STRUCTURAL GENERAL NOTES

GENERAL REQUIREMENTS
A. BUILDING CODE: ALL DESIGN AND CONSTRUCTION WORK FOR THIS PROJECT SHALL CONFORM TO THE 1996 BOCA BUILDING CODE AS AMENDED BY THE CITY OF O'FALLON, MISSOURI.
B. DESIGN LOADS: ALL BUILDING MEMBERS AND COMPONENTS SHALL BE DESIGNED AND CONSTRUCTED TO SAFELY SUPPORT ALL DEAD LOADS AND THE FOLLOWING APPLIED LOADS.
1. LIVE LOADS:
a. ROOF (MINIMUM) 25 PSF
b. ROOF (NET UPLIFT) 20 PSF
c. FLOOR (MINIMUM) 100 PSF
2. SNOW LOAD: Pg=20 PSF, Ce= 0.7, I= 1.15
3. WIND LOAD: WIND SPEED= 75 MPH, EXPOSURE C, I= 1.0
4. EARTHQUAKE LOAD:
. Av = 0.12
. Aa = 0.10
. SEISMIC HAZARD EXPOSURE GROUP 1
. SEISMIC PERFORMANCE CATEGORY C
. SOIL PROFILE SI
. BASIC STRUCTURAL SYSTEM - BUILDING FRAME SYSTEM
. SEISMIC RESISTING SYSTEM - CONCENTRICALLY BRACED FRAMES
. RESPONSE MODIFICATION FACTOR (R) = 5.0
. DEFLECTION MODIFICATION FACTOR (Cd) = 4.5
. ANALYSIS PROCEDURE - EQUIVALENT LATERAL FORCE PROCEDURE
C. FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE WORK SHOWN OR INFERRED BY THESE DRAWINGS.
D. THE GENERAL CONTRACTOR SHALL REVIEW AND COMPARE THE STRUCTURAL DRAWINGS WITH ALL OTHER CONTRACT DOCUMENTS, VERIFYING ALL DIMENSIONS AND ELEVATIONS, AND REPORT ANY INCONSISTENCIES, ERRORS, OR OMISSIONS TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
E. THE GENERAL CONTRACTOR SHALL TAKE FIELD MEASUREMENTS, VERIFY FIELD CONDITIONS AND SHALL COMPARE SUCH FIELD MEASUREMENTS AND CONDITIONS WITH THE STRUCTURAL DRAWINGS, AND REPORT INCONSISTENCIES TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
F. THE DESIGN LOADS SHOWN SHALL NOT BE EXCEEDED DURING CONSTRUCTION. THE CONTRACTOR SHALL MAKE ADEQUATE PROVISIONS FOR CONSTRUCTION LOADS AND FOR ADEQUATE TEMPORARY BRACING TO KEEP THE STRUCTURE (INCLUDING MASONRY WALLS, FLOORS, ROOF DECKS, ETC.) PLUMB AND IN TRUE ALIGNMENT AT ALL PHASES OF CONSTRUCTION. BRACING MEMBERS SHOWN ON PLANS ARE THOSE REQUIRED FOR THE FINISHED STRUCTURE AND MAY NOT BE ADEQUATE DURING CONSTRUCTION.
G. REFERENCE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

FOUNDATIONS
A. A SUBSURFACE INVESTIGATION AND REPORT WAS PREPARED BY SCI THE CONTRACTOR SHALL READ AND FAMILIARIZE HIMSELF WITH THE REPORT PRIOR TO BIDDING.
B. ALL FOOTINGS ARE DESIGNED TO BEAR ON NATURAL SOILS OR ENGINEERED FILL CAPABLE OF SUSTAINING A MINIMUM ALLOWABLE BEARING PRESSURE OF 2,000 PSF FOR COLUMN FOOTINGS AND 1,700 PSF FOR CONTINUOUS FOOTINGS. BEARING CAPACITY SHALL BE VERIFIED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING FOOTINGS. IF SUITABLE BEARING CAPACITY IS NOT ENCOUNTERED AT THE ELEVATION INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY.
C. THE SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH THE SPECIFICATIONS.
D. THE OWNER SHALL RETAIN SCI TO TEST AND OBSERVE ALL EARTHWORK, FOUNDATION, AND SLAB SUPPORT MATERIAL TO VERIFY COMPLIANCE WITH THE DESIGN REQUIREMENTS AND CONTRACT DOCUMENTS.
E. BACKFILL SHALL NOT BE PLACED AGAINST WALLS RETAINING EARTH UNTIL ELEMENTS PROVIDING LATERAL SUPPORT AT THE TOP AND BOTTOM OF THE WALL ARE COMPLETE OR ADEQUATE TEMPORARY BRACING IS PROVIDED.

