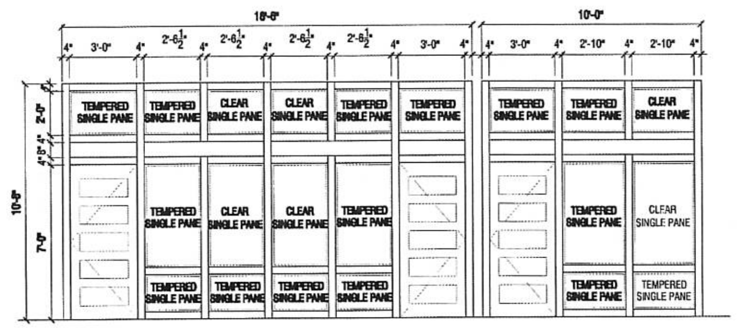
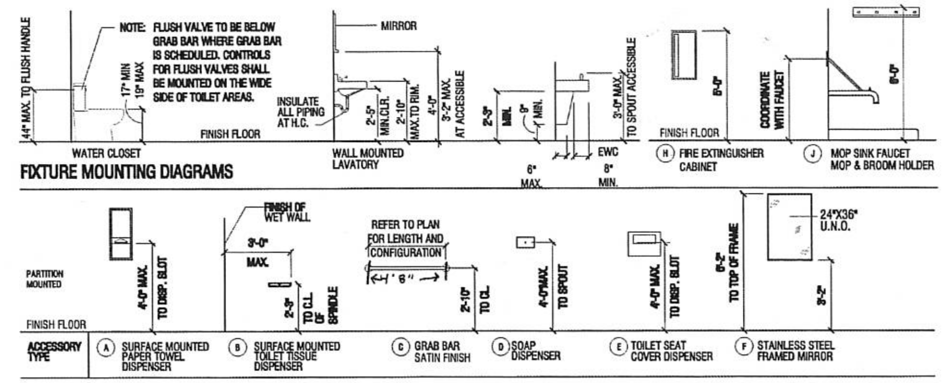
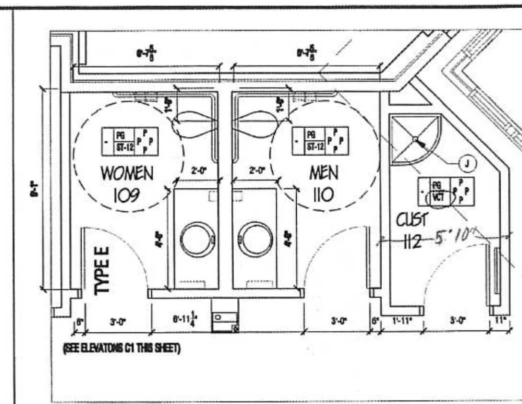


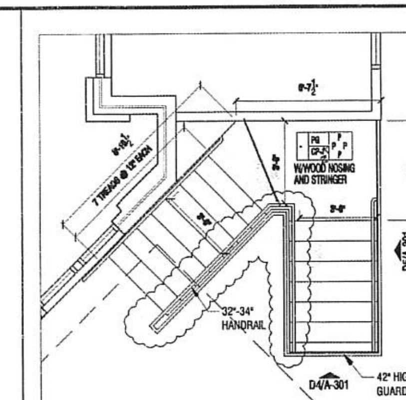
D1	CONFERENCE AND OFFICE WINDOW ELEVATION
1/4" = 1'-0"	



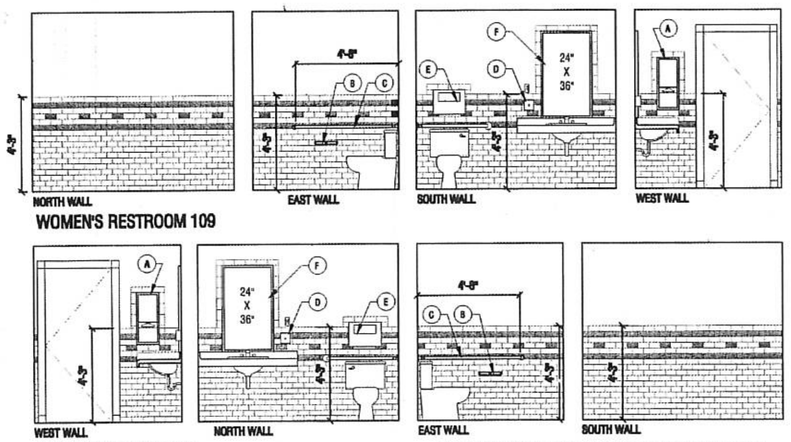
D2	FIXTURE AND ACCESSORY MOUNTING HEIGHTS
1/4" = 1'-0"	



D4	ENLARGED RESTROOM PLAN
1/4" = 1'-0"	



D5	ENLARGED STAIR PLAN
1/4" = 1'-0"	



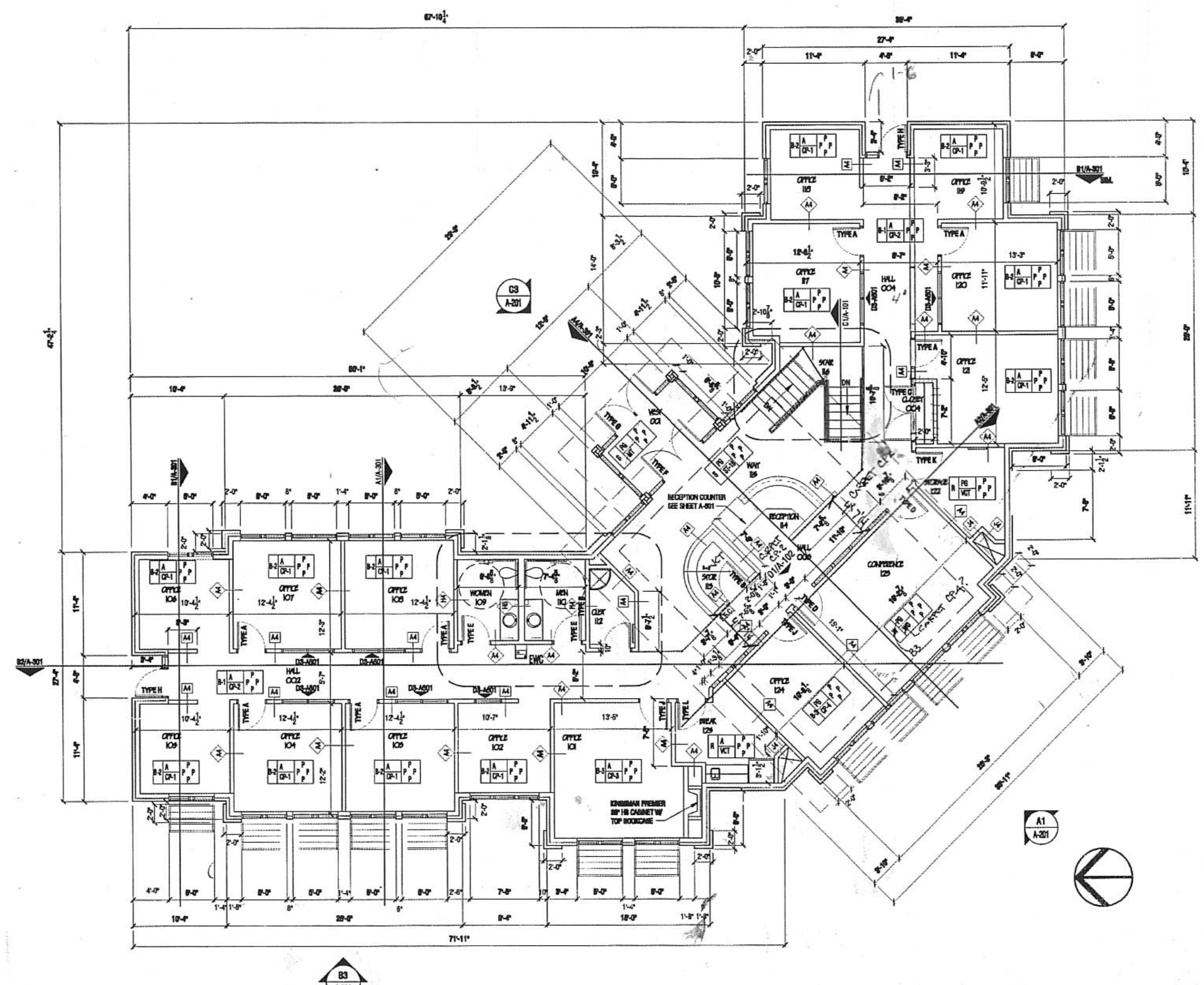
C1	RESTROOM ELEVATIONS
1/4" = 1'-0"	

WALL ASSEMBLIES

NOTE: EXTERIOR WALLS WOOD STUD FRAMING, INTERIOR WALLS STEEL STUD FRAMING.

A4 TYPICAL	5/8" GYP BOARD 3 5/8" MTL STUD, 20 GA BATT INSULATION (SOUND CONTROL WHERE OCCURS) 5/8" GYP BOARD
A5 TYPICAL	5/8" GYP BOARD 2x4 STUD FURRING R-11 BATT INSULATION AIR SPACE (VARIES) 8" CMU WALL
H6 TYPICAL	RESTROOM SIDE CERAMIC TILE CEMENTITIOUS BACKER BOARD 6" MTL STUD, 20 GA BATT INSULATION (SOUND CONTROL WHERE OCCURS) CEMENTITIOUS BACKER BOARD CERAMIC TILE RESTROOM SIDE
H4 TYPICAL	RESTROOM SIDE CERAMIC TILE CEMENTITIOUS BACKER BOARD 3 5/8" MTL STUD, 20 GA BATT INSULATION (SOUND CONTROL WHERE OCCURS) 5/8" GYP BOARD
J4 TYPICAL	5/8" GYP BOARD 3 5/8" MTL STUD, 20 GA MECHANICAL CHASE SIDE
□ WITH OUT BATT INSULATION	◇ WITH BATT INSULATION (SOUND CONTROL)

A1	WALL ASSEMBLIES



A2	MAIN LEVEL FLOOR PLAN

FINISH MATERIALS LEGEND

CEILING · BASE · WALLS (ORIENT W/ PLAN) · FLOORING

BASE:
- W = 6" HARDWOOD BASE
- B = 6" STONE BASE
- B-1 = 6" CARPET COLOR (1)
- B-2 = 6" CARPET COLOR (2)
- B-3 = 6" CARPET
- R = RUBBER BASE

FLOORING:
- CP-1 = CARPET COLOR (1)
- CP-2 = CARPET COLOR (2)
- CP-3 = CARPET COLOR (3)
- CP-4 = CARPET COLOR (4)
- VCT = VINYL COMPOSITION TILE
- WD = WOOD FLOORING
- ST-12 = 12" STONE TILE
- ST-18 = 18" STONE TILE @45° W/18" BORDER (ALL STONE TO BE BUTT JOINT)
- SC = SEALED CONCRETE
- WT = WALK-OFF MAT W/18" STONE BORDER

CEILING:
- PG = PAINTED GYPSUM BOARD
- A = ACOUSTIC PANEL CEILING SYSTEM SEE REFLECTED CLG PLAN FOR LOCATION

WALLS:
- P = PAINTED GYPSUM BOARD (WALLS IN PUBLIC AREAS TO BE VISITAN FINISH, COORDINATE W/INTERIOR DESIGNER) (WALLS IN OFFICES TO BE VINYL WALL COVERING, COORDINATE W/INTERIOR DESIGNER)

Public Restrooms above wainscot only.

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255 SOUTH 300 WEST LOGAN UT 84321
230 EAST SOUTH TEMPLE SLC UT 84111

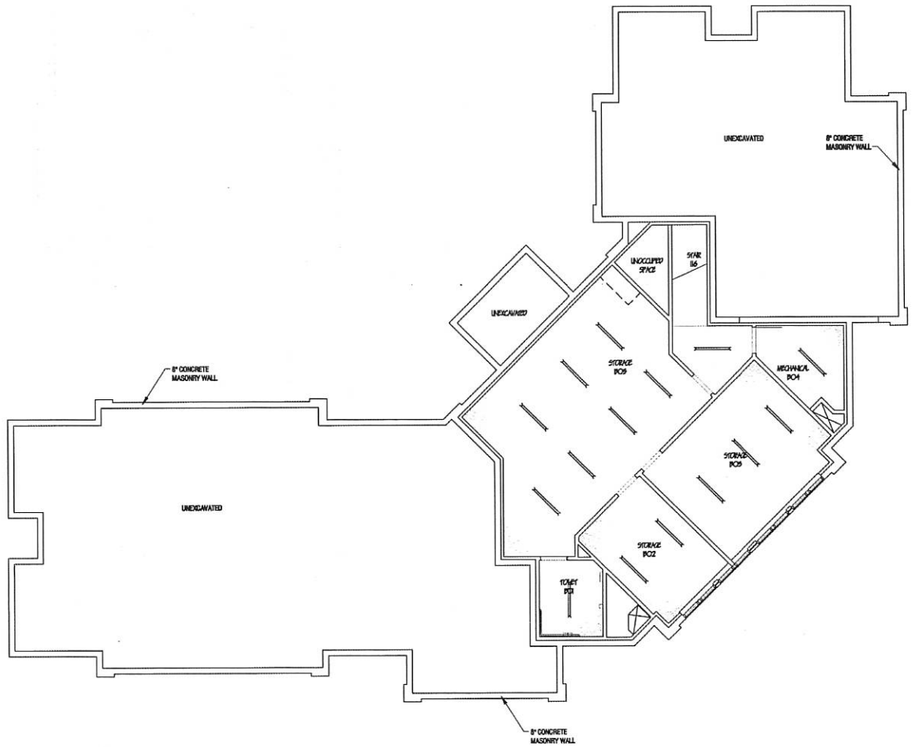
PROTECTIVE INSURANCE-NEW OFFICE BUILDING
LOGAN, UTAH

Mark:	Date:	Description:
1	AUG. 28, 2007	AUGUST 9, 2007 LOGAN CITY COMMENT, RESPONSES

STATE OF UTAH REGISTERED ARCHITECT 6-15-07

Project No:	46018
Dwg. File:	
Owner's No:	
Drawn By:	ST
Checked By:	ST
Issued:	7-12-07

FIRST FLOOR PLAN



CEILING SYMBOLS	
GYP. BD. CEILING	SMOKE DETECTOR
SUPPLY AIR	EXIT
RETURN AIR	WALL WASHER
EXHAUST AIR	PENDANT TYPE LIGHT FIXTURE
ACCESS PANEL	WALL MOUNTED LIGHT FIXTURE
FLUORESCENT LIGHT (INDIRECT)	DOWNLIGHT
	STRIP LIGHT

CEILING NOTES

1. FOR LAY IN ACOUSTICAL TILE CEILING SYSTEM SEISMIC BRACING REQUIREMENTS SEE A4.02/02E & C8
2. LOCATIONS OF SHORT TILES OR TILE STARTING LENGTHS INDICATED IN TILES WITH DIMENSIONS, IF MORE THAN 1 TILE THAN EQUAL SIZE TILE - (¾ MEANS REMAINDER DIMENSION LEFT AFTER LAYOUT)
3. FIRE SPRINKLER LOCATIONS ARE NOT INDICATED
4. ALL CEILINGS SHALL COMPLY WITH IBC REQUIREMENTS FOR LAY IN CEILINGS IN SEISMIC USE GROUP "I", DESIGN CATEGORY "E"

A1 BASEMENT REFLECTED CEILING PLAN

A5 CEILING LEGEND

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295 SOUTH 900 WEST LOGAN UT 84321
220 EAST SOUTH TEMPLE SLC UT 84111

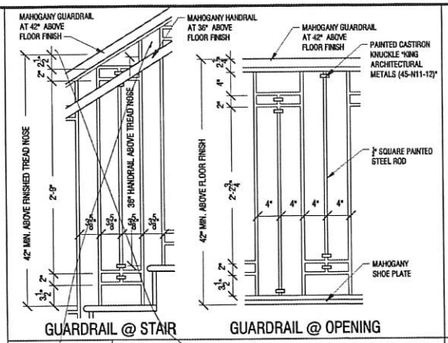
PROTECTIVE INSURANCE-NEW OFFICE BUILDING
LOGAN, UTAH

Mark:	Date:	Description:
1	AUG. 28, 2007	AUGUST 6, 2007 LOGAN CITY COMMENT RESPONSES

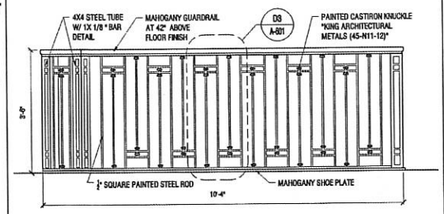
STATE OF UTAH — 6-15-07 — REGISTERED ARCHITECT

Project No:	46018
Dwg. File:	
Owner's No:	
Drawn By:	ST
Checked By:	ST
Issued:	7-12-07

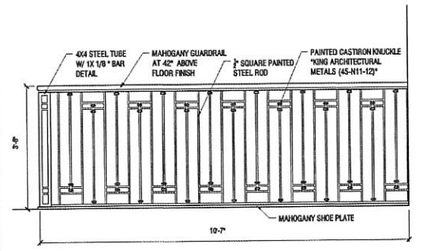
BASEMENT REFLECTED CEILING PLAN



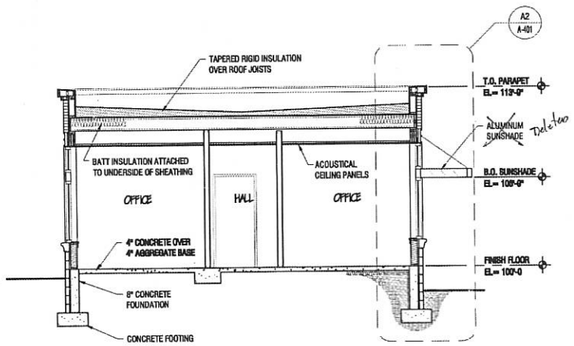
D3	GUARDRAIL DETAIL
1" = 1'-0"	



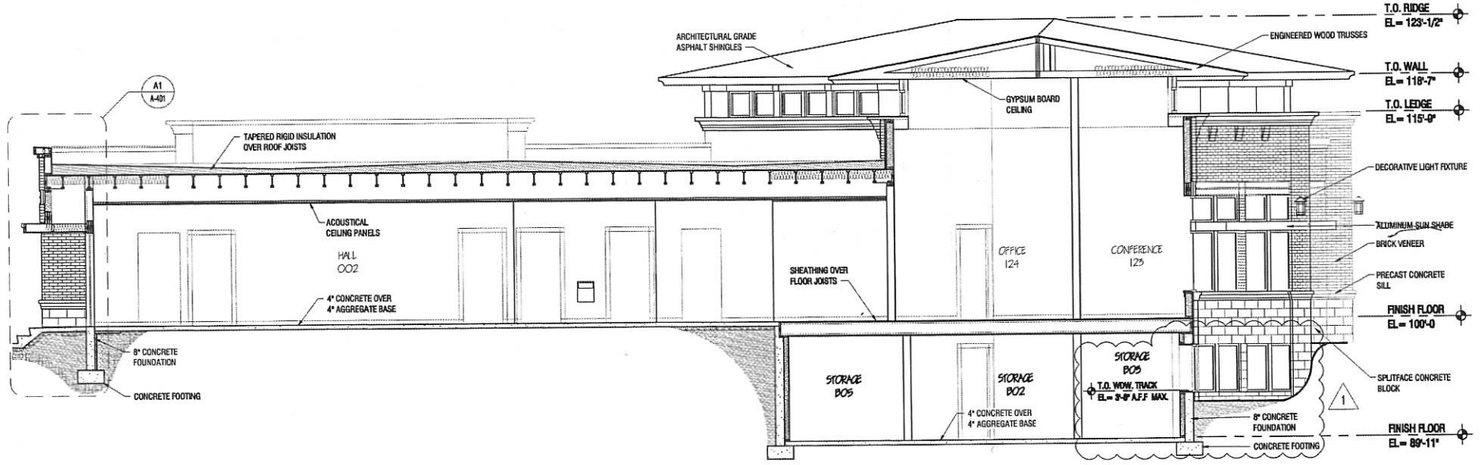
D4	GUARDRAIL ELEVATION
1/2" = 1'-0"	



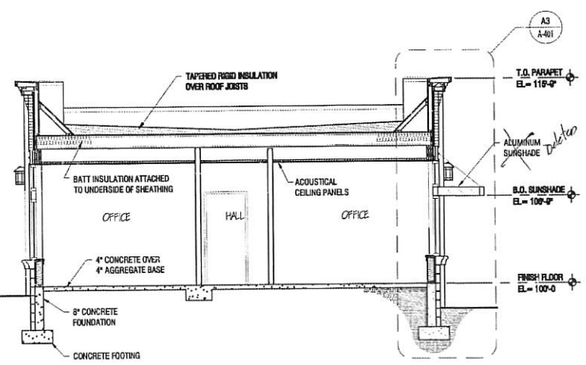
D5	GUARDRAIL ELEVATION
1/2" = 1'-0"	



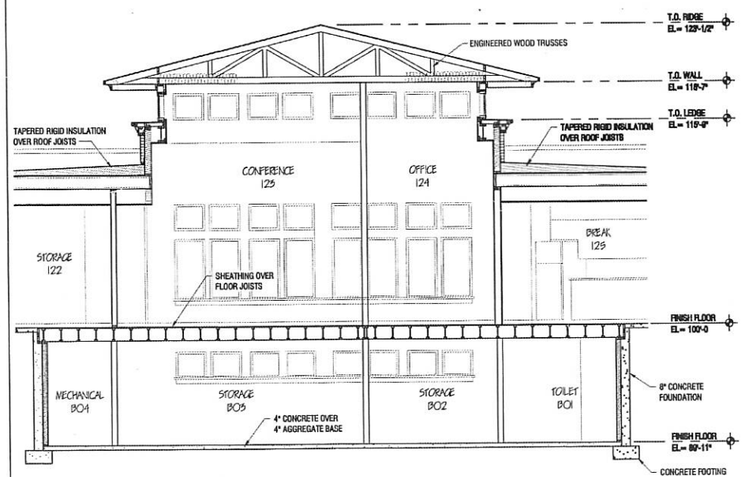
B1	BUILDING SECTIONS
3/16" = 1'-0"	



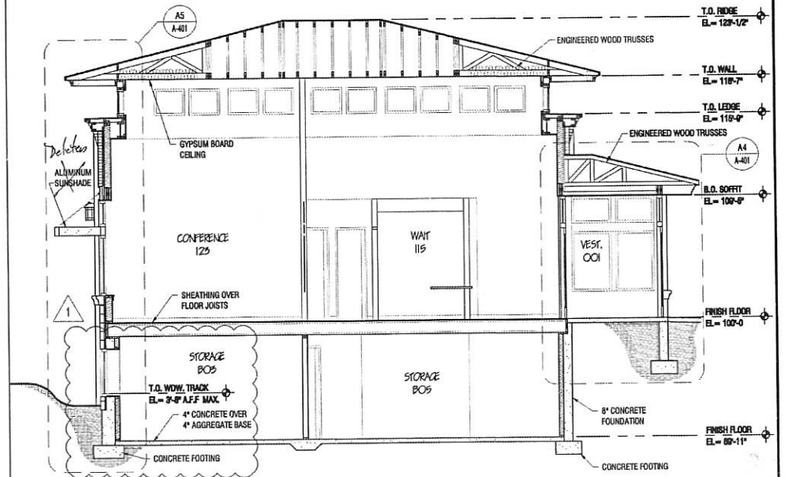
B2	BUILDING SECTIONS
3/16" = 1'-0"	



A1	BUILDING SECTIONS



A2	BUILDING SECTIONS



A4	BUILDING SECTIONS

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256 SOUTH 300 WEST LOGAN UT 84321
250 EAST BOOTH TEMPLE SLC UT 84111

PROTECTIVE INSURANCE-NEW OFFICE BUILDING
LOGAN, UTAH

Mark:	Date:	Description:
1	AUG. 28, 2007	AUGUST 6, 2007 LOGAN CITY COMMENT, RESPONSES

STATE OF UTAH REGISTERED ARCHITECT 6-15-07

Project No:	46018
Dwg. File:	
Owner's No:	
Drawn By:	ST
Checked By:	ST
Issued:	7-12-07

BUILDING SECTIONS

SPECIFICATIONS:

ARCHITECTURAL AND LANDSCAPE ONLY
SEE MECHANICAL AND ELECTRICAL SPECIFICATIONS
SEE STRUCTURAL SHEET NOTES

PROJECT: PROTECTIVE INSURANCE
755 NORTH MAIN
LOGAN, UT 84321

PROJECT DESCRIPTION:

NEW OFFICE BUILDING

ARCHITECTURAL DRAWINGS PREPARED BY:
ARCHITECTURAL DESIGN WEST, PC
255 SOUTH 300 WEST
LOGAN, UT 84321
(435) 752-7031 FAX (435) 752-5325

CAREFULLY EXAMINE SPECIFICATIONS, AND DRAWINGS, AS WELL AS THE SITE, AND THE CONDITIONS AFFECTING THE WORK. CONTRACTOR SHALL FULLY UNDERSTAND ALL PROVISIONS CONTAINED IN THESE DOCUMENTS AND AGREES TO DO ALL THAT IS CALLED FOR BY THEM, INCLUDING FURNISHING ALL NECESSARY LABOR AND MATERIALS TO SUPPLY AND INSTALL WORK OF EACH DIVISION OF THE WORK, OR ITEM FOR WHICH A COST IS GIVEN.

I. GENERAL CONDITIONS

A. THE STANDARD A.I.A. FORM A201, LATEST EDITION, SHALL BE A PART OF THE SPECIFICATIONS.

II. SUPPLEMENTARY GENERAL CONDITIONS

THE SUPPLEMENTARY GENERAL CONDITIONS CONTAIN CHANGES AND ADDITIONS TO THE GENERAL CONDITIONS. IN THE SUPPLEMENTARY GENERAL CONDITIONS, ANY PART OF THE GENERAL CONDITIONS MAY BE MODIFIED OR VOIDED, HOWEVER, THE UNALTERED PROVISIONS ARE TO REMAIN IN EFFECT.

A. PERMITS: THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL OBTAIN AND APPLY FOR ALL PERMITS, LICENSES, CERTIFICATES, INSPECTIONS, AND ALL OTHER FEES REQUIRED BY LAW, BOTH PERMANENT AND TEMPORARY. MAINTAIN COPIES OF ALL PERMITS ON THE JOB SITE AT ALL TIMES.

B. CHANGES FROM ORIGINAL PLANS:

1. THE OWNER RESERVES THE RIGHT TO MAKE ANY DESIRED CHANGE IN PLANS AND SPECIFICATIONS AFTER THE SAME SHALL HAVE BEEN PUT UNDER CONTRACT: BUT THE CHANGE SO MADE, WITH THE PRICE TO BE ADDED OR DEDUCTED FROM THE CONTRACT PRICE, SHALL BE AGREED UPON BETWEEN THE OWNER AND THE CONTRACTOR AND ENDORSED UPON ORIGINAL CONTRACT: AND WHEN BOTH PARTIES SHALL AGREE THERETO, IT SHALL IN NO WAY INVALIDATE OR MAKE VOID THE TERMS OF THE ORIGINAL CONTRACT.

2. THE OWNER, WITHOUT INVALIDATING THE CONTRACT, MAY ORDER EXTRA WORK OR MAKE CHANGES BY ALTERING, ADDING TO OR DEDUCTING FROM THE WORK: THE CONTRACT SUM THEN BEING ADJUSTED ACCORDINGLY. ALL SUCH WORK SHALL BE EXECUTED UNDER THE CONDITIONS OF THE ORIGINAL CONTRACT EXCEPT THAT ANY CLAIM FOR EXTENSION OF TIME CAUSED THEREBY SHALL BE ADJUSTED AT THE TIME OF SUCH THE VALUE OF ANY SUCH WORK OR CHANGE SHALL BE DETERMINED IN ONE OR MORE OF THE FOLLOWING WAYS: CHANGE ORDER, & COSTS FOR EXTENSIONS INCLUDED IN PROPOSAL.

   A. BY ESTIMATE AND ACCEPTANCE IN A LUMP SUM.

   B. BY COST AND PERCENTAGE, OR BY COST AND FIXED FEE.

3. IF THE CONTRACTOR CLAIMS THAT ANY INSTRUCTIONS BY DRAWINGS OR OTHERWISE INVOLVE EXTRA COST UNDER THIS CONTRACT, HE SHALL GIVE THE OWNER WRITTEN NOTICE THEREOF WITHIN A REASONABLE TIME AFTER THE RECEIPT OF SUCH INSTRUCTIONS, AND IN ANY EVENT, BEFORE PROCEEDING TO EXECUTE THE WORK, EXCEPT IN EMERGENCIES WHICH ENDANGER LIFE OR PROPERTY, AND THE PROCEDURE SHALL THEN BE AS PROVIDED FOR CHANGES IN THE WORK. NO SUCH CLAIM SHALL BE VALID UNLESS SO MADE.

C. CLEANING: IN ADDITION TO REMOVAL OF RUBBISH AND LEAVING BUILDING BROOM CLEAN, CONTRACTOR SHALL REMOVE STAINS, SPOTS, MARKS, AND DIRT FROM DECORATED WORK, WASH CONCRETE FLOORS, AND CLEAN AND WAX ALL RESILIENT FLOORS, CLEAN ALL GLASS. CONTRACTOR SHALL COMPLY WITH ALL SPECIAL CLEANING INSTRUCTIONS IN THE SPECIFICATIONS. AND/OR MANUFACTURERS INSTRUCTIONS.

D. DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE COMPLIMENTARY. SPECIFIC INFORMATION MAY BE FOUND IN EITHER OR BOTH.

E. WHEN A CONTRACTOR IS ALLOWED A SUBSTITUTION, HE WILL STAND THE ENTIRE EXPENSE OF THE SUBSTITUTION, INCLUDING WORK AND EXPENSES OF OTHER CONTRACTORS CAUSED BY THE SUBSTITUTION.

III. SPECIFICATIONS

DIVISION I - GENERAL REQUIREMENT

1.1 LAY OUT WORK:

A. LOCATE ALL EXISTING UTILITY SERVICE LINES AND PROTECT THROUGHOUT CONSTRUCTION PERIOD.

B. LAY OUT WORK AND BE RESPONSIBLE FOR ALL LINES, ELEVATIONS, MEASUREMENTS OF THE BUILDING, UTILITIES, AND OTHER WORK EXECUTED UNDER THE CONTRACT.

1.2 EXAMINATION:

A. ANY DISCREPANCIES, ERRORS, OR OMISSIONS DISCOVERED IN THE CONTRACT DOCUMENTS BY THE CONTRACTOR SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGNER BEFORE PROCEEDING WITH RELATED WORK, OTHERWISE THE CORRECTION OF SUCH ITEMS IS THE RESPONSIBILITY OF THE CONTRACTOR.

1.3. CODES AND STANDARDS

A. ALL WORK, MATERIALS, AND INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH ALL CODIFIED ORDINANCES, THE APPLICABLE STATE CODE, AND THE CITY'S BUILDING CODE, LATEST EDITIONS. A COPY OF WHICH IS AVAILABLE IN THE ARCHITECT'S OFFICE

1.4 TEMPORARY FACILITIES:

A. TEMPORARY OFFICE: AS REQUIRED BY CONTRACTOR.

B. TEMPORARY ELECTRICAL SERVICE: POWER IS AVAILABLE ON SITE FOR USE BY THE CONTRACTOR.

C. TEMPORARY WATER SUPPLY: WATER IS AVAILABLE ON SITE FOR USE BY THE CONTRACTOR.

D. ROADS: USE EXISTING ROADS AND SITE.

E. SAFETY AND FIRE PROTECTION IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR; PROVIDE THE FOLLOWING, IN ADDITION TO OTHER REQUIREMENTS OF STATE AND LOCAL AUTHORITIES.

1. SCHEDULE MEANS OF SAFETY AND FIRE PROTECTION FOR BUILDING, ALL MATERIALS, AND PERSONNEL PRIOR TO START OF WORK. METHODS AND EQUIPMENT SUBJECT TO THE APPROVAL OF THE BUILDING OFFICIAL.

2. COMPLY WITH ALL APPLICABLE PROVISION OF MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION, ISSUED BY THE ASSOCIATION OF GENERAL CONTRACTORS OF AMERICA, INC.

3. ALLOW NO WELDING PERFORMED BY ANY CONTRACTOR OR SUBCONTRACTOR UNLESS AN APPROVED FIRE EXTINGUISHER IS IMMEDIATELY ADJACENT TO THE WORK.

F. BASIS OF DESIGN

1. GOVERNING BUILDING CODE: 2006 INTERNATIONAL BUILDING CODE (IBC)

2. GRAVITY LOADING - SEE STRUCTURAL DRAWINGS.

3. ROOF -SEE STRUCTURAL DRAWINGS

4. EARTHQUAKE SEISMIC ZONE - SEE STRUCTURAL DRAWINGS

5. WIND VELOCITY- SEE STRUCTURAL DRAWINGS

DIVISION II - SITE WORK

(REFER TO STRUCTURAL SHEET NOTES).

