

TRAVERSE MOUNTAIN AREA PLAN
SANITARY SEWER



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Introduction

Traverse Mountain was granted 4,500 additional units above the original 3,500 units in the Fox Ridge area plan per the Cabella's Development agreement. The developer and the city have agreed upon a total of 5,812 residential units in the development. The additional 2,312 units created a need to determine how the additional sewer demand would be routed the sanitary sewer system to the outfall line to the TSSD trunk sewer line in 1900 south.

The original area plan sewer flows (both commercial, civic, park and residential) were included in the 1997 Lehi City sewer master plan. The purpose of this study is to determine a route for the additional sewer demand through the city to the existing TSSD sewer outfall line. The existing 36" outfall line (2700 west) does not have any unallocated capacity for the additional units that were granted to the development.

Summary

The analysis determined that a feasible option was to construct the master plan sewer along 1700 west from 1900 south to the existing 22-inch bore under I-15 at Thanksgiving Point. See SR-92, Figure 1 - offsite sanitary sewer, which shows the location of the proposed sewer. The master plan sewer would need to be up-sized from the 15" sewer to a 15", 24", and 30" depending on the location on 1700 west. The offsite sewer would need to be operational after the 3500th residential building permit is issued for the project.

The following report details the analysis and the route of the proposed sewer outfall line. Sections of the sewer have already been installed and upsized to meet required size for the additional Traverse Mountain flows. These sections are shown on Figure 1.

The following is a summary of the required piping, location and footage.

	<u>Master Plan</u>	<u>New Sewer</u>	<u>TM Required Size</u>	<u>Length</u>
1900 So. to 300 No.	18"	30"	24"	9500
300 No. to 900 No.	12"	30"	24"	2700
900 No. to 1500 No.	10" & 8"	Existing 24"	24"	2672
1500 No. (1700 W. to Rail Road)	10"	Existing 24"	24"	800
1500 No. to 2100 No.	New Pipe	Existing 24"	24"	3650
2100 No. (1650 W. to Ashton Blvd)	New Pipe	24"	24"	2080
Along West Frontage Road to I-15 Crossing	New Pipe	12"	12"	3280
Bull River Morning Glory to 500 West	18"	18"	12"	1970

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The analysis and the future design of the sanitary sewer system will be based upon the following criteria:

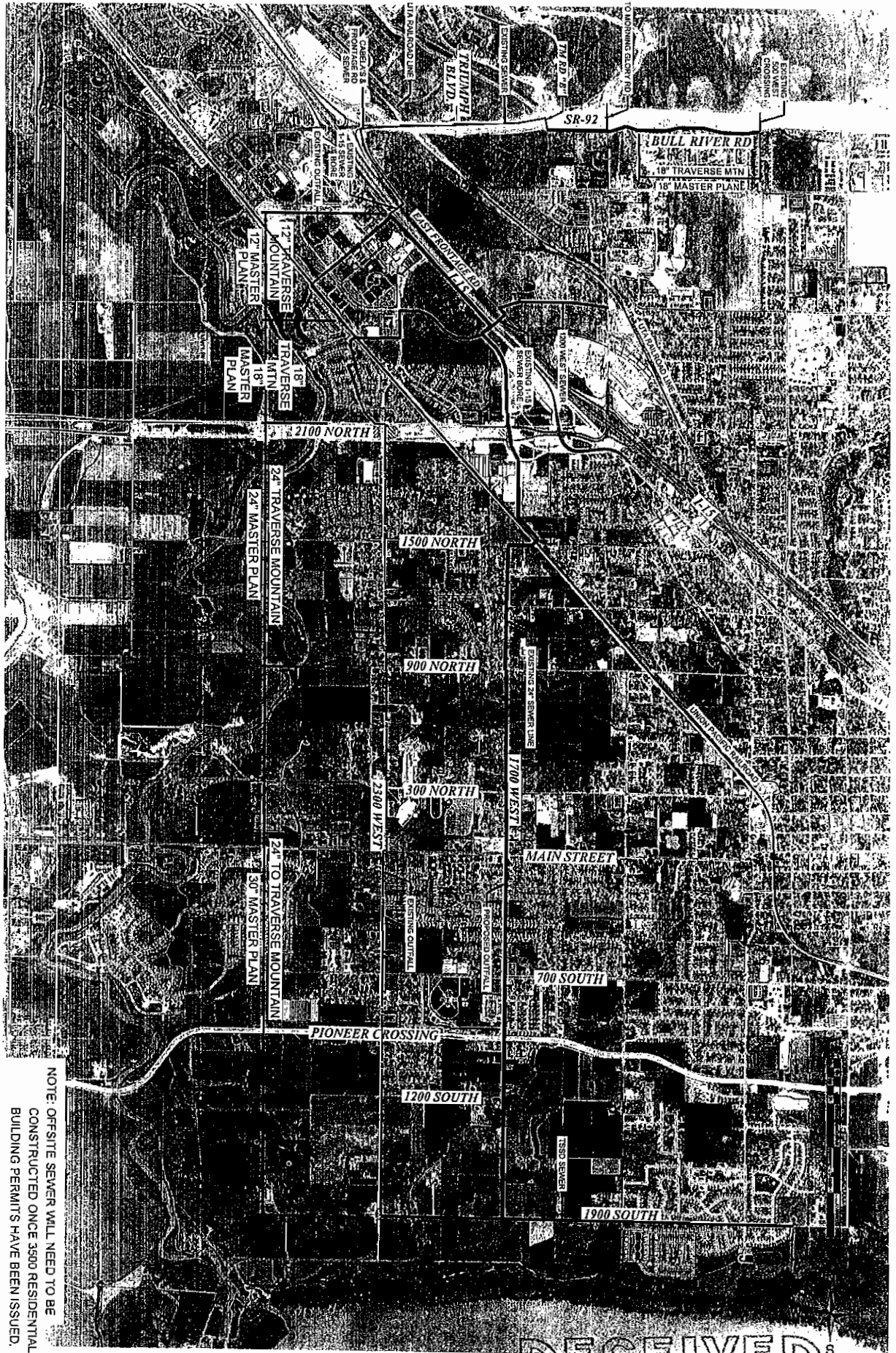
Onsite Design

DESCRIPTION	ASSUMPTION
Minimum Pipe Size	8-inch
Average Daily Flow	100 Gallons Per Day Per Person
Residential Unit	3.8 Persons Per Unit
Commercial	0.1 Gallons Per Day Per Square Foot (assume 25% Building Coverage)
Civic	0.25 Gallons Per Day Per Square Foot (assume 25% Building Coverage)
Recreational	Per State Regs
Peaking Factor	$1 + \frac{14}{(4 + \sqrt{p})}$

Offsite Design

DESCRIPTION	ASSUMPTION
Minimum Pipe Size	8-inch
Average Daily Flow	100 Gallons Per Day Per Person
Residential Unit	3.8 Persons Per Unit
Commercial	0.2 Gallons Per Day Per Square Foot (assume 25% Building Coverage)
Civic	0.25 Gallons Per Day Per Square Foot (assume 25% Building Coverage)
Recreational	Per State Regs
Peaking Factor	$1 + \frac{14}{(4 + \sqrt{p})}$

The existing system onsite was evaluated for the new design flows from the additional units. The system has the capacity to carry the new flows to the offsite sanitary sewer system with the exception of a section of 10" pipe that will need to have the grade increased to carry the proposed flows from the western canyon area. The pipe is located at the intersection of Traverse Mountain Boulevard and Holmstead drive into the Winterhaven development.



NOTE: OFFSITE SEWER WILL NEED TO BE CONSTRUCTED ONCE 3500 RESIDENTIAL BUILDING PERMITS HAVE BEEN ISSUED.

SHEET NO. SHT.00

PROJECT: TM OFFSITE SEWER FEASIBILITY STUDY
 TRAVERSE MOUNTAIN
 FIGURE 1 OFFSITE SEWER

NO.	DATE	BY	REVISION
1	03/01/2011	JAM	ISSUE FOR PERMIT
2	03/01/2011	JAM	ISSUE FOR PERMIT
3	03/01/2011	JAM	ISSUE FOR PERMIT
4	03/01/2011	JAM	ISSUE FOR PERMIT
5	03/01/2011	JAM	ISSUE FOR PERMIT
6	03/01/2011	JAM	ISSUE FOR PERMIT
7	03/01/2011	JAM	ISSUE FOR PERMIT
8	03/01/2011	JAM	ISSUE FOR PERMIT
9	03/01/2011	JAM	ISSUE FOR PERMIT
10	03/01/2011	JAM	ISSUE FOR PERMIT



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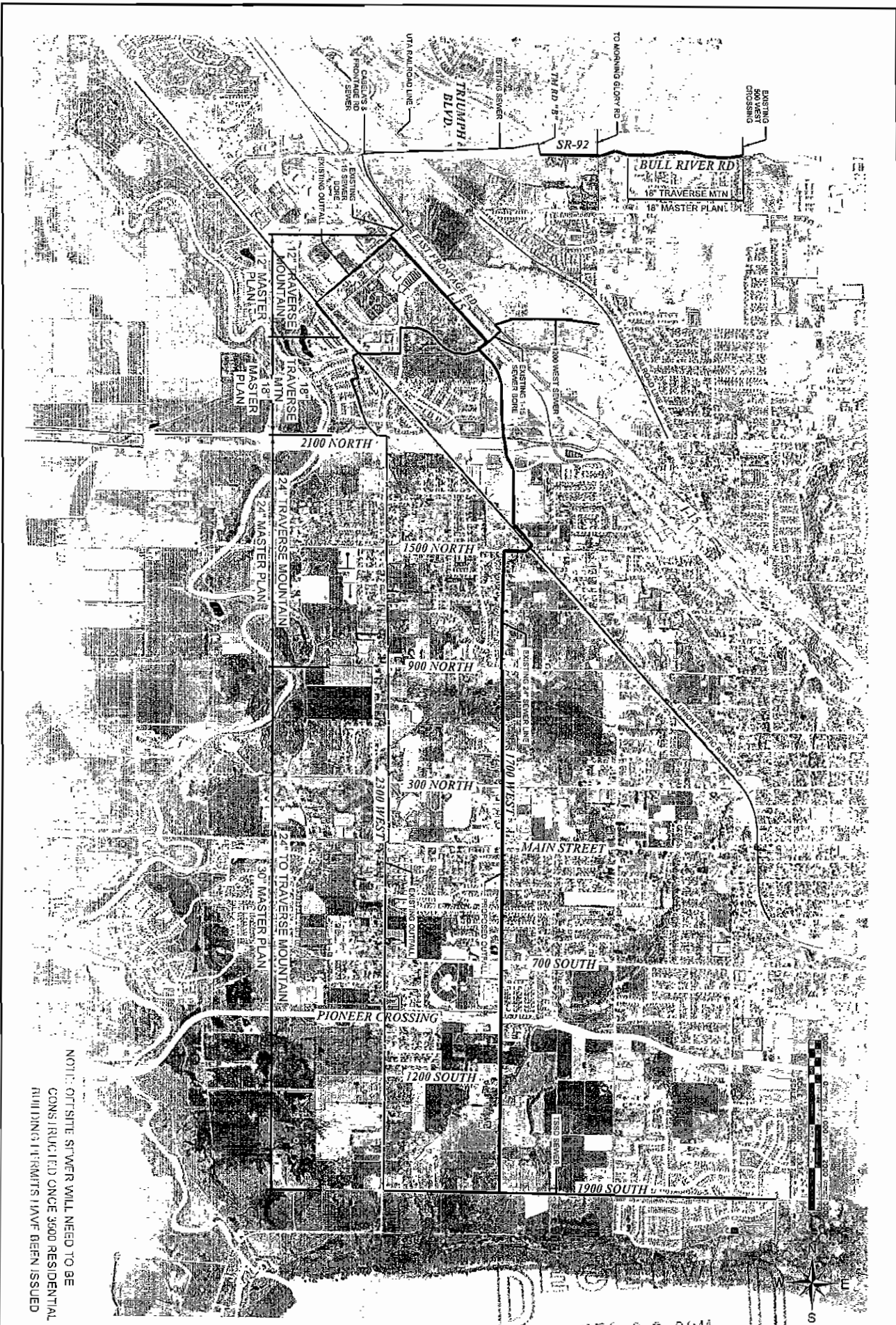
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**TRAVERSE MOUNTAIN
ON-SITE SEWER COMPUTATIONS**

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NOTE: OFFSITE SEWER WILL NEED TO BE
 CONSTRUCTED ONCE \$500 RESIDENTIAL
 BUILDING PERMITS HAVE BEEN ISSUED

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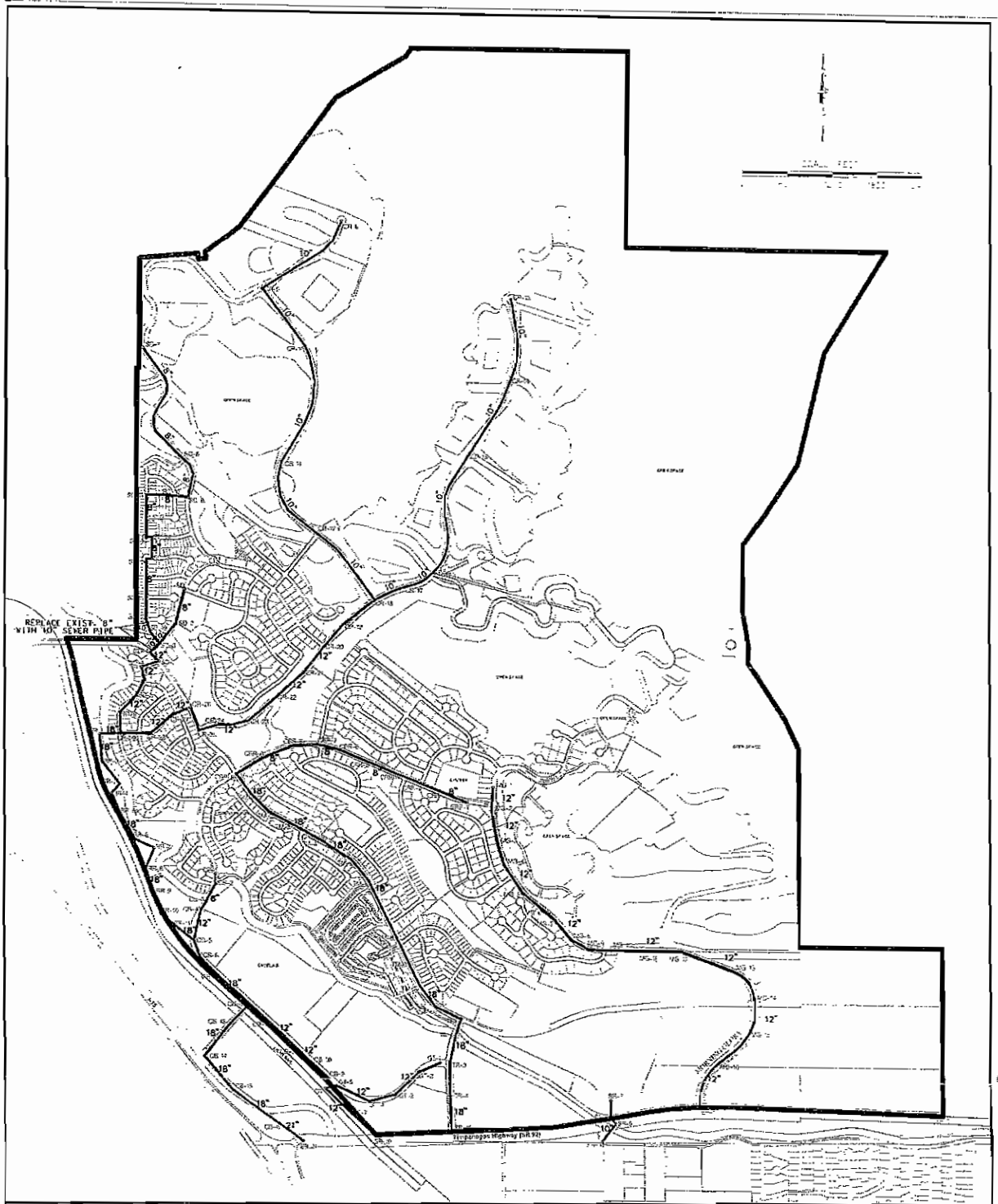
TM OFFSITE SEWER FEASIBILITY STUDY
 TRAVERSE MOUNTAIN
 FIGURE 1 OFFSITE SEWER

NO.	DATE	BY	REVISIONS
1	12/06/11	J. ROBERTSON	ISSUE FOR PERMITTING
2	12/06/11	J. ROBERTSON	REVISED PER PERMITTING COMMENTS
3	12/06/11	J. ROBERTSON	REVISED PER PERMITTING COMMENTS
4	12/06/11	J. ROBERTSON	REVISED PER PERMITTING COMMENTS
5	12/06/11	J. ROBERTSON	REVISED PER PERMITTING COMMENTS
6	12/06/11	J. ROBERTSON	REVISED PER PERMITTING COMMENTS
7	12/06/11	J. ROBERTSON	REVISED PER PERMITTING COMMENTS
8	12/06/11	J. ROBERTSON	REVISED PER PERMITTING COMMENTS
9	12/06/11	J. ROBERTSON	REVISED PER PERMITTING COMMENTS
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File	SEWER PLAN
Client	TRAVERSE MOUNTAIN, LEHI UTAH
Drawing Name:	ONSITE SEWER PIPE SIZES

PROJECT NO.	107-100000
SWR-1	07/21/11 08:51

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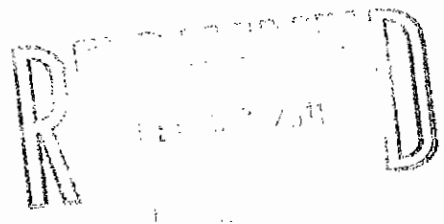
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WEST CANYON SEWER COMPUTATIONS

FROM	TO	LENGTH (ft)	Number of units	Comm. sq. ft.	Chp/Park Church (ft (sqns))	Total ERU	Average Flow	Total Average Flow	Peak Flow	Total Units	Total Comm. sq. ft.	Total Chp/Park Church	REQUIRED CAPACITY (gpm)	REQUIRED CAPACITY (ft³/s)	PIPE SIZE (in)	PIPE SIZE (ft)	NUMBER	HYDRAULIC RADIUS	SLOPE	VELOCITY (ft/s)	CAPACITY (ft³/s)	Designed Capacity	FALL (ft)	UPPER END	LOWER END
SC-7	SC-8	631	134	140	0	134	3.5	3.5	140	134	0	0	140	0.312	0	0.007	0.013	3.00%	7.70	2.71	OK	31.50	560.41	502.63	
SC-8	SC-9	500	90	0	0	90	2.1	2.1	90	90	0	0	90	0.099	0	0.007	0.013	3.00%	8.81	2.18	OK	40.00	560.89	498.65	
SC-9	SC-10	378	0	0	0	0	0	0	0	0	0	0	0	0.099	0	0.007	0.013	3.00%	8.81	2.18	OK	40.00	560.89	498.65	
SC-10	SC-11	218	0	0	0	0	0	0	0	0	0	0	0	0.099	0	0.007	0.013	3.00%	8.81	2.18	OK	40.00	560.89	498.65	
SC-11	SC-12	299	31	0	0	31	0.7	0.7	31	31	0	0	31	0.268	0	0.007	0.013	3.00%	7.92	3.05	OK	24.00	560.89	498.65	
SC-12	SC-13	153	15	0	0	15	0.4	0.4	15	15	0	0	15	0.150	0	0.007	0.013	3.00%	7.92	2.77	OK	18.00	560.89	498.65	
SC-13	SC-14	278	48	0	0	48	1.3	1.3	48	48	0	0	48	0.423	0	0.007	0.013	3.00%	8.81	2.77	OK	18.00	560.89	498.65	
SC-14	SC-15	153	15	0	0	15	0.4	0.4	15	15	0	0	15	0.150	0	0.007	0.013	3.00%	7.92	2.77	OK	18.00	560.89	498.65	
SC-15	SC-16	278	48	0	0	48	1.3	1.3	48	48	0	0	48	0.423	0	0.007	0.013	3.00%	8.81	2.77	OK	18.00	560.89	498.65	
SC-16	SC-17	520	10	0	0	10	0.3	0.3	10	10	0	0	10	0.099	0	0.007	0.013	3.00%	8.81	2.18	OK	24.00	560.89	498.65	
SC-17	SC-18	290	55	0	0	55	1.5	1.5	55	55	0	0	55	0.444	0	0.007	0.013	3.00%	8.81	3.13	OK	18.00	560.89	498.65	
SC-18	SC-19	178	22	0	0	22	0.6	0.6	22	22	0	0	22	0.222	0	0.007	0.013	3.00%	8.81	2.18	OK	18.00	560.89	498.65	
SC-19	SD-3	188	0	0	0	0	0	0	0	0	0	0	0	0.099	0	0.007	0.013	3.00%	8.81	2.18	OK	18.00	560.89	498.65	

