ROLLING HILLS APARTMENTS
NEW COMMON BUILDING

LAS TABLAS ROAD,
TEMPLETON, CALIFORNIA

GENERAL NOTES

1. ALL WORK SHALL CONFORM WITH THE MINIMUM STANDARDS OF THE FOLLOWING CODES:

   - 2007 CALIFORNIA BUILDING CODE (2006 IBC AND CA AMENDMENTS) & APPDX CHAPTER 33, 1997 UBC;
   - 2007 CALIFORNIA ELECTRIC CODE (2005 NEC AND CA AMENDMENTS);
   - 2007 CALIFORNIA MECHANICAL CODE (2006 IAPMO UMC AND CA AMENDMENTS);
   - 2007 CALIFORNIA PLUMBING CODE (2006 IAPMO UPC AND CA AMENDMENTS);
   - CALIFORNIA TITLE 24: 2007; CALIFORNIA STATE ENERGY AND ACCESSIBILITY STANDARDS;
   - COUNTY ORDINANCE(S) TITLE 19, 22, 23
   - AMERICANS WITH DISABILITIES ACT
   - ALL ACCUMULATIVE SUPPLEMENTS TO THE ABOVE CODES
   - ALL APPLICABLE STANDARDS AND REGULATIONS OF AGENCIES WITH JURISDICTION OVER THE WORK

2. THE CALIFORNIA ENERGY CONSERVATION STANDARDS FOR NON-RESIDENTIAL CONSTRUCTION, CONTAINED IN TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS, HAVE BEEN REVIEWED AND THE BUILDING DESCRIBED HEREIN IS IN SUBSTANTIAL CONFORMANCE WITH THOSE STANDARDS WHICH APPLY TO NEW CONSTRUCTION.

3. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS FOR DIMENSION, GRADE, CONFIGURATION, AND OTHER ASPECTS OF COMPATIBILITY WITH THE WORK DESCRIBED IN THESE CONSTRUCTION DOCUMENTS. ANY CONDITIONS WHICH INTERFERE WITH THE WORK SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND THE WORK SHALL NOT PROCEED IN THE AREAS OF CONFLICT UNTIL SUCH CONFLICTS HAVE BEEN RESOLVED.

4. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER DRAWING SCALE OR PROPORTION.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF A COMPLETE AND OPERABLE FIRE SUPPRESSION SYSTEM IN COMPLIANCE WITH NFPA 13 AND TEMPLETON FIRE DEPARTMENT POLICIES. A SEPARATE FIRE SPRINKLER PERMIT AND PLAN APPROVAL SHALL BE OBTAINED FROM THE TEMPLETON FIRE DEPARTMENT BY THE CONTRACTOR PRIOR TO THE INSTALLATION OF THE FIRE SPRINKLER SYSTEM. FIRE SPRINKLER PLANS SHALL BE REVIEWED, APPROVED AND STAMPED BY A FIRE PROTECTION ENGINEER (FPE) PRIOR TO BEING SUBMITTED TO THE FIRE DEPARTMENT. THE CONTRACTOR SHALL OBTAIN THE ARCHITECT'S APPROVAL OF FIRE SPRINKLER HEAD PLACEMENT SHOP DRAWINGS PRIOR TO THE INSTALLATION OF ANY FIRE SUPPRESSION PIPING. ANY MAINLINES THAT FEED THE FIRE SUPPLY SYSTEM SHALL BE INSPECTED BY THE FIRE DEPARTMENT PRIOR TO BACKFILLING. ALL UNDERGROUND PLUMBING ON THE SPRINKLER SIDE OF THE DOUBLE CHECK ASSEMBLY IS TO BE CL200 OR BETTER.

6. THE FIRE SPRINKLER SYSTEM SHALL BE SUPERVISED FOR WATER FLOW AND TAMPER BY AN APPROVED, UL LISTED, CENTRAL, PROPRIETARY OR REMOTE STATION SERVICE AND SHALL BE PROVIDED WITH LOCAL ALARMS WHICH WILL PROVIDE AN AUDIBLE SIGNAL AT A CONSTANTLY ATTENDED LOCATION. ALL WORK SHALL BE DONE BY A CALIFORNIA LICENSED ALARM CONTRACTOR AND SHALL MEET APPLICABLE PROVISIONS OF THE CBC, NFPA 13, NFPA 72, AND TEMPLETON FIRE DEPARTMENT STANDARDS.

7. A KEY BOX ACCEPTABLE TO THE TEMPLETON FIRE DEPARTMENT SHALL BE PLACED ADJACENT TO AN ENTRY DOOR AS DIRECTED, CONTAINING ALL KEYS NECESSARY TO ALLOW FIRE DEPARTMENT PERSONNEL ACCESS TO ALL PORTIONS OF BUILDING SPACES.

8. PRIOR TO COMMENCEMENT OF ANY WORK IN THE PUBLIC RIGHT-OF-WAY AN ENCROACHMENT PERMIT SHALL BE OBTAINED FROM THE COUNTY DEPARTMENT OF PUBLIC WORKS.

9. EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES MUST BE IN PLACE AND FUNCTIONAL PRIOR TO THE FIRST INSPECTION. NO INSPECTIONS CAN BE PERFORMED IF THEY ARE NOT IN PLACE OR HAVE FAILED TO PROVIDE EROSION CONTROL. FAILURE TO MAINTAIN EROSION CONTROL WILL CAUSE INSPECTIONS TO BE DELAYED UNTIL EROSION CONTROL MEASURES ARE FUNCTIONAL.

10. A SEPARATE PERMIT SHALL BE OBTAINED FROM THE COUNTY DEPARTMENT OF PUBLIC WORKS FOR REPAIRS OR NEW CONSTRUCTION AT THE PUBLIC CURB, GUTTER AND SIDEWALK.



VIEW FROM NORTHWEST

PROJECT DATA

ASSESSOR'S PARCEL NUMBER: 040-289-013

LAND USE CATEGORY: RMF (RESIDENTIAL MULTI-FAMILY)

PLANNING AREA: SALINAS RIVER

01 CBC OCCUPANCY GROUP: A-3

CBC CONSTRUCTION TYPE: V-B

01 FIRE SPRINKLERED?: YES

PUBLICLY FUNDED?: NO

OVERALL SITE AREA: 234,974 S.F. = 5.4 ACRES

OCCUPANT LOADS

MULTI-PURPOSE ROOM = 1107 / 15 =	74 OCCUPANTS
MISC. OFFICE SPACE = 1090 / 100 =	11 OCCUPANTS
LAUNDRY ROOM = 159 / 50 =	4 OCCUPANTS
TOTAL OCCUPANT LOAD =	89 OCCUPANTS

EXISTING BUILDINGS

DWELLINGS	53
COMMON SPACE / LAUNDRY FACILITIES	2
MANAGERS OFFICE	1

EXISTING PARKING

STANDARD SPACES	79
ACCESSIBLE SPACES	3
TOTAL	82

SCOPE OF WORK

1. 248 s.f. ADDITION TO EXISTING OFFICE.
2. DEMOLITION OF AN EXISTING 720 s.f. LAUNDRY FACILITY AND REPLACEMENT WITH A NEW 3,296 s.f. COMMON BUILDING.

LEGAL DESCRIPTION

PARCEL 4 OF PARCEL MAP CO 70-55, IN THE COUNTY OF SAN LUIS OBISPO, STATE OF CALIFORNIA, ACCORDING TO MAP RECORDED APRIL 17, 1972 IN BOOK 8 PAGE 24 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PROJECT DIRECTORY

OWNER / DEVELOPER:
PEOPLES' SELF HELP HOUSING CORPORATION
3533 EMPLEO STREET
SAN LUIS OBISPO 93401
805.781.3088

ARCHITECTS:
FRASER SEIPLE ARCHITECTS
971 OSOS STREET
SAN LUIS OBISPO 93401
805.544.6161

CIVIL ENGINEERS:
KEITH V. CROWE, PE
CONSULTING ENGINEER
805.464.0975

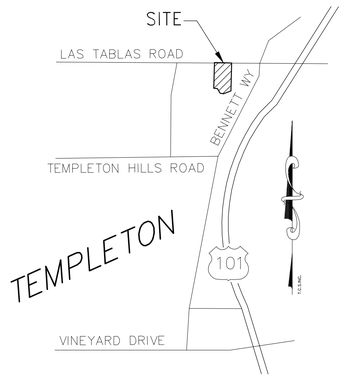
STRUCTURAL ENGINEERS:
MACIE ENGINEERING
1009 MORRO STREET
SAN LUIS OBISPO 93401
805.541.3837

MECHANICAL ENGINEERS:
JVA MECHANICAL ENGINEERING
1023 NIPOMO STREET STE. #200
SAN LUIS OBISPO 93401
805.543.3190

ELECTRICAL ENGINEERS:
THOMA ELECTRIC CO.
3562 EMPLEO STREET
SAN LUIS OBISPO 93401
805.543.3850

LANDSCAPE ARCHITECTS:
LINDA SHOTWELL
LANDSYSTEMS INC.
PO BOX 1764
SAN LUIS OBISPO
805.543.2473

VICINITY MAP



STATEMENT OF COMPLIANCE

THIS PROJECT HAS, TO THE BEST OF MY KNOWLEDGE AND UNDERSTANDING, BEEN DESIGNED IN ACCORDANCE WITH AND MEETS THE SAN LUIS OBISPO COUNTY ADOPTED CODE AND ORDINANCE REQUIREMENTS INCLUDING, BUT NOT LIMITED TO, THE CALIFORNIA STATE ACCESSIBILITY STANDARDS AND I/WE WILL BE RESPONSIBLE FOR ALL CLARIFICATIONS DEEMED NECESSARY DURING THE CONSTRUCTION PHASES.

BRUCE FRASER, PROJECT ARCHITECT

LICENSE NUMBER

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PROJECT
ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES
DESIGN DEVELOPMENT 4/15/10
FIRST SUBMITTAL 6/02/10
01 PLAN CHECK 1 8/16/10

SIGNED

LICENSED ARCHITECT BRUCE DOUGLAS FRASER C 9787 EXPIRES 12-31-11 STATE OF CALIFORNIA

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Written dimensions on these drawings shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and existing conditions on the job and shall report any discrepancies to the architect for resolution prior to commencing work.

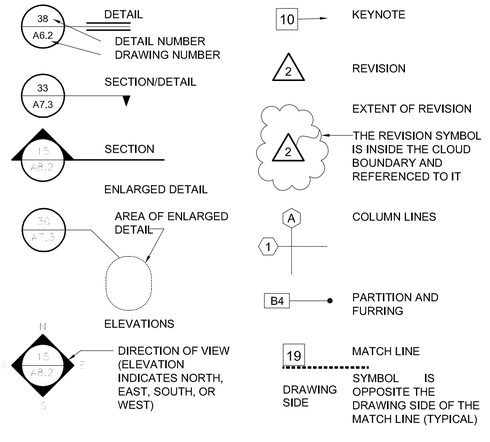
SHEET TITLE
TITLE

SHEET #
T1

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&	AND
∟	ANGLE
@	AT
℄	CENTERLINE
#	NUMBER OR POUND
||	PARALLEL
⊥	PERPENDICULAR
⌀	ROUND OR DIAMETER
⌑	SQUARE

A.C.	ASPHALT CONCRETE
ACBL.	ACCESSIBLE
A.D.	AREA DRAIN
ADJ.	ADJUSTABLE
AGGR.	AGGREGATE
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURE OR ARCHITECTURAL
ASPH.	ASPHALT
AUTO.	AUTOMATIC
BD.	BOARD
BITUM.	BITUMINOUS
BLDG.	BUILDING
BLK.	BLOCK
BM.	BEAM
B.O.	BOTTOM OF
BOT.	BOTTOM
BTWN.	BETWEEN
B.U.W.P.	BUILT-UP WATERPROOFING
B.U.R.S.	BUILT-UP BITUMINOUS ROOFING SYSTEM
CAB.	CABINET
C.B.	CATCH BASIN
CER.	CERAMIC
C.I.	CAST IRON
C.J.	CONTROL JOINT
CLG.	CEILING
CLKG.	CAULKING
CLR.	CLEAR
C.M.U.	CONCRETE MASONRY UNIT
C.O.	CASED OPENING
COL.	COLUMN
CONC.	CONCRETE
COND.	CONDUCTIVE
CONST.	CONSTRUCTION OR CONSTRUCT
CONT.	CONTINUOUS
C.T.	CERAMIC TILE
CTSK.	COUNTERSINK
CTR.	CENTER
DBL.	DOUBLE
DET.	DETAIL
D.F.	DOUGLAS FIR
DIA.	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
DN.	DOWN
DR.	DOOR
DS.	DOWNSPOUT
DW.	DISHWASHER
DWG.	DRAWING
(E)	EXISTING
EA.	EACH
E.F.	EXHAUST FAN
E.J.	EXPANSION JOINT
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR OR ELEVATION
EQ.	EQUAL
EQUIP.	EQUIPMENT
EXP.	EXPANSION
EXT.	EXTERIOR
F.D.	FLOOR DRAIN
FDN.	FOUNDATION
F.F.	FINISH FLOOR
F.H.	FIRE HYDRANT
FIN.	FINISH
FL.	FLOOR
FLASH.	FLASHING
FLUOR.	FLUORESCENT
F.O.	FACE OF
F.O.C.	FACE OF CONCRETE
F.O.F.	FACE OF FINISH
F.O.P.	FACE OF PARTITION
F.O.S.	FACE OF STUDS
F.O.W.	FACE OF WALL
FP.	FIREPROOF(ING)
FRZR.	FREEZER
F.S.	FULL SIZE OR FLOOR SINK
FT.	FOOT, FEET
FTG.	FOOTING
FURR.	FURRING
FUT.	FUTURE
GA.	GAUGE
GALV.	GALVANIZED
G.B.	GRAB BAR
GL.	GLASS
GRD.	GRADE
GWB	GYPSUM WALL BOARD
GYP.	GYPSUM
GYP.BD.	GYPSUM BOARD
H.B.	HOSE BIBB
H.C.	HOLLOW CORE
HDBD.	HARDBOARD
HDWD.	HARDWOOD
HT.	HEIGHT
H.M.	HOLLOW METAL
HNDRL.	HANDRAIL
HOR.	HORIZONTAL
HR.	HOUR
HDWR.	HARDWARE
H.V.P.	HARDWOOD VENEER PLYWOOD
I.D.	INSIDE DIAMETER OR INSIDE DIMENSION
IN.	INCH
INFO.	INFORMATION
INSUL.	INSULATION OR INSULATED
INT.	INTERIOR
JAN.SK.	JANITOR'S SINK
JT.	JOINT
K.P.	KICKPLATE
K.S.	KNEE SPACE
L.	LONG OR LENGTH
LAM.	LAMINATE
LAM.PL.	LAMINATED PLASTIC
LAV.	LAVATORY
LB.	POUND
L.C.	LINEN CHUTE
L.F.	LINEAR FEET
LONG.	LONGITUDINAL
LT.	LIGHT
LT.FXT.	LIGHTING FIXTURE
MACH.	MACHINE
MATL.	MATERIAL
MAX.	MAXIMUM
M.B.	MACHINE BOLT
MED.CAB.	MEDICINE CABINET
MECH.	MECHANICAL
MEMB.	MEMBRANE
MFR.	MANUFACTURER
MH.	MANHOLE
MIN.	MINIMUM
MIR.	MIRROR
MISC.	MISCELLANEOUS
MET.L.	METAL LATH
MOD.	MODULAR
MTD.	MOUNTED
MTG.	MOUNTING
MTL.	METAL
MUL.	MULLION
(N)	NEW
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
NOM.	NOMINAL
N.T.S.	NOT TO SCALE
OA.	OVERALL
OBS.	OBSCURE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.D.	OVERFLOW DRAIN
OPG.	OPENING
OPP.	OPPOSITE
PART.	PARTIAL
PARTN.	PARTITION
PAV.	PAVING OR PAVEMENT
P.C.	PORTLAND CEMENT
P.D.F.	POWDER DRIVEN FASTENER
PERF.	PERFORATE, PERFORATED
PL.	PLATE
P.L.	PROPERTY LINE
PLAS.	PLASTER
PLBG.	PLUMBING
P.L.F.	PER LINEAL FOOT
PLYWD.	PLYWOOD
PORT.	PORTABLE
P.P.	POWER POLE
PR.	PAIR
PROJ.	PROJECTION
PREFAB.	PREFABRICATED
P.S.F.	PER SQUARE FOOT
P.S.I.	PER SQUARE INCH
PT.	POINT
PTN.	PARTITION
Q.T.	QUARRY TILE
(R)	REMOVE
R.	RADIUS
R.D.	ROOF DRAIN
REF.	REFERENCE
REFR.	REFRIGERATOR
REINF.	REINFORCED
REQD.	REQUIRED
RESIL.	RESILIENT
RM.	ROOM
R.O.	ROUGH OPENING
R.U.	ROLL-UP
RWD.	REDWOOD
RW.L.	RAINWATER LEADER
S.C.	SOLID CORE
SCHED.	SCHEDULE
SCR.	SCREEN
SECT.	SECTION
SEP.	SEPARATION OR SEPARATE
SERV.	SERVICE
S.F.	SQUARE FEET
SH.	SHELF OR SHELVES
S.H.	SPRINKLER HEAD
SHR.	SHOWER
SHT.	SHEET
SIM.	SIMILAR
S.J.	SEPARATION JOINT OR SEISMIC JOINT
SK.	SINK
S.M.S.	SHEET METAL SCREW
SP.	SPACE
SPEC.	SPECIFICATION
SPR.	SPRINKLER
SPKR.	SPEAKER
SQ.	SQUARE
S.SK.	SERVICE SINK
S.S.	STAINLESS STEEL
S.T.C.	SOUND TRANSMISSION CLASS
ST.	STORAGE
STD.	STANDARD
STGD.	STAGGERED
STL.	STEEL
STRUCT.	STRUCTURAL OR STRUCTURE
SUSP.	SUSPENDED
SYM.	SYMMETRICAL
T.	TILE
TEL.	TELEPHONE
TEMP.	TEMPERED OR TEMPERATURE
TER.	TERRAZZO
TEMP.GL.	TEMPERED GLASS
T. & B.	TOP AND BOTTOM
T.& G.	TONGUE AND GROOVE
THERM.	THERMAL
TH.	THICK
THRES.	THRESHOLD
THRU	THROUGH
TOIL.	TOILET
T.O.	TOP OF
T.O.C.	TOP OF CONCRETE
T.O.P.	TOP OF PARAPET
T.O.R.W.	TOP OF RETAINING WALL
T.O.S.	TOP OF SLAB
T.O.ST.	TOP OF STEEL
T.O.W.	TOP OF WALL
TRD.	TREAD
TV.	TELEVISION
TYP.	TYPICAL
U.C.	UNDER COUNTER
UNEXC.	UNEXCAVATED
UNF.	UNFINISHED
U.N.O.	UNLESS NOTED OTHERWISE
V.B.	VAPOR BARRIER
V.C.T.	VINYL COMPOSITION TILE
VEN.	VENEER
VERT.	VERTICAL
VRFY.	VERIFY
V.G.	VERTICAL GRAIN
V.PLAS.	VENEER PLASTER
V.W.C.	VINYL WALL COVERING
W/	WITH
W.GL.	WIRE GLASS
WD.	WOOD
WNDW.	WINDOW
W/O.	WITHOUT
W.O.	WHERE OCCURS
WP.	WATERPROOF OR WORKPOINT
W.R.	WATER RESISTANT
WSCT.	WAINSCOT
WT.	WEIGHT



REFERENCE SYMBOLS

1/1

D010005A

ARCHITECTURAL ABBREVIATIONS

NO SCALE

D010006B

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB #

ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES
DESIGN DEVELOPMENT 4/15/10
FIRST SUBMITTAL 6/02/10
01 PLAN CHECK 1 8/16/10

SIGNED

LICENSED ARCHITECT
BRUCE DOUGLAS FRASER
C 9787
EXPIRES 12-31-11
STATE OF CALIFORNIA

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SHEET TITLE

SYMBOLS, ABBREVIATIONS

SHEET #

T2

\\John\Rolling Hills Apts 0706\drawings\0 - Drawing Sheets\Architectural\T2 - Symbols Abbreviations.dwg, 8/13/2010 1:14:01 PM, PDP95

NEW COMMON BUILDING AT ROLLING HILLS, TEMPLETON
SPECIFICATIONS
April 9, 2010

DIVISION 1 - GENERAL

01000 DESCRIPTION OF THE WORK
Work under this contract provides for a 248 s.f. addition to an existing management office building, the demolition of an existing 720 s.f. laundry facility, and replacement with a new 3,296 s.f. common building. Construction is of light wood framing. The project is located at 999 Las Tablas Road, Templeton, in the County of San Luis Obispo.

01010 DEFINITIONS
Throughout these drawings and specifications, the following definitions apply:
A. "Owner" or "Owner's Representative" shall refer to Rolling Hills Housing Associates, or any of Peoples' Self Help Housing specifically assigned representatives.
B. "Contractor" shall refer to Peoples' Self Help Housing Corporation, and any subcontractor who, by contract with or employment by the Owner, is responsible for the execution of some portion of the work.
C. "Architect" shall refer to Fraser Seiple Architects, or any of their specifically assigned project staff.
D. "Engineer" shall refer to any engineering consultant specifically referenced in a given note or section of these specifications.

01050 FIELD ENGINEERING
The Contractor is responsible for the accurate horizontal and vertical layout of the work. Actual surveying of control points shall be performed by California licensed Civil Engineers or Land Surveyors.

01100 SPECIAL PROJECT PROCEDURES
Contractors shall make every effort to protect existing improvements, neighboring property and construction in place as the work progresses. Any damage to such existing improvements, neighboring property, or construction resulting from acts of a Contractor shall be repaired to the satisfaction of, and at no additional cost to, the Owner.

Contractors shall control the spread of dust or mud in compliance with County requirements.

Noise generating construction activities are limited to the hours of 7:00 a.m. through 6:00 p.m., Monday through Friday.

Solid waste generated during construction shall be gathered and removed from the site in compliance with County requirements. Cleaning of concrete, plaster and similar material containers or tools shall not produce runoff that leaves the property or enters the storm drainage system. Every effort shall be made to recycle waste produced by construction.

01400 TESTING AND INSPECTION
Contractors are not required to provide laboratory testing in connection with construction; however, any Contractor shall schedule and cooperate with any testing or field inspection required by the specifications, the Architect, applicable building codes, or the local Building Official and shall replace or correct work which fails to meet the requirements of the specifications when tested. Testing and inspection may include soil compaction, concrete strength, or high strength bolting.

01600 SUBSTITUTIONS AND ALTERNATES
Substitutions or alternates to the materials, assemblies, or products described in the drawings and specifications will be acceptable only if approved in advance by the Owner.

01700 CLOSEOUT PROCEDURES
At the completion of construction the Contractor shall deliver to the Owner copies of operation and maintenance manuals, spare parts lists, guarantees and warranties for products and equipment installed in the work, as well as as-built drawings indicating the location of any concealed installations (such as below-grade utilities) that vary from the position and alignment indicated on working drawings.

The Contractor shall provide demonstration or instruction to the Owner's representative(s) for building equipment and systems, and shall provide a heating/ventilating/air conditioning balance report.

DIVISION 2 - SITEWORK

02200 EARTHWORK
Earthwork to prepare the site for construction shall be subject to the direction of the Soils Engineer and shall conform to the Soils Engineering Reports prepared by MidCoast Geotechnical on April 22, 2010 Report No. 13442, File No. 10-6454. Unless otherwise determined by the Soils Engineer, the area of new construction, including a band extending at least 5 feet beyond the edge of structures, exterior footings, and retaining wall footings, shall generally be prepared with over-excavation and recompaction, as follows:

The existing surface soils and any uncertified fill material underlying the proposed common building shall be removed to a minimum depth of 36 inches below the bottom of the proposed footings or down to firm natural material, whichever is deeper.

Note: Certified structural fill is required for any fill to be used for an engineering purpose. All fill beneath structures, on slopes greater than 5:1, in embankments or other earthen structures, must be certified structural fill. All other fills, deeper than 12 inches, not be be used for structural support should be compacted but in some cases may not require certification.

Deepened footings extended into approved native material may be used on the maintenance shop portion of this project. The proposed footings shall be extended through the estimated 2.5 feet of loose surface soils and a minimum of 12 inches into approved native material. The estimated depth to the bottom of the footings will be approximately 3.5 feet below existing grade. The foundation excavations shall be observed by a representative of the geotechnical engineer before any steel reinforcement or concrete is placed.

Concrete floor slabs, such as garage or entry slabs, may be used with the raised wood floor alternative, however, we recommend that all slabs on grade have the upper 24 inches of existing loose surface soils and/or any fill placed within the slab area properly removed, processed, and recompacted to a minimum of 90 percent relative compaction either before or after the foundations are placed.

In those areas outside the building area where certified fill will be placed, the surface soils shall be removed to a minimum depth of 24 inches below the existing ground surface as observed at the time of our field investigation or down to firm natural material, whichever is greater. (This removal is applicable to driveways, yards, and all other areas to be certified and receive structural fill.)

The exposed material at the bottom of the removal areas shall then be properly prepared and brought to near optimum moisture content before any fill is placed. The removal depth for certified fill pad shall extend a minimum of 5 feet beyond the exterior building lines or equal the the depth of removal, whichever is greater. The removed soil may be used as backfill providing all the deleterious materials, if any, are picked out.

Any unexpected conditions which are encountered during earthwork, such as subsurface structures, deleterious materials, hard stone, or pumping soil conditions, should immediately be brought to the attention of the Architect or the Soils Engineer; earthwork should not proceed until any conflicts or uncertainties have been resolved to the satisfaction of the Architect or Soils Engineer.

Control dust during site preparation by moistening. Materials removed during earthwork may not be burned or buried on the site. Refer to additional notes and requirements on the Grading and Drainage Plan.

02280 SOIL TREATMENT
Soil below walks and pavement shall be treated with soil sterilant herbicide to prevent weed germination and growth. Herbicide materials shall be California compliant and applicator shall deliver a soil treatment certificate to the Owner.

02515 CONCRETE PAVING AND SITEWORK
Except as otherwise indicated in the drawings, concrete walks, landings, steps, and other flatwork shall be 4 inches thick, reinforced with #3 bars at 24 inches each way, placed over compacted, imported material per Section 02200. Finish shall be light/medium broom at unless noted otherwise on drawings; control joints shall be as indicated in drawings; additional control joints are subject to the Architect's approval.

02900 LANDSCAPE PLANTING AND IRRIGATION
Landscape planting and irrigation shall be as shown and specified on the landscape drawings. Plant materials shall not be rootbound nor diseased; the Landscape Contractor shall replace any plant materials which are not healthy after a 90 day maintenance and establishment period. Plants from 5 gallon or larger containers shall be replaced if they die during a one year guarantee period. Irrigation system shall be tested in the presence of the landscape architect or Owner; adjustments or replacements shall be made as directed.

DIVISION 3 - CONCRETE

03300 CONCRETE FOUNDATIONS AND SLAB ON GRADE
Concrete footings and slab shall be configured and reinforced as indicated in the drawings, and shall meet the requirements of Structural Notes on the structural drawings. Concrete materials shall be as specified in structural notes and as follows:

Cement: Portland Type II, per ASTM C150
Fine Aggregate: per ASTM C33
Course Aggregate: per ASTM C535
Water: clean, potable, free of contaminants
Reinforcing Steel: intermediate (Grade 40) bars per ASTM A615
Admixtures: none specified

Finished surfaces shall not vary from line more than 1/4 inch in 10 feet and all footings shall be mechanically vibrated to prevent honeycombing unless a pump mix acceptable to the Structural Engineer is used. Minimum concrete strength shall be 2,500 psi at 28 days unless noted otherwise. Exposed to view concrete shall be filled, sacked, and ground as necessary to achieve a smooth, uniform finish.

DIVISION 5 - METALS

05500 METAL FABRICATIONS
Metal fabrications for this work include, but are not limited to structural steel connectors, roof access ladder, handrails, and guardrails. Shop drawings are required for structural components and must receive Architect's approval prior to fabrication. Materials shall be as follows:

Structural Steel: per ASTM A36
Steel Plate: per ASTM A283, Grade C
Ornamental Steel: cold formed tube per ASTM A500, Grade B
Primer: red iron oxide per FS TT-P-31
Galvanizing: zinc galvanized coating per ASTM A123, A153, and A386
Welding Materials: per AWS D1.1

Structural welding shall only be performed by certified journeyman welders. All exposed-to-view cuts and welds shall be deburred and ground smooth and even. Exposed-to-weather metal fabrications shall be made in the largest pieces manageable and primed, galvanized, or powder coated prior to delivery to the project site.

DIVISION 6 - WOODS AND PLASTICS

06100 ROUGH CARPENTRY
Lumber strength and grading requirements and connector requirements shall be as indicated in Structural Notes on the structural drawings. All framing shall be laid out accurately to the line and dimension shown on the drawings. Notching of studs and joists is not allowed; boring of studs and joists to accommodate plumbing or electrical installations is subject to the approval of the Structural Engineer. Provide all backing, blocking, stripping, furring, false framing, and other miscellaneous support to allow the work of other trades to proceed.

06170 PREFABRICATED WOOD STRUCTURAL MEMBERS
Glue-laminated beams, laminated veneer lumber, open-web wood trusses, and plywood-web wood trusses shall be as indicated on the structural drawings. Prefabricated wood structural member shop drawings and structural calculations shall be approved by the County Department of Planning and Building prior to fabrication.

06200 FINISH CARPENTRY
Finish carpentry for the work shall include all interior and exterior millwork and trim. Materials shall be as follows:

Exterior Exposed Rafters, Truss, and Fascia:
Douglas Fir No. 1, resawn or lightly sandblasted S4S.
Exterior Exposed Roof Decking:
clear 2 X 6, V-groove, Douglas Fir or Red Cedar.
Exterior Exposed Miscellaneous Wood Trim:
Hem Fir or manufactured composite, resawn.
Interior Window Stool Trim:
medium density hardboard, paint grade, in profiles as indicated on drawings.
Interior Door Casing, Wall Base, and Miscellaneous trim:
Solid or finger-jointed softwood or composite wood, paint grade

06400 CASEWORK
Cabinetry, shelving, and casework shall be as shown on drawings. Woodwork Institute certification will be required.

Countertops and Backsplashes:
plastic laminate; Wilsonart Type 107 general purpose laminate or equivalent, in color/pattern as selected by Architect
Upper, Lower Cabinets: facing:
high pressure plastic laminate; Wilsonart Type 335 standard vertical application laminate or equivalent; shelves/interiors: low pressure plastic laminate: Melamine or equivalent; Woodwork Institute "custom" grade; colors/patterns as selected by Architect.
Cabinet Hardware:
125 degree concealed hinges, full extension slides, and 4"wire pulls; brushed chrome where exposed to view.

\\John\Rolling Hills Apts 0706\drawings\0 - Drawing Sheets\Architectural\T3.1 - Specifications.dwg, 8/13/2010 1:15:49 PM, PDF995

PROJECT
ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES
DESIGN DEVELOPMENT 4/15/10
FIRST SUBMITTAL 6/02/10
01 PLAN CHECK 1 8/16/10

SIGNED
LICENSED ARCHITECT BRUCE DOUGLAS FRASER C 9787 EXPIRES 12•31•11 STATE OF CALIFORNIA

The use of these plans and specifications shall be restricted to the original site for which they were prepared and publication thereof is expressly limited to such use. Reproduction or publication by any method, in whole or in part, is prohibited. Title to these plans and specifications remain with the architect without prejudice. Visual contact with these plans and specifications shall constitute prima facie evidence of the acceptance of these restrictions.

Written dimensions on these drawings shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and existing conditions on the job and shall report any discrepancies to the architect for resolution prior to commencing work.

SHEET TITLE
SPECIFICATIONS

SHEET #
T3.1

DIVISION 7 - WEATHERPROOFING

07200 INSULATION
Exterior wall insulation shall be kraft faced fiberglass batts, stapled to framing members; roof and interior wall sound insulation shall be unfaced fiberglass batts, friction fit between framing members and wired as necessary. Design is based on the products of Owens-Corning Company Fiberglas Corporation. Materials shall be as follows:

At 2 X 6 Exterior Walls: 5-1/2", R-19 value
At Roof Framing: 9-1/2", R-30 value
At All Interior Walls between Occupied Rooms: 3-1/2" unfaced sound batts

07300 ROOFING TILES
Roofing shall be concrete interlocking tiles by MonierLifeTile "Villa" profile or equal, in a color to match adjacent buildings, applied over 90 lb. elastomeric membrane base flashing per manufacturer's recommended details. Installation shall be based on solid sheathing non-batten application, and shall include manufacturer's bird stop and all recommended flashing, tie and accessory options appropriate to the climate and installation. Installation shall generally follow the recommendations of the Tile Roofing Institute for Moderate Climate Regions.

07500 MEMBRANE ROOFING
Membrane roofing at the mechanical well shall be a minimum single ply PVC system for nailable wood decks and sidewalls, Johns Manville or equivalent. Provide walk board between the roof hatch and the filter side of mechanical units.

07600 FLASHING AND SHEET METAL
Flashing and sheet metal shall be installed as shown on the drawings and additionally as required to ensure a watertight project. Exposed-to-view gutters, downspouts, roof edges, valley flashings, and related installations, shall be galvanized iron, minimum 24 gauge, in configurations shown on drawings. Concealed flashings may be galvanized sheet steel with a minimum weight of 26 gauge. Fabricate and install flashing and sheet metal in compliance with SMACNA recommendations, with adequate slope, overlap, and accuracy to prevent puddling or the entry of wind-driven rain.

07700 ROOF ACCESSORIES
One self-curbing, lockable roof hatch with integrated skylight shall be provided where shown on drawings, Bilco Model S-50T or equivalent. The curb shall be fit with a fixed ladder extension or an extending safety post (O'Keeffe's Ladder-Up or equal).

07900 CAULKING AND SEALANTS
Calking and sealants which match the color of adjacent surfaces shall be used as indicated in the drawings and additionally as required to prevent the entry of water or outside air into exterior assemblies, and in bathrooms to control the penetration of moisture. Calking materials shall be chosen for specific applications as recommended by the manufacturers and backing rods shall be applied where appropriate; calking beads shall be clean, slightly concave, and excess material shall be immediately cleaned from adjacent surfaces.

DIVISION 8 - DOORS AND WINDOWS

08100 METAL DOORS AND FRAMES
Metal doors and frames shall be provided as indicated in the Door Schedule. Design is based on the following materials and manufacturers:

Exterior Exit, Utility Doors: flush panel primed, non-rated 18 gauge steel, Republic DM series or equivalent, with louvers and signage per drawings.
Entry Door Frame: (see storefront framing)
Exterior Door Frames: mitered primed, non-rated 16 gauge steel, Republic MG series or equivalent

08200 WOOD DOORS
Wood doors and frames shall be provided in the configurations shown in the Door Schedule, and may be pre-hung. Design is based on the following materials and manufacturers:

Flush Panel Interior Doors: stain grade hardwood veneer over solid particle board core (solid core), American Building Supply Inc. mahogany veneer or equivalent as approved by Architect.
Interior Door Frames: paint grade fir or poplar; may be prehung.

All doors shall be adjusted to close easily and fit snugly in frames.

08400 STOREFRONT SYSTEM
Storefront framing for glazed openings as identified in drawings shall be a 1 3/4" x 4" center glazed aluminum system to receive 1" dual pane glazing, Kawneer Trifab 400 or equivalent, with a clear anodized finish.

08600 WOOD AND PLASTIC WINDOWS
Windows shall be Vinyl, dual pane fixed and awning, with low-E glazing, in the configurations shown in the Window Schedule. Shop drawing and product data submittals require Architect's approval before windows are ordered. Design is based on Jeld-wen Premium Vinyl, white color. Provide manufacturer's screens, locks, and operating hardware at all windows.

08700 FINISH HARDWARE
Door hardware finishes shall be US26 Satin Chrome. All final hardware selections are subject to the Architect's approval; product data and hardware schedule submittals require approval before hardware is ordered. Lockset and latchset design is based on AL series standard duty products of Schlage, with JUP lever design. Exterior hinges shall be solid brass or stainless steel with ball bearing movement, based on the products of Hager. Threshold and weatherstripping design is based on the products of Pemko.

08800 GLASS AND GLAZING
Window and storefront glass shall be Grade B clear, low-emissivity coated, dual pane, tempered where required by code. Door glass shall be tempered, clear, minimum ¼" thick.

DIVISION 9 - FINISHES

09200 LATH AND PLASTER
Exterior building surfaces shall be finished with three coat Portland cement plaster in a sand finish to match adjacent structures. Materials shall be as follows:

Lath: 2 layers Grade D paper; wire lath at vertical surfaces; expanded metal rib lath at horizontal surfaces, by Western Metal Lath or equal
Accessories: galvanized iron drip screeds, square corner beads, and related products by Superior or equal
Cement: Portland cement per ASTM C150, Type 1
Lime: dry hydrated lime per ASTM C206, Type S
Sand: clean, graded sand per ASTM C144
Water: clean, potable water
Additives: plastic additives allowed up to 12% by volume maximum
Finish Coat: integrally pigmented, by LaHabra or equal.
Horizontal Reveal: Type SDE078-034 (3/4" wide)

Finish texture and color are subject to Owner and Architect approval of a field sample.

09250 GYPSUM DRYWALL
Gypsum drywall shall be installed as indicated in the Finish Schedule. Materials shall be as follows:

Gypsum Panels at Ceilings: 5/8" standard panels; U.S. Gypsum or equal
Gypsum Panels at Walls: 5/8" water resistant panels at all walls of bathrooms; 5/8 inch standard panels elsewhere; U.S. Gypsum or equal
Accessories: galvanized steel corner reinforcement at outside corners in square profile, fiberglass web at bridging conditions; U.S. Gypsum or equal
Texture: light knockdown

09300 CERAMIC TILE
Ceramic tile shall be applied to restroom walls and floors per drawings.

Floor tile shall be 2" x 2" unglazed porcelain tile, Dal Tile Keystones or equivalent, in one color. Wall tile shall be 4-1/4" x 4-1/4" semi-gloss glazed porcelain tile, Dal Tile Permatones or equivalent, in one field color and two accent colors (Series 1 or 2 colors). Colors shall be as selected by the Architect from currently available range. Tile backing board, where required by the installation, shall be Hardibacker by James Hardie Company or an equivalent fiber reinforced cement product rated for wet environments.

Interior floor tile shall be thin-set according to an approved Tile Council of America installation method; design is based on Method F113. Vertical surface tile shall be thin-set according to approved TCA installation methods; design is based on Method W243, with latex-Portland cement mortar bond coat. Grout shall be premixed latex-Portland cement, Custom or equal, sealed with a silicone grout sealer; grout color shall be as selected by the Architect.

09510 ACOUSTIC CEILING TREATMENTS
An aluminum suspension system and acoustic ceiling tiles shall be installed as indicated in the drawings, including all CBC required seismic stabilization components; USG/Donn intermediate duty exposed tee suspension with USG Pebbled tiles or equivalent, minimum .55 NRC, white color. Multi-purpose room acoustic ceiling panels shall be Tectum 1 1/2" V-Line panels for direct attachment to furring per drawings.

09650 RESILIENT FLOORING
Floors at identified rooms shall be 12" x 12" vinyl composition tile, Armstrong Excelon or equivalent; colors and pattern as selected by the Architect based on 60% color 1 and 20% each colors 2 and 3. Resilient base shall be 4" rubber coved wall base, Burke Base or equivalent, in a color as selected by the Architect.

09680 CARPET
Floors at identified rooms shall receive level loop broadloom carpet, solution dyed, 26 ounce minimum weight, with woven polypropylene backing, Milliken Carpet "Essentials" or equal. Application is direct glued.

09900 PAINTING
Paint and related coatings shall be applied as indicated in the drawings. Paint products shall be Sherwin Williams or equal, as selected by the Architect. Surface preparation, application and total mil thickness shall be as recommended by the paint or coating manufacturer for the subject surface.

Walls and ceilings: gypsum board sealer and two coats eggshell wall paint
Paint grade interior trim: high hiding wood primer and two coats semi-gloss paint
Stain grade interior doors: penetrating stain and two coats satin urethane finish
Exterior exposed wood trim and framing: two coats opaque exterior stain
Exterior handrails and guardrails: shop primer and two coats alkyd enamel paint
Other exposed metals: metal primer and two coats alkyd enamel paint
Exterior plaster walls: primer/crack filler and two coats flat acrylic house paint

DIVISION 10 - SPECIALTIES

10100 TOILET PARTITIONS
Toilet partitions and urinal screen shall be powder coated steel, floor mounted and top braced, Global or equivalent, in standard color as selected by the Architect.

10400 SIGNAGE
ADA compliant signage shall be installed at doors and walls as described in drawings and the Door Schedule. Door and wall signs shall be self adhering plastic with a raised, permanently fused image and Grade 2 Braille block, Scott Sign Systems ADA Molded Plaques, or equivalent, color as selected by the Architect.

10500 FIRE EXTINGUISHERS AND CABINETS
A 5-lb. type 2A10BC fire extinguisher shall be provided, mounted in a semi-recessed wall cabinet where shown on drawings, Potter Roemer Loma series or equivalent in standard white polyester paint finish.

10800 TOILET ACCESSORIES
Accessories at restrooms shall be as follows. Coordinate with framer to provide all required blocking and backing. Design is based on the products of Bobrick.

Grab Bars: B-506 series, size per drawings.
Surface Toilet Paper Holders: B-2730
Mirrors: B-290 series, size per drawings.
Semi Recessed Paper Towel Dispenser/Waste Receptacles: B-3944
Countertop Soap Dispensers: B-8221
Surface Toilet Seat Cover Dispensers: B-221

DIVISION 11 - EQUIPMENT

11400 APPLIANCES
Residential grade appliances as shown on drawings shall e as follows. Design is based on the products of General Electric except as noted.

Refrigerator: 19.7 cubic foot no frost sided-by-side with water and ice dispenser, white
Domestic Range: 30 inch wide slide-in, gas, continuous cleaning, with front controls, white (Magic Chef)
Range Hood: 30 inch, 160 cfm two-speed, with 75W lamp, white
Garbage Disposer: 1/3 horsepower continuous feed, noise insulated

DIVISION 12 - FURNISHINGS

12500 WINDOW TREATMENT
Windows at the Multi-Purpose Room, Classroom, Office, and Counseling Office will receive sun control/privacy window shades, Draper Manual FlexShade or equivalent in fabric color and transparency as selected by Architect.

DIVISION 13 - (not used)

DIVISION 14 - (not used)

DIVISION 15 - MECHANICAL SYSTEMS

15300 FIRE SUPPRESSION PIPING
A complete and operable NFPA 13 fire sprinkler system shall be engineered and installed, according to shop drawings and calculations approved by the County Building Department prior to installation.

15400 PLUMBING
All piping, fittings, and other plumbing systems shall meet the requirements of the California Plumbing Code, 2007 Edition. Materials are subject to the Mechanical Engineer's approval and are based on plumbing notes on the drawings and the following:

Water Supply Piping: copper, with wrought fittings
Waste Water Piping (if < 36" below concrete flatwork): cast iron pipe and fittings
Waste Water Piping (elsewhere): ABS Schedule 40 plastic, plastic fittings
Vent Piping: ABS Schedule 40 plastic, plastic fittings
Fuel Gas Piping: black iron pipe and fittings

15410 PLUMBING FIXTURES
Plumbing fixtures shall be provided, installed, and tested where indicated on the plumbing drawings, per the plumbing notes. Install water stops, shutoff valves, and cleanout escutcheons in a manner to minimize visibility. Provide maximum 1.6 gallon flush floor mounted tank type toilets, 1.0 gallon flush urinal, bathroom lavatories with maximum 2.2 gpm @ 40 psi faucets, floor drains, laundry sink and related plumbing fixtures, fittings and trim per plumbing drawings.

15600 HEATING, VENTILATING AND AIR CONDITIONING
Package gas/electric heating and cooling units, and exhaust fans, shall be provided and installed as indicated in the mechanical drawings, per the mechanical notes. Condensate lines shall be routed to sinks.

DIVISION 16 - ELECTRICAL SYSTEMS

16400 ELECTRICAL POWER
Electrical service and switchgear shall be as described on electrical drawings and in electrical notes.

16500 LIGHTING
Light fixtures and switching shall be provided as indicated on the drawings and in the Light Fixture Schedule; alternatives to the specified light fixtures require the Architect's approval of submittal materials. All light fixtures shall have manufacturer's recommended lamp installed. The electrical contractor will provide photometric studies if required by the County, to demonstrate compliance with spill light and dark sky ordinance requirements.

16721 ALARM SYSTEMS
Line voltage type smoke detectors shall be provided per drawings. The fire sprinkler system shall be annunciated by a flow/tamper alarm. The Contractor shall coordinate the installation of, and provide power to, any intrusion alarm systems by the Owner's vendors.

END OF SPECIFICATION

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PROJECT
ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES
DESIGN DEVELOPMENT 4/15/10
FIRST SUBMITTAL 6/02/10
01 PLAN CHECK 1 8/16/10

SIGNED
LICENSED ARCHITECT BRUCE DOUGLAS FRASER C 9787 EXPIRES 12•31•11 STATE OF CALIFORNIA

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Written dimensions on these drawings shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and existing conditions on the job and shall report any discrepancies to the architect for resolution prior to commencing work.

SHEET TITLE
SPECIFICATIONS

SHEET #
T3.2

Grading and Drainage Notes:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ITEMS SHOWN ON THE PLANS.

2. NO CONSTRUCTION SHALL BE STARTED WITHOUT PLANS APPROVED BY THE COUNTY BUILDING DEPARTMENT (COUNTY). A PRE-CONSTRUCTION MEETING IS REQUIRED WITH THE INSPECTOR TO GO OVER THE SPECIAL INSPECTION REPORTING REQUIREMENTS AND VERIFY THE SPECIAL INSPECTORS ARE APPROVED. CONTACT MATT VARVEL AT 781-1536. THE COUNTY SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO STARTING CONSTRUCTION. ANY CONSTRUCTION DONE WITHOUT APPROVED PLANS OR PRIOR NOTIFICATION TO THE COUNTY WILL BE REJECTED AND WILL BE DONE AT THE CONTRACTOR'S AND/OR OWNER'S RISK AND EXPENSE. THE ENGINEER OF RECORD TO PROVIDE WRITTEN VERIFICATION THAT THE EROSION/SEDIMENTATION CONTROL DEVICES ARE PROPERLY INSTALLED AND ARE BEING MONITORED BEFORE AND AFTER EACH STORM. OWNER TO CONTRACT WITH ENGINEER OF RECORD TO PROVIDE INSPECTION SERVICES IN ACCORDANCE WITH COUNTY REQUIREMENTS AS DESCRIBED.

3. THE INSPECTOR, ACTING ON BEHALF OF THE COUNTY MAY REQUIRE REVISIONS IN THE PLANS TO SOLVE UNFORESEEN PROBLEMS THAT MAY ARISE IN THE FIELD. ALL REVISIONS SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER'S ENGINEER.

4. A COUNTY ENCROACHMENT PERMIT IS REQUIRED FOR ALL WORK PERFORMED WITHIN THE RIGHT-OF-WAY AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN.

5. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PLACEMENT OF SAFETY DEVICES SUCH AS FENCING, BARRICADES, SAFETY TAPE, ETC., AND SHALL FOLLOW ALL APPLICABLE INDUSTRIAL SAFETY REGULATIONS. THE COUNTY AND ITS OFFICIALS, THE ENGINEER, AND THE OWNER SHALL NOT BE RESPONSIBLE FOR ENFORCING SAFETY REGULATIONS.

6. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OR PROPER RESETTING OF ALL EXISTING MONUMENTS AND OTHER SURVEY MARKERS. ANY SURVEY MONUMENTS DESTROYED BY THE CONTRACTOR SHALL BE REPLACED IN ACCORDANCE WITH THE STATE LAND SURVEYOR'S ACT AT THE CONTRACTOR'S OWN EXPENSE.

7. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT "UNDERGROUND SERVICE ALERT" AT 1-800-642-2444 FOR LOCATION OF POWER, GAS, OIL, AND TELEPHONE UNDERGROUND FACILITIES. CONTRACTOR WILL ALSO BE RESPONSIBLE FOR CONTACTING THE APPROPRIATE AGENCY FOR THE LOCATION OF ALL UNDERGROUND FACILITIES.

8. THESE PLANS DO NOT AUTHORIZE SITE DISTURBANCE BEYOND THE LIMITS OF GRADING SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PERMISSION TO ENTER UPON ADJOINING PROPERTY IF NECESSARY TO GRADE PRIOR TO CONSTRUCTION. THE COUNTY ENGINEER DOES NOT AUTHORIZE ENTRY PER THESE APPROVED PLANS.

9. ANY DEVIATION FROM THESE PLANS WITHOUT PRIOR APPROVAL FROM THE DESIGN ENGINEER SHALL BE AT THE CONTRACTOR'S OWN RISK AND EXPENSE.

10. NO GRADING SHALL OCCUR WITHIN 2 FEET OF THE PROPERTY LINES EXCEPT AS NECESSARY TO IMPROVE EXISTING CONDITIONS.

11. EARTHWORK CUT: 100 CY FILL: 0 CY NET: 100 CY EXPORT
MAX CUT DEPTH: 0.67 MAX FILL DEPTH:0.67

CUT AND FILL QUANTITIES ARE TO BE USED FOR DETERMINING PERMIT FEES ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ACTUAL EARTHWORK QUANTITIES FOR BIDDING PURPOSES. THE ENGINEER DOES NOT, EXPRESSLY OR BY IMPLICATION EXTEND ANY WARRANTY FOR EARTHWORK QUANTITIES. IT IS THE INTENT OF THE OWNER TO HAVE A BALANCED CUT AND FILL. EXCESS EARTHWORK TO BE DISTRIBUTED APPROPIATELY AND IN ACCORDANCE WITH THE SOILS REPORT ONSITE.

12. THE CONTRACTOR SHALL PROVIDE DUST CONTROL DURING ALL PHASES OF THE WORK IN ACCORDANCE WITH COUNTY ORDINANCES.

13. ALL GRADING SHALL BE CONDUCTED IN ACCORDANCE WITH CHAPTER 33 OF THE U.B.C., THE COUNTY GRADING ORDINANCE.

14. OWNER SHALL CONTRACT WITH A CERTIFIED SOILS ENGINEER FOR INSPECTION AND COMPACTION TESTING DURING ROUGH AND FINISH GRADING OPERATIONS.

15. MATERIAL TO BE USED AS BACK FILL OR EMBANKMENT SHALL BE APPROVED BY THE SOILS ENGINEER AND BE FREE OF OBJECTIONABLE MATERIAL SUCH AS TREES, STUMPS, ROOTS, LOGS OR OTHERWISE DELETERIOUS MATERIAL. THE CONTRACTOR SHALL FOLLOW THE SITE DEVELOPMENT RECOMMENDATIONS AS NOTED IN THE PROJECT SOILS REPORT.

16. COMPACTION TEST SHALL BE MADE ON SUB-GRADE MATERIAL AND MATERIAL PLACED AS SPECIFIED BY THE ENGINEER AND AS OUTLINED IN THE SOILS REPORT. SOIL TESTS SHALL BE MADE PRIOR TO THE PLACING OF STRUCTURAL MATERIAL.

17. SOILS TESTS SHALL BE DONE IN ACCORDANCE WITH COUNTY STANDARDS AND SPECIFICATIONS. ALL TESTS MUST BE MADE WITHIN 15 DAYS PRIOR TO PLACING MATERIAL. THE TEST RESULTS SHALL CLEARLY INDICATE THE LOCATION AND SOURCE OF THE MATERIAL.

18. A REGISTERED CIVIL ENGINEER MUST CERTIFY THAT THE IMPROVEMENTS, WHEN COMPLETED, ARE IN ACCORDANCE WITH THE APPROVED PLANS. PRIOR TO THE REQUEST FOR FINAL INSPECTION, AS-BUILT PLANS ARE TO BE PREPARED AFTER CONSTRUCTION IS COMPLETE. THE CIVIL ENGINEER CERTIFYING THE IMPROVEMENTS AND PREPARING AS-BUILT PLANS SHALL BE PRESENT WHEN THE FINAL INSPECTION IS MADE.

20. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT AND MAINTENANCE OF ALL EROSION CONTROL DEVICES AS SPECIFIED BY THE COUNTY ENGINEER. THESE DEVICES SHALL BE IN PLACE OR BE READY TO PLACE FROM OCTOBER 15 TO APRIL 15. IN THE EVENT THAT THE DEVICES ARE NOT PERMANENTLY IN PLACE THEY SHALL BE PLACED IN THE EVENT A FORECAST FOR RAIN EXCEEDS 30%. AN EMERGENCY CREW SHALL BE AVAILABLE 24 HRS A DAY IN THE EVENT AN EROSION PROBLEM SHOULD OCCUR. A RESPONSIBLE PERSON AND HIS PHONE NUMBER SHALL BE NAMED HERE UPON.

NAME: ROB CARNES, GROUND UP DESIGN AND CONSTRUCTION MANAGEMENT, INC
PHONE NUMBER: 440-9888

21. IN THE EVENT THAT DURING GRADING, CONSTRUCTION OR DEVELOPMENT OF THE PROJECT, AN ARCHAEOLOGICAL RESOURCES ARE UNCOVERED, ALL WORK SHALL BE HALTED UNTIL THE COUNTY HAS REVIEWED THE RESOURCES FOR THEIR SIGNIFICANCE. IF HUMAN BURIALS ARE ENCOUNTERED, THE COUNTY CORONER (781-4513) SHALL BE CONTACTED IMMEDIATELY. THE APPLICANT MAY BE REQUIRED TO PROVIDE ARCHAEOLOGICAL STUDIES AND/OR MITIGATION MEASURES.

22. ALL GRADING SHALL BE IN COMPLIANCE WITH THE RECOMMENDATIONS CONTAINED IN THE PROJECT SOILS REPORT. THIS REPORT AND ALL ADDENDUMS TO THE REPORT SHALL BE CONSIDERED A PART OF THESE PLANS.

23. DURING CONSTRUCTION AND GROUND DISTURBANCE ACTIVITIES, THE APPLICANT SHALL IMPLEMENT ALL OF THE RECOMMENDATIONS INCLUDED IN THE ENGINEERING GEOLOGY REPORT AS WELL AS ANY AMENDMENTS TO SUCH REPORT APPROVED BY THE DEPARTMENT OF PLANNING AND BLDG.

24. THE CONTRACTOR SHALL PROVIDE DUST CONTROL DURING ALL PHASES OF THE WORK.

25. THE GRADING PERMIT HOLDER AND THE OWNER SHALL COMPLY WITH DUST CONTROL MEASURES REQUIRED BY THE COUNTY OF SAN LUIS OBISPO. THE STANDARD DUST CONTROL MEASURES INCLUDE BUT MAY NOT BE LIMITED TO:

A. DUST CONTROL MEASURES CAPABLE OF PREVENTING THE MIGRATION OF DIRT AND DUST OFF-SITE, IN A MANNER ACCEPTABLE TO THE CITY OF MORRO BAY SHALL BE IMPLEMENTED AND MAINTAINED DURING ALL CONSTRUCTION, EARTH MOVING, AND GRADING PHASES OF THE PROJECT. FAILURE TO DO SO WILL RESULT IN THE ISSUANCE OF A "STOP WORK" ORDER WHICH WILL NOT BE RELEASED UNTIL SUCH TIME AS AN ADEQUATE PROGRAM IS IMPLEMENTED.

B. DURING THE CLEARING, EARTH MOVING, AND GRADING PHASES OF THE PROJECT WATER TRUCKS OR SPRINKLER SYSTEMS SHALL BE USED IN SUFFICIENT QUANTITIES TO PREVENT DUST FROM LEAVING THE SITE. IN ADDITION, THE ENTIRE AREA OF DISTURBED SOILS SHALL BE WET DOWN DURING THE EARLY MORNING HOURS AND AT THE END OF EACH DAY IN SUCH A MANNER AS TO CREATE A CRUST.

C. AFTER THE COMPLETION OF THE CLEARING, GRADING, OR EXCAVATION PHASE, THE ENTIRE AREA OF DISTURBED SOILS SHALL BE TREATED IMMEDIATELY BY WATERING TO PREVENT WIND PICK-UP OF THE SOIL. THIS MAY BE ACCOMPLISHED BY ONE OF THE FOLLOWING METHODS:
1. THE SEEDING AND OR WATERING OF THE SITE UNTIL SUCH TIME AS THE GROUND COVER HAS TAKEN ROOT.
2. THE SPREADING OF SOIL BINDERS.
3. THE WETTING DOWN OF THE AREA IN SUCH A MANNER AS TO CREATE A CRUST ON THE SURFACE AND THE REPEATED SOAKING OF THE AREA, AS NECESSARY, TO MAINTAIN THE CRUST AND PREVENT SOIL BLOWING.

D. DURING THE CONSTRUCTION PHASE OF THE PROJECT, WATER TRUCKS OR SPRINKLER SYSTEMS SHALL BE USED TO KEEP ALL AREAS OF VEHICULAR MOVEMENT DAMP ENOUGH TO PREVENT DUST RAISED FROM LEAVING THE SITE. AS A MINIMUM, THIS WILL INCLUDE THE WETTING DOWN OF SUCH AREAS IN THE LATE MORNING HOURS AND AT THE CLOSE OF EACH DAY'S ACTIVITIES. INCREASED WATERING WILL BE REQUIRED WHENEVER THE WIND SPEED EXCEEDS 15 MILES PER HOUR.

E. THE CONTRACTOR OR BUILDER SHALL DESIGNATE A PERSON OR PERSONS TO MONITOR THE DUST CONTROL PROGRAM AND TO ORDER INCREASED WATERING AS NECESSARY TO PREVENT THE TRANSPORT OF DUST OFF-SITE. THIS PERSON'S DUTY SHALL INCLUDE HOLIDAY AND WEEKEND PERIODS WHEN WORK MAY NOT BE IN PROGRESS. THE NAME AND TELEPHONE NUMBER OF SUCH PERSON OR PERSONS SHALL BE PROVIDED TO THE COUNTY OF SAN LUIS OBISPO BUILDING DIVISION.

F. ALL EARTH MOVING VEHICLES, HAULING TO AND FROM THE SITE, SHALL BE COVERED WITH A TARP.

G. ANY TEMPORARY STOCKPILES OF EARTH OR DEBRIS SHALL BE APPROVED BY THE CITY AND SHALL NOT OBSTRUCT DRAINAGE OR CREATE BLOWING DUST.

26. THE OWNER/ LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR HYDROSEEDING OR LANDSCAPING ALL DISTURBED SURFACES OTHER THAN PAVED OR GRAVEL SURFACES, PRIOR TO FINAL INSPECTION. HYDROSEED MIX TO BE "BASIC EROSION CONTROL MIX" SUPPLIED BY S&S SEEDS (805) 684-0436.

27. EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES MUST BE IN PLACE AND FUNCTIONAL PRIOR TO THE FIRST INSPECTION. NO INSPECTIONS CAN BE PERFORMED IF THEY ARE NOT IN PLACE OR HAVE FAILED TO PROVIDE EROSION CONTROL MEASURES THAT ARE FUNCTIONAL.

SLO CO DEPT. OF PLANNING & BUILDING GRADING GENERAL NOTES:

APPLICABLE CODES:
CBC-2007 CALIFORNIA BUILDING CODE (2006 IBC AND CA AMENDMENTS)
UPC-2007 UNIFORM PLUMBING CODE (2006 IAPMO UPC AND CA AMENDMENTS)
UMC-2007 UNIFORM MECHANICAL CODE (2006 IAMPO UMC AND CA AMENDMENTS)
NEC-2007 NATIONAL ELECTRICAL CODE (2005 NEC AND CA AMENDMENTS)
1997 UBC, APPENDIX CHAPTER 33
CALIFORNIA TITLE 24: 2007; CALIFORNIA STATE ENERGY AND ACCESSIBILITY STDS
COUNTY ORDINANCE(S) TITLE 19, 22, 23

Sheet Index

SHEET No.	SHEET TITLE
C-1	TITLE SHEET & GENERAL NOTES
C-2	GRADING & DRAINAGE PLAN FOR ACCESSIBILITY IMPROVEMENTS
C-3	GRADING & DRAINAGE FOR NEW COMMON BUILDING & ACCESSIBILITY IMPROVEMENTS
C-4	CONSTRUCTION DETAILS
C-5	EROSION CONTROL PLAN
C-6	EROSION CONTROL GENERAL NOTES AND DETAILS
C-7	EROSION CONTROL DETAILS

Legend

ABBREVIATIONS:

AB - AGGREGATE BASE
AC - ASPHALT CONCRETE
BLDG - BUILDING
BM - BENCHMARK
BS - BOTTOM STEP
CL - CENTERLINE
CO - CLEANOUT
CONC - CONCRETE
D/W - DRIVEWAY
ELEC - ELECTRICAL
ELEV - ELEVATION
EP - EDGE OF PAVEMENT
ES - EXISTING SURFACE
(E) - EXISTING
EXIST - EXISTING
FDC - FIRE DEPARTMENT CONNECTION
FG - FINISHED GRADE
FL - FLOWLINE
FNC - FENCE
FS - FINISHED SURFACE (PAVEMENT)
GB - GRADE BREAK
GP - GRADING PLAN
HP - HIGH POINT
LF - LINEAR FEET
LP - LOW POINT
MAX - MAXIMUM
MIN - MINIMUM
OHE - OVERHEAD ELEC
UG - UNDERGROUND
PA - PLANTER
PL - PROPERTY LINE
POC - POINT OF CONNECTION
PP - POWER POLE
PVC - POLYVINYL CHLORIDE
PVMT - PAVEMENT
R - RADIUS
REQ - REQUIRED
SHT - SHEET
SLOCO - SAN LUIS OBISPO COUNTY
SS - SANITARY SEWER
STA - STATION
STD - STANDARD
TB - THRUST BLOCK
TBA - TO BE ABANDONED IN PLACE
TBR - TO BE REMOVED
TBP - TO BE PROTECTED
TC - TOP OF CURB
TEL - TELEPHONE
TEMP - TEMPORARY
TF - TOP OF FOOTING
TG - TOP OF GRATE
TS - TOP OF STEP
TYP - TYPICAL
TW - TOP OF WALL
UP - UTILITY POLE
VERT - VERTICAL
WL - WATER LINE
WV - WATER VALVE
WWM - WELDED WIRE MESH

(000.00 ES) - EXISTING ELEVATION

PROPERTY / ROW LINE
EASEMENT LINE
SEWER LINE
WATER LINE
RED ELEC/TELEPHONE/CABLE
OHE OVERHEAD ELECTRIC
NEW FENCE
x EX. FENCE
PGE PG&E BOX
TEL TELEPHONE BOX/PED.
CATV CABLE T.V. BOX
ELEC ELECTRIC BOX
STREET LIGHT
JP JOINT POLE
PP POWER POLE
GUY WIRE
FIRE HYDRANT
WATER VALVE

Bench Mark

THE BENCH MARK FOR THIS PROJECT IS A FOUND ½" REBAR AT THE NORTHEASTERLY CORNER OF LOT AF.

ELEVATION=820.09' (PER TWIN CITIES SUVEYING)

Basis of Bearing

THE BASIS OF BEARINGS FOR THIS PROJECT IS BASED ON FOUND MONUMENTS ALONG THE NORTHERLY LINE OF LOT AF.
BEARING N 88° 22 55" W PER TWIN CITIES SUVEYING.

Site Data

ADDRESS: 999 LAS TABLAS ROAD, TEMPLETON

ASSESSOR'S PARCEL NO. APN 040-289-013

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Project:
ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

Client:
Rolling Hills Housing Associates, LP

Sheet Contents:
TITLE SHEET & GENERAL NOTES

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Aug 2010
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Rolling Hills Apartments

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of:

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LEGEND:

NEW CONCRETE FLATWORK

AC PAVING

CONSTRUCTION NOTES:

1. CONSTRUCT NEW CONCRETE FLATWORK PER DETAILS 12 & 13 SHT A1.3 AND PROJECT SPECIFICATIONS.
2. CONSTRUCT NEW AC PAVING PER DETAIL "B" SHT C4.0.
3. CONSTRUCT NEW 6" CONCRETE CURB PER DETAIL 14 SHT A1.3
4. CONSTRUCT NEW CONCRETE 6" CURB AND 12" GUTTER PER DETAIL "A" SHT C4.0
5. SAWCUT AND REMOVE EXISTING AC / CONCRETE/CURB TO LIMITS AS SHOWN.
6. PROVIDE AND INSTALL 6" PVC STORM DRAIN PIPE @ 1% MIN SLOPE.
7. PROVIDE AND INSTALL 6" PVC STORM DRAIN PIPE UNDER SIDEWALK PER DETAIL 11 SHT A1.3
8. CONSTRUCT EARTHEN SWALE PER AT PATIO EDGE PER DETAIL 31 SHT A1.3
9. CONSTRUCT BENCH AT EDGE OF PATIO PER DETAILS 24 & 33 SHT A1.3.
10. CONSTRUCT CURB AT PATIO EDGE PER DETAIL 31 SHT A1.3.
11. SEE ARCH PLANS FOR WHEELSTOP LOCATIONS AND DETAIL.
12. SEE ARCH PLANS SHEET A1.3 FOR HANDICAP STRIPING, SIGNAGE AND DETECTABLE WARNING DETAILS.
13. SEE ARCH PLANS SHEET A1.3 DETAIL 32 FOR HANDICAP RAMP DETAIL.
14. PROVIDE AND INSTALL CHRIST V62 CATCH BASIN.
15. PROVIDE AND INSTALL 4" PVC SD @ 1% MIN THRU NEW WALK.
16. RAISE EXISTING CATCH BASIN RIM AND GRATE TO ELEVATION SHOWN.
17. EXISTING STORM DRAIN - POTHOLE VERIFY SIZE, LOCATION AND DEPTH PRIOR TO COMMENCEMENT OF CONSTRUCTION. SEE PROJECT ASBUILTS FOR ADDITIONAL INFORMATION.
18. EXISTING SEWER MAIN - POTHOLE VERIFY SIZE, LOCATION AND DEPTH PRIOR TO COMMENCEMENT OF CONSTRUCTION. SEE PROJECT ASBUILTS FOR ADDITIONAL INFORMATION.
19. EXISTING WATER MAIN - POTHOLE VERIFY SIZE, LOCATION AND DEPTH PRIOR TO COMMENCEMENT OF CONSTRUCTION. SEE PROJECT ASBUILTS FOR ADDITIONAL INFORMATION.
20. SEE ARCH PLANS SHEET A1.3 DETAIL 44 FOR CURB RAMP DETAIL

NOTES

1. SEE SHEET A1.1 FOR OVERALL SITE PLAN.
2. SEE SHEET A1.2 FOR DEMOLITION AND ADDITIONAL ACCESSIBLITY INFORMATION.
3. SEE PROJECT ASBUILTS (RECORD DRAWINGS) FOR ROLLING HILLS APARTMENTS DATED 1980 FOR ADDITIONAL UNDERGROUND DRY AND WET UTILITY INFORMATION.
4. SEE SHEET E1.1 AND E1.2 FOR PROPOSED DRY UTILITY INFORMATION.
5. HAND DIGGING IS REQUIRED WITHIN THE DRIP LINE OF OAK TREES TO REMAIN; ANY EXPOSED ROOTS SHALL BE OBSERVED AND OR TREATED BY AN ARBORIST BEFORE REMOVING.
6. ALL (E) UNDERGROUND UTILITY INFORMATION IS APPROXIMATE AND IS SUBJECT TO FIELD VERFICATION PRIOR TO COMMENCEMENT OF CONSTRUCTION.

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ROLLING HILLS APARTMENTS

TEMPLETON, CA

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Sheet Contents:
GRADING AND DRAINAGE PLAN FOR ACCESSIBILITY IMPROVEMENTS

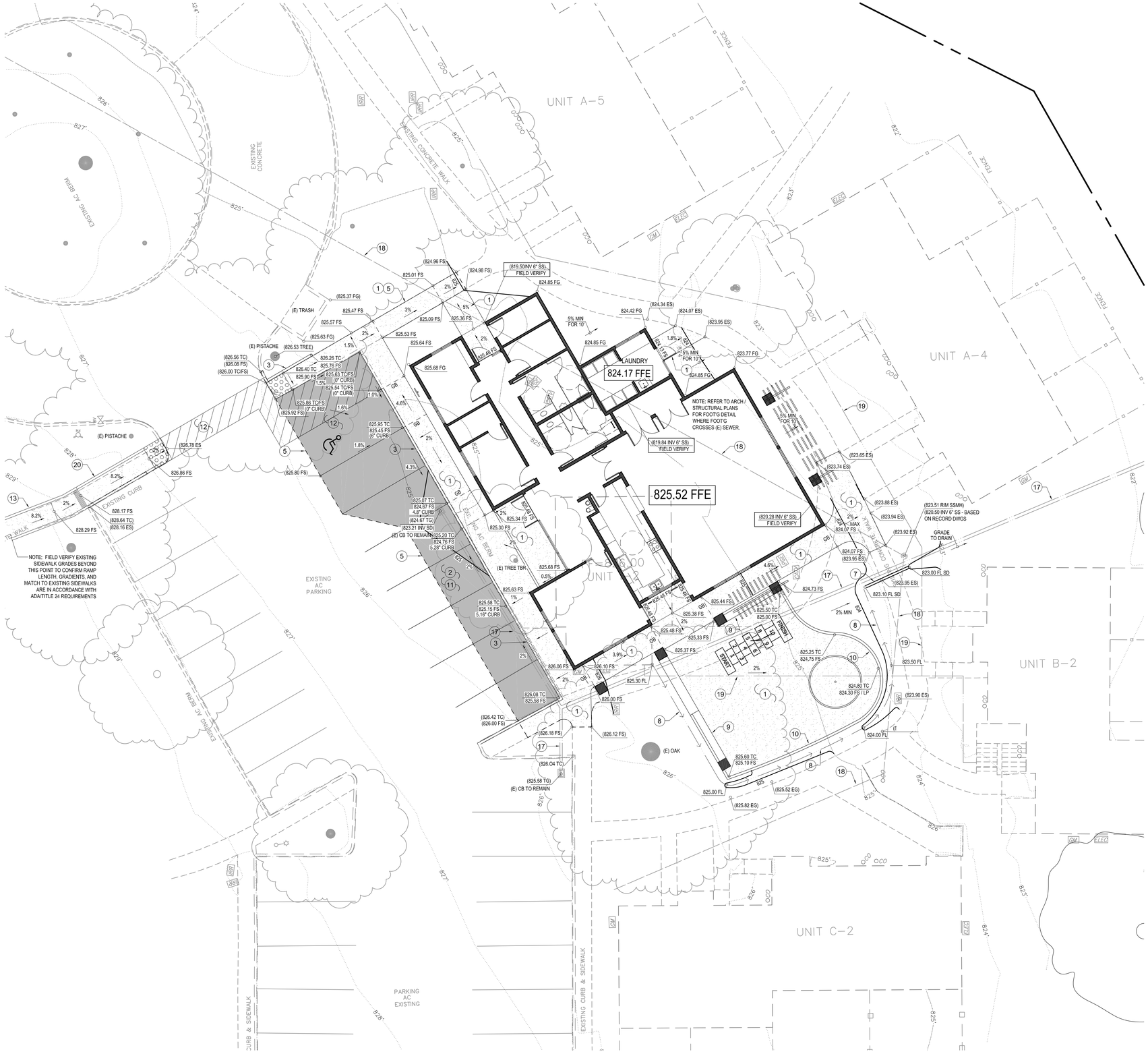
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Rolling Hills Apartments

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LEGEND:

- NEW CONCRETE FLATWORK
- AC PAVING

CONSTRUCTION NOTES:

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ROLLING HILLS APARTMENTS

TEMPLETON, CA

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Rolling Hills Housing Associates, LP

Sheet Contents:
GRADING AND DRAINAGE PLAN FOR NEW COMMON BUILDING AND ACCESSIBILITY IMPROVEMENTS

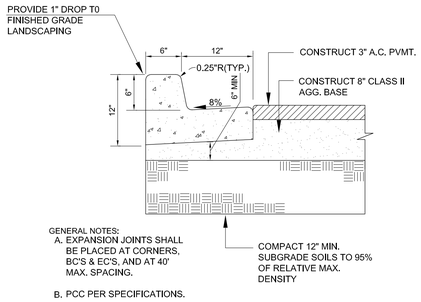
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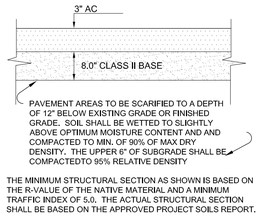
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A - 6" CONC. CURB & 12" GUTTER

SCALE: NTS



B - A.C. PAVEMENT SECTION

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LEGEND

- TC-1 STABILIZED CONSTRUCTION ENTRANCE
- SE-6 GRAVEL BAG BARRIERS
- SE-10 STORM DRAIN INLET PROTECTION
- SE-7 STREET SWEEPING AND VACCUMING
- SE-5 FIBER ROLLS
- EC-3 / 6 HYDRAULIC MULCH / STRAW, EC-4 HYDROSEED AND/OR WE-1 WIND EROSION PREVENTION
- SE-1 SILT FENCE
- ES-7 LONG TERM EROSION CONTROL BLANKET GREENFIX CF072B BIODEGRADABLE
- WM-8 CONCRETE WASH OUT
- DIRECTION OF FLOW
- SE-5 FIBER ROLL INSIDE A SE-1 SILT FENCE TYPICAL ALONG THE TOE OF SLOPE WITH NO MORE THAN 4 VERTICAL FEET UP STREAM.

EROSION CONTROL NOTES:

1. ALL EROSION CONTROL NOTES ON SHEET C-7 SHALL APPLY TO THIS PLAN.

2. ALL PERIMETER PROTECTIONS I.E. SILT FENCING AND FIBER ROLLS ARE CONSIDERED PHASE ONE CONTROLS AND SHALL BE INSTALLED PRIOR TO THE BEGINNING OF WORK ON THE SITE AS PRACTICABLE.

3. GRAVEL BAGS AND FIBER ROLLS IN GRADED AREAS SHALL BE INSTALLED AS PRACTICABLE AND IN CONFORMANCE WITH RAIN CONDITIONS.

4. HYDROSEED, MULCH AND WIND PROTECTION MEASURES SHALL BE APPLIED IF AREAS ARE NOT TO RECEIVE FURTHER WORK WITH IN 21 DAYS.

5. PERMANENT HYDROSEED SHALL BE PLACED AFTER ALL GRADING WORK IS PERFORMED AND DEEMED COMPLETE. FIBER ROLLS MAY REMAIN IN PLACE AFTER WORK COMPLETION.

6. FOR RESPONSIBLE CHARGE OF EROSION CONTROL DEVICES SEE SHEET C1.0.

7. ALL DETAILS FOR EROSION DEVICES SHOWN ON C7.0 & C8.0 DETAIL SHEETS.

8. HYDROMULCH, HYDROSEED AND OR WIND EROSION PREVENTION MEASURES PER BMP'S EC-3, 4 , 6 OR WE-1 SHALL BE PUT IN PLACE AS SOON AS PRACTICABLE.

9. NO DESIGNATED FUELING AREA - FUELING TO BE PROVIDED BY ROVING FUEL AND LUBE TRUCK WHICH HAVE THEIR OWN CONTAINMENT FACILITIES.

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ROLLING HILLS APARTMENTS

TEMPLETON, CA

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Sheet Contents:
EROSION CONTROL PLAN

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GENERAL EROSION NOTES:

1. PROHIBITION OF MOST NON-STORM WATER DISCHARGES

ONLY STORM WATER FROM THE PROJECT SITE SHALL BE ALLOWED TO FLOW INTO THE PUBLIC STREET SYSTEM. CLEAN, NON-CHLORINATED WATER FROM THE FLUSHING OF FIRE HYDRANTS, WATER MAINS, AND STORM DRAINS MAY BE DISCHARGED TO THE STREET IF IT IS NOT ALLOWED TO COLLECT DIRT, DEBRIS AND TRASH WHILE FLOWING TO THE STREET.

2. SOURCES OF STORM WATER POLLUTANTS

STORM WATER POLLUTANTS INCLUDE SOIL SEDIMENT AND NUTRIENTS, OIL, GREASE, TOXIC POLLUTANTS, HEAVY METALS, PAINT, AND STUCCO. SOURCES OF STORM WATER POLLUTANTS INCLUDE SOIL EROSION BY WATER AND/OR WIND; CLEARING OF VEGETATION; GRADING; VEHICLE AND EQUIPMENT REFUELING AND MAINTENANCE; WASHING OF CONCRETE TRUCKS, MIXERS AND HANDLING REQUIREMENT; PAINTS. SOLVENTS, ADHESIVES; LANDSCAPING WORK; ROOFING AND BUILDING MATERIALS; AND PETROLEUM PRODUCTS.

3. EROSION AND SEDIMENT CONTROLS

A. COVER EXPOSED STOCKPILES OF SOILS, CONSTRUCTION MATERIALS, AND LANDSCAPING MATERIALS WITH HEAVY PLASTIC SHEETING.

B. IN LANDSCAPING AREAS WHERE THE VEGETATION HAS NOT ESTABLISHED GROWTH AND TAKEN HOLD, CONSTRUCT SANDBAG OR DIRT BERM'S OR SILT FENCES AROUND THEIR PERIMETER TO INSURE THAT WATER WILL BE CONTAINED INSIDE THE LANDSCAPING AREA AND THAT IT WILL NOT BE CONVEYED TO A STORM DRAIN INLET.

C. RE-VEGETATE AREAS WHERE LANDSCAPING HAS DIED OR NOT TAKEN HOLD.

D. DIVERT STORM WATER RUNOFF AROUND DISTURBED SOILS WITH BERM'S OR DIRT SWALES.

4. OTHER CONTROLS

A. WASTE DISPOSAL

1. KEEP SOLID WASTE DISPOSAL CONTAINERS COVERED TO PREVENT ENTRY OF STORM WATER.

2. PROVIDE FOR THE WEEKLY (OR MORE FREQUENT, AS NECESSARY) DISPOSAL OF WASTE CONTAINERS.

3. PROVIDE CONTAINERS AT CONVENIENT LOCATIONS AROUND THE SITE.

B. SWEEPING OF SITE

1. PROVIDE WEEKLY (OR MORE FREQUENT, AS NECESSARY) SWEEPING BY HAND OR MECHANICAL MEANS TO KEEP THE PAVED AREAS OF THE SITE FREE OF DUST, DIRT, AND DEBRIS.

2. DISPOSE OF ACCUMULATED DIRT IN WASTE CONTAINERS, OR HAUL IT OFF THE SITE TO A LANDFILL.

C. SANITARY SEPTIC DISPOSAL

PORTABLE TOILETS AND OTHER SANITARY FACILITIES SHALL BE SERVICED WEEKLY (OR MORE FREQUENT, AS NECESSARY) AND PUMPED CLEAN BY A WASTE DISPOSAL COMPANY. NO TOXIC OR HAZARDOUS WASTES SHALL BE DISPOSED OF IN A PORTABLE TOILET OR IN THE ON-SITE SANITARY SEWER.

D. SPILLS

1. STORE ADEQUATE ABSORBENT MATERIAL, RAGS, BROOMS, SHOVELS, AND WASTE CONTAINERS ON THE SITE TO CLEAN-UP SPILLS OR MATERIALS SUCH AS FUEL, PAINT SOLVENTS, OR CLEANERS. CLEAN UP MINOR SPILLS IMMEDIATELY.

2. FOR REPORTABLE QUANTITIES OF A HAZARDOUS OR TOXIC SUBSTANCES, SECURE THE SERVICES OF QUALIFIED PERSONNEL FOR CLEAN-UP AND DISPOSAL.

E. CONTROL OF ALLOWABLE NON-STORM WATER DISCHARGES

LANDSCAPING IRRIGATION, EROSION CONTROL MEASURES, PIPE FLUSHING AND TESTING PAVEMENT WASHING, AND DE-WATERING ARE ALLOWED IF THEY CANNOT FEASIBLY BE ELIMINATED, COMPLY WITH THIS PLAN, DO NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF WATER QUALITY STANDARDS, AND ARE NOT REQUIRED TO BE PERMITTED BY THE LOCAL REGIONAL WATER QUALITY CONTROL BOARD.

F. VEHICLES AND EQUIPMENT

1. FIX LEAKS OF FUEL, OIL, AND OTHER SUBSTANCES IMMEDIATELY.

2. PERFORM REFUELING AND SERVICE OF VEHICLES OR EQUIPMENT OFF-SITE WHEN POSSIBLE. IF REFUELING OR SERVICE OF EQUIPMENT IS PERFORMED ON-SITE, THEN PROVIDE AN IMPERVIOUS, CONTAINED AREA WHERE ANY SPILLS CAN BE CONTAINED WITHOUT FLOWING TO A STORM WATER INLET OR INTO THE GROUND.

3. USE DRIP PANS TO CATCH LEAKS AND SMALL SPILLS.

G. CONCRETE TRUCKS, MIXERS, AND HAULING EQUIPMENT

1. DISPOSE OF WASHOUT FROM THE WASHING OF CONCRETE TRUCKS AT ASSIGNED WASHOUT AREAS.

2. PROVIDE A HOLDING TANK TO RECEIVE ANY WASHOUT FROM CONCRETE EQUIPMENT. DISPOSAL OF TANK CONTENTS SHOULD BE CONDUCTED BY A WASTE HAULING FIRM.

3. PROVIDE A DESIGNATED AREA FOR WASHING ANY VEHICLES OR EQUIPMENT; DRAINAGE FROM THIS AREA SHOULD FLOW TO THE HOLDING TANK.

H. LANDSCAPING OPERATIONS

1. USE ONLY THE MINIMUM AMOUNT OF LANDSCAPING FERTILIZERS, NUTRIENTS, AND OTHER CHEMICALS THAT ARE NEEDED.

2. DO NO OVER WATER FERTILIZED OR TREATED LANDSCAPE AREAS, MINIMIZE RUNOFF OF IRRIGATION WATER FROM LANDSCAPING.

I. STORM WATER INLETS

KEEP ALL ON-SITE STORM WATER INLETS CLEAN AND FREE OF DIRT, SILT, AND DEBRIS, ETC. IN THE EVENT THAT SEDIMENT AND DEBRIS MAY FLOW TO AN INLET, PROVIDE A 6-INCH (MINIMUM) SANDBAG BERM AROUND THE INLET TO TRAP THE DIRT AND DEBRIS AND ALLOW ONLY CLEAN STORM WATER TO ENTER THE INLET (EROSION CONTROL PLAN).

5. INSPECTION BY CONTRACTOR & ENGINEER OF RECORD

A. REGULAR INTERVAL INSPECTION AND INSPECTION BEFORE AND AFTER STORM

1. VISUALLY INSPECT THE SITE WEEKLY TO INSURE THAT STORM WATER INLETS ARE FREE OF DIRT AND DEBRIS.

2. BEFORE A STORM, INSPECT THE SITE TO INSURE THAT STORM WATER POLLUTION CONTROL MEASURES ARE IN PLACE.

3. AFTER A STORM, INSPECT ALL STORM WATER INLETS TO INSURE THAT THEY ARE CLEAR OF DIRT AND DEBRIS. CLEAN THOSE STORM WATER INLETS THAT ARE NOT CLEAR AND FREE OF DEBRIS.

4. THE REGIONAL WATER BOARD MAY REQUIRE THE DISCHARGER TO CONDUCT ADDITIONAL SITE INSPECTIONS, SUBMIT REPORTS AND CERTIFICATIONS, OR TO PERFORM SAMPLING AND ANALYSIS.

5. THE DISCHARGER (PERMITTEE) IS REQUIRED TO CONDUCT INSPECTION OF THE CONSTRUCTION SITE PRIOR TO ANTICIPATED STORM EVENTS AND AFTER ACTUAL STORM EVENTS TO IDENTIFY AREAS CONTRIBUTING TO A STORM WATER DISCHARGE AND TO EVALUATE WHETHER MEASURES TO REDUCE POLLUTANT LOADINGS IDENTIFIED IN THE SWPPP ARE ADEQUATE AND PROPERLY IMPLEMENTED IN ACCORDANCE WITH THE TERMS OF THE GENERAL PERMIT AND WHETHER ADDITIONAL CONTROL PRACTICES ARE NEEDED.

GENERAL EROSION NOTES: (CONTINUED)

6. MAINTENANCE OF CONTROLS

A. MAINTENANCE AND REPAIR

ALL CONTROLS AND MEASURES INDICATED ON THIS PLAN SHOULD BE MAINTAINED IN GOOD AND EFFECTIVE CONDITION BY THE CONTRACTOR. IF ANY CONTROL OF MEASURES ARE DAMAGED OR REMOVED, THEY SHOULD BE PROMPTLY REPAIRED OR RESTORED.

B. PLAN REVISIONS

IF CONSTRUCTION ACTIVITY OR CONDITIONS CHANGE FROM THOSE SHOWN IN THIS PLAN THEN THIS PLAN SHOULD BE REVISED TO REFLECT THE CURRENT CONDITIONS.

7. FINAL STABILIZATION AND POST-CONSTRUCTION CONTROLS

A. AFTER CONSTRUCTION HAS BEEN COMPLETED, THE SITE SHALL BE SWEPT CLEAN, STORM WATER INLETS (GRATES AND BASIN) SHALL BE CLEANED, AND ALL WASTE AND LEFTOVER MATERIALS SHALL BE REMOVED FROM THE SITE.

B. ALL LANDSCAPING AND PLANTING AREAS SHOULD BE WELL MAINTAINED TO PREVENT EROSION. AVOID OVER-WATERING OF LANDSCAPING.

C. ALL PAVED AREAS SHOULD BE SWEPT WEEKLY EITHER BY HAND OR BY MECHANICAL MEANS TO KEEP THE SITE CLEAR OF DIRT, DUST, AND DEBRIS.

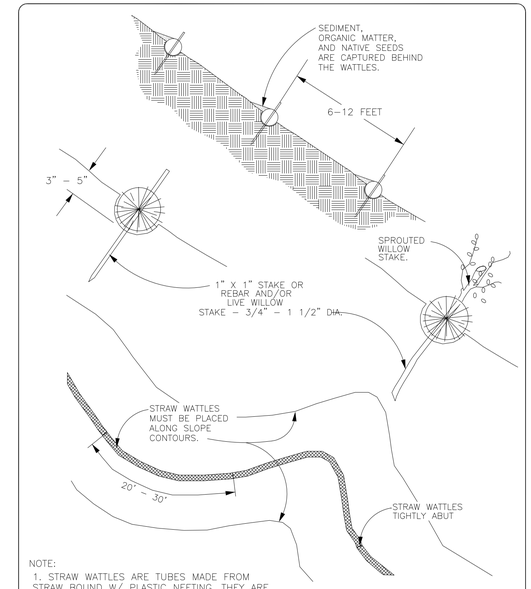
D. WASTE MATERIALS ON-SITE SHOULD BE STORED IN COVERED CONTAINERS WHICH ARE CLEANED OUT REGULARLY.

E. TESTING OF FIRE HYDRANTS ON-SITE SHALL NOT BE CONDUCTED UNTIL THE AREA WHERE THE WATER DISCHARGES HAS BEEN SWEPT CLEAN OF DIRT AND DEBRIS.

F. STORM DRAIN LINES SHOULD BE CHECKED AND CLEANED ANNUALLY TO KEEP THEM CLEAN AND CLEAR OF DEBRIS.

G. ALL ON-SITE STORM WATER INLETS SHOULD BE CLEARLY MARKED WITH 4" BLUE LETTERS ON WHITE FIELD "STORM WATER ONLY, THIS DRAINS TO THE OCEAN".

8. ALL CONSTRUCTION ACTIVITIES INCLUDING GRADING, VEGETATION REMOVAL, STOCKPILING, EQUIPMENT STORAGE ETC. SHALL REMAIN OUTSIDE OF THE 20-FOOT CREEK SETBACK LINE AT ALL TIMES UNLESS AN EXCEPTION FOR SUCH CONSTRUCTION HAS BEEN APPROVED BY THE COMMUNITY DEVELOPMENT DEPARTMENT. THE CREEK SETBACK LINE SHALL BE ESTABLISHED BY THE CITY'S NATURAL RESOURCE MANAGER AND MARKED IN THE FIELD. THE SETBACK AREA SHAL BE FENCED WITH ORANGE CONSTRUCTION FENCING, AND SHALL BE IN PLACE PRIOR TO THE BIGINNNING OF CONSTRUCTION AND THROUGHOUT THE DURATION OF CONSTRUCTION.

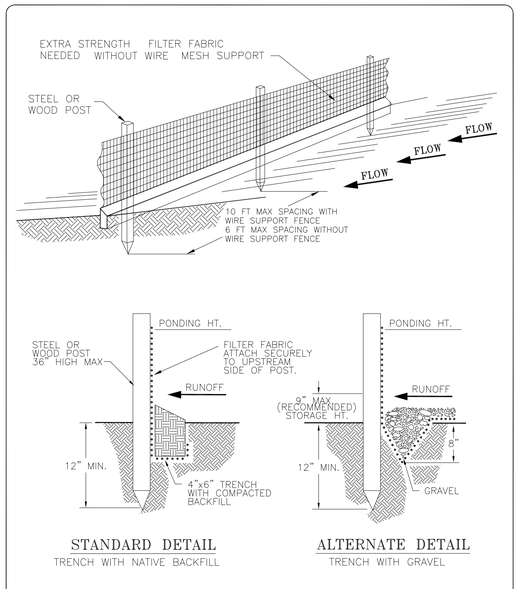


NOTE:
1. STRAW WATTLES ARE TUBES MADE FROM STRAW BOUND W/ PLASTIC NEETING. THEY ARE APPROX. 8" DIA. AND 20 – 30 FT. LONG.
2. STRAW WATTLES TRAP SEDIMENT AND REDUCE SHEET & RILL EROSION BY REDUCING SLOPE GRADIENT, INCREASING INFILTRATION RATES, AND BY PRODUCING A FAVORABLE ENVIRONMENT FOR PLANT ESTABLISHMENT.
3. STRAW WATTLE INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE WATTLE IN A TRENCH, 3" – 5" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND WATTLE.

STRAW WATTLES

© 1994 JOHN McCULLAH

SE-5 FIBER ROLL INSTALLATION



STANDARD DETAIL
TRENCH WITH NATIVE BACKFILL

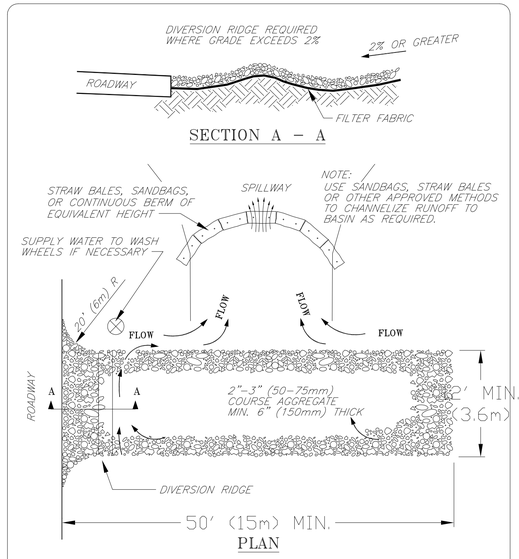
ALTERNATE DETAIL
TRENCH WITH GRAVEL

NOTE:
1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF–SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

SILT FENCE

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SE-1 SILT FENCE INSTALLATION

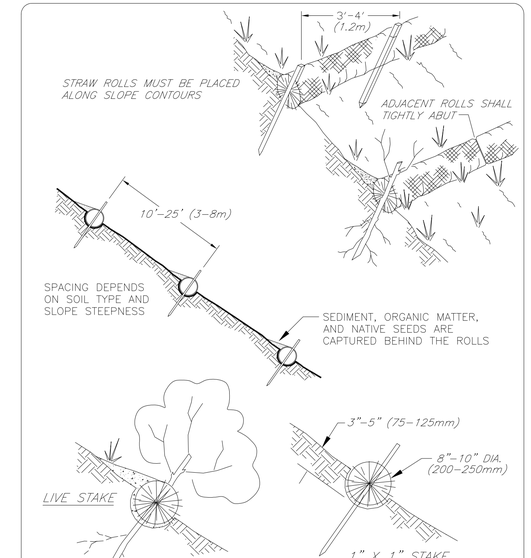


NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT–OF–WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

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TC-1 STABILIZED CONSTRUCTION ENTRANCE



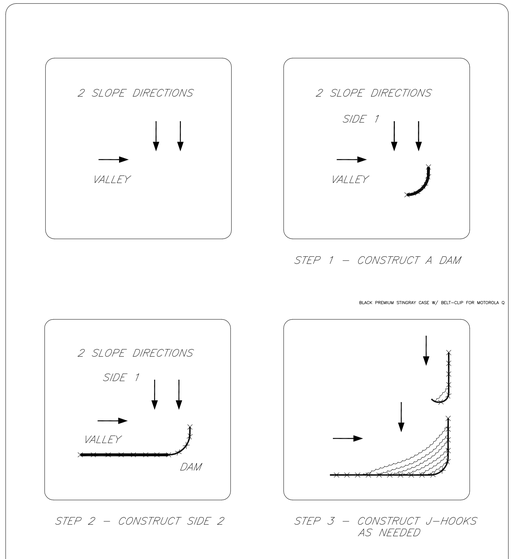
NOT TO SCALE

NOTE:
1. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3"–5" (75–125mm) DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.

STRAW ROLLS

© 1996 JOHN McCULLAH

SE-5 FIBER ROLL INSTALLATION



INSTALLATION WITH J–HOOKS WILL INCREASE SILT FENCE EFFICIENCY AND REDUCE EROSION–CAUSING FAILURES.

SILT FENCE
TYPICAL PLACEMENT–TWO SLOPES

© 2001 JOHN McCULLAH

SE-1 SILT FENCE INSTALLATION

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Project:
ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

Client:
Rolling Hills Housing Associates, LP

Sheet Contents:
EROSION CONTROL PLAN NOTES & DETAILS

Date:
Aug 2010

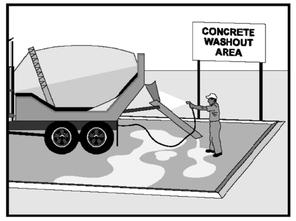
Revised:

Job No:
Rolling Hills Apartments

Sheet:
C-6.0
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Concrete Waste Management WM-8



Objectives

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

Legend:
☑ Primary Objective
☒ Secondary Objective

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	☑
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose
Prevent or reduce the discharge of pollutants to stormwater from concrete waste by conducting washout offsite, performing onsite washout in a designated area, and training employee and subcontractors.

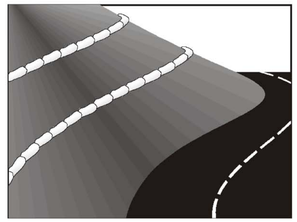
Suitable Applications
Concrete waste management procedures and practices are implemented on construction projects where:

- Concrete is used as a construction material or where concrete dust and debris result form demolition activities
- Slurries containing portland cement concrete (PCC) or asphalt concrete (AC) are generated, such as from saw cutting, coring, grinding, grooving, and hydro-concrete demolition
- Concrete trucks and other concrete-coated equipment are washed onsite
- Mortar-mixing stations exist
- See also NS-8, Vehicle and Equipment Cleaning

Limitations
- Offsite washout of concrete wastes may not always be possible.

WM-8 CONCRETE WASTE MANAGEMENT

Gravel Bag Berm SE-6



Objectives

EC	Erosion Control	☒
SE	Sediment Control	☑
TR	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Objective
☒ Secondary Objective

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

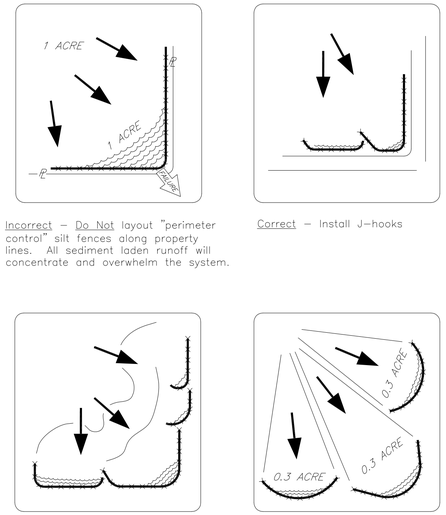
SE-1 Silt Fence
SE-5 Fiber Roll
SE-8 Sandbag Barrier
SE-9 Straw Bale Barrier

Description and Purpose
A gravel bag berm is a series of gravel-filled bags placed on a level contour to intercept sheet flows. Gravel bags pond sheet flow runoff, allowing sediment to settle out, and release runoff slowly as sheet flows, preventing erosion.

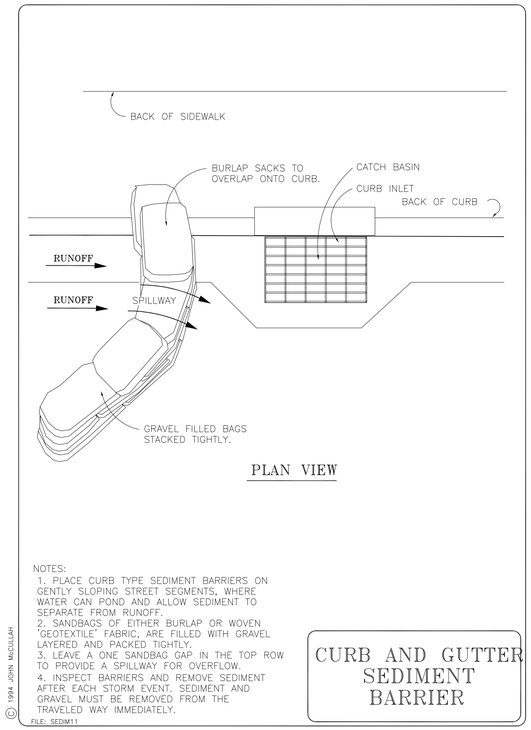
Suitable Applications
Gravel bag berms may be suitable:

- As a linear sediment control measure:
  - Below the toe of slopes and erodible slopes
  - As sediment traps at culvert/pipe outlets
  - Below other small cleared areas
  - Along the perimeter of a site
  - Down slope of exposed soil areas
  - Around temporary stockpiles and spoil areas
  - Parallel to a roadway to keep sediment off paved areas
  - Along streams and channels
- As linear erosion control measure:

SE-6 GRAVEL BAG INSTALLATION



SE-1 SILT FENCE INSTALLATION



SE-6 GRAVEL BAG BARRIER DETAIL

Stockpile Management WM-3



Objectives

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

Legend:
☑ Primary Objective
☒ Secondary Objective

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose
Stockpile Management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, paving materials such as portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate sub base or pre-mixed aggregate, asphalt minder (so called "cold mix" asphalt), and pressure treated wood.