02070 - SELECTIVE DEMOLITION: AS REQUIRED AND AS SHOWN AND INDICATED ON DRAWINGS

02200 - SITE WORK

A. ALL FILL AND BACK FILL SHALL BE COMPACTED IN ACCORDANCE WITH THE GENERAL STUCTURAL NOTES AND CURRENT I.B.C. REQUIREMENTS.

B. CONCRETE SLABS ON GRADE DESIGN AND CRITERIA IS SHOWN ON STRUCTURAL DRAWINGS.

02221 - DEMOLITION

A. REMOVE OBSTRUCTIONS, TREES, SHRUBS, GRASS, AND OTHER VEGETATION TO PERMIT INSTALLATION OF NEW CONSTRUCTION. REMOVAL INCLUDES DIGGING OUT STUMPS AND OBSTRUCTIONS AND GRUBBING ROOTS TO A DEPTH OF 18 INCHES (450 MM) BELOW EXPOSED SUBGRADE.

B. FILL DEPRESSIONS CAUSED BY CLEARING AND GRUBBING OPERATIONS WITH SATISFACTORY SOIL MATERIAL IN HORIZONTAL LAYERS NOT EXCEEDING 8-INCH (200-MM) LOOSE DEPTH, AND COMPACT EACH LAYER TO A DENSITY EQUAL TO ADJACENT ORIGINAL GROUND.

C. STRIP SUITABLE TOPSOIL TO WHATEVER DEPTHS ARE ENCOUNTERED IN A MANNER TO PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL OR OTHER WASTE MATERIALS.

D. STOCKPILE SURPLUS TOPSOIL MATERIALS AWAY FROM EDGE OF EXCAVATIONS WITHOUT INTERMIXING WITH SUBSOIL. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WINDBLOWN DUST.

E. REMOVE EXISTING ABOVE- AND BELOW-GRADE IMPROVEMENTS AS INDICATED AND AS NECESSARY TO FACILITATE NEW CONSTRUCTION.

02300 - EARTHWORK

A. GENERAL: PROVIDE BORROW SOIL MATERIALS WHEN SUFFICIENT SATISFACTORY SOIL MATERIALS ARE NOT AVAILABLE FROM EXCAVATIONS.

1. SATISFACTORY SOILS: ASTM D 2487 SOIL CLASSIFICATION GROUPS GW, GP, GM, SW, SP, AND SM, OR A COMBINATION OF THESE GROUP SYMBOLS; FREE OF ROCK OR GRAVEL LARGER THAN 3 INCHES (75 MM) IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION, AND OTHER DELETERIOUS MATTER.

2. UNSATISFACTORY SOILS: ASTM D 2487 SOIL CLASSIFICATION GROUPS GC, SC, ML, MH, CL, CH, OL, OH, AND PT, OR A COMBINATION OF THESE GROUP SYMBOLS.

   A. UNSATISFACTORY SOILS ALSO INCLUDE SATISFACTORY SOILS NOT MAINTAINED WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT AT TIME OF COMPLETION.

3. BACKFILL AND FILL: SATISFACTORY SOIL MATERIALS.

4. SUBBASE: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; ASTM D 2940; WITH AT LEAST 70-100 PERCENT PASSING A 4 INCH (100-MM) SIEVE, 50-70 PERCENT PASSING A 1 INCH (25 MM) SIEVE, 30-50 PERCENT PASSING A NO. 4 (4.75 MM) SIEVE, 5-15 PERCENT PASSING A NO. 200 (0.75 MM) SIEVE.

5. BASE: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; WITH 100 PERCENT PASSING A 1 INCH (25 MM) SIEVE, 70-100 PERCENT PASSING A 1/2 INCH (12.5 MM) SIEVE, 41-68 PERCENT PASSING A NO. 4 (4.75 MM) SIEVE, 21-41 PERCENT PASSING A NO. 16 SIEVE, 10-27 PERCENT PASSING A NO. 50 SIEVE AND 4-13 PERCENT PASSING A NO. 200 (0.75 MM) SIEVE.

6. ENGINEERED FILL: NATUALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; ASTM D 2940; WITH AT LEAST 70-100 PERCENT PASSING A 4 INCH (100-MM) SIEVE, 50-70 PERCENT PASSING A 1 INCH (24 MM) SIEVE, 30-50 PERCENT PASSING A NO. 4 (4.75 MM) SIEVE, 5-15 PERCENT PASSING A NO. 200 (0.75 MM) SIEVE.

7. BEDDING: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; ASTM D 2940; EXCEPT WITH 100 PERCENT PASSING A 1-INCH (25-MM) SIEVE AND 0 TO 5 PERCENT PASSING A NO. 4 (4.75-MM) SIEVE.

8. DRAINAGE FILL: WASHED, NARROWLY GRADED MIXTURE OF CRUSHED STONE, OR CRUSHED OR UNCRUSHED GRAVEL; ASTM D448; COARSE-AGGREGATE GRADING SIZE 57; WITH 100 PERCENT PASSING A 1-1/2-INCH (38-MM) SIEVE AND 0 TO 5 PERCENT PASSING A NO. 4 (4.75-MM) SIEVE.

9. FILTER MATERIAL: NARROWLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, OR CRUSHED STONE AND NATURAL SAND; ASTM D 448; COARSE-AGGREGATE GRADING SIZE 67; WITH 100 PERCENT PASSING A 1-INCH (24-MM) SIEVE AND 0 TO 5 PERCENT PASSING A NO. 4 (4.75-MM) SIEVE.

10. IMPERVIOUS FILL: CHAYEY GRAVEL AND SAND MIXTURE CAPABLE OF COMPACTING TO A DENSE STATE.

B. UNIFORMLY MOISTEN OR AERATE SUBGRADE AND EACH SUBSEQUENT FILL OR BACKFILL LAYER BEFORE COMPACTION TO WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT.

C. PLACE BACKFILL AND FILL MATERIALS IN LAYERS NOT MORE THAN 8 INCHES (200 MM) IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES (100 MM) IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.

D. COMPACT SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 1557:

1. UNDER STRUCTURES, BUILDING SLABS, STEPS, AND PAVEMENTS, SCARIFY AND RECOMPACT TOP 12 INCHES (300 MM) OF EXISTING SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL AT 95 PERCENT.

E. COMPACT SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D698:

1. UNDER HEAVY CONCRETE PAVING, CURBS AND GUTTERS SCARIFY AND RECOMPACT TOP 6 INCHES BELOW SUBGRADE AND COMPACT EACH LAYER OF BACKFILL OR FILL MATERIAL AT 95 PERCENT.

2. UNDER LAWN OR UNPAVED AREAS, SCARIFY AND RECOMPACT TOP 6 INCHES BELOW SUBGRADE AND COMPACT EACH LAYER OF BACKFILL OR FILL MATERIAL AT 80 PERCENT.

3. UNDER SIDEWALKS OR REGULAR CONCRETE PAVING: 90 PERCENT.

4. ALL TRENCH BACKFILL: 95 PERCENT.

02630-STORM DRAINAGE SYSTEM

A. CORRUGATED HD PE DRAINAGE TUBING AND FITTINGS: AASHTO M 252, TYPE S,WITH SMOOTH WATERWAY FOR COUPLING, JOINTS.

1. SOILTIGHT COUPLINGS: AASHTO M252, CORRUGATED, MATCHING TUBE AND FITTINGS TO FORM SOILTIGHT JOINTS.

2. SILTTIGHT COUPLINGS: PE SLEEVE WITH ASTM D 1056, TYPE 2, CLASS A, GRADE 2 GASKET MATERIAL THAT MATES WITH TUBE AND FITTINGS TO FORM SILTTIGHT JOINTS.

B. CORRUGATED HD PE PIPE AND FITTINGS: AASHTO M 294, TYPE S, WITH SMOOTH WATERWAY FOR COUPLING JOINTS.

1. SOILTTIGHT COUPLINGS: AASHTO M 294, CORRUGATED, MATCHING PIPE AND FITTINGS TO FORM SOILTIGHT JOINTS.

2. SILTTIGHT COUPLINGS: PE SLEEVE WITH ASTM D 1056, TYPE 2, CLASS A, GRADE 2 GASKET MATERIAL THAT MATES WITH PIPE AND FITTINGS TO FORM SILTIGHT JOINTS.

C. INSTALL CORRUGATED PIPING ACCORDING TO THE CORRUGATED POLYETHYLENE PIPE ASSOCIATION'S "RECOMMENDED INSTALLATION PRACTICES FOR CORRUGATED POLYETHYLENE PIPE AND FITTINGS."

D. PROVIDE AND INSTALL CATCH BASINS AND FRAMES AND GRATER AS SHOWN AND INDICATED ON DRAWINGS.

E. CONCRETE MATERIALS: COMPLY WITH REQUIREMENTS OF APPLICABLE DIVISION 3 SECTIONS OR GENERAL STRUCTURAL NOTES FOR CONCRETE MATERIALS, ADMIXTURES, BONDING MATERIALS, CURING MATERIALS, AND OTHERS AS REQUIRED.

02741-HOT ASPHALT PAVING

A. COARSE AGGREGATE: ASTM D 692, SOUND; ANGULAR CRUSHED STONE, CRUSHED GRAVEL, OR PROPERLY CURED, CRUSHED BLAST-FURNACE SLAG.

B. FINE AGGREGATE: [ASTM D 1073], SHARP-EDGED NATURAL SAND OR SAND PREPARED FROM STONE, GRAVEL, PROPERLY CURED BLAST-FURNACE SLAG, OR COMBINATIONS THEREOF. LIMIT NATURAL SAND TO A MAXIMUM OF 20 PERCENT BY WEIGHT OF THE TOTAL AGGREGATE MASS.

C. MINERAL FILLER: [ASTM D 242], ROCK OR SLAG DUST, HYDRAULIC CEMENT, OR OTHER INERT MATERIAL.

D. ASPHALT CEMENT: [ASTM D 3381 FOR VISCOSITY-GRADED MATERIAL] [ASTM D 946 FOR PENETRATION-GRADED MATERIAL].

E. TACK COAT: [ASTM D 977], EMULSIFIED ASPHALT OR [ASTM D 2397], CATIONIC EMULSIFIED ASPHALT, SLOW SETTING, DILUTED IN WATER, OF SUITABLE GRADE AND CONSISTENCY FOR APPLICATION.

F. UNDERSEALING ASPHALT: [ASTM D 3141], PUMPING CONSISTENCY.

G. HERBICIDE: COMMERCIAL CHEMICAL FOR WEED CONTROL, REGISTERED BY THE EPA. PROVIDE IN GRANNULAR, LIQUID, OR WETTABLE POWDER FORM. APPLY TO PREPARED SUBGRADE OR COMPACTED AGGREGATE BASE AT MANUFACTURER'S RECOMMENDED RATES.

H. SAND: [ASTM D 1073], GRADE NOS. 2 OR 3.

I. PAVEMENT-MARKING PAINT: LATEX, WATERBORNE EMULSION, LEAD AND CHROMATE FREE, READY MIXED, COMPLYING WITH FS TT-P-1952, WITH DRYING TIME OF LESS THAN 45 MINUTES. COLOR: BLUE AT ADA LOCATION. YELLOW AT ALL OTHER LOCATIONS UNLESS INDICATED OTHERWISE ON DRAWINGS.

J. MIXES: PROVIDE MIXES COMPLYING WITH COMPOSITION, GRADING, AND TOLERANCE REQUIREMENTS IN ASTM D 3515.

K. PATCHING: SAW CUT PERIMETER OF PATCH AND EXCAVATE EXISTING PAVEMENT SECTION TO SOUND BASE. EXCAVATE RECTANGULAR OR TRAPERXOIDAL PATCHES, EXTENDING 12 INCHES (300 MM) INTO ADJACENT SOUND PAVEMENT. APPLY TACK COAT UNIFORMLY TO VERTICAL SURFACES ABUTTING OR PROJECTING INTO NEW, HOT-MIX ASPHALT PAVING AT A RATE OF 0.05 TO 0.15 GAL./SQ. YD. FILL EXCAVATED PAVEMENTS WITH HOT-MIX ASPHALT BASE MIX AND, WHILE STILL HOT, COMPACT FLUSH WITH ADJACENT SURFACE.

L. JOINTS: CONSTRUCT JOINTS TO ENSURE A CONTINUOUS BOND BETWEEN ADJOINING PAVING SECTIONS. CONSTRUCT JOINTS FREE OF DEPRESSIONS WITH SAME TEXTURE AND SMOOTHNESS AS OTHER SECTIONS OF HOT-MIX ASPHALT COURSE.

M. COMPACTION: AVERAGE DENSITY: 92 PERCENT OF REFERENCE MAXIMUM THEORETICAL DENSITY ACCORDING TO ASTM D 2041, BUT NOT LESS THAN 90 PERCENT NOR GREATER THAN 96 PERCENT.

02751 - CEMENT CONCRETE PAVEMENT

A. FORMS: PLYWOOD, METAL, METAL-FRAMED PLYWOOD, OR OTHER APPROVED PANEL-TYPE MATERIALS TO PROVIDE FULL-DEPTH,CONTINUOUS, STRAIGHT, SMOOTH EXPOSED SURFACES. FORM-RELEASE AGENT: COAT FORMS WITH COMMERCIALLY FORMULATED FORM-RELEASE AGENT THAT WILL NOT BOND WITH, STAIN, OR ADVERSELY AFFECT CONCRETE SURFACES AND WILL NOT IMPAIR SUBSEQUENT TREATMENTS OF CONCRETE SURFACES.

B. REINFORCEMENT BARS: ASTM A 615/A 615M, GRADE 60 (GRADE 420), DEFORMED.

C. PLAIN STEEL WIRE: ASTM A 82, AS DRAWN.

D. CONCRETE MATERIALS: COMPLY WITH REQUIREMENTS OF APPLICABLE DIV. 3 SECTIONS OR GENERAL STRUCTURAL NOTES FOR CONCRETE MATERIALS, ADMIXTURES, BONDING MATERIALS, CURING MATERIALS AND OTHERS AS REQUIRED.

E. EXPANSION- AND ISOLATION-JOINT-FILLER STRIPS: ASTM D 1751, ASPHALT-SATURATED CELLULOSIC FIBER.

F. CONTRACTION JOINTS: GROOVED EDGE OF 1/4 INCH RADIUS OR 1/8" WIDE SAWED JOINTS.

G. EDGING: 1/4 INCH RADIUS.

H. MEDIUM TO FINE TEXTURED BROOM FINISH: DRAW A SOFT BRISTLE BROOM ACROSS FLOAT-FINISHED CONCRETE SURFACE PERPENDICULAR TO LINE OF TRAFFIC TO PROVIDE A UNIFORM, FINE-LINE TEXTURE. MEDIUM TO COARSE TEXTURED BROOM FINISH: PROVIDE A COARSE FINISH BY STRIATING FLOAT-FINISHED CONCRETE SURFACE 1/16 TO 1/8 INCH (1.6 TO 3 MM) DEEP WITH A STIFF-BRISTLED BROOM PERPENDICULAR TO LINE OF TRAFFIC.

02780-UNIT PAVERS:

A. BRICK PAVERS SET IN AGGREGATE SETTING BED. (FULL THICK, LIGHT TRAFFIC)

B. GRADED AGGREGATE FOR SUBBASE: CRUSHED STONE OR GRAVEL ASTM D 448 FOR SIZE NO. 57.

C. SAND FOR LEVELING COURSE: WASHED NATURAL SAND ASTM C 33 FOR FINE AGGREGATE OF COLOR TO PRODUCE DESIRED JOINT COLOR .

D JOINT PATTERN: HERRINGBONE.

02813 - UNDERGROUND SPRINKLER SYSTEM

PART 1 - GENERAL

A. RELATED DOCUMENTS: DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

B. SYSTEM DESCRIPTION: PROVIDE UNDERGROUND IRRIGATION SYSTEM DESIGN AND INSTALLATION AS REQUIRED FOR ALL LANDSCAPING IMPACTED DURING CONSTRUCTION AND ALL NEW LANDSCAPING. DESIGN SYSTEM AS REQUIRED TO ACHIEVE FULL, EVEN COVERAGE WITHOUT SPRAYING ONTO BUILDINGS, SIDEWALKS, FENCES, ETC.

C. DEFINITIONS:

1. CIRCUIT PIPING: DOWNSTREAM FROM CONTROL VALVES TO SPRINKLERS, SPECIALTIES, AND DRAIN VALVES. PIPING IS UNDER PRESSURE DURING FLOW.

2. DRAIN PIPING: DOWNSTREAM FROM CIRCUIT-PIPING DRAIN VALVES. PIPING IS NOT UNDER PRESSURE.

3. PRESSURE PIPING: DOWNSTREAM FROM POINT OF CONNECTION TO WATER DISTRIBUTION PIPING TO AND INCLUDING CONTROL VALVES. PIPING IS UNDER WATER DISTRIBUTION SYSTEM PRESSURE.

D. SYSTEM PERFORMANCE REQUIREMENTS:

1. MINIMUM WATER COVERAGE: 100 PERCENT OF TURF AND PLANTING AREAS.

2. LOCATION OF SPRINKLERS AND SPECIALTIES: DESIGN LOCATION WILL BE APPROXIMATE. MAKE MINOR ADJUSTMENTS NECESSARY TO AVOID PLANTINGS AND OBSTRUCTIONS SUCH AS SIGNS AND LIGHT STANDARDS.

3. MINIMUM WORKING PRESSURES: THE FOLLOWING ARE MINIMUM PRESSURE REQUIREMENTS FOR PIPING, VALVES, AND SPECIALTIES, UNLESS OTHERWISE INDICATED:

   A. PRESSURE PIPING: 200 PSIG.
   B. CIRCUIT PIPING: 150 PSIG.
   C. DRAIN PIPING: 100 PSIG.

E. GUARANTEE: SUBMIT 1-YEAR WRITTEN GUARANTEE SIGNED BY UNDERGROUND SPRINKLER CONTRACTOR, AGREEING TO REPAIR OR REPLACE ALL DEFECTS IN MATERIAL, EQUIPMENT AND WORKMANSHIP. GUARANTEE SHALL ALSO COVER REPAIR OF DAMAGE TO ANY PART OF THE PREMISES RESULTING FROM LEAKS OR OTHER DEFECTS IN MATERIAL, EQUIPMENT AND WORKMANSHIP TO THE SATISFACTION OF THE OWNER. REPAIRS, IF REQUIRED, SHALL BE DONE PROMPTLY AT NO COST TO THE OWNER.

F. SUBMITTALS:

1. PRODUCT DATA: INCLUDE PRESSURE RATING, RATED CAPACITY, SETTINGS, AND ELECTRICAL DATA OF SELECTED MODELS FOR THE FOLLOWING:

   A. VALVES: INCLUDE ABOVEGROUND AND UNDERGROUND; GENERAL-DUTY, MANUAL AND AUTOMATIC CONTROL, AND QUICK-COUPLER TYPES.

   B. VALVE BOXES.

   C. SPRINKLERS.

   D. SPECIALTIES.

   E. CONTROLLERS. INCLUDE WIRING DIAGRAMS.

2. SHOP DRAWINGS: SHOW LAWN SPRINKLER PIPING, INCLUDING PLAN LAYOUT AND LOCATIONS, TYPES, SIZES, CAPACITIES, AND FLOW CHARACTERISTICS OF LAWN SPRINKLER PIPING COMPONENTS. INCLUDE VALVES, PIPING, SPRINKLERS AND DEVICES, ACCESSORIES, CONTROLS, AND WIRING. SHOW AREAS OF SPRINKLER SPRAY AND OVERSPRAY.

3. MAINTENANCE DATA: TO INCLUDE IN MAINTENANCE MANUALS. INCLUDE DATA FOR THE FOLLOWING:

   A. SUBMIT FOUR (4) COPIES OF TYPEWRITTEN INSTRUCTIONS, BOUND IN SUITABLE SIZED RING BINDERS, RECOMMENDING PROCEDURES TO BE ESTABLISHED BY THE OWNER FOR THE MAINTENANCE OF THE SYSTEM FROM YEAR TO YEAR. THIS SHALL INCLUDE COMPLETE INSTRUCTIONS FOR SYSTEM OPERATION AND MAINTENANCE INCLUDING WINTERIZING AND COMPLETE INSTRUCTIONS ON HOW TO DRAIN ENTIRE BACKFLOW PREVENTER TO PREVENT FREEZING. SUBMIT MANUALS WITH RECORD DRAWINGS. THE MANUAL SHALL ALSO CONTAIN:

      1. IDENTIFICATION READABLE FROM THE OUTSIDE OF THE COVER STATING BY WHOM THE INFORMATION WAS COMPILED.

      2. NEATLY TYPEWRITTEN INDEX NEAR THE FRONT OF THE MANUAL, FURNISHING IMMEDIATE INFORMATION AS TO THE LOCATION IN THE MANUAL OF ALL EMERGENCY DATA REGARDING THE INSTALLATION.

      3. COMPLETE NOMENCLATURE OF ALL REPLACEABLE PARTS, THEIR PART NUMBERS, CURRENT COST, AND NAME AND ADDRESS OF THE NEAREST VENDOR OF REPLACEMENT PARTS.

      4. COMPLETE OUTLINE OF FUTURE WATERING SCHEDULES AND WHEN THEY SHOULD BE CHANGED FROM THE INITIAL INSTALLATION SCHEDULE. THE INITIAL SCHEDULE IS CALCULATED FOR A WATERING RATE TO ESTABLISH NEW LAWN.

      5. COPY OF ALL GUARANTEES AND WARRANTIES ISSUED ON THE I NSTALLATION, SHOWING ALL DATES OF EXPIRATION.

4. RECORD DRAWINGS:

   A. AS INSTALLATION OCCURS, PREPARE ACCURATE RECORD DRAWING TO BE SUBMITTED PRIOR TO FINAL INSPECTION, INCLUDING:

      1. DETAIL AND DIMENSION CHANGES MADE DURING CONSTRUCTION.

      2. SIGNIFICANT DETAILS AND DIMENSIONS NOT SHOWN IN THE APPROVED CONTRACT DOCUMENTS

      3. FIELD DIMENSIONED LOCATIONS OF VALVE BOXES, MANUAL DRAINS, QUICK-COUPLER VALVES, CONTROL WIRE RUNS NOT IN MAINLINE DITCH, AND BOTH ENDS OF SLEEVES.

      4. TAKE DIMENSIONS FROM PERMANENT CONSTRUCTED SURFACES OR EDGES LOCATED AT OR ABOVE FINISH GRADE.

      5. TAKE AND RECORD DIMENSIONS AT TIME OF INSTALLATION.

   B. THE RECORD DRAWINGS SHALL BE PROVIDED ELECTRONICALLY IN AUTOCAD (OR IN SOFTWARE COMPATIBLE WITH AUTOCAD) AND ON REPRODUCIBLE MATERIAL (I.E., SEPIA).

   C. PROVIDE REDUCED COPY OF RECORD DRAWING AT HALF-SIZE WITH COLOR KEY CIRCUITS, AND LAMINATE BOTH SIDES WITH 5 MIL THICK OR HEAVIER PLASTIC. MOUNT ON 1/4 INCH PLYWOOD BOARD. DRILL TWO 1/2-INCH HOLES AT TOP OF BOARD AND HANG ON HOOKS

   IN CUSTODIAL ROOM OR AS DIRECTED BY ARCHITECT.

G. QUALITY ASSURANCE

1. PRODUCT OPTIONS: DRAWINGS SHALL INDICATE SIZE, PROFILES, AND DIMENSIONAL REQUIREMENTS OF LAWN SPRINKLER PIPING COMPONENTS AND BASED ON SPECIFIC TYPES AND MODELS INDICATED.

2. WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH LATEST RULES AND REGULATIONS, AND OTHER APPLICABLE STATE OR LOCAL LAWS. NOTHING IN APPROVED CONTRACT DOCUMENTS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

3. PRE-INSTALLATION MEETING: SCHEDULE MEETING AFTER EXCAVATION OF TRENCHES AND INSTALLATION OF SLEEVES, BUT PRIOR TO INSTALLATION OF PIPE.

H. PROJECT CONDITIONS: INVESTIGATE AND DETERMINE AVAILABLE WATER SUPPLY WATER PRESSURE AND FLOW CHARACTERISTICS. REPORT ANY DISCREPANCIES FROM DESIGN TO ARCHITECT.

I. SEQUENCING AND SCHEDULING: MAINTAIN UNINTERRUPTED WATER SERVICE TO BUILDING DURING NORMAL WORKING HOURS. ARRANGE FOR TEMPORARY WATER SHUTOFF WITH OWNER. COORDINATE LAWN SPRINKLER PIPING WITH WORK SPECIFIED IN DIVISION 2 SECTION "LANDSCAPING." COORDINATE LAWN SPRINKLER PIPING WITH UTILITY WORK.

J. EXTRA MATERIALS: FURNISH EXTRA MATERIALS DESCRIBED BELOW THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS. DELIVER EXTRA MATERIALS TO OWNER.

1. TWO VALVE BOX COVER KEYS.

2. TWO QUICK COUPLER KEYS WITH BRASS HOSE SWIVEL.

3. TWO MANUAL DRAIN VALVE KEYS.

4. TWO SETS OF SPRINKLER WRENCHES FOR ADJUSTING, CLEANING OR DISASSEMBLY OF EACH TYPE OF SPRINKLER.

5. TWO EACH OF ANY OTHER TOOLS REQUIRED FOR ANY OTHER EQUIPMENT.

PART 2 - PRODUCTS

A. BACKFILL MATERIAL: BACKFILL MATERIAL SHALL CONSIST OF SAND, NATIVE MATERIAL OR TOPSOIL WITH NO ROCKS LARGER THAN 1/4 INCH IN ANY DIMENSION. IMPORTED BACKFILL MATERIAL, AS REQUIRED, SHALL BE CLEAN SOIL, FREE FROM ORGANIC MATERIAL, TRASH, DEBRIS, RUBBISH, BROKEN CEMENT, ASPHALT MATERIAL, OR OTHER OBJECTIONABLE SUBSTANCES AND APPROVED BY THE ARCHITECT.

B. DRAINAGE FILL MATERIAL: WASHED, EVENLY GRADED MIXTURE OF CRUSHED STONE, OR CRUSHED OR UNCRUSHED GRAVEL, WITH 100% PASSING A 1-1/2" SIEVE AND NOT MORE THAN 5% PASSING A NO. 4 SIEVE.

C. COMPONENTS

1. ALL IRRIGATION PIPE SHALL BE SCHEDULE 40 PVC. MANIFOLDS SHALL BE SCHEDULE 80 AND SHALL HAVE SCHEDULE 80 THREADED FITTINGS. ALL OTHER FITTINGS SHALL BE NON-THREADED SCHEDULE 40 PVC.

2. SLEEVES: SCHEDULE 40 PVC PIPE. SLEEVE DIAMETER SHALL BE TWO TIMES LARGER THAN PIPE THAT IS TO BE INSTALLED IN SLEEVE.

3. SPRINKLER HEADS:

   A. RAINBIRD 1800 PRS SERIES FOR ALL SPRAY SPRINKLER HEADS.
   B. HUNTER 1-20, 1-25 AND 1-40 SERIES FOR ALL ROTOR SPRINKLER HEADS.

4. SPRINKLER RISERS: ROTOR POP-UP SPRINKLER AND QUICK COUPLING VALVES SHALL HAVE AN ADJUSTABLE RISER ASSEMBLY, THREE ELL SWING JOINT ASSEMBLY, UNLESS DETAILED OTHERWISE ON THE APPROVED DRAWINGS. THESE SWING JOINT FITTINGS SHALL BE OF SCHEDULE 40 PVC PLASTIC AND NIPPLES SCHEDULE 80 GRAY PVC UNLESS OTHERWISE APPROVED ON SUBMITTED DRAWINGS. HORIZONTAL NIPPLE PARALLEL TO SIDE OF LATERAL LINE SHALL BE 8 INCHES LONG MINIMUM. ALL OTHER NIPPLES ON SWING JOINT RISER SHALL BE OF LENGTH REQUIRED FOR PROPER INSTALLATION OF SPRINKLER HEADS.

5. VALVES:

   A. HOSE BIBS: 3/4" ANGLE TYPE HOSE BIB. INSTALL ON MAIN LINE IN VALVE BOXES ON THREE-ELL SWING JOINT ASSEMBLY.

   B. CONTROL VALVES: HUNTER ICV SERIES ELECTRIC REMOTE CONTROL VALVE.

   C. DRAIN VALVES: MANUAL DRAIN VALVES: APOLLO BALL VALVES. 3/4" BRASS BALL VALVE AND SHALL HAVE "T" HANDLE ON MAIN LINES AND IN ALL VALVE BOXES ON LATERAL LINES OR APPROVED EQUAL.

   D. GATE VALVES: NIBCO T-113 NON-RISING STEM GATE VALVE OR APPROVED EQUAL. BRONZE CONSTRUCTION, ANGLE TYPE, 150 POUND CLASS, THREADED CONNECTIONS, WITH CROSS-TYPE OPERATING HANDLE DESIGNED TO RECEIVE OPERATING KEY OR APPROVED EQUAL.

   E. BACKFLOW PREVENTER: WATTS DOUBLE-CHECK VALVE ASSEMBLY OR APPROVED EQUAL, IF REQUIRED.

6. CONTROL WIRING: CONTROL WIRE SHALL BE UF-UL LISTED, COLOR CODED COPPER CONDUCTOR DIRECT BURIAL SIZE 14. DO NOT USE GREEN COLOR CODED WIRE. USE WATERPROOF WIRE CONNECTORS FOR ALL WIRE SPLICES. ACCEPTABLE MANUFACTURERS FOR WIRE CONNECTORS: DBY OR DBR BY 3M, KING "ONE STEP" OR EQUAL AS APPROVED BY ARCHITECT BEFORE INSTALLATION.

7. EXPANSION CURLS: EXPANSION CURLS SHALL BE PROVIDED WITHIN THREE (3) FEET OF EACH WIRE CONNECTION TO SOLENOID AND AT LEAST EVERY THREE HUNDRED (300) FEET IN LENGTH. (EXPANSION CURLS ARE FORMED BY WRAPPING AT LEAST 5 TURNS OF WIRE AROUND A ROD OR PIPE 1" OR MORE IN DIAMETER, THEN WITHDRAWING THE ROD).

8. VALVE BOXES: FOR BALL VALVE - 10" DIAMETER VALVE BOX WITH APPROPRIATE LID. LARGER SIZE OR SQUARE IF REQUIRED FOR ACCESS TO VALVE HANDLES. FOR CIRCUIT VALVES - AMETEK JUMBO BOX OR APPROVED EQUAL. VALVE BOX SUPPORTS - STANDARD SIZE FIRED CLAY PAVING BRICKS WITHOUT HOLES. ALL VALVE BOXES ARE TO HAVE LOCKING LIDS.

9. AUTOMATIC CONTROLLER: HUNTER ICV SERIES INDEPENDENT STATION CONTROLLER., WITH LIGHTNING PROTECTION INSTALLED.

10. OTHER COMPONENTS: SUBMIT OTHER COMPONENTS RECOMMENDED BY MANUFACTURER FOR ARCHITECT'S REVIEW AND ACCEPTANCE PRIOR TO INSTALLATION. PROVIDE COMPONENTS NECESSARY TO COMPLETE AND MAKE SYSTEM OPERATIONAL. INCLUDING PRESSURE REDUCING DEVICES, IF REQUIRED.

D. MIXES: CONCRETE FOR THRUST BLOCKS: ONE CU. FT. CEMENT, 2 CU. FT. SAND, 4 CU. FT. GRAVEL, AND 5 GALLONS MINIMUM TO 6 GALLONS MAXIMUM WATER. MIX THOROUGHLY BEFORE PLACING.

PART 3 - EXECUTION

A. EXAMINATION: SITE VERIFICATION OF CONDITIONS: PERFORM PRESSURE TEST AT STUB-OUT ON MAIN WATER LINE PROVIDED FOR IRRIGATION SYSTEM, OR AT NEAR-BY FIRE HYDRANT.

B. PREPARATION: DURING CONSTRUCTION AND STORAGE, PROTECT MATERIALS FROM DAMAGE AND PROLONGED EXPOSURE TO SUNLIGHT. WORK DAMAGED DURING COURSE OF WORK OF THIS SECTION SHALL BE REPLACED OR REPAIRED AT NO ADDITIONAL COST TO OWNER. IF DAMAGED WORK IS NEW, REPAIR OR REPLACEMENT SHALL BE PERFORMED BY INSTALLER OF ORIGINAL WORK. ALL LATERAL LINES SHALL RUN AS REQUIRED WITHIN PLANTING AREAS TO AVOID CONFLICT WITH THE LOCATION OF PLANT MATERIALS. WHERE TRENCHING IS REQUIRED IN PROXIMITY TO PLANT MATERIALS CARE SHALL BE TAKEN TO AVOID DAMAGE TO ROOTS. DO NOT CUT EXISTING TREE ROOTS MEASURING OVER 2 INCHES IN DIAMETER.

