

NEW BUILDING FOR DOLLAR GENERAL

FORT WHITE, FLORIDA



GENERAL NOTES

- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS SHOWN ON DRAWINGS AT THE JOB SITE AND SHALL NOTIFY DESIGNER OF ANY DISCREPANCIES, OMISSIONS, AND/OR CONFLICTS BEFORE PROCEEDING WITH THE JOB.
- CONTRACTOR MUST COMPLY WITH RULES AND REGULATIONS OF AGENCIES HAVING JURISDICTION AND SHALL CONFORM TO ALL CITY, COUNTY, STATE AND FEDERAL CONSTRUCTION, SAFETY AND SANITARY LAWS, CODES, STATUTES AND ORDINANCES. ALL FEES, TAXES, PERMITS, APPLICATIONS AND CERTIFICATES OF INSPECTION, AND THE FILING OF ALL WORK WITH GOVERNMENTAL AGENCIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- DELETED
- ALL WORK SHALL BE PERFORMED BY SKILLED AND QUALIFIED WORKMEN IN ACCORDANCE WITH THE BEST PRACTICES OF THE TRADES INVOLVED, AND IN COMPLIANCE WITH BUILDING REGULATIONS AND/OR GOVERNMENTAL LAWS, STATUTES OR ORDINANCES CONCERNING THE USE OF UNION LABOR.
- EACH TRADE WILL PROCEED IN A FASHION THAT WILL NOT DELAY THE TRADES FOLLOWING THEM.
- CONTRACTORS SHALL BE RESPONSIBLE FOR THE DISTRIBUTION OF DRAWINGS TO ALL TRADES UNDER HIS JURISDICTION.
- ALL WORK SHALL BE ERECTED AND INSTALLED PLUMB, LEVEL, SQUARE, TRUE AND IN PROPER ALIGNMENT.
- ALL MATERIALS SHALL BE NEW, UNUSED AND OF THE HIGHEST QUALITY IN EVERY RESPECT, UNLESS OTHERWISE NOTED. MANUFACTURED MATERIALS AND EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.
- DELETED
- ALL WORK AND MATERIALS SHALL BE GUARANTEED AGAINST DEFECTS FOR A PERIOD OF AT LEAST ONE (1) YEAR FROM APPROVAL FOR FINAL PAYMENT.
- DELETED
- CONTRACTOR SHALL AT ALL TIMES KEEP THE PREMISES FREE OF ACCUMULATION OF WASTE MATERIALS OR RUBBISH. PREMISES TO BE SWEEPED CLEAN DAILY OF RELATED CONSTRUCTION DEBRIS. AT THE COMPLETION OF THE WORK, LEAVE THE JOB SITE FREE OF ALL MATERIALS AND BROOM CLEAN.
- DO NOT SCALE DRAWINGS: DIMENSIONS GOVERN. LARGER SCALE DRAWINGS SHALL GOVERN SMALLER SCALE.
- PATCH ALL AREAS WHERE FLOOR IS NOT LEVEL OR TRUE PRIOR TO THE INSTALLATION OF FLOORING OR CARPETING.
- TO INSURE PROPER AND ADEQUATE BLOCKING, ALL BLOCKING FOR CABINET WORK WILL BE THE RESPONSIBILITY OF THE CABINET CONTRACTOR.
- UPON COMPLETION OF WORK THE CONTRACTOR SHALL WALK THROUGH WITH OWNER AND COMPILE A "PUNCH LIST" OF CORRECTIONS AND UNSATISFACTORY AND/OR INCOMPLETE WORK. FINAL PAYMENT WILL BE CONTINGENT UPON THE COMPLETION OF THESE ITEMS.
- DELETED
- ANY CHANGE WHICH RESULTS IN EXTRA COST SHALL NOT PROCEED WITHOUT WRITTEN AUTHORIZATION BY OWNER.

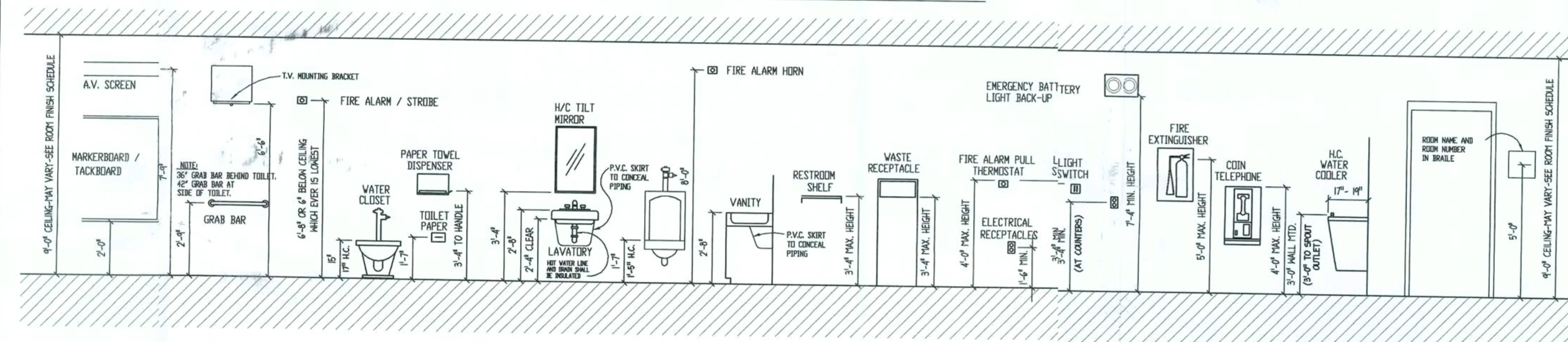
PROJECT DATA

TYPE CONSTRUCTION - TYPE
V UNPROTECTED, UNSPRINKLED

OCCUPANCY -
GROUP M - MERCANTILE

PROJECT DATA

GENERAL MOUNTING HEIGHTS



VICINITY MAP

PLAN N.T.S.

SYMBOLS & LEGENDS

SYMBOLS LEGEND

- SECTION
- DETAIL MARK
- REFERENCE (TO ANOTHER SECTION OR DETAIL)
- WALL TYPES
- DOOR TYPES
- WINDOW TYPES

MATERIALS LEGEND

- BATT INSULATION
- BRICK VENEER
- CONCRETE BLOCK (w/ FILLED CELLS)
- EARTH (UNDISTURBED)
- EARTH (DISTURBED & COMPACTED)
- EXISTING CONSTRUCTION
- FINISH WOOD (ON SECTION)
- PLYWOOD (ON SECTION)
- POURED IN PLACE CONC. (ON SECTION)
- RIGID INSULATION
- STEEL (ON SECTION)
- VENEER PLASTER BASE SYSTEM
- WOOD FRAMING (ON SECTION)

ABBREVIATIONS

NOTE: Clarify with Designer all abbreviations not listed.

AB. ANCHOR BOLT	ELEV. ELEVATION	ID. INSIDE DIAMETER	R. RISER
ACT. ABOVE FINISHED FLOOR	EMER. EMERGENCY	INSUL. INSULATION	RD. ROOF DRAIN
AGGR. AGGREGATE	ENCL. ENCLOSURE	INT. INTERIOR	REF. REFER TO
AL. ALUMINUM	EQ. EQUAL	JAN. JANITOR	REF. REFRIGERATOR
ALT. ALTERNATE	EQUIP. EQUIPMENT	JNT. JOINT	REIN. REINFORCED
APPROX. APPROXIMATE	EXP. EXPANSION	JST. JOIST	REQD. REQUIRED
ARCH. ARCHITECTURAL	EXT. EXTERIOR	KIT. KITCHEN	ROOF ROOF
BD. BOARD	F.A. FIRE ALARM	LAB. LABORATORY	ROUGH OPENING
BLDG. BUILDING	FD. FLOOR DRAIN	LAV. LAVATORY	S. SOUTH
BLK. BLOCK	F.D.C. FIRE DEPARTMENT CONNECTION	LAV. LAVATORY	S.C. SOLID CORE
BLKG. BLOCKING	FDN. FOUNDATION	LAV. LAVATORY	SCHED. SCHEDULE
BM. BEAM	FE. FIRE EXTINGUISHER	L.T. LIGHT	SECT. SECTION
BOT. BOTTOM	F.F. FIRE EXTINGUISHER CABINET	MAX. MAXIMUM	S.F. SQUARE FOOT
BTWN. BETWEEN	FF. FINISH FLOOR	MECH. MECHANICAL	SHT. SHEET
BUR. BUILT UP ROOFING	FIN. FINISH	MEMB. MEMBRANE	SIM. SIMILAR
B.W. BOTH WAYS	FLR. FLOOR	MFR. MANUFACTURER	SPEC. SPECIFICATION
C.J. CONTROL JT.	FLR. FLOOR	M.H. MANHOLE	SQ. OR P. SQUARE
CLG. CEILING	FLR. FLOOR	MIN. MINIMUM	S.S. STAINLESS STEEL
CLKG. CAULKING	FLUR. FLUORESCENT	MISC. MISCELLANEOUS	STAGG. STAGGERED
CLR. CLEAR	IND. INSULATION	M.D. MASONRY OPENING	STD. STANDARD
CMU. CONCRETE MASONRY UNIT	F.O.B. FACE OF BRICK	M.L. MULLION	STIFF. STIFFENER
COL. COLUMN	F.O.C. FACE OF CONCRETE	N. NORTH	STL. STEEL
CONC. CONCRETE	F.S. FULL SIZE	N.C. NOT IN CONTRACT	STRUC. STRUCTURAL
CONN. CONNECTION	FT. FOOT OR FEET	NO. NUMBER	SUSP. SUSPENDED
CONSTR. CONSTRUCTION	FT. FOOT OR FEET	NOM. NOMINAL	T. TOP
CONT. CONTINUOUS	FT. FOOT OR FEET	N.T.S. NOT TO SCALE	T. TOP OF
C.T. CERAMIC TILE	GA. GAUGE	O.C. ON CENTER	TYP. TYPICAL
DEG. DEGREE	GALV. GALVANIZED	O.D. OUTSIDE DIAMETER	U.O.N. UNLESS OTHERWISE NOTED
DET./DTL. DETAIL	G.C. GENERAL CONTRACTOR	OH. OVERHEAD	VCT. VINYL COMPOSITION TILE
D.F. DRINKING FOUNTAIN	GL. GLASS	OPF. OPPOSITE	VER. VERTICAL
DIAG. DIAGONAL	GR. GRADE	PCT. PRE-CAST	W. WEST
DIA. Ø DIAMETER	GYP. GYPSUM	P.L. PROPERTY LINE	W. WITH
DN. DOWN	GYP. BD. GYPSUM BOARD	PLAM. PLASTER LAMINATE	W.C. WATER CLOSET
D.S. DOWNSPOUT	H.B. HOSE BIB	PLYUD. PLYWOOD	WO. WOOD
DUG. DRAINAGE	H.C. HOLLOW CORE	FR. FAIR	W/O. WITHOUT
E. EAST	H/C. HOLLOW CORE	Q.T. QUARRY TILE	
EXTG. EXISTING	H/D. HANDICAPPED		
EA. EACH	HQ. HARDWARE		
E.I.F.S. EXTERIOR INSULATION AND FINISH SYSTEM	H.M. HOLLOW METAL		
EL. ELEV. ELEVATION	HR. HOUR		
ELEC. ELECTRICAL	HT. HEIGHT		
	HVAC. HEATING, VENTILATION AND AIR CONDITIONING		

INDEX OF DRAWINGS

- CS- COVERSHEET
- S1- FOUNDATION PLAN
- A1- FLOOR PLAN & WALL SECTION
- A2- ELEVATIONS
- A3-BUILDING SECTION

CIVIL DRAWINGS: BROWN & CULLEN

SEE DRAWINGS BY OTHER

MECHANICAL DRAWINGS: E.B.S. INC.

SEE DRAWINGS BY OTHER

APPROVED
(Subject to Revisions)
Inspection Department
Lake City Fire Dept.
State Fire Inspector
License # 1128
Date: 4/11/06

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E.B. LIC. No. 8690
3538 NW 37TH BLVD.
Gainesville, FL 32606
Phone (352) 333-1513
Fax (352) 333-6993

Driscoll Engineering Inc.
Designers & Consultants
Commercial, Residential, Industrial & Institutional

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PHONE 352-337-2771
EMAIL: JERRY@JCRDRAFTING.COM

METAL BUILDING ADDITION
FOR
DOLLAR GENERAL
FORT WHITE
COLUMBIA COUNTY, FLORIDA

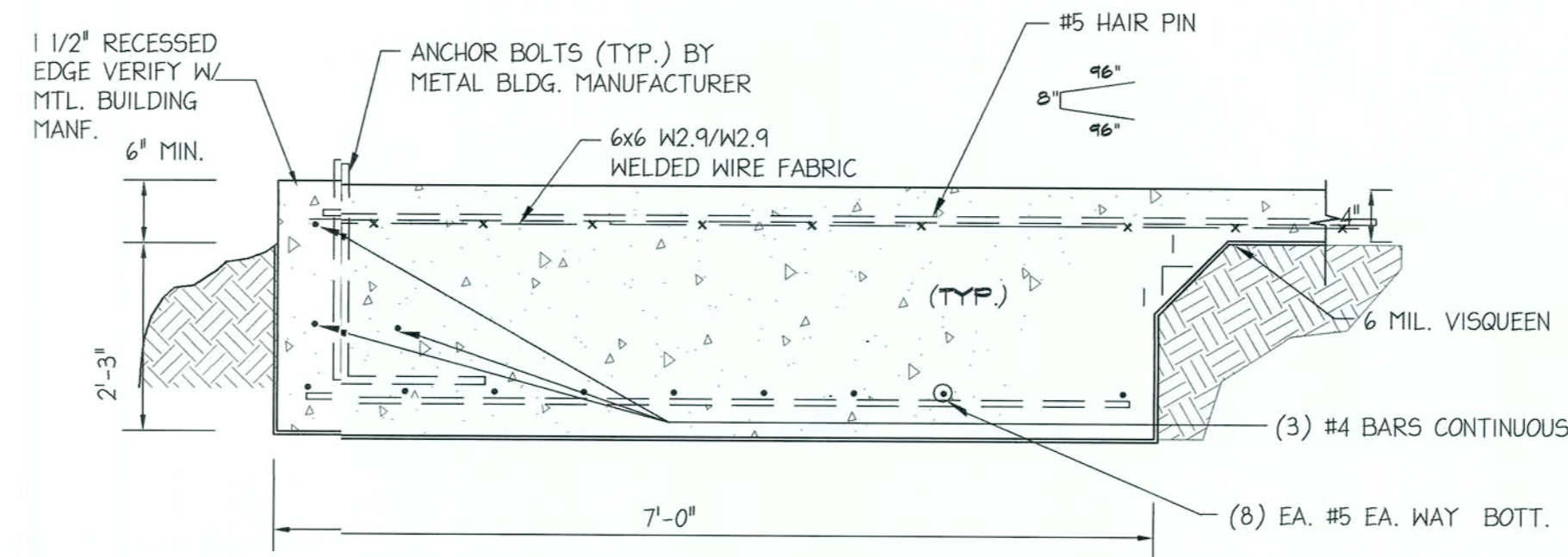
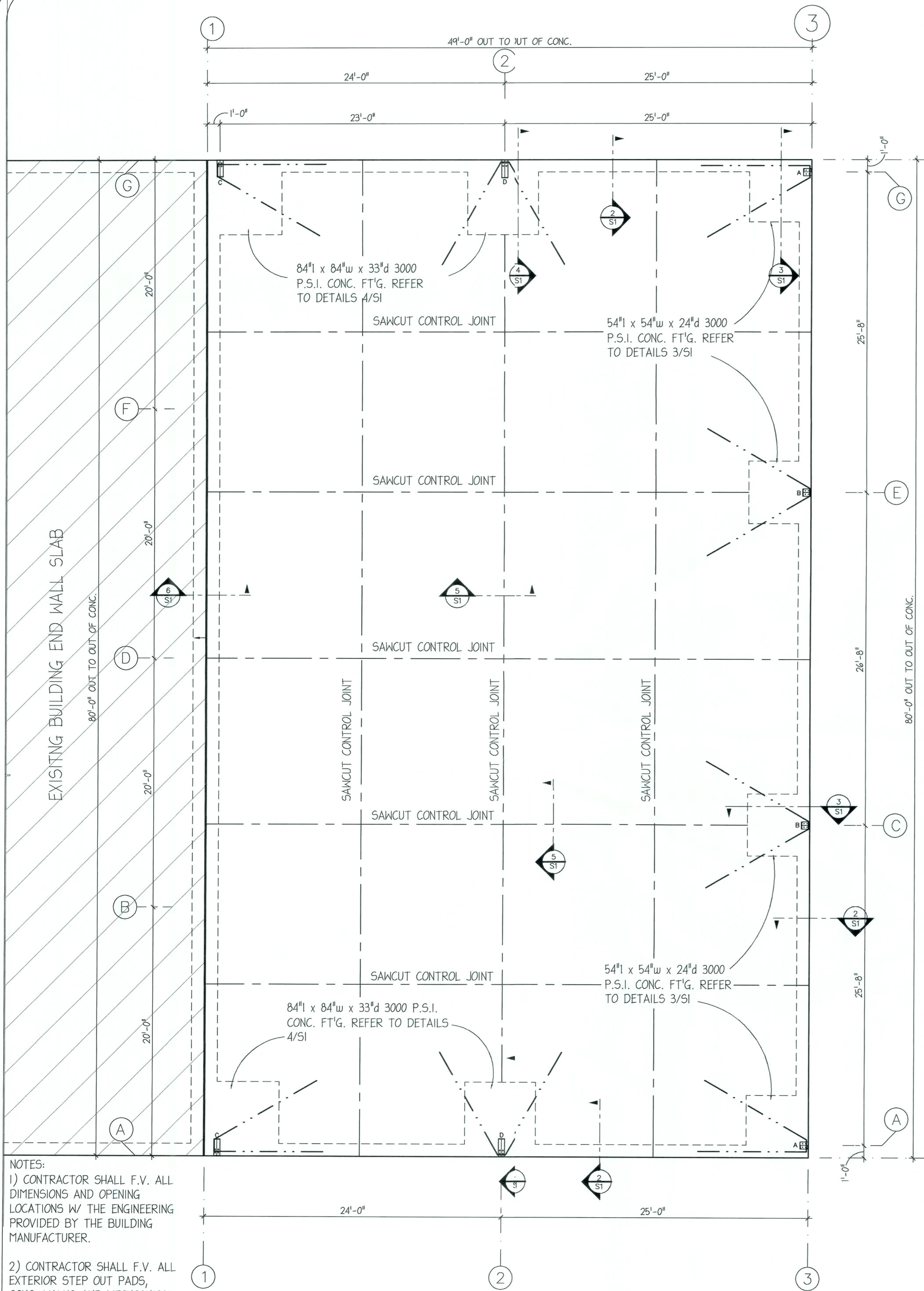
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CHECKED: M.E.D.
DATE: 7-21-06

revisions:
7-11-06
5-28-06

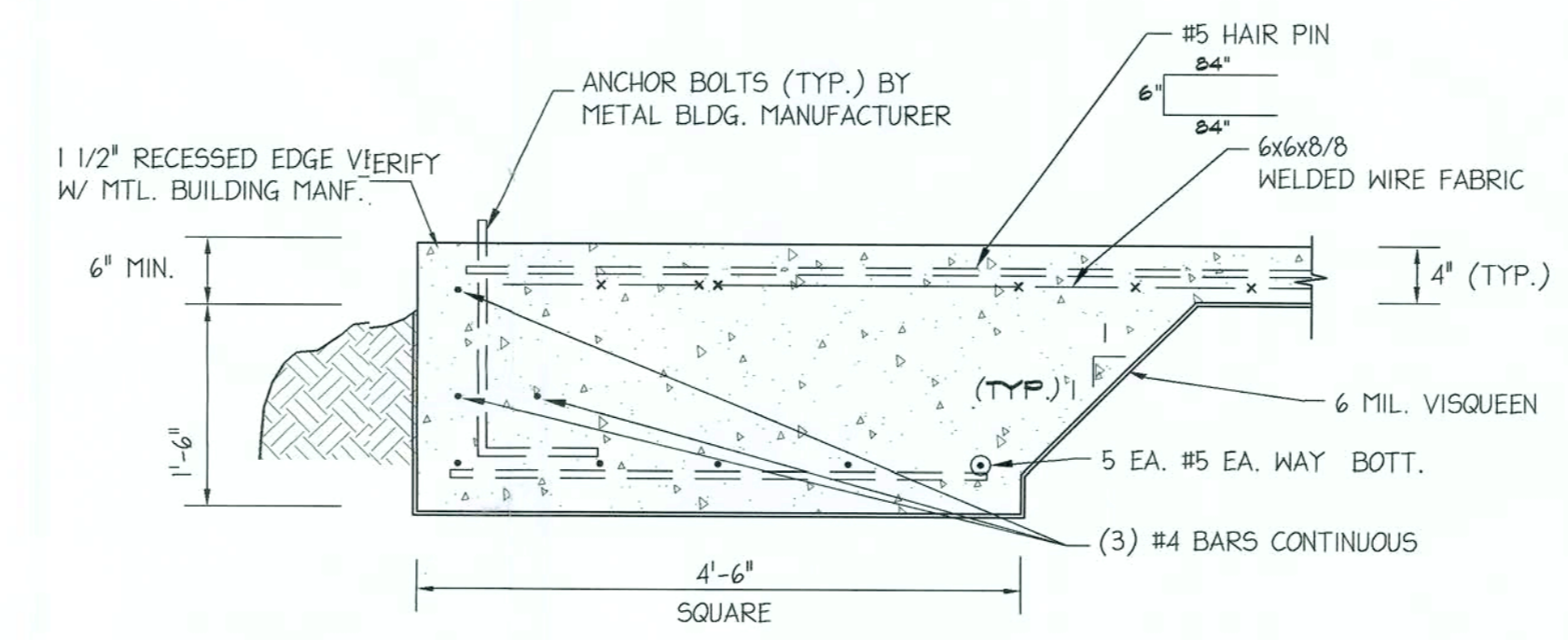
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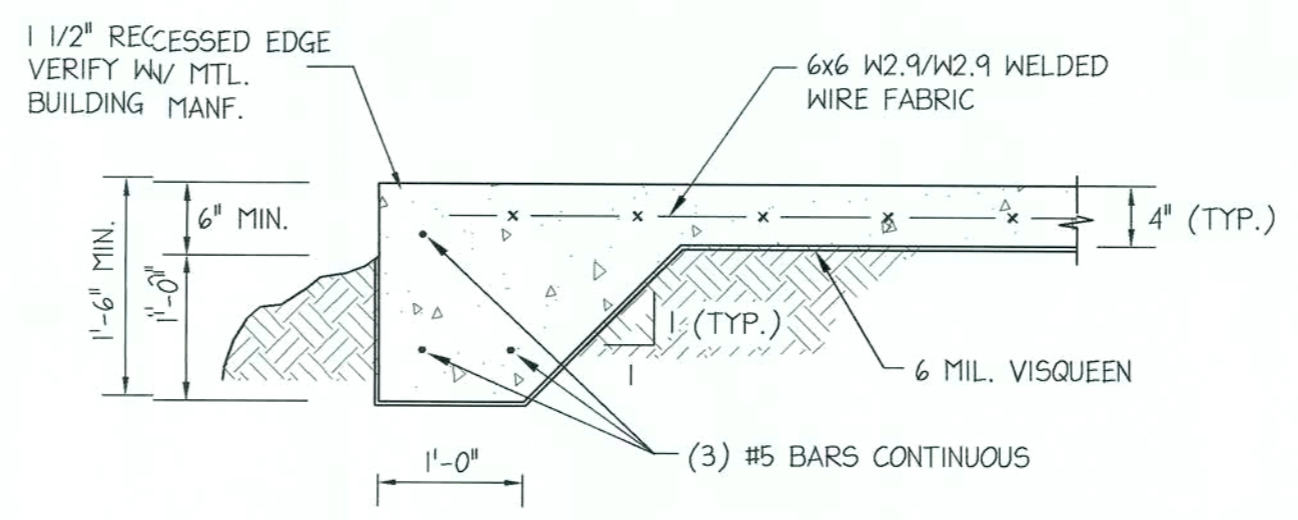
COVER SHEET



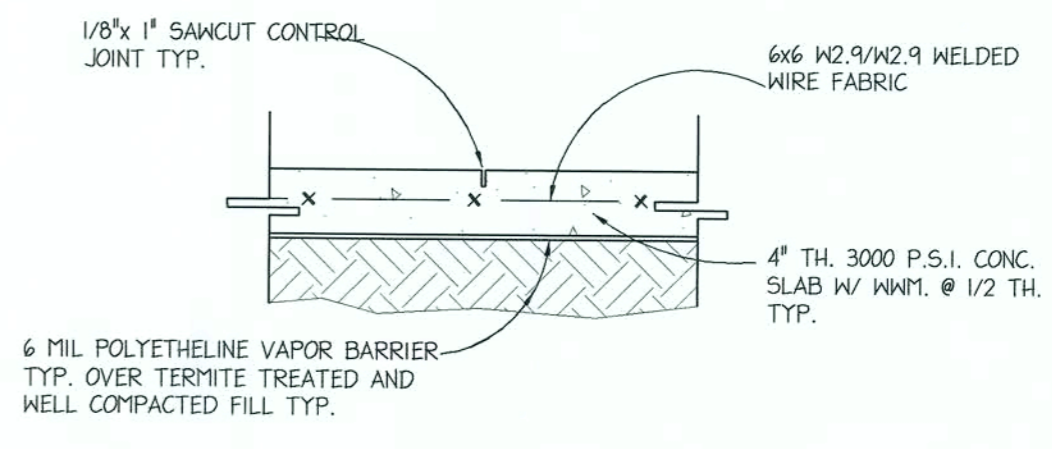
4 FOOTING DETAIL SIDE WALL
SCALE: 3/4"=1'



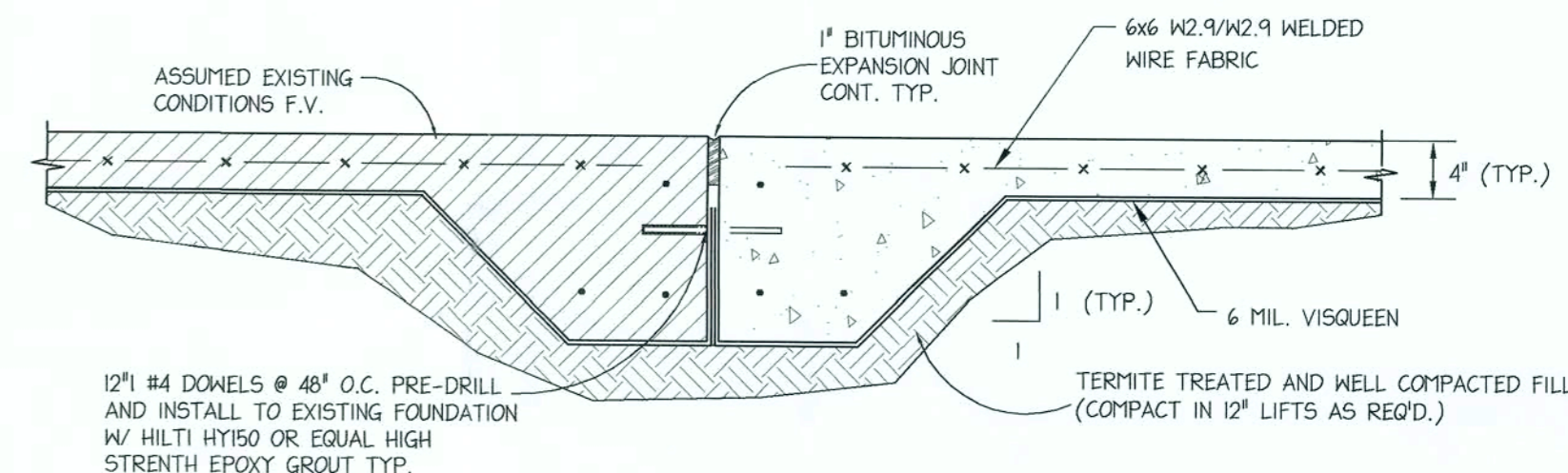
3 FOOTING DETAIL END WALL
SCALE: 3/4"=1'



2 TYP. GRADE BEAM
SCALE: 3/4"=1'



5 SAWCUT CONTROL JOINT
SCALE: 3/4"=1'



6 FOUNDATION CONNECTION
SCALE: 3/4"=1'

FOUNDATION NOTES:

- 1) IT IS HIGHLY RECOMMENDED THAT A GEOTECHNICAL ENGINEER BE CONSULTED PRIOR TO COMMENCEMENT OF CONSTRUCTION. IN THE ABSENCE OF GEOTECHNICAL INFORMATION AND/OR REPORTS THE FOUNDATION HAS BEEN DESIGNED FOR A MIN. SOIL BEARING CAPACITY OF 2,000 PSF. ALL SUB GRADE UNDER BUILDING SHALL BE COMPACTED TO ACHIEVE MIN. 2,000 PSF. BEARING. SOILS UNDER THE BUILDING SHALL NOT BE DELETERIOUS. IF CLAY, MUCK OR ORGANIC MATERIALS ETC. ARE DISCOVERED OR IF BEARING CONDITIONS ARE OTHER THAN THOSE DESCRIBED THE CONTRACTOR IS TO NOTIFY ENGINEER IMMEDIATELY.
- 2) ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE LATEST REVISIONS TO THE LOCAL STATE BUILDING CODES, THE LATEST EDITION OF THE ACI-308 & ALL APPLICABLE CODES, ORDINANCES & REGULATIONS OF GOVERNING AUTHORITIES
- 3) ANY DISCREPANCIES BTWN. REFERENCED STANDARDS AND DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO COMMENCEMENT OF WORK. COMMENCEMENT OF WORK IMPLIES CONTRACTORS RESPONSIBILITY IN COMPLYING WITH ALL APPLICABLE CODES & STANDARDS
- 4) ALL CONCRETE FOR USE IN FOOTINGS OR SLABS SHALL BE MIN. 3000 PSI. COMPRESSIVE STRENGTH @ 28 DAYS.