SHADOW RIDGE SEWER COMPUTATIONS

FROM	TO	LENGTH (ft)	Number of units	Comm. sq. ft.	Chp/Park Church (ft (sqns))	Total ERU	Average Flow	Total Average Flow	Peak Flow	Total Units	Total Comm. sq. ft.	Total Chp/Park Church	REQUIRED CAPACITY (gpm)	REQUIRED CAPACITY (ft³/s)	PIPE SIZE (in)	PIPE SIZE (ft)	NUMBER	HYDRAULIC RADIUS	SLOPE	VELOCITY (ft/s)	CAPACITY (ft³/s)	Designed Capacity	FALL (ft)	UPPER END	LOWER END
SD-1	SD-2	32	53	0	0	53	1.4	1.4	53	53	0	0	53	0.125	0	0.007	0.013	11.43%	11.74	4.08	OK	54.150	4508.95	4524.75	
SD-2	SD-3	108	481	0	0	481	122	122	481	481	0	0	481	1.245	0	0.007	0.013	7.09%	10.605	3.89	OK	23.595	4508.95	4524.75	
SD-3	SD-4	177	0	0	0	0	0	0	0	0	0	0	0	0.256	0	0.007	0.013	2.08%	8.895	3.782	OK	13.275	4508.95	4524.75	
SD-4	SD-5	165	0	0	0	0	0	0	0	0	0	0	0	0.256	0	0.007	0.013	2.08%	8.895	3.782	OK	13.275	4508.95	4524.75	
SD-5	SD-6	284	0	0	0	0	0	0	0	0	0	0	0	0.256	0	0.007	0.013	2.08%	8.895	3.782	OK	13.275	4508.95	4524.75	
SD-6	SD-7	213	18	0	0	18	0.4	0.4	18	18	0	0	18	0.395	0	0.007	0.013	0.39%	3.959	2.255	OK	1.050	4508.95	4524.75	
SD-7	SD-8	227	5	0	0	5	0.1	0.1	5	5	0	0	5	0.125	0	0.007	0.013	0.30%	3.024	3.711	OK	0.552	4508.95	4524.75	
SD-8	SD-9	312	10	0	0	10	0.3	0.3	10	10	0	0	10	0.313	0	0.007	0.013	0.30%	3.138	3.075	OK	0.125	4508.95	4524.75	
SD-9	CR-28	273	5	0	0	5	0.1	0.1	5	5	0	0	5	0.125	0	0.007	0.013	0.30%	3.069	3.075	OK	0.228	4508.95	4524.75	



WEST CANYON AND CENTRAL CANYON ROAD SEWER COMPUTATIONS

FROM	TO	LENGTH (ft)	Number of units introduced	Comm. eq. l. introduced (ft. eq.)	Chlor/Park (lb./year)	Total ERU introduced	Average Flow (MGD)	Total Average Flow	Peak Flow (MGD)	Total Units Served	Total Comm. Sq. Ft.	Total Chlor/Park (lb./year)	REQUIRED CAPACITY (GPD)	REQUIRED CAPACITY (MGD)	PIPE SIZE (in)	PIPE SIZE (ft)	MANNINGS NUMBER	HYDRAULIC RADIUS	SLOPE	VELOCITY (ft/s)	CAPACITY (ft³/s)	Combined Capacity vs. required	FALL (ft)	UPPER END	LOWER END		
CR-3	CR-4	0	279	48.8	279	279	0	394	0	279	0	279	76	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-4	CR-10	0	151	1.10	20	20	0	131	0	151	0	151	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-10	CR-11	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-11	CR-12	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-12	CR-13	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-13	CR-14	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-14	CR-15	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-15	CR-16	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-16	CR-17	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-17	CR-18	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-18	CR-19	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-19	CR-20	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-20	CR-21	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-21	CR-22	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-22	CR-23	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-23	CR-24	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-24	CR-25	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-25	CR-26	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-26	CR-27	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-27	CR-28	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-28	CR-29	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-29	CR-30	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-30	CR-31	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-31	CR-32	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-32	CR-33	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-33	CR-34	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551
CR-34	CR-35	0	100	1.18	0	0	0	100	0	100	0	100	124	0.192	10	0.532	0.013	8.20%	10.000	5.454	OK	0.000	5065.551	5065.551	0.000	5065.551	5065.551

RAILROAD SEWER COMPUTATIONS

FROM	TO	LENGTH (ft)	Number of units introduced	Comm. eq. l. introduced (ft. eq.)	Chlor/Park (lb./year)	Total ERU introduced	Average Flow (MGD)	Total Average Flow	Peak Flow (MGD)	Total Units Served	Total Comm. Sq. Ft.	Total Chlor/Park (lb./year)	REQUIRED CAPACITY (GPD)	REQUIRED CAPACITY (MGD)	PIPE SIZE (in)	PIPE SIZE (ft)	MANNINGS NUMBER	HYDRAULIC RADIUS	SLOPE	VELOCITY (ft/s)	CAPACITY (ft³/s)	Designed Capacity vs. required	FALL (ft)	UPPER END	LOWER END		
CR-29	RR-1	250	2634	1.18	48.8	279	730	730	2553	2634	0	48.8	730,000	1.626	18	1.500	0.013	3.83%	10.000	17.671	OK	7.075	0	4778.18	0		
RR-1	RR-2	306	0	1.10	0	0	0	730	28	2634	0	48.8	730,000	1.626	18	1.500	0.013	3.20%	12.873	22.746	OK	11.572	4778.18	4778.18	0	4778.18	4778.18
RR-2	RR-3	306	0	1.18	0	0	0	730	3	2634	0	48.8	730,000	1.626	18	1.500	0.013	2.20%	8.895	15.895	OK	2.894	4778.18	4778.18	0	4778.18	4778.18
RR-3	RR-4	284	0	1.18	0	0	0	730	3	2634	0	48.8	730,000	1.626	18	1.500	0.013	1.04%	6.842	10.712	OK	2.894	4778.18	4778.18	0	4778.18	4778.18
RR-4	RR-5	294	0	1.18	0	0	0	730	3	2634	0	48.8	730,000	1.626	18	1.500	0.013	0.37%	5.753	8.053	OK	2.894	4778.18	4778.18	0	4778.18	4778.18
RR-5	RR-6	309	0	1.18	0	0	0	730	3	2634	0	48.8	730,000	1.626	18	1.500	0.013	0.94%	6.053	10.909	OK	2.894	4778.18	4778.18	0	4778.18	4778.18
RR-6	RR-7	293	0	1.18	0	0	0	730	3	2634	0	48.8	730,000	1.626	18	1.500	0.013	0.37%	5.753	8.053	OK	2.894	4778.18	4778.18	0	4778.18	4778.18
RR-7	RR-8	290	0	1.18	0	0	0	730	3	2634	0	48.8	730,000	1.626	18	1.500	0.013	0.88%	5.944	10.909	OK	2.894	4778.18	4778.18	0	4778.18	4778.18
RR-8	RR-9	334	0	1.18	0	0	0	730	3	2634	0	48.8	730,000	1.626	18	1.500	0.013	1.03%	6.146	10.909	OK	3.181	4778.18	4778.18	0	4778.18	4778.18
RR-9	RR-10	301	0	2.43	0	0	0	730	7	2634	0	48.8	730,000	1.626	18	1.500	0.013	1.04%	6.062	10.712	OK	3.181	4778.18	4778.18	0	4778.18	4778.18
RR-10	RR-11	350	0	2.43	0	0	0	730	7	2634	0	48.8	730,000	1.626	18	1.500	0.013	1.17%	6.500	11.582	OK	3.019	4778.18	4778.18	0	4778.18	4778.18
RR-11	CR-5	295	0	2.43	0	0	0	730	7	2634	0	48.8	730,000	1.626	18	1.500	0.013	1.17%	6.500	11.582	OK	3.019	4778.18	4778.18	0	4778.18	4778.18

DEC 6 2011

MORNING GLORY ROAD SEWER COMPILATIONS

FROM	TO	LENGTH (ft)	Number of Units	Comm. Acres	Chw/Park (ft)	Total ERU	Average Flow	Total Average Flow	Peak Flow	Total Units Served	Total Comm. Chw/Park	Capacity (GPD)	Required Capacity (GPD)	Capacity (ft ³ /d)	Pipe Size (in)	Pipe Size (ft)	Number	Radius	Slope	Velocity (ft/s)	Capacity (ft ³ /d)	Designed Capacity	Fall (ft)	Upper	Lower
MG-1	MG-2	319	102	0	5.4	12	3	3	1.2	102	5.4	3,000	0.007	0.007	8	0.607	0.013	0.197	3.34%	8.327	2,200	OK	10.554	5097.6	5098.53
MG-2	MG-3	441	0	0	0	0	0	0	0	102	0	0	0	0	8	0.607	0.013	0.197	3.34%	1.091	1,091	OK	3.92	5060.23	5061.53
MG-3	MG-4	288	0	0	0	0	0	0	0	102	0	0	0	0	8	0.607	0.013	0.197	3.34%	2.151	2,151	OK	2.151	5076.71	5078.68
MG-4	MG-5	374	64	0	0	5	2	3	0	168	0	5,000	0.007	0.007	9	0.607	0.013	0.197	3.34%	3.889	1,295	OK	3.763	5074.48	5076.35
MG-5	MG-6	374	0	0	0	0	0	0	0	168	0	5,000	0.011	0.011	8	0.607	0.013	0.197	3.34%	3.064	1,295	OK	1.005	5080.15	5082.02
MG-6	MG-7	201	0	0	0	0	0	0	0	168	0	5,000	0.011	0.011	8	0.607	0.013	0.197	3.34%	3.229	1,137	OK	2.734	5083.87	5085.74
MG-7	MG-8	217	0	0	0	0	0	0	0	168	0	5,000	0.011	0.011	8	0.607	0.013	0.197	3.34%	3.889	1,340	OK	2.698	5085.87	5087.74
MG-8	MG-9	350	0	0	0	0	0	0	0	168	0	5,000	0.011	0.011	8	0.607	0.013	0.197	3.34%	2.448	1,340	OK	2.698	5085.87	5087.74
MG-9	MG-10	350	0	0	0	0	0	0	0	168	0	5,000	0.011	0.011	8	0.607	0.013	0.197	3.34%	2.448	1,340	OK	2.698	5085.87	5087.74
MG-10	MG-11	413	829	0	17.0	87	23	28	0	168	0	5,000	0.011	0.011	8	0.607	0.013	0.197	3.34%	3.321	2,459	OK	1.925	5090.97	5092.84
MG-11	MG-12	97.1	0	0	0	0	0	0	0	168	0	5,000	0.052	0.052	8	0.607	0.013	0.197	3.34%	1.159	3,800	OK	3.000	5094.18	5096.05
MG-12	MG-13	603	0	0	3.0	1	0	0	0	168	0	5,000	0.089	0.089	8	0.607	0.013	0.197	3.34%	8.974	3,132	OK	48.000	5097.39	5100.18
MG-13	MG-14	398	439	0	0	46	12	28	0	1450	0	14,000	0.045	0.045	8	0.607	0.013	0.197	3.34%	11.363	3,956	OK	41.000	5100.60	5103.39
MG-14	MG-15	591	0	0	0	0	0	0	0	1450	0	14,000	0.145	0.145	12	1.000	0.013	0.250	10.77%	10.100	3,956	OK	43.000	5103.81	5106.60
MG-15	MG-16	715	0	0	0	0	0	0	0	1450	0	14,000	0.233	0.233	12	1.000	0.013	0.250	10.77%	11.039	8,717	OK	46.000	5107.02	5110.81

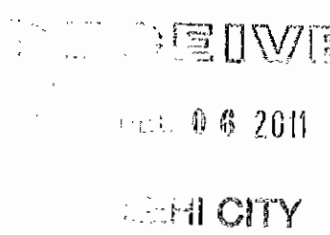
CHAPLAIN RIDGE ROAD, TRAVERS MOUNTAIN BLVD. & TRUMP BLVD. SEWER COMPILATIONS

FROM	TO	LENGTH (ft)	Number of Units	Comm. Acres	Chw/Park (ft)	Total ERU	Average Flow	Total Average Flow	Peak Flow	Total Units Served	Total Comm. Chw/Park	Capacity (GPD)	Required Capacity (GPD)	Capacity (ft ³ /d)	Pipe Size (in)	Pipe Size (ft)	Number	Radius	Slope	Velocity (ft/s)	Capacity (ft ³ /d)	Designed Capacity	Fall (ft)	Upper	Lower
TR-1	TR-2	274	509	5	4	22	16	15	7	1066	13.9	33,000	0.074	0.074	18	1.500	0.013	0.375	1.500%	7.280	12,866	OK	9.874	4811.51	4811.51
TR-2	TR-3	368	0	0	0	0	0	0	0	1066	13.9	33,000	0.074	0.074	18	1.500	0.013	0.375	1.500%	13.610	24,635	OK	18.070	4803.02	4803.02
TR-3	TR-4	462	0	0	0	0	0	0	0	1066	13.9	33,000	0.152	0.152	18	1.500	0.013	0.375	1.500%	11.739	20,744	OK	35.133	4766.8	4766.8
SR-1	SR-2	498	0	0	0	0	0	0	0	1066	13.9	33,000	0.192	0.192	18	1.500	0.013	0.375	1.500%	16.129	15,939	OK	8.920	4706.23	4706.23
CRR-1	CRR-2	390	0	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	18.726	5682.5	5682.5
CRR-2	CRR-3	295	0	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	12.500	5682.5	5682.5
CRR-3	CRR-4	389	7	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	16.905	5682.5	5682.5
CRR-4	CRR-5	332	0	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	14.615	5682.5	5682.5
CRR-5	CRR-6	210	0	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	35.558	5682.5	5682.5
CRR-6	CRR-7	280	0	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	32.040	5682.5	5682.5
CRR-7	CRR-8	340	133	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	19.720	5682.5	5682.5
CRR-8	CRR-9	355	45	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	20.910	5682.5	5682.5
CRR-9	CRR-10	353	0	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	18.910	5682.5	5682.5
CRR-10	TM-1	223	0	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	14.000	5682.5	5682.5
TM-1	TM-2	411	53	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	14.000	5682.5	5682.5
TM-2	TM-3	350	55	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	14.000	5682.5	5682.5
TM-3	TM-4	449	55	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	14.000	5682.5	5682.5
TM-4	TM-5	529	55	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	14.000	5682.5	5682.5
TM-5	TM-6	350	0	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	14.000	5682.5	5682.5
TM-6	TM-7	350	0	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	14.000	5682.5	5682.5
TM-7	TM-8	400	0	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	14.000	5682.5	5682.5
TM-8	TM-9	482	0	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	14.000	5682.5	5682.5
TM-9	TM-10	200	0	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	14.000	5682.5	5682.5
TM-10	TM-11	153	0	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	14.000	5682.5	5682.5
TM-11	TR-1	392	51	0	4.7	0	0	0	0	0	4.7	0	0	0	18	1.500	0.013	0.197	4.80%	7.905	2,947	OK	14.000	5682.5	5682.5
TR-1	TR-2	274	509	5	4	22	16	15	7	1066	13.9	33,000	0.074	0.074	18	1.500	0.013	0.375	1.500%	7.280	12,866	OK	9.874	4811.51	4811.51
TR-2	TR-3	368	0	0	0	0	0	0	0	1066	13.9	33,000	0.074	0.074	18	1.500	0.013	0.375	1.500%	13.610	24,635	OK	18.070	4803.02	4803.02
TR-3	TR-4	462	0	0	0	0	0	0	0	1066	13.9	33,000	0.152	0.152	18	1.500	0.013	0.375	1.500%	11.739	20,744	OK	35.133	4766.8	4766.8
SR-1	SR-2	498	0	0	0	0	0	0	0	1066	13.9	33,000	0.192	0.192	18	1.500	0.013	0.375	1.500%	16.129	15,939	OK	8.920	4706.23	4706.23

DEC 6 2011

PHOTO

FROM		TO		LENGTH	Number of Units	Comm sq. ft.	Church (sq. ft.)	Church (sq. ft.)	Total ERU	Average Flow	Total Flow	Peak Flow	Total Units	Total Comm	Total Church	REQUIRED CAPACITY (GPM)	REQUIRED CAPACITY (MGD)	PIPE SIZE (in)	PIPE SIZE (in)	MANNINGS	HYDRAULIC RADIUS	SLOPE	VELOCITY (ft/s)	CAPACITY (ft ³ /s)	Designed Capacity vs. required	FALL (ft)	UPPER	LOWER
CB-1	CB-2	126	103	19	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.015	0.02	3.10%	6.00	1.30	OK	3.80	4802.7	4802.7
CB-2	CB-3	126	103	19	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.015	0.02	3.10%	6.00	1.30	OK	3.80	4802.7	4802.7
CB-3	CB-4	126	103	19	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.015	0.02	3.10%	6.00	1.30	OK	3.80	4802.7	4802.7
CB-4	CB-5	126	103	19	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.015	0.02	3.10%	6.00	1.30	OK	3.80	4802.7	4802.7
CB-5	CB-6	126	103	19	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.015	0.02	3.10%	6.00	1.30	OK	3.80	4802.7	4802.7
CB-6	CB-7	126	103	19	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.015	0.02	3.10%	6.00	1.30	OK	3.80	4802.7	4802.7
CB-7	CB-8	126	103	19	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.015	0.02	3.10%	6.00	1.30	OK	3.80	4802.7	4802.7
CB-8	CB-9	126	103	19	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.015	0.02	3.10%	6.00	1.30	OK	3.80	4802.7	4802.7
CB-9	CB-10	126	103	19	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.015	0.02	3.10%	6.00	1.30	OK	3.80	4802.7	4802.7
CB-10	CB-11	126	103	19	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.015	0.02	3.10%	6.00	1.30	OK	3.80	4802.7	4802.7
CB-11	CB-12	126	103	19	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.015	0.02	3.10%	6.00	1.30	OK	3.80	4802.7	4802.7
CB-12	CB-13	126	103	19	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.015	0.02	3.10%	6.00	1.30	OK	3.80	4802.7	4802.7
CB-13	CB-14	126	103	19	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.015	0.02	3.10%	6.00	1.30	OK	3.80	4802.7	4802.7
CB-14	CB-15	126	103	19	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.015	0.02	3.10%	6.00	1.30	OK	3.80	4802.7	4802.7
CB-15	CB-16	126	103	19	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0.015	0.02	3.10%	6.00	1.30	OK	3.80	4802.7	4802.7
CB-16	SR-21	280	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	18	0.015	0.315	2.93%	10.000	17.071	OK	16.207	4023.207	4615