C. INSTALLATION

1. TRENCHING AND BACKFILLING: PULLING OF PIPE IS NOT PERMITTED. OVER-EXCAVATE TRENCHES 2 INCHES AND BRING BACK TO INDICATED DEPTH BY FILLING WITH BACKFILL MATERIAL AS SPECIFIED UNDER PART 2 - PRODUCTS. SEPARATE OUT ROCKS LARGER THAN 1-1/2 INCH IN ANY DIRECTION UNCOVERED IN TRENCHING OPERATION FROM EXCAVATED MATERIAL AND REMOVE FROM AREAS TO RECEIVE LANDSCAPING. COVER PIPE BOTH TOP AND SIDES WITH 2 INCHES OF BACKFILL MATERIAL AS SPECIFIED UNDER PART 2 - PRODUCTS. PLACE AND COMPACT REMAINDER OF BACKFILL TO WITHIN 5 INCHES OF FINISH GRADE SHALL BE AS SPECIFIED IN RELATED SECTIONS. TOP 5 INCHES OF BACKFILL SHALL BE TOPSOIL AS SPECIFIED IN RELATED SECTION. DO NOT COVER PRESSURE MAIN, SPRINKLER PIPE, OR FITTINGS UNTIL PRESSURE TEST HAS BEEN COMPLETED AND ARCHITECT HAS INSPECTED AND APPROVED THE SYSTEM.

2. EXCAVATION BEYOND EXCAVATION LIMITS: WHERE IT BECOMES NECESSARY TO EXCAVATE BEYOND THE LIMITS OF NORMAL EXCAVATION LINES IN ORDER TO REMOVE ROCK OR OTHER INTERFERING OBJECTS, THE VOID REMAINING AFTER THE REMOVAL OF THE OBJECT SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED AS PER THE "EARTHWORK" SECTION AND THIS SPECIFICATION SECTION. THE REMOVAL OF ALL ROCK OR OTHER INTERFERING OBJECTS AND THE BACKFILLING OF VOIDS LEFT BY SUCH REMOVALS SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

3. SLEEVING: CONTRACTOR IS RESPONSIBLE TO COORDINATE THE INSTALLATION OF THE SLEEVING WITH THE WORK OF OTHER TRADES, (I.E., CONCRETE, ASPHALT PAVING, ETC.). SLEEVE WATER LINES AND CONTROL WIRES UNDER WALKS AND PAVING. EXTEND SLEEVES 6 INCHES MINIMUM BEYOND WALK OR PAVEMENT EDGE. CAP SLEEVES UNTIL PIPES AND WIRES ARE INSTALLED TO KEEP SLEEVE CLEAN AND FREE OF DIRT AND DEBRIS. USE ONE WATER PIPE MAXIMUM PER SLEEVE. SLEEVE CONTROL WIRING IN SEPARATE SLEEVE. POSITION SLEEVES WITH RESPECT TO BUILDINGS AND OTHER OBSTRUCTIONS SO PIPE CAN BE EASILY REMOVED.

4. GRADES AND DRAINING: GRADE PIPING SO SYSTEM CAN BE COMPLETELY DRAINED.

   A. SLOPE PIPE TO DRAIN TO CONTROL VALVE BOX WHERE POSSIBLE. WHERE THIS IS NOT POSSIBLE, SLOPE PIPE TO A MINIMUM NUMBER OF LOW POINTS. AT THESE LOW POINTS, INSTALL: 3/4 INCH BRASS BALL VALVE FOR MANUAL DRAIN. INSTALL 2 INCH CLASS 200 PVC PIPE OVER TOP OF MANUAL DRAIN AND CUT AT FINISH GRADE. INSTALL RUBBER VALVE CAP MARKER FLUSH WITH FINISHED GRADE. PROVIDE PEA GRAVEL SUMP AT OUTLET OF EACH DRAIN. SUMP SHALL BE 4 FEET DEEP AND ONE FOOT IN DIAMETER WITH TOP OF GRAVEL 6 INCHES BELOW DRAIN. DO NOT USE AUTOMATIC DRAIN VALVES, UNLESS PREVIOUSLY USED ON SITE. COORDINATE WITH OWNER. SLOPE PIPES UNDER PARKING AREAS OR DRIVEWAYS TO DRAIN OUTSIDE THESE AREAS.

5. PIPE INSTALLATION: INSTALL PIPE IN MANNER TO PROVIDE FOR EXPANSION AND CONTRACTION AS RECOMMENDED BY MANUFACTURER. UNLESS OTHERWISE INDICATED ON APPROVED DRAWINGS, INSTALL MAIN LINES AND LATERAL LINES CONNECTING ROTOR POP-UP SPRINKLERS WITH MINIMUM COVER OF 18 INCHES BASED ON FINISHED GRADE. INSTALL REMAINING LATERAL LINES WITH MINIMUM OF 12 INCHES OF COVER BASED ON FINISH GRADE. INSTALL PIPE AND WIRES UNDER DRIVEWAYS OR PARKING AREAS IN SPECIFIED SLEEVES 18 INCHES MINIMUM BELOW FINISH GRADE OR AS SHOWN ON APPROVED DRAWINGS. LOCATE SPRINKLER

HEADS NO CLOSER THAN 12 INCHES FROM BUILDING FOUNDATION. HEADS IMMEDIATELY ADJACENT TO MOWSTRIPS, WALKS, OR CURBS SHALL BE ONE INCH BELOW TOP OF MOWSTRIP, WALK, OR CURB AND HAVE ONE TO 3 INCHES CLEARANCE BETWEEN HEAD AND MOWSTRIP, WALK, OR CURB. CUT PLASTIC PIPE SQUARE. REMOVE BURRS AT CUT ENDS PRIOR TO INSTALLATION SO UNOBSTRUCTED FLOW WILL RESULT. MAKE SOLVENT WELD JOINTS AS FOLLOWS:

   A. DO NOT MAKE SOLVENT WELD JOINTS IF AMBIENT TEMPERATURE IS BELOW 40 DEG. F. CLEAN MATING PIPE AND FITTING WITH CLEAN, DRY CLOTH AND APPLY ONE COAT OF P-70 PRIMER TO EACH. APPLY UNIFORM COAT OF 711 SOLVENT TO OUTSIDE OF PIPE. APPLY SOLVENT TO FITTING IN A SIMILAR MANNER. RE-APPLY LIGHT COAT OF SOLVENT TO PIPE AND QUICKLY INSERT INTO FITTING. GIVE PIPE OR FITTING A QUARTER TURN TO INSURE EVEN DISTRIBUTION OF SOLVENT AND MAKE SURE PIPE IS INSERTED TO FULL DEPTH OF FITTING SOCKET. HOLD IN POSITION FOR 15 SECONDS MINIMUM OR LONG ENOUGH TO SECURE JOINT. WIPE OFF SOLVENT APPEARING AT OUTER SHOULDER OF FITTING. DO NOT USE EXCESSIVE AMOUNT OF SOLVENT THEREBY CAUSING OBSTRUCTION TO FORM ON INSIDE OF PIPE. ALLOW JOINTS TO SET AT LEAST 24 HOURS BEFORE APPLYING PRESSURE TO PVC PIPE. TAPE THREADED CONNECTIONS WITH TEFLON TAPE. IF PIPE IS LARGER THAN 2 INCHES, INSTALL CONCRETE THRUST BLOCKS WHEREVER CHANGE OF DIRECTION OCCURS ON PVC MAIN PRESSURE LINES, UNLESS OTHERWISE DETAILED ON APPROVED DRAWINGS.

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PROTECTIVE INSURANCE-NEW OFFICE BUILDING
LOGAN, UTAH

Mark:	Date:	Description:
1	AUG. 28, 2007	AUGUST 9, 2007 LOGAN CITY COMMENT, RESPONSES

Project No:	46018
Dwg. File:	
Owner's No:	
Drawn By:	ST
Checked By:	
Issued:	7-12-07

SPECIFICATIONS

A-701

6. CONTROL VALVES AND VALVE BOXES

A. INSTALL CONTROL WIRES, AND VALVES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND ACCORDING TO ELECTRICAL CODE.

B. INSTALL VALVES, IN PLASTIC BOXES WITH LOCKING REINFORCED HEAVY DUTY PLASTIC COVERS. LOCATE VALVE BOX TOPS AT FINISH GRADE. DO NOT INSTALL MORE THAN TWO VALVES IN A SINGLE BOX.

C. PLACE PEA GRAVEL A MINIMUM OF 6 INCHES DEEP BELOW VALVE FOR DRAINAGE. EXTEND PEA GRAVEL 3 INCHES MINIMUM BEYOND LIMITS OF VALVE BOX AND MAINTAIN 4 INCHES MINIMUM BETWEEN BOTTOM OF VALVE AND TOP OF PEA GRAVEL. SET VALVE BOXES OVER VALVE SO ALL PARTS OF VALVE CAN BE REACHED FOR SERVICE. SET COVER OF VALVE BOX EVEN WITH FINISH GRADE. VALVE BOX SHALL BE REASONABLY FREE FROM DIRT AND DEBRIS. SET VALVE BOX ON PAVING BRICKS.

D. INSTALL 3/4 INCH BRASS BALL VALVE IN VALVE BOX ON DOWNSTREAM SIDE OF AUTOMATIC VALVES IF LATERAL LINE SLOPES TOWARD VALVE BOX.

E. WIRING: TAPE CONTROL WIRE TO SIDE OF MAIN LINE EVERY 10 FEET. WHERE CONTROL WIRE LEAVES MAIN OR LATERAL LINE, ENCLOSE IT IN CLASS 200 PVC CONDUIT. USE WATERPROOF WIRE CONNECTORS AT SPLICES AND LOCATE ALL SPLICES WITHIN VALVE BOXES. USE WHITE OR GRAY COLOR FOR COMMON WIRE AND OTHER COLORS FOR ALL OTHER WIRE. EACH COMMON WIRE MAY SERVE ONLY ONE CONTROLLER. PROVIDE 12 INCHES OF EXPANSION LOOP SLACK WIRE AT ALL CONNECTIONS INSIDE VALVE BOX. RUN ONE EXTRA CONTROL WIRE FROM PANEL CONTINUOUSLY FROM VALVE TO VALVE THROUGHOUT SYSTEM SIMILAR TO COMMON WIRE FOR USE IF A WIRE FAILS. WIRE SHALL BE DIFFERENT COLOR THAN ALL OTHER WIRES AND SHALL BE MARKED IN CONTROL BOX AS AN EXTRA WIRE. EXTEND EXTRA CONTROL WIRES 24 INCHES AND LEAVE COILED IN EACH VALVE BOX.

7. OTHER VALVES: STOP AND WASTE VALVES, ISOLATION VALVES, BACKFLOW PREVENTERS, PRESSURE REDUCTION VALVES, AND ANY OTHER EQUIPMENT REQUIRED BY LOCAL AUTHORITIES SHALL BE INSTALLED ACCORDING TO LOCAL CODES AND REQUIREMENTS IN ORDER TO MAKE THIS SYSTEM COMPLETE.

8. BACKFLOW PREVENTER, IF REQUIRED: INSTALL 12 INCHES MINIMUM FROM STRUCTURES OR HARDSCAPING. WHEN INSTALLED ADJACENT TO ANY STRUCTURE, MOUNT TEST COCKS ON SIDE AWAY FROM STRUCTURE. AFTER INSTALLATION, REMOVE HANDLES AND TURN OVER TO OWNER TOGETHER WITH EXTRA MAINTENANCE MATERIALS.

9. SPRINKLER HEADS: PRIOR TO INSTALLATION OF SPRINKLER HEADS, OPEN CONTROL VALVES AND USE FULL HEAD OF WATER TO FLUSH OUT SYSTEM. SET SPRINKLER HEADS AND QUICK-COUPLING VALVES PERPENDICULAR TO FINISH GRADE. DO NOT INSTALL SPRINKLERS USING SIDE INLETS; INSTALL USING BASE INLETS ONLY. SET SPRINKLER HEADS AT A CONSISTENT DISTANCE FROM EXISTING WALKS, CURBS, AND OTHER PAVED AREAS AND TO GRADE. SEE "PIPE INSTALLATION" SECTION. SHRUB SPRAY HEADS SHALL BE INSTALLED ON RISERS A MINIMUM OF 12 INCHES ABOVE FINISH GRADE OF PLANTING AREA WHERE NOT ADJACENT TO PEDESTRIAN AREAS. AT SHRUB AREAS ADJACENT TO PEDESTRIAN ACCESS USE 6" POP-UP SPRAY HEADS.

10. TESTING: NOTIFY ARCHITECT TWO WORKING DAYS MINIMUM PRIOR TO TESTING. TEST PRESSURE LINES AT 100 PSI MINIMUM FOR 6 HOURS MINIMUM AND MAKE CERTAIN THERE ARE NO LEAKS BEFORE BACKFILLING. AFTER BACKFILLING, PERFORM AN OPERATING TEST OF THE ENTIRE SYSTEM. OPERATE THE ENTIRE SYSTEM THROUGH ONE CYCLE OF THE CONTROLLER FOR THE PURPOSE OF CHECKING COVERAGE AND ASSURING THE ABSENCE OF LEAKS. REPAIR WATER LINES, VALVES, OR CONNECTIONS WHICH SHOW EVIDENCE OF LEAKAGE. ANY PORTION OF THE SYSTEM WHICH SHOWS DEFECTS OR LEAKAGE SHALL BE REPAIRED TO THE SATISFACTION OF THE ARCHITECT AND THE OWNER OR BE REPLACED. AFTER ALL REPAIRS OR REPLACEMENTS HAVE BEEN MADE AND APPROVED BY THE ARCHITECT, THE ABOVE REQUIRED TEST SHALL BE MADE AGAIN.

11. ADJUSTMENT: ADJUST HEADS TO PROPER GRADE WHEN TURF IS SUFFICIENTLY ESTABLISHED TO ALLOW WALKING ON IT WITHOUT APPRECIABLE HARM. SUCH LOWERING OR RAISING OF HEADS SHALL BE PART OF ORIGINAL CONTRACT WITH NO ADDITIONAL COST TO OWNER. ADJUST SPRINKLER HEADS FOR PROPER DISTRIBUTION AND TRIM SO SPRAY DOES NOT FALL ON BUILDING. ADJUST WATERING TIME OF VALVES TO PROVIDE PROPER AMOUNTS OF WATER TO ALL PLANTS.

12. CLEAN-UP: REMOVE FROM SITE ALL DEBRIS RESULTING FROM WORK OF THIS SECTION.

02900-LANDSCAPING

A. TOPSOIL: ASTM D 5268, pH RANGE OF 5.5 TO 7, A MINIMUM OF 2 PERCENT ORGANIC MATERIAL CONTENT; FREE OF STONES 1 INCH OR LARGER IN ANY DIMENSION AND OTHER EXTRANEOUS MATERIALS HARMFUL TO PLANT GROWTH.

B. REUSE SURFACE SOIL STOCKPILED ON-SITE. VERIFY SUITABILITY OF STOCKPILED SURFACE SOIL TO PRODUCE TOPSOIL. SUPPLEMENT WITH IMPORTED OR MANUFACTURED TOPSOIL FROM OFF-SITE SOURCES WHEN QUANTITIES ARE INSUFFICIENT. OBTAIN TOIPSOIL DISPLACED FROM NATURALLY WELL-DRAINED CONSTRUCTION OR MINING SITES WHERE TOPSOIL OCCURS AT LEAST 4 INCHES (100 MM) DEEP; DO NOT OBTAIN FROM BOGS OR MARSHES.

C. COMMERCIAL FERTILIZER: COMMERCIAL-GRADE COMPLETE FERTILIZER OF NEUTRAL CHARACTER, CONSISTING OF FAST- AND SLOW-RELEASE NITROGEN, 50 PERCENT DERIVED FROM NATURAL ORGANIC SOURCES OF UREA FORMALDEHYDE,

PHOSPHOROUS, AND POTASSIUM IN THE FOLLOWING COMPOSITION: 16 PERCENT NITROGEN, 16 PERCENT PHOSPHOROUS, AND 8 PERCENT POTASSIUM, BY WEIGHT.

D. MULCH: LONG-STRAND SHREDDED BARK, 3 INCHES THICK.

E. MAINTAIN AND ESTABLISH LAWN BY WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING, REPLANTING, AND OTHER OPERATIONS. ROLL, REGRADE, AND REPLANT BARE OR ERODED AREAS AND REMULCH TO PRODUCE A UNIFORMLY

SMOOTH LAWN. MOW LAWN AS SOON AS TOP GROWTH IS TALL ENOUGH TO CUT.

REPEAT MOWING TO MAINTAIN 2 TO 3 INCH WITHOUT CUTTING MORE THAN 40 PERCENT OF GRASS HEIGHT.

F. MAINTAIN TREES AND SHRUBS FOR THREE MONTHS FROM DATE OF SUBSTANTIAL COMPLETION BY PRUNING, CULTIVATING, WATERING, WEEDING, FERTILIZING, RESTORING PLANTING SAUCERS, AND RESETTING TO PROPER GRADES OR VERTICAL POSITION, AS REQUIRED TO ESTABLISH HEALTHY, VIABLE PLANTINGS. SPRAY AS REQUIRED TO KEEP TREES AND SHRUBS FREE OF INSECTS AND DISEASE.

G. MAINTAIN GROUND COVER AND PLANTS FOR THREE MONTHS FROM DATE OF SUBSTANTIAL COMPLETION BY WATERING, WEEDING, FERTILIXING, AND OTHER OPERATIONS AS REQUIRED TO ESTABLISH HEALTHY, VIABLE PLANTINGS.

H. WARRANTY: WARRANT TREES, SHRUBS, GROUND VOER AND PLANTS AND LAWNS FOR ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM LACK OF ADEQUATE MAINTENANCE, NEGLECT, OR ABUSE BY OWNER, OR INCIDENTS THAT ARE BEYOND CONTRACTOR'S CONTROL.

DIVISION III CONCRETE

(REFER TO STRUCTURAL SHEET NOTES)

03300 – CAST IN PLACE CONCRETE (REFER TO STRUCTURAL SHEET NOTES)

A. SEE STRUCTURAL DRAWINGS FOR DESIGN CRITERIA AND REQUIREMENTS OF ALL STRUCTURAL AND GENERAL CONCRETE, AND REINFORCING.

B. AGGREGATE BASE: GRAVEL, MANIMUM SIZE 1", NOT MORE THAN 5% PASSING A NUMBER 200 SIEVE. REFER TO DRAWINGS FOR REQUIRED THICKNESS OF BASE MATERIAL.

C. JOINT FILLER: FIBERBOARD MATERIAL IN THICKNESS INDICATED.

D. FOR ALL EXTERIOR CONCRETE PAVING REFER TO SECTION "02520 – CONCRETE PAVING".

03331-ARCHITECTURAL CAST CONCRETE (EXTERIOR SEAT-WALL CAP)

A. FORM-FACING PANELS FOR AS-CAST FINISHES. EXTERIOR-GRADE PLYWOOD PANELS NONABSORPTIVE, THAT WILL PROVIDE CONTINUOUS, TRUE, AND SMOOTH ARCHITECTURAL CONCRETE SURFACES MEDIUM-DENSITY OVERLAY, CLASS 1, OR BETTER, MILL-RELEASE AGENT TREATED EDGE SEALED, COMPLYING WITH DOC PS 1.

B. PATCH AND REPAIR DEFECTIVE AREAS. REMOVE FINS AND OTHER PROJECTIONS EXCEEDING ACI 347R LIMITS FOR CLASS OF SURFACE SPECIFIED.

DIVISION IV MASONRY

(REFER TO STRUCTURAL SHEET NOTES)

04810 – UNIT MASONRY

A. PROVIDE FACE BRICK, AND MORTAR COLOR TO BE SELECTED BY ARCHITECT.

1. GRADE: SW, TYPE FBS, SIZE 2-1/4"X3-5/8"X7-5/8" 3000 PSI

B. PROVIDE BRICK TIES AS REQUIRED.

C. CONCRETE MASONRY UNITS (CMU). PROVIDE CMU PER THE STRUCTURAL NOTES. PROVIDE FINISHES AS SHOWN INCLUDING REGULAR FACED UNITS AND SPLIT FACED, WHERE INDICATED ON DRAWINGS.

D. COMPLY WITH COLD WEATHER INSTALLATION REQUIREMENTS.

E. CLEAN MASONRY AT COMPLETION OF WORK.

DIVISION V - METALS

(REFER TO STRUCTURAL SHEET NOTES)

05500 – METAL FABRICATIONS (REFER TO STRUCTURAL SHEET NOTES)

A. MISC. METAL FABRICATIONS ARE AS INDICATED ON DRAWINGS, AND ARE TO BE DELIVERED TO THE JOB SITE PRIMED AND READY FOR PAINT. INCLUDE ALL BRACKETS AND FASTENERS REQUIRED FOR INSTALLATION. COUNTER TOP SUPPORT BRACKETS TO BE INSTALLED IN CMU AND STUD WALLS ARE PART OF THIS SECTION AND ARE TO BE PROVIDED TO GENERAL CONTRACTOR WHEN REQUIRED TO MEET CONSTRUCTION SCHEDULE OF OTHER TRADES.

B. ALL MISC. METAL FABRICATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE GENERAL STRUCTURAL NOTES AND STRUCTURAL DRAWINGS.

05521 – ORNAMENTAL HANDRAILS AND RAILINGS

A. STRUCTURAL PERFORMANCE OF HANDRAILS AND RAILING SYSTEMS: COMPLY WITH ASTM 985 BASED ON TESTING PER ASTM E 894 AND E 935.

B. PRODUCTS AS FOLLOWS:

1. STEEL PIPE: ASTM A 53: FINIHS, TYPE AND WEIGHT CLASS AS FOLLOWS: PAINTED FINISH FOR EXTERIOR INSTALLATIONS AND WHERE INDICATED.

TYPE S, GRADE A, STANDARD WEIGHT (SCHEDULE 40) UNLESS OTHERWISE INDICATED, OR ANOTHER WEIGHT REQUIRED BY STRUCTURAL LOADS.

2. STEEL TUBING: PRODUCT TYPE (MANUFACTURING METHOD) AND OTHER REQUIREMENTS AS FOLLOWS:

COLD-FORMED ROUND STEEL TUBING: ASTM A 500, GRADE AS INDICATED BELOW:

GRADE A, UNLESS OTHERWISE INDICATED OR REQUIRED BY STRUCTURAL LOADS.

3. STEEL PLATES, SHAPES, AND BARS: ASTM A 36.

4. GRAY IRON CASTINGS: ASTM A 48, CLASS 30.

5. BRACKETS, FLANGES, AND ANCHORS: CAST OR FORMED METAL OF THE SAME TYPE MATERIAL AND FINISH AS SUPPORTED RAILS, UNLESS OTHERWISE INDICATED.

DIVISION VI - CARPENTRY

(REFER TO STRUCTURAL SHEET NOTES)

06100 – ROUGH CARPENTRY

A. FURNISH ALL LABOR, TOOLS, EQUIPMENT, AND MATERIALS TO COMPLETE WORK UNDER THIS HEADING AS INDICATED ON THE DRAWINGS AND DESCRIBED IN THESE SPECIFICATIONS.

B MATERIALS: PROVIDE NEW LUMBER BEARING THE GRADE AND TRADEMARK OF THE ASSOCIATION UNDER WHOSE RULES IT WAS PRODUCED.

C. SEE STRUCTURAL DRAWINGS AND NOTES FOR REQUIREMENTS FOR STRUCTURAL WOOD, INCLUDING FRAMING, SHEATHING, AND PREMANUFACTURED WOOD JOISTS.

D. PRESERVATIVE-TREATED MATERIALS: AWPA C2 LUMBER AND AWPA C9 PLYWOOD, LABELED BY AN INSPECTION AGENCY APPROVED BY ALSC'S BOARD OF REVIEW. AFTER TREATMENT, KILN-DRY LUMBER AND PLYWOOD TO 19 AND 15 PERCENT MOISTURE CONTENT RESPECTIVELY. TREAT INDICATED ITEMS AND THE FOLLOWING

1. CONCEALED MEMBERS IN CONTACT WITH MASONRY OR CONCRETE. ALL WOOD LOCATED NEARER THAN 6" TO EARTH OR WHERE LOCATED ON SLABS PLACED ON EARTH SHALL BE TREATED PER IBC SECTION 2304.11.

E. SILL-SEALER: PROVIDE GLASS-FIBER INSULATION, 1-INCH (25-MM) THICK, COMPRESSIBLE TO 1/32 INCH (0.8 MM). AT ALL EXTERIOR WOOD FRAMED WALL BOTTOM PLATES.

F. BUILDING PAPER: POLYOLEFIN MATERIAL COMPLYING WITH ASTM E 1677, TYPE I, WITH MINIMUM WATER-VAPOR TRANSMISSION OF 10 PERMS (575 NG/PA X S X SQ. M).

G. FOUNDATION INSULATION: EXTRUDED-POLYSTYRENE BOARD INSULATION ASTM C 578, TYPE VII, 2.20 LB/CU. FT. WITH MAX FLAME SPREAD 75 AND 450,RESPECTIVELY.

H. FOUNDATION INSULATION PROTECTION BOARD PREMOLDED, SEMI RIGID ASPHALT/FIBER COMPOSITION BOARD, 1/4" THK.

06105 – MISCELLANEOUS CARPENTRY

A. ALL MISCELLANEOUS CARPENTRY SHALL COMPLY WITH THE REQUIREMENTS OF ROUGH CARPENTRY, SECTION 06100.

06402 – INTERIOR ARCHITECTURAL WOODWORK

A. PLASTIC-LAMINATE CABINETS AND COUNTERTOPS.

AWI CUSTOM GRADE. FLUSH OVERLAY CONSTRUCTION

1. HARDBOARD AHA A135.4,
2. MEDIUM-DENSITY FIBERBOARD ANSI A208.2, GRADE MD-EXTERIOR GLUE
3. EXPOSED TO VIEW SURFACES LAMINATE GRADE: GP-504.
4. UNEXPOSED SURFACES FUSED MELAMINE-IMPREGNATED DECORATIVE PAPER.
5. EDGE TREATMENT: 3MM BLACK PVC EDGE BANDING
6. HARDWARE

A. HINGES EUROPEAN TYPE HEAVY DUTY 170 DEGREE HINGES
B. CATCHES METAL HOUSING ROLLER CATCHES WITH 15# PULL
C. DRAWER HARDWARE SIDE MOUNTED, BALL-BEARING NYLON ROLLER DRAWER.
D. GUIDE, LOAD CAPACITY 75 LBS./PAIR
E. CABINET DRAWER PULLS (COORDINATE W/INTERIOR DESIGNER)
F. LOCKS 5-PIN TUMBLER LOCKS
G. SHELF SUPPORTS 32 MM HOLES/SUPPORT SYSTEM WITH K&V 345 NP SUPPORTS
H. CLOSET BARS K&V KV-2
I. STEEL COUNTER SUPPORT BRACKETTS ARE WORK OF DIV 5 SECTION
J. TV CABINET HINGE/SLIDE EQUIVELANT TO GRASS TRUE 32 OF LENGTH REQUIRED.
K. FILE DRAWER INSERTS WHERE INDICATED ON DRAWINGS. METAL FRAME INSERTS TO ACCOMODATE "LETTER" AND "LEGAL" SIZE HANGING FILES.
L. WIRE WAY GROMETS. 2-1/2" ROUND PLASTIC GROMETS AND SLEEVES ARE WORK OF THIS SECTION. PROVIDE (25) INSTALLED IN LOCATION AS DIRECTED BY OWNER

B. INTERIOR WOOD TRIM: TO BE MAHOGANY

DIVISION VII - MOISTURE PROTECTION

07110 – ICE AND WATER SHIELD UNDERLAYMENT

A. RUBBERIZED ASPHALT SHEET UNDERLAYMENT: SELF-ADHERING MEMBRANE OF RUBBERIZED ASPHALT INTEGRALLY BONDED TO POLYETHYLENE SHEETING, FORMED INTO UNIFORM FLEXIBLE SHEETS, COMPLYING WITH THE FOLLOWING:

B. AVAILABLE PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PRODUCTS THAT MAY BE INCORPORATED IN THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
W.R. GRACE AND CO. – ICE AND WATER SHIELD

C. APPLY ON ROOFS AT ALL EDGES, TRANSITIONS, PENETRATIONS, AND AREAS PRONE TO LEAKING.

07210 – INSULATION

A. MINERAL-FIBER-BLANKET BATT INSULATION: ASTM C 665, TYPE III, CLASS A, FOIL-SCRIM-KRAFT, FOIL-SCRIM, OR FOIL-SCRIM-POLYETHYLENE VAPOR-RETARDER MEMBRANE ON ONE FACE WITH FIBERS MANUFACTURED FROM GLASS; WITH R-VALUE AS INDICATED ON DRAWINGS OR IF NOT INDICATED AS FOLLOWS

1. EXTERIOR WALLS: 5 1/2", R-19 BATTS
2. ROOFRAFTERS: R-30 BATTS HELD IN PLACE WITH T FOIL POLYPROPYLENE TYPE TC 8125 FS 25 CLASS 1 HOLDER ASSEMBLY T FOIL (253) 209-2975 OR EQUIVELANT.

07241- EXTERIOR INSULATION AND FINISH SYSTEM CLASS PB (EIFS)

DRYVIT SYSTEMS, INC, SENERGY INC, STO CORP, MECHANICALLY ATTACHED TO SUBSTRATE, INTEGRALLY REINFORCED BASE COAT, AND TEXTURED PROTECTIVE FINISH COAT, TEXTURE AND COLOR AS SELECTED BY ARCHITECT.

SUBMIT EVIDENCE OF INSTALLERS CERTIFICATION FROM THE MANUFACTURER. A COPY OF THE MANUFACTURERS INSTALLATION INSTRUCTIONS, AND PRODUCT DATA ON SYSTEM MATERIALS.

INSTALL ALL MATERIALS IN ACCORDANCE WITH MANUFACTURERS PUBLISHED INSTRUCTIONS AND BEST RECOMENDATIONS.

A. 1-1/2 " BOARD INSULATION, V GROVES WHERE INDICATED

B. INSTALL PER MFGR'S PUBLISHED RECOMMENDATIONS FOR SUBSTRATE

C. COMPLY WITH COLD WEATHER INSTALLATION REQUIREMENTS AND MAINTAIN REQUIRED MIN TEMPERATURERS DURRING INSTALLATION AND FOR MIN 24HRS AFTER INSTALLATION OF FINISH.

D. IMPACT PROTECTION: WHERE INDICATED PROVIDE 15 OUNCE MESH AND PREFORMED CORNERS FROM BASE OF WALL TO 7'-2" OR HEIGHT INDICATED. INSTALL UNDERNEATH COATING REINFORCEMENT IN ADDITIONAL COAT OF BASE COAT.

E. CLEAN EIFS FROM ALL ADJACENT SURFACES AT COMPLETION OF WORK.

F. WARRANTY: 5 YEAR WARANTEE FROM THE MANUFACTURER COVERING REPLACEMENT OF DEFECTIVE MATERIALS.

07311 – ASPHALT SHINGLE SYSTEM

A. SHINGLES – DIMENSIONAL ASPHALT SHINGLES MINERAL-GRANULE SURFACED, SELF-SEALING, WIND RESISTANCE 1-90.

1. PROVIDE INTERGRAL MOSS RESISTANCE PER MANUFACTURER

2. COLOR (COORDINATE WITH OWNER AND ARCHITECT)

B. FELT UNDERLAYMENT (30# FELT) TYPE II, 36-INCH (914-MM) WIDE, ASPHALT-SATURATED ORGANIC FELT, COMPLYING WITH ASTM D 226 (NO. 30) OR ASTM D 4869.

C. WARRANTY: 30 YEAR WARRANTY.

D. ROOF VENTS: WHERE SHOWN ON ROOF PLAN

E. PROVIDE CLOSED CUT VALLEYS

07500 – THERMOPLASTIC SINGLE PLY MECHANICALLY ATTACHED MEMBRANE ROOFING SYSTEM

A. MANUFACTURES
GENFLEX
STEVENS
CARLISLE
SARNAFIL

1. MEMBRANE THICKNESS: 45 MILS, NONOMINAL
2. TAPERED INSULATION SYSTEM 4" MIN POLYISOCYANURATE FOAM MEETING ASTM C 1289, TYPE II
3 CRICKETTS SAME MATERIAL AS INSULATION
4. PROTECTION BOARD MIN 1/2" HIGH DENSITY WOOD FIBERBOARD THAT IS COMPATIBLE WITH SINGLE PLY MEMBRANE MANUFACTURE.
5. FASTENERS, COATED METAL FLASHINGS, PRE FORMED PIPE BOOT FLASHINGS, ONE-WAY VENTS, ADHESIVES AND SEALANTS, AND HEAVY TPO WALKWAY PROTECTION (MIN 90 MILLS THICK), AS REQUIRED BY MFGR'S PUBLISHED RECOMENDATIONS FOR A COMPLETE WARRENTED INSTALLATION.

B. THIS ROOFING SYSTEM TO BE INSTALLED BY AUTHORIZED ROOFING SYSTEMS APPLICATOR.

C. COMPONENTS OF THIS ROOFING SYSTEM TO BE PRODUCTS APPROVED BY

07500 – THERMOPLASTIC SINGLE PLY MECHANICALLY ATTACHED MEMBRANE ROOFING SYSTEM (CONT.)

D. WARRANTY 10 YEAR AFTER DATE OF SUBSTANTIAL COMPLETION SIGNED BY THE ROOFING INSTALLER AND THE SYSTEM MANUFACTURER ON A FORM THAT WAS PUBLISHED WITH THE PRODUCT LITERATURE AS OF THE DATE OF THE CONTRACT DOCUMENTS.

