

SITE PLAN
SCALE 1" = 30'-0"

SITE PLAN NOTES

1. NEW BUILDING EXPANSION.

2. EXISTING SIDEWALKS.

- 3 RELOCATE SIDEWALK AS SHOWN ON PLAN.
- 4. NEW STAIRS SEE SHEET #1 AND #3.
- 5. EXISITNG BUILDINGS
- 6. EXISTING PARKING LOT.

INDEX OF DRAWINGS

SITE AND UTILITY PLAN

FLOOR PLAN

EXTERIOR ELEVATIONS

BUILDING SECTIONS AND CEILING PLAN

WALL SECTIONS AND DETAILS

SPECIFICATIONS

FOUNDATION PLAN

FRAMING PLAN

MECHANICAL PLAN

PLUMBING PLAN

P1

LEGAL DESCRIPTION

REFLECTED CEILING/LIGHTING PLAN

POWER PLAN

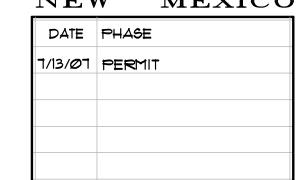
APACHE POINT OBSERVATORY
2001 APACHE POINT ROAD, P.O. BOX 59
SUNSPOT NM 88349
OTERO COUNTY
NEW MEXICO

GENERAL NOTES

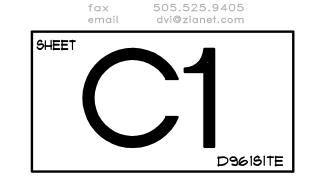
- . VERIFY LOCATION OF ALL UTILITIES ON SITE.
- 2. BUILDING DESIGNED IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE AND LOCAL REQUIREMENTS. ALL WORK TO MEET APPLICABLE STANDARDS.
- PLANS ARE PROVIDED FOR THE PURPOSE OF NEGOTIATED CONSTRUCTION WITH A SELECTED GENERAL CONTRACTOR AND MAY CONTAIN OMISSIONS AND INCONSISTENCIES. THE CONTRACTOR IS RESPONSIBLE FOR FINDING AND CORRECTING PROBLEMS.
- FINISH FLOOR ELEVATION OF THE BUILDING TO BE SET AT 9,172.00', WHICH IS RELATIVE TO TOPOGRAPHY SHOWN.
- B. REFER TO SEPARATE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

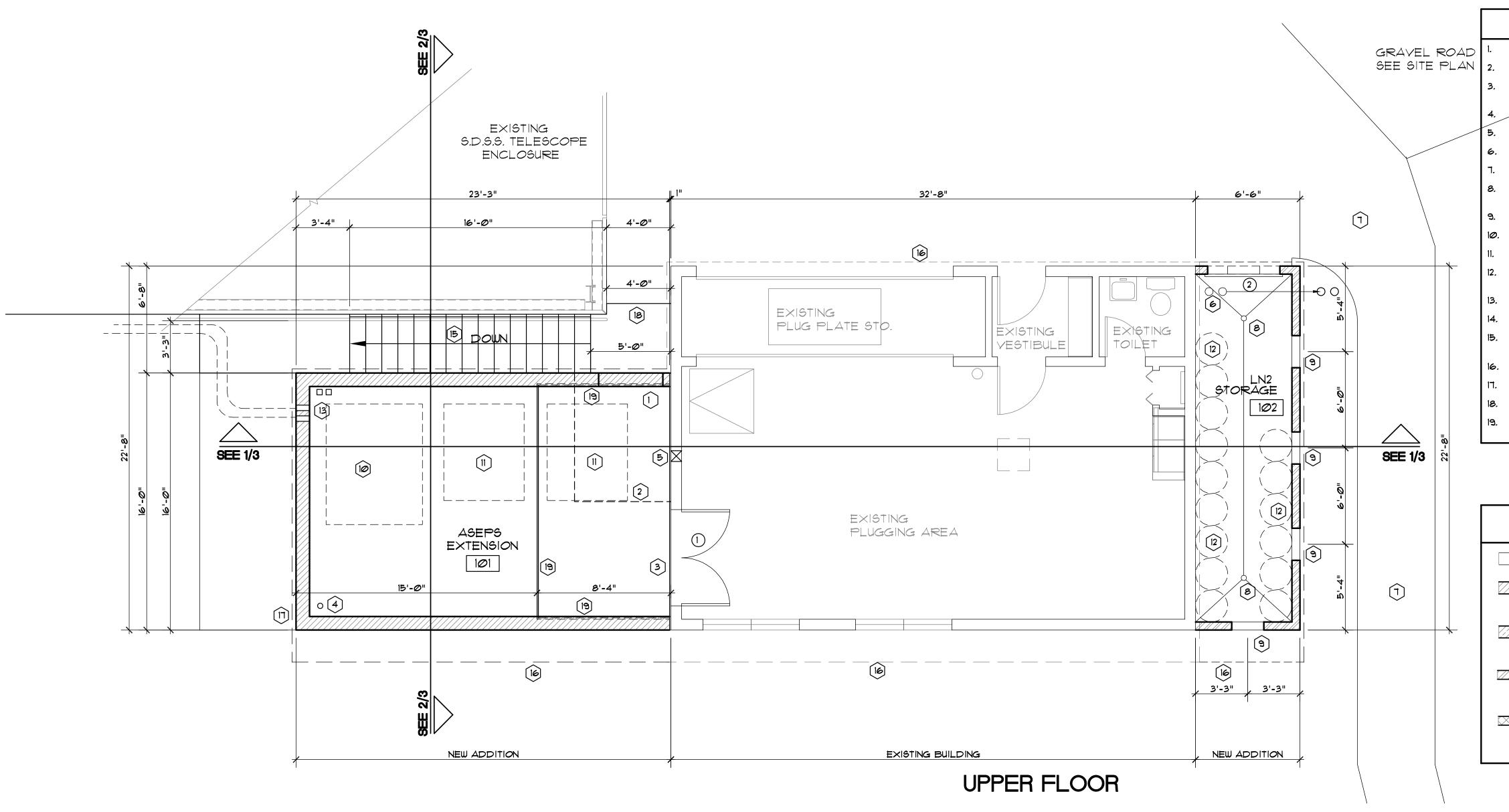
APACHE POINT OBSERVATORY

PREPARED FOR ASTROPHYSICAL RESEARCH CONSORTIUM SUNSPOT









SEE 1/3

LOWER FLOOR

_ _ _ ¬

ASEPS EXTENSION

1Ø3

14



- FRAME FOR FUTURE DOOR, 4'-0"x1'-0"
- DEMOLISH EXISTING LN2 STORAGE.
- WALLS, FLOORS AND CEILING TO BE ISOLATED FROM EXISTING BUILDING WITH I''
 CONTROL JOINT. NEW EQUIPMENT CAN NOT VIBRATE.
- 4. _4" CABLE SWEEP THRU FLOOR/CEILING OF BASEMENT.
- 8"x8" METAL FEED THRU.
- EXISTING CLEAN OUTS, RELOCATE TO OUTSIDE OF LN2 STORAGE.
- REGRADE AND INSTALL NEW CONCRETE WALKWAY.
- FLOOR DRAIN, SEE MECHANICAL PLANS. SLOPE CONCRETE FLOOR MAX. Ø.1" PER FOOT TO DRAIN AS SHOWN ON PLAN.
- 9. 24"x24" (7) TYP. LOUVERED AIR VENTS. SEE ELEVATION FOR HEIGHTS.
- 10. LOCATION OF 2000 16 ASTROPHYSICAL RESEARCH INSTRUMENT BY OWNER.
- LOCATION OF 1600 16 ASTROPHYSICAL RESEARCH INSTRUMENT BY OWNER.
- LOCATION OF 180 LITER LIQUID NITROGEN CONTAINERS AND HANDLING RACK BY OWNER.
- 13. (2) 4" CABLE SWEEP THRU FLOOR / WALL.
- 14. 6'-0" WIDE CONCRETE LANDING.
- 15. STEEL STAIRS, TO MATCH EXISITING STAIRS ON SITE. 16 RISER @ 63" AND 15 TREADS @ 12".
- 6. EXISTING AND NEW ROOFLINE.
- RELOCATE EXISITNG VIDEO CAMERA TO THIS LOCATION.
- 18. ACCESS TO PULL BOXES TO REMAIN.
- 19. 1" CONTROLJOINT IN SLAB, SEE ALSO STRUCTURAL PLANS, S-1 AND S-2. SEPARATE DRYWALL FROM FLLOR WITH JOINT.

WALL LEGEND

EXISTING WALLS TO REMAIN.

2x10 EXTERIOR WALLS, INSULATE W/ R-30 BATT INSULATION, EXTERIOR $\frac{1}{2}$ " WAFER BOARD AND STO STUCCO SYSTEM OR EQUAL, INTERIOR &" GYP. BD., TAPE, SMOOTH TEXTURE, PAINT. COLORS TO MATCH EXISTING.

8" CMU WALL OR POURED IN PLACE CONCRETE WALL. SEE STRUCTURAL PLANS FOR DETAILS. EXTERIOR, STO STUCCO SYSTEM OR EQUAL. COLORS TO MATCH EXISTING.

NEW 2x6 STUD WALL TO BOTTOM OF ROOF. EXTERIOR !! WAFER BOARD AND STO STUCCO SYSTEM OR EQUAL. INTERIOR $\frac{1}{2}$ " PLYWOOD, PAINT WHITE. COLOR TO MATCH EXISTING.

NEW 2x4 STUD WALL IN FRONT OF CONCRETE WALL INSULATE WITH R-30 HIGH DENSITY FOAM INSULATION. (2) 2.5" GEN FLEX TAPERED ISO OR EQUAL. & GYP. BD., TAPE, SMOOTH TEXTURE, PAINT WHITE, COLORS TO

DOOR SCHEDULE

		DOOR							
NO.	TYPE	SIZE	МАТ.	THK.	МДТ.	THK.	HDWR. NO.	COMMENTS	
1	-	PR 3'-0" x T'-0"	METAL/INSULATED	1 3/4"	MT	6 7/8"	1	FIT TO EXISTING WALL	
2	-		METAL	N/A	MT	6 7/8"	2	ROLLUP DOOR	
3	-	4'-Ø" × 7'-Ø"	METAL/INSULATED	1 3/4"	MT	10 7/8"	3	EXTERIOR	

, PRIVACY LATCH LOCK , 3 HEAVY DUTY HINGES, SURFACE BOLT, AUTOMATIC CLOSER. NO THRESHOLD

2. OVERHEAD DOOR HARDWARE. ELECTRIC W/ OUTSIDE MANUAL OVERRIDE.

ROOM/FINISH SCHEDLILE

	NOOM/FINISH S										
NUMBER	NAME	FLOOR	CEILING	WALLS	BASE						
101	ASEPS EXTENSION 1	1	3	6	7						
1Ø2	LN2 STORAGE 2 4 5 -										
103	1Ø3 ASEPS EXTENSION 2 1 3 6 7										
NOTE	NOTE DESCRIPTION										
1	CONCRETE SMOOTH SURFACE, PAINT LIGHT GREY AND SEAL.										
2	CONCRETE W/ TRACTION GRIP SURFACE, SEALED.										
3	3 5/8" GYPSUM BOARD - TEXTURE SMOOTH DUST FREE ,PAINT WHITE.										
4	NO CEILING, EXPOSED BEAMS.										
5	1/2" PLYWOOD PAINTED WHITE (EXTERIOR PAINT)										
6	5/8" GYPSUM BOARD - TEXTURE SM	OOTH DUST	FREE PAINT	WHITE.							
٦	7 VINYL BASE										

_								<u> </u>
	- -	4'-6" × 7'-0"	METAL METAL/INSULATED	N/A	MT	6 7/8" 10 7/8"	2	ROLLUP DOOR EXTERIOR
	-	PR 3'-0" x T'-0"	METAL/INSULATED	1 3/4"	MT	6 7/8"	1	FIT TO EXISTING WALL
).	TYPE	SIZE	MAI.	THK.	MA1.	THK.	NO.	

3. UNICAN 5 BOTTON COMBINATION W/ KEY BYPASS, 3 HEAVY DUTY HINGES, FLUSH BOLT, THRESHOLD, WEATHERSTRIP

NUMBER	NAME	FLOOR	CEILING	WALLS	BASE				
101	ASEPS EXTENSION 1	1	3	6	7				
102	LN2 STORAGE	2	4	5	-				
103	ASEPS EXTENSION 2	1	3	6	7				
NOTE	DESCRIPTION								
1	CONCRETE SMOOTH SURFACE, PAINT LIGHT GREY AND SEAL.								
2	CONCRETE W/ TRACTION GRIP SURFACE, SEALED.								
3	5/8" GYPSUM BOARD - TEXTURE SMOOTH DUST FREE ,PAINT WHITE.								
4	NO CEILING, EXPOSED BEAMS.								
5	1/2" PLYWOOD PAINTED WHITE (EXTERIOR PAINT)								
6	5/8" GYPSUM BOARD - TEXTURE SMO	OOTH DUST F	REE PAINT	NHITE.					
7	VINYL BASE								





GENERAL NOTES

- VERIFY LOCATION OF ALL UTILITIES ON SITE.
- BUILDING DESIGNED IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE AND OTERO COUNTY REQUIREMENTS. ALL WORK TO MEET APPLICABLE STANDARDS.
- . PLANS ARE PROVIDED FOR THE PURPOSE OF NEGOTIATED CONSTRUCTION WITH A SELECTED GENERAL CONTRACTOR AND MAY CONTAIN OMISSIONS AND INCONSISTENCIES. THE CONTRACTOR IS RESPONSIBLE FOR FINDING AND CORRECTING PROBLEMS.
- VERIFY ALL DIMENSIONS OF EXISTING BUILDING ON SITE. ALL DIMENSIONS SHOWN ON PLAN, NEW TO EXISTING, HAVE TO BE VERIFIED. THE ARCHITECT SHALL BE NOTIFIED IF THERE ARE LARGE DISCREPANCIES BETWEEN EXISTING AND DRAWINGS.
- DIMENSIONS SHOWN ARE TO THE FACE OF STUDS NOT FINISH

BLDG. CODE ANALYSIS

OCCUPANCY CLASSIFICATION: 5-2

GROSS BUILDING AREA: 716 sqft

 $S-2 = 716 \text{ sqft} \times 1/300 = 2.4$

APPROX. OCCUPANT LOAD = 2

TYPE OF CONSTRUCTION: TYPE VB

MAX. ALLOWABLE AREA: 13,500 sqft

MINIMUM EGRESS REQUIRED 1

PLUMBING FIXTURE

EXPANSION IS OF EQUIPMENT ROOMS ONLY, THEREFORE THEY ARE NOT REQUIRED TO BE ACCESSIBLE, SEE IBC 11032.9. EXISTING BATHROOM, WITH ONE WATER CLOSET AND SINK IS ADEQUATE.

