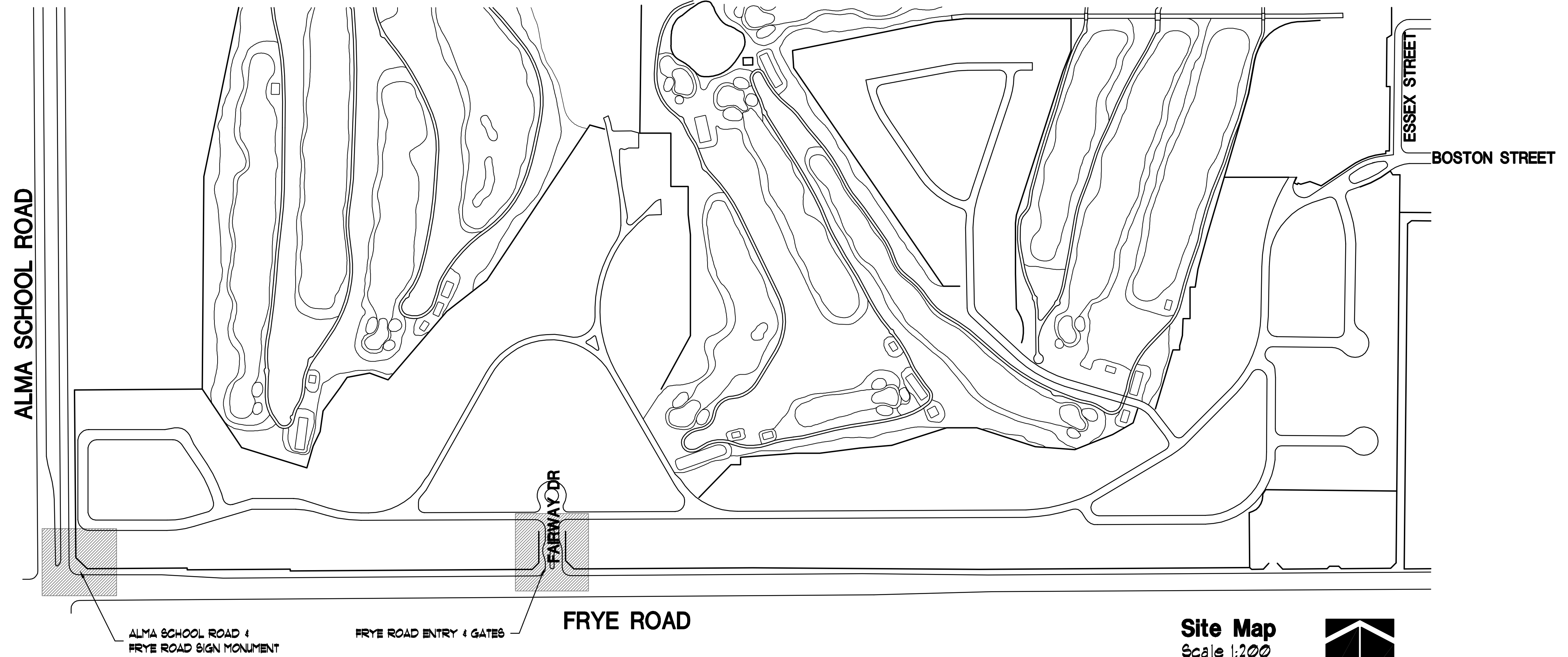


CITY NOTES:

- A. ALL SITE IMPROVEMENTS, INCLUDING LANDSCAPE AND SITE CLEANUP, MUST BE COMPLETED PRIOR TO CERTIFICATE OF COMPLETION.
- B. NO OBSTRUCTIONS TO VIEW SHALL BE ERRECTED, CONSTRUCTED OR PARKED WITHIN THE SIGHT VISIBILITY AREA. ALL TREES WITHIN THE LINE OF SIGHT WILL MAINTAIN A CANOPY HEIGHT ABOVE 6' CURB ELEVATION. ALL SHRUBS IN THIS AREA MAY NOT REACH A MATURE HEIGHT OVER 24'.
- C. ALL PLANT MATERIALS ARE GUARANTEED FOR A MINIMUM PERIOD OF SIXTY (60) DAYS FROM THE DATE OF FINAL APPROVAL BY THE CITY. ANY PLANT MATERIALS, WHICH ARE NOT APPROVED BY THE CITY PRIOR TO OCTOBER 1 OF THE CALENDAR YEAR IN WHICH THEY ARE INSTALLED, SHALL BE FURTHER GUARANTEED UNTIL MAY 20 OF THE FOLLOWING CALENDAR YEAR.
- D. TREES, SHRUBS, VINES, GROUND COVER AND TURF THAT HAVE TO BE REPLACED UNDER TERMS OF THE GUARANTEE, SHALL BE GUARANTEED FOR AN ADDITIONAL 60 DAYS FROM THE DATE OF REPLACEMENT.
- E. ALL PLANT MATERIALS MUST BE MAINTAINED IN HEALTH AND VIGOR AND BE ALLOWED TO ATTAIN NATURAL SIZE AND SHAPE IN ACCORDANCE WITH THE ORIGINALLY APPROVED LANDSCAPE PLAN (SEE SECTION 1903(6)(X)(H)).
- F. PARKING LOT TREES MUST HAVE A MINIMUM CLEAR CANOPY DISTANCE OF 5'. SEE SECTION 1903(6)(X)(4).
- G. ALL LANDSCAPE AREAS SHALL BE GRADED SO THAT FINISHED GRADE SURFACES OF ALL NONLIVING MATERIALS (I.E. DECOMPOSED GRANITE, CRUSHED ROCK, MULCH, ETC.) ARE ONE AND ONE HALF (1 1/2) INCHES BELOW CONCRETE OR OTHER PAVED SURFACES. SEE SECTION 1903(6)(X)(11), ZONING CODE.
- H. TREES MUST BE PLACED A MINIMUM OF 5' FROM SIDEWALKS, PUBLIC ACCESS-WAYS. SHRUBS MUST BE, AT MATURITY, 3' FROM ALL SIDES OF A FIRE HYDRANT, PIV, OR FDC. (SEE SECTION 1903(6)(X)(1), ZONING CODE.)
- I. ALL LANDSCAPING SHALL BE MAINTAINED BY THE LANDOWNER OR THE LESSOR IN COMPLIANCE WITH THE ZONING CODE. SEE SECTION 1903(6)(X)(H), ZONING CODE.
- J. THERE SHALL BE NO OBSTRUCTION OF SITE SIGNAGE BY LANDSCAPE PLANT MATERIAL, AND THAT SUCH MUST BE RELOCATED AND/OR CORRECTED BEFORE THE FIELD INSPECTION WILL ACCEPT/PASS THE SIGN IN THE FIELD OR ISSUE A CERTIFICATE OF OCCUPANCY FOR A PROJECT.
- K. ALL TRANSFORMER BOXES, METER PANELS AND ELECTRIC EQUIPMENT, BACKFLOW DEVICES OR ANY OTHER UTILITY EQUIPMENT NOT ABLE OR REQUIRED TO BE SCREENED BY LANDSCAPING OR WALLS, SHALL BE PAINTED TO MATCH THE BUILDING COLOR.
- L. ALL WALLS OVER 7' IN HEIGHT, SITE LIGHTING, SIGNAGE, RAMADAS AND SHADE STRUCTURES REQUIRE SEPARATE SUBMITTAL AND PERMITS.



UTILITY NOTES:

- 1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT M.A.G. STANDARD SPECIFICATIONS AND DETAILS AS SUPPLEMENTED BY THE CITY OF CHANDLER.
- 2. THE CITY ENGINEER'S OFFICE SHALL BE NOTIFIED OF WORK THROUGH THE ON-LINE INSPECTION REQUEST PROCESS AT [HTTPS://CHANDLERAZ.GOV/CLICS/](https://chandleraz.gov/clics/) OR BY CALLING THE AUTOMATED PHONE SYSTEM AT (480) 782-3100. PLEASE SEE THE INSPECTION CARD ISSUED WITH THE PERMIT FOR MORE INFORMATION ON HOW TO SCHEDULE AN INSPECTION. A CONTACT NAME AND PHONE NUMBER MUST BE INCLUDED IN THE SCHEDULING COMMENTS. EMERGENCY WORK PERFORMED AFTER NORMAL WORK HOURS SHALL BE REPORTED TO THE POLICE DISPATCHER AT (480) 782-4132.
- 3. ALL STREET CROSSINGS SHALL BE BORED USING HORIZONTAL DIRECTIONAL DRILLING (H.D.D.) IN ACCORDANCE WITH M.A.G. SECTION 608 AND CITY OF CHANDLER SUPPLEMENTAL SPECIFICATIONS UNLESS APPROVAL TO OPEN CUT HAS BEEN RECEIVED FROM THE CITY ENGINEER AND SUCH APPROVAL HAS BEEN NOTED ON THE PERMIT. ALL PAVEMENT REPLACEMENT SHALL BE IN ACCORDANCE WITH M.A.G. STANDARD DETAIL 200, 'T' TOP, WITH FULL DEPTH ABC BACKFILL.
- 4. TRAFFIC CONTROL SHALL BE MAINTAINED IN ACCORDANCE WITH THE CHANDLER TRAFFIC BARRICADE MANUAL. TRAFFIC RESTRICTIONS ARE NOT PERMITTED ON ARTERIALS AND MAJOR COLLECTORS PRIOR TO 8:30 A.M. OR AFTER 4 P.M.
- 5. PERMITS ARE REQUIRED FOR ALL WORK IN CITY RIGHTS-OF-WAY. A COPY OF THE PERMIT AND APPROVED PLAN SHALL BE AVAILABLE AT THE JOB SITE. FAILURE TO SECURE PERMITS PRIOR TO STARTING CONSTRUCTION WILL RESULT IN THE ASSESSMENT OF PENALTY FEES.
- 6. ALL WORK IN THE RIGHT-OF-WAY SHALL BE COMPACTION TESTED AND RESULTS KEPT ON FILE FOR A MINIMUM OF ONE YEAR.
- 7. ANY DAMAGE TO IRRIGATION SYSTEMS WITHIN THE CITY RIGHT-OF-WAY SHALL BE REPAIRED, WITHIN 48 HOURS OF SAID DAMAGE, TO PREVENT LOSS OF LANDSCAPE MATERIAL.
- 8. WHEN CONTRACTORS OR UTILITY COMPANIES CALL IN FOR BLUESTAKING OR CONSTRUCTION AREAS, 'SEMI-PERMANENT', OR APPROVED ALTERNATE 3-6 MONTH DURATION BLUE-STAKE PAINT SHALL BE SPECIFIED. IN ADDITION, 'STAKE CHASERS' WILL BE SPECIFIED FOR MARKING ACROSS LANDSCAPED YARDS/AREAS.

UTILITY COMPANIES OR CONTRACTORS FOR UTILITY COMPANIES THAT EMPLOY INDISCRIMINATE/EXCESSIVE BLUE-STAKE MARKING ACROSS RESIDENTIAL BUSINESS DRIVEWAYS OR YARDS WILL BE RESPONSIBLE FOR RESTORING RIGHT-OF-WAY, UTILITY EASEMENT, AND/OR ADJOINING PROPERTY OWNERS AREA TO ITS ORIGINAL UNMARKED CONDITION.

EXCEPTION: FOR LONG DURATION CONSTRUCTION PROJECTS ON MAJOR ARTERIALS OR MAJOR STREETS, OR CERTAIN SPECIALTY TYPE CONSTRUCTION PROJECTS, THE CONTRACTOR/UTILITY COMPANY MAY ASK THE CITY ENGINEER FOR APPROVAL TO USE LONGER DURATION BLUE-STAKE PAINT. IN ADDITION, IF THE REMOVAL OF 'STAKE CHASERS' OCCURS OR IS EXPECTED TO RESULT, THE CONTRACTOR/UTILITY COMPANY MAY ASK THE CITY ENGINEER FOR APPROVAL TO USE BLUE-STAKE PAINT MARKING ACROSS LANDSCAPED AREAS.

- 9. UTILITY CLEARANCE REQUIREMENTS: ANY AND ALL MORE STRINGENT SEPARATION REQUIREMENTS REQUIRED BY FEDERAL, STATE, OR LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

A SIX-FOOT MINIMUM HORIZONTAL SEPARATION FROM THE EXTERIOR WALL OF ANY UNDERGROUND DRY UTILITY SHALL BE PROVIDED TO THE EXTERIOR WALL OF WATER AND SEWER MAINS. ALL FIRE LINES, REGARDLESS OF SIZE (INCLUDING HYDRANTS AND OTHER FIRE SERVICE CONNECTIONS) ARE CONSIDERED MAINS.

A THREE-FOOT MINIMUM HORIZONTAL SEPARATION FROM THE EXTERIOR WALL OF ANY UNDERGROUND DRY UTILITY SHALL BE PROVIDED TO THE EXTERIOR WALL OF WATER AND SEWER SERVICES. REFER TO M.A.G. SECTION 608 AND CITY OF CHANDLER SUPPLEMENTAL SPECIFICATIONS FOR HORIZONTAL DIRECTIONAL DRILLING (H.D.D.) CLEARANCE REQUIREMENTS.

A TWO-FOOT MINIMUM VERTICAL SEPARATION FROM THE EXTERIOR WALL OF ANY UNDERGROUND DRY UTILITY SHALL BE PROVIDED TO THE EXTERIOR WALL OF ANY WET UTILITIES.

FOR ADDITIONAL INFORMATION REGARDING STANDARD UTILITY LOCATIONS REFER TO THE CITY OF CHANDLER STANDARD DETAILS AND SPECIFICATIONS, STREET SERIES, C-200 - C-259.

DEPTH REQUIREMENTS SHALL BE IN ACCORDANCE WITH CITY OF CHANDLER MINIMUM COVER REQUIREMENTS OR AT THE DISCRETION OF THE CITY ENGINEER.

GENERAL TRAFFIC REGULATIONS:

THE FOLLOWING ARE MINIMUM TRAFFIC CONTROL REQUIREMENTS FOR ALL TRAFFIC RESTRICTIONS, UNLESS OTHERWISE PROVIDED FOR IN THE CITY OF CHANDLER APPROVED STREET CLOSURE PERMIT.

- A. DURING OFF-PEAK TRAFFIC HOURS, A MAXIMUM REDUCTION OF ONE THROUGH LANE IN EACH DIRECTION IS PERMITTED. TURN LANES MAY BE RESTRICTED IF APPROVED BY THE CITY TRANSPORTATION ENGINEER OR HIS/HER DESIGNATE. ADDITIONAL LANE RESTRICTIONS MAY BE AUTHORIZED DURING EMERGENCIES, NIGHTS AND WEEKENDS. WEEKENDS ARE DEFINED AS FRIDAY AT 9PM TO 5AM ON MONDAY. NIGHTS ARE DEFINED AS 9PM TO 5AM.
- B. THE USE OF CITY OF CHANDLER POLICE OFFICERS AT BARRICADE LOCATIONS WITHIN THE CITY IS PREFERRED AND MUST BE GIVEN FIRST PRIORITY IN FILLING THESE JOBS. CONTRACTORS, UTILITIES, AND AGENCIES SHOULD CONTACT THE EXTRA DUTY COORDINATOR (480-782-4204) AT LEAST 24-HOURS IN ADVANCE TO SCHEDULE OFFICERS FOR THIS PURPOSE. THE CITY TRANSPORTATION ENGINEER, OR HIS/HER DESIGNEE, WILL DETERMINE THE NUMBER OF POLICE OFFICERS, IF ANY, REQUIRED BY TIME OF DAY.
- C. WITH AN APPROVED PERMIT, LOCAL STREETS MAY BE CLOSED EXCEPT FOR LOCAL ACCESS WHEN CONSTRUCTION OR MAINTENANCE REQUIRES.

- D. LOCAL ACCESS MUST BE MAINTAINED TO ALL PROPERTIES ON ALL STREETS (ARTERIAL, COLLECTOR AND LOCAL) AT ALL POSSIBLE TIMES. WHEN LOCAL ACCESS CANNOT BE MAINTAINED, THE CONTRACTOR, UTILITY OR OTHER AGENCY MUST NOTIFY AFFECTED PROPERTY OWNERS, RESIDENTS OR TENANTS A MINIMUM OF 24 HOURS IN ADVANCE AND RESTORE ACCESS AS SOON AS POSSIBLE.

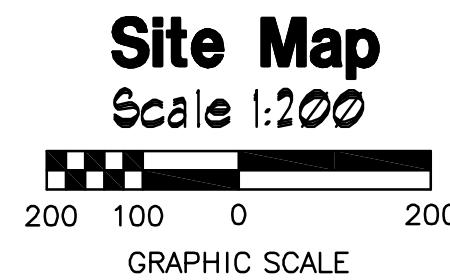
- E. ACCESS TO FIRE STATIONS, POLICE STATIONS, HOSPITALS, POST OFFICES AND SCHOOLS MUST BE MAINTAINED AT ALL TIMES. WHEN ACCESS RESTRICTIONS ARE NECESSARY, THE CONTRACTOR, UTILITY OR OTHER AGENCY MUST COORDINATE SUCH ACCESS RESTRICTIONS WITH THE RESPONSIBLE PERSON IN CHARGE OF THE AFFECTED FIRE STATION, HOSPITAL, POLICE STATION, POST OFFICE OR SCHOOL.

- F. DEVICES PLACED FOR WORK, ZONE TRAFFIC CONTROL (E.G. BARRICADES, VERTICAL PANELS, BARRELS, SIGNS) MUST BE REMOVED FROM THE STREET RIGHT-OF-WAY AT THE TIME THAT WORK IS COMPLETED. DEVICES LEFT IN THE RIGHT-OF-WAY FOR MORE THAN 24 HOURS AFTER STOPPING WORK WILL BE REMOVED BY THE CITY. DEVICES REMOVED BY THE CITY MAY BE RECLAIMED AT THE CITY YARD (915 EAST ARMSTRONG WAY) AFTER PAYMENT OF FEES COVERING CITY COSTS FOR REMOVAL AND STORAGE.

- G. SET UP OF BARRICADING AND TRAFFIC CONTROL MUST BE UNDERTAKEN BY QUALIFIED AND EXPERIENCED PERSONNEL ONLY. THE CITY OF CHANDLER REQUIRES THAT A CONTRACTOR DELEGATE THE DAILY SET UP TO A BARRICADING COMPANY WHEN WORKING ON ARTERIAL ROADS. REMOVAL OF BARRICADING AFTER COMPLETION OF DAILY TASKS MAY BE UNDERTAKEN BY EITHER THE CONTRACTOR OR THE BARRICADING COMPANY.

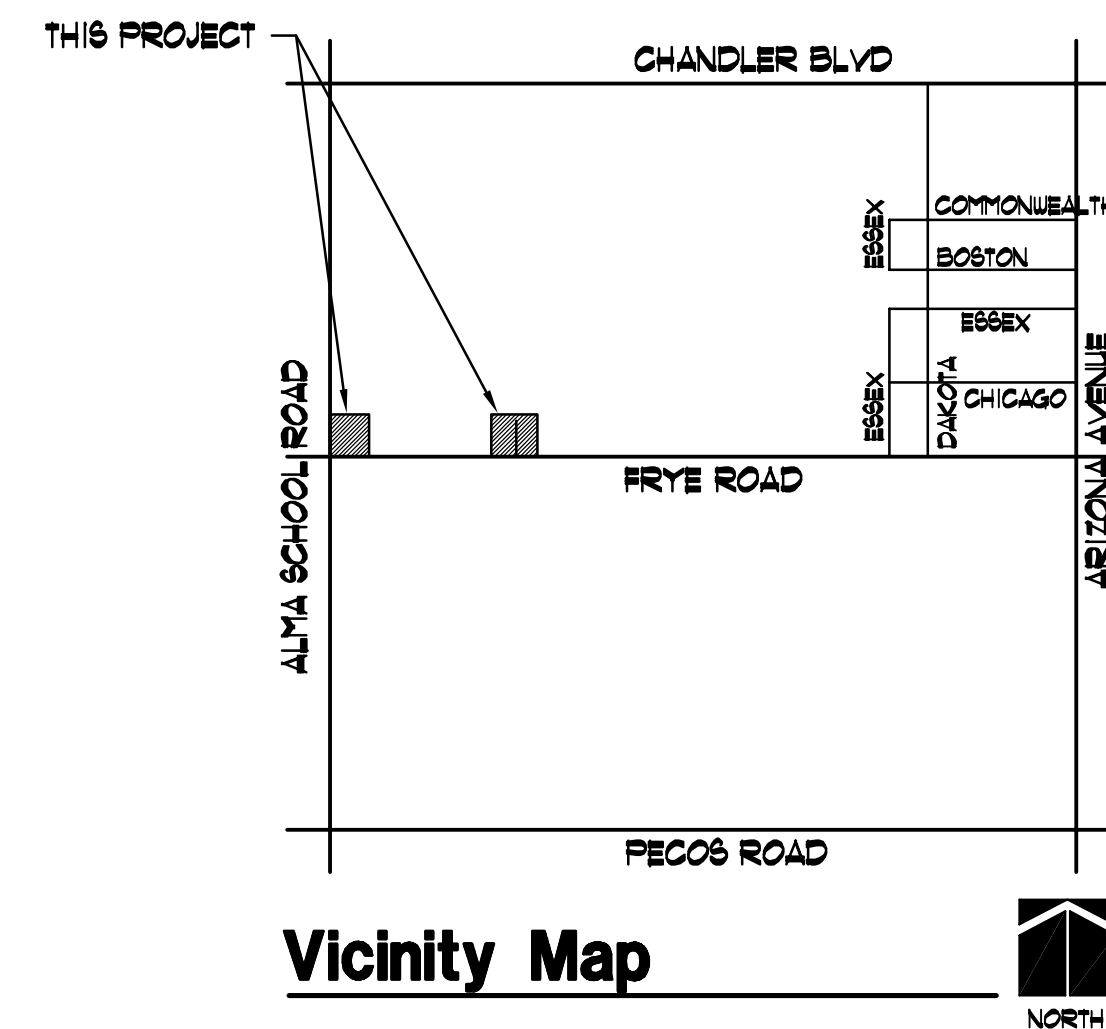
- H. THE CONTRACTOR, UTILITY OR OTHER AGENCY IS RESPONSIBLE TO REMAIN AT THE WORK SITE UNTIL ALL BARRICADING IS REMOVED FROM THE ROADWAY BY THE BARRICADING COMPANY. THE CONTRACTOR, UTILITY OR OTHER AGENCY MAY HAVE THE OPTION TO REMOVE BARRICADES. ALL BARRICADING MUST BE REMOVED FROM THE ROADWAY WITHIN ONE HOUR OF WORK COMPLETION. IF BARRICADES REMAIN LONGER THAN ONE HOUR AFTER WORK COMPLETION, THE CONTRACTOR, UTILITY OR OTHER AGENCY MAY BE SUBJECT TO PENALTIES.

- I. FAILURE TO COMPLY WITH A ROAD RESTRICTIONS AND CLOSURES PERMIT WILL RESULT IN A \$2,000 PER DAY PENALTY. FAILURE TO COMPLY WITH THE TRAFFIC CONTROL PLAN WILL RESULT IN A \$500 PER DAY PENALTY. POSSIBLE EXCEPTIONS TO PENALTIES MAY INCLUDE EMERGENCIES AFFECTING PUBLIC HEALTH AND SAFETY, OR EXTREME WEATHER CONDITIONS SUCH AS THE 50 OR 100-YEAR STORM. EXCEPTIONS WOULD NOT BE GRANTED FOR TYPICAL RAIN DELAYS OR KNOWN ADVERSE SOIL CONDITIONS. TO OBTAIN PAYMENT, THE CITY MAY TAKE ACTIONS SUCH AS WITHHOLDING FUTURE ROAD RESTRICTIONS AND CLOSURES PERMITS OR FINAL ACCEPTANCE OF OFFSITE IMPROVEMENTS.



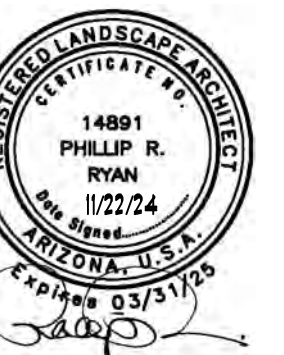
SHEET INDEX:

SHEET L-101	COVER SHEET
SHEET L-102	FRYE ROAD ENTRY IMPROVEMENT PLAN
SHEET L-103	ALMA SCHOOL & FRYE ROAD SIGN MONUMENT IMPROVEMENT PLAN
SHEET L-104	FRYE ROAD LANDSCAPE PLAN
SHEET L-105	FRYE ROAD IRRIGATION PLAN
SHEET L-106	LOW VOLTAGE LIGHTING PLAN
SHEET L-107	LANDSCAPE & IRRIGATION DETAILS
SHEET L-108	LANDSCAPE SPECIFICATIONS
SHEET L-109	IRRIGATION SPECIFICATIONS
SHEET L-201	FRYE ROAD SIGN MONUMENT/GATE, AND SIGN WALL ELEVATIONS
SHEET L-202	SITE DETAILS
SHEET L-203	SITE DETAILS



Vicinity Map

SAN MARCOS COUNTRY CLUB ESTATES
FRYE ROAD ENTRY IMPROVEMENTS
CHANDLER, ARIZONA 85225



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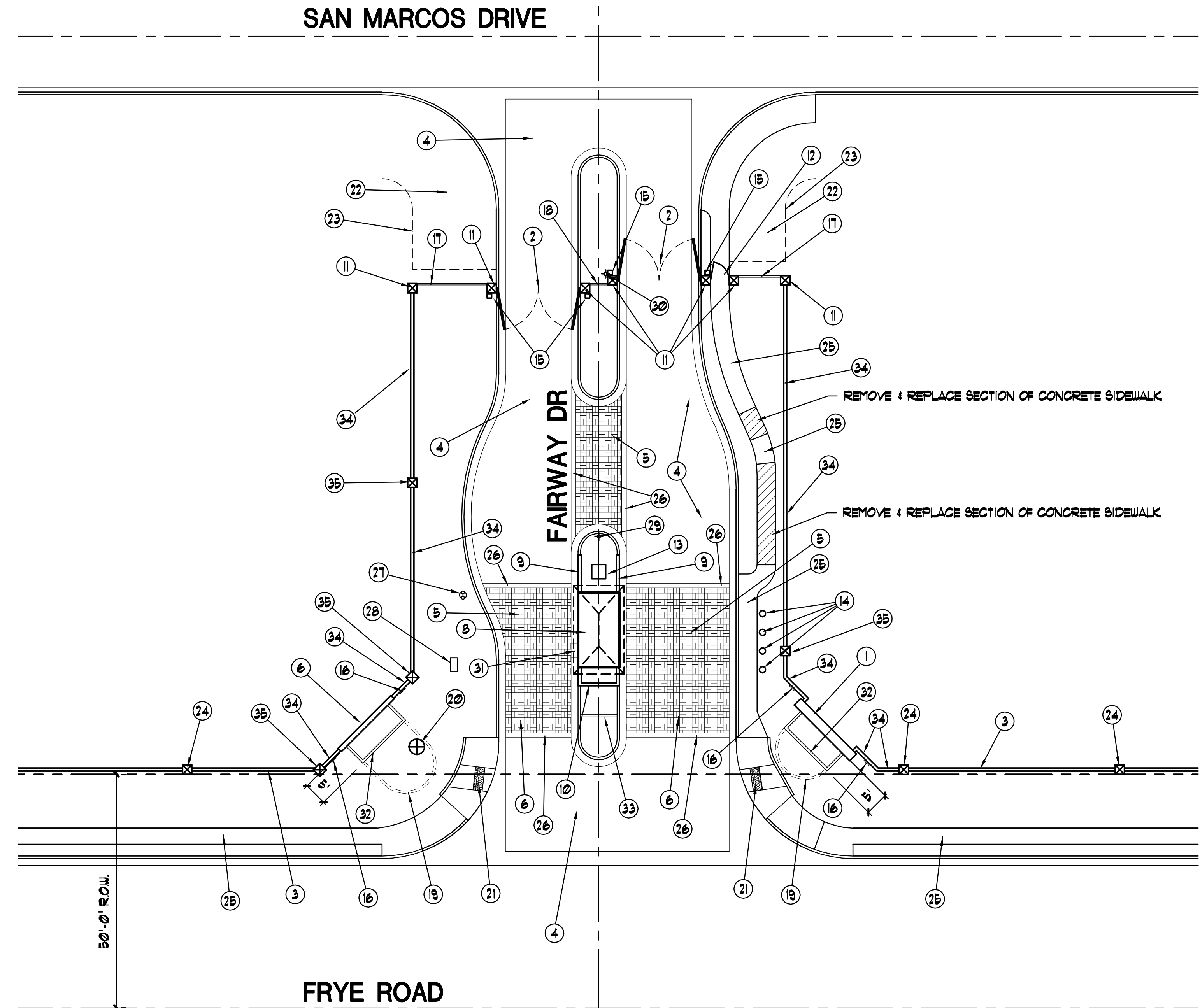
COVER SHEET

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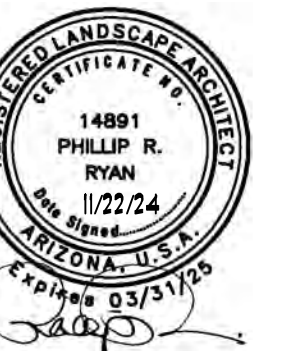
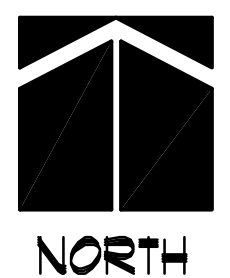
L-101

PLAN KEY NOTES:

- ① EXISTING SIGN MONUMENT TO BE MODIFIED, DETAIL (2/201)
- ② EXISTING VEHICULAR GATES TO BE REMOVED AND NEW GATES INSTALLED, DETAIL (1/201)
- ③ EXISTING WALL TO REMAIN
- ④ EXISTING ASPHALT PAVEMENT TO REMAIN
- ⑤ REMOVE EXISTING STAMPED AND SCORED CONCRETE AND INSTALL PAVERS, DETAIL (1/202)
- ⑥ EXISTING SIGN MONUMENT TO BE MODIFIED, DETAIL (2/203)
- ⑦ EXISTING CONCRETE CURBS TO REMAIN
- ⑧ EXISTING GUARDHOUSE TO BE MODIFIED, DETAIL (3/201) (4/201)
- ⑨ EXISTING SCREEN WALL TO REMAIN (REMOVE TOP PRE-CAST CONCRETE CAP AND INSTALL 2"x10" SOLD CAP (STUCCO & PAINT))
- ⑩ EXISTING PLANTER WALL TO REMAIN (REMOVE TOP PRE-CAST CONCRETE CAP AND INSTALL 2"x10" SOLD CAP (STUCCO & PAINT))
- ⑪ EXISTING CMU COLUMNS TO BE MODIFIED, DETAIL (8/202)
- ⑫ EXISTING PEDESTRIAN GATE TO BE REMOVED AND NEW GATE INSTALLED, DETAIL (5/202)
- ⑬ EXISTING A/C UNIT TO REMAIN
- ⑭ EXISTING CONCRETE BOLLARDS TO REMAIN
- ⑮ EXISTING MECHANICAL GATE OPERATORS TO REMAIN (RE-CONNECT TO NEW GATES)
- ⑯ INSTALL NEW TRELLIS FOR BOUGANVILLEA, DETAIL (2/202)
- ⑰ NEW TUBE STEEL FENCE, DETAIL (9/202)
- ⑱ NEW CENTER GATE PANEL, DETAIL (1/201)
- ⑲ EXISTING BRICK EDGING TO BE REMOVED
- ⑳ EXISTING FIRE HYDRANT TO REMAIN
- ㉑ EXISTING SIDEWALK RAMP TO REMAIN
- ㉒ EXISTING LAWN TO REMAIN
- ㉓ EXISTING LAWN EDGING TO REMAIN
- ㉔ EXISTING CMU COLUMNS TO REMAIN
- ㉕ EXISTING SIDEWALK TO REMAIN
- ㉖ CONSTRUCT 12" x 6" DEEP CONCRETE RIBBON CURB, DETAIL (1/202)
- ~~㉗ EXISTING LIGHT POLE TO REMAIN (RE-PAINT POST W/ 2 COATS DUNN EDWARDS 'RIVER BED')~~
- ㉘ EXISTING BACKFLOW PREVENTION DEVICE IN SECURITY CAGE TO REMAIN
- ㉙ EXISTING ELECTRICAL AND CAMERA POLE TO REMAIN (RE-PAINT POST W/ 2 COATS DUNN EDWARDS 'RIVER BED')
- ~~㉚ EXISTING OPTICAL FIRE POLE TO REMAIN (RE-PAINT POST W/ 2 COATS DUNN EDWARDS 'RIVER BED')~~
- ㉛ REMOVE CONCRETE RAMP TO GUARDHOUSE
- ㉜ INSTALL NEW 6"x12" CONCRETE CURB, DETAIL (3/202)
- ㉝ EXISTING BRICK EDGING TO REMAIN
- ㉞ EXISTING WALL TO REMAIN (RE-PAINT W/ 2 COATS DUNN EDWARDS 'RIVER BED')
- ㉟ EXISTING COLUMNS TO REMAIN (RE-PAINT W/ 2 COATS DUNN EDWARDS 'RIVER BED')



**Frye Road Entry
Existing Conditions and
Improvement Plan**
Scale 1/16" = 1'-0"
GRAPHIC SCALE



DRAWING TITLE
IMPROVEMENT PLAN

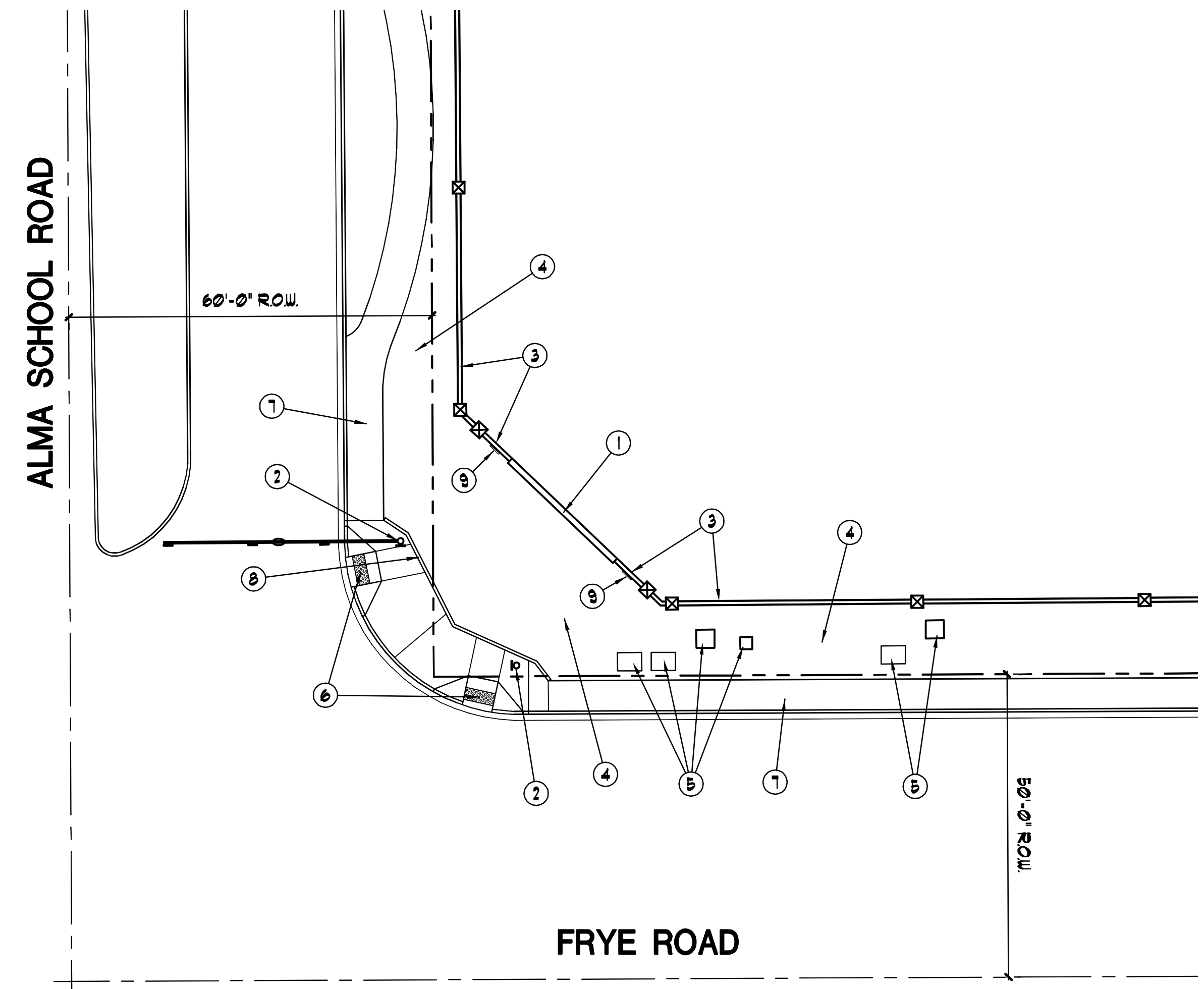
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L-102

