GENERAL STRUCTURAL NOTES

GENERAL REQUIREMENTS

1. THE CONTRACTOR SHALL EXAMINE THE STRUCTURAL DRAWINGS AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES HE MAY FIND BEFORE PROCEEDING WITH THE WORK.
2. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK SO INVOLVED.
3. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL SITE CONDITIONS AND DIMENSIONS. HE SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND INFORMATION SHOWN ON THE DRAWINGS BEFORE PROCEEDING WITH THE WORK.
4. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONDITION WHICH IN HIS OPINION MIGHT ENDANGER THE STABILITY OF THE STRUCTURE OR CAUSE DISTRESS TO THE STRUCTURE.
5. THE CONTRACTOR SHALL SUPERVISE AND DIRECT HIS WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. AS A PART OF HIS RESPONSIBILITY, THE GENERAL CONTRACTOR SHALL PROVIDE THE SERVICES OF A LICENSED STRUCTURAL ENGINEER TO DESIGN AND SUPERVISE ANY SCAFFOLDING FOR HIS WORKMEN AND SHORING OF FORMS AND ELEMENTS OF THE CONSTRUCTION AFFECTED BY HIS WORK.
6. ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE LATEST EDITION OF THE UNIFORM **STD. SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, AND ALL OTHER REGULATING AGENCIES EXERCISING AUTHORITY OVER ANY PORTION OF THE WORK.**
7. SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE THE NOTES, DRAWINGS, AND/OR SPECIFICATIONS DIFFER, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

FOUNDATIONS & EXCAVATIONS

1. ALL FOUNDATIONS ARE DESIGNED FOR AN ALLOWABLE SOIL BEARING VALUE OF 2,000 PSF MINIMUM IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE FOUNDATION INVESTIGATION REPORT BY J.H. KLEINFELDER ASSOCIATES, PROJECT NO. L-1288-6, DATED SEPTEMBER 4, 1985. THIS REPORT INCLUDES BORING LOGS, SOILS DESCRIPTION, TESTS PERFORMED AND RECOMMENDATIONS.
2. ALL FOUNDATIONS SHALL REST ON 12" OF TYPE II AGGREGATE BASE AND, FOR BIDDING PURPOSES ONLY 4'-0" OF TYPE I (3" SIZE) AGGREGATE BASE SHALL BE PLACED IMMEDIATELY BELOW THE TYPE II BASE. THIS LAYER OF TYPE I IS SHOWN ON THE PLANS AS "OVEREXCAVATION AND BACKFILL WITH TYPE I AGGREGATE - BASE BID".
3. A SOILS ENGINEER SHALL INSPECT ALL FOUNDATION EXCAVATIONS WHEN THE ELEVATION OF THE BOTTOM OF THE TYPE II AGGREGATE BASE IS ACHIEVED. WORK THEREAFTER SHALL PROCEED AS FOLLOWS:
   A. WHERE THE SOIL AT THIS ELEVATION IS (AS DEFINED IN THE SOILS REPORT) UNDISTURBED, STIFF OR MEDIUM DENSE SOIL WHICH, IN THE OPINION OF THE SOILS ENGINEER, IS CAPABLE OF THE REQUIRED BEARING CAPACITY:
      1) NO FURTHER EXCAVATION IS REQUIRED AND NO TYPE I AGGREGATE BASE SHALL BE PLACED.
   B. WHERE THE SOIL AT THIS ELEVATION IS NOT (AS DEFINED IN THE SOILS REPORT) UNDISTURBED, STIFF OR MEDIUM DENSE SOIL WHICH, IN THE OPINION OF THE SOILS ENGINEER, IS NOT CAPABLE OF THE REQUIRED BEARING CAPACITY.
      1) OVEREXCAVATION AND PLACEMENT OF TYPE I AGGREGATE BASE - BASE BID SHALL BE PERFORMED TO THE DEPTH AND AREA AS DIRECTED BY THE SOILS ENGINEER.
   C. ANY VOLUME OF TYPE I AGGREGATE BASE - BASE BID NOT PLACED SHALL BE CREDITED TO THE CONTRACT AT THE UNIT PRICE FOR "OVEREXCAVATION AND BACKFILL WITH TYPE I AGGREGATE BASE - BASE BID."
4. ALL BACKFILL SHALL BE COMPACTED TO 90% OF MAXIMUM DENSITY (ASTM D1557) UNDER THE SUPERVISION OF A SOILS ENGINEER.