07600 – SHEET METAL FLASHING

A. GENERAL: ALL SHEET METAL TO COMPLY WITH "SMACNA" STANDARDS, LATEST EDITION.

B. GUTTERS AND DOWNSPOUTS (WHERE INDICATED ON DRAWINGS) GUTTERS, STEEL 4" X 4" , 24 GA., FINISH PROFILE TO MATCH EXISTING. DOWNSPOUTS: SIZE 2 X 3 W/ FINISH AS TO MATCH (E). CONNECT TO DRAIN SYSTEM.

C. SHEET METAL FLASHING 24 GA. STEEL, FINISH TO MATCH ROOFING. WORK TO COMPLY WITH SMACNA RECOMMENDATIONS ALL FLASHING REQUIRED FOR ROOF INTEGRITY IS BY ROOFING CONTRACTOR. FLASHING IS TO BE PRE-PAINTED. COLOR TO MATCH EXISTING.

D. ALUMINUM SOFIT AND FACIA

1. ALUMINUM SOFFIT: VENTED AS SHOWN.

2. ALUMINUM FASCIA: AS SHOWN.

07901 JOINT SEALERS.

A. PROVIDE CAULKING AND SEALANTS FOR ALL JOINTS, INTERIOR AND EXTERIOR. PROVIDE MINIMUM ONE YEAR WARRANTY ON ALL SEALANTS.

DIVISION VIII - WINDOWS/DOORS

08211 – FLUSH WOOD DOORS WITH HARDWOOD-VENEER FACES AND FACTORY FIT AND FINISHING.

A. PREMIUM GRADE FACES OF PLAIN SLICED RED OAK. FIVE OR SEVEN PLIES.

B. FINISH TR-6 CATALLYZED POLYURETHANE WITH OPEN GRAIN FINISH AND SATIN SHEEN.

C. COMPLY WITH NFPA 80 FOR FIRE RATED DOORS.

D. LIGHT OPENINGS TO BE TRIMED WITH MOLDINGS OF MATERIAL MATCHING DOOR VENEERS. PROVIDE APPROVED METAL TRIMED DOOR OPENINGS WHERE REQUIRED TO COMPLY WITH FIRE RATINGS.

E. WARRANTY TO BE LIFE TIME OF DOOR.

08311 – ACCESS HATCHES

A. ROOF HATCH 30"X40". PROVIDE LADDER-UP POST.

B. INSTALL WHERE INDICATED ON PLANS AND AS PER MANUFACTURERS RECOMENDATIONS.

08400 – STOREFRONT FRAMING AND DOORS

PROVIDE ALUMINUM STOREFRONT AND ENTERANCE FRAMING AS INDICATED ON THE DRAWINGS AS MANUFACTURED BY KAWNEER OR US ALUMINUM.

A. SUBMITTALS: SHOP DRAWINGS INDICATING LOCATIONS, SIZES, INSTALLATION DETAILS, FINISH, AND HARDWARE.

B. WARANTY: MANUFACTURERS STANDARD 5 YEAR WARANTEY.

C. FABRICATED SYSTEM FROM ASTM B 221 ALUMINUM EXTRUSIONS AND ASTM B 209 SHEET, EQUAL TO KAWNEER PRODUCT 451T, THERMAL SYSTEM FOR INSULATED GLASS AS SHOWN ON DRAWINGS.

C. ALUMINUM ENTERANCE DOORS: STILE AND RAIL TYPE, 1-3/4" THK. NARROW STILE TUBULAR FRAME MEMBERS MECHANICALLY FASTENED AND REINFORCED JOINTS SINGLE PANE 1/4" GLAZING. DOUBLE PANE INSULATED GLAZING. EXPOSED ALLUMINUM SURFACES; FINISH AS INDICATED.

D. HARDWARE TO BE MANUFACTURERS STANDARD HEAVY DUTY HARDWARE UNITS OF TYPE RECOMENDED BY MANUFACTURER FOR SERVICE REQUIRED. FINISH TO MATCH DOOR UNLESS OTHERWISE INDICATED PERIMITER WEATHERSTRIPING CLOSERS MFGR'S STD HEAVY DUTY SURFACE MOUNTED PARALLEL ARM TO COMPLY WITH LOCAL CODES AND ADA AS APPLICABLE PUSH/PULL KAWNEER #"T" AND "V" STYLE. THREASHOLD 1/2"H X 4" W EXIT DEVICE HINGES STOP

E. COMPLY WITH MANUFACTURES INSTRUCTIONS AND BEST RECOMENDATIONS FOR INSTALLATION OF ALUMINUM ENTERANCES AND STOREFRONTS INCLUDING HARDWARE, FASTENERS, FLASHINGS, BRACKETS AND REINFORCEMENTS, INSERTS, COATINGS, SEALS, AND BREAK SHAPED 0.040 ALUMINUM METAL AS REQUIRED OR AS INDICATED.

F. SEAL ALL JOINTS, CONCEALED AND WATER TIGHT WITH SEALANT.

B. PROTECT, ADJUST, AND CLEAN AS REQUIRED INCLUDING THE REMOVAL OF EXCESS GLAZING AND JOINT SEALANTS, DIRT, AND OTHER SUBSTANCES FROM ALUMINUM SURFACES.

08520 – ALUMINUM WINDOWS

ACCEPTABLE WINDOWS SPECIFIED IS EFCO, TRECO, GRAHAM, KAWNEER. EQUIVELENT PRODUCTS BY OTHER MFGR'S MAY BE CONSIDERED UPON APPROVAL BY THE ARCHITECT

A. PROVIDE NEW ALUM WINDOWS, DOUBLE HUNG AND FIXED AS INDICATED.

B. PERFORMANCE REQUIREMENTS: AAMA/NWWDA 101/I.S.2 DETERMIN WIND LOADS AND RESULTING DESIGN PREASURES APPLICABLE TO PROJECT ACORDING TO ASCE 7 SECTION 6.4.2
PERFORMANCE CLASS HEAVY COMMERCIAL (HC) OR COMMERCIAL (C).

C. GLAZING TO BE INSULATED, LOW "E", CLEAR GLASS. TEMPERED WHERE REQUIRED.

D. FINISH:
EXTERIOR "BLUE", ARCHITECT TO SELECT FROM MANUFACTURER'S FULL RANGE OF COLORS.
INTERIOR "NEUTRAL", ARCHITECT TO SELECT FROM MANUFACTURER'S FULL RANGE OF COLORS.
BAKED-ENAMEL FINISH
ALUMINUM HIGH PERFORMANCE ORGANIC COATING THREE COAT SYSTEM.

E. INSTALL PER MFGR'S PUBLISHED INSTRUCTIONS FOR CONDITIONS INDICATED.

F. WARANTEE: MFGR STD 20 YEAR

ACCESSORIES Deletes

A. 1600 SUNSHADE: AN ALUMINUM SUNSHADE (CONSISTING OF OUTRIGGERS, LOUVERS, AND FASCIA WHICH MAY BE SELECTED FROM STANDARD CONFIGURATIONS, MODIFIED CONFIGURATIONS, OR CUSTOMIZED) THAT IS ANCHORED DIRECTLY TO THE VERTICAL CURTAIN WALL MULLIONS. OUTRIGGERS SHALL BE PAINTED (SELECT FROM KAWNEER'S STANDARD PAINTS AND COLORS. CUSTOM COLORS ARE AVAILABLE UPON REQUEST.) LOUVERS AND FASCIA SHALL BE PAINTED OR ANODIZED (SELECT FROM KAWNEER'S STANDARD PAINTS AND COLORS, CUSTOM COLORS ARE AVAILABLE UPON REQUEST, OR KAWNEER'S ANODIZED FINISHES.).

B. KAWNEER 1600 SUNSHADE

OUTRIGGER: STRAIGHT – SQUARE
LOUVER: PLANAR
FASCIA: RECTANGULAR

SECTION 08622 – TUBE SKYLIGHT

PART 1 – GENERAL

1. SUMMARY

. SECTION INCLUDES: ROOF MOUNTED, TUBULAR SKYLIGHT WITH CEILING LIGHT DIFFUSER.

SKYLIGHT TO BE INSTALLED ON SINGLE PLY MEMBRANE ROOF.

. SECTION 07500 – MEMBRANE ROOFING: [BUILT-UP] [SINGLE PLY] MEMBRANE ROOFING TO RECEIVE SKYLIGHT.

2. SUBMITTALS

. PROVIDE IN ACCORDANCE WITH SECTION 01330 – SUBMITTAL PROCEDURES:
. PRODUCT DATA FOR SKYLIGHT.
. SHOP DRAWINGS: INDICATE DIMENSIONS, CONSTRUCTION, AND INSTALLATION DETAILS.
. MANUFACTURER'S INSTALLATION AND MAINTENANCE INSTRUCTIONS.
. COPY OF WARRANTY REQUIRED BY PARAGRAPH 1.3 FOR REVIEW BY ARCHITECT.

3. WARRANTY

. PROVIDE UNDER PROVISIONS OF SECTION 01780 – CLOSEOUT SUBMITTALS: LIFETIME WARRANTY TO INITIAL OWNER TO COVER DEFECTS IN SKYLIGHT MATERIALS AND WORKMANSHIP.

PART 2 – PRODUCTS

4. ACCEPTABLE MANUFACTURERS

. ACTIVE VENTILATION PRODUCTS, INC.
. ADDRESS:
P.O. BOX 1521
NEWBURGH, NEW YORK 12551-1521
. TELEPHONE: 800-247-3463 OR 845-565-7770
. FAX: 845-562-8963
. WEBSITE: WWW.ROOFVENTS.COM
. E-MAIL: ROOFVENTS@AOL.COM

. REQUESTS TO USE EQUIVALENT PRODUCTS OF OTHER MANUFACTURERS SHALL BE SUBMITTED IN ACCORDANCE WITH SECTION 01630 – PRODUCT SUBSTITUTION PROCEDURES.

5. TUBE SKYLIGHT

. TYPE: ROOF MOUNTED, CIRCULAR, SKYLIGHT CONNECTED BY FLEX TUBING TO LIGHT DIFFUSER INSTALLED IN CEILING; AURA SKYLIGHT MODEL NO. AS-24 AS MANUFACTURED BY ACTIVE VENTILATION PRODUCTS, INC.

. MATERIALS:

. SKYLIGHT FRAME: SPUN ALUMINUM WITH [ELECTROSTATICALLY APPLIED POWDER PAINT COATING. COLOR SELECTED FROM MANUFACTURER'S MILL FINISH.
. CEILING DIFFUSER FRAME: SPUN ALUMINUM WITH ELECTROSTATICALLY APPLIED WHITE POWDER PAINT COATING.
. SKYLIGHT: CLEAR, ULTRAVIOLET RESISTANT POLYCARBONATE.
. CEILING DIFFUSER PANEL: FROSTED POLYCARBONATE.
. DUCT: FLEXIBLE ALUMINUM TUBE.
. UPPER AND LOWER CONNECTION RINGS: ALUMINUM WITH MILL FINISH.
. SKYLIGHT, TUBE, AND CEILING DIFFUSER NOMINAL DIAMETER: 24 INCHES
. SKYLIGHT MOUNTING FLANGE: 36 INCHES SQUARE FLANGE FABRICATED FROM 0.025 INCH ALUMINUM AND DESIGNED TO ACCOMMODATE MEMERANE ROOFING.

. SEALANTS: TYPE AS RECOMMENDED BY MANUFACTURER FOR APPLICATION AND TYPE OF ROOF SUBSTRATE.
. FASTENERS: CORROSION RESISTANT SCREWS, NAILS, STAPLES OR OTHER FASTENERS OF TYPE, SIZE, AND SPACING AS RECOMMENDED BY MANUFACTURER FOR APPLICATION AND TYPE OF ROOF SUBSTRATE.

PART 3 – EXECUTION

6. PREPARATION

. COORDINATE PROVISION OF SKYLIGHT WITH:
. ROOF SYSTEM SPECIFIED IN SECTION [07500] TO ENSURE COMPATIBILITY OF SUBSTRATE TO RECEIVE SKYLIGHT.
. CEILING SYSTEM SPECIFIED IN [SECTION 09260 – GYPSUM BOARD ASSEMBLIES] [SECTION 09510 – ACOUSTICAL CEILINGS] TO ENSURE PROPER MOUNTING OF CEILING ASSEMBLY.
. EXAMINE SITE CONDITIONS AND VERIFY THAT STRUCTURAL SUPPORTS AND OPENINGS ARE PROPERLY SIZED, PREPARED, AND READY TO RECEIVE SKYLIGHT.

7. INSTALLATION

. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SHOP DRAWINGS. COORDINATE WITH INSTALLATION OF ROOFING SYSTEM, CURBS, AND FLASHINGS TO ENSURE WEATHERTIGHTNESS.

. CEILING DIFFUSER INSTALLATION:

. ACCURATELY CUT OPENING IN CEILING USING CIRCULAR TEMPLATE. COORDINATE LOCATION WITH SKYLIGHT LOCATION.
. ENSURE WOOD BLOCKING AND SUPPLEMENTAL SUPPORTS ARE PROVIDED FOR SUPPORT AND ATTACHMENT OF CEILING DIFFUSER.
. ASSEMBLE FLEXIBLE DUCT AND CEILING DIFFUSER WITH CONNECTOR RING. PUSH DUCT THROUGH CEILING OPENING AND SECURELY ANCHOR LIGHT DIFFUSER AND DUCT TO BLOCKING.

. LOCATE SKYLIGHT ON ROOF AS INDICATED ON DRAWINGS. ENSURE OPENING DOES NOT CONFLICT WITH ROOF FRAMING MEMBERS. ACCURATELY CUT OPENING IN ROOF SUBSTRATE USING TEMPLATE AND PILOT HOLE.

. INSTALL PRESERVATIVE TREATED WOOD NAILERS.

. PULL FLEXIBLE DUCT TAUNT THROUGH SKYLIGHT OPENING AND INSERT INTO UPPER RING. CUT OFF EXCESS DUCT AS REQUIRED. ENSURE DUCT IS CLEAR AND LIGHT PASSAGE IS DIRECT. ATTACH TO ROOF SUBSTRATE WITH UPPER CONNECTOR RING..

. SKYLIGHT INSTALLATION ON SINGLE PLY MEMBRANE ROOFING SYSTEM:

. INSTALL SKYLIGHT AS PART OF SINGLE PLY MEMBRANE ROOFING.
. TRIM CORNERS OF MOUNTING FLANGE TO PROVIDE SMOOTH RADIUS WITHOUT SHARP POINTS.
. APPLY BUTYL TAPE SEALANT OR ROOFING MASTIC TO BOTTOM OF ROOF MOUNTING FLANGE. SET MOUNTING FLANGE OVER ROOF OPENING ONTO SINGLE PLY ROOF MEMBRANE.
. SECURELY ANCHOR SKYLIGHT FLANGE TO ROOF SUBSTRATE WITH FASTENERS OF TYPE, SIZE, AND SPACING RECOMMENDED BY MANUFACTURER.
. INSTALL PIECE OF SINGLE PLY ROOFING OVER MOUNTING FLANGE. SECURE WITH ADHESIVE, HEAT WELDING, OR OTHER PROCEDURE AS PART OF ROOFING OPERATION.

. WASH EXPOSED POLYCARBONATE AND ALUMINUM SURFACES WITH SOLUTION OF MILD DETERGENT AND WARM WATER APPLIED WITH SOFT, CLEAN CLOTHS. DO NOT USE ABRASIVE MATERIALS.

END OF SECTION

08800-GLASS AND GLAZING

A. WINDOWS, DOORS, GLAZED ENTERANCES AND INTERIOR LITES.

1. PRIMARY FLOAT GLASS ASTM C 1036, TYPE 1, QUALITY Q3
2. HEAT-TREATED FLOAT GLASS ASTM C 1048,TYPE 1, QUALITY Q3
3. INSULATED GLASS PRE ASSEMBLED UNITS ASTM E 774 FOR CLASS CBA OF THICKNESS REQUIRED FOR CONDITION, AND FOR WINDOW PERFORMANCE SPECIFIED. INDOOR AND OUTDOOR LITE TO BE FLOAT GLASS, CLASS 1 CLEAR ANNEALED. LOW-EMISSIVITY COATING ON THIRD SURFACE.
VISIBLE LIGHT TRANSMITTANCE 0.52-0.54.
AVERAGE U-VALUE 0.37-0.35.
SOLAR HEAT GAIN COEFFICINIENT 0.51-0.53.
4 LAMINATED GLASS ASTM C 1172

08710 – HARDWARE

SUBMITTALS

PRODUCT DATA: SUBMIT MANUFACTURERS TECHNICAL PRODUCT DATA FOR EACH ITEM OF HARDWARE. INCLUDE WHATEVER INFORMATION MAY BE NECESSARY TO SHOW COMPLIANCE WITH REQUIREMENTS, AND INCLUDE INSTRUCTONS FOR INSTALLATION AND FOR MAINTENANCE OF OPERATING PARTS AND FINISH.

HARDWARE SDCHEDULE: SUBMIT FINAL HARDWARE SCHEDULE. COORDINATE HARDWARE WITH DOORS, FRAMES AND RELATED WORK TO ENSURE PROPER SIZE, THICKNESS, HAND, FUNCTION AND FINISH OF HARDWARE

KEYING SCHEDULE: SUBMIT SEPARATE DETAILED SCHEDULE INDICATING CLEARLY HOW THE OWNER'S FINAL INSTRUCTIONS ON KEYING OF LOCKS HAS BEEN FULFILLED.

PROVIDED QUALITY OF FINISH, INCLUDING THICKNESS OF PLATING OR COATING (IF ANY), COMPOSITION, HARDNESS AND OTHER QUALITIES COMPLYING WITH MANUFACTURER'S STANDARDS, BUT IN NO CASE LESS THAN SPECIFIED FOR THE APPLICABLE UNITS OF HARDWARE BY REFERENCED STANDARDS. ALL HARDWARE SHALL BE US26D FINISH, EXCEPT AS NOTED OTHERWISE.

KEY TO EXISTING KEY SYSTEM

MANUFACTURERS USED:

HINGES:	MCKINNEY MFG. CO.
LOCKSETS:	SARGENT
EXIT DEVICES:	SARGENT
CLOSERS:	SARGENT
TRIM:	ROCKWOOD
WEATHERSTRIP:	PEMKO

HARDWARE SET 1: DOORS G

6	EA	HINGE	T4A3386 4.5 X 4.5 (NRP)	26D	MCKINNEY
1	EA	REMOV. MULLION L980		USP	SARGENT
1	EA	ACTIVE RIM EXIT	8813 ETL	32D	SARGENT
1	EA	INACTIVE RIM EXIT	8810 ETL-DT	32D	SARGENT
2	EA	CLOSER	1430 CPS	EN	SARGENT
1	EA	THRESHOLD	171A X WIDTH AS REQUIRED	ALUM	PEMKO
2	EA	SWEEP	315CN X DOOR WIDTH	ALUM	PEMKO
1	SET	WEATHERSTRIP	303AS X LENGTH REQUIRED	ALUM	PEMKO

HARDWARE SET 2: DOORS F

6	EA	HINGE	T4A3786 4.5 X 4.5	26D	MCKINNEY
2	SET	PUSH/PULL SET	8893 X ETL-DT	32D	SARGENT
2	EA	CLOSER	1430 CPS	EN	SARGENT
2	EA	WEATHERSTRIP		BY DOOR MFGR	

HARDWARE SET 3: DOORS C

6	EA	HINGE	TA2714 4.5 X 4.5	26D	MCKINNEY
2	EA	FLUSH BOLTS	555	26D	ROCKWOOD
1	EA	PASSAGE SET	28-7U15LL (PASSAGE)	26D	ROCKWOOD
2	EA	WALL STOP	409	32D	ROCKWOOD
2	EA	SILENCER	608	GREY	ROCKWOOD

HARDWARE SET 4: DOORS A & J

3	EA	HINGE	TA2714 4.5 X 4.5	26D	MCKINNEY
1	EA	LOCKSET	28-7G05 LL (OFFICE)	26D	SARGENT
1	EA	WALL STOP	409	32D	ROCKWOOD
3	EA	SILENCER	608	GREY	ROCKWOOD

HARDWARE SET 5: DOOR D

3	EA	HINGE	TA2714 4.5 X 4.5	26D	MCKINNEY
1	EA	LOCKSET	28-7G37 LL (CLASS)	26D	SARGENT
1	EA	WALL STOP	409	32D	ROCKWOOD
1	SET	GASKETING	S88D X LENGTH REQUIRED	BRONZE	PEMKO

HARDWARE SET 6: NOT USED

HARDWARE SET 7: DOORS H

3	EA	HINGE	T4A3386 4.5 X 4.5 NRP	26D	MCKINNEY
1	EA	RIM EXIT	8813 ETL ETL	32D	SARGENT
1	EA	CLOSER	1430 P10	EN	SARGENT
1	EA	WALL STOP	409	32D	ROCKWOOD
1	EA	THRESHOLD	171A X WIDTH AS REQUIRED	ALUM	PEMKO
1	EA	SWEEP	315CN X DOOR WIDTH	ALUM	PEMKO
1	SET	WEATHERSTRIP	303AS X LENGTH REQUIRED	ALUM	PEMKO

HARDWARE SET 8: NOT USED

HARDWARE SET 9: DOOR E

3	EA	HINGE	TA2714 4.5 X 4.5	26D	MCKINNEY
1	EA	LATCHSET	28-7U65 LL (PRIVACY)	26D	SARGENT
1	EA	WALL STOP	409	32D	ROCKWOOD
3	EA	SILENCER	608	GREY	ROCKWOOD

HARDWARE SET 10: DOOR B & K

3	EA	HINGE	T42714	26D	MCKINNEY
1	EA	LATCHSET	28-7G37 LL (PRIVACY)	26D	SARGENT
1	EA	WALL STOP	409	32D	ROCKWOOD
3	EA	SILENCER	608	GREY	ROCKWOOD

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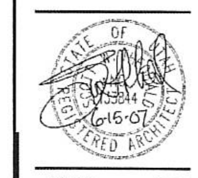
PROTECTIVE INSURANCE-NEW OFFICE BUILDING
LOGAN, UTAH

Mark:	Date:	Description:
1	AUG. 28, 2007	AUGUST 9, 2007 LOGAN CITY COMMENT, RESPONSES



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Drawn By:	ST
Checked By:	
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SPECIFICATIONS

DIVISION IX - FINISHES

09255–GYPSUM BOARD.

A. MATERIAL: UNITED STATES GYPSUM "SHEETROCK" STANDARD OF QUALITY.

B. INTERIOR WALLS: 5/8" THICK TAPERED EDGE.

1. CORNER BEADS: PERF. A–TRIM 0100
2. METAL TRIM: PERF. A–TRIM 0301.
3. TAPE: PERF. A–TAPE AND COMPOUND AND DWA–14 ADHESIVES.
4. INSTALLATION: IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN SPECIFICATIONS AND PERF. A–TAPE READY MIX JOINT SYSTEM.

C. TEXTURE: LIGHT SPRAY TEXTURE, UNLESS OTHERWISE NOTED.

D. NON–LOADBEARING HOT–DIP GALVANIZED STEEL FRAMING COMPLY WITH ASTM C 754 AND ASTM C 645 FOR CONDITIONS INDICATED. PROVIDE 25 GAUGE STUDS TYPICALLY AND 20 GA STUDS FOR WALLS TO RECEIVE CEMENTITIOUS BACKER UNITS. RC–1 RESILIENT CHANNELS WHERE INDICATED ON DRAWINGS.

E. TILE BACKING PANELS TO BE 1/2" CEMENTITIOUS BACKER UNITS ANSI A118.9

F. SOUND ATTENUATION BLANCKETS ASTM C 665, TYPE I (BLANKETS WITH OUT MEMBRANE), COMPLY WITH FIRE–RESISTANCE ASSEMBLIES.

G. ACOUSTICAL SEALANT TO BE NON–SAG, PAINTABLE, NONSTAINING, LATEX COMPLYING WITH ASTM C 834 THAT EFFECTIVELY REDUCE AIRBORN SOUND TRANSMISSION THROUGH PERIMITER JOINTS AND OPENINGS IN THE BUILDING CONSTRUCTION AS PER USG LISTED SOUND RATING ASSEMBLY REQUIREMENTS AND ASTM E 90.

09310 – CERAMIC TILE: PROVIDE FACTORY–MOUNTED FLAT TILE AS FOLLOWS:

A. UNGLAZED CERAMIC MOSAIC FLOOR TILES TO BE TO BE PORCELAIN WITH ABRASIVE ADMIXTURE, 2X2 X 1/4" THK, PLAIN FACE WITH CUSHION EDGE.

GLAZED WALL TILES 6 X 3 X 5/16" THK, PLAIN WITH CUSHION EDGES COLOR AS SELECTED BY ARCHITECT, FROM GROUP 1, ALLOW FOR A (3) COLOR SCHEME.

B. TRIM UNITS AS INDICATED OR IF NOT INDICATED TO PROVIDE A COMPLETE INSTALLATION INCLUDING COVED BASE, EXTERNAL CORNERS, INTERNAL CORNERS,WAINSCOT CAP AT JANITOR SURROUNDS.

C. INSTALL PER TCA (LATEST ADDITION) METHODS AS FOLLOWS
FLOORS TCA F–121 (WHERE INDICATED ON WALL TYPES)
WALLS TCA W–244 (WHERE INDICATED ON WALL TYPES)
WALLS TCA W–221 (WHERE INDICATED ON WALL TYPES)

D. CLEANING AND PROTECTION AS RECOMENDED BY MFGR.

09651 – RESELIENT FLOOR TILES

A. VINYL COMPOSITION FLOOR TILES (VCT) COMPLYING WITH ASTM F 1066, COLOR AS SELECTED BY ARCHITECT. CLASS 1, SMOOTH WEARING SURFACE, 1/8" THK,12X12 TILES.

B. RUBBER WALL BASE COMPLYING WITH FS–SS–W–40, TYPE 1 COLOR AS SELECTED BY ARCHITECT. COVE W/ TOP SET, 1/8" MIN THK, 4" HT, COILS IN LEGTHS AS STD WITH MFGR. PREMOLDED OUTSIDE AND INSIDE CORNERS AND SURFACES.

C. TRANSITION STRIPS RUBBER AS REQUIRED.

09511 ACOUSTIC CEILINGS.

A. ACOUSTIC PANEL CEILINGS.

24 X 24 X 3/4" CIRRUS BEVELED TEGULAR ARMSTRONG 589
9/16" SUPRAFINE GRID HEAVY DUTY
SUSPENSION GRID ASTM C 635
INSTALL PER 97 UBC CODE REQUIREMENTS INCLUDING
SEISMIC BRACING. (IBC 2" PERIMETER L TRIM WILL
NOT BE REQUIRED.)

09680 – CARPET

A. BROADLOOM CARPET EQUIVELANT TO LEES FACULTY CLASSICS. TUFTED TEXTURED LOOP,1/8" GUAGE, 8.3 STITCHES/INCH, YARN DYED ANTRON LEGACY WITH DURA TECH SOIL PROTECTION BY DUPONT. FACE WEIGHT 26 OZ/YD2, BACKING MATERIALS UNIBOND WOVEN POLYPROPYLENE 20 LB TUFT BIND, TOTAL WEIGHT 77.1 OZ/YD2.

B. COMPLY WITH CRI 104 SECTION 8. "DIRECT GLUE–DOWN".

C. CARPET BASE TO BE CLOTH BOUND 4" HIGH BASE, COLOR (SEE FINISH LEGEND), EDGE WRAPPED WITH CLOTH, AND A BOUND EDGE, (NO METAL), BINDING TAPE TO BE CONSTRUCTED OF POLYESTER ONLY, MIN OF 1–1/4" WIDE. ADHEARED TO WALL AS REQUIRED FOR SUBSTRATE PROVIDED.

C. ALLOW FOR (4) COLOR SELECTIONS AS PER ARCHITECT SELECTION.

09900 – PAINTING

A. GENERAL REQUIREMENTS: – PROVIDE ALL PAINTING TO COMPLETE THE WORK. INSPECT WORK OF OTHERS PRIOR TO APPLICATION AND NOTIFY THE DESIGNER AND CONTRACTOR OF ANY SURFACES NOT PROPERLY PREPARED FOR FINISHING OR ASSUME RESPONSIBILITY THEREOF.

B. THE INTENT OF THESE SPECIFICATIONS IS TO PROVIDE A SATISFACTORY FINISH TO ALL PARTS OF THE BUILDING UNLESS NOTED OTHERWISE. ALL SURFACES SHALL BE THOROUGHLY COVERED. IF THE NUMBER OF COATS SPECIFIED DOES NOT ACCOMPLISH THE INTENT, THIS CONTRACTOR SHALL APPLY ADDITIONAL COATS OF MATERIAL TO GIVE SATISFACTORY COVERAGE.

C. THE WORKMANSHIP SHALL BE OF THE VERY BEST QUALITY. ALL MATERIALS SHALL BE SUPPLIED UNDER ADEQUATE ILLUMINATION, EVENLY SPACED AND SMOOTHLY FLOWED ON WITHOUT RUNS OR SAGS. FOLLOW THE MANUFACTURER'S INSTRUCTIONS FOR PRODUCT

D. PAINT SCHEDULE – COLORS PER ARCHITECTS COLOR SELECTION
EXTERIOR:

1. FERROUS METALS:

FIRST COAT – KWALL–HOWELLS 9210 RUST INHIBITIVE PRIMER
NOTE: FIRST COAT NOT REQUIRED ON ITEMS DELIVERED SHOP PRIMED; TOUCH UP ONLY REQUIRED
SECOND COAT – KWALL–HOWELLS 9800 SERIES HIGH GLOSS ENAMEL
THIRD COAT – KWALL–HOWELLS 9800 SERIES HIGH GLOSS ENAMEL

INTERIOR: ALLOW FOR 3 ROOM TYPE COLOR SCHEMES (1 COLOR PER ROOM)

1. GYPSUM STANDARD DRYWALL SYSTEMS:

FIRST COAT – KWALL–HOWELLS 0880 PVA PRIMER
SECOND COAT – KWALL–HOWELLS 3000 SERIES LATEX SEMIGLOSS
THIRD COAT – KWALL–HOWELLS 3000 SERIES LATEX SEMIGLOSS

2. FERROUS METALS:

FIRST COAT – KWALL–HOWELLS 9210 RUST INHIBITIVE METAL PRIMER
NOTE: FIRST COAT NOT REQUIRED ON ITEMS THAT ARE SHOP PRIMED,NOT LESS THAT 4.5 MILS DRY FILM THICKNESS.
SECOND COAT – KWALL–HOWELLS ACCU–TONE LATEX SEMIGLOSS 3000
THIRD COAT – KWALL–HOWELLS ACCU–TONE LATEX SEMIGLOSS 3000

09900 – PAINTING (CONT.)

3. WOOD:

FIRST COAT – PRO–FINISH ALL PURPOSE 100% ACRYLIC PRIMER
SECOND COAT – KWALL–HOWELLS ACCU–PRO LATEX SEMIGLOSS 3000
THIRD COAT – KWALL–HOWELLS ACCU–PRO LATEX SEMIGLOSS 3000

5. CONCRETE FLOOR SEALER

FIRST COAT OKON W–1 WATER REPELLENT
SECOND COAT OKON W–1 WATER REPELLENT

DIVISION X - SPECIALTIES

10200–LOUVERS AND VENTS (BY MECHANICAL)

10431–SIGNS (BY ~~OWNER~~ Contractor

10520–FIRE EXTINGUISHER EQUIP

A. FIRE EXTINGUISHER CABINETS. JL INDUSTRIES MODEL NO. 1037F10 (FX WHERE REQUIRED). ALUMINUM SHEET SEMI RECESSED WITH ONE PIECE COMBINATION TRIM AND PERIMITER DOOR FRAME OVERLAPING SOURROUNDING WALL SURFACE WITH EXPOSED TRIM FACE AND WALL RETURN AT OUTER EDGE.

B. DOOR STYLE TO BE CENTER GLASS PANEL WITH FRAME WITH TEMPERED GLASS CLEAR. PROVIDE MFGR'S STD DOOR–OPERATING HARDWARE INCLUDING RECESSED DOOR PULL AND FRICTION LATCH AND 180 DEGREE HINGE, MOUNTING BRACKET AND SILKSCREENED WITH THE WORDS "FIRE EXTINGUISHER" APPLIED TO CABINET GLAZING COMPLYING WITH AUTHORITY HAVING JURISDICTION. LETTER COLORING RED ORIENTED HORIZONTAL.

C. MOUNTING BRACKET: MFGR'S STD STEEL, DESIGNED TO SECURE FIRE EXTINGUISHER TO WALL OR STRUCTURE, OF SIZE REQUIRED VERIFY WITH OWNER.WITH PLATED OR BAKED–ENAMEL FINISH.