 CITY OF MIAMI

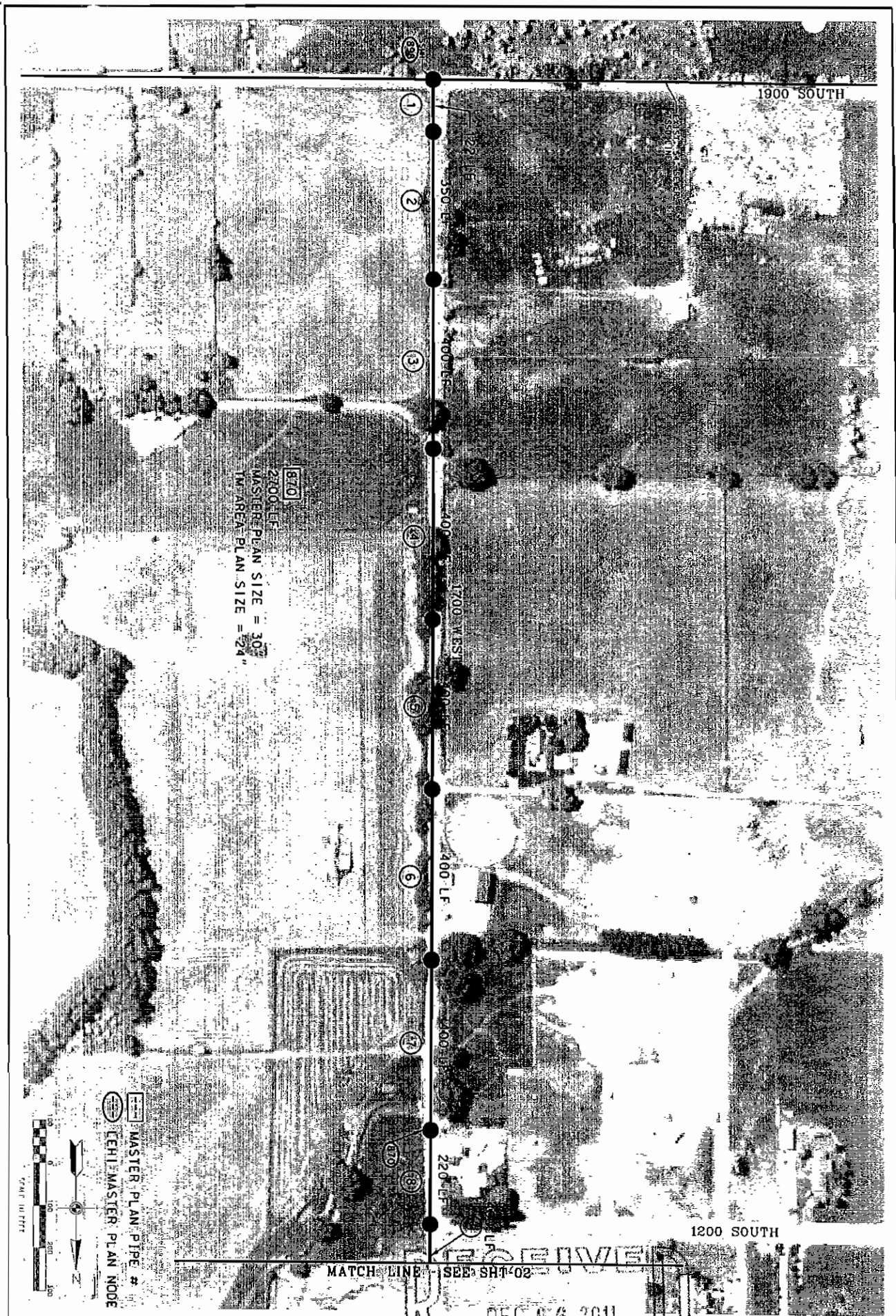
TRAVERSE MOUNTAIN

OFF-SITE SEWER

Figures

SS - 11

RECEIVED
DEC 04 2011
LENI CITY



SCALE 1" = 100 FT

MASTER PLAN PIPE #

 EHI MASTER PLAN NODE #

MATCH LINE - SEE SHT 02

DEC 06 2011

TM OFFSITE SEWER FEASIBILITY STUDY
 TRAVERSE MOUNTAIN
 OFFSITE SEWER

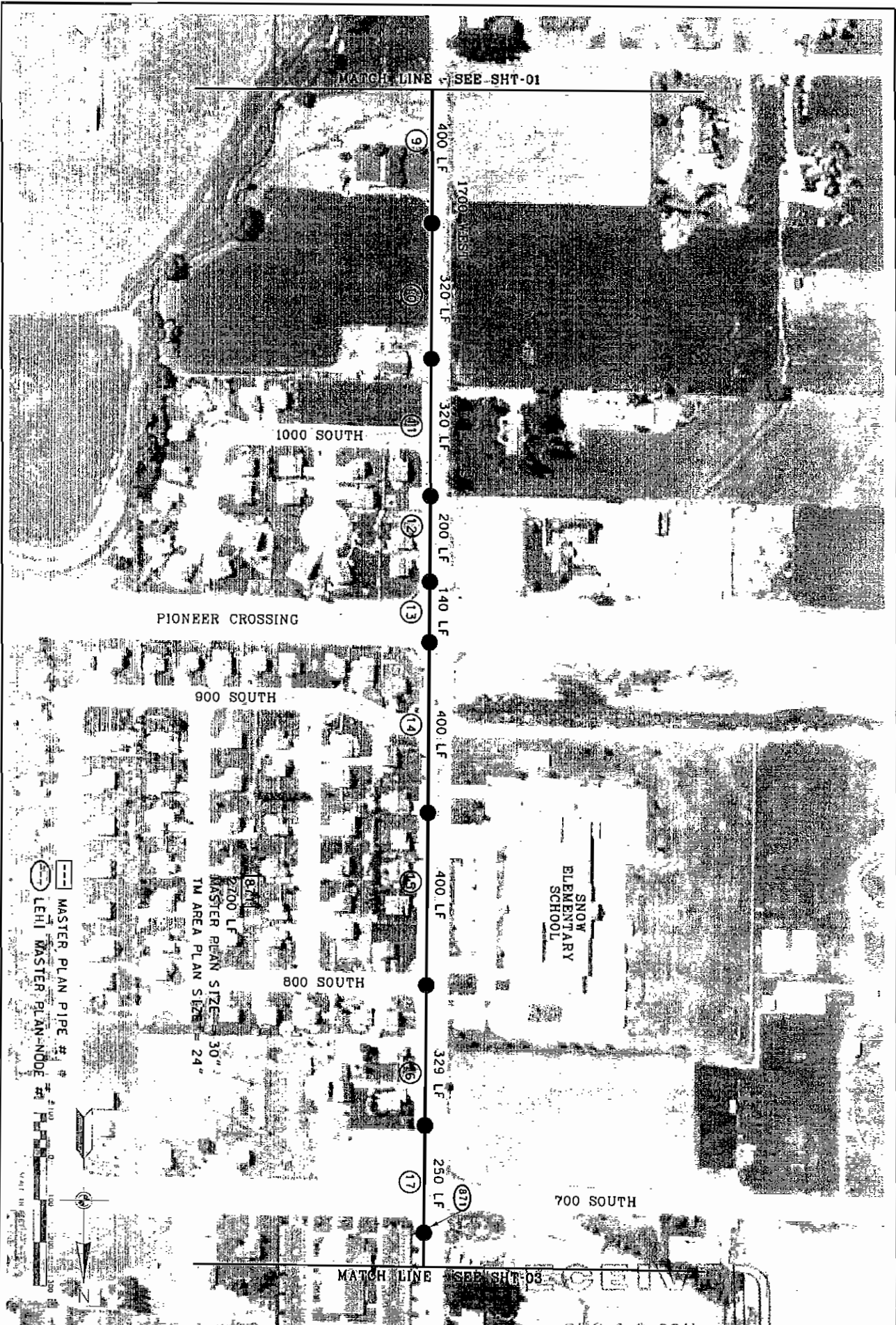
NO.	DATE	BY	REVISION



MW
BROWN
 ENGINEERING, INC.

Office (981) 377-1300 Fax (981) 377-8700
 578 East 79th North, Orem UT 84057

MATCH LINE - SEE SHT-01



PIONEER CROSSING

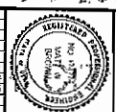
SNOW
ELEMENTARY
SCHOOL

MATCH LINE - SEE SHT-03

DEC 6 2011

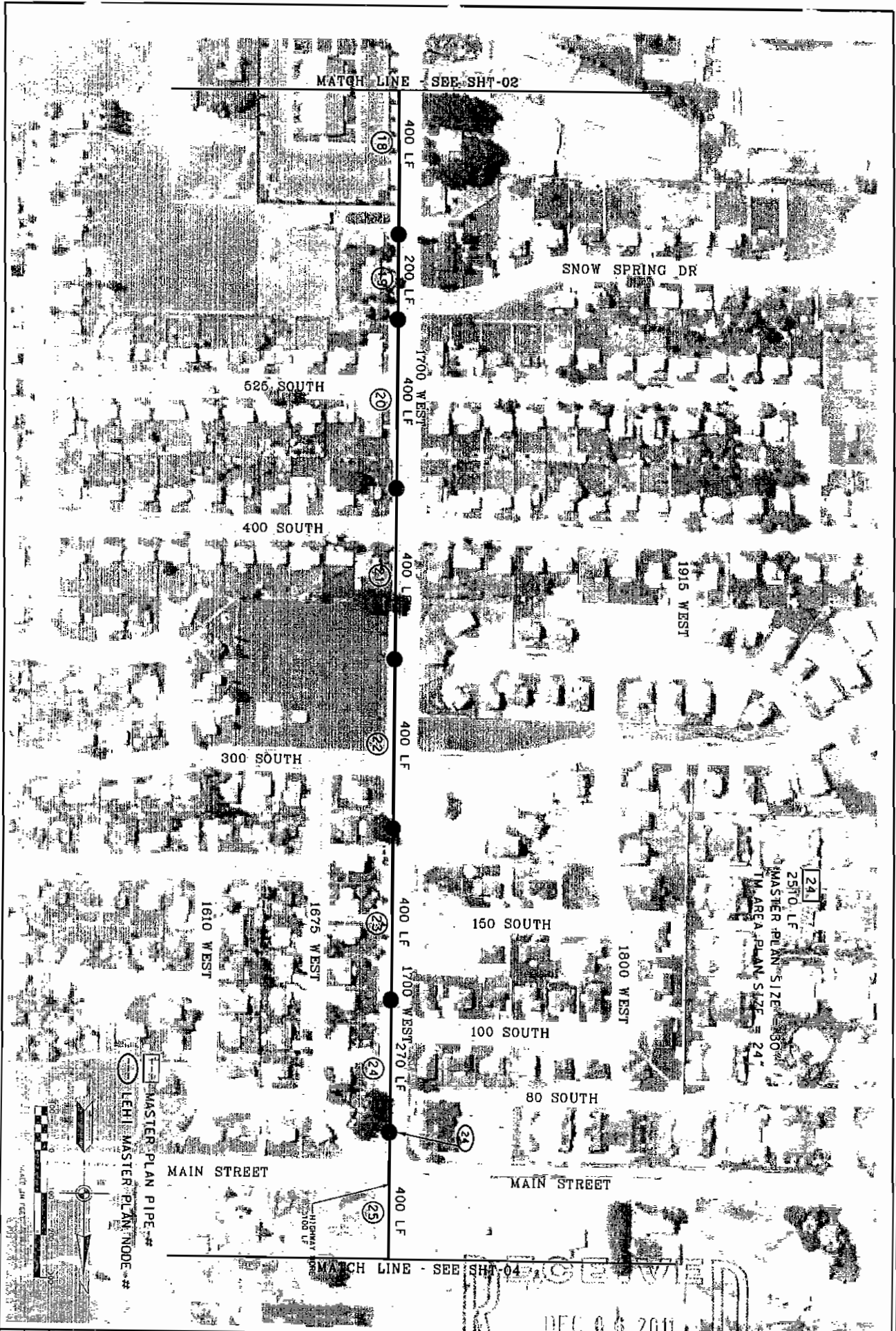
TM OFFSITE SEWER FEASIBILITY STUDY
 TRAVERSE MOUNTAIN
 OFFSITE SEWER

NO.	DATE	BY	DESCRIPTION
1	12-01-11	MM	ISSUE FOR AREA PLAN
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
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16			
17			
18			



MW
BROWN
 ENGINEERING, INC.
 Office 4901 17th Ave. East, Suite 100, Grand Rapids, MI 49508
 518 East 700 North, Ocean View, CA 90257

SHEET NO.
 SHT-02



MATCH LINE SEE SHT-02

MATCH LINE - SEE SHT-04

TM OFFSITE SEWER FEASIBILITY STUDY
 TRAVERSE MOUNTAIN
 OFFSITE SEWER

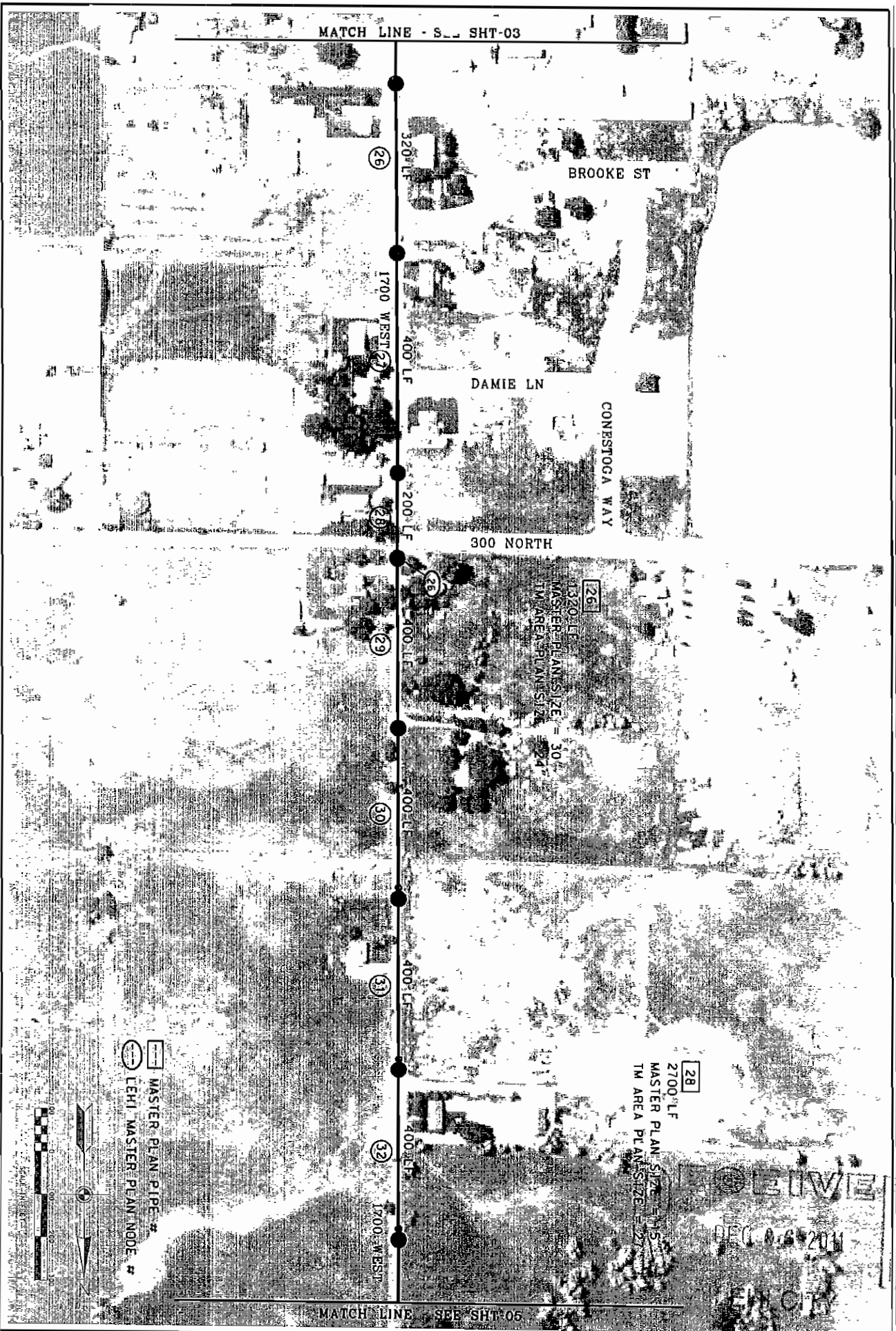
NO.	DATE	BY	REVISION
1	12/06/11	JM	ISSUED FOR PERMITS
2			
3			
4			
5			
6			
7			
8			
9			
10			



DEC 06 2011

MW BROWN
 ENGINEERING, INC.
 Office: (919) 551-7700 Fax: (919) 551-7709
 574 East 57th Street, Suite 111, Raleigh, NC 27606



MATCH LINE - S. SHT-03



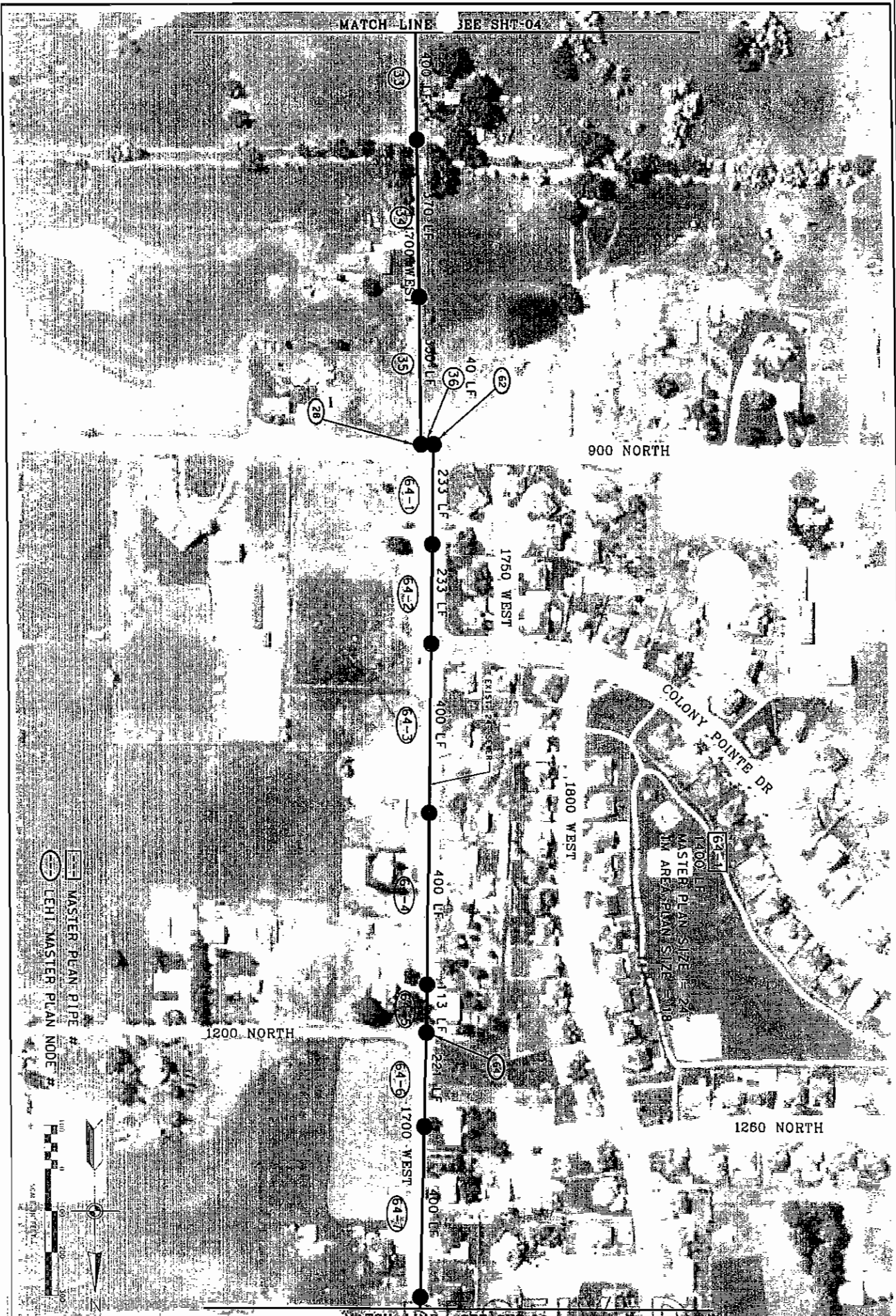
 MASTER PLAN PIPE #
 LEHI MASTER PLAN NODE #

28
 2700 LF
 MASTER PLAN SIZE
 TM AREA PLAN SIZE

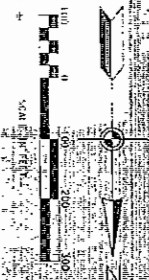
MATCH LINE - SEE SHT-05

SHT-04 10/11/13 4/10/13	Title: TM OFFSITE SEWER FEASIBILITY STUDY Project: TRAVERSE MOUNTAIN Drawing Name: OFFSITE SEWER	Scale: 1" = 40' Date: 10/11/13 Drawn By: [Blank] Checked By: [Blank]	REVISIONS <table border="1"> <tr><th>No.</th><th>Date</th><th>By</th><th>Notes</th></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>	No.	Date	By	Notes										 Office (401) 377-1199 Fax (401) 377-1789 576 East 17th North, Provo UT 84601
	No.	Date	By	Notes													