GRAVEL

1. ALL GRAVEL SHALL CONFORM TO CLARK COUNTY TYPE I OR TYPE II SPECIFICATIONS UNLESS NATURAL MATERIAL IS APPROVED IN WRITING BY THE SOILS ENGINEER. SEE FOUNDATION NOTES FOR COMPACTION.

CONCRETE

1. CONCRETE USED IN THE WORK SHALL HAVE 3000 P.S.I. MINIMUM ULTIMATE COMPRESSIVE STRENGTHS AT AGE 28 DAYS:
2. ALL CONCRETE SHALL BE STONE CONCRETE, CLASS DA, CONFORMING TO SECTION 501 OF THE STANDARD SPECIFICATIONS. CEMEMT SHALL BE TYPE V CONFORMING TO SECTION 701 AND ASTM C150.
3. ALL CONCRETE MIXES SHALL BE DESIGNED BY A CERTIFIED INDEPENDENT TESTING LABORATORY WHO SHALL SUBMIT COPIES OF THE DESIGN FOR APPROVAL, AND SHALL IN ADDITION SUBMIT COPIES OF 7 AND 28 DAY CYLINDER TEST RESULTS TO THE STRUCTURAL ENGINEER AND THE BUILDING DEPARTMENT, AND OBTAIN APPROVAL PRIOR TO USE.
4. BEFORE CONCRETE IS PLACED THE CONTRACTOR SHALL COORDINATE AND CHECK WITH ALL TRADES TO INSURE THE PROPER PLACEMENT OF ALL OPENINGS, CURBS, SLEEVES, INSERTS, DEPRESSIONS, ETC., RELATING TO THE WORK.
5. MINIMUM CONCRETE COVER OVER REINFORCING STEEL SHALL BE AS FOLLOWS:
   A. CONCRETE AGAINST EARTH (UNFORMED) 0.25'
   B. CONCRETE AGAINST EARTH (FORMED) 0.21'
   C. CONCRETE SLAB AND BRIDGE SIDEWALK 0.29'
6. CONSTRUCTION OR COLD JOINTS OTHER THAN THOSE SHOWN IN THE PLANS SHALL NOT BE MADE WITHOUT PRIOR APPROVAL BY THE STRUCTURAL ENGINEER.
7. ALL CONCRETE SHALL BE POURED WITH A SLUMP NOT TO EXCEED 3".
8. AN INITIAL CURING OF CONCRETE SHALL IMMEDIATELY FOLLOW THE FINISHING OPERATION. THE CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST OVERNIGHT BY USE OF ANY OF THE FOLLOWING:
   A. PONDING OR CONTINUOUS SPRINKLING
   B. ABSORPTIVE MAT OR FABRIC KEPT CONTINUOUSLY WET
   C. CURING COMPOUNDS APPLIED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE CURING COMPOUND MANUFACTURER

   IMMEDIATELY FOLLOWING THE INITIAL CURING AND BEFORE THE CONCRETE HAS DRIED, ADDITIONAL CURING SHALL BE ACCOMPLISHED BY:
   A. CONTINUING THE METHOD USED FOR THE INITIAL CURING
   B. WATERPROOF PAPER
   C. OTHER MOISTURE-RETAINING COVERINGS AS APPROVED