D. FIRE EXTINGUISHERS ARE TO BE PROVIDED BY OWNER.

10801–TOILET ACCESSORIES

A. PAPER TOWEL DISPENSER: BOBRICK B–2620
B. TOILET TISSUE DISPENSER: BOBRICK B–2840 (
C. GRAB BARS: BOBRICK B–5806 SERIES
D. SOAP DISPENSER: PROVIDED BY OWNER
E. TOILET SEAT COVER DISPENSER: BOBRICK B–221
F. MIRROR UNIT: BOBRICK B–165 SERIES
J. MOP AND BROOM HOLDER: BOBRICK B–223 X 24

DIVISION XI - EQUIPMENT - NOT USED

DIVISION XII - FURNISHINGS

12484–FLOOR MATTS AT ENTRY

A. MUSSON NO. TT–12CT 3/8" THK AND 12" X 12" TILE SIZE IN STALLED IN PARQUET PATTERN. COLOR AS SELECTED BY ARCHITECT. INSTALL PER MFGR UBLISHED INSTRUCTIONS.

DIVISION XIII - SPECIAL CONSTRUCTION - NOT USED

DIVISION XIV - CONVEYING SYSTEMS - NOT USED

DIVISION XV - MECHANICAL/PLUMBING

MECHANICAL:

SEE MECHANICAL DRAWINGS AND SPECIFICATIONS FOR DESIGN CRITERIA AND REQUIREMENTS OF ALL MECHANICAL AND PLUMBING.

DIVISION XVI - ELECTRICAL

ELECTRICAL: SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR DESIGN CRITERIA AND REQUIREMENTS FOR ALL POWER AND LIGHTING.

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PROTECTIVE INSURANCE–NEW OFFICE BUILDING
LOGAN, UTAH

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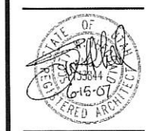
1	AUG. 29, 2007	AUGUST 9, 2007 LOGAN CITY COMMENT RESPONSES



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SPECIFICATIONS

A 702

GENERAL NOTES

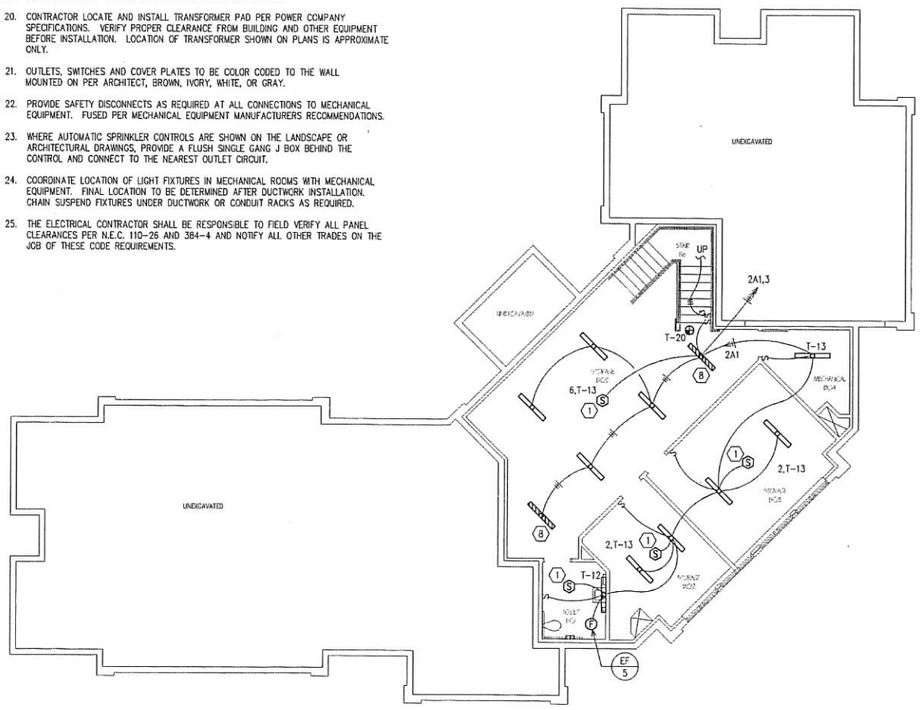
1. THE ELECTRICAL CONTRACTOR SHALL HAVE A COORDINATION MEETING WITH THE MECHANICAL CONTRACTOR, CONSTRUCTION SUPERINTENDENT AND ANY OTHER TRADES AS REQUIRED WITHIN SEVEN DAYS OF THE START OF THE JOB TO REVIEW CODE CLEARANCE REQUIREMENTS FOR PANELS, SWITCHES AND OTHER ELECTRICAL GEAR SPECIFICALLY FOR THIS JOB. RECORD THE MEETING IN THE SUPERINTENDENT'S LOG. REPORT UNRESOLVED CONFLICTS TO THE ARCHITECT IMMEDIATELY.
2. REFER TO MECHANICAL PLANS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT.
3. ALL ELECTRICAL INSTALLATIONS TO CONFORM TO THE LATEST N.E.C. AND LOCAL CODES.
4. ALL RECESSED LIGHT FIXTURES MUST CONFORM TO N.E.C. 410-65 THROUGH 410-66. ELECTRICAL CONTRACTOR COORDINATE WITH GENERAL CONTRACTOR AS REQUIRED.
5. CONTRACTOR SHALL VERIFY ALL SURFACE MOUNT FLUORESCENT FIXTURES CONFORM TO N.E.C. 410-76.
6. ELECTRICAL CONTRACTOR SHALL FURNISH ALL MOTOR DISCONNECTS, STARTERS, AND CONTROL STATIONS FOR MECHANICAL EQUIPMENT UNLESS THE SAME IS FURNISHED AS AN INTEGRAL PART OF THE EQUIPMENT. VERIFY WITH MECHANICAL CONTRACTOR.
7. EXHAUST FANS FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR.
8. MOUNTING HEIGHT OF GENERAL PURPOSE OUTLETS AND SWITCHES SHALL BE 16" TO BOTTOM AND 48" TO TOP RESPECTIVELY UNLESS OTHERWISE NOTED.
9. PROVIDE TWO SPEED MAGNETIC STARTERS FOR MECHANICAL EQUIPMENT AS SHOWN ON MECHANICAL EQUIPMENT SCHEDULES ON MECHANICAL DRAWINGS.
10. COORDINATE MOUNTING HEIGHT AND LOCATION OF "ALL" OUTLETS, SWITCHES, AUXILIARY EQUIPMENT, AND OTHER DEVICES WITH THE ARCHITECTURAL DRAWINGS. PRIOR TO INSTALLATION, REVIEW WITH THE GENERAL CONTRACTOR THE LOCATION OF MILLWORK AS A FINAL CHECK TO PREVENT COVERING OF ELECTRICAL ITEMS.
11. COORDINATE LOCATION OF CEILING LIGHT FIXTURES WITH THE REFLECTED CEILING PLAN.
12. ALL PARALLEL CONDUCTORS TO BE INSTALLED IN STRICT ACCORDANCE WITH N.E.C. ARTICLE 310-4. WIRE TO BE LAID ON FLAT SURFACE FOR MEASUREMENT. MACHINE MEASUREMENT IS NOT ACCEPTABLE. USE TORQUE WRENCH ON TERMINATIONS.
13. INCLUDE IN BID ANY EXTRA CHARGES BY POWER COMPANY FOR SERVICE TO BUILDING.
14. SUPPORT RECESSED T BAR MOUNT FIXTURES WITH TWO EXTRA GALVANIZED WIRE SUPPORTS ON OPPOSITE CORNERS PER U.B.C. CONNECT WIRES TO BUILDING STRUCTURE.
15. A GFI OUTLET SHALL BE INSTALLED AT EACH LOCATION DESIGNATED BY "GFI" ON THE DRAWINGS. DOWNSTREAM PROTECTION BY A GFI OUTLET UPSTREAM IS NOT ALLOWED.
16. DO NOT INSTALL ELECTRICAL BOXES BACK-TO-BACK IN PARTITION WALLS (SOUND TRANSMISSION), PROVIDE MINIMUM 12" HORIZONTAL SEPARATION.
17. CONTRACTOR VERIFY CEILING THICKNESSES AND USE CEILING TRIM EXTENDERS ON DOWN LIGHTS AS REQUIRED.
18. FINAL BREAKER OR FUSE SIZE PER MANUFACTURER.
19. PROVIDE FACTORY RECOMMENDED LAMPS IN ALL HID FIXTURES.
20. CONTRACTOR LOCATE AND INSTALL TRANSFORMER PAD PER POWER COMPANY SPECIFICATIONS. VERIFY PROPER CLEARANCE FROM BUILDING AND OTHER EQUIPMENT BEFORE INSTALLATION. LOCATION OF TRANSFORMER SHOWN ON PLANS IS APPROXIMATE ONLY.
21. OUTLETS, SWITCHES AND COVER PLATES TO BE COLOR CODED TO THE WALL MOUNTED ON PER ARCHITECT, BROWN, IVORY, WHITE, OR GRAY.
22. PROVIDE SAFETY DISCONNECTS AS REQUIRED AT ALL CONNECTIONS TO MECHANICAL EQUIPMENT. FUSED PER MECHANICAL EQUIPMENT MANUFACTURERS RECOMMENDATIONS.
23. WHERE AUTOMATIC SPRINKLER CONTROLS ARE SHOWN ON THE LANDSCAPE OR ARCHITECTURAL DRAWINGS, PROVIDE A FLUSH SINGLE GANG J BOX BEHIND THE CONTROL AND CONNECT TO THE NEAREST OUTLET CIRCUIT.
24. COORDINATE LOCATION OF LIGHT FIXTURES IN MECHANICAL ROOMS WITH MECHANICAL EQUIPMENT. FINAL LOCATION TO BE DETERMINED AFTER DUCTWORK INSTALLATION. CHAIN SUSPEND FIXTURES UNDER DUCTWORK OR CONDUIT RACKS AS REQUIRED.
25. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY ALL PANEL CLEARANCES PER N.E.C. 110-26 AND 384-4 AND NOTIFY ALL OTHER TRADES ON THE JOB OF THESE CODE REQUIREMENTS.
26. OUTLETS FOR ELECTRIC WATER COOLERS TO BE LOCATED SO THAT OUTLET AND COOLER EXTENSION CORDS ARE CONCEALED FROM VIEW.
27. DISCONNECT SWITCHES SHOWN IN APPROXIMATE LOCATION ONLY. CONTRACTOR FIELD VERIFY LOCATION OF ALL ELECTRICAL SWITCHES AND MOTOR CONTROL FOR PROPER CODE CLEARANCE. NOTIFY ARCHITECT IMMEDIATELY OF ANY CONFLICTS WITH OTHER TRADES REGARDING PROPER EQUIPMENT CLEARANCES.
28. CONNECT EMERGENCY CIRCUIT OF EMERGENCY LIGHT BATTERY PACK TO UNSWITCHED LIGHTING CIRCUIT. INSTALL EXTRA CONDUCTORS AS REQUIRED. BATTERY PACK MUST BE FED FROM SAME CIRCUIT AS THE FIXTURE IT SERVES. WIRE SO LAMPS IN NORMAL MODE ARE SWITCHED WITH OTHER LIGHTS IN AREA.
29. PANEL INDEXES SHALL INCLUDE ALL PERTINENT INFORMATION ON THE PANEL SCHEDULES INCLUDING INFORMATION ON LIGHTS AND OUTLETS. DO NOT SIMPLY COPY THE CIRCUIT DESCRIPTION COLUMN. INDEXES TO BE TYPEWRITTEN.
30. PENDANT FIXTURES SHALL HAVE SEISMIC RATED PENDANT CONNECTIONS AND SWIVEL JOINTS.
31. BEFORE RUNNING CONDUITS OR PLACING OUTLETS AND EQUIPMENT, THE CONTRACTOR SHALL REVIEW THE DRAWINGS AND SPECIFICATIONS OF THE OTHER TRADES SERVED BY THE CONDUIT OR OUTLETS.
32. COORDINATE LOCATION OF EXIT LIGHTS WITH ARCHITECT.
33. ALL ELECTRICAL EQUIPMENT SHALL BE LOCATED SO AS TO NOT INTERFERE WITH WOOD TRIM AND MOLDINGS. ELECTRICAL CONTRACTOR SHALL REVIEW FINISH SCHEDULES BEFORE ROUGH IN OF OUTLET BOXES OR SWITCH BOXES-TO-PREVENT BOXES FROM BEING PLACED BEHIND OR IN TRIMS AND MOLDINGS. REFER SPECIAL CONDITIONS TO ARCHITECT.
34. THE ELECTRICAL CONTRACTOR SHALL RUN BRANCH CIRCUIT CONDUITS IN ATTIC SPACES IN A NEAT AND WORKMANLIKE MANNER SO AS TO CONSERVE OPEN SPACES AS MUCH AS POSSIBLE IN DEFERENCE TO HVAC DUCTWORK RUNS. HVAC DUCTWORK SHALL HAVE LOCATION PRIORITY OVER BRANCH CIRCUIT CONDUIT RUNS.
35. DO NOT SCALE ELECTRICAL FLOOR PLANS. SEE ARCHITECTURAL DRAWINGS FOR ACCURATE DIMENSIONS AND FLOOR PLANS.
36. ELECTRICAL CONTRACTOR SHALL CONTACT POWER COMPANY AND TELEPHONE COMPANY WITHIN THE FIRST WEEK OF THE START OF CONSTRUCTION AND NOTIFY THEM OF THE PROBABLE DATE WHEN THE NEW ELECTRICAL AND/OR TELEPHONE SERVICE CONNECTION WILL BE NEEDED.
37. ALL CONVENIENCE OUTLETS MUST BE MOUNTED FLUSH WITH THE COVER PLATE AND SECURED FIRMLY TO THE OUTLET BOX. LOOSE OR SPONGY MOUNTED OUTLETS WILL NOT BE ACCEPTED.
38. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW ALL SWITCH LOCATIONS WITH THE GENERAL CONTRACTOR PRIOR TO ROUGH IN IN ORDER TO PREVENT ANY SWITCHES FROM BEING LOCATED ON THE WRONG SIDE OF THE DOOR.
39. INSTALL WEATHERPROOF GFI DUPLEX OUTLET ADJACENT TO EACH ROOFTOP HVAC UNIT AND CONNECT TO NEAREST 120V RECEPTACLE OUTLET CIRCUIT. SEE MECHANICAL PLANS.

LIGHT FIXTURE SCHEDULE

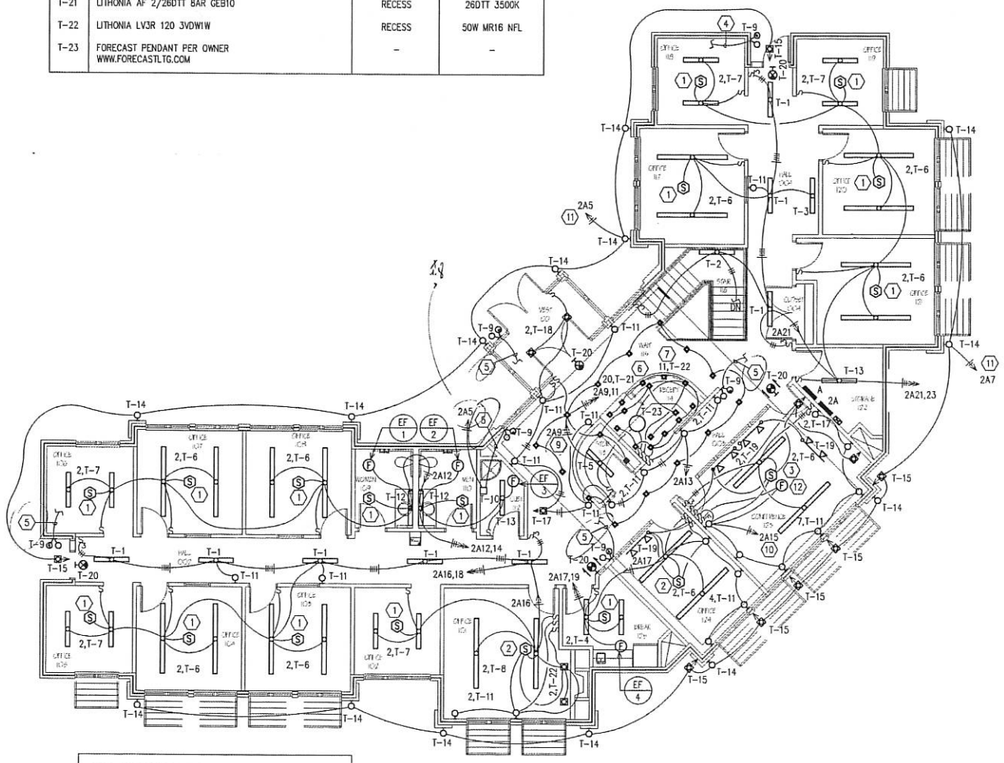
TYPE	MANUFACTURER/CATALOG NO.	MOUNTING	LAMPS
T-1	PEERLESS 10CRM4 232 WHR SBL 4FT R4 120 GEB10 1SE EL SCT LP835 F1/14" ACG SCEP	AIRCRAFT CABLE	F032/835
T-2	PEERLESS LF2FW 254T5HO U4 120 GEB10 EL SCT LP835 CBA	WALL, HEIGHT PER ARCHITECT	54T5HO 3500K
T-3	PEERLESS LF2FW 254T5HO U4 120 GEB10 SCT LP835 CBA	WALL, HEIGHT PER ARCHITECT	54T5HO 3500K
T-4	PEERLESS 10CRM4 232 WHR SBL 4FT R4 120 GEB10 SCT LP835 F1/18" ACG SCEP	AIRCRAFT CABLE	F032/835
T-5	LITHONIA CB132	SURFACE	F032/835
T-6	PEERLESS 10CRM4 232 WHR SBL 8FT R8 120 GEB10 SCT LP835 F1/18" ACG SCEP	AIRCRAFT CABLE	F032/835
T-7	PEERLESS 10CRM4 332 WHR SBL 4FT R4 120 GEB10 SCT LP835 F1/18" ACG SCEP	AIRCRAFT CABLE	F032/835
T-8	PEERLESS 10CRM4 332 WHR SBL 8FT R8 120 GEB10 SCT LP835 F1/18" ACG SCEP	AIRCRAFT CABLE	F032/835
T-9	LITHONIA ELA-W-T-SSB-N2512	WALL	INCLUDED
T-10	LITHONIA IND12450-NO HEADS	WALL +6 FT.	–
T-11	INDOOR WALL SCONCE HUDSON VALLEY LIGHTING, WAVERLY PER OWNER	WALL, HEIGHT PER ARCHITECT	–
T-12	PEERLESS CRW7 232 WHR 4FT R4 120 GEB10 SCT LP835 SCEP	WALL ABOVE MIRROR	F032/835
T-13	LITHONIA S132 WGS GEB10	SURFACE OR CHAIN SUSPEND	F032/835
T-14	OUTDOOR WALL SCONCE PER ARCHITECT WSA 0W1050 3QF13 CBA	WALL, HEIGHT PER ARCHITECT	13W PL 4100K
T-15	LITHONIA AHW 50M 6AR 120	RECESS	50W MH
T-16	LITHONIA (2)MR2 250M SR4SC TB SPA LPI CBA / 25 FT. SQUARE STEEL POLE, CBA GOOD FOR 100 MPH EPA RATING, DM28AS (TWO HEADS AT 180°	POLE, POLE BASE	250W MH
T-17	LITHONIA AFW 2/26TRT 6AR 120	RECESS	26TRT 3500K
T-18	LITHONIA AF 2/26TRT 6AR 120	RECESS	26TRT 3500K
T-19	LITHONIA LT4 CBA TRACK WITH TWO LTC GMBR MR16 CBA HEADS	SURFACE OR SUSPEND PER ARCHITECT	75W SPOT OR NFL PER THROW LENGTH
T-20	BRANDHURST B100U20GN WHITE FRAME COLOR	AS SHOWN	INCLUDED
T-21	LITHONIA AF 2/26DTT 8AR GEB10	RECESS	26DTT 3500K
T-22	LITHONIA LV3R 120 3VDW1W	RECESS	50W MR16 NFL
T-23	FORECAST PENDANT PER OWNER WWW.FORECASTLTG.COM	–	–

KEYED NOTES

1. WATT STOPPER DT-300 SENSOR AND B120E-P POWER PACK. WIRE IN SERIES WITH SWITCH(ES).
2. WATT STOPPER DT-300 SENSOR AND POWER PACKS AS REQUIRED TO CONTROL THREE SEPARATE SWITCHED LOADS.
3. WATT STOPPER DT-300 SENSOR AND POWER PACKS AS REQUIRED TO CONTROL FOUR SEPARATE SWITCHED LOADS.
4. TWO #8 WIRES IN 3/4" CONDUIT TO T-10 IN CUSTODIAN. DO NOT COMBINE WITH ANY OTHER REMOTE EMERGENCY HOME RUN.
5. TWO #10 WIRES IN 1/2" CONDUIT TO T-10 IN CUSTODIAN. DO NOT COMBINE WITH ANY OTHER REMOTE EMERGENCY HOME RUN.
6. T-21 FIXTURES ARE ON UPPER CEILING.
7. T-22 FIXTURES MOUNTED IN CABINETRY. SEE ARCHITECTURAL.
8. INSTALL EMERGENCY BATTERY PACK IN THIS FIXTURE TO OPERATE ONE LAMP AT 1400 LUMENS.
9. PROVIDE MONORAIL LIGHTING SYSTEM IN CENTER SECTION OF BUILDING PER OWNER. SYSTEM NOT SHOWN. PROVIDE SWITCHING, CIRCUITING ETC. AS REQUIRED. CONTACT ENGINEER FOR CIRCUITING HELP. PORTIONS OF SYSTEM IN WAITING, OFFICE 124 AND CONFERENCE 123 TO HAVE THREE SEPARATE SWITCHES.
10. ALL LIGHT FIXTURES IN CONFERENCE CONNECTED TO CIRCUIT 2A15.
11. RUN OUTDOOR LIGHTING CIRCUIT THROUGH SQUARE D CLASS 8903, TYPE LG6O, NEMA 1 CONTACTOR ADJACENT TO PANEL 2A. CONTROL THE CONTACTOR BY PHOTOCELL "ON" AND TIME CLOCK "OFF". USE TORK 1100 SERIES TIME CLOCK ADJACENT TO CONTACTOR. LOCATE TORK 2000 SERIES PHOTOCELL OUTSIDE OF BUILDING AWAY FROM ANY LIGHT SOURCE OR DIRECT SUNLIGHT. INSTALL MANUAL OVERRIDE TOGGLE SWITCH ADJACENT TO CONTACTOR.
12. CEILING FAN AND FAN SWITCH BY OWNER.



BASEMENT LIGHTING PLAN
SCALE: 1/8" = 1'-0"



NOTE: VERIFY SWITCH LOCATIONS PRIOR TO ROUGH IN TO AVOID UNMOUNTABLE AREAS.

NOTE: ALL LIGHT FIXTURES TO BE APPROVED BY ARCHITECT AND OWNER PRIOR TO ORDER.

MAIN LEVEL LIGHTING PLAN
SCALE: 1/8" = 1'-0"

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PROTECTIVE INSURANCE-NEW OFFICE BUILDING
LOGAN, UTAH

Mark:	Date:	Description:

Project No:	46018
Dwg. File:	
Owner's No:	
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Checked By:	DB
Issued:	6-14-07

LIGHTING PLANS

E-101

PANEL A ☒ NEW ☐ EXISTING TYPE NQOD 1 Ø 3 WIRE 120/240 VOLTS LOCATION STORAGE MOUNTING ☐ flush ☒ surface
☐ Bolt on breakers ☐ Isolated ground bus REMARKS SUB-FEED OR FEED THROUGH LUGS TO PANEL 2A. 400 amp. main ☒ lugs ☐ breaker

No.	BRKR. A	BRKR. P	CIRCUIT DESCRIPTION	L	Ø	M	Wire	CIRC. LOAD	Phase Loads A	Phase Loads C	CIRC. LOAD	Wire	L	Ø	M	CIRCUIT DESCRIPTION	BRKR. A	BRKR. P	No.
1	20	1	OFFICE		4		12	720	1440		720	12	4			OFFICE	20	1	2
3			OFFICE		4			720		1440	720		4			OFFICE			4
5			OFFICE		4			720	1620		900		5			CORRIDOR			6
7			OFFICE		5			900		1800	900		5			HALL/WAIT/STOR.			8
9			OFFICE		4			720	1440		720		4			OFFICE			10
11			OFFICE		4			720		1440	720		4			OFFICE			12
13			OFFICE		4			720	1440		720		4			OFFICE			14
15			OFFICE		4			720		900	180		1			PHONE BOARD			16
17			SPARE						180		180	10	1			COPIER			18
19			SPARE							500	500	12			1	SIGN			20
21			CORRIDOR/MEN/WOMEN		6		12	1080	2160		1080	12	6			BASEMENT			22
23			WAIT		4	1		720		1080	360		2			SOUND CABINET			24
25			BREAK		1			180	1180		1000				1	MONUMENT SIGN			26
27			BREAK		1			180		180						SPARE			28
29			REFRIGERATOR		1			180	180										30
31			BREAK		2			360		360									32
33			OFFICE		4			720	720										34
35			CONFERENCE		6			1080		1080									36
37			RECEPTION		3			540	540							SPACE			38
39			RECEPTION		2			360		360									40
41			SIGN			1		500	500										42
								TOTALS	11400	9140									

FEEDER: TWO PARALLEL (330) AMPS/PHASE 95 76 AIC 22000 parallel runs 2

PANEL 2A ☒ NEW ☐ EXISTING TYPE NQOD 1 Ø 3 WIRE 120/240 VOLTS LOCATION STORAGE MOUNTING ☐ flush ☒ surface
☐ Bolt on breakers ☐ Isolated ground bus REMARKS 400 amp. main ☒ lugs ☐ breaker

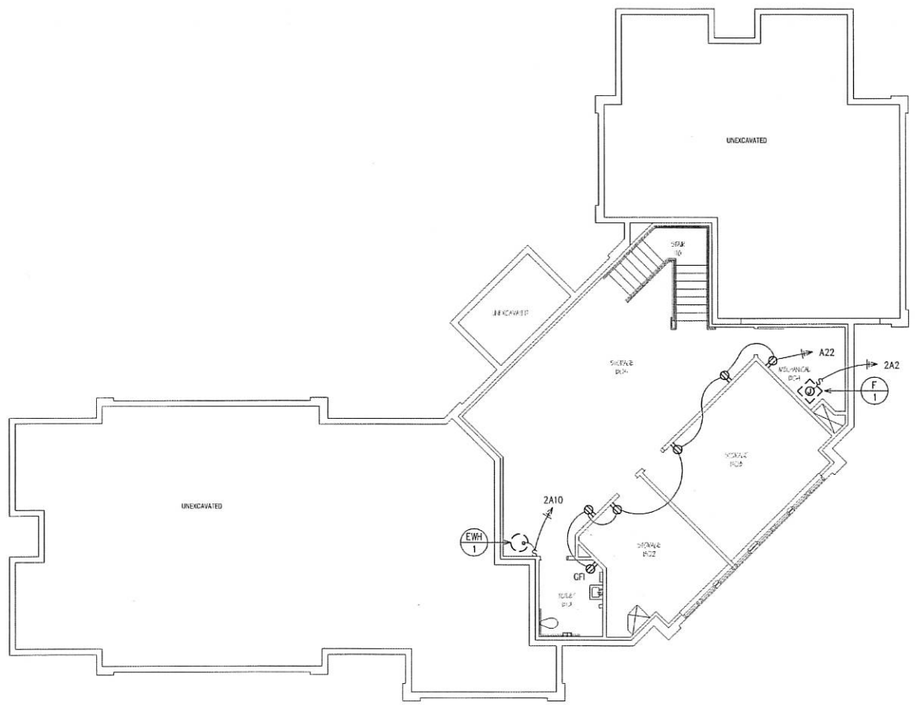
No.	BRKR. A	BRKR. P	CIRCUIT DESCRIPTION	L	Ø	M	Wire	CIRC. LOAD	Phase Loads A	Phase Loads C	CIRC. LOAD	Wire	L	Ø	M	CIRCUIT DESCRIPTION	BRKR. A	BRKR. P	No.
1	20	1	BASEMENT	6		1	12	967	2143		1176	12			1	F/1	20	1	2
3			BASEMENT	6				240		2232	1992	10			1	CU/1	30	2	4
5			OUTSIDE SECURITY/EMERGENCY	8		1		700	2592		1992	10				–	–	–	6
7			OUTSIDE SECURITY	13				1100		1850	750	12			1	EH/1	20	1	8
9			RECEPTION	13				1090	2590		1500				1	EWH/1			10
11			RECEPTION	20				1700		3227	1527		7		1	OFFICES/WOMEN			12
13			RECEPTION	12				1155	2658		1503		2		2	MEN/CUST.			14
15			CONFERENCE	14				1604		2480	876		8			OFFICE 101/102			16
17			OFFICE	7				834	2149		1315	13				OFFICES/CORRIDOR			18
19			BREAK	2		1		838		838						SPARE			20
21			OFFICE/CORRIDOR/STAIR	8				897	897										22
23			OFFICES	9				992		992									24
25	20	2	PARKING LIGHT	1				162	162										26
27	–	–	–					162		162									28
29	20	1	SPARE																30
31	50	2	RTU/1			1	6	3312		3312						SPACE			32
33	–	–	–				6	3312	3312										34
35	50	2	RTU/2			1	6	3312		3312									36
37	–	–	–				6	3312	3312										38
39	90	2	RTU/3			1	3	5412		5412									40
41	–	–	–				3	5412	5412										42
								TOTALS	25327	23817									

FEEDER: TWO PARALLEL (330) AMPS/PHASE 211 198 AIC 22000 parallel runs 2

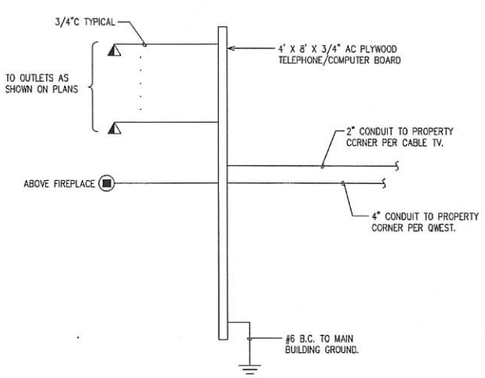
MECHANICAL EQUIPMENT SCHEDULE

SYM	DESCRIPTION	LOAD	VOLTS	PHASE	CONTROL CIRCUIT BY	* STARTER BY	SAFETY DISCONNECT BY	REMARKS
RTU 1	ROOFTOP UNIT	27.6A	208	1	MECH	MECH	ELEC	
RTU 2	ROOFTOP UNIT	27.6A	208	1	MECH	MECH	ELEC	
RTU 3	ROOFTOP UNIT	45.1A	208	1	MECH	MECH	ELEC	
F 1	FURNACE FAN	1/2 HP	120	1	MECH	–	ELEC	
CU 1	CONDENSING UNIT	16.6A	208	1	MECH	MECH	ELEC	
EF 1	EXHAUST FAN	1/4 HP	120	1	ELEC	–	ELEC	
EF 2	EXHAUST FAN	1/4 HP	120	1	ELEC	–	ELEC	
EF 3	EXHAUST FAN	1/4 HP	120	1	ELEC	–	ELEC	
EF 4	EXHAUST FAN	1/4 HP	120	1	ELEC	–	ELEC	
EF 5	EXHAUST FAN	1/4 HP	120	1	ELEC	–	ELEC	
EH 1	ELECTRIC BASEBOARD HEATER	750W	120	1	MECH	–	ELEC	
EWH 1	ELECTRIC WATER HEATER	1.5 KW	120	1	MECH	–	ELEC	
TP 1	TRAP PRIMER	1A	120	1	MECH	–	ELEC	

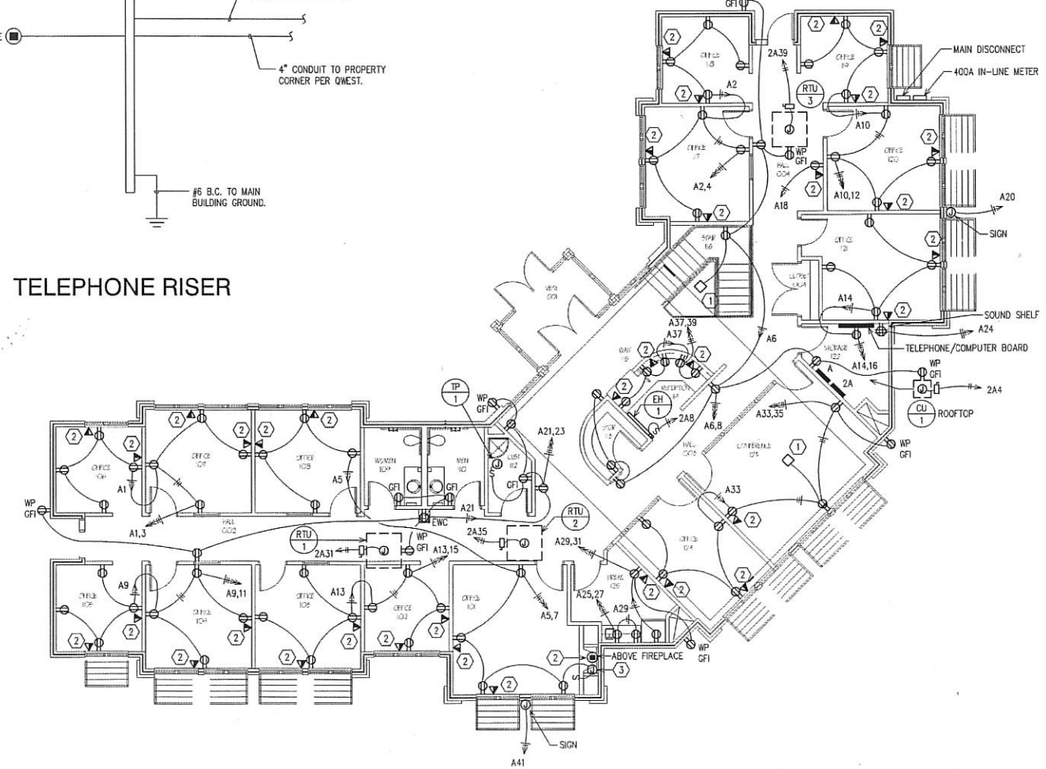
* ELECTRICAL CONTRACTOR VERIFY SINGLE SPEED OR TWO SPEED STARTERS WITH MECHANICAL DRAWINGS.