seal

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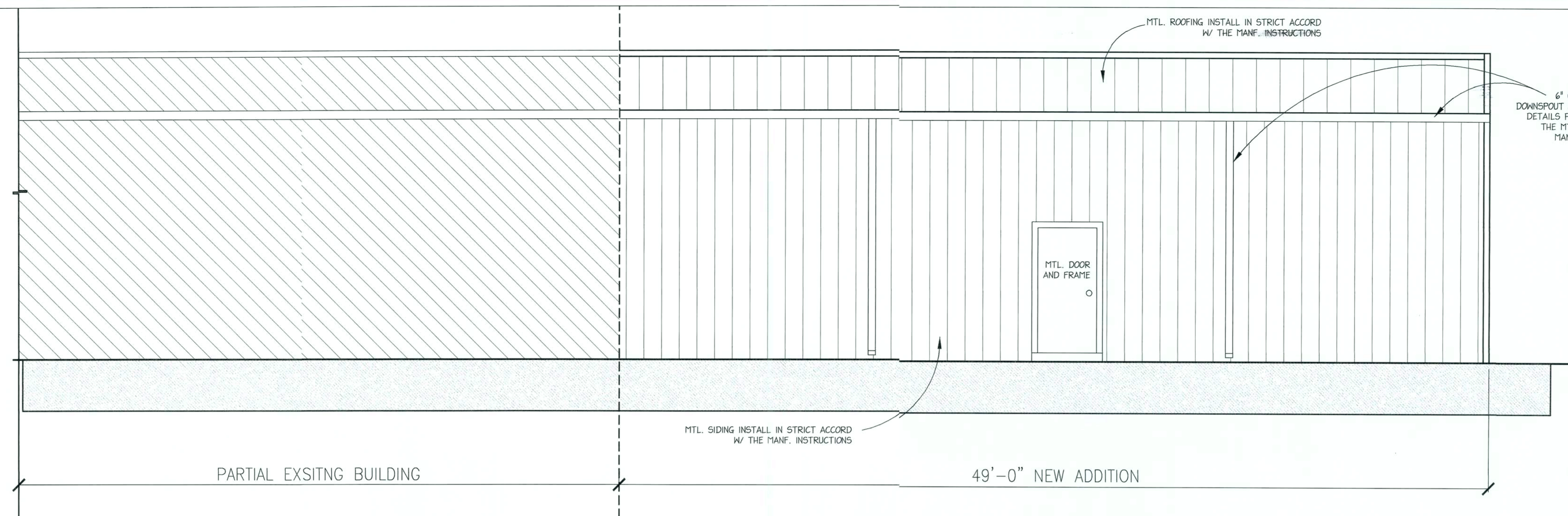
Driscoll Engineering Inc.
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METAL BUILDING ADDITION
FOR
DOLLAR GENERAL
FORT WHITE
COLUMBIA COUNTY, FLORIDA

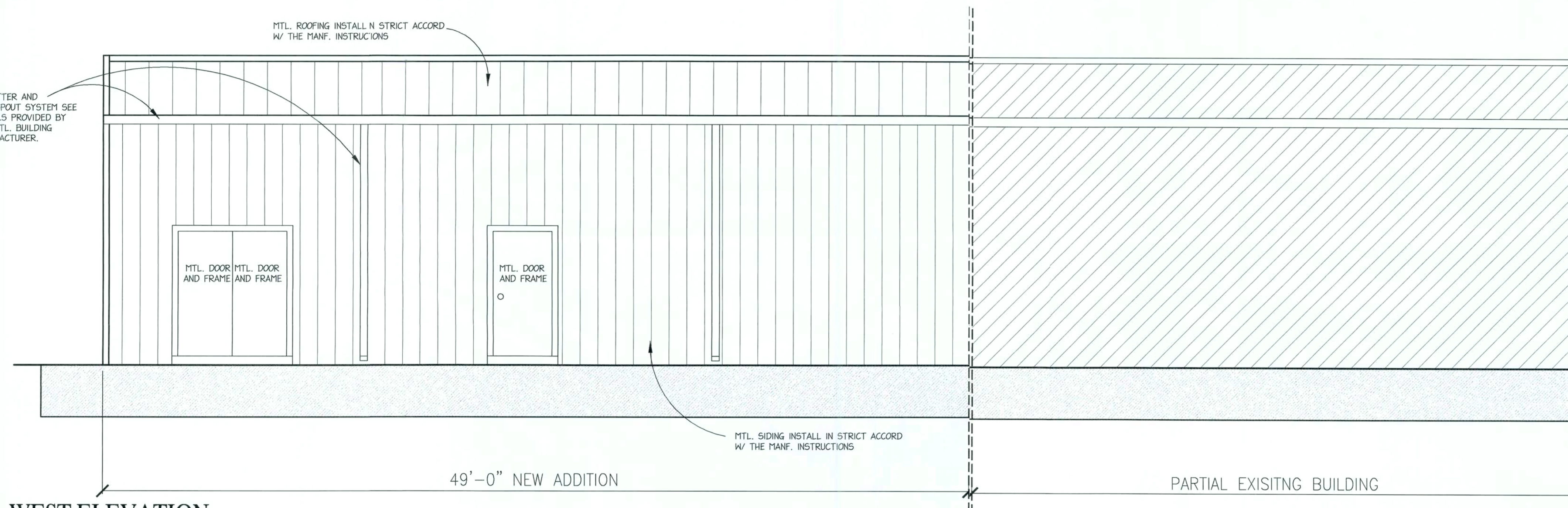
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DRAWN: J.G.R.	5-28-06
CHECKED: M.E.D.	
DATE: 7-21-06	
revisions:	

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of



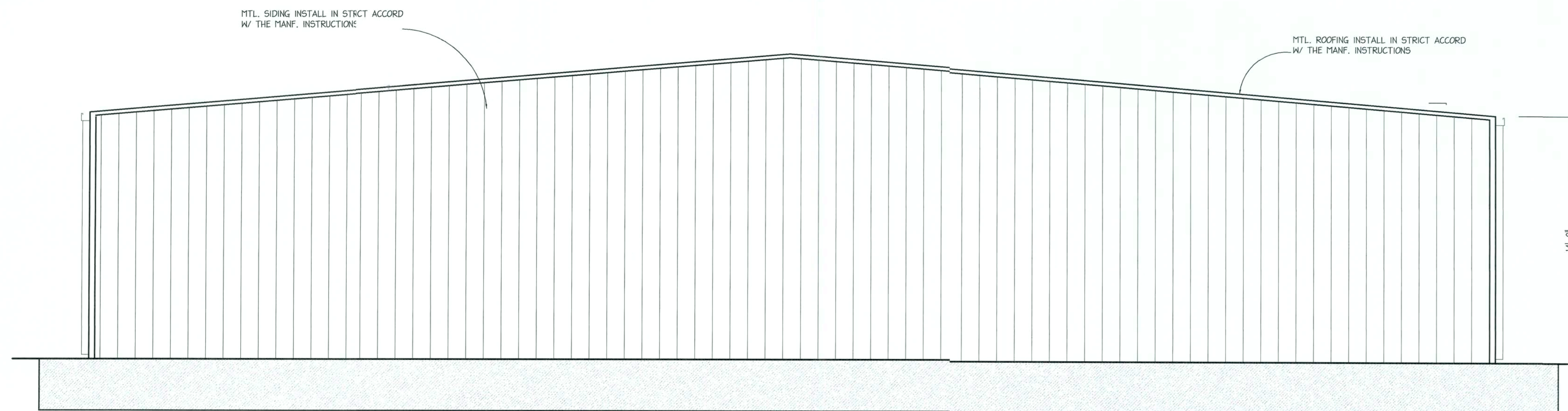
1 EAST ELEVATION

SCALE: 1/4"=1'



2 WEST ELEVATION

SCALE: 1/4"=1'



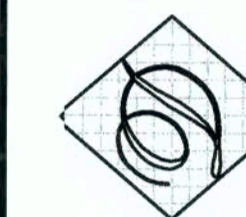
3 NORTH ELEVATION

SCALE: 1/4"=1'

seal
7-21-06

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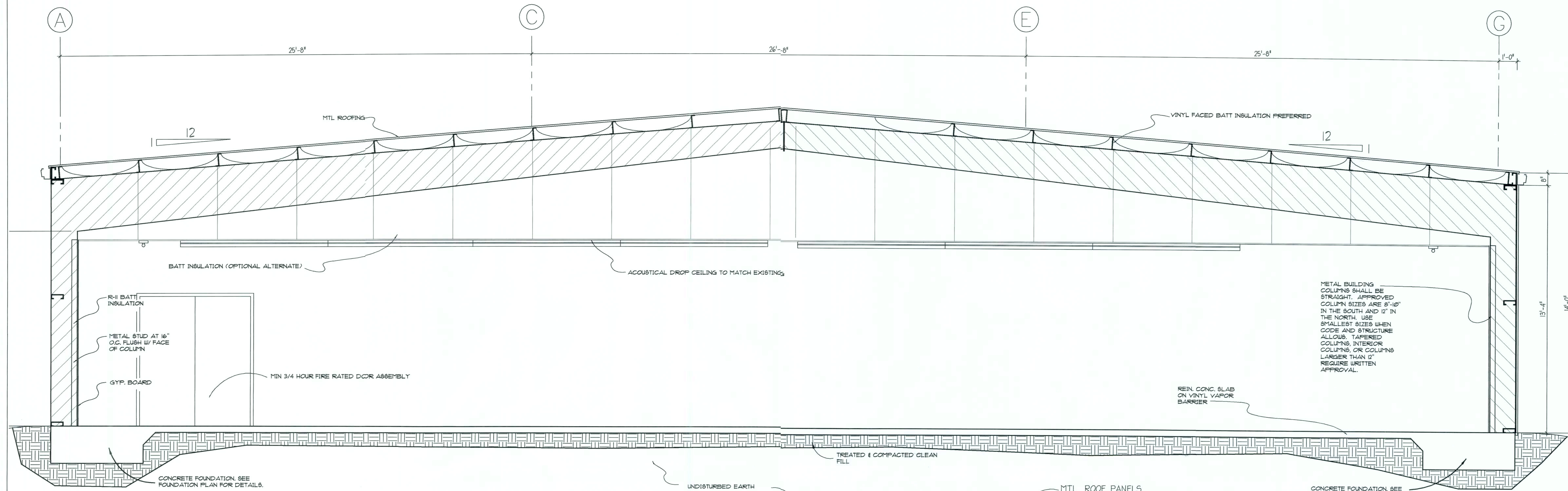
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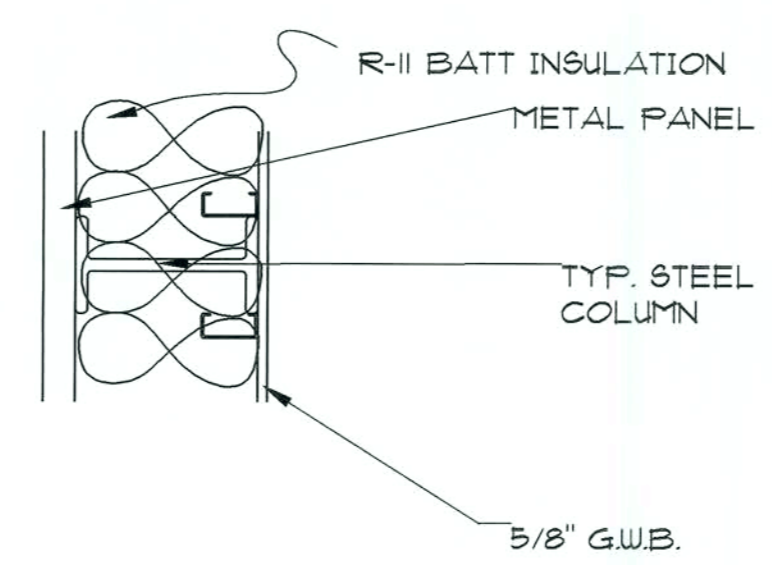
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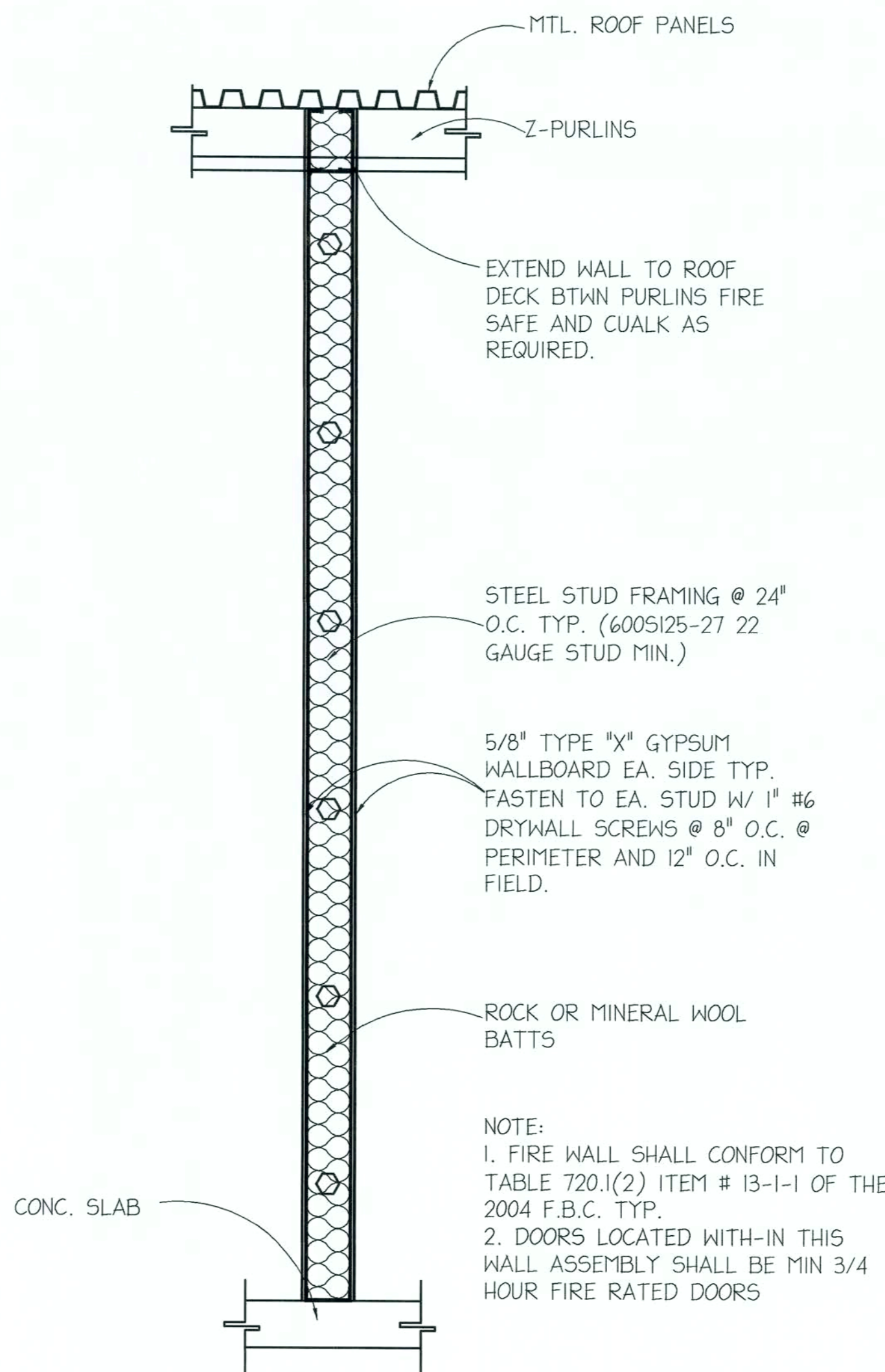
ELEVATIONS



1 BUILDING SECTION
SCALE: 1/4"=1'



2 WALL DETAIL
SCALE: 1/4"=1'



3 FIRE WALL DETAIL
SCALE: 1/4"=1'

7-21-06

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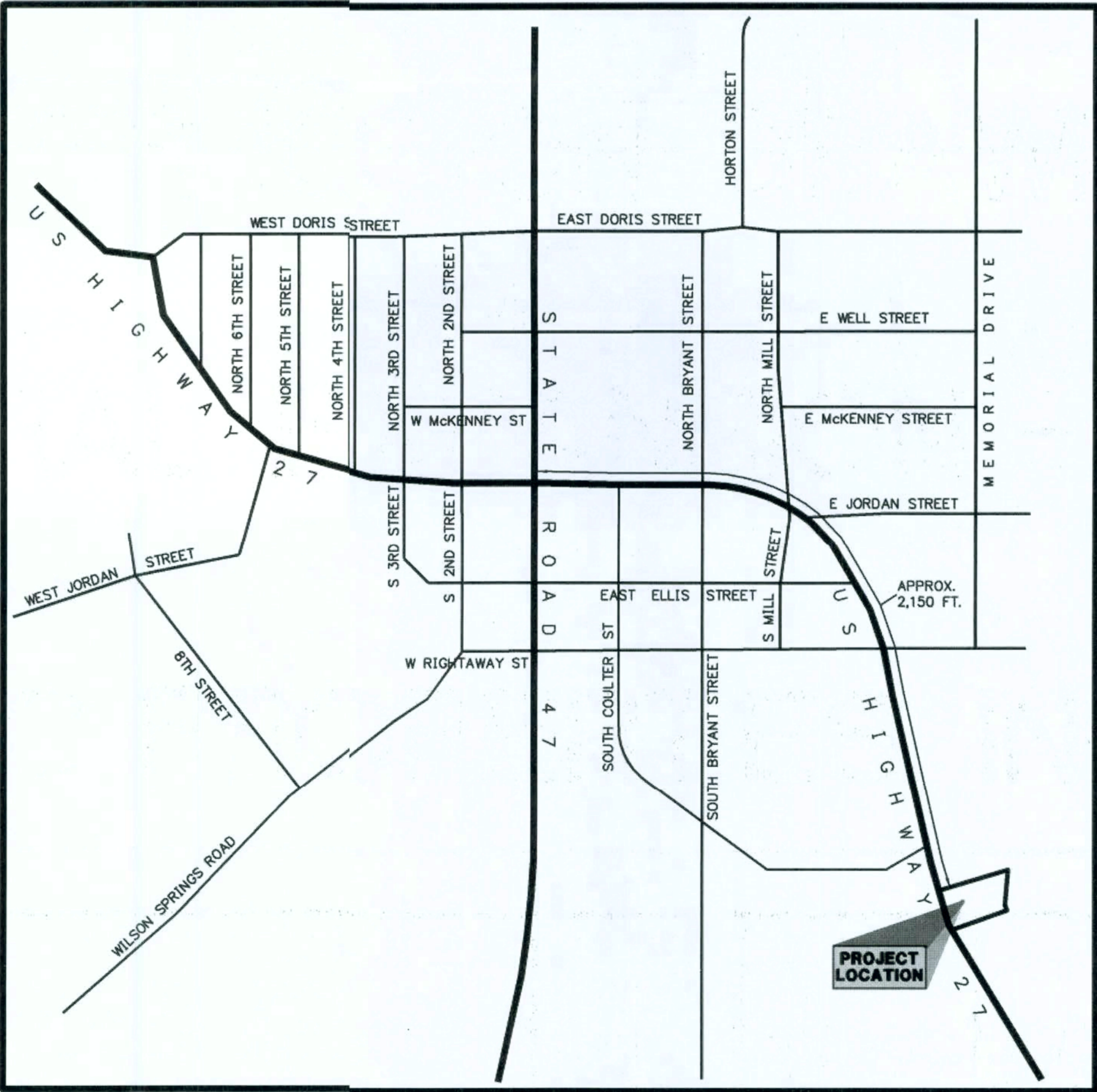
A3
of

BUILDING SECTION

CONSTRUCTION DRAWINGS
OF
DOLLAR GENERAL EXPANSION - FT. WHITE, FL.
FOR
TRC PROPERTIES, INC.

GENERAL DEVELOPMENT INFORMATION

1. PROJECT TITLE: DOLLAR GENERAL - FT. WHITE
2. DEVELOPER: TRC PROPERTIES, INC.
3. ENGINEER: BROWN & CULLEN INC.
4. SURVEYOR: RONALD E. PARRISH
5. TAX PARCEL NO.: 34-65-16-04059-302
6. PARCEL SIZE: 2.71 ACRES±
7. SECTION: 34
8. TOWNSHIP: 6 SOUTH
9. RANGE: 16 EAST
10. ZONING: CG
11. LAND USE: COMMERCIAL
12. STORMWATER MANAGEMENT PLAN:
THE PROJECT RUNOFF FROM THE 100 YEAR CRITICAL STORMS IS MAINTAINED ON SITE WITHIN THE DRY RETENSION BASIN.
13. SITE STATISTICAL DATA:
- | | EXISTING | PROPOSED | TOTAL | | | |
|--------------------------------|--------------|--------------|--------------|---|----------|----------|
| A. TOTAL SITE AREA: | 118,203 S.F. | 118,203 S.F. | 118,203 S.F. | = | 2.71 AC. | = 100.0% |
| B. BUILDING AREA: | 8,000 S.F. | 3,920 S.F. | 11,920 S.F. | = | 0.28 AC. | = 10.1% |
| C. PAVEMENT AND SIDEWALK AREA: | 17,215 S.F. | 5,992 S.F. | 22,970 S.F. | = | 0.51 AC. | = 19.4% |
| D. TOTAL IMPERVIOUS AREA: | 25,215 S.F. | 9,912 S.F. | 34,266 S.F. | = | 0.79 AC. | = 29.0% |
| E. OPEN AREA: | 92,988 S.F. | 83,937 S.F. | 83,937 S.F. | = | 1.93 AC. | = 71.0% |
14. PARKING DATA:
A ZONING VARIANCE WAS DISCUSSED AT THE DECEMBER 26th 2005 PLAN BOARD MEETING AT THIS MEETING IT WAS AGREED THAT 60 SPACES ARE REQUIRED FOR THE DOLLAR GENERAL EXPANSION.



LOCATION MAP
N.T.S.

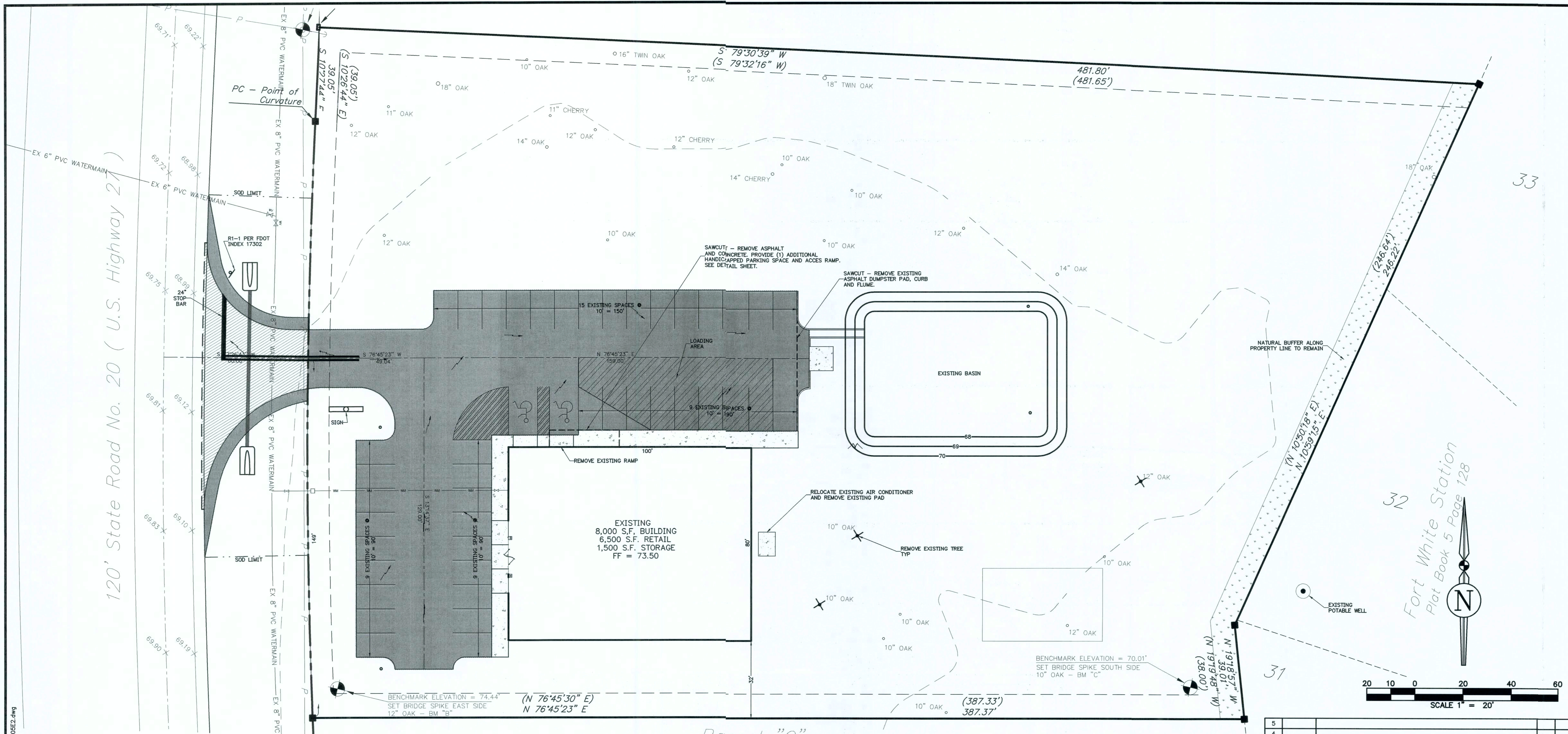
DOLLAR GENERAL EXPANSION - FT. WHITE		
SHEET INDEX		
SHEET NO.	TITLE	
1	COVER SHEET	
2	EXISTING CONDITIONS	
3	SITE PLAN	
4	PAVING, GRADING, & DRAINAGE PLAN	
5	DETAILS AND NOTES	
SUR-1	BOUNDARY & TOPOGRAPHIC SURVEY	

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PHONE: (352) 375-8999 FAX: (352) 375-0833
E-MAIL: bci@brown-cullen.com
St. of Fla. Bd. of Prof. Eng. Cert. of Auth. No. 8263

PROJECT ENGINEER STUART E. CULLEN, P.E.		FL. REG. NO. 51337
PROJECT NO. 130-00-05	DATE DECEMBER, 2005	
PROJECT MGR. SIC	DRAWN BY RCW	
SHEET 1	OF 5	

5					
4					
3					
2	7-20-06	REVISIONS PER STIPULATIONS OF P&Z BOARD	RCW	SIC	
1	1-16-06	REVISIONS PER TOWN OF FORT WHITE	RCW	SIC	
No.	DATE	REVISION NOTE	BY	APPR.	

Mar 14, 2006 - 11:57:21 - Scott - G:\300005-DG FT. White\Building Expansion\ - 13005E2.dwg



LEGEND	
	EXISTING ASPHALT PAVEMENT
	EXISTING CONC PAVEMENT / SIDEWALK
	EXISTING WATERLINE
	EXISTING TREE
	TREE TO BE REMOVED

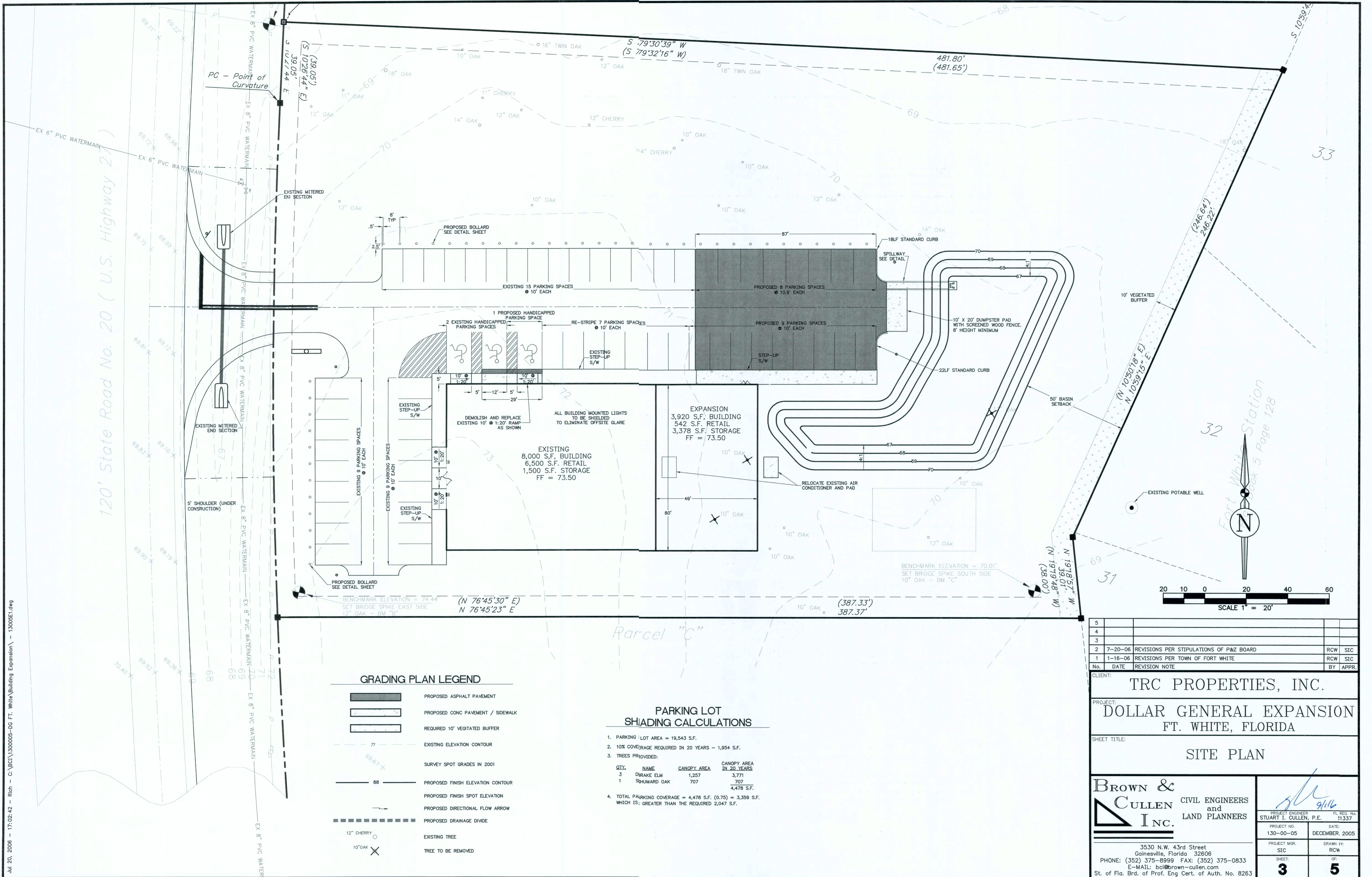
5					
4					
3					
2					
1	1-16-06	REVISIONS PER TOWN OF FORT WHITE		RCW	SIC
No.	DATE	REVISION NOTE		BY	APPR.