REINFORCING STEEL

1. REINFORCING STEEL SHALL BE NEW STOCK DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60 UNLESS NOTED OTHERWISE, (GRADE 40 MAY BE USED FOR #3 BARS OR LESS) WELDED WIRE FABRIC SHALL BE MADE OF COLD DRAWN WIRE AND SHALL CONFORM TO ASTM A185.
2. ALL BARS SHALL BE FREE OF RUST, GREASE, MILL SCALE, OR ANY MATERIAL WHICH MIGHT AFFECT ITS BOND TO CONCRETE.
3. ALL BAR BENDS MUST BE MADE COLD. REBENDING OF BARS WILL NOT BE PERMITTED.
4. BENDING, PLACING, SPACING, CONCRETE PROTECTIVE COVER, SPLICING, AND ALL OTHER DETAILS OF REINFORCEMENT SHALL CONFORM TO THE "BUILDING CODE REQUIREMENT FOR REINFORCED CONCRETE" A.C.I. 318-LATEST EDITION, CHAPTER 7 AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" A.C.I. 315-LATEST EDITION.
5. ALL TESTING OF REINFORCING STEEL SHALL BE AS REQUIRED BY LOCAL BUILDING CODE.
6. REINFORCING STEEL PLACING DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR PLACING. APPROVED DRAWINGS ARE REQUIRED AT THE JOB SITE ONE DAY PRIOR TO PLACING REINFORCING.

HANDRAIL AND GUARDRAIL

1. IN ACCORDANCE WITH CLARK COUNTY UNIFORM STANDARD DRAWINGS FOR TYPES AS SHOWN ON THE DRAWINGS.

GENERAL CIVIL NOTES

GENERAL SPECIFICATIONS

ALL MATERIAL AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF LAS VEGAS REQUIREMENTS, THE LATEST EDITION OF THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CLARK COUNTY AREA, NEVADA, AND THESE PLANS AND SPECIFICATIONS.

GENERAL REQUIREMENTS

1. THE C[illegible] SHALL EXAMINE [illegible] AND SHALL NOTIFY [illegible] ENGINEER OF ANY DISCREPANCIES HE MAY FIND BEFORE PROCEEDING T[illegible] WORK.
2. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK SO INVOLVED.
3. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL SITE CONDITIONS AND DIMENSIONS. HE SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND INFORMATION SHOWN ON THE DRAWINGS BEFORE PROCEEDING WITH THE WORK.
4. THE CONTRACTOR SHALL SUPERVISE AND DIRECT HIS WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES.
5. THE CONTRACTOR SHALL REMOVE AND REPLACE IN-KIND ALL PAVEMENT, CURBS, GUTTERS, LAWNS, WALLS, UNDERGROUND UTILITIES, PIPES, TURF, ETC., WHICH HAVE BEEN DISTURBED, TO A CONDITION EQUAL TO THAT WHICH EXISTED BEFORE CONSTRUCTION WAS STARTED.
6. SPECIFIC NOTE AND DETAILS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE THE NOTES, DRAWINGS, AND/OR SPECIFICATIONS DIFFER, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

EXISTING UTILITIES

1. THE LOCATION OF THE EXISTING UTILITIES AND OTHER FEATURES ON THESE PLANS IS APPROXIMATE ONLY AND IS DERIVED FROM EXISTING PLANS AND INFORMATION PROVIDED BY RESPECTIVE **UTILITY** COMPANIES. THE CONTRACTOR SHALL NOTIFY EACH RESPECTIVE UTILITY COMPANY FORTY-EIGHT (48) HOURS IN ADVANCE OF WORKING IN THE AREA OF THE UTILITY. THE ENGINEER ASSUMES NO LIABILITY FOR THEIR ACCURACY OR FOR ANY UTILITIES NOT SHOWN ON THE PLANS.

BEGINNING CONSTRUCTION

1. THE CITY OF LAS VEGAS SHALL BE NOTIFIED FORTY-EIGHT (48) HOURS PRIOR TO THE BEGINNING OF THE ACTUAL CONSTRUCTION. LOCATION AND GRADE STAKES SHALL BE SET BY THE CONTRACTOR.

RESTORATION OF EXISTING UTILITIES

1. WHEREVER EXISTING POWER, TELEPHONE, GAS, TRAFFIC SIGNALS OR OTHER UTILITIES REQUIRE RELOCATION, THE WORK SHALL BE COORDINATED WITH THE RESPECTIVE UTILITY COMPANY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION.