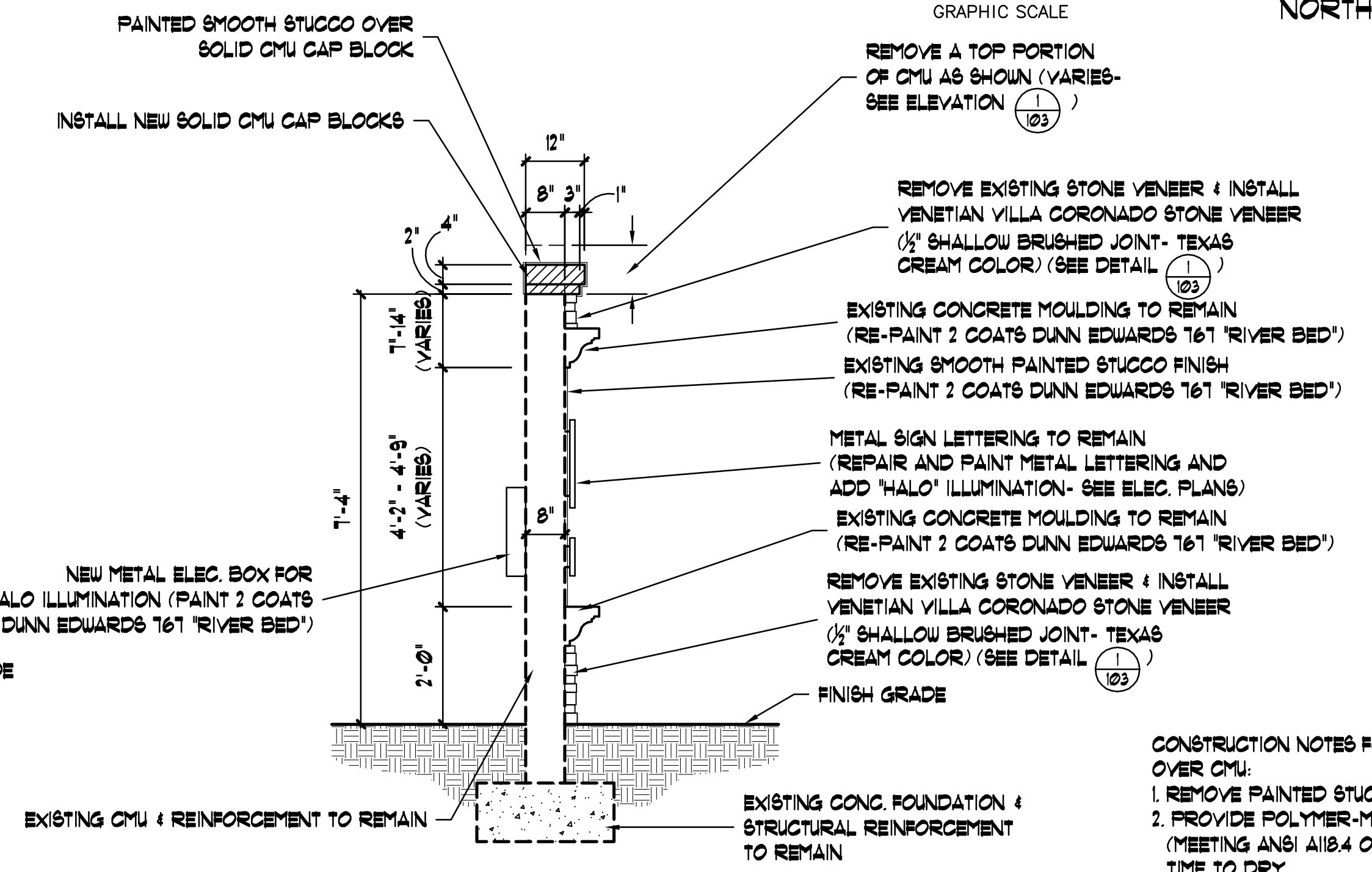
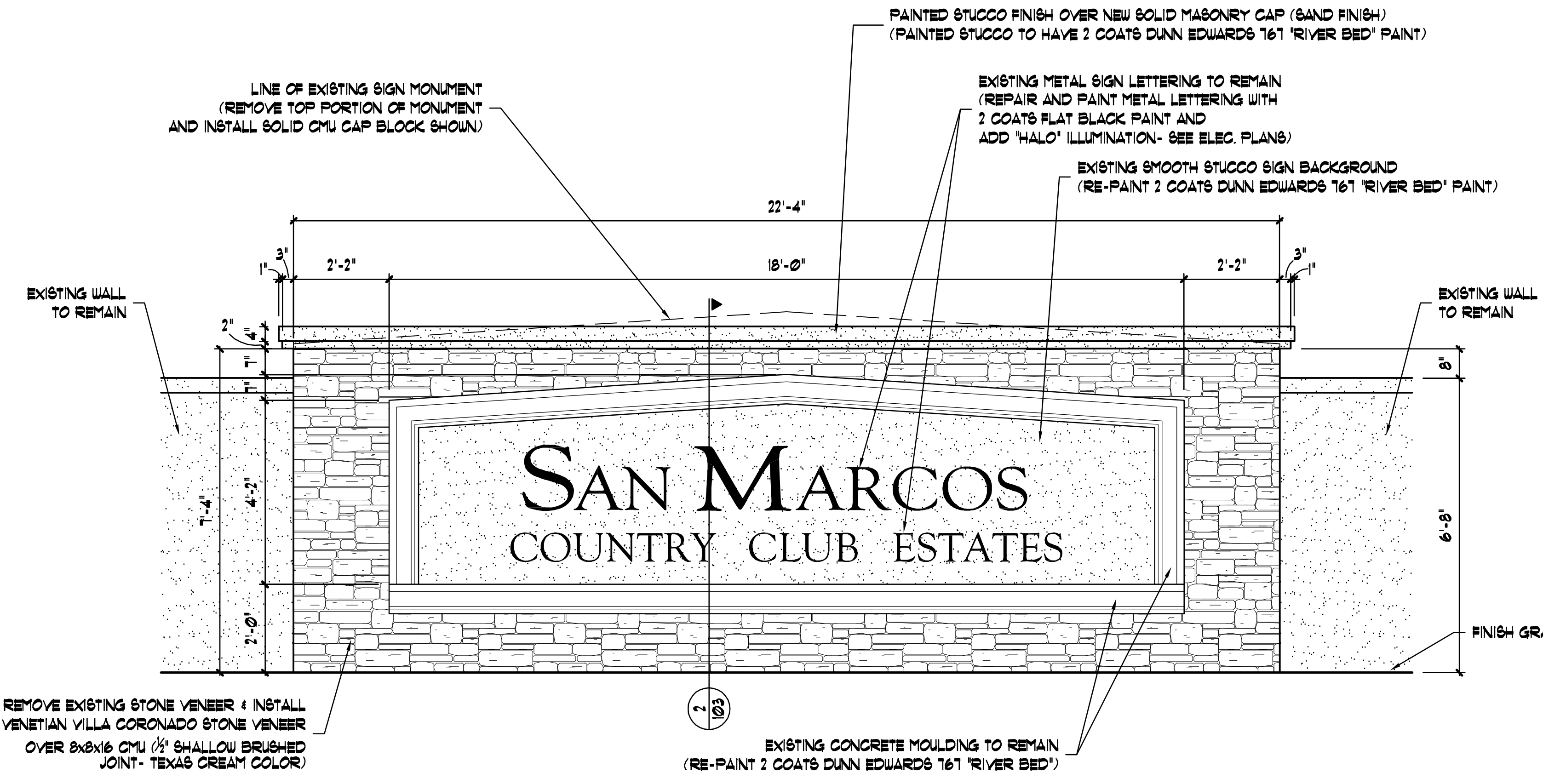
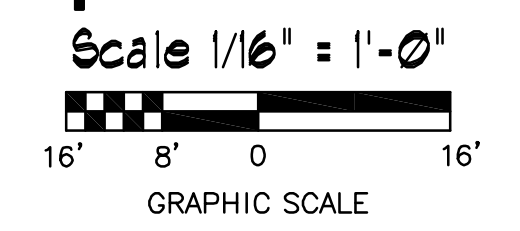
SAN MARCOS COUNTRY CLUB ESTATES
FRYE ROAD ENTRY IMPROVEMENTS
CHANDLER, ARIZONA 85225

PLAN KEY NOTES: (FOR PLAN ONLY)

- ① EXISTING SIGN MONUMENT TO BE MODIFIED (SEE DETAILS 1/103 & 2/103)
- ② EXISTING TRAFFIC SIGNAL
- ③ EXISTING WALL TO REMAIN
- ④ EXISTING LANDSCAPE TO REMAIN
- ⑤ EXISTING UTILITY BOXES
- ⑥ EXISTING SIDEWALK RAMP
- ⑦ EXISTING SIDEWALK TO REMAIN
- ⑧ EXISTING RETAINER CONCRETE CURB TO REMAIN
- ⑨ FABRICATE AND INSTALL NEW METAL TRELLIS ON WALL FOR NEW BOUGANVILLEA, DETAIL 2/102



Alma School Road & Frye Road Sign Monument Improvement Plan



- CONSTRUCTION NOTES FOR INSTALLING STONE OVER CMU:**
1. REMOVE PAINTED STUCCO COAT.
 2. PROVIDE POLYMER-MODIFIED MORTAR (MEETING ANSI A118.4 OR ANSI 118.15), ALLOW TIME TO DRY.
 3. PROVIDE ADHESIVE BOND COAT PER MRGR'S SPECIFICATIONS.

1
103 (N.E.C. OF ALMA SCHOOL & FRYE ROADS)
SIGN MONUMENT
 SCALE 1/2" = 1'-0"

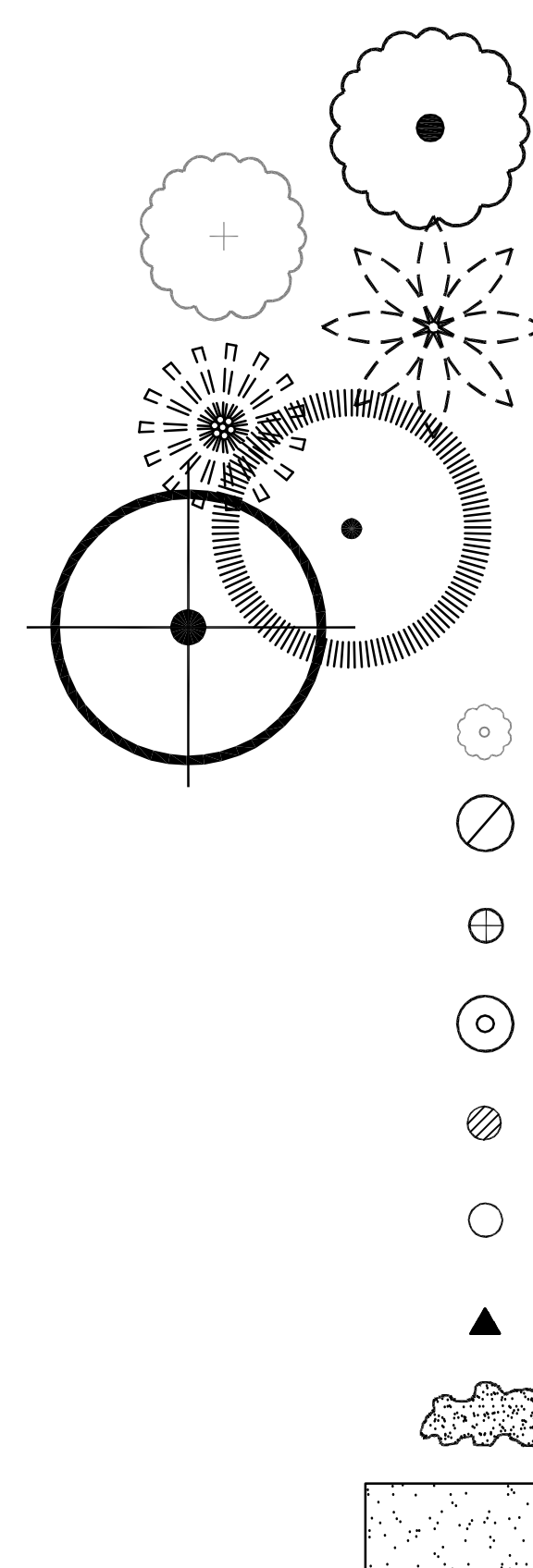
2
103 (N.E.C. OF ALMA SCHOOL & FRYE ROADS)
SIGN MONUMENT SECTION
 SCALE 1/2" = 1'-0"



IMPROVEMENT PLAN

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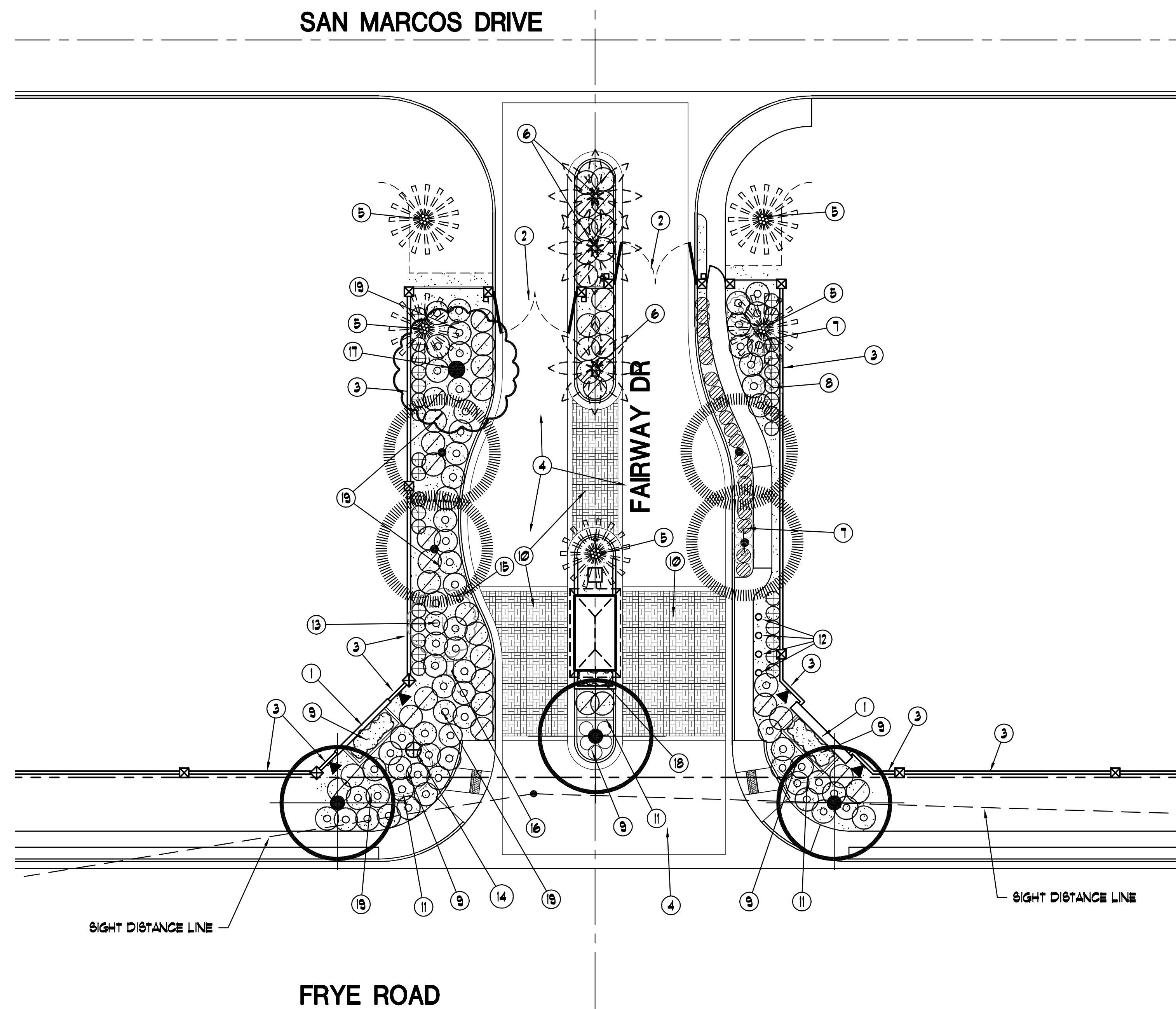


LANDSCAPE SCHEDULE:

EXISTING TREE	TO REMAIN	1 TOTAL
EXISTING TREE	TO BE REMOVED	1 TOTAL
EXISTING DATE PALM	TO REMAIN	3 TOTAL
EXISTING FAN PALM	TO REMAIN	5 TOTAL
ULMUS PARVIFOLIA EVERGREEN ELM	24" BOX 10' HT., 4.5' SP., 1 1/2" GAL.	4 TOTAL
OLEA EUROPAEA 'WILSONII' FRUITLESS OLIVE 'MULTI-TRUNK'	48" BOX SPECIMEN 12' HT., 6' SP., MULTI-TRUNK	3 TOTAL
EXISTING SHRUB	TO BE REMOVED	7 TOTAL
CARESSA GRANDIFLORA 'G.C.' GREEN CARPET	5 GALLON FULL, PAST CAN	44 TOTAL
DODONAEA VISCOSA 'PURPUREA' PURPLE HOPESEED BUSH	5 GALLON FULL, PAST CAN	33 TOTAL
EREMOPHYLLA GLABRA 'MINGINEW GOLD' OUTBACK SUNRISE	1 GALLON FULL, PAST CAN	61 TOTAL
MYRTUS COMMUNIS 'COMPACTA' DWARF MYRTLE	5 GALLON FULL, PAST CAN	19 TOTAL
LANTANA MONTIVIDENSIS 'NG.' NEW GOLD LANTANA	1 GALLON FULL, PAST CAN	5 TOTAL
BOUGANVILLEA 'SAN DIEGO RED' RED VINING BOUGANVILLEA	5 GALLON ON METAL TRELLIS	4 TOTAL
SEASONAL ANNUALS WINTER- RED GERANIUM / SUMMER- PURPLE LANTANA	FROM 4" POTS	AS REQUIRED
DECOMPOSED GRANITE	3/4" SCREENED MATCH EXISTING	3,575 SF.

PLAN KEY NOTES:

- 1 EXISTING SIGN MONUMENT TO BE MODIFIED (SEE IMPROVEMENT PLANS)
- 2 EXISTING VEHICULAR GATES TO BE REMOVED AND REPLACED (SEE IMPROVEMENT PLANS)
- 3 EXISTING WALL TO REMAIN
- 4 EXISTING ASPHALT PAVEMENT TO REMAIN
- 5 EXISTING FAN PALMS TO REMAIN
- 6 EXISTING DATE PALMS TO REMAIN
- 7 EXISTING OLEANDER SHRUBS TO BE REMOVED
- 8 EXISTING SAGE TO BE REMOVED
- 9 REMOVE EXISTING ANNUALS AND RE-PLANT PER SCHEDULE
- 10 REMOVE EXISTING DECORATIVE CONCRETE AND REPLACE WITH PAVERS OVER 4" CONCRETE
- 11 EXISTING CONCRETE CURB TO REMAIN
- 12 EXISTING CONCRETE BOLLARDS TO REMAIN
- 13 EXISTING PINE TREE TO BE REMOVED
- 14 EXISTING FIRE HYDRANT
- 15 EXISTING LIGHT POLE TO REMAIN
- 16 EXISTING BACKFLOW PREVENTION DEVICE IN SECURITY CAGE TO REMAIN
- 17 EXISTING MESQUITE TREE TO REMAIN
- 18 REMOVE EXISTING RUPELLIA AND RED YUCCA IN RAISED PLANTER
- 19 REMOVE ALL EXISTING SHRUB PLANTINGS IN THIS PLANTER



**Frye Road Entry
Landscape Plan**

Scale 1/16" = 1'-0"
 GRAPHIC SCALE



LANDSCAPE NOTE:

1. ALL ANNUAL PLANTER BEDS TO RECEIVE 2" DEEP SHREDDED BARK MULCH TOPDRESSING.



LANDSCAPE PLAN

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L-104

IRRIGATION SCHEDULE:

EMITTERS:

- OLIVE TREES: 2 EA. BOWSMITH ML-220 EMITTER PER TREE W/ 8 PORTS OPEN (16 G.P.H.), DETAIL 7, SHEET L-101
- 24" BOX TREES: 1 EA. BOWSMITH ML-220 EMITTER PER TREE W/ 5 PORTS OPEN (10 G.P.H.), DETAIL 7, SHEET L-101
- 5 AND 1 GALLON SHRUBS: 1 EA. BOWSMITH 68-10 EMITTER PER PLANT (1 G.P.H.), DETAIL 8, SHEET L-101

BUBBLERS:

- RAINBIRD 1300A-F ADJUSTABLE FLOW BUBBLER

VALVES, CONTROLLERS, AND ACCESSORIES:

- ⊕ EXISTING 1" REMOTE CONTROL VALVE
- ⊖ AG. PRODUCTS MANUAL DRAIN VALVE, DETAIL 4, SHEET L-101

PIPING: (DETAIL 9, SHEET L-101)

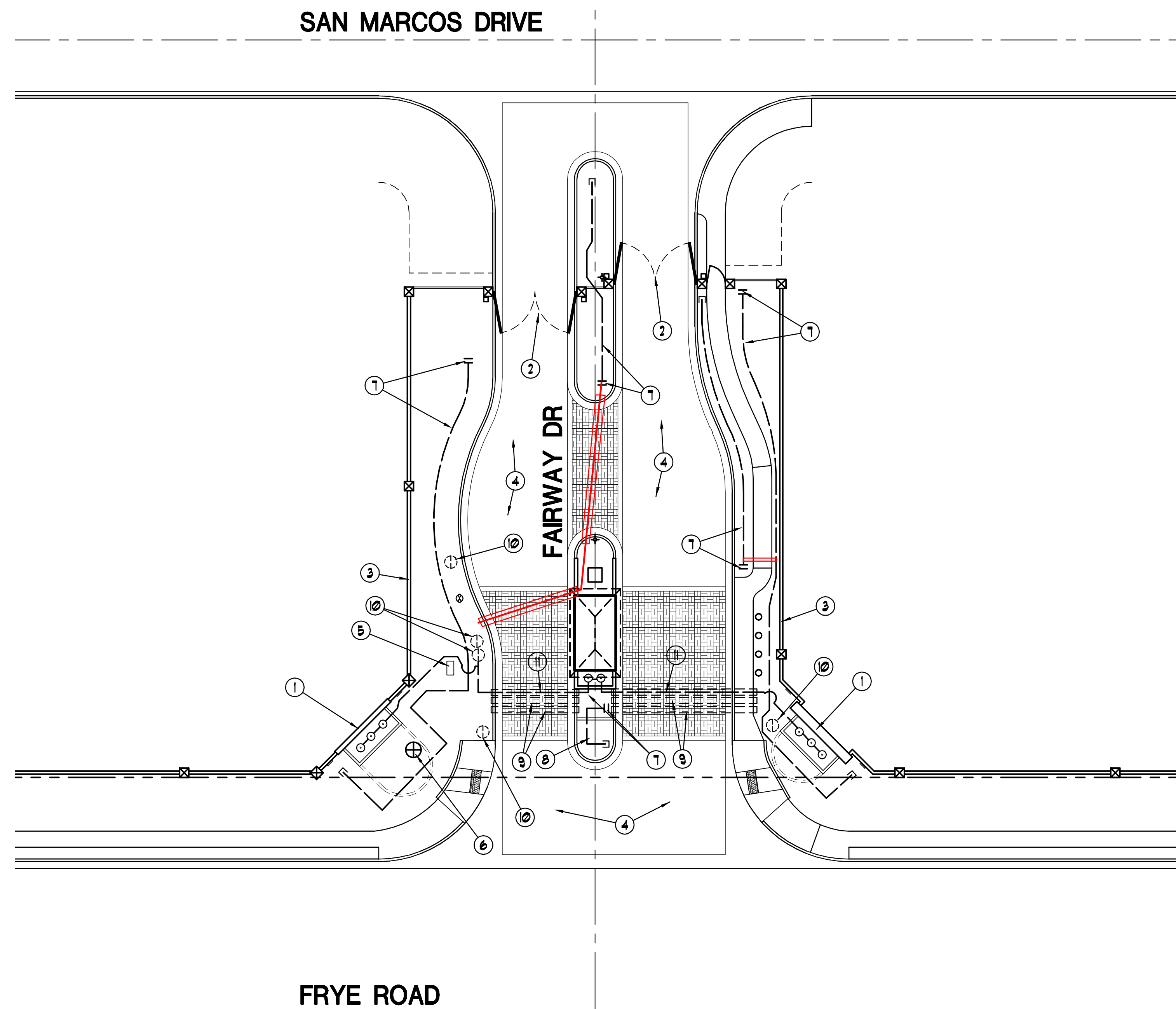
- CLASS 315 PVC EMITTER DISTRIBUTION LATERALS (1/2" SIZE)

PLAN KEY NOTES:

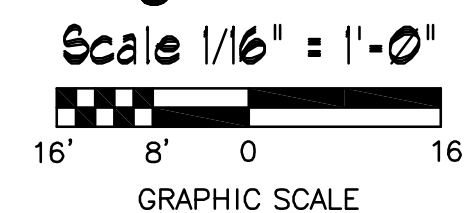
- ① MODIFIED SIGN MONUMENT
- ② NEW VEHICULAR GATES
- ③ EXISTING WALL
- ④ EXISTING ASPHALT PAVEMENT TO REMAIN
- ⑤ EXISTING BACKFLOW PREVENTION DEVICE
- ⑥ EXISTING FIRE HYDRANT
- ⑦ CONNECT TO EXISTING DRIP IRRIGATION AND INSTALL 1/2" CL. 315 PVC EMITTER DISTRIBUTION LINE
- ⑧ EXISTING IRRIGATION FOR ANNUALS TO REMAIN
- ⑨ INSTALL 2 EA. 2" SCH. 40 PVC SLEEVES PRIOR TO INSTALLING PRE-CAST PAVERS AND CONCRETE BASE (COMPACT TO 95%) (FOR 100V POWER ELECTRICAL)
- ⑩ EXISTING IRRIGATION VALVES TO REMAIN
- ⑪ INSTALL 2" SCH. 40 PVC SLEEVE FOR BUBBLER LINE

CONSTRUCTION NOTES:

- A. EMITTERS ARE NOT SHOWN FOR DRAWING CLARITY ONLY. INSTALL EMITTERS TO PLANTS AS SPECIFIED IN SCHEDULE.
- B. REMOVE EXISTING MAINLINE AND LATERAL PIPES THAT ARE ENCOUNTERED DURING CONSTRUCTION.



**Frye Road Entry
 Irrigation Plan**



IRRIGATION PLAN

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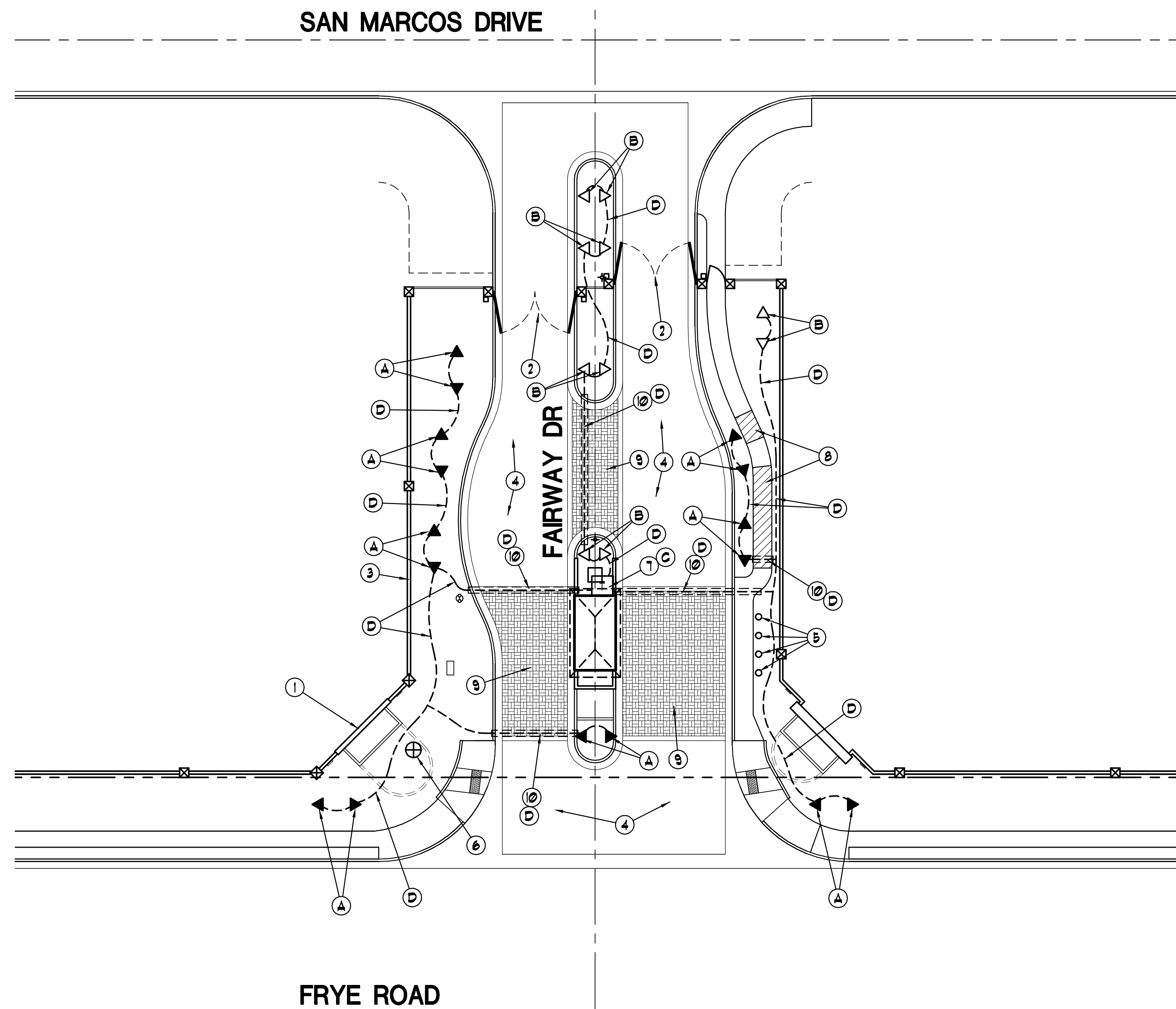
SAN MARCOS COUNTRY CLUB ESTATES
FRYE ROAD ENTRY IMPROVEMENTS
CHANDLER, ARIZONA 85225

PLAN KEY NOTES:

- ① MODIFIED SIGN MONUMENT
- ② NEW VEHICULAR GATES
- ③ EXISTING WALL
- ④ EXISTING ASPHALT PAVEMENT TO REMAIN
- ⑤ EXISTING CONCRETE BOLLARDS
- ⑥ EXISTING FIRE HYDRANT
- ⑦ EXISTING LOW VOLTAGE TRANSFORMER TO REMAIN (CONNECT ALL NEW LOW VOLTAGE LIGHTING TO EXISTING TRANSFORMER)
- ⑧ EXISTING CONCRETE SIDEWALK TO BE REMOVED AND REPLACED
- ⑨ REMOVE PAVEMENT AND REPLACE WITH PRE-CAST CONCRETE PAVERS
- ⑩ INSTALL 2" SCH. 40 PVC SLEEVE FOR LOW VOLTAGE WIRING

LOW VOLTAGE LIGHT SCHEDULE:

- ▲ (A) FX LUMINAIRE CA-51 W/ 35W LED LAMP (ANTIQUE BRONZE), DETAIL 1/106
- ▲ (B) FX LUMINAIRE CA-51 W/ 50W LED LAMP (ANTIQUE BRONZE), DETAILS 1/106 2/106
- ⊕ (C) EXISTING TRANSFORMER TO REMAIN
- - - (D) 12 GA LOW VOLTAGE WIRE

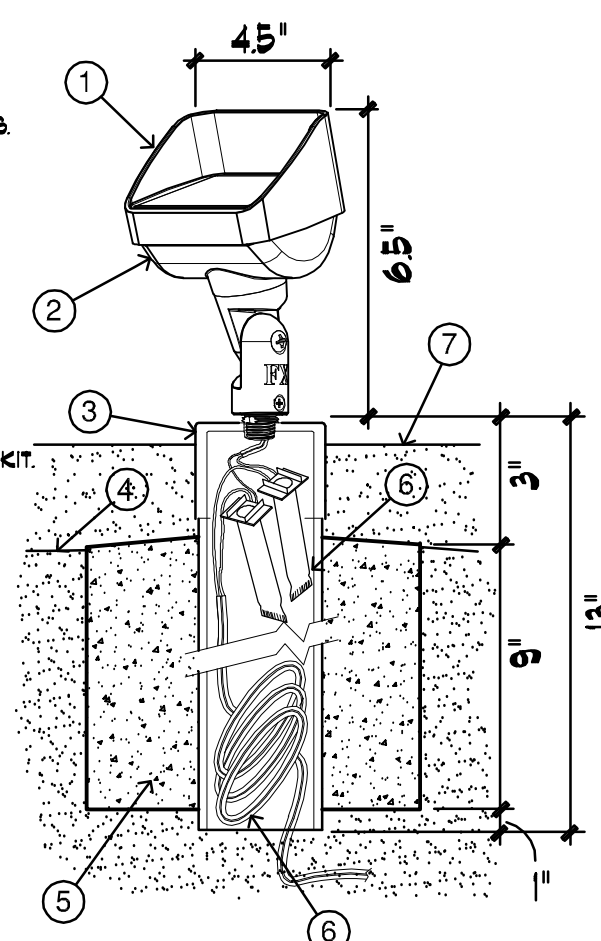


DETAIL LEGEND

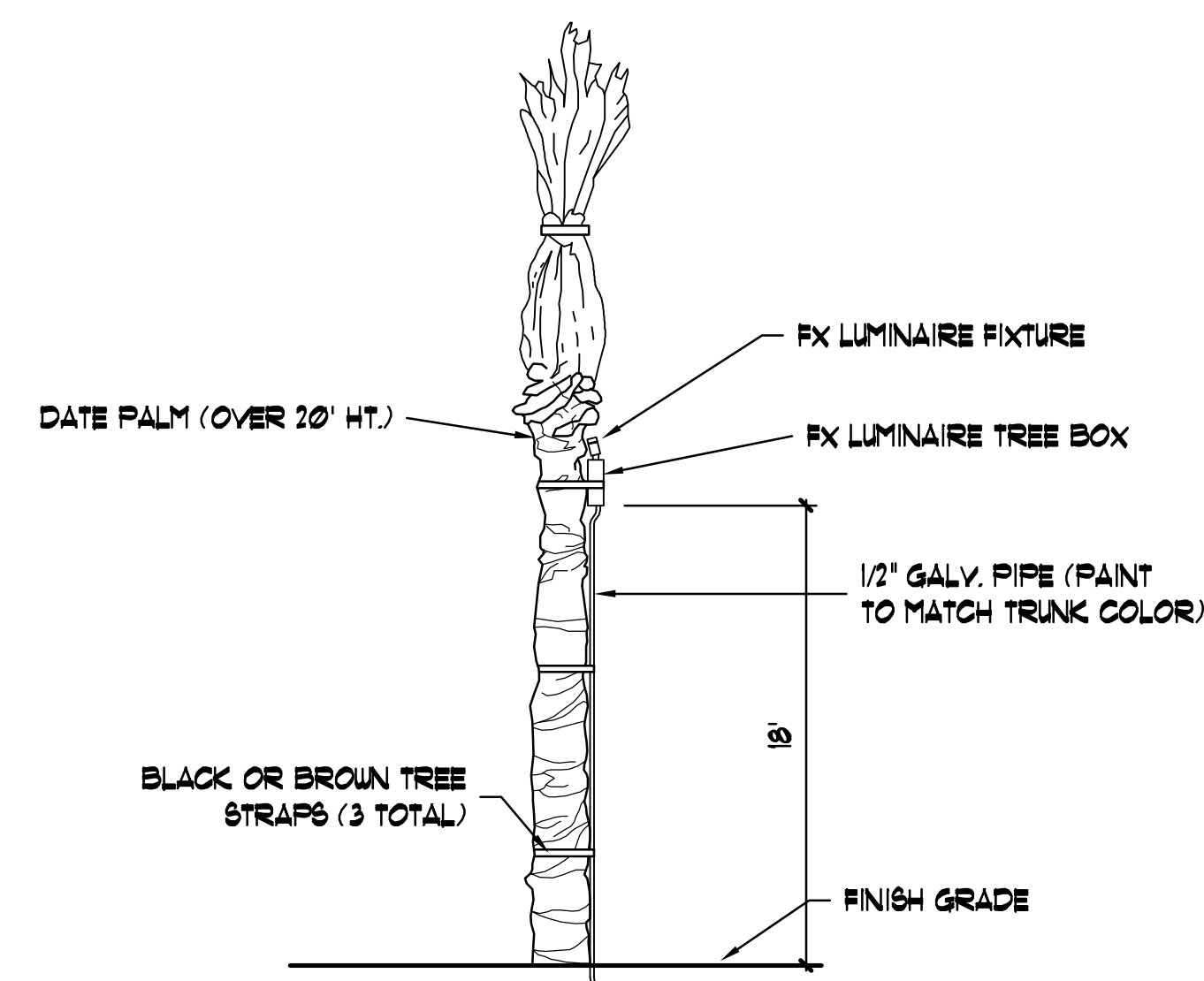
- ① FX LUMINAIRE LC FIXTURE SEE PLAN LEGEND FOR WATTAGE, BEAM SPREAD AND ACCESSORIES.
- ② AIM FIXTURE A MINIMUM OF 18" OFF VERTICAL TO ALLOW WATER AND DIRT TO DRAIN OFF LENS CAP.
- ③ FX LUMINAIRE POST MOUNT.
- ④ FINISHED GRADE
- ⑤ CONCRETE FOOTING
- ⑥ DIRECT BURY, UNIL. COPPER LOW VOLTAGE CABLE WITH 3M DBRY-6 DIRECT BURY SPLICE KIT. LEAVE 18" MINIMUM WIRE LOOP COILED BELOW FIXTURE FOR SERVICE.
- ⑦ 2" DEPTH DECOMPOSED GRANITE

NOTES

- A. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- B. SEE PLAN LEGEND FOR LED BOARD OPTION, BEAM SPREADS, AND ACCESSORIES.

