

# GENERAL STRUCTURAL AND CONSTRUCTION NOTES

THESE NOTES SUPPLEMENT THE SPECIFICATIONS WHICH SHALL BE REFERRED TO FOR ADDITIONAL REQUIREMENTS. THESE NOTES APPLY TO CONTRACTORS, SUBCONTRACTORS, MANUFACTURERS, SUPPLIERS, FABRICATORS, ERECTORS, ETC ENGAGED IN THE EXECUTION OF WORK INDICATED ON THESE DRAWINGS.

## A. CODES AND STANDARDS

- THE FOLLOWING CODES AND STANDARDS, INCLUDING ALL SPECIFICATIONS REFERENCED WITHIN, SHALL APPLY TO THE DESIGN, CONSTRUCTION, QUALITY CONTROL AND SAFETY OF ALL WORK PERFORMED ON THE PROJECT. USE THE LATEST EDITIONS UNLESS NOTED OTHERWISE.
  - "THE BOCA NATIONAL BUILDING CODE - 1996", BUILDING OFFICIALS AND CODE ADMINISTRATORS INTERNATIONAL, INC.
  - "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES" (ASCE 7-95), AMERICAN SOCIETY OF CIVIL ENGINEERS.
  - "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 318-95", AMERICAN CONCRETE INSTITUTE.
  - "ACI MANUAL OF CONCRETE PRACTICE - PARTS 1 THROUGH 5 - 1997".
  - "MANUAL OF STANDARD PRACTICE", CONCRETE REINFORCING STEEL INSTITUTE.
  - "MANUAL OF STEEL CONSTRUCTION - ALLOWABLE STRESS DESIGN", NINTH EDITION, 1989, AMERICAN INSTITUTE OF STEEL CONSTRUCTION (INCLUDING SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, SPECIFICATION FOR STRUCTURAL JOISTS USING ASTM A325 OR A490 BOLTS, AND ALSO CODE OF STANDARD PRACTICE.
  - "MANUAL OF STEEL CONSTRUCTION, VOLUME II CONNECTIONS", ASD 9TH EDITION/LRFD 1ST EDITION, AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
  - "DETAILING FOR STEEL CONSTRUCTION", AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
  - "STRUCTURAL WELDING CODE AWS/AWS D1.1-96", AMERICAN WELDING SOCIETY.
  - "STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOISTS, K-SERIES", STEEL JOIST INSTITUTE. (REV TO MAY 2, 1994 - EFFECTIVE SEPTEMBER 1, 1994)
  - "DESIGN MANUAL FOR FLOOR DECKS AND ROOF DECKS", STEEL DECK INSTITUTE.

## B. DESIGN DATA

### 1. GRAVITY - SUPERIMPOSED DEAD LOADS

AREA	PSF
a. ROOF	15
b. FLOORS	25

### 2. GRAVITY - LIVE LOADS

LIVE LOADS ON FOUNDATIONS, COLUMNS, BEAMS, ETC. ARE REDUCIBLE IN ACCORDANCE WITH BOCA BUILDING CODE.

AREA	PSF
a. FLOORS	100
b. ROOF FOR FUTURE FLOORS	100
c. ROOF LIVE LOAD	35 MINIMUM (SHOW LOAD IS USED WHEN GREATER THAN 35 PSF)
d. ROOF SNOW LOAD:	
(1) GROUND SNOW LOAD (Pg):	30
(2) SNOW EXPOSURE FACTOR (Ce):	0.7
(3) SNOW LOAD IMPORTANCE FACTOR (I):	1.0
(4) FLAT-ROOF SNOW LOAD: $P_f = C_e P_g$	= 21 PLUS UNBALANCED, DRIFTING AND SLIDING SNOW WHERE APPLICABLE

### 3. WIND LOADS

- MAIN WIND-FORCE RESISTING SYSTEM:
  - BASIC WIND SPEED: 80 MPH
  - SITE EXPOSURE CATEGORY: B
  - WIND IMPORTANCE FACTOR (I): 1
- BUILDING COMPONENTS & CLADDING:
  - DESIGN IN ACCORDANCE WITH SECTION 1609.8 OF BOCA, USING FOLLOWING:
    - BASIC WIND SPEED: 80 MPH
    - SITE EXPOSURE CATEGORY: C
    - WIND LOAD IMPORTANCE FACTOR: 1
- NET WIND UPLIFT: 25 PSF
- ROOF OVERHANGS: COMPLY WITH SECTION 1609.10 OF BOCA.
- SEISMIC LOADS:
  - STRUCTURAL DESIGN REQUIREMENTS:
    - EFFECTIVE PEAK VELOCITY-RELATED ACCELERATION ( $A_v$ ): < 0.07
    - EFFECTIVE PEAK ACCELERATION ( $A_h$ ): < 0.07
    - SEISMIC HAZARD EXPOSURE GROUP: I
    - SEISMIC PERFORMANCE CATEGORY: B
  - ARCHITECTURAL, MECHANICAL AND ELECTRICAL COMPONENTS AND SYSTEMS: DESIGN COMPLETE SYSTEM IN ACCORDANCE WITH SECTION 1610.8 OF BOCA AND ABOVE INFORMATION.
- LATERAL SOIL LOADS:
  - LATERAL EQUIVALENT FLUID PRESSURE (AS PROVIDED IN GEOTECHNICAL REPORT)
    - AT REST CONDITION (BRACED WALLS): PSF/FT OF DEPTH
    - ACTIVE CONDITION (CANTILEVERED RETAINING WALLS): PSF/FT OF DEPTH
    - SLIDING RESISTANCE (FRICTION FACTOR):

## C. FOUNDATIONS/GEOTECHNICAL REPORT

- FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS INCLUDED IN THE GEOTECHNICAL REPORT PREPARED BY TESTING SERVICES, INC., DATED 12/26/00, REPORT NO. 05002. SEE THAT REPORT FOR ADDITIONAL REQUIREMENTS.
  - FOUNDATIONS PLACED ON UNDISTURBED SOIL AT ELEVATIONS INDICATED HAVE BEEN DESIGNED FOR A NET ALLOWABLE BEARING PRESSURE OF 4000 PSF.
- D. MATERIALS:
- THE FOLLOWING ASTM STANDARDS AND DESIGN STRESSES SHALL BE USED FOR THE APPROPRIATE MATERIALS USED IN THE CONSTRUCTION OF THIS PROJECT.
  - CEMENT: ASTM C150; TYPE I OR II
  - BLENDED HYDRAULIC CEMENT (CEMENT SUBSTITUTES): ASTM C595, TYPE IS (LIMIT TO 35% MAX OF CEMENTITIOUS CONTENT BY WEIGHT)
  - AGGREGATES: ASTM C33 (NORMALWEIGHT)
  - ADMIXTURES:
    - AIR ENTRAINING ADMIXTURES: ASTM C260
    - CHEMICAL ADMIXTURES: ASTM C494
  - CONCRETE: AIR-ENTRAINED ALL EXPOSED CONCRETE  $6\% \pm 1-1\frac{1}{2}\%$  BY VOLUME UNLESS OTHERWISE NOTED. NO AIR FOR STEEL TROWEL FINISH.

