CLOSED SPEC PROVIDERS

ITEM	COMPANY NAME	CONTACT
ENERGY MANAGEMENT SYSTEM:	STOVER ELECTRIC, INC.	JAMES STOVER: 805.581.0740
	SYLVANIA LIGHTING SERVICES	ENIS PACAVAR: 978.395.1807
	ADVANCE ENERGY MGMT.	ADAM VELTMAN: 616.889.5109
	VENSTAR	818,812,9812 orders@venstar.com
HVAC UNITS / EQUIPMENT:	CARRIER	TERRIE TRULL: 877,501,4432 terrie.trull@carrier.utc.com
	YORK (4-5 WEEK LEAD TIME)	WALT JACOBE: 800.481.9738 walt.jacobe@jcl.com
EXT. MOTION SENSOR SYSTEM:	E.D.I. (ELEC. DISTRIBUTORS, INC.)	DEREK MILLER: 704.372.3040
SALES FLOOR DOOR:	ELIASON DOORS	800,828,3655
SECURITY DOOR HARDWARE:	DETEX CORPORATION	978-983-8150; fdconstruction@securitysource.com
FLOOR PRODUCT FIXTURES:	LOZIER (BY FDS)	1.800.228.9882
CHECK OUT FIXTURE:	LYONS (BY FDS)	502.267.0087
POWER POLE CONNECTIONS:	D&P CUSTOM LIGHTS	800.251.2200 OR 615.350.7800
INTERIOR LIGHTS:	LITHONIA (THRU E.D.I.)	DEREK MILLER: 704.372.3040
VINYL COMP. TILE (VEST. & RR.); CARPET (OFFICE):	ARMSTRONG MANNINGTON	F. JEFF GOBBELL: 281,376,7669 MICHAEL KETCHUM: 704.895.4377
ELECTRIC HAND DRYER:	WORLD DRYER "AIRFORCE" (THRU E.D.I.)	DEREK MILLER: 704-372-3040
TOILET FIXTURES AND RESTROOM SINK FAUCETS:	AMERICAN STANDARD	800,442,1902
NICHIHA PANELS		CHRIS TATE: 404.538.1261
FIRE EXTINGUISHERS	COMMERICAL FIRE	MOSES MANGRO: 1,800,241,1277 ext. 185 Moses.Mangro@commercialfire.com

CLOSED SPEC PROVIDERS

ITEM	COMPANY NAME	CONTACT
CONCRETE POLISHED FLOORS:	RETROPLATE- NATIONWIDE COV. PERFECT POLISH TITUS RESTOR, SERVICES, INC. QUESTMARK FLOORING	MICHAEL CLARKE: 770-862-6238 RICK MYERS: 865-494-7257 (EXT. 298) PHIL EVANS: 678-494-6893 GEORGE PAXINOS: 404-915-8663
EXTERIOR AND INTERIOR PAINT:	SHERWIN WILLIAMS	216,566,2000
FIRE MONITORING & FIRE EXIT INSPECTIONS ETC:	COMMERCIAL FIRE, INC.	TOM VANDERVENTER: 800.241.1277 x282 tom.vanderventer@commercialfire.com
ROLL DOWN GATES (IF REQUIRED BY FDS):	CORNELL	DAN BRODA: 800,882,6772 x590 dbroda@cornellstorefronts.com
EXTERIOR BUILDING/ SITE LIGHTING:	LITHONIA (THRU E.D.I.)	DEREK MILLER: 704.372.3040 fd@edi-nc.com

PREFERRED PROVIDERS

ITEM	COMPANY NAME	CONTACT
METAL BUILDING: (MUST PROVIDE 20-YEAR ALL WEATHER-TIGHNESS ROOF WARRANTY ON LABOR AND MATERIAL)	VARCO PRUDEN BUILDINGS	DAVID ENGLISH: 901,748,6103 denglish@vp.com
	NUCOR BUILDING SYSTEMS	DAVID BOYD: 864.414.7909 david.s.boyd@nucor.com
	MIDWEST STEEL BUILDING CO.	GERRY KING: 817,343,5616 gking@ncilp.com
STOREFRONT WALL SYSTEM:	KAWNEER OR VISTAWALL (OLD CASTLE)	877,767,9107 OR 800.869.4567
SITE LIGHTING CALCULATIONS:	SL BAGBY	JOHNNY MORGAN, LEED AP: 704.401.0171 deslgn@slbagby.com
TOILET ACCESSORIES:	BRADLEY ACCESSORIES	800,272,3539
LOCKS:	SCHLAGE	800,847,1864
TOWER CLADDING SYSTEM (SYSTEM INSTALLED BY G.C.)	ALLEN INDUSTRIES	HEATHER SURRATT: 336-668-2791 heather.surratt@allenindustries.com

NEW CONSTRUCTION FOR:

DELTA T DEVELOPMENT, LLC

FAMILY DOLLAR

200 HIGHWAY 83

LINTON, NORTH DAKOTA 58552

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

Castles Design Group

A Professional Architectural Corporation
3801 Kirby Drive, Suite 600
Houston, Texas 77098
tel: 713 664 7974
fax: 713 664 9756

DELTA T DEVELOPMENT, LLC
2425 LUMBLEY ROAD
RAINBOW CITY, AL 35906
PH: 256.278.4377

DATE: 04.18.2014
JOB No.: 1401-25
DRAWN: FS, SP
CHECKED: LC

NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

I hereby certify that this plan specification, or report was prepared by me or under my direct supervision, and that I am a duly Registered Architect under the laws of the State of North Dakota.
Date 4-16-14 Lic. No. 2091

EXPIRES: 06.30.2014
Larry L. Christian, A.I.A., N.C.A.R.B.
North Dakota Registration
#2091

REVISIONS

PRELIMINARY REVIEW:	03.27.2014
PERMIT ISSUE:	04.18.2014

TITLE SHEET
CODE ANALYSIS

SHEET NUMBER

T-1

ABBREVIATIONS

A.C.	ASPHALT CONCRETE	GLS.	GLASS	R.O.	ROUGH OPENING
A.C.T.	ACOUSTICAL CEILING TILE	GR.	GRADE	S.C.	SOLID CORE
A.F.F.	ABOVE FINISH FLOOR	GYP. BD.	GYPSUM BOARD	S.F.	SQUARE FEET
ALUM.	ALUMINUM	HT.	HEIGHT	SHT.	SHEET
BLKG.	BLOCKING	H.M.	HOLLOW METAL	SIM.	SIMILAR
BM.	BEAM	I.D.	INSIDE DIAMETER	SPEC.	SPECIFICATIONS
B.O.	BOTTOM OF	IBC	INTERNATIONAL BUILDING CODE	SERV.SINK.	SERVICE SINK
B.U.R.	BUILT UP ROOF	IFC	INTERNATIONAL FIRE CODE	S.S.	STAINLESS STEEL
C.C.	CENTER TO CENTER	JT.	JOINT	STR.	STRUCTURAL
C.J.	CONTROL JOINT	MEP	MECH., ELEC. & PLUMB.	SUSP.	SUSPENDED
C.L.	CENTER LINE	MFD.	MANUFACTURED	T.B.D	TO BE DECIDED
CLR.	CLEARANCE	MFR.	MANUFACTURER	T.O.C	TOP OF CURB
C.C.R.	CONSTRUCTION CODE REVIEW	M.O.	MASONRY OPENING	T.O.E	TOP OF EAVE
C.M.U.	CONCRETE MASONRY UNIT	MTD.	MOUNTED	T.J.	TOOLED JOINT
CONC.	CONCRETE	MTL.	METAL	T.O.M	TOP OF MASONRY
COL.	COLUMN	N.C.	NO CEILING	T.O.P	TOP OF PANEL
C.T.	CERAMIC TILE	N.I.C.	NOT IN CONTRACT	T.O.PAR	TOP OF PARAPET
D.F.	DRINKING FOUNTAIN	(N)	NEW	T.O.R	TOP OF RIDGE
DIA.	DIAMETER	N.T.S.	NOT TO SCALE	T.O.S	TOP OF STEEL
DIM.	DIMENSION	O.C.	ON CENTER	T.O.W	TOP OF WALL
D.S.	DOWNSPOUT	O.D.	OUTSIDE DIAMETER	T.O.SW	TOP OF SCREEN WALL
D.B.L.	DOUBLE	O.F.C.I.	OWNER FURNISHED CONTRACTOR INSTALLED	T.O.SF	TOP OF STEEL FRAMING
(E)	EXISTING	O.F.D.	OVERFLOW DRAIN	T.S.	TUBE STEEL
E.J.	EXPANSION JOINT	OPP	OPPOSITE	TYP.	TYPICAL
ELEV.	ELEVATION	O.S.	OVERFLOW SCUPPER	UBC	UNIFORM BUILDING CODE
EQ.	EQUAL	OPNG.	OPENING	UFC	UNIFORM FIRE CODE
EXT.	EXTERIOR	O.T.O.	OUT TO OUT	U.L.	UNDERWRITERS LABORAT.
F.D.	FLOOR DRAIN	OVHD.	OVERHEAD	U.N.O.	UNLESS NOTED OTHERWISE
F.E.C.	FIRE EXTINGUISHER CABINET	P.D.	PANIC DEVICE	VAR.	VARIES
FIN.	FINISH	P.L.	PROPERTY LINE	V.C.T.	VINYL COMPOSITION TILE
F.G.	FINISH GRADE	PLAM.	PLASTIC LAMINATE	VEST.	VESTIBULE
FLR.	FLOOR	PLYWD.	PLYWOOD	V.I.F.	VERIFY IN FIELD
F.S.	FLOOR SINK	RAD.	RADIUS	W.C.	WATER CLOSET
F.O.M.	FACE OF MASONRY	(R)	RELOCATE, UNO	WD.	WOOD
F.O.S.	FACE OF STUD	R.C.P.	REFLECTED CEILING PLAN	W.H.	WATER HEATER
FIN.S.	FINISH SURFACE	R.D.	ROOF DRAIN	W/	WITH
FTG.	FOOTING	R.I.	ROUGH IN		
FSM	FIRE SPRINKLER MAIN	R.I.C.	ROUGH IN AND CONNECT		
F.V.	FIELD VERIFY				
GA.	GAUGE				
GALV.	GALVANIZED				
G.C.	GENERAL CONTRACTOR				

PROJECT DIRECTORY

BUILDING DEPARTMENT
CITY OF LINTON
P.O. BOX 57
LINTON, NORTH DAKOTA 58552
TEL: 701.254.4460
ATTN: SHARON JANGULA
LIDCBEK@BEKTEL.COM

TENANT
FAMILY DOLLAR STORES, INC.
10301 MONROE ROAD
MATTHEWS, NORTH CAROLINA 28105
TEL: 704.814.3556
FAX: 704.844.1534
ATTN: BOB JENSEN
RJENSEN@FAMILYDOLLAR.COM

LANDLORD
DELTA T DEVELOPMENT, LLC
2425 LUMBLEY ROAD
RAINBOW CITY, ALABAMA 35906
TEL: 832.671.2424
FAX: 256.442.0161
ATTN: TREY PERMAN
TREY@DELTATDEVELOPMENT.COM

ARCHITECT OF RECORD
CASTLES DESIGN GROUP, P.C.
3801 KIRBY DRIVE, SUITE 600
HOUSTON, TEXAS 77098
TEL: 713.664.7974
FAX: 713.664.9756
ATTN: LARRY L. CHRISTIAN, AIA, NCARB

MEP ENGINEER
KOHRS, LONNEMAN, HEIL ENGINEERS, PSC
1538 ALEXANDRIA PIKE, SUITE 111
FT. THOMAS, KENTUCKY 41075
TEL: 281.617.3200
ATTN: MATT TURNER
MTURNER@KLHENGRS.COM

STRUCTURAL ENGINEER
PERMAN ENGINEERING CO., LLC
2425 LUMBLEY ROAD
RAINBOW CITY, ALABAMA 35906
TEL: 256.413.0433
FAX: 256.442.0161
ATTN: EDDIE PERMAN, JR.
EDDIE@PERMANENG.COM

CIVIL ENGINEER
PERMAN ENGINEERING CO., LLC
2425 LUMBLEY ROAD
RAINBOW CITY, ALABAMA 35906
TEL: 256.413.0433
FAX: 256.442.0161
ATTN: EDDIE PERMAN, JR.
EDDIE@PERMANENG.COM

CODE DATA

APPLICABLE CODES
2012 INTERNATIONAL BUILDING CODE
2012 INTERNATIONAL FIRE CODE
2009 UNIFORM PLUMBING CODE
2009 NORTH DAKOTA STATE PLUMBING CODE AMENDMENTS
2009 INTERNATIONAL MECHANICAL CODE
2008 NATIONAL ELECTRICAL CODE, WIRING STANDARDS OF NORTH DAKOTA
2010 ADA STANDARD FOR ACCESSIBLE DESIGN
2009 INTERNATIONAL ENERGY CONSERVATION CODE

CODE ANALYSIS

DESCRIPTION OF WORK: NEW CONSTRUCTION

USE & OCCUPANCY CLASSIFICATION: MERCANTILE: 'M': SALES AREA, HALL, & RESTROOMS
STORAGE: 'S-1': SALES SUPPORT
BUSINESS 'B': OFFICE

LEASABLE FLOOR AREA: 8,054 SQUARE FEET (TOTAL)

FLOOR AREA & OCCUPANT LOAD: (TABLE 1004.1.1 - IBC 2009)

'M' - 1 OCCUPANT PER 30 SQ. FT.	7,351 SQ. FT. / 30 =	245	OCCUPANTS
'S-1' - 1 OCCUPANT PER 300 SQ. FT.	627 SQ. FT. / 300 =	3	OCCUPANTS
'B' - 1 OCCUPANT PER 100 SQ. FT.	77 SQ. FT. / 100 =	1	OCCUPANT
	OCCUPANT LOAD =	249	

CONSTRUCTION TYPE: 1 STORY
TYPE II (TWO) B - UNSPRINKLERED

ALLOWABLE FLOOR AREA: 'M' OCCUPANCY
12,500 SQUARE FEET ALLOWABLE

8,054 SQ. FT. < 12,500 SQ. FT.
(ALLOWABLE PER IBC 2009 - TABLE 503)

EXITING & EGRESS REQUIREMENTS: OCCUPANT LOAD - 249
MAXIMUM TRAVEL DISTANCE: 200 FEET
(TABLE 1016.1 - IBC 2009)
249 < 500 OCCUPANTS - 2 EXITS REQUIRED
2 PROVIDED
249 OCCUPANTS / 2 EXITS = 125 OCCUPANTS
125 OCCUPANTS * 0.2 = 25" MIN. EXIT WIDTH
(3'-0" DOOR WIDTH MINIMUM)

MINIMUM AISLE: 36"
MINIMUM CORRIDOR: 44"
MINIMUM LEAF WIDTH: 32"

PLUMBING FIXTURES REQUIREMENTS: (PER 2009)

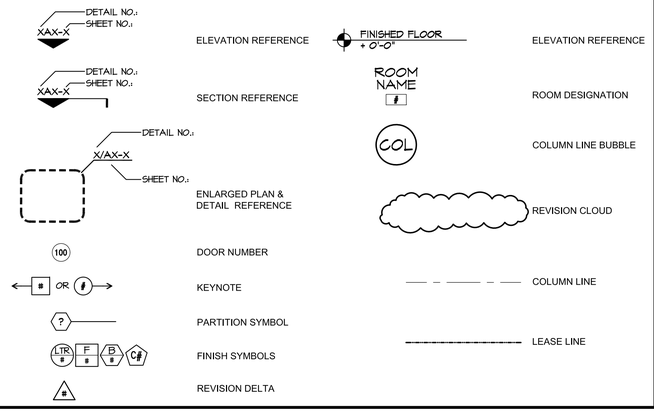
WATER CLOSETS	REQUIRED 1 PER 500	PROVIDED 2 PER 249
LAVATORIES	REQUIRED 1 PER 750	PROVIDED 2 PER 249
DRINKING FOUNTAIN	REQUIRED 1 PER 1000	PROVIDED 1 PER 249

PORTABLE FIRE EXTINGUISHERS:
IN ACCORDANCE WITH NFPA 10, STANDARDS FOR FIRE EXTINGUISHERS, FURNISH AND INSTALL AT LOCATIONS AS INDICATED ON PLANS, OR AS OTHERWISE DIRECTED BY THE FIRE MARSHAL.
- FIRE EXTINGUISHERS SHALL BE A MINIMUM 2A-10B.C
- TRAVEL DISTANCE TO A FIRE EXTINGUISHER SHALL NOT EXCEED 75 FEET
- TOP OF FIRE EXTINGUISHERS HAVING A GROSS WEIGHT LESS THAN 40 LBS SHALL BE 48" A.F.F.; TOP OF FIRE EXTINGUISHERS HAVING A GROSS WEIGHT GREATER THAN 40 LBS SHALL BE 42" A.F.F.
- G.C. TO ENSURE ADEQUATE BLOCKING IS PROVIDED INSIDE WALL TO SECURELY MOUNT AND SUPPORT FIRE EXTINGUISHER.

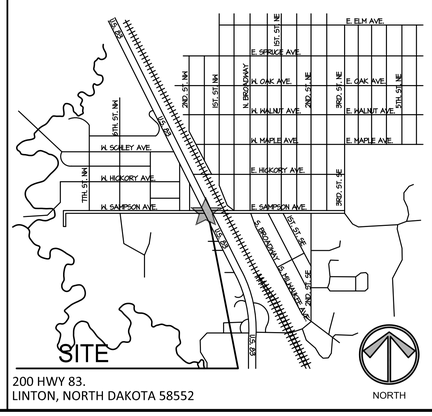
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E301	ELECTRICAL SITE PLAN
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	STRUCTURAL
	VENSTAR
V100	VENSTAR SYSTEM PLANS AND DETAILS

SYMBOLS



LOCAL MAP



200 HWY 83.
LINTON, NORTH DAKOTA 58552

PLAN	DISTRIBUTION	DATE
A	PRELIMINARY REVIEW	03.27.2014
A,MEP,C,S	PERMIT ISSUE	04.18.2014

CONCRETE POLISHING SYSTEM SPECIFICATION - CLOSED SPEC (RE: 1/A-1.4)

PART 1 GENERAL

1.01 SUMMARY

A. WORK IN THIS SECTION APPLIES TO POLISHING CONCRETE FLOOR SURFACES TO A DESIRED FINISH WITH THE INCORPORATION OF CONCRETE DENSIFIER(S).
B. RELATED WORK:
1. SECTION CAST IN PLACE CONCRETE
2. SECTION CONCRETE HARDENING/SEALING

1.02 SUBMITTALS

A. SUBMITTAL PACKAGE: PRIOR TO COMMENCEMENT OF WORK SUBMIT ALL PRODUCT DATA SHEETS AND MATERIAL SAFETY DATA SHEETS.
B. CONTRACT CLOSEOUT SUBMITTALS: PROVIDE 2 COPIES OF THE RECOMMENDED CLEANING AND MAINTENANCE INSTRUCTIONS FOR THE INSTALLED FLOOR SYSTEM TO THE OWNER'S REPRESENTATIVE.

1.03 QUALITY ASSURANCE

A. INSTALLER QUALIFICATIONS: INSTALLER SHALL BE AN ESTABLISHED COMPANY REGULARLY ENGAGED IN THE INSTALLATION OF DENSIFIED CONCRETE FLOOR SYSTEM WITH A MINIMUM OF THREE (3) YEARS EXPERIENCE. CONTRACTOR SHALL FURNISH DOCUMENTATION REGARDING THE SUCCESSFUL COMPLETION OF PROJECTS OF SIMILAR MAGNITUDE AND COMPLEXITY.
B. SINGLE SOURCE RESPONSIBILITY: ALL REQUIRED MATERIALS AND INSTALLATION PERSONNEL TO BE PROVIDED BY THE SAME COMPANY.
C. THE SYSTEM MANUFACTURER SHALL CERTIFY APPLICATOR.

1.04 DELIVERY, STORAGE AND HANDLING OF PRODUCT

A. DELIVERED MATERIALS TO THE SITE SHALL BE IN FACTORY-SEALED CONTAINERS, CLEARLY LABELED AND MARKED WITH MANUFACTURER'S NAME, ADDRESS, BATCH NUMBER, AND DATE OF MANUFACTURE. MATERIAL SAFETY DATA SHEETS MUST ACCOMPANY MATERIALS UPON ARRIVAL.
B. STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS. FURTHERMORE, MATERIALS TO BE USED IN CONJUNCTION WITH THE APPLICATION OF THIS SYSTEM SHALL BE STORED INDOORS, PROTECTED FROM DAMAGE AND MAINTAINED AT A TEMPERATURE NO LOWER THAN 55 DEGREES.

1.05 CONCRETE MIX DESIGN

A. CONCRETE MIXTURE SHALL BE 3500 PSI OR HIGHER, NON-AIR ENTRAINED.
1. ANY ADMIXTURES, PLASTICIZERS, OR ANYTHING TAKING THE PLACE OF PORTLAND-BASED CEMENT SHALL BE KEPT TO A MINIMUM.
2. CONFIRM THERE IS NO SLAG OR FLY ASH IN THE MIX - AS THESE MATERIALS WILL AFFECT THE POLISHING PROCESS.
3. THE CEMENT SHALL BE PORTLAND CEMENT TYPE 1, CONFORMING TO ASTM C 150.
4. MAINTAIN CONCRETE TEMPERATURE BELOW 85 DEGREES. KEEP CONCRETE AS COOL AND MOIST FOR AS LONG AS POSSIBLE. IN ESSENCE, DECREASE RATE OF HYDRATION AND DRYING TO MINIMIZE CRACKING.
5. WET CURES ARE MOST SUITABLE, BUT IF THIS CANNOT BE ACHIEVED, USE A DISSIPATING CURE AND SEAL - KEEP IN MIND - IF THIS HAS NOT DISSIPATED BEFORE GRINDING HAS BEGUN - EXTRA COST MAY BE ADDED FOR ITS REMOVAL.
6. USE ONE SOURCE FOR CEMENT, AGGREGATES AND POZZOLANS THROUGHOUT THE JOB. MONITOR AND CONTROL INCOMING MATERIAL CONSISTENCY. DO NOT USE CALCIUM CHLORIDE-BASED ADMIXTURES. NON-CHLORIDE ADMIXTURES MAY BE USED.
7. WASH OUT ALL DRUMS BEFORE LOADING. KEEP SLUMPS CONSISTENT WITH A MAXIMUM OF 5. MINIMIZE DRIVER ADDED WATER MAINTAINING A .45 WATER CONTENT RATIO.
8. PLACE CONCRETE TO ACHIEVE AS TRUE AND SMOOTH A TOP SURFACE AS POSSIBLE. MOUNDS OR DIPS ARE NOT ACCEPTABLE. GC SHALL CONTROL OVERALL FLATNESS AND LEVELNESS, INCLUDING ON SLOPING AREAS TO WITHIN TOLERANCES PERMITTED BY SPECIFICATION - ASTM E1155.
9. FLOOR FLATNESS (FF) 35 MINIMUM - FLOOR LEVELNESS (FL) 30 MINIMUM.SLAB SHALL BE PROTECTED FROM INDENTION, CONTAMINANTS AND FOOTPRINTS DURING POUR AND CURING.
10. PREPARE CONSTRUCTION JOINTS: JOINTS SAW CUT SPACING 30-35 TIMES AT SLAB THICKNESS (4" SLAB WOULD HAVE CUTS 10' - 12' ON CENTER). CUT 1/8 - 3/16 WIDE. CUT 1/3 THE CONCRETE THICKNESS IS IDEAL. IF A SOFTCUT SAW OR AN "EARLY ENTRY SAW" IS USED THE /SAME DAY, THEN 25% IS TYPICALLY ADEQUATE. IF THE CUTS ARE DONE THE NEXT DAY THEN THE FULL THIRD IS RECOMMENDED TO LEAVE CONCRETE UNDAMAGED FROM SAWING, CONVENTIONAL SAW CUTTING MUST BE DELAYED, USUALLY 4 TO 12 HOURS BUT NOT SO LONG THAT UNCONTROLLED CRACKING OF CONCRETE COULD OCCUR. FILL ALL CONTROL JOINTS FULL DEPTH WITH POLYUREA OR EQUAL.
11. EXPANSION JOINTS: USE FELT BOARD WITH "CAP STRIPS" (SEE HTTP://WWW.FORMTECHING.COM/OTHER_EXPANSIONJOINT.HTM) WHEN POURING TO ESTABLISH JOINT WIDTH AND FOR EASY REMOVAL. FILL JOINT WITH CLOSED CELL BACKER ROD AT LEAST 125% LARGER THAN JOINT WIDTH. CAULK WITH PECORA' DYNAFLEX URETHANE OR EQUAL. JOINT SEALANT THICKNESS TO BE ½ THE WIDTH OF THE JOINT AND TOLLED TO BE SLIGHTLY CONCAVE.
12. SLAB SHALL BE PROTECTED FROM INDENTION, CONTAMINANTS AND FOOTPRINTS DURING POUT AND CURING.
13. THE POURING OF THE SLAB SHALL BE FROM THE FRONT LEFT OR RIGHT CORNER OF THE BUILDING AND POUR BACK TO THE REAR OPPOSITE CORNER OF THE ORIGINAL STARTING POINT. CLOSE CONCENTRATION SHOULD BE MADE TO THE STOREFRONT ENTRANCE DOORS

1.06 PROJECT/SITE CONDITIONS

A. FLOOR AREAS TO BE POLISHED ARE TO BE FREE AND CLEAR OF ALL OBSTACLES INCLUDING RACKING, FIXTURES AND TEMPORARY EQUIPMENT AND MATERIALS IN ORDER TO PROVIDE AN OPEN AND UNINHIBITED CONCRETE SLAB.
B. PROTECTION: GENERAL CONTRACTOR SHALL PROTECT AREAS TO RECEIVE CONCRETE FINISH AT ALL TIMES DURING CONSTRUCTION TO PREVENT OILS, DIRT, METAL, EXCESSIVE WATER AND OTHER POTENTIALLY DAMAGING MATERIALS FROM AFFECTING THE FINISHED CONCRETE SURFACE. PROTECTION MEASURES LISTED BELOW SHALL BEGIN IMMEDIATELY AFTER THE CONCRETE SLAB IS POURED.
1. ALL HYDRAULIC POWERED EQUIPMENT SHALL BE DIAPERED TO AVOID STAINING OF THE CONCRETE.
2. ALL VEHICLE PARKING SHALL BE PROHIBITED ON THE FINISH SLAB AREA. IF NECESSARY TO COMPLETE THEIR SCOPE OF WORK, DROP CLOTHS SHALL BE PLACED UNDER VEHICLES AT ALL TIMES.
3. NO PIPE-CUTTING MACHINE SHALL BE USED ON THE FINISH FLOOR SLAB.
4. STEEL SHALL NOT BE PLACED ON THE FINISH SLAB TO AVOID RUSTING.
5. ACIDS AND ACIDIC DETERGENTS WILL NOT COME IN CONTACT WITH SLAB.
6. ALL PAINTERS WILL USE DROP CLOTHS ON THE CONCRETE. IF PAINT GETS ON THE CONCRETE, IT MUST BE IMMEDIATELY REMOVED.
7. ALL TRADES WILL BE INFORMED THAT THE SLAB MUST BE PROTECTED AT ALL TIMES.

C. A MINIMUM OF 28 DAYS OF CURE ON NEW CONCRETE SHOULD BE PROVIDED BEFORE SYSTEM INSTALLATION IS INITIATED.
D. THE BEST DEGREE OF CONCRETE FLOOR FLATNESS AND LEVELNESS SHOULD BE STRIVED FOR SINCE THE FLOOR FINISH MAY ENHANCE IMPERFECTIONS SUCH AS HIGH AND LOW SPOTS RESULTING FROM PLACEMENT AND FINISHING. A MINIMUM FLOOR FLATNESS RATING OF 35 AND A MINIMUM FLOOR LEVELNESS OF 30 IS RECOMMENDED ON NEWLY PLACED CONCRETE.
E. BLOCK OFF AREAS TO TRAFFIC FOR THE DURATION OF THE SYSTEM'S INSTALLATION,
F. ENSURE THAT ADEQUATE LIGHTING HAS BEEN INSTALLED TO SUPPORT SURFACE PREPARATION AND APPLICATION.

1.07 WARRANTY

A. THE INSTALLER SHALL FURNISH A SINGLE SOURCE WARRANTY FOR THEIR SYSTEM FOR A PERIOD OF ONE-YEAR MINIMUM.

PART 2 PRODUCTS / SYSTEM

2.01 SYSTEM PROVIDER (4 VENDORS)

A. QUESTMARK FLOORING, DIV OF CENTIMARK CORPORATION
12 GRANDVIEW CIRCLE
CANONSBURG, PA 15317
CONTACT: GEORGE PAXINOS 404 915 8663
E-MAIL -GEORGE.PAXINOS@CENTIMARK.COM
OR NORA PAUL AT 1.800.423.5667 X 1674
E-MAIL-NORA.PAUL@CENTIMARK.COM
B. PERFECT POLISH
P.O. BOX 151
NORRIS, TN 37828
CONTACT: JEFF YATESE 865-494-7257 EXT. 235
E-MAIL -JEFF.YATESE@PERFECTPOLISHONLINE.COM
C. TITUS RESTORATION SERVICES, INC.
547 TOONIGH RD
WOODSTOCK, GA 30188
CONTACT: PHIL EVANS 678-494-6893
E-MAIL -PHIL@TITUSRESTORATION.COM
D. RETROPLATE CORPORATE ACCOUNTS
1203 WEST SPRING CREEK PLACE
SPRINGVILLE, UTAH 84663
CONTACT: MICHAEL CLARKE (C) 770-862-6238 (F) 801-812-3400
E-MAIL -MICHAELC@RETROPLATESYSTEM.COM
E. SUBSTITUTIONS: THIS IS A CLOSED SPECIFICATION, NO SUBSTITUTIONS ALLOWED FOR SYSTEM OR MATERIALS PROVIDED BY THESE VENDORS.

2.02 EQUIPMENT TO BE USED FOR INSTALLATION

A. FLOOR GRINDER:
1. MODEL: CONCRETE POLISHING SOLUTIONS "G-320". (OR EQUIVALENT)
2. TYPE: MULTI-ORBITAL, PLANETARY-ACTION, OPPOSING-ROTATIONAL, DIAMOND-HEADED FLOOR GRINDER.
3. WEIGHT: 850 POUNDS.
4. GRINDING PRESSURE: 675 POUNDS.
5. GRINDING WIDTH: 32 INCHES.
6. MOTOR: 15 HP.
7. MAXIMUM RPM: 1,750.
8. HEAD: 3-HEAD SYSTEM CONTOURS TO FLOOR SURFACE.

B. VACUUM SYSTEM:
1. MODEL: CONCRETE POLISHING SOLUTIONS "CAT 5 DUST EXTRACTOR". (OR EQUIVALENT)
2. FILTRATION: DIRECT-CONNECT, HEPA FILTRATION SYSTEM.

C. DIAMOND TOOLING FOR COATING REMOVAL, INITIAL GRINDING, AND PREPARING FLOOR FOR POLISHING:
1. CONCRETE POLISHING SOLUTIONS "MFL" 80-GRIT METAL-BONDED DIAMONDS. (OR EQUIVALENT)
2. CONCRETE POLISHING SOLUTIONS "MFL" 150-GRIT METAL-BONDED DIAMONDS. (OR EQUIVALENT)

D. DIAMOND TOOLING FOR POLISHING CONCRETE:
1. CONCRETE POLISHING SOLUTIONS "GST" 100-GRIT RESIN-BONDED DIAMONDS. (OR EQUIVALENT)
2. CONCRETE POLISHING SOLUTIONS "GST" 200-GRIT RESIN-BONDED DIAMONDS. (OR EQUIVALENT)
3. CONCRETE POLISHING SOLUTIONS "GST" 400-GRIT RESIN-BONDED DIAMONDS. (OR EQUIVALENT)
4. CONCRETE POLISHING SOLUTIONS "GST" 800-GRIT RESIN-BONDED DIAMONDS. (OR EQUIVALENT)
5. CONCRETE POLISHING SOLUTIONS "GST" 1500-GRIT RESIN-BONDED DIAMONDS. (OR EQUIVALENT)
6. CONCRETE POLISHING SOLUTIONS "GST" 3000-GRIT RESIN-BONDED DIAMONDS. (OR EQUIVALENT)

2.03 MATERIALS

A. CONCRETE DENSIFIER:
1. CONCRETE POLISHING SOLUTIONS "ARMOR DENSIFIER MFL". (OR EQUIVALENT)
2. PERMANENT SEALING, DENSIFYING, AND HARDENING COMPOUND FOR CONCRETE.
3. ODORLESS.
4. VOC: O.

B. CONCRETE SEALER:
1. CONCRETE POLISHING SOLUTIONS "ARMOR STAIN SHIELD MFL". (OR EQUIVALENT)

PART 3 EXECUTION

3.01 INITIAL EXAMINATION

A. VERIFICATION OF CONDITIONS: EXAMINE SURFACES SCHEDULED TO RECEIVE THE WORK OF THIS SECTION FOR DEFECTS THAT WILL ADVERSELY AFFECT THE EXECUTION AND QUALITY OF THE WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED. PROVIDE IN WRITING TO OWNER A LIST OF THE CONDITIONS.
B. NEW CONCRETE: CONFIRM THAT A MINIMUM OF 28 DAYS HAS ELAPSED BEFORE INSTALLATION CAN BEGIN. ALSO CONFIRM IF CURING AGENTS OR HARDENING AGENTS HAVE BEEN APPLIED.
C. PRIOR TO APPLICATION, THE INSTALLER WILL NEED TO VERIFY THAT THE SITE IS CLEAR AND FREE OF ALL DEBRIS AND WITH ACCEPTANCE WILL HOLD SOLE RESPONSIBILITY FOR THE SPECIFICATION FOR THE FLOOR FINISH.

3.02 PROTECTION

A. ADVISE ALL OTHER CONTRACTORS, VENDORS AND OTHERS WORKING IN THE AREAS COMPLETED THAT THE CONCRETE SLAB SURFACE IS THE FINISHED FLOOR AND IS TO BE PROTECTED ACCORDINGLY.
B. DO NOT ALLOW CHEMICAL SPILLS, CUTTING OF MATERIALS OR SLIDING OF STEEL TO OCCUR ON THE FINISHED SURFACE BECAUSE DAMAGE CAN OCCUR.
C. FOLLOW SYSTEM MANUFACTURER'S INSTRUCTION FOR CLEANING TO ENSURE PROPER PROTECTION FROM DIRT AND DEBRIS.

3.03 INSPECTION

A. REQUEST ACCEPTANCE BY OWNER'S REPRESENTATIVE FOR THE FINISHED FLOOR.
B. CORRECT ALL UNACCEPTABLE WORK TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE

3.04 EXAMINATION

A. EXAMINE FLOOR TO RECEIVE POLISHED CONCRETE FLOOR SYSTEM.
B. NOTIFY ARCHITECT OR FDS REPRESENTATIVE OF CONDITIONS THAT WOULD ADVERSELY AFFECT INSTALLATION OR SUBSEQUENT USE.
C. IF DURING THE EXAMINATION A DIVIT IS FOUND USE A STAINLESS STEEL BRUSH WITH WATER TO CLEAN OUT THE DIVET. WHILE THE DIVET IS STILL DAMP POUR IN THE ROCKITE (THIS IS AN EXPANDING, ANCHORING CEMENT. WWW.ROCKITE.COM)
D. DO NOT BEGIN SURFACE PREPARATION OR INSTALLATION UNTIL UNACCEPTABLE CONDITIONS ARE CORRECTED.
E. VERIFY THE FOLLOWING FOR NEW CONCRETE FLOORS:
1. FLOOR FINISH:
A. SLABS AND FLATWORK SHALL BE PLACED AND FINISHED MONOLITHICALLY.
B. STRIKE OFF AND LASER SCREED SLABS TO TRUE, PLANE SURFACES AT REQUIRED ELEVATIONS.
C. THOROUGHLY COMPACT CONCRETE WITH VIBRATORS, FLOATS, AND TAMPERS TO FORCE COARSE AGGREGATE BELOW THE SURFACE.
D. POWER TROWEL WITH NO HAND FINISHING.
E. PAN FLOAT.
F. STEEL FINISH.
G. SURFACE SHOULD NOT BE BURNED DUE TO EXCESSIVE TOWELING.
H. IMPRINTS ARE NOT ACCEPTABLE (I.E. BOOTS, FOREIGN OBJECTS DROPPED INTO CONCRETE).
2. FLOOR AND JOINTS:
A. FREE OF DEBRIS AND EXCESSIVE DIRT, DUST, CLAY, AND MUD.
B. DRY.3. FLOOR SURFACE PROFILE:
A. FLOOR FLATNESS NUMBER (FF): 40 (+/- 5)
B. FLOOR LEVELNESS NUMBER (FL): 35 (+/- 5)
4. CONCRETE COMPRESSIVE STRENGTH: 3,500 PSI TO 5,000 PSI.
5. LIGHTWEIGHT CONCRETE: NOT ALLOWED IF AGGREGATE EXPOSURE IS REQUIRED.
6. CONCRETE CURING: MINIMUM 8 DAYS WATER CURED OR DISSIPATING CURING COMPOUND APPLIED.
7. CONCRETE ADJACENT TO FLOOR PENETRATIONS: TROWELED FLAT AND LEVEL WITH SURROUNDING CONCRETE.
8. CONCRETE ADJACENT TO DRAINS, CLEAN-OUTS, ETC: FINISH LEVEL TO THE TOP OF THE STRUCTURE.

3.05 SURFACE PREPARATION

A. PROTECTION: PROTECT SURROUNDING AREAS AND ADJACENT SURFACES FROM THE FOLLOWING:
1. MINIMAL ACCUMULATION OF DUST FROM GRINDING AND POLISHING.
2. CONTACT WITH OVERSPRAY OF CONCRETE DENSIFIER.
3. CONTACT WITH OVERSPRAY OF CONCRETE SEALER.
B. SURFACE PREPARATION: PREPARE SURFACES IN ACCORDANCE WITH INSTALLER'S INSTRUCTIONS.
C. CLEAN SURFACES: REMOVE DIRT, DUST, DEBRIS, OIL, GREASE, CURING AGENTS,
BOND BREAKERS, PAINT, COATINGS, AND OTHER SURFACE CONTAMINANTS WHICH COULD ADVERSELY AFFECT INSTALLATION OF POLISHED CONCRETE FLOOR SYSTEM.

3.06 INSTALLATION

A. INSTALL POLISHED CONCRETE FLOOR SYSTEM IN ACCORDANCE WITH INSTALLER'S INSTRUCTIONS AT LOCATIONS INDICATED ON THE DRAWINGS.
B. AGGREGATE EXPOSURE:
1. CREAM AGGREGATE: MINIMAL TO NO COURSE AGGREGATE EXPOSURE.
C. POLISHED CONCRETE FLOOR SYSTEM: IPCI SHEEN LEVEL 4 - GLOSSY SHINE.
1. PREPARATION STEP:
A. REMOVE EXISTING FLOOR COATINGS AND LEVEL FLOOR BY GRINDING WITH 80-GRIT METAL-BONDED DIAMONDS.
2. APPLY CONCRETE DENSIFIER TO DEEPLY SATURATE FLOOR.
3. REMOVE RESIDUE OF CONCRETE DENSIFIER DRIED ON FLOOR SURFACE BY GRINDING WITH 150-GRIT METAL-BONDED DIAMONDS.
4. FLOOR CLOSURE POLISHING:
A. REMOVE 150-GRIT METAL-BONDED DIAMOND SCRATCHES BY GRINDING WITH 1OO-GRIT RESIN-BONDED DIAMONDS.
B. REMOVE 150-GRIT METAL-BONDED AND 1OO-GRIT RESIN-BONDED DIAMOND SCRATCHES BY GRINDING WITH 200-GRIT RESIN-BONDED DIAMONDS.
C. PREPARE FLOOR FOR POLISHING BY GRINDING WITH 400-GRIT RESIN-BONDED DIAMONDS.
D. ACHIEVE LIGHT-REFLECTIVE FINISH WHEN VIEWED FROM A DISTANCE OF 30 FEET BY GRINDING WITH 800-GRIT RESIN-BONDED DIAMONDS.
E. PERIMETER POLISHING:
• MAINTAIN A 6" UNFINISHED PERIMETER AROUND SALES FLOOR, VESTIBULE AND OFFICE. WHEN COMPLETED WITH POLISHING, PAINT 6" STRIP SEMI-GLOSS LOW VOC BLACK BY SHERWIN WILLIAMS.
• MAINTAIN A 12" UNFINISHED PERIMETER AROUND SALES SUPPORT AREA FLOOR.
• SEE FLOOR PAINT PLANS THIS SHEET FOR LOCATIONS OF PAINT.
5. FINAL POLISH: SURFACE SHEEN GIVES OFF WET AND SHINY APPEARANCE WITH "LAKE-LIKE" MIRROR EFFECT REFLECTING SURROUNDING OBJECTS ABOVE IT.
A. START FINAL POLISH BY GRINDING WITH 1500-GRIT RESIN-BONDED DIAMONDS.
B. COMPLETE FINAL POLISH BY GRINDING WITH 3000-GRIT RESIN-BONDED DIAMONDS.
6. APPLY CONCRETE SEALER.

3.07 FIELD QUALITY CONTROL

A. INSPECT COMPLETED POLISHED CONCRETE FLOOR SYSTEM WITH OWNER, CONTRACTOR, ARCHITECT (AS-NEEDED), AND INSTALLER.
B. REVIEW PROCEDURES WITH ARCHITECT (AS-NEEDED) TO CORRECT UNACCEPTABLE AREAS OF COMPLETED POLISHED CONCRETE FLOOR SYSTEM.

3.08 PROTECTION

A. PROTECT COMPLETED POLISHED CONCRETE FLOOR SYSTEM FROM DAMAGE UNTIL SUBSTANTIAL COMPLETION.
1. DO NOT ALLOW VEHICLE AND PEDESTRIAN TRAFFIC ON UNPROTECTED FLOOR.
2. DO NOT ALLOW CONSTRUCTION MATERIALS, EQUIPMENT, AND TOOLS ON UNPROTECTED FLOOR.
B. IMMEDIATELY REMOVE MORTAR SPLATTER, SPILLED LIQUIDS, OIL, GREASE, PAINT, COATINGS, AND OTHER SURFACE CONTAMINANTS WHICH COULD ADVERSELY AFFECT COMPLETED POLISHED CONCRETE FLOOR SYSTEM.
C. REPAIR DAMAGED AREAS OF COMPLETED POLISHED CONCRETE FLOOR SYSTEM TO SATISFACTION OF OWNER OR ARCHITECT (AS-NEEDED).

GENERAL NOTES

1. THESE DRAWINGS INDICATE THE GENERAL SCOPE OF THE PROJECT IN TERMS OF ARCHITECTURE, DESIGN CONCEPT OF THE BUILDING AND ANY MAJOR ARCHITECTURAL ELEMENTS OR MAJOR TYPES OF MEP AND STRUCTURAL ELEMENTS. THE DRAWINGS DO NOT NECESSARILY INDICATE OR DESCRIBE ALL WORK FOR FULL PERFORMANCE AND COMPLETION OF THE SCOPE INDICATED, DESCRIBED OR IMPLIED. THE GENERAL CONTRACTOR SHALL FURNISH ALL ITEMS REQUIRED FOR THE EXECUTION AND TIMELY COMPLETION OF THIS PROJECT.

2. PRIOR TO COMMENCEMENT OF WORK THE GENERAL CONTRACTOR SHALL CAREFULLY STUDY THE CONTRACT DOCUMENTS AND ALL EXISTING SITE CONDITIONS. THE GENERAL CONTRACTOR SHALL REPORT TO THE ARCHITECT ANY INCONSISTENCY ERRORS, AND OR OMISSIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. FAILURE TO NOTIFY THE ARCHITECT OF DISCREPANCIES AND/OR UNSATISFACTORY CONDITIONS WILL BE CONSTRUED AS AN ACCEPTANCE OF THE CONDITIONS TO PROPERLY PERFORM ALL REQUIRED WORK.

3. THESE DRAWINGS AND COPIES THEREOF ARE LEGAL INSTRUMENTS OF SERVICE FOR USE BY THE CLIENT AND CASTLES DESIGN GROUP, INC. ONLY.

4. ALL TRADES SHALL BE RESPONSIBLE FOR KNOWLEDGE OF RELATIVE INFORMATION CONTAINED IN DOCUMENTS AND THE CONDITIONS UNDER WHICH THEY WILL BE EXPECTED TO PERFORM.

5. DIMENSIONS AND DETAILS SHALL BE VERIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION. TYPICAL DETAILS SHALL APPLY WHERE SPECIFIC DETAILS (OR SECTIONS) ARE NOT GIVEN.

6. DEVIATIONS FROM THESE DOCUMENTS NECESSITATED BY FIELD CONDITIONS SHALL BE BROUGHT TO THE ARCHITECTS ATTENTION IMMEDIATELY.

7. ALL CONSTRUCTION SHALL CONFORM WITH THE CURRENT BUILDING CODES AND ALL LAWS AND ORDINANCES OF THE AGENCIES HAVING JURISDICTION.

8. DO NOT SCALE DRAWINGS. BEFORE COMMENCING CONSTRUCTION CONTRACTOR SHALL VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IMMEDIATELY IF A CONFLICT ARISES WITH INTERPRETING THE PLANS.

9. BUILDING SIGNAGE IS NOT PART OF THIS/THESE CONSTRUCTION DRAWINGS (N.I.C.). ALL SIGNAGE WORK, PERMITTING, FABRICATION, INSTALLATION, MATERIALS, METHODS, ETC... ARE NOT IN SCOPE AND SHALL BE PERFORMED BY LICENSED PERSONNEL AS SELECTED BY THE OWNER.

10. UNLESS OTHERWISE NOTED, STATED MANUFACTURER'S ITEMS SHALL BE "OR EQUAL". CONTRACTOR SHALL RECEIVE APPROVAL FOR ALL SUBSTITUTIONS IN WRITING BY ARCHITECT PRIOR TO BID AND/OR INSTALLATION.

11. THE REVIEW OF SHOP DRAWINGS BY THE ARCHITECT SHALL NOT RELIEVE IN ANY MANNER THE GENERAL CONTRACTOR FROM RESPONSIBILITY FOR DEVIATIONS FROM THE DRAWINGS OR SPECIFICATIONS.

12. ALL PRIMARY ENTRANCES AND REQUIRED EXITS TO AND FROM THE BUILDING SHALL BE MADE ACCESSIBLE TO THE PHYSICALLY HANDICAPPED.

13. FIRE PROTECTIONS FACILITIES, INCLUDING ACCESS MUST BE PROVIDED PRIOR TO AND DURING CONSTRUCTION.

14. GENERAL CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR SECURING PERMITS REQUIRED BY ALL JURISDICTIONS.

15. BUILDING ADDRESS NUMBERS SHALL BE EASILY VISIBLE FROM THE STREET.

16. ALL REQUIRED EXIT SIGNS SHALL BE SELF-ILLUMINATING, RED AND WHITE IN COLOR (UNLESS ALTERNATE COLOR SPECIFICALLY NOTED) AND WIRED TO BUILDING ELECTRICAL WITH BATTERY BACKUP (TYPICAL).

17. ALL REQUIRED EXITS TO BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. NO DEAD BOLTS, NO SLIDING BOLTS

18. ALL DECORATIVE MATERIALS SHALL COMPLY WITH ALL ARTICLES OF THE BUILDING CODE.

19. CONSTRUCTION SHALL COMPLY WITH ALL ARTICLES OF THE BUILDING CODE.

20. CONSTRUCTION SHALL CONFORM WITH CURRENT ADA, TAS, AND LIFE SAFETY-NFPA 101 REQUIREMENTS.

21. PANIC HARDWARE TO BE INSTALLED AT REAR EXIT DOORS.

22. THE GENERAL CONTRACTOR SHALL GUARANTEE THAT ALL WORK INCLUDED IN THIS CONTRACT WILL BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THIS PROJECT. THE CONTRACTOR FURTHER AGREES THAN ANY OR ALL DEFECTS SHALL BE PROMPTLY REPAIRED AND/OR REPLACED AT CONTRACTOR'S OWN EXPENSE. ALSO ANY ITEM WHICH BECOMES DEFECTIVE DURING THE PERIOD OF THIS GUARANTEE.

23. THE CHARACTER AND SCOPE OF WORK ARE ILLUSTRATED BY THESE WORKING DRAWINGS. CONTRACTOR SHALL CAREFULLY EXAMINE ALL THE DRAWINGS AND SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION OF THE WORK.

24. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ASCERTAIN THE FOLLOWING PREVAILING PROCEDURES WITH REGARDS TO OPERATING:

A. STORAGE FACILITIES
B. PROTECTION OF EXISTING WORK
C. ACCESS TO WORK AREA
D. HOURS WORK IS PERMITTED
E. AVAILABILITY OF WATER, POWER, TELEPHONE, RESTRICTIONS, PROTECTION LIMITATIONS

25. IT SHALL BE THE RESPONSIBILITY OF EACH SUB-CONTRACTOR TO CHECK THE RULES AND REGULATIONS GOVERNING WORK ON THE PREMISES.

26. CONTRACTOR SHALL OBTAIN ALL REQUIRED APPROVALS FROM GOVERNMENTAL AGENCIES INVOLVED PRIOR TO FINAL PAYMENT.

27. GENERAL CONTRACTOR TO VERIFY CONDITION OF EXISTING CONDITIONS.

28. IF COORDINATION DISCREPANCIES EXIST WITHIN THESE DOCUMENTS, THE MORE EXPENSIVE OF THOSE DISCREPANCIES WILL BE REQUIRED.

29. BUILDING INSULATION SHALL HAVE A FLAME SPREAD RATING NOT GREATER THAN 25 AND A SMOKE DEVELOPMENT RATING NOT GREATER THAN 450.

30. 1" TELEPHONE CONDUIT WITH PULL-STRING FROM CABINET TO SPACE, STUBBED 6" ABOVE FINISH FLOOR.

31. G.C. SHALL INSTALL 1 DUPLEX OUTLET ADJACENT TO THE TELEPHONE BOARD

32. G.C. TO PROVIDE COMBINATION KEY SAFE (MODEL NO.: MASTER LOCK 5400D) INSTALLED ON STOREFRONT DOORS. COMBINATION TO BE DETERMINED BY OWNER.

Castles Design Group
A Professional Architectural Corporation
3801 Kirby Drive, Suite 600
Houston, Texas 77098
tel: 713 664 7974
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DELTA T DEVELOPMENT, LLC
2425 LUMBLEY ROAD
RAINBOW CITY, AL 35906
PH: 256.278.4377

DATE: 04.18.2014
JOB No.: 1401-25
DRAWN: FS, SP
CHECKED: LC

NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

I hereby certify that this plan specification, or report was prepared by me or under my direct supervision, and that I am a duly Registered Architect under the laws of the State of North Dakota.
Date 4-16-14 Lic. No. 2091

EXPIRES: 06.30.2014
Larry L. Christian, A.I.A., N.C.A.R.B.
North Dakota Registration #2091

REVISIONS
PRELIMINARY REVIEW: 03.27.2014
PERMIT ISSUE: 04.18.2014

GENERAL SPECIFICATIONS

SHEET NUMBER
T-2

CHAPTER 3: BUILDING BLOCKS

302 FLOOR OR GROUND SURFACES
302.1 GENERAL: FLOOR AND GROUND SURFACES SHALL BE STABLE, FIRM, AND SLIP RESISTANT AND SHALL COMPLY WITH 302.

302.2 CARPET: CARPET OR CARPET TILE SHALL BE SECURELY ATTACHED AND SHALL HAVE A FIRM CUSHION, PAD, OR BACKING OR NO CUSHION OR PAD. CARPET OR CARPET TILE SHALL HAVE A LEVEL LOOP, TEXTURED LOOP, LEVEL CUT PILE, OR LEVEL CUT/UNCUT PILE TEXTURE. PILE HEIGHT SHALL BE 1/2" MAXIMUM. EXPOSED EDGES OF CARPET SHALL BE FASTENED TO FLOOR SURFACES AND SHALL HAVE TRIM ON THE ENTIRE LENGTH OF THE EXPOSED EDGE. CARPET EDGE TRIM SHALL COMPLY WITH 303.

302.3 OPENINGS: OPENINGS IN FLOOR OR GROUND SURFACES SHALL NOT ALLOW PASSAGE OF A SPHERE MORE THAN 1/2 INCH DIAMETER EXCEPT AS ALLOWED IN 407.4.3, 409.4.3, 410.4, 810.5.3 AND 810.10.ELONGATED OPENINGS SHALL BE PLACED SO THAT LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.



FIGURE 302.2
CARPET PILE HEIGHT

303 CHANGES IN LEVEL
303.1 GENERAL: WHERE CHANGES IN LEVEL ARE PERMITTED IN FLOOR OR GROUND SURFACES, THEY SHALL COMPLY WITH 303

303.2 VERTICAL: CHANGES IN LEVEL OF 1/4 INCH HIGH MAXIMUM SHALL BE PERMITTED TO BE VERTICAL.

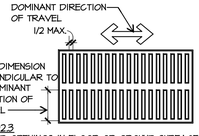


FIGURE 302.3
ELONGATED OPENINGS IN FLOOR OR GROUND SURFACES

303 CHANGES IN LEVEL
303.3 BEVELED: CHANGES IN LEVEL BETWEEN 1/4 INCH HIGH MINIMUM AND 1/2 INCH HIGH MAXIMUM SHALL BE BEVELED WITH A SLOPE NOT STEEPER THAN 1:2.

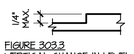


FIGURE 303.3
VERTICAL CHANGE IN LEVEL

FIGURE 303.3
BEVELED CHANGE IN LEVEL

302.2 CARPET: CARPET OR CARPET TILE SHALL BE SECURELY ATTACHED AND SHALL HAVE A FIRM CUSHION, PAD, OR BACKING OR NO CUSHION OR PAD. CARPET OR CARPET TILE SHALL HAVE A LEVEL LOOP, TEXTURED LOOP, LEVEL CUT PILE, OR LEVEL CUT/UNCUT PILE TEXTURE. PILE HEIGHT SHALL BE 1/2" MAXIMUM. EXPOSED EDGES OF CARPET SHALL BE FASTENED TO FLOOR SURFACES AND SHALL HAVE TRIM ON THE ENTIRE LENGTH OF THE EXPOSED EDGE.
CARPET EDGE TRIM SHALL COMPLY WITH 303.

302.3 OPENINGS: OPENINGS IN FLOOR OR GROUND SURFACES SHALL NOT ALLOW PASSAGE OF A SPHERE MORE THAN 1/2 INCH DIAMETER EXCEPT AS ALLOWED IN 407.4.3, 409.4.3, 410.4, 810.5.3 AND 810.10. ELONGATED OPENINGS SHALL BE PLACED SO THAT LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.

304 TURNING SPACE
304.1 GENERAL: TURNING SPACE SHALL COMPLY WITH 304

304.2 FLOOR OR GROUND SURFACES: FLOOR OR GROUND SURFACES OF A TURNING SPACE SHALL COMPLY WITH 302. CHANGES IN LEVEL ARE NOT PERMITTED.
EXCEPTION: SLOPES NOT STEEPER THAN 1:48 SHALL BE PERMITTED.

304.3 SIZE: TURNING SPACE SHALL COMPLY WITH 304.3.1 OR 304.3.2.

304.3.1 CIRCULAR SPACE: THE TURNING SPACE SHALL BE A SPACE OF 60 INCHES DIAMETER MINIMUM. THE SPACE SHALL BE PERMITTED TO INCLUDE KNEE AND TOE CLEARANCE COMPLYING WITH 306.

304.3.2 T-SHAPED SPACE: THE TURNING SPACE SHALL BE A T-SHAPED SPACE WITHIN A 60 INCH SQUARE MINIMUM WITH ARMS AND BASE 36 INCHES WIDE MINIMUM. EACH ARM OF THE T SHALL BE CLEAR OF OBSTRUCTIONS 12 INCHES MINIMUM IN EACH DIRECTION AND THE BASE SHALL BE CLEAR OF OBSTRUCTIONS 24 INCHES MINIMUM. THE SPACE SHALL BE PERMITTED TO INCLUDE KNEE AND TOE CLEARANCE COMPLYING WITH 306 ONLY AT THE END OF EITHER THE BASE OR ONE ARM.

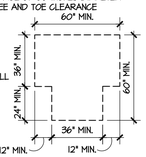


FIGURE 304.3.2
T-SHAPED TURNING SPACE

304.4 DOOR SWING: DOORS SHALL BE PERMITTED TO SWING INTO TURNING SPACES.

305 CLEAR FLOOR OR GROUND SPACE
305.1 GENERAL: CLEAR FLOOR OR GROUND SPACE SHALL COMPLY WITH 305.

305.2 FLOOR OR GROUND SURFACES: FLOOR OR GROUND SURFACES OF A CLEAR FLOOR OR GROUND SPACE SHALL COMPLY WITH 302. EXCEPTION: SLOPES NOT STEEPER THAN 1:48 SHALL BE PERMITTED

305.3 SIZE: THE CLEAR FLOOR OR GROUND SPACE SHALL BE 30 INCHES MINIMUM BY 48 INCHES MINIMUM.

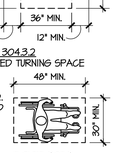


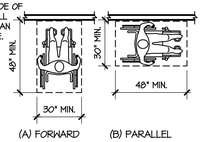
FIGURE 305.3
CLEAR FLOOR OR GROUND SPACE

305.4 KNEE AND TOE CLEARANCE: UNLESS OTHERWISE SPECIFIED, CLEAR FLOOR OR GROUND SPACE SHALL BE PERMITTED TO INCLUDE KNEE AND TOE CLEARANCE COMPLYING WITH 306.

305.5 POSITION: UNLESS OTHERWISE SPECIFIED, CLEAR FLOOR OR GROUND SPACE SHALL BE POSITIONED FOR EITHER FORWARD OR PARALLEL APPROACH TO AN ELEMENT.

305.6 APPROACH: ONE FULL UNOBSTRUCTED SIDE OF THE CLEAR FLOOR OR GROUND SPACE SHALL ADJOIN AN ACCESSIBLE ROUTE OR ADJOIN AN ANOTHER CLEAR FLOOR OR GROUND SPACE.

305.7 MANEUVERING CLEARANCE: WHERE A CLEAR FLOOR OR GROUND SPACE IS LOCATED IN AN ALCOVE OR OTHERWISE CONFINED ON ALL OR PART OF THREE SIDES, ADDITIONAL MANEUVERING CLEARANCE SHALL BE PROVIDED IN ACCORDANCE WITH 305.7.1 AND 305.7.2.



(A) FORWARD (B) PARALLEL
FIGURE 305.5
POSITION OF CLEAR FLOOR OR GROUND SPACE

305.7.1 FORWARD APPROACH: ALCOVES SHALL BE 36 INCHES WIDE MINIMUM WHERE THE DEPTH EXCEEDS 24 INCHES.

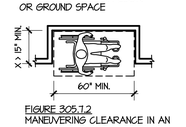


FIGURE 305.7.1
MANEUVERING CLEARANCE IN AN ALCOVE, FORWARD APPROACH

FIGURE 305.7.2
MANEUVERING CLEARANCE IN AN ALCOVE, PARALLEL APPROACH

305.7.2 PARALLEL APPROACH: ALCOVES SHALL BE 60 INCHES WIDE MINIMUM WHERE THE DEPTH EXCEEDS 15 INCHES

306 KNEE AND TOE CLEARANCE
306.1 GENERAL: WHERE SPACE BENEATH AN ELEMENT IS INCLUDED AS PART OF CLEAR FLOOR OR GROUND SPACE OR TURNING SPACE, THE SPACE SHALL COMPLY WITH 306. ADDITIONAL SPACE SHALL NOT BE PROHIBITED BENEATH AN ELEMENT BUT SHALL NOT BE CONSIDERED AS PART OF THE CLEAR FLOOR OR GROUND SPACE OR TURNING SPACE.

306.2 TOE CLEARANCE.
306.2.1 GENERAL: SPACE UNDER AN ELEMENT BETWEEN THE FINISH FLOOR OR GROUND AND 9 INCHES ABOVE THE FINISH FLOOR OR GROUND SHALL BE CONSIDERED TOE CLEARANCE AND SHALL COMPLY WITH 306.2.

306.2.2 MAXIMUM DEPTH: TOE CLEARANCE SHALL EXTEND 25 INCHES MAXIMUM UNDER AN ELEMENT.

306.2.3 MINIMUM REQUIRED DEPTH: WHERE TOE CLEARANCE IS REQUIRED AT AN ELEMENT AS PART OF A CLEAR FLOOR SPACE, THE TOE CLEARANCE SHALL EXTEND 17 INCHES MINIMUM UNDER THE ELEMENT.

306.2.4 ADDITIONAL CLEARANCE: SPACE EXTENDING GREATER THAN 6 INCHES BEYOND THE AVAILABLE KNEE CLEARANCE AT 9 INCHES ABOVE THE FINISH FLOOR OR GROUND SHALL NOT BE CONSIDERED TOE CLEARANCE.

306.2.5 WIDTH: TOE CLEARANCE SHALL BE 30 INCHES WIDE MINIMUM.

306.3 KNEE CLEARANCE.
306.3.1 GENERAL: SPACE UNDER AN ELEMENT BETWEEN 9 INCHES AND 27 INCHES ABOVE THE FINISH FLOOR OR GROUND SHALL BE CONSIDERED KNEE CLEARANCE AND SHALL COMPLY WITH 306.3.



(A) ELEVATION (B) PLAN
FIGURE 306.2
TOE CLEARANCE

306.3.2 MAXIMUM DEPTH: KNEE CLEARANCES SHALL EXTEND 25 INCHES MAXIMUM UNDER AN ELEMENT AT 9 INCHES ABOVE THE FINISH FLOOR OR GROUND.

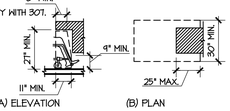
306.3.3 MINIMUM REQUIRED DEPTH: WHERE KNEE CLEARANCE IS REQUIRED UNDER AN ELEMENT AS PART OF A CLEAR FLOOR SPACE, THE KNEE CLEARANCE SHALL BE 11 INCHES DEEP MINIMUM AT 9 INCHES ABOVE THE FINISH FLOOR OR GROUND, AND 8 INCHES DEEP MINIMUM AT 27 INCHES ABOVE THE FINISH FLOOR OR GROUND.

306.3.4 CLEARANCE REDUCTION: BETWEEN 9 INCHES AND 27 INCHES ABOVE THE FINISH FLOOR OR GROUND, THE KNEE CLEARANCE SHALL BE PERMITTED TO REDUCE AT A RATE OF 1 INCH IN DEPTH FOR EACH 6 INCHES IN HEIGHT.

306.3.5 WIDTH: KNEE CLEARANCE SHALL BE 30 INCHES WIDE MINIMUM.

307 PROTRUDING OBJECTS
307.1 GENERAL: PROTRUDING OBJECTS SHALL COMPLY WITH 307.

307.2 PROTRUSION LIMITS: OBJECTS WITH LEADING EDGES MORE THAN 27 INCHES AND NOT MORE THAN 27 INCHES AND NOT MORE THAN 80 INCHES ABOVE THE FINISH FLOOR OR GROUND SHALL PROTRUDE 4 INCHES MAXIMUM HORIZONTALLY INTO THE CIRCULATION PATH.
EXCEPTION: HANDRAILS SHALL BE PERMITTED TO PROTRUDE 4 1/2 INCHES MAXIMUM.



(A) ELEVATION (B) PLAN
FIGURE 306.3
KNEE CLEARANCE

307.3 POST-MOUNTED OBJECTS: FREE-STANDING OBJECTS MOUNTED ON POSTS OR PYLONS SHALL OVERHANG CIRCULATION PATHS 12 INCHES MAXIMUM WHEN LOCATED 27 INCHES MINIMUM AND 80 INCHES MAXIMUM ABOVE FINISH FLOOR OR GROUND. WHERE A SIGN OR OTHER OBSTRUCTION IS MOUNTED BETWEEN POSTS OR PYLONS AND THE CLEAR DISTANCE BETWEEN THE POSTS OR PYLONS AND THE CLEAR DISTANCE BETWEEN THE POSTS OR PYLONS IS GREATER THAN 12 INCHES, THE LOWEST EDGE OF SUCH SIGN OR OBSTRUCTION SHALL BE 27 INCHES MAXIMUM OR 80 INCHES MINIMUM ABOVE THE FINISH FLOOR OR GROUND.

EXCEPTION: THE SLOPPING PORTIONS OF HANDRAILS SERVING STAIRS AND RAMPS SHALL NOT BE REQUIRED TO COMPLY WITH 307.3.

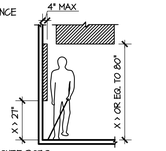


FIGURE 307.2
LIMITS OF PROTRUDING OBJECTS

307.4 VERTICAL CLEARANCE: VERTICAL CLEARANCE SHALL BE 80 INCHES HIGH MINIMUM. GUARDRAILS OR OTHER BARRIERS SHALL BE PROVIDED WHERE THE VERTICAL CLEARANCE IS LESS THAN 80 INCHES HIGH. THE LEADING EDGE OF SUCH GUARDRAIL OR BARRIER SHALL BE LOCATED 27 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND.

EXCEPTION: DOOR CLOSERS AND DOOR STOPS SHALL BE PERMITTED TO BE 78 INCHES MINIMUM ABOVE THE FINISH FLOOR OR GROUND.

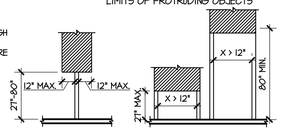


FIGURE 307.3
POST-MOUNTED PROTRUDING OBJECTS

307.5 REQUIRED CLEAR WIDTH: PROTRUDING OBJECTS SHALL NOT REDUCE THE CLEAR WIDTH REQUIRED FOR ACCESSIBLE ROUTES.

308 REACH RANGES.
308.1 GENERAL: REACH RANGES SHALL COMPLY WITH 308

308.2 FORWARD REACH.

308.2.1 UNOBSTRUCTED: WHERE A FORWARD REACH IS UNOBSTRUCTED, THE HIGH FORWARD REACH SHALL BE 48 INCHES MAXIMUM AND THE LOW FORWARD REACH SHALL BE 15 INCHES MINIMUM ABOVE THE FINISH FLOOR OR GROUND.

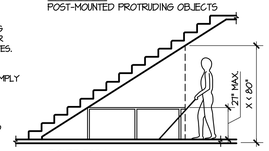
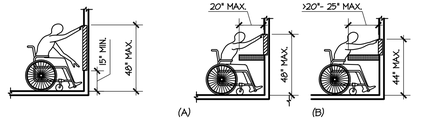


FIGURE 307.4
VERTICAL CLEARANCE

CHILDRENS REACH RANGES		
FORWARD OR SIDE REACH	HIGH (MAXIMUM)	LOW (MINIMUM)
AGES 3 AND 4	36 INCHES	20 INCHES
AGES 5 THROUGH 8	40 INCHES	18 INCHES
AGES 9 THROUGH 12	44 INCHES	16 INCHES



(A) (B)
FIGURE 308.2.1
UNOBSTRUCTED FORWARD REACH

FIGURE 308.2.2
UNOBSTRUCTED HIGH FORWARD REACH

308.3 SIDE REACH
308.3.1 UNOBSTRUCTED: WHERE A CLEAR FLOOR OR GROUND SPACE ALLOWS A PARALLEL APPROACH TO AN ELEMENT AND THE SIDE REACH IS UNOBSTRUCTED, THE HIGH SIDE REACH SHALL BE 48 INCHES MAXIMUM AND THE LOW SIDE REACH SHALL BE 15 INCHES MINIMUM ABOVE THE FINISH FLOOR OR GROUND.

EXCEPTIONS:
1. AN OBSTRUCTION SHALL BE PERMITTED BETWEEN THE CLEAR FLOOR OR GROUND SPACE AND THE ELEMENT WHERE THE DEPTH OF THE OBSTRUCTION IS 10 INCHES MAXIMUM.
2. OPERABLE PARTS OF FUEL DISPENSERS SHALL BE PERMITTED TO BE 54 INCHES MAXIMUM MEASURED FROM THE SURFACE OF THE VEHICULAR WAY WHERE FUEL DISPENSERS ARE INSTALLED ON EXISTING CURBS.

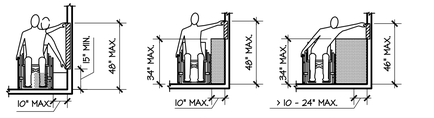


FIGURE 308.3.1
UNOBSTRUCTED SIDE REACH

FIGURE 308.3.2
UNOBSTRUCTED HIGH SIDE REACH

308.3.2 OBSTRUCTED HIGH REACH: WHERE A CLEAR FLOOR OR GROUND SPACE ALLOWS A PARALLEL APPROACH TO AN ELEMENT AND THE HIGH SIDE REACH IS OVER AN OBSTRUCTION SHALL BE 34 INCHES MAXIMUM AND THE DEPTH OF THE OBSTRUCTION SHALL BE 24 INCHES MAXIMUM. THE HIGH SIDE REACH SHALL BE 48 INCHES MAXIMUM FOR A REACH DEPTH OF 10 INCHES MAXIMUM. WHERE THE REACH DEPTH EXCEEDS 10 INCHES, THE HIGH SIDE REACH SHALL BE 46 INCHES MAXIMUM FOR A REACH DEPTH OF 24 INCHES MAXIMUM.

308.3.2 EXCEPTIONS:
1. THE TOP OF WASHING MACHINES AND CLOTHES DRYERS SHALL BE PERMITTED TO BE 36 INCHES MAXIMUM ABOVE THE FINISH FLOOR.
2. OPERABLE PARTS OF FUEL DISPENSERS SHALL BE PERMITTED TO BE 54 INCHES MAXIMUM MEASURED FROM THE SURFACE OF THE VEHICULAR WAY WHERE FUEL DISPENSERS ARE INSTALLED ON EXISTING CURBS.

309 OPERABLE PARTS
309.1 GENERAL: OPERABLE PARTS SHALL COMPLY WITH 309.

309.2 CLEAR FLOOR SPACE: A CLEAR FLOOR OR GROUND SPACE COMPLYING WITH 305 SHALL BE PROVIDED.

309.3 HEIGHT: OPERABLE PARTS SHALL BE PLACED WITHIN ONE OR MORE OF THE REACH RANGES SPECIFIED IN 308.

309.4 OPERATION: OPERABLE PARTS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE OPERABLE PARTS SHALL BE 5 POUNDS MAXIMUM.

EXCEPTION: GAS PUMP NOZZLES SHALL NOT BE REQUIRED TO PROVIDE OPERABLE PARTS THAT HAVE AN ACTIVATING FORCE OF 5 POUNDS MAXIMUM.

CHAPTER 4: ACCESSIBLE ROUTES

402 ACCESSIBLE ROUTES
402.1 GENERAL: ACCESSIBLE ROUTES SHALL COMPLY WITH 402.

402.2 COMPONENTS: ACCESSIBLE ROUTES SHALL CONSIST OF ONE OR MORE OF THE FOLLOWING COMPONENTS: WALKING SURFACES WITH A RUNNING SLOPE NOT STEEPER THAN 1:20, DOORWAYS, RAMPS, CURB RAMPS EXCLUDING THE FLARED SIDES, ELEVATORS, AND PLATFORM LIFTS. ALL COMPONENTS OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF CHAPTER 4.

403 WALKING SURFACE
403.1 GENERAL: WALKING SURFACES THAT ARE A PART OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH 403.

403.2 FLOOR OR GROUND SURFACE: FLOOR OR GROUND SURFACES SHALL COMPLY WITH 302.

403.3 SLOPE: THE RUNNING SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:20. THE CROSS SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:48.

403.4 CHANGES IN LEVEL: CHANGES IN LEVEL SHALL COMPLY WITH 303.

403.5 CLEARANCES: WALKING SURFACES SHALL PROVIDE CLEARANCES COMPLYING WITH 403.5.

EXCEPTION: WITHIN EMPLOYEE WORK AREAS, CLEARANCES ON COMMON USE CIRCULATION PATHS SHALL BE PERMITTED TO BE DECREASED BY WORK AREA EQUIPMENT PROVIDED THAT THE DECREASE IS ESSENTIAL TO THE FUNCTION OF THE WORK BEING PERFORMED.

403.5.1 CLEAR WIDTH: EXCEPT AS PROVIDED IN 403.5.2 AND 403.5.3, THE CLEAR WIDTH OF WALKING SURFACES SHALL BE 36 INCHES MINIMUM.

EXCEPTION: THE CLEAR WIDTH SHALL BE PERMITTED TO BE REDUCED TO 32 INCHES MINIMUM FOR A LENGTH OF 24 INCHES MAXIMUM PROVIDED THAT REDUCED WIDTH SEGMENTS ARE SEPARATED BY SEGMENTS THAT ARE 48 INCHES LONG MINIMUM AND 36 INCHES WIDE MINIMUM.

403.5.2 CLEAR WIDTH AT TURN: WHERE THE ACCESSIBLE ROUTE MAKES A 180 DEGREE TURN AROUND AN ELEMENT WHICH IS LESS THAN 48 INCHES WIDE, CLEAR WIDTH SHALL BE 42 INCHES MINIMUM APPROACHING THE TURN, 48 INCHES MINIMUM AT THE TURN AND 42 INCHES MINIMUM LEAVING THE TURN.

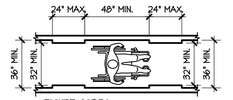


FIGURE 403.5.1
CLEAR WIDTH OF AN ACCESSIBLE ROUTE

EXCEPTION: WHERE THE CLEAR WIDTH AT THE TURN IS 60 INCHES MINIMUM COMPLIANCE WITH 403.5.2 SHALL NOT BE REQUIRED.

403.5.3 PASSING SPACES: AN ACCESSIBLE ROUTE WITH A CLEAR WIDTH LESS THAN 60 INCHES SHALL PROVIDE PASSING SPACES AT INTERVALS OF 200 FEET MAXIMUM. PASSING SPACES SHALL BE EITHER: A SPACE 60 INCHES MINIMUM; OR, AN INTERSECTION OF TWO WALKING SURFACES PROVIDING A T-SHAPED SPACE COMPLYING WITH 304.3.2 WHERE THE BASE AND ARMS OF THE T-SHAPED SPACE EXTEND 48 INCHES MINIMUM BEYOND THE INTERSECTION.

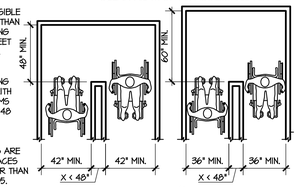


FIGURE 403.5.2
CLEAR WIDTH AT TURN

403.6 HANDRAILS: WHERE HANDRAILS ARE PROVIDED ALONG WALKING SURFACES WITH RUNNING SLOPES NOT STEEPER THAN 1:20 THEY SHALL COMPLY WITH 505.

404 DOORS, DOORWAYS, AND GATES
404.1 GENERAL: DOORS, DOORWAYS, AND GATES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH 404.

EXCEPTION: DOORS, DOORWAYS, AND GATES DESIGNED TO BE OPERATED ONLY BY SECURITY PERSONNEL SHALL NOT BE REQUIRED TO COMPLY WITH 404.2.7, 404.2.8, 404.2.9, 404.3.2 AND 404.3.4 THROUGH 404.3.7.

404.2 MANUAL DOORS, DOORWAYS, AND MANUAL GATES: MANUAL DOORS AND DOORWAYS AND MANUAL GATES INTENDED FOR USER PASSAGE SHALL COMPLY WITH 404.2.

404.2.1 REVOLVING DOORS, GATES, AND TURNSTILES: REVOLVING DOORS, REVOLVING GATES, AND TURNSTILES SHALL NOT BE PART OF AN ACCESSIBLE ROUTE.

404.2.2 DOUBLE-LEAF DOORS AND GATES: AT LEAST ONE OF THE ACTIVE LEAVES OF DOORWAYS WITH TWO LEAVES SHALL COMPLY WITH 404.2.3 AND 404.2.4.

404.2.3 CLEAR WIDTH: DOOR OPENINGS SHALL PROVIDE A CLEAR WIDTH OF 32 INCHES MINIMUM. CLEAR OPENINGS OF DOORWAYS WITH SWINGING DOORS SHALL BE MEASURED BETWEEN THE FACE OF THE DOOR AND THE STOP, WITH THE DOOR OPEN 90 DEGREES. OPENINGS MORE THAN 24 INCHES DEEP SHALL PROVIDE A CLEAR OPENING OF 36 INCHES MINIMUM. THERE SHALL BE NO PROJECTIONS INTO THE REQUIRED CLEAR OPENING LOWER THAN 34 INCHES ABOVE THE FINISH FLOOR OR GROUND. PROJECTIONS INTO THE CLEAR OPENING WIDTH BETWEEN 34 INCHES AND 80 INCHES ABOVE THE FINISH FLOOR OR GROUND SHALL NOT EXCEED 4 INCHES.

EXCEPTION: 1. IN ALTERATIONS, A PROJECTION OF 5/8 INCH MAXIMUM INTO THE REQUIRED CLEAR WIDTH SHALL BE PERMITTED FOR THE LATCH SIDE STOP. 2. DOOR CLOSERS AND DOOR STOPS SHALL BE PERMITTED TO BE 78 INCHES MINIMUM ABOVE THE FINISH FLOOR OR GROUND.

404.2.4 MANEUVERING CLEARANCES: MINIMUM MANEUVERING CLEARANCES AT DOORS AND GATES SHALL COMPLY WITH 404.2.4. MANEUVERING CLEARANCES SHALL EXTEND THE FULL WIDTH OF THE DOORWAY AND THE REQUIRED LATCH SIDE OR HINGE SIDE CLEARANCE.

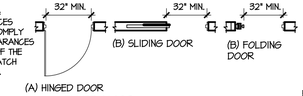


FIGURE 404.2.3
CLEAR WIDTH OF DOORWAYS

EXCEPTION: ENTRY DOORS TO HOSPITAL PATIENT ROOMS SHALL NOT BE REQUIRED TO PROVIDE THE CLEARANCE BEYOND THE LATCH SIDE OF THE DOOR.

404.2.4.1 SWINGING DOORS AND GATES: SWINGING DOORS AND GATES SHALL HAVE MANEUVERING CLEARANCES COMPLYING WITH TABLE 404.2.4.1 (AS ILLUSTRATED ON FIGURES 404.2.4.1)

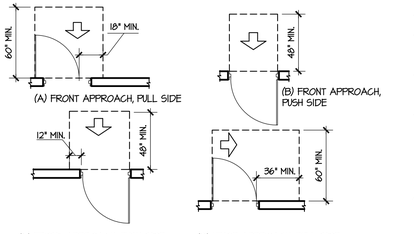
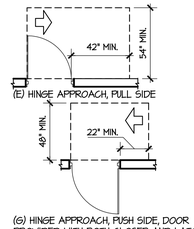


FIGURE 404.2.4.1
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES



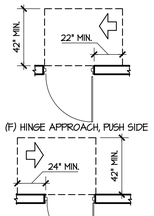


FIGURE 404.2.4.1 (CONTD.)
MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES

404.2.4.2 DOORWAYS WITHOUT DOORS OR GATES, SLIDING DOORS, AND FOLDING DOORS: DOORWAYS LESS THAN 36 INCHES WIDE WITHOUT DOORS OR GATES, SLIDING DOORS, OR FOLDING DOORS SHALL HAVE MANEUVERING CLEARANCES COMPLYING WITH TABLE 404.2.4.2. (AS ILLUSTRATED ON FIGURE 404.2.4.2)

404.2.4.3 RECESSED DOORS AND GATES: MANEUVERING CLEARANCES FOR FORWARD APPROACH SHALL BE PROVIDED WHEN ANY OBSTRUCTION WITHIN 18 INCHES OF THE LATCH SIDE OF A DOORWAY PROJECTS MORE THAN 8 INCHES BEYOND THE FACE OF THE DOOR, MEASURED PERPENDICULAR TO THE FACE OF THE DOOR OR GATE.

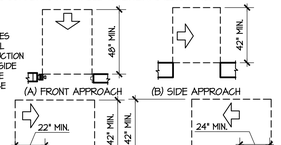


FIGURE 404.2.4.2
MANEUVERING CLEARANCES AT DOORWAYS WITHOUT DOORS, SLIDING DOORS, GATES AND FOLDING DOORS

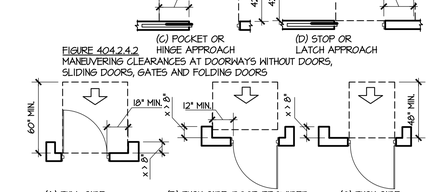


FIGURE 404.2.4.3
MANEUVERING CLEARANCES AT RECESSED DOORS AND GATES

404.2.4.4 FLOOR OR GROUND SURFACE: FLOOR OR GROUND SURFACE WITHIN REQUIRED MANEUVERING CLEARANCES SHALL COMPLY WITH 302.

EXCEPTIONS: 1. SLOPES NOT STEEPER THAN 1:48 SHALL BE PERMITTED. 2. CHANGES IN LEVEL AT THRESHOLDS COMPLYING WITH 404.2.5 SHALL BE PERMITTED.

404.2.5 THRESHOLDS: THRESHOLDS, IF PROVIDED AT DOORWAYS, SHALL BE 1/2 INCH HIGH MAXIMUM. RAISED THRESHOLDS AND CHANGES IN LEVEL AT DOORWAYS SHALL COMPLY WITH 302 AND 303.

EXCEPTION: EXISTING OR ALTERED THRESHOLDS 3/4 INCH HIGH MAXIMUM THAT HAVE A BEVELED EDGE ON EACH SIDE WITH A SLOPE NOT STEEPER THAN 1:2 SHALL NOT BE REQUIRED TO COMPLY WITH 404.2.5.

404.2.6 DOORS IN SERIES AND GATES IN SERIES: THE DISTANCE BETWEEN TWO HINGED OR PIVOTED DOORS IN SERIES AND GATES IN SERIES SHALL BE 48 INCHES MINIMUM PLUS THE WIDTH OF DOORS OR GATES SWINGING INTO THE SPACE.

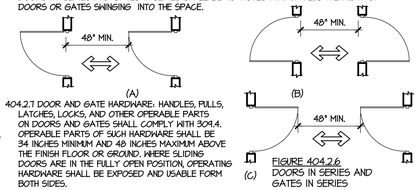


FIGURE 404.2.6
DOORS IN SERIES AND GATES IN SERIES

404.2.7 DOOR AND GATE HARDWARE: HANDLES, PULLS, LATCHES, LOCKS, AND OTHER OPERABLE PARTS ON DOORS AND GATES SHALL COMPLY WITH 309.4. OPERABLE PARTS OF SUCH HARDWARE SHALL BE 34 INCHES MINIMUM AND 48 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. WHERE SLIDING DOORS ARE IN THE FULLY OPEN POSITION, OPERATING HARDWARE SHALL BE EXPOSED AND USABLE FORM BOTH SIDES.

