LAKE HAVASU CITY, ARIZONA
MESQUITE PARK &
PARKING LOT RESTROOM

PROJECT NO. FA1000
AUGUST 2016

ARIZONA BLUE STAKE
CALL TWO WORKING DAYS BEFORE YOU DIG
Dial 811 or
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

UTILITY CONTACTS

LAKE HAVASU CITY (WASTEWATER)	(928) 855-3999
LAKE HAVASU CITY (WATER)	(928) 855-2618
SUDDEN LINK	(928) 855-9855
FRONTIER COMMUNICATION	(928) 453-0541
UNISOURCE ENERGY SERVICES (GAS)	(928) 505-7025
UNISOURCE ENERGY SERVICES (ELECTRIC)	(928) 505-7031

LAKE HAVASU CITY

CITY COUNCIL

MARK S. NEXSEN	MAYOR
DON CALLAHAN	VICE MAYOR
DEAN BARLOW	COUNCIL MEMBER
DONNA BRISTER	COUNCIL MEMBER
MICHELE LIN	COUNCIL MEMBER
CAL SHEEHY	COUNCIL MEMBER
JENI COKE	COUNCIL MEMBER

PROJECT MANAGER
JEREMY ABBOTT P.E.

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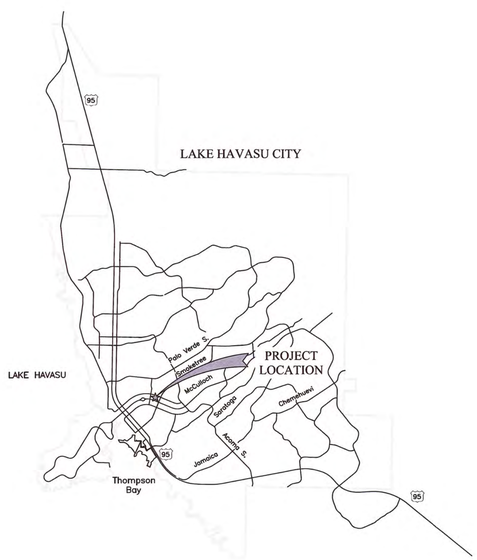
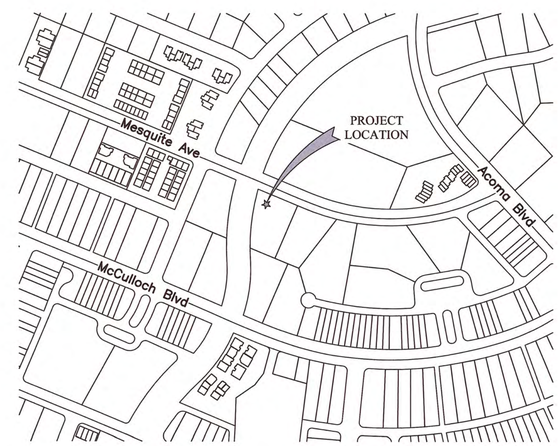


VICINITY MAP
NTS



LOCATION MAP
NTS

LAKE HAVASU CITY

NO.	REVISIONS / SUBMISSIONS	DATE
#	-	-
#	-	-
#	-	-
#	-	-

FA1000 MESQUITE PARK & PARKING LOT RESTROOM

Designed by:
Drawn by: GSH
Checked by: JA
Date: 07/2016
Dwg scale: AS SHOWN

COVER SHEET

REGISTERED PROFESSIONAL ENGINEER (CIVIL)
53390
JEREMY J. ABBOTT
Date Signed 3-16-16
ARIZONA U.S.A.
EXPIRES 03-31-19

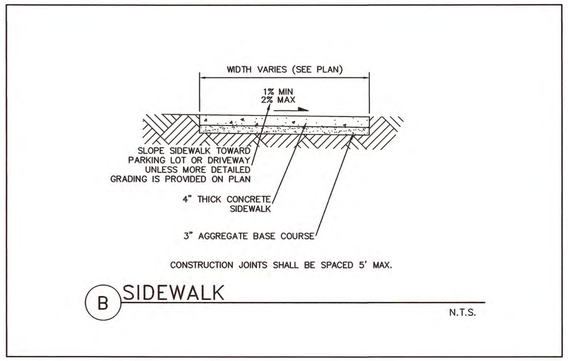
Sheet Number:
C-1
Sheet 1 of 22

GENERAL NOTES

1. ALL CONSTRUCTION SHALL ADHERE TO THE 2012 IBC.
2. THE CONTRACTOR WILL BE REQUIRED TO OBTAIN A BUILDING PERMIT FROM LAKE HAVASU CITY BUILDING DIVISION.
3. APPROVAL BY THE ENGINEER MEANS FOR GENERAL LAYOUT IN THE RIGHT–OF–WAY ONLY.
4. THE ENGINEER SHALL BE NOTIFIED A MINIMUM OF 24 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION.
5. ANY WORK PERFORMED WITHOUT THE KNOWLEDGE AND APPROVAL BY THE ENGINEER AND/OR ALL WORK MATERIAL NOT IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
6. NO JOB WILL BE CONSIDERED COMPLETE UNTIL ALL CURBS, PAVEMENT AND SIDEWALKS (NEW AND EXISTING) HAVE BEEN SWEPT CLEAN OF ALL DIRT AND DEBRIS.
7. THE CONTRACTOR SHALL KEEP SUITABLE EQUIPMENT ON HAND AT THE JOBSITE FOR MAINTENANCE DUST CONTROL, AND SHALL CONTROL DUST AS DIRECTED BY THE APPROPRIATE AGENCIES.
8. ASPHALT CONCRETE SHALL NOT BE PLACED ON SUBGRADE UNTIL SUBGRADE REQUIREMENTS HAVE BEEN COMPLETED PER THE PROJECT SPECIFICATIONS BY THE CONTRACTOR.
9. ALL QUANTITIES SHOWN ON PLANS ARE APPROXIMATE, ARE NOT VERIFIED BY THE ENGINEER, AND ARE FURNISHED SOLELY FOR THE CONTRACTOR'S CONVENIENCE. THEY DO NOT NECESSARILY CORRESPOND TO BID SCHEDULE ITEMS. PAYMENT WILL BE BASED ON BID SCHEDULE ITEMS. THE CONTRACTOR SHALL NOT BE RELIEVED OF HIS RESPONSIBILITY FOR INDEPENDENTLY ESTIMATING WORK QUANTITIES PRIOR TO BIDDING.
10. BACKFILL COMPACTION SHALL BE TYPE 1 (MAG 601) UNLESS OTHERWISE NOTED PER LHC STD DETAILS.
11. ALL PLANS, SIGNED BY THE DESIGN ENGINEER, ARE NULL AND VOID ONE YEAR FROM DATE OF SIGNATURE IF CONSTRUCTION HAS NOT STARTED.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING TO THE ENGINEER FOR APPROVAL, TRAFFIC CONTROL PLANS WHICH SHALL BE MADE A PART OF THE SUBMITTAL REVIEW REQUEST. THE CONTRACTOR SHALL DETERMINE THE EXACT SIGNING/TRAFFIC CONTROL DEVICES NECESSARY AND ALL TRAFFIC CONTROL WORK SHALL BE IN ACCORDANCE WITH MUTCD AND THE LATEST REVISIONS THEREOF. NO STREET IS TO BE CLOSED, RESTRICTED, OR CONSTRUCTED UPON UNTIL A TRAFFIC PLAN IS PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER 1 WEEK IN ADVANCE FOR REVIEW. APPROPRIATE EMERGENCY AGENCIES SHALL BE NOTIFIED 24 HOURS PRIOR TO ANY CLOSING OF STREETS.
13. CONTRACTOR SHALL WARRANTY ALL WORK FOR A MINIMUM OF A ONE YEAR PERIOD.
14. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN COPIES OF MAG AND THE CITY OF LAKE HAVASU STANDARDS, SPECIFICATIONS, AND DETAILS AS WELL AS ALL OTHER STANDARDS AND SPECIFICATIONS NECESSARY TO COMPLETELY AND ACCURATELY INTERPRET THESE PLANS.
15. REMOVAL OF STRUCTURES AND OBSTRUCTIONS AS NECESSARY TO COMPLETE THE WORK, OTHER THAN SPECIFICALLY SCHEDULED IN THE BID, IS INCIDENTAL TO THE CONTRACT. NO SEPARATE MEASUREMENT OF PAYMENT FOR UNSCHEDULED REMOVAL ITEMS WILL BE MADE.
16. CONSTRUCTION STAKING SHALL BE BY THE CONTRACTOR'S SURVEYOR WITH CONTROL PROVIDED BY THE DESIGN ENGINEER WHO STAMPED THE PLANS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW THE HORIZONTAL ALIGNMENT AND VERTICAL GRADES SHOWN IN THE PLANS, ANY CHANGES MUST BE APPROVED BY ENGINEER.
17. THE CITY OF LAKE HAVASU MAY ORDER ANY OR ALL WORKMANSHIP AND MATERIALS TO BE TESTED ACCORDING TO APPLICABLE STANDARDS.
18. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL REWORK AND/OR REMOVAL AND REPLACEMENT OF ALL MATERIALS AND/OR WORKMANSHIP REPRESENTED BY A FAILING TEST.
19. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS OF TESTING AND QUALITY CONTROL AS DELINEATED IN THE CITY'S PROJECT SPECIFICATIONS. THE COST OF TESTING IS INCIDENTAL TO EACH ITEM OF WORK. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE COST OF ANY CITY INSPECTION, AND TIME ASSOCIATED WITH, IF THE CONTRACTOR'S WORK IS BEING PERFORMED IN OVERTIME, AT NIGHT, OR ON WEEKENDS.
20. APPROVAL OF A PORTION OF THE WORK IN PROGRESS DOES NOT GUARANTEE ITS FINAL ACCEPTANCE. TESTING AND EVALUATION MAY CONTINUE UNTIL WRITTEN FINAL ACCEPTANCE OF A COMPLETE AND WORKABLE UNIT.
21. THE CITY OF LAKE HAVASU MAY SUSPEND THE WORK BY WRITTEN NOTICE WHEN, IN ITS JUDGEMENT, PROGRESS IS UNSATISFACTORY, WORK BEING DONE IS UNAUTHORIZED OR DEFECTIVE, WEATHER CONDITIONS ARE UNSUITABLE, OR THERE IS A DANGER TO THE PUBLIC HEALTH OR SAFETY.
22. STREET AND TRAFFIC SIGNS WILL BE RELOCATED BY THE CONTRACTOR. IF NECESSARY, ANY DIRECTION GIVEN BY THE CITY OF LAKE HAVASU SHALL BE INCIDENTAL.
23. CLEARING AND GRUBBING IS CONSIDERED INCIDENTAL TO THE WORK UNLESS SEPARATELY IDENTIFIED IN THE BID SCHEDULE. NO SEPARATE MEASUREMENT OF OR PAYMENT FOR CLEARING, GRUBBING, AND TREE REMOVAL WILL BE MADE. THE SITE OF ALL EXCAVATION, EMBANKMENTS, AND FILLS SHALL FIRST BE CLEARED OF STUMPS, TRASH, WEEDS, RUBBISH, AND LOOSE BOULDERS WHICH SHALL BE REMOVED AND DISPOSED OF. THE CONTRACTOR MUST SATISFY HIMSELF REGARDING THE CHARACTER AND AMOUNT OF LOAM, CLAY, SAND, QUICKSAND, HARDPAN, GRAVEL, ROCK, WATER, AND ALL OTHER MATERIAL TO BE ENCOUNTERED AND WORK TO BE PERFORMED.
24. EDGES OF CONCRETE TO HAVE A ¾" CHAMFER.
25. CONCRETE SURFACES TO HAVE A BROOM FINISH UNLESS OTHERWISE NOTED ON THE PLANS.
26. ALL CONCRETE TO BE AT LEAST 4,000 P.S.I. CLASS 'A' PORTLAND CEMENT CONCRETE UNLESS OTHERWISE SPECIFIED ON PLANS.
27. ALL EXPANSION JOINTS SHALL BE CONSTRUCTED PER MAG STANDARDS. UNLESS NOTED OTHERWISE ON PLANS.
28. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ARE APPROXIMATE AND ARE BASED ON FIELD DATA AND MAP RECORDS. THE CONTRACTOR SHALL CONTACT 1–800 STAKE–IT PRIOR TO ANY CONSTRUCTION ACTIVITY TO VERIFY THE ACTUAL LOCATION OF ALL UTILITIES. THE CONTRACTOR SHALL DETERMINE WHICH UTILITIES DO NOT PARTICIPATE IN 1–800–STAKE–IT AND CONTACT THEM DIRECTLY TO VERIFY THE LOCATION OF THOSE UTILITIES. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S OPERATION SHALL BE REPORTED TO THE UTILITY OWNER IMMEDIATELY AND REPAIRED OR REPLACED AT NO COST TO THE CITY. IN CASES WHEN THE EXISTING UTILITIES ARE NOT AS DEPICTED ON THE PLANS SOME MINOR DEVIATION TO THE PROPOSED ALIGNMENT MAY BE ALLOWED TO MAINTAIN MINIMUM SEPARATION DISTANCES BETWEEN UTILITIES. ANY PROPOSED CHANGES TO THE ALIGNMENT MUST BE SUBMITTED TO THE CITY'S REPRESENTATIVE FOR REVIEW. NO CHANGES WILL BE ALLOWED WITHOUT PRIOR APPROVAL.
29. IN ACCORDANCE WITH ARIZONA ADMINISTRATIVE CODE, SECTION R18–4–502, "MINIMUM DESIGN CRITERIA", EXTRA PROTECTION SHALL BE PROVIDED FOR GRAVITY SEWER LINES, FORCE MAIN SEWER LINES, REUSE FORCE MAINS, AND WATER LINES WHERE THE REQUIRED MINIMUM VERTICAL AND HORIZONTAL SEPARATION CAN NOT BE MAINTAINED. ENCASEMENT SHALL BE PROVIDED AS REQUIRED BY ADEQ AND SHALL CONFORM TO THE STANDARD DETAILS PROVIDED. REUSE LINES SHALL BE TREATED AS WATER LINES WHEN IN PROXIMITY TO SEWER LINES AND SHALL BE CONSIDERED SEWER LINES WHEN IN PROXIMITY TO WATER LINES.

GENERAL NOTES (CONT):

29. THE CONTRACTOR SHALL LIMIT THE WORK AREA TO PUBLIC RIGHT–OF–WAY AND PERMANENT EASEMENTS AS SHOWN FOR CONSTRUCTION OF THE PROJECT. TEMPORARY CONSTRUCTION EASEMENTS EXIST AS SHOWN AND INDICATED IN THE PLANS.
30. CONTRACTOR SHALL OBTAIN ANY ADDITIONAL TEMPORARY EASEMENTS OR USE AGREEMENTS THAT ARE DEEMED NECESSARY FOR CONSTRUCTION AT NO ADDITIONAL COST TO THE CITY. COPIES OF ALL CONTRACTOR OBTAINED EASEMENTS AND USE AGREEMENTS SHALL BE PROVIDED TO THE CITY'S REPRESENTATIVE PRIOR TO THE UTILIZATION OF THE SITE.
31. ALL EXISTING FLOW LINES SHOWN ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY CONTRACTOR.
32. THE CONTRACTOR SHALL GRADE AND RESURFACE ALL AREAS DISTURBED BY CONSTRUCTION. IN ACCORDANCE WITH THE SPECIFICATIONS AND TO A CONDITION EQUAL TO, OR BETTER THAN, THE PRE–CONSTRUCTION CONDITION.
33. THE CONTRACTOR SHALL PROVIDE PROTECTION TO PREVENT UNDERMINING OR DAMAGING THE STRUCTURAL INTEGRITY OF ALL POWER POLES, FENCES, BLOCK WALLS, SCREEN WALLS, RETAINING WALLS, HIGHWAY AND STREET SIGNS, OTHER UTILITY POLES, OR OTHER PRIVATE OR PUBLIC IMPROVEMENTS WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OWNING UTILITY AS NECESSARY TO PROVIDE TEMPORARY SUPPORT OR PROTECTION DURING CONSTRUCTION WORK, AND SHALL NEATLY REMOVE AND PROMPTLY REPLACE NON UTILITY IMPROVEMENTS WITHOUT UNDUE DISRUPTION. THE COST OF ALL SUCH PROTECTION, REMOVAL, AND REPLACEMENT REQUIRED TO COMPLETE THE PROJECT SHALL BE SUBSIDIARY TO OTHER BID ITEMS.
34. THE CONTRACTOR SHALL TAKE ALL APPROPRIATE STEPS TO MAINTAIN CONTINUOUS UTILITY SERVICE TO RESIDENTS AND BUSINESSES WITHIN THE PROJECT AREA. MANY EXISTING WATER AND GAS LINES ARE MORE THAN 30 YEARS OLD, PROPOSED METHOD OF CROSSING AND/OR SUPPORT OF UTILITIES SHALL BE APPROVED BY UTILITY OWNER IN ADVANCE OF WORK. MANY LOCAL WATER LINES ARE CONSTRUCTED OF ASBESTOS CEMENT. GAS LINES ARE REPORTED TO BE BRITTLE, SO CLOSE COORDINATION WITH THE UTILITY OWNER'S WILL BE NECESSARY TO AVOID DAMAGE. PROTECTION OF ALL UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
35. THE CONTRACTOR SHALL REMOVE ALL FENCING, ASPHALT AND CONCRETE ROADS AND DRIVEWAYS, CURB AND GUTTER, RIP–RAP, LANDSCAPING, DRAINAGE CULVERTS, LANDSCAPING AND ASSOCIATED APPURTENANCES AS REQUIRED FOR CONSTRUCTION PURPOSES. ALL ITEMS DAMAGED, REMOVED, OR DISTURBED SHALL BE RESTORED IN ACCORDANCE WITH THE SPECIFICATION TO A CONDITION EQUAL TO, OR BETTER THAN, THEIR CONDITION PRIOR TO THE START OF THE PROJECT. ITEMS OF WORK NOT SPECIFICALLY INCLUDED IN THE MEASUREMENTS AND PAYMENT SECTION OF THE SPECIFICATIONS SHALL BE CONSIDERED SUBSIDIARY TO OTHER BID ITEMS AND SHALL NOT BE PAID FOR SEPARATELY.
36. THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO PREVENT EROSION OF MATERIAL FROM THE WORK AREA AND DEPOSITION OF SEDIMENTS INTO WATER COURSES OR DRAINAGE SWALES, THE CONTRACTOR SHALL SUBMIT AN EROSION CONTROL PLAN PRIOR TO THE START OF ANY EXCAVATION. ALL EROSION AND SEDIMENT CONTROL WORK SHALL BE INCIDENTAL TO OTHER PAY ITEMS.
37. EXISTING WATER VALVES AND MANHOLES HAVE AN 8–INCH THICK CONCRETE COLLAR AT THE PAVEMENT SURFACE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL NEW CONCRETE COLLARS ON NEW MANHOLES AND VALVE BOXES, ALL EXISTING VALVE BOXES AND MANHOLES THAT ARE DISTURBED DURING CONSTRUCTION, AND WHERE THE NEW ASPHALT SURFACE IS PLACED TO AN ELEVATION HIGHER THAN EXISTING VALVE BOX OR MANHOLE COVER. THIS ITEM OF WORK IS SUBSIDIARY TO OTHER PAY ITEMS. ALL VALVE BOXES WITHIN THE DISTURBED PROJECT AREA SHALL BE ADJUSTED IN ACCORDANCE WITH MAG DETAIL 391–1A.
38. ANY ROCK ENCOUNTERED DURING EXCAVATION SHALL BE REMOVED AT NO ADDITIONAL COST TO LAKE HAVASU CITY. ROCK EXCAVATION COST SHALL BE INCIDENTAL TO OTHER ITEMS OF WORK.
39. ANY SHORING REQUIRED SHALL BE CONSIDERED INCIDENTAL TO OTHER ITEMS OF WORK.
40. CONTRACTOR SHALL SCHEDULE WATER SHUTDOWNS AND SEWER WORK SO AS TO NOT DISRUPT SERVICE TO SCHOOLS, HOSPITALS, DAY CARE FACILITIES, ETC. IN ACCORDANCE WITH ARIZONA STATE LAW.
41. IT IS NOT THE INTENTION OF THE SPECIFICATIONS TO SUPERSEDE ANY FEDERAL, STATE OR LOCAL LAWS, REGULATIONS AND/OR ORDINANCES; THEY SHALL GOVERN IN ALL INSTANCES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SHOW A GOOD FAITH EFFORT AND TO PROTECT ALL EXISTING UTILITIES AND STRUCTURES AND TO ABIDE BY ALL FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES IN THIS RESPECT.
42. PROPERTY LINES SHOWN ON DRAWINGS ARE APPROXIMATE.
43. CONTRACTOR TO VERIFY PRECISE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO TRENCHING OR LAYING ANY PIPE.
44. CONTRACTOR SHALL VERIFY ALL QUANTITIES PRIOR TO CONSTRUCTION.
45. ALL FITTINGS, JOINT RESTRAINTS, VALVES AND METAL PIPES SHALL BE DOUBLE POLY WRAPPED & TAPED.
46. ALL LANDSCAPING DISTURBED SHALL BE REPLACED AT EQUAL OR BETTER CONDITION THAN EXISTING.
47. CONTRACTOR SHALL VERIFY AHEAD OF EXCAVATING THAT MINIMUM CLEARANCE IS AVAILABLE BETWEEN SEWER, LATERALS, WATER MAIN AND OTHER UTILITIES AND MAKE ADJUSTMENTS AS NEEDED. NO EXTRA PAYMENT SHALL BE MADE FOR EXTRA EXCAVATION, ADJUSTMENTS, LOWERINGS, ETC, NECESSARY FOR MAINTAINING PROPER SEPARATION FROM ANY UTILITY. THIS WORK SHALL BE INCIDENTAL TO INSTALLATION OF THE WATERLINE.
48. CONTRACTOR IS RESPONSIBLE FOR PIPE PROTECTION WHERE MINIMUM SEPARATION CANNOT BE MAINTAINED.
49. PVC PIPE SHALL BEAR THE NSF SEAL FOR POTABLE WATER USE (NSF–PW).
50. PROJECT LOCATED ENTIRELY WITHIN FEMA ZONE X.
51. THE PROJECT SPECIFICATION SHALL ADDRESS PRESSURE TESTS, AND ALLOWABLE LEAKAGE AS A FUNCTION OF TEST PRESSURE AND PIPE DIAMETER. TEST SPECIFICATIONS FOR SEVERAL TYPES OF PIPE ARE INCLUDED IN AWWA STANDARD C600.



DETAIL:
N.T.S

LAKE HAVASU CITY

NO.	REVISIONS / SUBMISSIONS	DATE
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#	-	-

FA1000 MESQUITE PARK & PARKING LOT RESTROOM

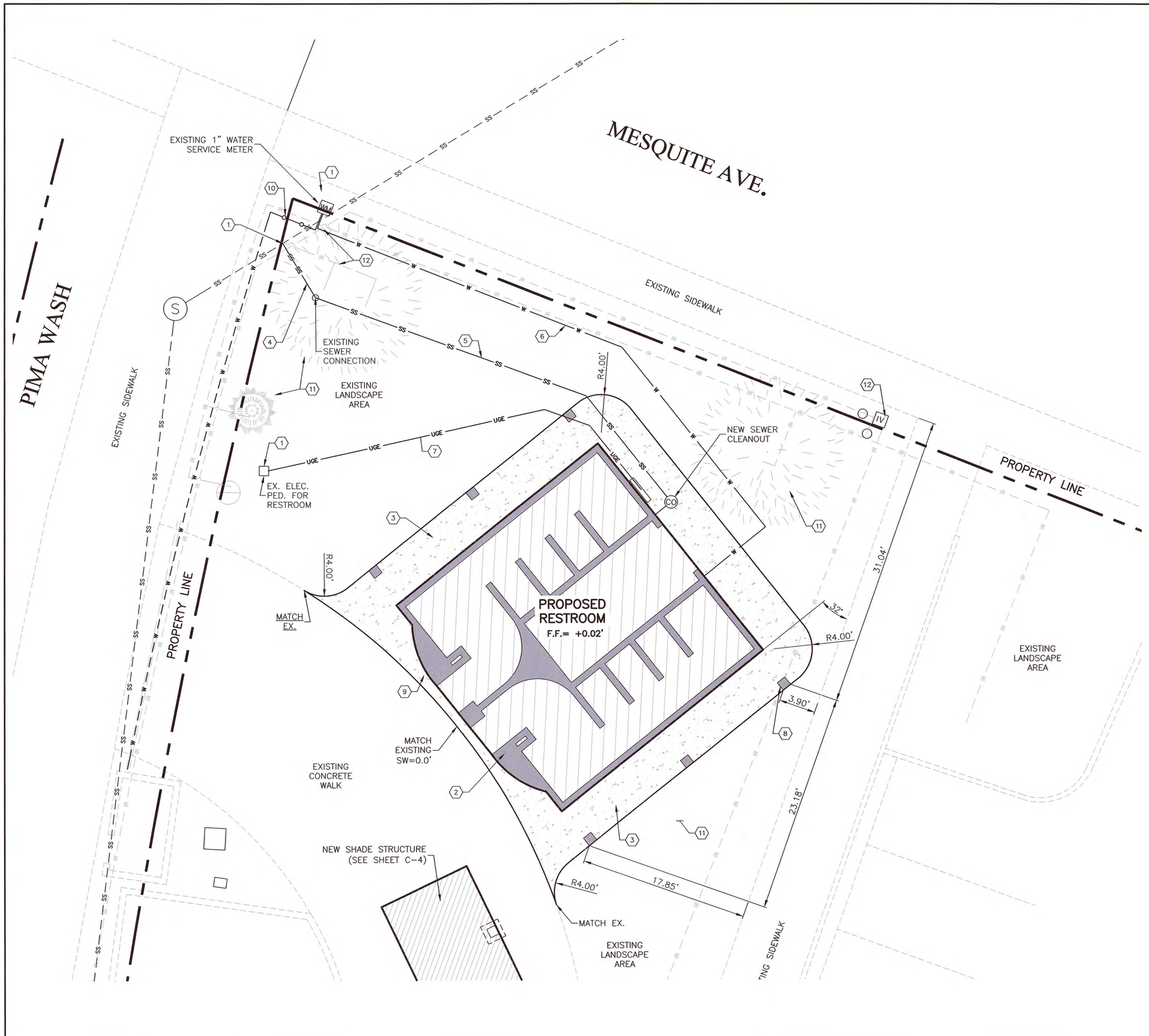
Designed by:
Drawn by: GSH
Checked by: JA
Date: 07/2016
Dwg scale: AS SHOWN

GENERAL NOTES DETAILS

REGISTERED PROFESSIONAL ENGINEER (CIVIL) CERTIFICATE NO. 57380 JEREMY J. ABBOTT Date Signed 8-9-16 ARIZONA U.S.A.

EXPIRES 3-31-16

Sheet Number:
C-2
Sheet 2 of 22



LEGEND

- RECORD PARCEL BOUNDARIES
- WATER
- SEWER
- EXISTING SEWER
- UNDERGROUND ELECTRIC
- EXISTING IRRIGATION LINES
- SEWER MANHOLE
- CLEAN OUT
- IRRIGATION VALVE
- WATER METER

CONSTRUCTION NOTES:

1. EXISTING LOCATION AND DEPTH OF ELECTRICAL CONDUIT, WATER LINES AND SEWER LATERALS TO BE VERIFIED BY CONTRACTOR BEFORE THE START OF CONSTRUCTION.
2. CONSTRUCT NEW RESTROOM PER (PLAN 4 SHEETS A1, A12–14, D1–3, E1–2, HC1, MP2–4, S1–4–7–8–9.) (803 S.F.)
3. INSTALL 4" CONCRETE WALK (540 S.F.) SEE DETAIL "B" SHEET C–2.
4. REMOVE & REPLACE EXISTING SEWER LATERAL TO ACHIEVE MIN. SLOPE TO SEWER MAIN. (10 L.F.)
5. INSTALL 4" SDR 35 PVC SEWER LATERAL. VERIFY DEPTH AT EXISTING CLEANOUT BEFORE THE START OF CONSTRUCTION. (50 L.F.)
6. INSTALL 2" SCH 40 PVC WATER SERVICE. (70 L.F.)
7. INSTALL UNDERGROUND ELECTRICAL SERVICE TO BUILDING SERVICE PANEL. (50 L.F.)
8. RE–LOCATE EXISTING IRRIGATION TO CLEAR COLUMN FOOTING.
9. DRINKING FOUNTAINS TO ALSO INCLUDE WATER–REFILLING STATIONS. (SUBMIT FOR APPROVAL).
10. EXISTING BACKFLOW PREVENTOR FOR SPLASH PAD.
11. PROTECT EXISTING TREES & LANDSCAPING. REMOVE AND RELOCATE IF NECESSARY. ENGINEER APPROVAL REQUIRED.
12. PROTECT IN–PLACE ALL EXISTING IRRIGATION WATER LINES AND VALVE CONTROL WIRING.

0 5' 10'
SCALE: 1"=5'

CALL TWO WORKING DAYS BEFORE YOU DIG
1-800-STAKE-IT
1-800-782-5348
(OUTSIDE MARICOPA COUNTY)

LAKE HAVASU CITY

REVISIONS / SUBMISSIONS	DATE
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-	-
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FA1000 MESQUITE PARKING LOT RESTROOM

Designed by:
Drawn by: GSH
Checked by: JA
Date: 04/2016
Dwg scale: AS SHOWN

RESTROOM SITE PLAN

REGISTERED PROFESSIONAL ENGINEER (CIVIL) CERTIFICATE NO. 36396 JEREMY J. ABBOTT Date Signed 9-16-16 ARIZONA U.S.A.
EXPIRES 3-31-19

Sheet Number:
C-3
Sheet 3 of 22

LEGEND

- RECORD PARCEL BOUNDARIES
- W — WATER
- SS — SEWER
- SS — EXISTING SEWER
- UGE — UNDERGROUND ELECTRIC
- IR — EXISTING IRRIGATION LINES
- S — SEWER MANHOLE
- CO — CLEAN OUT
- IV — IRRIGATION VALVE
- WM — WATER METER

CONSTRUCTION NOTES:

1. CONSTRUCT NEW 10x15x8 CANTILEVERED SHADE STRUCTURE BY TOTAL SHADE LLC. OR EQUAL APPROVED EQUAL.
2. SHADE STRUCTURE CALCULATIONS & DETAILS SHALL BE DESIGN BY ARIZONA REGISTERED ENGINEER. SUBMITTED FOR REVIEW AND APPROVAL.
3. COLORS TO BE SELECTED BY ENGINEER.
4. SAW CUTTING, FOUNDATION, ANCHOR BOLTS AND SLAB REPAIR, INCIDENTAL OF SHADE STRUCTURE INSTALLATION.

0 10' 20'
SCALE: 1"=10'

CALL TWO WORKING DAYS BEFORE YOU DIG
1-800-STAKE-IT
1-800-782-5348
(OUTSIDE MARICOPA COUNTY)

LAKE HAVASU CITY

REVISIONS / SUBMISSIONS	DATE
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-	-

FA1000 MESQUITE PARKING LOT RESTROOM

Designed by:
Drawn by: GSH
Checked by: JA
Date: 07/2016
Dwg scale: 1"=10'

SHADE STRUCTURE SITE PLAN

REGISTERED PROFESSIONAL ENGINEER CERTIFICATE NO. 54300 JEREMY J. ABBOTT Date Signed ARIZONA U.S.A.

EXPIRES 3-31-19

Sheet Number:
C-4

Sheet 4 of 22

MESQUITE SPLASH PAD
PUBLIC RESTROOM BUILDING

LAKE HAVASU CITY, ARIZONA

CONSTRUCTION DOCUMENTS

REVISIONS	BY

GERALD L. CLARK, ARCHITECT HEREBY EXPRESSLY RESERVES HIS COMMON LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. DOCUMENTS ARE INSTRUMENTS OF SERVICE AND AS SUCH SHALL REMAIN THE PROPERTY OF GERALD L. CLARK ARCHITECT. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MANNER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD/OTHER PARTY, WITHOUT HAVING FIRST OBTAINED THE EXPRESSED WRITTEN PERMISSION AND CONSENT OF GERALD L. CLARK, ARCHITECT.

CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND SHALL NOTIFY GERALD L. CLARK ARCHITECT, OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE CONSTRUCTION DOCUMENTS.

LAKE HAVASU CITY, TRACK 161, BLOCK 02, LOT 23

MESQUITE SPLASH PAD
PUBLIC RESTROOM BUILDING
2140 MESQUITE AVE.

Clark Architects, Inc.
1695 Mesquite Ave. #208
Lake Havasu, Az. 86403

ARCHITECT

REGISTERED ARCHITECT
GERALD L. CLARK
Date Signed 7/14/16
ARIZONA, U.S.A.

DRAWN	CAI
CHECKED	GLC
DATE	07-14-16
SCALE	SEE PLAN
JOB NO.	
SHEET	A-0
OF	SHEETS

GENERAL NOTES

FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION & IF DISCREPANCIES ARE FOUND, NOTIFY THEM TO THE OWNER.

ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF LOCAL, STATE, & FEDERAL CODES AND REGULATIONS.

ALL DIMENSIONS, NOTES, SPECIFICATIONS, & DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES. DO NOT SCALE PLANS

WHERE THERE MAY BE A CONFLICT IN THE CONSTRUCTION DOCUMENTS, THE MORE EXPENSIVE LABOR, MATERIALS, AND EQUIPMENT SHALL BE ASSUMED TO BE REQUIRED AND SHALL BE PROVIDED BY THE CONTRACTOR

ALL EXISTING UTILITIES TO BE ABANDONED SHALL BE PROPERLY DISCONNECTED, PLUGGED OR CAPPED AS REQUIRED BY CODE OR SOUND CONSTRUCTION PRACTICE.

ALL COMPONENTS, EQUIPMENT, ETC., SHALL BE INSTALLED PER THE MANUFACTURERS PRINTED RECOMMENDATIONS.

THIS BUILDING IS TO BE CONSTRUCTED ACCORDING TO ALL INDUSTRY STANDARDS AND MANUFACTURER'S PRINTED RECOMMENDATIONS.

THE OWNER SHALL SELECT ALL COLORS & FINISHES.

ALL EXPOSED SURFACES NOT FACTORY PREFINISHED SHALL BE PAINTED. COLOR TO BE SELECTED BY THE OWNER.

SLOPE ALL GRADES AWAY FROM BUILDING AT 5% MIN. IN LANDSCAPED AREAS AND 2% MIN. IN PAVEMENT AREAS WITHING 10'–0" OF BUILDING

WHEN WORK NOT SPECIFICALLY CALLED OUT IS REQUIRED TO COMPLETE THE PROJECT, IT SHALL BE PROVIDED BY THE CONTRACTOR WITH THE BEST MATERIALS AND WORKMANSHIP AVAILABLE.

