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CITY of NOVI CITY COUNCIL

Agenda Item I
August 13, 2007

SUBJECT: Approval to award a procurement contract to Kennedy Industries, Inc., the lowest responsive bidder, for three submersible sewage pumps for the Hudson Sanitary Pump Station Improvement project in the amount of $33,440.

SUBMITTING DEPARTMENT: Engineering

CITY MANAGER APPROVAL:

EXPENDITURE REQUIRED	**$33,440**
ESTIMATED AMOUNT	**$98,000**
APPROPRIATION REQUIRED	**N/A**
LINE ITEM NUMBER	**592-592.00-159.801**

BACKGROUND INFORMATION:

In June, Council awarded a contract to Stantec, Inc. to provide engineering services on a project to upgrade the equipment in the Hudson sanitary sewage pump station, located on the east side of Meadowbrook Road just north of I-96. The first major engineering task was to determine the type and performance characteristics of replacement pumps for the station. Stantec has now completed this task, and in order to expedite the overall project, a Request for Proposals was prepared for the purchase and delivery of three replacement pumps (Stantec's June 21 RFP, attached). Because lead time for pump delivery will be 8-9 weeks, procuring the pumps separately now will not delay completion of the overall station upgrade project. (A construction contract will be awarded in September for completing the pump station improvements.) Due to the specialized nature of the equipment, proposals were solicited from three qualified local suppliers to provide the submersible sewage pumps. Two proposals were received and opened on June 29, 2007 as follows:

Pump Supplier	Price
Hydrodynamics, Inc.	$28,038
Kennedy Industries, Inc.	**$33,400**
Dubois-Cooper, Inc.	Did Not Submit

Although the proposal received from Hydrodynamics, Inc. had the lowest price, Hydrodynamics was deemed to be non-responsive because several items required in the RFP were not addressed. Also, Hydrodynamics' delivery time could be as much as three weeks longer than that proposed by Kennedy Industries (Stantec's July 11 review letter, attached). Kennedy proposed to provide pumps manufactured by ITT-Flygt, which is a brand of pump that the City's Water & Sewer Department staff report have performed very well in other City pump stations. Additionally, Water & Sewer staff have worked with Kennedy in the past and have been pleased with their level of service. For these reasons, Kennedy Industries' proposal is recommended as being in the best interest of the City.

RECOMMENDED ACTION: Approval to award a procurement contract to Kennedy Industries, Inc., the lowest responsive bidder, for three submersible sewage pumps for the Hudson Sanitary Pump Station Improvement project in the amount of $33,440.

	1	2	Y	N
Mayor Landry				
Mayor Pro Tem Capello				
Council Member Gatt				
Council Member Margolis				

	1	2	Y	N
Council Member Mutch				
Council Member Nagy				
Council Member Paul				

Stantec Consulting Michigan Inc.
3959 Research Park Drive
Ann Arbor MI 48108-2216
Tel: (734) 761-1010
Fax: (734) 761-1200

Stantec

June 21, 2007
File: 2075105200

Mr. Wally Deaton
Hydro Dynamics
6200 Delfield Industrial Drive
Waterford, Michigan 48329

Mr. Barry Simescu
DuBois-Cooper Associates
905 Penniman
P.O. Box 6161
Plymouth, Michigan 48170

Mr. Steve Sadler
Kennedy Industries, Inc.
4975 Technical Drive
P.O. Box 809
Milford, Michigan 48381

Dear Sirs:

Reference: **City of Novi, Michigan**
Hudson Sanitary Pump Station Request for Bids

The City of Novi intends to perform improvements to their Hudson Sanitary Pump Station. The City is considering to pre-purchase the replacement pumps and would provide them to the Contractor as owner-furnished equipment.

The availability of the pumps has been identified as the critical path to this project. It is therefore desirable to pre-purchase the pumps to ensure the shortest path to project completion. The existing pumps are either damaged or inoperable and the availability of the new pumps is critical to the success of this project.

Consequently, we are requesting bid packages from you which should include the following:

1. Furnish three (3) submersible wastewater pumps meeting the specifications attached herein. Each pump shall be rated for 960 GPM at 40 feet TDH, 6" discharge, 20 HP, 208V, 3 phase. The pumps shall be equipped with explosion proof inverter duty rated motors.

2. Furnish accessories for each pump including:

   - Stainless steel lifting chain 40 feet in length

   - Stainless steel guide rails (minimum of 2 per pump), stainless steel intermediate guide rail brackets, and stainless steel upper guide rail brackets

   - 6" x 8" discharge elbow and heavy duty stainless steel anchor bolts suitable for retrofit application. Please note that the existing discharge piping is 8-inch diameter.

Reference: **City of Novi, Michigan**
Hudson Sanitary Pump Statio

3. Provide a detailed Bill of Materials.

4. Furnish shop drawings (with certified test curves to follow) no later than 10 business days from the Notice of Acceptance.

5. Shop drawings shall include specifications, materials of construction, performance curves, VFD curves, dimensional cut sheets, wiring diagrams, warranty information, etc.

6. The three (3) pumps must be capable of being mounted and operating at 24-inches on center. Please refer to the attached drawing of the existing pump station.

7. Provide start-up assistance, 4 hours in one trip.

8. Pumps and accessories must be fabricated and delivered to the Owner (or installing Contractor) no later than 8 weeks after shop drawings are approved. Liquidated damages in the amount of $800 per day will apply beyond this date. Provide a schedule of events to confirm the proposed dates.

9. Provide a firm price and delivery schedule.

10. It is anticipated that Notice of Acceptance will occur in early August.

Please submit three (3) copies of your bid package by Friday, June 29, 2007 at 3:00 p.m. to this office attention Mr. Aaron Uranga, PE.

If you have any questions or need further information, please do not hesitate to contact us. Thank you.

Sincerely,

STANTEC CONSULTING MICHIGAN INC.

Aaron A. Uranga, PE
Senior Project Engineer
Tel: (734) 214-1863
Fax: (734) 761-1200
aaron.uranga@stantec.com

Attachment: Drawings – Existing Pump Station (2 drawings)
Specifications – Submersible Pumps and Accessories

c. Rob Hayes, City of Novi
Brian Coburn, City of Novi
George Tsakoff, Stantec
Glen Wiczorek, Stantec

1.00 GENERAL

1.01 DESCRIPTION

A. Furnish three (3) submersible non-clog wastewater pumps and accessories. Pumps shall be as specified herein. Refer to the Request for Bids for other requirements.

