

Record Drawing

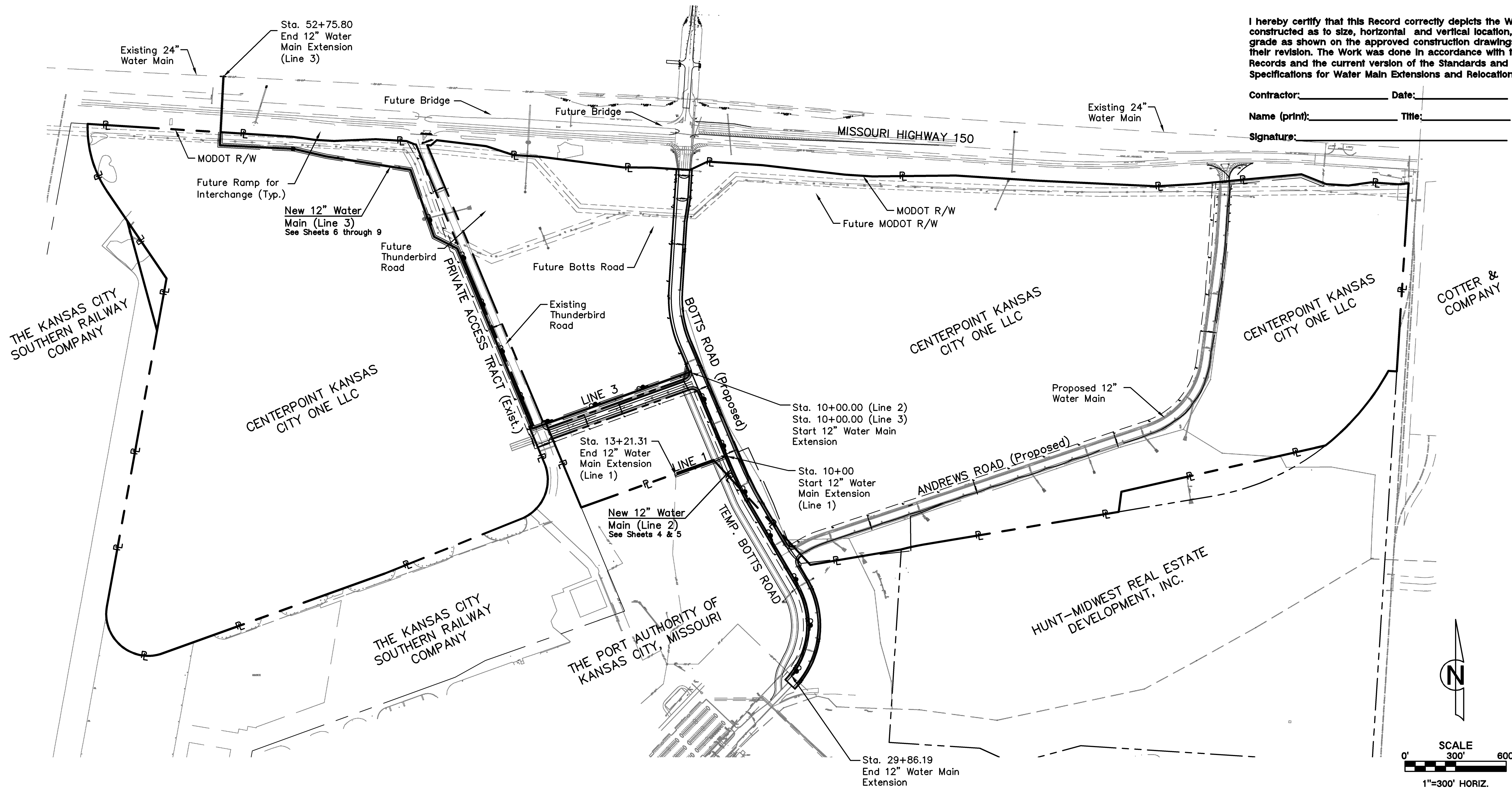
DATE: 1-19-09

I hereby certify that this Record correctly depicts the Work constructed as to size, horizontal and vertical location, and grade as shown on the approved construction drawings or their revision. The Work was done in accordance with these Records and the current version of the Standards and Specifications for Water Main Extensions and Relocations.