APACHE POINT

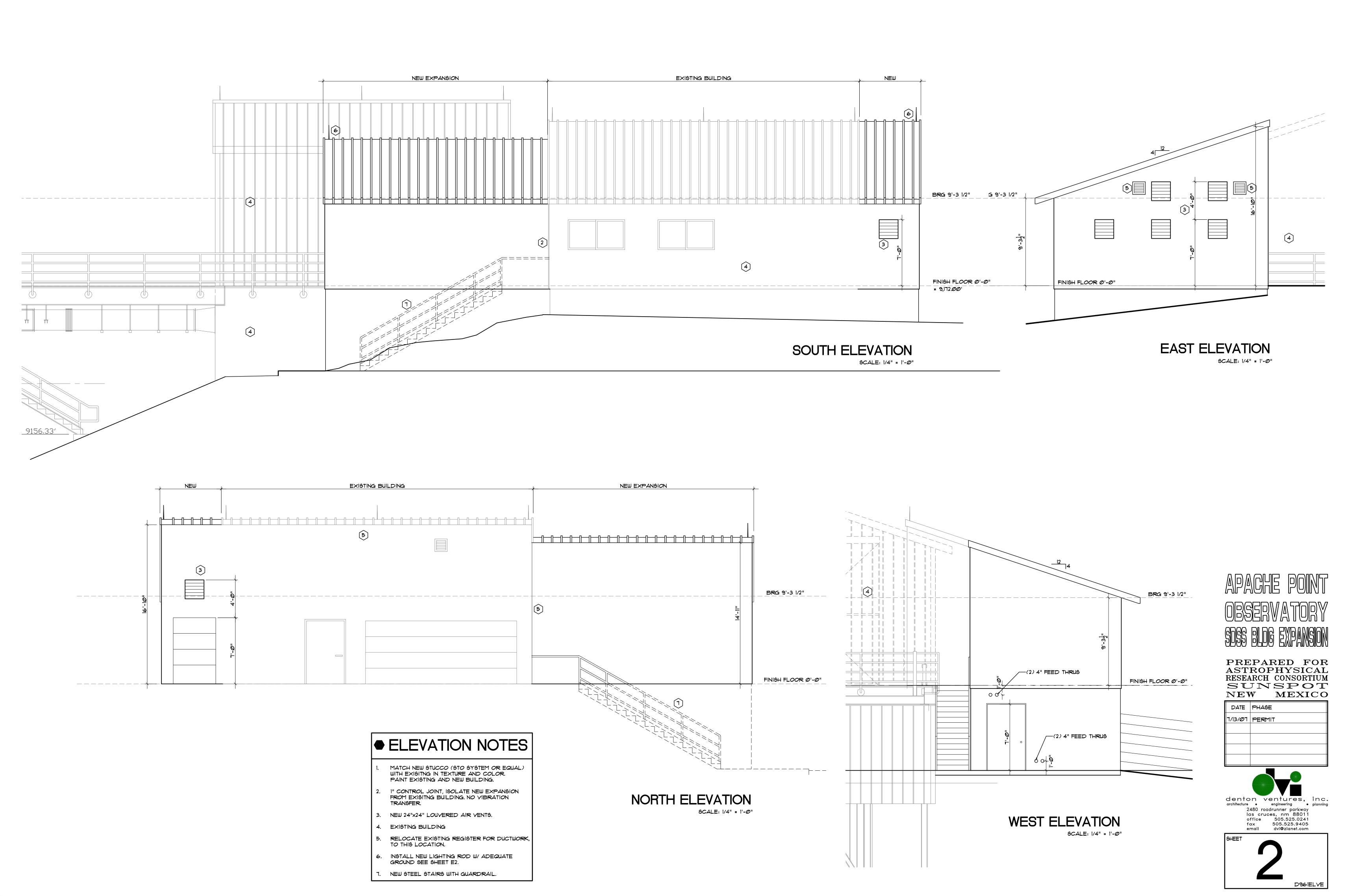
PREPARED FOR ASTROPHYSICAL RESEARCH CONSORTIUM SUNSPOT NEW MEXICO

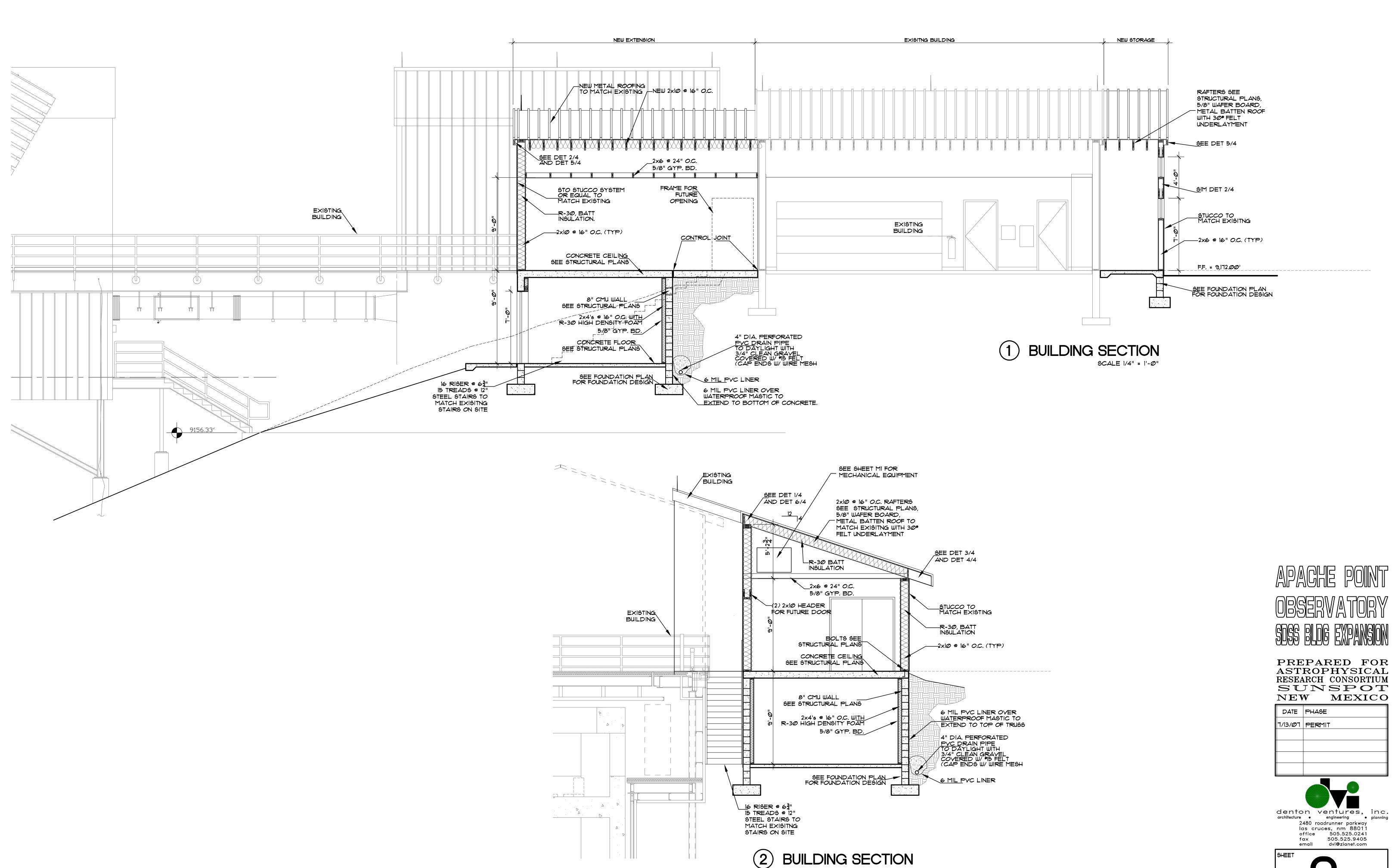
DATE PHASE 1/13/07 PERMIT







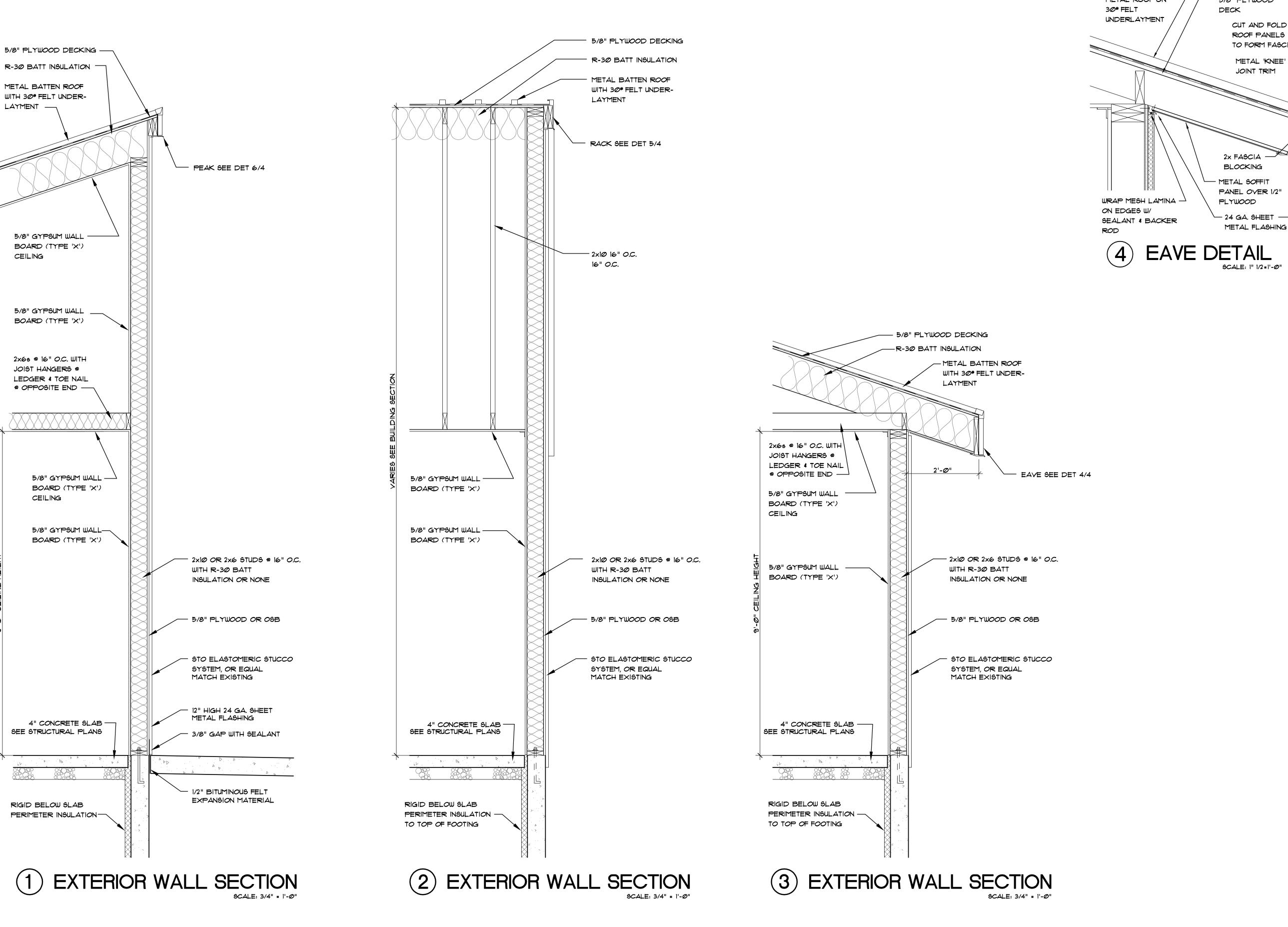


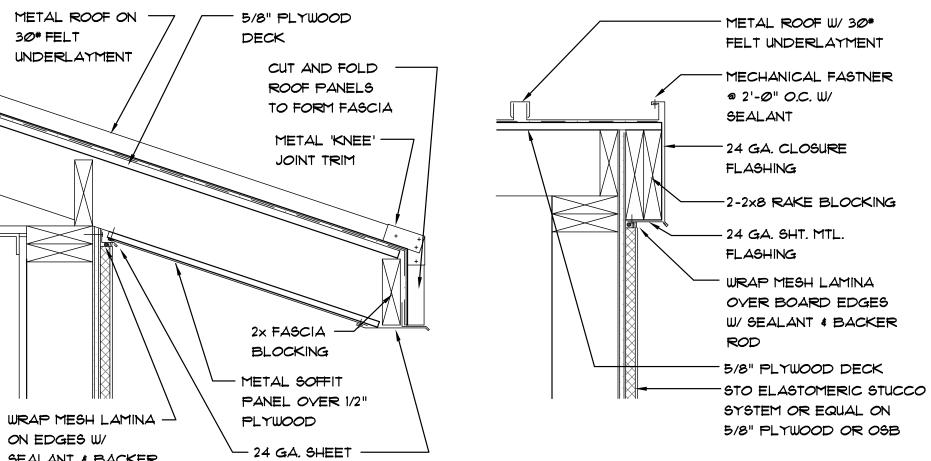


BUILDING SECTION

denton ventures, inc. architecture • engineering • planning 2480 roadrunner parkway las cruces, nm 88011 office 505.525.0241 505.525.9405 dvi@zianet.com

D961SECT

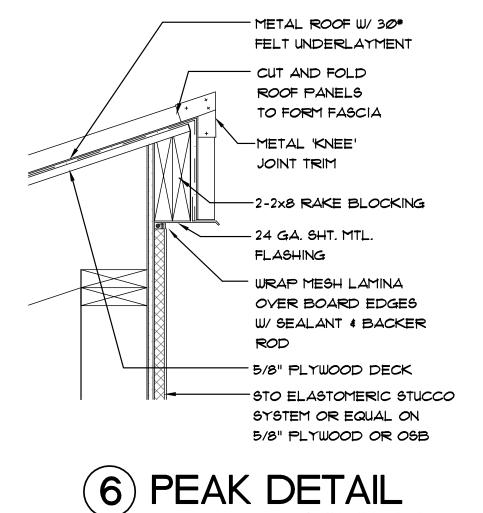




METAL FLASHING

5 RAKE DETAIL

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



APACHE POINT

PREPARED FOR ASTROPHYSICAL RESEARCH CONSORTIUM SUNSPOT NEW MEXICO

DATE PHASE 1/13/07 PERMIT

denton ventures, inc. 2480 roadrunner parkway las cruces, nm 88011 office 505.525.024 505.525.9405

WALL SECTION AND DETAILS

D961SEC2

DIVISION 1 SPECIFICATIONS

Contractor shall provide all labor m material, and equipment for a complete

Contractor shall pay all fees and taxes including, but not limited to permits, inspections, testing, utility connection and development charges, and gross

Contractor shall provide and pay for all temporary facilities including, but not limited t utilities, fencing, protective barricades, toilets, and storage or office All work shall conform to the latest adopted editions of regulating codes.

DIVISION 2 SPECIFICATIONS

SEE STRUCTURAL PLANS SHEET S-1.

DIVISION 3 SPECIFICATIONS

SEE STRUCTURAL PLANS SHEET S-1.

DIVISION 4 SPECIFICATIONS

SEE STRUCTURAL PLANS SHEET S-1.

DIVISION 6 SPECIFICATIONS

MILLWORK

MATERIALS

Wall base shall be Vinyl, color by owner.

Field dimensions shall be taken before commencing work.

All doors and their frames shall be set true, plumb, level and in strict accordance with the manufacture's directions.

All millwork shall be carefully fitted, securely fastened, and first class in every

Mitered joints are required in all casings and running trim. All trim not terminating at an inside corner including window stools and aprons shall have mitered returns to wall. No butt cuts shall be acceptable.

DIVISION 7 SPECIFICATIONS

INSULATION

MATERIALS

Perimeter insulation shall be 1" thick (as noted on the drawings), High Density "Styrofoam SM" as manufactured by Dow Chemical Co. or equal.

Batt insulation in all exterior walls , shall be 9—1/2" thick, R—30, Kraft faced with stapling flanges "Fiberglass" as

Batt insulation in all ceilings, as indicated, shall be R-30,

R-30 high density foam insulation (2) 2.5" Gen flex tapered ISO ore equal.

Sill sealer shall be 4" wide \times 1/2" thick "Fiberglass" or equal.

PROCEDURES

Mud sill shall be set on sill sealer.

Care shall be taken to chink spaces around doors, windows, and other penetrations full of fiberglass fibers and/or fill with urethane foam sealer.

All insulation shall be installed in accordance with manufacturer's recommendations.

FLASHING AND SHEET METAL

MATERIALS

All roof flashing, counter flashings, scupper and cap flashings shall be 24ga.

Valley flashing shall be 24ga. Galvanized sheet metal with center crimp.

Through—wall flashings exposed to weather and at steel lintels shall be 26ga. Galvanized sheet metal as indicated.