APPLICATION	F' @ 28 DAYS (PSI)	WT (PCF)	W/C (MAX)	MAX ALLOWABLE CHLORIDE ION CONTENT
a. FOOTINGS	3000	145	0.55	
b. WALLS	4000	145	0.50	
c. SLABS-ON-GRADE	3500	145	0.55	0.30 [1.00]
d. NORMALWEIGHT ON STEEL DECK	3500	145	0.55	

### 7. REINFORCEMENT:

- DEFORMED REINFORCING BARS: ASTM A615, GRADE 60
- WELDED WIRE FABRIC (WWF): ASTM A185

### B. BEARING MATERIALS:

### 9. STEEL:

- COLUMNS: ASTM A572, GRADE 50
- BEAMS: ASTM A572, GRADE 50
- OTHER STRUCTURAL SHAPES AND PLATES: ASTM A36
- HIGH STRENGTH BOLTS: ASTM A325-N
- ANCHOR BOLTS: ASTM A307 & A449 (AS INDICATED)
- HEADED SHEAR STUDS: ASTM A108
- WELDING ELECTRODES: AWS E51.1 OR E51.5, E70XX
- GALVANIZED STEEL FLOOR DECK: ASTM A446 AND ASTM A525, G-60
- GALVANIZED STEEL ROOF DECK: ASTM A446 AND ASTM A525, G-90
- GROUT: NON-SHRINK, NON-METALLIC, F'c = 5000 PSI

## E. CONSTRUCTION:

### 1. GENERAL:

- DO NOT SCALE DRAWINGS.
- THESE DRAWINGS REPRESENT THE COMPLETED PROJECT WHICH HAS BEEN DESIGNED FOR THE WEIGHTS OF THE MATERIALS INDICATED ON THE DRAWINGS AND FOR THE SUPERIMPOSED LOADS INDICATED IN THE DESIGN DATA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ALLOWABLE CONSTRUCTION LOADS AND PROVIDE PROPER DESIGN AND CONSTRUCTION OF FALSEWORK, FORMWORK, STAGINGS, BRACING, SHEETING AND SHORING, ETC. CONSTRUCTION LOADS EXCEEDING THE COMBINATION OF SUPERIMPOSED DEAD LOAD PLUS SPECIFIED LIVE LOAD ARE NOT PERMITTED ON ANY UNSHORED PORTION OF STRUCTURE UNDER CONSTRUCTION.
- IMPLEMENTING JOB SITE SAFETY AND CONSTRUCTION PROCEDURES ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
- REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING & ELECTRICAL DRAWINGS FOR SIZE AND LOCATIONS OF OPENINGS, SLEEVES, CONCRETE HOUSEKEEPING PADS, INSERTS, EMBEDS, CURBS, RAMPS, DRAINS, DEPRESSIONS, ETC. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
- REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR DETAILED INFORMATION REGARDING FINISHES, FIREPROOFING, WATERPROOFING, ETC.
- REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF MASONRY AND DRYWALL NON-LOAD BEARING PARTITIONS AND EXTERIOR FACE OF BUILDING. PROVIDE SLIP CONNECTIONS THAT ALLOW VERTICAL MOVEMENT AT THE HEADS OF SUCH PARTITIONS. DESIGN CONNECTIONS TO SUPPORT THE TOP OF THE WALLS LATERSALLY FOR THE CODE-REQUIRED LATERAL LOAD. PROVIDE COMPRESSIBLE FIRESTOPPING AT TOP OF WALL IN ACCORDANCE WITH ARCHITECTURAL DRAWINGS.

## 9. IN CASE OF CONFLICT BETWEEN THE GENERAL NOTES, DETAILS AND SPECIFICATIONS, THE MOST RIGID REQUIREMENTS GOVERN.

- REPRODUCTION OF ANY PORTION OF THE STRUCTURAL CONTRACT DRAWINGS FOR RESUBMITTAL AS SHOP DRAWINGS IS PROHIBITED. SHOP DRAWINGS PRODUCED IN SUCH A MANNER WILL BE REJECTED AND RETURNED.
- SUBMIT SHOP DRAWINGS AT LEAST 15 BUSINESS DAYS BEFORE DATE REVIEWED SUBMITTALS WILL BE NEEDED. SHOP DRAWINGS SHALL BEAR THE CONTRACTOR'S STAMP OF APPROVAL WHICH SHALL CONSTITUTE CERTIFICATION THAT HE HAS VERIFIED ALL FIELD MEASUREMENTS, CONSTRUCTION CRITERIA, MATERIALS AND SIMILAR DATA AND HAS CHECKED EACH DRAWING FOR COMPLETENESS, COORDINATION AND COMPLIANCE WITH THE CONTRACT DOCUMENTS. SUBMIT TWO SETS OF PRINTS AND ONE SET OF SEPIAS. ONE MARKED UP SET OF SEPIAS WITH COMMENTS BY STRUCTURAL ENGINEER OF RECORD WILL BE RETURNED.
- SUBMIT CALCULATIONS AND DRAWINGS FOR ALL OF THE FOLLOWING ASSEMBLIES, DESIGN ASSEMBLIES UNDER THE DIRECT SUPERVISION OF ENGINEER REGISTERED IN THE PROJECT'S JURISDICTION. ALL SUBMITTALS SHALL BEAR THE ENGINEER'S SEAL & SIGNATURE. REVIEW SHALL BE FOR GENERAL CONFORMANCE WITH THE PROJECT PARAMETERS AS INDICATED ON THE DRAWINGS AND IN THE GENERAL NOTES.
  - NON-LOAD BEARING STUD WALL (INCLUDING EXTERIOR WALLS) AND CURTAINWALL SYSTEMS AND RELATED CONNECTIONS: DESIGN FOR ALL VERTICAL AND LATERAL LOADS REQUIRED BY APPLICABLE BUILDING CODES. PROVIDE SLIP CONNECTIONS THAT ALLOW VERTICAL MOVEMENT AT THE HEADS OF WALLS. DESIGN BACK-UP SYSTEM AND CURTAINWALL FOR A MAXIMUM HORIZONTAL DEFLECTION OF 1/600 OF THE SPAN IN INCHES, OR 3/8", WHICHEVER IS LESS, AT THE APPLICABLE DESIGN WIND LOAD.
  - METAL STAIRS AND RAILINGS: DESIGN FOR ALL VERTICAL AND LATERAL LOADS REQUIRED BY APPLICABLE BUILDING CODES. WHERE HEADERS OR OTHER TYPES OF STRUCTURAL MEMBERS HAVE BEEN DESIGNATED BY THE STRUCTURAL ENGINEER OF RECORD TO SUPPORT THE STAIRS, DESIGN CONNECTIONS FROM THE STAIRS SO THAT NO ECCENTRIC OR TORSIONAL FORCES ARE INDUCED INTO THESE STRUCTURAL MEMBERS. FURNISH AND INSTALL EMBEDS AND HARDWARE AS REQUIRED BY THE STAIR DESIGN.
- SUBMIT DIMENSIONED SHOP DRAWINGS AT ALL LEVELS LOCATING FLOOR AND ROOF EDGES FOR REVIEW BY THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD.
- STORE AND HANDLE STRUCTURAL CONSTRUCTION MATERIALS TO PREVENT ANY ADVERSE EFFECTS ON THE PHYSICAL PROPERTIES OF THE MATERIAL.
- PAY ALL COSTS, INCLUDING INVESTIGATION AND/OR REDESIGN, DUE TO CONTRACTOR MISLOCATION OF STRUCTURAL ELEMENTS OR OTHER LACK OF CONFORMANCE WITH THE CONTRACT DOCUMENTS TO BRING WORK IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.

