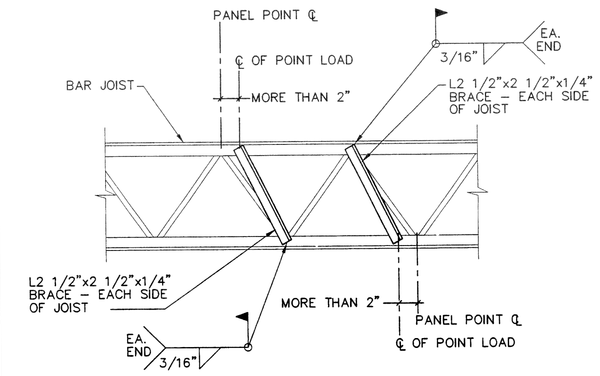
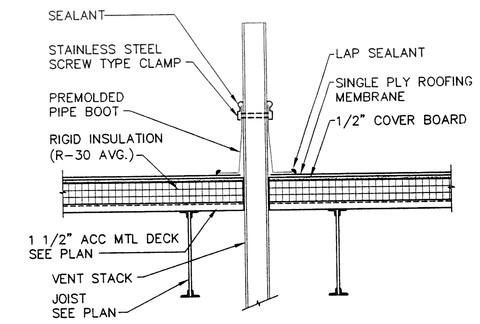


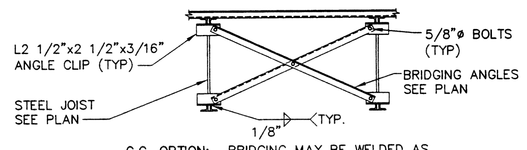
NOTES:

1. JOIST REINFORCEMENT REQUIRED WHEN POINT LOAD EXCEEDS 200 LBS.
2. BENEATH MECH. CURBS, PROVIDE JOIST REINF. AT JOIST PANEL JOINTS. WHEN CURBS ARE OFFSET FROM PANEL BY MORE THAN 2", REINF. JOIST AS DETAILED ABOVE.

F7	TRUSS FIELD MODIFICATION FOR POINT LOAD > 200#
3/4"=1'-0"	

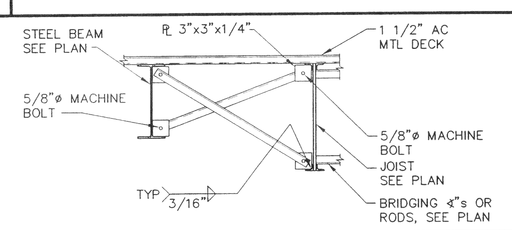


F9	VENT STACK PENETRATION DETAIL
3/4"=1'-0"	

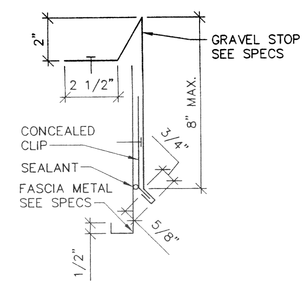


G.C. OPTION: BRIDGING MAY BE WELDED AS PER S.J.I. STANDARDS IN LIEU OF BOLTS.

E3	BOLTED DIAGONAL BRIDGING DETAIL - TYP.
3/4" = 1'-0"	



D3	BOLTED DIAGONAL BRIDGING TO STEEL BEAM
3/4" = 1'-0"	

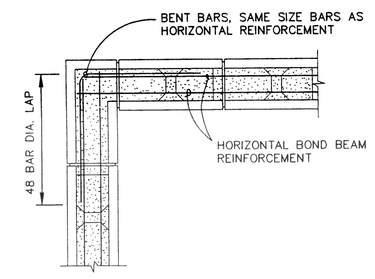


D5	GRAVEL STOP DETAIL
3"=1'-0"	

BAR JOIST
EXISTING BAR JOIST
STEEL BEAM OR WOOD LINTEL
EXISTING STEEL BEAM
BRIDGING
EXISTING BRIDGING
STEEL COLUMN
EXISTING STEEL COLUMN
BEARING PLATE
EXIST. CMU WALL
CMU WALL
(X'-X") TOP OF STEEL ELEVATION