THE CONTRACTOR IS RESPONSIBLE TO PROMPTLY REPAIR DAMAGES TO EXISTING AND NEW FACILITIES CAUSED DURING CONSTRUCTION

THE CONTRACTOR SHALL TAKE RESPONSIBLE AND ADEQUATE PRECAUTIONS TO PROTECT THE OWNER'S PROPERTY FROM DAMAGE DURING DEMOLITION WORK AND MOVING OF DEBRIS. RESTORE ANY DAMAGE TO THE OWNERS PROPERTY DUE TO THE ABOVE SAID WORK OR REPLACE IN A MANNER SATISFACTORY TO THE OWNER.

REMOVE ALL DEBRIS FROM THE SITE PROMPTLY.
NO ACCUMULATION OF
DEBRIS WILL BE PERMITTED.

THE CONTRACTOR SHALL DISPOSE OF ALL DEMOLISHED OR DELETERIOUS MATERIAL, RUBBLE, DEBRIS, CONCRETE RUBBLE, ASPHALT RESURFACING, VEGETATION, AND WASTE AT HIS EXPENSE, OF THE SITE.

UNDER NO CONDITION SHALL RUBBLE OR SUCH MATERIALS BE USED AS BACKFILL OR FILL.

ALL CONDUITS SHALL BE BURIED MINIMUM DEPTHS BELOW FINISH GRADE IN CONFORMANCE WITH NEC TABLE 300–5. IF ROCK IS ENCOUNTERED IT SHALL BE EXCAVATED AS REQUIRED. THE USE OF EXPLOSIVES IS NOT PERMITTED.

CONDUCT SITE CLEARING OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS OR OTHER OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISDICTION.

BURNING WASTE MATERIAL ON SITE IS NOT PERMITTED.

CONTRACTOR SHALL COMPLY WITH ACI 117–90, STANDARD SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS AND COMMENTARY (117R–90)

CONTRACTOR SHALL COMPLY WITH STANDARD SPECIFICATION FOR PLAIN CONCRETE PARKING LOTS (ACI 330.1–94), UNLESS OTHERWISE INDICATED.

ALL EQUIPMENT INSTALLATION STANDARDS, ICBO/ICC REPORTS, ASTM STANDARDS AND UL LISTING INFORMATION SHALL BE PROVIDED TO THE INSPECTOR AT THEIR REQUEST AND AT THE TIME OF INSPECTION.

ALL WEATHER EXPOSED SURFACES SHALL HAVE A WEATHER RESISTIVE BARRIER TO PROTECT THE INTERIOR WALL COVERINGS.

ALL EXTERIOR OPENINGS SHALL BE FLASHED WEATHERPROOF.

GEOTECHNICAL REPORT

IN LIEU OF A GEOTECHNICAL REPORT, THE FOUNDATION HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 18 OF THE IBC.

ALLOWABLE SOIL BEARING PRESSURE – 1500 PSF

DEFERRED SUBMITTALS

DEFERRED SUBMITTALS: (PER THE IBC SECTION 106.3.4.2)

FOR THE PURPOSES OF THIS SECTION, DEFERRED SUBMITTALS ARE DEFINED AS THOSE PORTIONS OF THE DESIGN WHICH ARE NOT SUBMITTED AT THE TIME OF THE APPLICATION AND WHICH ARE TO BE SUBMITTED TO THE BUILDING OFFICIAL WITHIN A SPECIFIED PERIOD.

DEFERRAL OF ANY SUBMITTAL ITEMS SHALL HAVE THE PRIOR APPROVAL OF THE BUILDING OFFICIAL. THE ARCHITECT SHALL LIST THE DEFERRED SUBMITTALS ON THE CONSTRUCTION DOCUMENTS FOR REVIEW BY THE BUILDING OFFICIAL.

DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATTION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND BEEN FOUND TO BE IN GENERAL CONFORMANCE TO THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNITL THE DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

DEFERRED SUBMITTAL ITEMS:

SPECIAL INSPECTION

THE OWNER SHALL EMPLOY A SPECIAL INSPECTOR DURING THE CONSTRUCTION OF CERTAIN TYPES OF WORK. PER IBC SEC. 1701 AND THE STRUCTURAL ENGINEER OF RECORD, SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING ITEMS:

TYPE OF WORK:	REQUIRED:	REMARKS:
BUILDING PLACEMENT SURVEY	YES	PER THE LAKE HAVASU CITY REQUIREMENTS
COMPACTION REPORT	YES	PER THE LAKE HAVASU CITY REQUIREMENTS
EARTHWORK		
CONCRETE FOOTINGS AND FOUNDATIONS		
EPOXY ANCHORS IN MASONRY WALL		
POST INSTALLED ANCHORS		
MASONRY		
WELDING		

SPECIAL INSPECTIONS THAT ARE NOT LISTED ABOVE SHALL NOT BE REQUIRED.

BASIS FOR DESIGN

CODES: (PER THE CITY OF LAKE HAVASU CITY)

THE CONTRACTOR SHALL COMPLY WITH ALL LAWS, ORDINANCES, REGULATIONS & BUILDING CODE REQUIREMENTS THAT GOVERN THE WORK INCLUDING THE FOLLOWING:

2012	INTERNATIONAL BUILDING CODE INCLUDING APPENDIX J. INTERNATIONAL PLUMBING CODE INTERNATIONAL MECHANICAL CODE INTERNATIONAL FUEL GAS CODE INTERNATIONAL FIRE CODE
2011	NATIONAL ELECTRIC CODE
2009	ICC/ANSI A117.1 AMERICAN NATIONAL STANDARD (ADA)
2010	ADA STANDARDS FOR ACCESSIBLE DESIGN

OCCUPANCY TYPE (PER IBC CHAPTER 3):

U — BUILDINGS AND STRUCTURES OF AN ACCESSORY CHARACTER AND MISCELLANEOUS STRUCTURES NOT CLASSIFIED IN ANY SPECIFIC OCCUPANCY.

TYPE OF CONSTRUCTION (PER IBC CHAPTER 6):

V–B — TYPE V CONSTRUCTION IS THAT TYPE OF CONSTRUCTION IN WHICH THE STRUCTURAL ELEMENTS, EXTERIOR WALLS, AND INTERIOR WALLS ARE OF ANY MATERIALS PERMITTED BY THIS CODE.

AUTOMATIC FIRE SPRINKLERS

REQUIRED: NO
PROVIDED: NO

FIRE ALARMS

REQUIRED: NO
PROVIDED: NO

BUILDING HEIGHTS

ALLOWABLE: 40'–0"
ACTUAL: 14'–8"

STORIES (PER TABLE 503):

ALLOWABLE: ONE
ACTUAL: ONE

ALLOWABLE AREA (PER TABLE 503):

BASIC ALLOWABLE AREA: 5,500 sf.
ACTUAL BUILDING AREA: 590 sf.
ACTUAL UNDER ROOF AREA: 778 sf.

OCCUPANT LOAD (PER TABLE 1004.1.2):

RESTROOM IS AN ACCESSORY USE

MINIMUM ROOF COVERING (PER TABLE 1505.1): CLASS: C

RAINFALL RATE: 1.5" PER HOUR (SEE IBC FIG. 1611.1)

GROUND SNOW LOAD: 5 PSF. (SEE IBC FIG. 1608.2)

LATITUDE & LONGITUDE: 34.45° / –114.36°

WIND SPEED: 105, 115, 120 MPH DEPENDING ON RISK CATEGORY

RISK CATEGORY: III

MINIMUM PLUMBING FIXTURES REQUIRED (TABLE 2902.1)

THE REQUIRED WATER CLOSETS, LAVATORIES, AND SHOWERS OR BATHTUBS SHALL BE DISTRIBUTED EQUALLY BETWEEN THE SEXES BASED ON THE PERCENTAGE OF EACH SEX ANTICIPATED IN THE OCCUPANT LOAD.

OCCUPANT LOAD:

PERSONS / 2 = MEN & WOMEN

FIXTURES REQUIRED:

MEN: 1 WATER CLOSET; 1 LAVATORY
WOMEN: 1 WATER CLOSET; 1 LAVATORY
OTHER: 1 DRINKING FOUNTAIN & 1 SERVICE SINK

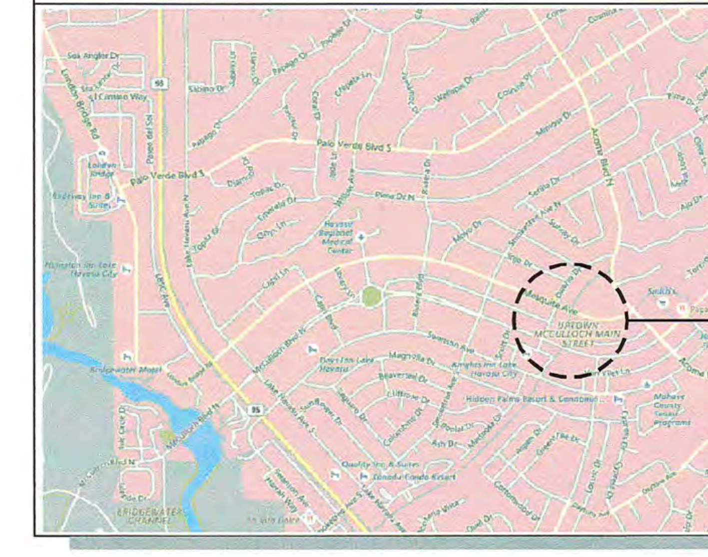
FIXTURES PROVIDED:

MEN: 1 WATER CLOSET, 1 URINAL, 2 LAVATORIES
WOMEN: 2 WATER CLOSETS, 2 LAVATORIES
OTHER: 2 DRINKING FOUNTAINS, 1 SERVICE SINK

SITE STATISTICS

OWNER:	LAKE HAVASU CITY 2300 MCCULLOCH BLVD. N. LAKE HAVASU CITY, ARIZONA 86403
STREET ADDRESS:	2140 MESQUITE AVE. LAKE HAVASU CITY, ARIZONA 86403
ASSESSORS PARCEL NO.:	
LEGAL DESCRIPTION:	
TOWNSHIP, RANGE, & SECTION:	T.13N, R.19W. SEC.22.
PARCEL SIZE:	
ZONING:	
BUILDING SETBACKS:	BUILDING SETBACK FROM PROPERTY LINES SHALL COMPLY WITH TABLE 602 EXTERIOR WALLS SHALL BE GREATER THAN 10'–0".
BUILDING HEIGHT:	14'–8"

VICINITY MAP



PROJECT LOCATION

DESIGN CONSULTANTS

ARCHITECT
GERALD L. CLARK, ARCHITECTS
1695 MESQUITE AVE., SUITE 208
LAKE HAVASU CITY, ARIZONA 86403
(928) 855–4328

STRUCTURAL
PROFESSIONAL ENGINEERING SERVICES, INC.
2167 BIRCH SQUARE
LAKE HAVASU CITY, ARIZONA 86403
(928) 453–9955

MECHANICAL / PLUMBING / ELECTRICAL
MAVEN ENGINEERING
2245 WEST UNIVERSITY DRIVE, SUITE 10
TEMPE, ARIZONA 85281
(480) 303–0180

GOVERNMENT / PRIVATE AGENCIES

MOHAVE COUNTY ENVIRONMENTAL HEALTH	2001 COLLEGE DR. LAKE HAVASU CITY, AZ. 86403 (928) 453–0703
LAKE HAVASU CITY COMMUNITY DEVELOPMENT	2330 McCULLOCH BLVD. NORTH LAKE HAVASU CITY, AZ. 86403 (928) 453–4148
LAKE HAVASU CITY ENGINEERING DEPT.	2330 McCULLOCH BLVD. NORTH LAKE HAVASU CITY, AZ. 86403 (928) 453–6336
LAKE HAVASU CITY PUBLIC WORKS DEPARTMENT	2330 McCULLOCH BLVD. NORTH LAKE HAVASU CITY, AZ. 86403 (928) 453–6660
LAKE HAVASU CITY FIRE DEPARTMENT	2330 McCULLOCH BLVD. NORTH LAKE HAVASU CITY, AZ. 86403 (928) 855–1141
UNISOURCE ENERGY SERVICES ELECTRIC & GAS SYSTEMS	2749 MARICOPA AVE. LAKE HAVASU CITY, AZ. 86403 (877) 837–4968
FRONTIER CITIZENS COMMUNICATIONS	1760 McCULLOCH BLVD. LAKE HAVASU CITY, AZ. 86403 (928) 453–0595

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A–2 ADA ACCESSIBILITY DETAILS
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A–5 BUILDING SECTIONS
A–6 ROOF PLAN / REFLECTED CEILING PLAN
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MECHANICAL / PLUMBING
MP–2 MECHANICAL & PLUMBING FLOOR PLANS
MP–3 MECHANICAL & PLUMBING DETAILS & SCHEDULES
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LAKE HAVASU CITY, TRACK 161, BLOCK 02, LOT 23

MESQUITE SPLASH PAD
PUBLIC RESTROOM BUILDING
2140 MESQUITE AVE.

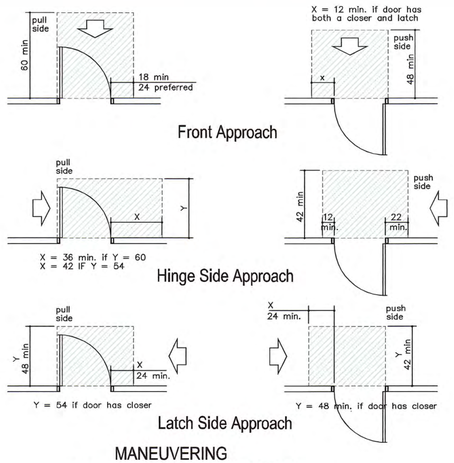
Clark Architects, Inc.
1695 Mesquite Ave, #208
Lake Havasu, Az. 86403

ARCHITECT

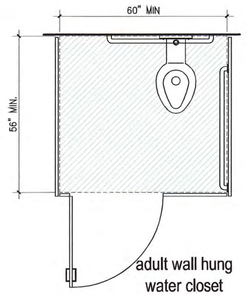
REGISTERED ARCHITECT 32055 GERALD L. CLARK Date Signed 7/14/16 ARIZONA, U.S.A.

DRAWN	CAI
CHECKED	GLC
DATE	07-14-16
SCALE	SEE PLAN
JOB NO.	
SHEET	A-1

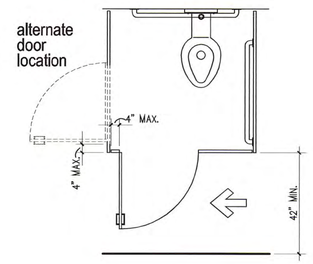
OF SHEETS



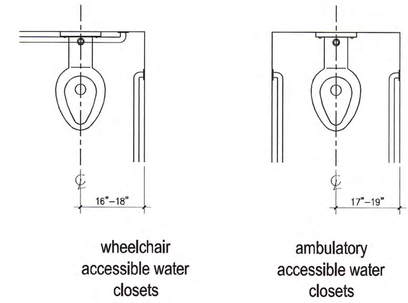
1 MANEUVERING CLEARANCES AT DOORS
NO SCALE



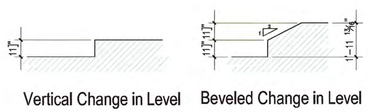
2 SIZE OF WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT
NO SCALE



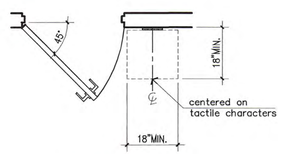
3 WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT DOORS
NO SCALE



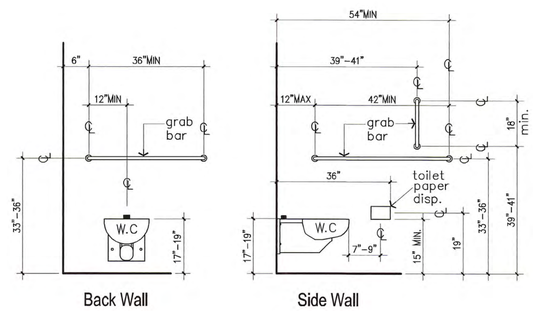
4 WATER CLOSET LOCATION
NO SCALE



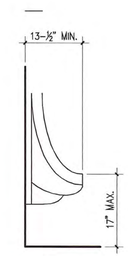
5 FLOOR OR GROUND SURFACE TRANSITIONS AND BEVELED EDGES
NO SCALE



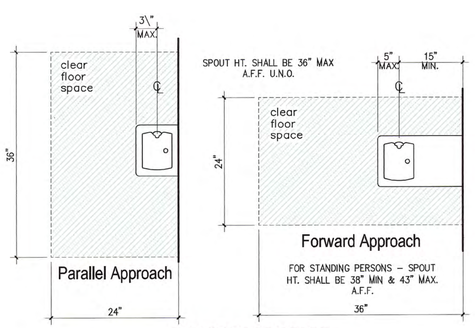
6 LOCATION OF TACTILE SIGNS AT DOORS
NO SCALE



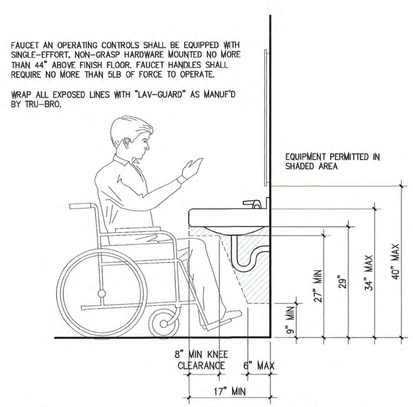
7 GRAB BARS AT WATER CLOSETS
NO SCALE



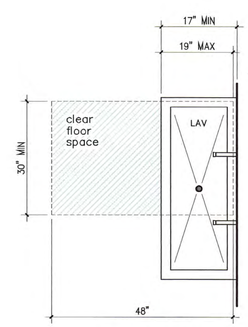
8 HEIGHT & DEPTH OF URINALS
NO SCALE



9 CLEAR FLOOR SPACE AT DRINKING FOUNTAINS
NO SCALE



10 LAVATORY CLEARANCES
NO SCALE



11 CLEAR FLOOR SPACE AT LAVATORY
NO SCALE

604.8.1.4 Toe Clearance. The front partition and at least one side partition shall provide a toe clearance of 9 inches (230 mm) minimum above the finish floor and 6 inches (150 mm) deep minimum beyond the compartment-side face of the partition, exclusive of partition support members. Compartments for children's use shall provide a toe clearance of 12 inches (305 mm) minimum above the finish floor.

EXCEPTION: Toe clearance at the front partition is not required in a compartment greater than 62 inches (1575 mm) deep with a wall-hung water closet or 65 inches (1650 mm) deep with a floor-mounted water closet. Toe clearance at the side partition is not required in a compartment greater than 66 inches (1675 mm) wide. Toe clearance at the front partition is not required in a compartment for children's use that is greater than 65 inches (1650 mm)deep

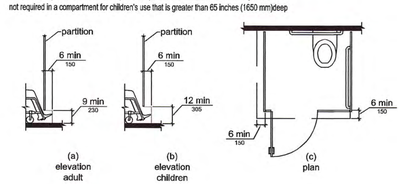


Figure 604.8.1.4 Wheelchair Accessible Toilet Compartment Toe Clearance

12 WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT TOE CLEARANCE
NO SCALE

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1695 Mesquite Ave. #208
Lake Havasu, Az. 86403

ARCHITECT

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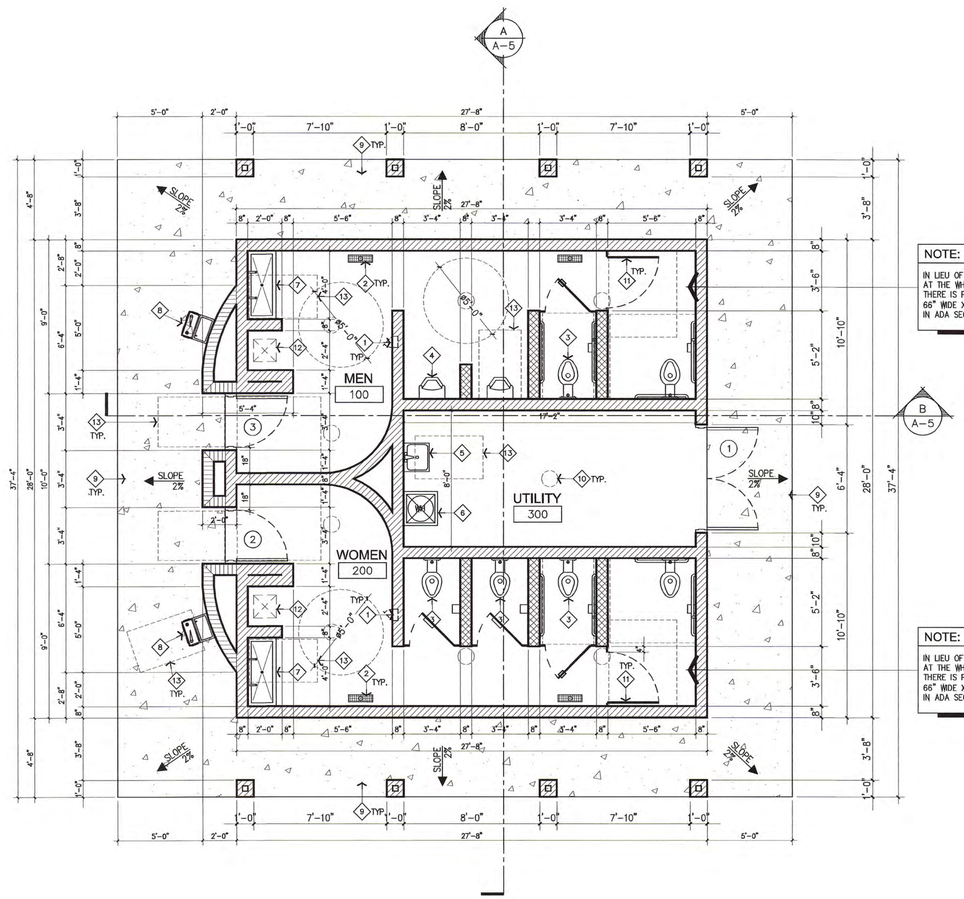

NOTE:

IN LIEU OF THE REQUIRED TOE CLEARANCES AT THE WHEELCHAIR ACCESSIBLE STALL, THERE IS PROVIDED, A CLEAR FLOOR SPACE 66" WIDE X 104" DEEP PER THE EXCEPTION IN ADA SEC. 604.8.1.4.

NOTE:

IN LIEU OF THE REQUIRED TOE CLEARANCES AT THE WHEELCHAIR ACCESSIBLE STALL, THERE IS PROVIDED, A CLEAR FLOOR SPACE 66" WIDE X 104" DEEP PER THE EXCEPTION IN ADA SEC. 604.8.1.4.

RESTROOM FLOOR PLAN

1/4" = 1'-0"

KEY NOTE SCHEDULE

ITEM NO.	DESCRIPTION
1	HOSE BIBB IN RECESSED LOCKABLE BOX PER PLUMBING DRAWINGS
2	RECESSED FLOOR DRAIN PER PLUMBING DRAWINGS
3	WALL MOUNTED FLUSH VALVE WATER CLOSET PER PLUMBING DRAWINGS
4	WALL MOUNTED FLUSH VALVE URINAL PER PLUMBING DRAWINGS
5	WALL MOUNTED SINK PER PLUMBING DRAWINGS
6	MOP SINK PER PLUMBING DRAWINGS
7	TROUGH TYPE LAVATORY PER PLUMBING DRAWINGS
8	WALL MOUNTED DRINKING FOUNTAIN PER PLUMBING DRAWINGS
9	4" THICK CONCRETE SIDEWALK OVER 4" ABC FILL. LIGHT BROOM FINISH. PROVIDE TOOLED CONTROL JOINTS @ 5'-0" O.C.
10	16" SOLATUBE DAYLIGHTING DEVICE. PROVIDE WITH NECESSARY EXTENSIONS, OFFSETS, & TRIM PIECES AS REQUIRED.
11	32" WIDE SOLID PLASTIC PARTITION DOORS WITH HARDWARE MEETING ADA REQUIREMENTS.
12	TRASH RECEPTACLE BY OWNER.
13	DASHED LINE INDICATED CLEAR FLOOR SPACES AT DOORS AND FIXTURES. SEE DETAILS ON SHEET A-2 FOR ADA REQUIREMENTS
14	
15	
16	
17	
18	
19	
20	

WALL SCHEDULE

PLAN	DESCRIPTION	SECTION
	8X8X16 SPLIT FACED CONCRETE MASONRY UNITS LAID IN RUNNING BOND PATTERN WITH REINFORCING PER STRUCTURAL DRAWINGS.	INTERIOR – SMOOTH FACE (REINFORCING IN GROUTED CELL; MORTAR JOINT) EXTERIOR – SPLIT FACE
	4X8X16 SLUMP BLOCK CONCRETE MASONRY UNITS LAID IN RUNNING BOND PATTERN WITH REINFORCING PER STRUCTURAL DRAWINGS. SEE FRONT ENTRY ELEMENT OF BUILDING FOR LOCATION	INTERIOR – SMOOTH FACE (REINFORCING IN GROUTED CELL; MORTAR JOINT) EXTERIOR – SLUMP BLOCK
	12X8X12 SPLIT FACED CONCRETE MASONRY UNITS LAID IN STACKED BOND WITH REINFORCING PER STRUCTURAL DRAWINGS. 4"X4" STEEL COLUMN WITH 10"X10" STEEL BASE PLATE PER STRUCTURAL DRAWINGS	(REINFORCING IN GROUTED CELL)
	8X8X16 STANDARD CONCRETE MASONRY UNITS LAID IN RUNNING BOND PATTERN WITH REINFORCING PER STRUCTURAL DRAWINGS. 6'-8" HT. SCREEN WALLS	INTERIOR – SMOOTH FACE (REINFORCING IN GROUTED CELL; MORTAR JOINT) INTERIOR – SMOOTH FACE

NOTES:

MASONRY COLOR SHALL BE "HAVASU BROWN".
INTERIOR WALLS & FLOORS SHALL BE FINISHED WITH EPOXY.
CORRUGATED METAL FASCIA SHALL BE
STANDING SEAM METAL ROOFING SHALL BE

REVISIONS	BY

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1695 Mesquite Ave, #208
Lake Havasu, Az. 86403

ARCHITECT

GERALD L. CLARK
Date Signed 7-14-16
ARIZONA

DRAWN	CAI
CHECKED	GLC
DATE	07-14-16
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JOB NO.	
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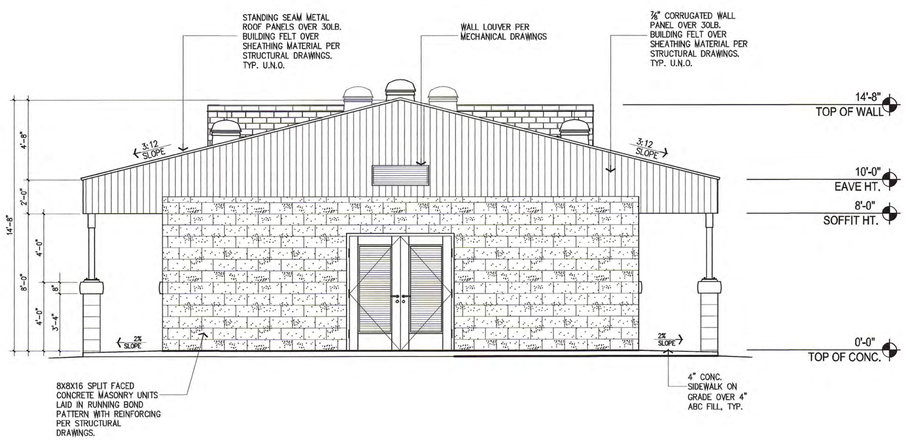
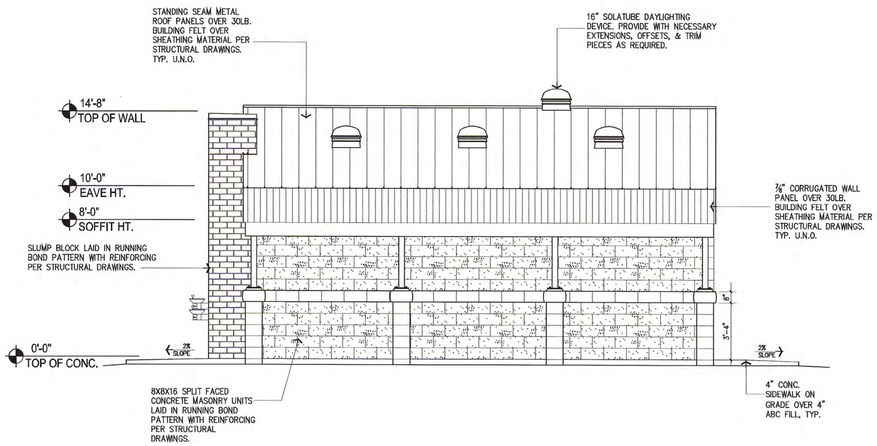


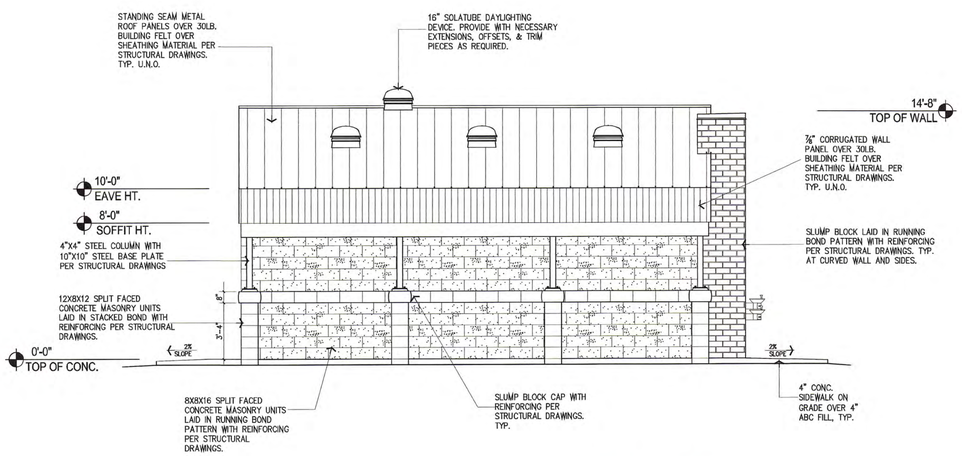
REAR ELEVATION

1/4" = 1'-0"



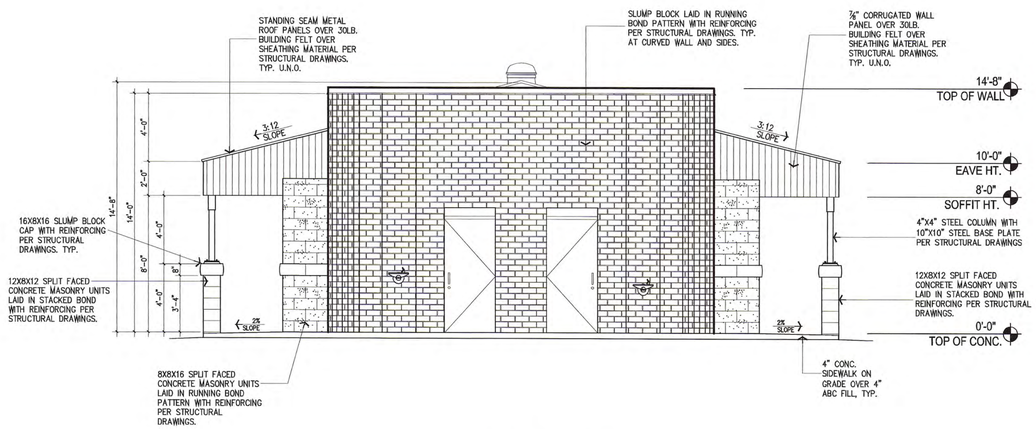
RIGHT SIDE ELEVATION

1/4" = 1'-0"



LEFT SIDE ELEVATION

1/4" = 1'-0"



FRONT ELEVATION

1/4" = 1'-0"

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LAKE HAVASU CITY, TRACK 161, BLOCK 02, LOT 23

MESQUITE SPLASH PAD
PUBLIC RESTROOM BUILDING
2140 MESQUITE AVE.