Suitable Applications
Implement in all projects that stockpile soil and other materials.

Limitations
None identified.

Implementation
Protection of stockpiles is a year-round requirement. To properly manage stockpiles:

- Locate stockpiles a minimum of 50 ft away from concentrated flows of stormwater, drainage courses, and inlets.
- Protect all stockpiles from stormwater runon using a temporary perimeter sediment barrier such as berms, dikes, fiber rolls, silt fences, sandbag, gravel bags, or straw bale barriers.

WM-3 STOCKPILE MANAGEMENT

Street Sweeping and Vacuuming SE-7



Objectives

EC	Erosion Control	
SE	Sediment Control	☒
TR	Tracking Control	☑
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Objective
☒ Secondary Objective

Targeted Constituents

Sediment	☑
Nutrients	
Trash	☑
Metals	
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

None

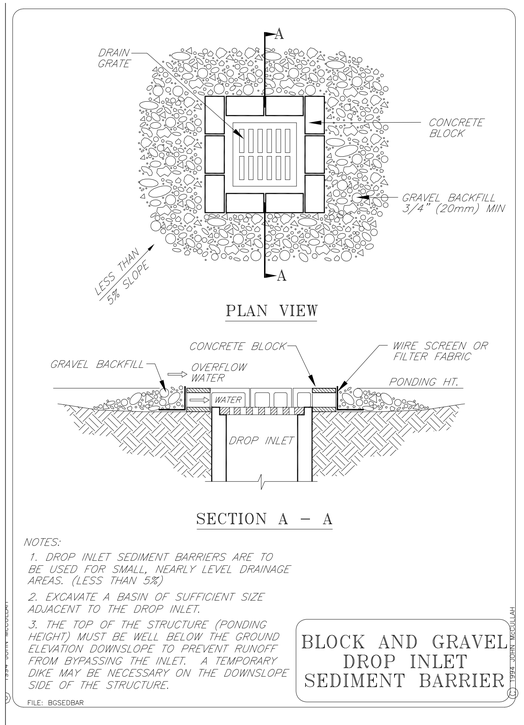
Description and Purpose
Street sweeping and vacuuming includes use of self-propelled and walk-behind equipment to remove sediment from streets and roadways, and to clean paved surfaces in preparation for final paving. Sweeping and vacuuming prevents sediment from the project site from entering storm drains or receiving waters.

Suitable Applications
Sweeping and vacuuming are suitable anywhere sediment is tracked from the project site onto public or private paved streets and roads, typically at points of egress. Sweeping and vacuuming are also applicable during preparation of paved surfaces for final paving.

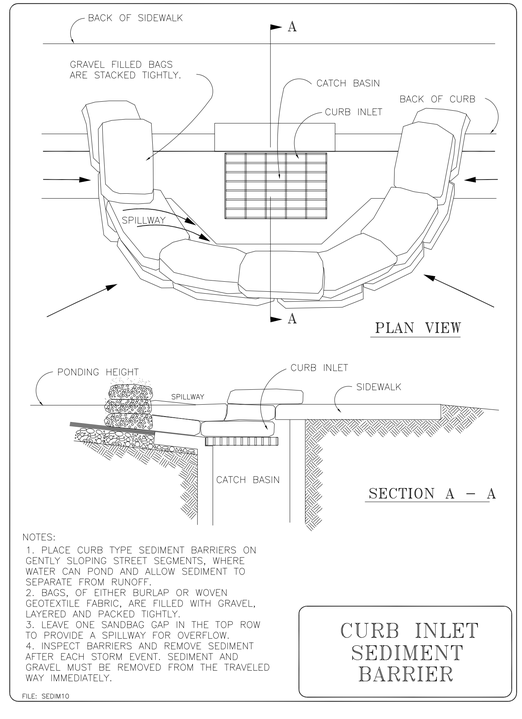
Limitations
Sweeping and vacuuming may not be effective when sediment is wet or when tracked soil is caked (caked soil may need to be scraped loose).

Implementation
- Controlling the number of points where vehicles can leave the site will allow sweeping and vacuuming efforts to be focused, and perhaps save money.
- Inspect potential sediment tracking locations daily.
- Visible sediment tracking should be swept or vacuumed on a daily basis.

SE-7 STREET SWEEPING AND VACUUMING



SE-10 STORM DRAIN PROTECTION



SE-10 STORM DRAIN PROTECTION

Keith V. Crowe, P.E.
Consulting Engineer
P.O. Box 832, Atascadero, CA 93423-0832
Phone & Fax: (805) 464-0975
KVCrowe@Charter.net

Project:
ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

Client:
Rolling Hills Housing Associates, LP

Sheet Contents:
EROSION CONTROL PLAN DETAILS

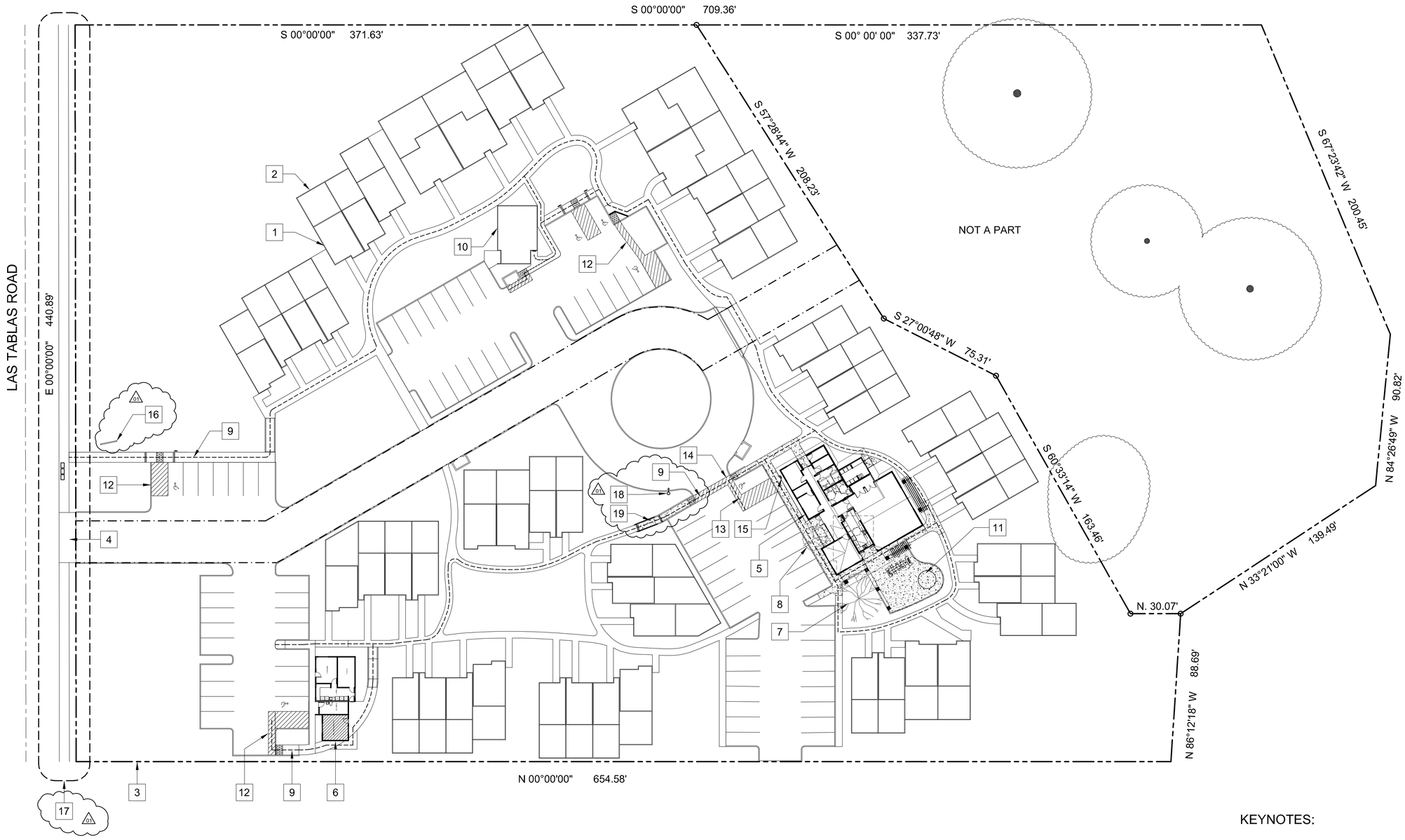
Date:
Aug 2010

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Job No:
Rolling Hills Apartments

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OVERALL SITE PLAN

SCALE : 1" = 30'

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

KEYNOTES:

1. EXISTING DWELLING UNIT, TYP.
2. EXISTING BACKYARD FENCE, TYP.
3. PROPERTY LINE.
4. EXISTING DRIVEWAY ACCESS.
5. DEMOLISH EXISTING LAUNDRY FACILITY AND REPLACE WITH NEW COMMON BUILDING.
6. MAINTENANCE SHOP ADDITION.
7. (E) 24" OAK TO REMAIN AND PROTECT.
8. (E) TREE TO REMAIN AND PROTECT.
9. ACCESSIBLE PATH OF TRAVEL TO ALL FACILITIES.
10. EXISTING LAUNDRY FACILITY.
11. NEW RECREATIONAL AREA.
12. ACCESSIBILITY IMPROVEMENTS UNDER SEPARATE PERMIT.
13. NEW VAN ACCESSIBLE PARKING SPACE. SEE SHEET A1.3.
14. NEW STRIPED ACCESSIBLE PATH OF TRAVEL MINIMUM 4' WIDE.
15. NEW ACCESSIBLE PARKING SIGN. SEE SHEET A1.3.
16. EXISTING PROJECT MONUMENT SIGN WITH ADDRESS NUMBERS.
17. SEE SHEETS A1.4 AND A1.5 FOR CURB / GUTTER / SIDEWALK AND DRIVEWAY APPROACH IMPROVEMENTS. (01)
18. EXISTING FIRE HYDRANT.
19. NEW RAMP WITH HANDRAILS ALONG ACCESSIBLE PATH.

NOTES:

1. NO TREES WILL BE REMOVED DURING THIS PROJECT.
2. REFER TO ELECTRICAL DRAWINGS FOR UTILITY VAULT RELOCATION PLANS.

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TtempleTON, CA

CLIENT JOB # | ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES
DESIGN DEVELOPMENT 4/15/10
FIRST SUBMITTAL 6/02/10
(01) PLAN CHECK 1 8/16/10

SIGNED

LICENSED ARCHITECT BRUCE DOUGLAS FRASER C 9787 EXPIRES 12•31•11 STATE OF CALIFORNIA

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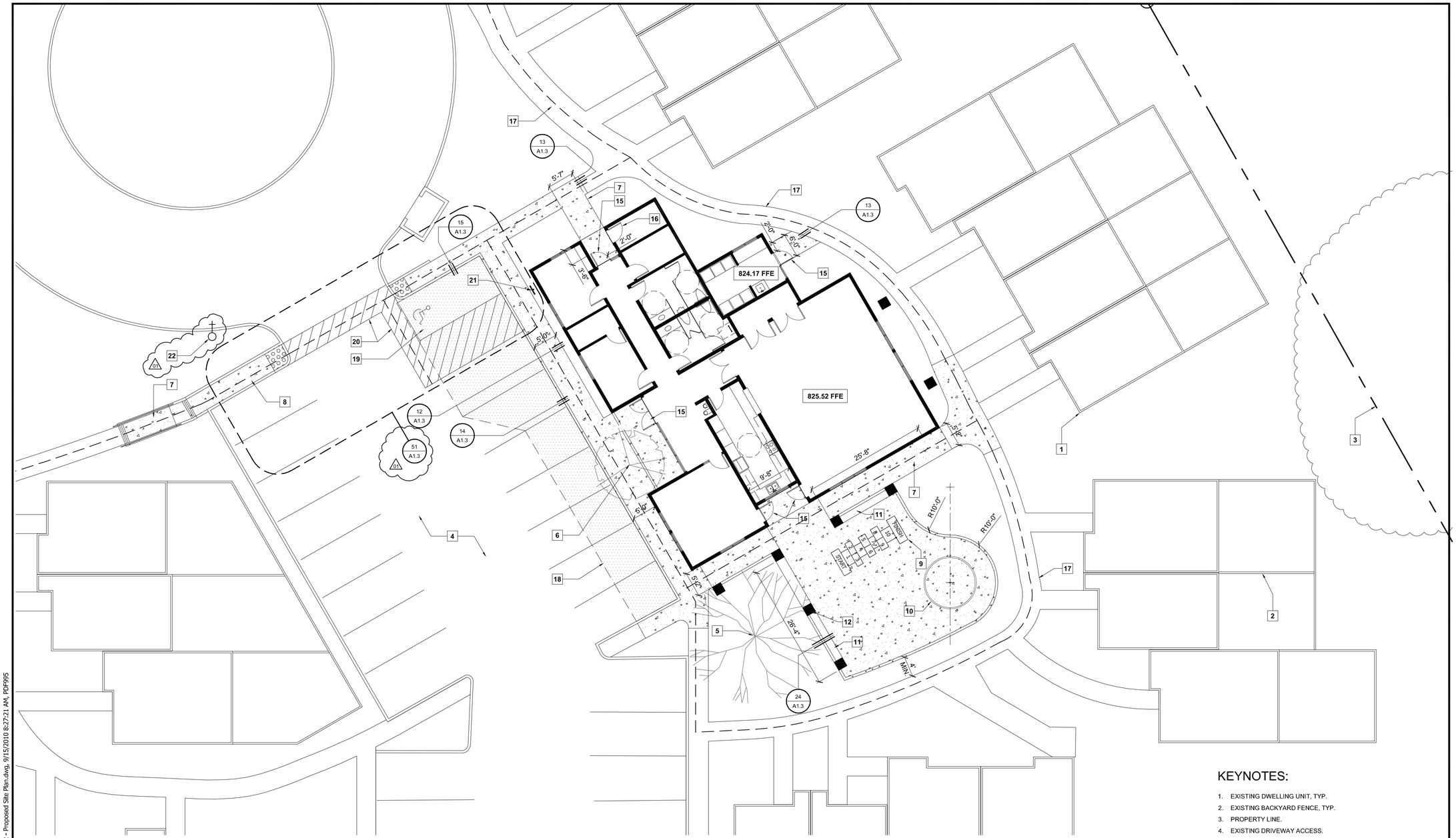
SHEET TITLE

OVERALL SITE PLAN

SHEET #

A1.1

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ENLARGED SITE PLAN

SCALE : 1" = 10'

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)

NOTE:

REFER TO SHEET C-3.0, FOR GRADING AND DRAINAGE PLAN.

KEYNOTES:

1. EXISTING DWELLING UNIT, TYP.
2. EXISTING BACKYARD FENCE, TYP.
3. PROPERTY LINE.
4. EXISTING DRIVEWAY ACCESS.
5. (E) 24" OAK TO REMAIN AND PROTECT.
6. (E) TREE TO REMAIN AND PROTECT.
7. NEW RAMP WITH HANDRAILS. SEE DETAIL **31 / A1.3**.
8. NEW CURB RAMP. SEE DETAIL **44 / A1.3**.
9. HOPSCOTCH STRIPPING.
10. TETHERBALL STRIPPING AND POLE.
11. BENCH. COMPOSITE LUMBER AND METAL PAINTED TO MATCH TRIM. SEE DETAIL **33 / A1.3**.
12. 2' HIGH CONCRETE WALL WITH SKATE STOPS @ 36" O.C.
13. NOTE USED
14. NOT USED
15. PROVIDE A 60" x 60" CLEAR LEVEL AREA AT WALK ADJACENT TO DOOR / GATE WHEN DOOR / GATE SWINGS TOWARD WALK.
16. PROVIDE 48" x 44" CLEAR LEVEL AREA AT WALK ADJACENT TO DOOR / GATE WHEN DOOR / GATE SWINGS AWAY FROM WALK.
17. EXISTING CONCRETE SIDEWALK TO REMAIN AND PROTECT.
18. SAWCUT AND REPLACE FULL SECTION WIDTH OF EXISTING PAVING. FLUSH TO MATCH EXISTING.
19. NEW VAN ACCESSIBLE PARKING SPACE. SEE SHEET A1.3.
20. NEW STRIPED ACCESSIBLE PATH OF TRAVEL MINIMUM 4' WIDE.
21. NEW ACCESSIBLE PARKING SIGN. SEE DETAIL **53 / A1.3.**
22. EXISTING FIRE HYDRANT.

01

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES
DESIGN DEVELOPMENT 4/15/10
FIRST SUBMITTAL 6/02/10
01 PLAN CHECK 1 8/16/10

SIGNED

LICENSED ARCHITECT
BRUCE DOUGLAS FRASER
C 9787
EXPIRES 12-31-11
STATE OF CALIFORNIA

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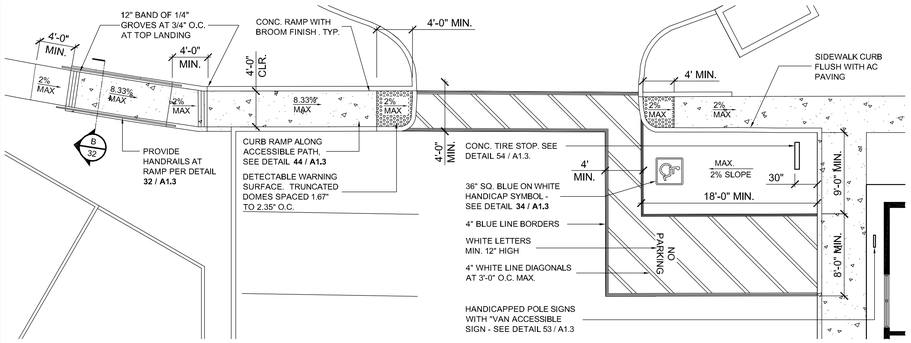
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ENLARGED SITE PLAN

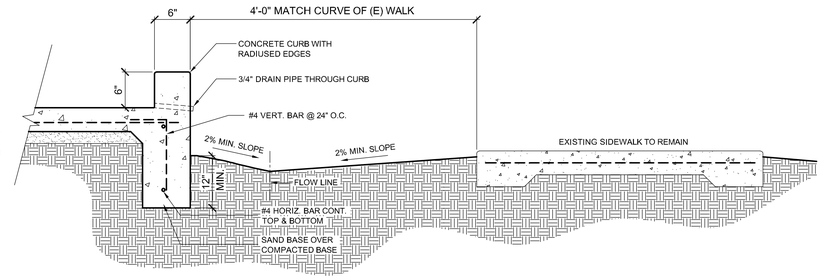
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A1.2

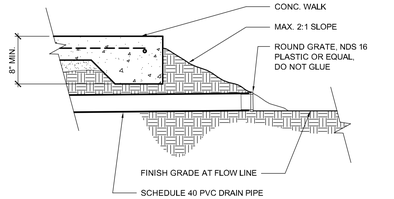
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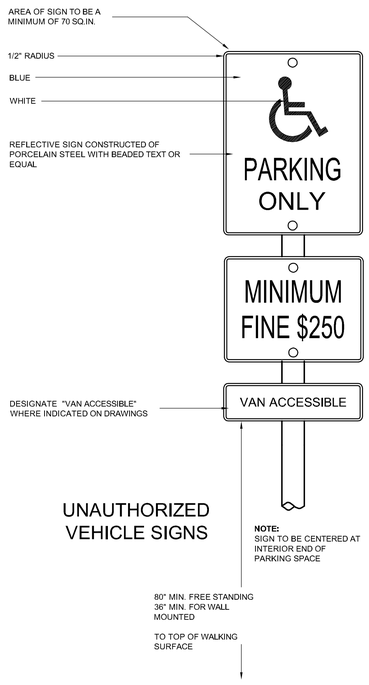
51 ENLARGED ACCESSIBILITY IMPROVEMENT PLAN
1/8"=1' -0"

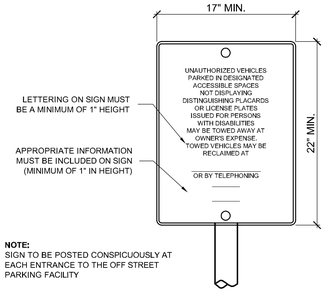


31 EDGE OF PATIO
1" =1' -0"
D027025A



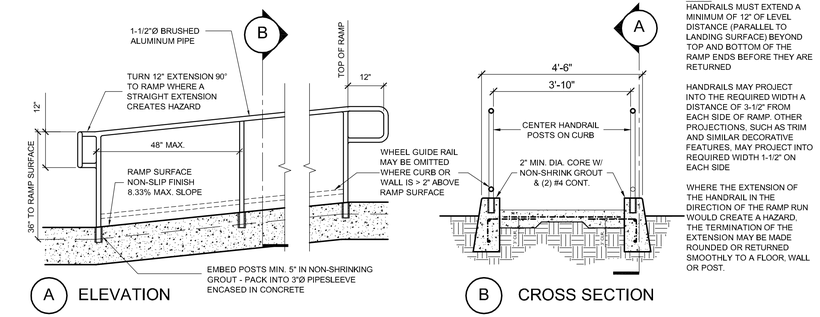
11 THRU-WALK DRAIN DETAIL
1" =1' -0"
D027024B





NOTE:
SIGN TO BE POSTED CONSPICUOUSLY AT EACH ENTRANCE TO THE OFF STREET PARKING FACILITY

53 PARKING SIGNAGE
1 1/2"= 1' -0"



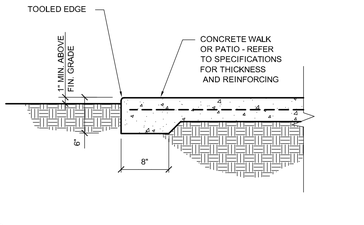
A ELEVATION
B CROSS SECTION

32 HANDRAIL AT RAMP
1/2"= 1' -0"
D057014C

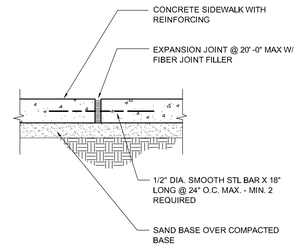
NOTE:
HANDRAILS MUST EXTEND A MINIMUM OF 12" OF LEVEL DISTANCE (PARALLEL TO LANDING SURFACE) BEYOND TOP AND BOTTOM OF THE RAMP ENDS BEFORE THEY ARE RETURNED

HANDRAILS MAY PROJECT INTO THE REQUIRED WIDTH A DISTANCE OF 3-1/2" FROM EACH SIDE OF RAMP. OTHER PROJECTIONS, SUCH AS TRIM AND SIMILAR DECORATIVE FEATURES, MAY PROJECT INTO REQUIRED WIDTH 1-1/2" ON EACH SIDE

WHERE THE EXTENSION OF THE HANDRAIL IN THE DIRECTION OF THE RAMP RUN WOULD CREATE A HAZARD, THE TERMINATION OF THE EXTENSION MAY BE MADE ROUNDED OR RETURNED SMOOTHLY TO A FLOOR, WALL OR POST.

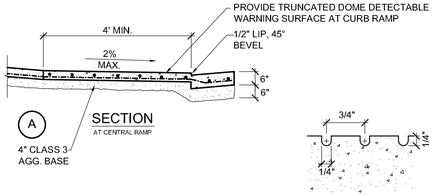


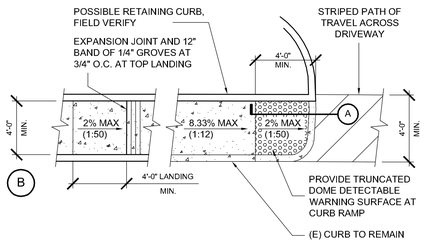
12 WALK / PATIO EDGE
1"= 1' -0"
D027009B



13 EXPANSION JOINT
1"= 1' -0"
D027003A

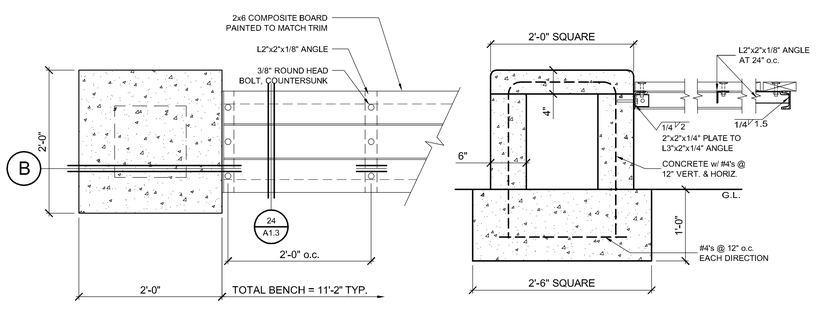
54 WHEEL STOP
1"= 1' -0"
D027007A





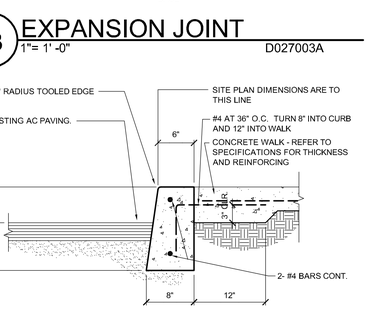
1. CENTRAL RAMP SHALL BE A FLAT PLANE WITH 2% SLOPE TOWARD THE STREET, AND NO MORE THAN 2% CROSS-SLOPE PARALLEL TO THE STREET. CENTRAL RAMP SHALL BE A MINIMUM OF 4' WIDE, AND HAVE A 1/2" LIP AT THE GUTTER, BEVELED AT 45° FOR THE FULL WIDTH.
2. RAMPS SHALL HAVE A MEDIUM BROOM FINISH.
3. CONCRETE SHALL BE CLASS B, 5-SACK, SLUMP 2" MIN. TO 4" MAX.
4. RAMP SHALL HAVE EXPANSION JOINTS AT LOCATIONS SHOWN. DOWELS AT EXPANSION JOINTS SHALL BE 1/2" SMOOTH BARS, 18" LONG AT 24" O.C., TO BE SLEEVED OR GREASED.
5. GUTTER CONSTRUCTION ADJACENT TO EXISTING A.C. PAVING SHALL INCLUDE SAWCUTTING, REMOVAL AND REPLACEMENT OF A.C. PAVING 18" MIN. FROM EDGE OF GUTTER, 2" THICKER THAN EXISTING, 5" MIN.
6. SIDEWALK AT TOP OF RAMP SHALL HAVE A 12" WIDE GROOVED BORDER WITH GROOVES 3/4" APART (SEE GROOVING DETAIL).
7. ENTIRE RAMP SHALL BE REINFORCE WITH REBAR. EITHER #3 AT 18" O.C. OR #4 AT 24" O.C. BOTH WAYS.
8. IF DISTANCE TO TOP OF RAMP EXCEEDS 12' PLACE ADDITIONAL GROOVED BORDER AT 12' FROM BOTTOM.

44 S.W. RAMP @ PARKING
3/16" =1' -0"
D027020B

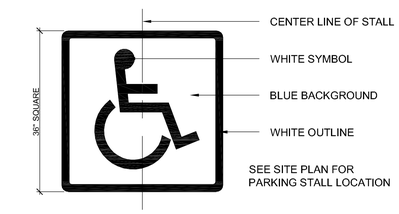


A PLAN VIEW
B SECTION

33 PATIO BENCH
1" =1' -0"
D027025A

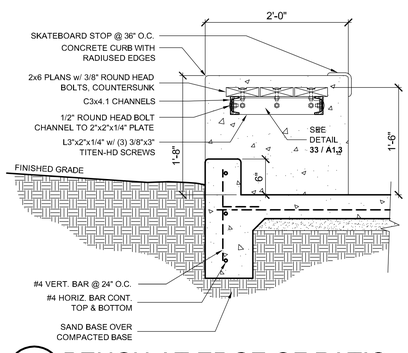


14 CONC. CURB
1"= 1' -0"
D027005A

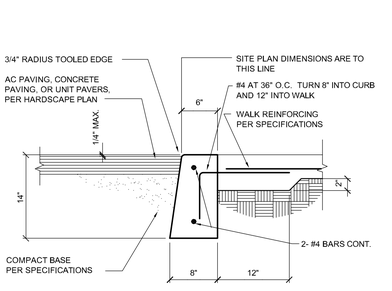


NOTE: PROVIDE A 36" x 36" BLUE BACKGROUND WITH A WHITE INTERNATIONAL SYMBOL OF ACCESSIBILITY PAINTED ON THE PARKING SPACE SURFACE VISIBLE TO TRAFFIC ENFORCEMENT OFFICERS WHEN VEHICLES ARE PROPERLY PARKED IN THE SPACE. THE PARKING SPACE SHALL BE OUTLINED OR PAINTED BLUE WITH THE SYMBOL OUTLINE IN WHITE OR OTHER SUITABLE CONTRASTING COLOR.

34 ACCESSIBLE PARKING STALL SYMBOL
3/4"= 1' -0"



24 BENCH AT EDGE OF PATIO
1" =1' -0"
D027025A



15 FLUSH WALK/PAVING
1"= 1' -0"
D027005E

\\John\Rolling Hills Apts 0706\drawings\0 - Drawing Sheets\Architectural\A1.3 - Site Details.dwg, 9/15/2010 8:38:55 AM, PDP995

PROJECT
ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES
DESIGN DEVELOPMENT 4/15/10
FIRST SUBMITTAL 6/02/10
01 PLAN CHECK 1 8/16/10

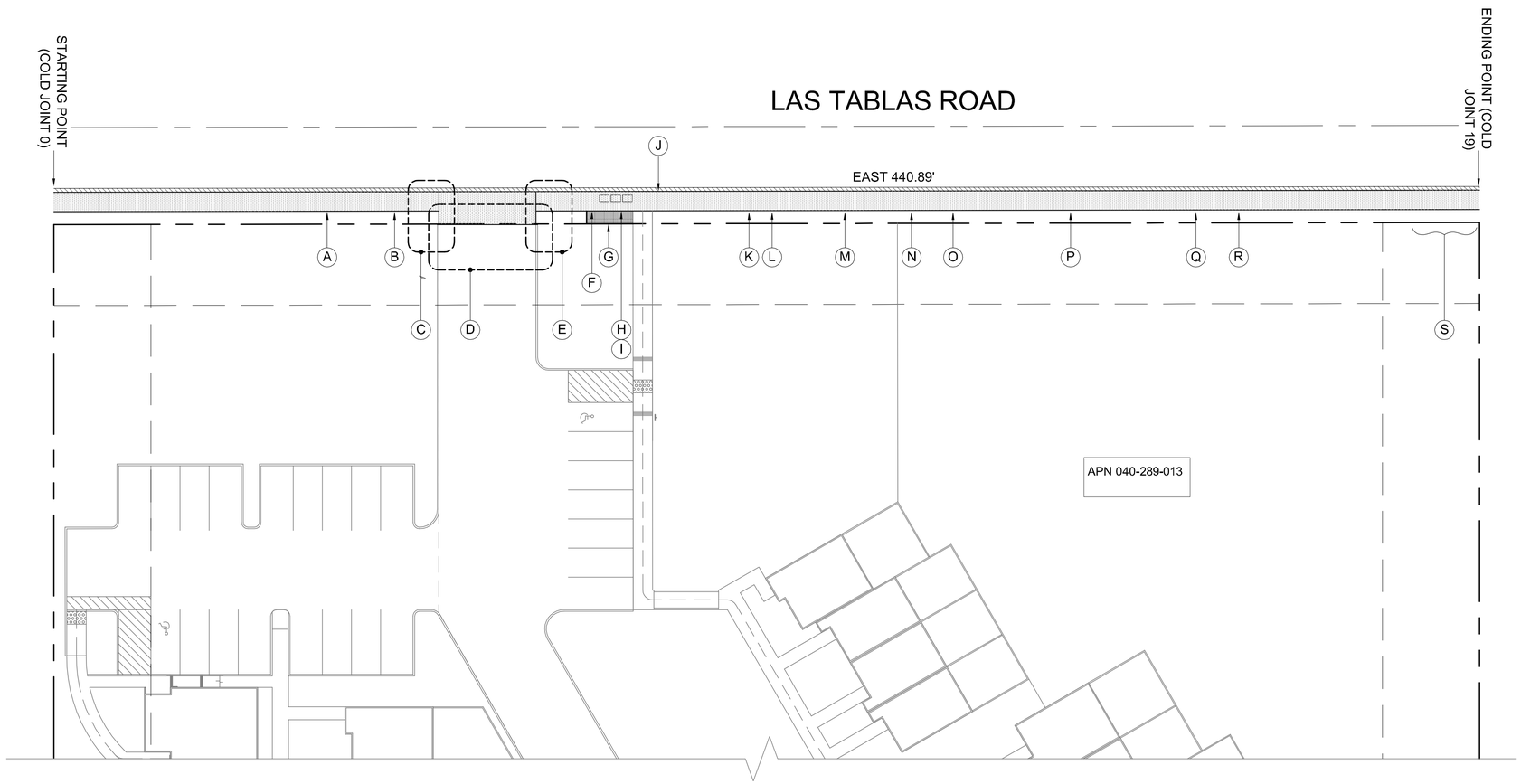
SIGNED
LICENSED ARCHITECT BRUCE DOUGLAS FRASER C 9787 EXPIRES 12-31-11 STATE OF CALIFORNIA

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SHEET TITLE
SITE DETAILS

SHEET #
A1.3



PUBLIC IMPROVEMENT KEYNOTES

LEGEND:

CJ = COLD JOINT (DISCONTINUOUS POUR)

WPJ = WEAKENED PLANE JOINT (TOOLED OR SAWCUT)

- (A) GRIND OFFSET AT 2ND WPJ BELOW CJ#4 TO MAXIMUM 1/4".
- B. FILL CRACK AT 3RD WPJ BELOW CJ#5.
- C. REMOVE DRIVEWAY APRON FLARE AND INSTALL HIGH VOLUME RADIUS RETURN PER SAN LUIS OBISPO COUNTY STANDARD DRAWING NO. B-3b.
- D. ADD COMPLYING ACCESSIBLE SIDEWALK BEHIND DRIVEWAY APRON PER SAN LUIS OBISPO COUNTY STANDARD DRAWING NO. B-2a. SEE SHEET A1.5.
- E. REMOVE DRIVEWAY APRON FLARE AND INSTALL HIGH VOLUME RADIUS RETURN PER SAN LUIS OBISPO COUNTY STANDARD DRAWING NO. B-3b. SEE SHEET A1.5.
- F. REPLACE SECTION OR GRIND OFFSET AT 2ND WPJ BELOW CJ#7 TO MAXIMUM 1/4".
- G. ADD CONCRETE TO INCREASE SIDEWALK TO MIN. 48" CLEAR WIDTH IN FRONT OF POST BOXES TO MIN. 48" WEST OF BOXES. SEE DETAIL 14 / A1.5.
- H. FILL CRACK AT 5TH WPJ BELOW CJ#7.
- I. GRIND OFFSET AT CJ#8 TO MAXIMUM 1/4".
- J. REPLACE SECTION OR GRIND OFFSET AT 2ND WPJ BELOW CJ#8 TO MAXIMUM 1/4".
- K. FILL AND GRIND OFFSET AT CJ#9 TO MAXIMUM 1/4".
- L. REPLACE SECTION BETWEEN 2ND AND 3RD WPJ BELOW CJ#9.
- M. FILL AND GRIND OFFSET AT CJ#10 TO MAXIMUM 1/4".
- N. GRIND OFFSET AT 2ND WPJ BELOW CJ#12 TO MAXIMUM 1/4".
- O. PATCH AND GRIND OFFSET AT 3RD WPJ BELOW CJ#13 TO MAXIMUM 1/4".
- P. PATCH AND GRIND OFFSET AT 2ND WPJ BELOW CJ#14 TO MAXIMUM 1/4".
- Q. REPLACE SECTION BEFORE 1ST WPJ BELOW CJ#17.
- R. PATCH 2ND WPJ BELOW CJ#17.
- S. REPLACE SECTION FROM CJ#18 TO EAST PROPERTY LINE.

GENERAL PUBLIC IMPROVEMENT NOTES

1. APPLY HERBICIDE TO ALL PLANT MATERIALS GROWING IN CRACKS OF CURB, GUTTER, OR SIDEWALK; COMPLETELY REMOVE PLANTS AND ROOTS.
2. ALL NEW CONCRETE SURFACES SHALL BE SLIP-RESISTANT IN COMPLIANCE WITH CBC SECTION 1133B.7.1.
3. CRACKS OR JOINTS IN WALK SURFACES SHALL NOT EXCEED 1/2" IN ANY DIMENSION; EXCESSIVE CRACK OR JOINT WIDTH SHALL BE FILLED WITH A FLEXIBLE JOINT FILLER.

GRAPHIC SCALE

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES

	DESIGN DEVELOPMENT	4/15/10
	FIRST SUBMITTAL	6/02/10
01	PLAN CHECK 1	8/16/10

SIGNED

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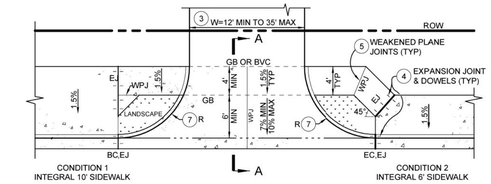
SHEET TITLE

FRONTAGE IMPROVEMENT PLAN

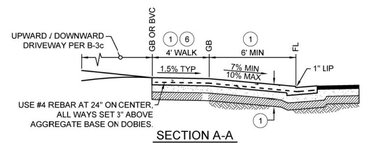
SHEET # 01 A1.4

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Revisions					
Description	Approved	Date	Description	Approved	Date



PLAN



SECTION A-A



PERSPECTIVE VIEW
NO SCALE

NOTES:
1. CONCRETE DRIVEWAY SHALL BE PORTLAND CEMENT CONCRETE CONFORMING TO THE DESIGN STANDARDS. CONCRETE CURING SHALL BE BY PIGMENTED CURING COMPOUND METHOD USING WHITE PIGMENT TYPE. TYPICAL SECTION SHALL BE:
   - 8-INCH MINIMUM PORTLAND CEMENT CONCRETE REINFORCED WITH #4's AT 24" OC BOTH WAYS, OVER
   - 6" MIN CLASS II AGGREGATE BASE TO 95% RELATIVE COMPACTION, OVER
   - 12" MINIMUM SUBGRADE TO 95% RELATIVE COMPACTION

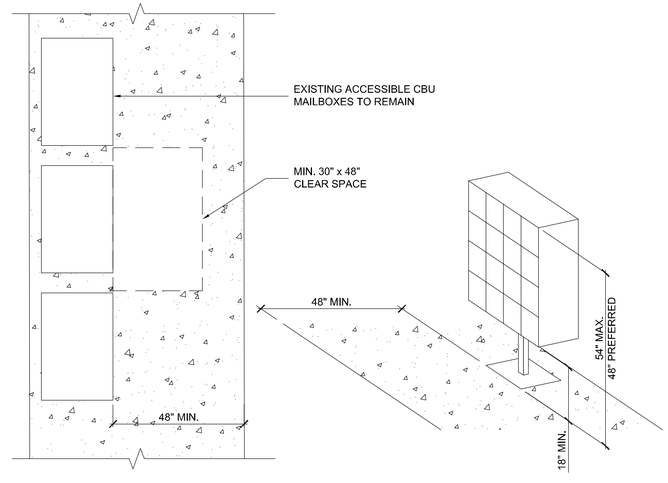
   IF THE R-VALUE OF THE NATIVE MATERIAL IS 55 OR GREATER THEN THE 6-INCHES OF AGGREGATE BASE MAY BE SUBSTITUTED WITH COMPACTED NATIVE MATERIAL.
   A COURSE BROOM FINISH- TRANSVERSE TO THE LINE OF TRAFFIC SHALL BE USED ON THE APRON AND WINGS. THE 4-
2. DIMENSIONS "W" & "R" AND PARKWAY WIDTH SHALL BE SHOWN ON PLANS.
3. W = DRIVEWAY WIDTH SHALL BE 12-FEET MINIMUM AND 35-FEET MAXIMUM FOR COMMERCIAL-INDUSTRIAL ACCESS.
4. EXPANSION JOINTS (EJ) SHALL BE CONSTRUCTED AS SHOWN. 1/2"Ø x 18" SMOOTH, GREASED DOWELS SHALL BE PLACED IN THE EJ, ONE IN CURB FACE, ONE IN GUTTER, AND AT 18-INCHES ON CENTER IN SIDEWALKS PER STANDARD DRAWING C-1.
5. WEAKENED PLANE JOINTS (WPJ) SHALL BE CONSTRUCTED AS SHOWN AND PER STANDARD DRAWING C-1.
6. THE CROSS SLOPE OF THE 4-FOOT WIDE SIDEWALK SHALL BE 1.5% (3/16-INCH PER FOOT), BUT NOT EXCEED 2% (1/4-INCH PER FOOT). MINIMUM SIDEWALK WIDTH FOR CLEAR PASSAGE SHALL BE MAINTAINED (NO OBSTACLES LOCATED WITHIN).
7. RADIUS (R) EQUALS PARKWAY WIDTH BUT SHALL NOT BE LESS THAN 10 FEET.
8. WHERE THE IMPROVEMENTS EXTEND BEYOND THE RIGHT-OF-WAY, THE ACQUISITION OF PEDESTRIAN EASEMENTS SHALL BE REQUIRED BY THE DEPARTMENT.
8. REFER TO A-5 SERIES STANDARD DRAWINGS FOR DRIVEWAY SIGHT DISTANCE REQUIREMENTS.
9. FOR NEW DRIVEWAY CONSTRUCTION AGAINST EXISTING ROADWAY, SAWCUT TO REMOVE EXISTING ROADWAY AND RECONSTRUCT PER STANDARD DRAWINGS R-2 OR R-2a.
10. THIS HIGH VOLUME DRIVEWAY STANDARD SHALL BE USED AT ENTRANCES THAT EXCEED 200 VEHICLES PER PM PEAK HOUR AND EXIT ONTO AN ARTERIAL ROAD, OR WHERE REQUIRED BY THE DEPARTMENT.
11. UNDER NO CIRCUMSTANCES SHALL UTILITY LIDS AND CONCRETE COLLARS BE LOCATED WITHIN DRIVEWAY APRONS.

SAN LUIS OBISPO COUNTY DEPARTMENT OF PUBLIC WORKS

COMMERCIAL-INDUSTRIAL DRIVEWAY

HIGH VOLUME DRIVEWAY

Scale:	Issued:
NTS	Aug. 2006
Drawing No:	B-3b
Sheet No:	1 OF 1



14 ACCESSIBLE MAILBOX
1/2"= 1' -0"

PROJECT

ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

CLIENT JOB # 0708B

ARCHITECT JOB #

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES 12 AUG 10

SIGNED

LICENSED ARCHITECT
BRUCE DOUGLAS FRASER
C 9787
EXPIRES 12-31-11
STATE OF CALIFORNIA

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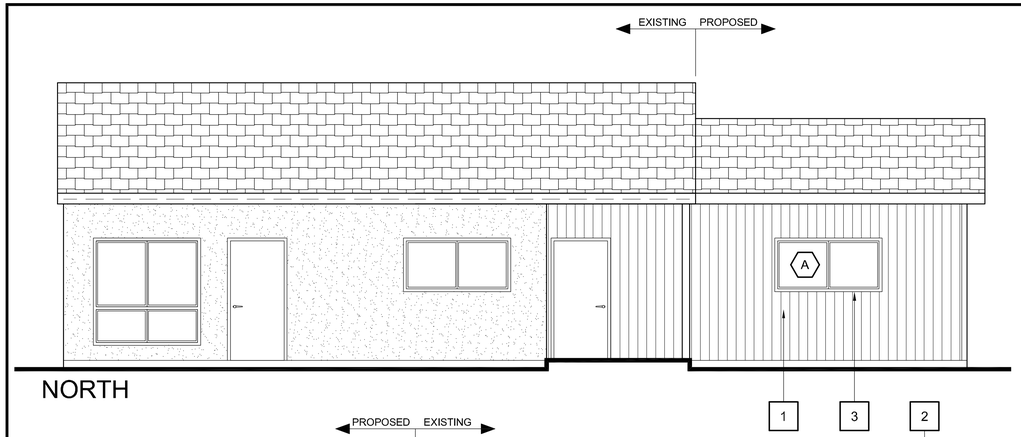
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SHEET TITLE

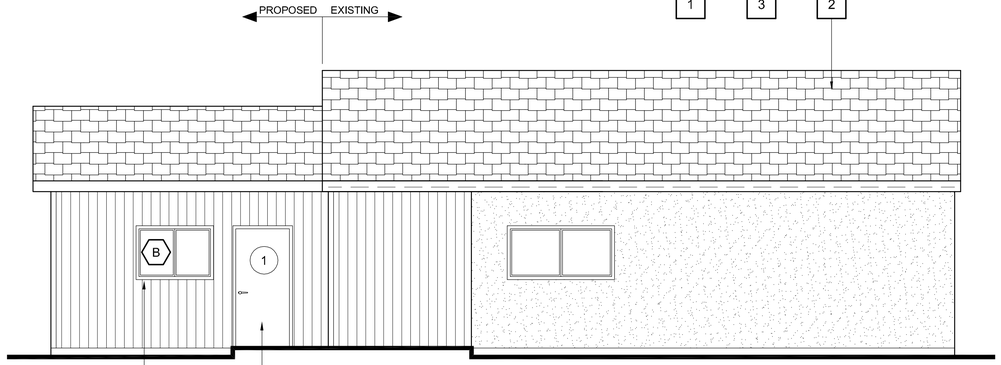
FRONTAGE IMPROVEMENT DETAILS

SHEET # A1.5

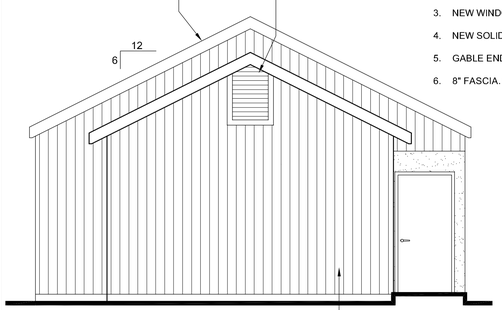
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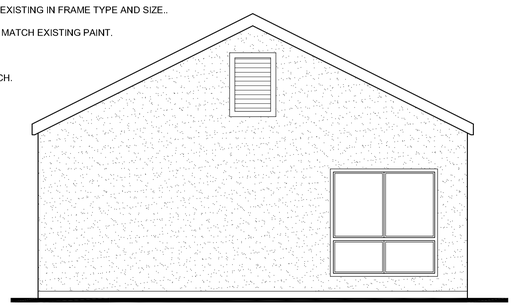
NORTH



SOUTH



WEST



EAST

EXTERIOR ELEVATIONS

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

FRAME LEGEND

VW VINYL WINDOW
HM HOLLOW STEEL

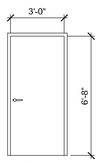
GLAZING LEGEND

G-1 1" INSULATING GLASS, HIGH PERFORMANCE, REGULAR STRENGTH

DOOR HARDWARE SCHEDULE

GROUP 1
Hinges: 3, standard duty brass or stainless steel
Lock: heavy duty storeroom function, lever handle
Closer: inside surface mount
Threshold: accessible saddle, full width
Door Bottom: full shoe, vinyl brush sweep
Seals: silicone bulb, jamb and head

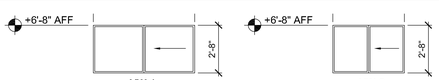
NOTE:
1. SEE SHEET A8.1 FOR GENERAL DOOR NOTES



HM-1

NOTES

1. NEW SIDING TO MATCH EXISTING.
2. ROOF TILES TO MATCH EXISTING.
3. NEW WINDOW TO MATCH EXISTING IN FRAME TYPE AND SIZE..
4. NEW SOLID CORE DOOR. MATCH EXISTING PAINT.
5. GABLE END ATTIC VENT.
6. 8" FASCIA. PAINT TO MATCH.



WINDOW SCHEDULE

SYM.	TYPE	FRAME	WIDTH	HT.	GLAZING	REMARKS
A	VW	VW-1	5'-8"	2'-8"	G-1	
B	VW	VW-2	4'-0"	2'-8"	G-1	

DOOR SCHEDULE

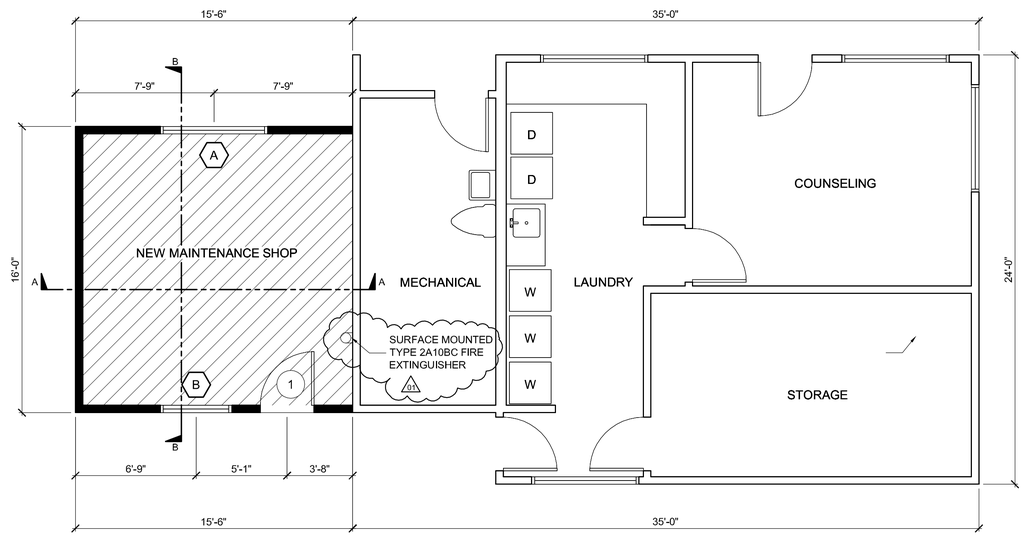
DOOR	TYPE	FRAME	WIDTH	HEIGHT	THICK.	HARDWARE	REMARKS/SIGNAGE
1	SD-1	HM-1	3'-0"	6'-8"		1	PAINT GRADE

FINISH SCHEDULE

FLOOR	BASE	WALLS	CEILING
SEALED CONCRETE	NONE	TAPED GYP. BD., FLAT PAINT	TAPED GYP. BD., FLAT PAINT

DOOR, WINDOW, FINISH SCHEDULES

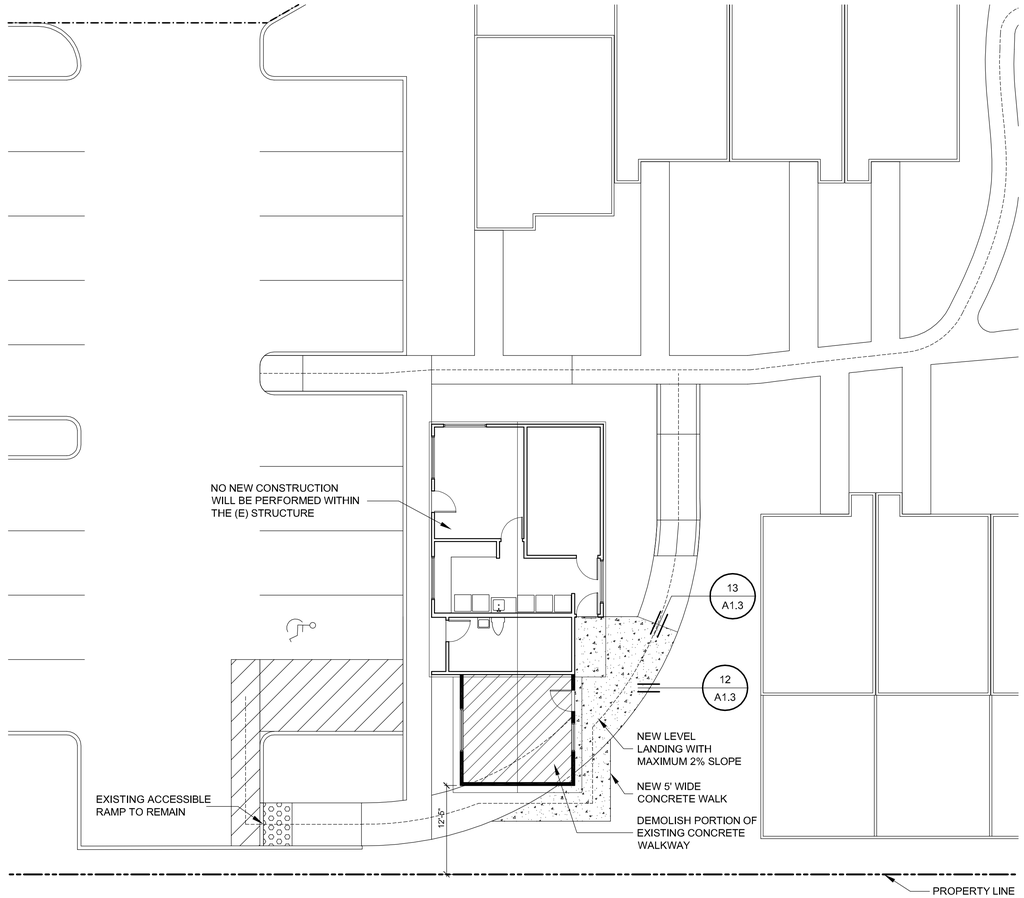
SCALE : 1/4" = 1'-0"



NORTH

FLOOR PLAN

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



NORTH

ENLARGED SITE PLAN

SCALE : 1" = 10'-0"

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
Ttempleton, CA

CLIENT JOB #

ARCHITECT JOB # 0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES
DESIGN DEVELOPMENT 4/15/10
FIRST SUBMITTAL 6/02/10
01 PLAN CHECK 1 8/16/10

SIGNED

LICENSED ARCHITECT
BRUCE DOUGLAS FRASER
C 9787
EXPIRES 12•31•11
STATE OF CALIFORNIA

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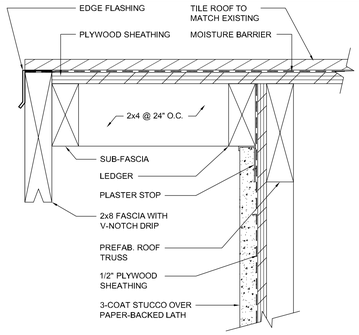
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SHOP ADDITION

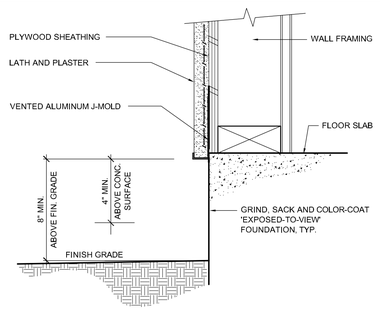
SHEET #

A2.1

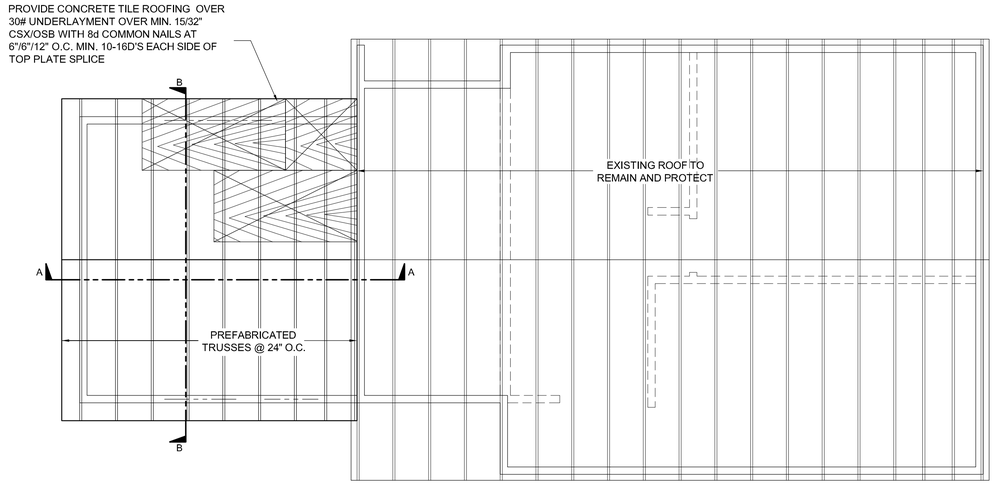
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51 GABLE END OVERHANG
3"= 1' -0"

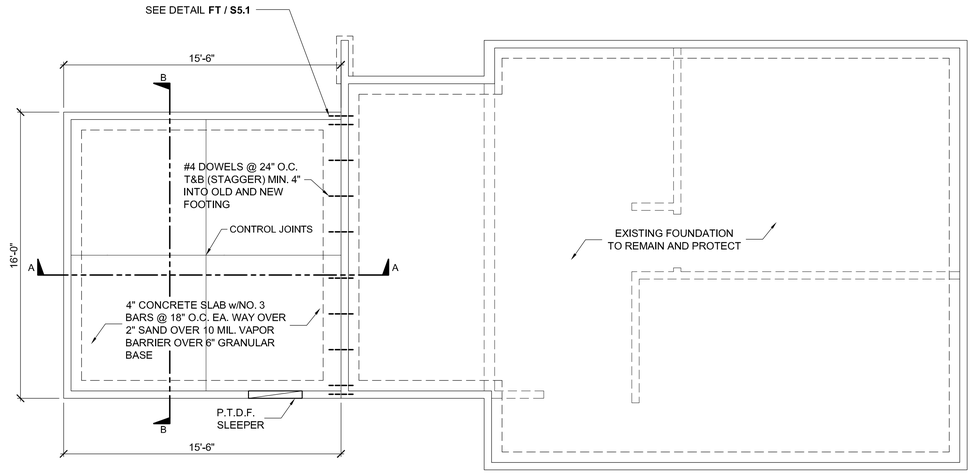


41 TYPICAL WEEP SCREED
3"= 1' -0"



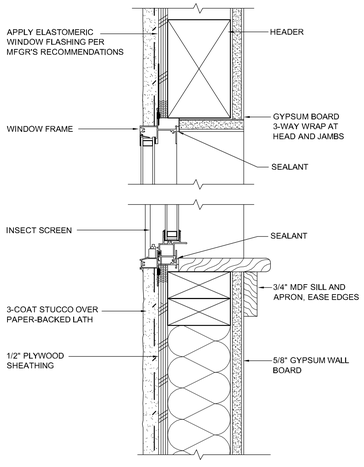
ROOF FRAMING PLAN
SCALE : 1/4" = 1'-0"

NORTH



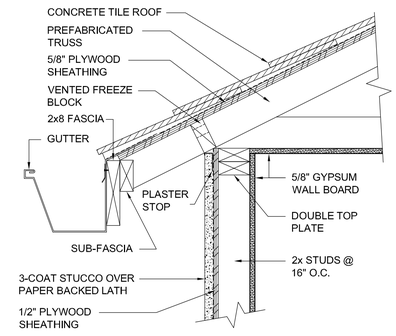
FOUNDATION PLAN
SCALE : 1/4" = 1'-0"

NORTH

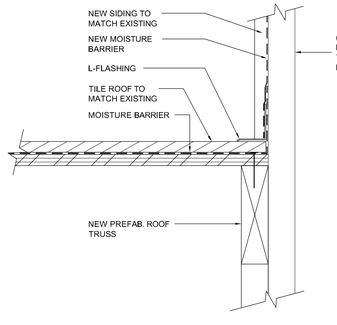


54 WINDOW SILL, HEAD (JAMB SIM.) SINGLE HUNG SHOWN
3"=1'- 0"

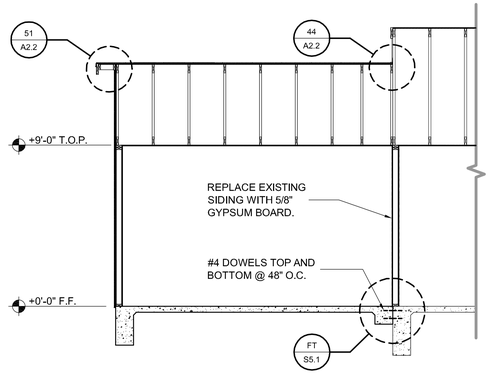
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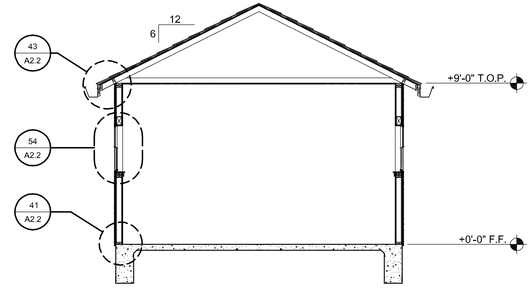
43 ROOF EAVE
1 1/2"= 1' -0"



44 ROOF AT HEAD WALL
3"= 1' -0"



A BUILDING SECTION
SCALE : 1/4" = 1'-0"



B BUILDING SECTION
SCALE : 1/4" = 1'-0"

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #
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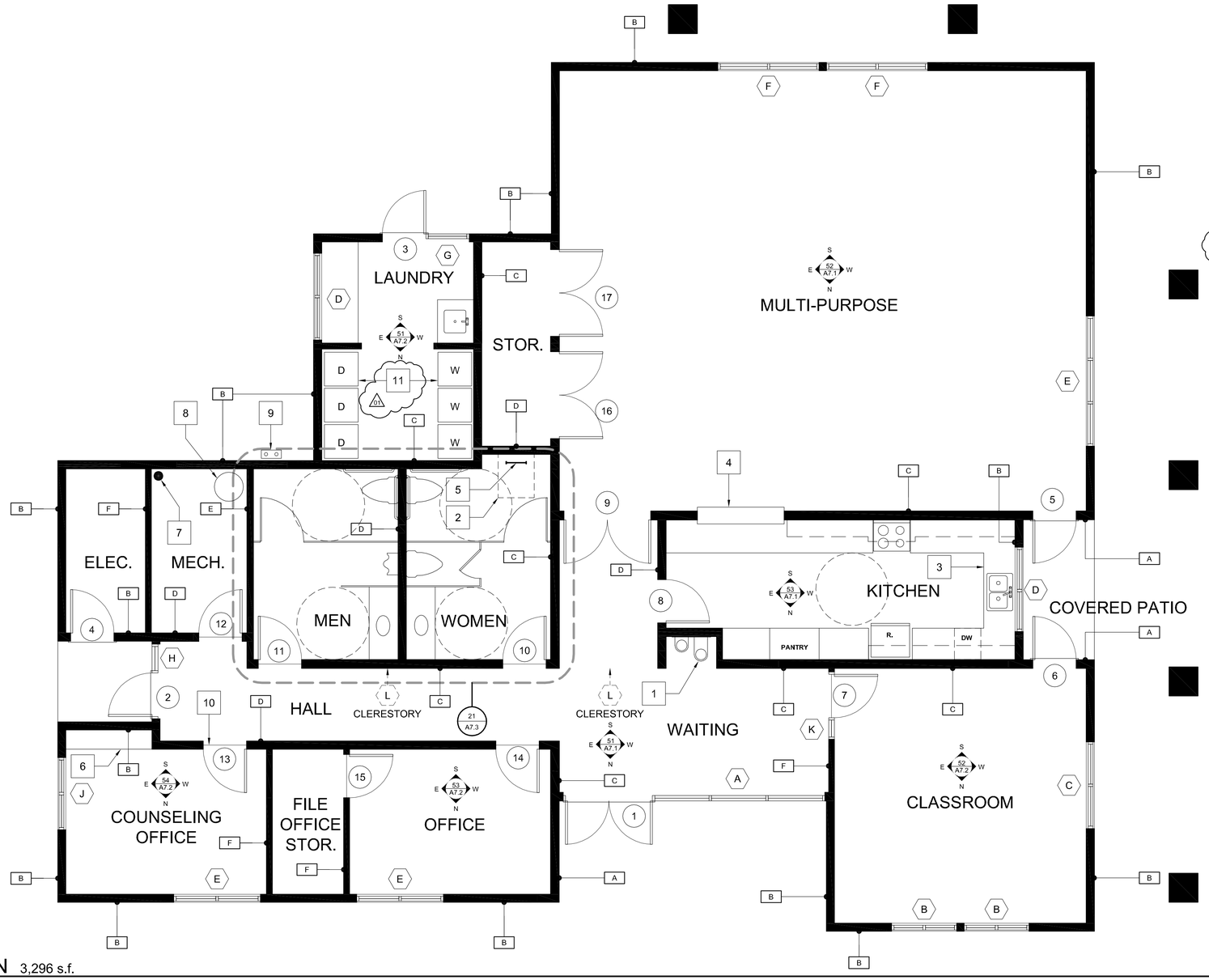
SHEET TITLE

SHOP ADDITION STRUCTURAL DRAWINGS / DETAILS

SHEET #

A2.2

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KEYNOTES:

1. HI / LOW WATER FOUNTAIN. SEE DETAIL **14 / A7.3.**
2. ROOF ACCESS HATCH WITH INTEGRATED SKYLIGHT.
3. CORRIAN COUNTER TOP, TYP.
4. PASS-THROUGH WINDOW WITH ROLL-UP SHUTTERS. SEE DETAIL **54 / A9.5.**
5. ROOF ACCESS LADDER. SEE DETAILS **44 & 45 / A9.3.**
6. BUILT-IN SHELVES.
7. FIRE RISER.
8. WATER HEATER. SEE PLUMBING PLANS.
9. GAS METER.
10. LINE OF FLOORING CHANGE.
11. WASHING MACHINES AND CLOTHES DRYERS IN ACCESSIBLE COMMON USE LAUNDRY ROOMS SHALL BE FRONT LOADING AS PER 2007 CBC 1127A.10.4.

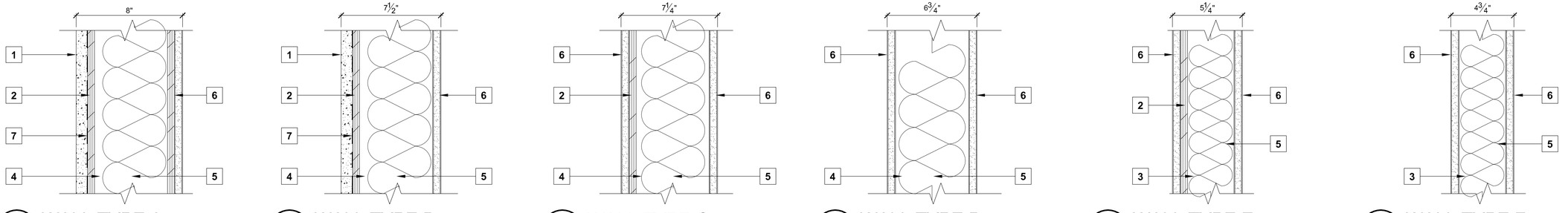
WALL TYPE KEYNOTES:

1. 3-COAT EXTERIOR PLASTER FINISH.
2. 1/2" PLYWOOD SHEATHING. SEE SHEARWALL SCHEDULE FOR NAILING.
3. 2x4 WOOD STUDS @ 16" O.C..
4. 2x6 WOOD STUDS @ 16" O.C..
5. BATT INSULATION.
6. 5/8" GYPSUM WALL BOARD.
7. MOISTURE BARRIER.

NORTH

FLOOR PLAN 3,296 s.f.

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



54 WALL TYPE A — NO SCALE

44 WALL TYPE B — NO SCALE

34 WALL TYPE C — NO SCALE

54 WALL TYPE D — NO SCALE

24 WALL TYPE E — NO SCALE

14 WALL TYPE F — NO SCALE

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB #

ARCHITECT JOB # 0708B

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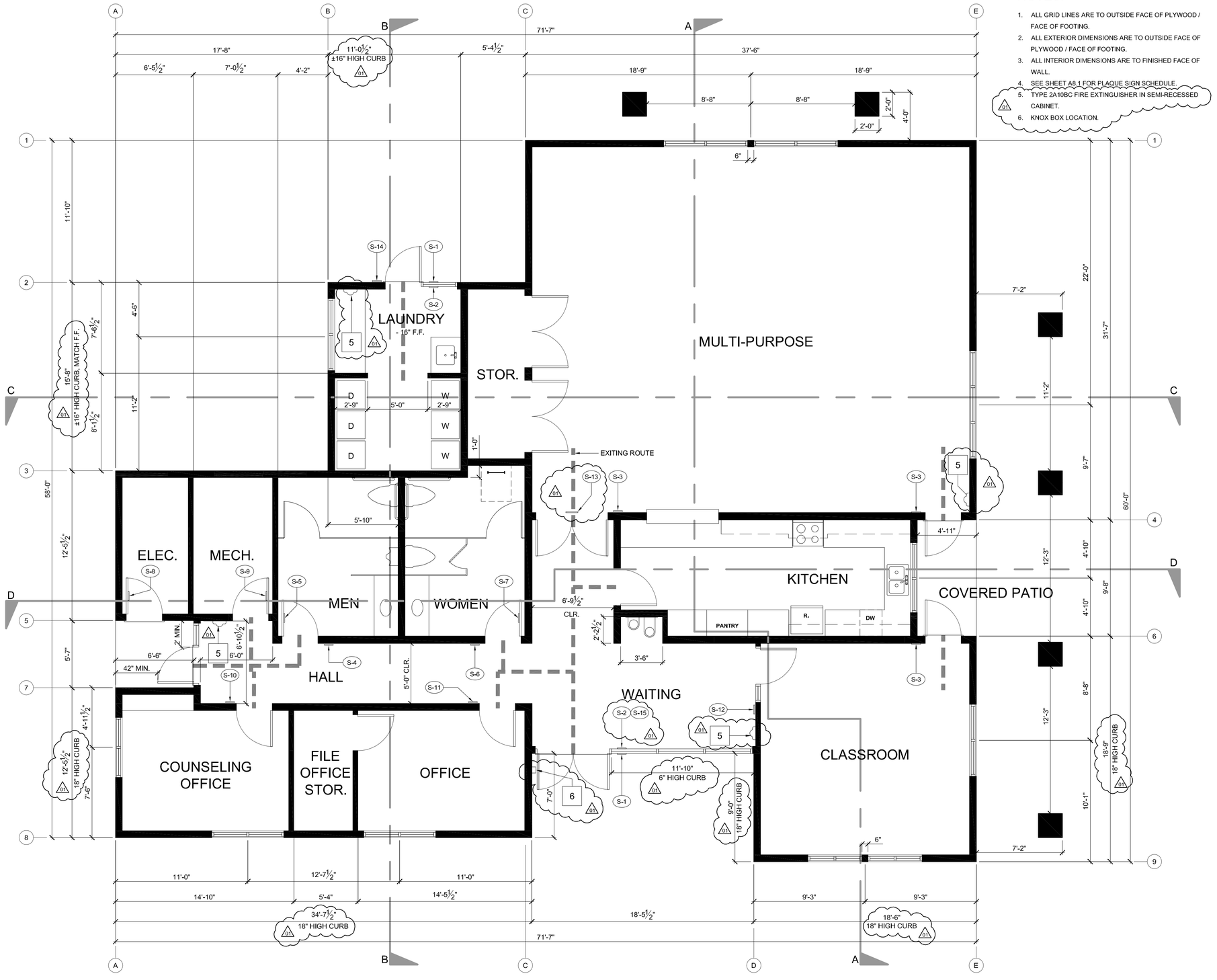
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SHEET TITLE

COMMON BUILDING FLOOR PLAN

SHEET # **A2.3**

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FLOOR PLAN: DIMENSIONED / SIGNAGE / EXITING 3,296 s.f.

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

NORTH

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

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BRUCE DOUGLAS FRASER
C 9787
Expires 12-31-11
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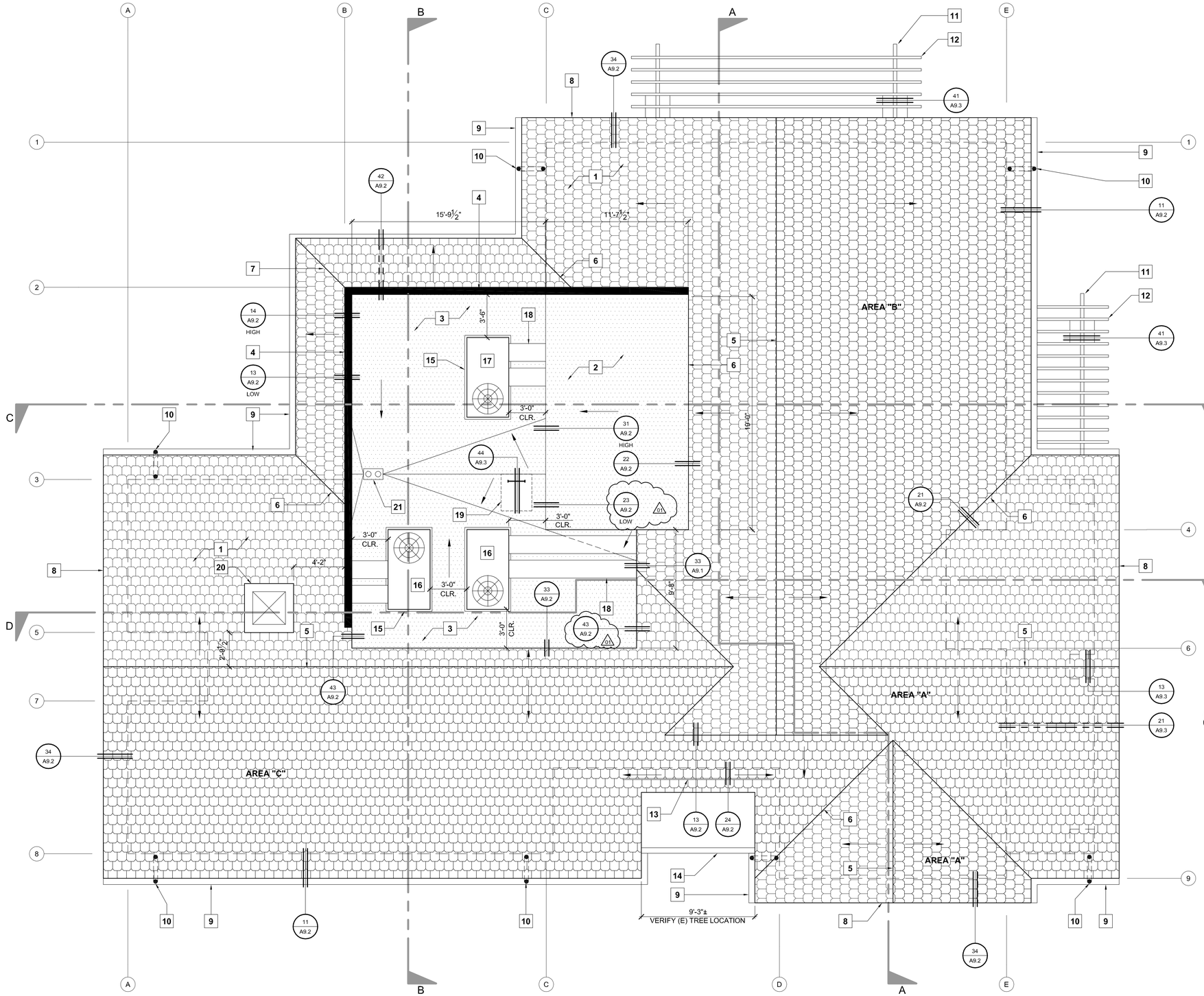
SHEET TITLE

FLOOR PLAN:
DIMENSIONED
/SIGNAGE
/EXITING

SHEET #

A2.4

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NORTH

ROOF PLAN

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

KEYNOTES

1. SLATE TILE ROOF AT 6:12 SLOPE.
2. SINGLE PLY ROOF MEMBRANE AT 3:12 SLOPE. REFER TO SPEC SECTION 07500.
3. ROOF WELL WITH SINGLE PLY ROOF MEMBRANE OVER BUILT-UP INSULATION.
4. PARAPET.
5. RIDGE.
6. VALLEY.
7. HIP.
8. GABLE END.
9. GUTTER.
10. DOWNSPOUT.
11. 4x10 MAIN TRELLIS SUPPORT BEAM.
12. 3x8 TRELLIS RAFTERS AT 12" O.C.
13. RAIN DIVERTER.
14. EXPOSED BEAM.
15. MECHANICAL EQUIPMENT CURB.
16. SEE MECHANICAL DRAWINGS FOR UNIT SIZE.
17. SEE MECHANICAL DRAWINGS FOR UNIT SIZE.
18. SUPPLY/RETURN DUCTS.
19. ROOF ACCESS HATCH WITH INTEGRATED SKYLIGHT. SEE DETAIL **34 / A9.3**.
20. DECORATIVE CHIMNEY.
21. ROOF DRAIN AND SEPARATE OVERFLOW DRAIN WITH DRAIN PIPES CONCEALED IN WALL FRAMING. FLEX PIPE DOWNSPOUT 8" ABOVE SILL PLATE TO SPLASH BLOCK. PROVIDE OVERFLOW WARNING DOWNSPOUT NOZZLE. SEE DETAIL 11 / MP5.2.

ROOF VENTILATION CALCS

AREA "A"	250 FT²
AREA "B"	2,368 FT²
AREA "C"	3,587 FT²
AREA "D"	2,694 FT²

"A" - 2,618/300 =	8.8 FT² REQUIRED;	9.6 FT² PROVIDED w/ (2) 4.8 FT² GABLE END VENTS
"B" - 3,587/300 =	12.0 FT² REQUIRED;	13.1 FT² PROVIDED w/ (1) 4.8 FT² GABLE END VENT AND (12) .69 FT² CONCEALED TILE VENTS
"C" - 2,694/300 =	9.0 FT² REQUIRED;	10.3 FT² PROVIDED w/ (1) 4.8 FT² GABLE END VENT AND (8) .69 FT² CONCEALED TILE VENTS

NOTE: THE MINIMUM REQUIRED NET FREE VENTILATION AREA SHALL BE 1/300 OF THE AREA OF THE SPACE VENTILATED, PROVIDED A VAPOR RETARDER HAVING A TRANSMISSION RATE NOT EXCEEDING 1 PERM IN ACCORDANCE WITH ASTM E 96 IS INSTALLED ON THE WARM SIDE OF THE ATTIC INSULATION AND PROVIDED 50 PERCENT OF THE REQUIRED VENTILATION AREA PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE EAVE OR CORNICE VENTS, WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. 2007 CBC SECTION 1203.2

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

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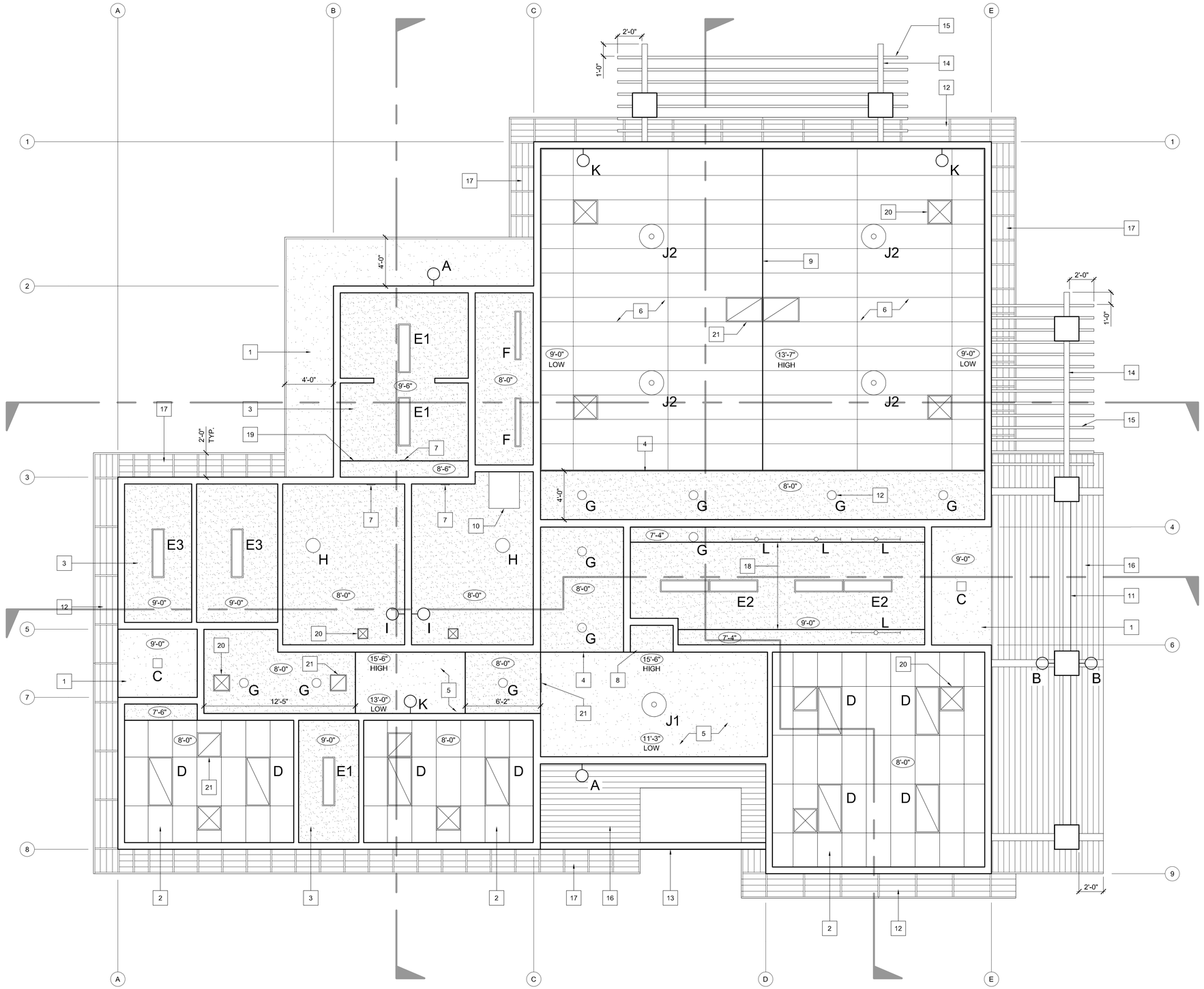
SHEET TITLE

COMMON BUILDING ROOF PLAN

SHEET #

A3.1

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LIGHT FIXTURE DESCRIPTIONS:

A. WALL MOUNTED WET LOCATION WALL PACK.
B. WALL MOUNTED WET LOCATION SCONCE.
C. RECESSED DAMP LOCATION DOWNLIGHT.
D. 2'x4' RECESSED DIRECT/INDIRECT FLUORESCENT.
E1. 1'x4' SURFACE FLUORESCENT DAMP LOCATION WRAPAROUND.
E2. 1'x8' SURFACE FLUORESCENT DAMP LOCATION WRAPAROUND.
E3. 1'x4' SURFACE FLUORESCENT.
F. 6"x4' SURFACE FLUORESCENT CORRIDOR.
G. RECESSED COMPACT FLUORESCENT DOWNLIGHT.
H. CEILING SURFACE FLUORESCENT DRUM.
I. 4' WALL MOUNTED FLUORESCENT VANITY FIXTURE.
J1. CEILING SUSPENDED DIRECT/INDIRECT FIXTURE.
J2. CEILING SUSPENDED DIRECT/INDIRECT FIXTURE, DIMMABLE.
K. WALL MOUNTED SCONCE, UPLIGHT/DOWNLIGHT.
L. 4' UNDERCABINET FIXTURE.

REFLECTED CEILING KEYNOTES:

1. FLAT STUCCO SOFFIT.
2. 2'x4' SUSPENDED ACOUSTIC TILE CEILING.
3. GYPSUM BOARD CEILING.
4. GYPSUM BOARD SOFFIT AT 8'-0".
5. VAULTED GYPSUM BOARD CEILING.
6. CATHEDRAL CEILING WITH 2'x8' ACOUSTICAL PANELS. SEE DETAILS **41** & **43** / **A9.4**.
7. FLUSH THRU-WALL EXHAUST FAN GRILL.
8. 7'-0" GYPSUM BOARD SOFFIT.
9. CEILING RIDGE.
10. ATTIC ACCESS HATCH WITH INTEGRATED SKYLIGHT.
11. HEAVY TIMBER GABLE END TRUSS.
12. GABLE END OVERHANG: GROOVE NOTCHED STARTER ROOF SHEATHING AND OUTRIGGERS PAINTED TO MATCH FASCIA.
13. EXPOSED WOOD BEAM ABOVE.
14. TRELLIS SUPPORT BEAM.
15. TRELLIS RAFTER.
16. SLOPING PAINTED STARTER BOARD SOFFIT.
17. ROOF EAVE: GROOVE NOTCHED STARTER ROOF SHEATHING AND TRUSS TAILS PAINTED TO MATCH FASCIA.
18. SOFFIT ABOVE CABINETS.
19. SOFFIT AT 8'-6" TO CONCEAL EXHAUST DUCTS.
20. SUPPLY GRILL.
21. RETURN GRILL.
22. FLUSH THRU-WALL SUPPLY GRILL.

NORTH

REFLECTED CEILING PLAN

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

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PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

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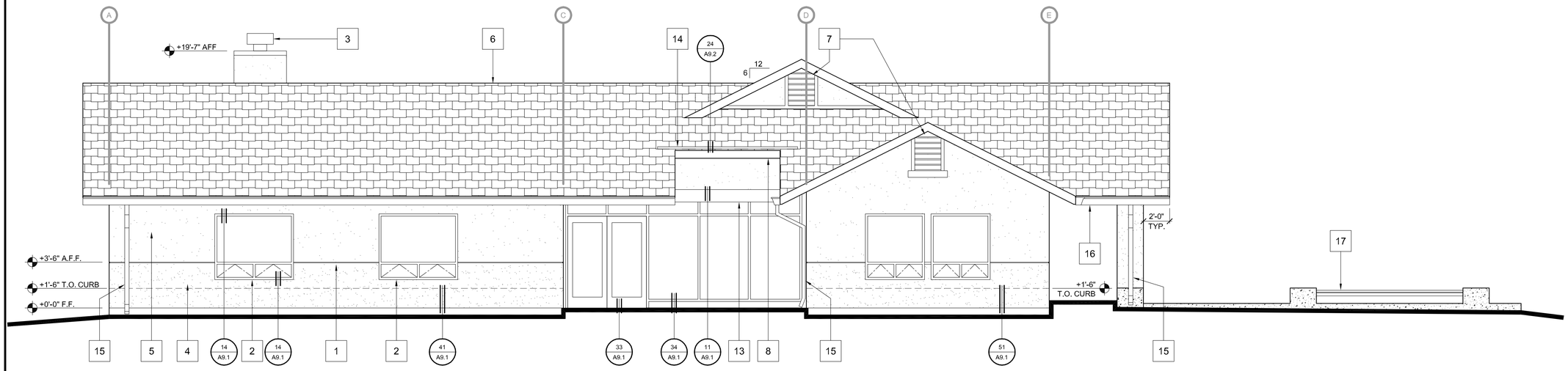
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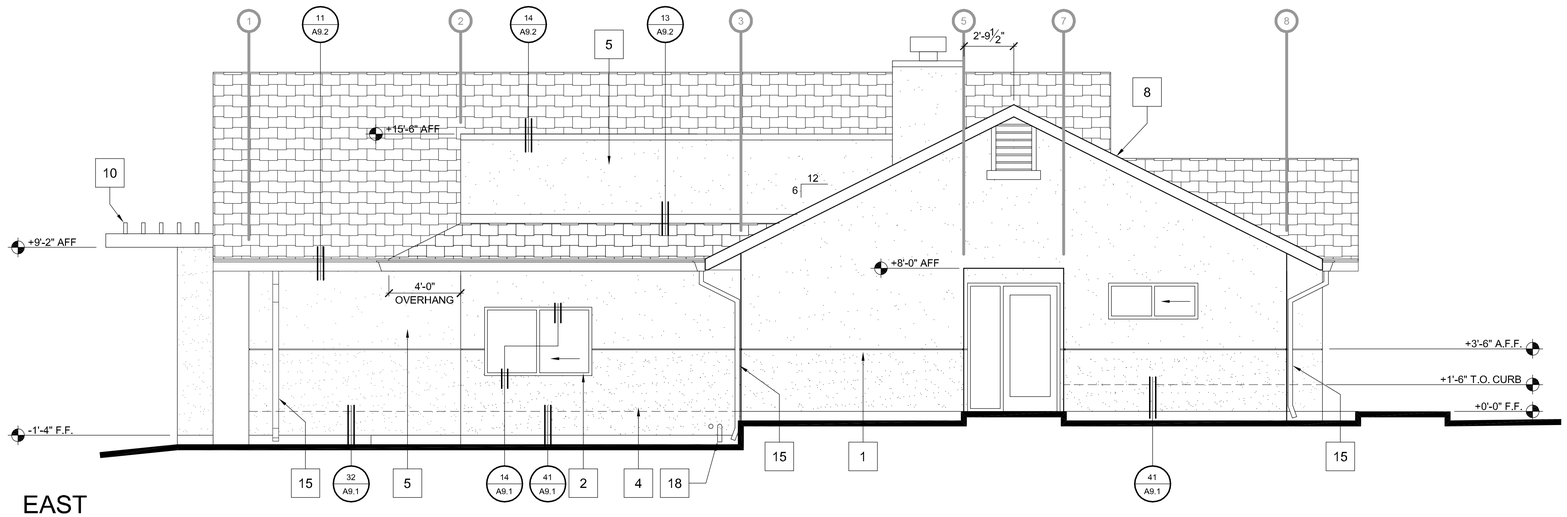
COMMON BUILDING
REFLECTED CEILING
PLAN / LIGHTING PLAN

SHEET #

A4.1



NORTH



EAST

ELEVATIONS

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

KEYNOTES:

1. 3/4" PAINTED REVEAL.
2. ALUMINUM FRAMED WINDOWS.
3. DECORATIVE WATER HEATER FLUE CAP.
4. 3-COAT STUCCO (COLOR 1).
5. 3-COAT STUCCO (COLOR 2).
6. CONCRETE TILE ROOF.
7. PAINTED METAL GABLE END ATTIC VENT.
8. 2x8 STAINED WOOD FASCIA, (COLOR 3) TYP.
9. 4x10 TRELLIS SUPPORT BEAM, (COLOR 3).
10. 3x8 TRELLIS RAFTERS, (COLOR 3).
11. 6x12 ROOF SUPPORT BEAM, (COLOR 3).
12. CUSTOM HEAVY TIMBER GABLE END TRUSS, (COLOR 3).
13. ENTRY ROOF SUPPORT BEAM, (COLOR 3).
14. RAIN DIVERTER.
15. PREFINISHED METAL DOWNSPOUT, (COLOR 2).
16. PREFINISHED METAL GUTTER, (COLOR 2).
17. COMPOSITE LUMBER BENCH, (COLOR 3). SEE DETAIL **33 / A1.3.**
18. ROOF DRAIN DOWNSPOUT AND OVERFLOW DRAIN NOZZLE.

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TtempleTON, CA

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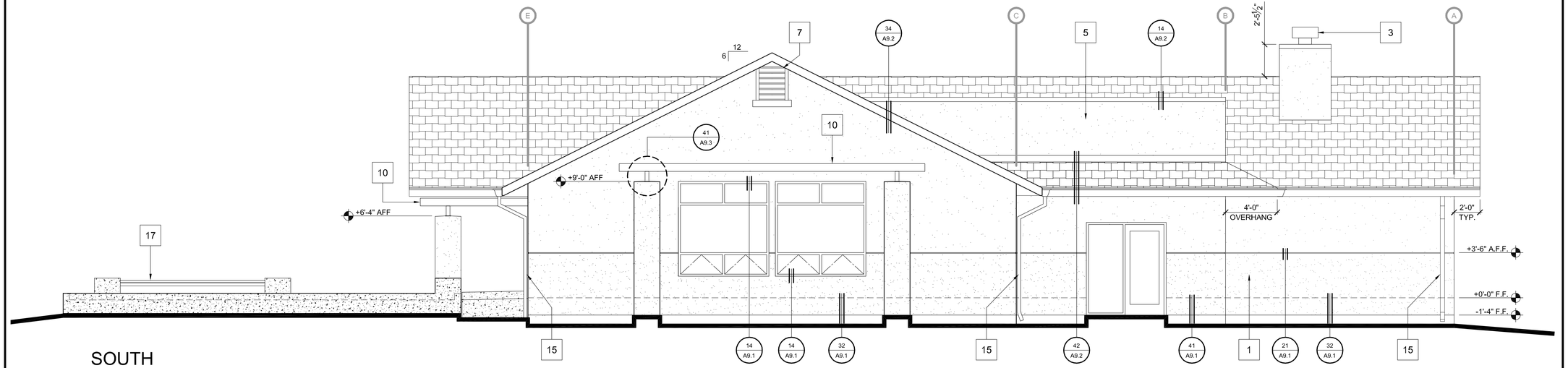
SHEET TITLE

COMMON BUILDING EXTERIOR ELEVATIONS

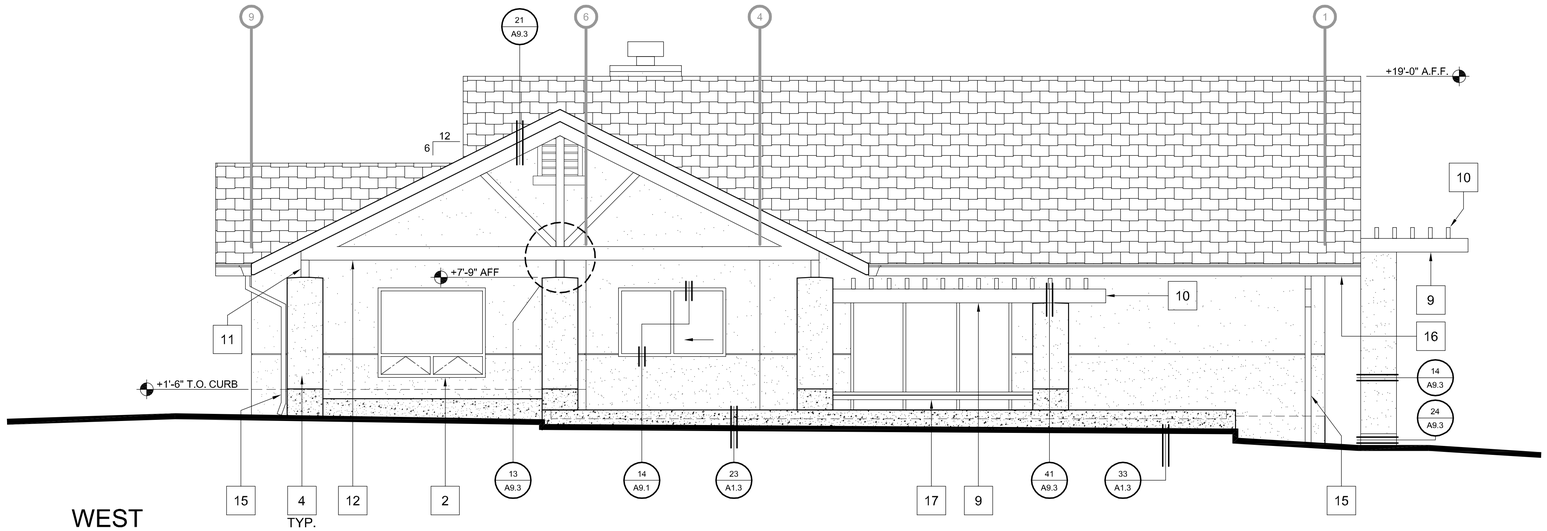
SHEET #

A5.1

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SOUTH



WEST

ELEVATIONS

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

KEYNOTES:

1. 3/4" PAINTED REVEAL.
2. ALUMINUM FRAMED WINDOWS.
3. DECORATIVE WATER HEATER FLUE CAP.
4. 3-COAT STUCCO (COLOR 1).
5. 3-COAT STUCCO (COLOR 2).
6. CONCRETE TILE ROOF.
7. PAINTED METAL GABLE END ATTIC VENT.
8. 2x8 STAINED WOOD FASCIA, (COLOR 3) TYP.
9. 4x10 TRELLIS SUPPORT BEAM, (COLOR 3).
10. 3x8 TRELLIS RAFTERS, (COLOR 3).
11. 6x12 ROOF SUPPORT BEAM, (COLOR 3).
12. CUSTOM HEAVY TIMBER GABLE END TRUSS, (COLOR 3).
13. ENTRY ROOF SUPPORT BEAM, (COLOR 3).
14. RAIN DIVERTER.
15. PREFINISHED METAL DOWNSPOUT, (COLOR 2).
16. PREFINISHED METAL GUTTER, (COLOR 2).
17. COMPOSITE LUMBER BENCH, (COLOR 3). SEE DETAIL **33 / A1.3.**
18. ROOF DRAIN DOWNSPOUT AND OVERFLOW DRAIN NOZZLE.

