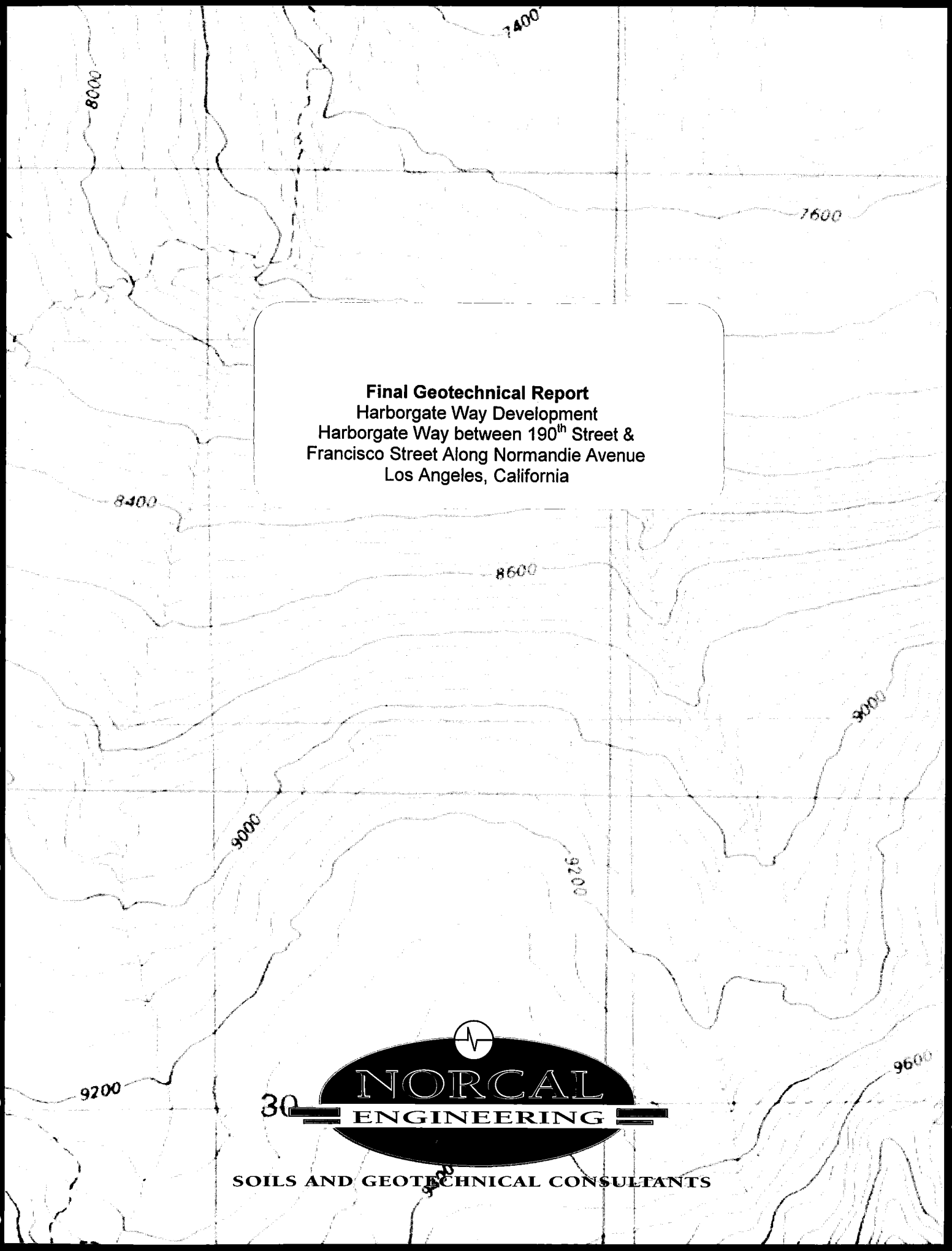

Final Geotechnical Report
Harborgate Way Development
Harborgate Way between 190th Street &
Francisco Street Along Normandie Avenue
Los Angeles, California

NORCAL
ENGINEERING

SOILS AND GEOTECHNICAL CONSULTANTS

Final Geotechnical Report
Harborgate Way Development
Harborgate Way between 190th Street &
Francisco Street Along Normandie Avenue
Los Angeles, California

Prepared For:

Boeing Realty Corporation
4060 Lakewood Boulevard
Long Beach, California 90808-1700

Attn: Mr. Johnny Marasco

Project Number 5936-96B
January 6, 2000

NorCal Engineering

Soils and Geotechnical Consultants
10641 Humbolt Street Los Alamitos, CA 90720
(562) 799-9469 Fax (562) 799-9459

January 6, 2000 Project Number 5936-96B

Boeing Realty Corporation
4060 Lakewood Boulevard
Long Beach, California 90808-1700

Attn: Mr. Johnny Marasco

RE: **Final Geotechnical Report** - Observation and Testing of Utility Trench Backfill Operations and Francisco Street Improvements – Proposed Harbor Gateway Development - Located at Harborgate Way between 190th Street and Francisco Street and Along Normandie Avenue, in the City of Los Angeles, California (Legal Description: Tract No. 52172)

Dear Mr. Marasco:

Pursuant to your request, this firm has observed and tested backfill operations at the above referenced project. Results of the compaction tests are attached and locations of these tests are shown on the accompanying Site Plan. All work was performed in accordance with our Geotechnical Investigation dated March 18, 1996, Project Number 5936-96 and all present day standards of the Geotechnical Engineering Industry.

Utility Trench Backfill

The purpose of the utility trench backfill was for the placement of fill to provide structural support for concrete slabs, curbs, gutters, flatwork and pavement. Fill soils placed were compacted to a minimum of 90% of the laboratory standard in lifts not in excess of eight inches in thickness. The on-site soils were utilized as backfill material with a maximum depth consisting of the following:

	Depth (ft)
Sewer	17½
Storm Drain	9½
Electrical	4½
Water Service	2½
Gas	3
Irrigation	3

Compaction of the utility backfill soils was achieved by use of a sheepsfoot roller and vibratory hand compactors. A water hose provided moisture control. A summary of compaction test results is provided in Appendix B with location of these tests are shown on the attached plan.

Pavement Subgrade

The pavement subgrade areas including concrete curb, gutter and sidewalk areas were fine graded and compacted to a minimum of 90% of the laboratory standard. The base section consisted of an approved crushed miscellaneous base material tested to a minimum of 95% relative compaction. The maximum depth of base material was approximately twelve inches. Five and ten ton steel drum rollers were utilized for compaction control. A summary of compaction tests of the fine grading operations are also provided in Table II with location shown on the accompanying plans.

Laboratory/Field Testing

The relative compaction was determined by Sand Cone Method (ASTM: D1556-82) and by the Drive Tube Method (ASTM: D2937). The maximum density of the fill soils was obtained by the laboratory standard (ASTM: D1557-91) and results are shown on Table I. Tests were performed a minimum of every 500 cubic yards placed and every two feet in depth of fill placed. Results of field density tests are presented in Table II.

Conclusions

The geotechnical engineering aspects of the grading and backfill operations have been observed and are in compliance with the geotechnical engineer's recommendations. The development has been backfilled to the approval of this firm and is suitable for its intended use.

We appreciate this opportunity to be of service to you. If you have any further questions, please do not hesitate to contact the undersigned.

Respectfully submitted,
NORCAL ENGINEERING

Keith D. Tucker
Project Engineer
R.G.E. 841

REGISTERED PROFESSIONAL ENGINEER
KEITH D. TUCKER
No. 841
Exp. 12/31/00
GEOTECHNICAL
STATE OF CALIFORNIA

Gregory H. Bennett
Project Manager

TABLE I
MAXIMUM DENSITY TESTS
(ASTM: D1557-91)

Sample	Classification	Optimum Moisture	Maximum Dry Density (lbs./cu.ft.)
I	Clayey silty SAND	14.0	117.0
II	Silty CLAY with occasional gravel	13.5	119.0
III	Silty, sandy CLAY with occasional gravel	15.0	118.0
IV	Silty CLAY with gravel	15.0	121.0
V	Silty CLAY	13.0	112.0
VI	Silty CLAY	14.0	110.0
VII	Clayey SILT	12.0	121.0
VIII	Silty, sandy CLAY with gravel	10.5	128.0
IX	Clayey silty SAND with occasional gravel	10.5	125.0
X	Crushed Miscellaneous Base	8.5	125.0
XI	SAND fine to medium grained, silty with slight clay with occasional gravel	9.5	126.0

