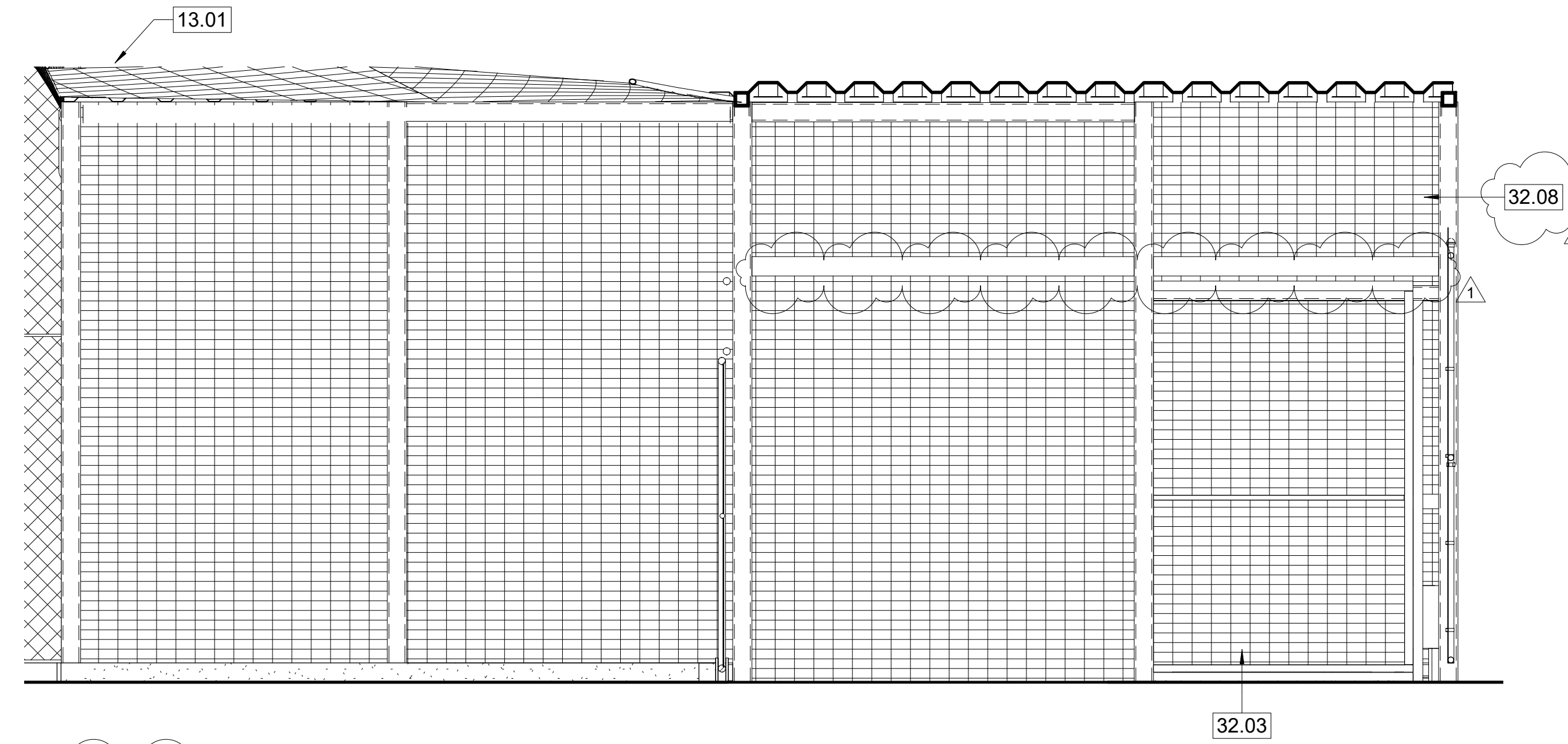
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OF

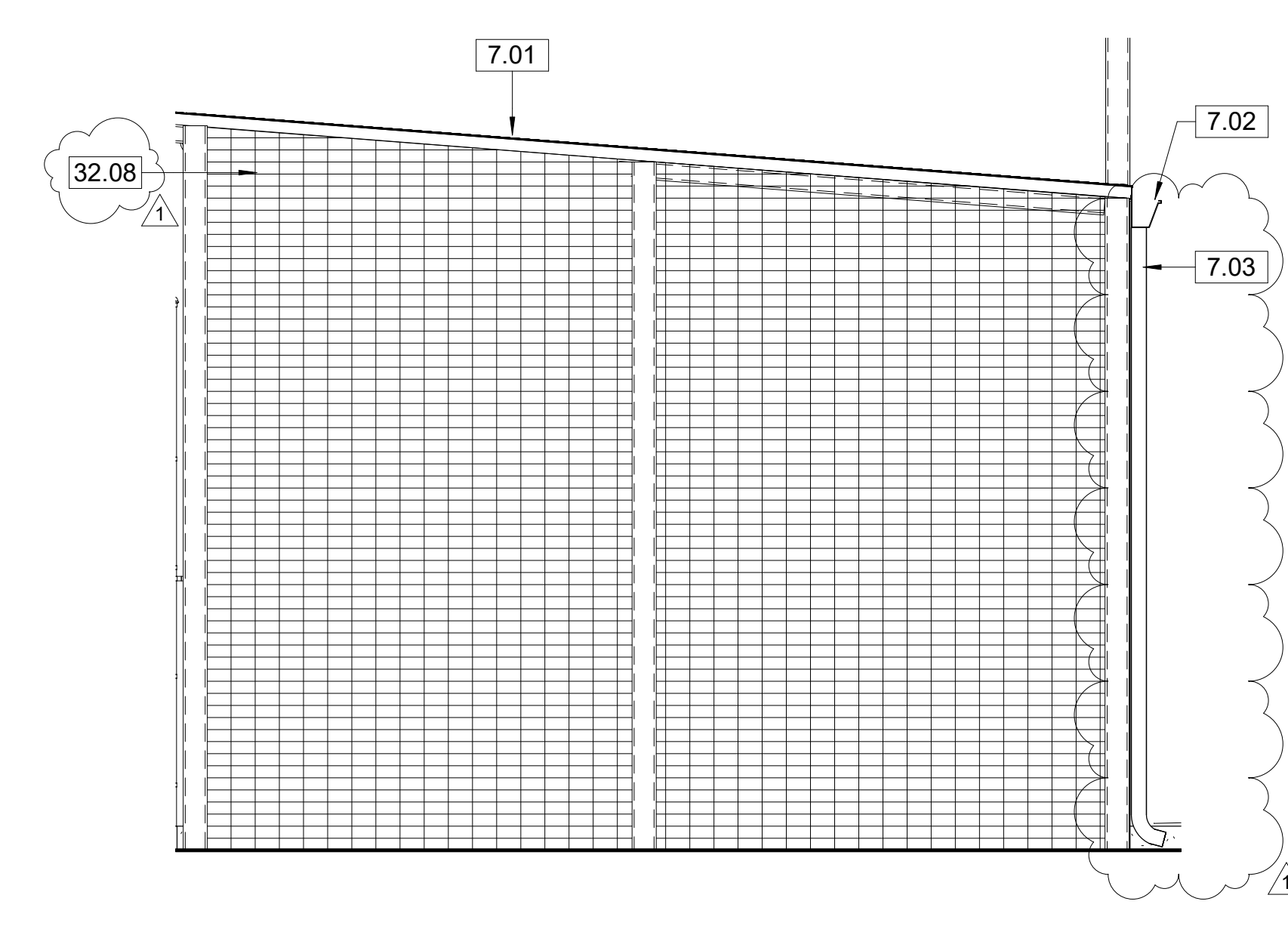




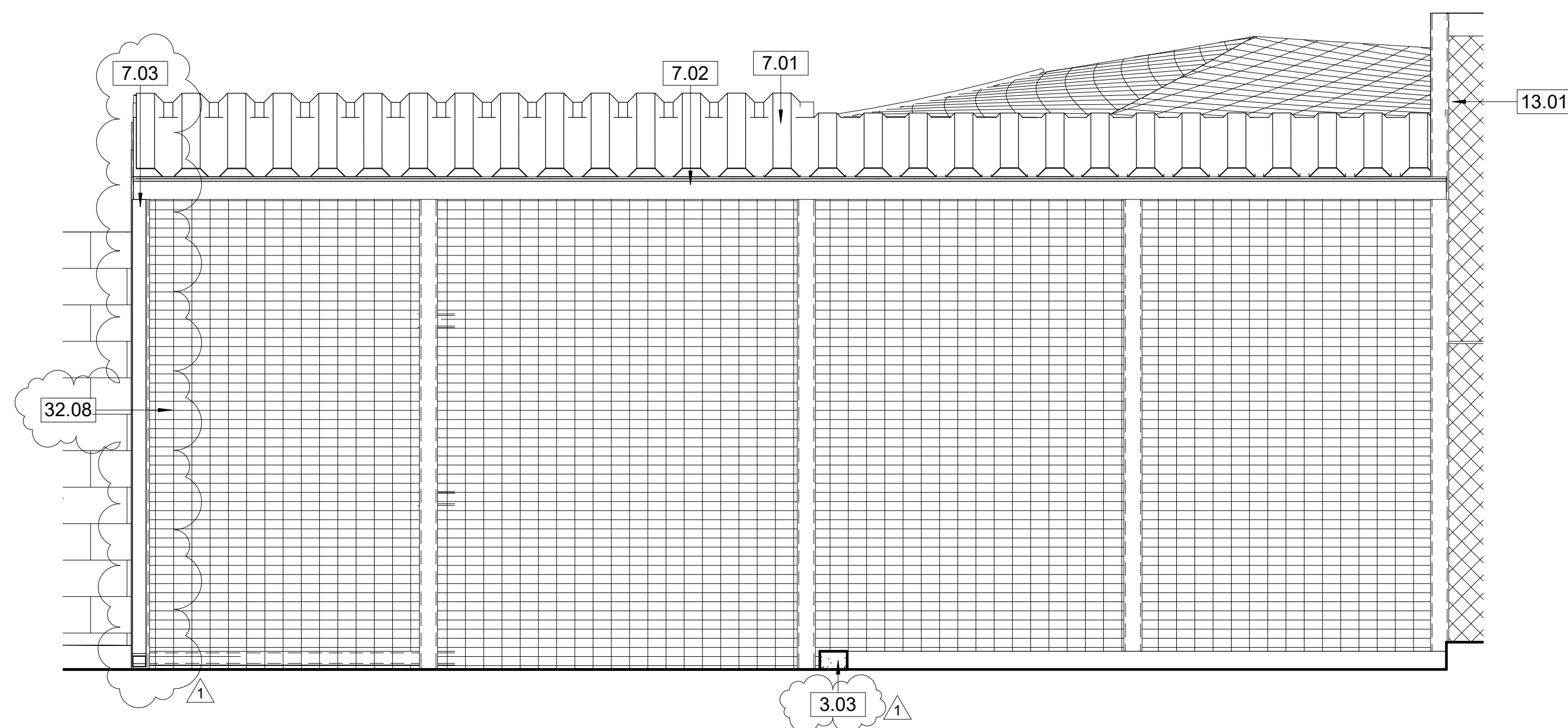
3 EAST ELEVATION  
1/2" = 1'-0"



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



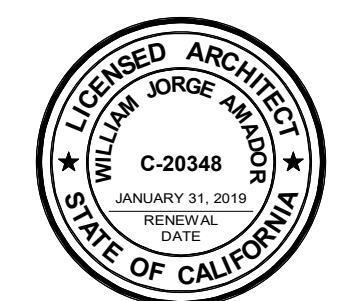
1 WEST ELEVATION  
1/2" = 1'-0"



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

**KEYNOTES**

- 3.03 4" HIGH CONCRETE CURB
- 7.01 CORRUGATED STEEL ROOF
- 7.02 GUTTER
- 7.03 DOWNSPOUT
- 13.01 CABLE WOVEN MESH NETTING
- 32.03 WELDED WIRE MESH SLIDING GATE
- 32.08 WELDED WIRE MESH PANEL



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**LION ENCLOSURE**

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7075 CAMPUS ROAD  
MOORPARK, CA 93021

**BID SET**

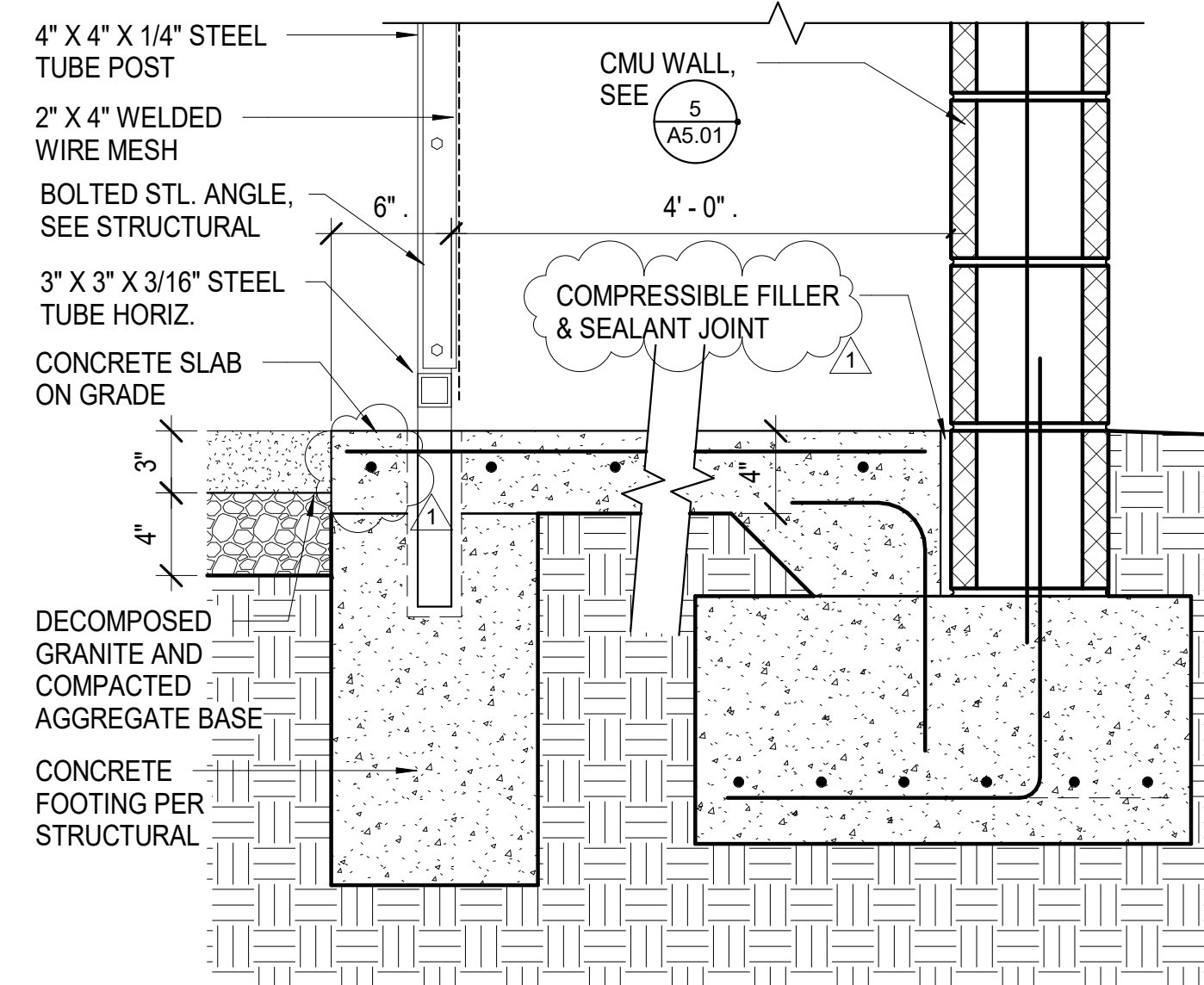
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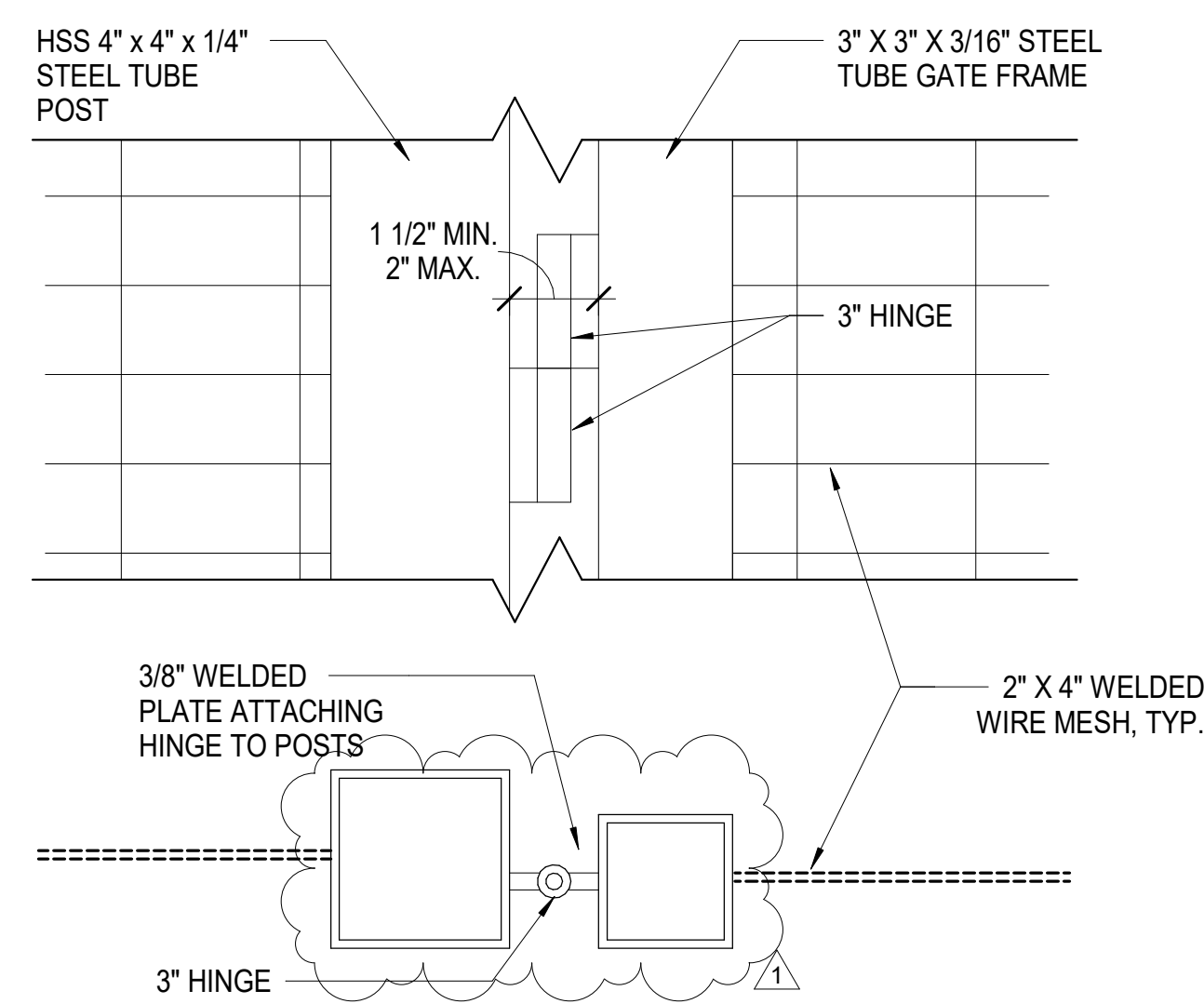
**LION BEDROOM EXTERIOR ELEVATIONS A1.07**

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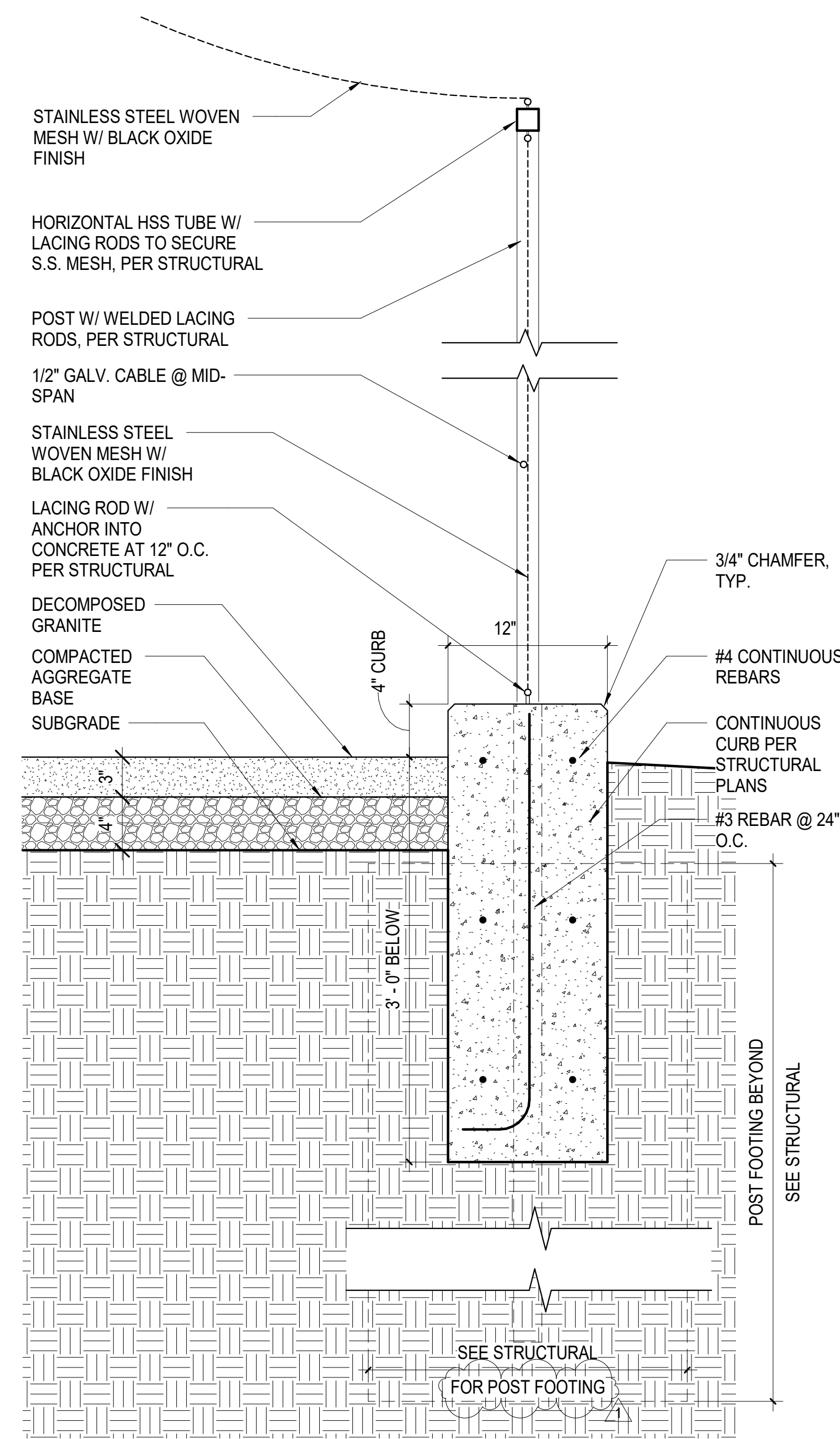




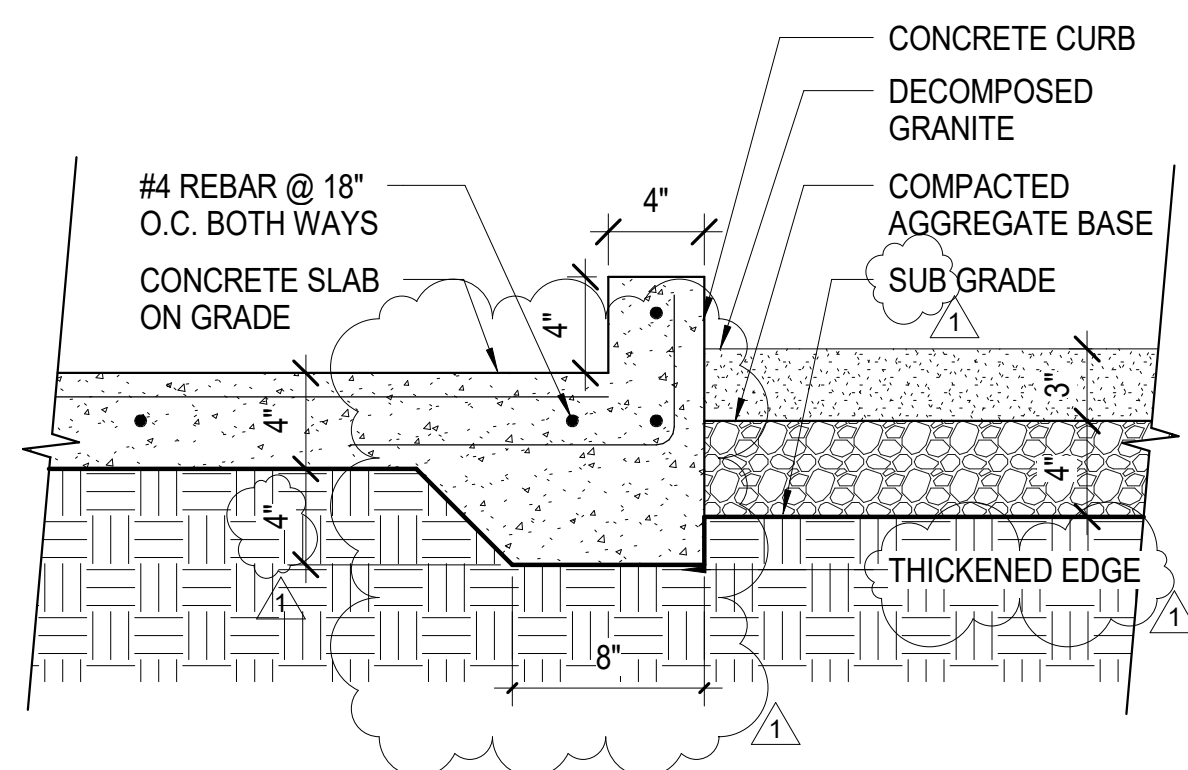
**6 CONCRETE SLAB DETAIL**  
1 1/2" = 1'-0"



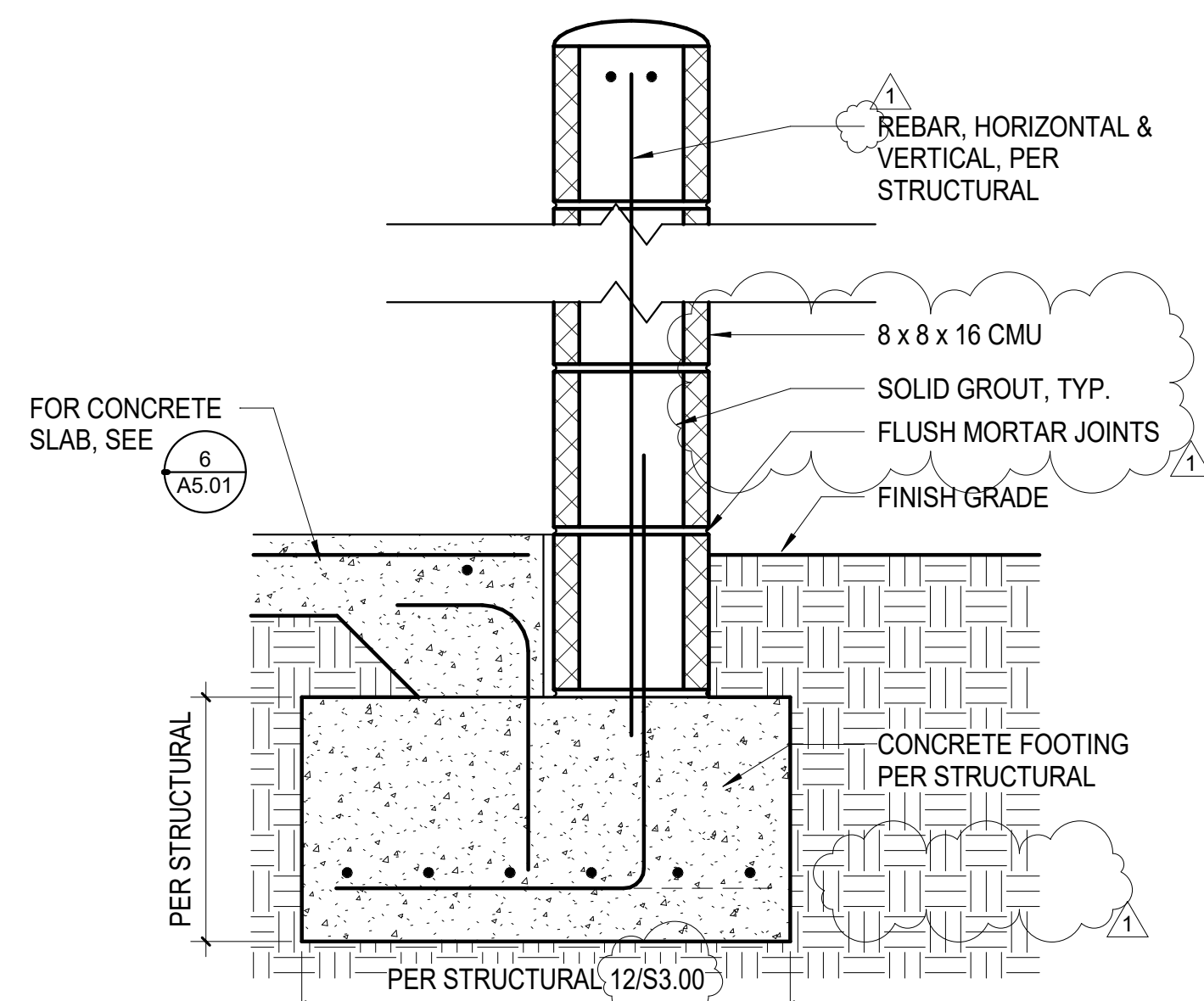
**3 GATE TYPE "B" HINGE DETAIL**  
3" = 1'-0"



**8 WOVEN MESH CURB DETAIL**  
1 1/2" = 1'-0"



**4 CONCRETE CURB DETAIL**  
1 1/2" = 1'-0"

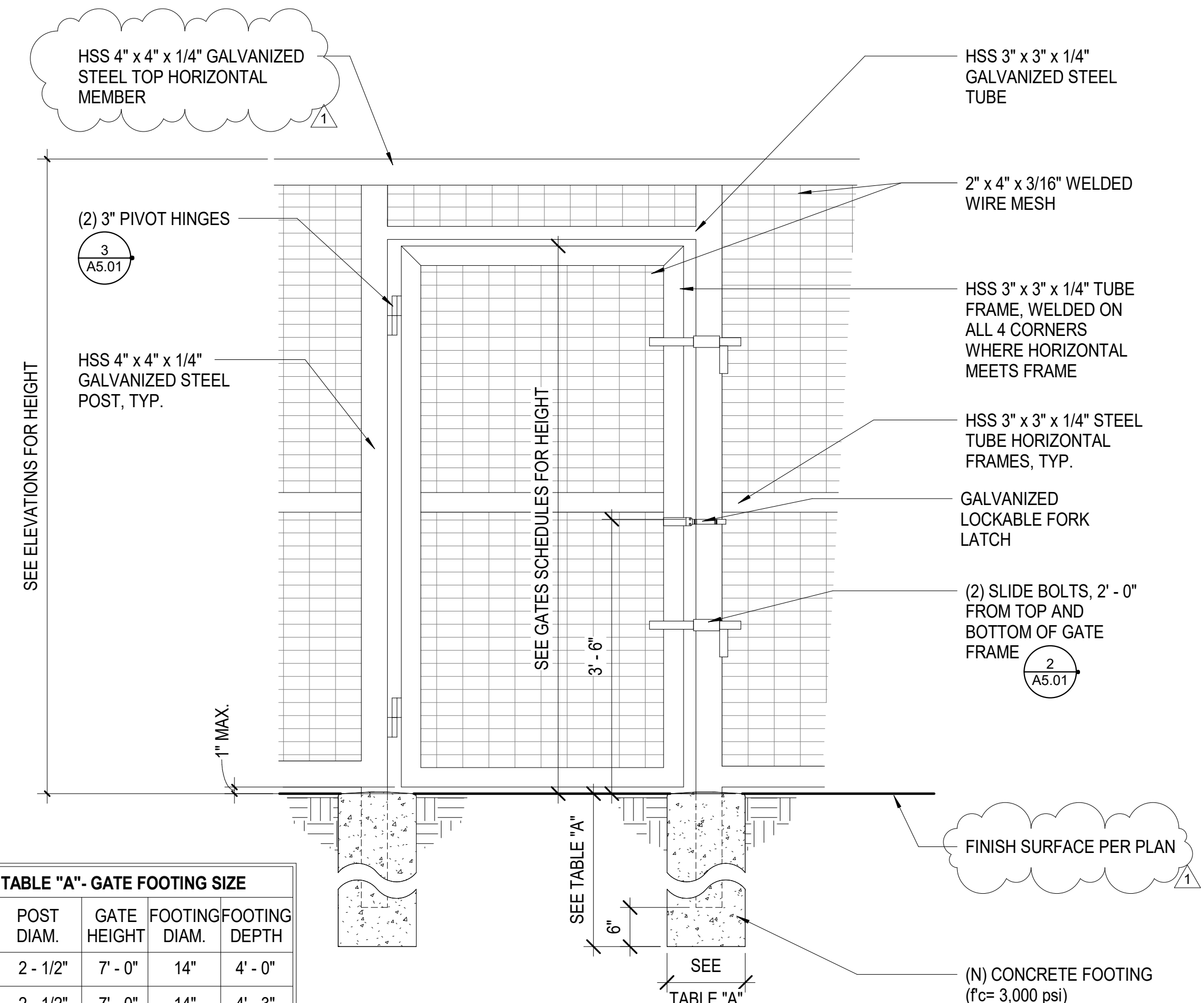


**5 CMU WALL DETAIL**  
1 1/2" = 1'-0"

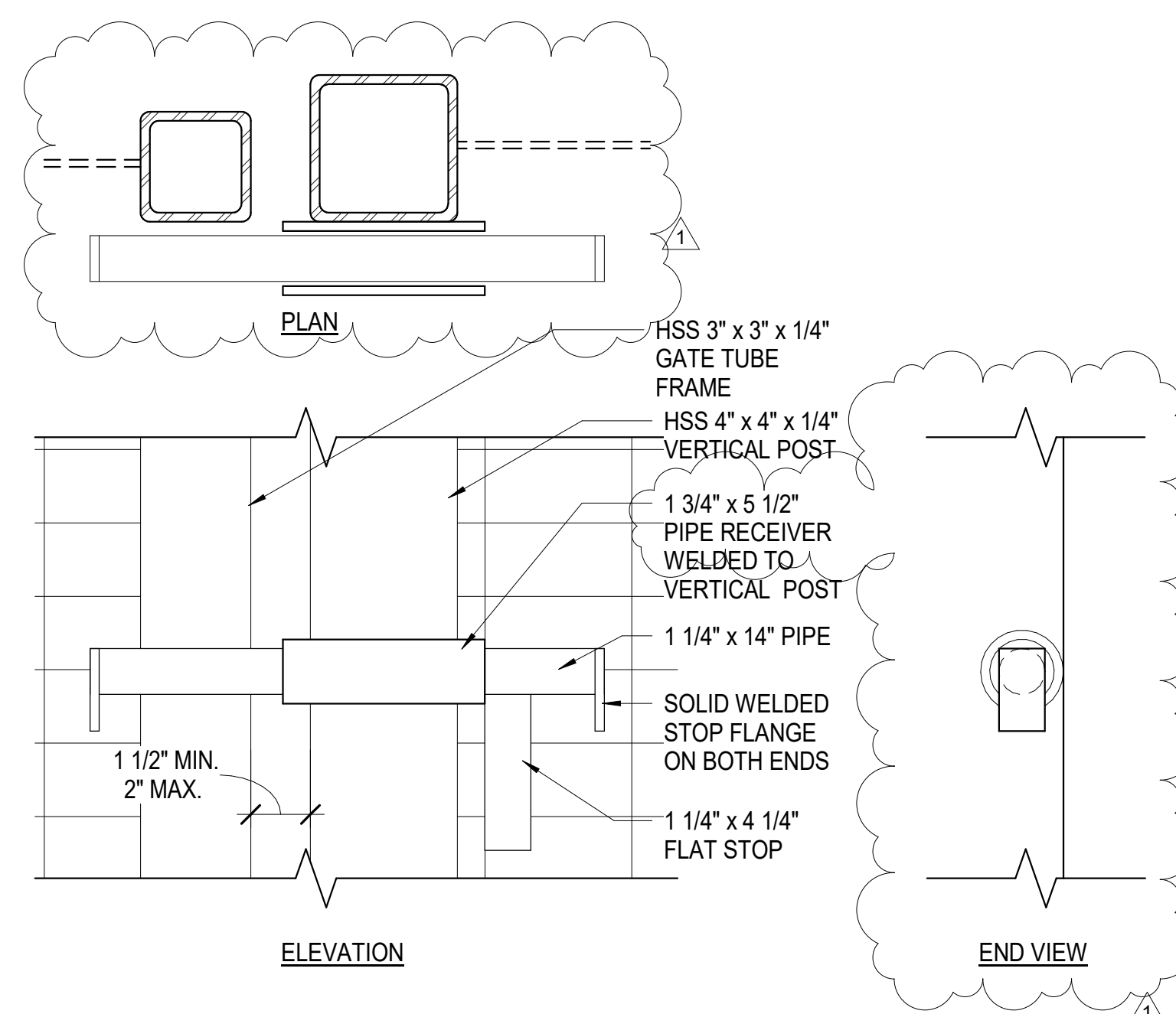
**NOTES:**  
1. ENTIRE ASSEMBLY TO BE HOT DIPPED GALVANIZED AFTER FABRICATION  
2. ALL WELDS TO BE GROUND SMOOTH

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"

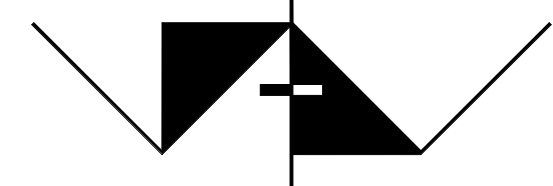
TABLE "A" - GATE FOOTING SIZE				
GATE SIZE	POST DIAM.	GATE HEIGHT	FOOTING DIAM.	FOOTING DEPTH
3' - 0"	2 - 1/2"	7' - 0"	14"	4' - 0"
3' - 6"	2 - 1/2"	7' - 0"	14"	4' - 3"
4' - 0"	2 - 1/2"	7' - 0"	14"	4' - 6"



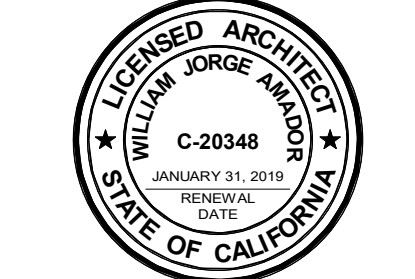
**1 GATE TYPE "B" DETAIL**  
3/4" = 1'-0"



**2 SLIDE BOLT DETAIL**  
3" = 1'-0"



**AMADOR WHITTLE ARCHITECTS, INC.**



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.