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES
DESIGN DEVELOPMENT 4/15/10
FIRST SUBMITTAL 6/02/10
01 PLAN CHECK 1 8/16/10

SIGNED

LICENSED ARCHITECT
BRUCE DOUGLAS FRASER
C 9787
EXPIRES 12-31-11
STATE OF CALIFORNIA

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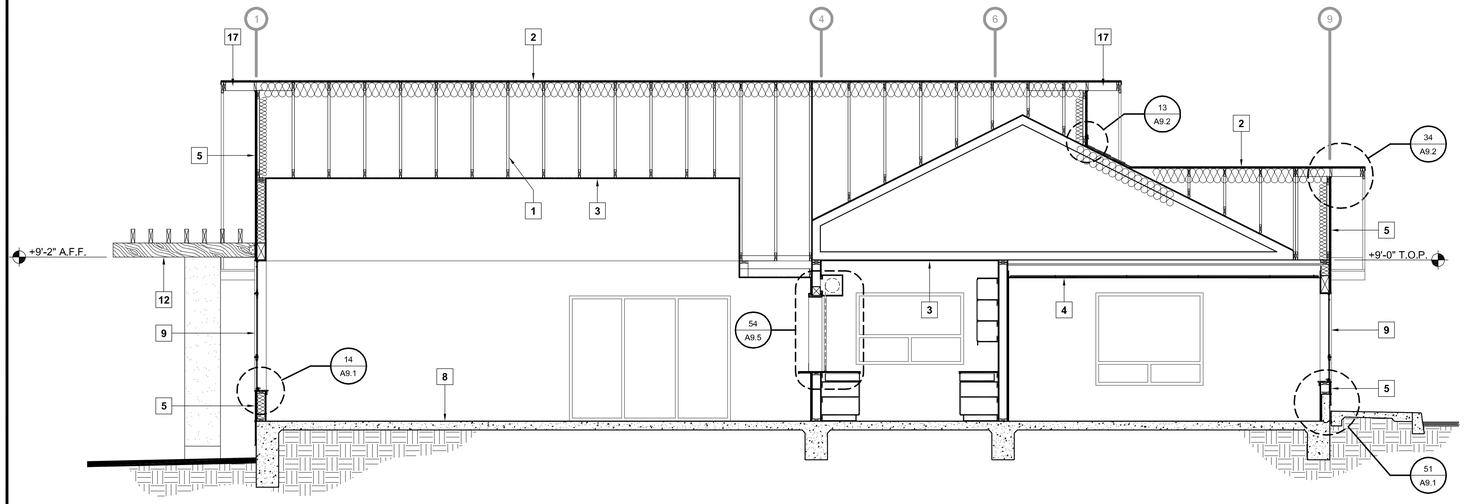
SHEET TITLE

COMMON BUILDING EXTERIOR ELEVATIONS

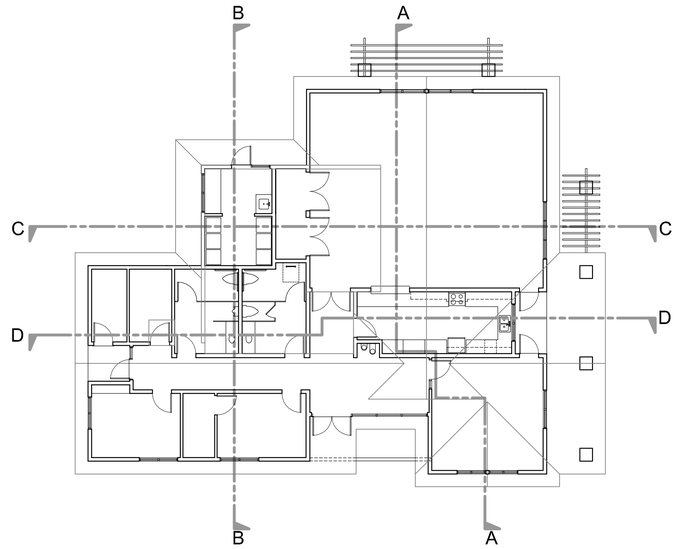
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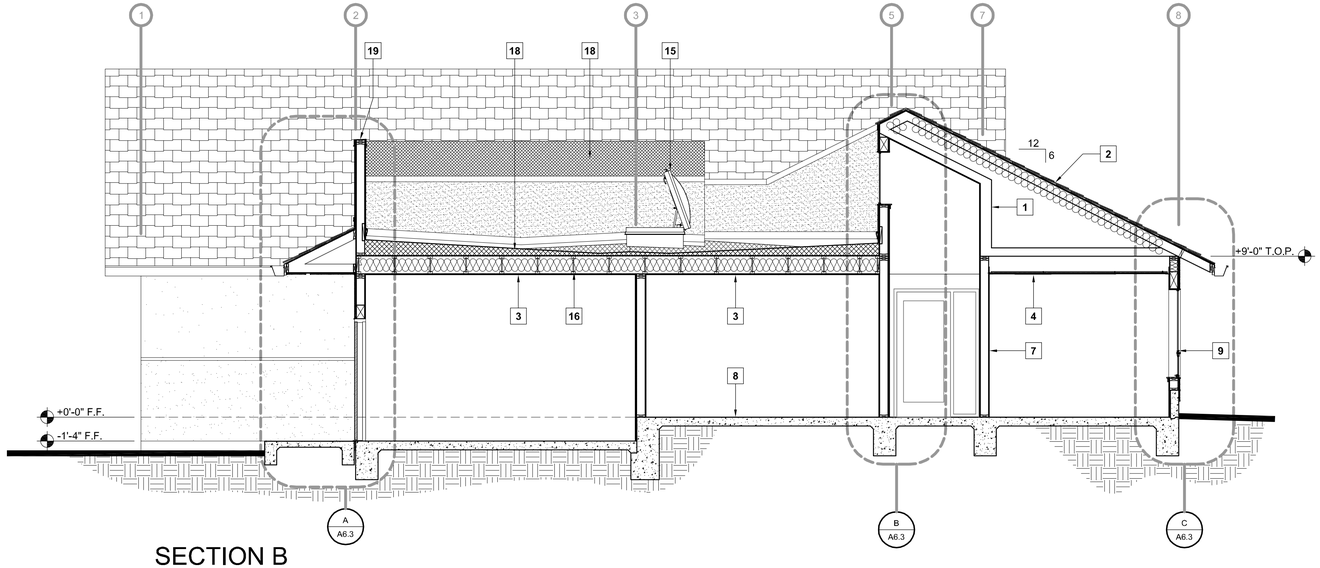
A5.2

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SECTION A





SECTION B

REFLECTED CEILING KEYNOTES

1. PREFABRICATED ROOF TRUSS.
2. CONCRETE TILE ROOF OVER MOISTURE BARRIER OVER PLYWOOD SHEATHING.
3. GYPSUM BOARD CEILING.
4. SUSPENDED T-BAR CEILING.
5. 3-COAT EXTERIOR STUCCO OVER PAPER BACKED LATH OVER 1/2" PLYWOOD SHEATHING.
6. 2x4 WOOD STUDS AT 16" O.C..
7. 2x6 WOOD STUDS AT 16" O.C.
8. CONCRETE SLAB FOUNDATION.
9. WINDOW.
10. DRAIN TO GRADE.
11. CONCRETE PATIO.
12. 4x10 TRELLIS SUPPORT BEAM.
13. NOT USED.
14. ATTIC ACCESS LADDER BEYOND WALL.
15. ROOF ACCESS HATCH WITH INTEGRATED SKYLIGHT. SEE DETAIL **34 / A9.3**.
16. 11-7/8" TJI ROOF JOISTS.
17. 2x6 OUTRIGGER AT 16" O.C.
18. SINGLE PLY ROOF MEMBRANE OVER BUILT-UP ROOF INSULATION.
19. WOOD BENCH PAINTED TO MATCH TRIM. SEE DETAILS **24 & 33 / A1.3**.

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TtempleTON, CA

CLIENT JOB #

ARCHITECT JOB #
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FRASER SEIPLE ARCHITECTS

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SHEET TITLE

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

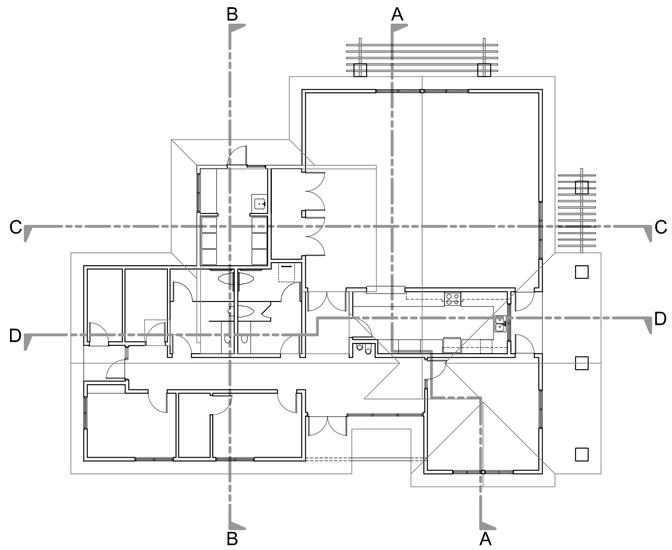
SHEET #

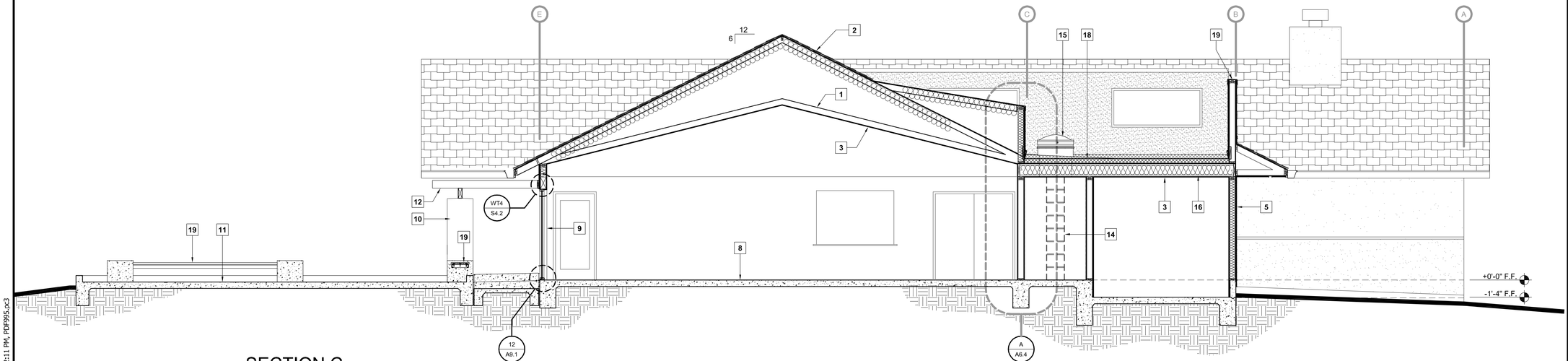
A6.1

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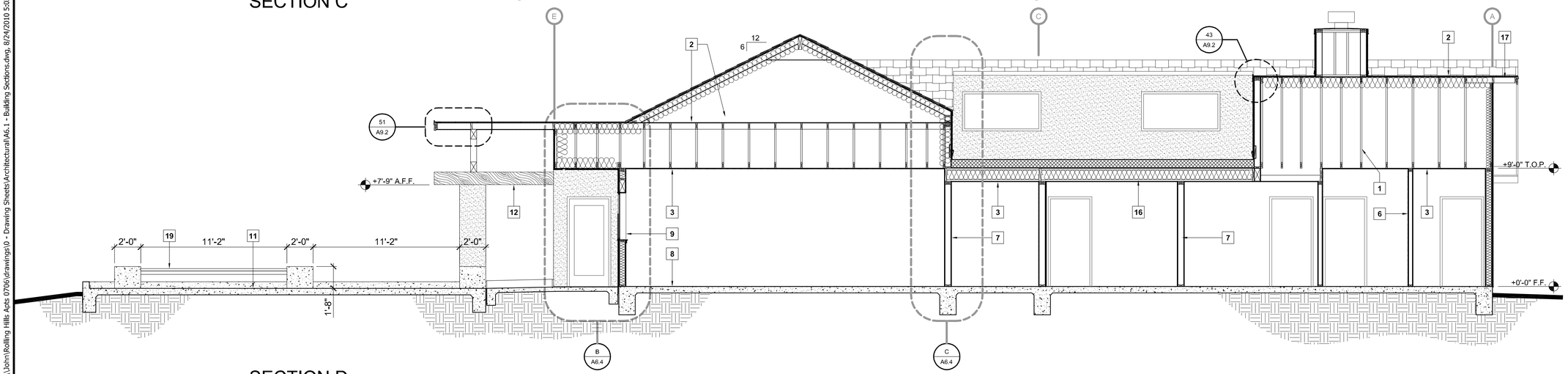
REFLECTED CEILING KEYNOTES

1. PREFABRICATED ROOF TRUSS.
2. CONCRETE TILE ROOF OVER MOISTURE BARRIER OVER PLYWOOD SHEATHING.
3. GYPSUM BOARD CEILING.
4. T-BAR DROP CEILING.
5. 3-COAT EXTERIOR STUCCO OVER PAPER BACKED LATH OVER 1/2" PLYWOOD SHEATHING.
6. 2x4 WOOD STUDS AT 16" O.C..
7. 2x6 WOOD STUDS AT 16" O.C.
8. CONCRETE SLAB FOUNDATION.
9. WINDOW.
10. DRAIN TO GRADE.
11. CONCRETE PATIO.
12. 4x10 TRELLIS SUPPORT BEAM.
13. NOT USED.
14. ATTIC ACCESS LADDER BEYOND WALL. SEE DETAILS **44 & 54 / A9.3**.
15. ROOF ACCESS HATCH WITH INTEGRATED SKYLIGHT. SEE DETAIL **34 / A9.3**.
16. 11-7/8" TJI ROOF JOISTS.
17. 2x6 OUTRIGGER AT 16" O.C.
18. SINGLE PLY ROOF MEMBRANE OVER BUILT-UP ROOF INSULATION.
19. WOOD BENCH PAINTED TO MATCH TRIM. SEE DETAILS **24 & 33 / A1.3**.





SECTION C



SECTION D

\\John\Rolling Hills Apts 0706\drawings\0 - Drawing Sheets\Architectural\A6.1 - Building Sections.dwg, 8/24/2010 5:02:11 PM, PDP995.pc3

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

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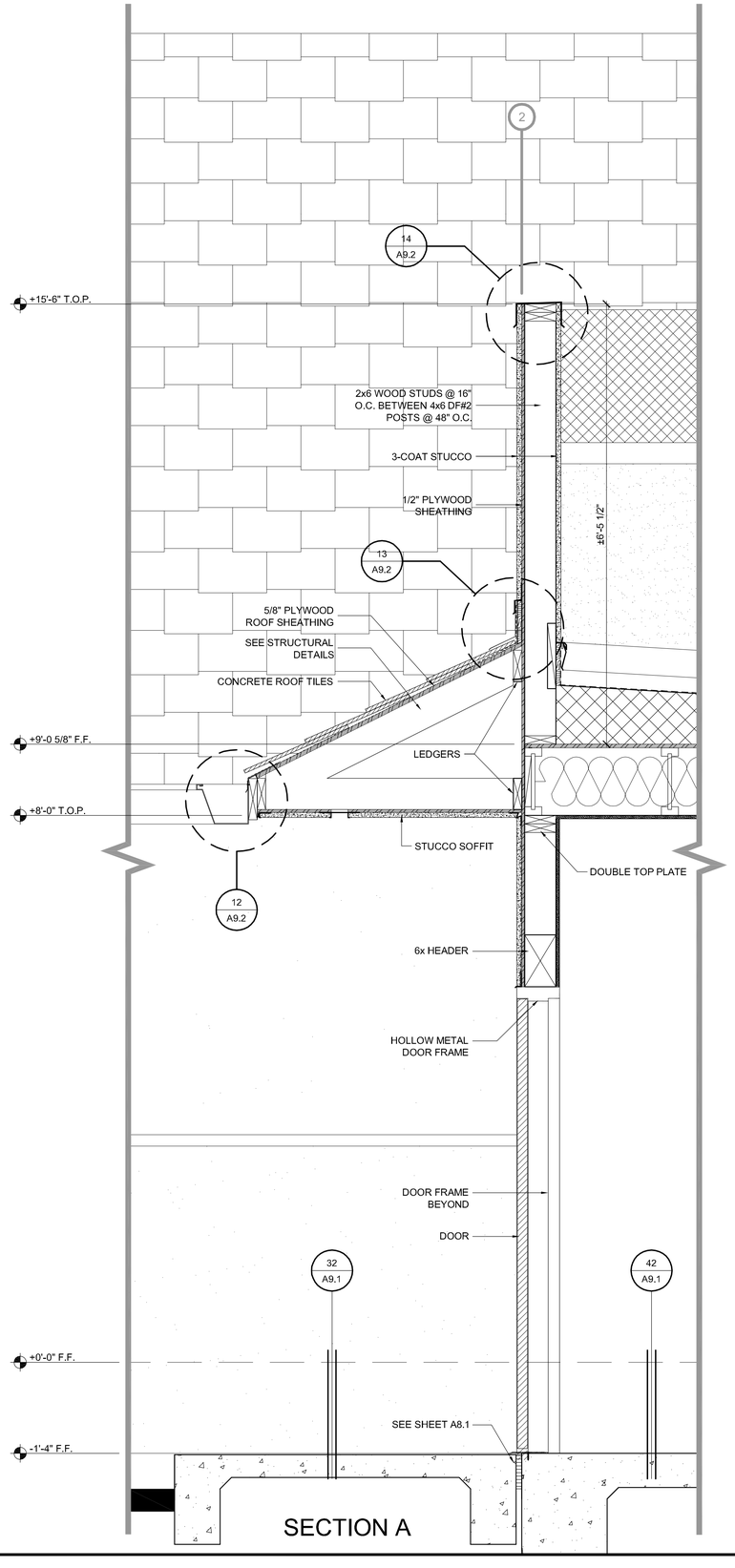
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SHEET TITLE

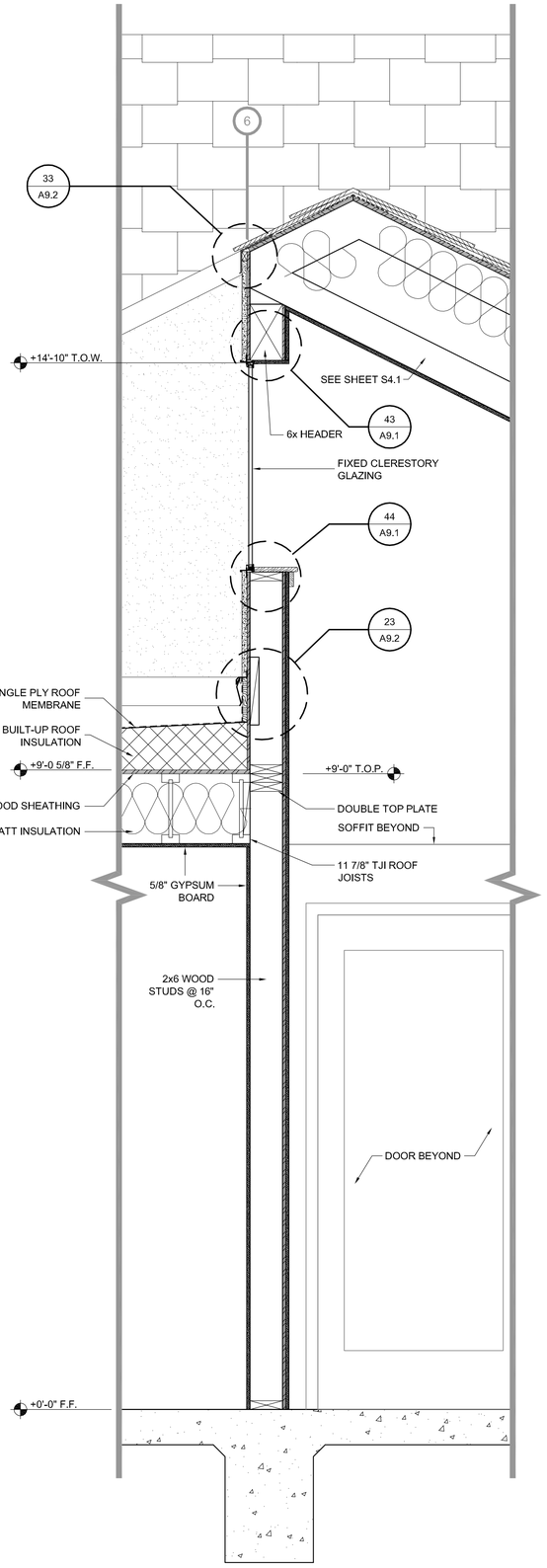
BUILDING SECTIONS
SCALE: 1/4"=1'-0"

SHEET #

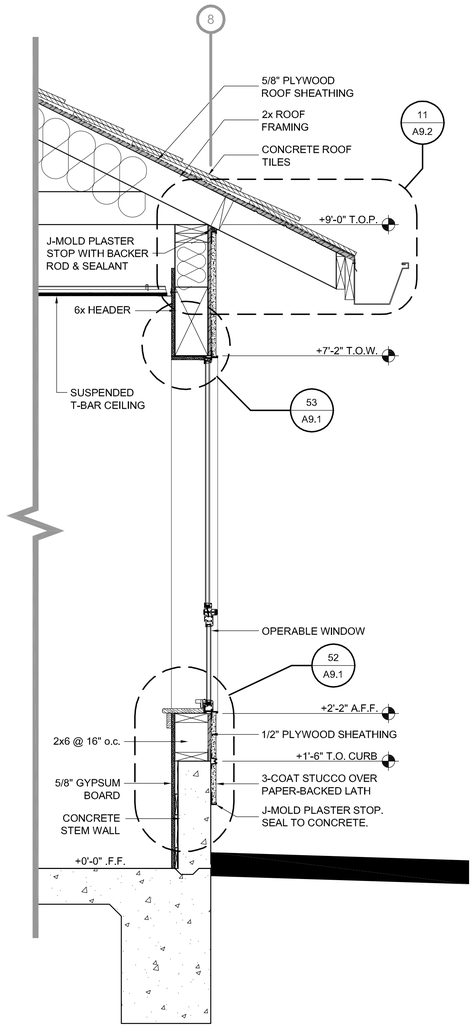
A6.2



SECTION A



SECTION B



SECTION C

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #
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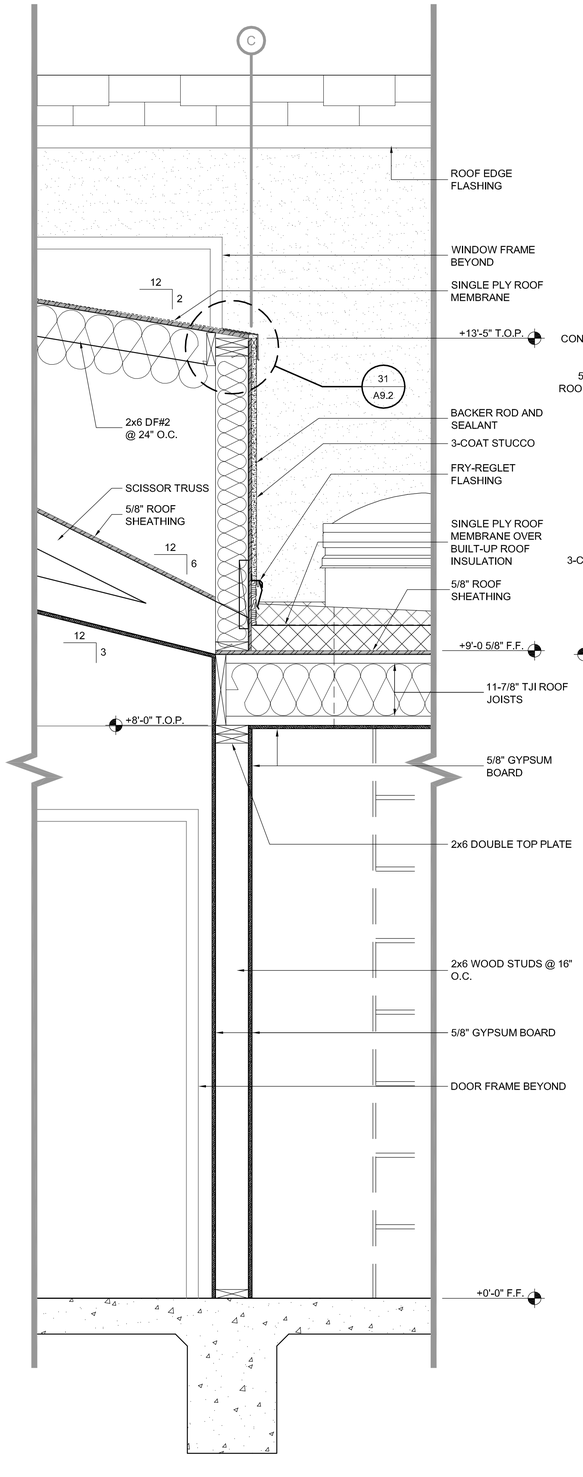
WALL SECTIONS

SCALE: 1"=1'-0"

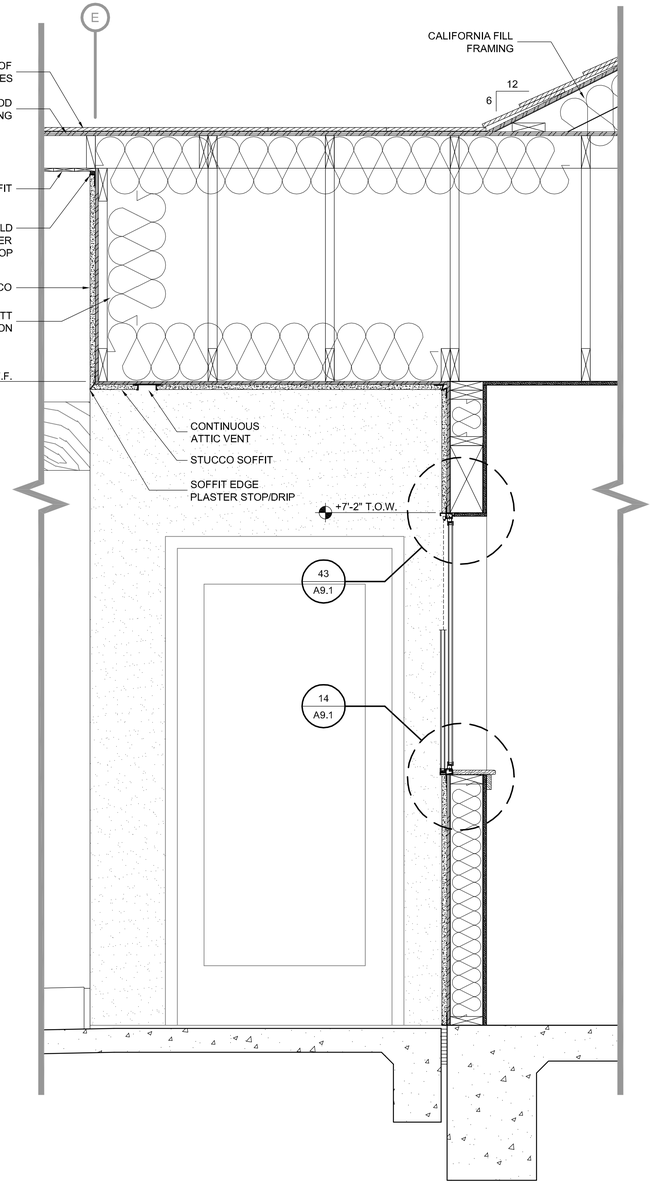
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A6.3

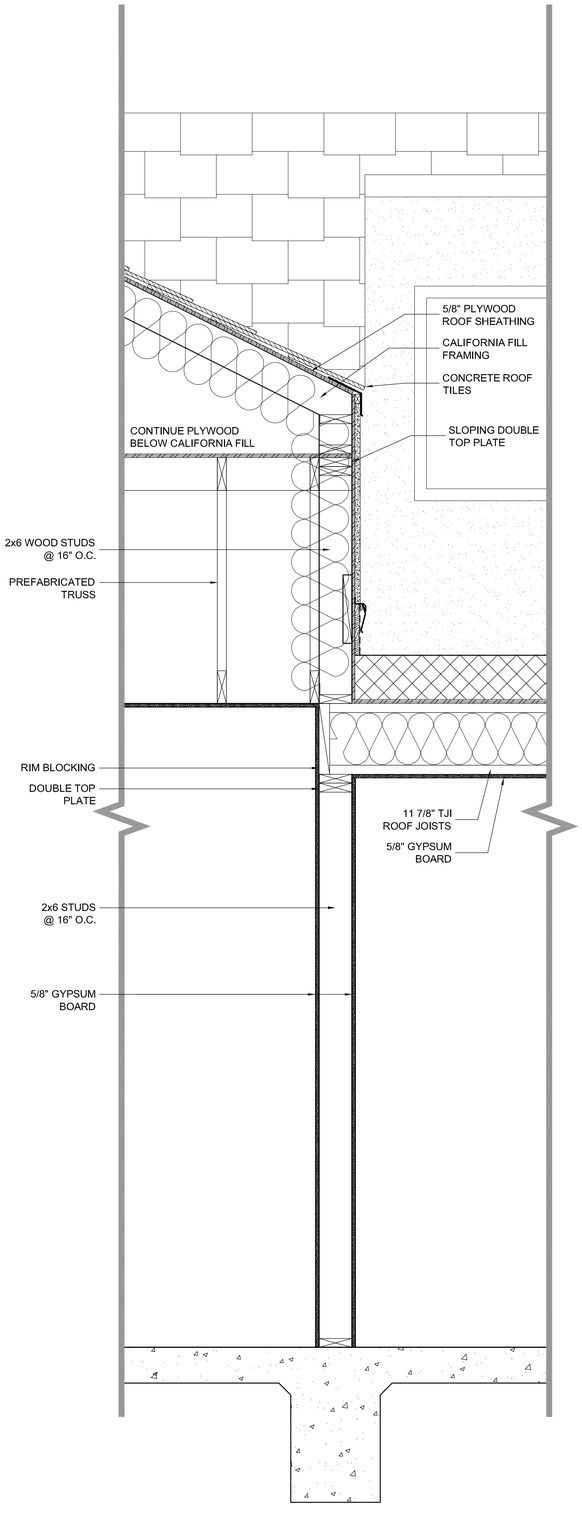
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SECTION A



SECTION B



SECTION C

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PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

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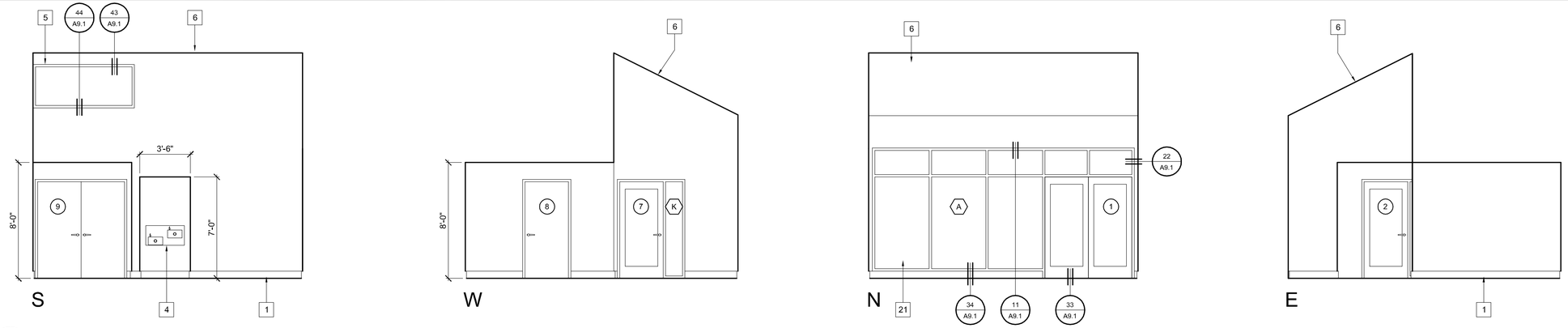
SHEET TITLE

WALL SECTIONS

SCALE: 1"=1'-0"

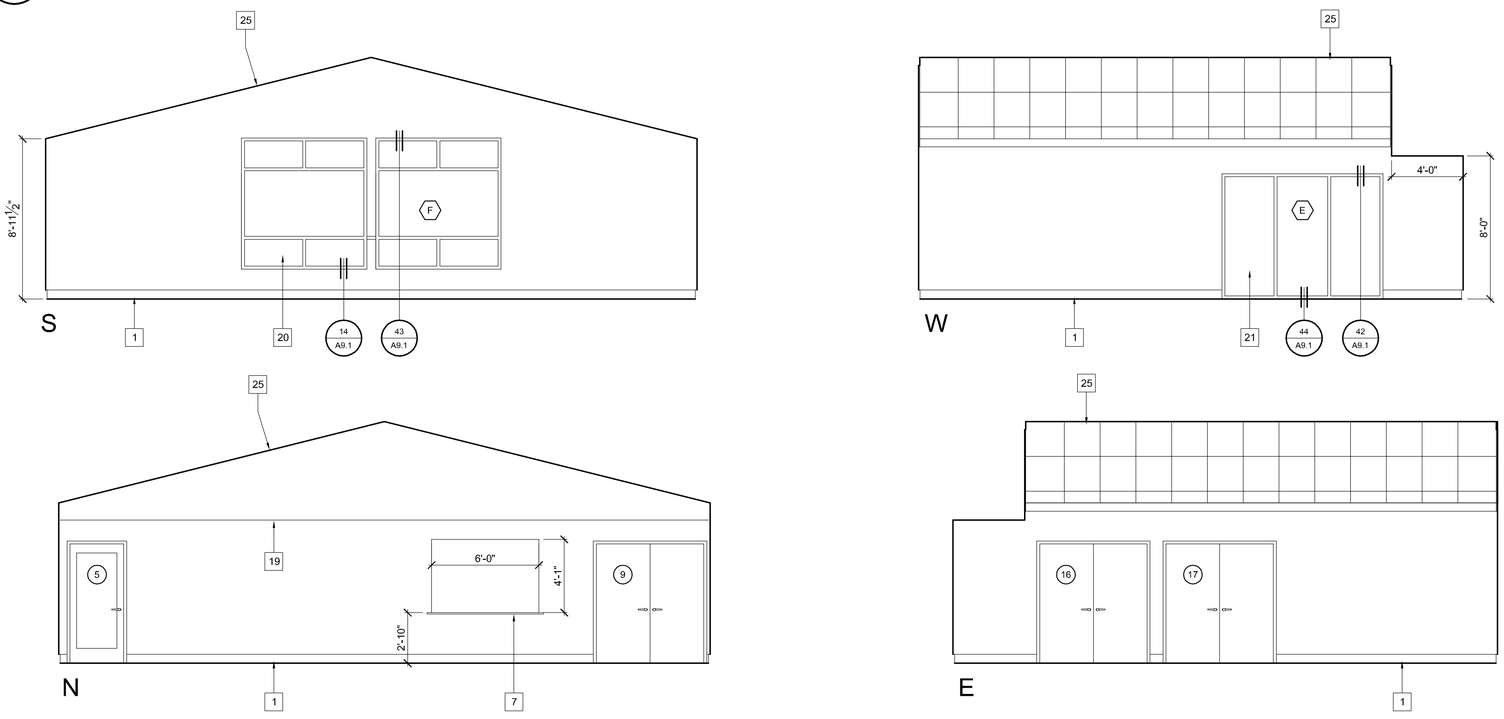
SHEET #

A6.4



51 LOBBY ELEVATIONS

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

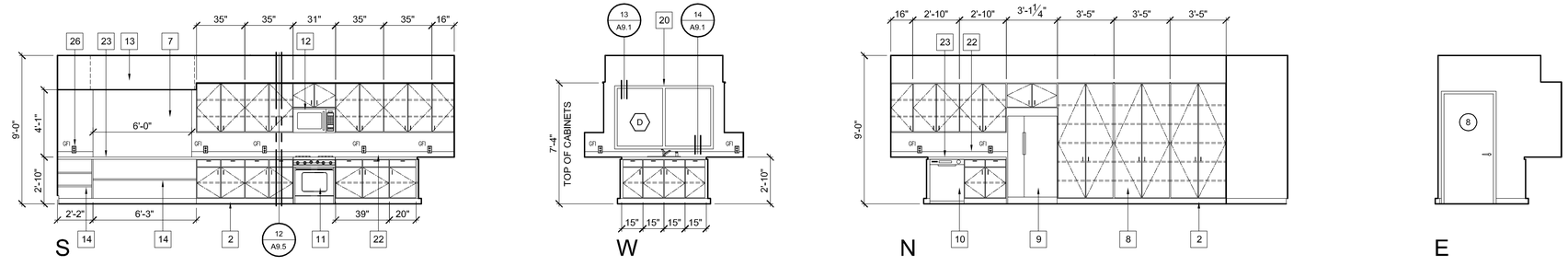


INTERIOR ELEVATION KEYNOTES

1. 6" HARDWOOD WALL BASEBOARD.
2. 4" RUBBER WALL BASE.
3. 6" RUBBER WALL BASE.
4. ACCESSIBLE HI/LO DRINKING FOUNTAIN. SEE DETAIL **41 / A9.1**.
5. CLERESTORY WINDOW.
6. SLOPING PORTION OF CEILING.
7. PASS-THROUGH WINDOW.
8. FULL HEIGHT PANTRIES.
9. REFRIGERATOR"
10. DISHWASHER.
11. RANGE.
12. BUILT-IN MICROWAVE WITH EXHAUST HOOD.
13. ROLL-UP DOOR. SEE DETAIL **54 / A9.5**.
14. OPEN SHELVING.
15. CLOTHES WASHER.
16. CLOTHES DRYER.
17. 38" HALF-WALL WITH HARDWOOD CAP.
18. UTILITY SINK.
19. SOFFIT 8'-0" A.F.F.
20. OPERABLE WINDOW. SEE WINDOW SCHEDULE ON SHEET A8.1.
21. STOREFRONT SYSTEM. SEE STOREFRONT SCHEDULE ON SHEET A8.1.
22. 4" TILE BACKSPLASH.
23. TILE COUNTERTOP.
24. BUILT-IN OPEN SHELVING.
25. ACOUSTIC CEILING PANELS. SEE REFLECTED CEILING PLAN.
26. SEE SHEET E3.0 FOR RECEPTACLE LOCATIONS.

52 MULTI-PURPOSE ROOM ELEVATIONS

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



53 KITCHEN ELEVATIONS

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

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #
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FRASER SEIPLE ARCHITECTS

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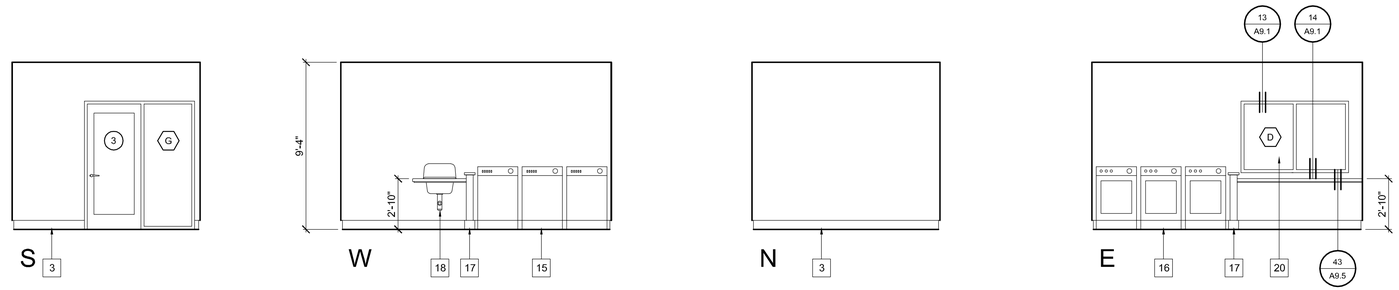
SHEET TITLE

INTERIOR ELEVATIONS

SHEET #

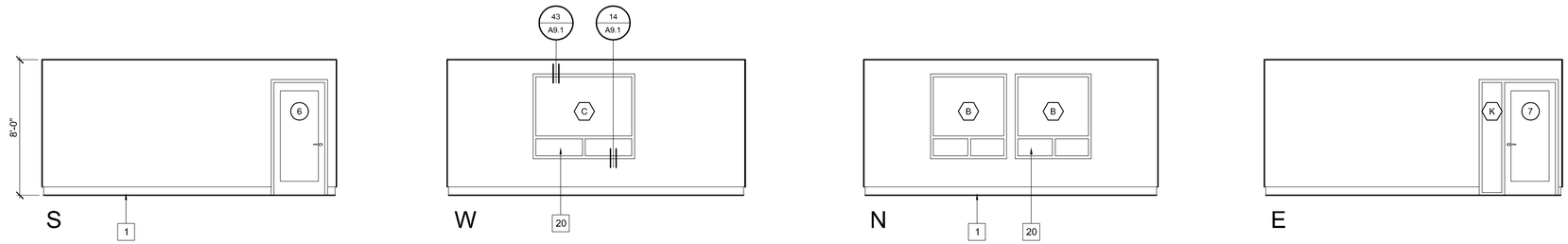
A7.1

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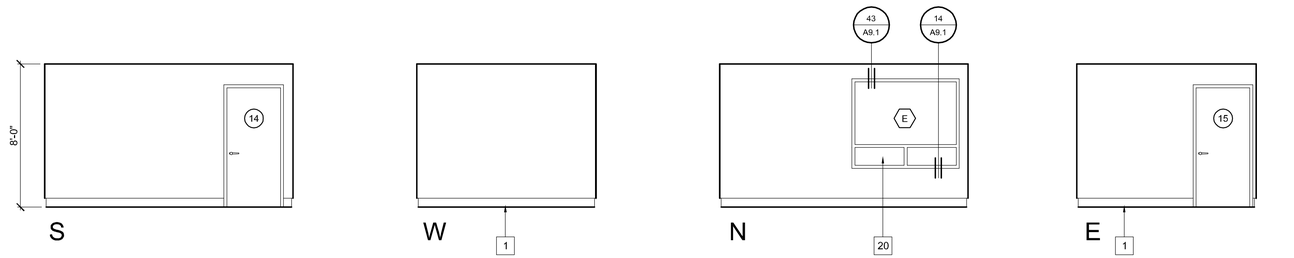
51 LAUNDRY ROOM ELEVATIONS

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



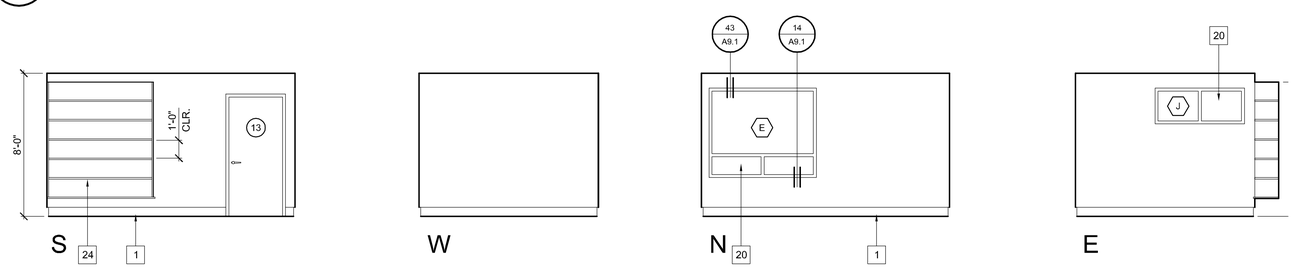
52 CLASSROOM ELEVATIONS

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



53 OFFICE ELEVATIONS

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



54 COUNSELING OFFICE ELEVATIONS

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

INTERIOR ELEVATION KEYNOTES

1. 6" HARDWOOD WALL BASEBOARD.
2. 4" RUBBER WALL BASE.
3. 6" RUBBER WALL BASE.
4. ACCESSIBLE HI/LO DRINKING FOUNTAIN. SEE DETAIL **41 / A9.1**.
5. CLERESTORY WINDOW.
6. SLOPING PORTION OF CEILING.
7. PASS-THROUGH WINDOW.
8. FULL HEIGHT PANTRIES.
9. REFRIGERATOR"
10. DISHWASHER.
11. RANGE.
12. BUILT-IN MICROWAVE WITH EXHAUST HOOD.
13. ROLL-UP DOOR. SEE DETAIL **54 / A9.5**.
14. OPEN SHELVING.
15. CLOTHES WASHER.
16. CLOTHES DRYER.
17. 38" HALF-WALL WITH HARDWOOD CAP.
18. UTILITY SINK.
19. SOFFIT 8'-0" A.F.F.
20. OPERABLE WINDOW. SEE WINDOW SCHEDULE ON SHEET A8.1.
21. STOREFRONT SYSTEM. SEE STOREFRONT SCHEDULE ON SHEET A8.1.
22. 4" TILE BACKSPLASH.
23. TILE COUNTERTOP.
24. BUILT-IN OPEN SHELVING.
25. ACOUSTIC CEILING PANELS. SEE REFLECTED CEILING PLAN.
26. SEE SHEET E3.0 FOR RECEPTACLE LOCATIONS.

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TtempleTON, CA

CLIENT JOB #

ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

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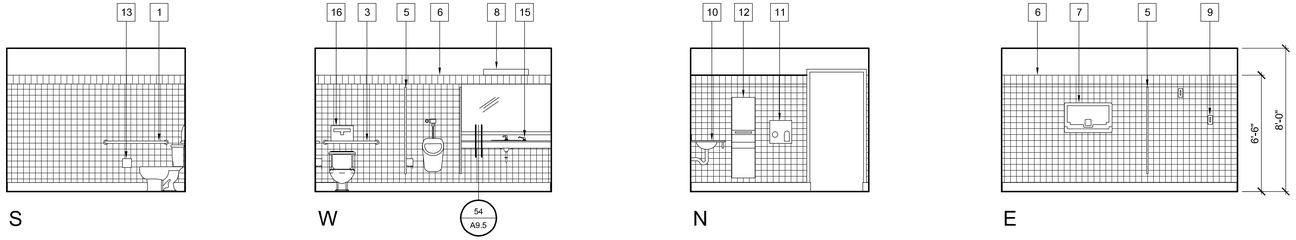
SHEET TITLE

INTERIOR ELEVATIONS

SHEET #

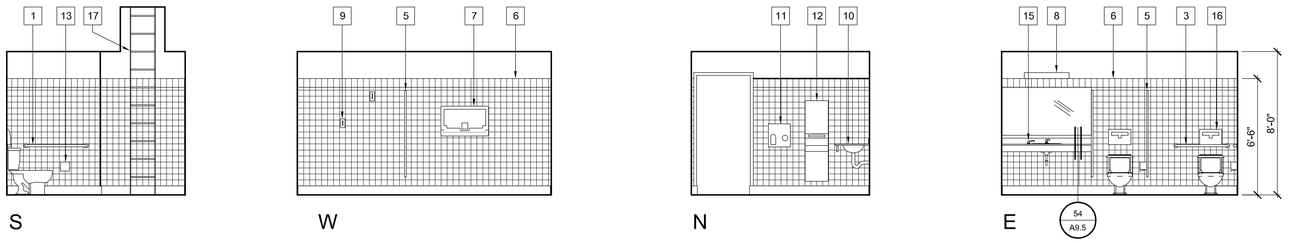
A7.2

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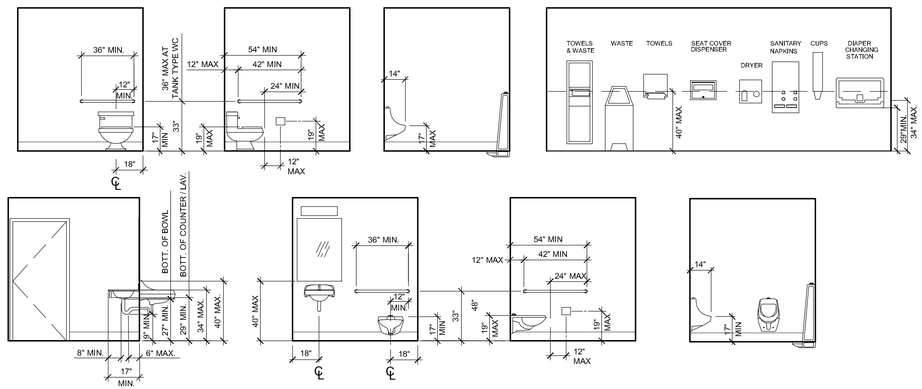
51 MEN'S RESTROOM ELEVATIONS

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



52 WOMEN'S RESTROOM ELEVATIONS

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

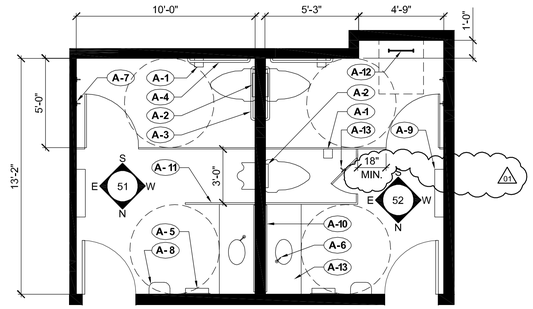


ACCESSIBILITY REQUIREMENTS FOR TOILET ROOM FIXTURES AND ACCESSORIES

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

ACCESSIBILITY GENERAL NOTES

3. MOUNT MIRROR(S) WITH THE BOTTOM EDGE NO HIGHER THAN 40" ABOVE FLOOR.
4. LOCATE OPERABLE PARTS (INCLUDING COIN SLOTS) OF ALL FIXTURES OR ACCESSORIES A MAXIMUM OF 40" ABOVE FLOOR: SOAP DISPENSERS, TOWELS, TOILET SEAT COVERS, AUTO DRYERS, SANITARY NAPKIN DISPENSERS, WASTE RECEPTACLES .
5. CONTROLS AND OPERATING MECHANISMS FOR ALL ITEMS SHALL BE OPERABLE WITH ONE HAND AND NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST.
6. THE FORCE REQUIRED TO ACTIVATE CONTROLS FOR ALL ITEMS SHALL BE 5 LBF. MAX.
7. LOCATE COAT HOOKS AND SHELVING WITHIN APPROPRIATE REACH RANGES 48" MAX. ABOVE FLOOR .
8. IF MEDICINE CABINETS ARE PROVIDED, AT LEAST ONE SHALL HAVE A USABLE SHELF NO HIGHER THAN 44" ABOVE FLOOR.



21 RESTROOMS

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

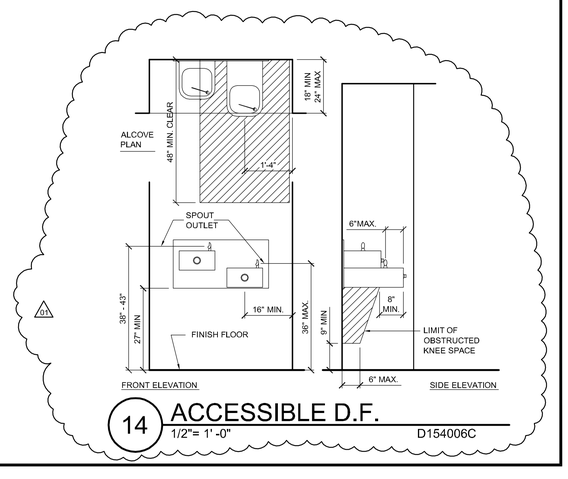
INTERIOR ELEVATION KEYNOTES

1. 42" MIN GRAB BAR PER ACCESSIBILITY REQUIREMENTS. SEE DETAIL **52 / A9.5**.
2. 6" WALL BASE.
3. 36" MIN GRAB BAR PER ACCESSIBILITY REQUIREMENTS.
4. CONTINUOUS GRAB BAR PER ACCESSIBILITY REQUIREMENTS.
5. PRIVACY PARTITION.
6. EDGE OF TILE +6'-6" A.F.F.
7. WALL MOUNTED CHANGING TABLE.
8. WALL MOUNT LIGHT FIXTURE.
9. COAT HOOK. PROVIDE ACCESSIBLE HOOK AT 46"
10. CORIAN COUNTER TOP.
11. HAND DRYER.
12. RECESSED PAPER TOWEL DISPENSER AND WASTE RECEPTACLE.
13. TOILET PAPER DISPENSER.
14. WALL MOUNTED PAPER TOWEL DISPENSER.
15. COUNTER MOUNTED SOAP DISPENSER.
16. SEAT COVER DISPENSER.
17. ROOF ACCESS LADDER. SEE DETAILS ~~44 & 54~~ / A9.3
18. THE INSIDE AND OUTSIDE OF THE COMPARTMENT DOOR SHALL BE EQUIPPED WITH A LOOP OR U-SHAPED HANDLE IMMEDIATELY BELOW THE LATCH. THE LATCH SHALL BE FLIP-OVER STYLE, SLIDING OR OTHER HARWARE NOT REQUIRING THE USER TO GRASP OR TWIST. 2007 CBC SECTION 1127A.2.1 (5.3).

01

RESTROOM ACCESSORIES

A - 1 TOILET PAPER DISPENSER.
A - 2 SEAT COVER DISPENSER.
A - 3 36" SIDE OF GRAB-BAR PER ACCESSIBILITY REQUIREMENTS.
A - 4 54" SIDE OF GRAB-BAR PER ACCESSIBILITY REQUIREMENTS.
A - 5 RECESSED PAPER TOWEL DISPENSER AND WASTE RECEPTACLE. SANITARY NAPKIN DISPOSAL CONTAINER.
A - 6 COUNTER MOUNTED SOAP DISPENSER.
A - 7 (2) COAT HOOKS. ONE ACCESSIBLE HOOK MOUNTED AT 46".
A - 8 HAND DRYER.
A - 9 WALL MOUNTED CHANGING TABLE.
A - 10 5' W x 2'-8" H MIRROR WITH BOTTOM EDGE MOUNTED AT 40" A.F.F..
A - 11 PRIVACY PARTITION.
A-12 ROOF ACCESS LADDER.



14 ACCESSIBLE D.F.

1/2"= 1' -0" D154006C

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB # 0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES
DESIGN DEVELOPMENT 4/15/10
FIRST SUBMITTAL 6/02/10
01 PLAN CHECK 1 8/16/10

SIGNED

LICENSED ARCHITECT BRUCE DOUGLAS FRASER C 9787 EXPIRES 12•31•11 STATE OF CALIFORNIA

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SHEET TITLE

ENLARGED RESTROOM PLANS

SHEET #

A7.3

\\John\Rolling Hills Apts 0706\drawings\10 - Drawing Sheets\Architectural\A7.2 - ENLARGED RESTROOM PLANS.dwg, 8/16/2010 9:51:41 AM, PDF995

WINDOW SCHEDULE

SYM.	TYPE	FRAME	WIDTH	HT.	GLAZING	REMARKS
A	SF	ALSF-1	18'-0"	9'-0"	G-2	FIXED GLAZING
B	VW	AW-1	4'-6"	5'-0"	G-1	FIXED, OPERABLE GLAZING
C	VW	AW-2	6'-0"	5'-0"	G-1	FIXED, OPERABLE GLAZING
D	VW	AW-3	6'-0"	3'-10"	G-1	FIXED, OPERABLE GLAZING
E	SF	ALSF-2	9'-0"	7'-2"	G-2	FIXED GLAZING
F	VW	AW-6	7'-0"	7'-4"	G-1	FIXED, OPERABLE GLAZING
G	SF	ALSF-3	2'-8"	6'-10"	G-2	FIXED GLAZING
H	SF	ALSF-4	1'-8"	6'-10"	G-2	FIXED GLAZING
J	VW	AW-4	5'-0"	2'-0"	G-1	OPERALBE GLAZING
K	PA	PA-1	1'-8"	6'-10"	G-1	FIXED GLAZING
L	VW	AW-5	7'-0"	3'-0"	G-2	FIXED CLERESTORY

FRAME LEGEND

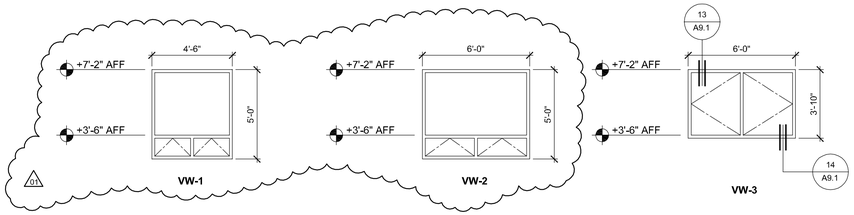
HM HOLLOW STEEL
PA PREFINISHED ALUMINUM
SF ALUMINUM STOREFRONT
VW VINYL WINDOW

GLAZING LEGEND

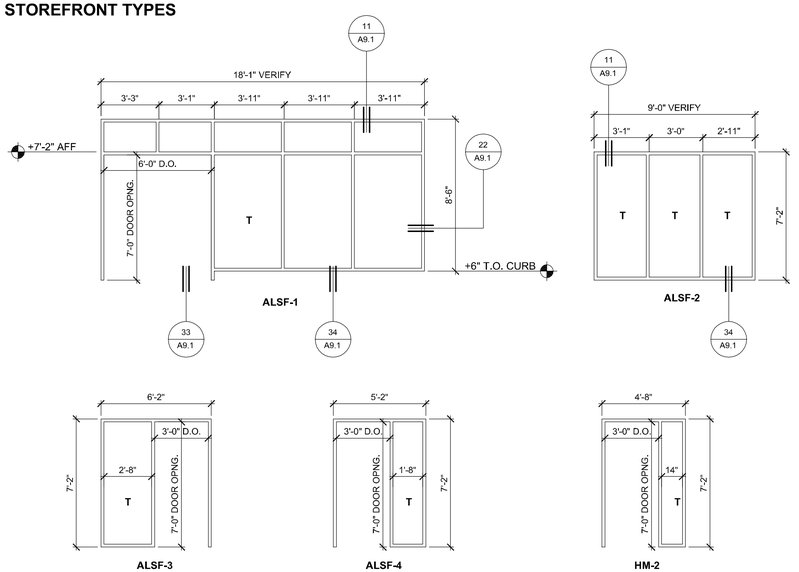
G-1 1" INSULATING GLASS, HIGH PERFORMANCE, REGULAR STRENGTH
G-2 1" INSULATING GLASS, HIGH PERFORMANCE, TEMPERED

NOTE: GLAZING WITHIN 24" OF DOORS SHALL BE TEMPERED.

WINDOW TYPES



STOREFRONT TYPES



PLAQUE SIGN SCHEDULE

SIGN	LOCATION	COPY	NOTES (SIGN SIZE W x H)
S-1	SURFACE OF WINDOW	(INTERNATIONAL ACCESSIBILITY SYMBOL)	9" X 9", ALIGN EXACTLY WITH SIGN ON OPPOSITE SIDE
S-2	SURFACE OF WINDOW	EXIT (+ ACCESSIBILITY SYMBOL)	9" X 9", ALIGN EXACTLY WITH SIGN ON OPPOSITE SIDE
S-3	WALL MOUNT HINGE SIDE OF DOOR	EXIT (+ ACCESSIBILITY SYMBOL)	9" X 12" TACTILE "EXIT" 4'-6" FROM EDGE OF DOOR
S-4	WALL MOUNT STRIKE SIDE OF DOOR	(MALE, ACCESSIBILITY SYMBOLS) MEN	6" X 9" MOUNT 4'-6" FROM EDGE OF DOOR
S-5	SURFACE OF DOOR	(MALE SYMBOL)	12" TRIANGLE
S-6	WALL MOUNT STRIKE SIDE OF DOOR	(FEMALE, ACCESSIBILITY SYMBOLS) WOMEN	6" X 9" MOUNT 4'-6" FROM EDGE OF DOOR
S-7	SURFACE OF DOOR	(FEMALE SYMBOL)	12" CIRCLE
S-8	SURFACE OF DOOR	ELECTRICAL, TELECOM EQUIPMENT	9" X 9"
S-9	SURFACE OF DOOR	FIRE SPRINKLER RISER	9" X 9"
S-10	WALL	OFFICE	9" X 9"
S-11	WALL	MANAGER	9" X 9"
S-12	WALL	CLASSROOM	9" X 9"
S-13	WALL MOUNT ABOVE DOOR	MAXIMUM OCCUPANCY NOT TO EXCEED 74 PERSONS	9" X 12"
S-14	WALL	LAUNDRY ROOM	9" X 9"
S-15	SURFACE OF WINDOW	THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED	9" X 12", ALIGNED WITH AND ABOVE EXIT SIGN

DOOR SCHEDULE

DOOR	TYPE	FRAME	WIDTH	HEIGHT	THICK.	HARDWARE	REMARKS/SIGNAGE
1	AL-2	ALSF-1	6'-0"	7'-0"		1 GLAZED	STOREFRONT ENTRY PAIR
2	AL-1	ALSF-5	3'-0"	7'-0"		2 GLAZED	STOREFRONT ENTRY
3	AL-1	ALSF-4	3'-0"	7'-0"		2 GLAZED	STOREFRONT ENTRY
4	SD-1	HM-1	3'-0"	7'-0"	1-3/4"	3 FLUSH	FLUSH PANEL, SIGN: ELECTRICAL ROOM
5	SD-2	HM-1	3'-0"	7'-0"	1-3/4"	4 GLAZED	PAINT GRADE
6	SD-2	HM-1	3'-0"	7'-0"	1-3/4"	4 GLAZED	PAINT GRADE
7	WD-1	HM-2	3'-0"	6'-8"	1-3/4"	5 GLAZED	SIGN: CLASSROOM
8	WD-2	HM-1	3'-0"	6'-8"	1-3/4"	5	STAIN GRADE
9	WD-4	HM-1	6'-0"	6'-8"	1-3/4"	6 GLAZED	STAIN GRADE
10	WD-2	HM-1	3'-0"	6'-8"	1-3/4"	7 FLUSH	STAIN GRADE, ACCESSIBLE BATH SIGNAGE
11	WD-2	HM-1	3'-0"	6'-8"	1-3/4"	7 FLUSH	STAIN GRADE, ACCESSIBLE BATH SIGNAGE
12	WD-3	HM-1	3'-0"	6'-8"	1-3/4"	8 FLUSH	STAIN GRADE, SIGN: FIRE RISER ROOM
13	WD-2	HM-1	3'-0"	6'-8"	1-3/4"	5 GLAZED	STAIN GRADE
14	WD-5	HM-1	3'-0"	6'-8"	1-3/4"	5 GLAZED	STAIN GRADE
15	WD-2	HM-1	3'-0"	6'-8"	1-3/4"	9	STAIN GRADE
16	WD-6	HM-1	6'-0"	6'-8"	1-3/4"	10 FLUSH	STAIN GRADE
17	WD-6	HM-1	6'-0"	6'-8"	1-3/4"	10 FLUSH	STAIN GRADE

DOOR HARDWARE SCHEDULE

GROUP 1
Hinges: 6 pivots, heavy duty
Lock: keyed cylinder
Pulls: 2, offset single acting
Push Bar: 2, full width
Closers: 2, concealed head mounted
Threshold: accessible saddle, full width
Door Bottoms: nylon brush sweep
Seals: adhered vinyl, jamb and head

GROUP 2
Hinges: 3 pivots, heavy duty
Lock: keyed cylinder
Pulls: 1, offset single acting
Push Bar: 1, full width
Closers: 2, concealed head mounted, hold open
Threshold: accessible saddle, full width
Door Bottom: vinyl brush sweep
Seals: adhered vinyl, jamb and head

GROUP 3
Hinges: 3, standard duty brass or stainless steel
Lockset: heavy duty storeroom function, lever handle
Threshold: accessible saddle, full width
Door Bottom: full shoe, vinyl sweep
Seals: silicone bulb, head and jambs

GROUP 4
Hinges: 3, heavy duty brass or stainless steel
Lockset: heavy duty entry/office function, lever handle
Threshold: accessible saddle, full width
Door Bottom: full shoe, vinyl sweep
Seals: silicone bulb, head and jambs

GROUP 5
Hinges: 3, standard duty
Lockset: standard duty entry/office function, lever handle
Stop: heavy duty wall base stop
Seals: adhered vinyl, head and jamb

GROUP 6
Hinges: 6, ball bearing
Active Leaf Lockset: heavy duty entry/offlce function, lever handle
Inactive Leaf Bolt: heavy duty flush bolts, top and bottom
Closer: 2, inside surface mount, hold-open
Stops: heavy duty wall stop
Seals: adhered vinyl, head and jamb

GROUP 7
Hinges: 3, heavy duty
Closer: inside surface mount
Push Plate: 4" x 16"
Pull: 8", on 4" x 16" plate
Mop Plate: 8" x door width, inside
Stop: heavy duty wall stop
Push Plate, Pull
Seals: adhered vinyl, jamb and head

GROUP 8
Hinges: 3, standard duty
Lockset: standard duty storeroom function, lever handle
Stop: heavy duty wall base stop
Seals: adhered vinyl, head and jamb

GROUP 9
Hinges: 3, standard duty
Lockset: standard duty storeroom function, lever handle
Stop: heavy duty wall base stop

GROUP 10
Hinges: 6, standard duty
Active Leaf Latchset: heavy duty passage
Inactive Leaf Bolts: heavy duty flush bolts, top and bottom

FINISH SCHEDULES

ROOM NAME	FLOOR	BASE	WALLS/CEILING	CEILING
WAITING	RF-1	RB-1	GB-1	GB-1
CLASSROOM	CAR-1	RB-1	GB-1	AC-1
OFFICE	CAR-1	RB-1	GB-1	AC-1
FILE OFFICE STORAGE	RF-2	RB-1	GB-1	GB-1
COUNSELING OFFICE	CAR-1	RB-1	GB-1	AC-1
ELECTRICAL	SC-1	NONE	GB-2	GB-2
MECHANICAL	SC-1	NONE	GB-2	GB-2
MEN'S RESTROOM	CT-1	CT-2	CT-3	GB-1
WOMEN'S RESTROOM	CT-1	CT-2	CT-3	GB-1
KITCHEN	RF-1	RB-1	GB-1	GB-1
MULTI-PURPOSE	RF-1	RB-1	GB-1	AC-2
STORAGE	RF-2	RB-1	GB-1	GB-1
LAUNDRY	RF-2	RB-1	GB-1	GB-1
HALL	RF-1	RB-1	GB-1	GB-1

FINISH LEGEND

FLOOR	
RF-1	12"x12" VINYL COMPOSITION TILE, 3-COLOR PATTERN
RF-2	12"x12" VINYL COMPOSITION TILE, 1 COLOR
CAR-1	LEVEL LOOP CARPET WITH PAD, 20 OZ.
CT-1	2" X 2" UNGLAZED CERAMIC TILE
SC-1	SEALED CONCRETE

BASE	
RB-1	4" STRAIGHT RESILIENT WALL BASE
CT-2	COVED CERAMIC TILE BASE

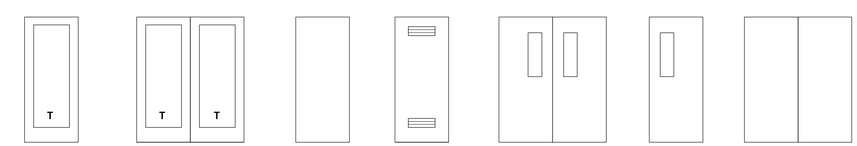
WALLS	
GB-1	GYPSUM BOARD, TEXTURED, SEMI-GLOSS PAINT
GB-2	GYPSUM BOARD, TAPED ONLY, FLAT PAINT
CT-3	4-1/4" X 4-1/4" GLAZED CERAMIC TILE
FRP-1	FIBERGLASS REINFORCED PANEL

CEILING	
GB-1	GYPSUM BOARD, TEXTURED, SEMI-GLOSS PAINT
GB-2	GYPSUM BOARD, TAPED ONLY, FLAT PAINT
AC-1	SUSPENDED ACOUSTIC TILE
AC-2	ACOUSTIC PANELS

GENERAL DOOR NOTES:

1. THE UNLATCHING OF ANY EXIT DOOR SHALL NOT REQUIRE MORE THAN ONE OPERATION.
2. ALL EXIT DOORS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE.
3. HC ACCESSIBLE DOOR HARDWARE SHALL BE CENTERED BETWEEN 30 AND 44 INCHES ABOVE FINISH FLOOR OR LANDING, AND SHALL BE OPERATED WITH SINGLE PUSH-PULL ACTIVATING BARS OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE.
4. INTERIOR AND EXTERIOR THRESHOLDS SHALL BE NO HIGHER THAN 1/2 INCH ABOVE ADJACENT FLOORLEVELS. HC ACCESSIBLE THRESHOLDS SHALL BE REQUIRED TO BE SLOPED A MINIMUM OF 2 HORIZONTAL TO 1 VERTICAL SO THAT NO VERTICAL CHANGE OF ELEVATION EXCEEDS 1/4 INCH.
5. ON DOORS THAT HAVE CLOSERS, THE DOOR CLOSER PRESSURE SHALL NOT EXCEED 5 POUNDS. EXTERIOR DOORS SHALL OPEN WITH A MAXIMUM EFFORT OF 5 POUNDS OF PRESSURE.
6. THE BOTTOM 10 INCHES OF ALL HC ACCESSIBLE DOORS SHALL HAVE A SMOOTH UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST.
7. ALL GLAZING IN DOORS SHALL BE TEMPERED.
8. REFER TO SPECIFICATION SECTION 10400 FOR DOOR SIGNAGE REQUIREMENTS.
9. PROVIDE A 60"x60" CLEAR LEVEL AREA AT WALK ADJACENT TO DOOR/GATE WHEN DOOR/GATE SWINGS TOWARD WALK.
10. PROVDIE A 48"x44" CLEAR LEVEL AREA AT WALK ADJACENT TO DOOR/GATE WHEN DOOR/GATE SWINGS AWAY FROM WALK.
11. THE FOLLOWING SHALL APPLY TO THE MAIN EXTERIOR DOOR (1):
    A. THE LOCKING DEVICE SHALL BE REDILY DISTINGUISHABLE AS LOCKED
    B. A READILY VISIBLE DURABLE SIGN SHALL BE POSTED ON THE EGRESS SIDE ON OR ADJACENT TO THE DOOR STATING: "THIS DOOR IS TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED" THE SIGN SHALL BE IN LETTERS 1 INCH HIGH ON A CONTRASTING BACKGROUND.

DOOR TYPES



PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES
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FIRST SUBMITTAL 6/02/10
01 PLAN CHECK 1 8/16/10

SIGNED

LICENSED ARCHITECT
BRUCE DOUGLAS FRASER
C 9787
EXPIRES 12-31-11
STATE OF CALIFORNIA

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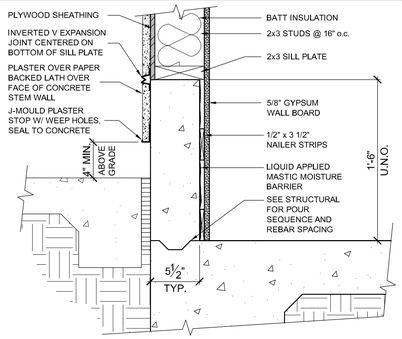
SHEET TITLE

DOOR, WINDOW, STOREFONT SCHEDULES

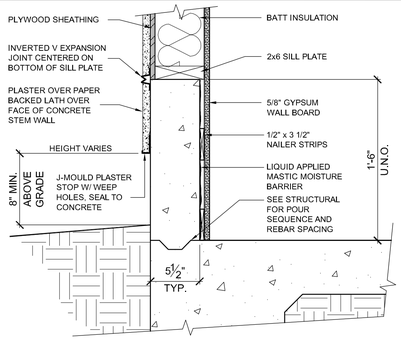
SHEET #

A8.1

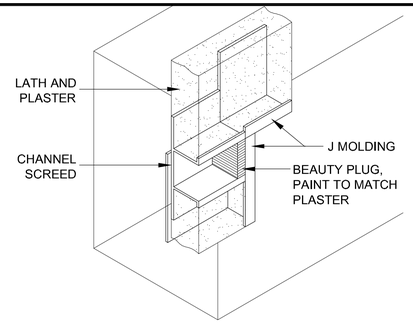
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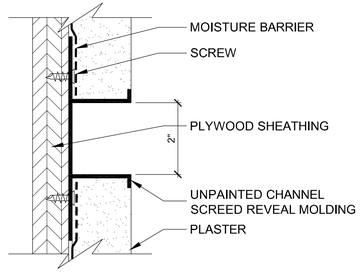
51 STEMWALL AT SIDEWALK
SCALE: 1 1/2" = 1'-0"



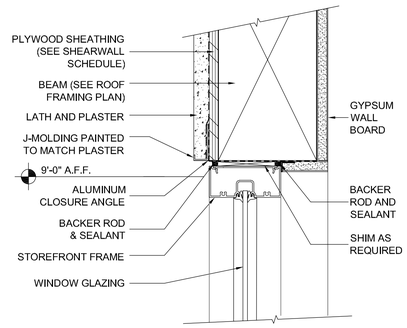
41 STEMWALL AT GRADE
SCALE: 1 1/2" = 1'-0"



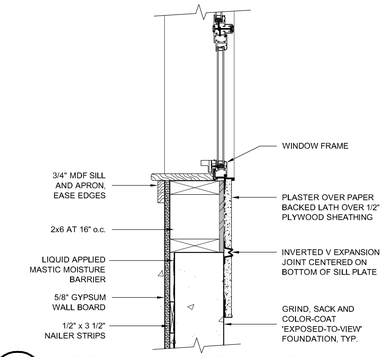
31 REVEAL AT STOREFRONT
6"= 1'- 0"



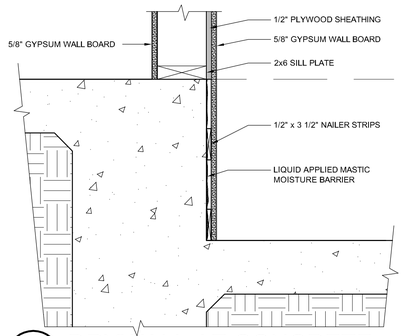
21 HORIZONTAL / VERTICAL WALL REVEAL
1:1



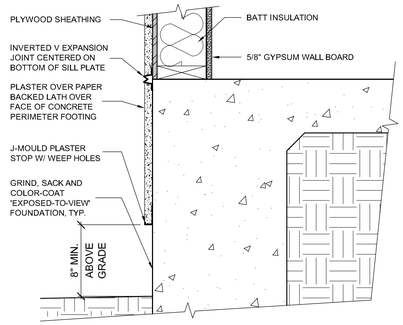
11 STOREFRONT HEAD
3"= 1' -0"



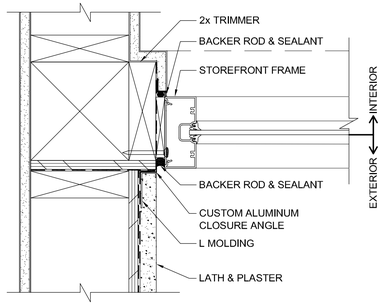
52 STEMWALL AT WINDOW
SCALE: 1 1/2" = 1'-0"



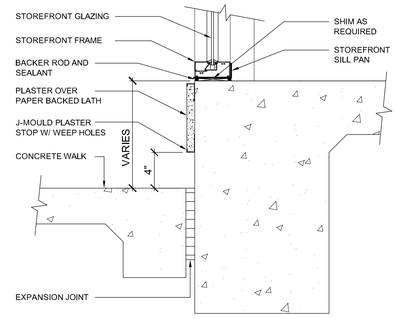
42 DRYWALL AT CONCRETE
SCALE: 1 1/2" = 1'-0"



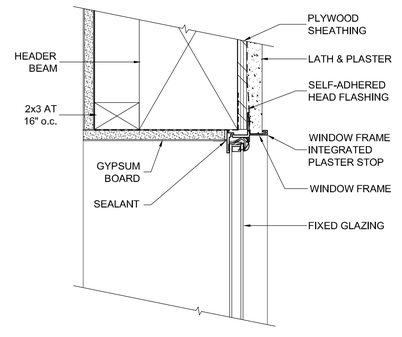
32 PLASTER AT CONCRETE
SCALE: 1 1/2" = 1'-0"



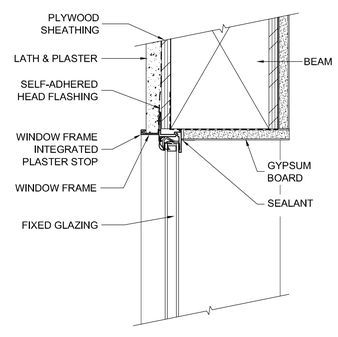
22 STOREFRONT JAMB AT MAIN ENTRY
3"= 1' -0"



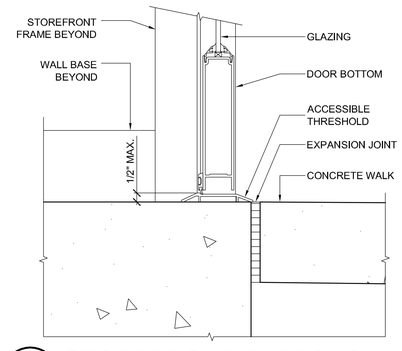
12 STOREFRONT SILL
SCALE: 1 1/2" = 1'-0"



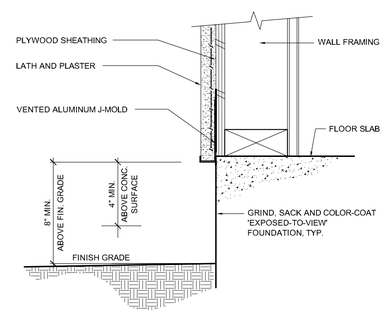
53 WINDOW HEAD
3"= 1' -0"



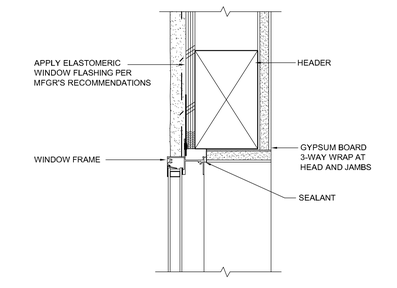
43 FIXED WINDOW HEAD
3"= 1' -0"



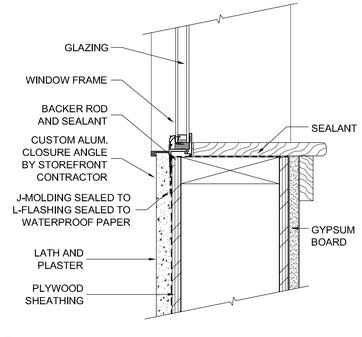
33 STOREFRONT THRESHOLD
3"= 1' -0"



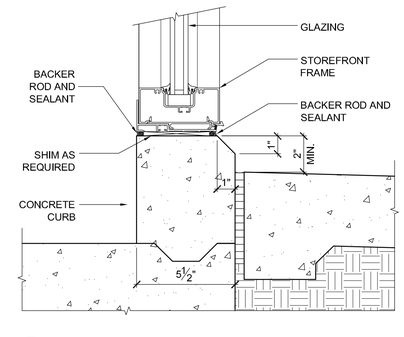
23 TYPICAL WEEP SCREED
3"= 1' -0"



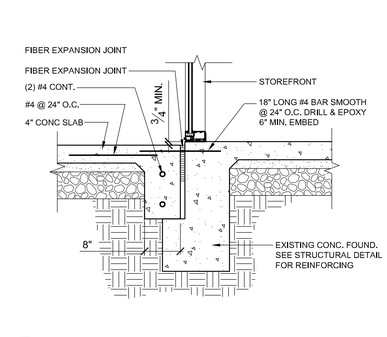
13 TYPICAL WINDOW HEAD
3"=1'- 0"
D085045A



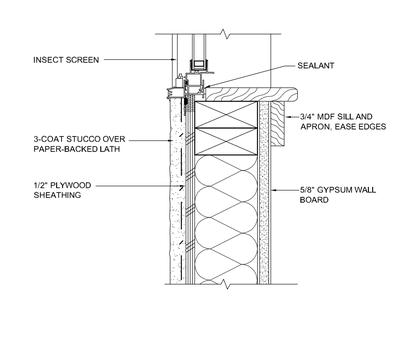
44 FIXED WINDOW SILL
3"= 1' -0"



34 STOREFRONT SILL
3"= 1' -0"



24 FOOTING AT WALK
3/4"= 1' -0"
D0330XXA



14 TYPICAL WINDOW SILL
3"=1'- 0"
D085045A

\\John\Rolling Hills Apts 0706\drawings\0 - Drawing Sheets\Architectural\A9.1 - Details.dwg, 8/24/2010 4:54:59 PM, PDF995.pc3

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES
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01 PLAN CHECK 1 8/16/10

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LICENSED ARCHITECT BRUCE DOUGLAS FRASER C 9787 EXPIRES 12-31-11 STATE OF CALIFORNIA

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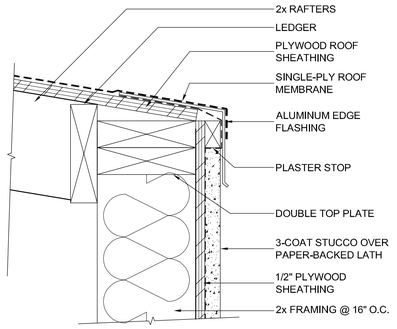
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SHEET TITLE

DETAILS

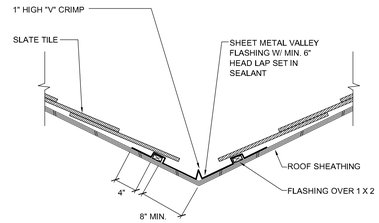
SHEET #

A9.1



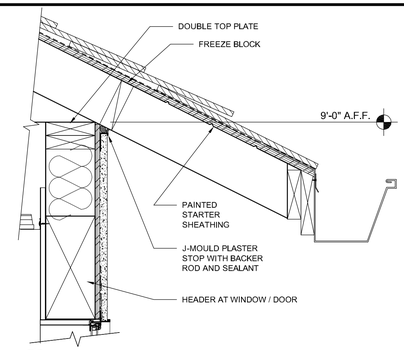
31 SINGLE-PLY ROOF EDGE

3"= 1' -0" DO96008A



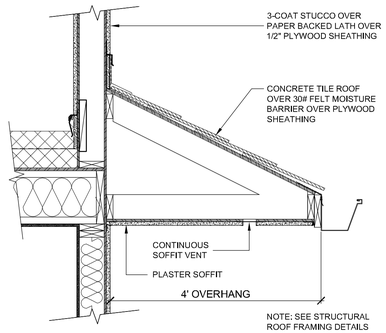
21 VALLEY FLASHINGS

1" =1' -0" D073005B



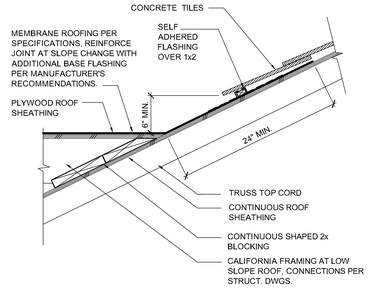
11 ROOF EAVE (TYP.)

1 1/2"= 1' -0" D073019A



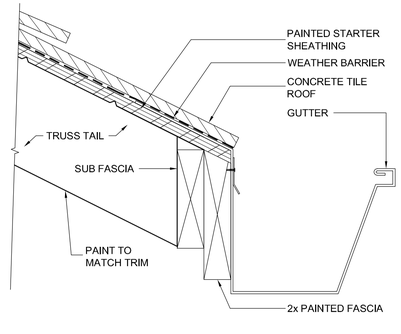
42 PLASTER SOFFIT

3/4"= 1' -0"



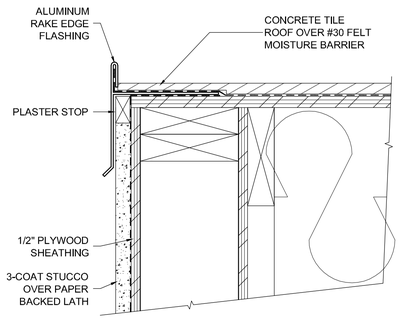
22 ROOF TRANSITION

1" =1' -0" D073023A



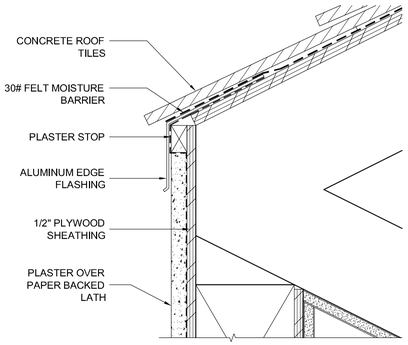
12 TYPICAL FASCIA / GUTTER

3"= 1' -0"



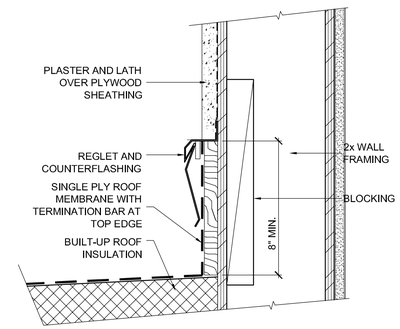
43 ROOF RAKE EDGE

3"= 1' -0"



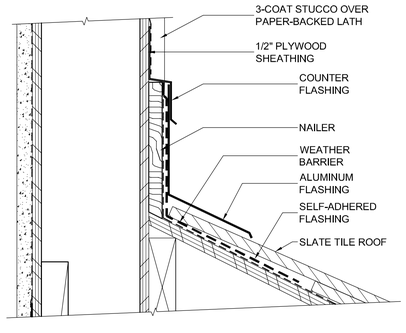
33 ROOF EDGE w/out GUTTER

3"= 1' -0"



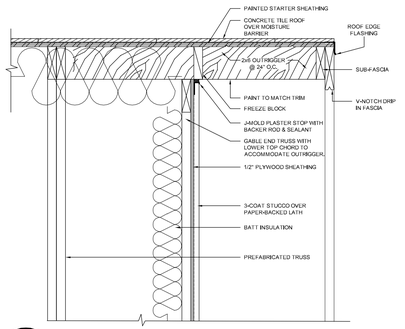
23 ROOF WELL HEAD WALL

3"= 1' -0"



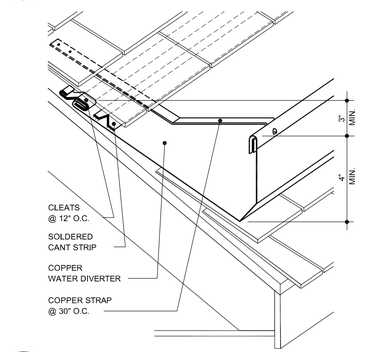
13 ROOF AT HEAD WALL

3"= 1' -0"



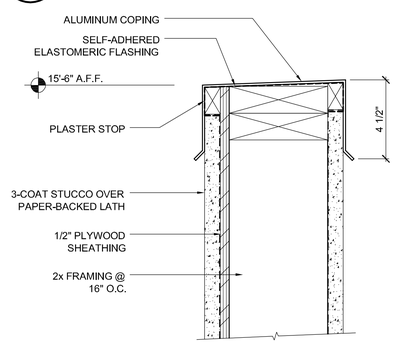
34 GABLE END OVERHANG

1" =1' -0"



24 WATER DIVERTER

SCALE: NONE D073019A



14 PARAPET COPING

3"= 1' -0"

\\John\Rolling Hills Apts 0706\drawings\0 - Drawing Sheets\Architectural\A9.1 - Details.dwg, 8/13/2010 2:23:20 PM, PDP95

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB # 0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

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FIRST SUBMITTAL 6/02/10
1 PLAN CHECK 1 8/16/10

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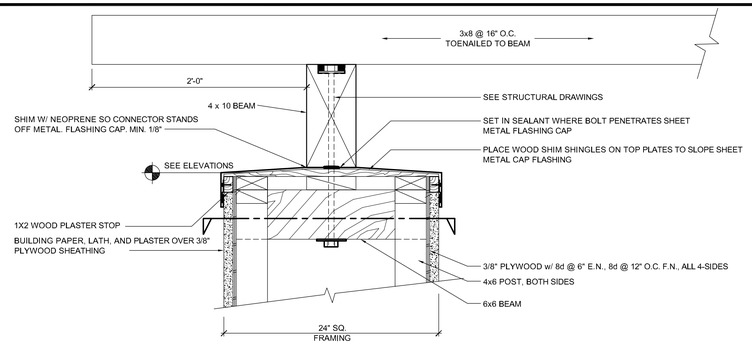
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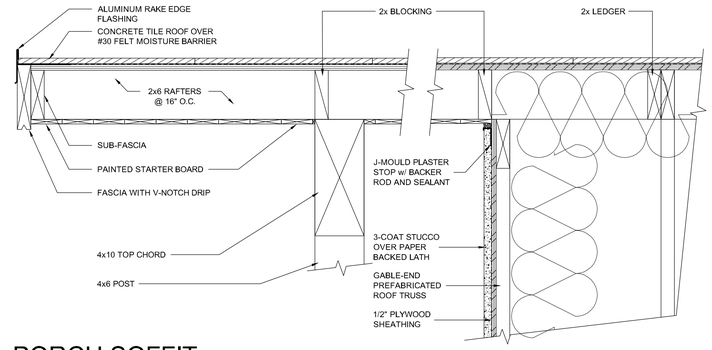
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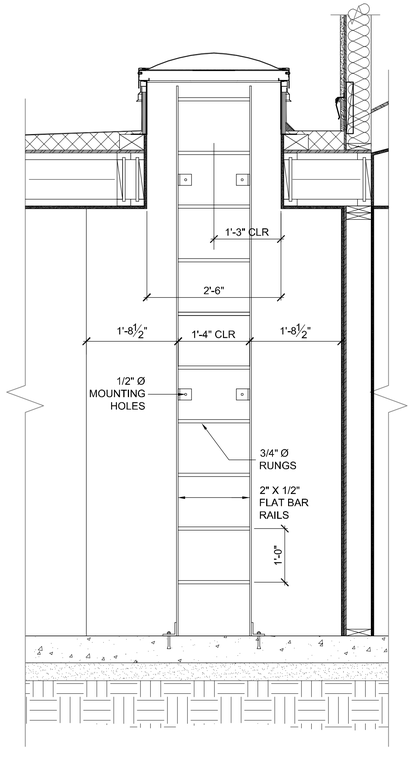


41 TRELLIS BEAM TO TOP OF COLUMN
1 1/2"= 1' -0"

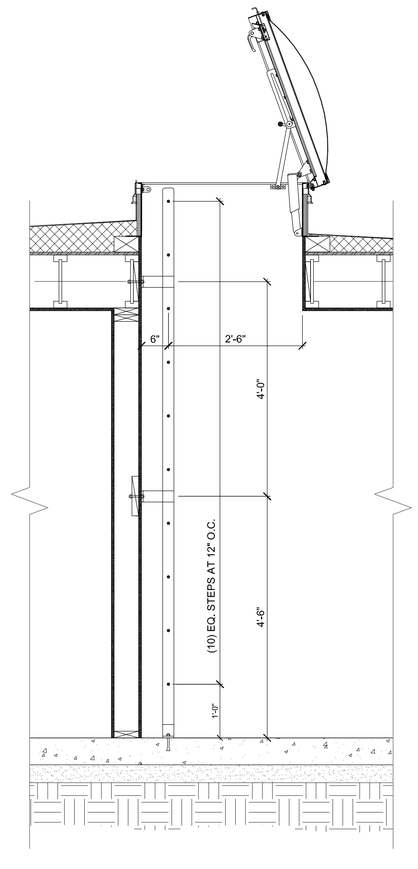
D061205B



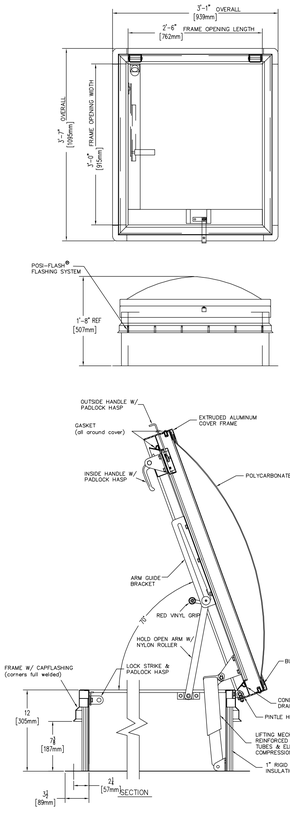
21 PORCH SOFFIT
SCALE: 1 1/2" = 1'-0"



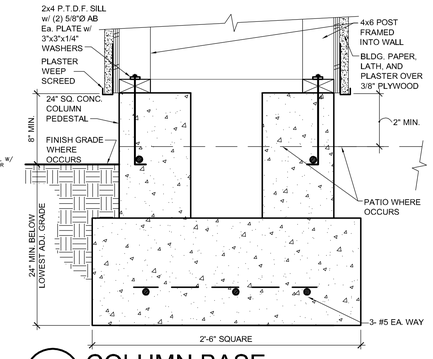
54 LADDER ELEVATION
3/4"=1'-0"



44 LADDER SECTION
3/4"=1'-0"

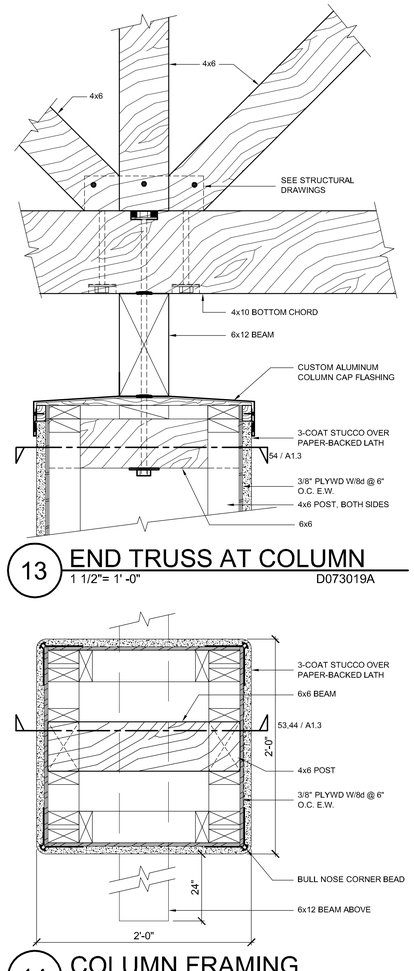


34 ROOF ACCESS HATCH W/
INTEGRATED SKYLIGHT
NTS



24 COLUMN BASE
1 1/2"= 1' -0"

D033104B



13 END TRUSS AT COLUMN
1 1/2"= 1' -0"

D073019A

14 COLUMN FRAMING
SCALE: 1 1/2" = 1'-0"

\\John\Rolling Hills Apts 0706\drawings\0 - Drawing Sheets\Architectural\A9.1 - Details.dwg, 8/30/2010 8:53:18 AM, PDF995.pc3

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB #

ARCHITECT JOB # 0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES
DESIGN DEVELOPMENT 4/15/10
FIRST SUBMITTAL 6/02/10
01 PLAN CHECK 1 8/16/10

SIGNED

LICENSED ARCHITECT
BRUCE DOUGLAS FRASER
C 9787
EXPIRES 12-31-11
STATE OF CALIFORNIA

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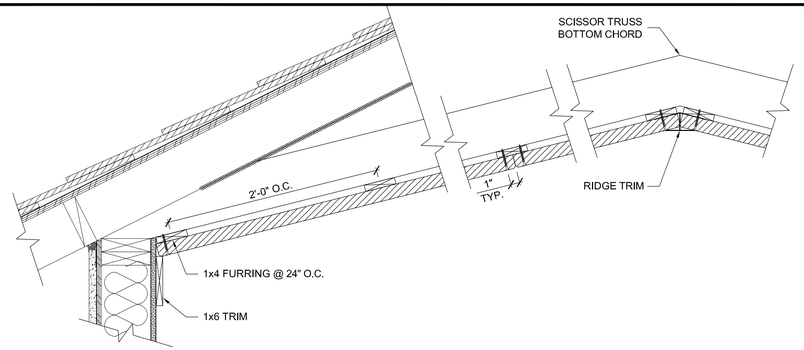
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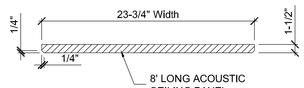
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A9.3



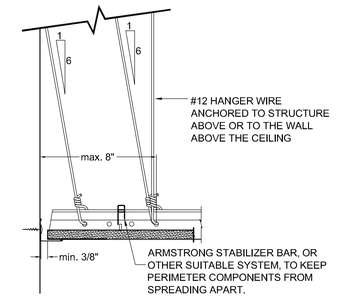
41 ACOUSTIC CEILING AT MULTI-PURPOSE ROOM

1 1/2"= 1' -0"



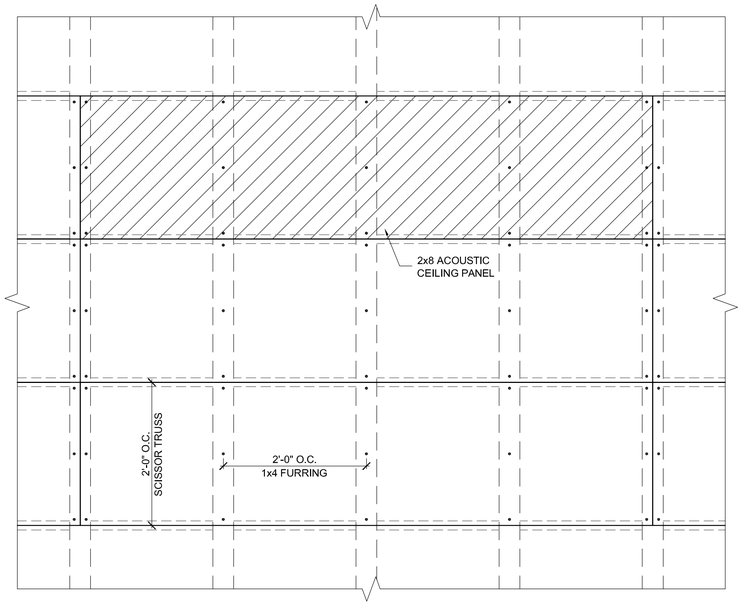
21 ACOUSTIC CEILING PANEL

1 1/2"= 1' -0"



11 SEISMIC END RESTRAINT: FIXED END - SEISMIC ZONE C

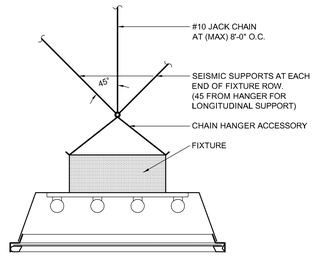
3"= 1' -0" D095009C



NOTES:
1. Standard application of Tectum Interior Ceilling Panels Furring spacing is at 24" maximum on center and furring can be wood or metal.
2. Screw spacing for wall panels is as shown with screws approximately 1" from the panel edge and ends.
3. Three screws per panel width are required.
4. Adhesive may be used in conjunction with the minimum screw pattern that is shown. Adhesive must meet the requirements of AFG-01.