X S2 — SECTION SYMBOL
1 S3.1
A — LOADING DIAGRAM SYMBOL
LIMITS OF DRIFTING SNOW
CONTROL JOINT
DIRECTION OF SLOPE
1/4 — WELD SYMBOL

D7	LEGEND
–	



D8	TYP. BOND BEAM AT CORNER
–	

±	PLUS OR MINUS	EB	EXPANSION BOLT	mm	MILLIMETER	TYP	TYPICAL
ABV	ABOVE	EXP	EXPOSED	MISC.	MISCELLANEOUS	UC	UNDERCUT
AFF	ABOVE FINISH FLOOR	EXIST	EXISTING	E	MODULUS OF ELASTICITY	UNF	UNFINISHED
AC	ACOUSTICAL	EXT	EXTERIOR	MR	MOISTURE RESISTANT	UV	UNIT VENTILATOR
ACP	ACOUSTICAL CEILING PANEL	EW	EACH WAY	NPM	NEWTONS PER METER	VBA	VAPOR BARRIER
ACT	ACOUSTICAL TILE	FB	FACE BRICK	NOM	NOMINAL	VEN	VENEER
ADD	ADDENDUM	Vu	FACTORED SHEAR	N	NORTH	VTR	VENT THROUGH ROOF
A/C	AIR CONDITIONING	FBD	FIBERBOARD	NIC	NOT IN CONTRACT	VERT	VERTICAL
ALUM	ALUMINUM	FGL	FIBERGLASS	NTS	NOT TO SCALE	VJ	VERTICAL JOINT
ALT	ALTERNATE	FF	FINISH FLOOR	#, No.	NUMBER	VB	VINYL BASE
ACI	AMERICAN CONCRETE INSTITUTE	FFE	FINISH FLOOR ELEVATION	OC	ON CENTER	VCB	VINYL COVE BASE
APA	AMERICAN PLYWOOD ASSOCIATION	FBRK	FIRE BRICK	OPNG	OPENING	VCB	VINYL COMPOSITION TILE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	FLG	FLASHING	OD	OUTSIDE DIAMETER	VT	VINYL TILE
		FLR	FLOOR (ing)	OH	OVERHEAD	WTW	WALL TO WALL
AWS	AMERICAN WELDING SOCIETY	FD	FLOOR DRAIN	PNL	PANEL	WP	WATERPROOFING
ANC	ANCHOR (age)	FPL	FLOOR PLATE	PVMT	PAVEMENT	WS	WATERSTOP
AB	ANCHOR BOLT	FNDN	FOUNDATION	PERF	PERFORATED	WWM	WELDED WIRE MESH
∠	ANGLE	FOB	FACE OF BRICK	PSF	POUNDS PER SQUARE FOOT	W	WEST
ANOD	ANODIZED	FOC	FACE OF CONCRETE	PSI	POUNDS PER SQUARE INCH	WIN	WINDOW
ARCH	ARCHITECTURAL	FOM	FACE OF MASONRY	PL. PL	PLATE	WM	WIRE MESH
ASPH	ASPHALT	FOS	FACE OF STUDS	PWD	PLYWOOD	WO	WITHOUT
@	AT	Ft	FOOT	PCF	POUNDS PER CUBIC FOOT	w/	WITH
AUTO	AUTOMATIC	FTG	FOOTING	PLF	POUNDS PER LINEAL FOOT	WD	WOOD
BSMT	BASEMENT	FV	FIELD VERIFY	PVC	POLYVINYL CHLORIDE	WB	WOOD BASE
BPL	BEARING PLATE	FL	FLANGE	PFB	PREFABRICATED	Fy	YIELD STRESS
Fb	BENDING STRESS	GALV	GALVANIZED	PFN	PREFINISHED		
BM	BENCHMARK	GP	GALVANIZED PIPE	PT	PRESSURE-TREATED		
BTW	BETWEEN	GKT	GASKET (ed)	PSC	PRESTRESSED CONCRETE		
BIT	BITUMINOUS	GA	GAUGE	PROP	PROPOSED		
BLKG	BLOCKING	GC	GENERAL CONTRACTOR	RAD	RADIUS		
BD	BOARD	GD	GRADE (ing)	RL	RAILING		
BW	BOTH WAYS	GVL	GRAVEL	RCP	REFLECTED CEILING PLAN		