CONCRETE
A. COMPLY WITH THE PROVISIONS OF THE LATEST EDITION OF THE FOLLOWING EXCEPT WHERE MORE STRINGENT REQUIREMENTS ARE SHOWN OR SPECIFIED.
1. ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"
2. CRSI, "MANUAL OF STANDARD PRACTICE"
B. REINFORCING MATERIALS
1. DEFORMED REINFORCING BARS ASTM A615, GRADE 60
2. WELDED WIRE FABRIC ASTM A185 AND ASTM A82
C. CONCRETE MINIMUM 28-DAY COMPRESSIVE STRENGTHS:
1. ALL CONCRETE 4000 PSI.
D. ALL CONCRETE FLATWORK EXPOSED TO WEATHER SHALL BE AIR ENTRAINED TO AN AIR CONTENT OF 5% TO 7%.
E. CONCRETE COVER FOR REINFORCEMENT SHALL BE AS FOLLOWS, UNLESS SHOWN OTHERWISE:
1. CONCRETE PLACED AGAINST EARTH 3 INCHES
2. CONCRETE PLACED IN FORMS THEN EXPOSED TO EARTH OR WEATHER 2
3. CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
INCHES
a. SLABS 1 INCH
b. BEAMS, COLUMNS AND WALLS 1 1/2 INCHES
F. REINFORCE ALL CONCRETE NOT OTHERWISE SHOWN WITH SAME STEEL AS IN SIMILAR SECTIONS OR AREAS.
G. ALL BARS SHALL BE LAPPED 40 BAR DIAMETERS (2'-0" MINIMUM) AT SPLICES UNLESS INDICATED OTHERWISE ON DRAWINGS. WELDED WIRE FABRIC SHALL BE LAPPED ONE FULL MESH SPACING.
H. PROVIDE (1) #5 BAR DIAGONALLY AT EACH FACE OF ALL STEPS IN FOUNDATION WALLS, CONTINUOUS FOOTINGS, AND GRADE BEAMS
I. CONTROL JOINTS IN SLAB-ON-GRADE SHALL BE AS SHOWN ON PLANS. WHERE NOT SHOWN, LIMIT CONTROLLED AREAS TO NOT MORE THAN 625 SQUARE FEET NOR GREATER THAN 25 FEET ON ANY SIDE. CONSTRUCTION JOINTS MAY BE SUBSTITUTED FOR CONTROL JOINTS AT CONTRACTOR'S OPTION.
J. AT ALL OPENINGS IN CONCRETE WALLS AND SLABS, ADD (2) #5 (OPENING DIMENSION PLUS 5'-0") AT EACH OF FOUR SIDES AND ADD (2) #5 X 5'-0" DIAGONALLY AT EACH OF FOUR CORNERS.
K. THE UNIT OF POUR FOR FOUNDATION WALLS, FOOTINGS, AND GRADE BEAMS SHALL NOT EXCEED 80 LINEAR FEET IN ANY ONE DIRECTION. CONSTRUCTION JOINTS SHALL BE DOWELED AND KEYED.
L. COORDINATE CONCRETE WORK WITH ARCHITECTURAL DRAWINGS AND THE PROJECT MANUAL FOR ANY ARCHITECTURAL FINISHED CONCRETE, RECESSED AREAS, EMBEDDED ITEMS, OR SPECIAL CONTROL JOINT PATTERNS.
M. NO ALUMINUM ITEMS SHALL BE EMBEDDED IN CONCRETE.
N. AT CORNERS & INTERSECTIONS OF ALL TRENCH FOOTINGS SUPPLY CORNER BARS 5'-0" LONG (2'-6" EACH DIRECTION) MATCHING SIZE AND QUANTITY WITH TRENCH FOOTING LONGITUDINAL STEEL.