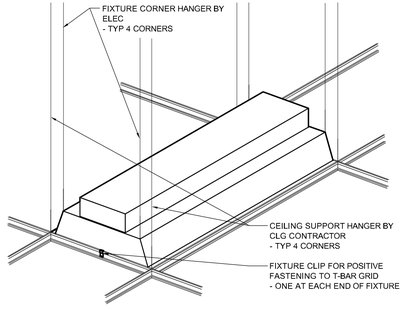
43 ACOUSTIC CEILING AT MULTI-PURPOSE ROOM

1" = 1' -0"



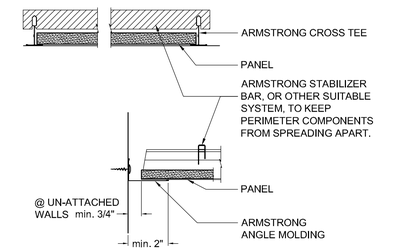
22 TYPICAL CHAIN MTD. FIXTURE DETAIL

1 1/2"= 1' -0" D165004A



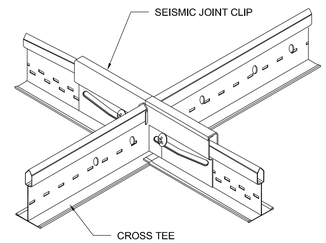
23 TYPICAL TROFFER SUPPORT DETAIL

NTS APPROX. 3/4"= 1' -0" D165005A



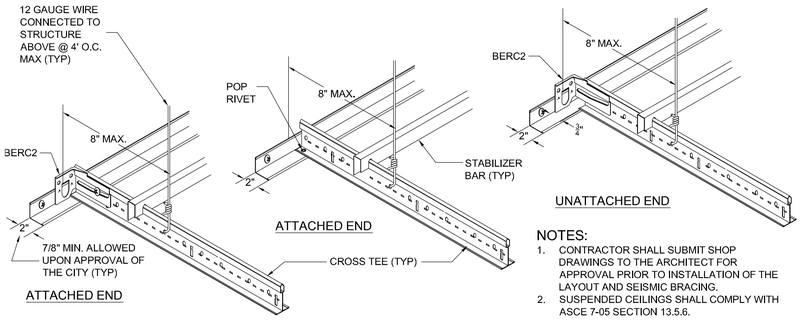
12 STABILIZER BAR: SEISMIC ZONES D,E & F

3"= 1' -0" D095009D



13 SEISMIC JOINT CLIP

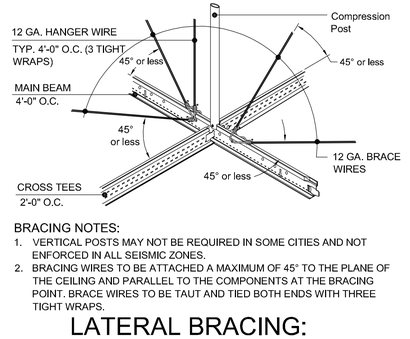
N.T.S. D095012B



NOTES:
1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION OF THE LAYOUT AND SEISMIC BRACING.
2. SUSPENDED CEILINGS SHALL COMPLY WITH ASCE 7-05 SECTION 13.5.6.

34 SEISMIC END RESTRAINTS: SEISMIC ZONES D,E & F

N.T.S. D095009B



BRACING NOTES:
1. VERTICAL POSTS MAY NOT BE REQUIRED IN SOME CITIES AND NOT ENFORCED IN ALL SEISMIC ZONES.
2. BRACING WIRES TO BE ATTACHED A MAXIMUM OF 45° TO THE PLANE OF THE CEILING AND PARALLEL TO THE COMPONENTS AT THE BRACING POINT. BRACE WIRES TO BE TAUT AND TIED BOTH ENDS WITH THREE TIGHT WRAPS.

14 LATERAL BRACING: WITH COMPRESSION POST

N.T.S. D095015B

PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # ARCHITECT JOB #
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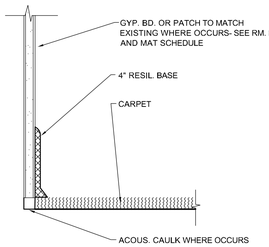
SHEET TITLE

CEILING DETAILS

SHEET #

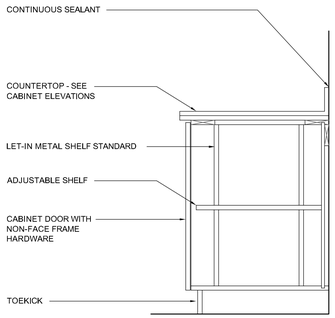
A9.4

\\John\Rolling Hills Apts 0706\drawings\0 - Drawing Sheets\Architectural\A9.5 - Suspended Ceiling Details.dwg, 8/13/2010 2:27:14 PM, PDP95



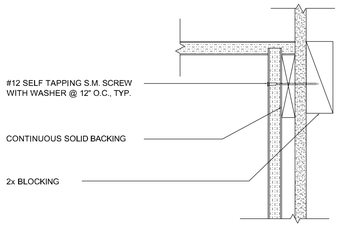
41 BASE: RESILIENT FLOOR: CARPET

3"=1'- 0" D096002A



31 BASE CABINET

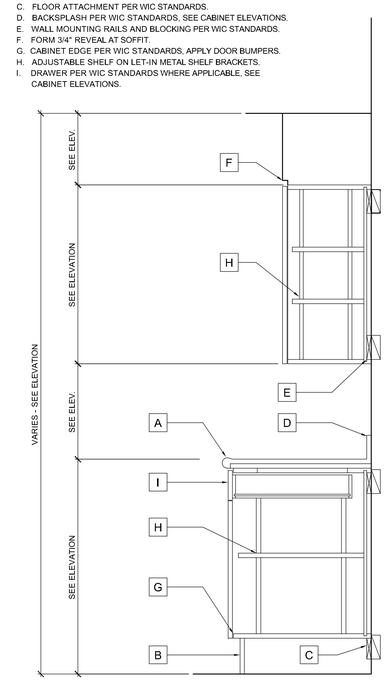
1" =1' -0" D061403A



ANCHORAGE AT TOP

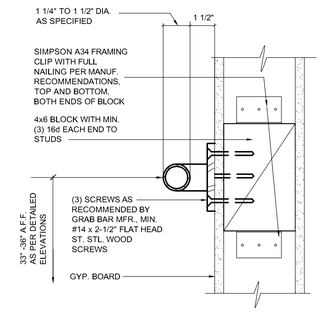
CABINET KEYNOTES

A. POST FORMED NO-DRIP BULLNOSE COUNTER EDGE WHERE APPLICABLE. SEE CABINET ELEVATIONS.
B. TOEKICK PER WIC STANDARDS, 6" HIGH U.N.O.
C. FLOOR ATTACHMENT PER WIC STANDARDS.
D. BACKSPLASH PER WIC STANDARDS. SEE CABINET ELEVATIONS.
E. WALL MOUNTING RAILS AND BLOCKING PER WIC STANDARDS.
F. FORM 3/4" REVEAL AT SOFFIT.
G. CABINET EDGE PER WIC STANDARDS, APPLY DOOR BUMPERS.
H. ADJUSTABLE SHELF ON LET-IN METAL SHELF BRACKETS.
I. DRAWER PER WIC STANDARDS WHERE APPLICABLE, SEE CABINET ELEVATIONS.



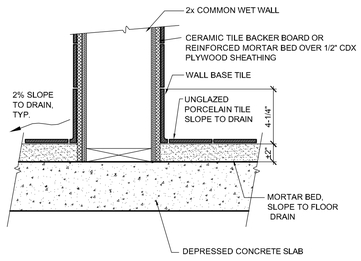
12 CABINET SECTION

1" =1' -0" D061402A



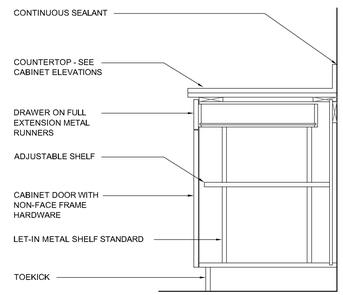
52 TYP. GRAB BAR MOUNT

3"= 1' -0" D108001B



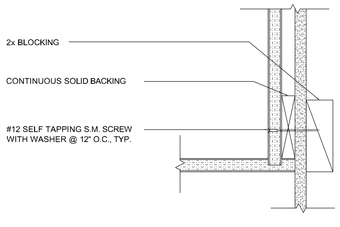
42 CERAMIC TILE/MORTAR BED

3"= 1' -0" DO96008A



32 BASE CAB'T WITH DRAWER

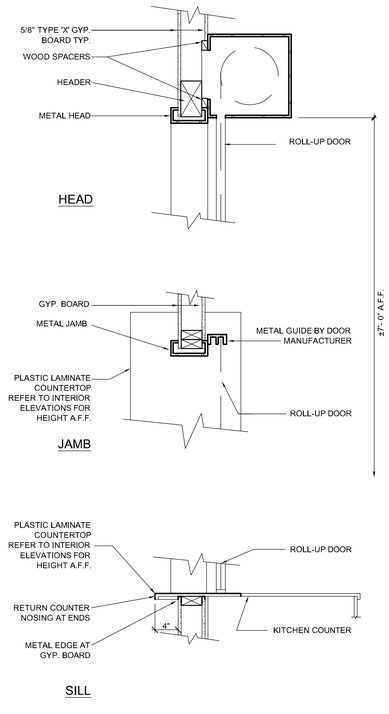
1" =1' -0" D061404A



ANCHORAGE AT BOTTOM

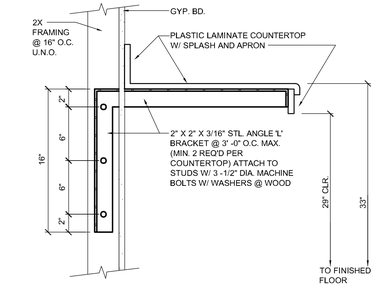
22 WALL CAB'T ANCHORAGE

1 1/2"=1'- 0" D061409A



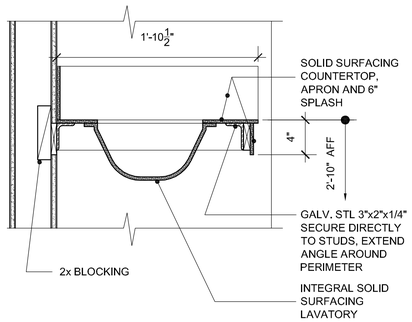
54 ROLL-UP COUNTER DOOR

1"= 1'-0" D083001A



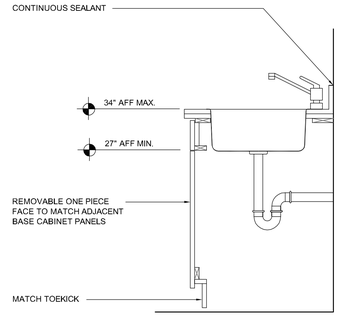
43 COUNTERTOP BRACKET

1 1/2"= 1' -0" D114001B



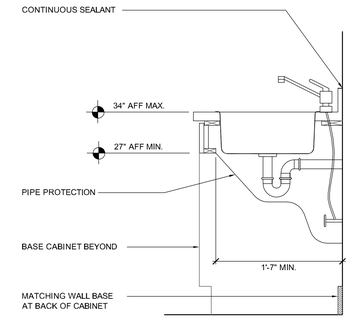
44 LAVATORY COUNTER

1-1/2"



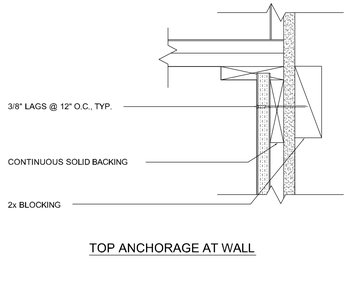
33 BASE SINK CABINET

1" =1' -0" D061405A

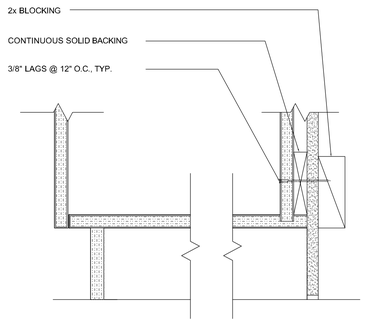


34 OPEN SINK CABINET

1" =1' -0" D061410A



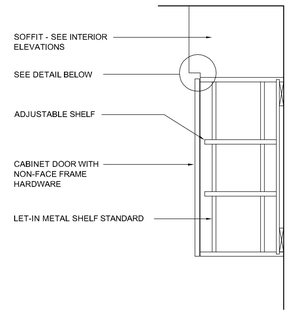
TOP ANCHORAGE AT WALL



BOTTOM ANCHORAGE AT WALL

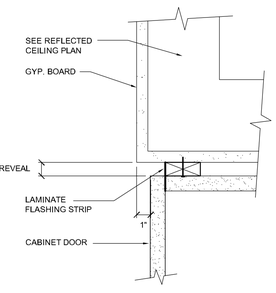
24 BASE CAB. ANCHORAGE

1 1/2"=1'- 0" D061408A



13 WALL CABINET

1" =1' -0" D061406A



14 CABINET AT SOFFIT

3"=1'- 0" D061101B

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PROJECT

ROLLING HILLS APARTMENTS

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON, CA

CLIENT JOB # ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER BDF

DRAWN BY DDL

DATES
DESIGN DEVELOPMENT 4/15/10
FIRST SUBMITTAL 6/02/10
1 PLAN CHECK 1 8/16/10

SIGNED

LICENSED ARCHITECT BRUCE DOUGLAS FRASER C 9787 EXPIRES 12•31•11 STATE OF CALIFORNIA

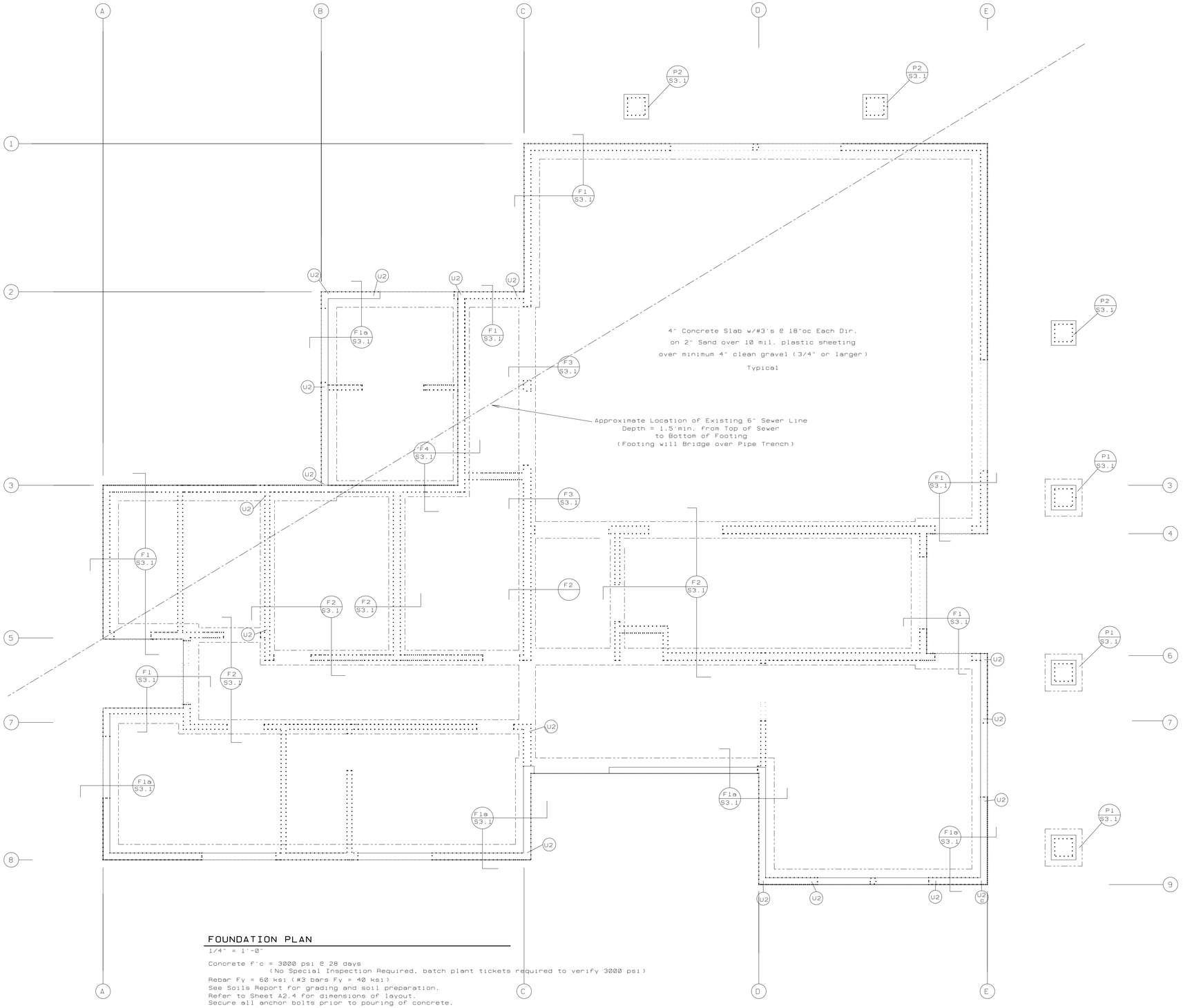
SHEET TITLE

INTERIOR DETAILS

SHEET #

A9.5

\\John\Rolling Hills Apts 0706\drawings\0 - Drawing Sheets\Architectural\A9.6 - Casework Details.dwg, 8/13/2010 2:28:21 PM, PDF995



FOUNDATION PLAN

1/4" = 1'-0"

Concrete f'c = 3000 psi @ 28 days
(No Special Inspection Required, batch plant tickets required to verify 3000 psi)
Rebar Fy = 60 ksi (#3 bars Fy = 40 ksi)
See Soils Report for grading and soil preparation.
Refer to Sheet A2.4 for dimensions of layout.
Secure all anchor bolts prior to pouring of concrete.
U2 = HDU2-2SDS2.5 w/SSTB20 AB
Typical AB = 5/8" Anchor Bolts @ max. 48"oc w/3"x 3"x 1/4" Plate Washer
(If slotted washer, use standard washer between plate washer and nut)

ROLLING
HILLS
APARTMENTS

Templeton, CA

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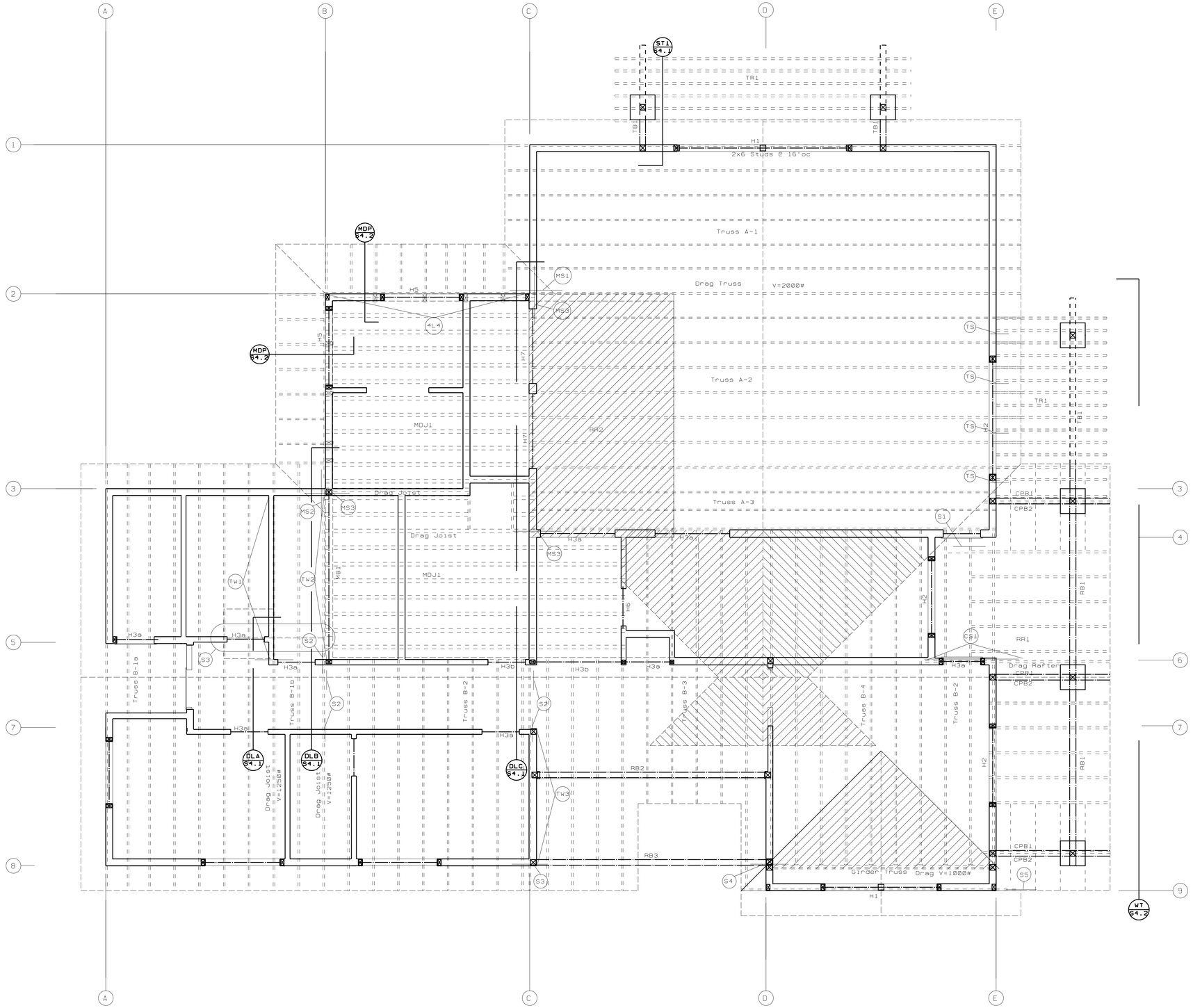
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SHEET TITLE:

FOUNDATION PLAN
COMMON BUILDING

SHEET #:

S1.2



ROOF FRAMING PLAN
1/4" = 1'-0"

ROOF FRAMING NOTES:

Truss engineering and specifications are to be supplied by the manufacturer. Any discrepancies between that presented in the manufacturer's drawings and specs. are to be brought to the immediate attention of this engineer and prior to resumption of construction.
All truss engineering, drawings, truss types, and detailed shop drawings shall be approved by the project Engineer or Architect prior to installation of the trusses.

Roof Ply = min. 15/32" CDX/OSB w/8d's @ 6"/6"/12"oc
Min. 16-16d's Each Side of Top Plate Splices
Mech. Deck Ply = min. 195/32" CDX/OSB w/10d's @ 6"/6"/12"oc

RR1 = Min. 2x6 DF#2 @ 16"oc
RR2 = Min. 2x6 DF#2 @ 24"oc (2x6 Ceilng Joist @ 24"oc)
RR2a = Min. 2x6 DF#2 @ 24"oc
CFR2 = Min. 2x6 DF#2 @ 24"oc
TR1 = 3x8 DF#2 @ 12"oc
RB1 = 4x10 DF#1
RB2 = 6x16 DF#1
RB3 = 6x12 DF#1
TB1 = 4x10 DF#1
H1 = 6x10 DF#1 Header
H2 = 6x10 DF#1 Header
H3a = 6x6 DF#1 Header (or 4x6 DF#1)
H3b = 6x6 DF#1 Header (or 4x10 DF#1)
H4 = 6x6 DF#1 Header (or 4x8 DF#1)
CPB1 = 4x10 DF#1
CPB2 = 6x12 DF#1
Drag Joist = 3.1/2"x 11.7/8" LSL 1.5E
MDJ1 = 11.7/8" TJI-210 Joists @ 16"oc
MB1 = 2-11.7/8" LVL 1.9E (Micro-Lam or equal)
Nail w/ 2 rows 10d's @ 12"oc
H5 = 6x8 DF#1 Header (or 4x10 DF#1)
H6 = 6x8 DF#1 Header (or 4x10 DF#1)
H7 = 6x12 DF#1 Header
All Bearing Walls = 2x6 DF Studs @ 16"oc min.
Non-Bearing Walls = 2x4 DF Studs @ 16"oc w/STC Clips 24"oc

S1 = ST22 Strap @ Truss/Blocking to Rafter
S2 = CS20-Strap over Plywood @ Roof Blocking 4' Ea. Dir.
S3 = ST22 Strap @ Beam to Top Plate
S4 = TS22 Strap @ Truss to Beam
S5 = ST22 Strap @ Facia Board to End Wall Truss

TW1 = LTP4 (or A35) Clips @ 48"oc @ Truss to Wall Top Plate
TW2 = Nail Top Chord of Truss to Wall Blocking
through Mechanical Well Wall w/16d's @ 12"oc
Wall Ply = 3/8" CDX/OSB Plywood w/8d's @ 6"oc
MS1 = MSTC28 Strap @ Side of Drag Truss to Rim Joist
(Min. 10-16d's Each End)
MS2 = MSTC28 Strap @ Side of Beam to Rim Joist
MS3 = MSTC28 Strap @ Side of Beam to Rim Joist
TW3 = LTP4 (or A35) Clips @ 48"oc @ Truss to Wall Top Plate
CS1 = CS20 Strap 24" @ Drag Rafter & 6' to Blckng over Ply
TS = TS12 Strap @ 4'oc from Stud to Top of Trellis Rafter.
4L4 = Min. 4 LTP4 Clips Rim Joist to Top Plate

ROLLING
HILLS
APARTMENTS

Templeton, CA

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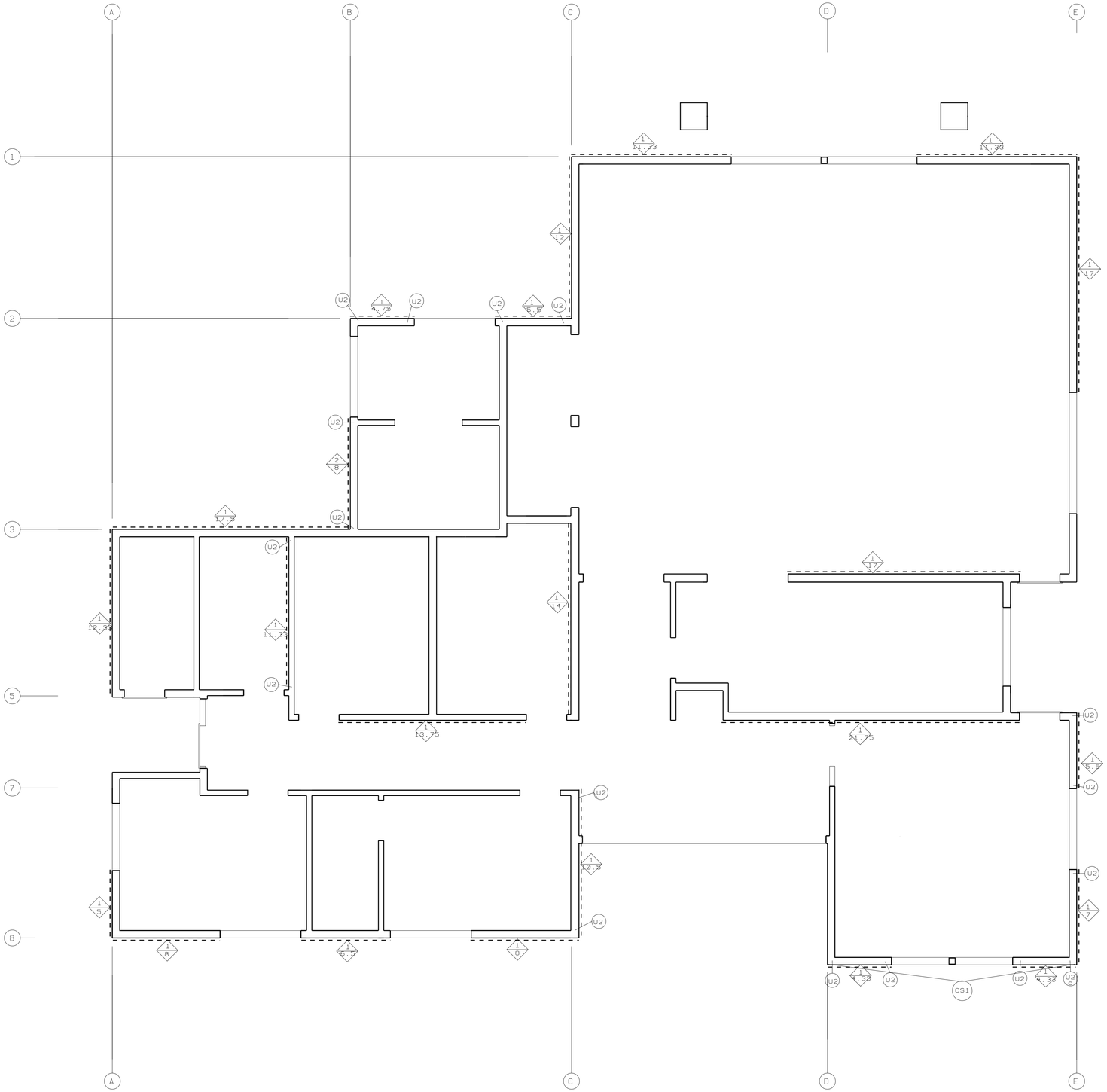
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SHEET TITLE:
ROOF FRAMING PLAN
COMMON BUILDING

SHEET #:
S2.2



SHEAR WALL PLAN

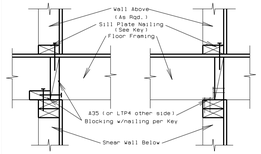
1/4" = 1'-0"

SHEAR WALL KEY

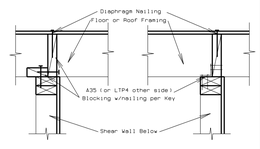
	STRUCTURAL PANEL ◇ = Shear Key Designation, Length of Shear Wall	Allow. v (plf)	Alternative Bottom Plate Connection: SDS1/4 x4 1/2 Spacing	Alternative Bottom Plate Connection: 16d Spacing	Anchor Bolts (Chart)	Clip to Top Plate: A35	Clip to Top Plate: LTP4
1	3/8" w/8d's @ 6"/12"oc	220 x	12"oc	9"oc	A	24"oc	24"oc
2	3/8" w/8d's @ 4"/12"oc	320 x	8"oc	6"oc	B	16"oc	24"oc
3	3/8" w/8d's @ 3"/12"oc ××	410 x	6"oc	5"oc	C	12"oc	18"oc
4	15/32" w/8d's @ 6"/12"oc	260	12"oc	8"oc	B	16"oc	24"oc
5	15/32" w/8d's @ 4"/12"oc ×× Stagger	380	8"oc	5"oc	C	12"oc	18"oc
6	15/32" w/8d's @ 3"/12"oc ×× Stagger	490	6"oc	4"oc	C	8"oc	16"oc
7	15/32" w/8d's @ 2"/12"oc ×× Stagger	640	4"oc	3"oc	D	8"oc	12"oc
8	15/32" w/10d's @ 6"/12"oc ×× Stagger	310	10"oc	6"oc	B	16"oc	24"oc
9	15/32" w/10d's @ 4"/12"oc ×× Stagger	460	6"oc	4"oc	C	8"oc	16"oc
10	15/32" w/10d's @ 3"/12"oc ×× Stagger	600	5"oc	3"oc	D	8"oc	12"oc
11	15/32" w/10d's @ 2"/12"oc ×× Stagger	770	4"oc	2.1/2"oc	E	6"oc	8"oc
12	19/32" w/10d's @ 6"/12"oc ×× Stagger	340	9"oc	6"oc	C	12"oc	18"oc
13	19/32" w/10d's @ 4"/12"oc ×× Stagger	510	6"oc	4"oc	D	8"oc	12"oc
14	19/32" w/10d's @ 3"/12"oc ×× Stagger	665	4"oc	3"oc	E	8"oc	12"oc
15	19/32" w/10d's @ 2"/12"oc ×× Stagger	870	3"oc	2.1/4"oc	F	6"oc	8"oc

NOTES:

x = Stud spacing @ 16"oc, use values for 15/32" panel w/8d's
All Edges require Blocking and edge nailing.
×× = Min. 3" nominal framing members required at adjoining panel edges.
Where panels are applied to both sides of the wall, double the plate nailing, clips & anchor bolts (Stagger the nails to avoid splitting)
××× = 3x nominal Foundation Sill Plate where allowable shear exceeds 350 plf, adjust anchor bolt length for added depth of plate (or decrease spacing of anchor bolts by 1/2 w/ 2x sill plate where shear less than 600 plf)



TYPICAL SHEAR TRANSFER



TYPICAL SHEAR TRANSFER

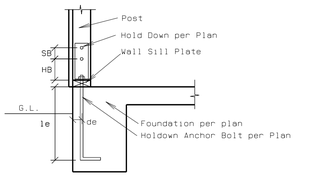
ANCHOR BOLTING

3"x 3"x 1/4" Washers Required

◇ or △	INTO CONCRETE: Panel One Side	INTO CONCRETE: Panel Both Sides	INTO MASONRY: Panel One Side	INTO MASONRY: Panel Both Sides
A	5/8" @ 48"oc	5/8" @ 32"oc	5/8" @ 48"oc	5/8" @ 32"oc
B	5/8" @ 48"oc	5/8" @ 24"oc	5/8" @ 32"oc	5/8" @ 16"oc
C	5/8" @ 32"oc	5/8" @ 16"oc	5/8" @ 24"oc	3/4" @ 16"oc
D	5/8" @ 24"oc	3/4" @ 16"oc	5/8" @ 16"oc	3/4" @ 16"oc
E	3/4" @ 32"oc	3/4" @ 16"oc	3/4" @ 32"oc	3/4" @ 16"oc
F	3/4" @ 24"oc	3/4" @ 12"oc	3/4" @ 24"oc	3/4" @ 12"oc

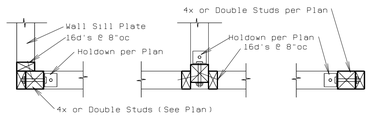
SHEAR PLAN NOTES:

1-U2 = HDU2-SDS2.5 to Dbl. or 4x Stud w/SSTB20 AB
(U2 / C) indicates corner detail for holdown.
2-See Roof Framing Plan for Drag Ties
3-All Shear Wall Plywood to Extend to Roof unless details are provided for shear transfer at truss.
4-All Line 5 to have shear plywood applied full length of wall line above openings.
5- CS1 = CS20 Strap @ Header Height to Wall Blocking over ply Full Length of Wall.



Typical Holdown Detail Section

3/4" = 1'-0"



CORNER INTERIOR END WALL

Typical Holdown Detail Plan

3/4" = 1'-0"

ROLLING HILLS APARTMENTS

Templeton, CA

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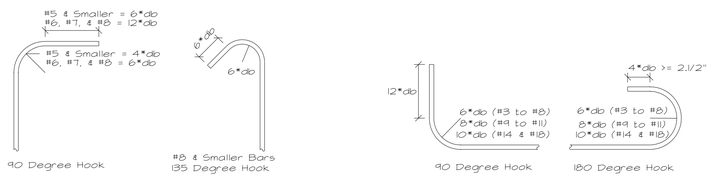
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SHEET TITLE:

SHEAR WALL PLAN
COMMON BUILDING

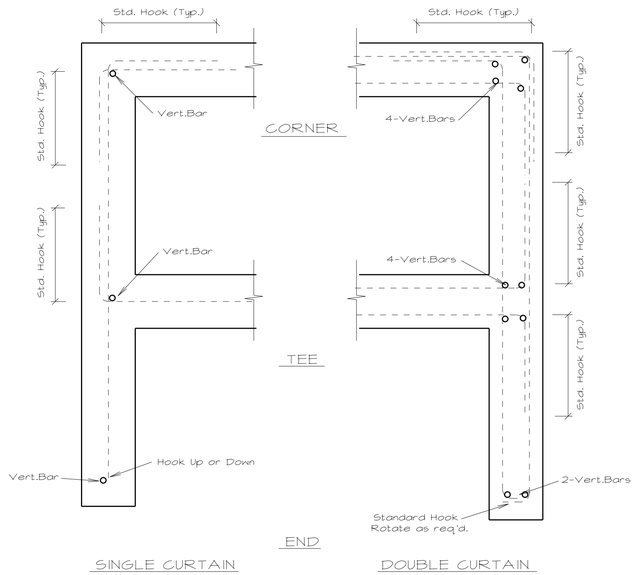
SHEET #:

S2.3

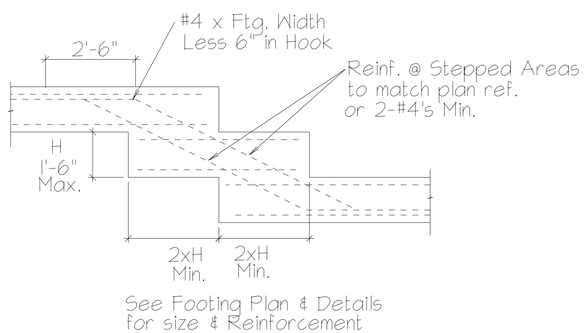


STIRRUP & TIE HOOKS

STANDARD HOOK

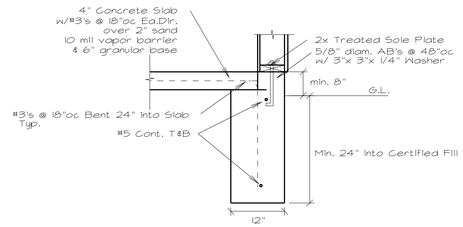


HORIZONTAL BARS IN WALLS & FOOTINGS

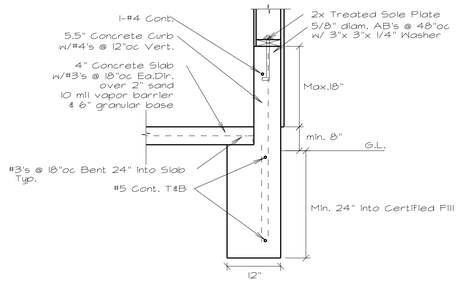


See Footing Plan & Details
for size & Reinforcement

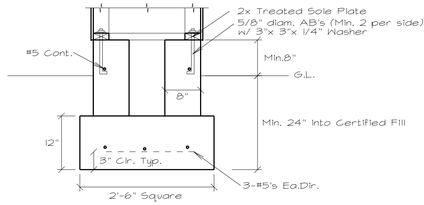
TYPICAL STEPPED FOOTING



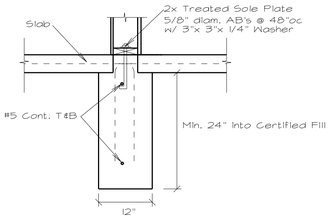
F1 PERIMETER FOOTING
3/4" = 1'-0"



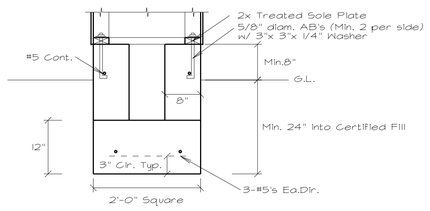
F1a PERIMETER FOOTING WITH CURB
3/4" = 1'-0"
NOTE: Extend Holdown Anchor Bolts to Bottom of Footing
Use Threaded Rod w/ Nut-Washer-Nut at end in Footing



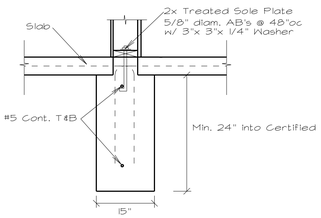
P1 FOOTING FOR PORCH COLUMN
3/4" = 1'-0"



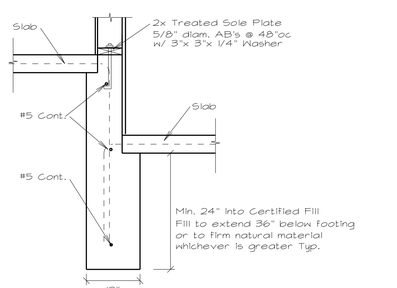
F2 INTERIOR FOOTING
3/4" = 1'-0"



P2 FOOTING FOR TRELLIS COLUMN
3/4" = 1'-0"



F3 INTERIOR FOOTING @ MECHANICAL DECK
3/4" = 1'-0"



F4 INTERIOR FOOTING LAUNDRY ROOM
3/4" = 1'-0"

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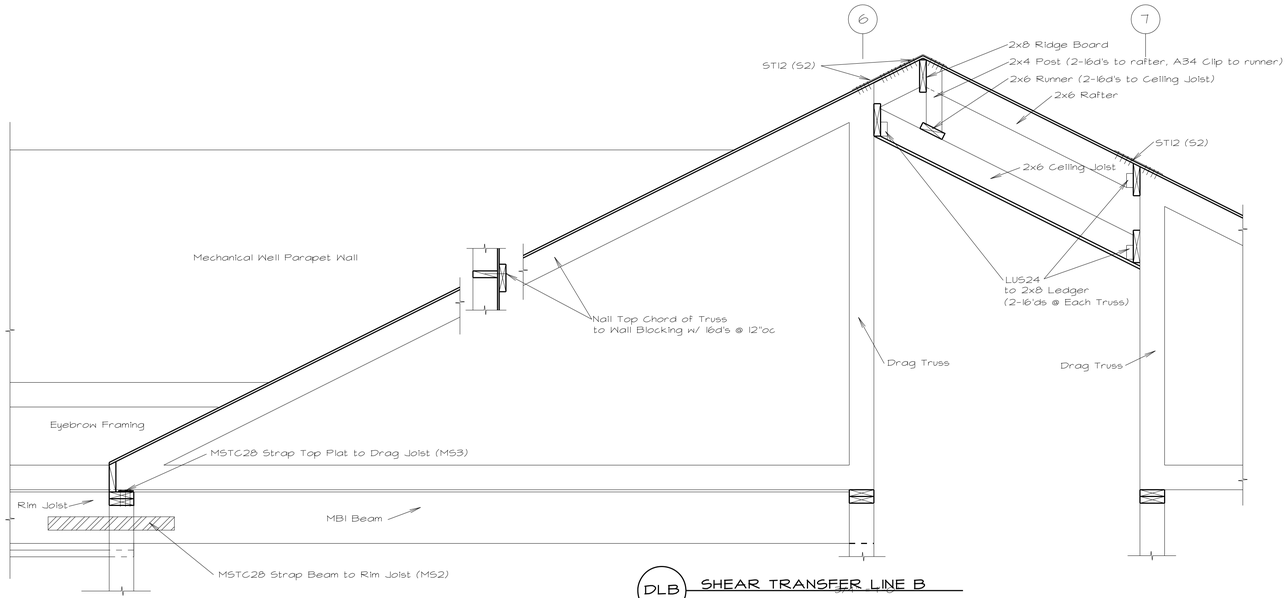
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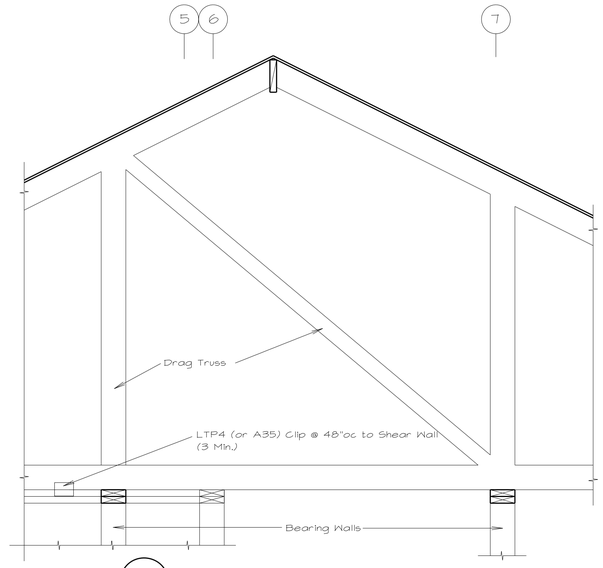
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SHEET TITLE:
FOUNDATION DETAILS
COMMON BUILDING

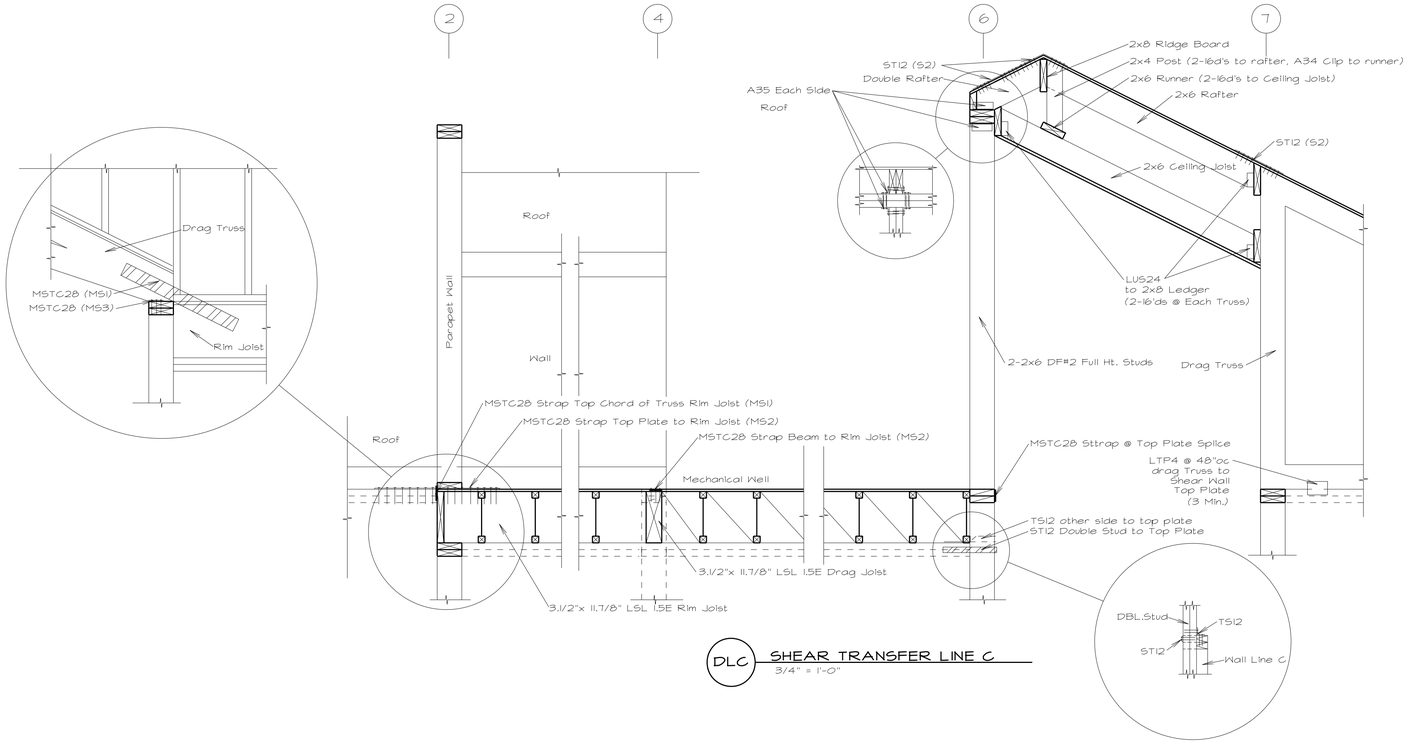
SHEET #:
S3.1



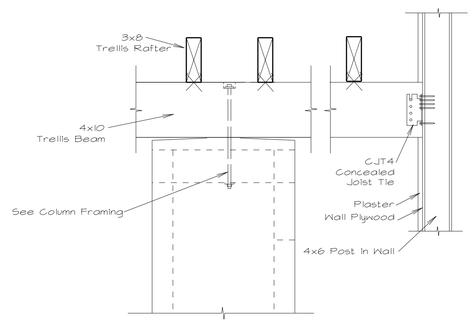
DLB SHEAR TRANSFER LINE B



DLA SHEAR TRANSFER LINE A,8
3/4" = 1'-0"



DLC SHEAR TRANSFER LINE C
3/4" = 1'-0"



ST1 SOUTH TRELLIS SUPPORT
1" = 1'-0"

ROLLING
HILLS
APARTMENTS

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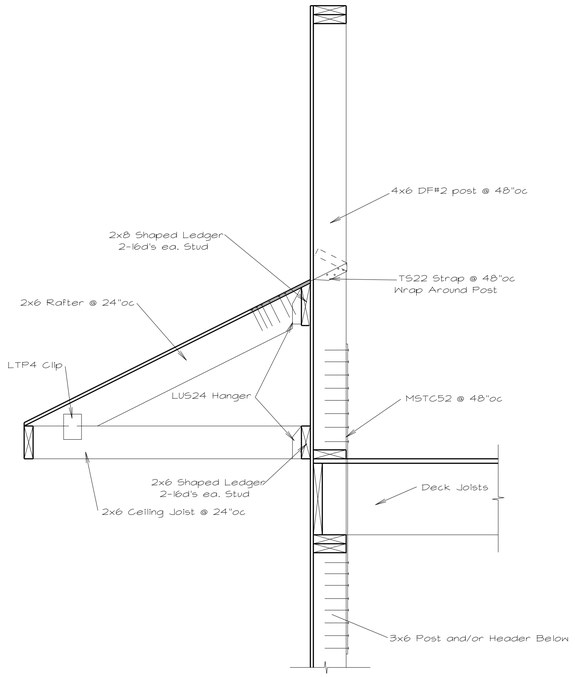
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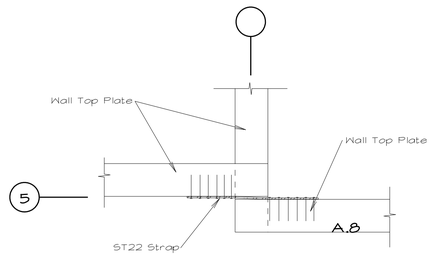
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SHEET TITLE:
ROOF FRAMING DETAILS
COMMOM BUILDING

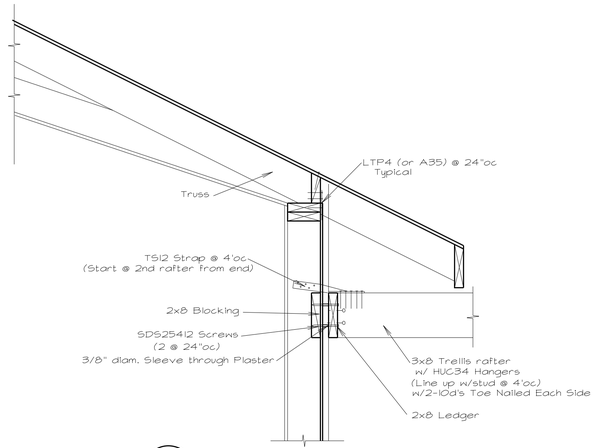
SHEET #:
S4.1



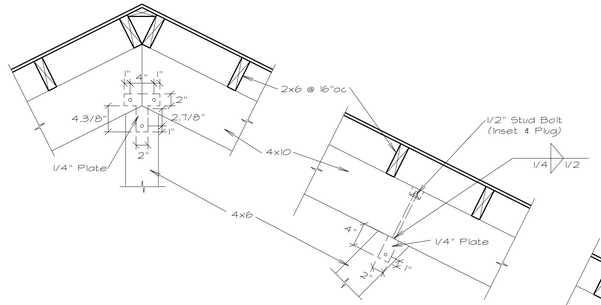
MDP MECHANICAL DECK EYEBROW & WALL SECTION
1" = 1'-0"



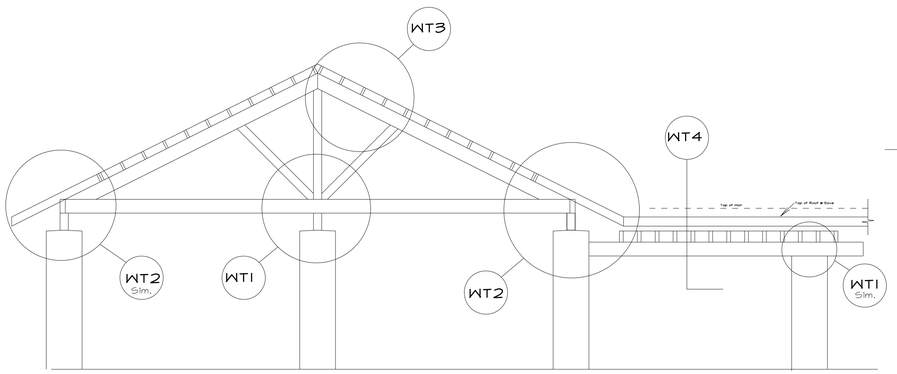
S3 LINE 5-6 TOP PLATE SPLICE
1" = 1'-0"



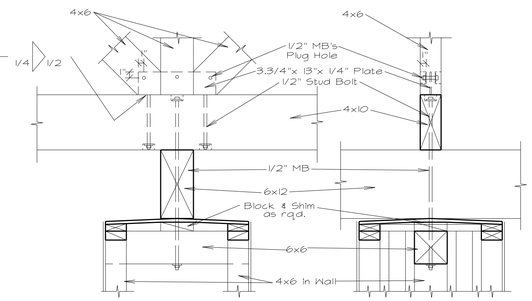
WT4 WEST TRELLIS CONNECTION TO WALL
1" = 1'-0"



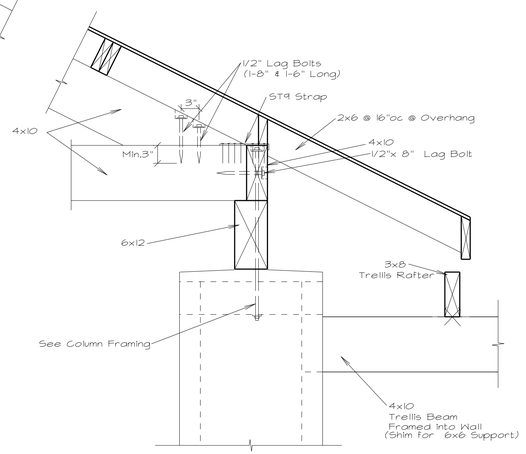
WT3 TRUSS RIDGE & DIAGONAL CONNECTION
1" = 1'-0"



WT WEST TRUSS & TRELLIS ELVATION
1/4" = 1'-0"



WT1 TRUSS SUPPORT COLUMN (Typ.)
1" = 1'-0"



WT2 TRUSS CONNECTION @ END
1" = 1'-0"

ROLLING
HILLS
APARTMENTS

Templeton, CA

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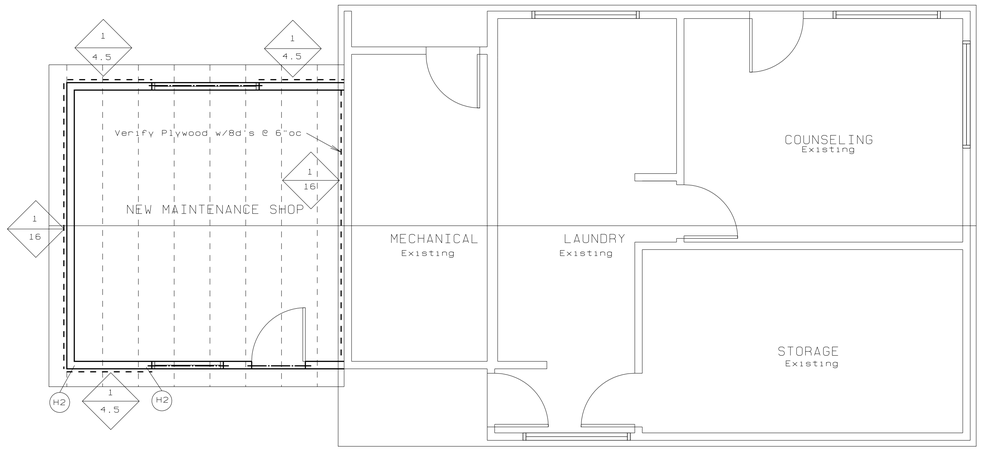
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SHEET TITLE:
ROOF FRAMING DETAILS
COMMOM BUILDING

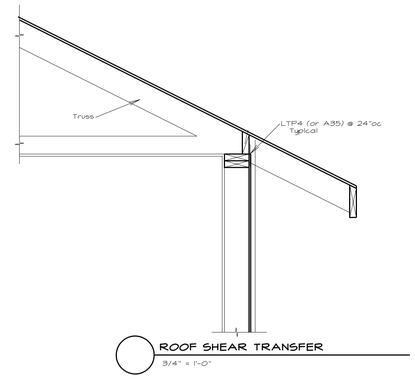
SHEET #:
S4.2



ROOF FRAMING w/ LATERAL PLAN

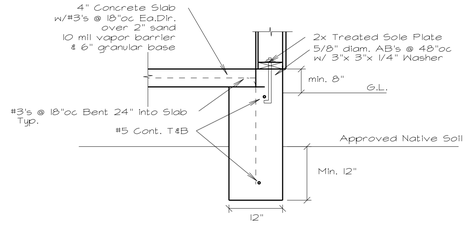
1/4" = 1'-0"

Roof Trusses by manufacturer
Roof Ply = Min. 15/32" CSX/OSB w/8d's @ 6"/6"/12"oc
Min. 10-16d's Each Side of Top Plate Splice
See Common Building Lateral Plan for Shear Key



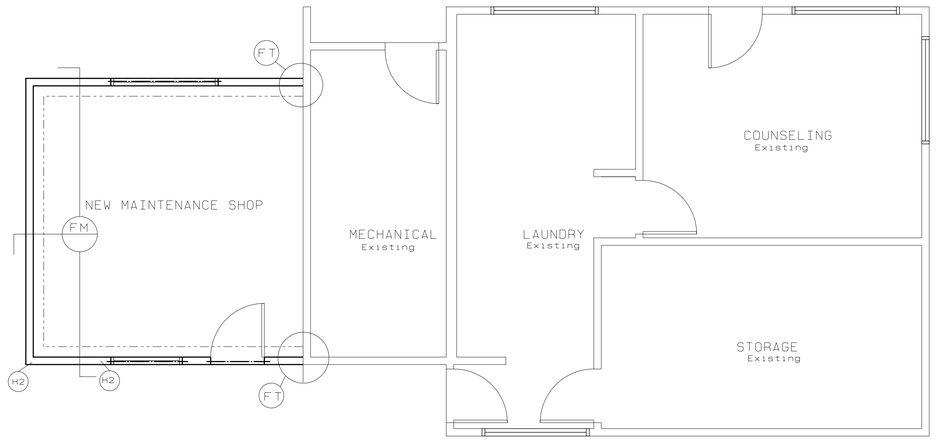
ROOF SHEAR TRANSFER

3/4" = 1'-0"



FM **PERIMETER FOOTING**

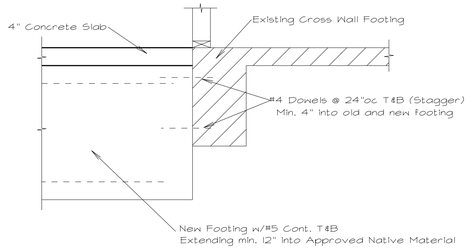
3/4" = 1'-0"



FOUNDATION PLAN

1/4" = 1'-0"

Concrete f'c = 2500 psi @ 28 days
Rebar Fy = 60 ksi (#3 bars Fy = 40 ksi)
See Soils Report for grading and soil preparation.
See Architectural Plan for dimensions of layout.
Secure all anchor bolts prior to pouring of concrete.
H2 = HDU2-2SDS2.5 w/SSTB16 AB
Typical AB = 5/8" Anchor Bolts @ max. 48"oc w/3"x 3"x 1/4" Plate Washer
(If slotted washer, use standard washer between plate washer and nut)



FT **NEW FOOTING TO OLD FOOTING**

3/4" = 1'-0"

ROLLING
HILLS
APARTMENTS

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SHEET TITLE:

SHOP ADDITION

SHEET #:

S5.1

GENERAL NOTES

MECHANICAL/PLUMBING WORK CONSISTS OF ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY FOR AND INCIDENTAL TO THE EXECUTION AND COMPLETION OF THE SYSTEMS AS INDICATED ON THESE DRAWINGS.

SUBMITTAL REQUIREMENTS:

- WITHIN 15 DAYS OF CONTRACT AWARD, THE MECHANICAL/PLUMBING CONTRACTOR SHALL SUBMIT COMPLETE APPLICABLE PRODUCT, EQUIPMENT, AND MATERIAL INFORMATION. NO PRODUCT, EQUIPMENT, OR MATERIAL SHALL BE ORDERED OR INSTALLED UNTIL SUBMITTALS ARE APPROVED BY THE MECHANICAL ENGINEER. ANY ITEM NOT INCLUDED IN THE SUBMITTAL SHALL BE PROVIDED WITHOUT SUBSTITUTION. SUBMITTAL INFORMATION SHALL INCLUDE: MANUFACTURER'S NAME AND CATALOGUE NUMBERS, DIMENSIONS, CAPACITIES, PERFORMANCE CURVES, AND ALL OTHER CHARACTERISTICS AND ACCESSORIES AS LISTED IN THE CONTRACT DOCUMENTS. THE INFORMATION SHALL BE CURRENT MANUFACTURER'S SUBMITTALS AND BROCHURES.

- SUBMITTALS FOR ANY EQUIPMENT SUBSTITUTED AS EQUIVALENT TO THE SCHEDULED EQUIPMENT SHALL INCLUDE TABULATED COMPARISON DATA SO AS TO CLEARLY DEMONSTRATE EQUIVALENCY. THIS DATA SHALL SPECIFICALLY INCLUDE COMPARISONS BETWEEN SCHEDULED AND PROPOSED EQUIPMENT IN THE FOLLOWING AREAS:
  - WEIGHT (INCLUDING CURBS AND ACCESSORIES)
  - DIMENSIONS
  - ELECTRICAL AND GAS REQUIREMENTS (VOLTAGE, PHASE, FULL LOAD AMPS & BTU)
  - SOUND LEVELS (WHERE APPLICABLE)
  - PERFORMANCE (EFFICIENCIES, HEATING, COOLING, AIR FLOW, STATIC PRESS.)

- THREE COPIES OF CLOSE OUT SUBMITTALS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF SYSTEM START-UP AND BALANCING. CLOSE-OUT SUBMITTALS SHALL INCLUDE THE FOLLOWING TEST REPORTS: HVAC EQUIPMENT OPERATING DATA AND AIR BALANCE, VALVES, THERMOMETERS, PRESSURE GAUGES, WATER METERS, WATER FEEDERS, AIR VENTS, TRAP PRIMERS, VACUUM BREAKERS, AND ALL OTHER APPLICABLE MECHANICAL/PLUMBING SYSTEM COMPONENTS.

- ALL WORK INDICATED ON THESE PLANS SHALL BE DONE IN COMPLIANCE WITH CURRENT STATE AND LOCAL CODES AND ALL APPLICABLE CALIFORNIA TITLE-24 REQUIREMENTS. IN THE EVENT OF CONFLICT BETWEEN CODES, THE MORE RESTRICTIVE REQUIREMENTS SHALL BE EXERCISED.

- NOTHING IN THESE DRAWINGS AND/OR SPECIFICATIONS SHALL BE INTERPRETED TO CONFLICT WITH ANY CITY OR STATE LAW, REGULATION, CODE, ORDINANCE, RULING, OR FIRE UNDERWRITER'S REQUIREMENT APPLICABLE TO THIS CLASS OF WORK.

- CONSTRUCTION AND/OR ENGINEERING COSTS RESULTING FROM PRODUCT SUBSTITUTIONS SHALL BE PAID BY THE MECHANICAL/PLUMBING CONTRACTOR. APPROVAL OF SUBSTITUTED PRODUCTS DOES NOT NEGATE THIS OBLIGATION.

- THE MECHANICAL/PLUMBING CONTRACTOR SHALL COORDINATE THE INSTALLATION OF AIR TERMINALS WITH THE REFLECTED CEILING PLAN, AND VERIFY CORRECT LOCATION OF EQUIPMENT, PIPING, AND PLUMBING SERVICES BEFORE PROCEEDING WITH INSTALLATION.

- ALL LOCATIONS OF DUCTWORK, EQUIPMENT AND PIPING ARE SHOWN DIAGRAMMATICALLY. THE MECHANICAL/PLUMBING CONTRACTOR SHALL ADHERE TO LOCATIONS INDICATED ON THE DRAWINGS AS CLOSELY AS POSSIBLE, VARYING PIPE RUNS AS REQUIRED TO MEET STRUCTURAL AND OTHER INTERFERENCES AS REQUIRED BY THE PROJECT.

- THE MECHANICAL/PLUMBING CONTRACTOR SHALL PROVIDE ACCESS PANELS WHERE REQUIRED FOR ALL PLUMBING-RELATED EQUIPMENT, ACCESSORIES, AND CONTROLS.

- DUCT DIMENSIONS SHOWN ARE INTERNAL.

- ALL EQUIPMENT SHALL BE FURNISHED AND INSTALLED WITH AT LEAST THE MANUFACTURER'S MINIMUM RECOMMENDED CLEARANCE ALLOWANCE FOR SUFFICIENT ACCESS TO CONTROLS, FILTERS, ELECTRIC MOTORS, ETC. FOR MAINTENANCE AND PROPER OPERATION.

- ALL MECHANICAL/PLUMBING DUCTING, PIPING, AND EQUIPMENT SHALL BE PROVIDED WITH SEISMIC RESTRAINING SERVICES AS REQUIRED BY LOCAL BUILDING CODES.

- THE WORK UNDER THIS SECTION SHALL BE IN COOPERATION WITH THE WORK OF OTHER TRADES TO PREVENT CONFLICT OR INTERFERENCE AND TO AID RAPID COMPLETION OF THE OVERALL PROJECT.

- THE MECHANICAL/PLUMBING CONTRACTOR SHALL GUARANTEE THAT THE SYSTEMS INSTALLED ARE IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS, AND WILL WARRANT ALL EQUIPMENT, MATERIALS, AND LABOR FURNISHED UNDER THIS CONTRACT TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION. THE MECHANICAL/PLUMBING CONTRACTOR SHALL REPAIR OR REPLACE ANY EQUIPMENT OR MATERIAL, WHICH IS DEFECTIVE OR IMPROPERLY INSTALLED. IN ADDITION, THE MECHANICAL/PLUMBING CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE TO THE BUILDINGS AND ITS CONTENTS OR OTHER EQUIPMENT, CAUSED BY DEFECTS OR IMPROPER INSTALLATION OF EQUIPMENT OR MATERIALS INSTALLED UNDER THIS SECTION OF THE SPECIFICATIONS. IN THE EVENT OF FAILURE TO COMPLY WITH THE ABOVE-MENTIONED CONDITIONS WITHIN TEN (10) DAYS AFTER BEING NOTIFIED IN WRITING, THE MECHANICAL/PLUMBING CONTRACTOR SHALL COLLECTIVELY OR SEPARATELY AUTHORIZE THE OWNER TO PROCEED TO HAVE SAID DEFECTS REPAIRED AND MADE GOOD AT THE CONTRACTORS EXPENSE. THE CONTRACTOR WILL HONOR AND PAY THE SAID COSTS AND CHARGES ON DEMAND.

- BY JVA MECHANICAL ENGINEERING ALL COMMON LAW COPYRIGHT AND OTHER PROPERTY RIGHTS RESERVED THESE DOCUMENTS AS ORIGINAL AND UNPUBLISHED WORK PRODUCT OF JVA MECHANICAL ENGINEERING AND THIS WORK SHALL NOT BE COPIED, DISCLOSED, OR USED IN CONNECTION WITH ANY WORK PROJECT OTHER THAN THE SPECIFIC PRODUCT FOR WHICH IT HAS BEEN PREPARED OR ASSIGNED TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPRESS WRITTEN CONSENT OF JVA MECHANICAL ENGINEERING VISUAL CONTACT WITH THIS DOCUMENT SHALL CONSTITUTE EVIDENCE OF ACCEPTANCE OF THESE RESTRICTIONS AND CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS OF THE JOB. UPON DISCOVERY OF ANY VARIATION, DISCREPANCY, OR OMISSIONS, PLEASE NOTIFY JVA MECHANICAL ENGINEERING AND PRIOR TO PROCEEDING WITH RELATED WORK OBTAIN WRITTEN RESOLUTION FROM JVA MECHANICAL ENGINEERING

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SPECIFICATIONS

MECHANICAL/PLUMBING: THE WORK UNDER THIS SECTION INCLUDES EVERYTHING NECESSARY FOR AND INCIDENTAL TO EXECUTING AND COMPLETING THE MECHANICAL/PLUMBING WORK, EXCEPT AS HEREINAFTER SPECIFICALLY EXCLUDED. WORK INCLUDED SHALL BE AS INDICATED ON THE DRAWINGS COMPLETELY INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- MECHANICAL EQUIPMENT
- AIR DISTRIBUTION
- CONTROLS
- START UP AND BALANCE
- SANITARY SOIL, WASTE, AND VENT SYSTEMS
- GAS PIPING
- CONDENSATE PIPING
- DOMESTIC WATER SYSTEMS
- PLUMBING FIXTURES AND EQUIPMENT
- REQUIRED SUPPORTS AND BLOCKING

RELATED WORK: THE FOLLOWING WORK SHALL NOT BE FURNISHED UNDER THIS SECTION OF THE SPECIFICATIONS BUT WILL BE INCLUDED IN OTHER SPECIFICATIONS SECTIONS:

- CUTTING, PATCHING, AND FURRING
- CONDUIT AND LINE VOLTAGE ELECTRICAL
- FINAL PAINTING
- ROOFING
- CONCRETE PLACEMENT

RIGID ROUND DUCTWORK AND FITTINGS:

- ALL RIGID ROUND DUCTWORK SHALL BE UNITED SHEET METAL SPIRAL LOCKSEAM DUCT, OR APPROVED EQUAL, MANUFACTURED FROM GALVANIZED STEEL MEETING THE ASTM A-527-71. ALL DUCT GAUGES SHALL CONFORM WITH TABLE 6-8, CMC 2007

- ALL FITTINGS SHALL BE MANUFACTURER AS SEPARATE FITTINGS. NO BRANCH TAPS WILL BE ALLOWED.

FLEXIBLE DUCT:

- FLEXIBLE AIR DUCTS SHALL BE THERMAFLEX M-KF(R=8.0), OR APPROVED EQUAL AND SHALL BE INSTALLED IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS. CONNECTIONS AND SUPPORTS SHALL BE IN ACCORDANCE WITH THE 2007 CMC.

RECTANGULAR DUCTWORK:

- ALL RECTANGULAR DUCTWORK, FITTINGS, AND ACCESSORIES SHALL BE FABRICATED AND INSTALLED IN STRICT ACCORDANCE TO THE SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" HANDBOOK, AND SHALL BE PRIME GRADE GALVANIZED STEEL SHEETS OF LOCK FORM QUALITY.

INTERIOR DUCTWORK SEALING:

- PROVIDE COMPLETE SEALING OF ALL DUCT CONNECTIONS WITH 'UNI-MASTIC 181' FIBER REINFORCED DUCT SEALER BY 'MCGILL AIRSEAL PRODUCTS.'

DUCT INSULATION:

- EXTERNAL DUCT INSULATION SHALL BE APPLIED TO ALL HEATING AND/OR COOLING DUCTS NOT INTERNALLY INSULATED AND NOT WITHIN CONDITIONED SPACES. MANVILLE MICROLITE FSK 1-1/2", R-SERIES, ALUMINUM FOIL REINFORCED WITH FIBERGLASS, SCRIM LAMINATED TO U.L. RATED KRAFT, WITH R=4.8, SHALL BE USED OR APPROVED EQUAL. CIRCUMFERENTIAL AND LONGITUDINAL SEAMS SHALL BE LAPPED A MINIMUM OF 2" AND SECURED WITH 3" WIDE PRESSURE SENSITIVE FOIL VAPOR BARRIER TAPE. FURTHER ATTACH INSULATION TO THE DUCTWORK BY SPIRALING WIRE AT 12" CENTERS ITS ENTIRE LENGTH. THE FINISHED PRODUCT SHALL BE VAPOR-PROOF AND FREE OF SAGS.

- INTERNAL DUCT INSULATION SHALL BE APPLIED TO ALL HEATING AND/OR COOLING DUCTS AS SHOWN ON THE DRAWING. PROCEDURE MUST COMPLY WITH THE RECOMMENDATIONS OF THE "SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION'S DUCT LINER APPLICATIONS STANDARD, SECOND EDITION. INSULATION SHALL BE FIBERGLASS 1" THICK INTERRUPTIONS AND ADHERED WITH 100% COVERAGE OF ADHESIVE. ALL EXPOSED EDGES SHALL BE COVERED WITH ADHESIVE. METAL FASTENERS SHALL BE USED IN ADDITION TO ADHESIVE.

CONTROLS:

- THERMOSTATS SHALL BE AS INDICATED ON PLANS AND MOUNTED AT 48" ABOVE FINISHED FLOOR. ALL LOW VOLTAGE WIRE, WIRING, AND CONNECTIONS ARE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. ALL THERMOSTATS SHALL BE PROGRAMMED TO PROVIDE ADEQUATE SETBACK DURING NON-OCCUPIED HOURS, AND FOR EVAPORATOR FANS TO RUN CONTINUOUSLY DURING OCCUPIED HOURS.

EXECUTION (MECHANICAL):

- BENDING OR FORCING OF DUCTWORK IS NOT ALLOWED. USE FITTINGS FOR ALL OFFSETS OR CHANGES IN ALIGNMENT OF DUCTING.

- DUCTING SHALL BE FIRMLY HELD IN PLACE BY ADJUSTABLE HANGERS AND SUPPORTS. ALL HANGERS AND SUPPORTS SHALL BE OF DESIGN WHICH WILL SUPPORT WEIGHT OF THE DUCT, INSULATION, AND PREVENT SAGGING. MAKESHIFT DEVICES ARE NOT ACCEPTABLE. PLUMBER'S TAPE IS NOT APPROVED.

- WHERE APPLICATIONS ARE NOT SPECIFICALLY COVERED IN THIS SECTION, FOLLOW MANUFACTURER'S INSTRUCTIONS. ALL DISCREPANCIES MUST BE REPORTED TO THE ARCHITECT FOR APPROVAL BEFORE STARTING WORK.

- ALL EXPOSED DUCTWORK, TAPS AND REGISTERS SHALL BE LEVEL, STRAIGHT AND FREE OF DEFECTS. ALL DAMPERS AND REGISTERS MUST BE INSTALLED AS TO NOT WHISTLE OR RATTLE.

- ALL FLEXIBLE DUCTWORK MUST BE RUN AS STRAIGHT AS POSSIBLE WITHOUT TIGHT BENDS. USE AN ELBOW ANYWHERE A 2' RADIUS CANNOT BE ACHIEVED.

- TESTING AND BALANCING SHALL BE PERFORMED FOLLOWING AABC OR NEBB BALANCE CRITERIA.THE FOLLOWING INFORMATION SHALL BE SUBMITTED TO THE MECHANICAL ENGINEER:
  - VOLTAGE (RATED AND ACTUAL)
  - FAN SPEEDS (RATED AND ACTUAL)
  - MOTOR CURRENT (RATED AND ACTUAL)
  - AIR QUANTITIES AT OUTLETS AND INLETS (RATED)
  - AIR QUANTITIES AT OUTLETS AND INLETS ADJUSTED TO WITHIN 10% OF DESIGN
  - SUPPLY AIR EXTERNAL STATIC PRESSURE ("W.G.)
  - RETURN AIR EXTERNAL STATIC PRESSURE ("W.G.)
  - TOTAL SUPPLY AIR CFM
  - TOTAL RETURN AIR CFM
  - TOTAL OUTSIDE AIR CFM
  - EQUIPMENT NAMEPLATE DATA

PLUMBING FITTINGS AND PIPING:

- SOIL, WASTE, STORM DRAIN, AND VENT: ABOVE AND BELOW GRADE: PLASTIC ABS OR PVC PIPE AND FITTINGS WITH SOLVENT JOINTS.

- DOMESTIC WATER PIPING: ABOVE GRADE: TYPE 'L' COPPER TUBING HARD DRAWN WITH WROUGHT COPPER SOLDER FITTINGS. SOLDER WITH 95 – 5 TIN-ANTIMONY SOLDER.

- CONDENSATE AND DRAIN PIPING: TYPE 'L' COPPER TUBING HARD DRAWN WITH WROUGHT COPPER SOLDER FITTINGS. SOLDER WITH 95 – 5 TIN-ANTIMONY SOLDER.

- GAS PIPING ABOVE GRADE: SCHEDULE 40 BLACK MALLEABLE IRON THREADED PIPE AND FITTINGS

PLUMBING FIXTURES:

- PLUMBING FIXTURES SHALL BE AS PER PLUMBING FIXTURE SCHEDULES-SEE PLANS

PIPING SPECIALTIES:

- SHUT-OFF VALVES (WATER): APOLLO, OR EQUIVALENT, FULL PORT BALL VALVE.

- SUPPLIES: ANGLE TYPE WITH TEE HANDLE STOP AND RIGID RISERS: "SPEEDWAY," R1700-S SERIES, ROBERT ML-600 SERIES OR EQUAL. P-TRAPS: CHROME PLATED BRASS 17 GAUGE WITH CP TUBING DRAIN TO WALL AND CLEAN-OUT PLUG. TRAP ARMS UNDER LAVATORIES, SINK, AND ESCUTCHEON AT WALL ALSO TO BE CHROME-PLATE

- FLOOR CLEANOUTS (FCO/COTG): J. R. SMITH #4810 COVER WITH U.P.C. BRONZE PLUG.

- WALL CLEANOUTS (WCO): TERRI, PRIME-COATED WITH U.P.C. BRONZE PLUG IN "NO-HUB" TEST-TEE.

- SHUT-OFF VALVES (GAS): CRANE #1128, OR EQUIVALENT (2" AND SMALLER).

PIPING HANGERS, SUPPORTS, AND ACCESS PANELS:

- PROVIDE HANGER SPECIFIED HEREIN. EQUIVALENT MODELS BY ELCEN, FEE & MASON OR KIN-LINE ARE ACCEPTABLE.

- ADJUSTABLE HANGERS WITH MINIMUM 3/8" RODS, UPPER ATTACHMENTS: B-LINE #B3690. PROVIDE SHIELDS AT INSULATED PIPING.

- TRAPEZE HANGERS: B-LINE #B22 WITH PIPE CLAMPS AND GUIDES AS REQUIRED.

- RISER CLAMPS: B-LINE #B3373.

- OFFSET PIPE CLAMPS: B-LINE #B3148.

- WATER PIPE ISOLATION: INCLUDE WITH HANGERS, 1/4" FELT OR APPROVED EQUIVALENT.

- ACCESS PANEL FOR VALVES: MILCOR PAINTED STEEL SIZE AS REQUIRED FOR EASY ACCESS MINIMUM SIZE 12" X 12".

PIPING INSULATION:

- DOMESTIC HOT WATER PIPING: ENGINEERED POLYMER FOAM INSULATION (EPFI) 3/4" WALL 'IMCOA' OR EQUIVALENT.

- LAVATORY TRAPS AND H. W. SUPPLIES: PROWRAP, PROTECTIVE KIT BY MCGUIRE OR EQUIVALENT.

EXCAVATION AND BACKFILL:

- EXECUTE ALL EXCAVATION TO GRADES TO ACCOMMODATE ELEVATIONS INDICATED AND WHERE INVERT ELEVATIONS ARE NOT INDICATED, PROVIDE MINIMUM COVERAGE FOR ANY PIPING UNDER BUILDING SLAB (TOP OF PIPE TO UNDERSIDE OF SLAB) OF 18 INCHES.

- EXCAVATION FOR PIPE SHALL BE CUT A MINIMUM OF SIX INCHES BELOW THE REQUIRED GRADE. A SIX-INCH BED OF SAND OR OTHER APPROVED MATERIAL SHALL BE THEN PLACED AND PROPERLY COMPACTED TO PROVIDE AN ACCURATE GRADE AND UNIFORM BEARING THROUGHOUT THE LENGTH OF THE PIPE.

- SAND USED SHALL BE WASHED RIVER SAND NORMALLY USED FOR BACKFILL PURPOSES, FREE OF CLODS OR LUMPS OF CLAY, ROCK, DEBRIS, AND RUBBISH.

- BACKFILLING SHALL NOT BE PLACED UNTIL THE WORK HAS BEEN INSPECTED, TESTED, AND APPROVED.

- BACKFILL TO POINT 12 INCHES ABOVE TOP OF PIPING WITH FINE EARTH (EXCAVATED MATERIAL MAY BE USED) FREE OF EXCESSIVE AMOUNTS OF CLAY, DEBRIS, RUBBISH, ROCKS, OR CLODS, AS APPROVED BY THE ARCHITECT. BACKFILL ABOVE 12 INCHES FROM TOP OF PIPING MAY BE WITH EXCAVATED MATERIAL. APPLY BACKFILL BY HAND IN 6-INCH DEEP LAYERS THE FULL WIDTH OF THE TRENCH. MOISTEN EACH LAYER (DO NOT FLOOD OR PUDDLE), AND HAND TAMP TO MINIMUM 90 PERCENT COMPACTION BEFORE PROCEEDING WITH THE NEXT LAYER OF BACKFILL.

- CLODS OR LUMPS ONE INCH IN SIZE OR LARGER WILL NOT BE PERMITTED IN THE BACKFILL. IF THE EXCAVATED MATERIAL IS NOT SUITABLE, ADEQUATE MATERIAL SHALL BE PROVIDED BY HAULING IN FROM OTHER LOCATIONS.

- SURPLUS EARTH OR MATERIAL REMAINING AFTER BACKFILLING SHALL BE REMOVED FROM THE SITE AS INDICATED IN SECTION ENTITLED "EARTHWORK."

- DO NOT EXCAVATE UNDER OR NEAR FOUNDATIONS OR FOOTINGS EXCEPT IN MANNER PERMITTED AND APPROVED BY THE ARCHITECT. DO NOT BACKFILL UNTIL INSTALLED PIPING HAS BEEN SUCCESSFULLY TESTED AND APPROVED FOR BACKFILL BY THE JURISDICTIONAL INSPECTOR AND THE ARCHITECT.

- PROVIDE SLEEVES AT ALL PIPE PENETRATIONS OF FOOTING AND FOUNDATIONS.

EXECUTION (PLUMBING):

- SOIL, WASTE AND VENT PIPING IS TO BE ASSEMBLED, CONNECTED, AND SUPPORTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ENCASE BELOW GRADE SOIL, WASTE, AND VENT PIPING IN SAND, 6" ALL AROUND PIPE. WRAP PENETRATIONS OF CONCRETE SLAB WITH FOAMED PLASTIC SLEEVING MATERIAL. ALL SOIL, WASTE, AND VENT PIPING SHALL HAVE A SMOOTH AND UNIFORM INVERT, AND BACK-FILLED SO AS NOT TO DISTURB THE PIPE OR JOINTING.

- JOINTS IN COPPER TUBING SHALL BE MADE BY FIRST THOROUGHLY CLEANING THE SURFACE OF THE PIPE AND FITTINGS, APPLYING A COPPERIZED FLUX AND SWEAT WITH 95 – 5 TIN ANTIMONY SOLDER OR EQUIVALENT LEAD-FREE SOLDER.

- FLUSH OUT ALL WATER MAINS, CONDENSATE DRAINS, SANITARY, AND STORM PIPING WITH WATER SO AS TO OBTAIN FREE FLOW.

- ALL PIPING, EXCEPT WHERE NOTED OTHERWISE ON PLANS, SHALL BE CONCEALED IN WALLS OR ABOVE CEILINGS. COORDINATE PIPING LOCATION WITH DUCTWORK AND CONDUIT.

- BENDING OR FORCING OF PIPE IS NOT ALLOWED. USE FITTINGS FOR ALL OFFSETS OR CHANGES IN ALIGNMENT OF PIPING.

- CLEANOUTS SHALL BE ACCESSIBLE IN ALL CASES AND SHALL BE BROUGHT TO SURFACE ON "Y" BRANCHES. ALL CLEANOUTS SHALL BE PROVIDED WITH REMOVABLE FLOOR OR WALL PLATES.

- PIPING SHALL BE FIRMLY HELD IN PLACE BY ADJUSTABLE HANGERS, SUPPORTS, AND PIPE RESTS. ALL HANGERS AND SUPPORTS SHALL BE OF DESIGN WHICH WILL SUPPORT WEIGHT OF PIPE, FLUID, INSULATION, AND PREVENT SAGGING. MAKESHIFT DEVICES ARE NOT ACCEPTABLE. PLUMBER'S TAPE IS NOT APPROVED.

- PIPING SHALL BE ISOLATED FROM ALL DIRECT CONTACT WITH THE STRUCTURE BY THE USE OF MANUFACTURED HANGER ISOLATORS AND STUD ISOLATION DEVICES.

- INSTALL ALL FIXTURES AND EQUIPMENT PER MANUFACTURER'S ROUGH-IN AND INSTALLATION INSTRUCTIONS. INSTALL HANDICAPPED FIXTURES PER TITLE 24 AND A.D.A. REQUIREMENTS. PROVIDE 17 GAUGE CHROME PLATED P-TRAPS, ANGLE STOPS AND FLEXIBLE RISERS, SUPPORT PLATES, ETC., AS REQUIRED.

- PROVIDE FIRE STOPPING AND SLEEVES FOR PIPING PENETRATIONS OF FIRE-RATED WALLS, FLOORS, AND CEILINGS. METHOD OF SLEEVING AND FIRE STOPPING SHALL BE APPROVED BY FIRE MARSHALL.

PLUMBING TEST AND ADJUSTMENTS:

- ALL WORK SHALL BE COMPLETELY INSTALLED, SANITIZED, AND TESTED AS REQUIRED BY LOCAL CODE AND THE STATE ORDINANCES AND STATE SAFETY ORDERS, AND SHALL BE LEAK-TIGHT BEFORE INSPECTION IS REQUESTED. ALL TESTS SHALL BE REPEATED UPON REQUEST TO THE SATISFACTION OF THOSE MAKING THE INSPECTION.

HVAC LEGEND

SYMBOL	DESCRIPTION	ABBREV.	SYMBOL	DESCRIPTION	ABBREV.	SYMBOL	DESCRIPTION	ABBREV.
	SUPPLY AIR DIFFUSER	SA		RECTANGULAR DUCT	–		VOLUME DAMPER	VD
	RETURN AIR GRILLE	RA		LINED RECTANGULAR DUCT	–		FIRE DAMPER	FD
	EXHAUST AIR GRILLE	EA	FLEXIBLE DUCT IF NOTED	RIGID ROUND DUCT	–	SD	SMOKE DECTECTOR	SD
	CEILING EXHAUST FAN	CEF		FLEXIBLE ROUND DUCT	–		FLEXIBLE CONNECTION	FC
	SIDEWALL GRILLE, REGISTER, OR LOUVER	–		POINT OF CONNECTION OR DISCONNECTION	POC/POD	T S	THERMOSTAT SENSOR	–
MARK CFM	GRILLE, DIFFUSER, REGISTER, OR LOUVER TAG	–	Ø	DIAMETER	DIA		EQUIPMENT OR DUCTWORK TO BE REMOVED	–

HVAC ABBREVIATIONS

ABV	ABOVE	**EDB**	ENTERING DRY BULB	**MER**	MECHANICAL EQUIPMENT ROOM	**SA**	SUPPLY AIR
A/C	AIR CONDITIONING, CONDITIONER	**EER**	ENERGY EFFICIENCY RATIO	**MFR**	MANUFACTURER	**SP**	STATIC PRESSURE
AD	ACCESS DOOR	**ELEC**	ELECTRICAL	**(N)**	NEW	**SEER**	SEASONAL ENERGY EFFICIENCY RATIO
AFF	ABOVE FINISH FLOOR	**ESP**	EXTERNAL STATIC PRESSURE	**N/A**	NOT APPLICABLE	**SHT**	SHEET
ALUM	ALUMINUM	**EWB**	ENTERING WET BULB	**NFA**	NET FREE AREA	**SQ**	SQUARE
APD	AIR PRESSURE DROP	**FA**	FACE AREA	**NIC**	NOT IN CONTRACT	**SSE**	STEADY STATE EFFICIENCY
ARCH	ARCHITECTURAL, ARCHITECT	**FAU**	FORCED AIR UNIT	**NO**	NUMBER	**TA**	TRANSFER AIR
BLDG	BUILDING	**FC**	FLEXIBLE CONNECTION	**NOM**	NOMINAL	**TBR**	TO BE REMOVED
BTU	BRITISH THERMAL UNIT	**FCU**	FAN COIL UNIT	**NTS**	NOT TO SCALE	**TEMP**	TEMPERATURE
BTUH	BTU PER HOUR	**FD**	FIRE DAMPER	**OA**	OUTSIDE AIR	**TYP**	TYPICAL
CAP	CAPACITY	**FLA**	FULL LOAD AMPS	**OAI**	OUTSIDE AIR INTAKE	**UL**	UNDERWRITER'S LABORATORIES
CFD	CEILING FIRE DAMPER	**FPM**	FEET PER MINUTE	**OBD**	OPPOSED BLADE DAMPER	**UON**	UNLESS OTHERWISE NOTED
CFM	CUBIC FEET PER MINUTE	**FSD**	COMBINATION FIRE/SMOKE DAMPER	**OD**	OUTSIDE DIAMETER	**UTR**	UP THROUGH ROOF
CONN	CONNECTION	**GA**	U.S. GAUGE (OR GAGE)	**OPER**	OPERATING	**VD**	VOLUME DAMPER
CSE	CALIFORNIA SEASONAL EFFICIENCY	**GALV**	GALVANIZED	**OSA**	OFFICE OF STATE ARCHITECT	**W/**	WITH
CTE	CAP TO EXISTING	**GC**	GENERAL CONTRACTOR	**PC**	PLUMBING CONTRACTOR	**W/O**	WITHOUT
CU	CONDENSING UNIT	**GPM**	GALLONS PER MINUTE	**PLMG**	PLUMBING	**WB**	WET BULB
DET	DETAIL	**GSM**	GALVANIZED SHEET METAL	**POC**	POINT OF CONNECTION	**WG**	WATER GAUGE
DIA	DIAMETER	**HP**	HORSEPOWER	**POD**	POINT OF DISCONNECTION	**WMS**	WIRE MESH SCREEN
DIV	DIVISION	**HR**	HOUR, HOURS	**PRESS**	PRESSURE	**WT**	WEIGHT
DN	DOWN	**HVAC**	HEATING, VENTILATING, AIR CONDITIONING	**PSI**	POUNDS PER SQUARE INCH	**WTB**	WALL FIRE DAMPER
DWG	DRAWING	**ID**	INSIDE DIAMETER	**RA**	RETURN AIR	**(X2)**	TYPICAL OF 2
(E)	EXISTING	**LBS**	POUNDS	**REV**	REVISION		
EA	EXHAUST AIR	**KBH**	BTU PER HOUR (THOUSANDS)	**RND**	ROUND		
EC	ELECTRICAL CONTRACTOR	**MC**	MECHANICAL CONTRACTOR	**RPM**	REVOLUTIONS PER MINUTE		

PLUMBING LEGEND

SYMBOL	DESCRIPTION	ABB.	SYMBOL	DESCRIPTION	ABB.	SYMBOL	DESCRIPTION	ABB.
	SOIL, WASTE, OR SEWER	W		PIPE CONNECTION	–		POINT OF CONNECTION/DIS.	POC/POD
	GREASE WASTE	GW		CAPPED OR PLUGGED PIPE	–		FIXTURE GAS SUPPLY	–
	STORM/OVERFLOW DRAIN	SD/OD		PIPE OR EQUIP. T.B.R.	–		WATER HAMMER ARRESTOR	WHA
	VENT	V		HOSE BIB	HB		GATE VALVE	–
	CONDENSATE DRAIN	COND		RECESSED HOSE BIB	RHB		BALL VALVE	–
	COLD WATER	CW		FIRE RISER	–		GLOBE VALVE	–
	COLD WATER TRAP PRIMER	–		FIRE DEPARTMENT CONNECTION	FDC		GAS COCK	–
	HOT WATER SUPPLY	HW		FLOOR CLEAN OUT	FCO		CHECK VALVE	–
	HOT WATER RECIRCULATION	HWR		CLEAN OUT TO GRADE	COTG		DOUBLE CHECK VALVE	–
	GAS LINE	G		WALL CLEAN OUT	WCO		VALVE IN RISER	–
	PIPE UP	–		FLOOR SINK	–		AUTOMATIC AIR VENT	AAV
	PIPE DOWN	–		FLOOR DRAIN	–		VALVE IN YARD BOX	–

PLUMBING ABBREVIATIONS

AA	AREA ALARM	**ESH**	EMERGENCY SHOWER	**LBS**	POUNDS	**SOV**	SHUT OFF VALVE
ABV	ABOVE	**EWC**	ELECTRIC WATER COOLER	**MBTUH**	BTU PER HOUR (THOUSANDS)	**TA**	TEMPERATURE
ADA	AMERICAN DISABILITIES ACT	**EXP**	EXPOSED	**MFR**	MANUFACTURE, MANUFACTURER	**TV**	ALARM TEMPERING VALVE
AFF	ABOVE FINISH FLOOR	**FD**	FLOOR DRAIN	**MH**	MANHOLE	**TXV**	THERMOSTATIC EXPANSION VALVE
ARCH	ARCHITECTURAL, ARCHITECT	**FF**	FINISH FLOOR	**(N)**	NEW	**TYP**	TYPICAL
B	BATHTUB	**FG**	FINISH GRADE	**NIC**	NOT IN CONTRACT	**URN**	URINAL
BEH	BEHIND	**FS**	FLOOR SINK	**NTS**	NOT TO SCALE	**UON**	UNLESS OTHERWISE NOTED
BEL	BELOW	**FT**	FLUSH TANK OR FEET	**P**	PUMP	**UTR**	UP THROUGH ROOF
BLDG	BUILDING	**FU**	FIXTURE UNITS	**PH**	PHASE	**VS**	VACUUM SWITCH
CD	CONDENSATE DRAIN	**FV**	FLUSH VALVE	**PIV**	POST INDICATOR VALVE	**VTR**	VENT THROUGH ROOF
CFH	CUBIC FEET PER HOUR	**GA**	GAUGE (OR GAGE)	**PSI**	POUNDS PER SQUARE INCH	**W**	WASTE
CI	CAST IRON	**GALV**	GALVANIZED	**RD**	ROOF DRAIN	**WC**	WATER CLOSET
CLG	CEILING	**GO**	GAS OUTLET	**RH**	RIGHT HAND	**WCH**	WATER CHILLER
CP	CHROME PLATED	**GPM**	GALLONS PER MINUTE	**RI&C**	ROUGH IN AND CONNECT	**WH**	WATER HEATER
DCW	DOMESTIC COLD WATER	**HB**	HOSE BIBB	**RPM**	REVOLUTIONS PER MINUTE	**WT**	WEIGHT
DF	DRINKING FOUNTAIN	**HP**	HORSEPOWER	**RM**	ROOM	**W/**	WITH
DN	DOWN	**LH**	LEFT HAND	**S**	SINK	**W/O**	WITHOUT
(E)	EXISTING	**L**	LAVATORY	**SD**	STORM DRAIN	**ZV**	ZONE VALVE
ELEC	ELECTRICAL	**KW**	KILLOWATTS	**SH**	SHOWER		

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PROJECT TITLE:
NEW COMMON BUILDING
ROLLING HILLS APARTMENTS
TEMPLETON, CA

CLIENT:
FRASER SEIPLE AR

AIR TERMINAL SCHEDULE

SYMBOL	MFG	MODEL	NECK SIZE	BORDER	CONST.	FINISH	OBD	NOTES
CSD-1	TITUS	300RS	14"X14"	BORDER TYPE 1	STEEL	SOFT WHITE	YES	1,2
CSD-2	TITUS	MCD	8"X8"	BORDER TYPE 1	STEEL	SOFT WHITE	YES	2
CSD-3	TITUS	MCD	12"X12"	BORDER TYPE 1	STEEL	SOFT WHITE	YES	2
CSD-4	TITUS	MCD	14"X14"	BORDER TYPE 1	STEEL	SOFT WHITE	YES	2
CSD-5	TITUS	MCD	12"X12"	BORDER TYPE 3	STEEL	SOFT WHITE	YES	2
WSD-1	TITUS	301RS	18"X10"	BORDER TYPE 1	STEEL	SOFT WHITE	YES	2
CRG-1	TITUS	350RS	14"X24"	BORDER TYPE 1	STEEL	SOFT WHITE	YES	1
CRG-2	TITUS	350RS	14"X14"	BORDER TYPE 1	STEEL	SOFT WHITE	YES	1
CRG-3	TITUS	350RS	16"X16"	BORDER TYPE 1	STEEL	SOFT WHITE	YES	1
CRG-4	TITUS	50F-NT	24"X24"	BORDER TYPE 3	STEEL	SOFT WHITE	YES	1
WEG-1	TITUS	350RS	6"X6"	BORDER TYPE 1	STEEL	SOFT WHITE	YES	1
DEG-1	TITUS	350RS	12"X12"	BORDER TYPE 1	STEEL	SOFT WHITE	YES	1
WVL-1	RUSKIN	EME520DD	18"X12"	INTERG. FLANG	STEEL	–	NO	3

LEGEND

MOUNTING LOCATION		FUNCTION		DEVICE	
C	CEILING	E	EXHAUST	D	DIFFUSER
D	DUCT	R	RETURN	G	GRILLE
Dr	DOOR	S	SUPPLY	R	REGISTER
W	WALL	I	INTAKE	L	LOUVER
F	FLOOR	V	VENTILATION	S	SLOT

EXAMPLE: CSD=CEILING SUPPLY DIFFUSER

NOTES:
1. PAINT GRILLE CANS FLAT BLACK INSIDE
2. MATCH DEFLECTIONS SEEN ON PLAN
3. COLOR ANODIZE, COORDINATE COLOR & FINISH WITH ARCHITECT PRIOR TO EQUIPMENT PURCHASE

PACKAGED HVAC UNIT SCHEDULE

SYMBOL	MFG	MODEL	COOLING CAPACITY (BTUH)	SEER	EER	POWER	MCA (AMPS)	MOCP (AMPS)	CFM	OAI CFM	E.S.P. "W.C.	ID BLOWER MOTOR HP	GAS INPUT (BTUH)	HEATING EFFICIENCY (AFUE%)	WEIGHT (LBS)	NOTES
AC-1	YORK	ZF060N0B	57,000	13.0	10.8	208/230-1-60	52.7	70	2000	240	0.6	1.0 (DIRECT)	100,000	80.5	840	1,2,4
AC-2	YORK	ZF036N04	36,000	13.0	11.0	208/230-1-60	36.7	45	1200	170	0.6	0.5 (DIRECT)	50,000	80.9	690	1,2,3
AC-3	YORK	ZF048N06	47,500	13.0	11.0	208/230-1-60	45.5	60	1600	200	0.6	1.0 (DIRECT)	75,000	80.9	760	1,2,3

NOTES:
1. PROVIDE OUTSIDE AIR DAMPER TO MAINTAIN SPECIFIED OUTSIDE AIR FLOW RATE
2. PROVIDE 7 DAY AUTO CHANGEOVER THERMOSTAT (FAN TO RUN CONTINUOUSLY DURING OCCUPIED HOURS) MOUNT AT 48" A.F.F. REFER TO PLAN FOR LOCATION
3. PROVIDE STANDARD 8" ROOF CURB, SEE DETAIL 12/MP5.1
4. PROVIDE SPRING ISOLATED ROOF CURB BY 'PROVENT', SEE DETAIL 22/MP5.1

EXHAUST FAN SCHEDULE

SYMBOL	MFG	MODEL	STYLE	LOCATION	POWER	DRIVE	CFM	E.S.P. "W.C.	HP	BHP	RLA	RPM	WEIGHT (LBS)	NOTES
EF-1	GREENHECK	G-080-D	DOME	ROOF	115/120-1-60	DIRECT	200	0.5	1/20	0.05	–	1,550	26	1,2
EF-2	BROAN	689	CEILING	–	115/120-1-60	DIRECT	60	0.75	–	–	1.5	–	3.5	3,4

NOTES:
1. INTERLOCK WITH AC-3 & BATHROOM LIGHTS, BY EC – REFER TO DETAIL 52/MP5.1 FOR WIRING
2. PROVIDE FACTORY ROOF CURB, BIRD SCREEN, BACK DRAFT DAMPER, AND SPEED CONTROLLER AT FAN TO MAINTAIN SPECIFIED AIR FLOW RATE
3. INTERLOCK WITH MAINTENANCE ROOM LIGHT SWITCH, BY EC
4. PROVIDE WITH RIGID CONDUCTOR PIPE UP TO T-TOP TERMINATION ON ROOF & MANUFACTURER'S BACKDRAFT DAMPER – SEE PLAN

ELECTRIC WALL HEATER

SYMBOL	MFG	MODEL	POWER	WATTS	NOTES
EH-1	CADET	CSC202TW	208-1-60	1500	ALL APPLY
EH-2	CADET	CSC202TW	208-1-60	1500	ALL APPLY

NOTES:
1. PROVIDE WITH INTEGRAL THERMOSTAT
2. REFER TO MANUFACTURER FOR INSTALLATION CLEARANCES

WATER HEATER SCHEDULE

SYMBOL	MANUFACTURER	MODEL	CAPACITY (GALLONS)	RECOVERY (GALLONS)	FUEL	BTU/H INPUT	HEATING EFFICIENCY (AFUE%)	POWER	FLUE	SHIPPING WEIGHT (LBS)	NOTES
WH-1	AO SMITH	FCG-75	74.0	81.0 GPH @ 90°F	NAT. GAS	75,100	80%	115/1/60	4"Ø	275	ALL APPLY

NOTES:
1. PROVIDE WITH APPROVED P&T VALVE
2. INSTALL WITH 'SMITTY' PAN AND DRAIN
3. PROVIDE WITH SEISMIC RESTRAIN, SEE DETAIL 24/MP5.2

ELECTRIC WATER HEATER SCHEDULE

SYMBOL	MANUFACTURER	MODEL	CAPACITY (GAL)	FITTINGS INLET & OUTLET	OPERATING PRESSURE MIN / MAX	POWER	CURRENT	KW	FULL WEIGHT	NOTES
WH-2	EEMAX	SP3512	–	3/8"COMPRESSION	25PSI/150PSI	115/120-1-60	30A	3.5	3.0LBS	ALL APPLY

NOTES:
1. REFER TO DETAIL 23/MP5.2 FOR INSTALLATION
2. PRIOR TO INSTALLING UNIT CONTRACTOR SHALL REFER TO MANUFACTURER'S INSTALL MANUAL FOR ADDITIONAL REQUIREMENTS
3. INSTALL MANUFACTURE SUPPLIED FLOW RESTRICTING AERATOR IN FAUCET TO MAINTAIN MAXIMUM 0.5 GPM

PLUMBING FIXTURE SCHEDULE

SYMBOL	MAKE & MODEL	DESCRIPTION	ROUGH IN SIZES				FITTINGS OR ACC.	NOTES
			HW	CW	W	V		
WC-1	KOHLER "WELLWORTH" # K-3422 29"x19-5/8"x28", 14-1/2" TO RIM VITREOUS CHINA, WHITE	WATER CLOSET FLOOR MOUNTED ELONGATED, 1.6 GPF	–	3/4"	3"	2"	OLSONITE # 95 SEAT	–
WC-2	KOHLER "HIGHLINE" # K-3427 29"x19-5/8"x30", 16-1/2" TO RIM VITREOUS CHINA, WHITE	ADA WATER CLOSET FLOOR MOUNTED ELONGATED, 1.6 GPF	–	3/4"	3"	2"	OLSONITE # 95 SEAT	1,2,3
URN-1	KOHLER "DEXTER" # K-5016-ET 13-1/2"x14-1/2"x20-1/2" VITREOUS CHINA, WHITE	URINAL WALL HUNG BACK OUTLET	–	1-1/4"	2"	1-1/2"	SLOAN ROYAL FLUSH VALVE # 186-1 JAY R. SMITH SUPPORT # 0637	–
LAV-1	KOHLER "PENNINGTON" # K-2196-4 20-1/4x17-1/2" VITREOUS CHINA, WHITE	ADA LAVATORY COUNTER TOP	1/2"	1/2"	2"	1-1/2"	DELTA FAUCET # 501-WF WITH GRID DRAIN	1,2,3
FD-1	J.R. SMITH SERIES # 2005Y02-A05PB-U	5"Ø, CAST IRON FLOOR DRAIN WITH BRONZE STRAINER	–	1/2"	2"	1-1/2"	PROVIDE WITH 'PRECISION PRODUCTS' PRIME-RITE TRAP PRIMER AND ACCESS PANEL	–
WS-1	JUST # SL-ADA-2217-A-GR 22"x17" SELF RIMMING 18 GAUGE STAINLESS STEEL	ADA SINGLE BOWL SINK COUNTER TOP	1/2"	1/2"	2"	1-1/2"	DELTA FAUCET # 100-WF STRAINER # JB-99, STOPS, SUPPLIES & C.P. BRASS 'P' TRAP	1,2,3
DF-1	SUNROC MODEL # ADAAC	NON-REFRIGERATED ADA DRINKING FOUNTAIN	–	1/2"	2"	1-1/2"	PROVIDE WITH MANUFACTURER'S WALL MOUNT SUPPORT CARRIER COORDINATE FINISH COLOR WITH ARCHITECT	1,2,3
KS-1	JUST # DL-ADA-2233-A-GR 22"x33" SELF RIMMING 18 GAUGE STAINLESS STEEL	ADA DOUBLE BOWL SINK COUNTER TOP	1/2"	1/2"	2"	1-1/2"	DELTA FAUCET # 100-WF (2) STRAINER #J-35, STOPS, SUPPLIES & C.P. BRASS 'P' TRAP	1,2,3
RD-1	TECH SPECIALTIES #T0073	3"Ø CAST IRON ROOF DRAIN WITH OVERFLOW	–	–	3"	–	PROVIDE WITH ALUMINUM DOME STRAINER ON DRAIN & OVERFLOW	–

NOTES:
1. ALL FIXTURES DESIGNATED TO BE ACCESSIBLE TO INDIVIDUALS WITH DISABILITIES SHALL BE IN ACCORDANCE WITH THE "AMERICANS WITH DISABILITIES ACT OF 1990" FIXTURES AND THEIR INSTALLATION SHALL ALSO COMPLY WITH AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) PUBLICATION A117.1 – "PROVIDING ACCESSIBILITY AND USABILITY FOR PHYSICALLY HANDICAPPED PEOPLE" AND/OR GOVERNING CODE.
2. ALL PLUMBING FIXTURES, EQUIPMENT, TRIM, AND FITTINGS SHALL COMPLY WITH LOCAL, STATE, AND FEDERAL REGULATIONS AND CODES, INCLUDING BUT NOT LIMITED TO WATER AND ENERGY CONSERVATION CODES. THE SCHEDULED AND/OR SPECIFIED PLUMBING FIXTURES AND EQUIPMENT REPRESENT THE MINIMUM CRITERIA AND SHALL BE THE BASIS FOR THE CONTRACTORS BASE BID. IF THE SCHEDULED OR SPECIFIED FIXTURES OR EQUIPMENT DO NOT COMPLY WITH THE GOVERNING CODES OR REGULATIONS IN ALL RESPECTS, THE CONTRACTOR SHALL PROVIDE AN ALTERNATE BID FOR THE COMPLYING FIXTURES, EQUIPMENT, TRIM, OR FITTINGS. THE ABSENCE OF AN ALTERNATE BID SHALL BE CONSTRUED TO MEAN THAT THE CONTRACTOR'S BID INCLUDES ALL COSTS NECESSARY TO MEET ALL REGULATIONS AND CODES
3. MAXIMUM ALLOWABLE WATER USAGE: WC = 1.6 GPF LAV = 0.5 GPM URN = 1.0 GPF SK = 0.5 GPM

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PROJECT TITLE:
NEW COMMON BUILDING
ROLLING HILLS APARTMENTS
TEMPLETON, CA

CLIENT:
FRASER SEIPLE ARCHITECTS
971 OSOS STREET
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(805) 544-8161

SHEET TITLE AND DESCRIPTION:
SCHEDULES

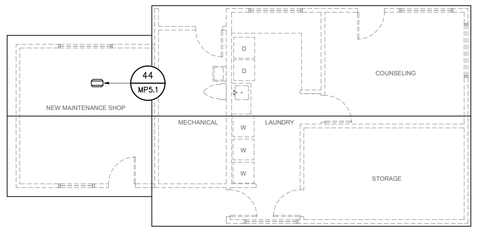
DATE	REMARKS
04.15.2010	DESIGN DEVELOPMENT
05.17.2010	FIRST SUBMITTAL
08.16.2010	1 PLAN CHECK 1

PLOT DATE:
8/16/2010 8:00 AM

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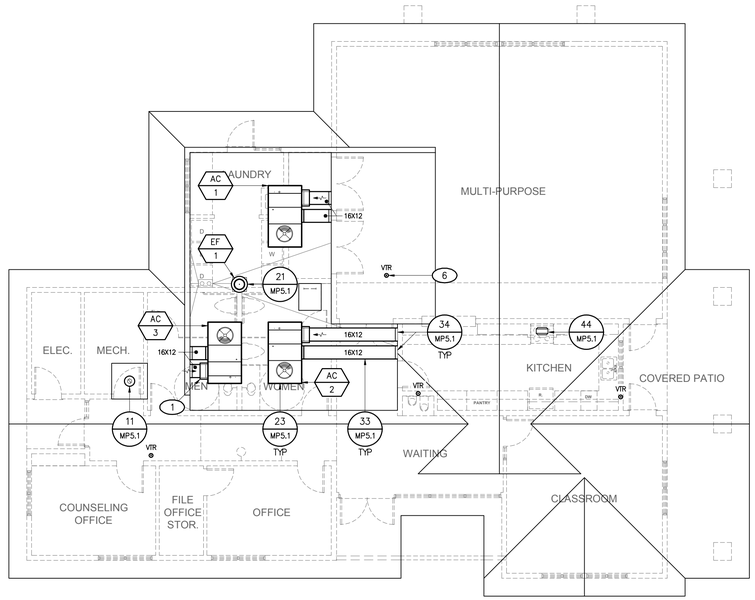
JVA JOB #
M10024

SHEET
SCHEDULES
MP2.1



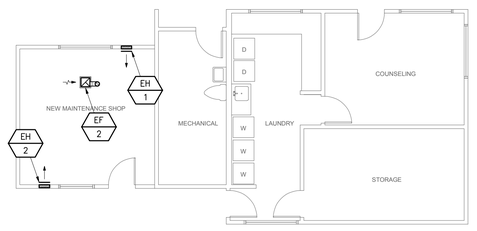
MECHANICAL - SHOP ADDITION, ROOF PLAN

1/8" = 1'-0"



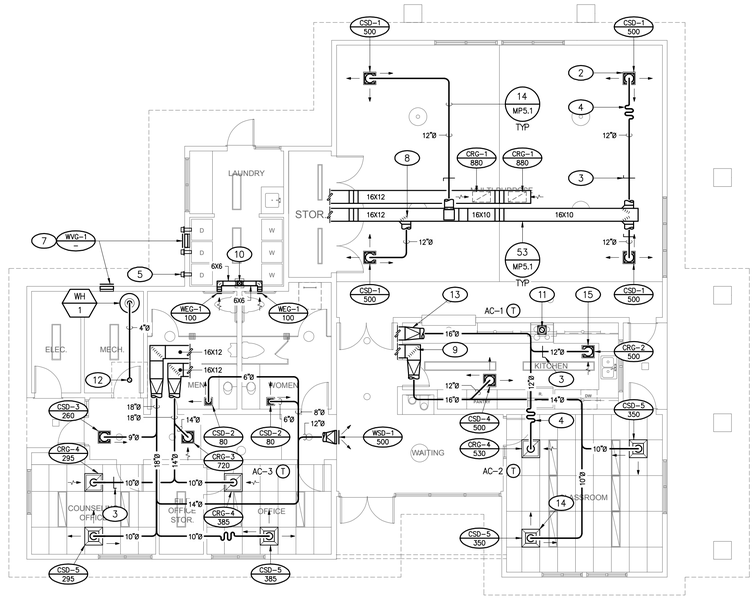
MECHANICAL - COMMONS BUILDING, ROOF PLAN

1/8" = 1'-0"



MECHANICAL - SHOP ADDITION, ROOF PLAN

1/8" = 1'-0"

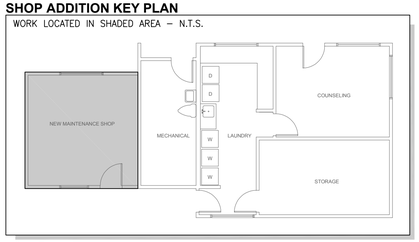


MECHANICAL - COMMONS BUILDING, FLOOR PLAN

1/8" = 1'-0"

SHOP ADDITION KEY PLAN

WORK LOCATED IN SHADED AREA – N.T.S.