B. Pumps shall be of the submersible quick-disconnect type. The design shall be such that the pumping units can be easily removed from the wet well for inspection or service without disconnecting or disturbing the discharge piping. The design shall permit the pumps, when lowered into place, to be automatically and firmly connected to the discharge piping by positively locking the volute in position to prevent any axial or lateral movement. There shall be no need for personnel to enter the wet well to inspect or service the pumps.

1.02 SUBMITTALS

A. The CONTRACTOR, prior to purchasing the pumping units, shall submit to the ENGINEER, at least eight (8) copies of characteristic curves and dimension sheets for the pumps which he proposes to furnish to meet the required conditions.

1.03 TESTING

A. All pumps shall be tested at the manufacturer's plant, and prior to shipment certified copies of such tests shall be submitted to the ENGINEER in triplicate for final review and acceptance. Test data shall include head capacity curves from zero head to shut-off, brake horsepower, and efficiency. Certified tests shall conform to the operating requirements specified.

1.04 MANUFACTURERS

A. The pumps shall be as manufactured by ITT Flygt, Gorman-Rupp or ABS.

2.00 PRODUCTS

2.01 PUMPS

A. The pumps shall be supplied with a mating cast iron 6 inch by 8 inch discharge connection and be capable of delivering 960 GPM at 40 FT. TDH. The pumps shall be automatically and firmly connected to the discharge connection, guided by no less than two guide bars per pump extending from the top of the station to the discharge connection. There shall be no need for personnel to enter the wet-well. Sealing of the pumping unit to the discharge connection shall be accomplished by a machined metal-to-metal watertight contact. Sealing of the discharge interface with a diaphragm, O-ring or profile gasket will not be acceptable. No portion of the pump shall bear directly on the sump floor. Each pump shall be fitted with 40 feet of stainless steel lifting chain. Each pump shall be furnished complete with stainless steel guide rails, stainless steel intermediate guide rail brackets, and stainless steel upper guide rail brackets. The working load of the lifting system shall be 50% greater than the pump unit weight.

B. Major pump components shall be of gray cast iron, ASTM A-48, Class 35B, with smooth surfaces devoid of blow holes or other irregularities. All exposed nuts or bolts shall be of stainless steel construction. All metal surfaces coming into contact with the pumpage, other than stainless steel or brass, shall be protected by a factory applied spray coating of acrylic dispersion zinc phosphate primer with a polyester resin paint finish on the exterior of the pump.

C. Sealing design shall incorporate metal-to-metal contact between machined surfaces. Critical mating surfaces where watertight sealing is required shall be machined and fitted with Nitrile or Viton rubber O-rings. Fittings will be the result of controlled compression of rubber O-rings in two planes and O-ring contact of four sides without the requirement of a specific torque limit.

Rectangular cross sectioned gaskets requiring specific torque limits to achieve compression shall not be considered as adequate or equal. No secondary sealing compounds, elliptical O-rings, grease or other devices shall be used.

D. Each unit shall be provided with an integral motor cooling system. A motor cooling jacket shall encircle the stator housing, providing for dissipation of motor heat regardless of the type of pump installation. An impeller, integral to the cooling system and driven by the pump shaft, shall provide the necessary circulation of the cooling liquid through the jacket. The cooling liquid shall pass about the stator housing in the closed loop system in turbulent flow providing for superior heat transfer. The cooling system shall have one fill port and one drain port integral to the cooling jacket. The cooling system shall provide for continuous pump operation in liquid or ambient temperatures of up to 104°F (40°C). Operational restrictions at temperatures below 104°F are not acceptable. Fans, blowers or auxiliary cooling systems that are mounted external to the pump motor are not acceptable.

E. The cable entry seal design shall preclude specific torque requirements to insure a watertight and submersible seal. The cable entry shall consist of dual cylindrical elastomer grommets, flanked by washers, all having a close tolerance fit against the cable outside diameter and the entry inside diameter. The grommets shall be compressed by the cable entry unit, thus providing a strain relief function. The assembly shall provide ease of changing the cable when necessary using the same entry seal. The cable entry junction chamber and motor shall be sealed from each other, which shall isolate the stator housing from foreign material gaining access through the pump top. Epoxies, silicones, or other secondary sealing systems shall not be considered equal.

F. The pump motor shall be a NEMA B design, induction type with a squirrel cage rotor, shell type design, housed in an air filled, watertight chamber. The stator windings shall be insulated with moisture resistant Class H insulation rated for 180°C (356°F). The stator shall be insulated by the trickle impregnation method using Class H monomer-free polyester resin resulting in a winding fill factor of at least 95%. The motor shall be inverter duty rated in accordance with NEMA MG1, Part 31.The stator shall be heat-shrink fitted into the cast iron stator housing. The use of multiple step dip and bake-type stator insulation process is not acceptable. The use of pins, bolts, screws or other fastening devices used to locate or hold the stator and that penetrate the stator housing are not acceptable. The motor shall be designed for continuous duty while handling pumped media of up to 104°F. The motor shall be capable of withstanding at least 15 evenly spaced starts per hour. The rotor bars and short circuit rings shall be made of aluminum. Three thermal switches shall be embedded in the stator end coils, one per phase winding, to monitor the stator temperature. These thermal switches shall be used in conjunction with and supplemental to external motor overload protection and shall be connected to the motor control panel. The junction chamber shall be sealed off from the stator housing and shall contain a terminal board for connection of power and pilot sensor cables using threaded compression type terminals. The use of wire nuts or crimp-type connectors is not acceptable. The motor and the pump shall be produced by the same manufacturer. Motors shall be 208 volt, 3-phase, 60 hz. Motors shall be 20 horsepower minimum to allow for future expansion of pump capacity via impeller replacement.

The motor service factor (combined effect of voltage, frequency and specific gravity) shall be 1.15. The motor shall have a voltage tolerance of +/- 10%. The motor shall be designed for continuous operation in up to a 40°C ambient and shall have a NEMA Class B maximum operating temperature rise of 80° C. A motor performance chart shall be provided upon request exhibiting curves for motor torque, current, power factor, input/output kW and efficiency. The

chart shall also include data on motor starting and no-load characteristics.

Motor horsepower shall be sufficient so that the pump is non-overloading throughout its entire performance curve, from shut-off to run-out. The motor and cable shall be capable of continuous submergence underwater without loss of watertight integrity to a depth of 65 feet or greater.