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Depth	Tech.	Laboratory Data: Soil Type	Laboratory Data: Unit Wt. lbs./cu.ft.	Laboratory Data: Optimum Moisture	Field Data: Dry Density	Field Data: Moisture Content	Relative Compaction: Results	Relative Compaction: Minimum Spec.
7/20/98	101	Sewer - Harborgate Way Sta. 0+80	8.0-8.5	JS	I	117.0	14.0	106.2	15.8	91	90
7/20/98	102	Sewer - Harborgate Way Sta. 1+05	6.0-6.5	JS	I	117.0	14.0	108.2	15.5	93	90
7/20/98	103	Sewer - Harborgate Way Sta. 0+95	2.0-2.5	JS	I	117.0	14.0	106.8	17.0	91	90
7/20/98	104	Sewer - Harborgate Way Sta. 1+50	4.5-5.0	JS	II	119.0	13.5	109.9	14.6	92	90
7/21/98	105	Sewer - Harborgate Way Sta. 1+30	0.5-1.0	JS	II	119.0	13.5	112.7	12.7	95	90
7/21/98	106	Sewer - Harborgate Way Sta. 3+80	7.0-7.5	JS	I	117.0	14.0	108.6	15.1	93	90
7/21/98	107	Sewer - Harborgate Way Sta. 2+90	5.0-5.5	JS	I	117.0	14.0	106.2	15.8	91	90
7/21/98	108	Sewer - Harborgate Way Sta. 2+35	3.0-3.5	JS	I	117.0	14.0	109.1	14.6	93	90
7/21/98	109	Sewer - Harborgate Way Sta. 2+10	6.0-6.5	JS	III	118.0	15.0	108.8	16.7	92	90
7/21/98	110	Sewer – Harborgate Way Sta. 3+20	1.0-1.5	JS	III	118.0	15.0	109.7	15.8	93	90
7/21/98	111	Sewer - Harborgate Way Sta. 5+10	4.0-4.5	JS	II	119.0	13.5	111.7	14.6	94	90
7/21/98	112	Sewer – Harborgate Way Sta. 3+50	0.5-1.0	JS	I	117.0	14.0	109.1	14.6	93	90
7/21/98	113	Sewer - Harborgate Way Sta. 4+60	2.0-2.5	JS	III	118.0	15.0	108.4	18.0	92	90
7/21/98	114	Sewer - Harborgate Way Sta. 4+20	0.5-1.0	JS	III	118.0	15.0	110.5	16.7	94	90
7/21/98	115	Sewer - Harborgate Way Sta. 5+60	3.0-3.5	JS	I	117.0	14.0	110.6	13.9	95	90
7/21/98	116	Sewer – Harborgate Way Sta. 6+30	1.0-1.5	JS	II	119.0	13.5	111.0	13.5	95	90
7/21/98	117	Sewer - Harborgate Way Sta. 8+45	6.0-6.5	JS	I	117.0	14.0	105.6	15.5	90	90
7/21/98	118	Sewer – Harborgate Way Sta. 7+15	2.0-2.5	JS	I	117.0	14.0	108.4	15.3	93	90
7/21/98	119	Sewer - Harborgate Way Sta. 7+80	4.0-4.5	JS	I	117.0	14.0	108.6	16.0	93	90
7/21/98	120	Sewer - Harborgate Way Sta. 8+80	0.5-1.0	JS	I	117.0	14.0	107.9	15.8	92	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Field Data Optimum lbs./cu.ft.	Dry Moisture	Relative Compaction Moisture Density	Content	Minimum Results	Spec.
7/21/98	121	Sewer - Harborgate Way Sta. 8+10	3.0-3.5	JS	III	118.0	15.0	110.5	16.7	94	90
7/22/98	122	Sewer – Harborgate Way Sta. 9+45	5.0-5.5	JS	III	118.0	15.0	108.6	16.8	92	90
7/22/98	123	Sewer - Harborgate Way Sta. 9+75	3.0-3.5	JS	II	119.0	13.5	111.9	15.1	93	90
7/22/98	124	Sewer - Harborgate Way Sta. 9+25	1.0-1.5	JS	III	118.0	15.0	111.7	15.5	95	90
7/22/98	125	Sewer - Harborgate Way Sta. 10+30	2.0-2.5	JS	I	117.0	14.0	108.2	15.5	93	90
7/22/98	126	Sewer - Harborgate Way Sta. 9+95	0.5-1.0	JS	II	119.0	13.5	111.0	15.3	93	90
7/22/98	127	Sewer - Harborgate Way Sta. 10+90	4.0-4.5	JS	II	119.0	13.5	109.7	15.8	92	90
7/22/98	128	Sewer - Harborgate Way Sta. 11+20	3.0-3.5	JS	II	119.0	13.5	108.8	14.8	92	90
7/22/98	129	Sewer – Harborgate Way Sta. 11+15	4.0-4.5	JS	II	119.0	13.5	112.9	15.1	95	90
7/22/98	130	Sewer – Harborgate Way Sta. 11+50	2.0-2.5	JS	II	119.0	13.5	110.6	14.8	93	90
7/22/98	131	Sewer - Harborgate Way Sta. 11+10	0.5-1.0	JS	I	117.0	14.0	105.8	13.4	90	90
7/23/98	132	Sewer - Harborgate Way Sta. 9+99	5.0-5.5	JS	I	117.0	14.0	109.1	14.6	93	90
7/23/98	133	Sewer - Harborgate Way Sta. 12+20	3.0-3.5	JS	II	119.0	13.5	114.6	14.3	96	90
7/23/98	134	Sewer - Harborgate Way Sta. 13+45	2.0-2.5	JS	II	119.0	13.5	110.1	15.3	93	90
7/23/98	135	Sewer - Harborgate Way Sta. 12+65	1.0-1.5	JS	III	118.0	15.0	111.4	14.9	94	90
7/23/98	136	Sewer – Harborgate Way Sta. 14+55	2.0-2.5	JS	II	119.0	13.5	112.7	15.4	95	90
7/23/98	137	Sewer – Harborgate Way Sta. 14+10	0.5-1.0	JS	II	119.0	13.5	114.1	13.9	96	90
7/23/98	138	Sewer – Harborgate Way Sta. 13+15	0.5-1.0	JS	III	118.0	15.0	110.0	14.5	93	90
7/24/98	139	Sewer – Harborgate Way Sta. 2+07	5.0-5.5	JS	I	117.0	14.0	106.9	15.1	91	90
7/24/98	140	Sewer – Harborgate Way Sta. 2+07	1.0-1.5	JS	I	117.0	14.0	109.2	14.5	93	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Optimum lbs./cu.ft.	Field Data Dry Moisture	Moisture Density	Relative Compaction Content	Minimum Results	Spec.
7/24/98	141	Sewer – Harborgate Way Sta. 2+07	2.5-3.0	JS	I	117.0	14.0	108.2	15.5	93	90
7/24/98	142	Sewer – Harborgate Way Sta. 4+25	2.5-3.0	JS	I	117.0	14.0	107.3	12.7	92	90
7/24/98	143	Sewer – Harborgate Way Sta. 2+64	6.0-6.5	JS	II	119.0	13.5	109.9	14.6	92	90
7/24/98	144	Sewer – Harborgate Way Sta. 2+64	4.0-4.5	JS	III	118.0	15.0	104.0	12.5	88	90
7/24/98	144A**	Sewer – Harborgate Way Sta. 2+64	4.0-4.5	JS	III	118.0	15.0	107.1	15.8	91	90
7/24/98	145	Sewer – Harborgate Way Sta. 2+64	2.0-2.5	JS	I	117.0	14.0	110.3	15.1	94	90
7/24/98	146	Sewer – Harborgate Way Sta. 2+64	1.0-1.5	JS	II	119.0	13.5	111.6	15.6	94	90
7/24/98	147	Sewer – Harborgate Way Sta. 6+00	4.0-4.5	JS	I	117.0	14.0	109.4	15.2	93	90
7/24/98	148	Sewer – Harborgate Way Sta. 3+31	4.0-4.5	JS	III	118.0	15.0	108.8	16.7	92	90
7/24/98	149	Sewer – Harborgate Way Sta. 3+31	2.0-2.5	JS	I	117.0	14.0	106.3	14.8	91	90
7/24/98	150	Sewer – Harborgate Way Sta. 3+31	0.5-1.0	JS	II	119.0	13.5	112.4	14.8	94	90
7/27/98	151	Sewer – Harborgate Way Sta. 6+71	4.0-4.5	JS	I	117.0	14.0	106.2	15.8	91	90
7/27/98	152	Sewer – Harborgate Way Sta. 6+71	2.0-2.5	JS	I	117.0	14.0	107.3	14.6	92	90
7/27/98	153	Sewer – Harborgate Way Sta. 5+73	4.0-4.5	JS	I	117.0	14.0	107.7	16.1	92	90
7/27/98	154	Sewer – Harborgate Way Sta. 5+73	2.0-2.5	JS	I	117.0	14.0	107.9	15.8	92	90
7/29/98	155	Sewer – Harborgate Way Sta. 2+07	2.5-3.0	JS	I	117.0	14.0	108.9	14.8	93	90
7/29/98	156	Sewer – Harborgate Way Sta. 3+90	3.0-3.5	JS	I	117.0	14.0	110.1	14.8	94	90
7/29/98	157	Sewer – Harborgate Way Sta. 3+90	3.0-3.5	JS	I	117.0	14.0	109.3	15.3	93	90
7/29/98	158	Sewer – Harborgate Way Sta. 5+62	3.0-3.5	JS	I	117.0	14.0	109.6	13.6	94	90
7/29/98	159	Sewer – Harborgate Way Sta. 7+10	3.0-3.5	JS	I	117.0	14.0	101.4	16.8	87	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Laboratory Data Depth	Laboratory Data Soil Tech.	Laboratory Data Soil Type	Field Data Unit Wt. lbs./cu.ft.	Field Data Optimum Moisture	Relative Compaction Dry Density	Relative Compaction Moisture Content	Relative Compaction Minimum Results	Spec.
8/4/98	159A**	Sewer – Harborgate Way Sta. 7+10	3.0-3.5	DR	I	117.0	14.0	108.2	15.5	93	90
8/4/98	160	Sewer – Harborgate Way Sta. 21+60	1.0-1.5	DR	I	117.0	14.0	106.5	15.5	91	90
8/4/98	161	Sewer – Harborgate Way Sta. 17+25	1.0-1.5	DR	I	117.0	14.0	106.2	11.1	91	90
8/4/98	162	Sewer – Harborgate Way Sta. 18+45	0.0-0.5	DR	II	119.0	13.5	106.4	10.0	90	90
8/4/98	163	Sewer – Harborgate Way Sta. 19+85	0.0-0.5	DR	I	117.0	14.0	105.6	12.7	90	90
8/4/98	164	Sewer – Harborgate Way Sta. 22+65	1.0-1.5	DR	III	118.0	15.0	108.2	15.5	92	90
8/4/98	165	Sewer – Harborgate Way Sta. 23+65	0.0-0.5	DR	III	118.0	15.0	110.7	9.3	94	90
8/20/98	166	Electrical – Harborgate Way Sta. 1+60	3.0-3.5	JS	II	119.0	13.5	109.5	14.2	92	90
8/20/98	167	Electrical – Harborgate Way Sta. 1+40	3.0-3.5	JS	II	119.0	13.5	110.9	15.4	93	90
8/20/98	168	Electrical – Harborgate Way Sta. 1+60	1.0-1.5	JS	IV	121.0	15.0	111.0	17.1	92	90
8/20/98	169	Electrical – Harborgate Way Sta. 1+40	1.0-1.5	JS	IV	121.0	15.0	115.6	16.8	96	90
9/17/98	170	Storm Drain – Trunk 'B' Sta. 1+00	6.0-6.5	JS	I	117.0	14.0	90.8	15.6	78	90
9/17/98	170A**	Storm Drain – Trunk 'B' Sta. 1+00	6.0-6.5	JS	I	117.0	14.0	107.1	12.0	92	90
9/17/98	171	Storm Drain – Trunk 'B' Sta. 3+00	5.0-5.5	JS	I	117.0	14.0	95.9	14.6	82	90
9/17/98	171A**	Storm Drain – Trunk 'B' Sta. 3+00	5.0-5.5	JS	I	117.0	14.0	105.8	13.6	90	90
9/17/98	172	Storm Drain – Trunk 'B' Sta. 4+25	4.5-5.0	JS	I	117.0	14.0	100.9	13.9	86	90
9/18/98	172A**	Storm Drain – Trunk 'B' Sta. 4+25	4.5-5.0	JS	IV	121.0	15.0	111.2	15.1	92	90
9/17/98	173	Storm Drain – Trunk 'B' Sta. 2+25	3.0-3.5	JS	II	119.0	13.5	108.4	15.3	92	90
9/18/98	174	Storm Drain – Trunk 'B' Sta. 1+50	3.0-3.5	JS	II	119.0	13.5	112.0	11.6	94	90
9/18/98	175	Storm Drain – Trunk 'B' Sta. 2+75	2.5-3.0	JS	IV	121.0	15.0	112.7	15.3	93	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Optimum lbs./cu.ft.	Field Data Dry Moisture	Moisture Density	Relative Compaction Content	Minimum Results	Spec.
9/21/98	176	Storm Drain – Trunk 'B' Sta. 4+75	4.5-5.0	JS	I	117.0	14.0	106.9	12.2	91	90
9/21/98	177	Storm Drain – Trunk 'B' Sta. 4+00	2.5-3.0	JS	I	117.0	14.0	97.2	12.7	83	90
9/21/98	177A**	Storm Drain – Trunk 'B' Sta. 4+00	2.5-3.0	JS	I	117.0	14.0	107.6	14.3	92	90
9/21/98	178	Storm Drain – Trunk 'B' Sta. 7+00	5.5-6.0	JS	II	119.0	13.5	111.4	12.2	94	90
9/22/98	179	Storm Drain – Trunk 'B' Sta. 4+75	2.0-2.5	JS	I	117.0	14.0	106.5	12.7	91	90
9/22/98	180	Storm Drain – Trunk 'B' Sta. 6+50	4.0-4.5	JS	I	117.0	14.0	106.9	12.2	91	90
9/22/98	181	Storm Drain – Trunk 'B' Sta. 1+25	1.0-1.5	JS	I	117.0	14.0	108.6	15.0	93	90
9/22/98	182	Storm Drain – Trunk 'B' Sta. 6+25	2.0-2.5	JS	IV	121.0	15.0	114.9	12.2	95	90
9/22/98	183	Storm Drain – Trunk 'B' Sta. 5+50	3.0-3.5	JS	I	117.0	14.0	108.9	14.8	93	90
9/23/98	184	Storm Drain – Trunk 'B' Sta. 5+75	0.5-1.0	JS	IV	121.0	15.0	116.4	13.4	96	90
9/24/98	185	Storm Drain – Trunk 'B' Sta. 9+25	4.0-4.5	JS	I	117.0	14.0	109.1	14.6	93	90
9/24/98	186	Storm Drain – Trunk 'B' Sta. 8+25	4.0-4.5	JS	I	117.0	14.0	106.9	12.2	91	90
9/24/98	187	Storm Drain – Trunk 'B' Sta. 7+75	0.5-1.0	JS	I	117.0	14.0	108.9	13.9	93	90
9/24/98	188	Storm Drain – Trunk 'B' Sta. 8+50	2.0-2.5	JS	I	117.0	14.0	109.4	14.3	93	90
9/25/98	189	Storm Drain – Trunk 'B' Sta. 8+75	1.0-1.5	JS	II	119.0	13.5	111.3	14.1	94	90
9/25/98	190	Storm Drain – Trunk 'B' Sta. 9+35	0.5-1.0	JS	II	119.0	13.5	111.6	11.1	94	90
9/28/98	191	Storm Drain – Trunk 'B' Sta. 10+75	5.0-5.5	JS	II	119.0	13.5	110.7	12.9	93	90
9/28/98	192	Storm Drain – Trunk 'B' Sta. 10+50	3.0-3.5	JS	I	117.0	14.0	105.8	13.4	90	90
9/29/98	193	Storm Drain – Trunk 'B' Sta. 9+25	0.0-0.5	JS	II	119.0	13.5	110.8	14.6	93	90
9/29/98	194	Storm Drain – Trunk 'B' Sta. 9+75	4.0-4.5	JS	III	118.0	15.0	110.1	15.3	93	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Depth	Laboratory Data Soil Tech.	Laboratory Data Type	Field Data Unit Wt. lbs./cu.ft.	Field Data Optimum Moisture	Relative Compaction Dry Density	Relative Compaction Moisture Content	Relative Compaction Minimum Results	Spec.
9/29/98	195	Storm Drain – Trunk 'B' Sta. 10+00	2.0-2.5	JS	IV	121.0	15.0	115.0	13.9	95	90
9/29/98	196	Storm Drain – Trunk 'B' Sta. 9+70	0.0-0.5	JS	IV	121.0	15.0	113.7	14.3	94	90
10/5/98	197	Electrical – Harborgate Way Sta. 14+15	2.0-2.5	JS	I	117.0	14.0	107.7	17.0	92	90
10/5/98	198	Electrical – Harborgate Way Sta. 16+10	1.0-1.5	JS	I	117.0	14.0	108.4	15.3	93	90
10/5/98	199	Electrical – Harborgate Way Sta. 15+27	2.0-2.5	JS	IV	121.0	15.0	111.4	15.8	92	90
10/5/98	200	Electrical – Harborgate Way Sta. 15+20	0.5-1.0	JS	II	119.0	13.5	110.2	14.3	93	90
10/5/98	201	Storm Drain – Trunk 'A' Sta. 0+56	1.5-2.0	JS	II	119.0	13.5	109.3	15.3	92	90
10/5/98	202	Storm Drain – Trunk 'A' Sta. 0+56	0.5-1.0	JS	IV	121.0	15.0	109.5	16.0	90	90
10/5/98	203	Storm Drain – Trunk 'A' Sta. 4+77	1.5-2.0	JS	IV	121.0	15.0	112.9	15.1	93	90
10/5/98	204	Storm Drain – Trunk 'A' Sta. 4+77	0.5-1.0	JS	I	117.0	14.0	107.3	14.6	92	90
10/5/98	205	Storm Drain – Trunk 'A' Sta. 6+08	2.0-2.5	JS	IV	121.0	15.0	111.4	15.8	92	90
10/15/98	206	Storm Drain – Trunk 'B' Sta. 11+00	5.0-5.5	JS	II	119.0	13.5	110.4	13.2	93	90
10/15/98	207	Storm Drain – Trunk 'B' Sta. 11+50	4.5-5.0	JS	I	117.0	14.0	110.8	14.6	95	90
10/16/98	208	Storm Drain – Trunk 'A' Sta. 0+56	2.0-2.5	JS	IV	121.0	15.0	116.4	13.4	96	90
10/16/98	209	Storm Drain – Trunk 'A' Sta. 0+56	0.5-1.0	JS	II	119.0	13.5	110.2	11.6	93	90
10/16/98	210	Storm Drain – Trunk 'A' Sta. 1+00	0.5-1.0	JS	II	119.0	13.5	111.2	15.1	93	90
10/16/98	211	Storm Drain – Trunk 'A' Sta. 4+77	0.5-1.0	JS	I	117.0	14.0	109.4	14.3	93	90
10/16/98	212	Storm Drain – Trunk 'A' Sta. 4+77	0.5-1.0	JS	III	118.0	15.0	109.3	15.3	93	90
10/16/98	213	Storm Drain – Trunk 'A' Sta. 6+08	1.0-1.5	JS	I	117.0	14.0	108.0	14.8	92	90
10/16/98	214	Storm Drain – Trunk 'A' Sta. 6+08	1.0-1.5	JS	II	119.0	13.5	111.3	14.1	94	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Optimum lbs./cu.ft.	Field Data Dry Moisture	Moisture Density	Relative Compaction Content	Minimum Results	Spec.
10/17/98	215	Storm Drain – Trunk 'B' Sta. 0+50	8.0-8.5	PG	I	117.0	14.0	107.0	14.9	92	90
10/17/98	216	Storm Drain – Trunk 'B' Sta. 0+75	6.0-6.5	PG	II	119.0	13.5	110.7	16.5	93	90
10/17/98	217	Storm Drain – Trunk 'B' Sta. 13+00	3.0-3.5	PG	IV	121.0	15.0	111.5	13.9	92	90
10/17/98	218	Storm Drain – Trunk 'B' Sta. 12+25	1.0-1.5	PG	IV	121.0	15.0	109.9	14.6	91	90
10/19/98	219	Storm Drain – Trunk 'B' Sta. 12+50	0.0-0.5	JS	II	119.0	13.5	113.2	12.2	95	90
10/20/98	220	Sewer – Knox Street Sta. 0+20	16.0-16.5	JS	I	117.0	14.0	107.3	14.6	92	90
10/20/98	221	Sewer – Knox Street Sta. 0+70	14.0-14.5	JS	I	117.0	14.0	108.7	12.2	93	90
10/20/98	222	Sewer – Knox Street Sta. 0+50	12.0-12.5	JS	III	118.0	15.0	108.6	15.1	92	90
10/20/98	223	Sewer – Knox Street Sta. 0+10	10.0-10.5	JS	III	118.0	15.0	106.5	15.5	90	90
10/20/98	224	Storm Drain – Trunk 'A' Sta. 6+60	1.5-2.0	JS	I	117.0	14.0	92.8	7.8	79	90
10/29/98	224A**	Storm Drain – Trunk 'A' Sta. 6+60	1.5-2.0	JS	II	119.0	13.5	111.1	13.4	93	90
10/20/98	225	Storm Drain – Trunk 'A' Sta. 5+75	1.0-1.5	JS	II	119.0	13.5	103.4	8.3	87	90
10/29/98	225A**	Storm Drain – Trunk 'A' Sta. 5+75	1.0-1.5	JS	II	119.0	13.5	109.1	14.6	92	90
10/20/98	226	Sewer – Knox Street Sta. 0+50	8.0-8.5	JS	II	119.0	13.5	114.3	12.0	96	90
10/20/98	227	Sewer – Knox Street Sta. 0+15	6.0-6.5	JS	I	117.0	14.0	111.4	12.2	95	90
10/20/98	228	Sewer – Knox Street Sta. 0+75	4.0-4.5	JS	I	117.0	14.0	108.9	12.9	93	90
10/20/98	229	Sewer – Knox Street Sta. 1+40	1.0-1.5	JS	IV	121.0	15.0	111.2	15.1	92	90
10/20/98	230	Sewer – Knox Street Sta. 0+25	2.0-2.5	JS	II	119.0	13.5	110.2	14.3	93	90
10/20/98	231	Sewer – Knox Street Sta. 0+80	0.5-1.0	JS	I	117.0	14.0	109.1	14.6	93	90
10/24/98	232	Storm Drain – Trunk 'B' Sta. 0+60	4.0-4.5	PG	IV	121.0	15.0	111.1	13.4	92	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Field Data Optimum lbs./cu.ft.	Dry Moisture	Relative Compaction Moisture Density	Content	Minimum Results	Spec.
10/24/98	233	Storm Drain – Trunk 'B' Sta. 0+90	2.0-2.5	PG	II	119.0	13.5	113.2	10.4	95	90
10/24/98	234	Storm Drain – Trunk 'B' Sta. 0+50	0.0-0.5	PG	II	119.0	13.5	109.4	13.3	92	90
10/27/98	235	Storm Drain – Trunk 'A' Sta. 12+52	0.5-1.0	JS	II	119.0	13.5	109.1	14.6	92	90
10/27/98	236	Storm Drain – Trunk 'A' Sta. 14+53	1.0-1.5	JS	II	119.0	13.5	109.1	12.7	92	90
10/27/98	237	Storm Drain – Trunk 'A' Sta. 14+28	1.0-1.5	JS	IV	121.0	15.0	111.0	15.3	92	90
10/27/98	238	Storm Drain – Trunk 'A' Sta. 0+25	0.5-1.0	JS	II	119.0	13.5	110.2	13.4	93	90
10/27/98	239	Storm Drain – Trunk 'A' Sta. 15+39	0.5-1.0	JS	II	119.0	13.5	112.4	13.9	94	90
10/27/98	240	Storm Drain – Trunk 'A' Sta. 18+24	1.0-1.5	JS	I	117.0	14.0	109.5	13.2	94	90
10/28/98	241	Storm Drain – Trunk 'A' Sta. 15+00	0.5-1.0	JS	II	119.0	13.5	111.8	12.7	94	90
10/28/98	242	Storm Drain – Trunk 'A' Sta. 16+50	0.5-1.0	JS	I	117.0	14.0	108.6	15.0	93	90
10/29/98	243	Sewer – Harborgate Way Sta. 12+76	2.5-3.0	JS	I	117.0	14.0	101.4	18.3	87	90
10/29/98	243A**	Sewer – Harborgate Way Sta. 12+76	2.5-3.0	JS	IV	121.0	15.0	111.7	14.6	92	90
10/29/98	244	Sewer – Harborgate Way Sta. 1+26	2.0-2.5	JS	II	119.0	13.5	115.9	12.2	97	90
10/29/98	245	Sewer – Harborgate Way Sta. 1+26	4.0-4.5	JS	II	119.0	13.5	109.5	13.2	92	90
10/29/98	246	Sewer – Harborgate Way Sta. 1+26	6.0-6.5	JS	I	117.0	14.0	109.6	14.0	94	90
10/29/98	247	Sewer – Harborgate Way Sta. 4+36	4.0-4.5	JS	IV	121.0	15.0	111.2	15.1	92	90
10/29/98	248	Sewer – Harborgate Way Sta. 4+36	1.0-1.5	JS	II	119.0	13.5	110.4	13.2	93	90
10/29/98	249	Sewer – Harborgate Way Sta. 6+76	2.5-3.0	JS	II	119.0	13.5	108.7	14.1	91	90
10/29/98	250	Sewer – Harborgate Way Sta. 9+71	4.0-4.5	JS	IV	121.0	15.0	109.7	15.8	91	90
10/29/98	251	Sewer – Harborgate Way Sta. 14+31	0.0-0.5	JS	II	119.0	13.5	111.1	13.4	93	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Optimum lbs./cu.ft.	Field Data Dry Moisture	Moisture Density	Relative Compaction Content	Minimum Results	Spec.
10/31/98	252	Storm Drain – Trunk 'A' Sta. 18+00	2.0-2.5	PG	II	119.0	13.5	109.7	13.9	92	90
10/31/98	253	Storm Drain – Trunk 'A' Sta. 18+50	0.0-0.5	PG	II	119.0	13.5	110.2	15.2	93	90
10/31/98	254	Storm Drain – Trunk 'A' Sta. 19+50	0.0-0.5	PG	III	118.0	15.0	108.9	15.6	92	90
10/31/98	255	Storm Drain – Trunk 'A' Sta. 20+00	2.0-2.5	PG	III	118.0	15.0	106.7	13.7	90	90
11/2/98	256	Storm Drain – Trunk 'A' Sta. 20+75	0.0-0.5	PG	III	118.0	15.0	109.0	13.4	92	90
11/2/98	257	Storm Drain – Trunk 'A' Sta. 21+50	2.0-2.5	PG	III	118.0	15.0	111.1	14.0	94	90
11/2/98	258	Storm Drain – Trunk 'A' Sta. 22+25	0.0-0.5	PG	II	119.0	13.5	108.7	13.6	91	90
11/7/98	259	Storm Drain – Trunk 'A' Sta. 23+00	2.0-2.5	PG	II	119.0	13.5	109.1	13.4	91	90
11/7/98	260	Storm Drain – Trunk 'A' Sta. 23+50	2.0-2.5	PG	III	118.0	15.0	106.3	13.4	90	90
11/7/98	261	Storm Drain – Trunk 'A' Sta. 24+00	0.0-0.5	PG	I	117.0	14.0	110.3	11.9	91	90
11/7/98	262	Storm Drain – Trunk 'A' Sta. 24+50	2.0-2.5	PG	II	119.0	13.5	106.8	14.2	93	90
11/7/98	263	Storm Drain – Trunk 'A' Sta. 25+00	0.0-0.5	PG	III	118.0	15.0	107.2	16.1	91	90
11/7/98	264	Storm Drain – Trunk 'A' Sta. 25+25	2.0-2.5	PG	II	119.0	13.5	105.4	13.8	90	90
11/7/98	265	Storm Drain – Trunk 'A' Sta. 25+60	0.0-0.5	PG	I	117.0	14.0	108.8	15.7	90	90
11/7/98	266	Storm Drain – Trunk 'A' Sta. 26+00	2.0-2.5	PG	II	119.0	13.5	107.5	15.8	91	90
11/7/98	267	Storm Drain – Trunk 'A' Sta. 26+75	0.0-0.5	PG	II	119.0	13.5	107.6	15.3	90	90
11/7/98	268	Storm Drain – Trunk 'A' Sta. 27+25	2.0-2.5	PG	III	118.0	15.0	108.9	14.3	91	90
11/9/98	269	Storm Drain – Trunk 'A' Sta. 27+50	0.0-0.5	PG	II	119.0	13.5	107.0	13.8	92	90
11/9/98	270	Storm Drain – Trunk 'A' Sta. 28+00	2.0-2.5	PG	III	118.0	15.0	106.9	14.9	91	90
11/9/98	271	Storm Drain – Trunk 'A' Sta. 28+50	0.0-0.5	PG	III	118.0	15.0	110.2	15.0	90	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Optimum lbs./cu.ft.	Field Data Dry Moisture	Moisture Density	Relative Compaction Content	Minimum Results	Spec.
11/9/98	272	Storm Drain – Trunk 'A' Sta. 29+00	2.0-2.5	PG	II	119.0	13.5	110.2	15.2	92	90
11/9/98	273	Storm Drain – Trunk 'A' Sta. 29+50	0.0-0.5	PG	II	119.0	13.5	108.8	13.9	91	90
11/9/98	274	Storm Drain – Trunk 'A' Sta. 29+80	2.0-2.5	PG	III	118.0	15.0	107.4	15.4	91	90
11/9/98	275	Storm Drain – Trunk 'A' Sta. 30+50	0.0-0.5	PG	III	118.0	15.0	106.7	15.2	90	90
12/8/98	276	Water – Harborgate Way Sta. 21+50	1.0-1.5	PG	II	119.0	13.5	112.7	12.5	95	90
12/28/98	277	Water – Harborgate Way Sta. 17+50	0.0-0.5	PG	I	117.0	14.0	108.4	15.3	93	90
12/28/98	278	Water – Harborgate Way Sta. 15+75	1.0-1.5	PG	I	117.0	14.0	109.1	14.6	93	90
12/28/98	279	Water – Harborgate Way Sta. 13+00	0.0-0.5	PG	I	117.0	14.0	107.6	14.8	92	90
12/28/98	280	Water – Harborgate Way Sta. 12+00	0.0-0.5	PG	III	118.0	15.0	106.5	15.3	90	90
1/29/99	281	Water – Harborgate Way Sta. 14+60	0.0-0.5	PG	II	119.0	13.5	101.4	16.8	90	90
1/29/99	282	Water – Harborgate Way Sta. 15+00	0.0-0.5	PG	I	117.0	14.0	108.2	15.5	93	90
1/29/99	283	Water – Harborgate Way Sta. 18+80	0.0-0.5	PG	I	117.0	14.0	107.3	14.6	92	90
2/3/99	284	Sewer-Francisco Street Sta. 19+50	10.0-10.5	PG	V	112.0	13.0	101.9	12.8	91	90
2/3/99	285	Sewer-Francisco Street Sta. 18+00	6.0-6.5	PG	V	112.0	13.0	103.6	13.3	93	90
2/3/99	286	Sewer-Francisco Street Sta. 18+50	4.0-4.5	PG	IV	121.0	15.0	109.7	15.0	91	90
2/9/99	287	Sewer-Western Avenue Sta. 0+75	10.0-10.5	PG	V	112.0	13.0	100.9	14.8	90	90
2/11/99	288	Sewer-Western Avenue Sta. 2+10	8.0-8.5	PG	V	112.0	13.0	106.5	13.0	96	90
2/15/99	289	Sewer-Western Avenue Sta. 4+00	6.0-6.5	PG	V	112.0	13.0	101.5	13.8	91	90
2/18/99	290	Sewer-Western Avenue Sta. 6+00	4.0-4.5	PG	V	112.0	13.0	102.7	14.2	92	90
2/19/99	291	Sewer-Western Avenue Sta. 7+50	2.0-2.5	PG	III	118.0	15.0	109.1	15.3	93	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Optimum lbs./cu.ft.	Field Data Dry Moisture	Moisture Density	Relative Compaction Content	Minimum Results	Spec.
2/22/99	292	Sewer-Western Avenue Sta. 8+50	2.0-2.5	PG	I	117.0	14.0	105.3	12.2	90	90
2/22/99	293	Sewer-Francisco Street Sta. 9+50	2.0-2.5	PG	V	112.0	13.0	101.3	14.0	91	90
2/25/99	294	Sewer-Western Avenue Sta. 0+25	0.0-0.5	PG	V	112.0	13.0	105.4	13.5	95	90
2/25/99	295	Sewer-Western Avenue Sta. 3+10	0.0-0.5	PG	VI	121.0	14.0	99.6	12.8	90	90
2/25/99	296	Sewer-Western Avenue Sta. 6+50	0.0-0.5	PG	V	112.0	13.0	103.5	13.0	93	90
3/1/99	297	Sewer-Francisco Street Sta. 10+20	10.0-10.5	PG	IV	121.0	14.0	113.6	16.3	95	90
3/2/99	298	Sewer-Francisco Street Sta. 10+20	8.0-8.5	PG	V	112.0	13.0	101.0	14.3	91	90
3/2/99	299	Sewer-Francisco Street Sta. 10+20	6.0-6.5	PG	V	112.0	13.0	104.8	13.5	94	90
3/2/99	300	Sewer-Francisco Street Sta. 10+20	4.0-4.5	PG	V	112.0	13.0	105.9	12.6	95	90
3/4/99	301	Sewer-Francisco Street Sta. 10+20	2.0-2.5	PG	VI	121.0	14.0	102.7	14.5	93	90
3/29/99	302	Sewer-Francisco Street Sta. 10+20	4.0-4.5	PG	V	112.0	13.0	108.5	11.7	98	90
4/12/99	303	Sewer-Francisco Street Sta. 10+20	4.0-4.5	PG	V	112.0	13.0	106.4	12.3	96	90
4/12/99	304	Sewer-Francisco Street Sta. 10+20	0.0-0.5	PG	V	112.0	13.0	101.3	12.6	91	90
4/16/99	305	Sewer-Francisco Street Sta. 10+20	0.0-0.5	PG	V	112.0	13.0	100.4	13.0	90	90
4/16/99	306	Sewer-Francisco Street Sta. 10+20	0.0-0.5	PG	V	112.0	13.0	102.2	13.3	92	90
4/16/99	307	Sewer-Francisco Street Sta. 10+20	0.0-0.5	PG	V	112.0	13.0	102.8	13.5	92	90
4/19/99	308	Sewer-Francisco Street Sta. 20+20	6.0-6.5	PG	I	117.0	14.0	108.3	14.9	93	90
4/19/99	309	Sewer-Francisco Street Sta. 21+80	4.0-4.5	PG	VII	121.0	12.0	114.6	12.0	96	90
4/19/99	310	Sewer-Francisco Street Sta. 23+00	2.0-2.5	PG	VII	121.0	12.0	111.6	11.5	93	90
4/20/99	311	Sewer-Francisco Street Sta. 24+50	2.0-2.5	PG	IV	121.0	15.0	110.6	15.0	92	90