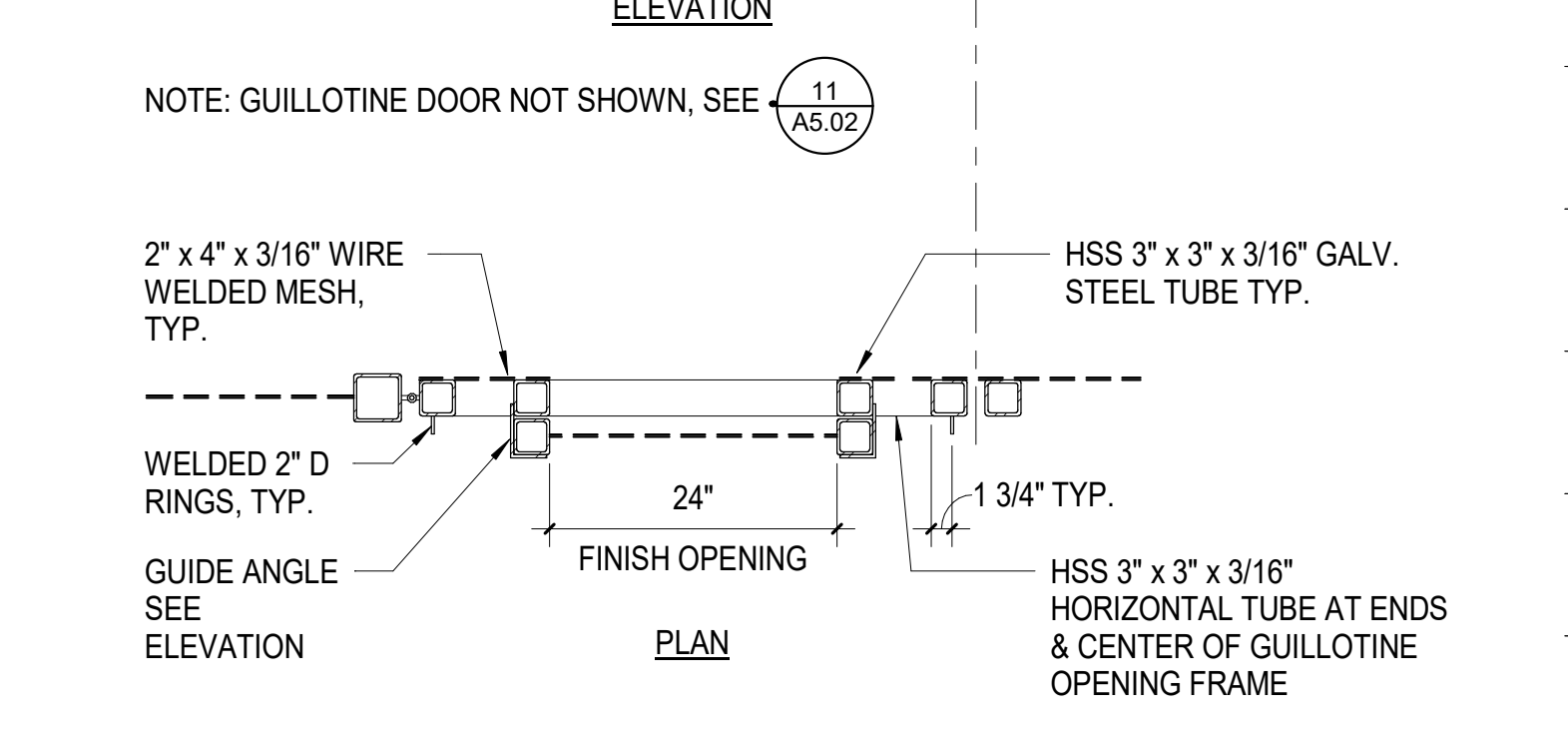
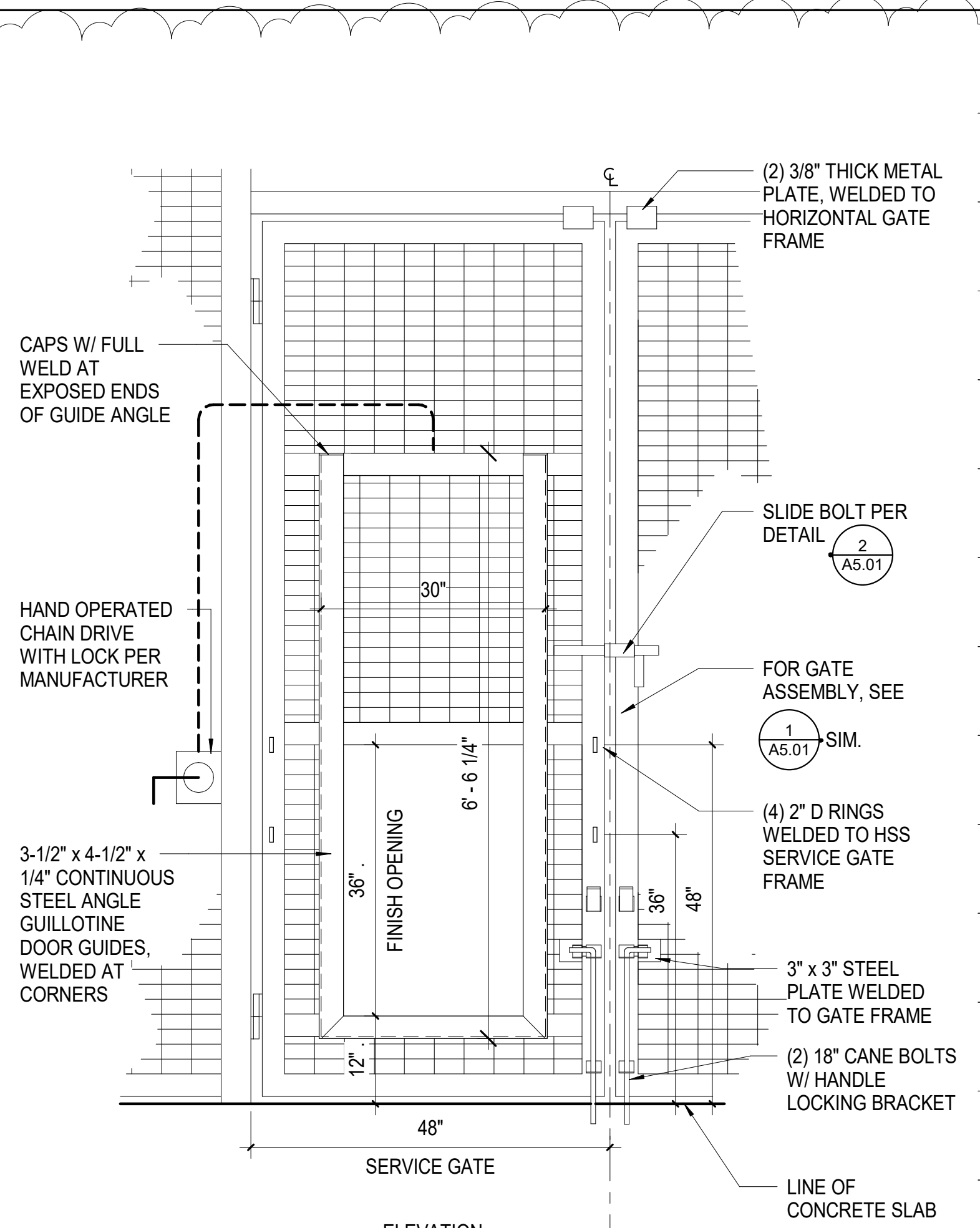
REVISIONS	07/11/19	ADDENDUM #1	DATE:	06/24/19
			DRAWN:	Author
			CHECK:	Checker
			JOB NO:	18-MPC-30

**DETAILS**

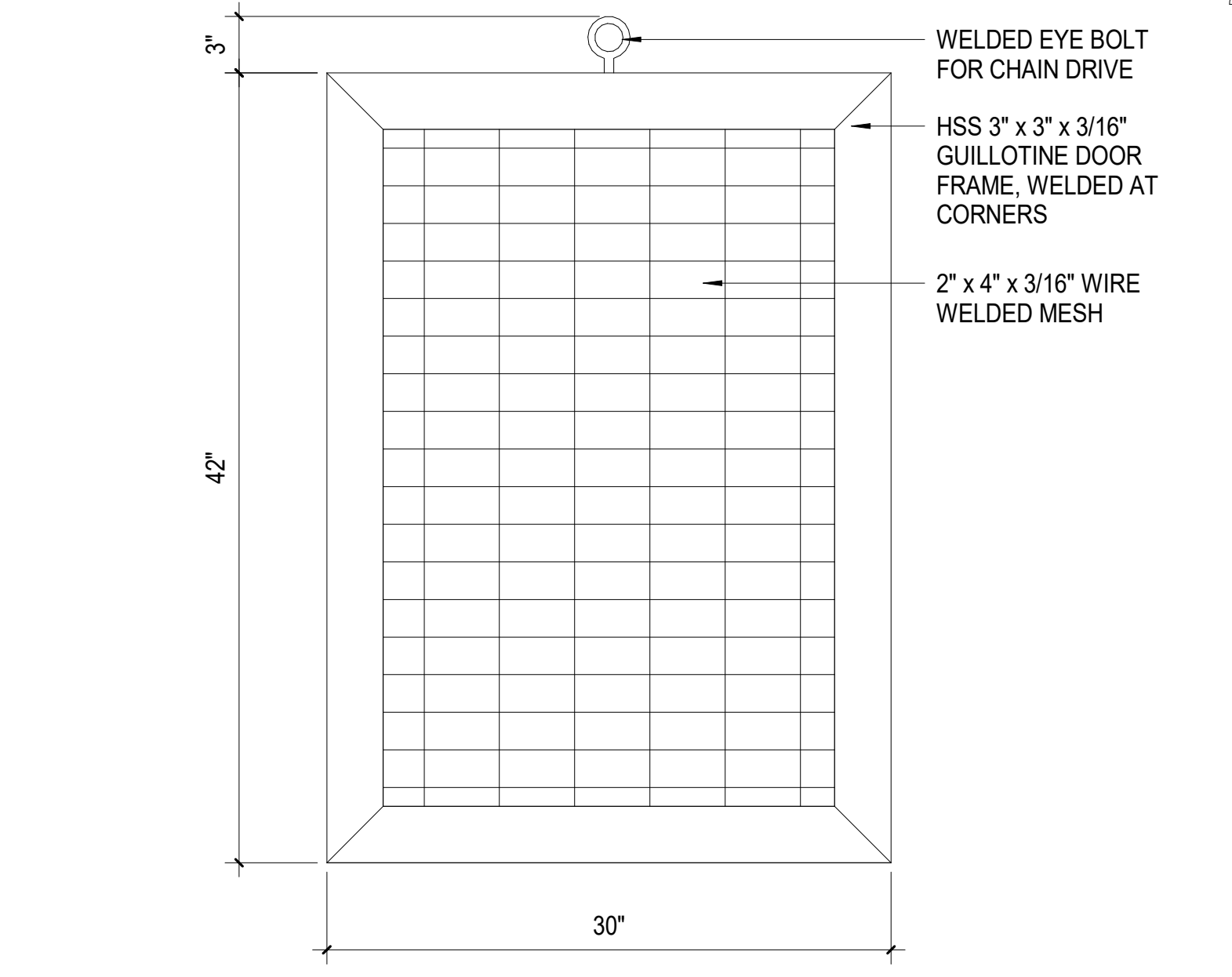
**A5.01**

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

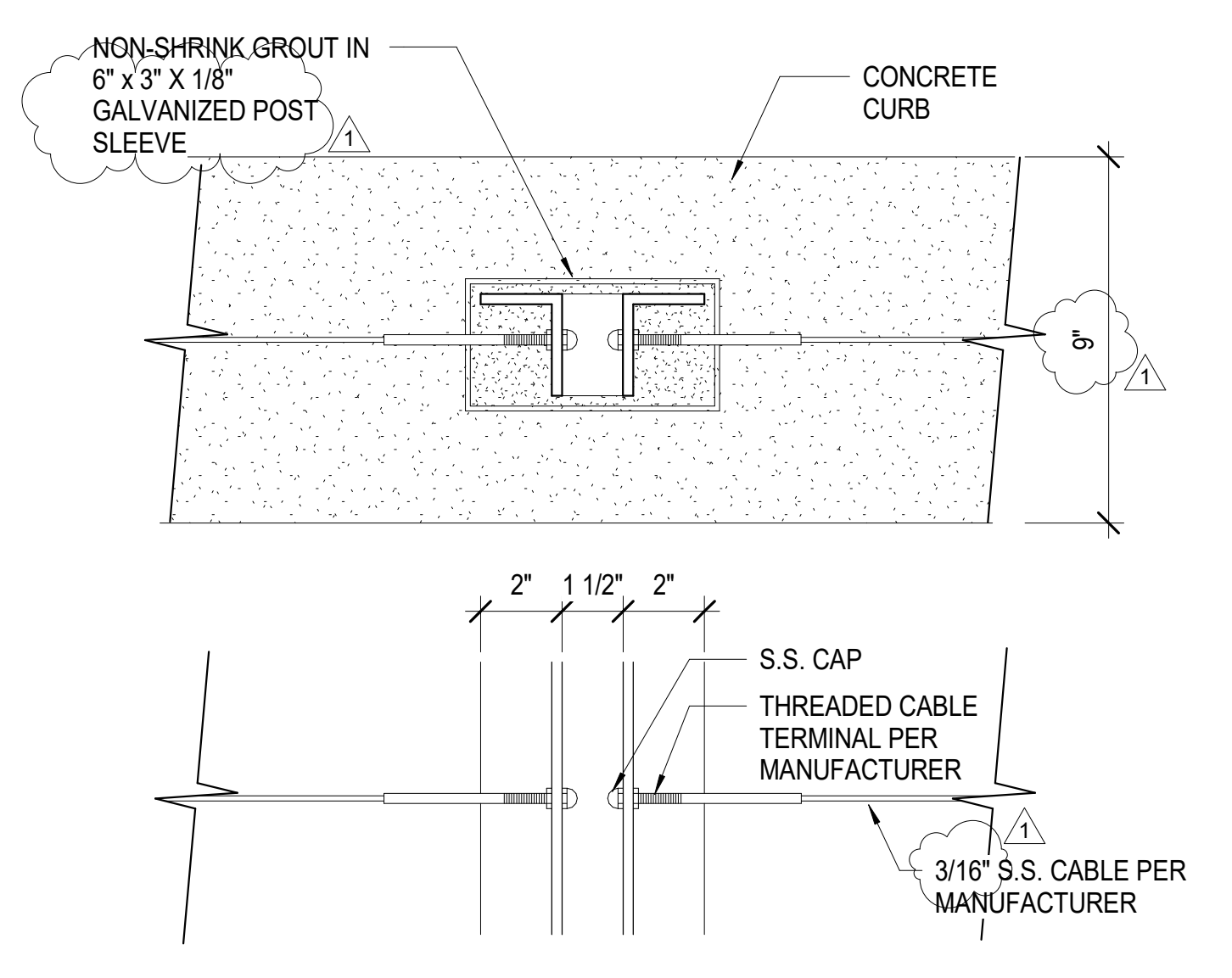




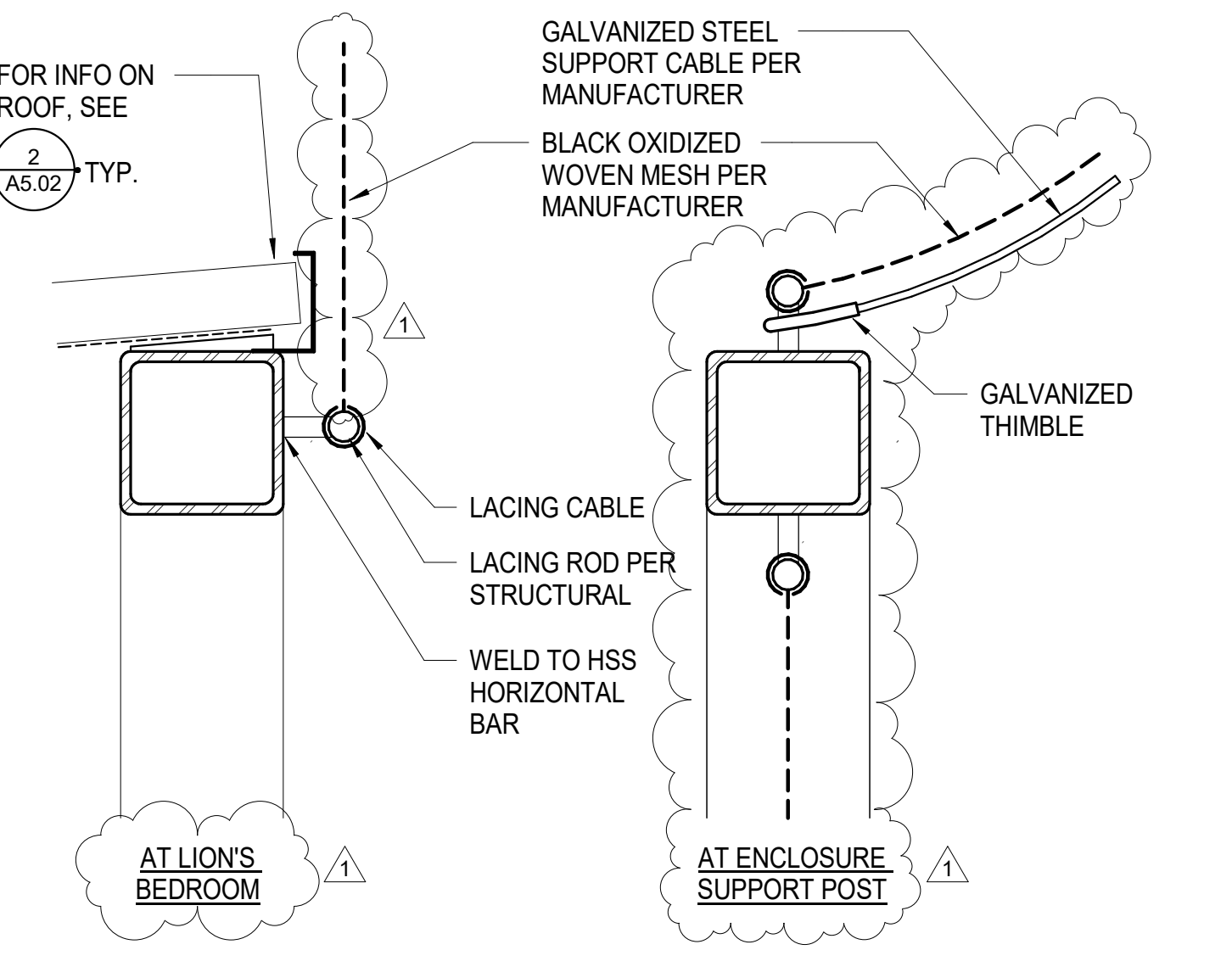
**10 GUILLOTINE GATE DETAIL**  
3/4" = 1'-0"



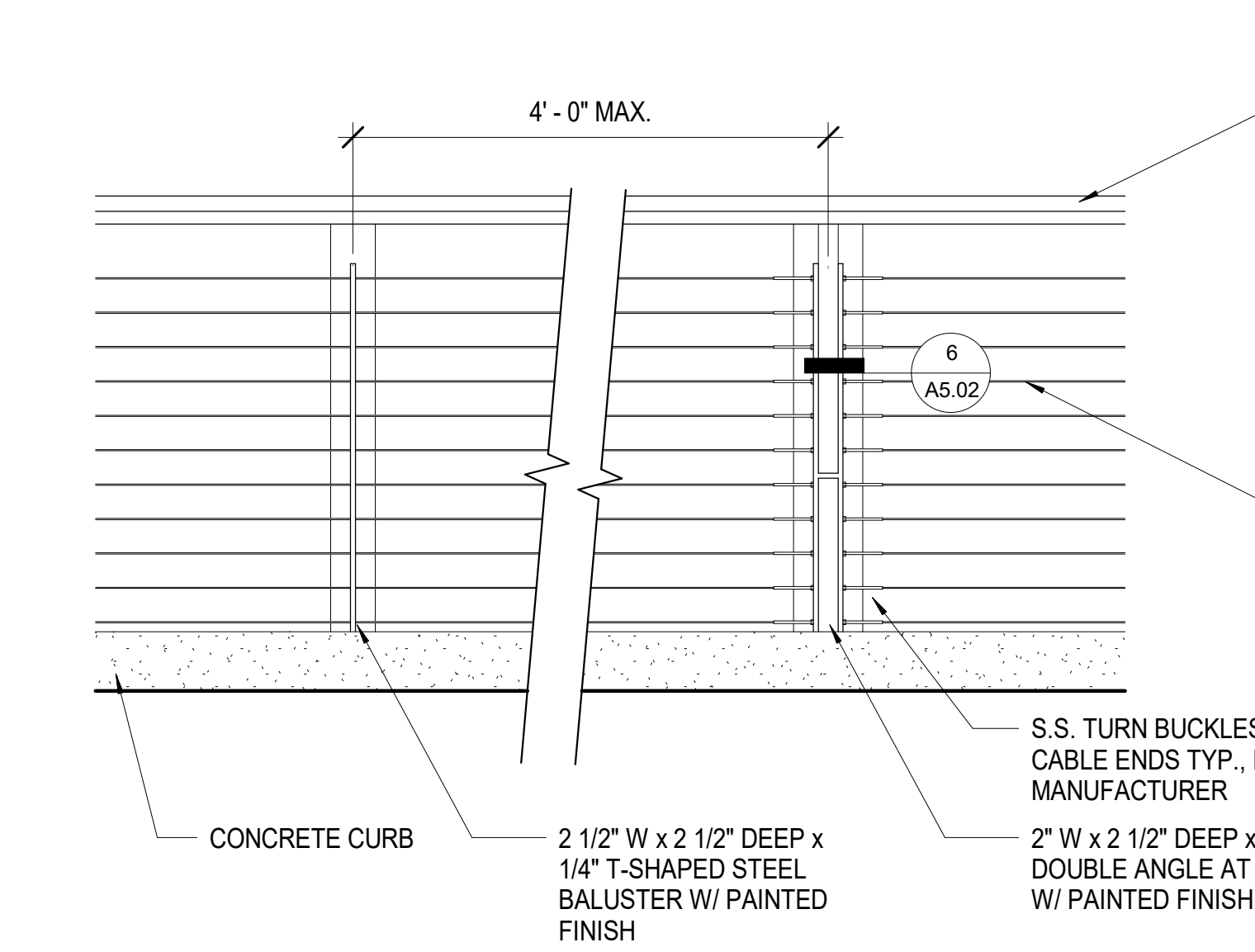
**11 GUILLOTINE DOOR ELEVATION**  
1 1/2" = 1'-0"



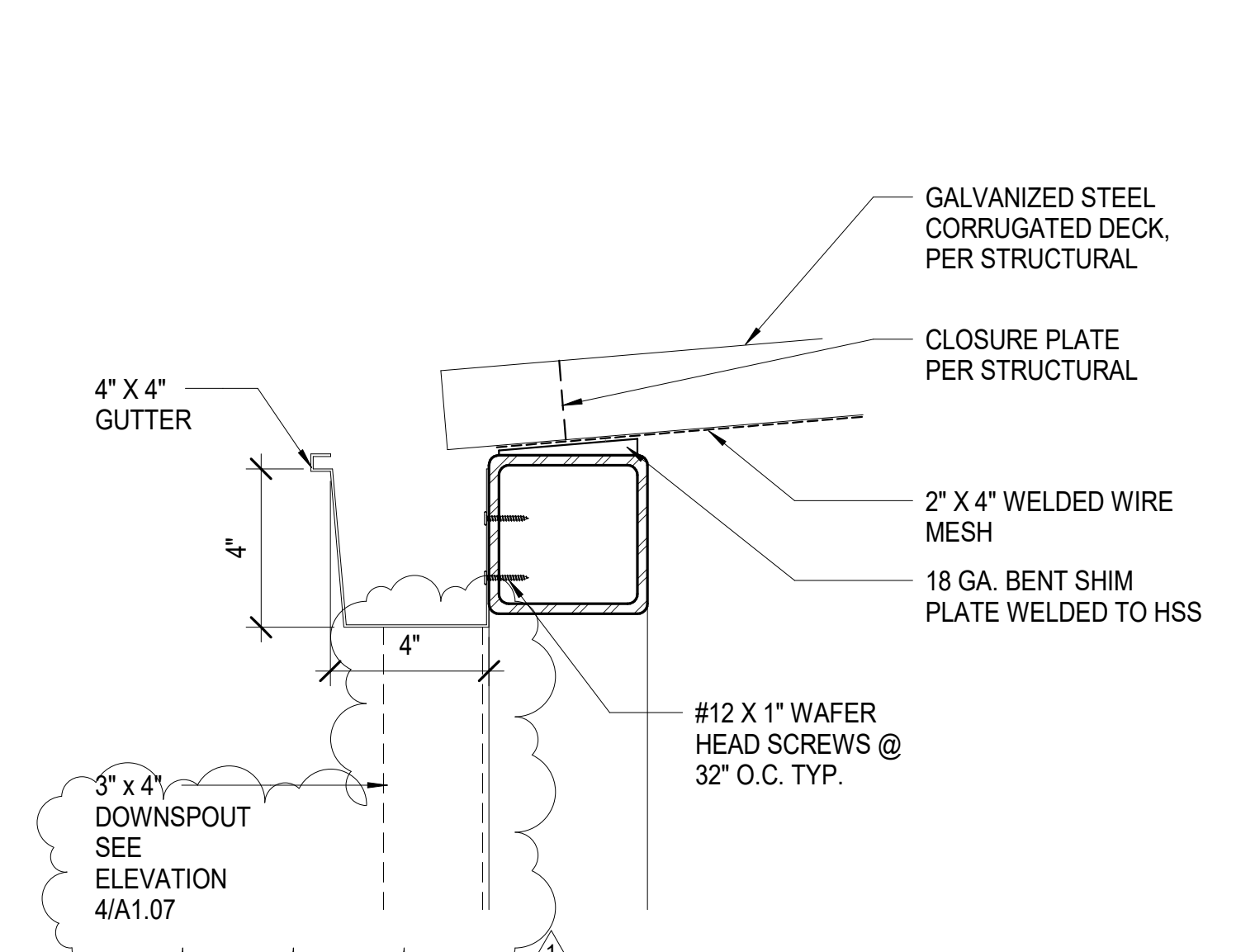
**6 GUARDRAIL DETAIL**  
3" = 1'-0"



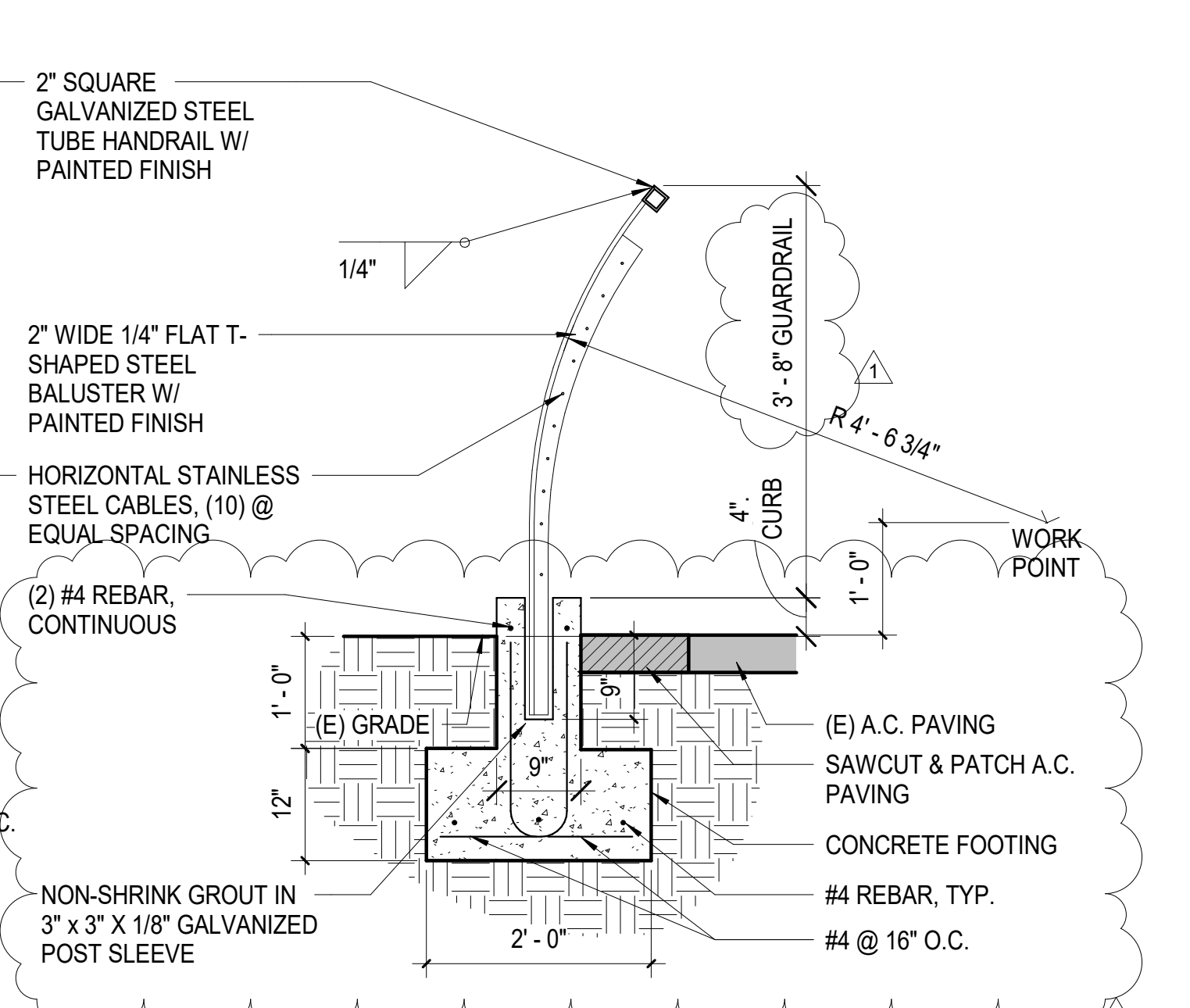
**7 WOVEN MESH TO HSS TUBE DETAIL**  
3" = 1'-0"



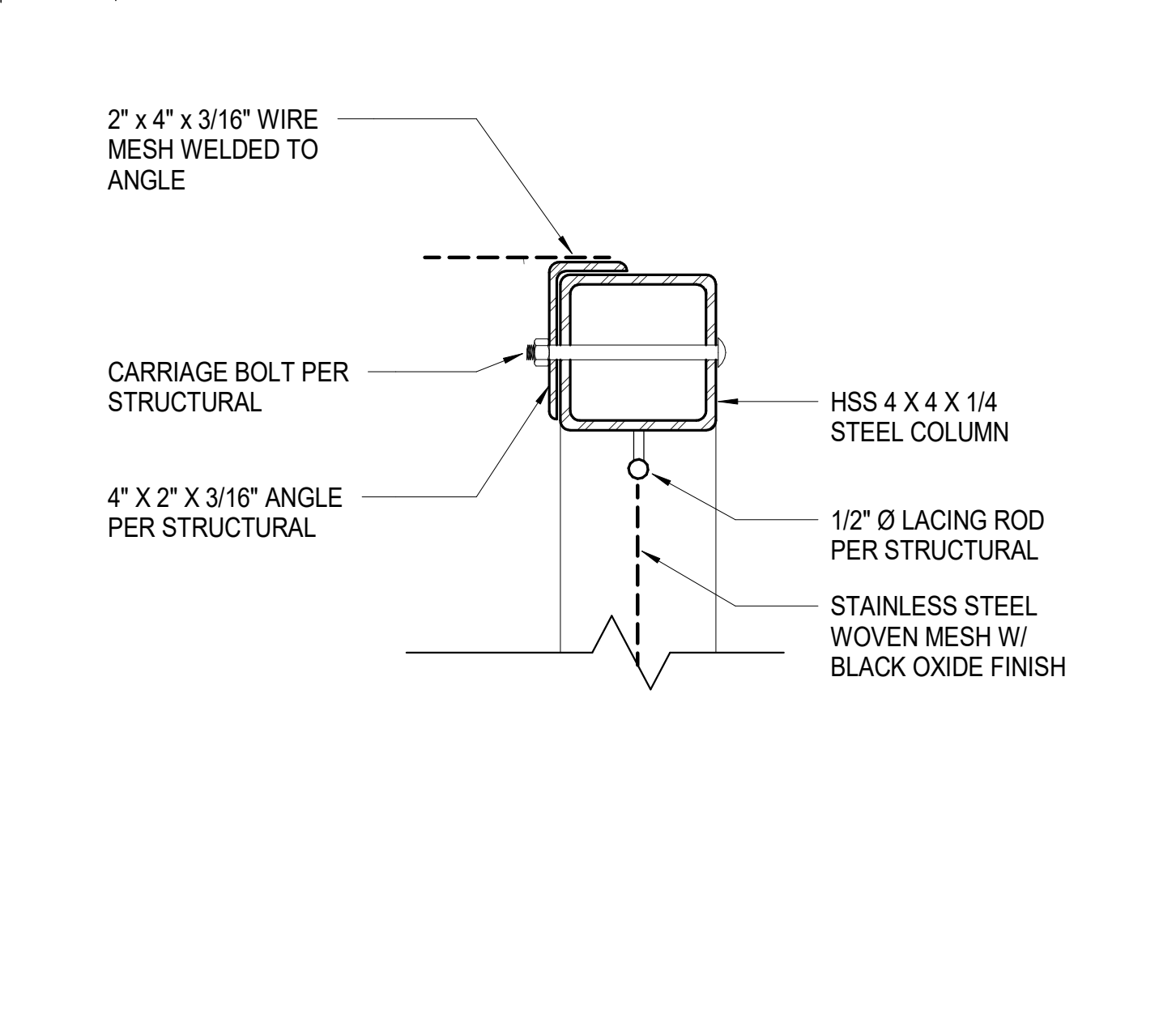
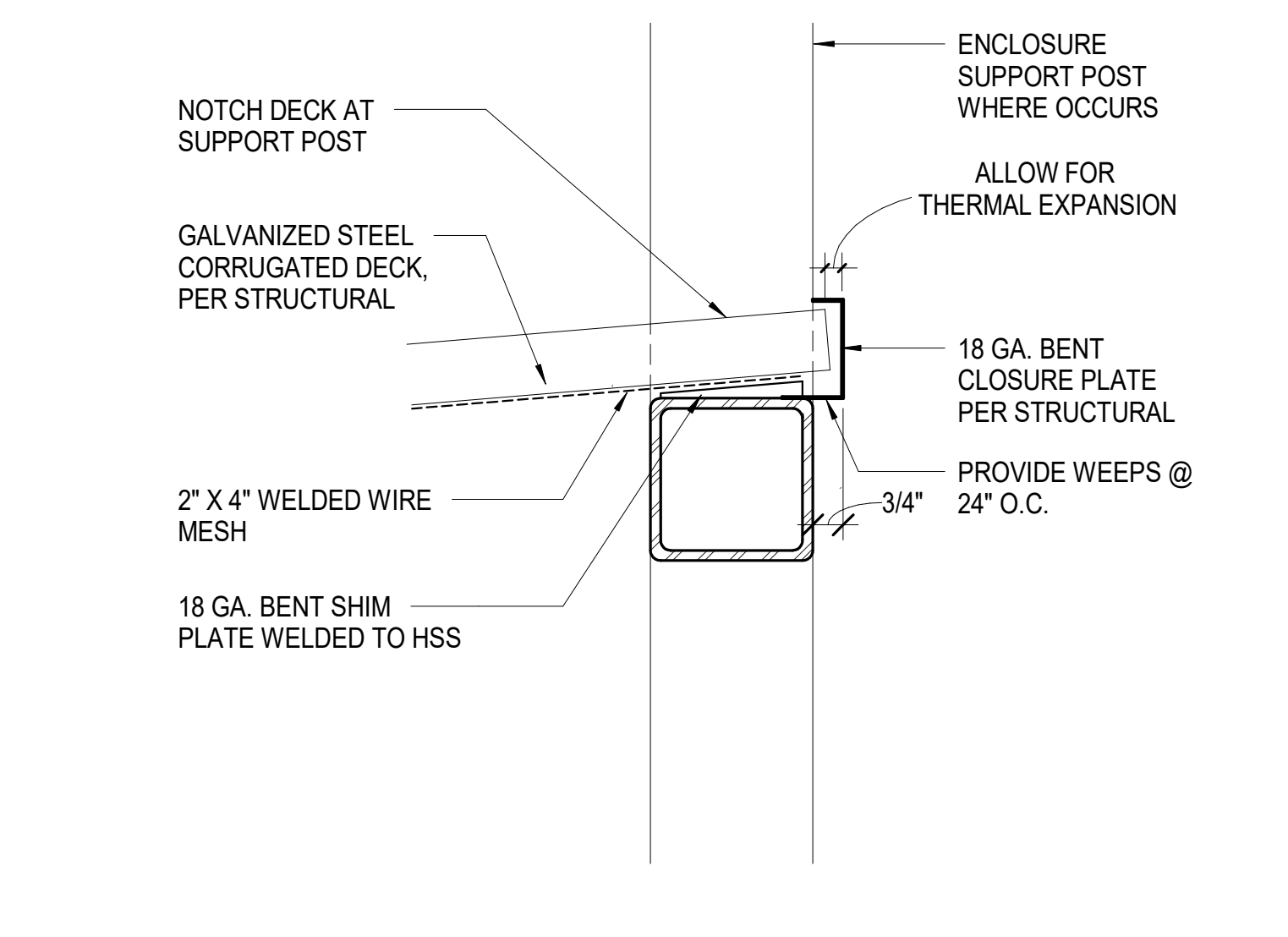
**3 GUARDRAIL DETAIL**  
3/4" = 1'-0"



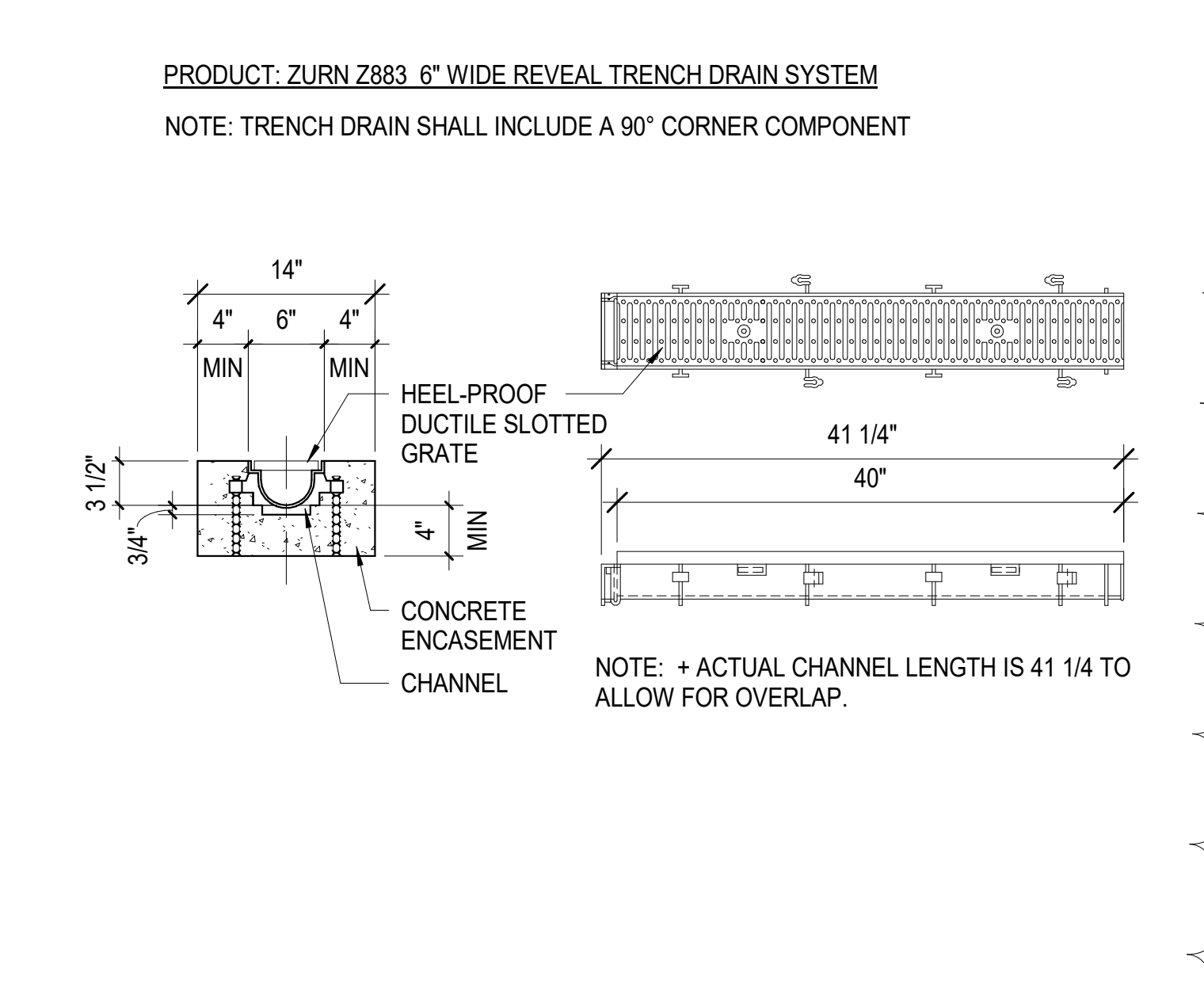
**4 ROOF AND GUTTER DETAIL**  
3" = 1'-0"



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



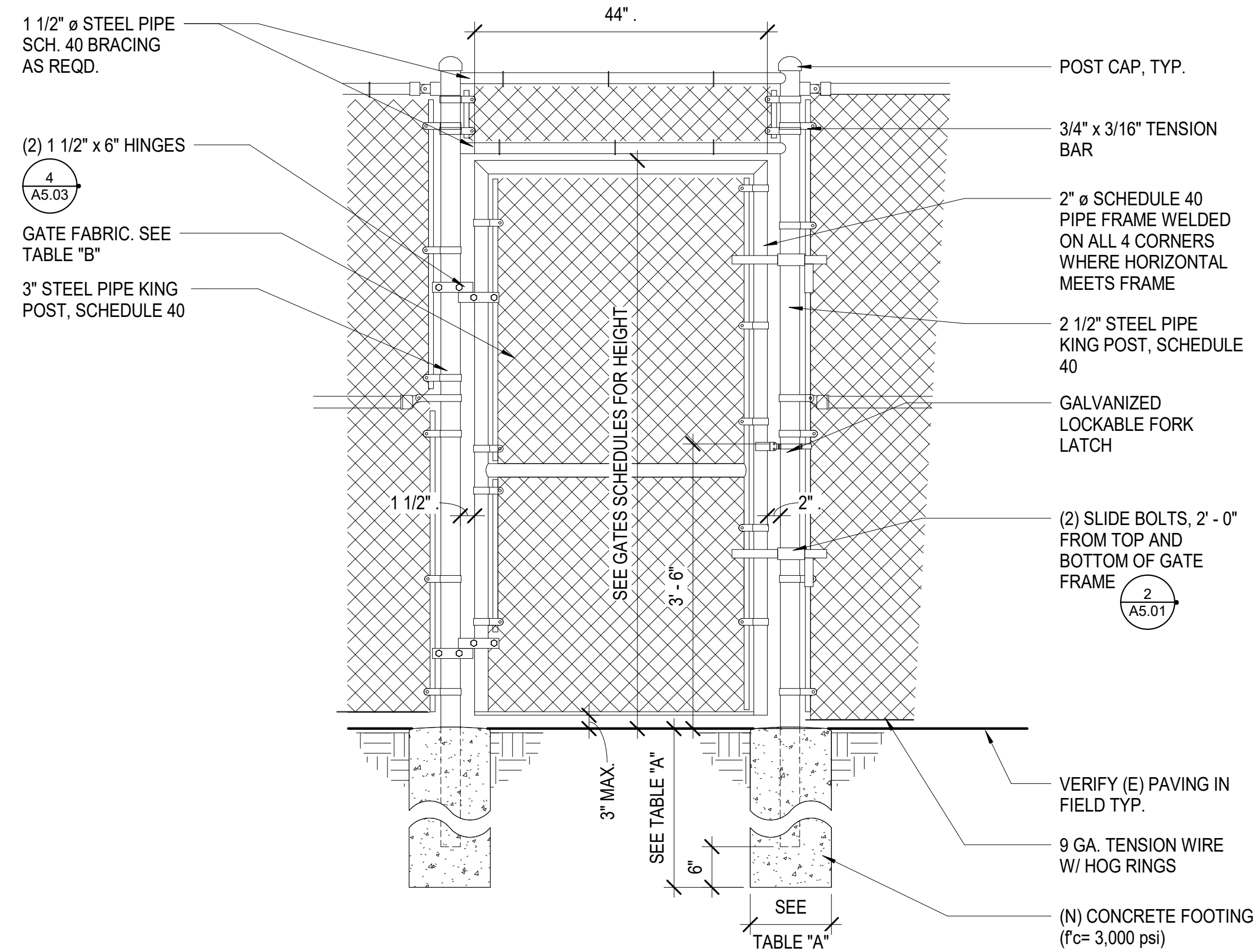
**8 COLUMN DETAIL AT CORNER**  
3" = 1'-0"



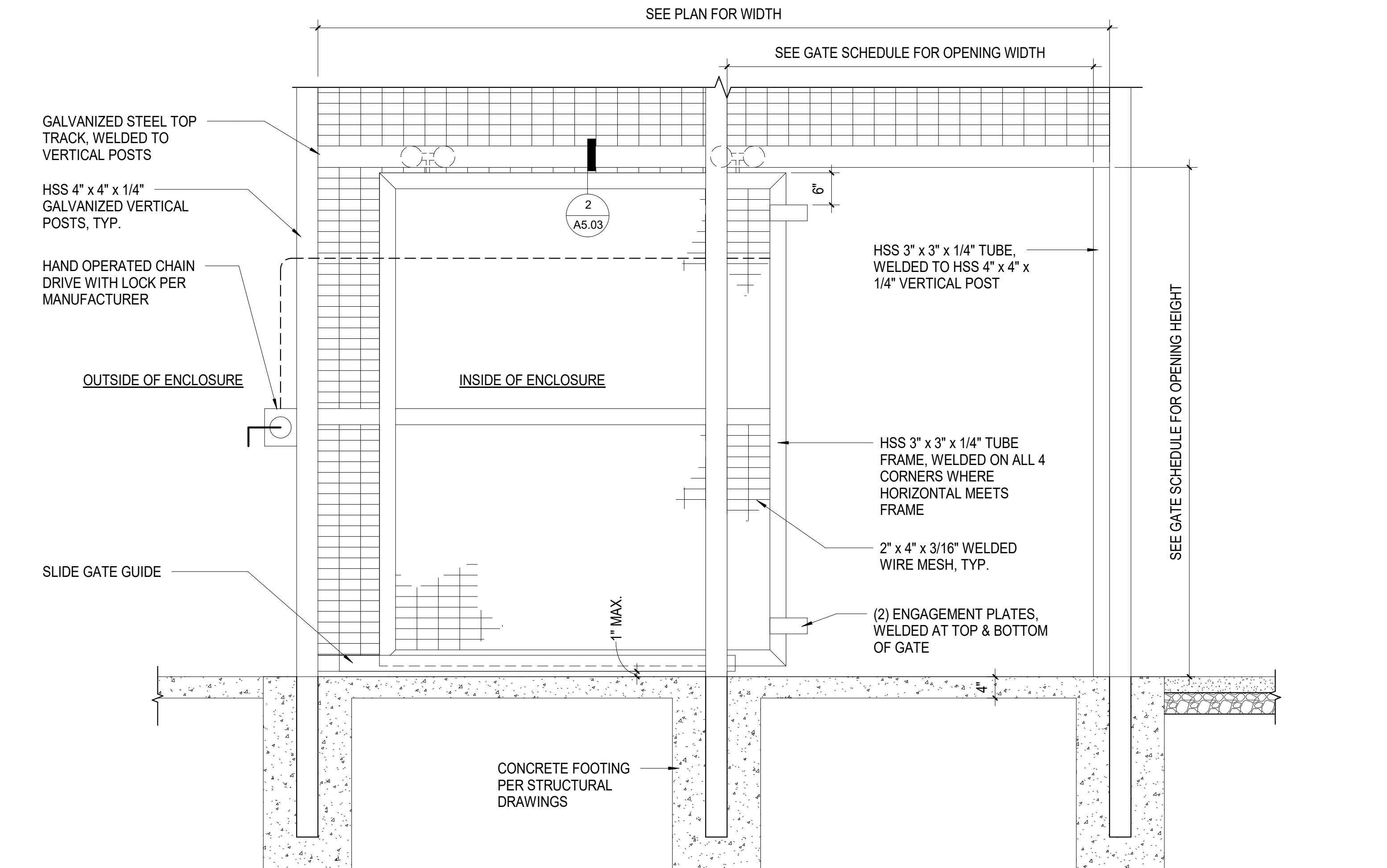
**5 TRENCH DRAIN DETAIL**  
1" = 1'-0"

<p><b>AMADOR WHITTLE ARCHITECTS, INC.</b></p> <p>28328 AGOURA ROAD, SUITE 203 AGOURA HILLS, CA 91301 (805) 530-3938, (818) 874-0071</p>		<p><b>LION ENCLOSURE</b></p> <p>EXOTIC ANIMAL TRAINING &amp; MANAGEMENT 7075 CAMPUS ROAD MOORPARK, CA 93021</p> <p><b>BID SET</b></p>				
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<p>REVISIONS</p> <table border="1"> <tr> <td>1</td> <td>07/11/19</td> <td>ADDENDUM #1</td> </tr> </table>	1	07/11/19	ADDENDUM #1	<p>DATE: 06/11/19</p> <p>DRAWN: Author</p> <p>CHECK: Checker</p> <p>JOB NO: 18-MPC-30</p>	<p><b>DETAILS</b></p> <p><b>A5.02</b></p>	
1	07/11/19	ADDENDUM #1				
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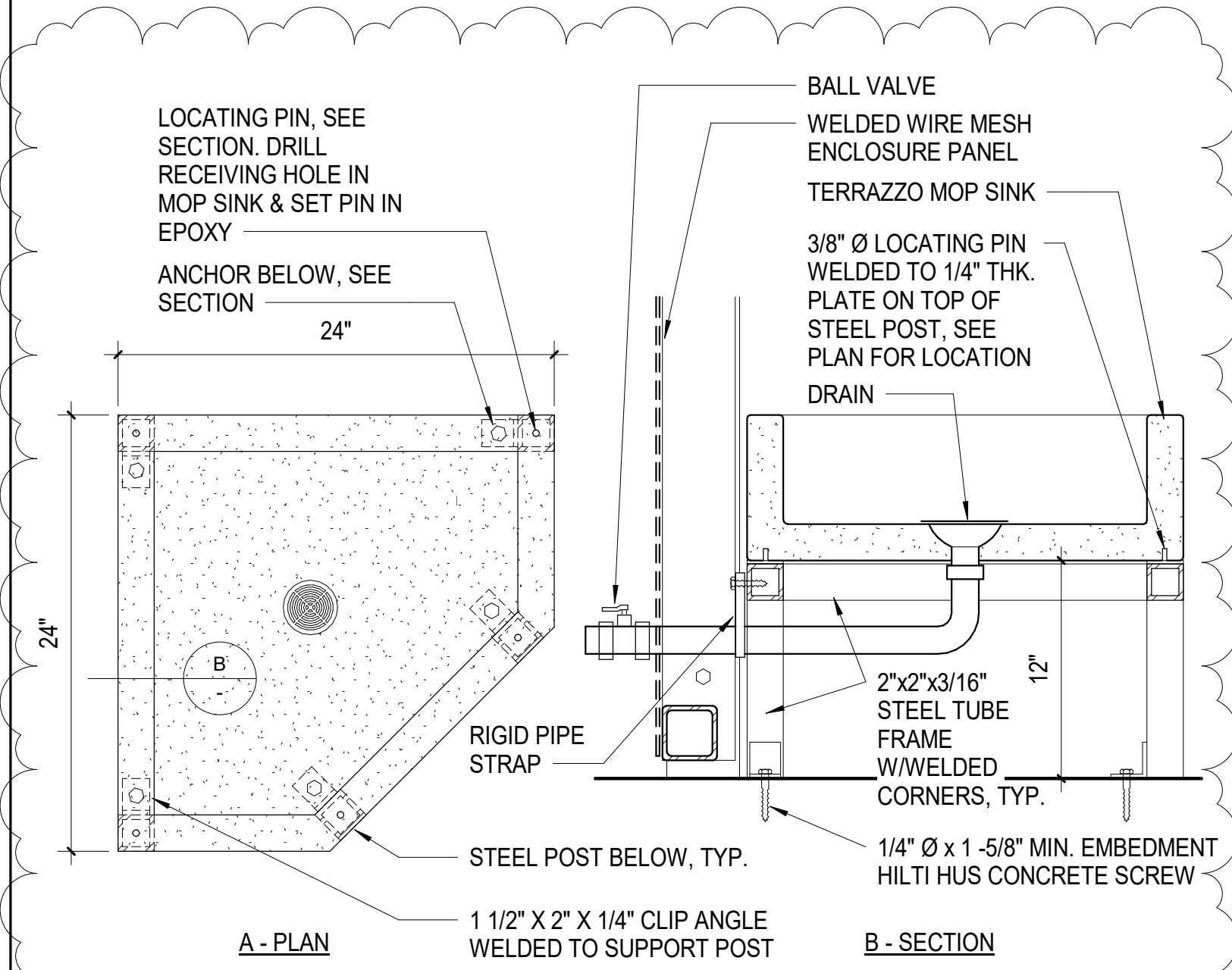




