

# OAKKAMONTT

BOULEVARD HILLS /  
SENIOR CITIZEN HOUSING  
& ASSISTED LIVING FACILITY  
ROCHESTER HILLS, MICHIGAN

developers:

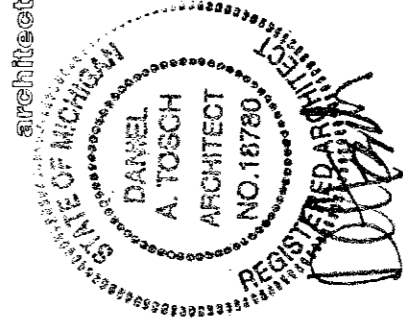
POMKAL ROCHESTER, L.L.C.  
26480 Telegraph Rd  
Suite 100  
Southfield, Michigan 48033  
(248) 356-4080

general  
contractors:

LIBERTY CONSTRUCTION COMPANY  
26480 Telegraph Rd  
Suite 100  
Southfield, Michigan 48033  
(248) 356-4080

architects:

Progressive Associates, Inc.  
838 West Long Lake Road  
Suite 250  
Bloomfield Hills, Michigan 48302  
(248) 640-5640



Issued:

REVIEW

April 30, 2009

REVISED CITY COMMENTS

June 26, 2009


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 Potosky, MI 49770  
 231 487-9290 Fax 231 487-9299  
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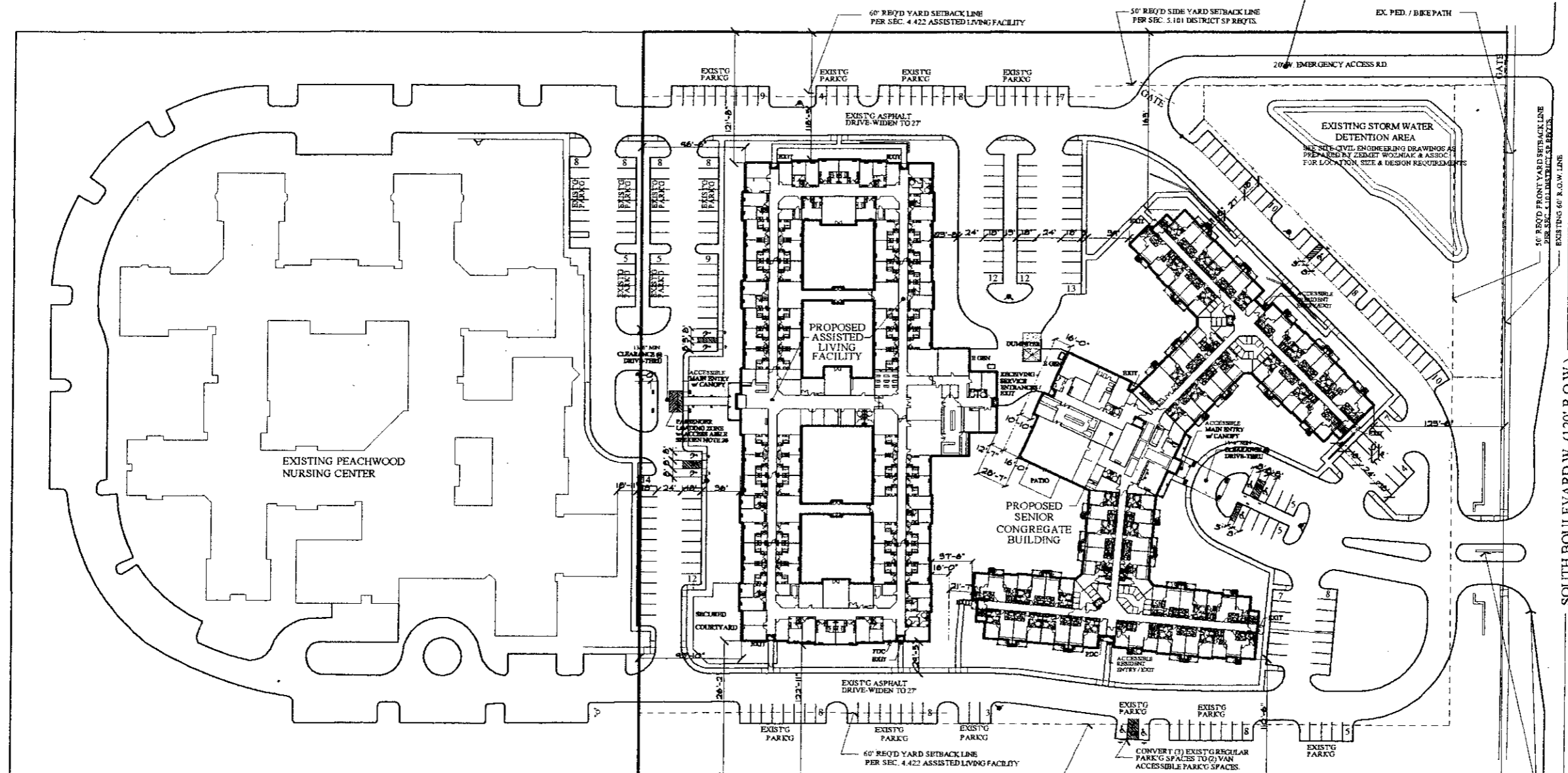
**GENERAL NOTES:**

- ALL PARKING SPACES AND COMMON DRIVES TO BE SETBACK A MIN. 5' AWAY FROM ANY BUILDING OR STRUCTURE.
- 5' CONC. WALKS ADJACENT TO PARKING AREAS
- ALL PROPOSED SITE WORK AND BUILDING CONSTRUCTION SHALL CONFORM TO THE CITY OF ROCHESTER HILLS GOVERNING ORDINANCES, REQUIREMENTS AND BUILDING CODES.
- ALL FINAL GRADING SHALL BE PER APPROVED SITE CIVIL ENGINEERING IN ACCORDANCE W/ THE CITY OF ROCHESTER HILLS REQUIREMENTS.
- FINAL FIRE HYDRANT LOCATION AND QUANTITY SHALL MEET W/ THE CITY OF ROCHESTER HILLS GOVERNING ENG. DEPT. & FIRE DEPT.
- TRASH DUMPSTER ENCLOSURES SHALL BE MASONRY ON (3) SIDES WITH WOOD GATES, MINIMUM 6 FT HSH - HEIGHT TO COVER DUMPSTER(S).
- ALL ELEVATIONS SHOWN ARE BASED ON U.S.G.S. DATUM
- CORNER CLEARANCE TO MEET ORDINANCE REQTS.
- ALL BLDG. NUMBERS AND NUMBERING SYSTEMS SHALL MEET WITH THE APPROVAL OF THE GOVERNING CITY OF ROCHESTER HILLS FIRE & POLICE DEPTS.

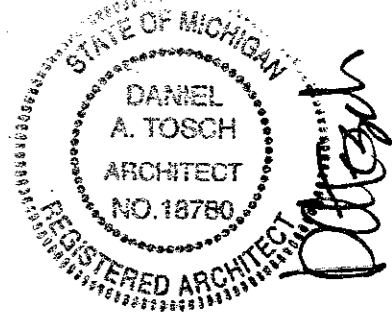
- SITE LIGHTING (EXISTING & PROPOSED) - NEW SITE LIGHTING SHALL MATCH THE EXISTING POLE TYPE, HEIGHT, FIXTURE TYPE & MOUNTAGE THAT EXISTS ALONG THE EXISTING RING DRIVE & PARKING AREAS AS PREVIOUSLY CONSTRUCTED WHEN THE "PEACHWOOD NURSING CENTER" WAS BUILT. SEE SHEET "SS-1" AS PREPARED BY ZEIMET WOZNIAK & ASSOCIATES FOR EXISTING LIGHT POLE LOCATIONS. ALL EXTERIOR SITE LIGHTING SHALL BE SHIELDED AND SHALL CONFORM TO THE GOVERNING CITY OF ROCHESTER HILLS ZONING ORDINANCE. ALL SITE LIGHTING SHALL BE DIRECTED TO REMAIN WITHIN THE THE SITE BOUNDARIES.  
 FOR PROPOSED NEW / ADDITIONAL SITE LIGHTING LOCATIONS REFER TO APPROVED / PERMITTED SITE LIGHTING ELECTRICAL DRAWINGS
- EXISTING COMMUNITY IDENT. SIGNAGE IS LOCATED AT THE DEVELOPMENT ENTRY BLVD OFF SOUTH BOULEVARD - SEE SHEET "SS-1" FOR LOCATION AS PREPARED BY ZEIMET WOZNIAK & ASSOCIATES. ADDITIONAL INTERIOR SITE DIRECTIONAL, SHALL CONFORM TO THE CITY OF ROCHESTER HILLS ZONING ORDINANCE. NEW SIGNS OR CHANGES TO EXISTING PROJECT IDENTIFICATION SIGNS SHALL BE PERMITTED SEPARATELY.
- PROVIDE 5'w. "BARRIER FREE" SIDEWALK RAMP WHERE INDICATED ON SHEET "SP-2" AS PREPARED BY ZEIMET WOZNIAK & ASSOCIATES. INSTALL PER THE "STATE OF MICHIGAN BARRIER FREE CODE" STANDARDS & CITY OF ROCHESTER HILLS ENG. DEPT. REQUIREMENTS

- PRESERVE ALL EXISTING VEGETATION / TREES WHERE FEASIBLE. SEE SITE LANDSCAPE PLANS AND TREE PRESERVATION PLANS AS PREPARED BY JAMES C. SCOTT & ASSOCIATES, INC. LANDSCAPE ARCHITECTS
- TREES TO REMAIN SHALL BE PROTECTED W/ A SNOW FENCE BARRIER AND SHALL MEET THE STANDARDS OF THE CITY OF ROCHESTER HILLS. SEE "TREE PROTECTION NOTES" LOCATED ON SHEET "SP-1" AS PREPARED BY ZEIMET WOZNIAK & ASSOCIATES
- ALL AREAS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE RESTORED AND HYDROSEEDDED.
- SEE SITE CIVIL ENGINEERING PLANS AS PREPARED BY ZEIMET WOZNIAK & ASSOCIATES FOR SANITARY SEWER, STORM WATER MANAGEMENT, WATER MAIN, BLDG. / SITE HORIZONTAL CONTROL PLAN, ETC.
- ALL STREETS TO BE POSTED "NO PARKING - FIRE LANE. SIGNAGE SHALL CONFORM TO THE GOVERNING CITY OF ROCHESTER HILLS FIRE DEPT. REQTS.
- PROVIDE TRAFFIC "STOP" SIGNAGE AT ALL VEHICLE EXITS FROM THE SITE.
- NOTE: THERE SHALL BE NO OUTDOOR STORAGE ALLOWED ON SITE.

- PASSENGER LOADING ZONE SHALL BE 20' x 5'. ADJACENT ACCESS AISLE SHALL BE 20' x 5'. THE PAVEMENT AT THE LOADING ZONE & THE ACCESS AISLE SHALL BE SLOPED NO MORE THAN 1:48 (2%).
- ANY & ALL ROOF TOP OR GROUND MOUNTED EQUIPMENT SHALL BE SCREENED FROM ADJACENT PROPERTIES ON ALL SIDES.
- PROVIDE DETECTABLE MARNINGS ON SIDEWALK RAMP LOCATED IN ALL RIGHT-OF-WAYS - SEE ENG DWGS FOR DETAIL.



Issued For:	REVIEW
	10.30.07
	REVIEW
	2.18.08
	REVIEW
	9.3.08
	REVIEW
	11.14.08
	REVIEW
	1.8.09
	REVIEW
	1.20.09
	REVIEW
	2.11.09
	REVIEW
	2.23.09
	REVIEW
	3.9.09
	REVIEW
	3.25.09
REVISED per CITY	6.26.09



Contractor:  
**LIBERTY CONSTRUCTION**

Developer:  
**POMKAL ROCHESTER LLC**

Project:

**BOULEVARD HILLS Senior Housing**

Rochester Hills, Michigan  
 Sheet Title:

**PROPOSED ARCHITECTURAL SITE PLAN**

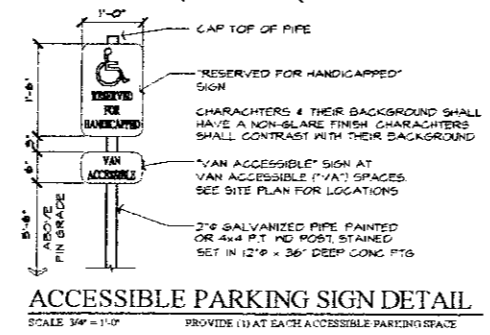
Project Number: **07-064**  
 Drawn: **VC**  
 Checked: **DT**  
 Date: **10.30.07**  
 Sheet Number: **ASP**

**SITE DATA**

SITE AREA: 12.86 NET ACRES / (560,181.6 NET SQ FT SITE AREA)	
ZONING: SP - SPECIAL PURPOSE DISTRICT	
<b>SENIOR CONGREGATE BUILDING</b>	
BUILDING HEIGHT (1) STORES	ASSISTED LIVING BUILDING
CONSTRUCTION TYPE: VA	CONSTRUCTION TYPE: VA
NO STANDPIPE SYSTEM	NO STANDPIPE SYSTEM
TOTAL ZONING ORD. BLDG AREA: 149,274 sq ft	TOTAL ZONING ORD. BLDG AREA: 65,698 sq ft
FIRST FLOOR: 55,321 sq ft	TOTAL # OF UNITS: 64
SECOND FLOOR: 47,315 sq ft	ASSISTED LIVING: 31
THIRD FLOOR: 47,308 sq ft	MEMORY CARE: 21
TOTAL # OF UNITS: 120	PARKING REQUIRED:
1 BEDRM: 64	6.5 SPACES PER RESIDENT
1 BEDRM + DEN: 12	SLEEPING ROOM: 32 SPACES
2 BEDRM: 24	1 SPACE/EMPLOYEE: 20 SPACES
PARKING PROVIDED:	PARKING PROVIDED: 56 SPACES
9.8 SPACES PER UNIT: 96 SPACES	(14.487 SPACES INCLUDING)
1 SPACE/EMPLOYEE: 20 SPACES	
PARKING PROVIDED: 143 SPACES	

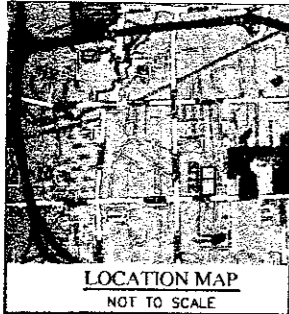
**GENERAL SITE NOTE:**  
 ALL SITE GRADING, PROPOSED UTILITY LAYOUTS - STORM WATER, MOT., WATER, SAN SEWER CURBING ETC. SHOWN ON THIS ARCHITECTURAL SITE PLAN IS FOR REFERENCE ONLY AND IS NOT FOR CONSTRUCTION PURPOSES - REFER TO SITE CIVIL ENGINEERING DRAWING AS PREPARED BY ZEIMET WOZNIAK & ASSOCIATES, INC.