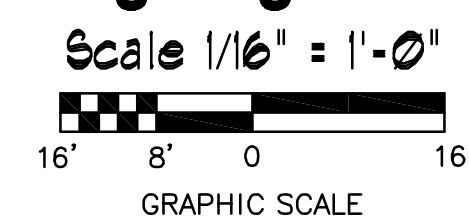


1
106 **LC UP LIGHT**
 POST MOUNT NOT TO SCALE



2
106 **PALM TREE UPLIGHT**
 (PALMS TALLER THAN 20') NOT TO SCALE

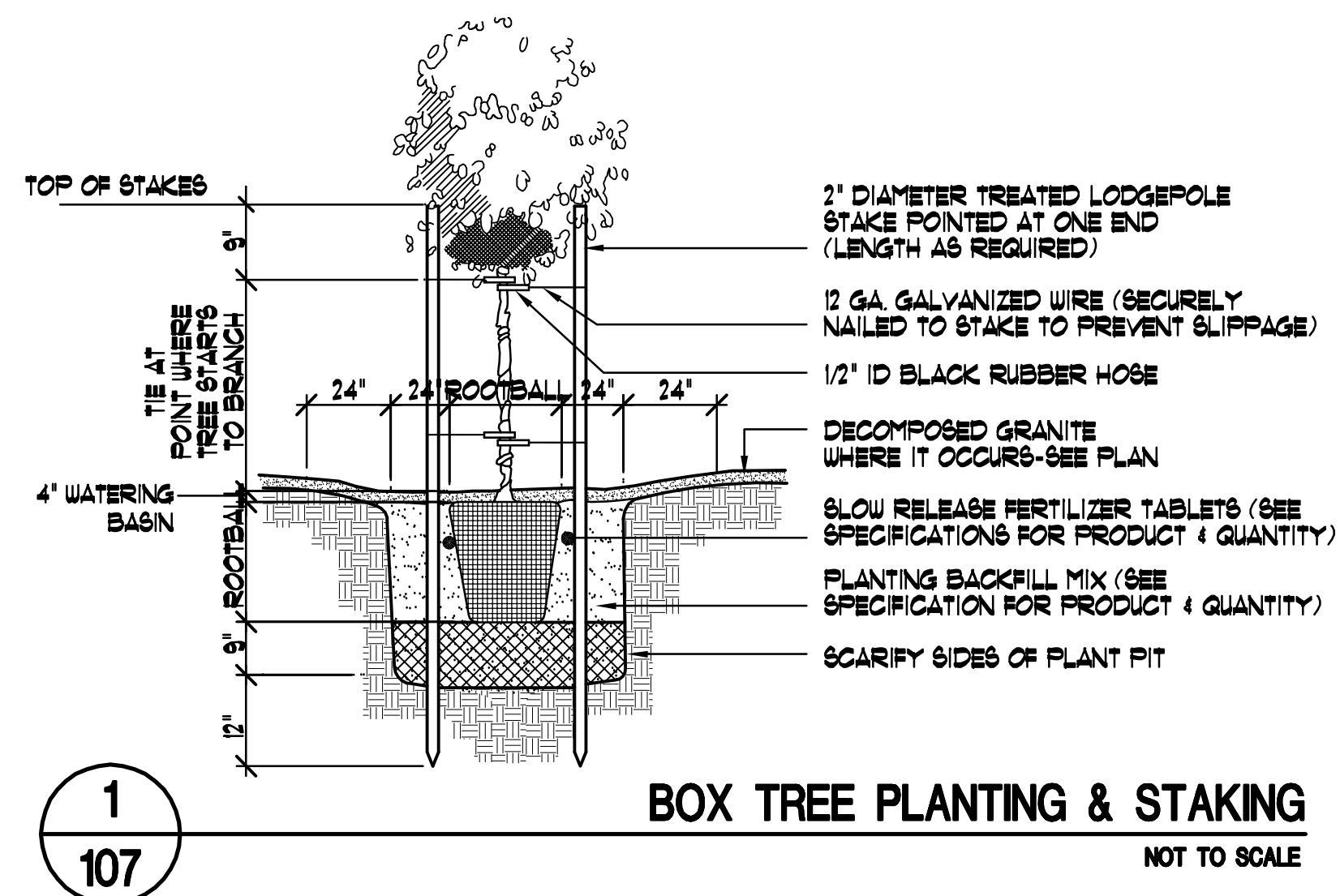
Low Voltage Lighting Plan



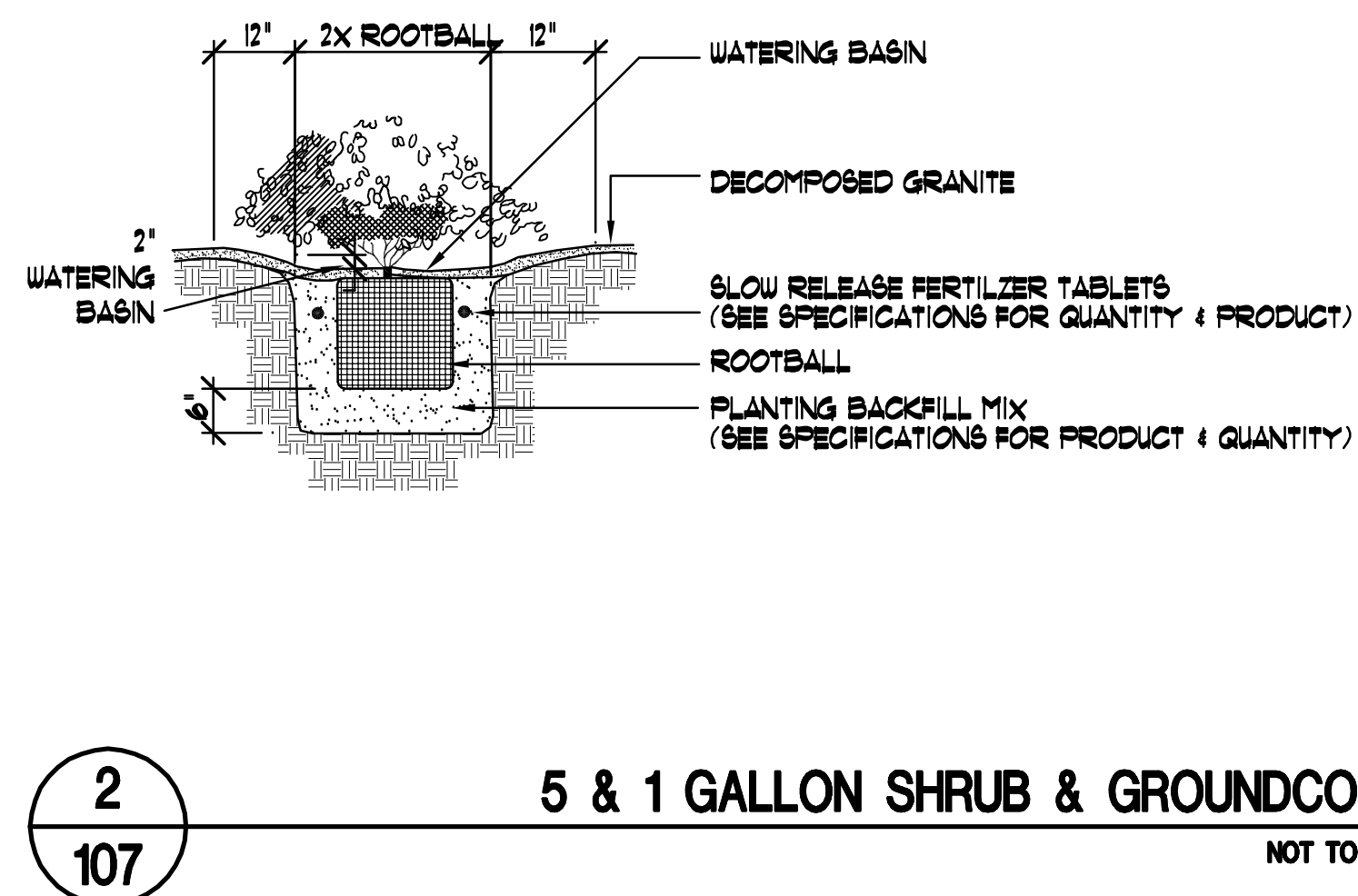
DRAWING TITLE
LIGHTING PLAN

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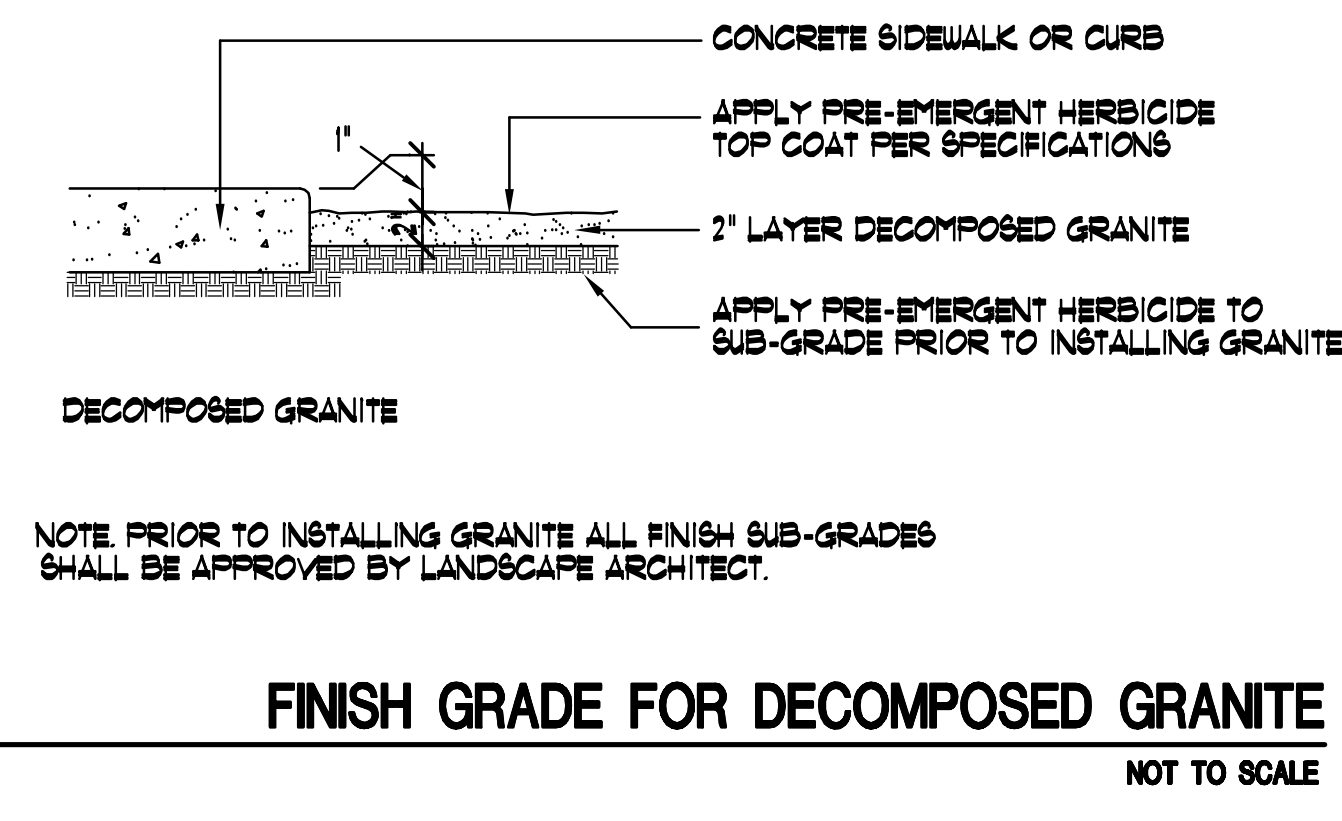
L-106



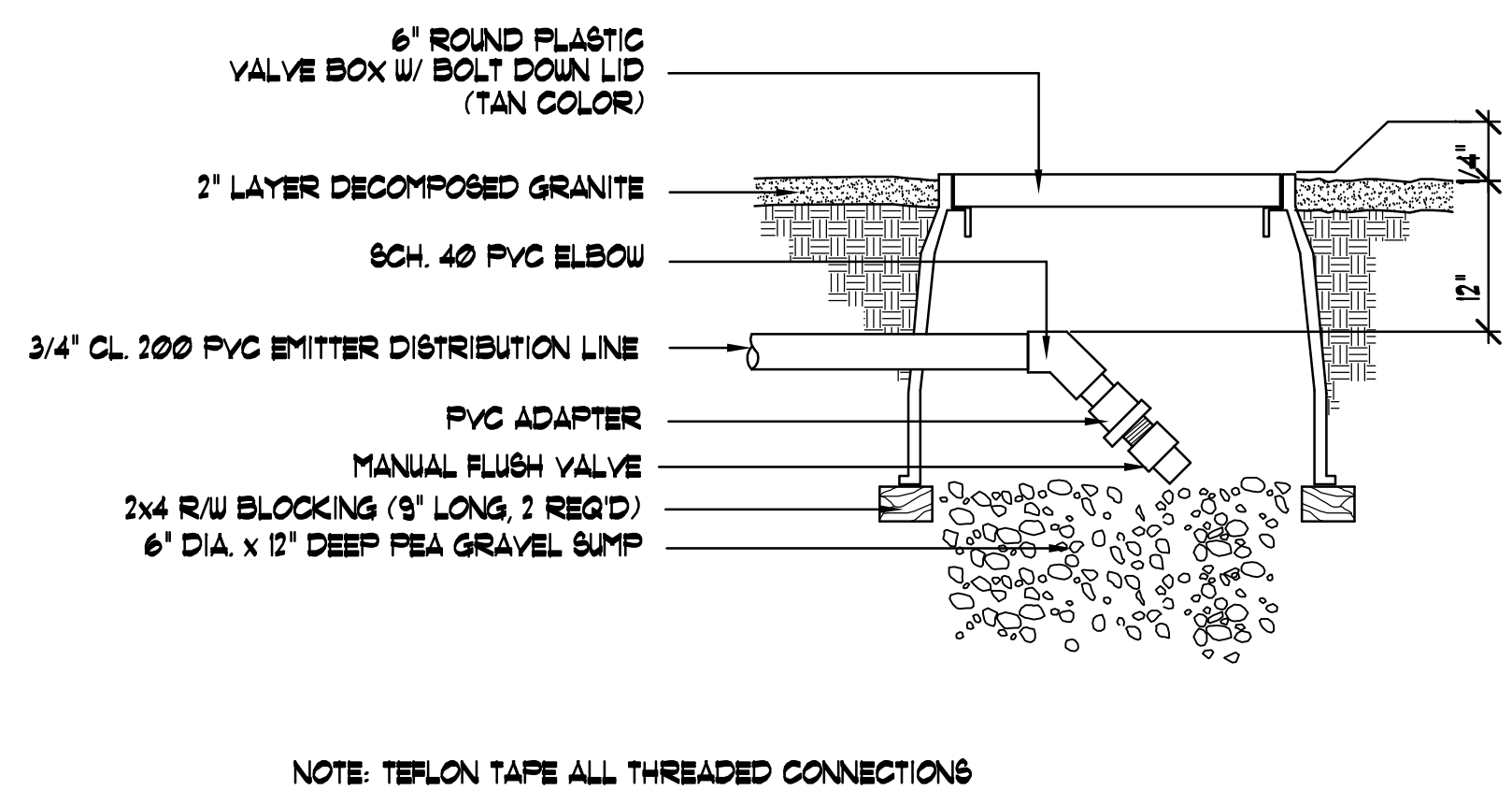
1
107 **BOX TREE PLANTING & STAKING**
NOT TO SCALE



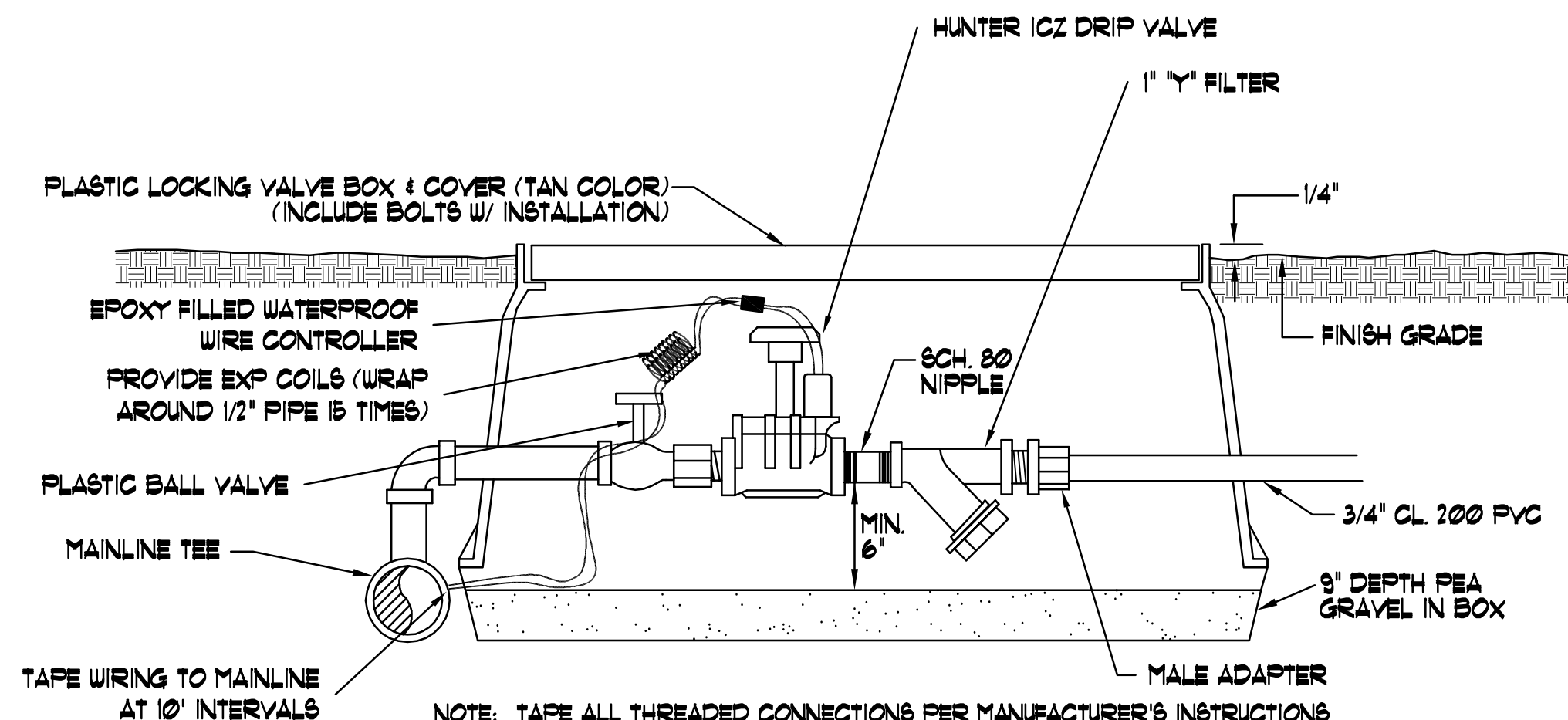
2
107 **5 & 1 GALLON SHRUB & GROUNDCOVER**
NOT TO SCALE



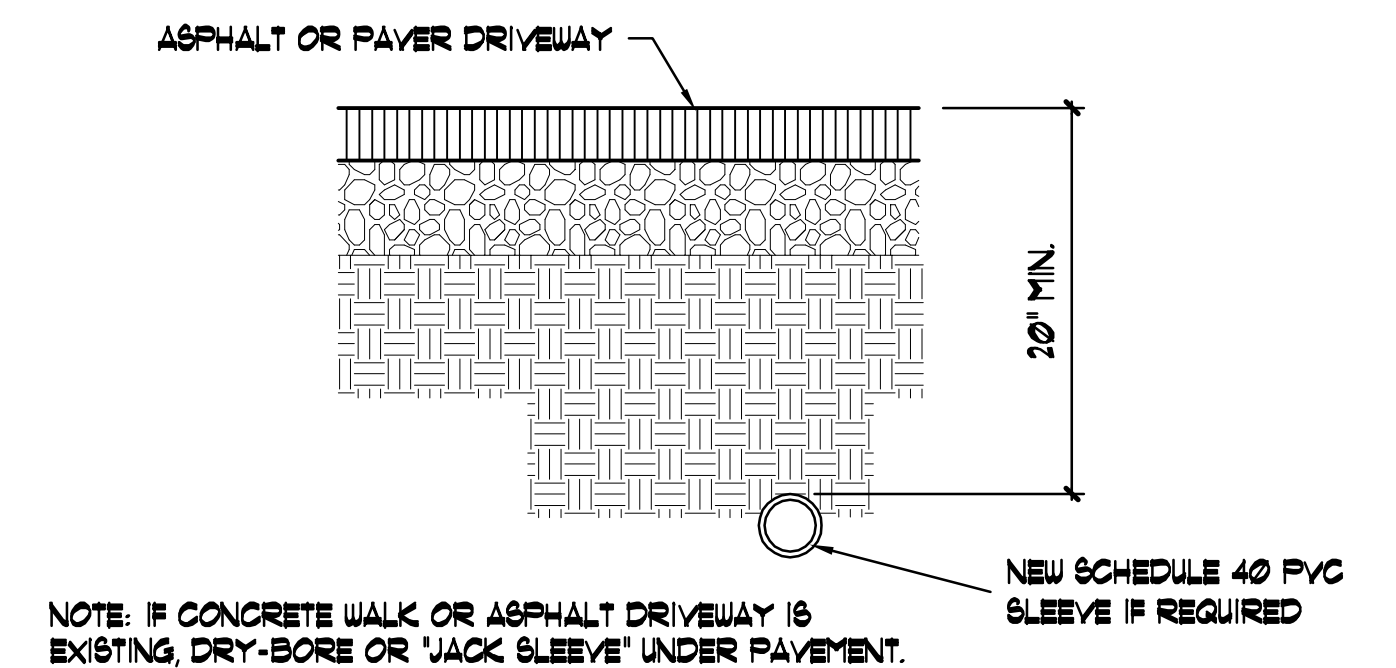
3
107 **FINISH GRADE FOR DECOMPOSED GRANITE**
NOT TO SCALE



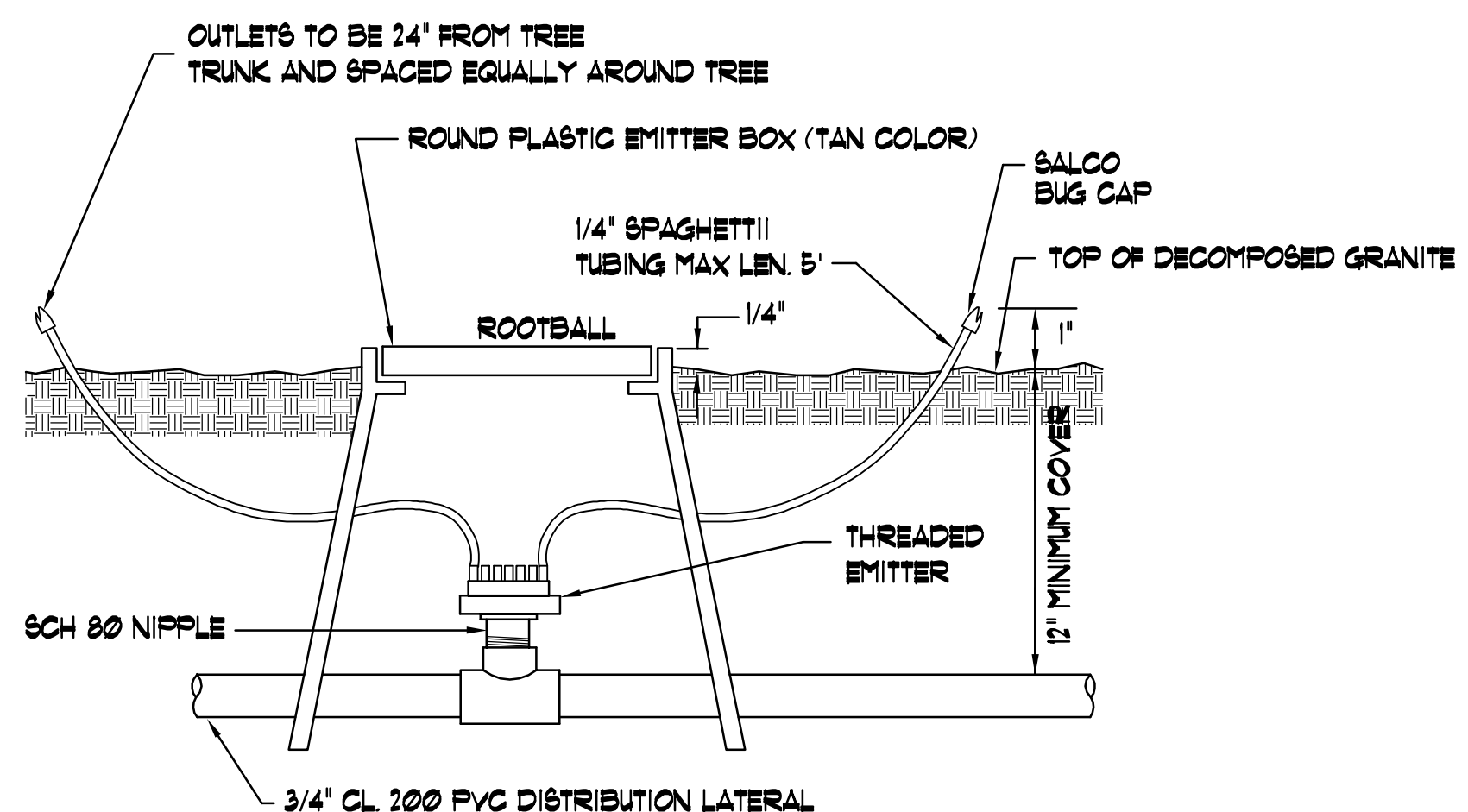
4
107 **FLUSH CAP**
NOT TO SCALE



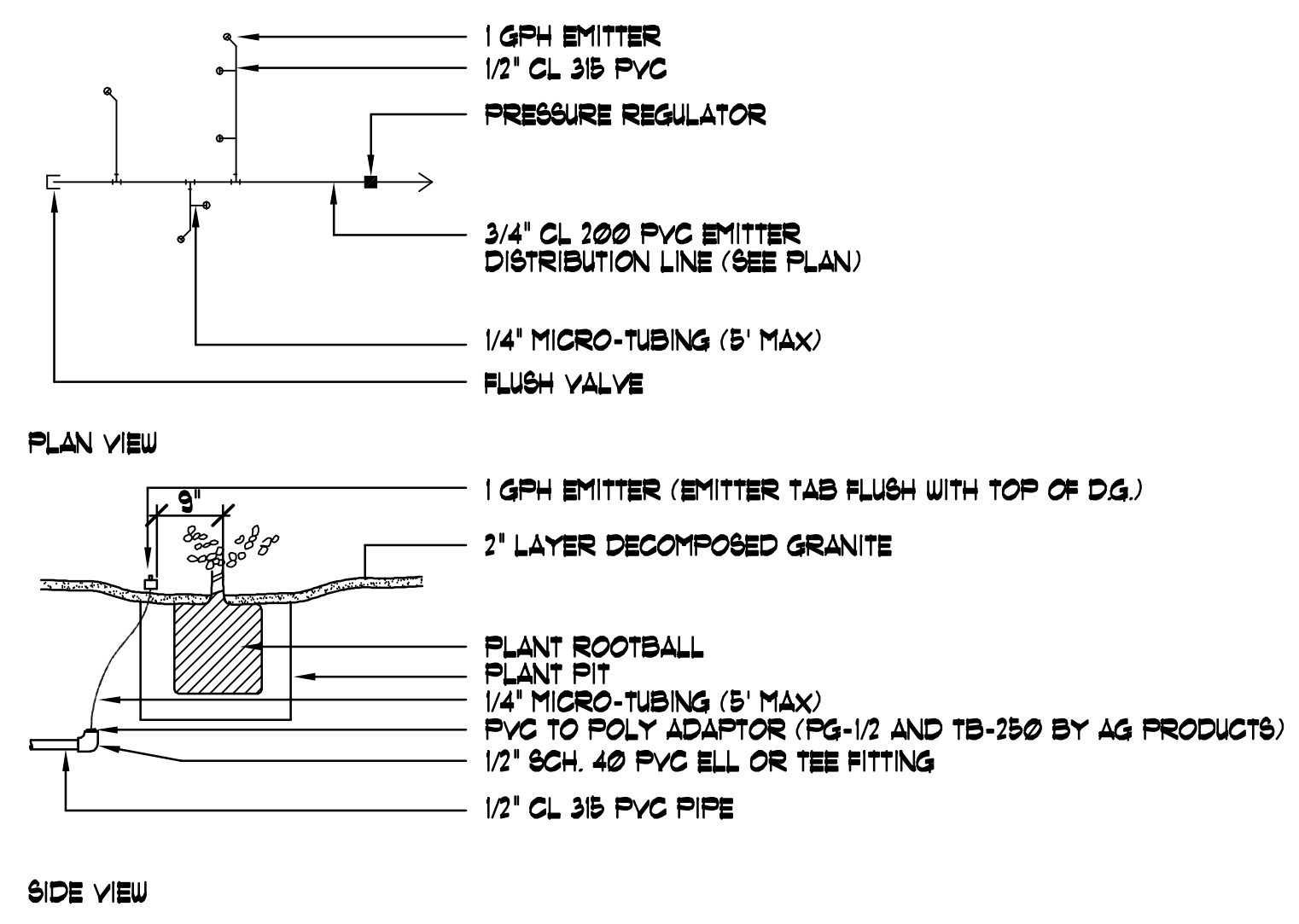
5
107 **DRIP EMITTER VALVE ASSEMBLY**
NOT TO SCALE



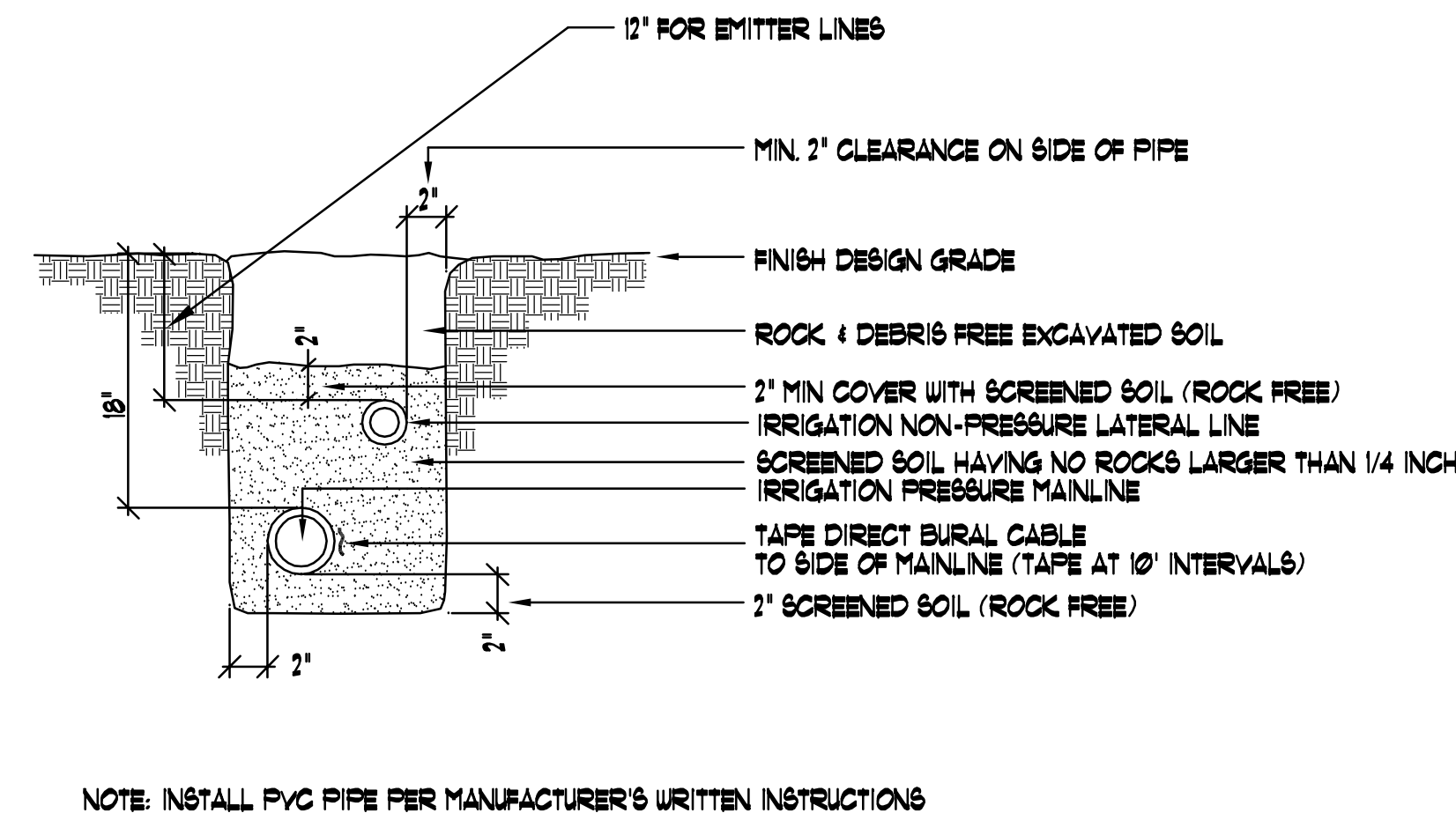
6
107 **SLEEVING DETAIL**
NOT TO SCALE



7
107 **TREE EMITTER DETAIL**
NOT TO SCALE



8
107 **SHRUB EMITTER DETAIL**
NOT TO SCALE



9
107 **TRENCHING DETAIL**
NOT TO SCALE



DRAWING TITLE
DETAILS

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LANDSCAPING

PART 1 GENERAL

1.01 DESCRIPTION

- A. WORK INCLUDED: PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES AS NECESSARY TO COMPLETE ALL LANDSCAPING WORK AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN.
- B. RELATED WORK DESCRIBED ELSEWHERE:
 - 1. COORDINATE WITH GRADING, DRAINAGE, AND PAVING DRAWINGS.