## 2. INSPECTION AND TESTING:

- THE OWNER WILL ENGAGE AN APPROVED TESTING AGENCY TO PROVIDE SERVICES AS INDICATED BELOW. SUBMIT REPORTS TO STRUCTURAL ENGINEER OF RECORD AND CODE OFFICIAL (AS APPLICABLE).
- CAST-IN-PLACE CONCRETE:
  - THE AGENCY SHALL INSPECT THE FORMWORK AND REINFORCING STEEL PLACEMENT FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS AND SHOP DRAWINGS. THE AGENCY SHALL MONITOR ALL STRUCTURAL CONCRETE PLACEMENT FOR CONFORMANCE WITH APPLICABLE ACI REQUIREMENTS.
  - SAMPLE FRESH CONCRETE IN ACCORDANCE WITH ASTM C172. HOLD TEST CYLINDERS IN ACCORDANCE WITH ASTM C31.
  - THE FOLLOWING NUMBER OF TEST CYLINDERS SHALL BE CAST FOR EACH DAY'S POUR OR EACH 500 CUBIC YARDS, WHICHEVER RESULTS IN MORE TEST CYLINDERS:

FOR FOOTINGS AND OTHER STRUCTURAL CONCRETE:	2 @ 7 DAYS, LAB CURED
	2 @ 28 DAYS, LAB CURED
  - THE AGENCY SHALL MAKE ADDITIONAL TESTS OF IN-PLACE CONCRETE AT THE CONTRACTOR'S EXPENSE WHEN TEST RESULTS INDICATE SPECIFIED CONCRETE STRENGTHS HAVE NOT BEEN ATTAINED, AS DIRECTED BY THE STRUCTURAL ENGINEER OF RECORD.
- STRUCTURAL STEEL:
  - THE AGENCY SHALL VISUALLY INSPECT ALL FILLET WELDS, BOLTED CONNECTIONS AND SHEAR STUDS.
  - THE AGENCY SHALL PERFORM WELDING INSPECTION AND TESTING PROCEDURES IN ACCORDANCE WITH THE AWS CODE.
  - TEST EACH FULL PENETRATION BUTT OR GROOVE WELD AND 50% OF PARTIAL PENETRATION WELDS BY THE ULTRASONIC METHOD ASTM E164.
  - TEST 10% OF ALL FIELD FILLET WELDS IN PRIMARY CONNECTIONS AND MULTI-PASS WELDS BY THE MAGNETIC PARTICLE METHOD ASTM E709.
  - TEST ANY WELD FOR WHICH VISUAL EXAMINATION INDICATES AN UNUSUAL CONDITION AND/OR POOR QUALITY.

## F. FOUNDATIONS & STRUCTURAL EARTHWORK:

### 1. GENERAL:

- REFER TO PROJECT SPECIFICATION AND GEOTECHNICAL REPORT REQUIREMENTS FOR EXCAVATION AND PREPARATION OF THE FOUNDATION AND SLAB-ON-GRADE SUBGRADES, INCLUDING COMPACTION PROCEDURES. REQUIREMENTS CONTAINED IN THE GEOTECHNICAL REPORT ARE PART OF THIS WORK.

- VERIFY ALL EXISTING FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE FOUNDATION SYSTEM AS SHOWN PRIOR TO STARTING WORK.
- UNKNOWN UTILITIES MAY ALSO BE PRESENT. LOCATE AND PROTECT ALL EXISTING UTILITIES, WHICH MAY BE AFFECTED BY THE CONSTRUCTION PROCESS.
- DESIGN, INSTALL, MAINTAIN, MONITOR AND REMOVE DRAINAGE AND EARTH RETENTION SYSTEMS. COORDINATE ELEMENTS OF EARTH RETENTION SYSTEM WITH PERMANENT BUILDING ELEMENTS. DESIGN EARTH RETENTION SYSTEM UNDER THE DIRECT SUPERVISION OF ENGINEER REGISTERED IN THE PROJECT'S JURISDICTION. SUBMIT CALCULATIONS, SHOP DRAWINGS AND SEQUENCE PLAN BEARING ENGINEER'S SEAL AND SIGNATURE.
- PROTECT EXISTING AND NEW STRUCTURES, CURBS, STREETS, ETC FROM DAMAGE BY CONSTRUCTION EQUIPMENT. REPAIR DAMAGE OF EXISTING AND NEW CONSTRUCTION CAUSED BY CONSTRUCTION TECHNIQUES OR MOVEMENT OF EARTH RETENTION SYSTEM.
- REFER TO PLUMBING DRAWINGS FOR PERIMETER DRAIN AND UNDERFLOOR DRAINAGE SYSTEM.
- DO NOT PLACE UTILITY LINES THROUGH OR BELOW FOUNDATIONS WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD.
- BEAR ALL FOUNDATIONS ON UNDISTURBED SOIL OR COMPACTED STRUCTURAL FILL. BEARING ELEVATIONS ARE ESTIMATED FROM SOIL BORING DATA INDICATED IN THE GEOTECHNICAL REPORT. DETERMINATION OF FINAL BEARING ELEVATIONS AND FIELD VERIFICATION OF ALLOWABLE BEARING PRESSURE SHALL BE MADE BY AN EXPERIENCED, QUALIFIED GEOTECHNICAL ENGINEER PRIOR TO PLACING FOUNDATIONS. NOTIFY STRUCTURAL ENGINEER OF RECORD WHEN ADDITIONAL EXCAVATION IS REQUIRED TO REACH SUITABLE BEARING MATERIAL.
- BEAR FOUNDATIONS A MINIMUM OF 3'-0" BELOW GRADE UNLESS OTHERWISE INDICATED. IN CASE OF CONFLICT, NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD IN ADVANCE OF ANY CONSTRUCTION TO ALLOW FOR ADJUSTMENT.
- THE SLOPE BETWEEN THE LOWER EDGES OF ADJACENT FOOTINGS NOT TO EXCEED 1.5 TO 1.0 WITH THE HORIZONTAL, UNLESS INDICATED OTHERWISE IN THE GEOTECHNICAL REPORT. PROTECT SUBGRADES, SLOPES AND FOOTINGS FROM DAMAGES CAUSED BY LATERAL MOVEMENT, UNDERMINING, WASHOUT, SETTLEMENT AND OTHER HAZARDS CREATED BY EXCAVATION.
- DO NOT USE EARTH CUTS AS FORMS FOR VERTICAL SURFACES UNLESS APPROVED IN ADVANCE BY STRUCTURAL ENGINEER OF RECORD.
- PLACE CONCRETE FOR FOUNDATIONS OR MUD SLABS ON THE SAME DAY SUBGRADE APPROVAL IS GIVEN BY THE GEOTECHNICAL ENGINEER.
- PROTECT CONCRETE FOUNDATIONS FROM FREEZING DURING PLACING AND FOR A PERIOD OF NOT LESS THAN 5 DAYS THEREAFTER.
- PROVIDE CONTINUOUS WATERSTOP AT ALL HORIZONTAL AND VERTICAL CONSTRUCTION IN BASEMENT WALLS AND ALL ELEVATOR PIT AND OTHER PIT WALLS.
- DO NOT DISPOSE OF ANY LIQUIDS, SLURRY, SPOILS OR CHEMICALS ON THE SITE EXCEPT AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL RESOURCES OR OTHER AGENCIES HAVING JURISDICTION.