**\* ZONING ORDINANCE BUILDING AREA:**  
 CALCULATED TO THE EXTERIOR FACE OF THE EXTERIOR WALLS EXCLUDING PATIOS, DECKS, PORCHES, AND PORTE-COCHERE



**FIRE DEPARTMENT NOTES:**

- CONSTRUCTION SITES SHALL BE SAFEGUARDED IN ACCORDANCE WITH IFC 2006 CHAPTER 14.
- OPEN BURNING IS NOT PERMITTED INCLUDING THE BURNING OF TRASH DEBRIS OR LAND CLEARING MATERIALS. OPEN BURNING FOR WARMING OF SAND AND/OR WATER FOR THE PREPARATION OF MORTAR SHALL BE WITHIN THE CITY OF ROCHESTER HILLS BURN PERMIT GUIDELINES. CONTACT ROCHESTER HILLS FIRE DEPT FOR PERMIT INFORMATION. FIRE PREVENTION ORDINANCE CHAPTER 50, SEC. 301.6.2 & 301.6.3
- FIRE LANES SHALL BE DESIGNATED BY THE FIRE CODE OFFICIAL AND SHALL BE CONSPICUOUSLY POSTED ON BOTH SIDES OF THE FIRE LANE, WITH FIRE LANE SIGNS SPACED NOT MORE THAN 100 FT APART.
- "NO STOPPING, STANDING, PARKING, FIRE LANE" AND IN CONFORMANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. FIRE PREVENTION ORDINANCE CHAPTER 50, SEC. 506
- A "KNOX" KEY SYSTEM SHALL BE INSTALLED, IN A LOCATION APPROVED BY THE FIRE CODE OFFICIAL. ORDERING INFORMATION IS AVAILABLE FROM THE FIRE DEPARTMENT. IFC 2006 SEC. 506
- KNOX LOCKS SHALL BE PROVIDED FOR BOTH GATES AT THE FIRE/EMERGENCY ACCESS ROAD.
- PROPOSED FIRE HYDRANT, LOCATION TO BE APPROVED BY ROCHESTER HILLS FIRE DEPARTMENT.
- EXISTING FIRE HYDRANT.



**PROPERTY DESCRIPTION (OVERALL):**  
 PART OF THE EAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 31, T. 3 N., R. 11 E., CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS:  
 COMMENCING AT THE SOUTH 1/4 CORNER OF SAID SECTION 31 AND PROCEEDING ALONG THE SOUTH LINE OF SAID SECTION 31, ALSO BEING THE CENTERLINE OF SOUTH BOULEVARD S. 89°57'35" W. 621.80 FEET; THENCE N. 00°08'37" W. 60.00 FEET TO A POINT ON THE NORTH RIGHT-OF-WAY LINE OF SAID SOUTH BOULEVARD (60 FEET WIDE, 1/2 WIDTH) AND POINT OF BEGINNING; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY LINE S. 89°57'35" W. 694.88 FEET; THENCE ALONG THE EAST LINE OF LOT 13 "PON-AVON FARMS" SUBDIVISION AS RECORDED IN LIBER 59, PAGE 23, OAKLAND COUNTY RECORDS N. 00°02'00" W. 619.97 FEET; THENCE N. 00°14'25" W. 187.03 FEET; THENCE N. 00°14'25" W. 590.00 FEET; THENCE THE FOLLOWING TWO (2) COURSES ALONG "PINE TRACE VILLAGE" OAKLAND COUNTY CONDOMINIUM SUBDIVISION PLAN NO. 732 N. 00°08'37" E. 607.00 FEET TO THE POINT OF BEGINNING, BEING SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD AND SUBJECT TO THE RIGHTS OF INGRESS AND EGRESS FOR SOWELL NUMBER 15-31-328-031 AND CONTAINING 12.27 ACRES MORE OR LESS.

**LEGAL DESCRIPTION (12.83-ACRE PARCEL):**  
 PART OF THE EAST 1/2 OF THE SOUTHWEST 1/4 OF SECTION 31, TOWN 3 NORTH, RANGE 11 EAST, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS:  
 COMMENCING AT THE SOUTH 1/4 CORNER OF SAID SECTION 31 AND PROCEEDING ALONG THE SOUTH LINE OF SAID SECTION 31, ALSO BEING THE CENTERLINE OF SOUTH BOULEVARD S. 89°57'35" W. 621.80 FEET; THENCE N. 00°08'37" W. 60.00 FEET TO A POINT ON THE NORTH RIGHT-OF-WAY LINE OF SAID SOUTH BOULEVARD (60 FEET WIDE, 1/2 WIDTH) AND POINT OF BEGINNING; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY LINE S. 89°57'35" W. 694.88 FEET; THENCE ALONG THE EAST LINE OF LOT 13 "PON-AVON FARMS" SUBDIVISION AS RECORDED IN LIBER 59, PAGE 23, OAKLAND COUNTY RECORDS N. 00°02'00" W. 619.97 FEET; THENCE N. 00°14'25" W. 187.03 FEET; THENCE N. 00°14'25" W. 694.00 FEET; THENCE ALONG THE WEST LINE OF "PINE TRACE VILLAGE" OAKLAND COUNTY CONDOMINIUM SUBDIVISION PLAN NUMBER 732 S. 00°08'37" E. 607.00 FEET TO THE POINT OF BEGINNING, BEING SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD AND SUBJECT TO THE RIGHTS OF INGRESS AND EGRESS FOR SOWELL NUMBER 15-31-328-031 AND CONTAINING 12.88 ACRES MORE OR LESS.

EXCEPTIONS, COMMITMENT NO. 274581 REVISION B, DATED 12-12-2007.

- MORTGAGE, SECURITY AGREEMENT AND ASSIGNMENT OF DEBTS, EXECUTED BY PONDAN ASSOCIATES, A MICHIGAN CO-PARTNERSHIP TO NBD BANK, DATED JUNE 3, 1996, RECORDED JUNE 10, 1996, IN LIBER 16338, PAGE 353.
- WATERMAIN EASEMENT IN FAVOR OF CITY OF ROCHESTER HILLS AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 10216, PAGE 250, SHOWN.
- TERMS AND CONDITIONS CONTAINED IN EASEMENT AGREEMENT AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 9107, PAGE 714 GRANTS RIGHTS TO DISCHARGE STORM WATER OFFSITE AND AMENDED IN LIBER 9300, PAGE 233, SHOWN.
- TERMS AND CONDITIONS CONTAINED IN DECLARATION OF RECIPROCAL EASEMENTS AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 9277, PAGE 905, SHOWN.
- EASEMENT IN FAVOR OF COUNTY OF OAKLAND AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 7157, PAGE 736, SHOWN.
- JOINT OVERHEAD AND UNDERGROUND EASEMENT IN FAVOR OF THE DETROIT EDISON COMPANY AND MICHIGAN BELL TELEPHONE COMPANY AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 9393, PAGE 283, SHOWN.
- WATERMAIN EASEMENT AND CONVEYANCE IN FAVOR OF CITY OF ROCHESTER HILLS AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 9965, PAGE 530 AND LIBER 9878, PAGE 347 AND LIBER 10660, PAGE 485, SHOWN.
- SANITARY SEWER EASEMENT AND CONVEYANCE IN FAVOR OF CITY OF ROCHESTER HILLS AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 9878, PAGE 344, SHOWN.
- TERMS AND CONDITIONS CONTAINED IN AREA MAINTENANCE METER AGREEMENT AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 12895, PAGE 843.
- NOT.
- RIGHTS OF TENANTS, IF ANY, UNDER ANY UNRECORDED LEASES.

**BENCHMARK:**  
 R.R. SPIKE IN UTILITY POLE FROM  
 GRADING PLAN  
 ELEVATION: 876.51  
 U.S.G.S. DATUM



- EXISTING LEGEND**
- MANHOLE
  - CATCH BASIN
  - INLET
  - CLEANOUT
  - END SECTION
  - ROOF DRAIN
  - GATE VALVE
  - HYDRANT
  - WATER SHUT-OFF
  - UTILITY POLE
  - GUY ANCHOR
  - LIGHT POLE
  - SIGN
  - TREE
  - TREE LINE
  - FENCE
  - SANITARY SEWER
  - STORM SEWER
  - WATER MAIN
  - GAS MAIN
  - ELECTRIC CABLE
  - CONTOUR MAJOR
  - CONTOUR MINOR
  - T/P TOP OF PAVEMENT
  - T/C TOP OF CURB
  - B/C BOTTOM OF CURB
  - SPOT ELEVATION

**NOTE:**  
 THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AS DISCLOSED BY AVAILABLE UTILITY COMPANY RECORDS AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE COMPANY. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OF ACCURACY THEREOF. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY IF A CONFLICT IS APPARENT.

**TREE NOTE:**  
 TREES TAGGED AND IDENTIFIED BY KING & MACROEOR ENVIRONMENTAL, INC. TAGGED TREES SURVEYED IN FIELD BY ZEMET-WOZNIAK AND ASSOCIATES.

NOT FOR CONSTRUCTION  
 CITY FILE 09-002

METROPOLITAN TITLE COMPANY, COMMITMENT NO. 274581 REVISION B, DATED 12-12-2007.

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
UPDATE SURVEY	1-21-07	JTW						
PER CITY COMMENTS	1-23-08	PTI						
	4-29-08	DAB						

**ZEMET WOZNIAK**  
 Civil Engineers & Land Surveyors  
 4000 GRAND RIVER AVE. STE 100  
 NOVI, MICHIGAN 48164  
 P: (248) 442-1100 F: (248) 442-0341 www.zemetwozniak.com

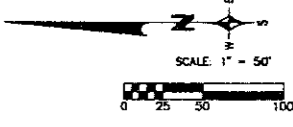
**PROJECT SPONSOR:**  
 LIBERTY CONSTRUCTION COMPAN  
 25480 TELEGRAPH ROAD, SUITE 100  
 SOUTHFIELD, MI 48034

**ALTA/ACSM LAND TITLE SURVEY**  
**BOULEVARD HILLS NURSING CENTER**  
 ROCHESTER HILLS, MICHIGAN

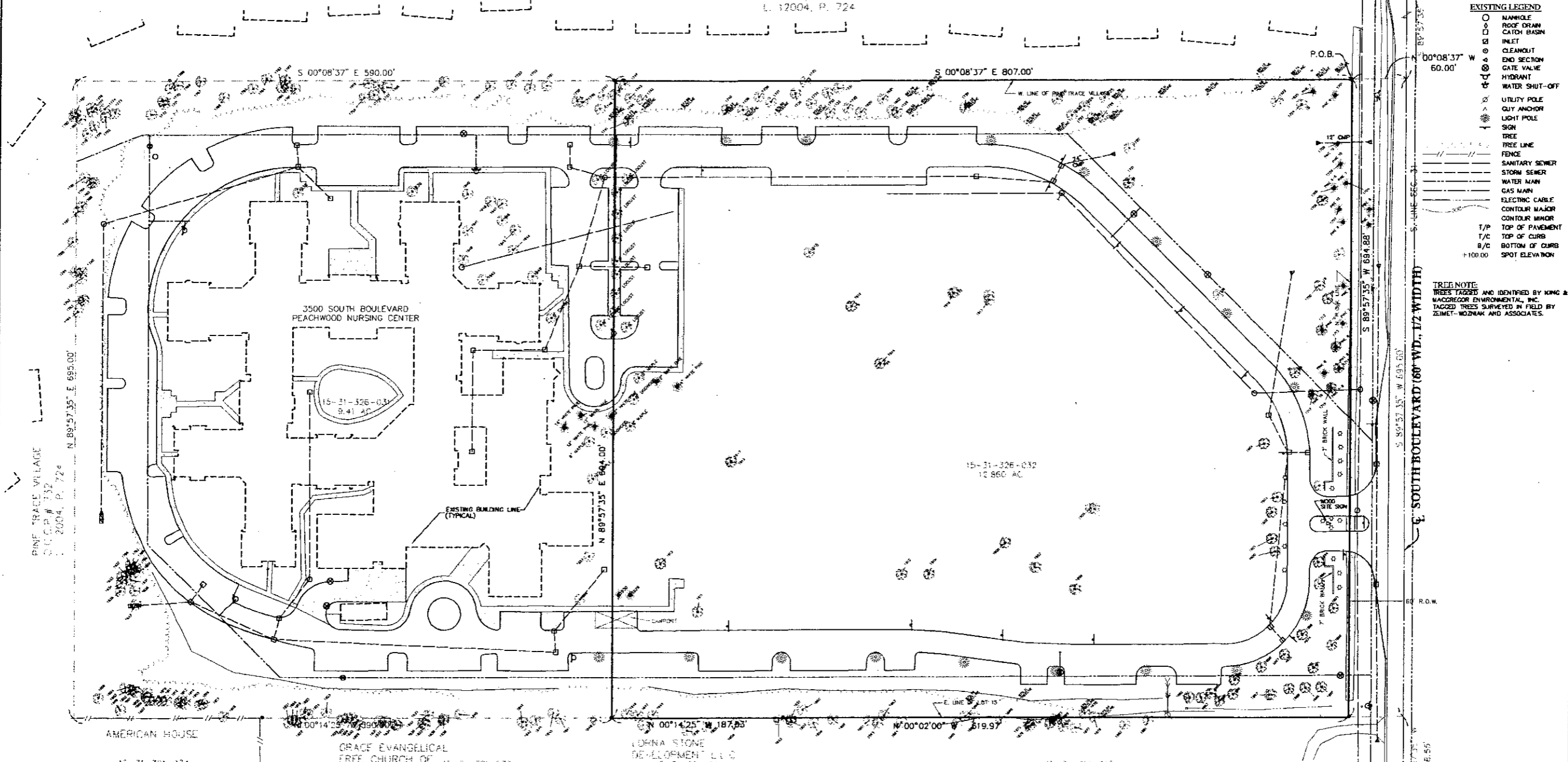
DATE: 12/18/08 SCALE: HORIZ. 1" = 50'  
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 CHECKED BY: JTW SHEET: SS-1

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G.C.P. # 732  
L. 12004, P. 724



- EXISTING LEGEND**
- MANHOLE
  - ROOF DRAIN
  - CATCH BASIN
  - INLET
  - CLEANOUT
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  - STORM SEWER
  - WATER MAIN
  - GAS MAIN
  - ELECTRIC CABLE
  - CONTOUR MAJOR
  - CONTOUR MINOR
  - T/P TOP OF PAVEMENT
  - T/C TOP OF CURB
  - B/C BOTTOM OF CURB
  - +100.00 SPOT ELEVATION

**TREE NOTE**  
TREES TAGGED AND IDENTIFIED BY KING & MACGREGOR ENVIRONMENTAL, INC.  
TAGGED TREES SURVEYED IN FIELD BY ZEMET-WOZNAK AND ASSOCIATES.