Furnish and install all ducts, vents, and weather caps as required for the following appliances and equipment in strict accordance with manufacturer's directions and local, state and national codes:

- * Plumbing vents as required.
- * Toilet exhaust fans as required.
- * Dryer vents. * All batt insulation in ceilings shall be installed above all ducts.

PROCEDURES

All materials and workmanship shall be in strict accordance with recommendations of the Sheet Metal Contractor's National Association, Inc., as set forth in the current edition of Standard Practices in Sheet Metal Work, Manuals #1 and #2.

Fabrication, in so far as possible, shall be done in the shop for field

The Contractor shall take and verify all dimensions at the job site, and shall be responsible for the accurate fitting of all work included in this Section.

DIVISION 7 SPECIFICATIONS (CON'D)

SEALANTS

MATERIALS Sealant shall be acrylic conforming to the requirements of Fed. Spec. TT-S-230, Type II equal to Ohio Sealants, Inc. One-Part Acrylic Sealant Color shall be selected by Owner.

Back-up material shall be closed cell, compressible, non-staining and nonrotting material such as polystyrene, neoprene sponge, or butyl sponge.

PROCEDURES

All joints shall be properly prepared, cleaned, dried, and backed prior to sealant applications.

Sealant shall be applied in a neat and careful manner in strict accordance with the manufacturer's recommendations.

Excess sealant that is allowed to run over the work of other trades shall be removed and surfaces repaired by the Contractor.

ROOFING

Roofing shall be 30# Felt and Berridge Batten seam roof Panels: Kynar 500-coated, roll- formed panels of 24-gage "galvalume" steel sheets designed for mechanical attachment using a concealed batten clip 16" O.C. Color and design to match existing.

DIVISION 8 SPECIFICATIONS

DOORS & FRAMES

All exterior / interior doors shall be commercial insulated steel doors. Windsor Republic doors or equal. Exterior: extra heavy duty min. 16 gage, insulate with polystyrene. Interior: heavy duty min. 18 gage, insulate with polystyrene.

Aluminum threshold and vinyl bottom sweep.

PROCEDURES

Refer to the drawings for size of opening, and the Contractor shall furnish all anchor clips, clip angles, bracing reinforcements, silencers, and other accessories indicated and required for complete and first class installations.

Steel doors shall be fabricated from electro-galvanized steel in accordance with manufacturer's normal standards and accepted industry practice.

All frames shall be finished with one coat of baked on prime coat or rust resistance paint, colors to match existing.

Frames and doors shall be handled with care to prevent damage. The Contractor shall remove all rust spots with steel wool, and spot paint all abrasions with paint to match prime coat finish.

All doors and their frames shall be set true, plumb, level and in strict accordance with the manufacturer's directions.

PROCEDURES

Hardware schedule (4 copies) shall be furnished to the Architect for approval.

Each item of hardware shall be packaged separately in an individual container complete with screws, keys, special wrenches, instructions and installation templates necessary for accurately locating and setting, the number of openings to which the hardware item is to be applied.

Unless otherwise directed, hardware shall be mounted as follows: * Hinges - Top hinge 9-3/4" from finish door frame. Bottom Hinge - 10-3/8" from finish floor. Middle Hinge — Equidistant from top and bottom.

* Center line of lock and strike — centered in lock rail of door. * Center line of deadlock and strike - 60" from finish floor.

* Closers — installed in accordance with manufacturer recommendations and template information.

Group 1: Privacy latch lock, 3 heavy duty hinges, automatic closer, no Threshold. Group 2: Overhead door hardware, electric w/ outside override.

Group 3: unican 5 botton combination w/ key bypass, 3 heavy duty hinges, flush bolt, threshold, weatherstrip.

All thresholds & hardware shall meet ADA requirements for accessibility.

DIVISION 9 SPECIFICATIONS

GYPSUM WALLBOARD

MATERIALS

5/8" water resistant gypsum wallboard shall be "USG Sheetrock W/R" or

5/8" fire rated TypeX gypsum wallboard shall be "USG Sheetrock Brand Firecode C" or equal.

1/2" gypsum wallboard shall be "USG Sheetrock" or equal.

dissimilar material. Expansion joints as recommended by the

Joint treatment shall be "USG Perf-A-Tape" reinforced with "Durabond" joint compound or equal, sanded smooth. Provide USG 200 Series steel casing where gypsum wallboard abutts

manufacturer.

Rated walls shall have gypsum board products installed, fastened and finished in accordance with assembly information detailed on the drawings.

Bathroom and Utility Room walls not otherwise required to be one of the above assemblies shall be "WR" water-resistant rated gypsum board.

DIVISION 9 SPECIFICATIONS (CON'D)

Provide metal casing beads at all gypsum wallboard terminations. Provide metal corner beads at all exterior corners.

All gypsum board surfaces shall be left clean and true to receive paint without further sanding.

All metal and gypsum wallboard materials shall be of the type indicated or required, and the standard products of Georgia-Pacific Corp., Milcor, National Gypsum Co., Penn Metal, U.S. Gypsum Co., or other approved manufacturers.

GYPSUM WALLBOARD

All construction systems and installation procedures for the work required under this Section shall conform to the current recommendations of the material's manufacturer and to the applicable requirements of governing codes, for the particular work.

Debris shall not be allowed to accumulate, and shall be removed at the end of each day's work. At completion of work in each area, the contractor shall remove all excess material, debris and equipment from the completed area, and upon final completion, he shall remove all such items from the entire premises.

All walls and ceilings to receive paint shall be "smooth" finish.

PAINTING

MATERIALS

Exterior work shall be as follows:

* Exterior galvanized sheet metal and steel tubing: One coat metal etch and primer. Two coats metal paint. Color to be selected by Owner.

Interior work shall be as follows:

* Gypsum wallboard and wallboard ceiling:

Paint shall be Sherwin Williams everclean, applied with primer coat and one through finish. Low sheen enamel for all surfaces, colors to be selected by Owners.

All paint, stain and varnish shall be products of Kwal Howells or approved equal.

All material shall be delivered to the job site in the original, unopened labeled containers. Colors will be selected by Owners.

Unless otherwise specified, field painting work of all surfaces shall be covered with at least two coats of paint.

Where one thorough top coat has been specified, that one coat shall be

applied to completely and fully cover the surface. Surfaces which do not have uniform color and sheen shall be repainted. The contractor shall carefully examine all surfaces before application of

any paint or stain and report all defects to the General Contractor for correction. After accepting surfaces and starting the painting, the Painting Contractor shall be held responsible for final results.

All surfaces of every kind shall be bone dry, clean, free from dust, dirt, oil, arease, rust and stain at the time paint or sizing is applied.

All minor scratches, cracks and rough spots in gypsum board surfaces shall be filled with spackling compound and sanded smooth and sealed before application of prime coat.

manner, and in strict accordance with the current recommendations of the supplier of the material used.

All paint shall be brushed, sprayed or rolled in even, thorough coats

All painting work shall be done by skilled mechanics in a first-class

Each coat shall be bone—dry prior to application of next coat.

without runs, sags, skips or other blemishes.

Undercoats of paint shall be colored or tinted to reasonably match the finish coat color.

All joints in wood work, casings and running trim, including juncture trim with adjacent wallboard, shall be neatly filled with latex painter's caulk prior to beginning paint application.

Paint all exposed surfaces of all items to receive paint including tops and bottoms of all doors, tops of all casings and inside all surfaces of all closets.

FLOOR COVERINGS

MATERIALS

Concrete floor to be smooth surface, paint light grey and seal.

All workmanship and material shall conform to best-accepted practices. Any defective workmanship which occurs within one year of the completion date must be corrected at the expense of the Contractor.

STUCCO FINISH SYSTEM

Stucco shall be two-coat system with fiber reinforced scratch/brown coat and elastomeric acrylic finish, by EL REY Stucco (perma-flex) or STO mfg (STO-FLEX) with associated accessories including stucco stop, control joints and drips.

Stucco texture and color to match existing.