PLUGS

1. ANY PIPES AND CONDUITS NOT CONNECTED ON THIS PROJECT SHALL BE CAPPED ON EACH END WITH **STANDARD CAPS AS PROVIDED BY THE CONDUIT MANUFACTURER.**

SITE PREPARATION

1. PRIOR TO PLACEMENT OF THE BASE MATERIAL, THE SITE SHOULD HAVE BEEN CLEARED OF ANY DEBRIS, VEGETATION AND OTHER DELETERIOUS MATTER. FOLLOWING REMOVAL OF FILL AND ANY SOFT, LOOSE OR DISTURBED SOIL, THE NATURAL SOILS AT SUBGRADE ELEVATION SHOULD BE SCARIFIED TO A DEPTH OF SIX INCHES, BROUGHT TO A MOISTURE CONTENT BETWEEN OPTIMUM AND 3 PERCENT ABOVE OPTIMUM, AND COMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION BASED ON THE LABORATORY MAXIMUM DRY DENSITY UTILIZING ASTM D1557-78 PROCEDURE.

AGGREGATE BASE

1. SHALL BE TYPE I OR TYPE II AS DESIGNATED AND COMPACTED TO AT LEAST 95 PERCENT OF ASTM D1557 AT NEAR OPTIMUM MOISTURE CONTENT.

CONCRETE

1. **CONCRETE APPROACH SLABS SHALL HAVE A MINIMUM MODULUS OF RUPTURE OF 600 P.S.I.**
2. ALL CONCRETE SHALL BE STONE CONCRETE UTILIZING AGGREGATE CONFORMING TO ASTM C33. CEMENT SHALL BE TYPE V CONFORMING TO ASTM C150.
3. ALL CONCRETE MIXES SHALL BE DESIGNED BY A CERTIFIED INDEPENDENT TESTING LABORATORY WHO SHALL SUBMIT COPIES OF THE DESIGN FOR APPROVAL, AND SHALL IN ADDITION SUBMIT COPIES OF 7 AND 28 DAY CYLINDER TEST RESULTS TO THE ENGINEER AND OBTAIN APPROVAL PRIOR TO USE.
4. BEFORE CONCRETE IS PLACED, THE CONTRACTOR SHALL COORDINATE AND CHECK WITH ALL TRADES TO INSURE THE PROPER PLACEMENT OF ALL OPENINGS, CURBS SLEEVES, INSERTS, DEPRESSIONS, ETC., RELATING TO THE WORK.
5. CONCRETE SHALL NOT BE DROPPED MORE THAN 3 FEET.
6. CONSTRUCTION OF COLD JOINTS OTHER THAN THOSE SHOWN IN THE PLANS SHALL NOT BE MADE WITHOUT PRIOR APPROVAL BY THE ENGINEER.
7. ALL CONCRETE SHALL BE POURED WITH A SLUMP NOT TO EXCEED 3".

REINFORCING STEEL

1. REINFORCING STEEL SHALL BE NEW STOCK DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60 UNLESS NOTED OTHERWISE.
2. ALL BARS SHALL BE FREE OF RUST, GREASE, MILL SCALE, OR ANY MATERIAL WHICH MIGHT AFFECT ITS BOND TO CONCRETE.
3. ALL BAR BENDS MUST BE MADE COLD. REBENDING OF BARS WILL NOT BE PERMITTED.
4. BENDING, PLACING, SPACING, CONCRETE PROTECTIVE COVER, SPLICING, AND ALL OTHER DETAILS OF REINFORCEMENT SHALL CONFORM TO THE "BUILDING CODE REQUIREMENT FOR REINFORCED CONCRETE" A.C.I. 318-LATEST EDITION, CHAPTER 7 AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" A.C.I. 315 - LATEST EDITION.