EXCEPTIONS: 1. EXISTING LOCKS SHALL BE PERMITTED IN ANY LOCATION AT EXISTING GLAZED DOORS WITHOUT STILES, EXISTING OVERHEAD ROLLING DOORS OR GRILLES, AND SIMILAR EXISTING DOORS OR GRILLES THAT ARE DESIGNED WITH LOCKS THAT ARE ACTIVATED ONLY AT THE TOP OR BOTTOM RAIL. 2. ACCESS GATES IN BARRIER WALLS AND FENCES PROTECTING POOLS, SPAS, AND HOT TUBS SHALL BE PERMITTED TO HAVE OPERABLE PARTS OF THE RELEASE OF LATCH ON SELF-LATCHING DEVICES AT 54 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND PROVIDED THE SELF-LATCHING DEVICES ARE NOT ALSO SELF-LOCKING DEVICES AND OPERATED BY MEANS OF A KEY, ELECTRONIC OPENER, OR INTEGRAL COMBINATION LOCK.

404.2.8 CLOSING SPEED: DOOR AND GATE CLOSING SPEED SHALL COMPLY WITH 404.2.8.

404.2.8.1 DOOR CLOSERS AND GATE CLOSERS: DOOR CLOSERS AND GATE CLOSERS SHALL BE ADJUSTED SO THAT FROM THE OPEN POSITION OF 90 DEGREES, THE TIME REQUIRED TO MOVE THE DOOR TO A POSITION OF 12 DEGREES FROM THE LATCH IS 5 SECONDS MINIMUM.

404.2.8.2 SPRING HINGES: DOOR AND GATE SPRING HINGES SHALL BE ADJUSTED SO THAT FROM THE OPEN POSITION OF 70 DEGREES, THE DOOR OR GATE SHALL MOVE TO THE CLOSED POSITION IN 1.5 SECONDS MINIMUM.

404.2.9 DOOR AND GATE OPENING FORCE: FIRE DOORS SHALL HAVE A MINIMUM OPENING FORCE ALLOWABLE BY THE APPROPRIATE ADMINISTRATIV

405.10 WET CONDITIONS: LANDINGS SUBJECT TO WET CONDITIONS SHALL BE DESIGNED TO PREVENT THE ACCUMULATION OF WATER.

406 CURB RAMPS

406.1 GENERAL: CURB RAMPS ON ACCESSIBLE ROUTES SHALL COMPLY WITH 406, 405.2 THROUGH 405.5, AND 405.10.

406.2 COUNTER SLOPE: COUNTER SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO THE CURB RAMPS SHALL NOT BE STEEPER THAN 1:20. THE ADJACENT SURFACES AT TRANSITIONS AT CURB RAMPS TO WALKS, GUTTERS, AND STREETS SHALL BE AT THE SAME LEVEL.

406.3 SIDES OF CURB RAMPS: WHERE PROVIDED, CURB RAMP FLARES SHALL NOT BE STEEPER THAN 1:10.



FIGURE 406.2
COUNTER SLOPE OF SURFACES ADJACENT TO CURB RAMPS

406.4 LANDINGS: LANDINGS SHALL BE PROVIDED AT THE TOPS OF CURB RAMPS.THE LANDING CLEAR LENGTH SHALL BE 36 INCHES MINIMUM. THE LANDING CLEAR WIDTH SHALL BE AT LEAST AS WIDE AS THE CURB RAMP, EXCLUDING FLARED SIDES, LEADING TO THE LANDING.
EXCEPTION: IN ALTERATIONS, WHERE THERE IS NO LANDING AT THE TOP OF CURB RAMPS, CURB RAMP FLARES SHALL BE PROVIDED AND SHALL NOT BE STEEPER THAN 1:12.

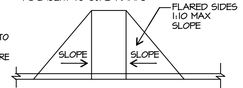


FIGURE 406.3
SIDES OF CURB RAMPS

406.5 LOCATION: CURB RAMPS AND THE FLARED SIDES OF CURB RAMPS SHALL BE LOCATED SO THAT THEY DO NOT PROJECT INTO VEHICULAR TRAFFIC LANES, PARKING SPACES, OR PARKING ACCESS AISLES. CURB RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING FLARED SIDES.

406.6 DIAGONAL CURB RAMPS: DIAGONAL OR CORNER TYPE CURB RAMPS WITH RETURNED CURBS OR OTHER WELL-DEFINED EDGES SHALL HAVE THE EDGES PARALLEL TO THE DIRECTION OF PEDESTRIAN FLOW. THE BOTTOM OF DIAGONAL CURB RAMPS SHALL HAVE A CLEAR SPACE 48 INCHES MINIMUM OUTSIDE ACTIVE TRAFFIC LANES OF THE ROADWAY. DIAGONAL CURB RAMPS PROVIDED AT MARKED CROSSINGS SHALL PROVIDE THE 48 INCHES MINIMUM CLEAR SPACE WITHIN THE MARKINGS. DIAGONAL CURB RAMPS WITH FLARED SIDES SHALL HAVE A SEGMENT OF CURB 24 INCHES LONG MINIMUM LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN THE MARKED CROSSING.

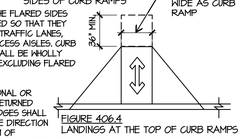


FIGURE 406.4
LANDINGS AT THE TOP OF CURB RAMPS

406.7 ISLANDS: RAISED ISLANDS IN CROSSINGS SHALL BE CUT THROUGH LEVEL WITH THE STREET OR HAVE CURB RAMPS AT BOTH SIDES. EACH CURB RAMP SHALL HAVE A LEVEL AREA 48 INCHES LONG MINIMUM BY 36 INCHES WIDE MINIMUM AT THE TOP OF THE CURB RAMP IN THE PART OF THE ISLAND INTERSECTED BY CROSSINGS. EACH 48 INCH MINIMUM BY 36 INCH MINIMUM AREA SHALL BE ORIENTED SO THAT THE 48 INCH MINIMUM LENGTH IS IN THE DIRECTION OF THE RUNNING SLOPE OF THE CURB RAMP IT SERVES. THE 48 INCH MINIMUM BY 36 INCH MINIMUM AREAS AND THE ACCESSIBLE ROUTE SHALL BE PERMITTED TO OVERLAP.

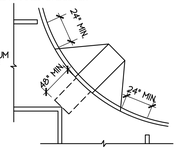


FIGURE 406.6
DIAGONAL OR CORNER TYPE CURB RAMPS

407 ELEVATORS

407.1 GENERAL: ELEVATORS SHALL COMPLY WITH 407 AND WITH ASME A17.1. THEY SHALL BE PASSENGER ELEVATORS AS CLASSIFIED BY ASME A17.1. ELEVATOR OPERATION SHALL BE AUTOMATIC.

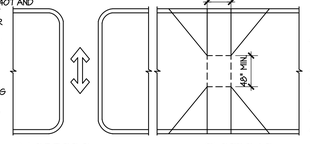


FIGURE 406.7
ISLANDS IN CROSSINGS

407.2 ELEVATOR LANDING REQUIREMENTS: ELEVATOR LANDINGS SHALL COMPLY WITH 407.2.

407.2.1 CALL CONTROLS: WHERE ELEVATOR CALL BUTTONS OR KEYPADS ARE PROVIDED, THEY SHALL COMPLY WITH 407.2.1 AND 309.4. CALL BUTTONS SHALL BE RAISED OR FLUSH.

EXCEPTION: EXISTING ELEVATORS SHALL BE PERMITTED TO HAVE RECESSED CALL BUTTONS.

407.2.1.1 HEIGHT: CALL BUTTONS AND KEYPADS SHALL BE LOCATED WITHIN ONE OF THE REACH RANGES SPECIFIED IN 308, MEASURED TO THE CENTERLINE OF THE HIGHEST OPERABLE PART.

EXCEPTION: EXISTING CALL BUTTONS AND EXISTING KEYPADS SHALL BE PERMITTED TO BE LOCATED AT 54 INCHES MAXIMUM ABOVE THE FINISH FLOOR, MEASURED TO THE CENTERLINE OF THE HIGHEST OPERABLE PART.

407.2.1.2 SIZE: CALL BUTTONS SHALL BE 3/4 INCH MINIMUM IN THE SMALLEST DIMENSION. EXCEPTION: EXISTING ELEVATOR CALL BUTTONS SHALL NOT BE REQUIRED TO COMPLY WITH 407.2.1.2.

407.2.1.3. CLEAR FLOOR OR GROUND SPACE: A CLEAR FLOOR OR GROUND SPACE COMPLYING WITH 305 SHALL BE PROVIDED AT CALL CONTROLS.

407.2.1.4 LOCATION: THE CALL BUTTON THAT DESIGNATES THE UP DIRECTION SHALL BE LOCATED THAT DESIGNATES THE DOWN DIRECTION.

EXCEPTION: DESTINATION-ORIENTED ELEVATORS SHALL NOT BE REQUIRED TO COMPLY WITH 407.2.1.

407.2.1.5 SIGNALS: CALL BUTTONS SHALL HAVE VISIBLE SIGNALS TO INDICATE WHEN EACH CALL IS REGISTERED AND WHEN EACH CALL IS ANSWERED.
EXCEPTIONS: 1. DESTINATION- ORIENTED ELEVATORS SHALL NOT BE REQUIRED TO COMPLY WITH 407.2.1.5 PROVIDED THAT VISIBLE AND AUDIBLE SIGNALS COMPLYING WITH 407.2.2 INDICATING WHICH ELEVATOR CAR TO ENTER ARE PROVIDED.
2. EXISTING ELEVATORS SHALL NOT BE REQUIRED TO COMPLY WITH 407.2.1.5.

407.2.1.6 KEYPADS: WHERE KEYPADS ARE PROVIDED, KEYPADS SHALL BE IN A STANDARD TELEPHONE KEYPAD ARRANGEMENT AND SHALL COMPLY WITH 407.4.1.2.

407.2.2 HALL SIGNALS: HALL SIGNALS, INCLUDING IN-CAR SIGNALS, SHALL COMPLY WITH 407.2.2.

407.2.2.1 VISIBLE AND AUDIO SIGNALS: A VISIBLE AND AUDIBLE SIGNAL SHALL BE PROVIDED AT EACH HOISTWAY ENTRANCE TO INDICATE WHICH CAR IS ANSWERING A CALL AND THE CAR'S DIRECTION OF TRAVEL. WHERE IN-CAR SIGNALS ARE PROVIDED, THEY SHALL BE VISIBLE FROM THE FLOOR AREA ADJACENT TO THE HALL CALL BUTTONS.

407.2.2.2 VISIBLE SIGNALS: VISIBLE SIGNAL FIXTURES SHALL BE CENTERED AT 72 INCHES MINIMUM ABOVE THE FINISH FLOOR OR GROUND. THE VISIBLE SIGNAL ELEMENTS SHALL BE 2 1/2 INCHES MINIMUM MEASURED ALONG THE VERTICAL CENTERLINE OF THE ELEMENT. SIGNALS SHALL BE VISIBLE FROM THE FLOOR AREA ADJACENT TO THE HALL CALL BUTTON.
EXCEPTIONS: 1. DESTINATION-ORIENTED ELEVATORS SHALL BE PERMITTED TO HAVE SIGNALS VISIBLE FROM THE FLOOR AREA ADJACENT TO THE HOISTWAY ENTRANCE. 2. EXISTING ELEVATORS SHALL NOT BE REQUIRED TO COMPLY WITH 407.2.2.2.

407.2.2.3 AUDIBLE SIGNALS: AUDIBLE SIGNALS SHALL SOUND ONCE FOR THE UP DIRECTION AND TWICE FOR THE DOWN DIRECTION, OR SHALL HAVE VERBAL ANNUNCIATORS THAT INDICATE THE DIRECTION OF ELEVATOR CAR TRAVEL. AUDIBLE SIGNALS SHALL HAVE A FREQUENCY OF 1500 HZ MAXIMUM. VERBAL ANNUNCIATORS SHALL HAVE A FREQUENCY OF 300 HZ MINIMUM AND 3000 HZ MAXIMUM. THE AUDIBLE SIGNAL AND VERBAL ANNUNCIATOR SHALL BE 10 DB MINIMUM ABOVE AMBIENT, BUT SHALL NOT EXCEED 80 DB, MEASURED AT THE HALL CALL BUTTON.

EXCEPTIONS: 1. DESTINATION-ORIENTED ELEVATORS SHALL NOT BE REQUIRED TO COMPLY WITH 407.2.2.3 PROVIDED THAT THE AUDIBLE TONE AND VERBAL ANNOUNCEMENT IS THE SAME AS THOSE GIVEN AT THE CALL BUTTON OR CALL BUTTON KEYPAD.2. EXISTING ELEVATORS SHALL NOT BE REQUIRED TO COMPLY WITH THE REQUIREMENTS FOR FREQUENCY AND DB RANGE OF AUDIBLE SIGNALS.



FIGURE 407.2.2.2
VISIBLE HALL SIGNALS

407.2.2.4 DIFFERENTIATION: EACH DESTINATION- ORIENTED ELEVATOR IN A BANK OF ELEVATORS SHALL HAVE AUDIBLE AND VISIBLE MEANS FOR DIFFERENTIATION.

407.2.3 HOISTWAY SIGNS: SIGNS AT ELEVATOR HOISTWAYS SHALL COMPLY WITH 407.2.3.

407.2.3.1 FLOOR DESIGNATION: FLOOR DESIGNATIONS COMPLYING WITH 703.2 AND 703.4.1 SHALL BE PROVIDED ON BOTH JAMBS OF ELEVATOR HOISTWAY ENTRANCES. FLOOR DESIGNATIONS SHALL BE PROVIDED IN BOTH TACTILE CHARACTERS AND BRAILLE. TACTILE CHARACTERS SHALL BE 2 INCHES HIGH MINIMUM. A TACTILE STAR SHALL BE PROVIDED ON BOTH JAMBS AT THE MAIN ENTRY LEVEL.

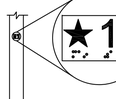


FIGURE 407.2.3.1
FLOOR DESIGNATIONS ON JAMBS OF ELEVATOR HOISTWAY ENTRANCES

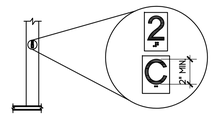


FIGURE 407.2.3.2
CAR DESIGNATIONS ON JAMBS OF DESTINATION-ORIENTED ELEVATOR HOISTWAY ENTRANCES

407.2.3.2 CAR DESIGNATIONS: DESTINATION-ORIENTED ELEVATORS SHALL PROVIDE TACTILE CAR IDENTIFICATION COMPLYING WITH 703.2 ON BOTH JAMBS OF THE HOISTWAY IMMEDIATELY BELOW THE FLOOR DESIGNATION. CAR DESIGNATIONS SHALL BE PROVIDED IN BOTH TACTILE CHARACTERS AND BRAILLE. TACTILE CHARACTERS SHALL BE 2 INCHES HIGH MINIMUM.

407.3 ELEVATOR DOOR REQUIREMENTS: HOISTWAY AND CAR DOORS SHALL COMPLY WITH 407.3.

407.3.1 TYPE: ELEVATOR DOORS SHALL BE THE HORIZONTAL SLIDING TYPE. CAR GATES SHALL BE PROHIBITED.

407.3.2 OPERATION: ELEVATOR HOISTWAY AND CAR DOORS SHALL OPEN AND CLOSE AUTOMATICALLY.
EXCEPTION: EXISTING MANUALLY OPERATED HOISTWAY SWING DOORS SHALL BE PERMITTED PROVIDED THAT THEY COMPLY WITH 404.2.3 AND 404.2.4. CAR DOOR CLOSING SHALL NOT BE INITIATED UNTIL THE HOISTWAY DOOR IS CLOSED.

407.3.3 REOPENING DEVICE: ELEVATOR DOORS SHALL BE PROVIDED WITH A REOPENING DEVICE COMPLYING WITH 407.3.3 THAT SHALL STOP AND REOPEN A CAR DOOR AND HOISTWAY DOOR AUTOMATICALLY IF THE DOOR BECOMES OBSTRUCTED BY AN OBJECT OR PERSON.
EXCEPTION: EXISTING ELEVATORS WITH MANUALLY OPERATED DOORS SHALL NOT BE REQUIRED TO COMPLY WITH 407.3.3.

407.3.3.1 HEIGHT: THE DEVICE SHALL BE ACTIVATED BY SENSING AN OBSTRUCTION PASSING THROUGH THE OPENING AT 5 INCHES NOMINAL AND 29 INCHES NOMINAL ABOVE THE FINISH FLOOR.

407.3.3.2 CONTACT: THE DEVICE SHALL NOT REQUIRE PHYSICAL CONTACT TO BE ACTIVATED, ALTHOUGH CONTACT IS PERMITTED TO OCCUR BEFORE THE DOOR REVERSES.

407.3.3.3 DURATION: DOOR REOPENING DEVICES SHALL REMAIN EFFECTIVE FOR 20 SECONDS MINIMUM.

407.3.4 DOOR AND SIGNAL TIMING: THE MINIMUM ACCEPTABLE TIME FROM NOTIFICATION THAT A CAR IS ANSWERING A CALL OR NOTIFICATION OF THE CAR ASSIGNED AT THE MEANS FOR THE ENTRY OF DESTINATION INFORMATION UNTIL THE DOORS OF THAT CAR START TO CLOSE SHALL BE CALCULATED FROM THE FOLLOWING EQUATION:

T = D/(1.5 FT/S) OR T = D/(455 MM/S) = 5 SECONDS MINIMUM WHERE T EQUALS THE TOTAL TIME IN SECONDS AND D EQUALS THE DISTANCE (IN FEET OR MILLIMETERS) FROM THE POINT IN THE LOBBY OR CORRIDOR 60 INCHES DIRECTLY IN FRONT OF THE FARTHEST CALL BUTTON CONTROLLING THAT CAR TO THE CENTERLINE OF ITS HOISTWAY DOOR.
EXCEPTIONS: 1. FOR CARS WITH IN-CAR LANTERNS, T SHALL BE PERMITTED TO BEGIN WHEN THE SIGNAL IS VISIBLE FROM THE POINT 60 INCHES DIRECTLY IN FRONT OF THE FARTHEST HALL CALL BUTTON AND THE AUDIBLE SIGNAL IS SOUNDED.
2. DESTINATION-ORIENTED ELEVATORS SHALL NOT BE REQUIRED TO COMPLY WITH 407.3.4.

407.3.5 DOOR DELAY: ELEVATOR DOORS SHALL REMAIN FULLY OPEN IN RESPONSE TO A CAR CALL FOR 3 SECONDS MINIMUM.

407.3.6 WIDTH: THE WIDTH OF ELEVATOR DOORS SHALL COMPLY WITH TABLE 407.4.1.
EXCEPTION: IN EXISTING ELEVATORS, A POWER-OPERATED CAR DOOR COMPLYING WITH 404.2.3 SHALL BE PERMITTED.

407.4 ELEVATOR CAR REQUIREMENTS: ELEVATOR CARS SHALL COMPLY WITH 407.4.

407.4.1 CAR DIMENSIONS: INSIDE DIMENSIONS OF ELEVATOR CARS AND CLEAR WIDTH OF ELEVATOR DOORS SHALL COMPLY WITH FIGURE 407.4.1 (TABLE 407.4.1.).
EXCEPTION: EXISTING ELEVATOR CAR CONFIGURATIONS THAT PROVIDE A CLEAR FLOOR AREA OF 16 SQUARE FEET MINIMUM AND ALSO PROVIDE AN INSIDE CLEAR DEPTH 54 INCHES MINIMUM AND A CLEAR WIDTH 36 INCHES MINIMUM SHALL BE PERMITTED.

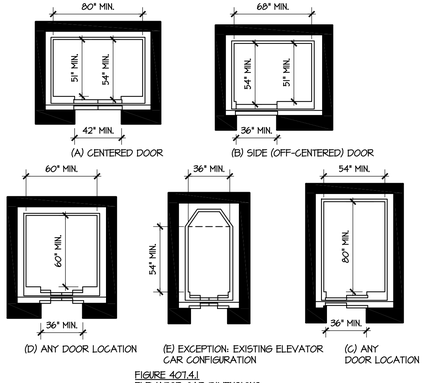


FIGURE 407.4.1
ELEVATOR CAR DIMENSIONS

407.4.2 FLOOR SURFACES: FLOOR SURFACES IN ELEVATOR CARS SHALL COMPLY WITH 302 AND 303.

407.4.3 PLATFORM TO HOISTWAY CLEARANCE: THE CLEARANCE BETWEEN THE CAR PLATFORM SILL AND THE EDGE OF ANY HOISTWAY LANDING SHALL BE 1 1/4 INCH MAXIMUM.

407.4.4 LEVELING: EACH CAR SHALL BE EQUIPPED WITH A SELF-LEVELING FEATURE THAT WILL AUTOMATICALLY BRING AND MAINTAIN THE CAR AT FLOOR LANDINGS WITHIN A TOLERANCE OF 1/2 INCH UNDER RATED LOADING TO ZERO LOADING CONDITIONS.

407.4.5 ILLUMINATION: THE LEVEL OF ILLUMINATION AT THE CAR CONTROLS, PLATFORM, CAR THRESHOLD AND CAR LANDING SILL SHALL BE 5 FOOT CANDLES (54 LUX) MINIMUM.

407.4.6 ELEVATOR CAR CONTROLS: WHERE PROVIDED, ELEVATOR CAR CONTROLS SHALL COMPLY WITH 407.4.6 AND 309.4.
EXCEPTION: IN EXISTING ELEVATORS, WHERE A NEW CAR OPERATING PANEL COMPLYING WITH 407.4.6 IS PROVIDED, EXISTING CAR OPERATING PANELS SHALL NOT BE REQUIRED TO COMPLY WITH 407.4.6.

407.4.6.1 LOCATION. CONTROLS SHALL BE LOCATED WITHIN ONE OF THE REACH RANGES SPECIFIED IN 308.

EXCEPTIONS:
1. WHERE THE ELEVATOR PANEL SERVES MORE THAN 16 OPENINGS AND A PARALLEL APPROACH IS PROVIDED, BUTTONS WITH FLOOR DESIGNATIONS SHALL BE PERMITTED TO BE 54 INCHES MAXIMUM ABOVE THE FINISH FLOOR.
2. IN EXISTING ELEVATORS, CAR CONTROL BUTTONS WITH FLOOR DESIGNATIONS SHALL BE PERMITTED TO BE LOCATED 54 INCHES MAXIMUM ABOVE THE FINISH FLOOR WHERE A PARALLEL APPROACH IS PROVIDED.

407.4.6.2 BUTTONS: CAR CONTROL BUTTONS WITH FLOOR DESIGNATIONS SHALL COMPLY WITH 407.4.6.2 AND SHALL BE RAISED OR FLUSH.

EXCEPTION: IN EXISTING ELEVATORS, BUTTONS SHALL BE PERMITTED TO BE RECESSED.

407.4.6.2.1 SIZE: BUTTONS SHALL BE 3/4 INCH MINIMUM IN THEIR SMALLEST DIMENSION.

407.4.6.2.2 ARRANGEMENT: BUTTONS SHALL BE ARRANGED WITH NUMBERS IN ASCENDING ORDER. WHEN TWO OR MORE COLUMNS OF BUTTONS ARE PROVIDED THEY SHALL READ FROM LEFT TO RIGHT.

407.4.6.3 KEYPADS: CAR CONTROL KEYPADS SHALL BE IN A STANDARD TELEPHONE KEYPAD ARRANGEMENT AND SHALL COMPLY WITH 407.4.7.1.2.

407.4.6.4 EMERGENCY CONTROLS: EMERGENCY CONTROLS SHALL COMPLY WITH 407.4.6.4.

407.4.6.4.1 HEIGHT: EMERGENCY CONTROL BUTTONS SHALL HAVE THEIR CENTERLINES 35 INCHES MINIMUM ABOVE THE FINISH FLOOR.

407.4.6.4.2 LOCATION: EMERGENCY CONTROLS, INCLUDING THE EMERGENCY ALARM, SHALL BE GROUPED AT THE BOTTOM OF THE PANEL.

407.4.7 DESIGNATIONS AND INDICATORS OF CAR CONTROLS: DESIGNATIONS AND INDICATORS OF CAR CONTROLS SHALL COMPLY WITH 407.4.7.1.

EXCEPTION: IN EXISTING ELEVATORS, WHERE A NEW CAR OPERATING PANEL COMPLYING WITH 407.4.7.1 IS PROVIDED, EXISTING CAR OPERATING PANELS SHALL NOT BE REQUIRED TO COMPLY WITH 407.4.7.1.

407.4.7.1.1 BUTTONS: CAR CONTROL BUTTONS SHALL COMPLY WITH 407.4.7.1.1.

407.4.7.1.1.1 TYPE: CONTROL BUTTONS SHALL BE IDENTIFIED BY TACTILE CHARACTERS COMPLYING WITH 703.2.

407.4.7.1.1.2 LOCATION: RAISED CHARACTER AND BRAILLE DESIGNATIONS SHALL BE PLACED IMMEDIATELY TO THE LEFT OF THE CONTROL BUTTON TO WHICH THE DESIGNATIONS APPLY.
EXCEPTION: WHERE SPACE ON AN EXISTING CAR OPERATING PANEL PRECLUDES TACTILE MARKINGS TO THE LEFT OF THE CONTROLS, MARKINGS SHALL BE PLACED AS NEAR TO THE CONTROL AS POSSIBLE.

407.4.7.1.3 SYMBOLS: THE CONTROL BUTTON FOR THE EMERGENCY STOP, ALARM, DOOR OPEN, DOOR CLOSE, MAIN ENTRY FLOOR, AND PHONE, SHALL BE IDENTIFIED WITH TACTILE SYMBOLS AS SHOWN IN TABLE 407.4.7.1.3 (REFER TO 2010 ADA FOR TABLE).

407.4.7.1.4 VISIBLE INDICATORS: BUTTONS WITH FLOOR DESIGNATIONS SHALL BE PROVIDED WITH VISIBLE INDICATORS TO SHOW THAT A CALL HAS BEEN REGISTERED. THE VISIBLE INDICATION SHALL EXTINGUISH WHEN THE CAR ARRIVES AT THE DESIGNATED FLOOR.

407.4.7.1.2 KEYPADS: KEYPADS SHALL BE IDENTIFIED BY CHARACTERS COMPLYING WITH 703.5 AND SHALL BE CENTERED ON THE CORRESPONDING KEYPAD BUTTON. THE NUMBER FIVE KEY SHALL HAVE A SINGLE RAISED DOT. THE DOT SHALL BE 0.118 INCH TO 0.120 INCH BASE DIAMETER AND IN OTHER ASPECTS COMPLY WITH TABLE 703.3.1.

407.4.8 CAR POSITION INDICATORS: AUDIBLE AND VISIBLE CAR POSITION INDICATORS SHALL BE PROVIDED IN ELEVATOR CARS.

407.4.8.1 VISIBLE INDICATORS: VISIBLE INDICATORS SHALL COMPLY WITH 407.4.8.1.

407.4.8.1.1 SIZE: CHARACTERS SHALL BE 1/2 INCH HIGH MINIMUM.

407.4.8.1.2 LOCATION. INDICATORS SHALL BE LOCATED ABOVE THE CAR CONTROL PANEL OR ABOVE THE DOOR.

407.4.8.1.3 FLOOR ARRIVAL: AS THE CAR PASSES A FLOOR AND WHEN A CAR STOPS AT A FLOOR SERVED BY THE ELEVATOR, THE CORRESPONDING CHARACTER SHALL ILLUMINATE.
EXCEPTION: DESTINATION-ORIENTED ELEVATORS SHALL NOT BE REQUIRED TO COMPLY WITH 407.4.8.1.3 PROVIDED THAT THE VISIBLE INDICATORS EXTINGUISH WHEN THE CALL HAS BEEN ANSWERED.
407.4.8.1.4 DESTINATION INDICATOR. IN DESTINATION-ORIENTED ELEVATORS, A DISPLAY SHALL BE PROVIDED IN THE CAR WITH VISIBLE INDICATORS TO SHOW CAR DESTINATIONS.

407.4.8.2 AUDIBLE INDICATORS: AUDIBLE INDICATORS SHALL COMPLY WITH 407.4.8.2.

407.4.8.2.1 SIGNAL TYPE: THE SIGNAL SHALL BE AN AUTOMATIC VERBAL ANNUNCIATOR WHICH ANNOUNCES THE FLOOR AT WHICH THE CAR IS ABOUT TO STOP.

EXCEPTION: FOR ELEVATORS OTHER THAN DESTINATION-ORIENTED ELEVATORS THAT HAVE A RATED SPEED OF 200 FEET PER MINUTE (1 M/S) OR LESS, A NON-VERBAL AUDIBLE SIGNAL WITH A FREQUENCY OF 1500 HZ MAXIMUM WHICH SOUNDS AS THE CAR PASSES OR IS ABOUT TO STOP AT A FLOOR SERVED BY THE ELEVATOR SHALL BE PERMITTED.

407.4.8.2.2 SIGNAL LEVEL: THE VERBAL ANNUNCIATOR SHALL BE 10 DB MINIMUM ABOVE AMBIENT, BUT SHALL NOT EXCEED 80 DB, MEASURED AT THE ANNUNCIATOR.

407.4.8.2.3 FREQUENCY. THE VERBAL ANNUNCIATOR SHALL HAVE A FREQUENCY OF 300 HZ MINIMUM TO 3000 HZ MAXIMUM.

407.4.9 EMERGENCY COMMUNICATION. EMERGENCY TWO-WAY COMMUNICATION SYSTEMS SHALL COMPLY WITH 308. TACTILE SYMBOLS AND CHARACTERS SHALL BE PROVIDED ADJACENT TO THE DEVICE AND SHALL COMPLY WITH 703.2.

408 LIMITED-USE/LIMITED-APPLICATION ELEVATORS.

408.1 GENERAL: LIMITED-USE/LIMITED-APPLICATION ELEVATORS SHALL COMPLY WITH 408 AND WITH ASME A17.1 (INCORPORATED BY REFERENCE, SEE "REFERENCED STANDARDS" IN CHAPTER 1). THEY SHALL BE PASSENGER ELEVATORS AS CLASSIFIED BY ASME A17.1. ELEVATOR OPERATION SHALL BE AUTOMATIC.

408.2 ELEVATOR LANDINGS: LANDINGS SERVING LIMITED-USE/LIMITED-APPLICATION ELEVATORS SHALL COMPLY WITH 408.2.

408.2.1 CALL BUTTONS: ELEVATOR CALL BUTTONS AND KEYPADS SHALL COMPLY WITH 407.2.1.

408.2.2 HALL SIGNALS: HALL SIGNALS SHALL COMPLY WITH 407.2.2.

408.2.3 HOISTWAY SIGNS: SIGNS AT ELEVATOR HOISTWAYS SHALL COMPLY WITH 407.2.3.1.

408.3 ELEVATOR DOORS: ELEVATOR HOISTWAY DOORS SHALL COMPLY WITH 408.3.

408.3.1 SLIDING DOORS: SLIDING HOISTWAY AND CAR DOORS SHALL COMPLY WITH 407.3.1 THROUGH 407.3.3 AND 408.4.1.

408.3.2 SWINGING DOORS: SWINGING HOISTWAY DOORS SHALL OPEN AND CLOSE AUTOMATICALLY AND SHALL COMPLY WITH 404, 407.3.2 AND 408.3.2.

408.3.2.1 POWER OPERATION: SWINGING DOORS SHALL BE POWER-OPERATED AND SHALL COMPLY WITH ANSI/BHMA A156.19 (1997 OR 2002 EDITION) (INCORPORATED BY REFERENCE, SEE "REFERENCED STANDARDS" IN CHAPTER 1).

408.3.2.2 DURATION. POWER-OPERATED SWINGING DOORS SHALL REMAIN OPEN FOR 20 SECONDS MINIMUM WHEN ACTIVATED.

408.4 ELEVATOR CARS: ELEVATOR CARS SHALL COMPLY WITH 408.4.

408.4.1 CAR DIMENSIONS AND DOORS: ELEVATOR CARS SHALL PROVIDE A CLEAR WIDTH 42 INCHES MINIMUM AND A CLEAR DEPTH 54 INCHES MINIMUM. CAR DOORS SHALL BE POSITIONED AT THE NARROW ENDS OF CARS AND SHALL PROVIDE 32 INCHES MINIMUM CLEAR WIDTH.

EXCEPTIONS:
1. CARS THAT PROVIDE A CLEAR WIDTH 51 INCHES MINIMUM SHALL BE PERMITTED TO PROVIDE A CLEAR DEPTH 51 INCHES MINIMUM PROVIDED THAT CAR DOORS PROVIDE A CLEAR OPENING 36 INCHES WIDE MINIMUM. 2. EXISTING ELEVATOR CARS SHALL BE PERMITTED TO PROVIDE A CLEAR WIDTH 36 INCHES MINIMUM, CLEAR DEPTH 54 INCHES MINIMUM, AND A NET CLEAR PLATFORM AREA 15 SQUARE FEET MINIMUM.

408.4.2 FLOOR SURFACES: FLOOR SURFACES IN ELEVATOR CARS SHALL COMPLY WITH 302 AND 303.

408.4.3 PLATFORM TO HOISTWAY CLEARANCE: THE PLATFORM TO HOISTWAY CLEARANCE SHALL COMPLY WITH 407.4.3.

408.4.4 LEVELING. ELEVATOR CAR LEVELING SHALL COMPLY WITH 407.4.4.

408.4.5 ILLUMINATION: ELEVATOR CAR ILLUMINATION SHALL COMPLY WITH 407.4.5.

408.4.6 CAR CONTROLS: ELEVATOR CAR CONTROLS SHALL COMPLY WITH 407.4.6. CONTROL PANELS SHALL BE CENTERED ON A SIDE WALL.

408.4.7 DESIGNATIONS AND INDICATORS OF CAR CONTROLS: DESIGNATIONS AND INDICATORS OF CAR CONTROLS SHALL COMPLY WITH 407.4.7.

408.4.8 EMERGENCY COMMUNICATIONS: CAR EMERGENCY SIGNALING DEVICES COMPLYING WITH 407.4.9 SHALL BE PROVIDED.

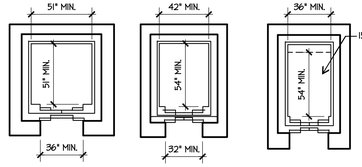


FIGURE 408.4.1
LIMITED-USE/ LIMITED - APPLICATION (LULA) ELEVATOR CAR DIMENSIONS

410 PLATFORM LIFTS

410.1 GENERAL: PLATFORM LIFTS SHALL COMPLY WITH ASME A18.1 (1999 EDITION OR 2003 EDITION) (INCORPORATED BY REFERENCE, SEE "REFERENCED STANDARDS" IN CHAPTER 1). PLATFORM LIFTS SHALL NOT BE ATTENDANT-OPERATED AND SHALL PROVIDE UNASSISTED ENTRY AND EXIT FROM THE LIFT.

410.2 FLOOR SURFACES: FLOOR SURFACES IN PLATFORM LIFTS SHALL COMPLY WITH 302 AND 303.

410.3 CLEAR FLOOR SPACE: CLEAR FLOOR SPACE IN PLATFORM LIFTS SHALL COMPLY WITH 305.

410.4 PLATFORM TO RUNWAY CLEARANCE: THE CLEARANCE BETWEEN THE PLATFORM SILL AND THE EDGE OF ANY RUNWAY LANDING SHALL BE 1 INCH MAXIMUM.

410.5 OPERABLE PARTS: CONTROLS FOR PLATFORM LIFTS SHALL COMPLY WITH 309.

410.6 DOORS AND GATES: PLATFORM LIFTS SHALL HAVE LOW-ENERGY POWER-OPERATED DOORS OR GATES COMPLYING WITH 404.3. DOORS SHALL REMAIN OPEN FOR 20 SECONDS MINIMUM. END DOORS AND GATES SHALL PROVIDE A CLEAR WIDTH 32 INCHES MINIMUM. SIDE DOORS AND GATES SHALL PROVIDE A CLEAR WIDTH 42 INCHES MINIMUM.

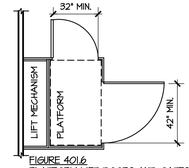


FIGURE 401.6
PLATFORM LIFT DOORS AND GATES

EXCEPTION: PLATFORM LIFTS SERVING TWO LANDINGS MAXIMUM AND HAVING DOORS OR GATES ON OPPOSITE SIDES SHALL BE PERMITTED TO HAVE SELF-CLOSING MANUAL DOORS OR GATES.

CHAPTER 5: GENERAL AND BUILDING ELEMENTS

501 GENERAL

501.1 SCOPE: THE PROVISIONS OF CHAPTER 5 SHALL APPLY WHERE REQUIRED BY CHAPTER 2 OR WHERE REFERENCED BY A REQUIREMENT IN THIS DOCUMENT.

502 PARKING SPACES

502.1 GENERAL: CAR AND VAN PARKING SPACES SHALL COMPLY WITH 502. WHERE PARKING SPACES ARE MARKED WITH LINES, WIDTH MEASUREMENTS OF PARKING SPACES AND ACCESS AISLES SHALL BE MADE FROM THE CENTERLINE OF THE MARKINGS.

EXCEPTION: WHERE PARKING SPACES OR ACCESS AISLES ARE NOT ADJACENT TO ANOTHER PARKING SPACE OR ACCESS AISLE, MEASUREMENTS SHALL BE PERMITTED TO INCLUDE THE FULL WIDTH OF THE LINE DEFINING THE PARKING SPACE OR ACCESS AISLE.

502.2 VEHICLE SPACES: CAR PARKING SPACES SHALL BE 96 INCHES WIDE MINIMUM AND VAN PARKING SPACES SHALL BE 132 INCHES WIDE MINIMUM, SHALL BE MARKED TO DEFINE THE WIDTH, AND SHALL HAVE AN ADJACENT ACCESS AISLE COMPLYING WITH 502.3.
EXCEPTION: VAN PARKING SPACES SHALL BE PERMITTED TO BE 96 INCHES WIDE MINIMUM WHERE THE ACCESS AISLE IS 96 INCHES WIDE MINIMUM.

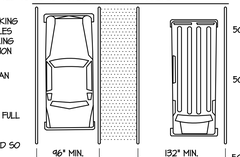


FIGURE 502.2
VEHICLE PARKING SPACES

502.3 ACCESS AISLE: ACCESS AISLES SERVING PARKING SPACES SHALL COMPLY WITH 502.3. ACCESS AISLES SHALL ADJOIN AN ACCESSIBLE ROUTE. TWO PARKING SPACES SHALL BE PERMITTED TO SHARE A COMMON ACCESS AISLE.

502.3.1 WIDTH. ACCESS AISLES SERVING CAR AND VAN PARKING SPACES SHALL BE 60 INCHES WIDE MINIMUM.

502.3.2 LENGTH: ACCESS AISLES SHALL EXTEND THE FULL LENGTH OF THE PARKING SPACES THEY SERVE.

502.3.3 MARKING: ACCESS AISL

603.2.2 OVERLAP. REQUIRED CLEAR FLOOR SPACES, CLEARANCE AT FIXTURES, AND TURNING SPACE SHALL BE PERMITTED TO OVERLAP.

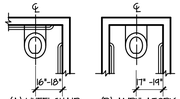
603.2.3 DOOR SWING. DOORS SHALL NOT SWING INTO THE CLEAR FLOOR SPACE OR CLEARANCE REQUIRED FOR ANY FIXTURE. DOORS SHALL BE PERMITTED TO SWING INTO THE REQUIRED TURNING SPACE.

EXCEPTIONS:
1. DOORS TO A TOILET ROOM OR BATHING ROOM FOR A SINGLE OCCUPANT ACCESSED ONLY THROUGH A PRIVATE OFFICE AND NOT FOR COMMON USE OR PUBLIC USE SHALL BE PERMITTED TO SWING INTO THE CLEAR FLOOR SPACE OR CLEARANCE PROVIDED THE SWING OF THE DOOR CAN BE RESTRICTED TO COMPLY WITH 609.2.3.
2. WHERE THE TOILET ROOM OR BATHING ROOM IS FOR INDIVIDUAL USE AND A CLEAR FLOOR SPACE COMPLYING WITH 305.3 IS PROVIDED WITHIN THE ROOM BEYOND THE ARC OF THE DOOR SWING, DOORS SHALL BE PERMITTED TO SWING INTO THE CLEAR FLOOR SPACE OR CLEARANCE REQUIRED FOR ANY FIXTURE.

603.3 MIRRORS. MIRRORS LOCATED ABOVE LAVATORIES OR COUNTERTOPS SHALL BE INSTALLED WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE 40 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. MIRRORS NOT LOCATED ABOVE LAVATORIES OR COUNTERTOPS SHALL BE INSTALLED WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE 35 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND.

603.4 COAT HOOKS AND SHELVES. COAT HOOKS SHALL BE LOCATED WITHIN ONE OF THE REACH RANGES SPECIFIED IN 308. SHELVES SHALL BE LOCATED 40 INCHES MINIMUM AND 48 INCHES MAXIMUM ABOVE THE FINISH FLOOR.

604 WATER CLOSETS AND TOILET COMPARTMENTS



(A) WHEELCHAIR ACCESSIBLE WATER CLOSETS (B) AMBULATORY ACCESSIBLE WATER CLOSETS

FIGURE 604.2
WATER CLOSET LOCATION

604.1 GENERAL: WATER CLOSETS AND TOILET COMPARTMENTS SHALL COMPLY WITH 604.2 THROUGH 604.9.

EXCEPTION: WATER CLOSETS AND TOILET COMPARTMENTS FOR CHILDREN'S USE SHALL BE PERMITTED TO COMPLY WITH 604.11.

604.2 LOCATION. THE WATER CLOSET SHALL BE POSITIONED WITH A WALL OR PARTITION TO THE REAR AND TO ONE SIDE. THE CENTERLINE OF THE WATER CLOSET SHALL BE 16 INCHES MINIMUM TO 18 INCHES MAXIMUM FROM THE SIDE WALL OR PARTITION, EXCEPT THAT THE WATER CLOSET SHALL BE 17 INCHES MINIMUM AND 19 INCHES MAXIMUM FROM THE SIDE WALL OR PARTITION IN THE AMBULATORY ACCESSIBLE TOILET COMPARTMENT SPECIFIED IN 604.8.2. WATER CLOSETS SHALL BE ARRANGED FOR A LEFT-HAND OR RIGHT-HAND APPROACH.

604.3 CLEARANCE. CLEARANCES AROUND WATER CLOSETS AND IN TOILET COMPARTMENTS SHALL COMPLY WITH 604.3.

604.3.1 SIZE: CLEARANCE AROUND A WATER CLOSET SHALL BE 60 INCHES MINIMUM MEASURED PERPENDICULAR FROM THE SIDE WALL AND 56 INCHES MINIMUM MEASURED PERPENDICULAR FROM THE REAR WALL.

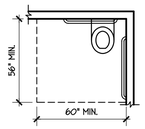


FIGURE 604.3.1
SIZE OF WATER CLOSETS

604.3.2 OVERLAP. THE REQUIRED CLEARANCE AROUND THE WATER CLOSET SHALL BE PERMITTED TO OVERLAP THE WATER CLOSET, ASSOCIATED GRAB BARS, DISPENSERS, SANITARY NAPKIN DISPOSAL UNITS, COAT HOOKS, SHELVES, ACCESSIBLE ROUTES, CLEAR FLOOR SPACE AND CLEARANCES REQUIRED AT OTHER FIXTURES, AND THE TURNING SPACE. NO OTHER FIXTURES OR OBSTRUCTIONS SHALL BE LOCATED WITHIN THE REQUIRED WATER CLOSET CLEARANCE.

604.4 SEATS: THE SEAT HEIGHT OF A WATER CLOSET ABOVE THE FINISH FLOOR SHALL BE 17 INCHES MINIMUM AND 19 INCHES MAXIMUM MEASURED TO THE TOP OF THE SEAT. SEATS SHALL NOT BE SPRUNG TO RETURN TO A LIFTED POSITION.

EXCEPTIONS:
1. A WATER CLOSET IN A TOILET ROOM FOR A SINGLE OCCUPANT ACCESSED ONLY THROUGH A PRIVATE OFFICE AND NOT FOR COMMON USE OR PUBLIC USE SHALL NOT BE REQUIRED TO COMPLY WITH 604.4.

604.5 GRAB BARS: GRAB BARS FOR WATER CLOSETS SHALL COMPLY WITH 609. GRAB BARS SHALL BE PROVIDED ON THE SIDE WALL CLOSEST TO THE WATER CLOSET AND ON THE REAR WALL.

EXCEPTIONS:
1. GRAB BARS SHALL NOT BE REQUIRED TO BE INSTALLED IN A TOILET ROOM FOR A SINGLE OCCUPANT ACCESSED ONLY THROUGH A PRIVATE OFFICE AND NOT FOR COMMON USE OR PUBLIC USE PROVIDED THAT REINFORCEMENT HAS BEEN INSTALLED IN WALLS AND LOCATED SO AS TO PERMIT THE INSTALLATION OF GRAB BARS COMPLYING WITH 604.5.
3. IN DETENTION OR CORRECTION FACILITIES, GRAB BARS SHALL NOT BE REQUIRED TO BE INSTALLED IN HOUSING OR HOLDING CELLS THAT ARE SPECIALLY DESIGNED WITHOUT PROTRUSIONS FOR PURPOSES OF SUICIDE PREVENTION.

604.5.1 SIDE WALL: THE SIDE WALL GRAB BAR SHALL BE 42 INCHES LONG MINIMUM, LOCATED 12 INCHES MAXIMUM FROM THE REAR WALL AND EXTENDING 54 INCHES MINIMUM FROM THE REAR WALL.

604.5.2 REAR WALL: THE REAR WALL GRAB BAR SHALL BE 36 INCHES LONG MINIMUM AND EXTEND FROM THE CENTERLINE OF THE WATER CLOSET 12 INCHES MINIMUM ON ONE SIDE AND 24 INCHES MINIMUM ON THE OTHER SIDE.

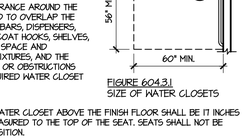


FIGURE 604.5.1
SIDE WALL GRAB BAR AT WATER CLOSETS

FIGURE 604.5.2
REAR WALL GRAB BAR AT WATER CLOSETS

EXCEPTIONS:
1. THE REAR GRAB BAR SHALL BE PERMITTED TO BE 24 INCHES LONG MINIMUM, CENTERED ON THE WATER CLOSET, WHERE WALL SPACE DOES NOT PERMIT A LENGTH OF 36 INCHES MINIMUM DUE TO THE LOCATION OF A RECESSED FIXTURE ADJACENT TO THE WATER CLOSET. 2. WHERE AN ADMINISTRATIVE AUTHORITY REQUIRES FLUSH CONTROLS FOR FLUSH VALVES TO BE LOCATED IN A POSITION THAT CONFLICTS WITH THE LOCATION OF THE REAR GRAB BAR, THEN THE REAR GRAB BAR SHALL BE PERMITTED TO BE SPLIT OR SHIFTED TO THE OPEN SIDE OF THE TOILET AREA.

604.6 FLUSH CONTROLS. FLUSH CONTROLS SHALL BE HAND OPERATED OR AUTOMATIC. HAND OPERATED FLUSH CONTROLS SHALL COMPLY WITH 309. FLUSH CONTROLS SHALL BE LOCATED ON THE OPEN SIDE OF THE WATER CLOSET EXCEPT IN AMBULATORY ACCESSIBLE COMPARTMENTS COMPLYING WITH 604.8.2.

604.7 DISPENSERS: TOILET PAPER DISPENSERS SHALL COMPLY WITH 309.4 AND SHALL BE 7 INCHES MINIMUM AND 9 INCHES MAXIMUM IN FRONT OF THE WATER CLOSET MEASURED TO THE CENTERLINE OF THE DISPENSER. THE OUTLET OF THE DISPENSER SHALL BE 15 INCHES MINIMUM AND 48 INCHES MAXIMUM ABOVE THE FINISH FLOOR AND SHALL NOT BE LOCATED BEHIND GRAB BARS. DISPENSERS SHALL NOT BE OF A TYPE THAT CONTROLS DELIVERY OR THAT DOES NOT ALLOW CONTINUOUS PAPER FLOW.

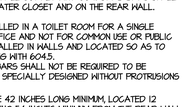
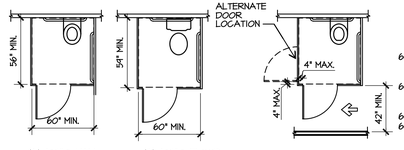


FIGURE 604.7
DISPENSER OUTLET LOCATION

604.8 TOILET COMPARTMENTS: WHEELCHAIR ACCESSIBLE TOILET COMPARTMENTS SHALL MEET THE REQUIREMENTS OF 604.8.1 AND 604.8.3. COMPARTMENTS CONTAINING MORE THAN ONE PLUMBING FIXTURE SHALL COMPLY WITH 603. AMBULATORY ACCESSIBLE COMPARTMENTS SHALL COMPLY WITH 604.8.2 AND 604.8.3.

604.8.1 WHEELCHAIR ACCESSIBLE COMPARTMENTS: WHEELCHAIR ACCESSIBLE COMPARTMENTS SHALL COMPLY WITH 604.8.1.

604.8.1.1 SIZE: WHEELCHAIR ACCESSIBLE COMPARTMENTS SHALL BE 60 INCHES WIDE MINIMUM MEASURED PERPENDICULAR TO THE SIDE WALL, AND 56 INCHES DEEP MINIMUM FOR WALL HUNG WATER CLOSETS AND 59 INCHES DEEP MINIMUM FOR FLOOR MOUNTED WATER CLOSETS MEASURED PERPENDICULAR TO THE REAR WALL. WHEELCHAIR ACCESSIBLE COMPARTMENTS FOR CHILDREN'S USE SHALL BE 60 INCHES WIDE MINIMUM MEASURED PERPENDICULAR TO THE SIDE WALL, AND 59 INCHES DEEP MINIMUM FOR WALL HUNG AND FLOOR MOUNTED WATER CLOSETS MEASURED PERPENDICULAR TO THE REAR WALL.



(A) ADULT WALL HUNG WATER CLOSET (B) ADULT FLOOR MOUNTED WATER CLOSET AND CHILDREN'S WATER CLOSET

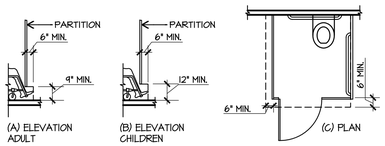
FIGURE 604.8.1.1
SIZE OF WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT

604.8.1.2 DOORS: TOILET COMPARTMENT DOORS, INCLUDING DOOR HARDWARE, SHALL COMPLY WITH 404 EXCEPT THAT IF THE APPROACH IS TO THE LATCH SIDE OF THE COMPARTMENT DOOR, CLEARANCE BETWEEN THE DOOR SIDE OF THE COMPARTMENT AND ANY OBSTRUCTION SHALL BE 42 INCHES MINIMUM. DOORS SHALL BE LOCATED IN THE FRONT PARTITION OR IN THE SIDE WALL OR PARTITION FARTHEST FROM THE WATER CLOSET. WHERE LOCATED IN THE FRONT PARTITION, THE DOOR OPENING SHALL BE 4 INCHES MAXIMUM FROM THE SIDE WALL OR PARTITION FARTHEST FROM THE WATER CLOSET. WHERE LOCATED IN THE SIDE WALL OR PARTITION, THE DOOR OPENING SHALL BE 4 INCHES MAXIMUM FROM THE FRONT PARTITION. THE DOOR SHALL BE SELF-CLOSING. A DOOR PULL COMPLYING WITH 404.2.7 SHALL BE PLACED ON BOTH SIDES OF THE DOOR NEAR THE LATCH. TOILET COMPARTMENT DOORS SHALL NOT SWING INTO THE MINIMUM REQUIRED COMPARTMENT AREA.

604.8.1.3 APPROACH: COMPARTMENTS SHALL BE ARRANGED FOR LEFT-HAND OR RIGHT-HAND APPROACH TO THE WATER CLOSET.

604.8.1.4 TOE CLEARANCE: THE FRONT PARTITION AND AT LEAST ONE SIDE PARTITION SHALL PROVIDE A TOE CLEARANCE OF 9 INCHES MINIMUM ABOVE THE FINISH FLOOR AND 6 INCHES 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 MINIMUM ABOVE THE FINISH FLOOR.

EXCEPTION: TOE CLEARANCE AT THE FRONT PARTITION IS NOT REQUIRED IN A COMPARTMENT GREATER THAN 62 INCHES DEEP WITH A WALL-HUNG WATER CLOSET OR 65 INCHES DEEP WITH A FLOOR-MOUNTED WATER CLOSET. TOE CLEARANCE AT THE SIDE PARTITION IS NOT REQUIRED IN A COMPARTMENT GREATER THAN 66 INCHES WIDE. TOE CLEARANCE AT THE FRONT PARTITION IS NOT REQUIRED IN A COMPARTMENT FOR CHILDREN'S USE THAT IS GREATER THAN 65 INCHES DEEP.



(A) ELEVATION ADULT (B) ELEVATION CHILDREN (C) PLAN

FIGURE 608.1.4
WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT TOE CLEARANCE

604.8.1.5 GRAB BARS: GRAB BARS SHALL COMPLY WITH 609. A SIDE-WALL GRAB BAR COMPLYING WITH 604.5.1 SHALL BE PROVIDED AND SHALL BE LOCATED ON THE WALL CLOSEST TO THE WATER CLOSET. IN ADDITION, A REAR-WALL GRAB BAR COMPLYING WITH 604.5.2 SHALL BE PROVIDED.

604.8.2 AMBULATORY ACCESSIBLE COMPARTMENTS: AMBULATORY ACCESSIBLE COMPARTMENTS SHALL COMPLY WITH 604.8.2.

604.8.2.1 SIZE: AMBULATORY ACCESSIBLE COMPARTMENTS SHALL HAVE A DEPTH OF 60 INCHES MINIMUM AND A WIDTH OF 35 INCHES MINIMUM AND 37 INCHES MAXIMUM.

604.8.2.2 DOORS: TOILET COMPARTMENT DOORS, INCLUDING DOOR HARDWARE, SHALL COMPLY WITH 404, EXCEPT THAT IF THE APPROACH IS TO THE LATCH SIDE OF THE COMPARTMENT DOOR, CLEARANCE BETWEEN THE DOOR SIDE OF THE COMPARTMENT AND ANY OBSTRUCTION SHALL BE 42 INCHES MINIMUM. THE DOOR SHALL BE SELF-CLOSING. A DOOR PULL COMPLYING WITH 404.2.7 SHALL BE PLACED ON BOTH SIDES OF THE DOOR NEAR THE LATCH. TOILET COMPARTMENT DOORS SHALL NOT SWING INTO THE MINIMUM REQUIRED COMPARTMENT AREA.

604.8.2.3 GRAB BARS: GRAB BARS SHALL COMPLY WITH 609. A SIDE-WALL GRAB BAR COMPLYING WITH 604.5.1 SHALL BE PROVIDED ON BOTH SIDES OF THE COMPARTMENT.

604.8.3 COAT HOOKS AND SHELVES: COAT HOOKS SHALL BE LOCATED WITHIN ONE OF THE REACH RANGES SPECIFIED IN 308. SHELVES SHALL BE LOCATED 40 INCHES MINIMUM AND 48 INCHES MAXIMUM ABOVE THE FINISH FLOOR.

604.9 WATER CLOSETS AND TOILET COMPARTMENTS FOR CHILDREN'S USE: WATER CLOSETS AND TOILET COMPARTMENTS FOR CHILDREN'S USE SHALL COMPLY WITH 604.9

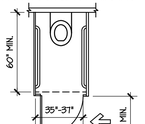


FIGURE 604.8.2
AMBULATORY ACCESSIBLE TOILET COMPARTMENT

ADVISORY SPECIFICATIONS FOR WATER CLOSETS SERVING CHILDREN AGES 3 THROUGH 12			
	AGES 3 AND 4	AGES 5 THROUGH 8	AGES 9 THROUGH 12
WATER CLOSET CENTERLINE	12 INCHES	12 TO 15 INCHES	15 TO 18 INCHES
TOILET SEAT HEIGHT	11 TO 12 INCHES	12 TO 15 INCHES	15 TO 17 INCHES
GRAB BAR HEIGHT	18 TO 20 INCHES	20 TO 25 INCHES	25 TO 27 INCHES
DISPENSER HEIGHT	14 INCHES	14 TO 17 INCHES	17 TO 19 INCHES

604.9.1 LOCATION: THE WATER CLOSET SHALL BE LOCATED WITH A WALL OR PARTITION TO THE REAR AND TO ONE SIDE. THE CENTERLINE OF THE WATER CLOSET SHALL BE 12 INCHES MINIMUM AND 18 INCHES MAXIMUM FROM THE SIDE WALL OR PARTITION, EXCEPT THAT THE WATER CLOSET SHALL BE 17 INCHES MINIMUM AND 19 INCHES MAXIMUM FROM THE SIDE WALL OR PARTITION IN THE AMBULATORY ACCESSIBLE TOILET COMPARTMENT SPECIFIED IN 604.8.2. COMPARTMENTS SHALL BE ARRANGED FOR LEFT-HAND OR RIGHT-HAND APPROACH TO THE WATER CLOSET.

604.9.2 CLEARANCE: CLEARANCE AROUND A WATER CLOSET SHALL COMPLY WITH 604.3.

604.9.3 HEIGHT: THE HEIGHT OF WATER CLOSETS SHALL BE 11 INCHES MINIMUM AND 17 INCHES MAXIMUM MEASURED TO THE TOP OF THE SEAT. SEATS SHALL NOT BE SPRUNG TO RETURN TO A LIFTED POSITION.

604.9.4 GRAB BARS: GRAB BARS FOR WATER CLOSETS SHALL COMPLY WITH 604.5.

604.9.5 FLUSH CONTROLS: FLUSH CONTROLS SHALL BE HAND OPERATED OR AUTOMATIC. HAND OPERATED FLUSH CONTROLS SHALL COMPLY WITH 309.2 AND 309.4 AND SHALL BE INSTALLED 36 INCHES MAXIMUM ABOVE THE FINISH FLOOR. FLUSH CONTROLS SHALL BE LOCATED ON THE OPEN SIDE OF THE WATER CLOSET EXCEPT IN AMBULATORY ACCESSIBLE COMPARTMENTS COMPLYING WITH 604.8.2.

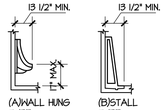
604.9.6 DISPENSERS: TOILET PAPER DISPENSERS SHALL COMPLY WITH 309.4 AND SHALL BE 7 INCHES MINIMUM AND 9 INCHES MAXIMUM IN FRONT OF THE WATER CLOSET MEASURED TO THE CENTERLINE OF THE DISPENSER. THE OUTLET OF THE DISPENSER SHALL BE 14 INCHES MINIMUM AND 19 INCHES MAXIMUM ABOVE THE FINISH FLOOR. THERE SHALL BE A CLEARANCE OF 1 1/2 INCHES MINIMUM BELOW THE GRAB BAR. DISPENSERS SHALL NOT BE OF A TYPE THAT CONTROLS DELIVERY OR THAT DOES NOT ALLOW CONTINUOUS PAPER FLOW.

604.9.7 TOILET COMPARTMENTS: TOILET COMPARTMENTS SHALL COMPLY WITH 604.8.

605 URINALS

605.1 GENERAL: URINALS SHALL COMPLY WITH 605.

605.2 HEIGHT AND DEPTH: URINALS SHALL BE THE STALL-TYPE OR THE WALL-HUNG TYPE WITH THE RIM 17 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. URINALS SHALL BE 13 1/2 INCHES DEEP MINIMUM MEASURED FROM THE OUTER FACE OF THE URINAL RIM TO THE BACK OF THE FIXTURE.



(A) WALL HUNG TYPE (B) STALL TYPE

FIGURE 605.2
HEIGHT AND DEPTH OF URINALS

605.3 CLEAR FLOOR SPACE: A CLEAR FLOOR OR GROUND SPACE COMPLYING WITH 305 POSITIONED FOR FORWARD APPROACH SHALL BE PROVIDED.

605.4 FLUSH CONTROLS: FLUSH CONTROLS SHALL BE HAND OPERATED OR AUTOMATIC. HAND OPERATED FLUSH CONTROLS SHALL COMPLY WITH 309.

606 LAVATORIES AND SINKS

606.1 GENERAL: LAVATORIES AND SINKS SHALL COMPLY WITH 606.

606.2 CLEAR FLOOR SPACE. A CLEAR FLOOR SPACE COMPLYING WITH 305, POSITIONED FOR A FORWARD APPROACH, AND KNEE AND TOE CLEARANCE COMPLYING WITH 306 SHALL BE PROVIDED.

EXCEPTIONS:
1. A PARALLEL APPROACH COMPLYING WITH 305 SHALL BE PERMITTED TO A KITCHEN SINK IN A SPACE WHERE A COOK TOP OR CONVENTIONAL RANGE IS NOT PROVIDED AND TO WET BARS.
2. A LAVATORY IN A TOILET ROOM OR BATHING FACILITY FOR A SINGLE OCCUPANT ACCESSED ONLY THROUGH A PRIVATE OFFICE AND NOT FOR COMMON USE OR PUBLIC USE SHALL NOT BE REQUIRED TO PROVIDE KNEE AND TOE CLEARANCE COMPLYING WITH 306.
3. RESIDENTIAL REQUIREMENTS NOT INCLUDED.
4. A KNEE CLEARANCE OF 24 INCHES MINIMUM ABOVE THE FINISH FLOOR OR GROUND SHALL BE PERMITTED AT LAVATORIES AND SINKS USED PRIMARILY BY CHILDREN 6 THROUGH 12 YEARS WHERE THE RIM OR COUNTER SURFACE IS 31 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND.
5. A PARALLEL APPROACH COMPLYING WITH 305 SHALL BE PERMITTED TO LAVATORIES AND SINKS USED PRIMARILY BY CHILDREN 5 YEARS AND YOUNGER.
6. THE DIP OF THE OVERFLOW SHALL NOT BE CONSIDERED IN DETERMINING KNEE AND TOE CLEARANCES.
7. NO MORE THAN ONE BOWL OF A MULTI-BOWL SINK SHALL BE REQUIRED TO PROVIDE KNEE AND TOE CLEARANCE COMPLYING WITH 306.

606.3 HEIGHT: LAVATORIES AND SINKS SHALL BE INSTALLED WITH THE FRONT OF THE HIGHER OF THE RIM OR COUNTER SURFACE 34 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND.

EXCEPTIONS:
1. A LAVATORY IN A TOILET OR BATHING FACILITY FOR A SINGLE OCCUPANT ACCESSED ONLY THROUGH A PRIVATE OFFICE AND NOT FOR COMMON USE OR PUBLIC USE SHALL NOT BE REQUIRED TO COMPLY WITH 606.3.

606.4 FAUCETS: CONTROLS FOR FAUCETS SHALL COMPLY WITH 309. HAND-OPERATED METERING FAUCETS SHALL REMAIN OPEN FOR 10 SECONDS MINIMUM.

606.5 EXPOSED PIPES AND SURFACES: WATER SUPPLY AND DRAIN PIPES UNDER LAVATORIES AND SINKS SHALL BE INSULATED OR OTHERWISE CONFIGURED TO PROTECT AGAINST CONTACT. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES AND SINKS.

607 BATHTUBS

607.1 GENERAL: BATHTUBS SHALL COMPLY WITH 607.

607.2 CLEARANCE: CLEARANCE IN FRONT OF BATHTUBS SHALL EXTEND THE LENGTH OF THE BATHTUB AND SHALL BE 30 INCHES WIDE MINIMUM. A LAVATORY COMPLYING WITH 606 SHALL BE PERMITTED AT THE CONTROL END OF THE CLEARANCE. WHERE A PERMANENT SEAT IS PROVIDED AT THE HEAD END OF THE BATHTUB, THE CLEARANCE SHALL EXTEND 12 INCHES MINIMUM BEYOND THE WALL AT THE HEAD END OF THE BATHTUB.

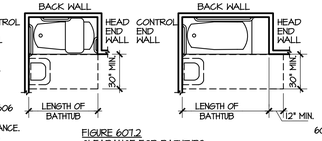


FIGURE 607.2
CLEARANCE FOR BATHTUBS

607.3 SEAT: A PERMANENT SEAT AT THE HEAD END OF THE BATHTUB OR A REMOVABLE IN-TUB SEAT SHALL BE PROVIDED. SEATS SHALL COMPLY WITH 610.

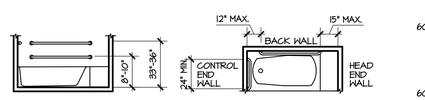
607.4 GRAB BARS: GRAB BARS FOR BATHTUBS SHALL COMPLY WITH 609 AND SHALL BE PROVIDED IN ACCORDANCE WITH 607.4.1 OR 607.4.2.

EXCEPTIONS:
1. GRAB BARS SHALL NOT BE REQUIRED TO BE INSTALLED IN A BATHTUB LOCATED IN A BATHING FACILITY FOR A SINGLE OCCUPANT ACCESSED ONLY THROUGH A PRIVATE OFFICE AND NOT FOR COMMON USE OR PUBLIC USE PROVIDED THAT REINFORCEMENT HAS BEEN INSTALLED IN WALLS AND LOCATED SO AS TO PERMIT THE INSTALLATION OF GRAB BARS COMPLYING WITH 607.4.

607.4.1 BATHTUBS WITH PERMANENT SEATS: FOR BATHTUBS WITH PERMANENT SEATS, GRAB BARS SHALL BE PROVIDED IN ACCORDANCE WITH 607.4.1.

607.4.1.1 BACK WALL: TWO GRAB BARS SHALL BE INSTALLED ON THE BACK WALL, ONE LOCATED IN ACCORDANCE WITH 609.4 AND THE OTHER LOCATED 8 INCHES MINIMUM AND 10 INCHES MAXIMUM ABOVE THE RIM OF THE BATHTUB. EACH GRAB BAR SHALL BE INSTALLED 15 INCHES MAXIMUM FROM THE HEAD END WALL AND 12 INCHES MAXIMUM FROM THE CONTROL END WALL.

607.4.1.2 CONTROL END WALL: A GRAB BAR 24 INCHES LONG MINIMUM SHALL BE INSTALLED ON THE CONTROL END WALL AT THE FRONT EDGE OF THE BATHTUB.



(A) ELEVATION (B) PLAN

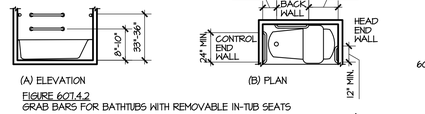
FIGURE 607.4.1
GRAB BARS FOR BATHTUBS WITH PERMANENT SEATS

607.4.2 BATHTUBS WITHOUT PERMANENT SEATS: FOR BATHTUBS WITHOUT PERMANENT SEATS, GRAB BARS SHALL COMPLY WITH 607.4.2.

607.4.2.1 BACK WALL: TWO GRAB BARS SHALL BE INSTALLED ON THE BACK WALL, ONE LOCATED IN ACCORDANCE WITH 609.4 AND OTHER LOCATED 8 INCHES MINIMUM AND 10 INCHES MAXIMUM ABOVE THE RIM OF THE BATHTUB. EACH GRAB BAR SHALL BE 24 INCHES LONG MINIMUM AND SHALL BE INSTALLED 24 INCHES MAXIMUM FROM THE HEAD END WALL AND 12 INCHES MAXIMUM FROM THE CONTROL END WALL.

607.4.2.2 CONTROL END WALL: A GRAB BAR 24 INCHES LONG MINIMUM SHALL BE INSTALLED ON THE CONTROL END WALL AT THE FRONT EDGE OF THE BATHTUB.

607.4.2.3 HEAD END WALL: A GRAB BAR 12 INCHES LONG MINIMUM SHALL BE INSTALLED ON THE HEAD END WALL AT THE FRONT EDGE OF THE BATHTUB.



(A) ELEVATION (B) PLAN

FIGURE 607.4.2
GRAB BARS FOR BATHTUBS WITH REMOVABLE IN-TUB SEATS

607.5 CONTROLS: CONTROLS, OTHER THAN DRAIN STOPPERS, SHALL BE LOCATED ON AN END WALL. CONTROLS SHALL BE BETWEEN THE BATHTUB RIM AND GRAB BAR, AND BETWEEN THE OPEN SIDE OF THE BATHTUB AND THE CENTERLINE OF THE WIDTH OF THE BATHTUB. CONTROLS SHALL COMPLY WITH 309.4.

607.6 SHOWER SPRAY UNIT AND HOSE: A SHOWER SPRAY UNIT WITH A HOSE 59 INCHES LONG MINIMUM THAT CAN BE USED BOTH AS A FIXED-POSITION SHOWER HEAD AND AS A HAND-HELD SHOWER SHALL BE PROVIDED. THE SHOWER SPRAY UNIT SHALL HAVE AN ON/OFF CONTROL WITH A NON-POSITIVE SHUT-OFF. IF AN ADJUSTABLE-HEIGHT SHOWER HEAD ON A VERTICAL BAR IS USED, THE BAR SHALL BE INSTALLED SO AS NOT TO OBSTRUCT THE USE OF GRAB BARS. BATHTUB SHOWER SPRAY UNITS SHALL DELIVER WATER THAT IS 120°F (49°C) MAXIMUM.

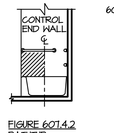


FIGURE 607.4.2
BATHTUB CONTROL LOCATION

607.7 BATHTUB ENCLOSURES: ENCLOSURES FOR BATHTUBS SHALL NOT OBSTRUCT CONTROLS, FAUCETS, SHOWER AND SPRAY UNITS OR OBSTRUCT TRANSFER FROM WHEELCHAIRS ONTO BATHTUB SEATS OR INTO BATHTUBS. ENCLOSURES ON BATHTUBS SHALL NOT HAVE TRACKS INSTALLED ON THE RIM OF THE OPEN FACE OF THE BATHTUB.

608 SHOWER COMPARTMENTS

608.1 GENERAL: SHOWER COMPARTMENTS SHALL COMPLY WITH 608.

608.2 SIZE AND CLEARANCES FOR SHOWER COMPARTMENTS: SHOWER COMPARTMENTS SHALL HAVE SIZES AND CLEARANCES COMPLYING WITH 608.2.

608.2.1 TRANSFER TYPE SHOWER COMPARTMENTS: TRANSFER TYPE SHOWER COMPARTMENTS SHALL BE 36 INCHES BY 36 INCHES CLEAR INSIDE DIMENSIONS MEASURED AT THE CENTER POINTS OF OPPOSING SIDES AND SHALL HAVE A 36 INCH WIDE MINIMUM ENTRY ON THE FACE OF THE SHOWER COMPARTMENT. CLEARANCE OF 36 INCHES WIDE MINIMUM BY 48 INCHES LONG MINIMUM MEASURED FROM THE CONTROL WALL SHALL BE PROVIDED.

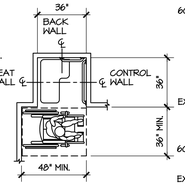
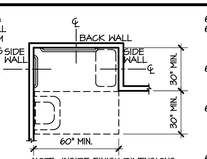


FIGURE 608.2.1
TRANSFER TYPE SHOWER COMPARTMENT SIZE AND CLEARANCE

608.2.2 STANDARD ROLL-IN TYPE SHOWER COMPARTMENTS: STANDARD ROLL-IN TYPE SHOWER COMPARTMENTS SHALL BE 30 INCHES WIDE MINIMUM BY 60 INCHES DEEP MINIMUM CLEAR INSIDE DIMENSIONS MEASURED AT CENTER POINTS OF OPPOSING SIDES AND SHALL HAVE A 60 INCHES WIDE MINIMUM ENTRY ON THE FACE OF THE SHOWER COMPARTMENT.

608.2.2.1 CLEARANCE: A 30 INCH WIDE MINIMUM BY 60 INCH LONG MINIMUM CLEARANCE SHALL BE PROVIDED ADJACENT TO THE OPEN FACE OF THE SHOWER COMPARTMENT.

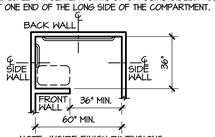
EXCEPTION: A LAVATORY COMPLYING WITH 606 SHALL BE PERMITTED ON ONE 30 INCH WIDE MINIMUM SIDE OF THE CLEARANCE PROVIDED THAT IT IS NOT ON THE SIDE OF THE CLEARANCE ADJACENT TO THE CONTROLS OR, WHERE PROVIDED, NOT ON THE SIDE OF THE CLEARANCE ADJACENT TO THE SHOWER SEAT.



NOTE: INSIDE FINISH DIMENSIONS MEASURED AT THE CENTER POINTS OF OPPOSING SIDES

FIGURE 608.2.2
STANDARD ROLL-IN TYPE SHOWER COMPARTMENT SIZE AND CLEARANCE

608.2.3 ALTERNATE ROLL-IN TYPE SHOWER COMPARTMENTS: ALTERNATE ROLL-IN TYPE SHOWER COMPARTMENTS SHALL BE 36 INCHES WIDE AND 60 INCHES DEEP MINIMUM CLEAR INSIDE DIMENSIONS MEASURED AT CENTER POINTS OF OPPOSING SIDES. A 36 INCH WIDE MINIMUM ENTRY SHALL BE PROVIDED AT ONE END OF THE LONG SIDE OF THE COMPARTMENT.



NOTE: INSIDE FINISH DIMENSIONS MEASURED AT THE CENTER POINTS OF OPPOSING SIDES

FIGURE 608.2.3
ALTERNATE ROLL- IN TYPE SHOWER COMPARTMENT SIZE AND CLEARANCE

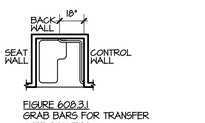


FIGURE 608.3.1
GRAB BARS FOR TRANSFER TYPE SHOWERS

608.3 GRAB BARS: GRAB BARS SHALL COMPLY WITH 609 AND SHALL BE PROVIDED IN ACCORDANCE WITH 608.3. WHERE MULTIPLE GRAB BARS ARE USED, REQUIRED HORIZONTAL GRAB BARS SHALL BE INSTALLED AT THE SAME HEIGHT ABOVE THE FINISH FLOOR.

EXCEPTIONS:
1. GRAB BARS SHALL NOT BE REQUIRED TO BE INSTALLED IN A SHOWER LOCATED IN A BATHING FACILITY FOR A SINGLE OCCUPANT ACCESSED ONLY THROUGH A PRIVATE OFFICE, AND NOT FOR COMMON USE OR PUBLIC USE PROVIDED THAT REINFORCEMENT HAS BEEN INSTALLED IN WALLS AND LOCATED SO AS TO PERMIT THE INSTALLATION OF GRAB BARS COMPL

101 GENERAL

101.1 SCOPE: THE PROVISIONS OF CHAPTER 7 SHALL APPLY WHERE REQUIRED BY CHAPTER 2 OR WHERE REFERENCED BY A REQUIREMENT IN THIS DOCUMENT.

702 FIRE ALARM SYSTEMS

702.1 GENERAL: FIRE ALARM SYSTEMS SHALL HAVE PERMANENTLY INSTALLED AUDIBLE AND VISIBLE ALARMS COMPLYING WITH NFPA 72 (1999 OR 2002 EDITION) (INCORPORATED BY REFERENCE, SEE "REFERENCED STANDARDS" IN CHAPTER 1) EXCEPT THAT THE MAXIMUM ALLOWABLE SOUND LEVEL OF AUDIBLE NOTIFICATION APPLIANCES COMPLYING WITH SECTION 4-3.2.1 OF NFPA 72 (1999 EDITION) SHALL HAVE A SOUND LEVEL NO MORE THAN 110 DB AT THE MINIMUM HEARING DISTANCE FROM THE AUDIBLE APPLIANCE. IN ADDITION, ALARMS IN GUEST ROOMS REQUIRED TO PROVIDE COMMUNICATION FEATURES SHALL COMPLY WITH SECTIONS 4-3 AND 4-4 OF NFPA 72 (1999 EDITION) OR SECTIONS 7.4 AND 7.5 OF NFPA 72 (2002 EDITION).

EXCEPTION: FIRE ALARM SYSTEMS IN MEDICAL CARE FACILITIES SHALL BE PERMITTED TO BE PROVIDED IN ACCORDANCE WITH INDUSTRY PRACTICE.

703 SIGNS

703.1 GENERAL: SIGNS SHALL COMPLY WITH 703. WHERE BOTH VISUAL AND TACTILE CHARACTERS ARE REQUIRED, EITHER ONE SIGN WITH BOTH VISUAL AND TACTILE CHARACTERS, OR TWO SEPARATE SIGNS, ONE WITH VISUAL, AND ONE WITH TACTILE CHARACTERS, SHALL BE PROVIDED.

703.2 RAISED CHARACTERS: RAISED CHARACTERS SHALL COMPLY WITH 703.2 AND SHALL BE DUPLICATED IN BRAILLE COMPLYING WITH 703.3. RAISED CHARACTERS SHALL BE INSTALLED IN ACCORDANCE WITH 703.4.

703.2.1 DEPTH: RAISED CHARACTERS SHALL BE 1/32 INCH MINIMUM ABOVE THEIR BACKGROUND.

703.2.2 CASE: CHARACTERS SHALL BE UPPERCASE.

703.2.3 STYLE: CHARACTERS SHALL BE SANS SERIF. CHARACTERS SHALL NOT BE ITALIC, OBLIQUE, SCRIPT, HIGHLY DECORATIVE, OR OF OTHER UNUSUAL FORMS.

703.2.4 CHARACTER PROPORTIONS: CHARACTERS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 55 PERCENT MINIMUM AND 110 PERCENT MAXIMUM OF THE HEIGHT OF THE UPPERCASE LETTER "I".

703.2.5 CHARACTER HEIGHT: CHARACTER HEIGHT MEASURED VERTICALLY FROM THE BASELINE OF THE CHARACTER SHALL BE 5/8 INCH MINIMUM AND 2 INCHES MAXIMUM BASED ON THE HEIGHT OF THE UPPERCASE LETTER "I".

EXCEPTION: WHERE SEPARATE RAISED AND VISUAL CHARACTERS WITH THE SAME INFORMATION ARE PROVIDED, RAISED CHARACTER HEIGHT SHALL BE PERMITTED TO BE 1/2 INCH MINIMUM.

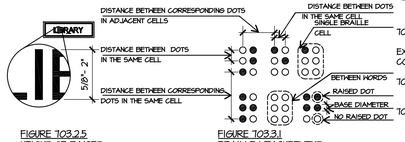


FIGURE 703.2.5
HEIGHT OF RAISED CHARACTERS

FIGURE 703.3.1
BRAILLE MEASUREMENT

703.2.6 STROKE THICKNESS: STROKE THICKNESS OF THE UPPERCASE LETTER "I" SHALL BE 15 PERCENT MAXIMUM OF THE HEIGHT OF THE CHARACTER.

703.2.7 CHARACTER SPACING: CHARACTER SPACING SHALL BE MEASURED BETWEEN THE TWO CLOSEST POINTS OF ADJACENT RAISED CHARACTERS WITHIN A MESSAGE, EXCLUDING WORD SPACES. WHERE CHARACTERS HAVE RECTANGULAR CROSS SECTIONS, SPACING BETWEEN INDIVIDUAL RAISED CHARACTERS SHALL BE 1/8 INCH MINIMUM AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH MAXIMUM. WHERE CHARACTERS HAVE OTHER CROSS SECTIONS, SPACING BETWEEN INDIVIDUAL RAISED CHARACTERS SHALL BE 1/16 INCH MINIMUM AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH MAXIMUM AT THE BASE OF THE CROSS SECTIONS, AND 1/8 INCH MINIMUM AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH MAXIMUM AT THE TOP OF THE CROSS SECTIONS. CHARACTERS SHALL BE SEPARATED FROM RAISED BORDERS AND DECORATIVE ELEMENTS 3/8 INCH MINIMUM.

703.2.8 LINE SPACING: SPACING BETWEEN THE BASELINES OF SEPARATE LINES OF RAISED CHARACTERS WITHIN A MESSAGE SHALL BE 135 PERCENT MINIMUM AND 170 PERCENT MAXIMUM OF THE RAISED CHARACTER HEIGHT.

703.3 BRAILLE: BRAILLE SHALL BE CONTRACTED (GRADE 2) AND SHALL COMPLY WITH 703.3 AND 703.4.

703.3.1 DIMENSIONS AND CAPITALIZATION: BRAILLE DOTS SHALL HAVE A DOMED OR ROUNDED SHAPE AND SHALL COMPLY WITH TABLE 703.3.1. THE INDICATION OF AN UPPERCASE LETTER OR LETTERS SHALL ONLY BE USED BEFORE THE FIRST WORD OF SENTENCES, PROPER NOUNS AND NAMES, INDIVIDUAL LETTERS OF THE ALPHABET, INITIALS, AND ACRONYMS.

TABLE 703.3.1: BRAILLE DIMENSIONS

MEASUREMENT RANGE	MINIMUM IN INCHES TO MAXIMUM IN INCHES
DOT BASE DIAMETER	0.059 TO 0.063
DISTANCE BETWEEN TWO DOTS IN THE SAME CELL	0.090 TO 0.100 MEASURED CENTER TO CENTER
DISTANCE BETWEEN CORRESPONDING DOTS IN ADJACENT CELLS	0.241 TO 0.300 MEASURED CENTER TO CENTER
DOT HEIGHT	0.025 TO 0.037
DISTANCE BETWEEN CORRESPONDING DOTS FROM ONE CELL DIRECTLY BELOW	0.395 TO 0.400 MEASURED CENTER TO CENTER

703.3.2 POSITION: BRAILLE SHALL BE POSITIONED BELOW THE CORRESPONDING TEXT. IF TEXT IS MULTI-LINED, BRAILLE SHALL BE PLACED BELOW THE ENTIRE TEXT. BRAILLE SHALL BE SEPARATED 3/8 INCH MINIMUM FROM ANY OTHER TACTILE CHARACTERS AND 3/8 INCH MINIMUM FROM RAISED BORDERS AND DECORATIVE ELEMENTS.

EXCEPTION: BRAILLE PROVIDED ON ELEVATOR CAR CONTROLS SHALL BE SEPARATED 3/16 INCH MINIMUM AND SHALL BE LOCATED EITHER DIRECTLY BELOW OR ADJACENT TO THE CORRESPONDING RAISED CHARACTERS OR SYMBOLS.