CLIENT: TRC PROPERTIES, INC.

PROJECT: DOLLAR GENERAL EXPANSION
FT. WHITE, FLORIDA

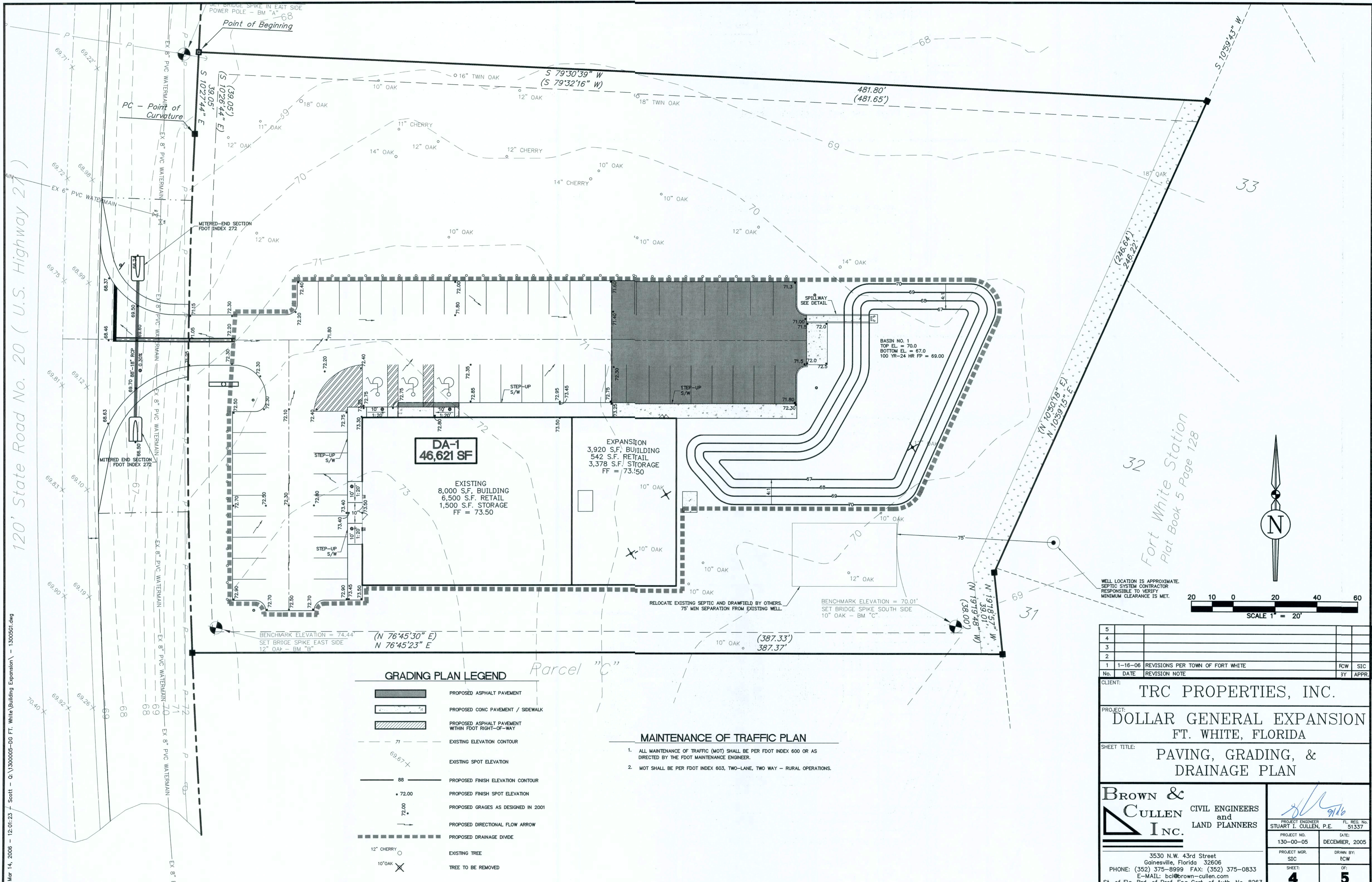
SHEET TITLE: EXISTING CONDITIONS

BROWN & CULLEN INC.		CIVIL ENGINEERS and LAND PLANNERS	
3530 N.W. 43rd Street Gainesville, Florida 32606 PHONE: (352) 375-8999 FAX: (352) 375-0833 E-MAIL: bci@brown-cullen.com St. of Fla. Brd. of Prof. Eng. Cert. of Auth. No. 8263		 PROJECT ENGINEER STUART I. CULLEN, P.E. FL. REG. NO. 51337	
PROJECT NO. 130-00-05		DATE: DECEMBER, 2005	
PROJECT MGR. SIC		DRAWN BY: RCW	
SHEET: 2		OF: 5	



5					
4					
3					
2	7-20-06	REVISIONS PER STIPULATIONS OF P&Z BOARD	RCW	SIC	
1	1-16-06	REVISIONS PER TOWN OF FORT WHITE	RCW	SIC	
No.	DATE	REVISION NOTE	BY	APPR.	
CLIENT: TRC PROPERTIES, INC.					
PROJECT: DOLLAR GENERAL EXPANSION FT. WHITE, FLORIDA					
SHEET TITLE: SITE PLAN					
BROWN & CULLEN Inc.			CIVIL ENGINEERS and LAND PLANNERS		
3530 N.W. 43rd Street Gainesville, Florida 32606 PHONE: (352) 375-8999 FAX: (352) 375-0833 E-MAIL: bcl@brown-cullen.com St. of Fla. Bd. of Prof. Eng. Cert. of Auth. No. 8263			PROJECT ENGINEER STUART I. CULLEN, P.E. PROJECT NO. 130-00-05 DATE: DECEMBER, 2005 PROJECT MGR. SIC DRAWN BY: RCW SHEET: 3 OF: 5		

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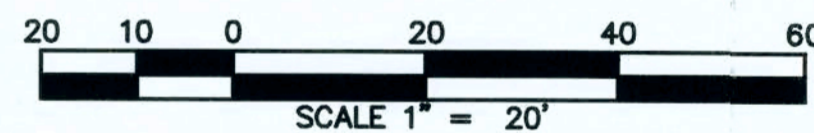


GRADING PLAN LEGEND

- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONC PAVEMENT / SIDEWALK
- PROPOSED ASPHALT PAVEMENT WITHIN FDOT RIGHT-OF-WAY
- EXISTING ELEVATION CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED FINISH ELEVATION CONTOUR
- PROPOSED FINISH SPOT ELEVATION
- PROPOSED GRAGES AS DESIGNED IN 2001
- PROPOSED DIRECTIONAL FLOW ARROW
- PROPOSED DRAINAGE DIVIDE
- EXISTING TREE
- TREE TO BE REMOVED

MAINTENANCE OF TRAFFIC PLAN

- ALL MAINTENANCE OF TRAFFIC (MOT) SHALL BE PER FDOT INDEX 600 OR AS DIRECTED BY THE FDOT MAINTENANCE ENGINEER.
- MOT SHALL BE PER FDOT INDEX 603, TWO-LANE, TWO WAY - RURAL OPERATIONS.



5				
4				
3				
2				
1	1-16-06	REVISIONS PER TOWN OF FORT WHITE	FCW	SIC
No.	DATE	REVISION NOTE	BY	APPR.

CLIENT: **TRC PROPERTIES, INC.**

PROJECT: **DOLLAR GENERAL EXPANSION
FT. WHITE, FLORIDA**

SHEET TITLE: **PAVING, GRADING, &
DRAINAGE PLAN**

BROWN & CULLEN INC.
CIVIL ENGINEERS and LAND PLANNERS
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PROJECT ENGINEER
STUART I. CULLEN, P.E.
PROJECT NO. 130-00-05
DATE: DECEMBER, 2005
PROJECT MGR. SIC
DRAWN BY: ICW
SHEET: **4**
OF: **5**

1. GENERAL: ALL DRAINAGE CONSTRUCTION, INCLUDING MATERIALS, CONSTRUCTION TECHNIQUES, AND TECHNICAL STANDARDS, SHALL BE IN ACCORDANCE WITH THE LATEST F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE LATEST F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS.

- ## EROSION AND SEDIMENTATION CONTROL PLAN

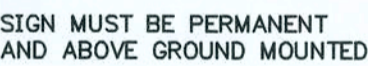
1. SILT FENCING AND/OR STAKED HAY BALES SHALL BE CONSTRUCTED WHERE SHOWN ON THE DRAWINGS PRIOR TO STARTING CONSTRUCTION.
2. ALL STORM DRAIN INLETS SHALL BE PROTECTED DURING CONSTRUCTION IN ACCORDANCE WITH F.D.O.T. INDEX NO. 102.
3. THE STORM DRAIN SYSTEM SHALL BE FLUSHED OUT TO REMOVE ALL ACCUMULATED DEBRIS AND SEDIMENT UPON COMPLETION OF CONSTRUCTION.
4. THE DRAINAGE BASIN BOTTOMS SHALL BE SCRAPED CLEAN OF ALL ACCUMULATED SEDIMENT UPON COMPLETION OF CONSTRUCTION AFTER THE STORM DRAIN SYSTEM IS COMPLETELY FLUSHED OUT. THE BASIN SIDE SLOPES SHALL BE COMPLETELY LANDSCAPED UPON CONSTRUCTION COMPLETION.
5. ALL DISTURBED AREAS IN THE CONSTRUCTION AREA SHALL BE COMPLETELY LANDSCAPED OR GRASSED BY COMPLETION OF CONSTRUCTION. EVIDENCE OF GROWTH MUST BE PRESENT PRIOR TO FINAL RELEASE.

- A. THE RETENTION BASIN SHALL BE MOWED REGULARLY TO AVOID EXCESSIVE VEGETATIVE GROWTH. MOWING SCHEDULE SHOULD BE MONTHLY DURING WINTER MONTHS AND MORE FREQUENTLY (BIWEEKLY) DURING SUMMER MONTHS.
- B. THE BASIN SHALL BE INSPECTED SEMI-ANNUALLY FOR STRUCTURAL SOUNDNESS AND OPERATIONAL FUNCTION. ANY DEFECTS DISCOVERED SHOULD BE REPAIRED TO ORIGINAL DESIGN CONDITION.
- C. THE BASIN SHALL BE CLEANED OUT ANNUALLY OF ANY ACCUMULATED SEDIMENTATION BUILDUP. IF THE RETENTION BASIN IS SHOWING EXCESSIVE SEDIMENTATION ACCUMULATION, THE RETENTION BASIN BOTTOM SHALL BE CLEANED OUT MORE OFTEN AS THE CONDITION DICTATES.
- D. BASIN SIDE SLOPES SHALL BE MAINTAINED WITH A GOOD STAND OF GRASS. SEASONAL GRASSES SHALL BE PLANTED TO AVOID EROSION (I.E. WINTER RYE, SUMMER MILLET, ETC.).
- E. BASINS THAT DO NOT DRAIN/DOWN PROPERLY AND MAINTAIN STANDING WATER FOR AN EXTENDED PERIOD OF TIME MAY REQUIRE REMEDIAL ACTION. THE ENGINEER SHALL BE NOTIFIED TO HELP COORDINATE REMEDIAL ACTION IN THE EVENT THIS OCCURS.
- F. ANY LANDSCAPING PROVIDED FOR EROSION CONTROL SHALL BE MAINTAINED IN A SOUND CONDITION AT ALL TIMES, AND SHALL BE REMOVED OR REPLACED IF NOT FUNCTIONING PROPERLY.

1. ALL CONSTRUCTION SHALL BE TO THE MOST CURRENT F.D.O.T. ROADWAY AND TRAFFIC STANDARDS AND F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. ALL CONSTRUCTION SHALL BE PER APPROVED PERMIT, COVER LETTER, SPECIAL PROVISIONS, SIGNED AND SEALED PLANS AND CONFORM TO ALL F.D.O.T. SPECIFICATIONS AND INSPECTIONS.
2. BASE COURSE MATERIAL SHALL BE LIMEROCK CONFORMING TO SECTION 911 AND PLACED ACCORDING TO SECTION 200 IN 6" (PER DESIGN SECTION) MINIMUM COMPACTED LIFTS. ALL BASE MATERIAL SHALL BE 98% DENSITY BY MODIFIED PROCTOR METHOD (AASHTO T-180). THE PRIME COT SHALL CONFORM TO SECTION 300. PERFORM AND PASS A MINIMUM OF THREE DENSITY TESTS.



N.T.S.




N.T.S.



CLIENT:	TRC PROPERTIES, INC.
PROJECT:	DOLLAR GENERAL EXPANSION FT. WHITE, FLORIDA

**BROWN &
CULLEN
INC** CIVIL ENGINEERS
and
LAND PLANNERS

 3530 N.W. 43rd Street Gainesville, Florida 32606 PHONE: (352) 375-8999 FAX: (352) 375-0833 E-MAIL: bc@brown-cullen.com St. of Fla. Bd. of Prof. Eng. Cert. of Auth. No. 8263	PROJECT NO. 130-00-05	DATE: DECEMBER, 2005
	PROJECT MGR. SIC	DRAWN BY: R:W
	SHEET: 5	OF: 5

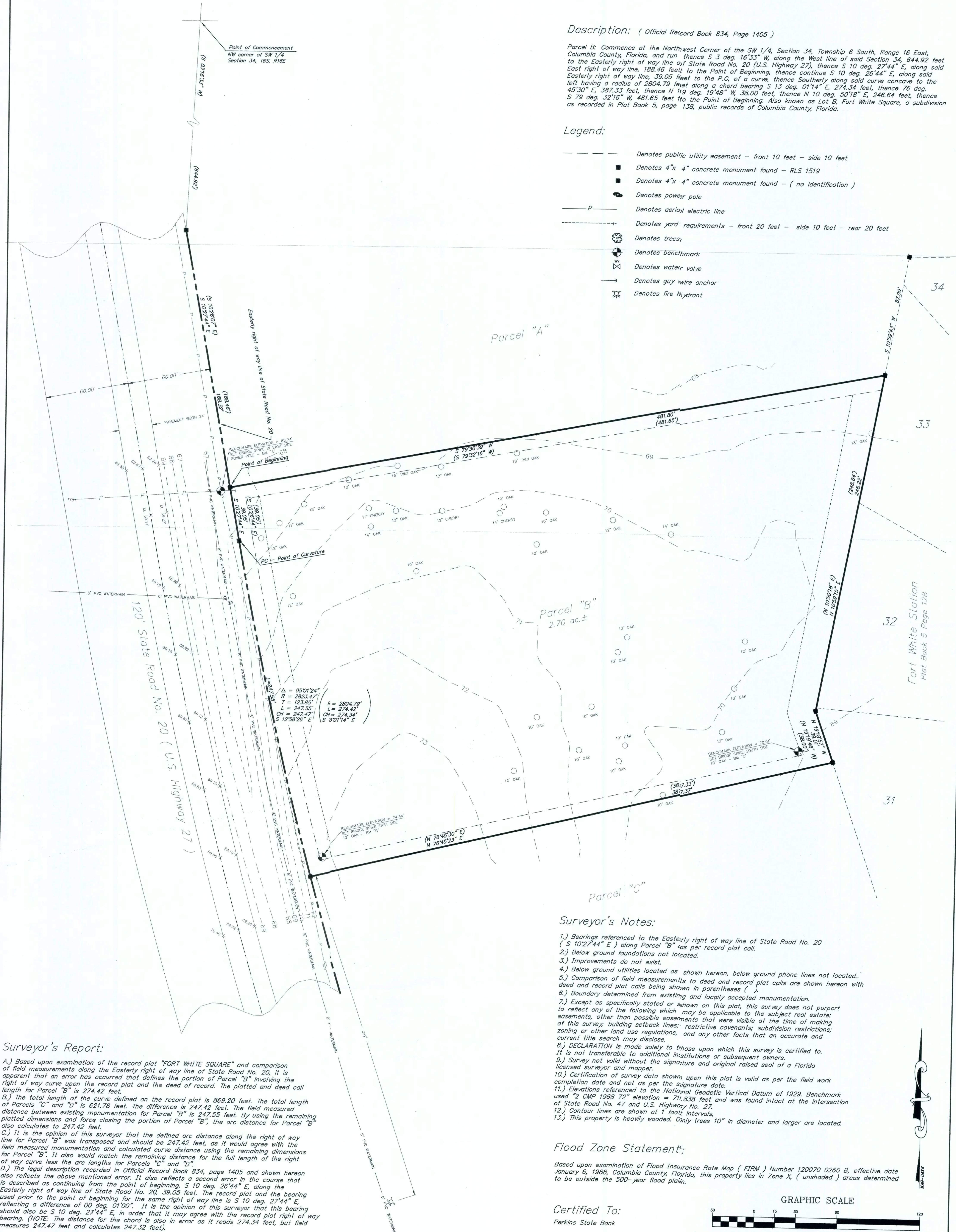
A Boundary & Topographic Survey of Parcel "B", FORT WHITE SQUARE
A Subdivision in Section 34, Township 6 South, Range 16 East, Columbia County, Florida
For: TRC Properties

Description: (Official Record Book 834, Page 1405)

Parcel B: Commence at the Northwest Corner of the SW 1/4, Section 34, Township 6 South, Range 16 East, Columbia County, Florida, and run thence S 3 deg. 16'33" W, along the West line of said Section 34, 644.92 feet to the Easterly right of way line of State Road No. 20 (U.S. Highway 27), thence S 10 deg. 27'44" E, along said East right of way line, 188.46 feet to the Point of Beginning, thence continue S 10 deg. 26'44" E, along said Easterly right of way line, 39.05 feet to the P.C. of a curve, thence Southerly along said curve concave to the left having a radius of 2804.79 feet along a chord bearing S 13 deg. 01'14" E, 274.34 feet, thence 76 deg. 45'30" E, 387.33 feet, thence N 19 deg. 19'48" W, 38.00 feet, thence N 10 deg. 50'18" E, 246.64 feet, thence S 79 deg. 32'16" W, 481.65 feet to the Point of Beginning. Also known as Lot B, Fort White Square, a subdivision as recorded in Plat Book 5, page 138, public records of Columbia County, Florida.

Legend:

- Denotes public utility easement - front 10 feet - side 10 feet
- Denotes 4"x 4" concrete monument found - RLS 1519
- Denotes 4"x 4" concrete monument found - (no identification)
- Denotes power pole
- P— Denotes aerial electric line
- Denotes yard requirements - front 20 feet - side 10 feet - rear 20 feet
- Denotes trees
- ⊕ Denotes benchmark
- ⊗ Denotes water valve
- Denotes guy wire anchor
- ⊕ Denotes fire hydrant



Surveyor's Report:

A.) Based upon examination of the record plat "FORT WHITE SQUARE" and comparison of field measurements along the Easterly right of way line of State Road No. 20, it is apparent that an error has occurred that defines the portion of Parcel "B" involving the right of way curve upon the record plat and the deed of record. The plat and deed call length for Parcel "B" is 274.42 feet.
B.) The total length of the curve defined on the record plat is 869.20 feet. The total length of Parcels "C" and "D" is 621.78 feet. The difference is 247.42 feet. The field measured distance between existing monumentation for Parcel "B" is 247.55 feet. By using the remaining plat dimensions and force closing the portion of Parcel "B", the arc distance for Parcel "B" also calculates to 247.42 feet.
C.) It is the opinion of this surveyor that the defined arc distance along the right of way line for Parcel "B" was transposed and should be 247.42 feet, as it would agree with the field measured monumentation and calculated curve distance using the remaining dimensions for Parcel "B". It also would match the remaining distance for the full length of the right of way curve less the arc lengths for Parcels "C" and "D".
D.) The legal description recorded in Official Record Book 834, page 1405 and shown hereon also reflects the above mentioned error. It also reflects a second error in the course that is described as continuing from the point of beginning, S 10 deg. 26'44" E, along the Easterly right of way line of State Road No. 20, 39.05 feet. The record plat and the bearing used prior to the point of beginning for the same right of way line is S 10 deg. 27'44" E, reflecting a difference of 00 deg. 01'00". It is the opinion of this surveyor that this bearing should also be S 10 deg. 27'44" E, in order that it may agree with the record plat right of way bearing. (NOTE: The distance for the chord is also in error as it reads 274.34 feet, but field measures 247.47 feet and calculates 247.32 feet).

Surveyor's Notes:

- 1.) Bearings referenced to the Easterly right of way line of State Road No. 20 (S 10°27'44" E) along Parcel "B" as per record plat call.
- 2.) Below ground foundations not located.
- 3.) Improvements do not exist.
- 4.) Below ground utilities located as shown hereon, below ground phone lines not located.
- 5.) Comparison of field measurements to deed and record plat calls are shown hereon with deed and record plat calls being shown in parentheses ().
- 6.) Boundary determined from existing and locally accepted monumentation.
- 7.) Except as specifically stated or shown on this plat, this survey does not purport to reflect any of the following which may be applicable to the subject real estate: easements, other than possible easements that were visible at the time of making of this survey; building setback lines; restrictive covenants; subdivision restrictions; zoning or other land use regulations; and any other facts that an accurate and current title search may disclose.
- 8.) DECLARATION is made solely to those upon which this survey is certified to. It is not transferable to additional institutions or subsequent owners.
- 9.) Survey not valid without the signature and original raised seal of a Florida licensed surveyor and mapper.
- 10.) Certification of survey data shown upon this plat is valid as per the field work completion date and not as per the Signature date.
- 11.) Elevations referenced to the National Geodetic Vertical Datum of 1929. Benchmark used "2 CMP 1968 72" elevation = 711.838 feet and was found intact at the intersection of State Road No. 47 and U.S. Highway No. 27.
- 12.) Contour lines are shown at 1 foot intervals.
- 13.) This property is heavily wooded. Only trees 10" in diameter and larger are located.

Flood Zone Statement:

Based upon examination of Flood Insurance Rate Map (FIRM) Number 120070 0260 B, effective date January 6, 1988, Columbia County, Florida, this property lies in Zone X (unshaded) areas determined to be outside the 500-year flood plain.

Certified To:

Perkins State Bank

Certificate:

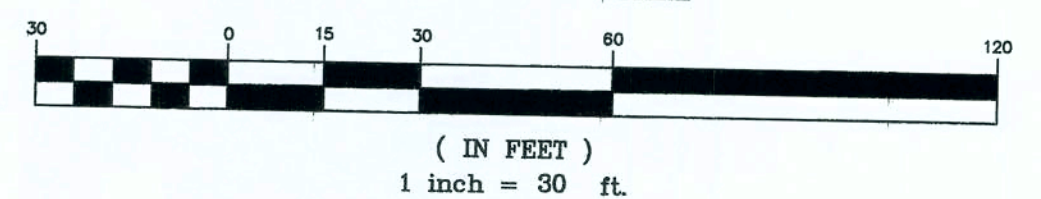
I hereby certify that this is a true and correct representation of a survey made under my responsible direction and supervision, that meets the minimum technical standards set forth by the Board of Professional Surveyors and Mappers in Chapter 61G17-6, Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

Dated

Ronald E. Parrish, PLS Cert. No. 4929

Field work completed 10/05/00 - Job No. G-226-00 - Field Book 2000-JGP

GRAPHIC SCALE



Parrish Land Surveying
305 S. Main Street - P.O. Box 310
Trenton, Florida 32693
Telephone (352) 463-2938

PLAN NOTES - MECHANICAL

- ALL EXTERIOR DUCTWORK IS TO BE G-90 GALVANIZED STEEL EXTERNALLY INSULATED WITH R-6 FOIL FACED FIBERGLASS DUCTBOARD, AID CLADDED WITH G-90 GALVANIZED STEEL COVER WITH STANDING SEAM LATERAL JOINTS AND PITTSBURGH LONGITUDINAL JOINTS.
- PROVIDE G-90 GALVANIZED STEEL FLASHING AND TRIM AT WALL PENETRATIONS, WALL PENETRATIONS TO BE BETWEEN CEILING AND ROOF STRUCTURE.
- PRTU-2 TO BE MOUNTED ON PIPE STAND. SEE DETAIL ON SHEET M-3.
- PROVIDE VERTICAL OUTDOOR AIR INTAKE DUCT EXTENSION THREE (3) FEET ABOVE UNIT AND PROVIDE GOOSENECK VENT TURNED DOWN AT TOP.
- RELOCATE EXISTING PACKAGED HEAT PUMP A/C-1 TO APPROXIMATE LOCATION AS SHOWN. CONNECT NEW 30/30 SUPPLY AIR DUCTWORK FROM RELOCATED A/C-1 TO EXISTING 30/30 SUPPLY AIR DUCTWORK ABOVE EXISTING CEILING. CONNECT NEW 28/28 RETURN AIR DUCTWORK FROM RELOCATED A/C-1 TO EXISTING 28/28 RETURN AIR DUCTWORK ABOVE EXISTING CEILING.

PROJECT NOTES - MECHANICAL

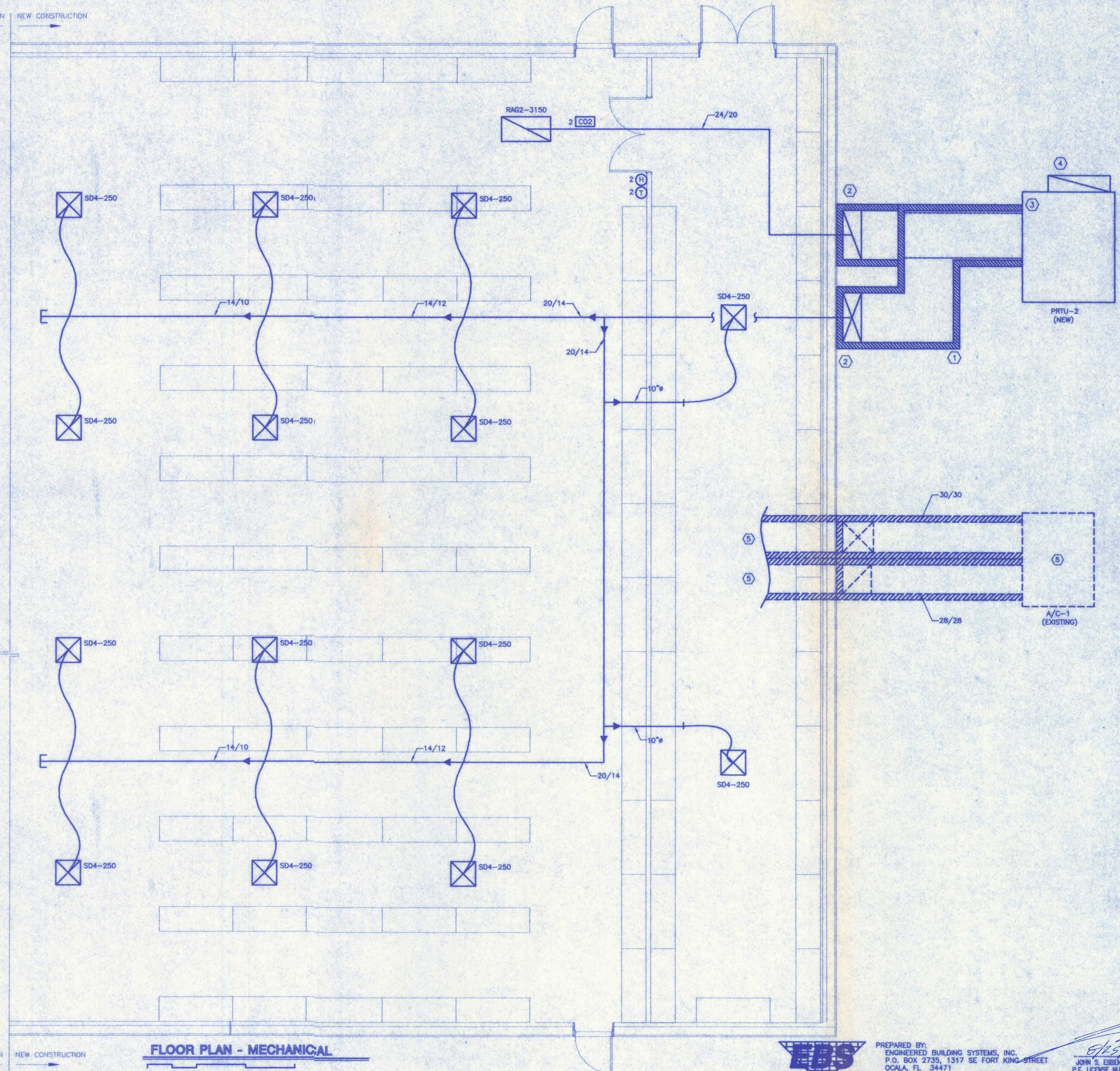
- SEE SHEET M-1 FOR MECHANICAL FLOOR PLAN.
- SEE SHEET M-2 FOR AIR CONDITIONING AND HEATING EQUIPMENT SCHEDULE.
- SEE SHEET M-2 FOR AIR DISTRIBUTION DEVICE SCHEDULE.
- SEE SHEET M-2 FOR GENERAL MECHANICAL NOTES.
- SEE SHEET M-3 FOR GENERAL MECHANICAL DETAILS.
- SEE SHEET M-4 FOR MECHANICAL SPECIFICATION NOTES.