BOT	BOTTOM	GT	GROUT	REINF	REINFORCE (ing), (ment)		
BOF	BOTTOM OF FOOTING	GPDW	GYPSUM DRYWALL	RFL	REFLECT (ed), (ive), (or)		
BOW	BOTTOM OF WALL	HC	HOLLOW CORE	REM	REMOVE (al)		
BRK	BRICK	HD	HIGH DENSITY	RES	RESILIENT		
BLDG	BUILDING	HDR	HEADER	REV	REVISION (s), (ed)		
CB	CATCH BASIN	HVAC	HEATING-VENTILATING-AIR-CONDITIONING	ROW	RIGHT OF WAY		
CLG	CEILING			RH	RIGHT HAND		
CEMT	CEMENT (itious)	HDW	HARDWARE	R	RISER		
CHAMF	CHAMFER	HGT	HEIGHT	RD	ROOF DRAIN		
CIRC	CIRCUMFERENCE	HP	HIGH POINT	RFG	ROOFING		
CLR	CLEAR(ance)	HORIZ	HORIZONTAL	RM	ROOM		
CO	CLEAN OUT	HM	HOLLOW METAL	RO	ROUGH OPENING		
COL	COLUMN	HW	HOT WATER	SCH	SCHEDULE		
CONC	CONCRETE	IN	INCH	SNT	SEALANT		
F'c	CONCRETE COMPRESSIVE STRENGTH	ID	INSIDE DIAMETER	SLR	SEALER		
		INSUL	INSULATE (d), (ion)	SEC	SECTION		
CMU	CONCRETE MASONRY UNIT	INT	INTERIOR	Fv	SHEAR STRESS		
CONN	CONNECTION	INV	INVERT	SHTH	SHEATHING		
CONST	CONSTRUCTION	JT	JOINT	SHT	SHEET		
CONT	CONTINUOUS	JF	JOINT FILLER	SIM	SIMILAR		
CONTR	CONTRACTOR	KILO	KILOGRAM	SKL	SKYLIGHT		
CJ	CONTROL JOINT	kNPM	KILO NEWTON PER METER	SC	SLIP CRITICAL		
CORR	CORRIDOR	LW	LIGHTWEIGHT	S	SOUTH		
COORD	COORDINATE	LTL	LINTEL	SP	SPACER		
CFL	COUNTERFLASHING	LLH	LONG LEG HORIZONTAL	SPEC	SPECIFICATION (s)		
CRS	COURSE (s)	LLV	LONG LEG VERTICAL	SQ	SQUARE		
CFT	CUBIC FOOT	LP	LOW POINT	STD	STANDARD		
CYD	CUBIC YARD	LVR	LOUVER	STL	STEEL		
DP	DAMPPROOFING	MH	MANHOLE	SJI	STEEL JOIST INSTITUTE		
DEM	DEMOLISH (tion)	MFG	MANUFACTURER	SD	STORM DRAIN		
DEP	DEPRESSED	MAS	MASONRY	STRUCT	STRUCTURAL		
DETL	DETAIL	F'm	MASONRY COMPRESSIVE STRENGTH	SAT	SUSPENDED ACOUSTICAL CEILING		
ø, DIA	DIAMETER			SYN	SYNTHETIC		
DIAG	DIAGONAL	MO	MASONRY OPENING	SYS	SYSTEM		
DIM	DIMENSION	MTL	MATERIAL (s)	TI	TAPERED INSULATION		
DWG	DRAWING	MAX	MAXIMUM	TV	TELEVISION		
EA	EACH	MDO	MEDIUM DENSITY OVERLAY	TEMP	TEMPERED		
EAF	EACH FACE	MPa	MEGA PASCAL	TZ	TERRAZZO		
	EAST	MMB	MEMBRANE	THR	THRESHOLD		
ELEV.	ELEVATION	MTL	METAL	THK	THICK(ness)		
EQ	EQUAL	MFD	METAL FLOOR DECKING	T&G	TONGUE & GROOVE		
EQP	EQUIPMENT	M	METER	TOM	TOP OF MASONRY		
EXP	EXPANSION	MP	MID POINT	TOP	TOP OF PLATE		
		MIN	MINIMUM	TSL	TOP OF SLAB		
		MPH	MILES PER HOUR	TST	TOP OF STEEL		
				TOW	TOP OF WALL		