MATCH LINE SEE SHT-04



 MASTER PLAN PIPE #
 LEHI MASTER PLAN NODE #

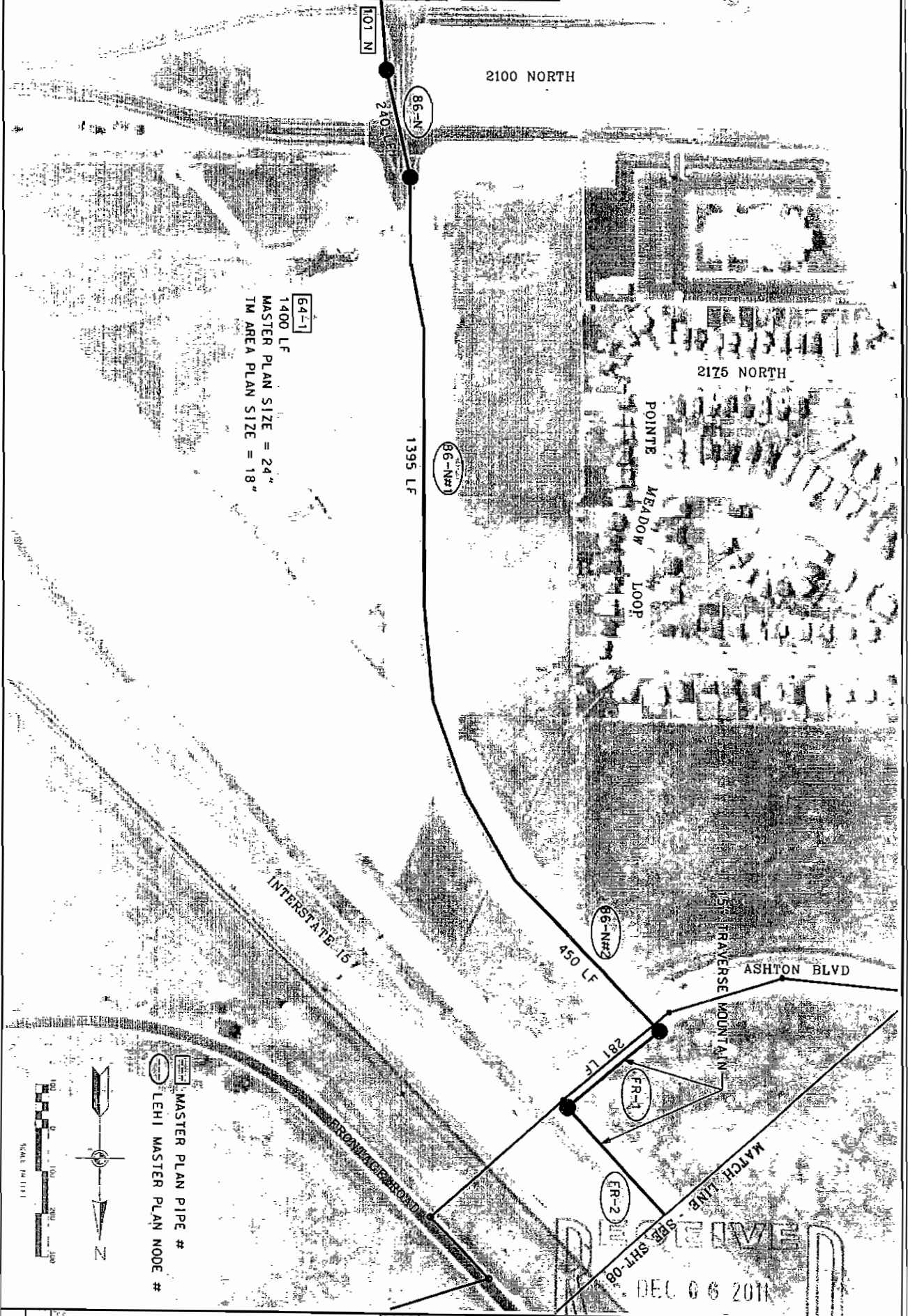


MATCH LINE SEE SHT-06

SHEET NO. SHT-05	PROJECT NAME TM OFFSITE SEWER FEASIBILITY STUDY		DATE DEC 06 2011		
	TRVERSE MOUNTAIN OFFSITE SEWER				

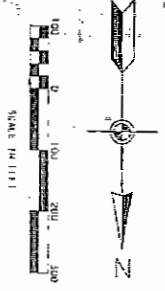
LEHI CITY

MATCH LINE - SEE SHT-06



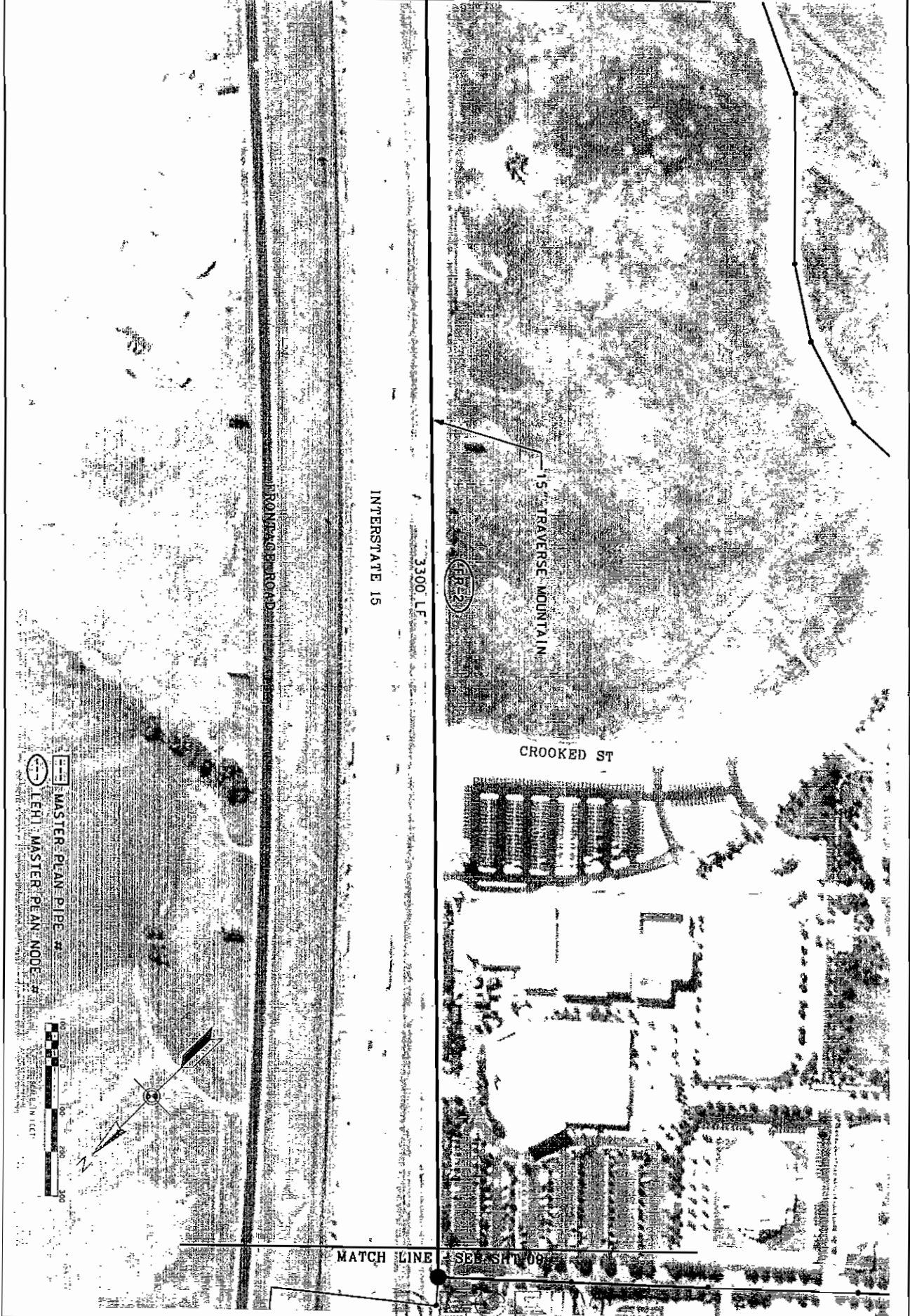
64-1
1400 LF
MASTER PLAN SIZE = 24"
TM AREA PLAN SIZE = 18"

MASTER PLAN PIPE #
LEHI MASTER PLAN NODE #



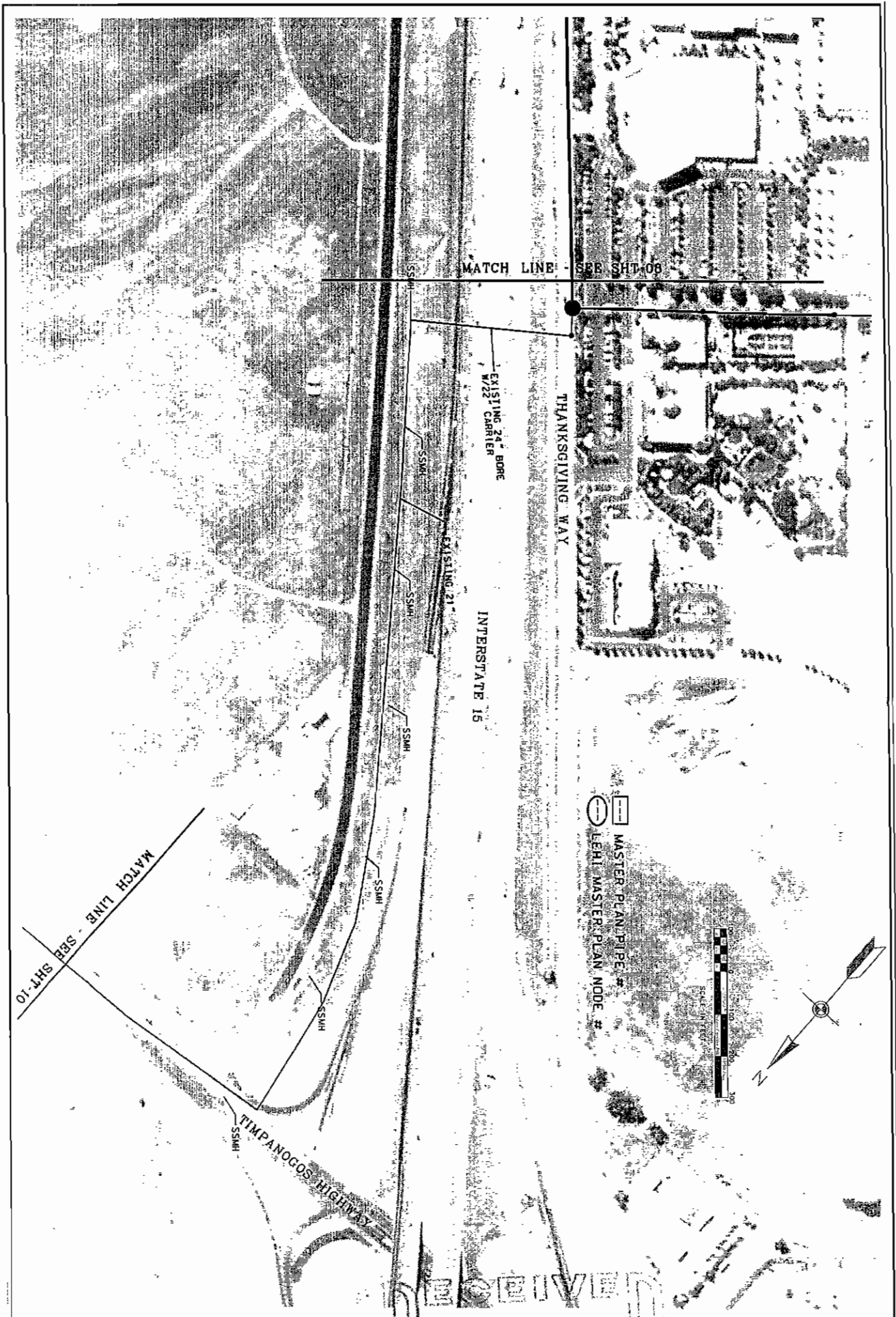
RECEIVED
DEC 06 2011

SHEET NO. SHT-07 DATE 11/11/10 DRAWN BY 2010.003	TM OFFSITE SEWER FEASIBILITY STUDY TRAVERSE MOUNTAIN OFFSITE SEWER		1 15/03/11 JNN LPT/PAE/MA/PAW No. Rev. L Br. REVISIONS		MW BROWN ENGINEERING, INC.
	MATCH LINE - SEE SHT-06			MATCH LINE - SEE SHT-06	



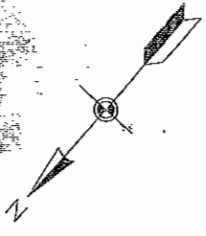
SHT-08	TM OFFSITE SEWER FEASIBILITY STUDY											
	TRAVERSE MOUNTAIN											
Drawing Name:		OFFSITE SEWER		<table border="1"> <tr> <td>DATE</td> <td>BY</td> <td>APP'D</td> <td>DATE</td> </tr> <tr> <td>12/08/11</td> <td>JPM</td> <td>JPM</td> <td>12/08/11</td> </tr> </table>	DATE	BY	APP'D	DATE	12/08/11	JPM	JPM	12/08/11
DATE	BY	APP'D	DATE									
12/08/11	JPM	JPM	12/08/11									

LEHI CITY



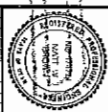
MASTER PLAN PIPE #

 LEGAL MASTER PLAN NODE #



TM OFFSITE SEWER FEASIBILITY STUDY
 TRAVERSE MOUNTAIN
 OFFSITE SEWER

DEC 06 2011	
DATE	DESCRIPTION



MW BROWN
 ENGINEERING, INC.
 Office: (801) 277-1979 Fax: (801) 477-1774
 274 East 700 North, Orem UT 84057

LEHI CITY

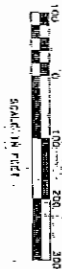
MATCH LINE SEE SHT-09

UTA RAILROAD LINE

EXISTING SEWER

TIMPANOGOS HIGHWAY

TRIUMPH BLVD



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MATCH LINE - SEE SHT-11

SHT-10

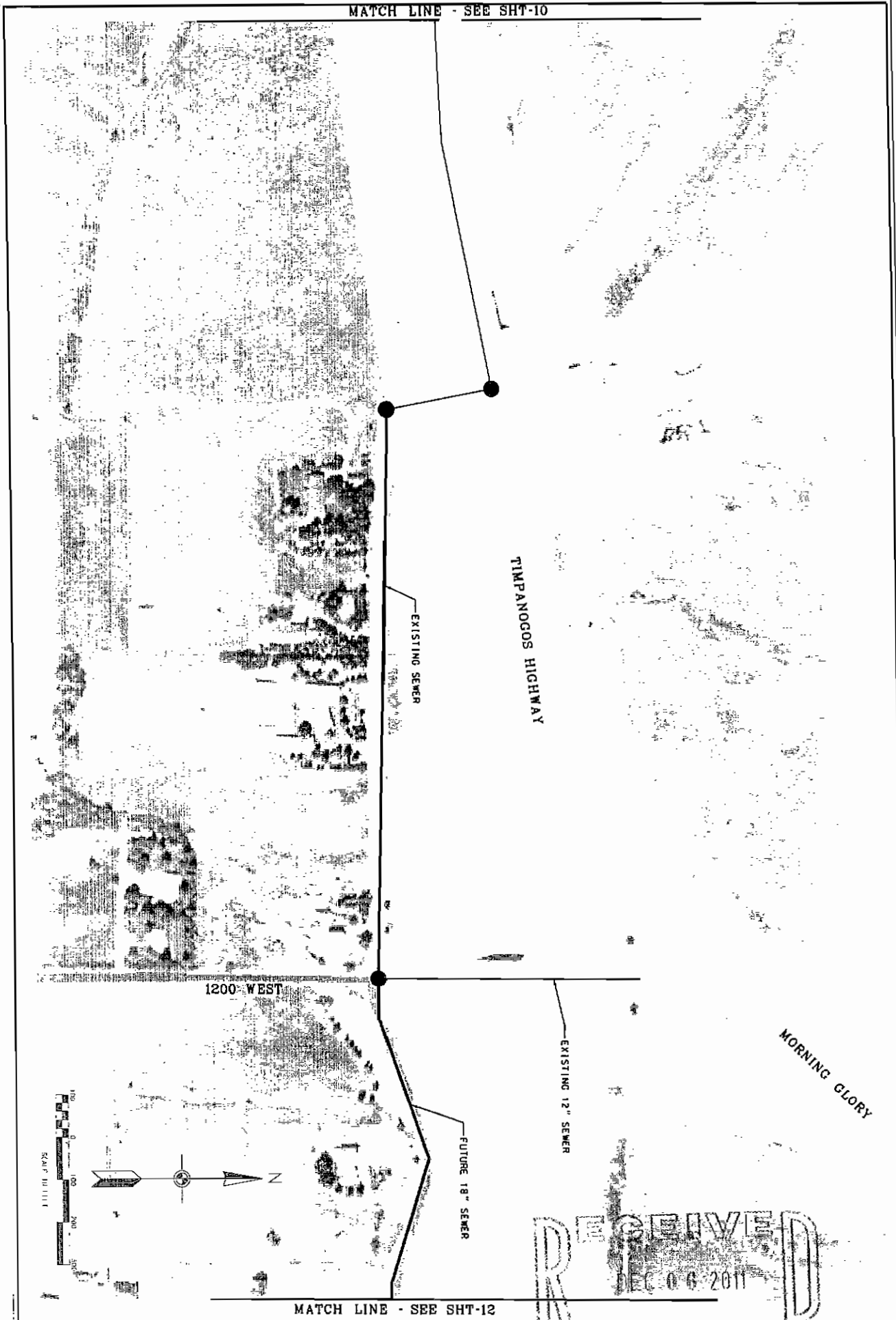
TM OFFSITE SEWER FEASIBILITY STUDY
TRAVERSE MOUNTAIN
Drawing Name
OFFSITE SEWER

NO.	DATE	BY	REVISION
1	12/06/11	AMT	ISSUE TO AREA PLAN
2			
3			
4			
5			



MW BROWN ENGINEERING, INC.
Office: (401) 323-1200 Fax: (401) 371-1774
518 Post Road North, Ocean DT-2400

MATCH LINE - SEE SHT-10



MATCH LINE - SEE SHT-12

SHT-11
11/13/11
10/13/11
10/13/11

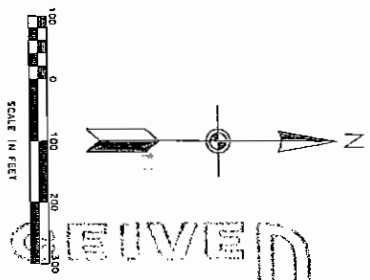
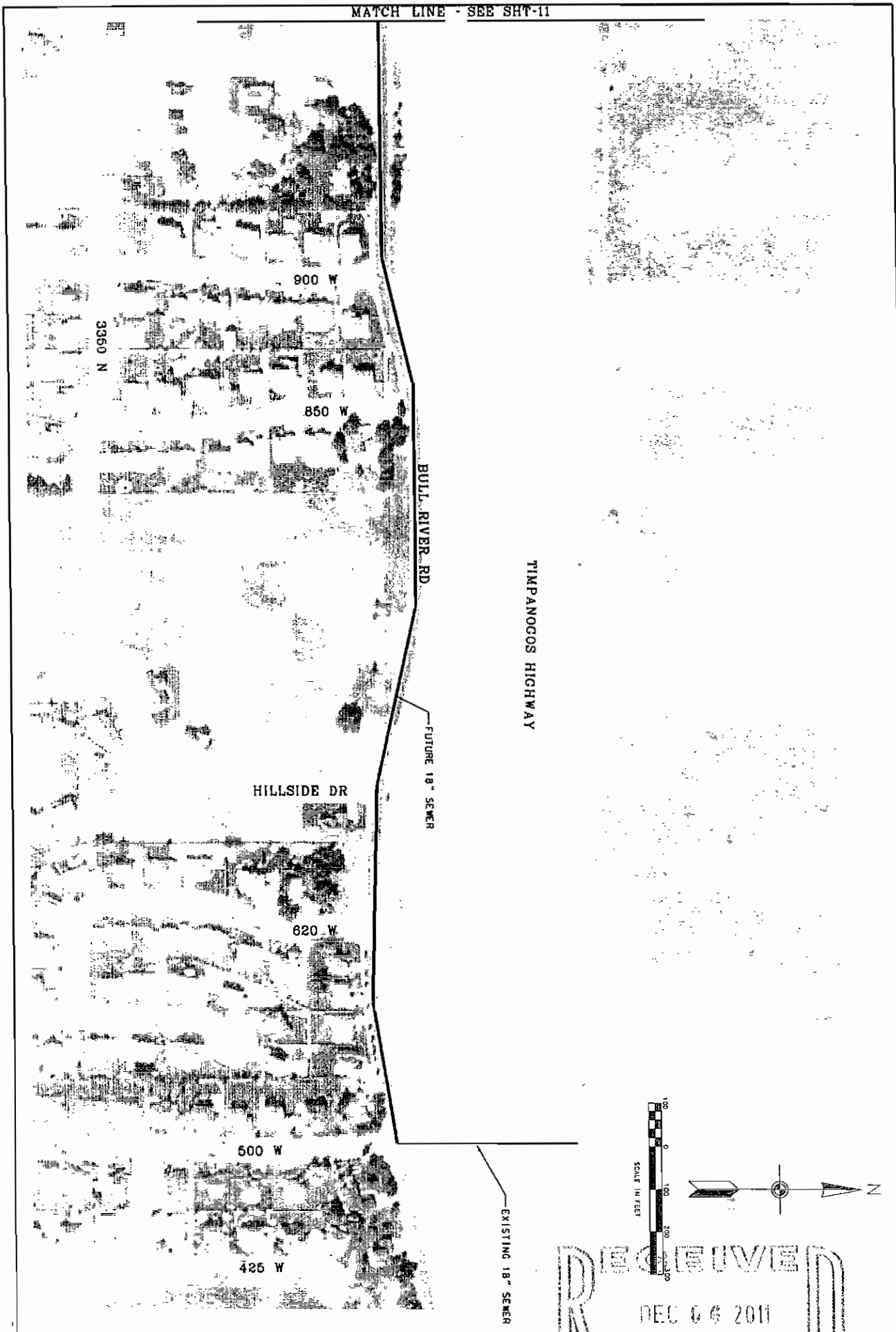
TM OFFSITE SEWER FEASIBILITY STUDY
 TRAVERSE MOUNTAIN
 OFFSITE SEWER

NO.	DATE	BY	DESCRIPTION
1	10/13/11	JVM	ISSUED FOR PERMITS
2	10/13/11	JVM	REVISED TO ADD 18\"/>



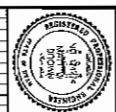
MW BROWN ENGINEERING, INC
 Office (408) 377-1790 Fax (408) 377-1791
 374 East 17th North, Provo UT 84607