Clark Architects, Inc.
1695 Mesquite Ave, #208
Lake Havasu, Az. 86403

ARCHITECT

GERALD L. CLARK
RESIDENT ARCHITECT
CERTIFICATE NO. 9000
ARIZONA

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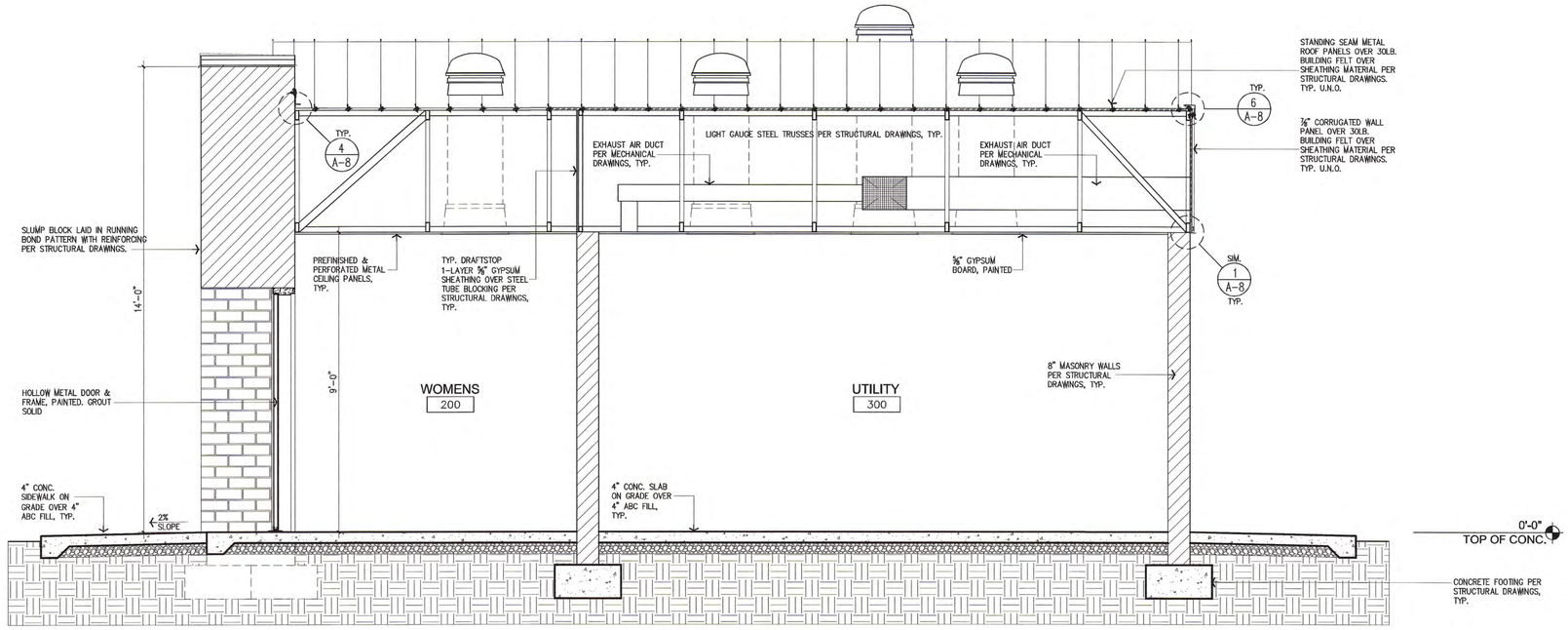
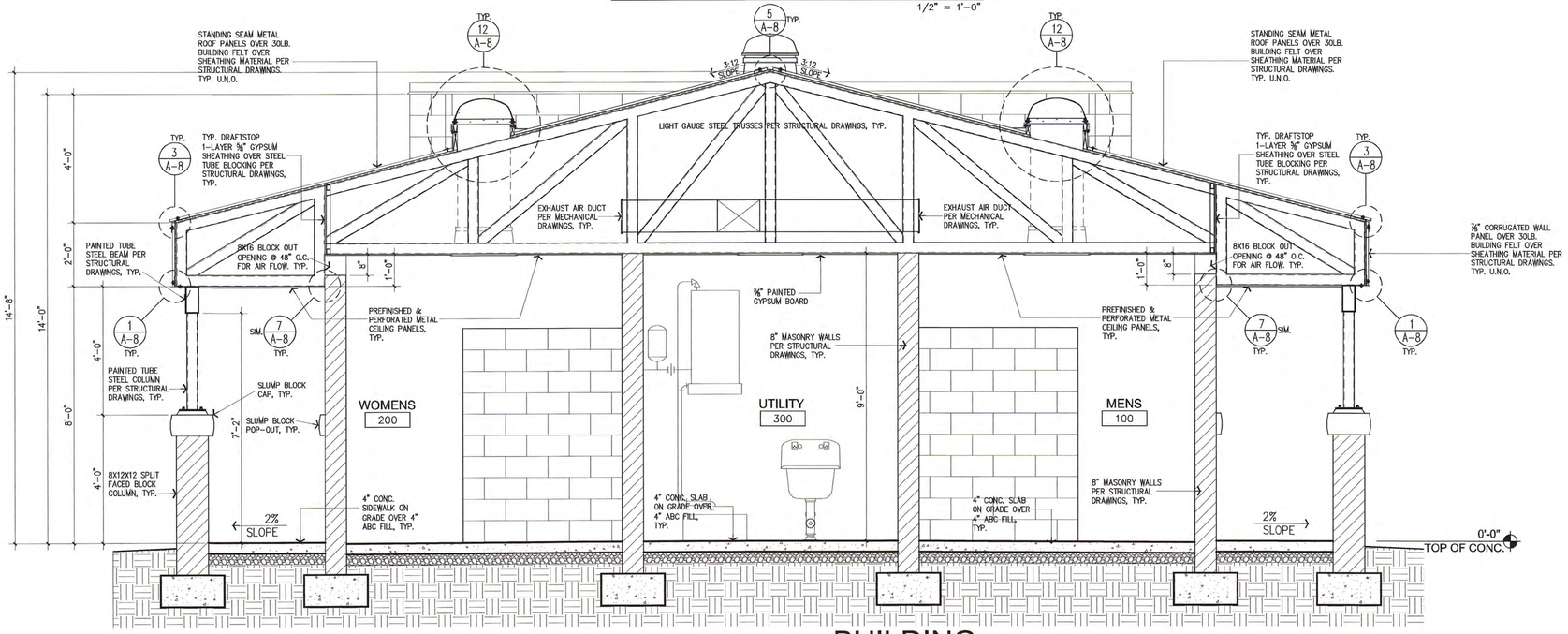
CHECKED	GLC
DATE	07-14-16
SCALE	SEE PLAN
JOB NO.	
SHEET	A-4
OF	SHEETS



B BUILDING SECTION

1/2" = 1'-0"



A BUILDING SECTION

1/2" = 1'-0"

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ARCHITECT

REGISTERED ARCHITECT 32055 GERALD L. CLARK Date Signed 7/14/16 ARIZONA, U.S.A.

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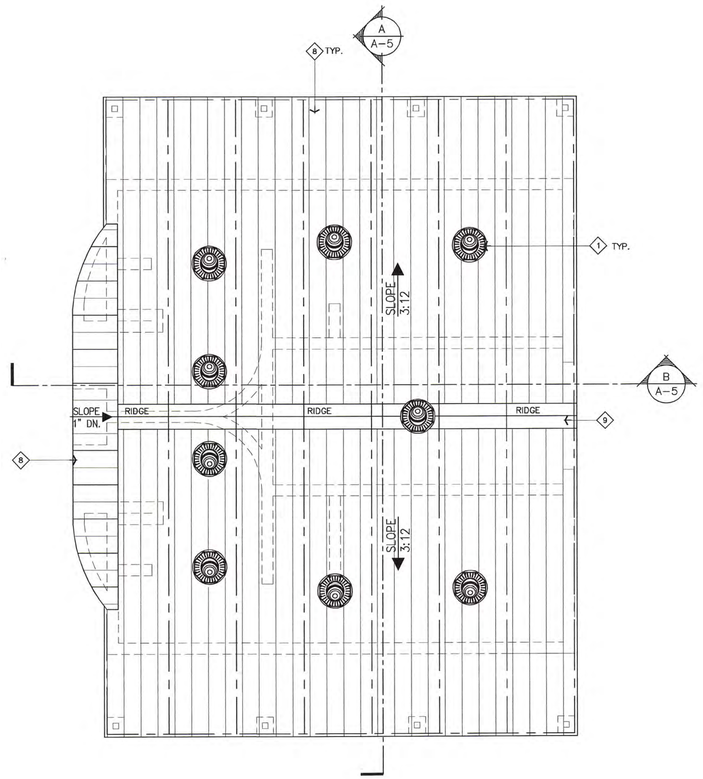
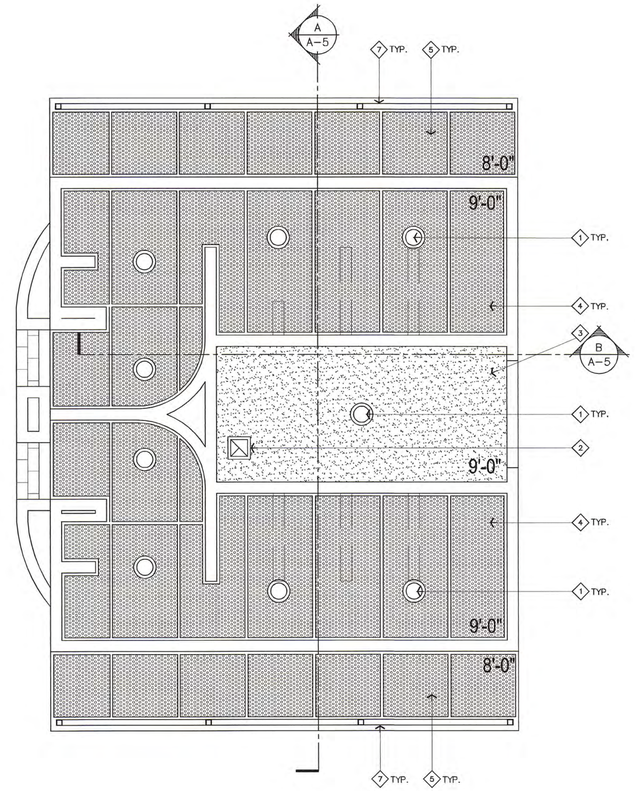


ROOF PLAN

1/4" = 1'-0"



REFLECTED CEILING PLAN

1/4" = 1'-0"

KEY NOTE SCHEDULE

ITEM NO.	DESCRIPTION
1	16" SOLATUBE DAYLIGHTING DEVICE. PROVIDE WITH NECESSARY EXTENSIONS, OFFSETS, & TRIM PIECES AS REQUIRED.
2	CEILING TRANSFER GRILLE PER MECHANICAL DRAWINGS.
3	1-LAYER 5/8" PAINTED GYPSUM BOARD
4	PREFINISHED, PERFORATED METAL CEILING PANELS
5	PREFINISHED, PERFORATED METAL CEILING PANELS OVER BIRDSCREEN
6	NOT USED
7	PAINTED STEEL TUBE BEAM
8	PREFINISHED, STANDING SEAM METAL ROOF PANELS OVER 30LB. ROOFING FELT MIN.
9	PREFINISHED METAL RIDGE CAP
10	
11	
12	
13	
14	
15	

CEILING / ROOF SCHEDULE

PLAN	DESCRIPTION
	EXTERIOR SOFFITS PREFINISHED PERFORATED METAL CEILING PANELS BY "McNICHOLS" 1612611638 – 16 GA., 1/2" ROUND, 1/16" STAGGERED, 36"X96" SHEETS. PROVIDE WITH ALL REQUIRED TRIM PIECES TO MATCH. INSTALL OVER METAL INSECT SCREEN BY "McNICHOLS" 3898093610 – SS/304 18"X14" MESH, .009 WOVEN COIL, 36"X1200" COIL.
	INTERIOR CEILINGS PREFINISHED PERFORATED METAL CEILING PANELS BY "McNICHOLS" 1631511841 – 18 GA., 3/8" ROUND, 5/16" STAGGERED, 48"X120" SHEETS. PROVIDE WITH ALL REQUIRED TRIM PIECES TO MATCH.
	1-LAYER 5/8" PAINTED GYPSUM BOARD
	PREFINISHED STANDING SEAM METAL ROOF PANELS BY "MBCI" LOKSEAM, 18" WIDE, 22GA., SNAP TOGETHER, WITH 1-3/4" VERTICAL SEAM & CONCEALED FASTENING SYSTEM. INSTALL OVER MIN. 30LB. ROOFING FELT U.N.O.

NOTES:

MASONRY COLOR SHALL BE "HAVASU BROWN".

INTERIOR MASONRY WALLS & CONCRETE FLOORS SHALL BE FINISHED WITH EPOXY.

METAL FACADE SHALL BE "WESTERN STATES 7/8" CORRUGATED WALL PANEL WITH A "WEATHERED RUSTIC" FINISH.

STANDING SEAM METAL ROOFING SHALL BE PREFINISHED BY MBCI.

CONCRETE LAVATORY SHALL BE FINISHED WITH A 2-PART FOOD GRADE EPOXY COATING.

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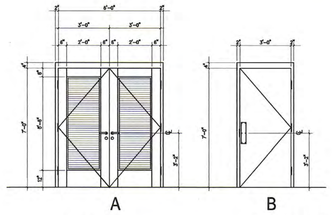
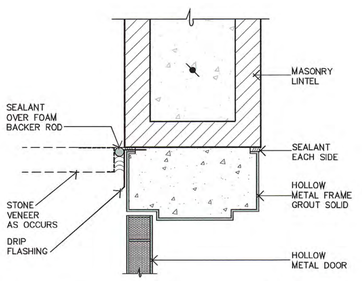
DOOR SCHEDULE

NUMBER	TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR THICKNESS	DOOR MATERIAL	DOOR FINISH	DOOR GLASS	FRAME THICKNESS	FRAME MATERIAL	FRAME FINISH	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	RATING	HARDWARE	REMARKS
1	A	(2) 3'-0"	6'-8"	1-3/4"	HOLLOW METAL	PAINTED	–	2"	HOLLOW METAL	PAINTED	1	2	3	–	GROUP 2	FULLY LOUVERED PAIR
2	B	3'-0"	6'-8"	1-3/4"	HOLLOW METAL	PAINTED	–	2"	HOLLOW METAL	PAINTED	1	2	3	–	GROUP 1	NO CLOSER
3	B	3'-0"	6'-8"	1-3/4"	HOLLOW METAL	PAINTED	–	2"	HOLLOW METAL	PAINTED	1	2	3	–	GROUP 1	NO CLOSER

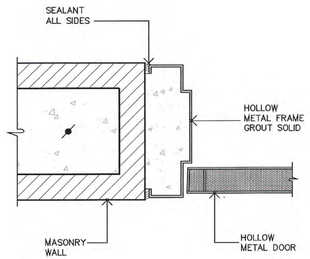
NOTES – PROVIDE SIGNAGE PER 2010 ADA ACCESSIBILITY GUIDELINES. SEE DETAIL.
PROVIDE A MANUAL HOLD OPEN DEVICE ON ALL DOORS.



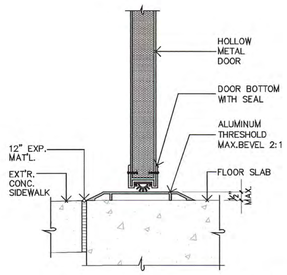
DOOR TYPES
1/4" = 1'-0"



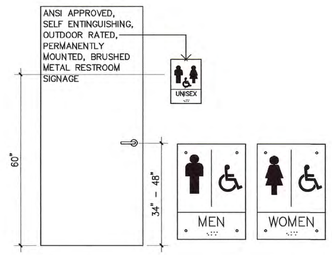
1 DOOR HEAD
NO SCALE



2 DOOR JAMB
NO SCALE



3 THRESHOLD
NO SCALE



4 RESTROOM SIGNAGE
NO SCALE

DOOR & HARDWARE NOTES

THRESHOLDS AT DOORWAYS SHALL NOT EXCEED 1/2" IN HEIGHT.

HANDLES, PULLS, LATCHES, LOCKS, & OTHER OPERATING DEVICES ON ACCESSIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING, OR TWISTING OF THE WRIST TO OPERATE.

ALL EXIT DOORS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT DURING BUSINESS HOURS.

IF A DOOR HAS A CLOSER, THEN THE SWEEP PERIOD OF THE CLOSER SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 70 DEGREES, THE DOOR WILL TAKE AT LEAST 3 SECONDS TO MOVE TO A POINT 3" FROM THE LATCH, MEASURED TO THE LEADING EDGE OF THE DOOR.

ALL SURFACE MOUNTED OR EDGE MOUNTED FLUSH BOLTS ARE PROHIBITED.

LOCKS ARE TO BE INSTALLED AT +39" A.F.F. UNLESS NOTED OTHERWISE.

THE MAXIMUM FORCE FOR PUSHING OR PULLING OPEN A DOOR SHALL BE AS FOLLOWS:

(1) FIRE DOORS SHALL HAVE THE MIN. OPENING FORCE ALLOWABLE BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY

(2) OTHER DOORS:
- (A) EXTERIOR HINGED DOORS: 8.5 LBF (37.7 N)
- (B) INTERIOR HINGED DOORS: 5 LBF (22.2 N)
- (C) SLIDING OR FOLDING DOORS: 5 LBF (22.2 N)

THESE FORCES DO NOT APPLY TO THE FORCE REQUIRED TO RETRACT LATCH BOLTS OR DISENGAGE OTHER DEVICES THAT MAY HOLD THE DOOR IN A CLOSED POSITION.

MASTER KEY ALL LOCKSETS AND CYLINDERS AS DIRECTED BY OWNER. (5) EA. MASTER KEYS, (3) EA. CHANGE KEYS, AND (5) EA. CONSTRUCTION KEYS, U.N.O.

PROVIDE SIGNAGE INDICATING HANDICAP ACCESSIBILITY AT ALL RESTROOMS PER IBC. SEC. 1110 & ADA.

DOOR HARDWARE MOUNTING HEIGHTS – 34"–48" A.F.F.

DOOR HARDWARE

GROUP 1

B800 SERIES COMMERCIAL GRADE 1 HEAVY DUTY PLUS PRIMUS HIGH SECURITY DOUBLE CYLINDER DEADBOLT LOCK BY SCHLAGE.

CRL 8" CLEAR ANODIZED SOLID OFFSET PULL HANDLE

RIXSON SATIN CHROME 27 SERIES LEFT HAND ¾" OFFSET 90 DEGREE SELECTIVE HOLD OPEN FLOOR MOUNTED CLOSER MDL. PH27905HDRH95.

CLR DL2521A SATIN CHROME FLOOR MOUNTED HEAVY DUTY DOOR STOP WITH HOOK AND HOLDER.

CLR SATIN CHROME NON-REMOVABLE PIN HEAVY WEIGHT ¼" RADIUS BALL BEARING TEMPLATE BUTT HINGE.

GROUP 2

B800 SERIES COMMERCIAL GRADE 1 HEAVY DUTY PLUS PRIMUS HIGH SECURITY DOUBLE CYLINDER DEADBOLT LOCK BY SCHLAGE.

CLR FBM526D SATIN CHROME 1" X 6" MANUAL FLUSH BOLT – 12".

CLR CHROME 30½" EXTRA HEAVY DUTY DOOR CHAIN.

CLR SATIN CHROME NON-REMOVABLE PIN HEAVY WEIGHT ¼" RADIUS BALL BEARING TEMPLATE BUTT HINGE.

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ARCHITECT

REGISTERED ARCHITECT
35005
GERALD L. CLARK
Date Signed 7-14-16
ARIZONA, U.S.A.

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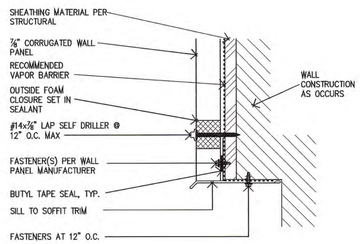
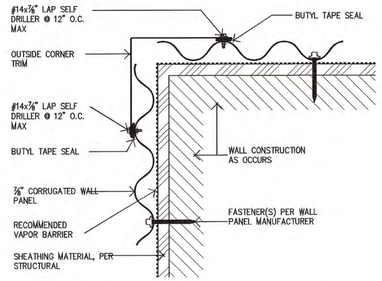
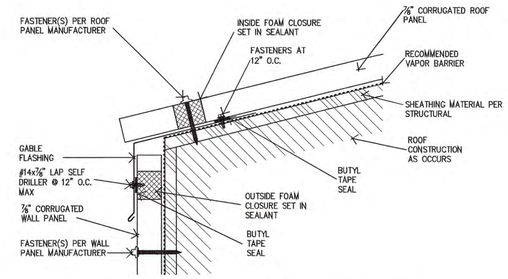


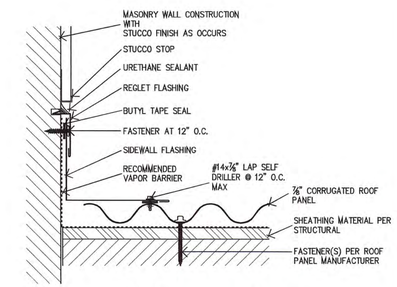
1 WALL PANEL - SOFFIT
NO SCALE



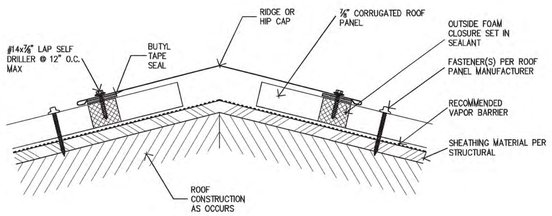
2 WALL PANEL - OUTSIDE CORNER
PLAN VIEW
NO SCALE



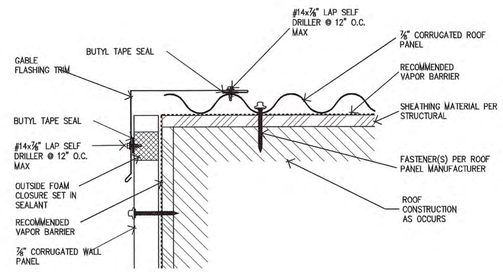
3 ROOF PANEL - EAVE
NO SCALE



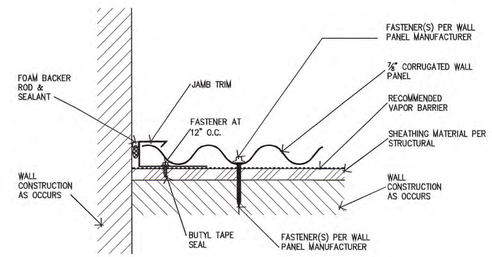
4 ROOF PANEL - SIDEWALL
NO SCALE



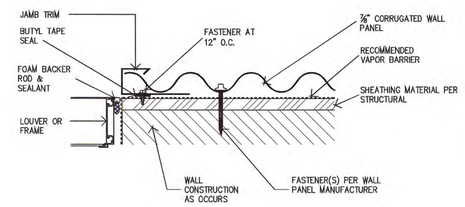
5 ROOF PANEL - RIDGE
NO SCALE



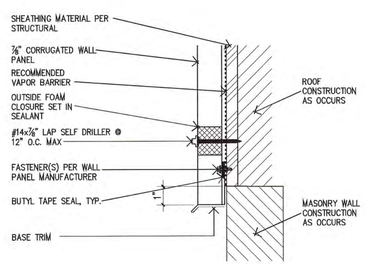
6 ROOF PANEL - GABLE
NO SCALE



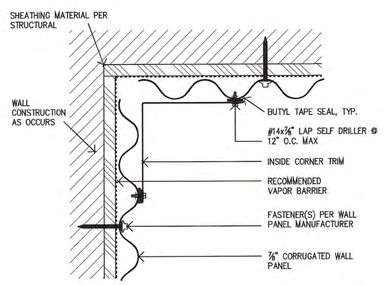
7 WALL PANEL - JAMB
PLAN VIEW
NO SCALE



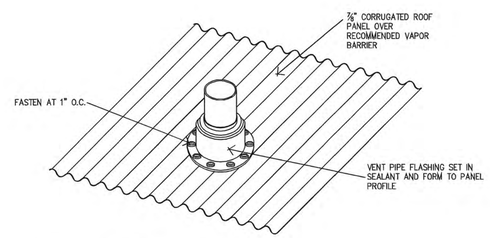
8 WALL PANEL - JAMB
HEAD SIMILAR
NO SCALE



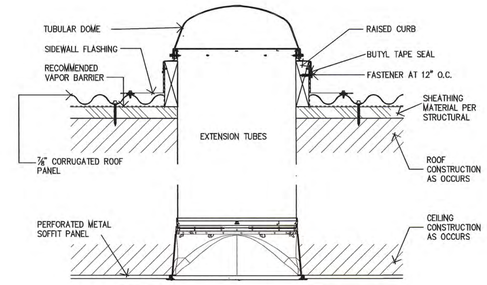
9 WALL PANEL - GABLE WALL BASE
NO SCALE



10 WALL PANEL - INSIDE CORNER
PLAN VIEW
NO SCALE



11 ROOF PANEL - PIPE FLASHING
NO SCALE



12 ROOF PANEL - SOLATUBE
NO SCALE

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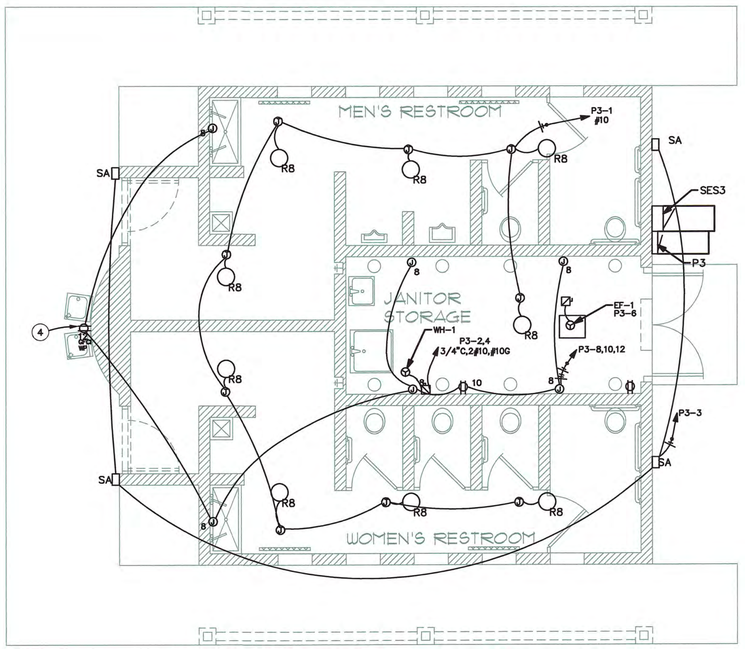
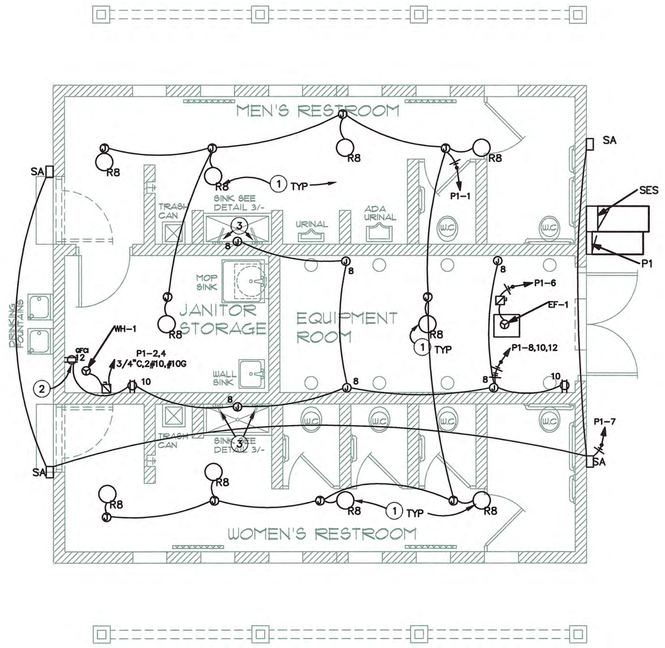


ELECTRICAL FLOOR PLAN 3

SCALE: 1/4"=1'0"

ELECTRICAL LAYOUT TO BE SAME FOR PLAN 4
ALL PANEL SIZING AND CIRCUITING TO BE THE SAME AS PLAN 1



ELECTRICAL FLOOR PLAN 1

SCALE: 1/4"=1'0"

ELECTRICAL LAYOUT TO BE SAME FOR PLAN 2

LUMINAIRE SCHEDULE

CALLOUT	SYMBOL	LAMP	MODEL	DESCRIPTION	BALLAST	MOUNTING	INPUT WATTS	VOLTS
R8	○	(1) 18W LED		LIGHT IN SKYLIGHT – SEE ARCH PLANS FOR SPECIFICATION	ELECTRONIC	RECESSED	18	120V 1P 2W
SA	▭	(10) LED	LITHONIA LIGHTING WSTLED-1-10A700-120	ARCHITECTURAL SCONCE WITH WIDE THROW DISTRIBUTION WITH CLEAR, FLAT GLASS LENS. CLEAR LAMP. MEETS THE 'NIGHTTIME FRIENDLY' CRITERIA.	PULSE START	WALL	24	120V 1P 2W

GENERAL EQUIPMENT SCHEDULE

CALLOUT	SYMBOL	DESCRIPTION	NEMA	VOLTS	CALCULATED AMPS	KVA	CALC. LOAD KVA	MOCP	CIRCUIT	WIRE CALLOUT	NOTE 1
EF-1		EXHAUST FAN		120V 1P 2W	5.8	0.7	0.87	15	P1-6	3/4"C,1#12,#12N,#12G	SWITCH W/ LIGHTS
WH-1		WATER HEATER		240V 2P 2W	18.8	4.5	4.5	30	P1-2,4	3/4"C,2#10,#10G	PROVIDE 30A/2P NEMA-1 FUSED DISCONNECT FUSED PER MANUFACTURES RECOMMENDATIONS.

LIGHTING GENERAL NOTES :

A. ALL EXTERIOR JUNCTION BOXES AND OUTLETS SHALL BE WEATHERPROOF, EXTERIOR DISCONNECT SWITCHES SHALL BE MOUNTED WITHIN NEMA 3R.

B. PER 2012 IRC CHAPTER 11 SECTION N1102.4.4 (R402.4.4) RECESSED LIGHTING. RECESSED LUMINAIRES INSTALLED IN THE BUILDING THERMAL ENVELOPE SHALL BE SEALED TO LIMIT AIR LEAKAGE BETWEEN CONDITIONED AND UNCONDITIONED SPACES. ALL RECESSED LUMINAIRES SHALL BE IC-RATED AND LABELED AS HAVING AN AIR LEAKAGE RATE NOT MORE THAN 2.0 CFM (0.944 L/S) WHEN TESTED IN ACCORDANCE WITH ASTM E 283 AT A 1.57 PSF (75 PA) PRESSURE DIFFERENTIAL. ALL RECESSED LUMINAIRES SHALL BE SEALED WITH A GASKET OR CAULK BETWEEN THE HOUSING AND THE INTERIOR WALL OR CEILING COVERING.

C. PER IRC CHAPTER 11 SECTION N1104.1 (R404.1) LIGHTING EQUIPMENT (MANDATORY). A MINIMUM OF 75 PERCENT OF THE LAMPS IN PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL BE HIGH-EFFICACY LAMPS OR A MINIMUM OF 75 PERCENT OF THE PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL CONTAIN ONLY HIGH-EFFICACY LAMPS.

D. LIGHT SWITCHES, ELECTRICAL OUTLETS, THERMOSTATS AND OTHER ENVIRONMENTAL CONTROLS SHALL HAVE OPERABLE PARTS OF THE CONTROLS LOCATED NO HIGHER THAN 48" AND NO LOWER THAN 15" ABOVE THE FLOOR. IF THE REACH IS OVER AN OBSTRUCTION BETWEEN 20" AND 25" IN DEPTH, THE MAXIMUM HEIGHT IS REDUCED TO 44" FOR FORWARD APPROACH, OR 46" FOR SIDE APPROACH, PROVIDING THE OBSTRUCTION IS NO MORE THAN 24" IN DEPTH. OBSTRUCTIONS SHALL NOT EXTEND MORE THAN 25" FROM WALL BENEATH A CONTROL.

LIGHTING KEYED NOTES : (#)

1. U.L. LISTED LIGHT IN SKYLIGHT – SEE ARCH PLAN
2. CONTRACTOR SHALL COORDINATE FINAL LOCATION WITH EDF TO MINIMIZE VANDALS FROM ACCESSING WHEN LOCATED OUTSIDE OPTIONAL EDF.
3. PROVIDE J-BOX FOR 120V CONNECTION TO METERED FAUCET. VERIFY POWER REQUIREMENTS WITH PLUMBING FIXTURE PRIOR TO ROUGH IN.
4. CONTRACTOR SHALL ADD ONE ADDITIONAL OUTLET FOR THE SPLIT EDF'S TO BE ON THE SAME CIRCUIT. SEE ARCH SHEET FOR LOCATIONS. LOCATE OUTLET TO MINIMIZE VANDALS FROM ACCESSING – COORDINATE IN FIELD.

POWER GENERAL NOTES:

A. PROVIDE GFCI PROTECTION FOR RECEPTACLES WITHIN 6'-0" OF ALL LAVATORIES, SINKS, AND BASINS WHICH SHALL BE SUPPLIED WITH A 20 AMP BRANCH CIRCUIT THAT SUPPLIES NO OTHER LOADS. NEC 210.8.

B. PROVIDE GFCI PROTECTED RECEPTACLES AT ALL EXTERIOR, BATHROOM, AND GARAGE LOCATIONS WHICH SHALL BE SUPPLIED WITH A 20 AMP BRANCH CIRCUIT THAT SUPPLIES NO OTHER LOADS. NEC 210.8, 210.52.

C. PROVIDE A MINIMUM OF TWO 20 AMP SMALL APPLIANCE BRANCH CIRCUITS FOR THE KITCHEN, DINING, BREAKFAST ROOMS. NEC 210.4(c)(1), 210.52(b)(1), 220.16(a).

D. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING EXACT LOCATION, QUANTITIES, AND INSTALLATION REQUIREMENTS OF ALL ELECTRICAL EQUIPMENT AND OUTLETS IN MILL WORK AND COUNTER AREAS.

E. ALL SWITCHING AND RECEPTACLES ARE SHOWN FOR REFERENCE ONLY. ELECTRICAL CONTRACTOR TO COORDINATE EXACT LOCATION WITH OWNER & ARCHITECT PRIOR TO ROUGH IN. COORDINATE WITH NEC 210.52 FOR REQUIREMENTS.

F. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT SIZE AND LOCATION FOR ALL MECHANICAL AND PLUMBING EQUIPMENT. PROVIDE ELECTRICAL SERVICE AS REQUIRED FOR EACH ITEM.

G. ALL EXTERIOR MECHANICAL UNIT FUSED DISCONNECTS SHALL BE WEATHERPROOF, HEAVY DUTY RATED.

H. MC CABLE MAY BE USED WHERE PERMITTED PER CODE.

I. SMOKE DETECTORS SHALL BE PERMANENTLY WIRED AND INTERCONNECTED WITHIN EACH DWELLING UNIT PRIOR TO FIRE DEPARTMENT APPROVAL.

J. SMOKE DETECTORS SHALL BE PROVIDED TO PROTECT EACH SEPARATE SLEEPING AREA AND BE A MINIMUM 3'-0" FROM AIR VENT OPENING.

K. WHERE THE HIGHEST POINT CEILING IN ROOM THAT OPENS TO HALLWAY SERVING BEDROOMS EXCEEDS THAT OF OPENING INTO HALLWAY BY 2'-0" OR MORE, SMOKE DETECTORS SHALL BE INSTALLED IN HALLWAY AND ADJACENT ROOM WITHIN 12" FROM HIGHEST POINT OF CEILING.

L. ALL CARBON MONOXIDE SENSORS TO BE PROVIDED WITH BATTERY BACK UP PER R315.

M. VERIFY PRECISE LAUNDRY ROOM CONFIGURATION WITH ARCHITECT PRIOR TO ROUGH-IN.

N. CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE AND OPERATIONAL UL LISTED GARAGE DOOR CONTROL SYSTEM. SYSTEM SHALL INCLUDE 120V. 1PH. MOTOR, INTEGRAL 120V-12/24V. STEP DOWN TRANSFORMER 10W VOLTAGE WEATHERPROOF KEY SWITCH, LOW VOLTAGE DOOR BUTTON, LOW VOLTAGE CONDUCTORS, ETC. SEE GENERAL.

O. TAMPER-RESISTANT LISTED RECEPTACLES IN DWELLING UNITS SHALL BE PROVIDED TO COMPLY WITH NEC 406.11.

P. OUTLET BOXES IN THE GARAGE CEILING SHALL BE METAL PER IRC R317.3.2

Q. OUTLET BOXES IN THE WALL BETWEEN THE DWELLING UNIT AND THE GARAGE SHALL BE METAL OR UL APPROVED FIRE RESISTIVE PLASTIC PER IRC R3.1.3.2

R. RECEPTACLES IN EVERY ROOM PER E3901.1 EXCEPT THE FOLLOWING LOCATIONS SHALL BE REQUIRED TO BE TAMPER RESISTANT: 1. RECEPTACLES LOCATED MORE THAN 5½' ABOVE THE FLOOR. 2. RECEPTACLES THAT ARE PART OF A LUMINAIRE OR APPLIANCE. 3. A SINGLE RECEPTACLE FOR A SINGLE APPLIANCE OR A DUPLEX RECEPTACLE FOR TWO APPLIANCES WHERE SUCH RECEPTACLES ARE LOCATED IN SPACES DEDICATED FOR THE APPLIANCES SERVED AND, UNDER CONDITIONS OF NORMAL USE, THE APPLIANCES ARE NOT EASILY MOVED FROM ONE PLACE TO ANOTHER.