G. The integral pump/motor shaft shall rotate on two bearings. The motor bearings shall be sealed and permanently grease lubricated with high temperature grease. The upper motor bearing shall be a single ball type bearing to handle radial loads. The lower bearing shall be a two row angular contact ball bearing to handle the thrust and radial forces. The minimum L_{10} bearing life shall be 50,000 hours at any usable portion of the pump curve.

H. Each pump shall be provided with a positively driven dual, tandem mechanical shaft seal system consisting of two seal sets, each having an independent spring. The lower primary seal, located between the pump and seal chamber, shall contain one stationary and one positively driven rotating corrosion resistant tungsten-carbide ring. The upper secondary seal, located between the seal chamber and the seal inspection chamber, shall contain one stationary and one positively driven rotating corrosion resistant tungsten-carbide seal ring. All seal rings shall be individual solid sintered rings. Each seal interface shall be held in place by its own spring system. The seals shall not depend upon direction of rotation for sealing. Mounting of the lower seal on the impeller hub is not acceptable. Shaft seals without positively driven rotating members or conventional double mechanical seals containing either a common single or double spring acting between the upper and lower seal faces are not acceptable. The seal springs shall be isolated from the pumped media to prevent materials from packing around them, limiting their performance.

Each pump shall be provided with a lubricant chamber for the shaft sealing system. The lubricant chamber shall be designed to prevent overfilling and shall provide capacity for lubricant expansion. The seal lubricant chamber shall have one drain and one inspection plug that are accessible from the exterior of the motor unit. The seal system shall not rely upon the pumped media for lubrication.

The area about the exterior of the lower mechanical seal in the cast iron housing shall have cast in an integral concentric spiral groove. This groove shall protect the seals by causing abrasive particulate entering the seal cavity to be forced out away from the seal due to centrifugal action.

A separate seal leakage chamber shall be provided so that any leakage that may occur past the upper, secondary mechanical seal will be captured prior to entry into the motor stator housing. Such seal leakage shall not contaminate the motor lower bearing. The leakage chamber shall be equipped with a float type switch that will signal if the chamber should reach 50% capacity.

I. The pump and motor shaft shall be a single piece unit. The pump shaft is an extension of the motor shaft. Shafts using mechanical couplings shall not be acceptable. The shaft shall be stainless steel – ASTM A479 S43100-T. Shaft sleeves will not be acceptable.

J. The impeller shall be of gray cast iron, ASTM A-48 Class 35B, dynamically balanced, semi-open, multi-vane, back swept, screw-shaped, non-clog design. The impeller leading edges shall be mechanically self-cleaned automatically upon each rotation as they pass across a spiral groove located on the volute suction. The screw-shaped leading edges of the impeller shall be hardened to Rc 45 and shall be capable of handling solids, fibrous materials, heavy sludge and other matter normally found in wastewater. The screw shape of the impeller inlet shall provide an inducing effect for the handling of up to 6% sludge and rag-laden wastewater. The impeller to volute clearance shall be readily adjustable by the means of a single trim screw. The impeller shall be locked to the shaft and held by an impeller bolt.

K. The pump volute shall be a single piece gray cast iron, ASTM A-48, Class 35B, non-concentric design with smooth passages of sufficient size to pass any solids that may enter the impeller. Minimum inlet and discharge size shall be as specified. The volute shall have a replaceable volute insert ring containing spiral-shaped, sharp-edged groove(s). The spiral groove(s) shall provide the relief path and sharp edge(s) across which each impeller vane leading edge shall cross during rotation so to remain unobstructed. The internal volute bottom shall provide effective sealing between the multi-vane semi-open impeller and the volute. The insert ring shall be cast of (ASTM A-48 Class 35B cast iron or ASTM A 532 (Alloy III A), 25% chrome cast iron).

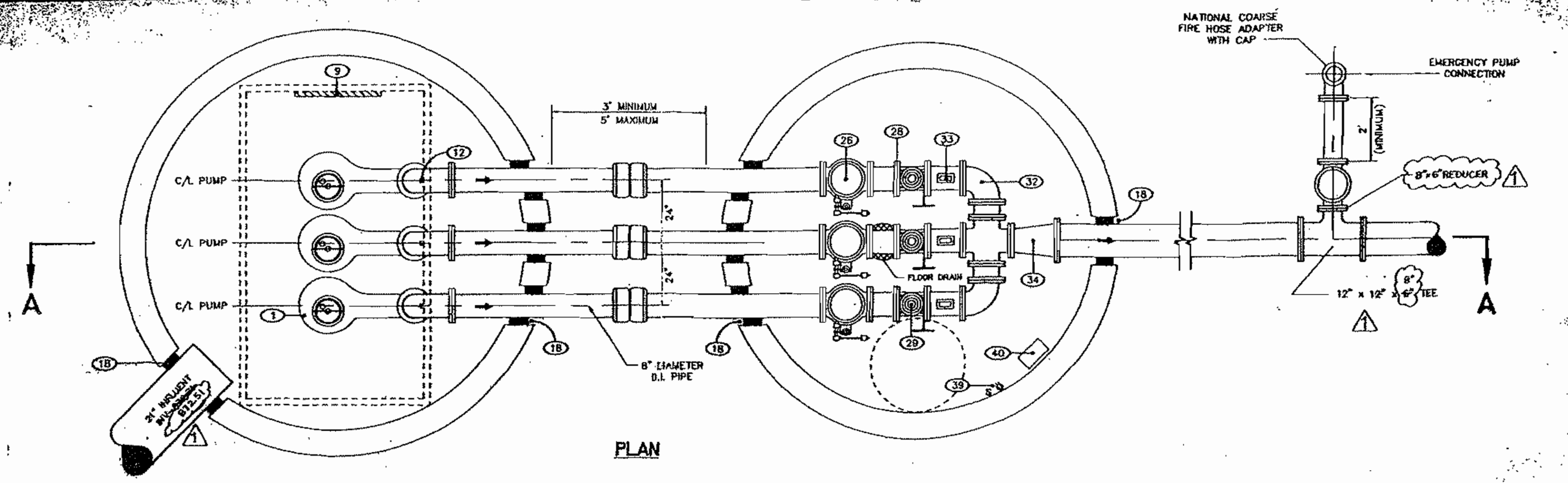
L. Each pump motor stator shall incorporate three thermal switches, one per stator phase winding and be connected in series, to monitor the temperature of the motor. Should the thermal switches open, the motor shall stop and activate an alarm. A float switch shall be installed in the seal leakage chamber and will activate if leakage into the chamber reaches 50% chamber capacity, signaling the need to schedule an inspection.

