

NOWAK & **FRAUS**

Consulting Engineers Land Surveyors

Land Planners

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BENCHMARKS

OFF-SITE BENCHMARKS

NEO 416: A standard U.S. Corps of Engineers bronze tablet stamped *760.166 D 32 1938* at Rochester, Oakland County, at the Southwest Corner of the intersection of Main and Fourth Streets, at the First National Bank, at the Northeast corner of the building, in the concrete ledge at the base of the window, and 3.4 feet above the sidewalk. Elevation 759.73

NEO 396: A standard U.S. Corps of Engineers bronze tablet stamped "B 107 1934" at Rochester, Oakland County, 147 yards East of the Southeast corner of the Grand Trunk Western Railway Station, in the top of an old concrete bridge seat, 1 foot East of the West end, 7 Feet South of the South rail. Elevation 728.42

ON—SITE BENCHMARKS:

Arrow on Fire Hydrant located on the North side of New Love Lane across from the Northwest corner of lot 20. N.A.V.D. 88 Datum 806.54

Arrow on Fire Hydrant located on the North side of New Love Lane across from the Northeast corner of lot 21. N.A.V.D. 88 Datum 807.10

ALL ELAVATIONS ARE BASED ON FEMA N.A.V.D. 88)

PROJECT

Lot 18b & 19 Heartpeace Hills No. 2

CLIENT

Ms. Patricia H. Radcliffe P.O. Box 80877 Rochester, MI 48308-0877

PROJECT LOCATION

Part of the S.E. 1/4 of

Section 9, T. 3 North,

Rochester Hills, Oakland

R. 11 East, City of

County, Michigan

Cut = 304 yards Fill = 555 yards Net = 555 - 304 = 251 yards of FILL

FILL BELOW FLOOD PLAIN LIMITS

100-yr flood plain elevation 805.30 (NAVD 88)

Part of Lot 18 and all of Lot 19

CUT & FILL ANALYSIS IN THE 100-YEAR FLOOD PLAIN

CALCULATIONS ARE BASED ON PROPOSED SITE GRADING AND PROPOSED MITIGATION CONTAINED ON THE LOT 18b & 19 PARCEL. EXISTING GRADE WAS ESTABLISHED BY HISTORICAL REICHERT'S SURVEY DATED 03-02-92 (JOB NO. 92-012).

100-YEAR FLOOD PLAIN ELEVATION PER REICHER SURVEY

CUT & FILL IN THE 100-YEAR FLOOD PLAIN AREA BELOW THE FLOOD PLAIN ELEVATION PROPOSED CUT FOR LOT 18b & 19 PARCEL PARCEL
PROPOSED FILL FOR LOT 18b & 19 PARCEL PARCEL
TOTAL FILL IN 100-YEAR FLOOD PLAIN FOR LOT 18b & 19 PARCEL
251 CY

PROPOSED EARTHWORK ON LOT 18b & 19 PARCEL GENERATES 251 CY OF FILL IN 100-YEAR FLOOD PLAIN.

THE DEPTH OF CUT & FILL SHOWN ON THE SITE PLAN DRAWING IS REFERENCED TO THE 100—YEAR FLOODPLAIN ELEVATION 805.30 (NAVD 88). FILL ABOVE THIS LEVEL HAS NOT BEEN ACCOUNTED FOR SINCE IT HAS NO RELEVANCE TO THE FLOOD PLAIN STORAGE.

THE MAXIMUM SLOPE OF PROPOSED GRADE WITHIN CUT AND FILL AREAS SHALL NOT EXCEED SLOPE OF 1 VERTICAL ON THREE HORIZONTAL (1:3) OR 33 %.

EARTHWORK TO BE DONE IN CONJUNCTION WITH WORK UNDERTAKEN BY ADJACENT PROPERTY OWNERS.

BEARING REFERENCE

Bearings are based upon the East line of section 9 being Due South as established in "Heartpeace Hills No. 2" plat recorded in Liber 129,

TOPO NOTES

Utility locations were obtained from municipal officials and records of utility companies, and no guarantee can be made to the completeness, or exactness

All elevations are existing elevations as surveyed in 1992 by Reichert Surveying (survey dated 03-02-92, Job No. 92-012), Buckerfield Engineering (survey dated 03-25-88, Job No. 1-503) and as supplemented by N&F survey data..

This survey may not show all easements of record unless an updated title policy is furnished to the surveyor by the owners

FLOODPLAIN NOTES

Estimated elevations are per FEMA Flood Insurance Rate Maps, Oakland County, Michigan, panel 391 & 392, community panel numbers 26125C0391F & 26125C0392F dated September 29, 2006.

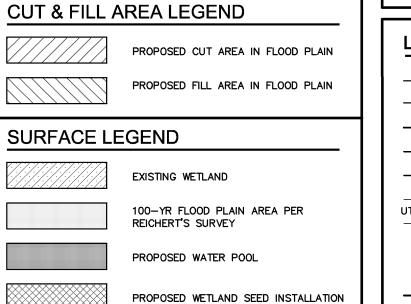
SOIL EROSION LEGEND

DATE/ REVISION

06-20-07 Per Client

Cut & Fill Analysis

06-18-07 Per Client



LEGEND MANHOLE ---- EXISTING SANITARY SEWER HYDRANT GATE VALVE EXISTING WATERMAIN MANHOLE CATCH BASIN EXISTING STORM SEWER EX. R. Y. CATCH BASIN EXISTING BURIED CABLES UTILITY POLE GUY POLE OVERHEAD LINES LIGHT POLE SIGN EXISTING GAS MAIN

DRAWN BY: **DESIGNED BY:** PK APPROVED BY: J. Huhta DATE: 06-02-07 SCALE: 1" = 20'N/F JOB NO. C735-02

2 of 2

PROPERTY OWNER

Ms. Patricia H. Radcliffe P.O. Box 80877 Rochester, MI 48308-0877