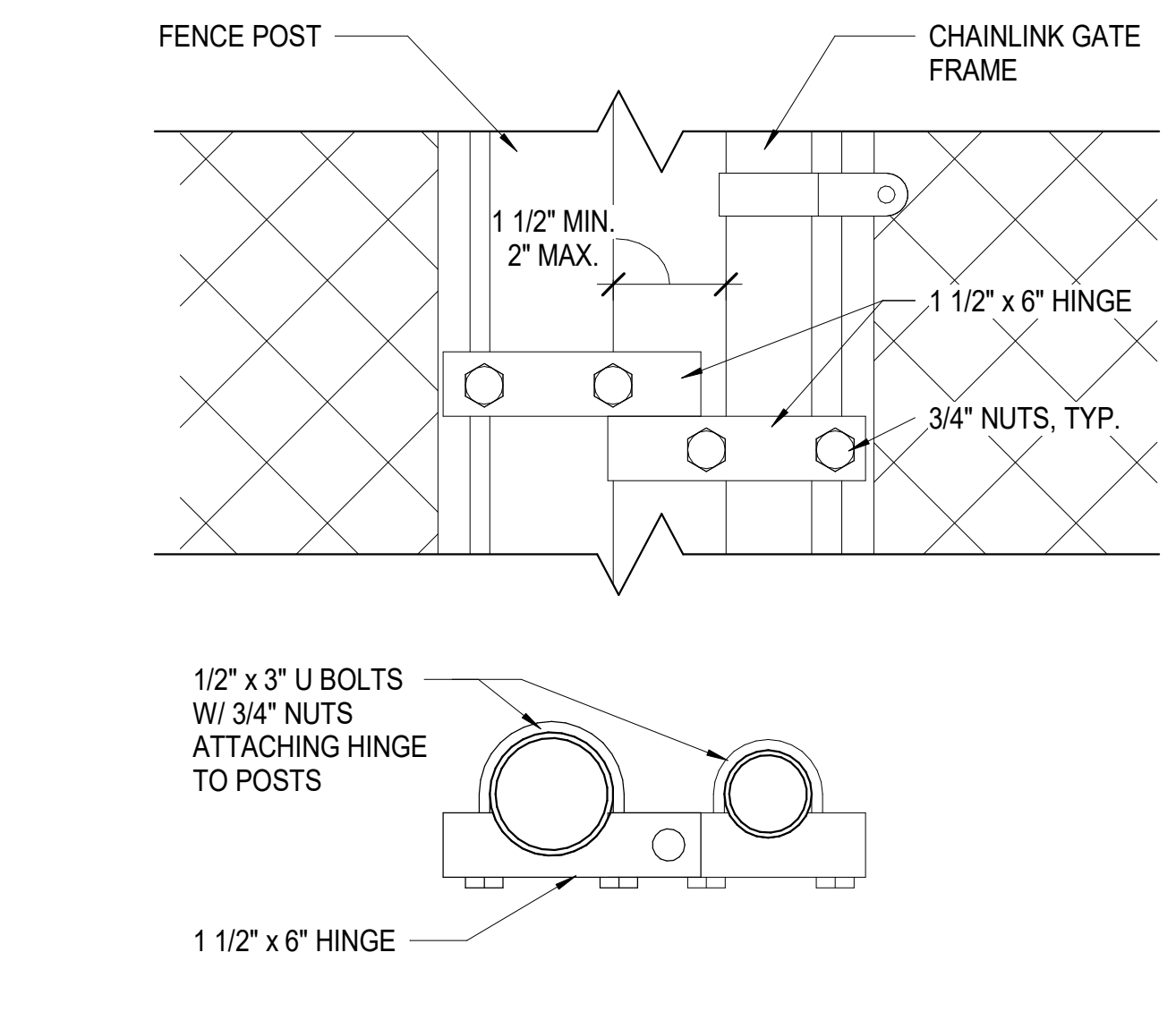
**3** GATE TYPE "A" DETAIL  
3/4" = 1'-0"



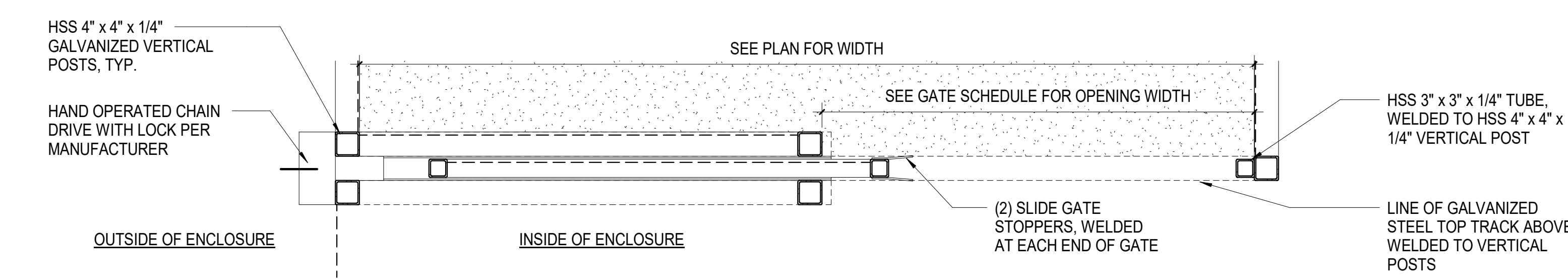
**1** SLIDING GATE PLAN & ELEVATION  
3/4" = 1'-0"



**5** DRINKING TROUGH DETAIL  
1 1/2" = 1'-0"



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



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

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<p><b>LION ENCLOSURE</b></p> <p>EXOTIC ANIMAL TRAINING &amp; MANAGEMENT 7075 CAMPUS ROAD MOORPARK, CA 93021</p> <p><b>BID SET</b></p>			
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7/11/19	ADDENDUM #1		
<p><b>DETAILS</b></p>		<p><b>A5.03</b></p> <p>OF</p>	
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## MASONRY

- BLOCK SHALL BE MEDIUM WEIGHT (115 PCF) CONFORMING TO ASTM- C-90 GRADE N-1. 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:
  - 1,900 PSI FOR SPECIFIED  $f_m$  UP TO 1500 PSI
  - 2,800 PSI FOR SPECIFIED  $f_m$  UP TO 2,000 PSI
  - 3,150 PSI FOR SPECIFIED  $f_m$  UP TO 2,500 PSI
- MIN. SPECIFIED COMPRESSIVE STRENGTH SHALL BE  $f_m = 1500$  PSI, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- CEMENT: ASTM C-150, LOW ALKALI, TYPE I OR II PORTLAND CEMENT. (MASONRY CEMENT AND PLASTIC CEMENT SHALL NOT BE USED)
- MORTAR:
  - CONFORMING TO ASTM C-270, TYPE [S].
  - MIX PROPORTIONS SHALL CONFORM TO ASTM C-270.
  - AGGREGATED SHALL CONFORM TO ASTM C-144.
- GROUT:
  - CONFORMING TO ASTM C-476.
  - ATTAINS THE MASONRY COMPRESSIVE STRENGTH  $f_m$  OR 2,000 PSI AT 28 DAYS, WHICHEVER IS GREATER.
  - MIX PROPORTIONS SHALL CONFORM TO ASTM C-476
  - AGGREGATES SHALL CONFORM TO ASTM C-404
  - USE COARSE GROUT IN GROUT SPACES 2 INCHES OR MORE IN WIDTH AND CELLS TO BE GROUTED SOLID.
- ADMIXTURES: DO NOT USE ANY ADMIXTURES IN MORTAR OR GROUT WITHOUT APPROVAL BY THE ARCHITECT.
- MEASURE MATERIALS FOR MORTAR AND GROUT IN CALIBRATED DEVICES. SHOVEL MEASUREMENTS ARE NOT ACCEPTABLE.
- ADJUST THE WATER CONTENT OF THE MORTAR AND GROUT MIXES TO PROVIDE PROPER WORKABILITY UNDER EXISTING FIELD CONDITIONS WITHOUT SEGREGATION.
- REINFORCING STEEL:
  - REBAR: ASTM A-615, GRADE 60 (FY=60KSI).
  - JOINT REINFORCEMENT: ASTM A-451
- LAP REINFORCING STEEL AT SPLICES WITH A MINIMUM 48 BAR DIAMETERS, UNLESS NOTED OTHERWISE. WHERE CLEAR DISTANCE BETWEEN BARS AT ADJACENT SPLICES IS 3 INCHES OR LESS, INCREASE LAP LENGTH 30% UNLESS SPLICES ARE STAGGERED AT LEAST 24 BAR DIAMETERS.
- DOWELS FOR WALLS AND COLUMNS SHALL MATCH SIZE AND SPACING OF WALL AND COLUMN REINFORCING STEEL.
- MASONRY WORK SHALL CONFORM TO THE LATEST ADOPTED EDITION OF THE CBC, AND THE 2016 MSJC SPECIFICATIONS.
- CONCRETE BLOCK UNITS ARE TO BE STAGGERED & TO HAVE VERTICAL CONTINUITY OF CELLS UNOBSTRUCTED.
- IF WORK IS STOPPED AN HOUR OR LONGER, PROVIDE HORIZONTAL CONSTRUCTION JOINT BY STOPPING GROUT 1 1/2" BELOW TOP OF MASONRY UNIT.
- SPECIAL INSPECTION IS REQUIRED FOR ALL MASONRY WORK.
- GROUT ALL MASONRY WALLS SOLID. GROUTING LIFTS SHALL NOT EXCEED 5'-0" IN HEIGHT IN ACCORDANCE WITH 2008 MSJC SPECIFICATIONS.
- THE CLEAR DISTANCE BETWEEN THE SURFACE OF A BAR AND ANY SURFACE OF A MASONRY UNIT SHALL BE NOT LESS THAN 1/4" FOR FINE GROUT AND NOT LESS THAN 1/2" FOR COURSE GROUT.
- SECURE REBAR AGAINST DISPLACEMENT PRIOR TO GROUTING AT INTERVALS NOT GREATER THAN 200 BAR DIAMETERS.
- TERMINATE HORIZONTAL BARS WITH A STANDARD HOOK AT THE JAMBS OF WALL OPENINGS.
- 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

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

PREPARED BY:

PROJECT NUMBER:

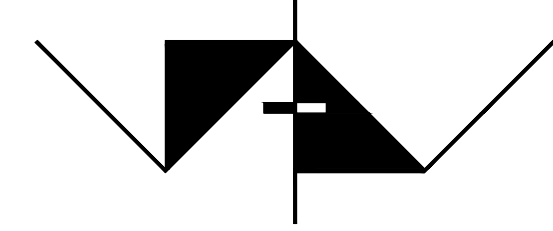
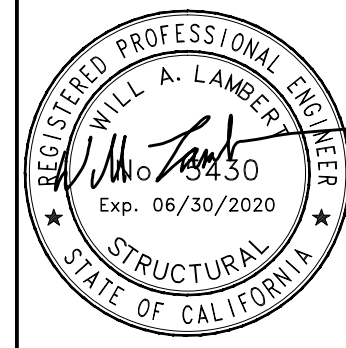


- THE GEOTECHNICAL INVESTIGATION REPORT AND ITS RECOMMENDATIONS SHALL BE FOLLOWED AND SHALL BE CONSIDERED MINIMUM REQUIREMENTS UNLESS MORE STRINGENT REQUIREMENTS ARE PRESENTED IN THE SPECIFICATIONS OR ON THE DRAWINGS.
- PER GEOTECHNICAL INVESTIGATION REPORT, THE ALLOWABLE SOIL BEARING PRESSURES ARE AS FOLLOWS:
  - CONTINUOUS FOOTING: 1500 PSF
  - ISOLATED SPREAD FOUNDATIONS: 1500 PSF
- BEARING VALUES MAY BE INCREASED BY ONE-THIRD WHEN TRANSIENT LOADS SUCH AS WIND AND/OR SEISMIC ARE INCLUDED.
- 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.
- LOCATE AND PROTECT EXISTING UTILITIES TO REMAIN DURING AND/OR AFTER CONSTRUCTION.
- REMOVE ABANDONED FOOTINGS, UTILITIES, ETC. WHICH INTERFERE WITH NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED.
- NOTIFY THE OWNER'S REPRESENTATIVE IF ANY BURIED STRUCTURES NOT INDICATED, SUCH AS CESSPOOLS, CISTERNS, FOUNDATIONS, ETC., ARE FOUND.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, UNDERPINNING AND PROTECTION OF EXISTING CONSTRUCTION.
- 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.
- 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.
- 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 GAVING 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

- ALL NEW CONSTRUCTION SHALL COMPLY WITH THE CONTRACT DOCUMENTS AND THE 2016 CALIFORNIA BUILDING CODE.
- 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.
- TYPICAL DETAILS AND GENERAL NOTES APPLY TO ALL PARTS OF THE WORK EXCEPT WHERE SPECIFICALLY DETAILED OR UNLESS NOTED OTHERWISE (U.N.O.)
- 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.
- 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.
- 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.
- DRAWING DIMENSIONS ARE TO FACE OF STRUCTURE, JOINT CENTERLINE OR COLUMN GRID CENTERLINE UNLESS NOTED OTHERWISE. DO NOT SCALE THE DRAWINGS.
- 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.
- 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.
- THE CONTRACTOR SHALL RESOLVE ANY CONFLICTS ON THE DRAWINGS OR IN THE SPECIFICATIONS WITH THE DESIGN TEAM BEFORE PROCEEDING WITH THE WORK.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL PROTECT ALL WORK, MATERIALS AND EQUIPMENT FROM DAMAGE AND SHALL PROVIDE PROPER STORAGE FACILITIES FOR MATERIALS AND EQUIPMENT DURING CONSTRUCTION.
- A COPY OF ANY REQUIRED ICC-ES REPORT AND/OR CONDITIONS OF LISTING SHALL BE MADE AVAILABLE AT THE JOB SITE.
- 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 HYAC EQUIPMENT & THEIR SUPPORTING PADS, PLATFORMS, FRAMES, ETC.; DUCTWORK, PIPES, CONDUITS, ARTWORK, GRILLES, GRATING, METAL SCREENS, ELEVATOR RAILS, STONE FINISH TILES, STONE CAPS, BRICK VENEER.
- ALLOW FOURTEEN WORKING DAYS FOR PROCESSING SHOP DRAWINGS AND SUBMITTALS AFTER RECEIPT.

## DESIGN CRITERIA

- BUILDING SHALL COMPLY WITH THE 2016 CALIFORNIA BUILDING CODE.
  - VERTICAL LIVE LOADS:
    - ROOF 20 PSF
  - LATERAL LOADS:
    - WIND:
      - BASIC WIND SPEED: 115 MPH
      - WIND IMPORTANCE FACTOR,  $I_w$ : 1.0
      - EXPOSURE TYPE: C
    - SEISMIC:
      - SITE CLASS: D
      - RISK CATEGORY: I
      - SEISMIC DESIGN CATEGORY: D
      - SEISMIC IMPORTANCE FACTOR,  $I_e$ : 1.0
      - $S_s = 2.782$
      - $S_1 = 0.976$   $F_A = 1.0$
      - $F_v = 1.5$   $S_{ps} = 1.855$
      - $S_{D1} = 0.976$
      - $R = 1.5$  (STEEL CANTILEVER COLUMN SYSTEM)
      - $RHO = 1.0$
      - $CS = 1.04$  (ASD) 1.48 (LRFD)
- EQUIVALENT STATIC FORCE METHOD USED FOR DESIGN.

 <b>AMADOR WHITTLE</b> <b>ARCHITECTS, INC.</b>	 OSG# 18843	 <b>Orion</b> <b>Structural</b> Orion Structural Group, Inc. 221 East Thousand Oaks Blvd, Suite 304 Thousand Oaks, California 91360 - 7734 Phone: 805.390.9242	
<b>LION ENCLOSURE</b>  EXOTIC ANIMAL TRAINING & MANAGEMENT 7075 CAMPUS ROAD MOORPARK, CA 93021  <b>BID SET</b>			
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			CHECK: WL
			JOB NO: 18-MPC-30
<b>GENERAL NOTES</b>			<b>\$0.00</b> OF
<small>IF THIS SHEET IS NOT 36" X 24", IT IS NOT FULL SIZE. SCALE DRAWINGS ACCORDINGLY.</small>			



## REINFORCEMENT

- 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)
  - 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.
  - MOMENT FRAME LONGITUDINAL REBARS, SHEAR WALL VERTICAL REBARS, AND COUPLING BEAM LONGITUDINAL REBARS SHALL BE ASTM A-706 [F<sub>y</sub>=60 KSI].
  - SMOOTH DOWELS IN SLAB ON GRADE: ASTM A36, 3/6 KSI
- 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:
  - WELDED REBAR SHALL COMPLY WITH ASTM A-706 [F<sub>y</sub>=60 KSI]
  - WELDING SHALL CONFORM TO AWS D1.4
  - USE E90XX ELECTRODES
- WELDED WIRE FABRIC SHALL BE MADE OF COLD DRAWN WIRE AND SHALL CONFORM TO ASTM A-105 [F<sub>y</sub>=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.
- 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 1/2"
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 1/2"
- #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.
- 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 FOUR 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.
- 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.
- 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.
- 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.
- ALL LAP SPLICES ARE CLASS 'B' LAP SPLICES UNLESS NOTED OTHERWISE.
- ALL WALL FOOTING REINFORCEMENT SHALL BEND AROUND ALL CORNERS AND EXTEND 36 BAR DIAMETERS OR 18 INCHES WHICHEVER IS LARGER. UNLESS NOTED OTHERWISE.
- 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/M2.4X2.9 WELDED WIRE FABRIC CONTINUOUS FOR EVERY 3' ARCHITECTURAL CONCRETE FILLS ABOVE THE STRUCTURAL SLAB.
- ALL MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT PADS LESS THAN 4" THICK SHALL BE REINFORCED WITH AT LEAST ONE (1) LAYER OF 6X6/M2.4X2.9 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.
- ADDITIONAL REINFORCEMENT SHALL BE PROVIDED AROUND ALL SLAB AND WALL OPENINGS INCLUDING DIAGONAL BARS WITHOUT EXCEPTION.
- 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

- 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.
- 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
- 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 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.
- NORMAL WEIGHT CONCRETE AGGREGATES SHALL CONFORM TO ASTM C33. LIGHT WEIGHT CONCRETE AGGREGATES SHALL CONFORM TO ASTM C330.
- NO MORE THAN ONE GRADE OF CONCRETE SHALL BE ON THE JOB SITE AT ANY ONE TIME.
- 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.
- KEY AND DOWEL FOUR JOINTS AS SHOWN ON THE PLANS. ANY DEVIATION FROM FOUR JOINTS SHOWN ON THE PLANS MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE.
- NON-SHRINK CEMENT GROUT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5000 PSI.
- DEFECTIVE CONCRETE (VOIDS, ROCK POCKETS, HONEYCOMBS, CRACKING, ETC.) SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE OWNER'S REPRESENTATIVE.

△

## STRUCTURAL STEEL

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

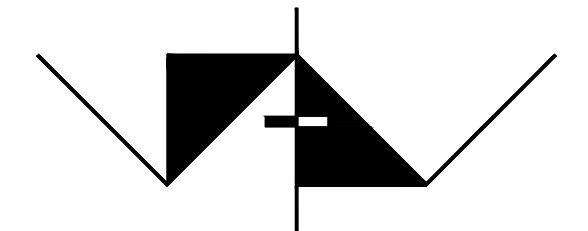
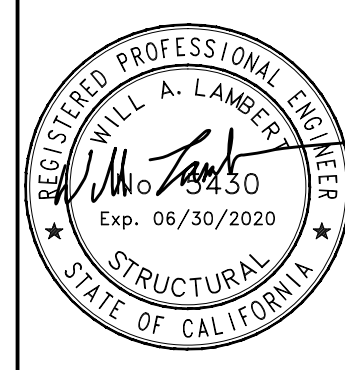

A. ALL WIDE FLANGE SHAPES	A992, GRADE 50
B. STEEL ANGLES	A36
C. ALL PLATES	A36
D. HSS (RECTANGULAR AND SQUARE)	A500, GRADE B
E. HSS (ROUND)	A500, GRADE B
F. PIPE COLUMNS	A53, GRADE B
G. CHANNELS (C AND MC SECTIONS)	A36
H. ALL OTHER STRUCTURAL SECTIONS	A512, GRADE 50
I. STEEL TO STEEL CONNECTION BOLTS	A325X
J. ANCHOR BOLTS	F1554 GR36 OR A36
K. THREADED RODS AND HANGER RODS	A36 OR A307-51
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
- ALL STEEL SHALL BE PROVIDED BY A CITY OF LOS ANGELES LICENSED FABRICATOR.
- WHEN FABRICATING SIMPLY SUPPORTED BEAMS, PLACE NATURAL CAMBER UP.
- SPLICE MEMBERS ONLY WHERE INDICATED.
- 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.
- 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.
- ALL HOLES SHALL BE STANDARD DIAMETER U.N.O.
- ALL FLANGE STIFFENER PLATES SHALL BE ORIENTED SO THAT ROLLING DIRECTION OF PLATE IS PARALLEL WITH DIRECTION OF PRINCIPAL STRESS.
- AFTER FABRICATION, ALL STEEL SHALL BE CLEANED FREE OF RUST, LOOSE MILL SCALE AND OIL.
- PROVIDE FILLS AT SPLICES OF PARTS HAVING MORE THAN 1/8" DIFFERENCE IN THICKNESS.
- PROVIDE BEVELED WASHERS ON ALL CONNECTIONS WHERE SLOPE SURFACE EXCEEDS 1:20.
- 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 2129). STUD WELDING INSPECTION AND TESTING SHALL CONFORM TO AWS D11.
- 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 D11.
- 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.
- 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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES WITH RELATION TO TEMPERATURE DIFFERENTIALS AND WELD SHRINKAGE.
- 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.
- ALL SHEET METAL SCREWS TO BE MANUFACTURED BY ITW BUILDEX ICC E5R-1976/3223, HILTI ICC E5R-3532/2196, OR PRIMESOURCE ICC E5R-1408. TO BE INSTALLED PER ICC-E5 REPORT AND MANUFACTURERS SPECIFICATIONS.
- ALL SHEET METAL SCREWS SHALL EXTEND THROUGH METAL FRAMING AND STRUCTURAL STEEL A MINIMUM OF 1/4" OR 3 EXPOSED THREADS, WHICHEVER IS GREATER.

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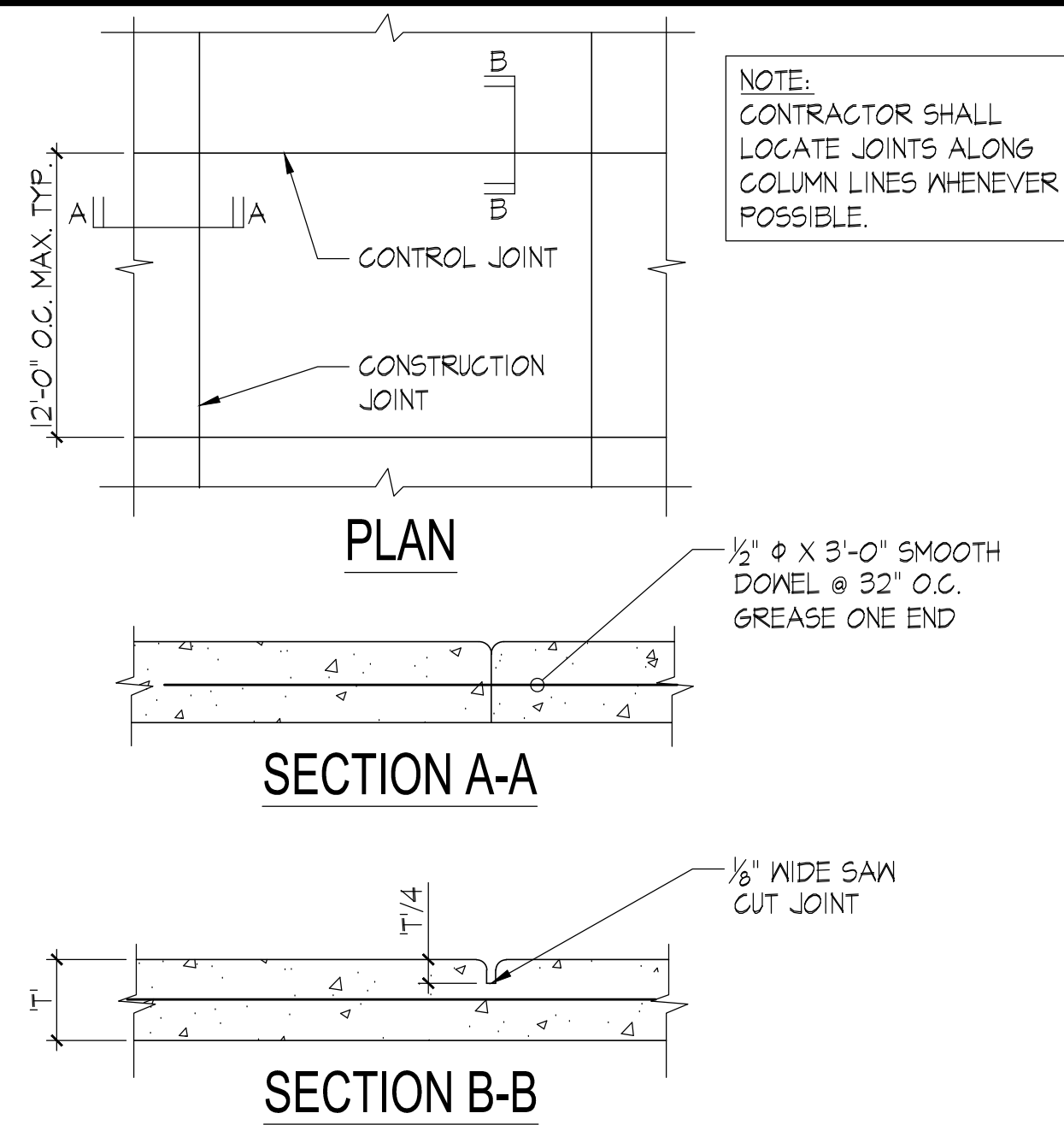
ALL STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION. COLD GALVANIZE AT FIELD CONNECTIONS. SEE ARCH. FOR ADDITIONAL PAINT FINISH

## STRUCTURAL STEEL WELDING

- ALL WELDING SHALL BE IN STRICT CONFORMANCE WITH THE LATEST EDITION OF AWS D11 AND THE 2016 CALIFORNIA BUILDING CODE.
- 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
- 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 @ 10 DEGREES FAHRENHEIT. CERTIFY CONFORMANCE TO CHARPY V-NOTCH TOUGHNESS REQUIREMENTS WITH TESTS BY AN INDEPENDENT TESTING LABORATORY.
- 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.
- CONTRACTOR SHALL PROVIDE FIELD WELDING AS REQUIRED FOR CONSTRUCTION. WHERE FIELD WELDING IS NOTED, THE DESIGNATION IS GIVEN AS A SUGGESTED CONSTRUCTION PROCEDURE ONLY.
- ALL SHOP WELDS SHALL BE PERFORMED BY A LOS ANGELES CITY LICENSED FABRICATOR.
- ALL WELDERS SHALL BE QUALIFIED FOR THE WORK THEY WILL BE DOING & SHALL HAVE CURRENT CERTIFICATIONS BY AWS & THE CITY OF LOS ANGELES.
- 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.
- 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.
- CLEAN GROOVE PREPARATION THERMAL CUTS BY GRINDING.
- 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.
- ALL WELDED JOINTS SHALL BE PRE-QUALIFIED PER THE LATEST EDITION OF AWS D11. NON PRE- QUALIFIED WELDED JOINTS SHALL BE QUALIFIED BY TEST & PROCEDURE QUALIFICATION TEST RECORD INCLUDED PER THE LATEST EDITION OF AWS D11.

 <b>AMADOR WHITTLE ARCHITECTS, INC.</b>	 OSG# 18843	 <b>Orion Structural</b> <small>Orion Structural Group, Inc. 223 East Thousand Oaks Blvd, Suite 304 Thousand Oaks, California 91300 - 7734 Phone: 805-390-9242</small>
<b>LION ENCLOSURE</b> EXOTIC ANIMAL TRAINING & MANAGEMENT 7075 CAMPUS ROAD MOORPARK, CA 93021 <b>BID SET</b>		
<small>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.</small>		
REVISIONS △ ADDENDUM #1 07/11/19	DATE: 06/24/19 DRAWN: MG CHECK: WL JOB NO: 18-MPC-30	<b>GENERAL NOTES</b> <b>S0.01</b> <small>IF THIS SHEET IS NOT 36" X 24", IT IS NOT FULL SIZE. SCALE DRAWINGS ACCORDINGLY</small>

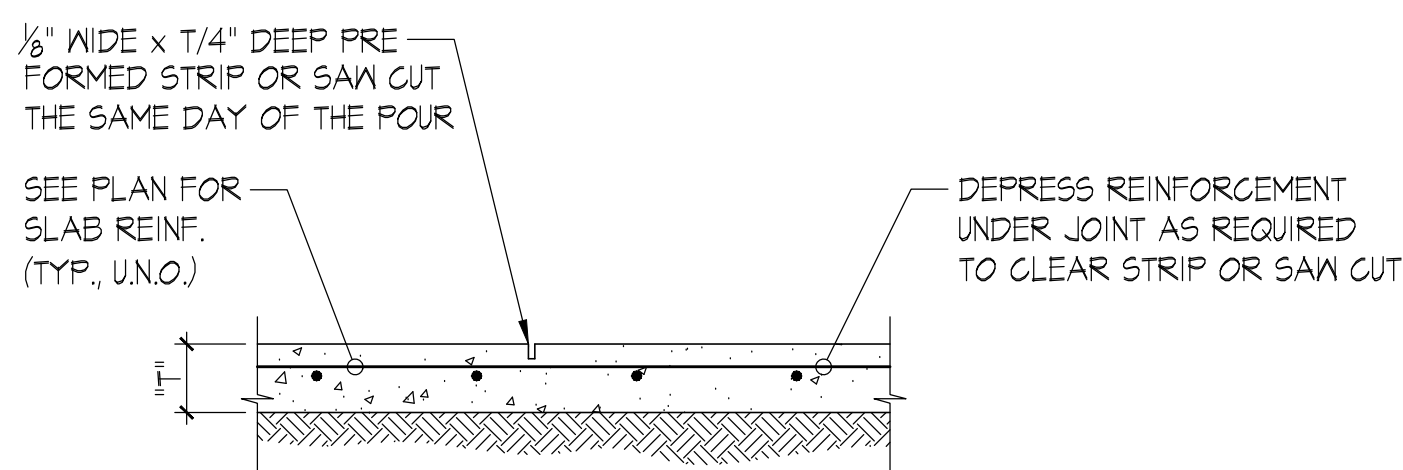




TYPICAL SLAB ON GRADE DETAIL

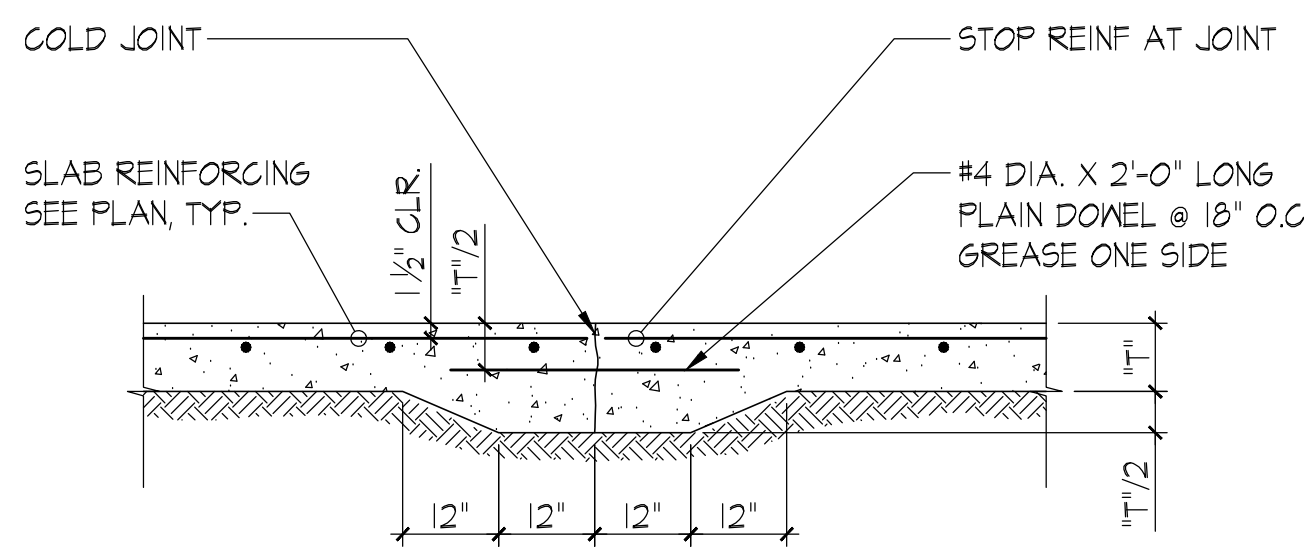
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10



CONTROL JOINT (WHERE CONTINUOUS POUR IS USED)

A



TYPICAL CONSTRUCTION JOINT

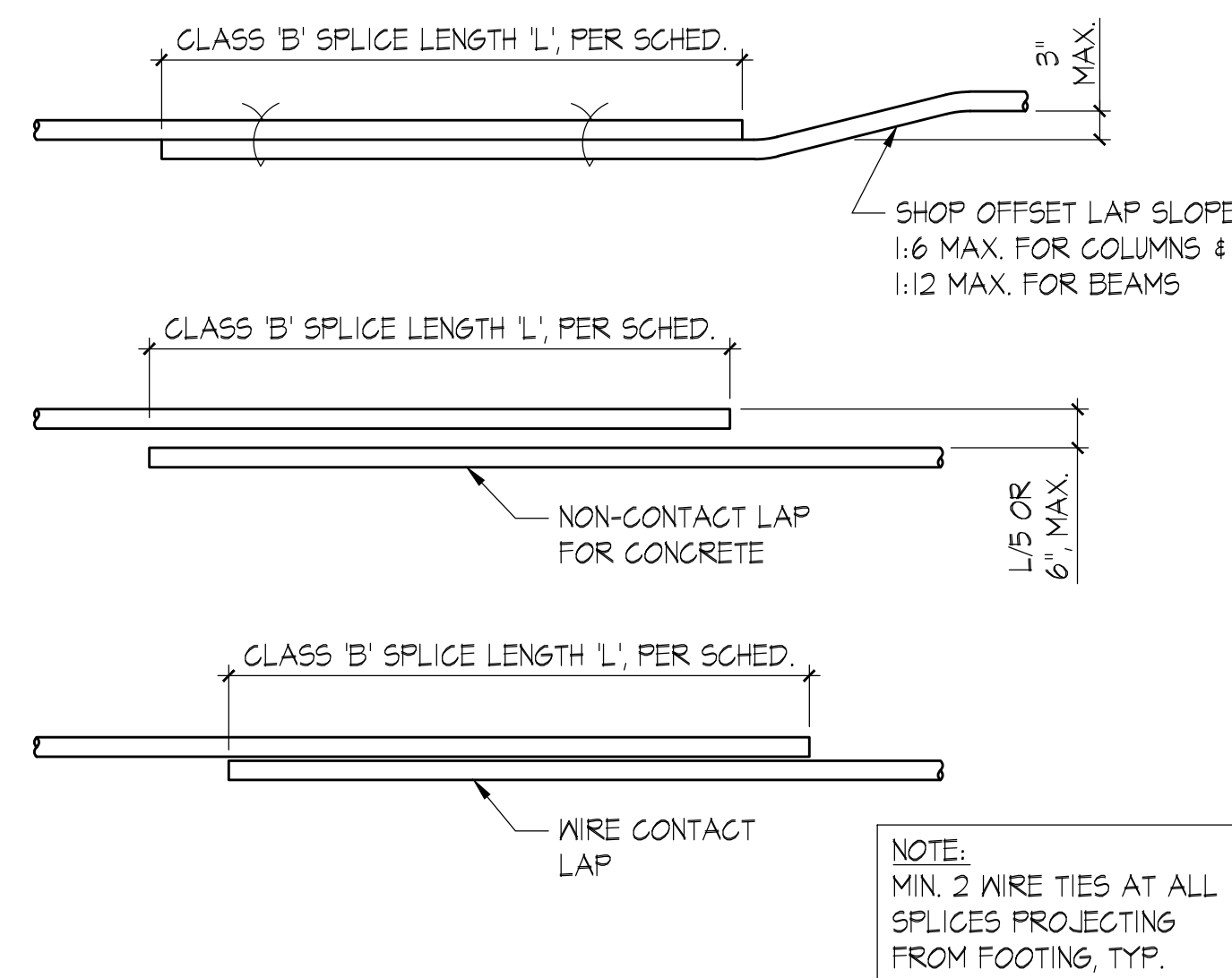
B

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

JOINTS AT SLAB ON GRADE

NOT TO SCALE

12



**NOTES:**

- TOP BARS ARE HORIZONTAL REINFORCING WITH MORE THAN 12" OF CONCRETE BELOW BARS.
- BOTTOM BARS INCLUDE ALL VERTICALS, ALL HORIZONTAL WALL REINFORCING, AND HORIZONTAL REINFORCING WITH LESS THAN 12" OF CONCRETE BELOW BARS.
- 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 49% OF BARS ARE TO BE SPLICED IN ONE LOCATION.
- SMALLER BAR LAP LENGTH SHALL BE USED WHEN SPLICING DIFFERENT SIZE BARS.
- INCREASE SPLICE LENGTH BY 33% FOR LIGHTWEIGHT CONCRETE.

BAR DEVELOPMENT LENGTH (Ld) SCHEDULE

BAR SIZE	F <sub>c</sub> ' = 2500 psi		F <sub>c</sub> ' = 3000 psi		F <sub>c</sub> ' = 4000 psi		F <sub>c</sub> ' = 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"	21"
#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	F <sub>c</sub> ' = 2500 psi		F <sub>c</sub> ' = 3000 psi		F <sub>c</sub> ' = 4000 psi		F <sub>c</sub> ' = 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:**

- MINIMUM SPLICE LENGTH FOR BARS WITH CLASS 'B' SPLICE PER ACI-308-14, SECTION 12.2.
- TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" CONCRETE CAST IN THE MEMBER BELOW THE REINFORCEMENT.
- THESE BAR DEVELOPMENT LENGTH APPLY TO REGULAR OR NORMAL WEIGHT CONCRETE. MULTIPLY THE SPECIFIED DEVELOPMENT LENGTH BY 1.33 FOR LIGHT WEIGHT CONCRETE.
- ALL DETAILING OF REINFORCEMENT SHALL COMPLY WITH THESE SCHEDULES UNLESS SPECIFICALLY DETAILED ON THE DRAWINGS.