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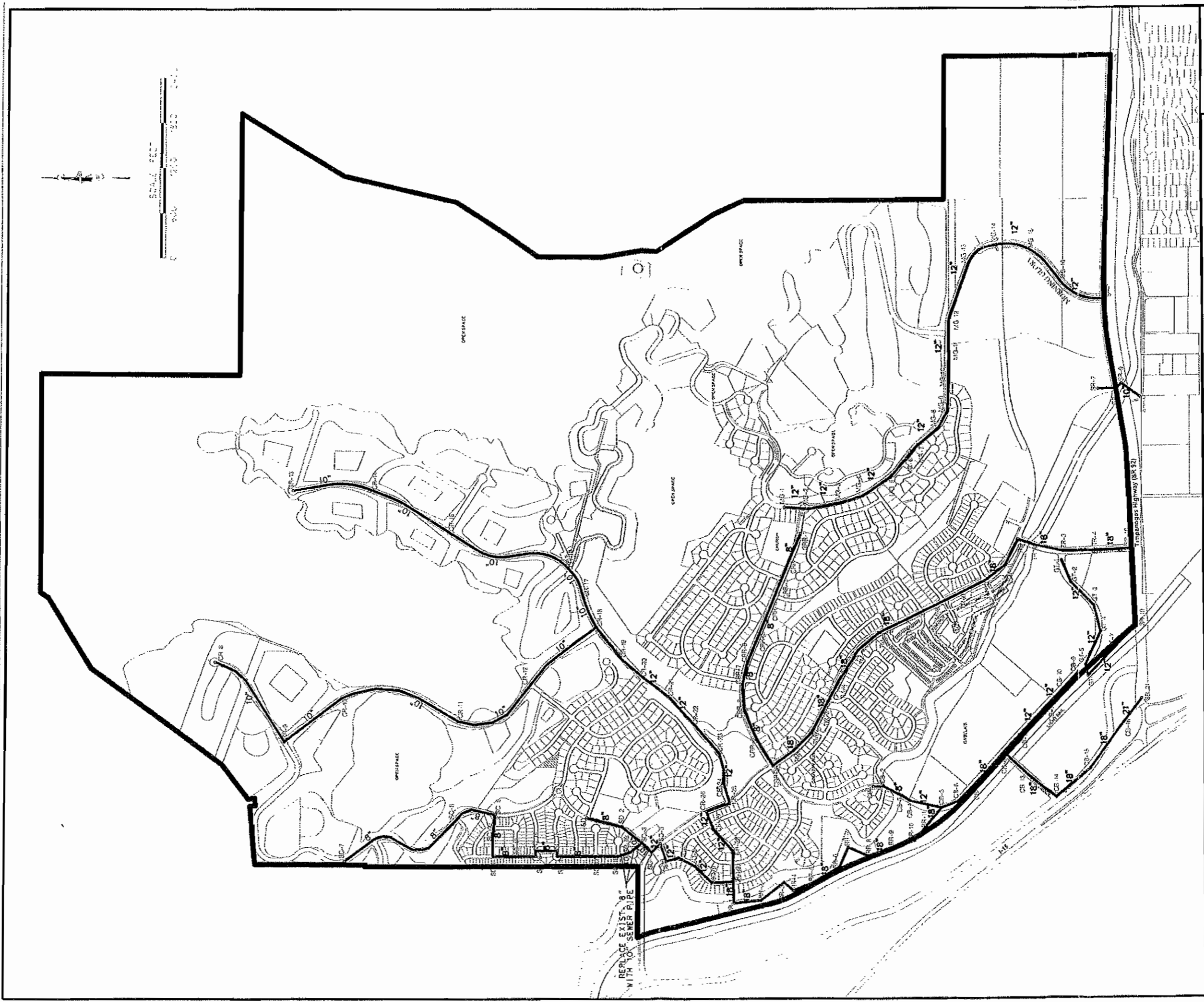


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SHT-12	PROJECT TITLE		DATE	
	TM OFFSITE SEWER FEASIBILITY STUDY		2/10/11	
PROJECT NAME		DRAWN BY		DATE
TRAVERSE MOUNTAIN		OFFSITE SEWER		
DRAWING NO.		DATE		SCALE
SHT-12		2/10/11		AS SHOWN
PROJECT NO.		DATE		SCALE
3360-2011		2/10/11		AS SHOWN
PROJECT NO.		DATE		SCALE
3360-2011		2/10/11		AS SHOWN
PROJECT NO.		DATE		SCALE
3360-2011		2/10/11		AS SHOWN
PROJECT NO.		DATE		SCALE
3360-2011		2/10/11		AS SHOWN



MW BROWN ENGINEERING, INC.
 Office (PM) 377-1390 Fax (PM) 377-1384
 376 East 77th Street, Orem, UT 84057



BROWN ENGINEERING, INC. Office: (801) 377-1790 Fax: (801) 377-1789 378 East 778 North, Orem UT 84097	Title: SEWER PLAN TRAVERSE MOUNTAIN, LEHIUTAH ONSITE SEWER PIPE SIZES	PROJECT NO. SWR-1
	Client: Drawing Name:	DATE: 11-24-11

APPROVED
 DEC. 06 2011
 LEHI CITY

WEST CANYON SEWER COMPUTATIONS																									
FROM	TO	LENGTH (ft)	Number of units Introduced	Comm sq. ft. Introduced	Civic/Park Church Int (acres)	Total ERU Introduced	Average Flow Introduced	Total Average Flow	Peak Flow Introduced	Total Units Served	Total Comm Sq. Ft.	Total Civic/Park Church	REQUIRED CAPACITY (GPM)	REQUIRED CAPACITY (ft ³ /s)	PIPE SIZE (in)	PIPE SIZE (ft)	MANNING'S NUMBER	HYDRAULIC RADIUS	SLOPE	VELOCITY (ft/s)	CAPACITY (ft ³ /s)	Designed Capacity vs. required	FALL (ft)	UPPER END	LOWER END
SC-7	SC-8	631	134		0	134	35	35	140	134	0	0	140	0.312	8	0.667	0.013	0.187	5.00%	7.758	2.71	OK	31.550	5060.41	5028.86
SC-8	SC-9	500	80		0	80	21	56	84	214	0	0	224	0.499	8	0.667	0.013	0.107	8.00%	9.813	3.43	OK	40.000	5028.66	4988.66
SC-9	SC-10	178	0			0	0	58	0	214	0	0	224	0.499	8	0.667	0.013	0.187	3.89%	6.843	2.39	OK	6.924	4988.46	4981.54
SC-10	SC-11	378	0			0	0	56	0	214	0	0	224	0.499	8	0.667	0.013	0.187	6.35%	8.743	3.05	OK	24.003	4981.34	4946.00
SC-11	SC-12	296	36			36	10	66	40	250	0	0	204	0.588	8	0.667	0.013	0.167	5.24%	7.942	2.77	OK	15.510	4945.80	4929.73
SC-12	SC-13	272	33			33	9	75	30	293	0	0	300	0.668	8	0.667	0.013	0.167	4.87%	7.656	2.67	OK	13.246	4929.53	4916.28
SC-13	SC-14	153	15			15	4	79	18	298	0	0	310	0.704	8	0.667	0.013	0.167	1.35%	4.031	1.41	OK	2.066	4916.08	4914.01
SC-14	SC-15	276	48			48	13	92	52	340	0	0	308	0.820	8	0.667	0.013	0.167	4.95%	7.719	2.69	OK	13.662	4913.81	4900.14
SC-15	SC-16	153	23			23	6	98	24	369	0	0	392	0.873	8	0.667	0.013	0.167	8.01%	9.819	3.43	OK	12.255	4899.94	4887.53
SC-16	SC-17	520	10			10	3	101	12	379	0	0	404	0.900	8	0.667	0.013	0.187	6.80%	9.047	3.18	OK	35.380	4887.33	4851.14
SC-17	SC-18	290	55			55	15	116	60	434	0	0	464	1.034	8	0.667	0.013	0.107	6.69%	8.974	3.13	OK	19.401	4850.94	4831.52
SC-18	SC-19	178	22			22	6	122	24	456	0	0	488	1.087	10	0.833	0.013	0.208	0.50%	2.947	1.55	OK	0.890	4831.32	4826.93
SC-19	SD-3	188	8			8	2	124	8	464	0	0	496	1.105	10	0.833	0.013	0.208	0.50%	2.847	1.55	OK	0.940	4826.73	4825.79

SHADOW RIDGE SEWER COMPUTATIONS																									
FROM	TO	LENGTH (ft)	Number of units Introduced	Comm sq. ft. Introduced	Civic/Park Church Int (acres)	Total ERU Introduced	Average Flow Introduced	Total Average Flow	Peak Flow Introduced	Total Units Served	Total Comm Sq. Ft.	Total Civic/Park Church	REQUIRED CAPACITY (GPM)	REQUIRED CAPACITY (ft ³ /s)	PIPE SIZE (in)	PIPE SIZE (ft)	MANNING'S NUMBER	HYDRAULIC RADIUS	SLOPE	VELOCITY (ft/s)	CAPACITY (ft ³ /s)	Designed Capacity vs. required	FALL (ft)	UPPER END	LOWER END
SD-1	SD-2	473	53			53	14	14	56	53	0	0.0	58	0.125	8	0.667	0.013	0.167	11.45%	11.714	4.089	OK	54.159	4908.99	4854.75
SD-2	SD-3	324	0		6.7	18	5	19	20	53	0	6.7	76	0.169	8	0.667	0.013	0.167	7.90%	9.730	3.396	OK	25.596	4854.55	4825.79
SC-19	SD-3	188	461		0.0	461	122	141	483	514	0	6.7	559	1.245	10	0.833	0.013	0.208	7.09%	10.695	5.834	OK	13.329	0	0
SD-3	SD-4	177	0			0	0	141	0	514	0	6.7	559	1.245	10	0.833	0.013	0.208	2.98%	6.935	3.782	OK	5.275	-0.2	4816.23
SD-4	SD-5	165	0			0	0	141	0	514	0	6.7	559	1.245	12	1.000	0.013	0.250	1.00%	4.536	3.563	OK	1.850	4816.03	4811.23
SD-5	SD-6	264	0		5.0	14	4	145	16	514	0	11.7	575	1.281	12	1.000	0.013	0.250	0.39%	2.833	2.225	OK	1.030	4811.03	4803.3
SD-6	SD-7	213	18			18	6	150	20	532	0	11.7	595	1.326	15	1.250	0.013	0.313	0.40%	3.329	4.086	OK	0.852	4803.1	4802.54
SD-7	SD-8	227	5			5	1	151	4	537	0	11.7	599	1.335	15	1.250	0.013	0.313	0.33%	3.024	3.711	OK	0.749	4802.34	4801.44
SD-8	SD-9	312	10			10	3	154	12	547	0	11.7	611	1.361	15	1.250	0.013	0.313	0.36%	3.168	3.876	OK	1.123	4801.24	4800.32
SD-9	CR-29	273	8			8	2	156	8	555	0	11.7	619	1.379	15	1.250	0.013	0.313	0.34%	3.069	3.767	OK	0.928	4800.12	4799

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WEST CANYON AND CENTRAL CANYON ROAD SEWER COMPUTATIONS																									
FROM	TO	LENGTH (ft)	Number of units Introduced	Comm sq. ft. Introduced	Civic/Park Church Int (acres) Introduced	Total ERU Introduced	Average Flow Introduced	Total Average Flow	Peak Flow Introduced	Total Units Served	Total Comm Sq. Ft.	Total Civ/Park Church	REQUIRED CAPACITY (GPM)	REQUIRED CAPACITY (ft ³ /s)	PIPE SIZE (in)	PIPE SIZE (ft)	MANNING'S NUMBER	HYDRAULIC RADIUS	SLOPE	VELOCITY (ft/s)	CAPACITY (ft ³ /s)	Designed Capacity vs. required	FALL (ft)	UPPER END	LOWER END
CR-8	CR-9	0	279		3.0	287	78	76	304	279	0	3.0	76	0.169	10	0.833	0.013	0.208	6.20%	10.000	5.454	OK	0.000	5055.551	5055.551
CR-9	CR-10	0	161		7.0	180	48	124	192	161	0	10.0	124	0.276	10	0.833	0.013	0.208	6.20%	10.000	5.454	OK	0.000	5055.351	5055.351
CR-10	CR-11	0	26			26	7	131	28	26	0	10.0	131	0.292	10	0.833	0.013	0.208	6.20%	10.000	5.454	OK	0.000	5055.151	5055.151
CR-11	CR-12	0	100		2.0	108	28	159	110	100	0	12.0	159	0.354	10	0.833	0.013	0.208	6.20%	10.000	5.454	OK	0.000	5054.951	5054.951
CR-12	CR-18	0	150		3.5	180	42	201	183	150	0	15.5	201	0.448	10	0.833	0.013	0.208	6.20%	10.000	5.454	OK	0.000	5054.751	5054.751
CR-13	CR-14	0	66		8.0	88	23	224	80	66	0	6.0	224	0.499	10	0.833	0.013	0.208	6.20%	10.000	5.454	OK	0.000	5054.551	5054.551
CR-14	CR-15	0	143		3.5	153	40	264	152	143	0	11.5	264	0.588	10	0.833	0.013	0.208	6.20%	10.000	5.454	OK	0.000	5054.351	5054.351
CR-15	CR-16	0	199		2.5	208	54	318	203	199	0	14.0	318	0.709	10	0.833	0.013	0.208	6.20%	10.000	5.454	OK	0.000	5054.151	5054.151
CR-16	CR-17	385	423		2.5	430	113	431	412	423	0	16.5	431	0.960	12	1.000	0.013	0.250	4.86%	10.000	7.854	OK	18.709	5053.951	5035.242
CR-17	CR-18	481	35			35	0	440	33	860	0	16.5	440	0.980	12	1.000	0.013	0.250	4.86%	10.000	7.854	OK	23.374	5035.042	5011.668
CR-18	CR-19	342	751		0.0	773	204	844	718	1617	0	24.5	844	1.435	12	1.000	0.013	0.250	4.86%	10.000	7.854	OK	16.820	5011.460	4994.848
CR-19	CR-20	374	35			35	0	663	32	1652	0	24.5	653	1.455	12	1.000	0.013	0.250	4.86%	10.000	7.854	OK	18.175	4994.640	4976.473
CR-20	CR-21	331	59			59	16	669	56	1711	0	24.5	669	1.491	12	1.000	0.013	0.250	4.86%	10.000	7.854	OK	16.085	4976.273	4960.188
CR-21	CR-22	487	51			51	13	682	46	1762	0	24.5	682	1.520	12	1.000	0.013	0.250	4.86%	10.000	7.854	OK	23.666	4959.988	4936.322
CR-22	CR-23	492	0			0	0	682	0	1762	0	24.5	682	1.520	12	1.000	0.013	0.250	4.86%	10.000	7.854	OK	23.909	4936.122	4912.213
CR-23	CR-24	442	0			0	0	682	0	1762	0	24.5	682	1.520	12	1.000	0.013	0.250	4.86%	10.000	7.854	OK	21.479	4912.013	4890.534
CR-24	CR-25	320	102		11.3	133	35	717	122	1864	0	35.8	717	1.597	12	1.000	0.013	0.250	4.86%	10.000	7.854	OK	15.551	4890.334	4874.784
CR-25	CR-26	326	66			66	17	734	59	1930	0	35.8	734	1.635	12	1.000	0.013	0.250	4.86%	10.000	7.854	OK	15.842	4874.584	4858.741
CR-26	CR-27	441	14			14	4	738	14	1944	0	35.8	738	1.644	12	1.000	0.013	0.250	4.86%	10.000	7.854	OK	21.431	4858.541	4837.111
CR-27	CR-28	241	10			10	3	741	10	1954	0	35.8	741	1.651	12	1.000	0.013	0.250	4.86%	10.000	7.854	OK	11.712	4836.911	4825.199
CR-28	CR-29	419	125		1.3	129	34	775	117	2079	0	37.1	775	1.727	12	1.000	0.013	0.250	4.86%	10.000	7.854	OK	20.361	4824.999	4804.638
SD-9	CR-29	273	555	0	11.7	587	155	930	524	2634	0	48.8	930	2.072	15	1.250	0.013	0.313	3.61%	10.000	12.272	OK	9.852	4804.438	4794.585
CR-29	RR-1	250	0		0.0	0	0	930	0	2634	0	48.8	930	2.072	18	1.500	0.013	0.375	2.83%	10.000	17.671	OK	7.075	4794.385	4787.31

RAIL ROAD SEWER COMPUTATIONS																									
FROM	TO	LENGTH (ft)	Number of units Introduced	Comm Acres Introduced	Civic/Park Church Int (acres) Introduced	Total ERU Introduced	Average Flow Introduced	Total Average Flow	Peak Flow Introduced	Total Units Served	Total Comm Sq. Ft.	Total Civ/Park Church	REQUIRED CAPACITY (GPM)	REQUIRED CAPACITY (ft ³ /s)	PIPE SIZE (in)	PIPE SIZE (ft)	MANNING'S NUMBER	HYDRAULIC RADIUS	SLOPE	VELOCITY (ft/s)	CAPACITY (ft ³ /s)	Designed Capacity vs. required	FALL (ft)	UPPER END	LOWER END
CR-29	RR-1	250	2634	0	48.8	2768	730	730	2533	2634	0	48.8	730.000	1.626	18	1.500	0.013	0.375	2.83%	10.000	17.671	OK	7.075	0	0
RR-1	RR-2	399	0	1.18	9.6	26	8	738	28	2634	1	58.4	738.000	1.644	18	1.500	0.013	0.375	2.29%	8.995	15.896	OK	9.137	-0.2	4778.18
RR-2	RR-3	396	0	1.18		0	1	739	3	2634	2	58.4	739.000	1.647	18	1.500	0.013	0.375	4.69%	12.873	22.749	OK	18.572	4777.98	4774.05
RR-3	RR-4	166	0	1.18		0	1	740	3	2634	4	58.4	740.000	1.649	18	1.500	0.013	0.375	2.29%	8.995	15.896	OK	3.801	4773.85	4772.99
RR-4	RR-5	284	0	1.18		0	1	741	3	2634	5	58.4	741.000	1.651	18	1.500	0.013	0.375	1.04%	6.062	10.712	OK	2.954	4772.79	4769.6
RR-5	RR-6	393	0	1.18		0	1	742	3	2634	6	58.4	742.000	1.653	18	1.500	0.013	0.375	0.94%	5.763	10.184	OK	3.694	4769.4	4763.73
RR-6	RR-7	283	0	1.18		0	1	743	3	2634	7	58.4	743.000	1.655	18	1.500	0.013	0.375	1.02%	6.003	10.609	OK	2.887	4763.53	4762.42
RR-7	RR-8	280	0	1.18		0	1	744	3	2634	8	58.4	744.000	1.658	18	1.500	0.013	0.375	0.98%	5.984	10.390	OK	2.744	4762.22	4759.71
RR-8	RR-9	334	0	1.18		0	1	745	3	2634	9	58.4	745.000	1.660	18	1.500	0.013	0.375	1.08%	6.177	10.916	OK	3.607	4759.51	4756.43
RR-9	RR-10	301	0	2.43		0	2	747	7	2634	12	58.4	747.000	1.664	18	1.500	0.013	0.375	1.06%	6.120	10.815	OK	3.191	4756.23	4753.36
RR-10	RR-11	300	0	2.43		0	2	749	7	2634	14	58.4	749.000	1.669	18	1.500	0.013	0.375	1.04%	6.062	10.712	OK	3.120	4753.16	4750.39
RR-11	CB-5	258	0	2.43		0	2	751	7	2634	17	58.4	751.000	1.673	18	1.500	0.013	0.375	1.17%	6.430	11.362	OK	3.019	4750.19	4747.97

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CHAPEL RIDGE ROAD, TRAVERSE MOUNTAIN BLVD., & TRIUMPH BLVD. SEWER COMPUTATIONS