NOT FOR CONSTRUCTION  
CITY FILE 09-002

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
UPDATE	7-27-07	JW									
UPDATE	8-10-08	SR									

**ZEMET WOZNAK**  
A CORPORATION  
CIVIL ENGINEERS & LAND SURVEYORS  
4821 GRAND RIVER AVE., SUITE 100  
NOVATEL, MICHIGAN 48328  
P: (248) 442-1101 F: (248) 442-1234 WWW.ZEMETWOZNAK.COM

**MISS HOOPER INC.**  
7700 STATE STREET, SUITE 100  
GRAND RAPIDS, MI 49508  
CALL: 734.949.1000  
FAX: 734.949.1001

**PROJECT SPONSOR:**  
LIBERTY CONSTRUCTION COMPAN  
25480 TELEGRAPH ROAD, SUITE 100  
SOUTHFIELD, MI 48034

**TREE SURVEY**  
BOULEVARD HILLS NURSING CENTER  
ROCHESTER HILLS, MICHIGAN

DATE: 7-17-07  
SCALE: HORIZ: 1" = 40'  
VERT: 1" = 4' N/A  
DRAWN BY: [Signature]  
JOB NO.: 06158  
SHEET: TS-1

I:\Projects\06158\06158.dwg (10/18/07) User: jw, 5/21/2008 10:02:24 AM, 5/21/2008

**GRADING NOTES:**

- SEED AND MULCH ALL AREAS DISTURBED DUE TO GRADING.
- PEAT OR ANY OTHER UNSUITABLE MATERIALS ENCOUNTERED IN CONSTRUCTION AREAS SHALL BE REMOVED AND BACKFILLED WITH COMPACTED SUITABLE MATERIAL (95% DENSITY). ALL ON-SITE WORK SHALL CONFORM, AT A MINIMUM, TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ROCHESTER HILLS.
- ALL PROPOSED GRADES SHOWN IN PAVED AREAS ARE TOP OF PAVEMENT (T/P) UNLESS SPECIFIED OTHERWISE.
- ADD 800.00 TO PROPOSED GRADES TO OBTAIN SITE DATUM ELEVATION.

**CITY OF ROCHESTER HILLS SESC NOTES:**

- ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OF THE OWLAND COUNTY DRAIN COMMISSIONER.
- ALL TEMPORARY AND PERMANENT (POST CONSTRUCTION) SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL CONFORM TO THE CITY OF ROCHESTER HILLS CURRENT MS4 PERMIT. ANY CONFLICT BETWEEN THESE STANDARDS AND THE MS4 PERMIT, THE PERMIT'S CONDITIONS SHALL TAKE PRECEDENCE.
- DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR FOR EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY.
- ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS.
- CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES WHEN REQUIRED AND AS DIRECTED ON THESE PLANS. HE SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DETRIEDS AND OTHER EARTH CHANGES HAVE BEEN ACCOMPLISHED. THIS WOULD INCLUDE TEMPORARY SEDIMENTATION POND AND TEMPORARY SO-2 FILTERS.
- STAKING THE WORK WILL BE DONE BY THE CONTRACTOR AS DIRECTED IN THESE PLANS AND AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED EARTH.
- SOIL EROSION CONTROL PRACTICES SHALL BE ESTABLISHED IN THE EARLY STAGES OF CONSTRUCTION BY THE CONTRACTOR. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTING OF SILT OFF THE SITE.

**CONSTRUCTION AND SOIL EROSION WORK SCHEDULE:**

- PLACE SILT FENCE AROUND PROPOSED CONSTRUCTION AREA AS SHOWN ON THIS PLAN.
- INSTALL GRAVEL MUD TRAPPING MAT NEAR ENTRANCE WHERE INDICATED. INSTALL INLET FILTERS ON ALL EXISTING DRAINAGE INLETS PER PLAN.
- MASS GRADE BUILDING PAD, DETENTION BASIN, AND PARKING AREA. PLACE SECOND ROW OF SILT FENCE AROUND PERMANENT WATER ELEVATION OF BASIN.
- INSTALL SANITARY, STORM, AND WATERMAIN COMPLETE. INSTALL LOW POINT INLET FILTERS ON ALL NEW DRAINAGE INLET STRUCTURES AND RIP-RAP AT ALL OUTLETS.
- INSTALL PAVEMENT, REPAIR OR REPLACE INLET FILTERS AS NEEDED.
- FINE GRADE AND LANDSCAPE. SEED AND MULCH OR INSTALL MULCH BLANKETS ON ALL DISTURBED AREAS FROM CONSTRUCTION ACTIVITIES.
- UPON STABILIZATION OF SITE, REMOVE ACCUMULATED SEDIMENT FROM BASIN AND STORM SEWER. SEED AND MULCH ANY DISTURBED AREA.
- IT SHALL BE THE DEVELOPER'S RESPONSIBILITY TO INSURE THAT ALL EROSION CONTROL DEVICES ARE MAINTAINED AS REQUIRED THROUGHOUT THE CONSTRUCTION AND THAT THE STREETS ARE KEPT FREE OF MUD AND CONSTRUCTION DEBRIS. EROSION CONTROL DEVICES SHALL BE CHECKED WEEKLY AND AFTER EACH RAIN EVENT TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY. ANY REPAIRS SHALL BE MADE IMMEDIATELY.

**FIRE DEPARTMENT NOTES:**

- ALL PORTIONS OF A BUILDING ARE REQUIRED TO BE WITHIN 150 FEET OF AN APPROVED FIRE DEPARTMENT ACCESS ROAD.
- FIRE DEPARTMENT ACCESS ROADS ARE REQUIRED TO BE PAVED AND A MINIMUM OF 20 FEET WIDE.
- EXIT DOORS SHALL REMAIN FREE OF OBSTRUCTIONS AT ALL TIMES. PROMISE GUARD POSTS OR OTHER ACCEPTABLE MEANS OF PROTECTING EXIT DOORS OPENING ONTO DRIVES AND PARKING AREAS.
- FIRE LANES SHALL BE CONSPICUOUSLY POSTED ON BOTH SIDES OF THE FIRE LANE, WITH FIRE LANE SIGNS SPACED NOT MORE THAN 100 FEET APART. FIRE LANE SIGNS SHALL READ "NO STOPPING, STANDING, PARKING, FIRE LANE" AND IN CONFORMANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND FIRE HYDRANTS.
- FIRE DEPARTMENT CONNECTIONS, WHEN REQUIRED, SHALL BE LOCATED VISIBLE ON THE STREET FRONT OF THE BUILDING, WITHIN 50 FEET OF AN APPROVED FIRE DEPARTMENT ACCESS ROAD AND A FIRE HYDRANT SHALL BE LOCATED WITHIN 100 FEET OF THE F.D.C.
- FIRE DEPARTMENT CONNECTIONS SHALL NOT BE OBSCURED OR OBSTRUCTED BY LANDSCAPING, PARKING OR BY ANY OTHER PERMANENT OR TEMPORARY MATERIALS OR DEVICE.
- CONSTRUCTION SHALL BE SAFEGUARDED IN ACCORDANCE WITH IFC CHAPTER 14.
- DUMPSTERS SHALL BE LOCATED A MINIMUM DISTANCE OF 5 FEET FROM ALL BUILDINGS OR STRUCTURES.
- OPEN BURNING IS NOT PERMITTED, INCLUDING THE BURNING OF TRASH, DEBRIS, OR LAND CLEARING MATERIALS. OPEN BURNING FOR WARMING OF SAND AND/OR WATER FOR PREPARATION OF MORTAR SHALL BE WITHIN CITY OF ROCHESTER HILLS BURN PERMIT GUIDELINES. CONTACT ROCHESTER HILLS FIRE DEPARTMENT FOR PERMIT INFORMATION.
- A "KNOX" KEY SYSTEM SHALL BE INSTALLED IN A LOCATION APPROVED BY THE FIRE CODE OFFICIAL. ORDERING INFORMATION IS AVAILABLE FROM THE FIRE DEPARTMENT.
- KNOX LOCKS SHALL BE PROVIDED FOR BOTH GATES AT THE FIRE/EMERGENCY ACCESS ROAD.

**HYDRANT REQUIREMENTS:**

- BUILDING CONSTRUCTION- TYPE 1B
  - BUILDING AREA- 216,830 S.F.
  - REQUIRED FIRE FLOW- 5,000 GPM +
  - REQUIRED HYDRANTS- 5 WITH 300' AVERAGE SPACING +
- \* REQUIRED FIRE FLOW AND HYDRANTS TAKEN FROM TABLES B10.1 AND C10.1 IN THE CITY OF ROCHESTER HILLS ENGINEERING DESIGN STANDARDS.

**WATERMAIN NOTES:**

- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE AGENCY HAVING JURISDICTION OVER THAT WORK.
- ALL HYDRANTS, INCLUDING NOZZLES AND PROJECTIONS SHALL BE 3" MINIMUM FROM EDGE OF SIDEWALK OR 6" MINIMUM FROM EACH OF CURB.
- THE WATERMAIN SHALL HAVE A MINIMUM OF 8 FEET OF COVER.
- THE CONTRACTOR SHALL DETERMINE DEGREE OF BEND FOR THE WATERMAIN FITTINGS. PIPE DEFLECTIONS SHALL NOT EXCEED 75% OF THE MANUFACTURER'S MAXIMUM ALLOWABLE DEFLECTION.
- WATERMAIN SHALL BE CEMENT-LINED (DOUBLE THICKNESS), DUCTILE IRON PIPE, CLASS 54 CENTERED IN A 20-FOOT WIDE EASEMENT.
- A VERTICAL SEPARATION OF 18 INCHES MUST BE MAINTAINED BETWEEN THE WATERMAIN AND SANITARY SEWERS, STORM SEWERS, OR OTHER PROPOSED UTILITIES.
- ALL GATE VALVES SHALL BE RESILIENT WEDGE OR SEATED TYPE GATE VALVE (E.J.W. OR U.S. PIPE).
- RESTRAINED ROODED JOINTS SHALL BE USED AT ALL VERTICAL BENDS. THE NUMBER OF RESTRAINED ROODED JOINTS REQUIRED SHALL BE DETERMINED BY THE MANUFACTURER, SUBJECT TO APPROVAL BY THE CITY ENGINEER.
- USE HYDRANT CONNECTION DETAILS PER CURRENT CITY STANDARD DETAIL SHEET.

**SANITARY SEWER NOTES:**

- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE AGENCY HAVING JURISDICTION OVER THAT WORK.
- ALL PROPOSED SANITARY SEWER PIPE SHALL BE PVC TRUSS CENTERED IN A 20-FOOT WIDE EASEMENT.
- ALL PROPOSED SANITARY SEWER BUILDING LEADS WILL BE SOLID WALL PVC SDR 23.5 PIPE.
- SANITARY SEWER DROP CONNECTIONS MUST BE EXTERNAL TYPE.
- THE MINIMUM SLOPE FOR 6" SANITARY BUILDING LEADS IS 1.00%.
- ALL PROPOSED SEWERS SHALL HAVE CHEMICALLY WELDED JOINTS.

**STORM SEWER NOTES:**

- PROPOSED STRUCTURE COVERS/GRATES SHALL BE PROVIDED AS REQUIRED ON THE CITY OF ROCHESTER HILLS STANDARD DETAIL SHEETS.
- EDGE DRAIN TO BE 2" IN EACH DIRECTION AT 90° ANGLES FROM INLET STRUCTURES LOCATED IN PAVED AREAS.
- STRUCTURAL CALCULATIONS AND SHOP DRAWINGS, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER (REGISTERED IN THE STATE OF MICHIGAN) SHALL BE SUBMITTED TO THE CITY FOR REVIEW PRIOR TO CONSTRUCTION OF ALL STORM SEWER STRUCTURES GREATER THAN 6 FEET IN DIAMETER.
- PROPOSED ROOF DRAINS SHALL BE SCHEDULE 40 PVC PIPE WITH CHEMICALLY WELDED JOINTS.
- PROPOSED STORM SEWER PIPE SHALL BE REINFORCED CONCRETE CLASS IV WITH RUBBER GASKETS AND CLASS B BEDDING.

**UTILITY NOTES:**

- M.D.O.T. CLASS B BACKFILL TO BE COMPACTED IN 6" LAYERS TO 95% OF MAXIMUM UNIT WEIGHT ABOVE REQUIRED UNDER OR WITHIN A 1 ON 1 SLOPE OF EXISTING OR PROPOSED PAVEMENT.
- ALL CONTRACTORS SHALL NAME ZEIMET-WOZNIAK & ASSOCIATES AS ADDITIONALLY INSURED ON ALL INSURANCE POLICIES.

**TREE PROTECTION NOTES:**

- APPROVED TREE PROTECTION SHALL BE ERECTED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE. THE CITY'S LANDSCAPE CONSULTANT SHALL BE NOTIFIED AFTER TREE PROTECTION IS IN PLACE PRIOR TO THE CONSTRUCTION ACTIVITIES INCLUDING DELIVERY OF MATERIALS.
- NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRP LINE OF ANY TREE DESIGNATED TO REMAIN, INCLUDING BUT NOT LIMITED TO, PLACING SOLVENTS, BUILDING MATERIALS, CONSTRUCTION EQUIPMENT, OR SOIL DEPOSITS WITHIN THE DRP LINES.
- GRADE CHANGES MAY NOT OCCUR WITHIN THE DRP LINE OF PROTECTED TREES.
- DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY REMAINING TREE.
- ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING.
- SWALES SHALL BE ROUTED TO AVOID THE AREA WITHIN THE DRP LINES OF PROTECTED TREES.
- IF TREE PROTECTION CANNOT BE MAINTAINED FOR A TREE THROUGHOUT THE CONSTRUCTION PERIOD, REPLACEMENT OF THAT TREE MAY BE REQUIRED PRIOR TO ISSUANCE OF THE CERTIFICATE OF OCCUPANCY.
- REGULATED TREES LOCATED ON ADJACENT PROPERTY THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.