COMBUSTION AIR CALCULATIONS

EQUIPMENT	TOTAL INPUT (BTU/H)	REQUIRED NET FREE AREA	LOUVER SIZE	PROVIDED NET FREE AREA (44%NFA)
CLOTHES DRYER(x3)	105,000	35.0 IN²	18"X12"	63.3 IN²

REQUIRED NFA BASED ON 1 IN² PER 3 kBTU/H INPUT (CMC 2007, 701.4.2)
SEE 'AIR TERMINAL SCHEDULE', SHEET MP3.1 FOR ADDITIONAL LOUVER DATA

REFERENCE NOTES

1. OUTSIDE AIR INTAKE. MAINTAIN 10' CLEAR FROM ALL PLUMBING VENTS AND FLUES. MAINTAIN 3' CLEAR FROM ALL ENVIRONMENTAL AIR EXHAUST
2. ALL AIR REGISTERS IN MULTI-PURPOSE ROOM SHALL BE CENTERED IN 2'X8' ACOUSTICAL CEILING TILES BY MECHANICAL CONTRACTOR
3. VOLUME DAMPER AT BRANCH DUCT. TYPICAL ALL BRANCH DUCTS, SUPPLY, RETURN, & EXHAUST. SEE DETAIL 43/MP5.1
4. FLEX DUCT AT END RUN CONDITION. SEE DETAIL 24/MP5.1 – TYPICAL
5. 4"Ø DRYER EXHAUST DUCTWORK TO EXTERIOR WALL CAP TERMINATION. INSTALL PER MANUFACTURER'S GUIDELINES. SEE DETAIL 13/MP5.1 – TYPx3
6. PLUMBING VENT TERMINATIONS SHOWN HERE FOR OUTSIDE AIR INTAKE CLEARANCE REFERENCE ONLY
7. WALL VENTILATION LOUVER (WVL-1) PROVIDED FOR WATER HEATER & CLOTHES DRYER COMBUSTION AIR SUPPLY (ONE PERMANENT OPENING METHOD). THE LOUVER SHALL BE INSTALLED AT A MAXIMUM OF 12" BELOW THE TOP OF THE ENCLOSURE. REFER TO THE 'COMBUSTION AIR CALCULATIONS' TABLE, THIS SHEET & THE 'AIR TERMINAL SCHEDULE', SHEET MP2.1
8. EXTRACTOR – TYPICAL
9. TURNING VANE – TYPICAL
10. 6X6 EXHAUST DUCT UP THROUGH ROOF TO UNIT CONNECTION SIZE PLENUM DROP
11. 7"Ø DOMESTIC RANGE EXHAUST DUCT UP THROUGH ROOF TO T-TOP TERMINATION
12. 4" CLASS 'B' WATER HEATER FLUE UP THROUGH ROOF, BY MC
13. SQUARE TO ROUND ADAPTOR PER SMACNA STANDARDS. SEE DETAIL 51/MP5.1 – TYPICAL
14. T-BAR GRILLE CONNECTION. SEE DETAIL 42/MP5.1 – TYPICAL
15. HARD LID GRILLE CONNECTION. SEE DETAIL 41/MP5.1 – TYPICAL

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SHEET TITLE AND DESCRIPTION:
MECHANICAL FLOOR & ROOF PLANS

DATE	REMARKS
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M10024

SHEET
MECHANICAL
FLOOR & ROOF PLANS
MP3.1

ROOF DRAIN SIZING

ROOF DRAIN	ROOF AREA SERVED	GPM PER SF	MAX. FLOW RATE	MINIMUM REQ'D SLOPE	REQUIRED DRAIN SIZE
RD–1	750 SF	0.016	12.0 GPM	1/4" PER FOOT	3"Ø

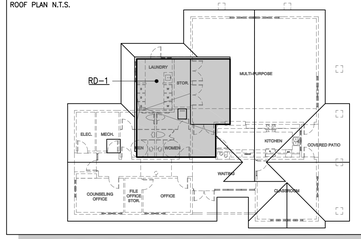
MAXIMUM ALLOWABLE FLOW @ 1/4" PER FOOT SLOPE	MAXIMUM PIPE SIZE		
	3"Ø	4"Ø	5"Ø
	48.0 GPM	110.0 GPM	196.0 GPM

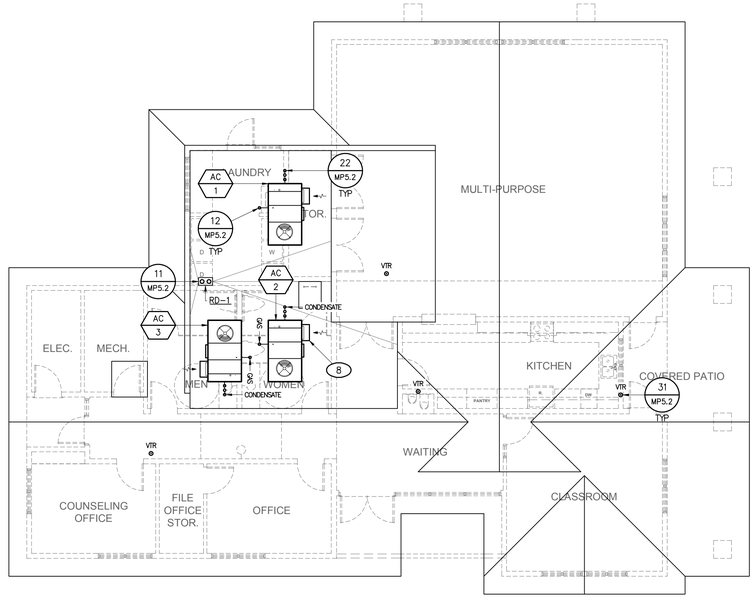
PER TABLE 11–2, 2007 CPC

STORM DRAINAGE 60 MINUTE DURATION,100 YEAR RETURN	TEMPLETON, CA
	0.016 GPM/SQUARE FOOT

PER APPENDIX 'D', 2007 CPC

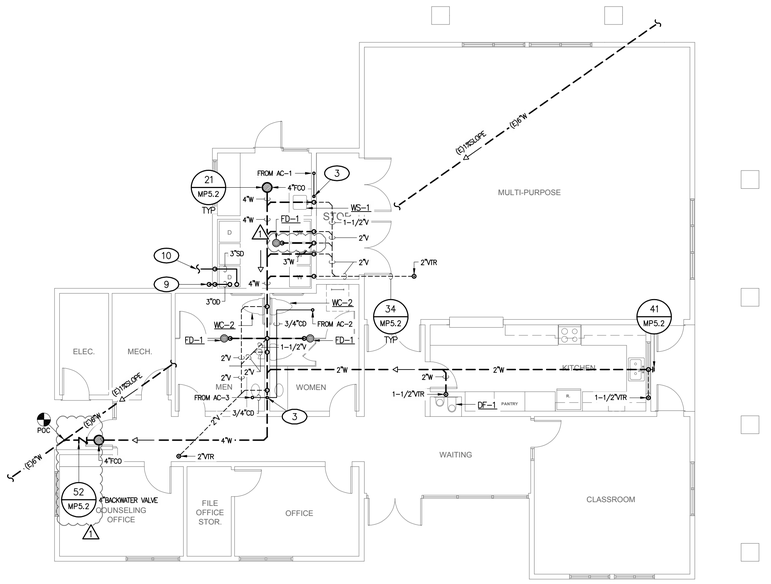
ROOF PLAN N.T.S.





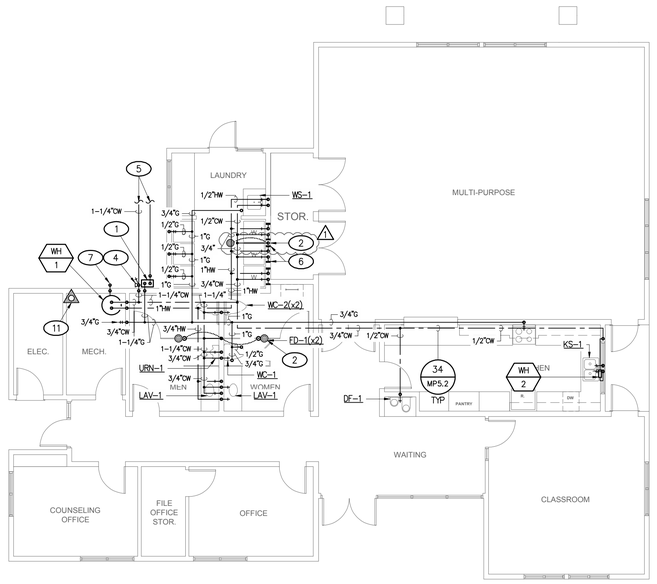
PLUMBING - ROOF PLAN

1/8" = 1'-0"



PLUMBING - FLOOR PLAN, WASTE & VENT

1/8" = 1'-0"



PLUMBING - FLOOR PLAN, WATER & GAS

1/8" = 1'-0"

NOTE

⟵	INDICATES DIRECTION OF WASTE PIPING SLOPE – MINIMUM 1/4" PER FOOT

NOTE

IF NOT INDICATED ON PLAN BRANCH LINE PIPE SIZES TO FIXTURES SHALL BE AS FOLLOWS:

FIXTR.	CW	HW	W	V
WC–1	3/4"	–	3"	2"
WC–2	3/4"	–	3"	2"
URN–1	1-1/4"	–	2"	1-1/2"
LAV–1	1/2"	1/2"	2"	1-1/2"
WS–1	1/2"	1/2"	2"	1-1/2"
KS–1	1/2"	1/2"	2"	1-1/2"
DF–1	1/2"	–	2"	1-1/2"
FD–1	–	–	2"	1-1/2"
CLOTHES WASHER	3/4"	3/4"	3"	2"

UTILITY LINE SIZING

DOMESTIC WATER SERVICE

NEW WSFU	EXISTING WSFU	TOTAL WSFU	TOTAL GPM	FLUSH TANK/ FLUSH VALVE	METER SIZE	PIPE SIZE
33.5	–	33.5	22.0	TANK	3/4"	1–1/4"

REGULATED PRESSURE	AVAILABLE PRESSURE (60 - ELEVATION LOSS)	REQ'RD RESIDUAL PSI AT FURTHEST FIXTURE	TOTAL DEVEL'D LENGTH [D+(Dx0.25)]	ALLOWABLE FRICTION LOSS
60.0psi	58.0psi	20.0	95'	40psi/100'

MAXIMUM ALLOWABLE WSFU (TYPE 'L' COPPER, FLUSH TANK)

PIPE SIZE	1/2"	3/4"	1"	1–1/4"	1–1/2"	2"	2–1/2"
COLD WATER (MAX. 8 FPS)	7	15	29	56	97	245	460
HOT WATER (MAX. 5 FPS)	3	8	18	28	45	115	241

SIZED PER APPENDIX 'A', 2007 CPC

GAS SERVICE

SPACE BTU	WATER BTU	OTHER BTU	TOTAL BTU	TOTAL CFH	FURTHEST DISTANCE FROM METER	PIPE SIZE
225,000	75,100	170,000	470,100	470.1	50'	1–1/2"

SIZED PER TABLE 12–7, 2007 CPC

SANITARY SEWER

NEW DFU	EXISTING DFU	TOTAL DFU	BUILDING SLOPE	PIPE SIZE
31	–	31	1/4" PER 1'–0"	4"

SIZED PER TABLE 7–5, 2007 CPC

REFERENCE NOTES

1. NEW GAS METER – BY GAS COMPANY. REFER TO DETAIL 42/MP5.2 FOR TYPICAL INSTALLATION
2. 1/2" TRAP PRIMER TO FLOOR DRAIN 'P' TRAP – PROVIDE ACCESS PANEL & SHUTOFF VALVE AHEAD OF PRIMER VALVE & PROVIDE AN APPROVED AIR–GAP ON THE OUTLET SIDE OF THE TRAP PRIMER VALVE, REFER TO DETAILS 43 & 14, SHEET MP5.2 – TYPICAL
3. 3/4" TYPE 'L' COPPER CONDENSATE DRAIN PIPING FROM AC UNITS ON ROOF TO LAVATORY TAILPIECE CONNECTION. SLOPE 1/8" PER FOOT TOWARD OUTLET ON ANY HORIZONTAL SECTION OF PIPING. PROVIDE MINIMUM 1" AIR GAP ABOVE P–TRAP WATER LEVEL. SEE DETAIL 44/MP5.2
4. PROVIDE FULL PORT BRASS SOV & REGULATOR AT NEW RISER. REFER TO DETAIL 13/MP5.2
5. REFER TO CIVIL SHEETS FOR CONTINUATION & NEW WATER METER LOCATION
6. WATER HAMMER ARRESTOR AT CLOTHES WASHER CONNECTION. TYPICAL BOTH HOT & COLD WATER CONNECTIONS. TYPx3
7. 3/4" TYPE 'L' COPPER P&T DRAIN FROM NEW WATER HEATER. CONNECT TO EXISTING P&T DRAIN LINE RUN TO EXTERIOR TERMINATION. SLOPE MINIMUM 1/8" PER FOOT TOWARD OUTLET ON ANY HORIZONTAL SECTION OF PIPING. TERMINATE 6" ABOVE FINISHED GRADE – P&T RELIEF LINE SHALL NOT BE TRAPPED
8. OUTSIDE AIR INTAKE. MAINTAIN 10' CLEAR FROM ALL PLUMBING VENTS AND FLUES. MAINTAIN 3' CLEAR FROM ALL ENVIRONMENTAL AIR EXHAUST
9. 3" STORM DRAIN. TERMINATE MAX. 1" OUT FROM EXTERIOR WALL, 3" ABOVE FINISHED GRADE
10. 3" STORM DRAIN PIPING, SEE CIVIL FOR CONTINUATION
11. LOCATION OF NEW FIRE RISER–TO BE INSTALLED BY FIRE SPRINKLER CONTRACTOR–SEPERATE PERMIT AND APPROVAL SHALL BE OBTAINED FROM THE FIRE AND BUILDING DEPARTMENTS. REFER TO DETAIL 51/MP5.2

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ROLLING HILLS APARTMENTS
TEMPLETON, CA

CLIENT:
FRASER SEIPLE ARCHITECTS
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SHEET TITLE AND DESCRIPTION:
PLUMBING SHEET TITLE

DATE	REMARKS
04.15.2010	DESIGN DEVELOPMENT
05.17.2010	FIRST SUBMITTAL
08.16.2010	1 PLAN CHECK 1

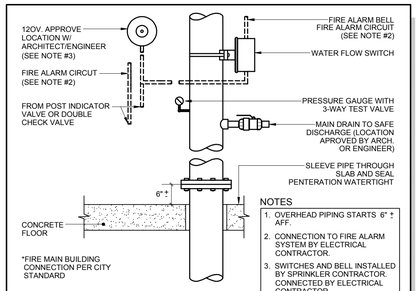
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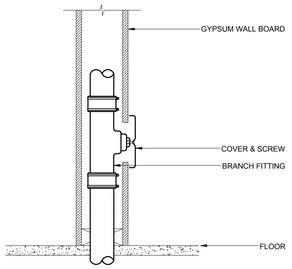
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SHEET
PLUMBING SHEET TITLE
MP4.1

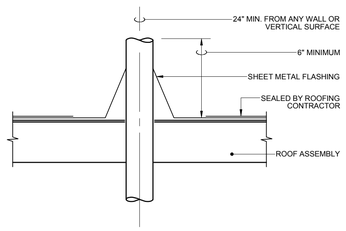
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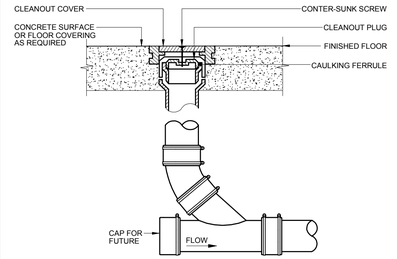
51 **FIRE RISER**
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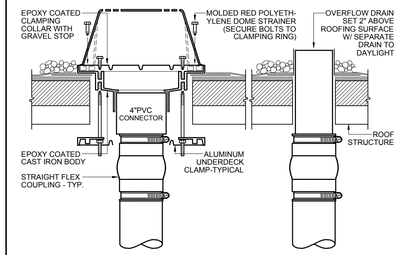
41 **WALL CLEANOUT**
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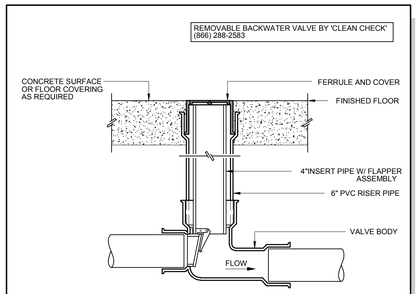
31 **VENT THROUGH ROOF**
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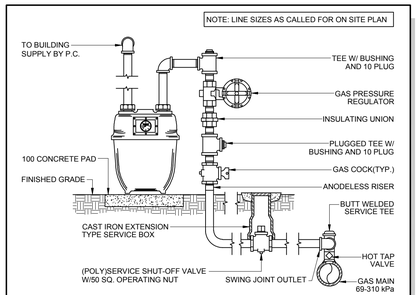
21 **FLOOR CLEANOUT**
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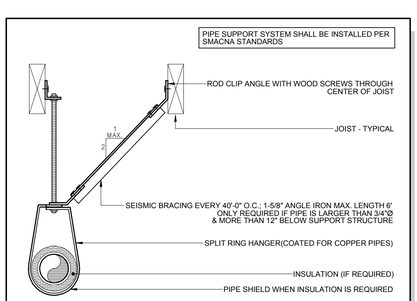
11 **ROOF DRAIN**
NO SCALE



52 **BACKWATER VALVE**
NO SCALE

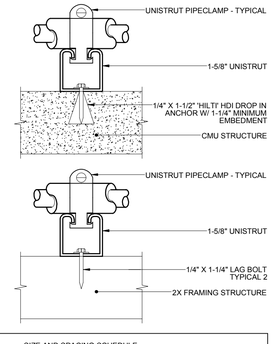


42 **GAS METER BY GAS COMPANY**
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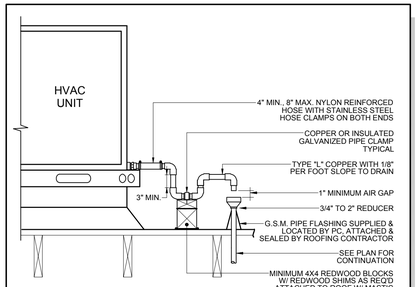
HANGER RODS - SIZE AND SPACING SCHEDULE						
		MAXIMUM HANGER SPACING				
		WATER AND WASTE				NATURAL GAS
PIPE SIZE	MIN. HANGER ROD SIZE	COPPER	STEEL SCH. 40	CAST IRON STD.	PLASTIC DWV/SCH. 40	SCH. 40
1/2"	1/4"	6 FT.	6 FT.	-	4 FT.	6 FT.
3/4"	1/4"	6 FT.	8 FT.	-	4 FT.	8 FT.
1"	1/4"	6 FT.	8 FT.	-	4 FT.	8 FT.
1-1/4"	3/8"	6 FT.	10 FT.	-	4 FT.	10 FT.
1-1/2"	3/8"	6 FT.	10 FT.	10 FT.	4 FT.	10 FT.
2"	3/8"	10 FT.	10 FT.	10 FT.	4 FT.	10 FT.
2-1/2"	1/2"	10 FT.	10 FT.	10 FT.	4 FT.	10 FT.
3"	1/2"	10 FT.	10 FT.	10 FT.	4 FT.	10 FT.
4"	1/2"	10 FT.	10 FT.	10 FT.	4 FT.	10 FT.

NOTE: LONGITUDINAL BRACINGS AT 80'-0" O.C. MAXIMUM UNLESS OTHERWISE NOTED

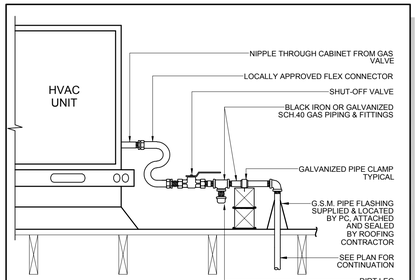


SIZE AND SPACING SCHEDULE			
	MAXIMUM HANGER SPACING		
	WATER, WASTE, AND VENT		NATURAL GAS
PIPE SIZE	COPPER	PLASTIC DWV/SCH. 40	SCH. 40 IRON
1/2"	6 FT.	4 FT.	6 FT.
3/4"	6 FT.	4 FT.	8 FT.
1"	6 FT.	4 FT.	8 FT.
1-1/4"	6 FT.	4 FT.	10 FT.
1-1/2"	6 FT.	4 FT.	10 FT.
2"	10 FT.	4 FT.	10 FT.
2-1/2"	10 FT.	4 FT.	10 FT.
3"	10 FT.	4 FT.	10 FT.
4"	10 FT.	4 FT.	10 FT.

34 **TYPICAL PIPING SUPPORT**
NO SCALE



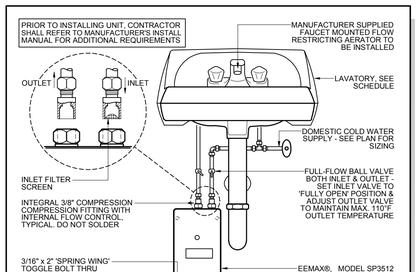
22 **HVAC UNIT CONDENSATE DRAIN**
NO SCALE



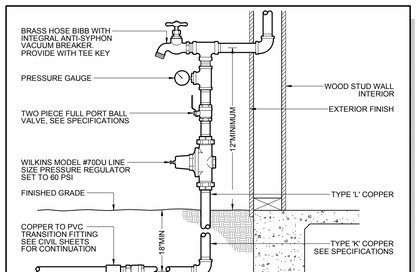
12 **GAS PIPING CONNECTION**
NO SCALE

43 **FLOOR DRAIN W/ TRAP PRIMER**
NO SCALE

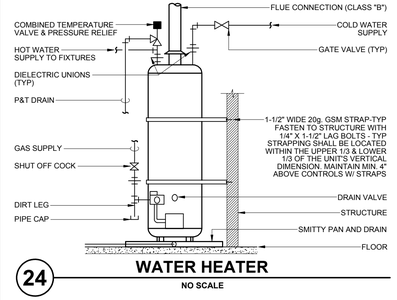
44 **CONDENSATE DRAIN CONNECTION**
NO SCALE



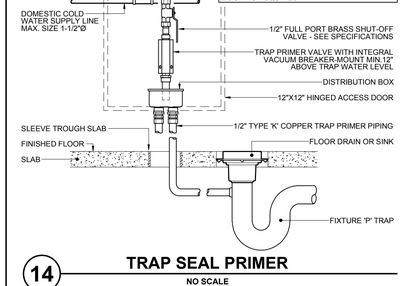
23 **'POINT-OF-USE' WATER HEATER**
NO SCALE



13 **DCW PRESSURE REGULATOR**
NO SCALE



24 **WATER HEATER**
NO SCALE



14 **TRAP SEAL PRIMER**
NO SCALE

JVA MECHANICAL ENGINEERING
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PROFESSIONAL ENGINEER — JAMES L. VAN DE VANTER — M31205 — MECHANICAL — STATE OF CALIFORNIA — 12/31/11

PROJECT TITLE:
NEW COMMON BUILDING
ROLLING HILLS APARTMENTS
TEMPLETON, CA

CLIENT:
FRASER SEIPLE ARCHITECTS
971 OSOS STREET
SAN LUIS OBISPO, CA
(805) 544-8161

SHEET TITLE AND DESCRIPTION:
DETAILS

DATE	REMARKS
04.15.2010	DESIGN DEVELOPMENT
05.17.2010	FIRST SUBMITTAL
08.16.2010	⚠1 PLAN CHECK 1

PLOT DATE:
8/16/2010 8:00 AM

DRAWN BY:
TDR

JVA JOB #
M10024

SHEET
DETAILS
MP5.2

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GENERAL NOTES

1. CODE COMPLIANCE: ALL WORK SHALL CONFORM TO AND BE PERFORMED IN ACCORDANCE WITH CODES, STANDARDS, AND ORDINANCES AS SET FORTH BY THE AUTHORITIES HAVING JURISDICTION AND THEIR LATEST ADOPTED EDITIONS (IN EFFECT AT TIME OF BUILDING PERMIT APPLICATION) OF THE FOLLOWING PUBLICATIONS:

   A. CALIFORNIA CODE OF REGULATIONS TITLE 24; INCLUDES 2005 NATIONAL ELECTRICAL CODE AND 2006 INTERNATIONAL FIRE CODE, INTERNATIONAL BUILDING CODE, ETC. WITH CALIFORNIA AND OTHER LOCAL AMENDMENTS AS APPLICABLE.

   B. AMERICANS WITH DISABILITIES ACT (ADA).

2. SAFETY: THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL EQUIPMENT IN A SAFE AND RESPONSIBLE MANNER. KEEP DEAD FRONT EQUIPMENT IN PLACE WHILE EQUIPMENT IS ENERGIZED. CONDUCT ALL CONSTRUCTION OPERATIONS IN A SAFE MANNER FOR EMPLOYEES AS WELL AS OTHER WORKPERSONS OR ANYONE VISITING THE JOB SITE. PROVIDE BARRIERS, FLAGS, TAPE, ETC. AS REQUIRED FOR SAFETY. THE CONTRACTOR SHALL HOLD ALL PARTIES HARMLESS OF NEGLIGENT SAFETY PRACTICES, WHICH MAY CAUSE INJURY TO OTHERS ON OR NEAR THE JOB SITE.

3. FIRE RATED ASSEMBLIES SHALL MAINTAIN RATINGS AS SPECIFIED IN THE CALIFORNIA BUILDING CODE CHAPTER 7. CONTRACTOR SHALL PROVIDE AND INSTALL PHYSICAL ENCLOSURE AROUND FIXTURES, PANELS, ETC. AS REQUIRED. ALL ASSEMBLIES TO BE PENETRATED SHALL BE INSTALLED WITH APPLICABLE THROUGH-PENETRATION FIRESTOP SYSTEM AS DETERMINED BY UL CLASSIFICATION. BEFORE CONSTRUCTION, VERIFY AND COMPLY WITH REQUIREMENTS OF LOCAL AUTHORITY HAVING JURISDICTION.

4. MOUNTING HEIGHTS IN INCHES TO CENTERLINE ABOVE FINISH FLOOR SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:

   +18" AFF: RECEPTACLES, TELEPHONE, TV & DATA OUTLETS.
   +48" AFF: LIGHT SWITCHES.
   +48" AFF: FIRE ALARM MANUAL PULL STATIONS, T-STATS.
   THE LOWER OF +80" AFF TO BOTTOM OF LENS, OR 6" BELOW CEILING: FIRE ALARM VISUALS.

   BEFORE ROUGH-IN, VERIFY ALL MOUNTING HEIGHTS AND EXACT LOCATIONS FOR ALL EQUIPMENT ELECTRICAL CONNECTIONS, STUB-UPS, RECEPTACLES, OUTLETS, ETC. WITH ARCHITECT OR OWNER. PLACE DEVICES LOCATED ABOVE COUNTERS, SHELVING, ETC. AND IN BATHROOMS SO AS NOT TO CONFLICT WITH EDGES OF WAINSCOTING, COUNTER SPLASH, SHELVING, ETC. ARCHITECTURAL SHEETS SHALL GOVERN.

5. LABEL PANELS, CABINETS, BACKBOARDS, MAIN DEVICES, SAFETY SWITCHES, CONTACTORS AND OTHER SPECIFICALLY DESIGNATED EQUIPMENT SHOWN ON PLANS. USE ENGRAVED LAMINATED PLASTIC NAMEPLATES ATTACHED BY SCREWS OR RIVETS. FOR FEEDERS, NEATLY AND INDELIBLY LABEL CONDUIT DESTINATIONS ON BOTH VISIBLE ENDS OF CONDUIT RUNS WHERE CONDUITS TERMINATE AT DESIGNATED ENCLOSURES, STRUCTURES OR EQUIPMENT (INCLUDING PULL AND SPLICE BOXES).

6. EQUIPMENT ANCHORAGE NOTE
   ALL MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE ANCHORED OR BRACED TO MEET THE HORIZONTAL AND VERTICAL FORCES PRESCRIBED IN THE 2007 CBC, SECTION 1614A.1.13 AND ASCE 7-05 SECTIONS 13.3, 13.4 & 13.6.

   THE ATTACHMENT OF THE FOLLOWING ITEMS SHALL BE DESIGNED TO RESIST THE FORCES PRESCRIBED ABOVE, BUT NEED NOT BE DETAILED ON THE PLANS:

   A. EQUIPMENT WEIGHING LESS THAN 400 POUNDS SUPPORTED DIRECTLY ON THE FLOOR OR ROOF.
   B. FURNITURE REQUIRED TO BE ATTACHED IN ACCORDANCE WITH PART 2, TITLE 24, C.C.R..
   C. TEMPORARY OR MOVABLE EQUIPMENT.
   D. EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUPPORTED BY VIBRATION ISOLATORS.
   E. EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

   FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE MECHANICAL/ELECTRICAL ENGINEER AND THE FIELD REPRESENTATIVE OF THE DIVISION OF THE STATE ARCHITECT.

   PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

   PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO RESIST THE FORCES PRESCRIBED IN ASCE 7-05 SECTION 13.3 AS DEFINED IN ASCE 7-05 SECTION 13.6.8, 13.6.7, AND 13.6.5.5, ITEM 6, RESPECTIVELY.

   THE BRACING AND ATTACHMENTS TO THE STRUCTURE SHALL COMPLY WITH ONE OF THE OSHPD PRE-APPROVALS WITH AN OPA#, SUCH AS MASON INDUSTRIES (OPA 349), OR ISAT (OPA 485) AS MODIFIED TO SATISFY ANCHORAGE REQUIREMENTS OF ACI 318, APPENDIX D.

   COPIES OF THE MANUAL SHALL BE ON THE JOBSITE PRIOR TO STARTING HANGING AND BRACING OF THE PIPE, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS.

   THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL SYSTEMS

1. MECHANICAL UNIT CONDUITS: TO PREVENT DAMAGE DUE TO VIBRATION, BOTH POWER AND CONTROL WIRING CONDUITS FEEDING EXTERIOR MECHANICAL UNITS SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR WITH LIQUID TIGHT FLEXIBLE TYPE AT FINAL CONNECTION TO UNIT AND BETWEEN ROOF JACK AND DISCONNECT SWITCH WHERE DISCONNECT IS MOUNTED ON UNIT.

2. MECHANICAL CONTROLS ROUGH-IN: PROVIDE AND INSTALL J-BOX, RING AND CONDUIT (SIZE ALL AS REQUIRED) FROM EACH MECHANICAL CONTROLS LOCATION TO CONTROLLED MECHANICAL UNITS.

3. EXHAUST FANS SHALL BE PROVIDED & INSTALLED BY MECHANICAL CONTRACTOR WITH WIRING CONNECTIONS MADE BY ELECTRICAL CONTRACTOR.

4. MECHANICAL EQUIPMENT CONTROLS: MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOW VOLTAGE WIRE AND CONNECTIONS (BELOW 120 VOLT) TO AND FROM ALL MECHANICAL CONTROL DEVICES. ALL LOW VOLTAGE CONTROL WIRE SHALL BE IN CONDUIT, UNLESS OTHERWISE NOTED.

5. PULLROPES: ANY RACEWAY WITHOUT CABLE OR WIRE SHALL BE INSTALLED WITH MINIMUM 200 POUND TEST PULL LINE AND LARGER IF REQUIRED BY SERVING UTILITY COMPANY. ANY NEW OR EXISTING COMMUNICATION OR SIGNAL RACEWAY ROUTED BETWEEN BUILDINGS, SIGNAL CABINETS, AND/OR SIGNAL CLOSETS WITH FUTURE CAPACITY SHALL BE INSTALLED WITH MINIMUM 200 POUND TEST PULL LINE AS WELL AS THE CALLED FOR CABLE.

EXISTING BUILDINGS

1. ASBESTOS: IF DURING THE COURSE OF WORK THE CONTRACTOR OBSERVES THE EXISTENCE OF ASBESTOS, OR ASBESTOS-BEARING MATERIALS, THE CONTRACTOR SHALL IMMEDIATELY TERMINATE FURTHER WORK ON THE PROJECT AND NOTIFY THE OWNER OF THE CONDITION. THE OWNER WILL, AFTER CONSULTATION WITH THE OWNER'S REPRESENTATIVE, DETERMINE A FURTHER COURSE OF ACTION.

2. ANY DEMOLITION WORK SHOWN WAS PREPARED FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER DOES NOT REPRESENT THAT ALL ITEMS WHICH MAY REQUIRE DEMOLITION HAVE BEEN SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CAREFULLY EXAMINE THE SITE AND THE CONTRACT DOCUMENTS AND TO PERFORM ALL DEMOLITION AND RECONSTRUCTION WHICH MAY BE REQUIRED FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK.

3. EXISTING CONDITIONS: INFORMATION SHOWN FOR EXISTING CONDITIONS WAS PRIMARILY GAINED FROM "AS BUILT" DRAWINGS AND/OR LIMITED FIELD INVESTIGATION. BEFORE BID, VISIT SITE TO VERIFY EXISTING CONDITIONS AND MAKE ALLOWANCE FOR VARIATIONS FROM THAT SHOWN.

4 EXISTING CONDUCTORS: INTERCEPT, EXTEND, REROUTE, REPULL CONDUCTORS, SPLICE AND OTHERWISE MODIFY EXISTING CONDUCTORS OF ALL SYSTEMS AS REQUIRED TO MAINTAIN AND/OR ESTABLISH PROPER FUNCTION AND SATISFY DESIGN INTENT. REMOVE ABANDONED CONDUCTORS.

5. EXISTING COMMUNICATIONS, DATA AND CATV AND OTHER LOW VOLTAGE TYPE SYSTEM OUTLET LOCATIONS SHOWN ON THE PLAN TO BE RELOCATED SHALL BE PERFORMED BY THE ELECTRICAL CONTRACTOR. MODIFY EXISTING SYSTEM AS REQUIRED FOR FULL FUNCTION (SAME AS EXISTING) IN NEW LOCATION.

6. WHERE EXISTING BUILDING CONSTRUCTION, MECHANICAL UNITS AND OTHER EQUIPMENT IS SHOWN TO BE REMOVED, DISCONNECT AND REMOVE ALL ASSOCIATED ELECTRICAL INSTALLATION.

7. CLOSELY COORDINATE OUTAGE AND FACILITY DISRUPTION TIME WITH ARCHITECT AND OWNER. MINIMUM 72-HOUR NOTICE IS REQUIRED BEFORE ANY CIRCUIT SHUTDOWN OR DISRUPTION OF FACILITY PERSONNEL FUNCTIONING.

GENERAL SITE PLAN NOTES

- UTILITY COMPANY CONTACTS: BEFORE CONSTRUCTION, COORDINATE & VERIFY ALL UTILITY COMPANY REQUIREMENTS:

PG&E	RUSS CRACKNELL	(805) 434-4424
AT&T	DIANE VICKERS	(805) 546-7463
CHARTER	BRUCE JENSEN	(805) 783-4950

- TRENCHING AND BACKFILLING FOR ALL CONDUIT SYSTEMS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL CONDUITS SHALL HAVE MINIMUM COVER REQUIREMENTS AS SPECIFIED IN CEC 300-5. MORE STRINGENT DEPTH REQUIREMENTS MAY BE IMPOSED BY UTILITY COMPANY AND / OR THIS SPECIFICATION. JOINT TRENCHING MAY BE UTILIZED WHERE PRACTICABLE AND WHERE PERMITTED BY THIS SPECIFICATION.

- LOCATIONS OF EXISTING UNDERGROUND (UG) UTILITY SYSTEMS SHALL BE DETERMINED BY CALLING UNDERGROUND SERVICE ALERT (USA). WHEN PLANNING UNDERGROUND WORK, AND BEFORE YOU DIG, CONTACT UNDERGROUND SERVICE ALERT (USA) AT LEAST 48 HOURS PRIOR TO EXCAVATION (WEEKENDS EXCLUDED) FOR THE LOCATION OF UNDERGROUND GAS AND ELECTRIC LINES OR EQUIPMENT.

- MAINTAIN REQUIRED CLEARANCES FROM ALL SANITARY SEWER, WATER AND STORM DRAIN PIPING. REFER TO CIVIL PLANS FOR EXACT LOCATIONS AND DEPTHS OF PIPING.

- ALL SITE UTILITY WORK SHALL BE INSTALLED PER THE UTILITY COMPANY ISSUED CONSTRUCTION DRAWINGS AND SPECIFICATIONS SPECIFIC TO THIS PROJECT. ANY UTILITY WORK PERFORMED WITHOUT PRIOR UTILITY COMPANY APPROVAL SHALL BE DONE AT THE CONTRACTOR'S RISK.

- THOMA HAS CONTACTED EACH OF THE ABOVE UTILITIES IN AN EFFORT TO REFLECT THE UTILITY WORK THAT WILL BE REQUIRED AS PART OF THIS PROJECT. WHERE A UTILITY PLAN HAS BEEN MARKED UP AND SENT BACK TO OUR OFFICE WITH A UTILITY REQUIREMENT, IT HAS BEEN REFLECTED ON THE PLANS. IF PLANS WERE NOT RECEIVED BACK FROM A UTILITY, WE HAVE INDICATED OUR BEST ESTIMATION OF THEIR REQUIREMENTS. THE UTILITY WORK SHOWN ON THE CONSTRUCTION DOCUMENT IS:

ELECTRIC UTILITY (PG&E)	TELEPHONE UTILITY (VERIZON)	CATV UTILITY (COMCAST)
☐ AN ESTIMATE ONLY	☐ AN ESTIMATE ONLY	☐ AN ESTIMATE ONLY
☒ BASED ON PHONE CONVERSATION ON 05-14-10.	☒ BASED ON SITE MEETING/DISCUSSION ON 5-6-10.	☒ BASED ON SITE MEETING/DISCUSSION ON 5-6-10.

GENERAL LIGHTING PLAN NOTES

- DUAL LEVEL SWITCHING: IN ROOMS 100 SQ. FT. OR LARGER, OR WHERE INDICATED ON PLANS, CONTROL INBOARD LAMPS BY ONE SWITCH AND OUTBOARD LAMPS BY OTHER SWITCH.

- NIGHT LIGHT (NL) DESIGNATED LUMINAIRES IN INTERIOR LOCATIONS SHALL HAVE ONE BALLAST CONTINUOUSLY ENERGIZED. LUMINAIRES IN EXTERIOR LOCATIONS SHALL BE AUTOMATICALLY CONTROLLED TO BE ON FROM DUSK TO DAWN.

- LIGHTING FIXTURE LOCATIONS SHOWN ARE SCHEMATIC. REFER TO ARCHITECTURAL PLANS (REFLECTED CEILING, ELEVATIONS, ETC.) FOR EXACT LOCATIONS AND MOUNTING HEIGHTS PRIOR TO ROUGH-IN.

- REFER TO ARCHITECT'S REFLECTED CEILING PLAN(S) FOR CEILING HEIGHTS, TYPES, FINISHES, ETC. IN EACH AREA. VERIFY FLANGE TYPES, TRIM KITS, STEM LENGTHS, ETC. FOR ALL FIXTURES PRIOR TO SUBMITTALS.

- CONFIRM LOCATION OF ALL DOORS SWINGS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN OF SWITCHES.

- PROVIDE UNSWITCHED HOT LEG OF ROOM LIGHTING BRANCH CIRCUIT TO EACH BATTERY POWERED EMERGENCY LIGHT AND EXIT SIGN FOR CONTINUOUS CHARGING.

GENERAL POWER PLAN NOTES

- FUSING: ALL FUSIBLE SAFETY DISCONNECT SWITCHES SHALL BE PROVIDED WITH DUAL-ELEMENT TIME DELAY TYPE FUSES SIZED AND RATED PER EQUIPMENT MANUFACTURERS' RECOMMENDATIONS. VERIFY WITH EQUIPMENT NAMEPLATE BEFORE INSTALLATION.

- MOTOR OVERLOAD PROTECTION: WHERE REQUIRED BY NEC ARTICLE 430 PART C AND NOT SHOWN ON PLAN OR PROVIDED INTEGRAL WITH EQUIPMENT, PROVIDE AND INSTALL THERMAL OVERLOAD PROTECTION FOR ALL MOTORS.

- DEVICE LOCATIONS SHOWN ARE SCHEMATIC AND APPROXIMATE. EXACT LOCATIONS SHALL BE FIELD VERIFIED DURING ROUGH-IN WITH ARCHITECTURAL ELEVATIONS, CASEWORK SHOP DRAWINGS, FURNITURE, ETC. AND SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICT WITH OTHER EQUIPMENT.

- ELECTRICAL AND COMMUNICATIONS OUTLETS SHOWN IN THE SAME LOCATION, SHALL BE MOUNTED ON OPPOSITE SIDES OF THE SAME STUD. COORDINATE BETWEEN ELECTRICAL AND COMMUNICATIONS PLANS.

GENERAL COMMUNICATION PLAN NOTES

- SIGNAL AND COMMUNICATIONS SYSTEMS RACEWAYS AND BOXES: PROVIDE AND INSTALL 4" SQUARE RECESSED JUNCTION BOX WITH 1-GANG RING AND (1) 1" CONDUIT TO 'TTB' AT EACH WALL COMBINATION VOICE/DATA OUTLET.

- BEFORE CONSTRUCTION, COORDINATE AND VERIFY ALL DATA AND TELEPHONE LOCATIONS WITH OWNER OR ARCHITECT.

- TELEVISION PREWIRE: EACH TELEVISION OUTLET SHOWN ON THE PLANS SHALL HAVE AN RG6U (WITH QUAD SHIELD) COAXIAL CABLE HOMERUN PREWIRED TO THE CATV TERMINAL BOARD. LABEL AND LEAVE ADEQUATE SLACK FOR UTILITY CONNECTION.

- DEVICE LOCATIONS SHOWN ARE SCHEMATIC AND APPROXIMATE. EXACT LOCATIONS SHALL BE FIELD VERIFIED DURING ROUGH-IN WITH ARCHITECTURAL ELEVATIONS, CASEWORK SHOP DRAWINGS, FURNITURE, ETC. AND SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICT WITH OTHER EQUIPMENT.

- ELECTRICAL AND COMMUNICATIONS OUTLETS SHOWN IN THE SAME LOCATION, SHALL BE MOUNTED ON OPPOSITE SIDES OF THE SAME STUD. COORDINATE BETWEEN ELECTRICAL AND COMMUNICATIONS PLANS.

LEGEND

NOTE: INTERPRET IN CONTEXT

LIGHT FIXTURES

- CEILING SURFACEMOUNT
- WALL SURFACEMOUNT
- PENDANT MOUNT
- RECESSED DOWNLIGHT
- RECESSED WALLWASH
- RECESSED FLUOR.
- SURFACE FLUOR.
- FLUOR. STRIP UON
- TRACK LIGHT
- DIRECTIONAL FLOOD
- EMERGENCY FIXTURE
- POLE LIGHT
- POLE LIGHT- DECORATIVE
- UPLIGHT- FLUSH IN GRADE
- BOLLARD
- TANDEM-WIRED LAMPS
- UNDERCABINET LIGHT
- WALL SURFACEMOUNT LINEAR TYPE
- PENDANT LINEAR FLUOR.
- RECESSED WALLMOUNT
- WALLPACK
- EXIT LIGHT- WALL
- EXIT LIGHT- CEILING (ARROW INDICATES DIRECTION)
- A LETTER ADJACENT INDICATES FIXTURE TYPE
- PC PHOTO CELL
- B LIGHT FIXTURE WITH EMERGENCY BATTERY BACK-UP OR ON EMERGENCY POWER CIRCUIT

FIRE SPRINKLER MONITORING

- H HORN- AUDIBLE DEVICE
- V VISUAL- VISUAL DEVICE
- AV AUDIBLE/VISUAL
- F FLOW SWITCH
- T TAMPER SWITCH
- P MANUAL PULL STATION
- SD SMOKE DETECTOR
- SD D DUCT SMOKE DETECTOR
- H HEAT DETECTOR
- B BELL
- END OF LINE RESISTOR
- C CHIME

POWER/COMM.

- SINGLE RECEPT.
- DUPLEX RECEPT.
- DUPLEX- HALF SWITCHED
- DOUBLE DUPLEX
- SPECIAL CONFIGURATION
- FLOORMOUNT 208V, 1ø RECEPT
- DUPLEX- FLOOR OUTLET
- GFI GROUND FAULT CIRCUIT INTERRUPT
- J JUNCTION BOX
- TELEPHONE OUTLET
- DATA OUTLET
- PHONE/DATA COMBO OUTLET
- TV TELEVISION OUTLET
- SAFETY DISCONNECT
- DROP CORD RECEPT
- J C ABOVE-CLGMOUNT J-BOX
- TV TV OUTLET-FLOORMOUNT
- TELEPHONE FLOOR OUTLET
- DATA FLOOR OUTLET
- PHONE/DATA COMBO FLOOR OUTLET
- MULTI-SERVICE FLOOR BOX WITH POWER & TELECOM DEVICES AS NOTED
- DOT INDICATES DEVICE TO BE MOUNTED ABOVE COUNTER
- TV RECEPTACLE MOUNTED AT TV LOCATION

SWITCHES

- $ SPST
- $2 DPST
- $3 3-WAY
- $4 4-WAY
- $D DIMMER
- $T TIMER SWITCH
- $T W/THERMAL OVERLOAD
- $P W/PILOT LIGHT
- $K KEY OPERATED
- $$ DUAL LEVEL SWITCHING
- (a) SWITCHLEG DESIGNATION
- OS OCCUPANCY SENSOR
- $ OS OCCUPANCY SENSOR, DUAL LEVEL WALL MOUNT.
- $LV LOW VOLTAGE SWITCH(ES)

CONDUIT/WIRE

- NEW
- UNDERGROUND
- NEW POWER HOMERUN (3 HOTS & NEUT SHOWN)
- GROUND
- ISOLATED GROUND
- EXISTING TO REMAIN
- (E) POWER HOMERUN
- WIRE LINE- CONTINUES
- 3 CONDUIT STUB (W/MARKER)
- VERTICAL CONDUIT RUN
- CONDUIT SEAL
- FLEXIBLE CONNECTION
- LOW VOLTAGE
- SURFACEMOUNT RACEWAY
- INDICATES LINE CONTINUES
- CORD W/PLUG

MISCELLANEOUS

- MOTOR
- T THERMOSTAT
- CIRCUIT BREAKER
- FUSIBLE SWITCH
- GROUND
- PHASE
- CLOCK
- CLOCK/SPEAKER COMBINATION
- WALL MOUNTED CLOCK
- PUSHBUTTON
- FLUSHMOUNT PANEL
- SURFACEMOUNT PANEL
- FLUSHMOUNT CABINET
- SURFACEMOUNT CABINET
- DM DAMPER MOTOR
- H HUMIDISTAT
- M MAGNETIC CONTACTOR
- COMBINATION STARTER
- HATCHING INDICATES ITEM IS TO BE REMOVED

ABBREVIATIONS

A	AMPERE	FACP	FIRE ALARM CONTROL PANEL	OCP	OVERCURRENT PROTECTION
AB	AMP BREAKER	FAT	FIRE ALARM TERMINAL	OD	OUTSIDE DIAMETER
ABAND	ABANDONED	FAU	FORCED AIR UNIT	OH	OVERHEAD
ABV	ABOVE	FBO	FURNISHED BY OTHERS	OSA	OFFICE of the STATE ARCHITECT
AC	ALTERNATING CURRENT	FC-#	FAN COIL	OSHPD	OFFICE of STATEWIDE HEALTH PLANNING & DEVELOPMENT
AC-#	AIR CONDITIONER	FLA	FULL LOAD AMPS		
ADJ	ADJACENT	FLR	FLOOR	OVLD	OVERLOAD
AF	AMP FUSE, AMP FRAME	FLUOR	FLUORESCENT	P	POLE
AFF	ABOVE FINISH FLOOR	FS	FUSIBLE SWITCH	PA	PUBLIC ADDRESS
AFG	ABOVE FINISH GRADE	FVNR	FULL VOLTAGE NON-REVERSING	PB	PULLBOX
AIC	AMPERES INTERRUPTING CAPACITY	G	GROUNDING CONDUCTOR	PC	PULL CHAIN
AI	ALUMINUM	GC	GENERAL CONTRACTOR	PC	PHOTOCELL
AS	AMP SWITCH RATING	GD	GARBAGE DISPOSAL	PC	PLUMBING CONTRACTOR
ATS	AUTOMATIC TIME SWITCH	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	ph	PHASE
ATS	AUTOMATIC TRANSFER SWITCH	GFI	GROUND FAULT CIRCUIT INTERRUPTER	PNL	PANEL
AV	AUDIBLE/AUDIO VISUAL	GND	GROUND	POC	POINT OF CONNECTION
AWG	AMERICAN WIRE GAGE	GRS	GALVANIZED RIGID STEEL	-PP-	POWER PRIMARY
BFG	BELOW FINISH GRADE	GWS	GANG WITH SWITCH	-PS-	POWER SECONDARY
BIL	BASIC IMPULSE LEVEL	H	HEIGHT, HIGH	(R)	RELOCATE(D)
BLDG	BUILDING	HACR	HEATING, AC & REFRIG	RECEPT	RECEPTACLE
C	CONDUIT	HID	HIGH INTENSITY DISCHARGE	REF	REFRIGERATOR
-C-	CATV CONDUIT	HO	HIGH OUTPUT	REQ'D	REQUIRED
CAB'T	CABINET	HOA	HAND-OFF-AUTO	RLA	RATED LOAD AMPS
CATV	CABLE TELEVISION	hp	HORSEPOWER	RM	ROOM
CB	CIRCUIT BREAKER, CODE BLUE	HPF	HIGH POWER FACTOR	RMC	RIGID METAL CONDUIT
CBC	CA. BUILDING CODE	HPS	HIGH PRESSURE SODIUM	RMV	REMOVE
CEC	CA. ELECTRICAL CODE	IC	INTERCOM	RPLC	REPLACE
	CA. ENERGY COMMISSION	ID	IDENTIFICATION	RS	RAPID START
CF	COMPACT FLUORESCENT	IF	INSIDE FROST	SC	SIGNAL CABINET
CFC	CALIFORNIA FIRE CODE	IG	ISOLATED GROUND	SCC	SHORT CKT CURRENT
CLG	CEILING	J-BOX	JUNCTION BOX	SFM	STATE FIRE MARSHAL
CL	CENTER LINE	K	QUANTITY 1000	SHT	SHEET
CKT	CIRCUIT	kVA	KILOVOLTAMPS	SL	SLIMLINE, SWITCH LEG
CNT'R	CONTRACTOR	kW	KILOWATT	SPEC	SPECIFICATION
C.O.	CONDUIT ONLY (W/PULLROPE)	LC	LIGHTING CONTACTOR	SPST	SINGLE POLE SINGLE THROW
COND	CONDUIT, CONDUCTOR	LPS	LOW PRESSURE SODIUM	SQ	SQUARE
CR	CRITICAL BRANCH	LRA	LOCKED ROTOR AMPS	STR'G	STORAGE
CSFM	CALIFORNIA SFM	LS	LIFE SAFETY BRANCH	SURF	SURFACE
CT	CURRENT TRANSFORMER	LT	LIGHT	SVC	SERVICE
Cu	COPPER	LTG	LIGHTING	SW	SWITCH
CU-#	CONDENSING UNIT	LV	LOW VOLTAGE	T	TRANSFORMER, TERMINAL
D	DEPTH	MC	MECHANICAL CONTRACTOR	-T-	TELEPHONE CONDUIT
(D)	DEMO	MCA	MINIMUM CKT AMPS	(TBR)	TO BE REMOVED
DC	DIRECT CURRENT	MCB	MAIN CIRCUIT BREAKER	TC	TIME CLOCK
DF	DRINKING FOUNTAIN	MCTB	MAIN CATV TERMINAL BOARD	TEL	TELEPHONE
DIA	DIAMETER	MCTC	MAIN CATV TERMINAL CABINET	TELCO	TELEPHONE COMPANY
DISC	DISCONNECT	MECH	MECHANICAL	TS	TIME SWITCH
DIST	DISTRIBUTION	MFR	MANUFACTURER	TSO	TIME SWITCH OVERRIDE
DPST	DOUBLE POLE SINGLE THROW	MFS	MAIN FUSIBLE SWITCH	TSP	TWISTED SHIELDED PAIR
DW	DISHWASHER	MH	METAL HALIDE	TTB	TELEPHONE TERMINAL BOARD
EM	EMERGENCY	MLO	MAIN LUGS ONLY	TTC	TELEPHONE TERMINAL CABINET
(E)	EXISTING	MOCP	MAXIMUM OCP	TX	TRANSFORMER
EA	EACH	MSB	MAIN SWITCHBOARD	TYP	TYPICAL
EB	ELECTRONIC BALLAST	MT	MOUNT	TYP SIM	TYPICAL SIMILAR
EC	ELECTRICAL CONTRACTOR	MT HT	MOUNTING HEIGHT	UC	UNDERCABINET, UNDERCOUNTER
EC-#	EVAPORATIVE COOLER	MTS	MANUAL TRANSFER SWITCH	UG	UNDERGROUND
EF-#	EXHAUST FAN	MTTB	MAIN TELEPHONE TERMINAL BOARD	UGPS	UNDERGROUND PULL SECTION
EL	EVENING LIGHT	MTTC	MAIN TELEPHONE TERMINAL CABINET	UL	UNDERWRITERS LABORATORIES
ELEC	ELECTRICAL	MW	MICROWAVE	UON	UNLESS OTHERWISE NOTED
EM	EMERG BATTERY BACKUP	N	NEUTRAL (GROUNDED CONDUCTOR)	USA	UG SVC ALERT 800-642-2444
EMB	EMERGENCY BALLAST	(N)	NEW	V	VOLT
EMERG	EMERGENCY	N3R	NEMA 3R	VA	VOLT AMPERES
EOL	END OF LINE	NC	NORMALLY CLOSED	VAC	VOLT ALTERNATING CURRENT
EQUIP'T	EQUIPMENT	NEC	NATIONAL ELECTRICAL CODE	VHO	VERY HIGH OUTPUT
ES	ENERGY SAVING	NEMA	NAT'L ELEC MANUFACTURER'S ASSOC	VOLT	VOLTAGE
(EXN)	(E) IN (N) LOCATION	NF	NON-FUSED	VR	VANDAL-RESISTANT
(EXR)	(E) TO BE (R)	NIC	NOT IN CONTRACT	W	WIDTH, WATT, WIRE
EXT	EXTERIOR	NL	NIGHT LIGHT	WH-#	WATER HEATER
F	FLUORESCENT	NO	NORMALLY OPEN	WP	WEATHERPROOF (NEMA 3R)
(F)	FUTURE	NPF	NORMAL POWER FACTOR	XFMR	TRANSFORMER
F-#	FURNACE	NTS	NOT TO SCALE	+48	INDICATES MOUNTING HEIGHT AFF
FA	FIRE ALARM	OC	ON CENTER		

ROOF PLAN NOTES

- PROVIDE SEALTITE POWER & CONTROL CONNECTIONS TO ALL AC UNITS.
- ALL EQUIPMENT SHOWN ABOVE ROOF IS NEMA 3R.
- VERIFY EXACT EQUIPMENT LOCATIONS AND POINTS OF CONNECTION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
- CONDUIT SHOWN IS ROUTED IN CEILING SPACE BELOW ROOF DECK.
- NO ROOF MOUNT CONDUIT IS ALLOWED UNLESS OTHERWISE NOTED.
- FUSE DISCONNECT SWITCHES PER EQUIPMENT NAMEPLATE RATING.
- ALL ROOF PENETRATIONS SHALL BE MADE WITH ROOF JACKS, SEAL ALL PENETRATIONS WITH MASTIC.

PROJECT

ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER JT

DRAWN BY DM

DATES

1	FIRST SUBMITTAL	5/28/10
1	PLAN CHECK 1	8/16/10

SIGNED

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REGISTERED PROFESSIONAL ENGINEER WILLIAM A. THOMA NO. 10757 ELECTRICAL STATE OF CALIFORNIA

EXPIRES: 06/30/11
THOMA #10-8055

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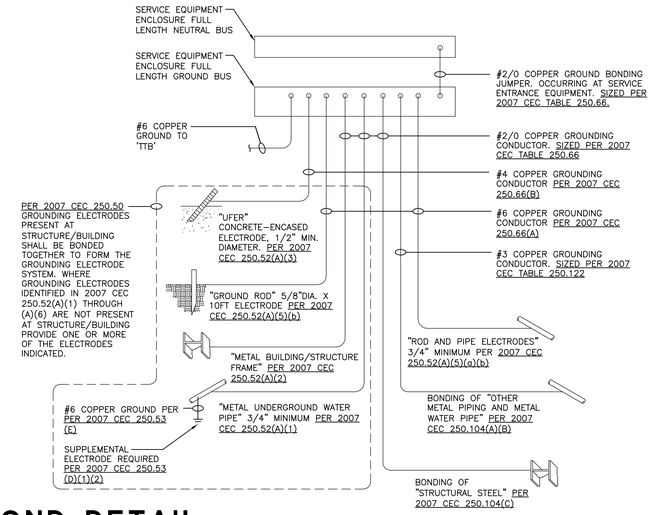
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SHEET TITLE

GENERAL NOTES AND LEGEND

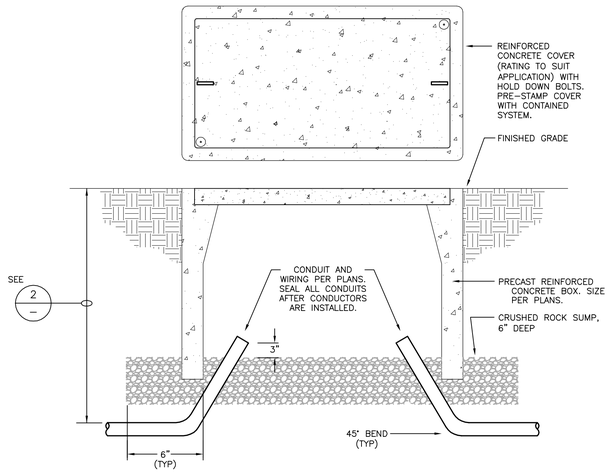
SHEET #

E0.1



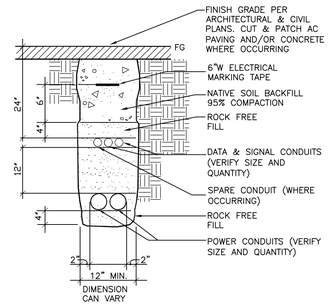
1 GROUND/BOND DETAIL

NTS



4 PULLBOX DETAIL

NTS



NOTE: CONDUITS SHOWN ARE TYPICAL. VERIFY EXACT NUMBER OF CONDUITS FROM SITE PLAN AND SINGLE LINE DIAGRAM.

2 COMMON TRENCH DETAIL

NTS

WARNING

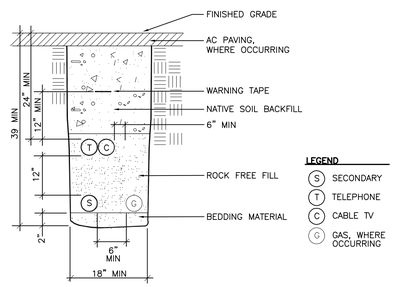
POTENTIAL ARC FLASH HAZARD
Appropriate PPE and Tools Required when working on this equipment

"PPE" REFERS TO "PERSONAL PROTECTIVE EQUIPMENT".

NOTE:
IN ACCORDANCE WITH CEC 110.16. PROVIDE ARC FLASH PROTECTION WARNING LABELS ON EACH SWITCHBOARD, PANELBOARD, AND TRANSFORMER. LABELS SHALL BE PER ANSI Z535.4 GUIDELINES.

5 ARC FLASH SIGNAGE

NTS



3 UTILITY TRENCH DETAIL

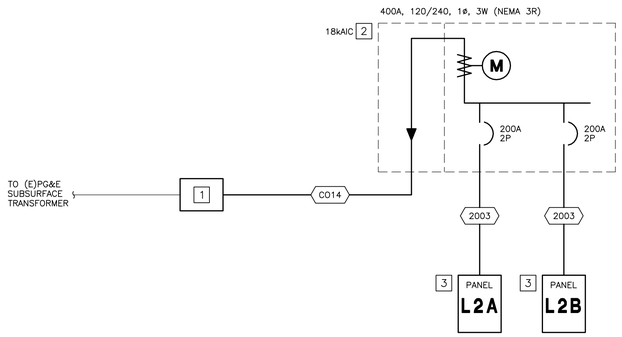
NTS

SINGLE LINE DIAGRAM NOTES

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT AND COORDINATE WITH THE SERVING UTILITY TO ENSURE ALL SERVING UTILITY REQUIREMENTS ARE MET.
- SERVICE ENTRANCE EQUIPMENT SHALL BE IN ACCORDANCE WITH THE SERVING ELECTRIC UTILITY COMPANY'S REQUIREMENTS.
- ALL CONDUCTORS SHALL BE COPPER WITH TYPE [THHN/THWN] INSULATION UNLESS OTHERWISE NOTED.
- ALL SWITCHES, CIRCUIT BREAKERS AND OTHER EQUIPMENT, AS SPECIFIED, SHALL HAVE TERMINATION PROVISIONS LISTED AND IDENTIFIED FOR USE WITH 75 DEG. CONDUCTORS, AND ALL FEEDER CONDUCTORS, AND CONDUITS, ARE SIZE BASED ON USE OF 75 DEG. C COPPER WIRES TYPE THWN/THHN.
- DESIGN SHOWN IS BASED ON EATON PRODUCT. ENGINEER-APPROVED EQUAL ALTERNATE PRODUCT WILL BE ACCEPTABLE.
- ALL EQUIPMENT SHALL HAVE AN APPROVED TESTING LABORATORY LABEL ATTACHED [UL, CSA, ETC.] (CEC 110-2).
- THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR SUPPLYING SWITCHGEAR SIZED TO FIT IN THE AVAILABLE SPACE IN THE ELECTRIC ROOM. REFER TO ARCHITECTURAL PLANS FOR DIMENSIONAL INFORMATION NOT SHOWN ON THE ELECTRICAL PLANS. CONTRACTOR SHALL SUBMIT A 1/4" SCALE DRAWING OF ALL SWITCHGEAR, AND TERMINATION CABINETS ON FLOOR PLAN WITH SUBMITTAL.

COPPER FEEDER SCHEDULE

FEEDER	RACEWAY	CONDUCTORS
C014	(1) 4"C	CONDUIT ONLY WITH PULL ROPE.
2003	(1) 2"C	(3) #3/0 THWN & (1) #6 GND.



REFERENCE NOTES

1. PG&E SECONDARY PULL BOXES. VERIFY REQUIREMENTS WITH PG&E HANDOUT PACKAGE. REFER TO SITE PLAN FOR LOCATION.
2. NEW COMMON BUILDING 400A (320A CONTINUOUS) SERVICE METER/MAIN WITH (2) 200A MAIN CIRCUIT BREAKERS TO FEED BRANCH CIRCUIT PANELS. SEE FLOOR PLAN FOR LOCATION.
3. NEW BRANCH CIRCUIT PANEL. SEE FLOOR PLAN FOR LOCATION.

SINGLE LINE DIAGRAM

PROJECT

ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB # 0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER JT

DRAWN BY DM

DATES
1 PLAN CHECK 1 8/16/10
FIRST SUBMITTAL 5/28/10

SIGNED

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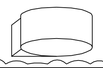
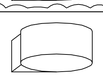
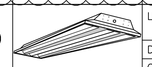
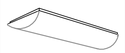
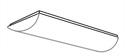
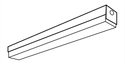
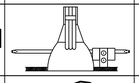
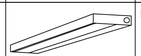
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SHEET TITLE

SINGLE LINE DIAGRAM

SHEET # **E0.2**

LIGHTING FIXTURE SCHEDULE

TYPE	ILLUSTRATION	MANUFACTURER	CATALOG NO.	VOLTAGE	MAX. VA.	LAMPING	MOUNTING	DESCRIPTION
A		SHAPER	697-WP-CFL/1 26-120V-BK	120	28	(1)26W CFL	WALL	WALL MOUNTED HOOD DOWNLIGHT, WET LOCATION RATED
AE		SHAPER	697-WP-CFL/1 26-120V-BK WITH REMOTE EMERGENCY BATTERY BACKUP	120	28	(1)26W CFL	WALL	WALL MOUNTED HOOD DOWNLIGHT, WET LOCATION RATED W/ REMOTE EMERG. BATTERY BACKUP MINIMUM 90 MINUTE 1100 LUMEN (1)
B		PROGRESS	P5675-31-P8799-31	120	150	(2)75W PAR-30	WALL	5" UP/DOWN WALL MOUNTED CYLINDER, WET LOCATION RATED (WITH TOP LENS COVER)
CE		HE WILLIAMS	PHSQ80-226T-EB-FF-EM	120	55	(2)26W CFL	FLUSH	SQUARE RECESSED DOWNLIGHT, DAMP LOCATION RATED W/ EMERGENCY BATTERY BACKUP MINIMUM 90 MINUTE 750 LUMEN (1)
D		LITHONIA	2RT8B-232-MVOLT-BSNP	120	62	(2)32W T8	RECESSED	2X4 DIRECT/INDIRECT TROFFER WITH STEP-DIMMING BALLAST
		DAY-BRITE	2-AT SERIES					
		COOPER	2AC SERIES					
E1		LITHONIA	11602-32-120-GEB10RS	120	62	(2)32W T8	SURFACE	1'x4' FLUORESCENT WRAP, DAMP LOCATION RATED
E2		LITHONIA	11602-32-120-GEB10RS -EL14 WHERE INDICATED W/ 'EM'	120	124	(4)32W T8 (2-LAMP CROSS-SECTION)	SURFACE	1'x8' FLUORESCENT WRAP (TWO 1'x4' SECTIONS), DAMP LOCATION RATED W/ EMERGENCY BATTERY PACK FOR 'EM' FIXTURES
E3		LITHONIA	CS-1-32-120-GEB10PS	120	32	(1)32W T8	SURFACE	4' WRAP
F		LITHONIA	CA-1-32-AR-MVOLT-GEB10PS	120	32	(1)32W T8	WALL	4' WRAP
G1		HALO	H280E-406WB	120	21	(1)18W CFL	FLUSH	6" RECESSED DOWNLIGHT WITH VERTICAL LAMP
G2		HALO	H280EICAT-406WB	120	21	(1)18W CFL	FLUSH	6" RECESSED DOWNLIGHT WITH VERTICAL LAMP, WITH IC HOUSING
H		LIGHTOLIER	5241WH239U	120	70	(2)39W CFL	SURFACE	SURFACE DRUM
J1		BORDEN	318-24-CF4/32 PAR 20-120-SAL-XX	120	202	(4)32W CFL AND (1)50W PAR-20	PENDANT	24" DIA. SUSPENDED DIRECT/INDIRECT BOWL WITH DOWNLIGHT *PENDANT LENGTH BY ARCHITECT
J2		BORDEN	318-40-CF4/57 PAR 30-120-SAL-(DIM)-* (ADVANCE MARK 10 BALLAST)	120	339	(4)57W CFL AND (1)75W PAR-30	PENDANT	40" DIA. DIRECT/INDIRECT SUSPENDED BOWL & DOWN LIGHT W/ ADVANCE MARK10 DIMMING BALLAST *PENDANT LENGTH BY ARCHITECT
K		SHAPER	653-CFL/2/32-120-NA	120	69	(2)32W CFL	WALL	WALL MOUNTED UP/DOWN CYLINDER
L		KENALL	AUCSD-I-MW-50-RS-120-CS	120	32	(1)32W T8	SURFACE	4' UNDERCABINET
M		BORDEN	574-24-2-T5/14-120-MW	120	34	(2)14W T5	WALL	2' VANITY LIGHT
N		COOPER	AEL1SD-WH-SD	120	1	(1)6W XENON	WALL	EMERGENCY LIGHT WITH SELF DIAGNOSTICS AND BATTERY BACKUP MINIMUM 90 MINUTE 330 LUMEN (1)
X1		COOPER	CAX7-1-70-R-W SD	120	10	LED	SURFACE	SINGLE SIDED EXIT SIGN WITH SELF DIAGNOSTICS

(E) PANEL L1

200A,120/240V,1ø, 3W, MLO
(30) FULL SIZE ____ CB SPACES
SURFACE MOUNT, NEMA
LOCATION: LAUNDRY BLDG.
WITH EQUIP'T GND BUS

SEE NOTE	CKT #	DESCRIPTION	AMP CB # POLE	WIRE SIZE	PHASE A VA	PHASE B VA	WIRE SIZE	AMP CB # POLE	DESCRIPTION	CKT #	SEE NOTE
8	1	RECEPTACLES	20/1		360		12	20/1	**(N) RECEPTACLES- SHOP**	2	9
					540						
8	3	RECEPTACLES	20/1			360		20/1	LIGHTS- INTERIOR	4	1,8
						710					
8	5	RECEPTACLES	20/1		360			20/1	LIGHTS- EXTERIOR	6	8
					60						
8	7	RECEPTACLES	20/1			360		20/1	RECEPTACLES- WASHER	8	8
						1000					
8	9	RECEPTACLES	20/1		630			20/1	RECEPTACLES- WASHER	10	8
					100						
8	11	RECEPTACLES EXTERIOR	20/1			180		20/1	RECEPTACLES- WASHER	12	8
						1000					
8	13	PUMP	20/1		630			20/1	IRRIGATION CONTROLLER	14	8
					100						
9	15	**(N) RECEPTACLES- SHOP**	20/1	12		**540**		20/1	SPARE	16	8
8	17	WATER HEATER	30/2		2000			20/1	SPARE	18	8
8	19	"				2000		20/1	SPARE	20	8
8	21	DRYER	40/2		3600			40	DRYER	22	8
					3600						
8	23	"				3600		2	"	24	8
	25	SPACE			**248**		12	20/1	**(N) LIGHTS - SHOP**	26	1,7
1,4,7	27	**(N) M - EH-1**	20/2	12		**750**	12	20/2	**(N) M - EH-1**	28	1,4,7
					750						
1,4,7	29	"		12	**750**		12		"	30	1,4,7
					750			2			
		CONNECTED LOAD (VA) =			**13728**	**14850**					
		25% OF CONTINUOUS LOAD =			**437**	**553**					
		TOTAL (VA) =			**14165**	**15403**					
		TOTAL ÷ 120 VOLT =			**118 A**	**128 A**					

(N) PANEL L2A

225A,120/240V, 1ø, 3W
30 FULL SIZE BOLTON CB SPACES
18K AIC PANEL & BRANCH CB'S
MLO
SURFACE MOUNT, NEMA 1
LOCATION: ELECTRIC ROOM
WITH EQUIP'T GND BUS

SEE NOTE	CKT #	DESCRIPTION	AMP CB # POLE	WIRE SIZE	PHASE A VA	PHASE B VA	WIRE SIZE	AMP CB # POLE	DESCRIPTION	CKT #	SEE NOTE
	1	R - MECH & ELEC RMS, RESTRMS & M - WH-1	20/1	12	1180		12	20/1	R - CLASSROOM	2	
					900						
	3	R - CONSELING OFFICE	20/1	12		1080	12	20/1	R - MULTI-PURPOSE & CLASSROOM	4	
						900					
	5	R - OFFICE	20/1	12	1080		12	20/1	R - MULTI-PURPOSE & CLASSROOM	6	
					900						
	7	R - LAUNDRY & MULTI-PURPOSE	20/1	12		1080	12	20/1	R - KITCHEN CONVENIENCE	8	5
						1500					
	9	K - REFRIGERATOR	20/1	12	1200		12	20/1	R - KITCHEN CONVENIENCE	10	5
					1500						
	11	K - DISHWASHER (1)	20/1	12		1500	12	20/1	L - MULTI-PURPOSE RM (PENDANTS)	12	1
						1356					
5	13	K - RANGE & HOOD	20/1	12	1500		12	20/1	L - MULTI-PURPOSE RM, HALLS, & WAITING	14	1
					423						
6	15	M - FIRE SPRINKLER BELL	20/1	12		200	12	20/1	L - MISC. ROOMS	16	1
						1208					
6	17	M - 'FACP'	20/1	12	200		12	20/1	M - 'TTB'	18	
					360						
	19	SPARE	20/1			450	12	20/1	L - (E) SITE LIGHTING	20	1,3
1,3	21	L - EXT. BLDG. MOUNT & TIME SWITCH 'TS2'	20/1	12	500		12	20/1	L - (E) SITE LIGHTING	22	1,3
					975						
	23	E - WASHER	20/1	12		1500	12	20/1	E - DRYER (GAS)	24	
						1500					
	25	E - WASHER	20/1	12	1500		12	20/1	E - DRYER (GAS)	26	
					1500						
	27	E - WASHER	20/1	12		1500	12	20/1	E - DRYER (GAS) (1)	28	
						1500					
	29	M - IRRIGATION CONTROLLER	20/1	12	200			20/1	SPARE	30	
		CONNECTED LOAD (VA) =			13918	15274					
		25% OF CONTINUOUS LOAD =			475	754					
		TOTAL (VA) =			14393	16028					
		TOTAL ÷ 120 VOLT =			120 A	134 A					

(N) PANEL L2B

225A,120/240V, 1ø, 3W
30 FULL SIZE BOLTON CB SPACES
18K AIC PANEL & BRANCH CB'S
MLO
SURFACE MOUNT, NEMA 1
LOCATION: ELECTRIC ROOM
WITH EQUIP'T GND BUS

SEE NOTE	CKT #	DESCRIPTION	AMP CB # POLE	WIRE SIZE	PHASE A VA	PHASE B VA	WIRE SIZE	AMP CB # POLE	DESCRIPTION	CKT #	SEE NOTE
4	1	M - AC-1	70/2	6	6324			20/1	SPARE	2	
4	3	"		6		6324		20/1	SPARE (1)	4	
4	5	M - AC-2	45/2	8	4404			20/1	SPARE	6	
4	7	"		8		4404	12	20/1	M - EF-1	8	4
						200					
4	9	M - AC-3	60/2	8	5460		8	40/1	M - WH-2	10	4
					3500						
4	11	"		8		5460		20/1	SPARE	12	
	13	SPARE	20/1					20/1	SPARE	14	
	15	SPARE	20/1					20/1	SPARE (1)	16	
	17	SPARE	20/1					20/1	SPARE	18	
	19	SPARE	20/1					20/1	SPARE	20	
	21	SPACE						20/1	SPARE	22	
	23	SPACE							SPACE	24	
	25	SPACE							SPACE	26	
	27	SPACE							SPACE	28	
	29	SPACE							SPACE	30	
		CONNECTED LOAD (VA) =			19688	16388					
		25% OF CONTINUOUS LOAD =			0	0					
		TOTAL (VA) =			19688	16388					
		TOTAL ÷ 120 VOLT =			164 A	137 A					

LIGHTING FIXTURE SCHEDULE NOTES

- ILLUSTRATIONS AND/OR DIMENSIONS ARE APPROXIMATIONS ONLY INTENDED TO REPRESENT BASIC FIXTURE TYPE; DO NOT USE AS EXACT INFORMATION SOURCE. REFER TO MANUFACTURER CUT SHEETS.
- EXACT LOCATIONS: BEFORE CONSTRUCTION, VERIFY WITH ARCHITECT EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL LIGHT FIXTURES. SEE ARCHITECTURAL REFLECTED CEILING PLANS AND ELEVATIONS AS APPLICABLE.
- FIXTURE BRANCH CIRCUIT THROUGH-WIRING: VERIFY AND COMPLY WITH FIXTURE MANUFACTURER RESTRICTIONS AS DETERMINED BY UL. & NEC.
- ALL STRAIGHT FLUORESCENT LAMPS SHALL BE SP35 OR EQUAL.
- ALL COMPACT FLUORESCENT LAMPS SHALL BE SPX35 OR EQUAL.
- ALL FLUORESCENT BALLASTS SHALL BE ELECTRONIC.
- FURNISH OWNER WITH (1) SPARE CASE OF EACH TYPE OF LAMP SPECIFIED ON SCHEDULE.
- VERIFY CEILING TYPES/FINISHES FOR ALL RECESSED FIXTURES PRIOR TO FORWARDING SUBMITTALS.
- ALL FLAT PRISMATIC LENSES IN FLUORESCENT FIXTURES SHALL BE MINIMUM .125" THICK.
- BALLASTS AND LAMPS SHALL BE COMPATIBLE FOR THE APPLICATION IN WHICH THEY ARE BEING USED FOR THIS PROJECT. EACH BALLAST SHALL BE COMPATIBLE WITH THE CONTROL DEVICES USED FOR THIS JOB.
- FLUORESCENT LUMINAIRES THAT UTILIZE DOUBLE-ENDED LAMPS AND CONTAIN BALLAST SHALL BE PROVIDED WITH A FACTORY INSTALLED, INTERNAL, DISCONNECTING MEANS (SWITCH OR CONNECTOR), WHICH MEETS THE REQUIREMENTS OF 2007 CEC ARTICLE 410.73(G).
- FLUORESCENT DIMMING: PROVIDE LUTRON HI-LUME SERIES DIMMING BALLASTS AND LUTRON NOVA SERIES DIMMERS. PROVIDE BOTH "HOT" AND "DIMMED HOT" CONDUCTORS FROM DIMMER TO EACH BALLAST PER MANUFACTURERS INSTALLATION INSTRUCTIONS.

PANEL SCHEDULE NOTES

1. LONG CONTINUOUS LOAD (LCL). ADDITIONAL 25% ADDED AT BOTTOM OF PANEL. FEEDER CALCULATED AT 125% OF TOTAL CONNECTED LOAD.
2. SEE SINGLE LINE DIAGRAM FOR CIRCUIT BREAKER AND/OR CONDUCTOR SIZE.
3. ROUTE BRANCH CIRCUIT THROUGH TIME SWITCH.
4. VERIFY LOAD, CB AND CONDUCTOR SIZE WITH EQUIPMENT.
5. SMALL APPLIANCE CIRCUIT.
6. PROVIDE CIRCUIT BREAKER WITH "LOCKED-ON" DEVICE.
7. NEW BREAKER LOAD. BREAKER TO BE SAME MAKE/MODEL/AIC AS EXISTING.
8. EXISTING BREAKER/LOAD. (NO CHANGE)
9. NEW LOAD ON EXISTING SPARE BREAKER.

CIRCUIT DESCRIPTION DEMAND LOAD TYPE IDENTIFIER
L = LIGHTING E = EQUIPMENT R = RECEPTACLE
K = KITCHEN (FOOD SERVICE) M = MECHANICAL OR MISC.

PROJECT

ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

CLIENT JOB # ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER JT

DRAWN BY DM

DATES
FIRST SUBMITTAL 5/28/10
(1) PLAN CHECK 1 8/16/10

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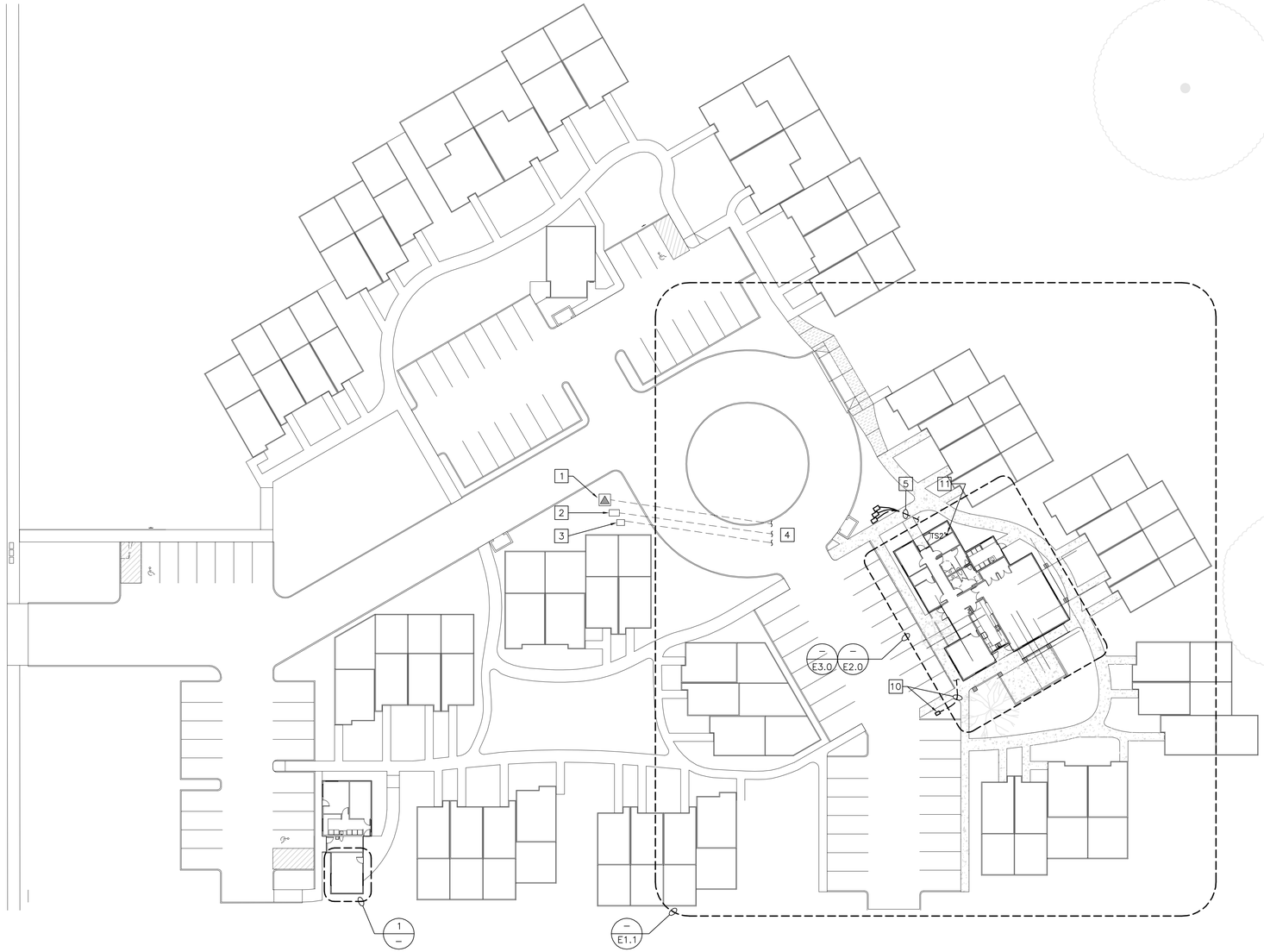
REGISTERED PROFESSIONAL ENGINEER WILLIAM A. THOMA NO. 10757 ELECTRICAL STATE OF CALIFORNIA
EXPIRES: 06/30/11
THOMA #10-8055

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SHEET TITLE
ELECTRICAL SCHEDULES

SHEET #
E0.3



ELECTRICAL SITE PLAN

SCALE: 1"=30'-0"

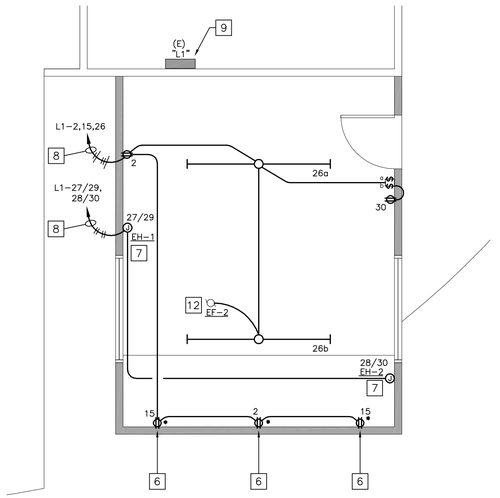
NORTH

REFERENCE NOTES

1. EXISTING PG&E SUBSURFACE TRANSFORMER, "T-2345".
2. EXISTING TELEPHONE UTILITY SPLICE BOX.
3. EXISTING CABLE TV UTILITY PEDESTAL.
4. SEE SHEET E1.1 FOR CONTINUATION.
5. NEW UNDERGROUND SERVICES TO NEW BUILDING:

   -(1) 4" PG&E SECONDARY
   -(1) 2" AT&T
   -(1) 2" CHARTER TV.

   REFER TO SHEET E1.1, "PROPOSED UTILITY REROUTING PLAN". VERIFY EXACT REQUIREMENTS WITH EACH UTILITY. REFER TO FLOOR PLAN FOR CONTINUATION OF SERVICES.
6. MOUNT ABOVE COUNTER.
7. PROVIDE CONNECTION TO WALL HEATER. REFER TO MECHANICAL PLANS.
8. TO EXISTING PANEL "L1".
9. EXISTING 200 AMP PANEL "L1". (SEE PANEL SCHEDULE)
10. PULLBOX INSTALLED FOR TEMPORARY POWER DURING CONSTRUCTION (REFER TO SHEET E1.1). INTERCEPT EXISTING SITE LIGHTING BRANCH CIRCUITS AND EXTEND IN NEW UNDERGROUND CONDUIT TO TIME SWITCH 'TS2' IN ELECTRIC ROOM.
11. APPROXIMATE LOCATION OF TIME SWITCH 'TS2'. VERIFY LOCATION ON FLOOR PLANS.
12. PROVIDE CONNECTION TO EXHAUST FAN. INTERLOCK WITH ROOM LIGHT SWITCH. REFER TO MECHANICAL PLANS.