KJH
KJH

MAVEN ENGINEERING
Job #16RRL012
Tel: (480) 303-0180
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Note: Any changes made to final bid documents due to field changes will be billed hourly to the contractor.

REVISIONS	BY

GERALD L. CLARK, ARCHITECT HEREBY RESERVES HIS COMMON LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS, DOCUMENTS AND ESTIMATES OF SERVICE AND AS SUCH SHALL RETAIN OWNERSHIP AND POSSESSION OF THE ORIGINAL PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY FORM OR MANNER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY, WITHOUT FIRST OBTAINING THE EXPRESSED WRITTEN PERMISSION AND CONSENT OF GERALD L. CLARK, ARCHITECT.
CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING - ANY ERRORS OR OMISSIONS SHALL BE REPORTED TO THE ARCHITECT. OF ANY VARIANCE FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE CONSTRUCTION DOCUMENTS.

LAKE HAVASU CITY
OPERATIONS DEPARTMENT
2330 McCulloch Blvd/
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Gerald L. Clark, Architects
1695 Mesquite Ave. #208
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REGISTERED ELECTRICAL ENGINEER
CERTIFICATE NO. 32867
BRYAN P. JEHLING
Date Signed 02.16.15
ARIZONA, U.S.A.
EXPIRES 09/30/16

DRAWN	
CHECKED	
DATE	2-16-15
SCALE	SEE PLAN
JOB NO.	15018 (G.C.)
SHEET	E1
	OF 7 SHEETS

ELECTRICAL SPECIFICATIONS

1. SCOPE THE WORK SHALL INCLUDE LABOR, MATERIAL AND EQUIPMENT NECESSARY FOR A COMPLETE AND PROPER WORKING INSTALLATION OF THE ELECTRICAL SYSTEMS INDICATED ON THE DRAWINGS AND SPECIFICATIONS. THE WORK SHALL INCLUDE BUT IS NOT LIMITED TO:

A. ELECTRICAL SERVICE, COMPLETE WITH UNDERGROUND SERVICE AND CONDUIT FOR SERVICE.

B. DISTRIBUTION SYSTEM FOR LIGHTING INCLUDING SWITCHES, RECEPTACLES, OUTLETS AND LIGHTING FIXTURES WITH LAMPS.

C. DISTRIBUTION SYSTEM FOR POWER INCLUDING WIRING TO AIR CONDITIONING EQUIPMENT AND CONTROLS.

D. CONDUIT, SLEEVES, MOUNTING BOARDS, WALL OUTLETS AND UNDERGROUND DUCT FOR TELEPHONE.

WORK NOT INCLUDED:
FURNISHING AND INSTALLING MOTORS AND AUTOMATIC CONTROLLERS.

2. PERMITS AND FEES: MAKE APPLICATION AND PAY FOR PERMITS AND INSPECTIONS REQUIRED BY MUNICIPAL AND STATE AUTHORITIES.

3. ELECTRICAL DRAWINGS: DRAWINGS ARE DIAGRAMMATIC AND OUTLET LOCATIONS ARE APPROXIMATE. REFER TO MECHANICAL AND STRUCTURAL PLANS REGARDING AVAILABLE SPACE AND CHECK FIELD CONDITIONS BEFORE MAKING ELECTRICAL INSTALLATIONS. CIRCUIT OUTLETS AS INDICATED ON THE DRAWINGS, MAKING REVISIONS ONLY WITH THE EXPRESS CONSENT OF THE ARCHITECT.

4. SHOP DRAWINGS: SUBMIT SIX COPIES OF DETAILED SHOP DRAWINGS OF PANEL, SERVICE ENTRANCE/ DISTRIBUTION PANEL OR OTHER SPECIALLY FABRICATED EQUIPMENT TO THE ARCHITECT. NO SUCH EQUIPMENT SHALL BE MANUFACTURED UNTIL APPROVED BY THE ENGINEER AND WHERE APPLICABLE, THE SERVING UTILITY.

5. INSPECTION: THE WORK WILL BE INSPECTED FOR COMPLIANCE WITH DRAWING AND SPECIFICATIONS BY THE OWNER'S REPRESENTATIVE.

6. MATERIAL AND WORKMANSHIP: SHALL COMPLY WITH CURRENT ELECTRICAL AND MECHANICAL ENGINEERING PRACTICES. THE NATIONAL ELECTRICAL CODE AND ALL LOCAL CODES SHALL GOVERN ALL WORK. PROVIDE NEW STANDARD PRODUCTS LISTED BY UL. SIMILAR ITEMS OF MATERIAL SHALL BE OF THE SAME TYPE AND MANUFACTURES. ALL EXPOSED CONDUITS AND DEVICES SHALL BE TRUE TO LINE, PLUMB AND ADEQUATELY SECURED IN PLACE. ALL WIRING DEVICES, FIXTURES AND PANELBOARDS SHALL BE PROTECTED FROM MOISTURE, PLASTER AND DUST DURING STORAGE AND BUILDING CONSTRUCTION.

7. SERVICE ENTRANCE: THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SERVICE ENTRANCE EQUIPMENT AS INDICATED BY THE DRAWINGS AND REQUIRED TO COMPLETE THE ELECTRICAL SYSTEM FROM THE POINT OF SERVICE BY THE POWER COMPANY. THE SERVICE SHALL BE UNDERGROUND TO THE ENTRANCE EQUIPMENT AND METERING BY THE POWER COMPANY OR AS OTHERWISE INDICATED. THE SERVICE NEUTRAL SHALL BE GROUNDED WITH CODE SIZE WIRE. ALL METERING PROVISIONS AND OTHER SERVICE WORK SHALL MEET THE REQUIREMENTS OF THE POWER COMPANY. THE CONTRACTOR SHALL PAY ALL CHARGES FOR SERVICE TO THE POWER COMPANY.

8. GROUNDING: PROVIDE GROUNDING CONDUCTOR OF SIZE INDICATED ON DRAWINGS IN ACCORDANCE WITH THE NEC AND ALL LOCAL CODES. BOND THE INTERIOR WATER PIPE SYSTEM TO THE MAIN ELECTRICAL GROUNDING SYSTEM.

9. CONDUIT: ALL WIRES (EXCEPT NM CABLE AND LOW VOLTAGE CONTROL) SHALL BE RUN IN CONDUIT. RIGID GALVANIZED STEEL CONDUIT SHALL BE USED IN CONCRETE AND UNDERGROUND LOCATIONS. STEEL CONDUIT INSTALLED UNDERGROUND SHALL BE ENCASED IN TWO INCH MINIMUM, CONCRETE ENVELOPE OR COMPLETELY COVERED WITH HALF-LAPPED #50 SCOTCH-WRAP TOP OF UNDERGROUND CONDUITS SHALL NOT BE LESS THAN 24". PVC ELECTRICAL CONDUIT, UL LISTED MAY BE USED FOR UNDERGROUND SECTIONS OF LIGHTING CIRCUITS AND FEEDER RACEWAYS. ALL NON-METALLIC CONDUITS SHALL HAVE BOND WIRES, EXCEPT FEEDING SERVICES.

THIN-WALL EMT SHALL BE EQUIPPED WITH WATERTIGHT COUPLING AND T & B INSULINERS CONNECTORS.

CONDUIT AND EMT SHALL BE RIGIDLY SUPPORTED WITH DURABLE STRAPS AND HANGERS AT INTERVALS NOT TO EXCEED SIX FEET. COUPLINGS CONNECTORS AND LOCKNUTS SHALL BE TIGHTLY SECURED TO PROVIDE ELECTRICAL CONTINUITY OF GROUNDING.

10. OUTLET BOXES: GALVANIZED STEEL BOXES AT LEAST 1 1/2" DEEP AND 4" SQUARE SHALL BE PROVIDED IN FINISHED AREAS FOR EACH WALL SWITCH, RECEPTACLE, TELEPHONE AND LIGHTING FIXTURE LOCATION. BOXES SURFACE MOUNTED IN DRY LOCATIONS MAY BE 4 X 2 SIZE PROVIDING NOT MORE THAN FIVE WIRES ENTER.

11. WIRING DEVICES: CONVENIENCE RECEPTACLES, HUBBELL OR APPROVED EQUAL, 15 AMPS, 125 VOLT GROUNDING TYPE WITH IVORY, PLASTIC PLATE IN FINISHED AREAS. PROVIDE WEATHER PROOF RECEPTACLE OUTLET FOR EXTERIOR LOCATIONS. CLOCK RECEPTACLES SHALL BE HUBBELL COMPLETE WITH IVORY PLASTIC PLATE. SWITCHES SHALL BE HUBBELL SINGLE-POLE, OR APPROVED EQUAL, WHERE INDICATED WITH PLATE TO MATCH RECEPTACLES. TELEPHONE WALL OUTLETS SHALL BE EQUIPPED WITH ONE-HOLE WALL PLATES TO MATCH RECEPTACLES.

12. WIRE AND CABLE: CONDUCTORS SHALL BE SOFT DRAWN COPPER, WITH THWN-2 INSULATION, NM CABLE SHALL BE #12 AWG MINIMUM EXCEPT LOW-VOLTAGE CONTROL WIRE MAY BE #16 PLASTIC INSULATED.

13. PANELBOARDS: PANELBOARD SHALL BE WITH LOAD CENTER TYPE, FULL SIZE BREAKERS AND SPACES AS INDICATED ON THE DRAWINGS, EQUAL TO SQUARE D. FRONT OF CABINETS SHALL BE FLUSH OR SURFACE MOUNTED AS SHOWN WITH A DIRECTORY CARD NEATLY TYPED OR PRINTED WHICH INDENTIFIES THE LOADS SERVED. EXTERIOR PANELS SHALL HAVE RAIN-TIGHT ENCLOSURES EQUIPPED WITH LOCK.

14. SAFETY SWITCHES: SHALL BE NEMA, GENERAL DUTY, QUICK-MAKE, QUICK-BREAK. SWITCHES EXPOSED OUTDOORS SHALL HAVE NEMA 3 RAIN-TIGHT ENCLOSURES.

15. FUSES: SHALL BE BUSSMAN FUSETRON, DUAL-ELEMENT AND LOW-PEAK TYPES OR TYPE INDICATED ON DRAWINGS. PROVIDE 3 SPARE FUSES OF EACH TYPE AND RATING USED TO THE OWNER AS SPARES.

16. LIGHTING FIXTURES: PROVIDE FIXTURES COMPLETE WITH LAMPS AS INDICATED ON DRAWINGS AND WITH PROPER TRIM AND SUPPORT BRACKETS.

17. MOTOR AND CONTROL WIRING: WIRE TO AND CONNECT MOTORS AND CONTROLS INDICATED ON THE DRAWINGS NOT PRE-WIRED BY THE SUPPLIER OF THE EQUIPMENT.

18. AS BUILT DRAWINGS: MAINTAIN ONE SET OF PRINTS ON THE JOB SHOWING LOCATIONS OF UNDER- GROUND CONDUITS AND DUCTS. PROVIDE THE ARCHITECT WITH ONE SET OF SUCH "AS BUILT" ACCURATE, NEAT AND LEGIBLE DRAWINGS ON COMPLETION OF THE WORK.

19. GUARANTEE: THE CONTRACTOR SHALL GUARANTEE ALL MATERIAL FURNISHED BY HIM AND ALL WORKMANSHIP UNDER THIS CONTRACT FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF WORK UNDER THIS CONTRACT. ANY DEFECTS DEVELOPED WITHIN THIS PERIOD TRACEABLE TO MATERIAL FUR- NISHED AS A PART OF THIS CONTRACT OR WORKMANSHIP PERFORMED HERE- UNDER, SHALL BE MADE GOOD PROMPTLY AT THIS CONTRACTOR'S EXPENSE. THIS CONTRACTOR SHALL ACCEPT THIS CONDITION AND FULLY UNDERSTAND ITS PROVISIONS PRIOR TO THIS CONTRACT BEING AWARDED AND NO CLAIM FOR EXTRA COMPENSATION WILL BE ALLOWED FOR CORRECTION OF FAULTY WORK OR REPLACING DEFECTIVE MATERIAL.

FAULT CURRENT SCHEDULE

DEVICE	FAULT	AIC RATING	L-N VOLTS	UTILITY FAULT	UTILITY X	UTILITY R	FED FROM DEVICE	FED FROM FAULT	FED FROM X	FED FROM R	FEEDER SIZE	FEEDER X / 1000'	FEEDER R / 1000'	FEEDER LENGTH	FEEDER X	FEEDER R	TOTAL MOTOR FAULT	DIRECTLY CONNECTED MOTOR LOAD KVA	DIRECTLY CONNECTED MOTOR LOAD FAULT	DIRECTLY CONNECTED MOTOR LOAD X	DIRECTLY CONNECTED MOTOR LOAD R
SES	10,012	22,000	120V	10,000	0.01177	0.002353					#4	0.048	0.31		0	0	12				
P1	9,920	22K/10K	120V	9,908	0.01181	0.002663	SES	10,000	0.01177	0.002353	#4	0.048	0.31	1'	0	0.0003	12	0.696	12	10.04	2.509

ELECTRICAL/ SPECIAL SYSTEM SYMBOLS

NOT ALL SYMBOLS MAY APPLY.

- FLUORESCENT SURFACE MOUNTED FIXTURE. LETTER OR NOTE INDICATES TYPE:
- FLUORESCENT STRIP FIXTURE (LETTER OR NOTE INDICATES TYPE)
- 2'X4' FLUORESCENT LIGHT FIXTURE (LETTER OR NOTE INDICATES TYPE)
- INDICATES N.L. & EMERGENCY LIGHT FIXTURE. BALLAST TO BE CONNECTED TO UNSWITCHED CONDUCTORS WITH BATTERY BACK-UP TO BE BODINE #850 (OR EQUAL). TYPICAL OF SHADED FIXTURES.
- 2'X2' FLUORESCENT LIGHT FIXTURE (LETTER OR NOTE INDICATES TYPE)
- RECESSED DOWNLIGHT, SUPERSCRIPT INDICATES TYPE. SHADED INDICATES BATTERY BACK-UP TO BE PROVIDED.
- EMERGENCY EXIT SIGN, CONNECT TO UNSWITCHED CONDUCTORS WITH BATTERY BACK UP. FACES & MOUNTING TO BE FIELD VERIFIED WITH LOCAL AUTHORITY. AUDIBLE AND VISIBLE ANNUNCIATION IN EMERGENCY MODE TIED TO FIRE/ALARM.
- WALL MOUNTED LIGHTING FIXTURE; SUPERSCRIPT INDICATES TYPE:
- POLE MOUNTED LIGHTING FIXTURE; SUPERSCRIPT INDICATES TYPE:
- SIMPLEX RECEPTACLE, NEMA 5-20R, 18" A.F.F., UNLESS NOTED OTHERWISE.
- DUPLEX RECEPTACLE, NEMA 5-20R, 18" A.F.F., UNLESS NOTED OTHERWISE.
- DUPLEX RECEPTACLE, NEMA 5-20R, MTD. 6" ABOVE COUNTER BACK SPLASH OR PER ADA AND ARCHITECT, OR U.N.O.
- 1/2 SWITCHED DUPLEX RECEPTACLE.
- FOURPLEX RECEPTACLE, NEMA 5-20R, 18" A.F.F., U.N.O.
- D · WALL MOUNTED DUPLEX RECEPTACLE IN DEDICATED CIRCUIT; 20R, 120V., 3 WIRE GROUNDED, 5-20R, MTD. @ +18" A.F.F., (U.N.O.). "HUBBEL" #5362-1, OR EQUAL.
- GFCI · WALL MOUNTED DUPLEX RECEPTACLE WITH GROUNDED FAULT CIRCUIT INTERRUPTER; 20A., 125V., 3 WIRE, GROUNDED, NEMA 5-20R, MTD. @ +18" A.F.F. (U.N.O.). "HUBBEL" #GF-5362-1, OR EQUAL & SHALL BE ON ALL RECEPTS. WITHIN 6' OF SINKS. READILY ACCESSIBLE PER NEC.
- E · EXISTING RECEPTACLE OUTLET TO REMAIN-NO CHANGES MADE OR RECIRCUIT AS INDICATED ON PLAN.
- I.G. · ALL ISOLATED GROUND RECEPTACLE TO HAVE ORANGE COVER OR ISOLATED GROUND SYMBOL. PROVIDE (1) NEUTRAL, (1) GROUND, & (1) ISOLATED GROUND. PROVIDE I.G. RECEPTACLE WHEN PANEL SCHEDULE(S) INDICATE ISOLATED GROUND WIRES ON CIRCUIT(S).
- FLOOR BOX FLUSH MOUNTED IN FLOOR WITH DUPLEX RECEPTACLE (20A., 125V., 3W., GROUNDED) NEMA 5-20R WITH CARPET FLANGE IN CARPETED AREAS. STEEL-CITY #664-SC/664-CST OR EQUAL.
- FLOOR BOX FLUSH MOUNTED IN FLOOR WITH QUAD-PLEX RECEPTACLE (20A., 125V., 3W., GROUNDED) NEMA 5-20R WITH CARPET FLANGE IN CARPETED AREAS. STEEL-CITY #842-SC/P64 OR EQUAL.
- FLUSH FLOOR BOX WITH TWO DUPLEX RECEPTACLE, NEMA 5-20R.
- SPECIAL OUTLET, VERIFY NEMA CONFIGURATION WITH EQUIP.
- JUNCTION BOX, SIZE PER N.E.C.
- JUNCTION BOX IN ACCESSIBLE LOCATION WITH FLEXIBLE CONDUIT CONNECTION TO LIGHTING FIXTURE OR EQUIPMENT AS NOTED.
- $ · SINGLE POLE, SINGLE THROW 20A. ROCKER LIGHT SWITCH.
- $2 · DOUBLE POLE, SINGLE THROW 20A. ROCKER LIGHT SWITCH.
- $3 · THREE-WAY, 20A. ROCKER LIGHT SWITCH.
- $4 · FOUR-WAY, 20A. ROCKER LIGHT SWITCH.
- $D · INCANDESCENT SLIDE TYPE DIMMER SWITCH RATED FOR 1500W U.N.O. (PROVIDE FLUORESCENT DIMMING BALLASTS TO FLUORESCENT FIXTURES SHOWN CONTROLLED WITH DIMMER(S). FLUORESCENT DIMMERS TO BE RATED FOR 1500W @ 120 VOLT AND 2200W @ 277 VOLT.
- Sm · H.P. RATED MANUAL MOTOR STARTER WITH THERMAL OVERLOADS (WEATHERPROOF WHERE OUTSIDE).
- MOTOR (SIZE AS INDICATED IN DRAWINGS)
- 120/208V PANELBOARD, FLUSH MOUNTED. PROVIDE (2) 3/4" SPARE CONDUITS STUBBED INTO ACCESSIBLE CEILING SPACE.
- 120/208V PANELBOARD, SURFACE MOUNTED.
- 277/480V PANELBOARD, FLUSH MOUNTED. PROVIDE (2) 3/4" SPARE CONDUITS STUBBED INTO ACCESSIBLE CEILING SPACE.
- 277/480V PANELBOARD, SURFACE MOUNTED.
- DISCONNECT SWITCH, SIZE AND POLES AS SHOWN (i.e., 30/3); FUSED WITH BUSSMAN, LPNRK TYPE. U.N.O.
- TELEPHONE HOMERUN TO CABINET, 3/4"C.
- STUB-OUT ABOVE CEILING, INSTALL INSULATED BUSHING TYPE AS REQUIRED.
- EQUIPMENT CONNECTION
- INDICATES CIRCUIT IN CONDUIT CONCEALED IN OR UNDER FLR. CONSTRUCTION OR BELOW GRADE.
- INDICATES CIRCUIT IN CONDUIT CONCEALED IN WALL OR CEILING SPACE.
- INDICATES HOMERUN TO PANELBOARD OR AS NOTED. HASH MARKS INDICATES NUMBER OF CONDUCTORS. IF NO HASH MARKS PROVIDE 2 CONDUCTORS #12 AWG. MINIMUM. CONDUIT 3/4"ø MINIMUM.

PUBLIC ADDRESS/INTERCOM SYMBOLS

- CEILING SPEAKER.
- WALL MOUNTED VOLUME CONTROL. MOUNT AT +48" A.F.F.
- WP · EXTERIOR INTERCOM HORN, WEATHER PROOF.
- A · SPEAKER/DIGITAL CLOCK COMBINATION. 'A' DENOTES ANALOG CLOCK.
- ADMIN. CONTROL CONSOLE. MOUNT AT +18" A.F.F.
- VOICE OUTLET, MOUNTED AT +18" A.F.F. U.N.O. PROVIDE 3/4" CONDUIT STUBBED UP TO ACCESSIBLE CEILING SPACE.
- DATA OUTLET, MOUNTED AT +18" A.F.F. U.N.O. PROVIDE 3/4" CONDUIT STUBBED UP TO ACCESSIBLE CEILING SPACE U.N.O.
- VOICE AND DATA OUTLET, MOUNTED AT +18" A.F.F. U.N.O. PROVIDE (2)-3/4" CONDUIT STUBBED UP TO ACCESSIBLE CEILING SPACE U.N.O. PROVIDE (1) 3/4"C. ONLY WHEN VENDOR IS SIMILAR FOR TELEPHONE AND DATA SYSTEMS.
- VOICE AND/OR DATA OUTLET MOUNTED IN FLOORBOX WITH FLUSH TYPE BUSHED COMPLETE WITH CARPET FLANGE IN CARPETED AREAS. STEEL CITY #664-CST.
- TELEPHONE OUTLET, FLOOR MOUNTED.
- T.V. OUTLET @ +18" U.N.O.
- S · FLUSH MOUNTED WALL SPEAKER.
- CLOCK RECEPTACLE.
- WALL MOUNTED CALL SWITCH.

FIRE ALARM SYMBOLS

- F · MANUAL PULL STATION. MOUNT AT +48" A.F.F.
- C · CHIME/STROBE. MOUNT AT +80" A.F.F.
- F WP · EXTERIOR WEATHER-PROOF HORN.
- HORN/STROBE. MOUNT AT +80" A.F.F.
- V · STROBE. MOUNT AT +80" A.F.F.
- SD · IONIZATION SMOKE DETECTOR.
- DSD · DUCT SMOKE DETECTOR. FIREX #2850-660, OR EQUAL. FURNISHED AND CONNECTED BY ELECTRICAL. MOUNTED BY MECHANICAL.
- SFD · SMOKE FIRE DAMPER.
- FS · FLOW SWITCH.
- TS · TAMPER SWITCH.
- H · HEAT DETECTOR. CEILING MOUNTED.
- MAGNETIC DOOR HOLDER.
- A · ANSUL (KITCHEN HOOD SYSTEM).
- FACP · FIRE ALARM CONTROL PANEL.
- FAAP · FIRE ALARM ANNUNCIATOR PANEL.

SECURITY SYSTEMS SYMBOLS

- P · POPIT.
- T · THERMOSTAT CONTACT FOR FREEZERS.
- Ks · SUB-ZONE KEY PAD MOUNTED AT +48" A.F.F.
- KM · MASTER KEY PAD MOUNTED AT +48" A.F.F.
- CR · CARD READER. MOUNT AT +48" A.F.F.
- M · MOTION DETECTOR, WIDE ANGLE.
- M · MOTION DETECTOR, 360° ANGLE.
- DOOR CONTACT/ROLL-UP DOOR CONTACT.

SOUND SYSTEM SYMBOLS

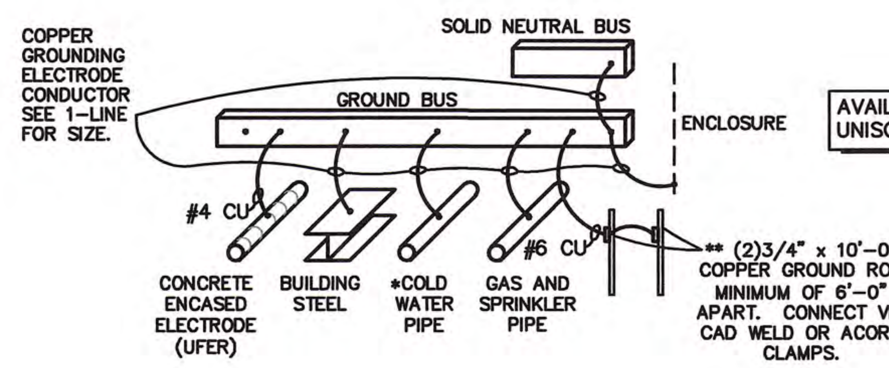
- M · WALL MOUNTED MIC. JACK.
- FLOOR MOUNTED MIC. JACK.
- S · SURFACE MOUNTED SPEAKER CAB.

MISCELLANEOUS SYMBOLS

- TC · TIME CLOCK. REFER TO ONE-LINE DIAGRAM.
- C "C1" · 30A. CONTACTOR REFER TO ONE-LINE DIAGRAM. SEE FAULT CURRENT CACULATION.

ABBREVIATIONS

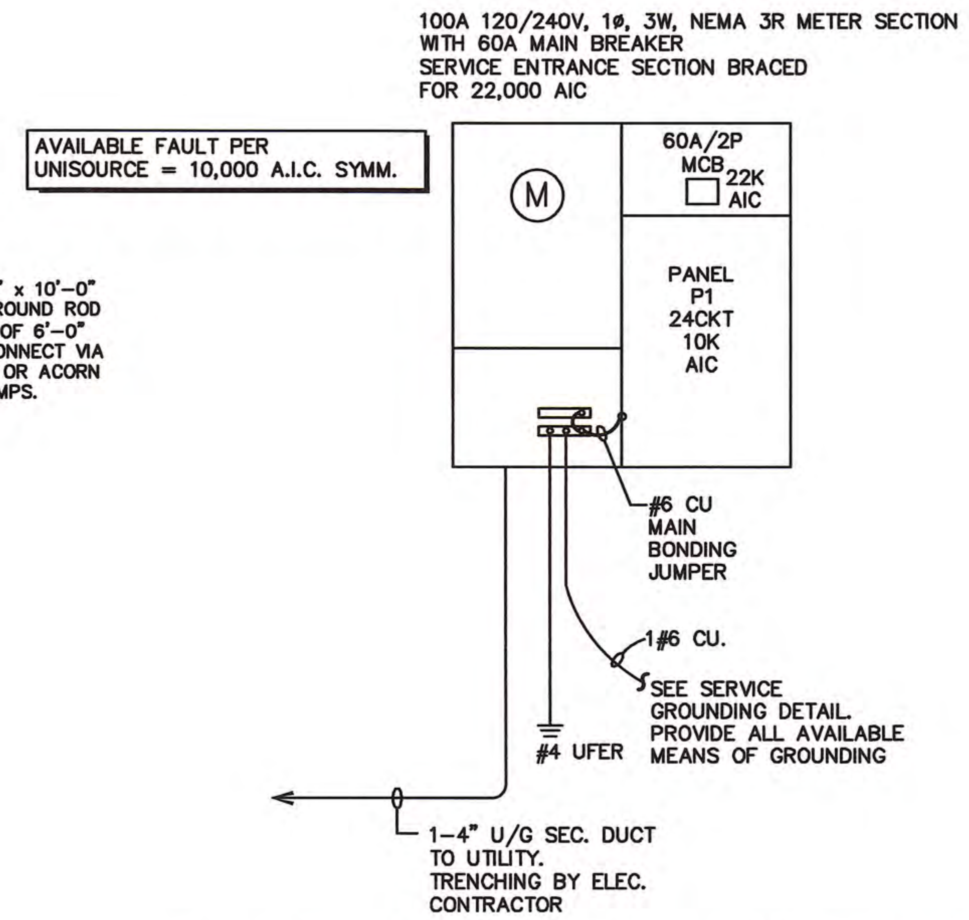
- C · CONDUIT
- CCTV · CLOSED CIRCUIT TELEVISION.
- EC · EMPTY CONDUIT WITH PULLWIRE.
- EDF · ELECTRIC DRINKING FOUNTAIN.
- GND · GROUND
- M.L.O. · MAIN LUGS ONLY
- M.C.B. · MAIN CIRCUIT BREAKER
- N.E.C. · NATIONAL ELECTRICAL CODE
- N.L. · NIGHT LIGHT
- S.E.S. · SERVICE ENTRANCE SECTION
- TTB · TELEPHONE TERMINAL BOARD.
- TMC · TELEPHONE MOUNTING CABINET.
- VP · VANDAL-PROOF.
- WG · WIRE GUARD.
- WP · WEATHERPROOF
- U.N.O. · UNLESS NOTED OTHERWISE
- I.G. · ISOLATED GROUND
- E.P. · EXPLOSION PROOF



SERVICE GROUNDING DETAIL

NOT TO SCALE

* CONNECTION TO 10' OR MORE OF METALLIC UNDERGROUND COLD WATER PIPE.
** PROVIDE ALL AVAILABLE GROUNDING AND BONDING CONNECTIONS. COPPER GROUND RODS WITH #6 GEC ONLY REQUIRED IF CONCRETE ENCASED ELECTRODE IS NOT AVAILABLE.



ONE-LINE DIAGRAM

GENERAL NOTES :

N.T.S.

A. SOLID LINES INDICATE NEW EQUIPMENT U.N.O.

B. ALL NEW ELECTRICAL GEAR TO BE SUNVALLEY BRAND EQUIPMENT U.N.O.

C. PER NEC 210.4(B), ALL MULTIWIRE BRANCH CIRCUITS ARE TO BE PROVIDED WITH A DEVICE THAT WILL DISCONNECT POWER TO ALL UNGROUNDED CONDUCTORS SIMULTANEOUSLY AT POINT OF ORIGIN.

ONE-LINE NOTES:

A. SWITCHBOARD COMPONENTS, INCLUDING OVERCURRENT PROTECTIVE DEVICES SHALL BE FULLY RATED FOR THE AVAILABLE FAULT CURRENT SHOWN.

B. PROVIDE ARC FLASH AND SHOCK HAZARD WARNING IDENTIFICATION PER NEC ARTICLE 110.16

C. "NO DESIGN CHANGES MAY BE MADE TO THE SYSTEM WITHOUT THE PRIOR APPROVAL OF THE DESIGN ENGINEER AND THE ELECTRICAL INSPECTOR."

PANEL SCHEDULE NOTES:

A. A.I.C. RATING SHOWN ON PANEL SCHEDULES ARE THE MINIMUM RATING FOR NEW AND REPLACEMENT OVERCURRENT PROTECTIVE DEVICES. EACH DEVICE SHALL BE FULLY RATED AT AFC AS SHOWN ON ONE-LINE DIAGRAM.

B. ALL PANEL BOARDS SHALL HAVE A TYPE WRITTEN DIRECTORY IDENTIFYING EACH NUMBERED CIRCUIT PLACED IN A DIRECTORY HOLDER INSIDE THE DOOR.

C. THE CONTRACTOR SHALL PERMANENTLY MARK WITH PERMANENT MARKER THE CIRCUIT IDENTIFICATIONS ON THE COVERPLATES OF RECEPTACLES, EQUIPMENT, AND LIGHTING JUNCTION BOXES. (STICK ON LABELS NOT ACCEPTABLE)

SES

ROOM — VOLTS 240/120V 2P 3W — AIC 22,000
MOUNTING SURFACE — BUS AMPS 100 — MAIN BKR 60
FED FROM UTILITY — NEUTRAL 100% — LUGS STANDARD
NOTE

CKT #	CIRCUIT DESCRIPTION	KVA LOAD A	KVA LOAD B	BREAKER TRIP/POLES	COND.	FEEDER RACEWAY AND CONDUCTORS
1	PANEL P1	4.13	4.1	60/2	CU	1"C,2#4,#4N,#10G
	TOTAL CONNECTED KVA BY PHASE	4.13	4.1			

	CONN. KVA	CALC. KVA			CONN. KVA	CALC. KVA	
LIGHTING	0.276	0.345	(125%)	CONTINUOUS	0.6	0.75	(125%)
LARGEST MOTOR	0.696	0.87	(125%)	HEATING	0	0	(100%)
OTHER MOTORS	0	0	(100%)	NONCONTINUOUS	5.58	5.58	(100%)
RECEPTACLES	1.08	1.08	(50%>10)	KITCHEN EQUIP	0	0	(N/A)
KITCHEN	0	0	(100%)	NONCOIN/DIVERSE	0	0	(N/A)
				TOTAL KVA	8.23	8.63	

BALANCED PHASE AMPS 35.9

P1

ROOM — VOLTS 240/120V 2P 3W — AIC 22K/10K
MOUNTING FLUSH — BUS AMPS 60 — MAIN BKR MLO
FED FROM SES — NEUTRAL 100% — LUGS STANDARD
NOTE

CKT #	CKT BKR	CIRCUIT DESCRIPTION	KVA LOAD A	KVA LOAD B	CKT #	CKT BKR	CIRCUIT DESCRIPTION	KVA LOAD A	KVA LOAD B
1	20/1	LIGHTING	0.072		2	30/2	WH-1	2.25	
3	20/1	LIGHTING		0.072	4	|			2.25
5	20/1	LIGHTING	0.036		6	15/1	EF-1	0.696	
7	20/1	LTG.		0.096	8	20/1	AUTO SENSOR		1.08
9	-/1	SPACE	0		10	20/1	RECEPTACLE	0.36	
11	-/1	SPACE		0	12	20/1	MISC. E.D.F.		0.6
13	-/1	SPACE	0		14	20/1	METERED FAUCET RECEPT.	0.72	
15	-/1	SPACE		0	16	-/1	SPACE		0
17	-/1	SPACE	0		18	-/1	SPACE	0	
19	-/1	SPACE		0	20	-/1	SPACE		0
21	-/1	SPACE	0		22	-/1	SPACE	0	
23	-/1	SPACE		0	24	-/1	SPACE		0
							TOTAL CONNECTED KVA BY PHASE	4.13	4.1
							TOTAL CONNECTED AMPS BY PHASE	34.5	34.2

	CONN. KVA	CALC. KVA			CONN. KVA	CALC. KVA	
LIGHTING	0.276	0.345	(125%)	CONTINUOUS	0.6	0.75	(125%)
LARGEST MOTOR	0.696	0.87	(125%)	HEATING	0	0	(100%)
OTHER MOTORS	0	0	(100%)	NONCONTINUOUS	5.58	5.58	(100%)
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KITCHEN	0	0	(100%)	NONCOIN/DIVERSE	0	0	(N/A)
				TOTAL KVA	8.23	8.63	

BALANCED PHASE AMPS 35.9

MAVEN ENGINEERING
Job #16RRL012
Tel: (480) 303-0180
Fax: (480) 302-7927
230 West Baseline Rd, Suite 103
Tempe, Arizona 85283

Note: Any changes made to final bid documents due to field changes will be billed hourly to the contractor.