TYP. REINF. DEVELOPMENT LENGTH & LAP SPLICE SCHEDULE

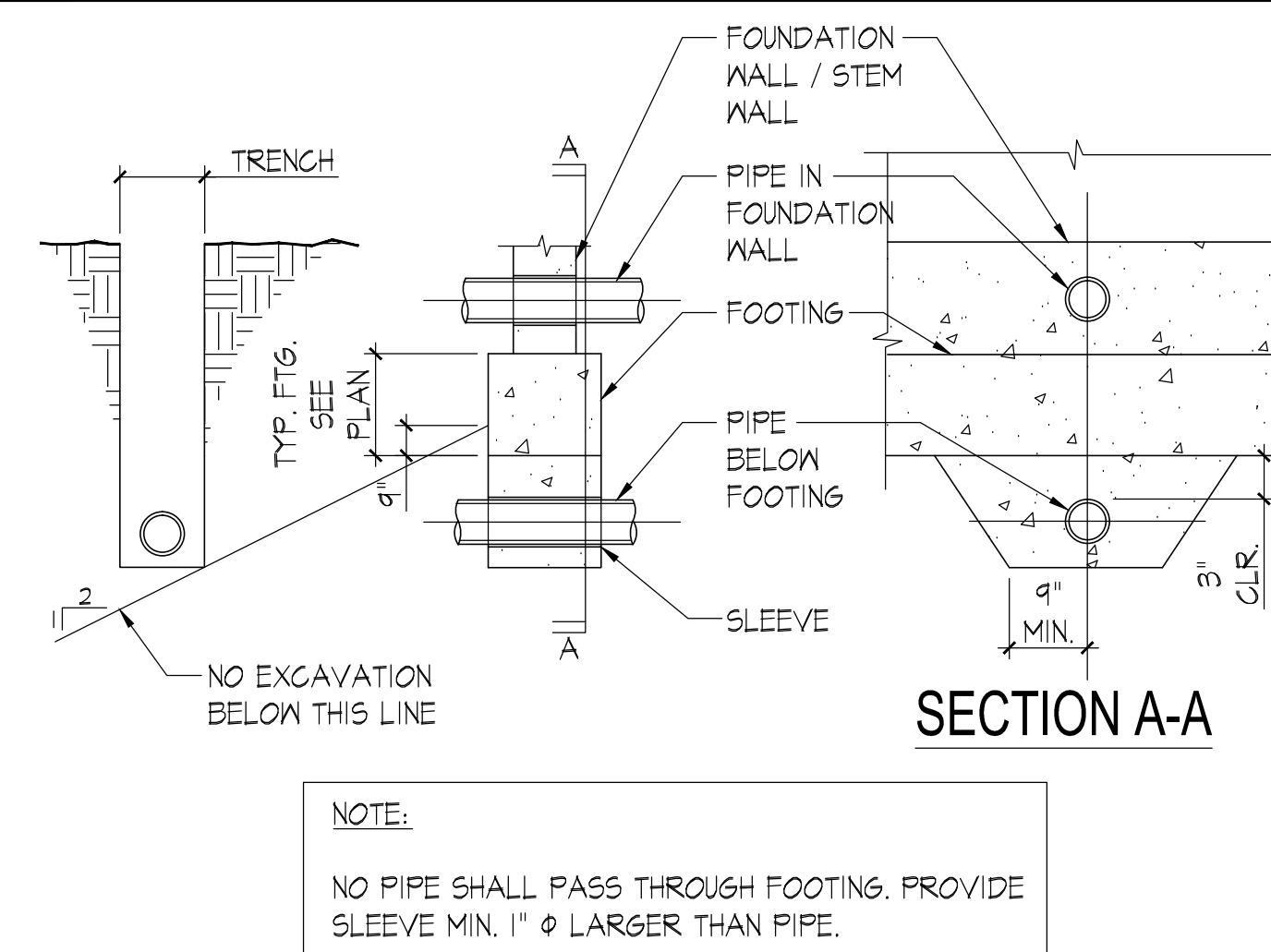
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9

REBAR AT INTERSECTION

SCALE: 1"=1'-0"

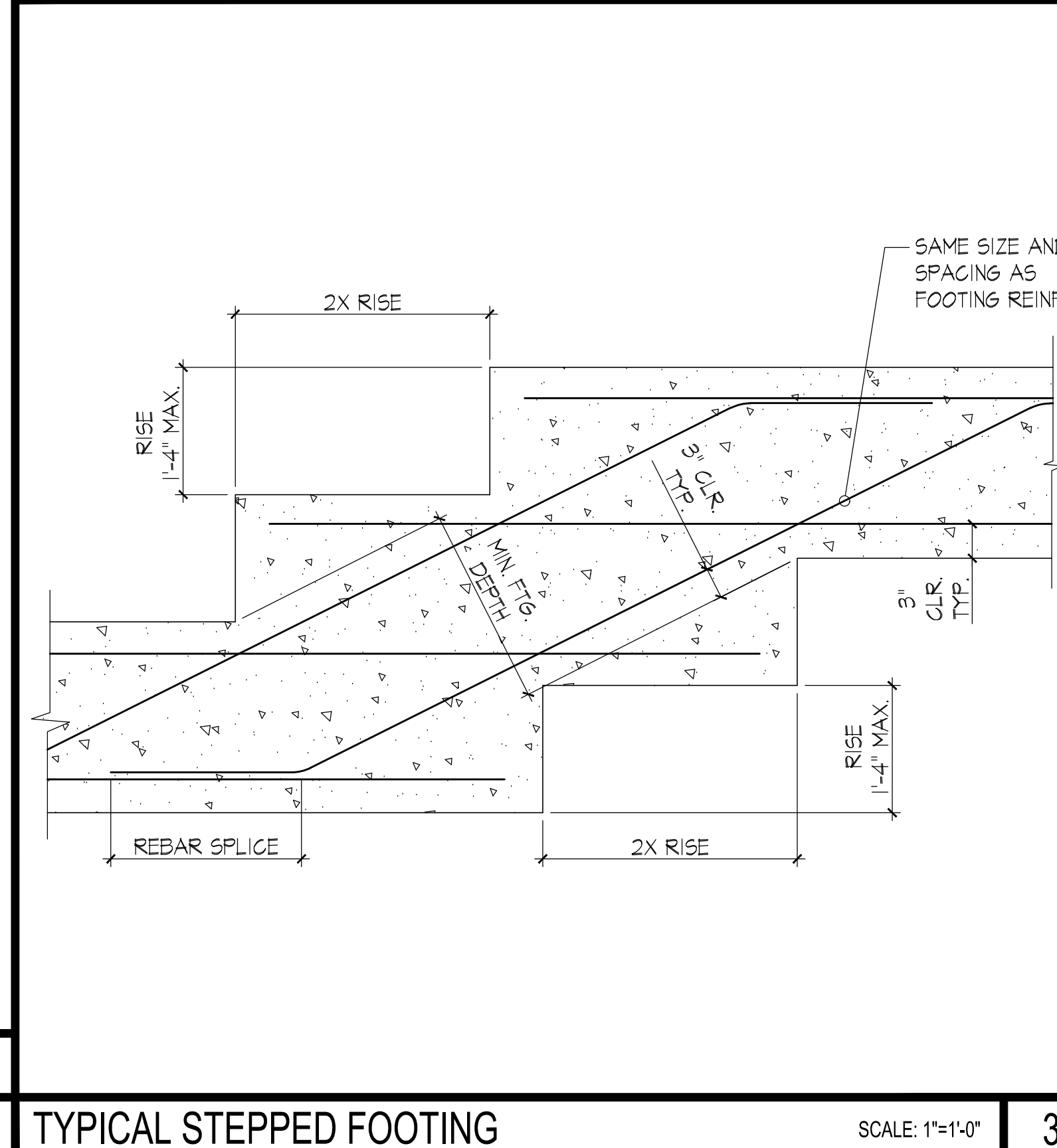
4



PIPE AT FOOTING

SCALE: 1"=1'-0"

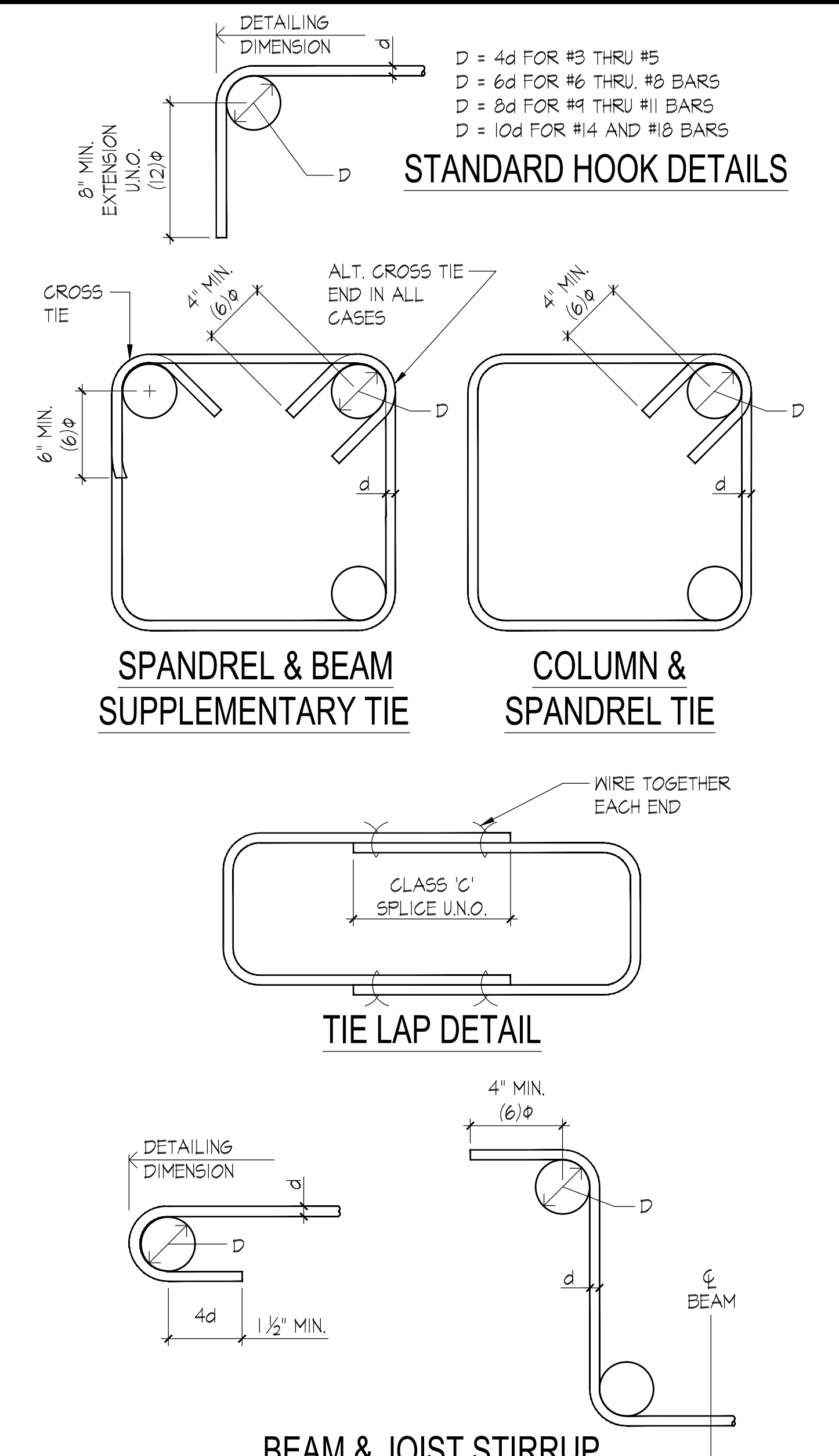
5



TYPICAL STEPPED FOOTING

SCALE: 1"=1'-0"

3



TYPICAL STANDARD HOOK DETAIL

SCALE: 1"=1'-0"

2

**AMADOR WHITTLE ARCHITECTS, INC.**

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**LION ENCLOSURE**

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

**BID SET**

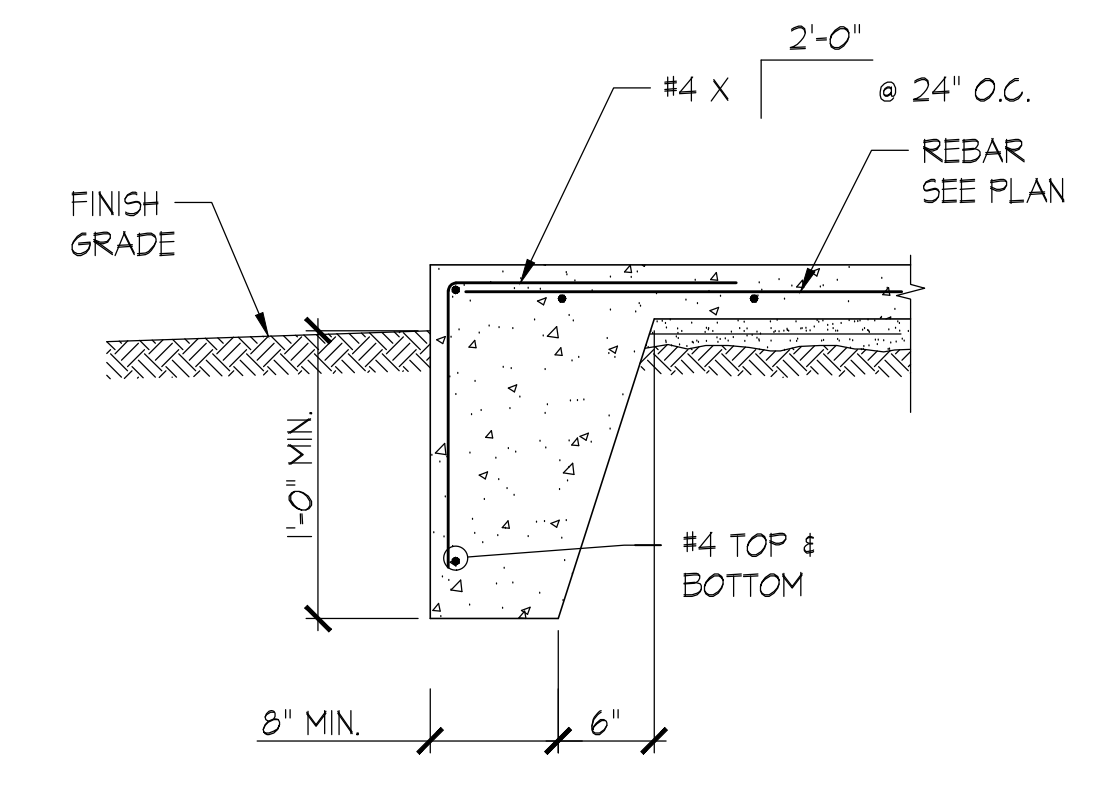
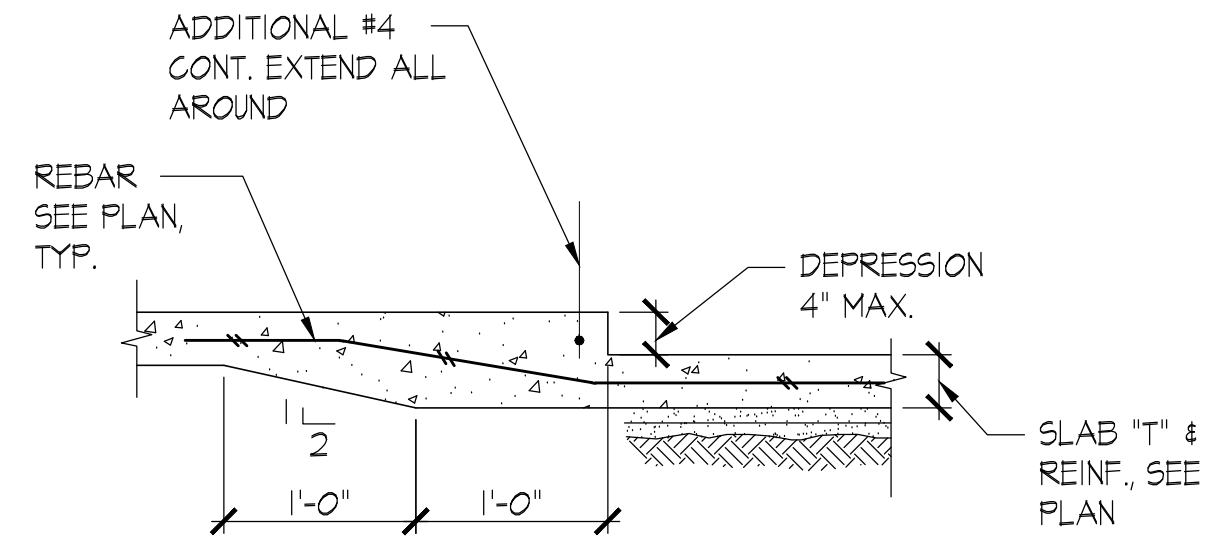
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<b>REVISIONS</b>	ADDENDUM #1	07/11/19	<b>DATE:</b>	06/24/19
			<b>DRAWN:</b>	MG
			<b>CHECK:</b>	WL
			<b>JOB NO:</b>	18-MPC-30

**TYPICAL DETAILS**

**S0.10**

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

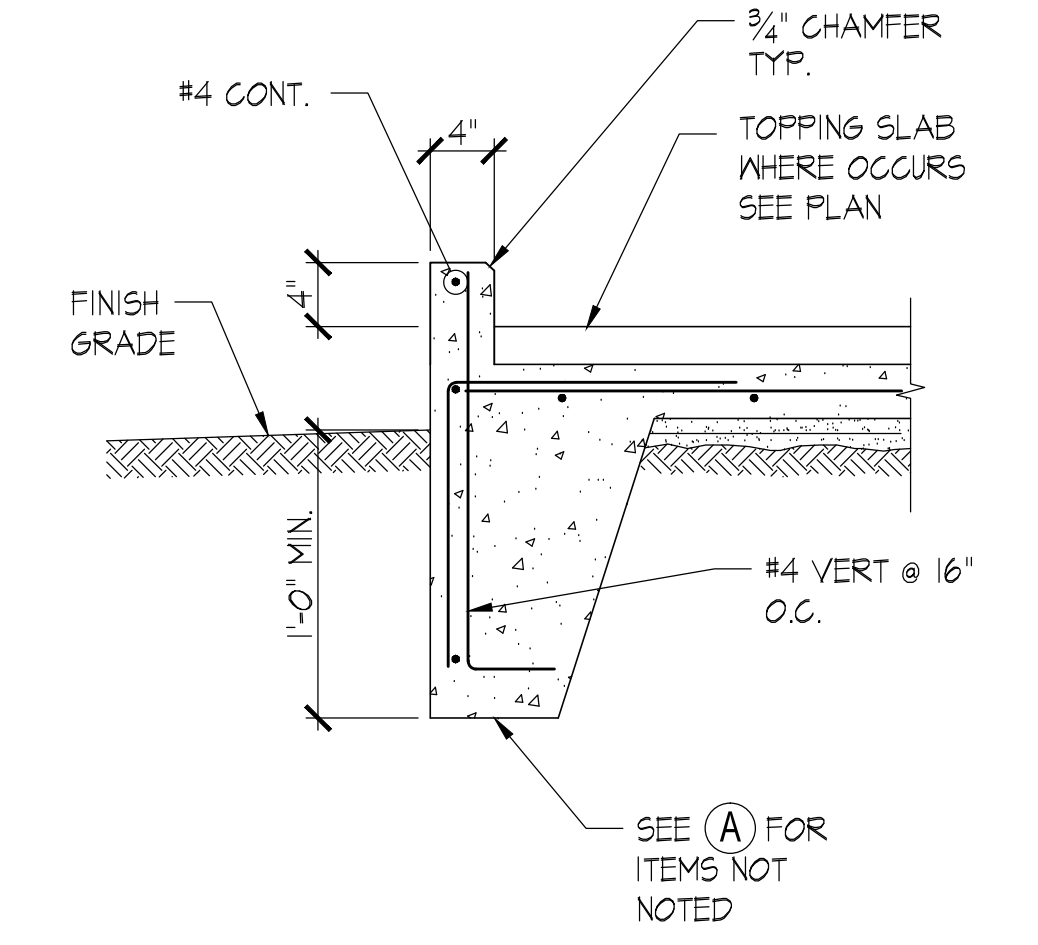


SCALE: 1"=1'-0" 10

NOT TO SCALE 7

SLAB ON GRADE DEPRESSION

SCALE: 1"=1'-0" 4



SLAB EDGE W/CURB (B)

NOT TO SCALE 8

SLAB ON GRADE DEPRESSION

SCALE: 1"=1'-0" 5

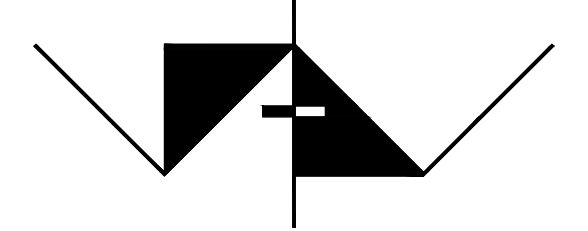
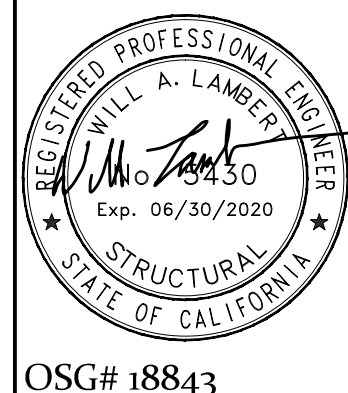

SLAB ON GRADE EDGE DETAIL

NTS 2

NOT TO SCALE 12

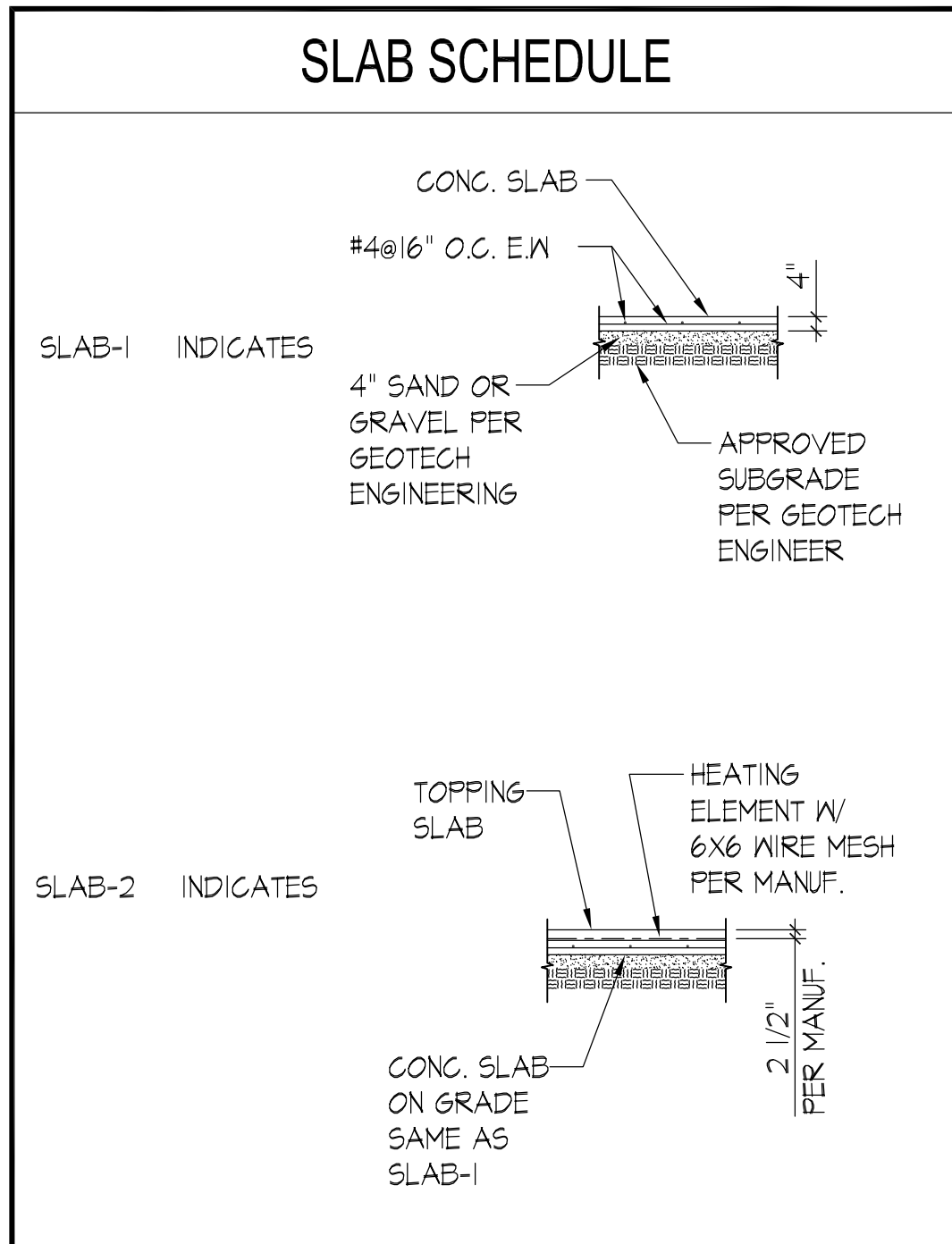
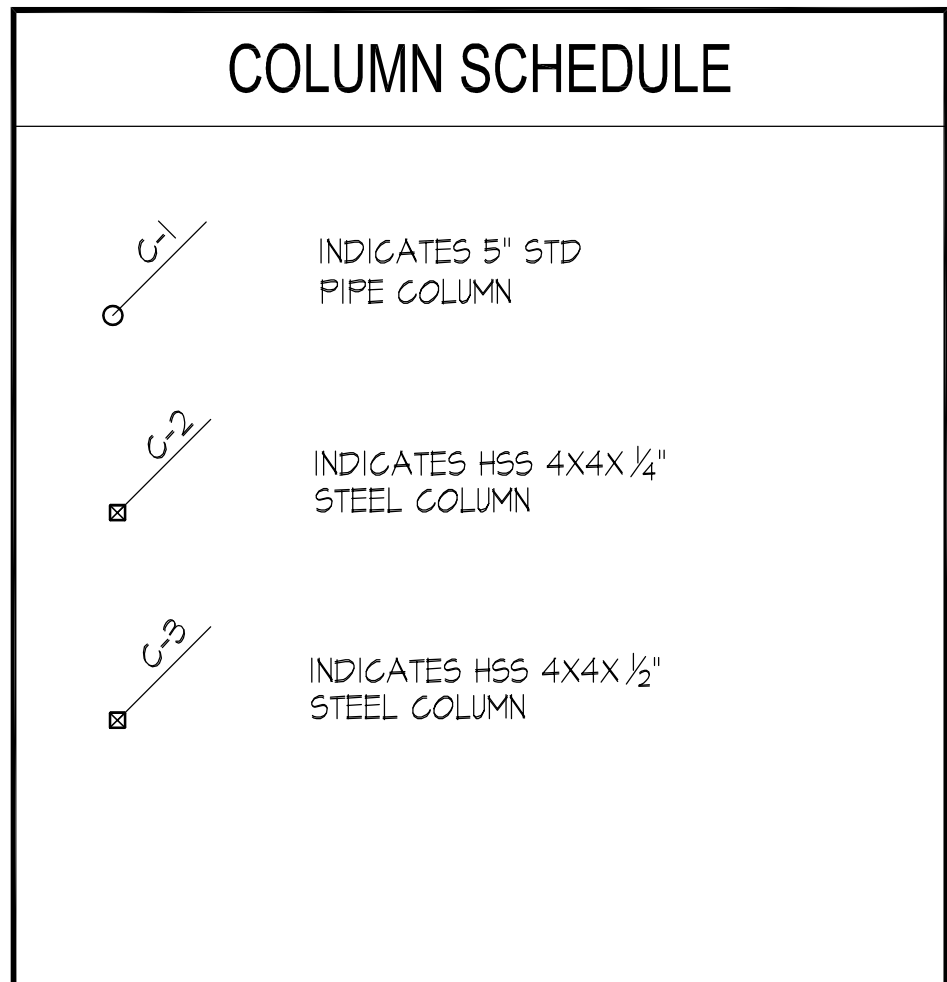
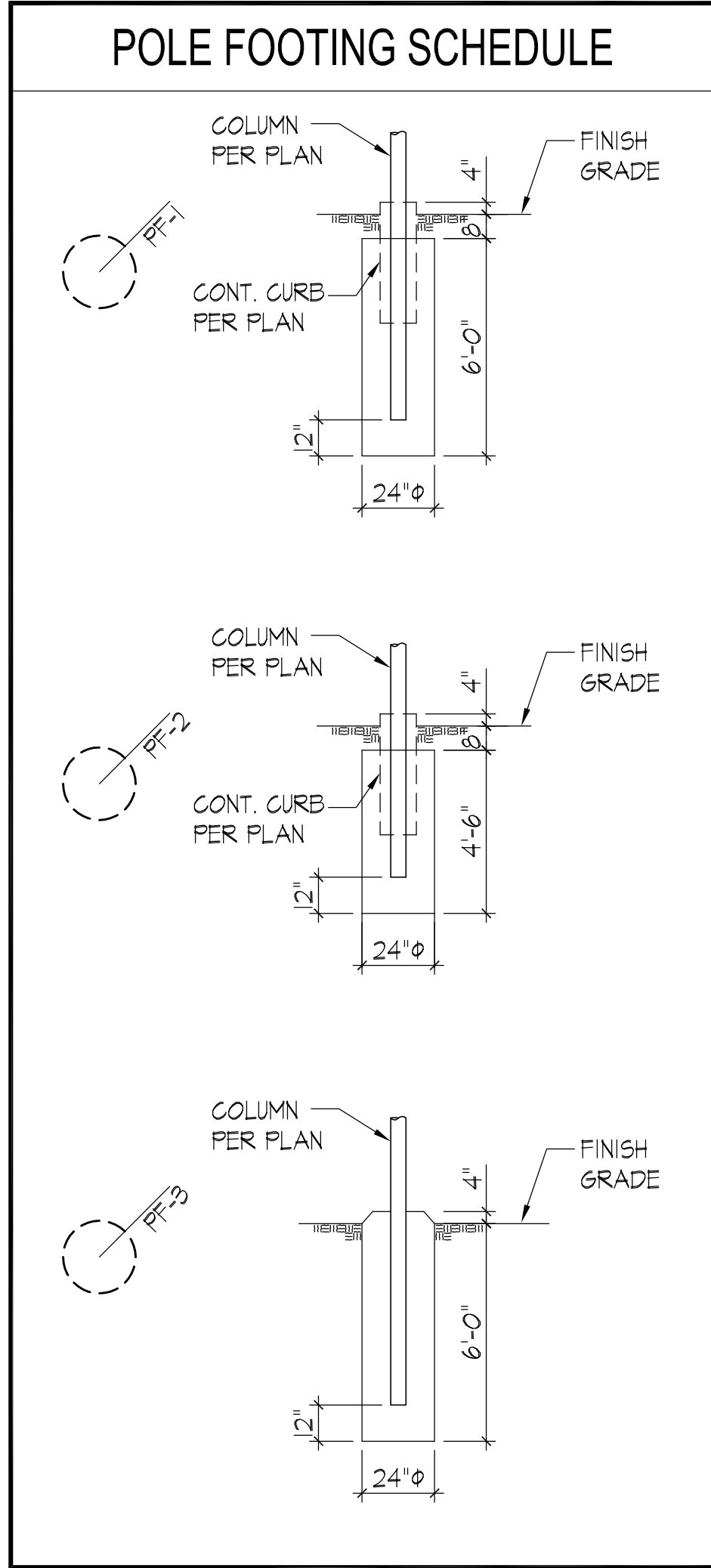
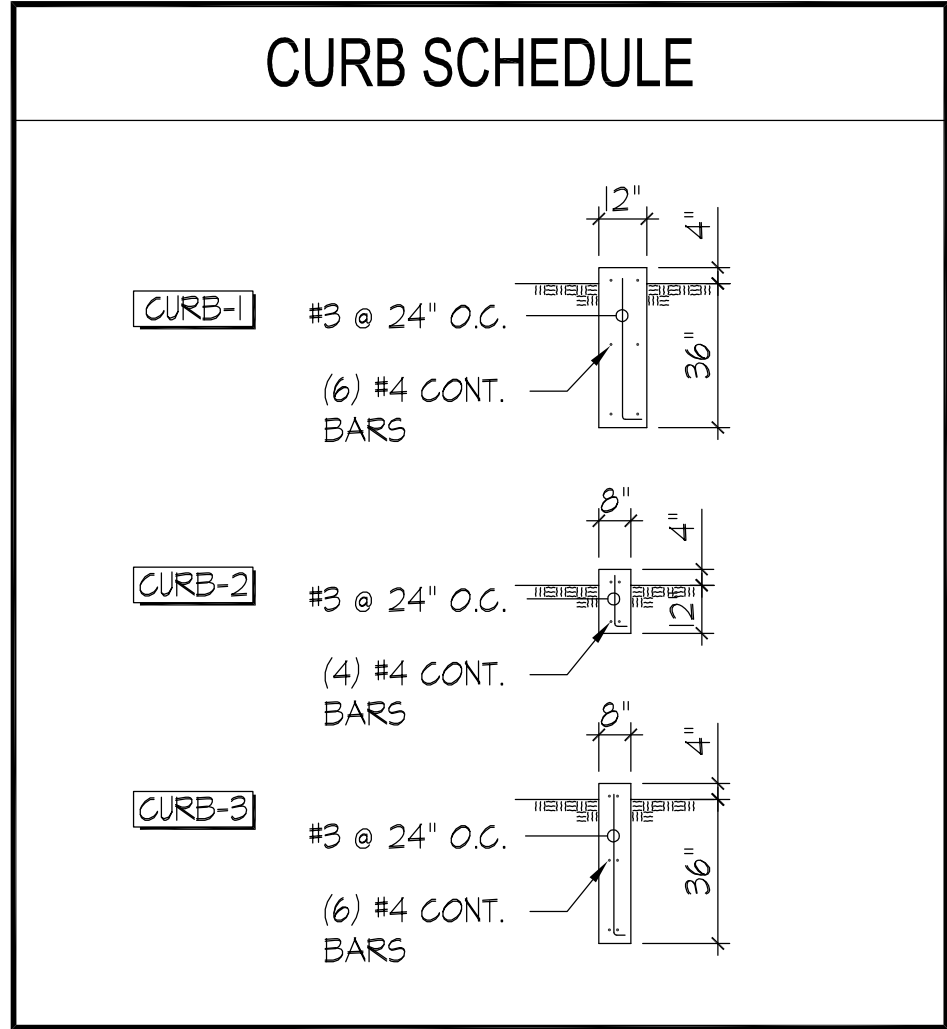
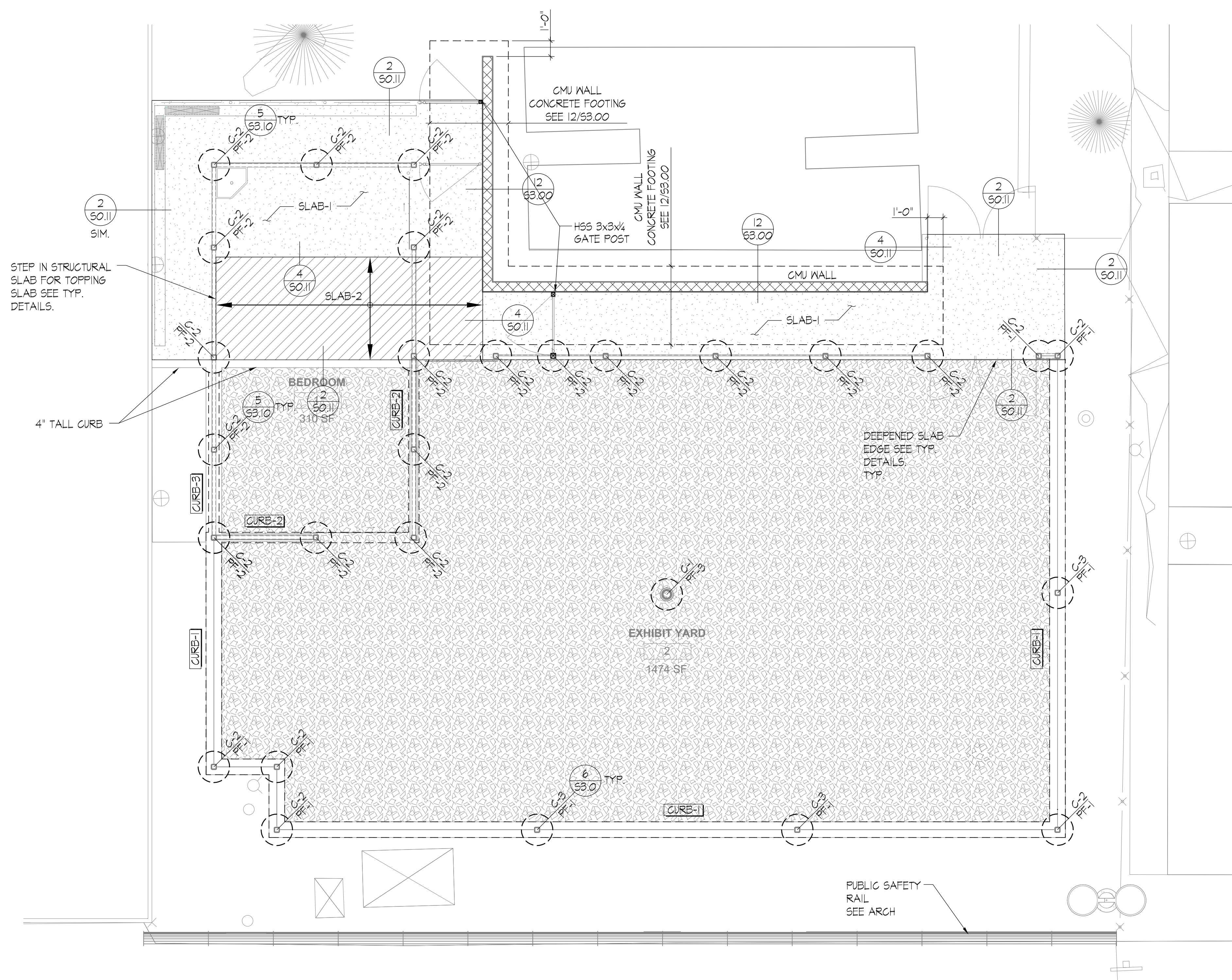
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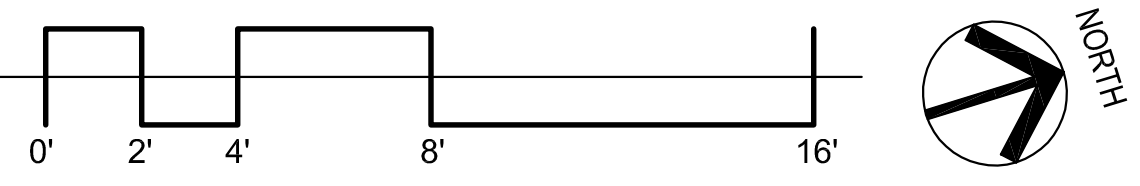
 <b>AMADOR WHITTLE ARCHITECTS, INC.</b>		 <b>Orion Structural</b> <small>Orion Structural Group, Inc.          225 East Thousand Oaks Blvd.          Suite 304          Thousand Oaks, California          91360 • 7734          Phone: 805-390-9242</small>
<small>NOTE: THIS SHEET IS ONE OF A SET OF DOCUMENTS 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.</small>		
REVISIONS ADDENDUM #1 DATE: 07/11/19	DATE: 06/24/19 DRAWN: MG CHECK: WL	JOB NO: 18-MPC-30
<b>TYPICAL DETAILS</b>		<b>S0.11</b>

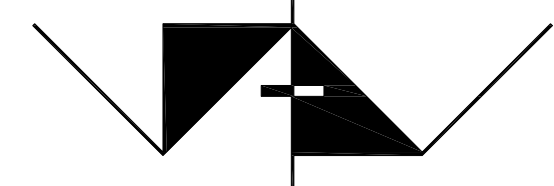
IF THIS SHEET IS NOT 36" X 24", IT IS NOT FULL SIZE. SCALE DRAWINGS ACCORDINGLY.





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





**AMADOR WHITTLE ARCHITECTS, INC.**

REGISTERED PROFESSIONAL ENGINEER  
WILLIAM A. LAMBERT  
Exp. 06/30/2020  
STRUCTURAL  
STATE OF CALIFORNIA  
OSG# 18843

**Orion Structural**

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

**LION ENCLOSURE**

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

BID SET

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REVISIONS	ADDENDUM #1	07/11/19	DATE: 06/24/19
			DRAWN: MG
			CHECK: WL
			JOB NO: 18-MPC-30

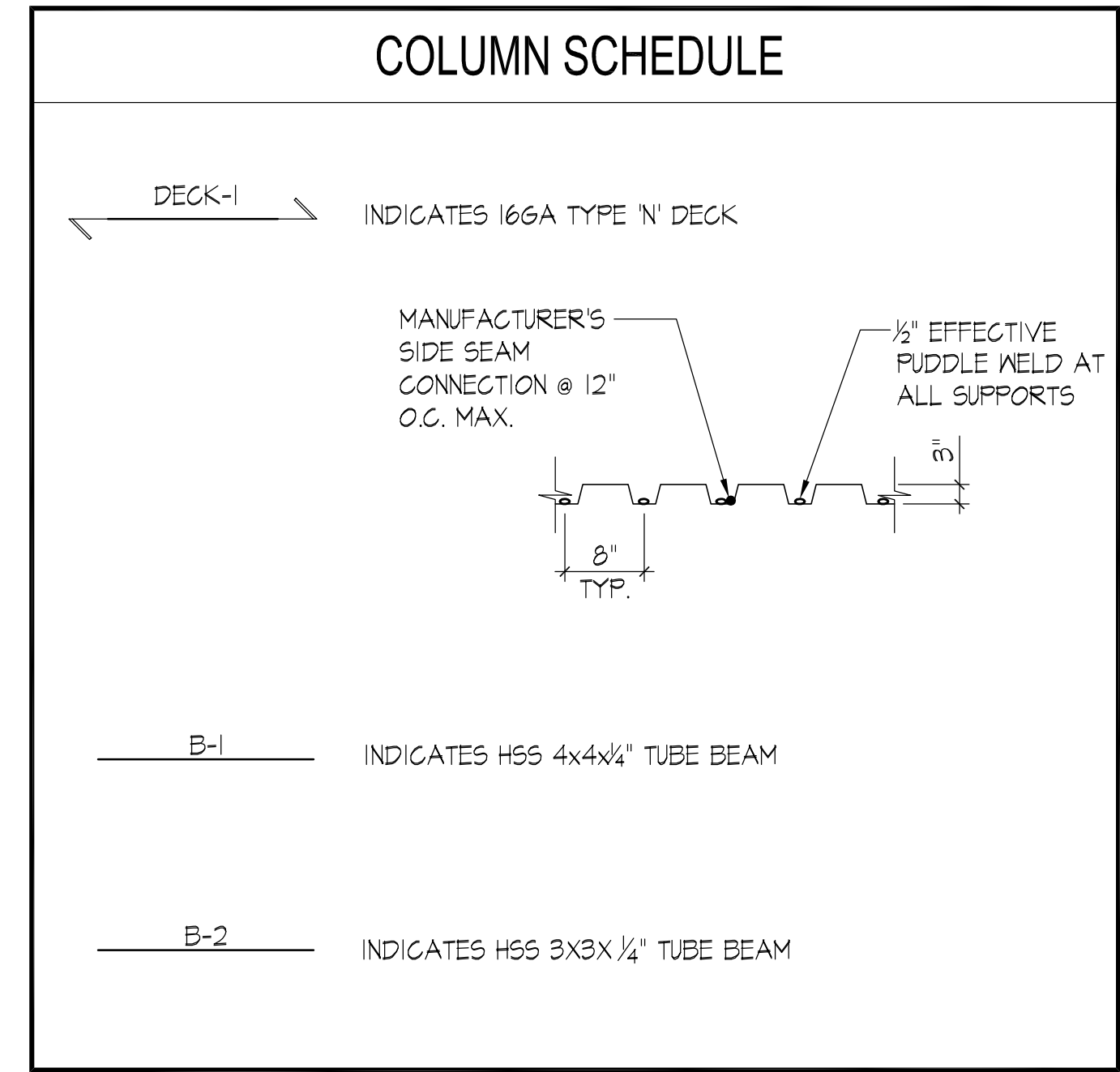
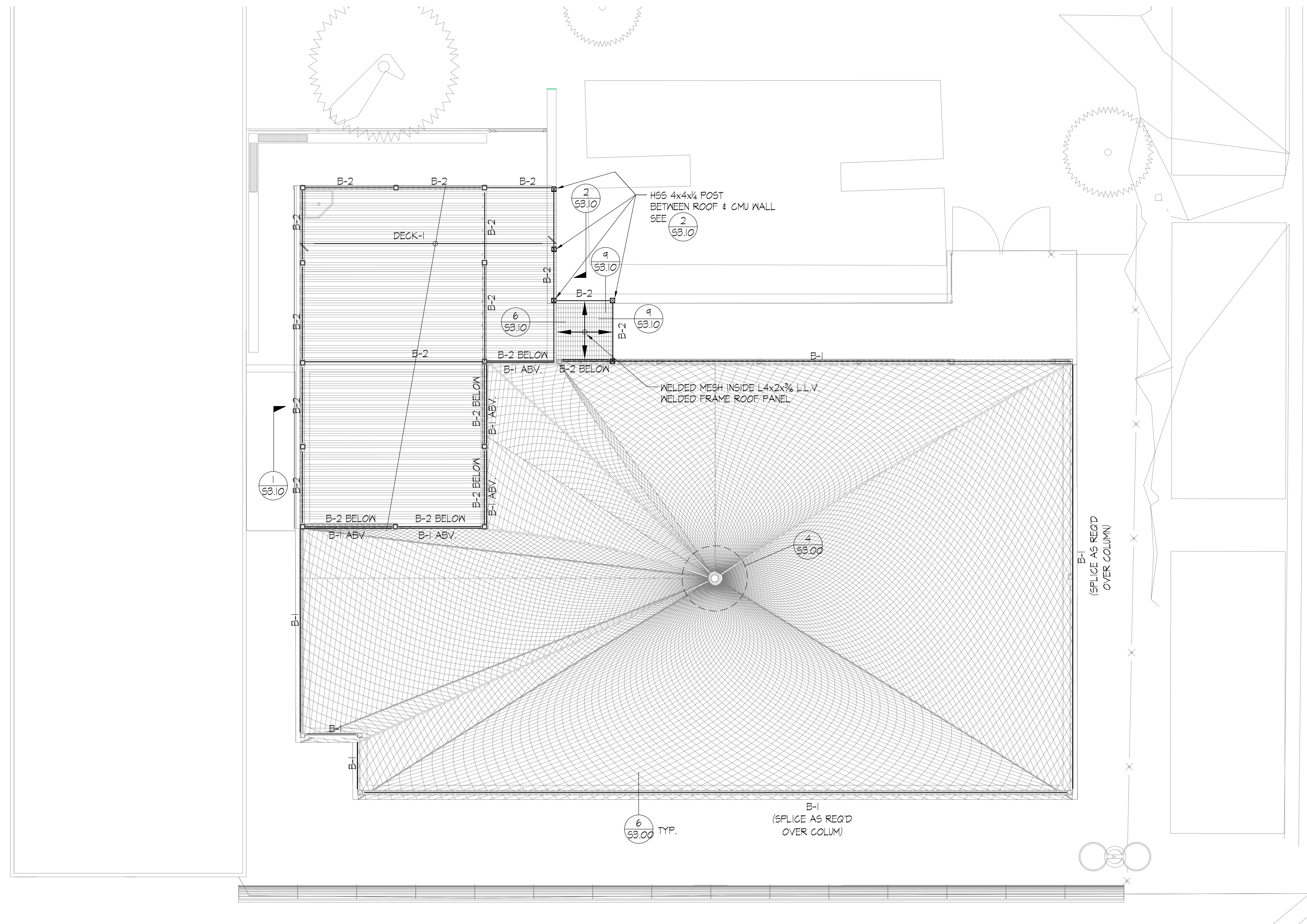
**FOUNDATION PLAN**

\$1.00

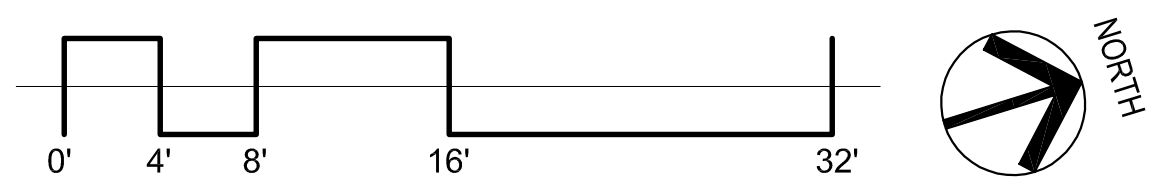
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IF THIS SHEET IS NOT 36" X 24", IT IS NOT FULL SIZE. SCALE DRAWINGS ACCORDINGLY.