EXISTING CONSTRUCTION NEW CONSTRUCTION

EXISTING CONSTRUCTION NEW CONSTRUCTION

FLOOR PLAN - MECHANICAL

4' 0' 4' 0'



Engineered Building Systems, Inc.
Professional Consulting Engineering Services
P. O. Box 5988
Ocala, Florida 34478
Phone: (352) 351-3941
Fax: (352) 732-8244



Revisions

No.	Date
0	06/23/08
1	
2	
3	
4	
5	
6	

Drawn by: _____
Checked by: _____
Signature: _____

DOLLAR GENERAL
FORT WHITE, FLORIDA

M-1
OF 4



PREPARED BY:
ENGINEERED BUILDING SYSTEMS, INC.
P.O. BOX 2735, 1317 SE FORT KING STREET
OCALA, FL 34471
PH: (352) 351-3941 FAX: (352) 732-8244
BUSINESS LICENSE NUMBER: EB0008061

JOHN S. ESSENHADE, P.E.
P.E. LICENSE NUMBER: 39460

GENERAL MECHANICAL NOTES

GENERAL:

THIS FACILITY IS EXISTING. MECHANICAL CONTRACTOR SHALL COMPLETELY FAMILIARIZE HIMSELF WITH ALL KISTING CONDITIONS AFFECTING HIS WORK INCLUDING VISIT TO THE SITE BEFORE PREPARING HIS PROPOSAL. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS ISSUED BY ALL AUTHORITIES HAVING JURISDICTION OVER THE WORK. WHERE CONFLICT EXISTS BETWEEN THE APPLICABLE CODES AND STANDARDS OR THE PLANS AND SPECIFICATIONS, THE MOST STRINGENT AS DETERMINED BY THE ENGINEER WILL APPLY. CONTRACTOR SHALL NOTIFY ENGINEER OF CONFLICTING CONDITIONS AFFECTING HIS WORK AND ADVISE ENGINEER FOR CLARIFICATION. LOCAL CODES IN EFFECT FOR THIS PROJECT INCLUDE BUT ARE NOT LIMITED TO:

FLORIDA STANDARD BUILDING CODE
FLORIDA STANDARD MECHANICAL CODE
FLORIDA STANDARD PLUMBING CODE
FLORIDA STANDARD GAS CODE
NFPA 90, 90A, 90B

ALL MATERIALS TO BE MANUFACTURED INCORPORATED INTO THE WORK TO BE MANUFACTURED IN THE USA UNLESS OTHERWISE NOTED OR SCHEDULED ON THE DRAWINGS.

MECHANICAL CONTRACTOR TO PROVIDE COMPLETE AND FUNCTIONING SYSTEMS. CONTRACTOR TO PROVIDE ALL REQUIRED MATERIALS AND LABOR AS NEEDED TO PROVIDE COMPLETE AND FUNCTIONING SYSTEM AS DESCRIBED IN THE CONSTRUCTION DOCUMENTS.

COOLING AND HEATING DESIGN CONDITIONS ARE TO BE AS FOLLOWS AND AS INDICATED IN MECHANICAL EQUIPMENT SCHEDULE:

OUTDOOR DRY BULB: 95 DEGREES FAHRENHEIT
OUTDOOR WET BULB: 78 DEGREES FAHRENHEIT
INDOOR DRY BULB: 74 DEGREES FAHRENHEIT
INDOOR RELATIVE HUMIDITY: < 60%

SUBMITTALS AND SHOP DRAWINGS:

CONTRACTOR TO PREPARE SUBMITTALS AND SHOP DRAWINGS FOR ALL MECHANICAL WORK AS REQUIRED BY THE CONSTRUCTION DOCUMENTS INTO SINGLE COMPLETE PACKAGE FOR ENGINEERS REVIEW. PACKAGE TO BE IN THREE RING BINDER WITH ALL SHOP DRAWINGS ATTACHED. BINDER AND DRAWINGS TO CLEARLY STATE PROJECT NAME, PROJECT ARCHITECT, PROJECT ENGINEER, PROJECT OWNER, CONTRACTOR NAME, AND SITE ADDRESS. INCOMPLETE SUBMITTAL PACKAGES WILL BE AVAILABLE AT THE ENGINEERS OFFICE FOR CONTRACTOR PICK-UP AND COMPLETION BEFORE ANY REVIEW BY THE ENGINEER OTHER THAN CURSORY REVIEW AS REQUIRED TO DETERMINE COMPLETENESS OF SUBMITTAL PACKAGE.

CONTRACTOR TO SUBMIT NAME AND QUALIFICATIONS OF TEST AND BALANCE COMPANY BEING PROPOSED BY CONTRACTOR FOR TEST AND BALANCE WORK. TEST AND BALANCE CONTRACTOR SUBMITTAL INFORMATION TO INCLUDE DOCUMENTATION OF EXPERIENCE AS WELL AS COPY OF TEST AND BALANCE CONTRACTORS ENGINEERING CORPORATION LICENSE SHOWING NAME OF QUALIFYING REGISTERED PROFESSIONAL ENGINEER AS WELL AS COPY OF QUALIFYING PROFESSIONAL ENGINEERS CURRENT LICENSE.

COORDINATION OF WORK:

ENGINEERS DRAWINGS AND CONSTRUCTION DOCUMENTS ARE DIAGRAMMATIC. CONTRACTOR OF WORK THIS TRADE TO COORDINATE WITH ALL WORK OF CONTRACTORS OF OTHER TRADES AND GENERAL CONTRACTOR. CONTRACTORS TO FIELD MEASURE PRIOR TO FABRICATION OF ANY WORK. CONTRACTOR OF WORK OF THIS TRADE TO COMMUNICATE WITH GENERAL CONTRACTOR AND CONTRACTORS OF OTHER TRADES AND PREPARE DRAWINGS, SKETCHES, AND PROVIDE INFORMATION AS NEEDED TO COMMUNICATE WITH OTHER TRADES FOR CONSTRUCTION OF COMPLETE AND OPERATING SYSTEM WITHOUT ADDITIONAL COST TO OWNER. PRIOR TO BEGINNING WORK OF THIS TRADE, CONTRACTOR OF THIS TRADE TO CONVENIE COORDINATION MEETING WITH OTHER AFFECTED CONTRACTORS OF OTHER TRADES AND GENERAL CONTRACTOR FOR PURPOSES OF COORDINATION. CONTRACTORS' FAILURES TO COORDINATE WILL NOT BE CAUSE FOR RECOVERY OF ADDITIONAL COMPENSATION FOR CORRECTION OR MODIFICATION WORK WHICH IN THE SOLE OPINION OF THE ENGINEER IS NOT WELL COORDINATED.

DUCTWORK:

ALL DUCTWORK TO BE G-60 GALVANIZED STEEL FOR INDOOR LOCATIONS AND G-90 GALVANIZED STEEL FOR OUTDOOR LOCATIONS AND WITHIN 10 FEET OF ALL BUILDING EXTERIOR ENVELOPE PENETRATIONS. ALL DIMENSIONS SHOWN ON THE DRAWINGS ARE CLEAR INSIDE DIMENSIONS. ALL DUCTWORK TO BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE MOST CURRENT DUCT CONSTRUCTION STANDARDS OF SMACNA AND WITHOUT BUTTON PUNCH JOINTS. PLENUM TYPE CONNECTION OF DUCTWORK TO EQUIPMENT OR HVAC SYSTEM APPURTENANCE IS NOT PERMITTED UNLESS SPECIFICALLY NOTED ON THE DRAWINGS. ALL DUCTWORK TO BE SEALED WITH DUCTMAE ENVIROSEAL MASTIC OR EQUAL OF DOMESTIC MANUFACTURE. DUCTWORK TO BE SMACNA SEAL CLASS "C" UNLESS OTHERWISE NOTED. TURNING VANES ARE TO BE INSTALLED IN ALL MITERS AND BRANCH CONNECTIONS OF ALL RECTANGULAR DUCTWORK. EXTRACTORS ARE TO BE INSTALLED AT ALL BRANCH DUCTS AND CONNECTIONS RUNNOUTS TO SUPPLY GRILLS AND SUPPLY REGISTERS. MANUAL VOLUME DAMPERS ARE TO BE INSTALLED AT ALL TAPS OR AIR DISTRIBUTION DEVICES AS WELL AS SHOWN ON THE DRAWINGS. FLEXIBLE DUCTWORK TO BE INSULATED TO NOT LESS THAN R-6 AND TO BE ATCO UPC #076 OR EQUAL BY SCHULLER. FLEX DUCT TO HAVE FLAME SPREAD RATING LESS THAN 25 AND SMOKE DEVELOPED RATING OF LESS THAN 50.

WHERE METAL DUCTWORK IS IN EXPOSED FINISHED INTERIOR LOCATIONS DUCTWORK TO BE AT LEAST TWO GAGES HEAVIER THAN THE MINIMUM GAUGE REQUIRED BY THE APPLICABLE SMACNA STANDARD AND JOINED WITH FOUR BOLT CONNECTION AS MANUFACTURED BY DUCTMAE OR EQUAL OF DOMESTIC MANUFACTURE. EXPOSED DUCTWORK TO BE PAINTED IN ACCORDANCE WITH THE PAINTING REQUIREMENTS OF ARCHITECTURAL SECTIONS OF THE CONSTRUCTION DOCUMENTS. WHERE PAINTING REQUIREMENTS ARE NOT DESCRIBED IN THE ARCHITECTURAL SECTIONS OF THE CONSTRUCTION DOCUMENTS, PROVIDE ONE COAT OF PRIMER AND TWO COATS OF OIL BASED ENAMEL AS MANUFACTURED BY PPG OR SHERWIN WILLIAMS APPLIED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. COLOR TO BE AS SELECTED BY THE ARCHITECT AND OWNER.

CONTRACTOR TO COORDINATE WITH TRUSS MANUFACTURER AND INSTALLER IN ORDER TO PROVIDE REQUIRED CLEARANCES WITHIN TRUSS WORK AND OTHER STRUCTURAL ELEMENTS AS NEEDED FOR INSTALLATION OF REQUIRED DUCTWORK.

WHERE DUCTWORK PENETRATES DRAFT STOPS OF OTHER CONTINUOUS WALLS OR OTHER BARRIERS IN THE CONSTRUCTION SEAL DUCTWORK AROUND PENETRATION IN MANNER CONSISTENT WITH LEVEL OF PROTECTION OF DRAFT STOP, WALL, OR OTHER BARRIER.

PROVIDE DUCT ACCESS DOOR AT ALL DUCT SMOKE DETECTOR LOCATIONS.

DUCTWORK INSULATION:

ALL SUPPLY AND RETURN DUCTWORK IS TO BE EXTERNALLY INSULATED TO NOT LESS THAN R-6. ALL RETURN AND EXHAUST DUCTWORK IS TO BE LINED WITH ACOUSTIC DUCT LINER WITHIN 10 FEET OF AHU, PACKAGE UNIT, FAN, OR BLOWER. OUTDOOR AIR AND EXHAUST DUCTWORK TO BE EXTERNALLY INSULATED TO NOT LESS THAN R-4. ALL EXTERNAL DUCT INSULATION TO BE SCHULLER R-SERIES MICROLITE FIBERGLASS DUCT WRAP WITH FSK FACING OR EQUAL BY OCF. ALL DUCT LINER TO BE SCHULLER PERMACOTE UNACOUSTIC WITH FACTORY APPLIED ANTI-MICROBIAL TREATMENT. FLAME SPREAD AND SMOKE DEVELOPED RATINGS OF BOTH DUCT WRAP AND LINER TO BE LESS THAN 25 AND 50 RESPECTIVELY. ALL INSULATION IS TO BE APPLIED WITH ADHESIVE AND MECHANICAL FASTENERS IN ACCORDANCE WITH THE MOST CURRENT WRITTEN RECOMMENDATIONS OF SMACNA.

FIRE DAMPERS:

FIRE DAMPERS TO BE INSTALLED UNLESS OTHERWISE NOTED IN RATED FLOOR AND WALL PENETRATIONS AND/OR IN ACCORDANCE WITH THE MOST CURRENT REQUIREMENTS OF NFPA 90, 90A, OR 90B. INSTALL FIRE DAMPERS IN SLEEVES AND SEAL BETWEEN SLEEVE AND FLOOR CUT WITH UL APPROVED FIRESTOP SEALANT. FIRE DAMPERS TO BE INSTALLED AS SHOWN ON THE DETAILS AND IN ACCORDANCE WITH THE MOST CURRENT SMACNA STANDARDS. ALL FIRE DAMPERS TO HAVE FULL FLOW CROSS SECTION, TYPE B.

HEATING VENTILATING AND AIR CONDITIONING EQUIPMENT:

EQUIPMENT TO BE AS SHOWN ON THE DRAWINGS OR EQUAL WHERE MANUFACTURED BY CARRIER OR TRANE. IF EQUAL MANUFACTURER IS SELECTED CONTRACTOR TO PROVIDE SUFFICIENT INFORMATION SHOWING EQUAL SYSTEM PERFORMANCE AND PHYSICAL CHARACTERISTICS. SPLIT HEATING OR COOLING SYSTEMS TO BE MATCHED SYSTEMS OF THE SAME MANUFACTURER. HVAC EQUIPMENT TO BE PROVIDED WITH SPRING VIBRATION ISOLATION, MASON SERIES SLR2A OR EQUAL AS APPROVED BY ENGINEER. HVAC EQUIPMENT TO BE FURNISHED WITH 2" FILTER RACK, FACTORY FURNISHED RETURN AIR PLENUM, AND FACTORY EVAPORATOR COIL ENCLOSURE. AT COMPLETION OF JOB AND AT FINAL CLEANUP, INSTALL NEW SET OF FARR 2"-30/30 FILTERS. FURNISH OWNER WITH SIX SETS OF FARR 2"-30/30 FILTERS. WHERE COOLING SYSTEMS HAVE MULTIPLE STAGES OF COOLING, COOLING COILS TO BE PROVIDED WITH VERTICAL FACE SPLITTING, NOT ROW SPLITTING. LABEL ALL EQUIPMENT WITH LAMINATED PLASTIC TAG HAVING 1" BLUE LETTERS ON WHITE BACKGROUND.

AIR FILTERS:

CONTRACTOR TO INSTALL TEMPORARY AIR FILTERS FOR USE DURING CONSTRUCTION AT TIME FILTER RACKS ARE INSTALLED. IF SYSTEMS ARE OPERATED DURING CONSTRUCTIONS FILTERS ARE TO BE REPLACED DURING CONSTRUCTION MONTHLY AND DUCT CLEANING IS TO BE PERFORMED JUST PRIOR TO REQUEST FOR SUBSTANTIAL COMPLETION AND BEFORE BEGINNING OF TEST AND BALANCE OF SYSTEM.

ALL AIR FILTERS TO BE ASHRAE MERV 8 PLEATED MEDIA FILTERS. PROVIDE TO OWNER FOUR SPARE FILTERS FOR EACH FILTER LOCATION AT TIME OF SUBSTANTIAL COMPLETION.

CONDENSATE DRAIN PIPING:

CONDENSATE DRAIN PIPING TO BE NOT LESS THAN 3/4" SCHEDULE 40 PVC PIPE. INTERIOR CONDENSATE DRAIN PIPE TO BE INSULATED WITH RUBBER CLOSED CELL FOAM OF NOT LESS THAN 1/2" WALL THICKNESS. INSTALL TRAP AT AIR HANDLING UNIT WHEN EVAPORATOR COIL IS LOCATED ON NEGATIVE PRESSURE SIDE OF BLOWER SECTION. MINIMUM TRAP DEPTH TO BE NOT LESS THAN TWICE THE EXTERNAL STATIC PRESSURE OF THE AIR HANDLING UNIT IN INCHES OF WATER. AUXILIARY CONDENSATE DRAIN LINE TO BE PROVIDED AT EACH AHU AND TO BE PIPED WITH TRAP.

TEST AND BALANCE:

PRIOR TO CONTRACTORS REQUEST FOR SUBSTANTIAL COMPLETION INSPECTION, CONTRACTOR TO PROVIDE INDEPENDENT TEST AND BALANCE BY FIRM WITH NOT LESS THAN 10 YEARS DEMONSTRABLE EXPERIENCE SPECIALIZING IN TEST AND BALANCE WORK. ENGINEER WILL NOT PERFORM SUBSTANTIAL COMPLETION INSPECTION OF WORK BEFORE RECEIPT OF TEST AND BALANCE REPORT. TEST AND BALANCE TO BE PERFORMED IN ACCORDANCE WITH THE WRITTEN PROCEDURES OF SMACNA, AMCA, OR NEBB. CONTRACTOR TO PROVIDE NOT LESS THAN FOUR COPIES OF CERTIFIED TEST AND BALANCE REPORT TO ENGINEER. ALL TEST AND BALANCE WORK TO BE PERFORMED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER AND ALL REPORTS TO BEAR THE ORIGINAL SEAL AND SIGNATURE OF LICENSED PROFESSIONAL ENGINEER.

TEST AND ADJUST EACH PIECE OF EQUIPMENT AND EACH SYSTEM AS REQUIRED TO ASSURE PROPER BALANCE AND OPERATION. TEST AND REGULATE VENTILATION AND AIR CONDITIONING SYSTEMS TO CONFORM TO THE AIR VOLUMES SHOWN ON THE APPROVED DESIGN DRAWINGS. MAKE TESTS AND ADJUSTMENTS IN APPARATUS AND DUCTS FOR SECURING THE PROPER VOLUME AND FACE DISTRIBUTION OF AIR FOR EACH GRILLE AND CEILING OUTLET. WHERE REQUIRED, PROVIDE PULLEYS FOR FANS AT NO ADDITIONAL COST TO THE OWNER, AND SET TO DRIVE THE FANS AT THE SPEED NEEDED TO GIVE THE INDICATED VOLUME.

FOR EACH SYSTEM, TAKE THE FOLLOWING DATA IN TABULATED FORM:

AIR VOLUMES AT ALL SUPPLY, RETURN, AND EXHAUST OUTLETS;
TOTAL CFM SUPPLIED BY MEASURED AT AHU OR PRU
TOTAL CFM RETURNED MEASURED AT AHU OR PRU
TOTAL CFM OUTDOOR AIR AT MULTIPLE DAMPER SETTINGS WHERE REQUIRED MEASURED AT AHU OR PRU
TOTAL CFM EXHAUST AT MULTIPLE SETTINGS WHERE REQUIRED MEASURED AT AHU OR PRU
DRY BULB AND WET BULB TEMPERATURES AT OUTDOOR AIR INTAKES, RETURN AIR, MIXED RETURN/OUTDOOR AIR, AND SUPPLY AIR.
SYSTEM COOLING CAPACITY.
TOTAL STATIC PRESSURE AT EACH FAN AND AT EACH SYSTEM;
MOTOR SPEED, FAN SPEED, AND INPUT AMPERE RATING FOR EACH FAN.
THERMOSTAT AND TEMPERATURE SENSOR CALIBRATIONS.
AIR FLOW TRAVERSES AT ALL AIR HANDLING SIDES OF ALL HEATING AND COOLING EQUIPMENT INCLUDING BUT NOT LIMITED TO COMPLETE TRAVERSES AND MULTIPLE OUTDOOR AIR DAMPER SETTINGS FOR TOTAL SUPPLY, TOTAL RETURN, AND TOTAL OUTDOOR AIR.

CONTRACTOR TO INCLUDE IN TEST AND BALANCE WORK THE FOLLOWING ADJUSTMENT SERVICES DURING THE FIRST 18 MONTHS FROM THE DATE OF SUBSTANTIAL COMPLETION AS WELL AS THOSE INDICATED ABOVE FOR THE PURPOSES OF PERFORMANCE CONFIRMATION, COMFORT BALANCING, AND OTHER SYSTEM ADJUSTMENT:

1. NOT LESS THAN THREE (3) SEPARATE SITE VISITS TO BE ATTENDED BY COMPOSITE CREW INCLUDING MECHANICAL CONTRACTOR, CONTROLS CONTRACTOR, GENERAL CONTRACTOR, AND INDEPENDENT TEST AND BALANCE COMPANY OF NOT LESS THAN FOUR HOUR DURATION AS REQUESTED BY ENGINEER. CREW TO BE COMPLETELY CAPABLE OF OPERATING, ADJUSTING, AND SERVICING ALL MECHANICAL EQUIPMENT AND CONTROLS ASSOCIATED WITH THE PROJECT AT TIME OF SITE VISIT.

SEQUENCE OF OPERATION FOR PRU-2 (SALES FLOOR):

AIR CONDITIONING SYSTEM BLOWERS TO BE SET TO RUN ON SIGNAL FROM OCCUPANCY SENSORS. OCCUPANCY SENSORS TO BE WIRED IN PARALLEL WHERE MORE THAN ONE SENSOR IS SHOWN WITHIN THE ZONE. OCCUPANCY SENSOR TO BE LOCATED IN CEILING AS SHOWN ON THE DRAWINGS AND FURNISHED WITH BOTH N.O. AND N.C. CONTACTS. OCCUPANCY SENSOR TO HAVE ADJUSTABLE CYCLE PERIOD OF FIVE (5) TO SIXTY (60) MINUTES AND HAVE NOT LESS THAN 40' DIAMETER COVERAGE FROM CEILING MOUNTED LOCATION. OCCUPANCY SENSOR TO HAVE ACTIVE ULTRASONIC AND PASSIVE INFRARED SENSING ELEMENTS AND TO BE AS MANUFACTURED BY HONEYWELL OR EQUAL. PROVIDE ONE OCCUPANCY SENSOR CONTROL CIRCUIT FOR EACH HVAC SYSTEM.

AIR CONDITIONING SYSTEM TO BE FURNISHED WITH MULTISTAGE SEVEN DAY PROGRAMMABLE ELECTRONIC THERMOSTAT WITH NIGHT SETBACK AND AUTO CHANGEOVER. THERMOSTAT TO HAVE AUXILIARY INPUT FOR EXTERNAL TIME-CLOCK FOR SET-BACK WITH CONTACT CLOSURE INITIATION. FURNISH REMOTE SENSOR (RS) OR DUCT SENSOR (DS) WHERE INDICATED. DURING OCCUPIED PERIODS SYSTEM TO RUN AT OCCUPIED SETPOINT TEMPERATURE WITH BLOWER RUNNING CONTINUOUSLY AND HEATING AND COOLING CYCLES OPERATING ON SPACE TEMPERATURE DEMAND. DURING UNOCCUPIED PERIODS SYSTEM TO RUN AT UNOCCUPIED SETPOINT TEMPERATURE WITH BLOWER AS WELL AS HEATING AND COOLING CYCLES OPERATING ON SPACE TEMPERATURE DEMAND.

PROVIDE CARBON DIOXIDE SENSOR (CO2) WHERE NOTED ON THE DRAWINGS. CO2 SENSOR TO BE TELAIRE SYSTEMS WITH BOTH N.O. AND N.C. CONTACTS AS WELL AS PROPORTIONAL SIGNAL FOR MODULATION OF OUTDOOR AIR DAMPER BETWEEN MINIMUM AND MAXIMUM OUTDOOR AIR SETPOINTS. CO2 SENSOR TO BE SET TO MODULATE DAMPER BETWEEN MINIMUM AND MAXIMUM DAMPER POSITIONS BETWEEN 700 PPM AND 1000 PPM CARBON DIOXIDE.

PRU TO BE PROVIDED WITH MANUFACTURER'S DEMAND VENTILATION CONTROLLER. DEMAND VENTILATION CONTROLLER TO HAVE POSITIVE SHUTOFF WHEN THE SYSTEM BLOWER IS OFF AND IN UNOCCUPIED PERIODS. SYSTEM TO OPERATE AT SETPOINT OUTDOOR AIR POSITION DURING OCCUPIED POSITIONS.

WARRANTY:

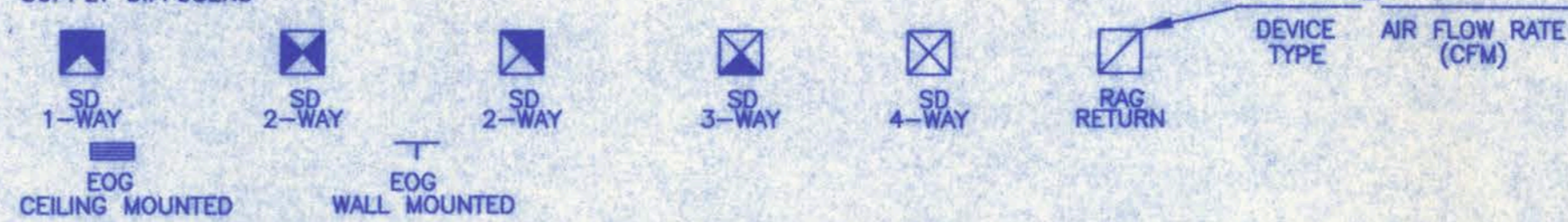
CONTRACTOR TO WARRANTY ALL MATERIALS, WORKMANSHIP, AND SYSTEM PERFORMANCE FOR A PERIOD OF NOT LESS THAN TWO YEARS FROM TIME OF SUBSTANTIAL COMPLETION. WHERE MANUFACTURER'S STANDARD WRITTEN WARRANTIES OR WARRANTY REQUIREMENTS STATED ELSEWHERE IN THE CONSTRUCTION DOCUMENTS ARE OF A PERIOD OF GREATER THAN TWO YEARS, CONTRACTOR OR MANUFACTURER ARE TO PROVIDE WARRANTY OF LONGER DURATION.

CONTRACTOR AND MANUFACTURER TO PROVIDE REPLACEMENT COST WARRANTY FOR ALL REFRIGERATION SYSTEM COMPRESSORS FOR PERIOD OF NOT LESS THAN FIVE YEARS.

AIR DISTRIBUTION DEVICE SCHEDULE

GRILLE AND DIFFUSER NOMENCLATURE:

SUPPLY DIFFUSERS



AIR DISTRIBUTION DEVICES TO BE BY LISTED MANUFACTURER OR EQUAL WHERE MANUFACTURED BY TITUS, METALAIR OR NAILOR. COLOR OF AIR DISTRIBUTION DEVICES TO BE SELECTED FROM MANUFACTURER'S STANDARD COLORS. ALL DIFFUSERS, GRILLES, REGISTERS, AND LOUVERS TO BE FITTED WITH KEY OPERATED ALUMINUM OPPOSED BLADE DAMPERS. CEILING DIFFUSERS AND CEILING GRILLES TO HAVE FRAMES TO ALLOW FOR REMOVAL OF DEVICE FROM BOTTOM. ALL DEVICES TO HAVE TRIM AS MANUFACTURED FOR ADJACENT CONSTRUCTION. ALL LOUVERS TO BE BY LISTED MANUFACTURER OR EQUAL WHERE MANUFACTURED BY RUSKIN, GREENHECK, OR NCA. LOUVERS INSTALLED IN BUILDING ENVELOPE WALLS TO BE FITTED WITH BIRD SCREENS. ALL DIFFUSERS, GRILLES, AND REGISTERS TO HAVE FULL FACE FRAMES. ALL DIFFUSERS, GRILLES, AND REGISTERS LOCATED IN HARD CEILINGS TO BE PROVIDED WITH TRIM RING FOR PLASTER AND SHEET ROCK CEILINGS. PAINT DEVICES TO MATCH ADJACENT FINISHES IN MANNER CONSISTENT WITH ARCHITECTURAL PAINTING REQUIREMENTS AND REFERENCED STANDARDS. ALL OUTDOOR AIR GRILLES TO BE STAINLESS STEEL.

SUPPLY DIFFUSERS (SD) TO BE TITUS MODEL TMSA-AA

EXHAUST OUTLET GRILLE (EOG) TO BE TITUS MODEL 350

RETURN AIR GRILLES (RAG) TO BE TITUS MODEL 350R

SYMBOL	ADAPTER / NECK SIZE	FACE SIZE	MAX CFM	MAX IN.	MAX SP.	THROW	RUN OUT SIZE	NOTES
SD1	4"	12/12	50	<15	0.026	1-2-4	4" ID	NONE
SD2	6"	12/12	110	<15	0.059	2-3-6	6" ID	NONE
SD3	8"	12/12	200	19	0.105	2-4-7	8" ID	NONE
SD4	8"	24/24	250	18	0.058	3-5-8	8" ID	NONE
SD5	10"	24/24	350	15	0.043	3-6-9	10" ID	NONE
SD6	12"	24/24	550	22	0.058	4-8-12	12" ID	NONE
SD7	14"	24/24	750	27	0.088	4-6-10	14" ID	NONE
RAG1	24/24	24/24	2000	25	0.022			NONE
RAG2	48/24	48/24	4000	29	0.022			NONE
RAG3	12/12	14/14	525	20	0.050			NONE
EOG								TITUS 355 ZR-SS

MECHANICAL SCHEDULES, DETAILS, NOTES

MECHANICAL EQUIPMENT SCHEDULE

SYSTEM AND AREA SERVED	SALES FLOOR
MATCHED PRU DESCRIPTION	10 TON SC 15 KW SH
MANUFACTURER OF PRU	LENNOX
PRU MODEL #	LCA120H2B1Y
COOLING CAPACITY (MBTUH)	125.0
SEER	-
EER	11.0
COP	-
HSPF	-
PLF	11.8
NO OF COMPRESSORS	2
STAGES PER COMPRESSOR	1
VOLTAGE/PHASE	208/3
MCA	54
RECOMMENDED OCP	80
APPROX. DIM LxWxH (IN)	99x58x50
APPROX. WT (LBS)	1265
APPROX. CURB OPENING	96x54
AHU MODEL #	-
AIR VOLUME (CFM)	4000
ESP (IN WATER)/BHP	1.2/2.45
EVAPORATOR COIL	-
BLOWER HORSEPOWER	2.0
VOLTAGE/PHASE	-
MCA	-
RECOMMENDED OCP	-
FILTER RACK SIZE	2"
APPROX. DIM LxWxH (IN)	-
CHARACTERISTICS	
895 QADB, 78 QAWB	
74 IADB, 64 QAWB	
CFM	3500
TOTAL COOLING (MBTUH)	125.6
SHF	0.54
ELECTRIC RESISTANCE HEAT	
KW	15
VOLTAGE/PHASE	208/3
STAGES	3
TOTAL SYSTEM BALANCE DATA	
TOTAL SUPPLY	3500
MINIMUM RETURN	2900
MAXIMUM RETURN	3150
MINIMUM OUTDOOR AIR	350
MAXIMUM OUTDOOR AIR	600
MINIMUM EXHAUST	-
MAXIMUM EXHAUST	-
SPECIAL OPTIONS/ACCESSORIES	
PROVIDE	
MFG DEMAND	
VENTILATION	
CONTROLLER	

NOTE:

PACKAGE AIR CONDITIONING (PAC) UNITS TO BE FURNISHED WITH SPRING VIBRATION ISOLATORS, 2" FILTER RACK, 6 SETS FARR 30/30 FILTERS, THERMAL EXPANSION VALVE, LOW AMBIENT KIT, PHASE FAILURE RELAY, SMOKE DETECTORS FOR EQUIPMENT OVER 2000 CFM AIR FLOW RATE AND/OR EQUIPMENT THAT SERVES A COMMON MEANS OF EGRESS, FIRE STAT, SINGLE POINT WIRING CONNECTION, AND MANUFACTURER STANDARD, HONEYWELL, OR JOHNSON SEVEN DAY PROGRAMMABLE AUTO-CHANGEOVER ELECTRONIC THERMOSTAT WITH BATTERY BACKUP. FURNISH THERMOSTAT "T" WITH REMOTE SENSOR "RS" WHERE INDICATED ON THE DRAWINGS. EQUIPMENT MOUNTED WITHIN 8' OF GRADE LEVEL TO BE FURNISHED WITH COIL GUARD. PROVIDE LAMINATED TAG MOUNTED TO THE SIDE OF EACH PIECE OF AIR CONDITIONING EQUIPMENT DENOTING THE UNIT NUMBER.