REVISIONS	BY

GERALD L. CLARK, ARCHITECT HEREBY EXPRESSLY RESERVES HIS COMMON LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. DOCUMENTS ARE INSTRUMENTS OF SERVICE AND AS SUCH SHALL REMAIN THE PROPERTY OF GERALD L. CLARK ARCHITECT. THESE PLANS ARE NOT TO BEREPRODUCED, CHANGED OR COPIED IN ANY OTHER FORM OR MANNER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD/OTHER PARTY, WITHOUT HAVING FIRST OBTAINING THE EXPRESSED WRITTEN PERMISSION AND CONSENT OF GERALD L. CLARK, ARCHITECT.
CONTRACTORS SHALL VERIFY AND BE RESPOSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND SHALL NOTIFY GERALD L. CLARK ARCHITECT. OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE CONSTRUCTION DOCUMENTS.

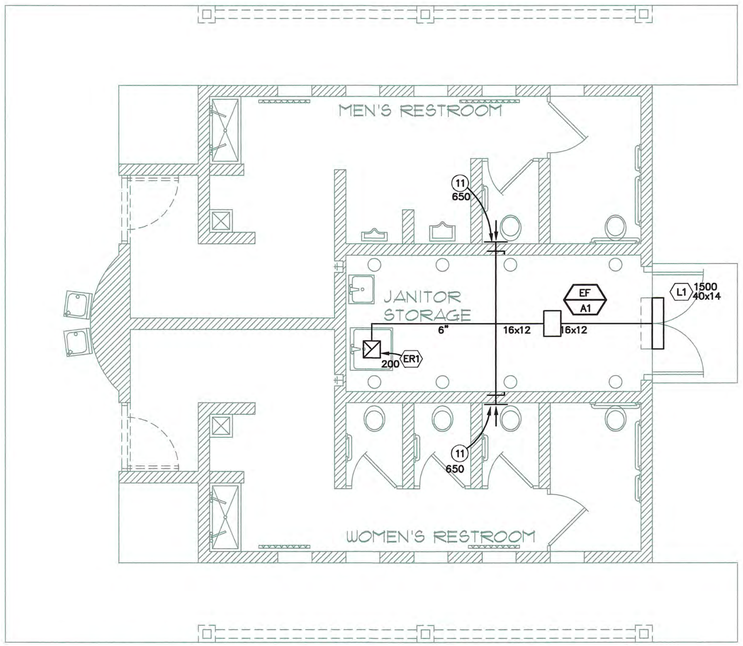
LAKE HAVASU CITY
OPERATIONS DEPARTMENT
2330 McCulloch Blvd/
Lake Havasu City, Az. 86403

Gerald L. Clark, Architects
1695 Mesquite Ave. #208
Lake Havasu, Az. 86403

Registered Professional Engineer (Electrical) — Certificate No. 32857 — BRYAN P. JEHLING — Date Signed 02-17-16 — ARIZONA, U.S.A.
EXPIRES 09/30/16

DRAWN	KJH
CHECKED	KJH
DATE	2-16-15
SCALE	SEE PLAN
JOB NO.	15018 (G.C.)
SHEET	E2

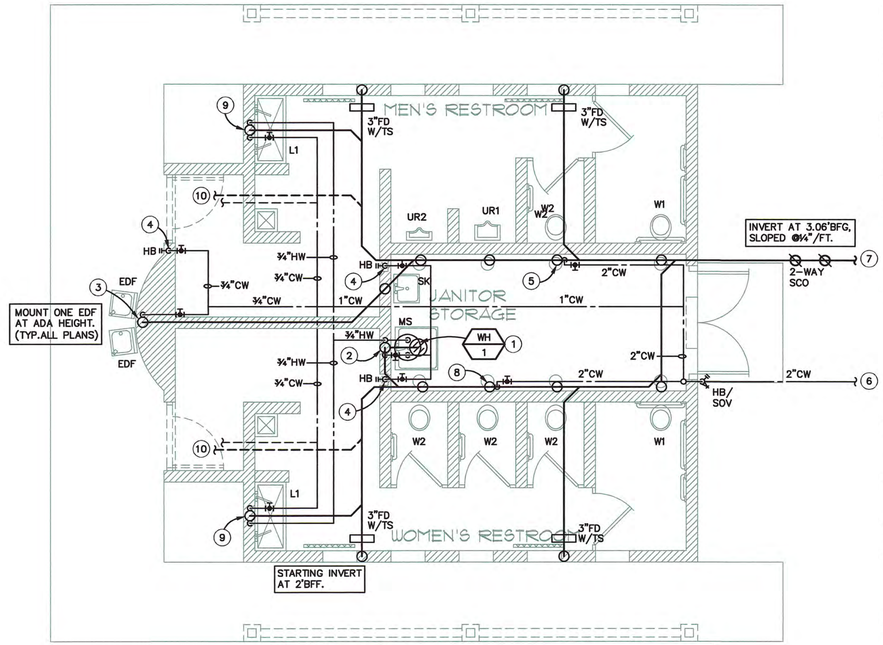
OF 7 SHEETS



MECHANICAL FLOOR PLAN 3

SCALE: 1/4"=1'0"

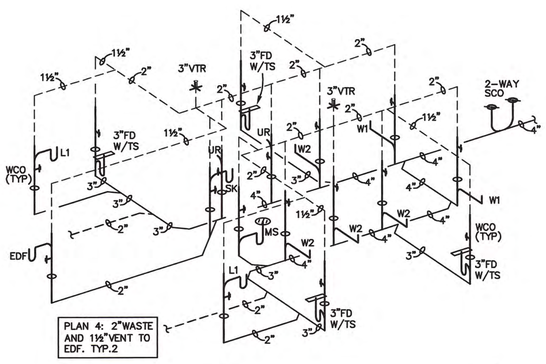
MECHANICAL LAYOUT TO BE SAME FOR PLAN 4



PLUMBING FLOOR PLAN 3

SCALE: 1/4"=1'0"

PLUMBING LAYOUT TO BE SAME FOR PLAN 4



WASTE & VENT SCHEMTATIC

SCALE: N.T.S.

MECHANICAL GENERAL NOTES :

1. MOUNT THERMOSTATS 48" ABOVE FINISH FLOOR TO CENTER.
2. DUCTWORK AND EQUIPMENT SHOWN IS DIAGRAMMATIC. COORDINATE AND ROUTE DUCTWORK TO MEET JOB REQUIREMENTS. LOCATION OF EQUIPMENT MUST BE COORDINATED WITH ALL DISCIPLINES BEFORE FINAL LOCATIONS ARE SELECTED. WEIGHTS OF EQUIPMENT MUST BE VERIFIED AND COORDINATED WITH STRUCTURAL SYSTEMS BEFORE EQUIPMENT CAN BE INSTALLED AT JOBSITE.
3. SPACE ALLOCATED FOR MECHANICAL AND OTHER WORK ABOVE THE SUSPENDED CEILINGS IS CRITICAL. LIGHT FIXTURES AND AIR DIFFUSERS HAVE BEEN LOCATED TO ACHIEVE A DEFINITE ARCHITECTURAL EFFECT AND MAY NOT BE CHANGED WITHOUT THE CONSENT OF THE ARCHITECT. BECOME FAMILIAR WITH THE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS PRIOR TO FABRICATING AND INSTALLING ANY MATERIALS. HANG DUCTWORK AS CLOSE AS POSSIBLE TO THE STRUCTURE ABOVE, UNLESS INDICATED OTHERWISE.
4. COORDINATE THE LOCATION OF CEILING DIFFUSERS, REGISTERS AND GRILLES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS.
5. PASSAGES OF PIPES, CONDUITS, BUS DUCTS, CABLES, WIRES, AIRDUCTS, PNEUMATIC DUCTS, AND SIMILAR BUILDINGS SERVICE EQUIPMENT THROUGH FIRE BARRIERS SHALL BE PROTECTED AS FOLLOWS: THE SPACE BETWEEN THE PENETRATING ITEM AND FIRE BARRIER SHALL: BE FILLED WITH A MATERIAL CAPABLE OF MAINTAINING THE FIRE RESISTANCE RATING OF THE FIRE BARRIER PRODUCT. PRODUCT USED MUST MEET TEST METHODS ASTM E814 OR NFPA 251 FOR FIRE RATING.
6. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DUCT & PIPING LOCATIONS IN FIELD AND INCLUDE IN BID EXTENDING TO EXISTING AS REQUIRED.
7. CONTRACTOR SHALL BALANCE ALL SYSTEMS TO CFM'S SHOWN. PROVIDE 3RD PARTY INSPECTION & PROVIDE COPY OF REPORT TO THE LAKE HAVASU CITY INSPECTOR AT FINAL MECHANICAL INSPECTION
8. EXISTING CONDENSATE DRAINS SUPPLY & RETURN AIR DUCT DROPS ARE EXISTING AND SHALL BE REUSED WHEN-EVER POSSIBLE.
9. PLANS SHALL CONFORM TO THE 2006 IMC AS ADOPTED BY LAKE HAVASU CITY.
10. ALL DIFFUSERS AND GRILLES ARE LESS THAN 20LBS, CONTRACTOR SHALL POSITIVELY ATTACH TO CEILING MAIN RUNNERS
11. VENTS SHALL BE TERMINATED A MINIMUM OF 1'-0" ABOVE ROOF AND 2'-0" ABOVE OR 8'-0" AWAY FROM PARAPETS OR WALLS.
12. SEE ARCHITECTURAL PLANS FOR LOCATION OF PERMANENT ACCESS TO ROOF.
13. ALL NEW UNITS SHALL BE LOCATED AND INSTALLED BELOW THE PARAPET OR A SCREEN WALL PROVIDED, (SEE ARCHITECTURE DRAWINGS FOR SCREENING DETAILS).
14. THERMOSTATS ARE LOW VOLTAGE PROGRAMMABLE THERMOSTATS AND ARE TO BE LOCATED AS SHOWN.
15. REFER TO ARCHITECTURAL LOCATION OF DRAWINGS FOR EXACT REGISTERS, GRILLES & DIFFUSERS.

KEYED NOTES : (#)

1. FULL SIZE T&P TO TERMINATE ABOVE MS W/ 1"AIR GAP.
2. ¾"H&CW DOWN IN WALL. PROVIDE ¾"H&CW TO MS AND ½"H&CW TO SK.
3. ½"CW DOWN IN WALL TO EDF.
4. ¾"CW DOWN IN WALL TO HB.
5. 1½"CW DOWN IN WALL TO FULL SIZE HEADER WITH SHOCK ABSORBER. PROVIDE 1"CW TO EACH UR AND 1¼"CW TO EACH WC.
6. EXTEND NEW 2"CW 5' BEYOND BUILDING EXTERIOR. SEE CIVIL FOR CONTINUATION.
7. EXTEND NEW 4"WASTE 10' BEYOND BUILDING EXTERIOR AND INVERT AT 3.06'BFG, SLOPED AT ¼"/FT.
8. 2"CW DOWN IN WALL TO FULL SIZE HEADER WITH SHOCK ABSORBER. PROVIDE 1¼"CW TO EACH WC.
9. ¾"H&CW DOWN IN WALL. PROVIDE ½"H&CW TO EACH L1 FAUCET AND MIXING VALVE AT LAV ON BACKSIDE OF WALL PRIOR TO WALL PENETRATION AND LAV CONNECTION.
10. PLAN 4 WASTE AND WATER ROUTING. EXTEND 2"WASTE AND ½"CW W/ SOV TO EDF, SEE ARCH SHEET EXACT LOCATION.
11. 8X16 OPEN ENDED DUCT WITH ¼"HARDWARE CLOTH OVER OPENING WITH OBD ABOVE PERFORATED CEILING IN RESTROOM.

PLUMBING GENERAL NOTES :

1. EXACT LOCATION OF PLUMBING FIXTURES SHALL BE DETERMINED FROM ARCHITECTURAL DRAWINGS.
2. BEFORE SUBMITTING BID, THE PLUMBING CONTRACTOR SHALL REVIEW THE ARCHITECTURAL DRAWINGS AND INCLUDE IN HIS BID AN AMOUNT TO FURNISH AND INSTALL ANY FIXTURES WHICH ARE SHOWN IN ADDITION TO FIXTURES SHOWN ON THE PLUMBING DRAWINGS.
3. CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF SEWERS TO WHICH NEW WASTE LINES ARE TO BE CONNECTED BEFORE MAKING UP OR INSTALLATION OF NEW WASTE SYSTEM.
4. CONTRACTOR SHALL VERIFY AND COORDINATE LOCATION OF ALL PLUMBING LINES WITH DUCTWORK AND ELECTRICAL SERVICES.
5. THE INSTALLATION OF ALL VALVES, UNIONS, THERMOMETERS, GAUGES, OR OTHER INDICATING OR RECORDING EQUIPMENT, OR SPECIALTIES REQUIRING FREQUENT READING, REPAIRS, ADJUSTMENT, INSPECTION, REMOVAL OR REPLACEMENT SHALL BE CONVENIENTLY AND ACCESSIBLY LOCATED WITH REFERENCE TO THE FINISHED BUILDING.
6. ALL VENTS THROUGH ROOF SHALL BE 10'-0" REMOVED FROM ALL AIR INTAKES, EVAPORATIVE COOLERS, ETC.
7. WHERE POSSIBLE, TIE VENTS TOGETHER SO THAT A MINIMUM NUMBER TERMINATE THROUGH THE ROOF.
8. WATER CLOSETS IN PUBLIC TOILET ROOMS SHALL CENTER ON THE FINAL LAYOUT OF TOILET PARTITIONS.
9. CONTRACTOR SHALL NOT CUT HOLES IN STRUCTURAL MEMBERS WITHOUT FIRST SECURING WRITTEN APPROVAL FROM THE ARCHITECT.
10. CONTRACTOR SHALL INSTALL DIELECTRIC UNIONS AT CONNECTIONS OF DISSIMILAR METALS.
11. CONTRACTOR SHALL ROUGH-IN ALL WASTES AND SUPPLIES TO SPECIAL EQUIPMENT ACCORDING TO MANUFACTURERS SHOP DRAWINGS AND MAKE FINAL CONNECTIONS. ALL SUPPLIES SHALL BE VALVED.
12. ASSUMED WATER PRESSURE-CONTRACTOR SHALL VERIFY ACTUAL WATER PRESSURE PRIOR TO CONSTRUCTION. IF PRESSURE IS LESS THAN 50 PSI CONTRACTOR SHALL CONTACT THE ENGINEER FOR PIPE SIZING EVALUATION. IF PRESSURE EXCEEDS 80 PSI, A PRESSURE REDUCING VALVE SHALL BE PROVIDED. PIPING VELOCITY SHALL NOT EXCEED 8 FEET PER SECOND.
13. ASSUMED NEW WATER METER. CONTRACTOR TO VERIFY IN FIELD THAT NO WATER METER IS AVAILABLE FOR USE. SHOULD THERE BE A WATER METER ON SITE FOR THE RESTROOMS, CONTRACTOR TO CONTACT ARCHITECT OR ENGINEER TO CONFIRM INSTALLATION OF NEW METER.

PLUMBING SYMBOL LIST

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
—GW—	GREASE WASTE (GW)		POINT OF CONNECTION
— — — —	EXISTING (E)	—▷◁—	SHUT OFF VALVE (GATE)
———	SOIL WASTE LINE (W)	—┌┐—	CHECK VALVE
— — — —	VENT LINE (V)	—┤├—	UNION
— — — —	COLD WATER (C.W.)	—┤T├—	LUBRICATED PLUG VALVE
— — — —	HOT WATER (H.W.)	——┤	HOSE BIBB (H.B.)
— — — —	HOT WATER RETURN	—┤◇├—	BRANCH RISE OFF MAIN
— G —	GAS LINE	ø S.C.O.	SURFACE CLEANOUT
—TW—	TEMPERED WATER	ø F.C.O.	FLOOR CLEANOUT
—SW—	SOFT WATER	—▷◁—	GLOBE VALVE
—— —	BUILDING SEWER	—◖●◗—	BALL VALVE
⊘	FLOOR DRAIN (F.D.)	-R.D.L.-	ROOF DRAIN LEADER
⊠	FLOOR SINK (F.S.)	-O.D.L.-	OVERFLOW DRAIN LEADER
◉	ROOF DRAIN (R.D.)	—CD—	CONDENSATE DRAIN LINE
◎	OVER FLOW DRAIN	—ICW—	INDUSTRIAL COLD WATER

NOTE: ONLY THOSE SYMBOLS SHOWN ON THE DRAWING APPLY

PIPING MATERIALS

SANITARY WASTE AND VENT SYSTEMS

PIPING:
ABS CONFORMING TO ASTM D 2661.

DOMESTIC WATER SYSTEM

PIPING:
TYPE "L" HARD DRAWN COPPER, CONFORMING TO ASTM B-88. TYPE "K" HARD DRAWN COPPER, CONFORMING TO ASTM B-88. TYPE "K" SOFT DRAWN COPPER, CONFORMING TO ASTM B-88.

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CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWINGS - ANY ERRORS OR OMISSIONS SHALL BE REPORTED TO THE ARCHITECT. OF ANY VARIANCE FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE CONSTRUCTION DOCUMENTS.

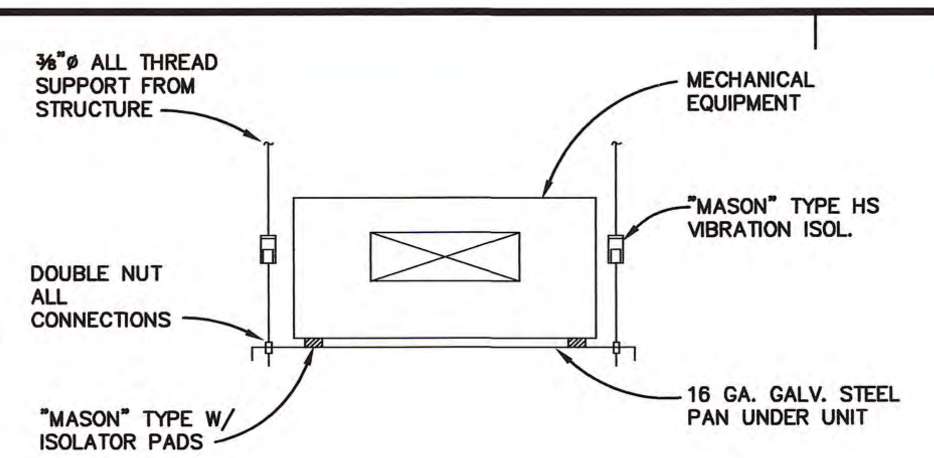
LAKE HAVASU CITY

OPERATIONS DEPARTMENT
2330 McCulloch Blvd/
Lake Havasu City, Az. 86403

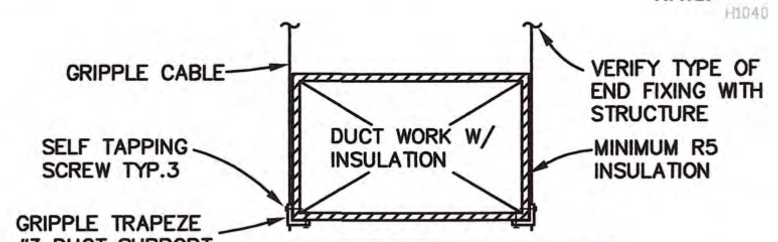
Gerald L. Clark, Architects
1695 Mesquite Ave. #208
Lake Havasu, Az. 86403

Registered Professional Engineer (Civil) CERTIFICATE NO. 24485 Kirk Hoffman No. 24485 Date Signed 07-26-16 ARIZONA, U.S.A.
EXPIRES 03/31/18

DRAWN	KEF
CHECKED	AJW
DATE	2-16-15
SCALE	SEE PLAN
JOB NO.	15018 (G.C.)
SHEET	MP2
OF	7 SHEETS

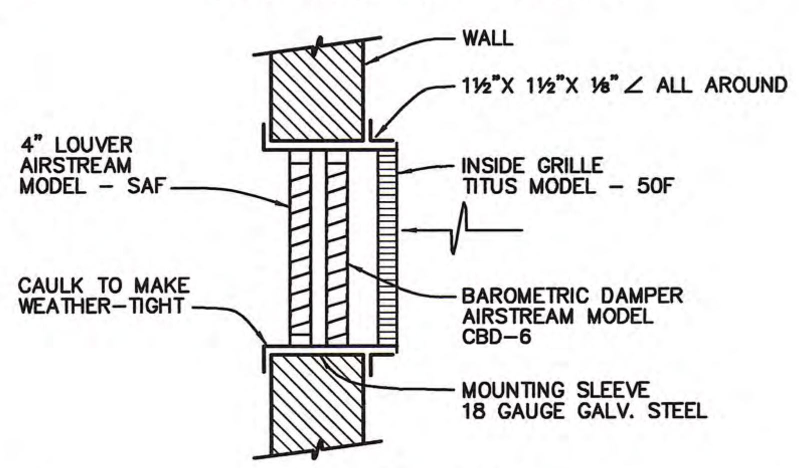


5 EQUIPMENT SUPPORT
N.T.S.
H1040



DUCT PERIMETER	SPACING
UP TO 60"	10'–0"
61" – 144"	10'–0"

6 RETANGULAR DUCTWORK GRIPPLE SUPPORTS
N.T.S.



7 LOUVER DETAIL
N.T.S.
H1087

WATER CALCULATION

STATIC PRESS.:	60 PSI		
BLDG. HEIGHT :	10		
60.00	PSI PRESSURE IN MAIN		
25.00	PSI PRESSURE REQUIRED AT FURTHEST FIXTURE		

35.00	PSI SUBTOTAL		
7.00	PSI PRESSURE DROP THRU NEW 1.5" METER		
10.00	PSI DROP THRU RPPBFP		

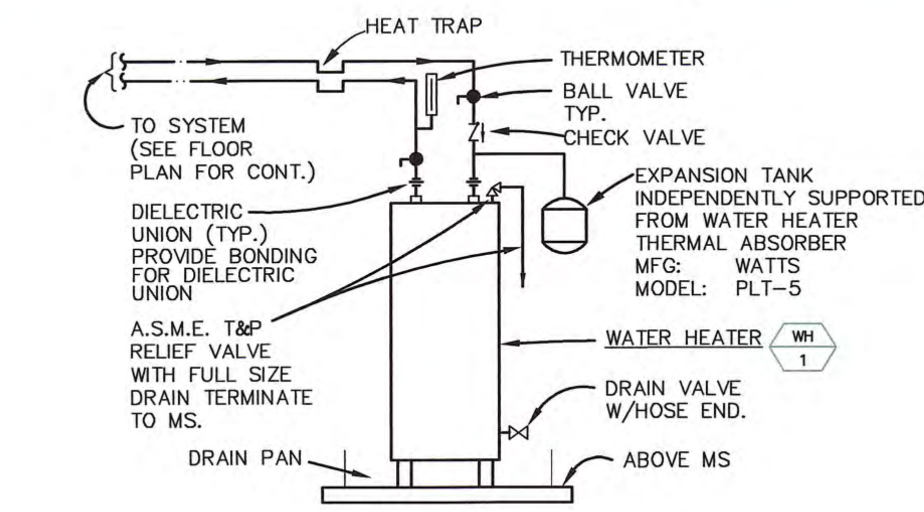
18.00	PSI SUBTOTAL		
4.33	PSI DROP FOR ELEVATION		

13.67	PSI ALLOWABLE FOR PIPE FRICTION		

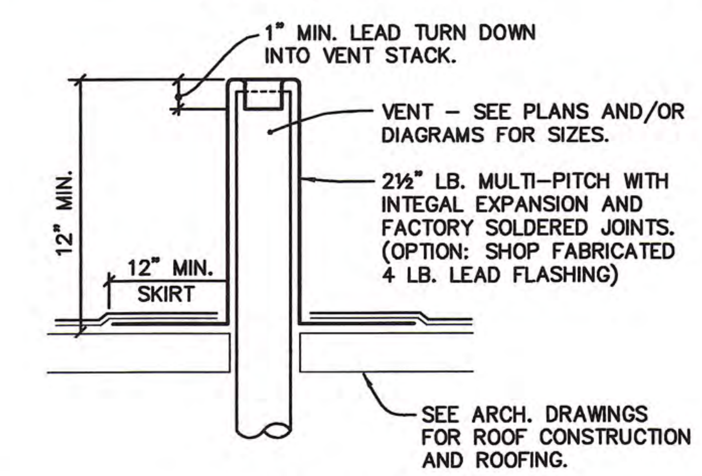
TOTAL LENGTH OF WTR SYSTEM	=	145	
EQUIVALENT FEET OF PIPE ALLOWED FOR			
TEES, ELBOWS, FITTINGS, ETC.	=	47.85	
TOT. DEVELOPED LENGTH OF WTR SYSTEM=		192.85	
* ALLOWABLE FRICTION LOSS	=	= 7.0884 PSI/100'*	
2 LAV	2 FU	=	4 FU
6 WC	10 FU	=	60 FU
2 UR	5 FU	=	10 FU
1 EDF	1.5 FU	=	1.5 FU
1 MS	3 FU	=	3 FU
1 SK	2 FU	=	2 FU
1 HB	5 FU	=	5 FU
2 ADDTL HB	2 FU	=	4 FU
	TOTAL FU	89.5	
	FUTURE FU	40	
	TOTAL	129.5	75 GPM

7.0 PSI DROP

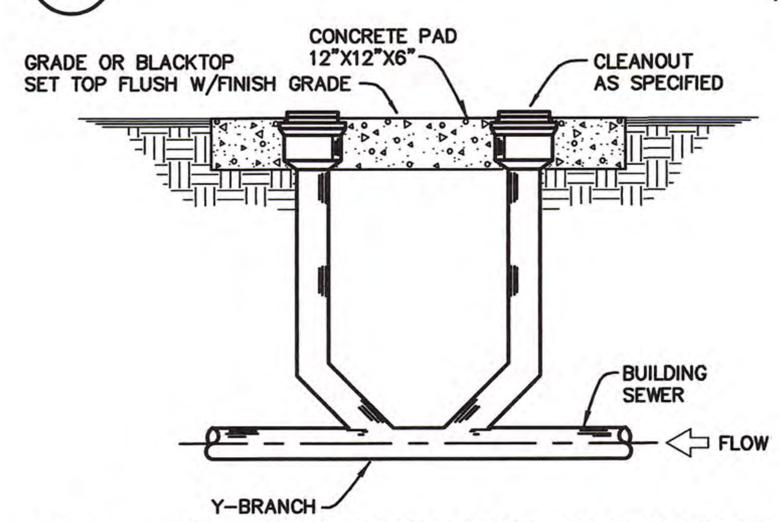
PIPE SIZE	GPM	FU (FT)	FU (FV)
½"	3	3	–
¾"	7	9	–
1"	16	23	–
1¼"	28	50	11
1½"	44	103	35
2"	77	259	135
2½"	120	479	365
3"	170	748	739



1 ELECTRIC WATER HEATER PIPING DIAGRAM
N.T.S.



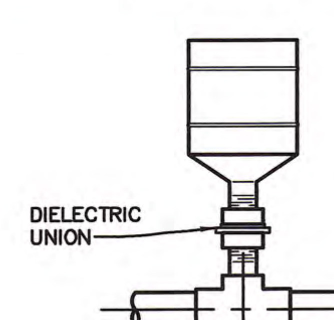
2 VENT FLASHING
N.T.S.



3 2-WAY SURFACE CLEANOUT
N.T.S.

SHOCK ABSORBER DETAIL

JR SMITH-HYDRO TROL	5005	5010	5020	5030	5040	5050
FIXTURE UNIT RATING	1-9	10-19	20-34	3564	64-129	130-250



1. CONTRACTOR SHALL FURNISH & INSTALL SHOCK ABSORBERS ON ALL FLUSH VALVE OPERATED FIXTURES OR FIXTURES W/QUICK CLOSING VALVES.
2. WHEN WATER PRESSURE IN THE LINE IS OVER 65 PSI, INSTALL THE NEXT LARGER UNIT.
3. CONTRACTOR SHALL PIPE AIR CHAMBERS 12" LONG & (2) PIPE SIZES LARGER THAN SUPPLY LINE AT ALL ISOLATED FIXTURES OR BATTERY OF FIXTURES NOT REQUIRING SHOCK ABSORBERS.
4. SIZE OF SHOCK ABSORBERS REQUIRED ON BATTERYOF FIXTURES SHALL BE BASED ON FIXTURE UNIT VALVES OF FLUSH VALVE OPERATED FIXTURES ONLY.
5. WHERE SHOCK ABSORBERS ARE INSTALLED IN NON-ACCESSIBLE PIPE SPACES OR IN PARTITIONS, CONTRACTOR SHALL INSTALL 12"x12" STAINLESS STEEL ACCESS PANEL W/CYLINDER LOCK.
6. SHOCK ABSORBERS MANUFACTURED BY ZURN, JOSAM OR WADE EQUAL TO LIST ABV. ARE APPROVED.

4 SHOCK ABSORBER DETAIL
N.T.S.

* VERIFY EXACT FIXTURES WITH OWNER/ARCH. PRIOR TO ORDERING.

PLUMBING FIXTURE SCHEDULE

FIXTURE SPECIFICATIONS					FIXTURE CONNECTIONS				
MARK	DESCRIPTION	MANUFACTURER AND MODEL NUMBER	FITTING & CAPACITY	ACCESSORIES/ REMARKS	C.W.	H.W.	WASTE	VENT	
W1	HANDICAP WATER CLOSET WALL MOUNTED FLUSH VALVE	"ACORN" #2100-W-FVBO MOUNTED @ADA HEIGHT	"SLOAN" #140-ESS THRU WALL, 1.28 GPF	STAINLESS STEEL, "J.R.SMITH" WALL CARRIER #0315	1¼"	–	4"	2"	
W2	WATER CLOSET WALL MOUNTED FLUSH VALVE	"ACORN" #2100-W-FVBO –	"SLOAN" #140-ESS THRU WALL, 1.28 GPF	STAINLESS STEEL, "J.R.SMITH" WALL CARRIER #0310	1¼"	–	4"	2"	
UR1	HANDICAP URINAL WALL MOUNTED FLUSH VALVE	"ACORN" #1709-W-FVBO MOUNT @ADA HEIGHT	"SLOAN" #190-ESS THRU WALL, 0.5 GPF	STAINLESS STEEL, "J.R.SMITH" WALL CARRIER #0609	1"	–	3"	2"	
UR2	URINAL WALL MOUNTED FLUSH VALVE	"ACORN" #1709-W-FVBO –	"SLOAN" #190-ESS THRU WALL, 0.5 GPF	STAINLESS STEEL, "J.R.SMITH" WALL CARRIER #0609	1"	–	3"	2"	
L1	ADA TROUGH LAVATORY WALL HUNG	CUSTOM 22"x48" CONCRETE –	"T&S" #B-0800 FAUCET x2 #B-0899 DRAIN	ANGLE STOPS, TAILPIECE, TRUEBRO #102 PIPE INSULATION "J.R.SMITH" WALL CARRIER #0915	½"	½"	2"	1½"	
L1	ADA LAVATORY WALL HUNG ALTERNATE OPTION	"BRADLEY" S93-573 –	– – –	ANGLE STOPS, TAILPIECE, TRUEBRO #102 PIPE INSULATION "J.R.SMITH" WALL CARRIER #0915	½"	½"	2"	1½"	**CONTRACTOR TO SUBMIT ALTERNATE BID**
FD	– FLOOR DRAIN –	"J.R.SMITH" #2005-T –	"J.R.SMITH" TRAP SEAL #2692	VANDAL PROOF 5"x17" RECTANGULAR STRAINER HEAD	–	–	3"	1½"	
MS	MOP SINK 24"x24"x10" DEEP FLOOR BASIN	"FIAT" #MSB-2424 –	SERVICE FAUCET #830-AA	HOSE & BRACKET – MOP HANGER W/ VACUUM BREAKER	¾"	¾"	3"	2"	
EDF	DRINKING FOUNTAIN VANDAL RESISTANT, ADA ALL PLANS	"ELKAY" #VRCHD8SF (SINGLE LEVEL)	– – –	– 9.4 GPH OF 70° WATER –	½"	–	2"	1½"	
EDF2	DRINKING FOUNTAIN VANDAL RESISTANT, ADA PLAN 1 & 2 ALTERNATE	"ELKAY" #EHW214C (SINGLE LEVEL)	"ELKAY" REMOTE CHILLER/PAN #ECH8	"ELKAY" CARRIER #MPW200 9.7 GPH OF 70° WATER	½"	–	2"	1½"	**CONTRACTOR TO SUBMIT ALTERNATE BID**
SK	WALL HUNG SINK –	"ACORN" MODEL # 1955-CSG	– – –	ANGLE STOPS, TAILPIECE, TRUEBRO #102 PIPE INSULATION "LEONARD" 170-LF MIXING VALVE	½"	½"	2"	1½"	
WH-1	ELECTRIC WATER HEATER –	"A.O. SMITH" # DEL-40 40 GAL. CAPACITY	TWO 4500 W NONSIMULTANEOUS ELEMENTS	23 GPH @ 80°F RISE 208V, 1ø –	–	–	–	–	
HB	– HOSE BIBB –	"ACORN" #A0000000-HB3 VANDAL RESISTANT	– ¾" INLET –	W/ VACUUM BREAKER, STEEL HOUSING AND LOCKABLE DOOR	¾"	–	–	–	

**** PROVIDE LEONARD #170-LF MIXING VALVE ON LAVATORY/SINKS WITH 120°F TO 140°F OR HIGHER HOTWATER SERVICE.
**** ACCEPTABLE ALTERNATE MANUFACTURERS FOR FITTINGS AND FAUCETS: "CHICAGO" OR "T&S BRASS" ONLY
**** ACCEPTABLE ALTERNATE MANUFACTURERS FOR FIXTURES: "BRADLEY CORP" OR "ACORN" ONLY

MECHANICAL EQUIPMENT SCHEDULE

NOTE: 1. AMBIENT TEMPERATURE 115 F COOLING, 31 F HEATING.
2. NO EQUIPMENT WITH LESS THAN 98% OF LISTED CAPACITIES WILL BE APPROVED. COOLING CAPACITY INCLUDES FAN HEAT.
3. FILTERS SHALL HAVE A MAXIMUM VELOCITY OF 500 FPM, 1" DEEP, 30% ATMOSPHERIC EFFICIENT.
4. UNIT SHALL HAVE LOW AMBIENT COMPRESSOR LOCKOUT THERMOSTAT.
5. SEE SPECIFICATION SECTION 15222 "AIR CONDITIONING UNITS" AND 15330 "FILTERS" FOR ADDITIONAL REQUIREMENTS.
6. PROVIDE ONE ELECTRICAL CONNECTION FOR EACH UNIT.
7. VERIFY ON PLAN FOR HORIZONTAL OR VERTICAL INSTALLATION.
8. APPROVED HVAC MANUFACTURERS ARE: TRANE, CARRIER, LENNOX & AMERICAN STANDARD, ONLY.
9. ALL UNITS SHALL BE INSPECTED, CHECKED, AND STARTED UP BY MANUFACTURER'S FACTORY CERTIFIED HVAC TECHNICIAN. UPON COMPLETION, MANUFACTURER SHALL PROVIDE ONE YEAR PARTS AND LABOR WARRANTY.