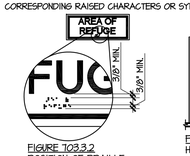


FIGURE 703.3.2
POSITION OF BRAILLE

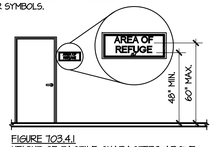


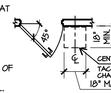
FIGURE 703.4.1
HEIGHT OF TACTILE CHARACTERS ABOVE FINISH FLOOR OR GROUND

703.4 INSTALLATION HEIGHT AND LOCATION: SIGNS WITH TACTILE CHARACTERS SHALL COMPLY WITH 703.4.

703.4.1 HEIGHT ABOVE FINISH FLOOR OR GROUND: TACTILE CHARACTERS ON SIGNS SHALL BE LOCATED 48 INCHES MINIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE LOWEST TACTILE CHARACTER AND 60 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE HIGHEST TACTILE CHARACTER.

EXCEPTION: TACTILE CHARACTERS FOR ELEVATOR CAR CONTROLS SHALL NOT BE REQUIRED TO COMPLY WITH THIS SECTION.

703.4.2 LOCATION: WHERE A TACTILE SIGN IS PROVIDED AT A DOOR, THE SIGN SHALL BE LOCATED ALONGSIDE THE DOOR AT THE LATCH SIDE. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH ONE ACTIVE LEAF, THE SIGN SHALL BE LOCATED ON THE WING OF THE ACTIVE LEAF. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH TWO ACTIVE LEAFS, THE SIGN SHALL BE LOCATED TO THE RIGHT OF THE RIGHT HAND DOOR. WHERE THERE IS NO WALL SPACE AT THE LATCH SIDE OF A SINGLE DOOR OR AT THE RIGHT SIDE OF DOUBLE DOORS, SIGNS SHALL BE LOCATED ON THE NEAREST ADJACENT WALL. SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18 INCHES MINIMUM BY 18 INCHES MINIMUM, CENTERED ON THE TACTILE CHARACTERS, IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND 45 DEGREE OPEN POSITION.



EXCEPTION: SIGNS WITH TACTILE CHARACTERS SHALL BE PERMITTED ON THE PUSH SIDE OF DOORS WITH CLOSERS AND WITHOUT HOLD-OPEN DEVICES.

703.5 VISUAL CHARACTERS: VISUAL CHARACTERS SHALL COMPLY WITH 703.5.

EXCEPTION: WHERE VISUAL CHARACTERS COMPLY WITH 703.2 AND ARE ACCOMPANIED BY BRAILLE COMPLYING WITH 703.3, THEY SHALL NOT BE REQUIRED TO COMPLY WITH 703.5.2 THROUGH 703.5.4.

703.5.1 FINISH AND CONTRAST: CHARACTERS AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH. CHARACTERS SHALL CONTRAST WITH THEIR BACKGROUND WITH EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND.

703.5.2 CASE: CHARACTERS SHALL BE UPPERCASE OR LOWERCASE OR A COMBINATION OF BOTH.

703.5.3 STYLE: CHARACTERS SHALL BE CONVENTIONAL IN FORM. CHARACTERS SHALL NOT BE ITALIC, OBLIQUE, SCRIPT, HIGHLY DECORATIVE, OR OF OTHER UNUSUAL FORMS.

703.5.4 CHARACTER PROPORTIONS: CHARACTERS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 55 PERCENT MINIMUM AND 110 PERCENT MAXIMUM OF THE HEIGHT OF THE UPPERCASE LETTER "I".

703.5.5 CHARACTER HEIGHT: MINIMUM CHARACTER HEIGHT SHALL COMPLY WITH TABLE 703.5.5. VIEWING DISTANCE SHALL BE MEASURED AS THE HORIZONTAL DISTANCE BETWEEN THE CHARACTER AND AN OBSTRUCTION PREVENTING FURTHER APPROACH TOWARDS THE SIGN. CHARACTER HEIGHT SHALL BE BASED ON THE UPPERCASE LETTER "I".

TABLE 703.5.5: VISUAL CHARACTER HEIGHT

HEIGHT TO FINISH FLOOR OR GROUND FROM BASELINE OF CHARACTER	HORIZONTAL VIEWING DISTANCE	MINIMUM CHARACTER HEIGHT
40 INCHES TO LESS THAN OR EQUAL TO 70 INCHES	LESS THAN 72 INCHES	5/8 INCH
	72 INCHES AND GREATER	5/8 INCH, PLUS 1/8 INCH PER FOOT OF VIEWING DISTANCE ABOVE 72 INCHES
GREATER THAN 70 INCHES TO LESS THAN OR EQUAL TO 120 INCHES	LESS THAN 180 INCHES	2 INCH
	180 INCHES AND GREATER	2 INCHES, PLUS 1/8 INCH PER FOOT OF VIEWING DISTANCE ABOVE 180 INCHES
GREATER THAN 120 INCHES	LESS THAN 20 FEET	3 INCH
	21 FEET AND GREATER	3 INCHES, PLUS 1/8 INCH PER FOOT OF VIEWING DISTANCE ABOVE 21 FEET

703.5.6 HEIGHT FROM FINISH FLOOR OR GROUND: VISUAL CHARACTERS SHALL BE 40 INCHES MINIMUM ABOVE THE FINISH FLOOR OR GROUND.

EXCEPTION: VISUAL CHARACTERS INDICATING ELEVATOR CAR CONTROLS SHALL NOT BE REQUIRED TO COMPLY WITH 703.5.6.

703.5.7 STROKE THICKNESS: STROKE THICKNESS OF THE UPPERCASE LETTER "I" SHALL BE 10 PERCENT MINIMUM AND 30 PERCENT MAXIMUM OF THE HEIGHT OF THE CHARACTER.

703.5.8 CHARACTER SPACING: CHARACTER SPACING SHALL BE MEASURED BETWEEN THE TWO CLOSEST POINTS OF ADJACENT CHARACTERS, EXCLUDING WORD SPACES. SPACING BETWEEN INDIVIDUAL CHARACTERS SHALL BE 10 PERCENT MINIMUM AND 35 PERCENT MAXIMUM OF CHARACTER HEIGHT.

703.5.9 LINE SPACING: SPACING BETWEEN THE BASELINES OF SEPARATE LINES OF CHARACTERS WITHIN A MESSAGE SHALL BE 135 PERCENT MINIMUM AND 170 PERCENT MAXIMUM OF THE CHARACTER HEIGHT.

703.6 PICTOGRAMS: PICTOGRAMS SHALL COMPLY WITH 703.6.

703.6.1 PICTOGRAM FIELD: PICTOGRAMS SHALL HAVE A FIELD HEIGHT OF 6 INCHES MINIMUM. CHARACTERS AND BRAILLE SHALL NOT BE LOCATED IN THE PICTOGRAM FIELD.

703.6.2 FINISH AND CONTRAST: PICTOGRAMS AND THEIR FIELD SHALL HAVE A NON-GLARE FINISH. PICTOGRAMS SHALL CONTRAST WITH THEIR FIELD WITH EITHER A LIGHT PICTOGRAM ON A DARK FIELD OR A DARK PICTOGRAM ON A LIGHT FIELD.

703.6.3 TEXT DESCRIPTORS: PICTOGRAMS SHALL HAVE TEXT DESCRIPTORS LOCATED DIRECTLY BELOW THE PICTOGRAM FIELD. TEXT DESCRIPTOR SHALL COMPLY WITH 703.2, 703.3 AND 703.4.

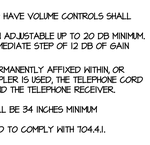


FIGURE 703.6.1
PICTOGRAM FIELD

703.7 SYMBOLS OF ACCESSIBILITY: SYMBOLS OF ACCESSIBILITY SHALL COMPLY WITH 703.7.

703.7.1 FINISH AND CONTRAST: SYMBOLS OF ACCESSIBILITY AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH. SYMBOLS OF ACCESSIBILITY SHALL CONTRAST WITH THEIR BACKGROUND WITH EITHER A LIGHT SYMBOL ON A DARK BACKGROUND OR A DARK SYMBOL ON A LIGHT BACKGROUND.

703.7.2 SYMBOLS.

703.7.2.1 INTERNATIONAL SYMBOL OF ACCESSIBILITY: THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL COMPLY WITH FIGURE 703.7.2.1.

703.7.2.2 INTERNATIONAL SYMBOL OF TTY: THE INTERNATIONAL SYMBOL OF TTY SHALL COMPLY WITH FIGURE 703.7.2.2.

703.7.2.3 VOLUME CONTROL TELEPHONES: TELEPHONES WITH A VOLUME CONTROL SHALL BE IDENTIFIED BY A PICTOGRAM OF A TELEPHONE HANDSET WITH RADIATING SOUND WAVES ON A SQUARE FIELD SUCH AS SHOWN IN FIGURE 703.7.2.3.

703.7.2.4 ASSISTIVE LISTENING SYSTEMS: ASSISTIVE LISTENING SYSTEMS SHALL BE IDENTIFIED BY THE INTERNATIONAL SYMBOL OF ACCESS FOR HEARING LOSS COMPLYING WITH FIGURE 703.7.2.4.



FIGURE 703.7.2.1
INTERNATIONAL SYMBOL OF ACCESSIBILITY



FIGURE 703.7.2.2
INTERNATIONAL SYMBOL OF TTY



FIGURE 703.7.2.3
VOLUME CONTROL TELEPHONE



FIGURE 703.7.2.4
INTERNATIONAL SYMBOL OF ACCESS FOR HEARING LOSS

704 TELEPHONES

704.1 GENERAL: PUBLIC TELEPHONES SHALL COMPLY WITH 704.

704.2 WHEELCHAIR ACCESSIBLE TELEPHONES: WHEELCHAIR ACCESSIBLE TELEPHONES SHALL COMPLY WITH 704.2.

704.2.1 CLEAR FLOOR OR GROUND SPACE: A CLEAR FLOOR OR GROUND SPACE COMPLYING WITH 305 SHALL BE PROVIDED. THE CLEAR FLOOR OR GROUND SPACE SHALL NOT BE OBSTRUCTED BY BASES, ENCLOSURES, OR SEATS.

704.2.1.1 PARALLEL APPROACH: WHERE A PARALLEL APPROACH IS PROVIDED, THE DISTANCE FROM THE EDGE OF THE TELEPHONE ENCLOSURE TO THE FACE OF THE TELEPHONE UNIT SHALL BE 10 INCHES MAXIMUM.

704.2.1.2 FORWARD APPROACH: WHERE A FORWARD APPROACH IS PROVIDED, THE DISTANCE FROM THE FRONT EDGE OF A COUNTER WITHIN THE TELEPHONE ENCLOSURE TO THE FACE OF THE TELEPHONE UNIT SHALL BE 20 INCHES MAXIMUM.

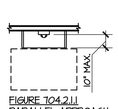


FIGURE 704.2.1.1
PARALLEL APPROACH TO TELEPHONE

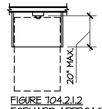


FIGURE 704.2.1.2
FORWARD APPROACH TO TELEPHONE

704.2.2 OPERABLE PARTS: OPERABLE PARTS SHALL COMPLY WITH 309. TELEPHONES SHALL HAVE PUSH-BUTTON CONTROLS WHERE SUCH SERVICE IS AVAILABLE.

704.2.3 TELEPHONE DIRECTORIES: TELEPHONE DIRECTORIES, WHERE PROVIDED, SHALL BE LOCATED IN ACCORDANCE WITH 309.

704.2.4 CORD LENGTH: THE CORD FROM THE TELEPHONE TO THE HANDSET SHALL BE 29 INCHES (735 MM) LONG MINIMUM.

704.3 VOLUME CONTROL TELEPHONES: PUBLIC TELEPHONES REQUIRED TO HAVE VOLUME CONTROLS SHALL BE EQUIPPED WITH A RECEIVE VOLUME CONTROL THAT PROVIDES A GAIN ADJUSTABLE UP TO 20 DB MINIMUM. FOR INCREMENTAL VOLUME CONTROL, PROVIDE AT LEAST ONE INTERMEDIATE STEP OF 12 DB OF GAIN MINIMUM. AN AUTOMATIC RESET SHALL BE PROVIDED.

704.4 TTYS: TTYS REQUIRED AT A PUBLIC PAY TELEPHONE SHALL BE PERMANENTLY AFFIXED WITHIN, OR ADJACENT TO, THE TELEPHONE ENCLOSURE. WHERE AN ACOUSTIC COUPLER IS USED, THE TELEPHONE CORD SHALL BE SUFFICIENTLY LONG TO ALLOW CONNECTION OF THE TTY AND THE TELEPHONE RECEIVER.

704.4.1 HEIGHT: WHEN IN USE, THE TOUCH SURFACE OF TTY KEYPADS SHALL BE 34 INCHES MINIMUM ABOVE THE FINISH FLOOR.

EXCEPTION: WHERE SEATS ARE PROVIDED, TTYS SHALL NOT BE REQUIRED TO COMPLY WITH 704.4.1.

704.5 TTY SHELF: PUBLIC PAY TELEPHONES REQUIRED TO ACCOMMODATE PORTABLE TTYS SHALL BE EQUIPPED WITH A SHELF AND AN ELECTRICAL OUTLET WITHIN OR ADJACENT TO THE TELEPHONE ENCLOSURE. THE TELEPHONE HANDSET SHALL BE CAPABLE OF BEING PLACED FLUSH ON THE SURFACE OF THE SHELF. THE SHELF SHALL BE CAPABLE OF ACCOMMODATING A TTY AND SHALL HAVE 6 INCHES MINIMUM VERTICAL CLEARANCE ABOVE THE AREA WHERE THE TTY IS TO BE PLACED.

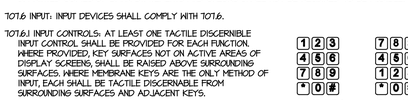
705 DETECTABLE WARNINGS

705.1 GENERAL: DETECTABLE WARNINGS SHALL CONSIST OF A SURFACE OF TRUNCATED DOMES AND SHALL COMPLY WITH 705.

705.1.1 DOME SIZE: TRUNCATED DOMES IN A DETECTABLE WARNING SURFACE SHALL HAVE A BASE DIAMETER OF 0.9 INCH MINIMUM AND 1.4 INCHES MAXIMUM, A TOP DIAMETER OF 50 PERCENT OF THE BASE DIAMETER MINIMUM TO 65 PERCENT OF THE BASE DIAMETER MAXIMUM, AND A HEIGHT OF 0.2 INCH.

705.1.2 DOME SPACING: TRUNCATED DOMES IN A DETECTABLE WARNING SURFACE SHALL HAVE A CENTER-TO-CENTER SPACING OF 1.6 INCHES MINIMUM AND 2.4 INCHES MAXIMUM, AND A BASE-TO-BASE SPACING OF 0.65 INCH MINIMUM, MEASURED BETWEEN THE MOST ADJACENT DOMES ON A SQUARE GRID.

705.1.3 CONTRAST: DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH ADJACENT WALKING SURFACES EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT.



(A) ELEVATION (ENLARGED)

(B) PLAN

FIGURE 705.1
SIZE AND SPACING OF TRUNCATED DOMES

705.2 PLATFORM EDGES: DETECTABLE WARNING SURFACES AT PLATFORM BOARDING EDGES SHALL BE 24 INCHES WIDE AND SHALL EXTEND THE FULL LENGTH OF THE PUBLIC USE AREAS OF THE PLATFORM.

706 ASSISTIVE LISTENING SYSTEMS

706.1 GENERAL: ASSISTIVE LISTENING SYSTEMS REQUIRED IN ASSEMBLY AREAS SHALL COMPLY WITH 706.

706.2 RECEIVER JACKS: RECEIVERS REQUIRED FOR USE WITH AN ASSISTIVE LISTENING SYSTEM SHALL INCLUDE A 1/8 INCH STANDARD MONO JACK.

706.3 RECEIVER HEARING-AID COMPATIBILITY: RECEIVERS REQUIRED TO BE HEARING-AID COMPATIBLE SHALL INTERFACE WITH TELECOILS IN HEARING AIDS THROUGH THE PROVISION OF NECKLOOPS.

706.4 SOUND PRESSURE LEVEL: ASSISTIVE LISTENING SYSTEMS SHALL BE CAPABLE OF PROVIDING A SOUND PRESSURE LEVEL OF 110 DB MINIMUM AND 118 DB MAXIMUM WITH A DYNAMIC RANGE ON THE VOLUME CONTROL OF 50 DB.

706.5 SIGNAL-TO-NOISE RATIO: THE SIGNAL-TO-NOISE RATIO FOR INTERNALLY GENERATED NOISE IN ASSISTIVE LISTENING SYSTEMS SHALL BE 18 DB MINIMUM.

706.6 PEAK CLIPPING LEVEL: PEAK CLIPPING SHALL NOT EXCEED 18 DB OF CLIPPING RELATIVE TO THE PEAKS OF SPEECH.

707 AUTOMATIC TELLER MACHINES AND FARE MACHINES

707.1 GENERAL: AUTOMATIC TELLER MACHINES AND FARE MACHINES SHALL COMPLY WITH 707.

707.2 CLEAR FLOOR OR GROUND SPACE: A CLEAR FLOOR OR GROUND SPACE COMPLYING WITH 305 SHALL BE PROVIDED.

EXCEPTION: CLEAR FLOOR OR GROUND SPACE SHALL NOT BE REQUIRED AT DRIVE-UP ONLY AUTOMATIC TELLER MACHINES AND FARE MACHINES.

707.3 OPERABLE PARTS: OPERABLE PARTS SHALL COMPLY WITH 309. UNLESS A CLEAR OR CORRECT KEY IS PROVIDED, EACH OPERABLE PART SHALL BE ABLE TO BE DIFFERENTIATED BY SOUND OR TOUCH, WITHOUT ACTIVATION.

EXCEPTION: DRIVE-UP ONLY AUTOMATIC TELLER MACHINES AND FARE MACHINES SHALL NOT BE REQUIRED TO COMPLY WITH 309.2 AND 309.3.

707.4 PRIVACY: AUTOMATIC TELLER MACHINES SHALL PROVIDE THE OPPORTUNITY FOR THE SAME DEGREE OF PRIVACY OF INPUT AND OUTPUT AVAILABLE TO ALL INDIVIDUALS.

707.5 SPEECH OUTPUT: MACHINES SHALL BE SPEECH ENABLED. OPERATING INSTRUCTIONS AND ORIENTATION, VISIBLE TRANSACTION PROMPTS, USER INPUT VERIFICATION, ERROR MESSAGES, AND ALL DISPLAYED INFORMATION FOR FULL USE SHALL BE ACCESSIBLE TO AND INDEPENDENTLY USABLE BY INDIVIDUALS WITH VISION IMPAIRMENTS. SPEECH SHALL BE DELIVERED THROUGH A MECHANISM THAT IS READILY AVAILABLE TO ALL USERS, INCLUDING BUT NOT LIMITED TO, AN INDUSTRY STANDARD CONNECTOR OR A TELEPHONE HANDSET. SPEECH SHALL BE RECORDED OR DIGITIZED HUMAN, OR SYNTHESIZED.

EXCEPTIONS:
1. AUDIBLE TONES SHALL BE PERMITTED INSTEAD OF SPEECH FOR VISIBLE OUTPUT THAT IS NOT DISPLAYED FOR SECURITY PURPOSES, INCLUDING BUT NOT LIMITED TO, ASTERISKS REPRESENTING PERSONAL IDENTIFICATION NUMBERS.
2. ADVERTISEMENTS AND OTHER SIMILAR INFORMATION SHALL NOT BE REQUIRED TO BE AUDIBLE UNLESS THEY CONVEY INFORMATION THAT CAN BE USED IN THE TRANSACTION BEING CONDUCTED.
3. WHERE SPEECH SYNTHESIS CANNOT BE SUPPORTED, DYNAMIC ALPHABETIC OUTPUT SHALL NOT BE REQUIRED TO BE AUDIBLE.

707.5.1 USER CONTROL: SPEECH SHALL BE CAPABLE OF BEING REPEATED OR INTERRUPTED. VOLUME CONTROL SHALL BE PROVIDED FOR THE SPEECH FUNCTION.

EXCEPTION: SPEECH OUTPUT FOR ANY SINGLE FUNCTION SHALL BE PERMITTED TO BE AUTOMATICALLY INTERRUPTED WHEN A TRANSACTION IS SELECTED.

707.5.2 RECEIPTS: WHERE RECEIPTS ARE PROVIDED, SPEECH OUTPUT DEVICES SHALL PROVIDE AUDIBLE BALANCE INQUIRY INFORMATION, ERROR MESSAGES, AND ALL OTHER INFORMATION ON THE PRINTED RECEIPT NECESSARY TO COMPLETE OR VERIFY THE TRANSACTION.

EXCEPTIONS:
1. MACHINE LOCATION, DATE AND TIME OF TRANSACTION, CUSTOMER ACCOUNT NUMBER, AND THE MACHINE IDENTIFIER SHALL NOT BE REQUIRED TO BE AUDIBLE.
2. INFORMATION ON PRINTED RECEIPTS THAT DUPLICATES INFORMATION AVAILABLE ON-SCREEN SHALL NOT BE REQUIRED TO BE PRESENTED IN THE FORM OF AN AUDIBLE RECEIPT.
3. PRINTED COPIES OF BANK STATEMENTS AND CHECKS SHALL NOT BE REQUIRED TO BE AUDIBLE.

707.6 INPUT: INPUT DEVICES SHALL COMPLY WITH 707.6.

707.6.1 INPUT CONTROLS: AT LEAST ONE TACTILE DISCERNIBLE INPUT CONTROL SHALL BE PROVIDED FOR EACH FUNCTION. WHERE PROVIDED, KEY SURFACES NOT ON ACTIVE AREAS OF DISPLAY SCREENS, SHALL BE RAISED ABOVE SURROUNDING SURFACES. WHERE MEMBRANE KEYS ARE THE ONLY METHOD OF INPUT, EACH SHALL BE TACTILE DISCERNABLE FROM SURROUNDING SURFACES AND ADJACENT KEYS.

1 2 3	7 8 9
4 5 6	4 5 6
7 8 9	1 2 3
* 0 #	* 0 #
(A) 12-KEY ASCENDING	(B) 12-KEY DESCENDING

FIGURE 707.6.2
NUMERIC KEY LAYOUT

707.6.2 NUMERIC KEYS: NUMERIC KEYS SHALL BE ARRANGED IN A 12-KEY ASCENDING OR DESCENDING TELEPHONE KEYPAD LAYOUT. THE NUMBER FIVE KEY SHALL BE TACTILELY DISTINCT FROM THE OTHER KEYS.

707.6.3 FUNCTION KEYS: FUNCTION KEYS SHALL COMPLY WITH 707.6.3.

707.6.3.1 CONTRAST: FUNCTION KEYS SHALL CONTRAST VISUALLY FROM BACKGROUND SURFACES. CHARACTERS AND SYMBOLS ON KEY SURFACES SHALL CONTRAST VISUALLY FROM KEY SURFACES. VISUAL CONTRAST SHALL BE EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT.

EXCEPTION: TACTILE SYMBOLS REQUIRED BY 707.6.3.2 SHALL NOT BE REQUIRED TO COMPLY WITH 707.6.3.1.

707.6.3.2 TACTILE SYMBOLS: FUNCTION KEY SURFACES SHALL HAVE TACTILE SYMBOLS AS FOLLOWS: ENTER OR PROCEED KEY: RAISED CIRCLE; CLEAR OR CORRECT KEY: RAISED LEFT ARROW; CANCEL KEY: RAISED LETTER EX; ADD VALUE KEY: RAISED PLUS SIGN; DECREASE VALUE KEY: RAISED MINUS SIGN.

707.7 DISPLAY SCREEN: THE DISPLAY SCREEN SHALL COMPLY WITH 707.7.

EXCEPTION: DRIVE-UP ONLY AUTOMATIC TELLER MACHINES AND FARE MACHINES SHALL NOT BE REQUIRED TO COMPLY WITH 707.7.1.

707.7.1 VISIBILITY: THE DISPLAY SCREEN SHALL BE VISIBLE FROM A POINT LOCATED 40 INCHES ABOVE THE CENTER OF THE CLEAR FLOOR SPACE IN FRONT OF THE MACHINE.

707.7.2 CHARACTERS: CHARACTERS DISPLAYED ON THE SCREEN SHALL BE IN A SANS SERIF FONT. CHARACTERS SHALL BE 3/16 INCH HIGH MINIMUM BASED ON THE UPPERCASE LETTER "I". CHARACTERS SHALL CONTRAST WITH THEIR BACKGROUND WITH EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND.

707.8 BRAILLE INSTRUCTIONS: BRAILLE INSTRUCTIONS FOR INITIATING THE SPEECH MODE SHALL BE PROVIDED. BRAILLE SHALL COMPLY WITH 703.3.

708 TWO-WAY COMMUNICATION SYSTEMS

708.1 GENERAL: TWO-WAY COMMUNICATION SYSTEMS SHALL COMPLY WITH 708.

708.2 AUDIBLE AND VISUAL INDICATORS: THE SYSTEM SHALL PROVIDE BOTH AUDIBLE AND VISUAL SIGNALS.

708.3 HANDSETS: HANDSET CORDS, IF PROVIDED, SHALL BE 29 INCHES LONG MINIMUM.

CHAPTER 8: SPECIAL ROOMS, SPACES AND ELEMENTS

801 GENERAL

801.1 SCOPE: THE PROVISIONS OF CHAPTER 8 SHALL APPLY WHERE REQUIRED BY CHAPTER 2 OR WHERE REFERENCED BY A REQUIREMENT IN THIS DOCUMENT.

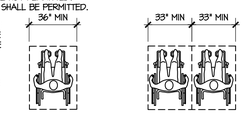
802 WHEELCHAIR SPACES, COMPANION SEATS, AND DESIGNATED AISLE SEATS

802.1 WHEELCHAIR SPACES: WHEELCHAIR SPACES SHALL COMPLY WITH 802.1.

802.1.1 FLOOR OR GROUND SURFACE: THE FLOOR OR GROUND SURFACE OF WHEELCHAIR SPACES SHALL COMPLY WITH 302. CHANGES IN LEVEL ARE NOT PERMITTED.

EXCEPTION: SLOPES NOT STEEPER THAN 1:48 SHALL BE PERMITTED.

802.1.2 WIDTH: A SINGLE WHEELCHAIR SPACE SHALL BE 36 INCHES WIDE MINIMUM WHERE TWO ADJACENT WHEELCHAIR SPACES ARE PROVIDED. EACH WHEELCHAIR SPACE SHALL BE 33 INCHES WIDE MINIMUM.



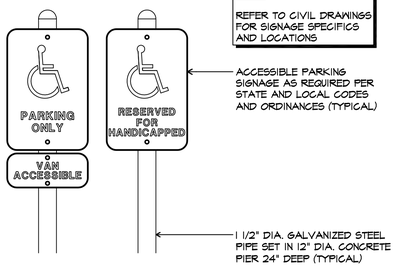
(A) SINGLE SPACE

(B) TWO SPACES

FIGURE 802.1.2
WIDTH OF WHEELCHAIR SPACES IN ASSEMBLY AREAS

802.1.3 DEPTH: WHERE A WHEELCHAIR SPACE CAN BE ENTERED FROM THE FRONT OR REAR, THE WHEELCHAIR SPACE SHALL BE 48 INCHES DEEP MINIMUM. WHERE A WHEELCHAIR SPACE CAN BE ENTERED ONLY FROM THE SIDE, THE WHEELCHAIR SPACE SHALL BE 60 INCHES DEEP MINIMUM.

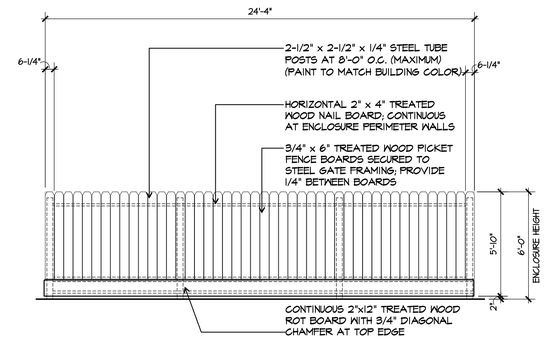
802.1.4 APPROACH: WHEELCHAIR SPACES SHALL ADJOIN ACCESSIBLE ROUTES. ACCESSIBLE ROUTES SHALL NOT OVERLAP WHEELCHAIR SPACES. 802.1.5 OVERLAP: WHEELCHAIR SPACES SHALL NOT OVERLAP C



ACCESSIBLE PARKING SIGNAGE — 11
SCALE: N.T.S.

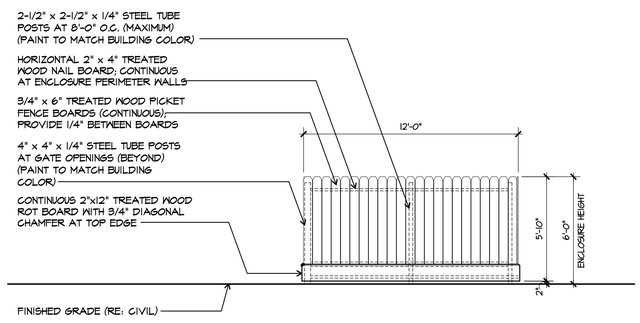
NOT USED — 7
SCALE: N.T.S.

NOT USED — 5
SCALE: N.T.S.

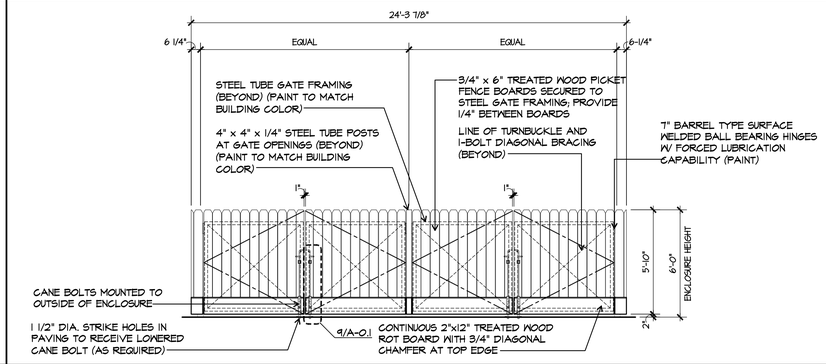


BACK ELEVATION - DUMPSTER ENCLOSURE — 3
SCALE: 1/4" = 1'-0"

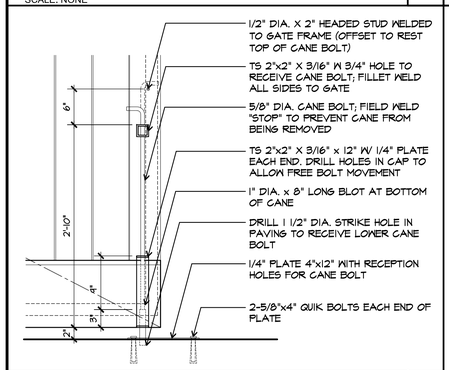
NOT USED — 10
SCALE: NONE



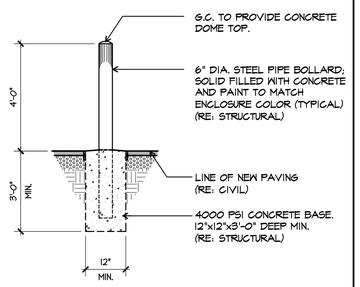
SIDE ELEVATION - DUMPSTER ENCLOSURE — 4
SCALE: 1/4" = 1'-0"



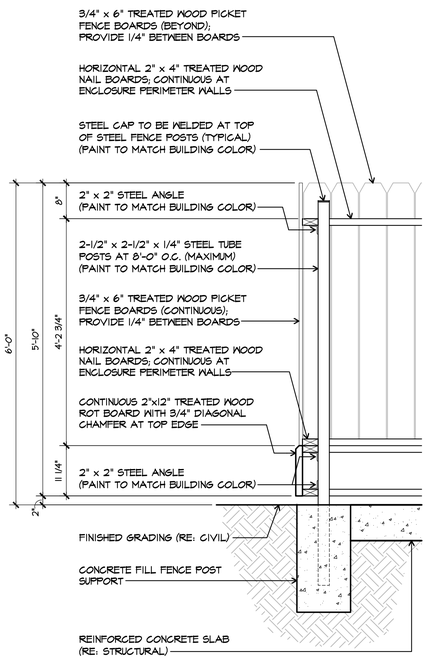
FRONT ELEVATION - DUMPSTER ENCLOSURE — 2
SCALE: 1/4" = 1'-0"



CANE BOLT DETAIL — 9
SCALE: 3/8" = 1'-0"



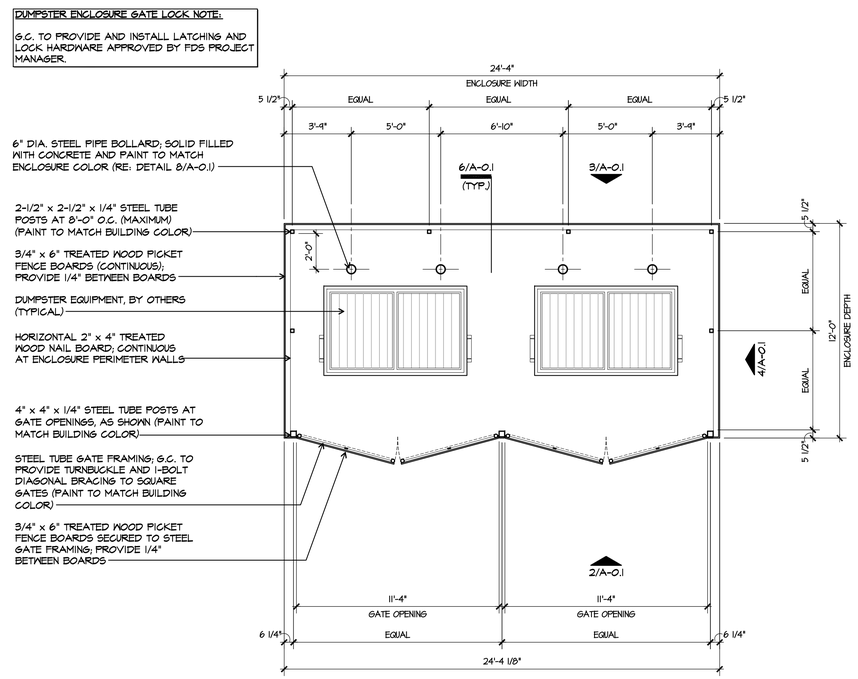
PIPE BOLLARD DETAIL — 8
SCALE: 3/8" = 1'-0"



SECTION - DUMPSTER ENCLOSURE — 6
SCALE: 3/4" = 1'-0"

DUMPSTER ENCLOSURE GATE LOCK NOTE:

G.C. TO PROVIDE AND INSTALL LATCHING AND LOCK HARDWARE APPROVED BY FDS PROJECT MANAGER.



ENLARGED PLAN - DUMPSTER ENCLOSURE — 1
SCALE: 1/4" = 1'-0"

DATE: 04.18.2014
JOB No.: 1401-25
DRAWN: FS, SP
CHECKED: LC

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A Professional Architectural Corporation
3801 Kirby Drive, Suite 600
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DELTA T DEVELOPMENT, LLC
2425 LUMBLEY ROAD
RAINBOW CITY, AL 35906
PH: 256.278.4577

NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

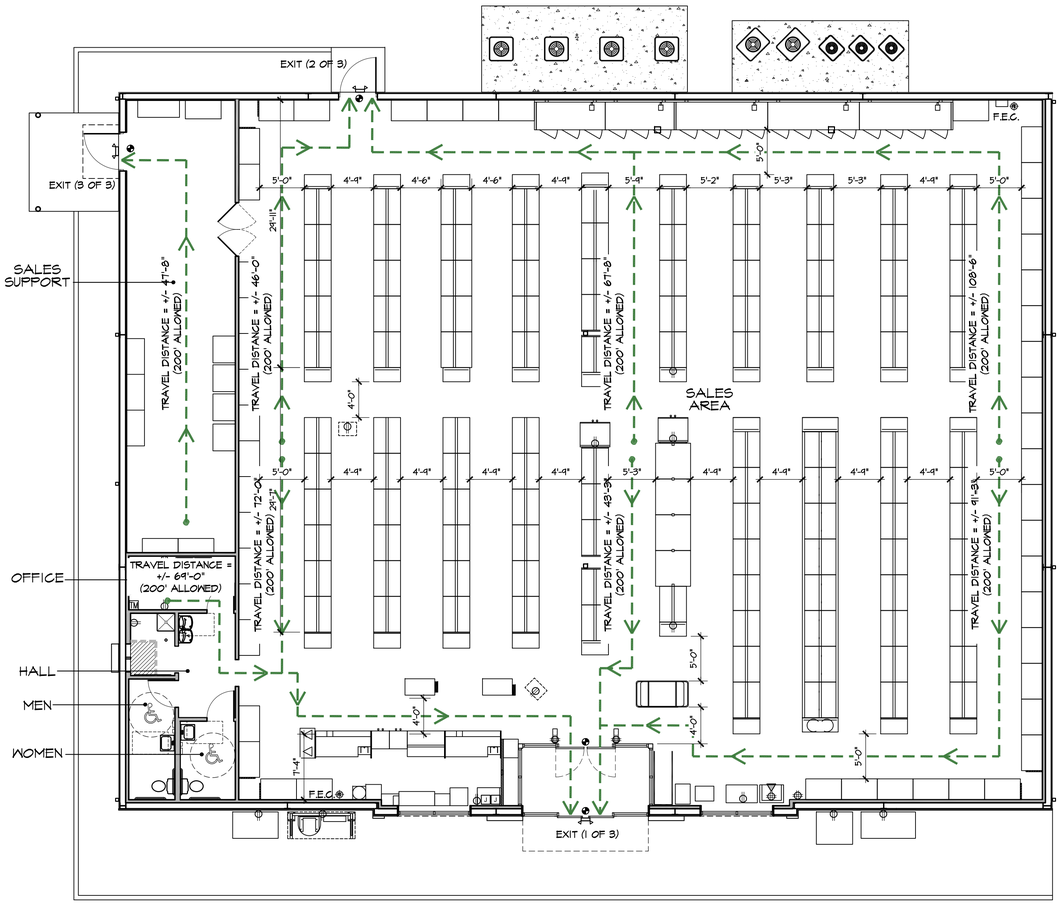
I hereby certify that this plan specification, or report was prepared by me or under my direct supervision, and that I am a duly Registered Architect under the laws of the State of North Dakota.
Date 4-18-14 Lic. No 2091

EXPIRES: 06.30.2014
Larry L. Christian, A.I.A., N.C.A.R.B.
North Dakota Registration
#2091

REVISIONS
PRELIMINARY REVIEW: 03.27.2014
PERMIT ISSUE: 04.18.2014

SITE AND DUMPSTER ENCLOSURE PLAN AND DETAILS

SHEET NUMBER
A-0.1



NOTE:

GENERAL CONTRACTOR TO PROVIDE KNOX BOX(ES) AS MANDATED PER LOCAL JURISDICTION AND FIRE MARSHAL REQUIREMENTS. LOCATE PER LOCAL CODE REQUIREMENTS. KNOX BOX CONTACT: 866-625-4563.

NOTE:

FIRE EXTINGUISHERS TO BE PROVIDED BY VENDOR. G.C. TO CONTACT VENDOR WITH AT LEAST A 4 WEEK NOTICE PRIOR TO FINAL INSPECTIONS. PLEASE PROVIDE THE STORE NUMBER, ADDRESS ALONG WITH THE SIZE, AND NUMBER OF FIRE EXTINGUISHERS AS REQUIRED BY THE LOCAL FIRE OFFICIAL. THIS INFORMATION SHOULD BE OBTAINED IN A COURTESY FIRE INSPECTION. VENDOR WILL INSTALL AND TAG ALL UNITS. VENDOR IS A CLOSED SPEC FAMILY DOLLAR VENDOR. REFER COVER SHEET.

BUILDING FOOTPRINT:	8,414 SQUARE FEET
INTERIOR FINISHED AREA:	8,054 SQUARE FEET
RETAIL:	7,097 SQUARE FEET
SALES SUPPORT:	627 SQUARE FEET
RESTROOM(S):	134 SQUARE FEET
OFFICE:	77 SQUARE FEET
HALL:	120 SQUARE FEET

FLOOR AREA & OCCUPANT LOAD: (TABLE 1004.1.1)

'M' - 1 OCCUPANT PER 30 SQ. FT.	7,351 SQ. FT. / 30 =	245 OCCUPANTS
'S-1' - 1 OCCUPANT PER 300 SQ. FT.	627 SQ. FT. / 300 =	3 OCCUPANTS
'B' - 1 OCCUPANT PER 100 SQ. FT.	77 SQ. FT. / 100 =	1 OCCUPANT
	OCCUPANT LOAD =	249

EXITING & EGRESS REQUIREMENTS:
MAXIMUM TRAVEL DISTANCE:

OCCUPANT LOAD - 249
200' FEET
249 < 500 OCCUPANTS - 2 EXITS REQUIRED
(PER TABLE 1021.1)

249 OCCUPANTS / 2 EXITS = 125 OCCUPANTS
125 OCCUPANTS * 0.2 = 25" MIN. EXIT WIDTH
(3'-0" DOOR WIDTH MINIMUM)

MINIMUM AISLE:	36"
MINIMUM CORRIDOR:	44"
MINIMUM LEAF WIDTH:	32"

PORTABLE FIRE EXTINGUISHERS:

IN ACCORDANCE WITH NFPA 10, STANDARDS FOR PORTABLE FIRE EXTINGUISHERS, FURNISH AND INSTALL AS SHOWN. VERIFY LOCATIONS AND NUMBER PER THE FIRE MARSHAL.

- FIRE EXTINGUISHERS SHALL BE A MINIMUM 2A10BC
- TOP OF FIRE EXTINGUISHERS HAVING A GROSS WEIGHT LESS THAN 40 LBS SHALL BE 48" A.F.F.; TOP OF FIRE EXTINGUISHERS HAVING A GROSS WEIGHT GREATER THAN 40 LBS SHALL BE 42" A.F.F.
- G.C. TO ENSURE ADEQUATE BLOCKING IS PROVIDED INSIDE WALL TO SECURELY MOUNT AND SUPPORT FIRE EXTINGUISHER.
- TRAVEL DISTANCE TO A FIRE EXTINGUISHER SHALL NOT EXCEED 75 FEET.

INTERIOR WALL & CEILING FINISHES REQUIREMENTS

NONSPRINKLERED

GROUP	EXIT ENCLOSURES AND EXIT PASSAGEWAYS	CORRIDORS	ROOMS AND ENCLOSED SPACES
"M"	A	B	C
"B"	A	B	C
"S"	B	B	C

EGRESS LEGEND

- EMERGENCY EGRESS FIXTURE WITH BATTERY BACKUP ADJACENT TO EXTERIOR DOORWAY (RE: MEP) (TYP.)
- ILLUMINATED EMERGENCY EGRESS SIGN WITH BATTERY BACKUP MOUNTED ABOVE DOORWAY (TYP.)
- FIRE EXTINGUISHER

GRAPHIC SCALE

8' 0' 2' 4' 8' 16' 32'

(IN FEET)
1/8" = 1'-0"

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

EGRESS FLOOR PLAN
SCALE: 1/8" = 1'-0"

1

NORTH

DATE: 04.18.2014
JOB No.: 1401-25
DRAWN: FS, SP
CHECKED: LC

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RAINBOW CITY, AL 35906
PH: 256.278.4377

NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

I hereby certify that this plan specification, or report was prepared by me or under my direct supervision, and that I am a duly Registered Architect under the laws of the State of North Dakota.
Date 4-18-14 Lic. No. 2091

EXPIRES: 06.30.2014
Larry L. Christian, A.I.A., N.C.A.R.B.
North Dakota Registration
#2091

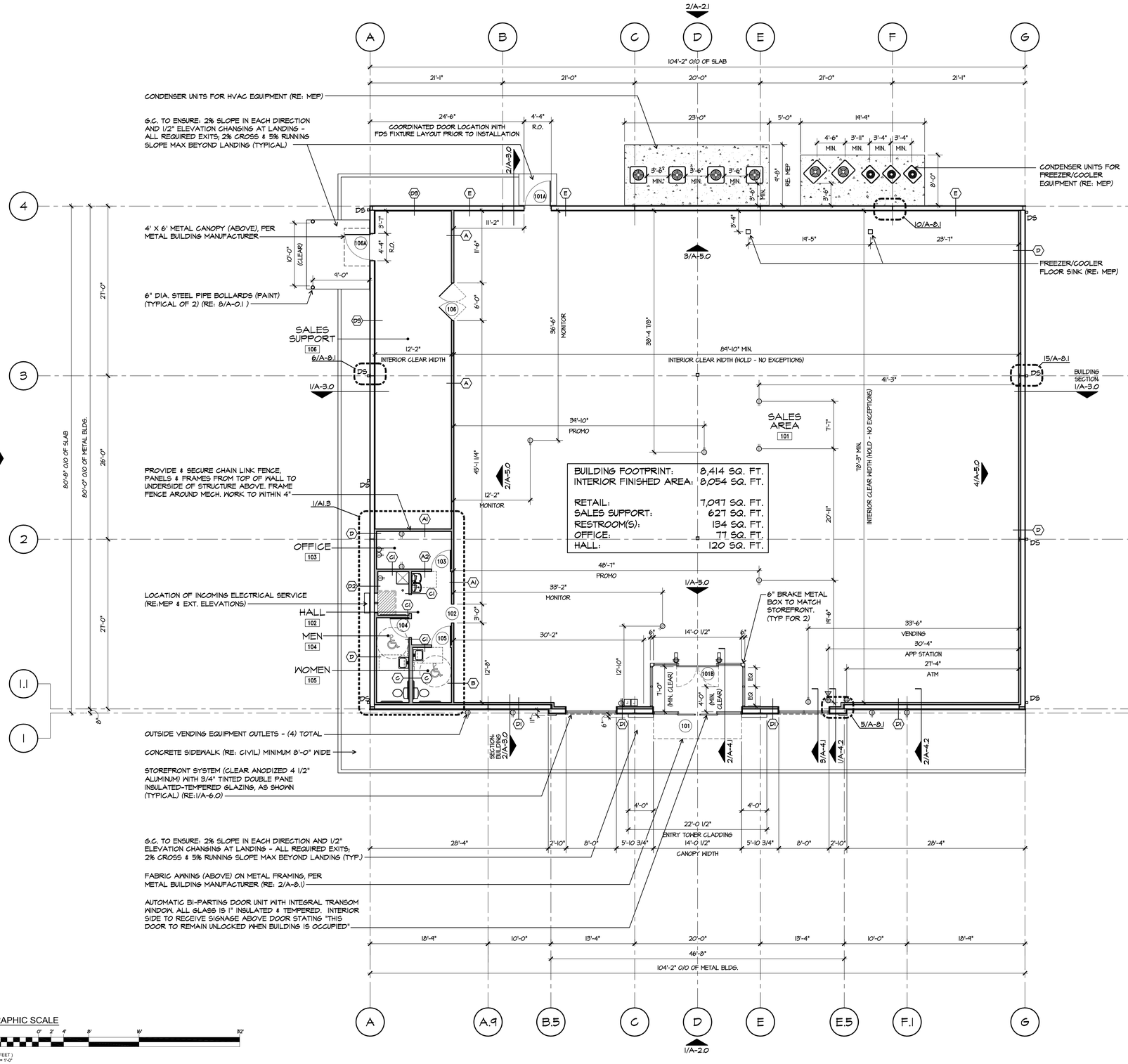
REVISIONS

PRELIMINARY REVIEW:	03.27.2014
PERMIT ISSUE:	04.18.2014

EGRESS FLOOR PLAN

SHEET NUMBER

A-0.2



SALES SUPPORT AREA:

NO HIGH PILED STORAGE, AS DEFINED PER IFC CHAPTER 23; NO STORAGE ABOVE 12'-0" A.F.F.; NO HIGH-HAZARD COMMODITIES ABOVE 6'-0" (TYPICAL)

COLUMN LAYOUT NOTE:

COLUMNS LOCATION SHALL BE VERIFIED BY THE METAL BUILDING MANUFACTURER. GENERAL CONTRACTOR SHALL COORDINATE DOOR LOCATIONS WITH THE METAL MANUFACTURER'S COLUMN LAYOUT. COLUMN LAYOUTS THAT VARY FROM THAT SHOWN IN THESE PROTOTYPE PLANS MUST BE SUBMITTED TO FAMILY DOLLAR STORE'S CONSTRUCTION DEPARTMENT FOR APPROVAL. CONVENTIONAL CMU, BRICK, OR WOOD CONSTRUCTION DESIGNS MUST BE SUBMITTED TO FAMILY DOLLAR CONSTRUCTION DEPARTMENT FOR APPROVAL.

ELECTRICAL NOTE:

THIS PLAN SHOWS ALL SPECIAL ELECTRICAL REQUIREMENTS. THE LOCATIONS INDICATED ON THE PLAN ARE APPROXIMATE. THE GENERAL CONTRACTOR/ SUBCONTRACTOR SHALL BE IN RECEIPT OF A FINAL SITE SPECIFIC FLOOR PLAN PROVIDED BY FAMILY DOLLAR STORES FOR COMPLETION OF ELECTRICAL WORK.

ELECTRICAL LOCATIONS MUST BE VERIFIED BY THE FAMILY DOLLAR STORE PROJECT MANGER, PRIOR TO INSTALLATION.

NOTE:

FOR WALL TYPES RE: A-8.0
FOR DOOR TYPES RE: A-7.0

NOTE:

GENERAL CONTRACTOR TO PROVIDE TERMITE TREATMENT PER FAMILY DOLLAR SPECIFICATIONS (TYPICAL)

PEMB NOTE:

PEMB MFR TO HOLD FRAME LINE COLUMNS TO 11-1/2" MAX.

NOTE AT GYPSUM BOARD:

INSTALL VERTICAL CONTROL JOINTS AT 20'-0" O.C. (TYPICAL) ALIGN WITH COLUMN LINES WHERE POSSIBLE.

NOTE:

PROVIDE SIGNAGE AT EVERY ENTRY POINT INTO THE BUILDING STATING "THIS IS A SMOKE FREE STORE. SMOKING IS PROHIBITED INSIDE THE STORE AND ON STORE PROPERTY, EXCEPT AT DESIGNATED EXTERIOR SMOKING AREA."

NOTE:

"DEVELOPER/G.C./LANDLORD MUST USE THIS GROUND FLOOR PLAN SHEET FOR THE PURPOSES OF DIMENSIONAL AS-BUILT SUBMITTAL TO FAMILY DOLLAR."

KEY BOX NOTE:

G.C. SHALL PROVIDE KEY BOX FOR LOCK ACCESS DURING PUNCHOUT AND TURNOVER. COMBINATION TO MATCH LAST FOUR DIGITS OF STORE NUMBER.

SALES AREA:

INTERIOR FINISHED WALLS MUST BE FLUSH, WITH NO OBSTRUCTIONS OR PROJECTIONS. THE EXCEPTION IS COLUMNS AT EACH SIDE OF THE STOREFRONT, WHICH ARE TO BE FURRED OUT.

GENERAL NOTES:

THIS FACILITY IS DESIGNED AROUND A PRE-ENGINEERED METAL BUILDING STRUCTURE. THE STRUCTURAL PLANS AND DETAILS ARE DESIGNED TO A LOCAL FROST DEPTH, SOIL REPORT, OR STRUCTURAL CALCULATION MINIMUM DEPTH. THE CONTRACTOR IS TO VERIFY DESIGN CRITERIA FOR EACH SPECIFIC BUILDING LOCATION.

GENERAL CONTRACTOR IS ADVISED THAT IT IS THEIR RESPONSIBILITY TO ENSURE THAT ALL CONSTRUCTION IS IN COMPLIANCE WITH ALL STATE AND LOCAL CODES AND WITH THE AMERICANS WITH DISABILITIES ACT. G.C. IS TO VERIFY THE COORDINATION OF THE VARIOUS DRAWINGS. IF A CONFLICT OF INFORMATION IS FOUND, G.C. SHALL CONTACT THE REQUIRED PARTIES PRIOR TO PROCEEDING.

GRAPHIC SCALE
8' 0' 2' 4' 8' 16' 32'
(IN FEET)
1/8" = 1'-0"

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

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

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NORTH

DATE: 04.18.2014
JOB No.: 1401-25
DRAWN: FS, SP
CHECKED: LC

Castles Design Group
A Professional Architectural Corporation
3801 Kirby Drive, Suite 600
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DELTA T DEVELOPMENT, LLC
2425 LUMBLEY ROAD
RAINBOW CITY, AL 35906
PH: 256.278.4377

NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

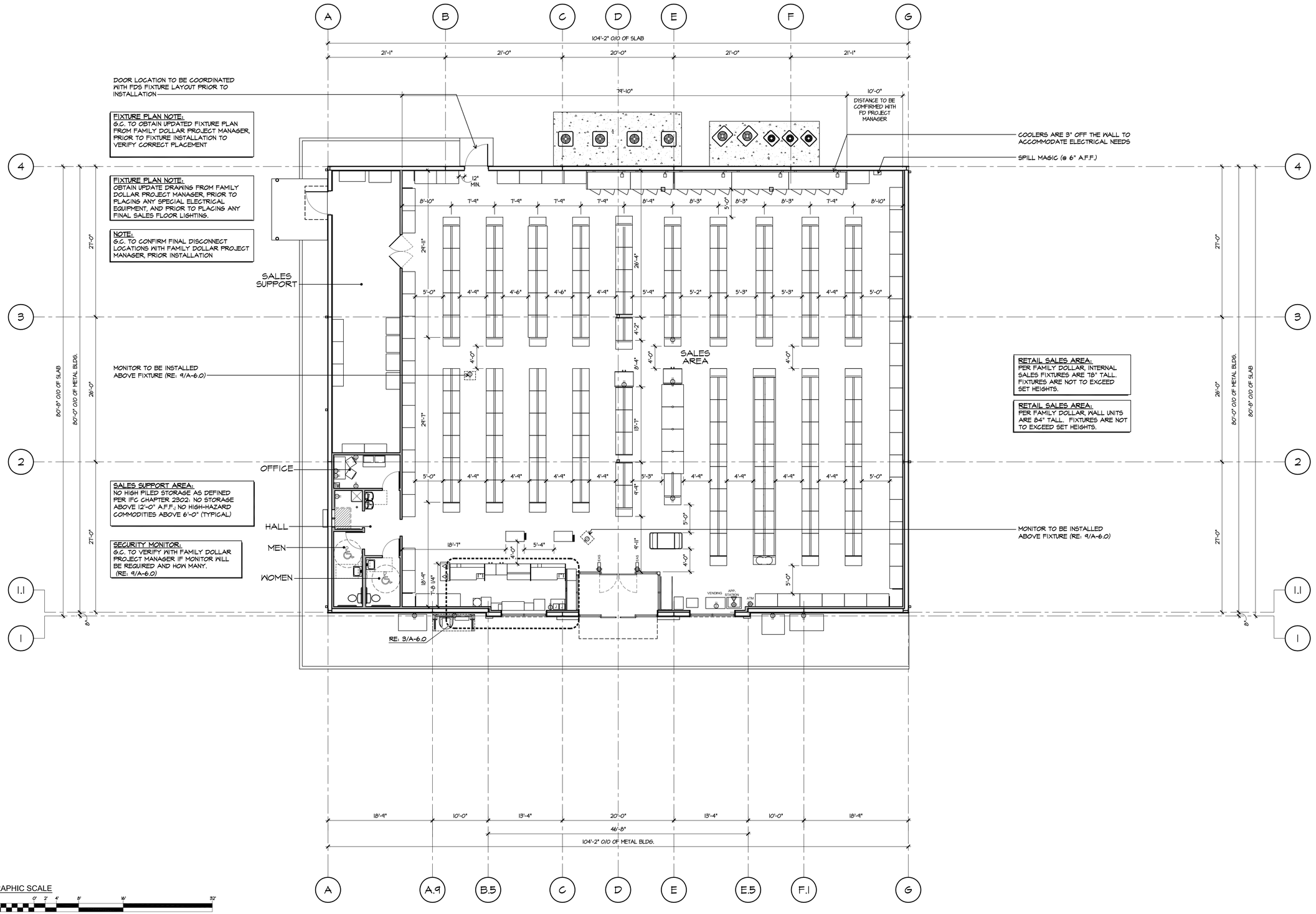
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REVISIONS
PRELIMINARY REVIEW: 03.27.2014
PERMIT ISSUE: 04.18.2014

FLOOR PLAN

SHEET NUMBER
A-1.0



GRAPHIC SCALE

8' 0' 2' 4' 8' 16' 32'

(IN FEET)
1/8" = 1'-0"

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

FIXTURE PLAN

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

1

NORTH

DATE: 04.18.2014
JOB No.: 1401-25
DRAWN: FS, SP
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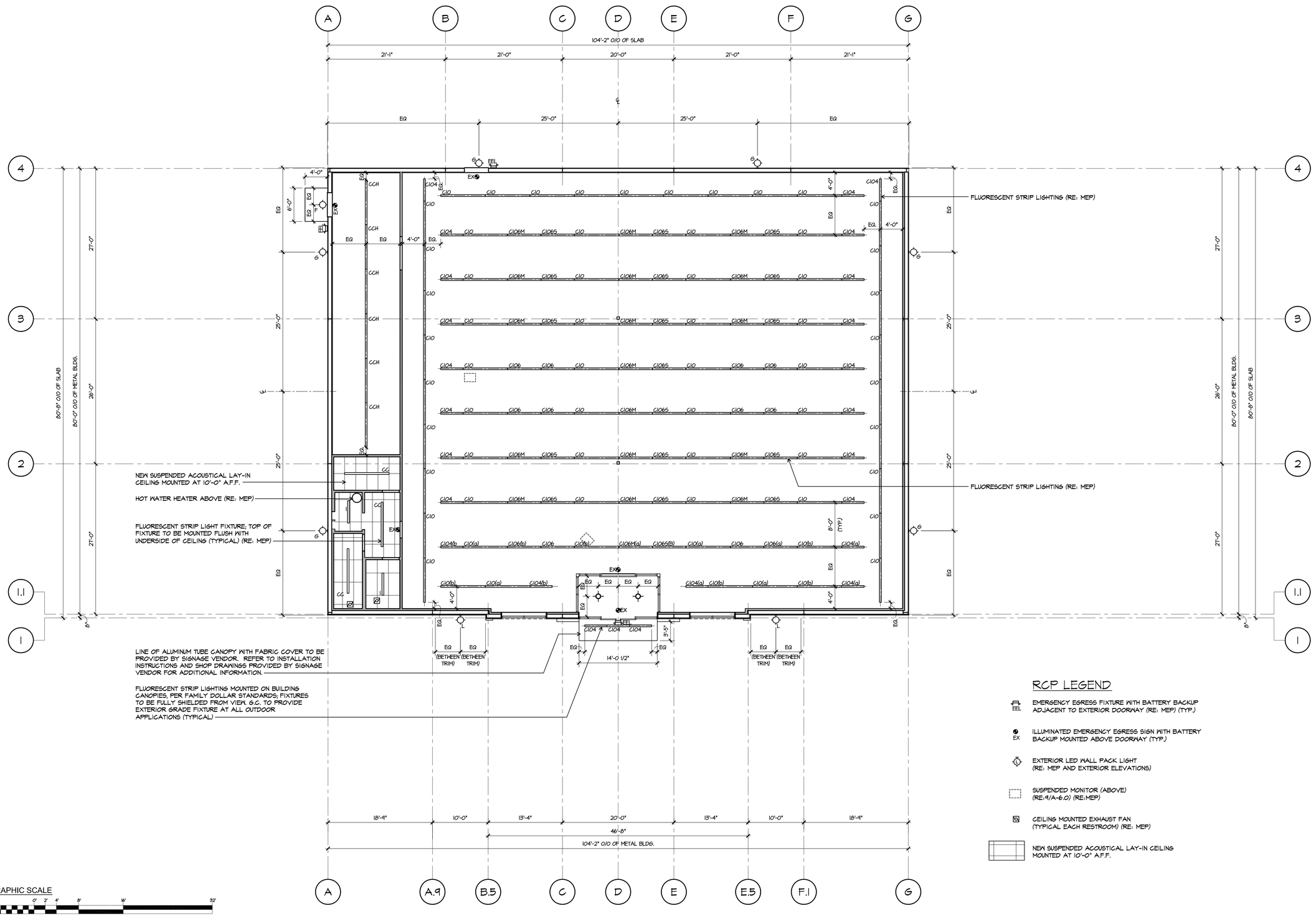
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FIXTURE PLAN

SHEET NUMBER

A-1.1



RCP LEGEND

- EEL — EMERGENCY EGRESS FIXTURE WITH BATTERY BACKUP ADJACENT TO EXTERIOR DOORWAY (RE: MEP) (TYP.)
- EX — ILLUMINATED EMERGENCY EGRESS SIGN WITH BATTERY BACKUP MOUNTED ABOVE DOORWAY (TYP.)
- EXTERIOR LED WALL PACK LIGHT (RE: MEP AND EXTERIOR ELEVATIONS)
- SUSPENDED MONITOR (ABOVE) (RE:9/A-6.0) (RE:MEP)
- CEILING MOUNTED EXHAUST FAN (TYPICAL EACH RESTROOM) (RE: MEP)
- NEW SUSPENDED ACOUSTICAL LAY-IN CEILING MOUNTED AT 10'-0" A.F.F.

GRAPHIC SCALE
8' 0' 2' 4' 8' 16' 32'
(IN FEET)
1/8" = 1'-0"

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

1

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DATE: 04.18.2014
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REFLECTED CEILING PLAN

SHEET NUMBER
A-1.2

INTERIOR RESTROOM ELEVATIONS # (KEY NOTE SYMBOL)

KEY NOTES

1. LINE OF SUSPENDED ACOUSTICAL LAY-IN CEILING MOUNTED AT 10'-0" A.F.F. AT RESTROOMS, OFFICE, BREAK, AND VESTIBULE; G.C. TO PROVIDE VINYL FACED MOISTURE RESISTANT TILES (TYPICAL EACH RESTROOM)
2. LINE OF NEW VCT FLOORING - (REFER TO INTERIOR FINISH SCHEDULE FOR FLOORING INFORMATION SHEET A-1.4)
3. 3'-0" x 7'-0" HOLLOW METAL DOOR AND FRAME, WITH ADA COMPLIANT LEVER HARDWARE, CLOSER, AND ACCESSORIES AS SCHEDULED (UNDERCUT DOOR 1" A.F.F.)
4. GYP. BOARD WALL SURFACE TO BE PAINTED SHERWIN WILLIAMS PAINT COLOR (REFER TO INTERIOR FINISH SCHEDULE SHEET A-1.4); G.C. TO PROVIDE WATER RESISTANT GYP BOARD ON ALL WET WALL SURFACES. (TYPICAL)
5. CONTINUOUS VINYL FLOOR BASE, 6" HEIGHT, AT ALL RESTROOM AREAS, AS SHOWN.
6. FRP PANELS; G.C. TO PROVIDE ALL TRIM CAPS ON TOP, SIDES, CORNERS AND JOINTS, INCLUDING CAULKING AS REQUIRED BY MFG. (RE: DETAIL 6/A-1.3)
7. ADA COMPLIANT, FLOOR MOUNTED, TANK TYPE TOILET. FLUSH LEVER TO BE INSTALLED ON WIDE SIDE OF TOILET, AWAY FROM ADJACENT WALL, AS SHOWN. (TYPICAL ALL RESTROOMS)
8. ADA COMPLIANT, WALL MOUNTED LAVATORY WITH INSULATED PIPE WRAP, ACCESSORIES AND HARDWARE.
9. COMMERCIAL GRADE WALL MOUNTED ELECTRIC HAND DRYER; G.C. TO ENSURE HAND DRYER DOES NOT CROSS IN TO 30"x48" CLEAR FLOOR SPACE AT ACCESSIBLE LAVATORY OR PROTRUDE MORE THAN 4" FROM FACE OF WALL.
10. WALL MOUNTED MIRROR WITH STAINLESS STEEL FRAME. (TYPICAL 2 RESTROOMS)
11. COMMERCIAL GRADE ROLL TYPE TOILET PAPER DISPENSER.
12. WALL MOUNTED STAINLESS STEEL GRAB BARS. G.C. TO ENSURE ALL BLOCKING IS PROVIDED TO SUPPORT 250 LB. MINIMUM LOAD. (RE: 5/A-1.3)
13. WALL MOUNTED SHELVING ABOVE WATER CLOSET AS SHOWN; G.C. TO PROVIDE (2) WHITE ADJUSTABLE SHELVES - 24" x 8" DEEP WITH WHITE PRE-FINISHED WALL STANDARDS AND SUPPORTS. (RE: 7/A-1.3)
14. DOOR HOOK MOUNTED TO INTERIOR SIDE OF RESTROOM DOOR. (TYPICAL 2 RESTROOMS)
15. WALL MOUNTED SOAP DISPENSER; MOUNTED PER ADA REQUIREMENTS.

RESTROOM

GENERAL NOTES

A. LAYOUT OF TOILET ROOM FACILITIES SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL CODES, INCLUDING ALL ADA REQUIREMENTS. SUBMIT ANY MODIFIED LAYOUTS TO FAMILY DOLLAR FOR THEIR REVIEW AND APPROVAL.

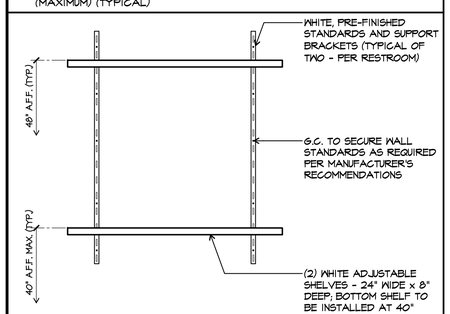
B. RESTROOMS SHALL BE EQUIPPED WITH THE FOLLOWING ACCESSORIES (FOR EACH RESTROOM - QUANTITIES AS SHOWN)

- (1) EA. 18"x34" FRAMED WALL MIRROR WITH CONCEALED MOUNTING OVER EACH LAVATORY. INSTALL WITH BASE OF REFLECTIVE SURFACE AT 40" A.F.F. (MAXIMUM)
- (1) EA. TOILET TISSUE HOLDER - BRADLEY MODEL "5054" 18 GAUGE, CHROME PLATED STEEL OR APPROVED EQUAL.
- (1) EA. HOOK - BRADLEY MODEL 931 OR APPROVED EQUAL MOUNTED TO DOOR FACE. INSTALL HOOK @ 48" AFF (MAXIMUM)
- (1) EA. 1 1/4" x 36" & 42" &18" STAINLESS STEEL, ADA COMPLIANT WALL MOUNTED GRAB BARS (OR FLOOR MOUNTED WHERE REQUIRED).
- (1) EA. ELECTRIC HAND DRYER - WORLD DRYER 'AIRFORCE' - J974, BY WORLD DRYER.
- (1) EA. SOAP DISPENSER - KUTOL- EZ HAND HYGIENE FOAM & LIQUID 1000 ML MOUNTED PER ADA REQUIREMENTS.
- (1) EA. CODE APPROVED ROOM IDENTIFICATION SIGN INSTALLED ADJACENT TO STRIKE JAMB/LATCH SIDE OF DOOR WITH HORIZONTAL CENTERLINE @ 60" A.F.F. (RE: DETAIL 4/A-1.3)
- (2) EA. TOILET SHELF - 24"L x 8"D. USE PRE-FINISHED WHITE ADJUSTABLE SHELF STANDARDS AND SUPPORTS (RE: DETAIL 7/A-1.3)
- (1) EA. CADET 3 FLO-WISE RIGHT HEIGHT ELONGATED TOILET BY AMERICAN STANDARD (RE:MEP).
- (1) EA. METERING FAUCET BY AMERICAN STANDARD AT LAVATORY. (RE: MEP).

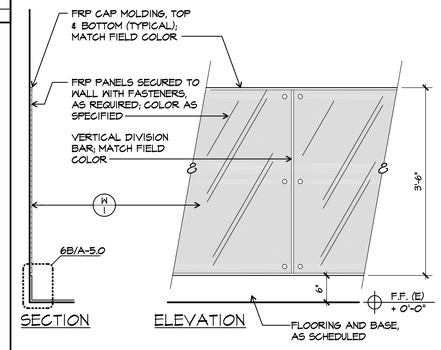
C. INSTALL CONTINUOUS FIRE RETARDANT TREATED MATERIAL AS 2x6 BLOCKING BETWEEN STUDS FOR HANDRAILS, GRAB BARS, FIXTURES, BRACKETS, ACCESSORIES, CABINETRY, AND MISCELLANEOUS SPECIALTIES, AS REQUIRED.

D. G.C. TO PROVIDE 1/2" MOISTURE RESISTANT GYP BOARD (GREENBOARD) AT ALL RESTROOM WALLS (PROVIDED 1/2" MOISTURE RESISTANT GYP BOARD AT RESTROOM CEILING, WHERE REQUIRED)

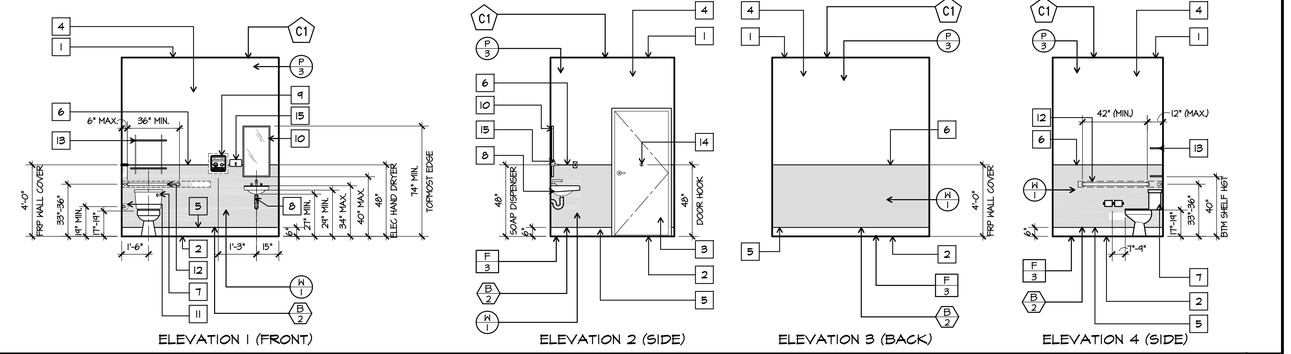
E. DOOR HARDWARE MUST BE MOUNTED BETWEEN 34" (MINIMUM) AND 48" (MAXIMUM) (TYPICAL)



ADJUSTABLE SHELF DETAIL — SCALE: 1-1/2" = 1'-0" — 7



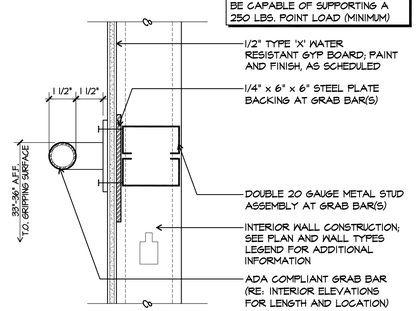
FRP WAINSCOT DETAIL — SCALE: 3/4" = 1'-0" — 6



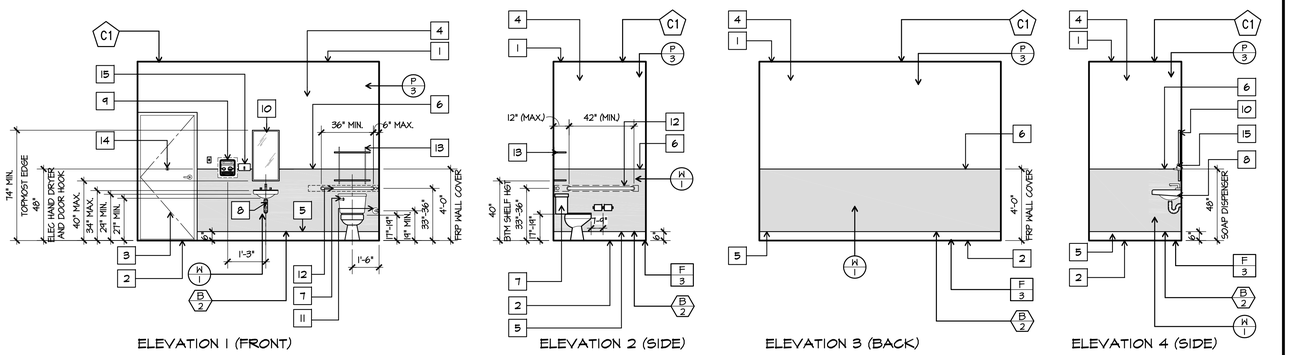
WOMEN 105 RESTROOM ELEVATIONS — SCALE: 1/4" = 1'-0" — 3

NOTE:

GRAB BAR(S) AND SUPPORT SHALL BE CAPABLE OF SUPPORTING A 250 LBS. POINT LOAD (MINIMUM)



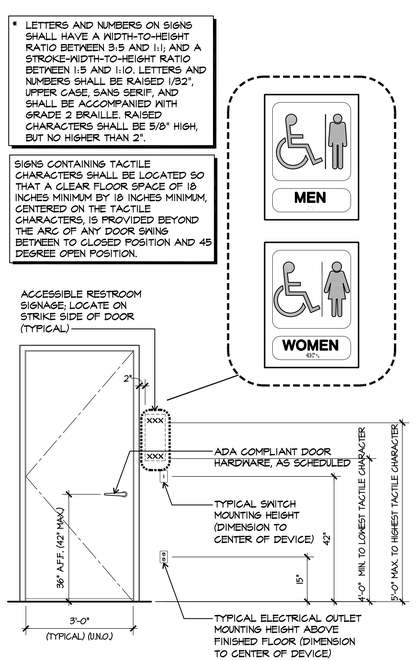
GRAB BAR DETAIL — SCALE: 3" = 1'-0" — 5



MEN 104 RESTROOM ELEVATIONS — SCALE: 1/4" = 1'-0" — 2

• LETTERS AND NUMBERS ON SIGNS SHALL HAVE A WIDTH-TO-HEIGHT RATIO BETWEEN 3:5 AND 1:1; AND A STROKE-WIDTH-TO-HEIGHT RATIO BETWEEN 1:5 AND 1:10. LETTERS AND NUMBERS SHALL BE RAISED 1/32", UPPER CASE, SANS SERIF, AND SHALL BE ACCOMPANIED WITH GRADE 2 BRAILLE. RAISED CHARACTERS SHALL BE 5/8" HIGH, BUT NO HIGHER THAN 2".

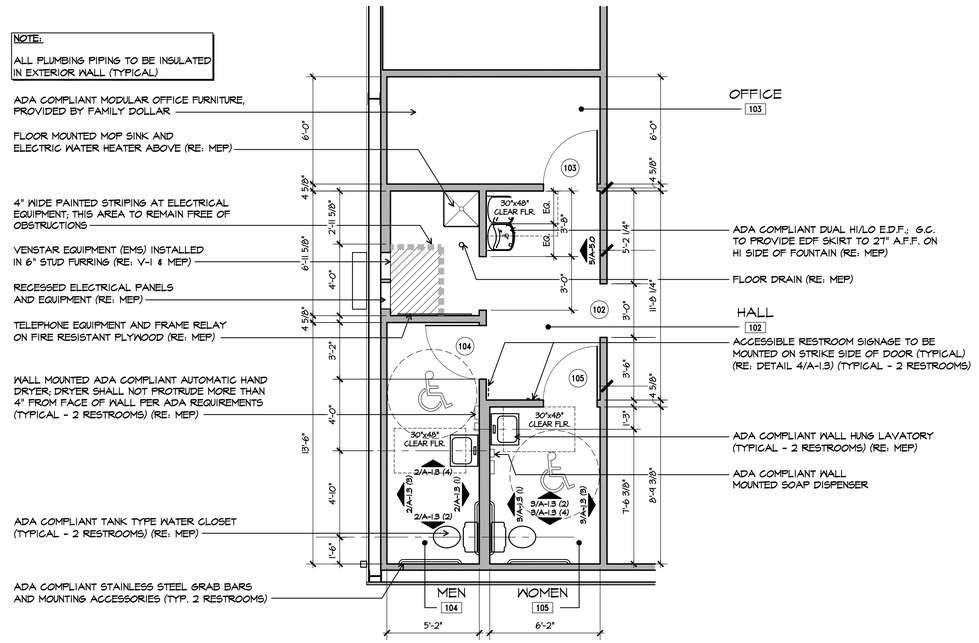
SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18 INCHES MINIMUM BY 18 INCHES MINIMUM, CENTERED ON THE TACTILE CHARACTERS, IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN TO CLOSED POSITION AND 45 DEGREE OPEN POSITION.



RESTROOM SIGNAGE — SCALE: 1/2" = 1'-0" — 4

NOTE:

ALL PLUMBING PIPING TO BE INSULATED IN EXTERIOR WALL (TYPICAL)



ENLARGED RESTROOM PLAN — SCALE: 1/4" = 1'-0" — 1

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ENLARGED RESTROOM PLAN, ELEVATIONS, AND DETAILS

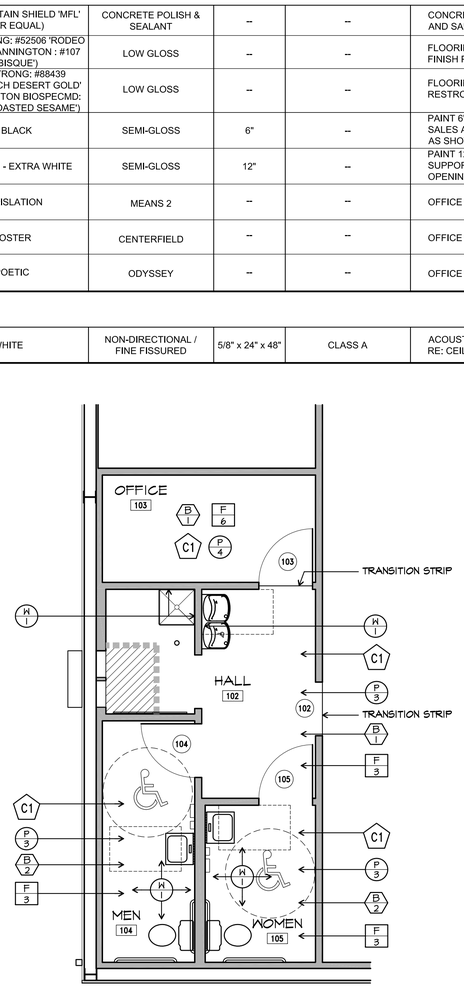
SHEET NUMBER
A-1.3

INTERIOR FINISH SCHEDULE

	NO.:	MATERIAL	MFR / SUPPLIER	COLOR / NUMBER	PATTERN / FINISH DESCRIPTION	SIZE	FLAME SPREAD RATING	SOURCE / REMARKS / NOTES
WALLS	LTR # (WALL FINISH SYMBOL)							
	P1	PAINT	SHERWIN WILLIAMS	SW 6680 - FRIENDLY YELLOW	EGGSHELL	2 COATS	--	ON WALLS AT SALES AREA; SHERWIN WILLIAMS LOW-VOC BASE PRODUCT: PROMAR 200 - B20W02651 (EGGSHELL)
	P2	PAINT	SHERWIN WILLIAMS	SW 6680 - FRIENDLY YELLOW	SEMI-GLOSS	2 COATS	--	ON EXPOSED STEEL COLUMNS; SHERWIN WILLIAMS LOW-VOC BASE PRODUCT: PROMAR 200 - B31W02651 (SEMI-GLOSS)
	P3	PAINT	SHERWIN WILLIAMS	SW 7006 - EXTRA WHITE	SEMI-GLOSS	2 COATS	--	SALES SUPPORT, RESTROOM, HALL, AND OFFICE: SHERWIN WILLIAMS LOW-VOC BASE PRODUCT: PROMAR 200 - B31W02651 (SEMI-GLOSS)
	P4	PAINT	SHERWIN WILLIAMS	SW 6165 - CONNECTED GRAY	SEMI-GLOSS	2 COATS	--	OFFICE WITH F6
	P5	PAINT	SHERWIN WILLIAMS	SW 6130 - MANNERED GOLD	SEMI-GLOSS	2 COATS	--	OFFICE WITH F7
	P6	PAINT	SHERWIN WILLIAMS	SW 6137 - BURLAP	SEMI-GLOSS	2 COATS	--	OFFICE WITH F8
	W1	FRP	MARLITE	P-100 (WHITE)	PEBBLED SURFACE	TO 48" A.F.F.	--	INSTALLED ON ALL RESTROOM WALLS. INSTALL BEHIND MOP SINK, AND DRINKING FOUNTAIN - EXTEND 12" PAST EACH SIDE.
FLOORING	B # (BASE FINISH SYMBOL)							
	B1	RUBBER BASE	ARMSTRONG	ARMSTRONG; #60 'JET BLACK'	TOPSET COVE VINYL, COLOR INTEGRATED	4"	--	4" CONTINUOUS RUBBER BASE FOR USE IN ALL AREAS EXCEPT FOR RESTROOMS. (TYPICAL) (U.N.O.)
	B2	RUBBER BASE	ARMSTRONG	ARMSTRONG	FLASH COVING, INTEGRAL COVE	6"	--	6" CONTINUOUS RUBBER BASE FOR USE IN RESTROOMS BELOW FRP PANELS (TYPICAL)
	F # (FLOORING FINISH SYMBOL)							
	F1	SEALANT	CONCRETE POLISHING SOLUTIONS	ARMOR STAIN SHIELD 'MFL' (OR EQUAL)	CONCRETE POLISH & SEALANT	--	--	CONCRETE SEALANT USED THROUGHOUT SALES AREA AND SALES SUPPORT AREA. RE: T-2
	F2	VCT	ARMSTRONG (ALT. MANNINGTON)	ARMSTRONG: #52506 'RODEO FAWN' (MANNINGTON : #107 'BISQUE')	LOW GLOSS	--	--	FLOORING TO BE USED IN BREAK AREA; RE: FINISH PLAN
	F3	VCT	ARMSTRONG (ALT. MANNINGTON)	ARMSTRONG; #88439 'MEDINTECH DESERT GOLD' (MANNINGTON BIOSPECMD: #15333 'TOASTED SESAME')	LOW GLOSS	--	--	FLOORING TO BE USED IN MEN'S AND WOMEN'S RESTROOMS, AND HALL; RE: FINISH PLAN
	F4	PAINT	SHERWIN WILLIAMS	BLACK	SEMI-GLOSS	6"	--	PAINT 6" WIDE BORDER ALONG PERIMETER WALLS & COLUMNS AT SALES AREA; TAPER PAINT TO 45° ANGLE AT ALL DOOR OPENINGS, AS SHOWN. (RE: FINISH FLOOR PLAN)
	F5	PAINT	SHERWIN WILLIAMS	SW 7006 - EXTRA WHITE	SEMI-GLOSS	12"	--	PAINT 12" WIDE BORDER ALONG PERIMETER WALLS AT SALES SUPPORT AREA; TAPER PAINT TO 45° ANGLE AT ALL DOOR OPENINGS, AS SHOWN. (RE: FINISH FLOOR PLAN)
	F6	CPT	MANNINGTON	LEGISLATION	MEANS 2	--	--	OFFICE WITH P4
	F7	CPT	MANNINGTON	ROSTER	CENTERFIELD	--	--	OFFICE WITH P5
	F8	CPT	MANNINGTON	POETIC	ODYSSEY	--	--	OFFICE WITH P6
CEILING	C# (CEILING FINISH SYMBOL)							
	C1	ACOUSTICAL TILE	ARMSTRONG (OR EQUAL)	WHITE	NON-DIRECTIONAL / FINE FISSURED	5/8" x 24" x 48"	CLASS A	ACOUSTIC LAY-IN CEILING IN HALL, RESTROOMS, AND OFFICE; RE: CEILING PLAN FOR MOUNTING HEIGHTS

NOTES: INTERIOR FINISHES

1. PAINTER TO APPLY ONE COAT PRIMER AND TWO COATS FINISH COLOR TO ALL PAINTED WALLS AND NOTED SURFACES.
2. ALL MATERIALS SHALL BE FLAME SPREAD RATED AND/OR FIRE RATED PER LOCAL CODES. G.C. TO VERIFY FOR EACH JOB LOCATION.
3. G. C. TO PROVIDE TENANT WITH STOCK OF ADDITIONAL FINISH MATERIALS UPON COMPLETION OF WORK, INCLUDING: CEILING TILE (10 MIN.), PAINT, LIGHT FIXTURE REPLACEMENT LAMPS, FLOOR FINISHES AND BASE. (ADDITIONAL ITEMS TO BE PLACED IN AVAILABLE STORAGE AREA) G.C.'S PAINTING SUBCONTRACTOR TO PROVIDE OWNER WITH ONE (1) FULL GALLON OF PAINT FOR EACH COLOR AND 10 EXTRA FURR STRIPS AT COMPLETION OF PROJECT.
4. G.C. TO CLEAN AND WAX ALL VCT FLOOR SURFACES PRIOR TO DELIVERY OF STORE TO FAMILY DOLLAR.
5. VCT TILE LAID PERPENDICULAR TO TOILET ROOM ENTRANCES; PATTERN TO BE TURNED 1/4" TURN WITH EACH TILE SET.
6. INSTALL SCHEDULED FRP TO 4'-0" A.F.F. ON ALL WALL SURFACES IN RESTROOMS (RE: 2/A-1.3). INSTALL FRP TO 4'-0" A.F.F. BEHIND MOP SINK AND DRINKING FOUNTAIN - EXTEND 12" PAST EACH SIDE. PROVIDE ALL TRIM CAPS ON TOP, SIDES, CORNERS AND JOINTS, INCLUDING CAULKING AS REQUIRED BY MFG. VERIFY LOCAL CODES FOR ADDITIONAL APPLICATION REQUIREMENTS.
7. ALL HOLES ON INTERIOR OF SPACE TO BE SEALED INCLUDING WALLS AND FLOOR. INSTALL METAL GRILLE OVER OPEN ENDED PIPES.
8. HOLLOW METAL DOORS AND FRAMES TO BE PRIMED AND PAINTED IN FIELD WITH 1 COAT PRIMER AND 2 COATS COLOR TO MATCH WALL SURFACE OF DOOR FACING.
9. G.C. OR PAINT CONTRACTOR MUST NOTIFY LOCAL SHERWIN WILLIAMS DEALER THAT PAINT IS BEING PURCHASED FOR A FAMILY DOLLAR STORE AND PROVIDE DEALER WITH STORE LOCATION.