Contractor: _____ Date: _____

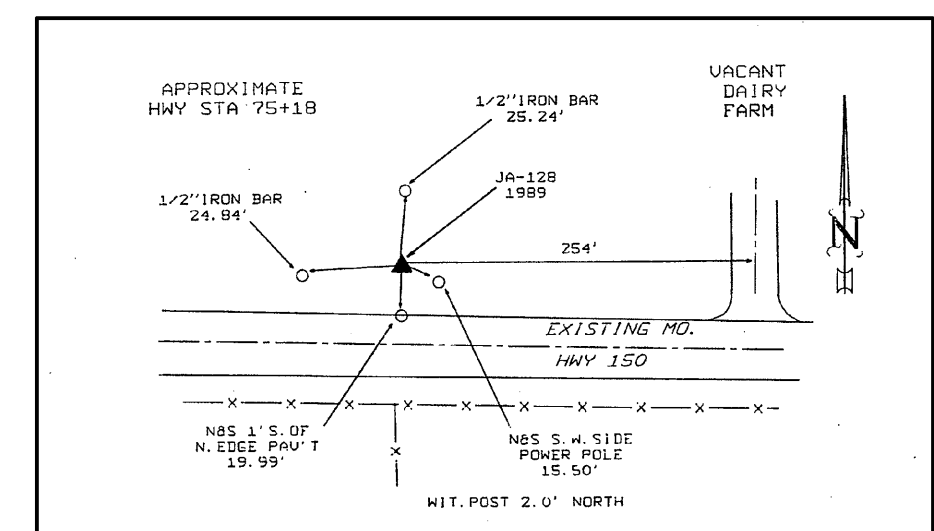
Name (print): _____ Title: _____

Signature: _____



- GENERAL NOTES:**
1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE STANDARDS AND SPECIFICATIONS FOR WATER MAIN EXTENSIONS AND RELOCATIONS OF THE KANSAS CITY, MISSOURI WATER SERVICE DEPARTMENT.
 2. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL FITTINGS REQUIRED TO PROVIDE PROPER HORIZONTAL AND VERTICAL ALIGNMENT FOR NEW WATER MAINS, CONNECTIONS TO EXISTING WATER MAINS AND INSTALLATION OF FIRE HYDRANTS AT THE PROPER LOCATION AND ELEVATION, WHETHER OR NOT THE PROPER FITTINGS, LOCATION OR ELEVATIONS ARE CALLED OUT ON THESE DRAWINGS, INCLUDING MODIFICATION OF EXISTING INFRASTRUCTURE REQUIRED TO MAKE ALL OF THE WORK CONFORM TO CURRENT WSD STANDARDS.
 3. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY BLOW-OFF ASSEMBLIES, FITTINGS, THRUST BLOCKING, AND RETRAINING DEVICES REQUIRED FOR TEMPORARY CONNECTIONS FOR FLUSHING, PRESSURE TESTING, CHLORINATION, AND DE-CHLORINATION OF THE NEW WATER MAINS. PRIOR TO PLACING NEW MAINS IN SERVICE THE CONTRACTOR SHALL REMOVE ANY CORPORATION COCKS USED FOR TESTING OR CHLORINATION AND REPLACE THEM WITH TAPERED BRASS PLUGS.
 4. THE CONTRACTOR SHALL INSTALL POLYETHYLENE ENCASUREMENT ON ALL WATER MAINS, VALVES, FITTINGS, AND OTHER APPURTENANCES FOR THE FULL LENGTH OF THE PROJECT IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR WATER MAIN EXTENSIONS AND RELOCATIONS OF THE KANSAS CITY, MISSOURI WATER SERVICES DEPARTMENT.
 5. SCHEDULING OF WATER MAIN SHUTS AND CONNECTION TO EXISTING MAINS SHALL BE AT THE DISCRETION OF THE WATER SERVICES DEPARTMENT.
 6. ALL FIRE HYDRANT BRANCHES SHALL BE RESTRAINED USING APPROVED RESTRAINING DEVICES. HYDRANTS SHALL BE INSTALLED SO THAT THE CENTERLINE OF THE OUTLET NOZZLE IS BETWEEN EIGHTEEN AND TWENTY-ONE INCHES (18"-21") ABOVE FINISHED GRADE, AND SO THAT THERE IS A MINIMUM CLEAR AREA OF 5' IN EACH DIRECTION TO ALLOW OPERATION OF THE HYDRANT.
 7. SECTIONS OF WATER MAIN REQUIRING MULTIPLE BENDS, SUCH AS CUL-DE-SACS, SHOULD BE RESTRAINED WITH APPROVED JOINT RESTRAINING DEVICES AND STRADDLE BLOCKS IN LIEU OF BACKING BLOCKS.
 8. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES.
 9. THE CONTRACTOR SHALL COMPLY WITH STATE LAW REQUIRING ANY PERSON OR FIRM DOING EXCAVATION ON THE PUBLIC RIGHT-OF-WAY DO SO ONLY AFTER GIVING NOTICE TO AND OBTAINING INFORMATION FROM UTILITY COMPANIES.
 10. STREETS AND PARKING AREAS ARE TO BE TO GRADE AND CURBS IN PLACE PRIOR TO CONSTRUCTION OF WATER MAINS. WATER MAINS SHALL BE INSTALLED WITH A MINIMUM GROUND COVER OF 42 INCHES BELOW FINISHED GRADE. SIXTEEN (16)-INCH AND LARGER WATER MAINS SHALL BE INSTALLED WITH A MINIMUM GROUND COVER OF 60 INCHES BELOW FINISHED GRADE.