## 2. BACKFILL:

- USE BACKFILL MATERIAL CONSISTING OF BANK RUN GRAVEL, CRUSHED STONE AND/OR MATERIAL APPROVED BY THE GEOTECHNICAL ENGINEER, WITH OPTIMUM MOISTURE CONTENT FOR COMPACTING AND FREE OF ANY DEBRIS.
- DO NOT BACKFILL AGAINST FOUNDATION WALLS UNTIL THE UPPER BRACING FLOORS ARE IN PLACE FOR AT LEAST 7 DAYS AND CONCRETE HAS ATTAINED 75% OF DESIGN STRENGTH, OR ADEQUATE TEMPORARY BRACING IS INSTALLED.
- WHERE THE FINAL GRADE ELEVATIONS ARE APPROXIMATELY EQUAL ON BOTH SIDES OF A WALL, BACKFILL IN LIFTS TO MAINTAIN LEVEL ELEVATIONS WITHIN 12" ON BOTH SIDES AT ANY TIME TO PREVENT LATERAL MOVEMENT AND/OR OVERTURNING.

## 3. STRUCTURAL FILL:

- REFER TO SPECIFICATIONS AND GEOTECHNICAL REPORT REQUIREMENTS FOR COMPACTED STRUCTURAL FILL. REQUIREMENTS CONTAINED IN THE GEOTECHNICAL REPORT ARE PART OF THIS WORK. INSPECTION OF THE PLACEMENT OF COMPACTED STRUCTURAL FILL SHALL BE BY AN EXPERIENCED, QUALIFIED GEOTECHNICAL ENGINEER.

## G. CONCRETE:

### 1. CAST-IN-PLACE:

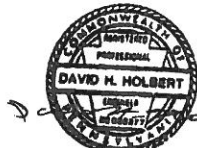
- COMPLY WITH REQUIREMENTS OF "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE" (ACI 301-96) EXCEPT AS MODIFIED BY THESE NOTES AND PROJECT SPECIFICATION. KEEP COPY OF ACI FIELD REFERENCE MANUAL, SP-15 IN FIELD OFFICE.
- PROVIDE MINIMUM CLEAR COVER FOR REINFORCING AS FOLLOWS UNLESS OTHERWISE NOTED:

(1) NON-POST-TENSIONED CONCRETE:	
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3"
CONCRETE EXPOSED TO EARTH OR WEATHER:	2"
#8 BARS AND LARGER	1-1/2"
#5 BARS AND SMALLER	
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:	
SLABS, WALL, JOISTS:	
#11 BARS AND SMALLER	3/4"
BEAMS, COLUMNS:	
PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS	1-1/2"

- SPLICE REINFORCEMENT AS DETAILED OR AUTHORIZED BY THE STRUCTURAL ENGINEER OF RECORD. MAKE BARS CONTINUOUS AROUND CORNERS. SPLICES SHALL BE MADE BY CONTACT TENSION LAP SPLICES, UNLESS OTHERWISE NOTED.
- WELDING OF REINFORCING IS NOT PERMITTED UNLESS SPECIFICALLY CALLED FOR OR APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
- FIELD BENDING OF REINFORCING PARTIALLY EMBEDDED IN CONCRETE IS NOT PERMITTED UNLESS OTHERWISE SHOWN OR APPROVED BY STRUCTURAL ENGINEER OF RECORD.
- SUPPLY WELDED WIRE FABRIC REINFORCEMENT IN SHEETS. LAP TWO FULL MESH LENGTHS AT SPLICES AND WIRE TOGETHER.
- FURNISH ALL ACCESSORIES, CHAIRS, SPACE BARS, SUPPORTS, ETC. NECESSARY TO SECURE REINFORCING.
- PROVIDE PLASTIC TIPPED BOLSTERS AND CHAIRS AT ALL LOCATIONS WHERE THE CONCRETE SURFACE IN CONTACT WITH THE BOLSTERS OR CHAIRS IS EXPOSED.
- PROVIDE 5" THICK CONCRETE SLAB-ON-GRADE, PLACED ON A VAPOR RETARDER OVER A MINIMUM 4" LAYER OF CLEAN, WELL-GRADED GRAVEL OR CRUSHED STONE OVER COMPACTED SUBGRADE. UNLESS OTHERWISE NOTED, REINFORCE WITH #6 WELDED WIRE FABRIC, UNLESS OTHERWISE NOTED. REFER TO GEOTECHNICAL REPORT FOR REQUIRED IN-PLACE DENSITY OF SUBGRADE SOILS.
- ARRANGE CONSTRUCTION JOINTS AND CONTROL JOINTS IN SLABS-ON-GRADE TO LIMIT MAXIMUM AREA BETWEEN JOINTS TO 500 S.F. APPROXIMATELY SQUARE. ALLOW A MINIMUM OF 48 HOURS TIME BETWEEN PLACEMENT OF ADJACENT SECTIONS.
- PROVIDE ADDITIONAL BARS AT RE-ENTRANT CORNERS AND AROUND ALL WALL AND SLAB OPENINGS AS INDICATED IN DETAILS. PROVIDE A MINIMUM OF 2 #5 X 8'-0" AT EACH CORNER.
- CAST-IN-PLACE INSERTS AND SLEEVES WHENEVER FEASIBLE.
- PLACING SLEEVES THROUGH CONCRETE ELEMENTS IS NOT PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS, APPROVED SLEEVING SHOP DRAWINGS OR SPECIFICALLY AUTHORIZED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD.
- LOCATE CONSTRUCTION JOINTS AS NOT TO IMPAIR THE STRENGTH OF THE STRUCTURE.
- LOCATE CONSTRUCTION JOINTS FOR SLABS ON METAL DECK MIDWAY BETWEEN BEAMS WHERE THE JOINT IS PARALLEL TO THE BEAM SPAN. LOCATE JOINTS WITHIN THE MIDDLE THIRD OF SPAN WHERE THE JOINT IS PERPENDICULAR TO THE BEAM SPAN. SUBMIT SHOP DRAWINGS INDICATING PROPOSED JOINT LOCATIONS AND REINFORCING STEEL TO BE PLACED IN THE SLAB. ANY STOP IN CONCRETE WORK MUST BE MADE WITH VERTICAL BULKHEADS, UNLESS OTHERWISE SHOWN. REINFORCING TO BE CONTINUOUS THROUGH JOINTS.
- FINISH CONCRETE SLABS FLAT AND LEVEL WITHIN TOLERANCE, TO THE ELEVATION INDICATED ON THE DRAWINGS. REFER TO NOTES AND DETAILS FOR CAMBER REQUIREMENTS. PROVIDE ADDITIONAL CONCRETE REQUIRED DUE TO FORMWORK AND FRAMING DEFLECTION TO ACHIEVE THIS FINISHED TOP OF SLAB ELEVATION. FOR SLABS ON STEEL DECK, ANTICIPATE A MINIMUM TEN PERCENT INCREASE IN CONCRETE VOLUME FOR UNSHORED CONSTRUCTION, UNLESS OTHERWISE NOTED.
- CHAMFER EXPOSED CONCRETE CORNERS, 3/4" X 3/4" MINIMUM, UNLESS OTHERWISE NOTED ON ARCHITECTURAL DRAWINGS.
- POWDER DRIVEN FASTENERS PERMITTED WHEN PROVEN TO THE SATISFACTION OF THE STRUCTURAL ENGINEER OF RECORD THAT THE FASTENERS WILL NOT SPALL THE CONCRETE AND HAVE THE SAME CAPACITY AS CAST-IN-PLACE INSERTS. TAKE MEASURES TO AVOID DRILLING EXISTING REINFORCING AND DESTRUCTION OF CONCRETE.
- WHEN INSTALLING EXPANSION BOLTS OR ADHESIVE ANCHORS, TAKE MEASURES TO AVOID DRILLING OR CUTTING OF EXISTING REINFORCING AND DESTRUCTION OF CONCRETE. BLOW HOLES CLEAN PRIOR TO PLACING BOLTS OR ADHESIVE ANCHORS.