**Retest of failing tests after area reworked

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Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Optimum lbs./cu.ft.	Field Data Dry Moisture	Moisture Density	Relative Compaction Content	Minimum Results	Spec.
4/20/99	312	Sewer-Francisco Street Sta. 25+50	2.0-2.5	PG	IV	121.0	15.0	108.9	14.7	90	90
4/21/99	313	Sewer-Francisco Street Sta. 21+00	0.0-0.5	PG	VIII	128.0	10.5	116.3	10.5	93	90
4/21/99	314	Sewer-Francisco Street Sta. 22+70	0.0-0.5	PG	VIII	128.0	10.5	115.2	9.6	90	90
4/21/99	315	Sewer-Francisco Street Sta. 23+50	0.0-0.5	PG	VIII	128.0	10.5	118.6	9.8	93	90
4/22/99	316	Sewer-Francisco Street Sta. 15+00	5.0-5.5	PG	I	117.0	14.0	105.8	14.0	90	90
4/23/99	317	Sewer-Francisco Street Sta. 16+50	3.0-3.5	PG	IV	121.0	15.0	111.0	14.0	93	90
4/26/99	318	Sewer-Francisco Street Sta. 18+00	1.0-1.5	PG	IV	121.0	15.0	109.6	14.6	91	90
4/26/99	319	Sewer-Francisco Street Sta. 19+50	0.0-0.5	PG	VIII	128.0	10.5	117.9	10.0	92	90
4/26/99	320	Sewer-Francisco Street Sta. 20+00	0.0-0.5	PG	VIII	128.0	10.5	117.0	11.5	92	90
4/26/99	321	Sewer-Francisco Street Sta. 15+70	0.0-0.5	PG	VIII	128.0	10.5	115.3	10.8	90	90
7/7/99	322	Storm Drain – Truck 'B' Sta. 15+50	3.0-3.5	JS	VII	121.0	12.0	115.2	11.1	95	90
7/7/99	323	Storm Drain – Truck 'B' Sta. 15+75	1.0-1.5	JS	IV	121.0	15.0	111.9	14.3	92	90
7/8/99	324	Storm Drain – Truck 'B' Sta. 16+75	2.5-3.0	JS	I	117.0	14.0	107.6	12.5	92	90
7/8/99	325	Storm Drain – Truck 'B' Sta. 17+00	0.5-1.0	JS	VIII	128.0	10.5	118.5	8.9	93	90
7/9/99	326	Storm Drain – Truck 'B' Sta. 18+00	3.0-3.5	JS	I	117.0	14.0	102.6	17.0	88	90
7/9/99	326A**	Storm Drain – Truck 'B' Sta. 18+00	3.0-3.5	JS	I	117.0	14.0	110.3	13.3	94	90
7/12/99	327	Storm Drain – Truck 'B' Sta. 17+50	1.5-2.0	JS	VII	121.0	12.0	112.2	13.2	93	90
7/12/99	328	Storm Drain – Truck 'B' Sta. 18+50	3.0-3.5	JS	III	118.0	15.0	108.9	14.8	92	90
7/12/99	329	Storm Drain – Truck 'B' Sta. 19+25	1.0-1.5	JS	VIII	128.0	10.5	122.3	10.4	96	90
7/13/99	330	Storm Drain – Truck 'B' Sta. 19+00	0.5-1.0	JS	III	118.0	15.0	109.3	15.3	93	90

**Retest of failing tests after area reworked

TABLE II
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Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Optimum lbs./cu.ft.	Field Data Dry Moisture	Moisture Density	Relative Compaction Content	Minimum Results	Spec.
7/13/99	331	Storm Drain – Truck 'B' Sta. 20+25	0.0-0.5	JS	VI	110.0	14.0	100.7	13.4	92	90
7/13/99	332	Storm Drain – Truck 'B' Sta. 20+75	3.0-3.5	JS	VII	121.0	12.0	111.8	12.7	92	90
7/13/99	333	Storm Drain – Truck 'B' Sta. 21+00	1.0-1.5	JS	I	117.0	14.0	109.6	14.1	94	90
7/13/99	334	Storm Drain – Truck 'B' Sta. 18+75	0.0-0.5	JS	I	117.0	14.0	106.1	12.5	91	90
7/13/99	335	Storm Drain – Truck 'B' Sta. 17+60	0.5-1.0	JS	II	119.0	13.5	108.7	12.2	91	90
7/13/99	336	Storm Drain – Truck 'B' Sta. 22+00	2.0-2.5	JS	III	118.0	15.0	111.2	15.1	94	90
7/13/99	337	Storm Drain – Truck 'B' Sta. 22+75	1.0-1.5	JS	III	118.0	15.0	109.6	14.1	93	90
7/28/99	338	Storm Drain – Truck 'B' Sta. 23+25	2.0-2.5	JS	IV	121.0	15.0	111.7	14.6	92	90
7/28/99	339	Storm Drain – Truck 'B' Sta. 23+40	0.5-1.0	JS	V	112.0	13.0	102.5	12.2	92	90
8/9/99	340	Storm Drain – Truck 'B' Sta. 24+25	9.0-9.5	JS	VII	121.0	12.0	116.1	14.6	96	90
8/9/99	341	Storm Drain – Truck 'B' Sta. 25+00	9.0-9.5	JS	VII	121.0	12.0	110.8	15.5	92	90
8/11/99	342	Storm Drain – Truck 'B' Sta. 24+25	2.0-2.5	JS	II	119.0	13.5	109.9	14.6	92	90
8/11/99	343	Storm Drain – Truck 'B' Sta. 25+00	0.5-1.0	JS	II	119.0	13.5	112.6	13.6	95	90
8/26/99	344	Storm Drain – Truck 'B' Sta. 14+25	4.0-4.5	JS	VII	121.0	12.0	110.5	10.4	91	90
8/26/99	345	Storm Drain – Truck 'B' Sta. 14+00	2.0-2.5	JS	VII	121.0	12.0	113.4	11.1	94	90
8/26/99	346	Storm Drain – Truck 'B' Sta. 14+00	0.0-0.5	JS	VII	121.0	12.0	109.1	10.3	90	90
8/26/99	347	Storm Drain – Truck 'B' Sta. 27+25	3.0-3.5	JS	VII	121.0	12.0	114.4	13.4	95	90
8/26/99	348	Storm Drain – Truck 'B' Sta. 26+25	1.0-1.5	JS	VII	121.0	12.0	111.4	12.2	92	90
8/26/99	349	Sewer – Francisco Street Sta. 11+00	5.0-5.5	JS	IV	121.0	15.0	103.5	11.1	86	90
8/26/99	349A**	Sewer – Francisco Street Sta. 11+00	5.0-5.5	JS	IV	121.0	15.0	113.3	13.9	94	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Field Data Optimum lbs./cu.ft.	Dry Moisture	Relative Compaction Moisture Density	Content	Minimum Results	Spec.
8/26/99	350	Sewer – Francisco Street Sta. 10+25	3.0-3.5	JS	II	119.0	13.5	112.0	12.5	94	90
8/26/99	351	Sewer – Francisco Street Sta. 8+25	6.0-6.5	JS	IV	121.0	15.0	111.7	14.6	92	90
8/26/99	352	Sewer – Francisco Street Sta. 8+50	4.0-4.5	JS	IV	121.0	15.0	108.7	10.4	89	90
8/27/99	352A**	Sewer – Francisco Street Sta. 8+50	4.0-4.5	JS	IV	121.0	15.0	111.1	13.4	92	90
8/27/99	353	Sewer – Francisco Street Sta. 11+17	3.0-3.5	JS	IV	121.0	15.0	112.7	12.7	93	90
8/27/99	354	Sewer – Francisco Street Sta. 11+32	4.0-4.5	JS	VIII	128.0	10.5	118.1	10.9	92	90
8/27/99	355	Sewer – Francisco Street Sta. 11+32	1.0-1.5	JS	II	119.0	13.5	114.1	12.2	96	90
8/27/99	356	Sewer – Francisco Street Sta. 8+00	2.0-2.5	JS	III	118.0	15.0	110.4	14.1	94	90
8/27/99	357	Sewer – Francisco Street Sta. 9+25	3.0-3.5	JS	II	119.0	13.5	112.7	12.7	95	90
8/27/99	358	Sewer – Francisco Street Sta. 9+60	1.0-1.5	JS	II	119.0	13.5	109.1	14.6	92	90
9/1/99	359	Sewer – Francisco Street Sta. 8+75	0.5-1.0	JS	IV	121.0	15.0	111.2	15.1	92	90
9/1/99	360	Storm Drain – Francisco St. Sta. 29+25	2.0-2.5	JS	VII	121.0	12.0	115.9	10.4	96	90
9/2/99	361	Storm Drain – Francisco St. Sta. 29+50	1.0-1.5	JS	VII	121.0	12.0	111.4	12.2	92	90
9/2/99	362	Storm Drain – Francisco St. Sta. 30+25	1.5-2.0	JS	III	118.0	15.0	99.0	17.0	84	90
9/2/99	362A**	Storm Drain – Francisco St. Sta. 30+25	1.5-2.0	JS	VII	121.0	12.0	110.0	11.8	91	90
9/2/99	363	Storm Drain – Francisco St. Sta. 31+50	2.5-3.0	JS	VII	121.0	12.0	114.3	11.1	94	90
9/9/99	364	Storm Drain – Francisco St. Sta. 30+75	2.0-2.5	JS	VIII	128.0	10.5	118.2	10.0	92	90
9/9/99	365	Sewer – Francisco Street Sta. 0+60	8.0-8.5	JS	II	119.0	13.5	110.8	14.6	93	90
9/9/99	366	Sewer – Francisco Street Sta. 0+75	6.0-6.5	JS	VII	121.0	12.0	112.5	11.1	93	90
9/9/99	367	Sewer – Francisco Street Sta. 1+00	4.0-4.5	JS	VIII	128.0	10.5	117.0	11.1	91	90

**Retest of failing tests after area reworked

TABLE II
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Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Field Data Optimum lbs./cu.ft.	Dry Moisture	Relative Compaction Moisture Density	Content	Minimum Results	Spec.
9/9/99	368	Sewer – Francisco Street Sta. 1+25	2.0-2.5	JS	I	117.0	14.0	109.5	15.1	94	90
9/9/99	369	Sewer – Francisco Street Sta. 0+75	0.0-0.5	JS	VII	121.0	12.0	113.3	11.8	94	90
9/9/99	370	Sewer – Francisco Street Sta. 1+75	5.0-5.5	JS	III	118.0	15.0	110.5	15.8	94	90
9/9/99	371	Sewer – Francisco Street Sta. 2+50	3.0-3.5	JS	II	119.0	13.5	113.9	14.1	96	90
9/9/99	372	Sewer – Francisco Street Sta. 3+00	4.0-4.5	JS	III	118.0	15.0	112.9	13.4	96	90
9/9/99	373	Sewer – Francisco Street Sta. 3+60	1.0-1.5	JS	VII	121.0	12.0	115.6	12.0	95	90
9/10/99	374	Sewer – Francisco Street Sta. 3+85	3.5-4.0	JS	VII	121.0	12.0	111.4	12.2	92	90
9/10/99	375	Sewer – Francisco Street Sta. 9+40	5.0-5.5	JS	IX	125.0	10.5	115.2	10.2	92	90
9/10/99	376	Sewer – Francisco Street Sta. 5+10	3.0-3.5	JS	IV	121.0	15.0	111.7	14.6	92	90
9/10/99	377	Sewer – Francisco Street Sta. 5+75	5.5-6.0	JS	VIII	128.0	10.5	118.3	10.7	92	90
9/10/99	378	Sewer – Francisco Street Sta. 4+75	2.0-2.5	JS	IX	125.0	10.5	113.6	11.8	91	90
9/10/99	379	Sewer – Francisco Street Sta. 5+50	1.5-2.0	JS	II	119.0	13.5	111.8	12.7	94	90
9/10/99	380	Sewer – Francisco Street Sta. 6+55	4.5-5.0	JS	IV	121.0	15.0	111.1	17.0	92	90
9/10/99	381	Sewer – Francisco Street Sta. 6+55	2.0-2.5	JS	IX	125.0	10.5	117.2	10.9	94	90
9/10/99	382	Sewer – Francisco Street Sta. 7+00	5.5-6.0	JS	IV	121.0	15.0	103.9	15.5	86	90
9/10/99	382A**	Sewer – Francisco Street Sta. 7+00	5.5-6.0	JS	VII	121.0	12.0	114.9	12.2	95	90
9/10/99	383	Sewer – Francisco Street Sta. 6+40	1.0-1.5	JS	IX	125.0	10.5	115.9	9.6	93	90
9/10/99	384	Sewer – Francisco Street Sta. 7+18	4.5-5.0	JS	VII	121.0	12.0	110.9	12.7	92	90
9/10/99	385	Sewer – Francisco Street Sta. 7+18	1.5-2.0	JS	VII	121.0	12.0	112.9	11.6	93	90
9/13/99	386	Sewer – Francisco Street Sta. 8+00	4.5-5.0	JS	IX	125.0	10.5	116.2	9.3	93	90

**Retest of failing tests after area reworked

TABLE II
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Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Optimum lbs./cu.ft.	Field Data Dry Moisture	Moisture Density	Relative Compaction Content	Minimum Results	Spec.
9/13/99	387	Sewer – Francisco Street Sta. 8+10	2.0-2.5	JS	IX	125.0	10.5	113.6	10.0	91	90
9/13/99	388	Sewer – Francisco Street Sta. 7+60	2.5-3.0	JS	II	119.0	13.5	110.9	12.7	93	90
9/13/99	389	Storm Drain – Francisco St. Sta. 32+90	8.0-8.5	JS	VII	121.0	12.0	112.9	13.4	93	90
9/13/99	390	Storm Drain – Francisco St. Sta. 32+90	8.0-8.5	JS	VII	121.0	12.0	113.2	12.2	94	90
9/13/99	391	Storm Drain – Francisco St. Sta. 29+75	2.0-2.5	JS	II	119.0	13.5	111.8	13.6	94	90
9/13/99	392	Storm Drain – Francisco St. Sta. 28+50	2.0-2.5	JS	IV	121.0	15.0	114.6	13.4	95	90
9/13/99	393	Storm Drain – Francisco St. Sta. 27+75	1.0-1.5	JS	III	118.0	15.0	110.3	14.3	93	90
9/13/99	394	Sewer – Francisco Street Sta. 4+07	2.5-3.0	JS	II	119.0	13.5	111.3	13.2	94	90
9/13/99	395	Sewer – Francisco Street Sta. 2+23	1.5-2.0	JS	IV	121.0	15.0	112.7	15.3	93	90
9/13/99	396	Storm Drain – Francisco St. Sta. 32+90	2.0-2.5	JS	VII	121.0	12.0	113.2	12.2	94	90
9/13/99	397	Storm Drain – Francisco St. Sta. 32+90	0.5-1.0	JS	II	119.0	13.5	108.9	13.9	91	90
9/13/99	398	Storm Drain – Francisco St. Sta. 32+24	2.0-2.5	JS	III	118.0	15.0	108.9	15.8	92	90
9/13/99	399	Storm Drain – Francisco St. Sta. 32+24	0.5-1.0	JS	III	118.0	15.0	107.1	14.8	91	90
9/13/99	400	Storm Drain – Francisco St. Sta. 28+55	2.0-2.5	JS	IV	121.0	15.0	109.5	16.0	90	90
9/13/99	401	Storm Drain – Francisco St. Sta. 28+55	0.5-1.0	JS	IV	121.0	15.0	112.6	14.6	93	90
9/14/99	402	Storm Drain – Francisco St. Sta. 32+24	1.5-2.0	JS	III	118.0	15.0	106.7	15.3	90	90
9/14/99	403	Storm Drain – Francisco St. Sta. 28+55	0.5-1.0	JS	III	118.0	15.0	108.8	15.8	92	90
9/15/99	404	Sewer – Francisco Street Sta. 0+45	8.0-8.5	JS	VIII	128.0	10.5	120.4	12.1	94	90
9/15/99	405	Sewer – Francisco Street Sta. 0+50	6.0-6.5	JS	I	117.0	14.0	109.4	14.3	93	90
9/15/99	406	Sewer – Francisco Street Sta. 0+25	4.0-4.5	JS	VII	121.0	12.0	113.4	12.0	94	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Field Data Optimum lbs./cu.ft.	Dry Moisture	Relative Compaction Moisture Density	Content	Minimum Results	Spec.
9/15/99	407	Sewer – Francisco Street Sta. 2+80	8.5-9.0	JS	III	118.0	15.0	106.2	15.8	90	90
9/15/99	408	Sewer – Francisco Street Sta. 2+60	7.0-7.5	JS	III	118.0	15.0	109.6	14.1	93	90
9/15/99	409	Sewer – Francisco Street Sta. 3+20	5.0-5.5	JS	II	119.0	13.5	110.2	13.4	93	90
9/15/99	410	Sewer – Francisco Street Sta. 2+75	2.0-2.5	JS	VII	121.0	12.0	112.3	13.2	93	90
9/16/99	411	Manhole – Francisco Street Sta. 0+00	8.0-8.5	JS	VII	121.0	12.0	109.5	11.1	90	90
9/16/99	412	Manhole – Francisco Street Sta. 0+00	6.0-6.5	JS	II	119.0	13.5	107.7	15.1	91	90
9/16/99	413	Manhole – Francisco Street Sta. 0+00	4.0-4.5	JS	II	119.0	13.5	111.7	14.6	94	90
9/16/99	414	Manhole – Francisco Street Sta. 0+00	2.0-2.5	JS	II	119.0	13.5	112.4	13.9	94	90
9/16/99	415	Sidewalk – Francisco Street Sta. 22+46	0.0-0.5	JS	V	112.0	13.0	105.0	12.7	94	90
9/16/99	416	Sidewalk – Francisco Street Sta. 21+46	0.0-0.5	JS	II	119.0	13.5	110.5	12.2	93	90
9/16/99	417	Sidewalk – Francisco Street Sta. 23+21	0.0-0.5	JS	III	118.0	15.0	107.4	13.4	91	90
9/16/99	418	Storm Drain – Francisco St. Sta. 19+94	2.0-2.5	JS	VIII	128.0	10.5	116.5	11.6	91	90
9/16/99	419	Storm Drain – Francisco St. Sta. 19+94	1.5-2.0	JS	II	119.0	13.5	110.2	13.4	93	90
9/16/99	420	Storm Drain – Francisco St. Sta. 19+94	0.5-1.0	JS	IV	121.0	15.0	110.3	15.1	91	90
9/16/99	421	Curb Sg. – Francisco St. Sta. 30+00	0.0-0.5	JS	VIII	128.0	10.5	115.9	10.4	91	90
9/16/99	422	Sidewalk Sg. – Francisco St. Sta. 28+90	0.0-0.5	JS	VII	121.0	12.0	112.0	12.5	93	90
9/16/99	423	Sidewalk Sg. – Francisco St. Sta. 26+75	0.0-0.5	JS	II	119.0	13.5	109.9	11.6	92	90
9/16/99	424	Curb Sg. – Francisco St. Sta. 27+50	0.0-0.5	JS	III	118.0	15.0	110.8	15.5	94	90
9/16/99	425	Sidewalk Sg. – Francisco St. Sta. 24+60	0.0-0.5	JS	II	119.0	13.5	110.9	12.7	93	90
9/16/99	426	Curb Sg. – Francisco St. Sta. 25+50	0.0-0.5	JS	V	112.0	13.0	103.2	14.3	92	90

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Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Field Data Optimum lbs./cu.ft.	Dry Moisture	Relative Compaction Moisture Density	Content	Minimum Results	Spec.
9/16/99	427	Curb Sg. – Francisco St. Sta. 22+85	0.0-0.5	JS	III	118.0	15.0	107.3	14.6	91	90
9/16/99	428	Curb Sg. – Francisco St. Sta. 21+00	0.0-0.5	JS	IX	125.0	10.5	117.1	9.3	94	90
9/17/99	429	Curb Sg. – Francisco St. Sta. 21+75	0.0-0.5	JS	IV	121.0	15.0	113.6	12.7	94	90
9/17/99	430	Sidewalk Sg. – Francisco St. Sta. 22+71	0.0-0.5	JS	II	119.0	13.5	99.9	12.2	84	90
9/17/99	430A**	Sidewalk Sg. – Francisco St. Sta. 22+71	0.0-0.5	JS	IX	125.0	10.5	115.6	10.7	93	90
9/17/99	431	Sidewalk Sg. – Francisco St. Sta. 24+00	0.0-0.5	JS	IX	125.0	10.5	110.8	14.6	88	90
9/17/99	431A**	Sidewalk Sg. – Francisco St. Sta. 24+00	0.0-0.5	JS	IX	125.0	10.5	114.1	10.4	91	90
9/17/99	432	Curb Sg. – Francisco St. Sta. 23+75	0.0-0.5	JS	II	119.0	13.5	112.5	12.9	95	90
9/17/99	433	Sidewalk Sg. – Francisco St. Sta. 25+00	0.0-0.5	JS	IX	125.0	10.5	115.5	10.0	92	90
9/17/99	434	Curb Sg. – Francisco St. Sta. 26+00	0.0-0.5	JS	II	119.0	13.5	110.2	13.4	93	90
9/17/99	435	Sidewalk Sg. – Francisco St. Sta. 27+00	0.0-0.5	JS	V	112.0	13.0	101.8	12.5	91	90
9/17/99	436	Sidewalk Sg. – Francisco St. Sta. 28+00	0.0-0.5	JS	III	118.0	15.0	107.7	13.2	91	90
9/17/99	437	Curb Sg. – Francisco St. Sta. 28+00	0.0-0.5	JS	VII	121.0	12.0	115.9	11.1	96	90
9/17/99	438	Sidewalk Sg. – Francisco St. Sta. 29+15	0.0-0.5	JS	II	119.0	13.5	111.1	13.4	93	90
9/17/99	439	Curb Sg. – Francisco St. Sta. 30+00	0.0-0.5	JS	VII	121.0	12.0	113.6	12.7	94	90
9/17/99	440	Curb Sg. – Francisco St. Sta. 20+25	0.0-0.5	JS	VIII	128.0	10.5	116.3	11.8	91	90
9/17/99	441	Sidewalk Sg. – Francisco St. Sta. 19+54	0.0-0.5	JS	V	112.0	13.0	103.6	12.2	93	90
9/17/99	442	Sidewalk Sg. – Francisco St. Sta. 20+50	0.0-0.5	JS	II	119.0	13.5	110.9	12.7	93	90
9/17/99	443	Curb Sg. – Francisco St. Sta. 19+62	0.0-0.5	JS	III	118.0	15.0	111.1	14.3	94	90
9/22/99	444	Curb Sg. – Francisco St. Sta. 30+34	0.0-0.5	JS	X	125.0	8.5	119.1	9.6	95	90