ENLARGED RESTROOM FINISH PLAN
SCALE: 1/4" = 1'-0"

2

NORTH

COLUMN NOTE:

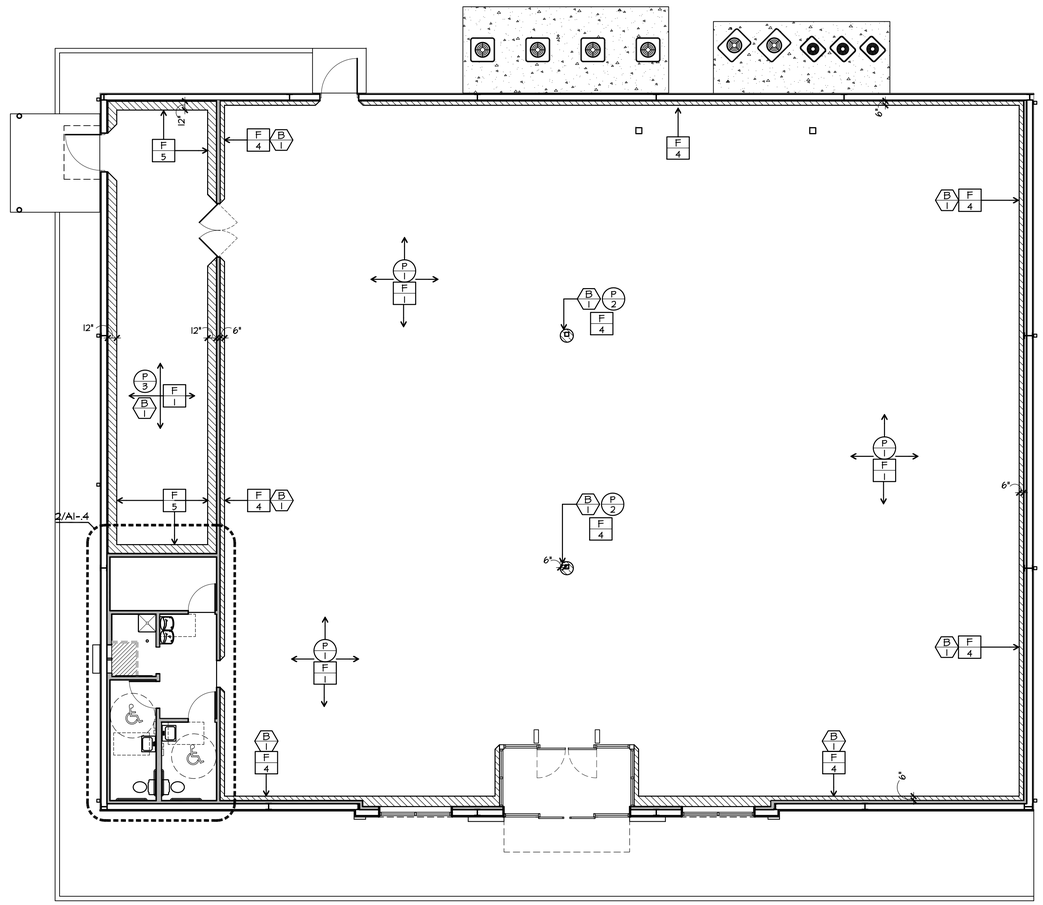
ROUND COLUMNS ARE NOT TO RECEIVE COVE BASE.

G.C. TO PROVIDE CIRCULAR OR SQUARE 6" PAINTED BORDER AROUND COLUMN IN SALE'S AREA.

FINISH REQUIREMENTS:

PER IBC TABLE 803.5 - INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY, INTERIOR FINISH RATINGS SHALL BE AS FOLLOWS:

GROUP 'M' - NONSPRINKLERED
EXIT ENCLOSURES AND PASSAGEWAYS: A
CORRIDORS: B
ROOMS AND ENCLOSED SPACES: C



FINISH FLOOR PLAN
SCALE: 1/8" = 1'-0"

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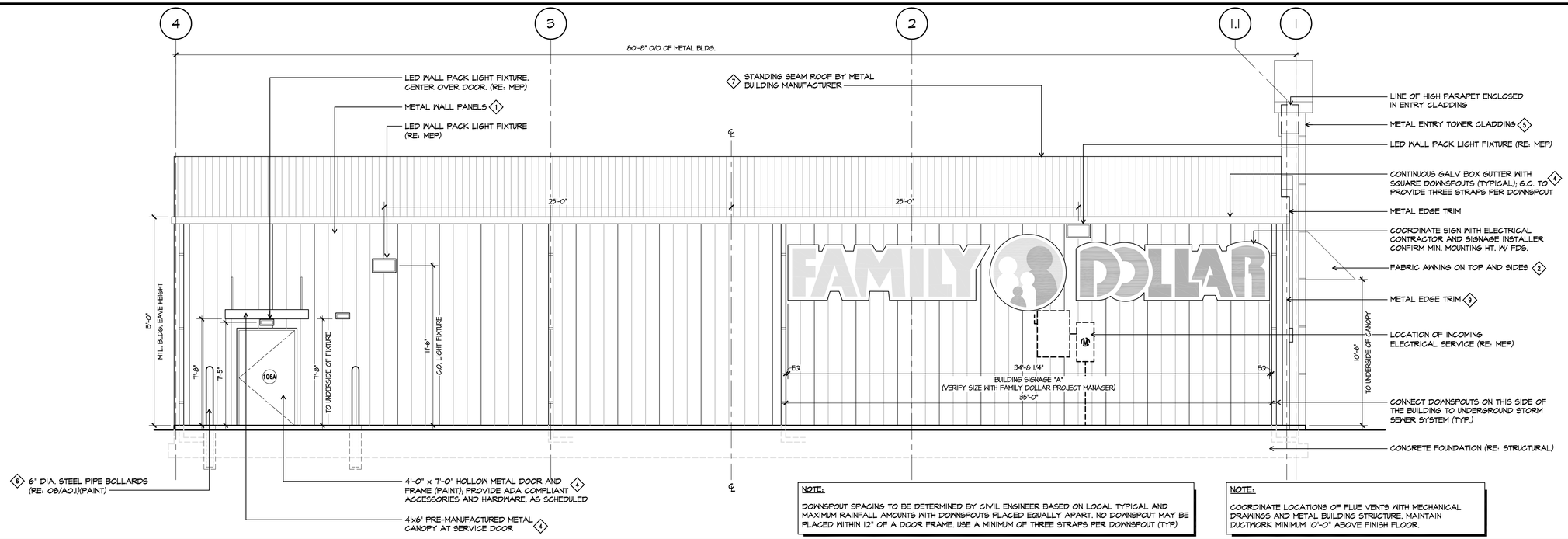
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FLOOR FINISH PLANS, INTERIOR FINISH SCHEDULE

SHEET NUMBER
A-1.4



NOTE:

DOWNSPOUT SPACING TO BE DETERMINED BY CIVIL ENGINEER BASED ON LOCAL TYPICAL AND MAXIMUM RAINFALL AMOUNTS WITH DOWNSPOUTS PLACED EQUALLY APART. NO DOWNSPOUT MAY BE PLACED WITHIN 12" OF A DOOR FRAME. USE A MINIMUM OF THREE STRAPS PER DOWNSPOUT (TYP)

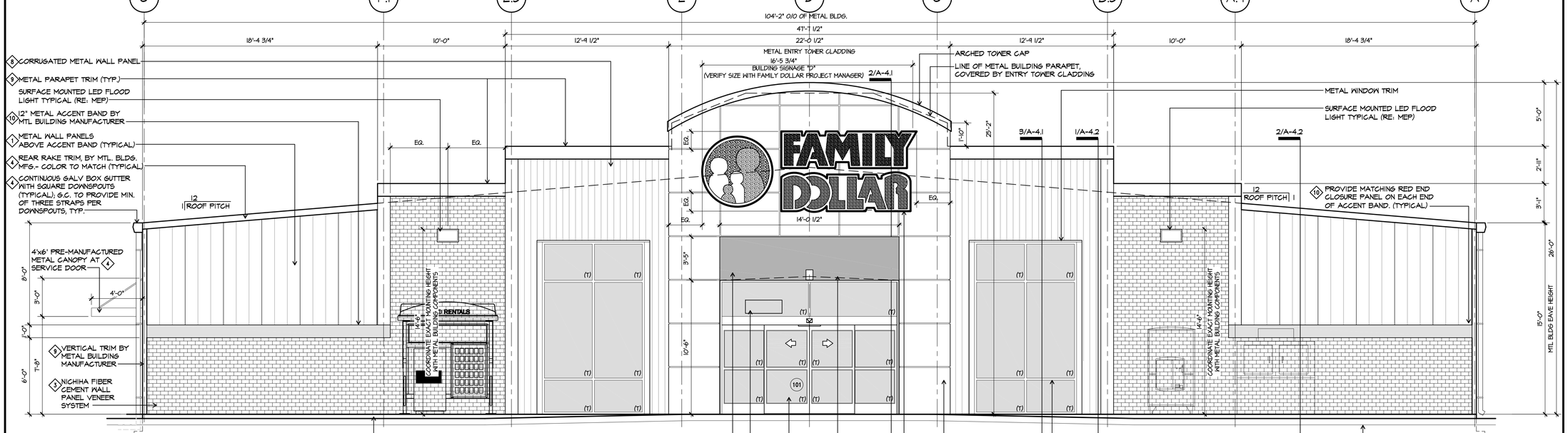
NOTE:

COORDINATE LOCATIONS OF FLUE VENTS WITH MECHANICAL DRAWINGS AND METAL BUILDING STRUCTURE. MAINTAIN DUCTWORK MINIMUM 10'-0" ABOVE FINISH FLOOR.

EAST - EXTERIOR ELEVATION

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

2



NOTE:

G.C. TO PROVIDE GRAY TINT SOLAR GLASS FOR EXTERIOR ELEVATION FACING SOUTH OR WEST.

NOTE:

G.C. TO USE TAMPER RESISTANT SCREWS FOR METAL WALL PANELS. SCREW MUST BE FULL HEIGHT PAN HEIGHT SELF-DRILLING, STAINLESS STEEL OR EQUAL.

NOTE:

STOREFRONT DOORS MUST BE SHIELDED OVERHEAD FROM THE WEATHER. IF THE PROTOTYPE CANOPY IS NOT USED, AN AWNING OR OTHER FORM OF PROTECTION MUST BE USED. FINAL APPROVAL FROM FAMILY DOLLAR STORES.

NOTE:

PROVIDE 20 YEAR ALL WEATHER TIGHTNESS WARRANTY FOR METAL ROOF.

MINIMUM STRUCTURAL HEIGHT NOTE:

THE MINIMUM CLEAR HEIGHT OF THE STRUCTURE OR OTHER CONSTRUCTION IS 12'-3" AT EXTERIOR WALL AND EAVE LOCATIONS.

A MAINFRAME BEAM, BAR JOIST OR WOOD TRUSS VERTICAL THICKNESS IS TO BE CALCULATED BY A LICENSED STRUCTURAL ENGINEER. AT THE ENTRY WALL THE BOTTOM OF ROOF STRUCTURE SHALL CLEAR THE TOP OF STOREFRONT SYSTEM BY MIN. 4". PROVIDE 15'-0" MIN. CLEAR AT CENTER AS SHOWN ON BUILDING SECTIONS.

DUCTWORK CLEARANCES SHOWN ON BUILDING SECTIONS IN SALES AREA ARE MIN. 12'-6" TO BOTTOM OF DUCTS. ALL STRUCTURAL ELEMENTS REQUIRING DEPTH THAT MAY INTERFERE WITH LIGHT AND DUCT PLACEMENT ARE TO GROW UP RATHER THAN DOWN INTO SPACE.

NORTH - EXTERIOR ELEVATION

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

1

DATE: 04.18.2014
JOB No.: 1401-25
DRAWN: FS, SP
CHECKED: LC

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DELTA T DEVELOPMENT, LLC
2425 LUMBLEY ROAD
RAINBOW CITY, AL 35906
PH: 256.278.4377

NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

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Date 4-16-14 Lic. No 2091

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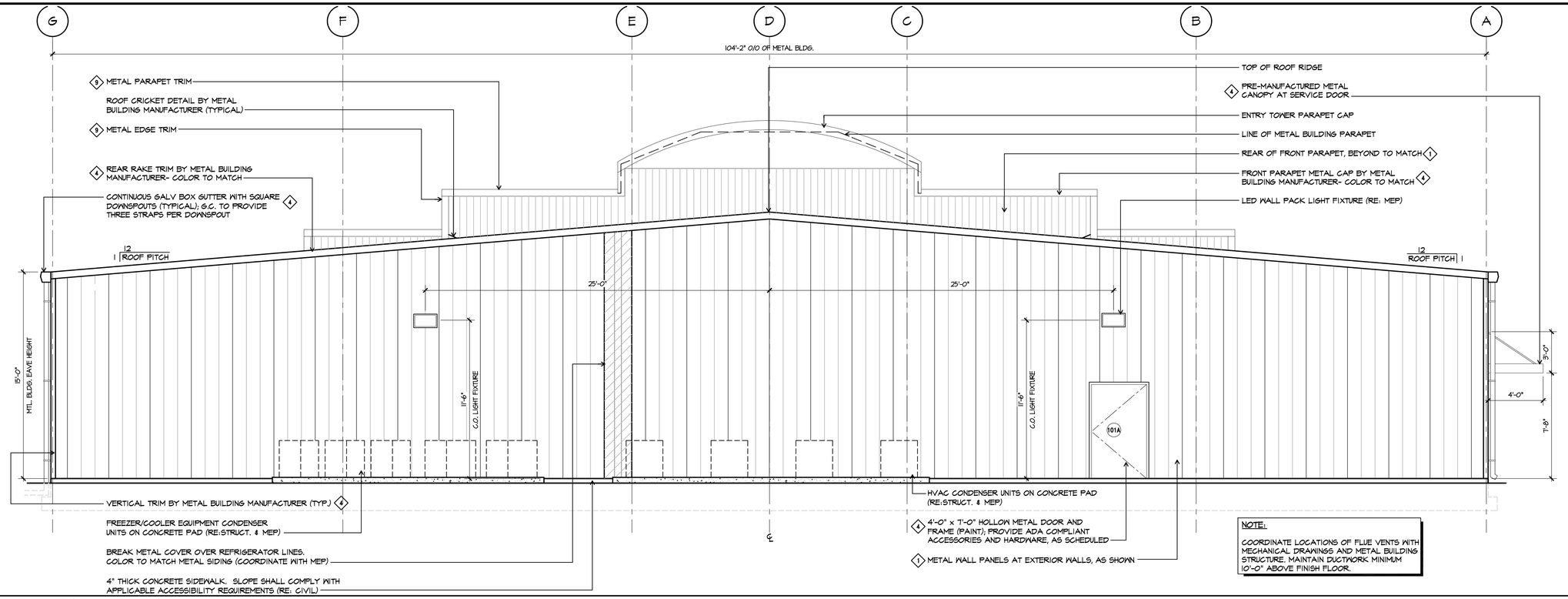
REVISIONS

PRELIMINARY REVIEW: 03.27.2014
PERMIT ISSUE: 04.18.2014

EXTERIOR ELEVATIONS

SHEET NUMBER

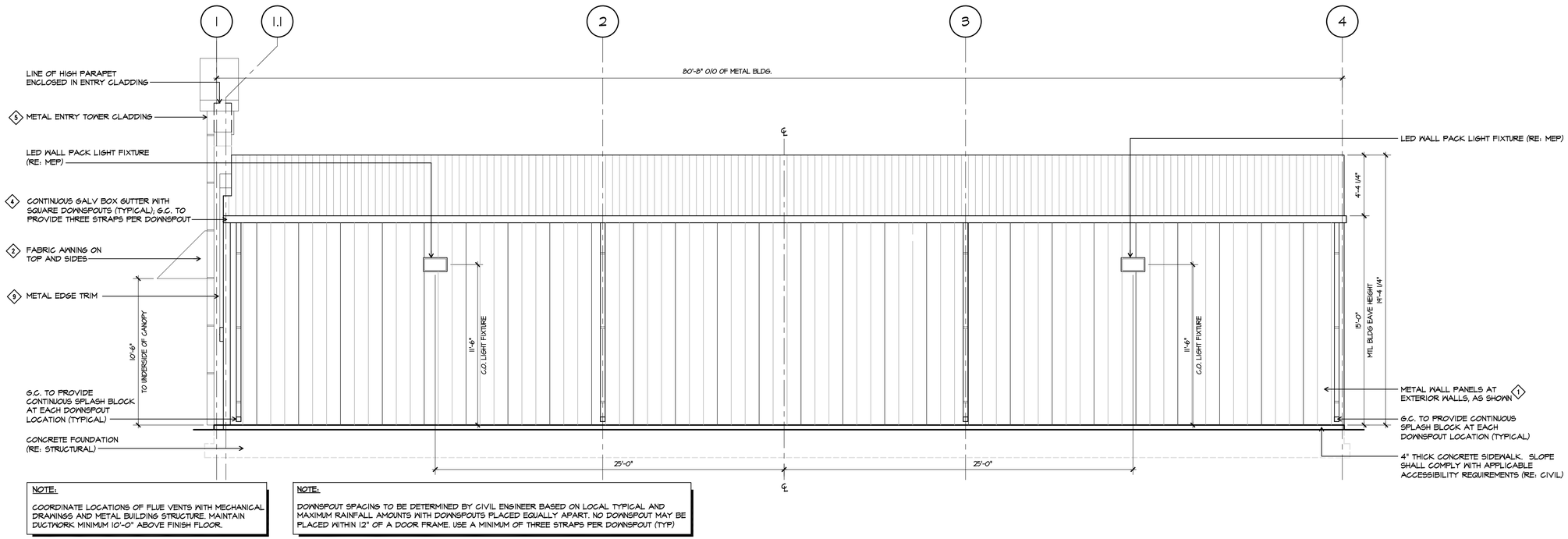
A-2.0



SOUTH - EXTERIOR ELEVATION

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

2



WEST - EXTERIOR ELEVATION

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

1

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EXTERIOR ELEVATIONS

SHEET NUMBER
A-2.1

EXTERIOR FINISH SCHEDULE

	NO.:	LOCATION	MATERIAL TYPE	COATS	COLOR INFORMATION
	(#) (EXTERIOR FINISH SYMBOL)				
BUILDING EXTERIOR	1	METAL WALL PANELS	VP - VEE RIB PANEL NUCOR - ACCENT PANEL MID-WEST - PBA PANEL	PRE-FINISHED	VP - COLOR "TAN" NUCOR COLOR "SAGEBRUSH TAN" OR SHERWIN WILLIAMS MATCHING COLOR SW 6122 "CAMELBACK" MID-WEST COLOR "SADDLE TAN"
	2	CANOPY	FABRIC ON ALUMINUM FRAME		COLOR RED - PER FAMILY DOLLAR STORE APPROVED CANOPY. DESIGN CONTACT: ALLEN INDUSTRIES 1-800-967-2553
	3	'NICHIHA' FIBER CEMENT WALL PANEL	EF623 PANELS		MANUFACTURER'S STANDARD MOUNTED TO REVERSE 'R' METAL WALL PANELS FURNISHED BY METAL BUILDING MANUFACTURER
	4	H.M. DOORS (EXT. FACE), GUTTERS, DOWNSPOUTS, METAL TRIM, METAL CANOPY & PARAPET CAP	METAL BUILDING MANUFACTURER	PRE-FINISHED	VP - COLOR "TAN" NUCOR COLOR " SAGEBRUSH TAN" OR SHERWIN WILLIAMS MATCHING COLOR SW 6122 "CAMELBACK" MID-WEST COLOR "SADDLE TAN"
	5	METAL ENTRY TOWER CLADDING	METAL TOWER STRUCTURE	PRE-FINISHED	COLOR- WALL PANELS: MATCH SW 6148- "WOOL SKEIN". RADIUS TOP MATCH SW 6122- "CAMELBACK". CONTACT: ALLEN INDUSTRIES 1-800-967-2553
	6	STEEL PIPE BOLLARDS	EXTERIOR LATEX	2	MATCH SHERWIN WILLIAMS SW 4081 "SAFETY RED"
	7	METAL ROOF	STANDING SEAM	PRE-FINISHED	COOL ARCTIC WHITE (PRE-FINISHED)
	8	CORRUGATED METAL WALL PANEL	NARROW CORRUGATED	PRE-FINISHED	GALVALUME
	9	METAL TRIM	METAL BUILDING MANUFACTURER	PRE-FINISHED	TAN (PRE-FINISHED) MATCH SW 6122 "CAMELBACK"
	10	METAL ACCENT TRIM	METAL BUILDING MANUFACTURER	PRE-FINISHED	FURNISHED BY METAL BUILDING MANUFACTURER, NUCOR COLOR "REGAL RED" (PRE-FINISHED), SINGLE BEAD, EMBOSSED

NOTES: EXTERIOR FINISHES

GENERAL NOTE:

MATERIALS ARE TO BE APPROVED BY FAMILY DOLLAR STORES. COLORS ARE CRITICAL AND MUST BE APPROVED BY A FAMILY DOLLAR STORE REPRESENTATIVE IF THEY DIFFER FROM THE METAL BUILDING MANUFACTURER, AND/OR SHERWIN WILLIAMS APPROVED ALTERNATE COLORS LISTED.

A. APPLY MASONRY BLOCK FILLER TO CONCRETE BLOCK PRIOR TO FINISH PAINTING.

B. IF METAL BUILDING IS USED, G.C. TO SUBMIT MANUFACTURER'S STANDARD COLORS TO FAMILY DOLLAR FOR APPROVAL.

C. GENERAL CONTRACTOR TO PROVIDE TENANT WITH STOCK OF ADDITIONAL FINISH MATERIALS UPON COMPLETION OF WORK, INCLUDING: CEILING TILE (10 MIN.), PAINT, LIGHT FIXTURE REPLACEMENT LAMPS, FLOOR FINISHES AND BASE. (ADDITIONAL ITEMS TO BE PLACED IN AVAILABLE STORAGE AREA) G.C.'S PAINTING SUBCONTRACTOR TO PROVIDE OWNER WITH ONE (1) FULL GALLON OF PAINT FOR EACH COLOR AT COMPLETION OF PROJECT.

D. G.C. OR PAINT CONTRACTOR MUST NOTIFY LOCAL SHERWIN WILLIAMS DEALER THAT PAINT IS BEING PURCHASED FOR A FAMILY DOLLAR STORE AND PROVIDE DEALER WITH STORE LOCATION.

METAL PANELS

GENERAL NOTES

1. THIS SYSTEM USES STANDING SEAM ROOF SYSTEM THERMAL BLOCKS. G.C. TO PROVIDE 20 YEAR WEATHER TIGHTNESS WARRANTY.
2. THE WALL PANELS ARE ATTACHED W/ TAMPER RESISTANT SCREWS. SCREWS TO BE PAN HEAD, WITH SELF SEAL WASHER.
3. METAL BUILDING EAVE HT. TO BE ADJUSTED AS REQUIRED TO MAINTAIN FAMILY DOLLAR STANDARD CEILING HEIGHT.

G.C. TO USE TAMPER RESISTANT SCREWS FOR ALL METAL WALL PANELS. SCREW MUST BE FULL HEIGHT PAN HEAD SELF-DRILLING STAINLESS STEEL SCREWS W/ SELF SEAL WASHERS OR EQUAL.

STOREFRONT NOTE:
GENERAL CONTRACTOR SHALL VERIFY AND COMPLY WITH ANY GOVERNING REQUIREMENTS FOR IMPACTED RATED STOREFRONT SYSTEMS.

SITE SOILS

GENERAL NOTES

GEOTECHNICAL INVESTIGATION RECOMMENDATIONS OF THE SOIL BELOW THE BUILDING AND PARKING LOT ARE TO BE FOLLOWED, AS WELL AS ANY COMPLIANCE WITH DOT STANDARDS FOR SITE WORK, AS REQUIRED. FOLLOW RECOMMENDATIONS OF SOILS REPORT FOR EACH SPECIFIC SITE. L.L. RESPONSIBLE FOR BORINGS @ FINAL BLDG. LOCATION CHOSEN. VERIFY GRADING PER CIVIL DRAWINGS. CONSULT ARCH/STRUCTURAL ENG. IF GRADING REQUIRES STEPPED FOOTINGS, PRIOR TO CONSTRUCTION.

BUILDING EXTERIOR

GENERAL NOTES

1. G.C. TO PROVIDE SLEEVE, BOOT, OR OTHER APPROPRIATE PENETRATION MATERIAL FOR A CLEAN TRANSITION FROM EXTERIOR TO INTERIOR FOR ALL CONDUIT WIRE, PIPE, ETC., OWNER MUST APPROVE METHOD AND FINISH BEFORE COMPLETION OF CONSTRUCTION.
2. DOWNSPOUT SPACING TO BE DETERMINED BY CIVIL ENGINEER BASED ON LOCAL TYPICAL AND MAXIMUM RAINFALL AMOUNTS WITH DOWNSPOUTS PLACED EQUALLY APART. NO DOWNSPOUT MAY BE PLACED WITHIN 12" OF A DOOR FRAME. USE A MINIMUM OF THREE STRAPS PER DOWNSPOUT (TYPICAL).
3. PROVIDE EXPANSION AND CONTROL JOINTS AS REQUIRED PER MASONRY MANUFACTURER'S RECOMMENDATIONS.

FINISHES AND CONSTRUCTION

GENERAL NOTES

1. THE MATERIALS USED FOR THE EXTERIOR FINISH MUST BE APPROVED BY THE FAMILY DOLLAR STORE REPRESENTATIVE. MATCHING EXISTING NEARBY STRUCTURES MATERIALS MUST BE DESCRIBED FOR FAMILY DOLLAR STORE CONSIDERATION.
2. CONSTRUCTION DETAILS MUST BE SEALED BY A LICENSED STATE STRUCTURAL ENGINEER OR QUALIFIED ARCHITECT. IF A METAL BUILDING IS USED, BUILDING REACTIONS MUST BE PROVIDED FOR STRUCTURAL ENGINEER TO DESIGN FOUNDATION.
3. A MAINFRAME BEAM, BAR JOIST OR WOOD TRUSS VERTICAL THICKNESS IS TO BE CALCULATED BY A LICENSED STRUCTURAL ENGINEER. AT THE ENTRY WALL THE BOTTOM OF ROOF STRUCTURE SHALL CLEAR THE TOP OF STOREFRONT SYSTEM BY MIN. 4". PROVIDE 15'-0" MIN CLEAR AT CENTER AS SHOWN ON BUILDING SECTIONS.
4. DUCTWORK CLEARANCES SHOWN ON BUILDING SECTIONS ARE MIN. 12'-0" TO BOTTOM OF DUCTS. ALL STRUCTURAL ELEMENTS REQUIRING DEPTH THAT MAY INTERFERE WITH LIGHT AND DUCT PLACEMENT ARE TO GROW UP RATHER THEN DOWN INTO SPACE.
5. PROVIDE INSECT/ TERMITE TREATMENT PER BONDED (WARRANTED) AUTHORIZED INSTALLING SUBCONTRACTOR AND LL IS TO FORWARD PROOF OF SAME TO FDS.

INSULATION

GENERAL NOTES

THE FOLLOWING ARE MINIMUM STANDARDS FOR INSULATION. A LICENSED PROFESSIONAL SHALL DETERMINE THE ACTUAL INSULATION VALUES BASED ON THE PROJECT LOCATION:

-WALL INSULATION SHALL BE THE SIMPLE SAVER SYSTEM BY THERMAL DESIGN. THE SYSTEM SHALL USE R-25 FILLER BLANKETS IN THE GIRT SPACES WITH THERMAL BREAK TAPE ("QUICK STOP") ON THE OUTSIDE AND 1/4" SNAP-R THERMAL BLOCKS ON THE INTERIOR OF THE GIRTS HAVING A TESTED TOTAL R-VALUE OF 13.8.

-ROOF INSULATION SHALL BE THE SIMPLE SAVER SYSTEM BY THERMAL DESIGN OVER METAL STANDING SEAM ROOFING. THE SYSTEM SHALL HAVE AN INSTALLED R VALUE OF NOT LESS THAN 32. USE DOUBLE LAYER SYSTEM WITH WITH WHITE SIMPLE SAVER FINISH SYSTEM LINER.

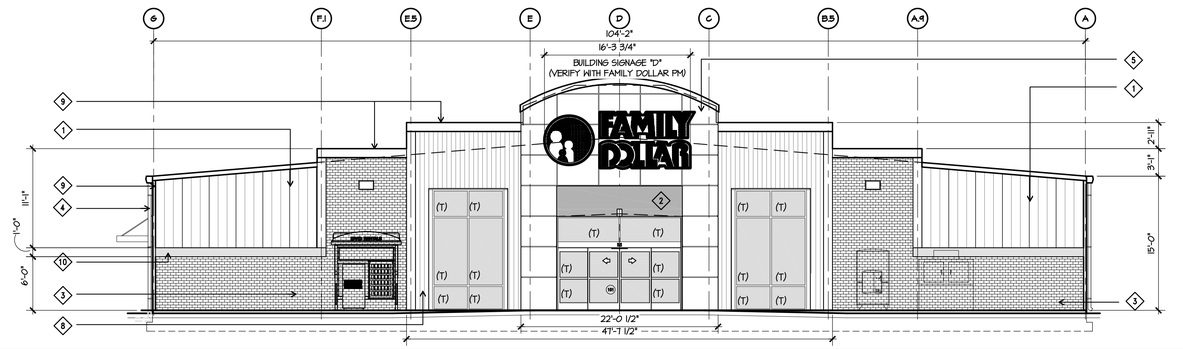
-PROVIDE RIGID FOUNDATION INSULATION AS REQUIRED WHEN REQUIRED BY LOCAL CODES.

-ADDITIONAL INSULATION SHALL BE PROVIDED IF REQUIRED BY JURISDICTION HAVING AUTHORITY OVER THE PROJECT SITE. PROJECT SHALL BE DESIGNED TO COMPLY WITH ALL LOCAL ENERGY CODE REQUIREMENTS.

SIMPLE SAVER LINER

GENERAL NOTES

ALL CUTS MADE IN THE VAPOR BARRIER THAT IS APPLIED BELOW THE PURLINS AS A PART OF THE INSULATION LINER SYSTEM IN ORDER TO MAKE ATTACHMENTS TO THE PURLINS, OR FOR ANY OTHER REASON, SHALL BE OF THE MINIMUM SIZE REQUIRED TO PERFORM THE WORK NEEDED AND SHALL BE TAPED AND SEALED IN ACCORDANCE WITH THE MANUFACTURER OF THE VAPOR BARRIER WITH PRODUCTS SUPPLIED BY THE MANUFACTURER OF THE VAPOR BARRIER.

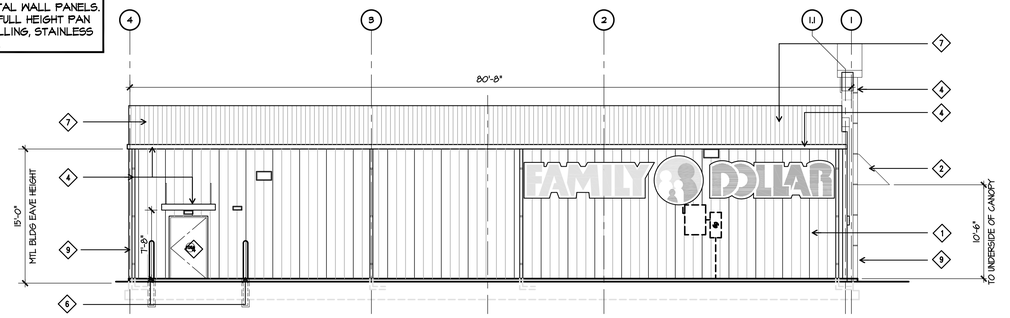


EXTERIOR ELEVATION - SOUTH 1

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

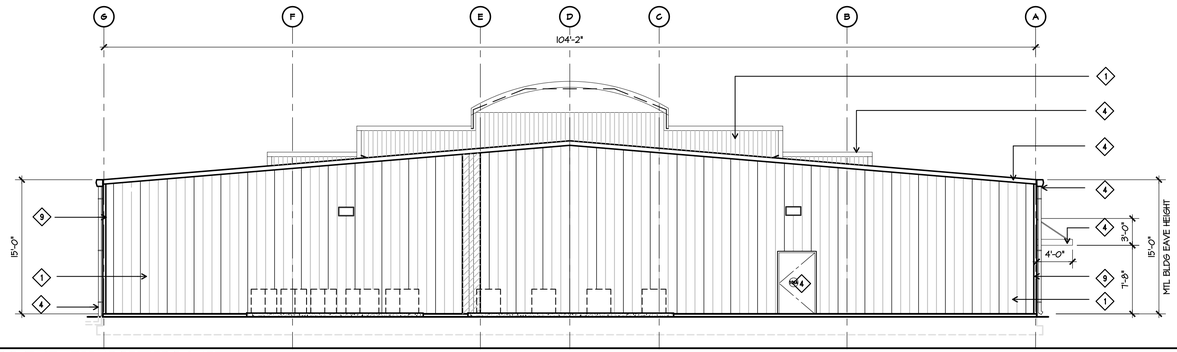
GENERAL NOTE:

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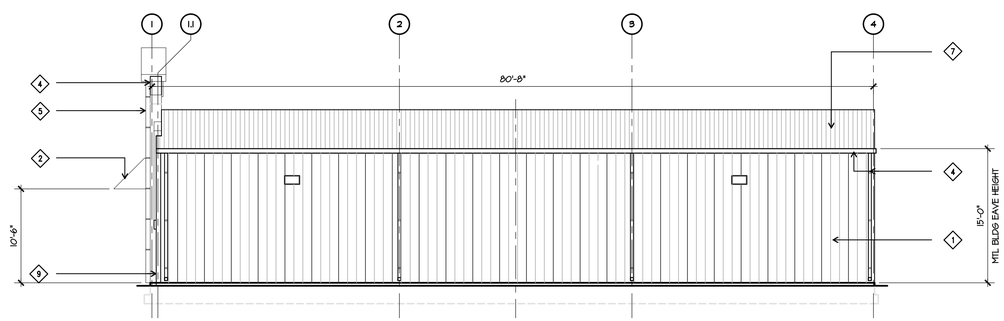
EXTERIOR ELEVATION - EAST 2

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



EXTERIOR ELEVATION- NORTH 3

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



EXTERIOR ELEVATION - WEST 4

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

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DATE: 04.18.2014
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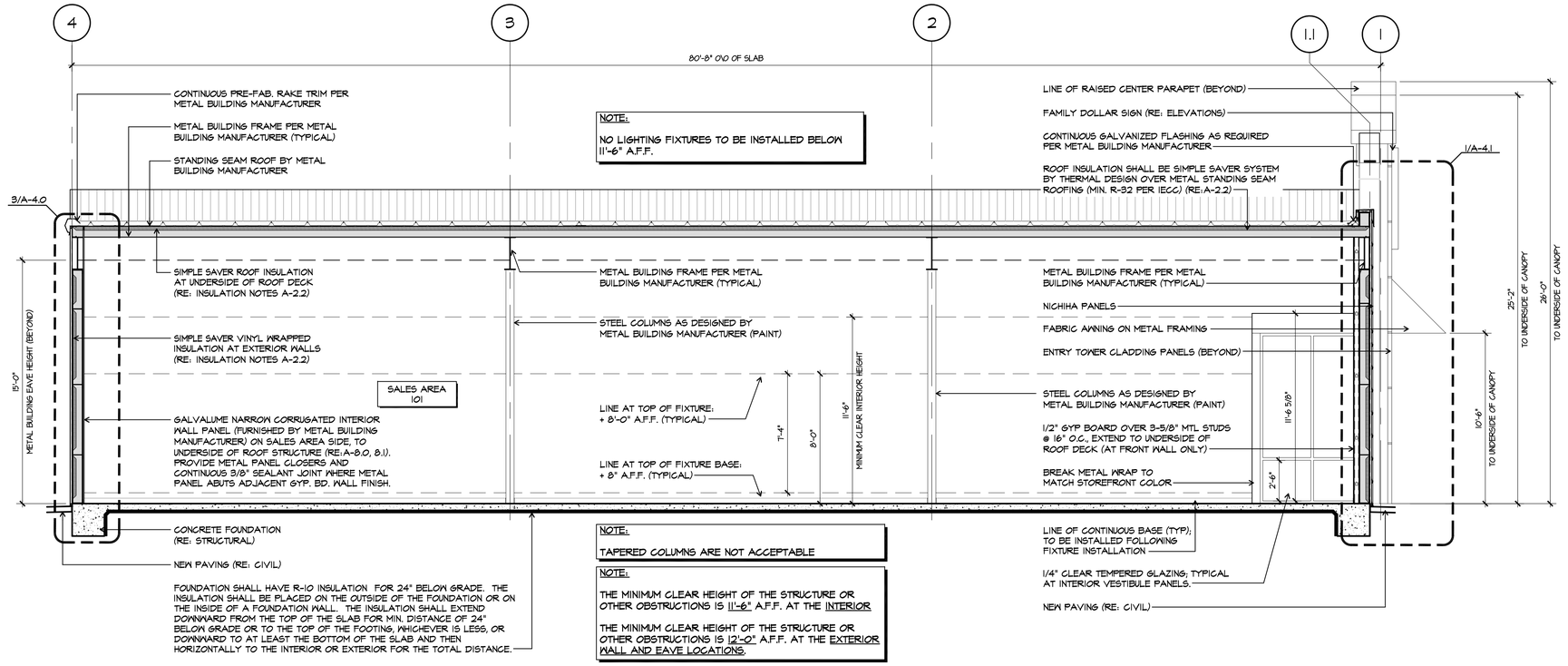
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ENLARGED EXTERIOR ELEVATIONS AND FINISH SCHEDULE

SHEET NUMBER

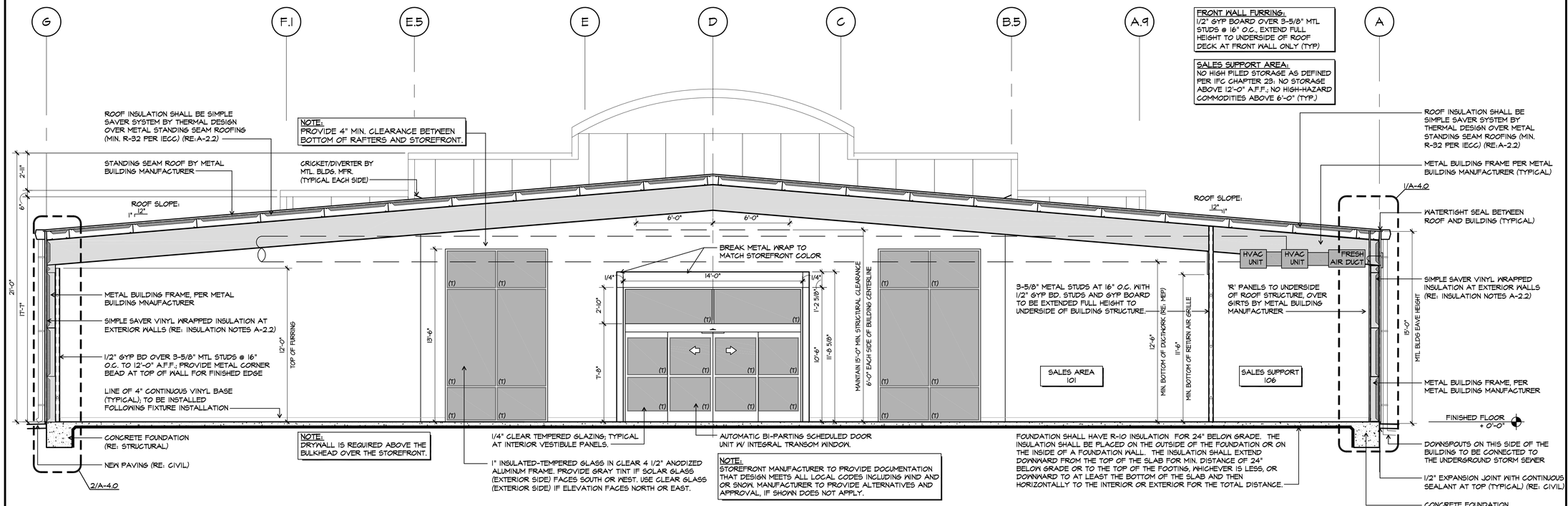
A-2.2



BUILDING SECTION

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

2



BUILDING SECTION

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

1

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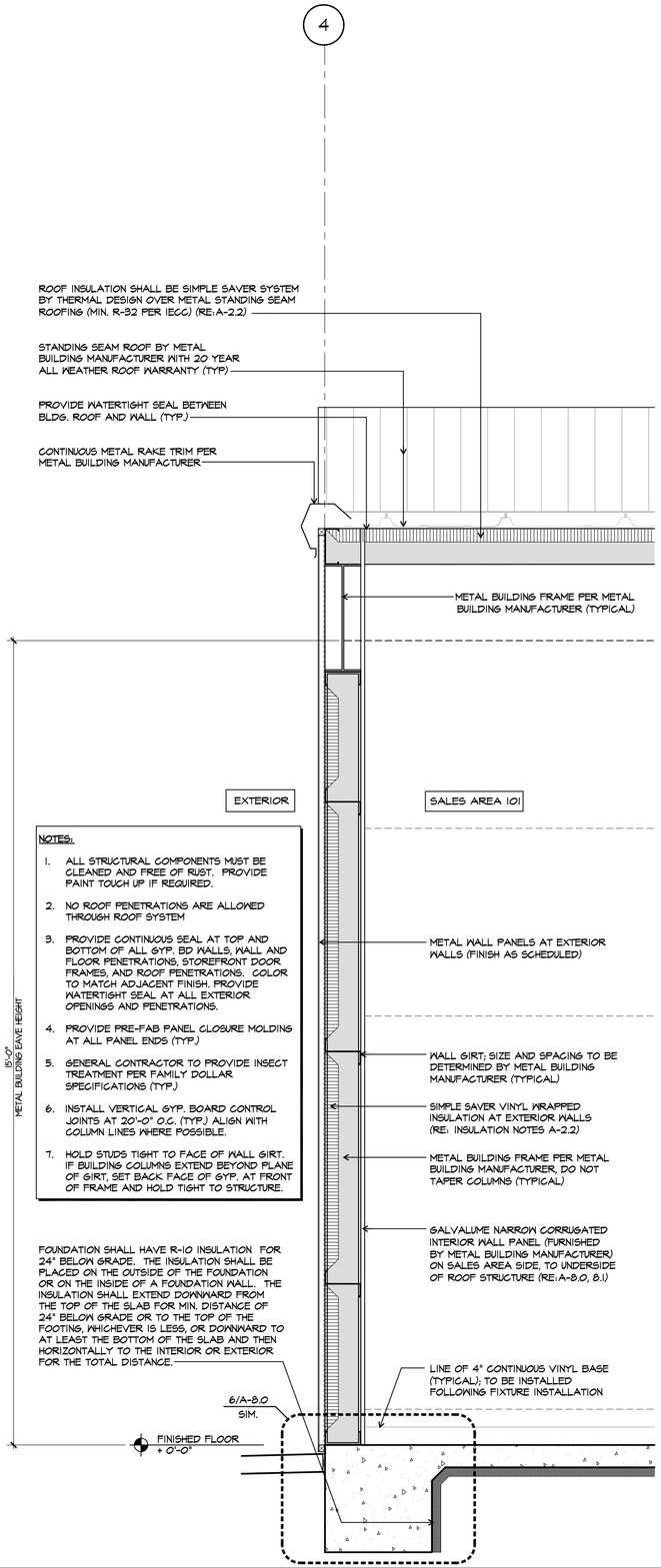
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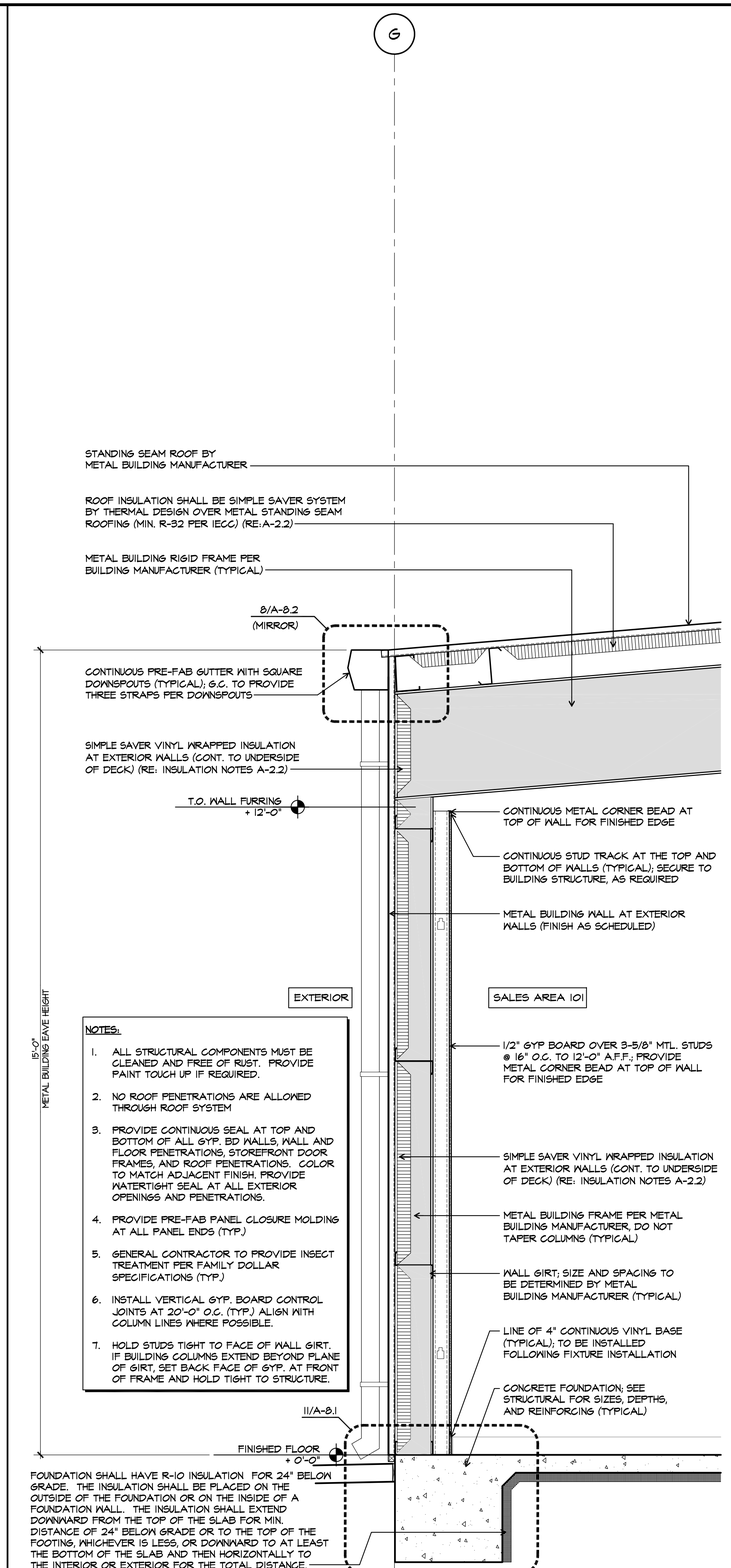
BUILDING SECTIONS

SHEET NUMBER
A-3.0



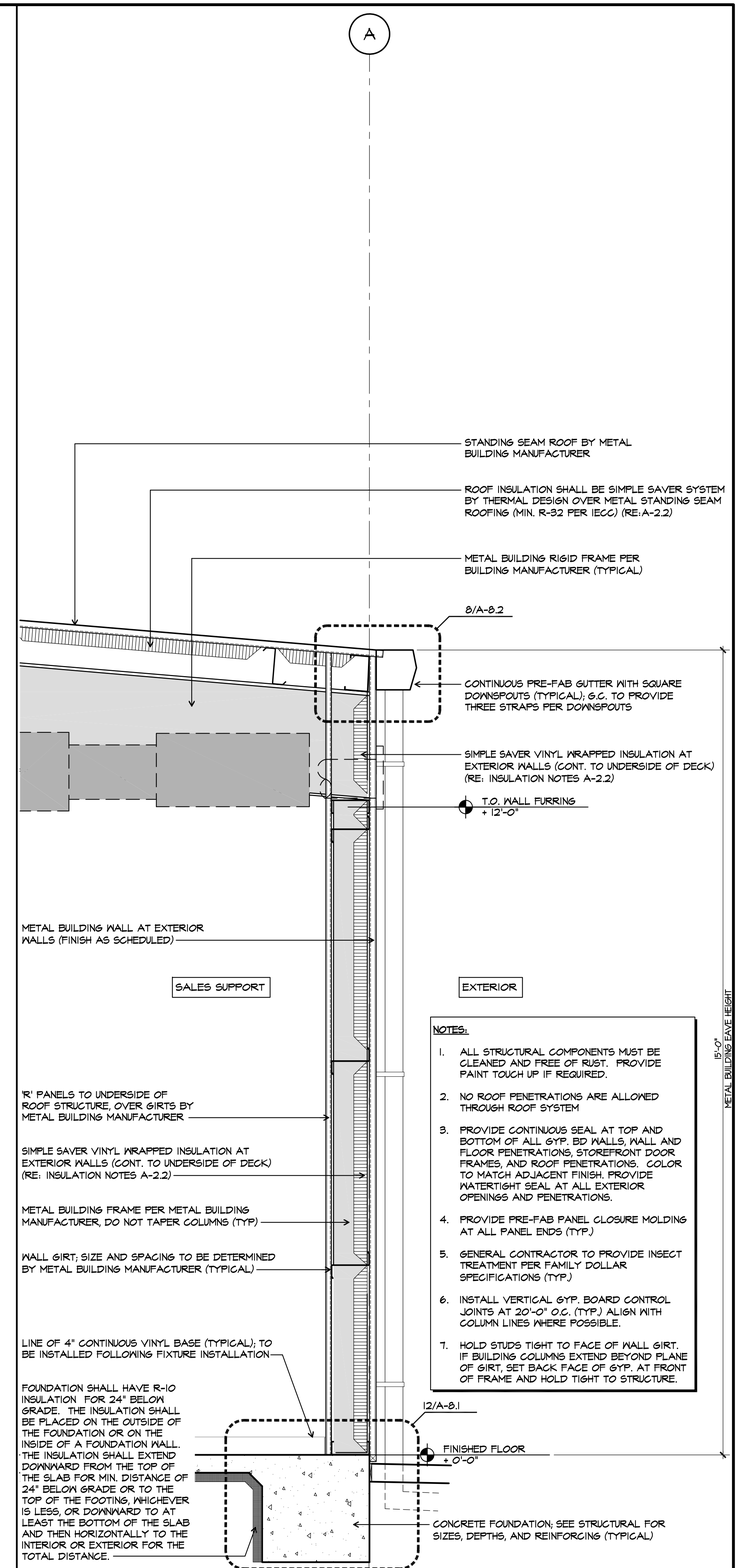
WALL SECTION
SCALE: 3/4" = 1'-0"

3



WALL SECTION
SCALE: 3/4" = 1'-0"

2



WALL SECTION
SCALE: 3/4" = 1'-0"

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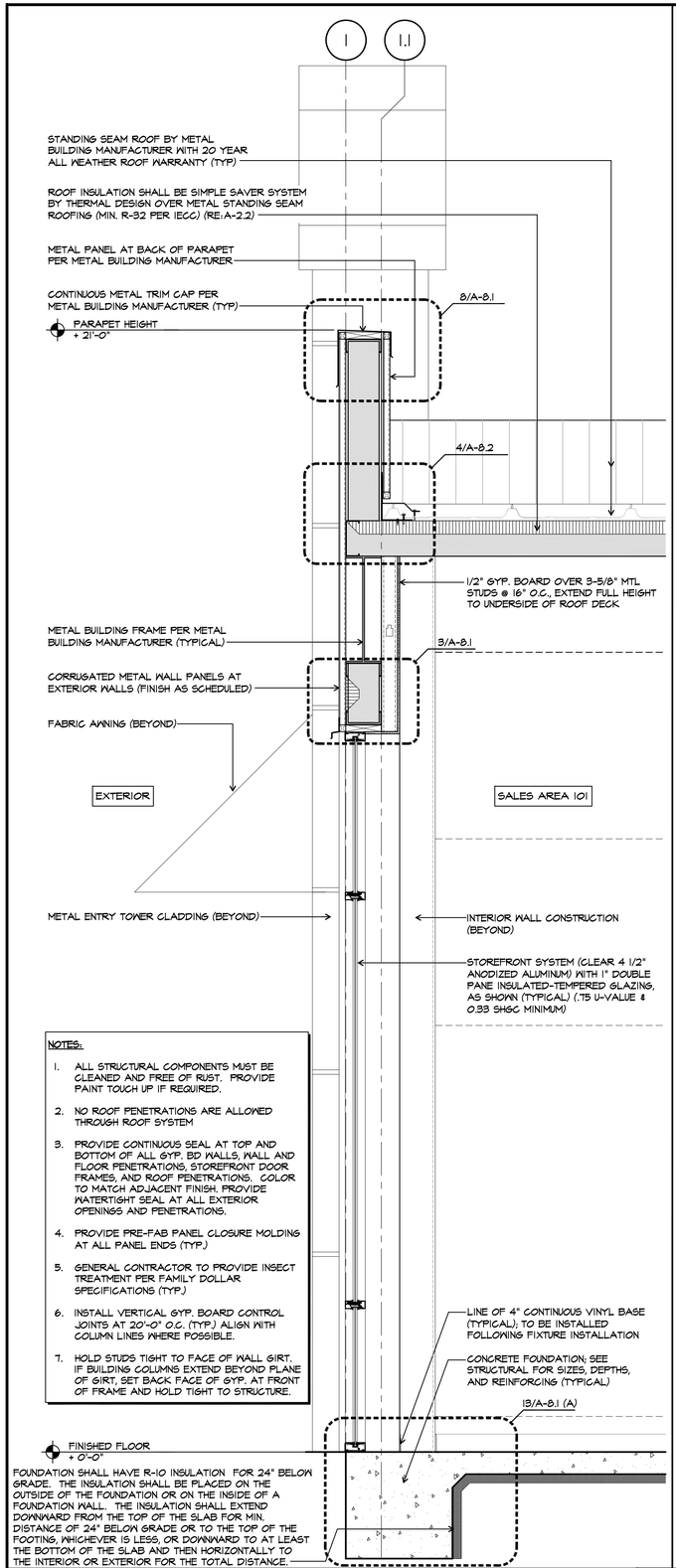
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WALL SECTIONS

SHEET NUMBER
A-4.0

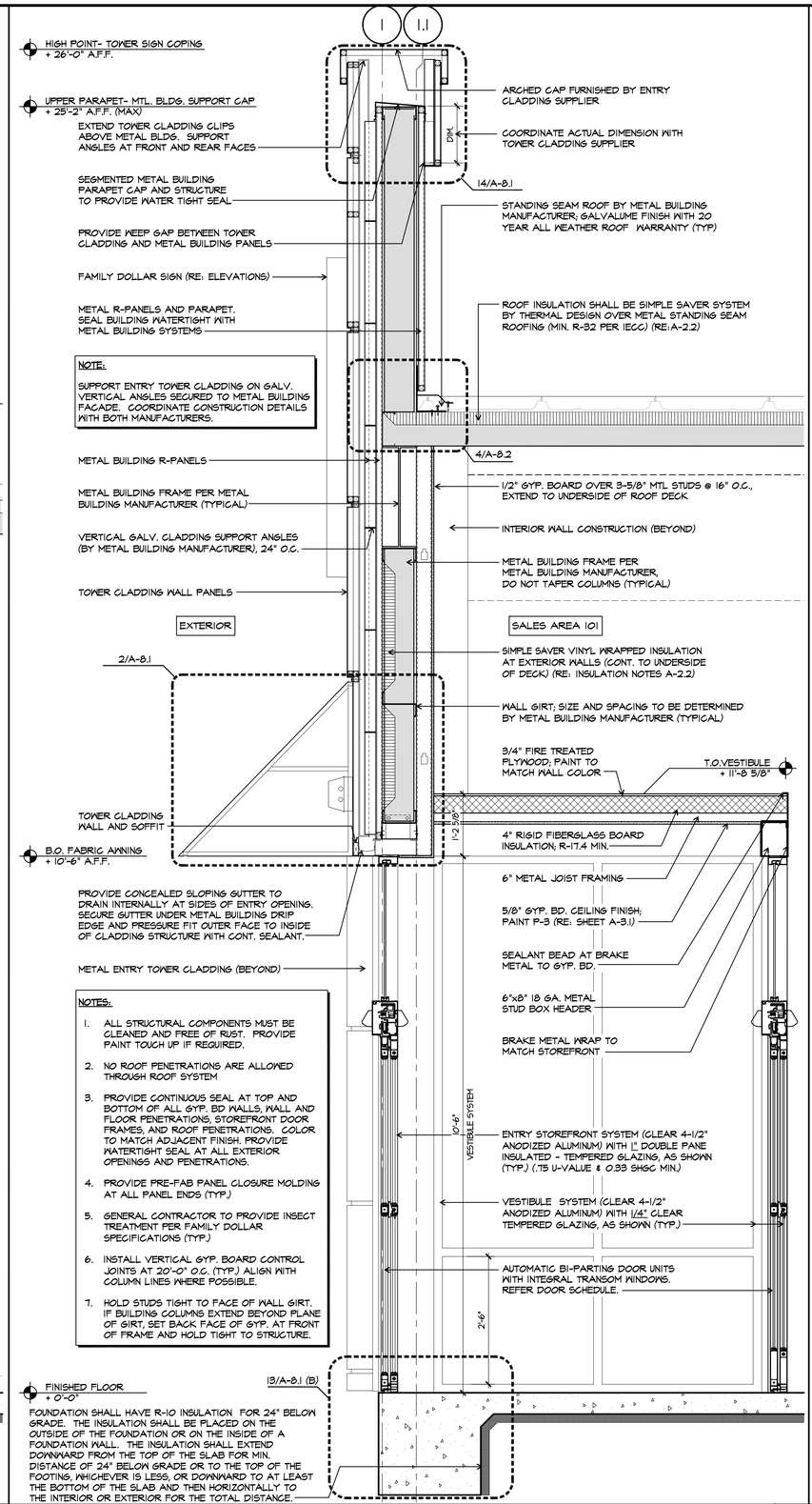


NOTES:

1. ALL STRUCTURAL COMPONENTS MUST BE CLEANED AND FREE OF RUST. PROVIDE PAINT TOUCH UP IF REQUIRED.
2. NO ROOF PENETRATIONS ARE ALLOWED THROUGH ROOF SYSTEM
3. PROVIDE CONTINUOUS SEAL AT TOP AND BOTTOM OF ALL GYP. BD WALLS, WALL AND FLOOR PENETRATIONS, STOREFRONT DOOR FRAMES, AND ROOF PENETRATIONS. COLOR TO MATCH ADJACENT FINISH. PROVIDE WATERTIGHT SEAL AT ALL EXTERIOR OPENINGS AND PENETRATIONS.
4. PROVIDE PRE-FAB PANEL CLOSURE MOLDING AT ALL PANEL ENDS (TYP.)
5. GENERAL CONTRACTOR TO PROVIDE INSECT TREATMENT PER FAMILY DOLLAR SPECIFICATIONS (TYP.)
6. INSTALL VERTICAL GYP. BOARD CONTROL JOINTS AT 20'-0" O.C. (TYP.) ALIGN WITH COLUMN LINES WHERE POSSIBLE.
7. HOLD STUDS TIGHT TO FACE OF WALL GIRT. IF BUILDING COLUMNS EXTEND BEYOND PLANE OF GIRT, SET BACK FACE OF GYP. AT FRONT OF FRAME AND HOLD TIGHT TO STRUCTURE.

FOUNDATION SHALL HAVE R-10 INSULATION FOR 24" BELOW GRADE. THE INSULATION SHALL BE PLACED ON THE OUTSIDE OF THE FOUNDATION OR ON THE INSIDE OF A FOUNDATION WALL. THE INSULATION SHALL EXTEND DOWNWARD FROM THE TOP OF THE SLAB FOR MIN. DISTANCE OF 24" BELOW GRADE OR TO THE TOP OF THE FOOTING, WHICHEVER IS LESS, OR DOWNWARD TO AT LEAST THE BOTTOM OF THE SLAB AND THEN HORIZONTALLY TO THE INTERIOR OR EXTERIOR FOR THE TOTAL DISTANCE.

WALL SECTION 3
SCALE: 3/4"= 1'-0"

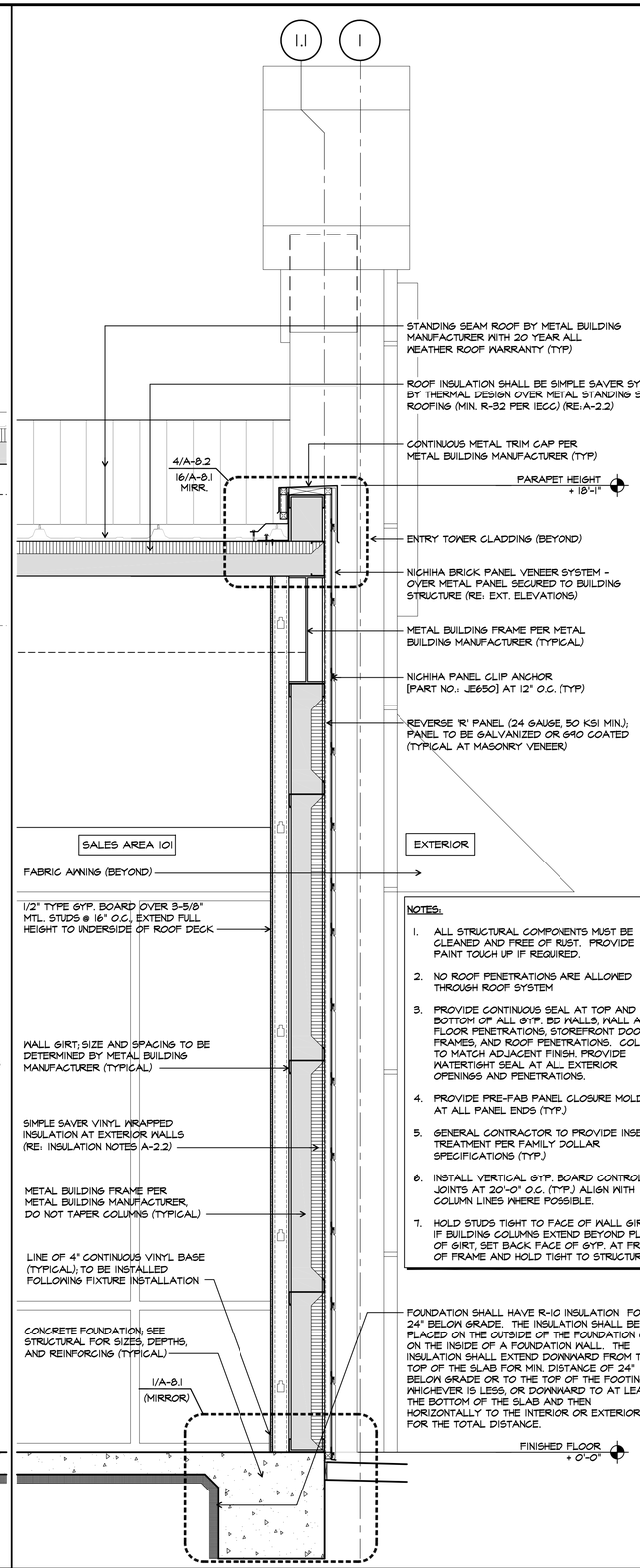


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4. PROVIDE PRE-FAB PANEL CLOSURE MOLDING AT ALL PANEL ENDS (TYP.)
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6. INSTALL VERTICAL GYP. BOARD CONTROL JOINTS AT 20'-0" O.C. (TYP.) ALIGN WITH COLUMN LINES WHERE POSSIBLE.
7. HOLD STUDS TIGHT TO FACE OF WALL GIRT. IF BUILDING COLUMNS EXTEND BEYOND PLANE OF GIRT, SET BACK FACE OF GYP. AT FRONT OF FRAME AND HOLD TIGHT TO STRUCTURE.

FOUNDATION SHALL HAVE R-10 INSULATION FOR 24" BELOW GRADE. THE INSULATION SHALL BE PLACED ON THE OUTSIDE OF THE FOUNDATION OR ON THE INSIDE OF A FOUNDATION WALL. THE INSULATION SHALL EXTEND DOWNWARD FROM THE TOP OF THE SLAB FOR MIN. DISTANCE OF 24" BELOW GRADE OR TO THE TOP OF THE FOOTING, WHICHEVER IS LESS, OR DOWNWARD TO AT LEAST THE BOTTOM OF THE SLAB AND THEN HORIZONTALLY TO THE INTERIOR OR EXTERIOR FOR THE TOTAL DISTANCE.

WALL SECTION 2
SCALE: 3/4" = 1'-0"



NOTES:

1. ALL STRUCTURAL COMPONENTS MUST BE CLEANED AND FREE OF RUST. PROVIDE PAINT TOUCH UP IF REQUIRED.
2. NO ROOF PENETRATIONS ARE ALLOWED THROUGH ROOF SYSTEM
3. PROVIDE CONTINUOUS SEAL AT TOP AND BOTTOM OF ALL GYP. BD WALLS, WALL AND FLOOR PENETRATIONS, STOREFRONT DOOR FRAMES, AND ROOF PENETRATIONS. COLOR TO MATCH ADJACENT FINISH. PROVIDE WATERTIGHT SEAL AT ALL EXTERIOR OPENINGS AND PENETRATIONS.
4. PROVIDE PRE-FAB PANEL CLOSURE MOLDING AT ALL PANEL ENDS (TYP.)
5. GENERAL CONTRACTOR TO PROVIDE INSECT TREATMENT PER FAMILY DOLLAR SPECIFICATIONS (TYP.)
6. INSTALL VERTICAL GYP. BOARD CONTROL JOINTS AT 20'-0" O.C. (TYP.) ALIGN WITH COLUMN LINES WHERE POSSIBLE.
7. HOLD STUDS TIGHT TO FACE OF WALL GIRT. IF BUILDING COLUMNS EXTEND BEYOND PLANE OF GIRT, SET BACK FACE OF GYP. AT FRONT OF FRAME AND HOLD TIGHT TO STRUCTURE.

WALL SECTION 1
SCALE: 3/4" = 1'-0"

DATE: 04.18.2014
JOB No.: 1401-25
DRAWN: FS, SP
CHECKED: LC

Castles Design Group
A Professional Architectural Corporation
3801 Kirby Drive, Suite 600
Houston, Texas 77098
tel: 713 664 7974
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DELTA T DEVELOPMENT, LLC
2425 LUMBLEY ROAD
RAINBOW CITY, AL 35906
PH: 256.278.4377

NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

I hereby certify that this plan specification, or report was prepared by me or under my direct supervision, and that I am a duly Registered Architect under the laws of the State of North Dakota.
Date 4-18-14 Lic. No 2091

EXPIRES: 06.30.2014
Larry L. Christian, A.I.A., N.C.A.R.B.
North Dakota Registration #2091

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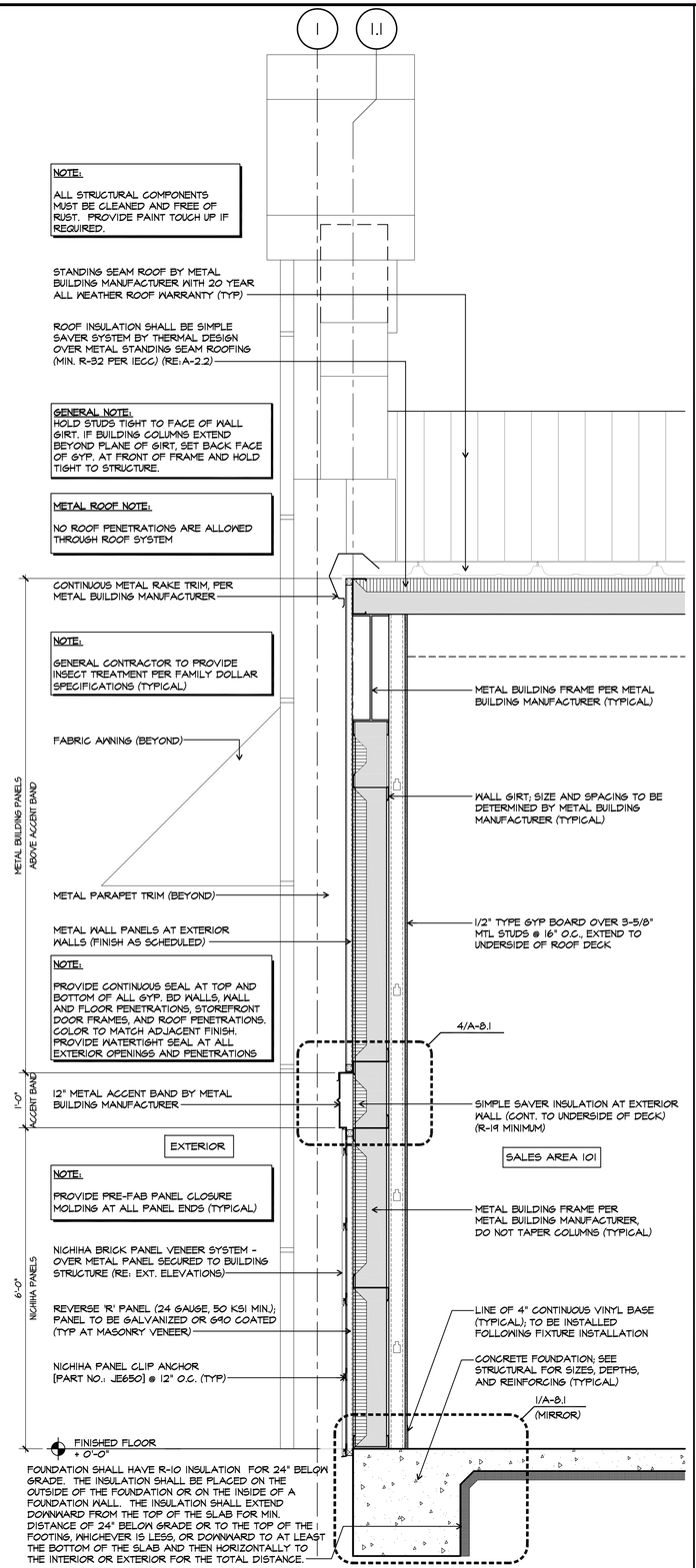
WALL SECTIONS

SHEET NUMBER
A-4.1

NOT USED

SCALE: NONE

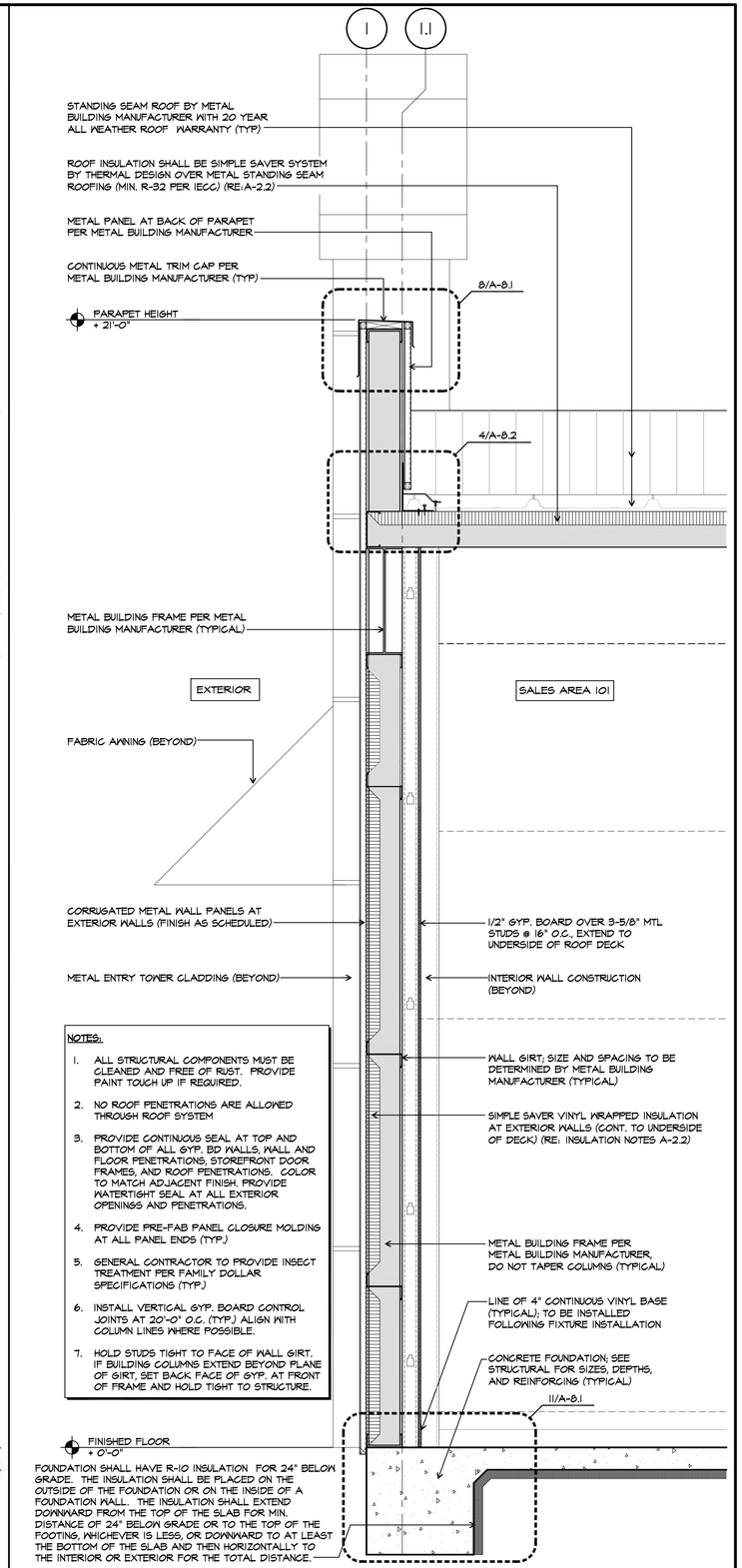
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WALL SECTION

SCALE: 3/4" = 1'-0"

2



WALL SECTION

SCALE: 3/4" = 1'-0"

1

DATE: 04.18.2014
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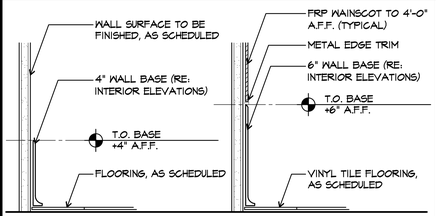
WALL SECTIONS

SHEET NUMBER
A-4.2

1. STOREFRONT SYSTEM (CLEAR ANODIZED ALUMINUM) (RE: 1/A-6.0)
2. LINE OF 4" CONTINUOUS VINYL BASE BASE (TYPICAL); TO BE INSTALLED FOLLOWING INSTALLATION OF FIXTURES (RE: A6/A-5.0)
3. METAL BUILDING COLUMN TO BE WRAPPED WITH BREAK METAL AT STOREFRONT; WRAP COLUMNS ABOVE STOREFRONT WITH 1/2" GYP BOARD OVER 1/8" FURRING CHANNELS OR METAL STUDS, AS REQUIRED.
4. AUTOMATIC BI-PARTING DOOR UNIT WITH INTEGRAL TRANSOM WINDOW. ALL GLASS IS 1" INSULATED & TEMPERED.
5. NOT USED.
6. 1/2" GYP BOARD OVER 3-5/8" METAL STUDS, CONTINUOUS TO UNDERSIDE OF ROOF DECK AT FRONT WALL; (REFER TO INTERIOR FINISH SCHEDULE SHEET A-4.1 (TYPICAL))
7. LINE OF NEW FIXTURES. TOP OF FIXTURE TO BE 8'-0" A.F.F. (TYPICAL), FIXTURE BASE TO BE 8" A.F.F. (TYPICAL)
8. 3'-0" x 7'-0" HOLLOW METAL FRAME (CASED OPENING) AS SCHEDULED.
9. 4'-0" x 7'-0" HOLLOW METAL DOOR AND FRAME (PAINT); PROVIDE ADA COMPLIANT ACCESSORIES AND HARDWARE, AS SCHEDULED
10. PAIR 3'-0" x 7'-0" ELIASON EASY SWING DOOR SYSTEM: MODEL LWP-3 (NO STOPS); ALL HARDWARE AND EQUIPMENT PROVIDED BY MANUFACTURER.
11. INTERIOR PARTITION TO EXTEND FULL HEIGHT TO UNDERSIDE OF ROOF DECK AT OFFICE/RESTROOM AND SALES SUPPORT AREA. WALL IS UNRATED INTERIOR PARTITION. WALLS TO BE PAINTED SHERWIN WILLIAMS COLOR (REFER TO INTERIOR FINISH SCHEDULE SHEET A-1.4 (TYPICAL))
12. 1/2" GYP BOARD OVER 3-5/8" METAL STUDS @ 16" O.C. CONTINUOUS TO 12'-0" A.F.F. - AT SIDE WALLS - SECURED TO BUILDING STRUCTURE; PROVIDE METAL CORNER BEAD AT TOP OF WALL FOR FINISHED EDGE. (REFER TO INTERIOR FINISH SCHEDULE SHEET A-1.4 (TYPICAL))
13. 2 FURR OUT COLUMN, AS REQUIRED, WITH 1/2" GYP BD INTERIOR FINISH, EACH SIDE OF ENTRY. GYP BD FROM F.F.E. TO STRUCTURE FOR EACH ENTRY COLUMN.
14. 3'-0" X 7'-0" HOLLOW METAL DOOR AND FRAME, WITH ADA COMPLIANT LEVER HARDWARE, CLOSER, PEEP HOLE, AND ACCESSORIES AS SCHEDULED.
15. ADA COMPLIANT E.D.F.; SPOUT SHALL BE NO HIGHER THAN 36" A.F.F. MEASURED FROM THE FLOOR OR GROUND SURFACES TO THE SPOUT OUTLET. WALL MOUNTED UNIT SHALL HAVE A CLEAR KNEE SPACE BETWEEN THE BOTTOM OF THE APRON AND THE FLOOR OF AT LEAST 27" HIGH, 30" WIDE, AND 17" TO 19" DEEP. (RE: MEP)
16. MARLITE P-100 'PEBBLED TEXTURE' 48" FRP PANELS, WHITE; PROVIDE PVC TRIM MOLDING "M350" AT INSIDE CORNERS, "M360" AT OUTSIDE CORNERS, "M365" AT DIVISIONS, AND "M370" AT EXPOSED EDGES. PROVIDE "M461" OUTSIDE CORNER GUARD AT EXPOSED VERTICAL CORNERS. (ALL RESTROOM WALLS) (RE: DETAIL 6/A-1.3)
17. FLOOR MOUNTED MOP SINK (RE: MEP)
18. WATER HEATER AND MOUNTING PLATFORM (RE: MEP). G.C. TO ENSURE PROJECTION OF WATER HEATER MOUNTING PLATFORM AND BRACKETS DO NOT EXTENT MORE THAN 4" BEYOND FACE OF WALL UNLESS LOCATED AT 80" A.F.F. MINIMUM.
19. GALVALUME NARROW CORRUGATED INTERIOR WALL PANEL (FURNISHED BY METAL BLDG. VENDOR) FROM SLAB TO UNDERSIDE OF STRUCTURE. PROVIDE METAL PANEL CLOSERS AND CONTINUOUS 3" SEALANT JOINT WHERE METAL PANEL ABUTS ADJACENT GYP. BD. WALL FINISH.
20. METAL PANEL CLOSURE. REFER FINISH SCHEDULE TO MATCH VINYL BASE COLOR.