## H. STRUCTURAL STEEL:

- SUBMIT CERTIFIED COPIES OF MILL TEST REPORTS TO THE STRUCTURAL ENGINEER OF RECORD FOR RECORD PURPOSES ONLY.
- PROVIDE ACCESS FOR INSPECTION OF ALL SHOP AND FIELD CONNECTIONS FOR PROPER MATERIALS AND WORKMANSHIP.
- OBTAIN CURRENT EVIDENCE OF WELDERS PASSING THE APPROPRIATE AWS QUALIFICATION TESTS. SUCH EVIDENCE MAY BE REQUESTED AT ANY TIME DURING THE PROJECT.
- PERMANENT FRAMING AND FINAL CONNECTION DETAILS ARE SHOWN ON THE DRAWINGS. THE FABRICATOR AND ERECTOR ARE RESPONSIBLE FOR THE DESIGN OF TEMPORARY BRACING AND RECOMMENDED ERECTION PROCEDURES.
- ALTERNATE CONNECTION DESIGNS SHALL ONLY BE ALLOWED WITH PRIOR APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD. IF SUCH APPROVAL IS GRANTED, DESIGN ALL CONNECTIONS, SPLICES AND ERECTION PIECES NOT IN ACCORDANCE WITH CONTRACT DRAWINGS (FABRICATOR REDESIGN) UNDER THE DIRECT SUPERVISION OF ENGINEER REGISTERED IN THE PROJECT'S JURISDICTION. SUBMIT CALCULATIONS AND SHOP DRAWINGS BEARING ENGINEER'S SEAL AND SIGNATURE.
- PROVIDE HIGH STRENGTH BOLTS OR WELDS FOR ALL SHOP AND FIELD CONNECTIONS. USE HIGH STRENGTH BOLTS AND NUTS WITH CLEAR MARKINGS AS REQUIRED BY AISC SPECIFICATIONS. CONNECTIONS MADE WITH UNMARKED BOLTS AND NUTS WILL BE REJECTED.
- SELECT CONNECTIONS FOR REACTIONS SHOWN ON PLANS AND AS DETAILED AND SCHEDULED. PROVIDE CONNECTIONS CONSISTING OF A MINIMUM OF TWO 3/4" DIA. A325-N BOLTS AND/OR WELDS DEVELOPING NOT LESS THAN 10,000 POUNDS. MINIMUM WELD 3/16" FILLET.
- TIGHTEN ALL A325 BOLTS TO THE "SNUG TIGHT" CONDITION DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH, UNLESS OTHERWISE NOTED. THE SNUG TIGHT CONDITION MUST ENSURE THAT THE PLIES OF THE CONNECTED MATERIAL HAVE BEEN BROUGHT INTO SNUG CONTACT.



— DEPARTMENT OF LABOR & INDUSTRY  
— APPROVAL

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"USE OF DRAWING AS A BASE SHEET FOR SHOP OR ERECTION DRAWINGS IS ILLEGAL."  
PROJECT No. 2000 186.00

MEDICAL OFFICE BUILDING  
CENTURY DRIVE ASSOCIATES

GENERAL NOTES

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1600 North Second Street  
Harrisburg, PA. 17102-2499  
717-234-2581 (fax 234-1201)

PLOT NO.	DATE @ 3/30/01
PROJECT NO.	DRAWING NO.
	S-1

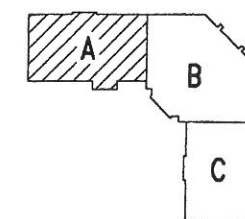
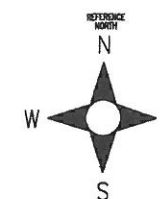


PLAN NOTES:

1. TOP OF SLAB IS AT ELEVATION = 449.67' = DATUM ELEVATION 0'-0" UNLESS NOTED.
2. ALL ELEVATIONS INDICATED ( $\pm 0'-0"$ ) ARE TAKEN FROM DATUM ELEVATION.
3. TOP OF INTERIOR FOOTING ELEVATION = -1'-0" UNLESS NOTED.
4. TOP OF EXTERIOR FOOTING ELEVATION = -3'-6" UNLESS NOTED. TOP OF WALL FOOTING ELEVATION TO MATCH ADJACENT COLUMN FOOTING. STEP FOOTING AS REQUIRED.
5. COLUMN AND FOOTING KEY:

The diagram shows a cross-section of a column and footing. A dashed rectangle represents the column, with a vertical line through its center labeled 'COLUMN SIZE'. Below the column is a solid rectangle representing the footing. A horizontal line at the top of the footing is labeled 'TOP OF FOOTING ELEVATION RELATIVE TO DATUM ELEVATION (IF DIFFERENT FROM TYPICAL)'. A vertical line from the top of the footing to the top of the column is labeled 'F-5.0' and '(-5'-0")'. A horizontal line from the center of the column to the center of the footing is labeled 'M89-21' and '38"-1"'. A vertical line from the top of the footing to the base of the column is labeled 'BASE PLATE MARK (SEE SCHEDULE ON S-12)'.