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Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Type	Wt. Optimum lbs./cu.ft.	Field Data Dry Moisture	Moisture Density	Relative Compaction Content	Minimum Results	Spec.
9/22/99	445	Curb Sg. – Francisco St. Sta. 27+00	0.0-0.5	JS	X	125.0	8.5	121.6	8.6	97	90
9/22/99	446	Curb Sg. – Francisco St. Sta. 24+00	0.0-0.5	JS	X	125.0	8.5	120.7	9.6	97	90
9/22/99	447	Curb Sg. – Francisco St. Sta. 21+00	0.0-0.5	JS	X	125.0	8.5	120.3	7.8	96	90
9/22/99	448	Curb Sg. – Francisco St. Sta. 18+75	0.0-0.5	JS	X	125.0	8.5	120.8	9.8	97	90
9/22/99	449	Curb Sg. – Francisco St. Sta. 30+25	0.0-0.5	JS	X	125.0	8.5	120.5	8.9	96	90
9/22/99	450	Curb Sg. – Francisco St. Sta. 27+25	0.0-0.5	JS	X	125.0	8.5	122.7	8.5	98	90
9/22/99	451	Curb Sg. – Francisco St. Sta. 26+00	0.0-0.5	JS	X	125.0	8.5	119.0	10.0	95	90
9/22/99	452	Curb Sg. – Francisco St. Sta. 23+00	0.0-0.5	JS	X	125.0	8.5	118.8	10.2	95	90
9/22/99	453	Curb Sg. – Francisco St. Sta. 21+00	0.0-0.5	JS	X	125.0	8.5	120.3	9.6	96	90
9/22/99	454	Curb Sg. – Francisco St. Sta. 19+30	0.0-0.5	JS	X	125.0	8.5	119.2	9.1	95	90
9/28/99	455	Storm Drain – Francisco St. Sta. 28+47	1.5-2.0	JS	III	118.0	15.0	110.8	14.6	94	90
9/28/99	456	Storm Drain – Francisco St. Sta. 28+47	0.5-1.0	JS	VII	121.0	12.0	112.2	12.2	93	90
9/29/99	457	Storm Drain – Francisco St. Sta. 19+94	1.5-2.0	JS	IX	125.0	10.5	115.7	10.6	93	90
9/29/99	458	Storm Drain – Francisco St. Sta. 19+94	0.5-1.0	JS	II	118.0	13.5	113.2	12.2	95	90
10/11/99	459	Vault Backfill – Francisco St. Sta. 22+40	6.0-6.5	JS	II	118.0	13.5	111.4	12.2	94	90
10/11/99	460	Vault Backfill – Francisco St. Sta. 22+40	4.0-4.5	JS	II	118.0	13.5	110.9	11.8	93	90
10/12/99	461	Vault Backfill – Francisco St. Sta. 22+40	6.0-6.5	JS	II	118.0	13.5	110.3	15.1	93	90
10/12/99	462	Vault Backfill – Francisco St. Sta. 22+40	4.0-4.5	JS	VII	121.0	12.0	110.4	13.9	91	90
10/15/99	463	Electrical – Francisco St. Sta. 19+00	0.5-1.0	JS	VIII	128.0	10.5	118.6	10.9	93	90
10/19/99	464	Electrical – Francisco St. Sta. 20+00	0.0-0.5	JS	VIII	128.0	10.5	121.5	7.0	95	90

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10/20/99	465	Vault Backfill – Francisco St. Sta. 22+40	0.0-0.5	JS	IV	121.0	15.0	110.2	13.4	91	90
10/20/99	466	Electrical – Francisco St. Sta. 22+20	0.5-1.0	JS	IV	121.0	15.0	116.4	12.0	96	90
10/20/99	467	Electrical – Francisco St. Sta. 22+10	0.5-1.0	JS	IV	121.0	15.0	115.4	12.7	95	90
10/22/99	468	Electrical – Francisco St. Sta. 25+60	1.0-1.5	JS	III	118.0	15.0	109.9	14.6	93	90
10/22/99	469	Electrical – Francisco St. Sta. 84+75	0.5-1.0	JS	VII	121.0	12.0	115.2	11.1	95	90
10/22/99	470	Utility Trench – Francisco St. Sta. 19+25	1.0-1.5	JS	II	119.0	13.5	107.9	12.2	91	90
10/22/99	471	Utility Trench – Francisco St. Sta. 21+00	2.0-2.5	JS	III	118.0	15.0	110.4	14.1	94	90
10/22/99	472	Utility Trench – Francisco St. Sta. 20+00	0.5-1.0	JS	II	119.0	13.5	110.9	12.7	93	90
10/25/99	473	Utility Trench – Francisco St. Sta. 22+00	1.0-1.5	JS	II	119.0	13.5	110.4	13.2	93	90
10/25/99	474	Utility Trench – Francisco St. Sta. 23+50	0.5-1.0	JS	II	119.0	13.5	110.0	12.7	92	90
10/25/99	475	Utility Trench – Francisco St. Sta. 22+60	0.5-1.0	JS	VIII	128.0	10.5	115.2	11.1	90	90
10/26/99	476	Utility Trench – Francisco St. Sta. 24+75	1.0-1.5	JS	VIII	128.0	10.5	118.2	10.0	92	90
10/26/99	477	Utility Trench – Francisco St. Sta. 26+25	0.5-1.0	JS	II	119.0	13.5	110.4	13.2	93	90
10/26/99	478	Utility Trench – Francisco St. Sta. 27+25	0.5-1.0	JS	II	119.0	13.5	113.1	14.1	95	90
10/26/99	479	Electrical – Francisco St. Sta. 23+50	1.0-1.5	JS	I	117.0	14.0	109.1	14.6	93	90
10/26/99	480	Electrical – Francisco St. Sta. 24+40	0.5-1.0	JS	IV	121.0	15.0	110.2	14.3	91	90
10/26/99	481	Electrical – Francisco St. Sta. 26+60	1.0-1.5	JS	II	119.0	13.5	113.1	13.2	95	90
10/27/99	482	Utility Trench – Francisco St. Sta. 22+75	2.0-2.5	JS	IX	125.0	10.5	115.9	9.6	93	90
10/27/99	483	Utility Trench – Francisco St. Sta. 22+75	0.5-1.0	JS	II	119.0	13.5	111.8	12.7	94	90
10/27/99	484	Utility Trench – Francisco St. Sta. 27+75	2.0-2.5	JS	II	119.0	13.5	109.9	14.6	92	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Field Data Optimum lbs./cu.ft.	Dry Moisture	Relative Compaction Moisture Density	Content	Minimum Results	Spec.
10/27/99	485	Utility Trench – Francisco St. Sta. 27+75	0.5-1.0	JS	IV	121.0	15.0	109.5	16.0	90	90
11/1/99	486	Electrical – Francisco St. Sta. 27+65	0.5-1.0	JS	III	118.0	15.0	108.5	13.4	92	90
11/1/99	487	Electrical – Francisco St. Sta. 27+75	0.5-1.0	JS	I	117.0	14.0	109.1	15.5	93	90
11/1/99	488	Electrical – Francisco St. Sta. 28+50	4.0-4.5	JS	I	117.0	14.0	109.7	13.9	94	90
11/1/99	489	Electrical – Francisco St. Sta. 28+25	2.0-2.5	JS	I	117.0	14.0	111.7	14.6	95	90
11/2/99	490	Electrical – Francisco St. Sta. 29+25	4.0-4.5	JS	II	119.0	13.5	110.2	13.4	93	90
11/2/99	491	Electrical – Francisco St. Sta. 29+00	2.0-2.5	JS	I	117.0	14.0	111.1	14.3	95	90
11/2/99	492	Electrical – Francisco St. Sta. 29+25	1.0-1.5	JS	II	119.0	13.5	111.8	12.7	94	90
11/5/99	493	Electrical – Francisco St. Sta. 26+00	1.0-1.5	JS	II	119.0	13.5	111.6	12.0	94	90
11/5/99	494	Electrical – Francisco St. Sta. 22+10	0.5-1.0	JS	IV	121.0	15.0	110.8	14.6	92	90
11/5/99	495	Electrical – Francisco St. Sta. 27+75	0.5-1.0	JS	III	118.0	15.0	109.6	14.1	93	90
11/9/99	496	Sewer – Francisco Street Sta. 0+00	12.0-12.5	JS	VII	121.0	12.0	113.2	12.2	94	90
11/9/99	497	Sewer – Francisco Street Sta. 0+00	8.0-8.5	JS	VII	121.0	12.0	112.5	11.1	93	90
11/9/99	498	Sewer – Francisco Street Sta. 0+00	4.0-4.5	JS	VII	121.0	12.0	111.8	11.8	92	90
11/9/99	499	Sewer – Francisco Street Sta. 0+00	0.5-1.0	JS	VII	121.0	12.0	111.9	12.7	92	90
11/9/99	500	Irrigation – Francisco Street Sta. 21+90	1.0-1.5	JS	III	118.0	15.0	109.1	14.6	92	90
11/9/99	501	Irrigation – Francisco Street Sta. 23+09	0.5-1.0	JS	II	119.0	13.5	110.7	12.9	93	90
11/9/99	502	Irrigation – Francisco Street Sta. 25+11	0.5-1.0	JS	II	119.0	13.5	109.3	13.4	92	90
11/10/99	503	Irrigation – Francisco Street Sta. 26+75	1.0-1.5	JS	V	112.0	13.0	103.1	11.1	92	90
11/10/99	504	Irrigation – Francisco Street Sta. 22+52	0.5-1.0	JS	II	119.0	13.5	112.5	12.9	95	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Optimum lbs./cu.ft.	Field Data Dry Moisture	Moisture Density	Relative Compaction Content	Minimum Results	Spec.
11/10/99	505	Irrigation – Francisco Street Sta. 23+43	1.0-1.5	JS	II	119.0	13.5	109.7	13.9	92	90
11/10/99	506	Irrigation – Francisco Street Sta. 24+97	1.5-2.0	JS	II	119.0	13.5	104.9	10.0	88	90
11/10/99	506A**	Irrigation – Francisco Street Sta. 24+97	1.5-2.0	JS	II	119.0	13.5	110.3	12.4	93	90
11/10/99	507	Irrigation – Francisco Street Sta. 25+93	0.5-1.0	JS	II	119.0	13.5	110.8	14.6	93	90
11/12/99	508	Irrigation – Francisco Street Sta. 28+10	0.5-1.0	JS	III	118.0	15.0	111.1	14.3	94	90
11/12/99	509	Irrigation – Francisco Street Sta. 27+32	0.5-1.0	JS	VII	121.0	12.0	112.0	11.6	93	90
11/13/99	510	Irrigation – Francisco Street Sta. 29+01	0.5-1.0	JS	VII	121.0	12.0	111.4	12.2	92	90
11/13/99	511	Sewer – Francisco Street Sta. 2+75	14.0-14.5	JS	I	117.0	14.0	107.9	13.9	92	90
11/13/99	512	Sewer – Francisco Street Sta. 2+65	10.0-10.5	JS	VII	121.0	12.0	112.7	12.7	93	90
11/13/99	513	Sewer – Francisco Street Sta. 2+75	6.0-6.5	JS	VII	121.0	12.0	112.2	12.2	93	90
11/13/99	514	Sewer – Francisco Street Sta. 2+50	4.0-4.5	JS	III	118.0	15.0	108.4	15.3	92	90
11/17/99	515	Sewer – Francisco Street Sta. 2+65	1.0-1.5	JS	I	117.0	14.0	110.2	14.3	94	90
11/17/99	516	Water – Francisco Street Sta. 25+50	0.5-1.0	JS	IX	125.0	10.5	107.5	5.6	87	90
11/22/99	516A**	Water – Francisco Street Sta. 25+50	0.5-1.0	JS	IX	125.0	10.5	115.9	9.6	93	90
11/18/99	517	Sidewalk – Francisco Street Sta. 29+25	0.0-0.5	JS	III	118.0	15.0	106.7	12.8	90	90
11/18/99	518	Sidewalk – Francisco Street Sta. 25+50	0.0-0.5	JS	VII	121.0	12.0	113.2	11.8	94	90
11/18/99	519	Sidewalk – Francisco Street Sta. 20+75	0.0-0.5	JS	VIII	128.0	10.5	117.5	12.2	92	90
11/20/99	520	Water – Francisco Street Sta. 29+95	0.0-0.5	JS	II	119.0	13.5	104.7	12.9	88	90
11/22/99	520A**	Water – Francisco Street Sta. 29+95	0.0-0.5	JS	VII	121.0	12.0	113.5	10.7	94	90
11/20/99	521	Sidewalk – Francisco Street Sta. 28+40	0.0-0.5	JS	X	125.0	8.5	120.2	7.8	96	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Field Data Optimum lbs./cu.ft.	Dry Moisture	Relative Compaction Moisture Density	Content	Minimum Results	Spec.
11/20/99	522	Sidewalk – Francisco Street Sta. 26+00	0.0-0.5	JS	X	125.0	8.5	115.1	9.3	92	90
11/20/99	523	Sidewalk – Francisco Street Sta. 24+00	0.0-0.5	JS	X	125.0	8.5	118.8	8.7	95	90
11/20/99	524	Sidewalk – Francisco Street Sta. 22+00	0.0-0.5	JS	X	125.0	8.5	114.7	9.8	92	90
11/20/99	525	Sidewalk – Francisco Street Sta. 20+00	0.0-0.5	JS	X	125.0	8.5	113.3	8.2	91	90
11/20/99	526	Sidewalk – Francisco Street Sta. 18+75	0.0-0.5	JS	X	125.0	8.5	117.7	8.1	94	90
11/20/99	527	Sidewalk – Francisco Street Sta. 21+00	0.0-0.5	JS	X	125.0	8.5	121.5	8.9	97	90
11/20/99	528	Sidewalk – Francisco Street Sta. 23+00	0.0-0.5	JS	X	125.0	8.5	120.3	8.3	96	90
11/20/99	529	Sidewalk – Francisco Street Sta. 25+00	0.0-0.5	JS	X	125.0	8.5	121.8	9.1	97	90
11/22/99	530	Sidewalk – Francisco Street Sta. 28+50	0.0-0.5	JS	X	125.0	8.5	116.5	10.2	93	90
11/22/99	531	Water – Francisco Street Sta. 29+95	0.0-0.5	JS	X	125.0	8.5	119.1	8.7	95	90
11/22/99	532	Water – Francisco Street Sta. 28+85	0.0-0.5	JS	VII	121.0	12.0	115.5	10.8	95	90
11/22/99	533	Water – Francisco Street Sta. 27+60	0.5-1.0	JS	II	119.0	13.5	111.8	11.8	94	90
11/22/99	534	Water – Francisco Street Sta. 24+00	0.5-1.0	JS	IV	121.0	15.0	113.1	13.2	93	90
11/22/99	535	Water – Francisco Street Sta. 22+60	0.5-1.0	JS	II	119.0	13.5	111.8	12.7	94	90
11/22/99	536	Water – Francisco Street Sta. 20+30	0.5-1.0	JS	II	119.0	13.5	110.6	13.9	93	90
11/23/99	537	Water – Francisco Street Sta. 19+75	1.0-1.5	JS	II	119.0	13.5	108.5	12.2	91	90
11/23/99	538	Ramp - Francisco St. Sta. 28+10	0.0-0.5	JS	VIII	128.0	10.5	115.5	10.0	90	90
11/24/99	539	Sewer – Normandie Ave. Sta. 1+50	12.0-12.5	JS	II	119.0	13.5	112.5	12.9	95	90
11/24/99	540	Sewer – Normandie Ave. Sta. 2+25	6.0-6.5	JS	XI	126.0	9.5	116.8	10.4	93	90
11/24/99	541	Sewer – Normandie Ave. Sta. 1+75	8.0-8.5	JS	VII	121.0	12.0	111.9	13.4	93	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

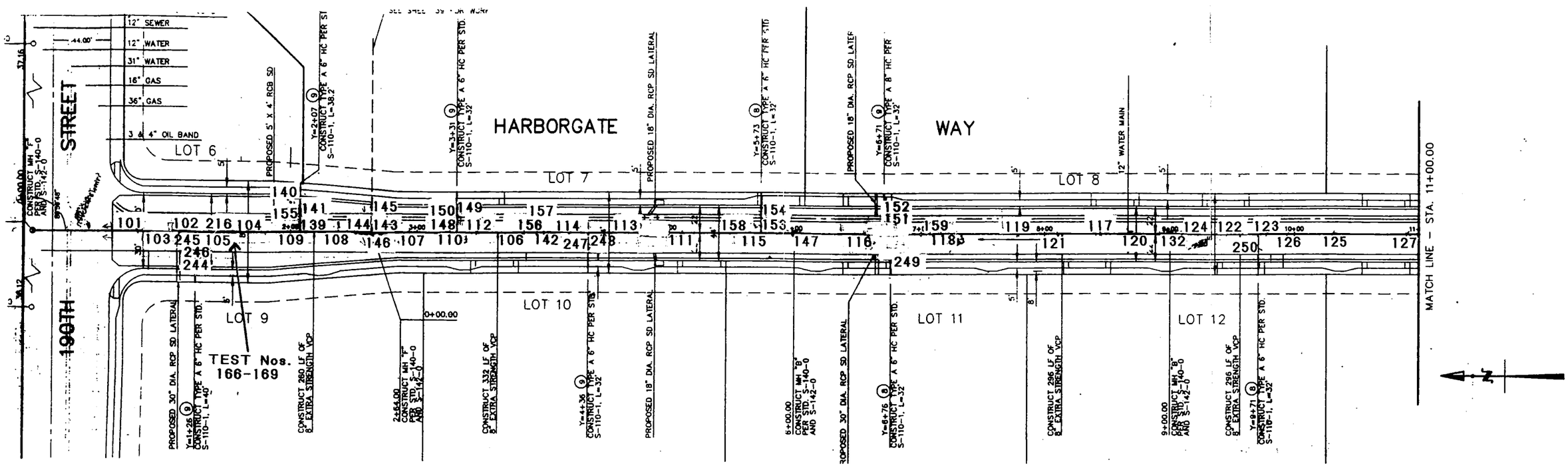
Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Wt. Type	Optimum lbs./cu.ft.	Field Data Dry Moisture	Moisture Density	Relative Compaction Content	Minimum Results	Spec.
11/24/99	542	Sewer – Normandie Ave. Sta. 2+00	5.0-5.5	JS	VIII	128.0	10.5	119.3	13.1	93	90
11/24/99	543	Sewer – Normandie Ave. Sta. 0+75	13.0-13.5	JS	VIII	128.0	10.5	117.4	11.9	92	90
11/24/99	544	Sewer – Normandie Ave. Sta. 0+25	16.0-16.5	JS	VII	121.0	12.0	110.4	14.1	91	90
11/24/99	545	Sewer – Normandie Ave. Sta. 0+50	11.0-11.5	JS	VII	121.0	12.0	113.6	12.7	94	90
11/24/99	546	Sewer – Normandie Ave. Sta. 1+00	6.0-6.5	JS	I	117.0	14.0	105.9	14.2	93	90
11/24/99	547	Sewer – Normandie Ave. Sta. 0+40	7.0-7.5	JS	VII	121.0	12.0	111.1	12.5	92	90
11/24/99	548	Sewer – Normandie Ave. Sta. 1+25	8.0-8.5	JS	VII	121.0	12.0	111.6	12.9	92	90
11/29/99	549	Sewer – Normandie Ave. Sta. 0+00	14.0-14.5	JS	VII	121.0	12.0	111.1	12.5	92	90
11/29/99	550	Sewer – Normandie Ave. Sta. 0+10	10.0-10.5	JS	VII	121.0	12.0	112.7	11.8	93	90
11/29/99	551	Sewer – Normandie Ave. Sta. 0+00	8.0-8.5	JS	I	117.0	14.0	109.1	14.6	93	90
11/29/99	552	Sewer – Normandie Ave. Sta. 0+00	6.0-6.5	JS	III	118.0	15.0	109.4	14.3	93	90
11/29/99	553	Sewer – Normandie Ave. Sta. 0+00	4.0-4.5	JS	VII	121.0	12.0	111.5	11.6	92	90
11/29/99	554	Sewer – Normandie Ave. Sta. 0+90	3.5-4.0	JS	VII	121.0	12.0	112.9	12.5	93	90
11/29/99	555	Sewer – Normandie Ave. Sta. 2+45	2.0-2.5	JS	XI	126.0	9.5	118.0	9.3	94	90
11/30/99	556	Sewer – Normandie Ave. Sta. 1+60	1.0-1.5	JS	VII	121.0	12.0	115.1	12.9	95	90
12/2/99	557	Storm Drain – Francisco St. Sta. 28+47	2.0-2.5	JS	XI	126.0	9.5	117.1	10.2	93	90
12/2/99	558	Storm Drain – Francisco St. Sta. 28+47	0.5-1.0	JS	XI	126.0	9.5	117.5	9.3	93	90
12/6/99	559	Subgrade – Francisco St. Sta. 28+25	0.0-0.5	JS	VIII	128.0	10.5	123.2	9.8	96	90
12/6/99	560	Subgrade – Francisco St. Sta. 27+25	0.0-0.5	JS	VII	121.0	12.0	113.6	9.3	94	90
12/6/99	561	Subgrade – Francisco St. Sta. 25+00	0.0-0.5	JS	II	119.0	13.5	113.6	12.7	95	90