11. WATER MAINS SHALL BE LAID AT LEAST 10 FEET, HORIZONTALLY FROM ANY SEWER. WHEN LOCAL CONDITIONS PREVENT A HORIZONTAL SEPARATION OF 10 FEET, A WATER MAIN MAY BE LAID CLOSER THAN 10 FEET TO A SEWER, PROVIDED THAT THE WATER MAIN IS LAID IN A SEPARATE TRENCH, OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER, AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER. WATER MAINS SHALL BE LAID SUCH THAT THERE IS A MINIMUM OF 18 INCHES CLEARANCE BETWEEN THE PIPE WALL AND THE EXTERIOR OF ANY MANHOLE AND/OR INLET ON THE SEWER LINE.
- WHENEVER A WATER MAIN MUST CROSS ABOVE A SEWER, A VERTICAL SEPARATION OF 18 INCHES BETWEEN BOTTOM OF THE WATER MAIN AND THE TOP OF THE SEWER SHALL BE MAINTAINED. WHENEVER A WATER MAIN MUST CROSS UNDER A SEWER, A VERTICAL SEPARATION OF 18 INCHES BETWEEN THE BOTTOM OF THE SEWER AND THE TOP OF THE WATER MAIN SHALL BE MAINTAINED. A FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ON THE SEWER TO BE CROSSED SO THAT THE JOINTS WILL BE EQUALLY DISTANT FROM THE SEWER AND AS FAR AWAY AS POSSIBLE. THE 18 INCH VERTICAL SEPARATION SHALL BE MAINTAINED FOR THAT PORTION OF THE WATER MAIN LOCATED WITHIN 10 FEET, HORIZONTALLY, OF ANY SEWER IT CROSSES.
- WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL SEPARATION AS STIPULATED ABOVE, OR WHEN A WATER MAIN MUST CROSS UNDER A SEWER, THE SEWER MUST BE RECONSTRUCTED OF DUCTILE IRON PIPE MEETING THE REQUIREMENTS OF SECTION 02618 OF THE STANDARDS AND SPECIFICATIONS FOR WATER MAIN EXTENSIONS AND RELOCATIONS; PRE-STRESSED CONCRETE CYLINDER PIPE MEETING THE REQUIREMENTS OF SECTION 02619; OR PVC PRESSURE PIPE CONFORMING TO AWWA C-900 OR C-905, AND SHALL BE PRESSURE TESTED TO ASSURE WATER TIGHTNESS BEFORE BACKFILLING. THE REQUIRED LENGTH OF SEWER TO BE REPLACED OR CONSTRUCTED OF PRESSURE PIPE WILL BE THE LENGTH NECESSARY TO ACHIEVE 10 FEET HORIZONTAL SEPARATION.
- WHERE THESE CONDITIONS CANNOT BE MET, THE WATER SERVICES DEPARTMENT SHALL BE CONSULTED AS TO THE PRECAUTIONS TO BE TAKEN TO PROTECT THE PUBLIC WATER SUPPLY.
12. AN EXCAVATION PERMIT MUST BE OBTAINED FROM THE CITY ENGINEER PRIOR TO COMMENCING CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY. CONTACT THE PUBLIC WORKS DEPARTMENT PERMIT COUNTER AT 513-2777 ON THE 18TH FLOOR OF CITY HALL.
13. A STREET CLOSURE PERMIT MAY BE REQUIRED FOR THIS WORK. CONTACT THE STREET AND TRAFFIC DIVISION OF THE PUBLIC WORKS DEPARTMENT AT 513-2679 ON THE 23RD FLOOR OF CITY HALL.
14. ALL WORK SHALL CONFORM TO THE LATEST REVISION OF THE KANSAS CITY, MISSOURI EROSION AND SEDIMENT CONTROL SPECIFICATIONS, WHICH ARE MADE A PART HEREOF BY REFERENCE. EROSION CONTROL PLANS SHALL BE SUBMITTED TO THE CITY ENGINEER, PUBLIC WORKS DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE START OF THIS PROJECT.
15. CONTRACTOR SHALL CONTACT LUTJEN, INC. 48 HOURS IN ADVANCE OF INSTALLATION OF WATER MAIN(S) TO SCHEDULE WATER AS-BUILT SURVEY.