1.02 CODES, RULES, AND SAFETY ORDERS

- A. ALL WORK AND MATERIALS TO BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF SAFETY ORDERS OF DIVISION OF INDUSTRIAL SAFETY, THE UNIFORM BUILDING CODE, AND OTHER APPLICABLE LAWS AND REGULATIONS, INCLUDING ALL CITY, COUNTY, STATE, AND FEDERAL LAWS AND REGULATIONS. NOTHING IN THESE SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES. SHOULD THE CONTRACT DOCUMENTS BE AT VARIANCE WITH THE FOREMENTIONED RULES AND REGULATIONS, NOTIFY LANDSCAPE ARCHITECT AND GET HIS INSTRUCTIONS BEFORE PROCEEDING WITH THE WORK AFFECTED.

1.03 GUARANTEE

- A. PLANT GUARANTEE: WARRANT ALL NEW AND TRANSPLANTED PLANT MATERIAL TO REMAIN ALIVE AND BE IN A HEALTHY, VIGOROUS CONDITION THROUGHOUT THE CONTRACT AND 60-DAY LANDSCAPE MAINTENANCE PERIOD. TREES AND SHRUBS REPLACED DURING THE GUARANTEE PERIOD SHALL HAVE A NEW GUARANTEE PERIOD OF 60 DAYS BEGINNING WITH THE TIME OF REPLACEMENT.
- B. REPLACEMENT OF PLANTS: ALL PLANTS THAT ARE DEAD OR, AS DETERMINED BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE, ARE IN AN UNHEALTHY OR UNSIGHTLY CONDITION ARE TO BE REPLACED. THE COST OF SUCH REPLACEMENT(S) IS AT CONTRACTOR'S EXPENSE.
- C. CONDITIONS OF PLANT GUARANTEE: WARRANTY SHALL NOT INCLUDE DAMAGE OR LOSS OF TREES, SHRUBS, AND GROUNDCOVERS CAUSED BY FLOODS, FIRES, FREEZING RAINS, LIGHTNING STORMS, OR WINTER KILL CAUSED BY EXTREME COLD AND SEVERE WINTER CONDITIONS NOT TYPICAL OF PLANTING AREA. ALL DAMAGE CAUSED FROM ACTS OF NEGLIGENCE FROM CONTRACTOR'S OPERATIONS AND MAINTENANCE SHALL BE REPAIRED AND REPLACED AT CONTRACTOR'S EXPENSE.

1.04 COORDINATION AND RESPONSIBILITY

- A. UTILITIES: BEFORE COMMENCING WORK ON THE SITE, BECOME THOROUGHLY ACQUAINTED WITH LAYOUT OF ALL UNDERGROUND UTILITIES AND STRUCTURES OVER THE ENTIRE SITE. ALL REQUISITE REPAIRS TO DAMAGE CAUSED BY WORK OF THIS SECTION SHALL BE AT CONTRACTOR'S EXPENSE.
- B. COORDINATE AND COOPERATE WITH OTHER CONTRACTORS WORKING ON THE SITE FOR SUCCESSFUL COMPLETION OF THE PROJECT, INCLUDING IRRIGATION WORK TO INSURE SUCCESSFUL INTEGRATION WITH THE LANDSCAPING.
- C. FINISH ROUGH GRADES: FINISH GRADES WILL TAKE THE FORMS SHOWN ON THE GRADING AND DRAINAGE PLANS. COORDINATE WORK OF THIS SECTION WITH OTHER WORK RELATING TO GRADING AND DRAINAGE. SEE LANDSCAPE DETAILS FOR FINISH DESIGN GRADES ADJACENT TO CURBS, SIDEWALKS, AND LAWN EDGING.
- D. EXISTING PLANT MATERIAL NOT INDICATED FOR REMOVAL SHALL BE PROTECTED AS NECESSARY AND REQUIRED TO INSURE SURVIVAL TO THE GREATEST EXTENT POSSIBLE. DURING CONSTRUCTION, PROVIDE CONTINUOUS WATERING TO ALL LANDSCAPE REMAINING.

1.05 INSPECTIONS

- A. PERIODIC INSPECTION: DURING THE COURSE OF CONSTRUCTION THE LANDSCAPE ARCHITECT MAY VISIT THE SITE AND INSPECT WORK IN PROGRESS AT HIS DISCRETION.
- B. SCHEDULED INSPECTIONS: THE CONTRACTOR MUST NOTIFY THE LANDSCAPE ARCHITECT FOR INSPECTION AT THE FOLLOWING PERIODS:
 - 1. PRIOR TO PLANTING TREES, SHRUBS, AND GROUNDCOVERS TO INSPECT PLANT MATERIAL DELIVERED TO SITE AND INSPECT PLANT PITS AND BACKFILL MIXTURE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL PLANT MATERIAL AT SITE, BACKFILL MIXTURE STOCKPILED, AND ALL TREE PITS EXCAVATED PRIOR TO LANDSCAPE ARCHITECT VISITING SITE.
 - 2. AT COMPLETION OF ALL WORK IN ACCORDANCE WITH CONTRACT DOCUMENTS.

1.06 SUBSTITUTIONS

- A. PLANT SUBSTITUTION: PLANTS OF KINDS OTHER THAN THOSE INDICATED ON THE PLANT LIST WILL BE CONSIDERED BY THE LANDSCAPE ARCHITECT UPON SUBMISSION OF PROOF THAT ANY PLANT IS NOT PROCURABLE IN THE REGION. REPLACEMENT PLANT WILL BE APPROVED ON THE GROUNDS THAT IT RESEMBLES THE PLANT SPECIFIED IN REGARDS TO APPEARANCE, ULTIMATE HEIGHT, SHAPE, HABIT OF GROWTH, GENERAL SOIL, AND OTHER REQUIREMENTS. IN NO CASE SHALL THE AVERAGE COST AND VALUE OF THE SUBSTITUTED PLANTS BE MORE THAN THE COST AND VALUE OF PLANTS INDICATED. ALL SUBSTITUTIONS MUST BE SUBMITTED IN WRITING NO MORE THAN SEVEN (7) DAYS AFTER THE NOTICE TO PROCEED AND APPROVAL OF THE SUBSTITUTION MUST BE ACKNOWLEDGED BY THE LANDSCAPE ARCHITECT IN WRITING BEFORE APPROVAL IS GRANTED.

PART 2 PRODUCTS

2.01 PLANT MATERIALS

- A. CONFORM TO REQUIREMENTS OF PLANT SCHEDULE ON DRAWINGS. CALIFER, SPREAD, AND HEIGHT, AS SPECIFIED IN THE PLANT SCHEDULE ON DRAWINGS WILL TAKE PRECEDENCE OVER THE CONTAINER SIZE. CONTAINER SIZE IS GIVEN AS A MINIMUM ROOTBALL SIZE ONLY.
- B. QUALITY: SOUND, HEALTHY, VIGOROUS, FREE FROM PLANT DISEASE, INSECTS, PESTS, OR THEIR EGGS AND NOXIOUS WEEDS. CONTAINER STOCK SHALL BE WELL ESTABLISHED AND FREE OF EXCESSIVE ROOTBOUND CONDITIONS.
- C. INSPECTION OF PLANT MATERIALS REQUIRED BY CITY, COUNTY, STATE, OR FEDERAL AUTHORITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SECURE PERMITS OR CERTIFICATES PRIOR TO DELIVERY OF PLANTS TO SITE.
- D. ACCEPTANCE OR REJECTION OF PLANT MATERIAL WILL BE DETERMINED BY THE COUNTY, OWNER, OR THE OWNER'S REPRESENTATIVE ON THE PROJECT SITE. PLANTS ARE SUBJECT TO INSPECTION AND APPROVAL OR REJECTION AT ANY TIME BEFORE OR DURING PROGRESS OF WORK FOR SIZE, VARIETY, CONDITION, LATENT DEFECTS, AND INJURIES. REJECTED PLANTS SHALL BE REMOVED FROM THE PROJECT SITE IMMEDIATELY.

2.02 TREE STAKES AND WIRE TIES FOR TREE STAKING AND GUYING

- A. TREE STAKES: TWO INCH DIAMETER NEW LODGEPOLE PINE TREATED WITH COPPER NEPHENATE OR APPROVED EQUAL. LENGTH OF STAKE AS REQUIRED FOR MAXIMUM SUPPORT OF TREE.
- B. WIRE & RUBBER TIES: #12 GAUGE ANNEALED, GALVANIZED STEEL INSERTED THROUGH NEW OR USED 1/2 INCH BLACK RUBBER GARDEN HOSE. STAKING PROCEDURE SUBJECT TO APPROVAL.

2.03 SOIL AMENDMENTS

- A. MULCH USED IN PLANT BACKFILL MIX AND SOIL PREPARATION IN LAWN AREAS: FOREST MULCH AS PRODUCED BY WESTERN AGRICULTURAL PRODUCTS CO, PHOENIX, AZ OR APPROVED EQUAL WELL-ROTTED WOOD FIBER, COMMERCIALY PREPARED AND PROCESSED FOR NINETY-EIGHT (98) PERCENT ORGANIC CONTENT AND COMPOSTED TO SUPPORT BACTERIAL CULTURES, PH RANGE TO BE 6.8-12. MULCH SHALL CONTAIN A MINIMUM 10 PERCENT NITROGEN ON A DRY WEIGHT BASIS.
- B. FERTILIZER TABLETS FOR PLANT PITS: AGRIFORM (21 GRAM) WITH A GUARANTEED ANALYSIS OF 20% NITROGEN, 10% AVAILABLE PHOSPHORIC ACID, 5% POTASH, 2% COMBINED CALCIUM, 15% SULFUR, 36% IRON, 43% ZINC, AND 18% MANGANESE.

ALL PLANTS WITH THE EXCEPTION OF GROUND COVERS IN FLATS AND TURF AREAS TO RECEIVE AGRIFORM (20-10-5) PLANT TABS AT THE FOLLOWING RATES:

1 GALLON	1-21 GRAM TABLETS
5 GALLONS	2-21 GRAM TABLETS
24' BOX TREES	6-21 GRAM TABLETS

SET TABLETS 3" BELOW FINISHED GRADE AND SPACE EVENLY AROUND PLANT'S PERIMETER.

- C. AMMONIUM PHOSPHATE: (16-20-0) WITH A GUARANTEED ANALYSIS OF 16% NITROGEN, 20% AVAILABLE PHOSPHORIC ACID.

- D. PLANT BACKFILL MIX: PLANTING BACKFILL SHALL BE A THOROUGHLY BLENDED MIXTURE OF SOIL AND SOIL AMENDMENTS AT THE FOLLOWING MIXTURES:

MULCH	1/3 C.Y.
TOPSOIL	2/3 C.Y.

2.04 APPROVED TOPSOIL

- A. TOPSOIL CONTENT: 20-45% SILT, 14-20% CLAY, AND 30-60% SAND WITH A MINIMUM OF 5% ORGANIC MATERIAL (NATURAL OR ADDED). THE PH SHALL NOT BE LOWER THAN 6.0 NOR HIGHER THAN 7.8. SOLUBLE SALTS SHALL NOT EXCEED 1200 PPM.
- B. TOPSOIL QUALITY: SCREENED, FERTILE, FRIABLE SOIL FROM WELL DRAINED ARABLE LAND AND FREE FROM NUTGRASS, REFUSE, ROOTS, HEAVY CLAY, NOXIOUS WEEDS, OR ANY MATERIAL TOXIC TO PLANT GROWTH. PROVIDE THE LANDSCAPE ARCHITECT WITH A SOIL ANALYSIS BY AN INDEPENDENT TESTING LABORATORY FOR VERIFICATION PRIOR TO HAVING TOPSOIL DELIVERED TO SITE. SOIL ANALYSIS SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

2.05 MATERIALS USED FOR TOPDRESSING OF SHRUB & GROUNDCOVER PLANTERS

- A. GRANITE: 3/4" SCREENED AS SPECIFIED ON DRAWINGS. SHALL BE OF A GRANITOID IGNEOUS ROCK WHICH HAS A PRINCIPAL CONSTITUENTS GRANULAR FRAGMENTS OF QUARTZ AND FELDSPAR. THE MATERIAL SHALL REMAIN STABLE WHEN SATURATED IN WATER. ALL MATERIAL SHALL BE FROM A SINGLE PRODUCTION SOURCE.

2.06 WEED CONTROL CHEMICALS

- A. THE APPLICATOR OF ALL WEED CONTROL MATERIALS SHALL BE LICENSED BY THE STATE OF ARIZONA AS A PEST CONTROL OPERATOR AND A PEST CONTROL ADVISOR IN ADDITION TO HOLDING ANY SUBCONTRACTOR LICENSES THAT ARE REQUIRED. PRIOR TO THE INSTALLATION OF ANY WEED CONTROL MATERIALS, THE PEST CONTROL ADVISOR SHALL SUBMIT TO THE LANDSCAPE ARCHITECT A LIST OF THE WEED CONTROL MATERIALS AND QUANTITIES PER ACRE INTENDED FOR USE IN CONTROLLING THE WEED TYPES PREVALENT AND EXPECTED ON THE SITE. PEST CONTROL ADVISOR SHALL FURNISH DATA TO DEMONSTRATE THE COMPATIBILITY OF THE WEED CONTROL MATERIALS AND METHODS WITH THE INTENDED PLANTING VARIETIES. WEED CONTROL SHALL ELIMINATE ALL NUT GRASS, JOHNSON GRASS, BURR CLOVER, SPURGE, AND OTHER INVASIVE WEEDS COMMON TO THE AREA. NO MATERIAL OR METHOD SHALL AFFECT THE LANDSCAPE PLANTING OR LAWN SEED GERMINATION AND ESTABLISHMENT. MATERIALS AND METHODS MUST CONFORM TO FEDERAL, STATE, AND LOCAL REGULATIONS. WEED CONTROL SHALL BE APPLIED TO ALL PLANTING AREAS WITH ADEQUATE TIME TO MEET MANUFACTURER'S RECOMMENDATIONS. IF AFTER APPLICATION, WEEDS REAPPEAR PRIOR TO PLANTING, REAPPLICATIONS WILL BE PROVIDED PER MANUFACTURER'S RECOMMENDATIONS. IF WEEDS REAPPEAR AFTER PLANTING, ADDITIONAL WEED CONTROL WILL BE APPLIED IN A MANNER NOT TO DAMAGE OR RETARD THE GROWTH OF PLANT MATERIAL. ANY PLANT MATERIAL DAMAGED OR KILLED DURING THIS PROCESS OR AS A RESULT OF THE APPLICATION OF WEED CONTROL MATERIAL, SHALL BE REPLACED AT NO COST TO THE OWNER.

- 1. SELECTIVE CONTACT SYSTEMIC HERBICIDES: COMPATIBLE WITH EXISTING PLANT MATERIAL TO REMAIN AND HAVING NO RESIDUAL. USE IN QUANTITIES AND STRENGTHS RECOMMENDED BY MANUFACTURER.

- 2. PRE-EMERGENT HERBICIDES: USE PRE-EMERGENT HERBICIDE(S) COMPATIBLE WITH NEWLY PLANTED MATERIALS IN QUANTITIES AND STRENGTHS RECOMMENDED BY MANUFACTURER. USE ONLY APPROVED WEED CONTROL MATERIALS AND A LICENSED APPLICATION.

PART 3 EXECUTION

3.01 SITE PREPARATION

- A. PROTECTION: TAKE CARE IN PERFORMING WORK OF THIS SECTION TO AVOID CONDITIONS WHICH WILL CREATE HAZARDS. POST SIGNS OR BARRIERS AS REQUIRED.
- B. PRIOR TO PLANTING AND SEEDING OPERATIONS: ALL TOP GROWTH OF GRASS, WEEDS, AND OTHER UNWANTED PLANT MATERIAL SHALL BE REMOVED FROM ALL AREAS TO BE PLANTED AND SEEDED. CONTRACTOR SHALL SPRAY ALL EXISTING GRASS AND WEEDS WITH SPECIFIED CONTACT SYSTEMIC HERBICIDE A MINIMUM OF TWO TIMES PER MANUFACTURER'S INSTRUCTIONS.
- C. ALL DEBRIS AND EXCESS SOIL IS TO BE REMOVED FROM SITE. IN AREAS TO RECEIVE NEW PLANTINGS OR SEED, SCREEN TOP 4 INCHES OF IMPORTED OR NATIVE TOPSOIL WITH APPROVED EQUIPMENT TO REMOVE ROCKS LARGER THAN 1/2-INCH DIAMETER, WEEDS, ROOTS, AND DEBRIS.
- D. SOIL TESTS: UPON FINAL GRADING OF THE SITE, SOIL SAMPLES OF THE TOP 8 INCHES OF SOIL WILL BE TAKEN BY THE LANDSCAPE CONTRACTOR FOR AN ANALYSIS BY AN INDEPENDENT SOILS LAB. A MINIMUM OF (4) FOUR SOIL SAMPLES SHALL BE TAKEN AT (4) FOUR DIFFERENT LOCATIONS OF THE SITE. RECOMMENDATIONS IN WRITING BY THE SOILS LAB SHALL BE FORWARDED TO THE LANDSCAPE ARCHITECT FOR REVIEW. THE LANDSCAPE ARCHITECT WILL REVIEW WITH THE OWNER THE RESULTS OF THE SOIL ANALYSIS AND PROVIDE A WRITTEN RESPONSE BACK TO THE CONTRACTOR. SOIL AMENITIES NOT SPECIFIED IN CONTRACT DOCUMENTS AND RECOMMENDED BY SOILS LAB SHALL BE IMPLEMENTED BY THE CONTRACTOR AFTER ACCEPTANCE IN WRITING BY OWNER. THE COST OF THE SOIL TESTING SHALL BE BORNE BY THE CONTRACTOR.

3.02 FINISH GRADING

- A. COORDINATE WITH ROUGH GRADING. PROVIDE AND PLACE ADDITIONAL SPECIFIED TOPSOIL AS REQUIRED TO FACILITATE DRAINAGE PATTERNS. REMOVE ALL ROCK, CLODS, AND DEBRIS FROM TOP 4 INCHES OF TOPSOIL IN LAWN AREAS AND GRADE SMOOTH WITHOUT UNDULATIONS. IF IT IS NOT POSSIBLE TO REMOVE ALL ROCK, CONTRACTOR SHALL PROVIDE A MINIMUM 2" SEED BED BY INSTALLING SPECIFIED TOPSOIL PER PAR. 2.04.

- B. DIRECT SURFACE DRAINAGE IN MANNER INDICATED ON GRADING AND DRAINAGE DRAWINGS BY MOLDING SURFACE TO FACILITATE NATURAL RUN-OFF WATER. FILL LOW SPOTS AND POCKETS WITH TOPSOIL AND GRADE TO DRAIN PROPERLY.

3.03 PLANT MATERIALS

- A. EXAMINATION: BEFORE PROCEEDING WITH WORK, CHECK AND VERIFY DIMENSIONS AND QUANTITIES. REPORT VARIATIONS BETWEEN DRAWINGS AND SITE TO LANDSCAPE ARCHITECT BEFORE PROCEEDING WITH WORK. ALL PLANTING INDICATED ON DRAWINGS IS REQUIRED UNLESS OTHERWISE INDICATED.
- B. PROTECTION: TAKE CARE AND PREPARATION IN WORK TO AVOID CONDITIONS WHICH WILL CREATE HAZARDS. POST SIGNS OR BARRIERS AS REQUIRED. PROVIDE ADEQUATE MEANS FOR PROTECTION FROM DAMAGE THROUGH EXCESSIVE EROSION, FLOODING, HEAVY RAINS, ETC. REPLACE OR REPAIR DAMAGED AREAS AS REQUIRED AT NO COST TO OWNER.

- C. INSTALLATION: DO NOT PLANT TREES, SHRUBS, AND GROUNDCOVERS UNTIL MAJOR CONSTRUCTION OPERATIONS ARE COMPLETED, SOIL PREPARATION IS COMPLETE, AND IRRIGATION SYSTEM IS IN FULL OPERATION.

- 1. LAYOUT INDIVIDUAL TREE LOCATIONS AND AREAS OF MULTIPLE SHRUB AND GROUNDCOVER PLANTINGS. STAKE LOCATIONS AND SECURE ACCEPTANCE FROM LANDSCAPE ARCHITECT BEFORE PLANTING. MAKE MINOR ADJUSTMENTS AS REQUESTED.

- 2. EXCAVATE PLANT PITS TO MINIMUM DIMENSIONS DETAILED ON DRAWINGS.

- 3. REMOVE PLANT FROM CONTAINER AND PLACE IMMEDIATELY IN PLANT HOLE OVER COMPACTED BACKFILL MIX. PLACE TREES, SHRUBS, AND GROUNDCOVERS IN HOLES TO CONFORM TO PLANTING DETAILS ON DRAWINGS.

- 4. BACKFILL WITH HOMOGENEOUS MIXTURE OF SPECIFIED BACKFILL. ADD FERTILIZER TABLETS IN PLANT PITS IN QUANTITIES SPECIFIED.

- 5. SETTLE BY FIRING AND WATERING TO BRING BALL DOWN TO PROPER LEVEL AS SHOWN ON DRAWINGS. DO NOT USE MUDDY SOIL FOR BACKFILLING. MAKE ADJUSTMENTS IN POSITIONS OF PLANTS AS DIRECTED.

- 6. THOROUGHLY WATER PLANTS IMMEDIATELY AFTER PLANTING.

3.04 TREE STAKING AND GUYING

- A. SUPPORT FOR TREES: IN PLANTING TREES 36-INCH BOX AND SMALLER, INCLUDE PLACEMENT OF TREE STAKES IN PLANT PITS OUTSIDE OF PLANT ROOTBALL. DRIVE STAKES INTO UNDISTURBED SOIL A MINIMUM OF 12 INCHES BEFORE BACKFILLING SO TREE ROOTS ARE NOT DAMAGED. LODGEPOLE STAKES SHALL BE INSTALLED IN A VERTICAL POSITION WITH TOPS OF STAKES AT THE SAME LEVEL.

- B. WIRE TIES: TIE TREE TO STAKES AS DETAILED ON DRAWINGS. INSTALL SINGLE STRAND OF GALVANIZED WIRE THROUGH SECTION OF RUBBER HOSE. LENGTH OF HOSE SHALL BE LONG ENOUGH TO PROTECT TREE TRUNK FROM WIRE. SECURE WIRE TO STAKE BY STAPLING AND REMOVE EXCESS WIRE ENDS.

- C. TRUNK PROTECTION: TREES LOCATED IN TURF AREAS SHALL RECEIVE "TREE BOOTS", "ARBOR GUARDS", OR EQUAL, TO PREVENT DAMAGE TO TREE FROM LINE TRIMMERS OR LAWN MOWERS. INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

3.05 FINISH APPEARANCE

- A. CLEAN UP AND REPAIR: CLEAN ALL SIDEWALKS, WALLS, AND PLANTING AREAS OF DEBRIS, SOIL, AND CHEMICAL STAINS, AND WASTE MATERIALS.

- B. FINISH APPEARANCE: PRIOR TO FINAL ACCEPTANCE OF LANDSCAPING BY OWNER, ALL NEW AND TRANSPLANTED PLANT MATERIAL SHALL BE IN A HEALTHY STATE OF GROWTH, PLANTER AND LAWN AREAS WEED FREE. SODDED AREAS ARE ESTABLISHED, TREES HAVE BEEN STAKED AND DETAILED, AND ALL LANDSCAPING, HEADERS, AND PLANTER TOPDRESSING HAVE BEEN INSTALLED AS PER CONTRACT DOCUMENTS.

3.06 LANDSCAPE MAINTENANCE

- A. GENERAL: CONTRACTOR WILL BE RESPONSIBLE FOR THE HEALTH AND GROWTH OF ALL NEW AND TRANSPLANTED LANDSCAPING FOR 60 DAYS FROM PRELIMINARY ACCEPTANCE OF LANDSCAPE WORK BY OWNER OR OWNER'S REPRESENTATIVE. REPLACE LANDSCAPING THAT IS DEAD OR APPEARS DEAD AS DIRECTED BY LANDSCAPE ARCHITECT. MAKE REPLACEMENTS WITHIN 10 DAYS OF NOTIFICATION.

- B. PROVIDE WRITTEN INSTRUCTIONS ON MAINTENANCE REQUIREMENTS.

- C. SUBMIT INSTRUCTIONS TO LANDSCAPE ARCHITECT FOR FORWARDING TO OWNER'S CUSTODIAN.

- F. TREES, SHRUBS, AND PLANTS

- 1. MAINTAIN BY PRUNING AS REQUIRED FOR HEALTHY GROWTH.

- 2. RESTORE TREE TIES AND STAKING AS NEEDED.

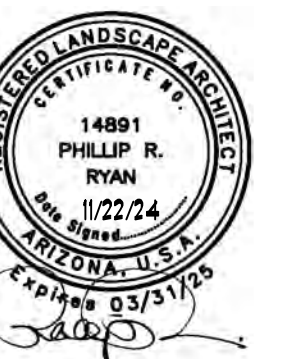
- G. DECOMPOSED GRANITE

- 1. MAINTAIN WEED FREE BY APPLYING CONTACT HERBICIDE ON NEW WEED GROWTH AS NEEDED.

SAN MARCOS COUNTRY CLUB ESTATES

FRYE ROAD ENTRY IMPROVEMENTS

CHANDLER, ARIZONA 85225



DRAWING TITLE

SPECIFICATIONS

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L-108

IRRIGATION SYSTEMS

PART 1 GENERAL

1.01 SYSTEM DESCRIPTION

- A. WORK INCLUDED: FURNISH AND INSTALL NEW DRIP IRRIGATION SYSTEM AS DESCRIBED IN CONTRACT DOCUMENTS COMPLETE WITH ACCESSORIES NECESSARY FOR PROPER FUNCTION.

1.02 GENERAL DESIGN REQUIREMENTS

- A. THE IRRIGATION SYSTEM HAS BEEN DESIGNED FOR THE USE OF POTABLE WATER.

1.03 INTENT OF CONTRACT DOCUMENTS

- A. IT IS THE INTENTION OF THIS SPECIFICATION TO ACCOMPLISH THE WORK OF INSTALLING A NEW IRRIGATION SYSTEM TO OPERATE IN AN EFFICIENT AND SATISFACTORY MANNER. THE SPECIFICATION CAN ONLY INDICATE THE INTENT OF THE WORK PERFORMED RATHER THAN A DETAILED DESCRIPTION OF THE PERFORMANCE OF THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL SAID MATERIALS AND EQUIPMENT IN SUCH A MANNER THAT THEY SHALL OPERATE EFFICIENTLY AND EVENLY AND SUPPORT OPTIMUM PLANT GROWTH AND HEALTH. THE LANDSCAPE ARCHITECT AND/OR HIS CONSULTANT SHALL BE THE SOLE JUDGE OF THE TRUE INTENT OF THE DRAWINGS AND SPECIFICATIONS AND OF THE QUALITY OF ALL MATERIALS FURNISHED IN PERFORMANCE OF THE CONTRACT.
- B. IN THE EVENT OF ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE SPECIFICATION, THE FINAL DECISION AS TO WHICH SHALL BE MADE BY THE LANDSCAPE ARCHITECT AND/OR HIS CONSULTANT. THE CONTRACTOR WILL BE COMPELLED TO ACT ON THIS DECISION AS DIRECTED. IN THE EVENT THE INSTALLATION IS CONTRADICTIONARY TO THE DIRECTION OF THE LANDSCAPE ARCHITECT, THE INSTALLATION SHALL BE RECTIFIED BY THE CONTRACTOR AT NO ADDITIONAL COST. ANY SUCH DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT BY THE CONTRACTOR.
- C. MAKE USE OF ALL DATA IN ALL OF THE CONTRACT DOCUMENTS INCLUDING MANUFACTURER'S CATALOGS AND VERIFY THE INFORMATION ON SITE PRIOR TO BIDDING ON THIS WORK AND ALSO AT THE SAME TIME OF INSTALLATION.

1.04 QUALITY ASSURANCE

- A. REGULATORY REQUIREMENTS: WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH LATEST RULES AND REGULATIONS, AND OTHER APPLICABLE STATE, COUNTY, OR LOCAL LAWS. NOTHING IN CONTRACT DOCUMENTS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1.05 SUBMITTALS

- A. RECORD DRAWINGS: PREPARE AN ACCURATE AS-BUILT DRAWING AS INSTALLATION PROCEEDS. SUBMIT TO OWNER.
- B. REDUCE COPY OF AS-BUILT DRAWING TO 1/4 SIZE, COLOR KEY CIRCUITS, AND LAMINATE IN PLASTIC. MOUNT IN CONTROLLER(S).
- C. INSTRUCTION MANUAL: PRIOR TO ACCEPTANCE OF PROJECT PROVIDE (3) THREE COPIES OF INSTRUCTION MANUAL WHICH LISTS COMPLETE INSTRUCTIONS FOR SYSTEM(S) OPERATION AND MAINTENANCE. INCLUDE MANUFACTURER'S INSTRUCTION AND MAINTENANCE MANUALS FOR EACH IRRIGATION COMPONENT INCLUDING CONTROLLERS, VALVES, POP-UP LAWN HEADS, BUBBLERS, AND EMITTERS. FINAL ACCEPTANCE OF PROJECT WILL NOT OCCUR UNTIL INSTRUCTION MANUAL AND AS-BUILT DRAWINGS HAVE BEEN SUBMITTED.

1.06 PRODUCT STORAGE

- A. DURING CONSTRUCTION, STORE AND PROTECT MATERIALS FROM DAMAGE AND PROLONGED EXPOSURE TO SUNLIGHT.

1.07 WARRANTY

- A. ONE YEAR: SHALL INCLUDE FILLING AND REPAIRING DEPRESSIONS AND REPLACING PLANTINGS DUE TO SETTLEMENT OF IRRIGATION TRENCHES.

1.08 PERMITS AND REGULATIONS

- A. THE CONTRACTOR SHALL GIVE ALL NOTICES AND PAY ALL FEES NECESSARY FOR COMPLETION OF WORK UNDER THIS CONTRACT, AND SHALL OBTAIN AND PAY FOR ALL PERMITS AND LICENSES OVER ALL OR ANY PART OF THE WORK AS DRAIN AND SPECIFIED.

1.09 EXAMINATION OF SITE

- A. THE CONTRACTOR SHALL BE HELD TO HAVE EXAMINED THE PROJECT SITE AND TO HAVE COMPARED IT WITH THE DRAWINGS AND SPECIFICATIONS, TO HAVE CAREFULLY EXAMINED ALL OF THE CONTRACT DOCUMENTS AND TO HAVE SATISFIED HIMSELF AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED BEFORE ENTERING INTO THIS CONTRACT FOR THIS WORK. NO ALLOWANCE SHALL SUBSEQUENTLY BE MADE ON BEHALF OF THE CONTRACTOR ON ACCOUNT OF AN ERROR ON PART OF HIS NEGLIGENCE OR FAILURE TO ACQUAINT HIMSELF WITH THE CONDITIONS OF THE SITES, EXISTING UTILITY LOCATIONS AND BASEMENTS, OR OF THE STREETS OR ROADS APPROACHING THE SITE. SUBMIT ANY QUESTIONS IN WRITING PRIOR TO COMMENCEMENT OF THE JOB.

1.10 SAFEGUARDS

- A. THE CONTRACTOR SHALL MAINTAIN SUFFICIENT SAFEGUARDS, SUCH AS RAILINGS, TEMPORARY WALKS, LIGHTS, BARRICADES, ETC., AGAINST THE OCCURRENCE OF ACCIDENTS, INJURIES, OR DAMAGE TO ANY PERSON OR PROPERTY RESULTING FROM HIS WORK, AND SHALL ALONE BE RESPONSIBLE FOR THE SAME IF SUCH OCCURS.

1.11 PROTECTION OF WORK AND PROPERTY

- A. THE CONTRACTOR SHALL CONTINUOUSLY MAINTAIN ADEQUATE PROTECTION OF ALL HIS WORK AND MATERIALS FROM DAMAGE, DESTRUCTION, OR LOSS, AND SHALL PROTECT THE OWNER'S PROPERTY FROM DAMAGE ARISING IN CONNECTION WITH THIS CONTRACT. HE SHALL MAKE GOOD ANY DAMAGE, DESTRUCTION, LOSS, OR INJURY. HE SHALL ADEQUATELY PROTECT ADJACENT PROPERTY AS PROVIDED BY LAW AND THE CONTRACT DOCUMENTS.
- B. PRIOR TO EXCAVATION FOR IRRIGATION PIPING OR EQUIPMENT, CONTRACTOR SHALL LOCATE UNDERGROUND UTILITY LINES AND TAKE PROPER PRECAUTIONS TO AVOID DAMAGE TO SUCH IMPROVEMENTS. IN THE EVENT OF A CONFLICT BETWEEN SUCH LINES AND IRRIGATION PIPING OR EQUIPMENT LOCATIONS, CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT WHO WILL ARRANGE FOR THE RELOCATION OF ONE OR THE OTHER. THE CONTRACTOR ASSUMES RESPONSIBILITY FOR MAKING REPAIRS FOR DAMAGES RESULTING FROM WORK AS HEREIN SPECIFIED.