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Test Date	Tests No.	Location	Laboratory Data Depth	Soil Tech.	Unit Type	Wt. Optimum lbs./cu.ft.	Field Data Dry Moisture	Moisture Density	Relative Compaction Content	Minimum Results	Spec.
12/6/99	562	Subgrade – Francisco St. Sta. 22+00	0.0-0.5	JS	VII	121.0	12.0	113.9	12.3	94	90
12/6/99	563	Subgrade – Francisco St. Sta. 20+50	0.0-0.5	JS	VIII	128.0	10.5	122.2	8.0	95	90
12/6/99	564	Subgrade – Francisco St. Sta. 18+75	0.0-0.5	JS	VIII	128.0	10.5	123.1	10.0	96	90
12/7/99	565	Subgrade – Francisco St. Sta. 29+75	0.0-0.5	JS	II	119.0	13.5	116.0	12.5	93	90
12/8/99	566	Base – Francisco Street Sta. 19+00	0.0-0.5	JS	X	125.0	8.5	120.3	8.3	96	90
12/8/99	567	Base – Francisco Street Sta. 21+25	0.0-0.5	JS	X	125.0	8.5	121.5	7.8	97	90
12/8/99	568	Base – Francisco Street Sta. 23+00	0.0-0.5	JS	X	125.0	8.5	119.1	8.7	95	90
12/8/99	569	Base – Francisco Street Sta. 24+75	0.0-0.5	JS	X	125.0	8.5	122.7	8.1	98	90
12/8/99	570	Base – Francisco Street Sta. 27+00	0.0-0.5	JS	X	125.0	8.5	121.3	7.8	97	90
12/8/99	571	Base – Francisco Street Sta. 29+50	0.0-0.5	JS	X	125.0	8.5	120.3	9.3	96	90

**Retest of failing tests after area reworked



TRACT NO. 52172
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BOEING

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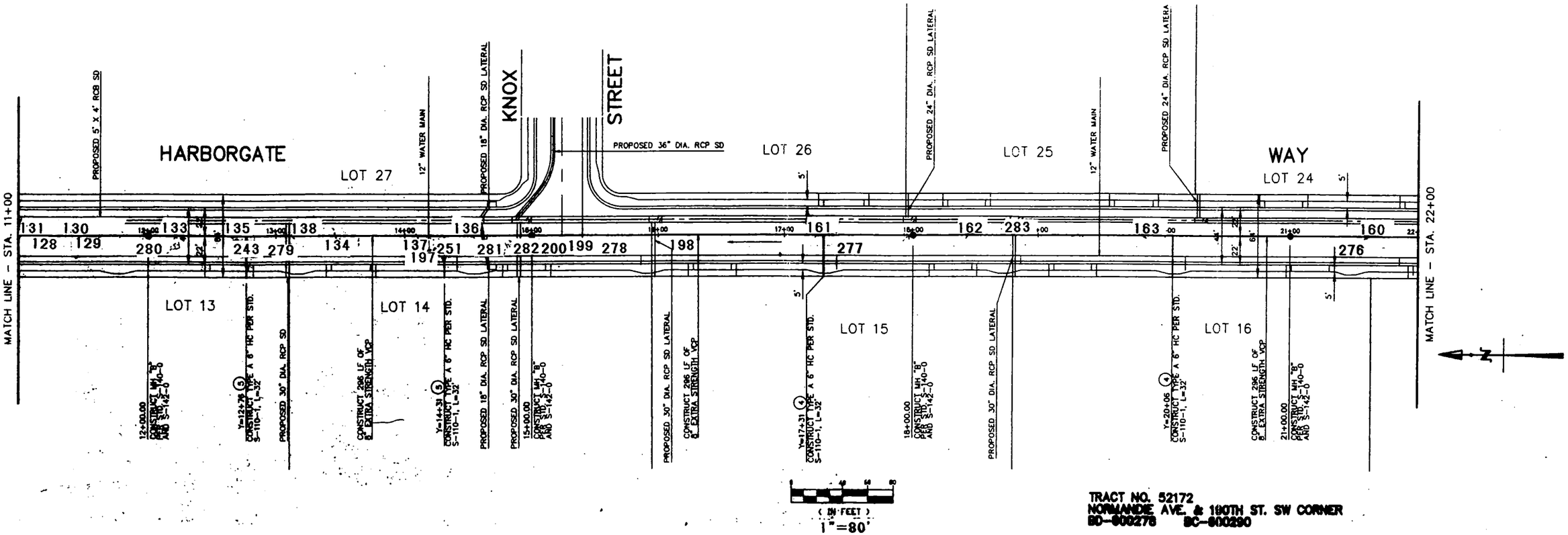
SITE PLAN

LOCATION OF COMPACTION TESTS

FIGURE 1

BOE-C6-0079067



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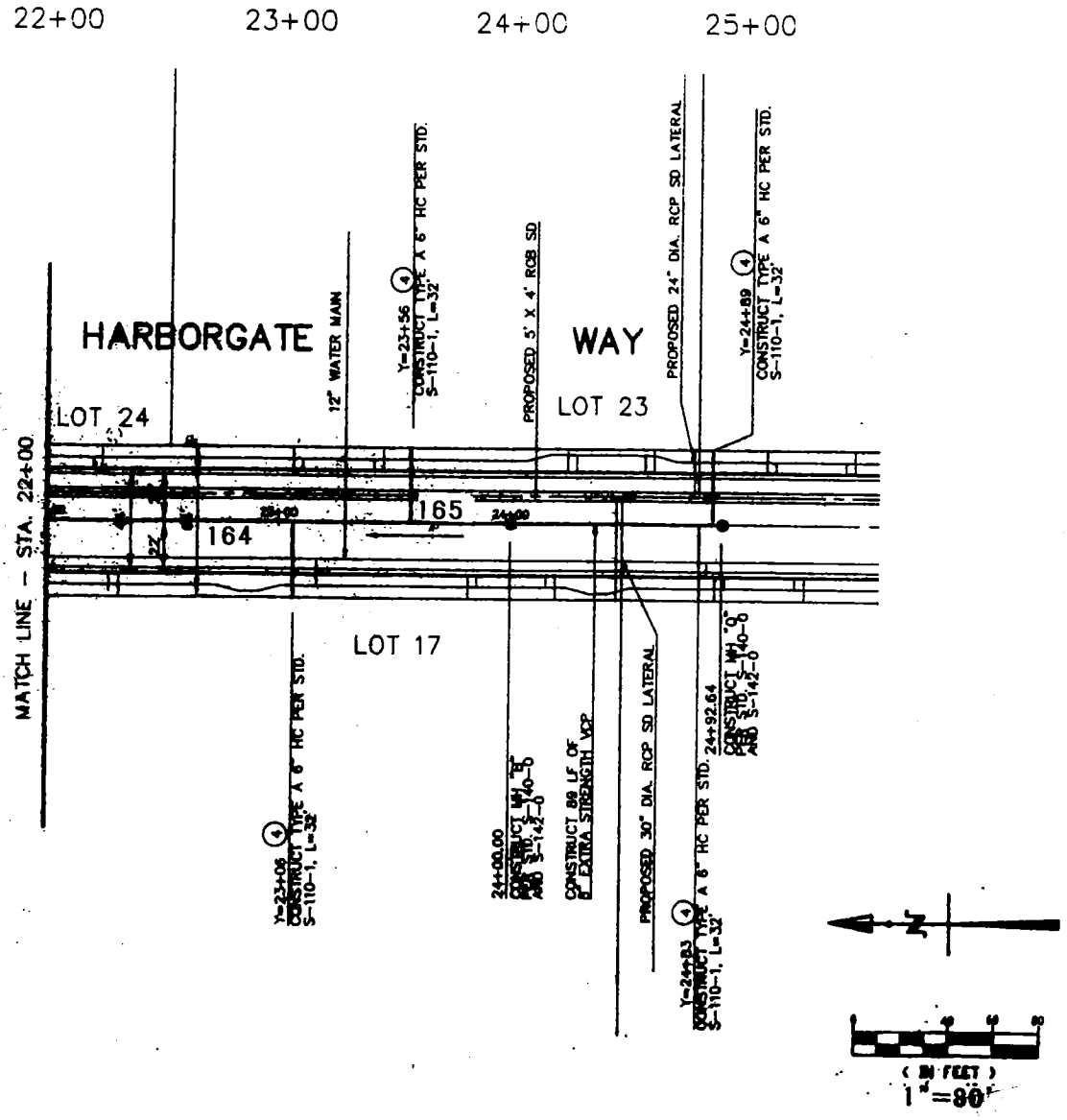
SITE PLAN

LOCATION OF COMPACTION TESTS

FIGURE 2

BOE-C6-0079068



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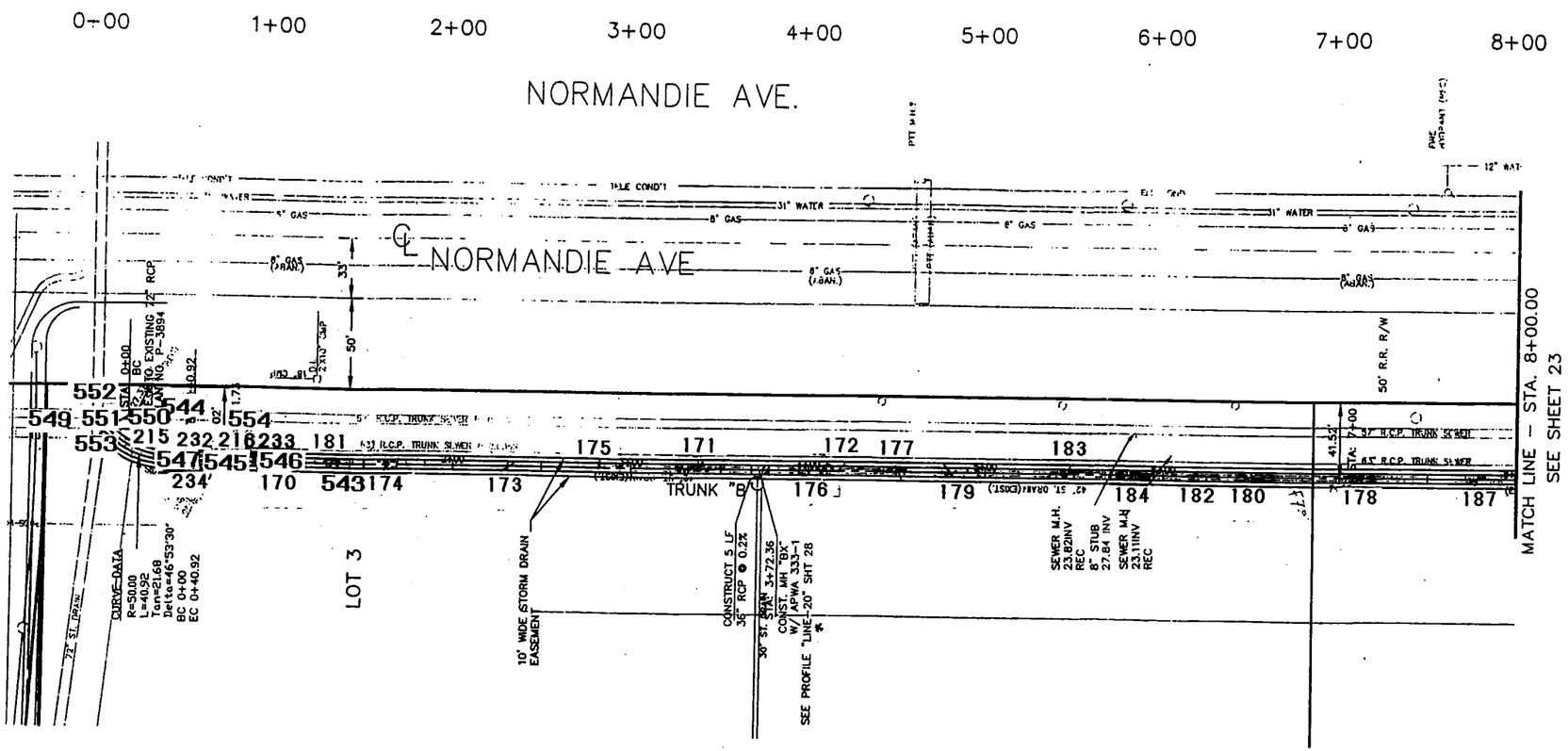
SITE PLAN

LOCATION OF COMPACTION TESTS

FIGURE 3



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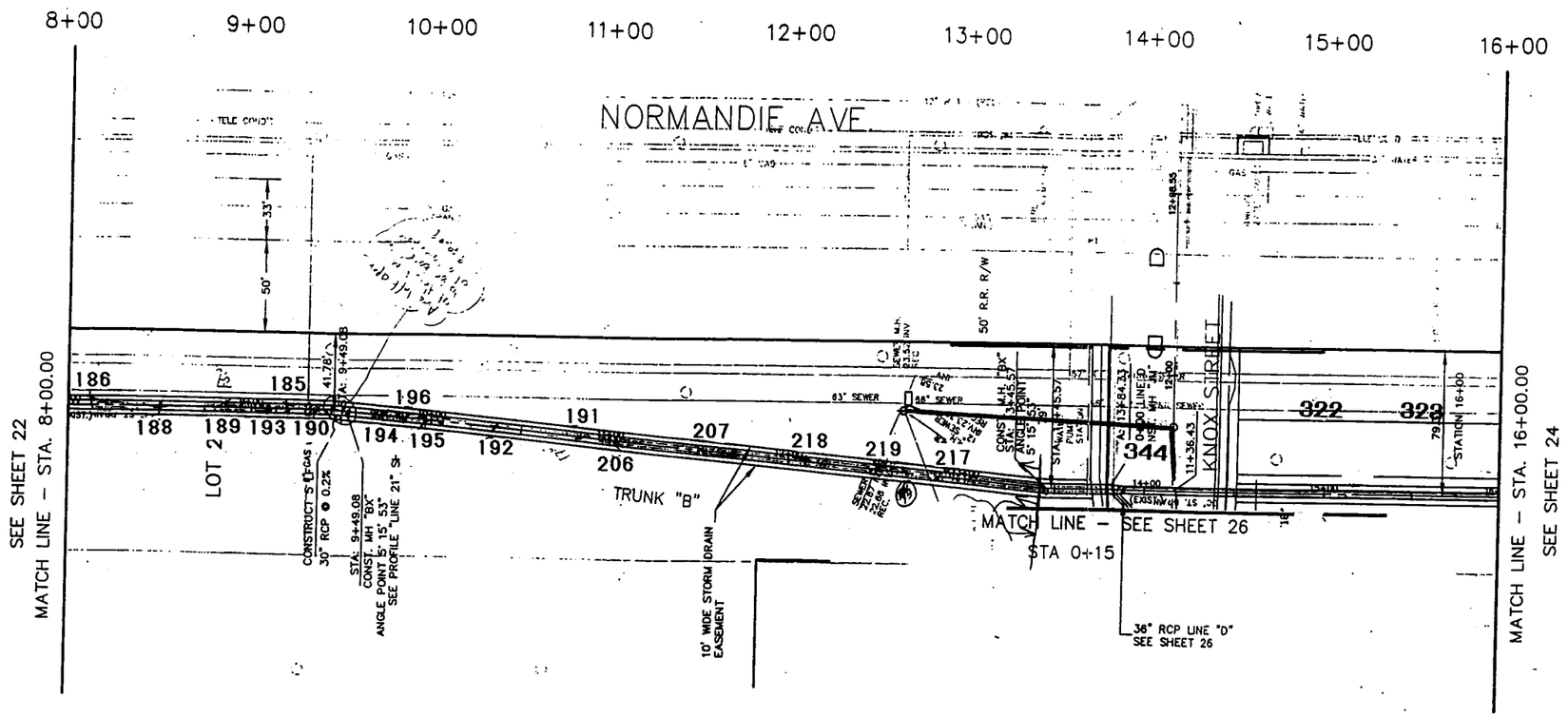
SITE PLAN

LOCATION OF COMPACTION TESTS

FIGURE 4

BOE-C6-0079070

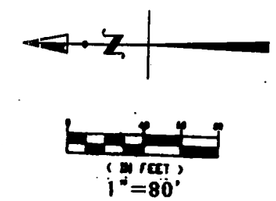


DATA FOR M.H. "BX"

STA.	P
9+49.08	8.7'
13+45.57	6.2'

DATA FOR M.H. "JM"

STA.	A	B	C	D1	D2	E	L	EL."S"	EL."R"	T
13+84.33(W)	45'	3.0'	3'-0"	3'-6"	4'-0"	5'-9"	8'-0"	37.51	37.77	6.5"



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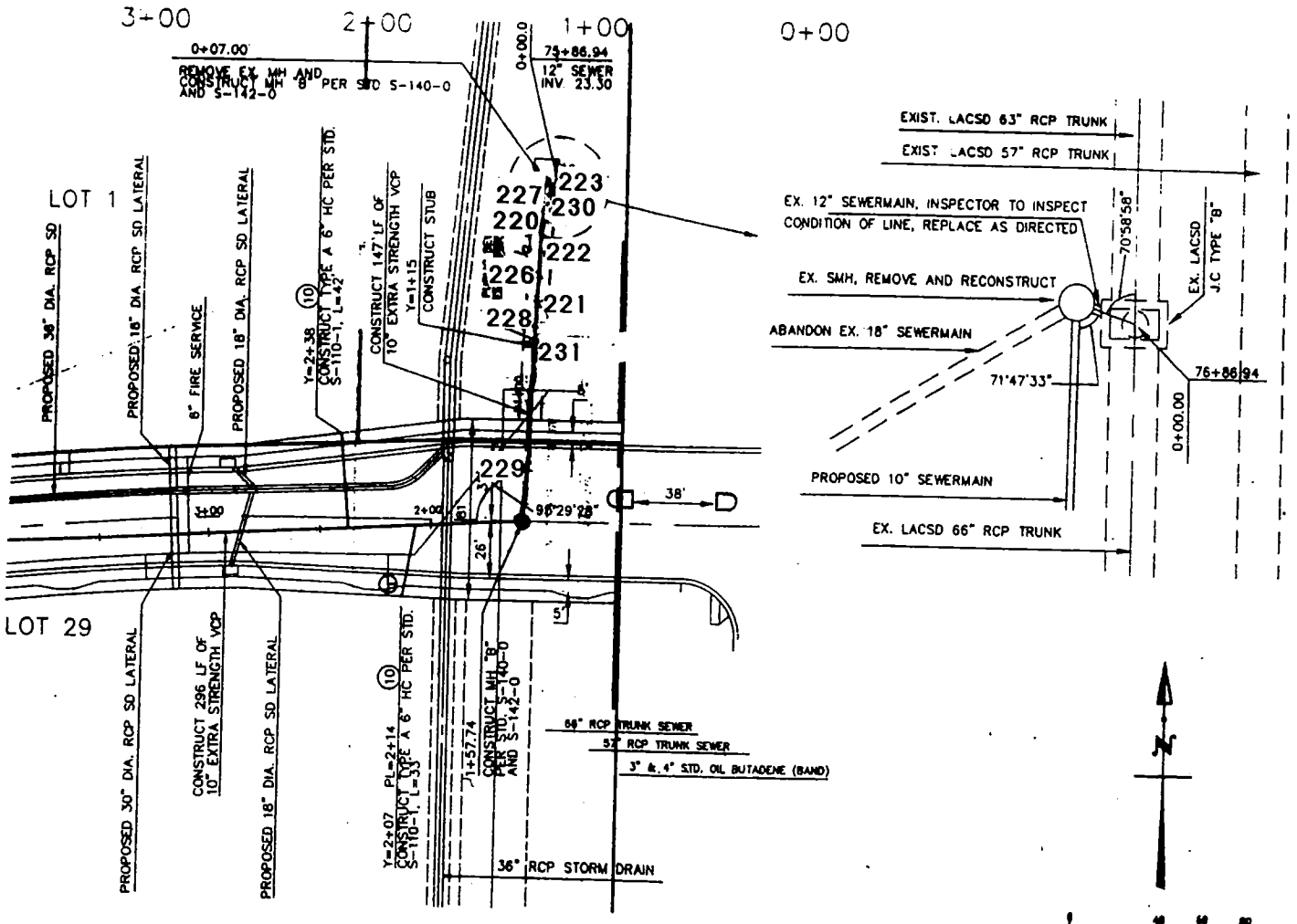
PROJECT 5936-96B DATE DECEMBER 1999

SITE PLAN
LOCATION OF COMPACTION TESTS

FIGURE 5

BOE-C6-0079071



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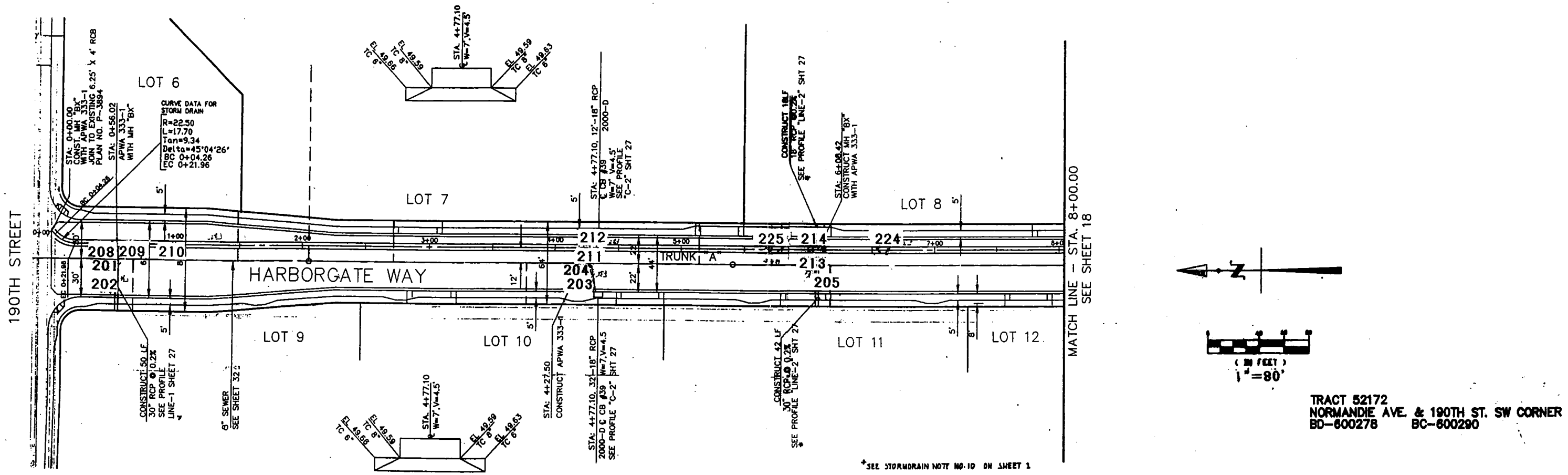
SOILS AND GEOTECHNICAL CONSULTANTS