FROM	TO	LENGTH (ft)	Number of units Introduced	Comm Acres Introduced	Civic/Park Church Int (acres)	Total ERU Introduced	Average Flow Introduced	Total Average Flow	Peak Flow Introduced	Total Units Served	Total Comm Sq. Ft.	Total Civic/Park Church	REQUIRED CAPACITY (GPM)	REQUIRED CAPACITY (ft ³ /s)	PIPE SIZE (in)	PIPE SIZE (ft)	MANNING'S NUMBER	HYDRAULIC RADIUS	SLOPE	VELOCITY (ft/s)	CAPACITY (ft ³ /s)	Designed Capacity vs. required	FALL (ft)	UPPER END	LOWER END
CRR-1	CRR-2	390	0		4.7	1	0	0	0	0	0	4.7	0.000	0.000	8	0.007	0.013	0.167	4.80%	7.585	2.847	OK	18.720	5082.5	5036.6
CRR-2	CRR-3	295	0			0	0	0	0	0	0	4.7	0.000	0.000	8	0.607	0.013	0.167	4.10%	7.010	2.447	OK	12.005	5030.4	5051.5
CRR-3	CRR-4	395	77			0	2	2	0	77	0	4.7	2.000	0.004	8	0.607	0.013	0.167	4.30%	7.170	2.506	OK	16.985	5051.3	5034.4
CRR-4	CRR-5	395	0			0	0	2	0	77	0	4.7	2.000	0.004	8	0.607	0.013	0.167	3.70%	6.650	2.324	OK	14.015	5034.2	5019.0
CRR-5	CRR-6	395	0			0	0	2	0	77	0	4.7	2.000	0.004	8	0.667	0.013	0.167	9.00%	10.386	3.025	OK	35.550	5019.4	4984.2
CRR-6	CRR-7	290	0			0	0	2	0	77	0	4.7	2.000	0.004	8	0.607	0.013	0.167	7.60%	9.544	3.331	OK	22.040	4984	4916.8
CRR-7	CRR-8	340	152			15	4	6	16	229	0	4.7	6.000	0.013	8	0.667	0.013	0.167	5.00%	8.337	2.910	OK	19.720	4916.6	4938.55
CRR-8	CRR-9	355	45			5	1	7	4	274	0	4.7	7.000	0.016	8	0.667	0.013	0.167	8.41%	10.039	3.504	OK	29.850	4938.35	4890
CRR-9	CRR-10	393	0			0	0	7	0	274	0	4.7	7.000	0.016	8	0.667	0.013	0.167	1.70%	4.514	1.576	OK	6.681	4898.8	4885.3
CRR-10	TM-1	423	0			0	0	7	0	274	0	4.7	7.000	0.016	10	1.500	0.013	0.375	0.20%	2.658	4.698	OK	0.840	4885.1	4884.55
TM-1	TM-2	411	53			5	1	8	4	327	0	4.7	8.000	0.018	10	1.500	0.013	0.375	0.20%	2.658	4.698	OK	0.822	4884.35	4883.95
TM-2	TM-3	360	0			0	0	8	0	327	0	4.7	8.000	0.018	10	1.500	0.013	0.375	0.20%	2.658	4.698	OK	0.720	4883.75	4883.3
TM-3	TM-4	449	56			0	2	10	0	303	0	4.7	10.000	0.022	10	1.500	0.013	0.375	0.20%	2.658	4.698	OK	0.898	4883.1	4882.82
TM-4	TM-5	529	0			0	0	10	0	303	0	4.7	10.000	0.022	10	1.500	0.013	0.375	0.20%	2.658	4.698	OK	1.058	4882.62	4882.08
TM-5	TM-6	350	0			0	0	10	0	303	0	4.7	10.000	0.022	10	1.500	0.013	0.375	0.30%	3.712	6.560	OK	1.365	4881.88	4878.02
TM-6	TM-7	410	48		5.1	6	2	12	8	431	0	9.8	12.000	0.027	10	1.500	0.013	0.375	4.05%	11.063	21.140	OK	16.605	4877.82	4844.56
TM-7	TM-8	400	47			5	1	13	4	478	0	9.8	13.000	0.029	10	1.500	0.013	0.375	4.60%	12.749	22.529	OK	18.400	4815.92	4844.56
TM-8	TM-9	402	48			5	1	14	4	526	0	9.8	14.000	0.031	10	1.500	0.013	0.375	4.10%	12.036	21.270	OK	16.482	4844.36	4828.09
TM-9	TM-10	153	0			0	0	14	0	526	0	9.8	14.000	0.031	10	1.500	0.013	0.375	3.43%	11.009	19.454	OK	5.248	4827.89	4822.84
TM-10	TM-11	352	51			5	1	15	4	577	0	9.8	15.000	0.033	10	1.500	0.013	0.375	2.72%	9.803	17.324	OK	9.574	4822.64	4811.51
TM-11	TR-1	373	0			0	0	15	0	577	0	9.8	15.000	0.033	10	1.500	0.013	0.375	5.50%	13.940	24.635	OK	5.595	4811.31	4801.12
TR-1	TR-2	274	509	5	4	52	18	33	72	1006	5	13.8	33.000	0.074	18	1.500	0.013	0.375	3.90%	11.739	20.744	OK	14.352	4782.84	4766
TR-2	TR-3	368	0			0	0	33	0	1086	5	13.8	33.000	0.074	18	1.500	0.013	0.375	7.36%	16.126	28.498	OK	29.587	4736.8	4736.43
TR-3	TR-4	402	0	38		0	35	68	140	1086	43	13.8	60.000	0.152	18	1.500	0.013	0.375	1.80%	7.975	14.093	OK	8.928	4736.23	4716.3
TR-4	SR-15	496	0			0	0	68	0	1086	43	13.8	68.000	0.152	18	1.500	0.013	0.375							

MORNING GLORY ROAD SEWER COMPUTATIONS

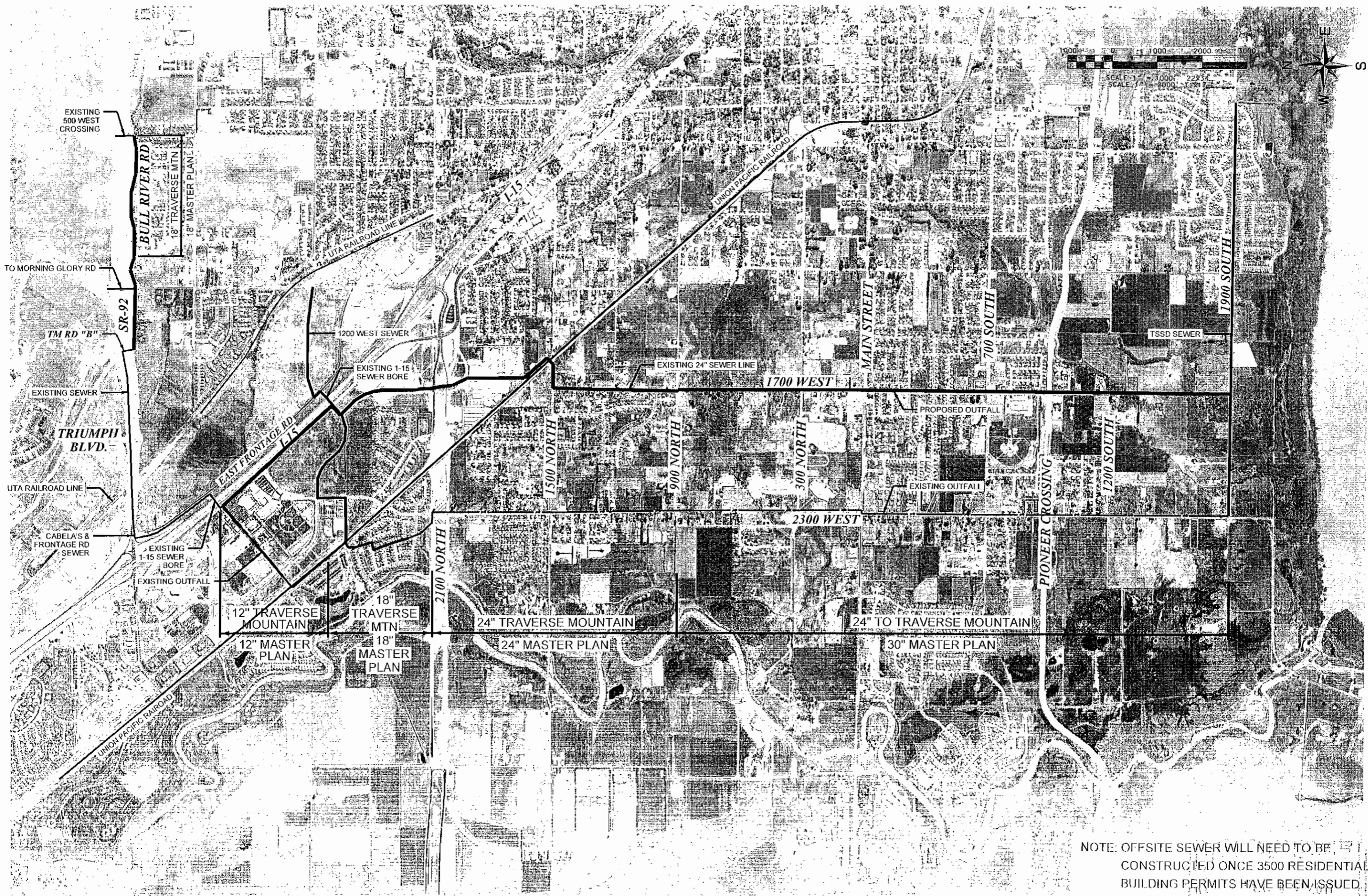
FROM	TO	LENGTH (ft)	Number of units Introduced	Comm sq. ft. Introduced	Civic/Park Church Int (acres)	Total ERU Introduced	Average Flow Introduced	Total Average Flow	Peak Flow Introduced	Total Units Served	Total Comm Sq. Ft.	Total Civic/Park Church	REQUIRED CAPACITY (GPM)	REQUIRED CAPACITY (ft ³ /s)	PIPE SIZE (in)	PIPE SIZE (ft)	MANNING'S NUMBER	HYDRAULIC RADIUS	SLOPE	VELOCITY (ft/s)	CAPACITY (ft ³ /s)	Designed Capacity vs. required	FALL (ft)	UPPER END	LOWER END
MG-1	MG-2	316	102		5.4	12	3	3	12	102	0	5.4	3.000	0.007	8	0.667	0.013	0.167	3.34%	6.327	2.208	OK	10.554	5097.6	5086.53
MG-2	MG-3	441	0			0	0	3	0	102	0	5.4	3.000	0.007	8	0.667	0.013	0.167	0.80%	3.096	1.081	OK	3.528	5086.33	5083.7
MG-3	MG-4	298	0			0	0	3	0	102	0	5.4	3.000	0.007	8	0.667	0.013	0.167	0.74%	2.978	1.040	OK	2.131	5083.5	5078.91
MG-4	MG-5	374	64			6	2	5	8	166	0	5.4	5.000	0.011	8	0.667	0.013	0.167	1.13%	3.680	1.285	OK	4.226	5078.71	5074.68
MG-5	MG-6	338	0			0	0	5	0	166	0	5.4	5.000	0.011	8	0.667	0.013	0.167	1.12%	3.664	1.279	OK	3.763	5074.48	5070.35
MG-6	MG-7	201	0			0	0	5	0	166	0	5.4	5.000	0.011	8	0.667	0.013	0.167	0.50%	2.448	0.854	OK	1.005	5070.15	5069.07
MG-7	MG-8	320	0			0	0	5	0	166	0	5.4	5.000	0.011	8	0.667	0.013	0.167	0.87%	3.229	1.127	OK	2.784	5068.87	5066.07
MG-8	MG-9	217	0			0	0	5	0	166	0	5.4	5.000	0.011	8	0.667	0.013	0.167	1.23%	3.839	1.340	OK	2.669	5065.87	5063.2
MG-9	MG-10	365	0			0	0	5	0	166	0	5.4	5.000	0.011	8	0.667	0.013	0.167	0.50%	2.448	0.854	OK	1.825	5063	5061.17
MG-10	MG-11	350	0			0	0	5	0	166	0	5.4	5.000	0.011	8	0.667	0.013	0.167	4.28%	7.160	2.499	OK	14.970	5060.97	5046
MG-11	MG-12	413	828		17.0	87	23	28	92	992	0	22.4	28.000	0.062	8	0.667	0.013	0.167	0.92%	3.321	1.159	OK	3.800	5045.8	5042
MG-12	MG-13	871	0			0	0	28	0	992	0	22.4	28.000	0.062	8	0.667	0.013	0.167	5.60%	8.194	2.860	OK	48.800	5041.8	4993
MG-13	MG-14	503	0		3.0	1	0	28	0	992	0	25.4	28.000	0.082	8	0.667	0.013	0.167	6.72%	8.974	3.132	OK	33.800	4992.8	4959
MG-14	MG-15	388	458			46	12	40	48	1450	0	25.4	40.000	0.089	8	0.667	0.013	0.167	10.77%	11.363	3.966	OK	41.800	4958.8	4917
MG-15	MG-16	581	0	27		0	25	65	100	1450	27	25.4	65.000	0.145	12	1.000	0.013	0.250	4.96%	10.100	7.932	OK	28.800	4916.8	4888
MG-16	SR-3	715	0	38		0	35	100	140	1450	65	25.4	100.000	0.223	12	1.000	0.013	0.250	5.99%	11.099	8.717	OK	42.800	4887.8	4845

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CABELA'S BLVD SEWER COMPUTATIONS																									
FROM	TO	LENGTH (ft)	Number of units Introduced	Comm sq. ft. Introduced	Civic/Park Church Int (acres)	Total ERU Introduced	Average Flow Introduced	Total Average Flow	Peak Flow Introduced	Total Units Served	Total Comm Sq. Ft.	Total Civic/Park Church	REQUIRED CAPACITY (GPM)	REQUIRED CAPACITY (ft ³ /s)	PIPE SIZE (in)	PIPE SIZE (ft)	MANNING'S NUMBER	HYDRAULIC RADIUS	SLOPE	VELOCITY (ft/s)	CAPACITY (ft ³ /s)	Designed Capacity vs. required	FALL (ft)	UPPER END	LOWER END
CB-1	CB-2	126	183			18	6	5	20	183	0	0.0	5 000	0.011	8	0.667	0.013	0.107	3.10%	6.091	2.120	OK	3.900	4806.6	4802.7
CB-2	CB-3	437	29			3	1	6	4	212	0	0.0	6 000	0.013	8	0.667	0.013	0.167	3.23%	6.218	2.171	OK	14.100	4802.5	4788.4
CB-3	CB-4	108	0	8		0	7	13	28	212	8	0.0	13 000	0.029	12	1.000	0.013	0.250	0.22%	2.120	1.671	OK	0.238	4788.2	4787.96
CB-4	CB-5	488	0	7		0	0	16	24	212	15	0.0	16 000	0.042	12	1.000	0.013	0.250	7.04%	12.036	9.453	OK	34.355	4787.76	4748.27
RR-11	CB-5	258	2634	17	58.4	279	89	108	356	2846	31	58.4	108 000	0.241	18	1.500	0.013	0.375	1.17%	6.430	11.382	OK	3.019	4760.19	4748.27
CB-5	CB-6	204	0			0	0	108	0	2846	31	58.4	108 000	0.241	18	1.500	0.013	0.375	3.90%	11.739	20.744	OK	7.956	4748.07	4739.83
CB-6	CB-7	335	0			0	0	108	0	2846	31	58.4	108 000	0.241	18	1.500	0.013	0.375	5.02%	14.463	25.558	OK	19.032	4739.63	4719.79
CB-7	CB-8	567	0	32		0	29	137	116	2846	63	58.4	137 000	0.305	18	1.500	0.013	0.375	3.35%	10.880	19.226	OK	16.995	4719.59	4693.56
CB-9	CB-10	300	0			0	0	137	0	0	63	58.4	0 000	0.000	12	1.000	0.013	0.250	0.30%	2.485	1.951	OK	0.900	4711.19	4710.31
CB-10	CB-11	300	0	5		0	5	142	20	0	68	58.4	5 000	0.011	12	1.000	0.013	0.250	0.30%	2.485	1.951	OK	0.900	4710.11	4709.22
CB-11	CB-12	547	0			0	0	142	0	0	68	58.4	5 000	0.011	12	1.000	0.013	0.250	0.30%	2.485	1.951	OK	1.641	4709.02	4708.89
CB-12	CB-8	315	0			0	0	142	0	0	68	58.4	5 000	0.011	12	1.000	0.013	0.250	3.22%	8.140	8.303	OK	10.143	4708.69	4693.56
CB-8	CB-13	380	2846			285	75	217	296	2846	68	58.4	142 000	0.316	18	1.500	0.013	0.375	2.83%	10.000	17.671	OK	10.755	4682.223	4671.469
CB-13	CB-14	477	0			0	0	217	0	2846	68	58.4	142 000	0.316	18	1.500	0.013	0.375	2.83%	10.000	17.671	OK	13.500	4671.269	4657.769
CB-14	CB-15	600	0			0	0	217	0	2846	68	58.4	142 000	0.316	18	1.500	0.013	0.375	2.83%	10.000	17.671	OK	16.981	4657.569	4640.588
CB-15	CB-16	600	0			0	0	217	0	2846	68	58.4	142 000	0.316	18	1.500	0.013	0.375	2.83%	10.000	17.671	OK	16.981	4640.389	4623.407
CB-16	SR-21	290	0			0	0	217	0	2846	68	58.4	142 000	0.316	18	1.500	0.013	0.375	2.83%	10.000	17.671	OK	8.207	4623.207	4615

GRAND TERRACE SEWER COMPUTATIONS																									
FROM	TO	LENGTH (ft)	Number of units Introduced	Comm sq. ft. Introduced	Civic/Park Church Int (acres)	Total ERU Introduced	Average Flow Introduced	Total Average Flow	Peak Flow Introduced	Total Units Served	Total Comm Sq. Ft.	Total Civic/Park Church	REQUIRED CAPACITY (GPM)	REQUIRED CAPACITY (ft ³ /s)	PIPE SIZE (in)	PIPE SIZE (ft)	MANNING'S NUMBER	HYDRAULIC RADIUS	SLOPE	VELOCITY (ft/s)	CAPACITY (ft ³ /s)	Designed Capacity vs. required	FALL (ft)	UPPER END	LOWER END
GT-1	GT-2	317	0	3		0	2	2	8	0	3	0.0	2 000	0.004	12	1.000	0.013	0.250	2.98%	7.831	6.150	OK	9.447	4780.32	4760.42
GT-2	GT-3	373	0	0		0	0	0	0	0	3	0.0	2 000	0.004	12	1.000	0.013	0.250	3.94%	9.004	7.072	OK	14.696	4760.22	4745.54
GT-3	GT-4	360	0	36		0	33	33	132	0	38	0.0	35 000	0.078	12	1.000	0.013	0.250	4.94%	10.082	7.919	OK	17.784	4745.34	4726.89
GT-4	GT-5	448	0			0	0	0	0	0	38	0.0	35 000	0.078	12	1.000	0.013	0.250	3.30%	8.241	6.472	OK	14.784	4726.69	4708.98
GT-5	GT-6	47	0			0	0	0	0	0	38	0.0	35 000	0.078	12	1.000	0.013	0.250	25.06%	22.709	17.835	OK	11.778	4708.78	4697
GT-6	GT-7	462	0	15		0	14	14	56	0	53	0.0	49 000	0.109	12	1.000	0.013	0.250	1.04%	4.624	3.632	OK	4.800	4696.8	4692
GT-7	SR-18	462	0			0	0	0	0	0	53	0.0	49 000	0.109	12	1.000	0.013	0.250	1.03%	4.595	3.609	OK	4.740	4691.8	4687.06

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NOTE: OFFSITE SEWER WILL NEED TO BE CONSTRUCTED ONCE 3500 RESIDENTIAL BUILDING PERMITS HAVE BEEN ISSUED.