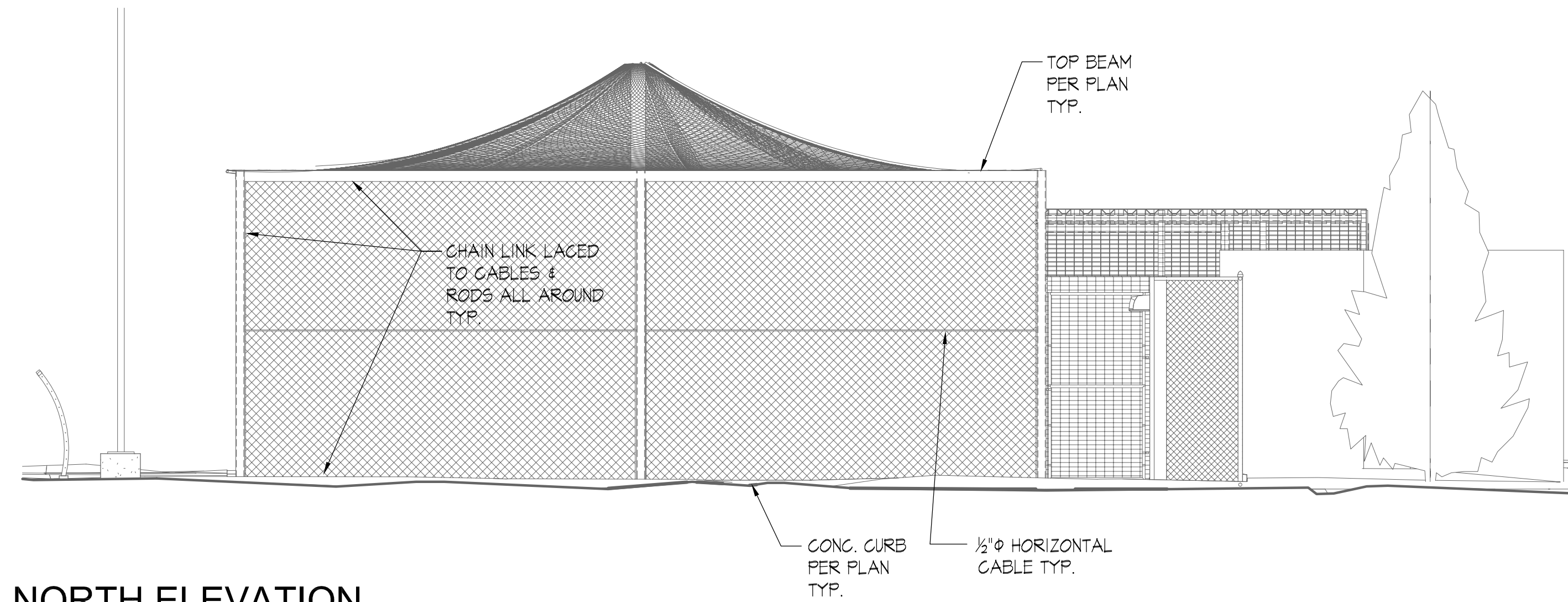


**2 ROOF FRAMING PLAN**  
1/8" = 1'-0"

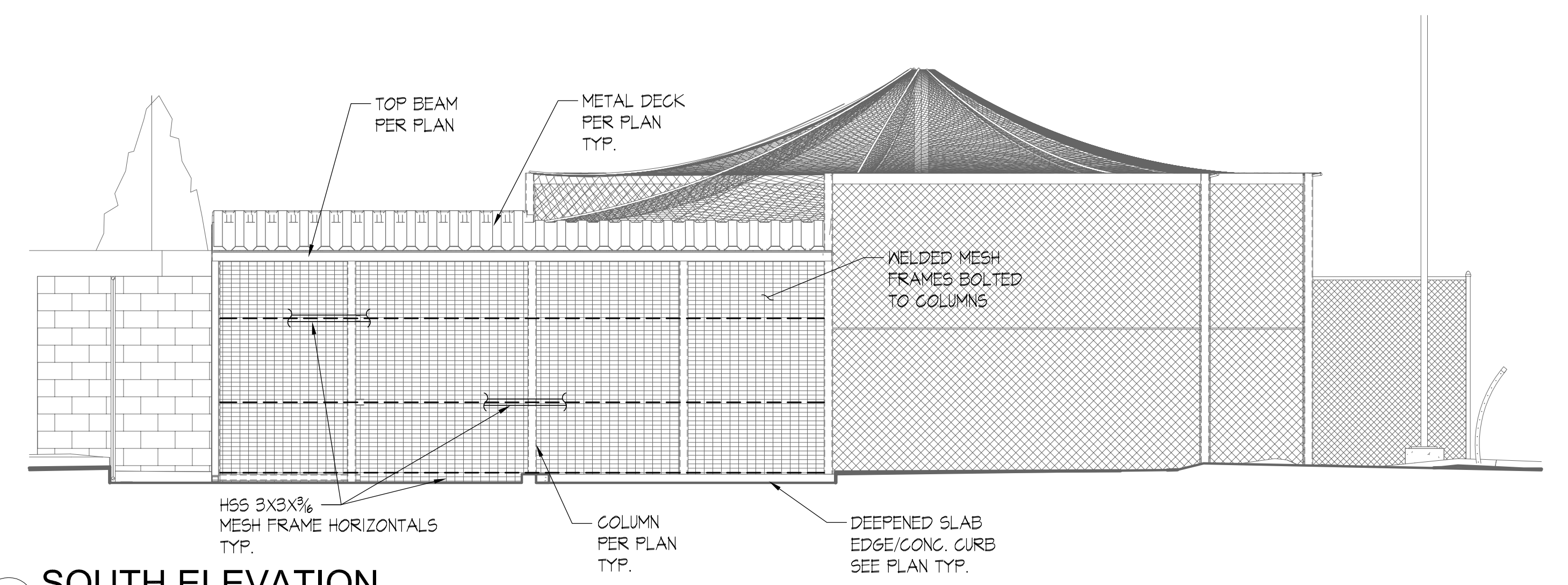


 <b>AMADOR WHITTLE ARCHITECTS, INC.</b>	 OS# 18843	 <b>Orion Structural</b> <small>Orion Structural Group, Inc.          223 East Thousand Oaks Blvd.          Suite 304          Thousand Oaks, California          91360 - 7734          Phone: 805.390.9242</small>
<b>LION ENCLOSURE</b> EXOTIC ANIMAL TRAINING & MANAGEMENT 7075 CAMPUS ROAD MOORPARK, CA 93021 <b>BID SET</b>		
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  ADDENDUM #1    07/11/19	DATE: 06/24/19 DRAWN: MG CHECK: WL JOB NO: 18-MPC-30	
<b>ROOF FRAMING PLAN</b>		<b>S1.10</b> <small>OF</small>
IF THIS SHEET IS NOT 36" X 24", IT IS NOT FULL SIZE. SCALE DRAWINGS ACCORDINGLY.		

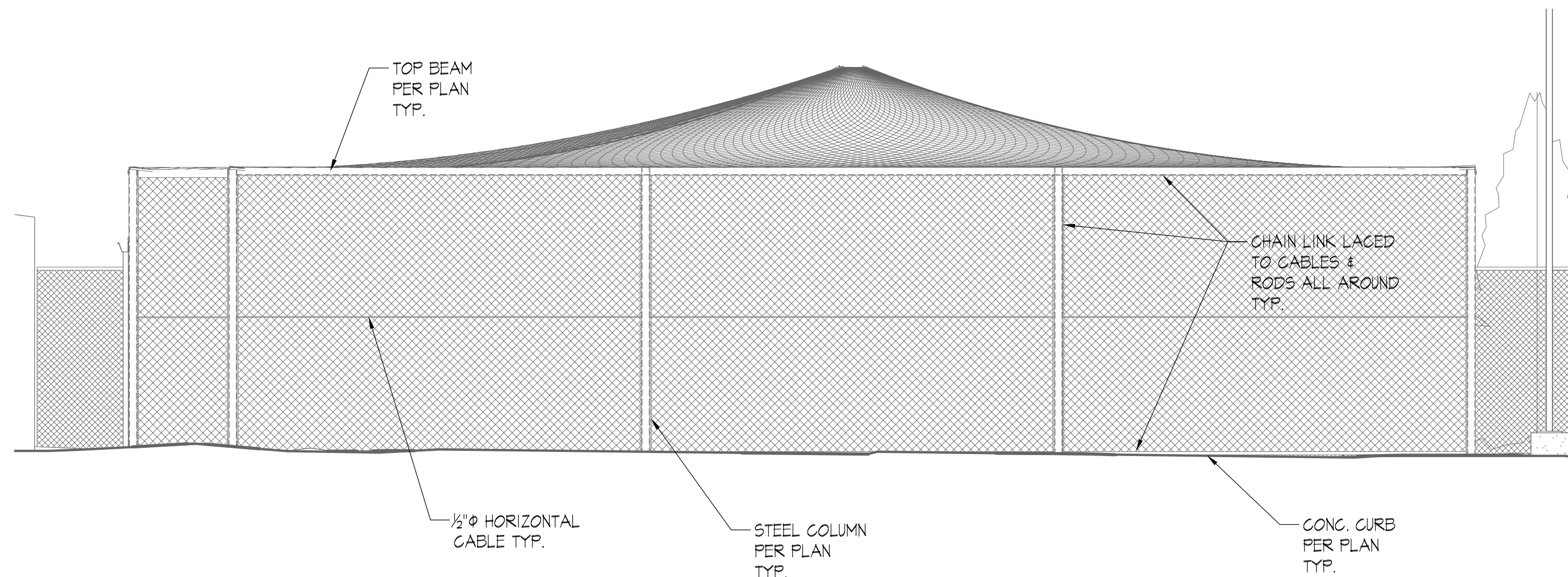




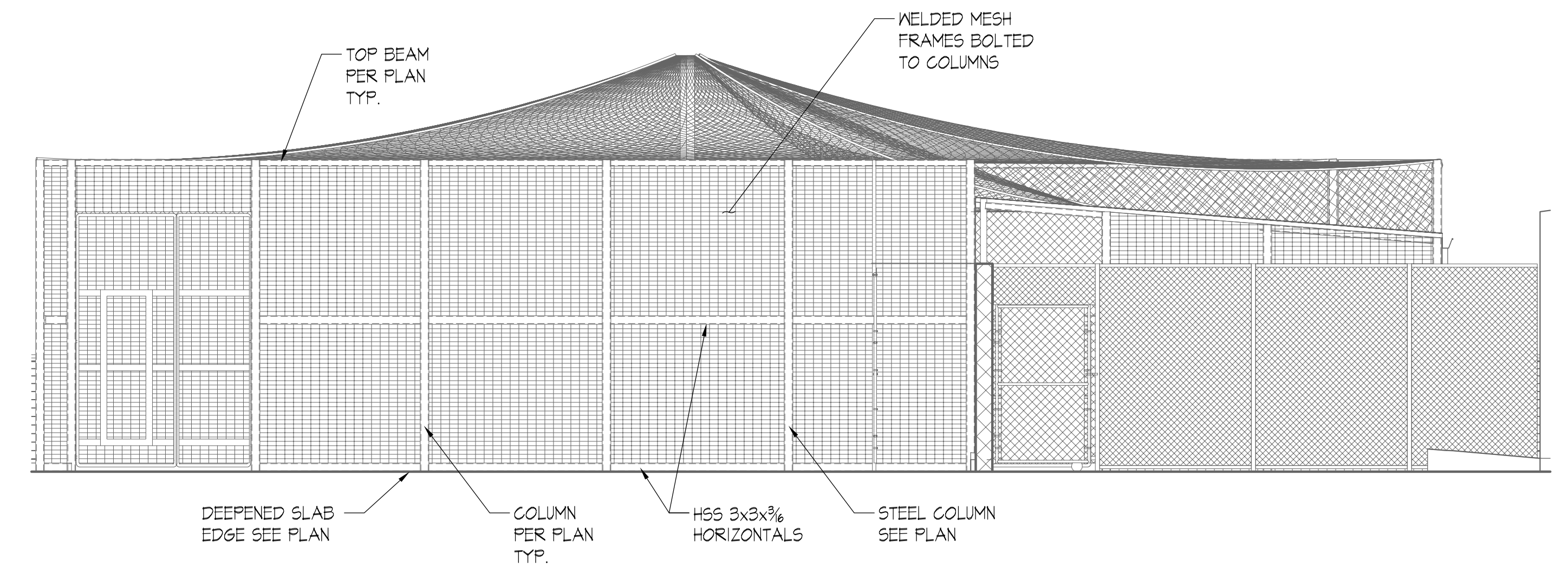
**3 NORTH ELEVATION**  
1/4" = 1'-0"



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



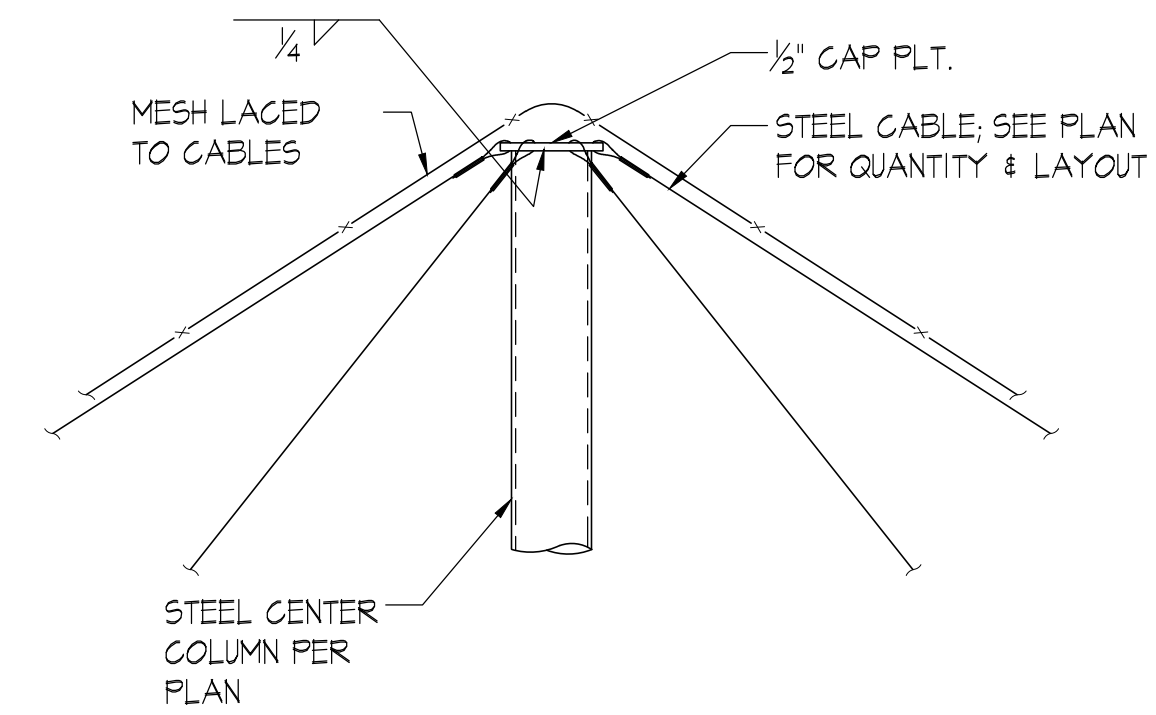
**4 EAST ELEVATION**  
1/4" = 1'-0"



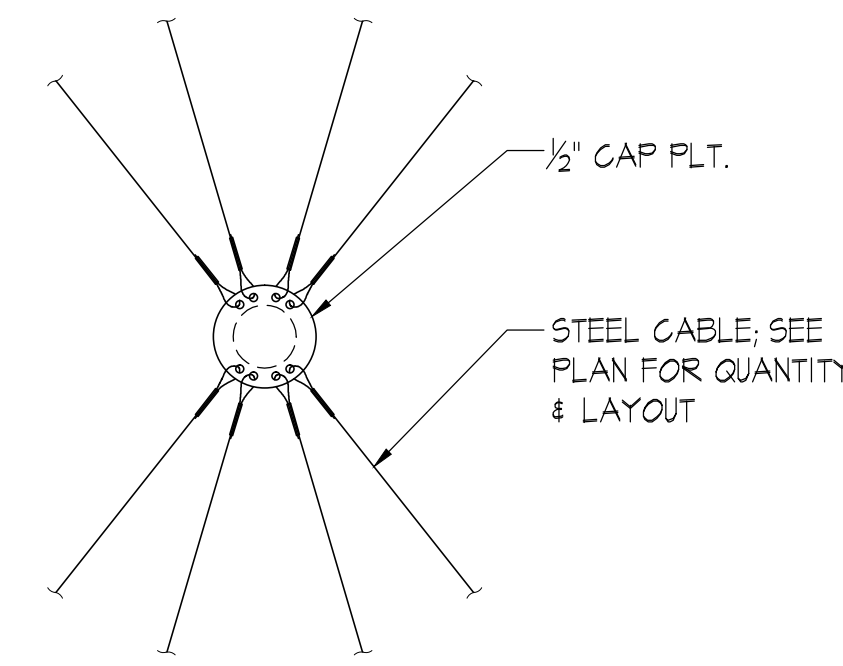
**2 WEST ELEVATION**  
1/4" = 1'-0"

 <b>AMADOR WHITTLE ARCHITECTS, INC.</b>	 OS# 18843	 <b>Orion Structural</b> <small>Orion Structural Group, Inc.          223 East Thousand Oaks Blvd.          Suite 304          Thousand Oaks, California          91360 - 7734          Phone: 805.390.9242</small>
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REVISIONS ADDENDUM #1 07/11/19	DATE: 06/24/19 DRAWN: MG CHECK: WL JOB NO: 18-MPG-30	
<b>STRUCTURAL ELEVATIONS</b>		<b>\$2.00</b> <small>OF</small>

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



ELEVATION VIEW A



PLAN VIEW B

STEEL BEAM CONN. AT WOOD POST

1" = 1'-0"

10

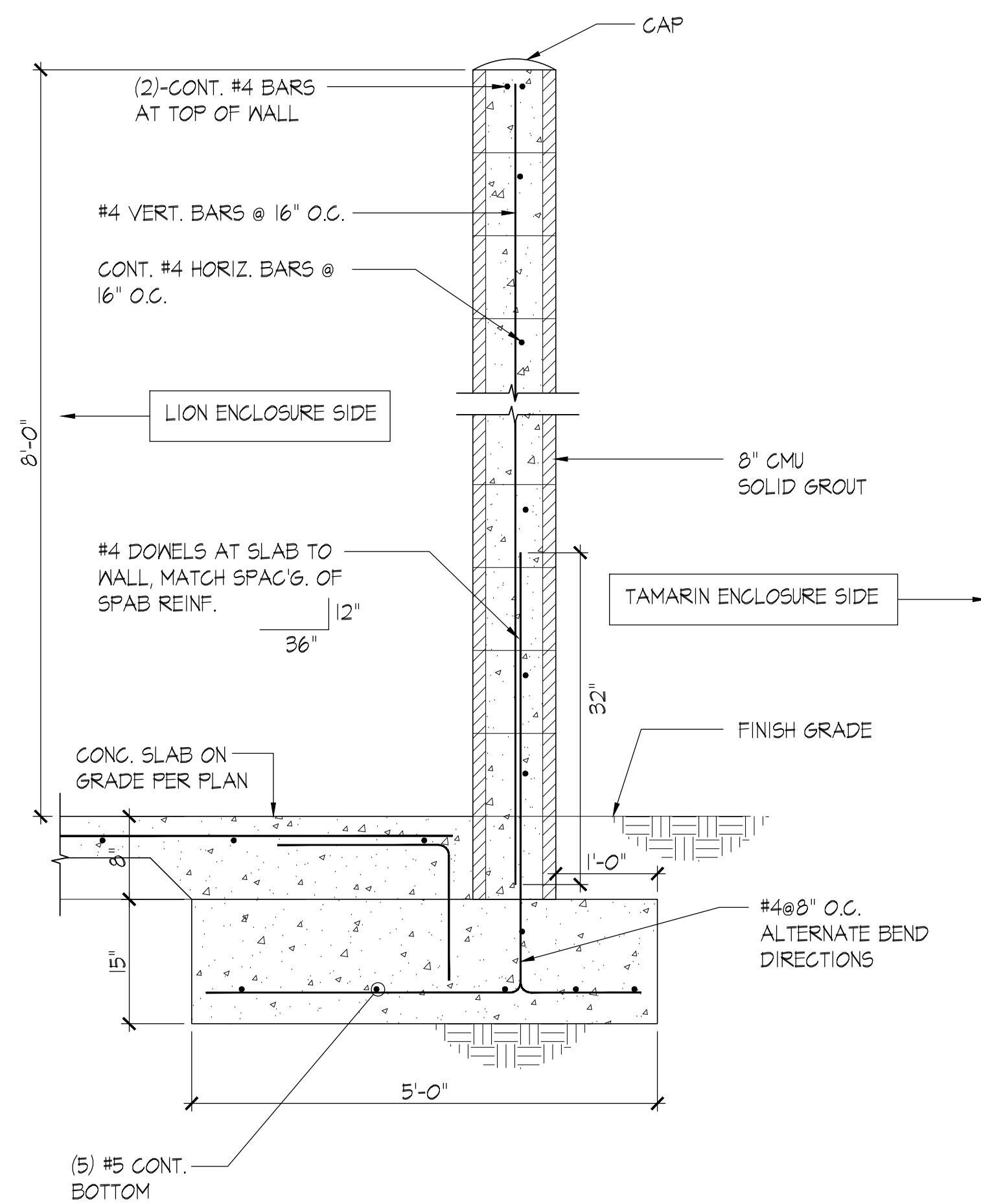
ENCLOSURE CENTER COLUMN TOP

1" = 1'-0"

4

1" = 1'-0"

1



CMU WALL

NTS

12

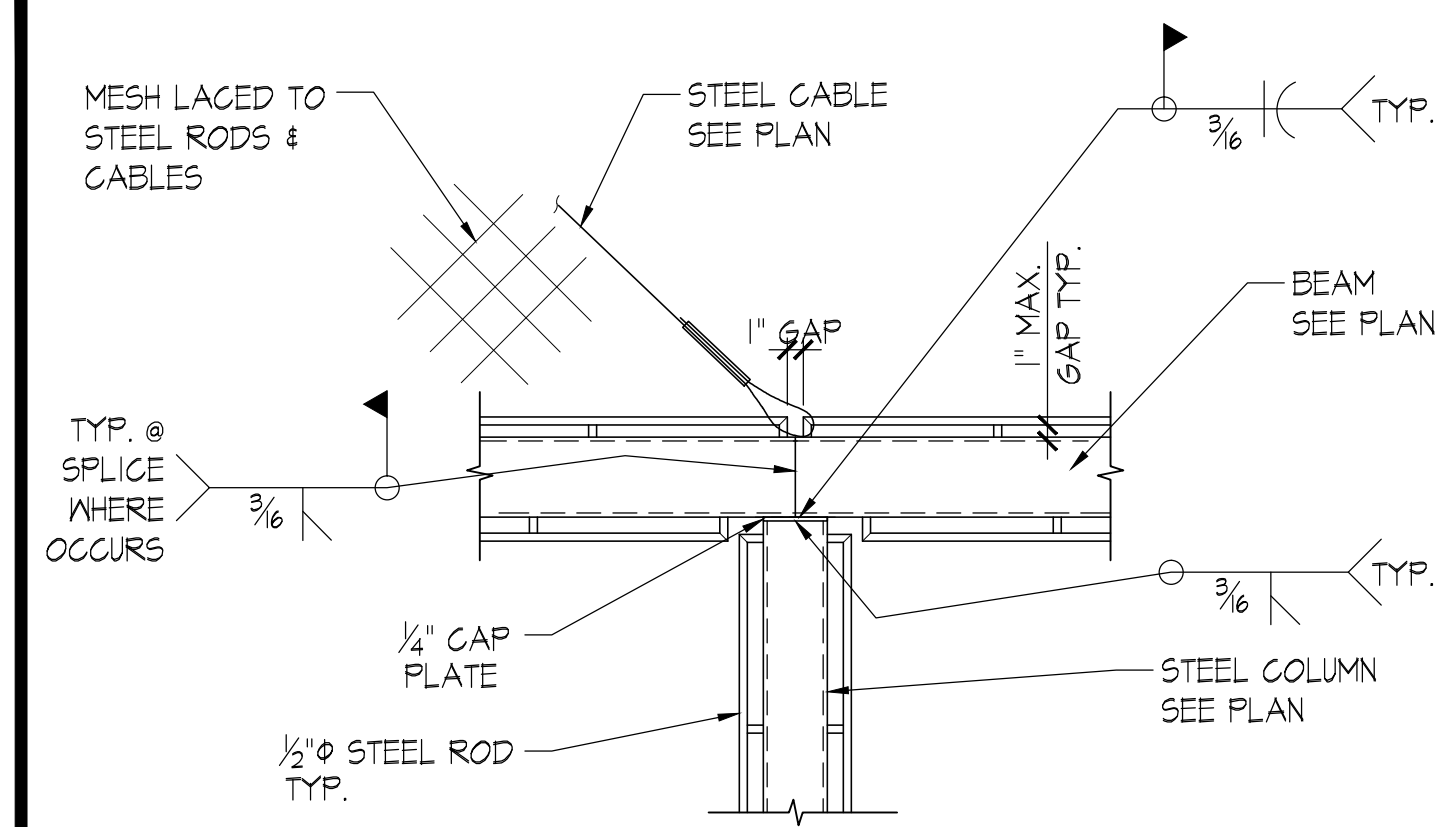
1" = 1'-0"

9

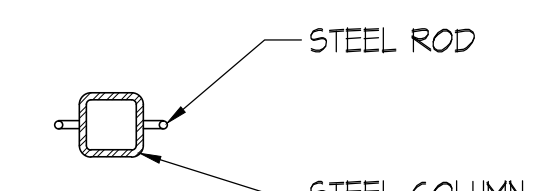
ENCLOSURE PERIMETER COLUMN

1" = 1'-0"

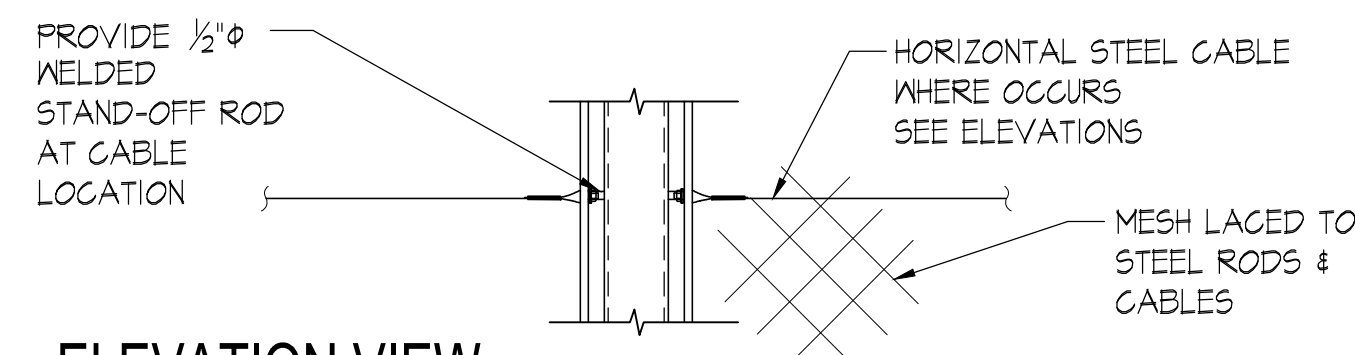
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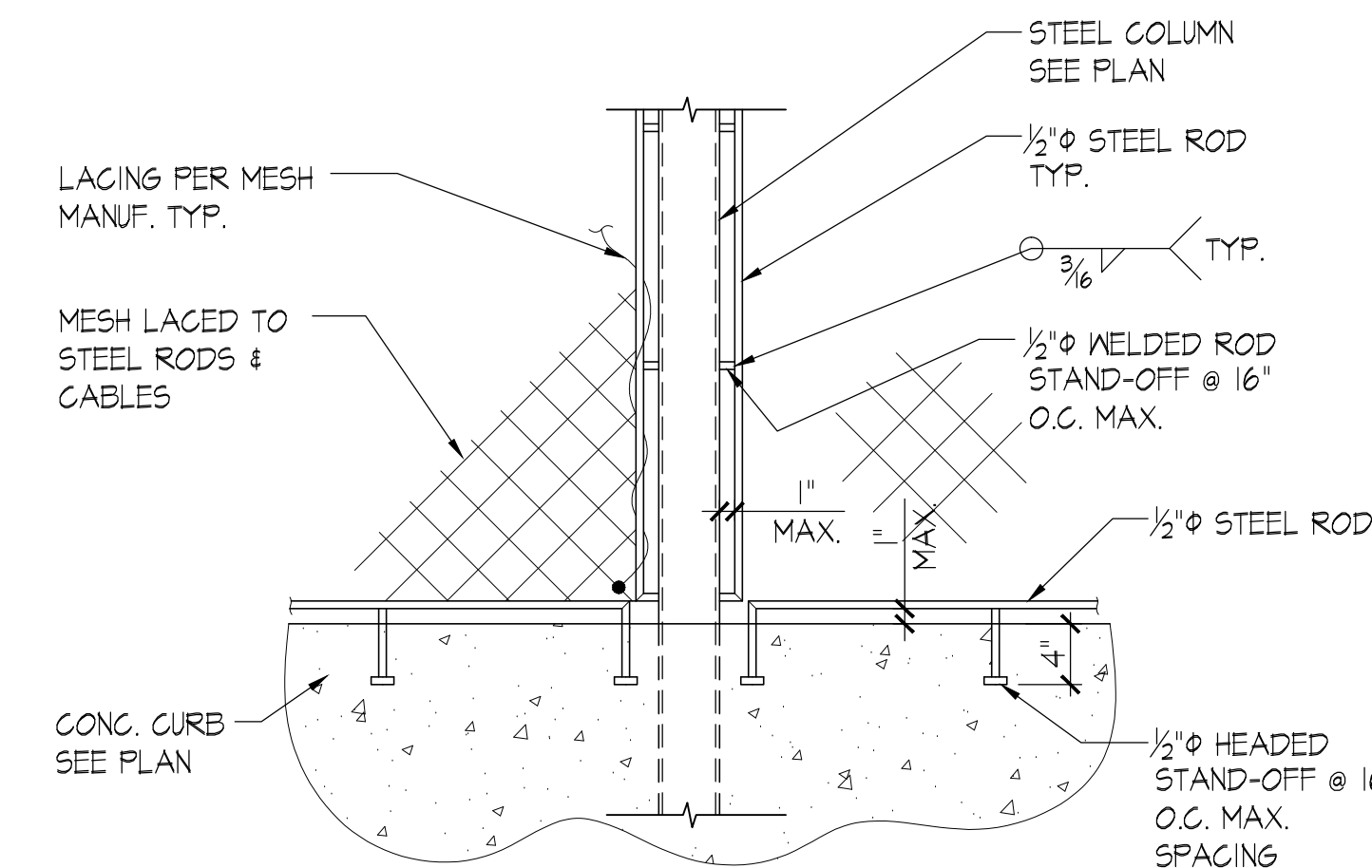
ELEVATION VIEW @ TOP D



PLAN VIEW @ COLUMN C



ELEVATION VIEW @ HORIZONTAL CABLES B



ELEVATION VIEW @ BASE A

1" = 1'-0"

2

**AMADOR WHITTLE ARCHITECTS, INC.**

OSG# 18843

**Orion Structural**

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223 East Thousand Oaks Blvd., Suite 304  
Thousand Oaks, California 91360 • 7734  
Phone: 805.390.9242

LION ENCLOSURE

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

BID SET

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			DRAWN: MG
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			JOB NO: 18-MPC-30

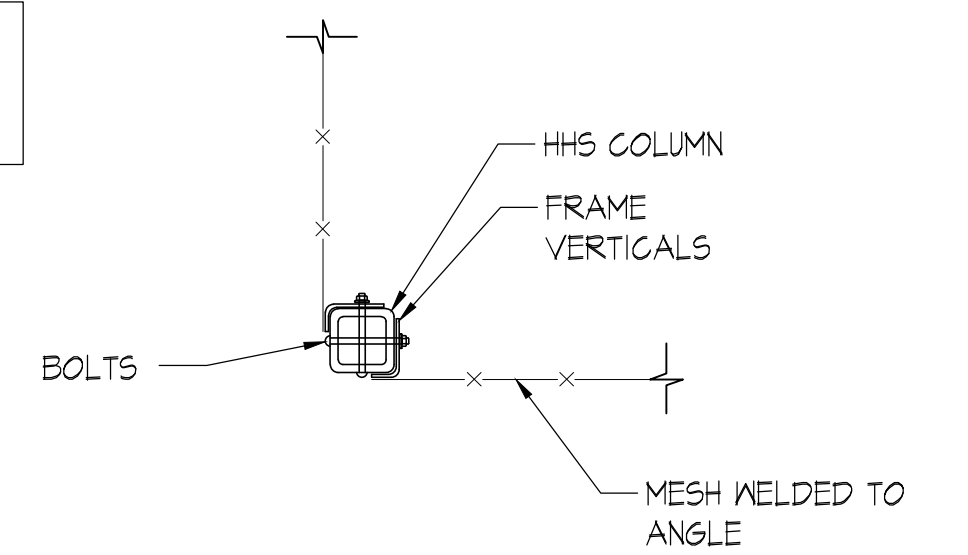
STRUCTURAL DETAILS

**\$3.00**

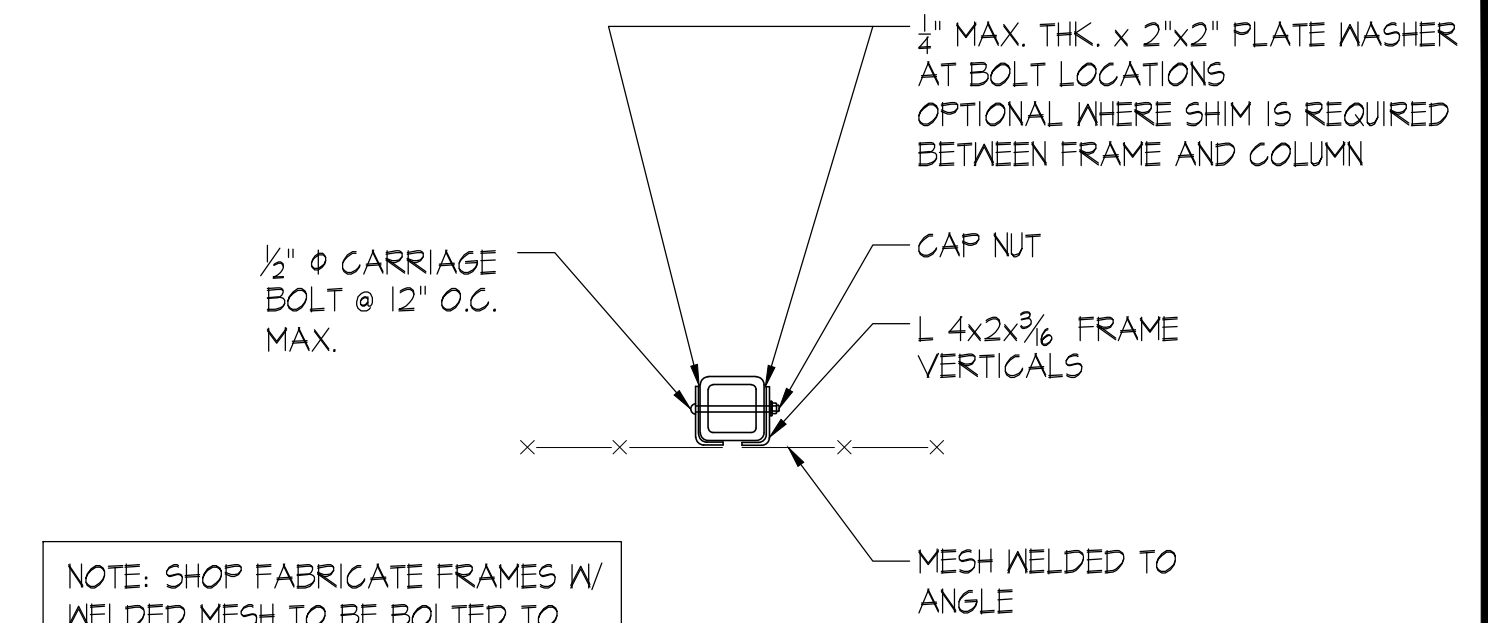
IF THIS SHEET IS NOT 36" X 24", IT IS NOT FULL SIZE. SCALE DRAWINGS ACCORDINGLY.



SEE (C) FOR ITEMS NOT NOTED

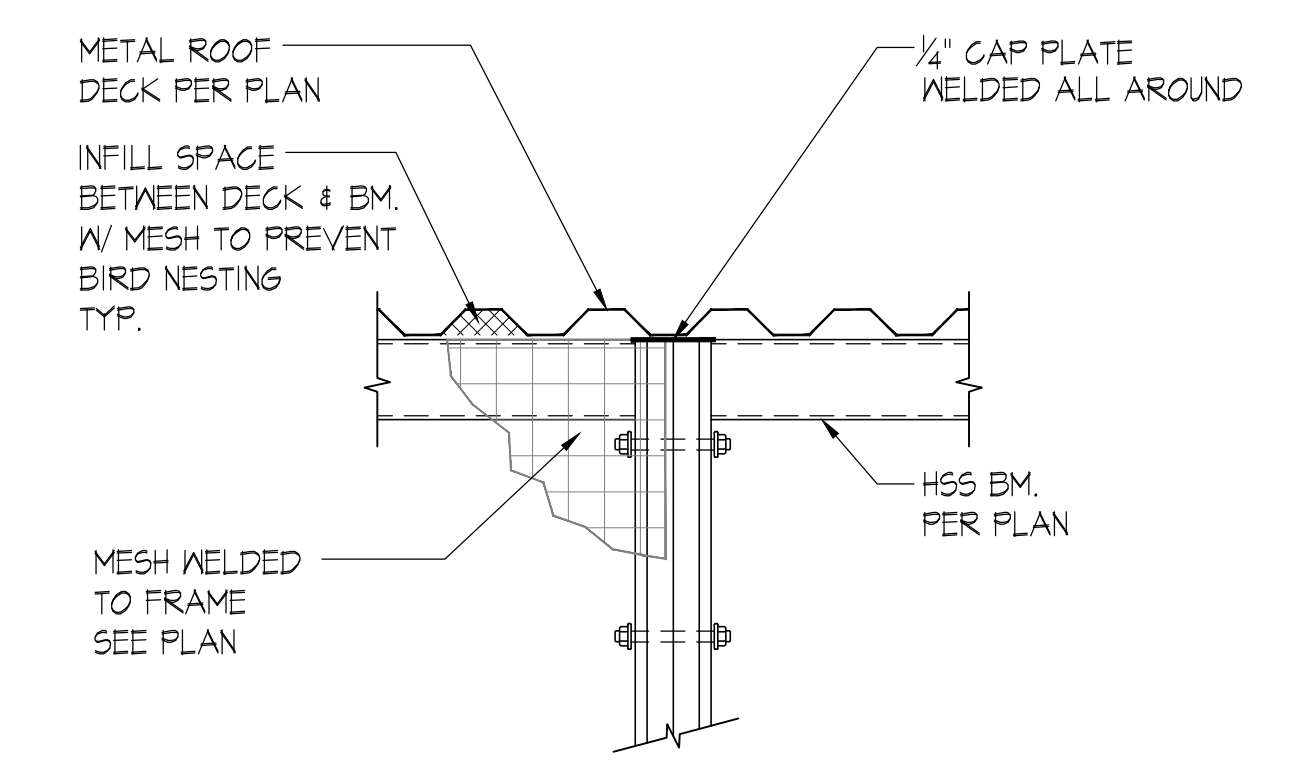


PLAN VIEW @ CORNER (C1)



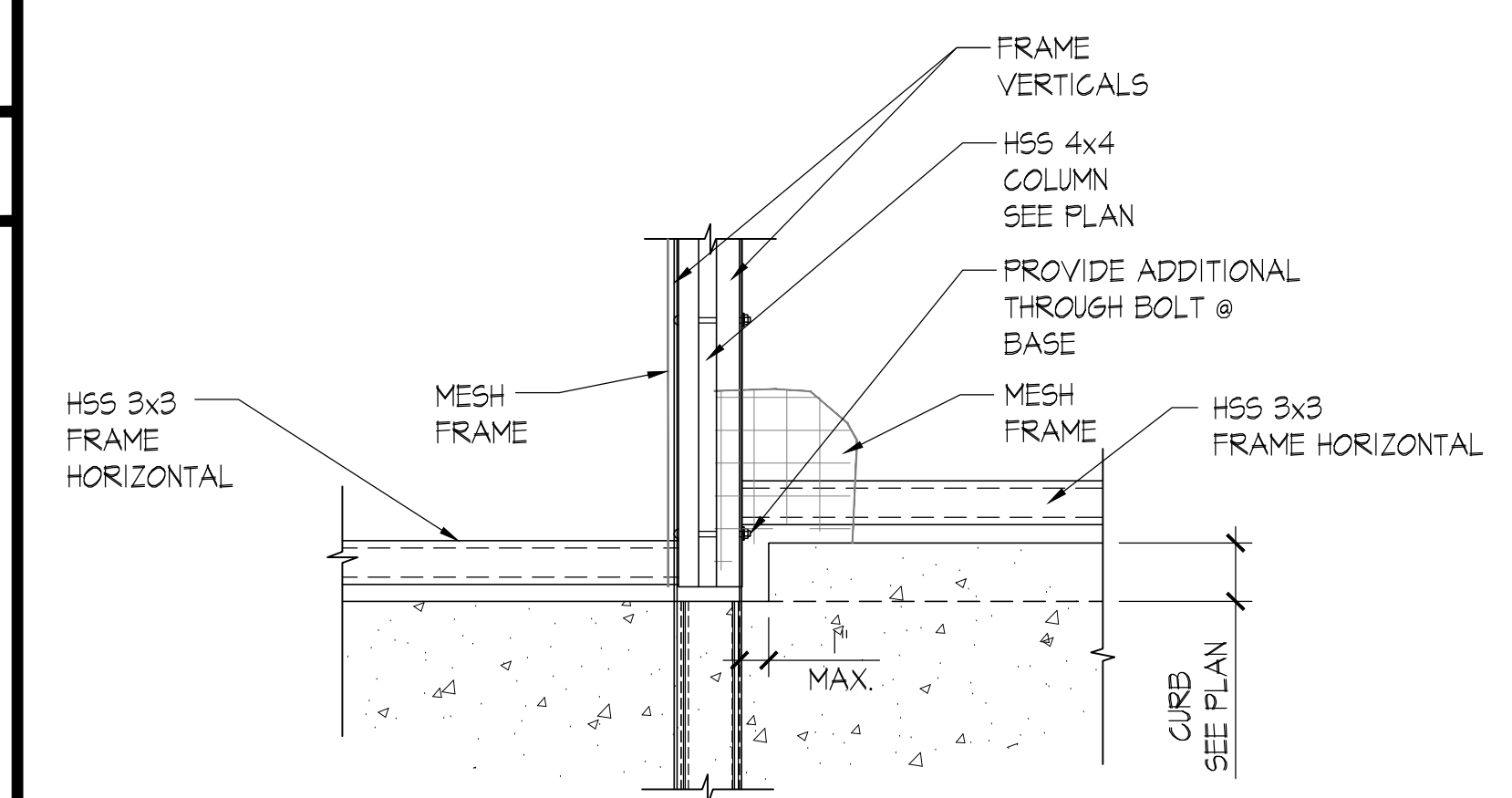
NOTE: SHOP FABRICATE FRAMES W/ WELDED MESH TO BE BOLTED TO COLUMNS IN FIELD

PLAN VIEW (C)

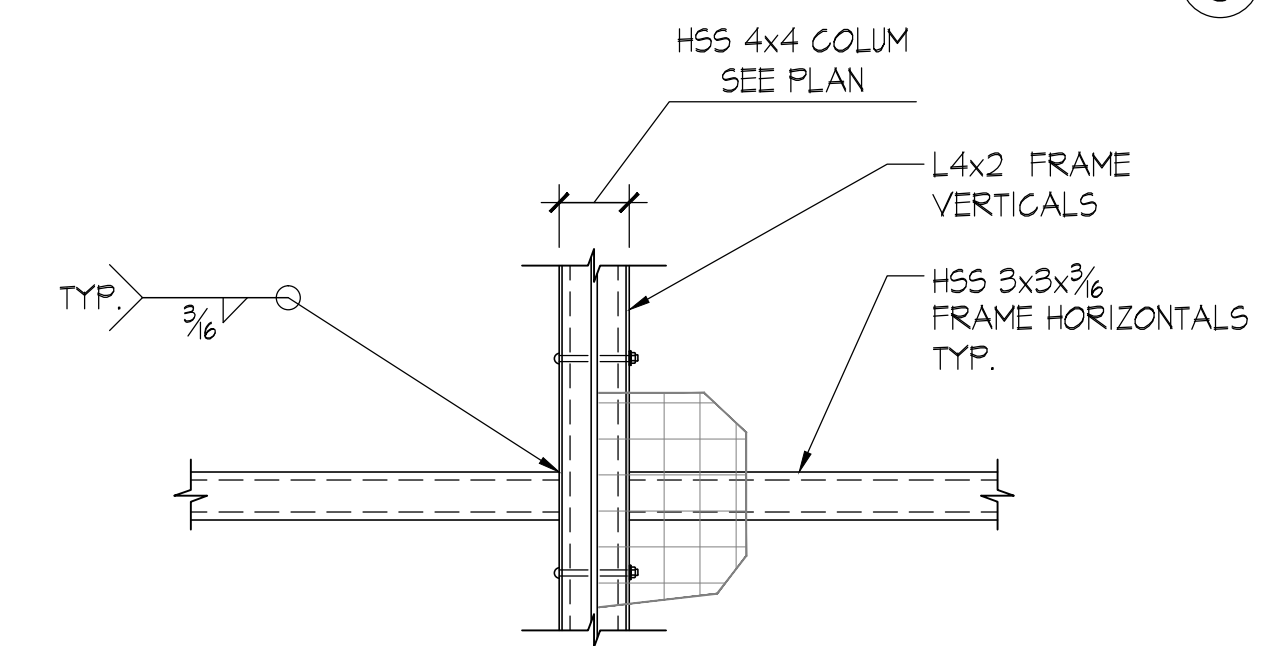


ELEVATION VIEW @ TOP (D)