BENCHMARK TABLE

STATION	GRID NORTHING	GRID EASTING	NAVD 88 ELEVATION
JA-128	979540.451	2787221.578	1046.26

NOTE: COORDINATES SHOWN ARE BASED ON THE ADJUSTED MISSOURI STATE PLANE GRID SYSTEM, NAD 1983, WEST ZONE, (ADJUSTED IN 2003) USING A COMBINED GRID FACTOR OF 0.9998962. COORDINATES ARE IN FEET.

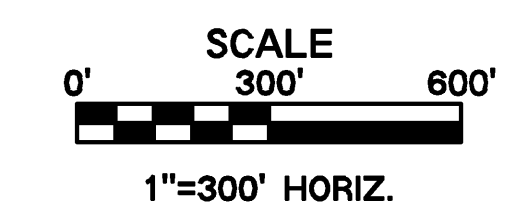
THE CONVERSION FROM METERS TO U.S. SURVEY FEET IS: 1 METER = 3.28083333 U.S. SURVEY FEET.

THE CONVERSION FROM KC DATUM TO NAVD 88 DATUM IS: NAVD 88 = KCMO +722.57 FEET.

Professional Surveyor Seal:

Date Jason S. Roudebush MO. PLS 2002014092

for WSD use:
Each sheet of these Record Drawings and attached Survey Cut Sheets for the Work have been reviewed and approved by the Registered Land Surveyor whose seal is affixed to this Record. The horizontal control, coordinates, and elevations shown on these Records are accurate and are based on the Missouri Coordinate System of 1983 West Zone and NAVD88 datum. These Records have been revised, as required in Section 01000, 1.20 of the Standards and Specifications for Water Main Extensions and Relocations, under my personal supervision to show the true and accurate measurements of the work as it was actually constructed.



WATER GENERAL LAYOUT

CENTERPOINT-KCS INTERMODAL CENTER

Reviewed By: S.E.C.
Designed By: R.J.S.
Drafted By: M.C.D.
Lutjen Project No.: 07185

LUTJEN

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surveying
planning
engineering
landscape architecture

Location: S:\Survey\RC-AIRPORT\WATERLINE\AS-BUILT\TS\BOTTIS-THUNDERBIRD\Water-3\GWA - 07165.dwg

DATE	P.E. SIGNATURE	DESCRIPTION
01-25-08	R.J.S.	Prepared for Review.
04-02-08	R.J.S.	Revised per City Comments
07-15-08	R.J.S.	Added Line 2 to Plans
08-21-08	R.J.S.	Revised Lines 1, 2, 3 Alignments
1-19-09	J.S.R.	AS-BUILT

CITY OF KANSAS CITY, MISSOURI WATER SERVICES DEPARTMENT

WATER MAIN EXTENSION

12" Water Main in Thunderbird Road & Botts Road
Centerpoint - KCS Intermodal Center,
Kansas City, Jackson County, Missouri

DRAWN BY:	CHECKED BY:	DATE SUBMITTED:	RANGE	TOWNSHIP	SECTION
M.C.D.	R.J.S.	01-25-08	32 W	47 N	35

CONTRACTOR DATE COMPLETED:

CONTRACT NO.	CONTRACT DATE	MAP NO.	WORK ORDER NO.	DRAWING NO.
80001324		J-8315	M-08-49	19777

PROJECT NO. 80001324 SHEET 2 OF 9