MAINTAINING TRAFFIC

1. THE CONTRACTOR SHALL PROVIDE TWO (2) 12 FOOT WIDE PAVED TRAVEL LANES ARE TO BE OPEN AT ALL TIMES TO BI-DIRECTIONAL TRAFFIC FLOW ON ALL ROADWAYS DURING CONSTRUCTION. THIS INCLUDES MAINTAINING BI-DIRECTIONAL TRAFFIC FLOW ACROSS THE WASHINGTON AVENUE CHANNEL. ALTERNATE ROUTES WILL BE PROVIDED AND PROPERLY INDICATED WHEN CONSTRUCTION ACTIVITIES WILL NOT ALLOW TWO (2) LANES OF BI-DIRECTIONAL TRAFFIC. SAFE PEDESTRIAN MOVEMENT SHALL BE PROVIDED AND MAINTAINED BY THE CONTRACTOR DURING THE CONTRACT.
2. A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED BY THE CONTRACTOR TO THE CITY OF LAS VEGAS TRAFFIC ENGINEERING DEPARTMENT FOR APPROVAL PRIOR TO COMMENCING ANY CONSTRUCTION. THIS PLAN SHALL CLEARLY INDICATE ALL TEMPORARY PAVEMENT, MARKINGS, SIGNS, BARRICADES, LIGHTING AND TRAFFIC SAFETY DEVICES TO BE UTILIZED DURING THE CONSTRUCTION PHASE.
3. THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE METROPOLITAN POLICE DEPARTMENT AND THE CITY OF LAS VEGAS FIRE DEPARTMENT OF ANY RESTRICTED TRAFFIC LANES ON THE PROJECT DURING CONSTRUCTION PERIOD. EMERGENCY PHONE NUMBERS OF THE CONTRACTOR AND/OR HIS DESIGNATED REPRESENTATIVE WILL BE SUPPLIED TO THE AFORESAID AUTHORITIES.
4. THE CONTRACTOR WILL PROVIDE PRIOR NOTIFICATION TO ALL RESIDENTS AND BUSINESSES EFFECTED BY ANY TEMPORARY TRAFFIC RE-ROUTING AND PROVIDE A LISTING OF THE AREAS SO NOTIFIED TO THE CITY OF LAS VEGAS TRAFFIC ENGINEERING DEPARTMENT.
5. ALL TRAFFIC FLAGMEN WORKING ON THIS CONTRACT WILL BE CERTIFIED BY THE CITY OF LAS VEGAS TRAFFIC ENGINEERING DEPARTMENT OR THE NEVADA DEPARTMENT OF TRANSPORTATION. AND SHALL BE PROPERLY DRESSED WHILE WORKING ON THE PROJECT.

DEWATERING

1. THE CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR REMOVING ALL EXCESSIVE GROUNDWATER, SURFACE WATER AND MISCELLANEOUS WATER WHICH IMPEDES THE EXECUTION OF THE CONTRACT. IF EXCESSIVE WATER IS ENCOUNTERED THE CONTRACTOR WILL PROVIDE ALL LABOR MATERIALS AND EQUIPMENT TO REMOVE THE WATER, THIS WORK INCLUDES, BUT IS NOT LIMITED TO, THE PROVISION OF ADEQUATE CAPACITY SUMP/TRASH PUMPS, PROPERLY LOCATED WELL POINTS, STABILIZATION OF THE SUBGRADE, AND ADEQUATE SHEETING AND SHORING. THE COST OF THIS WORK WILL BE INCLUDED IN THE UNIT PRICE BID FOR EXISTING **STRUCTURE REMOVAL.**

SEQUENCE OF CONSTRUCTION

1. THE CONTRACTOR SHALL CLOSELY COORDINATE THE SEQUENCE OF CONSTRUCTION WITH THE CITY OF LAS VEGAS **CONSTRUCTION SERVICES DIVISION** THE CITY WILL REQUIRE THE CONTRACTOR TO COMMENCE REMOVAL AND CONSTRUCT THE NEW STRUCTURE ON THE EASTERLY ONE-HALF (1/2) OF THE EXISTING STRUCTURE. A NEW STRUCTURE AT LAMB BLVD. AND THE LAS VEGAS WASH IS TO BE CONSTRUCTED DURING THE SAME TIME PERIOD AS THIS CONTRACT. THE CITY WILL REQUIRE THE CONTRACTOR TO COORDINATE ALL TRAFFIC PLANS, TEMPORARY PAVEMENTS AND CONSTRUCTION SCHEDULING TO MINIMIZE INCONVENIENCE TO THE PUBLIC.