BASEMENT POWER PLAN
SCALE: 1/8" = 1'-0"



TELEPHONE RISER



MAIN LEVEL POWER PLAN
SCALE: 1/8" = 1'-0"

KEYED NOTES

1. WALKER RFB4-3S FLOOR BOX WITH S3BCCICXX CBA COVER. COVER INFILL TO MATCH SURROUNDING FLOORING. PROVIDE TWO RFB-4TKO-SS DATA PLATES IN ADJACENT CORNERS AND TWO DUPLEX OUTLETS IN ADJACENT CORNERS. STUB 3/4" CONDUIT FROM DATA SECTIONS TO TELEPHONE/COMPUTER BOARD.
2. 4SD J-BOX WITH SINGLE GANG RING FOR TELEPHONE/COMPUTER OR TV. STUB 3/4" CONDUIT TO TELEPHONE/COMPUTER BOARD IN STORAGE 122.
3. CONNECT TO FIREPLACE AS REQUIRED.

ELECTRICAL SYMBOLS

- CEILING FIXTURE OUTLET
- WALL FIXTURE OUTLET
- RECESSED FIXTURE
- FLUORESCENT FIXTURE WITH OUTLET BOX ABOVE (OR REMOTE), SEE FIXTURE SCHEDULE
- EMERGENCY FIXTURE
- EXIT LIGHT, WALL - FACE(S) AS SHOWN
- EXIT LIGHT, DIRECTIONAL ARROWS, DOUBLE FACE
- S SINGLE POLE SWITCH
- S^3 THREE WAY SWITCH
- S^4 FOUR WAY SWITCH
- T TIME CLOCK SWITCH
- DUPLEX OUTLET
- WP WEATHERPROOF DUPLEX OUTLET
- GFI GROUND FAULT INTERRUPTER OUTLET (EACH INDIVIDUALLY PROTECTED)
- J JUNCTION BOX
- F FAN MOTOR
- EWC ELECTRIC WATER COOLER
- (S) OCCUPANCY SENSOR
- FUSED DISCONNECT (FUSED UNLESS NOTED), 10K AIC MINIMUM
- MAGNETIC STARTER/CONTACTOR
- COMBINATION STARTER
- PANELBOARD
- (P) PHOTOCELL
- TELEPHONE/DATA OUTLET

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PROTECTIVE INSURANCE-NEW OFFICE BUILDING
LOGAN, UTAH

Mark:	Date:	Description:

Project No:	46018
Dwg. File:	
Owners No:	
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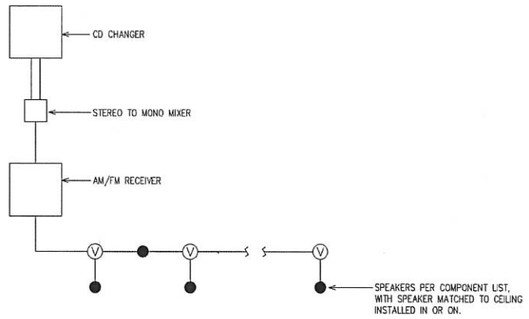
Issued:	6-14-07

POWER PLANS

E-201



SOUND SYSTEM RISER DIAGRAM

NO SCALE

SOUND SYSTEM COMPONENTS

CD CHANGER – MARANTZ DCM 290P

STEREO TO MONO MIXER – EDCOR S2M

AM/FM RECEIVER – BOGEN RM350D

WALL MOUNT EQUIPMENT SHELF – MIDDLE ATLANTIC WMS 20

LAY-IN TILE CEILING LOUDSPEAKER ASSEMBLY – BOGEN CSD2X2

SHEET ROCK/SURFACE LOUDSPEAKER/TRANSFORMER – BOGEN S810T725

SHEET ROCK CEILING LOUDSPEAKER BAFFLE – BOGEN SGBW

SHEET ROCK CEILING LOUDSPEAKER ENCLOSURE – BOGEN RE84

SURFACE MOUNT CEILING ENCLOSURE – LOWELL CB84

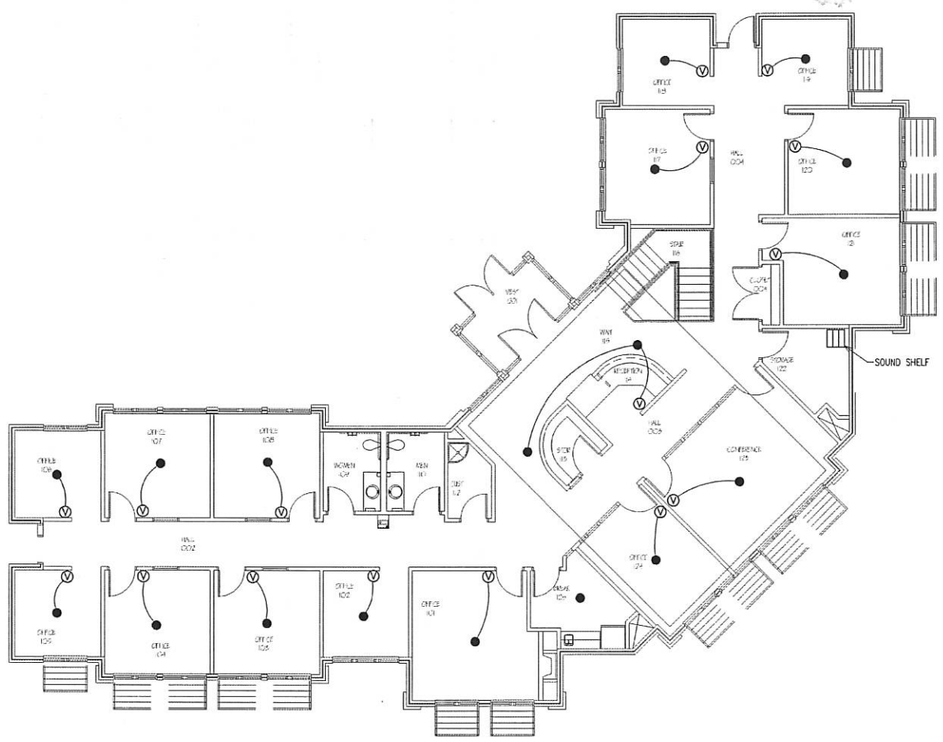
SURFACE MOUNT CEILING BAFFLE – LOWELL JG8X

VOLUME CONTROL – BOGEN AT10A

LOUDSPEAKER CABLE – WEST PENN 225

BASEMENT SOUND PLAN

SCALE: 1/8" = 1'-0"



MAIN LEVEL SOUND PLAN

SCALE: 1/8" = 1'-0"

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SOUND PLANS

E-202

DIVISION 26 - ELECTRICAL

SECTION 26001 - ELECTRICAL GENERAL PROVISIONS

It is understood that Division 26 shall govern and be the direct responsibility of the Electrical Contractor, who shall comply with the specifications and the accompanying drawings to describe and provide for the furnishings, delivering, installing, testing and placing in satisfactory and successful operation all equipment, materials, devices, and necessary appurtenances to provide a complete electrical system for lighting, power and auxiliaries; together with such other equipment and devices furnished and installed under other contracts which shall be wired and connected under this contract.

If a discrepancy occurs between the equipment supplied and the intent or function of the equipment, catalog numbers, discontinued products, drawings, specifications, etc., the Contractor shall bring this to the attention of the Architect or Engineer in writing prior to bidding. Failure to report any conflict does not relieve the Contractor from meeting the intent of the contract documents nor shall it change the contract cost. It shall further be understood that if the contractor is unable to interpret any part of the plans and specifications, or should he find discrepancies therein, he shall call attention of the fact to the Architect prior to bid date. The Architect will issue additional instructions to Bidders before the project is bid.

The electrical contractor shall refer to the architectural and/or mechanical drawings for exact placement of all electrical equipment. The electrical drawings unless specifically dimensioned are to be considered diagrammatic and are not to be scaled for placement of equipment.

In the installation of this work, comply in every way with the requirements of the laws, ordinances and rules of the State and National Board of Fire Underwriters, The National Electrical Code, and the rules and regulations of local ordinances.

All materials and equipment furnished and installed shall be of high quality, new, and meet the standards of NEMA, IPCA, LS, UL, NFPA, IBC, UOSHA, NEC, and shall bear their label wherever standards have been established and label service is available. Where materials and equipment are specified by manufacturer's name, the type and quality required is thereby denoted. The Architect shall be afforded every facility, deemed necessary to inspect and examine the materials and apparatus being installed to prove their quality, skill and competency of workmanship.

Any conflict arising from the use of substituted equipment shall be the responsibility of the contractor, who shall bear all costs required to make the equipment comply with the intent of the plans and specifications.

Perform for other trades the electrical wiring and connections for all devices or apparatus where not specified herein or indicated on the drawings. Consult the Architectural and Mechanical drawings to avoid the location of switches, outlets and other equipment from being hidden behind doors, cabinets, counters, heating equipment, etc. Buried electrical devices and/or connections shall be relocated as directed, at no additional cost to the Owner.

Architectural and Mechanical drawings are a part of the electrical work insofar as they apply, as if referred to in full.

All backfill shall be mechanically compacted in 6 inch layers to 95% of maximum soil density per ASTM D-1557.

END OF SECTION 26001

SECTION 26070 - ELECTRICAL CONNECTIONS FOR EQUIPMENT

Movable and/or portable equipment - wiring device, cord cap, and multi-conductor cord suitable for the equipment and in accordance with NEC requirements (Article 400). Provide 5 foot cords for washers, dryers, ranges and disposals.

END OF SECTION 26070

SECTION 26136 - SUPPORTING DEVICES

Install seismic supports on all T-Bar type fixtures consisting of galvanized 10 ga. wires connected from two corners of the fixture to structure.

END OF SECTION 26136

SECTION 26140 - WIRING DEVICES

Convenience Outlets: (Provide Decora equal if required by Owner)

Mfgr.	Standard	Isolated Ground	Surge Protected	Isolated Ground Surge Protected
Hubbell	HBL5352	IG 5362	5352 IS	IG 5352 IS
P & S	5362	IG 6300	No	No
Leviton	5362		Substitute	Substitute
Cooper	5352			

Switches: (Provide Decora equal if required by Owner)

Mfgr.	1 pole	3 way	4 way	W-Pilot
Hubbell	HBL1221	HBL1223	HBL1224	HBL122I-PL
P & S				
Leviton	1221	1223	1224	1221-PL
Cooper	1221	1223	1224	

Intermatic F15MH(W) Exhaust Fan Switches (Color per Architect).

Ground-fault Interrupter: Provide where required by code, general-duty, duplex receptacle, ground-fault circuit interrupters; grounding type UL-rated Class A, Group A, 20-amperes rating; 120-volts, 60 Hz; with solid-state ground-fault sensing and signaling; with 5 milliamperes ground-fault trip level; color as selected by Architect. Provide units of one of the following:

Hubbell
Square D

END OF SECTION 26140

SECTION 26160 - PANELBOARDS

Manufacturers: Subject to compliance with requirements, provide panelboards from one of the following:

General Electric Company
Square D Company

Panelboards: General: Except as otherwise indicated, provide panelboards, enclosures and ancillary components, of types, sizes, and ratings indicated. Equip with number of unit panelboard devices as required for complete installation. Fully equip "spaces" with hardware to receive breaker or switch of size indicated.

Power Distribution Panelboards: Provide dead-front safety type power distribution panelboards as indicated, with switching and protective devices in quantities, ratings, types and with arrangement shown. Equip with copper bus bars, neutral bus and ground bus. Provide fusible or circuit breaker branch and main devices as indicated.

Lighting and Appliance Panelboards: Provide dead-front safety type lighting and appliance panelboards as indicated, with switching and protective devices in quantities, ratings, types, and arrangement shown. Provide bolt-on thermal magnetic type branch breakers. Where multiple breakers are indicated provide with common trip handle. Equip with copper bus bars, neutral bus, and ground bus.

Panelboard Enclosures: Provide galvanized sheet steel cabinet type enclosures, in sizes and NEMA types as indicated, code-gage minimum 16-gage thickness. Provide fronts with adjustable indicating trim clamps, and doors with flush locks and keys, all panelboard enclosures keyed alike, with concealed door hinges and door swings as indicated. Equip with interior circuit-directory frame, and card with clear plastic covering. Provide baked gray enamel finish over a rust inhibitor. Provide enclosures fabricated by same manufacturer as overcurrent devices contained therein. Bolt engraved Formica labels indicating panel name and voltage on the interior and exterior of panelboards.

Branch panels shall generally be installed with the top of the panel at 6 ft. above floor.

Electrical Contractor shall verify the fit and required N.E.C. clearances of the equipment in the main electrical room(s) with shop drawings before the installation of service and feeder conduits.

END OF SECTION 26160

SECTION 26420 - SERVICE ENTRANCE

Consult local utility relative to all costs for line extensions, connections, etc., and include all costs for bringing service to the facility in base bid. Confirm location of point of service before bidding.

Provide labor and materials as required to accomplish power company metering in accordance with power company standards and requirements.

Provide concrete pads of size and type required for service transformers including any utility required primary conduit stub outs. Verify location, size, openings, reinforcing requirements with local utility before beginning work. Comply with local utility clearance requirements. Location of pads shown on the drawings are approximate only.

Before purchase of any service entrance equipment the contractor shall review with the power company the proposed service as shown on the drawings and the probable date when the service connection from the power company will be needed.

Transformer Pad: The electrical contractor shall be responsible to confirm the transformer pad & specifications, and clearance from other equipment and structures with the serving power company before beginning installation.

Installation of Service-entrance Equipment: Install service-entrance equipment as indicated, in accordance with equipment manufacturer's written instructions, and with recognized industry practices, to ensure that service-entrance equipment fulfills requirements. Comply with applicable installation requirements of NEC and NEMA standards.

Grounding: Provide system and equipment grounding and bonding connections for service-entrance equipment and conductors, as required.

END OF SECTION 26420

SECTION 26452 - GROUNDING

Materials and Components: General: Except as otherwise indicated, provide each electrical grounding system as specified herein, and as shown on drawings, including but not necessarily limited to, cables/wires, connectors, terminals (solderless lugs), grounding rods/electrodes and plate electrodes, bonding jumper braid, and other items and accessories needed for complete installation.

Where Materials or Components are not otherwise indicated, comply with NEC, NEMA and established industry standards for applications indicated.

Ground Rods: Steel with copper welded exterior, 3/4" dia. x 10'.

Footing Ground: Install 75 ft. of 3/0 bare copper wire in footings and connect to footing rebar.

The electrical service entrance and conduit system throughout the project shall be grounded as required by N.E.C. Connect to all available electrodes per N.E.C. 250-50.

All rotating equipment shall be grounded in compliance with the N.E.C.

All plastic conduit runs shall include a grounding conductor as per N.E.C. requirements. Conduit sizes shown are for steel conduit. If plastic conduit is used the contractor shall verify conduit size to accommodate the required grounding conductor.

Provide full size ground in each conduit of parallel conduit systems per N.E.C. 250-122.

Separate neutrals shall be installed on all GFI breakers.

Provide service entrance grounding by means of ground rods (quantity of two, driven exterior to building), by means of bonding to water main, by means of bonding to building structural steel, and by means of footing ground. Drive ground rods a minimum of 15 ft. apart.

END OF SECTION 26452

LICENSED PROFESSIONAL ENGINEER
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PROTECTIVE INSURANCE-NEW OFFICE BUILDING
LOGAN, UTAH

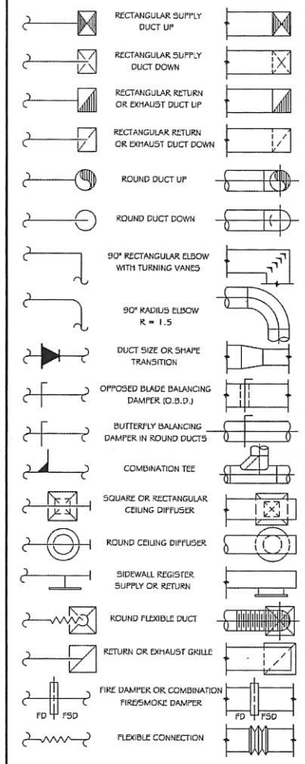
Mark: Date: Description:

Project No:	46018
Dwg. File:	
Owners No:	
Drawn By:	RC
Checked By:	DB
Issued:	6-14-07

ELECTRICAL SPECIFICATIONS

E-401

MECHANICAL SYMBOL LEGEND



MECHANICAL ABREVIATIONS

AD	ACCESS DOOR	N/A	NOT APPLICABLE
AHU	AIR HANDLING UNIT	NIC	NOT IN CONTRACT
BD	BALANCING DAMPER	NTS	NOT TO SCALE
BHP	BRAKE HORSE POWER	NO	NUMBER
BTU	BRITISH THERMAL UNIT	OZ	OUNCE
CFM	CUBIC FEET PER MINUTE	OA	OUTSIDE AIR
COND	CONDENS(-ER,-ING,-ATION)	PSF	POUNDS PER SQAURE FT.
CLG	COOLING	PSI	POUNDS PER SQUARE IN.
CW	COLD WATER	PSIA	PSI ABSOLUTE
DP	DEPTH OR DEEP	PSIG	PSI GAUGE
ID	INSIDE DIAMTER	PRESS	PRESSURE
OD	OUTSIDE DIAMTER	PD	PRESSURE DIFFERENCE
DB	DRY BULB TEMPERATURE	SP	STATIC PRESSURE
(E)	EXISTING	RA	RETURN AIR
EFF	EFFICIENCY	RPM	REVOLUTIONS PER MIN.
ELEV	ELEVATION	SF	SAFETY FACTOR
EWT	ENTERING WATER TEMP.	SL	SEA LEVEL
EVAP	EVAPORAT(-E,-ING,-ED,-OR)	SH	SENSIBLE HEAT
(F)	FUTURE	SC	SHADING COEFFICIENT
F	FARENHEIT	SPEC	SPECIFICATION
FC	FLEXIBLE CONNECT(-OR,-ION)	SQ	SQUARE
FD	FIRE DAMPER	STD	STANDARD
FPS	FEET PER SECOND	SP	STATIC PRESSURE
FSD	FIRE SMOKE DAMPER	SPLY	SUPPLY
FT	FEET	SA	SUPPLY AIR
GAL	GALLON(S)	TEMP	TEMPERATURE
GPH	GALLONS PER HOUR	TD	TEMP. DROP OR DIFF.
GPM	GALLONS PER MINUTE	R	THERMAL RESITANCE
HD	HEAD	TSTAT	THERMOSTAT
HT	HEIGHT	T	TIME
HTG	HEATING	VAC	VACUUM
HP	HORSE POWER	VAV	VARIBLE AIR VOLUME
HW	HOT WATER	VENT	VENT, VENTILATION
LH	LATENT HEAT	VERT	VERTICAL
LAT	LEAVING AIR TEMPERATURE	VOL	VOLUME
LWT	LEAVING WATER TEMP.	WTR	WATER
LG	LENGTH	WT	WEIGHT
MAX	MAXIMUM	WB	WET BULB TEMP.
MIN	MINIMUM	YR	YEAR
NO	NORMALLY OPEN		
NC	NORMALLY CLOSED		

MECHANICAL SPECIFICATIONS (3)

ROOFTOP AIR CONDITIONERS

A. PROVIDE AND INSTALL ROOFTOP AIR CONDITIONERS WITH CAPACITIES, FEATURES, AND ACCESSORIES AS SHOWN ON THE EQUIPMENT SCHEDULE. PROVIDE EQUIPMENT FROM THE FOLLOWING APPROVED MANUFACTURERS:
AAON, BRYANT, CARRIER, LENNOX, TRANE, YORK.

B. PROVIDE A 5 YEAR MINIMUM WARRANTY FOR THE COMPRESSORS AND A 10 YEAR WARRANTY MINIMUM FOR THE HEAT EXCHANGER.

C. PROVIDE AN EXTRA SET OF FAN BELTS FOR EACH FAN AND AN EXTRA SET OF FILTERS FOR EACH UNIT.

D. ROOFTOP UNIT SHALL BE FACTORY ASSEMBLED AND TESTED. UNIT SHALL BE CONSTRUCTED WITH MANUFACTURER'S STANDARD CONSTRUCTION WITH ALL COMPONENTS, EQUIPMENT, AND ACCESSORIES. THE ENCLOSURE SHALL HAVE A CORROSION-PROTECTION COATING AND EXTERIOR FINISH.

E. PROVIDE THE FOLLOWING FEATURES WITH THE ROOFTOP UNIT UNLESS NOTED OHERWISE ON THE EQUIPMENT SCHEDULE: 100% ECONOMIZER WITH POWER EXHAUST, 2 STAGE GAS HEATING, LOW AMBIENT HEAD-PRESSURE CONTROL TO OPERATE AT 0 DEG. F., 7-DAY PROGRAMMABLE THERMOSTAT WITH AUTOMATIC HEATING AND COOLING CHANGEOVER, VIBRATION ISOLATION SPRINGS WITH SEISMIC RESTRAINTS, MOTOR STARTER, SERVICE DISCONNECT, AND ELECTRICAL CONVENIENCE OUTLET.

F. PROVIDE COMPLETE ROOFTOP UNIT STARTUP AND COMMISSIONING INCLUDING CONTROLS CHECKOUT, LUBRICATION, FAN ROTATION, VIBRATION, REFRIGERATION SYSTEM, CLEANING, TESTING, AND BALANCING.

G. PROVIDE A FACTORY AUTHORIZED SERVICE REPRESENTATIVE TO COMPLETE THE UNIT STARTUP AND OWNER TRAINING.

COMMISSIONING

A. PROVIDE SYSTEM COMMISSIONING OF ALL MECHANICAL SYSTEMS CONSISTING OF FIELD VERIFICATION AND CERTIFYING THAT THE MECHANICAL SYSTEM IS PROPERLY INSTALLED AND IS FULLY OPERATIONAL.

B. PROVIDE A SYSTEM COMMISSIONING REPORT TO BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL THAT INCLUDES A CHECKLIST OF ALL EQUIPMENT AND SYSTEMS.

ELECTRIC AND ELECTRONIC CONTROLS

A. PROVIDE AND INSTALL A COMPLETE AUTOMATIC CONTROL SYSTEM AS DESCRIBED IN THE DRAWINGS. ALL SYSTEM CONTROLS SHALL BE PROVIDED BY A SINGLE MANUFACTURERS PRODUCTS. APPROVED MANUFACTURERS ARE: BRYANT, CARRIER, HONEYWELL, TRANE

B. PROVIDE THERMOSTATS WITH THREE HOUR OVERIDE AND LOCKABLE ENCLOSURE BOXES.

TEST AND BALANCE

A. PROVIDE A COMPLETE AIR SYSTEM BALANCE, TEST, AND REPORT BY A NEBB, OR AABC CERTIFIED TEST AND BALANCE SUPERVISOR WITH EXPERIENCE IN BALANCING SYSTEMS OF SIMILAR TYPES AND SIZE.

B. PROVIDE ALL NECESSARY TOOLS, EQUIPMENT, SHEAVE CHANGES, BELTS, AND ACCESSORIES TO COMPLETE WORK.

C. PROVIDE A REPORT SHOWING THE REQUIRED AND THE ACTUAL FLOWS. INCLUDE IN THE REPORT A DRAWING SHEMATIC OF THE SYSTEMS BALANCED, AND SYSTEMS CHECK REPORT. SUBMIT THE BALANCING REPORT FOR REVIEW PRIOR TO THE FINAL INSPECTION. ALL REPORTS SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL.

MECHANICAL SPECIFICATIONS (2)

METAL DUCTS

A. PROVIDE AND INSTALL SHEETMETAL DUCTS CONFORMING TO SMACNA, ASHRAE, AND AND NFPA 90A STANDARDS AS SHOWN ON THE MECHANICAL PLANS.

B. SHOP FABRICATE SQUARE, RECTANGULAR, ROUND, AND OVAL DUCTS, FITTINGS, HANGERS AND SUPPORTS ACCORDING TO SMACNA HVAC DUCT CONTRUCTION STANDARDS.

C. FACTORY APPLY DUCT LINER USING APPROVED SMACNA METHODS TO ALL REQUIRED DUCTS AS INDICATED IN THE INSULATION SECTION OF THIS SPECIFICATION.

D. PROVIDE TURNING VANES IN ALL RECTANGULAR DUCT FITTINGS OVER 45° ANGLES. PROVIDE 1.5 RADIUS ELBOWS ON ALL ROUND DUCTS.

E. SEAL ALL LONGITUDINAL AND TRANSVERSE JOINTS, SEAMS, AND CONNECTIONS WITH AN APPROVED SEALANT OR SEALING METHOD.

F. DUCT DIMENSIONS SHOWN ARE SHOWN ARE SHEETMETAL SIZES. NO INCREASE FOR DUCT LINER IS REQUIRED.

G. INSTALL DUCTWORK IN THE MOST EFFICIENT MANNER POSSIBLE, MINIMIZING JOINTS AND CHANGES IN DIRECTION.

H. PROTECT STORED AND INSTALLED DUCTWORK FROM DUST, DIRT, MOISTURE, AND CONSTRUCTION DEBRIS. CLEAN ALL DUCTWORK PRIOR TO OPERATION.

I. ALL ROUND DUCTS SHALL BE CONSTRUCTED OF SPIRAL WOUND SHEET METAL.

DUCT ACCESSORIES

A. PROVIDE AND INSTALL THE FOLLOWING DUCT ACCESSORIES WHERE INDICATED ON THE DRAWINGS: BACKDRAFT DAMPERS, BALANCING DAMPERS, FIRE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, ACTUATORS, TURNING VANES, ACCESS DOORS, FLEXIBLE DUCTS, AND ACCESSORIES HARDWARE.

B. PROVIDE CONCEALED DAMPER REGULATORS WITH REQUIRED LINKAGES AND COVER PLATES FOR EACH DAMPER LOCATED ABOVE A NON-ACCESSIBLE CEILING.

C. FIRE DAMPERS SHALL BE UL LISTED AND LABELED. FIRE DAMPERS SHALL BE RATED FOR 1-1/2 HOURS FOR FIRE RESISTIVE ASSEMBLIES RATED FOR 2 HOURS OR LESS AND RATED FOR 3 HOURS FOR FIRE RESISTIVE ASSEMBLIES RATED 3 HOURS OR MORE. REPLACEABLE FUSIBLE LINKS RATED FOR 165° F SHALL BE USED. USE TYPE A, B, OR C AS INDICATED ON THE DRAWINGS.

D. COMBINATION FIRE/SMOKE DAMPERS SHALL BE UL LISTED AND LABELED. FIRE/SMOKE DAMPERS SHALL BE RATED FOR 1-1/2 HOURS FOR FIRE RESISTIVE ASSEMBLIES RATED FOR 2 HOURS OR LESS AND RATED FOR 3 HOURS FOR FIRE RESISTIVE ASSEMBLIES RATED 3 HOURS OR MORE. PROVIDE 2 POSITION, NORMALLY CLOSED, ELECTRIC 120/1/60 ACTUATORS AND THERMAL LINKS RATED FOR 165 °F RESETABLE.

E. PROVIDE TURNING VANES WHERE NOTED IN THE METAL DUCTS SPECIFICATION.

F. PROVIDE DUCT MOUNTED ACCESS DOORS AT ALL FIRE DAMPERS, FIRE/SMOKE DAMPERS, AND MOTORIZED CONTROL DAMPERS. ACCESS DOORS SHALL BE FACTORY CONSTRUCTED OF GALVANIZED SHEET METAL AND HAVE HINGES, GASKETS, SEALS, AND LATCHES.

G. FLEXIBLE DUCTS SHALL BE ROUND INSULATED, FACTORY-FABRICATED OR CORRUGATED ALUMINUM WITH AN OUTER JACKET, AND A SPIN COLLAR. THE MAXIMUM ALLOWABLE LENGTH OF FLEX DUCT SHALL BE 5'-0" AT ALL DIFFUSER TERMINATIONS.

H. PROVIDE INSTRUMENT TEST HOLES AT THE INLET AND OUTLET OF ALL FAN SYSTEMS.

I. INSTALL ALL DUCT ACCESSORIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AND SMACNA STANDARDS.

EXHAUST FANS

A. PROVIDE AND INSTALL EXHAUST FANS WITH TYPE, CAPACITIES, FEATURES, AND ACCESSORIES AS SHOWN ON THE EQUIPMENT SCHEDULE. PROVIDE EQUIPMENT FROM THE FOLLOWING APPROVED MANUFACTURERS:
ACME, BROAN, CARNES, COOK, GREENHECK, PENN

B. ALL EXHAUST FANS SHALL DESIGNED, MANUFACTURED, TESTED, AND LABELED IN ACCORDANCE WITH UL REQUIREMENTS AND AMCA STANDARDS.

C. PROVIDE FACTORY FABRICATED AND ASSEMBLED EXHAUST FANS COMPLETE WITH ALUMINUM HOUSING, ALUMINUM FAN WHEEL, SHAFT, BEARINGS, DIRECT OR BELT DRIVE ASSEMBLY, PAINTED STEEL OR ALUMINUM GRILL, BACKDRAFT DAMPER, MOTOR, DISCONNECT SWITCH, MOUNTING BRACKETS, AND ACCESSORIES AS NOTED.

D. PROVIDE AND INSTALL REMOTE FAN SPEED CONTROL, PROGRAMMABLE TIMER, MANUAL TIMER, ON-OFF SWITCH AS INDICATED IN THE EQUIPMENT SCHEDULE.

E. PROVIDE COMPLETE FAN UNIT STARTUP AND COMMISSIONING INCLUDING CONTROLS CHECKOUT, LUBRICATION, FAN ROTATION, VIBRATION, CLEANING, TESTING, AND BALANCING.

AIR OUTLETS AND INLETS

A. PROVIDE FACTORY FABRICATED AND ASSEMBLED CEILING AIR DIFFUSERS AND GRILLES, WALL REGISTERS AND GRILLES, AND LOUVERS COMPLETE WITH ALL FEATURES AND ACCESSORIES AS NOTED IN THE SCHEDULE. PROVIDE EQUIPMENT FROM THE FOLLOWING APPROVED MANUFACTURERS:
AIROLITE, ANEMOSTAT, CARNES, COOLEY & HART, E.H. PRICE, J & J REGISTER, KRUEGER, LOUVERS AND DAMPERS, NAILOR, RUSKIN, TITUS, AND TUTTLE & BAILEY.

B. ALL AIR OUTLETS AND INLETS SHALL BE DESIGN, MANUFACTURERED, AND TESTED TO CONFORM TO ARI, ASHRAE, ADC, AND AMCA STANDARDS.

C. CEILING DIFFUSERS AND REGISTERS AND WALL REGISTERS AND GRILLES SHALL BE CONSTRUCTED OF GALVANIZED STEEL OR ALUMINUM AND SHALL HAVE A BAKED ENAMEL FINISH. COLOR SELECTION BY THE ARCHITECT OR OWNER.

D. LOUVERS SHALL BE CONSTRUCTED OF ALUMINUM EXTRUSIONS WITH WELDED CONNECTIONS OR STAINLESS STEEL FASTENERS. PROVIDE 1/2" ANODIZED ALUMINUM WIRE BIRD SCREEN. LOUVER FINISH SHALL BE ANODIZED ALUMINUM IN COLOR AS SELECTED BY THE ARCHITECT OR OWNER.

MECHANICAL SPECIFICATIONS (1)

BASIC MECHANICAL REQUIREMENTS

A. COMPLY WITH THE REQUIREMENTS OF THE 2006 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC), INTERNATIONAL MECHANICAL CODE (IMC), INTERNATIONAL PLUMBING CODE (IPC), INTERNATIONAL FUEL GAS CODE (IFGC), AND INTERNATIONAL ENERGY CONSERVATION CODE (IECC), AND THE CURRENT NATIONAL ELECTRIC CODE (NEC) INCLUDING ALL STATE AMENDMENTS. COMPLY WITH THE AUTHORITY HAVING JURISDICTION AND ALL APPLICABLE CITY, COUNTY, STATE, AND FEDERAL CODES AND REGULATIONS IN EFFECT AT THE BID DATE.