BOEING

PROJECT 5936-96B | DATE DECEMBER 1999

SITE PLAN
LOCATION OF COMPACTION TESTS

FIGURE 6



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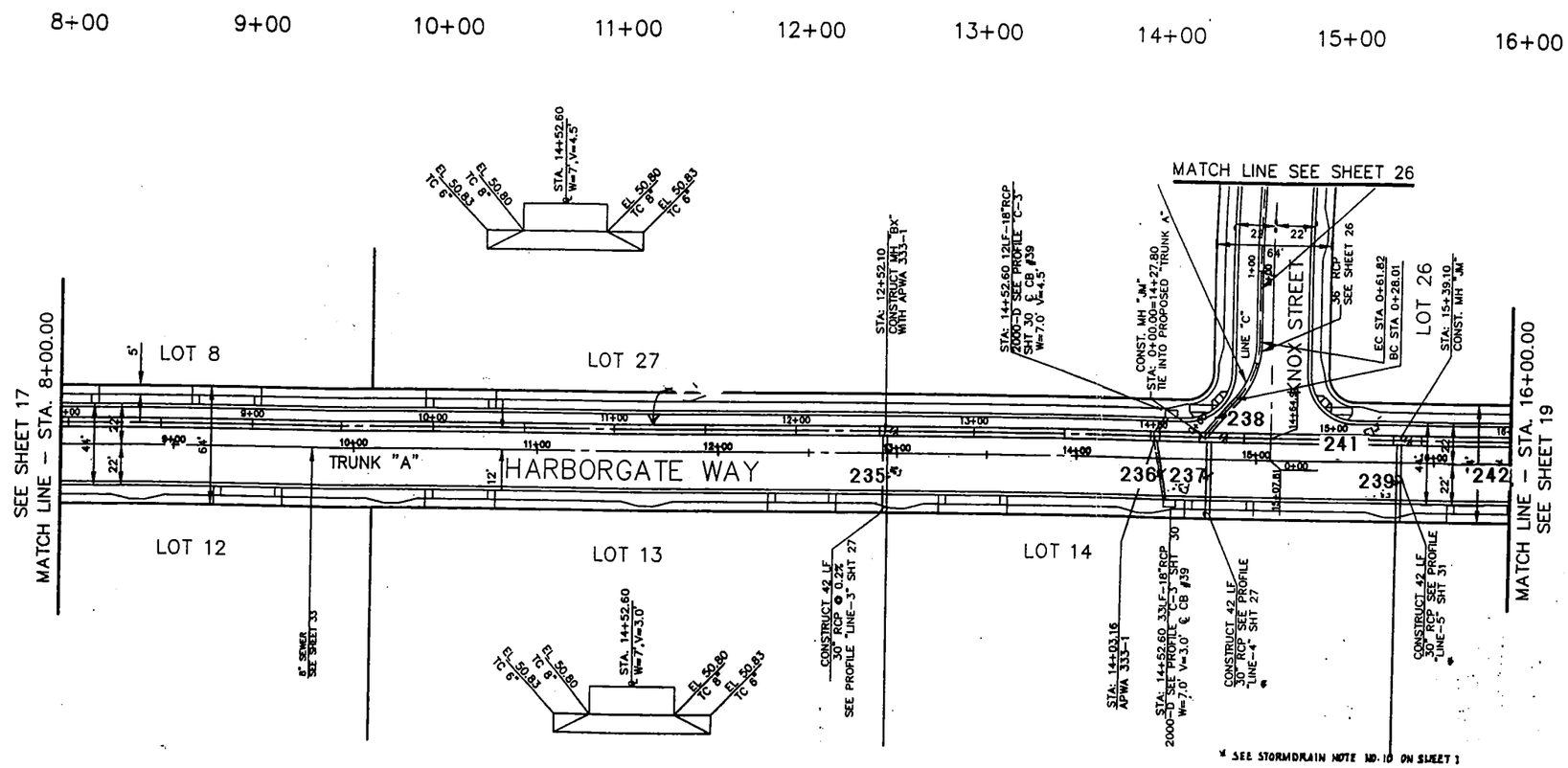
NorCal Engineering SOILS AND GEOTECHNICAL CONSULTANTS	SITE PLAN LOCATION OF COMPACTION TESTS
BOEING	
PROJECT 5936-968 DATE DECEMBER 1999	

FIGURE 7

BOE-C6-0079073



DATA FOR MH "BX"

STA.	P
12+52.10	3.0'

DATA FOR APWA 333-1

STA.	A	B	C	EL."S"	EL."R"	T
12+52.10(W)	90'	2.5'	5.0'	44.64	44.65	6"
14+03.16(E)	36'	1.5'	5.0'	45.30	45.31	6"
14+03.16(W)	80'	1.5'	5.0	45.30	45.31	6"

DATA FOR M.H. "JM"

STA.	A	B	C	D1	D2	E	L	EL."S"	EL."R"	T
14+27.80(E)	45'	3.0'	6'-0"	4'-6"	4'-0"	5'-0"	8'-0"	44.58	44.59	6.5"
14+27.80(W)	90'	2.5'	5'-0"	4'-6"	4'-0"	5'-0"	8'-0"	44.83	44.84	6"
15+39.10	90'	2.5'	5'-0"	4'-6"	4'-0"	5'-0"	8'-0"	45.19	45.20	6"

(IN FEET)
1" = 30'

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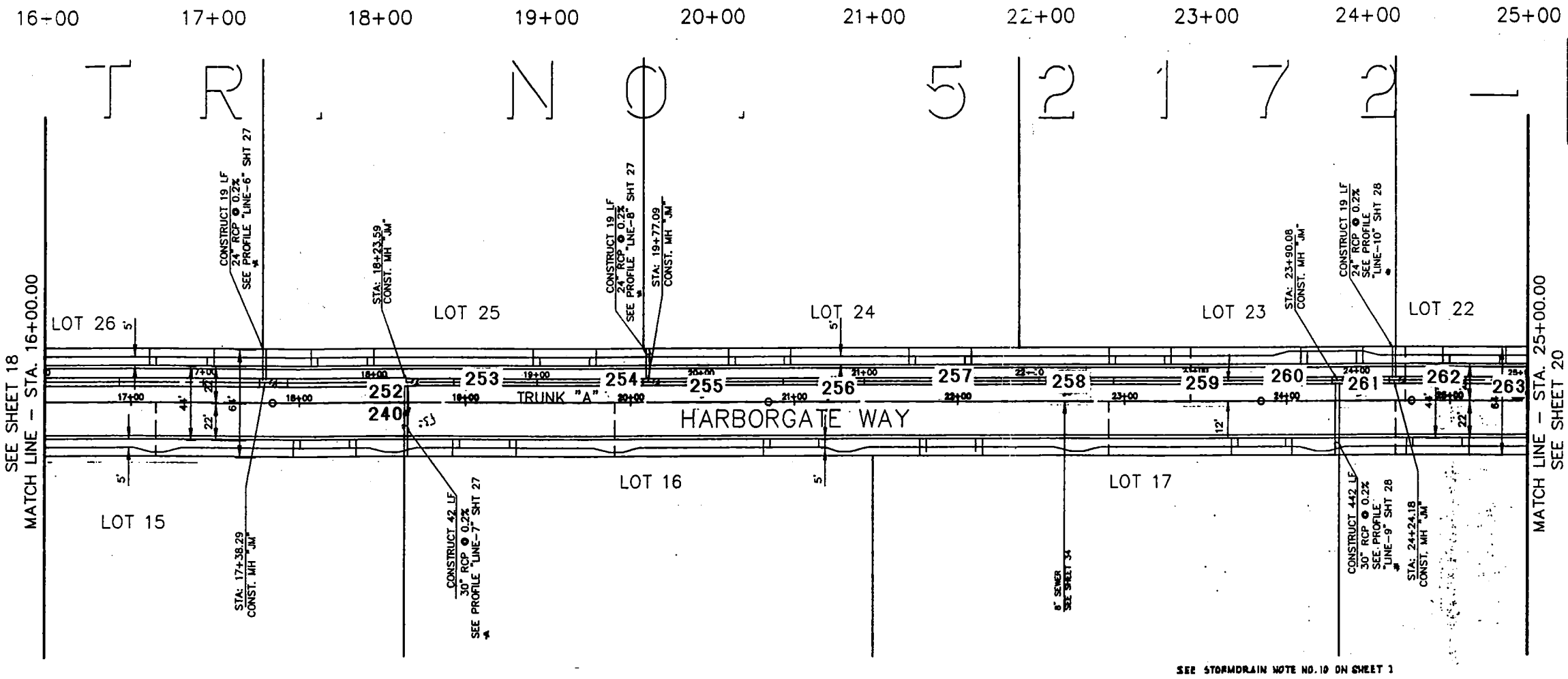
SITE PLAN

LOCATION OF COMPACTION TESTS

FIGURE 8

BOE-C6-0079074



DATA FOR M.H. "JM"

STA.	A	B	C	D1	D2	E	L	EL."S"	EL."R"	T
17+38.29(E)	90°	2.0'	4'-3"	4'-6"	4'-6"	2'-6"	5'-0"	45.64	45.65	5.25"
18+23.59(W)	90°	2.5'	4'-3"	4'-6"	4'-6"	2'-6"	5'-0"	44.03	44.04	6"
19+77.09(E)	90°	2.0'	4'-3"	4'-6"	4'-6"	2'-6"	5'-0"	45.63	45.64	5.25"
23+90.08(W)	90°	2.5'	4'-3"	4'-0"	4'-6"	2'-6"	5'-0"	45.80	45.81	6"
24+24.18(E)	90°	2.0'	4'-3"	4'-0"	4'-0	2'-6"	5'-0"	46.09	46.10	5.25"

(IN FEET)
1"=80'

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FIGURE 9

BOE-C6-0079075

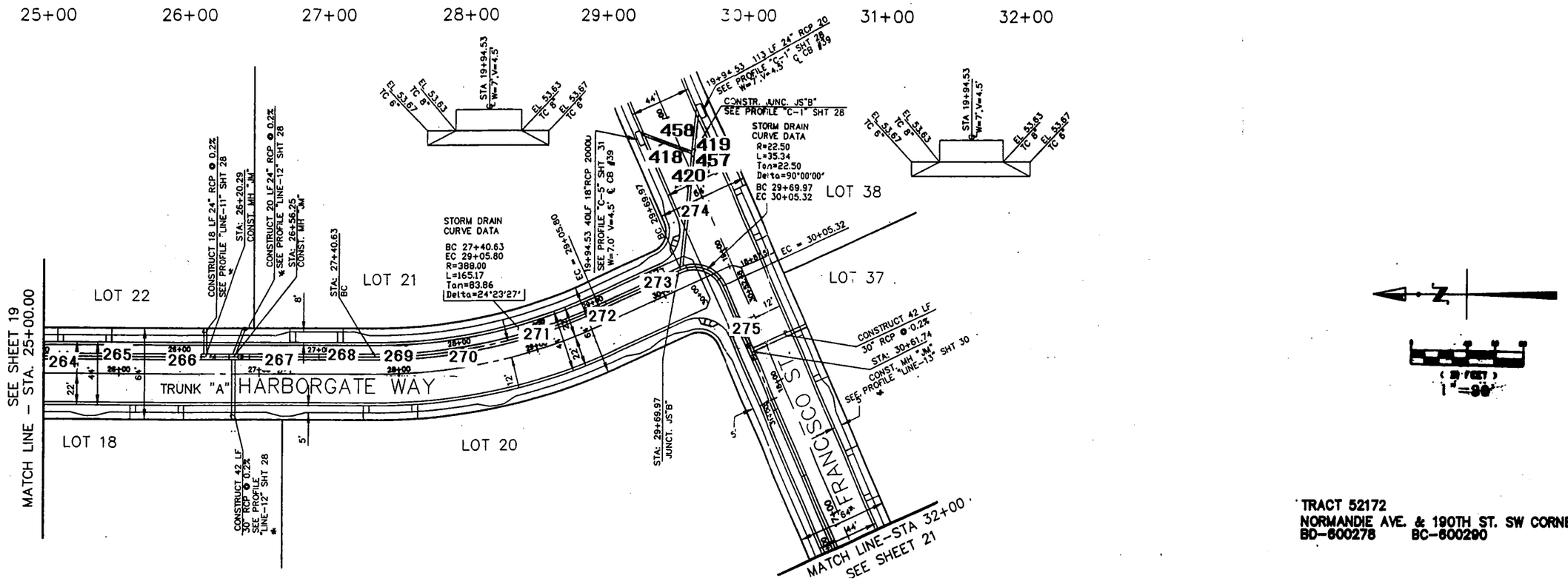

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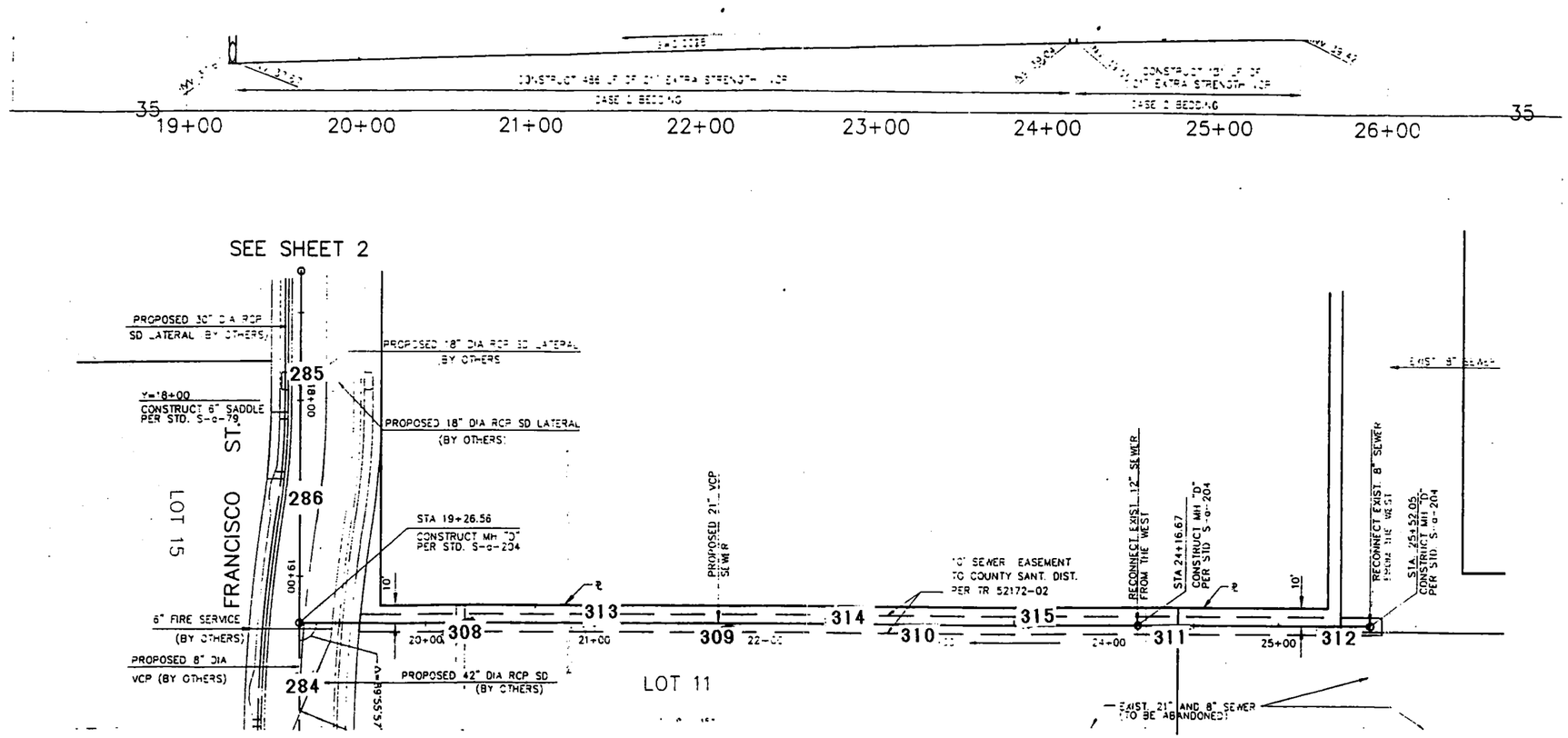
FIGURE 10

BOE-C6-0079076



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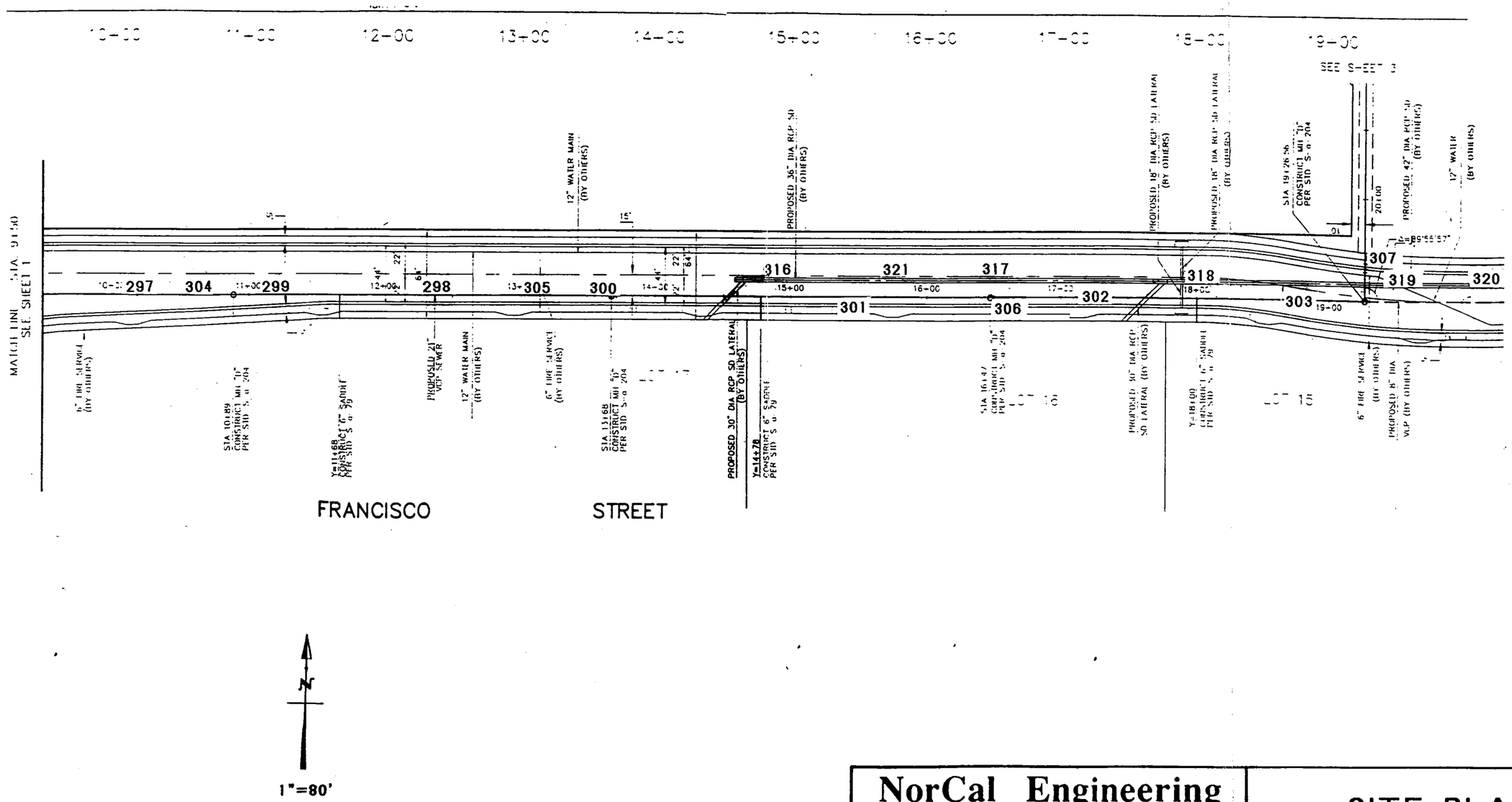
SITE PLAN