The thermal switches and float switch shall be connected to a Multi-Trode Multi-Smart control and status monitoring unit (to be furnished and installed separately, by others).

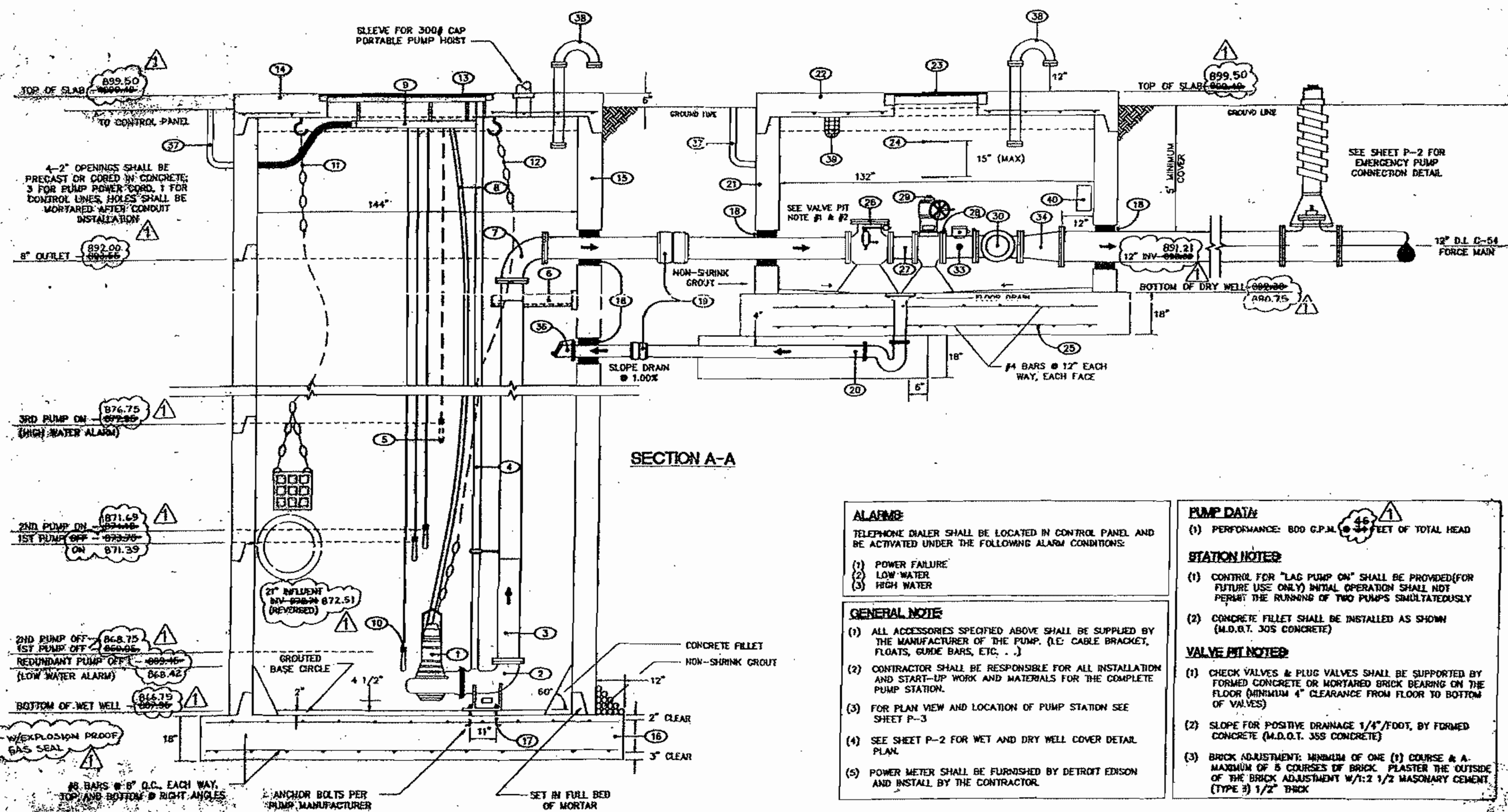
M. Provide pumps with 100 feet of submersible cable suitable for submersible pump applications.