KEY NOTES (KEY NOTE SYMBOL)

INTERIOR ELEVATIONS



(A) 4" CONTINUOUS VINYL BASE (TYPICAL) (U.N.O.)

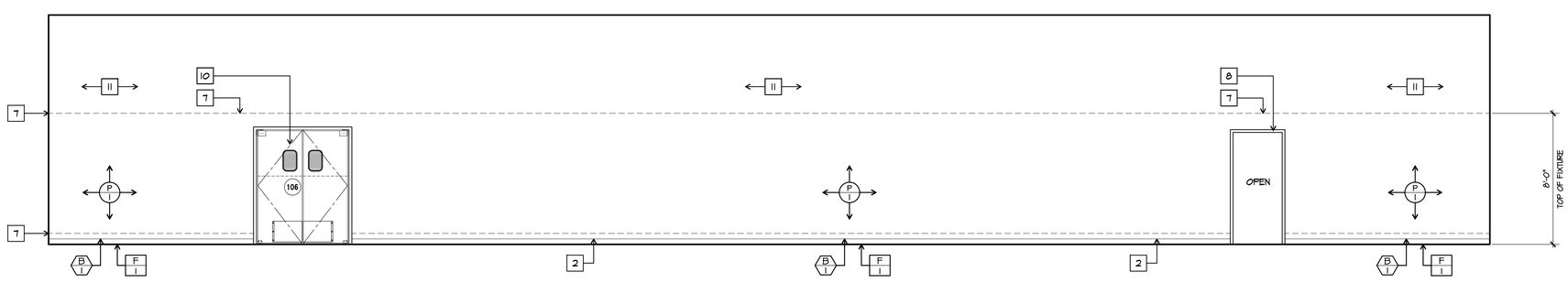
(B) 6" CONTINUOUS VINYL BASE (RESTROOMS ONLY)

FLOOR BASE DETAIL 6

SCALE: 3" = 1'-0"

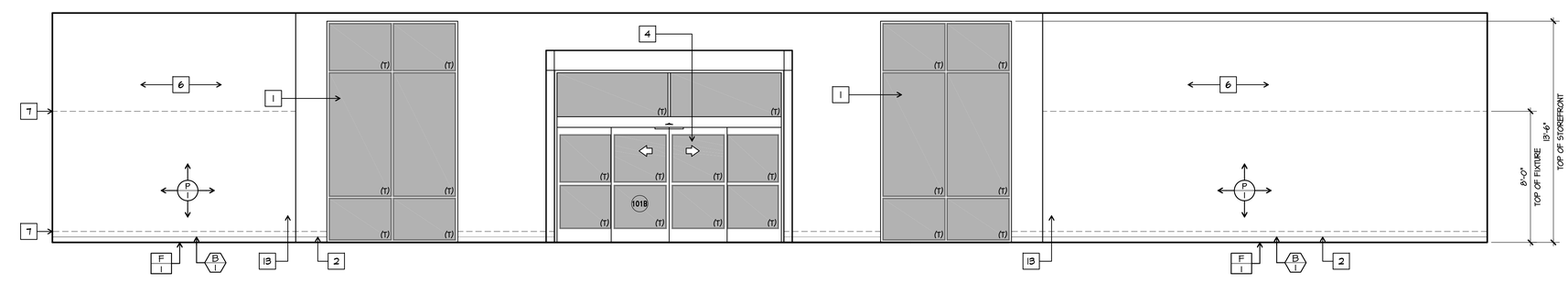
INTERIOR ELEVATION 5

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



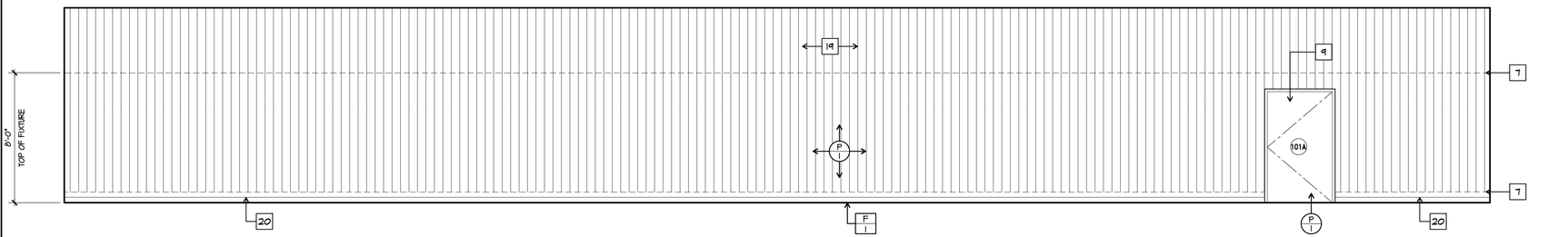
INTERIOR ELEVATION - SALES AREA 2

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



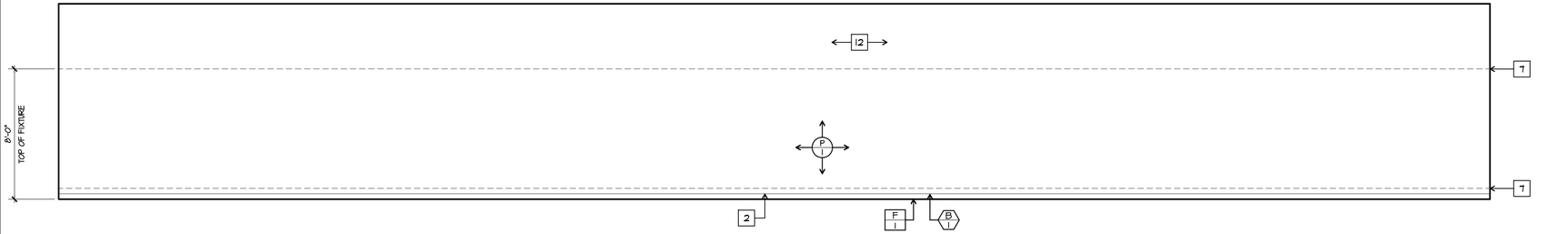
INTERIOR ELEVATION - SALES AREA 1

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



INTERIOR ELEVATION - SALES AREA 3

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



INTERIOR ELEVATION - SALES AREA 4

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

DATE: 04.18.2014
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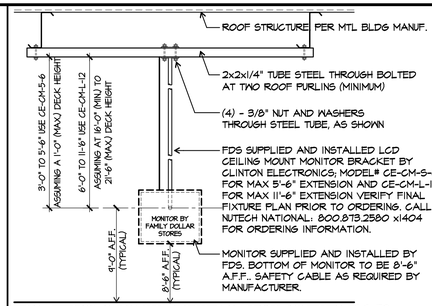
INTERIOR ELEVATIONS

SHEET NUMBER
A-5.0

NOT USED

SCALE: NONE

11

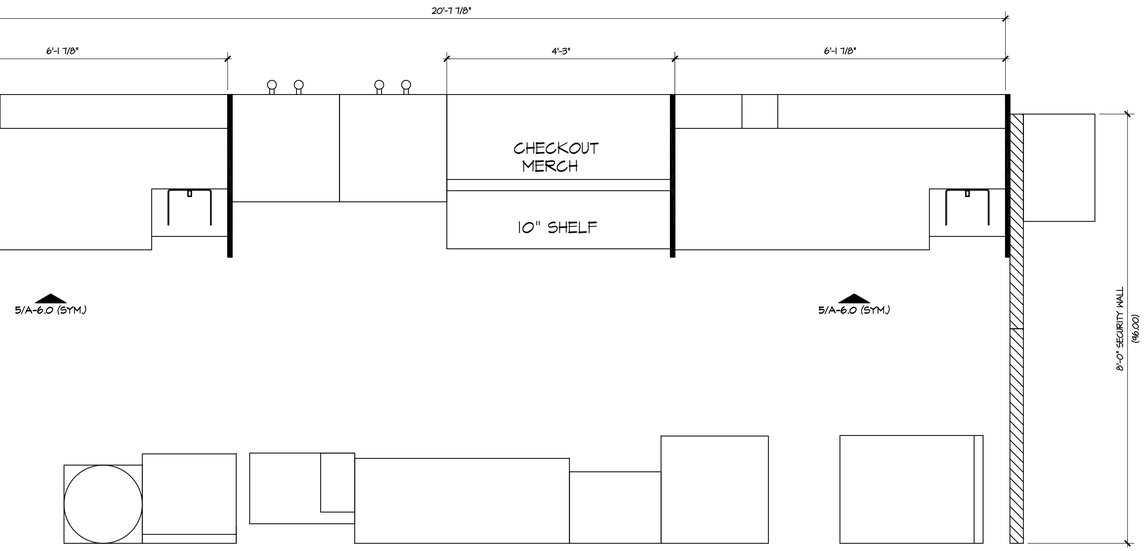


NOTE: MONITOR INSTALLED IN ALL STORE LOCATIONS. LL OR G.C. TO VERIFY WITH FAMILY DOLLAR PROJECT MANAGER IF MONITOR WILL BE REQUIRED PER LOCAL CRIME FACTORS. G.C.'S ELECTRICAL CONTRACTORS TO BE ON SITE AT STORE FIXTURE SET UP TO INSTALL FINAL CONNECTIONS FOR MONITOR. MONITOR BRACKET CONNECTIONS TO BE SUPPLIED AND INSTALLED BY G.C.

MONITOR MOUNTING DETAIL

SCALE: 3/4" - 1'-0"

9



NOTE:
- 36" WIDE x 34" HIGH PORTION OF COUNTER AREA (AT ACCESSIBLE AISLE)
- NUMBER OF AND DIMENSION OF COUNTER TO BE ACCESSIBLE PER IBC 1008.12.2; COUNTER TO HAVE A PORTION WHICH IS 36" WIDE (MIN.) AND 34" - 46" HIGH (MAX.) PER ANSI 117 SEC 904.3

NOTE:
- CHECK OUT FIXTURE SUPPLIED BY FAMILY DOLLAR STORES
- G.C. TO REFER TO VENDOR'S SPEC SHEETS FOR CURRENT CABINET LAYOUT AND DIMENSIONS.

NOT USED

SCALE: NONE

10

NOTE:
- CHECK OUT FIXTURE SUPPLIED BY FAMILY DOLLAR STORES
- G.C. TO REFER TO VENDOR'S SPEC SHEETS FOR CURRENT CABINET LAYOUT AND DIMENSIONS.

NOTE:
- 36" WIDE x 34" HIGH PORTION OF COUNTER AREA (AT ACCESSIBLE AISLE)
- NUMBER OF AND DIMENSION OF COUNTER TO BE ACCESSIBLE PER IBC 1008.12.2; COUNTER TO HAVE A PORTION WHICH IS 36" WIDE (MIN.) AND 34" - 46" HIGH (MAX.) PER ANSI 117 SEC 904.3

CHECK OUT (CASH WRAP) - ELEVATION

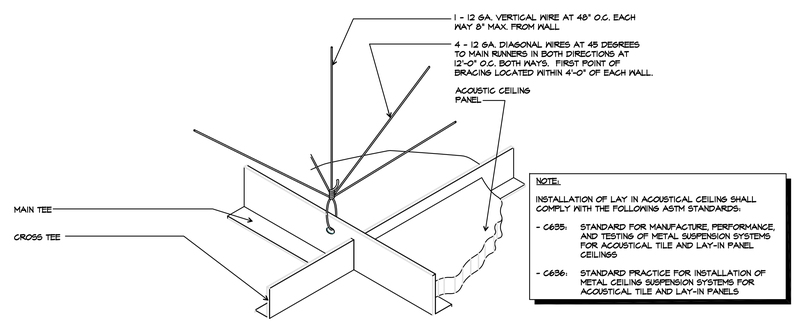
SCALE: 1/4" = 1'-0"

8

CHECK OUT (CASH WRAP) - PLAN

SCALE: 3/4" = 1'-0"

3



NOTE:

INSTALLATION OF LAY IN ACOUSTICAL CEILING SHALL COMPLY WITH THE FOLLOWING ASTM STANDARDS:

- C635: STANDARD FOR MANUFACTURE, PERFORMANCE, AND TESTING OF METAL SUSPENSION SYSTEMS FOR ACOUSTICAL TILE AND LAY-IN PANEL CEILINGS
- C636: STANDARD PRACTICE FOR INSTALLATION OF METAL CEILING SUSPENSION SYSTEMS FOR ACOUSTICAL TILE AND LAY-IN PANELS

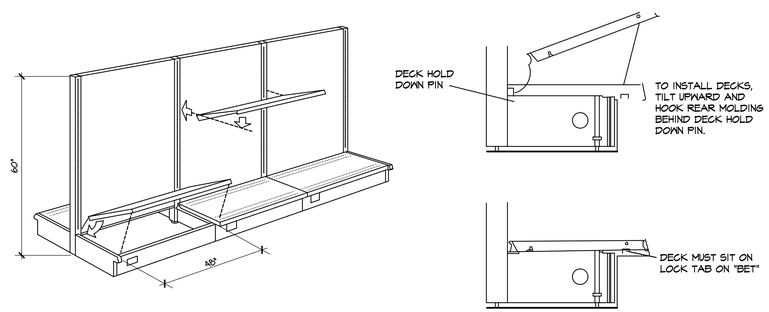
SUPSENDED CEILING DETAIL

SCALE: N.T.S.

7

NOT USED

2



INSTALL BASE DECKS AND SHELVES AS SHOWN. BE SURE BASE END TRIM (BET) IS INSTALLED BEFORE INSTALLING BASE DECKS.

GONDOLA SHELVING DETAIL

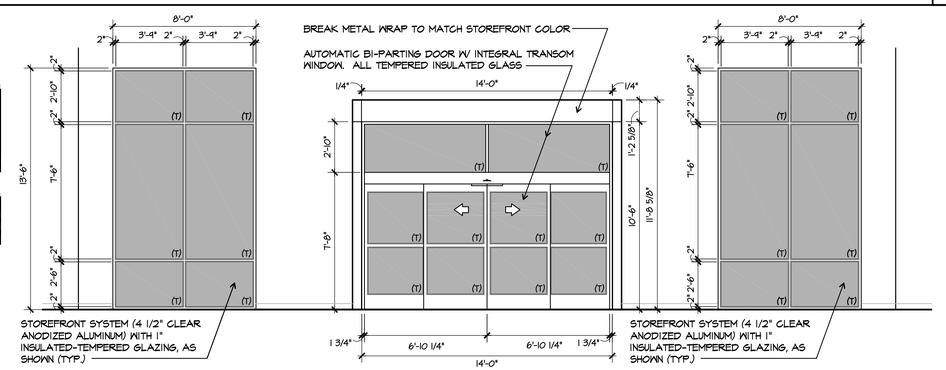
SCALE: 1/2" = 1'-0"

6

NOTE:

STOREFRONT MANUFACTURER TO PROVIDE DOCUMENTATION THAT DESIGN MEETS ALL LOCAL CODES INCLUDING WIND (OR SNOW) LOAD REQUIREMENTS. MANUFACTURER TO PROVIDE ALTERNATES FOR APPROVAL IF INDICATED PRODUCT DOES NOT COMPLY.

ALL GLAZING TO BE TEMPERED. G.C. TO PROVIDE GRAY TINT GLASS FOR EXTERIOR ELEVATION FACING SOUTH OR WEST.



STOREFRONT ELEVATION

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

1

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MILLWORK NOTES AND DETAILS

SHEET NUMBER

A-6.0

DOOR SCHEDULE

DOOR NO.	DOOR TYPE	DOOR SIZE (W x H)	DOOR MATERIAL	FRAME MATERIAL	HARDWARE				RATING (MIN.)	REMARKS	NOTES	DESCRIPTION
					HINGES	LOCK SET	CLOSER (SIDE)	THRESHOLD				
101	A	14'-0"x10'-6"	G.L./ALUM.	ALUM.	EMERGENCY BREAKOUT	ALL HARDWARE & WEATHER STRIPPING BY DOOR MANUFACTURER			N/A	TORMAX TX9200 OR STANLEY DOOR DURA-GLIDE 2000	1,2,4,6,7,11	ENTRY SALES AREA
101A	B	4'-0" x 7'-0"	H.M.	H.M.	HAGAR BB1279: 1-1/2 PR 5" x 5" USP	LOW RISK STORES: 'DETEX' V40-01 WITH LD MECHANICAL OPTION, 628 FINISH; HIGH RISK STORES: DETEX ECL-230X TDB MULTI POINT LOCK	PAINTED (PUSH SIDE)	1/2" ALUMINUM (MILL FINISH)	N/A	'DETEX' CRASH BAR WITHOUT ALARM DEVICE. 'DETEX' EAX 500 - PILFER GUARD. PROVIDE ILLUMINATED "EMERGENCY EXIT ONLY" SIGNAGE ABOVE DOOR & WEATHERSTRIPPING.	1,2,3,4,5,6,9	SALES AREA EMERGENCY EXIT DOOR
102	E	3'-0" x 7'-0"	--	H.M.	--	--	--	--	N/A	CASED OPENING	--	HALL
103	C	3'-0" x 7'-0"	H.M.	H.M.	HAGAR BB1279: 1-1/2 PR 4-1/2" x 4-1/2" USP	SCHLAGE: S280PD-626-JUP; SCHLAGE: B763P-626 DEADBOLT & LEVER (KEYED SAME)	PAINTED (PUSH SIDE)	--	N/A	TWO PEEP HOLES AT 40" & 60" AFF; SEPARATE DEAD-BOLT, KEYED WITH THUMB TURN INSIDE; PROVIDE LOCK DOOR GUARD	1,2,4,5,10,12	OFFICE
104	C	3'-0" x 7'-0"	H.M.	H.M.	HAGAR BB1279: 1-1/2 PR 4-1/2" x 4-1/2" USP	SCHLAGE: AL40S-626-JUP	PAINTED (PUSH SIDE)	--	N/A	--	2,4,5,12	MEN'S RESTROOM
105	C	3'-0" x 7'-0"	H.M.	H.M.	HAGAR BB1279: 1-1/2 PR 4-1/2" x 4-1/2" USP		PAINTED (PUSH SIDE)	--	N/A	--	2,4,5,12	WOMEN'S RESTROOM
106	D	PAIR 3'-0" x 7'-0"	PER MFG.	PER MFG.	ALL HARDWARE BY FIXTURE PROVIDER OR ELIASON DOOR MANUFACTURER				N/A	ELIASON EASY SWING DOOR SYSTEM: MODEL - LWP-3; NO STOPS. ALL HARDWARE BY MANUFACTURER.	2,4,8	SALES SUPPORT AREA
106A	B	4'-0" x 7'-0"	H.M.	H.M.	HAGAR BB1279: 1-1/2 PR 5" x 5" USP	LOW RISK STORES: 'DETEX' V40-01 WITH LD MECHANICAL OPTION, 628 FINISH; HIGH RISK STORES: DETEX ECL-230X TDB MULTI POINT LOCK	PAINTED (PUSH SIDE)	1/2" ALUMINUM (MILL FINISH)	N/A	'DETEX' CRASH BAR WITHOUT ALARM DEVICE. 'DETEX' EAX 500 - PILFER GUARD. INSTALL TWO PEEP HOLES AT 40" & 60" AFF & WEATHERSTRIPPING.	1,2,3,4,5,6,9	SALES SUPPORT EXTERIOR

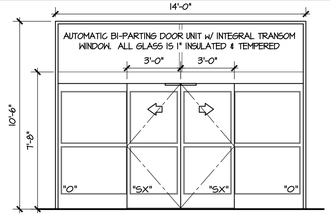
DOOR NOTES:

1. COORDINATE ALL KEYING WITH OWNER.
2. REFER TO ACCESSIBLE DOOR REQUIREMENTS (ADAI-4) FOR CODE REQUIREMENTS.
3. FOR DETEX ORDERS CONTACT: SECURITY SOURCE AT 918.493.8150, OR EMAIL: FDCONSTRUCTION@SECURITYSOURCE.COM FAX: 918.493.8361 WEBSITE: WWW.DETEX.COM.
4. ALL DOOR HARDWARE AND ITS OPERATION SHALL COMPLY WITH A.D.A REQUIREMENTS AND ANY STATE OR LOCAL CODES. G.C. SHALL COMPLY WITH THE MOST STRINGENT. DOOR TO MEET ADA DOOR OPENING PRESSURE GUIDELINES, MAXIMUM 5 LBS (INTERIOR) & 10-15 LBS (EXTERIOR)
5. ALL HOLLOW METAL DOORS AND FRAMES ARE TO BE PAINTED TO MATCH WALL FIELD COLOR ON EACH SIDE OF DOOR PER EXTERIOR & INTERIOR FINISH SCHEDULES.
6. ALL EXTERIOR DOORS - INSTALL BRUSH STYLE SWEEPS. USE SEALEAZE - C38OCLA06BL (X) X=3'-0", 3'-6", OR 4'-0" (OR EQUAL).
7. STOREFRONT - PROVIDE HEAD RECEPTOR WHEN SNOW LOAD IS EQUAL TO OR GREATER THAN 20 PLF.
8. ELIASON DOOR - G.C. IS RESPONSIBLE FOR PROVIDING AND INSTALLING ELIASON DOOR(S) AND HARDWARE.
9. DETEX DOOR HARDWARE WILL BE PROVIDED AND INSTALLED BASED ON RISK CATEGORY, LOW RISK OR HIGH RISK. G.C. TO CONFIRM WITH THE FAMILY DOLLAR STORES PROJECT MANAGER BEFORE ORDERING DETEX HARDWARE. DETEX PANIC HARDWARE HAS A FUNCTIONAL DEPTH THICKER THAN STANDARD PANIC HARDWARE.
10. "DO NOT LATCH DEADBOLT WHEN ROOM IS OCCUPIED" SIGN TO BE MOUNTED AT DOOR ON OFFICE INTERIOR.
11. PROVIDE SIGN AT ENTRY DOOR(S) THAT IS VISIBLE DURING BUSINESS HOURS: "THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED". SIGN SHALL CONSIST OF ONE INCH (1") HIGH BLACK LETTERS MOUNTED AT +5'-0" A.F.F. AND SIGN SHALL BE PLACED ON THE EGRESS SIDE.
12. HOLD BOTTOM OF DOOR 1" A.F.F. OR PROVIDE DOOR LOUVER (RE: MEP DRAWINGS)

ABBREVIATIONS:

ALUM.:	ALUMINUM
EXIST.:	EXISTING
G.L.:	GLASS
H.B.:	HARDBOARD FACES
H.C.H.B.:	HOLLOW CORE
H.M.:	HOLLOW METAL
K.D.:	KNOCK DOWN
T.G.:	TEMPERED GLAZING
S.C.:	SOLID CORE (W/ PLAM VENEER)
W.D.:	WOOD

DOOR TYPES

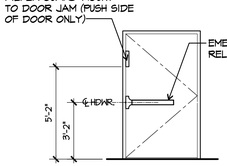


A: ALUMINUM AND GLASS STOREFRONT DOORS

PROVIDE SIGNAGE ABOVE DOOR STATING "THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED"

PROVIDE WEATHERSTRIPPING AND THRESHOLD SET IN FULL BED OF MASTIC AT ALL EXTERIOR DOORS (TYPICAL)

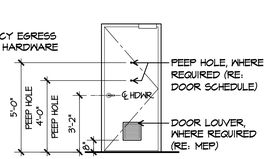
STOREFRONT ENTRY / EGRESS



B: 4'-0" x 7'-0" HOLLOW METAL DOOR AND FRAME (PAINT); PROVIDE ADA COMPLIANT ACCESSORIES AND HARDWARE, AS SCHEDULED

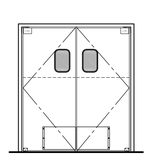
PROVIDE WEATHERSTRIPPING AND THRESHOLD SET IN FULL BED OF MASTIC AT ALL EXTERIOR DOORS (TYPICAL)

EXTERIOR EGRESS / SERVICE DOOR



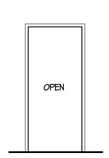
C: 3'-0" x 7'-0" HOLLOW METAL DOOR AND FRAME, WITH ADA COMPLIANT LEVER HARDWARE, CLOSER, AND ACCESSORIES AS SCHEDULED. SEE MEP FOR DOOR UNDERCUT AND LOUVER LOCATIONS.

TYPICAL INTERIOR DOOR



D: PAIR 3'-0" x 7'-0" ELIASON EASY SWING DOOR SYSTEM: MODEL LWP-3 (NO STOPS); ALL HARDWARE AND EQUIPMENT PROVIDED BY MANUFACTURER.

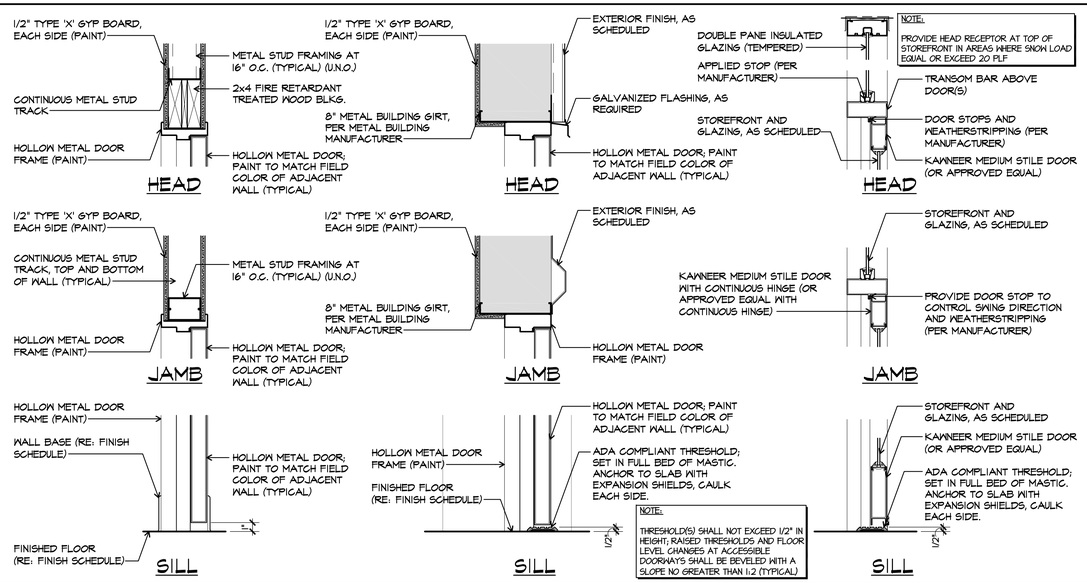
SWINGING SALES SUPPORT DOORS



E: 3'-0" x 7'-0" HOLLOW METAL FRAME

TYPICAL INTERIOR CASED OPENING

DOOR DETAILS



Castles Design Group

A Professional Architectural Corporation
3801 Kirby Drive, Suite 600
Houston, Texas 77098
tel: 713 664 7074
fax: 713 664 9756

DELTA T DEVELOPMENT, LLC
2425 LUMBLEY ROAD
RAINBOW CITY, AL 35906
PH: 256.278.4377

DATE: 04.18.2014
JOB No.: 1401-25
DRAWN: FS, SP
CHECKED: LC

NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

I hereby certify that this plan specification, or report was prepared by me or under my direct supervision, and that I am a duly Registered Architect under the laws of the State of North Dakota.
Date 4-18-14 Lic. No. 2091

EXPIRES: 06.30.2014
Larry L. Christian, A.I.A., N.C.A.R.B.
North Dakota Registration
#2091

REVISIONS

PRELIMINARY REVIEW:	03.27.2014
PERMIT ISSUE:	04.18.2014

DOOR SCHEDULE, DETAILS, AND NOTES

SHEET NUMBER

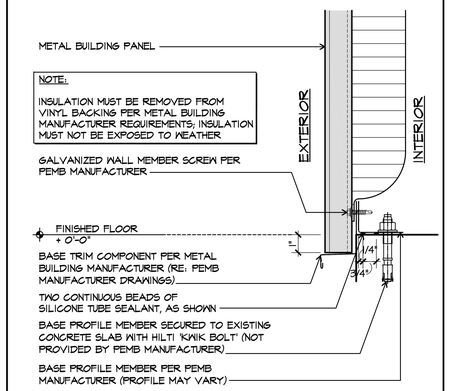
A-7.0

SIZE	GAUGE	TYPE	MAX. UNSUPPORTED HEIGHT	
			16" O.C.	24" O.C.
1-5/8"	25	ST	9'-6"	8'-3"
2-1/2"	25	ST	12'-6"	10'-9"
	22	ST	13'-0"	11'-6"
	20	ST	13'-10"	12'-0"
3-5/8	25	ST	16'-0"	13'-6"
	22	ST	17'-3"	15'-0"
	20	ST	17'-11"	15'-7"
	20	SJ	18'-6"	16'-9"
	18	SJ	19'-3"	
	16	SJ	20'-0"	
	14	SJ	22'-0"	
4"	25	ST	17'-3"	14'-3"
	22	ST	18'-6"	16'-3"
	20	ST	19'-2"	16'-10"
	20	SJ	19'-10"	18'-10"
	18	SJ	20'-7"	
	16	SJ	22'-0"	
	14	SJ	24'-0"	
6"	25	ST	20'-0"	15'-0"
	22	ST	25-3"	22'-0"
	20	ST	26'-1"	22'-10"
	20	SJ	26'-8"	23'-8"
	18	SJ	28'-0"	
	16	SJ	30'-0"	
	14	SJ	32'-0"	
7-1/4"	18	SJ	32'-0"	
	16	SJ	34'-0"	
	14	SJ	37'-0"	
8"	18	SJ	34'-6"	
	16	SJ	37'-4"	
	14	SJ	39'-6"	

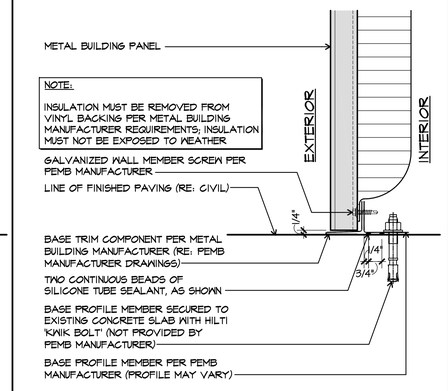
1. BASED ON INTERIOR NONBEARING PARTITIONS WITH ONE LAYER OF GYPSUM BOARD EACH SIDE. USE GAUGE/TYPE AS SCHEDULED UNLESS NOTED OTHERWISE ON DRAWINGS. - RUNNER TRACK GAUGE TO MATCH STUD GAUGE.
2. WALLS OVER 12'-0" HIGH TO BE LATERALLY BRACED AT 4'-0" O.C. VERTICAL WITH 1 1/2", 16 GA. COLD-ROLLED CHANNEL CLIPS ANCHORED TO THE METAL STUDS.

STEEL STUD LIMITING HGT SCHEDULE | 10
SCALE: N.T.S.

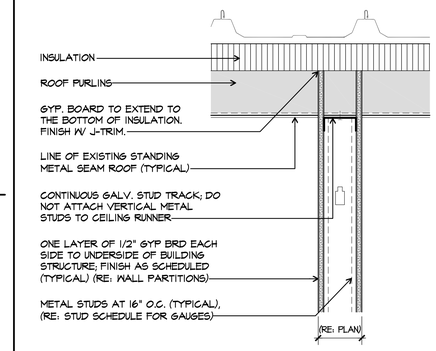
NOT USED | 8
SCALE: N.T.S.



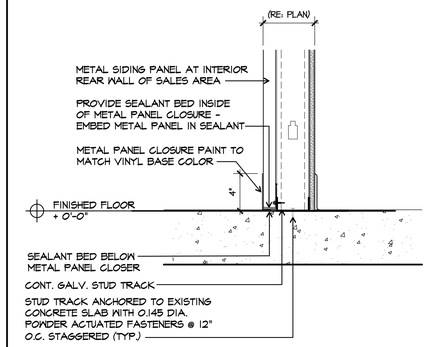
EXTERIOR PANEL BY-PASS CONDITION "B" | 7



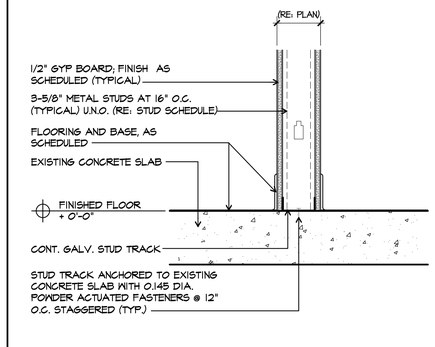
EXTERIOR PANEL FLUSH CONDITION "A" | 5
SCALE: 3"=1'-0"



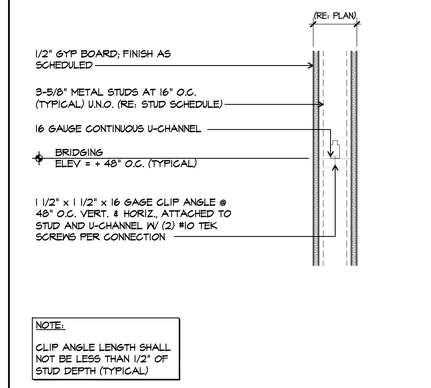
METAL STUD HEAD DETAIL | 3
SCALE: 1-1/2" = 1'-0"



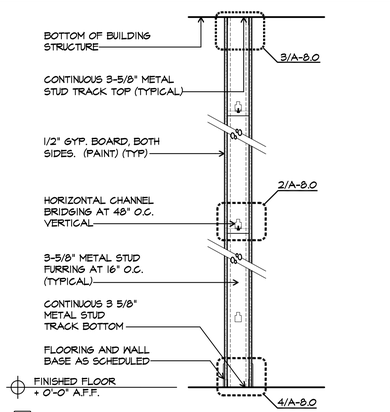
METAL STUD BASE DETAIL | 6
SCALE: 1-1/2" = 1'-0"



METAL STUD BASE DETAIL | 4
SCALE: 1-1/2" = 1'-0"



METAL STUD BRIDGING DETAIL | 2
SCALE: 1-1/2" = 1'-0"

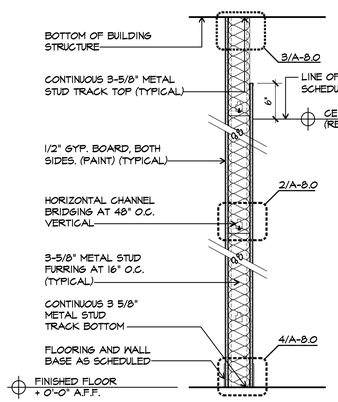


A EXTENDED FULL HEIGHT TO UNDERSIDE OF BUILDING STRUCTURE.

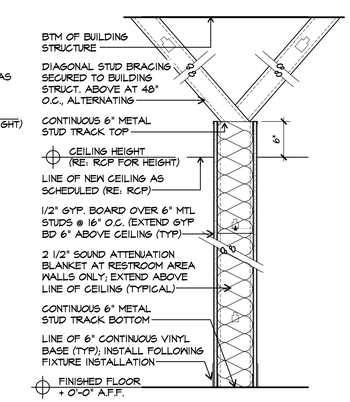
A1 SAME AS "A", WITH LAY-IN CEILING ON ONE SIDE (ONLY). EXTEND 1/2" GYP. BD. TO 6" ABOVE CEILING.

A2 SAME AS "A", WITH LAY-IN CEILING ON EACH SIDE. EXTEND 1/2" GYP. BD. TO 6" ABOVE CEILING.

G.C. TO PROVIDE WATER RESISTANT GYP BOARD AT ALL WET WALLS (TYPICAL)

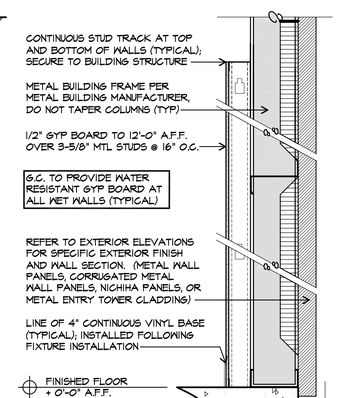


B EXTENDED FULL HEIGHT TO UNDERSIDE OF BUILDING STRUCTURE.



C PLUMBING CHASE TO BE FURRED OUT WITH 1/2" W.R. GYP BOARD OVER 6" - 20 GAUGE METAL STUDS AT 16" O.C.; G.C. TO PROVIDE FRP PANELS TO 48" A.F.F. AT ALL INTERIOR RESTROOM WALL SURFACES

C1 SAME AS "C", WITH 3-5/8" MTL STUD FURRING AT 16" O.C. (EXTEND 1/2" GYP BD 6" ABOVE CEILING (TYP))

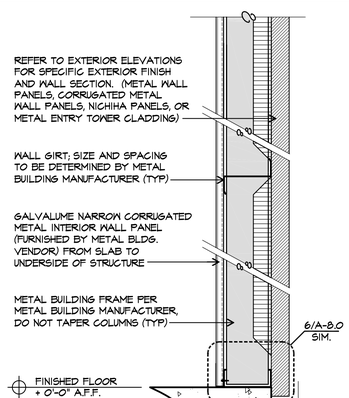


D AS SHOWN

D1 SAME AS "D", WITH MTL STUDS SECURED TO UNDERSIDE OF ROOF DECK

D2 SAME AS "D", WITH 6" MTL STUDS @ 16" O.C., AS REQUIRED (RE: 7/A-8.1)

D3 SAME AS "D", WITH NO METAL STUD OR GYP. BOARD. INTERIOR WHITE WALL 'R' PANEL ATTACHED TO METAL BUILDING STRUCTURE. EXTEND TO ROOF DECK.



E AS SHOWN

PARTITION TYPES | 1
SCALE: 1" = 1'-0"

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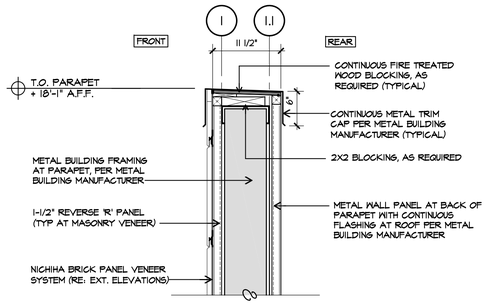
I hereby certify that this plan specification, or report was prepared by me or under my direct supervision, and that I am a duly Registered Architect under the laws of the State of North Dakota.
Date 4-16-14 Lic. No. 2091

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REVISIONS
PRELIMINARY REVIEW: 03.27.2014
PERMIT ISSUE: 04.18.2014

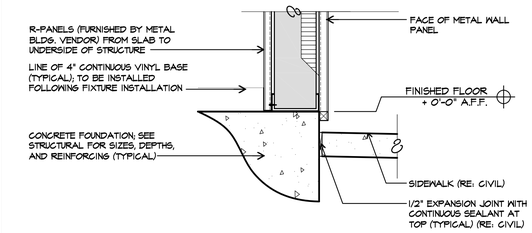
PARTITION TYPES & DETAILS

SHEET NUMBER
A-8.0



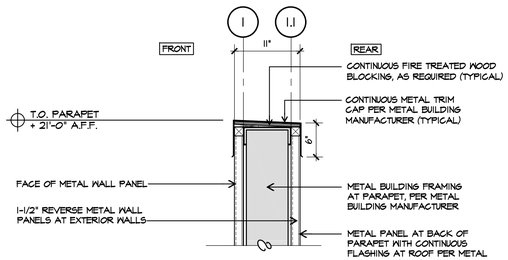
ENLARGED PARAPET DETAIL — 16

SCALE: 1" = 1'-0"



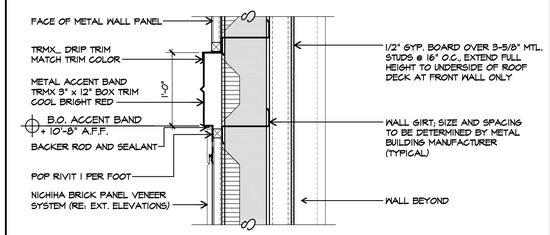
ENLARGED DETAIL — 12

SCALE: 1" = 1'-0"



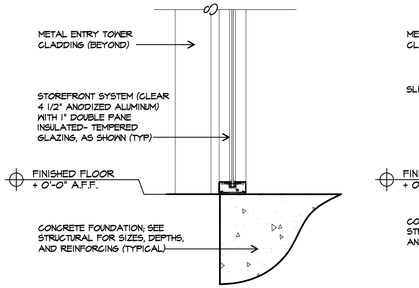
ENLARGED PARAPET DETAIL — 8

SCALE: 1" = 1'-0"



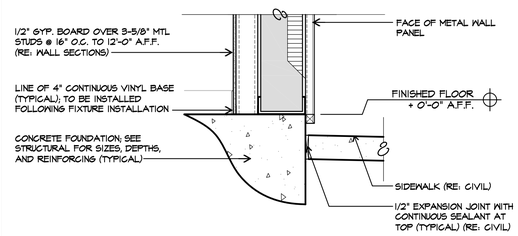
HEAD DETAIL — 4

SCALE: 1" = 1'-0"



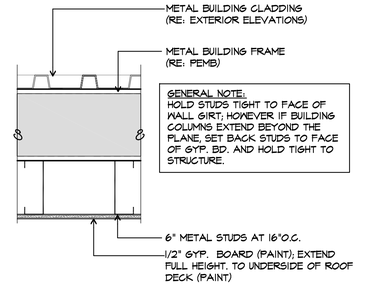
ENLARGED PLAN DETAIL — 15

SCALE: 1 1/2" = 1'-0"



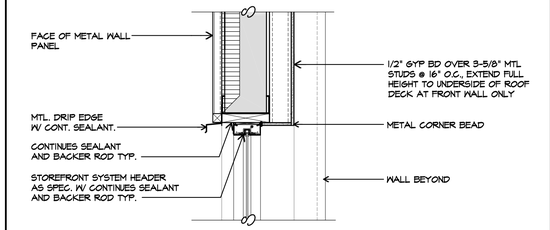
ENLARGED PLAN DETAIL — 11

SCALE:1" = 1'-0"



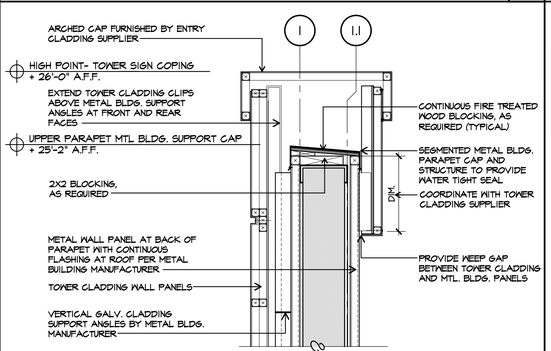
ENLARGED PLAN DETAIL @ ELECTRICAL PANEL — 7

SCALE: 1-1/2" = 1'-0"



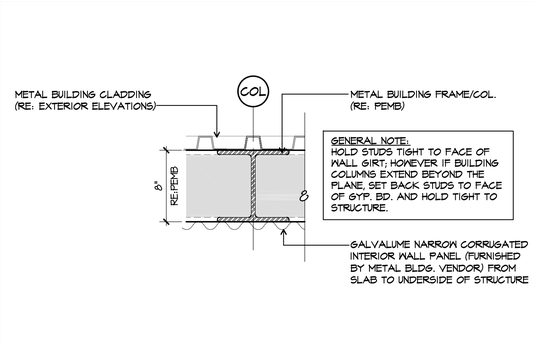
ENLARGED HEAD DETAIL — 3

SCALE: 1" = 1'-0"



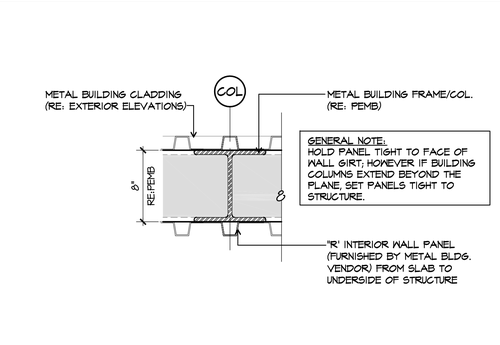
ENLARGED PARAPET DETAIL — 14

SCALE: 1" = 1'-0"



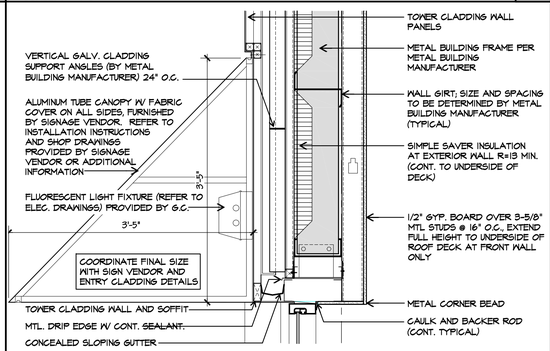
ENLARGED PLAN DETAIL — 10

SCALE: 1 1/2" = 1'-0"



ENLARGED PLAN DETAIL — 6

SCALE: 1-1/2" = 1'-0"

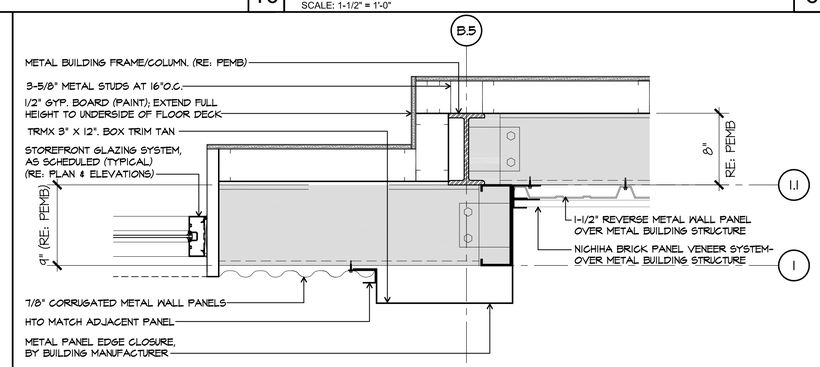


ENLARGED SILL DETAIL — 2

SCALE: 1" = 1'-0"

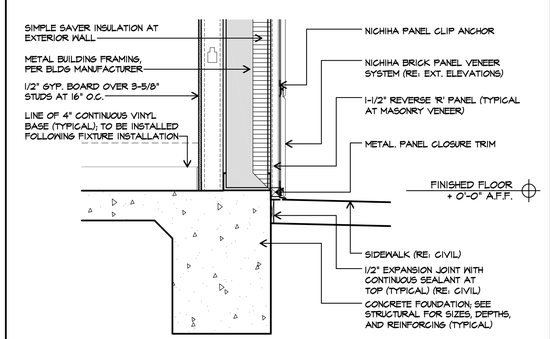
ENLARGED DETAILS — 13

SCALE: 1" = 1'-0"



ENLARGED PLAN DETAIL — 5

SCALE: 1-1/2" = 1'-0"



ENLARGED DETAIL — 1

SCALE: 1" = 1'-0"

DATE: 04.18.2014
JOB No.: 1401-25
DRAWN: FS, SP
CHECKED: LC

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North Dakota Registration #2091

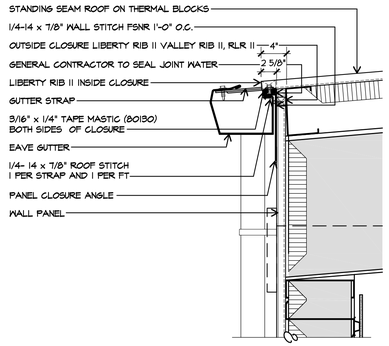
REVISIONS
PRELIMINARY REVIEW: 03.27.2014
PERMIT ISSUE: 04.18.2014

SECTION DETAILS

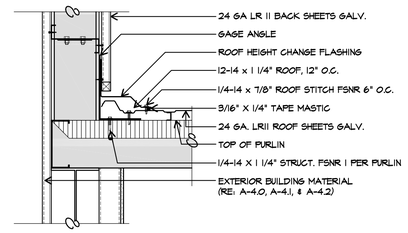
SHEET NUMBER
A-8.1

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SCALE: NONE
16

NOT USED
SCALE: NONE
12

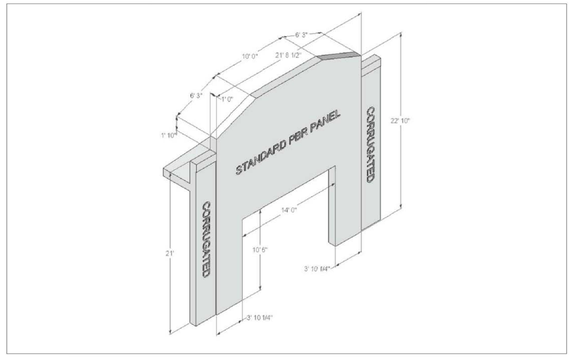


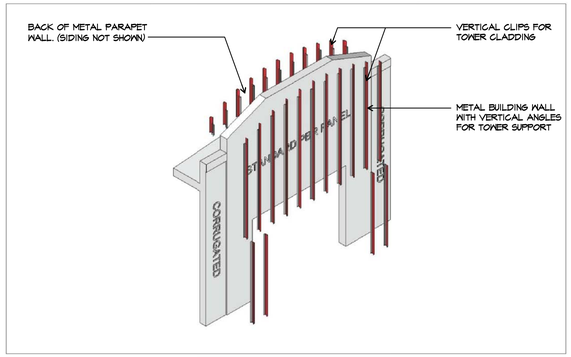
EAVE GUTTER DETAIL
SCALE: 1" = 1'-0"
8

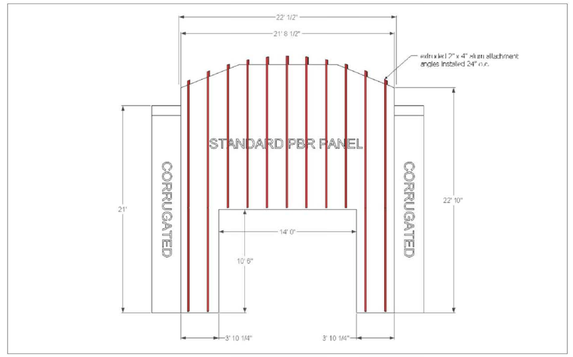


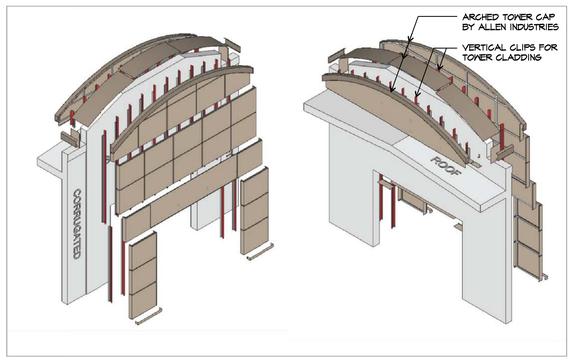
PARAPET/ ROOF FLASHING DETAIL
SCALE: 1" = 1'-0"
4

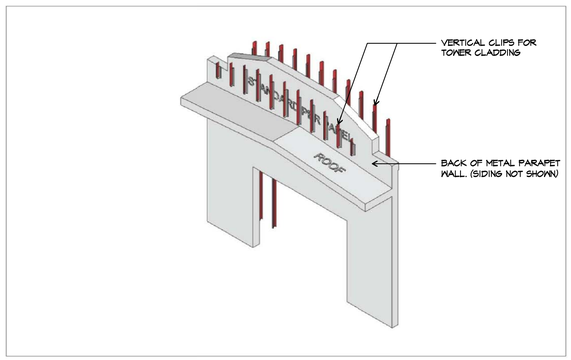
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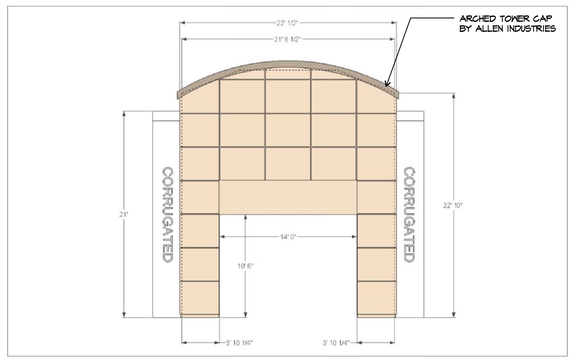












NOT USED
SCALE: NONE
14

METAL TOWER CLADDING IMAGES
SCALE: NOT TO SCALE
2

NOT USED
SCALE: NONE
13

TOWER CLADDING NOTES
SCALE: NONE
1

TONER CLADDING NOTES:

1. CLADDING AND TONER CLADDING CLIPS TO BE OBTAINED FROM ALLEN INDUSTRIES. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION.
2. OBTAIN LATEST DOCUMENTATION FROM FAMILY DOLLAR REPRESENTATIVE BY ALLEN INDUSTRIES:
   2.1. HYBRID TONER ASSEMBLY GUIDELINES
   2.2. HYBRID TONER ENGINEERING DRAWINGS (STANDARD AND HIGH WIND SPEED)
   2.3. HYBRID TONER INSTALLATION MANUAL
3. METAL BUILDING SYSTEMS AND CLADDING SUPPORT ANGLES UNDER TONER CLADDING SHALL BE MADE COMPLETELY WATER TIGHT PRIOR TO INSTALLATION OF TONER CLADDING AND CLIPS.
4. IT IS ACCEPTABLE FOR CONTRACTOR TO ENGAGE ALLEN INDUSTRIES FOR INSTALLATION INFORMATION.
5. TONER CLADDING SHALL BE CONSIDERED A "RAIN SCREEN" SYSTEM. PROVIDE A POSITIVE PATH FOR RAIN WATER / CONDENSATION TO WEEPS AT BASE OF CLADDING. COMPONENTS OF TONER CLADDING SHALL BE SEALED TO MINIMIZE / PREVENT WATER INTRUSION. REFER TO ALLEN INDUSTRIES DETAILS AND INSTALLATION DOCUMENTS.
6. ISOLATE DISSIMILAR METALS WITH MASTIC OR OTHER PERMANENT MATERIAL TO PREVENT CORROSION.
7. CONTINUOUSLY SEAL AT ALL ATTACHMENTS TO METAL BUILDING PANELS, CLIPS AND TRIM.
8. CONTINUOUSLY SEAL AT ALL TONER CLADDING PANEL JOINTS AS REQUIRED TO PROVIDE "RAIN SCREEN".
9. DESIGNER TO VERIFY WIND AND/OR SEISMIC LOADS AND ADJUST STRUCTURAL REQUIREMENTS FOR PEMB ACCORDINGLY.
10. ENTRY TONER CLADDING MATERIALS AND ERECTION DETAILS PROVIDED BY ALLEN INDUSTRIES. G.C. TO INSTALL CLADDING SYSTEM OVER WATER TIGHT METAL BUILDING WALL.
11. ACQUIRE "ALLEN INDUSTRIES" DETAILED DRAWINGS OF THE TONER CLADDING SYSTEM AND INSTALLATION FROM FAMILY DOLLAR REPRESENTATIVE.

TONER SPECIFICATIONS:

1. MINIMUM OF 10 Z-GIRTS SPACED 32" ON CENTER
2. PARAPET WIDTH CANNOT EXCEED 22' FINISHED
3. PARAPET DEPTH NEEDS TO BE A SINGLE 8" GIRT (NOT A DOUBLE)
4. PBR "R" PANELS ARE TO BE USED ON THE BUILDING FRONT BEHIND WHERE THE TONER WILL BE INSTALLED
5. "R" PANELS SHOULD NOT BE INSTALLED REVERSED
6. PBR "R" PANELS (NOT VEE PANELS) ARE TO BE INSTALLED ON THE REAR OF THE PARAPET WALL
7. J-CHANNEL FOR THE "R" PANEL SHOULD BE 4' TO 4'-1/2" FROM THE INSIDE OF THE DOOR OPENING
8. TOP OF THE PARAPET WALL AT THE LOWEST POINT SHOULD NOT EXCEED 22'-10" FROM FINISHED FLOOR & THE HIGHEST POINT CANNOT EXCEED 25'-2" FROM FINISHED FLOOR
9. IF PARAPET HAS A FLAT TOP IT CANNOT EXCEED 22'-12" O.A.H. FROM FINISHED FLOOR
10. MEASURING FROM THE TOP OF THE PARAPET DOWN START THE FIRST GIRT 14" FROM THE TOP THEN THE NEXT AT 16" ON CENTER, THEN PLACING GIRTS EVERY 32" ON CENTER WHICH SHOULD PUT THE LAST GIRT APPROXIMATELY 16" FROM THE FINISHED FLOOR
11. FRONT ENTRANCE OPENING CANNOT EXCEED 14'-1/2"

METAL BUILDING NOTES:

1. PROTOTYPE METAL BUILDING DETAILS ARE PROVIDED TO SHOW DESIGN INTENT ONLY. PEMB SHALL DETERMINE FINAL DETAILS TO PROVIDE INTENT INDICATED.
2. PROTOTYPICAL LAYOUTS ARE FOR THE STANDARD ELEVATION PROTOTYPE.
3. DESIGN INTENT IS BASED ON METAL PANELS AND DETAILING PER MATERIALS SUPPLIED BY VP BUILDINGS OTHER METAL BUILDING SUPPLIERS MAY HAVE DIFFERING STANDARD MATERIALS AND DETAILING. VP BUILDINGS MAY PROVIDE DIFFERING PROJECT SPECIFIC DETAILS.
4. REFER TO DOCUMENTS PROVIDED BY THE METAL BUILDING MANUFACTURER FOR PROJECT SPECIFIC DETAILS.
5. G.C. SHALL COORDINATE PROJECT SPECIFIC METAL BUILDING DETAILS WITH OTHER ELEMENTS OF THE WORK.
6. G.C. TO COORDINATE THE ENTRY CLADDING SUPPORT STRUCTURE WITH THE METAL BUILDING STRUCTURE.

FIBER CEMENT PANEL NOTES (NICHIHA):

1. PRODUCT - NICHIHA CINDERSTONE II - TAN (18" x 10'-0" PANEL SIZE).
2. STARTER TRACK FA100 TO START PANEL INSTALLATION.
3. PRE-ENGINEERED METAL BUILDING CLIPS JES 301 FOR 5/8" PANELS.
4. CONTROL JOINTS EVERY 10'-0" USING NICHIHA DOUBLE FLANGE BACKER FH1010.
5. SINGLE FLANGE BACKER (FHC1110) ON CORNERS & WHERE PANELS TERMINATE INTO METAL TRIM.
6. PROVIDE REVERSE 'R' PANELS (UN-PAINTED) BEHIND NICHIHA PANELS.

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NEW CONSTRUCTION FOR:
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LINTON, EMMONS COUNTY, ND 58552

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REVISIONS
PRELIMINARY REVIEW: 03.27.2014
PERMIT ISSUE: 04.18.2014

DETAILS

SHEET NUMBER
A-8.2

CAMERA SYSTEM INSTALLATION REQUIREMENTS

CAMERAS - LEAVE 25' OF SLACK LOOP AT ALL CAMERA LOCATION ENDS. FOR ALL CAMERAS, POSITION VIEWS TO CAPTURE ITEMS LISTED IN CAMERA INSTALLATION POWER POINT PRESENTATION SUPPLIED BY FDS. INSTALL CAMERAS APPROXIMATELY 10'-14' A.F.F. (NO LESS THAN 10' A.F.F.).

GANZ RISK CLASS 0 AND 1:

- CAMERA #1 - ENTRANCE
- CAMERA #2 - REGISTER 1
- CAMERA #3 - REGISTER 2
- CAMERA #4 - OFFICE
- CAMERA #5 - HBA
- CAMERA #6 - AIR FRESHENER
- CAMERA #7 - LAUNDRY
- CAMERA #8 - STOCKROOM

GANZ RISK CLASS 2 AND 3:
CURRENTLY SHOWN ON PLANS

- CAMERA #1 - ENTRANCE
- CAMERA #2 - REGISTER 1
- CAMERA #3 - REGISTER 2
- CAMERA #4 - OFFICE
- CAMERA #5 - HBA
- CAMERA #6 - AIR FRESHENER
- CAMERA #7 - LAUNDRY
- CAMERA #8 - STOCKROOM
- CAMERA #9 - APPAREL
- CAMERA #10 - COOLER
- CAMERA #11 - HEIGHT STRIP EXIT
- CAMERA #12 - EXTERIOR

PVM'S - FOR ALL PVM'S, CONNECT CAMERAS TO PVM'S PER LISTED IN CAMERA INSTALLATION POWER POINT PRESENTATION SUPPLIED BY FDS. INSTALL PVM'S WHERE BOTTOM OF PVM IS APPROXIMATELY 8'-12' A.F.F. (BOTTOM OF PVM NO LESS THAN 8' A.F.F.).

BURGLAR ALARM LEGEND

SYMBOL	DESCRIPTION	QUANTITY
DC	DOOR CONTACT	4
KP	KEYPAD WITH WIRELESS RECEIVER	1
IS	INDOOR SIREN	1
PB	WIRELESS PANIC BUTTON	2
M	CEILING MOUNTED MOTION	3
CONTROL PANEL	SECURITY CONTROL PANEL	1
GSM MOD	GSM MODULE MOUNTED INSIDE CONTROL PANEL	1

BURGLAR ALARM TAGGED NOTES:

(B1) IF THE CEILING DOES NOT ALLOW FOR 12'-0" A.F.F. MOUNTING THEN FLUSH MOUNT ON CEILING AT MAXIMUM HEIGHT AND PLACE MOTION SO IT'S PATTERN DOES NOT REACH THE FRONT GLASS WALL.

(B2) 360° PIR, PENDANT MOUNT @ 12'-0" A.F.F. 19'-0" FROM STORE FRONT AND 19'-0" FROM SIDE WALL.

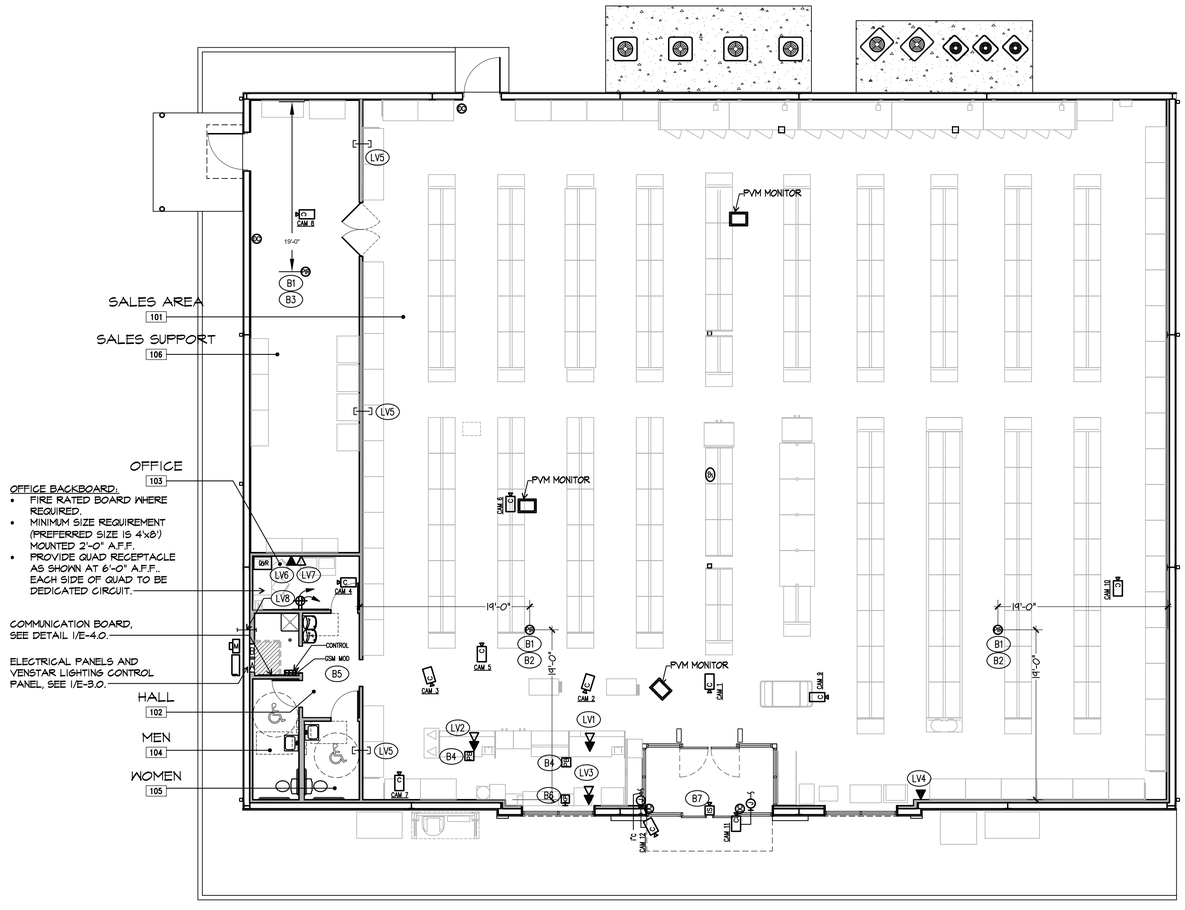
(B3) 360° PIR, PENDANT MOUNT @ 12'-0" A.F.F. 19'-0" FROM REAR DOOR, CENTERED IN SALES SUPPORT.

(B4) WIRELESS PANICS SHALL BE MOUNTED UNDER THE FRONT COUNTER AT EACH REGISTER.

(B5) CONTROL PANEL SHALL BE MOUNTED IN THE STOCKROOM NEXT TO THE DATA RACK IN THE REAR OF STORE. LOCATE MAIN CONTROLS AT TELCO DEMARC.

(B6) KEYPAD TO BE MOUNTED AT THE FRONT OF THE STORE NEAREST PROXIMITY TO THE NEAREST REGISTER.

(B7) SIREN WILL BE MOUNTED ABOVE THE SALES FLOOR ENTRY DOOR @ 8'-0" A.F.F. ON THE SALES FLOOR SIDE CENTRALLY LOCATED.



CATSE CABLE INSTALLATION REQUIREMENTS

1. CATSE CABLES SHOULD BE KEPT AT LEAST 12 INCHES FROM ELECTRICAL LINES AND OUTLETS. AVOID ATTACHING CATSE TO THE OUTSIDE OF POWER CONDUIT OR HANGING IT NEXT TO EXPOSED LINES. IN OPEN SPACES ABOVE DROP CEILINGS, DO NOT ALLOW CATSE CABLE TO REST ON TOP OF FLUORESCENT LIGHT FIXTURES.
2. CATSE CABLES CANNOT BE LAID ON TOP OF THE CEILING TILES OR GRID. THE CABLE SHOULD NEVER BE BENT TO LESS THAN A 1-INCH RADIUS. THIS ALSO CAN LEAD TO WEAKENED OR BROKEN CONDUCTORS. CARE SHOULD BE TAKEN WHEN PULLING CABLES IN TO ENSURE THAT THEY ARE NOT KINKED OR NICKED. WHEN HANGING THE CABLES, AVOID CRIMPING THE CONDUCTOR WIRES. DO NOT USE STAPLES. USE CARE NOT TO OVER-TIGHTEN PLASTIC CABLE TIES. TYING CABLES TO CEILING TILE GRID HANGERS IS NOT PERMITTED. CABLES SHOULD BE TIED TO THE BUILDING SUPPORT STEEL AT A MINIMUM OF 5 FOOT INTERVALS. CABLE TIES SHOULD ONLY BE FINGER TIGHT TO AVOID CRUSHING THE CABLES AS THIS COULD AFFECT THE CABLES PERFORMANCE CHARACTERISTICS. DO NOT USE CABLE TIE GUNS OR STAPLE GUNS. ALL TERMINATING SHOULD BE CARRIED OUT ACCORDING TO THE MANUFACTURERS' INSTRUCTIONS AND GUIDELINES, AND THE STANDARDS FOR GENERIC CABLING SYSTEMS. THE CABLE SHEATH SHOULD BE STRIPPED BACK NO MORE THAN ½ INCH FROM THE POINT OF TERMINATION AND THE TWIST RATES SHOULD BE MAINTAINED. ALL PAIRS SHALL BE TERMINATED. STANDARDS SET FORTH BY EIA/TIA 568B DEFINE THE ACCEPTABLE WIRING AND COLOR-CODING SCHEMES FOR CATSE CABLES. NO SPLICING, TAPPING OR BRIDGING DEVICES SHALL BE USED BETWEEN SPECIFIED CONNECTING HARDWARE. HOWERUN ALL CABLES FROM THE NETWORK EQUIPMENT DIRECTLY TO THE EQUIPMENT LOCATIONS WITHOUT ANY SPLICES OR JUNCTIONS IN BETWEEN THEM. CABLE INSTALLATION AND TERMINATION METHODS SHALL BE COMPLETED IN A MANNER THAT WILL NOT DEGRADE THE CABLE SPECIFICATION. ALL TERMINATIONS SHALL BE INSERTED BY THE USE OF THE PROPER TOOL.
3. ALL CATSE CABLING MUST ADHERE TO EIA/TIA STANDARDS AND THE CURRENT NATIONAL ELECTRIC CODE (NEC).
4. PUNCH ALL CABLES TO THE 24-PORT PUNCH PANEL IN THE HUBBELL NETWORK ENCLOSURE. PUNCH ALL CABLES AT THE DEVICE END. ATTACH THE NETWORK PATCH CABLES. ATTACH THE DEVICE PATCH CABLES. TEST THE CATSE CABLES WITH THE PATCH CABLES ATTACHED AND TEST FOR PASS/FAIL AND CABLE LENGTH.

LOW VOLTAGE TAGGED NOTES:

(LV1) FURNISH AND INSTALL (1) CATSE CABLE AND RJ45 TERMINATION PLUG FOR CASHIER'S MODULE #1 FROM THE STORE'S NETWORK ENCLOSURE. A 20' SERVICE LOOP IS TO BE NEATLY COILED, TIE-WRAPPED, AND ATTACHED TO THE BUILDING SUPPORT STEEL AT CASH-LANE #1 LOCATION. A 5' SERVICE LOOP IS TO BE NEATLY COILED, TIE-WRAPPED, AND ATTACHED TO THE BUILDING SUPPORT STEEL ABOVE THE NETWORK EQUIPMENT ENCLOSURE.

(LV2) FURNISH AND INSTALL (4) CATSE CABLES AND RJ45 TERMINATION PLUGS FOR CASHIER'S MODULE #2 FROM THE STORE'S NETWORK ENCLOSURE. A 20' SERVICE LOOP IS TO BE NEATLY COILED, TIE-WRAPPED, AND ATTACHED TO THE BUILDING SUPPORT STEEL AT CASH-LANE #2 LOCATION. A 5' SERVICE LOOP IS TO BE NEATLY COILED, TIE-WRAPPED, AND ATTACHED TO THE BUILDING SUPPORT STEEL ABOVE THE NETWORK EQUIPMENT ENCLOSURE.

(LV3) FURNISH AND INSTALL (3) CATSE CABLES AND RJ45 TERMINATION PLUGS FOR MANAGER'S WORKSTATION FROM THE STORE'S NETWORK ENCLOSURE. A 20' SERVICE LOOP IS TO BE NEATLY COILED, TIE-WRAPPED, AND ATTACHED TO THE BUILDING SUPPORT STEEL AT MANAGER'S WORKSTATION LOCATION. A 5' SERVICE LOOP IS TO BE NEATLY COILED, TIE-WRAPPED, AND ATTACHED TO THE BUILDING SUPPORT STEEL ABOVE THE NETWORK EQUIPMENT ENCLOSURE.

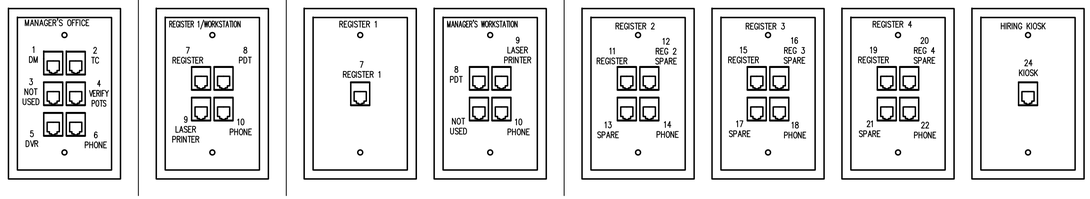
(LV4) FURNISH AND INSTALL (1) CATSE CABLE AND RJ45 TERMINATION PLUG FOR THE APPLICATION STATION FROM THE STORE'S NETWORK ENCLOSURE. A 20' SERVICE LOOP IS TO BE NEATLY COILED, TIE-WRAPPED, AND ATTACHED TO THE BUILDING SUPPORT STEEL AT APPLICATION STATION LOCATION. A 5' SERVICE LOOP IS TO BE NEATLY COILED, TIE-WRAPPED, AND ATTACHED TO THE BUILDING SUPPORT STEEL ABOVE THE NETWORK EQUIPMENT ENCLOSURE.

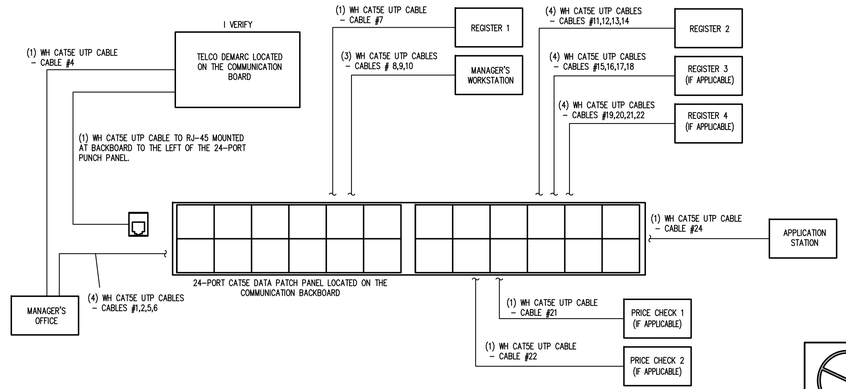
(LV5) PROVIDE A (1') ONE FOOT PIECE OF 3" EMPTY CONDUIT RUNNING THROUGH THE WALL AT LOCATIONS AS SPECIFIED ON THE PLANS. ALL CONDUITS SHALL BE LOCATED 6" TO BOTTOM OF PURLAN. PROVIDE FIRE CAULK AND CAP OFF CONDUIT FOR FUTURE USE BY FAMILY DOLLAR.

(LV6) FURNISH AND INSTALL (5) CATSE CABLES AND RJ45 TERMINATION PLUGS FOR THE MANAGERS OFFICE FROM THE STORE'S NETWORK ENCLOSURE. A 20' SERVICE LOOP IS TO BE NEATLY COILED, TIE-WRAPPED, AND ATTACHED TO THE BUILDING SUPPORT STEEL AT MANGERS OFFICE LOCATION. A 5' SERVICE LOOP IS TO BE NEATLY COILED, TIE-WRAPPED, AND ATTACHED TO THE BUILDING SUPPORT STEEL ABOVE THE TELCO DEMARC.

(LV7) MOUNT ALL DATA OUTLETS IN OFFICE AT 24" A.F.F.

(LV8) PROVIDE 1" CONDUIT THROUGH EXTERIOR WALL AT LOCATION SHOWN AT PANELBOARDS FOR FUTURE ANTENNA CONNECTION. COORDINATE MOUNTING HEIGHT WITH FDS CONSTRUCTION REPRESENTATIVE.





LOW VOLTAGE PLAN

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

1

DATE: 04.18.2014
JOB No.: 1401-25
DRAWN: FS, SP
CHECKED: LC

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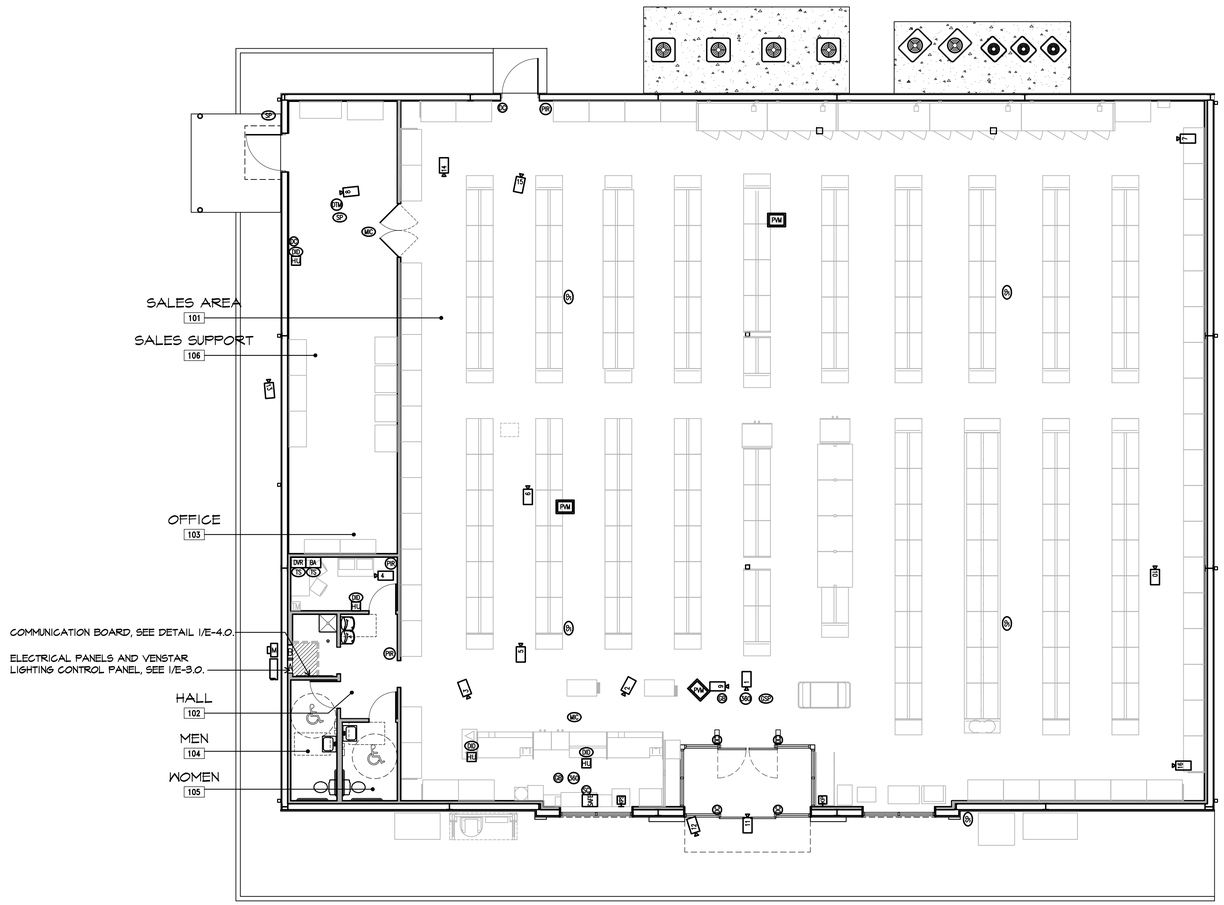
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Date 4-16-14 Lic. No. 2091

EXPIRES: 06.30.2014
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PRELIMINARY REVIEW: 03.27.2014
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LOW VOLTAGE PLAN

SHEET NUMBER
LV-1.0



CAMERA SYSTEM INSTALLATION REQUIREMENTS

CAMERAS - LEAVE 25' OF SLACK LOOP AT ALL CAMERA LOCATION ENDS. FOR ALL CAMERAS, POSITION VIEWS TO CAPTURE ITEMS LISTED IN CAMERA INSTALLATION POWER POINT PRESENTATION SUPPLIED BY FDS. INSTALL CAMERAS APPROXIMATELY 10'-14' A.F.F. (NO LESS THAN 10' A.F.F.).

- CAMERA #1 - ENTRANCE
- CAMERA #2 - REGISTER 1
- CAMERA #3 - REGISTER 2
- CAMERA #4 - OFFICE
- CAMERA #5 - HBA
- CAMERA #6 - AIR FRESHENER
- CAMERA #7 - LAUNDRY
- CAMERA #8 - STOCKROOM
- CAMERA #9 - APPAREL
- CAMERA #10 - COOLER
- CAMERA #11 - HEIGHT STRIP EXIT
- CAMERA #12 - EXTERIOR

INTERACTIVE CAMERA SITES

- CAMERA #13 - REAR EXTERIOR
- CAMERA #14 - AUTOMOTIVE
- CAMERA #15 - FLEX
- CAMERA #16 -

PVM'S - FOR ALL PVM'S, CONNECT CAMERAS TO PVM'S PER LISTED IN CAMERA INSTALLATION POWER POINT PRESENTATION SUPPLIED BY FDS. INSTALL PVM'S WHERE BOTTOM OF PVM IS APPROXIMATELY 8'-12' A.F.F. (BOTTOM OF PVM NO LESS THAN 8' A.F.F.).

RISK CLASS CLASSIFICATION

GANZ RISK CLASS 0, 1 CAMERA SCHEMATICS AND INSTALLATION INSTRUCTIONS.
(CURRENTLY USED BY SECURITY SOURCE TO INSTALL GANZ 16HD DVR - 8 CAMERAS AND 2 PVMS ON THE WEDNESDAY, THURSDAY, FRIDAY WEEK PRIOR TO THURSDAY GRAND OPENING. VENDOR'S TRIGGER TO BEING/COMMENCE IS ONCE THE GRAND OPENING CALENDAR IS RELEASED AND MP LAYOUTS BECOME AVAILABLE. BOTH ARE TYPICAL AVAILABLE APPROXIMATELY 30-24 DAYS PRIOR TO STORES CALENDARED GRAND OPENING.)