6. ALL PIERS, COLUMNS AND FOOTINGS SHALL BE CENTERED ON COLUMN LINES UNLESS NOTED.
7. SEE S-1 FOR GENERAL NOTES.
8. SEE S-12 THRU S-17 FOR TYPICAL DETAILS.



### KEY PLAN

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**CAGLEY & ASSOCIATES**  
Structural Engineers  
Rockville, MD. 20852-3973  
Phone (301) 881-9050

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**PROJECT No. 2000 186.00**

MEDICAL OFFICE BUILDING  
CENTURY DRIVE ASSOCIATES

FIRST FLOOR/FOUNDATION PLAN  
PART A

**Murray Associates  
Architects, P.C.**  
1600 North Second Street  
Harrisburg, PA. 17102-2499  
717-234-2581 (fax 234-1201)

PLOT NO.	DATE 3/30/01
PROJECT NO.	DRAWING NO. S-2





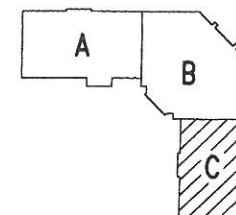
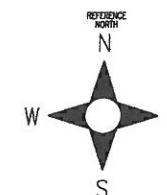
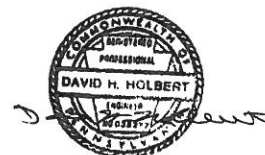


PLAN NOTES:

1. TOP OF SLAB IS AT ELEVATION = 449.67' = DATUM ELEVATION 0'-0" UNLESS NOTED.
2. ALL ELEVATIONS INDICATED ( $\pm 0'-0"$ ) ARE TAKEN FROM DATUM ELEVATION.
3. TOP OF INTERIOR FOOTING ELEVATION = -1'-0" UNLESS NOTED.
4. TOP OF EXTERIOR FOOTING ELEVATION = -3'-6" UNLESS NOTED. TOP OF WALL FOOTING ELEVATION TO MATCH ADJACENT COLUMN FOOTING. STEP FOOTING AS REQUIRED.
5. COLUMN AND FOOTING KEY:

The diagram illustrates a column and footing key. A dashed rectangle represents the column, with a vertical dimension line on the left labeled 'COLUMN SIZE'. A solid rectangle represents the footing, with a vertical dimension line on the left labeled '8'-0"'. A horizontal dimension line at the top of the footing is labeled 'F=5.0' and '(-1'-0")'. A vertical dimension line on the right of the footing is labeled 'TOP OF FOOTING ELEVATION RELATIVE TO DATUM ELEVATION (IF DIFFERENT FROM TYPICAL)'. A horizontal dimension line at the bottom of the footing is labeled 'BASE PLATE MARK (SEE SCHEDULE ON S-12)'. A vertical dimension line on the left of the column is labeled 'W8x21'.

6. ALL PIERS, COLUMNS AND FOOTINGS SHALL BE CENTERED ON COLUMN LINES UNLESS NOTED.
7. SEE S-1 FOR GENERAL NOTES.
8. SEE S-12 THRU S-17 FOR TYPICAL DETAILS.



KEY PLAN

**CAGLEY & ASSOCIATES**  
Structural Engineers  
Rockville, MD. 20852-3973  
Phone (301) 581-9050

**CAGLEY & ASSOCIATES**

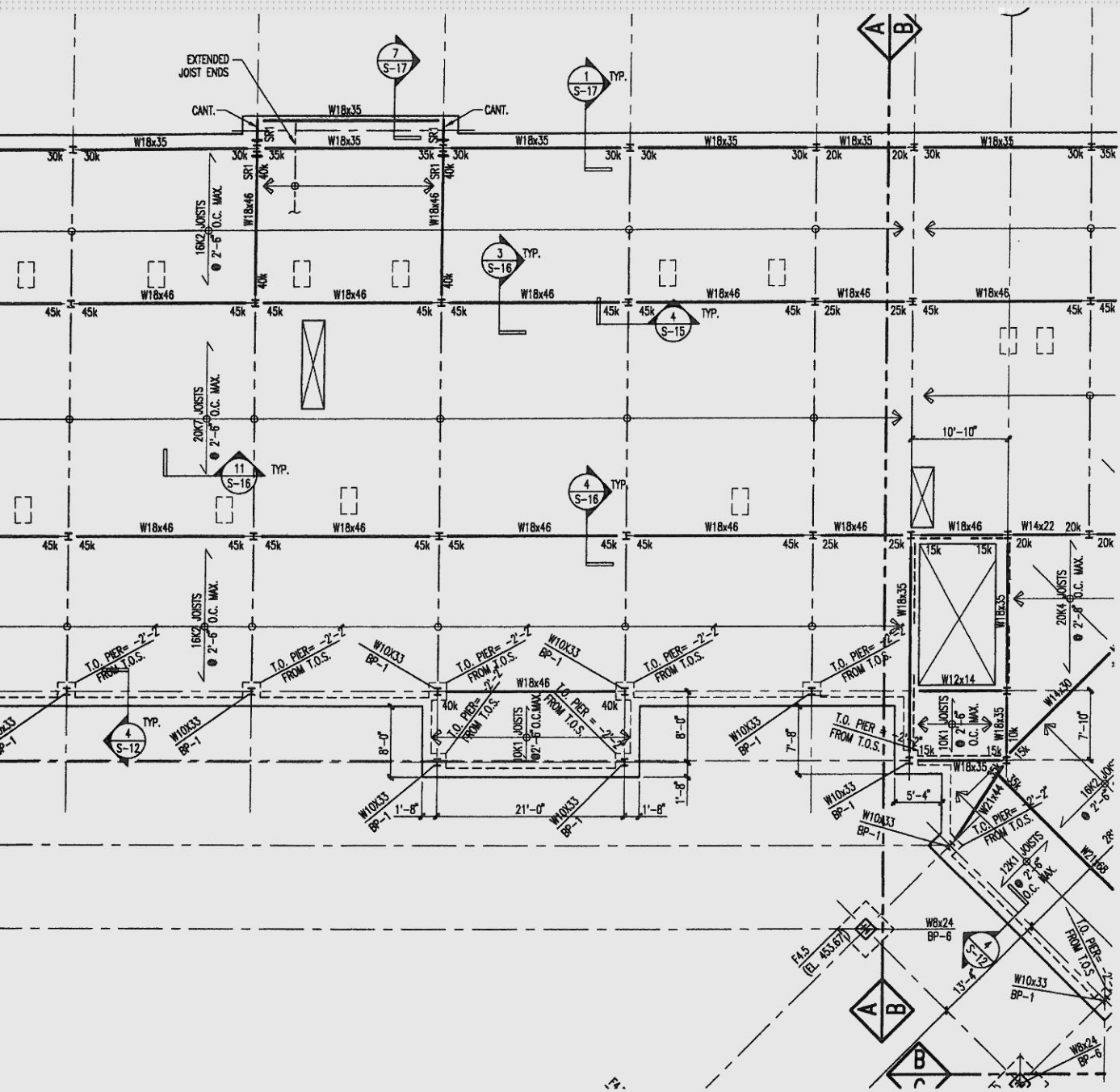
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**PROJECT No. 2000 188.00**