SURVEY BEARINGS

1. THE BASIS OF BEARINGS FOR THE CENTERLINES OF WASHINGTON AVENUE AND LAMB BLVD. AS SHOWN IS CITY OF LAS VEGAS RIGHT OF WAY MAP, FILE 115-342, SHEET 1 OF 8.

WATERLINES

1. THE LAS VEGAS VALLEY WATER DISTRICT SHALL BE NOTIFIED FORTY-EIGHT (48) HOURS PRIOR TO THE BEGINNING ACTUAL CONSTRUCTION.
2. THE LAS VEGAS VALLEY WATER DISTRICT CUSTOMERS SERVICED BY THE EXISTING 12 INCH WATER LINE AND THE EXISTING 8 INCH WATER LINE SHALL BE NOTIFIED TWENTY-FOUR (24) HOURS PRIOR TO THE SHUTTING OFF OF THEIR WATER SUPPLY. THE WATER SUPPLY "SHUT DOWN" TIME SHALL BE AS FOLLOWS:

   DAY TIME - 6 AM TO 10 PM. MAXIMUM SINGLE SHUT DOWN TIME IS 4 HOURS, AND MAXIMUM CUMULATIVE SHUT DOWN TIME IS 2 SEPARATE PERIODS OF 4 HOURS.

   NIGHT TIME - 10 PM TO 6 AM. MAXIMUM SINGLE SHUT DOWN TIME IS 8 HOURS, AND MAXIMUM CUMULATIVE SHUT DOWN TIME IS 3 SEPARATE PERIODS OF 8 HOURS.
3. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LAS VEGAS VALLEY WATER DISTRICT STANDARD DRAWINGS AND THE SAID "GENERAL SPECIFICATIONS".
4. THE NEW 12 INCH WATER LINE THAT PASSES UNDER THE WASHINGTON CHANNEL FROM LAMB BOULEVARD STA 19+65.50 TO STA 20+37.11 SHALL BE CONSTRUCTED SO THE TOP OF PIPE OR CASING IS A MINIMUM OF ONE FOOT BELOW THE BOTTOM OF THE BRIDGE CONCRETE SLAB. THIS PIPE SHALL BE EITHER MORTAR LINED AND COATED STEEL PIPE OR ASBESTOS CEMENT PIPE ENCASED IN A STEEL PIPE CASING OR A REINFORCED CONCRETE PIPE CASING AS DESCRIBED UNDER PIPE ENCASEMENT.
5. THE NEW 12 INCH WATER LINE UNDER WASHINGTON AVENUE SHALL BE EITHER ASBESTOS CEMENT PIPE OR MORTAR LINED AND COATED STEEL PIPE.
6. PIPE ENCASEMENT.

   THE CONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT, AND MATERIALS REQUIRED FOR A COMPLETE INSTALLATION OF ALL PIPE CASING AS SPECIFIED AND AS SHOWN ON THE DRAWINGS.

   A. PIPE CASING (USE MIN. **24"** I.D. FOR **12"** MAIN)
      1. PIPE CASING SHALL BE LAID TRUE TO LINE AND GRADE WITH NO BENDS OR CHANGES IN GRADE FOR THE FULL LENGTH OF THE CASING.
      2. UNLESS OTHERWISE SHOWN ON THE DRAWINGS OR SPECIFIED, THE CASING SHALL BE STEEL OR REINFORCED CONCRETE PIPE.
      3. IF PIPE IS TO BE INSTALLED INSIDE THE CASING, THE PIPE SHALL BE SUPPORTED AT EACH END OF EACH JOINT WITH MINIMUM 4" X 4" X 3' REDWOOD SKIDS. THE ANNULAR SPACE BETWEEN THE PIPE AND THE CASING SHALL BE BACKFILLED WITH SAND OR GROUT. AFTER INSTALLATION OF THE PIPE, THE CASING SHALL BE SEALED AT BOTH ENDS WITH MORTARED BRICK OR CEMENT **AS PER STANDARD SPECIFICATION G29.03.16 FOR A DISTANCE OF 12"(MIN.)**