NOT FOR CONSTRUCTION  
CITY FILE 09-002

**NOTES**  
BOULEVARD HILLS NURSING CENTER  
ROCHESTER HILLS, MICHIGAN

DATE 1/30/09 SCALE HOR 1" = 10'  
JOB NO. 06158  
SHEET SP-1

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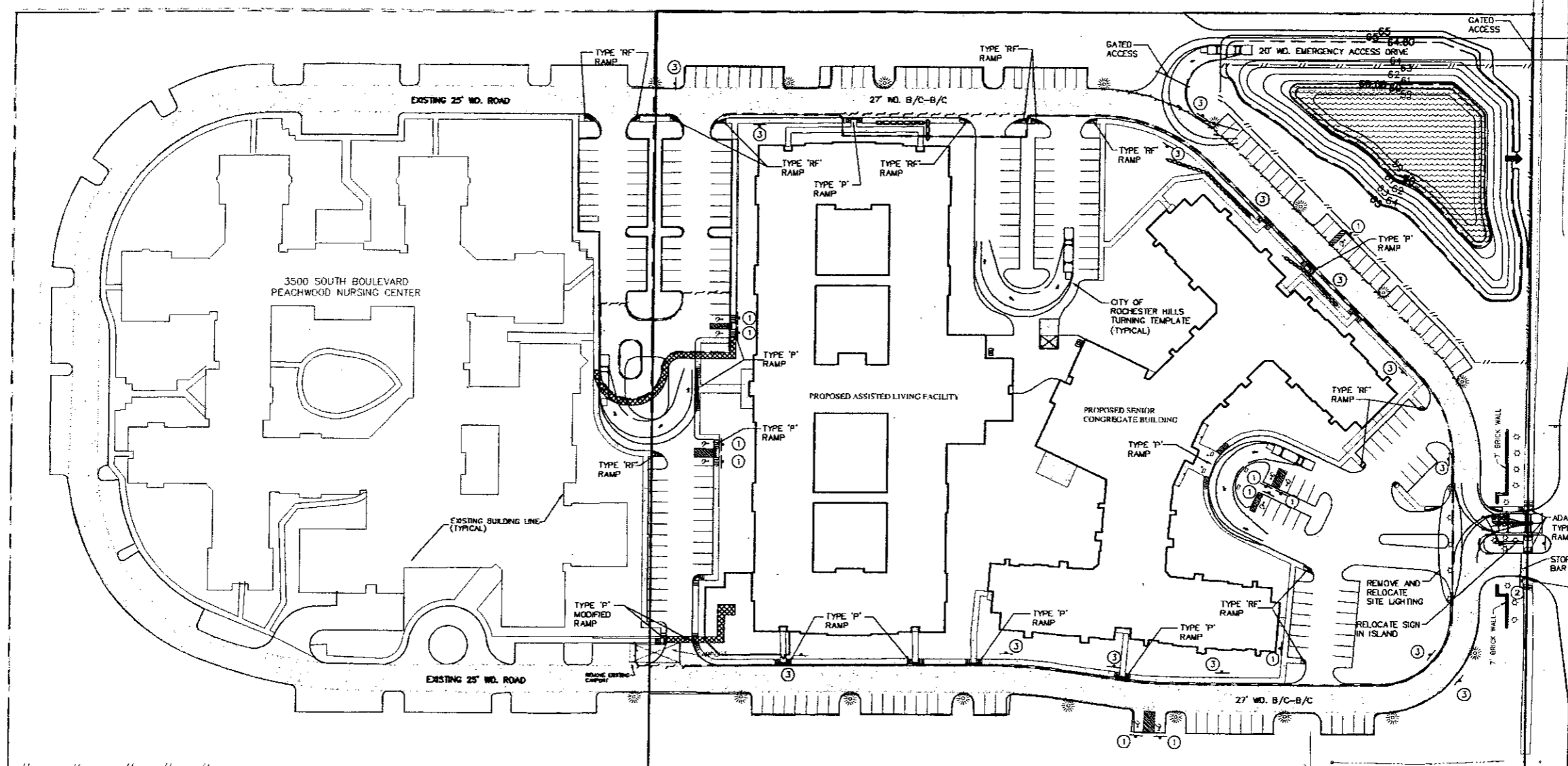
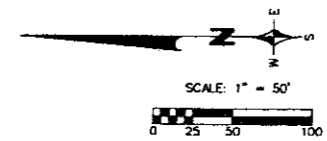
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REVISION	1/30/09										
PER CITY COMMENTS	5/29/09	DAB									

**ZEIMET WOZNIAK**  
Civil Engineers & Land Surveyors  
100 GRAND RIVER AVE, SUITE 100  
SOUTHFIELD, MI 48034  
P: (248) 442-1101 F: (248) 442-1244 WWW.ZEIMETWOZNIAK.COM

**MCS ENGINEERING**  
10000 WOODLAND AVE  
SOUTHFIELD, MI 48034  
P: (248) 342-7171

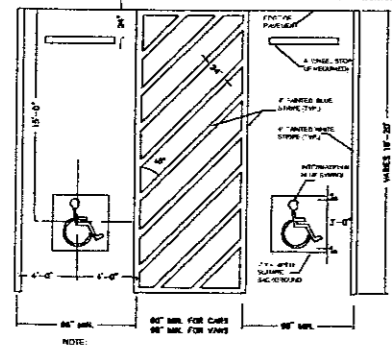
**PROJECT SPONSOR:**  
LIBERTY CONSTRUCTION CO.  
25480 TELEGRAPH ROAD, SUITE 100  
SOUTHFIELD, MI 48034

DATE 1/30/09 SCALE HOR 1" = 10'  
JOB NO. 06158  
SHEET SP-1

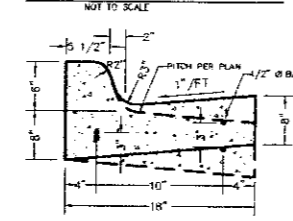


S. LINE SEC. 31  
SOUTH BOULEVARD (60' WD., 1/2 WIDTH)

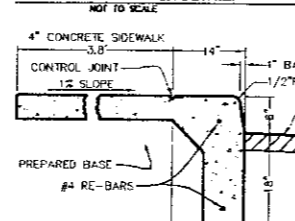
**BARRIER FREE PARKING DETAIL:**



**TYPE 'A' CURB AND GUTTER:**  
NOT TO SCALE



**INTEGRAL CURB-WALK DETAIL:**  
NOT TO SCALE



**PAVEMENT SPECIFICATIONS:**

- ASPHALT DRIVE AND PARKING:**  
1.5\"/>
- CONCRETE SIDEWALK:**  
4\"/>

(PAVEMENT SECTIONS SUBJECT TO OWNER'S GEOTECHNICAL ENGINEER'S RECOMMENDATIONS)

**PAVEMENT REMOVAL LEGEND:**

- SAWCUT PAVEMENT
- REMOVE CURB AND GUTTER
- REMOVE SIDEWALK
- MILL AND CAP WITH 2\"/>

**SIGN LEGEND:**

- RESERVED PARKING
- STOP
- NO STOPPING STANDING PARKING

\* TO BE INSTALLED AT THE DIRECTION OF THE CITY'S FIRE MARSHALL.

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
SITE PLAN REVIEW	4/20/09							
PER CITY COMMENTS	5/25/09	DAD						

**ZEMET WOZNAK**  
Civil Engineers & Land Surveyors  
1001 GRAND RIVER AVE. SUITE 100  
NOVI, MICHIGAN 48242  
P: (248) 442-1100 F: (248) 442-1244 www.zemetwoznak.com

**LIBERTY CONSTRUCTION CO.**  
25480 TELEGRAPH ROAD, SUITE 100  
SOUTHFIELD, MI 48034

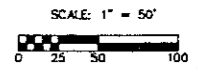
**PRELIMINARY PAVING PLAN**  
**BOULEVARD HILLS NURSING CENTER**  
ROCHESTER HILLS, MICHIGAN

**NOT FOR CONSTRUCTION**  
CITY FILE 09-002

DATE: 4/30/09  
SCALE: HOR: 1" = 50'  
VER: 1" = 10'  
JOB NO: 06158  
SHEET: SP-2

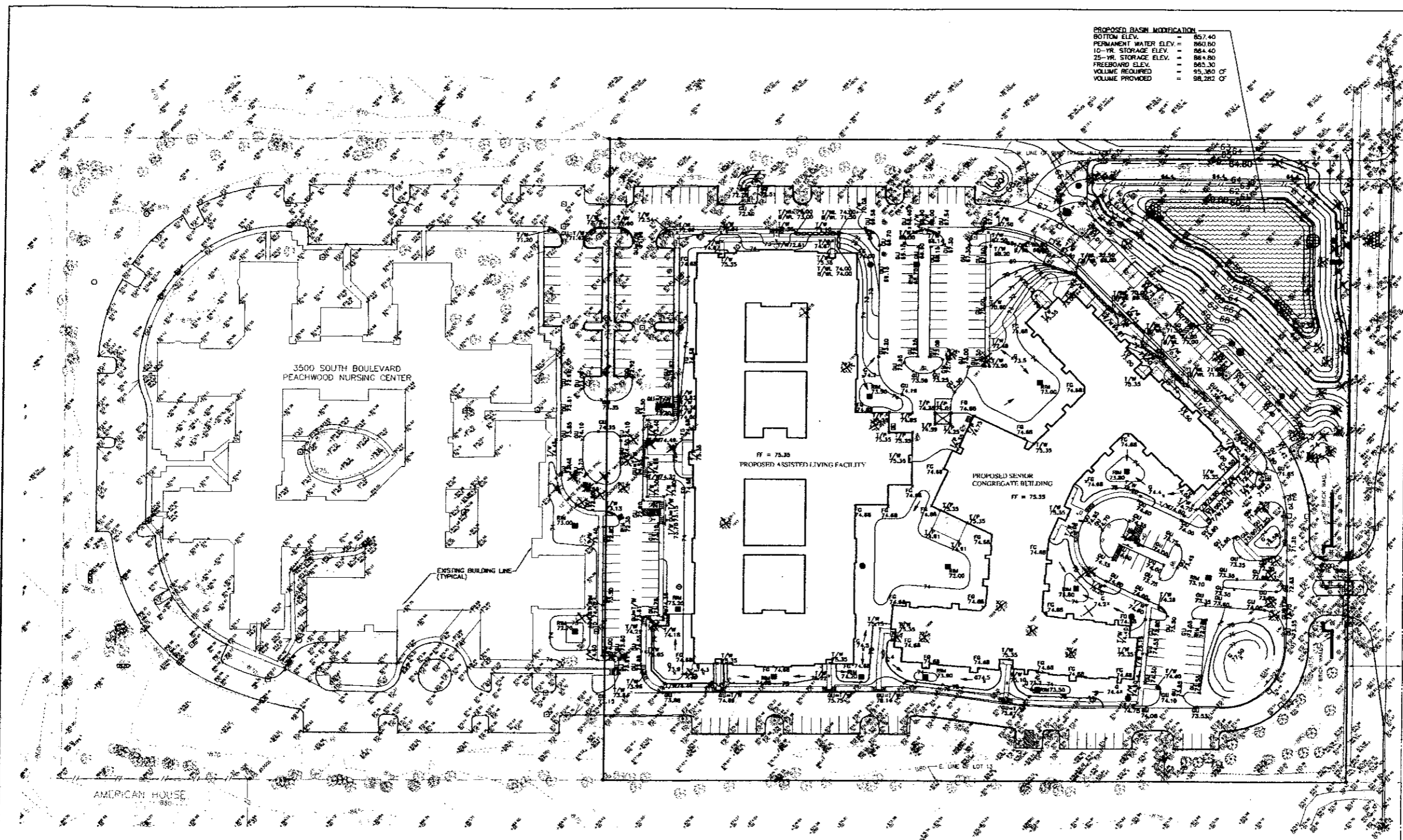
10/10/2009 10:58 AM SITE PLAN PAVING 09/002.DWG TO IT: 20-ALL (4/20/09)

PROPOSED BASIN MODIFICATION  
 BOTTOM ELEV. = 857.40  
 PERMANENT WATER ELEV. = 860.00  
 10-YR. STORAGE ELEV. = 864.40  
 25-YR. STORAGE ELEV. = 868.80  
 FREEBOARD ELEV. = 865.30  
 VOLUME REQUIRED = 95,380 CF  
 VOLUME PROVIDED = 98,282 CF



BENCHMARK:  
 RAILROAD SPIKE IN  
 UTILITY POLE ON SOUTH  
 SIDE OF SOUTH BOULEVARD  
 ACROSS FROM SITE ENTRANCE  
 ELEVATION: 870.51  
 U.S.G.S. DATUM

- LEGEND
- EXISTING**
- MANHOLE
  - CATCH BASIN
  - ◇ INLET
  - CLEANOUT
  - △ END SECTION
  - ROOF DRAIN
  - GATE VALVE
  - HYDRANT
  - WATER SHUT-OFF
  - UTILITY POLE
  - GUY ANCHOR
  - LIGHT POLE
  - SIGN
  - TREE
  - TREE LINE
  - SANITARY SEWER
  - STORM SEWER
  - WATER MAIN
  - GAS MAIN
  - ELECTRIC CABLE
  - CONTOUR MAJOR
  - CONTOUR MINOR
  - SPOT ELEVATION
- PROPOSED**
- MANHOLE
  - CATCH BASIN
  - ◇ INLET
  - CLEANOUT
  - △ END SECTION
  - ROOF DRAIN
  - GATE VALVE
  - HYDRANT
  - WATER SHUT-OFF
  - ✕ TREE REMOVAL
  - SANITARY SEWER
  - STORM SEWER
  - WATER MAIN
  - DITCH
  - CONTOUR MAJOR
  - CONTOUR MINOR
  - PROPOSED GRADE
  - 99.0
  - 1/2" = TOP OF CURB
  - 1/4" = TOP OF WALK
  - 1/8" = TOP OF PAVEMENT
  - 1/16" = TOP OF BANK
  - G = GROUND
  - D = DITCH
  - GU = GUTTER
  - FG = FINISH GRADE
  - FF = FINISH FLOOR
  - BF = BASEMENT FLOOR
  - BL = BRICK LEDGE
  - EMERGENCY OVERFLOW ROUTE



NOTE:  
 THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AS DISCLOSED BY AVAILABLE UTILITY COMPANY RECORDS AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE COMPANY. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY IF A CONFLICT IS APPARENT.