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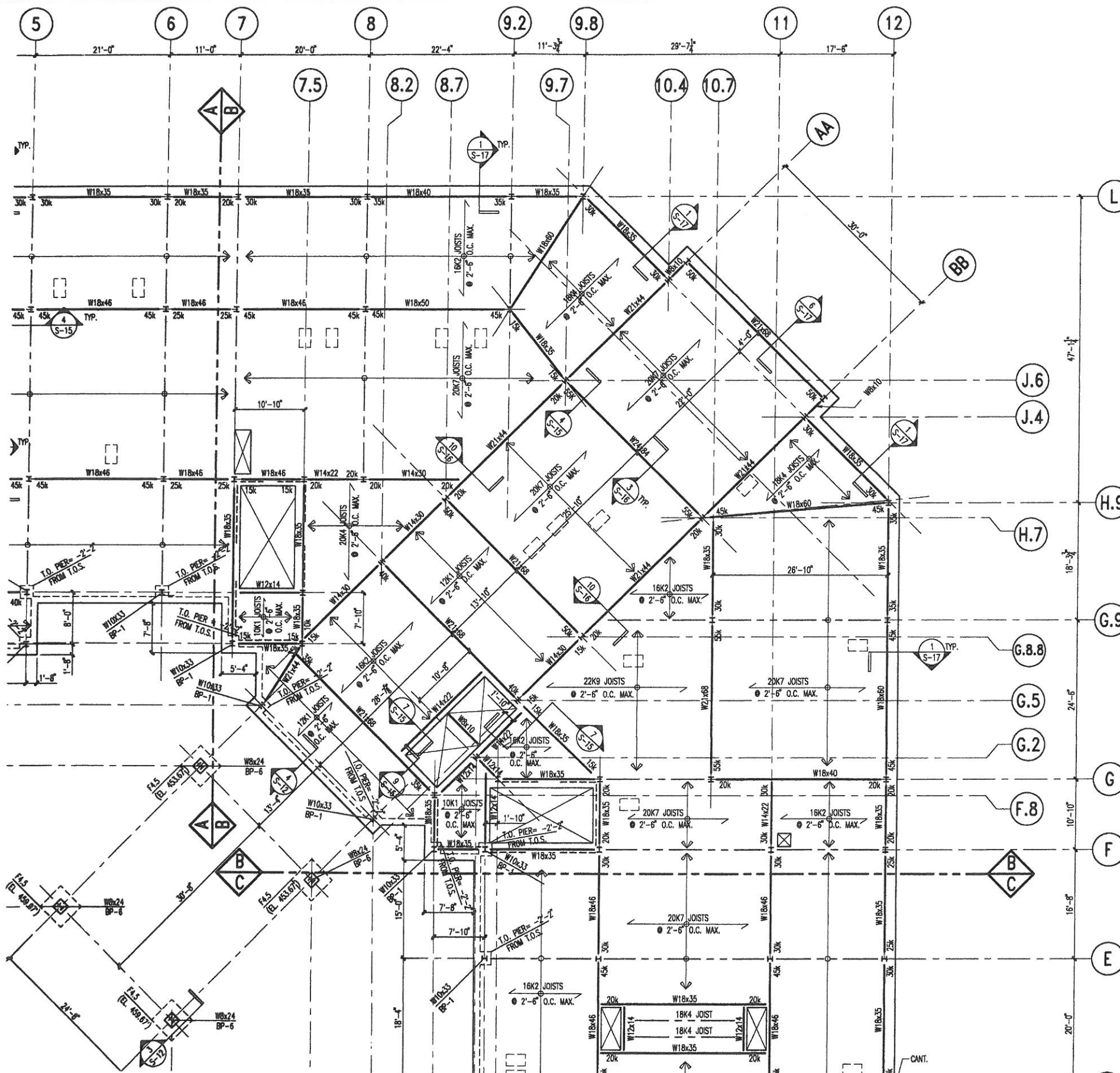
FIRST FLOOR/FOUNDATION PLAN  
PART C

**Murray Associates  
Architects, P.C.**  
1600 North Second Street  
Harrisburg, PA. 17102-2499  
717-234-2581 (fax 234-1201)

PLOT NO.	DATE 3/30/01
PROJECT NO.	DRAWING NO. S-4

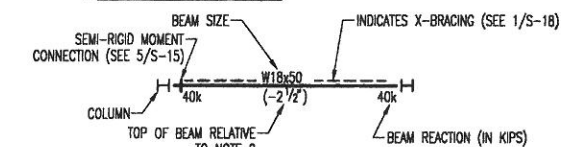




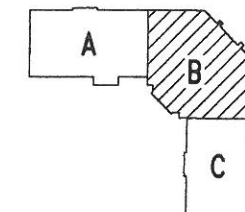
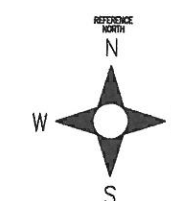


## SECOND FLOOR FRAMING PLAN PART B

- 1/8" = 1'-0"
- PLAN NOTES:
1. TOP OF SLAB IS AT ELEVATION = 462.67' UNLESS NOTED. THIS IS TO BE REFERENCE ELEVATION FOR THIS FLOOR.
  2. TOP OF STEEL (BOTTOM OF METAL DECK) IS 3" BELOW TOP OF FLOOR SLAB UNLESS NOTED.
  3. STRUCTURAL SLAB TO BE 3" NORMAL WEIGHT CONCRETE OVER 3/8" DEEP x 28 GAGE GALVANIZED FORM DECK (TOTAL THICKNESS = 3") REINFORCED WITH 6x6 W2.1xW2.1 WWF.
  4. TOP OF STEEL ELEVATION OF BEAMS PARALLEL TO JOISTS IS TO MATCH TOP OF JOIST UNLESS NOTED OTHERWISE.
  5. STRUCTURAL STEEL FRAMING KEY:



6. ALL JOISTS ARE SPACED EVENLY BETWEEN COLUMN LINES UNLESS NOTED.
  7. SEE S-1 FOR GENERAL NOTES.
  8. SEE S-12 THRU S-17 FOR TYPICAL DETAILS.
  9. COORDINATE SIZE AND LOCATION OF ALL OPENINGS AND SLEEVES WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS.
  10. [ ] INDICATES MECH. UNIT, SEE MECH. DRAWING FOR EXACT LOCATION.
  11. COLUMN AND FOOTING KEY:
- FOOTING MARK (SEE SCHEDULE ON S-12)
- COLUMN SIZE
- TOP OF FOOTING ELEVATION RELATIVE TO DATUM ELEVATION (IF DIFFERENT FROM TYPICAL)
- BASE PLATE MARK (SEE SCHEDULE ON S-12)
12. ALL PIERS, COLUMNS AND FOOTINGS SHALL BE CENTERED ON COLUMN LINES UNLESS NOTED.



