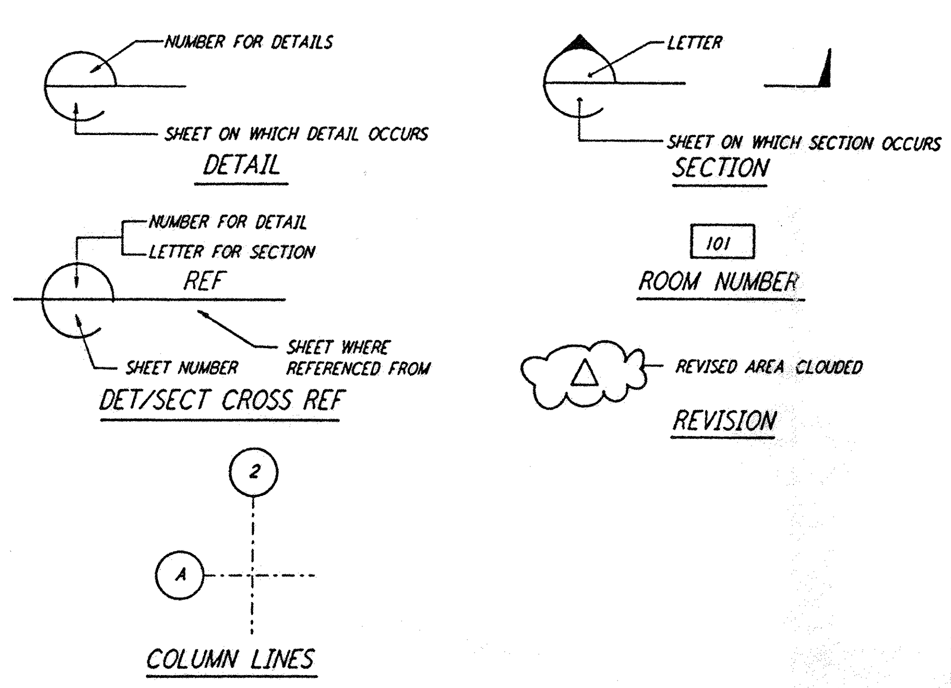
ABBREVIATIONS

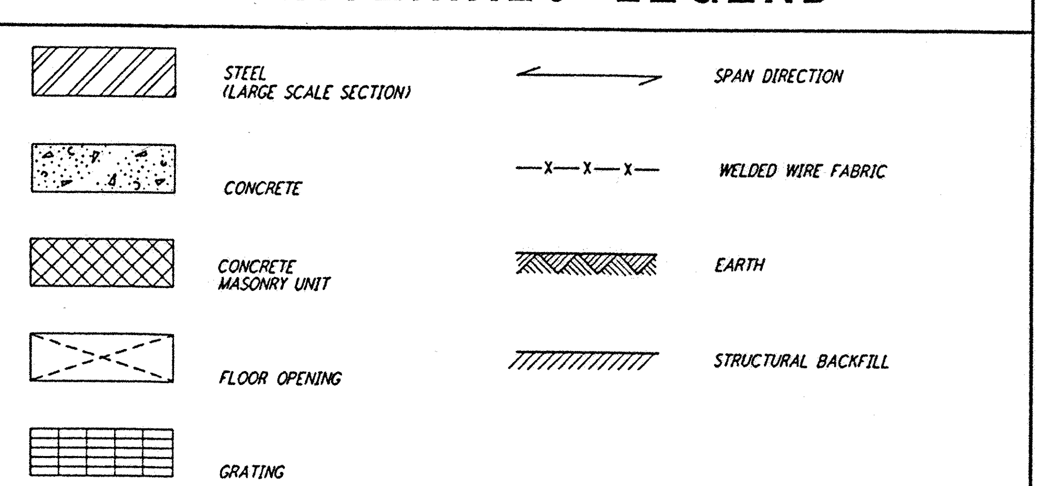
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
B/B	BACK TO BACK
B/P	BASE PLATE
BM	BEAM
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STEEL
BRCG	BRACING
C	CAMBER
CC OR C/C	CENTER TO CENTER
CG	CENTER OF GRAVITY
CJ	CONSTRUCTION JOINT
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
CU	CUBIC
DET	DETAIL
DIAG	DIAGONAL
DIM	DIMENSION
DL	DEAD LOAD
DO	DITTO
DWG	DRAWING
DWL	DOWEL
EA	EACH
EF	EACH FACE
EL	ELEVATION
ENCL	ENCLOSURE
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
ETC	ETCETERA
EW	EACH WAY
EXIST	EXISTING
FD	FLOOR DRAIN
FDN	FOUNDATION
FIN	FINISH
FLR	FLOOR
FLSHG	FLASHING
FOC	FACE OF CONCRETE
FRMG	FRAMING
FS	FAR SIDE
FT	FOOT, FEET
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GR	GRADE
HORIZ	HORIZONTAL
HP	HIGH POINT
HR	HANDRAIL
HSB	HIGH STRENGTH BOLT
ID	INSIDE DIAMETER
IN	INCH
INFO	INFORMATION
INSUL	INSULATION
JST	JOIST
JT	JOINT
LB	POUND
LG	LENGTH
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LVEA	LASER AND VACUUM EQUIPTMENT AREA
LWC	LIGHT WEIGHT CONCRETE
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MPH	MILES PER HOUR
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OSB	OPERATIONS SUPPORT BUILDING
OTO	OUT TO OUT
PCF	POUNDS PER CUBIC FOOT
PL	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT
R	RADIUS
RD	ROOF DRAIN
REF	REFERENCE
REINF OR BARS	REINFORCING STEEL
REQD	REQUIRED
REV	REVISE OR REVISION
SCHED	SCHEDULE
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SLV	SHORT LEG VERTICAL
SPA	SPACED
ST STL	STAINLESS STEEL
STD	STANDARD
STIF	STIFFENER
SYM	SYMMETRICAL
T&B	TOP AND BOTTOM
THK	THICKNESS
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VERT	VERTICAL
W/	WITH
WPF	WATER PROOF
WP	WORKING POINT
WS	WELDED STUD
WT	WEIGHT
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH

SYMBOLS

L	ANGLE	△	DELTA
C	CHANNEL	ɸ	SQUARE FEET
PL	PLATE	#	NUMBER or POUND
℄	CENTER LINE	&	AND
Ø	DIAMETER or ROUND	@	AT
⌖	WORK POINT OR ELEV BENCH MARK		



MATERIALS LEGEND



NOTES

INSPECTIONS AND APPROVALS

GENERAL

1. PROFESSIONAL SOILS ENGINEER REGISTERED IN THE STATE OF WASHINGTON SHALL INSPECT AND APPROVE ALL FOOTING EXCAVATIONS PRIOR TO PLACING CONCRETE ACCORDING TO SECTION 2200 OF THE SPECIFICATION.
2. CONTINUOUS INSPECTION BY AN INSPECTOR, APPROVED BY THE DEPARTMENT OF BUILDING AND SAFETY SHALL BE PROVIDED FOR THE FOLLOWING FIELD WORK:
   - A) PLACEMENT OF COMPACTED FILL.
   - B) PLACEMENT OF CONCRETE AND REINFORCING STEEL AND ANCHOR BOLTS.
   - C) EXPANSION TYPE CONCRETE ANCHORS.
   - D) FIELD WELDING
   - E) INSTALLATION OF HIGH STRENGTH BOLTS
3. FIELD WELDERS AND WELDING OPERATORS SHALL BE FULLY QUALIFIED IN ACCORDANCE WITH AWS D1.1 AND BE APPROVED BY THE DEPARTMENT OF BUILDING AND SAFETY.
4. THE CONSTRUCTION SHALL COMPLY WITH REQUIREMENTS OF THE BUILDING CODE.

GENERAL

1. ALL STRUCTURAL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE JOB SPECIFICATIONS AND STANDARDS.
2. ALL SHOP DRAWINGS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER OF RECORD PRIOR TO FABRICATION.
3. NO HOLES OTHER THAN THOSE SPECIFICALLY DETAILED, SHALL BE ALLOWED THROUGH STRUCTURAL STEEL MEMBERS. NO CUTTING OR BURNING OF STEEL SHALL BE PERMITTED WITHOUT APPROVAL OF THE ENGINEER OF RECORD.
4. PAINTING AND SHOP PRIMING WHERE REQUIRE SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
5. FOR TYPICAL DETAILS SEE DRAWINGS WA-S-002 THROUGH WA-S-009.
6. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING AND SHORING AS REQUIRED TO MAINTAIN THE ALIGNMENT OF BUILDING AND RETAINING WALLS UNTIL ALL CONNECTIONS ARE COMPLETED AND SLAB AND WALLS CONSTRUCTED.
7. PRIOR TO PLACING FOUNDATIONS & SLABS, REFER TO UNDERDRAIN SYSTEM DRAWINGS, ARCHITECTURAL DWGS FOR SLOPES & ELECTRICAL DWGS FOR GROUNDING.
8. FOR BUILDING COLUMN LOCATION COORDINATES SEE CIVIL DWGS.

NOTES

FOUNDATIONS

1. FOUNDATION AND SOIL REQUIREMENTS ARE BASED ON SOIL REPORT BY DAMES AND MOORE; REPORT NO. 177-004-0016 DATED: FEBRUARY 10, 1993.