EMBEDDED ITEMS
A. ALL STRUCTURAL STEEL SHALL BE ASTM A-36 EXCEPT STRUCTURAL TUBE COLUMNS SHALL BE ASTM A-500, GRADE B. FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF AISC MANUAL OF STEEL CONSTRUCTION EXCEPT THE SECOND SENTENCE OF PARAGRAPH 4.2.1 OF THE CODE OF STANDARD PRACTICE SHALL BE DELETED.
B. ALL WELDING SHALL CONFORM TO THE CURRENT AMERICAN WELDING SOCIETY SPECIFICATIONS AND BE PREFORMED BY CERTIFIED WELDERS.
C. ANCHOR RODS, BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A36.
D. SHEAR CONNECTIONS SHALL CONFORM TO ASTM A108, GRADE 1015 THROUGH 1020 HEADED STUD TYPE COLD FINISHED CARBON STEEL.
E. SUBMIT SHOP DRAWINGS FOR APPROVAL FOR ALL EMBEDDED ITEMS. SHOP DRAWINGS SHALL BE DRAWN 1/8" =1'-0" MINIMUM FOR PLANS AND 3/4" =1'-0" MINIMUM FOR SECTIONS. CONTRACT DRAWINGS SHALL NOT BE REPRODUCED IN WHOLE OR IN PART.

STRUCTURAL STEEL
A. COMPLY WITH THE PROVISIONS OF THE LATEST EDITION OF THE FOLLOWING:
1. AISC, "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS--ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN".
2. AISC, "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", EXCEPT THE SECOND SENTENCE OF PARAGRAPH 4.2.1 SHALL BE DELETED.
B. STEEL MATERIALS:
1. STEEL SHAPES AND PLATES ASTM A36
2. STEEL TUBES ASTM A500, GRADE B
3. STEEL PIPES ASTM A53, TYPE E OR S, GRADE B
4. ANCHOR BOLTS AND RODS ASTM A36
5. HIGH-STRENGTH BOLTS ASTM A325, TYPE 1
6. HEADED STUDS ASTM A108, GRADE 1015-1020
C. ALL BEAM CONNECTIONS SHALL BE BOLTED OR WELDED AS DETAILED ON THE DRAWINGS OR PER AISC, "MANUAL OF STEEL CONSTRUCTION" PART 4, "FRAMED BEAM CONNECTIONS".
D. BEAM CONNECTIONS, NOT OTHERWISE INDICATED, SHALL BE DETAILED TO SUPPORT ONE-HALF (1/2) THE TOTAL ALLOWABLE UNIFORM LOAD CAPACITY FOR THE GIVEN BEAM, SPAN AND GRADE OF STEEL.
E. ALL BOLTS SHALL BE 3/4 INCH DIAMETER TWIST-OFF TENSION CONTROL BOLTS.
F. ALL WELDING SHALL CONFORM TO THE CURRENT AMERICAN WELDING SOCIETY SPECIFICATIONS AND BE PERFORMED BY CERTIFIED WELDERS.
G. ALL STRUCTURAL STEEL SHALL HAVE ONE COAT OF RUST INHIBITOR PRIMER PAINT CONFORMING TO THE PROJECT MANUAL. FIELD TOUCH-UP ALL UNPAINTED AREAS AND WELDED AREAS.