DIVISION 16 SPECIFICATIONS

SEE SHEET E1 AND E2



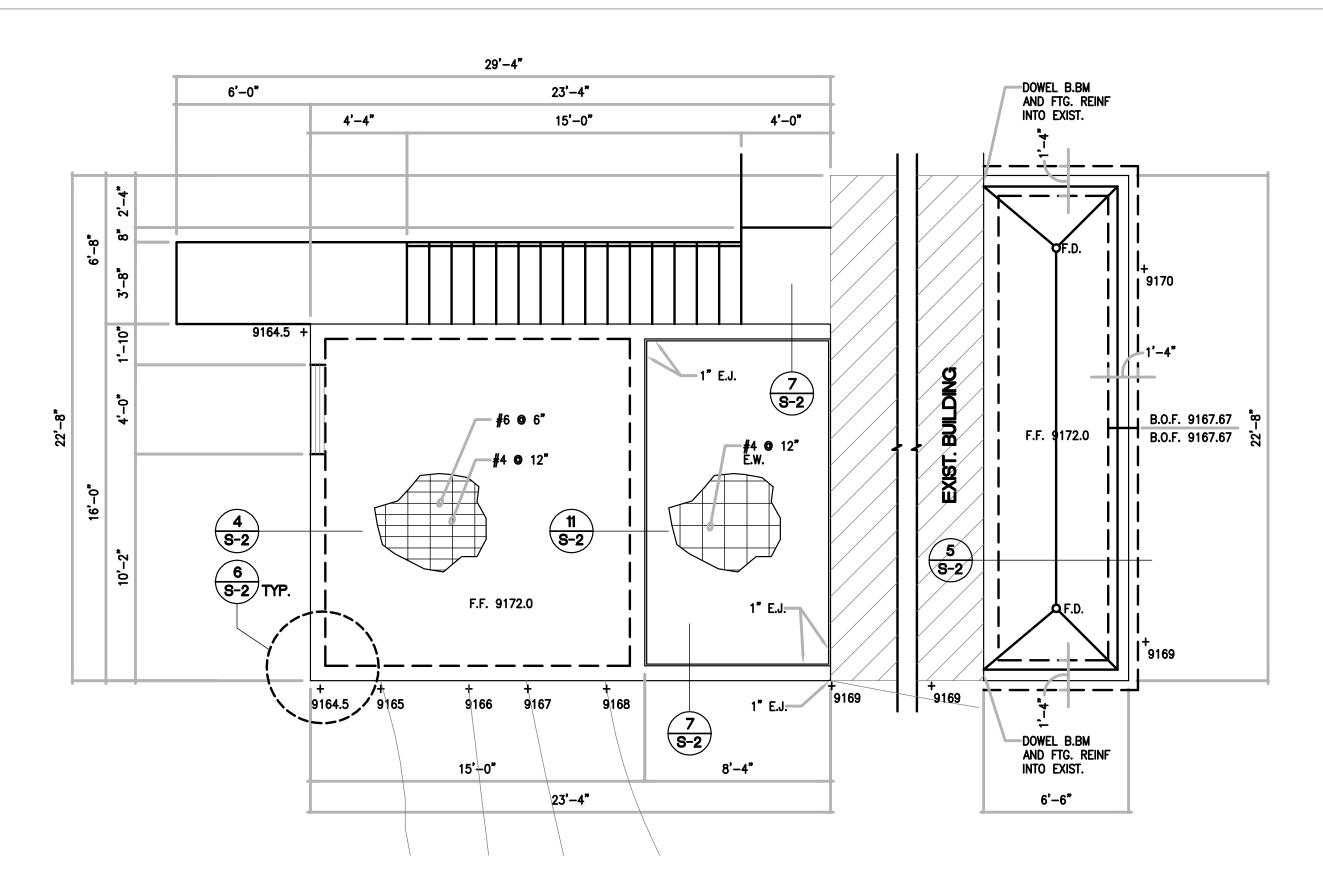
PREPARED FOR ASTROPHYSICAL RESEARCH CONSORTIUM SUNSPOT NEW MEXICO

DATE	PHASE
T/13/ØT	PERMIT

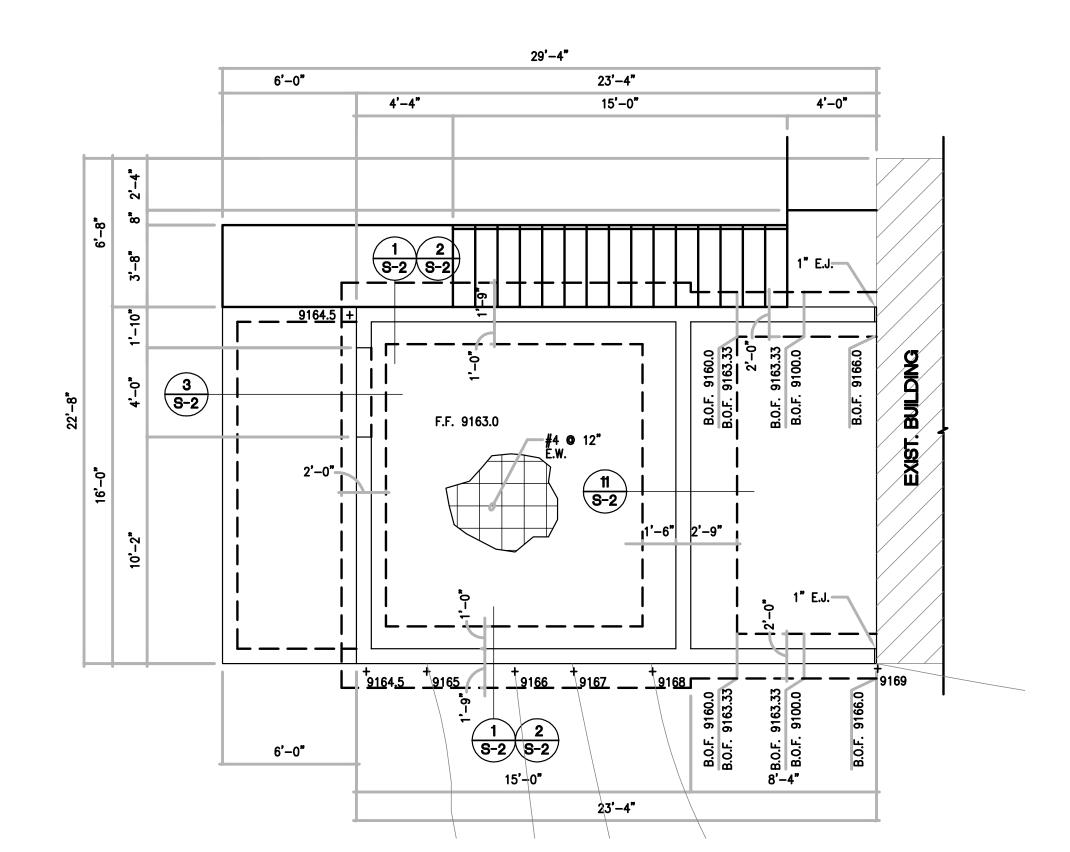




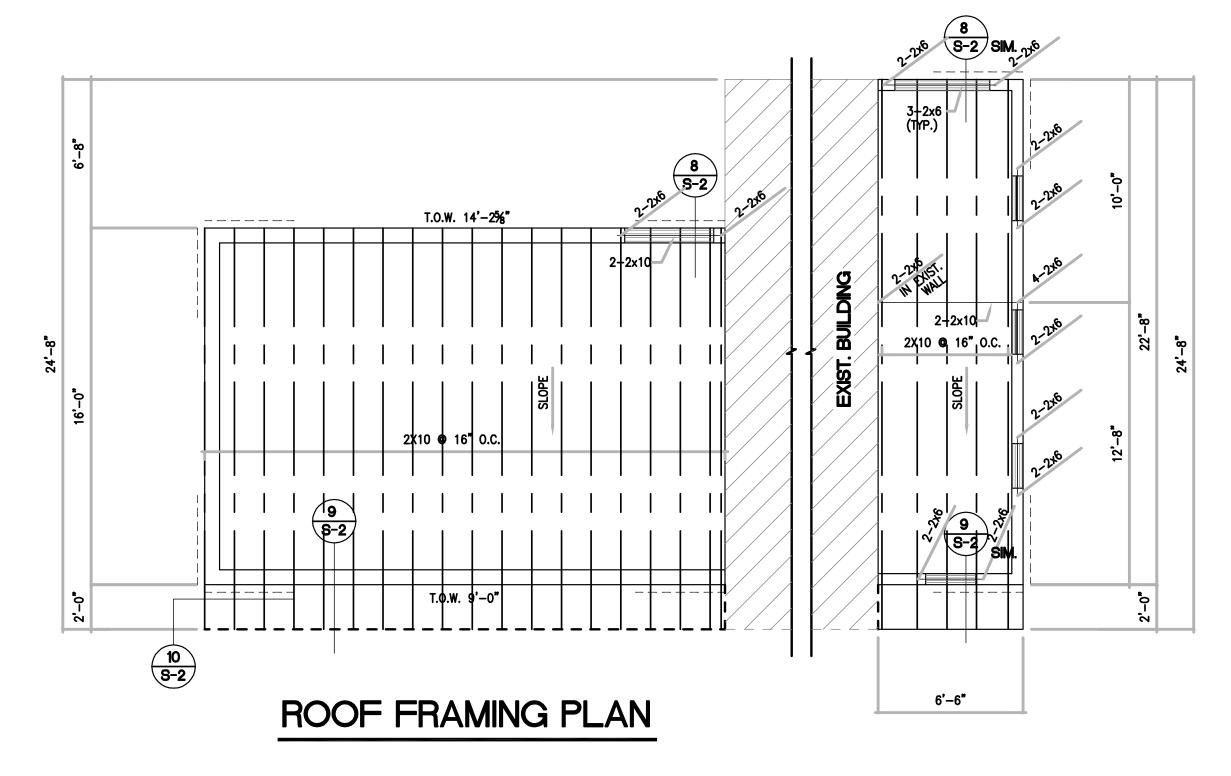
SPECIFICATIONS



UPPER LEVEL FOUNDATION PLAN



LOWER LEVEL FOUNDATION PLAN



CONSTRUCTION NOTES AND OUTLINE SPECIFICATIONS

DESIGN CRITERIA

WIND PRESSURE BASIC WIND SPEED = 80 MPH. (3 SEC. GUST = 100 MPH.)SEISMIC USE GROUP I IMPORTANCE FACTOR I = 1.0 30-40 FT. = 25.0 PSF SOILS SITE CLASS D SPECTRAL RESPONSE COEFFICIENTS. 0.1520g.

GENERAL NOTES

- 1. THE CONTRACTOR SHALL COMPARE THE STRUCTURAL DRAWINGS WITH THE ARCHITECTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS AS TO LAYOUT, DIMENSIONS AND ELEVATIONS. ALL DISCREPANCIES, IF ANY, SHALL BE REPORTED TO THE ARCHITECT/ENGINEER FOR PROPER ADJUSTMENT BEFORE PROCEEDING WITH 2. PRIOR TO BEGINNING ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL VERTICAL AND HORIZONTAL
- DIMENSIONS BY FIELD MEASUREMENTS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT/ENGINEER. ALL CONSTRUCTION SHALL MEET THE UNIFORM BUILDING CODE.

 3. IN THE EVENT THAT CERTAIN FEATURES OF THE CONSTRUCTION ARE NOT FULLY SHOWN ON THE DRAWINGS, OR CALLED FOR IN THE STRUCTURAL NOTES OR IN THE SPECIFICATIONS, THEN SUCH CONSTRUCTION SHALL BE IN THE SAME CHARACTER FOR SIMILAR CONDITIONS THAT ARE SHOWN OR CALLED FOR.

FIELD INSPECTION AND CONTROLS

- 1. THE CONTRACTOR SHALL PROVIDE TESTING AND INSPECTION SERVICE FOR ALL SOILS AND CONCRETE CONSTRUCTION INCLUDING SAMPLING AND TESTING OF ALL MATERIALS TO BE USED. THE TESTING AND INSPECTION SERVICE TO BE EMPLOYED IS SUBJECT TO PRIOR APPROVAL BY THE ARCHITECT/ENGINEER.

 2. SOILS: INSPECT AND APPROVE ALL MATERIALS TO BE USED DURING CONSTRUCTION. INSPECT AND APPROVE ALL LAYERS OF SUBGRADES AND FILL BEFORE FURTHER CONSTRUCTION WORK IS PERFORMED. SOILS TESTS TO BE TAKEN SHALL BE AS FOLLOWS; NATURAL GROUND (1) TEST PER 2500 SQ. FT.; FILL: (1) TEST PER 2500 SQ. FT. PERLAYER; FILL UNDER CONTINUOUS FOOTINGS: (1) TEST PER 100 LINEAL FEET PER LAYER; FINISH GRADE: (1) TEST PER 2500 SQ. FT. PER LAYER.
- 3. CONCRETE TEST CYLINDERS: USE ASTM C-31 AND ASTM C-172. MAKE FOUR OR SIX CYLINDERS. SIX REQUIRED IF FLY ASH IS USED. MAKE AT LEAST ONE SET FOR ALL DELIVERED CONCRETE FOR EVERY 20 OR LESS CUBIC YARDS OF CONCRETE OR ANY OTHER TIME DEEMED NECESSARY BY THE ARCHITECT/ENGINEER. COMPLY WITH ASTM C-94, READY MIXED CONCRETE. <u>TEST PER ASTM C-39</u>. WITHOUT <u>FLY-ASH</u>: 1 AT 7 DAYS, 2 AT 28 DAYS, WITH 1 LEFT. WITH FLY-ASH: 1 AT 7 DAYS, 2 AT 28 DAYS, 1 AT 42 DAYS, WITH 2 LEFT.

 4. SLUMP: ASTM C-143, 1 FOR EACH TRUCK. TEST PROMPTLY AFTER ONE-HALF CUBIC YARD HAS BEEN DISCHARGED BEGINNING WITH THE FIRST LOAD OF EACH DAY.

 5. AIR CONTENT: ASTM C-173, 1 FOR EACH TRUCK DELIVERING CONCRETE AND PERFORMED AT THE SAME TIME AS SLUMP TEST IS TAKEN.

EXCAVATION AND BACKFILL

- 1. ALL EXCAVATION, GRADING AND ENGINEERED BACKFILL SHALL BE COMPLETE PRIOR TO BEGINNING FOUNDATION EXCAVATION.

 2. AFTER CLEARING AND GRUBBING ARE COMPLETE FOR THE BUILDING PAD, THE RECOMMENDED SITE PREPARATION CONSISTS OF SCARIFYING 8 INCHES FOR THE ENTIRE BUILDING PAD AND BASES OF ALL FOUNDATIONS. TO THE EXPOSED SUBSOIL ADD SUFFICIENT WATER TO BRING THE SCARIFY MATERIAL TO ±2% OPTIMUM MOISTURE CONTENT AND COMPACTED TO 95%.

 3. ALL FOUNDATION DEPTHS ARE MINIMUM AND SHALL NOT BE REDUCED WITHOUT THE WRITTEN APPROVAL OF THE ADDITION OF THIS PROJECT MUST BE SUPPLIED
- THE ARCHITECT/ENGINEER. ALL MATERIALS USED IN THE CONSTRUCTION OF THIS PROJECT MUST BE SUPPLIED FROM OUTSIDE SOURCES AND SHALL HAVE A P.I. OF LESS THAN 12 PER ASTM D-4318, NO AGGREGATE SIZE LARGER THAN 3" AND BE COMPACTED IN 8" LAYERS TO 95% DENSITY PER ASTM D-1557. ALL LIFTS SHALL BE TESTED FOR COMPLIANCE. FAILURE TO MEET THIS REQUIREMENT WILL BE CAUSE FOR REJECTION AND THE LAYER SHALL BE REMOVED AND RECOMPACTED.

 4. ALL EXCAVATIONS SHALL BE FREE OF ALL LOOSE AND FOREIGN MATERIAL BEFORE ANY CONCRETE IS PLACED AND ALL AREAS TO RECEIVE CONCRETE SHALL BE THOROUGHLY WETTED PRIOR TO PLACEMENT.
- 5. THE ORIGINAL SOILS INVESTIGATION AND RECOMMENDATIONS WERE MADE BY SERGENT, HAUSKINS & BECKWITH PROJECT NO. E92-1137 DATED JULY 27, 1997 AND THIS DOCUMENT IS AVAILABLE FOR REVIEW AT THE ARCHITECT'S
- 1. PLYWOOD FORMS SHALL BE USED FOR ALL FORMED SURFACES. PLYWOOD FORMS SHALL BE MADE FROM PLYWOOD SHEETS OF ADEQUATE THICKNESS AND AS LARGE AS POSSIBLE WITH SMOOTH EVEN EDGES. PLYWOOD FORMS CAN BE MADE FROM EITHER NEW OR USED SHEETS, BUT IN GOOD CONDITION. ALL PLYWOOD SHALL CONFIDENT CAN BE MADE FROM EITHER NEW OR USED SHEETS, BUT IN GOOD CONDITION. ALL PLYWOOD SHALL CONFIDENT CAN BE MADE FROM EITHER NEW OR USED SHEETS, BUT IN GOOD CONDITION. 2. EARTH FORMS MAY BE USED ONLY FOR FOOTINGS AND ONLY IF THE CUT EARTH SURFACES CAN MAINTAIN THEIR SHAPE WITHOUT DANGER OF CAVE—IN THE SIDES AND BOTTOMS SHALL BE SMOOTH, EVEN AND TRUE VERTICAL OR HORIZONTAL PLANES WITH 45 DEGREE EDGES WHERE SHOWN ON THE DRAWINGS.

 3. THE SUBGRADE UNDER SLABS SHALL BE FINE GRADED AND PROPERLY COMPACTED.

 4. PLYWOOD FORMS SHALL BE INSTALLED WITH CLOSED, FLUSHED JOINTS.

 5. PLYWOOD SHALL BE SEALED AGAINST ABSORPTION OF MOISTURE FROM THE CONCRETE BY EITHER A FIELD
- APPLIED APPROVED FORM OIL, SEALER OR A FACTORY APPLIED NON-ABSORPTIVE LINER. ALL SEALING OF FORMS SHALL BE DONE PRIOR TO PLACING OF REINFORCING STEEL. EXCESS COATING MATERIAL SHALL NOT BE ALLOWED TO STAND IN PUDDLES IN THE FORMS NOR ALLOWED TO COME IN CONTACT WITH CONCRETE, WHICH FRESH CONCRETE WILL BE PLACED AGAINST OR ANY REINFORCING STEEL. SEALER OR FORM OIL SHALL BE COMPATIBLE WITH FINAL FINISH REQUIREMENTS.

<u>MASONRY</u>

- ALL CONCRETE, HOLLOW CORE, AND BLOCK SHALL CONFORM TO ASTM C-90, GRADE N, TYPE I. ALL SOLID NON-BEARING BLOCK SHALL BE SPLIT FACE BLOCK COMPLYING WITH ASTM C-90, GRADE N, TYPE I. COLOR SHALL BE AS SELECTED BY THE ARCHITECT WITH GRAY CEMENT. ALL CONCRETE SLUMP BLOCK SHALL CONFORM TO ASTM C-145. BLOCK TYPE ON THIS PROJECT IS 8".
 GROUT USED TO FILL MASONRY CELLS SHALL CONFORM TO THAT SPECIFIED ABOVE AND SLUMP USING SUPERPLASTICIZERS AT THE POINT OF DISCHARGE AND SHALL BE CAREFULLY MAINTAINED DURING PLACEMENT. WET CELLS BEFORE PLACEMENT AND PROVIDE CLEANOUT FOR EACH CELL TO BE GROUTED AND AT THE BOTTOM OF EACH LIFT FOR REMOVAL OF ALL MORTAR DROPPINGS, EXCESS WATER, ETC.
 ALL MORTAR, ROCK WALLS AND STANDARD MASONRY, SHALL CONFORM TO ASTM C-270. TYPE S.
 ALL HORIZONTAL JOINT REINFORCING, UNLESS OTHERWISE SHOWN ON THE DRAWINGS, SHALL BE SIMILAR TO "BLOK-TRUS" AAGOO STD 40 CAGE AS MANUFACTURED BY WIRE PRODUCTS CO MEETING ASTM A-82 OR FED. "BLOK-TRUS", AA600, STD, #9 GAGE, AS MANUFACTURED BY WIRE PRODUCTS CO. MEETING ASTM A-82 OR FED
- SPECIFICATION QQ-W-461. HORIZONTAL SPACING SHALL BE AT 16" O.C. ABOVE GRADE AND 8" O.C. BELOW GRADE UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

 5. ALL CONSTRUCTION JOINTS, INTERSECTIONS, EXPANSION JOINTS, DOOR JAMBS AND WINDOW JAMBS SHALL HAVE AT LEAST ONE #5 BAR ADDED AND GROUTED SOLID ON EITHER SIDE OF THE JOINT OR OPENING. ALL MASONRY WALLS BELOW GRADE SHALL HAVE BOND BEAMS AT 4' O.C. OR LESS. INSTALL A BOND BEAM AT FINISH GRADE OR FINISH FLOOR IN ALL CASES. ALL MASONRY WALLS ABOVE GRADE SHALL HAVE BOND BEAMS AT 8' O.C. OR LESS IN ALL CASES. ALL BOND BEAMS SHALL BE REINFORCED WITH 2-#5 CONTINUOUS.

- "DESIGN AND CONTROL OF CONCRETE MIXTURES". NO CONCRETE SHALL BE PLACED DURING RAIN, SLEET OR SNOW. ALL CONCRETE PLACED SHALL BE PROTECTED SUCH THAT THE TEMPERATURE AT THE SURFACE SHALL NOT DROP BELOW 55 DEGREES F. FOR 72 HOURS. AFTER PLACEMENT AND PREVENTED FROM FREEZING 3 DAYS THEREFACTER ALL CONCRETE SHALL BE PROTECTED DUBLING HOT WESTLESS OF ATTENTION TO THEREAFTER. ALL CONCRETE SHALL BE PROTECTED DURING HOT WEATHER BY GIVING PROPER ATT INGREDIENTS, PRODUCTION METHODS, HANDLING AND PLACING TO PREVENT EXCESSIVE CONCRETE TEMPERATURES AND WATER EVAPORATION.
- 3. ALL SLABS SHALL BE SAW CUT 1/4 OF DEPTH OF SLAB AT 12 FEET O.C. UNLESS SHOWN OTHERWISE ON THE DRAWINGS. IMMEDIATELY AFTER SAW CUTTING, THE JOINT SHALL BE CLEANED AND SEALED USING A SEALANT TO PREVENT DEBRIS FROM ACCUMULATING IN THE JOINT. SLABS ON GRADE SHALL BE CURED EITHER BY USING LIQUID MEMBRANE—FORMING COMPOUNDS AND MEETING CRS—C 300 AND ASTM C—309, BY USING WATER—PROOF PLASTIC COVERING 4 MILS THICK AND MEETING ASTM C—171.

 4. ALL EXPOSED CONCRETE SURFACES SHALL BE ROTED FREE FROM ALL FORM MARKS AND HONEYCOMBS. ALL EXPOSED CONCRETE SURFACES SHALL BE CHAMPEDED WITH 3/4" CHAMPED STRIPS
- EDGES SHALL BE CHAMFERED WITH 3/4" CHAMFER STRIPS.

 5. THE FOLLOWING TABLE IS INTENDED TO IDENTIFY AND ESTABLISH THE RESPECTIVE CRITERIA FOR ALL THE CLASSES OF CONCRETE TO BE USED ON THIS PROJECT.
- CONCRETE CLASSIFICATION TABLE CLASS OF CONCRETE MINIMUM SACKS OF CEMENT/ MAXIMUM AGGREGATE SIZE CONSTRUCTION (INCHES) OR ITEM NO.
 EXTERIOR SLABS, PARKING 3300 5.5 1.5"
- 6. ALL EXPOSED CONCRETE, INCLUDING THAT UNDER THE ROOFED AREAS, SHALL BE DESIGNED WITH A MINIMUM OF 5% AIR-ENTRAINMENT MEETING ASTM C-260.