Engineered Building Systems, Inc.
Professional Consulting Engineering Services



Revisions	
No.	Date
0	08/20/08
1	
2	
3	
4	
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Drawn by: _____
Checked by: _____
Signature: _____

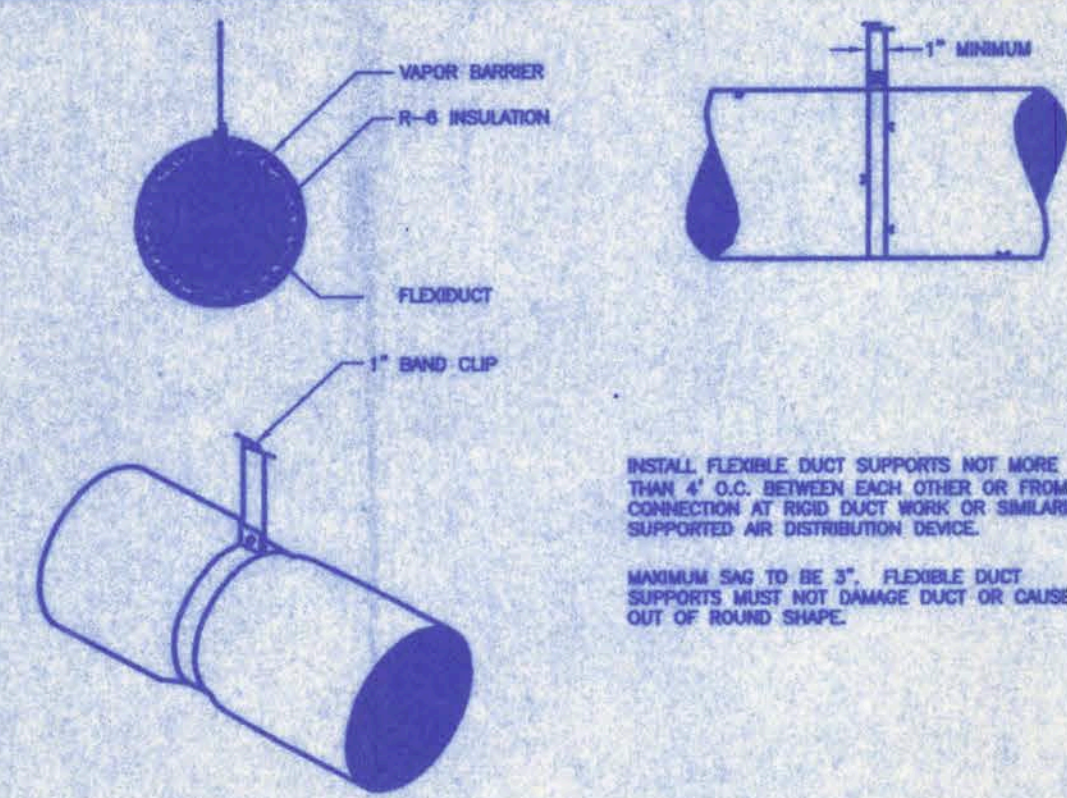
DOLLAR GENERAL
FORT WHITE, FLORIDA

M-2
OF 4



PREPARED BY:
ENGINEERED BUILDING SYSTEMS, INC.
P.O. BOX 2735, 1317 SE FORT KING STREET
OCALA, FL 34471
PH: (352)351-3941 FAX: (352)732-8244
BUSINESS LICENSE NUMBER: EB0008061

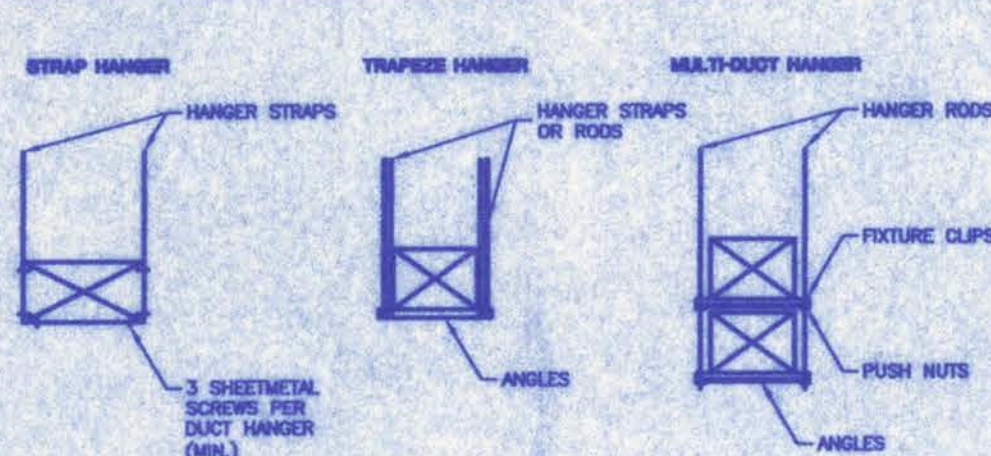
JOHN S. ESSENSHADE, P.E.
P.E. LICENSE NUMBER: 39460



FLEXIBLE DUCT SUPPORTS

NOT TO SCALE

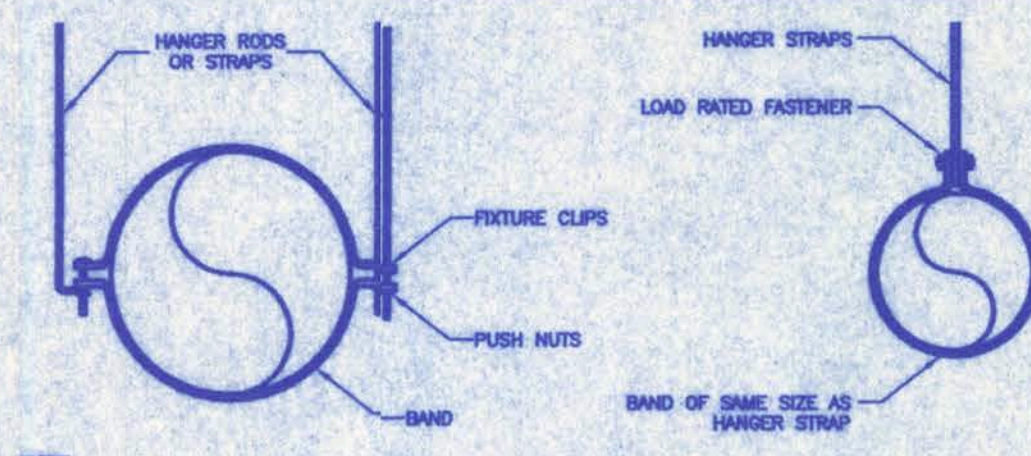
INSTALL FLEXIBLE DUCT SUPPORTS NOT MORE THAN 4' O.C. BETWEEN EACH OTHER OR FROM CONNECTION AT RIGID DUCT WORK OR SIMILAR SUPPORTED AIR DISTRIBUTION DEVICE.
MAXIMUM SAG TO BE 3". FLEXIBLE DUCT SUPPORTS MUST NOT DAMAGE DUCT OR CAUSE OUT OF ROUND SHAPE.



RECTANGULAR DUCT HANGERS

NOT TO SCALE

LONGEST DIMENSION OF DUCT	ROD HANGERS	STRAP HANGERS	TRAPEZE HANGER ANGLES	MAXIMUM SPACING
UP THRU 18"	8 GA. WIRE	1"x22 GAUGE	1"x1 1/2" x 1/8"	10'-0"
18" THRU 24"	8 GA. WIRE	1"x22 GAUGE	1"x1 1/2" x 1/8"	10'-0"
24" THRU 30"	8 GA. WIRE	1"x18 GAUGE	1-1/2"x1-1/2" x 1/8"	10'-0"
30" THRU 36"	3/8" ROD	1"x18 GAUGE	1-1/2"x1-1/2" x 1/8"	10'-0"
36" THRU 42"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
42" THRU 48"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
48" THRU 54"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
54" THRU 60"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
60" THRU 66"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
66" THRU 72"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
72" THRU 78"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
78" THRU 84"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
84" THRU 90"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
90" THRU 96"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
96" THRU 102"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
102" THRU 108"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
108" THRU 114"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
114" THRU 120"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
120" THRU 126"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
126" THRU 132"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
132" THRU 138"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
138" THRU 144"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
144" THRU 150"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
150" THRU 156"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
156" THRU 162"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
162" THRU 168"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
168" THRU 174"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
174" THRU 180"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
180" THRU 186"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
186" THRU 192"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
192" THRU 198"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
198" THRU 204"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
204" THRU 210"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
210" THRU 216"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
216" THRU 222"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
222" THRU 228"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
228" THRU 234"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
234" THRU 240"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
240" THRU 246"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
246" THRU 252"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
252" THRU 258"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
258" THRU 264"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
264" THRU 270"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
270" THRU 276"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
276" THRU 282"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
282" THRU 288"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
288" THRU 294"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"
294" THRU 300"	3/8" ROD	1"x18 GAUGE	2"x2" x 1/8"	8'-0"



NOTE: HANGERS MUST NOT DEFORM DUCT SHAPE.

DUCT DIAMETER	ROD HANGERS	STRAP HANGERS	MAXIMUM SPACING	HANGER ROD	NUMBER OF HANGERS
UP THRU 10"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
10" THRU 12"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
12" THRU 14"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
14" THRU 16"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
16" THRU 18"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
18" THRU 20"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
20" THRU 22"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
22" THRU 24"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
24" THRU 26"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
26" THRU 28"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
28" THRU 30"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
30" THRU 32"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
32" THRU 34"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
34" THRU 36"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
36" THRU 38"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
38" THRU 40"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
40" THRU 42"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
42" THRU 44"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
44" THRU 46"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
46" THRU 48"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
48" THRU 50"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
50" THRU 52"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
52" THRU 54"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
54" THRU 56"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
56" THRU 58"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
58" THRU 60"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
60" THRU 62"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
62" THRU 64"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
64" THRU 66"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
66" THRU 68"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
68" THRU 70"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
70" THRU 72"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
72" THRU 74"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
74" THRU 76"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
76" THRU 78"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
78" THRU 80"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
80" THRU 82"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
82" THRU 84"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
84" THRU 86"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
86" THRU 88"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
88" THRU 90"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
90" THRU 92"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
92" THRU 94"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
94" THRU 96"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
96" THRU 98"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
98" THRU 100"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
100" THRU 102"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
102" THRU 104"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
104" THRU 106"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
106" THRU 108"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
108" THRU 110"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
110" THRU 112"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
112" THRU 114"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
114" THRU 116"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
116" THRU 118"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
118" THRU 120"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
120" THRU 122"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
122" THRU 124"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
124" THRU 126"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
126" THRU 128"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
128" THRU 130"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
130" THRU 132"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
132" THRU 134"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
134" THRU 136"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
136" THRU 138"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
138" THRU 140"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
140" THRU 142"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
142" THRU 144"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
144" THRU 146"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
146" THRU 148"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
148" THRU 150"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
150" THRU 152"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
152" THRU 154"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
154" THRU 156"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
156" THRU 158"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
158" THRU 160"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
160" THRU 162"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
162" THRU 164"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
164" THRU 166"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
166" THRU 168"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
168" THRU 170"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
170" THRU 172"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
172" THRU 174"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
174" THRU 176"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
176" THRU 178"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
178" THRU 180"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
180" THRU 182"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
182" THRU 184"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
184" THRU 186"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
186" THRU 188"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
188" THRU 190"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
190" THRU 192"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
192" THRU 194"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
194" THRU 196"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
196" THRU 198"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
198" THRU 200"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
200" THRU 202"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
202" THRU 204"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
204" THRU 206"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
206" THRU 208"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
208" THRU 210"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
210" THRU 212"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
212" THRU 214"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
214" THRU 216"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
216" THRU 218"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
218" THRU 220"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
220" THRU 222"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
222" THRU 224"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
224" THRU 226"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
226" THRU 228"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
228" THRU 230"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
230" THRU 232"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
232" THRU 234"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	1
234" THRU 236"	8 GA. WIRE	1"x22 GAUGE	10'-0"	1/4"	

MECHANICAL SPECIFICATION NOTES

SECTION 19000

MECHANICAL/HEATING, VENTILATING AND AIR CONDITIONING

PART 1 - GENERAL

DESCRIPTION

WORK INCLUDED: PROVIDE HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS WHERE SHOWN ON THE DRAWINGS, AS SPECIFIED HEREIN, AND AS NEEDED FOR A COMPLETE AND PROPER INSTALLATION INCLUDING, BUT NOT NECESSARILY LIMITED TO: COMPLETE WITH, DAMPERS, DAMPER OPERATORS, BLOWERS, MOTORS, COMPRESSORS, CONDENSERS, FILTERS, AND RELATED ITEMS; AIR CONDITIONING SUPPLY AND RETURN DUCTWORK SYSTEM WITH GRILLES, DIFFUSERS, AND REGISTERS; SELF-CONTAINED, AIR-COOLED, GAS AND/OR ELECTRIC ROOFTOP PACKAGED AIR CONDITIONING UNITS. TEMPERATURE CONTROL SYSTEM INCLUDING LOW-VOLTAGE WIRING. MOTORS AS REQUIRED. ACOUSTICAL AND THERMAL INSULATION OF DUCTS, PIPING, EQUIPMENT, AND EQUIPMENT ROOMS, AND EQUIPMENT ENCLOSURES.

RELATED WORK:

DOCUMENTS AFFECTING WORK OF THIS SECTION INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, AND SECTIONS IN DIVISION 1 OF THESE SPECIFICATIONS.

QUALITY ASSURANCE

USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK OF THIS SECTION.

WITHOUT ADDITIONAL COST TO THE OWNER, PROVIDE SUCH OTHER LABOR AND MATERIALS AS ARE REQUIRED TO COMPLETE THE WORK OF THIS SECTION IN ACCORDANCE WITH THE REQUIREMENTS OF GOVERNMENTAL AGENCIES HAVING JURISDICTION, REGARDLESS OF WHETHER SUCH MATERIALS AND ASSOCIATED LABOR ARE CALLED FOR ELSEWHERE IN THESE CONTRACT DOCUMENTS.

SUBMITTALS

COMPLY WITH PERTINENT PROVISIONS OF THE GENERAL CONDITIONS OF THESE SPECIFICATIONS.

PRODUCT DATA: WITHIN 30 CALENDAR DAYS AFTER THE CONTRACTOR HAS RECEIVED THE OWNER'S NOTICE TO PROCEED, SUBMIT:

SHOP DRAWINGS FOR DUCTWORK OVER 4" PRESSURE CLASS, SHOWING PROPOSED LAYOUT OF EQUIPMENT, DUCTS, REGISTERS, GRILLES, AND OTHER COMPONENTS OF THE SYSTEM;
SHOP DRAWINGS OF THE CONTROL SYSTEM, DEMONSTRATING THE ADEQUACY OF THE PROPOSED SYSTEMS AND ITS COMPLIANCE WITH THESE SPECIFICATIONS;
SHOP DRAWINGS OF THE MECHANICAL ROOMS OR SPACES TO SCALE SHOWING ALL MECHANICAL WORK ON SCALE DRAWINGS OF SCALE NOT SMALLER THAN ONE HALF INCH TO ONE FOOT. SHOP DRAWING TO SHOW PLAN AND ELEVATION DRAWINGS TO CLEARLY DEMONSTRATE ALL DUCTWORK AND ASSOCIATED CONNECTIONS TO CONTRACTOR SUBMITTED MECHANICAL EQUIPMENT, MANUFACTURERS CATALOGS, SAMPLES, AND OTHER ITEMS NEEDED TO FULLY DEMONSTRATE THE QUALITY OF THE PROPOSED MATERIALS AND EQUIPMENT.

RECORD DRAWINGS:

COMPLY WITH PERTINENT PROVISIONS OF THE GENERAL CONDITIONS.
INCLUDE A COPY OF THE RECORD DRAWINGS IN EACH COPY OF THE OPERATION AND MAINTENANCE MANUAL DESCRIBED BELOW.

UPON COMPLETION OF THIS PORTION OF THE WORK, AND AS A CONDITION OF ITS ACCEPTANCE, DELIVER TO THE ARCHITECT TWO COPIES OF AN OPERATION AND MAINTENANCE MANUAL COMPILED IN ACCORDANCE WITH THE PROVISIONS OF THE GENERAL CONDITIONS OF THESE SPECIFICATIONS.

PRODUCT HANDLING

COMPLY WITH PERTINENT PROVISIONS OF SECTIONS OF THE GENERAL CONDITIONS OF THESE SPECIFICATIONS.

PART 2 - PRODUCTS

DUCTWORK

FOR EXHAUST SYSTEMS AND FOR THE HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS, PROVIDE GALVANIZED SHEET METAL DUCTS FABRICATED AND INSTALLED TO PERTINENT ASHRAE AND SMACNA STANDARDS, OR TO THE REQUIREMENTS OF GOVERNMENTAL AGENCIES HAVING JURISDICTION, WHICHEVER REQUIREMENT IS MORE STRINGENT AS DETERMINED OR OTHERWISE JUDGED BY AND ONLY BY THE ENGINEER.

DUCT SIZES SHOWN ON THE DRAWINGS ARE CLEAR INSIDE DIMENSIONS.

PROVIDE DAMPERS AND EXTRACTORS AS INDICATED ON THE DRAWINGS AND/OR AT ALL BRANCH DUCTS, DUCT RUN-OUTS, OR OTHER INTERCONNECTIONS BETWEEN DUCTWORK. MANUALLY OPERATED DAMPERS OF THE TYPE AND ARRANGEMENT SHOWN ON THE DRAWINGS ARE TO BE TWO CAGES HEAVIER THAN THE DUCT IN WHICH INSTALLED, AND EQUIPPED WITH LOCKING QUADRANTS. PROVIDE TURNING VANES AT ALL FITTINGS AND/OR WHERE-EVER SUGGESTED AS APPLICABLE LOCATION FOR TURNING VANES BY ANY APPROPRIATE ASHRAE OR SMACNA STANDARD. WHERE ANY SUCH STANDARD MAY INDICATE THAT THESE TURNING VANES, EXTRACTORS, OR DAMPERS ARE OPTIONAL, SUGGESTED, OR OTHERWISE DISCRETIONALLY REQUIRED; SUCH TURNING VANES, EXTRACTORS, OR DAMPERS ARE TO BE INSTALLED.

SEAL ALL DUCT SEAMS, TRANSVERSE AND LONGITUDINAL, AIR TIGHT WITH 6 OZ CANVAS SECURED IN PLACE WITH "EC800" OR EQUAL DUCT SEALING COMPOUND, AND APPROVED LAGGING ADHESIVE, OR DUCT TAPE.

FLEXIBLE DUCT

PROVIDE FACTORY FABRICATED INSULATED LOW PRESSURE FLEXIBLE DUCT WITH THE FOLLOWING ATTRIBUTES:
ZINC-COATED SPRING STEEL HELIX, WITH 1" THICK FIBERGLASS INSULATION, SHEATHED IN A SEAMLESS VAPOR BARRIER JACKET.
INTERIOR FIRE-RESISTIVE COATED TO PREVENT FIBER EROSION;
STRAIGHT RUN SOUND ABSORPTION OF 3 DB PER FT. AND 5 DB PER FT. SOUND ABSORPTION AT 45 DEGREE BENDS;
COMPOSITE ASSEMBLY, INCLUDING INSULATION AND VAPOR BARRIER, MEETING CLASS I REQUIREMENTS OF FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPED OF 50 OR LESS AS SET FORTH IN NFPA BULLETIN 90-A, AND BEARING UL LABEL AS AN AIR DUCT.

PROVIDE FLEXIBLE DUCT IN FULLY EXTENDED CONDITION, FREE FROM SAGS AND KINKS.

USE ONLY THE MINIMUM LENGTH REQUIRED TO MAKE THE CONNECTION.

DO NOT EXCEED 8'-0" IN LENGTH.

SUPPORT AS DETAILED ON THE DRAWINGS.

MAKE JOINTS AND CONNECTIONS WITH 1/8" WIDE POSITIVE LOCKING STEEL STRAPS.

FLEXIBLE DUCTWORK TO BE INSULATED TO NOT LESS THAN R6.

ACCEPTABLE PRODUCTS:

ATCO
METALFLEX

INSULATION

GENERAL:

PROVIDE MATERIALS COMPLYING WITH NFPA BULLETIN 90-A, AS DETERMINED BY UL METHOD NFPA 225-ASTM E84, AND COMPLYING WITH THE GOVERNING CODE, WITH FLAME SPREAD RATING UNDER 25 AND SMOKE DEVELOPED RATING UNDER 50. WHERE VAPOR BARRIERS ARE USED, PROVIDE INTACT AND CONTINUOUS THROUGHOUT.
ALL SUPPLY AND RETURN DUCTWORK TO BE EXTERNALLY INSULATED TO NOT LESS THAN R6 IN ACCORDANCE WITH THE MOST CURRENT WRITTEN INSTALLATION PRACTICES OF SMACNA. EXTERNAL INSULATION FURNISHED WITH FOIL FACED VAPOR BARRIER AND MANUFACTURED BY SCHULLER OF OWENS CORNING FIBERGLASS. ADDITIONALLY, RETURN AIR DUCTS WITHIN TEN FEET OF ANY BLOWER INLET BUT NOT LESS THAN THE DISTANCE OF THE FIRST 90 DEGREE EL IN THE RETURN DUCT ARE TO BE LINED WITH 1/2" ACOUSTIC DUCT LINER. DUCTLINER TO HAVE ANTI-MICROBIAL TREATMENT AND BE MANUFACTURED BY JOHNS-MANVILLE OR OCF.

VIBRATION ISOLATION AND FLEXIBLE CONNECTIONS

AT DUCTS TO EQUIPMENT, PROVIDE VENT-FABRIC FLEXIBLE CONNECTIONS WITH A MINIMUM OF 6" FULL LENGTH, AND APPROVED BY THE GOVERNMENTAL AGENCIES HAVING JURISDICTION.

FOR RETURN AIR CONNECTIONS AT EACH FLOOR TO THE RETURN RISER, PROVIDE FIBERGLASS OR LINED DUCT WITH A MINIMUM OF TWO ELBOWS.

PROVIDE ADDITIONAL SOUND ISOLATION AS REQUIRED TO LIMIT THE NOISE LEVEL IN CONDITIONED SPACE TO A MAXIMUM OF NC-30.

MOUNT VIBRATING EQUIPMENT ON "HYCURB VIBROCURBS" WITH A MINIMUM STATIC DEFLECTION OF 1" WHERE VIBRATION ISOLATING CURBS ARE CALLED OUT OR OTHERWISE NOTED AS BEING REQUIRED ON THE DRAWINGS.

ISOLATE PIPING FROM THE STRUCTURE IN A MANNER TO PREVENT TRANSMISSION OF VIBRATION.

MOTORS

PROVIDE MOTORS DESIGNED FOR THE SUPPLY VOLTAGES MADE AVAILABLE FOR THIS PORTION OF THE WORK, AND WITH THE FOLLOWING ATTRIBUTES:

SIZED TO DEVELOP THE REQUIRED BRAKE HORSEPOWER AND TO OPERATE SATISFACTORILY WITH A VOLTAGE VARIATION OF PLUS OR MINUS 10;
CONFORMING TO NEMA MOTOR STANDARDS;
DYNAMICALLY BALANCED, AND HELD TO COMMERCIAL TOLERANCE;
WHERE T-FRAME MOTORS ARE USED, OVERSIZED AT LEAST 10;
SELECTED SO THAT, WHEN AMBIENT TEMPERATURE REACHES 120 DEGREES F FOR A PERIOD OF TWO HOURS OR MORE, THE MOTOR WILL OPERATE SATISFACTORILY WITHOUT FAILURE, AND WITH A MINIMUM SERVICE FACTOR OF 1.5;
WITH SQUIRREL-CAGE TYPE DRIP-PROOF ENCLOSURE, UNLESS OTHERWISE INDICATED, CONSTANT SPEED, ACROSS-THE-LINE NORMAL STARTING TORQUE DESIGNED FOR QUIET OPERATION;
EACH MOTOR OF AMPLE SIZE TO OPERATE ITS UNIT AT PROPER FULL LOAD AND SPEED CONTINUOUSLY, WITHOUT HEATING IN ANY PART MORE THAN 40 DEGREES C ABOVE THE TEMPERATURE OF THE SURROUNDING ATMOSPHERE.

WHERE MOTOR IS USED WITH V BELT DRIVE, EQUIP WITH A SLIDING BASE AND BELT GUARD, AND MOTOR SHEAVE.

PROVIDE STARTERS FOR ALL MOTORS IN WORK OF THIS SECTION. SEE ELECTRICAL SPECIFICATIONS FOR MOTOR STARTER REQUIREMENTS.

PACKAGE ROOFTOP UNITS (PRTU)

GENERAL:

PROVIDE PACKAGED AIR-COOLED ROOF-MOUNTED HEATING AND COOLING UNITS WITH ACCESSORIES OF MANUFACTURER AS SHOWN ON THE DRAWINGS.
PACKAGE ROOFTOP UNITS TO BE FURNISHED WITH ITEMS SCHEDULED ON THE DRAWINGS BUT NOT LESS THAN THE FOLLOWING ACCESSORIES: FACTORY CURB, LOW AMBIENT KIT, 2" FILTER PACK, MANUAL OUTDOOR AIR DAMPER WITH OUTDOOR AIR HOOD UNLESS OTHERWISE NOTED, THERMAL EXPANSION VALVE, PHASE FAILURE RELAY, FACTORY FURNISHED SMOKE DETECTOR IN RETURN AIR DUCT, SINGLE POINT WIRING, COIL GUARD, FIRESTAT, AND ANTI-SHORT CYCLE TIMER.

COILS:

PROVIDE NON-FERROUS CONSTRUCTION WITH ALUMINUM FINS MECHANICALLY BONDED TO SEAMLESS COPPER TUBES.
FACTORY PRESSURE TEST FOR LEAKS AT 450-500 PSI.
SELECT FOR A MAXIMUM FACE VELOCITY OF 550 FPM AND 45 DEGREE F REFRIGERANT TEMPERATURE.
EVAPORATOR COILS FOR EQUIPMENT WITH MULTIPLE STAGES OF HEATING OR COOLING AND/OR MULTIPLE COMPRESSORS TO BE VERTICAL FACE SPLIT IN PROPORTION TO THE STAGES OF VAPOR COMPRESSION. WHERE VERTICAL FACE SPLIT IS NOT PRACTICAL COILS MAY BE HORIZONTAL FACE SPLIT; WHERE REQUESTED BY CONTRACTOR IN WRITING BEFORE CONTRACTOR'S SUBMITTAL OF EQUIPMENT AND APPROVED BY ENGINEER IN WRITING PRIOR TO CONTRACTOR'S SUBMITTAL OF EQUIPMENT. WHERE HORIZONTAL FACE SPLIT COILS OR COIL SECTIONS; HAVE BEEN APPROVED BY ENGINEER, THESE COILS SHALL BE PIPED SO THAT THE FIRST STAGES OF HEATING OR COOLING SERVE THE LOWEST ELEVATIONS OF COIL SECTIONS.

PROVIDE SERVICEABLE HERMETIC AND SEMIHERMETIC RECIPROCATING TYPE OR COMPLIANT SCROLL COMPRESSORS. WHERE TWO COMPRESSORS ARE REQUIRED, PROVIDE INDEPENDENT CIRCUITS.

PROVIDE REQUIRED OPERATING CONTROLS AS INDICATED ON THE DRAWINGS.

AUTOMATIC TEMPERATURE CONTROL

PROVIDE A SYSTEM OF TEMPERATURE CONTROL AS REQUIRED HERE AND/OR INDICATED ON THE DRAWINGS.

INCLUDE THERMOSTATS, SENSORS, TEMPERATURE CONTROLLERS, MOTORIZED DAMPERS, CENTRAL PROCESSING UNITS, MODEMS, USER INTERFACES, SOFTWARE, TRANSFORMERS AND ALL OTHER CONTROL SYSTEM COMPONENTS AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.
PROVIDE DEVICES CALIBRATED AND ADJUSTED WITH THE ACTUAL OPERATING CONDITIONS.

SEQUENCE OF OPERATION: SEE DRAWINGS FOR SEQUENCE OF OPERATION FOR HVAC SYSTEMS.

OTHER MATERIALS

PROVIDE OTHER MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, AS SELECTED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE ARCHITECT.

PART 3 - EXECUTION

SURFACE CONDITIONS

EXAMINE THE AREAS AND CONDITIONS UNDER WHICH WORK OF THIS SECTION WILL BE PERFORMED. CORRECT CONDITIONS DETRIMENTAL TO TIMELY AND PROPER COMPLETION OF THE WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.

COORDINATION

COORDINATE AS REQUIRED WITH OTHER TRADES TO ASSURE PROPER AND ADEQUATE PROVISION IN THE WORK OF THOSE TRADES FOR INTERFERENCE WITH THE WORK OF THIS SECTION.

PREPARATION

HOLES IN CONCRETE:

PROVIDE SLEEVES, ACCURATELY DIMENSIONED AND SHAPED TO PERMIT PASSAGE OF ITEMS OF THIS SECTION. DELIVER ALL SUCH SLEEVES, WITH ACCURATE SETTING DRAWINGS AND SETTING INFORMATION, TO THE TRADES PROVIDING THE SURFACES THROUGH WHICH SUCH ITEMS MUST PENETRATE AND IN A TIMELY MANNER TO ASSURE INCLUSION IN THE WORK.

FLASHING:

WHERE ITEMS OF THIS SECTION PENETRATE THE ROOF, OUTER WALLS, AT WATERPROOFING OF ANY KIND, PROVIDE UNDER THIS SECTION ALL BASE FLASHING AND COUNTERFLASHING REQUIRED AT SUCH PENETRATION.
PROVIDE ON EACH PIPE PASSING THROUGH THE ROOF A 4 LB SEAMLESS LEAD FLASHING AND COUNTERFLASHING ASSEMBLY.

EQUIPMENT INTERFACE

PROVIDE ALL REQUIRED SHUTOFF VALVES, UNIONS, AND FINAL CONNECTIONS OF PIPING TO THE WORK OF THIS SECTION.