KEY PLAN

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Structural Engineers  
Rockville, MD. 20852-3973  
Phone (301) 881-9050

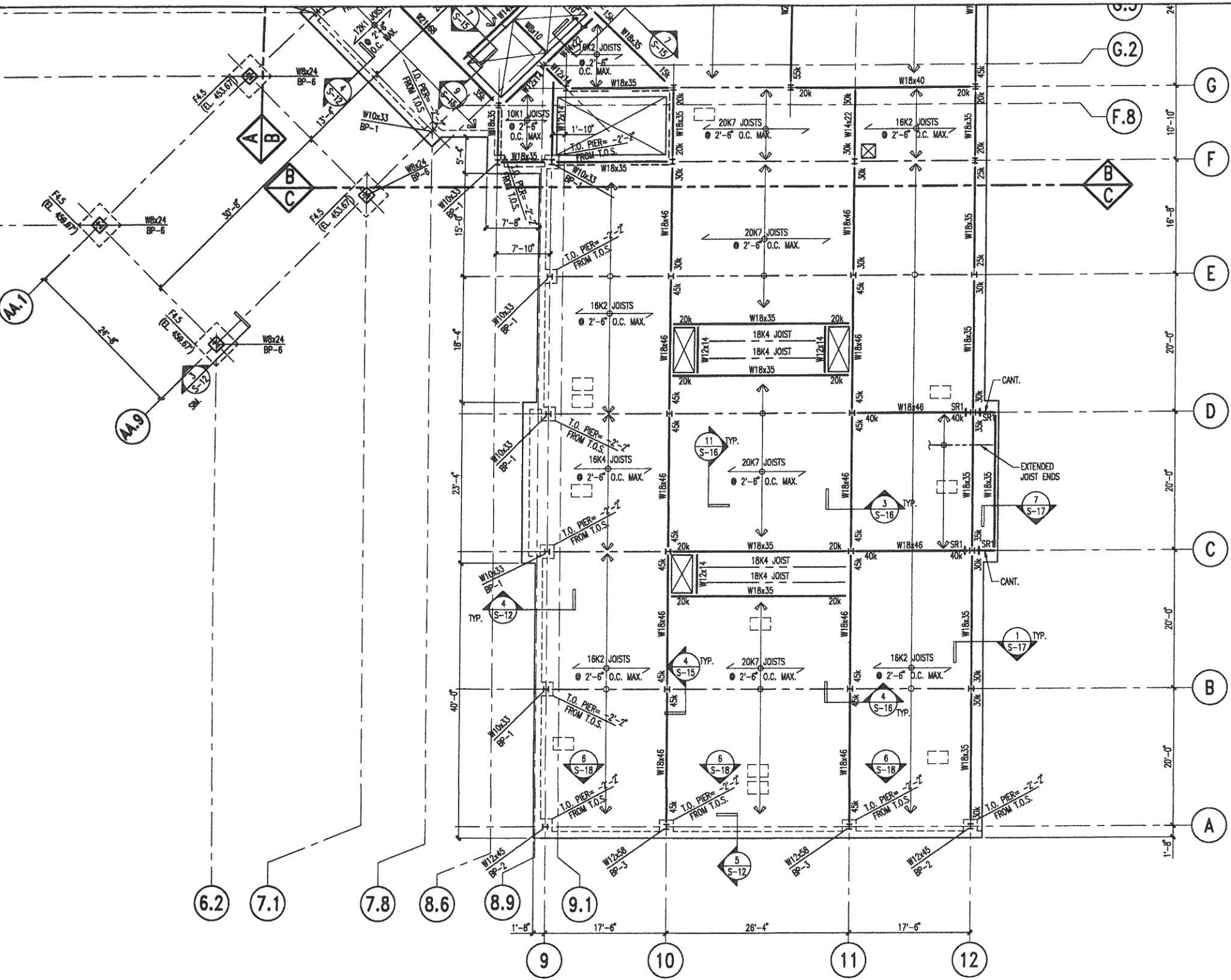
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MEDICAL OFFICE BUILDING  
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SECOND FLOOR FRAMING PLAN  
PART B

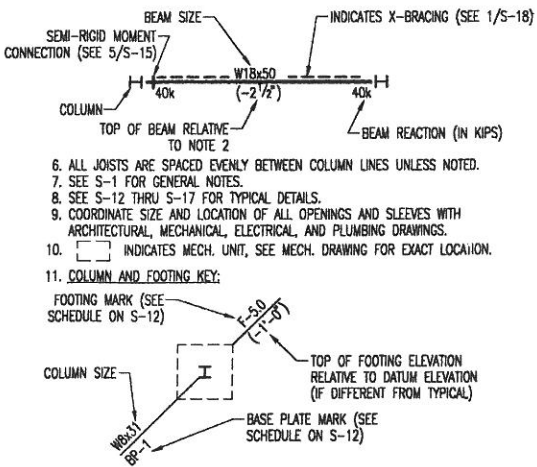
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Architects, P.C.**  
1600 North Second Street  
Harrisburg, PA. 17102-2499  
717-234-2581 (fax 234-1201)

PLOT NO.	DATE 3/30/01
PROJECT NO.	DRAWING NO.
	<b>S-6</b>

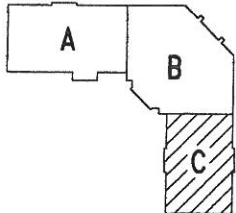
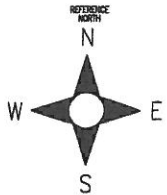


# SECOND FLOOR FRAMING PLAN PART C

- PLAN NOTES:
1. TOP OF SLAB IS AT ELEVATION = 462.67' UNLESS NOTED. THIS IS TO BE REFERENCE ELEVATION FOR THIS FLOOR.
  2. TOP OF STEEL (BOTTOM OF METAL DECK) IS 3" BELOW TOP OF FLOOR SLAB UNLESS NOTED.
  3. STRUCTURAL SLAB TO BE 3" NORMAL WEIGHT CONCRETE OVER 9/16" DEEP x 28 GAGE GALVANIZED FORM DECK (TOTAL THICKNESS = 3") REINFORCED WITH 6x6 W2.1xW2.1 WWF.
  4. TOP OF STEEL ELEVATION OF BEAMS PARALLEL TO JOISTS IS TO MATCH TOP OF JOIST UNLESS NOTED OTHERWISE.
  5. STRUCTURAL STEEL FRAMING KEY:



12. ALL PIERS, COLUMNS AND FOOTINGS SHALL BE CENTERED ON COLUMN LINES UNLESS NOTED.



KEY PLAN

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MEDICAL OFFICE BUILDING  
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## SECOND FLOOR FRAMING PLAN PART C

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Architects, P.C.  
1600 North Second Street  
Harrisburg, PA. 17102-2499  
717-234-2581 (fax 234-1201)

PLOT NO.	DATE 3/30/01
PROJECT NO.	DRAWING NO.
	S-7

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