END OF SECTION

MARK	QTY	DESCRIPTION
1	3	FLYGT C-3152 H.H. SUBMERSIBLE CENTRIFUGAL PUMP (IMPELLER ~~436~~ 434) W/ 8" AUTOMATIC DISCHARGE CONNECTION – 20 H.P. 1750 RPM OR APPROVED EQUAL (△1)
2	3	8" DISCHARGE CONNECTION W/ CLASS 125 FLANGE
3	3	8" DIAMETER FLANGED (CL 125) C.I. INTERIOR PIPING
4	3	2" STAINLESS STEEL GUIDE BARS (SUPPLIED BY MANUFACTURER)
5	3	INTERMEDIATE STEEL GUIDE BAR BRACKET
6	3	INTERMEDIATE PIPING BRACE
7	3	8" C.I. 90° LONG RADIUS ELBOW CLOW F-1804 OR APPROVED EQUAL
8	3	POWER CORD
9	3	CABLE HOLDER ASSEMBLY (ALL CABLES SHALL BE SUPPLIED WITH CABLE GRIPS) (SUPPLIED BY MANUFACTURER)
10	4	LIQUID LEVEL SENSORS ("LAG PUMP ON" FLOAT SHALL BE PROVIDED, BUT NOT INSTALLED) FLYGT ENH-10 OR EQUAL
11	1	HOOK & LIFTING CHAIN FOR TRASH BASKET REMOVAL (32' LONG)
12	3	HOOK & LIFTING CHAIN FOR PUMP REMOVAL (35' LONG)
13	1	ACCESS COVER (W/ 72" x 120" CLEAR OPENING) BILCO "JD" OR EQUAL CAST INTO PRECAST CONCRETE TOP
14	1	PRECAST CONCRETE TOP (SEE DETAIL SHEET # P-2)
15	1	144" I.D. PRECAST REINFORCED CONCRETE PIPE (ASTM C-478) W/ MODIFIED TONGUE & GROOVE RUBBER JOINT
16	1	176" O.D. PRECAST CONCRETE SLAB W/ SPIGOT PROTRUSION HAVING SAME DIMENSIONS AS SPIGOT END OF #15 "SUPER SEAL" PRECAST SLAB & SPIGOT (W/ CONCRETE INTERIOR) SHALL BE MONOLITHIC
17	6	3/4" S. STEEL BOLTS W/2 1/2" PROTUSION
18	10	RESILIENT FLEXIBLE CONNECTION CAST INTO WALL
19	4	DOUBLE HUB COUPLING, CLOW F-257, OR APPROVED EQUAL
20	1	4" C.I. DRAIN (W/TRAP ENCASED IN 12"x 18" 3500 PSI POURED CONCRETE & FLOOR DRAIN FRAME W/HINGED STRAINER
21	1	132" I.D. PRECAST REINFORCED CONCRETE PIPE (ASTM C-478) W/ MODIFIED TONGUE & GROOVE RUBBER JOINT
22	1	PRECAST CONCRETE TOP (SEE DETAIL SHEET P-2)
23	1	VALVE PIT FRAME & COVER NEEHAH R-6665 DNH OR APPROVED EQUAL W/EXPOSED HEAD HEX BOLTS PLACED IN MORTAR BED
24	6	STEEL STEPS ENCASED IN PROPYLENE PLASTIC M.A. INDUSTRIES PS-1 OR PS-1-B
25	1	176" O.D. PRECAST CONCRETE SLAB W/ SPIGOT PROTRUSION HAVING SAME DIMENSION RUBBER JOINT" PRECAST SLAB & SPIGOT (W/INTERIOR) SHALL BE MONOLITHIC
26	3	8" CUSHIONED CHECK VALVE (GOLDEN ANDERSON BULLETIN W-11A OR EQUAL)
27	3	8" DIA x 8" LNG C.I. PIPE W/FLANGE AND VICTAULIC GROOVED ENDS
28	3	8" VICTAULIC COUPLING – STYLE 77 (STANDARD)
29	3	8" PLUG VALVE–HANDWHEEL ACTUATED–DEZURIK 0800, FIG. 118, V, 6, RS16, AGG 8HB OR APPROVED EQUAL
30	2	8" C.I. CROSS CLOW F-823 OR APPROVED EQUAL
31	2	8" DIA x 15" LNG C.I. PIPE W/FLANGE AND VICTAULIC GROOVED ENDS
32	2	8" C.I. 90° ELBOW, CLOW F-1804 OR APPROVED EQUAL
33	3	8" MAGNETIC FLOW METER–FISCHER PORTER "FSCC" OR APPROVED EQUAL
34	1 △1	8" x ~~12"~~ 16" C.I. CONCENTRIC REDUCER CLOW F-834 OR APPROVED EQUAL
35	1	12" C.I. 90° LONG RADIUS ELBOW CLOW F-1804 OR APPROVED EQUAL
36	2	4" FLANGED FLAP VALVE W/NEOPRENE SEAT NEENAH R-5004 OR APPROVED EQUAL
37	2	2" DIA STEEL CONDUIT TO CONTROL PANEL (W/EXPLOSION PROOF GAS SEAL △1)
38	2	4" DIA VENT W/BIRD SCREEN
39	1	INCANDESCENT LIGHT W/EXPLOSION PROOF STEEL CAGE, 200W., MANUAL SWITCH FOR LIGHT AND VENT FAN
40	1	DEHUMIDIFIER



PLAN



SECTION A-A

ALARMS:

TELEPHONE DIALER SHALL BE LOCATED IN CONTROL PANEL AND BE ACTIVATED UNDER THE FOLLOWING ALARM CONDITIONS:

(1) POWER FAILURE
(2) LOW WATER
(3) HIGH WATER

GENERAL NOTE:

(1) ALL ACCESSORIES SPECIFIED ABOVE SHALL BE SUPPLIED BY THE MANUFACTURER OF THE PUMP. (I.E: CABLE BRACKET, FLOATS, GUIDE BARS, ETC. . .)

(2) CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INSTALLATION AND START-UP WORK AND MATERIALS FOR THE COMPLETE PUMP STATION.

(3) FOR PLAN VIEW AND LOCATION OF PUMP STATION SEE SHEET P-3

(4) SEE SHEET P-2 FOR WET AND DRY WELL COVER DETAIL PLAN.

(5) POWER METER SHALL BE FURNISHED BY DETROIT EDISON AND INSTALL BY THE CONTRACTOR.

PUMP DATA:

(1) PERFORMANCE: 800 G.P.M. @ ~~34~~ 46 FEET OF TOTAL HEAD (△1)

STATION NOTES:

(1) CONTROL FOR "LAG PUMP ON" SHALL BE PROVIDED(FOR FUTURE USE ONLY) INITIAL OPERATION SHALL NOT PERMIT THE RUNNING OF TWO PUMPS SIMULTATEOUSLY

(2) CONCRETE FILLET SHALL BE INSTALLED AS SHOWN (M.D.O.T. 30S CONCRETE)

VALVE PIT NOTES:

(1) CHECK VALVES & PLUG VALVES SHALL BE SUPPORTED BY FORMED CONCRETE OR MORTARED BRICK BEARING ON THE FLOOR (MINIMUM 4" CLEARANCE FROM FLOOR TO BOTTOM OF VALVES)

(2) SLOPE FOR POSITIVE DRAINAGE 1/4"/FOOT, BY FORMED CONCRETE (M.D.O.T. 35S CONCRETE)

(3) BRICK ADJUSTMENT: MINIMUM OF ONE (1) COURSE & A MAXIMUM OF 5 COURSES OF BRICK. PLASTER THE OUTSIDE OF THE BRICK ADJUSTMENT W/1:2 1/2 MASONARY CEMENT (TYPE 3) 1/2" THICK

△1 CHANGE ORDER #1

JCK & ASSOCIATES, INC.
45650 GRAND RIVER AVENUE
NOVI, MICHIGAN 48376
PHONE (313) 348-2680
FAX (313) 348-2777

HUDSON DISTRICT SANITARY SEWER
SANITARY SEWER PUMP STATION

Drawn JRB
Designed JRB
Checked
Scale 1"=2'
Date 6-23-92
Job No. N-2957
Sheet No. P-1

OAKLAND COUNTY SOIL SURVEY

AQUENTS, SANDY AND LOAMY, UNDULATING. THIS MAP UNIT CONSISTS OF SOMEWHAT POORLY DRAINED SOILS THAT HAVE BEEN SO ALTERED THAT CLASSIFICATION AT THE SERIES LEVEL IS NOT FEASIBLE. THESE SOILS RANGE IN TEXTURE FROM SAND TO CLAY LOAM. THEY MAKE UP AREAS OF 3 TO 30 ACRES. IN MOST AREAS, THESE SOILS HAVE BEEN COVERED BY FILL MATERIAL IN A FEW AREAS, SOIL MATERIAL HAS BEEN EXCAVATED.