1 FLOOR PLAN - SHOP ADDITION

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

PROJECT

ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB # 0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER JT

DRAWN BY DM

DATES

	FIRST SUBMITTAL	5/28/10
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SHEET TITLE

ELECTRICAL SITE PLAN AND SHOP ADDITION FLOOR PLAN

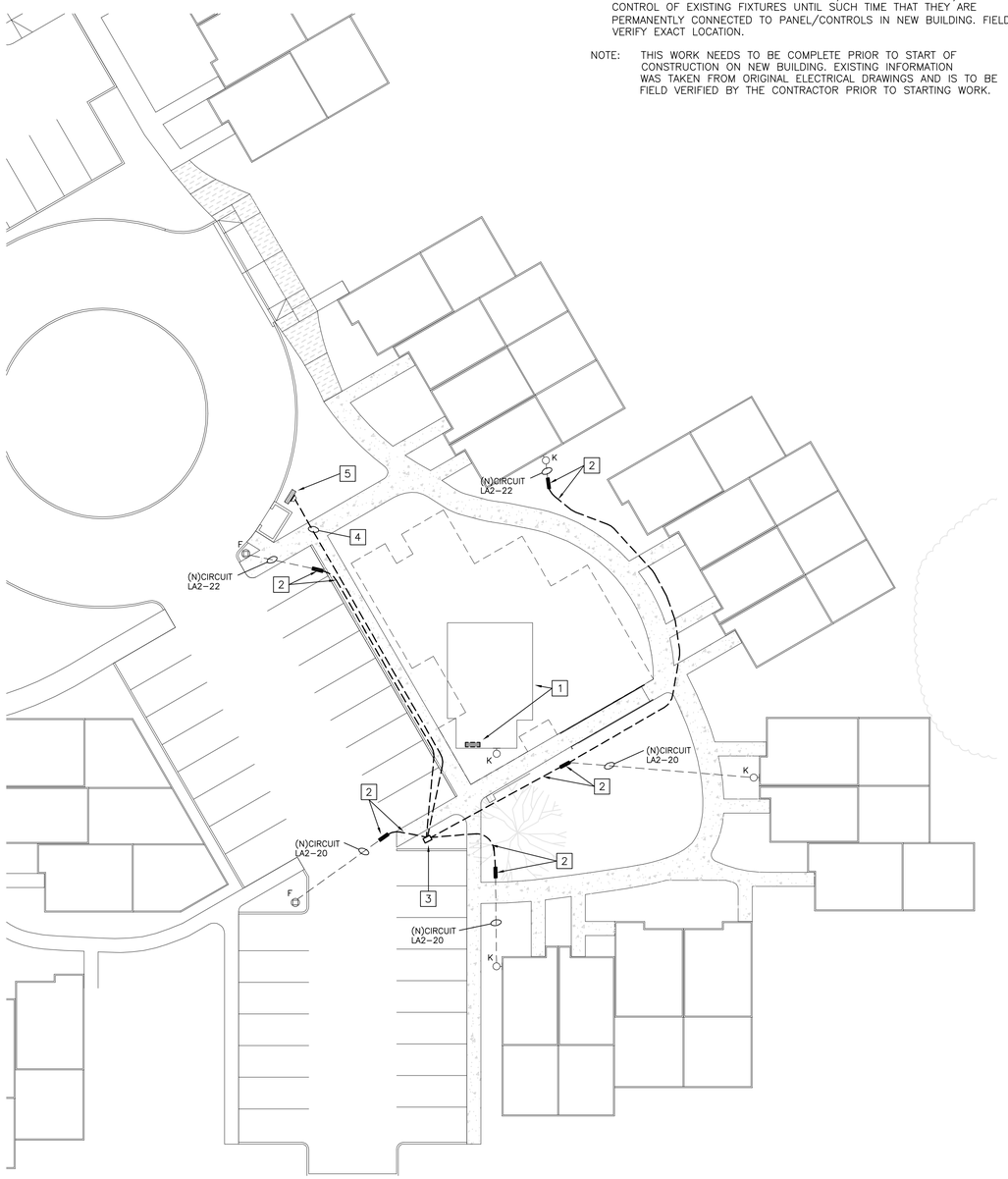
SHEET #

E1.0

☐REFERENCE NOTES (LIGHTING PLAN)

1. EXISTING LAUNDRY BUILDING (TO BE REMOVED) AND EXISTING PANEL "L2" WITH LIGHTING CONTROLS.
2. EXISTING EXTERIOR LIGHTING BRANCH CIRCUIT HOME RUN. INTERCEPT/EXTEND CONDUIT TO NEW LIGHTING PULL BOX. ROUTE CLEAR OF NEW BUILDING FOOTPRINT. EXTERIOR LIGHTING/CIRCUITS TO BE MAINTAINED DURING CONSTRUCTION OF NEW BUILDING.
3. NEW LIGHTING PULLBOX FLUSH IN GRADE (11"x17"). PULL NEW BRANCH CIRCUIT CONDUCTORS BACK TO FIRST LIGHT FIXTURE IN EACH RUN. SPLICE CONDUCTORS IN BOX FOR TEMPORARY CONNECTION TO TEMP. POWER METER/PANEL. (UPON COMPLETION OF NEW BUILDING, EXTEND NEW BRANCH CIRCUIT CONDUIT/WIRING TO PANEL/CONTROLS IN NEW BUILDING. NEW BRANCH CIRCUIT AS INDICATED ON THIS SHEET.)
4. TEMPORARY BRANCH CIRCUITS TO TEMPORARY POWER METER/PANEL.
5. NEW (BACKBOARD MOUNTED) TEMPORARY POWER METER/PANEL. PROVIDE BREAKERS AS REQUIRED AND PHOTOCELL/CONTACTOR FOR ON/OFF CONTROL OF EXISTING FIXTURES UNTIL SUCH TIME THAT THEY ARE PERMANENTLY CONNECTED TO PANEL/CONTROLS IN NEW BUILDING. FIELD VERIFY EXACT LOCATION.

NOTE: THIS WORK NEEDS TO BE COMPLETE PRIOR TO START OF CONSTRUCTION ON NEW BUILDING. EXISTING INFORMATION WAS TAKEN FROM ORIGINAL ELECTRICAL DRAWINGS AND IS TO BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO STARTING WORK.



EXISTING SITE LIGHTING PLAN

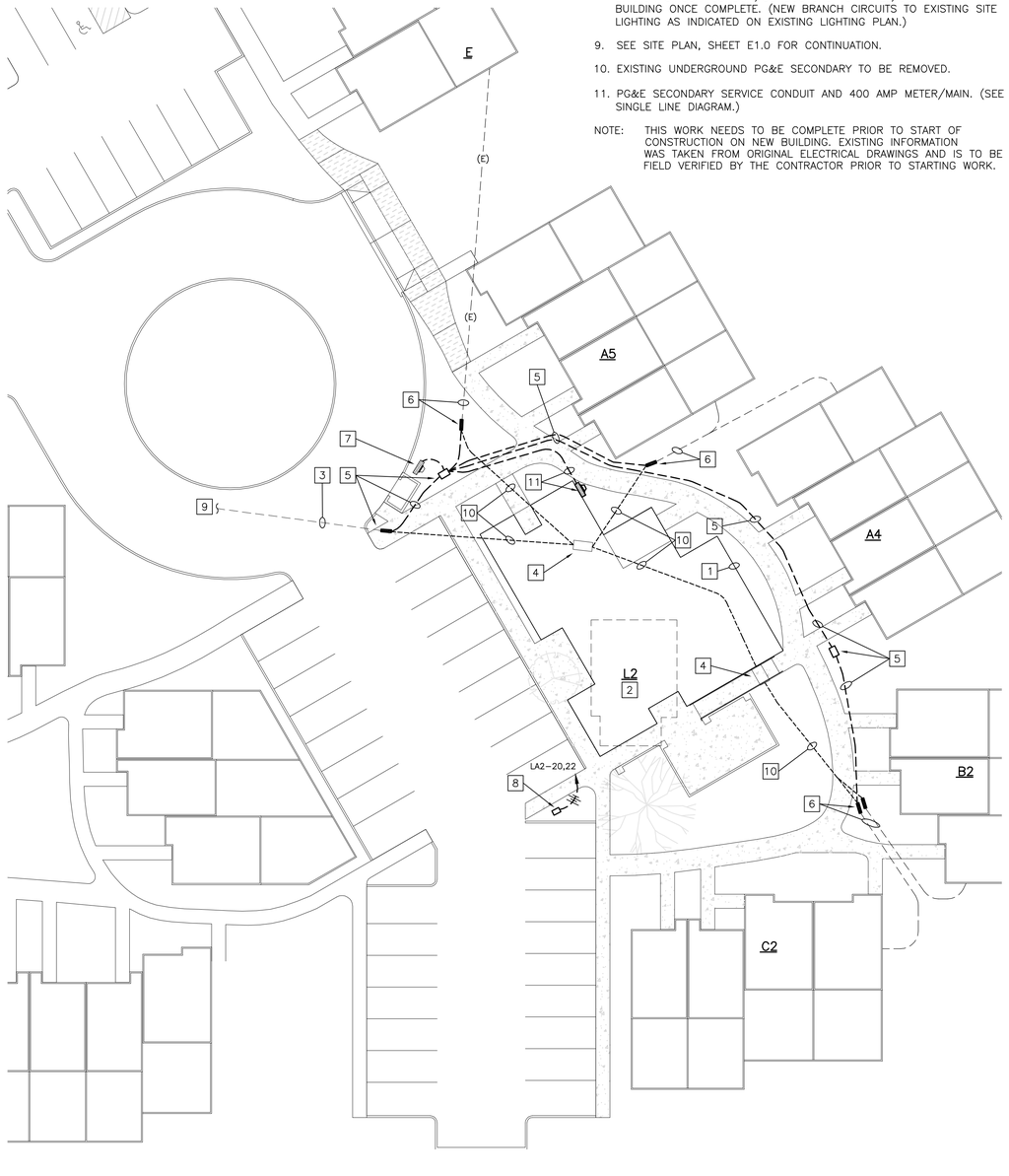
SCALE: 1"=20'–0"

NORTH

☐REFERENCE NOTES (PG&E PLAN)

1. OUTLINE OF NEW BUILDING.
2. EXISTING LAUNDRY BUILDING TO BE REMOVED.
3. EXISTING UNDERGROUND (PG&E SECONDARY).
4. EXISTING PG&E PULL BOX TO BE REMOVED. (CONFLICT WITH NEW BUILDING).
5. INTERCEPT EXISTING UNDERGROUND PG&E SECONDARY AND REROUTE AROUND NEW BUILDING. PROVIDE PULL BOXES AS REQUIRED BY PG&E.
6. EXISTING PG&E SECONDARY SERVICE CONDUITS TO EACH BUILDING. INTERCEPT/CONNECTION TO NEW SERVICE CONDUITS.
7. PROPOSED LOCATION FOR BACKBOARD MOUNTED TEMPORARY POWER METER/PANEL.
8. LIGHTING PULLBOX. (REFER TO EXISTING LIGHTING PLAN) PROVIDE NEW BRANCH CIRCUIT CONDUIT/CONDUCTORS TO PANEL/CONTROLS IN NEW BUILDING ONCE COMPLETE. (NEW BRANCH CIRCUITS TO EXISTING SITE LIGHTING AS INDICATED ON EXISTING LIGHTING PLAN.)
9. SEE SITE PLAN, SHEET E1.0 FOR CONTINUATION.
10. EXISTING UNDERGROUND PG&E SECONDARY TO BE REMOVED.
11. PG&E SECONDARY SERVICE CONDUIT AND 400 AMP METER/MAIN. (SEE SINGLE LINE DIAGRAM.)

NOTE: THIS WORK NEEDS TO BE COMPLETE PRIOR TO START OF CONSTRUCTION ON NEW BUILDING. EXISTING INFORMATION WAS TAKEN FROM ORIGINAL ELECTRICAL DRAWINGS AND IS TO BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO STARTING WORK.



PG&E UTILITY PLAN

SCALE: 1"=20'–0"

NORTH

PROJECT

ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB # 0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER JT

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SHEET TITLE

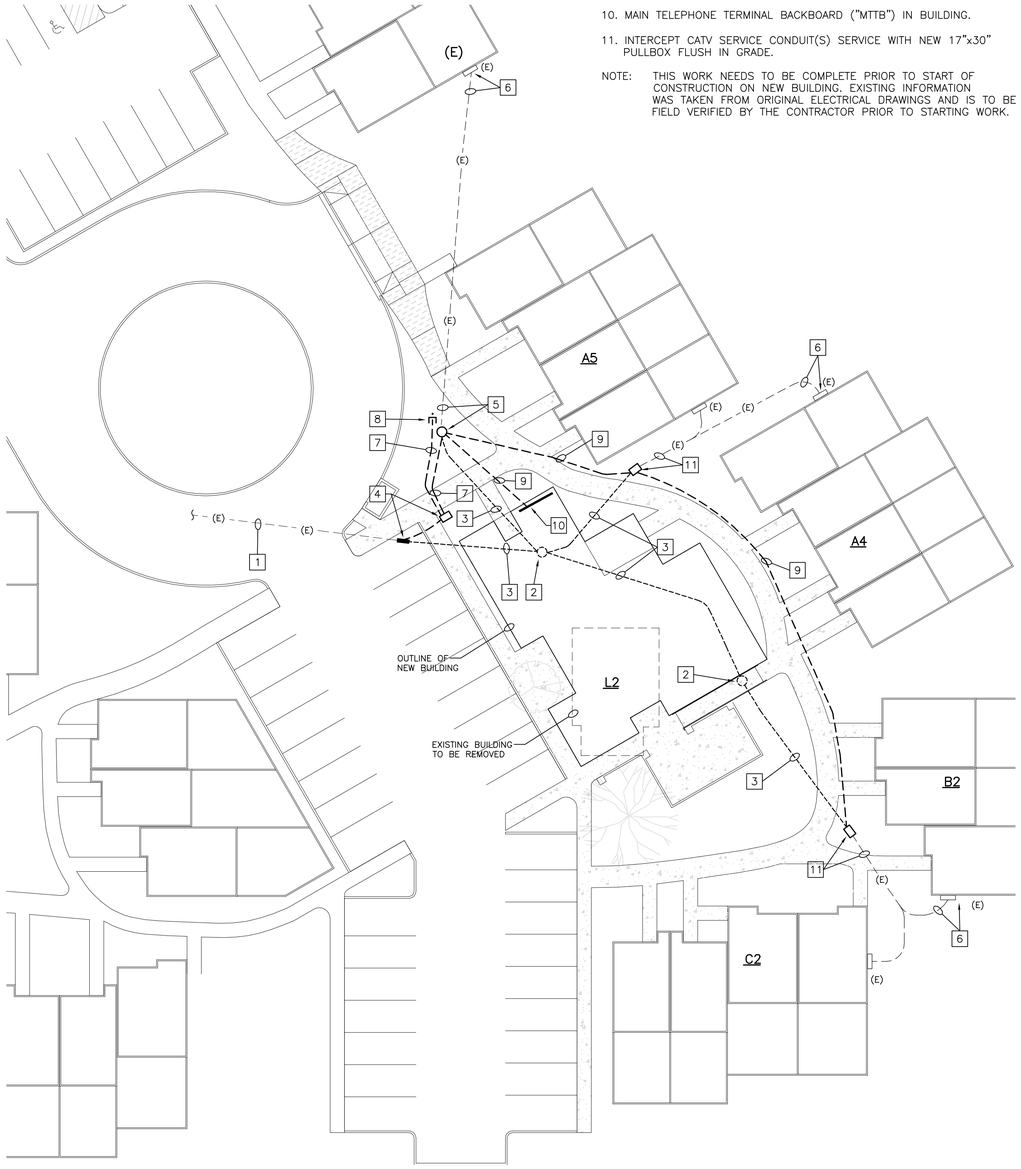
EXISTING SITE LIGHTING PLAN & PG&E UTILITY PLANS

SHEET # **E1.1**

☐REFERENCE NOTES (CATV PLAN)

1. EXISTING CATV CONDUIT TO REMAIN.
2. EXISTING CATV PEDESTAL TO BE REMOVED AFTER SERVICE CUTOVER.
3. EXISTING CATV CONDUIT TO BE REMOVED AFTER SERVICE CUTOVER.
4. INTERCEPT EXISTING CATV CONDUIT AND EXTEND WITH NEW 2" CONDUIT TO NEW 17"x30" PULLBOX FLUSH IN GRADE.
5. INTERCEPT EXISTING CATV SERVICE CONDUITS SERVING BUILDINGS WITH NEW 17"x30" ABOVE GRADE PEDESTAL.
6. EXISTING CATV SERVICE CABINET AND SERVICE CONDUIT AT EACH BUILDING TO REMAIN.
7. (2)2" CONDUIT.
8. STUB, CAP AND MARK FOR FUTURE EXTENSION.
9. 2" CONDUIT.
10. MAIN TELEPHONE TERMINAL BACKBOARD ("MTTB") IN BUILDING.
11. INTERCEPT CATV SERVICE CONDUIT(S) SERVICE WITH NEW 17"x30" PULLBOX FLUSH IN GRADE.

NOTE: THIS WORK NEEDS TO BE COMPLETE PRIOR TO START OF CONSTRUCTION ON NEW BUILDING. EXISTING INFORMATION WAS TAKEN FROM ORIGINAL ELECTRICAL DRAWINGS AND IS TO BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO STARTING WORK.



CATV UTILITY PLAN

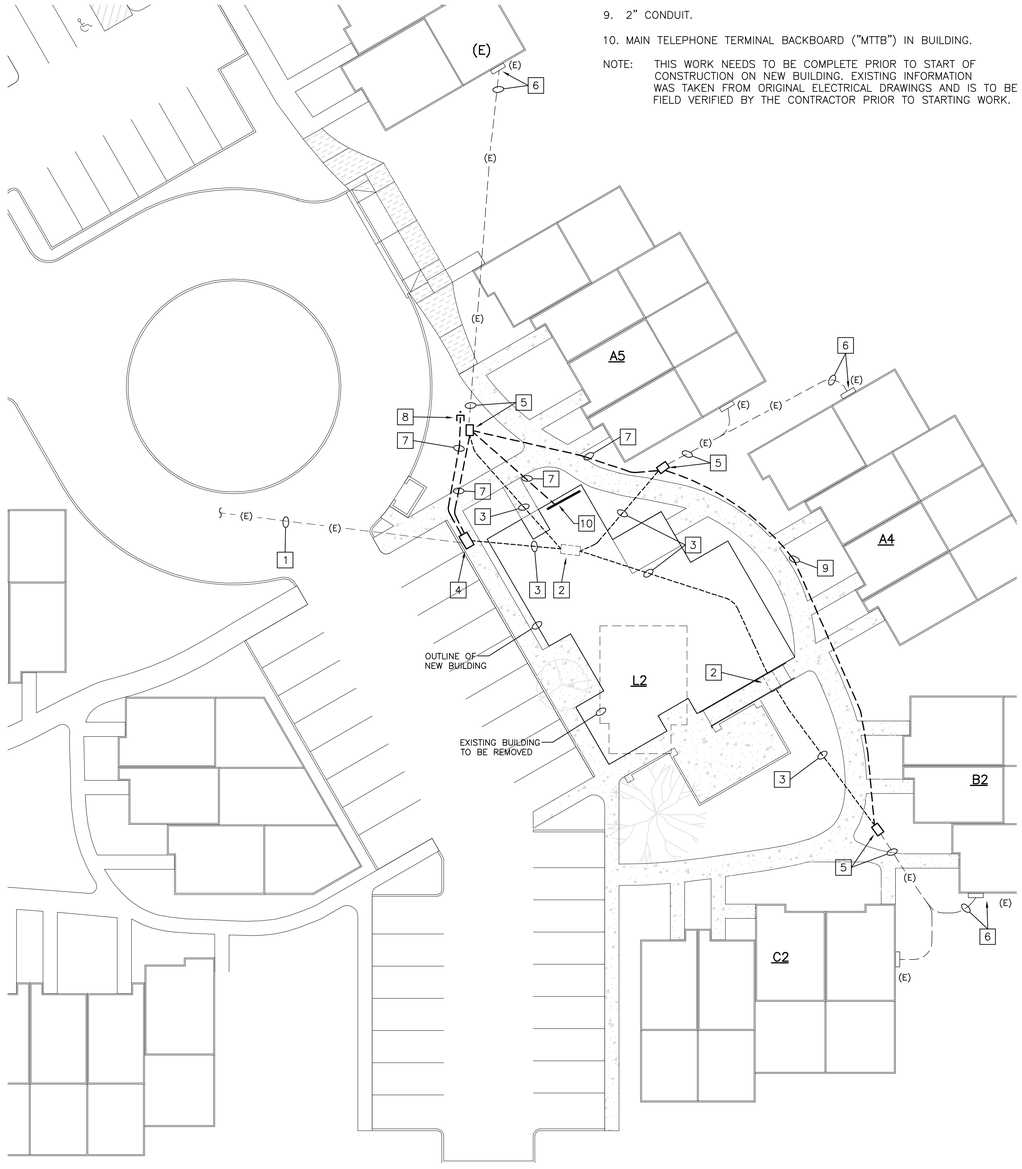
SCALE: 1"=20'-0"

NORTH

☐REFERENCE NOTES (TELEPHONE PLAN)

1. EXISTING DIRECT BURY TELEPHONE CABLE TO REMAIN.
2. EXISTING TELEPHONE PULLBOX TO BE REMOVED AFTER SERVICE CUTOVER.
3. EXISTING DIRECT BURY TELEPHONE CABLE TO BE REMOVED AFTER SERVICE CUTOVER.
4. INTERCEPT EXISTING DIRECT BURY TELEPHONE CABLE WITH NEW 30"x48" VAULT FLUSH IN NEW SIDE WALK.
5. INTERCEPT EXISTING DIRECT BURY TELEPHONE CABLE(S) SERVING BUILDINGS WITH NEW 24"x36" SPLICE BOX FLUSH IN GRADE.
6. EXISTING TELEPHONE SERVICE CABINET AND DIRECT BURY CABLE AT EACH BUILDING TO REMAIN. (TYPICAL)
7. 4" CONDUIT.
8. STUB, CAP AND MARK FOR FUTURE EXTENSION.
9. 2" CONDUIT.
10. MAIN TELEPHONE TERMINAL BACKBOARD ("MTTB") IN BUILDING.

NOTE: THIS WORK NEEDS TO BE COMPLETE PRIOR TO START OF CONSTRUCTION ON NEW BUILDING. EXISTING INFORMATION WAS TAKEN FROM ORIGINAL ELECTRICAL DRAWINGS AND IS TO BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO STARTING WORK.



TELEPHONE UTILITY PLAN

SCALE: 1"=20'-0"

NORTH

PROJECT

ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB # 0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER JT

DRAWN BY DM

DATES
- FIRST SUBMITTAL 5/28/10
- 1 PLAN CHECK 1 8/16/10

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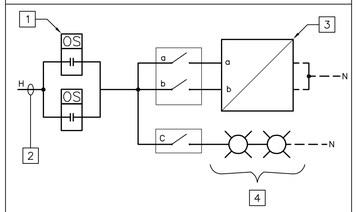
CATV & TELEPHONE UTILITY PLANS

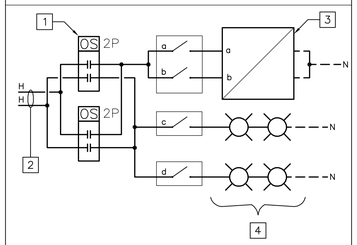
SHEET #

E1.2

TYPICAL LINE VOLTAGE OCCUPANCY SENSOR WIRING DIAGRAMS

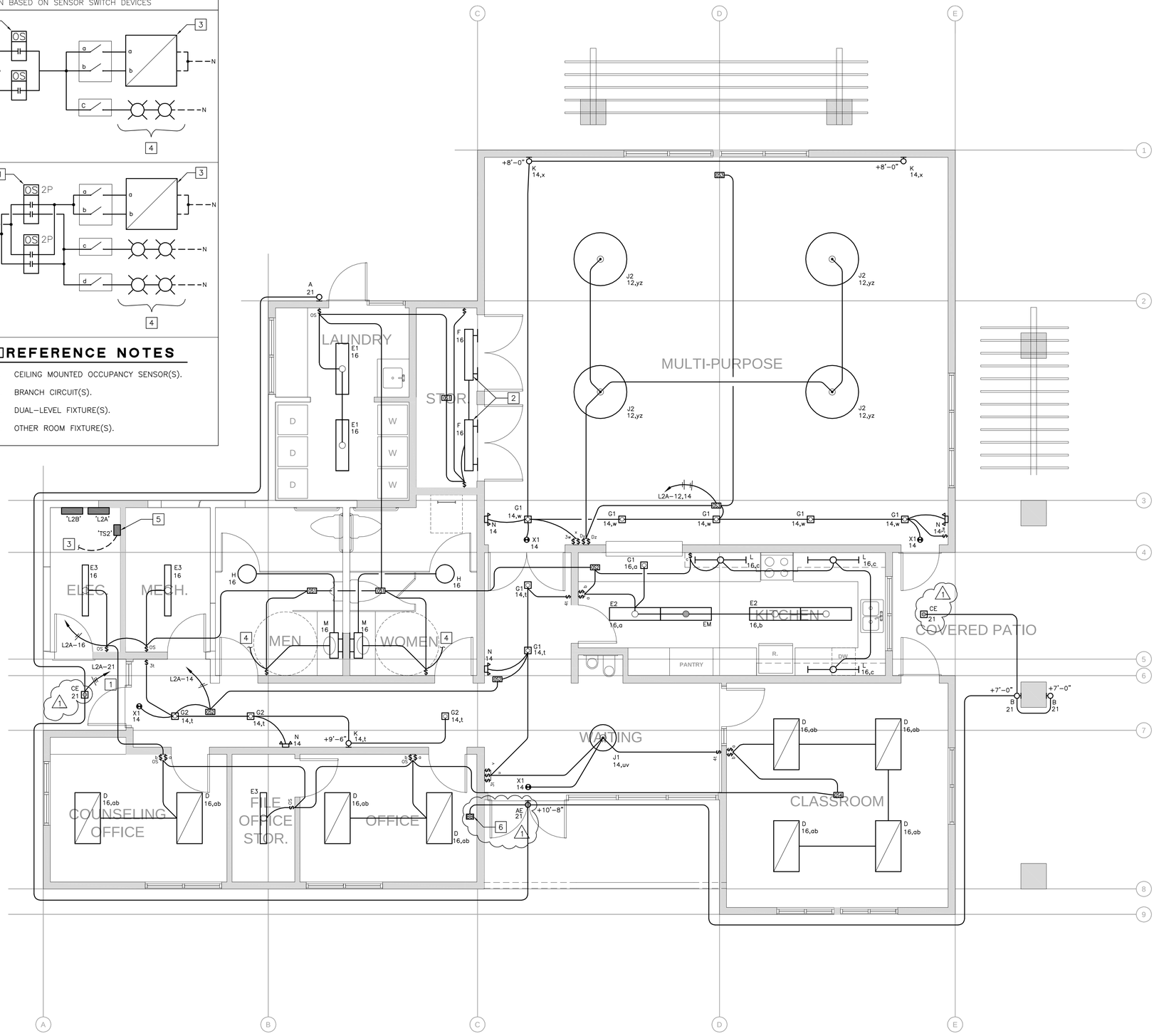
DESIGN BASED ON SENSOR SWITCH DEVICES





☐REFERENCE NOTES

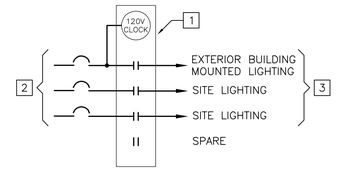
1. CEILING MOUNTED OCCUPANCY SENSOR(S).
2. BRANCH CIRCUIT(S).
3. DUAL–LEVEL FIXTURE(S).
4. OTHER ROOM FIXTURE(S).



☐REFERENCE NOTES

1. ROUTE CIRCUIT THROUGH TIME SWITCH 'TS2'. PROVIDE UNSWITCHED HOT TO FIXTURES WITH EMERGENCY BATTERY BACKUP.
2. MOUNT FIXTURE ON WALL ABOVE DOOR.
3. NEW UNDERGROUND CONDUIT FOR BRANCH CIRCUITS TO EXISTING SITE LIGHTING. REFER TO SHEETS E1.0 AND E1.1. FOR LOCATIONS AND CIRCUIT DESIGNATIONS.
4. INTERLOCK RESTROOM LIGHTS WITH EXHAUST FAN 'EF–1' PER MECHANICAL DETAIL 52 SHEET MP5.1.
5. TIME SWITCH 'TS2'. SEE CONTROL DIAGRAM (THIS SHEET).
6. REMOTE BATTERY PACK FOR EXTERIOR BUILDING MOUNTED FIXTURE. INSTALL IN ACCESSIBLE CEILING AREA ABOVE OFFICE.

LIGHTING CONTROL DIAGRAM



☐REFERENCE NOTES

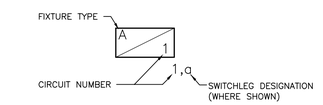
1. ELECTRONIC TIME SWITCH 'TS2'. 4–CHANNEL, 24 HOUR, 7 DAY, 365 DAY, ASTRONOMIC, WITH DAYLIGHT SAVINGS CONTROL. PARAGON EL74 OR APPROVED EQUAL.
2. BRANCH CIRCUITS (INDICATED ON PLANS).
3. PROGRAM ZONES PER OWNER'S SCHEDULE.

OCCUPANCY SENSOR LEGEND

DESIGN BASED ON SENSOR SWITCH DEVICES

SYMBOL	MODEL #	DESCRIPTION
^{OS}	WSD–PDT	WALL SWITCH LINE VOLTAGE DUAL TECHNOLOGY
^{OS}	WSD–2P	WALL SWITCH, 2–POLE LINE VOLTAGE PIR TECHNOLOGY
CMR	CMR–PDT	CEILING MOUNT STANDARD RANGE LINE VOLTAGE DUAL TECHNOLOGY
CMR	CMR–10	CEILING MOUNT EXTENDED RANGE LINE VOLTAGE PIR TECHNOLOGY
CMR	CMR–PDT–10–2P	CEILING MOUNT, 2–POLE EXTENDED RANGE LINE VOLTAGE DUAL TECHNOLOGY
CMR	CMR–2P	CEILING MOUNT, 2–POLE STANDARD RANGE LINE VOLTAGE PIR TECHNOLOGY

LIGHTING PLAN CIRCUITING LEGEND



- PROVIDE ALL BRANCH CIRCUIT WIRING FROM FIXTURES TO PANEL(S) AS DESCRIBED BY CIRCUIT NUMBERS SHOWN.
- PROVIDE ALL WIRING BETWEEN FIXTURES AND CONTROL DEVICES AS DESCRIBED IN REFERENCE NOTES AND/OR SHOWN BY SWITCHLEG DESIGNATIONS.
- EXIT AND EMERGENCY LIGHT FIXTURES SHALL BE CONNECTED TO AN UNSWITCHED BRANCH CIRCUIT CONDUCTOR.
- HOME RUN CONDUITS SHALL BE 3/4" CONDUIT MINIMUM, MAXIMUM OF (5) BRANCH CIRCUITS PER CONDUIT.

LIGHTING FLOOR PLAN - COMMON BUILDING

SCALE: 1/4"=1'–0"

NORTH

PROJECT

ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #: 0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER: JT

DRAWN BY: DM

DATES

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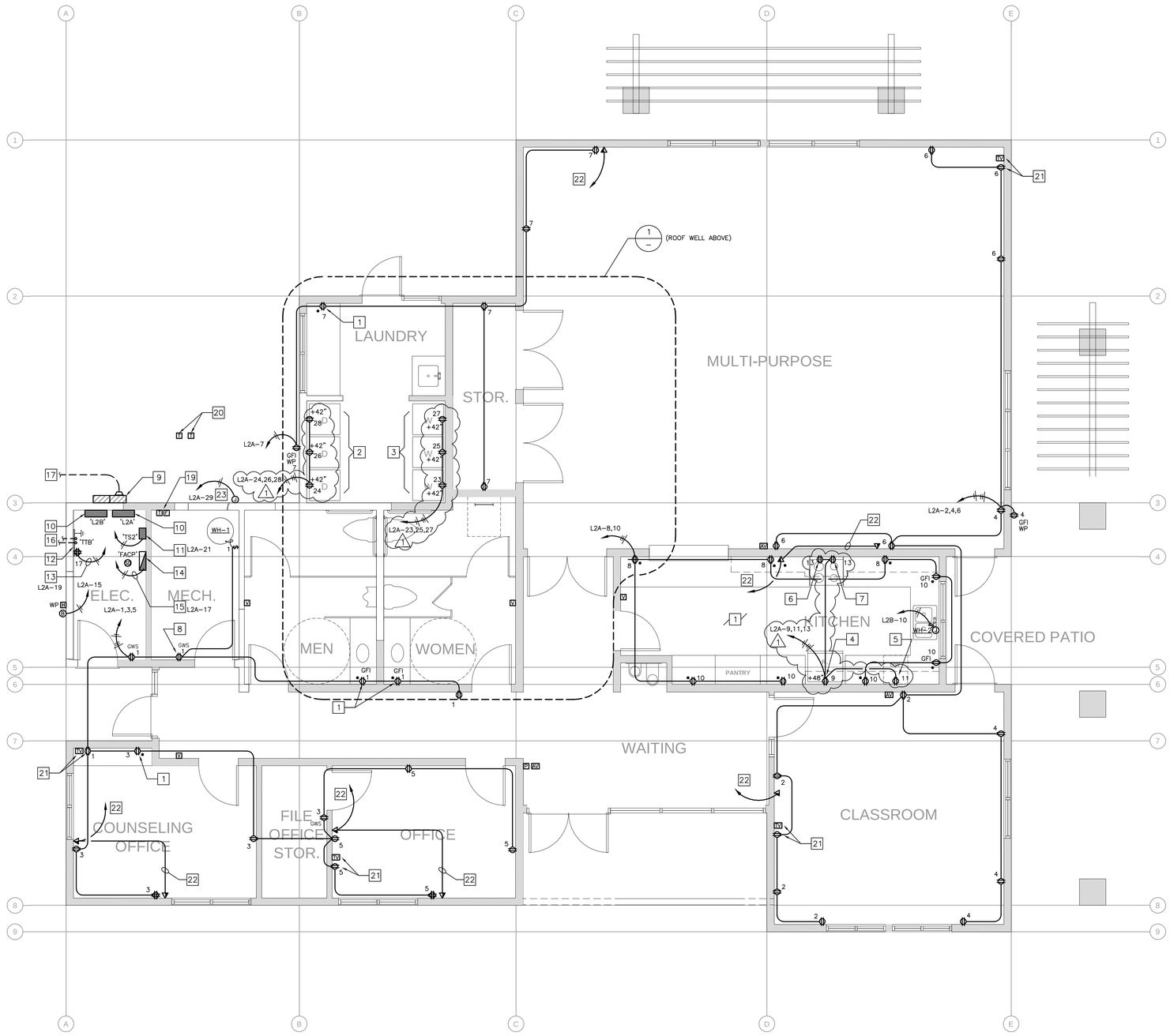
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SHEET TITLE

LIGHTING FLOOR PLAN - COMMON BUILDING

SHEET #

E2.0



POWER AND COMMUNICATIONS FLOOR PLAN - COMMON BUILDING

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

NORTH

REFERENCE NOTES

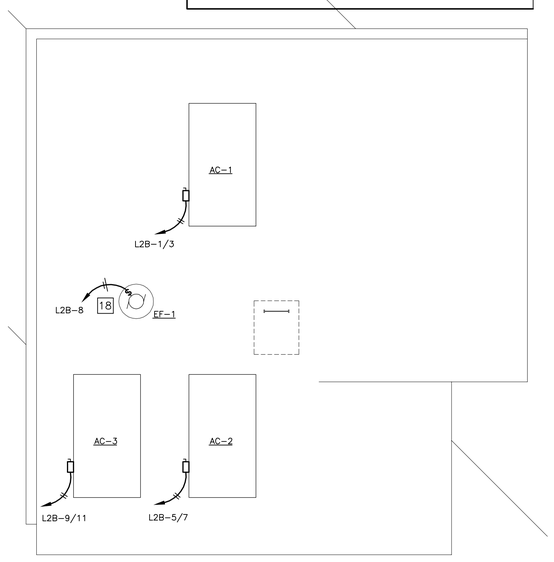
1. MOUNT DEVICES INDICATED WITH "DOT" ABOVE COUNTER. (TYPICAL)
2. GAS DRYER OUTLETS.
3. WASHING MACHINE OUTLETS.
4. REFRIGERATOR OUTLET.
5. DISHWASHER OUTLET.
6. GAS STOVE OUTLET.
7. HOOD OUTLET. COORDINATE MOUNTING LOCATION PRIOR TO ROUGH IN..
8. RECEPTACLE GANGED WITH SWITCH (GWS). COORDINATE WITH LIGHTING PLAN. (TYPICAL)
9. SERVICE METER/MAIN. REFER TO SINGLE LINE DIAGRAM.
10. BRANCH CIRCUIT PANELBOARD. REFER TO SINGLE LINE DIAGRAM AND PANEL SCHEDULES.
11. LIGHTING TIME SWITCH 'TS2'. SEE LIGHTING FLOOR PLAN.
12. TELECOMMUNICATIONS TERMINAL BACKBOARD 'TTB'. 3/4"x4'x8' FIRE RETARDANT PLYWOOD WITH (2) COATS OF ENAMEL.
13. PROVIDE DEDICATED CIRCUIT TO 'TTB'.
14. FIRE SPRINKLER MONITORING PANEL 'FACP'.
15. PROVIDE DEDICATED CIRCUIT TO 'FACP'.
16. TELEPHONE AND CABLE TV CONDUITS TO NEW UTILITY PULLBOXES. SEE SHEETS E1.0 AND E1.1.
17. PG&E SECONDARY CONDUITS TO NEW UTILITY PULLBOX. SEE SHEETS E1.0, E1.1, AND SINGLE LINE DIAGRAM.
18. PROVIDE CONNECTION TO EXHAUST FAN. INTERLOCK WITH RESTROOM LIGHTING (MEN AND WOMEN) AND MECHANICAL UNIT 'AC-3' PER DETAIL 52 SHEET MP5.1. REFER TO MECHANICAL PLANS.
19. TAMPER AND FLOW SWITCHES AT FIRE RISER. COORDINATE LOCATION WITH PLUMBING.
20. TAMPER SWITCH(ES) AT POST INDICATOR VALVE OR DOUBLE CHECK VALVE. COORDINATE LOCATION AND QUANTITY WITH CIVIL.
21. CATV AND POWER OUTLETS. VERIFY EXACT LOCATION AND MOUNTING HEIGHT WITH OWNER PRIOR TO ROUGH-IN.
22. (1)1"C.O. BACK TO 'TTB' AND BETWEEN DATA OUTLETS.
23. PROVIDE POWER TO IRRIGATION CONTROLLER. COORDINATE LOCATION AND REQUIREMENTS WITH LANDSCAPE PLANS.

POWER PLAN CIRCUITING LEGEND

CIRCUIT NUMBER — 6 — MOUNTING HEIGHT (WHERE NON-STANDARD)

DEVICE TYPE (SEE LEGEND) — +48"A.F.F. WP GFI IG — SPECIAL DEVICE/PLATE REQUIREMENTS

- PROVIDE ALL BRANCH CIRCUIT WIRING FROM DEVICES TO PANELS PER DESIGNATIONS/CIRCUIT NUMBERS.
- ISOLATED GROUND CIRCUITS SHALL HAVE A SEPARATE NEUTRAL AS INDICATED ON PANEL SCHEDULES.
- HOME RUN CONDUITS SHALL BE 3/4" MINIMUM, MAXIMUM OF (5) BRANCH CIRCUITS PER CONDUIT.



1 PARTIAL ROOF PLAN

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

PROJECT

ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB # 0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER JT

DRAWN BY DM

DATES

	FIRST SUBMITTAL	5/28/10
1	PLAN CHECK 1	8/16/10

SIGNED

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THOMA #10-8055

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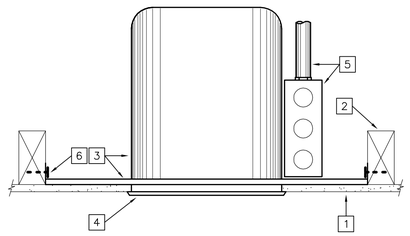
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SHEET TITLE

POWER AND COMMUNICATIONS FLOOR PLAN & PARTIAL ROOF PLAN- COMMON BUILDING

SHEET #

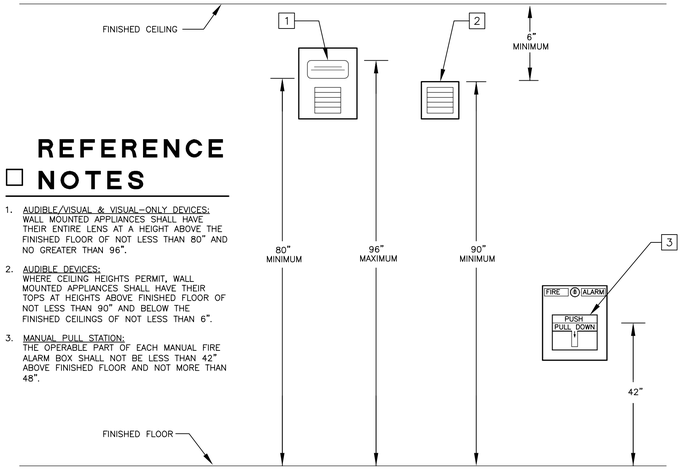
E3.0



REFERENCE NOTES

1. CEILING MATERIAL
2. FRAMING ABOVE OR BLOCKING BETWEEN AS REQUIRED.
3. RECESSED HOUSING WITH EXPANDABLE MOUNTING BARS.
4. FIXTURE TRIM
5. OUTLET BOX/BRANCH CIRCUIT
6. ATTACH TO FRAMING WITH #8x1-1/2" WOOD SCREWS. TOTAL (4) PER FIXTURE.

5 TYPICAL RECESSED DOWNLIGHT MOUNTING DETAIL
SCALE: NTS



REFERENCE NOTES

1. AUDIBLE/VISUAL & VISUAL-ONLY DEVICES: WALL MOUNTED APPLIANCES SHALL HAVE THEIR ENTIRE LENS AT A HEIGHT ABOVE THE FINISHED FLOOR OF NOT LESS THAN 80" AND NO GREATER THAN 96".
2. AUDIBLE DEVICES: WHERE CEILING HEIGHTS PERMIT, WALL MOUNTED APPLIANCES SHALL HAVE THEIR TOPS AT HEIGHTS ABOVE FINISHED FLOOR OF NOT LESS THAN 90" AND BELOW THE FINISHED CEILINGS OF NOT LESS THAN 6".
3. MANUAL PULL STATION: THE OPERABLE PART OF EACH MANUAL FIRE ALARM BOX SHALL NOT BE LESS THAN 42" ABOVE FINISHED FLOOR AND NOT MORE THAN 48".

2 FIRE ALARM DEVICE ELEVATION DETAIL
SCALE: NTS

FIRE SPRINKLER MONITORING SYSTEM NOTES

1. PROVIDE ALL WORK AND MATERIAL required for a complete and operating Authority(ies) Having Jurisdiction. Work shall include (but not be limited to):
   a. Shop Drawings
   b. Submittal for approval to Authority(ies) Having Jurisdiction
   c. Complete installation and testing
   d. System training for Owner's representative
   e. Warranty
2. SUBMIT DETAILED FIRE ALARM PLANS, specifications and engineering calculations including but not necessarily limited to:
   a. CSFM listing #'s and Manufacturer Model #'s for every system component which are to be interconnected as a part of this project.
   b. Single line, riser and point to point wiring diagrams including battery and voltage drop calculations for the entire system.
   c. Indication of conductor type(s), power-limited or non-power-limited system.
   d. List of proposed zones for all initiating devices.
   e. Matrix of system operation.
   f. Information as required to demonstrate compliance with applicable Code(s) and gain approval of Authority(ies) having jurisdiction.

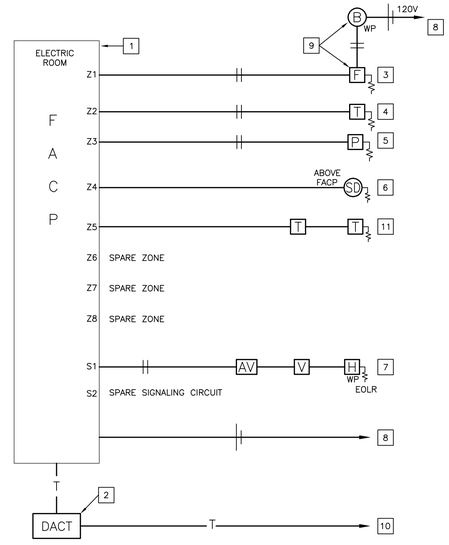
   FIRE ALARM system installation shall not begin until separate permit has been obtained and all of the above has been accepted and signed by the Authority(ies) having jurisdiction and the Architect. After construction, provide accurate field record drawings to Owner.
3. FIRE ALARM CONTROL PANEL shall be provided with battery backup, minimum of 8 zones and 2 signal circuit with provisions for future expansion. Provide with dialer (DACT) and connect to communications system (2) dedicated voice lines as required to send separate and distinct signals (as required by the fire department) to an approved central station. Fire sprinkler riser waterflow and/or valve tamper switches shall be provided and installed by the Sprinkler System contractor, and wired back to the FACP by the Fire Alarm Contractor. Coordinate for proper voltage. All fire alarm components shall be California State Fire Marshal listed. Fire Alarm Control Panel shall be equal in all respects to the FIRE-LITE #MS-SERIES.

REFERENCE NOTES

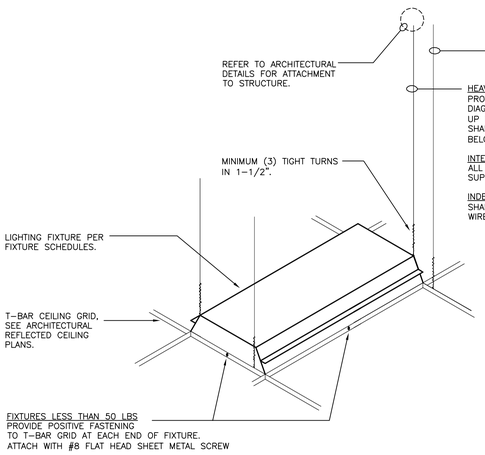
1. MAIN FIRE ALARM CONTROL PANEL "FACP".
2. DIGITAL ALARM COMMUNICATIONS TRANSMITTER.
3. ZONE 1 – FIRE SPRINKLER RISER FLOW SWITCH.
4. ZONE 2 – FIRE SPRINKLER RISER TAMPER SWITCHES.
5. ZONE 3 – PULL STATIONS (AS OCCURRING).
6. ZONE 4 – SMOKE DETECTORS (AS OCCURRING).
7. SIGNAL DEVICES (AS OCCURRING).
8. DEDICATED 120V BRANCH CIRCUIT. (LOCKED HOT) SEE PLANS FOR CIRCUIT DESIGNATION.
9. 120V BELL AT SPRINKLER RISER. RING THROUGH FLOW SWITCH.
10. (2) DEDICATED VOICE LINES TO MAIN TELEPHONE TERMINAL BACKBOARD 'TTB'.
11. ZONE 5 – TAMPER SWITCH(ES) AT POST INDICATOR VALVE OR DOUBLE DETECTION CHECK VALVE.

FIRE ALARM INSTALLATION NOTES:

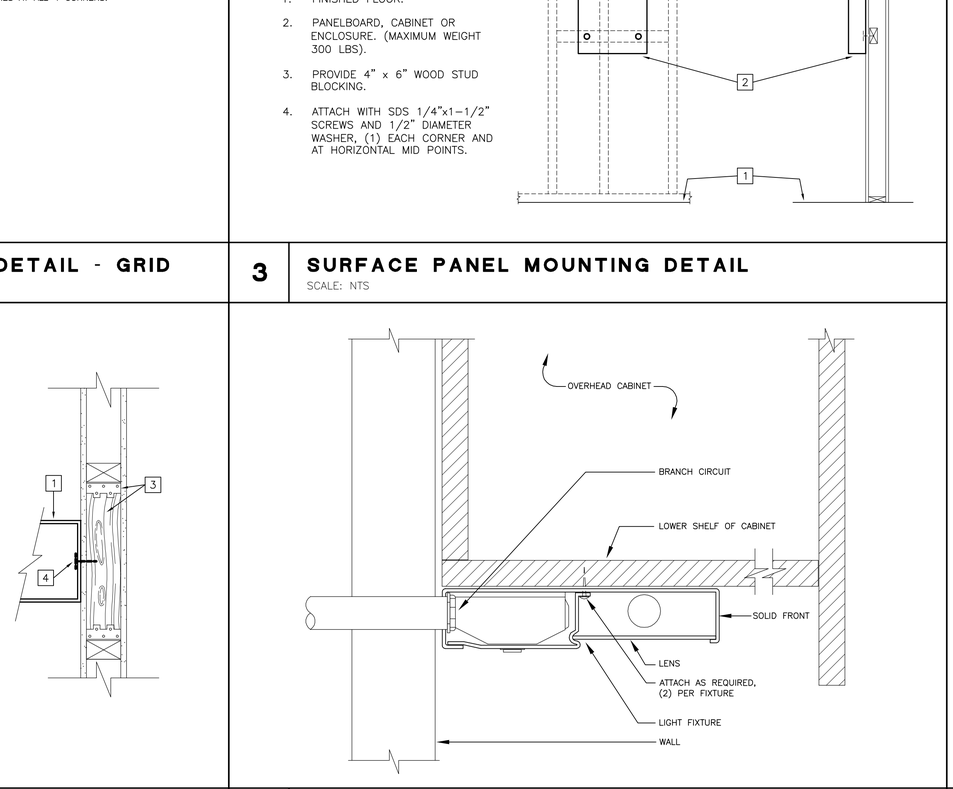
1. The fire sprinkler monitoring system shall conform to the California Electrical Code (CEC) Article 760, California Fire Code (CFC) Article 907 and 2002 NFPA 72 National Fire Alarm Code as amended by the California Building Code.
2. Detectors shall not be installed until the cleanup of all trades is completed and final. (2002 NFPA 72 Section 5.7.1.11)
3. Before requesting final approval of the installation the installing contractor shall furnish written statement to the Authority(ies) Having Juridiction to the effect that the system has been installed in accordance with approved plans and completely tested in accordance with manufacturer's specifications and appropriate NFPA requirement. (2002 NFPA 72 Section 4.5.1.2)
4. Upon completion of the installation of the fire alarm system, a satisfactory test of the system shall be made in the presence of the Authority(ies) Having Juridiction.
5. Please Note: Any reference to the fire alarm system on these plans, including locations of devices, have not been reviewed or approved by Authority(ies) Having Juridiction. Any reference to the fire alarm system is deferred for approval by Authority(ies) Having Juridiction following receipt of detailed plans.



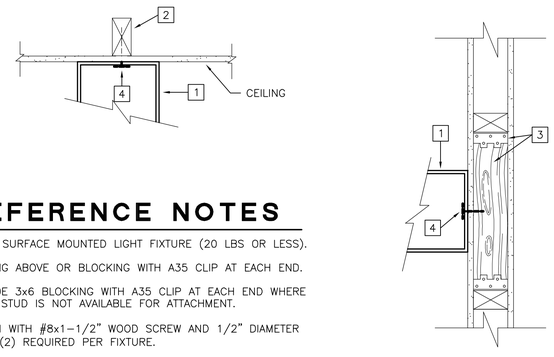
1 FIRE SPRINKLER MONITORING SYSTEM RISER DIAGRAM
SCALE: NTS



6 TROFFER LUMINAIRE MOUNTING DETAIL - GRID
SCALE: NTS



3 SURFACE PANEL MOUNTING DETAIL
SCALE: NTS



REFERENCE NOTES

1. SMALL SURFACE MOUNTED LIGHT FIXTURE (20 LBS OR LESS).
2. FRAMING ABOVE OR BLOCKING WITH A35 CLIP AT EACH END.
3. PROVIDE 3x6 BLOCKING WITH A35 CLIP AT EACH END WHERE VERTICAL STUD IS NOT AVAILABLE FOR ATTACHMENT.
4. ATTACH WITH #8x1-1/2" WOOD SCREW AND 1/2" DIAMETER WASHER. (2) REQUIRED PER FIXTURE.

7 WALL/CEILING MOUNTED LIGHT FIXTURE TYPICAL MOUNTING DETAIL
SCALE: NTS

4 UNDERCABINET LIGHT FIXTURE MOUNTING DETAIL
SCALE: NTS

PROJECT

ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #
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FRASER SEIPLE ARCHITECTS

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SHEET TITLE

ELECTRICAL DETAILS

SHEET #

E4.0

SECTION 16050 – BASIC MATERIALS AND METHODS

PART 1 – GENERAL

1.1 WORK INCLUDED

A. LABOR, MATERIAL, EQUIPMENT AND SERVICES NECESSARY TO CONSTRUCT AND INSTALL A COMPLETE ELECTRICAL SYSTEM AS SHOWN ON THE PLANS AND AS SPECIFIED HEREIN. ALL GENERAL CONDITIONS AND REQUIREMENTS OUTLINED ELSEWHERE IN THESE SPECIFICATIONS OR DRAWINGS SHALL BE APPLIED TO THIS ELECTRICAL SECTION.

B. MATERIALS AND EQUIPMENT SHALL BE FURNISHED AND INSTALLED IN SUPPORT OF ELECTRICAL WORK DESCRIBED IN THESE PLANS AND SPECIFICATIONS INCLUDING BUT NOT LIMITED TO, RACEWAYS, BOXES, ENCLOSURES, FEEDERS, BRANCH CIRCUITING, SUPPORTS, TERMINAL CABINETS, SLEEVES, GUTTERS, PANELS, TRANSFORMERS, SWITCHGEAR, LIGHTING FIXTURES, CONTROLS, RELAYS, CONTACTORS, IN ORDER TO COMPLETE AND MAKE FULLY FUNCTIONAL THE SYSTEMS DESCRIBED.

C. COMPLETE FIRE SPRINKLER MONITORING SYSTEM AS SHOWN AND/OR REQUIRED BY THE (LOCAL AUTHORITY HAVING JURISDICTION, CALIFORNIA STATE FIRE MARSHALL) INCLUDING MONITORING EQUIPMENT AND WIRING FOR CENTRAL STATION CONNECTION. PROVIDE FIRE ALARM SYSTEM DESIGN AND SUBMIT FOR APPROVAL BY THE AHJ.

D. LIGHTING SYSTEMS, BOTH INTERIOR AND EXTERIOR AS SHOWN ON THE PLANS AND AS SPECIFIED HEREIN, INCLUDING CONTROLS, OCCUPANCY SENSORS, PHOTOCELL CONTROLS, LAMPS, DIMMERS, RACKS, DIMMING BALLASTS, SUPPORTS, FASTENERS, STRAPS, AND MISCELLANEOUS MOUNTING HARDWARE AND SUPPORT STRUCTURES FOR SUCH EQUIPMENT.

E. ELECTRICAL, TELEPHONE AND CATV UTILITY COMPANY SITE WORK AS REQUIRED BY THE SERVING COMPANIES. ALL UTILITY COMPANY CONDUITS, RACEWAYS, TRENCHING, BACKFILLING, UTILITY VAULTS, EQUIPMENT PADS AND SUBSTRUCTURES SHALL MEET BOTH THE RESPECTIVE UTILITY COMPANIES REQUIREMENTS AS WELL AS THOSE OF THE AUTHORITY HAVING JURISDICTION, WHICHEVER IS MORE RESTRICTIVE. IN NO CASE SHALL WORK BE COMPLETED AND COVERED WITHOUT THE WRITTEN APPROVAL OF THE SERVING UTILITY COMPANIES BOTH ON AND OFF SITE.

F. DUCT BANKS AND RACEWAYS FOR ALL POWER AND COMMUNICATIONS SYSTEMS AS SHOWN AND/OR REQUIRED. DUCT BANKS SHALL INCLUDE ALL TRENCHING, RACKING, CONDUIT, CONCRETE, BACKFILL, BOXES, PADS, SUBSTRUCTURES REQUIRED FOR A FULLY DEVELOPED AND USEABLE PATHWAY FOR CABLES, CONDUCTORS, AS SHOWN ON SITE, ETC.

G. HVAC AND PLUMBING ELECTRICAL: CONDUIT, CONDUCTORS AND TERMINATIONS FOR ALL LINE VOLTAGE POWER, LINE VOLTAGE CONTROLS AND FUSIBLE AND/OR NON–FUSIBLE SAFETY DISCONNECT SWITCHES FOR HVAC EQUIPMENT, INCLUDING BUT NOT LIMITED TO AIR CONDITIONERS, FURNACES, FANS, HEAT PUMPS, COOLING TOWERS, SYSTEM PUMPS, CONDENSING UNITS. PROVIDE PROTECTIVE EQUIPMENT UNLESS OTHERWISE NOTED, ETC. INCLUDING PROTECTIVE DEVICES.

H. PLUMBING ELECTRICAL: CONDUIT, CONDUCTORS AND TERMINATIONS FOR PLUMBING EQUIPMENT WITH POWER REQUIREMENTS INCLUDING NECESSARY FUSIBLE AND/OR NON–FUSIBLE SAFETY DISCONNECT DEVICES. PROVIDE MOTOR STARTERS WHERE REQUIRED UNLESS PROVIDED BY MECHANICAL SPECIFICATION.

I. POWER AND LIGHTING DISTRIBUTION: FURNISH AND INSTALL POWER AND LIGHTING DISTRIBUTION SYSTEMS INCLUDING BUT NOT LIMITED TO PANELS, FEEDERS, TRANSFORMERS, BRANCH CIRCUITS, DEVICES, FIXTURES, DISCONNECT SWITCHES, CONTACTORS, CONTROLS, ETC. FOR A COMPLETE WORKING SYSTEM.

J. DATA SYSTEMS INFRASTRUCTURE INCLUDING ALL BOXES, RACEWAYS, DEDICATED BRANCH CIRCUITS, SLEEVES AND PENETRATIONS, ETC. AS DESCRIBED AND AS SHOWN IN PLANS AND/OR REQUIRED FOR A COMPLETE AND OPERATING SYSTEM.

K. ALLOCATION OF TIME TO ADEQUATELY TRAIN THE OWNER ON THE USE AND OPERATION OF ALL SYSTEMS INSTALLED WITHIN THE FACILITY OR ON THE PROPERTY. MINIMUM TWO WEEK ADVANCE NOTICE SHALL BE COORDINATED WITH THE OWNER AND HIS REPRESENTATIVES.

1.2 RELATED SECTIONS UNDER OTHER DIVISIONS

A. MECHANICAL WIRING CONTROL CIRCUIT WIRING, ENERGY MANAGEMENT CONTROLS AND INTERLOCKS FOR MECHANICAL EQUIPMENT SHALL BE INSTALLED BY MECHANICAL CONTRACTOR.

B. PAINTING OF ELECTRICAL EQUIPMENT WHERE EXPOSED AND REQUIRED BY THE ARCHITECT TO BE PAINTED AS DESCRIBED ELSEWHERE IN THE SPECIFICATION.

C. IRRIGATION SYSTEM: PROVIDE ALL LINE VOLTAGE (50 VOLTS OR ABOVE) CONNECTIONS TO IRRIGATION SYSTEM EQUIPMENT, TIME CLOCKS AND OR POWERED SATELLITE CONTROLS. COORDINATE LOCATIONS OF THIS WORK WITH THE LANDSCAPE CONTRACTOR.

D. HVAC CONTROL RACEWAY: RACEWAYS, BOXES, AND CONTROL WIRING FOR THERMOSTATS, TEMPERATURE SENSORS AND CONTROL COMPONENTS SPECIFIED WITHIN THE MECHANICAL SPECIFICATIONS, SHALL BE FURNISHED AND INSTALLED AS REQUIRED BY DIVISION 15 AND INSTALLED IN ACCORDANCE WITH THE MINIMUM WIRING METHODS ALLOWED FOR BRANCH CIRCUIT WIRING IN DIVISION 16.

1.3 SYSTEM DESCRIPTION

A. THE ELECTRICAL PLANS INDICATE THE GENERAL LAYOUT AND ARRANGEMENT; THE ARCHITECTURAL DRAWINGS AND FIELD CONDITIONS SHALL DETERMINE EXACT LOCATIONS. FIELD VERIFY ALL CONDITIONS AND MODIFY AS REQUIRED TO SATISFY DESIGN REQUIREMENTS AS WELL AS CODE MINIMUMS. MAINTAIN ALL REQUIRED WORKING CLEARANCES AS DESCRIBED IN CEC ARTICLE 110 AS WELL AS OTHER APPLICABLE ARTICLES.

B. DISCREPANCIES SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION. THE ARCHITECT SHALL APPROVE ANY CHANGES. PRIOR TO ROUGH–IN, REFER TO ARCHITECTURAL PLANS THAT SHALL TAKE PRECEDENCE OVER ELECTRICAL PLANS WITH RESPECT TO LOCATIONS.

C. VERIFY ALL POWER AND COMMUNICATIONS UTILITY COMPANY REQUIREMENTS PRIOR TO COMMENCEMENT OF UTILITY WORK. MAKE PROPER ADJUSTMENTS TO THE CONSTRUCTION TO SATISFY THE SERVING UTILITY REQUIREMENTS IF THEY DIFFER FROM THE CONSTRUCTION DOCUMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT EACH UTILITY COMPANY FOR OBTAINING FINALIZED UTILITY DESIGN DRAWINGS AND/OR APPROVAL, AND FOR SCHEDULING INSPECTION OF UTILITY INFRASTRUCTURE INSTALLATIONS.

D. CHARGES IMPOSED BY THE ELECTRIC AND COMMUNICATIONS UTILITY COMPANIES SHALL BE PAID BY OWNER DIRECTLY TO UTILITY COMPANIES.

1.4 SUBMITTALS AND SHOP DRAWINGS

A. BEFORE CONSTRUCTION, SUBMIT IN ACCORDANCE WITH THE GENERAL CONDITIONS OF THIS SPECIFICATION: A COMPLETE LIST OF ALL MATERIALS PROPOSED TO BE FURNISHED AND INSTALLED UNDER THIS SECTION.

B. MANUFACTURERS' SPECIFICATIONS, CATALOG CUTS AND SHOP DRAWINGS AS REQUIRED TO DEMONSTRATE COMPLIANCE WITH THE SPECIFICATIONS. IDENTIFY SPECIFIC INTENDED USE FOR EACH COMPONENT WHERE SUBMITTAL MAY BE AMBIGUOUS. SUBMIT ENTIRE BOUND SUBMITTAL AT ONE TIME; PARTIAL SUBMITTALS WILL NOT BE ACCEPTED. AT A MINIMUM, SUBMITTALS WILL BE REQUIRED FOR THE FOLLOWING:
   1. UTILITY SERVICE/SITE WORK EQUIPMENT INCLUDING DUCTS, CONDUITS, FITTINGS, CONCRETE MANHOLES, CONCRETE AND FIBERGLASS PULL, MANHOLE, BOXES, VAULTS, TRENCH RACKS, ACCESSORIES, ETC.
   2. DISTRIBUTION EQUIPMENT INCLUDING METERING EQUIPMENT, PANELS AND BREAKERS, MOTOR CONTROLS, GROUNDING, TRANSIENT VOLTAGE SURGE SUPPRESSORS, ETC.
   3. ELECTRICAL EQUIPMENT INCLUDING DISCONNECTS, FUSES, RACEWAYS, STRAPS AND RACKS, FITTINGS, CONDUCTORS, BOXES, GUTTERS, DEVICES, PLATES, ETC.
   4. LIGHTING EQUIPMENT INCLUDING FIXTURES, BALLASTS, LAMPS, MOUNTING ACCESSORIES, COLOR CHARTS (WHERE REQUIRED), ETC.
   5. LIGHTING CONTROL EQUIPMENT INCLUDING DIMMERS, SWITCHES, ACCESSORIES, OCCUPANCY SENSING EQUIPMENT, TIME CLOCKS, CONTACTORS, PHOTOCELLS, ETC.
   6. COMPLETE SYSTEM COMPONENT SUBMITTALS AND SHOP DRAWINGS FOR:

A. FIRE SPRINKLER MONITORING SYSTEM
   7. CONDUIT INCLUDING ALL FITTINGS, ETC.
   8. WIRING AND CABLE, TERMINATIONS, ETC.
   9. FIRE RATING PENETRATION MATERIALS, DETAILS, ETC.

C. THE INTENT OF THESE SPECIFICATIONS IS TO ESTABLISH A STANDARD OF QUALITY FOR MATERIALS AND EQUIPMENT. THEREFORE, SOME ITEMS ARE IDENTIFIED BY MANUFACTURER OR TRADE NAME DESIGNATION. SUBSTITUTIONS SHALL BE SUBJECT TO THE ARCHITECT'S APPROVAL. SAMPLES OF THE PROPOSED AND SUBSTITUTE MATERIALS MAY BE REQUIRED FOR INSPECTION PRIOR TO APPROVAL. COSTS, IF ANY, FOR EVALUATION OF SUBSTITUTIONS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE DECISION OF THE ARCHITECT SHALL BE FINAL. WHERE THE SUBSTITUTION WILL AFFECT OTHER TRADES, COORDINATE ALL CHANGES WITH THOSE TRADES CONCERNED AND PAY ANY ADDITIONAL COSTS INCURRED BY THEM AS A RESULT OF THIS SUBSTITUTION. APPROVAL OF SUBSTITUTIONS SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING AN OPERATIONAL SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES.

1.5 DELIVERY, STORAGE AND HANDLING

A. STORAGE OF EQUIPMENT FOR THE JOB IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR AND SHALL BE SCHEDULED FOR DELIVERY TO THE SITE, AS THE EQUIPMENT IS REQUIRED. DAMAGE TO THE EQUIPMENT DELIVERED TO THE SITE OR IN TRANSPORT TO THE JOB SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

PART 2 – PRODUCTS

2.1 MATERIALS

A. MATERIALS SHALL BE NEW AND BEAR THE LABEL OF OR BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY. THE QUALITY AND SUITABILITY OF ALL MATERIALS SHALL CONFORM TO THE STANDARDS AND PRACTICES OF THIS TRADE.

B. SUPPLIED MATERIALS SHALL BE OF A CURRENT MANUFACTURED PRODUCT LINE. DISCONTINUED PRODUCTS ARE NOT ACCEPTABLE. WHERE PRODUCTS ARE IDENTIFIED ON THE CONTRACT DOCUMENTS BY PART NUMBER, SUPPLY THE CURRENT PRODUCT MODEL OR SERIES WHICH MEETS THE SPECIFICATION AND INTENDED USE OF THE SPECIFIED COMPONENT.

2.2 SUPPORTING DEVICES

A. HANGERS: KINDORF B–905–2A CHANNEL, H–119–D WASHER, C105 STRAP, 3/8–INCH ROD WITH CEILING FLANGE.

B. CONCRETE INSERTS: KINDORF D–255, CAST IN CONCRETE FOR SUPPORT FASTENERS FOR LOADS UP TO 800 LBS.

C. PIPE STRAPS: TWO–HOLE GALVANIZED OR MALLEABLE IRON.

D. LUMINAIRE CHAIN: CAMPBELL CHAIN 75031, 90–LB. TEST WITH STEEL HOOKS.

PART 3 – EXECUTION

3.1 INSTALLATION

A. PROFESSIONALISM AND APPEARANCE OF INSTALLATIONS SHALL BE IN ACCORDANCE WITH ACCEPTED PRACTICES OF THIS TRADE. INSTALLATION METHODS SHALL CONFORM TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS. THE CONTRACTOR SHALL MAN THE JOB WITH QUALIFIED JOURNEYMEN AND HELPERS IN THIS TRADE FOR THE DURATION OF THE JOB. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMMUNICATE WITH AND KEEP THE JOB SUPERINTENDENT APPRAISED OF CHANGES OR CLARIFICATIONS, ETC.

B. EMPLOYMENT OF ANY PERSON ON ANY JOB IN THE CAPACITY OF AN ELECTRICIAN IS NOT PERMITTED UNLESS SUCH PERSON HAS QUALIFIED FOR AND HOLDS A VALID JOURNEYMAN ELECTRICIAN POCKET CARD OR GENERAL JOURNEYMAN ELECTRICIAN CERTIFICATE AS ISSUED BY THE STATE OF CALIFORNIA DIVISION OF APPRENTICESHIP STANDARDS EXCEPT, CONTRACTOR MAY EMPLOY ELECTRICAL HELPERS OR APPRENTICES ON ANY JOB OF ELECTRICAL CONSTRUCTION, NEW OR EXISTING, WHEN THE WORK OF SUCH HELPERS OR APPRENTICES IS PERFORMED UNDER THE DIRECT AND CONSTANT PERSONAL SUPERVISION OF A JOURNEYMAN ELECTRICIAN HOLDING A VALID POCKET CARD ACCEPTED BY THE STATE OF CALIFORNIA DIVISION OF APPRENTICESHIP STANDARDS.
   1. EACH POCKET CARD CARRYING JOURNEYMAN ELECTRICIAN WILL BE PERMITTED TO BE RESPONSIBLE FOR THE QUALITY OF WORKMANSHIP FOR A MAXIMUM OF ONE HELPER OR APPRENTICE DURING ANY SAME TIME PERIOD, PROVIDED THE NATURE OF WORK IS SUCH THAT GOOD SUPERVISION CAN BE MAINTAINED AND THE QUALITY OF WORKMANSHIP IS THE BEST, AS EXPECTED BY OWNER AND IMPLIED BY THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
   2. BEFORE EACH JOURNEYMAN ELECTRICIAN COMMENCES WORK, DELIVER TO OWNER AT THE PROJECT SITE, A PHOTOCOPY OF THE JOURNEYMAN'S VALID POCKET CARD.

C. MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS' SPECIFICATION AND RECOMMENDATIONS. THEY MUST CONFORM TO THE APPROVAL AHJ ADOPTED CODES AND STANDARDS, BUT NOT LESS THAN THE 2007 CEC AND ALL APPLICABLE CODES AND STANDARDS, INCLUDING BUT NOT NECESSARILY LIMITED TO CALIFORNIA CODE OF REGULATIONS TITLE 24, NFPA, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, ANSI, CBC, AND ANY OTHER ADOPTED ORDINANCES OF APPLICABLE AGENCIES HAVING JURISDICTION. REFER TO GENERAL CONDITIONS OF SPECIFICATIONS.

D. ELECTRICAL CONTRACTOR SHALL LAY WORK OUT IN ADVANCE IN ORDER TO AVOID UNNECESSARY CUTTING, CHASING, AND DRILLING OF FLOORS, WALLS, CEILINGS AND OTHER SURFACES. WORK OF THIS NATURE SHALL BE CAREFULLY DONE SO AS NOT TO DAMAGE WORK ALREADY PERFORMED BY OTHER TRADES. ANY DAMAGE WHICH RESULTS MUST BE PROPERLY REPAIRED AT NO EXTRA COST TO THE OWNER. SUCH ALTERATIONS SHALL NOT DEPRECIATE THE INTEGRITY OF THE STRUCTURE. APPROVAL FOR CUTS OR PENETRATIONS IN STRUCTURAL MEMBERS SHALL BE BY THE ARCHITECT.

E. SUPPORTING DEVICES:
   1. VERIFY MOUNTING HEIGHT OF ALL LUMINAIRES OR ITEMS PRIOR TO INSTALLATION WHEN HEIGHTS ARE NOT DETAILED.
   2. INSTALL VERTICAL SUPPORT MEMBERS FOR EQUIPMENT AND LUMINAIRES, STRAIGHT AND PARALLEL TO BUILDING WALLS. PROVIDE INDEPENDENT SUPPORTS TO STRUCTURAL MEMBER FOR ELECTRICAL LUMINAIRES, MATERIALS, OR EQUIPMENT INSTALLED IN OR ON CEILING, WALLS OR IN VOID SPACES OR OVER FURRED OR SUSPENDED CEILINGS.
   3. DO NOT USE OTHER TRADE'S FASTENING DEVICES AS SUPPORTING MEANS FOR ELECTRICAL EQUIPMENT, MATERIALS OR LUMINAIRES. DO NOT USE SUPPORTS OR FASTENING DEVICES TO SUPPORT OTHER THAN ONE PARTICULAR ITEM.
   4. SUPPORT CONDUITS WITHIN 18–INCHES OF OUTLETS, BOXES, PANELS, CABINETS AND DEFLECTIONS. MAXIMUM DISTANCE BETWEEN SUPPORTS NOT TO EXCEED 8–FOOT SPACING.
   5. SECURELY SUSPEND ALL JUNCTION BOXES, PULL BOXES OR OTHER CONDUIT TERMINATING HOUSINGS LOCATED ABOVE SUSPENDED CEILING FROM THE FLOOR ABOVE OR ROOF STRUCTURE TO PREVENT SAGGING AND SWAYING.
   6. PROVIDE SEISMIC BRACING PER UBC REQUIREMENTS FOR THIS BUILDING LOCATION.
   7. SUPPORTING DEVICES: SAFETY FACTOR OF 4 REQUIRED FOR EVERY FASTENING DEVICE OR SUPPORT FOR ELECTRICAL EQUIPMENT INSTALLED. SUPPORT TO WITHSTAND FOUR TIMES WEIGHT OF EQUIPMENT IT SUPPORTS. BRACING TO COMPLY WITH SEISMIC ZONE 4 REQUIREMENTS.

F. COORDINATE WORK WITH OTHER TRADES AS REQUIRED TO ELIMINATE ANY DELAYS DURING CONSTRUCTION. COORDINATE CHANGES WITH OTHER PRIME CONTRACTORS TO AVOID CONSTRUCTION CONFLICTS.

G. ENGINEER'S FIELD OBSERVATION: SITE VISITS DURING CONSTRUCTION FOR FIELD OBSERVATIONS AND REPORTS WILL BE CONDUCTED BY ELECTRICAL ENGINEER WHEN DIRECTED BY THE ARCHITECT. A LIST OF ITEMS THAT NEED TO BE ADDRESSED WILL BE SUBMITTED TO THE ARCHITECT FOR FORWARDING TO THE CONTRACTOR. A WRITTEN RESPONSE TO ALL ITEMS SHALL BE SUBMITTED FOR OWNER'S REVIEW ONCE COMPLETE. WHEN ELECTRICAL ENGINEERING REPRESENTATIVE PERFORMS A FIELD OBSERVATION, THE ELECTRICAL CONTRACTOR SHALL BE PRESENT AND AVAILABLE TO REMOVE EQUIPMENT COVERS AS NEEDED.

H. DRAWINGS OF RECORD: PROVIDE A FULL AND ACCURATE SET OF FIELD RECORD DRAWINGS MARKED UP IN A NEAT AND UNDERSTANDABLE MANNER SUBMITTED TO THE OWNER REPRESENTATIVE, CONSTRUCTION MANAGER, OR ARCHITECT UPON COMPLETION OF THE WORK AND PRIOR TO ISSUANCE OF A CERTIFICATE OF COMPLETION. THE DRAWINGS SHALL DIMENSION ALL ELECTRICAL FACILITIES INCLUDING BUT NOT LIMITED TO UNDERGROUND CONDUIT, VAULTS, BOXES AS WELL AS CONDUIT ROUTING SCALED TO WITHIN 12" OF ACTUAL FIELD CONDITIONS AND SHALL BE KEPT UP TO DATE ON A DAILY BASIS REFLECTING CHANGES OR DEVIATIONS. ELECTRICAL FACILITIES SHALL BE ACCURATELY DRAWN ON THE PLAN TO SCALE. REFER TO THE GENERAL CONDITIONS OF THESE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. RECORD DRAWINGS SHALL BE REQUIRED TO IDENTIFY BOTH HORIZONTAL AND VERTICAL DIMENSIONS TO VISIBLE AND FIXED POINTS SUCH AS CONCRETE, ASPHALT, BUILDINGS, SIDEWALKS, ETC.

I. IDENTIFICATION: PROVIDE ENGRAVED LAMINATED PLASTIC NAMEPLATES FOR ALL, PANELBOARDS, FIRE ALARM TERMINAL CABINETS, TELEPHONE AND CABLE TELEVISION BACKBOARDS, MAIN DEVICES, CONTROL PANELS, TIME CLOCKS, CONTACTORS AND SAFETY DISCONNECT SWITCHES ACCURATELY IDENTIFYING EACH DEVICE. LABELS SHALL BE ATTACHED TO THE EQUIPMENT BY MEANS OF SCREWS OR RIVETS. SELF–ADHERING LABELS WILL NOT BE ACCEPTABLE. REFER TO SECTION 16141, EQUIPMENT LABELS AND NAMEPLATES AND WARNING SIGNS.

J. SAFETY: THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO MAINTAIN EQUIPMENT IN A SAFE AND RESPONSIBLE MANNER. KEEP DEAD FRONT EQUIPMENT IN PLACE WHILE EQUIPMENT IS ENERGIZED. CONDUCT CONSTRUCTION OPERATIONS IN A SAFE MANNER FOR EMPLOYEES AS WELL AS OTHER WORK PERSONS OR ANYONE VISITING THE JOB SITE. PROVIDE BARRIERS, TRENCH PLATES, FLAGS, TAPE, ETC. THE CONTRACTOR SHALL HOLD ALL PARTIES HARMLESS OF NEGLIGENT SAFETY PRACTICES THAT MAY CAUSE INJURY TO OTHERS ON OR NEAR THE JOB SITE.

K. GUARANTEES: EQUIPMENT AND LABOR SHALL BE GUARANTEED AND WARRANTED FREE OF DEFECTS, UNLESS OTHERWISE STATED TO BE MORE RESTRICTIVE, FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER. A WRITTEN WARRANTY SHALL BE PRESENTED TO THE ARCHITECT AT THE TIME OF COMPLETION PRIOR TO FINAL ACCEPTANCE. EQUIPMENT DEEMED TO BE DAMAGED, BROKEN OR FAILED SHOULD BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER. MATERIALS OR SYSTEM REQUIRING LONGER THAN A ONE–YEAR WARRANTY AS DESCRIBED HEREIN SHALL BE SEPARATELY WARRANTED IN SEPARATE LETTERS OF GUARANTEE STATING THE DURATION OF WARRANTY.

L. OPERATING AND INSTALLATION MANUALS: PROVIDE TWO COPIES EACH OF MANUALS, OPERATING AND INSTALLATION INSTRUCTIONS FOR EQUIPMENT INDICATED IN SUBMITTAL PACKAGES. INSTRUCT THE OWNER'S REPRESENTATIVE AS TO THE OPERATION AND LOCATION OF EQUIPMENT NECESSARY TO ALLOW THEM TO OPERATE THE FACILITY UPON FINAL ACCEPTANCE. THIS INSTRUCTION PERIOD SHALL BE PREARRANGED WITH THE OWNER'S REPRESENTATIVE PRIOR TO OCCUPANCY OF THE FACILITY AND THE WEEKS PRIOR TO TRAINING SCHEDULED.

END OF SECTION 16050

SECTION 16110 – RACEWAYS

PART 1 – GENERAL

1.1 WORK INCLUDED

A. INSTALLATION OF ALL WIRE, CABLE, CONDUCTOR, PULL ROPES, FIBER OPTIC CABLE RACEWAY, CONDUIT, INNERDUCT, CABLE SLEEVE AND DUCT AS DESCRIBED ON THE PLANS AND/OR AS SPECIFIED HERE–IN. THIS SCOPE SHALL INCLUDE PATHWAYS TO BE INSTALLED UNDERGROUND ON SITE AND OFFSITE, UNDERSLAB, ABOVE GRADE, BOTH CONCEALED AND EXPOSED, OVERHEAD CONCEALED AND EXPOSED AS APPROPRIATELY APPLIED. RACEWAYS SHALL BE INSTALLED IN ACCORDANCE WITH THEIR INTENDED AND ALLOWED USES AND AS SPECIFIED IN WHICHEVER IS MORE AND RESTRICTIVE. SIZE AND CAPACITY OF ALL RACEWAY SHALL BE AS SPECIFIED HERE–IN OR AS DEPICTED ON THE DRAWINGS, BUT SHALL NOT BE LESS THAN THAT REQUIRED BY CODE. LARGER RACEWAY SIZES MAY BE SPECIFIED THAN CODE WOULD PERMIT. THE SPECIFICATIONS SHALL GOVERN.

B. LISTED PRODUCTS FOR TERMINATION, COUPLING, EXTENDING, BENCHING SUPPORTS OF RACEWAYS SHALL BE USED.

C. RACEWAYS DESCRIBED BY THIS SECTION SHALL INCLUDE, BUT NOT BE LIMITED TO, POWER FOR SITE UTILITIES AND LIGHTING, SITE AND BUILDING COMMUNICATIONS, CONTROLS, FIRE ALARM, DATA SYSTEM, POWER DISTRIBUTION, LIGHTING, LIGHTING CONTROLS, VIDEO, CATV, VOICE COMMUNICATIONS, HVAC AND OTHER BUILDING LOW VOLTAGE/COMMUNICATIONS SYSTEMS CONTROLS AS MAY BE REQUIRED. RACEWAYS AND DUCT PATHS REQUIRED FOR UTILITY COMPANIES SHALL BE INSTALLED PER PLANS UNLESS UTILITY COMPANY REQUIREMENTS ARE MORE RESTRICTIVE AT WHICH TIME THOSE REQUIREMENTS SHALL TAKE PRECEDENCE.

D. PROTECTION OF AND CLEANLINESS OF PATHWAYS AND RACEWAYS MUST BE ASSURED DURING THE CONSTRUCTION PROCESS IN ORDER TO ELIMINATE THE POSSIBILITY OF DEBRIS ENTERING THE CONDUIT, DUCT, PATHWAY RESULTING IN DECREASED WIRE CAPACITY AND POTENTIAL DAMAGE TO INSTALLED CONDUCTORS AND CABLES.

E. PATHWAYS ARE SHOWN IN A DIAGRAMMATIC WAY AND ARE GENERALLY ACCURATE AS TO ROUTING, HOWEVER, IT IS THE CONTRACTOR'S RESPONSIBILITY AS A MEANS AND METHODS PROCESS TO COORDINATE WITH ALL OTHER TRADES THAT REQUIRE SPACE WITHIN A BUILDING. THE CONTRACTOR SHALL OBTAIN APPROVAL FOR INSTALLATION OF RACEWAYS ROUTING THROUGH STRUCTURAL FOOTINGS, RETAINING WALLS, COLUMNS, BEAMS, PERLINS, GRADE BEAMS, ETC.

F. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT ALL RACEWAY AND PATHWAY SYSTEMS PENETRATE FIRE ASSEMBLIES AND SOUND RATED ASSEMBLIES IN AN APPROVED MANNER USING THE APPROPRIATE AND LISTED PRODUCTS FOR THE PURPOSE.

G. TRENCHING AND BACKFILLING FOR ALL UNDERGROUND CONDUIT SYSTEMS INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONDUITS SHALL HAVE MINIMUM COVER REQUIREMENT OF 36" BELOW FINISH GRADE WITH THE EXCEPTION OF SITE LIGHTING CONDUITS WHICH MAY BE 24" BELOW FINISH GRADE MINIMUM. MORE STRINGENT DEPTH REQUIREMENTS MAY BE IMPOSED BY THE LOCAL AGENCY AND UTILITY COMPANY AND SHALL BE ADHERED TO, AND / OR THIS SPECIFICATION OR AS DETAILED ON THE PLANS. JOINT TRENCHING MAY BE UTILIZED WHERE PRACTICABLE AND WERE PERMITTED BY THIS SPECIFICATION. CONCRETE, NATIVE MATERIAL AND SAND SHALL BE USED AS BACKFILL MATERIAL AND SHALL BE COMPACTED IN ACCORDANCE WITH AND COORDINATED WITH THE GRADING AND SITE PREPARATION REQUIREMENTS. CONDUITS SHALL REST IN A MINIMUM OF 4" BED OF SAND PRIOR TO BACKFILL AND COMPACTION. LOCATIONS OF EXISTING UNDERGROUND (UG) UTILITY SYSTEMS SHALL BE DETERMINED BY CALLING UNDERGROUND SERVICE ALERT (USA) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION. ALSO REFER TO SECTION 16402, UNDERGROUND ELECTRICAL CONSTRUCTION AND SERVICE.

H. MINIMUM CONDUIT SIZE SHALL BE ½ INCH EXCEPT IF PLAN SHOWS OR CODE REQUIRES LARGER SIZE. EXCEPTION: USE MINIMUM 3/4" FOR UNDERSLAB AND BELOW GRADE APPLICATIONS OUTSIDE OF BUILDING EXTERIOR WALLS.

I. ALL ELECTRICAL, CONTROL, COMMUNICATIONS SYSTEMS SHALL BE INSTALLED IN METALLIC CONDUIT SYSTEM. THIS SHALL NOT BE LIMITED TO ALL SYSTEMS DESCRIBED IN SECTION C ABOVE EXCEPT FOR VOICE AND DATA SYSTEMS WHICH SHALL BE INSTALLED AS DESCRIBED ON THESE PLANS AND AS SPECIFIED HERE–IN BUT SHALL NOT BE LESS THAN THE RECOMMENDATIONS OF EIA/TIA STANDARDS.

J. ALL LINE VOLTAGE WIRING WITHIN THE BUILDING SHALL BE INSTALLED IN METALLIC CONDUIT.

K. ALL CONDUIT, CONCRETE PADS, UNDERGROUND CONCRETE OR FIBERGLASS SUBSTRUCTURES SHALL BE FURNISHED AND INSTALLED WITH THE APPROVED MATERIALS AND TYPE FOR THE APPLICATION. PROVIDE PROPER TRAFFIC CONTROL DURING CONSTRUCTION AS WELL AS BARRIERS AND PROTECTION OF ALL EXCAVATIONS AND TRENCHING.

L. EMPTY OR FUTURE CONDUITS SHALL BE PROPERLY PLUGGED WITH PLASTIC CAPS OR INSERTS WITH A 3/8 INCH POLYETHYLENE PULL ROPE. PLASTIC OR "DUCT" TAPE WILL NOT BE ACCEPTABLE.

M. EXTERIOR INSTALLATIONS: AFTER CONDUCTORS ARE INSTALLED, SEAL CONDUIT ENDS TO PREVENT ENTRANCE OF FOREIGN MATERIAL USING PLIABLE DUCT SEAL, CAPS OR WATERPROOF EXPANDING FOAM.

N. UNDERGROUND CONDUITS ENTERING BUILDING SHALL HAVE THE OPEN END OF CONDUIT WITHIN BUILDING ABOVE THE ELEVATION OF THE CONDUIT OUTSIDE THE BUILDING SUCH THAT WATER CANNOT ENTER BUILDING THROUGH CONDUIT. IF SUCH A CONDITION EXISTS, A PULL BOX OUTSIDE OF BUILDING FOOTPRINT SHALL BE INSTALLED IN CONDUIT ROUTE BEFORE CONDUIT ENTERS BUILDING WHEREBY TOP OF PULL BOX IS BELOW FINISH FLOOR OF BUILDING AND MOISTURE MAY EXIT BOX BEFORE ENTERING BUILDING.

O. NO SINGLE CONDUIT RUN OF ANY TYPE SHALL EXCEED 300 DEGREES OF RADIUS BEND FROM TERMINATION BOX TO TERMINATION BOX.

P. SEPARATE RACEWAY SYSTEM: PROVIDE A SEPARATE DEDICATED RACEWAY SYSTEM FOR EACH SYSTEM INSTALLED, DO NOT COMBINE DIFFERENT SYSTEMS INTO A RACEWAY OR CABLE TRAY SYSTEM, UNLESS OTHERWISE NOTED OR ALLOWED.

Q. SPARE, FUTURE CONDUITS: CONDUITS LABELED CONDUIT ONLY, SPARE, OR FOR FUTURE USE, SHALL BE PROVIDED WITH A PULLROPE, CAPPED AT EACH END, LABELED AS SPARE WITH DESTINATION MARKED, AND TURNED OVER TO THE OWNER IN AN UNUSED STATE. CONTRACTOR SHALL NOT UTILIZE THESE CONDUITS FOR THE INSTALLATION OF CABLING OR CONDUCTORS AS PART OF THIS SCOPE OF WORK. CONTRACTOR TO VERIFY AND INSTALL AT NO ADDITIONAL COST TO THE OWNER, ADDITIONAL CONDUITS AS REQUIRED FOR THE INSTALLATION OF THE SYSTEMS BEING INSTALLED.

PART 2 – PRODUCTS

2.1 MATERIALS

A. HEAVY WALL RIGID NON–METALLIC CONDUIT, SHALL BE PVC SCHEDULE 40 MANUFACTURED IN ACCORDANCE WITH NEMA STANDARD TC–2, UL–651 AND WC 1094A SPECIFICATIONS. APPROVED MANUFACTURERS ARE CARLON, CERTAINTEED, R&G SLOANE OR EQUAL.

B. EXTRA HEAVY WALL NON–METALLIC CONDUIT, SHALL BE PVC SCHEDULE 80 MANUFACTURED IN ACCORDANCE WITH NEMA STANDARD TC–2, UL–651 AND WC 1094A SPECIFICATIONS. APPROVED MANUFACTURERS ARE CARLON, CERTAINTEED, R&G SLOANE OR EQUAL.

C. GALVANIZED RIGID STEEL (GRS) CONDUIT SHALL BE HOT DIPPED GALVANIZED, ZINC COATED AND SHALL COMPLY WITH UNDERWRITERS LABORATORIES UL–6, ANSI SPECIFICATION C–80.1 AND F

I. CONDUIT STUB–OUTS BELOW GRADE SHALL BE CAPPED WITH PLASTIC CAP, AND IDENTIFIED BY PLACING A PULL BOX MARKED WITH CORRECTLY IDENTIFIED UTILITY SUCH AS "ELEC", "TEL", ETC. DIMENSION FOR EXACT LOCATION ON FIELD RECORD DRAWINGS. PROVIDE LIDS FOR PROPER FIELD APPLICATION (I.E. TRAFFIC, INCIDENTAL, PEDESTRIAN).

J. CONDUIT SEALS: WHERE BELOW GRADE CONDUITS ENTER STRUCTURE THROUGH SLAB OR RETAINING WALL OF BUILDING OR BASEMENT, SEAL THE INSIDE OF EACH CONDUIT AS FOLLOWS:
1. PROVIDE DAMMING MATERIAL AROUND CONDUCTORS 3 INCH INTO CONDUIT.
2. FILL 3 INCHES OF CONDUIT WITH 3M #2123 SEALING COMPOUND.
3. WRAP CONDUCTORS WHERE THEY EXIT THE CONDUIT WITH 3M #2229 "SCOTCH SEAL" MASTIC TAPE. LAP TAPE TO APPROXIMATE DIAMETER OF THE RACEWAY AND WRAP OUTSIDE OF CONDUIT OPENING WITH (MINIMUM) ONE TURN.
4. USE CONDUIT SEALING BUSHINGS TYPE CSB (O–Z/GEDNEY) OR EQUAL.
5. EMPTY CONDUITS SHALL BE SEALED WITH STANDARD NON–HARDENING DUCT SEAL COMPOUND AND THEN CAPPED TO PREVENT ENTRANCE OF MOISTURE AND GASES AND TO MEET FIRE RESISTANCE REQUIREMENTS.
6. PROVIDE CABLE DRIP LOOP MINIMUM 12" HIGH.

K. MARKER TAPE: PLACE PLASTIC YELLOW MARKER TAPE AT 12 INCHES BELOW FINISH GRADE ALONG AND ABOVE BURIED CONDUITS. LABEL TAPE "CAUTION: ELECTRICAL LINES BELOW" OR SIMILAR WORDING.

L. ELECTRICAL AND COMMUNICATIONS SYSTEMS RACEWAYS ROUTED UNDERGROUND SHALL NOT OCCUPY THE SAME TRENCH AS PLUMBING UTILITIES SUCH AS SEWER, WATER, STORM DRAIN, GAS OR OTHER WET OR DRY GASEOUS UTILITY SYSTEM. A MINIMUM OF 12" OF UNDISTURBED EARTH IS REQUIRED. WHERE UTILITIES MUST CROSS IN CLOSER PROXIMITY TO EACH OTHER DUE TO PHYSICAL CONSTRAINTS, 6" MINIMUM CROSSING DISTANCES ARE ALLOWED, HOWEVER 18" ON ALL SIDES OF A UTILITY CROSSING MUST BE CONCRETE ENCASED.

M. DUCT BANK DEFINED HERE–IN SHALL BE FOUR OR MORE CONDUITS IN A COMMON TRENCH. CONDUIT SPACERS AND SADDLES SHALL BE REQUIRED IN ALL TRENCHES WHERE MORE THAN TWO CONDUITS OVER 2 INCH IN DIAMETER TRAVEL IN THE SAME TRENCH. PROPER SPACING BETWEEN SYSTEMS AS OUTLINED ABOVE SHALL BE REQUIRED AND SPACERS SHALL BE LOCATED EACH FIVE FEET (MAXIMUM) ALONG TRENCH ROUTE FROM POINT TO POINT.

N. CONDUITS, ROUTED BELOW FOOTINGS, SLABS, GRADE BEAMS, COLUMNS, AND OTHER STRUCTURAL ELEMENTS SHALL BE INSTALLED IN STRICT COMPLIANCE WITH STRUCTURAL DETAILS AND CRITERIA SHOWN ON STRUCTURAL PLANS. CLEARANCES BELOW STRUCTURAL ELEMENTS AND SLEEVES THROUGH STRUCTURAL ELEMENTS MUST BE CAREFULLY PLANNED TO AVOID CONFLICT AND MUST BE APPROVED BY THE STRUCTURAL ENGINEER IF CONFLICT ARISES.

O. ALL CONDUIT OR RACEWAYS PASSING THROUGH FIRE RATED WALLS, FLOORS, OR CEILINGS SHALL BE INSTALLED WITH A LISTED PENETRATION METHOD WHICH PROTECTS THE OPENING TO THE SAME RATING AS THE ASSEMBLY AND IS NON HARDENING.

END OF SECTION 16110

SECTION 16120 – POWER WIRE, CABLE AND CONDUCTORS

PART 1 – GENERAL

1.1 SUMMARY
A. SECTION INCLUDES:
1. WIRES AND CABLES.
2. CONNECTORS.
3. LUGS AND PADS.

1.2 SYSTEM DESCRIPTION
A. PROVIDE WIRES, CABLES, CONNECTORS, LUGS, STRAIN RELIEFS, RACKING INSULATORS FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM.

1.3 SUBMITTALS
A. PROVIDE PRODUCT DATA FOR THE FOLLOWING EQUIPMENT:
1. WIRES.
2. CABLES.
3. CONNECTORS.
4. LUGS.
5. SPLICE KITS.
6. STRAIN RELIEF FITTINGS.
7. CABLE RACKING AND INSULATORS.
B. PROVIDE THE INSULATION CABLE TESTING REPORT IN THE PROJECT CLOSEOUT DOCUMENTATION, REFER TO CLOSEOUT REQUIREMENTS IN THE GENERAL CONDITIONS PORTION OF THIS SPECIFICATION.

1.4 REGULATORY REQUIREMENTS
A. CONFORM TO REQUIREMENTS OF THE CEC, LATEST ADOPTED VERSION WITH AMENDMENTS BY LOCAL AUTHORITY HAVING JURISDICTION (AHJ).
B. FURNISH PRODUCTS LISTED BY UL OR OTHER TESTING FIRM ACCEPTABLE TO AHJ.

PART 2 – PRODUCTS

2.1 MANUFACTURERS
A. WIRES AND CABLES: CAROL, GENERAL CABLE, OKONITE, ROME, SOUTHWIRE, OR APPROVED EQUAL.
B. CONNECTORS: BURNDY, ILSCO, THOMAS & BETTS, OR APPROVED EQUAL.
C. WIRE CONNECTORS SHALL BE MINIMUM 75 DEGREE CENTIGRADE RATED AND PROPERLY SIZED FOR THE NUMBER OF CONDUCTORS BEING CONNECTED, TERMINATED, SPLICED ETC. ALL ABOVE GRADE CONNECTORS SHALL BE SOLDERLESS LUG OR PLASTIC WIRE NUT TYPE, SCREW ON, PRESSURE CABLE TYPE (WIRE NUT OR SPRING NUT TYPE), 600 VOLT, 105 DEGREE C, WITH SKIRT TO COVER ALL PORTIONS OF STRIPPED WIRES. CONNECTOR SHALL BE U.L. RATED FOR NUMBER AND SIZE OF CONDUCTORS BEING JOINED TOGETHER AS A SPLICE.
D. SPLICES:
1. BRANCH CIRCUIT SPLICES: IDEAL, SCOTCH–LOCK, 3M, OR APPROVED.
2. FEEDER SPLICES: COMPRESSION BARREL SPLICE WITH TWO LAYERS SCOTCH 23 AND FOUR LAYERS OF SCOTCH 33+ AS VAPOR BARRIER.
3. SCREW TERMINAL LUGS.
4. KEARNEY SPLIT BOLT.

2.2 WIRES AND CABLES FOR LINE VOLTAGE SYSTEM AND CONTROLS. WIRE AND CABLE SHALL BE:
A. COPPER, 600 VOLT RATED THROUGHOUT. CONDUCTORS 14AWG TO 10AWG, SOLID OR STRANDED. CONDUCTORS 8AWG AND LARGER, STRANDED.
B. PHASE COLOR TO BE CONSISTENT AT ALL FEEDER TERMINATIONS; A–B–C, TOP TO BOTTOM, LEFT TO RIGHT, FRONT TO BACK. PHASING TAPE SHALL BE PERMITTED ON SIZES #6 AND LARGER.
C. COLOR CODE CONDUCTORS AS FOLLOWS:

PHASE	240 VOLT DELTA
A	BLACK
B	BLUE
NEUTRAL	WHITE
GROUND	GREEN

D. ALL CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE NOTED. MINIMUM SIZE FOR INDIVIDUAL CONDUCTORS SHALL BE #12 AWG UNLESS OTHERWISE NOTED. SIZES #8 AWG AND LARGER SHALL BE STRANDED CONDUCTOR. INDIVIDUAL CONDUCTORS SHALL BE INSULATED WITH TYPE, XHHW, THW, THHN/THWN 600–VOLT INSULATION UNLESS OTHERWISE NOTED. CONTROL, SIGNAL, COMMUNICATION CONDUCTORS SHALL BE AS DICTATED BY THE VENDOR OF THAT EQUIPMENT OR AS SPECIFIED HERE–IN. PROPER INSULATION TYPE SHALL BE USED FOR THE PROPER ENVIRONMENTAL APPLICATION (I.E., WATERPROOF, WET LOCATION, PLENUM, TEMPERATURE RATED). IF A CONDITION EXISTS WHERE THE APPLICATION IS UNCERTAIN, CONTACT THE ENGINEER FOR DIRECTION. CONTRACTOR IS RESPONSIBLE TO FOLLOW SPECIFIC CABLING REQUIREMENTS DESCRIBED IN OTHER SECTIONS OF THIS SPECIFICATION RELATIVE TO VARIOUS COMMUNICATIONS AND CONTROLS SYSTEMS AS WELL AS THE RESPECTIVE RISER DIAGRAMS SHOWN ON PLANS. IF A DISCREPANCY OCCURS, COMMUNICATE SUCH DISCREPANCY TO THE ARCHITECT AND ENGINEER IMMEDIATELY FOR RESOLUTION.
E. INSULATION TYPES THWN, THHN OR XHHW. MINIMUM INSULATION RATING OF 90C FOR BRANCH CIRCUITS.