A1	ABBREVIATIONS
–	

1. PROVIDE & INSTALL MASONRY LINTELS FOR ALL MASONRY WALL OPENINGS UNLESS INDICATED OTHERWISE ON DRAWINGS. PROVIDE MASONRY LINTELS OF SIZE AND REINFORCEMENT AS FOLLOWS:
   A. OPENINGS UP TO 3'-11" (UNLESS OTHERWISE NOTED) — PROVIDE 8" HIGH C.M.U. LINTEL w/ (2) #4 BARS IN 8" WIDE UNITS (3) #4 BARS IN 12" WIDE UNITS
   B. OPENINGS 4'-0" TO 8'-0" (UNLESS OTHERWISE NOTED) — PROVIDE 16" HIGH C.M.U. LINTEL w/ (2) #6 BARS IN 8" WIDE UNITS (3) #6 BARS IN 12" WIDE UNITS
   C. INSTALL FOR ALL OPENINGS AND PENETRATIONS IN BRICK UP TO 3'-11" WIDE (UNLESS OTHERWISE NOTED) (1) 4"x3 1/2"x 1/4" STEEL ANGLE LINTEL. FOR ALL OPENINGS AND PENETRATIONS BETWEEN 4'-0" AND 8'-0" WIDE (UNLESS OTHERWISE NOTED) (1) 6"x3 1/2"x1/4" STEEL ANGLE LINTEL.
2. ALL CONCRETE MASONRY AND BRICK LINTELS SHALL HAVE 12" (MIN) END BEARING UNLESS OTHERWISE NOTED.
3. ALL CONCRETE MASONRY BLOCK WALLS WITH VERTICAL REINFORCING, SHALL HAVE CORES FILLED WITH 3000 PSI GROUT. INSTALLATION OF REINFORCEMENT SHALL BE CONTINUOUS AND RUN UNOBSTRUCTED BY BAR JOIST SEAT/BEARING PLATE ARRANGEMENTS. HORIZONTAL REINFORCEMENT SHALL BE PROVIDED @ 16" O.C. VERTICALLY.
4. PROVIDE VERTICAL CONTROL, EXPANSION OR CONTRACTION, JOINTS SPACED AT 30'-0" O.C. (MAX) AND LOCATE JOINTS AT EACH SIDE OF DOOR OPENINGS WHERE POSSIBLE FOR ALL INTERIOR MASONRY WALLS. CONTROL JOINTS FOR ALL EXTERIOR MASONRY WALLS WILL BE AS INDICATED IN THIS NOTE OR AS SHOWN ON EXTERIOR ELEVATIONS.
5. HOLLOW CONCRETE BLOCK UNITS: GRADE N 8" CMU, 1900 PSI, MINIMUM COMPRESSIVE STRENGTH. WALL DESIGN STRENGTH. F'M = 1500 PSI
6. LAY UNITS IN RUNNING BOND/ CORNERS SHALL HAVE A STANDARD BOND BY OVERLAPPING UNITS
7. MORTAR: TYPE S.
8. GROUT: SEE MASONRY DIV. 4 SPECIFICATIONS. ROD GROUT IMMEDIATELY AFTER POURING AND AGAIN APPROX. 5 MINUTES LATER.
9. MAXIMUM GROUT LIFT WITHOUT CLEANOUTS SHALL NOT EXCEED 4'-0" IN BLOCK.
10. TIE VERTICAL REINFORCING AT EACH END AND AT 8'-0" MAXIMUM VERTICAL SPACING USING SINGLE WIRE AND LOOP TYPE TIES AS MANUFACTURED BY A.A. WIRE PRODUCTS COMPANY OR APPROVED EQUAL.
11. IN 8" WALLS PROVIDE VERTICAL REINFORCING IN CENTER OF GROUT, AT CENTER OF WALL, CONTINUOUS FULL HEIGHT OF WALL AS FOLLOWS:
    A. 1 #5 VERTICAL AT CORNERS, INTERSECTIONS, WALL ENDS, JAMBS AND EACH SIDE OF EXPANSION OR CONTROL JOINTS.
    B. 1 #5 VERTICAL IN EACH CORE WITHIN 12 INCHES OF ALL WALL CORNERS.
12. PLACE BOND BEAM REINFORCING CONTINUOUS THROUGH EXPANSION AND CONTROL JOINTS, WRAPPING BARS WITH 1/8" THICK BOND BREAKING TAPE 2'-0" BOTH SIDES OF JOINT. DO NOT SPLICE BOND BEAM REINFORCING WITHIN 6'-0" OF AN EXPANSION OR CONTROL JOINT.
13. PROVIDE CONTINUOUS WIRE LATHE GROUT BARRIERS AS REQUIRED UNDER FIRST COURSE OF GROUTED CELLS.
14. WET MASONRY WALLS THOROUGHLY FOR 3 CONSECUTIVE DAYS IMMEDIATELY AFTER PLACEMENT IF TEMPERATURES ARE/WILL BE ABOVE 80°F DURING THE DAY.
15. NO EXPANSION BOLTS WILL BE ALLOWED IN MASONRY WALLS. (CHEMICAL ANCHORS ONLY)
16. MASONRY LAID IN OUTSIDE AIR TEMPERATURES BELOW 40° F SHALL BE PROTECTED IN ACCORDANCE WITH THE PROVISIONS OF THE "IMIAWC RECOMMENDED PRACTICES AND GUIDE SPECIFICATIONS FOR COLD WEATHER MASONRY".
17. ALL MASONRY BLOCK CORES BELOW FINISH FLOOR SHALL BE FILLED SOLID WITH 3000 PSI GROUT.
18. PROVIDE LADDER TYPE #9 JOINT REINFORCING AT 16" VERTICAL SPACING IN ALL WALLS.