TYPICAL RETAINING WALL DETAIL  
 NOT TO SCALE

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
SITE PLAN REVIEW	4/20/09										
PER CITY COMMENTS	6/29/09	DAB									

**ZEIMET WOZNAK**  
 CIVIL ENGINEERS & LAND SURVEYORS  
 3002 GRAND RIVER AVE. SUITE 100  
 SOUTHFIELD, MI 48034  
 P: (248) 342-1121 F: (248) 342-1244 WWW.ZEIMETWOZNAK.COM

**MISS AG SYSTEMS, INC.**  
 1-800-367-7177

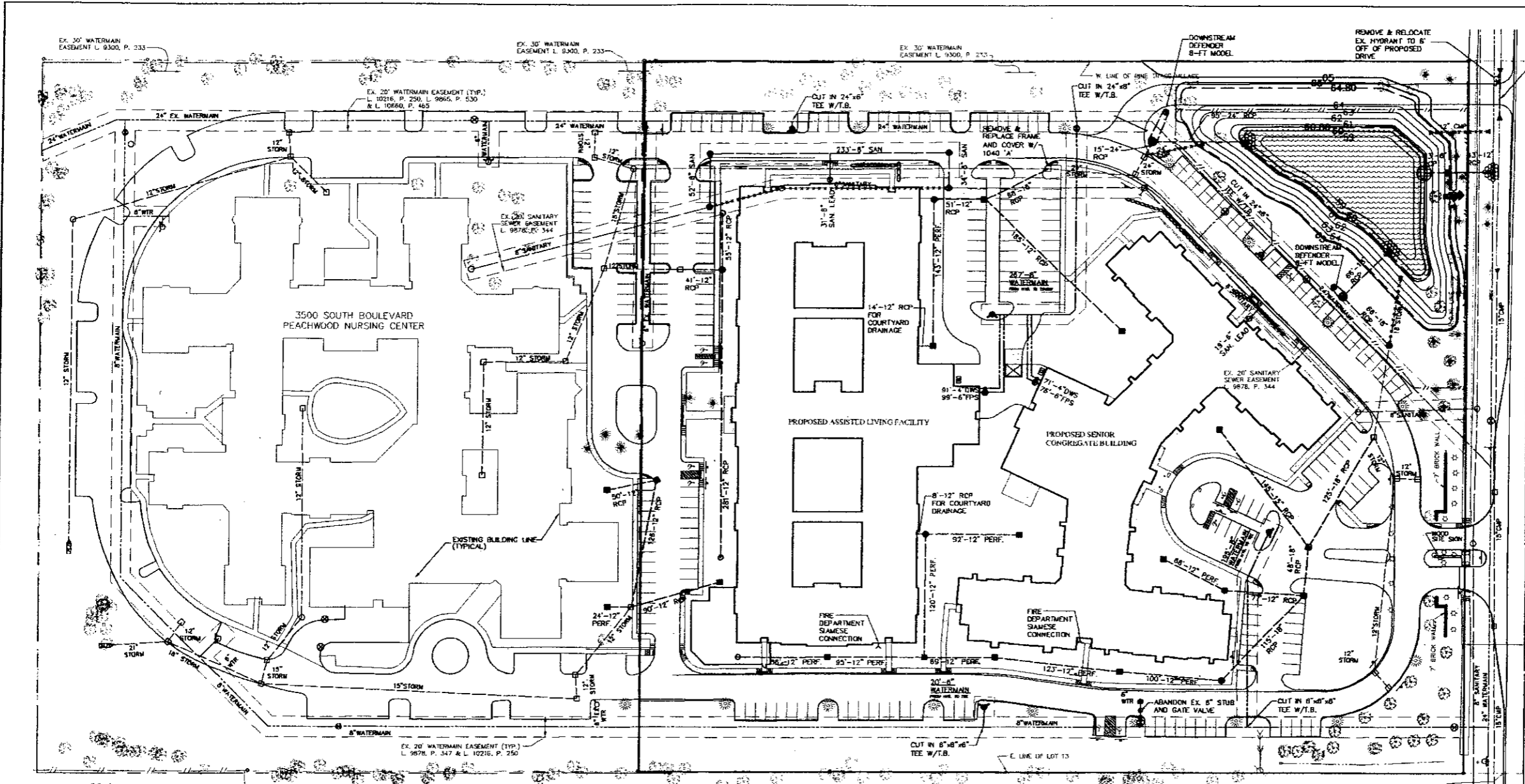
PROJECT SPONSOR:  
 LIBERTY CONSTRUCTION CO.  
 25480 TELEGRAPH ROAD, SUITE 100  
 SOUTHFIELD, MI 48034

PRELIMINARY GRADING PLAN  
 BOULEVARD HILLS NURSING CENTER  
 ROCHESTER HILLS, MICHIGAN

NOT FOR CONSTRUCTION  
 CITY FILE 09-002

DATE	SCALE	SHEET
4/20/09	1" = 50'	SP-3
DESIGNED BY	JOB NO.	
AW	06158	
DRAWN BY	SHEET	
SD	SP-3	

14-Proposed for 14/09/09 SITE PLAN/Grading, 8/23/2008 8:37:53 AM, 18W122224



SCALE: 1" = 50'

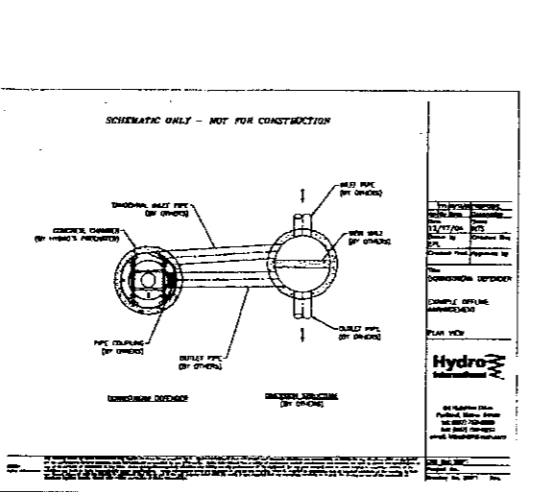
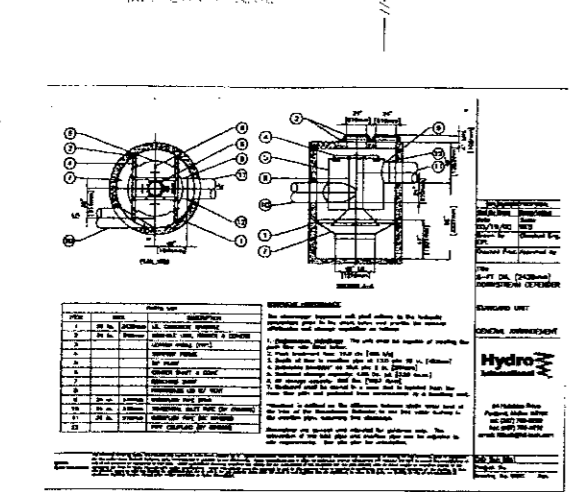
0 25 50 100

**EXISTING**

- MANHOLE
- CATCH BASIN
- INLET
- CLEANOUT
- END SECTION
- ROOF DRAIN
- GATE VALVE
- HYDRANT
- WATER SHUT-OFF
- UTILITY POLE
- GUY ANCHOR
- LIGHT POLE
- SIGN
- TREE
- TREE LINE
- SANITARY SEWER
- STORM SEWER
- WATER MAIN
- GAS MAIN
- ELECTRIC CABLE

**PROPOSED**

- MANHOLE
- CATCH BASIN
- INLET
- CLEANOUT
- END SECTION
- ROOF DRAIN
- GATE VALVE
- HYDRANT
- WATER SHUT-OFF
- ✕ TREE REMOVAL
- SANITARY SEWER
- REMOVE SANITARY SEWER
- STORM SEWER
- REMOVE STORM SEWER
- WATER MAIN
- ABANDON WATER MAIN
- & DITCH
- ➔ EMERGENCY OVERFLOW ROUTE



### Hydro International- Downstream Defender Design Chart

Model Number	Flow Rate (cfs)	Peak Flow Rate (cfs)	Minimum Inlet Pipe Diameter (Inches)	Minimum Outlet Pipe Diameter (Inches)	Headloss at Peak Flow (Feet)	Construction or Storage Capacity (Gallons)	Spill Capacity (Gallons)	Southward Storage Capacity (Cubic Feet)	List Diameter (Inches)
4-FT	1.5	3.0	12	12	5	75	144	2872	4
6-FT	4.7	9.4	18	18	8	228	624	2,510	8
8-FT	8.4	16.8	24	24	8	336	1,440	8,280	12
10-FT	17.2	34.4	30	30	10	1,080	2,937	8,710	16

NOTE:  
SEE SHEET SP-5 FOR SIZING CALCULATIONS.

**SANITARY SEWER BASIS OF DESIGN**

- Existing flow from Peachwood Nursing Center:  
(from approved construction plans by ZWA, Project 85148)  
The peak daily flow rate is 0.16 cfs.  
Per as-built plans the controlling sewer is 8" diameter at 0.31%.  
This equates to a capacity of 0.62 cfs.
- Proposed flow from Boulevard Hills Nursing Center:  
Assisted Living Facility:  
Number of Beds - 144  
REU\* - 1.0 + 0.5/bed x 144 beds - 73 REU  
Senior Congregate Building:  
Number of Beds - 64  
REU\* - 1.0 + 0.5/bed x 64 beds - 33 REU  
Total REU - 73 + 33 - 106 REU  
Total People - 3.5 people/REU x 106 REU - 371 people  
Average Daily Flow - 100 gpcd x 371 people / (7.5 x 24 x 3600) - 0.057 cfs  
Peaking Factor - (18 + √0.371) / (4 + √0.371) - 4.04 use 4.0  
Peak Daily Flow - 100 gpcd x 4.0 x 371 people / (7.5 x 24 x 3600) - 0.228 cfs
- Total Flow to Existing 8" Sewer:  
Peak Daily Flow - 0.16 cfs + 0.228 cfs - 0.388 cfs

Since the existing sewer has a capacity of 0.62 cfs, which is greater than the total Peak Daily Flow, the existing 8" sewer has sufficient capacity.

\* REU per Oakland County Residential Equivalent User Table (REU)

**WATERMAIN NOTE:**  
WATERMAIN CONNECTIONS SHALL BE COORDINATED WITH THE CITY AND ADJOINING PROPERTY OWNER TO MINIMIZE DOWNTIME. IF THE EXISTING FACILITY CANNOT ACCEPT SHORT-TERM SHUT-DOWNS, THEN TEMPORARY WATER SERVICE OR OTHER MEASURES MUST BE PROVIDED DURING CONSTRUCTION.

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
SITE PLAN REVIEW	4/30/09										
PER CITY COMMENTS	4/26/09	DAB									

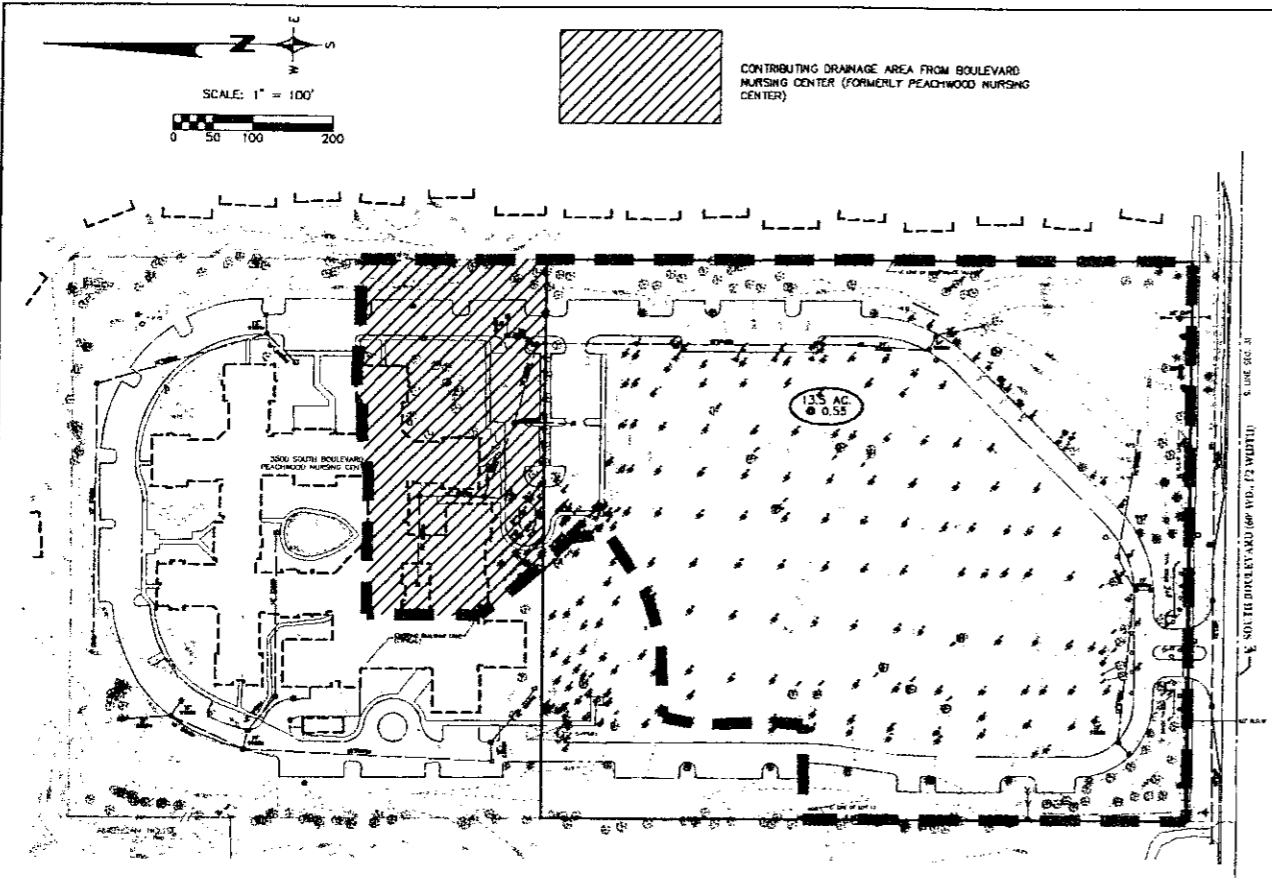
**ZEIMET WAZNAK**  
Civil Engineers & Land Surveyors  
1001 GRAND BLVD., SUITE 100  
NORWICH, VT 05055  
P: 249-442-1100 F: 249-442-1234 www.zetimwaznak.com