PART 2 PRODUCTS

2.01 MATERIALS

- A. MATERIALS, EQUIPMENT, APPARATUS, AND APPLIANCES USED THROUGHOUT THE SYSTEMS SHALL BE NEW AND IN PERFECT CONDITION.
- B. EQUIPMENT OR MATERIALS INSTALLED OR FURNISHED WITHOUT THE PRIOR APPROVAL OF THE LANDSCAPE ARCHITECT WILL BE REJECTED AND SUCH MATERIALS REMOVED FROM THE SITE AT NO COST TO THE OWNER OR LANDSCAPE ARCHITECT.

2.02 PIPE, PIPE FITTINGS, AND CONNECTIONS FOR IRRIGATION SYSTEM

ALL PIPE SHALL BE FREE OF BLISTERS, INTERNAL STRIATIONS, CRACKS, OR ANY DEFECTS OR IMPERFECTIONS. PIPE SHALL BE CONTINUOUSLY AND PERMANENTLY MARKED WITH DIMENSION RATIO NO., MANUFACTURER'S NAME, SIZE, SCHEDULE, OR PRESSURE CLASS, TYPE, AND WORKING PRESSURE, MATERIAL CODE DESIGNATION, SEAL OF THE TESTING AGENCY THAT VERIFIED THE SUITABILITY OF THE PIPE MATERIAL (NSF). PIPE SIZE SCHEDULE SHOWN ON DRAWINGS IS A MINIMUM. LARGER SIZES MAY BE SUBSTITUTED WITHOUT ADDITIONAL COST TO OWNER OR LANDSCAPE ARCHITECT.

A. PLASTIC PIPE:

1. PRESSURE LINES AND SLEEVES: SCHEDULE 40 PVC (POLYVINYL CHLORIDE) SOLVENT WELD PIPE COMPLYING WITH ASTM DESIGNATION D-1785, LATEST EDITION FOR MAINLINE PIPE 2 1/2-INCH AND SMALLER.
2. NON-PRESSURE LINES: PRESSURE CLASS 200 PVC SDR21, PVC-1120, TYPE I, GRADE I, COMPLYING WITH ASTM DESIGNATION D-2241 PVC SDR-PR PIPE SPECIFICATION.

B. PLASTIC PIPE FITTINGS:

1. THREADED TYPE: SCHEDULE 80, TYPE I, GRADE I, POLYVINYL CHLORIDE (PVC) PER ASTM D1784, AND D2467, MANUFACTURED BY SPEARS OR APPROVED EQUAL.
2. SLIP SOCKET TYPE: SCHEDULE 40, TYPE I, GRADE I, POLYVINYL CHLORIDE (PVC) PER ASTM D-2466 AND D-1784, MANUFACTURED BY SPEARS OR APPROVED EQUAL. (NOTE: USE EPOXY COATED STEEL FITTING FOR RUBBER RING AND GASKETED MAINLINE.)

C. COPPER PIPE:

1. COPPER PIPE SHALL BE TYPE "K" IN ACCORDANCE WITH ASTM B88. COPPER PIPE SHALL BE JOINTED WITH THE APPROPRIATE SOLDER TYPE WROUGHT COPPER PRESSURE FITTINGS FOR 2 1/2-INCH AND SMALLER SIZES.

2.03 PIPE CONNECTION MATERIALS

- A. JOINT COMPOUND FOR THREADED CONNECTIONS: TEFLON TAPE, OR APPROVED EQUAL UL LISTED.
- B. ADHESIVE SOLVENTS AND PRIMER FOR ALL CLASSES AND SCHEDULES OF PVC: SLOW DRYING SOLVENT CEMENT SHALL BE USED WHENEVER AMBIENT AIR TEMPERATURE IS 90 DEGREES F. OR HIGHER. P-10 PURPLE PRIMER AND SLOW-SET SOLVENT CEMENT AS MANUFACTURED BY INDUSTRIAL POLYCHEMICAL SERVICE, GARDENA, CALIFORNIA.
- C. SOLVENT FOR SLIP-FIT FLEX VINYL HOSE AND FITTINGS: SHALL BE P-10 PRIMER AND #195 SOLVENT CEMENT AS MANUFACTURED BY INDUSTRIAL POLYCHEMICAL SERVICE, GARDENA, CALIFORNIA.
- D. ALL CANS OF SOLVENTS AND PRIMERS SHALL HAVE LABELS INTACT AND SHALL BE STAMPED WITH THE DATE OF MANUFACTURE. NO CANS DATED OVER ONE YEAR OLD WILL BE PERMITTED.

2.04 EMITTERS:

CONFORM TO REQUIREMENTS SHOWN ON DRAWINGS.

2.05 AUTOMATIC SPRINKLER SYSTEM:

- A. CONTROL VALVES: EXISTING.

2.06 AUTOMATIC CONTROLLERS:

EXISTING TO REMAIN.

2.07 PRESSURE REDUCING VALVES, Y-STRAINERS, 4 FLUSH VALVES:

MAKE AND MODELS AS SHOWN ON DRAWINGS.

2.08 VALVE BOXES:

EXISTING.

2.09 BACKFILL MATERIALS

IRRIGATION PIPE TRENCH BACKFILL:

1. 2-INCH COVER AND BEDDING FOR PRESSURE IRRIGATION MAINLINE AND ALL NON-PRESSURE LATERALS: SCREENED SOIL HAVING NO ROCK OR DEBRIS LARGER THAN 1/4 INCH.
 2. OTHER BACKFILL MATERIALS: CLEAN NATIVE SOIL WITH NO ROCK OR DEBRIS LARGER THAN 1/2 INCH.
- B. FEA GRAVEL (FOR USE AROUND DRAINS AND VALVES): 1/2 INCH MAXIMUM ROUND, WATER WORN, WASHED ROCK.

PART 3 EXECUTION

3.01 PROTECTION:

PROVIDE ADEQUATE MEANS FOR PROTECTION OF THE PUBLIC BY POSTING SIGNS AND BARRIERS.

3.02 GENERAL REQUIREMENTS:

A. CONTRACTOR SHALL OBTAIN ALL INFORMATION PERTAINING TO LOCATIONS OF ALL EXISTING AND PROPOSED UTILITIES, LINES, AND APPURTENANCES PRIOR TO IRRIGATION INSTALLATION.

B. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING CONNECTIONS TO EXISTING PIPING, VALVES, CONDUIT, AND APPURTENANCES NOT IN HIS CONTRACT UTILIZING PROPER ADAPTATION TOOLS AND PROCEDURES. WATER LINE SHUT DOWNS/TRENCHING AT MAINS ARE CONTRACTOR'S RESPONSIBILITY. NO CHANGE ORDERS FOR CONNECTIONS OR INSTALLATION ARE WARRANTED.

3.03 LAYOUT AND VERIFICATION

- A. LOCATIONS AND DRAWINGS ARE DIAGRAMMATIC AND APPROXIMATE ONLY. ACTUAL WORK SHALL BE CHANGED AND ADJUSTED AS NECESSARY AND AS DIRECTED TO MEET EXISTING CONDITIONS AND OBTAIN COMPLETE WATER COVERAGE. ALL FITTINGS THAT ARE NECESSARY FOR PROPER CONNECTIONS SUCH AS SWING JOINTS, OFFSETS, AND REDUCING BUSHINGS ARE NOT SHOWN BUT SHALL BE INSTALLED AS NECESSARY AND AS DIRECTED.
- B. MINOR CHANGES IN LOCATIONS OF IRRIGATION EQUIPMENT AND PIPING SHOWN ON DRAWINGS SHALL BE MADE AS NECESSARY TO AVOID UTILITIES, STRUCTURES, ETC. AT THE CONTRACTOR'S EXPENSE.
- C. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR RELOCATION OF ANY ITEMS WITHOUT FIRST OBTAINING THE LANDSCAPE ARCHITECT'S APPROVAL. THE CONTRACTOR SHALL REMOVE AND RELOCATE SUCH ITEMS AT HIS EXPENSE IF SO DIRECTED BY THE LANDSCAPE ARCHITECT.
- D. BEFORE STARTING WORK ON IRRIGATION SYSTEM, CAREFULLY CHECK ALL GRADES TO DETERMINE THAT WORK MAY SAFELY PROCEED, KEEPING WITHIN THE SPECIFIED MATERIAL DEPTHS. THE CONTRACTOR SHALL BE AWARE OF THE FACT THAT THE DRAWINGS ARE BASED ON HORIZONTAL DIMENSIONS. ACTUAL MEASUREMENTS TAKEN ALONG THE SLOPE OF A BANK WILL DIFFER FROM THOSE SHOWN ON THE DRAWINGS.

3.04 TRENCHING & BACKFILLING:

OVER-EXCAVATE TRENCHES 2 INCHES AND BRING BACK TO INDICATED DEPTH BY FILLING WITH BACKFILL MATERIAL SPECIFIED IN THIS SECTION. LAY PIPE ON BEDDING MATERIAL PROVIDING A FIRM, UNIFORM BEARING. UNLESS OTHERWISE SPECIFIED, THE MINIMUM DEPTH OF COVER OVER PIPELINES AND CONDUITS SHALL BE AS FOLLOWS:

- A. PRESSURE IRRIGATION MAINLINE AND GEAR DRIVE HEADS: 18 INCHES MINIMUM, OR AS REQUIRED.
- B. NON-PRESSURE LATERAL LINES SERVICING EMITTERS: 12 INCHES MINIMUM.
- C. SLEEVES UNDER PAVING: 10 INCHES MINIMUM BELOW SUB-BASE.

DO NOT COVER PRESSURE MAIN, NON-PRESSURE LATERAL SPRINKLER PIPE, OR FITTINGS UNTIL LANDSCAPE ARCHITECT HAS INSPECTED AND APPROVED SYSTEMS. BALANCE OF TRENCH BACKFILL MATERIAL SHALL BE AS SPECIFIED. COMPACT BACKFILL SOIL USING RECOMMENDED MECHANICAL COMPACTION EQUIPMENT TO DENSITIES AS FOLLOWS:

UNDER PAVEMENT: 95% (OR PER SOILS REPORT)
IN LANDSCAPED AREAS: 90% (OR PER SOILS REPORT)

3.05 SLEEVING:

SLEEVE ALL WATER LINES AND CONTROL WIRES UNDER WALKS AND PAVING. SIZE SLEEVE TWO PIPE SIZES LARGER THAN PIPE TO BE SLEEVED AND EXTEND SLEEVES 6 INCHES MINIMUM BEYOND WALK OR PAVEMENT EDGE.

3.06 INSTALLING PLASTIC SOLVENT WELD PIPE:

INSTALL PLASTIC PIPE IN A MANNER TO PROVIDE FOR EXPANSION AND CONTRACTION AS RECOMMENDED BY MANUFACTURER. CUT PLASTIC PIPE SQUARE AND REMOVE BURRS AT CUT ENDS PRIOR TO INSTALLATION SO UNOBSTRUCTED FLOW WILL RESULT.

- A. DO NOT MAKE SOLVENT WELD JOINTS IF AMBIENT TEMPERATURE IS BELOW 40 DEGREES F.
- B. CLEAN MATING PIPE AND FITTING WITH CLEAN, DRY CLOTH AND APPLY ONE COAT OF P-10 PRIMER TO EACH.
- C. APPLY UNIFORM COAT OF SPECIFIED SOLVENT TO OUTSIDE OF PIPE.
- D. APPLY SOLVENT TO INSIDE FITTING IN A SIMILAR MANNER.
- E. REAPPLY A LIGHT COAT OF SOLVENT TO PIPE AND QUICKLY INSERT INTO FITTING.
- F. GIVE PIPE OR FITTING A QUARTER TURN TO INSURE EVEN DISTRIBUTION OF SOLVENT AND MAKE SURE PIPE IS INSERTED TO FULL DEPTH OF SOCKET.
- G. HOLD IN POSITION FOR 15 SECONDS MINIMUM OR LONG ENOUGH TO SECURE JOINT.
- H. WIPE OFF SOLVENT APPEARING AT OUTER SHOULDER OF FITTING.
- I. ALLOW JOINTS TO SET AT LEAST 24 HOURS BEFORE APPLYING PRESSURE TO PVC PIPE.
- J. TAPE THREADED CONNECTIONS WITH TEFLON TAPE AS PER MANUFACTURER'S WRITTEN RECOMMENDATIONS.

3.07 METAL PIPE

- A. ALL THREADED PIPE CONNECTIONS SHALL BE MADE USING TEFLON TAPE APPLIED TO MALE THREADS ONLY. (NOTE: DO NOT TAPE ACME THREADS ON SWING JOINTS.)
- B. METAL TO NON-METALLIC CONNECTIONS: COUPLINGS CONNECTING METAL TO NON-METALLIC ITEMS SHALL BE OF THE SAME MATERIAL AS THE METALLIC ITEM OR AS SHOWN ON RESPECTIVE DETAIL.
- C. WHEN CONNECTION IS PLASTIC TO METAL, PVC MALE ADAPTERS COMPLETE THE CONNECTION. JOINTS SHALL BE MADE WITH TWO WRAPS OF TEFLON TAPE AND HAND-TIGHTENED PLUS ONE TURN WITH A STRAP WRENCH.
- D. CONDUIT INSTALLATION: METALLIC CONDUIT SHALL BE USED AND ASSEMBLED AS PER MANUFACTURER'S WRITTEN SPECIFICATIONS AND PER LOCAL CODES WHERE WIRING IS ROUTED ABOVE GRADE.
- E. STUB CONDUIT INTO VALVE OR ELECTRICAL BOX A MINIMUM OF 2 INCHES.
- F. CONDUIT WITHIN CONTROL CABINETRY SHALL BE AS PROVIDED BY MANUFACTURER.

3.08 PIPE CLOSING AND FLUSHING:

- A. PIPE CLOSING: OPENINGS IN PIPING SYSTEM ARE TO BE CAPPED AND PLUGGED, LEAVING CAPS AND PLUGS IN PLACE UNTIL REMOVAL IS NECESSARY FOR COMPLETION OF INSTALLATION. PREVENT DIRT AND DEBRIS FROM ENTERING PIPE AND EQUIPMENT AT ALL TIMES.
- B. FLUSHING: ALL PIPES AND TUBING ARE TO BE THOROUGHLY FLUSHED OUT BEFORE INSTALLING VALVE CAPS OR SPRINKLER HEADS. AFTER FLUSHING, PROCEED TO INSTALL AFOREMENTIONED EQUIPMENT, AND CENTER LOAD THE LINES. JOINTS, FITTINGS, AND CONNECTIONS ARE TO REMAIN VISIBLE.

3.09 PURGING

- A. IMMEDIATELY PRIOR TO HYDROSTATIC TESTING, ALL IRRIGATION LINES SHALL BE THOROUGHLY PURGED OF ALL ENTRAPPED AIR.
- B. MAINLINE PIPING SYSTEM MAY BE TESTED IN SECTIONS. LATERAL SYSTEMS SHALL BE TESTED VALVE BY VALVE.
- C. ADJUST ZONE CONTROL VALVES AND INSTALL TEMPORARY CAPS IN ORDER TO FORCE WATER TO BE DISCHARGED FROM A SINGLE OUTLET.
- D. INTRODUCE WATER INTO LINES TO BE TESTED AT FULL OPERATING PRESSURE HEAD. OBSERVE WATER FLOW AT END DISCHARGE POINT UNTIL DETERMINATION IS MADE THAT ALL AIR AND RESIDUAL DEBRIS HAVE BEEN EXPELLED FROM THE LINE.

3.10 HYDROSTATIC PRESSURE TESTING

- A. WHILE THE NECESSARY PIPING SYSTEM COMPONENTS ARE EXPOSED, AND UNDER THE DIRECT OBSERVATION OF THE LANDSCAPE ARCHITECT, ALL PIPING IS TO BE SUBJECTED TO A HYDROSTATIC TEST.
1. CONTRACTOR IS TO SUPPLY ALL TESTING EQUIPMENT INCLUDING CAPS, VALVES, PUMPS, TANKS, AND GAUGES AS REQUIRED.
 2. CALIBRATION OF PRESSURE GAUGES SHALL BE SUCH THAT ACCURATE DETERMINATION OF POTENTIAL PRESSURE LOSS CAN BE ASCERTAINED.
 3. PRESSURE GAUGES ARE REQUIRED AT A MINIMUM OF TWO LOCATIONS ON THE SECTION OF PIPE BEING TESTED.
- B. PIPING SHALL BE TESTED AS FOLLOWS:
1. TEST SUPPLY LINES AT 150 PSI FOR A MINIMUM OF FOUR (4) HOURS WITH AN ALLOWABLE LOSS OF 5 PSI.
 2. TEST LATERAL LINES AT 16 PSI FOR A MINIMUM OF ONE (1) HOUR WITH AN ALLOWABLE LOSS OF 5 PSI.

3. TEST DRIP EMITTER LINES AT 40 PSI FOR A MINIMUM OF ONE (1) HOUR WITH AN ALLOWABLE LOSS OF 3 PSI.

RETEST AS REQUIRED UNTIL THE SYSTEM MEETS THE REQUIREMENTS. DURING THE TESTS, REGARDLESS OF THE AMOUNT OF LEAKAGE, ALL DETECTABLE LEAKS ARE TO BE STOPPED AND ALL DEFECTS CORRECTED.

MATERIALS AND INSTALLATION PROCEDURE USED FOR MAKING CORRECTIONS ARE TO BE THE SAME AS SPECIFIED HEREIN.

3.11 INSTALLATION OF SPRINKLER HEADS

- A. AFTER FLUSHING, PURGING, AND PRESSURE TESTING OF IRRIGATION LINES, INSTALL SPRINKLER HEADS AND BUBBLERS ON SWING-JOINT ASSEMBLIES AND RISER ASSEMBLIES AS DETAILED ON DRAWINGS.
- B. SPRINKLER HEADS SHALL BE SET WITHIN 1/4 INCH OF LEVEL WITH THE COMPACTED AND SETTLED FINAL GRADES.
- C. POP-UP SPRAY SPRINKLER HEADS SHALL BE SET AWAY FROM ALL PAVING AND STRUCTURES A MINIMUM OF ONE INCH AND A MAXIMUM OF TWO INCHES.
- D. GEAR DRIVE HEADS SHALL BE SET AWAY FROM ALL PAVING AND STRUCTURES A MINIMUM OF 3 INCHES AND A MAXIMUM OF 4 INCHES.
- E. SET ALL SPRINKLER HEADS PERPENDICULAR TO FINISH GRADES UNLESS OTHERWISE DIRECTED BY LANDSCAPE ARCHITECT.

3.12 INSTALLATION OF DRIP IRRIGATION

- A. ENTIRE DRIP IRRIGATION SYSTEM SHALL BE INSTALLED PER DETAILS ON DRAWINGS.
- B. DO NOT INSTALL EMITTERS UNTIL FLUSHING, PURGING, AND PRESSURE TESTING OF SYSTEM IS COMPLETED.

3.13 CONTROL VALVES AND CONTROLLER:

EXISTING TO REMAIN.

3.14 FIELD QUALITY CONTROL:

TEST PRESSURE AND LATERAL LINES TO MAKE CERTAIN THERE ARE NO LEAKS BEFORE BACKFILLING. NOTIFY LANDSCAPE ARCHITECT PRIOR TO TESTING.

3.15 MAINTENANCE:

PROVIDE THE FOLLOWING SERVICES DURING THE MAINTENANCE PERIOD:

- A. ON A DAILY BASIS, CHECK COMPLETE OPERATION OF THE IRRIGATION SYSTEM, INCLUDING REVIEW OF SOIL MOISTURE BY SOIL PROBING EACH AREA CONTROLLED BY A REMOTE CONTROL VALVE. ADJUST EQUIPMENT AS NECESSARY TO OBTAIN MAXIMUM EFFICIENCY.
- B. DURING THE LAST TWO WEEKS OF THE MAINTENANCE PERIOD, PROVIDE EQUIPMENT FAMILIARIZATION AND INSTRUCTION ON THE TOTAL OPERATION OF THE SYSTEM TO GROUND'S MAINTENANCE PERSONNEL WHO WILL ASSUME RESPONSIBILITY FOR SYSTEM OPERATION.

END SECTION

SAN MARCOS COUNTRY CLUB ESTATES
FRYE ROAD ENTRY IMPROVEMENTS
CHANDLER, ARIZONA 85225



DRAWING TITLE

SPECIFICATIONS

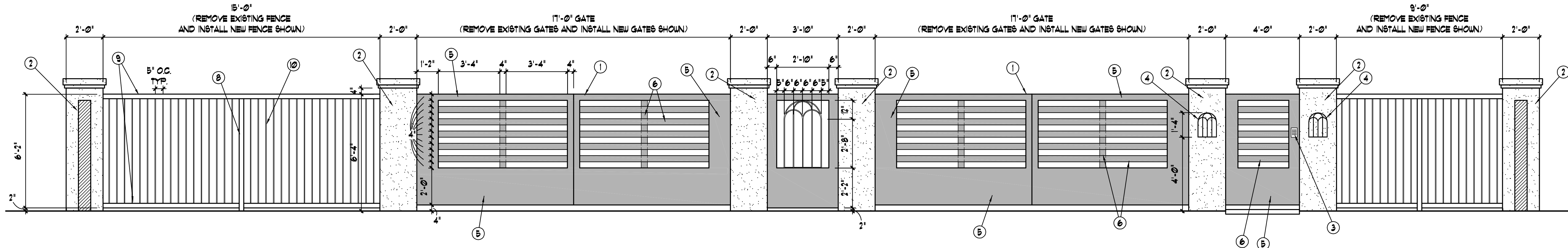
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ELEVATION KEY NOTES:

- ① REMOVE AND REPLACE VEHICULAR GATES
- ② EXISTING MASONRY COLUMNS (REMOVE AND REPLACE CAP BLOCK AND PROVIDE PAINTED STUCCO FINISH) (RE-PAINT ENTIRE COLUMN W/ 2 COATS DUNN EDWARDS 161 'RIVER BED'), DETAIL (B/202)
- ③ PROVIDE AND INSTALL NEW KEYPAD
- ④ METAL LOGO (PAINT FLAT BLACK)
- ⑤ GATE FRAME PANEL (4" THICK x 1/8" THICK STEEL WELDED PLATE)
- ⑥ GATE RIBS (4" x 1" STEEL TUBING)
- ⑦ 1/2" x 1" DEEP FORMED TUBE STEEL
- ⑧ 3" SQ. TUBE STEEL POST, DETAIL (B/202)
- ⑨ 1-1/2" x 3" BOTTOM AND TOP RAIL
- ⑩ 1/2" x 1" PICKETS AT 5' O.C.



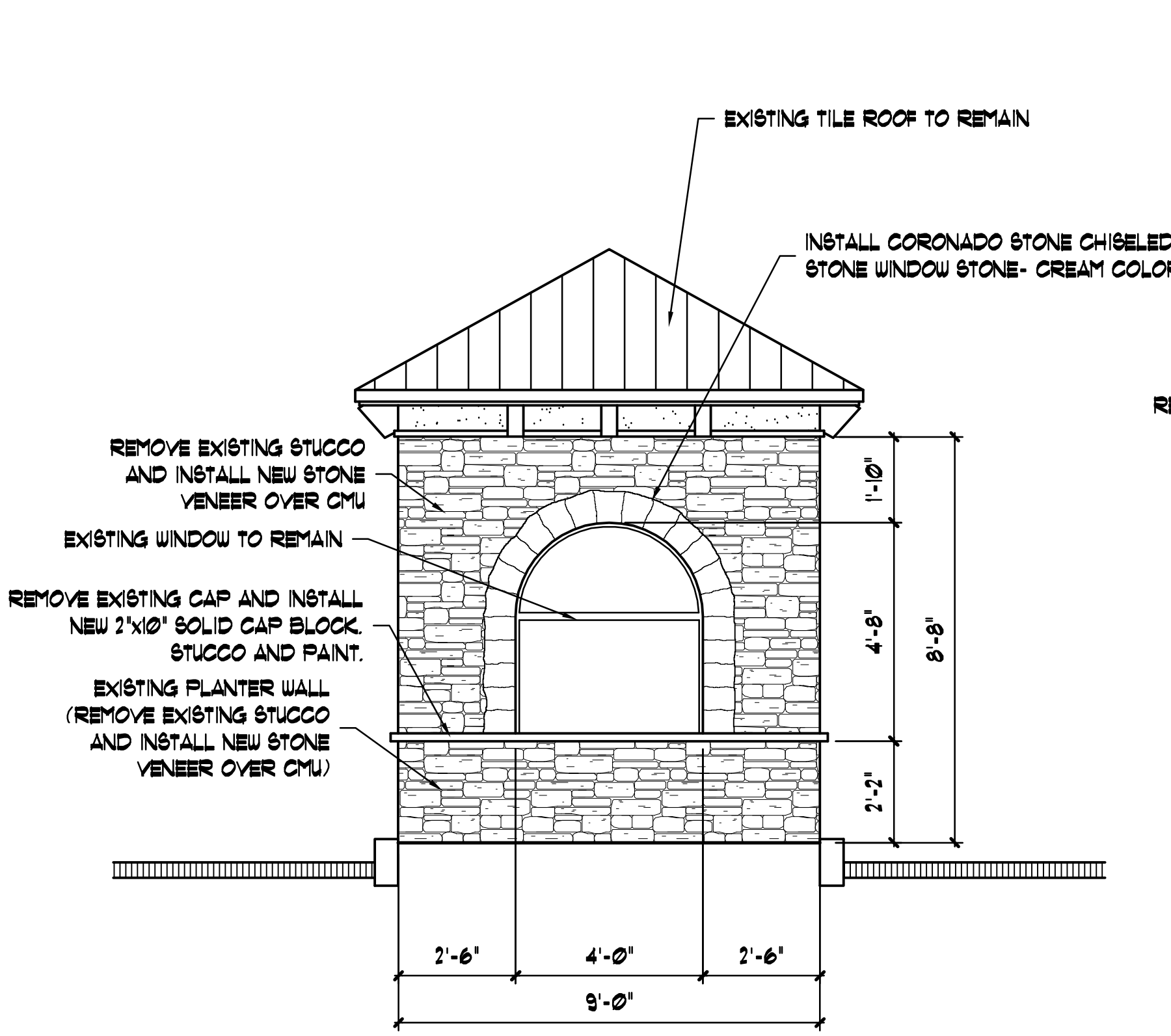
NOTES:
 1. ALL METAL TO HAVE 2 COATS FLAT BLACK PAINT.
 2. ALL STUCCO SURFACES TO HAVE 2 COATS DUNN EDWARDS 161 'RIVER BED' PAINT.

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FRYE ROAD GATE ELEVATION

SCALE 3/8" = 1'-0"

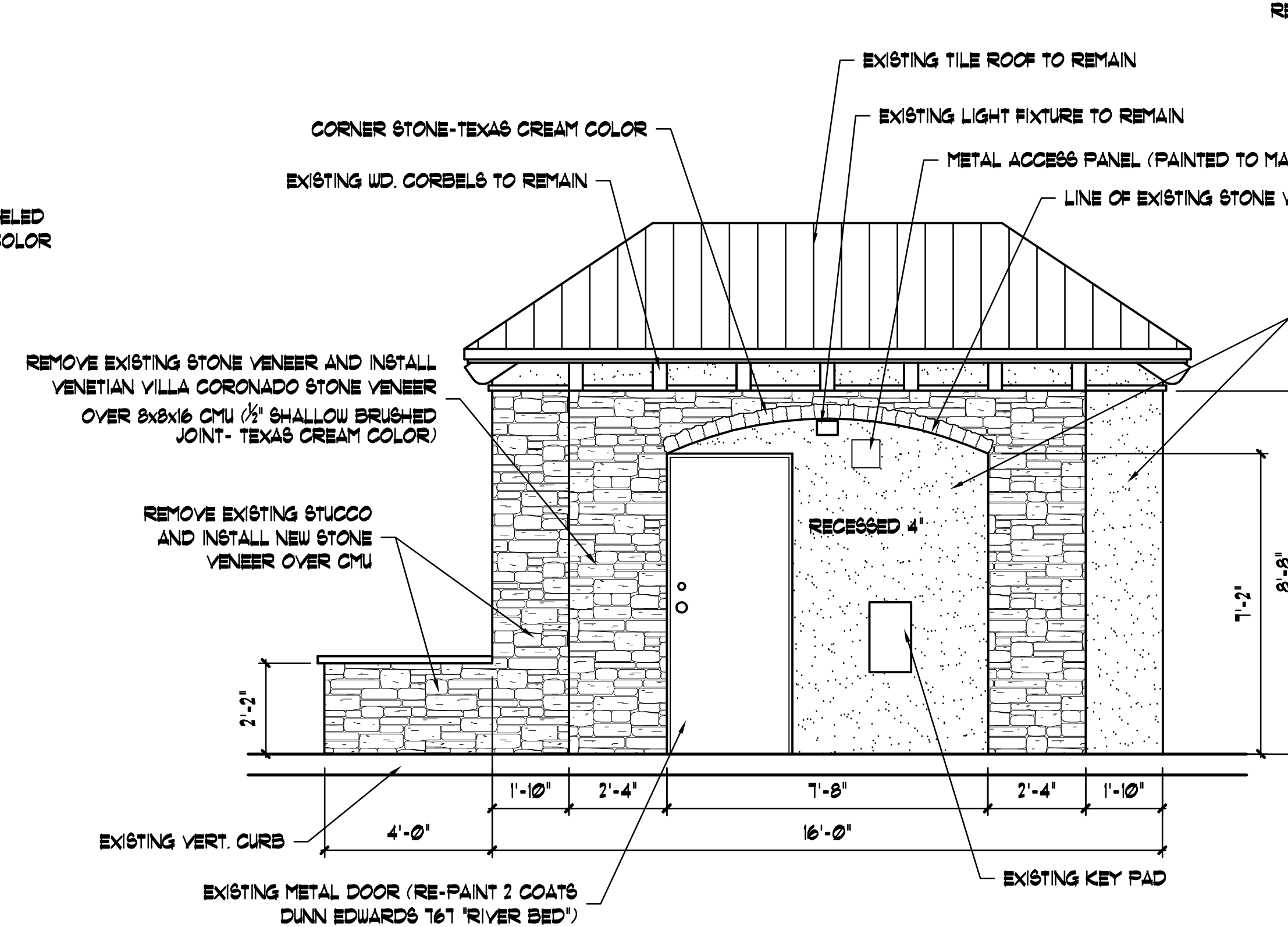
CONSTRUCTION NOTES FOR INSTALLING STONE OVER CMU:
 1. REMOVE PAINTED STUCCO COAT.
 2. PROVIDE POLYMER-MODIFIED MORTAR (MEETING ANSI A118.4 OR ANSI 118.5), ALLOW TIME TO DRY.
 3. PROVIDE ADHESIVE BOND COAT PER MFR'S SPECIFICATIONS.