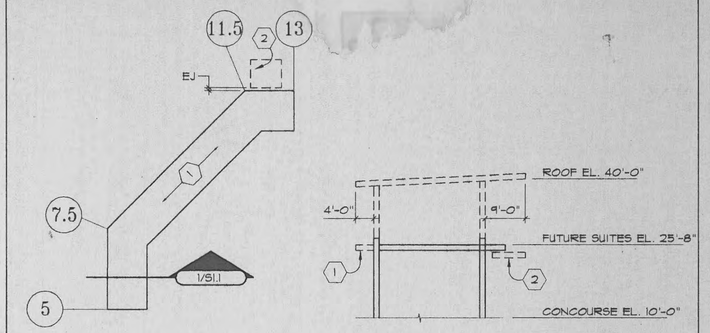
STEEL JOISTS
A. COMPLY WITH THE PROVISIONS OF THE STEEL JOIST INSTITUTE (SJI) "STANDARD SPECIFICATIONS AND LOAD TABLES FOR STEEL JOISTS", LATEST EDITION.
B. JOISTS SHOWN AS SPECIAL "SP" SHALL BE DESIGNED BY THE MANUFACTURER FOR THE LOADS SHOWN ON PLANS AND PER THE SNOW DRIFT LOAD PLAN.
C. CAMBER ALL JOISTS PER SJI RECOMMENDATIONS.
D. JOISTS SHALL HAVE BRIDGING PER SJI SPECIFICATIONS. ROOF JOISTS SHALL HAVE ADDITIONAL BRIDGING, AS REQUIRED, TO RESIST STRESS REVERSAL FOR THE NET UPLIFT LOADS INDICATED.
E. WELD ALL STEEL JOISTS TO BEAMS OR EMBEDDED STEEL WITH 3/16" FILLET WELD, 2" LONG EACH SIDE OF JOIST BEARING FOR K SERIES JOISTS.

STEEL DECK
A. COMPLY WITH THE PROVISIONS OF THE STEEL DECK INSTITUTE.
B. STEEL DECK SHALL BE WELDED TO SUPPORTING MEMBERS PER MANUFACTURER'S RECOMMENDATIONS. ROOF DECK SHALL BE CAPABLE OF TRANSFERRING THE DIAPHRAGM SHEAR VALUES INDICATED ON THE DRAWINGS.
C. ALL OPENINGS IN ROOF DECK LARGER THAN 12" X 12" SHALL HAVE 4" X 4" X 1/4" ANGLE FRAMES SET BETWEEN SUPPORTS.

MASONRY
A. COMPLY WITH PROVISIONS OF THE FOLLOWING, EXCEPT WHERE MORE STRINGENT REQUIREMENTS ARE SHOWN OR SPECIFIED:
1. ACI 530, "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES"
2. ACI 530.1, "SPECIFICATIONS FOR MASONRY STRUCTURES"
B. MATERIALS.
1. CONCRETE MASONRY UNITS . . . . . ASTM C90, GRADE N, TYPE 1
PROVIDE LIGHTWEIGHT UNITS WITH A MINIMUM AVERAGE NET COMPRESSIVE STRENGTH OF 2200 PSI.
2. COMPRESSIVE PRISM STRENGTH . . . . . ASTM E447, f'm=1500 PSI
3. DEFORMED REINFORCING BARS. . . . . ASTM A615, GRADE 60
4. COARSE GROUT . . . ASTM C476, f'c=3000 PSI, 3/8" AGGREGATE
5. MORTAR . . . . . ASTM C270, TYPE M OR S
C. ALL MASONRY IS DESIGNED WITH ONE-HALF (1/2) ALLOWABLE STRESSES, UNLESS INDICATED ON THE DRAWINGS TO REQUIRE SPECIAL INSPECTION.
D. REQUIREMENTS FOR REINFORCED MASONRY
1. VERTICAL REINFORCEMENT SHALL BE LOCATED AT CORNERS OF WALLS, AT EACH JAMB OF OPENINGS, AND ON EACH SIDE OF CONTROL JOINTS. BETWEEN THESE LOCATIONS, VERTICAL REINFORCEMENT SHALL BE SPACED AS INDICATED ON THE DRAWINGS
2. MAXIMUM HEIGHT OF GROUT POUR SHALL NOT EXCEED 4'-8".
3. VERTICAL CELLS TO BE GROUTED SHALL HAVE VERTICAL ALIGNMENT SUFFICIENT TO MAINTAIN A TOTAL MINIMUM CLEAR AREA OF 3" X 3". ALL OVERHANGING MORTAR, OBSTRUCTIONS AND DEBRIS SHALL BE CLEANED FROM THE INSIDE OF CELLS PRIOR TO GROUTING.
4. REINFORCEMENT SHALL BE PLACED PRIOR TO GROUTING.
5. TOLERANCE FOR THE PLACEMENT OF REINFORCEMENT IN WALLS SHALL BE PLUS OR MINUS 1/2 INCH FOR 8 INCH MASONRY AND PLUS OR MINUS 1 INCH FOR 12 INCHES MASONRY. REINFORCEMENT SHALL BE SECURED AGAINST DISPLACEMENT PRIOR TO GROUTING AT THE TOP OF EACH GROUT LIFT.
6. UNITS SHALL BE LAID TO THE FULL HEIGHT OF THE GROUT POUR AND GROUT SHALL BE PLACED IN A CONTINUOUS LIFT. BETWEEN GROUT POURS, A HORIZONTAL CONSTRUCTION JOINT SHALL BE FORMED BY STOPPING GROUT 1 1/2 INCH. BELOW A MORTAR JOINT EXCEPT AT THE TOP OF THE WALL.
7. GROUT SHALL BE CONSOLIDATED BY MECHANICAL VIBRATION DURING PLACEMENT, BEFORE LOSS OF PLASTICITY, AND IN A MANNER TO FILL THE GROUT SPACE.
8. LAP SPLICE ALL REINFORCEMENT 48 BAR DIAMETERS AT CONSTRUCTION JOINTS.
E. INITIAL BED JOINT THICKNESS SHALL NOT BE LESS THAN 1/4 INCH OR MORE THAN 1 INCH. SUBSEQUENT JOINTS SHALL NOT BE LESS THAN 1/4 INCH OR MORE THAN 5/8 INCH.
F. AT TOP AND BOTTOM OF ALL WALL OPENINGS, PROVIDE 8 INCH DEEP BOND BEAM REINFORCED WITH (1)-#5.