A4	MASONRY NOTES
–	

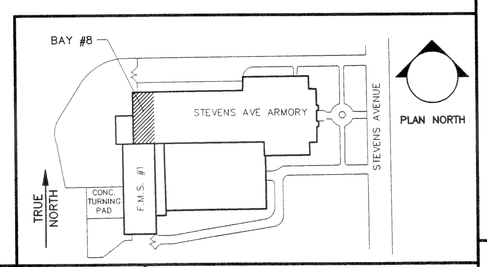
1. THE STRUCTURAL STEEL SUPPLIER SHALL COORDINATE WITH THE BAR JOIST SUPPLIER, LOCATION, PLATE SIZES, AND SLOTS REQUIRED FOR ALL TIE JOISTS. ALSO FOR THE LOCATION AND SIZES OF ALL MISCELLANEOUS BRIDGING CLIP ANGLES REQUIRED FOR PROPER JOIST INSTALLATION. (CONTRACTOR SHALL COORDINATE EFFORT BETWEEN SUPPLIERS).
2. ALL BEARING PLATES SHALL BE 8"x1/2"x0'-8" UNLESS OTHERWISE NOTED AND SHALL BE ANCHORED WITH STANDARD (2) 3/8" ANCHORS
3. MINIMUM LOADING REQUIREMENTS:
   A. ROOF LOADS: (EXCEPT AT DRIFTING SNOW LOCATIONS AND THOSE LISTED BELOW)
      LIVE (SNOW) LOAD: 42.0 P.S.F. (ADJUSTED FLAT)
      DEAD LOAD: 14.0 P.S.F. (VEHICLE MAINTENANCE)