NO.	DATE	BY	REVISIONS
1	12/01/11	JMM	UPDATE TM AREA PLAN
2			
3			
4			
5			
6			
7			
8			
9			
10			

Project: J. MORRISON
 Date: 9-24-2007

PROJECT: TM OFFSITE SEWER FEASIBILITY STUDY
 TRVERSE MOUNTAIN
 DRAWING NAME: FIGURE 1 OFFSITE SEWER
 PROJECT NO.: 2005.117
 SHEET NO.: SHT 00

1900 SOUTH

1200 SOUTH

MATCH LINE - SEE SHT-02

SR 89B

1 2 3 4 5 6 7 8

350 LF

400 LF

400

2700 WAST

400 LF

400 LF

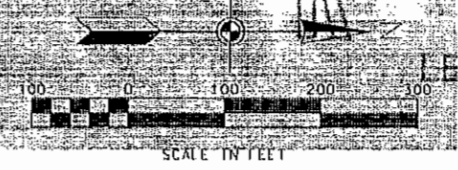
400

220 LF

LF

870
2700 LF
MASTER PLAN SIZE = 30"
TM AREA PLAN SIZE = 24"

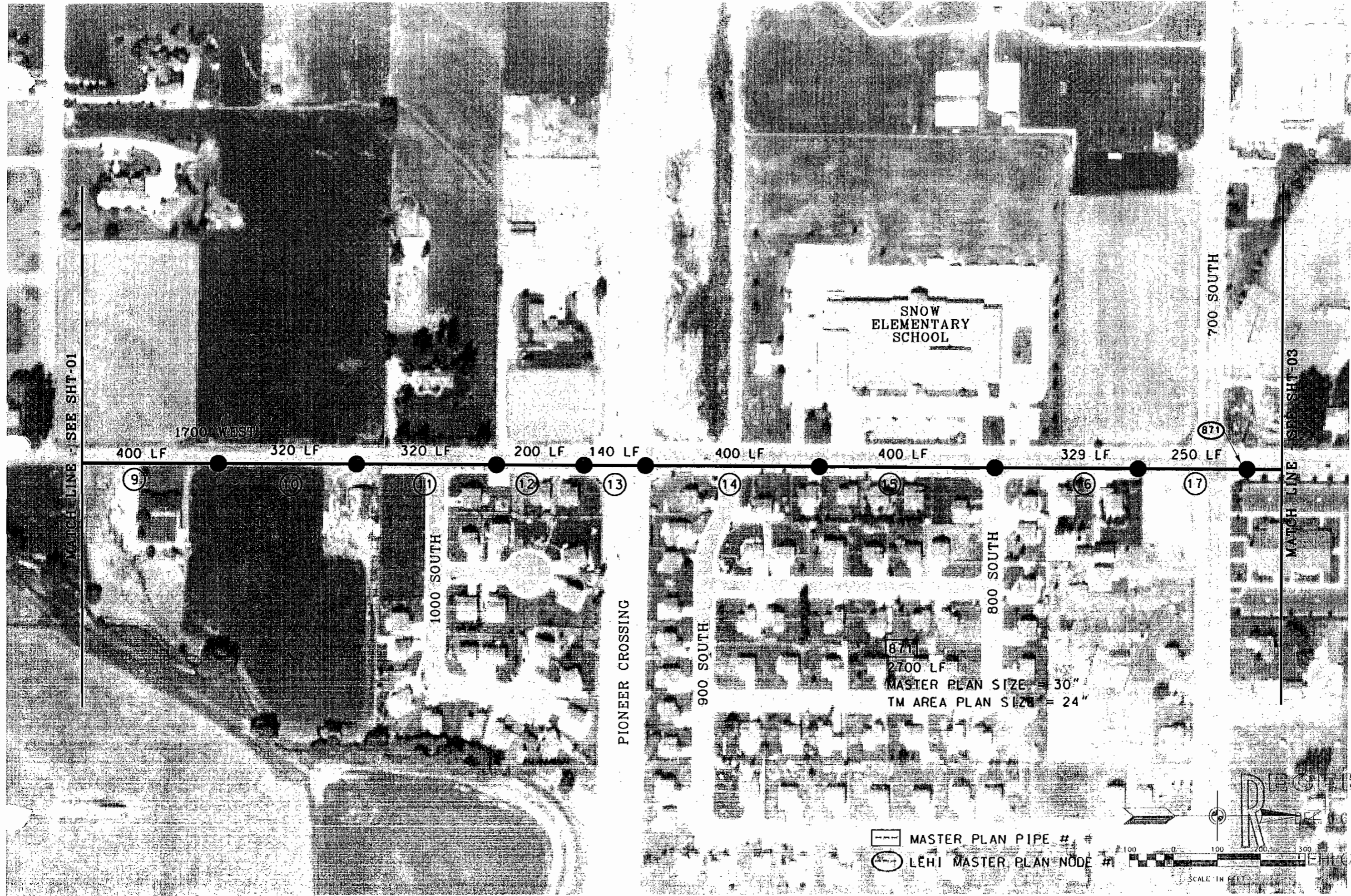
MASTER PLAN PIPE #
LEHI MASTER PLAN NODE #



NO.	DATE	BY	REVISIONS
1	12/26/11	AMM	UPDATE TM AREA PLAN
2			
3			
4			
5			
6			
7			
8			

Designed by: J. MORRISON
Checked by: J. MORRISON
Date: 9-24-2007

PROJECT NO. 2010.037
SHEET NO. SHT 01
Title: TM OFFSITE SEWER FEASIBILITY STUDY
Client: TRVERSE MOUNTAIN
Drawing Name: OFFSITE SEWER



MATCH LINE - SEE SHT-01

MATCH LINE - SEE SHT-03

SNOW
ELEMENTARY
SCHOOL

1700 WEST

700 SOUTH

1000 SOUTH

PIONEER CROSSING

900 SOUTH

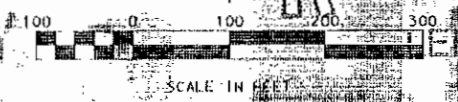
800 SOUTH

871
2700 LF
MASTER PLAN SIZE = 30"
TM AREA PLAN SIZE = 24"

400 LF 320 LF 320 LF 200 LF 140 LF 400 LF 400 LF 329 LF 250 LF

9 10 11 12 13 14 15 16 17

MASTER PLAN PIPE #
LEHI MASTER PLAN NODE #



SCALE IN FEET

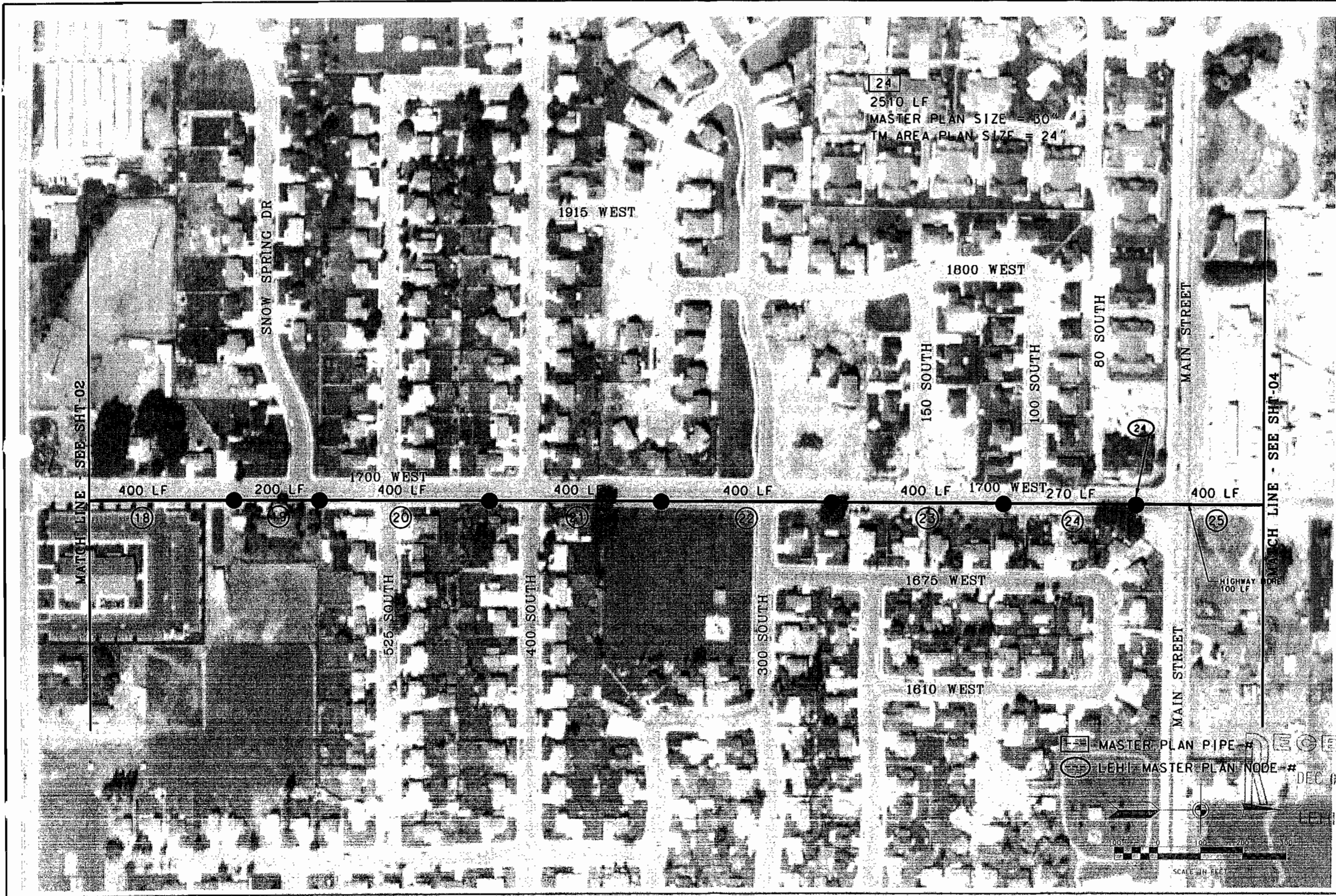
MW
BROWN
ENGINEERING, INC.
Office: (801) 377-1700 Fax: (801) 377-1789
578 East 77th North, Orem, UT 84057



NO.	DATE	BY	REVISIONS
1	12/06/11	JMM	UPDATE TM AREA PLAN

Designed: J. MORRISON
Checked: 9-24-2007

THE OFFSITE SEWER FEASIBILITY STUDY
TRAVERSE MOUNTAIN
OFFSITE SEWER
PROJECT NO. 2010-037
SHEET NO. SHT-02

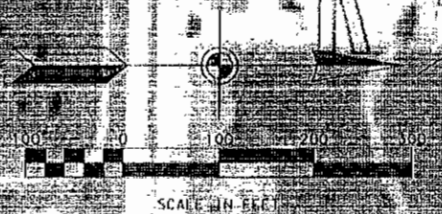


24
 2510 LF
 MASTER PLAN SIZE = 30"
 TM AREA PLAN SIZE = 24"

MATCH LINE - SEE SHT-02

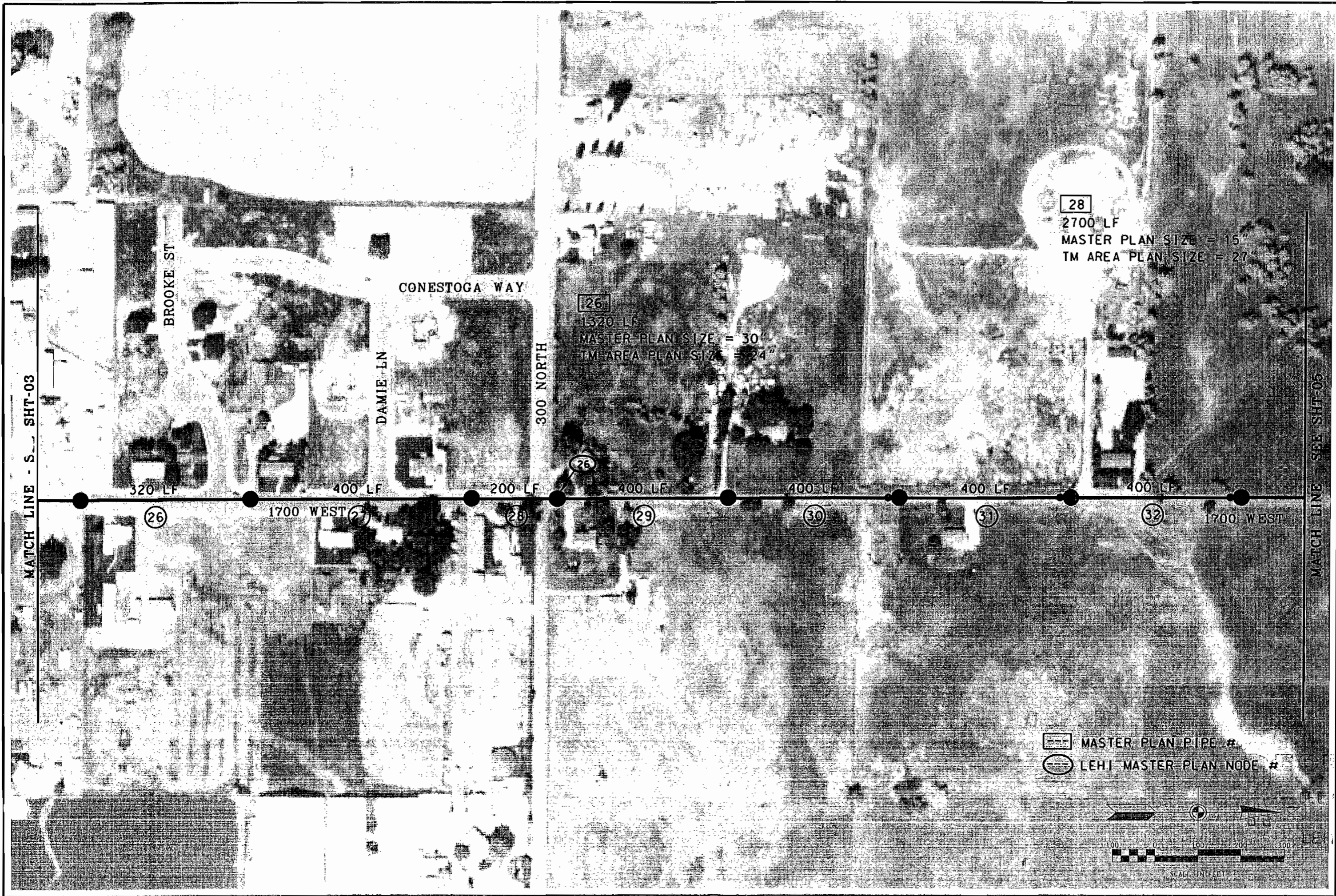
MATCH LINE - SEE SHT-04

 MASTER PLAN PIPE #
 LEHI MASTER PLAN NODE #



REVISIONS	
No.	Date
1	12/26/11
2	JMM
3	UPDATE TM AREA PLAN
4	
5	
6	
7	
8	
9	
10	

Designed: J. MORRISON
 Checked: 9-24-2007



MATCH LINE - SEE SHT-03

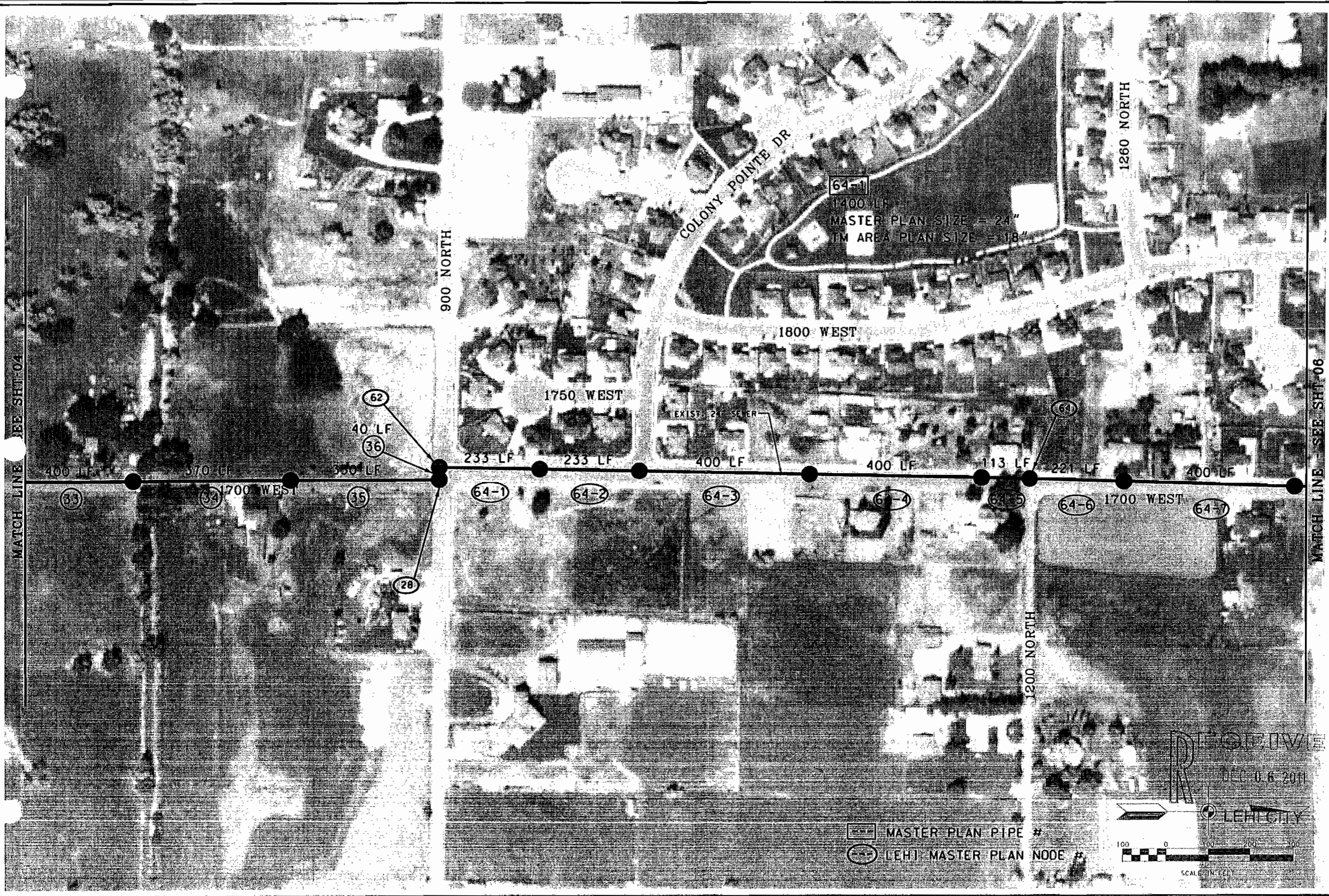
MATCH LINE - SEE SHT-05



No.	Date	By	Revisions
1	12/06/11	JMM	UPDATE TM AREA PLAN

Design: J. MORRISON
 Draw: J. MORRISON
 Check: J. MORRISON
 Date: 9-24-2007

Title: **CTM OFFSITE SEWER FEASIBILITY STUDY**
 Client: **TRAVERSE MOUNTAIN**
 Drawing Name: **OFFSITE SEWER**
 PROJECT NO. 2010-037
 SHEET NO. SHT-04



MATCH LINE - SEE SHT 04

MATCH LINE - SEE SHT 06

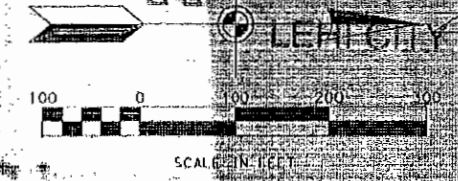


No.	Date	By	Revisions
1	12/06/11	JMB	UPDATE MASTER PLAN

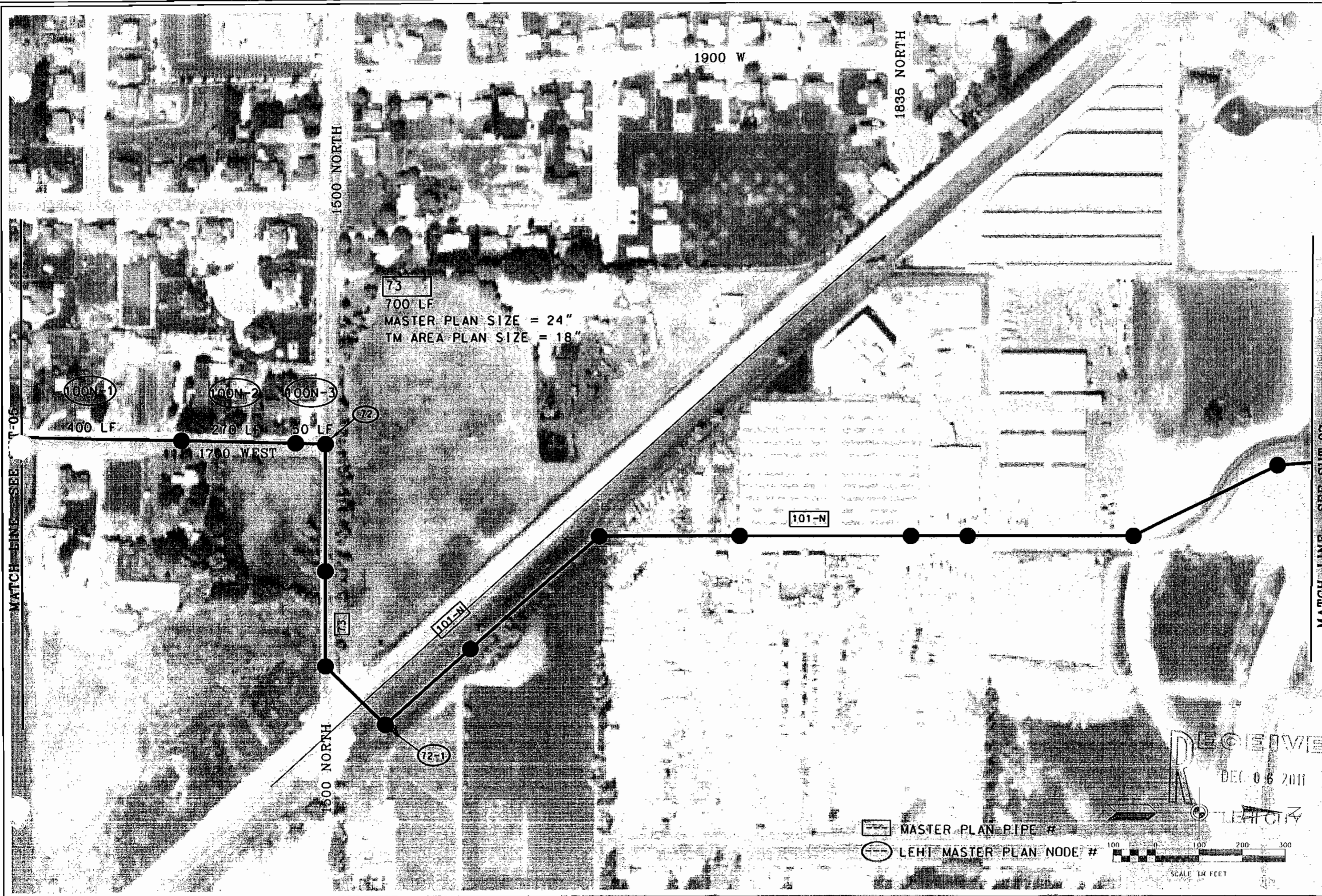
Designed: J. MORRISON
 Checked: J. MORRISON
 Date: 9-24-2007