   B. STEEL PIPE CASING

   UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS, STEEL PIPE CASING SHALL BE FABRICATED FROM A MINIMUM OF 1/4" THICK STEEL PLATES CONFORMING TO THE REQUIREMENTS OF THE "SPECIFICATION FOR LOW AND INTERMEDIATE TENSILE STRENGTH CARBON STEEL PLATES OF STRUCTURAL QUALITY" (ASTM A 283), GRADES B, C, OR D. IN ALL CASES, THE THICKNESS OF THE STEEL CASING SHALL BE DETERMINED BY LIMITING THE CASING DEFLECTION OF 2% OF THE I.D. WHEN SUBJECTED TO EXTERIOR LOADS AS DICTATED BY THE CONDITIONS AS SHOWN ON THE DRAWINGS. ALL JOINTS SHALL BE WELDED. INTERIOR JOINTS SHALL BE GROUND TO A SMOOTH FINISH. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE "STANDARD FOR FABRICATED ELECTRICALLY WELDED STEEL WATER PIPE" (AWWA C201). COATINGS FOR STEEL CASING ARE NOT REQUIRED.

   C. REINFORCED CONCRETE PIPE CASING

   REINFORCED CONCRETE PIPE CASING SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD FOR "REINFORCED CONCRETE CULVERT, STORM DRAIN, AND SEWER PIPE," (ASTM C 76). JOINTS SHALL BE MORTARED ON THE INSIDE AND WIPED SMOOTH TO PROVIDE A SMOOTH INTERIOR ALONG THE FULL LENGTH OF THE CASING. ALL REINFORCED CONCRETE PIPE CASING SHALL BE A MINIMUM OF CLASS IV IN ACCORDANCE WITH THE ABOVE REFERENCE ASTM STANDARD. IF THE CONTRACTOR PROPOSES TO SUPPLY AN ALTERNATE CLASS CASING, THE SHOP DRAWINGS SHALL INCLUDE D-LOAD CALCULATIONS IN ACCORDANCE WITH CHAPTER 4 OF THE AMERICAN CONCRETE PIPE ASSOCIATION DESIGN MANUAL, FEBRUARY, 1974.
7. ALL FITTINGS SHALL BE MECHANICAL JOINT CAST IRON WITH CEMENT LINING. CONTRACTOR SHALL CONSTRUCT THRUST BLOCKS AT ALL FITTINGS IN ACCORDANCE WITH LAS VEGAS VALLEY WATER DISTRICT STANDARDS.

CONDUITS

1. ALL CONDUITS & FITTINGS SHALL BE RIGID PLASTIC CONDUIT SCHEDULE 40 POLYVINYL CHLORIDE (PVC) TYPE, CONFORMING TO UNDERWRITERS LABORATORY, INC. PUBLICATION UL651.
2. CONSTRUCTION SHALL CONFORM TO SECTION 623 OF THE STANDARD SPECIFICATIONS.

DWG. No. 107-V1419 SHT. 6 OF 9

DATE	REVISION
12-10-86	REVISED PER CITY COMMENTS
4-10-87	REVISED PER CITY COMMENTS

GUNNY, BRIZENDINE & POGGEMEYER
ENGINEERS PLANNERS

JOB NUMBER 85080
DESIGNED BY
DRAWN BY CG
CHECKED BY GAB
DATE 10-30-'85

CITY OF LAS VEGAS, NEVADA
LAMB BOULEVARD / WASHINGTON AVENUE CHANNEL STRUCTURE

DRAWING NUMBER S-1 OF 4

33-120