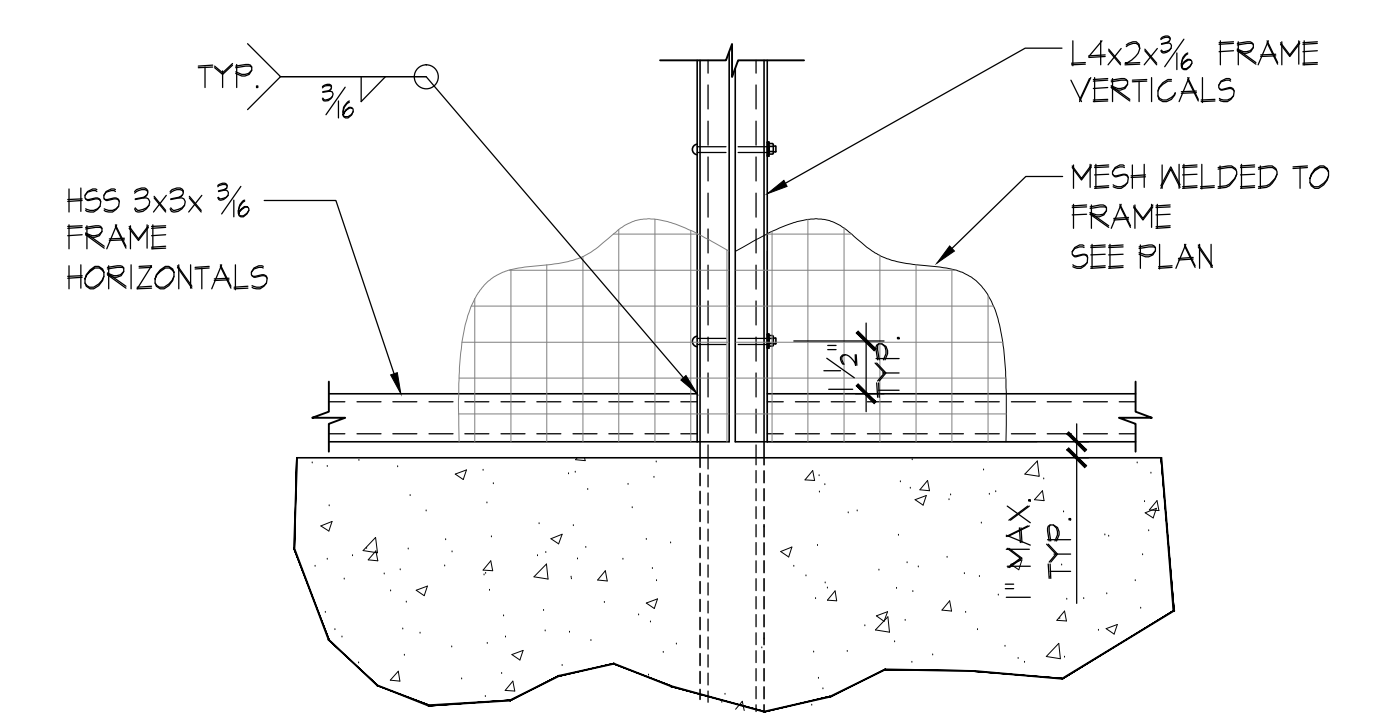
1" = 1'-0" 10



ELEVATION @ ADJACENT CURB (A1)

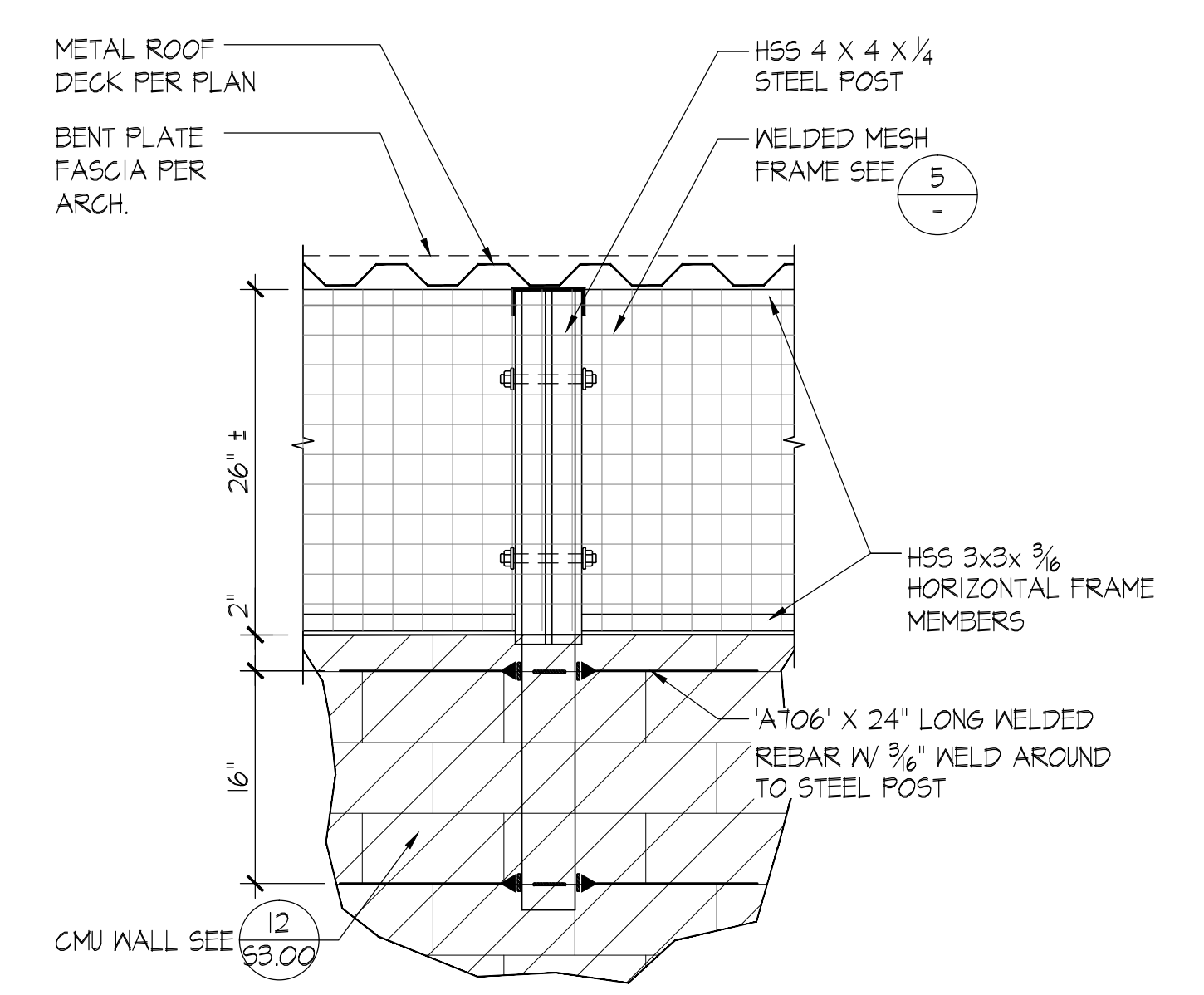


ELEVATION VIEW @ INTERMEDIATE HORIZ. (B)



ELEVATION VIEW @ BASE (A)

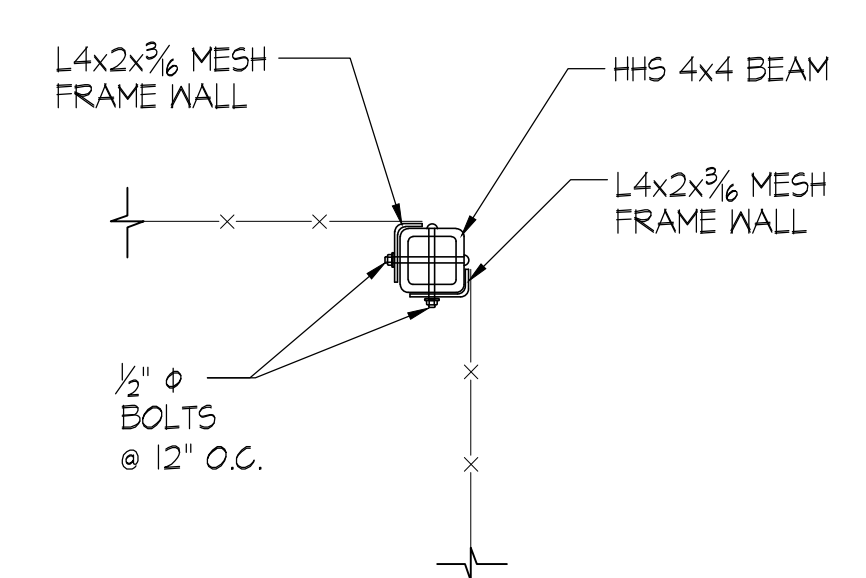
BEDROOM COLUMN TOP CONNECTION 1" = 1'-0" 1



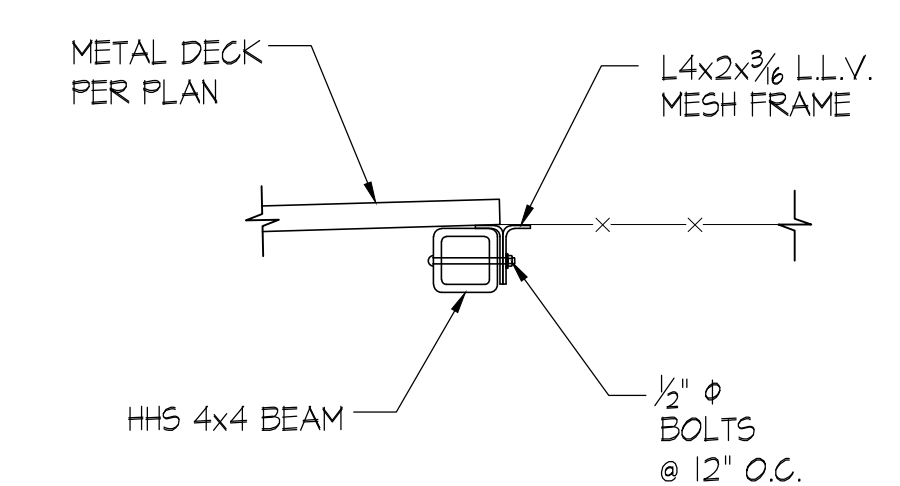
BEDROOM COLUMN 1" = 1'-0" 5

BEDROOM ROOF TO TOP OF CMU WALL 1" = 1'-0" 2

BEDROOM COLUMN 1" = 1'-0" 5



SECTION @ MESH FRAME ROOF TO MESH FRAME WALL 1" = 1'-0" 9



SECTION @ MESH FRAME ROOF TO METAL DECK 1" = 1'-0" 6

NTS 12

**AMADOR WHITTLE ARCHITECTS, INC.**

OSG# 18843

**Orion Structural**

Orion Structural Group, Inc.  
225 East Thousand Oaks Blvd,  
Suite 304  
Thousand Oaks, California  
91360 - 7734  
Phone: 805-390-9242

**LION ENCLOSURE**

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

**BID SET**

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REVISIONS	ADDENDUM #1	DATE: 07/11/19	DATE: 06/24/19
			DRAWN: MG
			CHECK: WL
			JOB NO: 18-MPC-30

**STRUCTURAL DETAILS**

S3.10

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

TIME: 2:11 PM

DATE: 10 July 2019

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DRAWING FILENAME: 18612E100

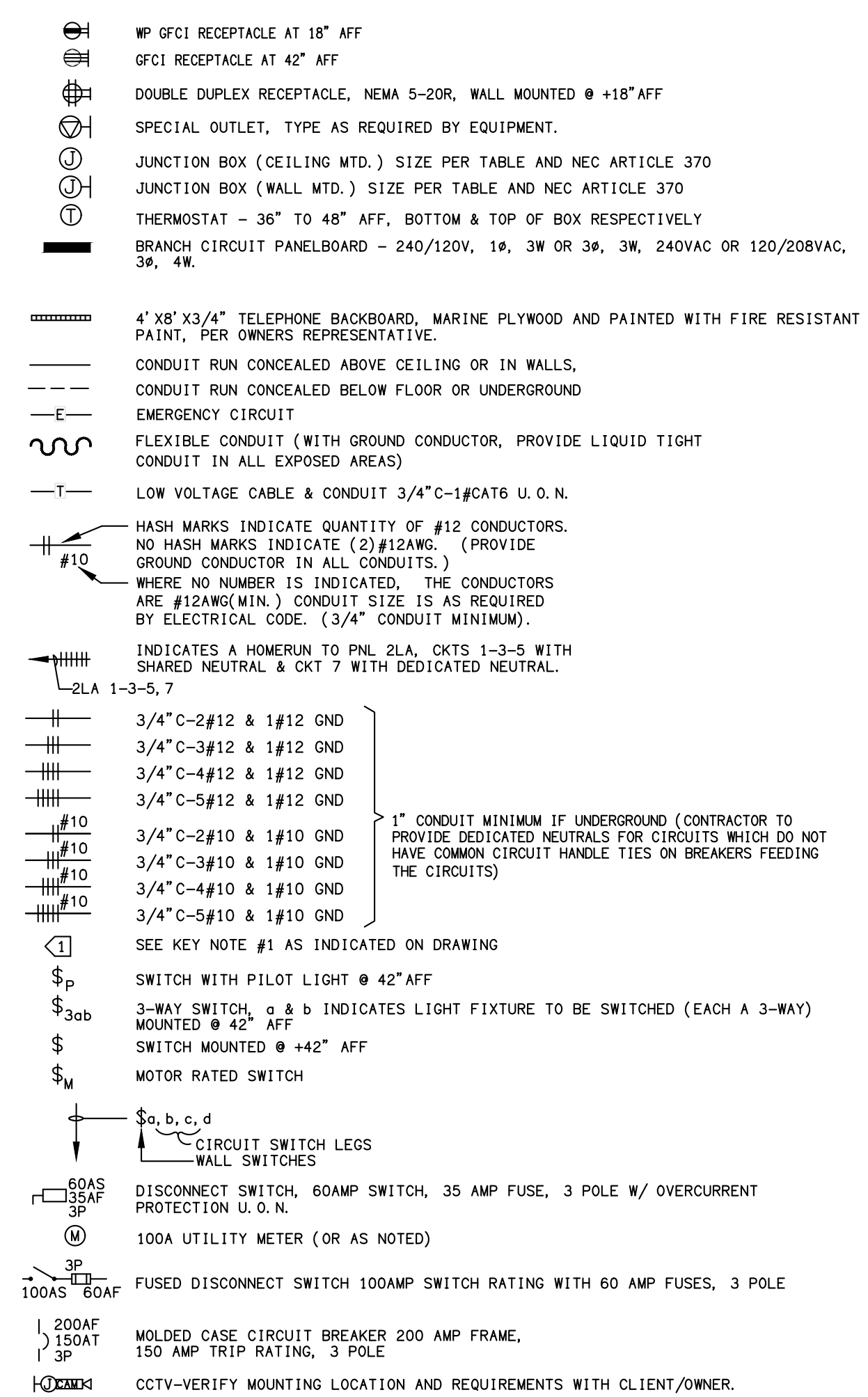
DRAFTER: CM02

DATE: 10 July 2019

GENERAL NOTES

- A. GENERAL
1. SCOPE
2. PERMITS AND CHARGES
3. REGULATIONS AND CODES
4. VERIFYING EXISTING CONDITIONS
5. COORDINATION
6. SERVICE CONTINUITY
7. AS BUILT
8. GUARANTEE
9. SHOP DRAWINGS
10. CONTRACTOR BID
B. MATERIAL AND INSTALLATION
C. CONDUITS
D. SWITCHES AND RECEPTACLES
E. FEEDERS AND BRANCH CIRCUITS IDENTIFICATION
F. CONDUCTORS
G. LIGHTING FIXTURES
H. PANELBOARDS (SQUARE D)
I. ELECTRICAL CERTIFICATION
J. DEMOLITION

SYMBOLS



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

Table with columns: SHEET, DESCRIPTION, SHEET, DESCRIPTION. Lists drawings E100 through E605.

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
2. 2016 CALIFORNIA BUILDING CODE (CBC)
3. CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 2
4. 2016 CALIFORNIA ELECTRICAL CODE (CEC)
5. 2016 CALIFORNIA FIRE CODE (FC)
6. 2016 CALIFORNIA REFERENCED STANDARDS CODE
7. AMERICANS WITH DISABILITIES ACT (ADA)

ABBREVIATIONS

Table of abbreviations for electrical terms such as AMPERES, FRAME, SWITCH, BREAKER, etc.

DERATING TABLE

Table showing derating factors for conductors based on number of current-carrying conductors and ambient temperature.

PROJECT AREA

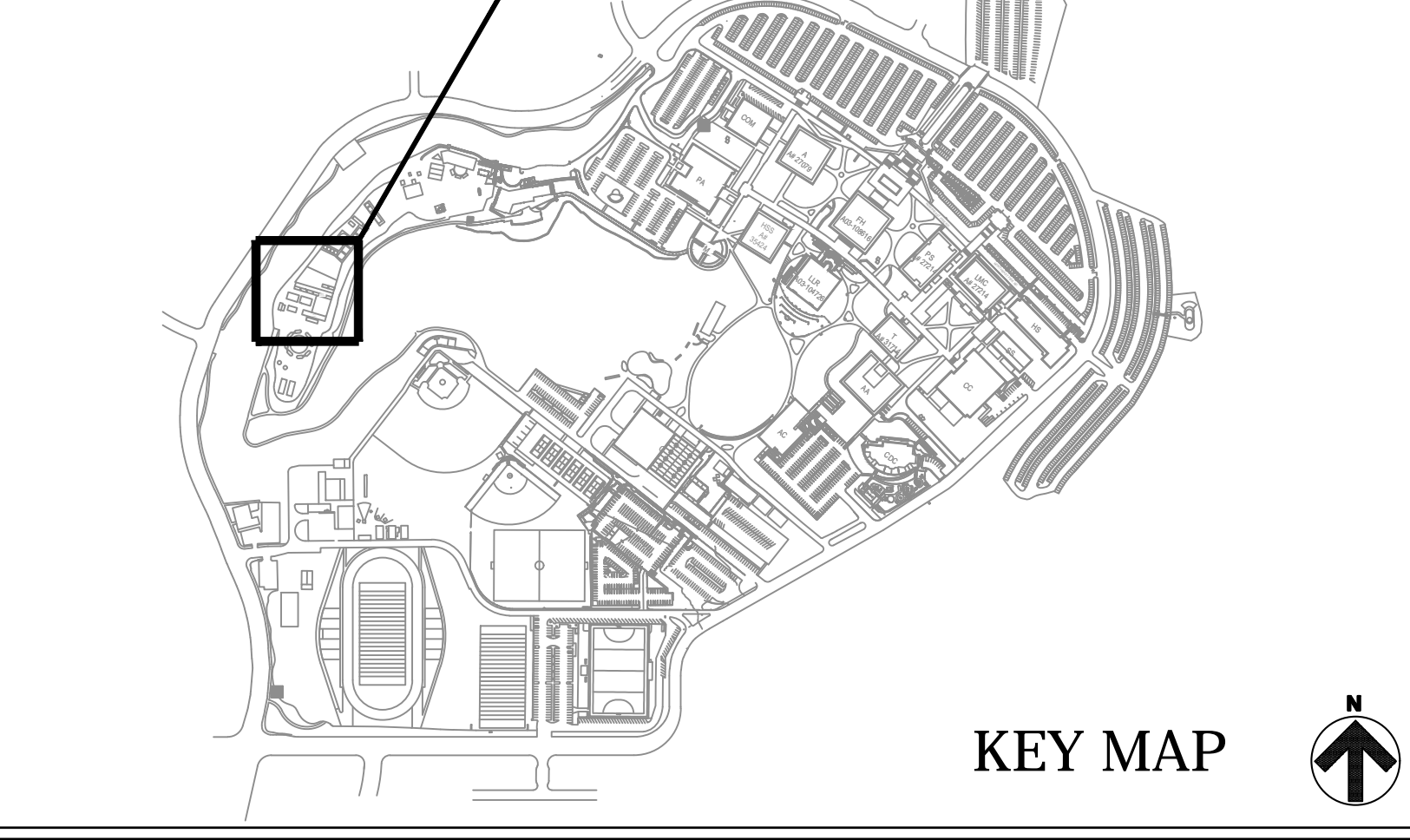


Table with columns: REVISIONS, DATE. Shows revision #1 as an addendum on 7-11-19.



LUCCHI & ASSOCIATES, INC. CONSULTING ELECTRICAL ENGINEERS
3251 CORTE MALPASO, #611
CAMARILLO, CA 93012-8084

GENERAL NOTES, ABBREVIATIONS, SYMBOLS AND DRAWING LIST

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



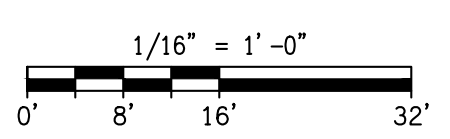
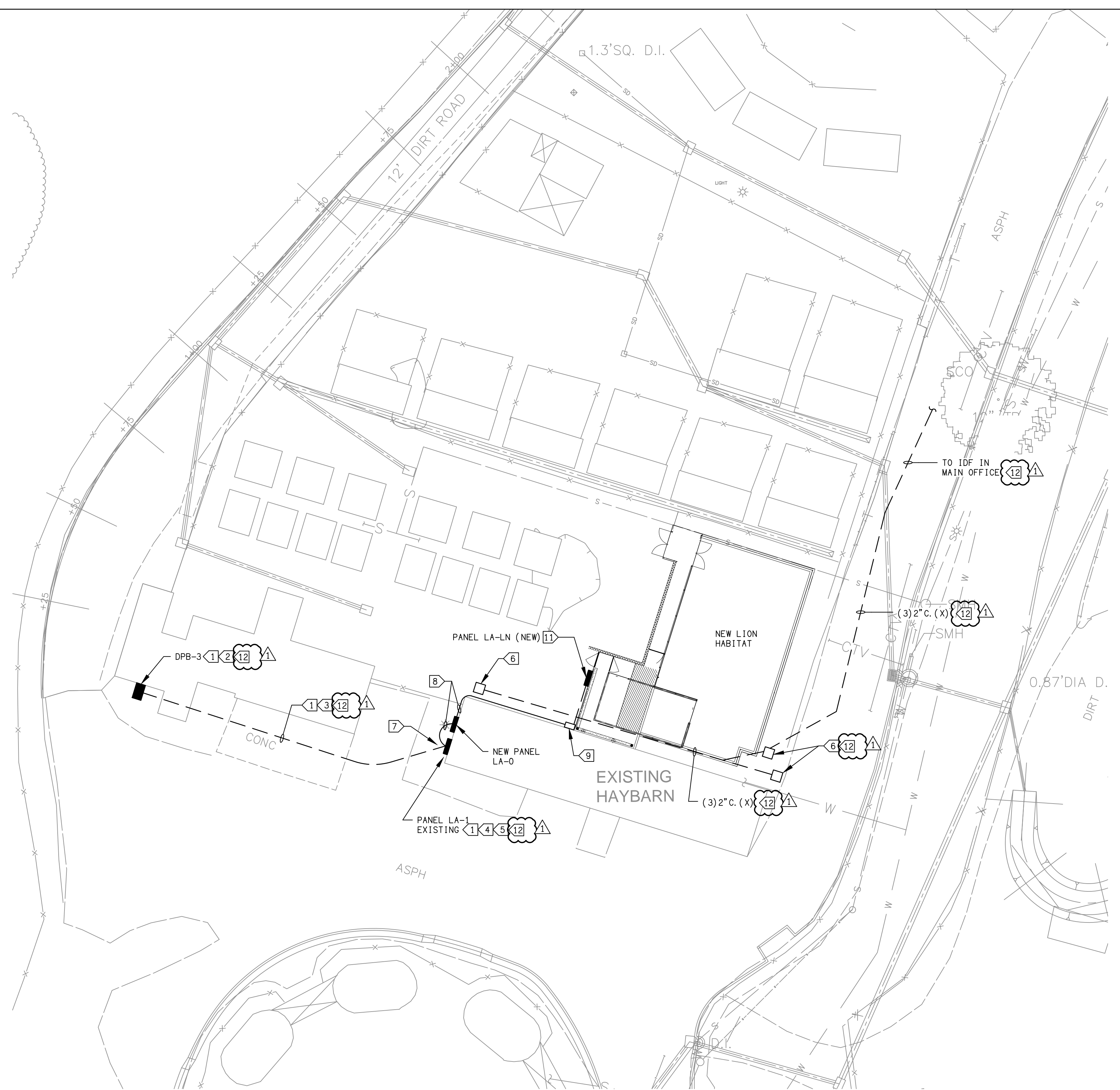
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DATE: 10 July 2019

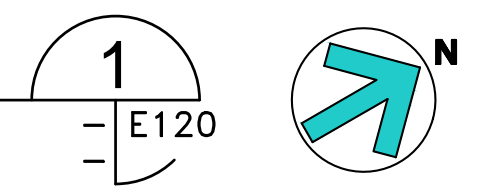
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DRAWING FILENAME: 18612E120

DRAFTER: CM02



**ENLARGED SITE ELECTRICAL PLAN**  
SCALE: 1/16"=1'-0"



**SHEET NOTES:**

- VERIFY LOCATION OF ALL BUILDINGS AND APPENDITURES ON ARCHITECTURAL AND CIVIL PLANS.
- CONTRACTOR SHALL VERIFY LOCATION AND REQUIREMENTS OF ALL ELECTRICAL DEVICES PRIOR TO BID. ROUGH-IN AND INSTALLATION.
- 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.
- ALL CONDUIT 90° CONDUIT BENDS AND RISERS SHALL BE PVC SCHEDULE 80.
- MINIMUM CONDUIT BURIAL DEPTH IS 24". PROVIDE TRACER TAPE 6" ABOVE CONDUITS.
- CONTRACTOR TO PROVIDE GROUND CONDUCTORS IN ALL CONDUITS.
- 1" CONDUIT MINIMUM UNDERGROUND.
- 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.
- 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:**

- SEE E200 SINGLE LINE.
- 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.
- 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.
- INTERCEPT CONDUIT BELOW PANEL LA-1 & INSTALL NEW WALL MOUNTED INTERCEPT PULLBOX (NEMA 3R 12"X12"X6") & ROUTE NEW CONDUIT/FEEDER FROM PULLBOX 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.
- BACK FEED PANEL LA-1 PER E200.
- EXISTING LOW VOLTAGE COMMUNICATION VAULT.
- NEW PULLBOX PER E200.
- ROUTE NEW FEEDER PER E200 ON BUILDING.
- NEW PULLBOX, NEMA 3R 12"X12"X8".
- NEW UNDERGROUND FEEDER PER E200 & PVC SCHEDULE 80 RISERS.
- MOUNT ON P2000 UNISTRUT. SEE E500.
- PROTECT IN PLACE.

REVISIONS	DATE
ADDENDUM #1	7-11-19

**LUCCHI & ASSOCIATES, INC.**  
CONSULTING ELECTRICAL ENGINEERS  
3251 CORTE MALPASO, #511  
CAMARILLO, CA 93012-8094  
(805) 389-6520 FAX (805) 389-6519  
Web Site <http://www.luccia.com>

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

**SHEET TITLE:**  
ENLARGED ELECTRICAL  
SITE PLAN

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

**E120**

OF SHEETS



TIME: 2:11 pm

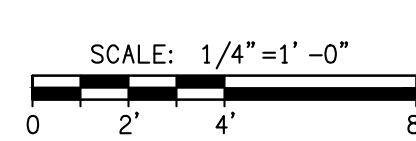
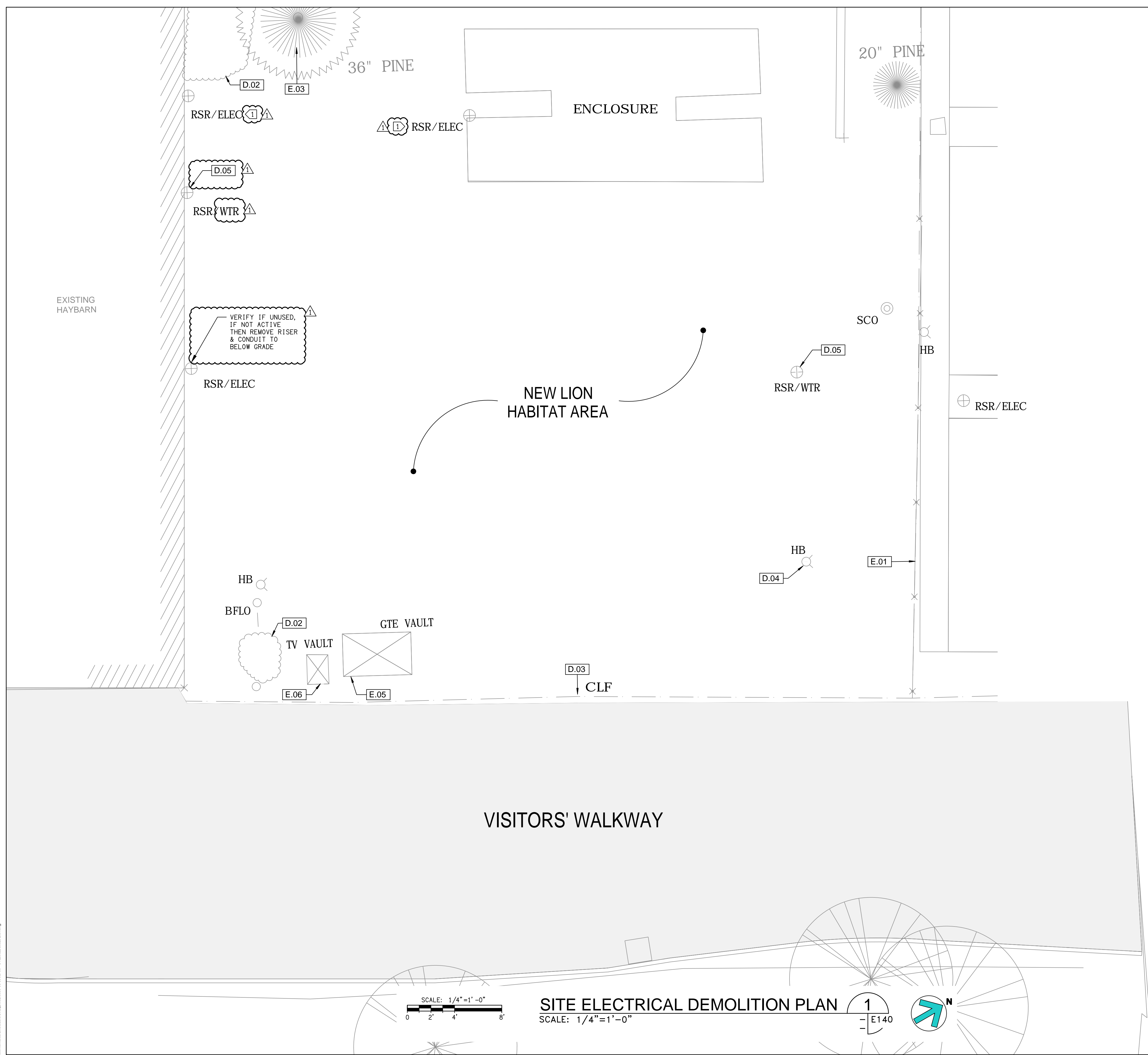
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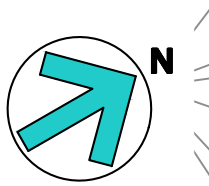
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**SITE ELECTRICAL DEMOLITION PLAN**  
SCALE: 1/4"=1'-0"

1  
- E140



**SHEET NOTES:**

- SCOPE: PROVIDE AND PERFORM DEMOLITION, PREPARATORY AND MISCELLANEOUS WORK IN AREAS AS INDICATED AND SPECIFIED, COMPLETE.
- DEMOLITION AND REMOVAL OF EXISTING ELECTRICAL CONDUIT, WIRING AND EQUIPMENT REQUIRED TO COMPLETE THE PROJECT.
- PREPARATION OF THE EXISTING BUILDING TO RECEIVE OR CONNECT THE NEW WORK.
- MISCELLANEOUS DEMOLITION, CUTTING, ALTERATION, AND REPAIR WORK IN THE EXISTING BUILDING NECESSARY FOR THE COMPLETION OF THE ENTIRE PROJECT.
- DISCONNECTING AND RECONNECTION OF ELECTRICAL EQUIPMENT AS REQUIRED BY THE CONSTRUCTION MODIFICATIONS.
- 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.
- 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.
- SCHEDULE ALL WORK AND OUTAGES WITH TENANTS AND OWNERS WRITTEN APPROVAL.
- 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**

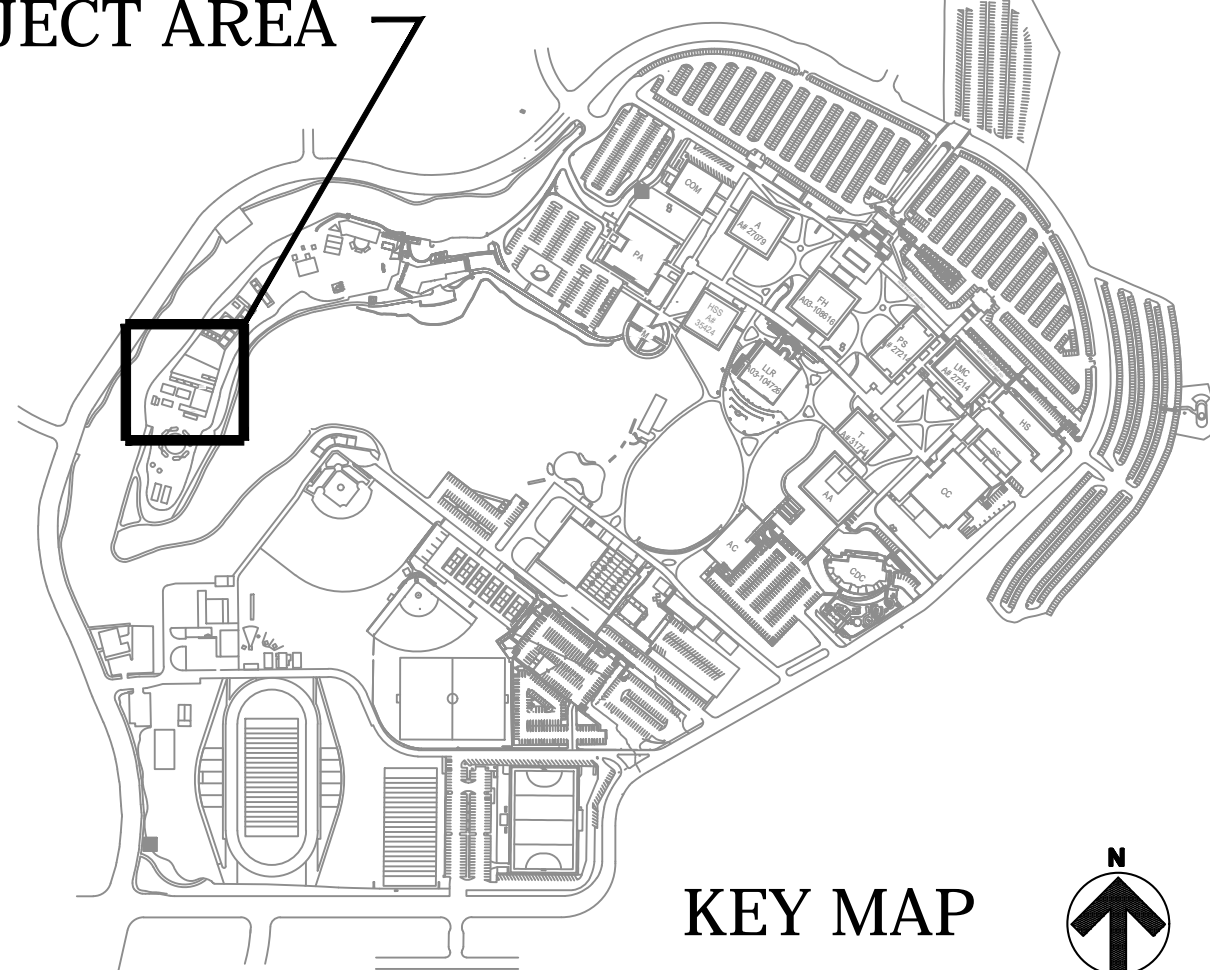
- E.01 (E) CHAINLINK FENCE
- E.03 (E) TREE TO REMAIN
- E.05 (E) UTILITY VAULT TO REMAIN
- E.06 (E) TV VAULT TO REMAIN

EXISTING TO REMAIN PROTECT IN PLACE

**KEY NOTES:**

- 1 EXISTING ELECTRICAL RISER/CONDUIT/DEVICE AND UNDERGROUND CONDUIT TO REMAIN (PROTECT IN PLACE)

**PROJECT AREA**



KEY MAP

REVISIONS	DATE
ADDENDUM #1	7-11-19

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

**SHEET TITLE:** SITE ELECTRICAL DEMOLITION PLAN

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

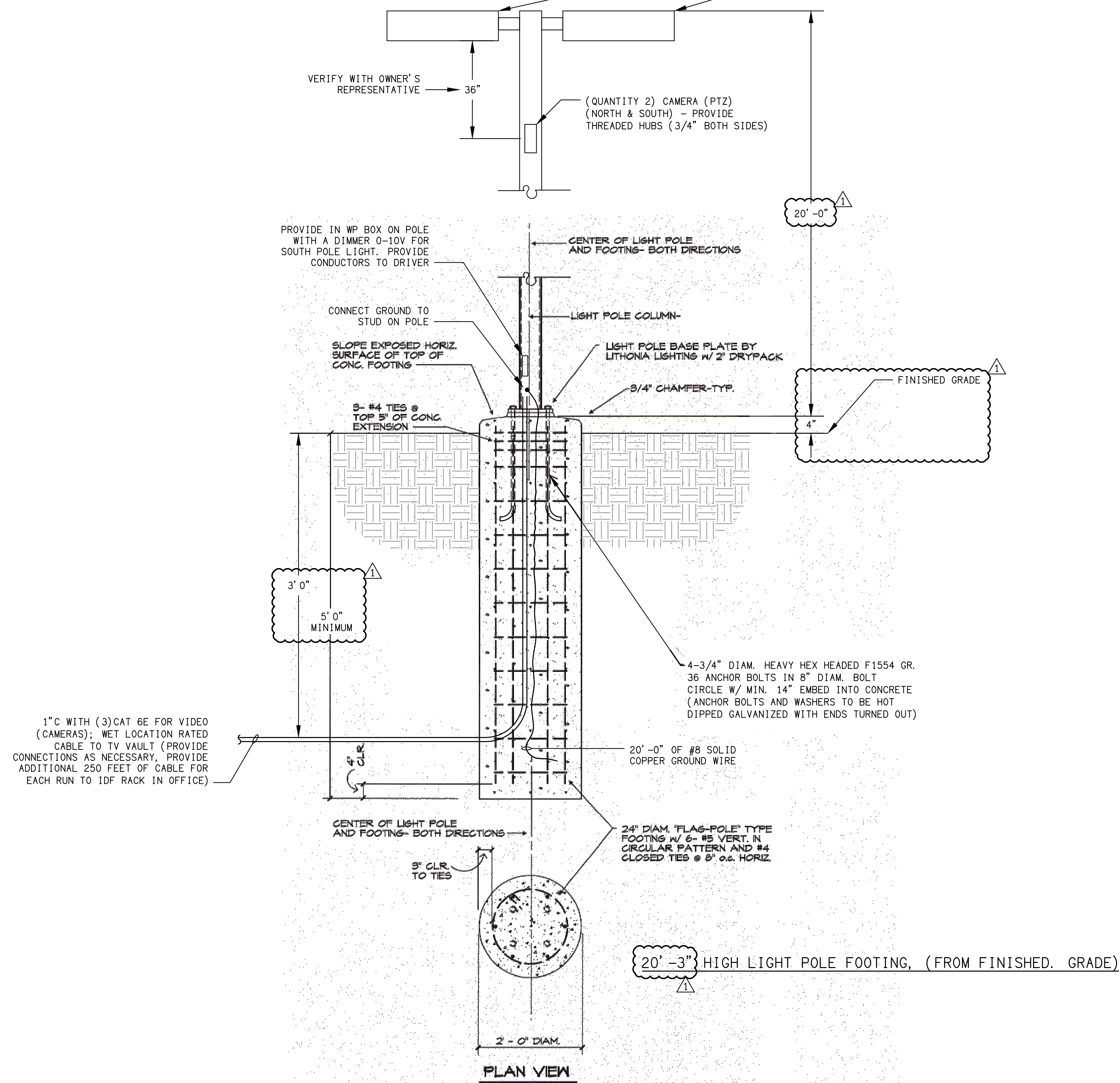
E140

OF SHEETS

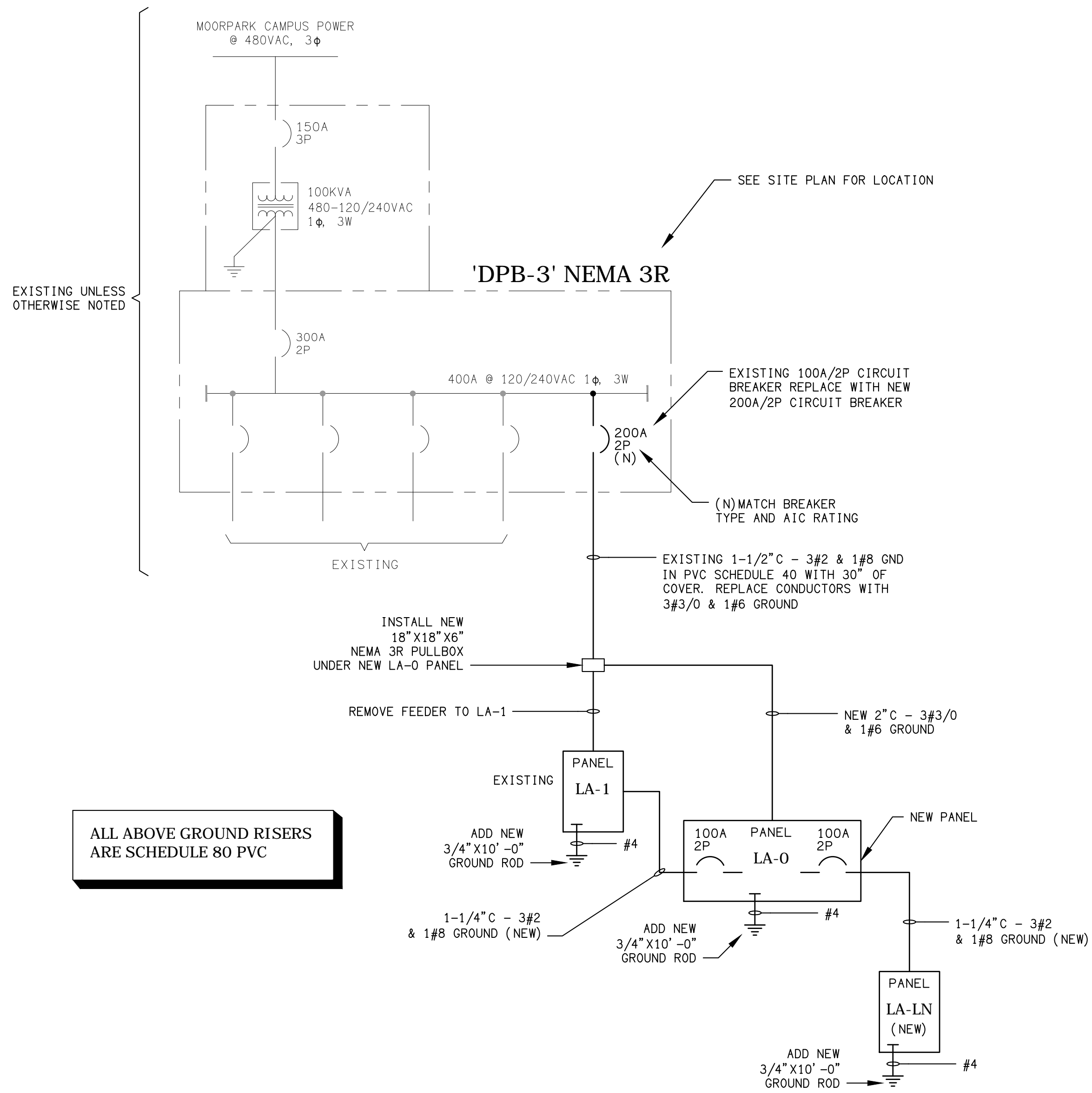


Manufacturer	Catalog Number	Description	Lamp
Lithonia Lighting	DSX1 LED P3 40K T4M MVOLT PIRH, SSS 18FT 4C DM19AS	DSX1 LED P3 35K T4M MVOLT Bi level motion/ambient sensor. Use 18ft pole if using with a pole base and 0-10V dimming driver.	LED

QUANTITY 2 FIXTURE HEADS ON ONE POLE FACING NORTH & SOUTH



**LIGHT POLE DETAIL** 2  
SCALE: NONE E200



**ELECTRICAL SINGLE LINE** 1  
SCALE: NONE E200

REVISIONS	DATE
ADDENDUM #1	7-11-19



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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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TIME: 2:11 pm

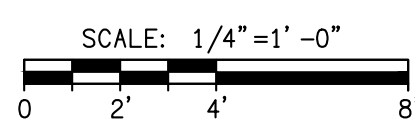
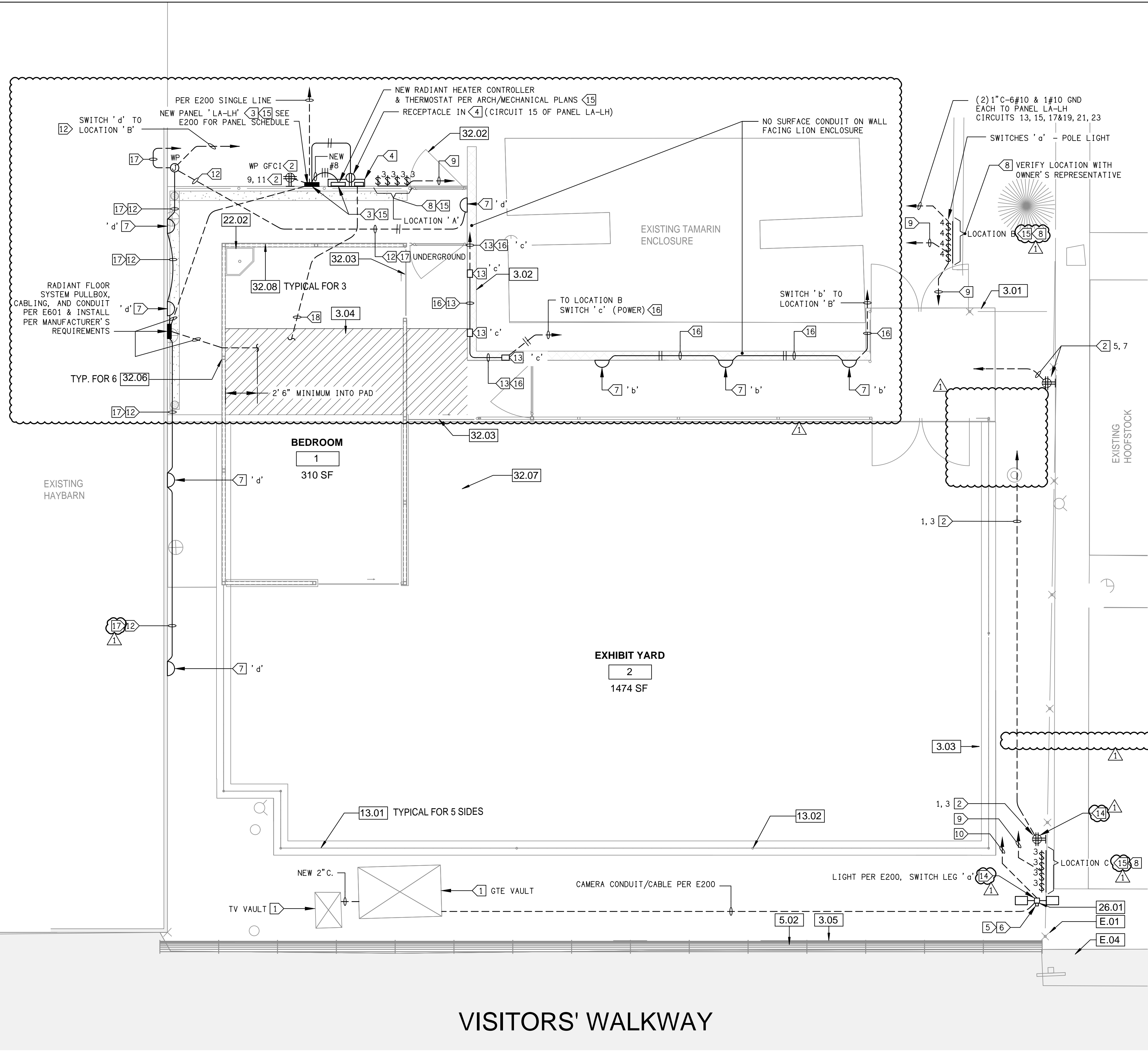
DATE: 10 July 2019

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DRAWING FILENAME: 18612E401

DRAFTER: CM02

DATE: 10 July 2019



**ENLARGED ELECTRICAL PLAN - LION ENCLOSURE**  
SCALE: 1/4"=1'-0"



**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 MANUFACTURER'S 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. NO EXPOSED CONDUIT ON/IN LION ENCLOSURE IS PERMITTED.