UNIT										COOLING				HEATING						
												ENT AIR								
MARK	MANUFACTURER	MODEL	SEER /EER	CFM	ESP "WG"	HP	VOLT	PH	MCA	SEN MBH	TOT MBH	DB	WB	COMP MBH	KW/ STAGES	VOLT	PH	OSA CFM	WEIGHT LBS	NOTES
EF-A1	GREENHECK	CSP-A2150	–	1500	0.375	735W	120	1	–	–	–	–	–	–	–	–	–	–	70	ON TIME CLOCK

LEGEND: EXHAUST FAN (EF), SPLIT SYSTEM: INDOOR UNIT (IU), OUTDOOR UNIT (OU), HEATPUMP (HP), AIR HANDLING UNIT (AHU), AIR CONDITIONER (AC), EVAPORATIVE COOLER (EC), MAKE-UP AIR UNIT (MUA)

GRILLES, REGISTERS AND DIFFUSER SCHEDULE

NOTE: 1. PROVIDE OBD'S SHALL BE PROVIDED AT TAKE-OFF OF MAIN DUCT FOR ALL LAY-IN TYPE DIFFUSERS OR GRILLES AND OBD'S AT THE DIFFUSER OR GRILLE WHEN FLANGE TYPE.
2. SEE SIZING SCHEDULES FOR NECK AND FLEX DUCT SIZES, UNLESS OTHERWISE DIRECTED.
3. ALL LAY-IN DIFFUSERS OR GRILLES SHALL BE WHITE IN COLOR UNLESS DIRECTED OTHERWISE. ALL FLANGE TYPE DIFFUSERS, REGISTERS OR GRILLE COLORS SHALL BE AS DIRECTED BY THE ARCHITECT.
4. CONTRACTOR SHALL PROVIDE SQUARE TO ROUND ADAPTERS AS REQUIRED FOR INSTALLATION.
5. CONTRACTOR SHALL PROVIDE T-BAR BORDER IN ALL LAY-IN CEILINGS AND FLANGE TYPE BORDERS FOR ALL OTHER APPLICATIONS UNLESS OTHERWISE INDICATED.

MARK	DESCRIPTION	MANUFACTURER	MODEL	MATERIAL	BORDER	FRONT	DAMPER	REMARKS
ER1	EXH. REGISTER	TITUS	350RS	STEEL	NOTE 5	HORIZONTAL	–	–

MAVEN ENGINEERING
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CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND SHALL NOTIFY GERALD L. CLARK ARCHITECT. OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE CONSTRUCTION DOCUMENTS.

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OPERATIONS DEPARTMENT
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Gerald L. Clark, Architects
1695 Mesquite Ave. #208
Lake Havasu, Az. 86403

Registered Professional Engineer (Mechanical) CERTIFICATE Kirk J. Hoffman No. 24488 Date Signed 07-13-16 ARIZONA, U.S.A. EXPIRES 03/31/18

DRAWN	KEF
CHECKED	AJW
DATE	2-16-15
SCALE	SEE PLAN
JOB NO.	15018 (G.C.)
SHEET	MP3

OF 7 SHEETS

PLUMBING SPECIFICATIONS

1. SCOPE
THE WORK SPECIFIED UNDER THIS CONTRACT INCLUDES THE FURNISHING OF ALL LABOR, MATERIALS, TOOLS, TRANSPORTATION, SERVICES, PERMITS, INSPECTION FEES, ETC., REQUIRED IN THE COMPLETE INSTALLATION OF PLUMBING WORK AS SPECIFIED HEREIN AND SHOWN ON ACCOMPANYING DRAWINGS AND AS REQUIRED BY THE CONDITIONS AT THE SITE. THE GENERAL AND SPECIAL CONDITIONS ARE HEREBY MADE A PART OF THIS SECTION. IN ADDITION, WORK IN THESE SECTIONS ARE GOVERNED BY ALL PROVISIONS OF THE CONTRACT DOCUMENTS.

2. SUBMITTALS
SUBMIT SHOP DRAWINGS AND ALL DATA REQUIRED IN ACCORDANCE WITH DETAILED REQUIREMENTS OF DIVISION 1, GENERAL REQUIREMENTS, FOR ALL WORK PROVIDED UNDER DIVISION 15.

3. RECORD DRAWINGS
PROVIDE RECORD DRAWINGS WHICH SHALL CLEARLY SHOW ALL DIFFERENCES BETWEEN THE CONTRACT WORK AS DRAWN AND INSTALLED. PIPING MAINS BELOW SLAB AND/OR GRADE AND ALL BRANCH LINES BELOW SLAB OR GRADE IN EXCESS OF 5 FT. IN LENGTH SHALL BE DIMENSIONED FROM COLUMNS OF ANY PERMANENT STRUCTURE. ALSO, SHOW ALL WORK ADDED TO THE CONTRACT WHICH IS NOT SHOWN ON THE CONTRACT DRAWINGS.

RECORD DRAWINGS SHALL BE IN ACCORDANCE WITH DIVISION REQUIREMENTS.

4. EQUIPMENT LIST AND MAINTENANCE MANUAL
MAINTENANCE MANUAL SHALL INCLUDE ALL AVAILABLE MANUFACTURERS' OPERATION AND MAINTENANCE INSTRUCTIONS TOGETHER WITH THE RECORD DRAWINGS HERE IN BEFORE SPECIFIED AND ALL OTHER DIAGRAMS AND INSTRUCTIONS NECESSARY TO PROPERLY OPERATE AND MAINTAIN THE EQUIPMENT. THE MANUAL SHALL ALSO INCLUDE THE NAME, ADDRESS, AND PHONE NUMBER OF THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS INVOLVED IN ANY OF THE WORK SPECIFIED HEREIN. THE EQUIPMENT LIST AND MAINTENANCE MANUAL SHALL BE SUBMITTED IN ACCORDANCE WITH DIVISION 1, GENERAL REQUIREMENTS.

5. CODES, PERMITS, FEES, INSPECTIONS, RULES & REGULATIONS
THE CONTRACTOR MUST, AT HIS OWN EXPENSE, OBTAIN ALL NECESSARY PERMITS, PAY ALL LEGAL FEES AND CHARGES INCLUDING WATER AND SEWER DEVELOPMENT FEES, AND COMPLY WITH ALL STATE AND MUNICIPAL BUILDING AND SAFETY LAWS, ORDINANCES AND REGULATIONS, RELATING TO BUILDING AND PUBLIC HEALTH AND SAFETY. ALL WORK SHALL BE IN CONFORMANCE WITH THE GOVERNING CITY CODES.

6. EXCAVATION AND BACKFILL
COMPLETE ALL SAW CUTTING, EXCAVATION AND BACKFILL AS NECESSARY FOR THE INSTALLATION OF UNDERGROUND PIPING. COMPACT AND TAMP BACKFILL TO ORIGINAL GRADE IN ACCORDANCE WITH REQUIREMENTS AS SPECIFIED IN SECTION ENTITLED 'EARTHWORK' AND REMOVE EXCESS DIRT AS DIRECTED. NO WORK SHALL BE COVERED UNTIL PROPERLY TESTED AND APPROVED. ALL PAVEMENT, SIDEWALK, PIPING, ELECTRICAL CONDUIT, ETC., CAUSED TO BE CUT OR DAMAGED BY THIS SECTION SHALL BE RESTORED TO ORIGINAL CONDITION BY WORKMEN QUALIFIED AND ACTIVE IN THE TRADES INVOLVED.

7. ELECTRIC WIRING
ALL POWER WIRING IS INCLUDED IN DIVISION 16, ELECTRICAL. THE RESPONSIBILITY FOR PROPER CONNECTIONS AND OPERATION IS INCLUDED UNDER THIS DIVISION.

8. WARRANTY
WARRANT THE SYSTEM, LABOR, MATERIALS AND EQUIPMENT FOR ONE (1) YEAR AFTER COMPLETION AND ACCEPTANCE. REPLACE OR REPAIR ALL DEFECTIVE WORKMANSHIP, EQUIPMENT, AND MATERIALS AT NO ADDITIONAL COST TO THE OWNER.

9. WORK SPECIFIED HEREIN
PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY TO FURNISH AND INSTALL COMPLETE PLUMBING AND PIPING SYSTEMS AS INDICATED OR SPECIFIED. INSTALL AND DELIVER ALL SYSTEMS COMPLETE, IN PERFECT WORKING ORDER, AND IN FULL ACCORDANCE WITH THE INTENT AND MEANING OF THE DRAWINGS AND SPECIFICATIONS. THE WORK, IN GENERAL, CONSISTS OF, BUT IS NOT NECESSARILY LIMITED TO, THE FOLLOWING:

COMPLETE SANITARY PLUMBING SYSTEMS FOR THE BUILDING WITH CONNECTIONS FROM EXISTING LINE IN THE BUILDING.

DOMESTIC WATER SYSTEM INCLUDING CONNECTION TO EXISTING STUB OUT, AND CONNECTIONS TO ALL PLUMBING FIXTURES AND EQUIPMENT.

ROUGH-IN AND FINAL CONNECTIONS OF WASTE AND WATER TO SPECIAL EQUIPMENT SPECIFIED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS OR SUPPLIED BY OWNER, INCLUDING KITCHEN EQUIPMENT, CONDENSATE DRAIN PIPING, P-TRAPS, WASTE TUBING STOPS, FLEXIBLE TUBE RISERS, ETC. AS REQUIRED.

VALVED OUTLETS AND CONNECTIONS TO ALL HEATING, AIR CONDITIONING, OR ELECTRICAL EQUIPMENT WITH LOCATION AS REQUIRED.

INSULATION INCLUDING DOMESTIC HOT WATER SUPPLY PIPING. PER IECC 2012 PROVIDE FOAM INSULATION OR INSULATE WITH 1' INSULATION HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER INCH/H x FT. SQUARED x °F.

PLUMBING SPECIALTIES, INCLUDING CLEAN-OUTS, DRAINS, FIXTURE SUPPORTS, INTERCEPTORS, ETC.

PLUMBING EQUIPMENT AS SPECIFIED AND SCHEDULED.

PLUMBING FIXTURES AS SPECIFIED.

ADEQUATE SUPERVISION OF ERECTION, BALANCING, ADJUSTMENTS AND INSTRUCTIONS FOR PROPER OPERATION AND MAINTENANCE.

PAYMENT FOR ALL PLUMBING PERMITS AND INSPECTION FEES.

STERILIZATION OF POTABLE WATER SYSTEM.

10. APPROVED MANUFACTURERS
SPECIFICATION HEREIN BY BRAND NAME IS INTENDED TO ESTABLISH A STANDARD OF QUALITY. FURTHER, THIS EQUIPMENT HAS BEEN CHECKED AS TO SIZE AND WEIGHT REQUIREMENTS AND SPACE ALLOCATION HAS BEEN MADE ACCORDINGLY.

SUBMITTAL OF EQUIPMENT BY OTHER ACCEPTABLE MANUFACTURERS MUST BE COMPLETE IN EVERY DETAIL, INCLUDING SPACE REQUIREMENTS, WEIGHT, COMPLETE PERFORMANCE DATA, AND SUPPLEMENTAL DATA REQUESTED BY THE ARCHITECT. CONTRACTOR SHALL BE RESPONSIBLE FOR ASSURANCE THAT THE EQUIPMENT MEETS ALL THE REQUIREMENTS DETAILED IN THIS AND OTHER SECTIONS, AND INDICATED ON THE DRAWINGS.

EACH SECTION INCLUDES A LIST OF MANUFACTURERS WHOSE EQUIPMENT IS ACCEPTABLE TO MANUFACTURE, SUBJECT TO CONFORMANCE WITH ALL DRAWINGS, SPECIFICATIONS AND ADDENDA ITEMS. CAREFUL CHECKING MUST BE MADE TO VERIFY THAT THE EQUIPMENT WILL MEET ALL CAPACITIES, REQUIREMENTS, SPACE ALLOCATIONS, AND THAT THE WEIGHTS ARE NOT EXCESSIVE.

11. MATERIALS
MANUFACTURERS INDICATE A STANDARD OF QUALITY, OTHER MANUFACTURES MUST BE APPROVED AS AN EQUAL.

SANITARY WASTE VENT AND STORM DRAINAGE: ABS CONFORMING TO ASTM D 2661.

DOMESTIC WATER: TYPE 'L' HARD DRAWN COPPER, CONFORMING TO ASTM B-88.

CLEAN OUTS: INTERIOR CONCRETE AND TILE FLOORS: 'WADE W-7000'. INTERIOR FINISHED WALLS: 'WADE W-8460-R'.

FLOOR DRAINS: TOILET ROOMS AND FINISHED AREAS: 'WADE 1100-G'.

FLOOR SINKS: EQUIPMENT ROOMS AND UNFINISHED AREAS: 'WADE W-2530'.

REDUCE PRESSURE BACKFLOW PREVENTER: WATTS #SS009, STAINLESS STEEL SHALL BE USED FOR ALL FOOD APPLICATIONS

BALL VALVES: NIBCO #S-585-70, 150# SOLDER JOINT FOR ALL LINES UP TO 2' IN DIAMETER.

CHECK VALVES: NIBCO #S-413-Y, 150# SOLDER JOINT FOR ALL VALVES UP TO 2' IN DIAMETER.

GLOBE VALVES: NIBCO #S-235-Y, 150# SOLDER JOINT FOR ALL VALVES UP TO 2' IN DIAMETER.

FIXTURES: USE POLISHED CHROME PLATED, ADJUSTABLE BRASS P-TRAPS AND WASTE ARMS WITH WALL ESCUTCHEONS AT ALL EXPOSED LOCATIONS. USE POLISHED CHROME PLATED FAUCETS WITH REMOVABLE TRIP, BRASS BODY AND BRASS HANDLES. FIXTURES AND SUPPLY FITTING SHALL BE AS SPECIFIED. PROVIDE DIAPHRAGM TYPE POLISHED CHROME PLATED FLUSH VALVES WITH INTEGRAL VACUUM BREAKERS AND SCREW DRIVER STOPS. PROVIDE FIXTURE STOPS AND VALVES AHEAD OF ALL EQUIPMENT OR FIXTURES. AFTER FIXTURES ARE SET IN PLACE AND SECURED TO WALLS, CAULK ALL AROUND BETWEEN FIXTURES AND WALL WITH EITHER 'DOW CORNING #780' OR G.E. CONSTRUCTION SEALANT' WHITE SILICONE CAULKING COMPOUND.

12. INSTALLATION
THE ENTIRE PLUMBING SYSTEM SHALL BE INSTALLED IN A NEAT, WORKMANLIKE, FINISHED, AND SAFE MANNER. CONCEAL ALL PIPING IN FINISHED AREAS UNLESS NOTED OTHERWISE. ALL PIPING SHALL BE ADEQUATELY SUPPORTED AND INSTALLED PARALLEL WITH THE BUILDING WALLS. THE ENTIRE INSTALLATION SHALL BE SUBJECT TO THE ARCHITECT'S APPROVAL.

13. TESTS
TEST WATER PIPING TO 100 PSI AND HOLD FOR 4 HOURS.
TEST SEWER AND VENT PIPING WITH A 10 FOOT HEAD OF WATER FOR 4 HOURS.
REPAIR ALL LEAKS UNTIL SYSTEMS ARE WATERTIGHT.

END OF SECTION

AIR CONDITIONING SPECIFICATIONS

1. GENERAL REQUIREMENTS AND SCOPE OF WORK:
THE WORK INCLUDED UNDER THIS SECTION CONSISTS OF FURNISHING ALL MATERIALS, EQUIPMENT AND LABOR, AND THE PERFORMING OF ALL FUNCTIONS, EXCEPT AS OTHERWISE SPECIFIED HEREIN OR SHOWN ON THE DRAWINGS TO BE PERFORMED BY OTHERS, FOR THE INSTALLATION OF COMPLETE AND WORKING AIR CONDITIONING, HEATING AND VENTILATING SYSTEMS WHICH COMPLIES WITH ALL CODES. CHECK FIELD CONDITIONS AND MAKE MEASUREMENTS BEFORE ORDERING MATERIALS.

MAINTENANCE MANUAL SHALL INCLUDE ALL AVAILABLE MANUFACTURERS' OPERATION AND MAINTENANCE INSTRUCTIONS TOGETHER WITH THE RECORD DRAWINGS TO PROPERLY OPERATE AND MAINTAIN THE EQUIPMENT. THE MANUAL SHALL ALSO INCLUDE THE NAME, ADDRESS, AND PHONE NUMBER OF THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS INVOLVED IN ANY OF THE WORK SPECIFIED HEREIN.

THE CONTRACTOR MUST, AT HIS OWN EXPENSE, OBTAIN ALL NECESSARY PERMITS, PAY ALL LEGAL FEES AND CHARGES AND COMPLY WITH ALL STATE AND MUNICIPAL BUILDING AND SAFETY LAWS, ORDINANCES AND REGULATIONS RELATING TO BUILDING AND PUBLIC HEALTH & SAFETY. ALL WORK AND MATERIALS SHALL BE IN CONFORMANCE WITH THE GOVERNING CODES.

PROVIDE MECHANICAL EQUIPMENT HAVING MOTORS WITH MOTOR PROTECTORS AND INTEGRAL STARTERS. WIRING AND PROPER OPERATION OF THE MECHANICAL EQUIPMENT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. ALL WIRING SHALL BE ROUTED IN CONDUIT OR IN PLENUM RATED WIRING.

THE SYSTEM SHALL HAVE A WARRANTY COVERING LABOR, MATERIALS AND EQUIPMENT FOR A PERIOD OF ONE YEAR AFTER COMPLETION AND ACCEPTANCE. REPLACE OR REPAIR ALL DEFECTIVE WORKMANSHIP, EQUIPMENT, AND MATERIALS AT NO ADDITIONAL COST TO THE OWNER.

THE MECHANICAL CONTRACTOR SHALL COORDINATE EXACT DIFFUSER AND GRILLE LOCATIONS WITH ELECTRICAL CONTRACTOR AND ALL OTHER TRADES AND ALSO COORDINATE SPACE AVAILABILITY FOR DUCTWORK ABOVE RECESSED LIGHTING TO AVOID RELOCATING DUCTWORK AT THE MECHANICAL CONTRACTORS EXPENSE. ALL AIR DISTRIBUTION DEVICES IN LAY-IN CEILING SHALL BE INDEPENDENTLY SUPPORTED TO THE STRUCTURE WITH A MINIMUM OF (2) SUPPORT RODS OR WIRES IN COMPLIANCE WITH SECTION 2.3.1.3 OF THE NFPA 90A & BUILDING CODE IF REQUIRED BY THE LOCAL CODE AUTHORITY.

SHOULD A CHANGE ORDER TO THE CONTRACT DOCUMENTS BE NECESSARY, THE CONTRACTOR SHALL SUBMIT A FORMAL CHANGE ORDER TO THE ARCHITECT/ENGINEER FOR REVIEW BEFORE ANY WORK COMMENCES. ANY WORK DONE WITHOUT PRIOR WRITTEN APPROVAL IS SUBJECT TO COMPLETION AT THE CONTRACTOR'S EXPENSE. CHANGE ORDERS SHALL INCLUDE A DETAILED MATERIAL, EQUIPMENT, AND LABOR TAKE-OFF IDENTIFYING ALL NEW AND CREDITED ITEMS. COSTS FOR SUCH ITEMS SHALL NOT EXCEED THE VALUES LISTED IN THE LATEST EDITION OF THE MEANS ESTIMATING GUIDE.

SPECIAL INSPECTIONS OR OBSERVATIONS SUCH AS DUCT SMOKE DETECTORS AND GREASE DUCT WRAP MAY REQUIRED THE PROFESSIONAL ENGINEER OF RECORD TO SEAL CERTIFICATE COMPLIANCE OR OBSERVE INSTALLATION ARE SUBJECT TO ADDITIONAL CHARGES MINIMUM OF $300.00 DEPENDING ON SIZE OF PROJECT.

PERFORM COMPLETE TESTING AND BALANCING OF ALL MECHANICAL SYSTEMS IN ACCORDANCE WITH AABC OR NEBB LATEST STANDARDS WITH REPORT. MECHANICAL CONTRACTOR TO PROVIDE BALANCE REPORT TO MECHANICAL INSPECTOR AT FINAL INSPECTION.

2. DUCTWORK:
INSTALL ALL DUCTWORK IN ACCORDANCE WITH SMACNA GUIDELINES AND LOCAL STANDARDS FOR A MINIMUM OF 1" STATIC PRESSURE. RADIUS ELBOWS SHALL HAVE A MINIMUM RADIUS OF 1.5 TIMES THE DUCT DIMENSION IN THE DIRECTION OF TURN, AND SQUARE ELBOWS SHALL HAVE SINGLE THICKNESS TURNING VANES. ALL JOINTS SHALL BE TAPED WITH GLASS CLOTH AND HARDCAST OR ADHESIVE (UL LISTED). ALL DUCT SIZES ARE TO THE INSIDE OF LINING, INCREASE OUTSIDE DIMENSIONS AS NECESSARY. COVERINGS, LININGS, ADHESIVES AND INSULATION SHALL HAVE A SPREAD INDEX OF NOT OVER 25 AND A SMOKE-DEVELOPED INDEX OF NOT OVER 50. ALL INSULATION SHALL COMPLY WITH THE INTERNATIONAL ENERGY CONSERVATION CODE.

ALL INSULATION ADHESIVES & INSTALLATION SHALL COMPLY WITH NFPA_E 84.

CONCEALED DUCTS INSIDE OF BUILDING: SHALL BE SHEET METAL WRAPPED WITH 1" THERMAL INSULATION (MINIMUM OF R-5), WITH VAPOR BARRIER COVER.

EXPOSED SQUARE DUCTS INSIDE BUILDING AND DUCTS WITHIN 10 FEET OF A MECHANICAL UNIT SHALL BE SHEET METAL LINED WITH 1" ACOUSTICAL INSULATION. EXPOSED ROUND DUCTS DO NOT REQUIRE INSULATION.

FLEX DUCT: FLEX DUCT SHALL BE CLASS 0 OR 1 AND TESTED PER UL 181.

DUCTS OUTSIDE BUILDING OR IN UNCONDITIONED CEILING OR ATTIC SHALL BE SHEET METAL LINED WITH 2" ACOUSTICAL INSULATION (MINIMUM OF R-8).

3. GRILLES AND REGISTERS
GRILLES AND REGISTERS SHALL BE OF THE TYPE AND FINISH AS INDICATED ON THE DRAWINGS, COMPLETE WITH OPPOSED BLADE DAMPERS EXTRACTORS AND STRAIGHTENING GRIDS AS REQUIRED.

4. EXHAUST FANS
DESCRIPTION: PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY TO FURNISH AND INSTALL EXHAUST FANS AND BLOWERS FOR A COMPLETE AND OPERATIONAL SYSTEM. ITEMS NOT LISTED BUT REQUIRED DUE TO LOCAL CODES OR OPERATIONAL REQUIREMENTS SHALL BE INCLUDED UNDER BASE BID.

PROVIDE ROOF CAPS, WALL CAPS, FLASHINGS, BASES, SPEED SWITCHES, APPROVED VIBRATION ISOLATORS, INTEGRAL INLET GRILLES, INTEGRAL STARTERS AND DUCT CONNECTIONS AS INDICATED OR SPECIFIED. PROVIDE INTERNAL DISCONNECTING MEANS AND OVERLOAD PROTECTION ON ALL UNITS 1/2 HP AND SMALLER AND/OR 120 VOLT, SINGLE PHASE. TWO SPEED MOTOR SHALL BE TWO WINDING TYPE. ALL BELT DRIVEN EXHAUST FANS SHALL HAVE ADJUSTABLE MOTOR PULLEYS FOR FAN SPEED CONTROL. RATE BELTS FOR 150% OF MOTOR RATED HP. ALL FANS, EXCEPT TOILET EXHAUST FANS 200 CFM AND BELOW, SHALL BE AMCA CERTIFIED AND APPROVED.

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JOB NO.: 15018 (G.C.)
SHEET: MP4
OF 7 SHEETS

GENERAL STRUCTURAL NOTES

A. GENERAL REQUIREMENTS

THE CONTRACT STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DESIGN AND PROVIDE ADEQUATE SHORING BRACING AND FORM-WORK ETC., AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED CONSTRUCTION SUCH THAT DESIGN LIVE LOAD PER SQUARE FOOT AS STATED HEREIN IS NOT EXCEEDED. VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS NOR WILL THE STRUCTURAL ENGINEER BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES OF CONSTRUCTION OR SAFETY PRECAUTIONS AND PROGRAMS INCIDENT THERETO.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH THE LOCAL BUILDING DEPARTMENT. ALL WORK OR CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE BUILDING CODES, REGULATIONS, AND SAFETY REQUIREMENTS.

WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA. OPTIONS ARE FOR CONTRACTOR'S CONVENIENCE. IF AN OPTION USED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES AND SHALL COORDINATE ALL DETAILS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS, CONDITIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL INFORM THE ARCHITECT OF ANY DISCREPANCIES OR OMISSIONS NOTED ON THE DRAWINGS. ANY SUCH DISCREPANCY, OMISSION, OR VARIATION NOT REPORTED BEFORE START OF CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS AND GENERAL STRUCTURAL NOTES, NOTES AND DETAILS ON DRAWING SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS.

TYPICAL DETAILS AND NOTES NOT NECESSARILY INDICATED ON A SPECIFIC LOCATION ON PLANS OR DETAILS SHALL APPLY NOTE-THE-LESS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT. DETAILS MAY SHOW ONLY ONE SIDE OF CONNECTION OR MAY OMIT INFORMATION FOR CLARITY.

ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL WITH APPROPRIATE TRADES DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.

ANY INSPECTIONS SPECIAL OR OTHERWISE THAT ARE REQUIRED BY THE BUILDING CODES, LOCAL BUILDING DEPARTMENTS, OR BY THESE PLANS SHALL, BE DONE BY AN INDEPENDENT INSPECTION COMPANY OR THE BUILDING DEPARTMENT, SITE VISITS BY THE ENGINEER DO NOT CONSTITUTE AN OFFICIAL INSPECTION, UNLESS SPECIFICALLY CONTRACTED FOR.

SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL ITEMS IN ADDITION TO ITEMS REQUIRED BY ARCHITECTURAL SPECIFICATIONS. THE CONTRACTOR SHALL REVIEW ALL SHOP DRAWING PRIOR TO SUBMITTAL. ITEMS NOT IN ACCORDANCE WITH CONTRACT DRAWINGS SHALL BE FLAGGED UPON HIS REVIEW. VERIFY ALL DIMENSIONS WITH ARCHITECT. ANY CHANGES, SUBSTITUTIONS, OR DEVIATIONS FROM ORIGINAL CONTRACT DRAWINGS SHALL BE CLOUDED. ANY OF THE AFOREMENTIONED WHICH ARE NOT CLOUDED OR FLAGGED BY SUBMITTING PARTIES, SHALL NOT BE CONSIDERED APPROVED AFTER ENGINEER'S REVIEW UNLESS NOTED ACCORDINGLY. ANY ENGINEERING PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW, SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE APPROPRIATE STATE. THE SHOP DRAWINGS DOES NOT REPLACE THE ORIGINAL CONTRACT DRAWINGS. ITEMS OMITTED OR SHOWN INCORRECTLY AND ARE NOT FLAGGED BY THE STRUCTURAL ENGINEER ARE NOT TO BE CONSIDERED CHANGES TO THE ORIGINAL DRAWINGS. THE ADEQUACY OF ENGINEERING DESIGNS AND LAYOUT PERFORMED BY THE OTHERS RESTS WITH THE DESIGNING OR SUBMITTING AUTHORITY. REVIEWING IS INTENDED ONLY AS AN AID TO THE CONTRACTOR IN OBTAINING CORRECT SHOP DRAWINGS. RESPONSIBILITY FOR CORRECTNESS SHALL REST WITH THE CONTRACTOR. ALLOW TEN (10) WORKING DAYS FOR THE ENGINEERS REVIEW. ONE COPY OF EACH SUBMITTAL WILL BE RETAINED FOR THE ENGINEERS RECORDS.

B. BASIS FOR DESIGN

BUILDING CODE: 2012 EDITION OF THE INTERNATIONAL BUILDING CODE

VERTICAL LOADS

ROOF LIVE LOADS:	20 psf (REDUCIBLE)
FLOOR LIVE LOAD:	
RESIDENTIAL	40 PSF
BALCONIES & DECKS	60 PSF

LATERAL LOADS:
WIND DESIGN
1. ULTIMATE DESIGN WIND SPEED = 115 MPH
2. RISK CATEGORY II
3. WIND EXPOSURE 'C'
4. DESIGN WIND PRESSURE FOR PARAPET WALLS = 34 psf MIN.

SEISMIC DESIGN: OCCUPANCY CATEGORY II
1. SEISMIC IMPORTANCE FACTOR I_E = 1.0
2. MAPPED SPECTRAL RESPONSE ACCELERATIONS S_S = 0.230 ; S_1 = 0.090
3. SITE CLASS 'D'
4. SPECTRAL RESPONSE COEFFICIENTS, S_{DS} = 0.246 ; S_{D1} = 0.144
5. SEISMIC DESIGN CATEGORY 'C'
6. BASIC SEISMIC-FORCE-RESISTING SYSTEM:
   X-DIR.: LIGHT FRAME WALLS WITH SHEAR PANELS-WOOD STRUCTURAL PANELS
   Y-DIR.: LIGHT FRAME WALLS WITH SHEAR PANELS-WOOD STRUCTURAL PANELS
7. DESIGN BASE SHEAR $V = C_s * W$
8. SEISMIC RESPONSE COEFFICIENT:
   X-DIRECTION C_s = 0.0378
   Y-DIRECTION C_s = 0.0378
9. RESPONSE MODIFICATION FACTOR:
   X-DIR.: R = 6.5
   Y-DIR.: R = 6.5
10. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE METHOD

C. FOUNDATION NOTES

A GEOTECHINCIAL INVESTIGATION WAS NOT PROVIDED FOR THIS PROJECT BY THE OWNER AND/OR CLIENT. THIS IS NOT THE DESIGNER'S DECISION NOR THE RESPONSIBILITY OF THIS FIRM. THE OWNER AND/OR CLIENT SHALL HOLD HARMLESS THIS FIRM FOR ANY DAMAGES TO THE STRUCTURE DUE TO THE SOIL CONDITIONS. IN THE EVENT OF LITIGATION, PROFESSIONAL ENGINEERING SERVICES, INC. SHALL BE ENTITLED TO ALL COSTS INCURRED, INCLUDING STAFF TIME, COURT COST, ATTORNEY FEES, AND ALL OTHER RELATED EXPENSES.

SOIL PARAMETERS USED IN DESIGN ARE PER LOCAL CITY BUILDING DEPARTMENT REQUIREMENTS AND SHOULD BE VARIED AND APPROVED BY THE CITY BUILDING OFFICIAL. ALLOWABLE DEAD PLUS LIVE LOAD SOIL PRESSURE OF 1500 PSF USED IN DESIGN OF FOOTINGS PER 2012 I.B.C MINIMUM REQUIREMENTS. A ONE-THIRD (⅓) INCREASE IS USED FOR DESIGN WITH SEISMIC OR WIND LOAD COMBINATIONS.

FOOTINGS SHALL EXTEND A MINIMUM OF 12 INCHES BELOW FINAL GRADE AND AT LEAST 12 INCHES BELOW LOWEST ADJACENT COMPACTED SUB GRADE OR NATURAL GRADE. FINAL GRADE IS DEFINED AS TOP OF SLAB FOR INTERIOR FOOTINGS AND TOP OF LANDSCAPE OR EXTERIOR PAVING OR SLABS WITHIN 5 FEET OF BUILDING FOR PERIMETER FOOTINGS.

ANY VARIATIONS IN SOIL CONDITIONS FOUND DURING CONSTRUCTION. SUCH AS EXPANSIVE CLAY OR ROCKS, SHALL BE NOTED IMMEDIATELY TO THE ENGINEER DURING WHICH ALL CONSTRUCTION SHALL BE HALTED UNTIL THE FOUNDATION IS REDESIGNED TO WITHSTAND NEW FOUND CONDITIONS.

EXCAVATION SHALL BE CLEAN AND FREE OF LOSE DEBRIS OR UNCOMPACTED MATERIAL AT TIME OF CONCRETE POUR.

CONCRETE SLABS ON GRADE SHALL BE SUPPORTED ON A 4 INCH LAYER OF SELECT FILL MATERIAL ACCORDING TO THE SPECIFICATIONS OF THE SOIL REPORT. THE FILL MATERIAL SHOULD BE MOISTENED, BUT NOT SATURATED JUST PRIOR TO PLACING CONCRETE.

MINIMUM REQUIRED REINFORCEMENT FOR CONTINUOS FOOTINGS IS (1) #4 BAR TOP AND BOTTOM. MINIMUM REQUIRED REINFORCEMENT FOR SPREAD FOOTING, UNLESS NOTED OTHERWISE, IS (1) #4 BAR AT 8 INCHES ON CENTER EACH DIRECTION. ALL ADDITIONAL REINFORCEMENT ARE PER FOUNDATION PLAN AND STRUCTURAL DETAILS.

OFFSET ALL PLUMBING OUT OF BEARING WALL FOOTINGS.

SURFACE WATER MUST BE DRAINED AWAY FROM ON-SITE STRUCTURES.

D. CONCRETE

MINIMUM TWENTY-EIGHT (28) DAYS STRENGTH SHALL BE AS FOLLOWS:

FOOTINGS:	3000 PSI
SLAB ON GRADE:	3000 PSI
SIDEWALKS:	3000 PSI
CURBS AND CUTTERS:	3000 PSI
NOT SPECIFIED ABOVE:	3000 PSI

CONCRETE STRENGTH OF 2500 PSI WAS USED IN DESIGN.

ALL CONCRETE SHALL BE REGULAR WEIGHT OF 145 POUNDS PER CUBIC FOOT USING HARD ROCK AGGREGATES. AGGREGATE USED IN CONCRETE SHALL CONFORM TO ASTM C67 FOR

3/4 INCH, ASTM C57. MAXIMUM SLUMP FOR ALL CONCRETE SHALL BE FOUR (4") INCHES. SLUMP FOR EXTERIOR SLABS SHALL BE SIX (6") INCHES. PORTLAND CEMENT SHALL CONFORM TO ASTM C-150. TYPE V CEMENT SHALL BE USED FOR CONCRETE IN CONTACT WITH EARTH, AND TYPE II ELSEWHERE. NO MORE THAN 90 MINUTES SHALL ELAPSE BETWEEN CONCRETE BATCHING AND CONCRETE PLACEMENT UNLESS APPROVED BY TESTING AGENCY.