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FRYE ROAD GUARDHOUSE SOUTH ELEVATION

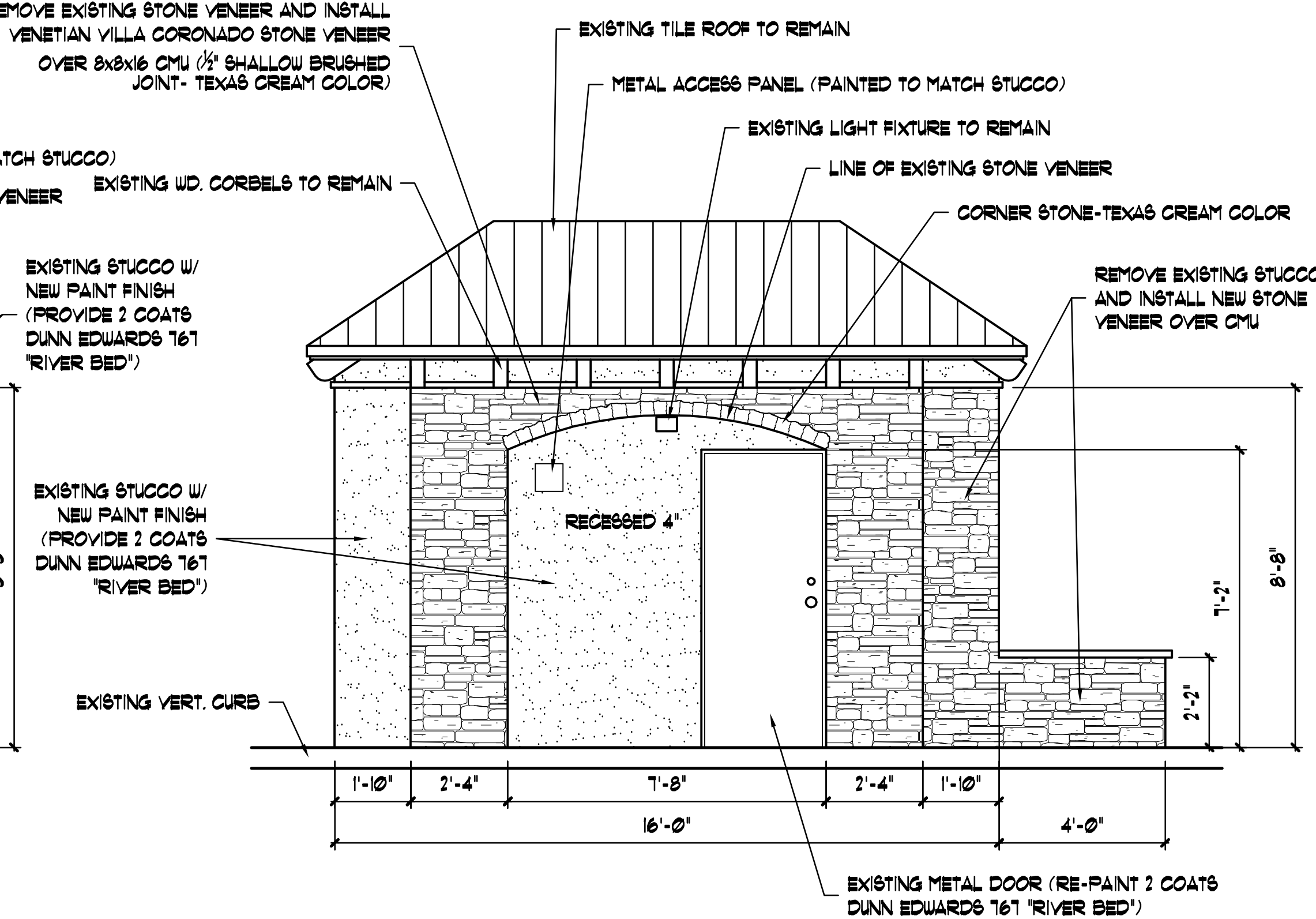
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FRYE ROAD GUARDHOUSE EAST ELEVATION

SCALE 3/8" = 1'-0"



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FRYE ROAD GUARDHOUSE WEST ELEVATION

SCALE 3/8" = 1'-0"

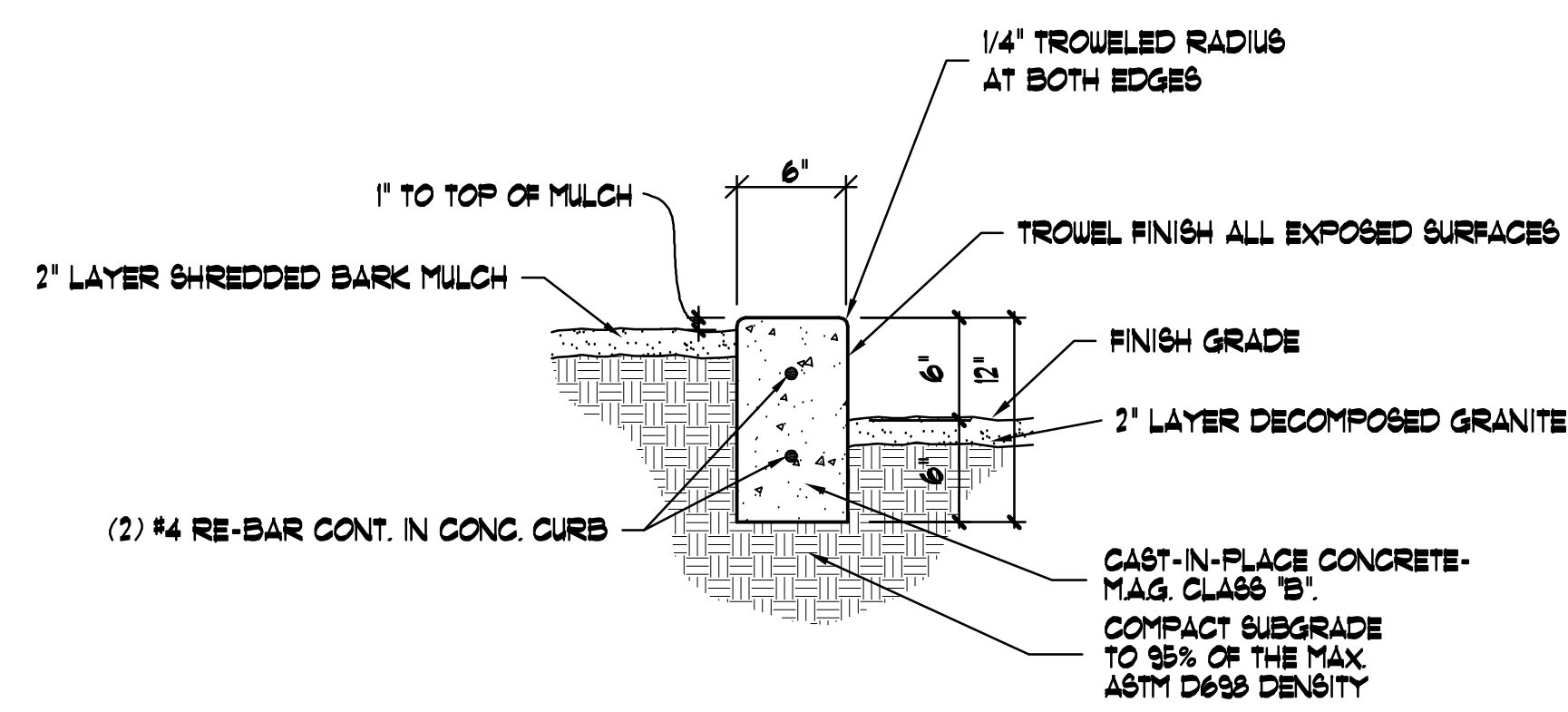
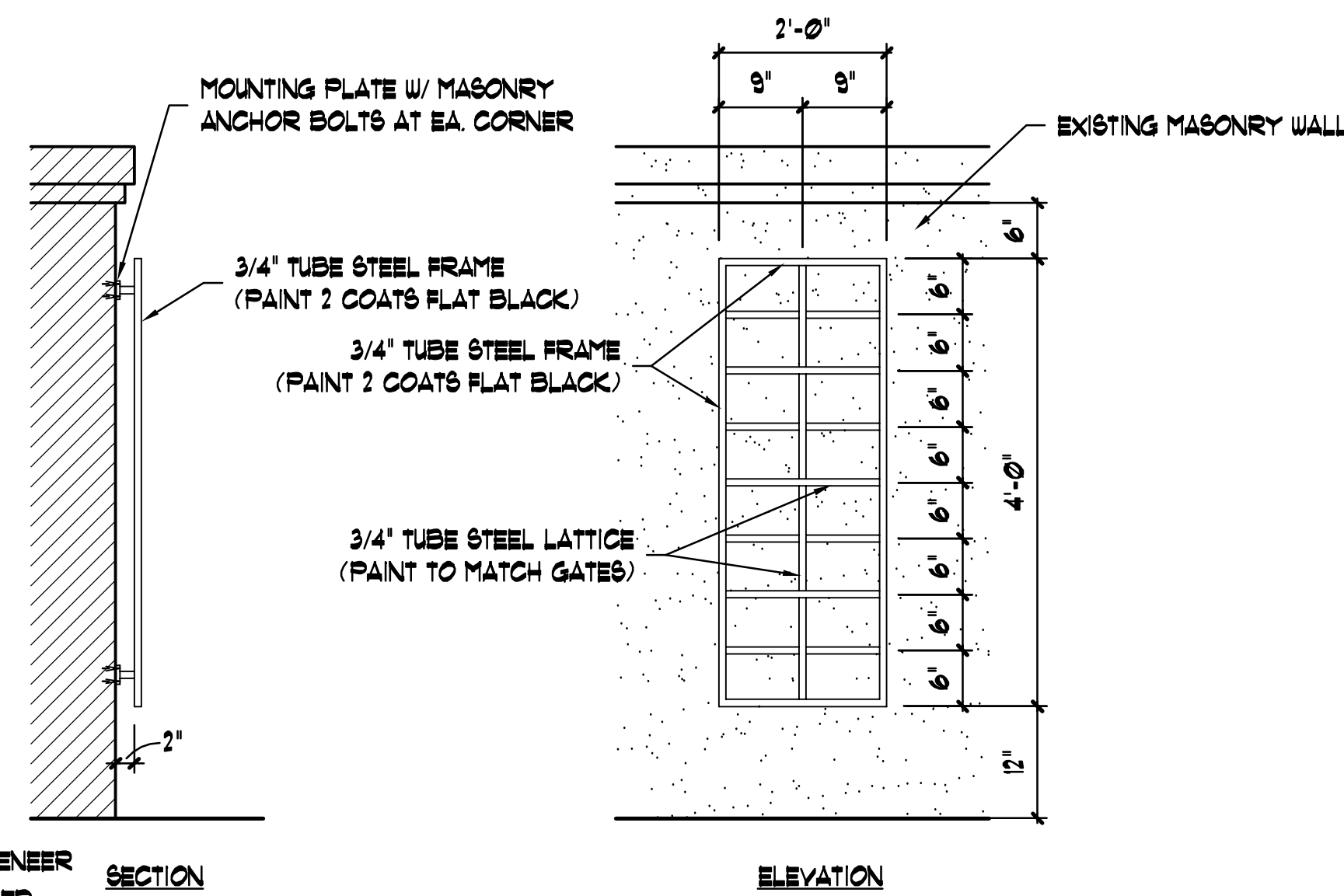
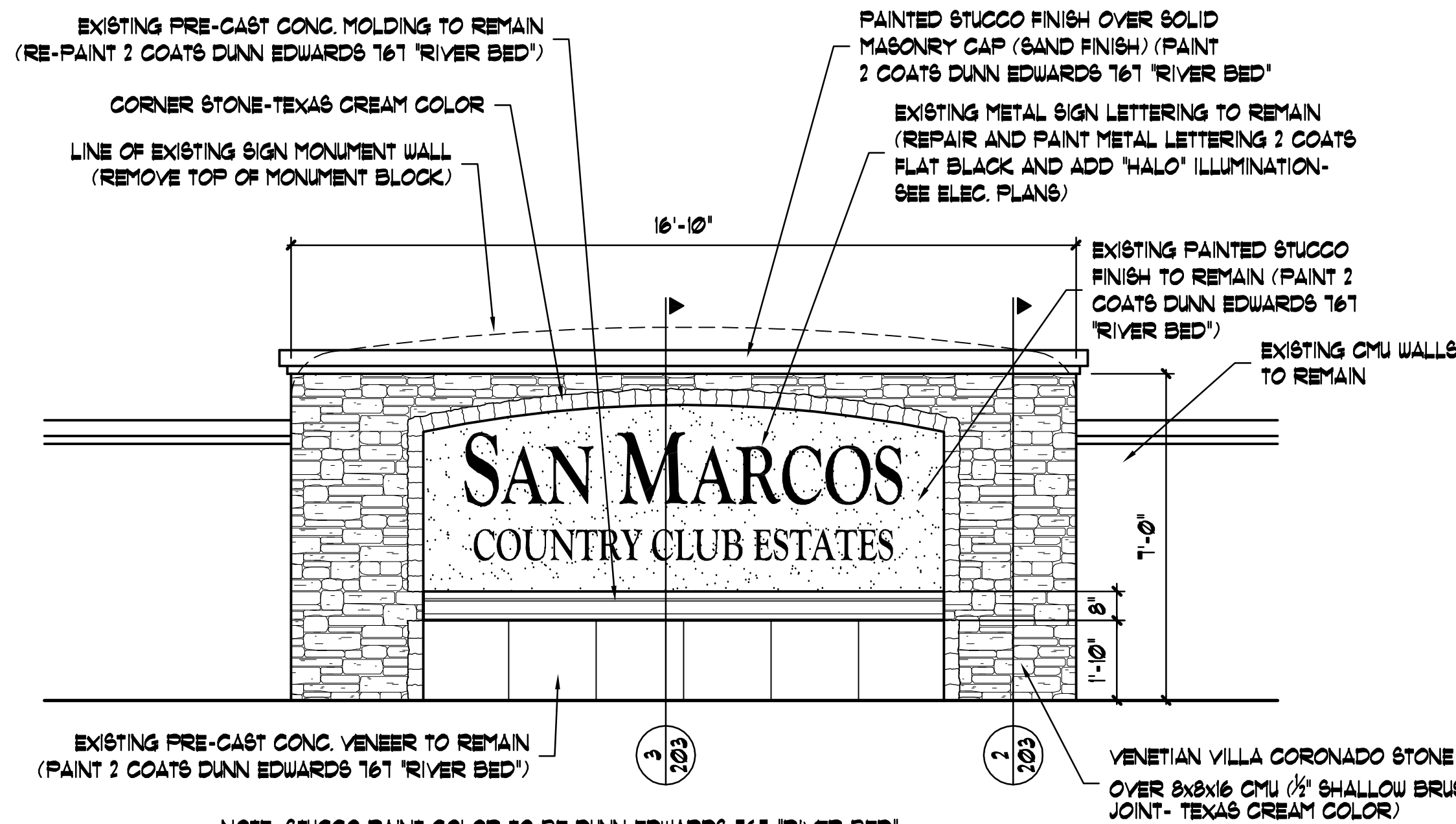
SAN MARCOS COUNTRY CLUB ESTATES
FRYE ROAD ENTRY IMPROVEMENTS
CHANDLER, ARIZONA 85225



SITE DETAILS

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L-201

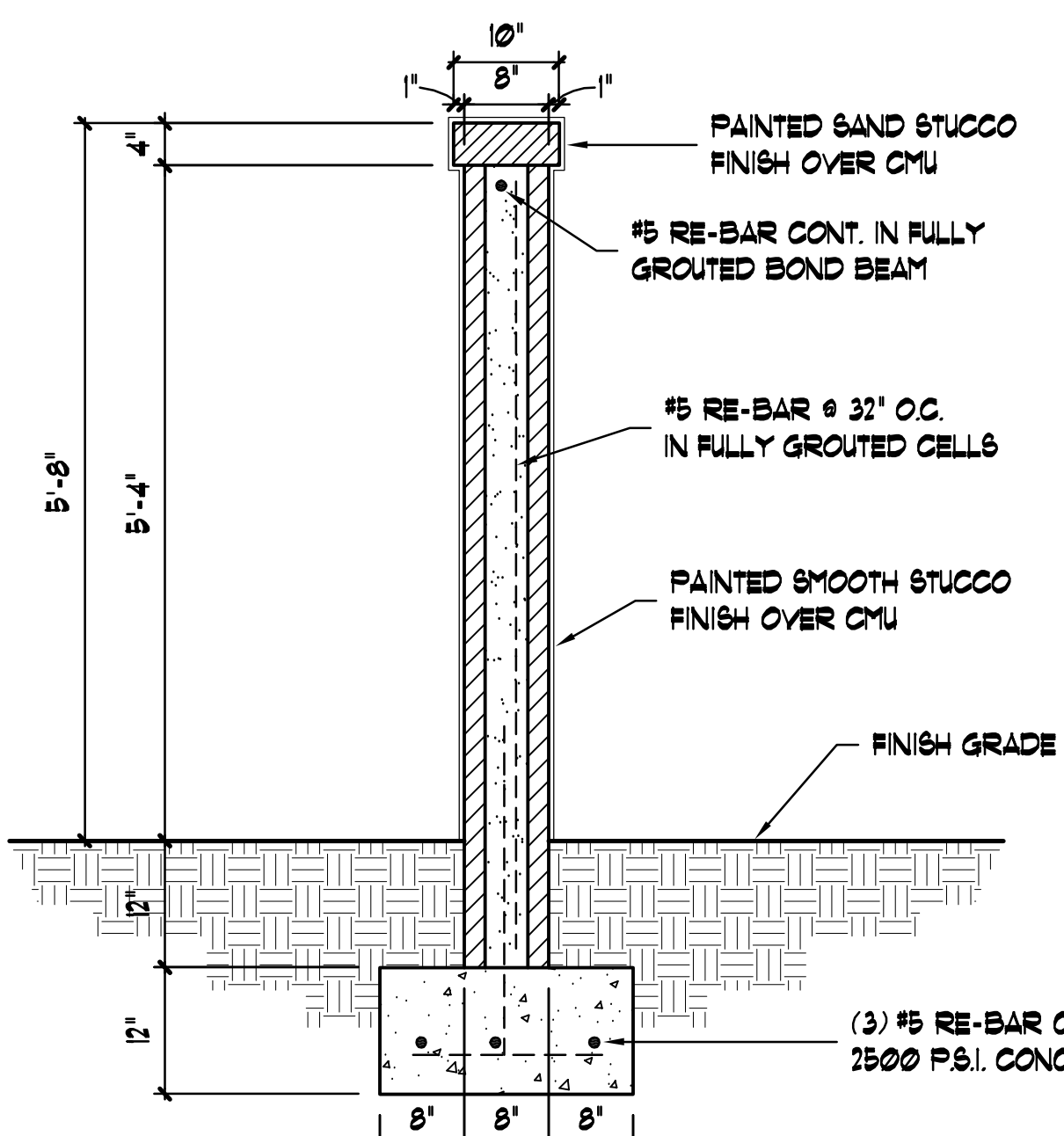


- MAXIMUM SPACING OF CONTRACTION JOINTS TO BE 10 FEET.
- 1/2\"/>

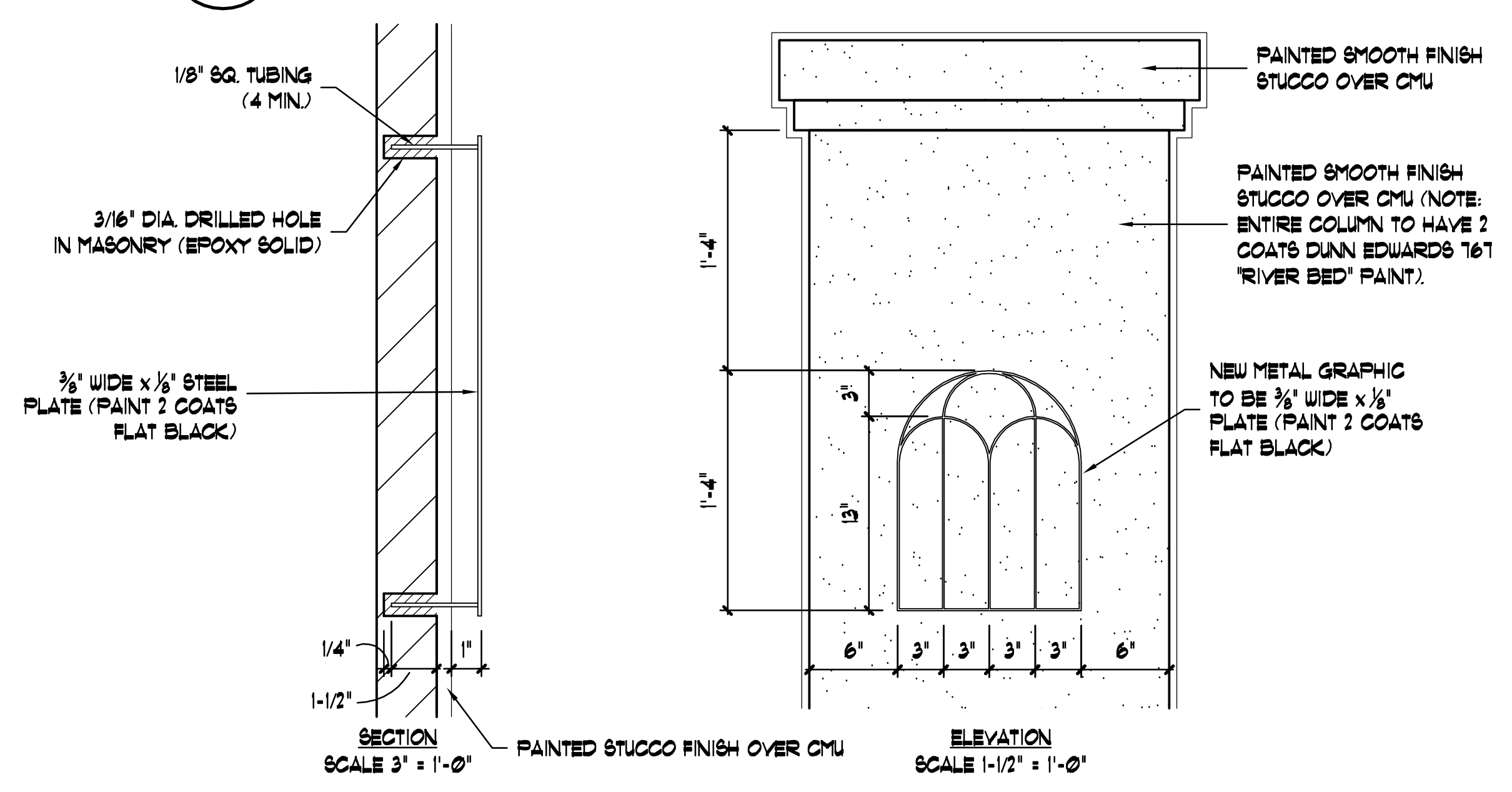
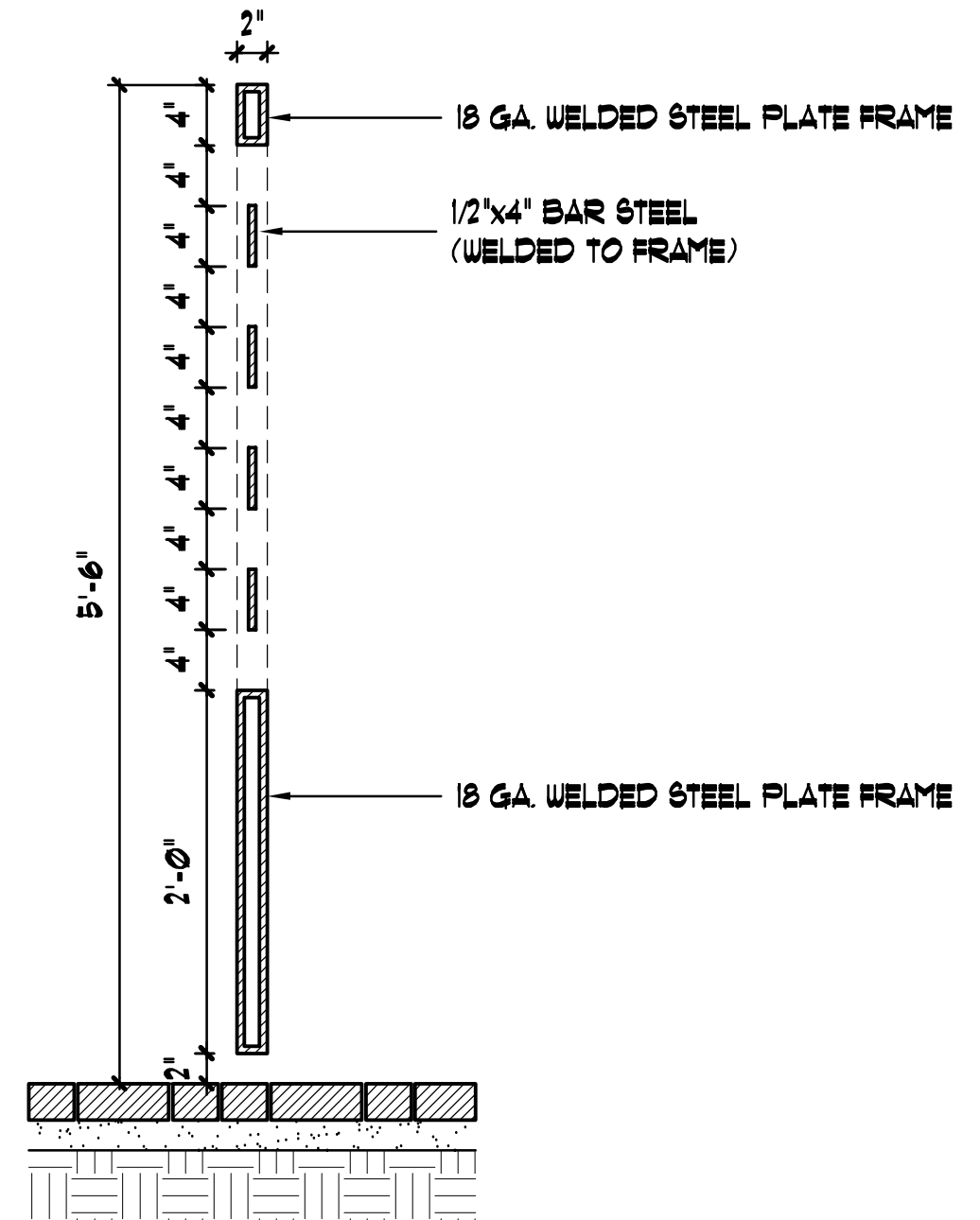
1
202
FRYE ROAD SIGN MONUMENT ELEVATION
(EAST SIDE OF FAIRWAY DR.)
SCALE 3/8" = 1'-0"

2
202
TUBE STEEL BOUGANVILLEA TRELLIS
SCALE 3/4" = 1'-0"

3
202
6" CONCRETE LANDSCAPE HEADER
NOT TO SCALE



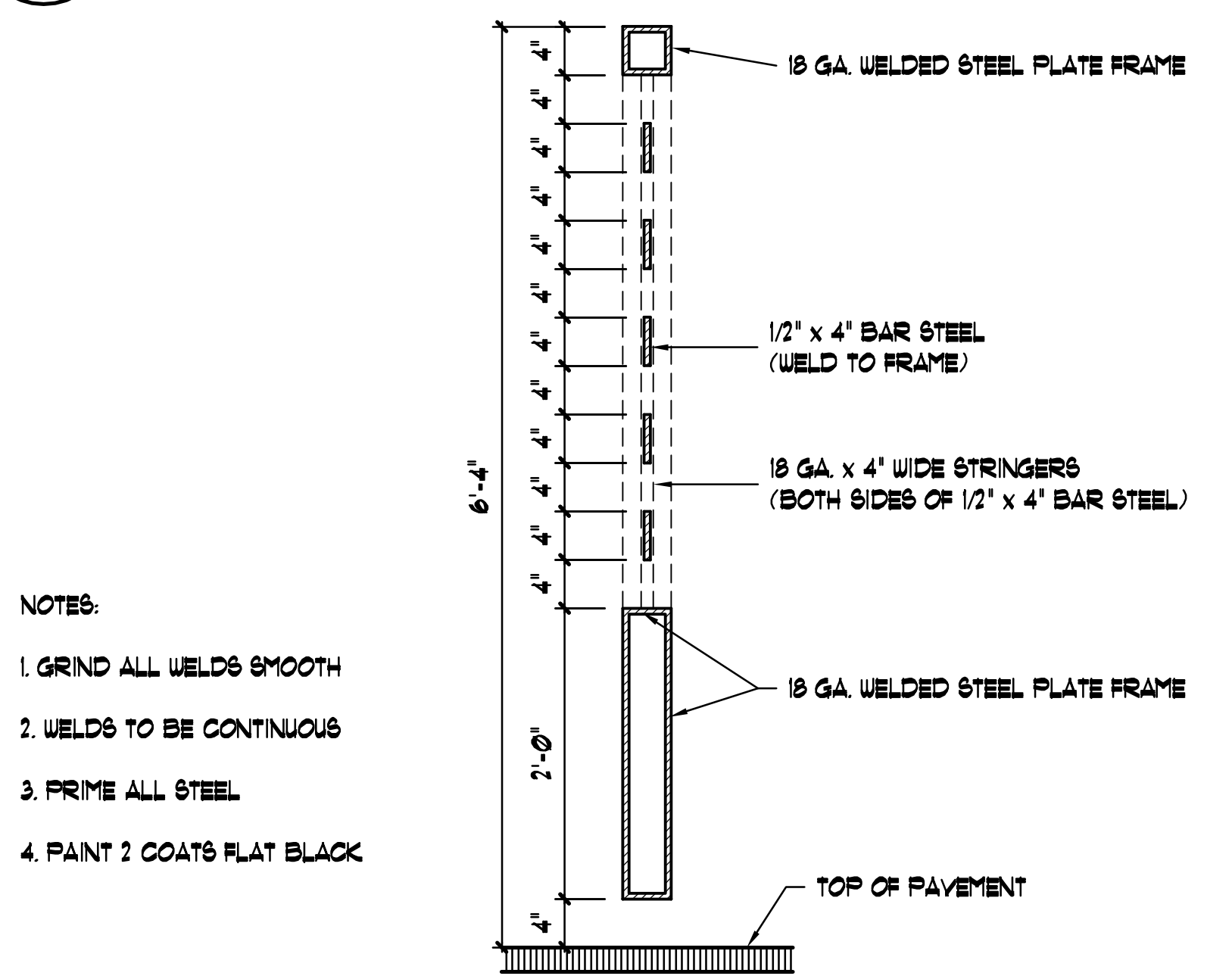
- NOTE:
1. GRIND ALL WELDS SMOOTH
 2. WELDS TO BE CONT.
 3. PRIME ALL STEEL
 4. PAINT 2 COATS FLAT BLACK



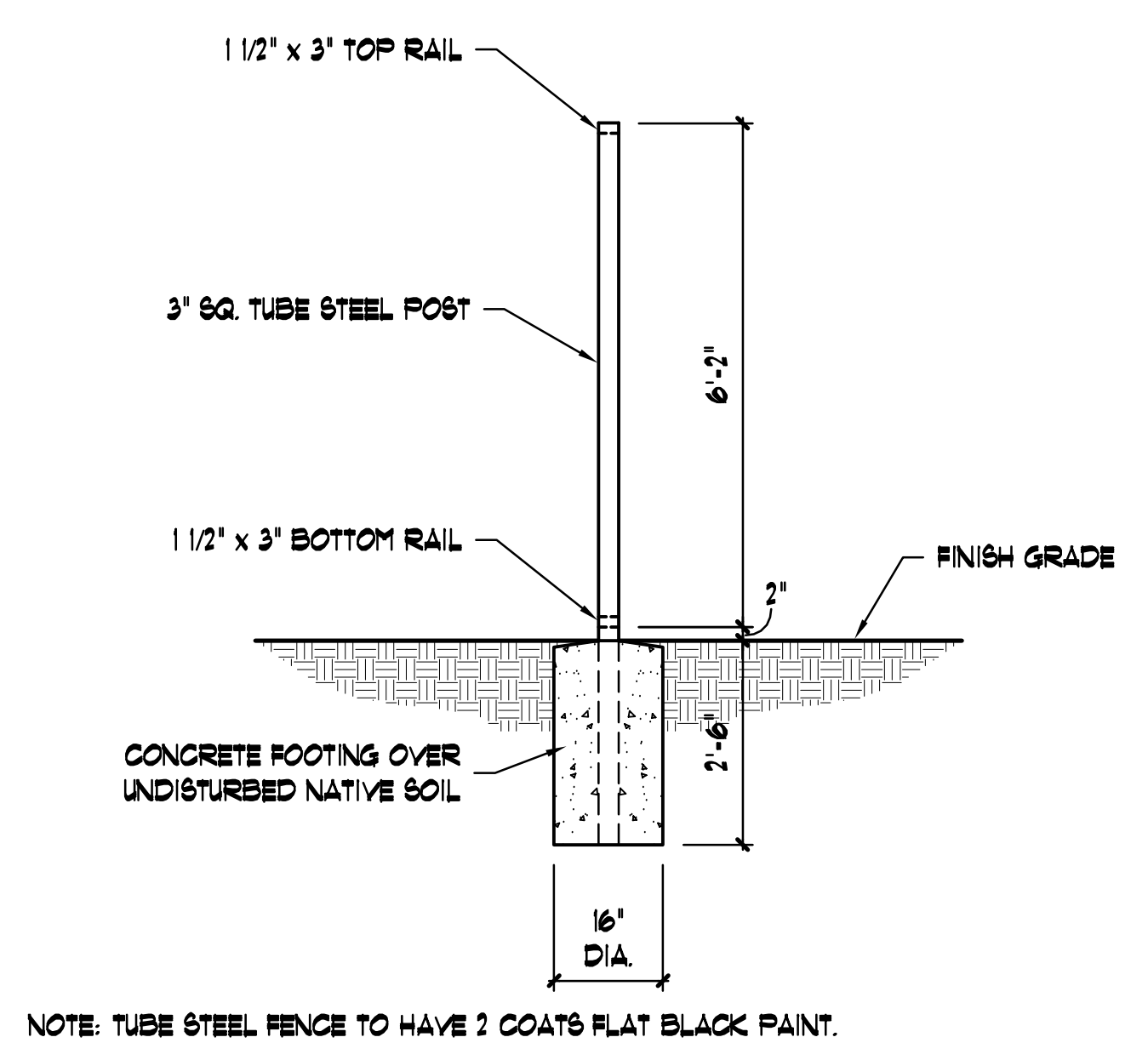
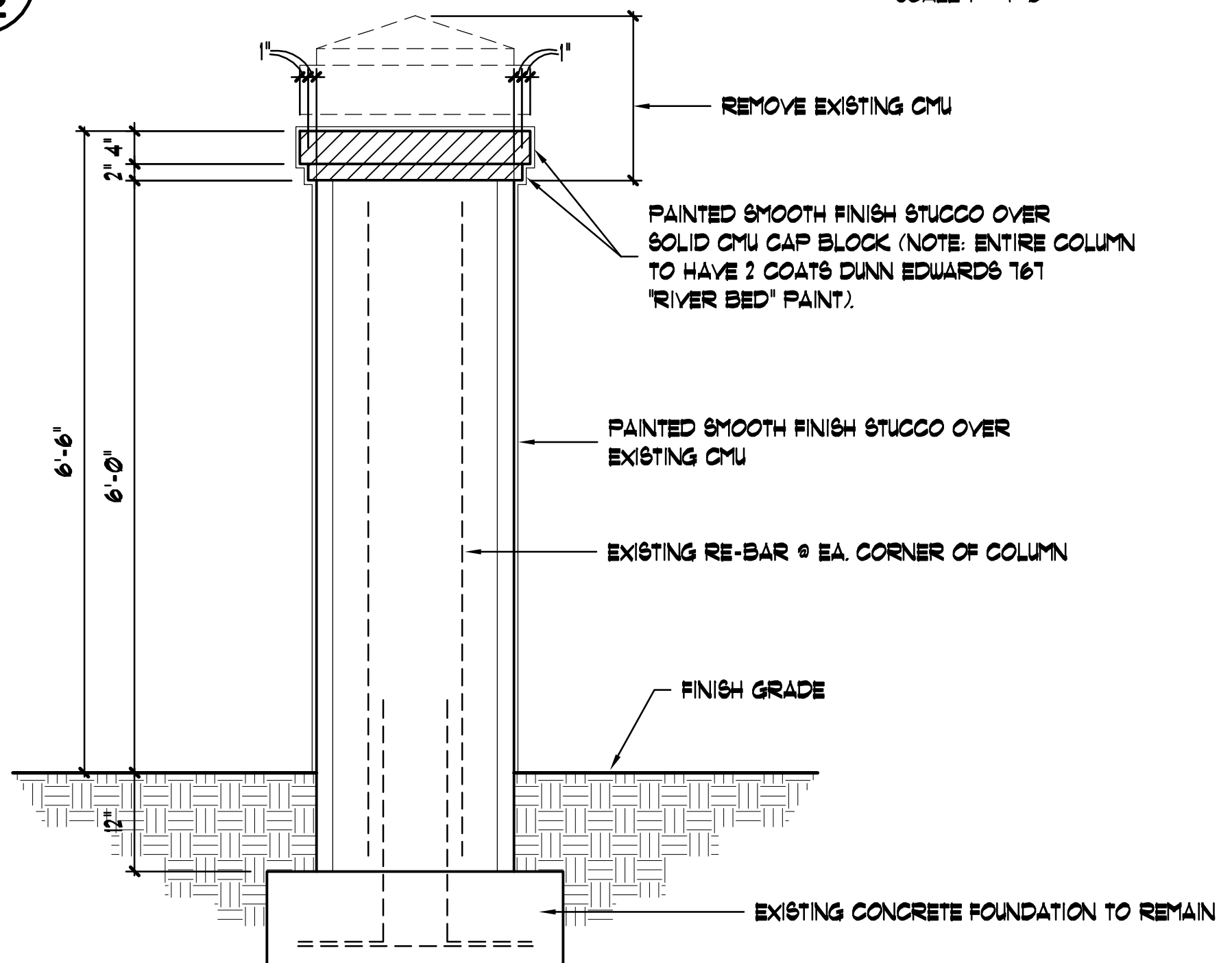
4
202
WALL SECTION
NOTE: PAINTED STUCCO TO HAVE 2 COATS DUNN EDWARDS 161 'RIVER BED' PAINT.
SCALE 3/4" = 1'-0"

5
202
PEDESTRIAN GATE SECTION
SCALE 1" = 1'-0"

6
202
NEW METAL GRAPHIC
SCALE AS NOTED



- NOTES:
1. GRIND ALL WELDS SMOOTH
 2. WELDS TO BE CONTINUOUS
 3. PRIME ALL STEEL
 4. PAINT 2 COATS FLAT BLACK



NOTE: TUBE STEEL FENCE TO HAVE 2 COATS FLAT BLACK PAINT.