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 #6 GROUND TO ALL METAL POSTS IN STRUCTURE AND #4 UFER GROUND AND 3/4"x10'-0" GROUND ROD

**KEY NOTES:**

- 1 EXISTING PER E140 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 NEW 36"X48"X36"X30"X12" WITH BACK PANEL, LABEL ENCLOSURE. PROVIDE 0-10V DIMMING FOR a, b, c, d.
- 5 LOCAL WP 0-10V DIMMER CONTROL IN HANDHOLE J-BOX FOR SOUTH FACING FIXTURE.
- 6 PROVIDE WP JBOX AT 48" AFG IN POLE HANDHOLE FOR LOCAL 5 CONTROL.
- 7 LITHONIA DSX WILED 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 - VERIFY LABELS WITH EOR) WALL MOUNTED AT 42" A.F.F. (TO BOTTOM OF FIXTURE)
- 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 PER E500.
- 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 CONDUCTORS TO 4 SWITCHES.
- 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 (IN ADDITION TO CONDUCTORS FOR 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 CONDUCTORS TO 4 ENCLOSURE DIMMER SWITCH, LABEL UNIQUELY.
- 14 SEE DETAIL 2/E200 FOR FIXTURE DESCRIPTION.
- 15 SEE E500 FOR FOOTING & MOUNTING DETAIL.
- 16 ROUTE CONDUIT IN WALL OR ON BACK SIDE OF WALL OR UNDERGROUND, DO NOT EXPOSE CONDUIT ON LION ENCLOSURE SIDE OF WALL.
- 17 PLUS 0-10V DIMMING CONDUCTORS TO 4
- 18 THERMOSTAT SENSING CONDUIT/CABLING PER E605 & MANUFACTURER RECOMMENDATIONS.

REVISIONS	DATE
ADDENDUM #1	7-11-19

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

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

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

**E401**

OF SHEETS



**BEGA Installation and Technical Information Drive over LED In-grade with white safety glass 77 072**

**Tools Required:**  
 M5 Torx key  
 5mm hex key  
 Small slotted standard screwdriver

**Dimensions:**  
 A: 10"  
 B: 5-1/8"

**Weight:** 18.7 lbs.

**Protection Class:** IP68 10m

**Notice to Installer for 77 072:**  
 1. See page 2 for specific product safety warnings.  
 2. **BEGA luminaires may be damaged if connected to conduit systems containing water - Article 300-5C of National Electric Code requires that "Conduits or raceways through which moisture may contact energized live parts shall be sealed or plugged at either or both ends."**  
 3. A separate wiring box suitable for outdoor locations (List #803000 or equivalent) for power supply must be provided by others.  
 4. Proper drainage MUST be provided. Failure to do so may result in over-condensation and void warranty.  
 5. For vehicular loads, housing must be anchored to a suitable, load bearing foundation. In all other applications, foundation should be sufficient to support anticipated load only future.  
 6. When installing fixture in organic mulch, surround installation housing with approximately 6" of sand or other non-organic material.  
 7. **WARNING:** LEDs are high quality electrical components. Please avoid touching them directly during installation.

**77 072 - outer housing installation:**  
 1. Loosen the (8) M5 Torx screws on facelate to the stop. Remove facelate and lens. Uncrew (2) 5mm screws to loosen inner housing from outer housing (Figure 1). Rotate inner housing until clamp lines up with opening (Figure 3) to remove inner housing from outer housing.  
 2. Establish location of wiring box. (These luminaires are pre-wired with (3) feet of waterproof cable factory sealed to the luminaire housing.) Make sure that enough cable is left to lift the inner housing out of the outer housing for re-lamping.  
 3. Establish foundation for anchorage and provide proper drainage.  
 NOTE: Provide at least 6" of material (pea gravel or similar) under fixture and wiring box to prevent build-up of standing water.  
 4. Use (3) 5/16" holes provided on outer housing flanges (located on inside of outer housing) to anchor outer housing to suitable foundation (1/4" anchor bolts recommended, by others). **IMPORTANT: THE TOP EDGE OF OUTER HOUSING MUST BE FLUSH OR ABOVE FINISHED SURFACE. FAILURE TO DO SO WILL PREVENT FACELATE SEAL AND VOID WARRANTY.** Make sure housing/finished surface is installed so the facelate does not rest on a finished surface. Use gravel, nuts, and washers for leveling. Finish surface.  
**77 072 - inner housing installation:**  
 1. Feed cable down outer housing and make supply wiring and cable connections inside weather-proof wiring box.  
 MAIN VOLTAGE SUPPLY WIRE TO BLACK LUMINAIRE WIRE.  
 NEUTRAL (COMMON) SUPPLY WIRE TO WHITE LUMINAIRE WIRE.  
 GREEN (GROUND) WIRE TO GREEN LUMINAIRE WIRE.  
 If applicable:  
 DIMMING CONTROL WIRE (+) TO POSITIVE DRIVER DIM CONTROL WIRE  
 DIMMING CONTROL WIRE (-) TO NEGATIVE DRIVER DIM CONTROL WIRE  
 2. Loosen (8) M5 Torx screws on stainless steel facelate and remove from inner housing.  
 3. Insert inner housing into outer housing, then tighten (2) 5mm screws to attach inner housing to outer housing.  
 4. Replace top lens, gasket, and stainless steel trim. Tighten (6) facelate screws evenly.

**Relamping/Maintenance:**  
 No relamping required.

**Accessories:**  
 Please refer to the appropriate accessory installation sheet for further instruction when applicable.

**Replacement Parts:**

Description	Part No.
Lens	140847-R
Lens gasket	831258-1
Driver (120-277V)	77021
LED (3000K)	LED-0133830
LED (4000K)	LED-0133840

Lamp: 13.4W LED

In the interest of product improvement, BEGA reserves the right to make technical changes without notice.  
 BEGA 1000 Bega Way, Carpinteria, CA 93013 (805)684-0533 Fax: (805)666-9474 www.bega-us.com Copyright BEGA-US 2015 77 072 8/4/2015 Page 1 of 2

**IN-CONCRETE WALL**

**LED drive-over in-grade location luminaires for high-pressure loads**

**Type:** BEGA Product  
**Project:**  
**Voltage:**  
**Color:**  
**Options:**  
**Modified:**

**Outer housing:** Constructed of high tensile strength stainless steel.  
**Inner housing:** Constructed of high tensile strength, cast stainless steel. Trim ring is heavy gauge, machined stainless steel secured to inner housing with stainless steel fasteners threaded into stainless steel threads. Tempered white safety glass is 1/2" thick and machined flush to trim ring. Weather light operation achieved through the use of molded high temperature silicone gasket. Inner housing fits into outer housing to be flush with finished surface.  
**Electrode:** 13.4W LED luminaire, 15 total system watts.  
 -30°C start temperature. Integrated 120V-277V electronic LED driver, 0-10V, TRAC and ELV dimmable. LED module(s) are available from factory for easy replacement. Standard LED color temperature is 4000K with a <math>-80</math> CRI. Available in 3000K (<math>-60</math> CRI), add suffix, 'SK' to order. Inner housing pre-wired with nine (9) feet of waterproof cable, cable clamp, and waterproof cable gland entry into housing. A separate waterproof wiring box for power supply must be provided (by contractor).  
**Note:** LEDs supplied with luminaires. Due to the dynamic nature of LED technology, LED luminaire data on this sheet is subject to change at the discretion of BEGA-US. For the most current technical data, please refer to www.bega-us.com.  
**Finish:** Machined 414 stainless steel. Custom colors are not available.  
**Temperature caution:** The column "T" in this chart indicates the temperature in degrees Celsius which is reached on the center of the glass surface during operation. Surface temperatures are for exterior applications; for interior applications add 10°C to temperatures shown.  
**Note:** A foundation and proper drainage must be supplied by the customer. These luminaires are designed to bear pressure loads up to 11,000 lbs. from vehicles with pneumatic tires. The luminaires must not be used for traffic lanes where they are subject to potential pressure from vehicles traveling, accelerating and changing direction.  
 CSA certified to U.S. and Canadian standards, suitable for wet locations. Protection class IP68 10m.  
**Weight:** 18.7 lbs.

**Luminaire Lumens:** 99  
 Tested in accordance with LM-79-08

Location luminaires: white safety glass

LAMP	T	A	B
77072	13.0W LED	30°	10 5V,

**BEGA-US** 1000 BEGA Way, Carpinteria, CA 93013 (805)684-0533 FAX (805)666-9474 www.bega-us.com  
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**D-Series Size 1 LED Wall Luminaire WALL**

**Specifications Luminaire:**  
**Width:** 13.34" (34.4 cm)  
**Height:** 6.38" (16.2 cm)  
**Weight:** 12 lbs (5.4 kg)

**Back Box (BBW, ELCW):**  
**Width:** 13.34" (34.4 cm)  
**Height:** 6.38" (16.2 cm)  
**Weight:** 5 lbs (2.3 kg)  
**Depth:** 4" (10.2 cm)  
**Weight:** 10 lbs (4.5 kg)

**Ordering Information:**

DSXW LED	Series	SKU	Color Temperature	Mounting	Shipped Included	Shipped Installed
B3W1 LED	10C	10125	30K	3000K	T25 Type II Short	MV012
	10C	10125	350	3500K	T25 Type II Short	MV012
	10C	10125	530	5300K	T25 Type II Short	MV012
	ZX	20125	700	7000K (H)	AMPC	Jordan plotter
	ZX	20125	1000	10000K (H)	T4M Type II Medium	287
					T4M Type II Medium	277
					TFM Forward Throw Medium	347
					AD37 Adaptive office	489

**Shipped installed:**  
 SF Single face (120, 277 or 347V)<sup>1,8</sup>  
 DF Double face (208, 240 or 480V)<sup>1,8</sup>  
 HS House-aim direct<sup>1,9</sup>  
 SPD Separate step voltage<sup>2,10</sup>

**Shipped separately<sup>11</sup>:**  
 BSW Bid-Detector optics  
 WG Wire guard  
 HW Hard hat  
 DDL Diffused optics

**Accessories:**  
 D0000 Diffuser  
 D0001 Diffuser  
 D0002 Diffuser  
 D0003 Diffuser  
 D0004 Diffuser  
 D0005 Diffuser  
 D0006 Diffuser  
 D0007 Diffuser  
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 D0100 Diffuser

**Notes:**  
 1. 30C is not available with PR, PRN, PRN-CV or PRN-CVX.  
 2. MV012 driver operates on any line voltage from 120-277V (0-10V).  
 3. Single face (SF) requires 120, 277 or 347V voltage option. Double face (DF) requires 208, 240 or 480V voltage option.  
 4. Only available with 30C, 3500K or 5000K. Not available with PR or PRN.  
 5. Back box (BBW) is not included. Cannot be ordered as an accessory.  
 6. Photometric (P) includes 10L, 20L, 30L, 277 or 347V voltage option. Not available with motion/ambient light sensor PR or PRN.  
 7. Reference luminaire series data on page 2.  
 8. Cold weather (LSD) need. Not compatible with outdoor applications. Not available with BBW mounting option. Not available with lighting. Not available with 347 or 480V voltage option. Emergency components located in back box housing. Emergency mode (EM) has located on product page at www.bega-us.com.  
 9. Not available with SPD.  
 10. Not available with DDL.  
 11. Also available as a separate accessory; see Accessories Information.

**D-Series Size 1 LED Area Luminaire POLE**

**Specifications:**  
**EPA:** 1.01 ft (0.31 m)  
**Length:** 33" (8.4 m)  
**Width:** 13" (3.3 m)  
**Height H1:** 7.1-22" (181-559 mm)  
**Height H2:** 3.1-7" (79-178 mm)  
**Weight:** 27 lbs (12.2 kg)  
**Finish:** 3112R

**Ordering Information:**

DSX LED	Series	SKU	Color Temperature	Mounting	Shipped Included	Shipped Installed
D011 LED	P1	P4	30K	3000K	T15 Type II Short	MV012
	P1	P4	350	3500K	T15 Type II Short	MV012
	P1	P4	530	5300K	T15 Type II Short	MV012
	P2	P5	700	7000K (H)	T3M Type II Medium	208
	P2	P5	1000	10000K (H)	T3M Type II Medium	287
	P3	P6	3000K		T3M Type II Medium	347
	P3	P6			T3M Type II Medium	489
	P3	P6			T4M Type II Medium	347
	P3	P6			T4M Type II Medium	489
	P3	P6			TFM Forward Throw	347
	P3	P6			TFM Forward Throw	489
	P3	P6			AD37 Adaptive office	489
	P3	P6			AD37 Adaptive office	489

**Shipped installed:**  
 P1 Pole 1 short  
 P2 Pole 2 medium  
 P3 Pole 3 medium  
 P4 Pole 4 long  
 P5 Pole 5 long  
 P6 Pole 6 long

**Shipped separately:**  
 P1 Pole 1 short  
 P2 Pole 2 medium  
 P3 Pole 3 medium  
 P4 Pole 4 long  
 P5 Pole 5 long  
 P6 Pole 6 long

**Notes:**  
 1. 30C is not available with PR, PRN, PRN-CV or PRN-CVX.  
 2. MV012 driver operates on any line voltage from 120-277V (0-10V).  
 3. Single face (SF) requires 120, 277 or 347V voltage option. Double face (DF) requires 208, 240 or 480V voltage option.  
 4. Only available with 30C, 3500K or 5000K. Not available with PR or PRN.  
 5. Back box (BBW) is not included. Cannot be ordered as an accessory.  
 6. Photometric (P) includes 10L, 20L, 30L, 277 or 347V voltage option. Not available with motion/ambient light sensor PR or PRN.  
 7. Reference luminaire series data on page 2.  
 8. Cold weather (LSD) need. Not compatible with outdoor applications. Not available with BBW mounting option. Not available with lighting. Not available with 347 or 480V voltage option. Emergency components located in back box housing. Emergency mode (EM) has located on product page at www.bega-us.com.  
 9. Not available with SPD.  
 10. Not available with DDL.  
 11. Also available as a separate accessory; see Accessories Information.

**COMPONENTS:**

- CARLON RED-DOT 2 GANG ALUMINUM CAST BOX 21HD5-3
- 2 DUPLEX GFCI RECEPTACLES
- LOCKABLE #2CKU COVER

**JUNCTION BOX, CAST ALUMINUM, WITH TWO WP GFCI RECEPTACLE**

**IN GRADE RECEPTACLE**  
 SCALE: NTS

**DETAIL NOTES:**

- ALL CONDUITS TO BE PROVIDED WITH METERED PULLWIRES THEIR ENTIRE LENGTH.
- ALL CONDUITS BENDS SHALL BE FACTORY BENDS WITH MINIMUM 12 TIMES DIAMETER. BEND RADIUS.
- ALL FEEDERS TO BE PER ELECTRICAL SINGLE LINE SHEET E151.

**DUCTBANK SECTION**  
 SCALE: NONE

**UPFER GROUND DETAIL**  
 SCALE: NONE

**DETAIL NOTES:**

- CONCRETE-ENCASED ELECTRODE: AN ELECTRODE ENCASED BY AT LEAST 2 INCHES (50.8MM) OF CONCRETE. LOCATED WITHIN AND NEAR THE BOTTOM OF A CONCRETE FOUNDATION OR FOOTING THAT IS IN DIRECT CONTACT WITH THE EARTH, CONSISTING OF AT LEAST 20 FEET (6.1 M) OF ONE OR MORE BARE OR ZINC GALVANIZED OR OTHER ELECTRICALLY CONDUCTIVE COATED STEEL REINFORCING BARS OR RODS OF NOT LESS THAN 1/2 INCH (12.7 MM) DIAMETER, OR CONSISTING OF AT LEAST 20 FEET (6.1 M) OF BARE COPPER CONDUCTOR NOT SMALLER THAN NO. 4. SEE PLANS FOR SIZE OF CONDUCTOR IF GREATER THEN #4.

**UPFER GROUND DETAIL**  
 SCALE: NONE

**PANEL LA-LH, RADIANT ENCLOSURE & SWITCHES**  
 SCALE: NONE

**SWITCH LOCATIONS A, B & C**  
 SCALE: NONE

**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:** E500

**DATE:** 10 July 2019  
**TIME:** 2:11 pm  
**PATHNAME:** G:\18612\EL\Sheets

**REVISIONS**

NO.	DATE	DESCRIPTION
1	7-11-19	ADDENDUM #1

**PROFESSIONAL ENGINEER:** J. LUCI  
 REGISTERED PROFESSIONAL ENGINEER  
 CIVIL, ELECTRICAL, MECHANICAL, PLUMBING, HEATING, AND REFRIGERATION  
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**DRAWN:** M. WATERS  
**CHECKED:** K. LUCCI  
**DATE:** 06-19-2019  
**SCALE:** AS NOTED  
**JOB NO.:** 18612  
**SHEET:** E500

**NEW SHEET**

DATE: 10 July 2019  
 TIME: 2:11 pm  
 PATHNAME: G:\18612\EL\Sheets  
 DRAFTER: CM02  
 DRAWING FILENAME: 18612E500  
 SHEET TITLE: 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: E500  
 SHEETS: 1



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## Important Safety Information

**WARNING** 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.

**WARNING** 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.

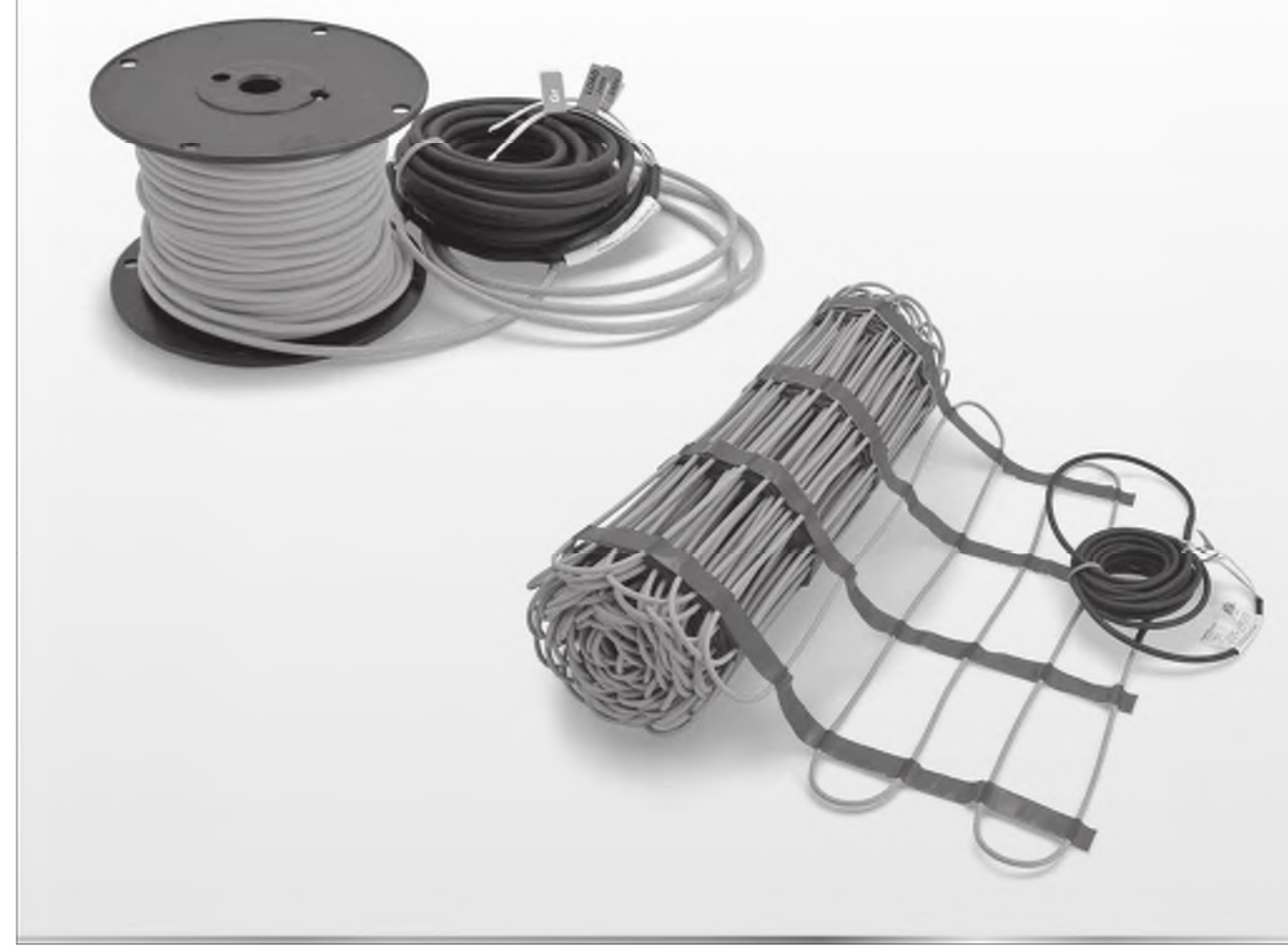
**WARNING** As with any electrical product, care should be taken to guard against the potential risk of fire, electric shock, and injury to persons. The following cautions must be observed:

- 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 (GFCP) 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 1.

# 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.

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, 24 VAC	18-24 AWG (See sensor instructions for size and length limits)
24VAC, COMMON		
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 from the included transformer, terminal blocks, and the call 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: [www.pro65.com](http://www.pro65.com)

**Limited Warranty:** Watts Radiant Co. ("Company") warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or repair the product without charge. THE WARRANTY SET FORTH HEREIN IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY THE COMPANY WITH RESPECT TO THE PRODUCT. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE COMPANY HEREBY SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. The Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, towing caused by adverse weather conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication, improper installation or improper maintenance or alteration of the product. Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult appropriate state laws to determine your rights. SO FAR AS IS CONSISTENT WITH APPLICABLE STATE LAW, ANY IMPLIED WARRANTIES THAT MAY NOT BE DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF ORIGINAL SHIPMENT.

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EDP# 81012456 © 2016 Watts Radiant

# Instructions for Installing ProMelt Contactor Pro Relay Panels

FOR PROMELT CP-50 PANELS

**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.

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 GFCP (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**
- 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.
  - For 120, 208, and 240 VAC systems, the COM lead from the transformer comes pre-wired 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.
  - 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.
  - 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 both panels.

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

- 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
Contact Pro CP-50	1	50

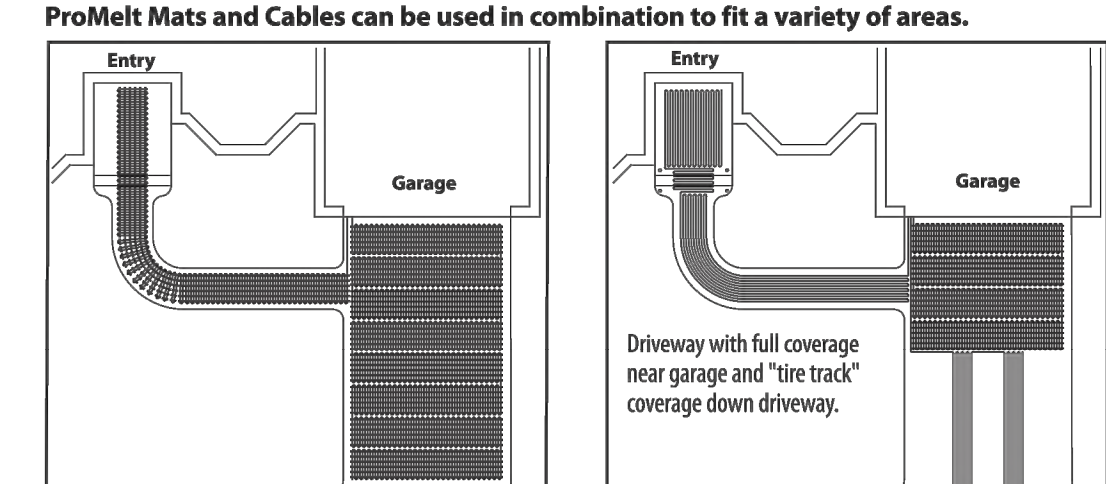
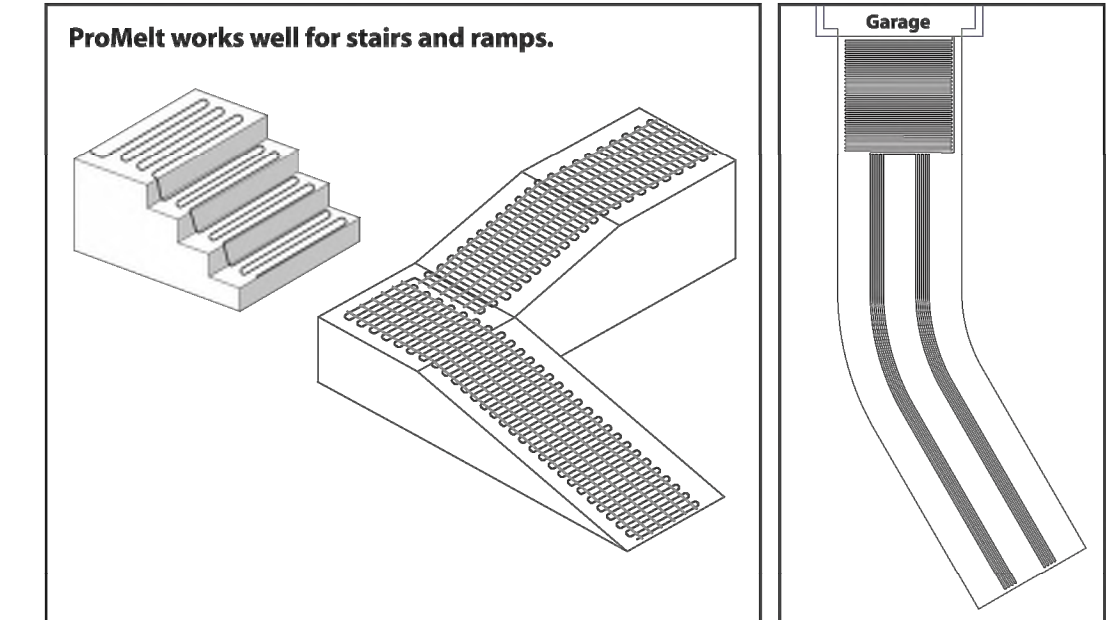
**Wiring CP series panels to be "Extension Panels"**  
A CP series panel can be used in conjunction with another CP series panel to serve as an "extension panel". Follow the steps below for proper installation:

- 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.
- For 120, 208, and 240 VAC systems, the COM lead from the transformer comes pre-wired 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.
- 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.
- Make wire connection between the contactor T1 and T2 terminals and the ProMelt mats/cables.

Transformer Colors	
Primary Voltage	Lead Colors
120 Volts	Black & White

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

## Some Typical ProMelt Installations



## 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 ft<sup>2</sup> required, location specific calculations are recommended. The ASHRAE 2007 handbook is a good reference for this, with tables that include flux & Watts/ft<sup>2</sup> 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.

**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

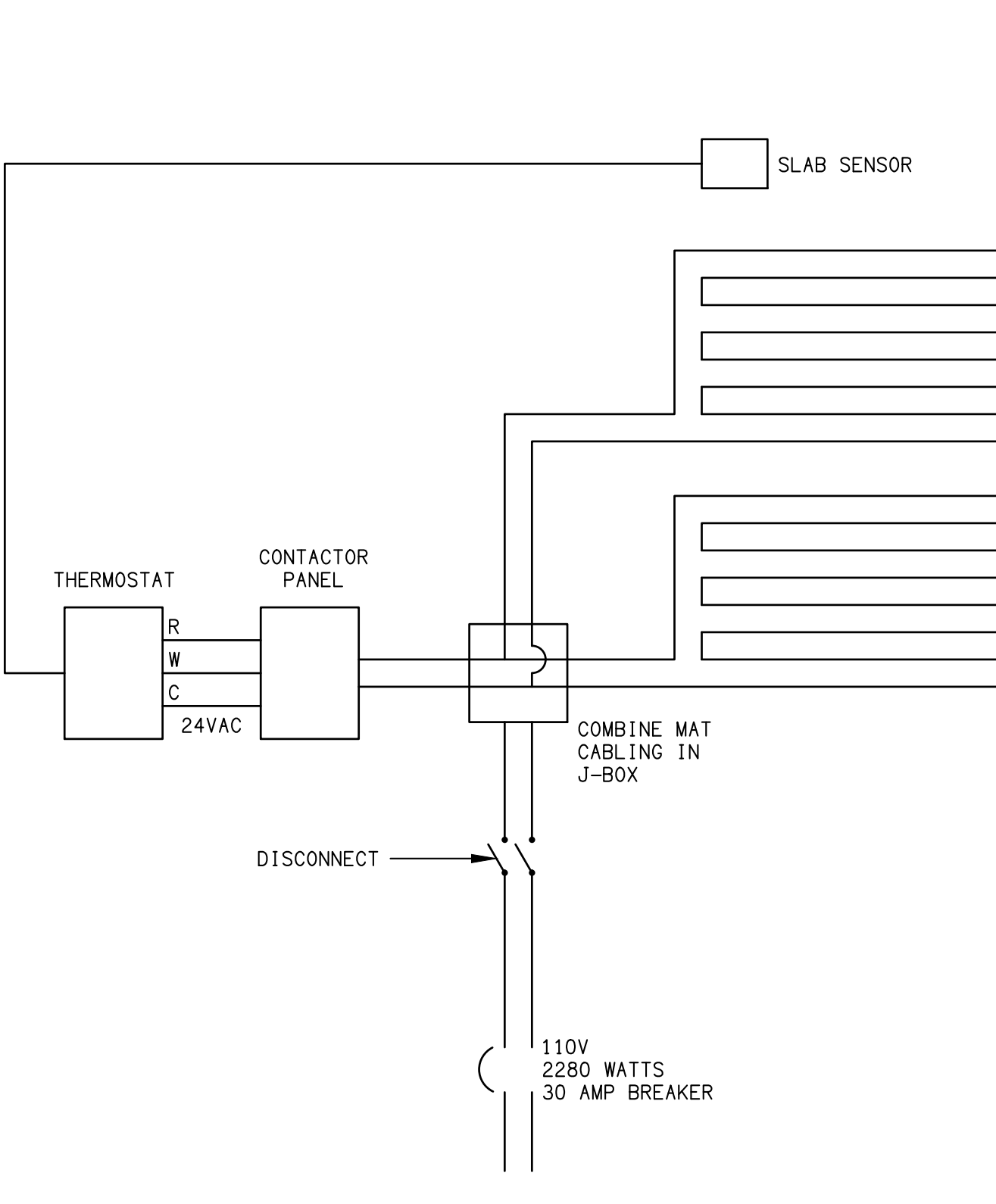
ProMelt products are a simple way to eliminate snow and ice from surfaces. This instruction manual is provided as a guide to installing ProMelt Mat and ProMelt Cable, including design considerations, mat and cable installation, control installation, precautions, and surfacing guidelines.

**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/ft<sup>2</sup> (170 Btu/h/ft<sup>2</sup>) and 38 W/ft<sup>2</sup> (130 Btu/h/ft<sup>2</sup>)  
**Maximum heater current:** 24 amps (see table 1)  
**Maximum circuit load:** 50 amps  
**GFCP** (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)

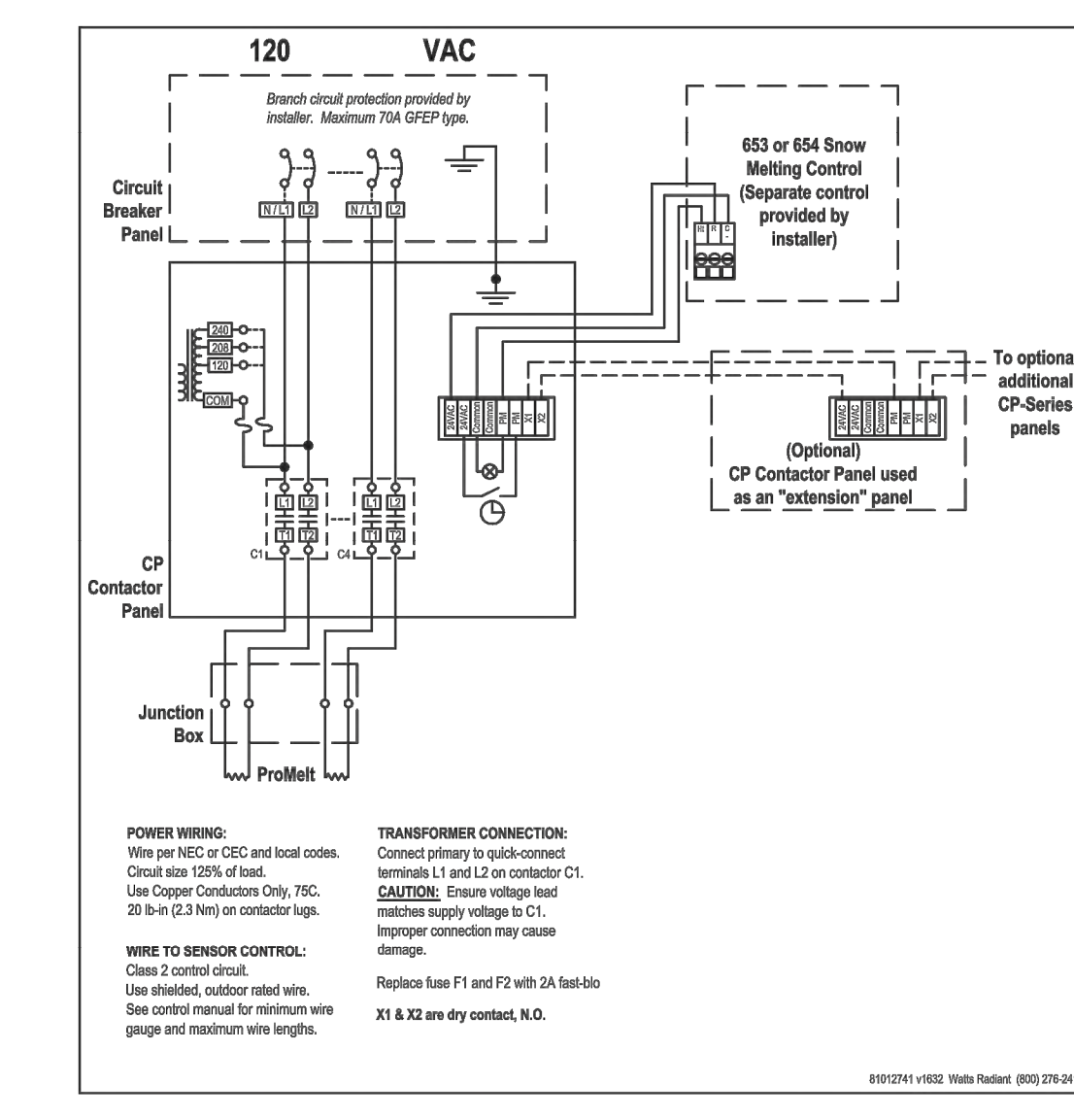
**Specifications for ProMelt Cable:**  
ProMelt Cable is a complete heating cable consisting of a series resistance heating cable and a single power lead for easy single-point connection. The heating cable length cannot be cut to fit.  
**Voltages:** 120, 208, 240, 277 VAC, 1-phase  
**Watts:** 50 W/ft<sup>2</sup> (170 Btu/h/ft<sup>2</sup>), spaced at 3 inches on-center. 38 W/ft<sup>2</sup> (130 Btu/h/ft<sup>2</sup>), 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  
**GFCP** (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.

PROMELT MAT. ELECTRIC RADIANT HEAT. TWO 2' X 15' MATS MODEL SM3812001524. ELECTRICAL DATA 110/1/60, 1140 WATTS EACH CONTACTOR PRO CP-50 PANEL. TEKMAR RADIANT FLOOR THERMOSTAT 519



**Operation**  
Once all wiring connections have been completed, the sensor and ProMelt mats/cables have been fully installed, and any inspectors 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.



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 sensors, 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	DATE

**LUCCHI & ASSOCIATES, INC.**  
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**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

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Table 3 - Mat/Cable Resistance Log

Table with 4 columns: Mat/Cable 1, Mat/Cable 2, Mat/Cable 3. Rows include serial number, model number, voltage, resistance range, and installation notes.

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.

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 69°F (20°C), except for a brief test to ensure system is functioning. Heating performance is never guaranteed.

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.

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.

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

Table with 6 columns: Coverage (ft²), 3" spacing (50 W/ft²), 4" spacing (38 W/ft²), Length, Model#, Amps, Ohms, Watts. Lists various cable specifications.

240 VAC Cable

Table with 6 columns: Coverage (ft²), 3" spacing (50 W/ft²), 4" spacing (38 W/ft²), Length, Model#, Amps, Ohms, Watts. Lists various cable specifications.

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.

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.

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.
Avoid crossing expansion joints in a slab, unless proper technique and protection steps are followed.
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.

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.

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

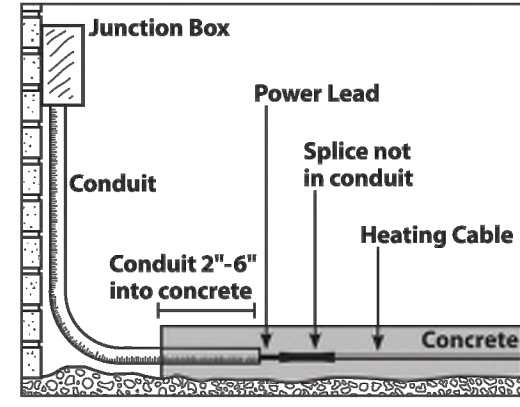
The following Steps 3.1 through 3.12 cover installation basics. Steps 3.13 through 3.14 cover some specific applications and their special requirements.

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.



- 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.

STEP 2.4

Your electrician should perform an insulation resistance test on the mat. A megohmmeter (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

Megohmmeters apply high voltage and could shock or cause serious injury if improperly used. Follow megohmmeter 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.

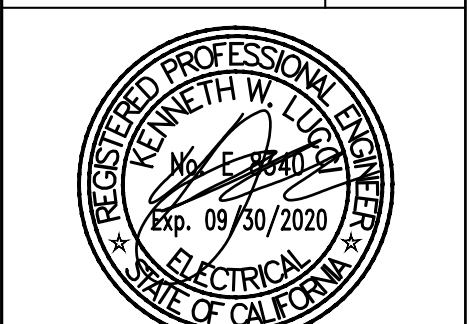
Table with 6 columns: System Size, Operation, Sensor, Control, Order #, Required. Lists control packages for different system sizes.

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.

Table with 3 columns: ContactorPro Panel, CP-50, CP-100, CP-200. Lists panel specifications.



Table with 2 columns: REVISIONS, DATE.



LUCI & ASSOCIATES, INC. reserve their right to make changes to these plans, drawings and specifications without notice and without liability. The user of these plans and drawings shall be responsible for obtaining and reviewing all applicable laws, codes and regulations. The user shall indemnify and hold Lucci & Associates, Inc. harmless from and against all claims, damages, costs and expenses, including reasonable attorneys' fees, arising out of or from the use of these plans and drawings.

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

SHEET TITLE: ELECTRICAL DETAILS

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

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# 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.
Snow/ice is not melting.	Mat/cable has been damaged.	If the ohmmeter (multi-meter) has multiple ranges (e.g. 200Ω, 2kΩ, 20kΩ, 200kΩ, 20MΩ) set the range to 200Ω and re-measure.
	Ground fault has tripped.	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.
System operates continuously.	Incorrect wiring. Control was "bypassed".	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.
	Faulty control. Relay is not opening properly.	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".	
	Incorrect wiring. Control was "bypassed".	Check wire connections. See wiring instructions with control and in this manual.
System operates continuously.	Faulty control. Relay is not opening properly.	Check instructions with the control.

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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.

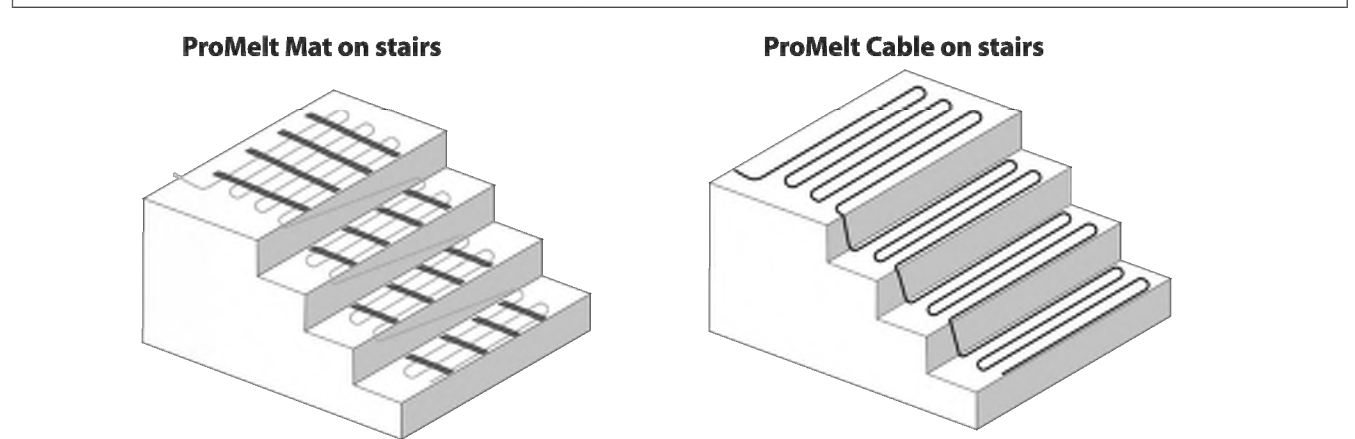
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# SPECIAL APPLICATIONS

**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:

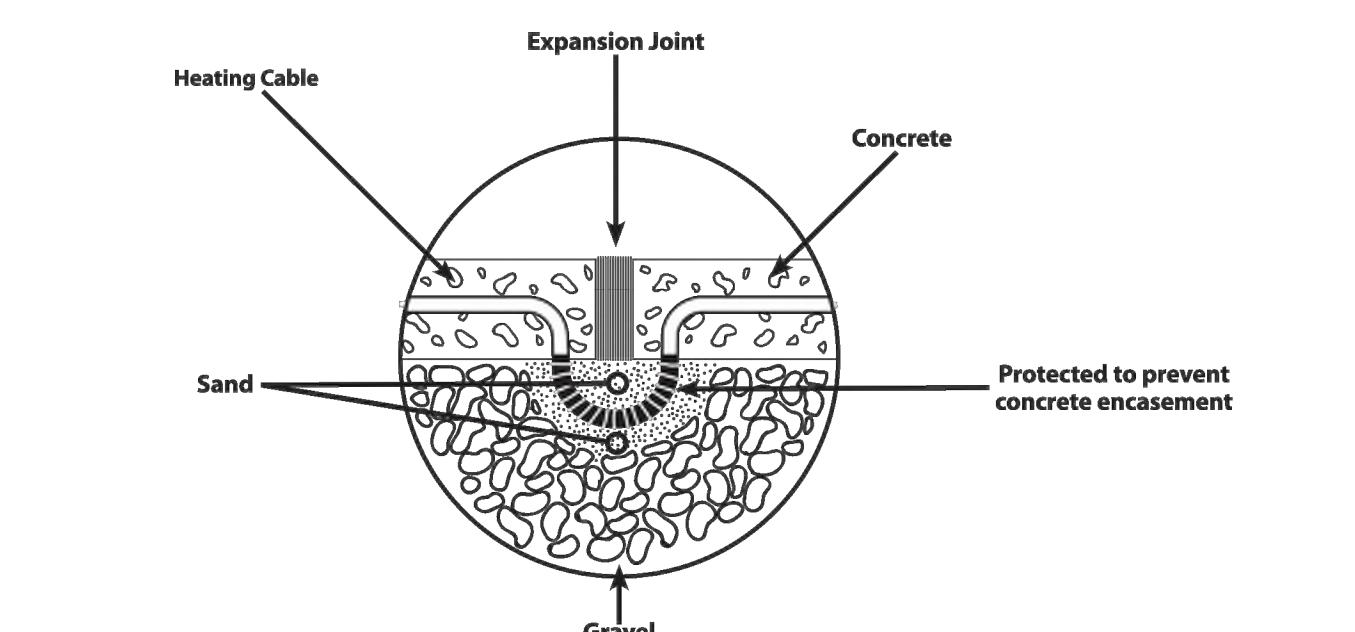
- Lay cable no greater than 3 inches from the front edge of the finished tread. Otherwise this edge may not snow melt properly.
- Lay cable at least 6 inches from the side edges of the finished tread.
- Account for future hand railings that could be mounted onto the tread, especially in the middle of 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.