 7. ALL CONCRETE DESIGNED WITH FLY-ASH MEETING ASTM C-618 SHALL HAVE 2 EXTRA CONCRETE CYLINDERS TAKEN FOR TESTS AT 42 AND 56 DAYS. NO CONCRETE SHALL BE DESIGNED WITH MORE THAN 15 SUBSTITUTE FOR CEMENT, EXCEPT FOR EXTERIOR TOPPING WHICH WILL BE DESIGN WITH 20% FLY ASHFLY-ASH AS A 8. FIBERS MAY BE ADDED AT THE PLANT OR JOB SITE AFTER REQUIRED SLUMP IS OBTAINED, HOWEVER, NO ADDITIONAL WATER SHALL BE ADDED TO THE CONCRETE AFTER THIS POINT. SLUMPS SHOWN IN THE ABOVE TABLE ARE AT FINAL DESTINATION WITH A TOLERANCE OF PLUS OR MINUS 1 INCH FOR A SLUMP OF 4 INCHES OR GREATER. SLUMPS LESS THEN 4" SHALL BE WITHIN 1/2". THE CONTRACTOR, AT HIS OPTION, MAY INCREASE THE SLUMP TO AS MUCH AS 8 INCHES USING SUPER-PLASTICIZERS, BUT NOT WATER, TO AID IN PLACEMENT.
- 9. ALL DRIVES, WALKS AND RAMPS SHALL HAVE A COARSE BROOM FINISH TO MINIMIZE SKIDDING AND SLIPPING OF VEHICLES AND PEOPLE. ALL INTERIOR FLOORS SHALL HAVE A SMOOTH "HARD" TROWELED FINISH.

CONCRETE REINFORCING

- 1. ALL REINFORCING SHALL BE NEW BILLET GRADE 60, ASTM A-615.
 2. ALL BAR SPLICES SHALL BE 32 DIAMETERS FOR ALL LOCATIONS: I.E FOOTINGS, WALLS, ETC.
 3. ALL REINFORCING STEEL IN WALLS SHALL BE PLACED IN THE CENTER OF THE SLAB OR CORE AS APPLICABLE UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
 4. REINFORCING IN ALL SLABS SHALL BE ENGINEERED SYNTHETIC REINFORCING FIBERS MADE FROM 100% POLYPROPYLENE MATERIALS, WITH A SPECIFIC GRAVITY OF .91, TENSILE STRENGTH OF 70 to 110 KSI, MODULUS OF ELASTICITY OF 500 TO 700 PSI AND IN LENGTHS OF 1/2" TO 1.0" AND MIXED WITH THE CONCRETE IN AMOUNTS OF 1.5 LBS. PER CUBIC YARD. NO REPROCESSED OLEFIN FIBERS ARE ALLOWED.
 5. ALL REINFORCING FOR BOND BEAMS, LINTELS, VERTICAL, ETC., SHALL BE ASTM A-615, GRADE 60. ALL TIES AT COLUMNS MAY BE GRADE 40.
- 6. AT THE CONTRACTOR'S OPTION, REINFORCING IN SLABS SHALL BE #4 BARS GRADE 60 AT 16" O.C. SUPPORTED ON SAND CHAIRS.

WOOD FRAMING AND LUMBER

- 1. THE EXTENT OF WOOD FRAMING AND LUMBER IS SHOWN ON THE DRAWINGS AND INCLUDES ALL PLYWOOD, FRAMING MEMBERS, SHEATHING AND WOOD TRUSSES INCLUDING ALL NAILS, SCREWS, BOLTS AND OTHER SIMILAR ITEMS NOT SPECIFICALLY DESCRIBED BUT REQUIRE TO COMPLETE THE PROJECT. THE FOLLOWING IS A LIST OF THE MINIMUM REQUIREMENTS FOR SELECTED ITEMS TO BE FURNISHED AND IS INTENDED TO ESTABLISH THE STANDARDS OF QUALITY FOR THE MATERIALS ON THIS PROJECT:

 2. ALL LUMBER ON THIS PROJECT INCLUDING ROOF FRAMING, STUDS, JOISTS, HEADERS, LINTELS, BEAMS, TRUSSES SYSTEMS SHALL MEET THE REQUIREMENTS SHOWN IN THE "TIMBER CONSTRUCTION STANDARDS" BY AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC) AND THE CRITERIA SHOWN BELOW:
- 3. HORIZONTAL & VERTICAL FRAMING MEMBERS:

 A. HEM FIR: #1 GRADE & BETTER, E = 1,500,000 PSI, Fb = 1100 PSI, Ft = 725 PSI, Fc = 1350 Fv = 75 PSI.

4. PLYWOOD: A. SHEATHING: STRUCTURAL I, C-DX 5/8".

- DIAGONAL WIND BRACING: SHALL BE PLACED AT EACH CORNER USING 5/8" PLYWOOD FASTENED WITH 8d AT 4" O.C. AT PERIMETER AND 8" O.C. AT INTERMEDIATE SUPPORTS.

 AT ALL PARTY WALLS "SIMPSON" WB X BRACING SHALL BE INSTALLED, FASTENED TO EACH STUD WITH 1-8d NAILS AND FASTENED TO EACH END WITH 3-16d NAILS.
- PANEL SUBFLOORING: PANEL THICKNESS = 5/8", NAIL SIZE & TYPE = 8d COMMON, SUPPORT PANEL EDGES = 6, INTERMEDIATE SUPPORTS = 12. PLYWOOD SHALL BE ATTACHED TO JOIST/TRUSSES AS PER APA
- D. <u>TELEPHONE AND MISCELLANEOUS BACKBOARDS</u>: 3/4" THICK. AD, GROUP 1, INTERIOR.



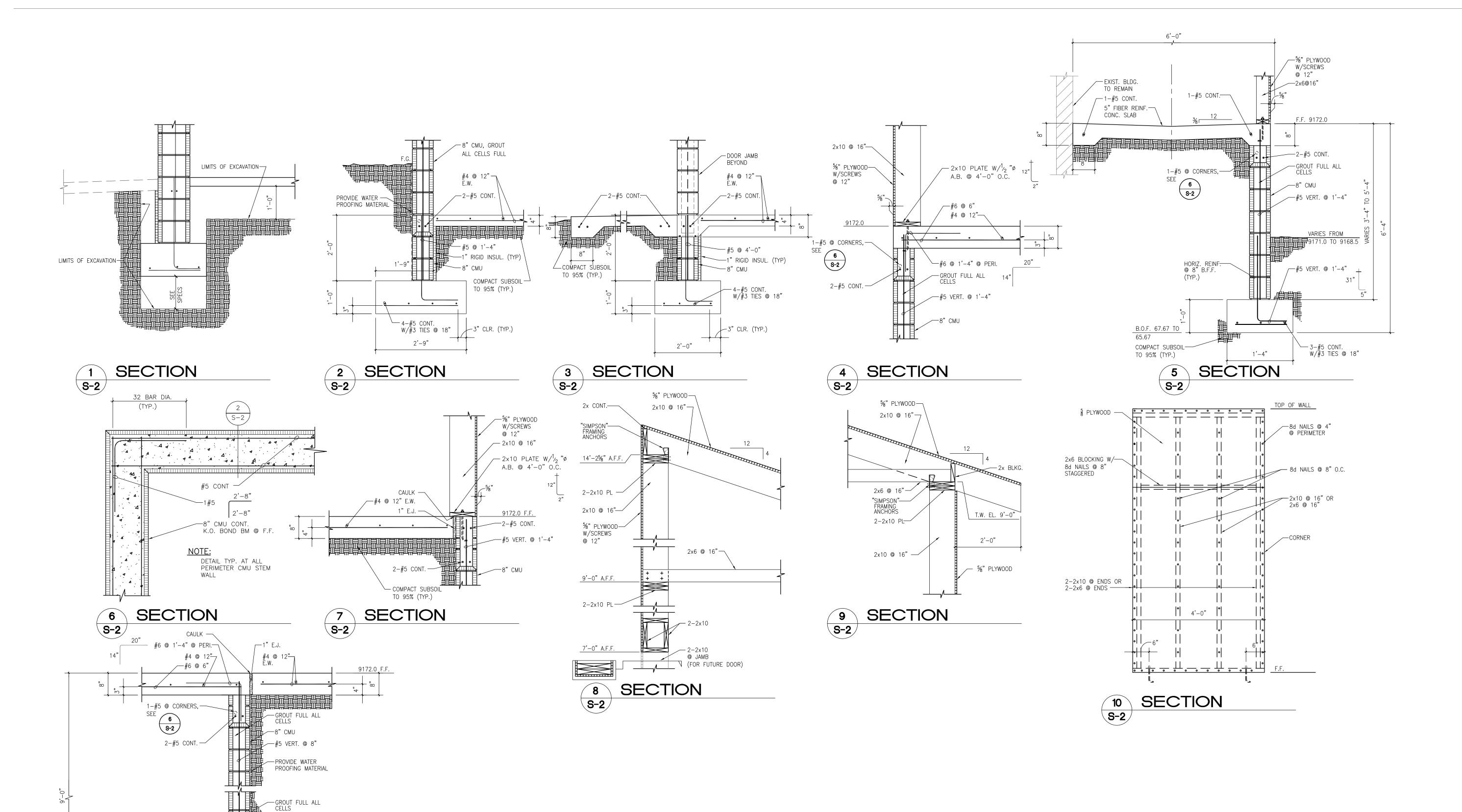
E-mail: ponceeng@aol.com

PREPARED FOR **ASTROPHYSICAL** RESEARCH CONSORTIUM SUNSPOT

NEV	W MEXICO
DATE	PHASE
7/4/07	PERMIT
	1



SHEET



—#6 VERT. @ 8"

— COMPACT SUBSOIL

---6-#5 CONT. @ TOP W/ #5 @ 1'-4"--7

TO 95% (TYP.)

-#6 VERT. @ 8"

4'-3"

HORIZ. REINF. 8" B.F.F.

SECTION

#4 @ 12<u>"</u> E.W.

2-#5 @ BOTT.—

11 S-2



PREPARED FOR ASTROPHYSICAL RESEARCH CONSORTIUM SUNSPOT NEW MEXICO

denton ventures, inc.
architecture engineering planning

2480 roadrunner parkway
las cruces, nm 88011
office 505.525.0241
fax 505.525.9405
email dvi@zianet.com

SHEET

D96 IFLOR

PONCE ENGINEERING, INC.

CONSULTING STRUCTURAL ENGINEERING

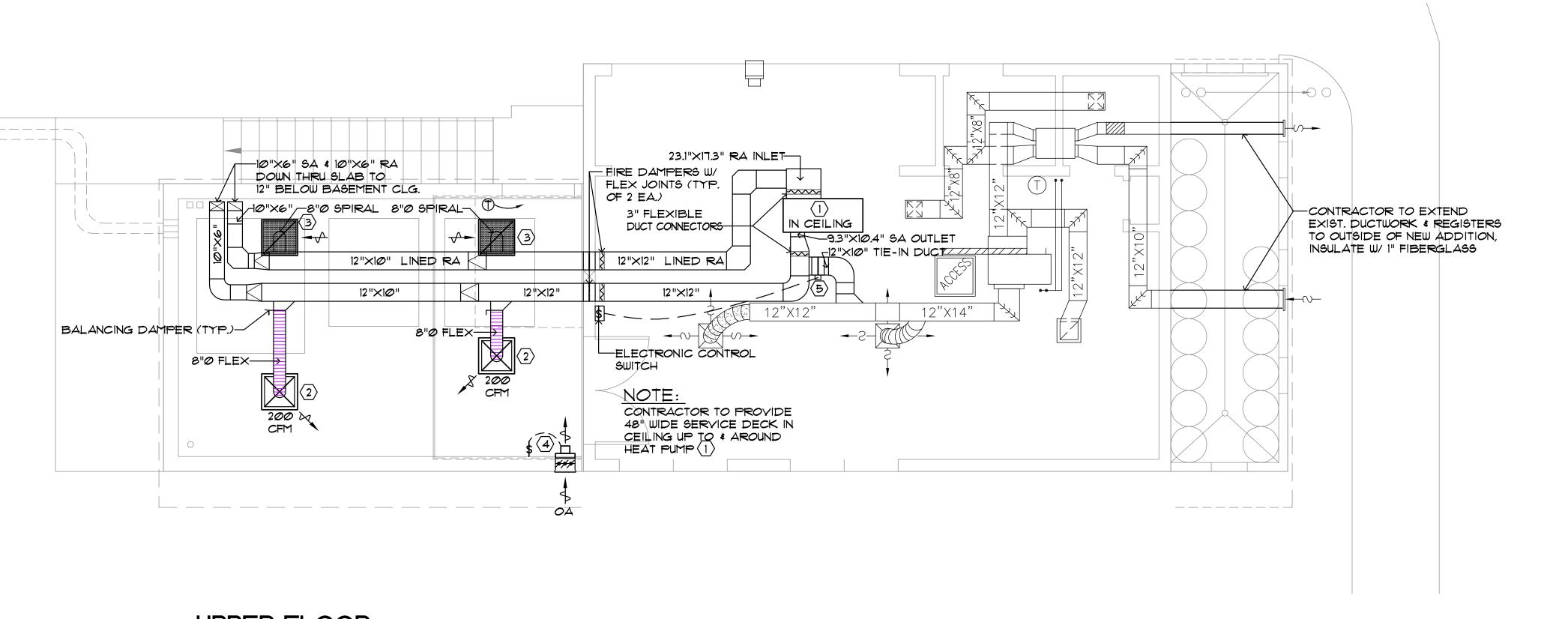
2417 WYOMING AVE.