B. PREPARE AND SUBMIT FIVE (5) COPIES OF THE SHOP DRAWINGS FOR ALL MECHANICAL EQUIPMENT, VALVES, AND ACCESSORIES INCLUDING MANUFACTURER'S NAME, CATALOG NUMBER, DESCRIPTION, SIZE, CAPACITY, ELECTRICAL REQUIREMENTS, OPERATION, AND MAINTENANCE INFORMATION. SHOP DRAWINGS SHALL BE REVIEWED AND STAMPED BY THE MECHANICAL AND GENERAL CONTRACTOR PRIOR TO ENGINEERS REVIEW. EQUIPMENT SHALL NOT BE ORDERED UNTIL APPROVED SHOP DRAWINGS HAVE BEEN RECEIVED.

C. PREPARE COORDINATION DRAWINGS DETAILING ALL MAJOR EQUIPMENT AND SYSTEMS. INCLUDE EQUIPMENT CONNECTIONS, CLEARANCES, FIRE-RATED WALL OR FLOOR PENETRATIONS, CONCRETE PADS, AND SUPPORT DETAILS IN COORDINATION DRAWINGS. COORDINATION DRAWINGS SHALL BE IN CONJUNCTION WITH THE MECHANICAL, FIRE SPRINKLER (WHERE REQUIRED), ELECTRICAL, REFLECTED CEILINGS, AND ALL OTHER APPLICABLE TRADES.

D. PREPARE RECORD "AS BUILT" DOCUMENTS INCLUDING ALL CHANGES FROM THE ORIGINAL BID DOCUMENTS. SUBMIT COMPLETE "AS BUILT" DOCUMENTS AT THE COMPLETION OF THE PROJECT.

E. PROVIDE 2 SETS OF OPERATION AND MAINTENANCE (O & M) MANUALS CONTAINING INFORMATION FOR ALL MECHANICAL AND PLUMBING SYSTEMS. THE MANUALS SHALL CONTAIN A LIST OF ALL SUB-CONTRACTORS AND SUPPLIERS, EQUIPMENT CUT SHEETS, START-UP INFORMATION, BALANCING REPORTS, AND MAINTENANCE REQUIREMENTS. THE MANUALS SHALL BE HARD BACKED 3-RING BINDERS WITH THE PROJECT LABELED ON THE COVER AND SPLINE.

F. INSTALL ALL MECHANICAL EQUIPMENT AND MATERIALS IN COORDINATION WITH ALL OTHER TRADES. VERIFY ALL ELECTRICAL CONNECTIONS WITH THE ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.

G. PROVIDE AND INSTALL ACCESS DOORS WHERE EQUIPMENT, VALVES OR DAMPERS ARE CONCEALED BEHIND FINISHED SURFACES.

H. PROVIDE FACTORY-AUTHORIZED EQUIPMENT START-UP, COMMISSIONING, AND TRAINING OF ALL MECHANICAL EQUIPMENT.

I. INSTALL ALL SYSTEMS, MATERIALS, AND EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS. INSTALL ALL PIPING FREE FROM SAGS AND BENDS AND AT THE SLOPE INDICATED (WHERE REQUIRED). INSTALL DUCTWORK, PIPING, AND EQUIPMENT TO PROVIDE THE MAXIMUM POSSIBLE HEADROOM.

J. ALL WORK SHALL BE PERFORMED BY CERTIFIED AND SKILLED WORKERS WITH PRIOR EXPERIENCE IN THEIR PARTICULAR TRADE.

K. THE MECHANICAL SUB-CONTRACTOR SHALL PROVIDE WARRANTY THE ENTIRE MECHANICAL SYSTEM FOR A PERIOD OF ONE YEAR. INCLUDE THE WARRANTY AND ALL OTHER GUARANTEES AND WARRANTIES IN THE OPERATION AND MAINTENANCE MANUAL.

L. THE CONTRACTOR SHALL STORE AND PROTECT ALL EQUIPMENT AND MATERIALS DURING CONSTRUCTION AS REQUIRED AND SHALL REPAIR OR REPLACE ALL DAMAGED PIPING, EQUIPMENT, OR OTHER DAMAGE DURING CONSTRUCTION.

M. PROVIDE AND INSTALL ALL MECHANICAL EQUIPMENT, PIPING, FIXTURE, AND ACCESSORIES IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE ALL FITTINGS, VALVES, TRANSITIONS, AND OTHER DEVICES AS REQUIRED FOR A COMPLETE AND OPERATIONAL MECHANICAL SYSTEM.

N. SUBMIT FOR PRIOR APPROVAL FOR EQUIPMENT MANUFACTURERS NOT LISTED IN THE SPECIFICATIONS A MINIMUM OF FIVE PRIOR TO BID.

BASIC MECHANICAL MATERIALS AND METHODS

A. ALL PIPE AND PIPE FITTINGS SHALL BE NEW AND SHALL BE AMERICAN MADE WITH APPROVED LABELS. DELIVER, STORE, AND PROTECT DUCTWORK AND PIPING DURING CONSTRUCTION FROM DAMAGE, DIRT, AND MOISTURE.

B. SEAL ALL DUCT AND PIPE PENETRATIONS THROUGH WALLS AND FLOORS AIR TIGHT. CAULK ALL FIRE RATED PIPE PENETRATIONS WITH APPROVED FIRE-STOPPING MATERIAL.

C. CUT, CHANNEL, CHASE, AND DRILL FLOORS, WALLS, PARTITIONS, CEILINGS, AND OTHER SURFACES NECESSARY FOR PROPER INSTALLATION. REPAIR AS REQUIRED TO MATCH ADJACENT SURFACES.

HANGERS AND SUPPORTS

A. PROVIDE AND INSTALL DUCT SUPPORTS AND HANGERS AS REQUIRED FOR ALL DUCTWORK AND EQUIPMENT ACCORDING TO MANUFACTURERS STANDARDIZATION SOCIETY (MSS) AND SMACA STANDARDS.

VIBRATION ISOLATION AND SEISMIC CONTROLS

A. PROVIDE AND INSTALL VIBRATION ISOLATORS, FLEXIBLE CONNECTIONS, ISOLATION PADS, AND OTHER EQUIPMENT TO PREVENT NOISE AND VIBRATION TRANSMISSION.

DUCTWORK AND EQUIPMENT IDENTIFICATION

A. PROVIDE DUCT AND EQUIPMENT TAGS, LABELS, AND IDENTIFICATION INDICATING FLOW DIRECTION, AREA SERVED, SYSTEM TYPE AND OTHER IDENDIFYING INFORMATION. COMPLY WITH ASME PIPING EQUIPMENT IDENTIFICATION STANDARDS.

INSULATION

A. PROVIDE AND INSTALL GLASS FIBER DUCT INSULATION ACCORDING TO THE FOLLOWING SCHEDULE:
RECTANGULAR SUPPLY AND RETURN DUCTS:
1" DUCT LINER
ROUND SUPPLY AND RETURN DUCTS:
1-1/2" BLANKET WRAP WITH VAPOR BARRIER.
ROUND AND RECTANGULAR EXHAUST DUCTS:
NO INSULATION UNLESS OTHERWISE NOTED.
UNLINED SUPPLY, COMBUSTION, AND OUTSIDE AIR DUCTS:
1-1/2" BLANKET WRAP WITH VAPOR BARRIER.
EXTERIOR INSTALLED SUPPLY AND RETURN DUCTS:
2" BLANKET WRAP WITH VAPOR BARRIER.

B. DUCT LINER SHALL BE 1" THICK, 2 LBS. DENSITY, WITH ASTM C 1071, TYPE II COATED ACRYLIC SURFACE AND PRE-TEATED FOR ANTI-MICROBIAL AGENT TO PREVENT MICROBIAL GROWTH.

C. GLASS FIBER INSULATION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS.

D. SEAL ALL ENDS AND JOINTS TO PROVIDE A COMPLETELY SEALED INSULATION SYSTEM.

E. SEAL JOINTS, BREAKS AND PUNCTURES WITH VAPOR BARRIER COMPOUND.

F. PROVIDE AND INSTALL 3/4" FLEXIBLE ELASTOMERIC CELLULAR INSULATION ON ALL REFRIGERANT SUCTION PIPING. USE APPROVED ADHESIVE AND PAINT ALL EXTERIOR INSTALLED PIPE INSULATION WITH A LATEX ENAMEL PAINT COATING AS RECOMMENDED BY THE INSULATION MANUFACTURER.

MECHANICAL GENERAL NOTES

1. PROVIDE ALL EQUIPMENT, PIPING, MATERIALS, LABOR, PERMITS, AND FEES TO CONSTUCT A COMPLETE AND OPERATIONAL MECHANICAL SYSTEM FOR THE ENTIRE PROJECT AS SHOWN ON THE DRAWINGS.
2. COORDINATE ALL WORK WITH THE GENERAL CONTRACTOR, PLUMBING SUB-CONTRACTOR, ELECTRICAL SUB-CONTRACTOR, AND ALL OTHER TRADES IN THE PROJECT.
3. ALL MECHANICAL INFORMATION IS NOT SHOWN ON THE MECHANICAL DRAWINGS. COORDINATE ALL WORK WITH THE ARCHITECTURAL, STRUCTURAL, PLUMBING, CIVIL, AND ELECTRICAL DRAWINGS.
4. MECHANICAL PLANS ARE SCHEMATIC IN NATURE AND THEREFORE DO NOT SHOW ALL DROPS, RISERS, AND OFFSETS. THE CONTRACTOR SHALL MAKE ALL REQUIRED MODIFICATIONS TO PROVIDE A COMPLETE AND OPERATIONAL MECHANICAL SYSTEM. MAJOR MODIFICATIONS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER.

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LICENSED PROFESSIONAL ENGINEER
No. 179919
LORIN R. MORTENSEN
STATE OF UTAH

PROTECTIVE INSURANCE
2500 NORTH 90 WEST, LOGAN, UTAH

Mark:	Date:	Description:

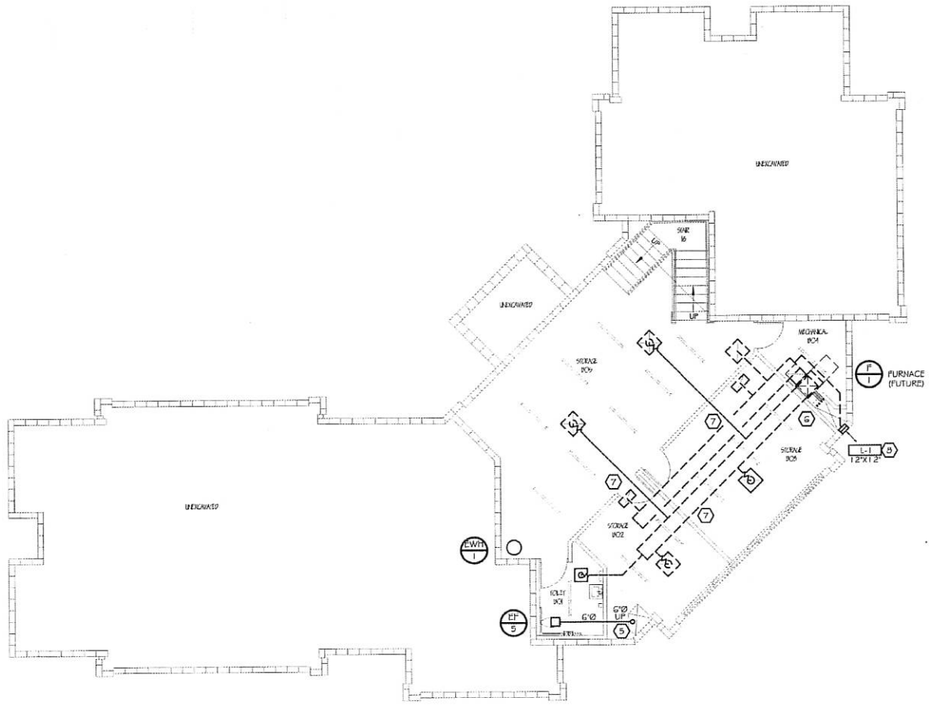
Project No:
Dwg. File:
Owner's No:
Drawn By:
Checked By: LRM
Issued: 6-9-07

GENERAL NOTES SPECIFICATIONS & SYMBOL LEGEND

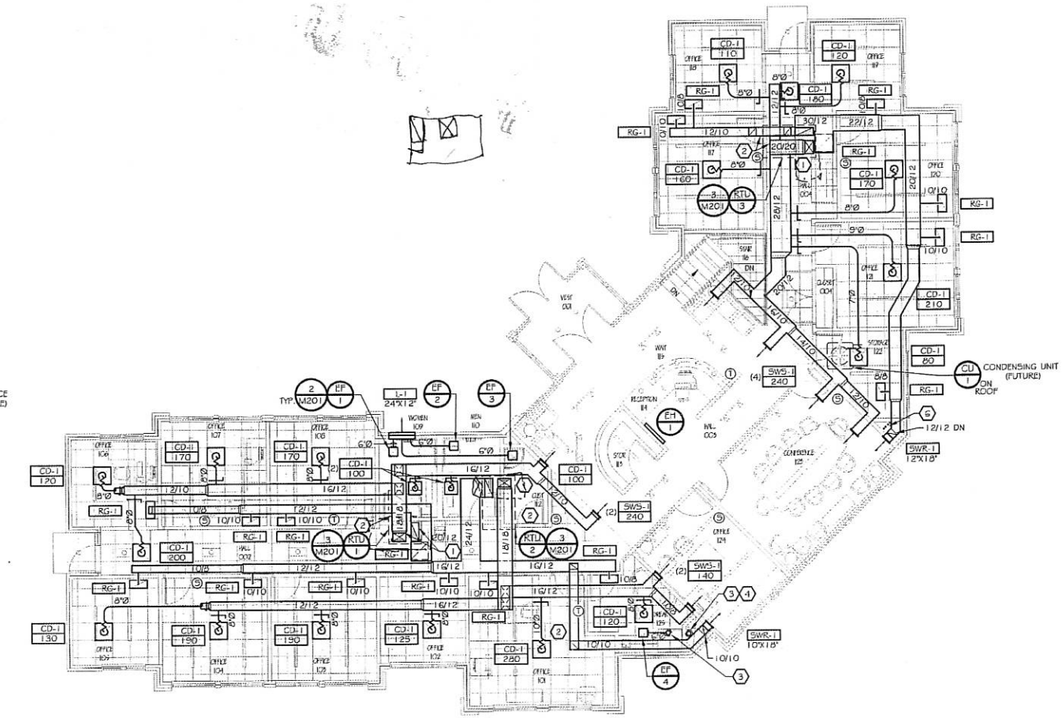
M100

REFERENCE NOTES

1. DUCTS UP THROUGH ROOF TO ROOFTOP AIR CONDITIONER.
2. DUCT TO RUN IN JOIST SPACE.
3. EXHAUST DUCT UP THROUGH ROOF. PROVIDE RAIN CAP.
4. DUCT DOWN. SEE BASEMENT MECHANICAL PLAN FOR CONTINUATION.
5. DUCT UP. SEE MAIN LEVEL MECHANICAL PLAN FOR CONTINUATION.
6. SEAL COMBUSTION/FLUE AND REFRIGERANT PIPING FOR FUTURE FURNACE.
7. FUTURE DUCTS.
8. INSTALL LOUVER AND CAP FOR FUTURE FURNACE.



BASEMENT MECHANICAL PLAN
SCALE: 1/8" = 1'-0"



MAIN LEVEL MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

NORTH

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LICENSED PROFESSIONAL ENGINEER
No. 179919
LORIN R. MORTENSEN
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PROTECTIVE INSURANCE
Logan, Utah

Mark:	Date:	Description:

Project No:
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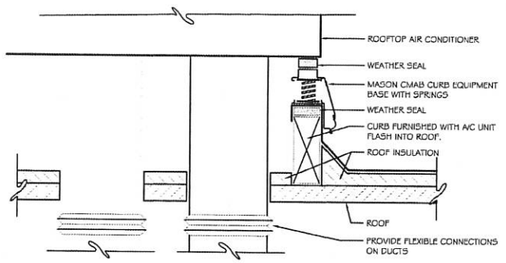
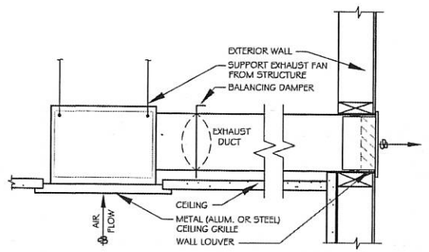
Issued: 6-9-07

MECHANICAL PLAN

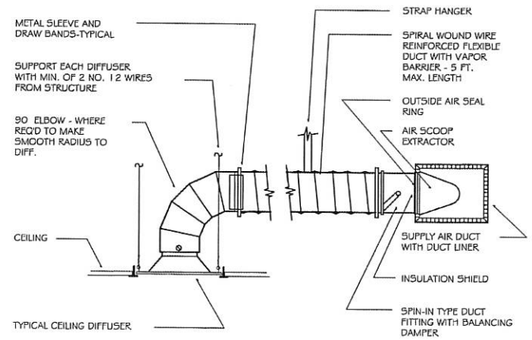
M101



3 / M201 ROOFTOP A/C ON SPRING BASE DETAIL
NOT TO SCALE



2 / M201 CEILING EXHAUST FAN DETAIL
NOT TO SCALE



1 / M201 CEILING DIFFUSER DETAIL
NOT TO SCALE

ROOFTOP PACKAGE AIR CONDITIONING UNIT SCHEDULE (GAS)

SYMBOL	MANUFACTURER & MODEL NO.	CFM	EXT. S.P. (1)	SUPPLY FAN BHP	NATURAL GAS HEATING MBH		COOLING MBH (2)		MIN. OUTSIDE AIR SETTING	MAX WEIGHT LBS.	ARI SEER/ EER	ELECTRICAL			COMMENTS
					INPUT	OUTPUT (1)	SENSIBLE	TOTAL				VOLTS/ PHASE/ CYCLE	MIN. CIRCUIT AMP.	FLA	
RTU 1	CARRIER 48HJF04	1400	0.7	1.20	82 115	67 94	32.7	37.5	200	750	13.0/11.2	230/1/60	31.6	27.6	(1)(2)(3)(4)(5) (6)(7)
RTU 2	CARRIER 48HJF04	1320	0.7	1.20	82 115	67 94	32.7	37.5	200	750	13.0/11.2	230/1/60	31.6	27.6	(1)(2)(3)(4)(5) (6)(7)
RTU 3	CARRIER 48HJE06	1990	0.7	2.40	82 115	67 94	47.5	56.4	300	800	13.0/11.0	230/1/60	52.3	45.1	(1)(2)(3)(4)(5) (6)(7)

(1) CAPACITY AT 4600 FEET ELEVATION.
(2) BASED ON 95°F DB, 65°F WB AMBIENT TEMPERATURE.
(3) BASED ON 55°F DB, 54°F WB LAT, 80°F DB, 63°F WB EAT.
(4) COMPLETE WITH 100% ECONOMIZER, AND POWER RELIEF.
(5) TWO STAGE GAS HEATING.
(6) UNIT COMPLETE WITH STARTER, SERVICE DISCONNECT, AND CONVIENCE OUTLET.
(7) PROVIDE VIBRATION ISOLATION ROOF CURB (ALTERNATE).

REGISTER AND GRILLE SCHEDULE

SYMBOL	MANUFACTURER	MODEL	DESCRIPTION	MAX. NC	NECK SIZE	MAX. CFM
CD-1	PRICE	SCD	LOUVERED FACE CEILING DIFFUSERS REMOVABLE FACE & CORE. W/O.B.D. FRAME SHALL BE FOR SURFACE OR LAY-I IN MOUNTING AS REQUIRED BY CEILING TYPE. LAY-IN FRAMES SHALL BE 24" X 24", 24" X 12", OR 12" X 12" AS REQD. TO FIT CEILING TILE SPACE AVAILABLE. PROVIDE ROUND NECK ADAPTER.	30	6 x 6 8 x 8 9 x 9 10 x 10 6 x 18 12 x 12 15 x 15 18 x 18	125 220 250 320 350 425 625 900
RG-1	PRICE	535	LOUVERED FACE CEILING RETURN AIR UNIT, REMOVABLE FACE & CORE. FRAME SHALL BE FOR SURFACE OR LAY-IN MOUNTING AS REQUIRED BY CEILING TYPE. LAY-IN FRAMES SHALL BE 24" X 24", 24" X 12" OR 12" X 12" AS REQUIRED TO FIT CEILING TILE SPACE AVAILABLE. AIR QUANTITY SHALL MATCH ROOM SUPPLY OR EXHAUST AIR QUANTITY.	30	10 x 10 12 x 12 14 x 14 10 x 22 16 x 16 18 x 18 24 x 24 36 x 24	350 500 550 625 725 900 1300 2200
SWR-1	PRICE	91L	HEAVY DUTY SIDEWALL RETURN AIR GRILLE. STATIONARY HORIZONTAL DEFLECTION VANES SPACED AT 1/2" O.C. 1-1/4" FLANGE. INSTALL INTERMEDIATE SUPPORT CHANNELS. FRAME TO BE MADE OF 16 GAUGE STEEL.	30	SEE PLAN	
SWS-1	PRICE	510	SIDEWALL SUPPLY DIFFUSER. DOUBLE DEFLECTION SUPPLY REGISTER. VERTICAL FRONT WITH HORIZONTAL REAR DEFLECTION VANES SPACED AT 3/4" O.C. ADJUSTABLE. COMPLETE W/ O.B.D.	30	SEE PLAN	
L-1	AIROLITE	K6774	WALL LOUVER. STATIONARY 4" THICK 45 BLADE 12 GA. EXT. ALUMINUM BLADES, 6 GA. EXT. JAMBS. CHANNEL FRAME, BRONZE ANODIZED FINISH WITH BIRD SCREEN. COLOR BY ARCHITECT.	30	SEE PLAN	

EXHAUST FAN SCHEDULE

SYMBOL	MANUFACTURER	MODEL	CFM	STATIC PRESSURE IN. WG.	H.P.	RPM	VOLTS/PHASE/CYCLE	COMMENTS
EF 1	PENN	ZEPHYR ZSH	120	0.30	1/4	1050	115/1/60	(1)(2)(3)
EF 2	PENN	ZEPHYR ZSH	120	0.30	1/4	1050	115/1/60	(1)(2)(3)
EF 3	PENN	ZEPHYR ZSH	100	0.30	1/4	1050	115/1/60	(1)(2)(3)
EF 4	PENN	ZEPHYR ZSH	100	0.30	1/4	1050	115/1/60	(1)(2)(3)
EF 5	PENN	ZEPHYR ZSH	100	0.30	1/4	1050	115/1/60	(1)(2)(3)

(1) ALL CAPACITIES AT 4600 FT. ELEVATION.
(2) CEILING EXHAUST FAN
PROVIDE GRAVITY BACKDRAFT DAMPER, INTEGRAL THERMAL OVERLOAD PROTECTION, AND ADJUSTABLE RHEASTAT BALANCING.
(3) CONTROL: ON-OFF WALL SWITCH BY DIV. 16.

ELECTRIC HEATER SCHEDULE

SYMBOL	MANUFACTURER & MODEL NO.	MOUNTING ARRANGEMENT	SOUND RATING	HEATING CAPACITY		CFM	FLA	VOLTS/ PHASE/ CYCLE	COMMENTS
				WATTS	MBH				
EH 1	QMARK HBB3750	WALL MOUNTED BASEBOARD	-	750	2.6	-	6.3	120/1/60	(1)

(1) PROVIDE WITH THERMOSTAT CONTROL MOUNTED ON BASEBOARD HEATER.

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LICENSED PROFESSIONAL ENGINEER
No. 179919
LORIN R. MORTENSEN
STATE OF UTAH

PROTECTIVE INSURANCE
2500 NORTH 150 WEST, LOGAN, UTAH

Mark: Date: Description:

Project No:
Dwg. File:
Owner's No:
Drawn By:
Checked By: LRM
Issued: 6-9-07

MECHANICAL DETAILS & SCHEDULES

M201

PLUMBING SYMBOL LEGEND

SOIL, WASTE-ABOVE GRADE
SOIL, WASTE-BELOW GRADE
VENT
COLD WATER
HOT WATER
HOT WATER CIRCULATE
GAS — G
RAIN WATER-ABOVE GRADE — RW
RAIN WATER-BELOW GRADE — RW
OVERFLOW RAIN WATER-ABOVE GRADE — ORW
DRAIN LINE — D
WALL HYDRANT — W.H.
HOSE BIBB — H.B.
CLEANOUT TO GRADE — C.O.T.G.
FLOOR CLEANOUT — F.C.O.
WALL CLEANOUT — W.C.O.
SHUT OFF VALVE
CHECK VALVE
ANGLE VALVE
VENTURI
BALANCING OR PLUG COCK
FLOW SETTER
GAS COCK
BUTTERFLY VALVE
BALL VALVE
RELIEF VALVE
PRESSURE REDUCING VALVE
GAUGE COCK
STRAINER
FLEXIBLE CONNECTION
PRESSURE GAUGE
THERMOMETER
REDUCER CONCENTRIC
REDUCER ECCENTRIC
90° ELBOW UP
90° ELBOW DOWN
90° TEE UP
90° TEE DOWN
UNION
CAPPED PIPE
ANCHOR

PLUMBING ABREVIATIONS

BHP	BRAKE HORSE POWER	NTS	NOT TO SCALE
BTU	BRITISH THERMAL UNIT	NO	NUMBER
CLG	COOLING	OZ	OUNCE
CW	COLD WATER	PSI	POUNDS PER SQUARE INCH
DP	DEPTH OR DEEP	PSIA	PSI ABSOLUTE
ID	INSIDE DIAMTER	PSIG	PSI GAUGE
OD	OUTSIDE DIAMTER	PRESS	PRESSURE
(E)	EXISTING	PD	PRESSURE DROP
EFF	EFFICIENCY	RECIRC	RECIRCULATE
ELEV	ELEVATION	RPM	REVOLUTIONS PER MINUTE
(F)	FUTURE	RW	RAIN WATER
F	FARENHEIT	SCW	SOFT COLD WATER
FC	FLEXIBLE CONNECTION	SF	SAFETY FACTOR
FT	FEET	SL	SEA LEVEL
GAL	GALLON(S)	SPEC	SPECIFICATION(S)
GPH	GALLONS PER HOUR	SQ	SQUARE
GPM	GALLONS PER MINUTE	STD	STANDARD
HD	HEAD	SPLY	SUPPLY
HT	HEIGHT	TEMP	TEMPERATURE
HTG	HEATING	TD	TEMP. DROP OR DIFF.
HP	HORSE POWER	R	THERMAL RESITANCE
HW	HOT WATER	T	TIME
LG	LENGTH	VAC	VACUUM
MAX	MAXIMUM	VENT	VENT, VENTILATION
MIN	MINIMUM	VERT	VERTICAL
NO	NORMALLY OPEN	VOL	VOLUME
NC	NORMALLY CLOSED	WTR	WATER
N/A	NOT APLICABLE	WT	WEIGHT
NIC	NOT IN CONTRACT	YR	YEAR

PLUMBING SPECIFICATIONS (3)

FIRE SPRINKLER SYSTEM

A. NOT INCLUDED IN THIS CONTRACT.

PLUMBING SPECIALTIES

A. PROVIDE AND INSTALL WATER PRESSURE REGULATING VALVE RATED FOR INITIAL WORKING PRESSURE OF 150 PSIG WITH INLET AND OUTLET SHUTOFF VALVES, PRESSURE GAUGE, AND DRAIN VALVE.

B. PROVIDE AND INSTALL CLEANOUTS AND COVER PLATES WHERE INDICATED ON THE DRAWINGS. INSTALL A CLEANOUT AT EACH PLUMBING FIXTURE. CLEANOUT FLOOR COVER PLATES SHALL BE MOUNTED FLUSH WITH THE FLOOR. COORDINATE CLEANOUT COVER PLATES WITH WALL OR FLOOR SURFACE FINISH.

WATER HEATERS

A. PROVIDE A WATER HEATER AS SHOWN ON THE DRAWINGS THAT COMPLIES WITH ASME BOILER AND PRESSURE VESSEL CODE, UL LISTING, AGA STANDARDS, AND ASHRAE ENERGY STANDARDS.

B. SUBMIT MANUFACTURERS CUTSHEET FOR REVIEW AND APPROVAL INCLUDING MANUFACTURER, TYPE, MODEL NUMBER, CAPACITY, ELECTRICAL REQUIREMENTS, AND OPTIONS.

C. INSTALL WATER HEATER LEVEL AND PLUMB ON CONCRETE EQUIPMENT PAD UNLESS OTHERWISE NOTED. INSTALL WATER HEATER ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ANCHOR WATER HEATER TO EQUIPMENT PAD. INSTALL EARTHQUAKE BRACING SECURE TO STRUCTURAL MEMBERS.

D. INSTALL WATER HEATER WITH RELIEF VALVE, SHUTOFF VALVES, UNIONS, THERMOMETERS, DRAIN LINE, GAS CONNECTION, VENT AND RECIRCULATION SYSTEM AS INDICATED ON THE DRAWINGS.

PLUMBING SPECIFICATIONS (2)

VALVES

A. PROVIDE AND INSTALL BALL SHUTOFF VALVES WHERE SHOWN ON PLANS FOR LINES 3" AND SMALLER. BALL VALVES SHALL BE MSS SP-110, CLASS 150 BRONZE BODY AND BONNET AND VINYL-COVERED STEEL HANDLE.

B. PROVIDE AND INSTALL BUTTERFLY VALVES WHERE SHOWN ON PLANS FOR LINES 4" AND LARGER. BUTTERFLY VALVES SHALL BE MSS SP-67, ASTM A 126 CAST-IRON BODY AND BONNET WITH EPDM SEALS.

FUEL GAS PIPING

A. COORDINATE INSTALLATION OF GAS YARD LINE AND GAS METER WITH THE GAS COMPANY. WORK TO BE PERFORMED BY THE GAS COMPANY PAID BY THE CONTRACTOR.

B. COMPLY WITH NFPA 54 "NATIONAL FUEL GAS CODE", LOCAL GAS COMPANY REQUIREMENTS, AND ALL OTHER APPLICABLE CODES FOR GAS PIPING MATERIALS, COMPONENTTS, INSTALLATIONS, INSPECTIONS, TESTING, AND PURGING.

C. GAS PIPING SHALL BE SEAMLESS, GRADE B, SCHEDULE 40 BLACK STEEL WITH THREADED FITTINGS.

D. INSTALL SHUTOFF VALVE DOWNSTREAM OF THE GAS METER OUTSIDE OF THE BUILDING.

F. INSTALL 2 PSIG - TO - 4 OZ. GAS PRESSURE REGULATOR WHERE SHOWN ON THE DRAWINGS. INSTALL AND VENT AS REQUIRED BY MANUFACTURERS INSTRUCTIONS.

G. INSTALL GAS SHUTOFF VALVE AT ALL GAS APPLIANCES. CONNECT TO APPLIANCE WITH APPROVED FLEXIBLE CONNECTION. INSTALL TEE FITTING SEDIMENT TRAPS WITHIN 6' OF EACH APPLIANCE.

PLUMBING PIPING

A. WATER DISTRIBUTION PIPING - BELOW GROUND (150 PSIG):
3-1/2" AND SMALLER - USE TYPE K SOFT OR HARD COPPER TUBE WITH CAST COPPER ALLOY BRAZED JOINT PRESSURE FITTINGS.

B. WATER DISTRIBUTION PIPING - ABOVE GROUND (125 PSIG):
3-1/2" AND SMALLER - USE TYPE L HARD COPPER TUBE WITH CAST COPPER ALLOY BRAZED JOINT PRESSURE FITTINGS.

C. WASTE AND VENT PIPING - BELOW GROUNGD (10-FOOT HEAD OF WATER):
2" TO 8" - USE HUB-AND-SPIGOT CAST-IRON SOIL PIPE WITH CAST IRON SOIL PIPE FITTINGS, NEOPRENE RUBBER GASKETS, AND COMPRESSION JOINTS.
2" TO 6" - USE ACRYLONITRILE-BUTADIENE-STYRENE (ABS) PLASTIC PIPE WITH ABS SOCKET-TYPE DRAIN, WASTE, AND VENT PIPE PATTERN FITTINGS WITH SOLVENT CEMENTED JOINTS.
2" TO 8" - USE POLYVINYL CHLORIDE (PVC) PLASTIC DWV PIPE AND SOCKET-TYPE DRAIN WASTE AND VENT PIPE PATTERN FITTINGS WITH SOLVENT CEMENTED JOINTS.

D. WASTE AND VENT PIPING - ABOVE GROUNGD (10-FOOT HEAD OF WATER):
2" TO 8" - USE HUB-AND-SPIGOT CAST-IRON SOIL PIPE WITH CAST IRON SOIL PIPE FITTINGS, NEOPRENE RUBBER GASKETS, AND COMPRESSION JOINTS.
2" TO 6" - USE ACRYLONITRILE-BUTADIENE-STYRENE (ABS) PLASTIC PIPE WITH ABS SOCKET-TYPE DRAIN, WASTE, AND VENT PIPE PATTERN FITTINGS WITH SOLVENT CEMENTED JOINTS.
2" TO 8" - USE POLYVINYL CHLORIDE (PVC) PLASTIC DWV PIPE AND SOCKET-TYPE DRAIN WASTE AND VENT PIPE PATTERN FITTINGS WITH SOLVENT COMENTED JOINTS.