INCLUDED IN MAPPING ARE MODERATELY SLOPING TO VERY STEEP SOILS ALONG THE OUTER EDGES OF THE MAPPED AREAS. THEY ARE MORE ERODIBLE. INCLUDED ALSO ARE A FEW AREAS OF MARL OR CLAY AND SOME AREAS WHERE ORGANIC MATERIAL IS BELOW 2 TO 4 FEET OF THE FILL MATERIAL IS A MIXTURE OF ORGANIC AND MINERAL MATERIALS. THE INCLUDED SOILS MAKE UP 5 TO 30 PERCENT OF THIS MAP UNIT.

THE HIGH WATER TABLE IS AT A DEPTH OF 2 FEET TO NEAR THE SURFACE FROM OCTOBER TO MAY. PERMEABILITY, REACTION, AND AVAILABLE WATER CAPACITY ARE VARIABLE. SURFACE RUNOFF IS SLOW TO THE PONDED. THE SOIL MATERIAL IS GENERALLY VERY LOW IN ORGANIC MATTER CONTENT.

IN MOST AREAS THESE SOILS ARE IDLE LAND. IN A FEW AEAS THEY ARE USED FOR URBAN DEVELOPMENT, PASTURE, OR RECREATION USES. THESE SOILS GENERALLY ARE POORLY SUITED TO CROPLAND USE. ONSITE EVALUATION IS NEEDED TO DETERMINE THEIR SUITABILITY FOR WOODLAND, PASTURE, AND RECREATION USES AND FOR BUILDING SITE DEVELOPMENT

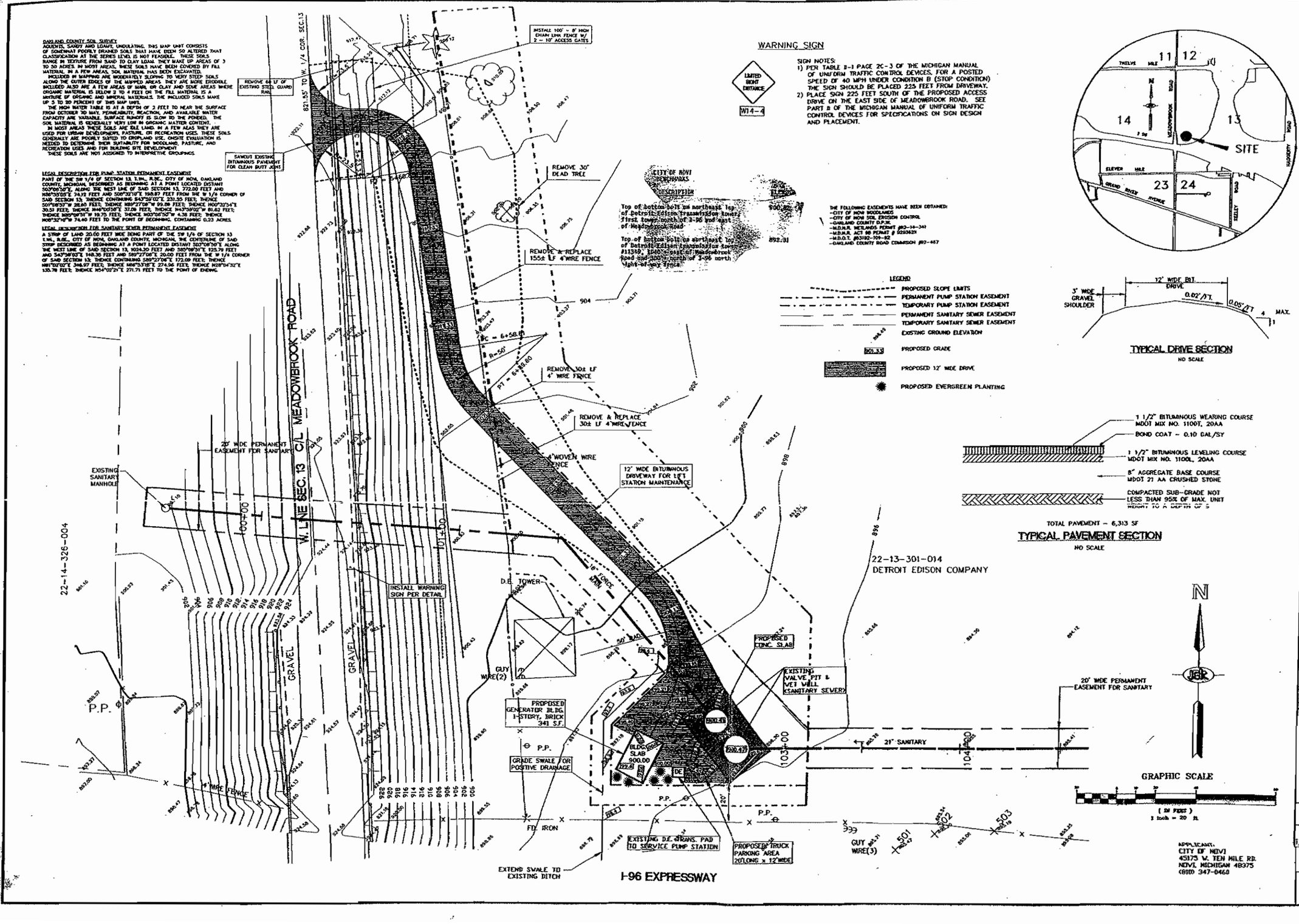
THESE SOILS ARE NOT ASSIGNED TO INTERPRETIVE GROUPINGS.