**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.



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- 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.

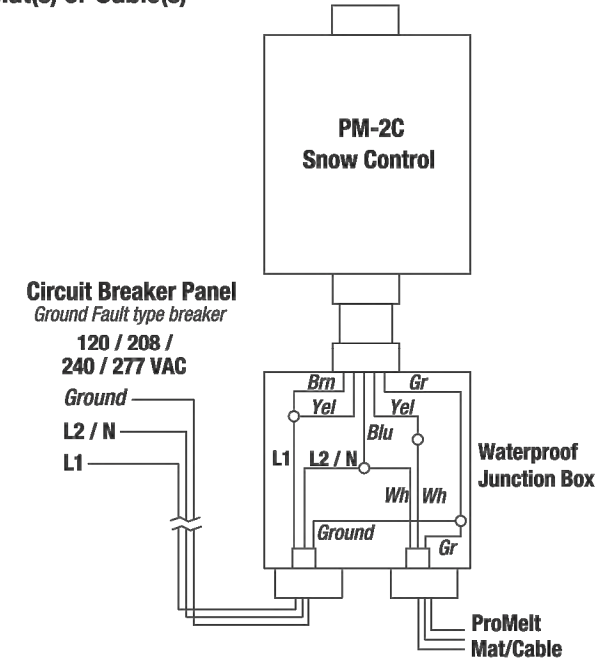
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# Appendix: Typical Wiring Diagrams

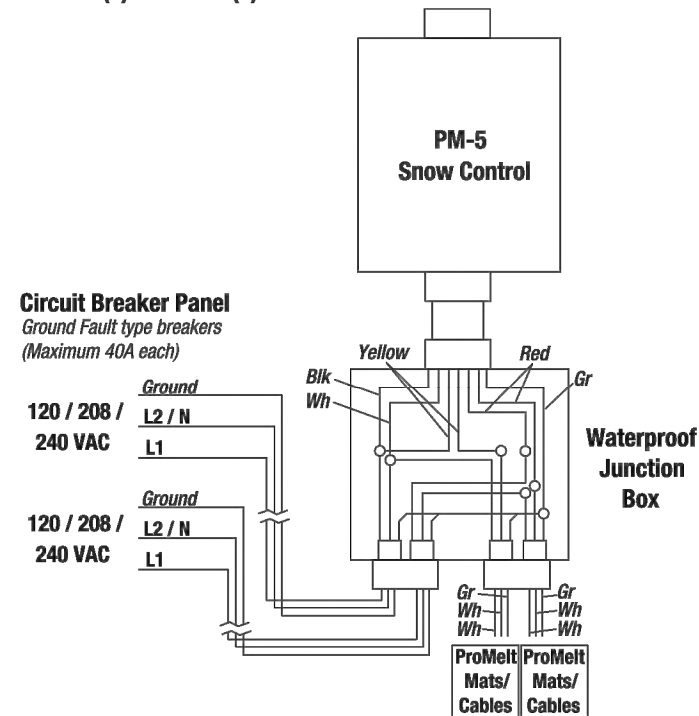
Following are examples of typical wiring connections for the ProMelt systems. Carefully read and follow the instructions given with each control for complete information.

**⚠ 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)



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# 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

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# 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:**

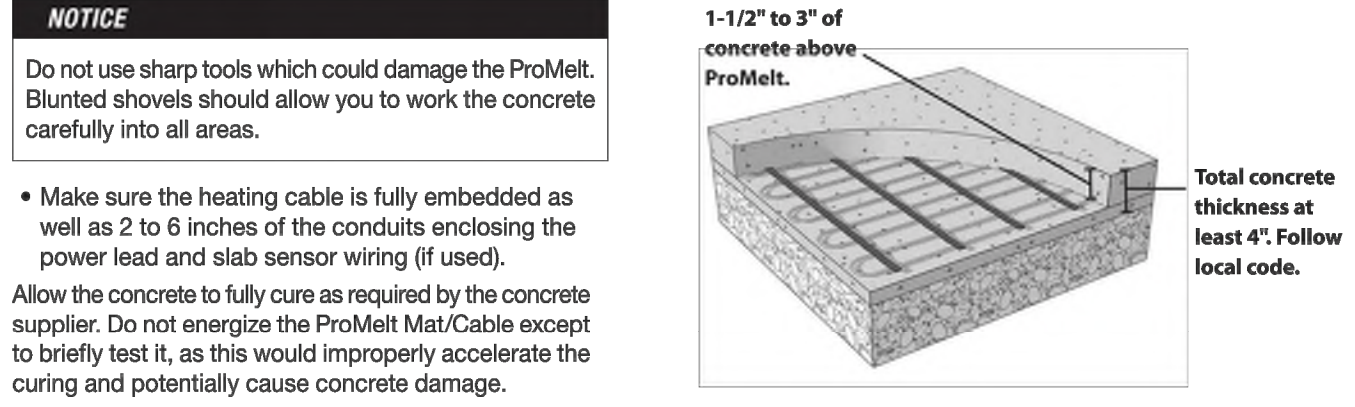
Use a digital multi-meter to measure and record the resistance between the conductors of the mat/cable power leads again (see Step 2.3). If possible, your electrician should perform an insulation resistance test on the mat/cable. A megohmmeter (e.g. Megger®) adjusted to a minimum 1000 VDC should give 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.



**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.

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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.

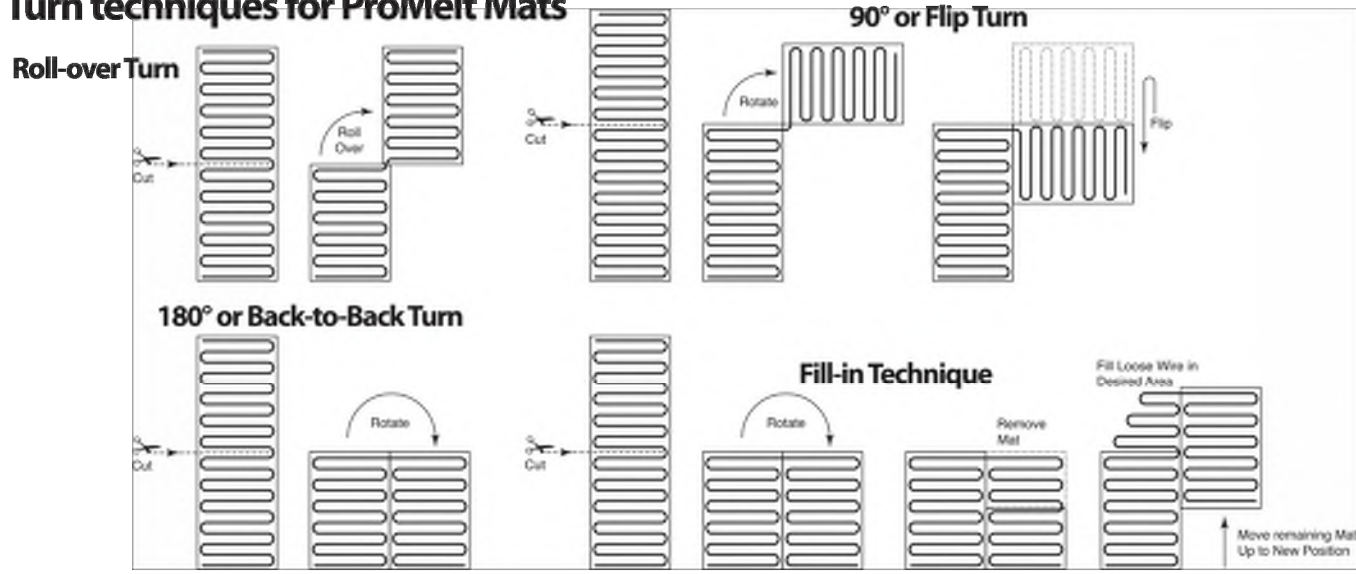
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# STEP 3.8 (ProMelt Mat Only)

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.

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.

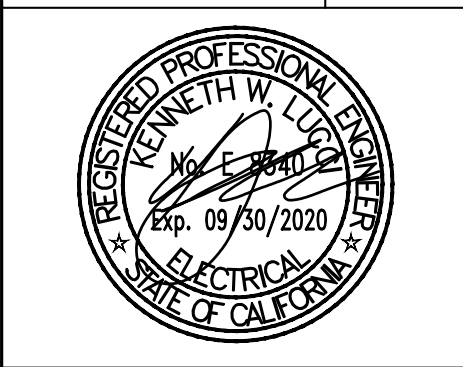
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REVISIONS	DATE



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

**SHEET TITLE:**  
 ELECTRICAL DETAILS

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

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E602

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Materials Required

- 18 AWG LVT Solid Wire (Low Voltage Connections)

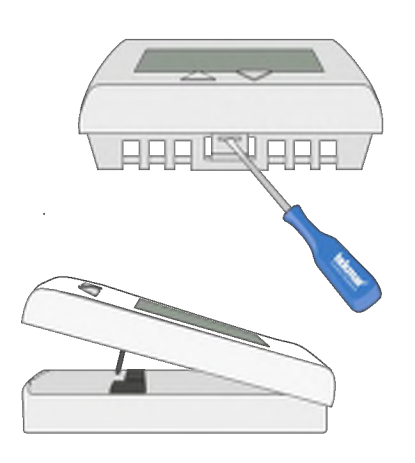
Installation Location

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

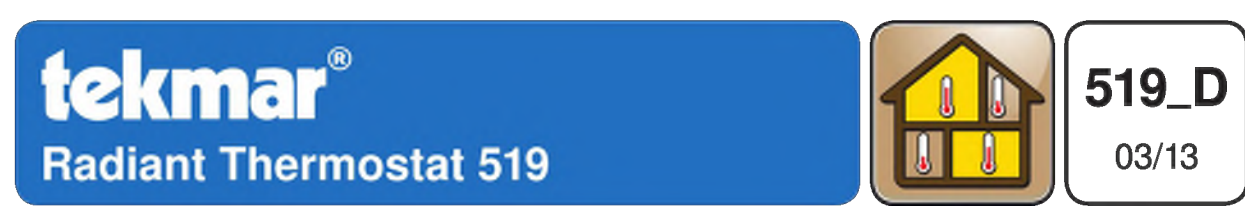
- Consider the following: Interior Wall, Keep dry, Avoid potential leakage onto the control, Relative Humidity less than 90%, Non-condensing environment, No exposure to extreme temperatures beyond 32-122°F (0-50°C), No draft, direct sun, or other cause for inaccurate temperature readings, Away from equipment, 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.



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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

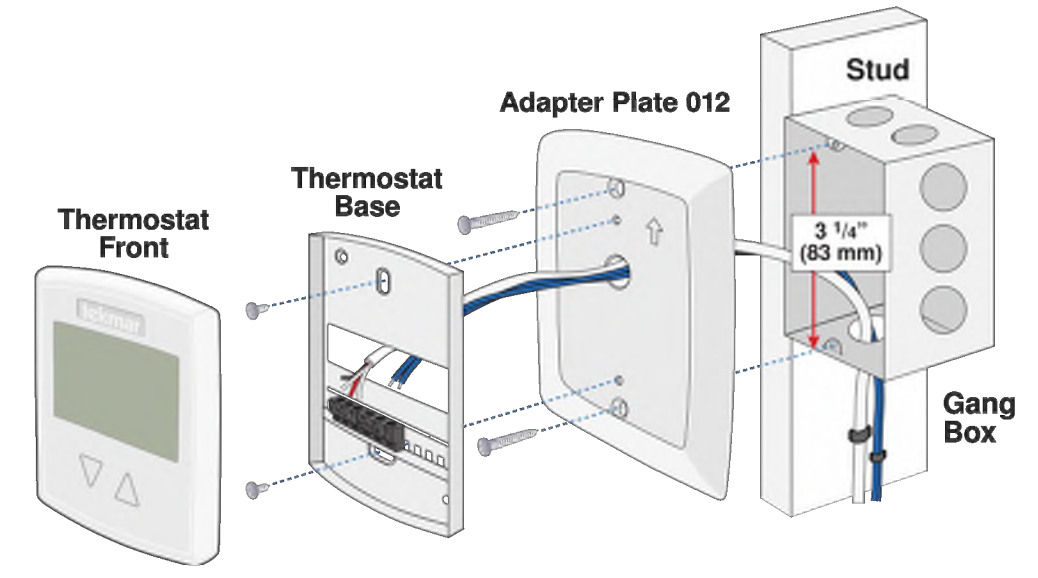
Additional Features

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

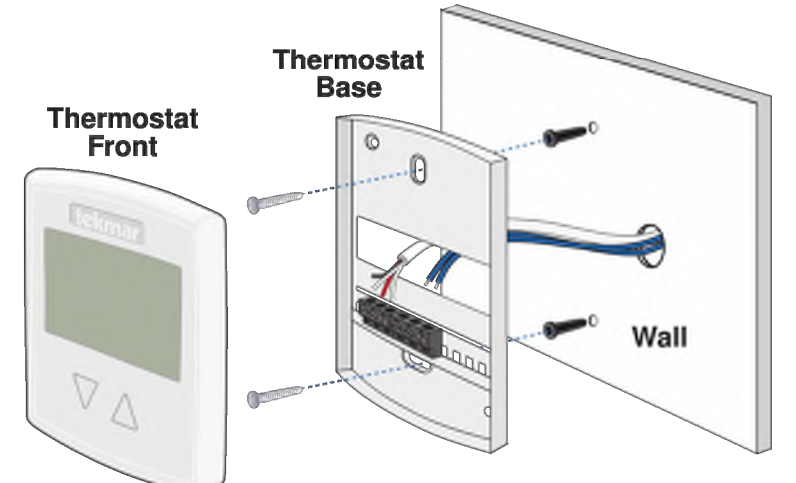


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Mounting The Thermostat



- 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 .....2, Installation .....2, Preparation .....2, Removing The Thermostat Base .....3, Mounting The Thermostat .....4, Slab Sensor 079 Installation .....5, Slab Sensor 079 Wiring .....6, Slab Sensor 079 Testing .....7, Temperature vs. Resistance Table .....9, Thermostat Wiring .....9, Testing the Thermostat Wiring .....10, User Interface .....11, Home Screen .....11, Symbols Description .....11, Sequence of Operation .....12, Heating Operation .....12, Programmable Settings .....13, Troubleshooting .....14, Error Messages .....14, Frequently Asked Questions .....15, Technical Data .....15, Limited Warranty and Product Return Procedure .....16

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, Wire Stripper, Phillips head screwdriver

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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.

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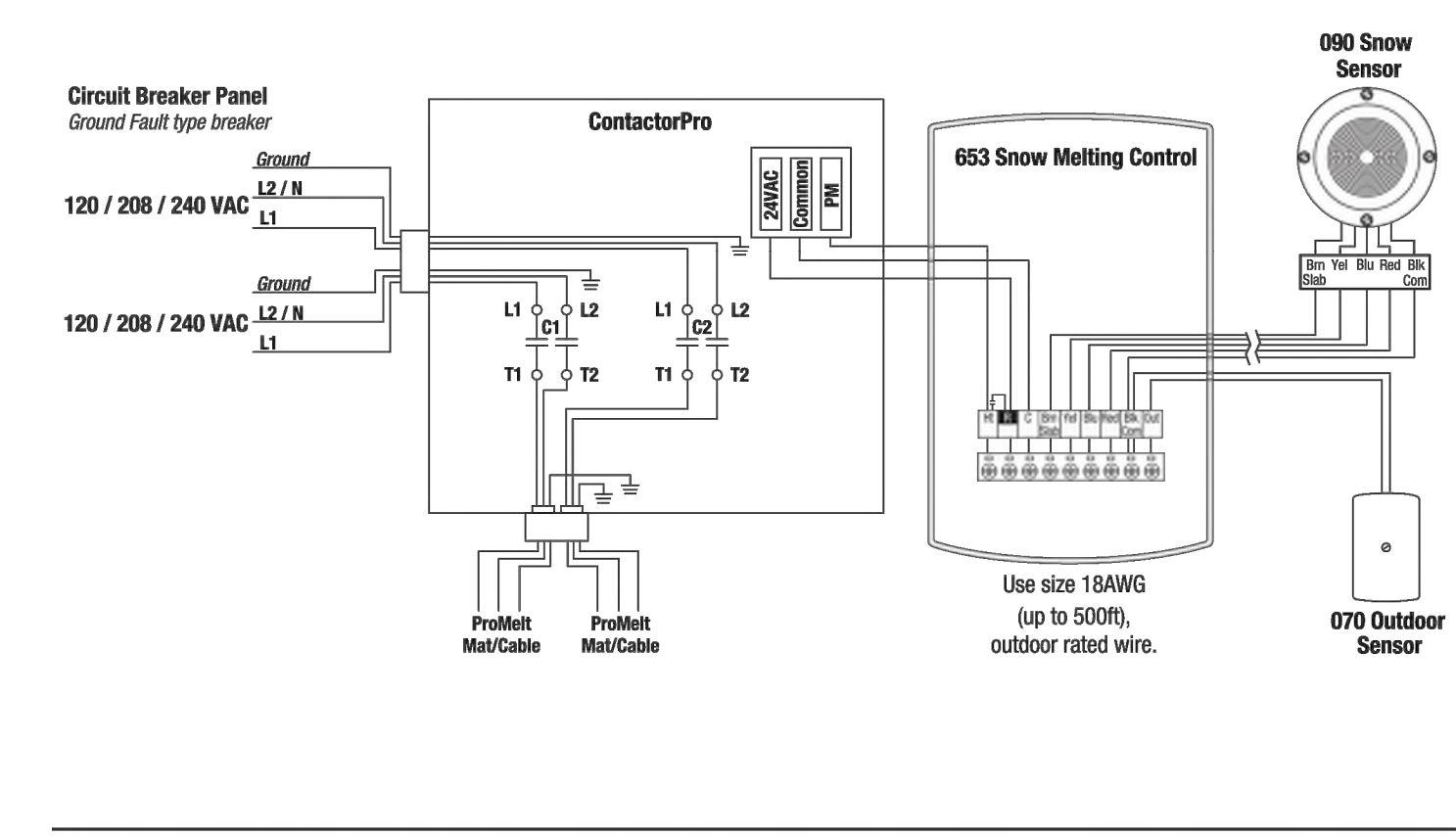
Watts Radiant 4500 E. Progress Place Springfield, MO 65803-8816 800-276-2419 (toll-free phone) 417-864-6108 (phone) 417-864-8161 (fax) www.wattsradiant.com

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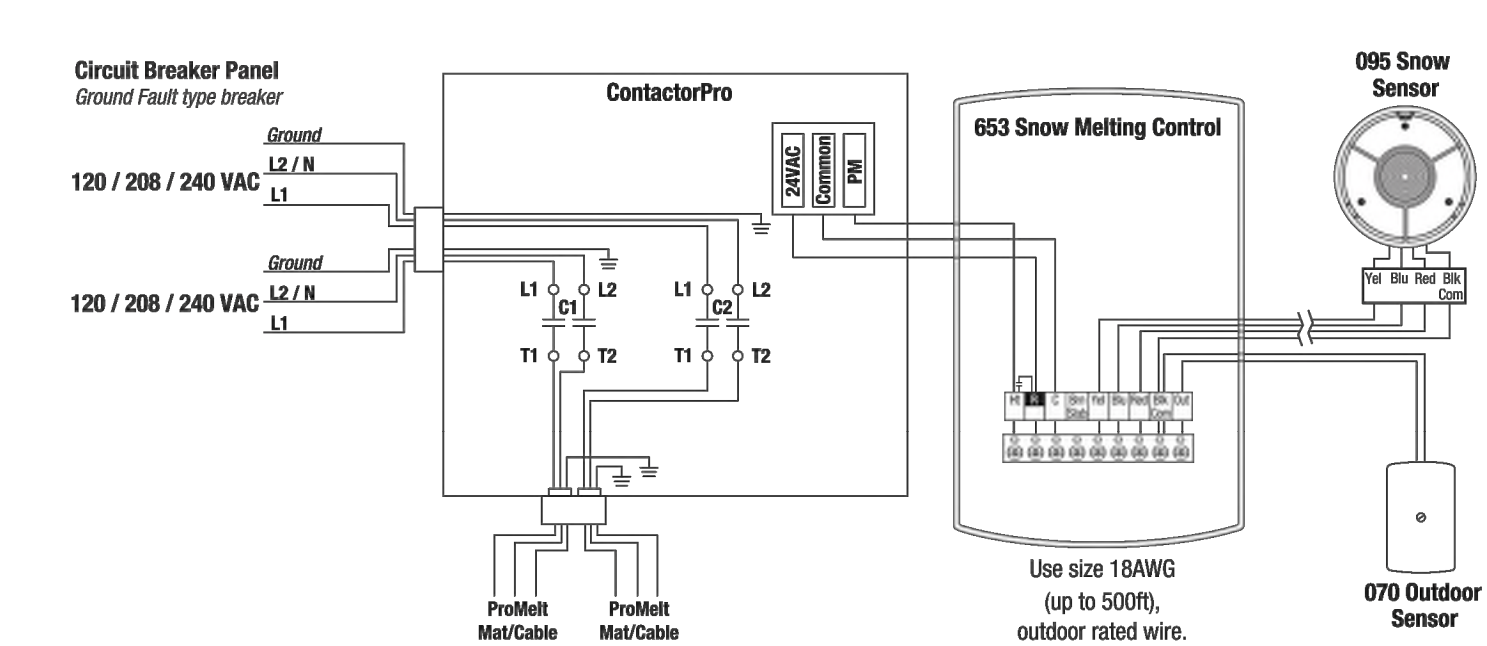


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ProMelt Snow Melting Control Kit PM-L3 with ProMelt Mat(s) or Cable(s)

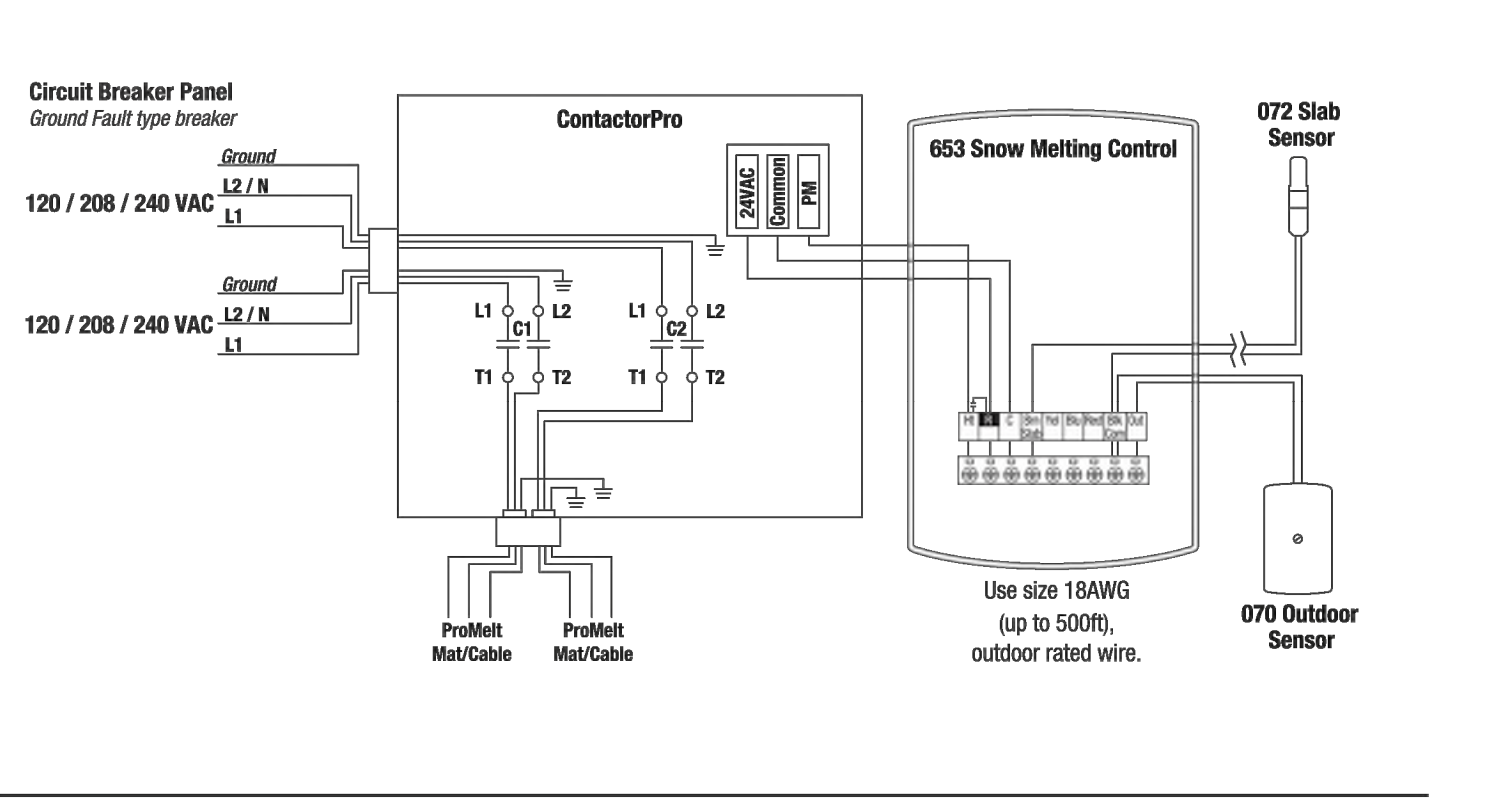


ProMelt Snow Melting Control Kit PM-L2 with ProMelt Mat(s) or Cable(s)



21

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

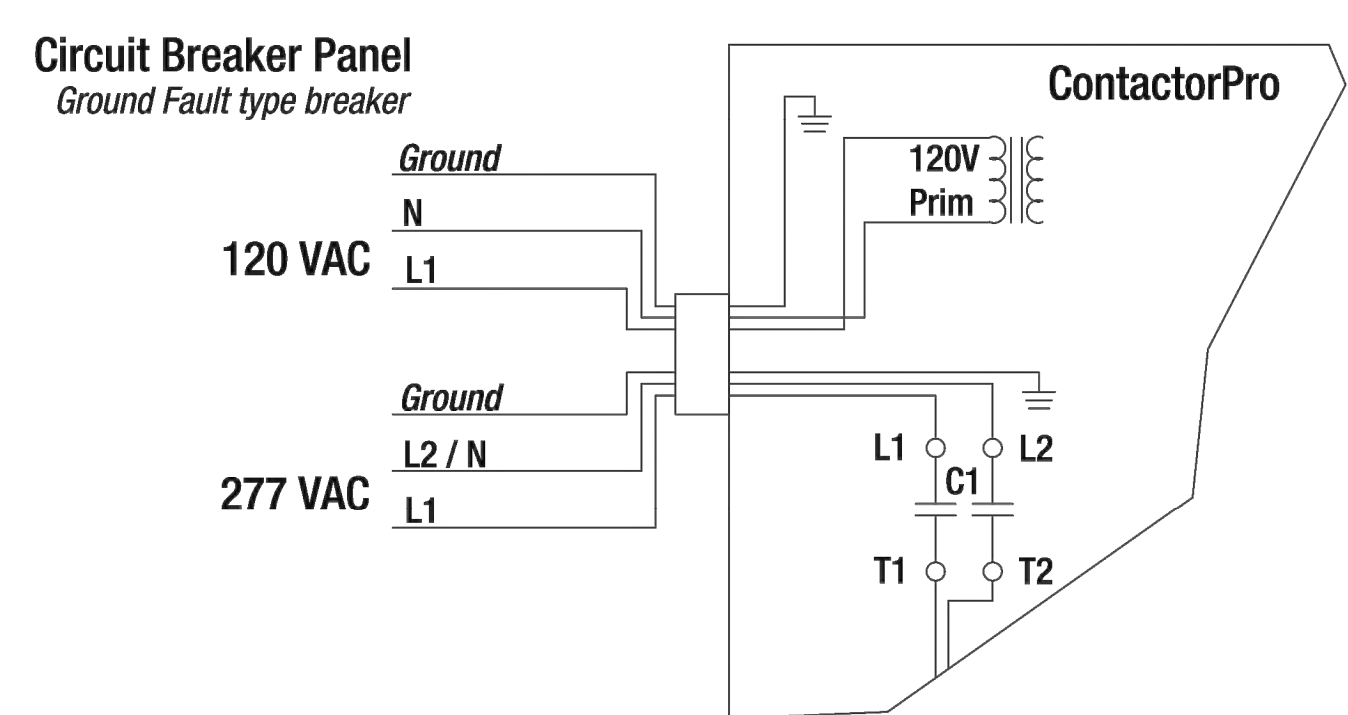


Table with 2 columns: REVISIONS, DATE

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ELECTRICAL DETAILS

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

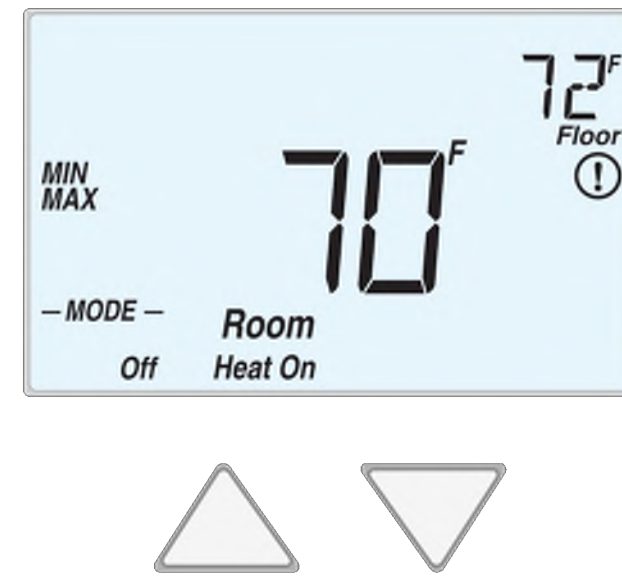
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OF SHEETS



## User Interface

### Home Screen



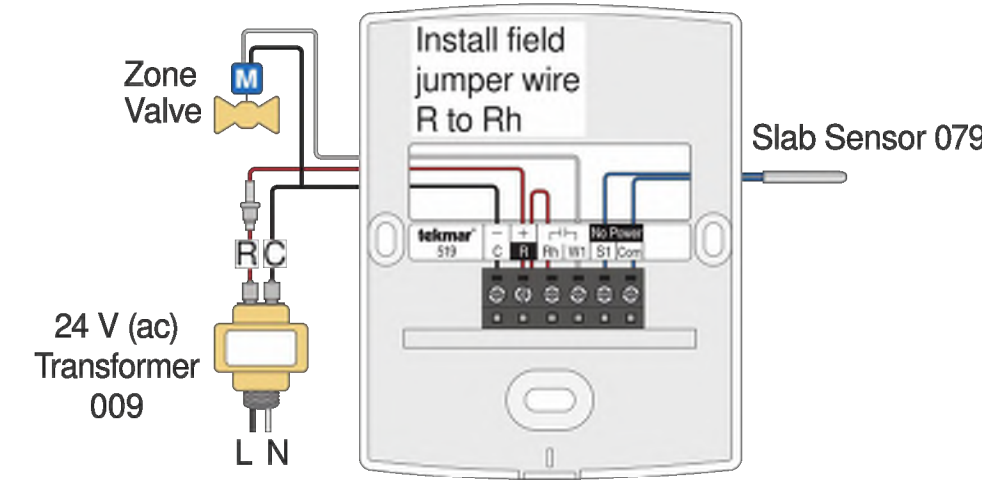
### Symbols Description

	<b>HEAT ON</b> Heat is turned on.	<b>MIN</b>	<b>MIN</b> The floor is at or below the floor minimum temperature.
	<b>MODE OFF</b> The heating system is off.	<b>MAX</b>	<b>MAX</b> The floor has reached the floor maximum temperature.
	<b>WARNING SYMBOL</b> Indicates an error is present.		

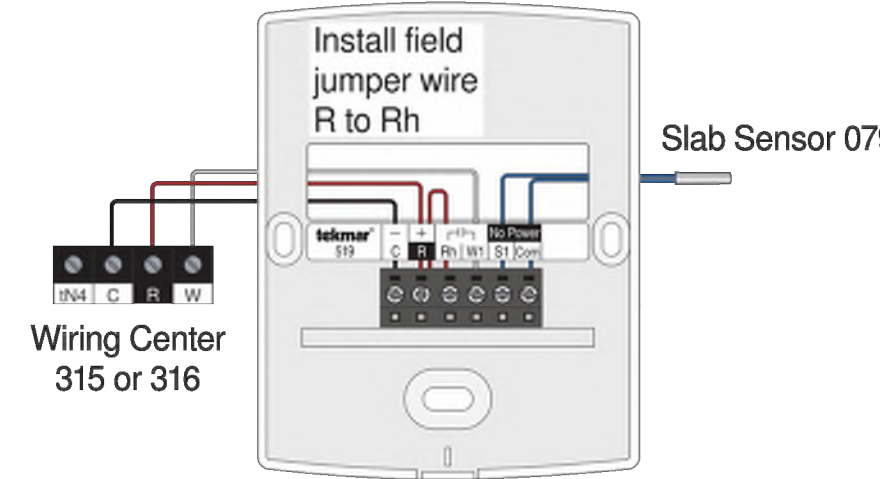
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## Thermostat Wiring

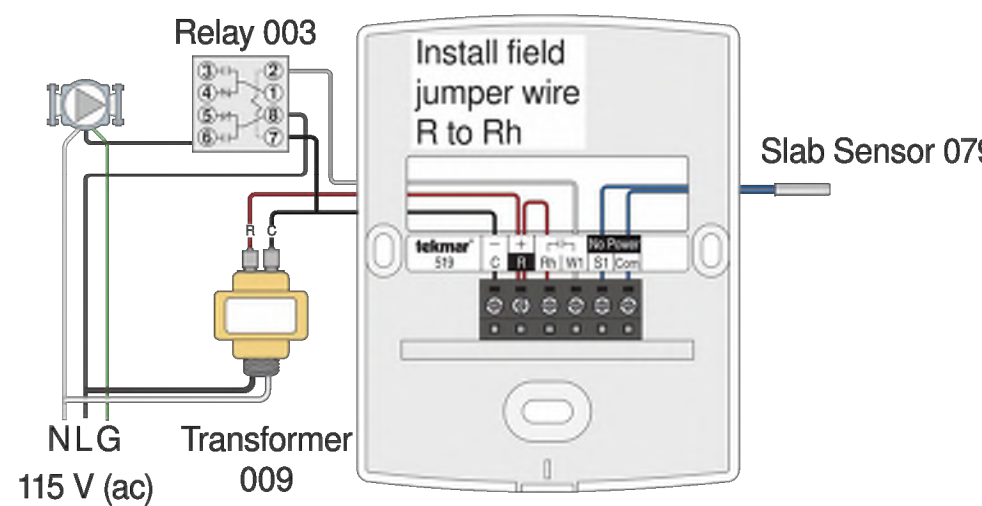
### Zone Valve



### Wiring Center 315 or 316



### Relay 003



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## 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 °F	Temperature °C	Resistance Ω	Temperature °F	Temperature °C	Resistance 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

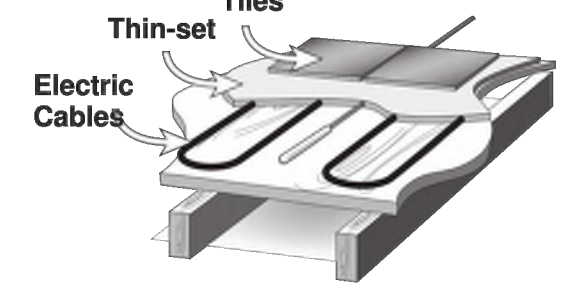
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## Slab Sensor 079 Installation

### New Installations

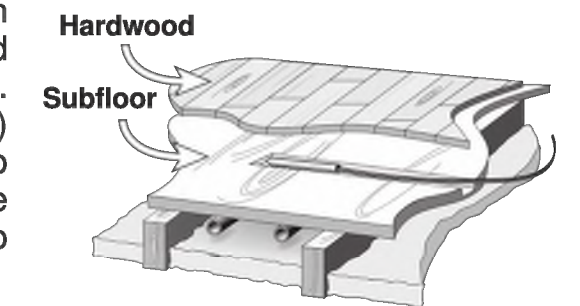
#### Thin-Set or Thin-Pour Applications

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))

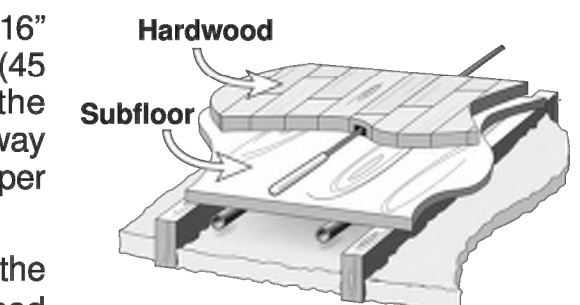
If a thin floor covering is to be installed directly to the subfloor, a groove 1/8" (4 mm) wide by 1/16" (2 mm) deep can be cut into the surface of the subfloor to accommodate the wire for the sensor. Ensure that the sensor is located in such a position that the attached wire is able to reach to a suitable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

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## Sequence of Operation

### Heating Operation

To change the heat temperature setting, push the  $\Delta$  or  $\nabla$  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  $\pm 1.5^\circ\text{F}$  ( $1^\circ\text{C}$ ) of the temperature setting. The floor and air heating can be shut off by holding the  $\nabla$  button until Set Room is Off.

To resume heating when the Mode is Off, press the  $\Delta$  button to navigate to the Mode setting, then press the  $\Delta$  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

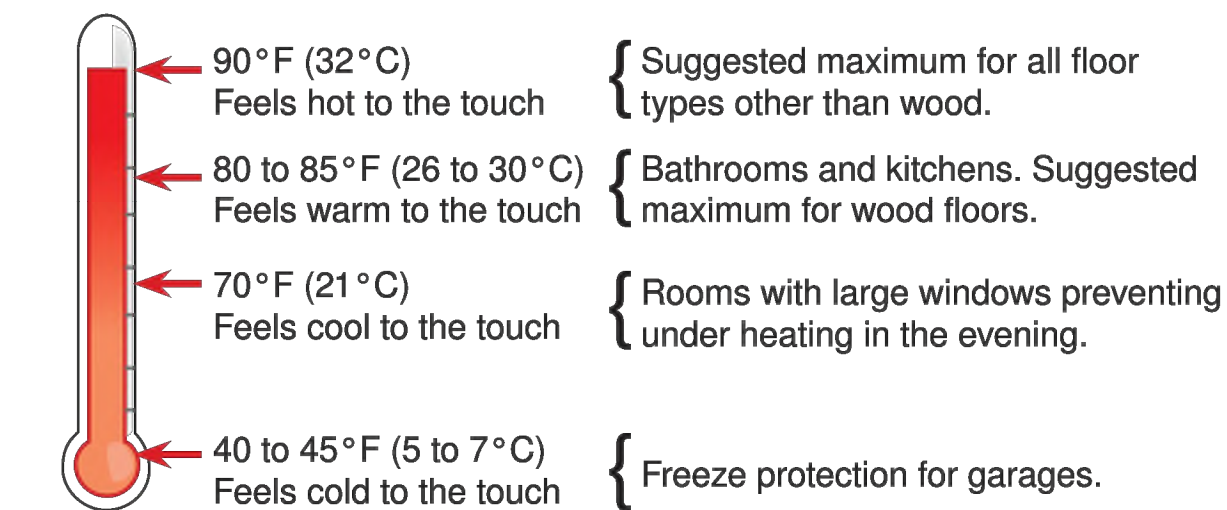
If the air sensor has been disabled, the thermostat will only maintain floor temperature and ignore air temperature. This operation is recommended for areas such as bathrooms to ensure that tile floors are warm to the touch.

### 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.

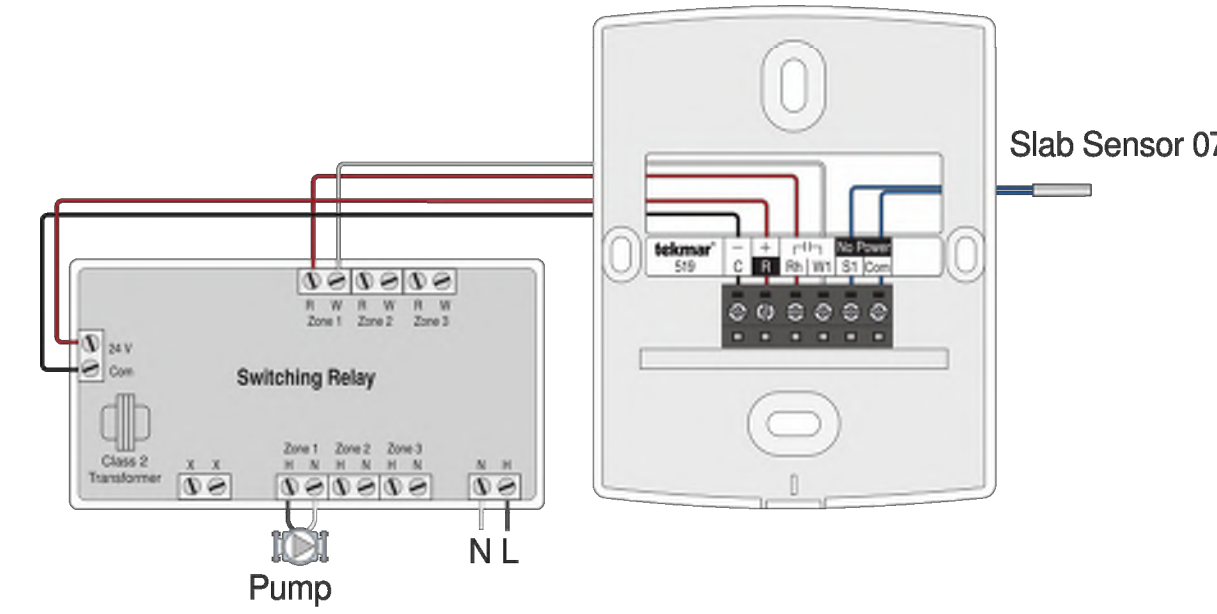
This operation is also recommended for rooms with hardwood floors. Setting floor minimum and maximum temperatures is a way of enhancing the comfort of the living space while protecting floor coverings.



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## 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 initially powers on but later shuts off intermittently, 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  $\Delta$  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.

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## Temperature vs. Resistance Table - Continued

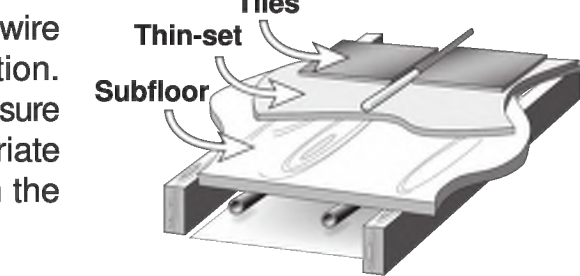
Temperature °F	Temperature °C	Resistance Ω	Temperature °F	Temperature °C	Resistance Ω
100	38	5,828	165	74	1,538
105	41	5,210	170	77	1,403
110	43	4,665	175	79	1,281
115	46	4,184	180	82	1,172
120	49	3,760	185	85	1,073
125	52	3,383	190	88	983
130	54	3,050	195	91	903
135	57	2,754	200	93	829
140	60	2,490	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

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## Retrofit Installations

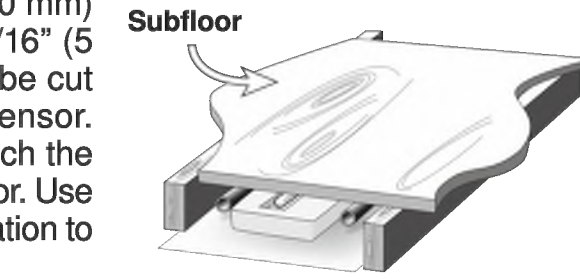
### Tile Floor Coverings

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

**E604**

OF SHEETS  $\Delta$



Frequently Asked Questions

Table with 3 columns: Symptom, Look for..., Corrective Action. Rows include 'Display powering on and off' and 'Thermostat does not heat'.

Technical Data

Table for Radiant Thermostat 519 One Stage Heat. Includes literature, control, dimensions, enclosure, approvals, ambient conditions, power supply, relay, sensor, and optional parts.

Table for Slab Sensor 079 10' (3 m) wire. Includes dimensions, enclosure, approvals, operating range, and sensor details.

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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 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.

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All specifications are subject to change without notice 16 of 16 519\_D - 03/13

Programmable Settings

Table with 2 columns: Setting, Display. Rows include Mode (HEAT), Units (F), Light (AUTO), Set Floor (72), Type (519), Escape (ESCAPE), Auxiliary Sensor (NONE), Room Sensor (ON), Set Floor Maximum (85), and another Escape (ESCAPE).

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Troubleshooting

Error Messages

Table with 2 columns: Error Message, Description. Rows include Setup Menu Save Error, Room Sensor Open Circuit Error, Room Sensor Short Circuit Error, Auxiliary Sensor Open Circuit Error, and Auxiliary Sensor Short Circuit Error.

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Table with 2 columns: REVISIONS, DATE.



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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

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