AB	ANCHOR BOLT	EW	EACH WAY	PC	PRECAST
ACI	AMERICAN CONCRETE INSTITUTE	EXIST	EXISTING	PL	PLATE
ADJ	ADJACENT	EXP	EXPANSION	PLF	POUNDS PER FOOT
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	EXT	EXTERIOR	PROJ	PROJECTION
ALT	ALTERNATE	FB	FIELD BEND	PSF	POUNDS PER SQUARE FOOT
ARCH	ARCHITECT	FD	FLOOR DRAIN	PSI	POUNDS PER SQUARE INCH
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	FIN	FINISH	R	RADIUS
		FLR	FLOOR	RD	ROOF DRAIN
BLDG	BUILDING	FND	FOUNDATION	REF	REFERENCE
BLKG	BLOCKING	FTG	FOOTING	REINF	REINFORCEMENT
BM	BEAM	GA	GAGE	REQ'D	REQUIRED
BOC	BOTTOM OF CAISSON	GALV	GALVANIZED	REV	REVISION
BOF	BOTTOM OF FOOTING	GYP	GYPSUM	RTU	ROOF TOP UNIT
BOT	BOTTOM	HK	HOOK	SCHED	SCHEDULE
BRG	BEARING	HOR	HORIZONTAL	SECT	SECTION
BTWN	BETWEEN	INCL	INCLUDING	SHT	SHEET
C	COMPRESSION	INSUL	INSULATION	SIM	SIMILAR
CJ	CONTROL JOINT	INT	INTERIOR	SJI	STEEL JOIST INSTITUTE
℄	CENTER LINE	JST	JOIST	SPA	SPACING
CLR	CLEAR	JT	JOINT	SPECS	SPECIFICATIONS
COL	COLUMN	K	K.IP = 1000 LBS	SQ. or ▯	SQUARE
CONC	CONCRETE	K-FT	KIP - FEET (Moment)	STD	STANDARD
CONN	CONNECTION	L	ANGLE	STIFF	STIFFENER
CONT	CONTINUOUS	LLH	LONG LEG HORIZONTAL	STL	STEEL
DIA, or ⌀	DIAMETER	LLV	LONG LEG VERTICAL	T	TENSION
DIM	DIMENSION	MAX.	MAXIMUM	THRD	THREADED
DET	DETAIL	MECH	MECHANICAL	TOC	TOP OF CONCRETE
DN	DOWN	MFR	MANUFACTURER	TOF	TOP OF FOOTING
DWG	DRAWING	MIN	MINIMUM	T.O.M.	TOP OF MASONRY
DWL	DOWEL	MISC	MISCELLANEOUS	TOS	TOP OF STEEL
EA	EACH	MO	MASONRY OPENING	TOH	TOP OF HALL
EE	EXTENDED ENDS	MTL	METAL	TYP	TYPICAL
EF	EACH FACE	#	NUMBER	UNO	UNLESS NOTED OTHERWISE
EL	ELEVATION	NIC	NOT IN CONTRACT	VERT	VERTICAL
EQ	EQUAL	NTS	NOT TO SCALE	W	WITH
		o.c.	ON CENTER	WP	WORK POINT
		OPNG	OPENING	WT	WEIGHT
		OPP	OPPOSITE HAND	WWF	WELDED WIRE FABRIC BY (ex 2x6)