CONCRETE PLACEMENT AND QUALITY SHALL BE PER RECOMMENDATIONS IN A.C.I. 164, A.C.I. 301 AND A.C.I. 318. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, EXCEPT THAT SLABS ON GRADE NEED BE VIBRATED ONLY AROUND AND UNDER FLOOR DUCTS, ETC. AND CAST CLOSURE POUR, WHERE SHOWN ON PLANS AROUND COLUMNS AFTER COLUMN DEAD LOAD IS APPLIED. REMOVE DEBRIS FROM FORMS BEFORE POURING.

CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCING STEEL (AS IN WALL AND COLUMNS) SO AS TO NOT CAUSE SEGREGATION OF AGGREGATES. UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED FIVE (5') FEET. CARE SHALL BE TAKEN IN PLACING SLABS ON GRADE TO NOT DISTURB FILL MATERIAL.

ALL ITEMS TO BE CAST IN CONCRETE SUCH AS REINFORCING, DOWELS, BOLTS, ANCHORS, PIPES, SLEEVES, ETC., SHALL BE SECURELY POSITIONED IN PLACE BEFORE PLACING THE CONCRETE, AND PRIOR TO FOUNDATION INSPECTION.

UNLESS APPROVED OTHERWISE, ALL CONCRETE SLABS, ON GRADE SHALL BE BOUNDED BY CONTROL JOINTS (KEYED OR SAW CUT) SUCH THAT THE ENCLOSED AREA DOES NOT EXCEED 600 SQUARE FEET.

CONCRETE SLABS ON GRADE SHALL BE BOUNDED BY CONTROL JOINTS AS SHOWN ON FOUNDATION PLAN. KEYED CONTROL JOINTS NEED ONLY OCCUR AT EXPOSED EDGES DURING POURING, ALL OTHER JOINTS MAY BE SAW CUT.

PIPES OTHER THAN ELECTRICAL CONDUITS SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE EXCEPT WHERE SPECIFICALLY APPROVED BY THE ENGINEER. MAXIMUM PIPE SIZE SHALL BE 1/3 OF THE SLAB THICKNESS AND LOCATED AT THE MID. MINIMUM SPACING SHALL BE 3 TIMES THE PIPE DIAMETER. PIPES SHALL NOT IMPAIR THE STRENGTH OF THE MEMBER.

FLY ASH MAY BE USED ONLY IF PERMITTED BY ARCHITECTURAL SPECIFICATIONS AND SHALL BE LIMITED TO 18 PERCENT OF CEMENTITIOUS MATERIALS AND SHALL HAVE A REPLACEMENT FACTOR OF 1.2 RELATIVE TO CEMENT REPLACED. NO FLY ASH ADDITIVES SHALL BE USED IN FLAT WORK OR ARCHITECTURALLY EXPOSED CONCRETE.

COLD/HOT WEATHER CONCRETING: PROTECT CONCRETE FROM DAMAGE OR REDUCED STRENGTH IN COMPLIANCE WITH A.C.I. 305 AND 306.

E. REINFORCING STEEL

REINFORCING BARS SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF A.S.T.M. A615 GRADE 60 (Fy = 60 KSI) DEFORMED BARS FOR ALL BARS NO.5 AND LARGER AND ALL BARS USED FOR CONCRETE WALLS, BEAMS, ELEVATED SLABS AND COLUMN REINFORCING. A.S.T.M. A615 GRADE 40 (Fy = 40 KSI) DEFORMED BARS FOR ALL NO.4 OR SMALLER USED IN CONCRETE FOUNDATIONS.

WELDED WIRE FABRIC PER A.S.T.M. A185, WIRE PER A.S.T.M. A82. DEFORMED WELDED WIRE FABRIC PER A.S.T.M. A497. LAPS IN WELDED WIRE FABRIC SHALL BE MADE SO THAT THE OVERLAP, MEASURED BETWEEN OUTERMOST CROSS WIRE OF EACH FABRIC SHEET, IS NOT LESS THAN THE SPACING OF CROSS WIRES PLUS 2 INCHES. ALL WELDED WIRE FABRIC SHALL BE CHAIRED TO ENSURE PROPER CLEARANCE.

ALL DIMENSIONS SHOWING THE LOCATIONS OF REINFORCING STEEL NOT NOTED AS "CLEAR" OR "CLR" ARE TO CENTER OF STEEL. MINIMUM COVER FOR NON-PRESTRESSED CONCRETE REINFORCING SHALL BE AS FOLLOWS:

	MINIMUM COVER	TOLERANCE (+/-)
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3"	3/8"
EXPOSED TO EARTH OR WEATHER		
NO.5 AND SMALLER BARS:	1/2"	1/8"
NO.6 AND LARGER BARS	2"	3/8"
NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND ROOF SLAB:	1"	1/8"
STRUCTURAL SLABS AND WALLS	3/4"	1/8"
BEAMS AND COLUMNS (PRIMARY) REINFORCEMENT, TIES, STIRRUPS AND SPIRALS:	1-1/2"	3/8"
SLABS ON GRADE:	1-1/2"	1/4"

LAP SPLICES OF REINFORCING STEEL, UNLESS NOTED OTHERWISE, IN CONCRETE BEAMS, SLABS AND FOOTINGS SHALL BE 30 BAR DIAMETERS FOR GRADE 40, AND 48 BAR DIAMETER FOR GRADE 60. LAP SPLICES OF REINFORCING IN MASONRY SHALL BE 40 BAR DIAMETER FOR GRADE 40 STEEL AND 48 BAR DIAMETER FOR GRADE 60 STEEL MINIMUM SPLICES FOR JOINT REINFORCING OF STANDARD WEIGHT NO. 9 GAGE WIRE SHALL BE 75 WIRE DIAMETERS (11 INCHES) MINIMUM.

STAGGER SPLICES A MINIMUM OF ONE LAP LENGTH, NO TACK WELDING OF REINFORCING BARS ALLOWED WITHOUT PRIOR REVIEW OF PROCEDURE WITH THE STRUCTURAL ENGINEER. LATEST A.C.I. CODE AND DETAILING MANUAL APPLY. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT ALL CORNERS AND INTERSECTIONS PER TYPICAL DETAILS. SPLICE BARS IN SPANDRELS, WALL BEAMS, GRADE BEAMS, ETC., (UNLESS NOTED OTHERWISE), AS FOLLOWS: TOP BARS AT CENTER LINE OF SPAN, BOTTOM BARS AT THE SUPPORT.

REINFORCING BAR SPACING GIVEN ARE MAXIMUM ON CENTERS. ALL BARS PER C.R.S.I. SPECIFICATIONS AND HANDBOOK. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE.

F. MASONRY

VERTICAL REINFORCING: (MINIMUM UNLESS NOTED OTHERWISE ON PLANS) ONE NO. 4 BAR VERTICAL FULL HEIGHT IN CENTER OF GROUTED CELLS AT ALL WALL INTERSECTIONS, CORNERS, WALL ENDS, JAMBS AND EACH SIDE OF CONTROL JOINTS AND AT INTERVALS NOT TO EXCEED 48 INCHES ON CENTER. TIE AT 8'-0" VERTICALLY, WITH SINGLE WIRE LOOP TIE OR EQUIVALENT. DOWEL ALL REINFORCING TO FOUNDATION WITH DOWELS TO MATCH AND LAP VERTICAL WALL OR COLUMN REINFORCING.

HORIZONTAL REINFORCING: (MINIMUM UNLESS NOTED OTHERWISE ON PLANS) ONE NO. 4 IN CENTER OF 8 INCH DEEP MINIMUM CONTINUOUS GROUTED BOND BEAM AT ELEVATED FLOOR AND ROOF LINES. PLACE NO. 4 BAR IN CENTER OF 8 INCH DEEP CONTINUOUS GROUTED BOND BEAM AT TOP OF PARAPET OR FREE STANDING WALL. PLACE THESE BARS CONTINUOUS THROUGH CONTROL JOINTS. PROVIDE BENT BARS PER TYPICAL DETAILS, TO MATCH HORIZONTAL BOND BEAM CONTINUITY. PROVIDE STANDARD WEIGHT (NO. 9 GAGE WIRE) DUR-O-WALL OR DUR-O-WALL LADDER TYPE JOINT REINFORCEMENT AT 16 INCHES ON CENTER IN MASONRY WALL.

BLOCK QUALITY: CONCRETE BLOCK SHALL BE HOLLOW LIGHTWEIGHT LOAD BEARING CONCRETE MASONRY UNITS CONFORMING TO A.S.T.M. C90-06 WITH A MINIMUM COMPRESSIVE STRENGTH OF 1900 P.S.I. USE BOND BEAM UNITS AT HORIZONTAL REINFORCING.

MORTAR: MORTAR MIX SHALL CONFORM TO STANDARD SPECIFICATION A.S.T.M. C-270-05a, TYPE M OR S MORTAR SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1800 P.S.I. AT 28 DAYS.

GROUT: GROUT SHALL CONFORM TO STANDARD SPECIFICATION OF A.S.T.M. C-476, AND SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF 2000 P.S.I. AT 28 DAYS. USE SUFFICIENT WATER FOR GROUT TO FLOW INTO ALL JOINTS OF THE MASONRY WITHOUT SEGREGATION (8 TO 10 INCH SLUMP). GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 2000 P.S.I. AT 28 DAYS. ALL CELLS IN CONCRETE BLOCKS CONTAINING REINFORCING SHALL BE FILLED SOLID WITH GROUT. ALL MASONRY BELOW FINISHED FLOOR OR GRADE SHALL BE GROUTED SOLID. PROVIDE CLEAN OUTS FOR ALL GROUT POURS OVER 5 FEET IN HEIGHT. STOP GROUT POURS 1 ½ INCHES BELOW THE TOP OF A COURSE TO PROVIDE A KEY AT POURED JOINTS. PROVIDE A MINIMUM OF ½ INCH OF GROUT AROUND ALL REINFORCING EXCEPT THAT HORIZONTAL REINFORCING MAY BE SUPPORTED BY THE CROSS WEBS OR THE CONCRETE BLOCK UNITS.

BLOCK CONSTRUCTION: ALL BLOCK SHALL BE PLACED IN RUNNING BOUND CONSTRUCTION (UNLESS OTHERWISE NOTED) WITH ALL VERTICAL CELLS IN ALIGNMENT.

MASONRY LINTELS: LINTELS NOT NOTED ON PLANS SHALL HAVE A MINIMUM OF 2-#5 HORIZONTAL BARS IN BOTTOM OF BOND BEAM OF LINTEL BLOCK AND SHALL BE GROUTED SOLID TO A MINIMUM DEPTH OF 16 INCHES. ALL LINTEL REINFORCING AND GROUT SHALL EXTEND 2 FEET PAST JAMBS UNLESS NOTED OTHERWISE ON PLANS/DETAILS.

G. STEEL

MATERIALS STANDARD STRUCTURAL STEEL SHAPES, ROLLED SECTIONS, BARS AND PLATES SHALL CONFORM TO ASTM A36 (FY= 36 KSI). STEEL PIPES PER ASTM A-53 GRADE B, AND STEEL TUBING PER ASTM A-500 GRADE B.

ALL BOLTS AND STUDS SHALL BE ASTM A307, UNLESS OTHERWISE NOTED. ALL EXPANSION BOLTS TO HAVE CURRENT I.C.B.O. RATING FOR MATERIAL INTO WHICH INSTALLATION TAKES PLACE. HEADED STUDS SHALL CONFORM TO ALL REQUIREMENTS OF THE LATEST EDITION OF THE "RECOMMENDED PRACTICES FOR STUD WELDING" AND THE "STRUCTURAL WELDING CODE" PUBLISHED BY A.W.S. ALL BOLTS, ANCHOR BOLTS, EXPANSION BOLTS, ETC. SHALL BE INSTALLED WITH STEEL WASHERS AT FACE OF WOOD OR AT SLOTTED HOLES IN STEEL SECTIONS.

ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH A.I.S.C. SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, LATEST EDITION.

WELDING SHALL BE BY WELDERS HOLDING VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELD SHOWN ON THE DRAWINGS OR NOTES. ALL WELDING SHALL USE E70 SERIES LOW HYDROGEN RODS UNLESS NOTED OTHERWISE.

ALL WELDING PER LATEST AMERICAN WELDING SOCIETY STANDARDS. ALL WELDS ON DRAWINGS ARE SHOWN AS SHOP WELDS. CONTRACTORS MAY SHOP WELD OR FIELD WELD AT HIS DISCRETION.

WELDING OF REINFORCING BARS SHALL BE MADE ONLY TO ASTM A615 GRADE 60 BARS AND ONLY USING E90 SERIES RODS. WELDING OF REINFORCING BARS SHALL BE MADE ONLY AT LOCATIONS SHOWN ON PLANS OR DETAILS.

DRY PACK SHALL BE 5,000 PSI FIVE STAR NON-SHRINK GROUT OR EQUIVALENT. INSTALL DRY PACK UNDER BEARING PLATES BEFORE FRAMING MEMBER IS INSTALLED. AT COLUMNS. INSTALL DRY PACK UNDER BASE PLATES AFTER COLUMN HAS BEEN PLUMBED BUT PRIOR TO FLOOR OR ROOF INSTALLATION.

H. LUMBER

GENERAL REQUIREMENTS:
ALL PLYWOOD, LIGHT FRAMING DIMENSIONAL LIMBER AND GLUELAMS SHALL BE STAMPED WITH THE APPROPRIATE IDENTIFYING MARK OF AN APPROVED INSPECTION AGENCY AND/OR LUMBER GRADING AGENCY.

LIGHT GAUGE METAL FRAMING CONNECTORS SIMPSON STRONG TIE COMPANY OR APPROVED EQUAL, INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AS NOTED ON THE DRAWINGS. (ALL CONNECTORS CALLED OUT ON THE PLANS ARE OF THE SIMPSON TYPE)

ALL NAILING NOT NOTED SHALL BE ACCORDING TO TABLE 2304.9.1 OF THE 2006 INTERNATIONAL BUILDING CODE.

BEARING WALL STUDS SHALL BE SPACED 16" O.C. MAXIMUM AND OF THE SIZE SHOWN ON PLANS.

NO STRUCTURAL MEMBERS SHALL BE CUT FOR PIPES, VENTS, DUCTS, AND OTHER SIMILAR OPENINGS EXCEPT AS DETAILED.

2X SOLID BLOCKING SHALL BE PLACED BETWEEN ALL JOISTS AND RAFTERS, UNLESS NOTED OTHERWISE, AT ALL POINTS OF SUPPORTS AND UNDER ALL PARTITIONS. 2X SOLID BLOCKING FULL DEPTH SHALL BE PLACED BETWEEN ALL JOISTS AND RAFTERS (SPANS GREATER THAN 8 FT.) AS FOLLOWS: ROOF RAFTERS 10 FT. INTERVALS, FLOOR JOISTS 8 FT. INTERVALS UNLESS DETAILED OTHERWISE. APPROVED NAILABLE TYPE METAL CROSS BRIDGING OF EQUAL STRENGTH MAY BE USED IN LIEU OF BLOCKING.

BOLTS FASTENING WOOD MEMBERS TOGETHER SHALL BE FITTED WITH STANDARD CUT WASHERS. HOLES FOR BOLTS SHALL BE BORED 1/32 LARGER THAN NOMINAL BOLT DIAMETER.

DOUBLE TOP PLATES ON ALL EXTERIOR AND BEARING PARTITIONS (NOT OTHERWISE DETAILED) SHALL LAP 4'-0" MIN. AT SPLICES AND HAVE 8-16d NAILS MINIMUM THROUGH LAP.

PROVIDE HORIZONTAL BLOCKING IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, AT THE CEILING AND FLOOR LEVELS, AND AT 8 FT. INTERVALS ALONG THE LENGTH OF THE WALL.

FOUNDATION SILLS SHALL BE PRESSURE TREATED OR EQUAL. ANCHOR STUD WALLS TO ADJACENT CONCRETE WALLS, MASONRY WALLS AND STEEL COLUMNS WITH 1/2 INCH DIAMETER BOLTS AT 24 INCH ON CENTER AND 6 INCHES FROM TOP AND BOTTOM.

I. STRUCTURAL LUMBER

ALL FRAMING LUMBER SHALL BE GRADE STAMPED BY AN AGENCY CERTIFIED BY THE BOARD OF REVIEW OF THE AMERICAN LUMBER STANDARD COMMITTEE AND MANUFACTURED IN ACCORDANCE WITH THE PRODUCT STANDARD 20-70, AS PUBLISHED BY THE DEPARTMENT OF COMMERCE AND SHALL MEET OR EXCEED THE FOLLOWING EXPECTATIONS:

1) 2X RAFTERS AND 4X BEAMS SHALL BE DOUGLAS FIR NO.2 OR BETTER:
Fb = 900 PSI, Fv = 180 PSI, Fc = 1350 PSI, E = 1,600,000 PSI, PERPENDICULAR TO GRAIN Fc = 625 PSI

2) 6X BEAMS SHALL BE DOUGLAS FIR NO.1 OR BETTER:
Fb = 1350 PSI, Fv = 170 PSI, Fc = 625 PSI, E = 1,600,000 PSI, PERPENDICULAR TO GRAIN Fc = 625 PSI

3) 4X POSTS SHALL BE DOUGLAS FIR NO.2 OR BETTER:
Fb = 900 PSI, Fc = 1350 PSI, E = 1,600,000 PSI, PERPENDICULAR TO GRAIN Fc = 625 PSI

4) 6X POSTS SHALL BE DOUGLAS FIR NO.1 OR BETTER:
Fb = 1200 PSI, Fc = 1000 PSI, E = 1,600,000 PSI, PERPENDICULAR TO GRAIN Fc = 625 PSI

5) 2X STUD WALL SHALL BE, UNLESS NOTED OTHERWISE, HEM-FIR STUD GRADE FOR 0 - 8 FT STUDS, AND HEM-FIR NO.2 FOR 8' 1" STUDS AND LARGER.

6) ROUND WOOD COLUMNS SHALL BE PONDEROSA PINE PER ASTM D 3200

J. SHEATHING

EACH PANEL SHALL BE IDENTIFIED WITH THE APPROPRIATE TRADE MARK OF THE AMERICAN PLYWOOD ASSOCIATION, AND SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF U.S. STANDARD PRODUCT PS1 OR ONE OF A.P.A.'S PERFORMANCE STANDARDS.

ALL PANELS WHICH HAVE ANY EDGE OR SURFACE PERMANENTLY EXPOSED TO THE WHETHER SHALL BE CLASSED EXTERIOR.

PANEL THICKNESS, GRADE, AND GROUP NUMBER OR SPAN RATING SHALL BE AT LEAST EQUAL TO THAT SHOWN ON THE DRAWINGS. APPLICATION SHALL BE IN ACCORDANCE WITH RECOMMENDATION OF THE AMERICAN PLYWOOD ASSOCIATION.

PLYWOOD ROOF AND FLOOR SHEATHING ORIENTATION SHALL BE WITH FACE GRAIN PERPENDICULAR TO SUPPORTS AND LONGITUDINAL SHEET EDGES STAGGERED. MINIMUM AREA OF APPLIED SHEATHING SHALL BE 2 SQUARE FEET WITH LEAST DIMENSION OF 12 INCHES. WALL SHEATHING SHALL BE PER SHEAR WALL SCHEDULE AS PROVIDED ON THE PLANS.

ALL HORIZONTAL AND VERTICAL DIAPHRAGM SHEATHING AND NAILING SHALL BE INSPECTED AND APPROVED BY THE CITY BUILDING DEPARTMENT PRIOR TO COVERING TO ENSURE CONFORMANCE TO ENGINEERING PLANS AND DESIGN SPECIFICATIONS.

K. GLUE LAMINATED BEAMS

ALL GLUE LAMINATED LUMBER SHALL BE DOUGLAS FIR-LARCH COMBINATION SYMBOL 24F-V4 FOR SIMPLE SPAN BEAMS AND 24F-V8 FOR CANTILEVER BEAMS. ALLOWABLE LOADS ARE AS FOLLOWS: Fb= 2400 PSI, Fv = 165 PSI, Fc = 650 PSI (PERPENDICULAR TO GRAIN), E = 1,800,000 PSI. FABRICATION SHALL BE IN ACCORDANCE WITH COMMERCIAL STANDARD ANSI / AITC A190.1-1983 FOR STRUCTURAL GLUE LAMINATED TIMBER. ALL STRUCTURAL GLUE LAMINATED TIMBER SHALL BE INSPECTED DURING LAMINATION BY AN APPROVED INSPECTION AGENCY.

AN A.T.I.C. CERTIFICATE OF COMPLIANCE FOR GLUE LAMINATED WOOD MEMBERS SHALL BE GIVEN TO THE BUILDING INSPECTOR PRIOR TO INSTALLATION.

CAMBER ALL BEAMS L/300, WHERE L = SPAN IN INCHES UNLESS NOTED OTHERWISE ON PLANS. ALL GLUE LAMINATED TIMBER SHALL BE WRAPPED FOR PROTECTION FOR SHIPPING AND STORAGE.

L. TRUSS JOISTS, PLYWOOD WEB I-BEAM JOISTS, AND PREFABRICATED WOOD TRUSSES

JOISTS, TRUSSES AND RELATED BRACING SHALL BE SIZED AND DETAILED TO FIT THE DIMENSIONS AND CARRY LOADS INDICATED ON THE PLANS. ALL DESIGNS SHALL BE IN ACCORDANCE WITH APPLICABLE PROVISIONS OF THE BUILDING CODE.

TRUSSES MANUFACTURER SHALL PROVIDE TRUSS CALCULATIONS SEALED BY A REGISTERED ENGINEER. EACH TRUSS SHALL BE LEGIBLY BRANDED. MARKED OR OTHERWISE HAVE OPERMANENTLY AFFIXED THERTO THE FOLLOWING INFORMATION LOCATED WITHIN 2 FEET OF THE CENTER OF THE SPAN ON THE FACE OF THE BOTTOM CHORD:
A) TRUSS MANUFACTURER NAME.
B) THE DESIGN LOAD.
C) THE SPACING OF THE TRUSSES.

TRUSSES SHALL BE BLOCKED AT ALL POINTS OF BEARING. DO NOT NOTCH TOP CHORD FOR LOOKOUTS UNLESS SPECIFICALLY DETAILED.

PROVIDE ENGINEERED TRUSSES BELOW HVAC UNITS TO CARRY THE APPLIED LOAD.

INSTALLATION SHALL BE PER MANUFACTURER'S RECOMMENDATIONS, UNLESS NOTED OTHERWISE.

M. LIGHT METAL STRUCTURE:

1. THE EXTENT OF THE STRUCTURAL LIGHT GAGE FRAMING IS SHOWN ON THE DRAWINGS AND INCLUDES ALL COLD FORMED FRAMING 22 GA. AND HEAVIER. IT INCLUDES BUT IS NOT LIMITED TO INSTALLATION OF ROOF JOISTS, FLOOR JOISTS, WALL STUDS, AND RUNNER TRACKS COMPLETE WITH CLIPS, BRIDGING, STIFFENERS, ETC. REQUIRED FOR A COMPLETE FRAMING PACKAGE.

2. MATERIALS: ALL MEMBERS SHALL BE COLD FORMED FROM STRUCTURAL QUALITY SHEET STEEL MEETING THE REQUIREMENTS OF ASTM A446 GRADE A, MINIMUM YIELD OF 33 KSI FOR 20 GA. AND LIGHTER AND MEETING THE REQUIREMENTS ASTM A653M GRADE D, MINIMUM YIELD OF 57 KSI FOR 18 GA. AND MEETING THE REQUIREMENTS ASTM A653 SS GRADE 50 CLASS, ASTM A570 GRADE 50 OR ASTM A607-92 GRADE EE, MINIMUM YIELD OF 55 KSI FOR 16 GA. AND HEAVIER. ALL MEMBERS SHALL BE MARKED SO THAT SUPPLIED MATERIALS CAN BE FIELD VERIFIED.

3. INSTALLATION:

A. WALL STUDS: INSTALL STUDS IN CONTINUOUS TRACKS, SIZED TO MATCH STUDS TOP AND BOTTOM, AND SECURE THE STUDS TO THE TRACKS WITH APPROVED CONNECTIONS, INSTALL BRIDGING AS INDICATED ON THE DRAWINGS.

B. DO NO SPLICE ANY FRAMING MEMBER EXCEPT AS SHOWN ON THE DRAWINGS OR WITH THE APPROVAL OF THE ARCHITECT/ENGINEER.

C. ALL FRAMING COMPONENTS SHOULD BE CUT SQUARELY FOR ATTACHMENT TO PERPENDICULAR MEMBERS OR AS REQUIRED FOR ANY ANGULAR FIT AGAINST AN ABUTTING MEMBER.

D. TOP AND BOTTOM TRACKS TO BEAR DIRECTLY ON STUDS/POSTS, WHERE IT OCCURS.

E. USE LIGHT-GAUGE SHIMS IN BOTTOM TRACK TO ACCOUNT FOR SLAB IRREGULARITIES.

F. STUDS/POSTS MUST BE FASTENED ON BOTH SIDES OF TOP AND BOTTOM TRACTS, WHERE IT OCCURS.

4. CONNECTIONS:

A. WELDS: WELDING SHALL BE IN CONFORMANCE WITH AWS D1.1 AND D1.3. USING E60XX OR E70XX ELECTRODES. THE ENGINEER OF RECORD MAY REQUEST A NONDESTRUCTIVE TEST TO VERIFY PROPER WELDS.

B. STEEL SCREWS:

1. SELF DRILLING AND SELF TAPPING, OF THE SIZE REQUIRED FOR LOADINGS, PROVIDE EXTERIOR COATING FOR SCREWS EXPOSED TO THE EXTERIOR.

2. USE #12 TEKS UNLESS OTHERWISE NOTED FROM: PRIMESOURCE BUILDING PRODUCTS, HILTI SELF DRILLING SCREWS, OR EQUALLY APPROVED.

3. SCREW PLACEMENT: MINIMUM EDGE DISTANCE, END DISTANCE, AND SPACING SHALL BE THREE TIMES THE SCREW DIAMETER. SCREWS SHALL BE SUFFICIENT LENGTH TO ENSURE PENETRATION INTO STUD BY AT LEAST TWO FULL DIAMETER THREADS.

LIGHT METAL STRUCTURE:

1. THE EXTENT OF THE STRUCTURAL LIGHT GAGE FRAMING IS SHOWN ON THE DRAWINGS AND INCLUDES ALL COLD FORMED FRAMING 22 GA. AND HEAVIER. IT INCLUDES BUT IS NOT LIMITED TO INSTALLATION OF ROOF JOISTS, FLOOR JOISTS, WALL STUDS, AND RUNNER TRACKS COMPLETE WITH CLIPS, BRIDGING, STIFFENERS, ETC. REQUIED FOR A COMPLETE FRAMING PACKAGE.

2. MATERIALS: ALL MEMBERS SHALL BE COLD FORMED FROM STRUCTURAL QUALITY SHEET STEEL MEETING THE REQUIREMENTS OF ASTM A446 GRADE A, MINIMUM YIELD OF 33 KSI FOR 20 GA. AND LIGHTER AND MEETING THE REQUIREMENTS ASTM A653M GRADE D, MINIMUM YIELD OF 57 KSI FOR 18 GA. AND MEETING THE REQUIREMENTS ASTM A653 SS GRADE 50 CLASS, ASTM A570 GRADE 50 OR ASTM A607-92 GRADE EE, MINIMUM YIELD OF 55 KSI FOR 16 GA. AND HEAVIER. ALL MEMBERS SHALL BE MARKED SO THAT SUPPLIED MATERIALS CAN BE FIELD VERIFIED.

3. INSTALLATION:

A. WALL STUDS: INSTALL STUDS IN CONTINUOUS TRACKS, SIZED TO MATCH STUDS TOP AND BOTTOM, AND SECURE THE STUDS TO THE TRACKS WITH APPROVED CONNECTIONS, INSTALL BRIDGING AS INDICATED ON THE DRAWINGS.

B. DO NO SPLICE ANY FRAMING MEMBER EXCEPT AS SHOWN ON THE DRAWINGS OR WITH THE APPROVAL OF THE ARCHITECT/ENGINEER.

C. ALL FRAMING COMPONENTS SHOULD BE CUT SQUARELY FOR ATTACHMENT TO PERPENDICULAR MEMBERS OR AS REQUIRED FOR ANY ANGULAR FIT AGAINST AN ABUTTING MEMBER.

D. TOP AND BOTTOM TRACKS TO BEAR DIRECTLY ON STUDS/POSTS, WHERE IT OCCURS.

E. USE LIGHT-GAUGE SHIMS IN BOTTOM TRACK TO ACCOUNT FOR SLAB IRREGULARITIES.

F. STUDS/POSTS MUST BE FASTENED ON BOTH SIDES OF TOP AND BOTTOM TRACTS, WHERE IT OCCURS.

4. CONNECTIONS:

A. WELDS: WELDING SHALL BE IN CONFORMANCE WITH AWS D1.1 AND D1.3. USING E60XX OR E70XX ELECTRODES. THE ENGINEER OF RECORD MAY REQUEST A NONDESTRUCTIVE TEST TO VERIFY PROPER WELDS.

B. STEEL SCREWS:

1. SELF DRILLING AND SELF TAPPING, OF THE SIZE REQUIRED FOR LOADINGS, PROVIDE EXTERIOR COATING FOR SCREWS EXPOSED TO THE EXTERIOR.

2. USE #12 TEKS UNLESS OTHERWISE NOTED FROM: PRIMESOURCE BUILDING PRODUCTS, HILTI SELF DRILLING SCREWS, OR EQUALLY APPROVED.

3. SCREW PLACEMENT: MINIMUM EDGE DISTANCE, END DISTANCE, AND SPACING SHALL BE THREE TIMES THE SCREW DIAMETER. SCREWS SHALL BE SUFFICIENT LENGTH TO ENSURE PENETRATION INTO STUD BY AT LEAST TWO FULL DIAMETER THREADS.

#10	# 3 POINT	0.036" - 0.175"
#12	# 3 POINT	0.036" - 0.210"
#12-24	# 4.5 POINT	0.125" - 0.375"
#12-24	#5 POINT	0.250" - 0.500"

C. POWDER DRIVEN SHOTS: SIZE AND SPACING AS REQUIRED TO PROPERLY ANCHOR THE FRAMING MEMBERS, USE CHARGE AS APPROPRIATE FOR ACTURAL USE FOR HILTI, INC.

D. BOLTS: THE STANDARD DIAMETER OF HOLES FOR BOLTS LESS THAN ½"φ OR GREATER SHALL BE LIMITED TO THE BOLT DIAMTER PLUS 1/16-INCH. (PER 2004 AISI-NORTH AMERICAN SPECIFICATIONS SECTION E3A) BOLTS SHALL BE INSTALLED USING "TURN OF THE NUT" METHOD.

N. STEEL ROOF DECK:

1. STEEL DECK SHALL BE McELROY "MULTI-RIB", FORM OF 26 GAGE SHEETS CONFORMING TO ASTI A-446, WITH A PROTECTIVE COATING OF ZINC CONFORMING TO ASTM A-525\
2. THE DECK SHALL BE CAPABLE OF RESISTING A UNIFORMLY DISTRIBUTED ROOF LOAD.
3. THE DECK SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH THE "SPECIFICATIONS FOR DESIGN OF LIGHT GAGE COLD FORMED STEEL STRUCTURAL MEMBERS", AND CONFORM TO THE STEEL DECK INSTITUTE'S RECOMMENDED SPECIFICATIONS.
4. DECK UNITS SHALL BE ERECTED AND ANCHORED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND ERECTION DRAWINGS.