7
202
VEHICULAR GATE SECTIONS
SCALE 1" = 1'-0"

8
202
MODIFIED COLUMN SECTION
SCALE 3/4" = 1'-0"

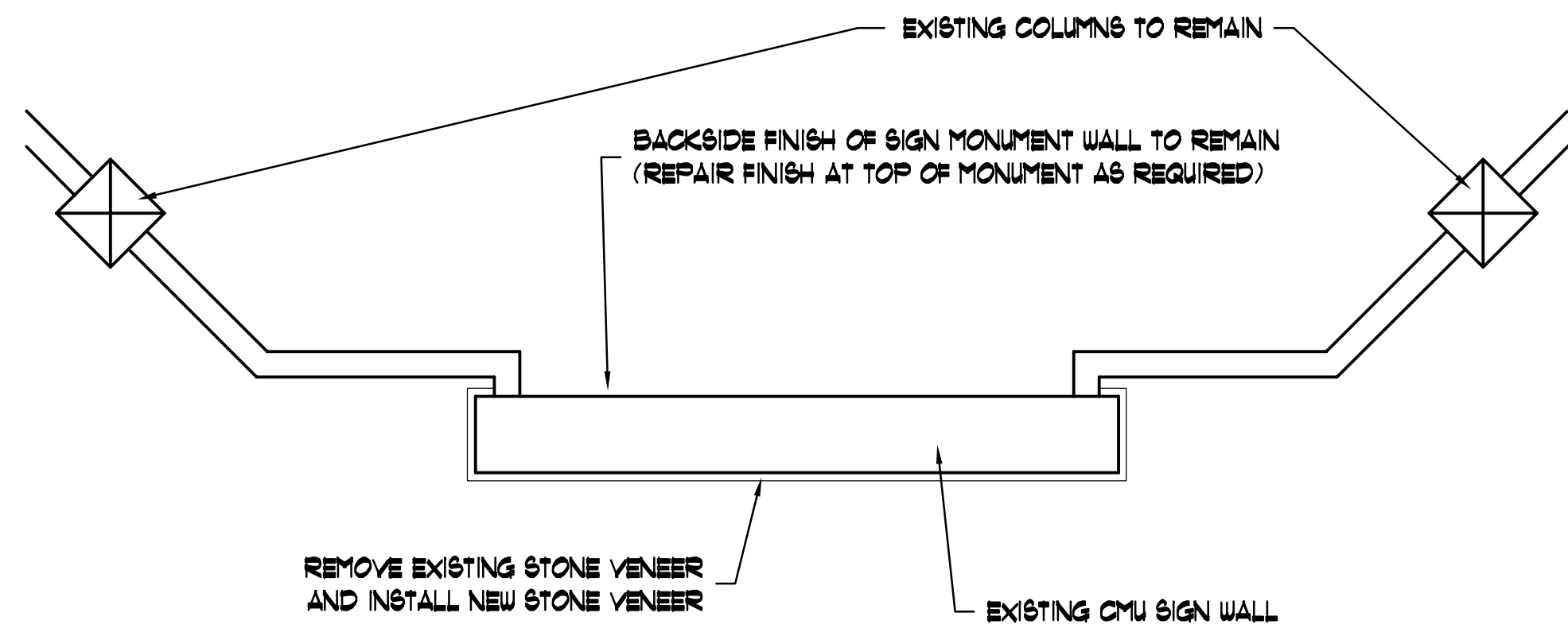
9
202
TUBE STEEL FENCE
SCALE 1/2" = 1'-0"

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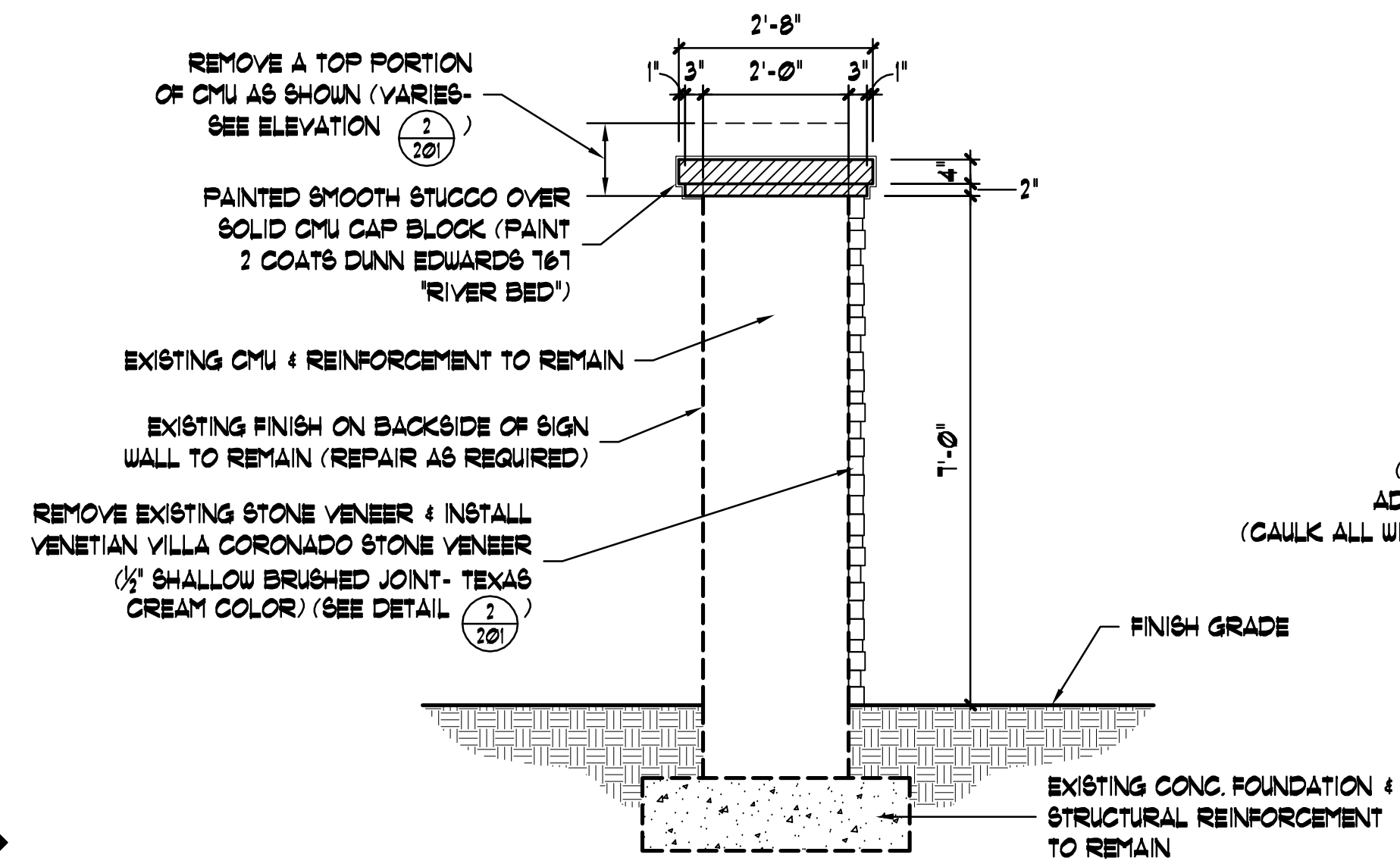
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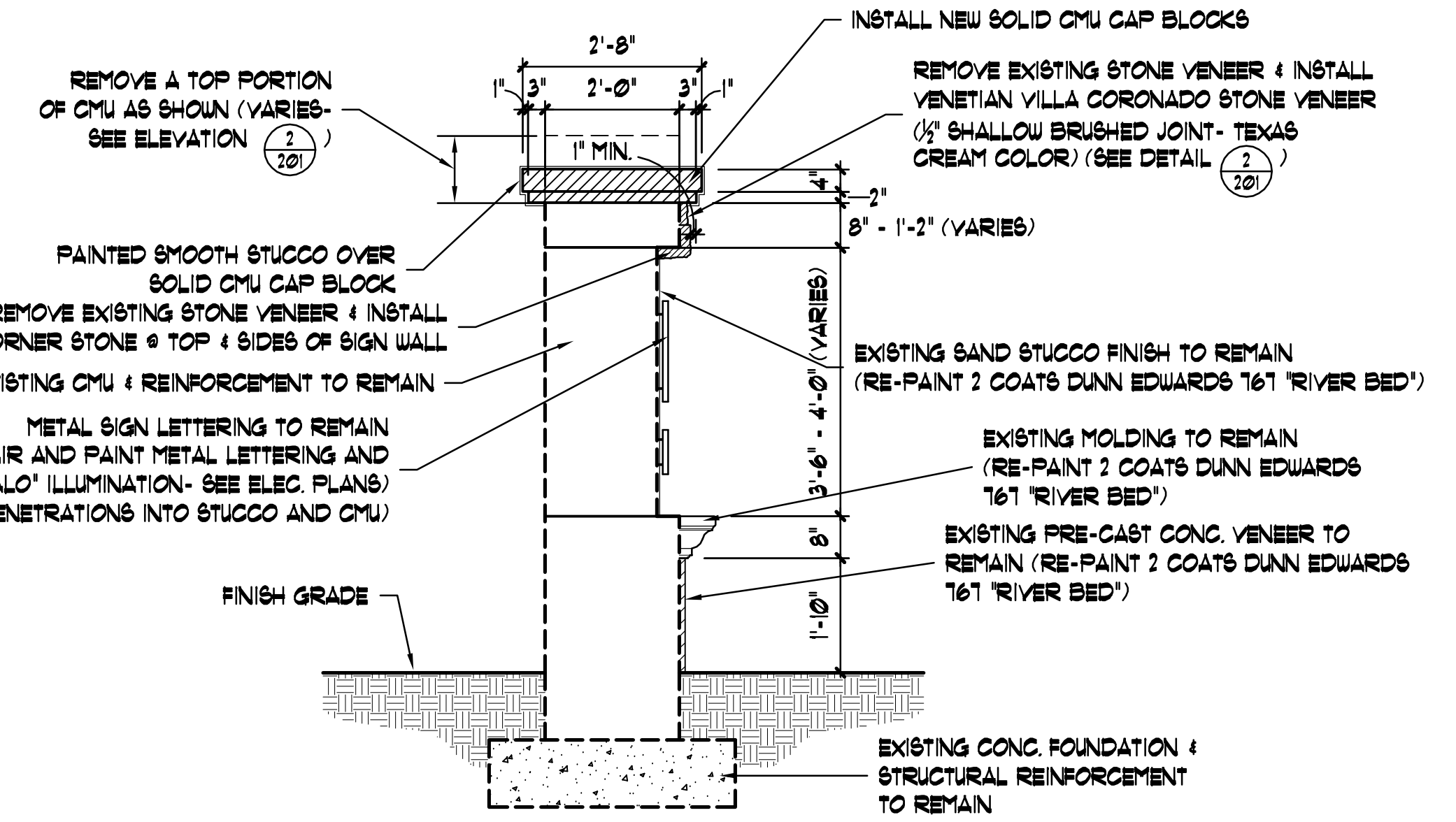
1
203 FRYE ROAD SIGN MONUMENT PLAN VIEW
(EAST SIDE OF FAIRWAY DR.)

SCALE 1/4" = 1'-0"



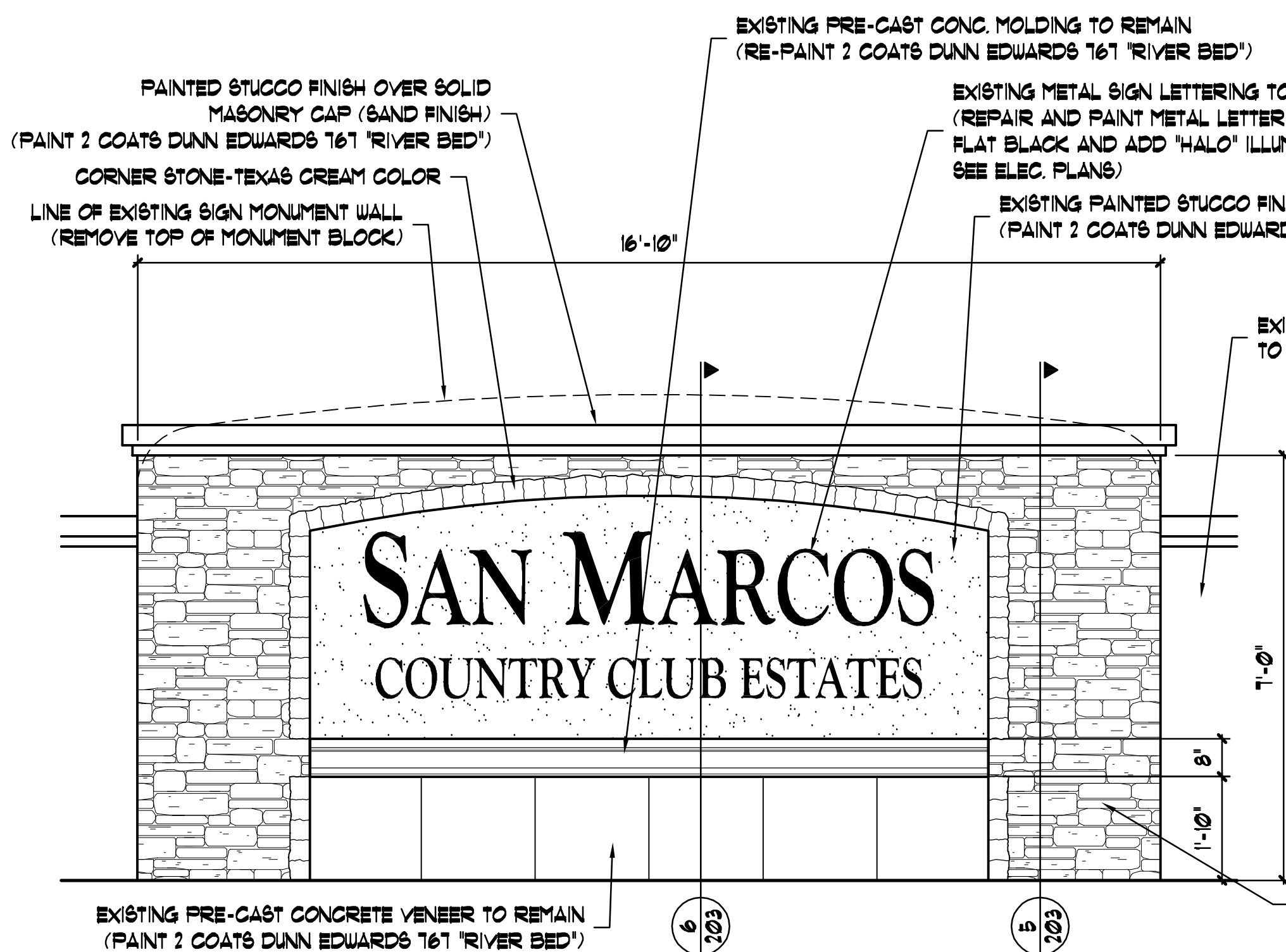
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203 FRYE ROAD SIGN MONUMENT SECTION
(EAST SIDE OF FAIRWAY DR.)

SCALE 1/2" = 1'-0"



3
203 FRYE ROAD SIGN MONUMENT SECTION
(EAST SIDE OF FAIRWAY DR.)

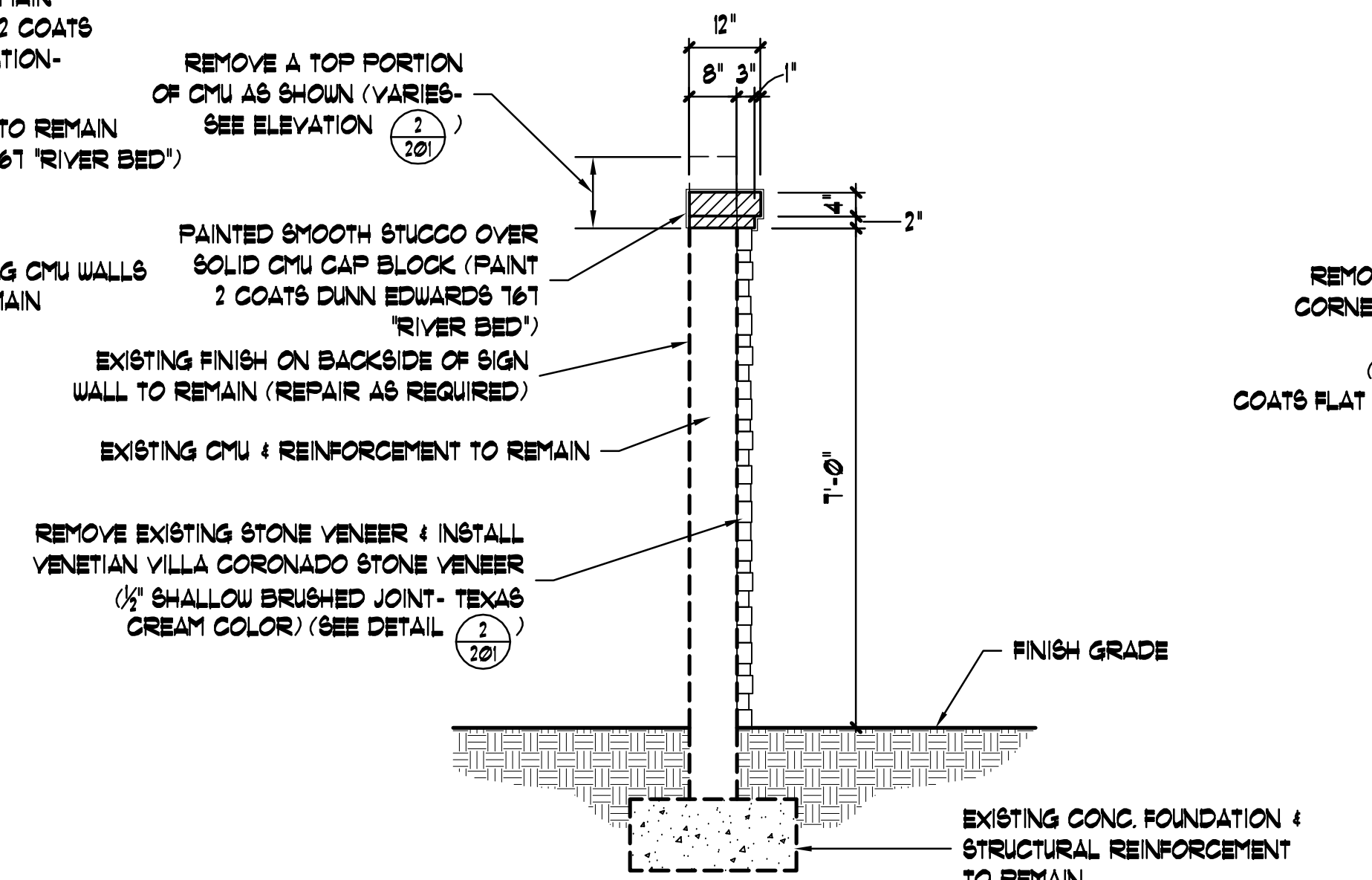
SCALE 1/2" = 1'-0"



4
203 FRYE ROAD SIGN MONUMENT
(WEST SIDE OF FAIRWAY DR.)

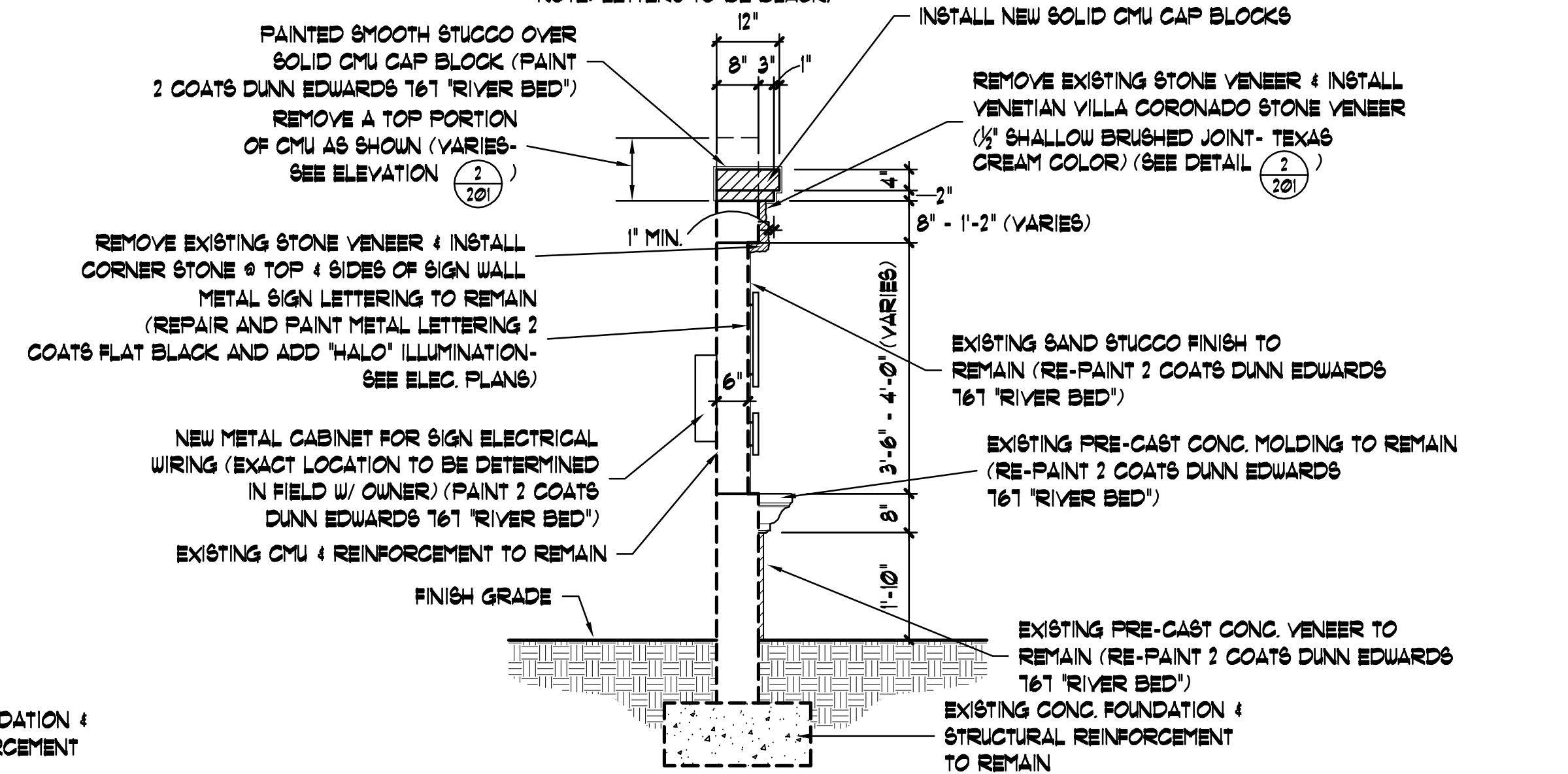
SCALE 1/2" = 1'-0"

NOTE: STUCCO PAINT COLOR TO BE DUNN EDWARDS '161 'RIVER BED'.
NOTE: LETTERS TO BE BLACK.



5
203 FRYE ROAD SIGN MONUMENT SECTION
(WEST SIDE OF FAIRWAY DR.)

SCALE 1/2" = 1'-0"

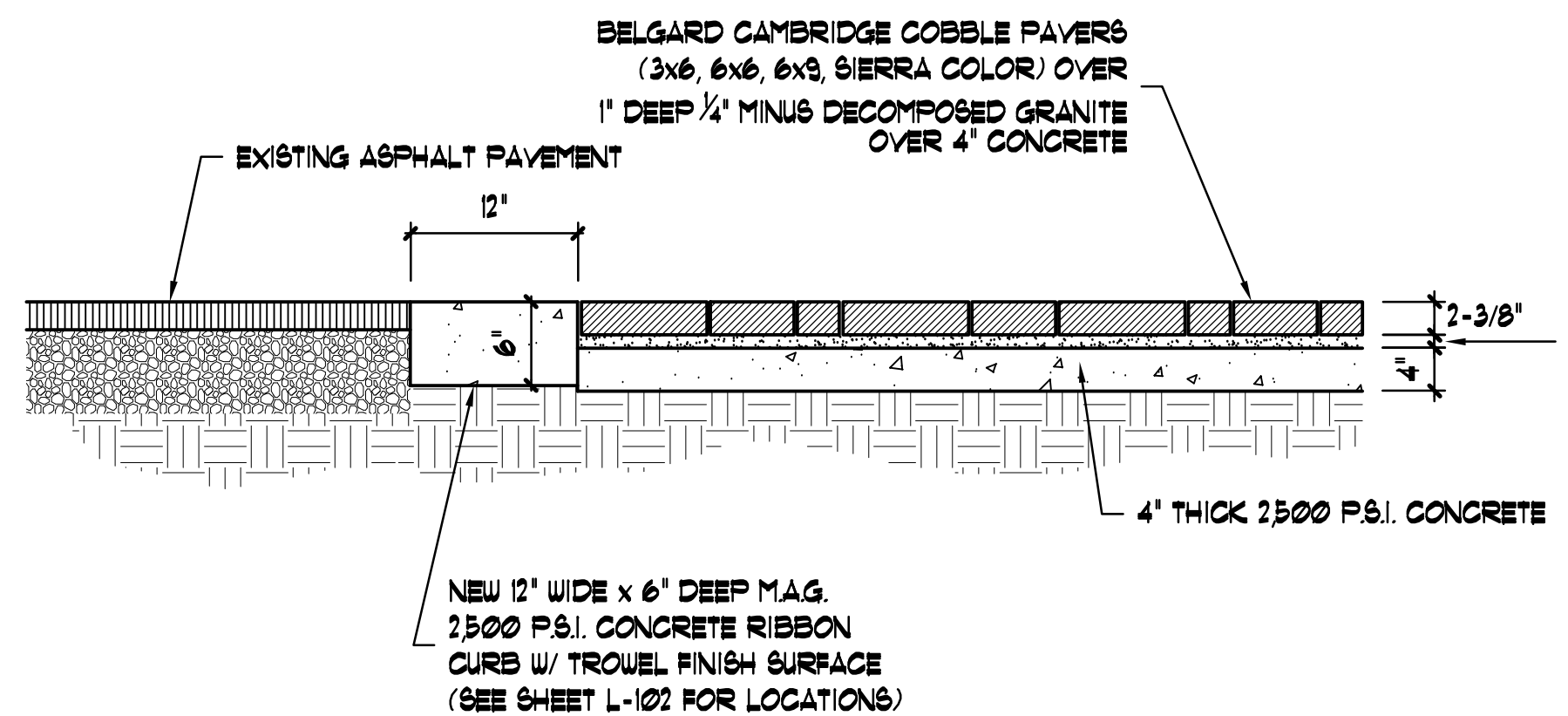


6
203 FRYE ROAD SIGN MONUMENT SECTION
(WEST SIDE OF FAIRWAY DR.)

SCALE 1/2" = 1'-0"

NOTE: STUCCO PAINT COLOR TO BE DUNN EDWARDS '161 'RIVER BED'.
NOTE: LETTERS TO BE BLACK.
NOTE: CAULK ALL NEW WIRE PENETRATIONS INTO STUCCO AND CMU.

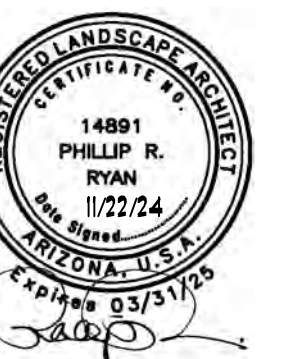
- CONSTRUCTION NOTES FOR INSTALLING STONE OVER CMU:
1. REMOVE PAINTED STUCCO COAT.
 2. PROVIDE POLYMER-MODIFIED MORTAR (MEETING ANSI A118.4 OR ANSI 118.5), ALLOW TIME TO DRY.
 3. PROVIDE ADHESIVE BOND COAT PER MGR'S SPECIFICATIONS.



7
203 PAVER DETAIL FOR STREET

SCALE 1" = 1'-0"

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DRAWING TITLE
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L-203

ELECTRICAL SYMBOLS (NOTE: ALL SYMBOLS MAY NOT APPLY TO THIS PROJECT)

- CEILING MOUNTED LIGHT FIXTURE
- ⊖ WALL MOUNTED LIGHT FIXTURE
- FLUORESCENT FIXTURE
- ⊕ EXIT SIGN - SEE LIGHT FIXTURE SCHEDULE
- ⊕ JUNCTION BOX IN ACCESSIBLE LOCATION ABOVE REMOVABLE CEILING W/ FLEXIBLE CONDUIT CONNECTION TO LIGHT FIXTURE
- ⊕ FLEXIBLE CONDUIT CONNECTION TO EQUIPMENT
- ⊕ SURFACE-MOUNT EMERGENCY LIGHTING BATTERY PACK-SINGLE OR DOUBLE HEAD-SEE LIGHT FIXTURE SCHEDULE
- ⊕ RECESSED EMERGENCY LIGHTING BATTERY PACK-SINGLE OR DOUBLE HEAD-SEE LIGHT FIXTURE SCHEDULE
- ⊕ JUNCTION BOX IN ACCESSIBLE LOCATION
- ⊕ DUPLEX CONVENIENCE RECEPTACLE AT +15" A.F.F. TO BOTTOM OR AS NOTED
- ⊕ FOUR-PLEX CONVENIENCE RECEPTACLE AT +15" A.F.F. TO BOTTOM OR AS NOTED
- ⊕ ISOLATED GROUND RECEPTACLE AT + 15" A.F.F. TO BOTTOM OR AS NOTED
- ⊕ RECEPTACLE (TYPE AS SHOWN) AT + 42" A.F.F.
- ⊕ SPECIAL USE RECEPTACLE. VERIFY NEMA NUMBER AND MOUNTING HEIGHT WITH EQUIPMENT
- S₃S₄ TOGGLE SWITCH - SINGLE POLE, 3-WAY, 4-WAY AT +42" OR AS NOTED ON PLANS.
- S_P SINGLE-POLE, ILLUMINATED HANDEL OR PILOT LIGHT TOGGLE SWITCH AT +42" OR AS NOTED ON PLANS
- S_M MOTOR RATED SWITCH WITH THERMAL PROTECTION
- S_L DUAL TECHNOLOGY OCCUPANCY SWITCH WALL MOUNTED AS MANUF. BY LUTRON 0-10V LED/DIMMER TYPE
- S_{OC} DUAL TECHNOLOGY OCCUPANCY SWITCH WALL MOUNTED AS MANUF. BY LUTRON 0-10V LED TYPE
- PP DIMMING MODULE FOR 0-10V DIMMING AND OCCUPANCY SENSOR INTERFACE AND MANUAL 'ON' FUNCTION AS MANUFACTURED BY 'LUTRON'
- PHOTOCELL - TORK #2100 - MOUNT ON ROOF AND AIM NORTH
- TS TIMESWITCH: TORK 'W' SERIES OR EQUAL
- CIRCUIT IN CONDUIT CONCEALED IN FLOOR
- CIRCUIT IN CONDUIT CONCEALED IN WALLS OR ABOVE CEILING
- HOMERUN TO PANELBOARD OR AS NOTED
- PANELBOARD, MOUNT TOP OF PANEL AT + 6"-8". STUB (2) 3/4" E.C. INTO ACCESSIBLE CEILING SPACE ON FLUSH MOUNTED PANELS.
- MOTOR: SIZE AND RATING AS SHOWN. EF INDICATES 55-WATT, 120V. EXHAUST FAN
- A.C. MAGNETIC STARTER BY ELECTRICAL CONTRACTOR. HORSEPOWER, VOLTAGE AND PHASE RATED, NUMBER OF POLES REQUIRED, FURNISH WITH (1) N.O. AUXILIARY CONTACT (120 V. CONTROL) SINGLE SPEED NON-REVERSING UNLESS OTHERWISE SHOWN ON PLAN
- DISCONNECT SWITCH - HORSEPOWER RATED, FUSED, NEMA 3R WHERE OUTSIDE. N.E. INDICATES NON-FUSED. (FUSE PER EQUIPMENT MANUFACTURERS' SPECIFICATIONS.)
- STRIP HEATER AND CONTROL
- MOTOR CONTROLLER - FURNISHED WITH EQUIPMENT
- TELEPHONE OUTLET AT +15" TO BOTTOM OR AS NOTED WITH 3/4"C. UP INTO ACCESSIBLE CEILING SPACE UNLESS SHOWN OTHERWISE
- PAY PHONE OUTLET AT + 42" A.F.F. OR AS NOTED WITH 3/4"C. TO T.M.B.
- DATA OUTLET AT + 15" A.F.F. TO BOTTOM OR AS NOTED. STUB 3/4"C. INTO ACCESSIBLE CEILING SPACE
- DATA/TELEPHONE OUTLET AT + 15" A.F.F. TO BOTTOM OR AS NOTED. STUB 3/4"C. INTO ACCESSIBLE CEILING SPACE
- APPROVED TEMPERATURE SEAL-OFF AND EXPANSION JOINTS AS REQ'D BY N.E.C. ART. #300-7
- FLUSH FLOOR DUPLEX OUTLET AND DATA/TELEPHONE OUTLET COMBO WITH BRASS DEVICE PLATE
- FLUSH FLOOR DATA RECEPTACLE WITH BRASS COVER PLATE AND 3/4"C. STUBBED TO ABOVE ACCESSIBLE CEILING LOCATION
- FLUSH FLOOR TELEPHONE RECEPTACLE WITH BRASS COVER PLATE AND 3/4"C. STUBBED TO ABOVE ACCESSIBLE CEILING LOCATION
- FLUSH FLOOR DUPLEX OUTLET WITH BRASS DEVICE PLATE
- FLUSH FLOOR FOURPLEX OUTLET WITH BRASS DEVICE PLATE
- ISOLATED GROUND RECEPTACLE "HUBBELL" # IG5263 20A, 125V, FLUSH FLOOR WITH BRASS DEVICE PLATE
- TELEVISION COAXIAL OUTLET AT + 15" TO BOTTOM OR AS NOTED. STUB 3/4"C INTO ACCESSIBLE CEILING SPACE
- A.D.A.-APPROVED SMOKE DETECTOR MOUNTED IN CEILING OR AS INDICATED
- OCCUPANCY SENSOR 360 DEGREE (DUAL TECHNOLOGY) 0-10V CEILING MOUNTED AS MANUFACTURED BY LUTRON (NO SUBSTITUTIONS)
- OCCUPANCY SENSOR 360 DEGREE (DUAL TECHNOLOGY) 1000W CEILING MOUNTED AS MANUFACTURED BY LUTRON (NO SUBSTITUTIONS)
- WP WEATHER PROOF
- EDF ELECTRIC DRINKING FOUNTAIN
- S.E.S. SERVICE ENTRANCE SECTION
- T.M.B. TELEPHONE MOUNTING BOARD: 4' X 8' X 3/4" PLYWOOD WITH #6 CU. BOND WIRE TO GROUNDING ELECTRODE SYSTEM
- T.T.C. TELEPHONE TERMINAL CABINET: 36" W. X 36" H X 6" D 16 GA. WEATHERPROOF HINGED LOCKABLE COVER, 5/8" PLYWOOD BACKBOARD. PROVIDE A #6 CU BOND TO GROUNDING ELECTRODE SYSTEM

SHEET LIST

- SHEET E0.0 - ELECTRICAL SYMBOLS AND ONE-LINE DIAGRAM
- SHEET E1.0 - ELECTRICAL POWER PLAN
- SHEET E2.0 - ELECTRICAL SPECIFICATIONS

GENERAL NOTES:

ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH 2020 (OR LATEST ADOPTED) NATIONAL ELECTRICAL CODES AND 2021 INTERNATIONAL ENERGY CONSERVATION CODE AND ALL APPLICABLE LOCAL CODES, ORDINANCES AND MAG AMENDMENTS TO N.E.C.

ALL WIRING SHALL BE COPPER UNLESS OTHERWISE NOTED. INSULATION SHALL BE TYPE XHHW OR THHN/THWN.

ALL PENETRATIONS OF FIRE RESISTIVE FLOORS OR SHAFT WALLS SHALL BE PROTECTED BY MATERIALS AND INSTALLATION DETAILS THAT CONFORM TO UNDERWRITERS LABORATORY LISTINGS FOR THROUGH PENETRATIONS FIRESTOP SYSTEMS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWING DETAILS WHICH SHOW COMPLETE CONFORMANCE TO THE U.L. LISTING TO THE INSPECTORS. THE DRAWINGS SHALL BE SPECIFIC FOR EACH PENETRATION WITH ALL VARIABLES DEFINED.

CONTRACTOR IS TO VERIFY CONDITION OF EXISTING INSTALLATIONS BY FIELD INSPECTION. CONTRACTOR IS TO PROVIDE NEW WIRE, CONDUIT, AND BOXES AS REQUIRED WITH NO ADDITIONAL COST.

COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATIONS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN WITH NO ADDITIONAL COST.

PROVIDE EQUIPMENT GROUNDING CONDUCTOR IN ALL RACEWAYS, SIZED IN ACCORDANCE WITH N.E.C. ARTICLE 250.122

CONTRACTOR IS TO VERIFY EXACT LOCATIONS, MOUNTING HEIGHTS AND ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT PROVIDED BY OTHERS PRIOR TO ROUGH-IN.