EL PASO, TEXAS 79903

(915) 544–2810

E-mail: ponceeng@aol.com

DRAWN BY: ANGEL JIMENEZ

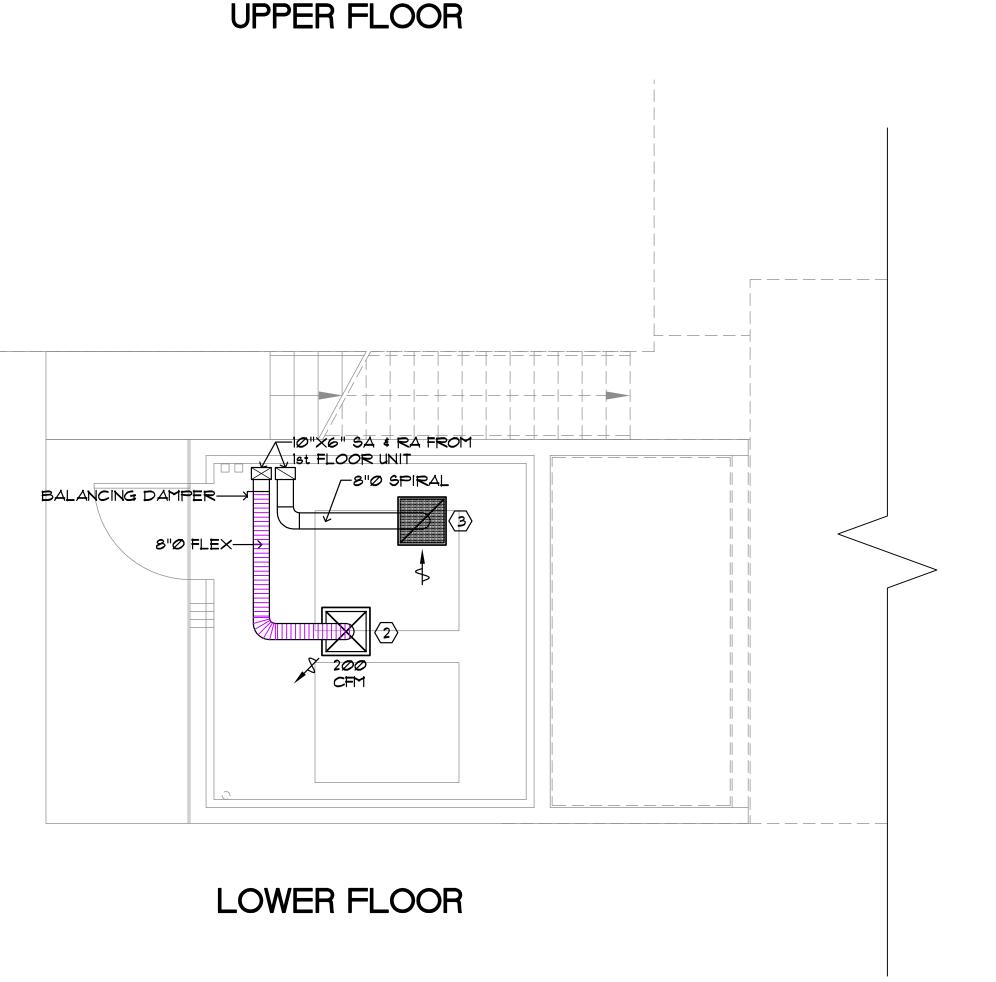


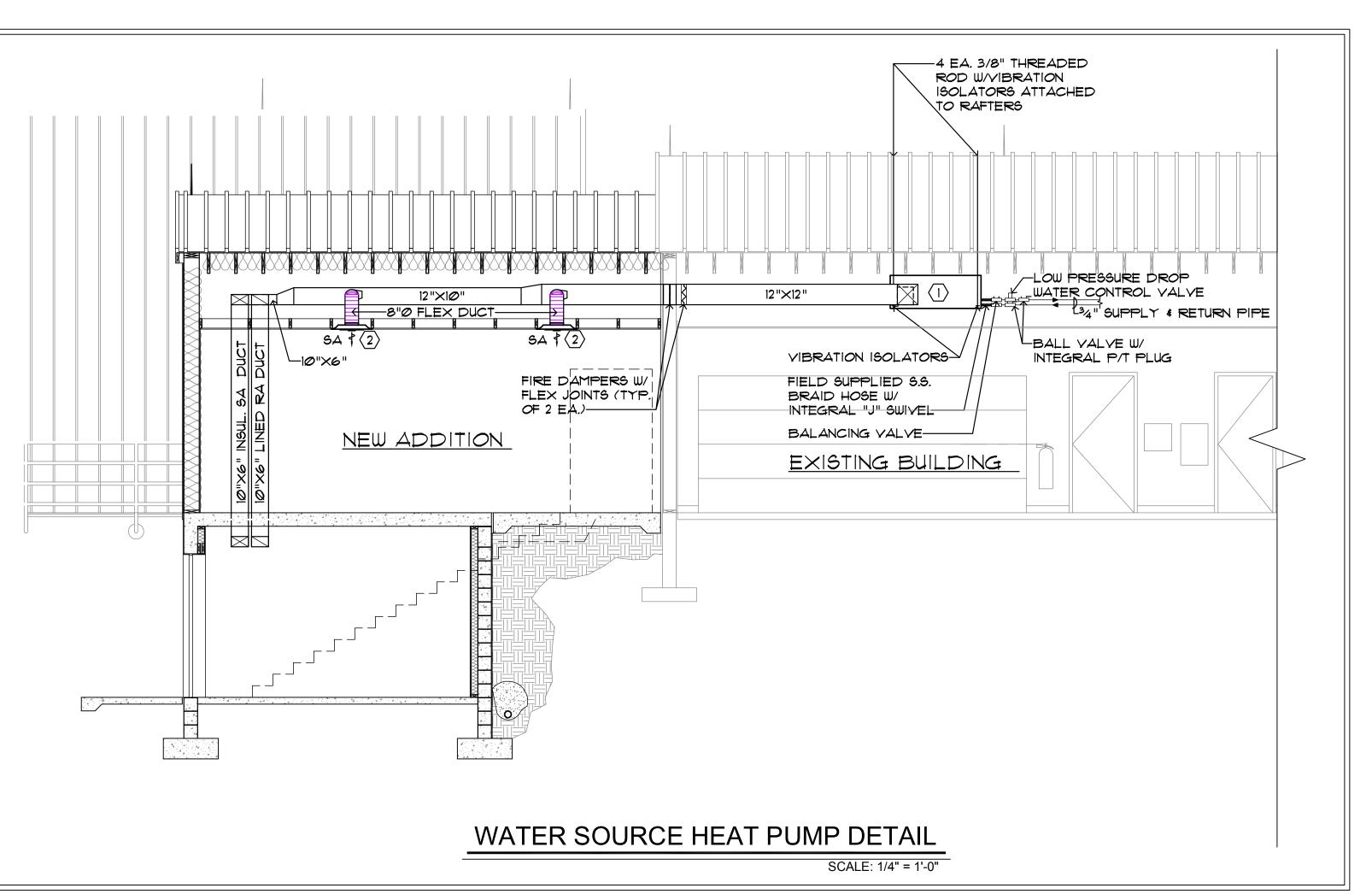
GENERAL HVAC NOTES

- 1.) MATCH ALL DIFFUSERS AND GRILLES TO CEILING PLAN, AVOID LIGHTS, ETC.
- 2.) MAXIMUM RUN OF FLEX DUCT 16 12 FT.
- 3.) ALL RETURN AIR DUCT TO BE LINED W/I" FIBERBOARD BACK TO UNIT.
- 4.) INSULATE ALL SUPPLY AIR DUCT (IN UNCONDITIONED SPACE & ON ROOFTOP)
 WITH I" FIBERGLASS AND VAPOR BARRIER.
- 5.) DUCTWORK TO MEET SMACNA REQUIREMENTS.
- 6.) ALL WORK TO MEET INTERNATIONAL MECHANICAL CODE 2003 EDITION CONTRACTOR TO TEST ADJUST & BALANCE HYAC SYSTEMS.
- 1.) ALL DUCT INSTALLATION SHALL MEET N.M. ENERGY CODE 2003 EDITION.
- 8.) ALL SUPPLY & RETURN DUCT INSULATION SHALL MEET MINIMUM R 8 VALUES.
- 9.) SMOKE DETECTORS TO BE INSTALLED MIN. OF 3 FT. AWAY FROM ALL HYAC REGISTERS AND CEILING FANS.

MECHANICAL EQUIPMENT SCHEDULE

- HEAT PUMP: WATER SOURCE HEAT PUMP, HIGH EFFICIENCY, SCROLL COMPRESSOR, THERMOSTATIC EXPANSION VALVE (TXV), RIGHT RETURN LEFT DISCHARGE, HORIZONTAL CONFIGURATION, NOMINAL 1-1/2 TON ARI RATED, 16.7 EER,
 3.6 COP, NOMINAL 600 CFM, 4.5 GPM, INSULATED CABINET INTERIOR, VIBRATION
 ISOLATORS, FAN MOTOR INSULATION & COMPRESSOR SPRINGS FOR SOUND
 ISOLATION, SHORT CYCLE TIME DELAY, 2" WIDE 95% PARTICULATE FILTERS,
 EMERGENCY 2 STAGE ELECTRIC HEAT OPTION, PROGRAMMABLE ELECTRONIC
 THERMOSTAT, 208/230 Y I PHASE, CARRIER 50RHS018ZCC3, COMPRESSORRLA 7.1 LRA 38.0, FM-FLA 1.0, TOTAL FLA 8.1, POWER SUPPLY: MCA-9.8, FUSE
 OR HACR BKR-15, TRANE, YORK, OAE, UNIT WEIGHT= 189 16f. NOTE: MODIFY HEAT
 PUMP TO FIT EXISTING TEMPERATURES, FOR OPERATION IN COLD TEMPERATURES.
- (2) <u>CEILING REGISTER:</u> HIGH CAPACITY FOR EVAPORATIVE COOLING, NO CENTER CORE, SLIDE GATE FOR WINTER SHUTDOWN, WHITE FINISH, STEEL CONSTRUCTION, AIR MATE MODEL 1020, OAE
- (3) <u>GRILLE:</u> RETURN AIR, SIZE 24"X24" OR AS SHOWN, ALUMINUM CONSTRUCTION, WHITE FINISH, PERFORATED, J&J AL-1230, TUTTLE & BAILEY, KRUEGER, OAE
- SIDE WALL PROPELLER FAN: VENTILATING SUPPLY AIR FAN, STEEL CONSTRUCTION, WALL MOUNT COLLAR, BACKDRAFT DAMPER W/DAMPER GUARD, 311 CFM, DIRECT DRIVE MOTOR, 1050 RPM, 1.5 SONES, SWITCHED SEPERATELY, GREENHECK MODEL 5-8, OAE
- (5) <u>ZONE DAMPER:</u> 12"X10" DAMPER W/ACTUATOR, OPOSED BLADE, NORMALLY CLOSED, 20 30 VAC, 2.5 VA, CLASS 2, JOHNSON CONTROLS ZOTDE-012X010, OAE





denton ventures, inc.
architecture • engineering • planning
2480 roadrunner parkway
las cruces, nm 88011
office 505.525.0241
fax 505.525.9405
email dvi@zianet.com