STRUCTURAL STEEL

1. THE DESIGN, FABRICATION AND ERECTION OF ALL STRUCTURAL STEEL SHALL CONFORM TO AISC "MANUAL OF STEEL CONSTRUCTION" AND WITH THE SPECIFICATIONS.
   STRUCTURAL STEEL SHAPES & PLATES SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE NOTED ON PLAN.
2. PROVIDE FILLERS AT SPLICES OF PARTS HAVING MORE THAN $\frac{1}{16}$" DIFFERENCE IN THICKNESS.
3. ALL BEARING STIFFENER PLATES SHALL HAVE A CLOSE BEARING AGAINST THE INNER SURFACES OF BOTH FLANGES.

CONNECTIONS

1. PLATE FOR BOLTED SHEAR PLATE CONNECTIONS SHALL BE THE SAME THICKNESS AS THE BEAM WEB WITH A MINIMUM THICKNESS OF $\frac{3}{8}$" UNLESS OTHERWISE NOTED. DIAGONAL GUSSET PLATE CONNECTIONS SHALL HAVE A MINIMUM THICKNESS OF $\frac{1}{2}$" (UNLESS OTHERWISE NOTED) AND THE NET AREA THROUGH THE BOLTS HOLES SHALL DEVELOP TOTAL SHEAR CAPACITY OF THE BOLTS. ALL CONNECTIONS SHALL HAVE A MINIMUM OF TWO BOLTS. LOAD INDICATOR WASHERS SHALL BE USED WITH ALL ASTM A325SC BOLTS.
2. ALL BOLTS SHALL BE ASTM A325SC, CLASS A, UNLESS OTHERWISE NOTED. $\frac{3}{4}$"Ø BOLTS SHALL BE USED FOR MID & END STATION, OSB BUILDING AND MAINTENANCE BUILDING AND $\frac{7}{8}$"Ø BOLTS SHALL BE USED FOR CORNER LVEA BUILDING, UNLESS OTHERWISE NOTED.
3. ALL STIFFENERS SHALL HAVE A MINIMUM THICKNESS OF $\frac{3}{8}$", UNLESS OTHERWISE NOTED.
4. GIRT CONNECTIONS SHALL HAVE A MINIMUM OF 2-$\frac{3}{4}$"Ø ASTM A307 BOLTS.

WELDING

1. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.1-90 STRUCTURAL WELDING CODE AND THE SPECIFICATION.
2. ALL WELDING PROCEDURE SPECIFICATIONS AND WELDING PROCEDURE QUALIFICATIONS, WELDERS, AND WELDING OPERATORS SHALL BE FULLY QUALIFIED IN ACCORDANCE WITH AWS D1.1-90.
3. LENGTHS OF WELDS SHOWN ARE EFFECTIVE LENGTHS AS SPECIFIED IN AISC SPECIFICATIONS. WHERE LENGTH OF WELD IS NOT SHOWN, IT SHALL BE FULL LENGTH OF JOINT. ALL BUTT WELDS SHALL BE FULL PENETRATION WELDS, UNLESS OTHERWISE NOTED.
4. ALL WELDING ELECTRODES SHALL BE E70XX.
5. WITH REFERENCE TO MINIMUM SIZE OF FILLET WELD REQUIREMENTS IN SECTION 1.17 OF AISC SPECIFICATIONS, MINIMUM SIZE OF FILLET WELDS WHEN NOT SPECIFIED ON WELD SYMBOLS SHALL BE AS FOLLOWS:
   $\frac{1}{4}$" WELD FOR MATERIAL THICKNESS UP TO AND INCLUDING $\frac{3}{4}$"
   $\frac{5}{16}$" WELD FOR MATERIAL THICKNESS OVER $\frac{3}{4}$" TO $1\frac{1}{2}$"
6. WELDING PROCEDURES AND SEQUENCES SHALL BE PLANNED TO MINIMIZE WELD SHRINKAGE THAT COULD RESULT IN LAMELLAR TEARING, AND APPROVED BY OWNER'S REPRESENTATIVE.
7. GRIND SMOOTH WELDED JOINTS WHERE FLUSH SURFACE IS REQUIRED.

METAL DECK

1. ALL METAL DECKING SHALL BE IN ACCORDANCE WITH SECTION 5312 OF THE SPECIFICATIONS.
2. ROOF DECK SHALL HAVE SINGLE RIBS 3" DEEP AND MADE OUT OF 20 GAGE STEEL WITH MINIMUM I=0.873 IN^4/FOOT OF WIDTH AND MINIMUM S(+)=0.508 IN^3/FOOT WIDTH AND Sx(-)=0.562 IN^3/FOOT WIDTH. ATTACHMENT OF ROOF DECK TO SUPPORTS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. THE ATTACHMENT SHALL BE CAPABLE OF RESISTING 80 PSF NET UPLIFT AND 300 POUNDS PER LINEAR FOOT OF SHEAR.
3. ACOUSTICAL ROOF DECK OF SAME SECTION PROPERTIES AS INDICATED IN ITEM 2 ABOVE SHALL BE USED FOR THE ROOF OVER MULTIPURPOSE ROOM OF THE OSB BLDG AS INDICATED ON THE DWG.
4. ROOF DECK SHALL HAVE A MINIMUM OF TWO (2) SPANS UNLESS OTHERWISE NOTED.