LEGAL DESCRIPTION FOR PUMP STATION PERMANENT EASEMENT

PART OF THE SW 1/4 OF SECTION 13, T.1N., R.8E., CITY OF NOVI, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS BEGINNING AT A POINT LOCATED DISTANT S03°06'56"E, ALONG THE WEST LINE OF SAID SECTION 13, 772.00 FEET AND N86°53'04"E, 198.87 FEET FROM THE W 1/4 CORNER OF SAID SECTION 13; THENCE CONTINUING S43°59'02"E 231.95 FEET; THENCE S03°06'56"E 28.80 FEET; THENCE N89°27'04"E 90.00 FEET; THENCE N00°33'04"E 30.53 FEET; THENCE N46°05'58"E 37.09 FEET; THENCE N43°59'02"W 81.62 FEET; THENCE N89°09'51"W 19.75 FEET; THENCE N03°06'56"W 4.38 FEET; THENCE N89°27'04"W 74.40 FEET TO THE POINT OF BEGINNING. CONTAINS 0.23 ACRES.

LEGAL DESCRIPTION FOR SANITARY SEWER PERMANENT EASEMENT

A STRIP OF LAND 20.00 FEET WIDE BEING PART OF THE SW 1/4 OF SECTION 13 T.1N., R.8E., CITY OF NOVI, OAKLAND COUNTY, MICHIGAN, THE CENTERLINE OF SAID STRIP DESCRIBED AS BEGINNING AT A POINT LOCATED DISTANT S03°06'56"E ALONG THE WEST LINE OF SAID SECTION 13, 1024.20 FEET AND S85°59'51"E 125.79 FEET AND S43°59'02"E 148.36 FEET AND S89°27'04"E 20.00 FEET FROM THE W 1/4 CORNER OF SAID SECTION 13; THENCE CONTINUING S89°27'04"E 172.00 FEET; THENCE N81°02'02"E 348.07 FEET; THENCE N86°53'58"E 274.56 FEET; THENCE N08°04'32"E 130.78 FEET; THENCE N54°05'21"E 271.71 FEET TO THE POINT OF ENDING.



WARNING SIGN

SIGN NOTES:
1) PER TABLE II-1 PAGE 2C-3 OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, FOR A POSTED SPEED OF 40 MPH UNDER CONDITION B (STOP CONDITION) THE SIGN SHOULD BE PLACED 225 FEET FROM DRIVEWAY.
2) PLACE SIGN 225 FEET SOUTH OF THE PROPOSED ACCESS DRIVE ON THE EAST SIDE OF MEADOWBROOK ROAD. SEE PART II OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR SPECIFICATIONS ON SIGN DESIGN AND PLACEMENT.

THE FOLLOWING EASEMENTS HAVE BEEN OBTAINED:
- CITY OF NOVI WOODLANDS
- CITY OF NOVI SOIL EROSION CONTROL
- OAKLAND COUNTY D.P.W.
- M.D.N.R. WETLANDS PERMIT #82-14-341
- M.D.N.R. ACT 98 PERMIT # 0293621
- M.D.O.T. #83182-109-82
- OAKLAND COUNTY ROAD COMMISSION #82-467

LEGEND

- PROPOSED SLOPE LIMITS
- PERMANENT PUMP STATION EASEMENT
- TEMPORARY PUMP STATION EASEMENT
- PERMANENT SANITARY SEWER EASEMENT
- TEMPORARY SANITARY SEWER EASEMENT
- 904.69 EXISTING GROUND ELEVATION
- 901.33 PROPOSED GRADE
- PROPOSED 12' WIDE DRIVE
- PROPOSED EVERGREEN PLANTING

TYPICAL DRIVE SECTION
NO SCALE

TOTAL PAVEMENT - 6,313 SF

TYPICAL PAVEMENT SECTION
NO SCALE

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

APPLICANT:
CITY OF NOVI
45175 W. TEN MILE RD.
NOVI, MICHIGAN 48375
(810) 347-0460

JCK & ASSOCIATES, INC.
45650 GRAND RIVER AVENUE
NOVI, MICHIGAN 48376
PHONE: (313) 348-2680
FAX: (313) 348-2777

PRELIMINARY AND FINAL SITE PLAN

HUDSON DISTRICT SANITARY SEWER SECTION 13

Revisions
FINAL 1-10-94

Drawn	PGH
Designed	JPB
Checked	JPB
Scale	1"=20'
Date	12-02-93
Job No.	N-2957
Sht. No.	P-3

Stantec Consulting Michigan Inc.
3959 Research Park Drive
Ann Arbor MI 48108-2216
Tel: (734) 761-1010
Fax: (734) 761-1200

Stantec

July 11, 2007
File: 2075105200

City of Novi, Michigan
45175 W. Ten Mile Road
Novi, MI 48375

Attention: **Mr. Brian Coburn, P.E.**

Dear Mr. Coburn:

Reference: **City of Novi, Michigan**
Hudson Sanitary Pump Station Improvements
Submersible Pump Bid Packages

Pursuant to your authorization, proposals were solicited from three (3) local pump suppliers for the new submersible pumps for the Hudson Sanitary Pump Station. Proposals were due to Stantec Consulting Michigan, Inc. at 3:00 PM on June 29, 2007.

A total of two (2) proposals were received for this project. The two (2) proposals for the project are as follows:

Bidder	Pumps Proposed	Proposal Price
Hydrodynamics, Inc.	ABS	$28,038
Kennedy Industries, Inc.	ITT – Flygt	$33,400

(No proposal was received from Dubois-Cooper, Inc., which supplies Gorman-Rupp pumps)

A summary of the proposals and proposal requirements is enclosed.

Having reviewed the proposal from Hydrodynamics, we have found several irregularities with their proposal compared to the proposal requirements. Based on the irregularities, we do not consider Hydrodynamics' proposal to be comparable to Kennedy's.

Having reviewed the proposal from Kennedy Industries, we have found no irregularities with their proposal.

We have provided a table summarizing the Bid Packages. Most notable was the difference in Delivery Schedules – Hydrodynamics noting that they could be as much as 4 weeks behind Kennedy. With the existing pumps in a state of disrepair, this difference in delivery schedules could be critical.

City of Novi staff have previously indicated a preference for ITT – Flygt pumps; based upon past performance, a desire to standardize all stations around one pump manufacturer, and the local service provided by Kennedy Industries out of Milford, Michigan.

Reference: City of Novi, Michigan
Hudson Sanitary Pump Station Improvements

Based upon the above and Stantec's review of the pumps, we recommend that the City of Novi accept Kennedy Industries proposal of Thirty-Three Thousand Four Hundred Forty and No/100 Dollars ($33,400.00), which includes freight costs but not taxes.

If you have any questions or need additional clarifications concerning this recommendation, please do not hesitate to contact us.