FOR ELECTRICALLY OPERATED EQUIPMENT, VERIFY THE ELECTRICAL CHARACTERISTICS ACTUALLY AVAILABLE FOR THE WORK OF THIS SECTION AND PROVIDE EQUIPMENT MEETING THOSE CHARACTERISTICS.

PAINTING

PAINT INSIDE OF ALL AIR OUTLETS AND CONNECTING PLENUMS WITH ONE COAT OF BLACK PAINT, OR PROVIDE ALL SUCH ITEMS FACTORY PREPAINTED.

FOR ROOF-MOUNTED EQUIPMENT, PROVIDE FACTORY PREFINISH ON ALL EXPOSED SURFACES.

TOUCH-UP SCRATCHES AND ABRASIONS TO BE INVISIBLE TO THE UNAIDED EYE FROM A DISTANCE OF 5'0".

INSULATION

WRAP INSULATION FIRMLY AROUND DUCTWORK, COVERING ALL SURFACES INCLUDING STANDING SEAMS, AND WITH ALL JOINTS LAPPED AT LEAST 2".

SECURELY FASTEN THE INSULATION IN PLACE WITH 16 GAGE SOFT ANNEALED BLACK OR GALVANIZED WIRE SPACED APPROXIMATELY 12" ON CENTERS FOR STRAIGHT RUNS AND 3" ON CENTERS FOR ELBOWS AND FITTINGS.

TAKE SPECIAL CARE TO AVOID EXCESSIVE STRETCHING AND COMPRESSING, AND TO ACHIEVE SECURING AT LAPPED SECTIONS WHERE POSSIBLE.

INSTRUCTIONS

UPON COMPLETION OF THIS PORTION OF THE WORK, AND PRIOR TO ITS ACCEPTANCE BY THE OWNER, PROVIDE A QUALIFIED ENGINEER AND FULLY INSTRUCT THE OWNER'S MAINTENANCE PERSONNEL IN THE PROPER OPERATION AND MAINTENANCE OF ITEMS PROVIDED UNDER THIS SECTION.

DEMONSTRATE THE CONTENTS OF THE APPROVED OPERATION AND MAINTENANCE MANUAL REQUIRED UNDER ARTICLE 1.3 ABOVE.

TESTING AND ADJUSTING

TEST AND ADJUST EACH PIECE OF EQUIPMENT AND EACH SYSTEM AS REQUIRED TO ASSURE PROPER BALANCE AND OPERATION. TEST AND REGULATE VENTILATION AND AIR CONDITIONING SYSTEMS TO CONFORM TO THE AIR VOLUMES SHOWN ON THE APPROVED DESIGN DRAWINGS.

MAKE TESTS AND ADJUSTMENTS IN APPARATUS AND DUCTS FOR SECURING THE PROPER VOLUME AND FACE DISTRIBUTION OF AIR FOR EACH GRILLE AND CEILING OUTLET.
WHERE REQUIRED, PROVIDE PULLEYS FOR FANS AT NO ADDITIONAL COST TO THE OWNER, AND SET TO DRIVE THE FANS AT THE SPEED NEEDED TO GIVE THE INDICATED VOLUME.

FOR EACH SYSTEM, TAKE THE FOLLOWING DATA IN TABULATED FORM:
AIR VOLUMES AT ALL SUPPLY, RETURN, AND EXHAUST OUTLETS;
TOTAL CFM SUPPLIED;
TOTAL CFM RETURNED;
TOTAL CFM OUTDOOR AIR AT MULTIPLE DAMPER SETTINGS WHERE REQUIRED.
TOTAL CFM EXHAUST AT MULTIPLE SETTINGS WHERE REQUIRED.
TOTAL STATIC PRESSURE AT EACH FAN AND AT EACH SYSTEM;
MOTOR SPEED, FAN SPEED, AND INPUT AMPERE RATING FOR EACH FAN.
THERMOSTAT AND TEMPERATURE SENSOR CALIBRATIONS.
AIR FLOW TRAVERSES AT ALL AIR HANDLING SIDES OF ALL HEATING AND COOLING EQUIPMENT INCLUDING BUT NOT LIMITED TO COMPLETE TRAVERSES AND MULTIPLE OUTDOOR AIR DAMPER SETTINGS FOR TOTAL SUPPLY, TOTAL RETURN, AND TOTAL OUTDOOR AIR.

SUBMIT TWO SETS OF TEST AND BALANCE REPORTS TO THE ARCHITECT FOR APPROVAL.

ELIMINATE NOISE AND VIBRATION, AND ASSURE PROPER FUNCTION OF ALL CONTROLS, MAINTENANCE OF TEMPERATURE, AND OPERATION IN ACCORDANCE WITH THE APPROVED DESIGN.

SECURE REQUIRED APPROVAL FROM GOVERNMENTAL AGENCIES HAVING JURISDICTION.

TEST AND BALANCE WORK TO BE PERFORMED BY INDEPENDENT TEST AND BALANCE CONTRACTOR. TEST AND BALANCE REPORT TO BE PERFORMED UNDER SUPERVISION AND SEAL OF FLORIDA REGISTERED PROFESSIONAL ENGINEER. TEST AND BALANCE REPORTS TO BEAR ENGINEERS METAL IMPRESSION SEAL.

END OF SECTION



Revisions	
No.	Date
0	08/23/08
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Drawn by: _____
Checked by: _____
Signature: _____



PLAN NOTES - POWER/SYSTEMS

- NEW POWER CIRCUITS SHOWN ON THIS PLAN TO BE CONNECTED TO EXISTING PANELBOARD AS SHOWN.
- RELOCATE EXISTING ELECTRICAL DISCONNECT TO NEW A/C-1 LOCATION. CONTRACTOR TO EXTEND EXISTING CONDUCTORS TO NEW DISCONNECT LOCATION.

PROJECT NOTES - POWER/SYSTEMS

- SEE SHEET E-1 FOR POWER/SYSTEMS FLOOR PLAN.
- SEE SHEET E-2 FOR LIGHTING FLOOR PLAN.
- SEE SHEET E-3 FOR ELECTRICAL POWER RISER DIAGRAM.
- SEE SHEET E-4 FOR ELECTRICAL PANEL SCHEDULES.
- SEE SHEET E-4 FOR GENERAL ELECTRICAL NOTES.
- SEE SHEET E-4 FOR MASTER SYMBOL LEGEND.

EXISTING CONSTRUCTION NEW CONSTRUCTION

EXISTING CONSTRUCTION NEW CONSTRUCTION

WPG

+120"

WPG
WP
PRTU-2

P2-33

WPG
WP
A/C-1 (EXISTING)

PRTU-2
(NEW)

A/C-1
(EXISTING)

FLOOR PLAN - POWER/SYSTEMS

4' 0' 4' 8'



PREPARED BY:
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BUSINESS LICENSE NUMBER: EB0006061

8/25/06
JOHN S. ESBENSHADE, P.E.
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Revisions	
No.	Date
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DOLLAR GENERAL
FORT WHITE, FLORIDA

E-1
OF 6

PLAN NOTES - LIGHTING

- ALL EMERGENCY AND EXIT LIGHTS TO BE CIRCUITED TO LOCAL LIGHTING CIRCUIT AHEAD OF SWITCH.
- CIRCUIT NEW EXTERIOR WALLPACKS THROUGH EXISTING BUILDING PERIMETER WALLPACKS EXTERIOR LIGHTING CONTROL.
- NEW LIGHTING CIRCUITS SHOWN ON THIS PLAN TO BE CONNECTED TO EXISTING PANELBOARD AS SHOWN.
- CONTRACTOR TO MATCH ALL NEW LIGHT FIXTURES TO EXISTING LIGHT FIXTURES TO THE GREATEST EXTENT POSSIBLE. LIGHT FIXTURE LOCATIONS TO BE COORDINATED WITH OWNER'S FINAL SHELVING LAYOUT. CONTRACTOR TO CONFIRM PRIOR TO ROUGH-IN. ADVISE ENGINEER IF LAMPING IS DIFFERENT FROM SCHEDULED FIXTURE BEFORE BEGINNING WORK.

PROJECT NOTES - LIGHTING

- SEE SHEET E-1 FOR POWER/SYSTEMS FLOOR PLAN.
- SEE SHEET E-2 FOR LIGHTING FLOOR PLAN.
- SEE SHEET E-3 FOR ELECTRICAL POWER RISER DIAGRAM.
- SEE SHEET E-4 FOR ELECTRICAL PANEL SCHEDULES.
- SEE SHEET E-4 FOR GENERAL ELECTRICAL NOTES.
- SEE SHEET E-4 FOR MASTER SYMBOL LEGEND.

EXISTING CONSTRUCTION

NEW CONSTRUCTION

EXISTING CONSTRUCTION

NEW CONSTRUCTION

FLOOR PLAN - LIGHTING

4' 0' 4' 8'



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Drawn by: _____
Checked by: _____
Signature: _____

DOLLAR GENERAL
FORT WHITE, FLORIDA

E-2
OF 6

MECHANICAL ELECTRICAL CONNECTION SCHEDULE	
SYSTEM AND AREA SERVED	SALES FLOOR
MATCHED PARTU DESCRIPTION	10 TON SC 15 KW SH
PRTU	208/3 2.0 54 80
VOLTAGE/PHASE BLOWER HORSEPOWER MCA RECOMMENDED OCP	15 208/3 3
ELECTRIC RESISTANCE HEAT	PROVIDED W/EQUIPMENT
KW VOLTAGE/PHASE STAGES	4-#1CU+GRO IN 1.5" C.
DISCONNECT SIZE/TYPE	MA-37-39-41
CONDUCTOR/CONDUIT	
CIRCUIT NUMBER	
NOTES:	
1. VERIFY ACTUAL INSTALLED EQUIPMENT NAME PLATE RATINGS PRIOR TO ANY WORK.	
2. FUSES INSTALLED IN DISCONNECT SWITCHES SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATION.	

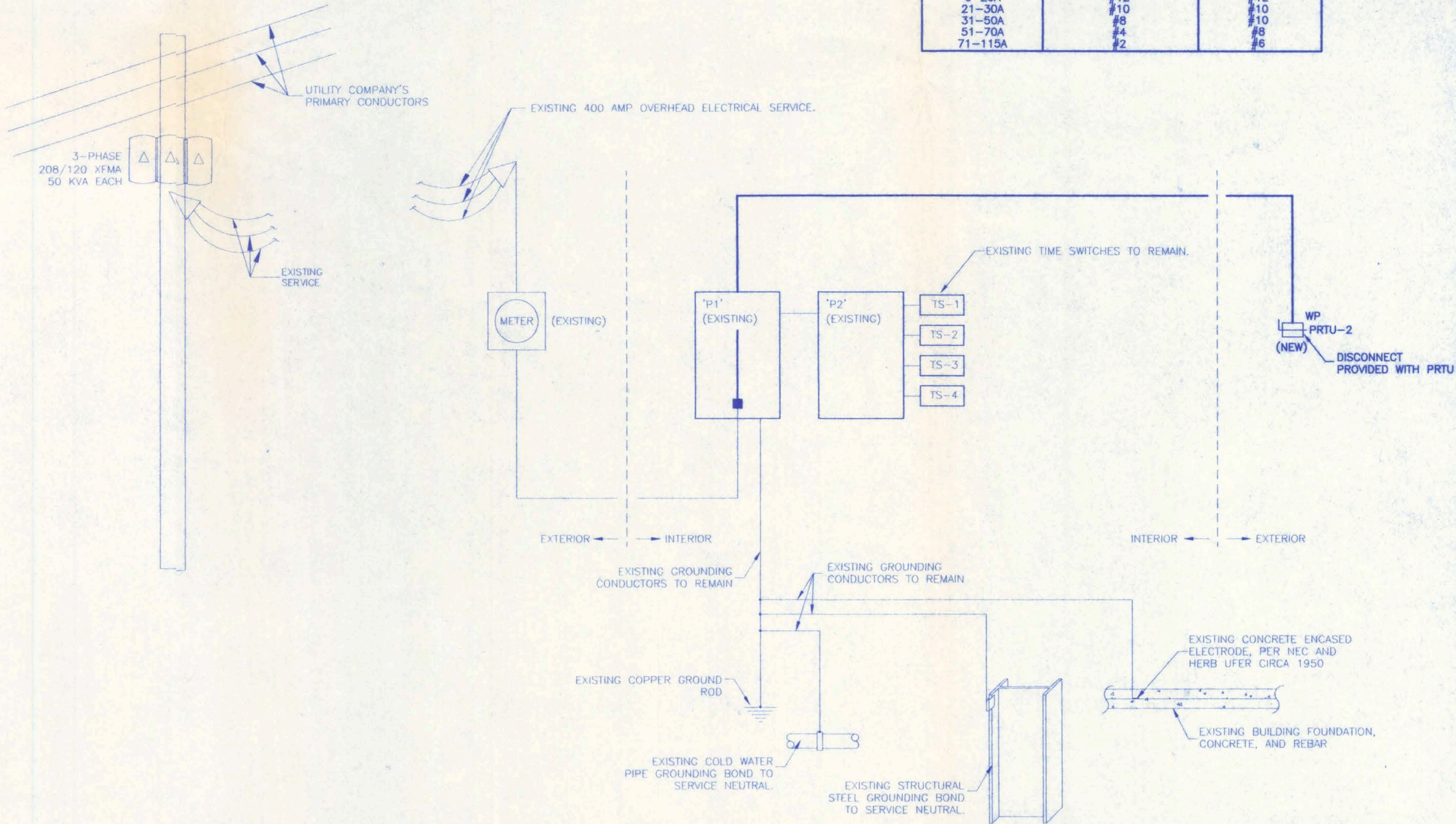
TAG	DESCRIPTION	MFG	MODEL NUMBER	LAMP(S)	VOLT	NOTE	EQUAL MFG.
A	8' STRIP FLUORESCENT SURFACE MTD.	LIGHTOLIER	SW4T232HPF120SO	(4) 32W T8	120	1,2	LITHONIA DAYBRITE
A1	8' STRIP FLUORESCENT SURFACE MTD. WITH BATTERY BACK-UP	LIGHTOLIER	SW4T232HPF120SO	(4) 32W T8	120	1,2	LITHONIA DAYBRITE
B	4' STRIP FLUORESCENT SURFACE MTD.	LIGHTOLIER	SW4S232HPF120SO	(2) 32W T8	120	-	LITHONIA DAYBRITE
C	1X4 SURFACE MTD FLUORESCENT WRAP WITH VIRGIN ACRYLIC LENS	LIGHTOLIER	WB4B232120SO	(2) 32W T8	120	-	LITHONIA DAYBRITE
D	EXTERIOR WALL PACK WITH SPECULAR ANODIZED AL REFLECTOR	EXCELINE	543400MA8	(1) 400W MA	120	-	LITHONIA DAYBRITE
EX	SINGLE FACE UNIVERSAL MOUNT/ARROWS THERMOPLASTIC, RED LETTERS	LIGHTOLIER	LLNURW	FURNISHED	120	-	LITHONIA CHLORIDE
EM	SELF CONTAINED DUAL HEAD EMERGENCY LIGHT WITH INTERGAL TEST MODULE	CONCEALITE	E2250LH12	FURNISHED	120	-	LITHONIA CHLORIDE
EXEM	COMBINATION EXIT/EMERGENCY LIGHT RED LETTERS AND DUAL HEAD	LIGHTOLIER	LC25LT91RW	FURNISHED	120	-	LITHONIA CHLORIDE

LIGHT FIXTURE NOTES - GENERAL

- ALL FLUORESCENT FIXTURES SHALL BE PROVIDED WITH ELECTRONIC BALLAST UNLESS OTHERWISE NOTED.
- ALL LINEAR FLUORESCENT LAMPS SHALL BE T-8 OCTRON W/3500K WITH MINIMUM 82 CRI RATING UNLESS OTHERWISE NOTED.
- ALL COMPACT FLUORESCENT LAMPS SHALL BE 4-PIN, 3500K WITH MINIMUM 82 CRI RATING UNLESS OTHERWISE NOTED.
- ALL INCANDESCENT FLAMENT LAMPS SHALL BE RATED 130 VOLT UNLESS OTHERWISE NOTED.
- COORDINATE THE AMING OF ALL ACCENT FIXTURES WITH ENGINEER PRIOR TO INSTALLATION.
- IN ORDER FOR ANY FIXTURE TO BE CONSIDERED 'EQUAL' TO THAT WHICH IS SPECIFIED, THE FIXTURE AND ALL COMMONEST MUST BE MANUFACTURED IN TYPE, SIZE, COLOR, FUNCTION, DIMENSIONS, ETC. THE SAME OR SUPERIOR TO THAT WHICH IS SPECIFIED, AND AT THE ENGINEER'S REQUEST, A SAMPLE OF THE FIXTURE SHALL BE SUBMITTED PRIOR TO APPROVAL.
- DIVISION 16 CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE CEILING TYPES WITH CEILING CONTRACTOR PRIOR TO ORDERING OF FIXTURES.
- ALL FLUORESCENT FIXTURES EXPOSED TO OUTSIDE AMBIENT AIR TEMPERATURES SHALL BE EQUIPPED WITH 'D' (COLD WEATHER) BALLAST UNLESS OTHERWISE NOTED.
- ALL LIGHTING CALCULATIONS HAVE BEEN BASED ON SPECIFIED FIXTURES EQUIPPED WITH OSRAM/SYLVANIA LAMPS. PROVIDE THE QUICKTRONIC FLUORESCENT SYSTEM WITH WARRANTY OR EQUAL.
- FLUORESCENT BATTERY INVERTERS SHALL BE RATED 1100 LUMENS.
- ALL NON IC RATED FIXTURES SHALL BE INSTALLED PER NEC 410.68. PROVIDE A PHYSICAL PROTECTIVE BARRIER ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION WHERE INSULATION IS INSTALLED ABOVE OR INFRINGES ON THE ON THE 3" CLEARANCE AS DESCRIBED BY CODE. ALL INSTALLATIONS SHALL BE PER MFG RECOMMENDATIONS.
- ALL LIGHT FIXTURES INSTALLED IN FIRE RATED CEILINGS SHALL MEET ALL CODE REQUIREMENTS AND WILL BE THE RESPONSIBILITY OF THE DIVISION 16 ELECTRICAL CONTRACTOR.

P1 PANEL SCHEDULE (EXISTING)		TOTAL CONNECTED KVA		118.8 *		AVAILABLE FAULT DUTY		
208/120 VOLT, 3 PHASE, 4 WIRE 400 AMP WITH MAIN CIRCUIT BREAKER SURFACE MOUNTED		TOTAL DEMAND KVA		124.0 *		EXISTING AIR FULL RATING		
		REMARKS: EXISTING MAIN DISTRIBUTION PANEL TO REMAIN. *PANELBOARD LOADS ARE BASED UPON LOADS REFLECTED ON ORIGINAL CONSTRUCTION DOCUMENTS PLUS THE NEW ADDED LOADS.						
DESCRIPTION	(VA/PH	CK BRKR			BREAKER TYPE	MOUNTING SPACE		
		A	B	C				#
AIR CONDITIONING UNIT AC-1	(EXISTING)	18.5	18.5	18.5	1	200	3	
PANEL "P2"	(EXISTING)	14.1	14.1	14.1	2	150	3	
TVSS UNIT	(EXISTING)	—	—	—	3	30	3	
WATER HEATER IN STOCK ROOM	(EXISTING)	1.5	—	—	4	20	1	
PRTU-2	(NEW)	6.5	6.5	6.5	5	80	3	
SPACE	(EXISTING)	—	—	—	6	—	—	
SPACE	(EXISTING)	—	—	—	7	—	—	
					8			
					9			
					10			
					11			
					12			
					13			
					14			
					15			
					16			
					17			
					18			
					19			
					20			
					21			
TOTALS:		40.6	39.1	39.1				

P2 PANEL SCHEDULE				(EXISTING)				TOTAL CONNECTED KVA				42.3 *		AVAILABLE FAULT DUTY				
208/120 VOLT, 3 PHASE, 4 WIRE 225 AMP MLO SURFACE MOUNTED 42 CKT NEMA 1								TOTAL DEMAND KVA				47.5 *		EXISTING				
														AIR SERIES RATING				
REMARKS: EXISTING PANEL TO REMAIN *PANELBOARD LOADS ARE BASED UPON LOADS REFLECTED ON ORIGINAL CONSTRUCTION DOCUMENTS PLUS THE NEW ADDED LOADS.																		
DESC	KVA			CK #	BRKR P	PHASE			TOTAL	BRKR P	CK #	KVA			DESC			
	A	B	C			A	B	C				A	B	C				
LIGHTING-STOCK ROOM	1.0										2	1.5		LIGHTING-SALES AREA				
LIGHTING-SALES AREA		1.3									20	1	4	1.5	LIGHTING-SALES AREA			
LIGHTING-SALES AREA			1.5								20	1	6	1.3	LIGHTING-SALES AREA			
LIGHTING-SALES AREA		1.5									20	1	8	1.0	LIGHTING-SALES AREA			
LIGHTING-SALES AREA			1.5								20	1	10	0.8	LIGHTING-SALES AREA			
LIGHTING-SALES AREA				1.5							20	1	12		LIGHTING-MEN, WOMEN, OFF. VEST			
NIGHT AND EMERGENCY LIGHTS	0.6										20	1	14	1.5	INTERIOR STORE SIGNS			
CANOPY LIGHTING		1.2									20	1	16	1.5	INTERIOR STORE SIGNS			
BUILDING PERIMETER WALLPACKS			1.4								20	1	18		EXTERIOR PYLON SIGNS			
IG RECEPT AT POWER POLE	0.8										20	1	20	1.5	EXTERIOR CANOPY LIGHTING			
IG RECEPT AT POWER POLE		0.8									20	1	22	1.5	EXTERIOR CANOPY LIGHTING			
IG RECEPT AT POWER POLE			0.8								20	1	24	0.6	RECEPTS-STOCK RM, SALES			
IG RECEPT IN OFFICE		0.8									20	1	26	0.4	RECEPTS-STOCK RM, SALES			
RECEPT AT TELEPHONE BACKBOARD			0.4								20	1	28	0.6	RECEPT FOR ELEC. WATER COOLER			
EXTERIOR RECEPT NEAR OD UNITS				0.2							20	1	30	0.4	RECEPTS-NEAR FRONT ENTRANCE			
RECEPT-OFFICE		0.8									20	1	32	0.4	RECEPTS-NEAR FRONT ENTRANCE			
RECEPTS-SALES/STORAGE (NEW)			1.4								20	1	34	0.6	RECEPTS AT POWER POLES			
LIGHTING-PER. WALLPACKS (NEW)				1.4							20	1	36		RECEPTS-SALES AREA			
LIGHTING-SALES FLOOR (NEW)		1.0									20	1	38	0.6	LIGHTING-STORAGE (NEW)			
LIGHTING-SALES FLOOR (NEW)			1.0								20	1	40	1.0	LIGHTING-SALES FLOOR (NEW)			
LIGHTING-SALES FLOOR (NEW)				1.0							20	1	42	1.0	LIGHTING-SALES FLOOR (NEW)			
TOTALS:	6.5	7.6	7.8					13.4		15.1			13.8			6.9	7.5	6.0



ELECTRICAL-SCHEDULES, DETAILS, NOTES



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Revisions	
No.	Date
0	08/23/06
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Drawn by:
Checked by:
Signature:

DOLLAR GENERAL
FORT WHITE, FLORIDA

E-3
OF 6

GENERAL ELECTRICAL NOTES

GENERAL:

THIS FACILITY IS EXISTING. ELECTRICAL CONTRACTOR SHALL COMPLETELY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS AFFECTING HIS WORK INCLUDING VISIT TO THE SITE BEFORE PREPARING HIS PROPOSAL. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS ISSUED BY ALL AUTHORITIES HAVING JURISDICTION OVER THE WORK. WHERE CONFLICT EXISTS BETWEEN THE APPLICABLE CODES AND STANDARDS OR THE PLANS AND SPECIFICATIONS, THE MOST STRINGENT AS DETERMINED BY THE ENGINEER WILL APPLY. CONTRACTOR SHALL NOTIFY ENGINEER OF CONFLICTING CONDITIONS AFFECTING HIS WORK AND ADVISE ENGINEER FOR CLARIFICATION. LOCAL CODES IN EFFECT FOR THIS PROJECT INCLUDE BUT ARE NOT LIMITED TO THE MOST RECENT EDITIONS OF:

FLORIDA STANDARD BUILDING CODE
FLORIDA STANDARD MECHANICAL CODE
FLORIDA STANDARD PLUMBING CODE
FLORIDA STANDARD GAS CODE
NFPA 90, 90A, 90B
NFPA 70 "NATIONAL ELECTRIC CODE"

ELECTRICAL CONTRACTOR WILL FURNISH AND INSTALL ALL CONDUIT, RACEWAYS, WIRE CABLE, WIRING DEVICES, SWITCHES, BOXES, CABINETS, ENCLOSURES, SUPPORTING DEVICES, TRANSFORMERS, SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, CIRCUIT BREAKERS, FUSES, MOTOR CONTROLLERS, LUMINAIRES, SITE LIGHTING, THEATRICAL LIGHTING, POWER SUPPLIES, SERVICE ENTRANCES, LIGHTNING PROTECTION, SURGE PROTECTION, FIRE ALARM SYSTEMS, INTERCOM SYSTEMS, PA SYSTEMS, MUSIC SYSTEMS, TELEVISION SYSTEMS, HEAT TRACING, ELECTRIC RELAYS, ELECTRIC CONTROLS, AND ALL OTHER ELECTRICAL ITEMS WHERE SHOWN ON THE DRAWINGS AND/OR OTHERWISE SPECIFIED OR AS NEEDED FOR A COMPLETE, PROPER AND FUNCTIONAL SYSTEM.

ALL MATERIALS INCORPORATED INTO THE ELECTRICAL SYSTEMS TO BE NEW WITH UL LABEL AND OF DOMESTIC MANUFACTURE UNLESS OTHERWISE NOTED OR SPECIFIED BY BRAND NAME.

ROUTE WIRE AND CABLE AS REQUIRED TO MEET PROJECT CONDITIONS. WIRE AND CABLE ROUTING IS APPROXIMATE UNLESS DIMENSIONED. LOCATIONS OF ELECTRICAL EQUIPMENT AND DEVICES ON DRAWINGS ARE APPROXIMATED AND TO BE COORDINATED IN FIELD BY CONTRACTOR. CONTRACTOR TO ALLOW FOR OWNER, ARCHITECT, OR ENGINEER TO RELOCATE ANY RECEPTACLE OR 20A RATED SWITCH WITHIN ROOM PRIOR TO OR DURING ROUGH IN WITHOUT ADDITIONAL COST TO OWNER. TO MEET THIS REQUIREMENT CONTRACTOR TO GIVE WRITTEN NOTICE TO OWNER, ARCHITECT, AND ENGINEER FIVE DAYS WRITTEN NOTICE BEFORE REQUESTING ROUGH IN INSPECTION.

CONTRACTOR TO COORDINATE WITH LOCAL UTILITY COMPANY AS REQUIRED FOR INSTALLATION OF SERVICE ENTRANCE AND PROVIDE PADS, ACCESSORY ENCLOSURES, METER BOXES, CONDUIT, RACEWAY, AND OTHER ELECTRICAL ITEMS AS REQUIRED BY LOCAL UTILITY.

SUBMITTALS AND SHOP DRAWINGS:

CONTRACTOR TO PREPARE SUBMITTALS AND SHOP DRAWINGS FOR ALL ELECTRICAL WORK AS REQUIRED BY THE CONSTRUCTION DOCUMENTS INTO SINGLE COMPLETE PACKAGE FOR ENGINEERS REVIEW. PACKAGE TO BE IN THREE RING BINDER WITH ALL SHOP DRAWINGS ATTACHED. BINDER AND DRAWINGS TO CLEARLY STATE PROJECT NAME, PROJECT ARCHITECT, PROJECT ENGINEER, PROJECT OWNER, CONTRACTOR NAME, AND SITE ADDRESS. INCOMPLETE SUBMITTAL PACKAGES WILL BE AVAILABLE AT THE ENGINEERS OFFICE FOR CONTRACTOR PICK-UP AND COMPLETION BEFORE ANY REVIEW BY THE ENGINEER OTHER THAN CUSORY REVIEW AS REQUIRED TO DETERMINE COMPLETENESS OF SUBMITTAL PACKAGE.

COORDINATION OF WORK:

ENGINEERS DRAWINGS AND CONSTRUCTION DOCUMENTS ARE DIAGRAMMATIC. CONTRACTOR OF WORK THIS TRADE TO COORDINATE WITH ALL WORK OF CONTRACTORS OF OTHER TRADES AND GENERAL CONTRACTOR. CONTRACTORS TO FIELD MEASURE PRIOR TO FABRICATION OF ANY WORK. CONTRACTOR OF WORK OF THIS TRADE TO COMMUNICATE WITH GENERAL CONTRACTOR AND CONTRACTORS OF OTHER TRADES AND PREPARE DRAWINGS, SKETCHES, AND PROVIDE INFORMATION AS NEEDED TO COMMUNICATE WITH OTHER TRADES FOR CONSTRUCTION OF COMPLETE AND OPERATING SYSTEM WITHOUT ADDITIONAL COST TO OWNER. PRIOR TO BEGINNING WORK OF THIS TRADE, CONTRACTOR OF THIS TRADE TO CONVEY COORDINATION MEETING WITH OTHER AFFECTED CONTRACTORS OF OTHER TRADES AND GENERAL CONTRACTOR FOR PURPOSES OF COORDINATION. CONTRACTORS' FAILURES TO COORDINATE WILL NOT BE CAUSE FOR RECOVERY OF ADDITIONAL COMPENSATION FOR CORRECTION OR MODIFICATION WORK WHICH IN THE SOLE OPINION OF THE ENGINEER IS NOT WELL COORDINATED.