2.3 CONNECTORS
A. COPPER PADS: DRILLED AND TAPPED FOR MULTIPLE CONDUCTOR TERMINALS.
B. LUGS: INDENT/COMPRESSION TYPE FOR USE WITH STRANDED BRANCH CIRCUIT OR CONTROL CONDUCTORS.
C. SOLID CONDUCTOR BRANCH CIRCUITS: SPRING CONNECTORS, WIRE NUTS, FOR CONDUCTORS 18 THROUGH 8AWG.

2.4 LUGS AND PADS
A. AMPACITY: CROSS–SECTIONAL AREA OF PAD FOR MULTIPLE CONDUCTOR TERMINATIONS TO MATCH AMPERE RATING OF PANELBOARD BUS OR EQUIPMENT LINE TERMINALS.

PART 3 – EXECUTION

3.1 INSTALLATION
A. INSTALLATION: CONDUCTORS SHALL NOT BE INSTALLED UNTIL AFTER CONDUIT SYSTEMS ARE PERMANENTLY IN PLACE. USE AN APPROVED NON HARDENING TYPE WIRE PULLING LUBRICANT IF LUBRICANT IS TO BE USED. MAINTAIN ALL CONDUITS AND WIRE PULLS FREE FROM FOREIGN MATERIAL. IF DUE TO FIELD CONDITIONS, MORE THAN A TOTAL OF 300 DEGREES OF BEND ARE REQUIRED; A PULL BOX SHALL BE FURNISHED AND INSTALLED FOR EASE OF INSTALLATION. SAID PULL BOXES MUST BE SIZED AND RATED FOR THE APPROPRIATE APPLICATION AND MUST REMAIN EASILY ACCESSIBLE UPON COMPLETION OF THE PROJECT (APPROVAL OF THE LOCATION SHALL BE OBTAINED FROM THE ARCHITECT PRIOR TO INSTALLATION). SHOW THESE PULLBOXES ON THE FIELD RECORD DRAWINGS. CONDUCTORS INSTALLED IN UNDERGROUND RACEWAYS ON SITE SHALL BE DUCT SEALED AND TAPED WHERE THEY EXIT THE RACEWAY TO PREVENT THE ENTRANCE OF FOREIGN MATERIAL AND MOISTURE AFTER THE CONDUCTORS ARE INSTALLED. PROPER DRAINAGE SHALL BE PROVIDED FOR UNDERGROUND PULL AND SPLICE BOXES.
B. INSULATION: USE PROPER INSULATION TYPES WHERE TEMPERATURE AND ENVIRONMENT ARE A FACTOR.
C. SPLICES AT OR BELOW GRADE LEVEL SHALL BE MADE WITH WET LOCATION RATED AND APPROVED MECHANICAL CONNECTORS AND SHALL BE ENCAPSULATED IN EPOXY OR PLASTIC MOLDED POURED KITS. THE CONNECTIONS MUST BE ASSURED TO BE WATERTIGHT. SPLICES AT OR BELOW GRADE SHALL ALWAYS BE AVOIDED AND MINIMIZED. PRIOR APPROVAL IS REQUIRED FOR FEEDER SPLICES BELOW GRADE. SUBMIT PROPOSED MATERIALS AND EXHIBIT SHOWING LOCATION OF INTENDED SPLICES FOR ENGINEER'S REVIEW AND APPROVAL IF GRANTED.
D. LABELING: ALL CONDUCTORS IN PANELS, SWITCHBOARDS, TERMINAL CABINETS, VAULTS, PULL BOXES, AND JUNCTION BOXES SHALL BE LABELED WITH TAPE NUMBER MARKERS INDICATING CIRCUIT NUMBER AND IDENTIFYING SYSTEM. ALL LABELING SHALL BE PERMANENT. IN MANHOLES AND VAULTS, PROVIDE EMBOSSED BRASS TAGS IDENTIFYING SYSTEM SERVICED AND FUNCTION. SEE SECTION 16141, EQUIPMENT LABELS AND NAMEPLATES AND WARNING SIGNS.
E. ALL CONDUCTORS, WIRING, CABLE WHERE INSTALLED BELOW FLOOR, SLAB OR UNDERGROUND SHALL BE CONSIDERED WET LOCATIONS, AND SHALL BE RATED ACCORDINGLY. NON WATERPROOF CABLING IS NOT ALLOWED IN ANY BELOW GRADE OR WET APPLICATION.
F. CABLES ROUTED TOGETHER IN CABLE TRAY SHALL BE STACKED, ORGANIZED AND TIE WRAPPED TOGETHER IN A NEAT AND WORKMAN LIKE MANNER. RANDOM CABLE ROUTING IS NOT ACCEPTABLE.
G. CABLE AND CONDUCTORS ROUTED THROUGH PULL BOXES AND VAULTS SHALL BE PROPERLY SUPPORTED ON PORCELAIN OR EQUAL INSULATORS MOUNTED ON STEEL RACK INSERTS. BEND RADIUS OF CABLE OR CONDUCTOR SHALL NOT BE LESS THAN SIX TIMES THE OVERALL CABLE DIAMETER.
H. WIRES AND CABLES:
1. CONDUCTOR INSTALLATION:
A. INSTALL CONDUCTORS IN RACEWAYS HAVING ADEQUATE, CODE SIZE CROSS–SECTIONAL AREA FOR WIRES INDICATED.
B. INSTALL CONDUCTORS WITH CARE TO AVOID DAMAGE TO INSULATION.
C. DO NOT APPLY GREATER TENSION ON CONDUCTORS THAN RECOMMENDED BY MANUFACTURER DURING INSTALLATION.
D. USE OF PULLING COMPOUNDS IS PERMITTED. CLEAN RESIDUE FROM EXPOSED CONDUCTORS AND RACEWAY ENTRANCES AFTER CONDUCTOR INSTALLATION.
2. CONDUCTOR SIZE AND QUANTITY:
A. INSTALL NO CONDUCTORS SMALLER THAN 12AWG UNLESS OTHERWISE SHOWN.
B. PROVIDE ALL REQUIRED CONDUCTORS FOR A FULLY OPERABLE SYSTEM.
3. PROVIDE DEDICATED NEUTRALS (ONE NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR) IN THE FOLLOWING SINGLE PHASE CIRCUITS:
A. DIMMER CONTROLLED CIRCUITS.
B. GROUND FAULT AND ARC FAULT PROTECTED CIRCUITS WHERE A GFI AND ARC FAULT BREAKERS ARE USED IN PANELBOARDS.
C. OTHER ELECTRONIC EQUIPMENT WHICH PRODUCES A HIGH LEVEL OF HARMONIC DISTORTION INCLUDING BUT NOT LIMITED TO COMPUTERS, PRINTERS, PLOTTERS, COPY MACHINES, FAX MACHINES, WHERE INDICATED.
4. CONDUCTORS IN CABINETS:
A. CABLE AND TRAIN ALL WIRES IN PANELS AND CABINETS FOR POWER AND CONTROL NEATLY AND UNIFORMLY. USE PLASTIC TIES IN PANELS AND CABINETS.
B. TIE AND BUNDLE FEEDER CONDUCTORS IN WIREWAYS OF PANELBOARDS.
C. HOLD CONDUCTORS AWAY FROM SHARP METAL EDGES.
D. CONNECTORS: RETIGHTEN MECHANICAL TYPE LUGS AND CONNECTORS FOR CONDUCTORS TO EQUIPMENT PRIOR TO NOTICE OF COMPLETION.

3.2 FIELD QUALITY CONTROL
A. TESTS:
1. TEST CONDUCTOR INSULATION ON FEEDERS OF 400 AMP AND GREATER FOR CONFORMITY WITH 1000 VOLT MEGOHMMETER. USE INSULATED CABLE ENGINEERS ASSOCIATION TESTING PROCEDURES. MINIMUM INSULATION RESISTANCE ACCEPTABLE IS 1 MEGOHM FOR SYSTEMS 600 VOLTS AND BELOW.

2. TEST REPORT: PREPARE A TYPED TABULAR REPORT INDICATING THE TESTING INSTRUMENT, THE FEEDER TESTED, AMPERAGE RATING OF THE FEEDER, INSULATION TYPE, VOLTAGE, THE APPROXIMATE LENGTH OF THE FEEDER, CONDUIT TYPE, AND THE MEASURED RESISTANCE OF THE MEGOHMMETER TEST. SUBMIT REPORT WITH OPERATING AND MAINTENANCE MANUAL.

END OF SECTION 16120

SECTION 16130 – BOXES AND GUTTERS

PART 1 – GENERAL

1.1 SUMMARY
A. SECTION INCLUDES:
1. OUTLET BOXES.
2. WEATHERPROOF OUTLET BOXES.
3. JUNCTION AND PULL BOXES.
4. CABINETS, TERMINATION CABINETS.
5. GUTTERS.
6. CONCRETE BOXES AND VAULTS.

1.2 SYSTEM DESCRIPTION
A. OUTLET SYSTEM: PROVIDE ELECTRICAL BOXES AND FITTINGS AS REQUIRED FOR A COMPLETE INSTALLATION. INCLUDING BUT NOT LIMITED TO OUTLET BOXES, JUNCTION BOXES, PULL BOXES, BUSHINGS, LOCKNUTS, COVERS AND ALL OTHER NECESSARY COMPONENTS.
B. CODE COMPLIANCE: COMPLY WITH CEC AS APPLICABLE TO CONSTRUCTION AND INSTALLATION OF ELECTRICAL BOXES AND FITTINGS AND SIZE BOXES ACCORDING TO CEC 312, 314 AND 366 EXCEPT AS NOTED OTHERWISE.
C. OUTLETS TO BE FLUSH MOUNTED: MAINTAIN INTEGRITY OF INSULATION AND VAPOR BARRIER. UNLESS OTHERWISE NOTED, FLUSH MOUNT ALL OUTLET BOXES.
D. PROVIDE PUTTY PADS OF PROPER TYPE AROUND OUTLET BOXES AND/OR AS DETAILED ON PLAN TO MEET SOUND TRANSMISSION RESTRICTIONS AND FIRE RATINGS OF WALLS.

1.3 SUBMITTALS
A. PROVIDE SHOP DRAWINGS AND PRODUCT DATA FOR THE FOLLOWING EQUIPMENT:
1. OUTLET BOXES.
2. WEATHERPROOF OUTLET BOXES.
3. JUNCTION AND PULL BOXES.
4. CABINETS, TERMINATION CABINETS.
5. GUTTERS.
6. CONCRETE BOXES AND VAULTS.
7. PUTTY PADS.

1.4 REGULATORY REQUIREMENTS
A. CONFORM TO REQUIREMENTS OF THE CEC, LATEST ADOPTED VERSION WITH AMENDMENTS BY LOCAL AHJS.
B. FURNISH PRODUCTS LISTED BY UL OR OTHER INDEPENDENT AND NATIONALLY RECOGNIZED TESTING FIRM.

PART 2 – PRODUCTS

2.1 MANUFACTURERS
A. OUTLET BOXES: BOWERS, RACO, STEEL CITY OR APPROVED.
B. WEATHERPROOF OUTLET BOXES: BELL, RED DOT, CARLON OR APPROVED.
C. JUNCTION AND PULL BOXES: CIRCLE AW, HOFFMAN, WIREGUARD OR APPROVED.
D. BOX EXTENSION ADAPTER: BELL, RED DOT, CARLON OR APPROVED.
E. CONDUIT FITTINGS: O–Z GEDNEY, THOMAS & BETTS, OR APPROVED.
F. VAULTS: CHRISTY, BROOKS, UTILITY VAULT OR APPROVED EQUAL.
G. PUTTY PADS: 3M, HILTI, OR APPROVED EQUAL.

2.2 OUTLET BOXES
A. NEMA 1 GUTTER, JUNCTION AND PULL BOXES SHALL BE FABRICATED FROM CODE GAGE STEEL FINISHED IN GREY ENAMEL WITH SCREW COVER FRONTS AND CONCENTRIC KNOCKOUTS IN ALL SIDES.
B. NEMA 3R GUTTER, JUNCTION AND PULL BOXES SHALL BE FABRICATED FROM CODE GAGE GALVANIZED STEEL WITH SCREW COVER FRONTS AND CONCENTRIC KNOCKOUTS IN THE BOTTOM ONLY. ANY PENETRATIONS TO THE SIDE, TOP OR BACK SHALL BE WEATHERPROOFED IN AN APPROVED MANNER SUCH AS "MYERS" GASKETED TYPE HUB OR EQUAL.
C. STEEL OUTLET BOXES AND PLASTER RINGS SHALL BE GALVANIZED RIGID ASSEMBLIES, EITHER ONE PIECE PRESSED OR FACTORY WELDED CONSTRUCTION CONTAINING THE SIZE AND NUMBER OF KNOCKOUTS REQUIRED. STEEL OUTLET BOXES SHALL BE MANUFACTURED, SIZED AND INSTALLED IN ACCORDANCE WITH CEC ARTICLE 314. DEVICE OUTLET: INSTALLATION OF ONE OR TWO DEVICES AT COMMON LOCATION, MINIMUM 4 INCH SQUARE, MINIMUM 1 ½ INCHES DEEP. SINGLE OR 2 GANG FLUSH DEVICE PLASTER RING. RACO SERIES 681 AND 686 OR EQUAL.
D. LUMINAIRE OUTLET: MINIMUM 4" SQUARE WITH CORRECT PLASTER RING DEPTH, MINIMUM 1–1/2" DEEP WITH 3/8–INCH LUMINAIRE STUD IF REQUIRED. PROVIDE PROPER DEPTH PLASTER RING ON BRACKET OUTLETS AND ON CEILING OUTLETS.
E. MULTIPLE DEVICES: THREE OR MORE DEVICES AT COMMON LOCATION. INSTALL 1 PIECE GANG BOXES WITH 1 PIECE DEVICE PLASTERING. INSTALL ONE DEVICE PER GANG UNLESS OTHERWISE ALLOWED.
F. MASONRY BOXES: OUTLETS IN CONCRETE, RACO SERIES 690 OR EQUAL.
G. CONSTRUCTION: PROVIDE GALVANIZED STEEL INTERIOR OUTLET WIRING BOXES, OF THE TYPE, SHAPE AND SIZE, INCLUDING DEPTH OF BOX, TO SUIT EACH RESPECTIVE LOCATION AND INSTALLATION; CONSTRUCTED WITH STAMPED KNOCKOUTS IN BACK AND SIDES, AND WITH THREADED HOLES WITH SCREWS FOR SECURING BOX COVERS OR WIRING DEVICES. BOXES SHALL BE PROPERLY SECURED TO THE STRUCTURE SUCH THAT THEY ARE FLUSH WITH THE FINISH SURFACE. BOXES SHALL BE MADE STRUCTURALLY SECURE BY MEANS OF THE PROPER FASTENING DEVICES.
H. ACCESSORIES: PROVIDE OUTLET BOX ACCESSORIES AS REQUIRED FOR EACH INSTALLATION, INCLUDING MOUNTING BRACKETS, WALLBOARD HANGERS, EXTENSION RINGS, PLASTER RINGS, LUMINAIRE STUDS, CABLE CLAMPS AND METAL STRAPS FOR SUPPORTING OUTLET BOXES, COMPATIBLE WITH OUTLET BOXES BEING USED AND MEETING REQUIREMENTS OF INDIVIDUAL WIRING SITUATIONS.

2.3 WEATHERPROOF OUTLET BOXES
A. CONSTRUCTION: PROVIDE CORROSION–RESISTANT CAST IRON, WITH ZINC FINISH, WEATHERPROOF OUTLET WIRING BOXES, OF THE TYPE, SHAPE AND SIZE, INCLUDING DEPTH OF BOX, WITH THREADED CONDUIT ENDS, CAST METAL FACE PLATE WITH SPRING–HINGED WATERPROOF CAP SUITABLY CONFIGURED FOR EACH APPLICATION, INCLUDING FACE PLATE GASKET, BLANK PLUGS AND CORROSION PROOF FASTENERS. WEATHERPROOF BOXES TO BE CONSTRUCTED TO HAVE SMOOTH SIDES, ZINC, GALVANIZED FINISH.
B. SURFACE MOUNTED DIE CAST ALUMINUM DEVICE BOXES SHALL BE PROVIDED WITH SCREW HOLES TO ACCOMMODATE CAST DEVICE COVERS.

2.4 JUNCTION AND PULL BOXES
A. CONSTRUCTION: PROVIDE GALVANIZED SHEET STEEL JUNCTION AND PULL BOXES, WITH SCREW–ON COVERS; OF THE TYPE SHAPE AND SIZE, TO SUIT EACH RESPECTIVE LOCATION AND INSTALLATION; WITH WELDED SEAMS AND EQUIPPED WITH STEEL NUTS, BOLTS, SCREWS AND WASHERS.
B. LOCATION:
1. INSTALL JUNCTION BOXES ABOVE ACCESSIBLE CEILINGS FOR DROPS INTO WALLS FOR RECEPTACLE OUTLETS FROM OVERHEAD.
2. INSTALL JUNCTION BOXES AND PULL BOXES AS REQUIRED TO FACILITATE THE INSTALLATION OF CONDUCTORS AND LIMITING THE ACCUMULATED ANGULAR SUM OF BENDS BETWEEN BOXES, CABINETS AND APPLIANCES TO 300 DEGREES.
3. LOCATIONS: JUNCTION BOXES SHALL BE LOCATED ONLY WHERE NECESSARY AND ONLY IN EQUIPMENT ROOMS, CLOSETS, AND ACCESSIBLE ATTIC AND UNDERFLOOR SPACES. A HORIZONTAL DISTANCE OF 24 INCHES SHALL SEPARATE OUTLET BOXES ON OPPOSITE SIDES OF OCCUPANCY SEPARATION WALLS, FIRE–RATED WALLS OR PARTITIONS.
4. LABELING: JUNCTION BOX COVERS SHALL BE MARKED WITH INDELIBLE INK INDICATED THE CIRCUIT NUMBERS PASSING THROUGH THE BOX.

2.5 BOX EXTENSION ADAPTER
A. CONSTRUCTION: CAST IRON WITH GASKET.
B. LOCATION: INSTALL OVER FLUSH WALL OUTLET BOXES TO PERMIT FLEXIBLE RACEWAY EXTENSION FROM FLUSH OUTLET TO FIXED OR MOVABLE EQUIPMENT. BELL 940 SERIES, RED DOT IHE4 SERIES OR EQUAL.

2.6 CONDUIT FITTINGS
A. REQUIREMENTS: PROVIDE CORROSION–RESISTANT PUNCHED–STEEL BOX KNOCKOUT CLOSURES, CONDUIT LOCKNUTS AND PLASTIC CONDUIT BUSHINGS OF THE TYPE AND SIZE TO SUIT EACH RESPECTIVE USE AND INSTALLATION.
B. STEEL BOXES MAY ALLOW FOR FIELD KNOCK–OUT MODIFICATIONS, BUT SHALL IN ALL OTHER WAYS CONFORM TO CODE REQUIREMENTS.

2.7 EXTERIOR IN–GRADE BOXES FOR NON–UTILITY COMPANY USE SHALL BE:
A. PRECAST CONCRETE OR POLYMER CONCRETE TYPE WITH FULL BOTTOMS AND DRAINING INTO GRAVEL DRYWELL. ACCEPTABLE MANUFACTURERS ARE UTILITY VAULT AND CHRISTY. OPEN BOTTOM SPLICE/PULL BOXES 24" X 36" AND SMALLER SHALL BE OPEN BOTTOM, WITH MINIMUM 12" OF GRAVEL BELOW FOR DRAINAGE.
B. FLUSHMOUNT IN HARDSCAPE AND 1" ABOVE GRADE IN SOFTSCAPE.
C. PROVIDED WITH CORRECT TRAFFIC TYPE LID, I.E., FULL VEHICULAR, INTERMEDIATE INCIDENTAL VEHICULAR OR PEDESTRIAN–RATED AS APPLICABLE STAMPED WITH "ELECTRIC", "LIGHTING", "COMMUNICATIONS", ETC. COVER IDENTIFICATION AS SHOWN ON THE DRAWINGS OR AS APPLICABLE. ALL BOXES OR VAULTS LOCATED IN STREETS, DRIVEWAYS, SIDEWALKS WIDER THAN 8 FEET, AND TURF AREAS WHERE MOWING TAKES PLACE SHALL BE TRAFFIC RATED.
D. PROVIDED WITH BRASS HOLD–DOWN BOLTS IN COVER.
E. PROVIDED WITH NECESSARY BOX EXTENSIONS TO GAIN PROPER DEPTH.
F. SEAL ALL CONDUIT IN UNDERGROUND BOXES WITH DUCT SEAL AFTER CONDUCTORS HAVE BEEN INSTALLED.

2.8 IN–GRADE UTILITY COMPANY BOXES AND VAULTS
A. IN–GRADE BOXES AND PADS FOR UTILITY COMPANY, SHALL BE AS SPECIFIED BY THE RESPECTIVE UTILITY COMPANY WITH ALL OF THE COMPANY'S REQUIREMENTS AND CONSTRUCTION METHODS MET.

2.9 PUTTY PADS
A. INTUMESCENT MOLDABLE FIRESTOP PUTTY DESIGNED TO PROTECT ELECTRICAL OUTLET BOXES.
B. DESIGNED TO INSTALL AROUND OUTSIDE OF OUTLET BOXES.

PART 3 – EXECUTION

3.1 INSTALLATION
A. LOCATION: LOCATE BOXES AND CONDUIT BODIES SO AS TO ENSURE ACCESSIBILITY OF ELECTRICAL WIRING.
B. ANCHORING: SECURE BOXES RIGIDLY TO THE SUBSTRATE UPON WHICH THEY ARE BEING MOUNTED, OR SOLIDLY EMBED BOXES IN CONCRETE OR MASONRY.
C. SPECIAL APPLICATION: PROVIDE WEATHERPROOF OUTLETS FOR LOCATIONS EXPOSED TO WEATHER OR MOISTURE.
D. KNOCKOUT CLOSURES: PROVIDE KNOCKOUT CLOSURES TO CAP UNUSED KNOCKOUT HOLES WHERE BLANKS HAVE BEEN REMOVED.
E. MOUNT CENTER OF OUTLET BOXES, UNLESS OTHERWISE REQUIRED BY ADA, OR NOTED ON DRAWINGS, THE FOLLOWING DISTANCES ABOVE THE FLOOR:
1. CONTROL SWITCHES: 48 INCHES.
2. RECEPTACLES: 18 INCHES.
3. TELECOM OUTLETS: 18 INCHES.
4. OTHER OUTLETS: AS INDICATED IN OTHER SECTIONS OF SPECIFICATIONS OR AS DETAILED ON DRAWINGS.
F. COORDINATE ALL ELECTRICAL DEVICE LOCATIONS WITH THE ARCHITECTURAL FLOOR PLAN AND INTERIOR AND EXTERIOR ELEVATIONS TO PREVENT MOUNTING DEVICES WITHIN ELEMENTS THAT THEY MAY CONFLICT SUCH AS CABINETRY, MIRRORS, PLANTERS, ETC.
G. SIZE OUTLET AND JUNCTION BOXES TO MINIMUM WIRE FILL SPACE REQUIREMENTS. UPSIZE BOX AS REQUIRED TO ALLOW EASE OF WIRE INSTALLATION AND DEVICE INSTALLATION.
H. OUTLET AND JUNCTION BOXES IN FIRE RATED WALLS SHALL BE GAUGED AND SPACED SO AS NOT TO EXCEED THE MAXIMUM PENETRATION ALLOWED BY THE ASSEMBLY WITHOUT COMPROMISING THE FIRE RATING. IF A CONFLICT ARISES RELATIVE TO A SPECIFIC CONDITION, THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF THE FIRE AUTHORITY AND ASK FOR GUIDANCE FROM THE DESIGN TEAM. AT NO TIME SHOULD A LARGER BOX BE INSTALLED PRIOR TO RESOLUTION OF CONFLICT.

END OF SECTION 16130

SECTION 16140 – WIRING DEVICES

PART 1 – GENERAL

1.1 DESCRIPTION
A. THIS SECTION SPECIFIES THE FURNISHING, INSTALLATION AND CONNECTION OF WIRING DEVICES.

1.2 RELATED WORK
A. SECTION 16050, BASIC MATERIALS AND METHODS.
B. SECTION 16110, RACEWAYS.
C. SECTION 16120, POWER WIRE, CABLE AND CONDUCTORS.
D. SECTION 16450, GROUNDING.

PART 2 – PRODUCTS

2.1 RECEPTACLES
A. GENERAL: ALL RECEPTACLES SHALL BE LISTED BY UNDERWRITERS LABORATORIES, INC.
1. MOUNTING STRAPS SHALL BE PLATED STEEL, WITH BREAK–OFF PLASTER EARS AND SHALL INCLUDE A SELF–GROUNDING FEATURE (THIS FEATURE DOES NOT SUBSTITUTE FOR A GROUNDING CONDUCTOR TERMINATED ON GROUNDING STRAP OF DEVICE). TERMINAL SCREWS SHALL BE BRASS, BRASS PLATED OR A COPPER ALLOY METAL.
2. RECEPTACLES SHALL BE OF A SCREW TERMINAL TYPE, "PRESSURE TYPE QUICK WIRE" TERMINATIONS ARE NOT ALLOWED.
B. DUPLEX RECEPTACLES SHALL BE PREMIUM SPECIFICATION GRADE, STYLE LINE/DECORA SINGLE PHASE, 20 AMPERE, 120 VOLTS, 2–POLE, 3–WIRE, AND CONFORM TO THE NEMA 5–20R CONFIGURATION IN NEMA WD 6. THE DUPLEX TYPE SHALL HAVE BUSSING BREAK–OFF FEATURE FOR TWO–CIRCUIT OPERATION. THE UNGROUNDED POLE OF EACH RECEPTACLE SHALL BE PROVIDED WITH A SEPARATE TERMINAL.
1. BODIES SHALL BE WHITE IN COLOR. CONTRACTOR TO VERIFY DEVICE COLOR WITH ARCHITECT PRIOR TO PROCUREMENT.
2. SPECIFIED DUPLEX RECEPTACLES SHALL BE WIRED SO THAT ONLY THE TOP RECEPTACLE IS SWITCHED. THE REMAINING RECEPTACLE SHALL BE UNSWITCHED.
3. GROUND FAULT INTERRUPTER DUPLEX RECEPTACLES: SHALL BE AN INTEGRAL UNIT SUITABLE FOR MOUNTING IN A STANDARD OUTLET BOX.
A. GROUND FAULT INTERRUPTER SHALL BE COMMERCIAL GRADE AND CONSIST OF A DIFFERENTIAL CURRENT TRANSFORMER, SOLID STATE SENSING CIRCUITRY AND A CIRCUIT INTERRUPTER SWITCH. IT SHALL BE RATED FOR OPERATION ON A 60 HZ, 120 VOLT, 20–AMPERE BRANCH CIRCUIT. DEVICE SHALL MEET CEC REQUIREMENTS. DEVICE SHALL HAVE A MINIMUM NOMINAL TRIPPING TIME OF 1/30TH OF A SECOND. DEVICES SHALL MEET UL 943.
C. RECEPTACLES; 20, 30 AND 50 AMPERE, 250 VOLTS: SHALL BE COMPLETE AND MATCH WITH APPROPRIATE CORD GRIP PLUG. DEVICES SHALL MEET UL 231.
D. WEATHERPROOF RECEPTACLES: SHALL CONSIST OF A DUPLEX RECEPTACLE, MOUNTED IN BOX WITH A GASKETED, WEATHERPROOF, CAST METAL COVER PLATE AND CAP OVER EACH RECEPTACLE OPENING. THE CAP SHALL BE PERMANENTLY ATTACHED TO THE COVER PLATE BY A SPRING–HINGED FLAP. COVER PLATES ON OUTLET BOXES MOUNTED FLUSH IN THE WALL SHALL BE GASKETED TO THE WALL IN A WATERTIGHT MANNER.

2.2 SWITCHES AND DIMMERS
A. STYLE LINE/DÉCOR ROCKER SWITCHES SHALL BE TOTALLY ENCLOSED TUMBLER TYPE WITH BODIES OF PHENOLIC COMPOUND. TOGGLE HANDLES COLOR TO MATCH RECEPTACLE DEVICE COLOR UNLESS OTHERWISE SPECIFIED.
1. SWITCHES INSTALLED IN HAZARDOUS AREAS SHALL BE E

SECTION 16141 – EQUIPMENT LABELS AND NAMEPLATES AND WARNING SIGNS

PART 1 – GENERAL

1.1 DESCRIPTION

A. PROVIDE ALL LABOR MATERIALS AND EQUIPMENT NECESSARY FOR NAMEPLATES AND WARNING SIGNS WHERE SPECIFIED HEREIN AND AS SHOWN ON CONTRACT DOCUMENTS INCLUDING THE FOLLOWING:
   1. NAMEPLATES AND WARNING SIGNS PERMANENTLY INSTALLED ON ALL ELECTRICAL EQUIPMENT AND DEVICES INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING ITEMS:

A. ENCLOSURES FOR TRANSFORMERS, SWITCHBOARDS, MOTOR CONTROL, PANELS, PULLBOXES, CABINETS, MOTORS, GENERATORS, TRANSFER SWITCHES.

B. ENCLOSURES FOR ALL SEPARATELY ENCLOSED DEVICES INCLUDING, BUT NOT LIMITED TO, DISCONNECT SWITCHES, CIRCUIT BREAKERS, CONTACTORS, TIME SWITCHES CONTROL STATIONS AND RELAYS, FIRE ALARM PANELS AND LIGHTING CONTROL PANEL.

C. WALL SWITCHES NOT WITHIN SIGHT OF OUTLET CONTROLLED.

D. SPECIAL SYSTEMS SUCH AS, BUT NOT LIMITED TO, TELEPHONE, FIRE ALARM, WARNING AND SIGNAL SYSTEMS. IDENTIFICATION SHALL BE AT EACH EQUIPMENT RACK, TERMINAL CABINET, CONTROL PANEL, ANNUNCIATOR AND PULLBOX.

E. DEVICES MOUNTED WITHIN AND PART OF EQUIPMENT INCLUDING CIRCUIT BREAKERS, SWITCHES, CONTROL DEVICES, CONTROL TRANSFORMERS, RELAYS, INDICATION DEVICES AND INSTRUMENTS.

1.2 RELATED WORK

A. SECTION 16050, BASIC MATERIALS AND METHODS.
B. SECTION 16160, PANELBOARDS.
C. SECTION 16170, SWITCHES, DISCONNECT AND SAFETY.
D. SECTION 16426, SERVICE AND DISTRIBUTION SWITCHBOARD.

PART 2 – PRODUCTS

2.1 EQUIPMENT LABEL DESIGNATIONS

A. EQUIPMENT LABELS INDICATING EQUIPMENT DESIGNATIONS. DESIGNATION DATA PER DRAWINGS OR TO BE SUPPLIED WITH SHOP DRAWINGS APPROVAL.
B. PANELBOARD LABELS SHOWING PANEL DESIGNATION, VOLTAGE, PHASE AND SOURCE.
C. IN ACCORDANCE WITH CEC 110.16, PROVIDE ARC FLASH PROTECTION WARNING LABELS ON ALL SWITCHBOARDS, PANELBOARDS, DISTRIBUTION PANELS, TRANSFORMERS, SAFETY SWITCHES, ETC. LABELS SHALL BE PER ANSI Z535.4 GUIDELINES.

2.2 MATERIALS

A. FOR LABELS: THREE LAYER LAMINATED PLASTIC OR MICARTA WITH ENGRAVED WHITE LETTERS OVER BLACK BACKGROUND.
B. FOR WARNING SIGNS: MINIMUM 18 GAUGE STEEL WITH RED LETTERING ON WHITE PORCELAIN ENAMEL FINISH.
C. ARC FLASH LABELS SHALL BE PROVIDED AS REQUIRED BY CEC ARTICLE 70E.

PART 3 – EXECUTION

3.1 MOUNTING

A. EQUIPMENT LABELS SHALL BE MOUNTED BY SELF–TAPPING, THREADED SCREWS AND BOLTS, OR BY RIVETS. ADHESIVE TYPES ARE NOT ACCEPTABLE UNLESS SPECIFICALLY NOTED IN THIS SECTION.

3.2 HEIGHTS ON LABELS

A. PANELBOARDS, SWITCHBOARDS AND MOTOR CONTROL CENTERS AND SPECIAL SYSTEMS ENCLOSURES: 1/4 INCH IDENTIFY EQUIPMENT DESIGNATION; 1/8 INCH IDENTIFY VOLTAGE RATING AND SOURCE.
B. INDIVIDUAL CIRCUIT BREAKERS, SWITCHES, AND MOTOR STARTERS IN PANELBOARDS, SWITCHBOARDS, AND MOTOR CONTROL CENTERS: 3/16 INCH IDENTIFY CIRCUIT AND LOAD SERVED, INCLUDING LOCATION OF EQUIPMENT.
C. ENCLOSED CIRCUIT BREAKERS, ENCLOSED SWITCHES, AND MOTOR STARTERS: 3/16 INCH IDENTIFY LOAD SERVED.

3.3 WARNING SIGNS

A. WARNING SIGNS SHALL BE PERMANENTLY MOUNTED WITH CADMIUM PLATED STEEL SCREWS OR NICKEL–PLATED BRASS BOLTS.
B. WARNING SIGNS TO READ "DANGER – HIGH VOLTAGE", WITH LETTERS 1–1/2 INCH HIGH, 3/16 INCH STROKE MINIMUM.
C. PROVIDE WARNING SIGN ON ALL DOORS OR IMMEDIATELY NEXT TO DOOR FOR EQUIPMENT ROOMS, ENCLOSURES OR CLOSETS CONTAINING EQUIPMENT ENERGIZED ABOVE 150 VOLTS TO GROUND AS PER CEC, AND/OR AS DIRECTED BY THE ARCHITECT. FOR INTERIOR FINISH SPACES AND INTERIOR DOORS, SIGNAGE SHALL BE COORDINATED AND APPROVED WITH THE ARCHITECT IN ADVANCE OF INSTALLATION.

END OF SECTION 16141

SECTION 16160 – PANELBOARDS

PART 1 – GENERAL

1.1 DESCRIPTION

A. THIS SECTION SPECIFIES THE FURNISHING, INSTALLATION AND CONNECTION OF PANELBOARDS.

1.2 RELATED WORK

A. PAINTING SECTION: IDENTIFICATION AND PAINTING OF PANELBOARDS.
B. SECTION 16050, BASIC MATERIALS AND METHODS.
C. SECTION 16110, RACEWAYS.
D. SECTION 16120, POWER WIRE, CABLES AND CONDUCTORS (600 VOLTS AND BELOW): CABLES AND WIRING.
E. SECTION 16450, GROUNDING: REQUIREMENTS FOR PERSONNEL SAFETY AND TO PROVIDE A LOW IMPEDANCE PATH FOR POSSIBLE GROUND FAULT CURRENTS.

1.3 APPLICABLE PUBLICATIONS

A. PUBLICATIONS LISTED BELOW (INCLUDING AMENDMENTS, ADDENDA, REVISIONS, SUPPLEMENTS AND ERRATA) FORM A PART OF THIS SPECIFICATION TO THE EXTENT REFERENCED. PUBLICATIONS ARE REFERENCED IN THE TEXT BY THE BASIC DESIGNATION ONLY.
B. UNDERWRITERS LABORATORIES, INC. (UL):
   1. NO. 50–1995 ENCLOSURES FOR ELECTRICAL EQUIPMENT
   2. NO. 67–1993 PANELBOARDS
   3. NO. 489–1991 MOLDED CASE CIRCUIT BREAKERS AND CIRCUIT BREAKER ENCLOSURES
C. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):
   1. NO. 70–2004 CALIFORNIA ELECTRICAL CODE (CEC)
D. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA):
   1. NO. PB–1–2002 PANELBOARDS.
   2. NO. AB–3–1996 MOLDED CASE CIRCUIT BREAKERS AND THEIR APPLICATION.

PART 2 – PRODUCTS

2.1 PANELBOARDS

A. PANELBOARDS SHALL BE IN ACCORDANCE WITH UL, NEMA, NEC, CEC AND AS SHOWN ON THE DRAWINGS. APPROVED MANUFACTURERS ARE CUTLER HAMMER, SQUARE D, SEIMENS, GENERAL ELECTRIC.
B. PANELBOARDS SHALL BE STANDARD MANUFACTURED PRODUCTS. ALL COMPONENTS OF THE PANELBOARDS SHALL BE THE PRODUCT AND ASSEMBLY OF THE SAME MANUFACTURER. ALL SIMILAR UNITS OF ALL PANELBOARDS TO BE OF THE SAME MANUFACTURER.
C. ALL PANELBOARDS SHALL BE DEAD FRONT SAFETY TYPE. ARRANGE SECTIONS FOR EASY REMOVAL WITHOUT DISTURBING OTHER SECTIONS.
D. ALL PANELBOARDS SHALL BE COMPLETELY FACTORY ASSEMBLED WITH MOLDED CASE CIRCUIT BREAKERS. ALL FACTORY WIRING SHALL BE CHECKED FOR CORRECT TIGHTNESS AND VISUALLY INSPECTED TO INSURE THAT BUSSING AND TERMINATIONS HAVE NOT BECOME LOOSE IN TRANSIT TO JOB SITE.
E. PANELBOARDS SHALL HAVE MAIN BREAKER OR MAIN LUGS, BUS SIZE, VOLTAGE, PHASE, TOP OR BOTTOM FEED, AND FLUSH OR SURFACE MOUNTING AS SCHEDULED ON THE DRAWINGS. REFER TO SINGLE LINE DIAGRAM AND PANEL SCHEDULES ON DRAWINGS. TERMINALS SHALL BE MINIMUM 75 DEGREE RATED. BACK FED MAIN CIRCUIT BREAKERS ARE NOT ALLOWED. MAIN CIRCUIT BREAKERS SHALL BE VERTICALLY MOUNTED.
F. PANELBOARDS SHALL HAVE THE FOLLOWING FEATURES:
   1. NONREDUCED SIZE COPPER BUS BARS, AND CONNECTION STRAPS BOLTED TOGETHER AND RIGIDLY SUPPORTED ON MOLDED INSULATORS. BUS BAR TAPS FOR PANELS WITH SINGLE POLE BRANCHES SHALL BE ARRANGED FOR SEQUENCE PHASING OF BRANCH CIRCUIT DEVICES.
   2. FULL SIZE NEUTRAL BAR, MOUNTED ON INSULATED SUPPORTS.
   3. GROUND BAR AND ISOLATION GROUND BAR (WHERE CALLED FOR IN PANEL SCHEDULE) WITH SUFFICIENT TERMINALS FOR ALL GROUNDING WIRES. BUSES BRACED FOR THE AVAILABLE SHORT CIRCUIT CURRENT.
   4. ALL BREAKERS AND PHASE BUS CONNECTIONS SHALL BE ARRANGED SO THAT IT WILL BE POSSIBLE TO SUBSTITUTE A 2–POLE BREAKER FOR TWO SINGLE POLE BREAKERS, AND A 3–POLE BREAKER FOR THREE SINGLE POLE BREAKERS, WHEN TRIP IS 30 AMPS OR LESS AND FRAME SIZE IS 100 AMPERES OR LESS, WITHOUT HAVING TO DRILL AND TAP THE MAIN BUS BARS AT BUS STRAPS. WHERE USED FOR HEATING AND AIR CONDITIONING, AND REFRIGERATION EQUIPMENT, USE ONLY HACR TYPE U.L. LISTED CIRCUIT BREAKERS.
   5. DESIGN INTERIOR SO THAT PROTECTIVE DEVICES CAN BE REPLACED WITHOUT REMOVING ADJACENT UNITS, MAIN BUS CONNECTORS, AND WITHOUT DRILLING OR TAPPING.
   6. WHERE DESIGNATED ON PANEL SCHEDULE AS "SPACE", INCLUDE ALL NECESSARY BUSSING, DEVICE SUPPORT AND CONNECTIONS. PROVIDE BLANK COVER FOR EACH SPACE.
   7. SERIES RATED PANELBOARDS ARE NOT PERMITTED.
   8. LABEL ALL PANELS IN ACCORDANCE WITH SECTION 16141, EQUIPMENT LABELS AND NAMEPLATES AND WARNING SIGNS.
G. PANELBOARDS SERVING AS BUILDING MAINS SHALL BE "SERVICE ENTRANCE RATED" AND UL LISTED AS "SERVICE EQUIPMENT".

2.2 CABINETS AND TRIMS

A. CABINETS:
   1. PROVIDE GALVANIZED STEEL CABINETS TO HOUSE PANELBOARDS. CABINETS FOR OUTDOOR PANELS SHALL BE FACTORY PRIMED AND SUITABLY TREATED WITH A CORROSION–RESISTING PAINT FINISH MEETING UL STANDARD FOR OUTDOOR APPLICATIONS.
   2. CABINET ENCLOSURE SHALL NOT HAVE VENTILATING OPENINGS.
   3. CABINETS FOR PANELBOARDS MAY BE OF ONE PIECE FORMED STEEL OR OF FORMED SHEET STEEL WITH END AND SIDE PANELS WELDED, RIVETED, OR BOLTED AS REQUIRED.
   4. PROVIDE NECESSARY HARDWARE FOR "IN" AND "OUT" ADJUSTMENT OF PANEL INTERIOR.
   5. CABINETS FOR TWO SECTION PANELBOARDS SHALL BE ARRANGED SIDE BY SIDE, AND SHALL BE THE SAME HEIGHT. FLUSH MOUNTED CABINETS SHOULD BE 1–1/2 INCHES APART AND COUPLED BY CONDUIT NIPPLE IF NECESSARY.
   6. GUTTER SIZE IN PANEL BOXES, ON ALL SIDES, SHALL BE IN ACCORDANCE WITH THE CEC. PENETRATIONS THROUGH GUTTER TO LIVE AREA OF THE PANELBOARD SHALL INCORPORATE APPROVED NON–METALLIC–GROMMET TYPE OF INSULATION TO PROTECT WIRE PASSING THROUGH.
B. TRIMS:
   1. FABRICATE TRIM OF SHEET STEEL CONSISTING OF FRAME WITH DOOR ATTACHED BY CONCEALED HINGES. PROVIDE FLUSH OR SURFACE TRIM AS SHOWN ON THE DRAWINGS.
   2. FLUSH TRIMS SHALL OVERLAP THE BOX BY AT LEAST 3/4–INCH ALL AROUND.
   3. SURFACE TRIM SHALL HAVE THE SAME WIDTH AND HEIGHT AS THE BOX.
   4. FLUSH OR SURFACE TRIMS SHALL NOT HAVE VENTILATING OPENINGS.
   5. SECURE TRIMS TO BACK BOXES BY INDICATING TRIM CLAMPS.
   6. PROVIDE A WELDED ANGLE ON REAR OF TRIM TO SUPPORT AND ALIGN TRIM TO CABINET.
   7. PROVIDE SEPARATE TRIMS FOR EACH SECTION OF MULTIPLE SECTION PANELBOARDS. TRIMS AND DOORS OF SECTIONS SHALL BE OF THE SAME HEIGHT.
C. DOORS:
   1. PROVIDE DOORS WITH FLUSH TYPE LATCH AND MANUFACTURER'S STANDARD LOCK. DOORS OVER 48 INCHES IN HEIGHT SHALL HAVE A VAULT HANDLE AND A THREE–POINT CATCH, ARRANGED TO FASTEN DOOR AT TOP, BOTTOM, AND CENTER.
   2. IN MAKING SWITCHING DEVICES ACCESSIBLE, DOORS SHALL NOT UNCOVER ANY LIVE PARTS.
   3. PROVIDE CONCEALED HINGES WELDED TO THE DOORS AND TRIMS.
   4. FOR LIGHTING OR POWER CONTACTORS INCORPORATED IN PANELBOARDS, PROVIDE SEPARATE DOORS FOR THE CONTACTORS.
   5. PROVIDE KEYED ALIKE SYSTEM FOR ALL PANELBOARDS.
   6. PROVIDE A DIRECTORY CARD, METAL HOLDER, AND TRANSPARENT COVER. PERMANENTLY MOUNT HOLDERS ON INSIDE OF DOORS.
D. PAINTING:
   1. THOROUGHLY CLEAN AND PAINT TRIMS AND DOORS AT THE FACTORY WITH PRIMER AND MANUFACTURER'S STANDARD FINISH.

2.3 MOLDED CASE CIRCUIT BREAKERS FOR PANELBOARDS

A. BREAKERS SHALL BE UL LISTED AND LABELED, IN ACCORDANCE WITH THE CEC, AS SHOWN ON THE DRAWINGS, AND AS SPECIFIED.
B. CIRCUIT BREAKERS IN PANELBOARDS SHALL BE BOLT ON TYPE ON PHASE BUS BAR OR BRANCH CIRCUIT BAR.
   1. MOLDED CASE CIRCUIT BREAKERS FOR LIGHTING AND APPLIANCE BRANCH CIRCUIT PANELBOARDS SHALL HAVE MINIMUM INTERRUPTING RATING AS INDICATED.
   2. MOLDED CASE CIRCUIT BREAKERS SHALL HAVE AUTOMATIC, TRIP FREE, NON–ADJUSTABLE, INVERSE TIME, AND INSTANTANEOUS MAGNETIC TRIPS FOR 100 AMPERE FRAME OR LESS. MAGNETIC TRIP SHALL BE ADJUSTABLE FROM 3 TIMES TO 10 TIMES FOR BREAKERS WITH 600 AMPERE FRAMES AND HIGHER. FACTORY SETTING SHALL BE HI, UNLESS OTHERWISE NOTED.
C. BREAKER FEATURES SHALL BE AS FOLLOWS:
   1. INTEGRAL HOUSING OF MOLDED INSULATING MATERIAL.
   2. SILVER ALLOY CONTACTS.
   3. ARC QUENCHERS AND PHASE BARRIERS FOR EACH POLE.
   4. QUICK–MAKE, QUICK–BREAK, OPERATING MECHANISMS.
   5. A TRIP ELEMENT FOR EACH POLE, THERMAL MAGNETIC TYPE WITH LONG TIME DELAY AND INSTANTANEOUS CHARACTERISTICS, A COMMON TRIP BAR FOR ALL POLES AND A SINGLE OPERATOR.
   6. ELECTRICALLY AND MECHANICALLY TRIP FREE.
   7. AN OPERATING HANDLE WHICH INDICATES ON, TRIPPED, AND OFF POSITIONS.
A. LINE CONNECTIONS SHALL BE BOLTED.
B. INTERRUPTING RATING SHALL NOT BE LESS THAN THE MAXIMUM SHORT CIRCUIT CURRENT AVAILABLE AT THE LINE TERMINALS AS INDICATED ON THE DRAWINGS, AND AS SHOWN ON THE ELECTRICAL SYSTEM PROTECTIVE DEVICE STUDY AS REQUIRED IN SECTION 16051. THE INTERRUPTING RATING SHALL NOT BE LESS THAN THE MINIMUM IDENTIFIED REQUIREMENT.
   8. AN OVERLOAD ON ONE POLE OF A MULTIPOLE BREAKER SHALL AUTOMATICALLY CAUSE ALL THE POLES OF THE BREAKER TO OPEN.

PART 3 – EXECUTION

3.1 INSTALLATION

A. INSTALLATION SHALL BE IN ACCORDANCE WITH CEC, AS SHOWN ON THE DRAWINGS, AND AS SPECIFIED.
B. LOCATE PANELBOARDS SO THAT THE PRESENT AND FUTURE CONDUITS CAN BE CONVENIENTLY CONNECTED. COORDINATE THE SIZES AND LAYOUT OF CABINETS WITHIN THE DESIGNATED SPACES. ALL EQUIPMENT MUST BE DIMENSIONED IN ORDER TO PHYSICALLY FIT IN THE SPACES PROVIDED AND TO COMPLY WITH ALL CODE REQUIRED CLEARANCES.
C. INSTALL A TYPEWRITTEN SCHEDULE OF CIRCUITS IN EACH PANELBOARD. INCLUDE THE ROOM NUMBERS (AS FINALLY DESCRIBED BY THE OWNER) AND ITEMS SERVED ON THE CARDS. OBTAIN FINAL ROOM NUMBERS FROM ARCHITECT PRIOR TO CREATING SCHEDULE.
D. MOUNT THE PANELBOARD SO THAT MAXIMUM HEIGHT OF THE TOP CIRCUIT BREAKER ABOVE FINISHED FLOOR SHALL NOT EXCEED 78 INCHES.
E. FOR PANELBOARDS LOCATED IN AREAS ACCESSIBLE TO THE PUBLIC, PAINT THE EXPOSED SURFACES OF THE TRIMS, DOORS, AND BOXES WITH FINISHES TO MATCH SURROUNDING SURFACES AFTER THE PANELBOARDS HAVE BEEN INSTALLED.
F. CIRCUIT NUMBERS SHALL CORRESPOND TO THE APPROVED PANEL SCHEDULE. PROVIDE AS–BUILT DRAWINGS SHOWING THE ACTUAL CIRCUIT NUMBERS BEING USED FOR EACH DEVICE ON EACH BRANCH CIRCUIT IF CHANGES ARE REQUIRED.
G. VERIFY DEPTH OF ALL FLUSHMOUNTED ENCLOSURES IN WALLS TO BE CERTAIN WALL DEPTH WILL ACCOMMODATE PANEL DEPTH PRIOR TO INSTALLATION.
H. CONTRACTOR SHALL INCLUDE THE SERVICES OF AN INDEPENDENT TESTING COMPANY TO TEST GFI CIRCUIT BREAKERS IN DISTRIBUTION AND MAIN PANELBOARDS.

END OF SECTION 16160

SECTION 16170 – SWITCHES; DISCONNECT AND SAFETY

PART 1 – GENERAL

1.1 DESCRIPTION

A. PROVIDE ALL LABOR MATERIALS AND EQUIPMENT NECESSARY FOR DISCONNECT AND SAFETY SWITCHES WHERE SHOWN ON THE CONTRACT DRAWINGS AND SPECIFIED HEREIN.

1.2 RELATED WORK

A. WORK OF THIS SECTION SHALL COMPLY WITH THE CONTRACT DOCUMENTS INCLUDING, BUT NOT NECESSARILY LIMITED TO, GENERAL CONDITIONS AND THE GENERAL REQUIREMENTS.
B. SECTION 16141, EQUIPMENT LABELS AND NAMEPLATES AND WARNING SIGNS.

PART 2 – PRODUCTS

2.1 GENERAL

A. APPROVED MANUFACTURERS: CUTLER HAMMER, GENERAL ELECTRIC, ITE–SIEMENS AND SQUARE–D.
B. DISCONNECT SWITCHES: PROVIDE WITH DEVICES ENABLING THE SWITCH TO BE LOCKED IN THE OPEN OR CLOSED POSITIONS.
C. MANUAL MOTOR SWITCHES: TUMBLER TYPE RATED 3HP, 240 VOLTS WITH OR WITHOUT OVERLOAD HEATERS AS REQUIRED TO PROTECT EQUIPMENT SERVED.
D. EXTERNALLY OPERABLE SAFETY SWITCHES: TO HAVE QUICK–MAKE, QUICK–BREAK MECHANISM, CAPABLE OF SWITCHING 10 TIMES SWITCH RATING, WITH COVER INTERLOCK TO PREVENT OPENING WITH SWITCH IN ON POSITION AND DEFEAT MECHANISM FOR MAINTENANCE.
E. SWITCHES: SHALL BE GENERAL DUTY (GD) FOR 240 VOLT AND BELOW AND HEAVY DUTY (HD) FOR 277/480 VOLT TYPE UNLESS OTHERWISE INDICATED. PROVIDE NEMA 1 ENCLOSURES FOR INTERIOR LOCATIONS AND NEMA 3R ENCLOSURES FOR EXTERIOR OR WET LOCATIONS. PROVIDE WITH NUMBER OF POLES, AMPACITY, VOLTAGE AND HP RATING, FUSIBLE OR NONFUSIBLE AS INDICATED. COPPER BLADES SHALL BE VISIBLE IN OFF POSITION.
F. FUSIBLE SWITCHES: EQUIP THEM WITH REJECTION CLIPS FOR UL CLASS R FUSES. SWITCHES HAVING A DUAL RATING WHEN USED WITH DUAL ELEMENT FUSES SHALL HAVE A RATING SO INDICATED AND SHALL BE CONFIRMED BY EQUIPMENT VENDOR BEING CONNECTED.
G. 600 AMPERES OR LESS FUSES: UL CLASS RKI WITH A MINIMUM INTERRUPTING RATING OF 200,000 AMPERES, BUSSMANN "LOW–PEAK TYPE" OR EQUAL.

PART 3 – EXECUTION

3.1 GENERAL INSTALLATION

A. LOCATIONS: INSTALL SWITCHES, DISCONNECTS AND SAFETY WHERE INDICATED ON THE CONTRACT DRAWINGS OR AS REQUIRED BY CEC.
B. FASTENINGS: SECURELY FASTEN SWITCHES TO STRUCTURAL MEMBERS OR UNISTRUT SUPPORT AS DIRECTED BY THE MANUFACTURER.
C. MANUAL MOTOR SWITCHES: INSTALL FLUSH MOUNTED IN FINISHED AREAS.
D. MANUAL MOTOR SWITCHES: INSTALL SURFACE MOUNTED IN EQUIPMENT ROOMS AND NON–FINISHED AREAS. WHERE INSTALLED ABOVE INACCESSIBLE CEILINGS PROVIDE ACCESS PANELS.
E. LABEL ALL DISCONNECT SWITCHES IN ACCORDANCE WITH SECTION 16141, EQUIPMENT LABELS AND NAMEPLATES AND WARNING SIGNS.
F. FUSE: ALL FUSES SHALL BE AS INDICATED ON THE PLAN OR AS REQUIRED BY THE EQUIPMENT. VERIFY FUSE SIZE WITH EQUIPMENT MANUFACTURER REQUIREMENTS, PRIOR TO INSTALLATION. USE CURRENT LIMITING FUSES AS INDICATED ON PLAN. PROVIDE ONE SPARE FUSE CABINET IN EACH ELECTRICAL ROOM WITH ONE COMPLETE SET OF SPARE FUSES FOR ALL SIZES OF MAIN FUSES, SUBPANEL FUSES, HVAC EQUIPMENT FUSES AND FIRE ALARM.
G. TERMINALS SHALL BE MINIMUM 75 DEGREE RATED.

END OF SECTION 16170

SECTION 16402 – UNDERGROUND ELECTRICAL CONSTRUCTION AND SERVICE

PART 1 – GENERAL

1.1 DESCRIPTION

A. THIS SECTION SPECIFIES THE FURNISHING, INSTALLATION AND CONNECTION OF MANHOLES, HANDHOLES AND DUCTS TO FORM A COMPLETE UNDERGROUND RACEWAY SYSTEM AS REQUIRED TO PROVIDE NEW SERVICES TO BUILDING AND REROUTE EXISTING UTILITIES AROUND NEW BUILDING FOOTPRINT.
B. "DUCT" AND "CONDUIT", AND "RACEWAY" ARE USED INTERCHANGEABLY IN THIS SPECIFICATION AND HAVE THE SAME MEANING. REFER TO SECTION 16110, RACEWAYS FOR APPROVED RACEWAY AND MATERIALS AS WELL AS EXECUTION.
C. SCOPE OF WORK: FURNISHING, INSTALLATION AND CONNECTION OF MANHOLES, HANDHOLES AND DUCTS TO FORM A COMPLETE UNDERGROUND RACEWAY SYSTEM FOR DISTRIBUTION OF ELECTRICAL AND UTILITY SERVICE ENTRANCE FACILITIES. THIS SPECIFICATION SHALL ALSO PROVIDE GUIDANCE FOR CONSTRUCTION OF THE UTILITY COMPANY UNDERGROUND AND SUBSTRUCTURE REQUIREMENTS. CONTACT SERVING COMPANY DIRECTLY AND OBTAIN CURRENT DETAILED REQUIREMENTS OF INSTALLATION AND ADHERE BY SAME. PROVIDE TRENCHING, CONDUIT, BACKFILL, BOXES AND EQUIPMENT PADS AS APPLICABLE. NOTHING HERE IN SHALL BE CONSTRUED TO BE IN CONFLICT WITH THE REQUIREMENTS OF THE UTILITY COMPANY, WHICH SHALL TAKE PRECEDENCE OVER ANY POSSIBLE CONFLICTING REQUIREMENT.

1.2 RELATED WORK

A. SITEWORK.
B. FLATWORK.
C. LANDSCAPING.
D. SECTION 16050, BASIC MATERIALS AND METHODS.
E. SECTION 16110, RACEWAYS: CONDUITS, FITTINGS AND BOXES FOR RACEWAY SYSTEMS.
F. SECTION 16450, GROUNDING.

1.3 SUBMITTALS

A. SUBMIT IN ACCORDANCE WITH SECTION 16050, BASIC MATERIALS AND METHODS.
B. SHOP DRAWINGS:
   1. SUFFICIENT INFORMATION, CLEARLY PRESENTED, SHALL BE INCLUDED TO DETERMINE COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS.
   2. INCLUDE MANHOLES, HANDHOLES, DUCT MATERIALS, AND HARDWARE. PROPOSED DEVIATIONS FROM DETAILS ON THE DRAWINGS SHALL BE CLEARLY MARKED ON THE SUBMITTALS.
   3. IF NECESSARY TO LOCATE MANHOLES OR HANDHOLES AT LOCATIONS OTHER THAN SHOWN ON THE DRAWINGS, SHOW THE PROPOSED LOCATIONS ACCURATELY ON SCALED SITE DRAWINGS.
   4. PRECAST MANHOLES AND HANDHOLES: SUBMIT DETAIL DRAWINGS AND DESIGN CALCULATIONS FOR APPROVAL PRIOR TO INSTALLATION.

1.4 APPLICABLE PUBLICATIONS

A. PUBLICATIONS LISTED BELOW (INCLUDING AMENDMENTS, ADDENDA, REVISIONS, SUPPLEMENTS, AND ERRATA) FORM A PART OF THIS SPECIFICATION TO THE EXTENT REFERENCED. PUBLICATIONS ARE REFERENCED IN THE TEXT BY THE BASIC DESIGNATION ONLY.
B. UNDERWRITERS LABORATORIES, INC. (UL):
   1. UL 467–1993 GROUNDING AND BONDING EQUIPMENT
   2. UL 651–1995 SCHEDULE 40 AND 80 RIGID PVC CONDUIT
   3. UL 6–2000 ELECTRICAL RIGID METAL CONDUIT–STEEL
C. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):
   1. 70–2002 CALIFORNIA ELECTRICAL CODE (CEC)
D. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA):
   1. RN 1–1998 POLYVINYL CHLORIDE (PVC) EXTERNALLY COATED GALVANIZED RIGID STEEL CONDUIT AND INTERMEDIATE METAL CONDUIT
   2. TC 2–1998 ELECTRICAL POLYVINYL CHLORIDE (PVC) TUBING AND CONDUIT
   3. TC 3–1999 PVC FITTINGS FOR USE WITH RIGID PVC CONDUIT AND TUBING
E. AMERICAN CONCRETE INSTITUTE (ACI):
   1. 318–02 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
F. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):
   1. C478–1997STANDARD SPECIFICATION FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS
   2. C478M–1997 STANDARD SPECIFICATION FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS (METRIC).
   3. F512–95(2001) STANDARD SPECIFICATION FOR SMOOTH–WALL POLYVINYL CHLORIDE (PVC) CONDUIT AND FITTINGS FOR UNDERGROUND INSTALLATION
G. UTILITY COMPANY HANDOUT PACKAGE AND CONSTRUCTION REQUIREMENTS FOR UNDERGROUND AND SUBSTRUCTURE INSTALLATION.

PART 2 – PRODUCTS

2.1 MATERIALS

A. CONCRETE: ACI 318, 3000 PSI MINIMUM 28 DAY COMPRESSIVE STRENGTH.
B. REINFORCING STEEL: NUMBER 4 MINIMUM.
C. MANHOLE HARDWARE:
   1. FRAMES AND COVERS (TRAFFIC TYPE)
   2. SUMP FRAMES AND GRATINGS
   3. PULLING IRONS: 7/8 INCH DIAMETER HOT DIPPED GALVANIZED STEEL BAR WITH EXPOSED TRIANGULAR SHAPED OPENING.
   4. CABLE SUPPORTS:

A. CABLE STANCHIONS, HOT ROLLED, HEAVY DUTY, HOT DIPPED GALVANIZED "T" SECTION STEEL 2 1/4 INCHES BY ¼ INCH IN SIZE AND PUNCHED WITH 14 HOLES ON 1 1/2 INCH CENTERS FOR ATTACHING CABLE ARMS.

B. CABLE ARMS, 3/16 INCH GAGE, HOT ROLLED, HOT DIPPED GALVANIZED SHEET STEEL PRESSED TO CHANNEL SHAPE. ARMS SHALL BE APPROXIMATELY 2 1/2 INCHES WIDE AND 14 INCHES LONG.

C. INSULATORS FOR CABLE SUPPORTS, HIGH GLAZED, WET PROCESS PORCELAIN.

   D. SPARES: EQUIP EACH CABLE STANCHION WITH TWO SPARE CABLE ARMS AND SIX SPARE INSULATORS FOR FUTURE USE.
   E. MISCELLANEOUS HARDWARE, HOT DIPPED GALVANIZED STEEL.
   D. HANDHOLE HARDWARE:
1. FRAMES AND COVERS CONFIGURATION AS SHOWN ON THE DRAWINGS.
2. PULLING IRONS, 7/8 INCH DIAMETER GALVANIZED STEEL BAR WITH EXPOSED TRIANGULAR SHAPED OPENING.
   E. CABLE SUPPORTS ARE NOT REQUIRED.
   F. GROUND ROD SLEEVE: PROVIDE A 3" PVC SLEEVE IN MANHOLE FLOORS SO THAT A DRIVEN GROUND ROD MAY BE INSTALLED.
   G. MANHOLES AND HANDHOLES SHALL BE PRECAST UNITS AND BE CONSTRUCTED AS DESCRIBED BELOW. UNITS SHALL COMPLY WITH ASTM C478, C478M.
1. SIZE: PLAN AREA AND CLEAR HEIGHT SHALL BE NOT LESS THAN THAT SHOWN ON THE DRAWINGS.
2. ACCESSORIES, HARDWARE, AND FACILITIES SHALL BE THE SAME AS REQUIRED FOR POURED IN PLACE TYPE.
3. ASSUME GROUND WATER LEVEL 3 FEET BELOW GROUND SURFACE UNLESS A HIGHER WATER TABLE IS SHOWN IN THE BORING LOGS AND ADJUST DESIGN ACCORDINGLY.
   H. DUCTS:
1. SIZE SHALL BE AS SHOWN ON DRAWINGS.
2. DUCTS (CONCRETE ENCASED):
   A. PLASTIC CONDUIT:
      1) NEMA TC6 & 8 AND TC9 PLASTIC UTILITIES CONDUIT UL 651 AND 651A SCHEDULE 40 PVC.
      2) DUCT SHALL BE SUITABLE FOR USE WITH 90 DEGREE C RATED CONDUCTORS.
3. DUCTS (DIRECT BURIAL):
   A. PLASTIC DUCT:
      1) NEMA TC2 AND TC3, EPC–40, TYPE II.
      2) UL 651 AND 651A, SCHEDULE 40 SCHEDULE 80 PVC.
      3) DUCT SHALL BE SUITABLE FOR USE WITH 75 DEGREE C RATED CONDUCTORS.
   B. RIGID METAL CONDUIT, PVC–COATED: UL6 AND NEMA RN1 GALVANIZED RIGID STEEL, THREADED TYPE, COATED WITH PVC SHEATH BONDED TO THE GALVANIZED EXTERIOR SURFACE, NOMINAL 0.040 INCH THICK.
   I. GROUND RODS: PER SECTION 16450, GROUNDING.
   J. GROUND WIRE: STRANDED BARE COPPER NO. 6 AWG MINIMUM.
   K. CONDUIT SPACERS: PREFABRICATED PLASTIC.
   L. WARNING TAPE: STANDARD 4–MIL POLYETHYLENE 3 INCH WIDE TAPE, DETECTABLE TYPE, RED WITH BLACK LETTERS, IMPRINTED WITH "CAUTION BURIED ELECTRIC CABLE BELOW".
   M. PULL ROPE: PLASTIC WITH 200 POUND MINIMUM TENSILE STRENGTH.

PART 3 – EXECUTION

3.1 TRENCHING

A. REFER TO EARTHWORK SECTION OF SPECIFICATION FOR TRENCHING BACK–FILLING, AND COMPACTION REQUIREMENTS.
B. WORK WITH EXTREME CARE NEAR EXISTING DUCTS, CONDUITS, CABLES, AND OTHER UTILITIES TO AVOID DAMAGING THEM.
C. CUT THE TRENCHES NEATLY AND UNIFORMLY FOR UTILITY COMPANY TRENCHES, NOTIFY FOR INSPECTIONS BY UTILITY COMPANY A MINIMUM OF 48 HOURS IN ADVANCE.
D. CONDUITS TO BE INSTALLED UNDER EXISTING PAVED AREAS, ROADS, AND RAILROAD TRACKS WHICH ARE NOT TO BE DISTURBED SHALL BE PROTECTED INTO PLACE. CONDUITS SHALL BE MINIMUM 36" COVER.
E. TRENCH PREPARATION: A 4–INCH SAND BEDDING IS REQUIRED IF TRENCH BOTTOM IS NOT ROCK FREE. A 4–INCH SAND COVERING OVER THE CABLE IS REQUIRED IF THE NATIVE BACKFILL IS NOT ROCK FREE. BACKFILL AND COMPACTION SHOULD MEET CITY, COUNTY, STATE AND UTILITY COMPANY REQUIREMENTS. THE SERVING UTILITY COMPANY MAY REQUIRED 100% SAND BACKFILL. ALL BACKFILL REQUIREMENTS SHALL ALSO MEET OR EXCEED THOSE SET FORTH IN THE EARTHWORK OR CIVIL SECTION OF THIS SPECIFICATION.
F. EXCAVATION: PROVIDE 6"

B. SERVICE AND DISTRIBUTION SECTIONS SHALL CONTAIN CIRCUIT BREAKERS, FUSIBLE SWITCHES, AND COMBINATION MOTOR STARTERS, WITH SHUNT TRIPS, MOTOR OPERATORS, GROUND FAULT PROTECTION, AND OTHER ACCESSORIES, AS INDICATED ON THE DRAWINGS, AS WELL AS PROVISIONS FOR UTILITY METERING SHALL BE IN ACCORDANCE WITH THE SERVING ELECTRIC UTILITY REQUIREMENTS. EACH DISCONNECTING MEANS SHALL BE PROVIDED WITH A MEANS FOR INDIVIDUAL PADLOCKING. SWITCHES SHALL BE HEAVY-DUTY, QUICK-MAKE AND QUICK-BREAK, AND HORSEPOWER RATED THROUGH 500 HP. SWITCHES RATED OVER 600 AMPERES SHALL BE BOLTED PRESSURE CONTACT TYPE. RATINGS OF DISCONNECTING MEANS AND OVERCURRENT PROTECTIVE DEVICES SHALL BE AS INDICATED ON THE DRAWINGS.
C. FINISH: INTERIOR FINISH SHALL BE A GRAY LACQUER OR ENAMEL; EXTERIOR FINISH SHALL BE A GRAY BAKED-ON ENAMEL OR LACQUER. APPLY ALL FINISH COATINGS OVER A RUST-INHIBITING METAL PRIMER.
D. IDENTIFICATION: PROVIDE AN ENGRAVED LAMINATED PLASTIC NAMEPLATE IDENTIFYING THE EQUIPMENT AS DESIGNATED AND LOCATED ON THE CONTRACT DRAWINGS, AND INDICATING VOLTAGE, PHASE, AND NUMBER OF SYSTEM CONDUCTORS. FOR EXAMPLE, "SWITCHBOARD MS 277/480V. 3Ø 4W. LETTERING SHALL BE WHITE ON BLACK FINISH AND 2-INCH HIGH MINIMUM. NAMEPLATES SHALL BE AFFIXED BY A MINIMUM OF TWO ESCUTCHEON PINS OR SCREWS. EACH DEVICE ON THE EQUIPMENT SHALL BE PROVIDED WITH AN ENGRAVED PLASTIC NAMEPLATE AS SPECIFIED IN SECTION 16141, EQUIPMENT LABELS AND NAMEPLATES AND WARNING SIGNS.

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION
A. EQUIPMENT SHALL BE SECURELY BOLTED TO THE STRUCTURE. FINAL ATTACHMENT MEANS SHALL BE IN COMPLIANCE WITH THE SEISMIC REQUIREMENTS OF GOVERNING AUTHORITY. SHOP DRAWINGS INDICATING THE ATTACHMENT REQUIREMENTS SHALL BE PROVIDED BY THE MANUFACTURER ALONG WITH ALL NECESSARY CALCULATIONS AND SHALL BE SUBMITTED WITH THE SHOP DRAWINGS OF THE EQUIPMENT.
B. EQUIPMENT SHALL BE INSTALLED IN A LEVEL AND "PLUMB" CONDITION.
C. EQUIPMENT SHALL BE PROTECTED DURING CONSTRUCTION IN SUCH A MANNER TO PREVENT PLASTER, PAINT, DUST, ETC. FROM DEFACING THE FINISH OF EQUIPMENT. PRIOR TO FINAL ACCEPTANCE OF THE EQUIPMENT, THE INTERIOR OF THE EQUIPMENT SHALL BE CLEANED OF ALL FOREIGN MATERIALS AND DEBRIS. ANY BLEMISHES OR DEFECTS ON THE EXTERIOR OF THE EQUIPMENT SHALL BE REPAIRED BY PAINTING THE EQUIPMENT WITH PAINT SUPPLIED BY THE MANUFACTURER OF THE EQUIPMENT TO MATCH THE FACTORY FINISHES.
D. NO OPERATING HANDLES SHALL BE LOCATED ABOVE 6-FOOT 6-INCHES ABOVE FINISH FLOOR. CODE CLEARANCES ON ALL SIDES OF THE EQUIPMENT SHALL BE MAINTAINED.
E. EQUIPMENT SHALL BE MECHANICALLY GROUNDED TO THE GROUNDING SYSTEM.

3.2 ACCEPTANCE TESTING OF METERING EQUIPMENT
A. GENERAL:
1. INSPECT FOR PHYSICAL DAMAGE.
2. COMPARE EQUIPMENT NAMEPLATE INFORMATION WITH LATEST SINGLE LINE DIAGRAM.
3. INSPECT FOR PROPER ALIGNMENT, ANCHORAGE AND GROUNDING.
4. CHECK TIGHTNESS OF ACCESSIBLE BOLTED BUS JOINTS BY CALIBRATED TORQUE WRENCH METHOD. REFER TO MANUFACTURER'S INSTRUCTION FOR PROPER FOOT POUND LEVELS.
5. ALL DOORS, PANELS AND SECTIONS SHALL BE INSPECTED FOR PAINT, DENTS, SCRATCHES.

END OF SECTION 16426

SECTION 16450 - GROUNDING

PART 1 - GENERAL

1.1 DESCRIPTION
A. THIS SECTION SPECIFIES GENERAL GROUNDING AND BONDING REQUIREMENTS OF ELECTRICAL INSTALLATIONS FOR PERSONNEL SAFETY AND TO PROVIDE A LOW IMPEDANCE PATH FOR POSSIBLE GROUND FAULT CURRENTS AS DESCRIBED IN CEC ARTICLE 250.
B. "GROUNDING ELECTRODE SYSTEM" REFERS TO ALL ELECTRODES REQUIRED BY CEC, AS WELL AS INCLUDING MADE, SUPPLEMENTARY, LIGHTNING PROTECTION SYSTEM AND TELECOMMUNICATIONS SYSTEM GROUNDING ELECTRODES.
C. THE TERMS "CONNECT" AND "BOND" ARE USED INTERCHANGEABLY IN THIS SPECIFICATION AND HAVE THE SAME MEANING.

1.2 RELATED WORK
A. SECTION 16050, BASIC MATERIALS AND METHODS.
B. SECTION 16120, POWER WIRE, CABLES AND CONDUCTORS.

PART 2 - PRODUCTS

2.1 GROUNDING AND BONDING CONDUCTORS
A. EQUIPMENT GROUNDING CONDUCTORS SHALL BE UL 83 INSULATED STRANDED COPPER, EXCEPT THAT SIZES NO. 10 AWG AND SMALLER SHALL BE SOLID COPPER. INSULATION COLOR SHALL BE CONTINUOUS GREEN FOR ALL EQUIPMENT GROUNDING CONDUCTORS, EXCEPT THAT WIRE SIZES NO. 4 AWG AND LARGER SHALL BE PERMITTED TO BE IDENTIFIED PER CEC.
B. BONDING CONDUCTORS SHALL BE ASTM B8 BARE STRANDED COPPER, EXCEPT THAT SIZES NO. 10 AWG AND SMALLER SHALL BE ASTM B1 SOLID BARE COPPER WIRE.
C. CONDUCTOR SIZES SHALL NOT BE LESS THAN WHAT IS SHOWN ON THE DRAWINGS AND NOT LESS THAN REQUIRED BY THE CEC, WHICHEVER IS GREATER.

2.2 GROUND RODS
A. COPPERCLAD STEEL, ? INCH DIAMETER BY 10 FEET LONG, CONFORMING TO UL 467 UNLESS OTHERWISE NOTED ON DRAWINGS AND DETAILS.
B. QUANTITY OF RODS SHALL BE AS REQUIRED TO OBTAIN THE SPECIFIED GROUND RESISTANCE OR ADDITIONAL RODS SHALL BE DRIVEN TO OBTAIN SPECIFIED RESISTANCE OR LESS.

2.3 SPLICES AND TERMINATION COMPONENTS
A. COMPONENTS SHALL MEET OR EXCEED UL 467 AND BE CLEARLY MARKED WITH THE MANUFACTURER, CATALOG NUMBER, AND PERMITTED CONDUCTOR SIZE(S).

PART 3 - EXECUTION

3.1 GENERAL
A. GROUND IN ACCORDANCE WITH THE CEC, AS SHOWN ON DRAWINGS, AND AS HEREINAFTER SPECIFIED.
B. SYSTEM GROUNDING:
1. SECONDARY SERVICE NEUTRALS: GROUND AT THE SUPPLY SIDE OF THE SECONDARY DISCONNECTING MEANS AND AT THE RELATED TRANSFORMERS.
2. SEPARATELY DERIVED SYSTEMS (TRANSFORMERS DOWNSTREAM FROM THE SERVICE ENTRANCE): GROUND THE SECONDARY NEUTRAL.
C. EQUIPMENT GROUNDING: METALLIC STRUCTURES (INCLUDING DUCTWORK AND BUILDING STEEL), ENCLOSURES, FIRE SPRINKLERS, PLUMBING PIPING, RACEWAYS, JUNCTION BOXES, OUTLET BOXES, CABINETS, MACHINE FRAMES, AND OTHER CONDUCTIVE ITEMS IN CLOSE PROXIMITY WITH ELECTRICAL CIRCUITS SHALL BE BONDED AND GROUNDED.

3.2 INACCESSIBLE GROUNDING CONNECTIONS
A. MAKE GROUNDING CONNECTIONS WHICH ARE BURIED OR OTHERWISE NORMALLY INACCESSIBLE (EXCEPT CONNECTIONS FOR WHICH PERIODIC TESTING ACCESS IS REQUIRED) BY EXOTHERMIC WELD.

3.3 SECONDARY EQUIPMENT AND CIRCUITS
A. MAIN BONDING JUMPER: BOND THE SECONDARY SERVICE NEUTRAL TO THE GROUND BUS IN THE SERVICE EQUIPMENT.
B. METALLIC PIPING, BUILDING STEEL, AND SUPPLEMENTAL ELECTRODE(S):
1. PROVIDE A GROUNDING ELECTRODE CONDUCTOR SIZED PER CEC BETWEEN THE SERVICE EQUIPMENT GROUND BUS AND ALL METALLIC WATER AND GAS PIPE SYSTEMS, BUILDING STEEL, AND SUPPLEMENTAL OR MADE ELECTRODES. JUMPER INSULATING JOINTS IN THE METALLIC PIPING. ALL CONNECTIONS TO ELECTRODES SHALL BE MADE WITH FITTINGS THAT CONFORM TO UL 467.
2. PROVIDE A SUPPLEMENTAL GROUND ELECTRODE AND BOND TO THE GROUNDING ELECTRODE SYSTEM.
C. SERVICE DISCONNECT: PROVIDE A GROUND BAR BOLTED TO THE ENCLOSURE WITH LUGS FOR CONNECTING THE VARIOUS GROUNDING CONDUCTORS.
D. SWITCHGEAR AND SWITCHBOARDS:
1. CONNECT THE VARIOUS FEEDER EQUIPMENT GROUNDING CONDUCTORS TO THE GROUND BUS IN THE ENCLOSURE WITH SUITABLE PRESSURE CONNECTORS.
2. FOR SERVICE ENTRANCE EQUIPMENT, CONNECT THE GROUNDING ELECTRODE CONDUCTOR TO THE GROUND BUS.
3. CONNECT METALLIC CONDUITS, WHICH TERMINATE WITHOUT MECHANICAL CONNECTION TO THE HOUSING, BY GROUNDING BUSHINGS AND GROUNDING CONDUCTOR TO THE EQUIPMENT GROUND BUS.
E. CONDUIT SYSTEMS:
1. GROUND ALL METALLIC CONDUIT SYSTEMS. ALL METALLIC CONDUIT SYSTEMS SHALL CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR SIZED PER CEC.
2. NON METALLIC CONDUIT SYSTEMS SHALL CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR, EXCEPT THAT NON-METALLIC FEEDER CONDUITS WHICH CARRY A GROUNDED CONDUCTOR FROM EXTERIOR TRANSFORMERS TO INTERIOR OR BUILDING-MOUNTED SERVICE ENTRANCE EQUIPMENT NEED NOT CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR.
3. METAL CONDUIT CONTAINING ONLY A GROUNDING CONDUCTOR, AND WHICH IS PROVIDED FOR MECHANICAL PROTECTION OF THE CONDUCTOR, SHALL BE BONDED TO THAT CONDUCTOR AT THE ENTRANCE AND EXIT FROM THE CONDUIT.
F. FEEDERS AND BRANCH CIRCUITS: INSTALL EQUIPMENT GROUNDING CONDUCTORS WITH ALL FEEDERS, POWER AND LIGHTING BRANCH CIRCUITS.
G. BOXES, CABINETS, ENCLOSURES, AND PANELBOARDS:
1. BOND THE EQUIPMENT GROUNDING CONDUCTOR TO EACH PULLBOX, JUNCTION BOX, OUTLET BOX, DEVICE BOX, CABINETS, AND OTHER ENCLOSURES THROUGH WHICH THE CONDUCTOR PASSES.
2. PROVIDE LUGS IN EACH BOX AND ENCLOSURE FOR EQUIPMENT GROUNDING CONDUCTOR TERMINATION.
3. PROVIDE GROUND BARS IN PANELBOARDS, BOLTED TO THE HOUSING, WITH SUFFICIENT LUGS TO TERMINATE THE EQUIPMENT GROUNDING CONDUCTORS.
H. MOTORS AND EQUIPMENT: PROVIDE LUGS IN MOTOR TERMINAL BOX AND STARTER HOUSING OR MOTOR CONTROL CENTER COMPARTMENT TO TERMINATE EQUIPMENT GROUNDING CONDUCTORS.
I. RECEPTACLES SHALL NOT BE GROUNDED THROUGH THEIR MOUNTING SCREWS. GROUND WITH A JUMPER FROM THE RECEPTACLE GREEN GROUND TERMINAL TO THE DEVICE BOX GROUND SCREW AND THE BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTOR.
J. GROUND LIGHTING FIXTURES TO THE EQUIPMENT GROUNDING CONDUCTOR OF THE WIRING SYSTEM WHEN THE GREEN GROUND IS PROVIDED; OTHERWISE, GROUND THE FIXTURES THROUGH THE CONDUIT SYSTEMS. FIXTURES CONNECTED WITH FLEXIBLE CONDUIT SHALL HAVE A GREEN GROUND WIRE INCLUDED WITH THE POWER WIRES FROM THE FIXTURE THROUGH THE FLEXIBLE CONDUIT TO THE FIRST OUTLET BOX.
K. FIXED ELECTRICAL APPLIANCES AND EQUIPMENT SHALL BE PROVIDED WITH A GROUND LUG FOR TERMINATION OF THE EQUIPMENT GROUNDING CONDUCTOR.

3.4 CONDUCTIVE PIPING
A. BOND ALL CONDUCTIVE PIPING SYSTEMS, INTERIOR AND EXTERIOR, TO THE BUILDING TO THE GROUNDING ELECTRODE SYSTEM. BONDING CONNECTIONS SHALL BE MADE AS CLOSE AS PRACTICAL TO THE EQUIPMENT GROUND BUS.

3.5 GROUND RESISTANCE
A. GROUNDING SYSTEM RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS. MAKE NECESSARY MODIFICATIONS OR ADDITIONS TO THE GROUNDING ELECTRODE SYSTEM FOR COMPLIANCE WITHOUT ADDITIONAL COST TO THE OWNER. FINAL TESTS SHALL ASSURE THAT THIS REQUIREMENT IS MET.
B. RESISTANCE OF THE GROUNDING ELECTRODE SYSTEM SHALL BE MEASURED USING A FOUR-TERMINAL FALL-OF-POTENTIAL METHOD AS DEFINED IN IEEE STANDARD 81. GROUND RESISTANCE MEASUREMENTS SHALL BE MADE BEFORE THE ELECTRICAL DISTRIBUTION SYSTEM IS ENERGIZED AND SHALL BE MADE IN NORMALLY DRY CONDITIONS NOT LESS THAN 48 HOURS AFTER THE LAST RAINFALL. RESISTANCE MEASUREMENTS OF SEPARATE GROUNDING ELECTRODE SYSTEMS SHALL BE MADE BEFORE THE SYSTEMS ARE BONDED TOGETHER BELOW GRADE. THE COMBINED RESISTANCE OF SEPARATE SYSTEMS MAY BE USED TO MEET THE REQUIRED RESISTANCE, BUT THE SPECIFIED NUMBER OF ELECTRODES MUST STILL BE PROVIDED.
C. SERVICES AT PACIFIC GAS AND ELECTRIC COMPANY INTERFACE POINT SHALL COMPLY WITH THEIR GROUND RESISTANCE REQUIREMENTS.
D. BELOW-GRADE CONNECTIONS SHALL BE VISUALLY INSPECTED BY THE IOR PRIOR TO BACKFILLING. THE CONTRACTOR SHALL NOTIFY THE IOR 24 HOURS BEFORE THE CONNECTIONS ARE READY FOR INSPECTION.
E. FURNISH A COPY OF TESTS TO OWNER AT COMPLETION OF PROJECT.

3.6 GROUND ROD INSTALLATION
A. DRIVE EACH ROD VERTICALLY IN THE EARTH, NOT LESS THAN 9.5 FEET IN DEPTH.
B. WHERE PERMANENTLY CONCEALED GROUND CONNECTIONS ARE REQUIRED, MAKE THE CONNECTIONS BY THE EXOTHERMIC PROCESS TO FORM SOLID METAL JOINTS. MAKE ACCESSIBLE GROUND CONNECTIONS WITH MECHANICAL PRESSURE TYPE GROUND CONNECTORS.
C. WHERE ROCK PREVENTS THE DRIVING OF VERTICAL GROUND RODS, INSTALL ANGLED GROUND RODS OR GROUNDING ELECTRODES IN HORIZONTAL TRENCHES TO ACHIEVE THE SPECIFIED RESISTANCE.

END OF SECTION 16450

SECTION 16510 - BUILDING LIGHTING, INTERIOR

PART 1 - GENERAL

1.1 DESCRIPTION
A. THIS SECTION SPECIFIES THE FURNISHING, INSTALLATION AND CONNECTION OF THE INTERIOR LIGHTING SYSTEMS, INCLUDING LUMINAIRES, BALLASTS, LAMPS AND EMERGENCY LIGHTING EQUIPMENT.

PART 2 - PRODUCTS

2.1 EMERGENCY FLUORESCENT LAMP POWER SUPPLY:
A. SELF-CONTAINED BATTERY-OPERATED POWER SUPPLY FOR OPERATING ONE T8 OR COMPACT FLUORESCENT LAMP FOR A MINIMUM OUTPUT OF 90 MINUTES.
B. THE POWER SUPPLY SHALL BE INSTALLED WITHIN THE LUMINAIRE BALLAST COMPARTMENT OR WIREWAY. PROVIDE WITH TEST SWITCH AND CHARGE INDICATOR INSTALLED INTEGRAL TO THE LUMINAIRE. THE TEST SWITCH AND CHARGE INDICTOR MAY BE INSTALLED IN A REMOTE CEILING MOUNTED FLUSH J-BOX FOR RECESSED DOWNLIGHTS WHICH CANNOT ACCEPT INTEGRAL COMPONENTS.
C. PERFORMANCE: EMERGENCY OPERATION LUMEN OUTPUT FOR LINEAR FLUORESCENT LAMPS SHALL BE A MINIMUM OF 1100 LUMENS, AND FOR COMPACT FLUORESCENT LAMPS SHALL BE A MINIMUM OF 640 LUMENS, UNLESS SPECIFICALLY NOTED OTHERWISE ON THE ASSOCIATED ELECTRICAL DRAWINGS.
D. PROVIDE ACCESS HATCHES, FOR EMERGENCY BATTERY BACKUP BALLASTS, ADJACENT TO RECESSED 6-INCH OR LESS DIAMETER DOWNLIGHTS INSTALLED IN INACCESSIBLE CEILINGS.
E. MANUFACTURERS: BODINE, IOTA, OR APPROVED. EMERGENCY FLUORESCENT LAMP POWER SUPPLIES MAY BE PROVIDED AS FACTORY INSTALLED BY THE LUMINAIRE MANUFACTURER PROVIDED THE PRODUCT MEETS THE ABOVE SPECIFICATION CRITERIA.

2.2 LIGHTING FIXTURES (LUMINAIRES)
A. SHALL BE IN ACCORDANCE WITH NFPA 70, UL 1598 AND SHALL BE AS SHOWN ON DRAWINGS AND AS SPECIFIED. ALL LUMINAIRES SHALL HAVE BEEN CERTIFIED TO THE CALIFORNIA ENERGY COMMISSION BY ITS MANUFACTURER TO COMPLY WITH THE EFFICIENCY STANDARDS AS PER CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 6, SECTION 111 REFERENCING THE APPLIANCE EFFICIENCY REGULATIONS IN TITLE 20. POST CERTIFICATION WITH BUILDING PERMIT.
B. SHEET METAL:
1. SHALL BE FORMED TO PREVENT WARPING AND SAGGING. HOUSING, TRIM AND LENS FRAME SHALL BE TRUE, STRAIGHT (UNLESS INTENTIONALLY CURVED) AND PARALLEL TO EACH OTHER AS DESIGNED.
2. WIREWAYS AND FITTINGS SHALL BE FREE OF BURRS AND SHARP EDGES AND SHALL ACCOMMODATE INTERNAL AND BRANCH CIRCUIT WIRING WITHOUT DAMAGE TO THE WIRING.
3. WHEN INSTALLED, ANY EXPOSED FIXTURE HOUSING SURFACE, TRIM FRAME, DOOR FRAME AND LENS FRAME SHALL BE FREE OF LIGHT LEAKS; LENS DOORS SHALL CLOSE IN A LIGHT TIGHT MANNER.
A. HINGED DOOR CLOSURE FRAMES SHALL OPERATE SMOOTHLY WITHOUT BINDING WHEN THE FIXTURE IS IN THE INSTALLED POSITION, AND LATCHES SHALL FUNCTION EASILY BY FINGER ACTION WITHOUT THE USE OF TOOLS.
B. LUMINAIRES INSTALLED UNDER CANOPIES, ROOF OR OPEN PORCHES AND SIMILAR DAMP OR WET LOCATION SHALL BE U.L. LABELED AS SUITABLE FOR DAMP OR WET LOCATION.
C. BALLASTS SHALL BE SERVICEABLE WHILE THE FIXTURE IS IN ITS NORMALLY INSTALLED POSITION, AND SHALL NOT BE MOUNTED TO REMOVABLE REFLECTORS OR WIREWAY COVERS UNLESS SO SPECIFIED.
D. LAMP SOCKETS:
1. FLUORESCENT: LAMPHOLDER CONTACTS SHALL BE THE BITING EDGE TYPE OR PHOSPHOROUS BRONZE WITH SILVER FLASH CONTACT SURFACE TYPE AND SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF UL 542. CONTACTS FOR RECESSED DOUBLE CONTACT LAMPHOLDERS AND FOR SLIMLINE LAMPHOLDERS SHALL BE SILVER PLATED. LAMPHOLDERS FOR BI PIN LAMPS, WITH THE EXCEPTION OF THOSE FOR "U" TYPE LAMPS, SHALL BE OF THE TELESCOPING COMPRESSION TYPE, OR OF THE SINGLE SLOT ENTRY TYPE REQUIRING A ONE QUARTER TURN OF THE LAMP AFTER INSERTION.
2. INCANDESCENT: SHALL HAVE PORCELAIN ENCLOSURES AND CONFORM TO THE APPLICABLE REQUIREMENTS OF UL 496.
3. HIGH INTENSITY DISCHARGE (H.I.D.): SHALL HAVE PORCELAIN ENCLOSURES.
E. RECESSED FIXTURES SHALL BE OF THE TYPE APPROVED FOR THE CEILING AND INSULATION CONDITIONS AND APPROPRIATE FOR THE INSTALLATION LOCATION. INSULATION MUST BE HELD BACK FROM THE FIXTURE TO PROVIDE MANUFACTURERS' RECOMMENDED CLEARANCES FOR PROPER OPERATION. THERMAL TRIPPING SHALL BE THE INSTALLER'S RESPONSIBILITY TO CORRECT. WHERE INSTALLED IN FIRE RATED CEILINGS, COORDINATE INSTALLATION OF FIRE RATED ENCLOSURES AROUND THE CEILING PENETRATIONS. FIXTURES SHALL CONTAIN THE PROPER THROUGH WIRING CAPACITY FOR THAT WHICH IS SHOWN ON THE PLANS.
F. RECESSED FIXTURES SHALL BE PROVIDED WITH THE APPROPRIATE TRIMS AND HARDWARE COMPATIBLE WITH THE CEILING TYPE SHOWN. PLASTER FRAMES ARE REQUIRED WHERE PLASTER OR GYPSUM BOARD CEILINGS ARE ENCOUNTERED.
G. FLUORESCENT FIXTURES WITH LOUVERS OR LIGHT TRANSMITTING PANELS SHALL HAVE HINGES, LATCHES AND SAFETY CATCHES TO FACILITATE SAFE, CONVENIENT CLEANING AND RELAMPING. VAPOR TIGHT FIXTURES SHALL HAVE PRESSURE CLAMPING DEVICES IN LIEU OF THE LATCHES.
H. MECHANICAL SAFETY: LIGHTING FIXTURE CLOSURES (LENS DOORS, TRIM FRAME, HINGED HOUSINGS, ETC.) SHALL BE RETAINED IN A SECURE MANNER BY CAPTIVE SCREWS, CHAINS, CAPTIVE HINGES OR FASTENERS SUCH THAT THEY CANNOT BE ACCIDENTALLY DISLODGED DURING NORMAL OPERATION OR ROUTINE MAINTENANCE.
I. METAL FINISHES:
1. THE MANUFACTURER SHALL APPLY STANDARD FINISH (UNLESS OTHERWISE SPECIFIED) OVER A CORROSION RESISTANT PRIMER, AFTER CLEANING TO FREE THE METAL SURFACES OF RUST, GREASE, DIRT AND OTHER DEPOSITS. EDGES OF PRE-FINISHED SHEET METAL EXPOSED DURING FORMING, STAMPING OR SHEARING PROCESSES SHALL BE FINISHED IN A SIMILAR CORROSION RESISTANT MANNER TO MATCH THE ADJACENT SURFACE(S). FIXTURE FINISH SHALL BE FREE OF STAINS OR EVIDENCE OF RUSTING, BLISTERING, OR FLAKING.
2. INTERIOR LIGHT REFLECTING FINISHES SHALL BE WHITE WITH NOT LESS THAN 85 PERCENT REFLECTANCES, EXCEPT WHERE OTHERWISE SPECIFIED ON THE DRAWING.
3. EXTERIOR FINISHES SHALL BE AS SHOWN ON THE DRAWINGS.
J. PROVIDE ALL LIGHTING FIXTURES WITH A SPECIFIC MEANS FOR GROUNDING METALLIC RACEWAYS AND HOUSINGS TO AN EQUIPMENT GROUNDING CONDUCTOR.
K. LIGHT TRANSMITTING COMPONENTS FOR FLUORESCENT FIXTURES:
1. SHALL BE 100 PERCENT VIRGIN ACRYLIC PLASTIC OR WATER WHITE, ANNEALED, CRYSTAL GLASS.
2. FLAT LENS PANELS SHALL HAVE NOT LESS THAN 1/8 INCH OF AVERAGE THICKNESS. THE AVERAGE THICKNESS SHALL BE DETERMINED BY ADDING THE MAXIMUM THICKNESS TO THE MINIMUM UNPENETRATED THICKNESS AND DIVIDING THE SUM BY 2.
3. UNLESS OTHERWISE SPECIFIED, LENSES, DIFFUSERS AND LOUVERS SHALL BE RETAINED FIRMLY IN A METAL FRAME BY CLIPS OR CLAMPING RING IN SUCH A MANNER AS TO ALLOW EXPANSION AND CONTRACTION OF THE LENS WITHOUT DISTORTION OR CRACKING.
L. COMPACT FLUORESCENT FIXTURES SHALL BE MANUFACTURED SPECIFICALLY FOR COMPACT FLUORESCENT LAMPS WITH BALLASTS INTEGRAL TO THE FIXTURE. ASSEMBLIES DESIGNED TO RETROFIT INCANDESCENT FIXTURES ARE PROHIBITED EXCEPT WHEN DESCRIBED IN THIS FASHION. FIXTURES SHALL BE DESIGNED FOR LAMPS AS SPECIFIED.

2.3 BALLASTS
A. BALLASTS, GENERAL:
1. PROVIDE BALLASTS RATED FOR SPECIFIED LAMPS, I.E., T-8 RATED BALLASTS WHERE T-8 LAMPS SPECIFIED.
2. THERMAL PROTECTION: INTERNAL UL CLASS P WITH AUTOMATIC RESET.
3. POWER FACTORS: NOT LESS THAN 90 PERCENT UNLESS OTHERWISE INDICATED.
4. SOUND RATINGS: RATING A, EXCEPT WHERE NOT AVAILABLE AS STANDARD PRODUCTS FROM ANY MANUFACTURER. PROVIDE QUIETEST RATINGS AVAILABLE.
5. INPUT VOLTAGE: MATCH BRANCH CIRCUIT SUPPLY VOLTAGE; REFER TO DRAWINGS.
6. PROVIDE NUMBER OF BALLASTS IN LUMINAIRES TO PROVIDE MULTILEVEL SWITCHING AS INDICATED ON DRAWINGS.
B. FLUORESCENT ELECTRONIC BALLASTS:
1. PROVIDE BALLASTS WHICH MEET REQUIREMENTS OF UL 935 LISTED CLASS P TYPE 1, UL TYPE CC ANTI-ARC RATED, THERMALLY PROTECTED AND RECOGNIZED BY CERTIFIED BALLAST MANUFACTURER (CBM) AND BEAR THE APPROPRIATE UL LABEL.
2. ELECTRICAL CHARACTERISTICS:
A. PROVIDE ELECTRONIC BALLASTS WHICH WITHSTAND INPUT POWER LINE TRANSIENTS AS DEFINED IN ANSI C62.41, CATEGORY-A AND IEEE 587. MULTI-VOLTAGE CONTROL CAPABILITIES FROM 108 VOLT TO 305 VOLT.
B. POWER FACTOR: 95 PERCENT OR HIGHER.
C. MINIMUM 0.77 BALLAST FACTOR.
D. TOTAL HARMONIC DISTORTION: NOT TO EXCEED 10 PERCENT OF THE INPUT CURRENT.
E. COMPLY WITH FCC RULES AND REGULATIONS PART 18, CLASS A CONCERNING GENERATION OF BOTH ELECTROMAGNETIC INTERFERENCE AND RADIO FREQUENCY INTERFERENCE.
F. PROVIDE RATED INITIAL AND MEAN LUMEN OUTPUT WITH SYSTEM CONFIGURATION PROVIDED.
C. ALL BALLASTS SHALL HAVE BEEN CERTIFIED TO THE CALIFORNIA ENERGY COMMISSION BY ITS MANUFACTURER TO COMPLY WITH THE EFFICIENCY STANDARDS AS PER CALIFORNIA CODE OR REGULATION TITLE 24, PART 6, SECTION 111 REFERENCING THE APPLIANCE EFFICIENCY REGULATIONS IN TITLE 20. POST CERTIFICATION WITH BUILDING PERMIT.
D. PERFORMANCE: BALLASTS SHALL CARRY A MINIMUM FULL 5 YEAR WARRANTY. ALL BALLASTS SHALL HAVE A CLASS A SOUND RATING. ANY BALLAST DEEMED NOISY BY THE ARCHITECT SHALL BE REPLACED AT NO CHARGE TO THE OWNER.
E. SHIELDING: ALL LENS MATERIAL SHALL BE 100% VIRGIN ACRYLIC, .125" MINIMUM THICKNESS, UNLESS OTHERWISE INDICATED IN THE FIXTURE SCHEDULE. DIFFUSERS SHALL COMPLY WITH UBC 5209.
F. SLIMLINE AND MAGNETIC BALLASTS SHALL NOT BE ALLOWED.
G. MAINTAIN ACCESSIBILITY OF ALL BALLAST LOCATIONS.
H. FLUORESCENT DIMMING BALLASTS:
1. DIMMING RANGE 100 PERCENT TO 5 PERCENT.
2. POWER FACTOR GREATER THAN 95 PERCENT.
3. THD LESS THAN 10 PERCENT.
4. NO VISIBLE LAMP FLICKER.
5. MANUFACTURER: ADVANCE MARK 10 SERIES.