GANZ RISK CLASS 2, 3 CAMERA SCHEMATICS AND INSTALLATION INSTRUCTIONS. - CURRENTLY SHOWN ON PLANS
(CURRENTLY USED BY SECURITY SOURCE TO INSTALL GANZ 16HD DVR - 12 CAMERAS AND 3 PVMS ON THE WEDNESDAY, THURSDAY, FRIDAY WEEK PRIOR TO THURSDAY GRAND OPENING. VENDOR'S TRIGGER TO BEING/COMMENCE IS ONCE THE GRAND OPENING CALENDAR IS RELEASED AND MP LAYOUTS BECOME AVAILABLE. BOTH ARE TYPICAL AVAILABLE APPROXIMATELY 30-24 DAYS PRIOR TO STORES CALENDARED GRAND OPENING.)

RISK CLASS 4 INTERACTIVE SYSTEM CAMERA SCHEMATICS AND INSTALLATION INSTRUCTIONS.
(CURRENTLY USED BY IVERIFY OR INTERFACE TO INSTALL A GANZ 16HD DVR - 12 CAMERAS AND 3 PVMS ON THE WEDNESDAY, THURSDAY, FRIDAY WEEK PRIOR TO THURSDAY GRAND OPENING. VENDOR'S TRIGGER TO BEING/COMMENCE IS ONCE THE GRAND OPENING CALENDAR IS RELEASED AND MP LAYOUTS BECOME AVAILABLE. THERE ARE PRIMARILY RC 4 SITES. THERE WILL BE SPECIAL CASES WHERE RC3 FIT THE BILL.

I-VERIFY LEGEND	
SYMBOL	DESCRIPTION
#	CAMERA (# = CAMERA NUMBER)
PVM	PUBLIC-VIEW MONITOR
DVR	DVR BOX
BA	BURGLAR ALARM CONTROL BOX
KP	KEYPAD
SKP	SAFE KEYPAD
CS	SAFE CONTACT
SAFE	SAFE/2 DOORS
360	360° MOTION SENSOR
DTM	DUALTEK MOTION SENSOR
PIR	PIR MOTION SENSOR
TS	TAMPER SENSOR
DC	DOOR CONTACT
GB	GLASS BREAKS (OPTIONAL)
SP	SPEAKER
GSP	GREETER SPEAKER
MIC	MICROPHONE
DID	DID HANDSET
HU	HOLD UP BUTTON

WIRE/CABLE TYPE:

- RG59 = 18/2 SIAMESE = CAMERA & PVMS
- CAT 5 = DID HANDSETS
- 22/4 STANDARD CM ALARM WIRE = ALL ALARM DEVICES (MOTIONS, DOOR CONTACTS, HOLD UP, TAMPERS, KEY PADS, GLASS BREAKS, AND SAFE CONTACTS.
- 22/2 STANDARD SHIELDED WIRE = SPEAKER & MICROPHONES.

LOW VOLTAGE PLAN
SCALE: 1/8" = 1'-0"

1

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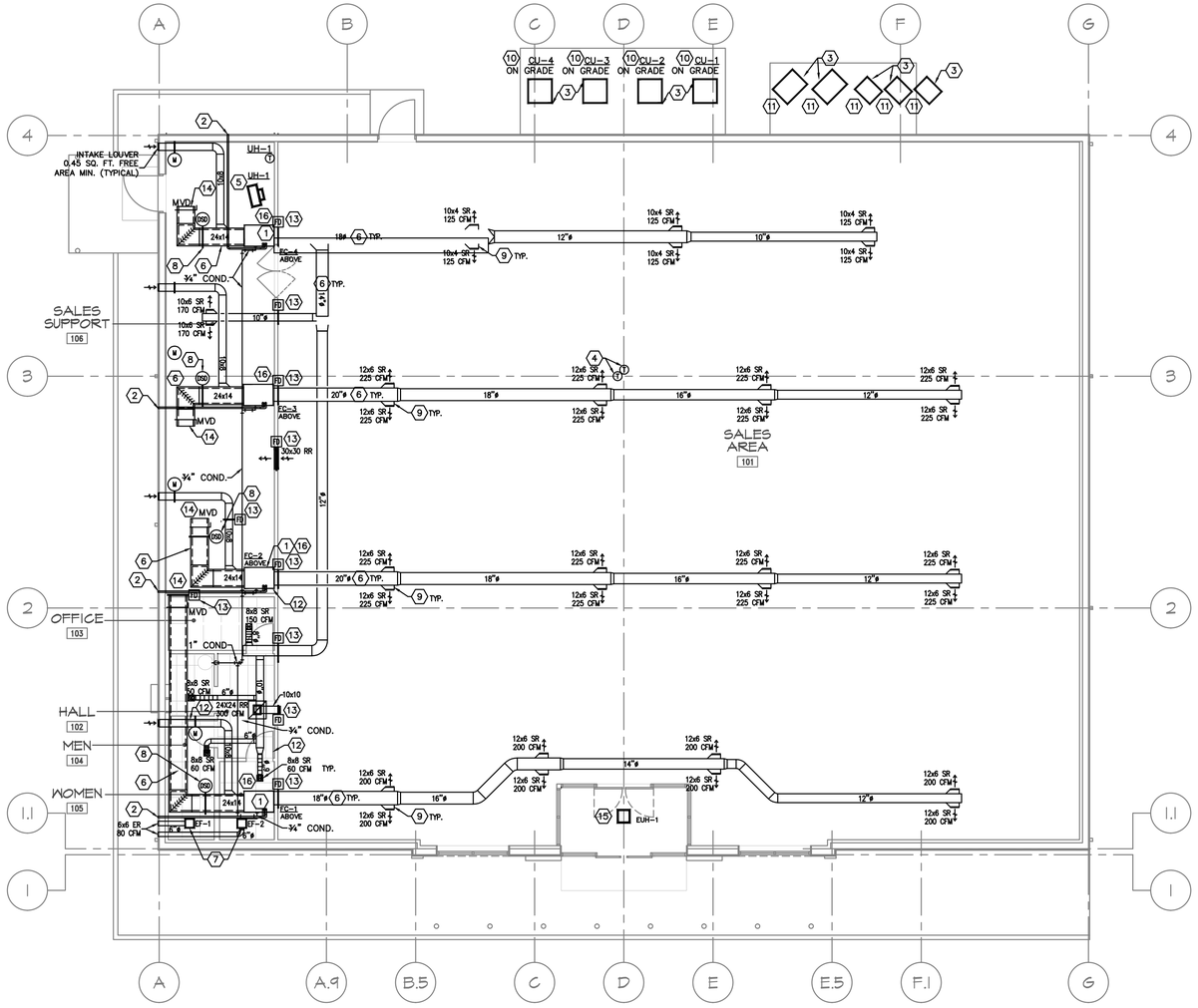
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LOW VOLTAGE PLAN

SHEET NUMBER
LV-1.1



KEYED NOTES

1. PROVIDE SPLIT DX SYSTEM WITH GAS HEATING, AS SCHEDULED. BALANCE TO SCHEDULED CFM. EXTEND INSULATED COPPER TO DRAIN. TERMINATE WITH AN INDIRECT CONNECTION. PROVIDE SECONDARY DRAIN PAN AND HIGH WATER ALARM. REFER TO DETAIL. COORDINATE FINAL LOCATION IN FIELD.
2. PROVIDE 2" CONCENTRIC VENT PER MANUFACTURER'S RECOMMENDATIONS AND PER ALL APPLICABLE CODES. MAINTAIN 10' MINIMUM CLEARANCE.
3. PROVIDE CONCRETE EQUIPMENT PAD FIELD, COORDINATE ACTUAL LOCATION WITH CIVIL SITE PLAN. PROPERTY LINES AND STRUCTURAL. PROVIDE FENCING AROUND PAD IF REQUIRED.
4. THERMOSTATS ARE BEING SUPPLIED WITH THE VENSTAR SURVEYOR EQUIPMENT. MECHANICAL CONTRACTOR SHALL MOUNT AND WIRE THERMOSTATS. SEE V100 FOR ADDITIONAL DETAILS.
5. UNIT HEATER MOUNTED 8' AFF TO BOTTOM OF HEATER AND 4' FROM EXTERIOR DOOR (CENTERED ON DOOR). RUN FLUE EXHAUST PIPE OUT THE SIDE OF THE REAR WALL (DO NOT PENETRATE ROOF). REFER TO SCHEDULE SHEET M201.
6. DUCTWORK SHALL BE GALVANIZED SHEET METAL FABRICATED AND INSTALLED IN ACCORDANCE WITH ASHRAE AND SMACNA RECOMMENDATIONS. ALL SQUARE ELBOWS SHALL INCLUDE SINGLE THICKNESS TURNING VANES. ALL INTERIOR EXPOSED SUPPLY DUCTWORK (WITH EXCEPTION FOR THE FIRST 10' INSIDE BUILDING) IN THE SALES AREA SHALL BE SPIRAL ROUND. DUCTWORK CONCEALED ABOVE CEILINGS OR IN THE SALES SUPPORT AREA MAY BE RECTANGULAR OR ROUND. FIBERGLASS DUCTWORK SHALL BE INSULATED AS FOLLOWS:
   INTERNAL INSULATION SHALL BE PROVIDED ON ALL RECTANGULAR RETURN AIR DUCTWORK AND OUTSIDE AIR DUCTWORK. INTERNAL INSULATION ON INTERIOR DUCTWORK(WHERE REQUIRED) SHALL BE MINIMUM 1" THICK 1-1/2 PCF FIBERGLASS, NEOPRENE COATED, AND ADHERED WITH AN APPROVED ADHESIVE WITH 100% COVERAGE AND STICK CLIPS ON 12" CENTERS. AFTER 10 FEET OF INSULATED SUPPLY AIR DUCTWORK INSIDE OF BUILDING, SUPPLY AIR DUCTWORK RUN IN EXPOSED CONDITIONED AREAS IS NOT REQUIRED TO BE INSULATED. SHEET METAL SIZES SHALL BE INCREASED ACCORDINGLY TO ALLOW FOR DUCT LINER. SUPPLY AIR DUCTWORK RUN ABOVE THE CEILING IN CONCEALED AREAS SHALL BE WRAPPED WITH 2" FIBERGLASS INSULATION. TYPICAL FOR ALL DUCTWORK. (TYPICAL)
7. PROVIDE CEILING MOUNTED EXHAUST FAN AS SCHEDULED. INTERLOCK FAN WITH RESTROOM LIGHT. BALANCE TO SCHEDULED CFM. ROUTE EXHAUST THRU SIDEWALL WITH WALL CAP. COORDINATE FINAL LOCATION OF FAN WITH RESTROOM LIGHTS.
8. PROVIDE DUCT MOUNTED SMOKE DETECTOR IN RETURN AIR DUCTWORK. MECHANICAL CONTRACTOR TO INSTALL AND ELECTRICAL TO PROVIDE AND WIRE.
9. SALES AREA LIGHTS ARE BEING INSTALLED AT 11'-6" TO TOP OF LIGHT FIXTURE. BOTTOM OF SUPPLY AND RETURN DUCT IN SALES AND RECEIVING AREAS SHALL BE INSTALLED MINIMUM 12'-0" AFF. IT IS THE RESPONSIBILITY OF THE GC AND MC TO COORDINATE DUCTWORK SIZES AND LAYOUT WITH METAL BUILDING MANUFACTURER PRIOR TO FABRICATION OF METAL BUILDING. GC AND MC SHALL ALSO FIELD VERIFY ACTUAL METAL BUILDING STRUCTURAL ON-SITE CONDITIONS PRIOR TO FABRICATION AND INSTALLATION OF ANY DUCTWORK AND NOTIFY ARCHITECT/ENGINEER IMMEDIATELY OF ANY CONFLICTS. (TYPICAL)
10. PROVIDE GRADE MOUNTED CONDENSING UNIT AS SCHEDULED. LOCATION SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY EXACT LOCATION PRIOR TO INSTALLATION. PROVIDE LONG LINE ACCESSORIES AS REQUIRED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. ROUTE REFRIGERANT PIPING TO ASSOCIATED INDOOR UNIT. MAINTAIN ALL CODE REQUIRED AND MANUFACTURER RECOMMENDED CLEARANCES. FIELD COORDINATE WITH STRUCTURAL. PROVIDE 4" CONCRETE PAD FOR GRADE SUPPORT
11. COOLER/FREEZER CONDENSING UNITS (BY OTHERS), TYP. CONTRACTOR TO VERIFY EXACT LOCATION PRIOR TO INSTALLATION.
12. UNDERCUT DOOR 1"
13. PROVIDE FIRE DAMPER TO PRESERVE FIRE RATING OF WALL.
14. COVER DUCT END WITH 1" SQUARE WIRE MESH
15. PROVIDE CEILING ELECTRIC DUCT HEATER IN VESTIBULE AS SCHEDULED
16. ROUTE REFRIGERATION PIPING BETWEEN CONDENSING AND FAN COIL UNITS PARALLEL WITH EXTERIOR WALLS.

GENERAL NOTES

A. ALL MECHANICAL WORK SHALL BE DONE PER THE STATE MECHANICAL CODE AND LOCAL MECHANICAL CODES HAVING JURISDICTION.

B. HOLD ALL DUCTWORK AS TIGHT AS POSSIBLE TO THE UNDERSIDE OF THE STRUCTURE.

C. COORDINATE ALL DUCT ROUTING WITH LIGHTING. NO DUCTWORK SHALL BE ROUTED OVER OR UNDER ANY LIGHT FIXTURES.

D. SPIN-IN FITTING WITH AIR SCOOPS SHALL BE PROVIDED FOR ALL ROUND BRANCH TAPS.

E. FLEX CONNECTIONS TO DIFFUSERS ARE TO BE EXTENDED WITH INSULATED FLEX WITH A MAXIMUM LENGTH OF 5'-0".

F. PROVIDE ALL CONTROL WIRING.

G. COORDINATE THE WIRING OF ALL MECHANICAL EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.

H. PROVIDE BALANCING DAMPERS WITH ACCESS AT ALL BRANCH DUCTS.

I. DOORS SHALL NOT BE UNDERCUT IN EXCESS OF THE CLEARANCE PERMITTED IN ACCORDANCE WITH NFPA-80.

J. PIPE AND DUCT PASSING THROUGH HORIZONTAL ASSEMBLIES SHALL BE PROTECTED WITH AN APPROVED NON-COMBUSTIBLE MATERIAL TO RESIST THE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION.

K. HEATING EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE UNDERWRITERS APPROVAL, MANUFACTURES RECOMMENDATIONS, GOOD ENGINEERING PRACTICE AND THE STATE MECHANICAL CODE AND THE INTERNATIONAL FUEL AND GAS CODE.

L. COORDINATE THE LOCATION OF AIR DEVICES WITH THE REFLECTED CEILING PLAN AND LIGHTING LAYOUT.

M. PROVIDE TURNING VANES FOR ALL TURNS GREATER THAN 45 DEGREES.

N. PROVIDE ANY REQUIRED CURB FABRICATIONS DUE TO STRUCTURAL REQUIREMENTS INCLUDING DUCTWORK ROUTING.

O. SQUARE SUPPLY AIR DEVICES SHALL BE CEILING MOUNTED TITUS TMS-AA WITH A WHITE FINISH, SIZED AS SHOWN ON PLANS. DUCT MOUNTED SUPPLY AIR DEVICES SHALL BE TITUS 300RL WITH A WHITE FINISH AND INTEGRAL DAMPER, SIZED AS SHOWN ON PLANS.

P. CEILING/WALL MOUNTED RETURN/EXHAUST AIR DEVICES SHALL BE TITUS 350FL WITH A WHITE FINISH, SIZED AS SHOWN ON PLANS.

Q. PACKAGED HVAC UNITS SHALL BE YORK OR CARRIER ONLY. FOR YORK NATIONAL ACCOUNTS, CONTACT WALT JACOBE @ 800-481-9738 OR EMAIL TO WALT.JACOBE@JCI.COM. FOR CARRIER NATIONAL ACCOUNTS (#NA7331) CONTACT TERRIE TRULL @ 877-501-4432 OR EMAIL TO TERRIE.TRULL@CARRIERUTC.COM WITH THE SQUARE FOOTAGE OF THE STORE, VOLTAGE, HEAT, AND ANY SITE SPECIFIC REQUIREMENT FOR THE FAMILY DOLLAR STORE. ALL MODEL NUMBER AND CONTACT INFORMATION IS SUBJECT TO CHANGE WITHOUT NOTICE.

FIELD VERIFY ALL CONDITIONS

DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.

THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.

BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES. THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

DATE: 04.14.2014
JOB No.: 15150
DRAWN: EP, ALG
CHECKED: MPE

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NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
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LINTON, EMMONS COUNTY, ND 58552

ROBERT A. LONNEMANN REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA
APR 14 2014

PRELIMINARY DESIGN: 03.27.2014
PERMIT ISSUE: 04.14.2014

MECHANICAL PLAN

SHEET NUMBER
M101

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

1 MECHANICAL PLAN
1/8" = 1'-0"

NORTH

HVAC ELECTRICAL COORDINATION SCHEDULE (HECS)

ABBREVIATIONS		CONTRACTOR TYPE		MOTOR CONTROL TYPE		CONTROL TYPE	
DC	LOCAL DISCONNECT	EC	ELECTRICAL CONTRACTOR	CS	COMBINATION STARTER	TC	TIMECLOCK
MC	MOTOR CONTROL (POWER)	EX	EXISTING	MCC	MOTOR CONTROL CENTER	CPT	CONTROL POWER TRANSFORMER
SD	DUCT SMOKE DETECTOR	FC	FIRE PROTECTION CONTRACTOR	MG	MAGNETIC STARTER OR CONTACT	BAS	BUILDING AUTOMATION SYSTEM
CN	CONTROLS	GC	GENERAL CONTRACTOR	MS	MANUAL STARTER	LOW	LOW VOLTAGE CONTROLS
TS	TOGGLE SWITCH	HC	HVAC CONTRACTOR	VFD	VARIABLE FREQUENCY DRIVE	LINE	LINE VOLTAGE CONTROLS
C/B	H.A.C.R. CIRCUIT BREAKER AT SOURCE PANELBOARD	MFR	MANUFACTURER	MSR	MANUAL STARTER W/CONTROL RELAY	RLINE	REVERSE ACTING LINE VOLTAGE STAT
FUSE	FUSE AT LOCAL DISCONNECT (VERIFY FIELD RATING)	PC	PLUMBING CONTRACTOR	OV	OVERCURRENT PROTECTION	MAN	MANUAL
FLA	OPERATING FULL LOAD AMPS	OR	OWNER OR OTHERS			FA	FIRE ALARM
MCA	MINIMUM CIRCUIT AMPACITY					CO	CARBON MONOXIDE SENSOR
CP	CORD AND PLUG CONNECTION					INT	INTEGRAL TO EQUIPMENT
						SCP	SMOKE CONTROL PANEL

MARK	DESCRIPTION	STATUS	VOLTS	PHASE	EMERG	BHP	HP	HTG KW	WATTS	FLA	MCA	OCP	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	SD QUAN
CU-1	CONDENSING UNIT		208	1							24.3	40	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	0
CU-2	CONDENSING UNIT		208	1							29	50	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	0
CU-3	CONDENSING UNIT		208	1							29	50	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	0
CU-4	CONDENSING UNIT		208	1							24.3	40	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	0
EF-1	EXHAUST FAN		120	1						1.14			EC	EC	EC	MG	MFR	MFR	MFR	MAN	EC	EC	EC	0
EF-2	EXHAUST FAN		120	1						1.14			EC	EC	EC	MG	MFR	MFR	MFR	MAN	EC	EC	EC	0
EUH-1	ELECTRIC UNIT HTR		208	1				1.125		5.8			EC	EC	EC	---	---	---	---	INT	HC	HC	HC	0
FC-1	FANCOIL UNIT		120	1			1			9.2	12.4	15	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	1
FC-2	FANCOIL UNIT		120	1			1			11.8	15.6	20	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	1
FC-3	FANCOIL UNIT		120	1			1			11.8	15.6	20	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	1
FC-4	FANCOIL UNIT		120	1			1			11.8	15.6	20	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	1
UH-1	UNIT HEATER		120	1				8.8		1.9		15	EC	EC	EC	MG	MFR	MFR	MFR	LINE	HC	EC	EC	0

HVAC VENTILATION SCHEDULE

ROOMNUM	ROOMNAME	SYSTEM	ZONE	AREA	CLNGHT	AIR CHGS	OA CHGS	PEOPLE DES	PEOPLE RED	OA PER	OA SQFT	REQ SUP	ACT SUP	REQ OA	ACT OA	ACT RET	ACT EXH	CRITICAL	PRESSURE	PCT OPERABLE
101A	SALES AREA A	1		1250	0	0	0	10	10	7.5	0.12	1553	1600	233	240	1600	0	0.1756	E	0
101B	SALES AREA B	2		2350	0	0	0	16	16	7.5	0.12	1775	1800	426	432	1800	0	0.2788	E	0
101C	SALES AREA C	3		2350	0	0	0	16	16	7.5	0.12	1775	1800	426	432	1800	0	0.2788	E	0
101D	SALES AREA D	4		600	0	0	0	6	6	7.5	0.12	720	750	108	112	750	0	0.1946	E	0
102	HALL	4		209	0	0	0	0	0	0	0.12	120	125	18	19	125	0	0.248	E	0
103	OFFICE	4		48	0	0	0	1	1	5	0.06	147	150	22	22	150	0	0.0666	E	0
104	RESTROOM MEN	4		70	0	0	0	0	0	0	0	60	60	9	9	0	80	0	N	0
105	RESTROOM WOMEN	4		54	0	0	0	0	0	0	0	60	60	9	9	0	80	0	N	0
106	SALES SUPPORT	4		533	0	0	0	0	0	0	0.06	287	300	43	45	300	0	0.1333	E	0

HVAC CONDENSING UNIT SCHEDULE

MARK	DESCRIPTION	AREA SERVED	STATUS	MFGR	MODEL	MIN EER	MIN COP	VOLTS	PHASE	WEIGHT	EMERG	CLG MBH	CLG SENS	ACCESS	FLA	MCA	OCP
CU-1	CONDENSING UNIT	FC-1		CARRIER	24ABB348			208	1	200		46	38			24.3	40
CU-2	CONDENSING UNIT	FC-2		CARRIER	24ABB360			208	1	200		60	46			29	50
CU-3	CONDENSING UNIT	FC-3		CARRIER	24ABB360			208	1	200		60	45			29	50
CU-4	CONDENSING UNIT	FC-4		CARRIER	24ABB348			208	1	200		41	34			24.3	40

HVAC SYSTEM EQUIPMENT SCHEDULE

MARK	DESCRIPTION	AREA SERVED	MFGR	MODEL	VOLTS	PHASE	CFM	ESP (IN)	OACFM	CLG MBH	CLG SENS	MAT CLG DB	MAT CLG WB	LAT DB	LAT WB	HTG MBH	GAS HTG IN	GAS HTG OUT	MIN GAS PRESSURE	MAX GAS PRESSURE	ACCESS	FLA	MCA	OCP
FC-1	FANCOIL UNIT	SALES AREA A	CARRIER	59TPA080-16	120	1	1600	0.5	240	46	38	78	66	55	54	72	80	78	4.5	13.6	1,4,6,10	9.2	12.4	15
FC-2	FANCOIL UNIT	SALES AREA B	CARRIER	59TPA100-20	120	1	1800	0.5	432	61	46	80	67	55	54	81	100	97	4.5	13.6	1,4,6,10	11.8	15.6	20
FC-3	FANCOIL UNIT	SALES AREA C	CARRIER	59TPA100-20	120	1	1800	0.5	432	60	45	80	67	55	54	80	100	97	4.5	13.6	1,4,6,10	11.8	15.6	20
FC-4	FANCOIL UNIT	SALES AREA D	CARRIER	59TPA100-20	120	1	1445	0.5	216	41	34	78	66	55	54	93	100	97	4.5	13.6	1,4,6,10	11.8	15.6	20

HVAC LOAD SCHEDULE

MARK	CROOF	CWALL	CPART	CGLASS	CSOLAR	CLIGHTS	CEQUIP	CPSENS	CSSENS	CFAN	COAS	CTSENS	CPLAT	COAL	CTLAT	CTOT	HROOF	HWALL	HPART	HGLASS	HSLAB	HSPACE	HOA	HTOT
FC-1	2.7	2.6	0.0	2.7	11.4	6.4	0.0	2.4	29.1	1.0	4.5	37.6	2.0	6.5	8.5	46.1	7.5	11.4	0.0	16.9	5.8	45.1	22.2	67.3
FC-2	5.2	1.1	0.0	0.0	0.0	12.0	0.0	3.9	22.7	1.2	8.2	45.6	3.2	11.7	15.0	60.4	14.1	4.8	0.0	0.0	3.6	25.3	40.1	65.4
FC-3	5.2	1.1	0.0	0.0	0.0	12.0	0.0	3.9	22.6	1.2	8.2	45.4	3.2	11.7	15.0	60.4	14.1	4.8	0.0	0.0	3.6	24.9	40.1	65.0
FC-4	3.3	6.6	0.0	0.0	0.0	7.7	0.6	1.7	20.8	0.9	4.1	34.0	1.4	5.8	7.3	41.3	9.1	29.4	0.0	0.0	11.0	52.2	20.0	72.2

HVAC MISCELLANEOUS EQUIPMENT SCHEDULE

MARK	DESCRIPTION	AREA SERVED	MFGR	MODEL	VOLTS	PHASE	WEIGHT	GAS HTG IN	GAS HTG OUT	HTG KW	FLA	MCA	OCP	DOMESTIC WATER
EUH-1	ELECTRIC UNIT HTR	VESTIBULE	INDEECO	CCL1500	208	1	20			1.1250	5.8			
UH-1	UNIT HEATER	SALES SUPPORT	REZNOR	UDAP30	120	1	54	30	25	8.8	1.9		15	

HVAC EXHAUST FAN SCHEDULE

MARK	DESCRIPTION	AREA SERVED	STATUS	MFGR	MODEL	VOLTS	PHASE	WEIGHT	EMERG	CFM	ESP (IN)	BHP	HP	WATTS	RPM	ACCESS	FLA	OCP
EF-1	EXHAUST FAN	RESTROOM MENS		GREENHECK	CSP-B110	120	1			80	0.2					1,14	1.14	
EF-2	EXHAUST FAN	RESTROOM WOMENS		GREENHECK	CSP-B110	120	1			80	0.2					1,14	1.14	

HVAC ACCESSORIES

ACCESSORIES:

1. MOTOR DAMPER
2. ECONOMIZER
3. ROOF CURB
4. SMOKE DETECTOR
5. INTAKE HOOD
6. VIBRATION ISOLATION
7. FLAT FILTER
8. FILTER/MIXING BOX
9. ACCESS DOOR
10. FLEX CONNECTIONS
11. MOUNTING COLLAR
12. HOT GAS BYPASS
13. FACE/BYPASS DAMPER
14. CONDENSATE PUMP
15. MOTOR GUARD
16. GREASE TRAP
17. DUCT FLANGES
18. BASE RAIL
19. HUMIDIFIER
20. CO2 SENSORS
21. ECON POWERED EXHAUST
22. ECON BAROMETRIC RELIEF
23. HEAT RECLAIM COIL

DATE: 04.14.2014
JOB No.: 15150
DRAWN: EP, ALG
CHECKED: MPE

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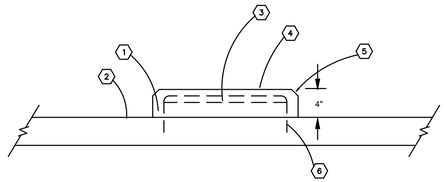
NEW CONSTRUCTION FOR:
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200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

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APR 1 4 2014

PRELIMINARY DESIGN: 03.27.2014
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MECHANICAL SCHEDULES

SHEET NUMBER
M201



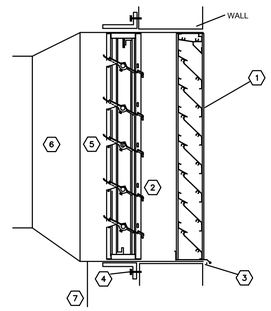
KEYED NOTES:

1. ROUGHEN FLOOR
2. FINISHED FLOOR
3. REBAR
4. CONCRETE BASE
5. 45° CHAMFER ALL FOUR SIDES
6. SECURE PAD TO FLOOR

GENERAL NOTES:

A. CONCRETE BASE SHALL BE 4" LARGER ALL AROUND THAN THE BASE OF THE EQUIPMENT BEING SUPPORTED.
B. MECHANICAL CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL CONCRETE PADS WITH GENERAL CONTRACTOR.

233113.00-01 4 INCH CONCRETE BASE
SCALE: NONE



KEYED NOTES:

1. EXTERIOR WALL MOUNTED LOUVER
2. MOTOR OPER. DAMPER
3. CAULKING
4. ANCHOR TO WALL AT 12" O/C
5. PROVIDE INSULATED SHEET METAL PLENUM, FULL SIZE OF LOUVER, (MIN 12" DEEP)
6. TRANSITION DUCT CONNECTION WITH ANGLED FITTING TO PLENUM FOR UNIFORM AIR FLOW
7. 3/4" PIPING TO FLOOR DRAIN

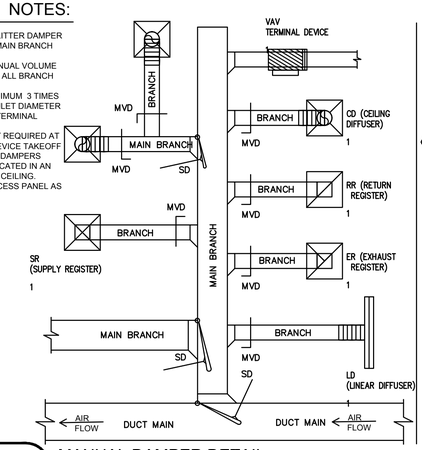
GENERAL NOTES:

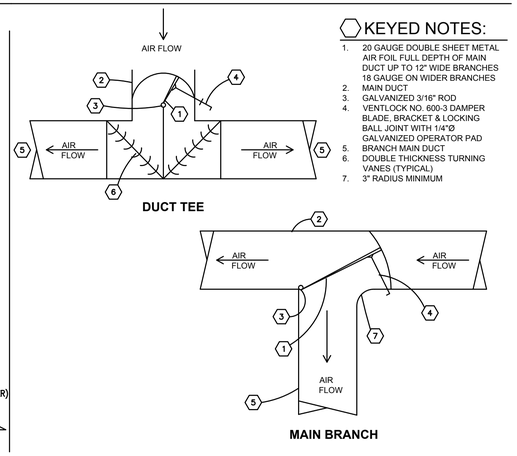
A. REFER TO ARCHITECTURAL DRAWINGS FOR SIZES AND LOCATIONS.

233713.00-11 DUCTED LOUVER
SCALE: NONE

GENERAL NOTES:

1. PROVIDE SPLITTER DAMPER (SD) AT ALL MAIN BRANCH TAKEOFFS
2. PROVIDE MANUAL VOLUME DAMPERS AT ALL BRANCH TAKEOFFS
3. PROVIDE MINIMUM 3 TIMES STRAIGHT INLET DIAMETER TO ALL VAV TERMINAL DEVICES
4. DAMPER NOT REQUIRED AT TERMINAL DEVICE TAKEOFF
5. ALL MANUAL DAMPERS SHALL BE LOCATED IN AN ACCESSIBLE CEILING. PROVIDE ACCESS PANEL AS REQUIRED





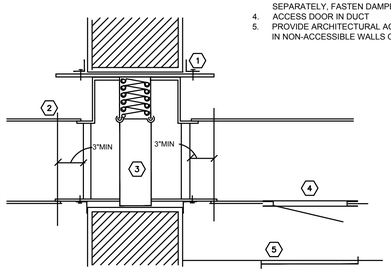
KEYED NOTES:

1. 20 GAUGE DOUBLE SHEET METAL AIR FOIL FULL DEPTH OF MAIN DUCT UP TO 12" WIDE BRANCHES 18 GAUGE ON WIDER BRANCHES
2. MAIN DUCT
3. GALVANIZED 3/16" ROD
4. VENTLOCK NO. 600-3 DAMPER BLADE, BRACKET & LOCKING BALL JOINT WITH 1/4"Ø GALVANIZED OPERATOR PAD
5. BRANCH MAIN DUCT
6. DOUBLE THICKNESS TURNING VANES (TYPICAL)
7. 3" RADIUS MINIMUM

233300.00-01 MANUAL DAMPER DETAIL
SCALE: NONE

GENERAL NOTES:

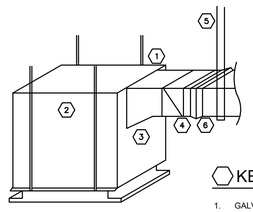
A. INSTALLATION TO CONFORM TO NFPA 90A AND MANUFACTURERS INSTRUCTIONS
B. FLOOR INSTALLATION IS SIMILAR TO THAT SHOWN
C. FIRE DAMPERS TO BEAR THE UL LABEL



KEYED NOTES:

1. 1.5" x 1.5" ANGLE (18 GA.) FASTEN TO ALL FOUR SIDES OF STEEL SLEEVE (6" O.C.). DO NOT FASTEN TO WALLS
2. "SLIP BREAK AWAY" CONNECTIONS. DO NOT USE "C" DRIVES, SCREWS OR RIVETS
3. FIRE DAMPER WITH 14 GA. WALL SLEEVE INTEGRAL WITH DAMPER OR FURNISHED SEPARATELY, FASTEN DAMPER TO SLEEVE
4. ACCESS DOOR IN DUCT
5. PROVIDE ARCHITECTURAL ACCESS PANEL IN NON-ACCESSIBLE WALLS OR CEILINGS

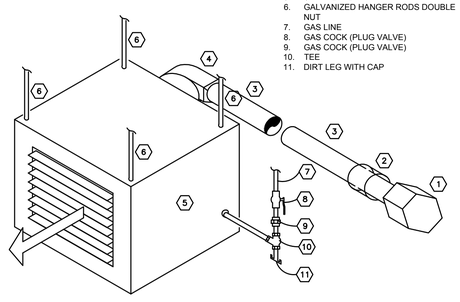
233313.00-13 FIRE DAMPER (TYPE B)
SCALE: NONE



KEYED NOTES:

1. GALVANIZED ALL THREAD ROD SUSPEND FROM BUILDING STRUCTURE AND FROM FAN MOUNTING FLANGES. USE CHANNELS UNDER FAN AS AN ALTERNATIVE SUPPORT
2. CEILING FAN
3. OUTLET FLANGE
4. BACKDRAFT OR MOTOR OPERATED DAMPER (SEE SCHEDULE SPEC'S)
5. METAL HANGER, SECURE TO STRUCTURE AND TO DUCTWORK
6. FLEXIBLE CONNECTION

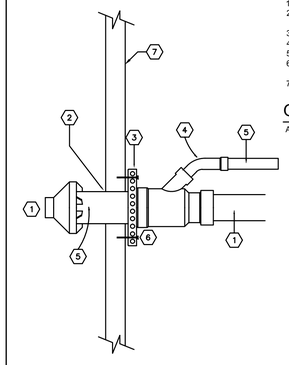
233423.00-02 CABINET EXHAUST FAN
SCALE: NONE



KEYED NOTES:

1. SIDEWALL VENT CAP
2. WALL THIMBLE
3. DOUBLE WALL VENT PIPE
4. FLUE VENT FAN
5. UNIT HEATER
6. GALVANIZED HANGER RODS DOUBLE NUT
7. GAS LINE
8. GAS COCK (PLUG VALVE)
9. GAS COCK (PLUG VALVE)
10. TEE
11. DIRT LEG WITH CAP

235513.00-01 GAS FIRED UNIT HEATER
SCALE: NONE



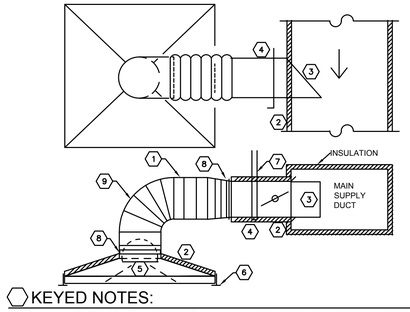
KEYED NOTES:

1. VENT OUTLET
2. SEAL AROUND PIPE PENETRATION THRU WALL
3. SUPPORT (FIELD SUPPLIED)
4. ELBOW (FIELD SUPPLIED)
5. COMBUSTION AIR INLET
6. CONCENTRIC VENT TERMINATION FURNISHED BY HEATER MANUFACTURER
7. EXTERIOR WALL

GENERAL NOTES:

A. SUPPORT MUST BE FIELD INSTALLED TO SECURE TERMINATION KIT TO STRUCTURE

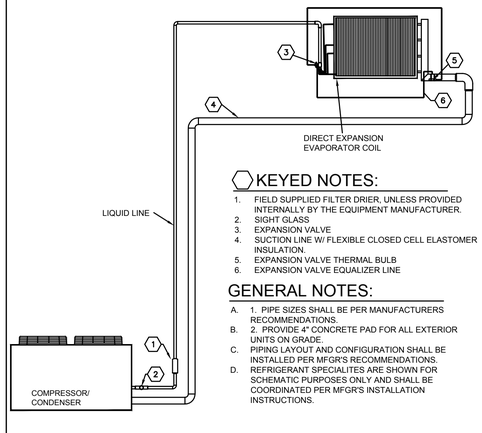
235123.00-03 CONCENTRIC VENT WALL TERMINATION
SCALE: NONE



KEYED NOTES:

1. MAXIMUM LENGTH OF INSUL. FLEX DUCT EQUALS 5 FEET. FLEX NOT PERMITTED IN INACCESSIBLE CEILINGS
2. INSULATED DUCT, COLLAR AND DIFFUSER BY HVAC CONTRACTOR
3. SCOOP
4. SPIN IN FITTING WITH MANUAL VOLUME DAMPER
5. INTERNAL BUTTERFLY DAMPER FOR DRYWALL APPLICATIONS ONLY. (PROVIDE KEY FOR ADJUSTMENT)
6. SECURE TO CEILING PER MANUFACTURER'S RECOMMENDATIONS AND PER CEILING FINISH. PROVIDE GRID CLIPS PER MFG'R REQUIREMENTS. PROVIDE FRAMING FOR DRYWALL INSTALLATION.
7. HANGER, SECURE TO STRUCTURE AND DUCTWORK
8. PEEL BACK INSULATION AND PROVIDE STRAPPING AND SHEET METAL SCREWS AT FLEX CONNECTION TO DUCT. THEN PROVIDE STRAPPING AROUND INSULATION.
9. SUPPORT FLEX TO PREVENT COLLAPSING

233713.00-04 DIFFUSER INSTALLATION (TYPICAL)
SCALE: NONE



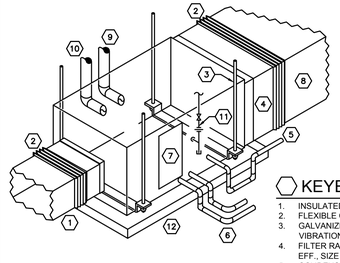
KEYED NOTES:

1. FIELD SUPPLIED FILTER DRIER, UNLESS PROVIDED INTERNALLY BY THE EQUIPMENT MANUFACTURER.
2. SIGHT GLASS
3. EXPANSION VALVE
4. SUCTION LINE W/ FLEXIBLE CLOSED CELL ELASTOMER INSULATION.
5. EXPANSION VALVE THERMAL BULB
6. EXPANSION VALVE EQUALIZER LINE

GENERAL NOTES:

A. 1. PIPE SIZES SHALL BE PER MANUFACTURERS RECOMMENDATIONS.
B. 2. PROVIDE 4" CONCRETE PAD FOR ALL EXTERIOR UNITS ON GRADE.
C. PIPING LAYOUT AND CONFIGURATION SHALL BE INSTALLED PER MFGR'S RECOMMENDATIONS.
D. REFRIGERANT SPECIALITES ARE SHOWN FOR SCHEMATIC PURPOSES ONLY AND SHALL BE COORDINATED PER MFGR'S INSTALLATION INSTRUCTIONS.

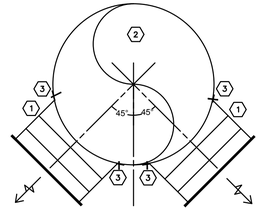
232313.00-05 REFRIGERANT PIPING
SCALE: NONE



KEYED NOTES:

1. INSULATED SUPPLY DUCT
2. FLEXIBLE CONNECTION
3. GALVANIZED ALL-THREAD ROD W/ VIBRATION ISOLATOR (TYP.)
4. FILTER RACK AND ACCESS DOOR (2" 30% EFF., SIZE AT 300 FPM)
5. CONDENSATE LINE WITH TRAP SEE CONDENSATE DRAIN TRAP DETAIL
6. REFRIGERANT LINES, SUCTION LINE INSULATED WITH 3/4" ARMAFLEX
7. SERVICE ACCESS PANEL
8. RETURN DUCT 1/2" ACOUSTIC LINING (MIN OF 10')
9. VENT PER MANUFACTURER'S RECOMMENDATIONS.
10. COMBUSTION AIR INTAKE
11. GAS TRAIN, PLUG VALVE, UNION AND DIRT LEG
12. SECONDARY DRAIN PAN W/ HIGH WATER ALARM. WIRE TO BREAK 24 VOLT CONTROL POWER IN THE THE CASE OF A HIGH WATER EVENT.

235416.00-03 GAS FIRED FURNACE UNIT (DX)
SCALE: NONE



KEYED NOTES:

1. REGISTER WITH OPPOSED BLADE DAMPER (TO BE SIZED AS SHOWN ON PLAN)
2. SUPPLY DUCT
3. SEAL JOINTS BETWEEN COLLAR AND MAIN DUCT

233713.00-02 ANGLED 45 DEG. REGISTER INSTALLATION
SCALE: NONE

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

1 MECHANICAL DETAILS
NTS

NORTH

DATE: 04.14.2014
JOB No.: 15150
DRAWN: EP, ALG
CHECKED: MPE

Castles Design Group
A Professional Architectural Corporation
3801 Kirby Drive, Suite 600
Houston, Texas 77098
tel: 713 664 7974
fax: 713 664 9756

KOHRS LONNEMANN HEIL ENGINEERS, PSC
MECHANICAL/ELECTRICAL ENGINEERS
WWW.KLHENGRS.COM

DELTA T DEVELOPMENT, LLC
2425 LUMBLEY ROAD
RAINBOW CITY, AL 35906
PH: 256.278.4377

NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

ROBERT A. LONNEMANN REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA
APR 14 2014

PRELIMINARY DESIGN: 03.27.2014
PERMIT ISSUE: 04.14.2014

MECHANICAL DETAILS

SHEET NUMBER
M301

HVAC SPECIFICATION

23 05 01.00 – Common Requirements for HVAC

General
General Provisions of the Contract including General and Supplementary Conditions and General Requirements apply to work of this section.

Scope
The base bid includes furnishing all materials, labor, tools, and equipment and the performance of all work required to install a complete heating and air conditioning system as outlined herein.

Guarantee
The contractor shall provide a guarantee in written form stating that all work under this section shall be free of defective work, materials, or parts for a period of one year from the date of owner's final acceptance and shall repair, revise or replace at no cost to the owner any such defects occurring within the guarantee period. Contractor shall also state in written form that any items or accessories arising during the guarantee period will be attended to in a timely manner and will in no case exceed four (4) working days from date of notification by owner.

Quality Assurance
Provide a complete installation in conformance with the following standards.
AGA: American Gas Association
ASHRAE: American Society of Heating, Refrigerating and Air Conditioning Engineers
NFPA: National Fire Protection Association
SMACNA: Sheet Metal and Air Conditioning Contractors National Association.
Statewide Building Code
IMC: International Mechanical Code

Permits, Fees, Inspections, Laws and Regulations
Permits and fees of every nature required in connection with this work shall be obtained and paid for by this contractor who shall also pay for all the installation fees and similar charges. Laws and regulations, which bear upon or affect the various branches of this work shall be complied with by this contractor and are hereby made a part of this contract. All work, which such laws require to be inspected, shall be submitted to the proper public official for inspection and a certificate of final approval must be furnished.

Work in Existing Spaces
General: Care shall be taken when working in existing spaces so as not to damage existing walls and ceilings where work is being performed.
Ceilings: Where work is being performed above ceilings, and the architectural drawings do not indicate ceiling modifications by the general contractor, it shall be the responsibility of this contractor to remove and replace existing ceilings where work is being performed. In those instances, all repair and installation of new grid, ceiling panels, etc shall be the responsibility of this contractor. Match existing finishes.
Walls & Floors: It shall be the responsibility of this contractor to patch existing walls and floors and match existing finishes where work is being removed or installed and patching is being performed, unless noted otherwise on the architectural drawings.

Tests and Adjustments
No ducts, piping, fixtures or equipment shall be concealed or covered until they have been inspected and approved by the Architect and the inspector who shall be notified by the contractor when the work is ready for inspection.
Work shall be completely installed, tested and leak tight before inspection is required. All tests shall be repeated to the satisfaction of those making the inspection.

23 05 03.00 – submittals for HVAC

General
Where submittals are required by the Contract Documents, they shall be prepared and supplied in accordance with the Contract Documents. In addition to Division 01, the Contractor is advised to review and comply with the requirements articulated within each Division and within each section of that Division. Some Divisions may include a division-specific Submittal Requirements for . . section. Where this section exists, it articulates additional requirements that apply to the work of that Division.
The following requirements help to identify, track and keep the project organized for all parties involved. They are necessary to ensure a timely turnaround and an appropriate technical review. Submittals that do not conform to the administrative requirements are rejected and returned, without technical review.

Requirements
Supply submittals for each section: Submittals shall be supplied on a section-by-section and type-by-type basis. For example, independent product data submittals shall be furnished for each section that requires product data submittals. Independent shop drawing submittals shall be furnished for each section that requires shop drawings. Refer to the specifications for identification of which submittals are required for the project. Separate PDF file packages shall be supplied for each section, for each submittal type, where electronic submittals are required. Each PDF shall represent a single standalone submittal.
Separately bound and identified submittals shall be provided where hardcopies are required.
Include a transmittal: Transmittals shall enumerate each submittal for each section of each type and iteration.
Include cover sheet / title page: The cover sheet shall include the information identified in the contract documents. It shall be included as the first page of each electronic and/or hardcopy document-based submittal. An editable and printable PDF form created with editable fields and specification compliant appearance is available from KLH upon request. It is also downloadable from the KLH website at www.klhengrs.com.
Include an Index: The index shall enumerate the contents of the submittal.
Include checklists: Where checklists are included with the specifications, complete and include them within the appropriate submittal. Supply complete submittals: Complete submittals of each type are required. Partial submittals will be rejected.Where a section requires a product data submittal, all product data for that section shall be supplied together, at one time, as one complete submittal. Do not send half the product data as one submittal and the other half as a separate one. When resubmittal is required (e.g. Revise and Resubmit) the revised submittal shall be more complete, more accurate and more contract-compliant than its rejected predecessor. The submittal number (for each section and type) shall increment for each subsequent submittal (00 – Original submission, 01 – First Resubmission, 02 – Second Resubmission, etc.). Resubmittals shall include a copy of the reviewers comments supplied with the prior submittal rejection and shall be annotated with a description of the specific action taken to comply with the reviewer's comments. The absence of this on resubmittal is cause for rejection.
Name electronic files to match the submittal ID and cover sheet: The electronic file name of submittals shall match the submittal ID included on the submittals cover page. For example:The original/first product data submittal for Section 234116 would be labeled as 234116.00-PD-00; the first resubmittal of the same shall be labeled 234116.00-PD-01. The original/first shop drawings submittal file for the same section would be labeled 234116.00-SD-00; the first resubmittal of same shall be labeled 234116.00-SD-01.

Use of Electronic Drawings from the Owner's Design Team
Plan drawings for the Project were created with AutoCAD.
If expressly permitted by the Owner and the terms of the Contract, editable electronic versions of standard-scale, AutoCAD-based plan drawings may be made available for the creation of shop and as-built drawings.
Due to the proprietary nature of internal design systems, editable native-software versions of some drawings, including but not limited to system diagrams and details will not be made available in an editable form. In these cases, electronic versions of the drawings may be made available only in PDF, JPG or similar non-editable electronic form, at the sole discretion of the Design Professional.
The Request Drawings form can be accessed, filled out and submitted at the following internet address (scroll down to bottom of home page): http://www.klhengrs.com.

23 05 29.00 – Hangers and Supports for HVAC Piping and Equipment

General
Support all piping, ductwork and equipment by hangers or brackets. Furnish structural steel members where required to support piping and equipment. No portion of piping or valves shall be supported by equipment.
Ductwork – Support by means of hangers as follows:

Duct Width	Hanger Size and Type	Max. Spacing
30 or less	(#16 gage)	8
31 to 60 (#14 gage)		8
61 to 90 3/8" dia. Rod		8

A pair of hangers shall be located at every transverse joint and elsewhere according to the table.

23 05 93.00 – Testing, Adjusting and Balancing for HVAC

General
Test, adjust, and balance the following mechanical systems:
Supply air systems, all pressure ranges including variable volume and double duct systems:
Return air systems.
Exhaust air systems.
Verify temperature control system operation.
Test systems for proper sound and vibration levels.

Quality Assurance
Codes and Standards:
AABC: "National Standards for Total System Balance".
ASHRAE: ASHRAE Handbook, 2011 Applications, Chapter 38, Testing, Adjusting, and Balancing.

Submittals
Certified Reports: Submit testing, adjusting, and balancing reports bearing the seal and signature of the Test and Balance Engineer. The reports shall be certified proof that the systems have been tested, adjusted, and balanced in accordance with the referenced standards; are an accurate representation of how the systems have been installed; are a true representation of how the systems are operating at the completion of the testing, adjusting, and balancing procedures; and are an accurate record of all final quantities measured, to establish normal operating values of the systems. Follow the procedures and format specified below:
Final Report: Upon verification and approval prepare final reports, type written, and organized and formatted as specified below. Submit 2 complete sets of final report to the owner / landlord.
Report Format: Report forms shall be those standard forms prepared by the referenced standard for each respective item and system to be tested, adjusted, and balanced.

Qualifications
The contractor shall procure the services of an Independent Balance and Testing Agency, approved by the Engineer, and a member of Associated Air Balance Council (AABC) or NEBB, which specializes in the balancing and testing of heating, ventilating and air conditioning systems, to balance, adjust and test all air and water systems and equipment as herein specified. All work by this agency shall be done under direct supervision of a qualified testing and ventilating Engineer employed by this agency. All instruments used by this agency shall be accurately calibrated and maintained in good working order.

Sequencing and Scheduling
Test, adjust, and balance the air systems before hydronic, steam, and refrigerant systems.
Test, adjust and balance air conditioning systems during summer season and heating systems during winter season, including at least a period of operation at outside conditions within 5 deg F wet bulb temperature of maximum summer design conditions, and within 10 deg F dry bulb temperature of minimum winter design condition. Take final temperature readings during seasonal operation.
Check all filters for cleanliness, provide new as required. Check dampers (volume and fire) for correct and locked position, and temperature control for completeness of installation before starting fans. Place outlet dampers in full open position. Lubricate all motors and bearings. Check fan belt tension. Check fan rotation.
Air balance and testing shall not begin until the system has been completed and is in full working order. The Contractor shall put all heating, ventilating and air conditioning systems and equipment into full operation and shall continue the operation of same during each working day of testing and balancing. The contractor shall submit within 30 days after receipt of contract, 8 copies of submittal data for the testing and balancing of the air conditioning, heating, and ventilating systems. The Air Balance and Testing Agency shall provide proof of having successfully completed at least five projects of similar size and scope.
The air balancing contractor shall include the additional cost to change every fan factory installed sheave, pulley and/or belt of in order to obtain the design air flows.

Performing Testing, Adjusting and Balancing
Perform testing and balancing procedures on each system identified, in accordance with the detailed procedures outlined in the referenced standards.
Cut insulation, ductwork, and piping for installation of test probes to the minimum extent necessary to allow adequate performance of procedures.
Patch insulation, ductwork, and housings, using materials identical to those removed.
Seal ducts and piping, and test for and repair leaks.
Seal insulation to re-establish integrity of the vapor barrier.
Mark equipment settings, including damper control positions; valve indicators, fan speed control levers, and similar controls and devices, to show final settings. Mark with paint or other suitable, permanent identification materials.
Retest, adjust, and balance systems subsequent to significant system modifications, and resubmit test results.

23 07 13.00 – Duct Insulation
Provide insulation on all concealed supply, return and outside air ductwork. All liners, insulation and adhesives shall have a flame spread index not more than 25 and a smoke developed index of not more than 50.
Rigid Fiberglass Ductwork Insulation: Glass fibers bonded with a thermosetting resin. Comply with ASTM C 612, Type IB, without facing and with vapor barrier all-service jacket manufactured from kraft paper, reinforcing scrim, aluminum foil, and vinyl film. Insulation shall have a minimum R value as required by Code.
Flexible Fiberglass Ductwork Insulation: Glass fibers bonded with a thermosetting resin. Comply with ASTM C 553, Type II, without facing and with vapor barrier all-service jacket manufactured from kraft paper, reinforcing scrim, aluminum foil, and vinyl film. Insulation shall have a minimum R value as required by Code.
Vapor Barrier Material for Ductwork: Paper-backed aluminum-foil, except as otherwise indicated; strength and permeability rating equivalent to factory-applied vapor barriers on adjoining ductwork insulation, where available; with following additional construction characteristics:
High Puncture Resistance: Low vapor transmission (for ducts in exposed areas: Mech. Rooms, etc.)
Moderate Puncture Resistance: Medium vapor transmission (for ducts in concealed areas).

23 07 19.00 – HVAC Piping Insulation
Provide 3/4" armaflex on refrigerant piping.
Provide 1 fiberglass insulation on concealed condensate drain piping.
Insulation shall have a minimum R value as required by Code.
All insulation and adhesives shall have a flame spread index not more than 25 and a smoke developed index of not more than 50.

23 09 93.00 – Sequence of Operations for HVAC Controls

Split System Furnace ACU (Gas-Fired/DX, with O.A.)
1. Startup
The unit shall operate on a 7 day/night programmable thermostat.
2. Supply Fan Control
The supply fan speed shall be constant and set to the required CFM.
3. Space Temperature Control
Provide local wall mounted room temperature thermostat with digital display of room temperature and setpoint (+/- deg. F. adjustable) and override feature.
4. Minimum Outside Air Control
During occupied mode the minimum outside air damper shall be open. Provide motorized outdoor air damper.
5. Cooling Control
Cooling shall be controlled to maintain space temperature setpoint. On a call for cooling the heating shall be off. On a further call for cooling the mechanical cooling shall be staged on.
6. Heating Control
Heating shall be controlled to maintain space temperature setpoint. On a call for heating, the mechanical cooling shall be off. On a further call for heating the gas heating shall be staged on.
7. Smoke Detector
When the smoke detector is alarmed, the system shall be alarmed and the air handler shall fail safe with manual reset. Electrical contractor shall furnish, HVAC Contractor shall mount & Electrical contractor shall wire a UL listed photoelectric smoke detector per local code authority having jurisdiction.
8. Unoccupied Mode
During the unoccupied mode of operation, the ACU shall go into night setback mode.
9. Night Setback/Shutdown
At night setback/shutdown the ACU shall go to fail safe position. Fail safe position is defined by the following: The supply fan is off, the outdoor air intake damper is closed, the heating is off and the mechanical cooling is off. The supply fan shall cycle in conjunction with either the heating or cooling system to maintain a minimum/maximum space temperature depending on the season.

Toilet Exhaust Fans (Manual)
Exhaust fans shall be controlled by local manual switch furnished, installed and wired by electrical contractor. When activated, exhaust fan motor damper shall open and fan shall start.
(Indicated by EC on HECS schedule)

Electric Unit Heater
Provide a line voltage wall mounted room thermostat with adjustable setpoint. On a call for heating, fan shall start and coil shall activate to maintain room temperature setpoint.
Provide relays and controls to automatically disconnect power to the electric heaters when the Cooling system is in operation.

Controls
Electrical contractor will provide power wiring. HVAC contractor shall provide all the low voltage wiring of HVAC units and controls, thermostat and controllers. Thermostat shall be by the manufacturer of the HVAC unit (heat/cool/auto/off) with night setback. Provide plastic protective cover for all thermostats.

Low Voltage Thermostats
Low voltage thermostats shall be furnished, installed and wired by the HVAC contractor. The electrical contractor shall provide 4 square x 1– 1/2 deep wall outlet boxes (with single-gang rings) for all thermostats/sensors. The electrical contractor shall provide one 3/4" empty conduit from each thermostat/sensor location, turned out above accessible ceilings (in joist space or against overhead slab/deck). The HVAC/Temperature Control Contractor shall provide all other necessary conduit, raceway and wiring related work. Conduit shall be installed in ceiling cavity and shall be provided with sweep bends, bushings and dragline.
The HVAC/Temperature Control Contractor shall coordinate with the General Contractor to ensure thermal envelope is maintained at these locations.

General Control Wiring Requirements and Installation Methods
Except where specifically indicated otherwise, the HVAC/Temperature Control Contractor shall provide all electrical work as required for all temperature control related wiring (i.e. conduit, raceway, outlet boxes, junction boxes, wiring, etc.) in accordance with Electrical Specifications requirements. All conduit shall be 3/4 minimum.

Coordinate all thermostat/sensor locations in field (case by case) with Architect, Owner and Electrical Contractor to ensure that they are placed in locations that will not interfere with furniture, equipment, artwork, wall-hung specialties, room finishes, etc. All thermostat/sensor wall locations indicated on HVAC drawings are schematic locations. Coordinate exact location in field to avoid conflicts.
All electrical work as described in this specification shall be per the latest edition of the National Electrical Code (NEC) and per applicable state and local codes.
Where "free-air" installation methods are used above the ceilings, in bridle rings or in cable trays) are permitted under Electrical Specifications above ceilings, provide plenum-rated cables wherever plenum ceilings (if any) exist and install as defined under Electrical Specifications. Install low voltage cables located in concrete slabs and masonry walls, in inaccessible locations, or exposed in occupied areas, in electrical conduit regardless of what wiring methods are permitted under Electrical Specifications.
Where cable trays or bridle rings are provided for the installation of low voltage cables, these raceways may be utilized for control wiring by this contractor (provide special color coded jackets, label cable jackets per Electrical Specifications and provide control wiring cables). Provide conduit drops from cable tray/bridle ring paths to wall outlet boxes and equipment unless directed otherwise under Electrical Specifications.
Regardless of permitted methods in Electrical Specifications, all cables/wiring installed concealed by gypsum board, masonry or other inaccessible materials in walls or above ceilings shall be installed in conduit, 3/4" minimum.
All conduit, bridle rings, raceway, outlet boxes, etc. necessary for complete operational installation of control wiring shall be provided (furnished and installed) by the temperature control contractor in strict compliance with Electrical Specifications documents. Coordinate all work with all other applicable trades including the electrical contractor.
Provide all required conduit work to and between equipment in a manner compliant with that described above (i.e. between VAV boxes, to boilers, starters, condensing units, etc. as applicable).
Install control wiring without splices between terminal points, color-coded. Install in neat workmanlike manner, securely fastened. Install in accordance with National Electrical Code and per Electrical Specifications.
Install circuits over 25 volt with color-coded No. 12 wire in electrical metallic tubing, per Electrical Specifications. Install circuits under 25 volt with color-coded No. 18 wire with 0.031" high temperature (105 degs. F) plastic insulation on each conductor and plastic sheath over all. Install electronic circuits with color-coded No. 22 wire with 0.023" polyethylene insulation on each conductor with plastic-jacketed copper shield over all.

Smoke Detector
All duct smoke detectors will be furnished by electrical contractor, installed by the HVAC contractor, and wired by the electrical contractor per local codes. HVAC contractor will interlock RTU fan with smoke detector.

Motor Operated Dampers
All fresh air intakes and exhaust louvers shall have motor operated dampers. Dampers shall be low leak with blade and edge seals. Motor operated dampers shall provided, installed and wired by the mechanical contractor unless otherwise noted. Provide all necessary transformers, contactors, controls and wiring for interlocking equipment to motor operated dampers.

23 21 13.23 – Aboveground Gas Piping

Gas Piping
All gas piping and connections by the plumbing contractor unless otherwise noted.

23 31 13.00 – Metal Ducts

Ductwork Materials
Exposed Ductwork Materials: Where ductwork is indicated to be exposed to view in occupied spaces, provide materials which are free from visible imperfections including pitting, seam marks, roller marks, stains and discolorations, and other imperfections, including those which would impair painting. Exposed ductwork which is to be painted shall have paint grip applied.
Sheet Metal: Except as otherwise indicated, fabricate ductwork from galvanized sheet steel, lock forming quality; with G 90 zinc coating and mill phosphatized for exposed locations. Minimum gauge shall be 24.

Miscellaneous Ductwork Materials
Volume Dampers: Provide volume dampers in all branch ducts or as required for balancing to required air flows.
Fittings: Provide radius type fittings fabricated of multiple sections with maximum 15 deg. change of direction per section. Unless specifically detailed otherwise, use 45 deg. laterals and 45 deg. elbows for branch takeoff connections. Where 90 deg. branches are indicated, provide conical type tees.
Duct Sealant: Non-hardening, non-migrating mastic or liquid elastic sealant, type applicable for fabrication/installation detail, as compounded and recommended by manufacturer specifically for sealing joints and seams in ductwork.
Duct Cement: Non-hardening migrating mastic or liquid evaporative cement, type applicable for fabrication/installation detail, as compounded and recommended by manufacturer specifically for cementing fitting components, or longitudinal seams in ductwork.
Ductwork Support Materials: Except as otherwise indicated, provide hot-dipped galvanized steel fasteners, anchors, rods, straps, trim and angles for support of ductwork.

Flexible Ducts
Either spiral-wound spring steel with flameproof vinyl sheathing, or corrugated aluminum. Unless specifically mentioned, the maximum length of flex duct on the supply equals 5 feet. Flex is not allowed for return, relief or exhaust applications. The flexible duct indicated for use in the H.V.A.C. system shall conform to the requirements of UL 181 for Class 0 or Class 1 flexible air ducts and shall be so identified.
Where installed in unconditioned spaces other than return air plenums, provide 1" thick 1–1/2 lb. continuous flexible fiberglass sheath with vinyl vapor barrier jacket.
Installation is not permitted above drywall ceilings and inaccessible ceilings.

Fabrication
Shop fabricate ductwork in 4, 8, 10 or 12–ft lengths, unless otherwise indicated or required to complete runs. All ductwork shall be Pittsburgh Construction with a minimum of thickness of 24 gauge. In addition, ductwork used in systems over 3" W.G. shall have cold sealant applied. Shop fabricate ductwork of gauges and reinforcement complying with SMACNA "HVAC Duct Construction Standards".

Lined Duct
Fabricate ductwork with duct liner in each section of duct where indicated. Laminate liner to internal surfaces of duct in accordance with instructions by manufacturers of lining and adhesive, and fasten with mechanical fasteners. Duct liner to be 3–lb density for acoustic requirements 1" thick or as noted. Size of ductwork shown on the drawings is free net area, outside dimension of ducts will need to be increased if lined duct is used.
Duct Liner: Fibrous glass of thickness indicated. 3–lb density. All liners, insulation and adhesives shall have a flame spread index not more than 25 and a smoke developed index of not more than 50.

Duct Liner Adhesive
Duct Liner Fasteners: Comply with SMACNA HVAC Duct Construction Standards.

Installation of Metal Ductwork
General: Assemble and install ductwork in accordance with recognized industry practices which will achieve air-tight (5% leakage for systems rated 3" and under; 1% for systems rated over 3") and noiseless (no objectionable noise) systems, capable of performing each indicated service. Install each run with minimum number of joints. Align ductwork accurately at connections, within 1/8" misalignment tolerance and with internal surfaces smooth. Support ducts rigidly with suitable ties, braces, hangers and anchors of type which will hold ducts true–to–shape and to prevent buckling. Support vertical ducts at every floor.
Sealing: Seal all longitudinal seams, 5's and drives and all joints with mastic or cement. Install according to SMACNA standards.
Balancing Dampers: The sheet metal contractor shall be fully responsible for installing balancing dampers in the ductwork, whether shown on the drawing or not) in order to arrive at the intended air flow. The balancing sub–contractor shall provide direction and assistance in determining locations where dampers are required. Additional dampers, if required shall be installed at no additional cost to the owner.
Wall Penetrations: Seal and pack around all ducts and piping sleeves which pass through walls that extend to bottom side of structure and rated walls.
Field Fabrication: Complete fabrication of work at project as necessary to match shop–fabricated work and accommodate installation requirements.
Routing: Locate ductwork runs, except as otherwise indicated, vertically and horizontally and avoid diagonal runs wherever possible. Run ductwork in shortest route which does not obstruct useable space or block access for servicing building and its equipment. Hold ducts close to walls, overhead construction, columns, and other structural and permanent enclosure elements of building. Limit clearance to 1/2" where furring is shown for enclosure or concealment of ducts, but allow for insulation thickness, if any. Where possible, locate insulated ductwork for 1" clearance outside of insulation. Wherever possible in finished and occupied spaces, conceal ductwork from view, by locating in mechanical shafts, hollow wall construction or above suspended ceilings. Do not encase horizontal runs in solid partitions, except as specifically shown.
Coordinate layout with suspended ceiling and lighting layouts and similar finished work.
Electrical Equipment Spaces: Do not route ductwork through transformer vaults and their electrical equipment spaces and enclosures.
Penetrations: Where ducts pass through interior partitions and exterior walls, and are exposed to view, conceal space between construction opening and duct or duct insulation with sheet metal flanges of same gage as duct. Overlap opening on 4 sides by at least 1–1/2". Fasten to duct and substrate.
Where duct pass through fire–rated walls, partitions and floors, provide fire dampers and firestopping between duct and substrate, in accordance with requirements of Division–7 Section "Firestopping".
Coordination: Coordinate duct installations with installation of accessories, dampers, coil frames, equipment, controls and other associated work of ductwork system.

Installation of Duct Liner
General: Install duct liner in accordance with SMACNA HVAC Duct Construction Standards. Size of ductwork shown on the drawings is free net area, outside dimension of ducts will need to be increased if lined duct is used.
Store internally lined ductwork up off of the floor. Protect internally lined ductwork from water and dust.
*Butter the leading edge of all internal duct lining with the manufacturer's recommended adhesive.
Inspect and repair all damaged lining prior to installation of ductwork.

Installation of Flexible Ducts
Maximum Length: For any duct run using flexible ductwork, do not exceed 5' – 0" extended length. Installation shall have smooth full radius turns down to diffuser.
Installation not permitted above inaccessible ceilings.

23 34 23.00 – HVAC Power Ventilators

Ceiling Ventilators
Centrifugal Ceiling Exhausters: Provide centrifugal ceiling exhausters, designed for ceiling or wall mounting, of type, size and capacity as scheduled.
Provide AMCA Certified Ratings Seal.
Type: Provide galvanized steel housing lined with acoustical insulation, adaptable for ceiling or wall installation. Provide centrifugal fan wheels mounted on motor shaft with fan shrouds, all removable for service. Provide integral backdraft damper fan discharge.
Grille: Provide steel louvered grille with flange on intake with thumbscrew attachment to fan housing.
Motor: Provide permanent split–capacitor motor, permanently lubricated.
Accessories: Provide manufacturer's standard roof jack, wall cap, and transition fittings as indicated on drawings or schedules.
Vibration Isolation: Provide spring floor isolators or hangers depending on type of installation.
Duct Lining: Provide 1" thick, 3–lb density duct liner a minimum of 5' (five feet) up and down stream of fan.
Manufacturer: Subject to compliance with requirements, provide centrifugal ceiling exhausters of one of the following:
Acme
Breidert
Cornes
Cook Co., Loren.
Greenheck
Penn Ventilator Co., Inc.
Jenn Fan
Twin City Fan & Blower

Inspection
General: Examine areas and conditions under which power and gravity ventilators are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected.

Installation
Coordinate ventilator work with work of roofing, walls, and ceilings, as necessary for proper interfacing.
Provide access door in duct below ventilator to service damper.
Solder bottom joints and up 2" of side joints of duct under roof ventilator to retain any moisture entering ventilator.
Access: Provide access and service space around and over fans as indicated, but in no case less than that recommended by manufacturer.
Electrical Wiring: Install electrical devices furnished by manufacturer but not specified to be factory–mounted. Furnish copy of manufacturer's wiring diagram submittal to Electrical Installer.
Verify that electrical wiring installation is in accordance with manufacturer's submittal and installation requirements of Division–16 Sections. Verify that rotation is in direction indicated and intended for proper performance. Do not proceed with centrifugal fan start–up until wiring installation is acceptable to fan installer.

Field Quality Control
Testing: After installation of ventilators has been completed, test each ventilator to demonstrate proper operation of units at performance ratings specified. When possible, field correct malfunctioning units, then retest to demonstrate compliance. Replace units, which cannot be satisfactorily corrected.

Adjusting and Cleaning
Cleaning: Clean factory–finished surfaces. Repair any marred or scratched surfaces with manufacturer's touch–up paint.

23 37 13.00 – Diffusers, Registers and Louvers

Ceiling Air Diffusers
Diffuser Faces:
Square: Square housing, core of square concentric louvers, square or round duct connection.
Diffuser Mountings:
Surface Mount: Diffuser shall have rolled edge below finished ceiling for surface mounting or diffuser shall be furnished with accessory plaster frame.
Lay–In: Diffuser housing sized to fit between ceiling exposed suspension tee bars and rest on top surface of tee bar.
Diffuser Dampers:
Opposed Blade Dampers: Multiple opposed blade dampers connected to linkage adjustable from face of diffuser with key.
Diffuser Acoustic Performance: NC less than or equal to 30
Diffuser Finishes: White Enamel: Semi–gloss white enamel prime finish.
Manufacturer: Subject to compliance with requirements, provide diffusers of one of the following:
Anemostat Products Div., Dynamics Corp. of America.
Metal–Aire
Titus Products Div., Philips Industries, Inc.
Tuttle and Bailey.
Price

Ceiling and Wall Registers & Grilles
Steel Construction: Manufacturer's standard stamped sheet steel frame and adjustable blades.
Register Dampers:
Opposed Blade: Adjustable opposed–blade damper assembly, key operated from face of register.
Register and Grille Finishes: White Enamel: Semi–gloss white enamel prime finish.
Register and Grille Acoustic Performance: NC less than or equal to 30
Manufacturer: Subject to compliance with requirements, provide diffusers of one of the following:
Anemostat Products Div., Dynamics Corp. of America.
Metal–Aire
Titus Products Div., Philips Industries, Inc.
Tuttle and Bailey.
Price

Louvers
Provide louvers, dampers, and fire dampers of size as noted. Fire dampers shall be "high hat" type "B" with damper outside of air stream.
Manufacturer equal to Louvers and Dampers, Aerolite, Prefco.

23 54 00.00 – Furnaces

High Efficiency Gas Fired Furnace
General: Provide factory–assembled and tested units as indicated, consisting of insulated casing, filter and rack, fan, motor and drive, fan and limit controls, two stage heat exchanger, mono–port burner direct vent sealed combustion chamber and control transformer. Provide evaporator coil.
Filter Rack: Filter rack must hold a stack sized throw away filter (16x20x1 or 20x25x1). If external filter rack is used, then return duct must have this type filter rack with cover installed.
Refrigeration Circuit: Provide refrigerant thermal expansion valve for refrigerant control. Provide access valves in suction and liquid lines.
Compressors: Provide welded shell, hermetic compressors, or serviceable hermetic compressors, 1750 RPM. Provide crankcase heaters. Provide 5 year extended warranty on compressor.
Evaporator Coil: Construct of copper tubing and aluminum fins, pressure and leak tested at 1.5 times working pressure.
Fans: Provide direct double–inlet, forward curved, centrifugal fans with drive. Provide permanently lubricated fan and motor bearings, and thermal overloads in motor.
Heat Exchanger: four–pass heat exchangers–both primary and condensing.
Condensing section to be high grade stainless steel.
Monoport Inshot Burners:
Electronic Ignition:
Direct Vent sealed combustion chamber.

Filters: Provide 1" thick throwaway filters.
Integral Air–Cooled Condensing Units: Provide condenser coil constructed of copper tubes and aluminum fins. Factory leak–test at 1.5 times working pressure, dehydrate and provide full charge of refrigerant. Provide subcooler and accumulator.
Low Ambient Control: Provide head pressure control, designed to operate at temperatures down to 0 deg. F (–18 deg. C).
Controls: Provide factory–installed and wired controls, with terminal strip. Provide connections for remote thermostat.
Provide the Following:
Concentric Vent Termination Kit.
Schedule 40 PVC combustion intake and exhaust piping with long radius elbows.
Motor with individual overload protection.
High and low refrigerant cutouts.
Fan–auto and heat–off–cool switches.
Time delay relay to prevent short cycling compressor.
Manual indoor change–over thermostat.
Two stage heat/cool for dual circuit units.
Outdoor thermostat.
Crankcase heater.
Low ambient control.
Moisture indicator.
Filter drier.
Refrigerant service valves.
Sub base for bottom return for all units above 1800 CFM.
1" PVC condensate piping to nearest floor drain.
Manufacturer: Subject to compliance with requirements, provide AC units of one of the following:
BDP Co., Div of Carrier Corp.
Carrier Air Conditioning, Div of Carrier Corp.
Lennox Industries Inc.
Trane (The) Co., Div of American Standard Inc.
Johnson Controls

Spare Parts
General: Furnish to Owner, with receipt, the following spare parts for AC unit:
1 set of matched fan belts for each belt driven fan.
1 set filters for each unit.

Inspection
Examine areas and conditions under which furnaces are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to installer.

Installation
General: Install units in accordance with manufacturers' installation instructions. Install units plumb and level, firmly anchored in locations indicated, and maintain manufacturer's recommended clearances.
Support:
Install exterior units on 4" thick concrete pad.
Install interior units on 2" thick concrete pad.
Combustion Intake & Exhaust Piping: Provide long radius elbows on all combustion intake and exhaust piping. Provide 1/2" flexible cellular insulation on all combustion intake and exhaust piping routed through uninsulated areas. Refer to section 15250 Mechanical insulation.
Contractor shall provide pressure drop reading across the intake and combustion exhaust piping.
Electrical Wiring: Install electrical devices furnished by manufacturer but not specified to be factory–mounted. Furnish copy of manufacturer's wiring diagram submittal to Electrical Installer.
Verify that electrical wiring installation is in accordance with manufacturer's submittal and installation requirements of electrical specifications. Do not proceed with equipment start–up until wiring installation is acceptable to equipment installer.
Ductwork: Connect supply and return ducts to unit with flexible duct connections. Provide transitions to exactly match unit duct connection size. Provide 1" acoustic duct lining on return air side a minimum of 10' from the unit. Provide outside air duct to unit with flexible connection, provide manual damper and motorized damper.
Restrictors or piping changes shall be made as necessary to achieve manufacturers recommended pressure drops. The findings shall be reported to the engineer at project closeout.
Drain Piping: Connect unit drain to nearest indirect waste connection. Drain piping to be PVC. Provide trap at drain piping connection to unit sized per manufacturer's recommendations.
Start–up Furnaces units, in accordance with manufacturer's start–up instructions. Test controls and demonstrate compliance with requirements. Replace damaged or malfunctioning controls and equipment.

Training of Owner's Personnel
Provide services of manufacturer's technical representative for 1–half day to instruct Owner's personnel in operation and maintenance of units. Schedule training with Owner, provide at least 7–day notice to Contractor and Engineer of training date.

23 82 13.00 – Air Cooled Condensing Units
Warranty on Motor/Compressor: Provide written warranty, signed by manufacturer, agreeing to replace/repair, within warranty period, motors/compressors with inadequate or defective materials and workmanship, including leakage, breakage, improper assembly, or failure to perform as required; provided manufacturer's instructions for handling, installing, protecting, and maintaining units have been adhered to during warranty period. Replacement is limited to component replacement only, and does not include labor for removal and reinstallation.
Warranty Period: 5 years from date of owner acceptance.

Commercial Air–Cooled Condensing Units
Manufacturers: Subject to compliance with requirements, provide air–cooled condensing units of one of the following:
BDP Co; Div Carrier Corp.
Carrier Air Conditioning; Div of Carrier Corp.
McQuay Air Conditioning Group; McQuay Inc.
Trane (The) Co; Div American Standard Inc.
General: Factory–assembled and tested air–cooled condensing units, consisting of casing, compressors, condensers, coils, condenser fans and motors, and unit controls. Capacities and electrical characteristics are scheduled.
Unit Casings: Designed for outdoor installation and complete with weather protection for components and controls, and complete with removable panels for required access to compressors, controls, condenser fans, motors, and drives. Additional features include:
Steel, galvanized or zinc–coated, for exposed casing surfaces, treated and finished with manufacturer's standard paint coating;
Lifting lugs to facilitate rigging of units;
Factory–installed metal grilles, for protection of condenser coil during shipping, installation, and operation;
Hinged and gasketed control panel door.
Compressor: Reciprocating hermetic–type compressor, 1,750 RPM, designed for air–cooled condensing, complete with crankcase sight glass, crankcase heater, and backseating service access valves on suction and discharge ports. Capacity shall be controlled through cylinder unloading.
Additional features include:
Crankcase heater in wet within crankcase;
Capacity steps on six cylinder, or greater number;
Compressor of same manufacturer as condensing unit.
Controls: Operating and safety controls shall include high and low pressure cutouts, oil pressure cutout, compressor winding thermostat cutout, 3–leg compressor overload protection, and condenser fan motors with thermal and overload cutouts. Provide 3 Control Power Transformer to be 115–volts. Provide magnetic contactors for compressor and condenser fan motors.
Additional features include:
Reset relay without fan cycling manual resetting of cutouts from remote thermostat location;
Automatic nonrecycling pumpdown, and timing device to prevent excessive compressor cycling;
Condensing Section: Condenser coil shall be seamless copper tubing mechanically bonded to heavy–duty, configured aluminum fins, with separate and independent refrigeration circuit for each compressor. Units shall include liquid accumulator and subcooling circuit, and backseating liquid line service access valve.
Condenser coils shall be factory–tested at 450 psig, vacuum dehydrate, and filled with a holding charge of nitrogen.
Condenser fans and drives: Propeller–type condenser fans for vertical air discharge; either direct drive or belt drive. Additional features include:
Permanent lubricated ball bearing motors for condenser fan motors;
Separate motor for each condenser fan;
Constant speed condenser fan motors;
Each fan assembly shall be dynamically and statically balanced.
Head pressure control, thermostatic expansion valve, evaporator freeze stat, compressor start assist kit for low ambient conditions down to –20 degrees F.
Provide subcooler and accumulator.

Examination
Verify structure, mounting supports, and membrane installations are completed to the proper point to allow installation of roof mounted units. Do not proceed with work until unsatisfactory conditions have been corrected.

Installation
General: Install condensing units in accordance with manufacturers installation instructions. Install units plumb and level, firmly anchored in locations indicated, and maintain manufacturer's recommended clearances.
Ground Support: Install ground–mounted units on 4" thick reinforced concrete pad, 4" larger on each side than condensing unit. Unit shall be anchored to the concrete pad. Concrete is specified in Division 3.
Coordinate installation of anchoring devices.
Ground Support: Where units and refrigerant piping are located a distance of 10 feet or more from the building exit, provide 4" pvc sleeve with full radius elbows for refrigerant piping.

Commercial Air–Cooled Condensing Units Installation
Connect refrigerant piping to unit; maintain required access to unit.
Install furnished field–mounted accessories.
Filter Dryer (replaceable cartridge) with isolation valves on each side of Filter Dryer.
Sight Glass
King Valve at Evap. and Cond.

Field Quality Control
Testing: Charge systems with refrigerant and oil, and test for leaks. Repair leaks and replace lost refrigerant and oil.

23 82 39.00 – Unit Heaters
General: Provide unit heaters in locations as indicated, and of capacities, style, and having accessories as scheduled. Provide temperature control valves for modulation during a call for heat and closed during cooling.

Horizontal Unit Heaters:
Casings: Construct of steel, phosphatized inside and out, and finished with baked enamel. Color selected by architect. Provide motor–mounted panel, minimum of 18–ga steel. Fabricate casing to enclose coil, louvers, and fan blades. Provide louvers for 4–way air diffusion.
Fans: Construct of aluminum, and factory–balance. Provide fan inlet orifice, smooth, and drawn into casing back panel.
Coils: Construct of plate–type aluminum fins, mechanically bonded to copper tubes. Design coil for use in steam or hot water applications.
Motors: Provide totally enclosed motors, with built–in overload protection, having electrical characteristics as scheduled.
Controls: Provide line voltage thermostat shipped loose for field installation.
Manufacturer: Subject to compliance with requirements, provide unit heaters of one of the following:
Airtherm
McQuay Inc.
Modine Mfg. Co.
Trane (The) Co.
Wing (The) Co., Div. Wing Industries

COMcheck Software Version 3.9.3

Mechanical Compliance Certificate

90.1 (2007) Standard

Section 1: Project Information

Project Type: **New Construction**
Project Title : Family Dollar

Construction Site:
200 Highway 83
Emmons County
Linton, ND 58552

Owner/Agent:

Designer/Contractor:
Kohrs Lonnemann Heil Engineers
1538 Alexandria Pike
Ft. Thomas, KY 41075
859-442-8050

Section 2: General Information

Building Location (for weather data): **Linton, North Dakota**
Climate Zone: **6a**

Section 3: Mechanical Systems List

Quantity	System Type & Description
1	FC-1/CU-1 (Single Zone) : Heating: 1 each - Central Furnace, Gas, Capacity = 80 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency = 80.00% Et Cooling: 1 each - Split System, Capacity = 48 kBtu/h, Air-Cooled Condenser Proposed Efficiency = 13.00 SEER, Required Efficiency = 13.00 SEER Fan System: None
1	FC-2/CU-2 (Single Zone) : Heating: 1 each - Central Furnace, Gas, Capacity = 100 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency = 80.00% Et Cooling: 1 each - Split System, Capacity = 60 kBtu/h, Air-Cooled Condenser Proposed Efficiency = 13.00 SEER, Required Efficiency = 13.00 SEER Fan System: None
1	FC-3/CU-3 (Single Zone) : Heating: 1 each - Central Furnace, Gas, Capacity = 100 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency = 80.00% Et Cooling: 1 each - Split System, Capacity = 60 kBtu/h, Air-Cooled Condenser Proposed Efficiency = 13.00 SEER, Required Efficiency = 13.00 SEER Fan System: None
1	FC-4/CU-4 (Single Zone) : Heating: 1 each - Central Furnace, Gas, Capacity = 100 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency = 80.00% Et Cooling: 1 each - Split System, Capacity = 48 kBtu/h, Air-Cooled Condenser Proposed Efficiency = 13.00 SEER, Required Efficiency = 13.00 SEER Fan System: None
1	UH-1 (Unknown) : Heating: 1 each - Unit Heater, Gas, Capacity = 30 kBtu/h Proposed Efficiency = 80.00% Ec, Required Efficiency = 80.00% Ec Fan System: None
1	EUH-1 (Unknown) : Heating: 1 each - Unit Heater, Electric, Capacity = 6 kBtu/h No minimum efficiency requirement applies Fan System: Unspecified

Section 5: Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 90.1 (2007) Standard requirements in COMcheck Version 3.9.3 and to comply with the mandatory requirements in the Requirements Checklist.