CONDUIT:

ALL CONDUCTORS TO BE INSTALLED IN EMT, IMC, IMC, SCH 80 PVC OR SCH 40 PC IN LOCATIONS AS DESCRIBED IN THE CONSTRUCTION DOCUMENT. WHERE CONDUIT IS BURIED IN EARTH UNDER SLAB USE THINWALL NONMETALIC CONDUIT WITH THICKWALL NONMETALIC FITTINGS. FOR SWEEPS FROM BELOW EARTH PENETRATING SLAB USE INTERMEDIATE METAL CONDUIT COATED WITH TWO APPLICATIONS OF HEAVY FIBERED COAL TAR MASTIC. WHERE CONDUIT IS INSTALLED IN OUTDOOR LOCATIONS ABOVE GRADE, SLAB ABOVE GRADE, WET, OR DAMP LOCATIONS USE INTERMEDIATE METAL CONDUIT. WHERE CONDUIT IS IN DRY CONCEALED OR EXPOSED LOCATIONS USE ELECTRICAL METAL TUBING WITH COMPRESSION FITTINGS. FITTINGS AND CONDUIT BODIES TO BE OF SAME MATERIAL AS ADJACENT CONDUIT. FLEXIBLE METAL CONDUIT TO BE OF INTERLOCKED STEEL CONSTRUCTION. USE OF FLEXIBLE METAL CONDUIT TO BE LIMITED TO LENGTHS OF 8' MAXIMUM AND USED FOR ONLY FOR FINAL CONNECTION OF BRANCH CIRCUITRY AT LIGHT FIXTURES, MOTORIZED EQUIPMENT, AND OTHER SPECIFIC VIBRATING EQUIPMENT AS APPROVED BY ENGINEER PRIOR TO INSTALLATION OF FLEXIBLE METAL CONDUIT. LIGHT LIQUID TIGHT FLEXIBLE METAL CONDUIT TO BE OF STEEL CONSTRUCTION WITH PVC JACKET AND USED IN DAMP, WET, AND OUTDOOR LOCATIONS.

CONDUCTOR:

ALL CONDUCTORS UNLESS SPECIFICALLY NOTED OTHERWISE ARE TO BE COPPER. ALL CONDUCTOR INSULATION TO BE 600 VOLT RATED THWN/THHN UNLESS OTHERWISE SPECIFICALLY NOTED. MINIMUM CONDUCTOR SIZE IS TO BE #12 AWG.

BOXES CABINETS AND ENCLOSURES:

ALL BOXES TO BE GALVANIZED METAL. BOXES IN DRY INDOOR LOCATIONS TO BE SHEET METAL. BOXES IN OUTDOOR, DAMP, OR WET LOCATIONS TO BE CAST BOXES. FLOOR BOXES TO BE FULLY ADJUSTABLE, CAST, ROUND, 1-1/2 INCH DEEP WITH FLOOR TRIM TO ACCOMMODATE ADJACENT FLOOR FINISH.

ALL CABINETS AND ENCLOSURES TO BE STEEL CONSTRUCTION WITH METAL MOUNTING PANEL. FINISH TO BE MANUFACTURER'S STANDARD ENAMEL FINISH. WHERE HINGED ENCLOSURE IS REQUIRED USE CONTINUOUS HINGES WITH LOCKING MEANS.

WIRING DEVICES:

ALL RECEPTACLES, WALL SWITCHES, AND WALL DIMMERS TO HAVE A CURRENT RATING OF NOT LESS THAN THEIR BRANCH CIRCUIT WITH A MINIMUM OF 20 AMP RATING. VOLTAGE RATING TO BE NOT LESS THAN BRANCH CIRCUIT VOLTAGE. COLOR TO BE AS SELECTED BY OWNER. WALL PLATES TO BE SMOOTH STAINLESS STEEL UNLESS PLASTIC NYLON COLOR IS SELECTED BY OWNER.

MOUNTING HEIGHTS OF ALL WALL SWITCHES AND RECEPTACLES TO BE COORDINATED WITH MILLWORK SHOP DRAWINGS, FURNITURE LOCATIONS, AND/OR INTERIOR ELEVATIONS. WHERE COORDINATION WITH THESE ITEMS IS NOT REQUIRED, MOUNT WALL RECEPTACLES ADJACENT TO FLOOR 12" AFF TO CENTERLINE OF RECEPTACLE; MOUNT WALL RECEPTACLES IN GARAGES 48" AFF TO CENTERLINE OF RECEPTACLE; MOUNT WALL RECEPTACLES IN BASEMENT, LAUNDRY, AND UTILITY ROOMS 42" AFF; MOUNT WALL RECEPTACLES IN KITCHEN AND AT COUNTERTOPS 48" AFF TO CENTERLINE OF RECEPTACLE; AND MOUNT WALL SWITCHES 48" AFF TO CENTERLINE OF WALL SWITCH.

DISTRIBUTION SWITCHBOARDS AND PANELBOARDS AND ENCLOSED SWITCHES:

DISTRIBUTION SWITCHBOARDS AND PANELBOARDS TO BE AS NOTED ON THE DRAWING. MANUFACTURER TO BE SQUARE "D", SIEMENS, OR CUTLER HAMMER. PANELBOARDS AND SWITCHBOARDS TO HAVE COPPER BUSS.

ENCLOSED SWITCHES TO BE HEAVY DUTY FUSED WITH ENCLOSURE TYPE COMPATIBLE WITH LOCATION AS MANUFACTURED BY SQUARE D, SIEMENS, OR CUTLER HAMMER. INSTALL FUSES IN SWITCHES.

LUMINAIRES:

LUMINAIRES TO BE AS SCHEDULED ON THE DRAWINGS WITH LAMPS. UPON COMPLETION OF THE PROJECT REPLACE ALL FAILED LAMPS AND BALLASTS.

INSTALLATION:

ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH NECA "STANDARD OF INSTALLATION" AND IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS. CONDUIT TO BE ROUTED PARALLEL AND PERPENDICULAR TO WALLS EXCEPT UNDER SLAB WHERE ROUTING IS TO BE FROM POINT TO POINT. INSTALL NO MORE THAN THE EQUIVALENT OF THREE 90 DEGREE BENDS BETWEEN BOXES IN CONDUIT RUNS.

CONDUCTORS TO BE PULLED INTO RACEWAY AT THE SAME TIME USING SUITABLE WIRE PULLING LUBRICANT FOR WIRE SIZES GREATER THAN 4 AWG. CLEAN CONDUCTOR SURFACES BEFORE INSTALLING LUGS AND CONNECTORS AND MAKE TERMINATION TO CARRY FULL CURRENT RATING OF CIRCUIT WITH NO PERCEPTIBLE TEMPERATURE RISE.

INSTALL SWITCHBOARDS, PANELBOARDS, AND ENCLOSURES PLUMB AND LEVEL. PROVIDE FIVE SPARE 1" CONDUITS FROM EACH RECESSED PANELBOARD TO AN ACCESSIBLE LOCATION ABOVE THE CEILING AND LABEL AS SPARE.

PROVIDE SEPARATE, INSULATED EQUIPMENT GROUNDING CONDUCTOR WITHIN EACH FEEDER AND BRANCH CIRCUIT RACEWAY TERMINATED ON EACH END WITH A SUITABLE LUG, BUS, OR BUSHING.

CLEAN CONDUCTOR SURFACES BEFORE INSTALLING LUGS AND CONNECTORS.

INSTALL LUMINAIRES STRAIGHT, PLUMB, AND TRUE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. USE CLIPS FOR RECESSED LUMINAIRES IN GRID CEILINGS. LUMINAIRES LARGER THAN 2'X4' RECESSED IN SUSPENDED CEILINGS TO BE SUSPENDED INDEPENDENT OF THE CEILING GRID. AIM AND ADJUST LUMINAIRES AS INDICATED OR DIRECTED.

INSPECTION, TESTING, IDENTIFICATION AND CLEANING:

INSPECT EACH ELECTRICAL DEVICE FOR DEFECTS IN MANUFACTURE AND OPERATE EACH SWITCHING DEVICE WITH CIRCUIT ENERGIZED TO VERIFY PROPER OPERATION. VERIFY THAT EACH RECEPTACLE DEVICE IS ENERGIZED WITH PROPER POLARITY. PERFORM GFCI TEST FOR EACH GFCI RECEPTACLE OR CIRCUIT BREAKER. CHECK EACH LUMINAIRE FOR PROPER OPERATION FOR A PERIOD OF TWO HOURS.

IDENTIFY EACH ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT ENCLOSURE WITH ENGRAVED THREE LAYER LAMINATED PLASTIC NAMEPLATE WITH WHITE 1/4" LETTERS ON RED BACKGROUND. IDENTIFY FEEDER CIRCUITS ON DISTRIBUTION SWITCHBOARDS WITH SIMILAR LABEL.

PROVIDE TYPED CIRCUIT DIRECTORY FOR EACH BRANCH CIRCUIT PANELBOARD. REVISE DIRECTORY TO REFLECT CIRCUITING CHANGES REQUIRED TO BALANCE PHASE LOADS.

THOROUGHLY CLEAN ALL EXPOSED ELECTRICAL DEVICES, SWITCHES, SWITCHPLATES, RECEPTACLES, RECEPTACLE PLATES, LUMINAIRES, AND PHOTOMETRIC CONTROL SURFACES BEFORE TURNING WORK OVER TO THE OWNER.

ALLOWANCES:

CONTRACTOR SHALL INCLUDE IN HIS BASE BID PROPOSAL FURNISHING AND INSTALLING THE FOLLOWING ITEMS AT LOCATIONS AS DIRECTED BY THE ENGINEER AND WITHIN FIVE FEET OF THE EXTERIOR BUILDING ENVELOPE OR EAVE OVERHANG:

- THREE TWENTY AMP RECEPTACLE CIRCUITS WITH UP TO EIGHT 20 AMP DUPLEX RECEPTACLES.
- TWO TWENTY AMP LIGHTING CIRCUITS WITH UP TO SIX SWITCHING LOCATIONS PER CIRCUIT INCLUDING INSTALLATION OF LIGHT FIXTURES ASSOCIATED WITH CIRCUITS AS FURNISHED AND SELECTED BY OTHERS.

WARRANTY:

CONTRACTOR TO WARRANTY ALL MATERIALS, WORKMANSHIP, AND SYSTEM PERFORMANCE FOR A PERIOD OF NOT LESS THAN TWO YEARS FROM TIME OF SUBSTANTIAL COMPLETION. WHERE MANUFACTURERS STANDARD WRITTEN WARRANTIES OR WARRANTY REQUIREMENTS STATED ELSEWHERE IN THE CONSTRUCTION DOCUMENTS ARE OF A PERIOD OF GREATER THAN TWO YEARS, CONTRACTOR OR MANUFACTURER ARE TO PROVIDE WARRANTY OF LONGER DURATION.

VOICE/DATA SYMBOL LEGEND

SYMBOL	DESCRIPTION	MOUNTING
	TELEPHONE OUTLET. STUB 3/4"C. W/90° BEND AND BUSHING INTO ACCESSIBLE CEILING ABOVE. PROVIDE PULL STRING.	18" AFF UNLESS OTHERWISE NOTED
	TELEPHONE OUTLET. STUB 3/4"C. W/90° BEND AND BUSHING INTO ACCESSIBLE CEILING ABOVE. PROVIDE PULL STRING.	48" AFF UNLESS OTHERWISE NOTED
	MODEM OUTLET. STUB 3/4"C. W/90° BEND AND BUSHING INTO ACCESSIBLE CEILING ABOVE. PROVIDE PULL STRING.	18" AFF UNLESS OTHERWISE NOTED
	TELE/FAX/DATA DUPLEX OUTLET. STUB (2) 3/4"C. W/90° BENDS AND BUSHINGS INTO ACCESSIBLE CEILING. PROVIDE PULL STRING.	18" AFF UNLESS OTHERWISE NOTED
	TELE/FAX/DATA/MODEM QUAD OUTLET. STUB (2) 1.0"C. W/90° BENDS AND BUSHINGS INTO ACCESSIBLE CEILING. PROVIDE PULL STRING AND 4-11/16" BACK BOX.	18" AFF UNLESS OTHERWISE NOTED
	CATV OUTLET. PROVIDE 3/4" C. TO COMMUNICATIONS CLOSET AND/OR PATCH PANEL. PROVIDE PULL STRING.	18" AFF UNLESS OTHERWISE NOTED
	TELEPHONE TERMINAL BOARD: 4x8x3/4" EXTERIOR PLYWOOD WITH 2 COATS OF GRAY FIRE RETARDANT PAINT. PROVIDE #6 CU GROUND TO MAIN ELECTRICAL SERVICE GROUND W/6" SLACK @ BOARD.	REFER TO DRAWINGS
		18" AFF UNLESS OTHERWISE NOTED

ABBREVIATIONS FOR SYSTEM SYMBOLS

W/ = WALL HUNG FL = FLOOR BOX
M/ = MODEM

NOTES:

- ALL SYMBOLS MAY NOT APPEAR ON THIS SET OF CONSTRUCTION DOCUMENTS, HOWEVER, FUTURE ADDENDUM, CHANGE ORDERS, SUPPLEMENTAL INSTRUCTIONS, ETC...MAY CONTAIN SYMBOLS NOT ORIGINALLY USED.
- ALL MEASUREMENTS ARE TO CENTER LINE OF DEVICE.
- FLOOR BOX DESIGNATION "FL" INDICATES FLUSH FLOOR BOX TO MATCH POWER OUTLET COMPLETE FLANGE AND COVER.

ABBREVIATIONS FOR ELECTRICAL SYMBOLS

G = GROUND FAULT WP = WEATHER PROOF EWC = ELECTRIC WATER COOLER
CLG = CEILING MOUNTED FL = FLOOR MOUNTED UT = UTILITY AREAS
WPG = WEATHERPROOF GFI TP = TAMPER PROOF H = HOSPITAL GRADE

NOTES:

- ALL SYMBOLS MAY NOT APPEAR ON THIS SET OF CONSTRUCTION DOCUMENTS, HOWEVER, FUTURE ADDENDUM, CHANGE ORDERS, SUPPLEMENTAL INSTRUCTIONS, ETC...MAY CONTAIN SYMBOLS NOT ORIGINALLY USED.
- ALL MEASUREMENTS ARE TO CENTER LINE OF DEVICE.
- ALL RECEPTACLES MOUNTED VERTICALLY SHALL BE MOUNTED WITH THE GROUND CONTACT IN THE "UP" POSITION.
- DEVICE WALL PLATES SHALL BE NYLON, IVORY, COMMERCIAL GRADE UNLESS OTHERWISE NOTED.
- DEVICES SHALL BE MOUNTED IN THE VERTICAL POSITION UNLESS OTHERWISE NOTED.
- RECEPTACLES LOCATED ON THE EXTERIOR SHALL BE MOUNTED HORIZONTAL WITH "IN-USE" COVER.
- RECEPTACLES LOCATED ABOVE COUNTER TOPS SHALL BE MOUNTED HORIZONTAL, 2" ABOVE MILLWORK. COORDINATE WITH MILLWORK CONTRACTOR PRIOR TO ROUGH-IN.
- FLUSH MOUNTED RECEPTACLES LOCATED IN UTILITY AREAS SHALL USE #302 S.S COVER AND TYPE CR20 DEVICE.
- SURFACE MOUNTED RECEPTACLES LOCATED IN UTILITY AREAS SHALL USE INDUSTRIAL RS COVERS.

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	MOUNTING
	DUPLEX RECEPTACLE: 125 VOLT, 20 AMP, NEMA 5-20R LEVITON #16352-GY	18" AFF UNLESS OTHERWISE NOTED
	SINGLE RECEPTACLE: 125 VOLT, 20 AMP, NEMA 5-20R LEVITON #16351-GY	18" AFF UNLESS OTHERWISE NOTED
	DUPLEX RECEPTACLE: HOSPITAL GRADE 125 VOLT, 20 AMP, NEMA 5-20R LEVITON #16262-SO-G	18" AFF UNLESS OTHERWISE NOTED
	DUPLEX RECEPTACLE: 125 VOLT, 20 AMP, NEMA 5-20R LEVITON #16352-GY	CEILING SECURE TO STRUCTURE ABOVE
	DUPLEX RECEPTACLE: 125 VOLT, 20 AMP, NEMA 5-20R SPLIT WIRED FOR FOR SWITCHED CONTROL. LEVITON #16352-GY SEE TYPE "WPG" FOR EXTERIOR LOCATED RECEPTACLE TYPE.	18" AFF UNLESS OTHERWISE NOTED
	DUPLEX TAMPER PROOF RECEPTACLE: 125 VOLT, 20 AMP, NEMA 5-20R LEVITON #5262-SOI	18" AFF UNLESS OTHERWISE NOTED
	DUPLEX GROUND FAULT RECEPTACLE: 125 VOLT, 20 AMP, NEMA 5-20R LEVITON #6899-GY	48" AFF UNLESS OTHERWISE NOTED
	DUPLEX RECEPTACLE: 125 VOLT, 20 AMP, NEMA 5-20R LEVITON #16352-GY. COORD. MFG. HT. WITH FLOOR PLANS.	2" ABOVE COUNTER/BACKSPLASH COORD. W/MILLWORK CONTR.
	DUPLEX GROUND FAULT RECEPTACLE: 125 VOLT, 20 AMP, NEMA 5-20R LEVITON #6899-1 W/LEVITON #5997-CL IN-USE COVER	26" AFF UNLESS OTHERWISE NOTED SEE NOTE 6 BELOW
	DUPLEX FLOOR RECEPTACLE: 125 VOLT, 20 AMP, NEMA 5-20R WALKER #880M SERIES W/FLANGE AND COVER AND ONE GANG DEDICATED FOR DATA OUTLET.	FLUSH SECURE TO STRUCTURE
	DUPLEX ISOLATED GROUND RECEPTACLE: 125 VOLT, 20 AMP, NEMA 5-20R LEVITON #16362-IG ORANGE WITH ENGRAVED PLATE "ISOLATED GROUND". PROVIDE ISOLATED GROUND CONDUCTOR	18" AFF UNLESS OTHERWISE NOTED
	(2) DUPLEX RECEPTACLES: 125 VOLT, 20 AMP, NEMA 5-20R (2) LEVITON #16352-GY	18" AFF UNLESS OTHERWISE NOTED
	(2) DUPLEX ISOLATED GROUND RECEPTACLES: 125 VOLT, 20 AMP LEVITON #16262-IG ORANGE WITH ENGRAVED PLATE "ISOLATED GROUND" PROVIDE ISOLATED GROUND CONDUCTOR	18" AFF UNLESS OTHERWISE NOTED
	(2) DUPLEX RECEPTACLES: 125 VOLT, 20 AMP, NEMA 5-20R (2) LEVITON #16352-GY. COORD. MFG. HT. WITH FLOOR PLANS.	2" ABOVE COUNTER/BACKSPLASH COORD. W/MILLWORK CONTR.
	DUPLEX RECEPTACLE ON CRITICAL BRANCH: 125 VOLT, 20 AMP, NEMA 5-20R LEVITON #16262-IG-R RED WITH ENGRAVED PLATE "EMERGENCY"	18" AFF UNLESS OTHERWISE NOTED
	(2) DUPLEX RECEPTACLE ON CRITICAL BRANCH: 125 VOLT, 20 A NEMA 5-20R (2) LEVITON #16262-IG-R RED WITH ENGRAVED PLATE "EMERGENCY"	18" AFF UNLESS OTHERWISE NOTED
	JUNCTION BOX CONCEALED ABOVE CEILING OR FLUSH MOUNTED IN WALL. WHERE MOUNTED ABOVE CEILING SECURE TO STRUCTURE ABOVE.	REFER TO DRAWINGS
	SURFACE MOUNTED OR GRADE MOUNTED JUNCTION BOX.	
	DISCONNECT SWITCH. REFER TO SPECIFIC DRAWINGS FOR SIZE AND CHARACTERISTICS.	REFER TO DRAWINGS
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH. REFER TO SPECIFIC DRAWINGS FOR SIZE AND CHARACTERISTICS.	REFER TO DRAWINGS
	MOTOR STARTER. REFER TO SPECIFIC DRAWINGS FOR SIZE AND CHARACTERISTICS.	
	MOTOR CONNECTION. MAKE ALL NECESSARY WIRE TERMINATION FOR A COMPLETE CONNECTION.	REFER TO DRAWINGS
	120/208 VOLT PANEL. SEE PANEL SCHEDULE FOR TYPE.	REFER TO DRAWINGS
	277/480 VOLT PANEL. SEE PANEL SCHEDULE FOR TYPE.	REFER TO DRAWINGS
	INFRARED OCCUPANCY SENSOR: WALL MOUNT LEVITON #6768	48" AFF UNLESS OTHERWISE NOTED
	ULTRASONIC OCCUPANCY SENSOR: CEILING MOUNT LEVITON 6878-1W WITH # 6783-120 CONTROL UNIT.	CEILING
	SINGLE POLE - SINGLE THROW TOGGLE SWITCH LEVITON #5621-2-GY	48" AFF UNLESS OTHERWISE NOTED
	DOUBLE POLE SINGLE THROW TOGGLE SWITCH LEVITON #5622-2-GY	48" AFF UNLESS OTHERWISE NOTED
	THREE WAY TOGGLE SWITCH LEVITON #5623-2-GY	48" AFF UNLESS OTHERWISE NOTED
	THREE WAY TOGGLE SWITCH LEVITON #5624-2-GY	48" AFF UNLESS OTHERWISE NOTED
	SINGLE POLE LOCKING SWITCH: PROVIDE 2 ADDITIONAL KEYS TO OWNER LEVITON #1121-2L	48" AFF UNLESS OTHERWISE NOTED
	DIMMER SWITCH: PRE-SET W/LED LOCATOR. COLOR TO MATCH OTHER DEVICES. LEVITON "TP" TOUCHPOINT SERIES OR EQUAL. 1000 WATT MINIMUM	48" AFF UNLESS OTHERWISE NOTED
	MOTOR RATED SWITCH SQUARE "D" CLASS 2510 WITH ENCLOSURE	PER CODE
	INCANDESCENT OR COMPACT FLUORESCENT RECESSED DOWN LIGHT	CEILING
	FLUORESCENT SURFACE/RECESSED AS INDICATED ON FIXTURE SCHEDULE.	CEILING
	FLUORESCENT SURFACE/RECESSED AS INDICATED ON FIXTURE SCHEDULE.	CEILING
	FLUORESCENT SURFACE INDUSTRIAL AS INDICATED ON FIXTURE SCHEDULE.	REFER TO DRAWINGS
	INCANDESCENT OR COMPACT FLUORESCENT SURFACE MOUNTED.	
	INCANDESCENT OR COMPACT FLUORESCENT WALL MOUNTED.	
	INCANDESCENT OR COMPACT FLUORESCENT WALL SCONCE.	
	WALL/CEILING MOUNTED EMERGENCY LIGHT. INDICATES TEST MODULE	
	UNIVERSAL MOUNTED EXIT LIGHT. SHADING INDICATES FACE ORIENTATION. ARROW(S) INDICATE DIRECTION. PROVIDE BATTERY BACK-UP.	

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Revisions

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Checked by:
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FORT WHITE, FLORIDA

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ELECTRICAL-SCHEDULES, DETAILS, NOTES



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ELECTRICAL SPECIFICATION NOTES

SECTION 16400

ELECTRICAL

PART 1 - GENERAL

DESCRIPTION

WORK INCLUDED: PROVIDE COMPLETE ELECTRICAL, POWER, LIGHTING, SIGNAL, COMMUNICATION, AND LAN SERVICE WORK WHERE SHOWN ON THE DRAWINGS, AS SPECIFIED HEREIN, AND AS NEEDED FOR A COMPLETE AND PROPER INSTALLATION INCLUDING, BUT NOT NECESSARILY LIMITED TO:

MAIN SWITCHBOARD, METERING FACILITIES, MAIN SWITCH, AND DISTRIBUTION BOARD OR BOARDS AS NEEDED;
FEEDER SYSTEM, IN CONDUIT TO BRANCH CIRCUITS PANELS;
BRANCH CIRCUIT PANELS FOR POWER AND LIGHTING;
BRANCH CIRCUIT WIRING, IN CONDUIT, FOR LIGHTING, RECEPTACLES, JUNCTIONS BOXES, AND MOTORS;
TELEPHONE CONDUIT AND TERMINAL BOARDS;
LAN CONDUIT AND TERMINAL BOARDS;
INTERCOM SYSTEM
HANGERS, ANCHORS, SLEEVES, CHASES, SUPPORTS FOR FIXTURES, AND OTHER ELECTRICAL MATERIALS AND EQUIPMENT IN ASSOCIATION THEREWITH;
LIGHTING FIXTURES AND LAMPS;
WIRING SYSTEM, IN CONDUIT, FOR EQUIPMENT AND CONTROLS PROVIDED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS INCLUDING, BUT NOT NECESSARILY LIMITED TO, PLUMBING AND FIRE SPRINKLER SECTIONS;
MOTOR STARTERS AND CONTROLS FOR MOTORS PROVIDED UNDER THE CONTRACT, BUT FOR WHICH MOTOR STARTERS AND CONTROLS ARE NOT OTHERWISE PROVIDED;
OTHER ITEMS AND SERVICES REQUIRED TO COMPLETE THE SYSTEMS.
FIRE ALARM SYSTEM.

RELATED WORK:

DOCUMENTS AFFECTING WORK OF THIS SECTION INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, AND SECTIONS IN DIVISION 1 OF THESE SPECIFICATIONS.

QUALITY ASSURANCE

USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCE IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK OF THIS SECTION.

WITHOUT ADDITIONAL COST TO THE OWNER, PROVIDE SUCH OTHER LABOR AND MATERIALS AS ARE REQUIRED TO COMPLETE THE WORK OF THIS SECTION IN ACCORDANCE WITH THE REQUIREMENTS OF GOVERNMENTAL AGENCIES HAVING JURISDICTION, REGARDLESS OF WHETHER SUCH MATERIALS AND ASSOCIATED LABOR ARE CALLED FOR ELSEWHERE IN THESE CONTRACT DOCUMENTS.

SUBMITTALS

COMPLY WITH PERTINENT PROVISIONS OF THE GENERAL CONDITIONS.

PRODUCT DATA: WITHIN 35 CALENDAR DAYS AFTER THE CONTRACTOR HAS RECEIVED THE OWNER'S NOTICE TO PROCEED, SUBMIT: MATERIAL LIST OF ITEMS PROPOSED TO BE PROVIDED UNDER THIS SECTION;
MANUFACTURER'S SPECIFICATIONS AND OTHER DATA NEEDED TO PROVE COMPLIANCE WITH THE SPECIFIED REQUIREMENTS;
MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES WHICH, WHEN APPROVED BY THE ARCHITECT, WILL BECOME THE BASIS FOR ACCEPTING OR REJECTING ACTUAL INSTALLATION PROCEDURES USED OF THE WORK.

SAMPLES:

WHEN SO REQUESTED BY THE ARCHITECT, PROMPTLY PROVIDE SAMPLES OF THE ITEMS SCHEDULED TO BE EXPOSED IN THE FINAL STRUCTURE.
WHEN SPECIFICALLY SO REQUESTED BY THE CONTRACTOR AND APPROVED BY THE ARCHITECT, APPROVED SAMPLES WILL BE RETURNED TO THE CONTRACTOR FOR INSTALLATION ON THE WORK.

MANUAL: UPON COMPLETION OF THIS PORTION OF THE WORK, AND AS A CONDITION OF ITS ACCEPTANCE, DELIVER TO THE ARCHITECT TWO COPIES OF AN OPERATION AND MAINTENANCE MANUAL COMPILED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 01730 OF THESE SPECIFICATIONS. INCLUDE WITHIN EACH MANUAL:
COPY OF THE APPROVED RECORD DOCUMENTS FOR THIS PORTION OF THE WORK;
COPIES OF ALL CIRCUIT DIRECTORIES;
COPIES OF ALL WARRANTIES AND GUARANTEES.

PRODUCT HANDLING

COMPLY WITH PERTINENT PROVISIONS OF SECTIONS OF THE GENERAL CONDITIONS.

WARRANTY

IN ADDITION TO STANDARD ONE YEAR WARRANTY ON ALL LABOR AND MATERIALS, PROVIDE A TWO YEAR WARRANTY ON BALLASTS FOR ALL FLUORESCENT LIGHTING FIXTURES.

PART 2 - PRODUCTS

GENERAL

PROVIDE ONLY MATERIALS THAT ARE NEW, OF THE TYPE AND QUALITY SPECIFIED. WHERE UNDERWRITER'S LABORATORIES, INC. HAVE ESTABLISHED STANDARDS FOR SUCH MATERIALS, PROVIDE ONLY MATERIALS BEARING THE UL LABEL.

TEMPORARY POWER:

IN ADDITION TO PROVIDING TEMPORARY POWER AS NEEDED FOR CONSTRUCTION PROVIDE AND PAY THE COSTS FOR INSTALLING PERMANENT POWER, ELECTRICAL METERS AND METERING ACCESSORIES AS REQUIRED. CONTRACTOR TO COORDINATE AS NEEDED WITH THE LOCAL UTILITY TO INCLUDE ALL COSTS ASSOCIATED WITH THE INSTALLATION OF PERMANENT ELECTRICAL SERVICES AS SHOWN ON THE DRAWINGS.
WHEN PERMANENT METERING IS IN PLACE AND CONNECTED, THE OWNER WILL PAY THE COSTS FOR ELECTRICAL POWER CHARGED AGAINST THE METER OR METERS.

ENTRANCES AND SWITCHBOARD

MAIN SWITCHBOARD:

PROVIDE FACTORY ASSEMBLED, DEAD FRONT, BRACED AS SHOWN ON THE DRAWINGS, WITH EQUIPMENT BUSING CONNECTION, CURRENT-LIMITING FUSES, CIRCUIT BREAKERS, AND SIMILAR COMPONENTS AS SHOWN ON THE DRAWINGS OR REQUIRED FOR PROPER COMPLETION. APPROVED MANUFACTURERS SQUARE D, SIEMENS, OR CUTLER HAMMER.
AT FUSED SWITCHES, PROVIDE ETCHED PLASTIC NAMEPLATES SECURED BY TWO CADMIUM PLATED SCREWS.

DISTRIBUTION SWITCHBOARD:

PROVIDE FACTORY ASSEMBLED, DEAD FRONT, BRACED AS SHOWN ON THE DRAWINGS, WITH EQUIPMENT BUSING CONNECTION, CURRENT-LIMITING FUSES, CIRCUIT BREAKERS, AND SIMILAR COMPONENTS AS SHOWN ON THE DRAWINGS OR REQUIRED FOR PROPER COMPLETION. APPROVED MANUFACTURERS SQUARE D, SIEMENS, OR CUTLER HAMMER.
AT FUSED SWITCHES, PROVIDE ETCHED PLASTIC NAMEPLATES SECURED BY TWO CADMIUM PLATED SCREWS.
PROVIDE SAME CONSTRUCTION AND MANUFACTURE AS THE MAIN SWITCHBOARD, BUT EQUIP WITH EYEBOLTS TO FACILITATE HOISTING AND PLACEMENT OF SECTIONS.