   WIND LOADS:
   A. FACTORS:
      BASIC WIND SPEED: 85 MPH — EXPOSURE CATEGORY: "C"
      IMPORTANCE FACTOR: 1.15 — BUILDING HEIGHT: 25' – 30'
4. ALL STRUCTURAL STEEL BEAMS, COLUMNS SHALL CONFORM TO ASTM A992, Fy=50ksi ALL STEEL TUBE COLUMNS SHALL CONFORM TO ASTM A500 GRADE "B", Fy=46ksi ALL MISCELLANEOUS PLATES, SHAPES, ANGLES ETC. SHALL CONFORM TO ASTM A36 Fy=36ksi.
5. ALL STEEL JOISTS SHALL CONFORM TO THE LATEST S.J.I. STANDARDS.
6. ALL STRUCTURAL WOOD TO CONFORM TO THE LATEST NDS STANDARDS.
7. ALL PLYWOOD TO CONFORM TO THE LATEST PDS STANDARDS.
8. ALL STEEL BEAMS AND BAR JOISTS RESTING ON CONCRETE MASONRY UNIT WALLS SHALL HAVE BEARING PLATES AND (3) COURSES OF FILLED BLOCK UNDERNEATH.
9. WELD BAR JOIST TO BEAMS OR BEARING PLATES WITH (2) FILLET WELDS AT EACH END. SIZE AND LENGTH AS INDICATED ON THE STRUCTURAL DRAWINGS OR AS REQUIRED BY THE STEEL JOIST INSTITUTE.
10. FOR ROOF PENETRATIONS SMALLER THAN 12" DIAMETER-USE 36"x36"x0.057 PLATE PROVIDED BY THE METAL DECK SUPPLIER.
11. STEEL ROOF DECK SHALL BE FASTENED AS SPECIFIED TO STEEL BEAMS, BAR JOIST, AND PERIMETER ANGLES PER SPECIFICATIONS.
12. STRUCTURAL STEEL BAR JOIST SUPPLIER SHALL PROVIDE A LETTER INDICATING THAT ALL SHOP DRAWINGS WERE PREPARED UNDER THE DIRECTION OF A LICENSED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF MAINE. ALL CALCULATIONS SEALED BY A LICENSED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF MAINE SHALL BE SUBMITTED WITH SHOP DRAWINGS FOR REVIEW.
13. PROVIDE CONTINUOUS BAR JOIST BOTTOM CHORD "UPLIFT BEARING" AT THE FIRST PANEL POINT FROM EACH END AND SIZED AS REQUIRED TO SATISFY THE NET WIND UPLIFT REQUIREMENTS LISTED IN THE MINIMUM LOAD REQUIREMENTS.
14. LOADS ARE UNFACTORED AND ALLOWABLE STRESS INCREASE OF 1/3 MAY BE USED IN ACCORDANCE WITH THE BOCA NATIONAL CODE.
15. JOIST AND DECK SUPPLIER SHALL VERIFY CAPACITY OF ALL BAR JOISTS, FASTENING METHOD AND PATTERN OF METAL DECK AND THE SIZE AND LOCATION OF ALL BRIDGING REQUIRED TO SATISFY THE NET WIND UPLIFT LOAD REQUIREMENTS LISTED UNDER THE MINIMUM LOADING REQUIREMENTS.
16. ALL BASE PLATE ANCHOR BOLTS IN NEW CONSTRUCTION WILL BE 3/4"ø A-307 WITH A MINIMUM OF 9" EMBEDMENT AND A STANDARD 3" HOOK. ALL BASE PLATE ANCHOR BOLTS IN EXISTING CONSTRUCTION WILL BE 3/4"ø A-307 WITH A MINIMUM OF 12" EMBEDMENT AND SET IN EPOXY.
17. AT LOCATIONS BETWEEN SUPPORTS, PROVIDE 3/8" WEB STIFFENERS (UNLESS OTHERWISE NOTED) ON BOTH SIDES OF STEEL BEAMS AT ALL LOCATIONS WHERE STEEL BEAMS SUPPORT COLUMNS ABOVE.