PROJECT: TM OFFSITE SEWER FEASIBILITY STUDY
 CLIENT: TRAVERSE MOUNTAIN
 DRAWING NAME: OFFSITE SEWER
 PROJECT NO: 2010.037
 SHEET NO: SHT-05

64-1 MASTER PLAN PIPE #
36 LEHI MASTER PLAN NODE #



REGISTERED PROFESSIONAL ENGINEER
 NO. 174774
 MATT W. BROWN
 STATE OF UTAH
 DEC 06 2011
 LEHI CITY



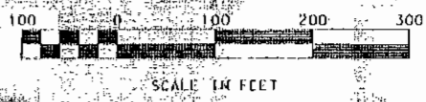
73
 700 LF
 MASTER PLAN SIZE = 24"
 TM AREA PLAN SIZE = 18"

100N-1 400 LF
 100N-2 270 LF
 100N-3 50 LF

MATCH LINE SEE SHT-06

MATCH LINE SEE SHT-07

MASTER PLAN PIPE #
 LEFT MASTER PLAN NODE #

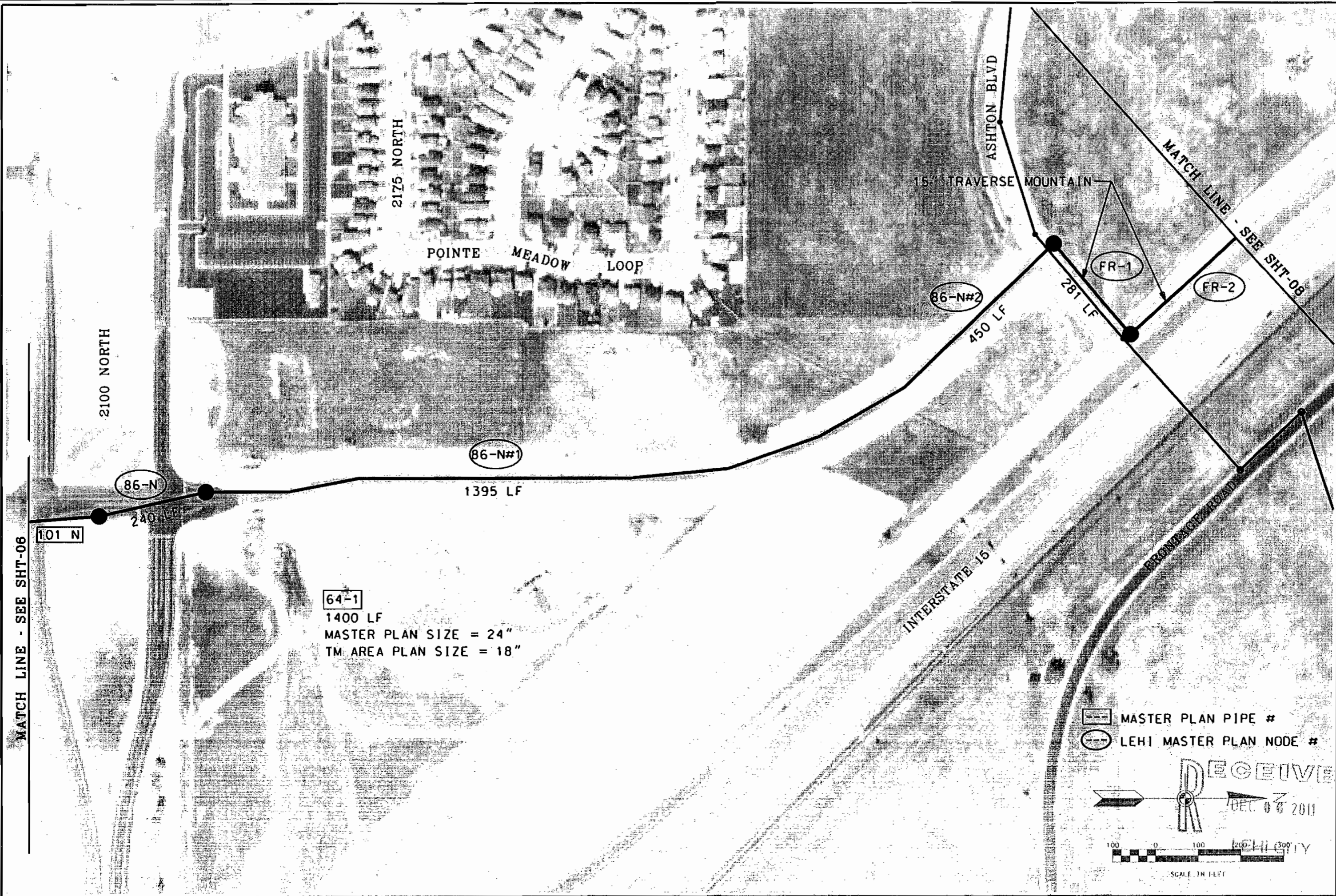


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NO.	DATE	BY	REVISIONS
1	08/02/11	JMM	UPDATE TM AREA PLAN
2	09/24/11	JMM	UPDATE TM AREA PLAN

PROJECT NO. 2010-037
 SHEET NO. SHT-06
 TITLE: TM OFFSITE SEWER FEASIBILITY STUDY
 CLIENT: TRAVERSE MOUNTAIN
 DRAWING NUMBER: OFFSITE SEWER
 Designer: J. MORRISON
 Date: 9-24-2007



MATCH LINE - SEE SHT-06

MATCH LINE - SEE SHT-08

64-1
1400 LF
MASTER PLAN SIZE = 24"
TM AREA PLAN SIZE = 18"

64-1 MASTER PLAN PIPE #
FR-1 LEHI MASTER PLAN NODE #

RECEIVING

DEC 05 2011

SCALE IN FEET

MW
BROWN
 ENGINEERING, INC



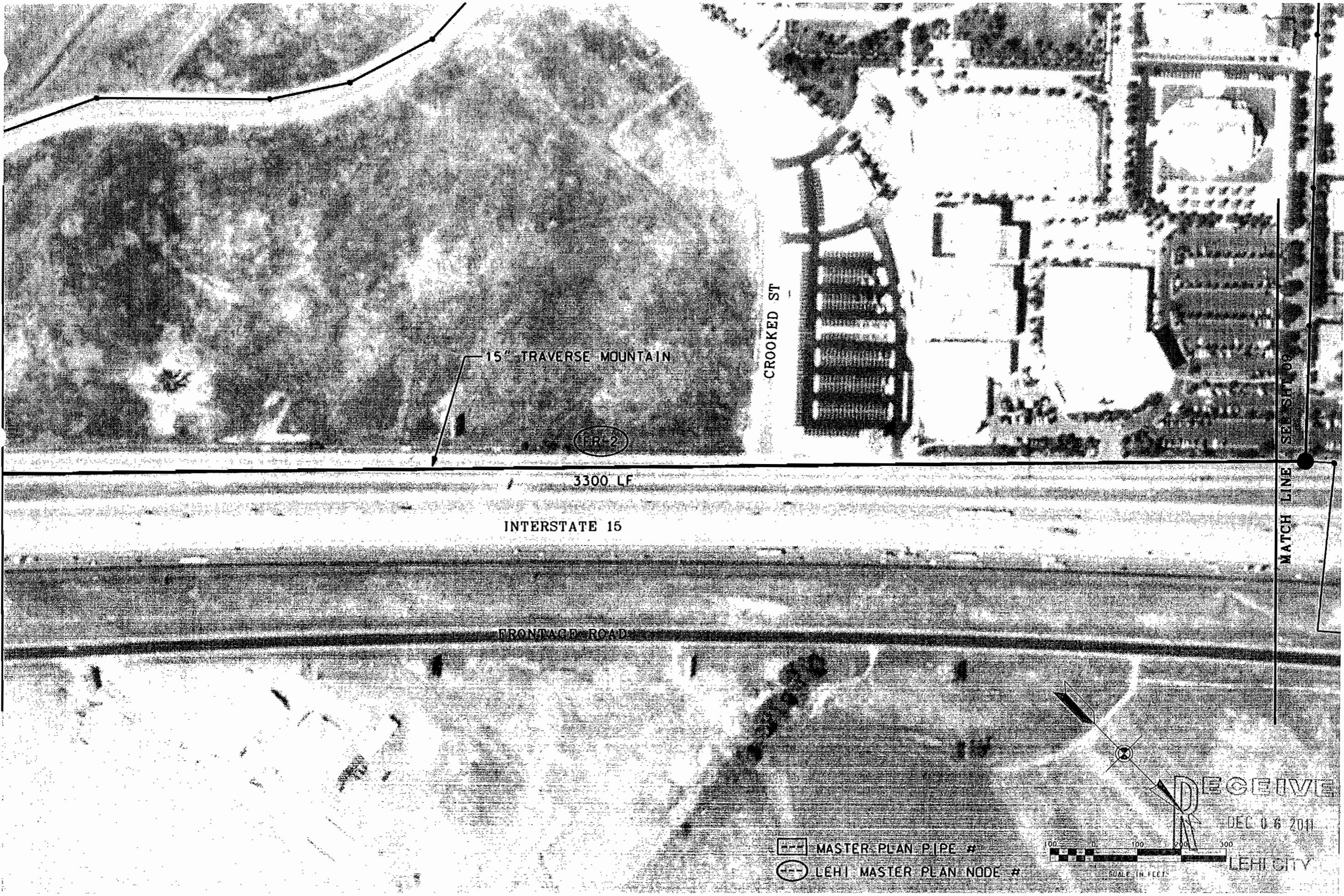
REVISIONS	
No.	By

Design: J. MORRISON
 Drawn: J. MORRISON
 Date: 9-24-2007

JIM OFFSITE SEWER FEASIBILITY STUDY
 TRAVERSE MOUNTAIN
 OFFSITE SEWER

PROJECT NO.
 2010.037
 SHEET NO.
 SHT-07

MATCH LINE - SEE SHT-07



15" TRAVERSE MOUNTAIN

CROOKED ST

FR-2

3300 LF

INTERSTATE 15

FRONTAGE ROAD

MATCH LINE - SEE SHT-08

MASTER PLAN PIPE #

LEHI MASTER PLAN NODE #



RECEIVE

DEC 06 2011

LEHI CITY

MW BROWN ENGINEERING, INC

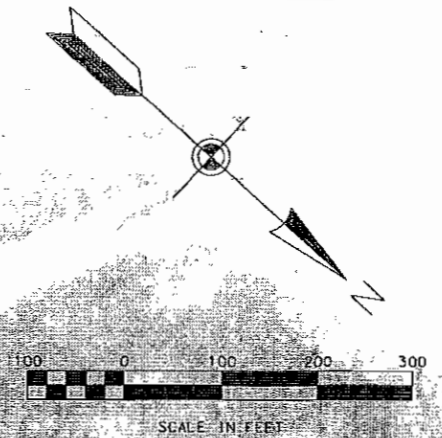
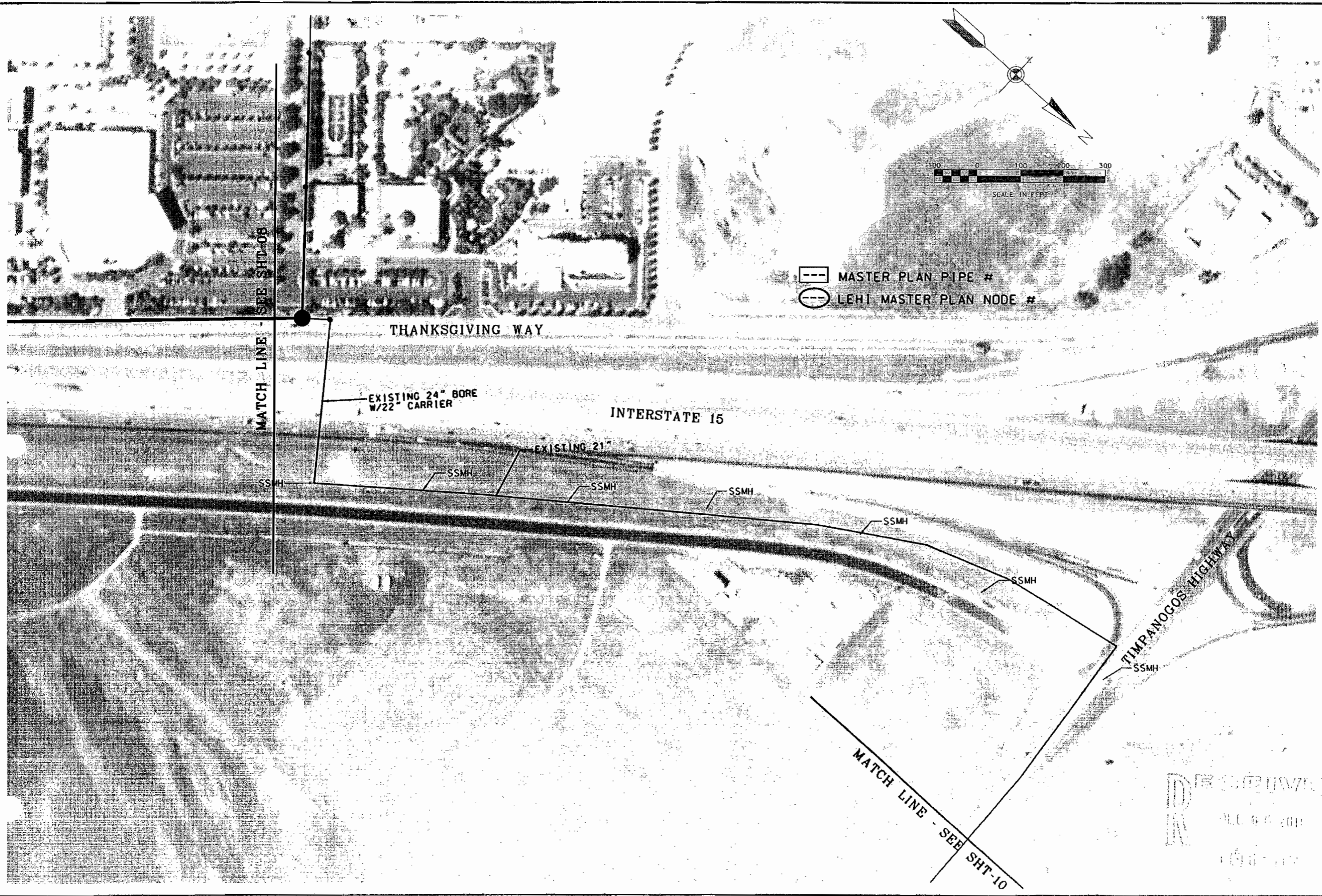


No.	Date	By	Notes
1	12/06/11	J.M.M.	UPDATE TM AREA PLAN

Designed: J. MORRISON
 Date: 9-24-2007

OFFSITE SEWER FEASIBILITY STUDY
 TRAVERSE MOUNTAIN
 OFFSITE SEWER

PROJECT NO. 2010-037
 SHEET NO. SHT-08



--- MASTER PLAN PIPE #
--- LEHI MASTER PLAN NODE #

MATCH LINE - SEE SHT-08

SSMH

MATCH LINE - SEE SHT-10



No.	Date	By	Check	Notes
1	12/06/11	JMM		UPDATE TM AREA PLAN

Designer: J. MORRISON
 Drawn: _____
 Checked: 9-24-2007
 Date: _____

TM-OFFSITE SEWER FEASIBILITY STUDY
 TRAVERSE MOUNTAIN
 OFFSITE SEWER
 Drawing Name: _____
 PROJECT NO. 2010.037
 SHEET NO. SHT-09

MATCH LINE - SEE SHT-10

MATCH LINE - SEE SHT-12

MORNING GLORY

TIMPANOGOS HIGHWAY

EXISTING 12" SEWER

FUTURE 18" SEWER

EXISTING SEWER

1200 WEST



SCALE IN FEET

RECEIVED
DEC 6 2011
LEHI CITY

MW
BROWN
ENGINEERING, INC.
Office: (801) 377-1790 Fax: (801) 377-1799
578 East 700 North, Orem UT 84057



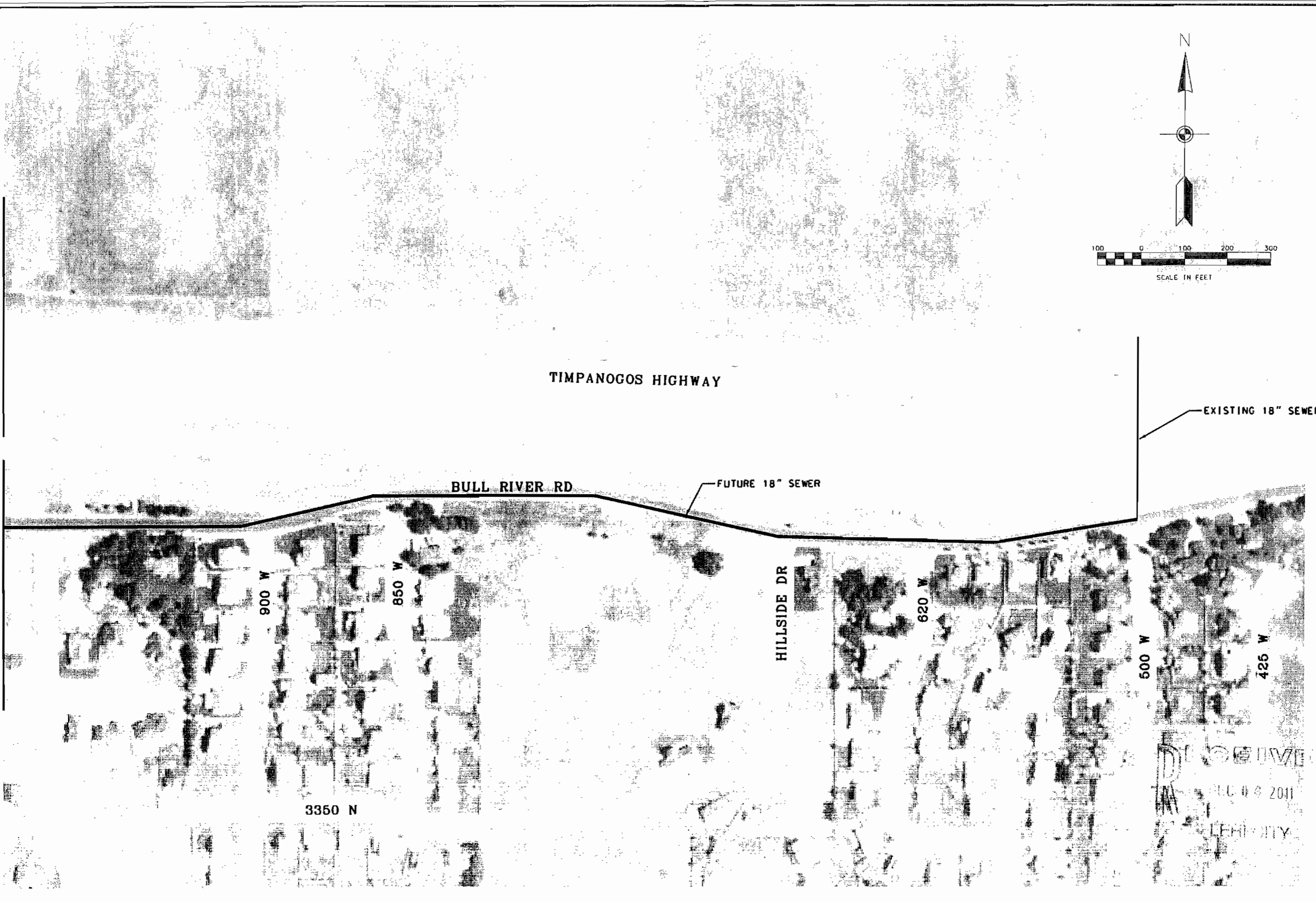
No.	Date	By	Revisions
1	12/26/11	JAM	UPDATE TM AREA PLAN

Designed: J. MORRISON
Checked: 9-24-2007

TM OFFSITE SEWER FEASIBILITY STUDY
TRAVERSE MOUNTAIN
OFFSITE SEWER

PROJECT NO.
2010.037
SHEET NO.
SHT-11

MATCH LINE - SEE SHT-11



SCALE IN FEET

TIMPANOGOS HIGHWAY

BULL RIVER RD

FUTURE 18" SEWER

EXISTING 18" SEWER

HILLSIDE DR

900 W

850 W

620 W

500 W

425 W

3360 N

MW BROWN ENGINEERING, INC.
 Office: (801) 377-1790 Fax: (801) 377-1780
 578 East 7th North, Orem UT 84097

No.	Date	By	Notes
1	12/06/11	JAW	UPDATE TM AREA PLAN

Designed: _____
 Drawn: J. MORRISON
 Checked: _____
 Date: 9-24-2007

TM OFFSITE SEWER FEASIBILITY STUDY
TRAVERSE MOUNTAIN
OFFSITE SEWER

Title: _____
 Project No: 2010-037
 Sheet No: SHT-12