Sincerely,

STANTEC CONSULTING MICHIGAN INC.

Aaron Uranga, P.E.
Senior Project Engineer
Tel: (734) 214-1863
Fax: (734) 761-1200
aaron.uranga@stantec.com

Attachment: Bid Summary
Bid Packages

c. Glen Wiczorek, Stantec

tm v:\2075\active\2075105200\design\correspondence\let_bid_package_recommendation_20070709.doc

stantec.com

Stantec

City of Novi, Michigan

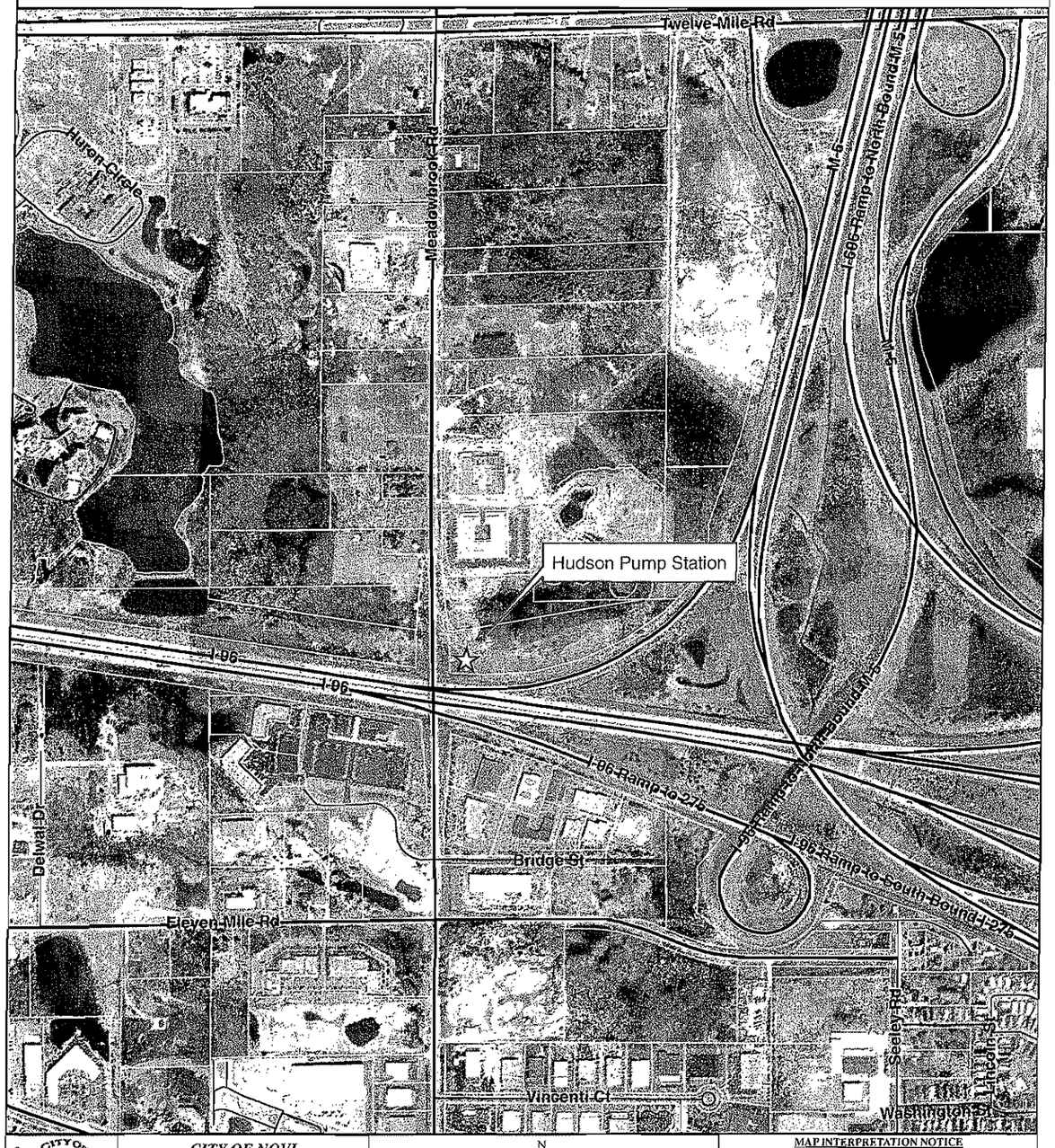
Hudson Sanitary Lift Station

Bid Package Summary

Requirement	Kennedy Steve Sadler 4975 Technical Drive Milford, MI 48381 (734) 684-1200 sjs@kennedyind.com	Hydrodynamics Wally Deaton 6200 Defield Industrial Drive Waterford, MI 4829 (248) 623-4700 wally@hydrodynamics.net	Dubois-Cooper Jim Cooper 905 Penniman Plymouth, MI 48170 (734) 455-6700 Jim@Duboiscooper.com
Pump Manufacturer	Flygt	ABS	No Bid Submitted
Total Price	$33,440	$28,038	
3 Submersible Pumps rated for 960 GPM at 40 TDH	Yes	Yes	
Horsepower at Design Point	14	13.4	
Inverter Duty Rated	Yes	Not specified	
Stainless Steel Lifting Chain	Yes	Yes	
Stainless Steel Guide Rails (2 per pump)	Yes	One per pump	
Stainless Steel Guide Rail Brackets (intermediate and upper)	Yes	Not specified	
6" x 8" Discharge Elbow	Yes	Yes	
Stainless Steel Anchor Bolts	4 - 3/4" bolts, 10" in length	Not specified	
Detailed Bill of Materials	Yes	No	
Pumps Capable of Being Mounted 24-inches on center	Yes	Not specified	
Start-up Assistance	As specified	As specified	
Less than 8 week Delivery Schedule	8-9 weeks	8-12 weeks	
Firm Price	Yes; for 30 days	30 day Material Costs provided	
Specifications	Yes	Yes	
Cutsheets	Yes	No	
Pump Warranty	Yes 5 years	Yes 5 years	

Location Map

Hudson Pump Station



CITY OF NOVI GEOGRAPHIC GIS INFORMATION SYSTEM

CITY OF NOVI
ENGINEERING DIVISION
45175 W. TEN MILE ROAD
NOVI, MI 48375
(248) 347-0454
WWW.CI.NOVI.MI.US

N W E S

0 295 590 1,180 1,770
FEET
1 INCH EQUALS 764 FEET

MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.