A7	STRUCTURAL NOTES
–	

1. ALL WORK SHALL BE DONE IN COMPLIANCE WITH THE 1999 BOCA, INCLUSIVE OF THE PORTLAND, MAINE SUPPLEMENT.
2. THE CONTRACTOR SHALL VISIT THE SITE AT A DESIGNATED TIME APPROVED BY THE OWNER, TO VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, LOCATION OF EXISTING UTILITIES, ETC. THE CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES WITHOUT EXCEPTION.
3. ALL WORK SHALL BE DONE IN AN ORDERLY AND PROFESSIONAL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL WORK TO BE DONE BY SUBCONTRACTORS, LOCAL AUTHORITIES, STATE AGENCIES AND/OR UTILITY COMPANIES WHICH MAY HAVE JURISDICTION OVER THIS PROJECT.
4. ALL UTILITY EXTENSIONS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH STATE AND LOCAL CODES OR AS INDICATED BY THE SPECIFICATIONS.
5. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY EXISTING ITEMS DAMAGED BY NEW CONSTRUCTION, AND FOR ANY INCIDENTAL REPAIRS OF EXISTING FINISHED SURFACES DISTURBED BY NEW CONSTRUCTION; SUCH REPAIRS SHALL MATCH EXISTING TO THE OWNER'S SATISFACTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING, HANDLING, AND STORAGE OF ALL ITEMS/MATERIALS TO REMAIN THE PROPERTY OF THE OWNER WITH THE OWNER'S REPRESENTATIVE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS AND METHODS AND ALL TEMPORARY SHORING, PRECAUTIONS DURING BUILDING OPERATIONS, PROTECTION OF PUBLIC AND WORKERS, REMOVAL OF WASTE MATERIAL, PROTECTION OF ADJACENT PROPERTY, PROTECTION OF HAZARDOUS OPENINGS, SAFETY PRECAUTIONS, AND SANITARY PROVISIONS OF EMPLOYEES AND SUBCONTRACTORS AS REQUIRED FOR THE DURATION OF THE CONTRACT.
8. INSTALL NEW SINGLE-PLY ROOFING SYSTEM (INCLUDING ADHERED EPDM MEMBRANE, OVERLAYMENT BOARD AND ROOFING INSULATION), CURBS, PRESSURE-TREATED WOOD BLOCKING, FLASHING, AND FASCIA/ROOFING EDGE SYSTEM PER DRAWINGS AND SPECIFICATIONS.
9. THE CONTRACTOR SHALL VERIFY ALL EXISTING JOIST END CONDITIONS, FOR PROPER BEARING LENGTH AND ANCHORAGE.

C9	GENERAL NOTES
–	



A9	KEY PLAN
–	

160 Veranda Street
Portland, Maine 04103
T: 207.221.2260
F: 207.221.2266
Web: www.allied-eng.com

Allied Engineering
Structural Mechanical Electrical Commissioning

REVISIONS

NUMBER	DATE	BY	DESCRIPTION

Date: 03/10/2006
Drawn By: PED
Checked By: WPF
Project Mgr: WPF
Project No: 06009
Cad File: 06009SF.DWG
Graphic Scale: 0 1"

STRUCTURAL NOTES AND DETAILS

REPLACE BAY #8 ROOF SYSTEM
F.M.S. #1
PORTLAND, MAINE

© COPYRIGHT 2006 ALLIED ENGINEERING, INC.

S-000