CONCRETE

1. ALL CONCRETE MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF DIVISION 3 (CONCRETE) OF THE SPECIFICATIONS. (REGULAR WEIGHT AND LIGHT WEIGHT)
2. STRUCTURAL CONCRETE SHALL HAVE AN ULTIMATE COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS UNLESS OTHERWISE NOTED. ALL CONCRETE SHALL BE REGULAR WEIGHT CONCRETE UNLESS OTHERWISE NOTED.
3. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60 (UNLESS OTHERWISE NOTED).
   SPLICES AND HOOKS SHALL CONFORM TO ACI 318-89. SPLICES SHALL BE CLASS B UNLESS OTHERWISE NOTED. MINIMUM LAP SHALL BE 30 DIAMETERS. STIRRUP AND TIE HOOKS SHALL HAVE 135-DEGREE BENDS.
4. LOCATION OF ALL CONSTRUCTION JOINTS OR OTHER TYPES OF JOINTS, OTHER THAN SPECIFIED, SHALL BE APPROVED BY THE CONSTRUCTION MANAGER BEFORE PLACING.
5. MINIMUM CONCRETE COVER PROVIDED FOR REINFORCEMENT SHALL BE IN ACCORDANCE WITH THE SPECIFICATION.
6. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS AND OTHER INSERTS SHALL BE WELL SECURED IN POSITION AND INSPECTED BY QUALIFIED INSPECTOR PRIOR TO PLACING CONCRETE.
7. EXISTING PAVEMENT SHALL BE SAW CUT AND BROKEN OUT TO CLEAN, STRAIGHT EDGES OF DEMOLITION AREAS.
8. EXPOSED EDGES OF CONCRETE SHALL HAVE A $\frac{3}{4}$" CHAMFER UNLESS OTHERWISE NOTED ON DRAWINGS.
9. EXCAVATING AND BACKFILLING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
10. CONSTRUCTION JOINTS SHALL BE CLEANED AND ROUGHENED TO $\frac{1}{4}$" AMPLITUDE.
11. PROVIDE REINFORCEMENT IN WALLS AT CORNER AND INTERSECTIONS AS PER DETAIL 11/WA-S-002

ANCHOR BOLTS

1. FOR ANCHOR BOLT DETAILS SEE DRAWING WA-S-003

MASONRY

1. WALLS SHALL BE LOAD BEARING REGULAR WEIGHT HOLLOW CONCRETE MASONRY UNITS WITH ALL CELLS GROUTED SOLID (UON), ACCORDING TO THE SPECIFICATIONS.
2. THE MORTAR SHALL BE CEMENT-LIME TYPE 'S' WITH A COMPRESSIVE STRENGTH OF 1800 PSI AT 28 DAYS, CONSISTING OF ONE PART OF CEMENT $\frac{1}{4}$ TO $\frac{1}{2}$ PART OF HYDRATED LIME OR LIME PUTTY AND DAMP LOOSE AGGREGATE $2\frac{1}{4}$ TO 3 TIMES THE SUM OF VOLUMES OF CEMENT AND LIME.
   THE GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI AT 28 DAYS.
3. THE MINIMUM CLEAR DISTANCE BETWEEN PARALLEL BARS SHALL BE THE BAR'S DIAMETER, BUT NOT LESS THAN 1".
4. MINIMUM LAP OF REINFORCING STEEL SHALL BE 40 DIAMETERS, BUT MOT LESS THAN 2'-0".
5. IF WORK STOPPED FOR ONE HOUR OR MORE, PROVIDE A HORIZONTAL CONSTRUCTION JOINT BY STOPPING THE GROUT $1\frac{1}{2}$" MINIMUM BELOW THE TOP OF MORTAR OR MASONRY.

NO.	DATE	BY	CHKD	ENGR	PROJ	DESCRIPTION
B	4-19-96	MCS	[illegible]	[illegible]	[illegible]	FINAL DESIGN REVIEW & BID
A	10-31-95				TDM	PRELIMINARY DESIGN REVIEW

DRAWN	MCS
CHECKED	
ENGINEER	
PROJ	

REFERENCES: DRAWING NO. | DESCRIPTION

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SITE NO. 1 - HANFORD, WASHINGTON

TITLE: STRUCTURAL GENERAL NOTES, ABBREVIATIONS & LEGEND

SCALE	CONTRACT NUMBER	PROJECT NUMBER
NONE	PP150969	8094

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