MECHANICAL PLAN

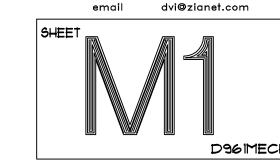


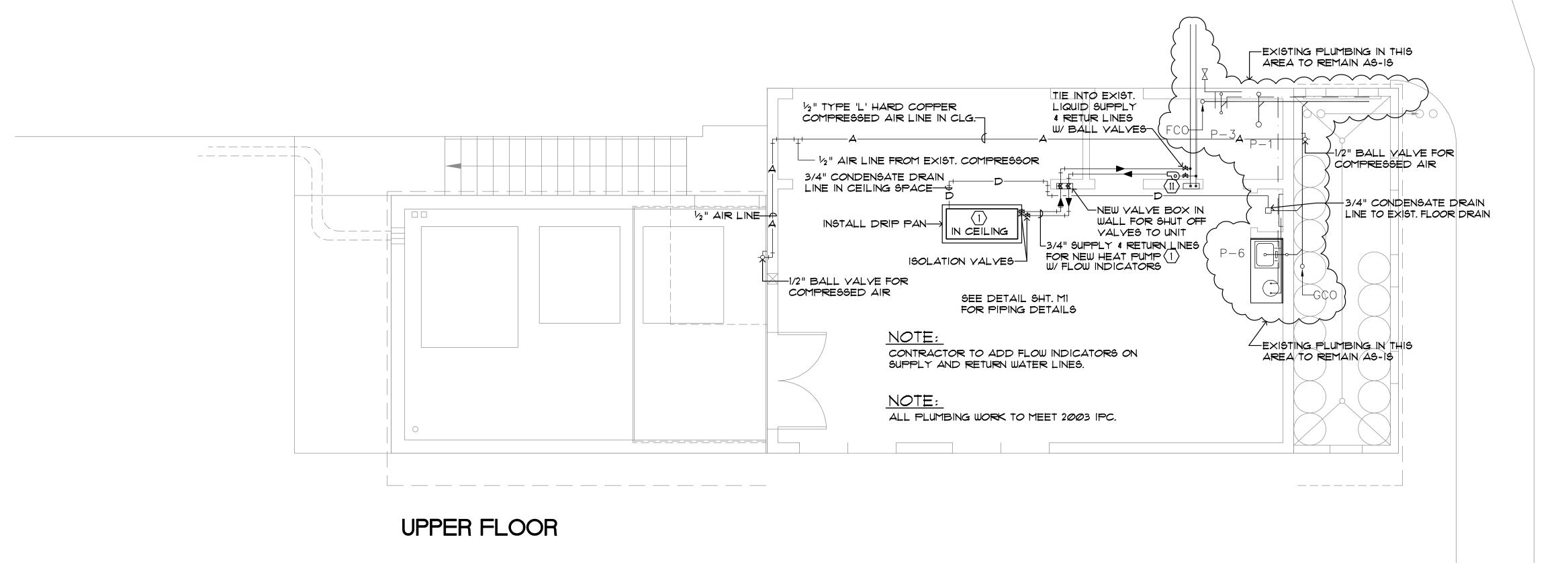
PREPARED FOR ASTROPHYSICAL RESEARCH CONSORTIUM SUNSPOT

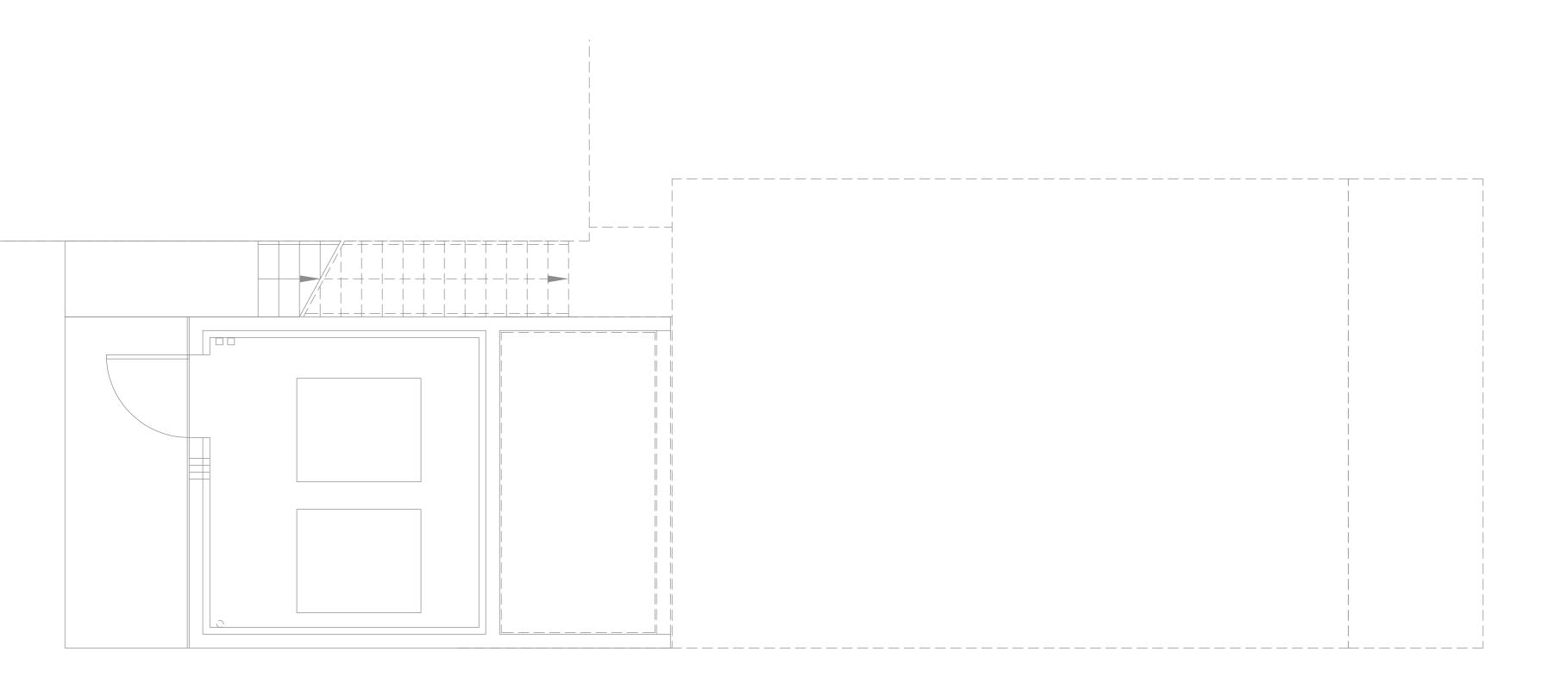
DATE PHASE

4/28/07 PRELIMINARY

7/15/07 PERMIT

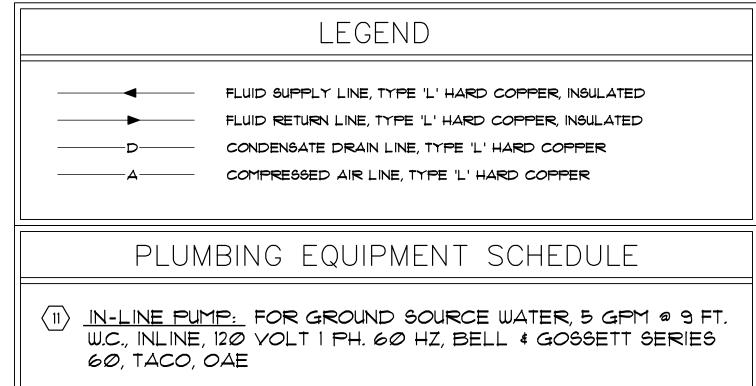






LOWER FLOOR







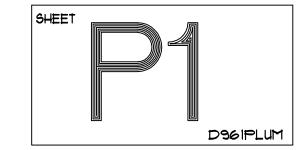
PREPARED FOR ASTROPHYSICAL RESEARCH CONSORTIUM SUNSPOT

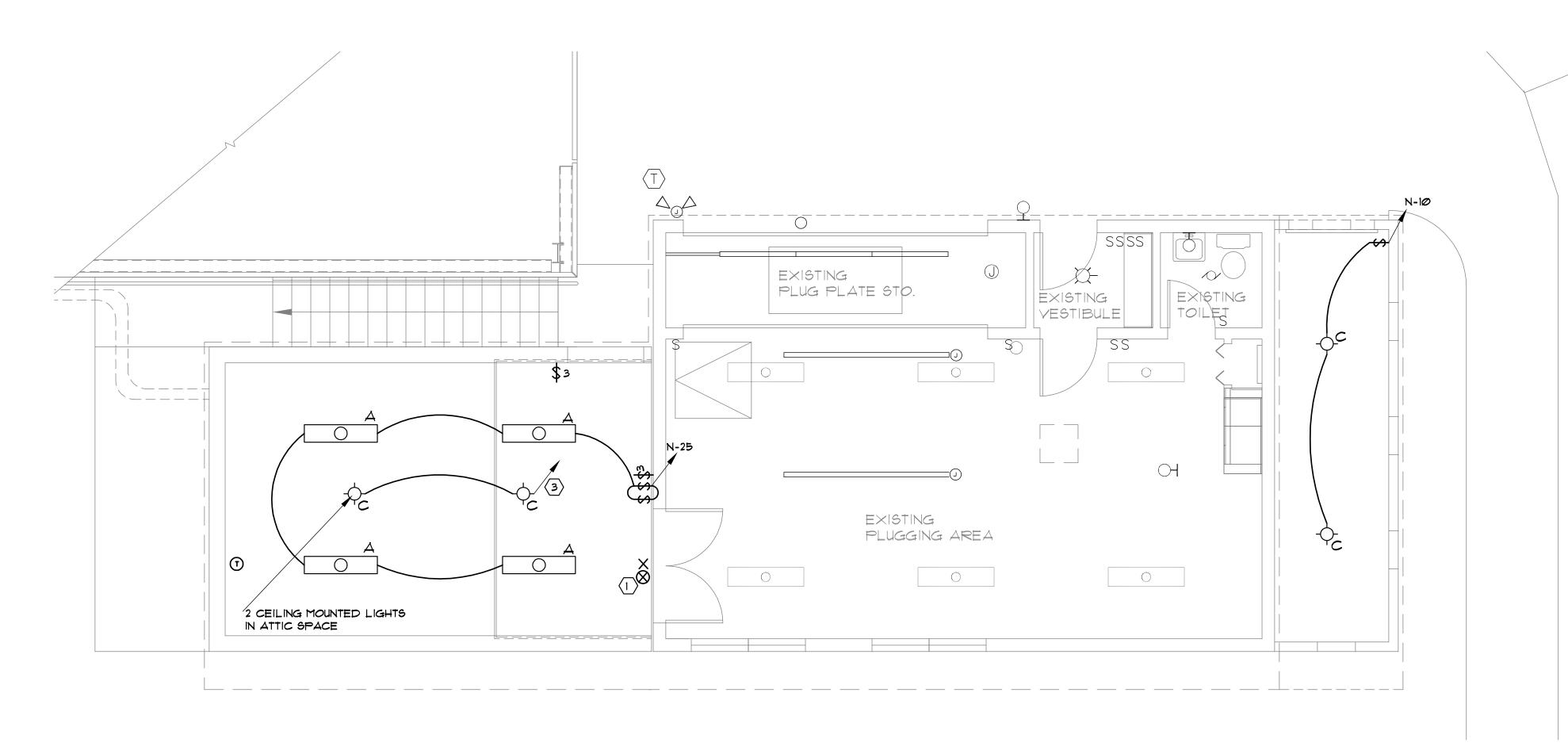
DATE PHASE

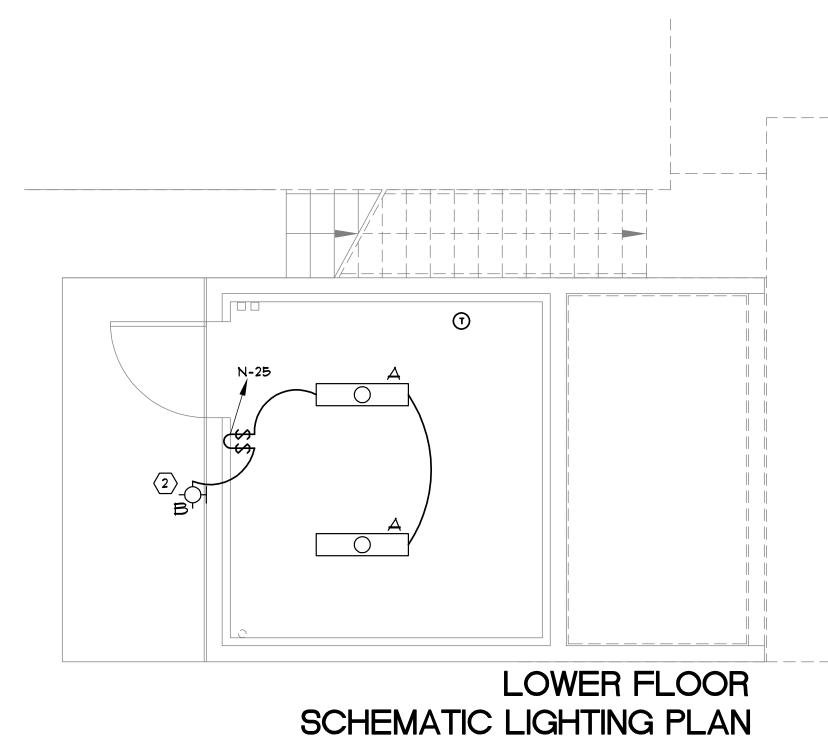
4/26/ØT PRELIMINARY

1/15/ØT PERMIT







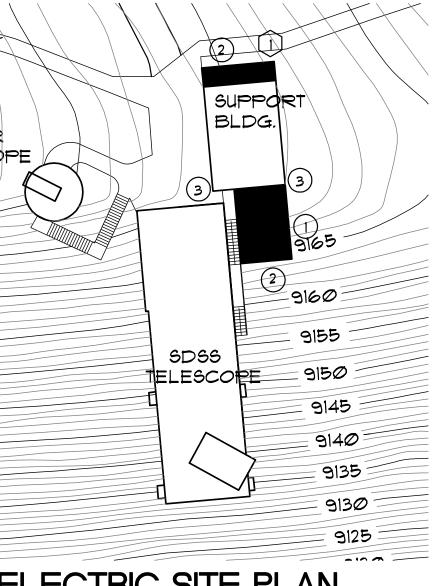


UPPER FLOOR SCHEMATIC LIGHTING PLAN

LIGHT FIXTURE SCHEDULE									
MARK MANUFACTURER	CATALOG NUMBER	BULBS							
A COLUMBIA B MATCH EXISTING	JT814-332F-FSA12.125-EB8UNV	4-F32T8T35							
C PRESCOLITE X DUAL LITE	9468-60 LXURWE	2-75W A-19 incl.							

● KEYED SITE PLAN NOTES

- EXISTING COUNTERPOISE WILL BE AFFECTED BY NEW CONSTRUCTION. EXTEND EXISTING COUNTERPOISE WIRING TO NEW INSTALLATION.
- INSTALL NEW COUNTERPOISE CONSISTING OF 4/0 CU TO 18"x18" COPPER PLATES BURIED 36" DEEP. CONNECT TO LIGHTNING PROTECTION SYSTEM, AND TO SLAB WWM REINFORCING SYSTEM. PROVIDE SPECIAL ELECTRICAL CONNECTIONS OF THE CONCRETE EMBEDDED WWM BY WRAPPING A #10 CU SOFT DRAWN WIRE AROUND EACH WWM (4 WRAPS) AT 12" INTERVALS AND AT ENDPOINTS FROM ONE END OF THE INTERSECTION TO THE OTHER. SILVER SOLDER EACH WRAPPING POINT. AT THE INTERSECTION OF THE SLAB EXPANSION JOINTS, PROVIDE A #10 WIRE AT 6" INTERVALS FROM THE WWM ACROSS THE EXPANSION JOINT TO THE ADJOINING WWM. WRAP AROUND THE WWM (4 TIMES) AND SILVER SOLDER EACH END. NOTIFY THE ARCHITECT FOR INSPECTION PRIOR TO POURING CONCRETE.
- . THE CONTRACTOR MUST WORK WITH THE OWNER TO LOCATE AND WHEN NECESSARY, RELOCATE EXISTING FACILITIES TO NOT DISTRUPT THE FUNCTION OF THE SITE.



ELECTRIC SITE PLAN

GENERAL ELECTRICAL NOTES

THESE PLANS ARE SCHEMATIC AND DO NOT SHOW THE EXACT LOCATIONS OF EQUIPMENT, CONDUIT ROUTING, ETC. THE CONTRACTOR MUST REFER TO ARCHITECTURAL AND MECHANICAL PLANS AND DETAILS TO OBTAIN COMPLETE INFORMATION.

- THE CONTRACTOR IS RESPONSIBLE FOR SEEING THAT NEC CLEARANCES AROUND AND ABOVE ELECTRICAL EQUIPMENT ARE MAINTAINED. SEE NEC 110.26 FOR SPECIFIC INFORMATION. SPECIFICALLY DO NOT ALLOW FOREIGN EQUIPMENT ABOYE PANELBOARDS AND INSTALL TO LEAVE AT LEAST 36" OF SPACE
- THE CONTRACTOR MAY INSTALL UP TO 9 CURRENT CARRYING CONDUCTORS IN A CONDUIT. LOADINGS ARE BASED ON THHN INSULATION AND DERATINGS FOR TEMPERATURE AND UP TO 9 $\,$ CONDUCTORS IN A CONDUIT.
- . ELECTRICAL DEVICE INSTALLATION SHALL COMPLY WITH THE ACCESSIBILITY CODES ADOPTED FOR NEW MEXICO. SPECIFICALLY APPLICABLE SWITCHES AND CONTROLS SHALL BE MOUNTED AT 44" A.F.F. TO THE BOTTOM OF THE BOX, AND APPLICABLE RECEPTACLES SHALL BE MOUNTED AT 15" AFF. TO THE BOTTOM OF THE BOX, UNLESS NOTED OTHERWISE. ELECTRICAL DEVICES ABOVE A COUNTERTOP OR OTHER OBSTRUCTION SHOULD COMPLY WITH ICC/ANSI 117.1-1998 SECTION
- EXTERIOR FIXTURES SPECIFIED ON THIS PROJECT COMPLY WITH THE STATE OF NEW MEXICO NIGHT SKY PROTECTION ACT. IF ALTERNATE FIXTURES ARE USED, THEY MUST COMPLY AS WELL.
- . WIRE SIZING SHALL COMPLY WITH THE STATE STANDARDS FOR VOLTAGE DROP.
- THIS BUILDING REQUIRES I EXIT, THEREFOR EMERGENCY LIGHTING IS NOT REQUIRED.

■ KEYED LIGHTING PLAN NOTES

- CONNECT EXIT LIGHTING TO NEAREST UNSWITCHED LIGHTING CIRCUIT SERVING THE SAME IMMEDIATE AREA.
- 2. EXTERIOR FIXTURE TO MATCH EXISTING FIXTURES

3. CEILING LIGHTS IN ATTIC. PROVIDE A SWITCH IN THE ATTIC AT THE ENTRANCE..

ELECTRICAL LEGEND DUPLEX, CONVENIENCE OUTLET LIGHT FIXTURE, CEILING MT'D

DUPLEX, GFCI OUTLET

FLOOR OUTLET

JUNCTION BOX

3-WAY SWITCH

WALL MOUNTED

THERMOSTAT

EXHAUST FAN

TELEVISION / HI-FI

DATA / TELEPHONE

---- CONDUIT IN SLAB OR FLOOR

TIC MARKS INDICATE HOT, NEUTRAL

SWITCHED LEG, & GROUND

SWITCH, SINGLE POLE

DUPLEXWEATHEROOF OUTLET

4-PLEX CONVENIENCE OUTLET

- LIGHT FIXTURE, WALL MT'D
- LIGHT FIXTURE, RECESSED LIGHT FIXTURE, PORCELAIN SOCKET
- FULL SPECTRUM FLUORESCENT LAMPS, LAY-IN CEILING TYPE. EMERGENCY LIGHTING

CEILING FAN W/LIGHT

FULL SPECTRUM FLUORESCENT

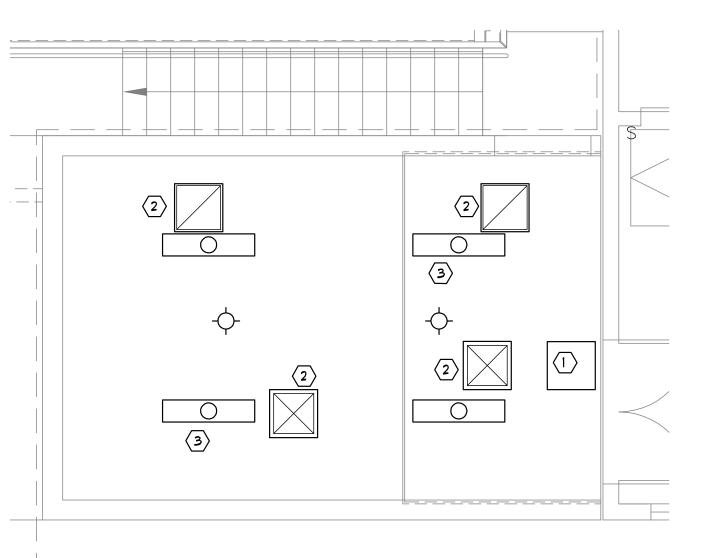
FULL SPECTRUM FLUORESCENT

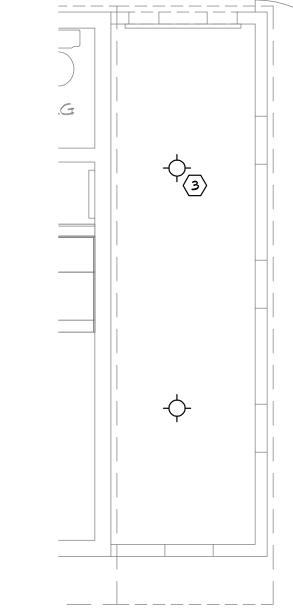
- EXIT SIGN
 - CEILING FAN NO LIGHT

CEILING MOUNTED

- FULL SPECTRUM FLUORESCENT COVE LIGHT
- WALL SLOT
 - SPOTLIGHT
 - VERIFY MOUNTING HT. OF ALL WALL MOUNTED DEVICES WITH OWNER 2. COORDINATE WITH MECHANICAL FOR ADDITIONAL REQUIREMENTS.