E. STORM DRAINAGE PIPING - ABOVE GROUNGD (10-FOOT HEAD OF WATER):
2" TO 8" - USE HUB-AND-SPIGOT CAST-IRON SOIL PIPE WITH CAST IRON SOIL PIPE FITTINGS, NEOPRENE RUBBER GASKETS, AND COMPRESSION JOINTS.

F. ABS, PVC, OR PLASTIC PIPE MATERIAL SHALL NOT BE USED IN SUPPLY OR RETURN AIR PLENUMS.

G. INSTALL HANGERS FOR HORIZONTAL COPPER AND CAST IRON PIPING WITH THE FOLLOWING MAXIMUM SPACING AND MINIMUM ROD SIZES:

NOM. PIPE SIZE	MAX. SPAN	MIN. ROD DIA.
3/4"	6'	3/8"
1"	6'	3/8"
1-1/2"	6'	3/8"
2"	12'	3/8"
2-1/2"	12'	1/2"
3"	12'	1/2"
3-1/2"	12'	1/2"
4"	12'	5/8"
5"	12'	5/8"
6"	12'	3/4"

SUPPORT VERTICAL PIPE AND TUBING AT EACH FLOOR.

H. SUPPORT HORIZONTAL ABS AND PVC PIPING WITH PIPE HANGERS LOCATED AT 4' MAXIMUM SPAN.

I. CLEAN, FLUSH, AND TEST ALL WATER DISTRIBUTION PIPING TO 1-1/2 TIMES THE OPERATING PRESSURE FOR A TIME PERIOD OF 4 HOURS. PURGE AND DISINFECT POTABLE WATER SYSTEMS WITH A WATER/CHLORINE SOLUTION IN ACCORDANCE WITH THE LOCAL HEALTH CODE REQUIREMENTS. TEST AND SUBMIT SATISFACTORY REPORT PRIOR TO BUILDING OCCUPANCY.

J. CLEAN, FLUSH, AND TEST THE WASTE AND VENT PIPING SYSTEM TO 10 FEET HEAD OF WATER.

PLUMBING FIXTURES

A. PROVIDE AND INSTALL PLUMBING FIXTURES WHERE INDICATED ON THE DRAWINGS FOR A COMPLETE PLUMBING SYSTEM. PROVIDE ALL REQUIRED CARRIERS, SUPPORTS, EQUIPMENT, HANGERS, FITTINGS, TRIM, STOPS, AND ACCESSORIES ASSOCIATED WITH THE PLUMBING FIXTURES. COORDINATE THE COLOR STYLE, COLOR, AND ACCESSORIES OF EACH FIXTURE WITH THE BUILDING OWNER. ALL FIXTURES NOTED AS ACCESSIBLE SHALL COMPLY WITH A.D.A. REQUIREMENTS. COORDINATE ALL ELECTRICAL REQUIREMENTS WITH THE ELECTRICAL SUB-CONTRACTOR. INSTALL ALL PLUMBING FIXTURES PLUMB, LEVEL, AND ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. REFER TO THE PLUMBING FIXTURE SCHEDULE.

B. PROVIDE PLUMBING FIXTURES FROM THE FOLLOWING MANUFACTURERS:
WATER CLOSETS AND URINALS:
AMERICAN STANDARD, BRIGGS, CRANE, ELJER, KOHLER
LAVATORIES:
ACORN,AMERICAN STANDARD, BRIGGS, CRANE, ELJER, ELKAY, KOHLER
FAUCETS:
AMERICAN STANDARD, BRIGGS, CHICAGO, CRANE, DELTA, ELJER, ELKAY, GERBER, KOHLER, MOEN, PRICE PFISTER, SYMMONS, T & S BRASS
DRINKING FOUNTAINS AND WATER COOLERS:
ACCORN, ELKAY, HALSEY TAYLOR, HAWS, SUNROC

C. SUBMIT MANUFACTURERS CUTSHEET FOR REVIEW AND APPROVAL FOR EACH PLUMBING FIXTURE INCLUDING MANUFACTURER, MODEL, STYLE, OPTIONS, AND ACCESSORIES.

D. PROVIDE SNAP ON INSULATION KIT ON ALL ADA COMPLIANT LAVATORIES AND SINKS.

PLUMBING SPECIFICATIONS (1)

BASIC PLUMBING REQUIREMENTS

A. COMPLY WITH THE REQUIREMENTS OF THE 2006 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC), INTERNATIONAL MECHANICAL CODE (IMC), INTERNATIONAL PLUMBING CODE (IPC), INTERNATIONAL FUEL GAS CODE (IFGC), AND INTERNATIONAL ENERGY CONSERVATION CODE (IECC), AND THE CURRENT NATIONAL ELECTRIC CODE (NEC) INCLUDING ALL STATE AMENDMENTS. COMPLY WITH THE AUTHORITY HAVING JURISDICTION AND ALL APPLICABLE CITY, COUNTY, STATE, AND FEDERAL CODES AND REGULATIONS IN EFFECT AT THE BID DATE.

B. PREPARE AND SUBMIT FIVE (5) COPIES OF THE SHOP DRAWINGS FOR ALL PLUMBING FIXTURES, EQUIPMENT, VALVES, AND ACCESSORIES INCLUDING MANUFACTURERS NAME, CATALOG NUMBER, DESCRIPTION, SIZE, CAPACITY, ELECTRICAL REQUIREMENTS, OPERATION, AND MAINTENANCE INFORMATION. SHOP DRAWINGS SHALL BE REVIEWED AND STAMPED BY THE PLUMBING AND GENERAL CONTRACTOR PRIOR TO ENGINEERS REVIEW. FIXTURES, EQUIPMENT, ETC. SHALL NOT BE ORDERED UNTIL APPROVED SHOP DRAWINGS HAVE BEEN RECEIVED.

C. PREPARE COORDINATION DRAWINGS DETAILING ALL MAJOR EQUIPMENT AND SYSTEMS. INCLUDE EQUIPMENT CONNECTIONS, CLEARANCES, FIRE-RATED WALL OR FLOOR PENETRATIONS, CONCRETE PADS, AND SUPPORT DETAILS IN COORDINATION DRAWINGS. COORDINATION DRAWINGS SHALL BE IN CONJUNCTION WITH THE MECHANICAL, FIRE SPRINKLER (WHERE REQUIRED), ELECTRICAL, REFLECTED CEILINGS, AND ALL OTHER APPLICABLE TRADES.

D. PREPARE RECORD "AS BUILT" DOCUMENTS INCLUDING ALL CHANGES FROM THE ORIGINAL BID DOCUMENTS. SUBMIT COMPLETE "AS BUILT" DOCUMENTS AT THE COMPLETION OF THE PROJECT.

E. PROVIDE 2 SETS OF OPERATION AND MAINTENANCE (O & M) MANUALS CONTAINING INFORMATION FOR ALL MECHANICAL AND PLUMBING SYSTEMS. THE MANUALS SHALL CONTAIN A LIST OF ALL SUB-CONTRACTORS AND SUPPLIERS, EQUIPMENT CUT SHEETS, START-UP INFORMATION, BALANCING REPORTS, AND MAINTENANCE REQUIREMENTS. THE MANUALS SHALL BE HARD BACKED 3-RING BINDERS WITH THE PROJECT LABELED ON THE COVER AND SPLINE.

F. INSTALL ALL PLUMBING EQUIPMENT AND MATERIALS IN COORDINATION WITH ALL OTHER TRADES. VERIFY ALL ELECTRICAL CONNECTIONS WITH THE ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.

G. PROVIDE AND INSTALL ACCESS DOORS WHERE EQUIPMENT OR VALVES ARE CONCEALED BEHIND FINISHED SURFACES.

H. PROVIDE FACTORY-AUTHORIZED EQUIPMENT START-UP, COMMISSIONING, AND TRAINING OF ALL PLUMBING EQUIPMENT.

I. INSTALL ALL SYSTEMS, MATERIALS, AND EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS. INSTALL ALL PIPING FREE FROM SAGS AND BENDS AND AT THE SLOPE INDICATED (WHERE REQUIRED). INSTALL PIPING AND EQUIPMENT TO PROVIDE THE MAXIMUM POSSIBLE HEADROOM.

J. ALL WORK SHALL BE PERFORMED BY CERTIFIED AND SKILLED WORKERS WITH PRIOR EXPERIENCE IN THEIR PARTICULAR TRADE.

K. THE PLUMBING SUB-CONTRACTOR SHALL PROVIDE WARRANTY THE ENTIRE PLUMBING SYSTEM FOR A PERIOD OF ONE YEAR. INCLUDE THE WARRANTY AND ALL OTHER GUARANTEES AND WARRANTIES IN THE OPERATION AND MAINTENANCE MANUAL.

L. THE CONTRACTOR SHALL STORE AND PROTECT ALL EQUIPMENT AND MATERIALS DURING CONSTRUCTION AS REQUIRED AND SHALL REPAIR OR REPLACE ALL DAMAGED PIPING, EQUIPMENT, OR OTHER DAMAGE DURING CONSTRUCTION.

M. PROVIDE AND INSTALL ALL PLUMBING EQUIPMENT, PIPING, FIXTURE, AND ACCESSORIES IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE ALL FITTINGS, VALVES, TRANSITIONS, AND OTHER DEVICES AS REQUIRED FOR A COMPLETE AND OPERATIONAL PLUMBING SYSTEM.

N. SUBMIT FOR PRIOR APPROVAL FOR EQUIPMENT MANUFACTURERS NOT LISTED IN THE SPECIFICATIONS A MINIMUM OF FIVE PRIOR TO BID.

BASIC PLUMBING MATERIALS AND METHODS

A. ALL PIPE AND PIPE FITTINGS SHALL BE NEW AND SHALL BE AMERICAN MADE WITH APPROVED LABELS. DELIVER, STORE, AND PROTECT PIPING DURING CONSTRUCTION FROM DAMAGE, DIRT, AND MOISTURE.

B. PROVIDE AND INSTALL DIELECTRIC FITTINGS AND FLEXIBLE CONNECTORS WERE REQUIRED FOR PROPER SYSTEM FLUID, PRESSURE, AND TEMPERATURE.

C. PROVIDE PIPE ESCUTCHEONS FOR ALL EXPOSED WALL AND CEILING PENETRATIONS. PROVIDE COVER PLATES FOR ALL FLOOR AND WALL CLEANOUTS.

D. SEAL ALL PIPE PENETRATIONS THROUGH WALLS AND FLOORS AIR TIGHT. CAULK ALL FIRE RATED PIPE PENETRATIONS WITH APPROVED FIRE-STOPPING MATERIAL.

E. CUT, CHANNEL, CHASE, AND DRILL FLOORS, WALLS, PARTITIONS, CEILINGS, AND OTHER SURFACES NECESSARY FOR PROPER INSTALLATION. REPAIR AS REQUIRED TO MATCH ADJACENT SURFACES.

HANGERS AND SUPPORTS

A. PROVIDE AND INSTALL PIPE SUPPORTS AND HANGERS AS REQUIRED FOR ALL PIPING AND EQUIPMENT ACCORDING TO MANUFACTURERS STANDARDIZATION SOCIETY (MSS) STANDARDS.

VIBRATION ISOLATION AND SEISMIC CONTROLS

A. PROVIDE AND INSTALL VIBRATION ISOLATORS, FLEXIBLE CONNECTIONS, ISOLATION PADS, AND OTHER EQUIPMENT TO PREVENT NOISE AND VIBRATION TRANSMISSION.

PIPING AND EQUIPMENT IDENTIFICATION

A. PROVIDE PIPE AND EQUIPMENT TAGS, LABELS, AND IDENTICATION INDICATING FLOW DIRECTION, AREA SERVED, SYSTEM TYPE, AND OTHER IDENDIFYING INFORMATION. COMPLY WITH ASME PIPING EQUIPMENT IDENTIFICATION STANDARDS.

INSULATION

A. PROVIDE AND INSTALL GLASS FIBER PREFORMED PIPE INSULATION WITH VAPOR PROOF COATING ACCORDING TO THE FOLLOWING SCHEDULE:
DOMESTIC COLD WATER PIPING:
1/2" TO 2" PIPE SIZE - 3/4" INSULATION
2" AND ABOVE - 1" INSULATION
DOMESTIC HOT WATER AND RECIRCULATED HOT WATER PIPING:
1/2" TO 2" PIPE SIZE - 1" INSULATION
2" AND ABOVE - 1-1/2" INSULATION
RAIN WATER PIPING AND PLUMBING VENTS (WITHIN 6' OF ROOF):
1/2" TO 2" PIPE SIZE - 3/4" INSULATION
2" AND ABOVE - 1" INSULATION

B. GLASS FIBER INSULATION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS.

C. SEAL ALL ENDS AND JOINTS TO PROVIDE A COMPLETELY SEALED INSULATION SYSTEM. PROVIDE COVER HANGER INSERTS AND SHIELDS WITH JACKET MATERIAL MATCHING ADJACENT PIPE INSULATION.

D. PROVIDE PVC JACKETING ON ALL PIPING INSULATION INSTALLED IN EXPOSED AREAS AND IN MECHANICAL ROOMS.

PLUMBING GENERAL NOTES

1. PROVIDE ALL EQUIPMENT, PIPING, MATERIALS, LABOR, PERMITS, AND FEES TO CONSTUCT A COMPLETE AND OPERATIONAL PLUMBING SYSTEM FOR THE ENTIRE PROJECT AS SHOWN ON THE DRAWINGS.
2. COORDINATE THE EXACT LOCATION OF ALL PLUMBING FIXTURES AND DRAINS WITH THE ARCHITECTURAL DRAWINGS AND THE GENERAL CONTRACTOR.
3. COORDINATE ALL WORK WITH THE GENERAL CONTRACTOR, MECHANICAL SUB-CONTRACTOR, ELECTRICAL SUB-CONTRACTOR, AND ALL OTHER TRADES IN THE PROJECT.
4. ALL PLUMBING INFORMATION IS NOT SHOWN ON THE PLUMBING DRAWINGS. COORDINATE ALL PLUMBING WORK WITH THE ARCHITECTURAL STRUCTURAL, MECHANICAL, CIVIL, AND ELECTRICAL DRAWINGS.
5. PLUMBING PLANS ARE SCHEMATIC IN NATURE AND THEREFORE DO NOT SHOW ALL DROPS, RISERS, AND OFFSETS. THE CONTRACTOR SHALL MAKE ALL REQUIRED MODIFICATIONS TO PROVIDE A COMPLETE AND OPERATIONAL PLUMBING SYSTEM. MAJOR MODIFICATIONS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER.
6. DO NOT RUN PIPING ABOVE ELECTRICAL PANELS. PROVIDE 4'-0" DEEP X 6'6" HIGH CLEAR ACCESS SPACE IN FRONT OF PANELS. DO NOT RUN PIPING IN ELECTRICAL ROOMS.
7. INSTALL ALL PIPING SHOWN IN EXTERIOR WALLS ON THE WARM (ROOM) SIDE OF THE BUILDING INSULATION.
8. INSTALL WATER, GAS, AND VENT PIPING AS HIGH AS POSSIBLE ABOVE THE CEILING UNLESS NOTED OTHERWISE.
9. INSTALL WASTE PIPING BELOW THE FLOOR UNLESS NOTED OTHERWISE.
10. PROVIDE AND INSTALL 2" MINIMUM WASTE PIPE SIZE BELOW GRADE.
11. INSTALL EXTERIOR PIPING 48" MINIMUM BELOW GRADE.
12. INSTALL PLUMBING VENTS A MINIMUM OF 3 FEET ABOVE OR 10 FEET AWAY FROM OUTSIDE AIR INTAKES. COORDINATE WITH THE MECHANICAL SUB-CONTRACTOR.
13. PAINT ALL ROOFTOP PLUMBING VENTS, CONCENTRIC VENTS, AND FLUES TO MATCH THE ROOF COLOR.

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LICENSED PROFESSIONAL ENGINEER
No. 179919
LORIN R. MORTENSEN
STATE OF UTAH

PROTECTIVE INSULATION
2500 NORTH 90 WEST, LOGAN, UTAH

Mark:	Date:	Description:

Project No:
Dwg. File:
Owner's No:
Drawn By:
Checked By: LRM
Issued: 6-9-07

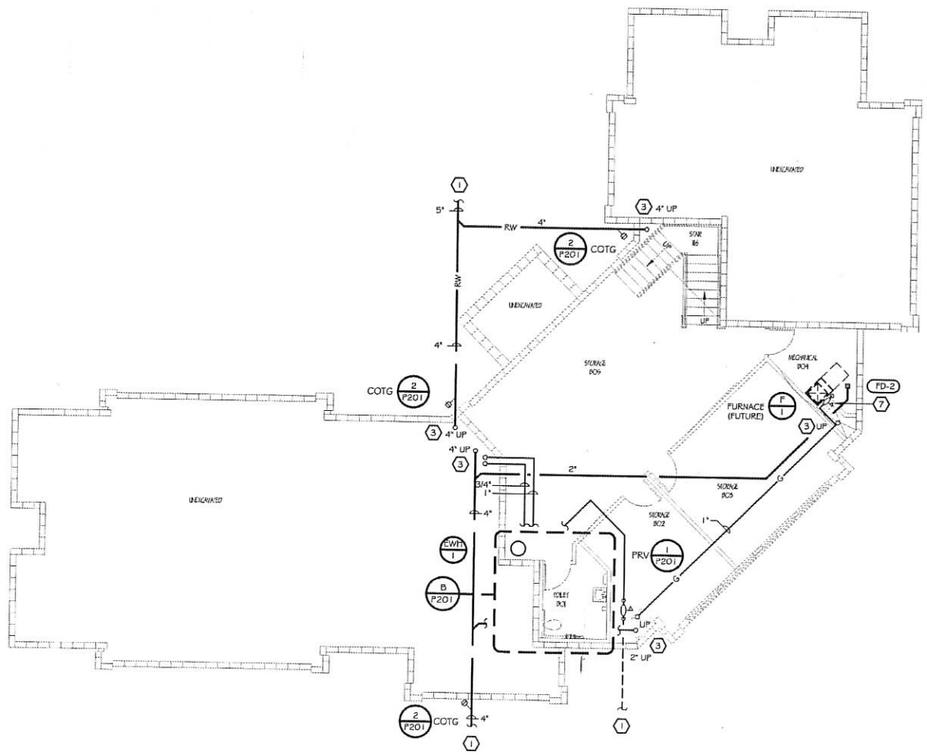
GENERAL NOTES SPECIFICATIONS & SYMBOL LEGEND

P100

REFERENCE NOTES

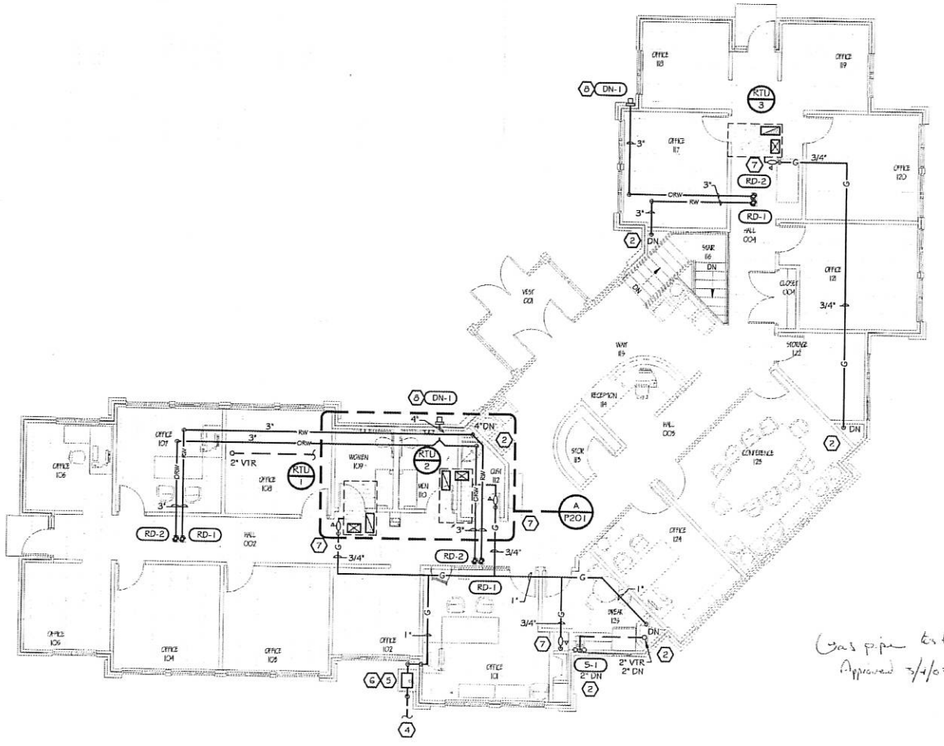
1. SEE SITE UTILITY PLAN FOR CONTINUATION.
2. SEE BASEMENT PLUMBING PLAN FOR CONTINUATION.
3. SEE MAIN LEVEL PLUMBING PLAN FOR CONTINUATION.
4. GAS YARD LINE BY GAS COMPANY.
5. GAS METER (2 LB. - 530 CFH) BY GAS COMPANY.
6. PROVIDE CONCRETE PAD BELOW GAS METER.
7. 2 LB. - TO - 4 OZ. GAS PRESSURE REGULATOR. VENT AS REQUIRED BY MANUFACTURER.
8. OVERFLOW DOWNSPOUT OUTLET. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION.

Above grade plumbing
AP 3/4/08



BASEMENT PLUMBING PLAN
SCALE: 1/8" = 1'-0"

NORTH



Gas pipe ext - Design
Approved 3/4/08 JC

MAIN LEVEL PLUMBING PLAN
SCALE: 1/8" = 1'-0"

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Logan, Utah

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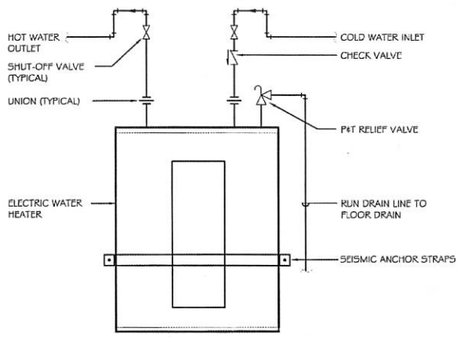
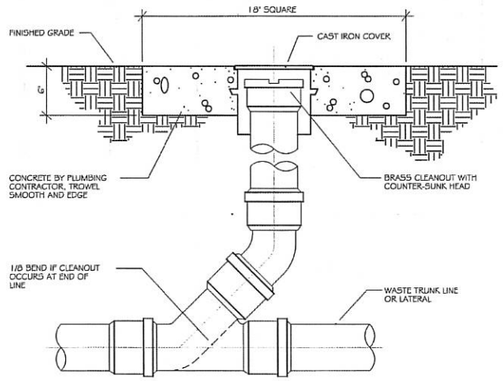
Issued: 7-13-07

PLUMBING PLAN

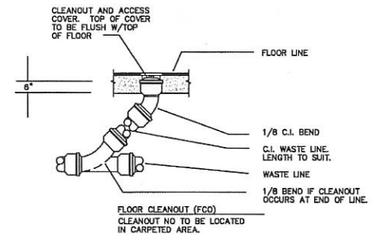
P101



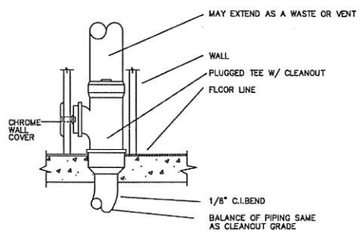
WATER HEATER DETAIL — NOT TO SCALE — 3 / P201



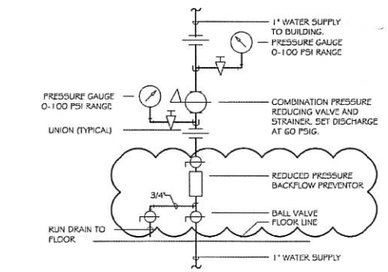
CLEAN OUT TO GRADE DETAIL — NOT TO SCALE — 2 / P201



FLOOR CLEANOUT DETAIL — NOT TO SCALE — 5 / P201



WALL CLEANOUT DETAIL — NOT TO SCALE — 4 / P201



VERTICAL WATER PRESSURE REDUCING STATION DETAIL — NOT TO SCALE — 1 / P201

PLUMBING FIXTURE SCHEDULE

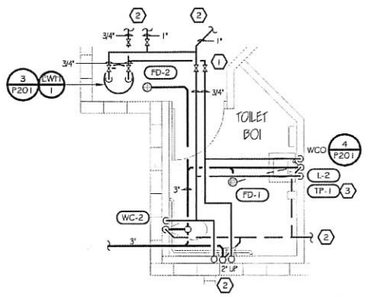
FIX. NO.	FIXTURE	TYPE	DESCRIPTION	WASTE	TRAP	VENT	HW	CW
EWC-1	ACCESSIBLE ELECTRIC WATER COOLER	ACCESSIBLE BARRIER-FREE	ACORN AQUA A1141065F WALL MOUNTED BARRIER FREE WATER COOLER WITH ONE-PIECE STAINLESS STEEL TOP AND RECEPTOR, WELDED STEEL FRAME, AND STEEL PANELS WITH BAKED ENAMEL COATING. 1/4 HP, 115V1/60. PAN COOLED CONDENSER, 8 GPH OF 50 ° F WATER AT 80° F INLET WATER. COLOR BY ARCH.	1 1/2"	1 1/4"	1 1/4"	-	1/2"
FD-1	FLOOR DRAIN	TOILET ROOMS	SMITH FIGURE 2010-BP CAST IRON BODY AND FLASHING COLLAR WITH PROTECTIVE CAP AND SQUARE NICKEL BRONZE ADJUSTABLE STRAINER HEAD WITH SECURED SQUARE HOLE GRATE. ROUND FLOOR DRAIN TOP IN ALL SLOPED CONCRETE LOCATIONS. PROVIDE TRAP PRIMER CONNECTION.	2"	2"	1 1/2"	-	-
FD-2	FLOOR DRAIN	MECH. ROOMS	SMITH FIGURE 2010-BP CAST IRON BODY AND FLASHING COLLAR WITH PROTECTIVE CAP AND ROUND NICKEL BRONZE ADJUSTABLE STRAINER HEAD WITH SECURED SQUARE HOLE GRATE. TRAP PRIMER CONNECTION.	2"	2"	1 1/2"	-	-
L-1	ACCESSIBLE LAVATORY	ACCESSIBLE COUNTER MOUNTED OVAL	KOHLER K-2195 PENNINTON 20"x 17" OVAL VITREOUS CHINA COUNTER MOUNTED LAVATORY WITH 4" FAUCET CENTERS; TECHNICAL CONCEPTS AUTOFAUCET WITH SURROUND SENSOR TECHNOLOGY MODEL 500484 4" PLATE, THERMOSTATIC MIXING VALVE AND BATTERY POWERED SENSOR, ADA INSULATION KIT. (1)	1 1/2"	1 1/4"	1 1/4"	1/2"	1/2"
L-2	LAVATORY	WALL HUNG RECTANGULAR	KOHLER K-2006 KINGSTON 21"x 18" VITREOUS CHINA WALL HUNG LAVATORY WITH 8" FAUCET CENTERS AND DRILLING FOR FLOOR MOUNTED CARRIERS WITH CONCEALED ARM BRACKETS; K-7715 OPEN GRID STRAINER; CHICAGO NO. 785-E3 HI-LITE QUATURN FITTING: NO. 317 WRISTBLADE HANDLES; GN-1A-E3 SPOUT. (1)	1 1/2"	1 1/4"	1 1/4"	1/2"	1/2"
S-1	BREAKROOM SINK	SINGLE COMPARTMENT	ELKAY LK1716 16 GAUGE TYPE 304 STAINLESS STEEL COUNTERTOP SELF RIMMING SINK. DIMENSIONS: 17"x 16"x 7 1/2" WITH (2) FAUCET HOLES ON 8" CENTERS; LK-35 DUO-STRAINER; CHICAGO 785-E3 HI-LITE QUATURN FITTING: NO. 317 WRIST BLADE HANDLES; GN-1A-E3 SPOUT. (1)	2"	1 1/2"	1 1/2"	1/2"	1/2"
SS-1	SERVICE SINK	FLOOR MOUNTED CORNER INSTALLED SERVICE SINK	KOHLER K-6710 WHITBY WHITE ENAMELED CAST IRON CORNER SERVICE SINK WITH K-8940 COATED WIRE RIM GUARD, K-9146 STRAINER, AND DEEP SEAL TRAP. CHICAGO 897-CP WALL MOUNTED FAUCET WITH VACUUM BREAKER, PAIL HOOK, WALL BRACE, 369 HANDLES, 3/4" MALE HOSE OUTLET, 4 WALL HOOK.	3"	3"	1 1/2"	1/2"	1/2"
TP-1	TRAP PRIMER VALVE	TRAP PRIMER	PRECISION PLUMBING PRODUCTS TAIL PIECE TRAP PRIMING ASSEMBLY WITH WYE SPLITTER TO SERVE TWO TRAPS. 1-1/2" TAIL PIECE AND 1/2" BRAIDED STAINLESS STEEL FLEXIBLE MAKE UP WATER LINE.	-	-	-	-	1/2"
WC-1	WATER CLOSET	ACCESSIBLE FLOOR MOUNTED TANK TYPE	KOHLER K-3451 WELLWORTH COMFORT HEIGHT VITREOUS CHINA INGENIUM FLUSHING SYSTEM, ELONGATED BOWL, COMFORT HT. BOLT CAPS; PLASTIC OPEN FRONT SEAT; 12" ROUGHING-IN. ACTUATOR SHALL BE ON THE WIDE SIDE OF STALL. 1.6 GAL/ FLUSH MAX.	3"	-	1 1/2"	-	1/2"
WC-2	WATER CLOSET	FLOOR MOUNTED TANK TYPE	KOHLER K-3422 WELLWORTH FLOOR MOUNTED VITREOUS CHINA CLOSE-COUPLED REVERSE TRAP ELONGATED TOILET WITH BOLT CAPS; PLASTIC OPEN FRONT SEAT; 12" ROUGHING-IN. ACTUATOR SHALL BE ON THE WIDE SIDE OF STALL. 1.6 GAL/ FLUSH MAX. INGENIUM FLUSHING SYSTEM.	3"	-	1 1/2"	-	1/2"
WH-1	WALL HYDRANT	WALL MOUNTED	CHICAGO NONFREEZE AUTOMATIC DRAINING, ANTIBACKFLOW TYPE, KEY OPERATION WITH 3/4" HOSE CONNECTION.	-	-	-	-	3/4"
RD-1	ROOF DRAIN		SMITH FIGURE 1010-ERC CAST IRON BODY WITH COMBINED FLASHING CLAMP AND CAST IRON GRAVEL STOP, CAST IRON DOME, EXTENSION, SUMP RECEIVER AND UNDERDECK CLAMP.	SEE PLAN	-	-	-	-
RD-2	OVERFLOW ROOF DRAIN		SMITH FIGURE 1010-ERC CAST IRON BODY WITH COMBINED FLASHING CLAMP AND CAST IRON GRAVEL STOP, CAST IRON DOME, 2" HIGH CAST IRON WATER COLLAR, EXTENSION, SUMP RECEIVER AND UNDERDECK CLAMP.	SEE PLAN	-	-	-	-
DN-1	DOWNSPOUT NOZZLE		SMITH FIGURE 1770 DOWNSPOUT NOZZLE. CAST BRONZE BODY AND FLANGE. PROVIDE BRONZE BOLTS TO SECURE NOZZLE TO WALL. INSTALL 12" ABOVE FOUNDATION UNLESS NOTED OTHERWISE.	SEE PLAN	-	-	-	-

(1) PROVIDE SYMMONS THERMIXER MODEL 5-120 THERMOSTATIC MIXING VALVE BELOW LAVATORIES AND SINK. SET OUTLET AT 110° F. CONNECT TO HOT WATER INLET OF FAUCET.

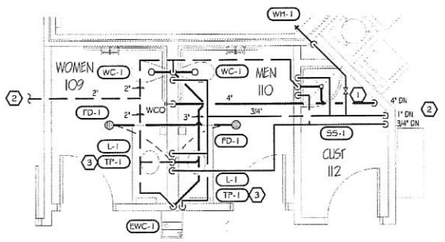
ELECTRIC DOMESTIC HOT WATER HEATER SCHEDULE

SYMBOL	MANUFACTURERS AND MODEL NO.	TANK CAPACITY GALLONS	INPUT KW	VOLTS/ PHASE/ CYCLE	RECOVERY RATE GPH (1)	WATER TEMP IN/OUT	COMMENTS
WH-1	A.O. SMITH ELJF-15	15	1.5	120/1/60	-	50/120	(1)(2)

(1) STORAGE TANK TYPE ELECTRIC WATER HEATER.
(2) ADJUSTABLE EXTERNAL TEMPERATURE CONTROL.



B / P201 LARGE SCALE PLUMBING PLAN — SCALE: 1/4" = 1'-0"



A / P201 LARGE SCALE PLUMBING PLAN — SCALE: 1/4" = 1'-0"

KEYED NOTES
1. SHUT-OFF VALVE (TYPICAL).
2. SEE PLUMBING PLAN SHEET P1.1 FOR CONTINUATION.
3. EXTEND TRAP PRIMER MANIFOLD LINES TO FLOOR DRAIN.

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PLUMBING DETAILS & SCHEDULES

P201