2.4 LAMPS
A. PROVIDE LAMPS FOR ALL LUMINAIRES.
B. FLUORESCENT LAMPS:
1. ALL FLUORESCENT LAMPS SHALL BE SECOND GENERATION T8 LAMPS RATED AT MINIMUM 3100 LUMEN OUTPUT, 4100K MINIMUM CRI 85, LENGTH AND WATTAGE AS NOTED IN LUMINAIRE SCHEDULE. GE F32T8/XL/SPX41/HL/ECO, OSRAM/SYLVANIA F032/84XPS/ECO, PHILLIPS F32T8/ADV841/ALTO, 24,000 HOUR RATED MINIMUM LAMP LIFE.
2. COMPACT FLUORESCENT LAMPS: QUAD TUBE, 4100K MINIMUM CRI 85 UNLESS OTHERWISE NOTED. GENERAL ELECTRIC, OSRAM/SYLVANIA, PHILIPS, 10,000 HOUR LIFE MINIMUM.
3. PROVIDE FLUORESCENT LAMPS BY SAME MANUFACTURER GENERAL ELECTRIC, OSRAM/SYLVANIA, PHILIPS.
C. INCANDESCENT: 130 VOLT RATED. GENERAL ELECTRIC, OSRAM/SYLVANIA, PHILIPS.

PART 3 - EXECUTION

3.1 INSTALLATION
A. INSTALLATION AND FURNISHING OF LIGHTING FIXTURES SHALL BE IN ACCORDANCE WITH THE CEC, MANUFACTURER'S INSTRUCTIONS AND AS SHOWN ON THE DRAWINGS OR SPECIFIED. FIXTURES DAMAGED IN TRANSIT AND STORAGE PRIOR TO COMPLETION SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.
B. ALIGN, MOUNT AND LEVEL THE LIGHTING FIXTURES UNIFORMLY.
C. AVOID INTERFERENCE WITH AND PROVIDE CLEARANCE FOR EQUIPMENT. WHERE THE INDICATED LOCATIONS FOR THE LIGHTING FIXTURES CONFLICT WITH THE LOCATIONS FOR EQUIPMENT, CHANGE THE LOCATIONS FOR THE LIGHTING FIXTURES BY THE MINIMUM DISTANCES NECESSARY AS APPROVED BY THE ARCHITECT. THE ARCHITECTURAL REFLECTED CEILING PLAN WILL TAKE PRECEDENCE OVER ELECTRICAL PLANS.
D. FOR SUSPENDED LIGHTING FIXTURES, THE MOUNTING HEIGHTS SHALL PROVIDE THE CLEARANCES BETWEEN THE BOTTOMS OF THE FIXTURES AND THE FINISHED FLOORS AS SHOWN ON THE DRAWINGS.
E. LIGHTING FIXTURE SUPPORTS:
1. CONTRACTOR SHALL PROVIDE SUPPORT FOR ALL OF THE FIXTURES INDEPENDENT OF SUSPENDED CEILINGS. SUPPORTS MAY BE ANCHORED TO CHANNELS OF THE CEILING CONSTRUCTION, TO THE STRUCTURAL SLAB OR TO STRUCTURAL MEMBERS WITHIN A PARTITION, OR ABOVE A SUSPENDED CEILING.
2. SHALL MAINTAIN THE FIXTURE POSITIONS AFTER CLEANING AND RELAMPING.
3. SHALL SUPPORT THE LIGHTING FIXTURES WITHOUT CAUSING THE CEILING OR PARTITION TO DEFLECT.
4. HARDWARE FOR RECESSED FLUORESCENT FIXTURES:
A. FIXTURES SHALL BE SUPPORTED AS DETAILED ON DRAWINGS
B. INSTALLATION: FIXTURES SHALL BE SECURELY MOUNTED ON CEILINGS AND WALLS WITH APPROPRIATE FASTENING DEVICES. "DROP-IN" TYPE T-BAR FIXTURES SHALL BE SECURED WITH #12 GAUGE SAFETY "EARTHQUAKE WIRES" AS DESCRIBED BY CALIFORNIA CODE OF REGULATIONS TITLE 24 PART 2, CHAPTER 47. "EARTHQUAKE CLIPS" WILL BE REQUIRED FOR FASTENING TO THE T-BAR SYSTEM IN ADDITION TO SAFETY WIRE. SURFACE MOUNTED FLUORESCENT FIXTURES SHALL BE SOLIDLY SCREWED OR CLIPPED INTO FRAMING ABOVE DRYWALL WITH 4-#10 SHEET METAL SCREWS INTO EACH FIXTURE. PROVIDE BLOCKING FOR SCREW SUPPORTS BEHIND ALL SURFACE MOUNTED LIGHTING FIXTURES WEIGHING MORE THAN 15 LBS.
5. SURFACE MOUNTED LIGHTING FIXTURES:
A. FIXTURES SHALL BE BOLTED AGAINST THE CEILING INDEPENDENT OF THE OUTLET BOX AT FOUR POINTS SPACED NEAR THE CORNERS OF EACH UNIT. THE BOLTS SHALL BE MINIMUM ¼-20 BOLT, SECURED TO STRUCTURAL CEILING. NON-TURNING STUDS MAY BE ATTACHED TO THE BUILDING STRUCTURE BY 12 GAUGE SAFETY HANGERS.
6. FIXTURES MOUNTED IN OPEN CONSTRUCTION SHALL BE SECURED DIRECTLY TO THE BUILDING STRUCTURE WITH APPROVED BOLTING AND CLAMPING DEVICES.
7. SINGLE OR DOUBLE PENDENT MOUNTED LIGHTING FIXTURES:
A. EACH STEM SHALL BE SUPPORTED BY AN APPROVED OUTLET BOX, MOUNTED SWIVEL JOINT AND CANOPY WHICH HOLDS THE STEM CAPTIVE AND PROVIDES SPRING LO

SECTION 16740 – TELEPHONE UTILITY SERVICE

PART 1 – GENERAL

1.1 SUMMARY

1.2 RELATED WORK
- A. SECTION 01010, SUMMARY OF WORK.
- B. SECTION 01300, SUBMITTALS.
- C. SECTION 16110, RACEWAYS.
- D. SECTION 16130, BOXES AND GUTTERS.
- E. SECTION 02320, TRENCHING.

1.3 WORK INCLUDED
- A. ALL WORK AND MATERIAL AS SHOWN AND/OR REQUIRED TO PROVIDE NEW SERVICE TO BUILDING AND REROUTE EXISTING FACILITIES AROUND NEW BUILDING FOOTPRINT.
- B. CONTACT THE SERVING UTILITY COMPANY AT START OF CONSTRUCTION AND AGAIN 30 DAYS PRIOR TO DATE THAT SERVICE CABLE PLACEMENT WILL BE REQUIRED.
- C. COMPLIANCE WITH STANDARDS: THE SERVING UTILITY COMPANY RESERVES THE RIGHT TO REFUSE TO USE ANY CONDUIT, PULLBOXES, MANHOLES OR UTILITY BOXES THAT DEVIATE FROM APPLICABLE BUILDING CODES, PLANS AND/OR SPECIFICATIONS.

1.4 DEFINITIONS
- A. MTTB: MAIN TELEPHONE TERMINAL BOARD
- B. RNC: RIGID NONMETALLIC CONDUIT
- C. UFER: CONCRETE-ENCASED ELECTRODE

PART 2 – PRODUCTS

2.1 MATERIALS
- A. MAIN TELEPHONE TERMINAL BOARD (MTTB) SHALL BE PROVIDED WITH A #6 THHN SOLID COPPER GROUND WIRE IN 1/2" CONDUIT RUN TO A MAIN ELECTRIC SERVICE GROUND: EITHER THE CONCRETE-ENCASED ELECTRODE ("UFER") OR THE METAL UNDERGROUND WATER PIPE. PROVIDE WITH MINIMUM OF 30" CLEAR WORKING SPACE SHALL BE PROVIDED IN FRONT OF MTTB. IF IN A CLOSET, NO DOOR SILLS OR CENTER POSTS SHALL OBSTRUCT ACCESS.
- B. INTERIOR MTTB SHALL BE 3/4" THICK PLYWOOD SIZED AND LOCATED PER PLAN. FASTEN SECURELY TO WALL. PROVIDE WITH ADJACENT 120VOLT DOUBLE DUPLEX RECEPTACLE ON DEDICATED 20AMP CIRCUIT.

PART 3 – EXECUTION

3.1 INSTALLATION
- A. SERVICE CONDUITS SHALL BE RNC SCHEDULE 40 OR GT-80 BELOW GRADE EXCEPT AT BENDS UP TO AND INCLUDING ABOVE GRADE WHICH SHALL BE RNC SCHEDULE 80. VERIFY WITH UTILITY PRIOR TO INSTALLATION.
  1. MANDREL AND MEASURE CONDUITS END-TO-END TO FACILITATE THE UTILITY ORDERING OF CABLES.
  2. PROVIDE MINIMUM 3/16" PULL ROPE IN EACH CONDUIT.
  3. MINIMUM COVER FOR CONDUIT SHALL BE 30".
  4. MINIMUM SEPARATION FROM POWER CONDUIT(S) IN JOINT TRENCH SHALL BE 12" OF COMPACTED SOIL OR 3" OF CONCRETE.
  5. CONDUITS AT BACKBOARD SHALL EXTEND 2" ABOVE FINISH FLOOR OR 6" BELOW CEILING AND 1" OUT FROM FACE OF BACKBOARD.
  6. MINIMUM RADIUS OF BENDS FROM TRENCH TO BUILDING SHALL BE 36".
- B. 300' CONDUIT LENGTH AND BENDING LIMITS: UNLESS OTHERWISE SHOWN ON THE PLAN, SERVICE ENTRANCE CONDUIT LENGTH SHALL NOT EXCEED FOR 4" CONDUIT OR 250' FOR 2" CONDUIT. NOT INCLUDING RISERS, CONDUITS SHALL HAVE A MAXIMUM OF 270 DEGREES TOTAL OF BENDING INCLUDING A MAXIMUM OF TWO 90-DEGREE BENDS. IF THESE LIMITS ARE EXCEEDED, A PULL BOX WILL BE REQUIRED.
- C. ALL MANHOLES, PULLBOXES AND UTILITY BOXES SHALL BE SIZED PER PLAN WITH COVER MARKED "TELEPHONE" AS MANUFACTURED BY ASSOCIATED CONCRETE OR PLASTIC PRODUCTS "QUIKSET", BROOKS, CHRISTY OR EQUAL AS APPROVED BY THE UTILITY COMPANY.
  1. PULLBOXES SHALL BE PROVIDED WITH CABLE RACKING AND TORSION PARKWAY COVER. IF REQUIRED BY THE UTILITY, ALSO PROVIDE WITH 5' GROUND ROD DRIVEN 4' INTO GROUND.
  2. UTILITY BOXES SHALL BE PROVIDED WITH 5' GROUND ROD DRIVEN 4' INTO GROUND IF REQUIRED BY THE UTILITY.

END OF SECTION 16740

SECTION 16780 – CABLE TELEVISION SERVICE

PART 1 – GENERAL

1.1 SUMMARY
- A. RELATED SECTIONS
  1. SECTION 01010, SUMMARY OF WORK.
  2. SECTION 01300, SUBMITTALS.
  3. SECTION 16110, RACEWAYS.
  4. SECTION 16130, BOXES AND GUTTERS.
  5. SECTION 02320, TRENCHING.
- B. WORK INCLUDED
  1. ALL WORK AND MATERIAL AS SHOWN AND/OR REQUIRED TO PROVIDE NEW SERVICE TO BUILDING AND REROUTE EXISTING FACILITIES AROUND NEW BUILDING FOOTPRINT.
  2. CONTACT THE SERVING CABLE TELEVISION (CATV) UTILITY COMPANY AT START OF CONSTRUCTION AND AGAIN 30 DAYS PRIOR TO DATE CATV SERVICE CABLE PLACEMENT WILL BE REQUIRED.
  3. COMPLIANCE WITH STANDARDS: THE UTILITY COMPANY RESERVES THE RIGHT TO REFUSE TO USE ANY CONDUIT, PULLBOXES, MANHOLES OR UTILITY BOXES THAT DEVIATE FROM APPLICABLE BUILDING CODES, UTILITY STANDARDS, PLANS AND/OR SPECIFICATIONS.

PART 2 – PRODUCTS

2.1 MATERIALS
- A. PROVIDE A COMPLETE CONDUIT INFRASTRUCTURE FOR INSTALLATION OF THE UTILITY SERVICE CABLE. MATERIALS SHALL COMPLY WITH APPLICABLE PORTIONS OF SPECIFICATION SECTIONS 16110, RACEWAYS AND 16130, BOXES AND GUTTERS.

PART 3 – EXECUTION

3.1 INSTALLATION
- A. PROVIDE ALL TRENCHING, EXCAVATIONS, AND ROCK-FREE BACKFILL (1/4" SCREEN) AND SERVICE CONDUITS. NOTIFY SERVING COMPANY 48 HOURS BEFORE BACKFILL.
- B. SERVICE CONDUITS SHALL BE RNC SCHEDULE 40 OR GT-80 BELOW GRADE EXCEPT AT BENDS UP TO AND INCLUDING ABOVE GRADE WHICH SHALL BE RNC SCHEDULE 80. VERIFY WITH UTILITIES PRIOR TO INSTALLATION.
  1. MANDREL AND MEASURE CONDUITS END-TO-END TO FACILITATE INSTALLATION OF CATV CABLES.
  2. PROVIDE MINIMUM 3/16" PULL ROPE IN EACH CONDUIT.
  3. MINIMUM COVER FOR CONDUIT SHALL BE 24".
  4. MINIMUM SEPARATION FROM POWER CONDUIT(S) IN JOINT TRENCH SHALL BE 12" OF COMPACTED SOIL OR 3" OF CONCRETE.
  5. CONDUITS AT BACKBOARD SHALL EXTEND 2" ABOVE FINISH FLOOR OR 6" BELOW CEILING AND 1" OUT FROM FACE OF BACKBOARD.
  6. MINIMUM RADIUS OF BENDS FROM TRENCH TO BUILDING SHALL BE 36".
- C. CONDUIT LENGTH AND BENDING LIMITS: UNLESS OTHERWISE SHOWN ON THE PLAN, SERVICE ENTRANCE CONDUIT LENGTH SHALL NOT EXCEED 500 FEET. NOT INCLUDING RISERS, CONDUITS SHALL HAVE A MAXIMUM OF 270 DEGREES TOTAL OF BENDING INCLUDING A MAXIMUM OF TWO 90-DEGREE BENDS. IF THESE LIMITS ARE EXCEEDED, A PULL BOX WILL BE REQUIRED.
- D. ALL MANHOLES, PULLBOXES AND UTILITY BOXES SHALL BE SIZED PER PLAN WITH COVER MARKED "CABLE TV" AS MANUFACTURED BY ASSOCIATED CONCRETE OR PLASTIC PRODUCTS "QUIKSET", BROOKS, CHRISTY OR EQUAL AS APPROVED BY UTILITY COMPANY.
- E. CONDUITS MUST ENTER BOXES WITH A 90-DEGREE SWEEP AND SHALL BE NO MORE THAN A 15-DEGREE ANGLE FROM THE MAIN LINE TRENCH.
- F. PULLROPES: INSTALL 3/16" POLYPROPYLENE 800 LB. MINIMUM TEST PULL LINE IN 2" CONDUITS AND 1/8" POLYPROPYLENE 200 LB. MINIMUM TEST PULL LINE IN 1" CONDUITS.
- G. LOCATIONS OF EXISTING UNDERGROUND FACILITIES SHALL BE OBTAINED BY CALLING UNDERGROUND SERVICE ALERT AT LEAST 48 HOURS IN ADVANCE, 800-642-2444.

END OF SECTION 16780

SECTION 16906 – OCCUPANCY SENSORS

PART 1 – GENERAL

1.1 SUMMARY

1.2 RELATED WORK
- A. SECTION 16050, BASIC MATERIALS AND METHODS.
- B. SECTION 16110, RACEWAYS.
- C. SECTION 16120, POWER WIRE, CABLES AND CONDUCTORS.
- D. SECTION 16140, WIRING DEVICES.
- E. SECTION 16970, LIGHTING ACCEPTANCE TESTING.

1.3 SYSTEM DESCRIPTION
- A. THE OCCUPANCY SENSORS SHALL SENSE THE PRESENCE OF HUMAN ACTIVITY WITHIN THE DESIRED SPACE AND ENABLE OR DISABLE THE ON/OFF MANUAL LIGHTING CONTROL FUNCTION PROVIDED BY LOCAL SWITCHES.
- B. UPON DETECTION OF HUMAN ACTIVITY BY THE DETECTOR, INITIATE A TIME DELAY TO MAINTAIN THE LIGHTS ON FOR A PRESET PERIOD OF TIME. FIELD ADJUSTABLE TIME DELAY SETTING FROM 30 SECONDS TO 15 MINUTES.
- C. SENSORS SHALL HAVE FACTORY SET PIR SENSING SENSITIVITY FOR MAXIMUM SENSITIVITY. PROVIDE TIME DELAY AT 10 MINUTES.
- D. INSTALL SYSTEM IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.
- E. ALL LINE VOLTAGE SENSORS, CONTROL UNITS, AND RELAYS UL LISTED

1.4 SUBMITTALS
- A. PROVIDE, ON REPRODUCIBLE ARCHITECTURAL FLOOR PLAN, A LAYOUT OF SENSORS INDICATING THEIR SENSING DISTRIBUTION.
- B. PROVIDE WIRING DIAGRAMS INDICATING LOW VOLTAGE AND LINE VOLTAGE WIRING REQUIREMENTS.

PART 2 – PRODUCTS

2.1 WALL SWITCH SENSORS
- A. SENSOR SHALL RECESS INTO SINGLE GANG SWITCH BOX AND FIT A STANDARD GFI OPENING.
- B. SENSOR MUST MEET NEC GROUNDING REQUIREMENTS BY PROVIDING A DEDICATED GROUND CONNECTION AND GROUNDING TO MOUNTING STRAP. LINE AND LOAD WIRE CONNECTIONS SHALL BE INTERCHANGEABLE. SENSOR SHALL NOT ALLOW CURRENT TO PASS TO THE LOAD WHEN SENSOR IS IN THE UNOCCUPIED (OFF) CONDITION.
- C. SENSOR SHALL USE PIR SENSING INCORPORATING A NOMINAL ONE HALF INCH FOCAL LENGTH LENS VIEWING 9 INCHES ABOVE AND BELOW HORIZONTAL VIEW PATTERN MEASURED AT 10 FEET.
- D. SENSOR SHALL HAVE OPTIONAL FEATURES FOR PHOTOCELL/DAYLIGHT OVERRIDE, VANDAL RESISTANT LENS, AND NO SWITCH AS SPECIFIED.
- E. IN AREAS WITH INBOARD/OUTBOARD SWITCHING, SENSOR SHALL PROVIDE TWO DEDICATED RELAYS AND OVERRIDE SWITCHES. EACH RELAY SHALL HAVE INDEPENDENT PROGRAMMABLE TIME DELAYS.
- F. IN AREAS WITH OBSTRUCTIONS TO THE OCCUPANT'S WORKSPACE, SENSOR SHALL UTILIZE PROGRAMMABLE DUAL TECHNOLOGY SENSING.
- G. ALL MODELS SHALL HAVE "REDUCED TURN ON". THIS IS A FIELD PROGRAMMABLE FUNCTION FOR PROBLEMATIC AREAS WITH UNFORESEEN REFLECTIVE SURFACES. FALSE TURN ON SHALL BE ELIMINATED WITH THIS FEATURE.
- H. SENSOR SHALL BE THE FOLLOWING SENSOR SWITCH MODEL NUMBERS. DEVICE COLOR AND OPTIONAL FEATURES AS SPECIFIED.
  1. WSD (PIR)
  2. WSD-2P (PIR INBOARD/OUTBOARD)
  3. WSD-PDT (DUAL TECHNOLOGY)
  4. WSD-PDT-2P (DUAL TECHNOLOGY)

2.2 WALL SWITCH SENSORS – LARGE AREAS
- A. SENSOR SHALL SURFACE MOUNT TO SINGLE GANG SWITCH BOX.
- B. SENSOR SHALL USE PIR SENSING INCORPORATING A NOMINAL ONE-INCH FOCAL LENGTH LENS VIEWING 9 INCHES ABOVE AND BELOW HORIZONTAL VIEW PATTERN MEASURED AT 20 FEET.
- C. SENSOR SHALL HAVE OPTIONAL FEATURE FOR PHOTOCELL/DAYLIGHT OVERRIDE.
- D. IN AREAS WITH INBOARD/OUTBOARD SWITCHING OR TWO CIRCUITS, SENSOR SHALL PROVIDE TWO DEDICATED RELAYS AND OVERRIDE SWITCHES.
- E. IN AREAS WITH OBSTRUCTIONS TO THE OCCUPANT'S WORKSPACE, SENSOR SHALL UTILIZE DUAL TECHNOLOGY SENSING.
- F. SENSOR SHALL BE THE FOLLOWING SENSOR SWITCH MODEL NUMBERS. DEVICE COLOR AND OPTIONAL FEATURES AS SPECIFIED.
  1. LWS (PIR)
  2. LWS-2P (PIR INBOARD/OUTBOARD OR TWO CIRCUITS)
  3. LWS-PDT (DUAL TECHNOLOGY)
  4. LWS-PDT-2P (DUAL TECHNOLOGY INBOARD/OUTBOARD OR TWO CIRCUITS

2.3 LINE VOLTAGE SENSORS
- A. SENSORS SHALL BE SELF-CONTAINED AND ACCEPT CLASS 1 WIRING DIRECTLY WITHOUT THE USE OF A POWER PACK.
- B. IN AREAS WITH CLEAR LINE OF SITE VIEW OF THE WORKSPACE, SENSORS SHALL USE PIR DETECTION. IN AREAS WITH OBSTRUCTIONS, SENSORS SHALL USE DUAL TECHNOLOGY DETECTION.
- C. MULTIPLE SENSORS CONTROLLING THE SAME LOAD SHALL BE WIRED IN PARALLEL.
- D. SENSORS SHALL BE THE FOLLOWING SENSOR SWITCH MODEL NUMBERS.
  1. CMR-9 & CMR-9-2P (PIR CEILING MOUNT- SINGLE AND TWO POLE)
  2. CMR-PDT & CMR-PDT-2P (DUAL TECHNOLOGY CEILING MOUNT- SINGLE AND TWO POLE)
  3. CMR-10 & CMR-10-2P (PIR CEILING MOUNT EXTENDED RANGE – SINGLE AND TWO POLE)
  4. CMR-PDT-10 & CMR-PDT-10-2P (DUAL TECHNOLOGY CEILING MOUNT EXTENDED RANGE – SINGLE AND TWO POLE)

PART 3 – EXECUTION

3.1 INSTALLATION
- A. INSTALL OCCUPANCY SENSORS AS DIRECTED BY MANUFACTURER'S INSTRUCTIONS. COMPLETE ALL ELECTRICAL CONNECTIONS TO ALL CONTROL CIRCUITS, OCCUPANCY SENSORS, POWER SUPPLY PACK AND LOW VOLTAGE WIRING.
- B. VERIFY WITH MANUFACTURER'S REPRESENTATIVE THAT THE SENSORS ARE LAID OUT IN COMPLIANCE TO MANUFACTURERS PUBLISHED SENSING DISTRIBUTION. PROVIDE ADDITIONAL SENSORS FOR COMPLETE COVERAGE OF THE SPACE BEING SENSED.

3.2 QUALITY CONTROL
- A. USE MANUFACTURER'S PUBLISHED TESTING AND ADJUSTING PROCEDURES TO ADJUST SENSORS TIME DELAY, DAYLIGHT SENSITIVITY, AND PASSIVE INFRARED SENSITIVITY TO SATISFACTION OF THE OWNER.

END OF SECTION 16906

PROJECT

ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

CLIENT JOB # ARCHITECT JOB #

0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER JT

DRAWN BY DM

DATES

	FIRST SUBMITTAL	5/28/10
1	PLAN CHECK 1	8/16/10

SIGNED

thoma ENGINEERING
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Phone: (805) 543-3850
Fax: (805) 543-3829
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REGISTERED PROFESSIONAL ENGINEER – WILLIAM A. THOMA – NO. 10757 – ELECTRICAL – STATE OF CALIFORNIA

EXPIRES: 06/30/11
THOMA #10-8055

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SHEET TITLE

ELECTRICAL SPECIFICATIONS

SHEET #

E5.4

INDOOR LIGHTING POWER ALLOWANCE — LTG-3C

Project Name: ROLLING HILLS APARTMENTS
Date: 5/5/2010

ALLOWED LIGHTING POWER (Chose One Method)

A Separate LTG-3C must be filled out for Conditioned and Unconditioned Spaces. Indoor Lighting Power Allowances listed on this page are only for:
☑ CONDITIONED SPACES ☐ UNCONDITIONED SPACES

COMPLETE BUILDING METHOD

BUILDING CATEGORY (From §146 Table 146-E)	WATTS PER (ft^2)	X	COMPLETE BLDG. AREA	=	ALLOWED WATTS
TOTALS			AREA		WATTS

AREA CATEGORY METHOD

BUILDING CATEGORY (From §146 Table 146-F)	WATTS PER (ft^2)	X	Area ft^2	=	ALLOWED WATTS
Corridor/Restroom/Support	*0.60*		*529*		*317*
Commercial, Industrial Storage	*0.60*		*135*		*82*
Laundry	*0.90*		*181*		*163*
Classroom, Lecture, Training	*1.20*		*339*		*407*
Office <= 250 sqft	*1.10*		*317*		*349*
Convention/Conference/Meeting	*1.40*		*1,170*		*1,638*
Waiting Areas/Lounges	*0.80*		*189*		*151*
TOTALS			*2,861*		*3,107*
			AREA		WATTS

TAILORED METHOD

Total Allowed Watts using the Tailored Method taken from LTG-4C (Page 1 of 4) Row 3 | *0*

The indoor lighting power allowance using the Tailored Method of compliance shall be determined using the LTG-4C set of forms. A separate set of LTG-4C forms shall be filled out for CONDITIONED and UNCONDITIONED spaces.

CERTIFICATE OF COMPLIANCE (Part 3 of 4) — LTG-1C

Project Name: ROLLING HILLS APARTMENTS
Date: 5/5/2010

INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

Fill in controls for all spaces: a) area controls, b) multi-level controls, c) manual daylighting controls for daylit areas > 250 ft^2, automatic daylighting controls for daylit areas > 2,500 ft^2, d) shut-off controls, e) display lighting controls, f) tailored lighting controls – general lighting controlled separately from display, ornamental and display case lighting and g) demand responsive automatic controls for retail stores > 50,000 ft^2, in accordance with Section 131.

MANDATORY LIGHTING CONTROLS – FIELD INSPECTION ENERGY CHECKLIST

Type/ Description	Number of Units	Location in Building	Special Features	Field Inspector Pass	Field Inspector Fail
°$$ᵇ MULTI–LEVEL CONTROL	4	MP, KITCHEN, CLASS, WAITING	☐	☐	☐
OS OCCUPANCY SENSOR – CEILING	9	THROUGH–OUT BUILDING	☐	☐	☐
°$$ᵇ MULTI–LEVEL OS WALL SWITCH	2	OFFICES	☐	☐	☐
$OS OCC. SENSOR – WALL SWITCH	4	ELEC, MECH, STOR	☐	☐	☐

SPECIAL FEATURES INSPECTION CHECKLIST (See Page 2 of 4 of LTG-1C)

The local enforcement agency should pay special attention to the items specified in this checklist. These items require special written justification and documentation, and special verification. The local enforcement agency determines the adequacy of the justification, and may reject a building or design that otherwise complies based on the adequacy of the special justification and documentation submitted.

Field Inspector's Notes or Discrepancies:

CERTIFICATE OF COMPLIANCE (Part 1 of 4) — LTG-1C

Project Name: ROLLING HILLS APARTMENTS
Date: 5/5/2010

Project Address	Climate Zone	Total Cond. Floor Area	Unconditioned Floor Area
999 LAS TABLAS TEMPLETON	*4*	*2,861*	*0*

GENERAL INFORMATION

Building Type: ☑ Nonresidential ☐ High-Rise Residential ☐ Hotel/Motel Guest Room ☐ School ☐ Relocatable Public School ☑ Conditioned Spaces ☐ Unconditioned Spaces
Phase of Construction: ☑ New Construction ☐ Addition ☐ Alteration
Method of Compliance: ☐ Complete Building ☑ Area Category ☐ Tailored

Documentation Author's Declaration Statement

I certify that this Certificate of Compliance documentation is accurate and complete.

Name: *William Thoma, P.E.*	Signature
Company: *Thoma Electric*	Date: *5/5/2010*
Address: *3562 Empleo*	CEA # / CEPE #
City/State/Zip: *San Luis Obispo, CA 93405*	Phone: *805.543.3850*

The Principal Lighting Designer's Declaration Statement

- I am eligible under Division 3 of the California Business and Professional Code to accept responsibility for the lighting design.
- This Certificate of Compliance identifies the lighting features and performance specifications required for compliance with Title 24, Pages 1 and 6 of the California Code of Regulations.
- The design features represented on this Certificate of Compliance are consistent with the information provided to document this design on the other applicable compliance forms, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Name: *WILLIAM THOMA, PE*	Signature
Company: *THOMA ELECTRIC, INC*	Phone: *805.543.3850*
Address: *3562 EMPLEO*	License #: *10757*
City/State/Zip: *SAN LUIS OBISPO, CA 93401*	Date: *05–05–2010*

Lighting Mandatory Measures
Indicate location on building plans of Mandatory Measures Note Block: *E6.0*

LIGHTING COMPLIANCE FORMS & WORKSHEETS (check box if worksheets is included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance forms, please refer to the Nonresidential Manual published by the California Energy Commission.

☑	LTG-1C Pages 1 through 4	Certificate of Compliance. All Pages required on plans for all submittals.
☑	LTG-2C	Lighting Controls Credit Worksheet
☑	LTG-3C	Indoor Lighting Power Allowance
☐	LTG-4C Pages 1 through 4	Tailored Method Worksheet
☐	LTG-5C Pages 1 and 2	Line Voltage Track Lighting Worksheet

LIGHTING MANDATORY MEASURES: NONRESIDENTIAL — LTG-MM

Project Name: ROLLING HILLS APARTMENTS
Date: 5/5/2010

Indoor Lighting Measures:

§131(d):	**Shut-off Controls**	
	1.	For every floor, all interior lighting systems shall be equipped with a separate automatic control to shut off the lighting. This automatic control shall meet the requirements of Section 119 and may be an occupancy sensor, automatic time switch, or other device capable of automatically shutting off the lighting.
	2.	Override for Building Lighting Shut off: The automatic building shut-off system is provided with a manual, accessible override switch in sight of the lights. The area of override is not to exceed 5,000 square feet.
§119(h):		Automatic Control Devices Certified: All automatic control devices specified are certified, all alternate equipment shall be certified and installed as directed by the manufacturer.
§111:		Fluorescent Ballast and Luminaires Certified: All fluorescent fixtures specified for the project are certified and listed in the Directory. All installed fixtures shall be certified.
§131(a):		Individual Room/Area Controls: Each room and area in this building is equipped with a separate switch or occupancy sensor device for each area with floor-to-ceiling walls.
§131(b):		Uniform Reduction for Individual Rooms: All rooms and areas greater than 100 square feet and more than 0.8 watts per square foot of lighting load shall be controlled with bi-level switching for uniform reduction of lighting within the room.
§131(c):		Daylight Area Control: All rooms with windows and skylights that are greater than 250 square feet and that allow for the effective use of daylight in the area shall have 50% of the lamps in each daylit area controlled by a separate switch; or the effective use of daylight cannot be accomplished because the windows are continuously shaded by a building on the adjacent lot. Diagram of shading during different times of the year is included on plans.
§131(c):		Display Lighting. Display lighting shall be separately switched on circuits that are 20 amps or less.6.

Outdoor Lighting Measures:

§130(c)1:	Mandatory lighting power determination for medium base sockets without permanently installed ballasts
§132(a):	All permanently installed luminaires with lamps rated over 100 Watts either have a lamp efficacy of at least 60 lumens per Watt or are controlled by a motion sensor.
§132(b):	All Luminaires with lamps rated greater than 175 Watts in hardscape area, including parking lots, building entrances, canopies, and all outdoor sales areas meet the Cutoff Requirements.
§132(c)1:	All permanently installed outdoor lighting meets the control requirements listed.
§132(c):	Building facades, parking lots, garages, canopies, and outdoor sales areas meet the Multi-Level Lighting Requirements listed.

CERTIFICATE OF COMPLIANCE (Part 4 of 4) — LTG-1C

Project Name: ROLLING HILLS APARTMENTS
Date: 5/5/2010

CONDITIONED AND UNCONDITIONED SPACE LIGHTING MUST NOT BE COMBINED FOR COMPLIANCE

Indoor Lighting Power for Conditioned Spaces	Watts	Indoor Lighting Power for Unconditioned Spaces	Watts
Installed Lighting (from Conditioned LTG-1C, Page 2)	*2,897*	**Installed** Lighting (from Unconditioned LTG-1C, Page 2)	*0*
Lighting Control Credit Conditioned Spaces (from LTG-2C)	- *0*	Lighting Control Credit Unconditioned Spaces (from LTG-2C)	- *0*
Adjusted **Installed** Lighting Power	= *2,897*	Adjusted **Installed** Lighting Power	= *0*
Complies if **Installed** ≤ **Allowed**	↕	Complies if **Installed** ≤ **Allowed**	↕
Allowed Lighting Power Conditioned Spaces (from LTG-3C or PERF-1)	*3,107*	**Allowed** Lighting Power Unconditioned Spaces (from LTG-3C)	*0*

Required Acceptance Tests

Designer:
This form is to be used by the designer and attached to the plans. Listed below is the acceptance test for this Lighting system, **LTG-2A.** The designer is required to check the acceptance tests and list all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance. If all the lighting system or control of a certain type requires a test, list the different lighting and the number of systems. The NA7 Section in the Appendix of the Nonresidential Reference Appendices Manual describes the test. Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately. **Forms can be grouped by type of Luminaire controlled.**

Enforcement Agency:
Systems Acceptance. Before Occupancy Permit is granted for a newly constructed building or space or when ever new lighting system with controls is installed in the building or space shall be certified as meeting the Acceptance Requirements.
The **LTG-2A** form is not considered a complete form and is not to be accepted by the enforcement agency unless the boxes are checked and/or filled and signed. In addition, a Certificate of Acceptance forms shall be submitted to the enforcement agency that certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of §10-103(b) of Title 24 Part 6. The field inspector must receive the properly filled out and signed forms before the building can receive final occupancy. A copy of the **LTG-2A** for each different lighting luminaire control(s) must be provided to the owner of the building for their records.

Controls for Credits — LTG-2A

Equipment Requiring Testing	Description	Number of Luminaire controls	Location	Controls and Sensors and Automatic Daylighting Controls Acceptance
				☐

CERTIFICATE OF COMPLIANCE (Part 2 of 4) — LTG-1C

Project Name: ROLLING HILLS APARTMENTS
Date: 5/5/2010

INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

Installation Certificate, LTG-1- INST (Retain a copy and verify form is completed and signed.) **Field Inspector** ☐

Certificate of Acceptance, LTG-2A (Retain a copy and verify form is completed and signed.) **Field Inspector** ☐

A separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces Installed Lighting Power listed on this Lighting Schedule is only for:

☑ **CONDITIONED SPACE** ☐ **UNCONDITIONED SPACE**

☑ The actual indoor lighting power listed below includes all installed permanent and portable lighting systems in accordance with §146(a).

☑ Only for offices: Up to the first 0.2 watts per square foot of portable lighting shall not be required to be included in the calculation of actual indoor lighting power density in accordance with the Exception to §146(a). All portable lighting in excess of 0.2 watts per square foot is totaled below.

	Luminaire (Type, Lamps, Ballasts)			Installed Watts				
A	B	C	D	E	F	G	H	
None or Item Tag	Complete Luminaire Description[1] (i.e.,3 lamp fluorescent troffer, F32T8, and dimmable electronic ballasts)	Special Features	Watts per Luminaire	How wattage Was determined: CEC Default From NA8	How wattage Was determined: According To §130(d or e)	Number of Luminaires	Installed Watts (C x F)	Field Inspector[2]: Pass
D	*(2) 4 ft Fluorescent T8 Rapid Start Elec*	☐	*62.0*	☑	☐	*8*	*496*	☐
E1	*(2) 4 ft Fluorescent T8 Rapid Start Elec*	☐	*62.0*	☑	☐	*2*	*124*	☐
E3	*(1) 4 ft Fluorescent T8 Rapid Start Elec*	☐	*32.0*	☑	☐	*1*	*32*	☐
F	*(1) 4 ft Fluorescent T8 Rapid Start Elec*	☐	*32.0*	☑	☐	*2*	*64*	☐
G	*(1) 18w Compact Fluorescent Triple 4 Pin Elec*	☐	*21.0*	☑	☐	*10*	*210*	☐
H	*(2) 36w/39w Leg Crept T5 Fluorescent Twin Elec*	☐	*70.0*	☑	☐	*2*	*140*	☐
J1a	*(4) 32w Compact Fluorescent Triple 4 Pin ElecD*	☐	*152.0*	☑	☐	*1*	*152*	☐
J1b	*50w PAR-20*	☐	*50.0*	☑	☐	*1*	*50*	☐
J2a	*(4) 57w Compact Fluorescent Trip/Quad 4pin ElncD*	☐	*264.0*	☑	☐	*4*	*1,056*	☐
J2b	*75w PAR-30*	☐	*75.0*	☑	☐	*4*	*300*	☐
K	*(2) 32w Compact Fluorescent Triple 4 Pin Elec*	☐	*69.0*	☑	☐	*3*	*207*	☐
M	*(2) 2 ft Fluorescent T8 Elec*	☐	*33.0*	☑	☐	*2*	*66*	☐
		☐		☐	☐			☐
		☐		☐	☐			☐
		☐		☐	☐			☐
		☐		☐	☐			☐
		☐		☐	☐			☐
		☐		☐	☐			☐
		☐		☐	☐			☐
		☐		☐	☐			☐
						Installed Watts Page Total:	*2,897*	
Building total number of pages:						Installed Watts Building Total (Sum of all pages)		
						Enter into LTG-1C Page 4 of 4	*2,897*	

1. Wattage shall be determined according to Section 130 (d and e). Wattage shall be rating of light fixture, not rating of bulb.
2. If Fail then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. Verify building plans if necessary.

PROJECT

ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

CLIENT JOB # ARCHITECT JOB #
0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER JT

DRAWN BY DM

DATES
FIRST SUBMITTAL 5/28/10
1 PLAN CHECK 1 8 /16 /10

SIGNED

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REGISTERED PROFESSIONAL ENGINEER WILLIAM A. THOMA NO. 10757 ELECTRICAL STATE OF CALIFORNIA

EXPIRES: 06/30/11
THOMA #10–8055

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SHEET TITLE
TITLE 24

SHEET #
E6.0

OUTDOOR LIGHTING WORKSHEET (Part 2 of 3) OLTG-2C

Project Name: ROLLING HILLS APARTMENTS | Date: 5/5/2010

D. SPECIFIC APPLICATION LIGHTING WATTAGE ALLOWANCE PER APPLICATION

DETERMINE WATTAGE ALLOWANCE				DESIGN WATTS					ALLOWANCE
A	B	C	D	E	F	G	H	I	J
Specific Lighting Application	Number of Applications	Specific Application Allowance (watts)	Wattage Allowance (B X C)	Luminaire Symbol	Luminaire Type	Lumin QTY	Watts Per Luminaire	Design Watts (G X H)	Allowed Watts Minimum of D or I
BUILDING ENTRANCE	6	100	600	A	(1) 26w Compact Fluorescent Triple 4 Pin	2	28.0	56	466
				B	(2)75w PAR-30	2	150.0	300	
				C	(2) 26w Compact Fluorescent Triple 4 Pin	2	55.0	110	
Enter total into OLTG-1C; Page 4 of 4; Row D; Specific Application Wattage Allowance Per Application									466

E. SPECIFIC APPLICATION LIGHTING WATTAGE ALLOWANCE PER AREA

DETERMINE WATTAGE ALLOWANCE				LUMINAIRE TYPE		DESIGN WATTS			
A	B	C	D	E	F	G	H	I	J
Specific Lighting Application	Illuminated Area of Application	Specific Application Allowance (watts per ft²)	Wattage Allowance (B X C)	Code for Luminaire Type	Luminaire Type	Lumin QTY	Watts Per Luminaire	Design Watts (G X H)	Allowed Watts Minimum of D or I
Enter total into OLTG-1C; Page 4 of 4; Row E; Specific Application Lighting Wattage Allowance Per Area									0

CERTIFICATE OF COMPLIANCE (Part 3 of 4) OLTG-1C

Project Name: ROLLING HILLS APARTMENTS | Date: 5/5/2010

A. OUTDOOR LIGHTING ZONE

OUTDOOR LIGHTING ZONE: ☐ OLZ 1 ☐ OLZ 2 ☑ OLZ 3 ☐ OLZ 4

Is the Outdoor Lighting Zone: ☑ Default in accordance with §10-114, or ☐ Amended by JHA

Complete the information below if the default Outdoor Lighting Zone has been amended by the local jurisdiction having authority (JHA):

- ☐ The site is a government designated park, recreational area, wildlife preserve, or portion thereof, and has been designated as LZ2 or LZ3, in accordance with Table 10-114-A, because the site is contained within such a zone.
- ☐ The local jurisdiction having authority has officially adopted a change to the State Default Lighting Zone and has notified the Energy Commission by providing the materials required in §10-114(d) to the Executive Director.
- ☐ The adopted change is posted on the Energy Commission website.

B. ADDITIONAL LIGHTING POWER ALLOWANCE FOR ORDINANCE REQUIREMENTS

Are additional lighting power allowances for ordinance in Table 147-C used? ☐ Yes ☑ No

Complete the information below if additional lighting power allowances for ordinance requirements are used:

- ☐ The local jurisdiction having authority has officially adopted specific outdoor light levels, which are expressed as average or minimum footcandle levels, by following a public process that allowed for formal public notification, review, and comment about the proposed change.
- ☐ The local jurisdiction having authority which adopted specific outdoor light levels and has notified the Commission by providing the following materials required §10-114(f) to the Executive Director.

C. ACCEPTANCE FORMS

Required Acceptance Tests

Designer:

This form is to be used by the designer and attached to the plans. Listed below is the acceptance test for the Lighting system, **OLTG-2A**. The designer is required to check the acceptance tests and list all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance. If all the lighting system or control of a certain type requires a test, list the different lighting and the number of systems. The NA7 Section in the Appendix of the Nonresidential Reference Appendices Manual describes the test. Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately. **Forms can be grouped by type of Luminaire controlled.**

Enforcement Agency:

Systems Acceptance. Before Occupancy Permit is granted for a newly constructed building or space or when ever new lighting system with controls is installed in the building or space shall be certified as meeting the Acceptance Requirements. The **OLTG-2A** form is not considered a complete form and is not to be accepted by the enforcement agency unless the boxes are checked and/or filled and signed. In addition, a Certificate of Acceptance forms shall be submitted to the enforcement agency that certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of §10-103(b) of Title 24 Part 6. The field inspector must receive the properly filled out and signed forms before the building can receive final occupancy. A copy of the **OLTG-2A** for each different lighting luminaire control(s) must be provided to the owner of the building for their records.

Certificate of Acceptance

	Luminaires Controlled			OLTG-2A[1]
Equipment Requiring Testing	Description	Qty. of Like Controls	Location	Outdoor Lighting Acceptance Tests

1. Insert: **OMS** for Outdoor Motion Sensor; **OLSC** for Outdoor Lighting Shutoff Controls; **OP** for Outdoor Photocontrol; **ATS** for Astronomical Time Switch; and, **STS** for Standard (non-astronomical) Time Switch acceptance.

CERTIFICATE OF COMPLIANCE (Part 1 of 4) OLTG-1C

Project Name: ROLLING HILLS APARTMENTS | Date: 5/5/2010

Project Address: 999 LAS TABLAS TEMPLETON, CA 93465 | Total Illuminated Area: 0

GENERAL INFORMATION

Phase of Construction: ☑ New Construction ☐ Addition ☐ Alteration

Documentation Author's Declaration Statement

I certify that this Certificate of Compliance documentation is accurate and complete.

Name: William Thoma, PE	Signature:
Company: Thoma Electric	Date: 5/5/2010
Address: 3562 Empleo	CEA # / CEPE #:
City/State/Zip: San Luis Obispo, CA 93406	Phone: 805.543.3850

Principal Lighting Designer's Declaration Statement

- I am eligible under Division 3 of the California Business and Professional Code to accept responsibility for the lighting design.
- This Certificate of Compliance identifies the lighting features and performance specifications required for compliance with Title 24, Pages 1 and 8 of the California Code of Regulations.
- The design features represented on this Certificate of Compliance are consistent with the information provided to document this design on the other applicable compliance forms, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Name: WILLIAM THOMA, PE	Signature:
Company: THOMA ELECTRIC, INC	Phone: 805.543.3850
Address: 3562 EMPLEO	License #: 10757
City/State/Zip: SAN LUIS OBISPO, CA 93401	Date: 05-05-2010

Principal Lighting Designer's Declaration

☑ I certify that this Certificate of Compliance documentation is accurate and complete, and accounts for all outdoor lighting power, including building mounted, pole mounted, as well as all other lighting designed for the site, and that Additional Lighting Power Allowances for Specific Applications or Additional Lighting Power Allowances for Ordinance Requirements have not been counted more than one time for the same area, in accordance with Section 147 of the Standards.

Outdoor Lighting Mandatory Measures
Indicate location on building plans of Mandatory Measures Note Block: E6.0

LIGHTING COMPLIANCE FORMS & WORKSHEETS (check box if worksheets is included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance forms; please refer to the Nonresidential Manual published by the California Energy Commission.

☑	OLTG-1C	Certificate of Compliance. All 4 pages required on plans for all submittals.
☐	OLTG-2C	(Pages 1 of 3) Lighting Wattage Allowances for General Hardscape, Sales Frontage, or Ornamental Lighting. Optional on plans.
☑	OLTG-2C	(Pages 2 of 3) Lighting Wattage Allowance for Per Application or Per Area. Optional on plans.
☐	OLTG-2C	(Pages 3 of 3) Additional Lighting Power Allowance for Ordinance Requirements. Optional on plans.

CERTIFICATE OF COMPLIANCE (Part 4 of 4) OLTG-1C

Project Name: ROLLING HILLS APARTMENTS | Date: 5/5/2010

ALLOWED AND INSTALLED OUTDOOR LIGHTING POWER

		Lighting Wattage Power Allowance
A	Lighting power allowance for general hardscape (from OLTG-2C Page 1 of 3)	0
B	Specific application lighting wattage allowance per unit length (from OLTG-2C Page 1 of 3)	0
C	Specific application lighting wattage allowance for ornamental lighting (from OLTG-2C Page 1 of 3)	0
D	Specific application lighting wattage allowance per application (from OLTG-2C Page 2 of 3)	466
E	Specific application lighting wattage allowance per area (from OLTG-2C Page 2 of 3)	0
F	Specific application lighting wattage allowance for ordinance requirements (from OLTG-2C Page 3 of 3)	0
G	Total Allowed Wattage = Sum of rows A through G:	466
H	Total installed watts (from Compliance Fixture Schedule, (from OLTG-2C Page 1 of 3)	466
Complies if wattage in row H is less than or equal to the wattages in row G		☑ Yes ☐ No

CERTIFICATE OF COMPLIANCE (Part 2 of 4) OLTG-1C

Project Name: ROLLING HILLS APARTMENTS | Date: 5/5/2010

COMPLIANCE FIXTURE / LIGHTING CONTROL SCHEDULE and FIELD INSPECTION CHECKLIST

INSTALLATION CERTIFICATE, OLTG-1INST (Retain a copy and verify form is completed and signed.) **Field Inspection** ☐

CERTIFICATE OF ACCEPTANCE, OLTG-2A (Retain a copy and verify form is completed and signed.) **Field Inspection** ☐

Luminaire Schedule — **Installed Watts**

A	B	C	D	E	F		G	H	I	
					How wattage was determined				Field Inspector[2]	
Name or Item Tag	Luminaire Description[1] See footnote below (i.e.: 1 lamp pole-top shoe-box 400 watt metal halide)	Code† Designation	Watts per Luminaire	Special Features	Default from NA.8	According to §130 (D or E)	Number of Luminaires	Installed Watts (D X G)	Pass	Fail
A	(1) 26w Compact Fluorescent Triple 4 Pin Elec		28.0	☐	☑	☐	2	56	☐	☐
B	(2)75w PAR-30		150.0	☐	☑	☐	2	300	☐	☐
C	(2) 26w Compact Fluorescent Triple 4 Pin Elec		55.0	☐	☑	☐	2	110	☐	☐
				☐	☐	☐			☐	☐
				☐	☐	☐			☐	☐
				☐	☐	☐			☐	☐
				☐	☐	☐			☐	☐
				☐	☐	☐			☐	☐
				☐	☐	☐			☐	☐
				☐	☐	☐			☐	☐

Enter total into OLTG-1C; Page 4 of 4: Row H; Total Installed Watts: 466

1. Type of luminaire (i.e.: post top, wall pack, surface, shoe box); for non-incandescent luminaires, indicate nominal lamp wattage and lamp type (i.e.: fluorescent, incandescent, HID); ballast type (i.e.: electronic or magnetic); number of lamps and number of ballasts per luminaire. For incandescent luminaires, the luminaire wattage listed in column D shall be the maximum relamping rated wattage on a permanent factory-installed label on the luminaire, NOT the wattage of the lamp (bulb) used, in accordance with Section 130(d or e).
2. If Fail then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. Verify building plans if necessary.

EXEMPT LUMINAIRES **Field Inspection** ☐

Name or Symbol	Description of exempt luminaires in accordance with §147

MANDATORY CONTROLS **Field Inspection** ☐

#	Description	Location	#	Description	Location
1	AUTOMATIC TIME SWITCH	ELECTRICAL ROOM			

SPECIAL FEATURES INSPECTION CHECKLIST (See Page 2 of 4 of OLTG-1C)

The local enforcement agency should pay special attention to the items specified in this checklist. These items require special written justification and documentation, and special verification. The local enforcement agency determines the adequacy of the justification, and may reject a building or design that otherwise complies based on the adequacy of the special justification and documentation submitted.

Filed Inspector Notes or Discrepancies:

PROJECT

ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #: 0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER JT

DRAWN BY DM

DATES
- FIRST SUBMITTAL 5/28/10
- 1 PLAN CHECK 1 8 /16 /10

SIGNED

thoma ENGINEERING
THOMA ELECTRIC, INC.
P.O. Box 1167 – 3562 Empleo St.
San Luis Obispo, CA 93406
Phone: (805) 543-3850
Fax: (805) 543-3829
cod@thomaelec.com

REGISTERED PROFESSIONAL ENGINEER WILLIAM A. THOMA NO. 10757 ELECTRICAL STATE OF CALIFORNIA

EXPIRES: 06/30/11
THOMA #10-8055

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SHEET TITLE

TITLE 24

SHEET #

E6.1

K:\DWGS\10-8055\10-8055_E61.dwg – jean – Aug 16, 2010 – 9:16am

Plan Legend

- (n) Irrigation POC
- C — (n) Irrigation controller
- WM — (n) Water meter
- (n) Hosebib
- (n) Concrete paving
- (e) Concrete paving
- (e) Parking lot
- (n) Large river cobbles
- PA — (n) Landscape Planting Area
- (e) Lawn
- (e) Tree to remain- protect
- Propsed trees optional per Owner
- (n) Sch. 40 PVC sleeves, size as noted
- (n) Downspout
- Direction of surface run-off (2% min. positive drainage)

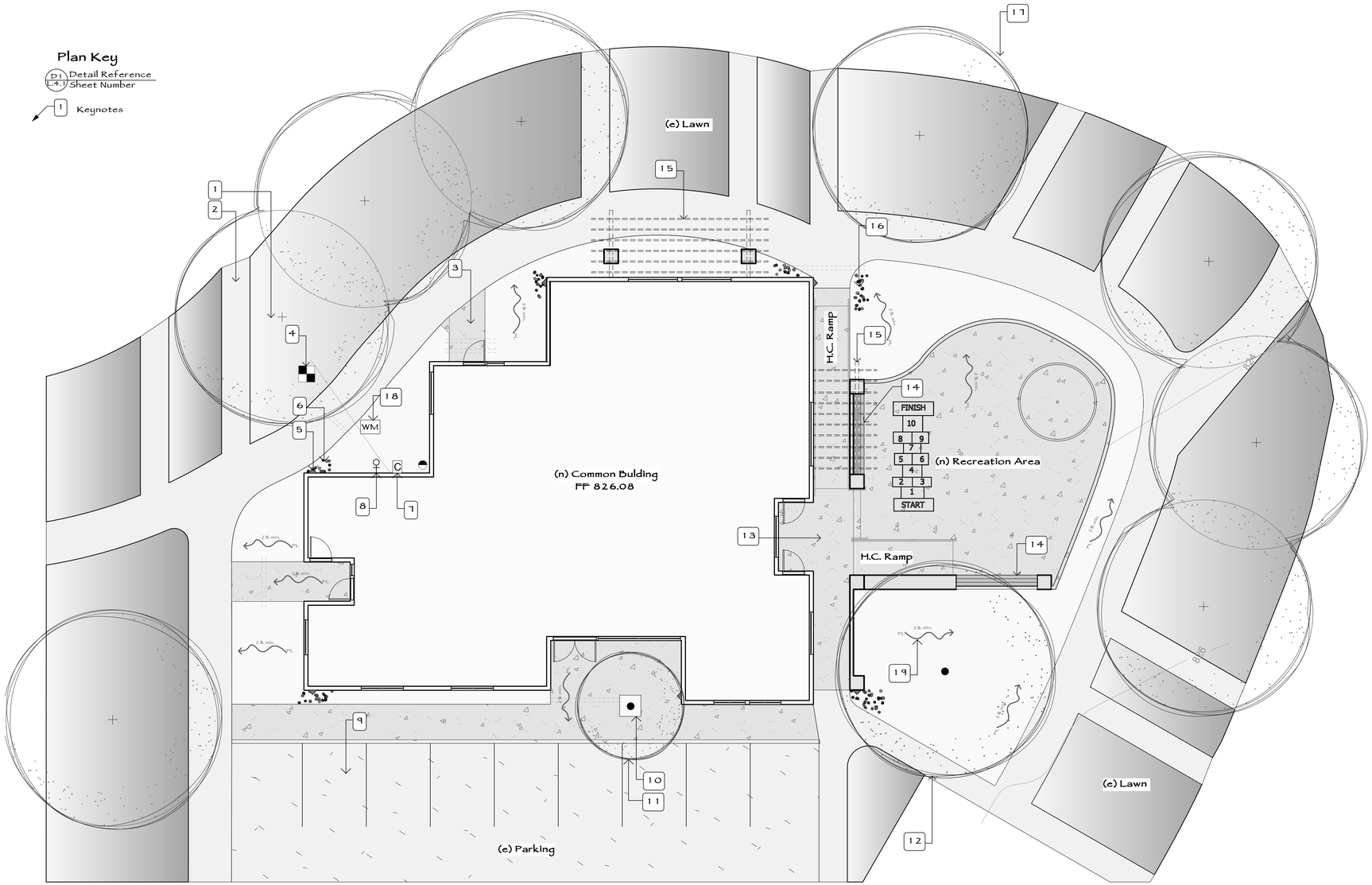
Key Notes

1. (e) Lawn area (continues)
2. (e) Concrete walk (continues) (sym. typ.)
3. (n) Concrete walk (sym. typ.)
4. (n) Irrigation point of connection. Connect to existing irrigation mainline, field verified. See Key Note 18
5. (n) Down spout (sym. typ.)
6. (n) River cobbles or splash block (sym. typ.) at down spout outlet
7. (n) Hosebib
8. (n) Irrigation controller
9. (e) Parking lot (continues)
10. (n) 3' x 3' Decorative tree grate flush with sidewalk
11. (e) Golden Rain Tree- protect during construction, see Notes
12. (e) Tree- protect during construction, see Notes
13. (n) Covered patio
14. (n) Wall mount bench
15. (n) Line of trellis rafters above
16. (n) River cobbles at under drain outlet
17. Proposed trees along walkways in (e) lawn area, optional per the Owner
18. (n) Water meter and alternate irrigation P.OC. Verify with Architect
19. Direction of surface runoff (sym. typ.). See Architecture Site Plan

Irrigation Sleeve Schedule

Irrigation Sleeves: Install sch. 40 PVC irrigation sleeves under all concrete, through walls, buried to a depth of 24" (18" for non-bearing surfaces). Sleeves to be a minimum of twice the diameter of the supply line/pipe size, or as noted per irrigation Plan. (Sheet L.3)

Pipe diameter	Sleeve diameter
3/4"	1 1/2"
1"	2"
1 1/2"	3"
2"	4"



Groundwork Plan

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

12 4 0 8 12

Tree Protection Notes

1.0 Tree Protection

1.1 (e) trees shall be preserved and protected during construction per the Plan & Specifications.

1.2 Contractor/ applicant must verify that protection fencing is in place prior to the start of any earthwork, if required by the County. All required tree protection conditions shall be implemented before construction activities begin.

1.3 Trees/ shrubs within 20' of grading or trenching shall be protected by placement of protective fencing as indicated. This fencing must be placed at the drip line, unless otherwise indicated.

1.4 Protective fencing shall be four-foot high safety fence.

1.5 Trenching & excavation within tree drip lines shall be done carefully to minimize root disturbance. During foundation or retaining wall construction any trenching within the root zone of an existing tree proposed for protection shall be hand dug, augured or bored. All ma jor roots shall be avoided whenever possible and if not, all roots larger than one-inch diameter shall be "cut clean" (not ragged), then capped. Once trenching has exceeded the root zone, conventional equipment may be used.

1.6 Pruning lower limbs in the construction area shall occur prior to construction activities to minimize damage.

Groundwork Plan Sheet Notes

A. The Landscape Contractor is responsible to fulfill the intent of this design. Consult the Landscape Designer for clarification.

B. Elevations/Grades: The elevations shown on this Plan are based on topographical information provided by Others and may not accurately represent the as-built grading. Field verify proposed drainage and finish grades prior to bidding or performing work.

C. No demolition or grubbing of site shall occur prior to approval by the Owner Representative

D. Owner Selections: Verify with the Owner prior to bidding and performing work, the style, finish,and Owner options where indicated by the Plan.

E. Drainage: Drain water to be discharged to a stabilized outflow area (splash blocks/ cobbles) or tied into existing or new drain line. Refer to the Architectual Site Plan.

F. Utility Rough-In: The Building Contractor is responsible to coordinate with the Landscape Contractor for the power supply to the automatic controller and the irrigation point-of-connection.

G. Irrigation Sleeves: The Installer/ Contractor is responsible to provide all irrigation sleeves beneath flatwork and walls to accommodate irrigation pipe. Coordinate with the Building Contractor. Provide Schedule 40 PVC irrigation sleeves under all concrete, through walls, buried to a depth of 24" (18" for non-bearing surfaces). Sleeves to be a minimum of twice the diameter of the supply line/pipe size. Refer to the Irrigation Plan. Contractor to provide detailed as-built information for placement of underground wire & pipe utilities for the Owners future reference.

H. See the Landscape Notes and Specifications for further information.

Call USA TOLL FREE
1.800.642.2444
Before planting trees, trenching, digging fence posts, grading , excavating, etc., call Underground Service Alert for underground clearance and location of underground utilities

PROJECT

ROLLING HILLS APARTMENT

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON

CLIENT JOB #

ARCHITECT JOB # 0708B

ARCHITECT

FRASER SEIPLE ARCHITECTS

LANDSCAPE CONSULTANT

Landsystems & Associates
Linda Shotwell
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PROJECT MANAGER BDF

DRAWN BY

DATES 05-27-10
06-04-10

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SHEET TITLE

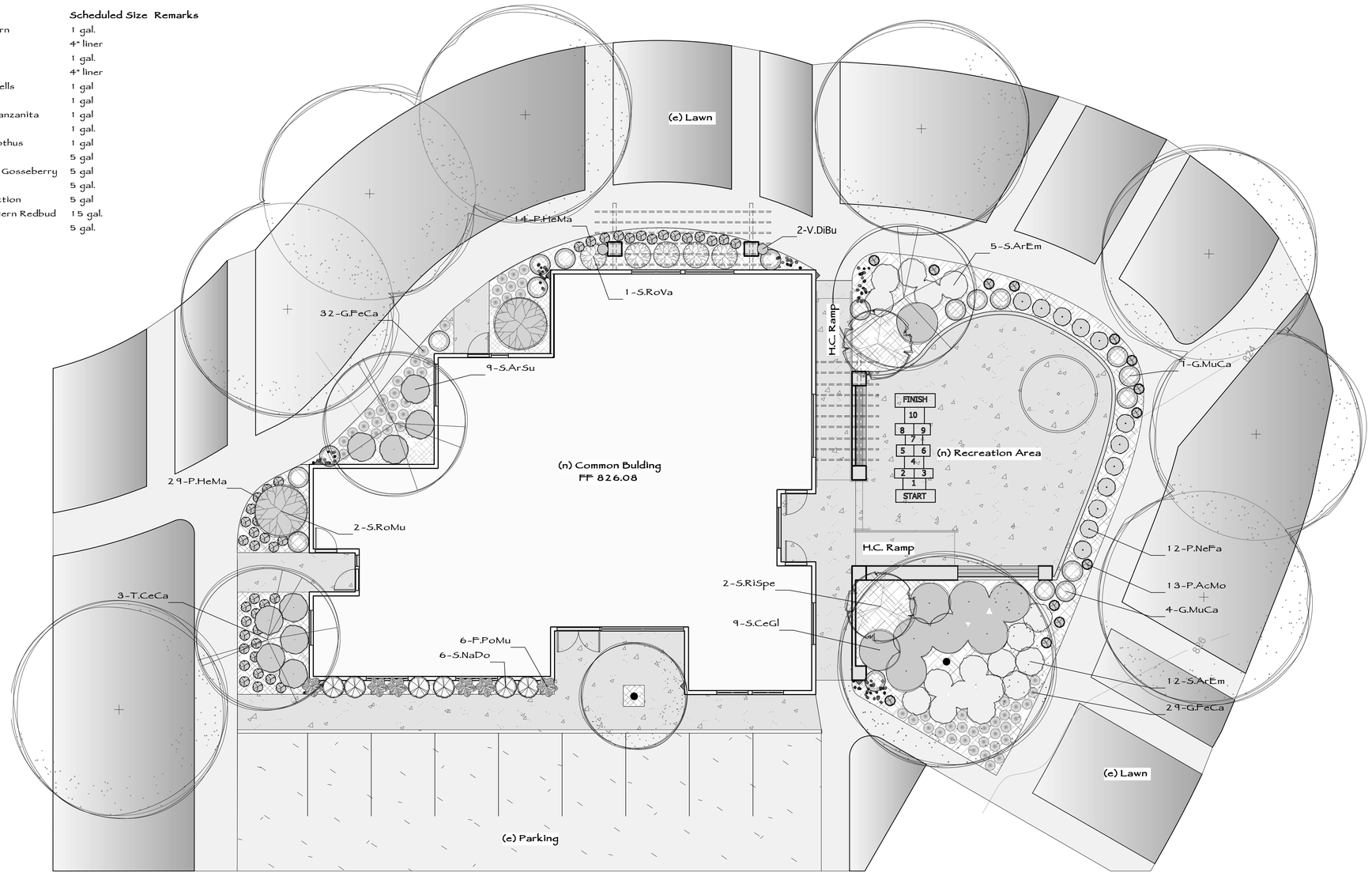
GROUNDWORK PLAN

SHEET #

L.1

Plant List Schedule

ID	Qty	Botanical Name	Common Name	Scheduled Size	Remarks
F.PoMu	6	Polystichum munitum	Western Sword Fern	1 gal.	
G.FeCa	62	Festuca californica	California Fescue	4" liner	
G.MuCa	11	Muhlenbergia capillaris	Gulf muhlygrass	1 gal.	
P.AcMo	13	Achillea 'Moonshine'	Fern Leaf Yarrow	4" liner	
P.HeMa	43	Heuchera maxima	California Coral Bells	1 gal	
P.NeFa	13	Nepeta x faassenii	Cat Mint	1 gal	
S.ArEm	18	Arctostaphylos 'Emerald Carpet'	Emerald Carpet Manzanita	1 gal	
S.ArSu	9	Arctostaphylos 'Sunset'	Sunset Manzanita	1 gal.	
S.CeGl	9	Ceanothus gloriosus	Emily Brown ceanothus	1 gal	
S.NaDo	6	Nandina domestica	Heavenly Bamboo	5 gal	
S.RiSpe	2	Ribes speciosum	Fuchsia-flowering Gosseberry	5 gal	
S.RoMu	2	Rosa 'Mutabilis'	Butterfly Rose	5 gal.	
S.RoVa	5	Rosa Varieties	Rose, Owner Selection	5 gal	
T.CeCa	3	Cercis canadensis 'Forest Pansy'	Forest Pansy Eastern Redbud	15 gal.	
V.DiBu	2	Distictis buccinatoria	Red Trumpet Vine	5 gal.	



Planting Plan

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

Planting Plan Sheet Notes

A. The Landscape Contractor is responsible for verification of plant quantities indicated by the Plan and Plant Legend.
B. Designer to approve all plant substitutions prior to order & delivery to site.
C. Contractor shall verify plant availability & obtain Designer approval prior to finalizing order & scheduling delivery. Consult the Designer for assistance sourcing specified plant material.
D. Plant groundcover to within 48 inches of all tree and shrub bases.
E. The Landscape Designer to approve all plant locations prior to planting. Provide 48 hours advance notice for on-site inspection of layout.
F. Owner Representative to approve all trees prior to order and delivery, and all tree locations prior to planting.
G. Final tree placement shall maintain a minimum of 8' clearance from all underground utilities.
H. Keep planting area clear surrounding all hose bibs. Mulch area, or provide river cobbles, or flagstone steppers, as selected by the Owner.
I. Provide 12 inches of clean amended topsoil (fill) for foundation planting beds. Excavate any soil contaminated by construction activities.
J. Automatic irrigation system to be fully operational prior to planting. Contractor is responsible for 100% coverage & uniform delivery of supplemental water to (n) plantings.
K. Install a 3" layer of walk-on bark mulch in all planting areas to cover drip laterals.
L. See the Landscape Notes and Specifications for further information.

Landscape Inspection Schedule

On-site inspection of completed work is recommended prior to proceeding with subsequent phase, according to the schedule below. Provide 48 hours notification.

1. Prior to job start, upon demolition and/or grubbing of site
2. Following construction layout, and prior to installation of lawn headers, flatwork, paths, and boulder placement.
3. Following rough-in (prior to backfill) of utilities, plumbing, drain lines, sleeving and lighting.
4. Following completed hardscape construction and/or items noted above.
5. Prior to backfilling irrigation trenches.
6. Following completion of irrigation installation, site preparation, and finish grades.
7. Prior to tree planting final location is subject to change as directed by the Owner and/or Designer.
8. Prior to planting, inspection of plant material, and placement. Spot plants prior to inspection.
9. Completion of planting, and prior to initiation of establishment period.
10. Following establishment period - provide Designer with irrigation schedule and as built drawings at time of inspection.

Inspections Required This Sheet

12 4 0 8 12

Call USA TOLL FREE
1.800.642.2444
Before planting trees, trenching, digging fence posts, grading , excavating, etc., call Underground Service Alert for underground clearance and location of underground utilities

PROJECT

ROLLING HILLS APARTMENT

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON

CLIENT JOB #

ARCHITECT JOB #
0708B

ARCHITECT

FRASER SEIPLE ARCHITECTS

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DATES 05-27-10
06-04-10

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SHEET TITLE

PLANTING PLAN

SHEET #

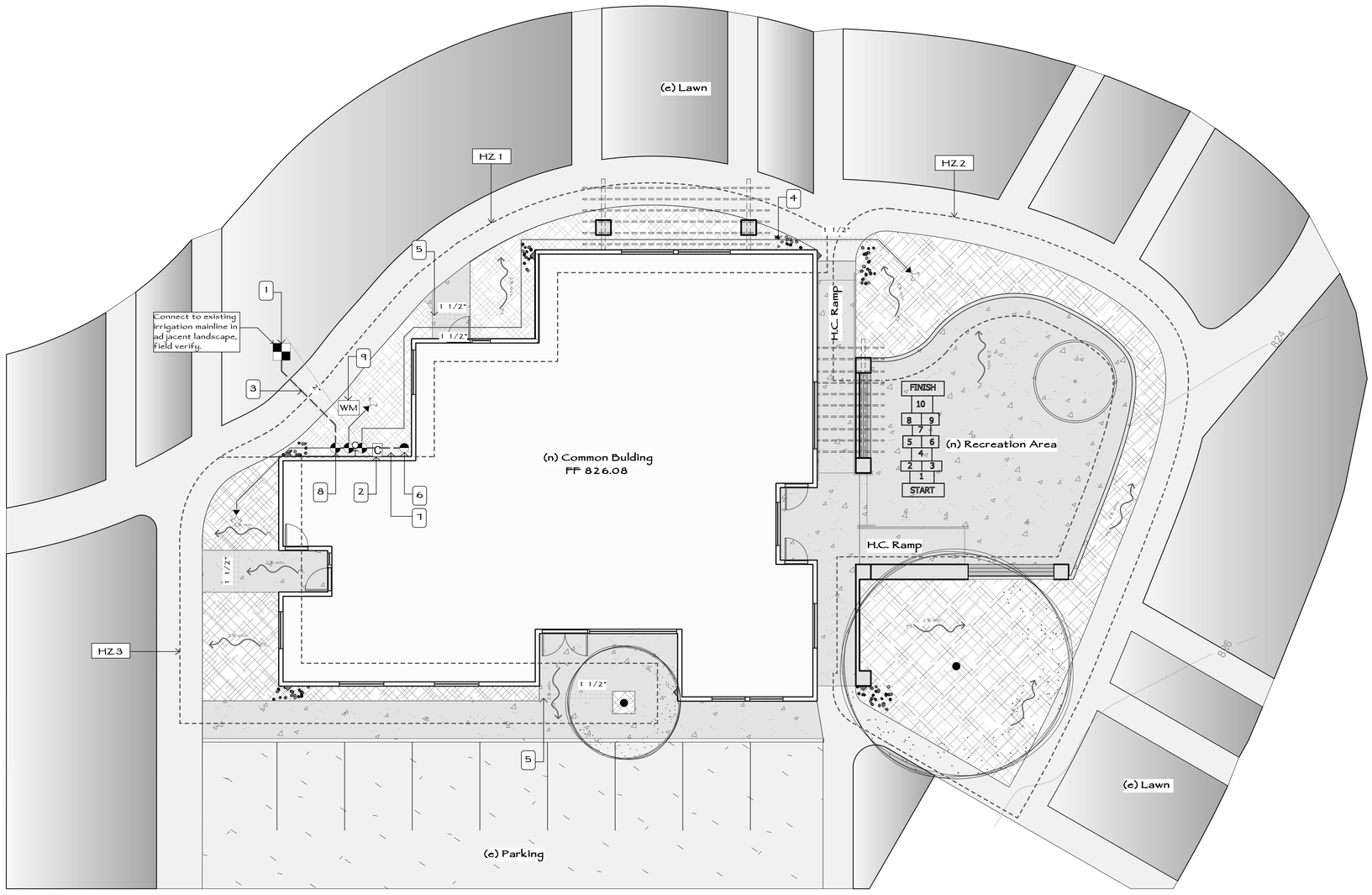
L.2

Irrigation Legend

- Irrigation P.O.C. (existing mainline, field verify)
- C — (n) Irrigation Controller- 6 station Hunter
- WM — (n) Water meter
- (n) Automatic valve- Rainbird
- Isolation Valve- line size
- (n) Sch. 40 PVC mainline, 1" or as noted
- (n) Class 200 lateral line, 3/4"
- Sch. 40 PVC sleeves, size as noted
- (n) Garden hose valve- see Detail
- (n) PVC stubout
- (n) Drip system P.O.C.- extend 5/8" P.E. tubing into designated hydrozone. - see Detail
- HZ 1 — Hydrozone callout
- (n) Hydrozone area

Irrigation Keynotes

1. (n) Irrigation POC from existing irrigation mainline.
2. (n) Irrigation controller - coordinate for power supply.
3. Mainline route represented diagrammatically. Sleeve beneath paving.
4. Lateral lines beneath paving (see Detail).
5. Irrigation sleeve (typ.)
6. (n) Garden hose valve (sym. typ.) from irrigation mainline or interior plumbing. Install per Detail.
7. Stub-out for future irrigation valve.
8. Valves represented diagrammatically. Locate in planting areas.
9. (n) Alternate irrigation P.O.C. with authorization from Architect/ Owner representitive



Irrigation Hydrozone Plan

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

Hydrozone Legend

6 Station Controller

Zone	Area Description	Irrigation Type	Notes
HZ 1	South/East foundation planting bed	Drip	1 (e) valve to irrigation system mainline
HZ 2	Recreation area surround planting	Drip	1 (e) valve to irrigation system mainline
HZ 3	North/Parking lot areas	Drip	1 (e) valve to irrigation system mainline

Hydrozoning (system design): System to include an approved, automatic controller, automatic valves, and backflow prevention. Trees to be irrigated by drip on a dedicated P.E. lateral or if within the shrub hydrozone to be isolated from the submain drip lateral with a hose thread ball valve.. All remaining planting areas to be irrigated by drip emitters and covered with 3" layer of bark mulch. Provide future stub-outs at garden hose valves to accommodate future landscape areas.

Irrigation Plan Sheet Notes

A. Irrigation scope of work: Verify existing system on site, and install automatic valves, piping, meet local plumbing codes and manufacturer product specifications. Verify with Landscape Designer the system design, and equipment proposed prior to the bid submittal. The irrigation system to be fully operational within the existing landscape areas and the new landscape areas.

B. The Contractor is responsible for 100% coverage and uniform delivery of supplemental water to the new planting areas. Appropriate hydrozoning is mandatory, and the Contractors responsibility -consult the Landscape Designer for clarification. Refer to the Hydrozone Schedule. The irrigation system to be fully operational within the existing and new landscape areas, prior ot planting

C. Plan intent is diagramatic: Install pipe and equipment on property. Do not willfully install the sprinkler system as shown on the drawings when it is obvious in the field that wind conditions, obstructions, grade differences or differences in the area's dimensions exist that might not have been considered in the engineering. Bring such obstructions or differences to the attention of the Landscape Designer. In the event that this notification is not performed, the Landscape Contractor assumes full responsibility and cost for all necessary revisions and repair of damage caused by performance of work.

D. System working pressure requirements: This system design is based on 45 PSI at the point of connection existing irrigation. Verify in the field, and notify the Landscape Designer of any discrepancies between the design psi/gpm and the actual pressure and flow readings at the irrigation point of connection.

E. Screen backflow: Locate backflow in (n) landscape area and screen with plants.

F. Sleeving: Sleeve all mainline and lateral piping beneath hardscape.

H. Trees within the drip hydrozone, and not on the dedicated tree valve to be isolated from the submain drip lateral with a hose thread ball valve.

I. Provide future stub-outs at garden hose valves to accommodate future landscape areas where indicated by the Plan.

J. Contractor to provide detailed as-built information for placement of underground wire & pipe

K. Non-pressure lateral (sub-main) line routing and valve placement as selected by Contractor. Verify individual valves/ laterals maintain the pressure (psi) and flow (gpm) indicated per Plan.

L. See the Landscape Notes and Specifications for further information.

Call USA TOLL FREE
1.800.642.2444
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12 4 0 8 12

PROJECT

ROLLING HILLS APARTMENT

NEW COMMON BUILDING

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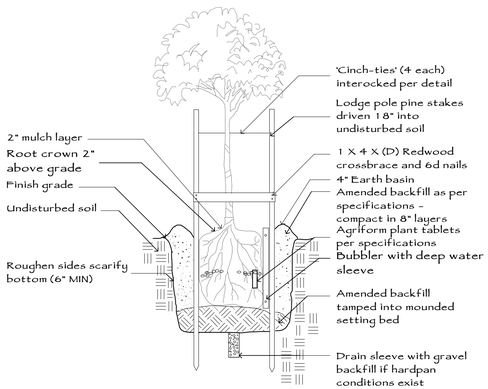
Written dimensions on these drawings shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and existing conditions on the job and shall report any discrepancies to the architect for resolution prior to commencing work.

SHEET TITLE

IRRIGATION PLAN

SHEET #

L.3



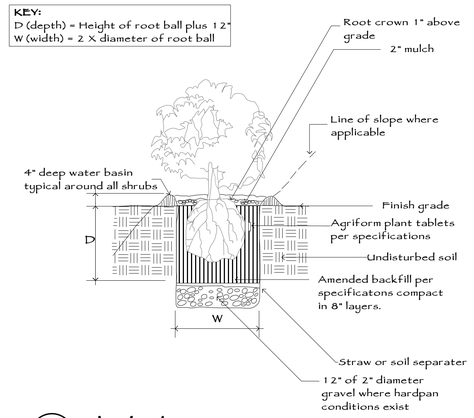
P1 Tree Staking and Planting

NTS

Notes:

A. Final tree placement shall maintain 8' minimum clearance from underground utilities.

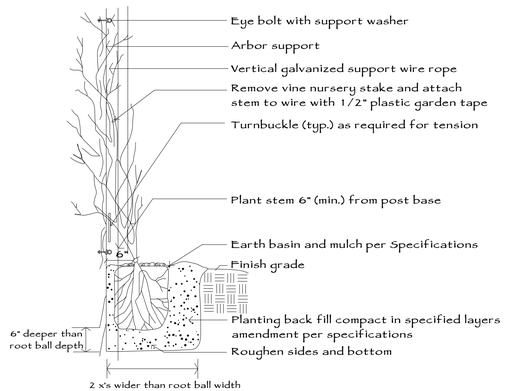
B. Apply pre-emergent 'Ronstar' with 'Surflan' blended and applied per manufacturer's directions under mulch at each plant.



P2 Shrub Planting

NTS

Note: Apply pre-emergent 'Ronstar' with 'Surflan' blended and applied per manufacturer's directions under mulch at each plant.

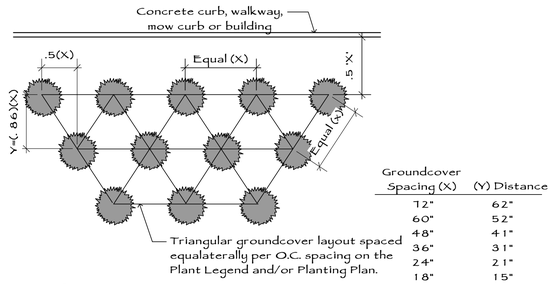


P3 Vine On Post Support

NTS

Note:

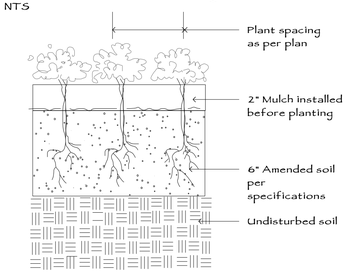
A. Plant vine per shrub planting Detail and Specifications - at 6 to 10" from vertical surface.



Groundcover Spacing (X)	(Y) Distance
72"	62"
60"	52"
48"	41"
36"	31"
24"	21"
18"	15"
12"	10"

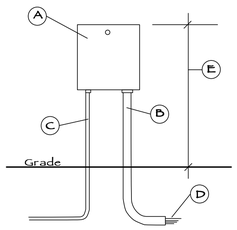
P4 Groundcover Planting

NTS



P5 Groundcover Planting - Section

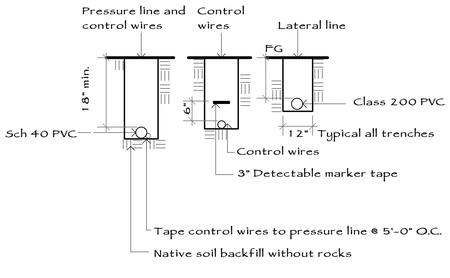
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1 Irrigation Controller

NTS

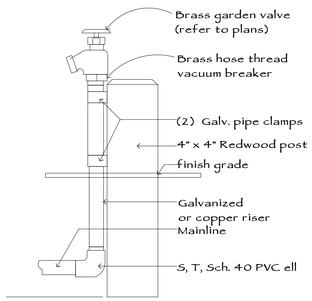
A. Controller, bolt to exterior wall
B. 2" Dia. PVC valve wire conduit
C. 1" Dia. code approved 110V conduit
D. 14 Gauge code approved direct buriel valve wire
E. Set Controller 60" above grade



2 Trenching

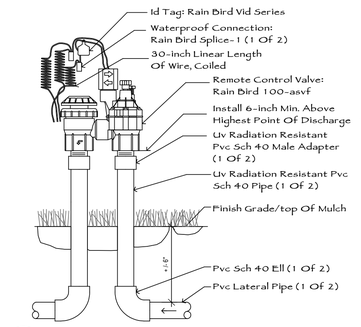
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Note: Compact backfill to eliminate soil settling



3 Hose Garden Valve

NTS



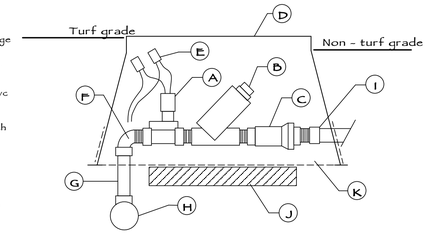
4 Anti-Syphon Valve

NTS

Important Note:
Use for proposed irrigation system if the point-of-connectionis the new water service (meter) supply line

Notes:

A. Installation to be completed In accordance with Manufacturer's specifications.
B. Do not scale drawings.
C. Contractors Note: For product and company information visit Www.caddetails.com/Info
D. For drip applications, install filter and pressure regulator.



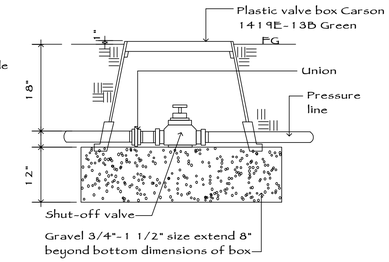
5 Electric Control Valve (Drip) (3/4")

NTS

Important Note:
Use for proposed irrigation system if the point-of-connectionis is the existing irrigation system mainline

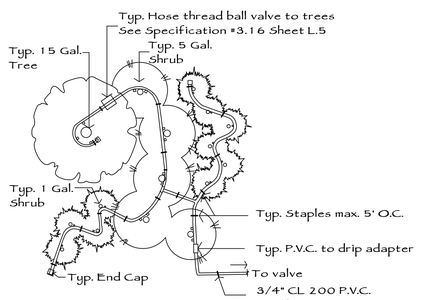
Notes:

A. Rainbird 75 - DVX remote control valve, 3/4"
B. Rainbird RBY-075-200MX inline filter, 3/4"
C. Rainbird PSI-L30X-075 pressure regulator, 3/4"
D. Rectangular valve box with bolted T-cover
E. Silicone filled wire connectors
F. PVC ST. elbow, 3/4"
G. PVC schedule 40 riser, length as required, 3/4"
H. PVC mainline tee connection
I. PVC male adapter fitting and lateral to field
J. Gravel. 3/4"-1 1/2" size. Extend 8" beyond bottom of box.
K. Optional 1/2" square galvanized wire cloth rodent screen



6 Isolation Valve

NTS

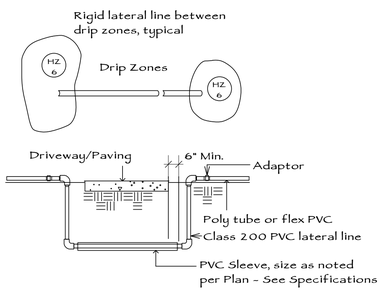


7 Drip Irrigation - Plan View (Level Areas)

NTS

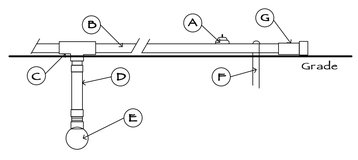
Notes:

1. Run 5/8" tubing to all root zones.
2. Do not use vortex tubing.
3. See Drip Tubing Diagram (Plan View) for drip systems on slopes.



8 Drip Zones

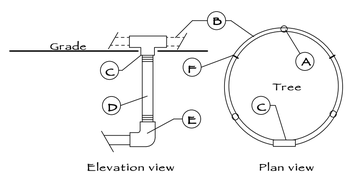
NTS



9 Drip Irrigation - Shrubs

NTS

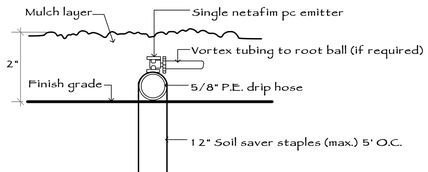
A. Netafim #WPC.10 (2GPH) Emitters w/ Bug Caps:
1 Gal. Plant - 1 emitter centered
5 Gal. Plant - 2 emitters, one on each side
15 Gal. Plant - loop pipe around plant, install 3 emitters equally spaced.
B. 1/2" PE Tubing, 100 ft. max. length from riser POC, sleeve thru 1 1/4" PVC under hardscape
C. 1/2" x 1/2" PE x FPT Tee (or elbow) (or KBI KC - noted per Plan)
D. 1/2" KBI #KC-0500-6 (or 3/4" IPS hose)
E. 3/4" x 1/2" SxSxT Tee (or elbow)
F. Poly tubing wire stake, 6 ft. on center
G. 1/2" PE x 3/4" Hose end tubing cap



10 Drip Irrigation - Trees

NTS

A. (3) Netafim #WPC.20 (2GPH) emitters w/ bug caps
B. 1/2" Polyethylene tubing ring, 24" diameter
C. 1/2" x 1/2" PE x FPT tee on grade (or KBI KC - noted per Plan)
D. 1/2" KBI KC-0500-6 flex-riser (or 3/4" IPS hose)
E. 3/4" x 1/2" SxT elbow, riser to lateral connection
F. Poly tubing wire stake, (2) total
G. See Irrigation Specifications #3.16 Sheet L.5 and Detail 11



11 Drip System Head

NTS

Note: 1) Netafim PC Emitter per each 1 gal. plant
2) Emitters per each 5 gal. plant
3) Emitters per each 15 gal. plant

PROJECT

ROLLING HILLS APARTMENT

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON

CLIENT JOB #

ARCHITECT JOB #
0708B

ARCHITECT

FRASER SEIPLE ARCHITECTS

LANDSCAPE CONSULTANT

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San Luis Obispo, CA 93401
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SHEET TITLE

DETAILS

SHEET #

L.4

Planting Installation Specifications

2.0 General: The Landscape Contractor is responsible for fulfilling the intent of the Plan. The Landscape Contractor shall supply all plant materials in quantities sufficient to complete the planting shown on all drawings. Any substitutions for specified plant material or alterations in planting locations (as shown per Plan) requires prior approval by the Designer.

2.1 Site Preparation: Eradicate weeds prior to cultivation with a post-emergent herbicide application, per the Manufacturer specifications -- Roundup is recommended. (Two applications/grow-and-kill cycles is required for seeded areas). Do not cultivate until all the weeds are dead. Cultivate to a depth of 6",
uniform planting soil. Thoroughly rip the planting areas to a depth of 12" where soils are compacted from building construction activities.

2.2 Soil Amendment: Amend lawn and herbaceous ground cover (rooted cuttings from flats) areas with the following; spread and cultivate to a depth of 6", to achieve a friable, well mixed, and uniform planting soil:

i. 5 cay "forest humus" composted bark mixture per 1000 SF
ii. Pre-plant fertilizer 16-6-8 per 1000 SF.

2.3 Drainage: Provide a minimum of 2% positive surface drainage in all planting areas. Tie in downspouts to underground drain-line, or provide river cobbles or splash blocks to direct water out of planting areas. Install catch basins and subsurface drainage pipe and/or subsurface drain where required to divert run-off and eliminate puddling.

2.4 Finish grades: Verify site conditions conform to the Site Grading Plan prior to finish grading and planting. Rake planting areas smooth to conform to finish grading and drainage requirements.

i. Remove all debris larger than 1" diameter
ii. 1/2" to 1" below sidewalk or patio surface
iii. 2" below top of raised planter

2.5 Percolation Tests: Test tree planting holes for percolation prior to planting. Planting holes with any standing water remaining longer than 24 hours requires Designer approved drainage measures beyond the specified planting technique.

2.6 Protective Plant Hardware: Line planting holes for all trees, and 5-gallon shrubs with wire mesh baskets if required for protection from gophers. Utilize Repel if browse from deer is evident.

2.7 Tree And Shrub Backfill: Backfill all container stock with the following:

i. 3 parts native soil to 1 part KELLOGG Black Forest Organic Compost. (forest humus blend- O.E.)
ii. Grow Power (5-3-1) (with Mycorrhizae). Rates per manufacturer.

2.8 Planting Container Stock: Do not plant until the irrigation system is fully operative and planting locations are approved by the Designer. Where impervious soils or obstructions to planting operations are encountered during excavation, notify the Landscape Designer before continuing work. Plant per detail provided: all plants to bear the same relationship to finished grade as the original grade. Following planting, basin plants, install a 2" layer of mulch, and water (deep soak) immediately.

2.9 Tree Planting, Staking and Guying: All tree locations shall be approved by the Owner and/or Designer prior to planting. Plant per detail provided. Stake all trees with 2-2" lodge-pole stakes, minimum of 2 non-binding ties and 1-1" x 4"" cross-brace. All nursery tags and nursery stake to be removed prior to staking. Stakes shall be set plumb and at right angles to prevailing wind. Guy all multi stem trees, coniferous trees, and specimen trees (24 " box and larger).

2.10 Ground cover Planting: Plant ground cover in alternate rows forming equilateral triangles at the spacing noted, to within 36 inches of tree and shrub bases. Keep all ground cover back of all walks and patios one-half the distance of the plant diameter at maturity.

2.11 Vines/Espalier: Remove nursery stakes. Train to trellis, fence, or wall with galvanized support wires or as noted per Plan.

2.12 Preemergent Herbicide: Apply an appropriate weed preemergent, according to the manufacturer's directions, in all ground cover, shrub areas, beneath dry creeks, cobbles, and decomposed granite (or equal) paving. The Contractor shall replace any plant material showing loss of vigor or health due to improper application of herbicide.
Mulch and Netting: Install a 2"- 3" layer of gorilla hair bark mulch in all interior beds and sloping areas. Install chipper bark mulch in perimeter planting areas. Mulch all tree and shrub basins. Install jute netting on all 2:1 slopes when planted with container stock and irrigated by drip.

2.13 Lawn: N/A

2.14 Warranty And Replacement: The Landscape Contractor is not responsible for owner neglect or natural disaster. The Installer/ Contractor guarantees to repair or replace defective work and substandard material. The Landscape Contractor guarantees to replace plant material during the warranty period, beginning with the date of final acceptance: 90 days for plant material 5 gallon and smaller, and one year for trees 15 gallon and larger. Irrigation is warranted for a one-year period, from the date of final acceptance, in addition to the Manufacturer guarantee.

2.15 Establishment Period: The 90-day establishment to begin after the Satisfactory Completion Notice is granted. The Landscape Contractor is responsible for maintenance of all planting areas in a weed-free condition, performance of pest control, pruning, fertilization, timely replacement of substandard plant material, and irrigation scheduling as necessary to establish a vigorous and attractive landscape.

Irrigation Installation Specifications

3.0 General: The Landscape Contractor is responsible for fulfilling the intent of the Plan. Install the new system to meet local plumbing codes and manufacturer product specifications. The Contractor shall provide all materials and labor necessary to install the complete irrigation system from the point of connection. Materials and equipment shall conform to the Plan Specifications; substitutions require prior approval by the Designer. The Contractor is responsible for 100% coverage and uniform delivery of supplemental water to the new planting areas. Appropriate hydrozoning is mandatory, and the Contractors responsibility - consult the Landscape Designer for clarification.

3.1 As-Built Drawing: The Landscape Contractor shall provide the Owner with an accurate as-built irrigation drawings upon conclusion of the establishment period and project final acceptance.

3.2 Warranty period: New irrigation is warranted for a one-year period, from the date of final acceptance.

3.3 Field Verification: Before commencing work - verify the following data as designated on the drawings:

i. Existing site conditions and dimensions
ii. Type and size of POC
iii. Static water pressure
iv. Underground utilities

3.4 Layout: Irrigation drawings are diagrammatic and indicative of the work to be performed. Piping, valves, equipment, etc. shown in hardscape areas or out of property boundaries to be installed in planting areas, in a manner so as to conform to the details, notes, and specifications. Install mainlines on property. Do not willfully install the sprinkler system as shown on the drawings when it is obvious in the field that wind conditions, obstructions, grade differences or differences in the area's dimensions exist that might not have been considered in the engineering.

3.5 Automatic Controller: The final location and exact positioning of the automatic controller shall be approved by the Owner prior to installation.
The 120-volt electrical power service to the controller location shall be provided by Owner. The Contractor shall make the final hook-up from the electrical service to the automatic controller.

3.6 Irrigation Control Wire: To be #14 (min.), UL approved for direct burial. Common wire to be #12 (min.), approved for direct burial, white in color. Wires to individual remote control valves to be made within remote control valve boxes. All splices to be made within remote control valve boxes. Leave 24" excess wire coil at remote control valve locations. Splicing material to be Scotchlok spring connector and Scotchlok #3576 sealing pack. Test each connection for short circuits prior to connection to controller panel. Pull additional wires for future valve POCs as noted per plan.

3.7 Mainline and Lateral Piping: Bury all mainline 18" deep, all lateral lines 12" deep, and all P.E. distribution tubing 6" deep. Sleeve through Schedule 40 PVC beneath hardscape, buried 24 deep, and 18 deep beneath non-bearing surfaces.

3.8 Irrigation Sleeves/Electric Conduit: The Installer / Contractor is responsible to provide all irrigation sleeves and electric conduit beneath flatwork and walls to accommodate irrigation pipe and wiring for landscape lighting. Coordinate with the Building Contractor. Provide Schedule 40 PVC irrigation sleeve under all concrete, though walls, buried to a depth of 24" (18" for non-bearing surfaces). Sleeves to be a minimum of twice the diameter of the supply line/pipe size.

3.9 Pressure Test: Prior to backfilling trenches and installation of heads and/or emitters, flush completed piping system. Test pressure lines and each valve system, and re-test following repair of any leaks or faulty connections.

3.10 Remote Control Valves: Install per detail.
bolted cover, over pea gravel, and 1/2" square galvanized wire cloth screen beneath. Set valve boxes to grade and locate in shrub areas within 36 of walks, lawn, or patio areas. Drip valves to be fitted with a filter and pressure regulator, and where possible, located at the low point of the drip hydrozone.

3.11 Spray Irrigation (If Applicable): Installer is responsible for uniform 100% (head-to-head) coverag adjustments for optimum performance. Ad just head location if spray is detrimental to or blocked by a tree, shrub or structure, to maintain uniform coverage of planted areas. Ad just radius of spray and arc to minimize over spray. Throttle the flow control at each valve to obtain the optimum operating pressure for each system.

3.12 Low Head/Emitter Drainage: The Contractor is responsible for low head and/or low emitter drainage. Install check valves as needed to prevent low emitter drainage. Water to flow uphill and through check valves to minimize backflow.

3.13 Drip System POC: Mount spring check valves vertically (as a riser) between PVC drip header and 1/2" poly pipe adapter on grade. Ad justable check valves, if specified, to be installed on the PVC lateral sub main line, ad jacent the drip tubing POC.

3.14 Drip Laterals: Install 1/2 PE tubing, buried to a depth of 6 and located 3 (maximum) from plant root ball. Where drip laterals are located in sloping areas, install parallel to slope contours and fit PE lateral ends with flush end caps per Specifications. Install hose thread ball valve with separate lateral run to isolate trees within the zone..

3.15 Tree Drip System(s): Isolate drip irrigation of trees, by running separate drip laterals, and installing hose thread ball valves for those trees occurring within the hydrozone and not on the dedicated tree bubbler system. All 24 in box and larger trees located in ground cover areas irrigated by a spray system spray shall be provided with supplemental drip irrigation.

3.16 Drip End Flush Cap (Slopes): Ag Products CEFCH 710 Compression End Plug with flushing automatic end cap. Install on ends of 1/2" PE drip tubing drain outlet to 12" deep x 12" wide pea gravel dry well; may use common dry well for multiple uphill outlets if site conditions permit.

3.17 Drip Emitters: Netafim Woodpecker pressure compensating @ 2 gph, installed directly on 1/2" PE drip lateral: 1 per #1 gallon plant, 2 per #5 gallon plant, 3 per #15 gallon tree. Connect 1/4" micro tubing to feed water to the plant root ball at the soil surface.

3.18 Drip System Flow Parameters:

i. maximum length 1/4" distribution tubing-- 48".
ii. maximum length 1/2" PE lateral from drip POC riser-- 350'.
iii. maximum gph per drip lateral from drip POC riser - 240 gph.
iv. maximum gph per 100 Lf (max. 5/8" drip lateral -240).

Landscape Inspection Schedule

On-site inspection of completed work is recommended prior to proceeding with subsequent phase, according to the schedule below. Provide 48 hours notification.

1. Prior to job start, upon demolition and/or grubbing of site
2. Following construction layout, and prior to installation of lawn headers, flatwork, paths, and boulder placement.
3. Following rough-in (prior to backfill) of utilities, plumbing, drain lines, sleeving and lighting.
4. Following completed hardscape construction and/or items noted above.
5. Prior to backfilling irrigation trenches.
6. Following completion of irrigation installation, site preparation, and finish grades.
7. Prior to tree planting final location is subject to change as directed by the Owner and/or Designer.
8. Prior to planting, inspection of plant material, and placement. Spot plants prior to inspection.
9. Completion of planting, and prior to initiation of establishment period.
10. Following establishment period - provide Designer with irrigation schedule and as built drawings at time of inspection.

PROJECT

ROLLING HILLS APARTMENT

NEW COMMON BUILDING

LAS TABLAS ROAD
TEMPLETON

CLIENT JOB #

ARCHITECT JOB #
0708B

ARCHITECT

FRASER SEIPLE ARCHITECTS

LANDSCAPE CONSULTANT

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SHEET TITLE

NOTES & SPECIFICATIONS

SHEET #

L.5