**PROJECT SPONSOR:**  
LIBERTY CONSTRUCTION CO.  
25480 TELEGRAPH ROAD, SUITE 100  
SOUTHFIELD, MI 48034

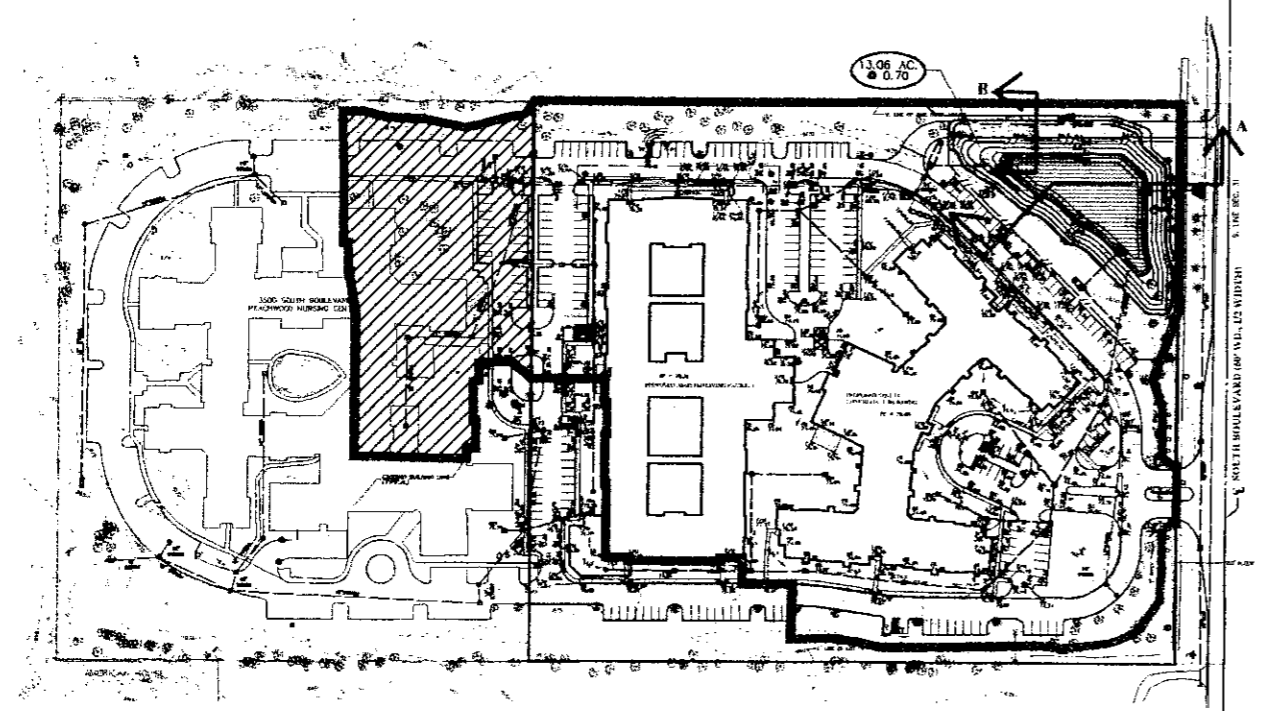
**PRELIMINARY UTILITY PLAN**  
**BOULEVARD HILLS NURSING CENTER**  
ROCHESTER HILLS, MICHIGAN

DATE: 4/30/09 SCALE: HOR: 1" = 50'  
JOB NO.: 0615B  
DRAWN BY: JWB  
SHEET: SP-4





PRE-DEVELOPMENT CONDITIONS



POST-DEVELOPMENT CONDITIONS

**STORMWATER MANAGEMENT ANALYSIS**

**A. LIVERVIEW**

A vacant 217.96 acre parcel of land (that was once part of a larger 22.27 acre parcel) is proposed to be developed into a senior congenial building and assisted living facility. When it was master planned in 1985, then known as "Peachwood Nursing Center", a stormwater basin was constructed to accommodate runoff from this parcel in accordance with the City's standards at that time. The existing basin shall continue to serve this parcel but shall be modified as necessary to meet the City's current requirements.

**B. PRE-DEVELOPMENT DESIGN**

Per records from 1985:

- A = 13.5 ac.
- C = 0.55
- Q<sub>10</sub> = 1.32 cfs
- U<sub>10</sub> = 1.32 - (13.5 x 0.55) = 0.18 cfs/ac-imp
- T<sub>10</sub> = 25 + (0.5625 x 0.18)<sup>2</sup> = 165.94 mins
- V<sub>10</sub> = [(0.570 x 165.94) / (25 + 165.94)] (40 x 0.18 x 165.94) = 7,930.45 cfs-ac-imp
- V<sub>25</sub> = 7,930.45 x 0.55 x 13.5 = 59,400 cf

The original basin was designed to store 63,460 cf. The basin presently stores a volume of 49,205 cf using a permeable water at elev. 861.0 and a 10-year storage at Elev. 863.0 based on measurements of the existing basin.

**C. POST-DEVELOPMENT DESIGN**

The basin will now serve a drainage area (A) of 13.06 acres of which 11.06 acres represents the new project and 2.0 acres represents the older existing nursing center.

Determine new runoff coefficient:

Impervious	Area (ac)	C	Q
Pavement/Roof	7.49	0.8	7.11
Lawns/Grazes	4.25	0.25	1.31
Water	0.32	0.05	0.32
	13.06		8.74

$C = \frac{7.11 + 1.31 + 0.32}{13.06} = 0.67 \rightarrow \text{Use } 0.70$

**Allowable Discharge**

- Q<sub>10</sub> = 13.06 ac x 0.70 cfs/ac = 9.14 cfs
- Per City Engineer, use Q<sub>10</sub> = 1.20 cfs
- U<sub>10</sub> = 1.20 - (13.06 x 0.70) = 0.131 cfs/ac-imp
- 10-Year Storage for Under Drainage Area
- T<sub>10</sub> = 25 + (0.5625 x 0.131)<sup>2</sup> = 198.82 mins
- V<sub>10</sub> = [(0.570 x 198.82) / (25 + 198.82)] (40 x 0.131 x 198.82) = 9,327.18 cfs-ac-imp
- V<sub>25</sub> = 9,327.18 x 0.70 x 13.06 = 85,262 cf
- 25-Year Storage for Under Drainage Area
- T<sub>25</sub> = 25 + (0.5625 x 0.131)<sup>2</sup> = 223.06 mins
- V<sub>25</sub> = [(0.570 x 223.06) / (25 + 223.06)] (40 x 0.131 x 223.06) = 10,431.07 cfs-ac-imp
- V<sub>25</sub> = 10,431.07 x 0.70 x 13.06 = 95,362 cf

**D. AVAILABLE STORAGE**

Because of limited space, the existing basin can be expanded by regaining the side-slopes that only so much because of limited space:

Station	Area (sf)	Area (a)	Depth (ft)	Volume (cf)	Gain Vol. (cf)
806.6	14,027	14,895	0.4	5,958	5,958
801	15,713	17,800	1.0	17,800	23,758
802	19,806	22,047	1.0	22,047	45,805
804	24,208	26,564	1.0	26,564	72,369
804	28,919	32,397	0.8	25,913	98,282

Thus, the 25-year storm storage elevation is at 864.80 (V=96,282 cf)  
By interpolation, the 10-year storm storage elevation is at 864.30 (V=85,317 cf)

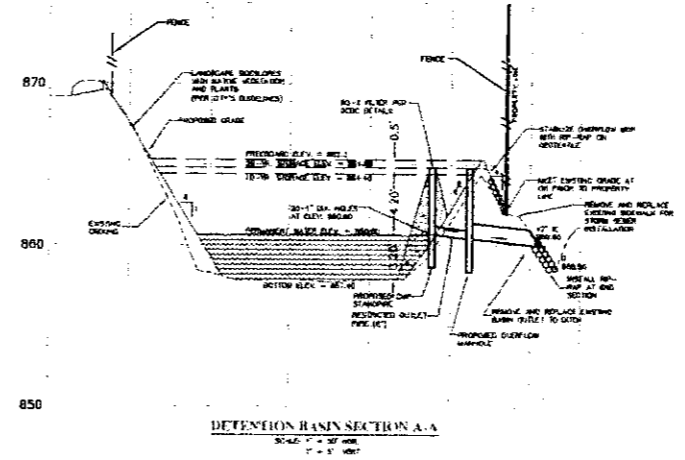
**E. MECHANICAL TREATMENT LEVEL SIZING**

Units shall be sized to treat the peak flow rate of the 1 year, 0.5" storm event.

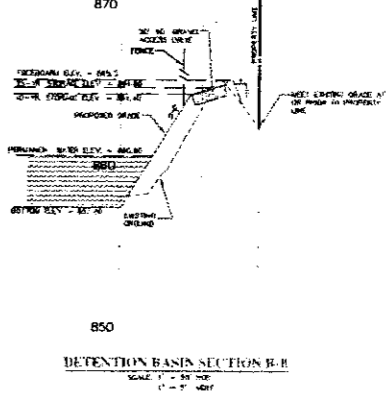
- Norwathy Unit:**
- Contributing area = 0.57 acres
  - Runoff coefficient, C<sub>r</sub> = 0.70
  - I = 72(1+25) = 72(1+25) = 1,80
  - Q<sub>peak</sub> - CIA = 0.70(1.80)(4.7) = 8.15 cfs
- Use a Downstream Defender Model 8-T in an offline configuration.
- Unitary Unit:**
- Contributing area = 4.71 acres
  - Runoff coefficient, C<sub>r</sub> = 0.70
  - I = 72(1+25) = 72(1+25) = 1,80
  - Q<sub>peak</sub> - CIA = 0.70(1.80)(4.71) = 5.93 cfs
- Use a Downstream Defender Model 8-T in an offline configuration.

**F. DUCTILE SIZING**

- Restrictive pipe:**
- A = (Q/0.477gh)<sup>2/3</sup>
  - Q = 2.61 cfs
  - H = 864.8-860.6 = 4.2'
  - A = 2.61 / (0.477(32.2)(4.2)<sup>1/2</sup>) = 0.2559 sf
  - This equates to a 6.8" restrictor. Use a 6" restrict pipe.
- Standpipe or flow:**
- A = 0.39087(Amjh)<sup>2/3</sup> / 172,800 = 0.39087(360)(4.2)<sup>1/2</sup> / 172,800
  - A = 0.1074 sf
  - Number of 1" dia holes = 0.1074 / 0.005 = 19.5
  - Use 20-1" diameter holes in standpipe. Set lowest holes at elev. 860.60



DETENTION BASIN SECTION A-A  
SCALE: 1" = 30'-0"  
1" = 1'-0"



DETENTION BASIN SECTION B-B  
SCALE: 1" = 30'-0"  
1" = 1'-0"

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 8/29/09 8:36:50 AM 8/29/09

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
SITE PLAN REVIEW	4/30/09										
PER CITY COMMENTS	8/29/09	DAB									

**ZEMET WOZNIAK**  
 ASSOCIATES  
 Civil Engineers & Land Surveyors  
 4000 GRAND CENTER AVE. SUITE 100  
 SOUTHFIELD, MI 48034  
 P: (248) 462-1101 F: (248) 462-1241 www.zemwoz.com

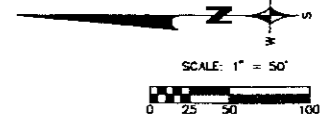
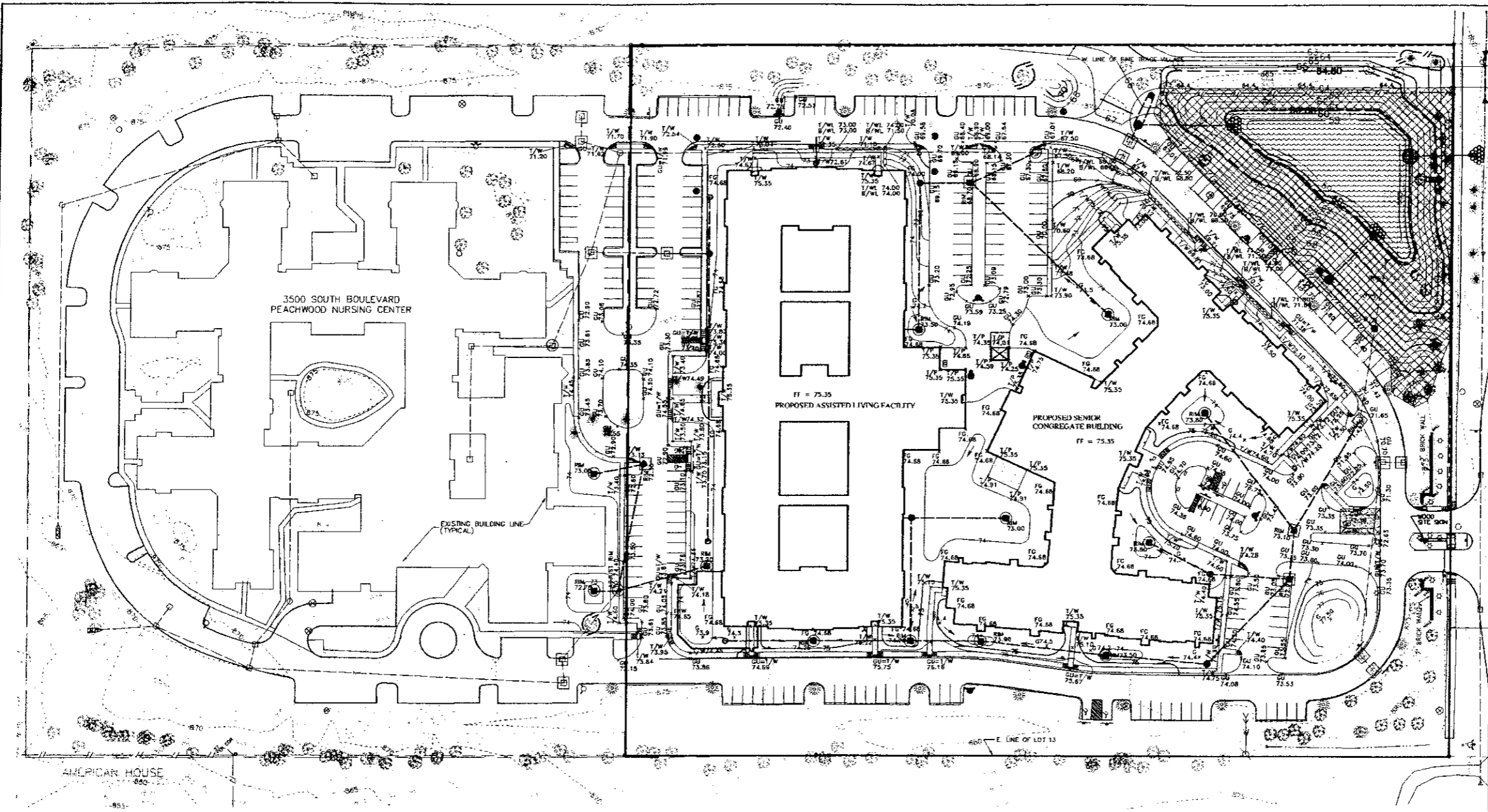
**MRS. ROSSITER, INC.**  
 1-800-321-7171

PROJECT SPONSOR:  
**LIBERTY CONSTRUCTION CO.**  
 25480 TELEGRAPH ROAD, SUITE 100  
 SOUTHFIELD, MI 48034

**PRELIMINARY STORMWATER MANAGEMENT**  
**BOULEVARD HILLS NURSING CENTER**  
 ROCHESTER HILLS, MICHIGAN

NOT FOR CONSTRUCTION  
 CITY FILE D9--002

DATE	1/30/09	SCALE	HORIZ 1" = 100'
DESIGNED BY	AW	VERT	1" = 1'-0"
DRAWN BY	SBE	JOB NO.	06158
CHECKED BY		SHEET	SP-5



- EROSION CONTROL LEGEND:**
- GEOTEXTILE SILT FENCE
  - ORANGE TREE FENCE
  - GRAVEL MUD TRACKING MAT
  - PAVEMENT INLET FILTER
  - REAR YARD INLET FILTER
  - SEED AND STAKED STRAW MULCH BLANKET
  - DETENTION BASIN OUTLET FILTER
  - RIP-RAP

**NOTE:**  
 THIS PLAN ILLUSTRATES THE MINIMUM EROSION CONTROLS NEEDED TO PREVENT SILTS FROM LEAVING THE SITE AND IS SUBJECT TO CHANGE AS CONDITIONS IN THE FIELD WARRANT.