CONTRACTOR IS TO PROVIDE DISCONNECT SWITCHES, TRANSFORMERS AS REQUIRED, AND FINAL CONNECTIONS TO EQUIPMENT PER OWNER.

WHEN ELECTRICAL CONTRACTOR REMOVES AN ITEM CAUSING CIRCUITRY TO OTHER ITEMS TO BE INTERRUPTED, ELECTRICAL CONTRACTOR SHALL PROVIDE NEW CONDUIT, WIRE, BOXES, ETC. AND SHALL RECONNECT ALL ITEMS SO THEY WILL NOT BE INTERRUPTED.

WHEN AN ITEM IS SHOWN TO BE RELOCATED, ELECTRICAL CONTRACTOR SHALL EXTEND WIRING AND CONDUIT TO THE APPROPRIATE NEW LOCATION AND PROVIDE ALL NECESSARY JUNCTION BOXES, SPLICES, COVER PLATES, ETC.

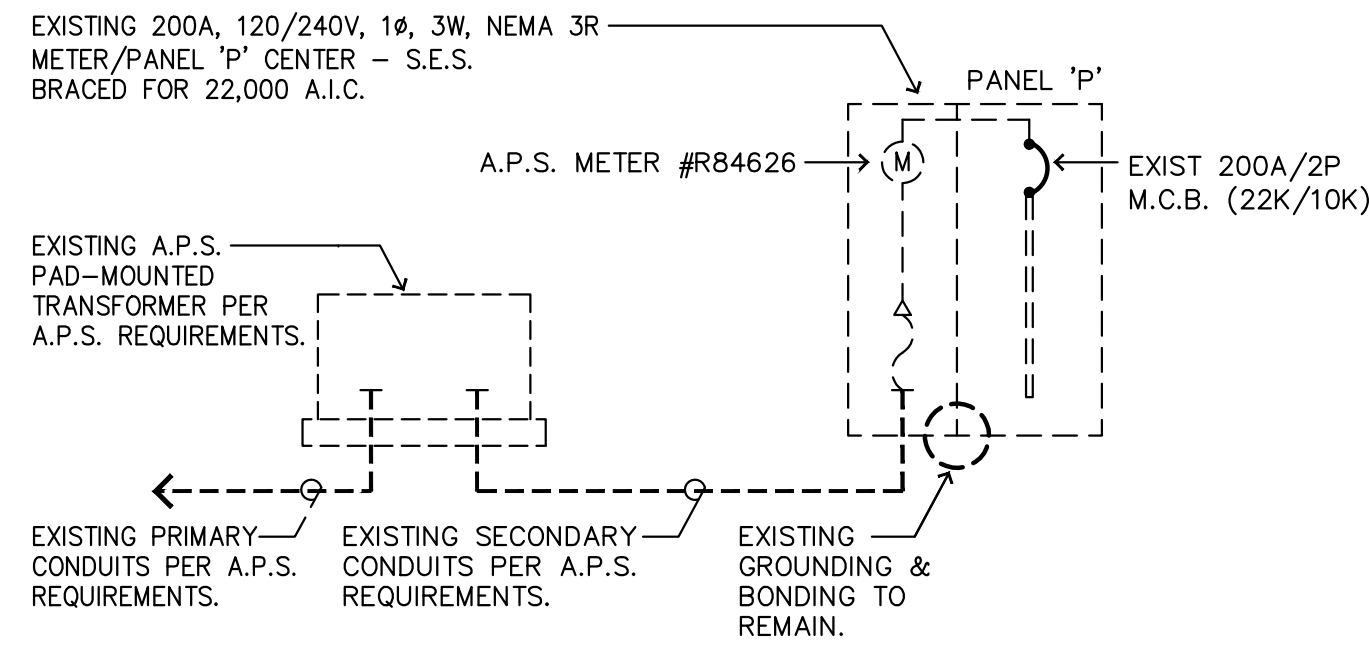
ELECTRICAL CONTRACTOR SHALL PROPERLY SUPPORT ALL EXISTING AND NEW CONDUIT PER NEC ART. 300-11.

ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL PANELBOARDS AND DISCONNECT SWITCHES WITH PLASTIC MICARTA 'ENGRAVED' NAMEPLATES IN ACCORDANCE WITH NEC ART. 110.22 AND TYPED PANEL SCHEDULE DIRECTORIES PER NEC ART. 408.4

ALL JUNCTION BOXES USED IN THE PROJECT SHALL BE MARKED WITH PANEL DESIGNATION AND CIRCUIT NUMBERS VIA A PERMANENT BLACK MARKER.

WIRE SCHEDULE					
AMP/VOLT DISTANCE	CONDUCTOR SIZE	AMP/VOLT DISTANCE	CONDUCTOR SIZE	AMP/VOLT DISTANCE	CONDUCTOR SIZE
20A 120V 0-80'	#12	30A 120V 0-75'	#10	20A 277V 0-150'	#12
20A 120V 80-130'	#10	30A 120V 75-110'	#8	20A 277V 150-200'	#10
20A 120V 130-180'	#8	30A 120V 110-180'	#6	20A 277V 200-350'	#8
20A 120V 180-275'	#6	30A 120V 180-250'	#4	20A 277V 350-400'	#6

MAXIMUM AVAILABLE FAULT CURRENT = 14,318A SYMM. AMPS PER A.P.S. FAULT CURRENT TABLE



LEGEND

- EXISTING TO REMAIN
- - - - - EXISTING TO BE REMOVED
- _____ NEW

EXISTING ELECTRICAL ONE-LINE DIAGRAM - 'S.E.S.'

- NOTES:
- ALL EQUIPMENT & INSTALLATIONS ARE EXISTING UNLESS NOTED AS 'NEW'.
 - ALL CONDUCTOR SIZES BASED ON TYPE 'XHHW' & 'THHN/THWN' COPPER.
 - ALL ITEMS SHOWN AS 'NEW' SHALL BE INSTALLED AND PROVIDED BY ELECTRICAL CONTRACTOR.

LOAD CALCULATION

EXISTING LOAD S.E.S / PANEL 'P':	
EXISTING HIGH DEMAND = 4KVA	
$4 * 1000 / 240 * 125\% \div 240$	= 26.0 AMPS
NEW LOAD ADDED: S.E.S. PANEL 'P'	= 12.0 AMPS
REVISED TOTAL LOAD ON S.E.S. / PANEL 'A'	= 38.0 AMPS

EXISTING PANEL: S.E.S / PANEL 'P', 120/240 VOLT, 1 PHASE, 3 WIRE, 200 AMP BUSSING, 200A/2P MCB (X), SURFACE (X), NEMA 3R (X)

CKT #	NEW LOAD					DESCRIPTION	TOTAL PER PHASE IN KVA					NEW LOAD					CKT #
	K	M	HV	R	L		A	B	AMP	POLE	NOTE	L	R	HV	M	K	
1						EX PANEL B'	0.0	0.0	25	2	2.7					2	
3																4	
5						EX FOUNTAIN PUMP FILTER	0.0		20	2	2.7					6	
7																8	
9						EX GATE MOTORS	0.0		20	2	2.7					10	
11																12	
13						EX LTG LANDSCAPE	0.0		20	1	2					14	
15						EX FOUNTAIN PUMP	0.0	0.0	20	1	2					16	
17						EX WIND CONTROL	0.0		20	1	2					18	
19						BUSSED SPACE		1.4	20	1	1,3,8				1.38	20	
21						BUSSED SPACE		1.4	20	1	1,3,8				1.38	22	
23						BUSSED SPACE		0.0								24	
SERIES RATED 22K10KAIK							(EXISTING) TOTAL =	3.1	3.1						6.24	TOTAL CONNECTED KVA (EXISTING)	
							(NEW) TOTAL =	1.4	1.4							2.76	TOTAL CONNECTED KVA (NEW)
							(COMBINED) TOTAL =	4.5	4.5							13.27	TOTAL CONNECTED AMPS (NEW)
																9.00	TOTAL CONNECTED KVA (COMBINED)
																43.27	TOTAL CONNECTED AMPS (COMBINED)

SERVING (PANEL S.E.S.)	CONN LOAD	DIVERSITY	DEMAND LOAD	NOTES:
LIGHTING	L = 2.76 KVA	X 1.25 =	3.45 KVA	1. BOLD TEXT INDICATED NEW LOAD.
FIRST 10KW RECEPTACLES	R = 0.00 KVA	X 1.00 =	0.00 KVA	2. EXISTING CIRCUIT BREAKER & EXISTING LOAD TO REMAIN AS IS.
HVAC EQUIP	HV = 0.00 KVA	X 1.00 =	0.00 KVA	3. E.C SHALL PROVIDE AND INSTALL NEW CIRCUIT BREAKER IN EXISTING SPACE. CB SIZE AS INDICATED. E.C SHALL MATCH MANUFACTURER, TYPE AND AIC RATINGS OF EXISTING CIRCUIT BREAKERS. E.C SHALL VERIFY PRIOR TO BID THAT EXISTING PANELBOARD HAS SPARE CAPACITY TO ACCOMMODATE ADDITIONAL LOAD.
25% OF LARGEST MOTOR	HV = 0.00 KVA	X 25 =	0.00 KVA	
MISCELLANEOUS	M = 0.00 KVA	X 1.00 =	0.00 KVA	
KITCHEN EQUIPMENT	K = 0.00 KVA	X 0.65 =	0.00 KVA	
(** KITCHEN LOAD PER 2017 NEC TABLE 220.56)	TOTAL = 2.76 KVA	TOTAL =	3.45 KVA	4. PROVIDE WITH LOCK-ON DEVICE
	TOTAL = 13.27 AMPS	TOTAL =	16.59 AMPS	5. PROVIDE WITH LOCK-OFF DEVICE
				6. PROVIDE WITH HACR TYPE BREAKER
				7. CIRCUIT BREAKERS ARE HANDLE TIED
				8. ROUTE CIRCUIT THRU EXISTING PHOTOCELL OR PROVIDE NEW PHOTOCELL CONTROL

GENERAL NOTES - ONE-LINE PLAN:

- DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.
- THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.
- BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.
- ELECTRICAL CONTRACTOR SHALL VERIFY EXACT OVER CURRENT PROTECTION / DISCONNECT REQUIREMENTS (N.E.C. ART 440) WITH EQUIPMENT MANUFACTURER NAMEPLATE DATA UPON RECEIPT AT JOB SITE AND COMPARE WITH ELECTRICAL CONNECTION SCHEDULE. CONTACT ENGINEER WITH ANY DISCREPANCIES.
- E.C SHALL PROVIDE AND MARK ALL APPROVED SERIES RATED EQUIPMENT PER N.E.C. 240.86(B)

NOTE - PANEL & SES MARKINGS

- ALL CIRCUITS AND CIRCUIT MODIFICATIONS SHALL BE LEGIBLY IDENTIFIED AS TO THEIR CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE. THE IDENTIFICATIONS SHALL INCLUDE SUFFICIENT DETAIL TO ALLOW EACH CIRCUIT TO BE DISTINGUISHED FROM ALL OTHERS. THE IDENTIFICATION SHALL BE INCLUDED IN A CIRCUIT DIRECTORY LOCATED ON THE FACE OF THE PANELBOARD ENCLOSURE OR INSIDE THE PANEL DOOR. N.E.C. 408.4(A) FIELD IDENTIFICATION REQUIRED.
- ALL SWITCHBOARDS, SWITCHGEAR, AND PANEL BOARDS SUPPLIED BY FEEDERS SHALL BE PERMANENTLY MARKED TO INDICATE EACH DEVICE OR EQUIPMENT WHERE THE POWER ORIGINATES. THE LABEL SHALL BE PERMANENTLY AFFIXED, OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED, AND NOT HANDWRITTEN. NEC 408.4(B). SOURCE OF SUPPLY.

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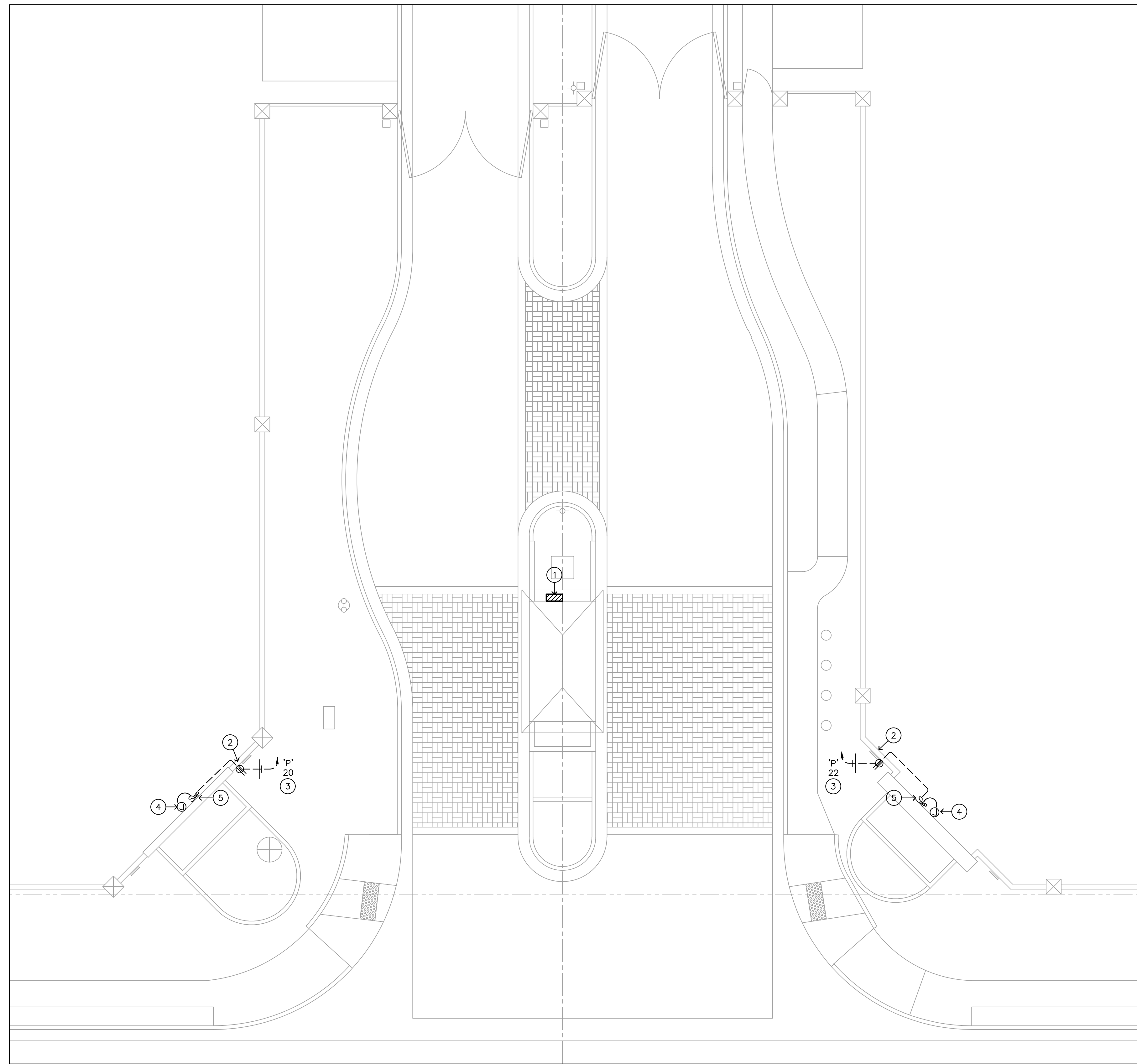
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ELECTRICAL SYMBOLS & ONELINE

E.O.O

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 • 623.236.3264 ph • 602.565.7726 cell
 • email: edcelectricalconsulting@cox.net



ELECTRICAL POWER PLAN

SCALE : 3/32" = 1'-0"



GENERAL NOTES - POWER PLAN:

- (NOT ALL APPLY)
1. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH LATEST ADOPTED NATIONAL ELECTRICAL CODES AND ALL APPLICABLE LOCAL CODES, ORDINANCES AND MAG AMENDMENTS TO N.E.C.
 2. SIZE INDIVIDUAL JUNCTION BOXES AS REQUIRED TO SAFELY ACCOMMODATE NUMBER OF CIRCUITS CONTAINED IN EACH BOX.
 3. ALL WIRING SHALL BE #12 THHN/THWN COPPER IN 3/4" CONDUIT, UNLESS OTHER NOTED. IF BRANCH CIRCUITS EXCEED 65 FEET IN LENGTH, UPSIZE CONDUIT AND WIRE PER N.E.C.
 4. ALL EQUIPMENT SHALL BE U.L. LISTED WHERE APPLICABLE.
 5. CONTRACTOR SHALL VERIFY THAT ALL NEW CIRCUIT BREAKERS AND OR FUSIBLE SWITCHES BEING ADDED TO EXISTING PANELS ARE A.I.C. RATED TO THE NEW PANEL RATING AS APPLICABLE.
 6. PROVIDE EQUIPMENT GROUND CONDUCTOR IN ALL RACEWAYS, SIZED IN ACCORDANCE WITH N.E.C. ARTICLE 250.122
 7. ELECTRICAL CONTRACTOR SHALL PROPERLY SUPPORT ALL NEW CONDUIT PER NEC ART. 300.11.
 8. ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL PANELBOARDS AND DISCONNECT SWITCHES WITH PLASTIC MICARTA "ENGRAVED" NAMEPLATES IN ACCORDANCE WITH NEC ART. 110-22 AND TYPE PANEL SCHEDULE DIRECTORIES PER NEC ART. 408.4.
 9. ALL JUNCTION BOXES USED IN THIS PROJECT SHALL BE MARKED WITH PANEL DESIGNATION AND CIRCUIT NUMBERS VIA PERMANENT BLACK MARKER.
 10. ALL WIRING DEVICES ARE NEW UNLESS NOTED OTHERWISE.
 11. DEVICE AND COVER PLATE FINISH SHALL BE COORDINATED WITH LANDSCAPE ARCHITECT PRIOR TO BID.

KEYED NOTES:

1. EXISTING S.E.S. PANELBOARD 'P'. SEE ONE-LINE FOR ADDITIONAL INFORMATION.
2. NEW 20A 125V GFCI RECEPTACLE WITH WEATHERPROOF "IN-USE" COVER. FIELD VERIFY EXACT MOUNTING LOCATION AND HEIGHT.
3. NEW (2)#10'S CU,(1)#10 CU,EG., 3/4"C. TRENCH ROUTING SHALL BE DETERMINED IN FIELD BY CONTRACTOR.
4. NEW WP JUNCTION BOX AND 20A 120V CIRCUIT FOR NEW BACKLIT RAISED LETTER SIGNAGE. ROUTE CIRCUIT THRU NEW PHOTOCELL AS REQUIRED. FIELD VERIFY EXACT MOUNTING HEIGHT.
5. SIGNAGE MEANS OF DISCONNECT - INSTALL 20A 125V SINGLE POLE SWITCH IN NEMA 3R LOCKABLE BOX NEAR SIGNAGE IN COMPLIANCE WITH N.E.C. ARTICLE 600.6(A)(1)

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ELECTRICAL POWER PLAN

E1.0

ELECTRICAL SYSTEM SPECIFICATIONS - DIVISION 16000

(SOME SECTIONS MAY NOT APPLY)

1. GENERAL CONDITIONS

The General Provisions of the Contract, including the Conditions of the Contract (General, Supplementary and other Conditions) and Division 1 – General Requirements as appropriate, apply to the work specified in this Section.

2. SCOPE OF WORK

The work included under this section consists of furnishing all materials, equipment, and labor and the performing of all functions, except as otherwise specified herein or shown on the drawings to be performed by others, for the installation and placing into operation of a complete electrical system as specified and shown on the drawings.

3. GENERAL DESCRIPTION

3.1 The work in general shall consist of, but is not necessarily limited to the following.

3.1.1 Furnishing and installing all fixtures with lamps as indicated on the drawings and as specified herein unless noted.

3.1.2 Furnishing and installing all electrical work, panels, service, conduit, wiring, etc., for all outlets and equipment.

3.1.3 Furnishing and installing all telephone outlets, conduits with pull strings and telephone mounting boards including conduit from telephone mounting board to the building entrance as indicated on the plan.

3.1.4 Furnishing and installing a complete Fire Alarm system as indicated on plans.

3.1.5 Include \$ _____ hundred dollars) allowance for power and telephone company utility service charges. Difference between actual cost and allowance to be credited or billed to the Owner.

3.1.6 Furnishing and installing all motor starters and control components, not specifically specified to be furnished in accordance with other sections of the specifications.

3.1.7 Furnishing and installing all power and wiring except that which is pre-wired in factory assembled equipment.

3.1.8 Installing all LINE VOLTAGE mechanical control wiring and associated controls which are furnished by the Mechanical Contractor (low voltage control wiring and controls shall be furnished and installed by the Mechanical Contractor).

3.1.9 Painting work as described under other sections of these specifications. Clean and prepare all surfaces ready for painting.

3.1.10 Provide temporary construction power as outlined below. This service shall be maintained throughout the entire job as the work progresses. Provide outlets at convenient points and in sufficient numbers so that no extension cord over 50 feet in length is required to reach any work point. Maintain general lighting in corridors, stairs, basement and other areas not receiving sufficient daylight required for safety. Remove temporary work as rapidly as required for or allowed by installation of permanent work.

3.1.11 Certain items of work by other trades will be necessary for the completion of work under this division. Cooperate with other trades and arrange for these items to be performed in orderly course.

3.1.12 This Contractor shall review the mechanical control requirements as specified and shown on the drawings and shall furnish and install all necessary conduit, wiring, boxes, protective devices, switches, etc., for the completion and proper operation of the system.

3.1.13 Review all drawings and all specifications for each section of work. Unless specifically noted otherwise, herein or elsewhere, furnish and install items of any electrical nature required for completion of work for other trades, whether or not same is shown or noted in this or other sections.

4. REGULATIONS AND CODES

The Contractor must comply with all state, municipal and federal safety laws, construction codes, ordinances and regulations relating to building and public health and safety. In addition, comply with rules and regulations of the State Fire Protection Code. Fire protection material must bear the Fire Underwriters Laboratories label.

5. GENERAL REQUIREMENTS

5.1 The Contractor shall examine the premises and satisfy himself of existing conditions under which he will be obligated to operate in performing his part of the work or that will in any manner affect the work under the contract. The Contractor shall cooperate with other trades so that the installations of all equipment may be properly coordinated.

5.2 All equipment furnished shall fit the space available, with connection, etc., in the required locations and with adequate space for operating and servicing. The drawings are generally diagrammatic and indicate the manner and method of the installation, while the specifications and fixture list denote the type and quality of material and workmanship to be used. Where a conflict exists between the drawings and the specifications, the Contractor shall promptly notify the Architect/Engineer whose decision shall be final. No allowance will be made subsequently in this connection in behalf of the Contractor after award of the contract.

6. EQUIPMENT AND MATERIAL

6.1 All materials furnished under this contract shall be new (except as noted), free from defects of any character, shall conform with the standards of the Underwriters Laboratories, Inc. (U.L.) (or other nationally recognized Laboratory), in every case where such a standard has been established and shall be so labeled. It is the intention of these specifications to indicate a standard of quality for all materials incorporated in this work, and where materials are not specified herein and are required to complete the electrical installation, these materials shall be of first quality for use intended. Manufacturers of similar quality products will be considered unless the specifications or drawings indicate otherwise.

6.2 Materials shall be suitable for intended use and location. Unless otherwise shown use NEMA-1 for interior areas and NEMA-3R for exterior areas.

6.3 The Architect/Engineer decision as to equal in grade and quality shall rule and be final for all electrical materials incorporated in this work. Where two or more similar type items are furnished, all shall be of the same manufacturer (e.g., all disconnect switches shall be of the same manufacturer) unless otherwise noted herein or shown on the drawings. All material and installation methods used shall be in accordance with the latest and approved electrical and mechanical engineering practices.

7. SERVICE ENTRANCE EQUIPMENT

7.1 Service entrance equipment shall be in accordance with the requirements of the municipal governing body and serving utility. Shop drawings shall be submitted to the serving utility for written approval before ordering equipment.

7.2 Label equipment and each individual overcurrent device per Section 16000.22.

7.3 Approved manufacturers are: Sun Valley, Square D, Cutler-Hammer, Siemens/ITE, General Electric

8. PANELBOARDS

8.1 Each panel shall be provided with a hinged door in door cover. Each panel shall be provided with two keys, all keyed alike. Each panel shall be provided with typewritten sheet installed on door identifying the use of each branch circuit. Panels shall have copper bussing.

8.2 Label equipment per Section 16000.22

8.3 Approved manufacturers are: Cutler-Hammer, Square D, Siemens/ITE, General Electric or prior approved equal

9. STARTERS

9.1 All motor starters shall be furnished under this section of the specifications unless an integral part of equipment or noted as furnished with equipment specified under other sections of these specifications.

9.2 Separately mounted motor starters shall be across-the-line combination magnetic with 120V coils, fused disconnect contactors, additional auxiliary contact for interlocking of controls. Provide pushbutton or selector switch in cover. Switchboard mounted starters shall be magnetic with 120V coils and additional auxiliary contacts as required for interlocking of controls. Starters shall have an integral control circuit transformer or separate 120V control with control circuit disconnect switch in cover.

9.3 Manual starters shall be horsepower, voltage and phase rated with overload protection and green "on" pilot light. Surface mounted unless noted otherwise.

9.4 All starters shall have overload protection in all phase lines. Furnish and install the proper size overload heater elements determined from full load nameplate readings on motors and compensation for ambient temperature in all starters whether they be furnished under this Section or other Sections.

9.5 Label per Section 16000.22

9.6 Approved manufacturers are: Cutler-Hammer, Square D, Siemens/ITE, General Electric or prior approved equal

10. TRANSFORMERS

10.1 Transformers shall be dry type, with voltage ratings as indicated on plans. Transformers shall be rated for full load operation at a maximum 150 degree centigrade rise above a 40 degree centigrade ambient or as otherwise noted on drawings. Provide at least (4) 2 1/2 percent taps, two above normal and two below normal and have a sound rating not to exceed NEMA standards. Special "K" factor ratings as noted.

10.2 Submit complete transformer data with shop drawings for approval. The data shall include efficiencies, core and copper losses, impedance, regulation and sound level.

10.3 Installation of transformers shall be on vibration isolators and all wiring connections with flexible conduit.

10.4 Label per Section 16000.22

10.5 Approved manufacturers are: Square D, Siemens, Jefferson, Cutler-Hammer, Westinghouse, General Electric, or same manufacturer as distribution equipment.

11. CONDUIT

11.1 Metallic conduits shall be hot dipped galvanized equal to LTV Steel.

11.2 Electric metallic tubing (EMT) is permitted for exposed work above 6"-0" A.F.F. or concealed work only. EMT is NOT permitted in the following: (1) in or under concrete, (2) in earth, (3) in grouted walls, (4) exterior of building, (5) with dissimilar metals, (6) where it will be subject to severe physical damage (either during or after installation), (7) in any hazardous (classified location) except as permitted by 502.10, 503.10 and 504.20, (8) without an equipment grounding conductor. Size and provide equipment grounding conductor per Article 250 and increase conduit size if required.

11.3 Rigid PVC conduit is permitted only underground or as noted on drawings. Provide rigid steel elbows and risers (NO MINIMUM SIZE). Size and provide equipment grounding conductor per Article 250 and increase conduit size if required.

11.4 Rigid galvanized or sherodized steel shall be used for all exposed conduit below 6"-0" A.F.F. or as noted on drawings. Where used in or under concrete or in earth, shall be code approved PVC coated or half lap wrapped with Polyken #900 tape or equal.

11.5 Install exposed raceways parallel and perpendicular to nearby surfaces or structural members and follow the surface contours as much as practical.

11.6 Run exposed, parallel, or banked raceways together. Make bends in parallel or banked runs from the same center line so that the bends are parallel. Factory elbows may be used in banked runs only where they can be installed parallel. This requires that there be a change in the plane of the run such as from wall to ceiling and that the raceways be of the same size. In other cases provide field bends for parallel raceways.

12. WIRE

12.1 Soft drawn annealed copper (unless otherwise noted on plans) having conductivity of not less than 98% of that of pure copper, uniform in cross section, free from flaws, scales, and other imperfections. All wire larger than #10 shall be stranded.

12.2 Insulation: Type THHN/THWN, or XHHW for all branch circuit and feeder wiring.

12.3 Sizes: No wire smaller than #12 unless otherwise noted on drawings.

12.4 Feeder conductors #2 awg and larger may be copper or AA-8000 series aluminum alloy. Aluminum conductors shall be equal or larger ampacity to copper. Conduit fill shall not exceed 40% factor as described in 2020 NEC, annex C, table C1 (copper) or C1A (aluminum).

12.5 The use of MC Cable is acceptable in accordance with 2020 NEC Article 330, but limited to use for concealed branch circuits. MC Cable may not be used for home runs or outdoors.

13. MISCELLANEOUS MATERIALS:

13.1 Safety switches: Heavy duty, fused rejection type, minimum 200,000 A.I.C. rated. "NF" indicates not fused.

13.1.1 Label per Section 16000.22

13.1.2 Approved manufacturers are: Square D, Cutler-Hammer, Siemens/ITE, General Electric or same manufacturers as distribution equipment.

13.2 Fuses: "Bussmann" or "Gould Shawmut" mfg. No substitutions unless by prior written approval from Engineer, or as noted on drawings.

13.3 Conduit strap: Heavy gauge steel snap-on type.

13.4 Electrical metallic tubing fittings: Equal to T&B compression type. Connectors shall have insulated bushings.

13.5 Rigid conduit locknuts and bushings: Equal to T&B.

13.6 Flexible conduit and fittings: Equal to California Conduit and Cable Company, Inc.

13.7 Liquid tight conduit and fittings for all exterior and equipment connections.

13.8 Outlet boxes, plaster rings, pull, and junction boxes, etc: Equal to RACO. Zinc coated or Cadmium plated sheet steel for indoor locations, cast aluminum for outdoor locations.

13.8.1 For all light fixtures: Octagon or 4" square boxes unless noted in fixture schedule or on cut sheet.

13.8.2 For switches and receptacles: 4" or 4-11/16" square boxes.

13.8.3 Junction and pull boxes: 4" square minimum size. Provide with screwfastened covers located in accessible locations.

13.9 Condulets: Equal to Crouse-Hinds.

13.10 Wire and Cable: Equal to General Cable and/or Simplex.

13.11 Devices: "Hubbell", "Leviton", or Pass & Seymour. Receptacles: Duplex-20 amp #5362, isolated ground - 20 amp #G-5362, GFCI- 20 amp #GF-5362. Switches: 20 amp #1221 single pole, 1222 double pole, 1223 three way, 1224 four way. Colors to be specified by Architect/Owner/Tenant.

13.12 Device plates: "Hubbell", "Leviton", or Pass & Seymour. Ivory nylon in interior areas or as noted on drawings. Zinc die cast flip lid mounted horizontally for exterior or weatherproof locations.

13.13 Lighting fixtures: Provide as shown on fixture schedule or described on drawings, complete with lamps in original cartons and all canopies, stems, hangers and accessories including all structural members required for proper mounting. All fluorescent fixture ballasts shall be electronic energy saving type. Submit shop drawings to Architect/Engineer for approval by the same. Must be C.E.C. approved in Calif.

13.14 Lamps: G.E. or equal and shall be for the maximum rated wattage of fixture unless otherwise shown on drawings.

14. SLEEVES, INSERTS, OPENINGS

14.1 Contractor shall layout and install his work in advance of pouring concrete floors or walls. Provide all sleeves and/or openings through floors or walls required for electrical conduits or ducts.

14.2 Sleeves shall be of rigid conduit or galvanized sheet steel rigidly supported and suitably packed to prevent entrance of wet concrete.

15. EXCAVATION/CUTTING/FITTING/REPAIRING/FINISHING

15.1 The Contractor shall include in his bid all excavation, compaction, fill, backfill, cutting, fitting, repairing and finishing of all work necessary for the installation of all equipment under this specification but no cutting of the work of other Contractors shall be done without the consent of the General Contractor.

15.2 Earthwork shall be done in accordance with latest industry standards.

16. CLEANUP OF PREMISES

Contractor shall at all times keep the premises clear of waste materials and debris caused by his employees and operation. Equipment not required in the work shall be removed prior to the termination of the contract.

17. TESTS AND INSPECTIONS

17.1 Contractor shall test wiring and devices as sections are completed and shall correct all defects immediately at his own expense, including any damage to walls, ceilings, floor or other portions of the building which may result from replacing defective equipment.

17.2 Furnish all meters, cable, connections and apparatus necessary for making tests.

17.3 Test system for shorts and grounds. Faulty wiring shall be removed and replaced. Any device, apparatus or fixture installed showing substandard performance shall be removed and replaced as directed by the Architect/Engineer.

17.4 Megger all systems neutrals to insure the neutral is not grounded within the system.

17.5 All equipment rated at 1,000 amps or more, or 480 volts shall be tested for insulation breakdown prior to its being energized. Such equipment shall withstand for a period of one minute without breakdown, the application of a 60HZ alternating potential of 1,000V plus twice the rated voltage of the device.

17.6 After the electrical wiring system installation is completed and at such time as the Architect/Engineer or his authorized representative may direct, the Contractor shall conduct an operating test for approval. Equipment shall be demonstrated to operate in accordance with requirements of specifications. Test shall be performed in presence of Architect/Engineer or his representative.

18. SHOP DRAWINGS

18.1 All data shall be submitted at one time, bound and indexed in an orderly manner. Prior to starting the work, submit to the Architect/Engineer for approval, six (6) sets of shop drawings of service (S.E.S.), panels, distribution sections, light fixtures, motor control centers, fire alarm system, dimmers, sound system, emergency generator, devices, transformers, labels as required by 16000.22, and all other equipment to be fabricated.

18.2 Procure shop drawings, wiring diagrams, etc., from other trades involved where such drawings may facilitate and expedite the work. Air conditioning and mechanical equipment shall be wired complete as per manufacturer's wiring diagrams furnished by the air conditioning and mechanical contractors.

19. DRAWINGS OF RECORD (AS-BUILT)

As-built drawings shall be submitted in accordance with and if required by Division 1 – General Requirements.

20. GUARANTEE

The Contractor shall guarantee all material and workmanship to be free from defect of material and workmanship and shall replace or repair without cost to the owner all defective material and workmanship for a period of one year after final acceptance.

21. INSTRUCTIONS

21.1 Contractor shall instruct the Owner in the proper operating and maintenance of the equipment.

21.2 Contractor shall provide two (2) sets of operating and maintenance manuals for each piece of equipment provided by this discipline, only when such manuals are available from the manufacturer.

21.2.1 All manuals to be bound in a 3-ring binder and tabulated in an orderly manner.

22. LABELING

22.1 Labels shall be engraved, black on white melamine plastic laminate, 1/16" minimum thickness for signs up to 20 square inches or 8 inches long; 1/8" thick for larger sizes. Engraved legend shall be in white letters on black face with minimum 3/16" high letters. Labels shall be punched and fastened to equipment with aluminum rivets or self tapping stainless steel screws or number 10/32 stainless steel machine screws with nuts, flat and lock washers.

22.2 Label equipment with name, amperage, voltage, phase, and wires (i.e. Panel "A", 400A, 120/208V, 30,4W). Submit list of all labels with wording for review as per 16000.18.

22.3 Equipment to be labeled shall include service (S.E.S.) and all overcurrent devices, distribution sections and all overcurrent devices, motor control centers (M.C.C.) and all overcurrent devices, fusible panelboards and all overcurrent devices, panels, starters and transformers. Label other equipment as noted on plans.

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SPECIFICATIONS

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