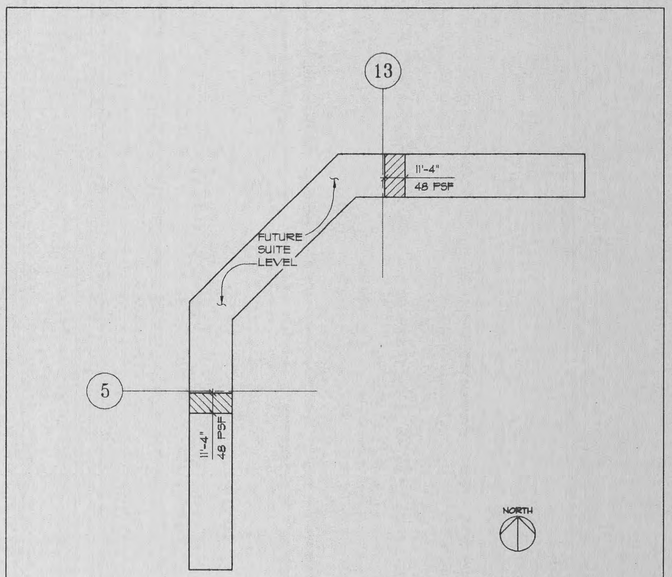
TYPICAL STRUCTURAL ABBREVIATIONS



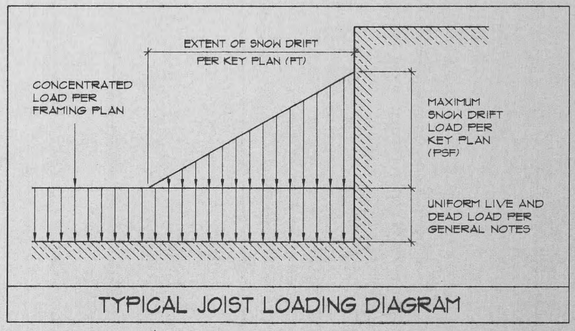
FUTURE SUITE LEVEL
100 PSF LIVE LOAD
1 5" CONCRETE SLAB
2 PROPOSED 2 STORY ADDITION

SECTION 1
1 FUTURE WALKWAY
2 FUTURE SUITE SEATING

FUTURE SUITE PLAN



TYPICAL ROOF SNOW DRIFT LOAD KEY PLAN



TYPICAL JOIST LOADING DIAGRAM

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T. R. HUGHES BALLPARK
AT THE OZZIE SMITH SPORTS COMPLEX
FOR THE RIVER CITY RASCALS
O'FALLON, MO.

PACKAGE

REVISIONS

NO.	DATE	DESCRIPTION

PROJECT NO.	ISSUED BY:
97-0761-00	HOK SPORT
DRAWN BY:	REVIEWED BY:

ISSUED:
07-7-98

SHEET TITLE
GENERAL NOTES

CATEGORY - SUB-CATEGORY - SHEET
S 1.1