S. LINE SEC. 31  
 E. SOUTH BOULEVARD (60' WD., 1/2 WIDTH)

60' R.O.W.

GRAVEL MUD TRACKING MAT DETAIL:      PAVEMENT INLET FILTER DETAIL:      REAR YARD INLET FILTER DETAIL:      SILT FENCE DETAIL:      RIP-RAP, END SECTION, & BAR SCREEN DETAIL:      TEMPORARY DETENTION BASIN OUTLET STONE FILTER (SO-3) DETAIL:

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
SITE PLAN REVIEW	1/30/09										
PER CITY COMMENTS	6/24/09	DAB									

**ZEMET WOZNAK**  
 Civil Engineers & Land Surveyors  
 402 GRAND RIVER AVE. SUITE 100  
 NOVI, MICHIGAN 48240  
 P: (248) 442-1141 F: (248) 442-5241 www.zemetwoznak.com

**MISS HANSEN INC.**  
 1-800-282-7171

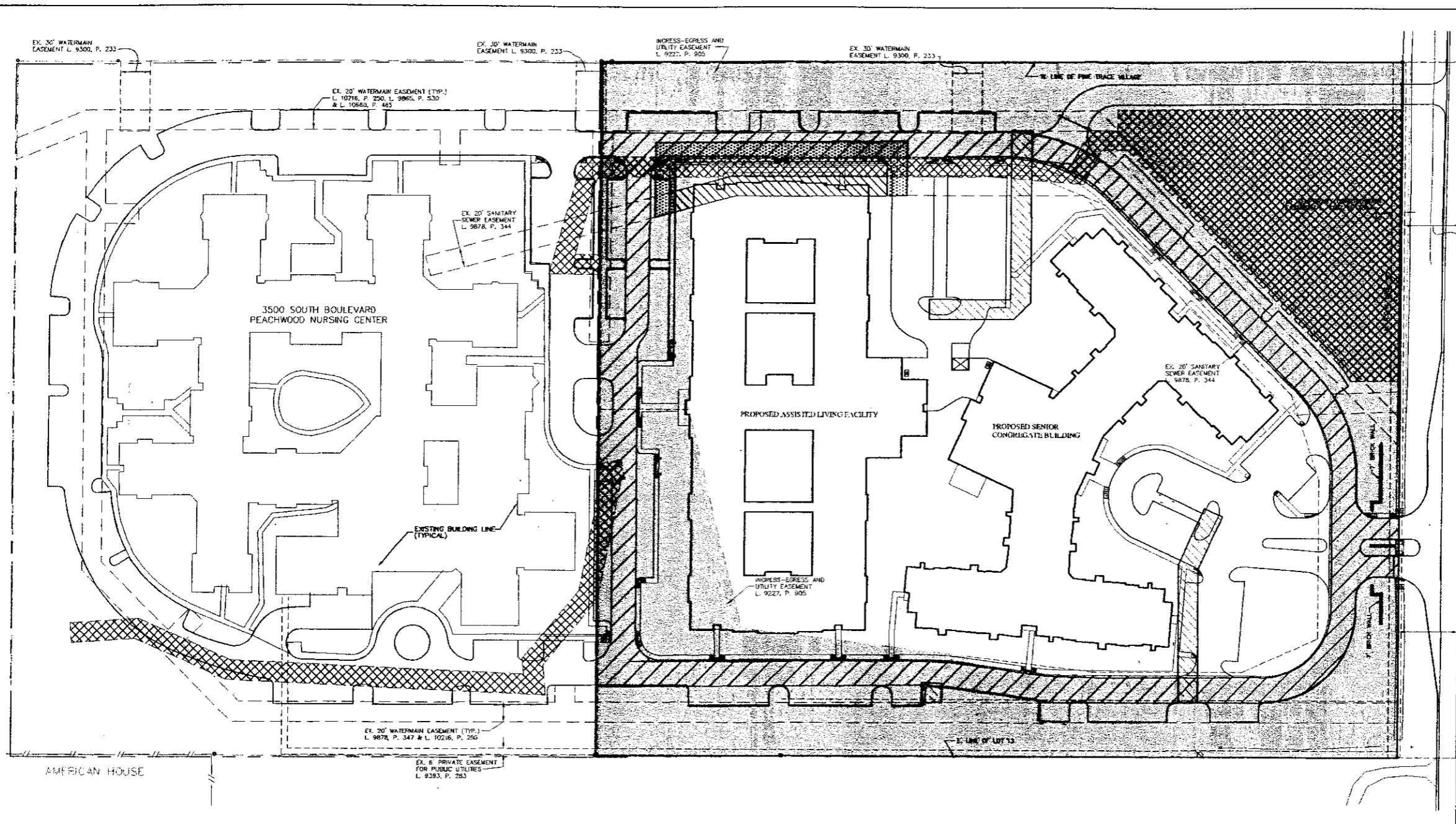
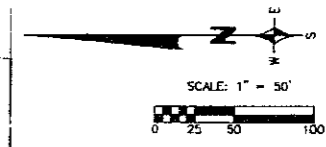
**PROJECT SPONSOR:**  
 LIBERTY CONSTRUCTION CO.  
 25480 TELEGRAPH ROAD, SUITE 100  
 SOUTHFIELD, MI 48034

**PRELIMINARY SOIL EROSION CONTROL PLAN**  
**BOULEVARD HILLS NURSING CENTER**  
 ROCHESTER HILLS, MICHIGAN

NOT FOR CONSTRUCTION  
 CITY FILE D9-002

DATE	4/30/09	SCALE	HOR: 1" = 50'
DESIGNED BY	JAW	VERT.	1" = NA
DRAWN BY	SDS	JOB NO.	06158
CHECKED BY		SHEET	SP-6

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**EASEMENT LEGEND**

	EXISTING EASEMENT
	PROPOSED PUBLIC WATERMAIN EASEMENT
	PROPOSED PUBLIC SANITARY SEWER EASEMENT
	PROPOSED RECIPROCAL PRIVATE STORM SEWER EASEMENT
	EXISTING SANITARY SEWER EASEMENT TO BE VACATED
	PROPOSED PUBLIC INGRESS / EGRESS EASEMENT
	EXISTING INGRESS / EGRESS AND UTILITIES EASEMENT TO BE VACATED

S. LINE SEC. 31  
 60' SOUTH BOULEVARD (60' WD., 1/2 WIDTH)

60' R.O.W.

PROJECT SPONSOR: LIBERTY CONSTRUCTION CO. 25480 TELEGRAPH ROAD, SUITE 100 SOUTHFIELD, MI 48034

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
PER CITY COMMENTS	8/29/09	DAB									

**ZEMET WOZNIAK**  
 CIVIL ENGINEERS & LAND SURVEYORS  
 9821 GRAND HAVEN AVE. SUITE 100  
 NORT MYRTLE, MI 48161  
 P: (248) 442-1121 F: (248) 442-1124 www.zemetwozniak.com

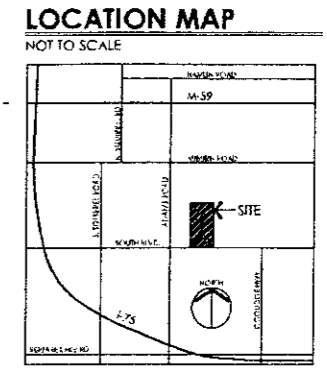
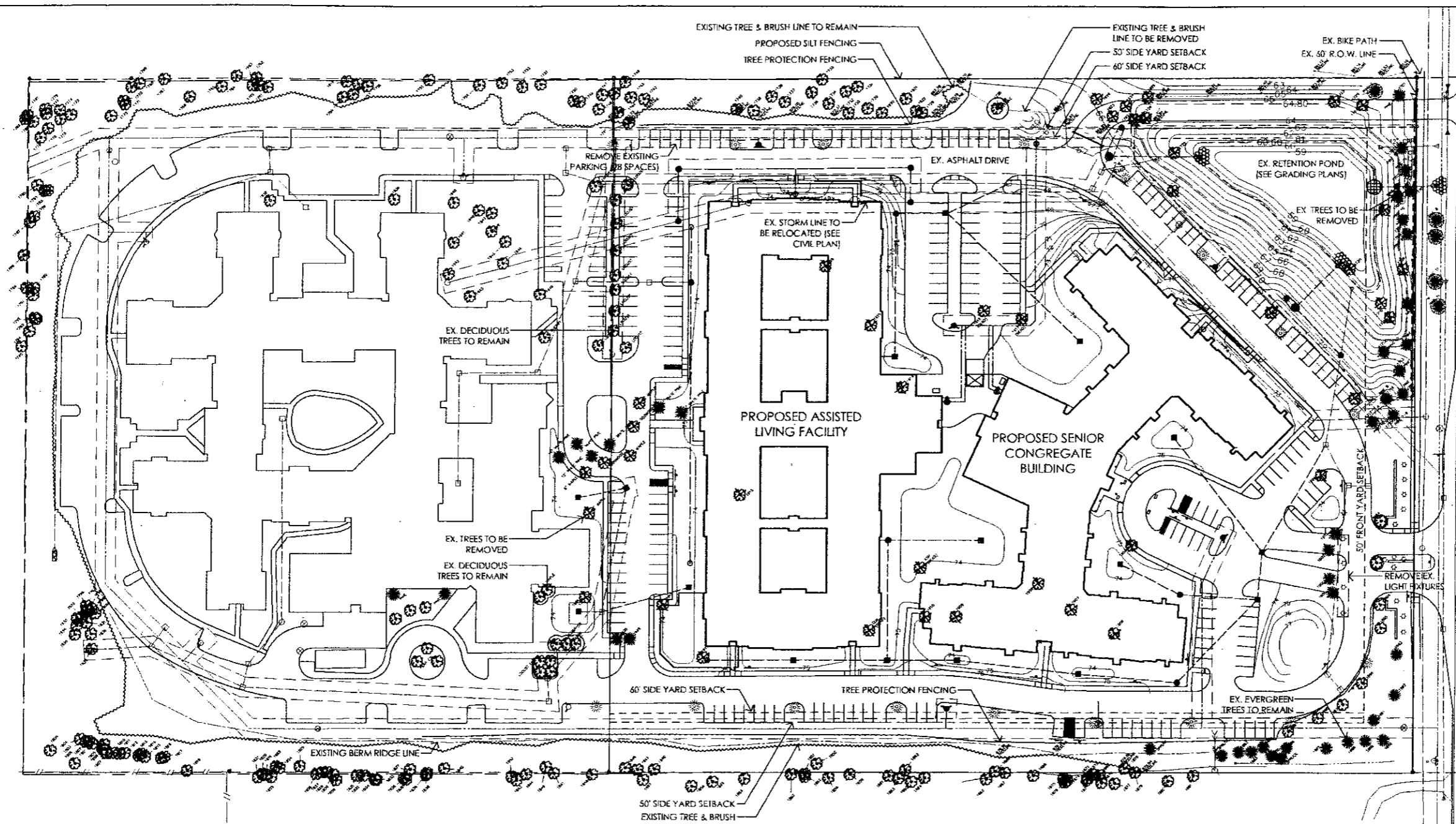
**MISS PROSPECTOR INC.**  
 10000 FULL MEMORIAL DR. #200  
 ROYAL OAK, MI 48067  
 P: (248) 833-7777 F: (248) 833-7778

PROJECT SPONSOR:  
 LIBERTY CONSTRUCTION CO.  
 25480 TELEGRAPH ROAD, SUITE 100  
 SOUTHFIELD, MI 48034

**PRELIMINARY EASEMENT PLAN**  
**BOULEVARD HILLS NURSING CENTER**  
 ROCHESTER HILLS, MICHIGAN

NOT FOR CONSTRUCTION  
 CITY FILE 09-002

DATE	8/29/09	SCALE	HOR: 1" = 50'
DESIGNED BY	ATB	VER:	1" = NA
JOB NO.	06158		
DRAWN BY	SPB	SHEET	SP-7



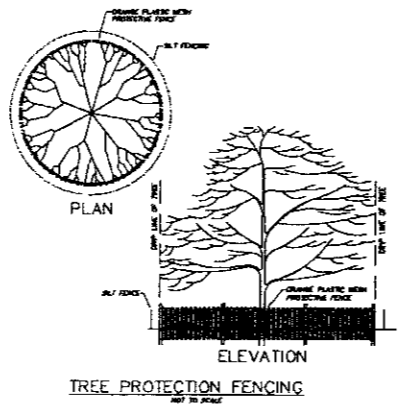
TREE PRESERVATION PLAN  
 ROCHESTER HILLS, MI  
 LANDSCAPE ARCHITECTS • SITE PLANNERS  
 300 E. LOND LAKE RD. STE. 120, BLOOMFIELD HILLS, MI 48304  
 (P) 248.646.6554 (F) 248.646.4838

BOULEVARD HILLS NURSING CENTER  
 ROCHESTER HILLS, MI  
 JAMES C. SCOTT & ASSOCIATES

DATE: 4/29/08  
 DATE: 6/29/08  
 DATE: 1/26/09  
 DATE: BMW  
 SCALE: 1" = 50' 0"  
 L-1

**TREE PROTECTION/ REMOVAL NOTES**

1. APPROVED TREE PROTECTION SHALL BE ERECTED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE. THE CITY'S LANDSCAPE CONSULTANT SHALL BE NOTIFIED AFTER TREE PROTECTION IS IN PLACE. PRIOR TO CONSTRUCTION ACTIVITIES, INCLUDING DELIVERY OF MATERIALS.
2. NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN, INCLUDING, BUT NOT LIMITED TO, PLACING SOLVENTS, BUILDING MATERIALS, CONSTRUCTION EQUIPMENT, OR SOIL DEPOSITS WITHIN THE DRIP LINES.
3. GRADE CHANGES MAY NOT OCCUR WITHIN THE DRIP LINES OF PROTECTED TREES.
4. DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY REMAINING TREE.
5. ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING.
6. SWALES SHALL BE ROUTED TO AVOID THE AREA WITHIN THE DRIP LINES OF PROTECTED TREES.
7. IF TREE PROTECTION CANNOT BE MAINTAINED FOR A TREE THROUGHOUT THE CONSTRUCTION PERIOD, REPLACEMENT OF THAT TREE MAY BE REQUIRED PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY.
8. REGULATED TREES LOCATED ON ADJACENT PROPERTY THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.