LOCATION OF COMPACTION TESTS

FIGURE 11

BOE-C6-0079077



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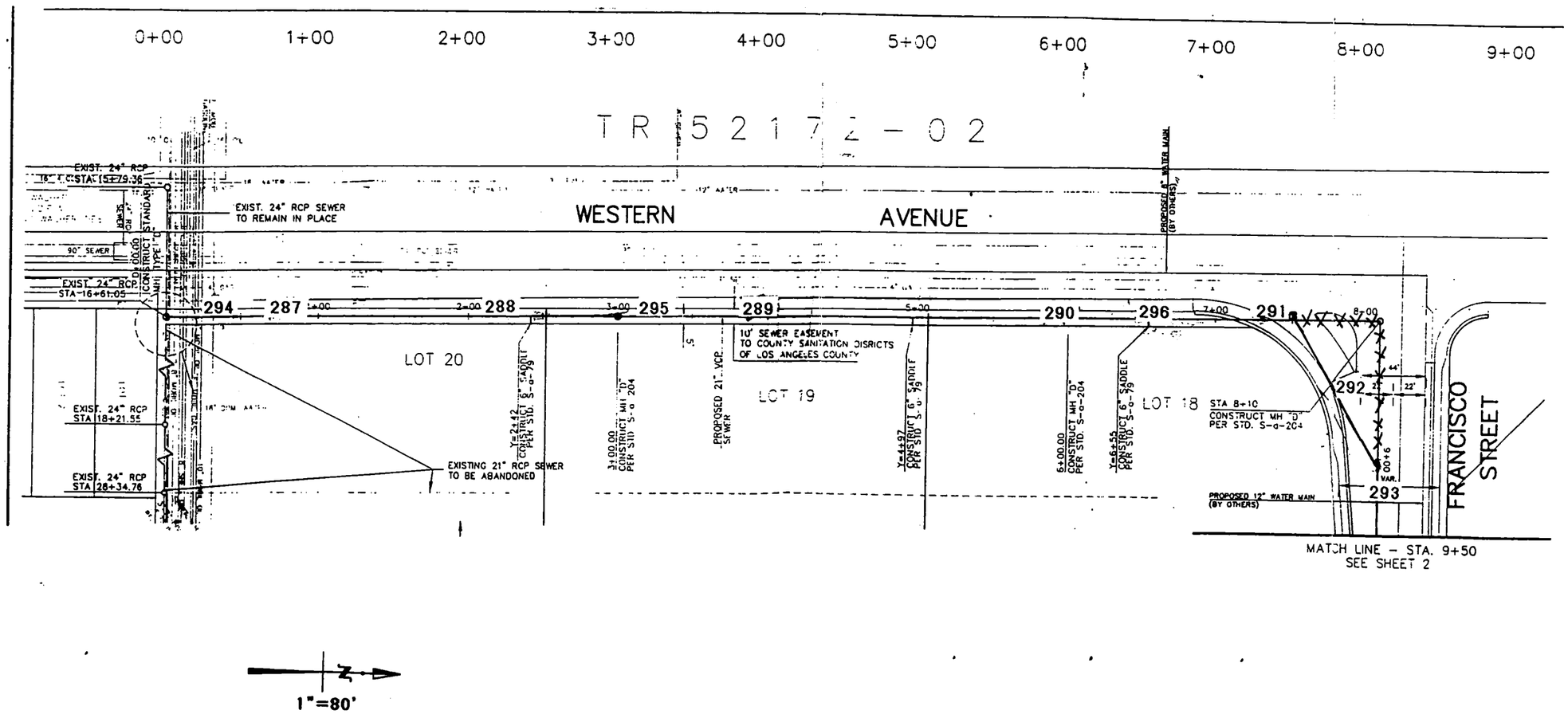
LOCATION OF COMPACTION TESTS

FIGURE 12



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LOCATION OF COMPACTION TESTS

FIGURE 13

BOE-C6-0079079

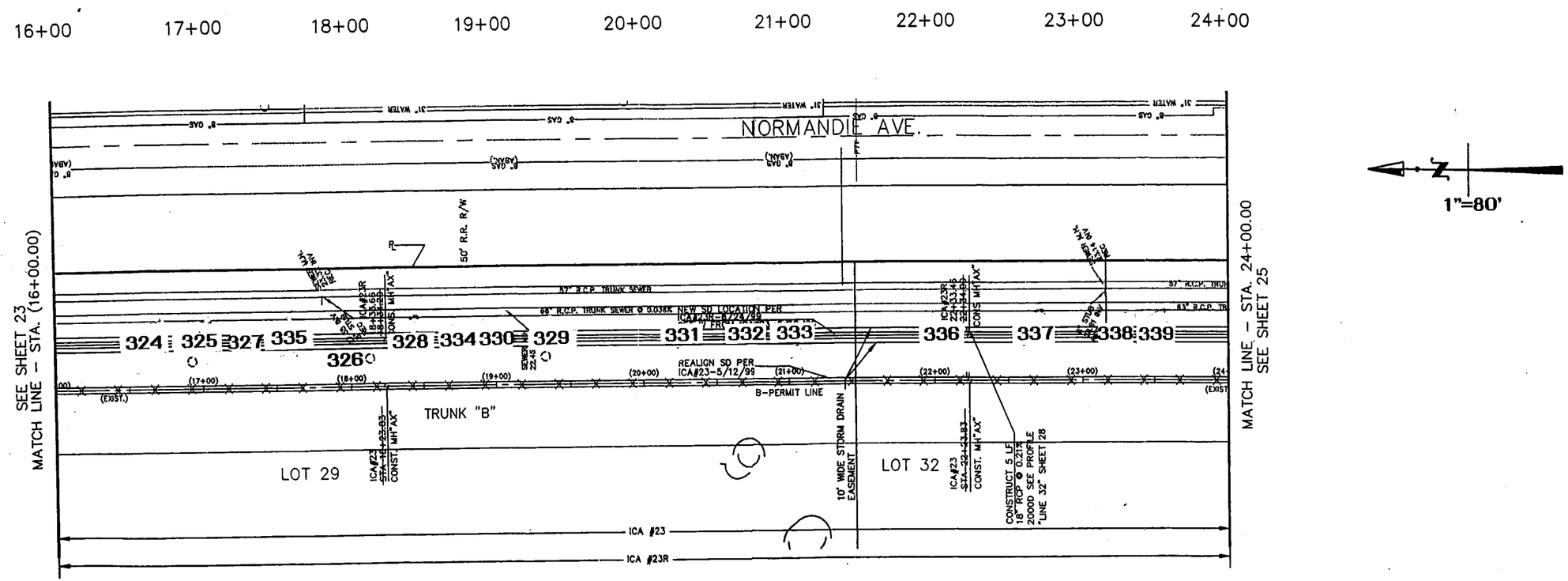

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FIGURE 14

BOE-C6-0079080

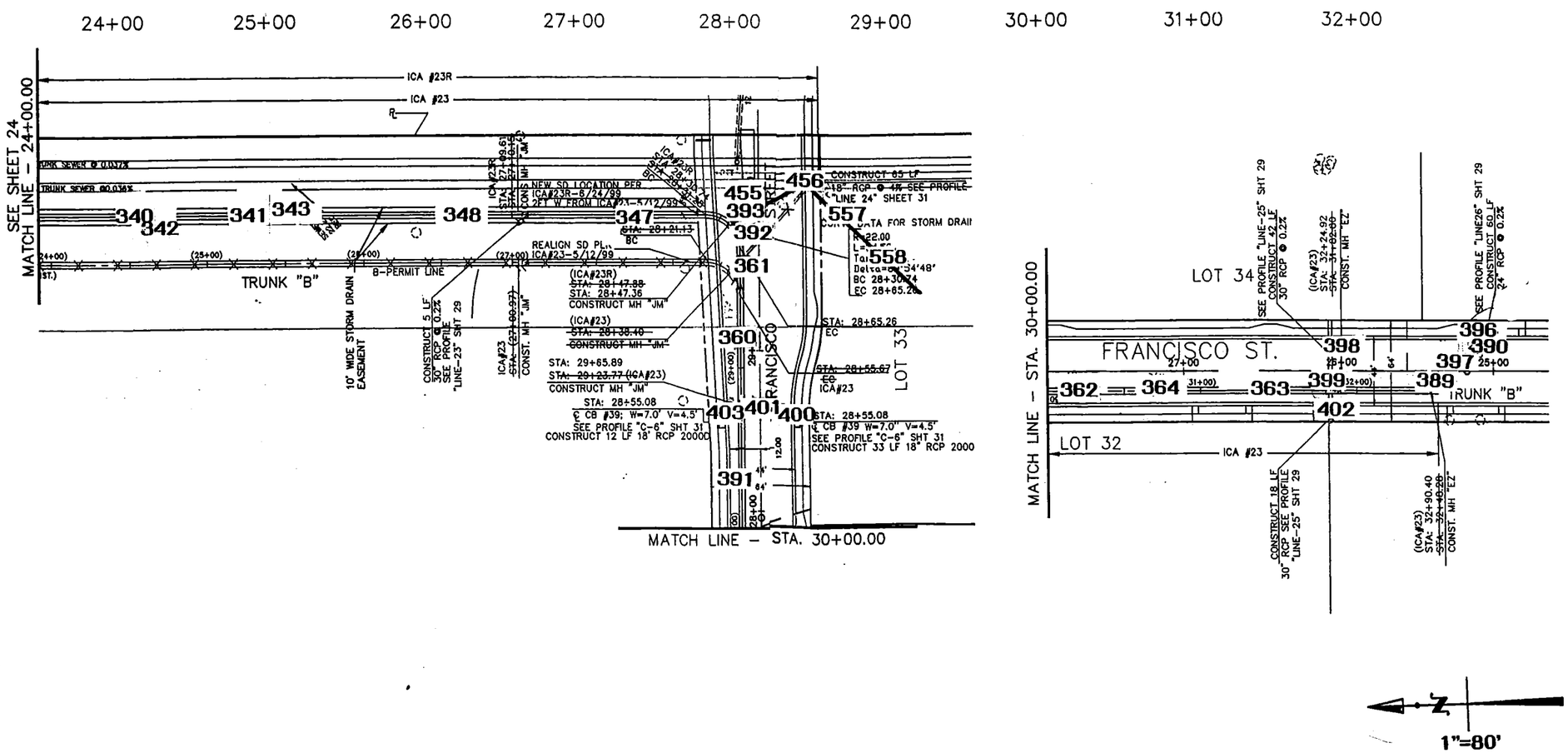

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FIGURE 15

BOE-C6-0079081

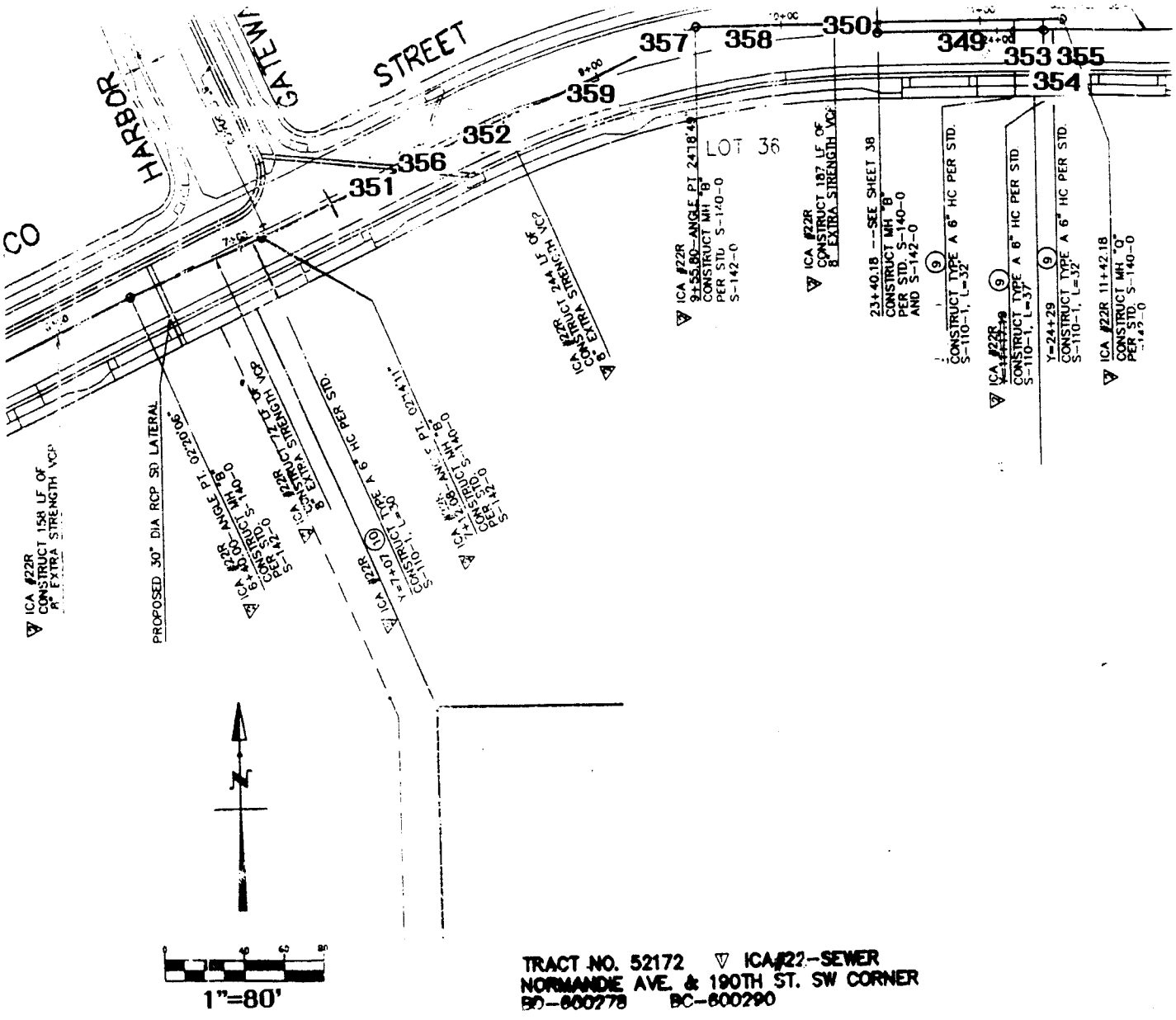

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FIGURE 16

BOE-C6-0079082

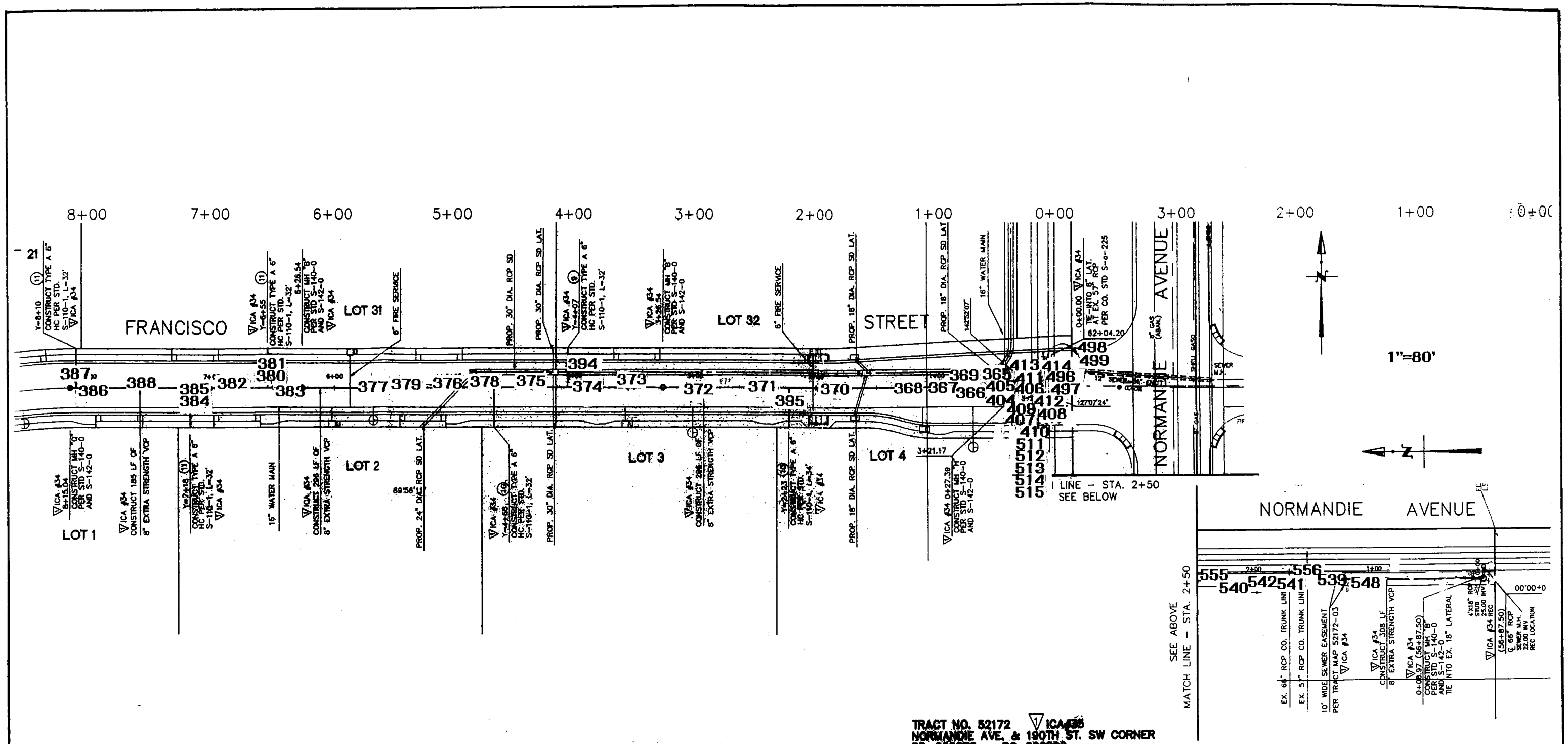

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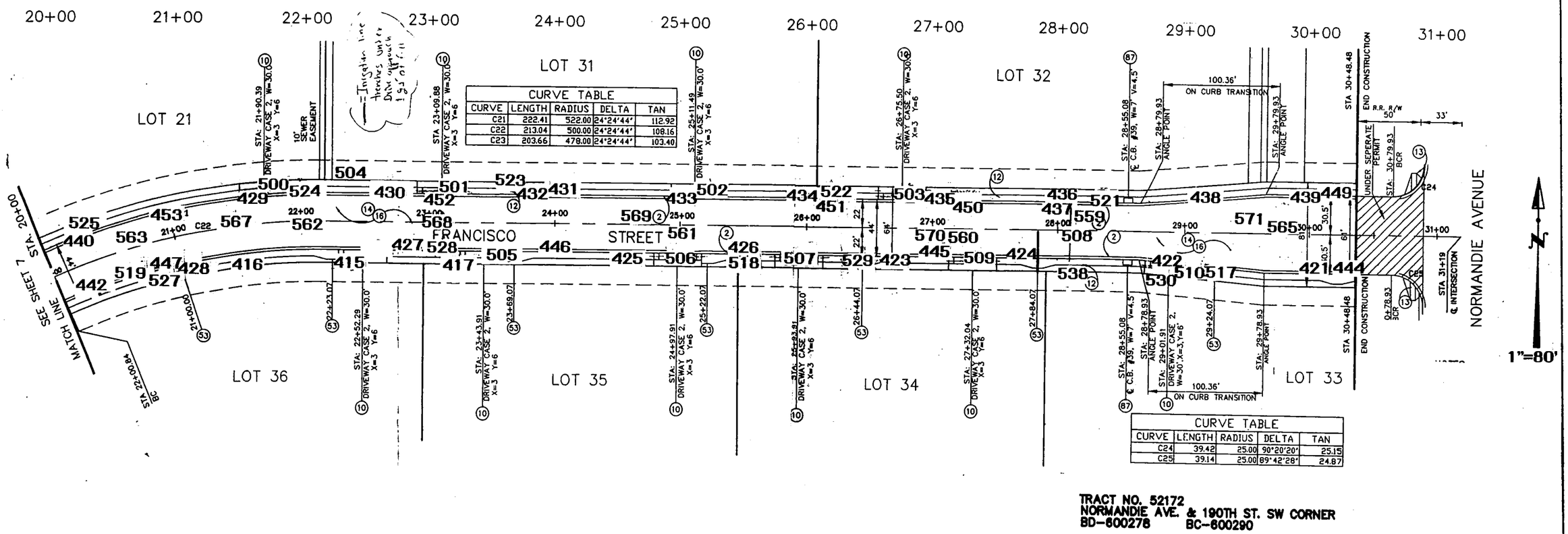
FIGURE 17

BOE-C6-0079083



CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	TAN
C21	222.41	522.00	24°24'44"	112.92
C22	213.04	500.00	24°24'44"	108.16
C23	203.66	478.00	24°24'44"	103.40

CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	TAN
C24	39.42	25.00	90°20'20"	25.15
C25	39.14	25.00	89°42'28"	24.87

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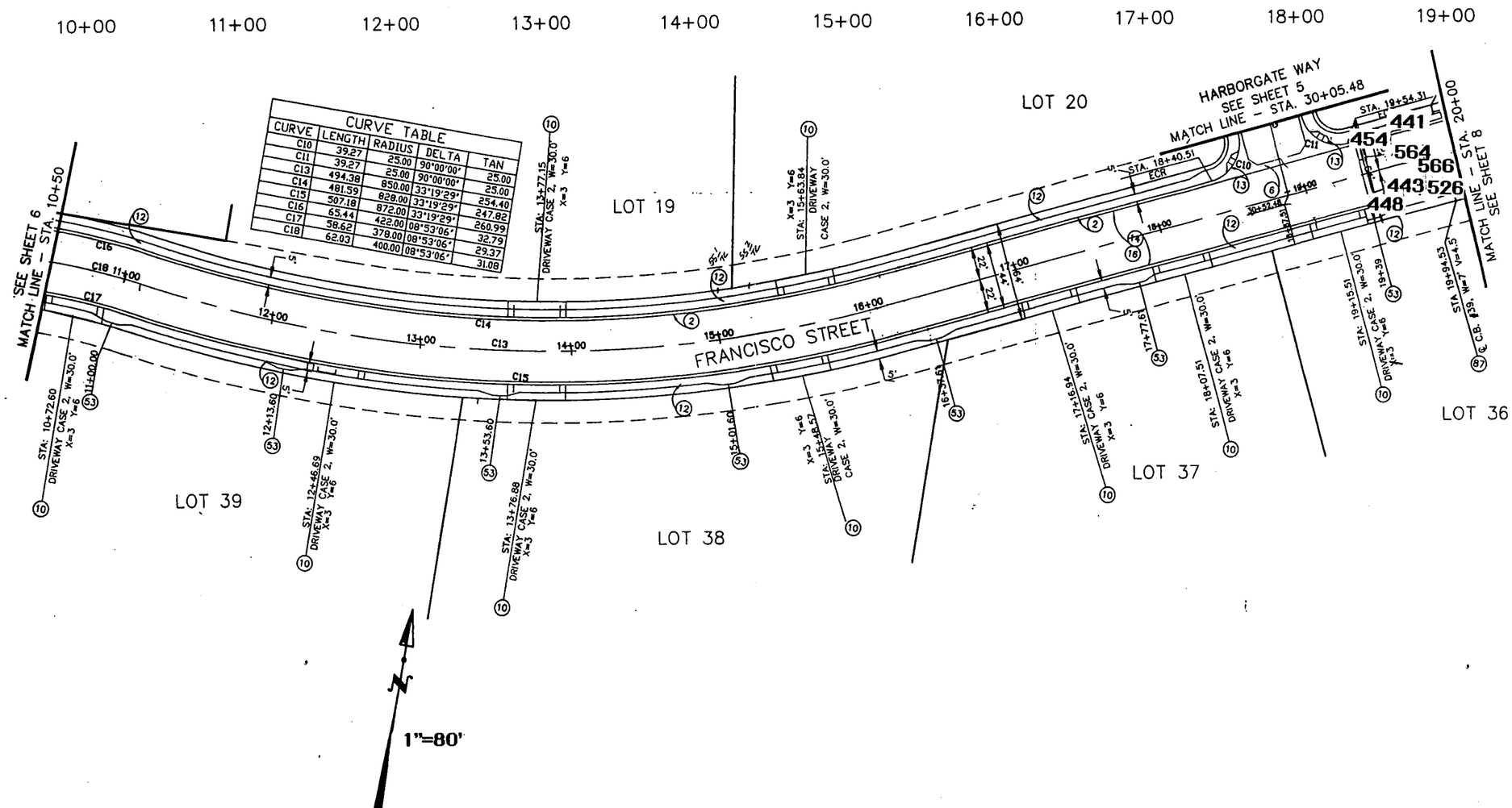
FIGURE 18