Robert A. Lonnemann, P.E. _____ _____
Name - Title Signature Date

Section 6: Post Construction Compliance Statement

- ☐ HVAC record drawings of the actual installation and performance data for each equipment provided to the owner within 90 days after system acceptance.
- ☐ HVAC O&M documents for all mechanical equipment and system provided to the owner within 90 days after system acceptance.
- ☐ Written HVAC balancing report provided to the owner.

The above post construction requirements have been completed.

_____ _____ _____
Principal Mechanical Designer-Name Signature Date

COMcheck Software Version 3.9.3

Inspection Checklist

Energy Code: 90.1 (2007) Standard

Requirements: 78.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

90.1 (2007) Standard	Plan Review	Complies?	Comments/Assumptions
4.2.2, 6.4.2 [PR2]†	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
4.2.2, 7.4.1 [PR3]†	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufacturer's sizing guide.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.7.2.4 [PR5]†	Detailed instructions for HVAC systems commissioning included on the plans or specifications for projects >=50,000 ft2.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

90.1 (2007) Standard	Footing / Foundation Inspection	Complies?	Comments/Assumptions
6.4.3.8 [FO9]†	Freeze protection and snow/ice melting system sensors for future connection to controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.4.1.4, 6.4.1.5 [ME1]†	HVAC equipment efficiency verified. Non-NAECA HVAC equipment labeled as meeting 90.1.	Efficiency:____	Efficiency:____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Mechanical Systems list for values.*
6.4.3.4.1 [ME3]†	Stair and elevator shaft vents have motorized dampers that automatically close.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.4.3.4.2, 6.4.3.4.3, 6.4.3.4.4 [ME4]†	Outdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.4.5 [ME5]†	Ventilation fans >0.75 hp have automatic controls to shut off fan when not required.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.9 [ME6]†	Demand control ventilation provided for spaces >500 ft2 and >40 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.4.1.1 [ME7]†	Insulation exposed to weather protected from damage. Insulation outside of the conditioned space and associated with cooling systems is vapor retardant.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.4.1.2 [ME8]†	HVAC ducts and plenums insulated.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.4.1.3 [ME9]†	HVAC piping insulation thickness.	____ in.	____ in.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.4.2.1 [ME10]†	Ducts and plenums sealed based on static pressure and location.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.4.2.2 [ME11]†	Ductwork operating >3 in. water column requires air leakage testing.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply. *See the Mechanical Systems list for values for FC-1/CU-1*
6.4.4.2.2 [ME11]†	Ductwork operating >3 in. water column requires air leakage testing.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply. *See the Mechanical Systems list for values for FC-2/CU-2*
6.4.4.2.2 [ME11]†	Ductwork operating >3 in. water column requires air leakage testing.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply. *See the Mechanical Systems list for values for FC-3/CU-3*

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.4.4.2.2 [ME11]†	Ductwork operating >3 in. water column requires air leakage testing.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply. *See the Mechanical Systems list for values for FC-4/CU-4.*
6.4.4.2.2 [ME11]†	Ductwork operating >3 in. water column requires air leakage testing.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply. *See the Mechanical Systems list for values for UH-1.*
6.4.4.2.2 [ME11]†	Ductwork operating >3 in. water column requires air leakage testing.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply. *See the Mechanical Systems list for values for EUH-1.*
6.5.2.3 [ME19]†	Dehumidification controls provided to prevent reheating, recooling, mixing of hot and cold airstreams or concurrent heating and cooling of the same airstream.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.5.4.1 [ME25]†	HVAC pumping systems >10 hp designed for variable fluid flow.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.5.6.1 [ME30]†	Exhaust air energy recovery on systems >=5,000 cfm and 70% of design supply air.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.5.7.1 [ME32]†	Kitchen hoods >5,000 cfm have make up air >=50% of exhaust air volume.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.5.7.2 [ME33]†	Fume hoods exhaust systems >=15,000 cfm have VAV hood exhaust and supply systems, direct make-up air or heat recovery.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.5.8.1 [ME34]†	Unenclosed spaces that are heated use only radiant heat.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.5.9 [ME35]†	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met. *See the Mechanical Systems list for values for FC-1/CU-1.*
6.5.9 [ME35]†	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met. *See the Mechanical Systems list for values for FC-2/CU-2*
6.5.9 [ME35]†	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met. *See the Mechanical Systems list for values for FC-3/CU-3*
6.5.9 [ME35]†	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met. *See the Mechanical Systems list for values for FC-4/CU-4.*

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

90.1 (2007) Standard	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
10.4.1 [EL9]†	Electric motors meet requirements where applicable.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

90.1 (2007) Standard	Final Inspection	Complies?	Comments/Assumptions
6.4.3.1.1 [FI2]†	Heating and cooling to each zone is controlled by a thermostat control.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.1.2, 6.4.3.2, 6.4.3.3, 6.4.3.3.1, 6.4.3.3.2 [FI3]†	Thermostatic controls have a 5 °F deadband.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.7 [FI6]†	When humidification and dehumidification are provided to a zone, simultaneous operation is prohibited.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.7.2.1 [FI7]†	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.7.2.2 [FI8]†	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.7.2.3 [FI9]†	An air and/or hydronic system balancing report is provided for HVAC systems serving zones >5,000 ft2 of conditioned area.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.7.2.4 [FI10]†	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.2 [FI20]†	Temperature controls have setpoint overlap restrictions.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.3.1 [FI21]†	HVAC systems equipped with at least one automatic shutdown control.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.3.2 [FI22]†	Setback controls allow automatic restart and temporary operation as required for maintenance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

DATE: 04.14.2014
JOB No.: 15150
DRAWN: EP, ALG
CHECKED: MPE

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NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

ROBERT A. LONNEMANN — REGISTERED — PROFESSIONAL — ENGINEER — NORTH DAKOTA
APR 14 2014

PRELIMINARY DESIGN: 03.27.2014
PERMIT ISSUE: 04.14.2014

MECHANICAL ENERGY COMPLIANCE

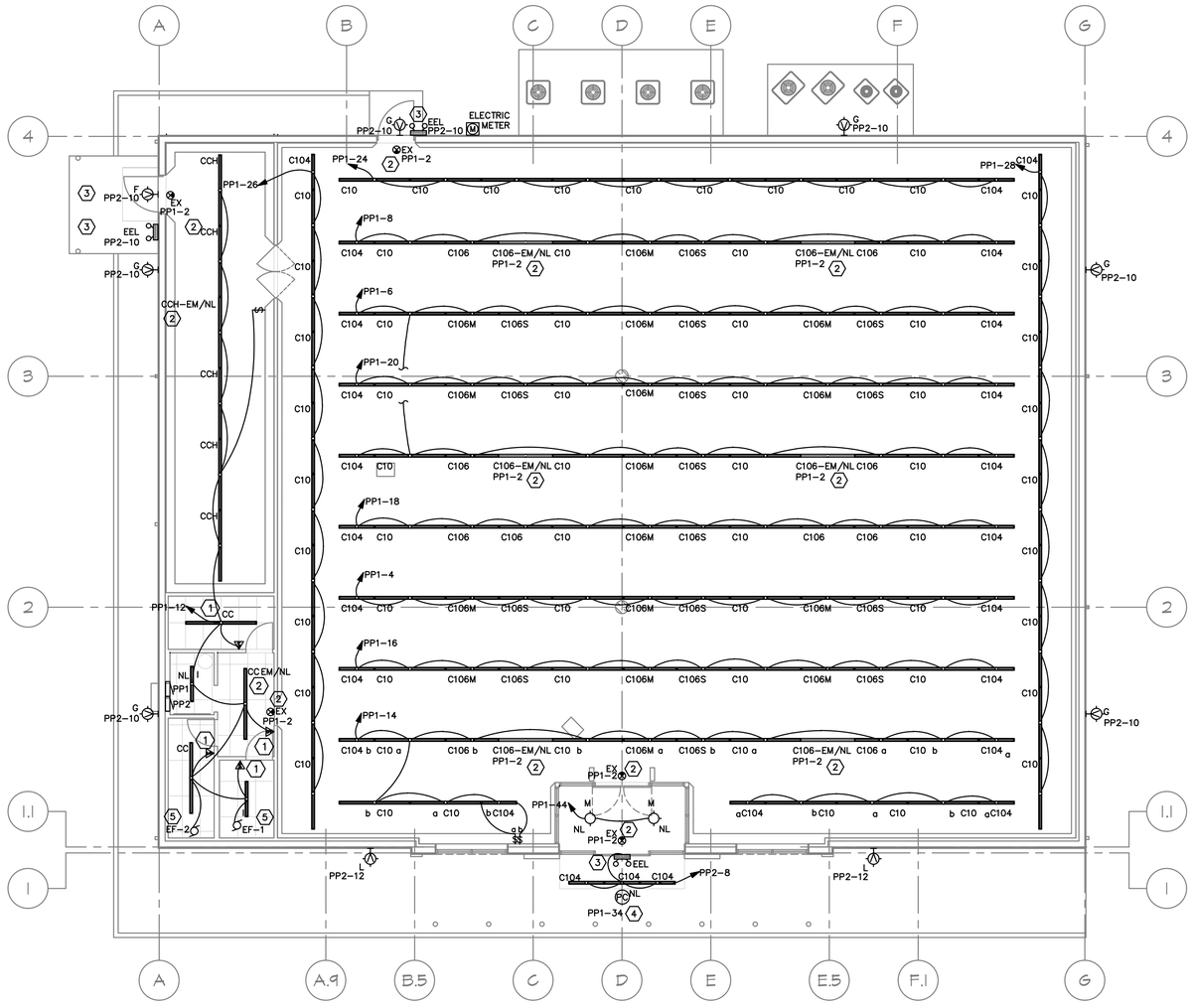
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M501

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

1 MECHANICAL ENERGY COMPLIANCE
NTS

NORTH



ELECTRICAL POWER PLAN NOTES:

1. PROVIDE OCCUPANCY SENSOR SWITCH MODEL #WSD-WH.
2. WIRE "EX", "EL", NIGHT LIGHT (NL) AND EMERGENCY BALLAST (EM) OF LIGHT FIXTURE TO HOT LEG OF NEAREST LOCAL LIGHTING CIRCUIT AHEAD OF ANY SWITCHING INCLUDING CONTACTORS.
3. WIRE "EEL" AND "F" TO HOT LEG OF NEAREST EXTERIOR LIGHTING CIRCUIT AHEAD OF ANY SWITCHING INCLUDING CONTACTORS.
4. NIGHT LIGHT. FIXTURE SHALL BE CONTROLLED BY PHOTOCELL (PC) PROVIDED BY E.C. (ON AT DUSK, OFF AT DAWN). WIRE VIA PC TO HOT LEG OF NEAREST LIGHTING CIRCUIT AHEAD OF ANY SWITCHING INCLUDING CONTACTORS. (NOTE: THIS FIXTURE IS NOT CONTROLLED BY VENSTAR SYSTEM).
5. INTERLOCK EXHAUST FAN IN THIS ROOM WITH LIGHT/LIGHT CONTROLS.

NOTE:

TOP OF LIGHT FIXTURES TO BE AT 11'-6" AFF IN SALES AND RECEIVING AREAS WITH OPEN CEILINGS. PROVIDE APPROPRIATE HANGERS FOR FIXTURES AND MAINTAIN ACCURATE LINEAR ALIGNMENT.

GENERAL NOTES

A. ALL CONDUITS SHALL BE CONCEALED IN WALLS AND OUTLET BOXES SHALL BE FLUSH WITH FINISHED WALL UNLESS OTHERWISE NOTED.

B. CIRCUITS UP TO 100'-0" IN LENGTH SHALL UTILIZE #12 CONDUCTORS MINIMUM. CIRCUITS FROM 101'-0" TO 150'-0" IN LENGTH SHALL UTILIZE #10 CONDUCTORS MINIMUM. CIRCUITS FROM 151'-0" TO 250'-0" IN LENGTH SHALL UTILIZE #8 CONDUCTORS MINIMUM. CIRCUITS ABOVE 251'-0" IN LENGTH SHALL UTILIZE #6 CONDUCTORS MINIMUM.

C. LIGHTING SHALL BE CIRCUITED EXACTLY AS SHOWN ON PLANS. CIRCUITING SHALL BE THRU-WIRING WHEREVER POSSIBLE. MULTIPLE CONNECTIONS TO A SINGLE LIGHT FIXTURE FOR VOLTAGE DROP CONDITIONS OR AS A RESULT OF A FIELD CONDITION ARE ACCEPTABLE. LIGHTING FIXTURES SHALL BE MANUFACTURED TO ACCOMMODATE THRU-WIRING, ANY RELATED COSTS FOR MULTIPLE CONNECTIONS SHALL BE INCLUDED IN BID.

D. EMERGENCY AND EXIT FIXTURES SHALL BE INSTALLED AND CIRCUITED PER LOCAL AND LATEST NATIONAL ELECTRICAL CODES.

E. NIGHT-LIGHT FIXTURES "NL" SHALL BE WIRED AHEAD OF SWITCHING.

F. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO REVIEW ALL ARCHITECTURAL DRAWINGS, ELECTRICAL DRAWINGS AND NOTES TO INSURE THAT ALL ELECTRICAL REQUIREMENTS ARE MET.

G. ANY PENETRATIONS THROUGH FIRE-RESISTANT/RATED WALLS, PARTITIONS, FLOORS, AND CEILINGS SHALL BE FIRESTOPPED USING APPROVED METHODS TO MAINTAIN THE FIRE RESISTANCE RATING.

H. ALL EXTERIOR LIGHTING SHALL BE CONTROLLED BY VENSTAR SYSTEM.

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

1 ELECTRICAL LIGHTING PLAN
1/8" = 1'-0"

NORTH

DATE: 04.14.2014
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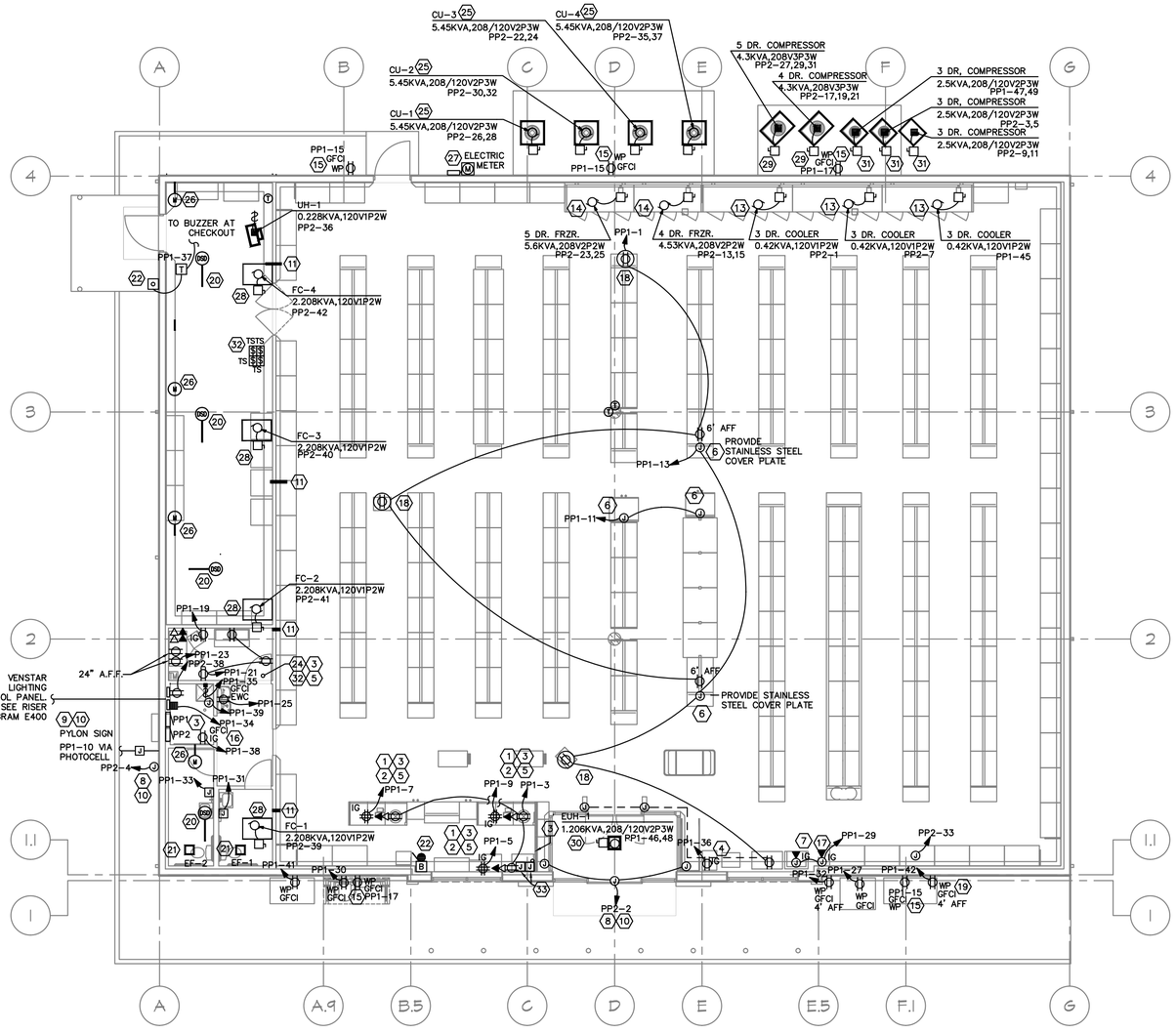
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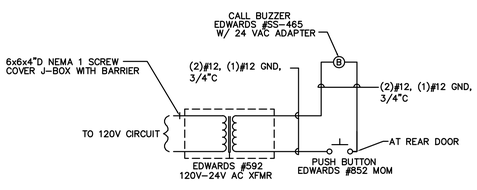
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ELECTRICAL LIGHTING PLAN

SHEET NUMBER

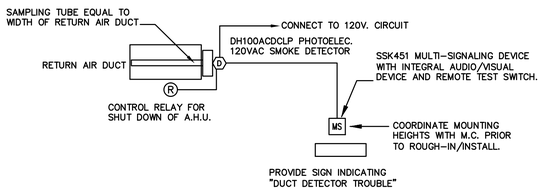
E100





2 E200 BUZZER SCHEMATIC

SCALE: N.T.S.



3 E200 DUCT DETECTOR MOUNTING DETAIL

SCALE: N.T.S.

DUCT DECTECTOR & MULTI-SIGNALING ACCESSORY MODEL NUMBERS ARE FROM SYSTEM SENSOR.

ALL EQUIPMENT AND INSTALLATION SHALL COMPLY WITH THE LATEST LOCAL CODES.

SMOKE DETECTOR TO BE SUPPLIED BY EC TO MC FOR INSTALLATION INTO DUCTWORK. EC TO PROVIDE, WIRE AND TEST OPERATION OF DETECTOR AND NOTIFICATION DEVICES.

SEE MECHANICAL PLANS FOR LOCATION OF A/V DEVICES.

GENERAL NOTES

A. ALL CONDUITS SHALL BE CONCEALED IN WALLS AND OUTLET BOXES SHALL BE FLUSH WITH FINISHED WALL UNLESS OTHERWISE NOTED.

B. CIRCUITS UP TO 100'–0" IN LENGTH SHALL UTILIZE #12 CONDUCTORS MINIMUM. CIRCUITS FROM 101'–0" TO 150'–0" IN LENGTH SHALL UTILIZE #10 CONDUCTORS MINIMUM. CIRCUITS FROM 151'–0" TO 250'–0" IN LENGTH SHALL UTILIZE #8 CONDUCTORS MINIMUM. CIRCUITS ABOVE 251'–0" IN LENGTH SHALL UTILIZE #6 CONDUCTORS MINIMUM.

C. COORDINATE EXACT LOCATION OF DEVICES SERVING CASEWORK WITH CASEWORK CONTRACTOR.

D. ELECTRICAL CONTRACTOR TO PROVIDE A TYPED PANEL DIRECTORY WITH ALL CIRCUITS ACCURATELY LISTED PRIOR TO STORE OPENING.

E. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO REVIEW ALL ARCHITECTURAL DRAWINGS, ELECTRICAL DRAWINGS AND NOTES TO INSURE THAT ALL ELECTRICAL REQUIREMENTS ARE MET.

F. DUCTWORK AND PIPING SHALL NOT BE ROUTED OVER ELECTRIC PANELS OR TRANSFORMERS.

G. ANY PENETRATIONS THROUGH FIRE-RESISTANT/RATED WALLS, PARTITIONS, FLOORS, AND CEILINGS SHALL BE FIRESTOPPED USING APPROVED METHODS TO MAINTAIN THE FIRE RESISTANCE RATING.

ELECTRICAL POWER PLAN NOTES:

1. FURNISH AND INSTALL WIRING AND HOOKUP FOR EACH CASHIER'S MODULE INCLUDING; CONVENIENCE CIRCUIT, DEDICATED CIRCUIT WITH ISOLATED GROUND AND PHONE/DATA CONNECTION. CIRCUITS SHALL BE TERMINATED AT A JUNCTION BOX MOUNTED 12'–0" A.F.F. WITH 15' WHIP.
2. ALL CIRCUITS SERVING RECEPTACLES TO CHECK–OUT AND VENDING MAY BE RUN IN THE SAME CONDUIT.
3. FDS REQUIRES (4) TELEPHONE/DATA DROPS, (1) IN OFFICE WITH QUAD WALL JACK AND (3) AT CASH CHECKOUT. FIELD VERIFY EXACT LOCATIONS, INSTALLATION AND QUANTITY OF DEVICES WITH FDS AT JOB SITE. E.C. SHALL PROVIDE 2" CONDUIT UP IN WALLS TO ABOVE CEILING. ALL CAT. 5E CABLES SHALL BE RUN BY OTHERS.
4. PROVIDE DEDICATED ISOLATED GROUND RECEPTACLE MOUNTED AT 6" AFF FOR SECURITY SYSTEM (EAS). RECEPTACLE SHALL BE SURFACE MOUNTED TO MULLION. RUN 1500 SERIES METAL WIRE MOLD WITH 90 DEGREE ELBOW FOR CIRCUITING CONCEALED ALONG BASE OF WALL TO THE OUTLET. WIRES WILL BE TUCKED UNDER COVE BASE TO ROUTE TO POWER SUPPLY. IF NO COVE BASE IS AVAILABLE, PLASTIC DEC–DUCT WILL BE USED. FLOOR MUST BE SAW CUT BETWEEN PEDESTALS. FIELD VERIFY EXACT RECEPTACLE LOCATION AND ROUTING OF CIRCUITING DOWN IN MULLION WITH FDS CONSTRUCTION REPRESENTATIVE AND STOREFRONT SYSTEM PRIOR TO INSTALLATION. PROVIDE AND INSTALL A 1 /2" CONDUIT BELOW FLOOR GRADE, WITH A 4" STUB ABOVE GRADE ON BOTH ENDS. FOR DOORS 6' WIDE, THE STUB WILL BE PLACED 1" BEYOND THE 90 DEGREE SWING OFF THE DOOR JAMB AND 22" OFF THE DOOR JAMB. (IF USING AUTOMATIC SWINGING OR SLIDING DOORS, PLACEMENT WILL BE 26" OFF THE DOOR JAMB). FOR ALL OTHER DOOR PLACEMENTS, PLEASE CONSULT YOUR FAMILY DOLLAR CONSTRUCTION PROJECT MANAGER.
5. PROVIDE DEDICATED ISOLATED GROUND RECEPTACLES WITH ISOLATED GROUNDING CONDUCTOR BACK TO SERVICE GROUND.
6. FURNISH AND INSTALL WIRING AND HOOKUP FOR COKE/PEPSI COOLERS AND PROMO DISPLAYS. CIRCUIT SHALL BE TERMINATED AT A JUNCTION BOX MOUNTED 12'–0" A.F.F. WITH 15' WHIP AND FINAL CONNECTION MADE TO SPECIAL PLUG–IN 'PIGTAIL' CONNECTOR PROVIDED WITH POWER POLE. POWER POLE SHALL BE FURNISHED BY FDS AND INSTALLED BY E.C. FIELD VERIFY EXACT POWER POLE LOCATION WITH FDS CONSTRUCTION REPRESENTATIVE PRIOR TO INSTALLATION.
7. FURNISH AND INSTALL WIRING AND HOOKUP FOR APPLICATION STATION INCLUDING DEDICATED CIRCUIT. CIRCUIT SHALL BE TERMINATED AT A JUNCTION BOX MOUNTED 12'–0" A.F.F. WITH 15' WHIP AND FINAL CONNECTION MADE TO SPECIAL PLUG–IN 'PIGTAIL' CONNECTORS PROVIDED WITH POWER POLE. POWER POLE SHALL BE FURNISHED BY FDS AND INSTALLED BY E.C. FIELD VERIFY EXACT POWER POLE LOCATION WITH FDS CONSTRUCTION REPRESENTATIVE PRIOR TO INSTALLATION.
8. FURNISH AND INSTALL CONDUIT AND WIRING FOR EXTERIOR BUILDING SIGN. CIRCUIT SHALL BE TERMINATED AT A JUNCTION BOX(ES) LOCATED MINIMUM 12' AFF. CIRCUIT SHALL BE CONTROLLED BY VENSTAR SYSTEM. FINAL CONNECTIONS SHALL BE MADE BY THE ELECTRICAL CONTRACTOR.
9. ELECTRICAL CONTRACTOR SHALL PROVIDE A WEATHERPROOF JUNCTION BOX FOR LIGHTED ROAD SIGN. MOUNT TO SIGN PEDESTAL OR POLE. ELECTRICAL CONTRACTOR SHALL RUN WIRE IN CONDUIT AS SPECIFIED ON PLANS TO SIGN. FINAL CONNECTIONS SHALL BE MADE BE THE ELECTRICAL CONTRACTOR.
10. ALL EXTERIOR BUILDING LIGHTING AND SIGN CIRCUITS SHALL BE CONTROLLED BY VENSTAR SYSTEM. REFER TO SITE ELECTRICAL PLAN FOR MORE INFORMATION.
11. PROVIDE A (1') ONE FOOT PIECE OF 3" EMPTY CONDUIT RUNNING THROUGH THE WALL AT LOCATIONS AS SPECIFIED ON THE PLANS. ALL CONDUITS SHALL BE LOCATED 12'–6" AFF. PROVIDE FIRE CAULK AND CAP OFF CONDUIT FOR FUTURE USE BY FAMILY DOLLAR.
12. NOT USED.
13. FURNISH AND INSTALL WIRING (1#12 HOTS, 1#12 NEUTRAL, 1#10 GROUND) AND HOOKUP FOR ONE 120V–1PH 15A DEDICATED CIRCUIT FOR COOLER CASE. CIRCUIT SHALL BE TERMINATED AT DISCONNECT MOUNTED 86" A.F.F. TO BOTTOM OF DISCONNECT. FINAL CONNECTION TO COOLER SHALL BE MADE BY FDS REFRIGERATION INSTALLER. VERIFY EXACT LOCATION WITH FDS CONSTRUCTION REPRESENTATIVE PRIOR TO INSTALLATION. SEE DETAIL 6/E001. E.C. TO PROVIDE 20A 1P DISCONNECT SWITCH.
14. FURNISH AND INSTALL WIRING (2#10 HOTS, 1#10 NEUTRAL, 1#10 GROUND) AND HOOKUP FOR THREE 120V/208v–1PH (25A FOR 4 DOOR FREEZER CASE, 30A FOR 5 DOOR FREEZER CASE) DEDICATED CIRCUIT FOR FREEZER CASE CIRCUIT SHALL BE TERMINATED AT A DISCONNECT MOUNTED 86" AFF TO BOTTOM OF DISCONNECT. FINAL CONNECTION TO FREEZER SHALL BE MADE BY FDS REFRIGERATION INSTALLER. VERIFY EXACT LOCATION WITH FDS CONSTRUCTION REPRESENTATIVE PRIOR TO INSTALLATION. SEE DETAIL 6/E001. E.C TO PROVIDE 30A/2P NEMA 1 HEAVY DUTY DISCONNECT SWITCH.
15. EXTERIOR RECEPTACLES SHALL BE RECESSED IN WALL WITH FACE FLUSH WITH WALL.
16. PROVIDE DEDICATED ISOLATED GROUND RECEPTACLES WITH ISOLATED GROUNDING CONDUCTOR BACK TO SERVICE GROUND. SEE COMMUNICATION BOARD DETAIL 2 ON SHEET E001.
17. FURNISH AND INSTALL WIRING AND HOOKUP FOR ATM STATION INCLUDING DEDICATED CIRCUIT. CIRCUIT SHALL BE TERMINATED AT A JUNCTION BOX MOUNTED 12'–0" A.F.F. WITH 15' WHIP AND FINAL CONNECTION MADE TO SPECIAL PLUG–IN 'PIGTAIL' CONNECTORS PROVIDED WITH POWER POLE. POWER POLE SHALL BE FURNISHED BY FDS AND INSTALLED BY E.C. FIELD VERIFY EXACT POWER POLE LOCATION WITH FDS CONSTRUCTION REPRESENTATIVE PRIOR TO INSTALLATION.
18. FURNISH AND INSTALL WIRING AND HOOKUP FOR SECURITY MONITOR. CIRCUIT SHALL BE TERMINATED TO A DUPLEX RECEPTACLE MOUNTED 12'–0" A.F.F. VERIFY EXACT LOCATION WITH FDS CONSTRUCTION REPRESENTATIVE PRIOR TO INSTALLATION. SEE MONITOR DETAIL ON ARCHITECTURAL DRAWINGS FOR ADDITIONAL INSTALLATION INSTRUCTIONS.
19. PROVIDE (2) DEDICATED 20A CIRCUITS TERMINATED TO (2) GFCI RECEPTACLES MOUNTED AT 4' AFF FOR GLACIER WATER MACHINE. ONE CIRCUIT SHALL BE FOR NORMAL WATER VENDING MACHINE POWER. THE SECOND CIRCUIT SHALL BE FOR CABINET HEATER FOR "COLD WEATHER" MODEL GLACIER WATER MACHINE. RECEPTACLES SHALL BE RECESSED IN WALL WITH FACE FLUSH WITH WALL. RECEPTACLES SHALL BE LOCATED ON SAME SIDE OF STORE AS COOLERS AND FREEZERS. FIELD VERIFY EXACT RECEPTACLE LOCATION WITH FDS CONSTRUCTION REPRESENTATIVE PRIOR TO INSTALLATION. ALL CIRCUIT WIRING SHALL BE 12–GAUGE UNLESS CIRCUIT RUN IS FURTHER THAN 100' IN WHICH CASE THE WIRE WILL BE 10 GAUGE. THE CORRESPONDING BREAKERS INSIDE THE PANEL SHOULD BE LABELED AS "GLACIER WATER MACHINE". THE BELL BOX ON THE GLACIER WATER MACHINE SHOULD BE LABELED WITH CORRESPONDING CIRCUIT NUMBERS.
20. ELECTRICAL CONTRACTOR SHALL PROVIDE NEW DUCT MOUNTED SMOKE DETECTOR. MECHANICAL CONTRACTOR SHALL INSTALL SMOKE DETECTOR. MECHANICAL CONTRACTOR SHALL PROVIDE WIRING TO FAN INTERLOCK. E.C. SHALL PROVIDE WIRING FOR FINAL CONNECTIONS TO REMOTE TEST KEYED SWITCH IF TEST SWITCH IS REQUIRED. PROVIDE AND LOCATE TEST SWITCH PER LOCAL AHJ'S REQUIREMENTS.
21. CONNECT EXHAUST FAN TO THE LIGHTING CIRCUIT. SEE LIGHTING PLAN FOR MORE INFORMATION.
22. SEE DETAIL 1 THIS SHEET FOR PUSHBUTTON/BUZZER SCHEMATIC. MOUNT BUZZER AT 11'–0" AFF. MOUNT DOORBELL AT 48" AFF (TO TOP OF DEVICE).
23. NOT USED.
24. ALL RECEPTACLES AND TELEPHONE/DATA OUTLETS IN OFFICE SHALL BE MOUNTED AT 24" AFF.
25. PROVIDE 60A/2P/NF 240V NEMA–3R HEAVY DUTY DISCONNECT SWITCH FOR HVAC CONDENSING UNIT. PROVIDE (3)#8 AWG CU & (1)#10 AWG CU GND. IN 1" CONDUIT.
26. PROVIDE JUNCTION BOX AND LOW VOLTAGE CONTROL CIRCUIT PP2–34 FOR CONTROL OF MOTORIZED DAMPER. ALL TRANSFORMERS SHALL BE PROVIDED BY MECHANICAL CONTRACTOR.
27. REFER TO RISER DIAGRAM ON SHEET E400 FOR MORE INFORMATION.
28. PROVIDE 30A/1P/NF 240V HEAVY DUTY DISCONNECT SWITCH FOR FAN COIL UNIT. PROVIDE (2)#10 AWG CU & (1)#10 AWG CU GND. IN 2" CONDUIT.
29. PROVIDE 30A/3P/NF 240V NEMA–3R HEAVY DUTY DISCONNECT SWITCH FOR REFRIGERATION COMPRESSOR UNIT. PROVIDE (3)#12 AWG CU & (1)#12 AWG CU GND. IN 2" CONDUIT.
30. PROVIDE 30A/1P/NF 240V NEMA–1 HEAVY DUTY DISCONNECT SWITCH FOR ELECTRICAL UNIT. PROVE (2)#10 AWG CU & (1)#10 AWG CU GND. IN 2" CONDUIT.
31. PROVIDE 30A/2P/NF 240V NEMA–3R HEAVY DUTY DISCONNECT SWITCH FOR REFRIGERATION COMPRESSOR UNIT. PROVIDE (3)#12 AWG CU & (1)#12 AWG CU GND. IN 2" CONDUIT.
32. PROVIDE REMOTE ANNUNCIATOR WITH KEYED TEST SWITCH FOR DUCT SMOKE DETECTOR. TEST SWITCH SHALL BE LABELED WITH WHICH UNIT IT SERVES. E.C. SHALL PROVIDE WIRING FOR CONNECTION TO DUCT SMOKE DETECTORS.
33. ALL CASHWRAP POWER INCLUDING ISOLATED GROUND SHALL BE ROUTED THROUGH JUNCTION BOXES, UP WALL IN 2" CONDUIT TO CEILING AND BACK TO SOURCE. E.C. SHALL COORDINATE IN FIELD WITH FAMILY DOLLAR PROJECT MANAGER PRIOR TO INSTALLATION.

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

1 ELECTRICAL POWER PLAN
1/8" = 1'-0"

NORTH

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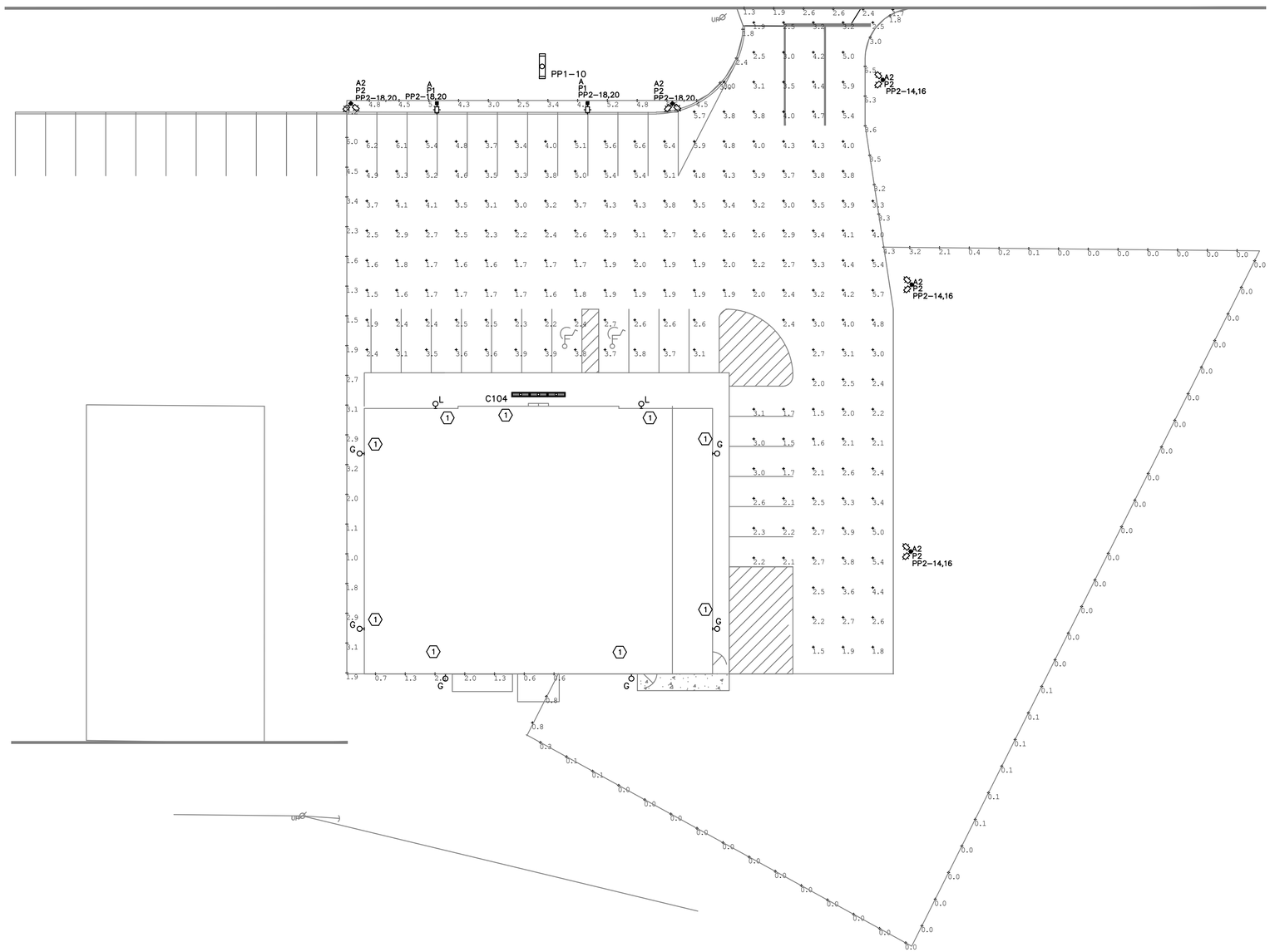
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ELECTRICAL POWER PLAN

SHEET NUMBER
E200



LUMINAIRE SCHEDULE

Symbol	Label	Qty	Catalog Number	Description	Lamp	File	Lumens	LLF	Watts
	A	2	LITHONIA KAD 320M SR4SC (PULSE START)	Area Luminaire, 320W MH, SR4SC Reflector with Full Cutoff	ONE 320-WATT CLEAR ED-28 METAL HALIDE, HORIZONTAL POSITION.	KAD_320M_SR4SC (PULSE_START).ies	30000	0.75	364
	A2	5	LITHONIA KAD 320M SR4SC (PULSE START)	Area Luminaire, 320W MH, SR4SC Reflector with Full Cutoff	TWO 320-WATT CLEAR ED-28 METAL HALIDE, HORIZONTAL POSITION.	KAD_320M_SR4SC (PULSE_START).ies	30000	0.75	728
	C104	3	LITHONIA Z 2 32	Z STRIP FOR (2) 32W T8 LAMP	TWO 32-WATT LINEAR FLUORESCENT T8, HORIZONTAL POS.	Z_2_32.ies	2800	0.83	56
	G	6	LITHONIA OLW 31	Outdoor LED Wallpack with Type III optics	Nichia 219A 5000K	OLW_31.ies	3073	0.91	48.2
	L	2	LITHONIA CSXW LED 30C 700 40K T4M MVOLT	CSXW Wall Mounted Housing with (1) T4M Light Engines	ONE 69-WATT LED, DOWNLIGHT POS.	CSXW_LED_30C_700_40K_T4M_MVOLT.ies	Absolute	0.91	74

NOTE: LUMINAIRE SCHEDULE IS SHOWN FOR CALCULATION PURPOSES ONLY. REFER TO SHEET E001 FOR PROJECT LUMINAIRE SCHEDULE

STATISTICS

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Drive	+	3.19 fc	6.6 fc	1.5 fc	2.13:1	4.40:1
Boundary Line	+	1.53	7.2 fc	0.0 fc	N/A	N/A

KEYED NOTES

1. LOCATION SHOWN FOR PHOTOMETRIC PURPOSES ONLY. REFER TO E100 FOR EXACT LOCATION PRIOR TO ROUGH-IN.

PHOTOMETRIC PLAN GENERAL NOTES

A. THIS PHOTOMETRIC REPORT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA (IES FILES). THIS LABORATORY DATA IS TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH THE ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA) APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRES MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS.

B. THE ILLUMINATION LEVELS, MEASURED IN FOOTCANDLES, SHOWN ARE BASED ON THE SPECIFIED CRITERIA. ANY SUBSTITUTIONS/DEVIATIONS IN LUMINAIRES OR ALTERATIONS TO THE LAYOUT WILL AFFECT ILLUMINATION LEVELS SHOWN AND WILL NOT BE THE RESPONSIBILITY OF KLH ENGINEERS, PSC.

C. FINAL ADJUSTMENTS TO AIMING ANGLE(S) OF LUMINAIRES MAY BE REQUIRED TO ELIMINATE LIGHT TRESPASS OR GLARE ONTO ADJACENT PROPERTIES OR ROADWAYS.

D. FOOTCANDLE LEVELS SHOWN ARE CONSIDERED MAINTAINED.

E. REFER TO THE LUMINAIRE SCHEDULE FOR ALL LUMINAIRE AND POLE INFORMATION.

F. CONTRIBUTIONS FROM ADJACENT STREET LIGHTING, ADJACENT PROPERTIES AND BUILDING OR POLE MOUNTED LUMINAIRES, NOT WITHIN THIS PROJECT, ARE NOT REFLECTED IN THIS PHOTOMETRIC REPORT.

G. THIS PHOTOMETRIC REPORT DOES NOT ACCOUNT FOR TOPOGRAPHY CHANGES UNLESS OTHERWISE INDICATED.

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

1 SITE PLAN PHOTOMETRICS
1" = 20'-0"

NORTH

DATE: 04.14.2014
JOB No.: 15150
DRAWN: EP, ALG
CHECKED: MPE

Castles Design Group
A Professional Architectural Corporation
3801 Kirby Drive, Suite 600
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MECHANICAL/ELECTRICAL ENGINEERS
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DELTA T DEVELOPMENT, LLC
2425 LUMBLEY ROAD
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PH: 256.278.4377

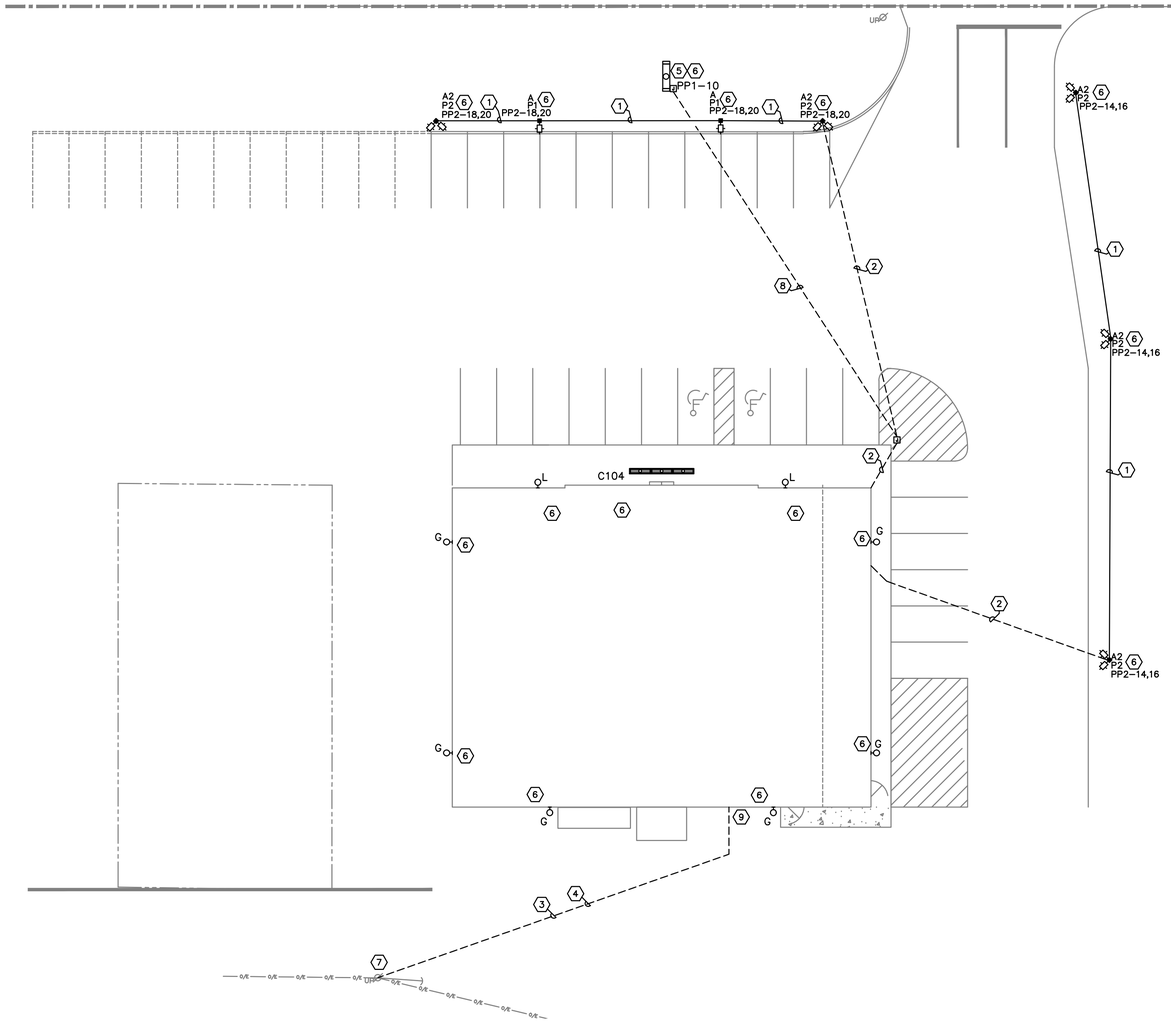
NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

ROBERT A. HEIL REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA
APR 14 2014

PRELIMINARY DESIGN: 03.27.2014
PERMIT ISSUE: 04.14.2014

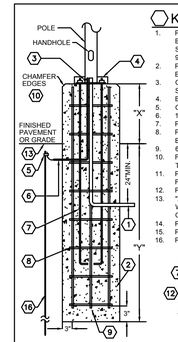
SITE PLAN PHOTOMETRICS

SHEET NUMBER
E300

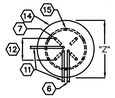


KEYED NOTES:

1. PROVIDE 1" MINIMUM SCHEDULE 40 ELECTRICAL PVC CONDUIT. BACKFILL WITH EXCAVATED OR BORROWED MATERIAL. MATERIAL SHALL BE FREE OF ROCKS 1" DIAMETER AND LARGER. COMPACT TO 90% IN MAX 8" LIFTS OF LOOSE SOIL.
2. PROVIDE 3000# CONCRETE BASE (CLASS A FORMED SURFACE WHERE EXPOSED)
3. GROUND LUG IN BASE BOLTED TO BASE PLATE WITH MIN. #10 AWG SOLID COPPER CONDUCTOR.
4. BASE COVER OVER GALVANIZED WASHERS, NUTS & LOCKNUTS.
5. GROUND CLAMP.
6. 1/2" SCHEDULE 40 ELECTRICAL PVC FOR GROUND WIRE.
7. PROVIDE MINIMUM OF FOUR ANCHOR BOLTS. GALVANIZED.
8. PROVIDE #4 TIE LOOPS AT 3" FROM TOP AND BOTTOM AND +/- 12" C/C BETWEEN LOOPS.
9. 6 #6 VERTICAL REBARS - TIE VERTICAL BARS TO TIE LOOPS.
10. FOR BASES FLUSH WITH PAVEMENT, DO NOT PROVIDE CHAMFER. SEAL THE PERIMETER OF THE BASE TOP INSTEAD.
11. PROVIDE 24" MINIMUM RADIUS; EXTEND 3/4" MAXIMUM ABOVE FOUNDATION WITH NUMBER OF CONDUITS AS NEEDED, 1" MIN.
12. PROVIDE DIAMETER BOLT CIRCLE PER LUMINAIRE MANUFACTURER.
13. "X" AND "Y" DIMENSIONS ARE MINIMUM LENGTHS FROM THIS LINE. WHERE GRADE OR PAVEMENT IS SLOPED, "Y" IS FROM THE LOW SIDE OF THE SLOPE AND "X" IS FROM THE HIGH SIDE OF THE SLOPE.
14. PROVIDE ROUND CONCRETE BASE.
15. PROVIDE REBAR CAGE.
16. PROVIDE 5/8" X 10' GROUND ROD.



SECTION VIEW



PLAN VIEW

POLE BASE DIMENSIONS		
X	Y	Z
"30"	"72"	"24"

NOTE: DIMENSIONS BASED ON LITHONIA SSS–25–DM–19. IF DIFFERENT POLE IS USED, POLE BASE DIMENSIONS WILL NEED TO BE ADJUSTED TO ACCOMODATE POLE TYPE.

1 LIGHT POLE BASE DETAIL
SCALE: NONE

KEYED NOTES

1. PROVIDE (2) #10 CU AWG AND (1) #10 AWG GND IN 1" CONDUIT FOR POLE LIGHTS.
2. PROVIDE (2) #8 CU AWG (1) #8 AWG GND IN 1" CONDUIT.
3. REFER TO RISER DIAGRAM ON SHEET E400 FOR SECONDARY REQUIREMENTS.
4. PROVIDE (2) 2" CONDUITS WITH PULL STRING FOR TELEPHONE AND DATA SERVICE. SEE DETAIL 2/E001 FOR REQUIREMENTS. COORDINATE CONDUIT ROUTING TO TELEPHONE POLE WITH LOCAL TELEPHONE CO.
5. ELECTRICAL CONTRACTOR SHALL PROVIDE A WEATHERPROOF JUNCTION BOX AND DISCONNECT SWITCH FOR LIGHTED PYLON SIGN. MOUNT TO SIGN PEDESTAL OR POLE. ELECTRICAL CONTRACTOR SHALL RUN WIRE IN CONDUIT AS SPECIFIED ON PLANS TO SIGN. FINAL CONNECTIONS SHALL BE MADE BY THE ELECTRICAL CONTRACTOR. CIRCUIT VIA PHOTOCELL. COORDINATE FINAL SIGN LOCATION WITH FD GENERAL CONTRACTOR. PROVIDE WEATHERPROOF DISCONNECT AT PYLON SIGN MOUNTED PER NEC AND LOCAL AHJ REQUIREMENTS.
6. ALL EXTERIOR LIGHTING AND SIGN CIRCUITS SHALL BE CONTROLLED BY VENSTAR SYSTEM.
7. APPROXIMATE LOCATION OF UTILITY CONNECTION POLE. COORDINATE EXACT LOCATION WITH UTILITY PRIOR TO CONSTRUCTION.
8. PROVIDE (2) #6 CU AWG (1) #8 AWG GND IN 1" CONDUIT FOR PYLON SIGN.
9. CONTRACTOR TO CONFIRM RATING OF SECONDARY CONDUCTOR TO PANELBOARDS WITH AHJ, UTILITY COMPANY, AND CONSTRUCTION PROJECT MANAGER.

GENERAL NOTES

A. SEE SHEET E200 FOR LOCATION OF ELECTRICAL AND TELEPHONE SERVICE INSIDE THE BUILDING. REFER TO SHEET E400 FOR SERVICE REQUIREMENTS.

B. SEE SHEET E001 FOR LIGHT FIXTURE SCHEDULE.

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

1 ELECTRICAL SITE PLAN
1" = 20'-0"

NORTH

DATE: 04.14.2014
JOB No.: 15150
DRAWN: EP, ALG
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APR 14 2014

PRELIMINARY DESIGN: 03.27.2014
PERMIT ISSUE: 04.14.2014

ELECTRICAL SITE PLAN

SHEET NUMBER
E301

ELECTRICAL CONTRACTOR TO COORDINATE ALL INCOMING ELECTRICAL SERVICE INFORMATION WITH UTILITY COMPANY BELOW BEFORE STARTING ANY WORK. INFORMATION BELOW HAS BEEN CONFIRMED BETWEEN KLH AND THE UTILITY COMPANY AS THE BASIS OF DESIGN. NOTIFY KLH IF ANY DISCREP

PROJECT NAME	Family Dollar
PROJECT ADDRESS	200 Highway 83 Linton, ND 58552
KLH PROJECT NUMBER	15150
UTILITY COMPANY	Montana Dakota Utilities
UTILITY CONTACT	Tim Volk
PHONE NUMBER	605-848-1594
DATE CONTACTED	5-Mar-14
KLH CONTACT	Matt Turner
KLH PHONE NUMBER	859-547-0154

SERVICE LATERAL	Underground
TRANSFORMER IS EXISTING OR NEW	Utility will determine
TRANSFORMER SIZE	Utility will size
SECONDARY VOLTAGE	120/208V
TRANSFORMER LOCATION	Pole mounted

Please see riser diagram for more information.

PP1 (NEW)

ROOM BACK OF HOUSE
MOUNTING REFER TO SINGLE-LINE DIAGRAM
FED FROM UTILITY
NOTE

VOLTS 208Y/120V 3P 4W
BUS AMPS REFER TO SINGLE-LINE DIAGRAM
NEUTRAL 100%

AIC REFER TO SINGLE-LINE DIAGRAM
MAIN REFER TO SINGLE-LINE DIAGRAM
LUGS REFER TO SINGLE-LINE DIAGRAM

CKT #	TYP	BKR	CIRCUIT DESCRIPTION	KVA LOAD A	B	C	CKT #	TYP	BKR	CIRCUIT DESCRIPTION	KVA LOAD A	B	C	
1		20/1	REC – SALES FLOOR, REC – MONITOR, REC – SALES VENDING	1.1			2		20/1	EM/NL LTG	0.341			(LO)
3		20/1	REC – CHECKOUT		0.54		4		20/1	SALES LTG		0.828		(WORK)
(LO) 5		20/1	IG CASH REGISTER			0.36	6		20/1	SALES LTG			1.54	(WORK)
(LO) 7		20/1	IG CASH REGISTER	0.36			8		20/1	SALES LTG	0.716			(WORK)
(LO) 9		20/1	IG CASH REGISTER		0.36		10		20/1	PYLON SIGN		1.2		(S/S)
11		20/1	COKE MACHINE			1.8	12		20/1	RECEIVING, OFFICE LTG			0.48	(WORK)
13		20/1	PROMO DISPLAY	1.2			14		20/1	SALES LTG	1.36			(WORK)
15		20/1	EXTERIOR RECEPTACLE		0.54		16		20/1	SALES LTG		0.828		(SALES)
17		20/1	EXTERIOR RECEPTACLE			0.36	18		20/1	SALES LTG			0.828	(SALES)
(LO) 19		20/1	IG REC – OFFICE	0.18			20		20/1	SALES LTG	0.828			(SALES)
21		20/1	REC – OFFICE		0.54		22		20/1	SPARE		0		
23		20/1	REC – BREAK AREA			0.36	24		20/1	SALES LTG			0.911	(SALES)
25		20/1	EWC REC	0.18			26		20/1	SALES LTG	0.911			(SALES)
(GFCI) 27		20/1	ICE BOX		0.4		28		20/1	SALES LTG		0.911		(SALES)
(LO) 29		20/1	IG ATM, APP STATION			1.1	30		20/1	VENDING MACHINE			0.3	
31		20/1	HAND DRYER	1.2			32		20/1	GLACIER WATER MACHINE	0.3			(LO)
33		20/1	HAND DRYER		1.2		34		20/1	PHOTOCELL/ VENSTAR		0.3		(LO)
35		20/1	WATER HEATER			1.5	36		20/1	IG EAS			0.6	(LO)
37		20/1	SIGNAL BELL	0.15			38		20/1	IG REC – PHONE BOARD	0.5			(LO)
(GFEP) 39		20/1	HEAT TAPE		1.5		40		20/1	SPARE		0		(LO)
41		20/1	RED BOX DVD KIOSK			0.18	42		20/1	HEATER – WATER MACHINE			0.3	(LO)
43		20/1	SPARE	0			44		20/1	VESTIBULE LIGHTING	0.05			(LO)
(LO) 45		15/1	3 DR. COOLER		0.42		46		20/2	EUH-1		0.603		
(LO) 47		15/2	3 DR. COMPRESSOR			1.25	48							
49				1.25			50		20/1	SPARE	0			
51		20/1	SPARE		0		52		20/1	SPARE		0		
53		20/1	SPARE			0	54		20/1	SPARE			0	
			TOTAL CONNECTED KVA BY PHASE	31.2	30.4	34.7								
			LUG LOAD: PANEL PP2	20.6	20.2	22.2				TOTAL CONNECTED AMPS BY PHASE	261	253	290	

	CONN. KVA	CALC. KVA			CONN. KVA	CALC. KVA	
LIGHTING	18.9	23.6	(125%)	CONTINUOUS	0.6	0.75	(125%)
LARGEST MOTOR	5.6	7	(125%)	HEATING	1.21	1.21	(100%)
OTHER MOTORS	52.9	52.9	(100%)	NONCONTINUOUS	9.15	9.15	(100%)
RECEPTACLES	6.41	6.41	(50%>10)	KITCHEN EQUIP	0	0	(N/A)
				NONCOIN/DIVERSE	0	0	(N/A)
				TOTAL KVA	96.3	101	

BALANCED THREE PHASE AMPS 280

PP2 (NEW)

ROOM BACK OF HOUSE
MOUNTING REFER TO SINGLE-LINE DIAGRAM
FED FROM PP1
NOTE

VOLTS 208Y/120V 3P 4W
BUS AMPS REFER TO SINGLE-LINE DIAGRAM
NEUTRAL 100%

AIC REFER TO SINGLE-LINE DIAGRAM
MAIN REFER TO SINGLE-LINE DIAGRAM
LUGS REFER TO SINGLE-LINE DIAGRAM

CKT #	TYP	BKR	CIRCUIT DESCRIPTION	KVA LOAD A	B	C	CKT #	TYP	BKR	CIRCUIT DESCRIPTION	KVA LOAD A	B	C	
(LO) 1		15/1	3 DR. COOLER	0.42			2		20/1	BLDG SIGN	1			(S/S)
(LO) 3		15/2	3 DR. COMPRESSOR		1.25		4		20/1	BLDG SIGN		1		(S/S)
5						1.25	6		20/1	SPARE			0	(S/S)
(LO) 7		15/1	3 DR. COOLER	0.42			8		20/1	CANOPY LTG	0.189			(S/S)
(LO) 9		15/2	3 DR. COMPRESSOR		1.25		10		20/1	EXT. LTG		0.428		(S/S)
11						1.25	12		20/1	EXT. FRONT LTG			0.148	(S/S)
(LO) 13		25/2	4 DR. FRZR.	2.27			14		20/2	SITE LIGHTING	1.09			(S/S)
15					2.27		16					1.09		
(LO) 17		15/3	4 DR. COMPRESSOR			1.43	18		20/2	SITE LIGHTING			1.09	(S/S)
19				1.43			20				1.09			
21					1.43		22		50/2	CU-3		2.72		
(LO) 23		30/2	5 DR. FRZR.			2.8	24						2.72	
25				2.8			26		50/2	CU-1	2.72			
(LO) 27		20/3	5 DR. COMPRESSOR		1.43		28					2.72		
29						1.43	30		50/2	CU-2			2.72	
31				1.43			32				2.72			
33		20/1	CONDENSATE PUMP		0.185		34		20/1	SPARE		0		
35		50/2	CU-4			2.72	36		15/1	UH-1			0.228	
37				2.72			38		20/1	IRRIGATION SYSTEM	0.25			
39		20/1	FC-1		2.21		40		20/1	FC-3		2.21		
41		20/1	FC-2			2.21	42		20/1	FC-4			2.21	
			TOTAL CONNECTED KVA BY PHASE								20.6	20.2	22.2	
			TOTAL CONNECTED AMPS BY PHASE								172	168	186	

	CONN. KVA	CALC. KVA			CONN. KVA	CALC. KVA	
LIGHTING	7.13	8.92	(125%)	CONTINUOUS	0	0	(125%)
LARGEST MOTOR	5.6	7	(125%)	HEATING	0	0	(100%)
OTHER MOTORS	50	50	(100%)	NONCONTINUOUS	0.25	0.25	(100%)
RECEPTACLES	0	0	(50%>10)	KITCHEN EQUIP	0	0	(N/A)
				NONCOIN/DIVERSE	0	0	(N/A)
				TOTAL KVA	63	66.2	

BALANCED THREE PHASE AMPS 184

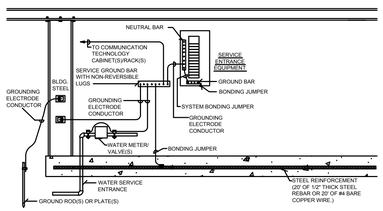
PANEL SCHEDULE LEGEND

(LO) – PROVIDE LOCK-ON DEVICE FOR BREAKER
(WORK) – EMPLOYEE WORK LIGHTING (CIRCUIT VIA VENSTAR SYSTEM)
(SALES) – CUSTOMER LIGHTING (CIRCUIT VIA VENSTAR SYSTEM)
(GFEP) – PROVIDE GFEP BREAKER
(S/S) – SIGN AND SITE LIGHTS (CIRCUIT VIA VENSTAR SYSTEM)

HVAC ELECTRICAL COORDINATION SCHEDULE (HECS)

ABBREVIATIONS		CONTRACTOR TYPE		MOTOR CONTROL TYPE		CONTROL TYPE	
DC	LOCAL DISCONNECT	EC	ELECTRICAL CONTRACTOR	CS	COMBINATION STARTER	TC	TIMECLOCK
MC	MOTOR CONTROL (POWER)	EX	EXISTING	MCC	MOTOR CONTROL CENTER	CPT	CONTROL POWER TRANSFORMER
SD	DUCT SMOKE DETECTOR	FC	FIRE PROTECTION CONTRACTOR	MG	MAGNETIC STARTER OR CONTACT	BAS	BUILDING AUTOMATION SYSTEM
CN	CONTROLS	GC	GENERAL CONTRACTOR	MS	MANUAL STARTER	LOW	LOW VOLTAGE CONTROLS
TS	TOGGLE SWITCH	HC	HVAC CONTRACTOR	VFD	VARIABLE FREQUENCY DRIVE	LINE	LINE VOLTAGE CONTROLS
C/B	H.A.C.R. CIRCUIT BREAKER AT SOURCE PANELBOARD	MFR	MANUFACTURER	MSR	MANUAL STARTER W/CONTROL RELAY	RLINE	REVERSE ACTING LINE VOLTAGE STAT
FUSE	FUSE AT LOCAL DISCONNECT (VERIFY FIELD RATING)	PC	PLUMBING CONTRACTOR	OV	OVERCURRENT PROTECTION	MAN	MANUAL
FLA	OPERATING FULL LOAD AMPS	OR	OWNER OR OTHERS			FA	FIRE ALARM
MCA	MINIMUM CIRCUIT AMPACITY					CO	CARBON MONOXIDE SENSOR
CP	CORD AND PLUG CONNECTION					INT	INTEGRAL TO EQUIPMENT
						SCP	SMOKE CONTROL PANEL

MARK	DESCRIPTION	STATUS	VOLTS	PHASE	EMERG	BHP	HP	HTG KW	WATTS	FLA	MCA	OCP	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FURN	CN INST	CN WIRE	SD QUAN
CU-1	CONDENSING UNIT		208	1							24.3	40	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	0
CU-2	CONDENSING UNIT		208	1							29	50	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	0
CU-3	CONDENSING UNIT		208	1							29	50	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	0
CU-4	CONDENSING UNIT		208	1							24.3	40	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	0
EF-1	EXHAUST FAN		120	1						1.14			EC	EC	EC	MG	MFR	MFR	MFR	MAN	EC	EC	EC	0
EF-2	EXHAUST FAN		120	1						1.14			EC	EC	EC	MG	MFR	MFR	MFR	MAN	EC	EC	EC	0
EUH-1	ELECTRIC UNIT HTR		208	1				1.125		5.8			EC	EC	EC	---	---	---	---	INT	HC	HC	HC	0
FC-1	FANCOIL UNIT		120	1			1			9.2	12.4	15	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	1
FC-2	FANCOIL UNIT		120	1			1			11.8	15.6	20	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	1
FC-3	FANCOIL UNIT		120	1			1			11.8	15.6	20	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	1
FC-4	FANCOIL UNIT		120	1			1			11.8	15.6	20	EC	EC	EC	MG	MFR	MFR	MFR	LOW	HC	HC	HC	1
UH-1	UNIT HEATER		120	1				8.8		1.9		15	EC	EC	EC	MG	MFR	MFR	MFR	LINE	HC	EC	EC	0



GENERAL NOTES:

A. THIS DETAIL APPLIES AT EACH SERVICE ENTRANCE. REFER TO FLOOR PLANS FOR GROUND BAR LOCATIONS, AND IF NOT SHOWN IN PLAN VIEW INSTALL AS CLOSE AS POSSIBLE TO SERVICE ENTRANCE EQUIPMENT.
B. PROVIDE ALL GROUNDING ELECTRODE CONDUCTORS PER NEC TABLE 250.66 UNLESS NOTED OTHERWISE.
C. PROVIDE SERVICE GROUND BAR EQUAL TO ERICO EQUIPMENT GROUND BAR W/INSULATERS AND BRACKET (1/4" THICK, 4" WIDE, 24" LONG WITH HOLE PATTERN TYPE "CC").
D. SIZE GROUND CONDUCTORS BETWEEN ROOM GROUND BARS AS GROUND ELECTRODE CONDUCTORS.
E. SIZE ALL BONDING JUMPERS PER NEC TABLE 250.122 UNLESS NOTED OTHERWISE.
F. COORDINATE WITH ELECTRICAL INSPECTOR. MODIFY SPECIFIC MEANS & METHODS IF SO DIRECTED.

2 / E400 SERVICE GROUND DETAIL
SCALE: N.T.S.

GENERAL RISER NOTES

A. PARALLEL FEEDER CONDUCTORS SHALL BE CUT TO EXACTLY THE SAME LENGTHS AND SHALL BE FROM THE SAME FACTORY RUN. ALL CONNECTIONS FOR SAME SHALL BE TORQUED TO IDENTICAL VALUES.

B. EXTERIOR ELECTRICAL WORK SHALL NOT ONLY BE WEATHERPROOF AND WATER-TIGHT, BUT SHALL ALSO BE RUST-RESISTANT.

C. CONDUCTORS BELOW GRADE OR SUBJECT TO MOISTURE SHALL BE "XHHW-2".

D. POWER DISTRIBUTION EQUIPMENT SUPPLIER SHALL PROVIDE EQUIPMENT APPROPRIATELY RATED AND BRACED TO ACCOMMODATE THE AVAILABLE FAULT CURRENT AT THE UTILITY COMPANY TRANSFORMER SECONDARIES. THIS SUPPLIER SHALL ACCORDINGLY PROVIDE ANY RELATED CALCULATIONS SO THAT THEIR EQUIPMENT IS PROPERLY COORDINATED FOR THE AVAILABLE FAULT CURRENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THIS SUPPLIER WITH COPIES OF THE ELECTRICAL DOCUMENTS AS REQUIRED SO THAT PROPERLY RATED/BRACED EQUIPMENT IS PROVIDED UNDER BASE BID.

E. GROUNDING ELECTRODE CONDUCTORS SHALL BE PROVIDED IN STRICT COMPLIANCE WITH N.E.C., INCLUDING N.E.C. ARTICLE 250 AND TABLE 250-66. THESE CONDUCTORS MAY NOT BE INDICATED ON RISERS OR SINGLE-LINES, BUT SHALL BE PROVIDED UNDER BASE BID NEVERTHELESS.

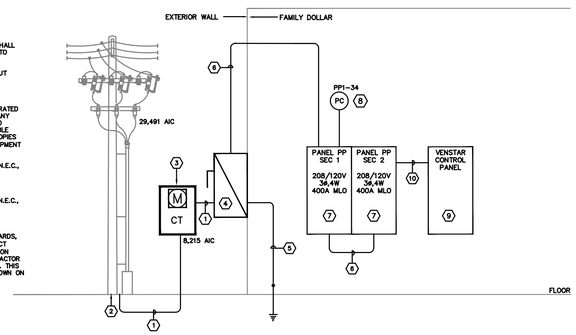
F. EQUIPMENT GROUNDING CONDUCTORS SHALL BE PROVIDED IN STRICT COMPLIANCE WITH N.E.C., INCLUDING N.E.C. ARTICLE 250 AND TABLE 250-122. THESE CONDUCTORS MAY NOT BE INDICATED ON RISERS OR SINGLE-LINES, BUT SHALL BE PROVIDED UNDER BASE BID NEVERTHELESS.

G. WORKING CLEARANCES SHALL BE PROVIDED FOR ALL ELECTRICAL EQUIPMENT (SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, STARTERS, DISCONNECTS, ETC. AS APPLICABLE) IN STRICT COMPLIANCE WITH N.E.C. CHAPTER 1, PART B, SECTION 110-26(a). LOCATIONS SHOWN ON FLOOR PLANS ARE SCHEMATIC AND DIAGRAMMATIC IN NATURE. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING COMPLIANCE WITH THE ABOVE N.E.C. REFERENCE. THIS REQUIREMENT APPLIES TO EQUIPMENT ON FLOOR PLANS AS WELL AS TO EQUIPMENT SHOWN ON RISER.

H. ALL PANELS HAVE NEMA 1 ENCLOSURES UNLESS NOTED OTHERWISE.

I. ALL PANELS ARE SURFACE MOUNTED UNLESS NOTED OTHERWISE.

J. E.C. SHALL BE RESPONSIBLE FOR BALANCING ALL PHASES TO WITHIN 10%



1 / E400 ELECTRICAL RISER DIAGRAM
SCALE: N.T.S.

RISER DIAGRAM KEYED NOTES:

1. COORDINATE WITH THE LOCAL UTILITY COMPANY AND LANDLORD FOR THE INSTALLATION OF A NEW 400 AMP, 208/120V, 3Φ, 4-WIRE ELECTRICAL SERVICE FOR FAMILY DOLLAR. PROVIDE (2) SETS OF (4) #3/0 AWG CU EACH SET IN 2" CONDUIT FOR INCOMING SERVICE CONDUCTORS. SEE SITE PLAN FOR ROUTING.
2. UTILITY TERMINAL POLE AND NEW POLE MOUNTED TRANSFORMER.
3. COORDINATE WITH THE LOCAL UTILITY COMPANY TO ARRANGE FOR THE PURCHASE AND INSTALLATION OF A NEW WEATHERPROOF CT CABINET, CT'S AND METER/METER SOCKET.
4. PROVIDE NEMA-3R 400A/3P, 22K AIC RATED, 240V HEAVY DUTY DISCONNECT, SERVICE ENTRANCE RATED WITH 400A CLASS J FUSES.
5. PROVIDE (1) #1/0 CU IN 3/4" CONDUIT. SEE GROUNDING DETAIL 2 THIS SHEET.
6. PROVIDE (2) SETS OF (4) #3/0 AWG CU & (1)#3 AWG CU GND. EACH SET IN 2" CONDUIT FOR INCOMING SERVICE CONDUCTORS.
7. PROVIDE NEW PANEL PP1, 22K AIC RATED, WITH FEED THRU LUGS TO FEED NEW PANEL PP2, 22K AIC RATED. PANELS SHALL BE RECESSED.
8. PROVIDE NEW PHOTOCELL (120V). FACING NORTH BY E.C. TO CONTROL NIGHT LIGHT AT FRONT CANOPY ONLY. NOTE: VENSTAR HAS A SEPERATE PHOTOCELL.
9. SEE V100 FOR VENSTAR DETAILS AND INFORMATION.
10. SEE E200 FOR CIRCUIT NUMBER. PROVIDE (2) #12 CU., (1) #12 CU GND. IN 3/4"C.

IMPORTANT NOTE:
FAULT CURRENT CALCULATIONS ARE BASED ON A 2250VA UTILITY TRANSFORMER AT 2% IMPEDANCE. E.C. SHALL VERIFY THE AVAILABLE FAULT CURRENT AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.

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KLH
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DELTA T DEVELOPMENT, LLC
2425 LUMBLEY ROAD
RAINBOW CITY, AL 35906
PH: 256.278.4377

DATE: 04.14.2014
JOB No.: 15150
DRAWN: EP, ALG
CHECKED: MPE

NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

ROBERT A. HEIL REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA
APR 14 2014

PRELIMINARY DESIGN: 03.27.2014
PERMIT ISSUE: 04.14.2014

ELECTRICAL RISER AND PANEL SCHEDULES

SHEET NUMBER
E400

DIVISION 26 - ELECTRICAL SPECIFICATIONS

GENERAL REQUIREMENTS

The General Provisions of the Contract including the General and Supplemental Conditions and General Requirements apply to the work in this section. Before submitting a bid, examine documents of all other trades, visit the site and get acquainted with all conditions that may in any way whatsoever affect the execution of this contract. Take measurements and be responsible for exact size and locations of all openings required for the installation of work. Figured dimensions are reasonably accurate and should govern in setting out work. Where detailed method of installation is not indicated or where variations exist between described work and approved practice, direction of the Owners representative on job site shall be followed.

The contract includes all items of material and labor required for the complete installation and full operation of the electrical work as shown on the drawings and hereinafter specified. All materials and methods shall be in accordance with applicable codes, regulations and/or ordinances and meet the approval of local inspection authority having jurisdiction. The latest edition of the National Electric Code shall be the minimum requirement for all work. Examine the drawings and specifications for compliance with the above codes, regulations and ordinances and base bid and work accordingly. Obtain and pay for all permits and inspections related to this work. A certificate of approval for work from inspection authority shall be given to the Owner before final acceptance will be given by Owners representative.

All work, materials, and equipment shall have a one year warranty after acceptance of the work by the Owner. Any defective items shall be removed and replaced at the electrical sub-contractors expense and to the satisfaction of the Engineer.

Perform work under this contract in close harmony with other contractors so completed work shall present a neat and workmanlike installation. Exposed finished materials and equipment shall be carefully cleaned and wiped to remove grease, smudges, dust and other spots and left smooth and clean. During the progress of the work, the electrical sub-contractor shall carefully clean up after his men and shall leave the premises and all portions of the building in which he is working free of debris and in a clean and safe condition.

Whenever the words "contractor", "this contractor", etc. appear on drawings or in these specifications for the Electrical Work, it shall refer to the Electrical Sub-Contractor. Whenever the word "provide" appears in these documents, it shall be interpreted to mean "Furnish & Install".

The exact mounting height of outlets shall be determined in the field with relation to architectural details and equipment being served. It shall be the responsibility of this contractor to coordinate outlet location with equipment. The Owners representative shall be permitted to relocate any outlet prior to installation within a 15 foot limit at no additional charge in contract price. All fasteners, hangers and methods of hanging exposed work in finished areas shall be submitted to the Owners representative for approval before installation.

This contractor shall be responsible for the proper instruction of each system to the satisfaction of the Owners representative.

The Electrical Contractor shall consult the Plumbing, Heating and Structural plans in all instances before installing his work so that his piping will not interfere with those branches. In the event of a conflict, this contractor shall report to the Owners representative at once and do no further work to be installed until a satisfactory arrangement is decided upon. Any work done, or equipment placed in position by this contractor, creating a conflict in violation hereof, shall be readjusted to the satisfaction of the Owners representative at the expense of the contractor. The decision of the Owners representative shall be final in regard to changes due to conflicting conditions. Contractor shall complete his work or any part thereof at such time as may be designated by the Owner, so that it can be used for temporary or permanent use and such use of the system shall not be construed as an acceptance of same by Owner.

RECORD DRAWINGS AND OPERATING INSTRUCTIONS & SERVICE MANUAL

Two sets of mechanical/electrical drawings shall be provided as record drawings which shall be separate, clean, sepia reproducibles reserved for the purpose of showing a complete picture of the work as actually installed. These drawings shall also serve as work progress report sheets and the electrical sub-contractor shall make any notations, neat and legible thereon daily as work proceeds. The drawings shall be available for inspection at all times and shall be kept at the job at a location designated by the Owners representative. At the completion of the work, these record drawings shall be signed by the electrical sub-contractor, dated and returned to the Owners representative. Final payment of contract will not be made until receipt and review of said drawings.

Provide two neatly bound (with tabbed sections) copies of maintenance and instruction books, parts list pertaining to all equipment furnished. Submit to the Owners representative for approval. Final payment will not be made until drawings for record, maintenance and instruction manuals are delivered to the Owners representative.

MATERIALS AND EQUIPMENT

All materials and equipment shall be new. All materials, apparatus and equipment shall bear the Underwriters Laboratories Inc., label where regularly supplied. Certain manufacturers of material and equipment are specified and plans are detailed according to this material. This contractor shall base his bid on furnishing and installing this make of material and equipment.

Where more than one make of material or equipment is specified, the contractor shall state in his bid which make he proposes to furnish. Shop drawings shall be submitted on material and equipment to be furnished by the contractor for Engineers approval. This approval to be obtained prior to shipment of equipment.

ELECTRICAL IDENTIFICATION

Provide manufacturers standard self-adhesive vinyl tape not less than 3 mils thick by 1-1/2" wide. Where applicable, install on all concealed raceways at connection to all junction boxes, pull boxes, equipment, wall/floor/roof penetrations, etc. Unless otherwise indicated or required by governing regulations, provide orange tape with black letters. Provide circuit identification bands for all cables and conductors. Provide manufacturers standard color coding for cable/conductor jacket and/or insulation for all cables and conductors of all systems. Match identification with marking system used in existing systems (where applicable), shop drawings, contract documents, and similar previously established identification for projects electrical work. Provide on all conductors of all systems.

The following insulation color code shall be used for system and voltage identification. This shall apply to both feeder and branch circuit wiring. Interchange of colors shall not be permitted.

208Y/120V System:	Black, Red, Blue & White (neutral)
480Y/277V System:	Brown, Orange, Yellow & Gray (neutral)
Equipment Grounding:	Green

Systems: To match existing where applicable - verify in field.The use of Scotch color coding tapes for phase identification shall be permitted on feeder cables only.Install engraved plastic-laminate sign on major units of electrical equipment, including panelboards, disconnects, starters, control panels, etc. Except as otherwise indicated, provide single line of text, 1/2" high lettering, on 1-1/2" high sign (2" high where 2 lines are required), white lettering in black field. Unless determined otherwise in field, provide text matching terminology and numbering of the contract documents and shop drawings. As a minimum provide signs for each unit of the following categories of electrical work where such work exists on the project. Secure to substrate with fasteners, except use adhesive where fasteners should not or cannot penetrate substrate.

All equipment & system identification nomenclature shown on drawings or listed herein is shown for general design and installation reference only. The actual nameplate, etc. nomenclature for this project shall be verified by electrical contractor in field prior to fabrication and where applicable, shall be an extension of existing nomenclature used on the site as determined in field by electrical contractor.

GROUNDING

All metallic conduit, surface wireways, supports, cabinet and equipment shall be grounded in accordance with the latest issue of the National Electric Code.

Provide all new branch circuiting installed under this contract with redundant insulated parity sized green ground wire by this contractor, installed in strict accordance with NEC Article 517. This contractor shall field test all exposed conductive surfaces in all new "Patient Vicinity" areas (Exam Rooms), and provide all necessary corrective work (if any) to comply with grounding requirements of NEC Article 517. Provide documentation of all testing results to engineer and state electrical inspector.

CONDUIT AND FITTINGS

Normal system power feeders and branch circuits shall be installed in separate raceways from emergency system power.

All wiring for different power voltages shall be installed in raceway systems separate from each other.

All wiring for the various electrical systems shall be installed in raceway systems separate from each other.

All conduit installed indoors shall be galvanized steel EMT (3/4" minimum); all fittings for same shall be set-screw or compression type steel, with insulated throats. Unless indicated otherwise on drawings or in other parts of the electrical specifications, all wiring of all systems shall be installed in conduit. Conduit fill shall not exceed NEC requirements.

Conduit shall be cleaned inside before any wires are pulled. Conduit ends shall be capped and plugged with standard accessories as soon as conduit has been permanently installed. Conduit installed without conductors shall be provided with sweep bends and baling wire for pulling.

All joints shall be made tight with watertight couplings matching conduit and all corners shall be make with long radius. The ends of all conduits shall be cut square and reamed and all joints brought to a shoulder. Conduit shall be continuous between outlets to make a complete installation and to effect a continuous ground. Suitable supports and fastening shall be provided for conduit.

Conduit shall be supported by approved straps, fasteners and hangers. Hangers shall be suspended from rods. Perforated straps will not be acceptable. Fasteners shall be lead expansion shields in block or concrete, toggle bolts in hollow walls, machine screws on metal surfaces and wood screws on wood construction. All conduit shall be supported independently from all other building systems and shall be supported directly from structural components. At building expansion joints and where deflection is expected, conduits shall be provided with expansion fittings with bonding jumpers. Conduits passing through structural members shall be provided with stub and coupling or sleeve in the member. Where moisture conditions are encountered, a hole shall be drilled at the lowest point in the conduit run. Also provide sleeves for all fire wall and smoke partition penetrations (sealed accordingly).

All raceways shall be entirely free of plaster, mortar, water and other foreign matter.

WIRE AND CABLE

Furnish and install all necessary cable of the size and type indicated on the drawings or specified hereinafter. All wire shall be copper. All wiring shall be new. No wire smaller than #12 AWG shall be installed unless specifically designated. Use of #14 color coded wire will be allowed for control circuits only. All conductors shall be copper. Provide stranded conductors for all sizes unless indicated otherwise.

Provide THHN/THWN insulation for all conductors size 500 MCM (kcmil) and larger, and no. 8 AWG and smaller. For all other sizes provide THW or THHN/THWN insulation as appropriate for the locations where installed. Provide color coded insulation/jacket for phase identification. All wires shall be rated at 600 volts. Provide type XHHW insulation for all wiring below grade or subject to moisture.

Type AC and MC Cable shall be formed from continuous length of spirally wound, interlocked zinc-coated or galvanized (inside & outside) strip **steel**. All conductors shall be rated for 90 deg. C. minimum. Provide with full parity sized green insulated equipment ground conductor. Provide compatible **steel** fittings with integral red plastic insulated throat bushings, compliant with NEC 350-5. Cables shall be 90 deg. C. rated with all components and fittings listed for grounding and compliant with the following.