SWITCHES:

PROVIDE QUICK-MAKE, QUICK-BREAK, FUSED TYPE, RATED 240V AC FOR 120/208V SYSTEMS, AND RATED 600V FOR 277/480V SYSTEMS. SWITCHES TO BE AS MANUFACTURED BY SQUARE D, SIEMENS, OR CUTLER HAMMER.

PROVIDE CURRENT LIMITING FUSES:

FOR ABOVE 600 AMPS, PROVIDE CLASS L "HI-CAP" MANUFACTURED BY BUSSMAN, OR EQUAL MANUFACTURED BY CHASE-SHAMMUT.
FOR BELOW 600 AMPS, AS SHOWN FOR SHORT CIRCUIT DUTY, PROVIDE CLASS K-1 "LIMITRON", OR CLASS K-5 "LOW PEAK" OR CLASS K-9 "FUSETRON" MANUFACTURED BY BUSSMAN, OR EQUAL MANUFACTURED BY CHASE-SHAMMUT.

AT ALL SECTIONS, PROVIDE A MICARTA NAMEPLATE WITH WHITE LETTERING ON A RED BACKGROUND, READING WARNING, REPLACE ONLY WITH CURRENT LIMITING FUSES AS ORIGINALLY INSTALLED.

PROVIDE 100% SPARE FUSES FOR EACH FEEDER, HOUSED IN A SUITABLE CABINET NEAR THE MAIN DISTRIBUTION BOARD.

PROVIDE COPPER BUSING FULL HEIGHT.

GROUNDING SYSTEM

GROUND ALL EQUIPMENT, INCLUDING SWITCHBOARDS, TRANSFORMERS, CONDUIT SYSTEMS, MOTORS, AND OTHER APPARATUS, BY CONDUIT OR CONDUCTOR TO INDEPENDENT GROUNDING ELECTRODE AS SHOWN ON THE DRAWINGS, USING GROUND CLAMPS MANUFACTURED BY BURNDY OR T&B, AND APPROVED BY THE ARCHITECT.

USE GROUND RODS IF WATER MAINS OR PIPING ARE NOT METALLIC, OR IF ISOLATION COUPLINGS HAVE BEEN USED.

LOCATE GROUND RODS IN PLANTERS OR SIMILAR AREAS WHICH WILL RECEIVE WATER REGULARLY, AND DRIVE TO A DEPTH OF AT LEAST 8'-0".
MAKE MEG GROUND TESTS TO MEASURE GROUND RESISTANCE, AND PROVIDE NOT MORE THAN 5 OHMS RESISTANCE, ADDING GROUND RODS AS REQUIRED TO ACHIEVE THAT LEVEL.
PROVIDE "UFER" GROUND IF SO REQUIRED BY GOVERNMENTAL AGENCIES HAVING JURISDICTION.

DISTRIBUTION SYSTEM

IDENTIFICATION:

IDENTIFY ALL PANELBOARDS, CABINETS, SAFETY SWITCHES, AND OTHER APPARATUS USED FOR OPERATION AND CONTROL OF CIRCUITS, APPLIANCES AND EQUIPMENT.
PROVIDE PLASTIC LAMINATE NAMEPLATES, BLACK FACE WITH WHITE CORE LETTERS, SHOWING PROPER AND COMPLETE IDENTIFICATION.

BRANCH CIRCUIT PANELS:

PROVIDE BRANCH CIRCUIT PANELS FOR LIGHTING AND SINGLE PHASE LOADS, USING COPPER BUSING AS SCHEDULED ON THE DRAWINGS.

WIRING DEVICES:

AS SPECIFIED ON DRAWINGS.

UNDERFLOOR RACEWAYS:

PROVIDE WALKER SINGLE DUCT OR TRIPLE DUCT UNDERFLOOR DISTRIBUTION SYSTEM WHERE SHOWN ON THE DRAWINGS.
PROVIDE WELDED RECTANGULAR TUBING, FACTORY PROCESSED TO PREVENT RUSTING, DELIVERED IN 10'-0" LENGTHS.
PROVIDE MARKER ESCUTCHEONS FOR OUTLETS ADJACENT TO JUNCTION BOXES AND AT LAST OUTLET AT ENDS OF DUCT RUNS.
PROVIDE FLOOR JUNCTIONS BOXES WHERE SHOWN, ADJUSTABLE TO ELEVATION OF DUCTS, AND WITH TOPS AT SURFACE OF THE FINISHED FLOOR.
PROVIDE PARTITIONS SEPARATING THE RESPECTIVE RUNS.
PROVIDE JUNCTION BOX COVER PANS TO RECEIVE THE INDICATED FINISHES.
PROVIDE FITTINGS NEEDED TO FACILITATE CONNECTIONS TO THE EQUIPMENT AND OTHER ITEMS SHOWN.

ABOVEFLOOR RACEWAYS:

PROVIDE RIGID GALVANIZED OR SHERARDIZED STEEL CONDUIT AND FITTINGS IN LOCATIONS AS NOTED ON THE DRAWINGS AND/OR FOR ALL LOCATIONS WITHIN AND WHERE POURED INTO CONCRETE CONSTRUCTION, WHERE REQUIREMENTS NOTED ON THE DRAWINGS OR REQUIRED BY CODE PROVIDE MOST STRINGENT AS DETERMINED BY ENGINEER.
PROVIDE INTERMEDIATE GALVANIZED OR SHERARDIZED STEEL CONDUIT AND FITTINGS IN LOCATIONS WHERE NOTED ON THE DRAWINGS AND WHERE LOCATED IN EXPOSED INTERIOR FINISHED SPACES IN INTERIOR ATMOSPHERIC CONDITIONS BUT NOT OTHERWISE PROTECTED FROM THE WEATHER. WHERE REQUIREMENTS NOTED ON THE DRAWINGS OR REQUIRED BY CODE PROVIDE MOST STRINGENT AS DETERMINED BY ENGINEER.
PROVIDE ELECTRICAL METALLIC TUBING WITH COMPRESSION FITTINGS IN LOCATIONS AS NOTED ON THE DRAWINGS AND FOR ALL CONDUIT CONCEALED IN THE WALLS, ABOVE THE CEILINGS, OR OTHER LOCATIONS CONCEALED IN INTERIOR ATMOSPHERIC ENVIRONMENT AND OTHERWISE PROTECTED FROM THE WEATHER, WHERE REQUIREMENTS NOTED ON THE DRAWINGS OR REQUIRED BY CODE PROVIDE MOST STRINGENT AS DETERMINED BY ENGINEER.
INDENTER FITTINGS ARE NOT ACCEPTABLE.
WHERE CONDUIT IS INSTALLED UNDERGROUND OR IN THE FLOOR SLAB, PROVIDE RIGID GALVANIZED STEEL CONDUIT.
WHERE ELECTRICAL METALLIC TUBING IS USED, COMPLY WITH PERTINENT REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
PVC CONDUIT MAY NOT BE USED WITHOUT SPECIFIC WRITTEN APPROVAL OF THE ARCHITECT UNLESS OTHERWISE NOTED ON THE DRAWINGS.
PROVIDE FLUSH FLOOR BOXES, CAST IRON, WATERTIGHT, EQUAL TO RUSSELL & STOLL NO. 2511, WITH COMBINATION 1/2" AND 1-1/8" PLUG.
FOR FLOOR BOXES WITH CONVENIENCE OUTLETS, PROVIDE LEW NO. 632SB-DFB, UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
OUTLETS, JUNCTION BOXES, AND SWITCH BOXES;
PROVIDE STANDARD ONE-PIECE UNITS, GALVANIZED OR SHERARDIZED, OF SHAPE AND SIZE BEST SUITED TO THAT PARTICULAR LOCATION, OF SUFFICIENT SIZE TO CONTAIN ENCLOSED WIRES WITHOUT CROWDING.
PROVIDE DEEP BOXES WITH 1" AND LARGER CONDUIT.
FOR LIGHTING OUTLETS, PROVIDE STANDARD 4" OCTAGON OR SQUARE UNITS, WITH 3/8" MALLEABLE IRON FIXTURE STUDS AND BOX HANGERS WHERE REQUIRED.
FOR SWITCHES AND RECEPTACLES, PROVIDE STANDARD GANG SWITCH BOXES WITH STAINLESS STEEL COVERS; EXCEPT FOR EXPOSED WORK PROVIDE PRESSED STEEL BOXES WITH GALVANIZED OR CADMIUM PLATED STEEL COVERS.
PROVIDE BOXES 4" SQUARE BY 1-1/2" DEEP, EXCEPT FOR BOXES AT ENDS OF RUN WHERE CONTAINING A SINGLE DEVICE. THESE MAY BE NO. 180 HANDY BOXES IF PERMITTED BY THE GOVERNING CODE.
FOR TELEPHONE OUTLETS, PROVIDE 4" SQUARE BOXES WITH SINGLE DEVICE COVER AND ONE-HOLE BAKELITE TELEPHONE OUTLET.
FOR PULL BOXES, PROVIDE GALVANIZED COKE-BAKE SHEET STEEL UNITS WITH SCREWED-ON COVERS, OF SIZE AND SHAPE REQUIRED TO ACCOMMODATE WIRES WITHOUT CROWDING, AND TO SUIT THE LOCATION.
PROVIDE SLEEVES AND CHASES WHERE CONDUITS PASS THROUGH FLOORS AND WALLS.

CONDUCTORS:

FOR LINE VOLTAGES, PROVIDE 600V INSULATED COPPER WIRE AND CABLE, NEC STANDARD, OF TYPES SPECIFIED BELOW FOR DIFFERENCE APPLICATIONS, WITH UL LABEL, AND COLOR CODED AS REQUIRED BY GOVERNMENTAL AGENCIES HAVING JURISDICTION.
INSULATION TYPE TO BE AS SHOWN ON THE DRAWINGS.
WHERE BRANCH CIRCUIT WIRING IS INSTALLED IN WIRING CHANNELS OF CONTINUOUS ROW-MOUNTED FIXTURES, PROVIDE UL TYPE RHH OR OTHER APPROVED 90 DEGREE C WIRES, RATED AT 600V.
FOR WIRE NO. 8 AND SMALLER, PROVIDE SOLID WIRE; FOR WIRE LARGER THAN NO. 8, PROVIDE STRANDED WIRE.
FOR WIRE IN CONDUITS SUBJECTED TO DIRECT SUNLIGHT, PROVIDE THWN OR RHHW.
USE ONLY COPPER WIRES AND CABLES.

LIGHTING FIXTURES

PROVIDE FIXTURES OF THE TYPES SHOWN ON THE DRAWINGS, AND WITH THE FOLLOWING ACCESSORIES AS APPLICABLE.

RECESSED FIXTURE:

PROVIDE UNITS HAVING AN ATTACHED PULL BOX, AND WITH UL LABEL.
PROVIDE LOCAL LABEL IN ADDITION IF SO REQUIRED BY GOVERNMENTAL AGENCIES HAVING JURISDICTION.

FLUORESCENT FIXTURES:

PROVIDE BALLASTS THERMALLY PROTECTED AGAINST OVERHEATING BY BUILT-IN THERMAL PROTECTORS SENSITIVE TO BALLAST WINDING TEMPERATURE AND CURRENT.
PROVIDE PROTECTOR PREVENTING WINDING TEMPERATURE FROM EXCEEDING 120 DEGREES C, ALLOWING WINDING TEMPERATURES TO REACH 105 DEGREES C UNDER NORMAL OPERATING CONDITIONS AT 40 DEGREES C AMBIENT AND, AFTER OPENING, NOT RECLOSED ABOVE 80 DEGREES C.
PROVIDE COLD WEATHER BALLASTS TO OPERATE AT TEMPERATURES DOWN TO 0 DEGREE F.

TELEPHONE, INTERCOM, SIGNAL, AND COMMUNICATION SYSTEMS

PROVIDE CONDUITS, SERVICE ENTRANCE EQUIPMENT, OUTLETS, TERMINAL BOARDS AND OTHER ITEMS SHOWN ON THE DRAWINGS OR REQUIRED FOR A COMPLETE, APPROVED, AND OPERATING TELEPHONE AND INTERCOM SERVICE, EXCEPT FOR SUCH ITEMS AND EQUIPMENT AS ARE FURNISHED BY THE SERVING TELEPHONE COMPANY.

PROVIDE ACCESS PULL BOXES SO THAT NO CONDUIT RUN IS LONGER THAN 100 FEET, OR CONTAINS MORE THAN TWO 90 DEGREES ELBOWS.

PROVIDE PULL WIRES IN ALL TELEPHONE AND INTERCOM UNITS.

MOTOR STARTERS

GENERAL: PROVIDE SQUARE D UNITS, OR EQUAL AS MANUFACTURED BY CUTLER HAMMER OR ALLEN BRADLEY OF THE SIZES AND TYPES NEEDED FOR THE OPERATIONS SHOWN ON THE DRAWINGS, SPECIFIED HEREIN, AND OTHERWISE REQUIRED FOR THE FACILITY, AND WITH THE FOLLOWING ATTRIBUTES.

COMPLY WITH PERTINENT REQUIREMENTS OF NEMA AND NEC.

INCLUDE REQUIRED ACCESSORY ITEMS.
HORSEPOWER RATED, WITH INTERCHANGEABLE THERMAL OVERLOADS AND WITH DOUBLE-BREAK CONTACTS CAPABLE OF INTERRUPTING 10 TIMES THE RATED MOTOR CURRENT.
NORMALLY RESET WITHOUT ENTERING THE STARTER ENCLOSURE.
EQUIPPED WITH OVERLOADS IN EACH UNGROUNDED LEG.

MANUAL STARTERS:

FOR BOTH SINGLE PHASE AND THREE PHASE STARTERS, PROVIDE UNITS THAT OPEN ALL UNGROUNDED CONDUCTORS SIMULTANEOUSLY.
FOR SINGLE PHASE STARTERS, PROVIDE UNITS OF TUMBLER TYPE THAT CLEARLY INDICATE ON, OFF AND TRIPPED POSITIONS.
FOR THREE PHASE STARTERS, PROVIDE PUSH-BUTTON OPERATED UNITS WITH START, STOP-RESET BUTTON ON THE ENCLOSURE COVER.

MAGNETIC STARTERS:

PROVIDE UNITS WITH OPERATING COILS DESIGNED TO OPERATE ON LINE VOLTAGE OR ANY OTHER AUXILIARY CONTACTS NEEDED FOR AUTOMATIC OR REMOTE OPERATION AS SHOWN ON THE DRAWINGS.
FOR STARTERS WITH LINE VOLTAGE OPERATING COILS, PROVIDE BUILT IN UNDER VOLTAGE RELEASE.
PROVIDE UNITS WITH THE ACCESSORIES AND AUXILIARY CONTACTS NEEDED FOR AUTOMATIC OR REMOTE OPERATION AS SHOWN ON THE DRAWINGS.

COMBINATION STARTERS:

PROVIDE UNITS COMPLYING WITH REQUIREMENTS FOR MAGNETIC STARTERS AND, IN ADDITION, WITH A CIRCUIT BREAKER IN THE SAME ENCLOSURE.
PROVIDE CIRCUIT PROTECTION COMPLY WITH NEC REQUIREMENTS FOR THE MOTOR BEING OPERATED.

SAFETY SWITCHES

PROVIDE SAFETY SWITCHES OF HEAVY DUTY TYPE, HORSEPOWER RATED, QUICK-MAKE AND QUICK-BREAK DESIGN, EXTERNALLY OPERATED WITH PROVISION FOR PADLOCKING, FUSIBLE OR NON-FUSIBLE AS SHOWN ON THE DRAWINGS.

PROVIDE ENCLOSURES CLEARLY MARKED FOR MAXIMUM VOLTAGE, CURRENT, AND HORSEPOWER RATING AND:

INDOOR: NEMA TYPE 1;
OUTDOOR: NEMA TYPE 3R, RAINTIGHT.

FOR SWITCHES HAVING DUAL RATINGS (HIGHER RATING WHEN USED WITH DUAL-ELEMENT FUSES), PROVIDE RATINGS INDICATED ON A METAL PLATE RIVETED OR OTHERWISE PERMANENTLY FASTENED TO THE ENCLOSURE.

OTHER MATERIALS

PROVIDE OTHER MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, AS SELECTED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE ARCHITECT.

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Revisions

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ELECTRICAL-SPECIFICATION NOTES



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OF 6

ELECTRICAL SPECIFICATION NOTES

PART 3 - EXECUTION

SURFACE CONDITIONS

EXAMINE THE AREAS AND CONDITIONS UNDER WHICH WORK OF THIS SECTION WILL BE PERFORMED. CORRECT CONDITIONS DETRIMENTAL TO TIMELY AND PROPER COMPLETION OF THE WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.

PREPARATION

COORDINATE:
COORDINATE AS NECESSARY WITH OTHER TRADES TO ASSURE PROPER AND ADEQUATE PROVISION IN THE WORK OF THOSE TRADES FOR INTERFERENCE WITH THE WORK OF THIS SECTION.
COORDINATE THE INSTALLATION OF ELECTRICAL ITEMS WITH THE SCHEDULE FOR WORK OF OTHER TRADES TO PREVENT UNNECESSARY DELAYS IN THE TOTAL WORK.
WHERE LIGHTING FIXTURE AND OTHER ELECTRICAL ITEMS ARE SHOWN IN CONFLICT WITH LOCATION OF STRUCTURAL MEMBERS AND MECHANICAL OR OTHER EQUIPMENT, PROVIDE REQUIRED SUPPORTS AND WIRING TO CLEAR THE ENCROACHMENT.

DATA INDICATED ON THE DRAWINGS AND IN THESE SPECIFICATIONS ARE AS EXACT AS COULD BE SECURED, BUT THEIR ABSOLUTE ACCURACY IS NOT WARRANTED. THE EXACT LOCATIONS, DISTANCES, LEVELS, AND OTHER CONDITIONS WILL BE GOVERNED BY ACTUAL CONSTRUCTION AND THE DRAWINGS AND SPECIFICATIONS SHOULD BE USED ONLY FOR GUIDANCE IN SUCH REGARD.

WHERE OUTLETS ARE NOT SPECIFICALLY LOCATED ON THE DRAWINGS, LOCATE AS DETERMINED IN THE FIELD BY THE ARCHITECT.
WHERE OUTLETS ARE INSTALLED WITH SUCH SPECIFIED DIRECTION, RELOCATE AS DIRECTED BY THE ARCHITECT AND AT NO ADDITIONAL COST TO THE OWNER.

VERIFY ALL MEASUREMENTS AT THE BUILDING. NO EXTRA COMPENSATION WILL BE ALLOWED BECAUSE OF DIFFERENCES BETWEEN WORK SHOWN ON THE DRAWINGS AND ACTUAL MEASUREMENTS AT THE SITE OF CONSTRUCTION.

BRANCH CIRCUIT WIRING AND ARRANGEMENT OF HOME RUNS HAVE BEEN DESIGNED FOR MAXIMUM ECONOMY CONSISTENT WITH ADEQUATE SIZING FOR VOLTAGE DROPS AND OTHER CONSIDERATIONS. INSTALL THE WIRING WITH CIRCUITS ARRANGED EXACTLY AS SHOWN ON THE DRAWINGS, EXCEPT AS OTHERWISE APPROVED IN ADVANCE BY THE ARCHITECT.

THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, BUT ARE REQUIRED TO BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION AND WORK OF OTHER TRADES WILL PERMIT. WHERE DEVIATIONS ARE REQUIRED TO CONFORM WITH ACTUAL CONSTRUCTION AND THE WORK OF OTHER TRADES, MAKE SUCH DEVIATIONS WITHOUT COST TO THE OWNER.

TRENCHING AND BACKFILLING

PERFORM TRENCHING AND BACKFILLING ASSOCIATED WITH THE WORK OF THIS SECTION IN STRICT ACCORDANCE WITH THE PROVISIONS OF SECTION 02220 OF THESE SPECIFICATIONS.

INSTALLATION OF RACEWAYS AND FITTINGS

WHERE RIGID OR INTERMEDIATE CONDUIT IS INSTALLED IN WORK AREAS:
SEAL JOINTS TO PREVENT ENTRANCE OF WATER.

USE FLEXIBLE CONDUIT ONLY FOR SHORT MOTOR CONNECTIONS, OR WHERE SUBJECT TO VIBRATION.

PROVIDE NECESSARY SLEEVES AND CHASES WHERE CONDUITS PASS THROUGH FLOOR AND WALLS, AND PROVIDE OTHER NECESSARY OPENINGS AND SPACES, ARRANGING FOR IN PROPER TIME TO PREVENT UNNECESSARY CUTTING IN CONNECTION WITH THE WORK. PERFORM CUTTING AND PATCHING IN ACCORDANCE WITH THE PROVISIONS FOR THE ORIGINAL WORK.

WHERE CONDUIT IS EXPOSED, RUN PARALLEL TO OR AT RIGHT ANGLE WITH LINES OF THE BUILDING.
MAKE BENDS WITH STANDARD CONDUIT ELBOWS OR CONDUIT BENT TO NOT LESS THAN THE SAME RADIUS.
MAKE BENDS FREE FROM DENTS AND FLATTENING.

SECURELY AND RIGIDLY SUPPORT CONDUITS THROUGHOUT THE WORK.

WHERE CONDUITS PIERCE THE ROOF, PROVIDE 24 GAGE GALVANIZED IRON ROOF JACKS AND FLASHING COLLAR BRAZED ONTO THE CONDUITS AND COVERING THE TOP OF THE ROOF JACKS.

INSTALLATION OF LIGHTING FIXTURES

INSTALL LIGHTING FIXTURES COMPLETE AND READY FOR SERVICE IN ACCORDANCE WITH THE LIGHTING FIXTURE SCHEDULE SHOWN ON THE DRAWINGS.

WIRE FIXTURES WITH FIXTURE WIRING OF AT LEAST 50 DEGREES C RATING. WHERE FIXTURES ARE MOUNTED IN CONTINUOUS ROWS, PROVIDE CONDUCTORS IN WIRING CHANNELS OF THE SAME SIZE AS THE CIRCUIT WIRES SUPPLYING THE ROW OF FIXTURES.

USE ONLY PONDORIZED, GALVANIZED, OR SHERARDIZED STEEL FOR FIXTURE INSTALLATION FOR PROTECTION AGAINST RUST AND CORROSION, AND INSTALL FLUORESCENT FIXTURES STRAIGHT AND TRUE WITH REFERENCE TO WALLS.

INSTALL ALL LIGHTING FIXTURES, INCLUDING THOSE MOUNTED IN CONTINUOUS ROWS, SO THAT THE WEIGHT OF THE FIXTURE IS SUPPORTED, EITHER DIRECTLY OR INDIRECTLY, BY A SOUND AND SAFE STRUCTURAL MEMBER OF THE BUILDING, USING ADEQUATE NUMBER AND TYPE OF FASTENINGS TO ASSURE SAFE INSTALLATION.
SCREWED FASTENINGS, AND TOGGLE BOLTS THROUGH CEILING MATERIAL OR WALL PANELING, ARE NOT ACCEPTABLE.
DO NOT SUPPORT FROM SUB-PURLINS OF PANELIZED ROOF SYSTEMS.

INSTALLATION OF POWER EQUIPMENT

PROVIDE POWER AND CONTROL WIRING FOR MOTOR STARTERS AND SAFETY SWITCHES AS SHOWN ON THE DRAWINGS.

CONNECTIONS TO MISCELLANEOUS BUILDING EQUIPMENT:
WIRE TO, AND CONNECT TO, ALL ITEMS OF BUILDING EQUIPMENT NOT SPECIFICALLY DESCRIBED BUT TO WHICH ELECTRICAL POWER IS REQUIRED.
COORDINATE AS NECESSARY WITH OTHER TRADES AND SUPPLIERS TO VERIFY TYPES, NUMBERS, AND LOCATIONS OF EQUIPMENT.

INSTALLATION OF CONDUCTORS

UNLESS OTHERWISE SHOWN ON THE DRAWINGS, USE NO. 12 TYPE THHN/THWN CONDUCTORS FOR ALL BRANCH CIRCUITS, PROTECTED BY 20 AMP CIRCUIT BREAKERS. WHERE SO INDICATED ON THE DRAWINGS, USE LARGER WIRED TO LIMIT VOLTAGE DROPS.

THE NUMBER OF WIRES IN A CONDUIT RUN MAY BE INDICATED ON THE DRAWINGS BY CROSS LINES ON THE CONDUIT RUNS OR ASSOCIATED POWER CIRCUIT BY DROP OR CIRCUIT ARROWS.
WHERE WIRE SIZE IS NOT SHOWN, INSTALL NO. 12 CONDUCTORS OR NEC MINIMUM FOR UPSTREAM OVERCORRECT PROTECTION DEVICE INDICATED.
WHERE CONDUIT SIZE IS NOT SHOWN, MINIMUM SIZE IS TO BE 1/2" CONDUIT.
PROVIDE CODE-SIZE CONDUIT FOR NUMBER AND SIZE WIRES SHOWN OR REQUIRED WITHOUT WIRE AMPACITY DERATING, UNLESS A LARGER SIZE CONDUIT AND/OR CONDUCTOR IS SHOWN ON THE DRAWINGS.

USE IDENTIFIED (WHITE) NEUTRALS AND COLOR CODED PHASE WIRES FOR ALL BRANCH CIRCUIT WIRING.
MAKE SPLICES ELECTRICALLY AND MECHANICALLY SECURE WITH PRESSURE TYPE CONNECTORS, OR BY SOLDERING.
FOR WIRED SIZE 8 AWG AND SMALLER, PROVIDE "SCOTCHLOCK" CONNECTORS.
FOR WIRE SIZE 4 AWG AND LARGER, PROVIDE BURNDY "VERSITAPS" AND HEAVY-DUTY CONNECTORS, OR T&B "LOCK TITE" CONNECTORS.
INSULATE SPLICES WITH A MINIMUM OF TWO HALF-LAPPED LAYERS OF SCOTCH BRANCH NO. 33 VINYL-PLASTIC ELECTRICAL TAPE WHERE INSULATION IS REQUIRED.

TAPE ALL JOINTS WITH RUBBER TAPE 1-1/2 TIMES THE THICKNESS OF THE CONDUCTOR INSULATION, THEN COVER WITH THE FRICTION TAPE OR THE VINYL-PLASTIC ELECTRICAL TAPE SPECIFIED ABOVE.

THE DRAWINGS INDICATE THE GENERAL DIRECTION OF HOME RUNS. CONTINUE ALL SUCH HOME RUNS TO THE PANEL AS THOUGH THE ROUTES WERE SHOWN COMPLETELY.

INSTALLATION OF PANELS

UNLESS OTHERWISE SHOWN ON THE DRAWINGS, INSTALL PANELS WITH THE TOP OF THE TRIM 6'-3" ABOVE THE FINISHED FLOOR.

MOUNT A TYPEWRITTEN DIRECTORY BEHIND GLASS OR PLASTIC ON THE INSIDE OF EACH PANEL DOOR AND, ON THE DIRECTORY, SHOW THE CIRCUIT NUMBER AND COMPLETE DESCRIPTION OF ALL OUTLETS ON EACH CIRCUIT.

PROVIDE THREE 1" CONDUITS ONLY, STUBBED OUT OF THE TOP OF EACH FLUSH-MOUNTED PANEL AND TERMINATED IN ACCESSIBLE CEILING SPACE, WITH EACH CONDUIT TAGGED WITH PANEL DESCRIPTION.

TESTING AND INSPECTION

PROVIDE PERSONNEL AND EQUIPMENT, MAKE REQUIRED TESTS, AND SECURE REQUIRED APPROVALS FROM THE ARCHITECT AND GOVERNMENTAL AGENCIES HAVING JURISDICTION.

MAKE WRITTEN NOTICE TO THE ARCHITECT ADEQUATELY IN ADVANCE OF EACH OF THE FOLLOWING STAGES OF CONSTRUCTION:
IN THE UNDERGROUND CONDITION PRIOR TO PLACING CONCRETE FLOOR SLAB, WHEN ALL ASSOCIATED ELECTRICAL WORK IS IN PLACE;
WHEN ALL ROUGH-IN IS COMPLETE, BUT NOT COVERED;
AT COMPLETION OF THE WORK OF THIS SECTION.

WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND TO NOT COMPLY WITH THE SPECIFIED REQUIREMENTS, WITHIN THREE DAYS AFTER RECEIPT OF NOTICE OF SUCH NON-COMPLIANCE REMOVE THE NON-COMPLYING ITEMS FROM THE JOB SITE AND REPLACE THEM WITH ITEMS COMPLYING WITH THE SPECIFIED REQUIREMENTS, ALL AT NO ADDITIONAL COST TO THE OWNER.

IN THE ARCHITECT'S PRESENCE:
TEST ALL PARTS OF THE ELECTRICAL SYSTEM AND PROVE THAT ALL SUCH ITEMS PROVIDED UNDER THIS SECTION FUNCTION ELECTRICALLY IN THE REQUIRED MANNER.
IMMEDIATELY SUBMIT TO THE ARCHITECT A REPORT OF MAXIMUM AND MINIMUM VOLTAGES, AND A COPY OF THE RECORDING VOLTMETER CHART.
ALSO MEASURE VOLTAGES BETWEEN PHASES AND BETWEEN PHASE WIRES AND NEUTRALS, AND REPORT THESE VOLTAGES TO THE ARCHITECT.

PROJECT COMPLETION

UPON COMPLETION OF THE WORK OF THIS SECTION, THOROUGHLY CLEAN ALL EXPOSED PORTIONS OF THE ELECTRICAL INSTALLATION, REMOVING ALL TRACES OF SOIL, LABELS, GREASE, OIL, AND OTHER FOREIGN MATERIAL, AND USING ONLY THE TYPE CLEANER RECOMMENDED BY THE MANUFACTURER OF THE ITEM BEING CLEANED.

THOROUGHLY INDOCTRINATE THE OWNER'S OPERATION AND MAINTENANCE PERSONNEL IN THE CONTENTS OF THE OPERATIONS AND MAINTENANCE MANUAL REQUIRED TO BE SUBMITTED UNDER ARTICLE 1.3 OF THIS SECTION OF THESE SPECIFICATIONS.

ON THE FIRST DAY THE FACILITY IS IN OPERATION, FOR AT LEAST EIGHT HOURS AT A TIME DIRECTED BY THE ARCHITECT, PROVIDE A QUALIFIED FOREMAN AND CREW TO PERFORM SUCH ELECTRICAL WORK AS MAY BE REQUIRED BY THE ARCHITECT.

END OF SECTION

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Revisions	
No.	Date
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Signature: _____

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ELECTRICAL-SPECIFICATION NOTES



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