BOE-C6-0079084



CURVE TABLE				
CURVE	LENGTH	RADIUS	DELTA	TAN
C10	39.27	25.00	90°00'00"	25.00
C11	39.27	25.00	90°00'00"	25.00
C13	494.38	850.00	33°19'29"	254.40
C14	481.59	828.00	33°19'29"	247.82
C15	507.18	872.00	33°19'29"	260.99
C16	65.44	422.00	08°53'06"	32.79
C17	58.62	378.00	08°53'06"	29.37
C18	62.03	400.00	08°53'06"	31.08

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SITE PLAN
LOCATION OF COMPACTION TESTS

FIGURE 19

BOE-C6-0079085

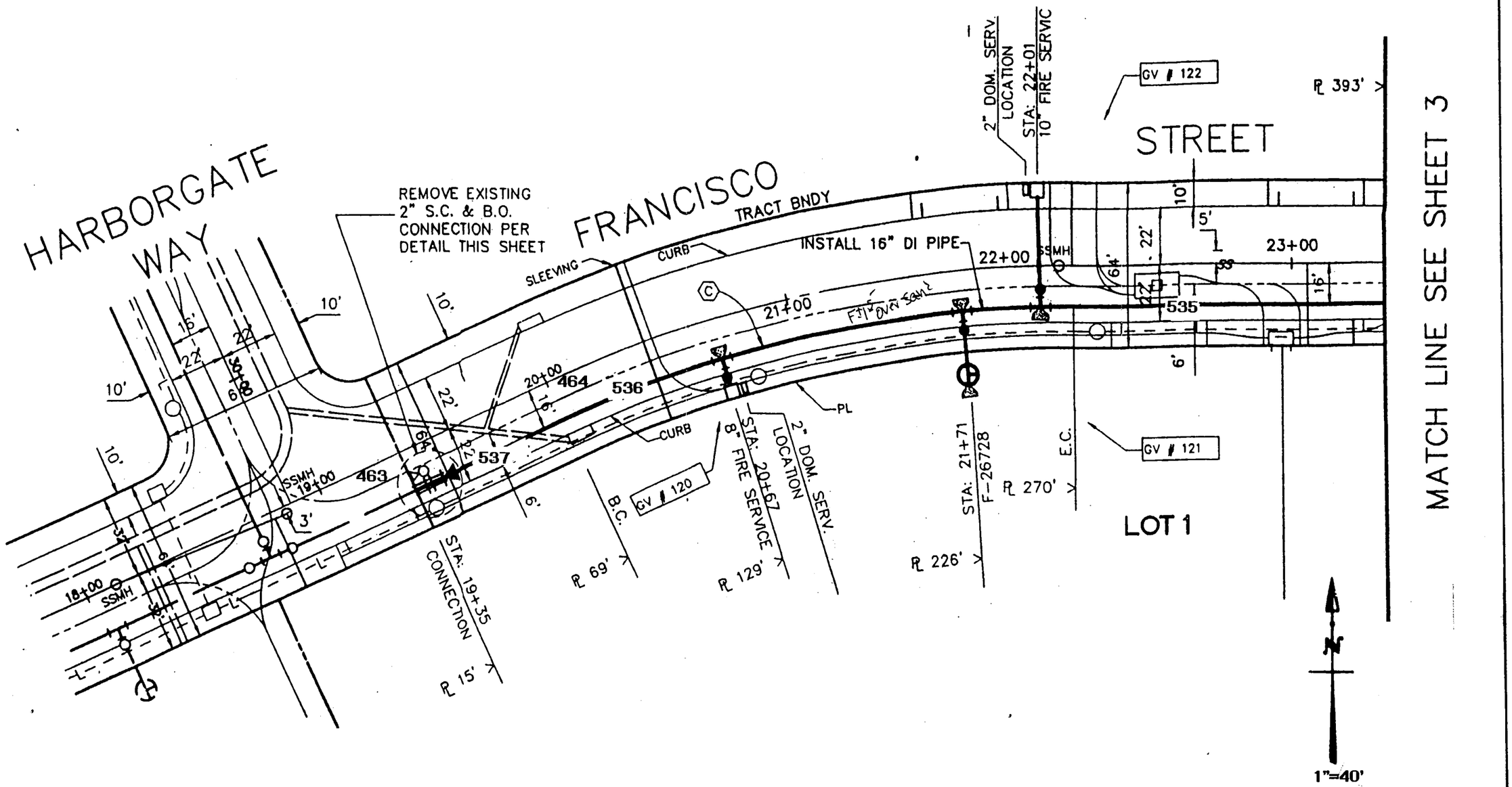

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FIGURE 20

BOE-C6-0079086

* Note: If installed pipe was lengthened from the original planned message the new and old move to be re-calculated per System Instruction 194.0100, in the field and documented on the "As Built" drawing.

Turn in all leak test documentation per System Instruction 194.0100 to the Planner at the Regional Headquarters at the conclusion of this job.

Initial / Date

___/___ 1) Install all new pipe, fittings and services per the design of the construction sketch and leak test from location A to location B. The new 4" PE94 main with air at 100 psig for 24 minutes* (System Instruction 194.0100) when the test is complete vent the test medium to atmosphere. .

___/___ 2) From a test fitting installed on existing main at location A verify pressure to be 28 psig and insert gas through newly tested main and purge location B for 100% gas verified with MSA gascope.

___/___ 3) At location A double pinch and tie-in new 4" main to existing 4" main release pinch and soap test tie-in and complete.

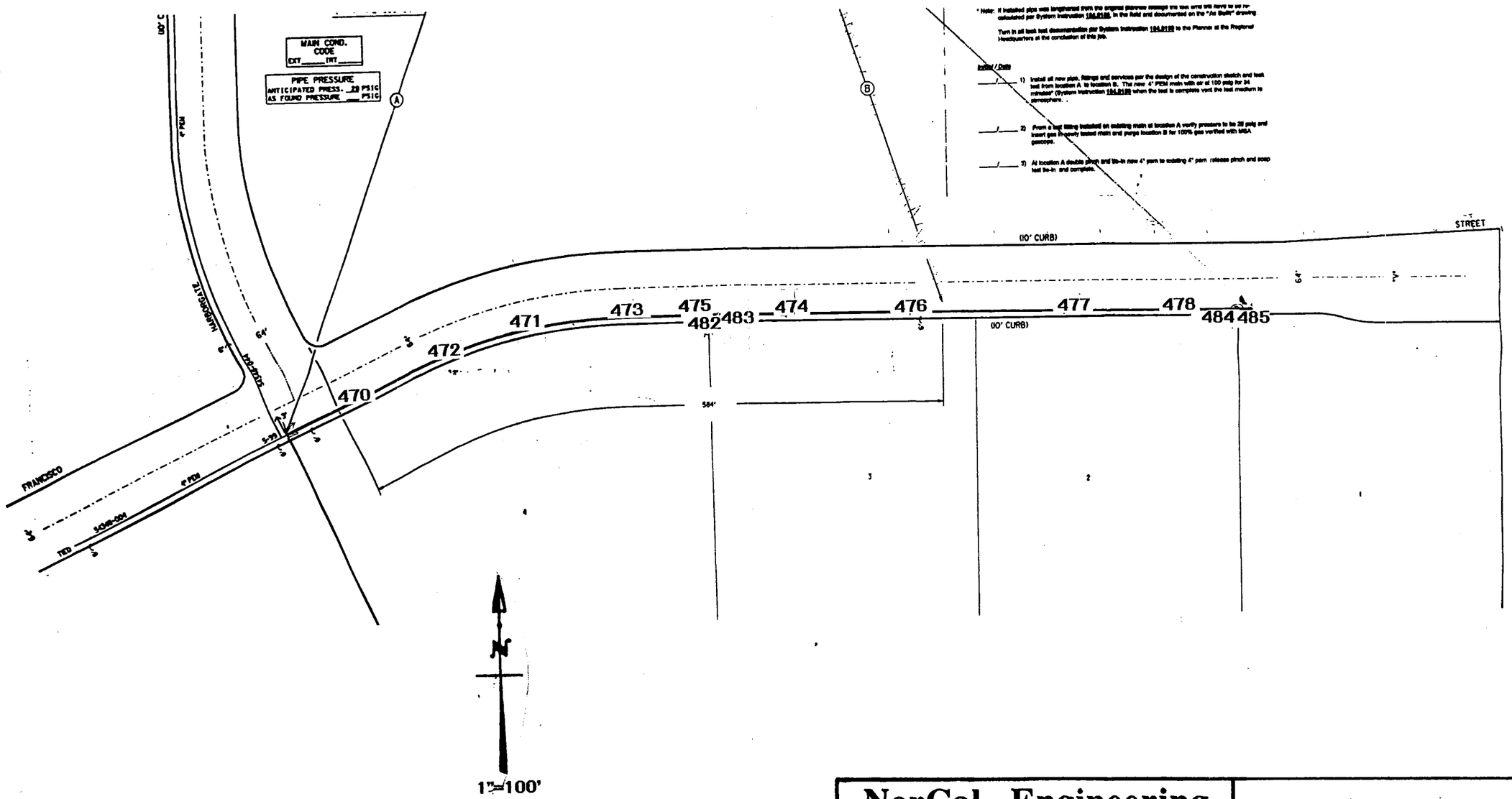

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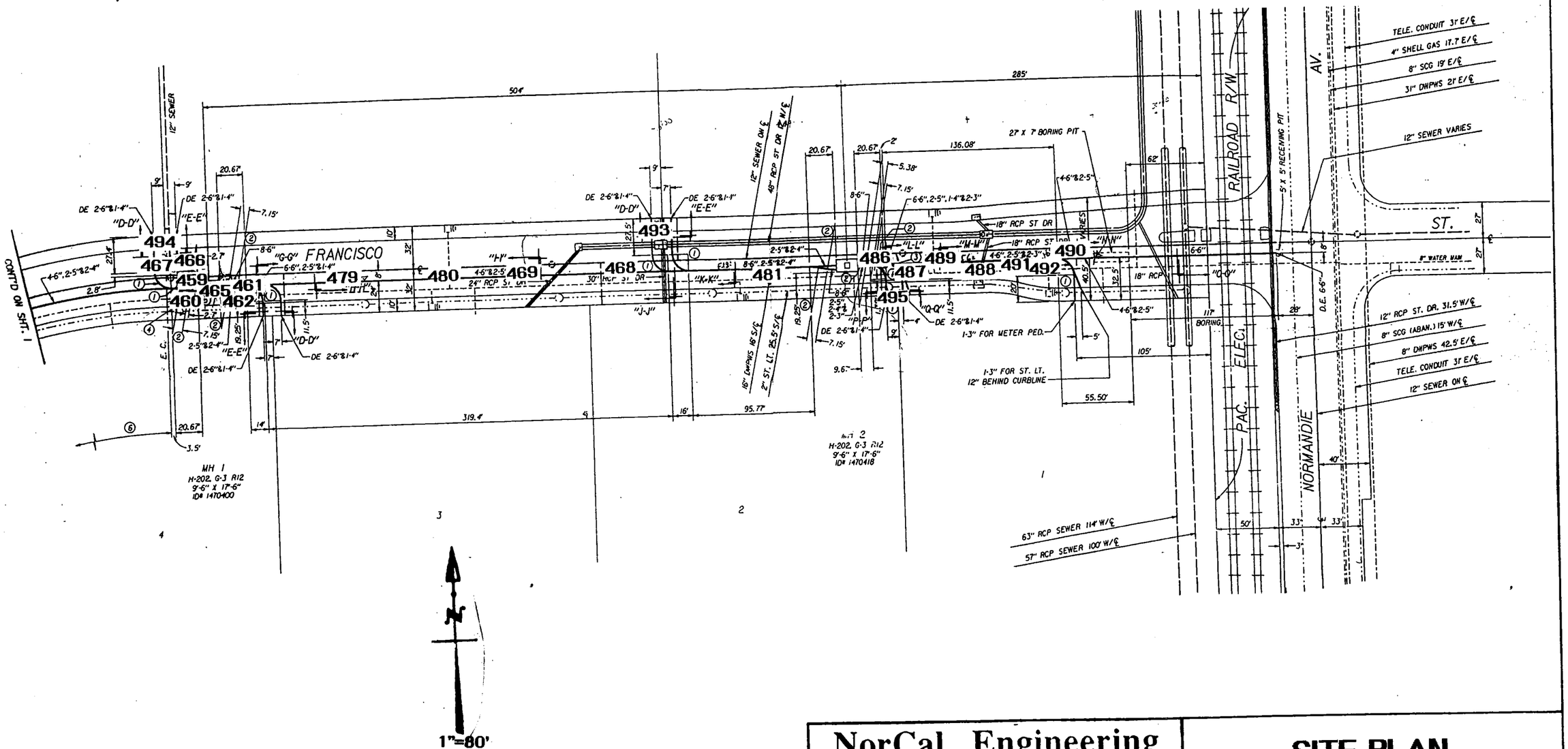
FIGURE 21

BOE-C6-0079087



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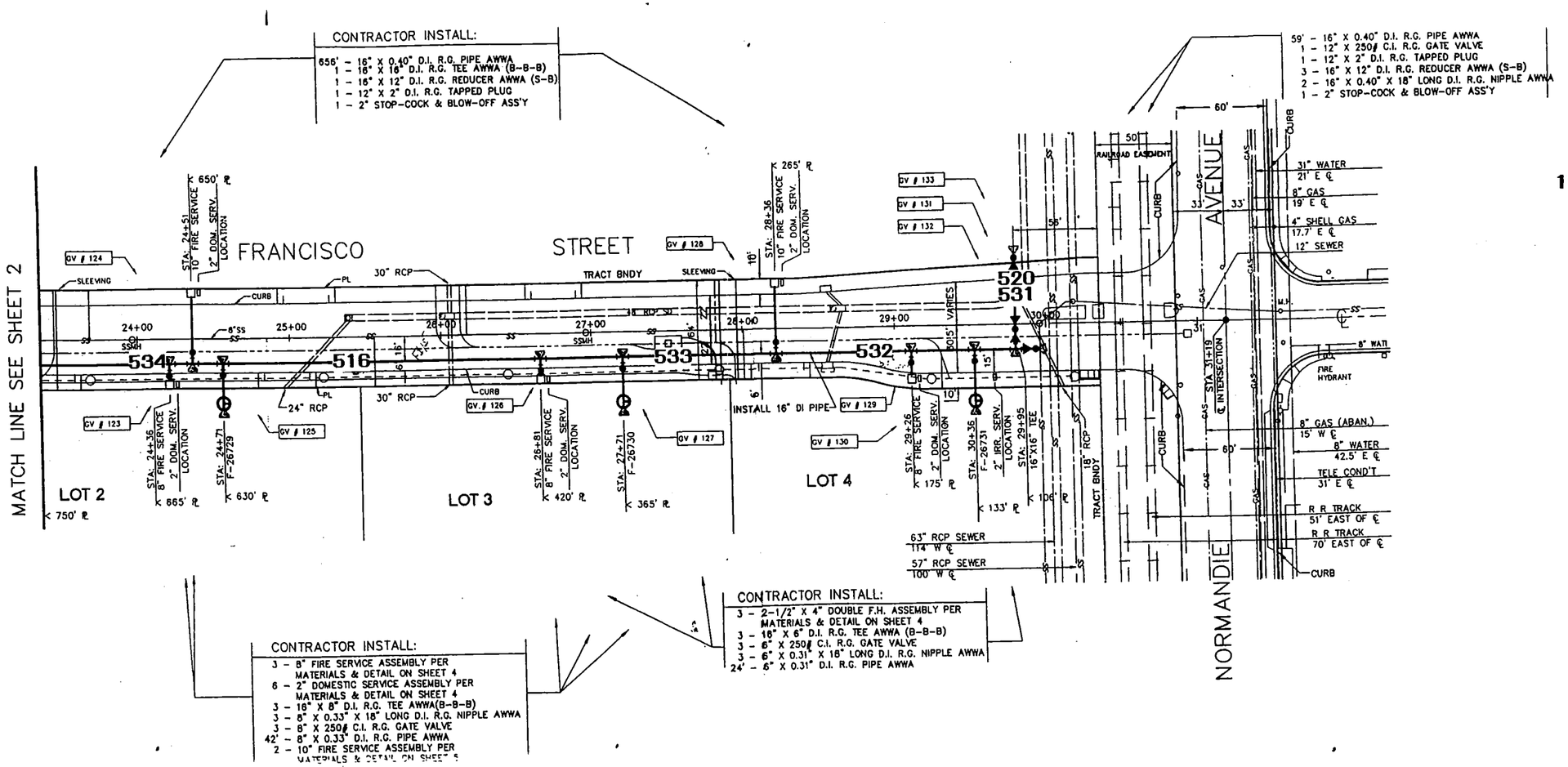
LOCATION OF COMPACTION TESTS

FIGURE 22

BOE-C6-0079088



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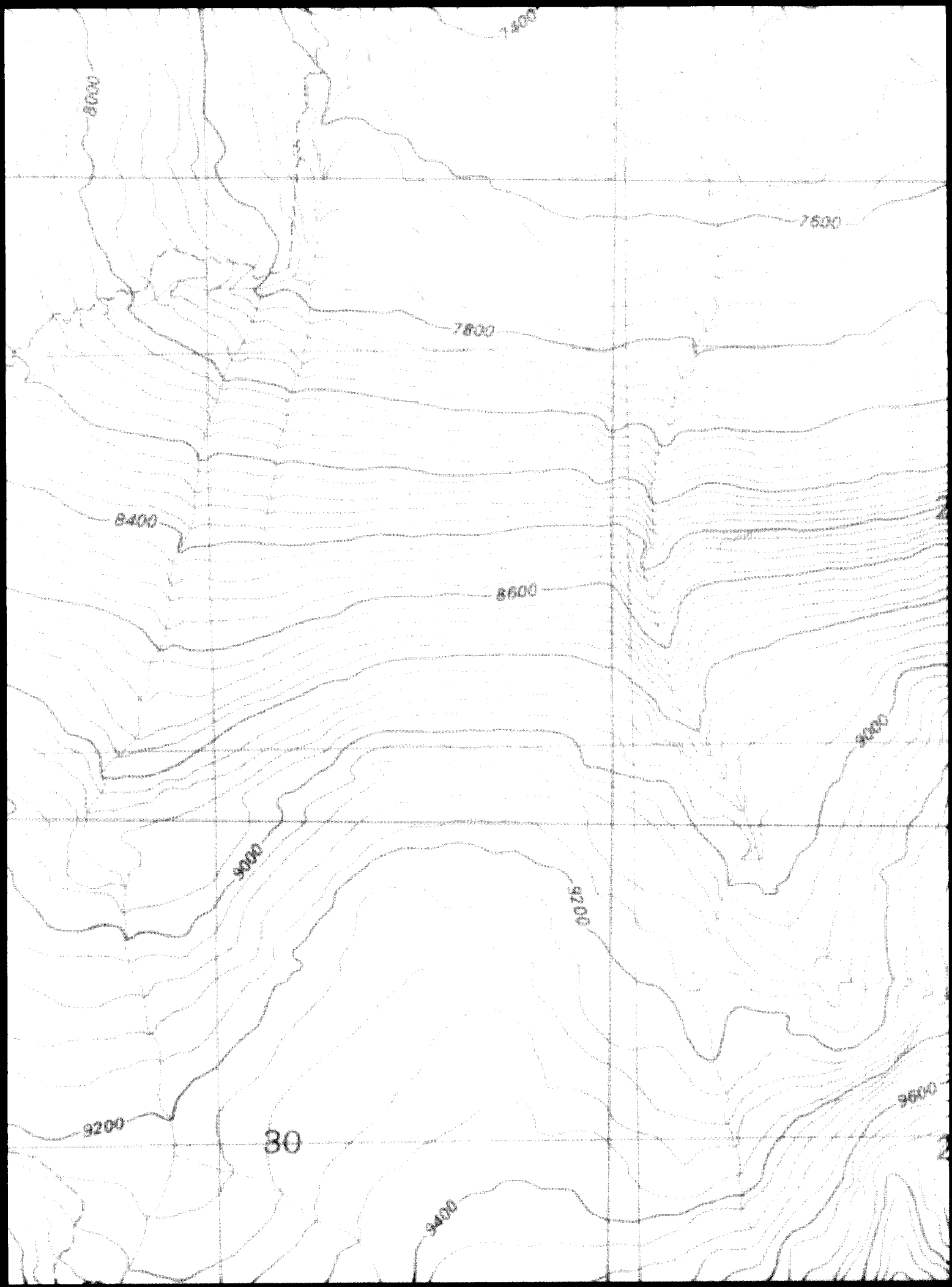
LOCATION OF COMPACTION TESTS

FIGURE 23

BOE-C6-0079089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9200
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