3. +44 INDICATES SPECIAL MTG. HEIGHT IN INCHES ABOVE FLOOR TO CENTER.





APACHE POINT

PREPARED FOR

ASTROPHYSICAL

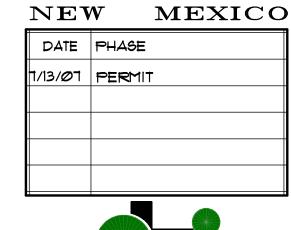
RESEARCH CONSORTIUM SUNSPOT

1. FLOOR REFLECTED CEILING PLAN

REFLECTED CEILING NOTES

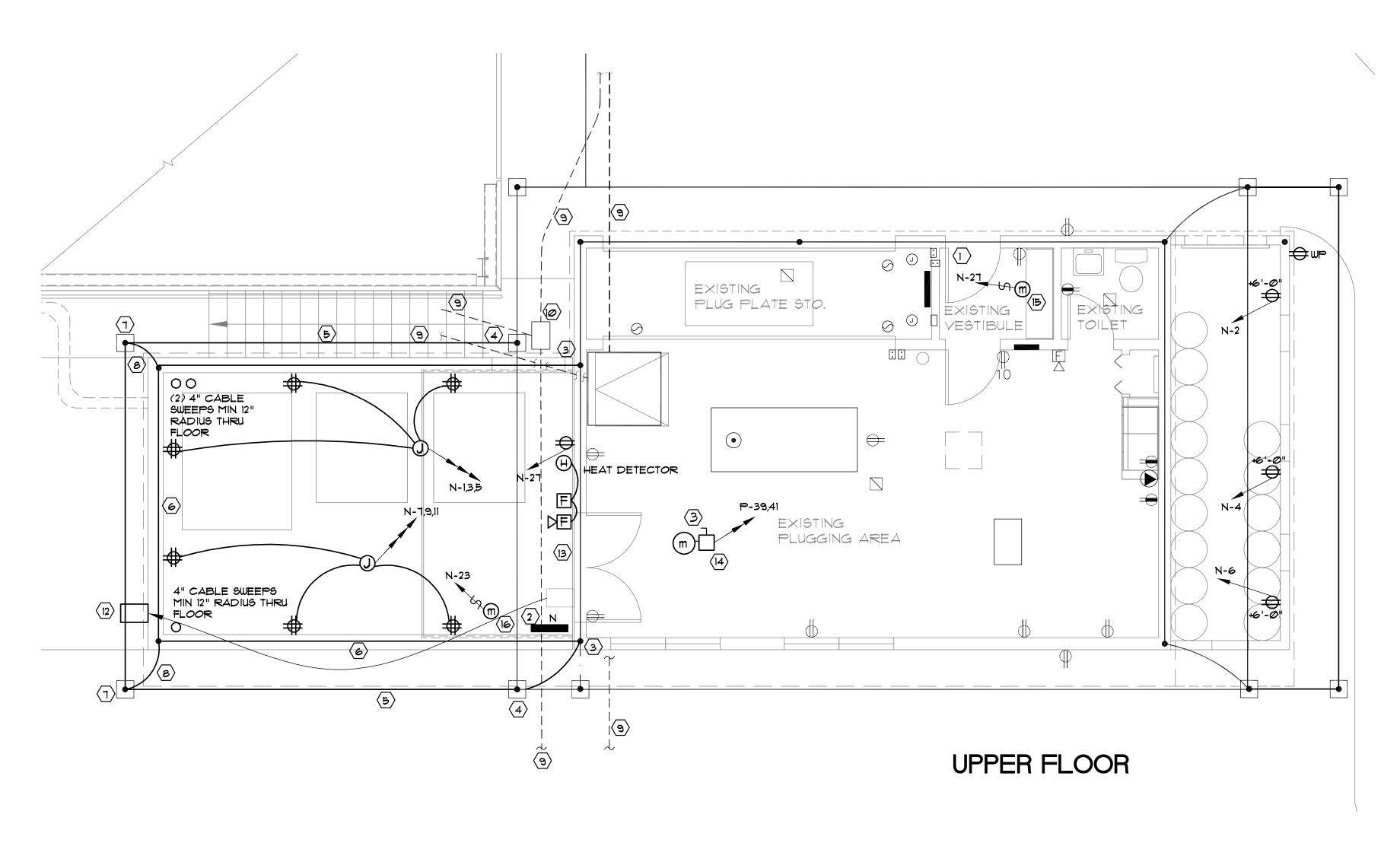
- 24"x24" ACCESS HATCH
- MECHANICAL OUTLETS SEE SHEET MI.
- 3. LIGHT FIXTURES SEE SHEET E1.

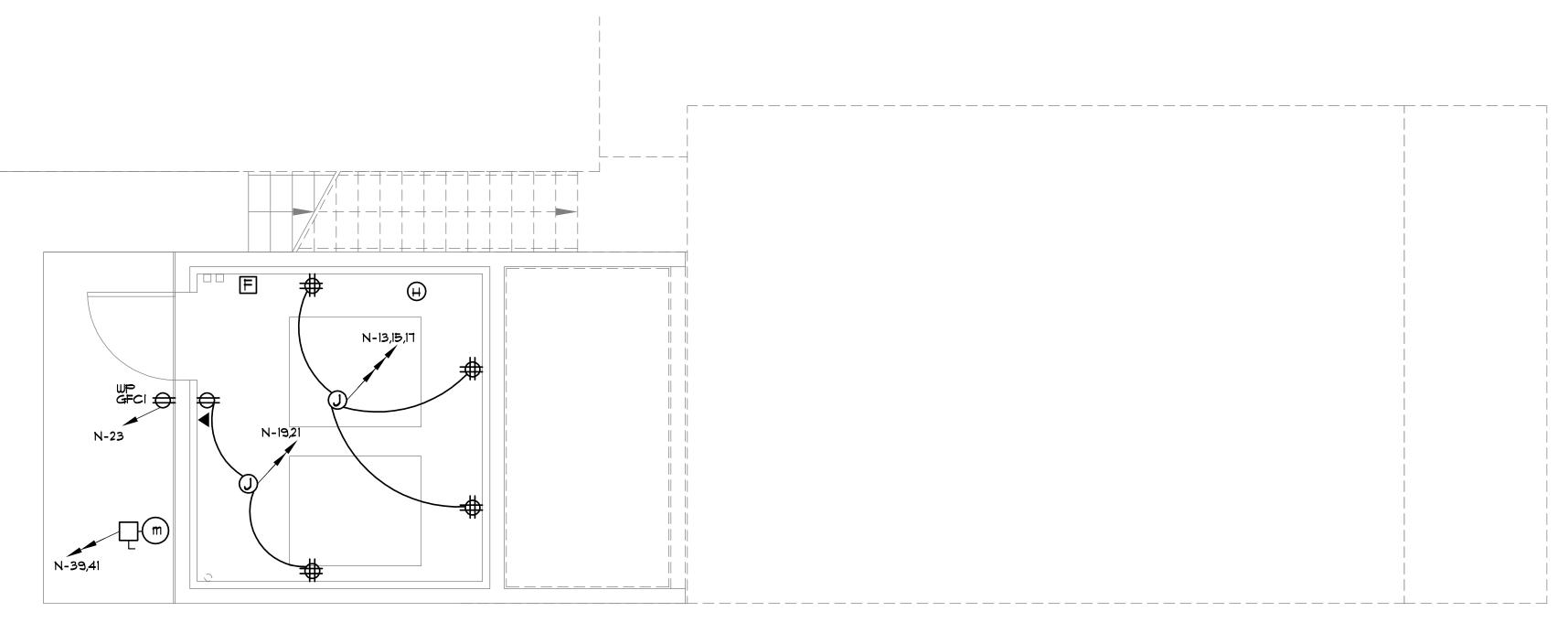
2. FLOOR REFLECTED CEILING PLAN



denton ventures, inc. 2480 roadrunner parkway las cruces, nm 88011 office 505.525.0241 505.525.9405 dvi@zianet.com

REFLECTED CEILING PLAN AND SCHEMATIC LIGHTING PLAN





LOWER FLOOR

★ KEYED POWER PLAN NOTES

- I. EXISTING PANEL SB LOCATED HERE.
- PROPOSED LOCATION OF NEW PANEL N.
- B. EXISTING LIGHTNING ROD WITH DOWNLEAD TO COUNTERPOISE.
 NEW LIGHTNING PROTECTION CONDUCTOR TO BE CONNECTED
- 4. EXISTING DOWNLEAD CONNECTION TO COUNTERPOISE AND TO 18"X18" COPPER PLATE THOMPOSON #233 OR EQUIVALENT. PLATE IS BURIED 36" DEEP.
- 5. 4/0 CU COUNTERPOISE BURIED 36" DEEP.
- 6. *2 CU LIGHTNING PROTECTION CONDUCTOR.
- NEW EXOTHERMIC WELDED CONNECTION FROM DOWNLEAD TO COUNTERPOISE, AND TO 18"X18" COPPER PLATE, THOMPSON #233 OR EQUIVALENT.
- B. LIGHTNING PROTECTION SYSTEM AIR TERMINAL 18". WITH *2 COPPER LIGHTNING DOWNLEAD.
- 9. NUMEROUS EXISTING UTILITIES EXIST IN THE AREA OF NEW CONSTRUCTION. THE CONTRACTOR MUST WORK WITH THE OWNER TO LOCATE AND WHEN NECESSARY, RELOCATE FACILITIES TO NOT DISTRUPT THE FUNCTION OF THE SITE.
- 10. EXISTING PULLBOX FOR EXISTING UTILITIES. SEE #9 ABOVE.
- 11. NEW HEAT PUMP WITH DISCONNECT AND WP GFCI MAINTENANCE RECEPTACLE ADJACENT. PROVIDE SUFFICIENT CONDUIT FOR MECHANICAL TO INSTLL LOW VOLTAGE CONTROL WIRING.
- 12. RELOCATE VIDEO CAMERA TO NEW EXTERIOR WALL.
- 13. CONNECT FIRE ALARM DEVICES TO EXISTING FIRE ALARM
- 14. HEAT PUMP IN ATTIC OF EXISTING BLDG. PROVIDE DISCONNECTED MAINTENANCE RECEPTACLE.
- 15. 1/4 HP WATER PUMP. SEE MECH PLANS SPECIFIC INFORMATION.
- 16. FRACTIONAL HP EXHAUST FAN. SEE MECHANICAL PLANS FOR SPECIFIC INFORMATION.

SERVICE ENTRANCE / ONE LINE DIAGRAM NOTES

- EXISTING 4-500 CU THHN/THWN WITH #2 GROUND. NO CHANGE.
- 2. EXISTING 120/208 YOLT 400 AMP PANEL SB.
- 3. ADD A 150/3 BREAKER TO FEED NEW PANEL N.
- 4. 4-1/0 CU THHN/THWN WITH *6 GROUND IN 2" CONDUIT.

 5. NEW 120/208 YOLT 200 AMP M.L.O. PANEL N. SEE PANEL
- SCHEDULE FOR SPECIFIC INFORMATION.

 6. EXISTING GROUNDING. NO CHANGE.

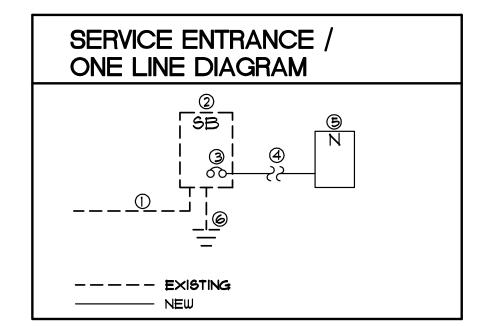
LOAD SUMMARY

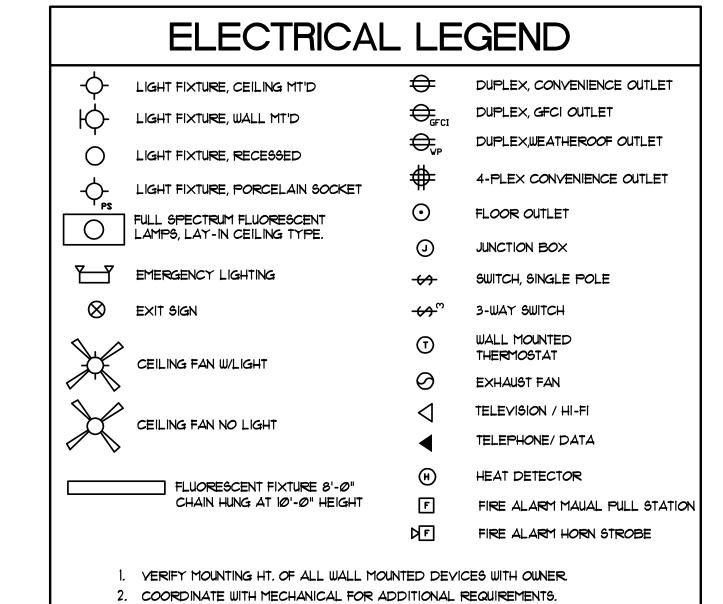
PANEL LOAD EXISTING LOAD PER PLANS 83,880VA/233 AMPS NEW LOAD37,440VA/104 AMPS

TOTAL BUILDING LOAD 121,320VA/334 AMPS

FAULT CURRENT CALCULATIONS

150 KVA 120/208 VOLT TRANSFORMER 2.5%Z
150/(.208x1.732) = 416 AMPS
416/.025 = 16,640 AMPS FAULT CURRENT
BECAUSE OF FEEDER IMPEDANCE FAULT CURRENTS
ARE REDUCED TO LESS THAN 10 KA. NEW GEAR
MUST MATCH EXISTING AIC RATINGS.





3. +44 INDICATES SPECIAL MTG. HEIGHT IN INCHES ABOVE FLOOR TO CENTER

	<u> </u>	<u> </u>	<u>VEL</u>	<u>_B</u>	<u>C</u>	<u>/</u>	<u> </u>	<u>)</u>	<u>3C</u>	<u>出</u>	E	DL		<u> </u>	
		PAN	EL: N							LOC	AT	ION:			
	SERVI	CE: 12	20/208	<i>yo</i>	LTE) ,	3 PH	ASE,	4 l	NIRE	S.N	l. 2	00 A	MP m.l.c	o.
CIRCUIT DESCRIPTION	A	WATTE	, c	A	P	UIRE SIZE			WIRE SIZE	A	P	Δ	WATTS	3 C	CIRCUIT DESCRIPTIO
ET ENCLOSURE QUAD	+^			20		12],	⊭ 2	12	20	1				LN2 RECEPTACLE
	////	7///			H	Ī	3 _	4	Ť		İ		////		LN2 RECEPTACLE
			1				5	6			1			////	LN2 RECEPTACLE
				1			1	8	1		\parallel	////			LN2 RECEPTACLE
					Ш		9 (10			1	////			LN2 LIGHTING
	1///				$\parallel \parallel$			12			1				
							13	14			$\top \!$,,,,,			
					Ш		15 (16			1		1		
							<u> </u>	18			1				
1					Ш		19	20			\parallel	7777			
ET DUPLEX	////				Ш		21	22			1			Y ////	
ET WPGFCI							23 (24			1				
ET LIGHTING					Ш		25	26			\top	////			
WATER PUMP	////	1		1	Ш	V	27	28					////		
					Ш	'	29 /	30			1				
							31	32			Τſ				
							33⁄	34							
			1				35 /	36							
				1	1		37	38			\parallel				
HYAC				15	M	14	39⁄	40			1				
П			1		2		41 (42		V	1			1	
TOTAL WATTS "A"															
TOTAL WATTS "B"															
TOTAL WATTS "C"											_ {				
TOTAL				1											

APACKE POINT

PREPARED FOR ASTROPHYSICAL RESEARCH CONSORTIUM SUNSPOTNEW MEXICO

DATE PHASE

1/13/ØT PERMIT





SCHEMATIC POWER PLAN