SPECIAL INSPECTION

PER SECTIONS 1704 & 1705 OF THE 2012 INTERNATIONAL BUILDING CODE:

1.	STEEL CONSTRUCTION	1705.2
2.	WELDING	1705.2.2.1
3.	CONCRETE CONSTRUCTION	1705.3
4.	MASONRY CONSTRUCTION	1705.4
5.	SOILS - EXCAVATION & FILLING	1705.6
6.	SOIL COMPACTION - 95% ASTM D6998	

M. STRUCTURAL ABBREVIATIONS

A/C	AIR CONDITIONING
A.B.	ANCHOR BOLT
A.C.I.	AMERICAN CONCRETE INSTITUTE
ADJ.	ADJACENT
A.F.F.	ABOVE FINISHED FLOOR
AL.	ALUMINUM
ALT.	ALTERNATE
A.P.A.	AMERICAN PLYWOOD INSTITUTE
A.S.T.M.	AMERICAN SOCIETY FOR TESTING MATERIALS
BEL.	BELOW
BET.	BETWEEN
BLK.	BLOCK
BLKG.	BLOCKING
BM.	BEAM
B.N.	BOUNDARY NAILING
B.O.F.	BOTTOM OF FOOTING
BOT.	BOTTOM
C.	CHANNEL
C.I.P.	CAST IN PLACE
C.J.	CONTROL JOINT\CEILING JOIST
CLG.	CEILING
CLR.	CLEAR
C.M.U.	CONCRETE MASONRY UNIT
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
CSK.	COUNTER SINK
CTRD.	CENTERED
DBL.	DOUBLE
DEG.	DEGREE
DEM.	DEMOLISH, DEMOLITION
DEP.	DEPRESSED
DIA.	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
DO.	DITTO
D.T.	DRAG TRUSS
DWG.	DRAWING
DWL.	DOWEL
(E)	EXISTING
EA.	EACH
E.F.	EACH FACE
E.J.	EXPANSION JOINT
ELEC.	ELECTRICAL
ELEV.	ELEVATION
E.N.	EDGE NAILING
EQ.	EQUAL
EQPT.	EQUIPMENT
E.S.	EACH SIDE
E.W.	EACH WAY
EXIST.	EXISTING
EXP.	EXPANSION
EXT.	EXTERIOR
F.F.	FINISHED FLOOR
F.G.	FINISHED GRADE
FIN.	FINISH FINISHED
F.J.	FLOOR JOIST
FLR.	FLOOR, FLOORING
F.N.	FIELD NAIL
FND.	FOUNDATION
F.O.	FACE OF
F.O.C.	FACE OF CONCRETE
F.O.M.	FACE OF MASONRY
F.O.S.	FACE OF STEEL
F.S.	FAR SIDE
FT.	FEET
FTG.	FOOTING
FUT.	FUTURE
GA.	GAUGE
GAL.	GALVANIZED
GD.	GRADE, GRADING
GLB.	GLUED ;LAMINATED
G.T.	GIRDER TRUSS
GUSS.	GUSSET
HD.	HOLDOWN
HDR.	HEADER
HGR.	HANGER
H., HOR.	HORIZONTAL
H.P.	HOT POINT
HT.	HEIGHT
HVAC.	HEATING/VENTILATION AIR CONDITIONING
I.D.	INSIDER DIAMETER
IN.	INCH
INCL.	INCLUDE
INFO.	INFORMATION
INS.	INSULATED
INT.	INTERIOR
JST.	JOIST
JT.	JOINT
L.	LENGTH, ANGLE
LAM.	LAMINATED
LB.	POUND
LG.	LONG

L.L.	LIVE LOAD
L.L.H.	LONG LEG HORIZONTAL
L.L.V.	LONG LEG VERTICAL
L.P.	LOW POINT
LVR.	LOUVER
MAS.	MASONRY
MAX.	MAXIMUM
M.B.	MACHINE BOLT
MECH.	MECHANICAL
MED.	MEDIUM
MEZZ.	MEZZANINE
MFR.	MANUFACTURE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
MT.	MOUNT
MTL.	METAL
N.	NORTH
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
NOM.	NOMINAL
N.S.	NEAR SIDE
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.H.	OVER HEAD
OPNG.	OPENING
PAR.	PARALLEL
P.C.C.	PRECAST CONCRETE
P.C.F.	POUNDS PER CUBIC FOOT
PENT.	PENETRATION
PL.	PLATE, PROPERTY LINE
PLY.	PLYWOOD
PNL.	PANEL
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
P.T.	PRESURE TREATED
R., RAD.	RADIUS
REF.	REFERENCE
REINF.	REINFORCEMENT
REQ.	REQUIRED
RET.	RETURN
REV.	REVISION, REVISED
RF.	ROOF
RFT.	RAFTERS
RM.	ROOM
R.O.	ROUGH OPENING
R.S.	ROUGH SAWN
R.T.	ROOF TRUSS
S.	SOUTH
SCHED.	SCHEDULE
SEC.	SECTION
SEP.	SEPERATION
SHT.	SHEET
SIM.	SIMILAR
S.M.S.	SHEET METAL SCREW
SQ.	SQUARE
S.S.	STAINLESS STEEL
STD.	STANDARD
STIF.	STIFFENER
STL.	STEEL
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED
SYM.	SYMMETRICAL
T.&B.	TOP AND BOTTOM
T.&G.	TONGUE & GROOVE
T.C.	TOP OF CURB
THK.	THICKNESS
T.N.	TOE NAIL
T.O.B.	TOP OF BEAM
T.O.C.	TOP OF CONCRETE
T.O.F.	TOP OF FOOTING
T.O.P.	TOP OF PARAPET
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
T.S.	TUBE STEEL MANUFACTURE
TYP.	TYPICAL
U.B.C.	UNIFORM BUILDING CODE
U.N.O.	UNLESS NOTED OTHERWISE
U.O.N.	UNLESS OTHERWISE NOTED
V.B.	VAPOR BARRIER
VERT.	VERTICAL
W/	WITH
W.	WEST
WD.	WOOD
WO.	WITHOUT
W.P.	WATER PROOF
W.PT.	WORKING POINT
W.T.	WEIGHT
W.W.F.	WELDED WIRE FABRIC
W.W.M.	WELDED WIRE MESH

REVISIONS	BY
1 REDLINES 8-16-16	NGM
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CLIENT: GERALD E. CLARK, ARCHITECT
PROJECT: PUBLIC RESTROOM FACILITY MODEL NO.4
ADDRESS: MESQUITE PARK LAKE HAVASU CITY, ARIZONA

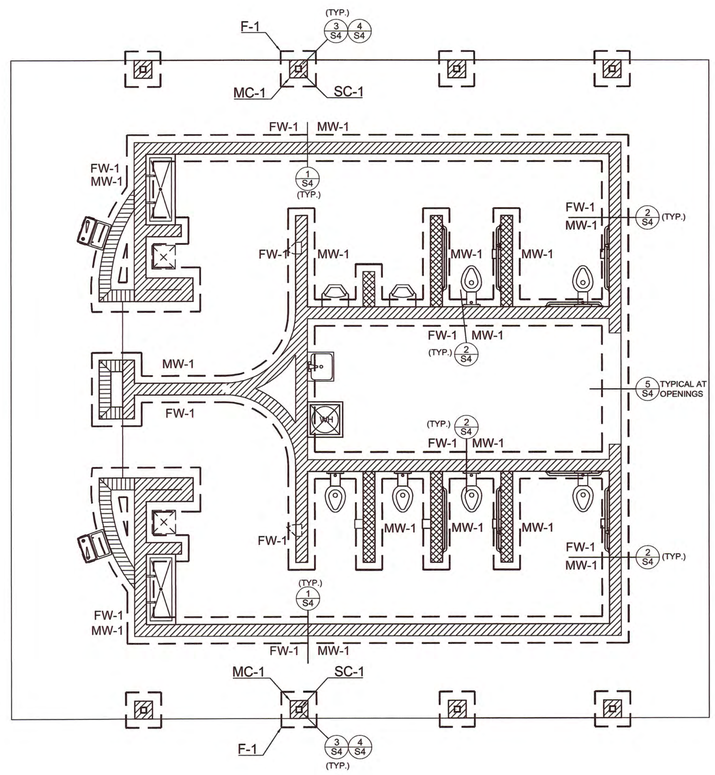
PROFESSIONAL ENGINEERING SERVICES, INC.
2167 BIRCH SQUARE STE. A, LAKE HAVASU CITY, AZ 86403
WWW.AZPES.COM TEL: (928) 453-9955, FAX: (928) 453-9933

Registered Professional Engineer (Civil)
CERTIFICATE NO. 35906
N. GEORGE MITWASI
Date Signed 8/16/2016
ARIZONA, U.S.A.

EXPIRES: 3-31-2019

PREPARED BY: NGM
CHECKED BY: NGM
DATE: 7/21/2016
SCALE: AS SHOWN
JOB NUMBER: PES150832

SHEET
S1



RESTROOM PLAN NO.4

FOUNDATION PLAN

SCALE: 1/4":12"

= MASONRY WALL, MW-1

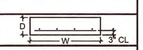
= INTERIOR MASONRY WALL PARTIAL HEIGHT PER ARCHITECTURAL PLANS, MW-1

NOTE:
SEE ARCHITECTURAL PLANS FOR SLUMP BLOCK LOCATION.

FOUNDATION NOTES:

1. CONCRETE SLAB SHALL BE 4" THICK SLAB ON GRADE OVER 4" A.B.C. WITH TERMITE CONTROL.
2. FOOTING TO HAVE A MIN. DEPTH OF 12" INTO UNDISTURBED SOIL.
3. CONTROL JOINTS REQUIRED EVERY 30 FT. O.C. EACH WAY AND OFFSETS GREATER THAN 10 FT.
4. ALL ITEMS TO BE CAST IN CONCRETE SUCH AS REINFORCING, DOWELS, BOLTS ANCHORS, PIPES, SLEEVES, ETC., SHALL BE SECURELY POSITIONED IN PLACE BEFORE PLACING THE CONCRETE, AND PRIOR TO FOUNDATION INSPECTION.
5. CONCRETE SLABS & FOOTINGS SHALL BE MIN. 3000 PSI AT 28 DAYS. 2500 P.S.I. @ 28 DAYS WAS USED FOR DESIGN.
6. CONCRETE SIDE WALKS TO HAVE A HEAVY BROOM FINISH AND SCORE LINES A' 4'-0" O.C. AND EXPANSION JOINTS AT 10'-0" O.C.
7. ALL WORK TO MEET OR EXCEED CURRENT 2012 IBC, AND ALL LOCAL CODES.
8. SLOPE OF LANDINGS @ DOORWAYS SHALL BE A MAXIMUM OF 1/4 PER 12.
9. SEAL ALL VOIDS AROUND PIPING WHICH PENETRATES CONCRETE FLOORS.
10. FINISHED FLOOR SHALL BE A MINIMUM 6" ABOVE FINISHED GRADE.
11. OFFSET ALL PLUMBING OUT OF BEARING WALL FOOTINGS.
12. SURFACE WATER MUST BE DRAINED AWAY FROM ON-SITE STRUCTURES.
13. THESE DRAWINGS ARE STRICTLY DIAGRAMMATIC, CONFIRMATION OF DIMENSIONS & ENGINEERING ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND/OR SUB-CONTRACTOR.

SPREAD FOOTING SCHEDULE



MARK	FOOTING SIZE			REINFORCEMENT
	WIDTH	LENGTH	DEPTH	
F-1	2'-0"	2'-0"	1'-0"	(3)-#4 RE-BARS EACH DIRECTION AT BOTTOM

WALL FOOTING SCHEDULE

MARK	FOOTING SIZE	REINFORCEMENT
FW-1	18" WIDE X 12" DEEP CONT.	LONGIT.: (2)-#4 RE-BARS CONT. AT BOTTOM TRANSVERSE: #4 RE-BAR AT 12" O.C.

MASONRY WALL SCHEDULE

MARK	WALL SIZE	REINFORCEMENT
MW-1	8" CMU	VERT. REINF.: #4 RE-BAR @ 24" O.C. CENTER IN WALL HORIZ. REINF: #4 RE-BAR @ 24" O.C. IN 8" BOND BEAM

STEEL COLUMN SCHEDULE (SC)

MARK	SIZE	BASE PLATE
SC-1	HSS4"X4"X$\frac{1}{4}$", Fy = 46 KSI	3/8"X10"X10" STL. PL. W/ (4)-$\frac{1}{2}$"ØX10" A.B.

MASONRY COLUMN SCHEDULE

MARK	WALL SIZE	REINFORCEMENT
MC-1	12"x12" CMU	VERT. REINF.: (4)-#4 RE-BARS AT CORNERS HORIZ. REINF: #3 STIRRUPS @ 8" O.C.

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2167 BIRCH SQUARE STE. A, LAKE HAVASU CITY, AZ 86403
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Registered Professional Engineer (Civil) CERTIFICATE NO. 35906 N. GEORGE MITWASI Date Expired 8/16/2016 ARIZONA, U.S.A.

EXPIRES: 3-31-2019

PREPARED BY: NGM

CHECKED BY: NGM

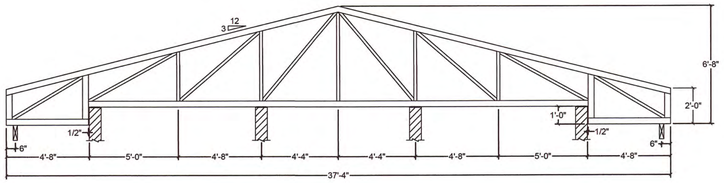
DATE: 7/21/2016

SCALE: AS SHOWN

JOB NUMBER: PES150832

SHEET

S2



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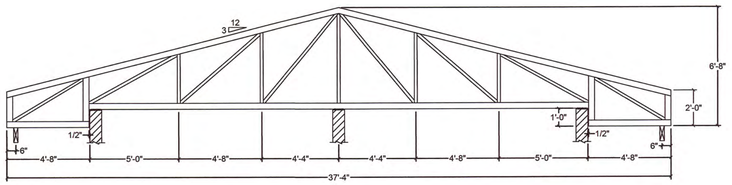

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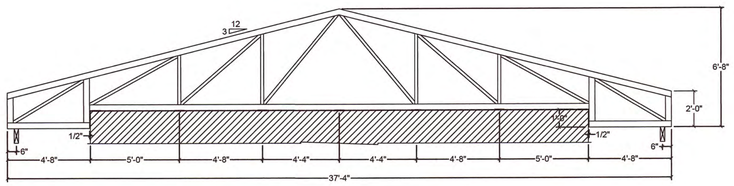

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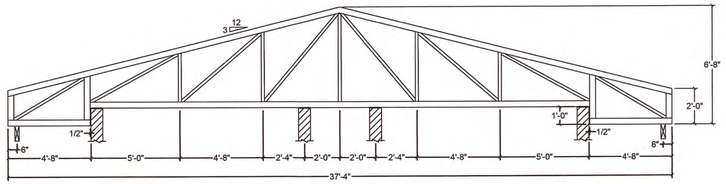

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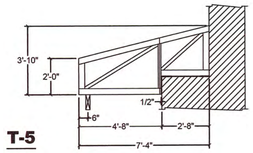
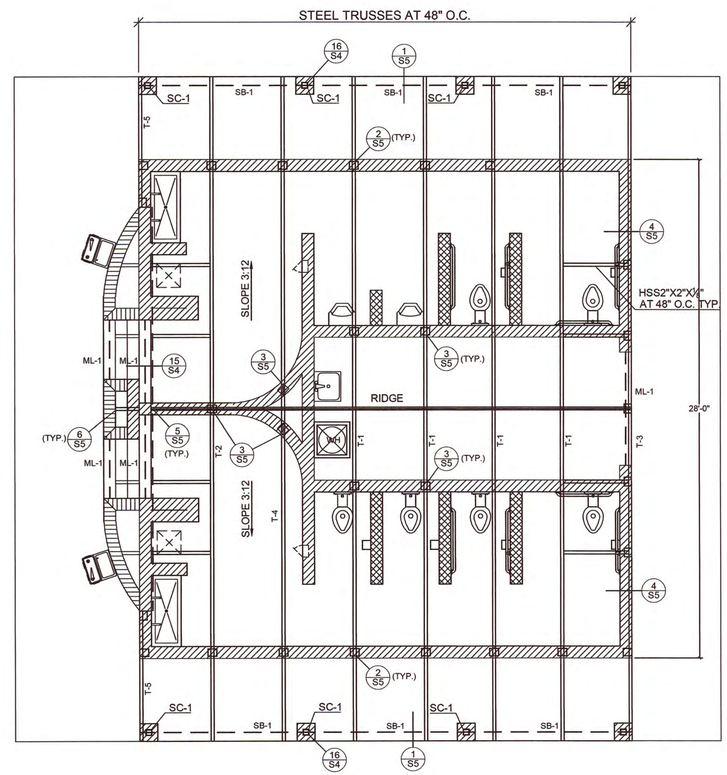


T-5

STEEL TRUSS FRAMING MEMBERS:

TOP CHORD:	HSS4X2X3/16", Fy=46 KSI
BOTTOM CHORD:	HSS4X2X3/16", Fy=46 KSI
VERTICAL ENDS:	HSS4X2X3/16", Fy=46 KSI
WEBS:	HSS2X2X3/16", Fy=46 KSI
WELDS:	3/16" FILLET WELDS ALL SIDES TYP.

TRUSS PROFILE



PLAN NO.4

FRAMING PLAN

SCALE: 1/4":12"

ROOF SHEATHING:

SHEATHING:	1-1/8" TONGUE & GROOVE APA RATED SHEATHING 48/24
NAIL SPEC.:	SIMP. TB1460S STRONG-DRIVE TB WOOD-TO-STEEL SCREWS OR APPROVED EQUIVALENT
NAIL SPACING:	6" O.C. AT BUILDING BOUNDARY AND SHEAR WALLS 6" O.C. AT PANEL SUPPORTED EDGES 12" O.C. AT FIELD.

METAL DECK ROOFING:
STEEL DECK SHALL BE McELROY "MULTI-RIB", FORM OF 26 GAGE SHEETS CONFORMING TO ASTM A792, WITH A PROTECTIVE COATING OF ZINC CONFORMIN TO ASTM A-525. CONSULT WITH ARCHITECT FOR COLOR BEFORE CONSTRUCTION

MASONRY WALL SCHEDULE

MARK	WALL SIZE	REINFORCEMENT
MW-1	8" CMU	VERT. REINF.: #4 BAR @ 24" O.C. CENTER IN WALL SOLID GROUTED WALL. HORIZ. REINF: #4 BAR @ 24" O.C.

MASONRY LINTEL SCHEDULE

MARK	DEPTH	REINFORCEMENT
ML-1	16"	(2)-#4 REINF. BARS AT BOTTOM. (1)-#4 @ 24" O.C. VERTICAL R.EINF.

MASONRY COLUMN SCHEDULE

MARK	WALL SIZE	REINFORCEMENT
MC-1	12"x12" CMU	VERT. REINF.: (4)-#4 RE-BARS AT CORNERS HORIZ. REINF: #3 STIRRUPS @ 8" O.C.

STEEL COLUMN SCHEDULE (SC)

MARK	SIZE	BASE PLATE
SC-1	HSS4X4X 3/16" SQ., FY = 46 PSI	3/8"X10"X10" STL. PL. W/ (4) 1/2"X 10" A.B.

STEEL BEAM SCHEDULE (SB)

MARK	SIZE	BASE PLATE
SB-1	HSS10X5X 3/16" RECTANCULAR TUBE	FY = 46 KSI

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Registered Professional Engineer (Civil)
CERTIFICATE NO. 35906
N. GEORGE MITWASI
Date Signed 8/16/2016
ARIZONA, U.S.A.

EXPIRES: 3-31-2019

PREPARED BY: NGM

CHECKED BY: NGM

DATE: 7/21/2016

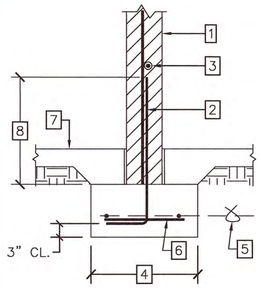
SCALE: AS SHOWN

JOB NUMBER: PES150832

SHEET

S3

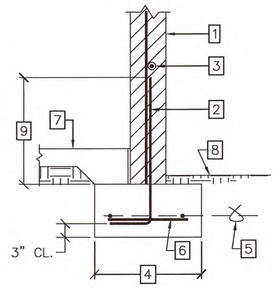
3 OF 5



1) MASONRY WALL PER PLAN.
2) DOWELS TO MATCH VERTICAL WALL REINF. PER PLAN.
3) HORIZ. REINF. BAR PER PLANS.
4) CONT. CONC. FTG. PER PLAN.
5) LONGITUDINAL FTG. REINF. PER PLAN.
6) TRANSVERSE FTG. REINF. PER PLAN.
7) CONCRETE SLAB PER PLAN.
8) LAP LENGTH PER GENERAL STRUCTURAL NOTES

1 CONTINUOUS CONCRETE FOOTING FOR MASONRY WALL

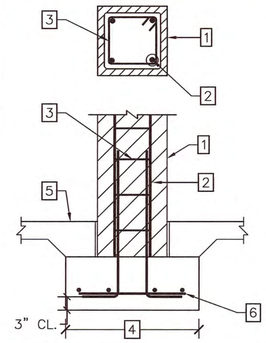
C1330



1) MASONRY WALL PER PLAN.
2) DOWELS TO MATCH VERTICAL WALL REINF. PER PLAN.
3) HORIZ. REINF. BAR PER PLANS.
4) CONT. CONC. FTG. PER PLAN.
5) LONGITUDINAL FTG. REINF. PER PLAN.
6) TRANSVERSE FTG. REINF. PER PLAN.
7) CONCRETE SLAB PER PLAN.
8) FINISH GRADE PER PLAN.
9) LAP LENGTH PER GENERAL STRUCTURAL NOTES

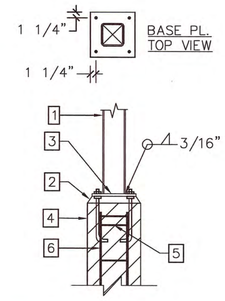
2 CONTINUOUS CONCRETE FOOTING FOR MASONRY WALL

C1330



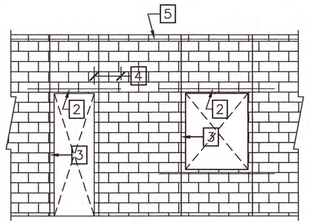
1) MASONRY COLUMN PER PLAN.
2) VERTICAL RE-BARS AT CORNERS PER PLAN.
3) COLUMN STIRRUPS PER PLAN.
4) CONCRETE FOOTING PER PLAN.
5) CONCRETE SLAB PER PLAN.
6) FTG. RE-BAR PER PLAN.

3 MASONRY COLUMN TO CONCRETE FOOTING CONNECTION



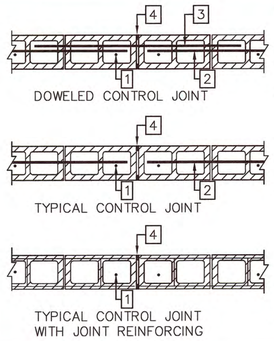
1) STEEL COLUMN PER PLAN
2) 1 1/2" DRY PACK
3) STEEL BASE PLATE AND ANCHOR BOLTS PER PLANS.
4) 12" SQ. MASONRY COLUMN.
5) #3 STIRRUPS @ 8" O.C. W/ (2)-#3 @ TOP.
6) (4)-#4 RE-BARS VERT. AT CORNERS AS SHOWN.

4 STEEL COLUMN TO MASONRY PEDESTAL CONNECTION



1) MASONRY WALL PER PLAN
2) MASONRY LINTEL PER PLAN. MIN. 16" DEEP GROUTED SOLID WITH (2)-#4 BARS. U.N.O.
3) (2)-#4 CONT. VERT. BARS MIN. U.N.O.
4) EXTEND REINF. 24" PAST THE JAMPS.
5) (2)-#4 BAR CONT. IN 8" BOND BEAM AT TOP OF WALL. TYP. U.N.O.

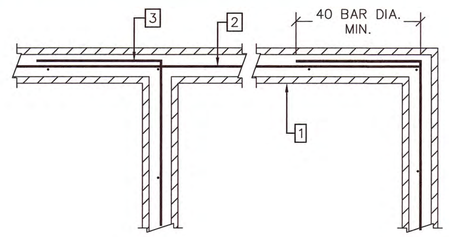
5 TYPICAL REINFORCEMENT AT OPENINGS IN MASONRY WALL



1) VERTICAL BAR ON EACH SIDE OF ALL CONTROL JOINTS.
2) TERMINATE ALL NON STRUCTURAL REINFORCING 2" FROM CONTROL JOINT.
3) PROVIDE 4'-0" LONG DOWELS ACROSS THE JOINT. PREVENT BOND BETWEEN BAR AND GROUT WITH GREASE OR A PLASTIC SLEEVE. CAP ALL DOWELS TO ALLOW 1" OF MOVEMENT.
4) ⅝" MAXIMUM JOINT WIDTH. USE FIRE RATED CAULKING WHERE FIRE RATED ASSEMBLY IS REQUIRED. USE 4 HR FIRE RATED COMPOUND 3M FIRE BARRIER 2000+ SILICONE SEALANT UL2079 OR APPROVED EQUIVALENT.

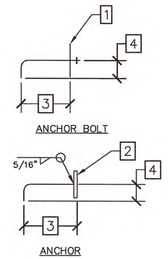
NOTE:
REINFORCING STEEL AT LEDGERS AND LINTELS MUST CONTINUE THROUGH THE CONTROL JOINT

6 MASONRY WALL CONTROL JOINT



1) MASONRY WALL PER PLAN.
2) HORIZONTAL REINFORCEMENT PER PLAN.
3) ALTERNATE DIRECTION OF DOWEL BEND

7 REINFORCING BARS AT MASONRY WALL CORNER AND INTERSECTION

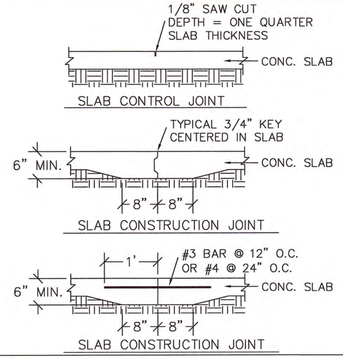


NOTE:
PROVIDE ANCHORS & ANCHOR BOLTS PER THIS SCHEDULE UNO ON PLANS OR DETAILS.

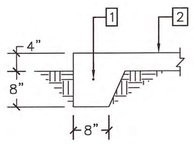
1) FACE OF WALL
2) PLATE, L, CHANNEL ETC.
3) EMBED LENGHT
4) 3" MIN. STD HOOK.

BOLT DIAM	VERT BOLT EMBED LENGTH	HORIZ BOLT EMBED LENGTH
1/2"	6"	4"
5/8"	6"	4"
3/4"	7"	5"
7/8"	8"	6"
1"	9"	7"
1 1/4"	11"	9"
1 1/2"	12"	10"

8 TYPICAL ANCHOR AND ANCHOR BOLT SCHEDULE

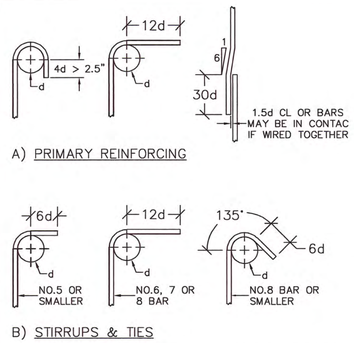


9 CONCRETE SLAB CONTROL JOINTS TYPICAL



1) (1)-#4 REINFORCING BAR CONTINUOUS.
2) CONCRETE SLAB AND REINFORCING PER PLANS.

10 TYPICAL CONCRETE SLAB TURNDOWN AT DRIVEWAY



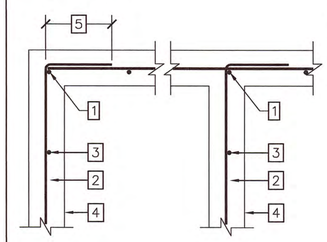
MINIMUM DIAMETERS OF BENDS FOR STD. HOOKS

BAR SIZE	MIN. DIA.
NO. 3 – 8	6d
NO. 9 – 11	8d

d = BAR DIAMETER

11 STANDARD BAR BENDING DETAIL

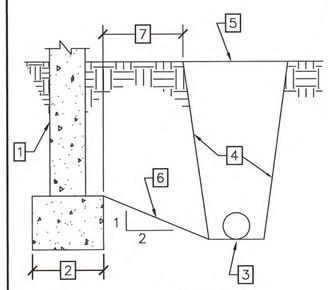
C1430



1) VERTICAL REINF. AT CORNERS AND WALL INTERSECTIONS
2) HORIZONTAL REINF. PER PLAN
3) VERTICAL REINF. PER PLAN
4) CONCRETE WALL OR FOOTING PER PLAN.
5) LAP REINF. 36 BAR DIA. MIN.

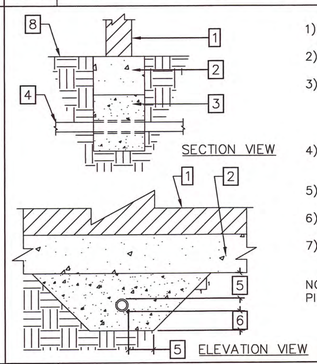
12 REINFORCEMENT AT CORNERS AND INTERSECTIONS

C171



1) STEM WALL WHERE EXISTS PER PLAN.
2) CONCRETE FOOTING PER PLAN.
3) PIPE AS SHOWN.
4) TRENCH EXCAVATION LINE.
5) BACFILL MATERIAL.
6) NO EXCAVATION BELWO THIS LINE.
7) 18" MIN. DISTANCE.

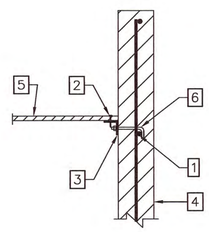
13 TRENCH ADJACENT TO CONCRETE FOOTING



1) STEM WALL AS REQUIRED PER PLAN
2) CONCRETE FOOTING PER PLAN.
3) CONCRETE FILL TO BE PLACED ROUND PIPE BEFORE FOOTING IS POURED. IT IS NOT REQUIRED IF PIPE DEPTH IS LARGER THAN 3 FT.
4) PIPE PASSING THRU SLEEVE 1/2" CLEARANCE AROUND PIPE.
5) 8" MINIMUM OR 2X SLEEVE DIAMETER.
6) 6" MINIMUM OR SLEEVE DIAMETER.
7) FINISH GRADE PER PLAN.

NOTE:
PIPE SHALL NOT PASS THRU FOOTING.

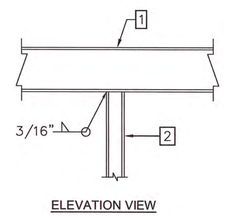
14 PIPE PASSING UNDER CONTINUOUS CONCRETE FOOTING. TYPICAL



1) BOND BEAM WITH (1)-#4 BAR CONT.
2) BOUNDARY SCREWS PER PLAN.
3) L3"X3"X3/16" STEEL ANGLE CONT.
4) MASONRY WALL & REINF. PER PLAN.
5) ROOF SHEATHING PER PLAN.
6) ½"øX6" ANCHOR BOLTS AT 24" O.C.

15 ROOF FRAMING TO MASONRY WALL CONNECTION

M1343



1) STEEL BEAM PER PLAN.
2) STEEL COLUMN PER PLAN

16 STEEL BEAM TO STEEL COLUMN CONNECTION

S120

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CLIENT: GERALD E. CLARK, ARCHITECT

PROJECT: PUBLIC RESTROOM FACILITY MODEL NO.4

ADDRESS: MESQUITE PARK LAKE HAVASU CITY, ARIZONA

PROFESSIONAL ENGINEERING SERVICES, INC.
2167 BIRCH SQUARE STE. A, LAKE HAVASU CITY, AZ 86403
WWW.AZPES.COM TEL: (928) 453-9863, FAX: (928) 453-9863

Registered Professional Engineer (Civil) CERTIFICATE NO. 35906 N. GEORGE MITWASI Date Signed 8/16/2016 ARIZONA, U.S.A.

EXPIRES: 3-31-2019

PREPARED BY: NGM

CHECKED BY: NGM

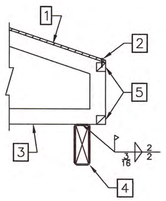
DATE: 7/21/2016

SCALE: AS SHOWN

JOB NUMBER: PES150832

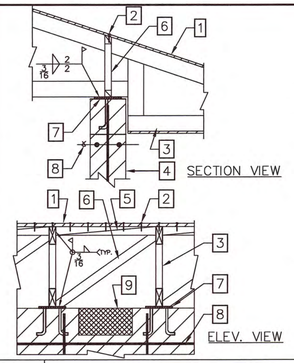
SHEET

S4



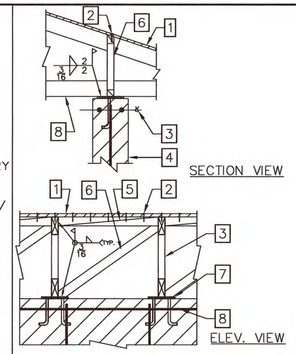
1) ROOF SHEATHING PER PLAN.
2) BOUNDARY SCREWS PER PLAN TYP.
3) STEEL TRUSS PER PLAN.
4) STEEL BEAM PER PLAN.
5) HSS2X2X⅛" STEEL BLOCKING BETWEEN TRUSSES AT TOP & BOTTOM.

1 STEEL TRUSS TO STEEL BEAM CONNECTION W234

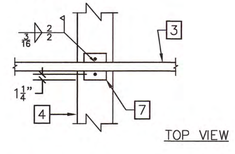


1) ROOF SHEATHING PER PLAN.
2) BOUNDARY SCREWS PER PLAN.
3) STEEL TRUSSES PER PLAN.
4) MASONRY WALL PER PLAN.
5) HSS2X2X⅛" HORIZONTAL BLOCK EVERY BAY BETWEEN TRUSSES.
6) HSS2X2"X⅛" DIAGONAL BRACE EVERY BAY BETWEEN TRUSSES.
7) ⅜"X5"X6" STEEL BEARING PLATE W/ (2)–½" DIA.X6" A.B. WELD TO THE BOTTOM OF STEEL PL.
8) BOND BEAM WITH (2)–#4 RE–BARS CONT. PLACE BOND BEAM BELOW VENTILATION OPENING
9) OPENING IN MASONRY WALL FOR VENTILATION PER ARCH.

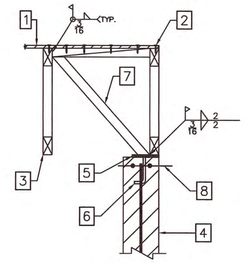
2 ROOF STEEL FRAMING TO STEEL BEAM CONNECTION W234



1) ROOF SHEATHING PER PLAN.
2) BOUNDARY SCREWS PER PLAN.
3) STEEL TRUSSES PER PLAN.
4) MASONRY WALL PER PLAN.
5) HSS2X2X⅛" HORIZONTAL BLOCK EVERY BAY BETWEEN TRUSSES.
6) HSS2X2X⅛" DIAGONAL BRACE EVERY BAY BETWEEN TRUSSES.
7) ⅜"X5"X6" STEEL BEARING PLATE W/ (2)–½" DIA.X6" A.B. WELD TO THE BOTTOM OF STEEL PL.
8) BOND BEAM WITH (2)–#4 RE–BARS CONT.

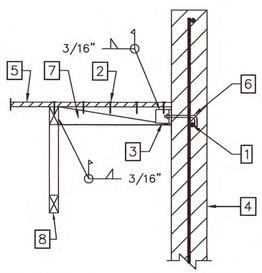


3 ROOF STEEL FRAMING TO STEEL BEAM CONNECTION W234



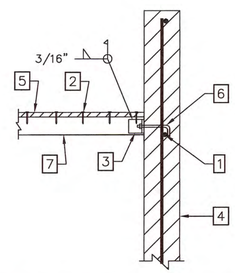
1) ROOF SHEATHING PER PLAN.
2) BOUNDARY SCREWS PER PLAN.
3) STEEL TRUSS PER PLAN.
4) MASONRY WALL & REINF. PER PLANS.
5) ⅜"X5"X6" STEEL PLATE AT 48" O.C. AT EACH BRACE
6) (2)–½"øX6" A.B. WELDED TO BOTTOM PLATE.
7) HSS2X2X3/16" STEEL DIAGONAL BRACE @ 48" O.C.
8) BOND BEAM W/ (2)–#4 RE–BARS CONT.

4 ROOF FRAMING TO MASONRY WALL CONNECTION M390



1) BOND BEAM WITH (1)–#4 BAR CONT.
2) BOUNDARY SCREWS PER PLAN.
3) L3"X3"X3/16" X 3" LONG STEEL ANGLE.
4) MASONRY WALL & REINF. PER PLAN.
5) ROOF SHEATHING PER PLAN.
6) ½"øX6" ANCHOR BOLT AT STEEL ANGLE.
7) HSS4X2X3/8" STEEL PURLIN AT 48" O.C.
8) STEEL TRUSS PER PLAN.

5 ROOF FRAMING TO MASONRY WALL CONNECTION M1343



1) BOND BEAM WITH (1)–#4 BAR CONT.
2) BOUNDARY SCREWS PER PLAN.
3) L3"X3"X3/16" X 3" LONG STEEL ANGLE CONT.
4) MASONRY WALL & REINF. PER PLAN.
5) ROOF SHEATHING PER PLAN.
6) ½"øX6" ANCHOR BOLT AT STEEL ANGLE.
7) HSS4X2X3/8" STEEL PURLIN AT 48" O.C.

6 ROOF FRAMING TO MASONRY WALL CONNECTION M1343

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Registered Professional Engineer (Civil) CERTIFICATE NO. 35906 N. GEORGE MITWASI Date Signed 8/16/2016 ARIZONA, U.S.A.

EXPIRES: 3-31-2019

PREPARED BY: NGM

CHECKED BY: NGM

DATE: 7/21/2016

SCALE: AS SHOWN

JOB NUMBER: PES150832

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S5

5 OF 5