UL Std.4 and UL Std. 83.
ANSI E119 and E814.
NEC Articles 250 and 333.
NEC Article 517 (including health care listing & continuous green marking on outer jacket).

METHOD OF WIRING - POWER

Neatly dress all work. Install all work parallel and perpendicular to surfaces or exposed structural members, and follow surface contours, where possible. Keep conductor splices to minimum. Install splice and tap connectors which possess equivalent or better mechanical strength and insulation rating than conductors being spliced. Use splice and tap connectors which are compatible with conductor material. All wires shall be run continuous from outlet to outlet/luminaire to luminaire. Insulation value of joints to be 100% in excess of wire. Provide adequate length of conductors within electrical enclosures and train the conductors to terminal points with no excess. Bundle multiple conductors, with conductors larger than no 10 AWG cabled in individual circuits. Make terminations so there is no bare conductor at the terminal.

Keep conductor splices to minimum. Pull conductors simultaneously where more than one is being installed in same raceway. Use UL listed pulling compound or lubricant, where necessary. Install splice and tap connectors which possess equivalent or better mechanical strength and insulation rating than conductors being spliced. Use splice and tap connectors which are compatible with conductor material. Increase wire sizes per NEC to offset voltage drop as/if required.

Branch subfeeder circuits shall be installed as shown on the floor plans. Where outlets are indicated by letters on plans, they shall be controlled by corresponding switches. No wire size smaller than No. 12 shall be used for any branch circuit unless otherwise noted on plans for control circuits. Larger sizes shall be used where required and/or indicated on the plans.
Provide the following minimum wire sizes based on distances from panel to first device of a 15 or 20 ampere general lighting or receptacle branch circuit. In addition to upsizing conductors as required for voltage drop, provide minimum #10 AWG conductors to the last device for branch circuits more than 150 feet in length.

Distance	AWG Wire Sizes
Up to 60 feet	#12
61 to 90 feet	#10
91 to 150 feet	# 8
151 to 240 feet	# 6

Provide the following minimum AWG conductor sizes for general branch circuiting that are not indicated on drawings, based on using copper conductors. Where applicable increase as required to accommodate voltage drop and to accommodate special conditions. Do not derate any grounded (neutral) conductors. Temperature ratings listed below pertain to both wire and terminations.

	60 Deg. C Rating	75 Deg. C Rating	Equipt. Grounding
Source Breaker/Fuse	AWG Wire Size	AWG Wire Size	AWG Wire Size
15 Ampere	#12	#12	#12
20 Ampere	#12	#12	#12
25 Ampere	#10	#10	#10
30 Ampere	#10	#10	#10
35 Ampere	# 8	# 8	#10
40 Ampere	# 8	# 8	#10
45 Ampere	# 6	# 8	#10
50 Ampere	# 6	# 6	#10
60 Ampere	# 4	# 6	#10
70 Ampere	# 4	# 4	#8
80 Ampere	# 3	# 4	#8
90 Ampere	# 2	# 2	#8
100 Ampere	# 1	# 2	#8

Outlets shall be located approximately as shown on the plans and shall be wired to provide control of outlets indicated. All wires of any one circuit shall be run in the same conduit.

All wires shall be run continuous from outlet to outlet. Insulation value of joints to be 100% in excess of wire. Mechanical wire splicers shall be Scotchlock insulated type, T&B Stakon or approved equal. The conductors terminating at each wired outlet shall be left not less than 8" long at their outlet fittings to facilitate installment of devices or luminaires. Friction and rubber tape conform to Federal Specifications HH-T-11 and HH-T-111. Plastic electrical tape shall be Scotch #33+ or approved equal.

Do not share neutrals when amongst multiple branch circuits or with multi-wire branch circuits.

Provide grounding electrode conductors per NFPA 70 (National Electrical Code, NEC) for service entrances and derived systems.

Provide all feeders and branch circuits with insulated (green covering) equipment grounding conductors per NFPA 70 (National Electrical Code, NEC).

Only install conduit exposed outdoors when it is impossible to do otherwise, or only if specifically indicated for such installation case-by-case elsewhere in documents. Installation convenience, financial considerations, lack of coordination with other trades and similar rationale are not sufficient reasons for doing so. In cases where conduits must be installed at outdoor locations, de-rate conductors and modify conduit sizes per NFPA 70 (National Electrical Code, NEC). Provide expansion fittings, which are UL listed and labeled for the respective applications, at all building expansion joints and at maximum distances of 100 feet. Paint all such conduits with at least two coats of UV-resistant weatherproof paint. Provide white paint on flat rooftops that have finishes white in color, and for otherwise-colored roof finishes that are not visible from the building interior or from the ground outdoors. Elsewhere select colors to match surrounding surfaces; submit colors to Architect for review in advance of procuring paint.

Only install conduit exposed on rooftops when it is impossible to do otherwise, or only if specifically indicated for such installation case-by-case elsewhere in documents. Installation convenience, financial considerations, lack of coordination with other trades and similar rationale are not sufficient reasons for doing so. In cases where conduits must be installed on rooftops, de-rate conductors and modify conduit sizes per NFPA 70 (National Electrical Code, NEC). Provide expansion fittings, which are UL listed and labeled for the respective applications, at all building expansion joints and at maximum distances of 100 feet. Paint all such conduits with at least two coats of UV-resistant weatherproof paint. Provide white paint on flat rooftops that have finishes white in color, and for otherwise-colored roof finishes that are not visible from the building interior or from the ground outdoors. Elsewhere select colors to match surrounding surfaces; submit colors to Architect for review in advance of procuring paint.

Type AC/MC cable may be utilized only if NEC approved and if approved by local authority having jurisdiction and if included in the limited applications defined below.

15 through 30 ampere branch circuit work. This shall apply only under **all** of the following circumstances and conditions.
Only where concealed (all exposed wiring shall be installed in conduit).
Route all cables perpendicular and parallel to the building architectural lines/surfaces/structural members, keeping offsets to a minimum and following surface contours where possible. Maintain a uniform elevation for all cable runs wherever possible. All cables shall be supported/anchored at maximum 4 foot intervals and within 12" of box or outlet and shall not sag. Install cables in a manner that prevents overheating. Cables shall be fastened directly to the structure using factory clamps/clips specifically designed for the respective cable (Caddy or equal).
Only where installed for normal utility circuits; all wiring for emergency system feeders and receptacle branch circuits shall be in conduit (EMT), no exceptions.

OUTLET, JUNCTION AND SWITCHBOXES

In general, gang type outlet boxes shall not be used. The outlet box locations indicated on drawings shall be considered approximate, and therefore, it shall be incumbent upon this contractor to study the general construction with relation to spaces and equipment surrounding each outlet. All outlet, switch and junction boxes shall be made of code galvanized steel complete with rings and screw cover plates and located where shown and noted on drawings. Where conduit is concealed, boxes shall not be less than 4" square x 1-1/2" deep. All boxes shall be equipped with proper covers to bring flush with finished wall surface.

Where outlet boxes occur in block, cinder, or concrete block, facing tile or other material where such materials form the finished wall surface, the opening for the box shall be cut neatly and of the size that the cover plate will cover all parts of the opening. Conduletes shall be used on exposed raceways. In general, junction boxes shall be furnished and required by the National Electric Code, of the proper sizes, and shall be constructed of #12 gauge steel with removable front fastened on with counter sunk head screws or other approved means. For special application, junction boxes shall be noted, detailed and/or sized on the drawings or in the field as required.

HEIGHT OF BOXES

Prior to rough-in, verify all box/device mounting heights and locations in field with Owners representative. In general, where not located at counter areas, the height of boxes from finished floor to center of boxes shall be as follows, unless otherwise noted on plans:

Switches: 47/0"
Devices at special heights: As directed in field.
Receptacles: 1'6" (unless counter height)
Telephone Outlets (desk phone): 1'6"
Telephone Outlets (Wall phone): 4'0"
Data Cable Outlets: 1'6"Control Stations: 4'0"

WIRING DEVICES

Unless specifically indicated otherwise, or directed otherwise in field, provide ivory color for normal utility wiring devices. Unless specifically indicated otherwise, or directed otherwise in field. Unless specifically indicated otherwise, or directed otherwise in field, provide red color for "emergency" utility wiring devices.

Provide wall switches, that are flush self-grounding with green ground screw and color coded cover, snap toggle type, back and side wired, specification grade. Provide wall switches rated 20A, 120/277 volts, 1 HP at 120V, A.C. quiet type. Single pole switches shall be equal to Leviton #1221-2 series. Double-pole switches shall be equal to Leviton #1222-2 series. 3-way switches shall be equal to Leviton #1223-2 series. 4-way switches shall be equal to Leviton #1224-2 series. Locking type switches shall be same as above except with "L" suffix. Provide six keys.

Provide grounded ("neutral") conductors in all wall switch, dimmer and other lighting control outlet boxes, even if not immediately utilized.

Provide Weather Resistant GFCI receptacles for all receptacles installed in damp or wet locations. Provide as shown on the drawings with "WP/GFI" next to it denoting exterior cover shall be installed with a weather resistant (WR) GFCI receptacle. Provide duplex weather resistant receptacles equal to Leviton # W7899 series. For receptacle circuits protected with 15A breakers, provide NEMA 5-15R equivalents.

Provide duplex and single specification grade receptacles, 2-pole, 3-wire grounding, self-grounding, green grounding screw, ground terminals and poles internally connected to mounting yoke, color coded base, 20-amperes, 125-volts, with metal plaster ears, back & side wiring, NEMA configuration 5-20R. Provide duplex receptacles equal to Leviton #5362 series. For receptacle circuits protected with 15A breakers, provide NEMA 5-15R equivalents. Provide duplex receptacles equal to Leviton #5361 series for simplex (single) applications. Provide clock hanger receptacles equal to Leviton #5361-CH.

Provide self-grounding commercial specification grade, duplex receptacles, ground-fault circuit interrupters; feed-thru type, capable of protecting connected downstream receptacles on single circuit, grounding type UL-rated 943, Class A, Group 1, specification grade, 20-amperes rating (device & feed-thru), 125-volts, 60 Hz; with solid-state ground-fault sensing and signaling (maximum threshold of 5mA at 0.025 seconds maximum); equip with 20-ampere plug configuration; NEMA 5-20R. Provide ground fault circuit interrupter duplex receptacles equal to Leviton #8898 series. For receptacle circuits protected with 15A breakers, provide NEMA 5-15R equivalents. Where GFI protected receptacles are shown on drawings, provide a separate GFI receptacle for each one shown. Do not feed downstream receptacles from load-side (GFI-protected) terminals of upstream receptacles. Provide Weather-Resistant Receptacles with UL "WR" marking, compliant with NEC 406.8, for all applications in wet or damp locations.

Provide self-grounding, duplex specification grade safety type receptacles, 2-pole, 3-wire grounding, self-grounding, green grounding screw, ground terminals and poles internally connected to mounting yoke, color coded base, 20-amperes, 125-volts, with metal plaster ears, back & side wiring, NEMA configuration 5-20R, with shutter mechanisms for tamper resistant applications. Provide duplex safety type receptacles equal to Leviton #5262-SG series. For receptacle circuits protected with 15A breakers, provide NEMA 5-15R equivalents.

Special purpose receptacles shall be of the size, type and manufacturer as indicated on the plans or as determined in field. Refer to GROUNDING Section for special receptacle grounding requirements.

Provide wall plates with engraved legends where indicated on drawings and/or where required per ELECTRICAL IDENTIFICATION Section. All device wallplates shall be standard size; "midway", "oversized" ("jumbo") or "extra deep" wallplates shall not be acceptable. Construct with metal screws for securing plates to devices; screw heads colored to match finish of plates. Wallplates in finished areas shall be commercial specification grade, satin finish stainless steel, with beveled edges, equal to Leviton Type 430 series. Wallplates in unfinished areas shall be galvanized steel.

SUPPORTS, INSERTS, CUTTING AND PATCHING

This contractor shall do all cutting and patching required for the admission of his work. Any damage done by this contractor to the building during the progress of his work shall be made good at his own expense. All patching shall be done by a skilled craftsman in that respective trade. It shall be the responsibility of this contractor to supervise the installation of, and pay for all additional members, wood or metal and labor which may be required to support any type of permanent or temporary electrical apparatus employed in the execution of this contractors work.

Seal all new floor, ceiling, wall, slab, etc. penetrations to match or exceed existing assembly fire ratings. Provide sleeve seals for all sleeves, provide sleeves for all penetrations. All penetrations of fire-rated or smoke-rated wall, floors ceilings, etc. shall be sealed immediately after raceways are installed. All new electrically related work shall be supported directly from building structural members. New electrically related work shall not be supported from ductwork, ductwork hanger, ceiling supports, existing conduit support, etc. All conduits (and cable assemblies, where applicable) shall be routed parallel to building structural members. Any and all noncomplying work installed by the electrical contractor shall be removed and reinstalled to the satisfaction of the owner's representative and the engineer, at the expense of the electrical contractor.

LUMINAIRES

All recessed luminaires shall be equipped with necessary plaster frames and surface trim. All recessed fluorescent luminaires shall be equipped and suitably constructed to operate with "P" rated ballasts. All recess mounted incandescent and H.I.D. luminaires shall have UL approved thermal protection per latest edition of NFPA/NEC. All junction boxes and serviceable components (ballasts, thermal protection devices, fuses, etc.) for recessed luminaires shall be readily accessible for service or replacement from below the ceiling, without removing any ceiling components (other than tiles).

All luminaires utilized for emergency egress lighting shall be connected ahead of switching. All ballasts of the same type shall be of the same manufacturer and catalog number. All lamps of the same type shall be of the same manufacturer and catalog number.

Provide low energy solid state rapid start electronic fluorescent lamp ballasts specifically designed for operating lamp types indicated. Fluorescent ballasts shall be Motorola or Advance equal (less than or equal to 20% THD). All luminaires shown on drawings with multi-level switching shall be provided with multiple ballasts to accommodate same. All other luminaires may contain either single ballasts or multiple ballasts as required to fulfill required function and as required to comply with construction schedule.

Incandescent lamps shall be G.E., Sylvania or Philips, long life type (3000 hours). All incandescent lamps shall be inside frosted unless specifically directed otherwise. Provide socket adapters/extenders if required for accommodating the specified lamp.

Fluorescent lamp color temperature shall be as indicated on drawings or as directed in field.

F32T8 fluorescent lamps shall be rapid start, energy saving type, minimum 75 CRI, minimum 2850 initial lumens and minimum 20,000 hours rated. Lamps shall be G.E., Sylvania, Osram or Philips, equal to Sylvania #FO32/RS.

All surface and recessed ceiling luminaires installed on grid or tile ceilings shall be installed to agree with module of ceiling either displacing a tile, or unit on center of tile, or centered on grid lines.

Provide luminaires and/or luminaire outlet boxes with hangers to properly support luminaire weight. All luminaires installed in or on suspended ceiling systems shall be anchored directly to the building structural system above (anchored per NEC). Such anchoring shall be independent of the ceiling support system. All luminaires shall be installed plumb and level. Support surface mounted luminaires greater than 2 feet in length at a point in addition to the outlet box luminaire stud.

Where used for temporary lighting prior to time of Substantial Completion, replace all incandescent luminaire lamps, as well as any lamps that are defective, damaged or burned out.

MECHANICAL EQUIPMENT

Provide all conduit and outlet boxes as required for all control wiring and thermostats. Furnish and install power wiring and make line connections to all heating, ventilating and air conditioning equipment. This contractor shall furnish and install all necessary starters, disconnects, etc. to operate the various architectural, mechanical and technology equipment and systems. The Electrical Contractor shall provide control and interlock wiring as specifically indicated on the drawings. All other control wiring required for operation of the systems shall be provided by the Heating Contractor.

Examine the approved documents of all trades and branches of work and shall wire and connect all motors, disconnects, control devices and other items requiring electricity for operation. Make the necessary electrical connections between the specified equipment and the junction box near equipment with flexible metallic conduit and matched connectors. No flexible conduit shall be exposed in finished rooms. Provide each motor, appliance, etc. with disconnect switch or starter.

Provide GFEP source circuit breakers for all circuits that feed heat trace.

PANELBOARDS

Subject to compliance with requirements, provide panelboard products of one of the following (for each type and rating of panelboard and enclosure): Square D Company, General Electric Company, Siemens, Eaton/Cutler-Hammer.

Panelboards shall bear UL labels for their specific applications. Panelboards shall be suitable for service voltage with number of branch circuits of capacity scheduled. Unless otherwise indicated, panelboards and sections thereof, if any, shall have main lugs only of capacity equal to, or greater than, the rating or setting of the over the current protective device next back on the line. All circuit breaker panelboard bus assemblies shall be of the distributed (sequence) bussing type throughout, so that any 2 adjacent single pole breakers and/or spaces shall be replaceable by a 2 pole internal common trip breaker, and any 3 adjacent single pole breakers and/or spaces shall be replaceable by a 3 pole internal common trip breaker, 15 amp through 70 amp inclusive, without disturbing any other breaker. All panelboards shall be UL listed and labeled for use as service entrance equipment where being used as such.

All bussing shall be copper.

All branch circuit breakers shall be full ambient compensated thermal magnetic molded case with quick-make and quick-break action and positive handle trip indication, both on manual and on automatic operation. Breakers shall be of the over-the-center toggle operating type with the handle going to a position between "on" and "off" to indicate automatic tripping.

All circuit breakers shall be full size. "Tandem" or "split" breakers shall not be permitted. All multi-pole breakers shall have internal common trip with all load side box lugs of one breaker in the same gutter. All circuit breakers shall have sealed cases to prevent tampering. All 15 and 20 ampere branch circuit breakers shall be UL Listed as SWD (switching duty). All 15-70 ampere branch circuit breakers shall be HACR Type. All GFI circuit breakers shall be UL Class A with maximum threshold of 5 mA. All branch circuit breakers serving all ballasted (fluorescent/HID) lighting loads shall be HID rated.

Provide all electrical distribution related equipment with appropriately braced bussing and properly rated breakers, fuses, etc. for the available fault currents.

Fill out panelboard's circuit directory card upon completion of installation work. Directories shall be neatly typewritten. All panelboard directories shall include the actual room names/numbers that are selected for interior signage/designation.
All recessed panelboards shall be provided with a minimum of three 1-1/4" empty conduits terminated to a single 12" X 12" X 6" deep junction box above accessible ceiling.

DISCONNECTS, STARTERS & CONTACTORS

Subject to compliance with requirements, provide equipment of one of the following (for each type and rating):
Allen-Bradley Co.
General Electric Co.
Siemans/ITE
Square D Co.
Westinghouse/Cutler-Hammer

Disconnect switches shall be equal to Square D Type HD. All Safety Switches/Disconnects shall be heavy duty, safety type, quick make and quick break and externally operated. Unless noted otherwise on drawings or directed otherwise in field, all disconnect switches shall be fused. Unless noted otherwise on drawings or directed otherwise in field, brace all disconnect switches for 200,000 A.I.C. Provide heavy-duty switches, with fuses of classes and current ratings indicated and UL listed for use as service equipment under UL Standard 98 or 869. See Section "FUSES" for specifications. Where current limiting fuses are indicated, provide switches with non-interchangeable feature suitable only for current limiting type fuses. Install disconnect switches within sight of controller position unless otherwise indicated.

Except as otherwise indicated, provide motor starters and ancillary components; of types, sizes, ratings and electrical characteristics indicated, which comply with manufacturer's standard materials, design and construction in accordance with published product information, and as required for complete installations. All starters shall be equipped with pilot lights. All starters shall be sized according to load being served or as noted on drawings, whichever requirement is larger. Manual and magnetic starters thermal overload elements shall be rated between 115% and 125% full load current or as called for under NEC. Install and connect capacitors furnished by HVAC Contractors ahead of overloads where applicable.

Provide single-phase AC fractional HP manual motor starters, of sizes and ratings required. Equip with manually operated quick-make, quick-break toggle mechanisms; and with one-piece melting alloy type thermal units. Equip with thermal overload relay with field adjustment capability of plus or minus 10% variation of nominal overload heater rating, for protection of fractional HP motors as shown on drawings. Starter shall become inoperative when thermal unit is removed. Provide starters with double break silver alloy contacts, visible from both sides of starter; green pilot lights, and switch capable of being padlocked-OFF. Manual Starters shall be equal to the following.

Manual Starter in Finished Areas:
Square D #2510 or Allen-Bradley Bul. 600-TQX109 flush mounted, 2-pole toggle switch type with neon pilot and NEMA 1 Type B enclosure for flush wall installation.

Manual Starter for Exposed Conduit Installation:
Square D #8536 or Allen-Bradley Bul. 600-TAX109 surface mounted, 2-pole toggle switch type with neon pilot and NEMA 1 Type FG-2P enclosure for surface wall installation.

Provide contactors equipped with external pilot lights in cover, and external HOA selector switches in cover. Wire contactors for lighting applications so that the "AUTO" position is the normal activated condition (i.e. photocell controlled, photocell/time-clock controlled, remote switch controlled, BAS controlled, etc.); so that the "OFF" position is manual override to turn lighting off; and so that the "HAND" position is manual override to turn lighting on. Provide contactors with field convertible N.O./N.C. contacts and descriptive nameplates.

FUSES

Subject to compliance with requirements, provide fuses of one of the following. All fuses shall be of the same manufacturer: Bussman, LittelFuse, Shawmut (A4BQ series).

Except as otherwise indicated, provide fuses of types, sizes, ratings, and average time-current and peak let-through current characteristics indicated, which comply with manufacturer's standard design, materials, and constructed in accordance with published product information, and with industry standards and configurations. Fuses 1 ampere through 600 amperes shall be rejection type. Fuses 601 amperes through 6000 amperes shall be Hi-Cap, bolt type.

Provide UL Class L current-limiting, time-delay, dual-element (with pure silver links) fuses equal to Bussman # KRP-C (low peak) rated 600 volt, 60 Hz with 200,000 RMS symmetrical interrupting current rating for protecting transformers, motors, circuit-breakers, service entrances and distribution feeders above 600 amperes.

Provide UL Class RK1 time-delay, dual-element (with pure silver links) fuses equal to Bussman #LPS-RK1 (600V) or Bussman #LPN-RK1 (250V) rated 60 Hz with 200,000 RMS symmetrical interrupting current rating for protecting service entrances and distribution feeders 600 amperes and below.

Provide UL Class RK5 time-delay, dual-element (with pure silver links) fuses equal to Bussman #LPS-RK5 (600V) or Bussman #LPN-RK5 (250V) rated 60 Hz with 200,000 RMS symmetrical interrupting current rating for protecting general duty motors.

Provide UL Class J time-delay, dual-element (with pure silver links) fuses equal to Bussman #JS (600V) or Bussman #JN (250V) rated 60 Hz with 200,000 RMS symmetrical interrupting current rating for protecting service entrances and distribution feeders. Class J fuses shall only be used in equipment which is specifically designed to incorporate this size fuse.

Provide UL Class T current limiting fuses rated 600-volts, 60 Hz with 200,000 RMS symmetrical interrupting current rating. Provide Class T fuses only where specifically called for on specialty applications in contract documents or where specifically directed in field.

Provide cable limiters rated 600-volts, 60 Hz with tubular type terminals for compression connection to 500 MCM copper cable. Provide cable limiters only where specifically called for in contract documents or where specifically directed in field.

Provide factory fuse identification labels, installed on the inside of the door of each switch indicating type and size of fuses installed. For types and ratings required, furnish additional fuses, amounting to 10 percent of fuses supplied, but not less than one set of 3 of each kind.

Each fuse shall be clearly factory marked with classification, characteristics, ampere ratings, voltage ratings, etc. Fuses shall not be shipped installed in switches nor shall they be installed in the equipment until the equipment until the equipment is ready to be energized. All fuses shall be of the same manufacturer.

Prior to installing fuses for protection of specific equipment, motors, etc., verify recommended fuse size/type in field from respective equipment manufacturer. If a conflict in fuse size/type results between manufacturer's recommendations and above specifications, contact engineer. Provide all required fuses under base bid. Install fuses in fused switches.

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2425 LUMBLEY ROAD
RAINBOW CITY, AL 35906
PH: 256.278.4377

DATE: 04.14.2014
JOB No.: 15150
DRAWN: EP, ALG
CHECKED: MPE

NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

ROBERT A. HEIL REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA
APR 14 2014

PRELIMINARY DESIGN: 03.27.2014
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ELECTRICAL SPECIFICATIONS

SHEET NUMBER
E401

COM*check* Software Version 3.9.3

Interior Lighting and Power Compliance Certificate

90.1 (2007) Standard

Section 1: Project Information

Project Type: **New Construction**
Project Title : Family Dollar

Construction Site:
200 Highway 83
Emmons County
Linton, ND 58552

Owner/Agent:

Designer/Contractor:
Kohrs Lonnemann Heil Engineers
1538 Alexandria Pike
Ft. Thomas, KY 41075
859-442-8050

Section 2: Interior Lighting and Power Calculation

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B x C)
Retail:Sales Area	8063	1.7	13707
		Total Allowed Watts =	13707

Section 3: Interior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Retail (8063 sq ft.)				
Linear Fluorescent 1 copy 4: C104: 4' LINEAR STRIP: 48" T8 28W (Super T8): Electronic:	4	25	56	1400
Linear Fluorescent 1 copy 3: CCHVCC: 8' LINEAR STRIP: 48" T8 28W (Super T8): Electronic:	2	9	48	432
Linear Fluorescent 1 copy 2: I: 4' LINEAR STRIP: 48" T8 28W (Super T8): Electronic:	1	2	24	48
Linear Fluorescent 1 copy 1: C10: 8' LINEAR STRIP: 48" T8 28W (Super T8): Electronic:	4	64	95	6080
Linear Fluorescent 1 copy 1: C106: 6' LINEAR STRIP (W 2' BLANK): 48" T8 28W (Super T8): Electronic:	2	48	56	2688
LED: M: VESTIBULE LIGHTING: Other: Electronic:	1	2	25	50
			Total Proposed Watts =	10698

Interior Lighting PASSES: Design 22% better than code

Section 4: Compliance Statement

Compliance Statement: The proposed lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting system has been designed to meet the 90.1 (2007) Standard requirements in COMcheck Version 3.9.3 and to comply with the mandatory requirements in the Requirements Checklist.

Name - Title _____ Signature _____ Date _____

Section 5: Post Construction Compliance Statement

Record Drawings and Operating and Maintenance Manuals:

☐ 1. Construction documents with record drawings and operating and maintenance manuals provided to the owner.

_____ _____ _____

Lighting Designer or Contractor Name Signature Date

COM*check* Software Version 3.9.3

Inspection Checklist

Energy Code: 90.1 (2007) Standard

Requirements: 0.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

90.1 (2007) Standard	Plan Review	Complies?	Comments/Assumptions
4.2.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
8.4.1.1, 8.4.1.2 [PR6][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

90.1 (2007) Standard	Rough-in Electrical Inspection	Complies?	Comments/Assumptions
9.4.1.1 [EL1][1]	Automatic controls to shut off all building lighting installed in buildings >5,000 ft2.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
9.4.1.2 [EL2][1]	Independent lighting controls installed per approved lighting plans and all manual controls readily accessible and visible to occupants.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
9.4.1.4 [EL4][1]	Separate lighting control devices for specific uses installed per approved lighting plans.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
9.4.2 [EL5][1]	Ballasted one and three lamp fixtures with >30 W/lamp have two lamp tandem wired ballasts when >=2 fixtures in same space on same control.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
9.4.3 [EL6][1]	Exit signs do not exceed 5 watts per face.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
9.6.2 [EL8][1]	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

90.1 (2007) Standard	Final Inspection	Complies?	Comments/Assumptions
8.7.1 [FI16][1]	Furnished as-built drawings for electric power systems within 30 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
8.7.2 [FI17][1]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
9.2.2.3 [FI18][1]	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Interior Lighting fixture schedule for values.*

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

1 ELECTRICAL SPECIFICATIONS
NTS

NORTH

DATE: 04.14.2014
JOB No.: 15150
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APR 14 2014

PRELIMINARY DESIGN: 03.27.2014
PERMIT ISSUE: 04.14.2014

ENERGY COMPLIANCE

SHEET NUMBER
E402

GENERAL NOTES

A. THIS WORK SHALL BE EXECUTED IN STRICT CONFORMITY WITH BASE BUILDING SPECIFICATIONS AND WITH THE LATEST EDITION OF THE PREVAILING STATE PLUMBING AND BUILDING CODES AND ALL LOCAL REGULATIONS THAT MAY APPLY. IN CASE OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND A GOVERNING CODE OR ORDINANCE, THE MORE STRINGENT STANDARD SHALL APPLY.

B. ALL UNDERGROUND SANITARY WASTE PIPING SHALL BE SOLVENT SEAL SCHEDULE 40 PVC-DWV OR GASKETED HUB/SPIGOT CAST IRON. ABOVE GROUND SHALL BE SOLVENT SEAL SCHEDULE 40 PVC-DWV OR HUBLESS CAST IRON WITH MECHANICAL COUPLINGS AND SLOPED WITH A MINIMUM OF 1/8" PER FOOT (3" OR LARGER) AND 1/4" PER FOOT (2" AND SMALLER) WHERE INSTALLED IN THE HORIZONTAL POSITION. MATERIAL SHALL COMPLY WITH CODE REQUIREMENTS.

C. ALL VENT PIPING SHALL BE SOLVENT SEAL SCHEDULE 40 PVC-DWV OR THREADED GALVANIZED STEEL. MATERIAL SHALL COMPLY WITH CODE REQUIREMENTS. NO PVC SHALL BE USED IN RETURN AIR PLENUM.

D. DOMESTIC WATER PIPING BELOW GRADE OR SLAB SHALL BE BRAZED TYPE 'K' COPPER, WATER PIPING ABOVE SLAB SHALL BE SOLDERED TYPE 'L' OR MECHANICAL CRIMP JOINT. INSULATE WATER PIPING WITH 1/2" ARMAFLEX II OR EQUAL BY RUBATEX OR ARMACELL.

E. ALL PLUMBING FIXTURES SHALL BE SUPPLIED WITH INDIVIDUAL HEAVY DUTY SUPPLY STOPS AND CODE APPROVED P-TRAPS WITH CLEANOUTS. EXPOSED PIPING SHALL BE CHROME PLATED WITH CHROMED ESCUTCHEONS AT WALL PENETRATIONS.

F. NO PIPING SHALL PASS DIRECTLY OVER ELECTRICAL POWER DISTRIBUTION CABINETS. CONTRACTOR SHALL COORDINATE PANEL LOCATIONS PRIOR TO PIPING INSTALLATION.

G. ALL FLOOR DRAIN TRAPS SHALL BE PROVIDED WITH TRAP PRIMERS PER LOCAL CODES HAVING JURISDICTION.

H. ALL HORIZONTAL VENT PIPING MAY NOT BE SHOWN ON THIS PLAN FOR THE SAKE OF CLARITY. REFER TO SANITARY ISOMETRIC FOR VENT PIPING ROUTING AND PROVIDE COMPLETE VENTING SYSTEM IN ACCORDANCE WITH CODE.

I. ALL PLUMBING WORK SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO PROCEEDING WITH INSTALLATION.

J. ALL DOMESTIC WATER BRANCH LINES SHALL HAVE FULL PORT, TWO PIECE BALL TYPE ISOLATION VALVES.

K. PROVIDE WATER HAMMER ARRESTORS (WHA) AT ALL WATER PIPE DROPS TO FIXTURES WITH QUICK CLOSING VALVES AND ON SYSTEMS WITH HIGHER THAN NORMAL PRESSURE WHERE WATER HAMMER MAY BE AN ISSUE.

L. INSTALL ALL FLOOR CLEANOUTS TO CLEAR EQUIPMENT AND PROVIDE REQUIRED ACCESSIBILITY FOR MAINTENANCE.

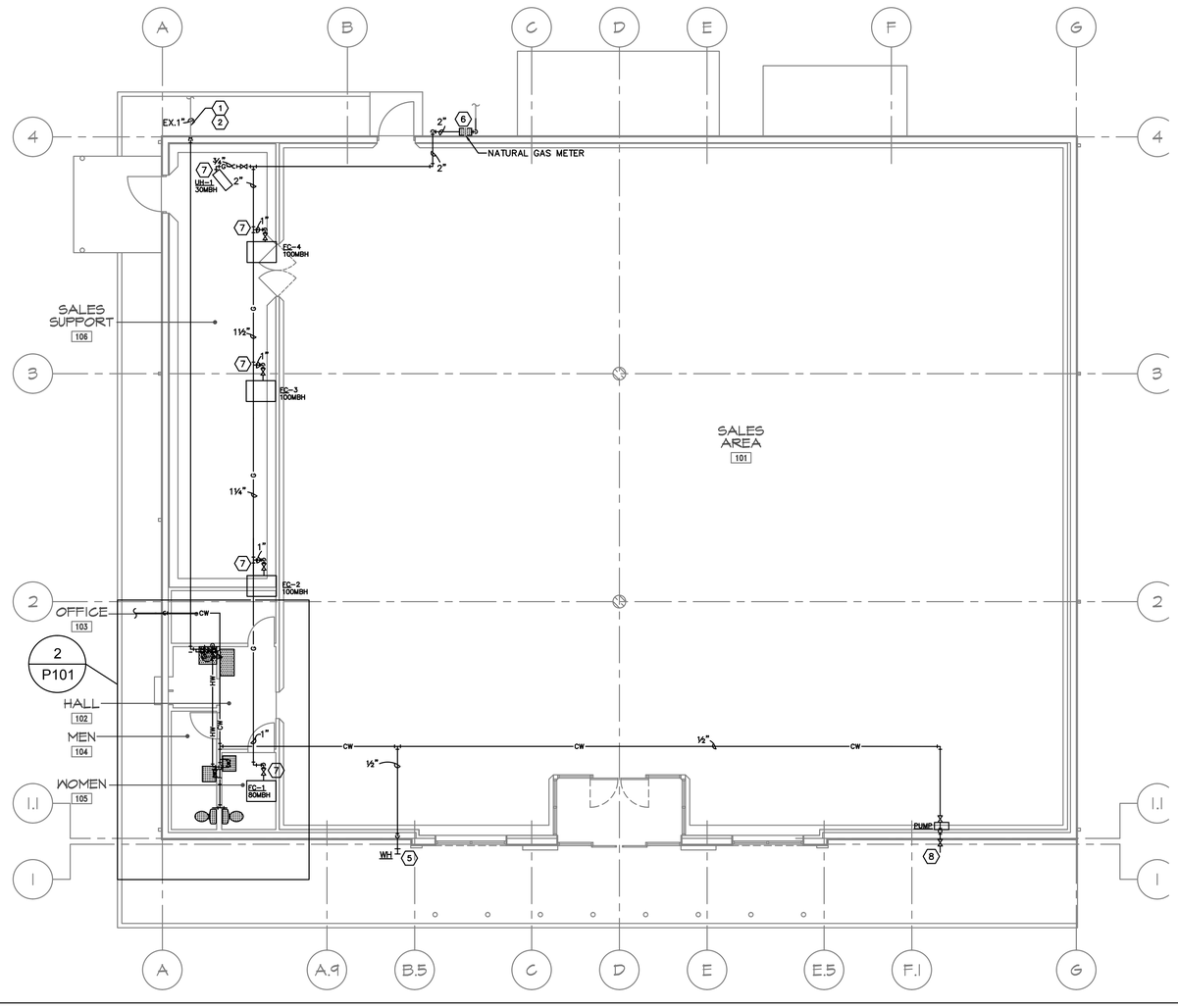
M. VERIFY INVERT ELEVATIONS AND EXACT LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO INSTALLING ANY UNDERGROUND PIPING. COORDINATE WITH SITE UTILITY CONTRACTOR.

N. NO SANITARY WASTE LINES SHALL BE RUN UNDER THE SALES AREA EXCEPT FOR WASTE PIPING SERVING FLOOR SINKS AT COOLERS AND FREEZER.

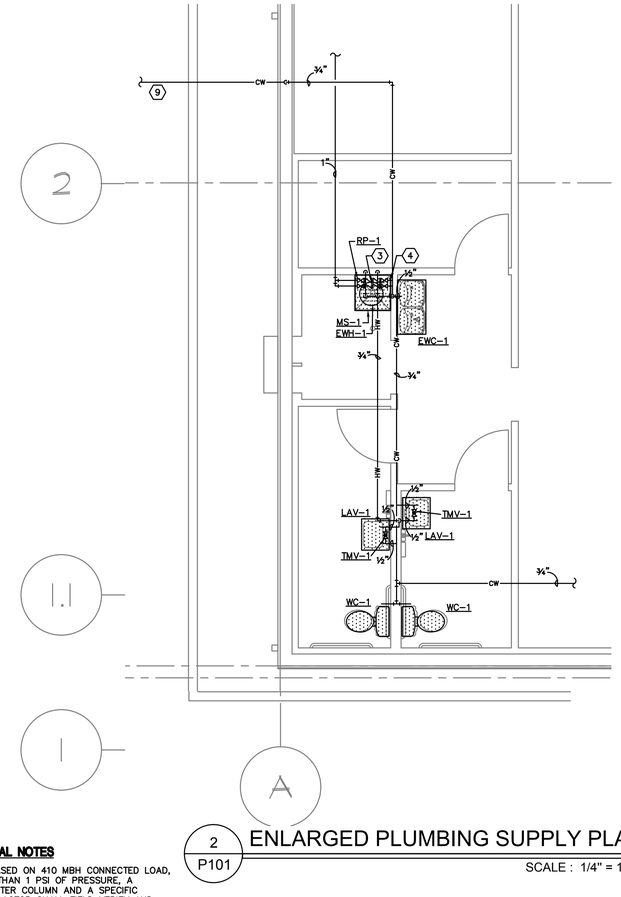
O. HEAT TAPE SHALL BE PROVIDED FOR ALL DOMESTIC WATER LINES LOCATED IN EXTERIOR WALLS.

SUPPLY PLAN KEYED NOTES

1. 1" COLD WATER RISER UP THRU SLAB WITH SHUT-OFF VALVE IN WALL. PROVIDE ACCESS PANEL IN WALL. PROVIDE HEAT TAPE FOR ALL DOMESTIC WATER LINES LOCATED IN EXTERIOR WALLS IN CLIMATE WHERE PIPES ARE SUBJECT TO FREEZING.
2. PROVIDE 1" WATER LINE RUN FROM METER TO BUILDING. PROVIDE PRESSURE REDUCING VALVE WHERE WATER PRESSURE EXCEEDS 70 PSI. COORDINATE WATER PIPE ROUTING AND BACKFLOW PREVENTER REQUIREMENTS AND LOCATION WITH CIVIL ENGINEER AND GENERAL CONTRACTOR. VERIFY WHETHER EXISTING 1" METER CAN BE REUSED WITH CIVIL PRIOR TO BID. COORDINATE WATER METER LOCATION WITH CIVIL ENGINEER IF NEW METER IS TO BE PROVIDED.
3. LOCATE ELECTRIC HOT WATER HEATER ABOVE MOP SINK WITH 6'-8" CLEAR TO BOTTOM OF WATER HEATER SUPPORT PLATFORM. MINIMUM 10 GALLON, 1.5 KW. PROVIDE EXPANSION TANK: AMTROL ST-5.
4. PROVIDE HOSE AND MOP HANGER BRACKET FOR MOP SINK.
5. PROVIDE RECESSED BOX TYPE FREEZELESS WALL HYDRANT EQUAL TO WOODFORD MODEL B65 WITH AUTOMATIC DRAINING ANTI-SIPHON VACUUM BREAKER.
6. PROVIDE NEW GAS METER. COORDINATE EXACT LOCATION WITH CIVIL AND UTILITY. PROVIDE NEW PRESSURE REGULATOR AS REQUIRED. ROUTE GAS PIPE UP TO ROOF LEVEL ALONG EXTERIOR WALL.
7. PROVIDE CONNECTION TO NEW MECHANICAL EQUIPMENT PER MANUFACTURER GUIDELINES. PROVIDE DIRT LEG AND SHUT OFF VALVE.
8. PROVIDE 1/2" CW CONNECTION (TYPE L HARD COPPER, INSULATED) LOCATED 48" AFF TO WATER VENDING MACHINE. PROVIDE BALL VALVE AND INLINE BACKFLOW PREVENTER (ASSE RATED 1024) EQUAL TO WATTS SERIES 7. BALL VALVE FOR MACHINE SHALL NOT EXCEED 1 FOOT FROM THE MACHINE. TERMINATE LINE WITH 1/2" MALE ADAPTER. FIELD VERIFY EXACT CW LOCATION WITH FDS CONSTRUCTION REPRESENTATIVE PRIOR TO INSTALLATION.
9. PROVIDE BACKFLOW PREVENTOR AND 3/4" SERVICE FOR IRRIGATION. PROVIDE COLD WATER RISER DOWN THRU SLAB WITH SHUT-OFF VALVE IN WALL. PROVIDE ACCESS PANEL IN WALL. PROVIDE HEAT TAPE FOR ALL DOMESTIC WATER LINES LOCATED IN EXTERIOR WALLS IN CLIMATE WHERE PIPES ARE SUBJECT TO FREEZING. COORDINATE REQUIREMENTS AND LOCATION WITH CIVIL ENGINEER AND GENERAL CONTRACTOR.



1 PLUMBING SUPPLY PLAN
1/8" = 1'-0"



2 P101 ENLARGED PLUMBING SUPPLY PLAN
SCALE : 1/4" = 1'-0"

NATURAL GAS PIPING GENERAL NOTES

NATURAL GAS PIPING IS SIZED BASED ON 410 MBH CONNECTED LOAD, 150 LINEAR FEET OF PIPE, LESS THAN 1 PSI OF PRESSURE, A PRESSURE DROP OF 0.3-INCH WATER COLUMN AND A SPECIFIC GRAVITY OF 0.6. PLUMBING CONTRACTOR SHALL FIELD VERIFY AND COORDINATE EXACT CONDITIONS WITH LOCAL NATURAL GAS COMPANY PRIOR TO BID. IMMEDIATELY NOTIFY ENGINEER OF RECORD IF FIELD CONDITIONS DIFFER.

FIXTURE SCHEDULE

ALL FIXTURES SHALL BE COMMERCIAL GRADE AND SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES.

ITEM	FIXTURE	ROUGH-IN SERVICES						DESCRIPTION	REMARKS
		COLD WATER	HOT WATER	WASTE	VENT	INDIRECT WASTE	GAS		
WC-1	ADA FLOOR SET TANK TYPE WATER CLOSET	1/2"		4"	2"			AMERICAN STANDARD MODEL 3378.128 CADET 3 FLOWISE, HIGH EFFICIENCY 1.28GPF, RIGHT HEIGHT, ELONGATED TOILET. NO SUBSTITUTIONS ALLOWED. PROVIDE CAULK AROUND FIXTURE.	
LAV-1	ADA WALL HUNG LAVATORY	1/2"	1/2"	2"	1-1/2"			AMERICAN STANDARD LUCERNE, 0355.012, VITREOUS CHINA WALL HUNG, FRONT OVERFLOW, D-SHAPED BOWL, CONCEALED ARM SUPPORTS, 4" OC FAUCET HOLES, FAUCET LEDGE, SELF DRAIN DECK AREA CONTOURED SIDE AND BACK SPLASH SHIELDS, LEVER HANDLE FAUCET, THERM-MIX VALVE ASSE 1070. PROVIDE AMERICAN STANDARD MODEL 1340.225 METERING CENTERSET FAUCET WITH TRUEBRO MODEL 102 TRAP WRAP KIT AND MOSURE 165. PROVIDE CAULK AROUND FIXTURE.	
F.D.	FLOOR DRAIN			3"	1-1/2"			ZURN Z-415-P-VP-B, DURA-COATED CAST IRON WITH BOTTOM OUTLET, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR, TYPE B STRAINER TRAP PRIMER CONNECTION, 1-3" EXTENSION ADAPTER, VANDAL PROOF SCREWS.	
EWH-1	WATER HEATER	1/2"	1/2"					WATER HEATER. AO SMITH DEL-10, 10 GALLON, 1.5KW, 120V, 1-PHASE. PROVIDE SUPPORT PLATFORM.	
EWC-1	WATER COOLER	1/2"		2"	1-1/2"			ELKAY EZSTL8C BARRIER FREE, STANDARD COLOR TO BE SELECTED BY ARCHITECT. 120V, 1-PHASE, TO MEET HANDICAP AND ADA REQUIREMENTS. PROVIDE WITH LKAPREZL APRON.	
FCO	FLOOR CLEAN OUT							ZURN Z-1400-VP ADJUSTABLE POLISHED BRONZE FLOOR CLEANOUT, DURA-COATED CAST IRDON BODY WITH GAS AND WATER TIGHT ABS TAPERED THREAD PLUG, ROUND SECURED TOP, VANDAL RESISTANT PROOF SCREWS. NO-HUB CONNECTION.	
MS-1	MOP SINK	1/2"	1/2"	3"	1-1/2"			FIAT MSB-2424, FAUCET FIAT 830-AA, MOLDED STONE IN MATCHED METAL DIES UNDER HEAT AND PRESSURE ONE PIECE BASIN, 24X24X10 DEEP, 3-1/2" DRAIN OPENING, STAINLESS STEEL FLAT GRID STRAINER. PROVIDE HOSE AND MOP HANGER BRACKET. PROVIDE CAULK AROUND FIXTURE.	
F.S.	FLOOR SINK			3"	1-1/2"			JOSAM SERIES 49323-PVC-3 PVC BODY, 12x12 TOP WITH NICKEL BRONZE HALF GRATE AND SEDIMENT BUCKET.	
RP-1	REDUCED PRESSURE BACKFLOW PREVENTER	1/2"	1/2"			3/4"		WILKINS 975XL, ASSE LISTED 1013 CAST BRONZE MAIN BODY AND ACCESS COVERS, FULL PORT BALL VALVES, TWO INDEPENDETLY OPERATED SPRING LOADED CHECK VALVES, STAINLESS STEEL SPRINGS, DIAPHRAM TYPE INTEGRAL PRESSURE RELIEF VALVE, AIR GAP FITTINGS.	

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

NORTH

DATE: 04.14.2014
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APR 14 2014

PRELIMINARY DESIGN: 03.27.2014
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PLUMBING SUPPLY PLAN

SHEET NUMBER
P101

GENERAL NOTES

A. THIS WORK SHALL BE EXECUTED IN STRICT CONFORMITY WITH BASE BUILDING SPECIFICATIONS AND WITH THE LATEST EDITION OF THE PREVAILING STATE PLUMBING AND BUILDING CODES AND ALL LOCAL REGULATIONS THAT MAY APPLY. IN CASE OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND A GOVERNING CODE OR ORDINANCE, THE MORE STRINGENT STANDARD SHALL APPLY.

B. ALL UNDERGROUND SANITARY WASTE PIPING SHALL BE SOLVENT SEAL SCHEDULE 40 PVC-DWV OR GASKETED HUB/SPIGOT CAST IRON. ABOVE GROUND SHALL BE SOLVENT SEAL SCHEDULE 40 PVC-DWV OR HUBLESS CAST IRON WITH MECHANICAL COUPLINGS AND SLOPED WITH A MINIMUM OF 1/8" PER FOOT (3" OR LARGER) AND 1/4" PER FOOT (2" AND SMALLER) WHERE INSTALLED IN THE HORIZONTAL POSITION. MATERIAL SHALL COMPLY WITH CODE REQUIREMENTS.

C. ALL VENT PIPING SHALL BE SOLVENT SEAL SCHEDULE 40 PVC-DWV OR THREADED GALVANIZED STEEL. MATERIAL SHALL COMPLY WITH CODE REQUIREMENTS. NO PVC SHALL BE USED IN RETURN AIR PLENUM.

D. DOMESTIC WATER PIPING BELOW GRADE OR SLAB SHALL BE BRAZED TYPE 'K' COPPER, WATER PIPING ABOVE SLAB SHALL BE SOLDERED TYPE 'L' OR MECHANICAL CRIMP JOINT. INSULATE WATER PIPING WITH 1/2" ARMAFLEX II OR EQUAL BY RUBATEX OR ARMACELL.

E. ALL PLUMBING FIXTURES SHALL BE SUPPLIED WITH INDIVIDUAL HEAVY DUTY SUPPLY STOPS AND CODE APPROVED P-TRAPS WITH CLEANOUTS. EXPOSED PIPING SHALL BE CHROME PLATED WITH CHROMED ESCUTCHEONS AT WALL PENETRATIONS.

F. NO PIPING SHALL PASS DIRECTLY OVER ELECTRICAL POWER DISTRIBUTION CABINETS. CONTRACTOR SHALL COORDINATE PANEL LOCATIONS PRIOR TO PIPING INSTALLATION.

G. ALL FLOOR DRAIN TRAPS SHALL BE PROVIDED WITH TRAP PRIMERS PER LOCAL CODES HAVING JURISDICTION.

H. ALL HORIZONTAL VENT PIPING MAY NOT BE SHOWN ON THIS PLAN FOR THE SAKE OF CLARITY. REFER TO SANITARY ISOMETRIC FOR VENT PIPING ROUTING AND PROVIDE COMPLETE VENTING SYSTEM IN ACCORDANCE WITH CODE.

I. ALL PLUMBING WORK SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO PROCEEDING WITH INSTALLATION.

J. ALL DOMESTIC WATER BRANCH LINES SHALL HAVE FULL PORT, TWO PIECE BALL TYPE ISOLATION VALVES.

K. PROVIDE WATER HAMMER ARRESTORS (WHA) AT ALL WATER PIPE DROPS TO FIXTURES WITH QUICK CLOSING VALVES AND ON SYSTEMS WITH HIGHER THAN NORMAL PRESSURE WHERE WATER HAMMER MAY BE AN ISSUE.

L. INSTALL ALL FLOOR CLEANOUTS TO CLEAR EQUIPMENT AND PROVIDE REQUIRED ACCESSIBILITY FOR MAINTENANCE.

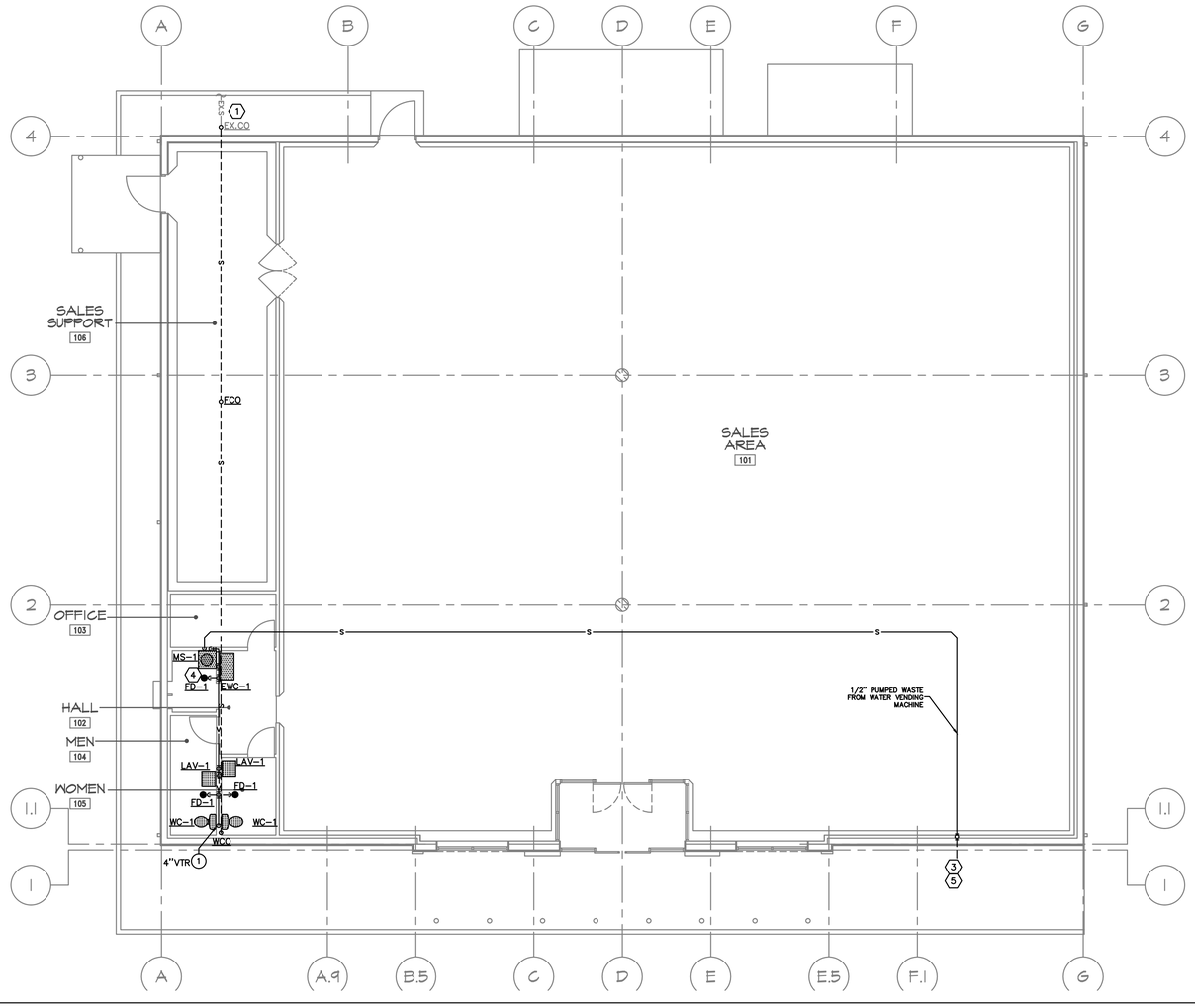
M. VERIFY INVERT ELEVATIONS AND EXACT LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO INSTALLING ANY UNDERGROUND PIPING. COORDINATE WITH SITE UTILITY CONTRACTOR.

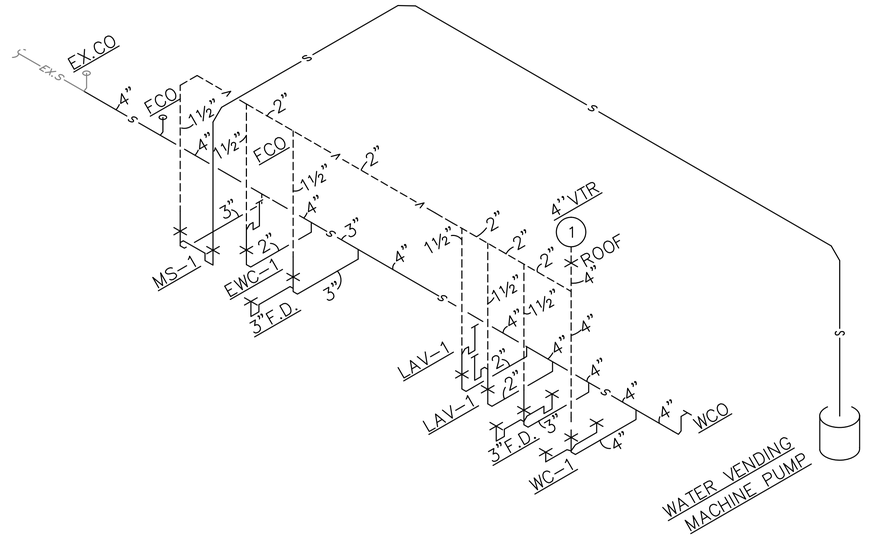
N. NO SANITARY WASTE LINES SHALL BE RUN UNDER THE SALES AREA EXCEPT FOR WASTE PIPING SERVING FLOOR SINKS AT COOLERS AND FREEZER.

O. HEAT TAPE SHALL BE PROVIDED FOR ALL DOMESTIC WATER LINES LOCATED IN EXTERIOR WALLS.

VENT AND WASTE PLAN KEYED NOTES

1. 4" SANITARY WASTE SERVICE. COORDINATE ROUTING AND INVERT WITH CIVIL ENGINEER. SEE CIVIL FOR CONTINUATION.
2. NOT USED
3. PROVIDE 1/2" PUMP IN WASTE CONNECTION (TYPE L HARD COPPER, INSULATED) LOCATED 24" AFF TO WATER VENDING MACHINE. TERMINATE LINE WITH 1/2" MALE ADAPTER. THE DRAIN SHALL BE CONNECTED TO A 2.2 GPM (OPEN-FLOW) DIAPHRAGM PUMP, WHICH CAN PUMP VERTICALLY AND HORIZONTALLY APPROXIMATELY 400 FEET IN TOTAL LENGTH. ROUTE DRAIN UP IN WALL TO BOTTOM OF STRUCTURE. FIELD ROUTE DOWN IN WALL AT COOLERS AND FREEZERS AND RUN ACROSS FLOOR (BELOW CASES) AND SPILL INDIRECTLY INTO MOP SINK WITH 2" AIR GAP.
4. PROVIDE FLOOR DRAIN WITH TRAP PRIMER IN FRONT OF MOP SINK.
5. CONNECT FORCE MAIN INTO INTERNAL WATER VENDING MACHINE PUMP.





2 P102 WASTE AND VENT ISOMETRIC

SCALE : NTS

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

1 PLUMBING WASTE AND VENT PLAN

1/8" = 1'-0"

NORTH

DATE: 04.14.2014
JOB No.: 15150
DRAWN: EP, ALG
CHECKED: MPE

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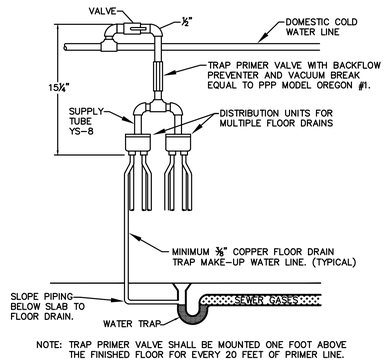
NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

ROBERT A. LONNEMANN REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA
APR 14 2014

PRELIMINARY DESIGN: 03.27.2014
PERMIT ISSUE: 04.14.2014

PLUMBING WASTE AND VENT PLAN

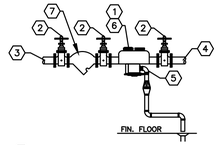
SHEET NUMBER
P102



NOTE: TRAP PRIMER VALVE SHALL BE MOUNTED ONE FOOT ABOVE THE FINISHED FLOOR FOR EVERY 20 FEET OF PRIMER LINE.

5 TRAP PRIMER DETAIL

SCALE: NOT TO SCALE

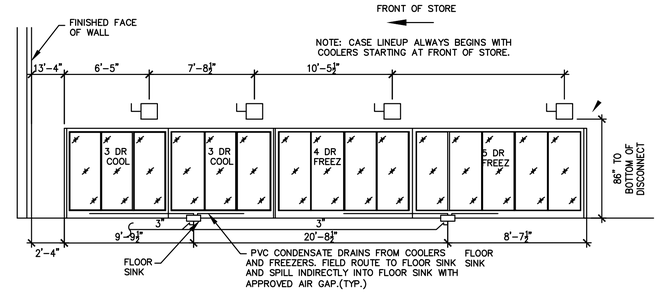


DRAWING NOTES:

1. REDUCED PRESSURE BACKFLOW PREVENTER, SIZE AS INDICATED ON DRAWINGS.
2. SHUT-OFF VALVES.
3. INLET, SIZE AS INDICATED ON DRAWINGS.
4. OUTLET, SIZE AS INDICATED ON DRAWINGS.
5. PRESSURE RELIEF VALVE, RUN DISCHARGE PIPE FULL SIZE TO FLOOR DRAIN WITH REQUIRED AIR GAP & TRAP PRIMER.
6. THE PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL REDUCED PRESSURE BACKFLOW PREVENTERS IN THIS SYSTEM AS REQUIRED TO MEET ALL STATE AND LOCAL CODES AND REGULATIONS.
7. STRAINER.

6 REDUCED PRESSURE BACKFLOW PREVENTER

SCALE: NOT TO SCALE



NOTE: DESIGN BASED ON "ZERO ZONE" FREEZERS AND COOLERS.

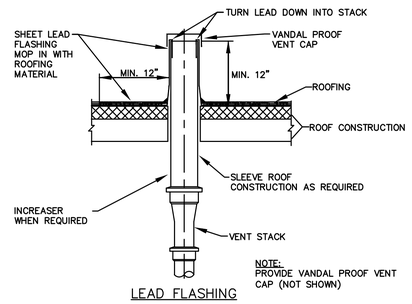
COOLER/FREEZER CONDENSATE DISPOSAL OPTIONS
(IT IS RESPONSIBILITY OF GC TO COORDINATE CONDENSATE DISPOSAL REUIREMENTS WITH LOCAL CODE AUTHORITIES PRIOR TO BEGINNING CONSTRUCTION.)

OPTION 1: REQUIRED FOR ALL NEW CONSTRUCTION UNLESS WRITTEN APPROVAL FROM FD IS OBTAINED PRIOR TO BEGINNING CONSTRUCTION.)
PROVIDE FLOOR SINKS CENTERED UNDER FREEZERS/COOLERS. ROUTE CONDENSATE DRAIN LINES FROM FREEZERS AND COOLERS AND SPILL INDIRECTLY INTO FLOOR SINKS WITH APPROVED AIR GAP. RUN 3" WASTE FROM FLOOR INKS UNDER SALES FLOOR SLAB AND CONNECT TO SANITARY SEWER AT RESTROOMS. IT IS RESPONSIBILITY OF THE PC TO COORDINATE FLOOR SINK LOCATIONS WITH MOST RECENT FDS FIXTURING PLAN AND COOLER/FREEZER MANUFACTURER.

7 COOLER/FREEZER CASES INSTALLATION DETAIL

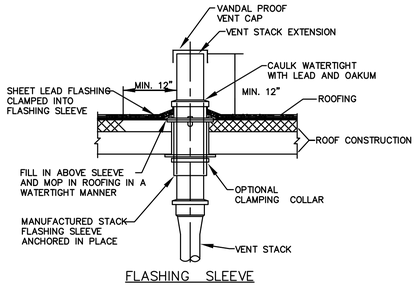
SCALE: NOT TO SCALE

NOTE: G.C. TO ENSURE 20 YEAR ALL WEATHER ROOF WARRANTY (LABOR AND MATERIALS)



NOTE: PROVIDE VANDAL PROOF VENT CAP (NOT SHOWN)

LEAD FLASHING

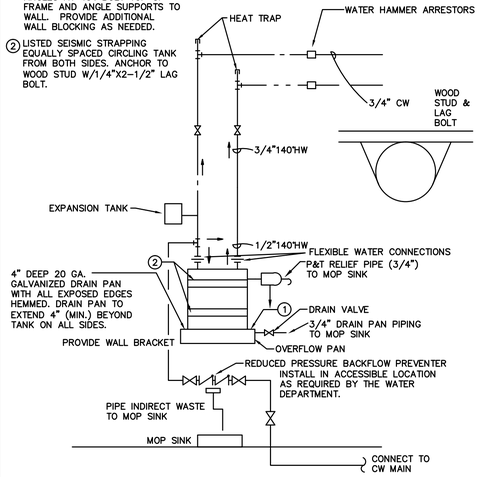


FLASHING SLEEVE

1 VENT THRU ROOF

SCALE: NOT TO SCALE

1. 1-1/2"x1-1/2"x1/4" STEEL ANGLE IRON FRAME WITH SUPPORT ANGLES AT 45° BOLT TOP OF FRAME AND ANGLE SUPPORTS TO WALL. PROVIDE ADDITIONAL WALL BLOCKING AS NEEDED.
2. LISTED SEISMIC STRAPPING EQUALLY SPACED CIRCLING TANK FROM BOTH SIDES. ANCHOR TO WOOD STUD W/1/4"X2-1/2" LAG BOLT.



2 WATER HEATER

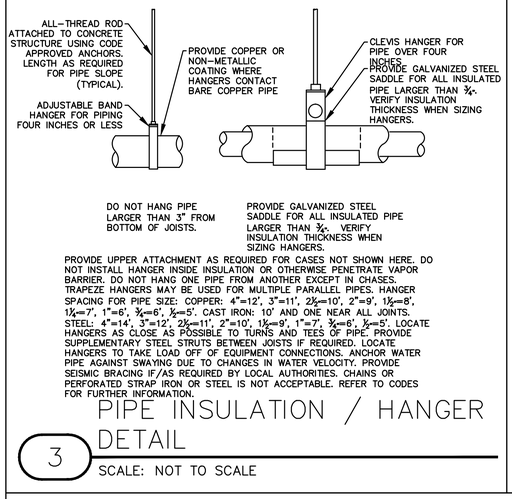
SCALE: NOT TO SCALE

FIELD VERIFY ALL CONDITIONS

DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.

THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.

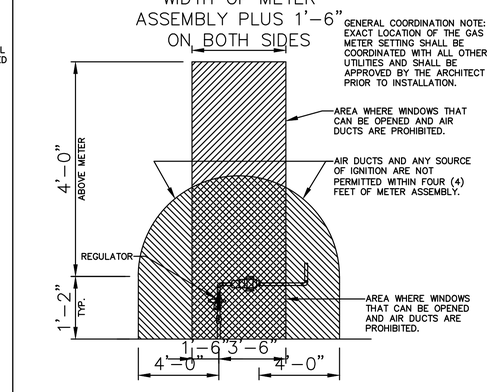
BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.



PROVIDE UPPER ATTACHMENT AS REQUIRED FOR CASES NOT SHOWN HERE. DO NOT INSTALL HANGER INSIDE INSULATION OR OTHERWISE PENETRATE VAPOR BARRIER. DO NOT HANG ONE PIPE FROM ANOTHER EXCEPT IN CHASES. TRAPEZE HANGERS MAY BE USED FOR MULTIPLE PARALLEL PIPES. HANGER SPACING FOR PIPE SIZE: COPPER: 4"=12', 3"=11', 2½"=10', 2"=9', 1½"=8', 1¼"=7', 1"=6', ¾"=6', ½"=5'. CAST IRON: 10' AND ONE NEAR ALL JOINTS. STEEL: 4"=14', 3"=12', 2½"=11', 2"=10', 1½"=9', 1"=7', ¾"=6', ½"=5'. LOCATE HANGERS AS CLOSE AS POSSIBLE TO TURNS AND TEES OF PIPE. PROVIDE SUPPLEMENTARY STEEL STRUTS BETWEEN JOISTS IF REQUIRED. LOCATE HANGERS TO TAKE LOAD OFF OF EQUIPMENT CONNECTIONS. ANCHOR WATER PIPE AGAINST SWAYING DUE TO CHANGES IN WATER VELOCITY. PROVIDE SEISMIC BRACING IF/AS REQUIRED BY LOCAL AUTHORITIES. CHAINS OR PERFORATED STRAP IRON OR STEEL IS NOT ACCEPTABLE. REFER TO CODES FOR FURTHER INFORMATION.

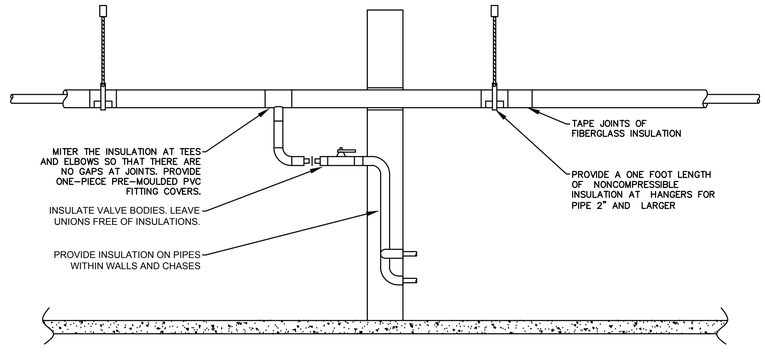
3 PIPE INSULATION / HANGER DETAIL

SCALE: NOT TO SCALE



4 GAS METER SCHEMATIC

SCALE: NOT TO SCALE



0 PIPE INSULATION DETAIL

SCALE: NOT TO SCALE

DATE: 04.14.2014
JOB No.: 15150
DRAWN: EP, ALG
CHECKED: MPE

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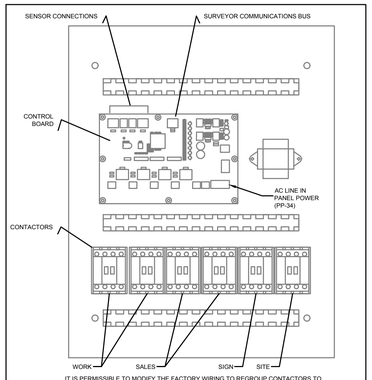
PLUMBING DETAILS AND SCHEDULES

SHEET NUMBER
P201

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

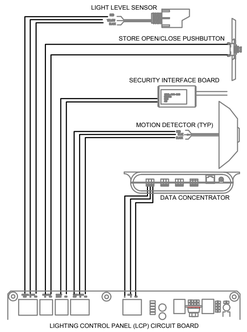
1 PLUMBING DETAILS AND SCHEDULES
NTS

NORTH



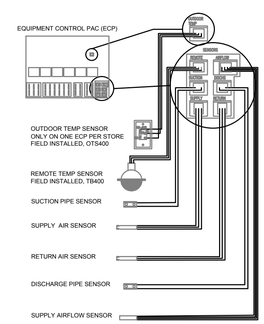
IT IS PERMISSIBLE TO MODIFY THE FACTORY WIRING TO REGROUP CONTACTORS TO SUIT THE ACTUAL CONTROLLED LOADS. TYPICAL MODIFIED WIRING WOULD BE:
BROWN (WORK) - CONTACTORS 1,2
BLUE (SALES) - CONTACTORS 3,4
ORANGE (SIGN) - CONTACTOR 5
RED (SITE) - CONTACTOR 6

2 V100 LIGHTING CONTROL PANEL
SCALE: N.T.S.

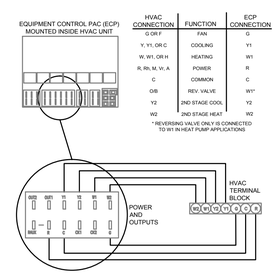


3 V100 LIGHTING CONTROL SENSORS
SCALE: N.T.S.

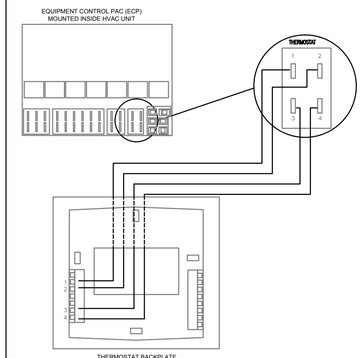
PROVIDE ONE EQUIPMENT CONTROL PAC (ECP) PER HVAC SYSTEM.



4 V100 EQUIPMENT CONTROL PAK (ECP) SENSORS
SCALE: N.T.S.

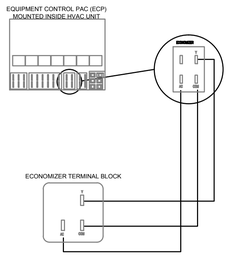


5 V100 HVAC CONTROL WIRING
SCALE: N.T.S.



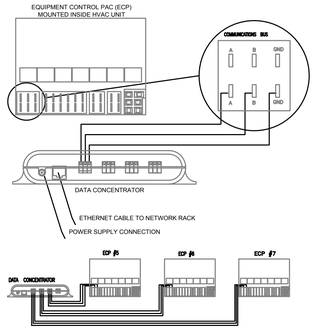
6 V100 THERMOSTAT WIRING
SCALE: N.T.S.

WHEN EQUIPPED, CONNECT 0-12VDC MODULATING ECONOMIZER DAMPER MOTOR AS SHOWN. HVAC UNITS WITH SURVEYOR FACTORY INSTALLED WILL HAVE THIS WIRING PRE-CONNECTED, DEPENDING ON THE ECONOMIZER OPTIONS.



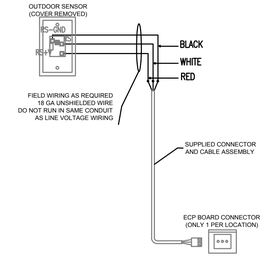
7 V100 ECONOMIZER WIRING
SCALE: N.T.S.

WIRE EACH ECP WITH INDIVIDUAL 'HOME RUN' COMMUNICATION WIRING TO THE DATA CONCENTRATOR, TO A SEPARATE CONNECTOR WHEN POSSIBLE. WHEN MORE THAN THREE ECP'S ARE USED (3 PORTS FOR ECP'S PLUS ONE FOR THE LIGHTING CONTROL PANEL) ADDITIONAL UNITS CAN BE WIRED TO A PORT ON THE DATA CONCENTRATOR THAT ALREADY HAS COMMUNICATION WIRES CONNECTED.

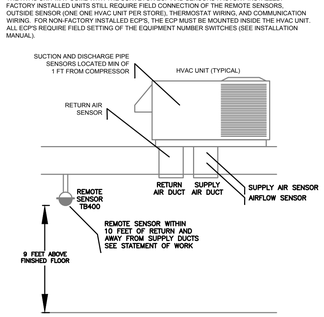


8 V100 COMMUNICATION WIRING
SCALE: N.T.S.

MOUNT THE OUTDOOR SENSOR (ODS400) ON A NORTH FACING, VERTICAL SURFACE, NEAR THE TOP OF ONE HVAC UNIT PER STORE. ASSURE THE SENSOR IS NOT LOCATED WHERE IT WILL NOT BE AFFECTED BY HEATED CONDENSER AIRFLOW.

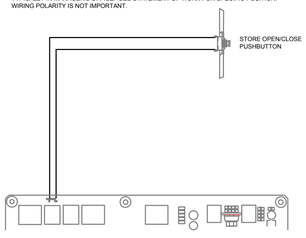


9 V100 OUTDOOR SENSOR DETAILS
SCALE: N.T.S.



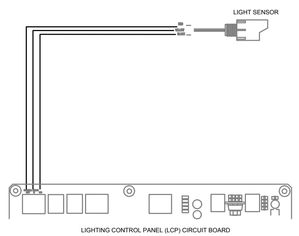
10 V100 ECP SENSOR POSITIONS
SCALE: N.T.S.

PUSH BUTTON MOUNTED IN 2X4 JUNCTION BOX LOCATED 48" AFF OR ADA ACCESSIBLE, TYPICALLY IN MANAGER'S OFFICE. SEE STATEMENT OF WORK FOR SPECIFIC POSITION. WIRING POLARITY IS NOT IMPORTANT.



11 V100 STORE OPEN/CLOSE PUSHBUTTON
SCALE: N.T.S.

MOUNT THE LIGHT SENSOR NEAR THE TOP OF ONE OF THE VERTICAL, NORTH FACING SIDES OF ONE OF THE HVAC UNITS. THE LIGHT SENSOR MUST MOUNT HORIZONTAL, FACING NORTH. ASSURE THE SENSOR WILL NOT BE AFFECTED BY LIGHTING OR BRIGHT REFLECTIONS.

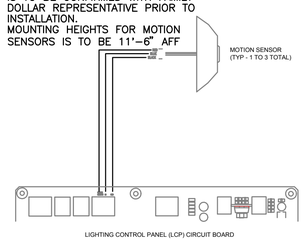


12 V100 OUTDOOR LIGHT SENSOR
SCALE: N.T.S.

MOUNT MOTION SENSOR 11'6" A.F.F. AVOID PLACEMENT NEAR MOVING ITEMS SUCH AS HANGING BANNERS. POSITION SENSORS TO PROVIDE BEST COVERAGE OF EMPLOYEES ENTERING THE STORE AND WORKING LATE. DETAILS OF THE NUMBER OF MOTION DETECTORS AND POSITION GUIDELINES CAN BE FOUND IN THE STATEMENT OF WORK.

WHEN WIRING MULTIPLE MOTION DETECTORS, RUN SEPARATE WIRES FROM EACH DETECTOR AND COMBINE THEM AT THE LCP TERMINAL BLOCK.

NOTE:
EXACT LOCATION OF MOTION SENSORS IS TO BE CONFIRMED WITH FAMILY DOLLAR REPRESENTATIVE PRIOR TO INSTALLATION.
MOUNTING HEIGHTS FOR MOTION SENSORS IS TO BE 11'-6" AFF



13 V100 MOTION SENSORS
SCALE: N.T.S.

NOTES:
1. DRAWINGS ARE FOR GENERAL INFORMATION ONLY.
2. LOCAL BUILDING CODES, BUILDING PLANS AND STORE OWNER STATEMENT OF WORK TAKE PRECEDENCE OVER THIS DOCUMENT.
3. CAUTION: INSTALLATION REQUIRES REMOVAL OF SAFETY COVERS AND EXPOSE THE INSTALLER TO ELECTRICAL HAZARDS. USE OF A LICENSED ELECTRICIAN IS REQUIRED. FOLLOW ALL APPROPRIATE SAFETY PRECAUTIONS. ADDITIONAL SAFETY INFORMATION IS IN THE SURVEYOR INSTALLATION MANUALS.

SURVEYOR HARDWARE ORDERING:
1. THE E.C. IS REQUIRED TO USE ONE OF FAMILY DOLLAR'S CLOSED SPECIFICATION PROVIDERS AND INSTALLERS FOR THE VENSTAR SYSTEM. CONTACT FOR PRICING AND SCHEDULING OF VENSTAR INSTALLATION.
a. JAMES STOVER
JAMES@STOVERELECTRICINC.COM
(805) 551-2305 (CELL)
(805) 581-0740 (OFFICE)
469 GRINNEL COURT
SIMI VALLEY, CA 93065
b. ENIS PACAVAR, PMP
ENIS.PACAVAR@SYLVANIA.COM
SYLVANIA LIGHTING SERVICES
SLS C/O
OSRAM SYLVANIA
129 PORTSMOUTH AVE.
EXETER, NH 03833
(978) 395-1807 (OFFICE)
(978) 646-4953 (FAX)
c. Adam Veltman
Advance Energy Mgmt.
adam@goaem.com
616-889-5109
10052 US Hwy 31, Montague, MI 49437
2. THE FOLLOWING INFORMATION IS REQUIRED TO PROCESS AN ORDER:
a. FDS STORE NUMBER
b. PROJECT NUMBER
c. BILL TO INFORMATION
d. SHIP TO INFORMATION (INCLUDE CONTACT NAME AND PHONE)
e. NUMBER AND TYPE OF HVAC UNITS
f. NUMBER OF ECONOMIZERS
3. E.C. SHOULD ALLOW 4 WEEKS FOR ASSEMBLY AND SHIPPING TO JOBSITE.

SURVEYOR SYSTEM NOTES:
1. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO RE-TORQUE ALL FACTORY WIRING TERMINATIONS UPON DELIVERY OF VENSTAR SURVEYOR EQUIPMENT.
2. THE VENSTAR SURVEYOR EQUIPMENT IS FACTORY PREWIRED. THE CONTRACTOR IS RESPONSIBLE TO MAKE ANY MINOR ADJUSTMENTS DUE TO CHANGES MADE IN THE FIELD.
3. REFER TO SURVEYOR WIRING DIAGRAMS FOR EACH COMPONENT FOR ADDITIONAL INFORMATION.
4. ALL WIRING SHOULD BE 18-20 GAUGE, UNSHIELDED, UNLESS OTHERWISE NOTED.
5. WIRING MAY BE RUN IN CONDUIT OR WIRE TIED IN BUNDLES, AS SPECIFIED BY THE CUSTOMER IN THE STATEMENT OF WORK.
6. DO NOT RUN COMMUNICATION AND SENSOR WIRES IN THE SAME CONDUIT OR BUNDLE WITH CONTROL AND LINE VOLTAGE WIRING.
7. THE INTERIOR MOTION SENSORS, LIGHT LEVEL SENSOR, STORE OPEN/CLOSE PUSHBUTTON, OUTDOOR TEMPERATURE SENSOR, REMOTE TEMPERATURE SENSOR(S), THERMOSTAT(S), EQUIPMENT CONTROL PAC(S) AND DATA CONCENTRATOR WILL BE INSTALLED BY THE ELECTRICAL CONTRACTOR. ALL DEVICES WILL WIRE BACK TO THE SURVEYOR EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL FIELD COORDINATE FINAL LOCATION OF SURVEYOR EQUIPMENT CONTROLS WITH FAMILY DOLLAR PRIOR TO INSTALLATION.
8. ALL EQUIPMENT CONTROL PACS REQUIRE SETTING OF THE EQUIPMENT NUMBER DIP SWITCHES AND HEAT PUMP JUMPERS AS APPROPRIATE. REFER TO THE EQUIPMENT CONTROL PAC INSTALLATION INSTRUCTIONS FOR FURTHER INFORMATION.

FOR TECHNICAL ASSISTANCE CONTACT VENSTAR AT:
818-812-9812

FOR ADDITIONAL INSTALLATION INFORMATION CONTACT YOUR FAMILY DOLLAR PROJECT MANAGER.

GETTING STARTED

PROGRAM SCHEDULES – PRESS THE PROGRAM BUTTON. USE THE MODE BUTTON TO ADVANCE THROUGH THE PROGRAMMING SCREENS. USE THE UP AND DOWN ARROWS TO ADJUST THE FLASHING ITEMS IN EACH SCREEN.

TO VIEW SENSORS – PRESS THE OUTSIDE BUTTON. USE THE UP OR DOWN BUTTONS TO ADVANCE TO THE NEXT SENSOR READING.

1. OUTSIDE TEMP.
2. OUTSIDE HUMIDITY
3. INSIDE HUMIDITY
4. REMOTE TEMP.
5. SUCTION PIPE TEMP.
6. SUPPLY AIR TEMP.
7. DISCHARGE PIPE TEMP.
8. RETURN AIR TEMP.
9. AIR VELOCITY (FPM)
10. SECONDARY VOLTAGE

Castles Design Group
A Professional Architectural Corporation
3801 Kirby Drive, Suite 600
Houston, Texas 77098
tel: 713 864 7974
fax: 713 864 9756

KOHRS LONNEMANN HEIL ENGINEERS, PSC
MECHANICAL/ELECTRICAL ENGINEERS
WWW.KLHENGRS.COM

DELTA T DEVELOPMENT, LLC
2425 LUMBLEY ROAD
RAINBOW CITY, AL 35906
PH: 256.278.4377

DATE: 04.14.2014
JOB No.: 15150
DRAWN: EP, ALG
CHECKED: MPE

NEW CONSTRUCTION FOR:
FAMILY DOLLAR
FOR DELTA T DEVELOPMENT, LLC
200 HIGHWAY 83
LINTON, EMMONS COUNTY, ND 58552

ROBERT A. HEIL REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA
APR 14 2014

PRELIMINARY DESIGN: 03.27.2014
PERMIT ISSUE: 04.14.2014

VENSTAR SYSTEM PLAN AND DETAILS

SHEET NUMBER
V100

2013-01: FAMILY DOLLAR PROTOTYPE CRITERIA

1 VENSTAR SYSTEM PLAN AND DETAILS
NTS

NORTH