**TREE PRESERVATION CALCULATIONS**

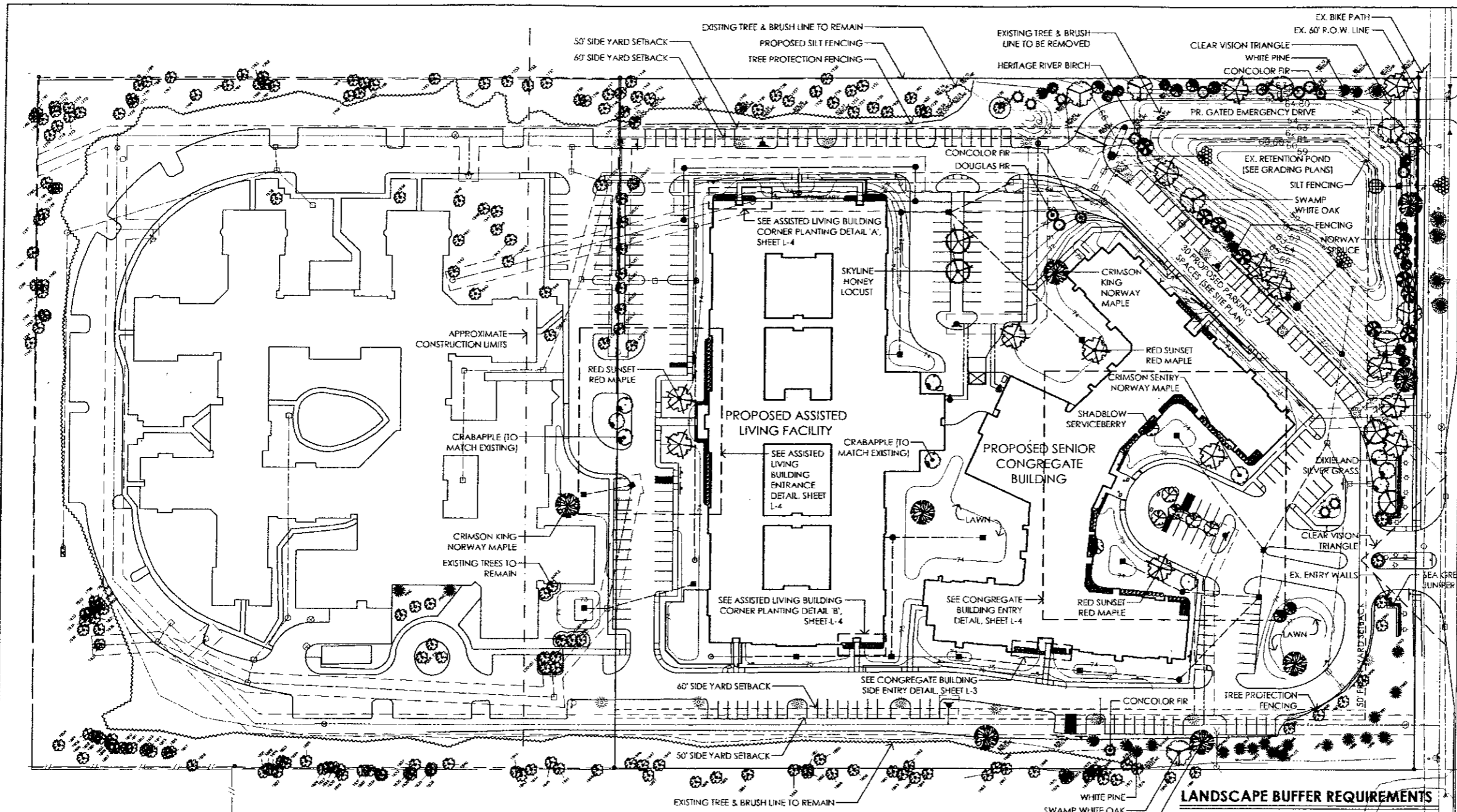
TOTAL NUMBER OF TREES SURVEYED:	248
PLUS ADDITIONAL TREES NOT IN SURVEY:	53
MINUS OFF SITE TREES:	53
MINUS ASH TREES:	3
MINUS DEAD (NON ASH) TREES:	2
TOTAL NUMBER OF REGULATED TREES:	243
MINUS NUMBER OF REGULATED TREES PRESERVED:	175
TOTAL NUMBER OF REGULATED TREES REMOVED:	68
TOTAL NUMBER OF REPLACEMENT TREES REQUIRED:	68
TOTAL NUMBER OF REPLACEMENT TREES PROVIDED:	191

SEE EXISTING TREE SURVEY, SHEET L-2.

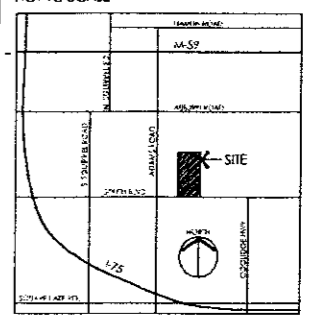
**PLEASE NOTE:**  
 ALL EFFORTS WILL BE MADE TO PRESERVE ANY EXISTING TREES (CURRENTLY DESIGNATED AS A REMOVAL) THAT ARE NOT IMMEDIATELY IMPACTED BY GRADING AND/OR CONSTRUCTION.

NOTE: ALL QUANTITIES ARE LANDSCAPE ARCHITECT'S ESTIMATES. THESE QUANTITIES ARE NOT TO BE TAKEN AS DEFINING OR LIMITING THE AMOUNT OF WORK TO BE DONE UNDER THE CONTRACT. THE CONTRACTOR IS RESPONSIBLE FOR HIS OWN ESTIMATES. ALL DISCREPANCIES ARE TO BE REPORTED TO THE LANDSCAPE ARCHITECT'S OFFICE IMMEDIATELY. ALL DESIGNS, CONCEPTS, DETAILS, ETC. ARE THE PROPERTY OF JAMES C. SCOTT & ASSOCIATES, INC., AND MAY NOT BE DUPLICATED, PHOTOGRAPHED, OR REPRODUCED WITHOUT THE WRITTEN CONSENT OF JAMES C. SCOTT, OWNER. COPYRIGHT 2008

Tag No.	Scientific Name	Common Name	Diam. 1	Diam. 2	Condition	Notes	Action	1765	Prunus serotina	Black Cherry	11.1	10.0	Poor	One trunk dead.	Preserve	1831	Prunus serotina	Black Cherry	9.2	Fair	Preserve	1886	Quercus palustris	Pin Oak	14.7	Fair	Preserve			
1701	Pinus strobus	White Pine	8.2		Fair		Remove	1766	Quercus velutina	Black Oak	20.4		Good		Preserve	1832	Prunus serotina	Black Cherry	13.9	8.7	Fair	Additional trunk 8.4.	Preserve	1887	Quercus palustris	Pin Oak	12.4	Fair	Preserve	
1702	Pinus strobus	White Pine	10.7		Fair		Remove	1767	Prunus serotina	Black Cherry	28.0	15.0	Poor	Rot at base. Additional trunk 13.8".	Preserve	1833	Prunus serotina	Black Cherry	13.0	7.4	Fair		Preserve	1888	Quercus palustris	Pin Oak	11.9	Fair	Preserve	
1703	Pinus strobus	White Pine	8.3		Fair		Remove	1768	Sassafras albidum	Sassafras	6.7		Fair		Preserve	1834	Prunus serotina	Black Cherry	9.4	Fair	Preserve	1889	Pinus strobus	White Pine	11.2	Fair	Preserve			
1704	Pinus strobus	White Pine	6.5		Fair		Remove	1769	Prunus serotina	Black Cherry	8.5		Fair		Preserve	1835	Quercus palustris	Pin Oak	18.0	Good	Preserve	1890	Pinus strobus	White Pine	10.3	Fair	Preserve			
1705	Pinus strobus	White Pine	7.4		Fair		Remove	1770	Sassafras albidum	Sassafras	8.5		Fair		Preserve	1836	Prunus serotina	Black Cherry	8.2	Fair	Preserve	1891	Pinus strobus	White Pine	9.8	Fair	Preserve			
1706	Acer saccharum	Sugar Maple	7.1		Fair		Remove	1771	Sassafras albidum	Sassafras	5.9		Fair		Preserve	1837	Acer platanoides	Norway Maple	11.4	6.3	Fair		Preserve	1892	Pinus strobus	White Pine	9.8	Fair	Preserve	
1707	Pinus strobus	White Pine	8.2		Fair		Remove	1772	Quercus velutina	Black Oak	18.4		Fair		Preserve	1838	Prunus serotina	Sweet Cherry	7.1	Poor	Shaded.	Preserve	1893	Pinus strobus	White Pine	10.0	Fair	Preserve		
1708	Pinus strobus	White Pine	8.7		Fair		Remove	1773	Quercus velutina	Black Oak	12.9		Fair		Preserve	1839	Prunus serotina	Sweet Cherry	8.1	6.1	Poor	Shaded.	Preserve	1894	Pinus strobus	White Pine	9.8	Fair	Preserve	
1709	Juglans nigra	Black Walnut	16.7		Good		Remove	1774	Sassafras albidum	Sassafras	6.7		Fair		Preserve	1840	Prunus serotina	Black Cherry	7.0	Fair	Preserve	1895	Pinus strobus	White Pine	10.0	Fair	Preserve			
1710	Juglans nigra	Black Walnut	19.5		Good		Remove	1775	Quercus velutina	Black Oak	9.7		Fair		Preserve	1841	Quercus macrocarpa	Bur Oak	11.4	8.6	Fair		Preserve	1896	Pinus strobus	White Pine	10.0	Fair	Preserve	
1711	Juglans nigra	Black Walnut	8.0		Fair		Remove	1776	Sassafras albidum	Sassafras	11.4		Poor	Thin crown.	Preserve	1842	Acer platanoides	Norway Maple	19.1	Good		Preserve	1897	Pinus strobus	White Pine	12.8	10.5	Fair	3 trunks.	
1712	Pinus strobus	White Pine	8.0		Fair		Remove	1777	Sassafras albidum	Sassafras	6.8		Poor	Shaded.	Preserve	1843	Prunus serotina	Black Cherry	8.7	Fair		Preserve	1898	Pinus strobus	White Pine	13.5	Fair	Preserve		
1713	Pinus strobus	White Pine	6.0		Fair		Remove	1778	Quercus velutina	Black Oak	11.3		Fair		Preserve	1844	Rhamnus cathartica	Common Buckthorn	6.4	Fair		Preserve	1899	Pinus strobus	White Pine	10.0	Fair	Preserve		
1714	Pinus strobus	White Pine	9.0		Fair		Remove	1779	Ulmus americana	American Elm	17.5		Fair		Preserve	1845	Quercus macrocarpa	Bur Oak	14.6	Good		Preserve	1900	Pinus strobus	White Pine	12.8	10.5	Fair	3 trunks.	
1715	Pinus strobus	White Pine	7.5	7.1	Fair		Remove	1780	Quercus velutina	Black Oak	8.0		Poor	Thin crown.	Preserve	1846	Quercus velutina	Black Oak	27.3	Good		Preserve	1901	Pinus strobus	White Pine	13.5	Fair	Preserve		
1716	Pinus strobus	White Pine	8.1		Fair		Remove	1781	Sassafras albidum	Sassafras	9.6		Fair		Preserve	1847	Acer platanoides	Norway Maple	9.9	Good	Rot at base.	Preserve	1902	Pinus strobus	White Pine	15.0	12.8	Good	Some basal rot	
1717	Pinus strobus	White Pine	7.5		Fair		Remove	1782	Sassafras albidum	Sassafras	9.3		Fair		Preserve	1848	Quercus macrocarpa	Bur Oak	27.0	22.8	Good	Heavily	Preserve	1903	Pinus strobus	White Pine	11.8	7.8	Fair	
1718	Pinus strobus	Black Walnut	30.6		Fair	Scar on side.	Remove	1783	Populus deltoides	Cottonwood	24.8		Fair		Preserve	1849	Prunus serotina	Sweet Cherry	8.1	Fair		Preserve	1904	Pinus strobus	White Pine	15.0	12.8	Good		
1719	Quercus palustris	Pin Oak	8.4		Poor	Yellow leaves	Remove	1784	Sassafras albidum	Sassafras	6.5		Fair		Preserve	1850	Prunus serotina	Black Cherry	9.3	Good		Preserve	1905	Pinus strobus	White Pine	9.3	Very Poor	Dead		
1720	Salix alba	Weeping Willow	6.2		Fair		Remove	1785	Sassafras albidum	Sassafras	6.5		Fair		Preserve	1851	Calluna occidentalis	Northern Hackberry	7.7	Fair		Preserve	1906	Pinus strobus	White Pine	11.6	Very Poor	Dead		
1721	Pinus serotina	Black Cherry	10.8		Fair	One trunk sawn off.	Remove	1786	Sassafras albidum	Sassafras	7.0		Fair		Preserve	1852	Prunus serotina	Black Cherry	20.7	Fair		Preserve	1907	Pinus strobus	White Pine	12.8	Very Poor	Dead		
1722	Salix alba	Weeping Willow	8.5	6.6	Fair	Multi-trunked.	Remove	1787	Sassafras albidum	Sassafras	6.2		Fair		Preserve	1853	Prunus serotina	Black Cherry	9.3	8.2	Poor	Mostly dead	Preserve	1908	Pinus strobus	White Pine	8.3	Fair	Preserve	
1723	Acer saccharum	Sugar Maple	7.7		Good		Remove	1788	Quercus velutina	Black Oak	6.6		Fair		Preserve	1854	Prunus serotina	Black Cherry	14.6	Fair		Preserve	1909	Pinus strobus	White Pine	25.0	Good	Preserve		
1724	Pinus strobus	White Pine	10.0		Good		Remove	1789	Quercus velutina	Black Oak	14.3		Good		Preserve	1855	Prunus serotina	Black Oak	7.1	Fair		Preserve	1910	Pinus strobus	White Pine	10.5	Poor	Preserve		
1725	Pinus strobus	White Pine	8.2		Good		Remove	1790	Quercus velutina	Black Oak	8.0		Fair		Preserve	1856	Sassafras albidum	Sassafras	6.8	Fair	Old wound on trunk	Preserve	1911	Pinus strobus	White Pine	17.9	Fair	Preserve		
1726	Prunus serotina	Black Cherry	9.7		Very Poor	Nearly dead.	Remove	1791	Prunus serotina	Black Cherry	9.8		Fair		Preserve	1857	Prunus serotina	Black Cherry	13.3	Fair		Preserve	1912	Pinus strobus	White Pine	18.3	Fair	Preserve		
1727	Acer negundo	Box-elder	19.2		Fair		Remove	1792	Prunus serotina	Black Cherry	9.9		Fair		Preserve	1858	Prunus serotina	Black Cherry	39.7	Poor	Mostly dead, 2 trunks.	Preserve	1913	Pinus strobus	White Pine	21.0	13.1	Poor	Dead branches	
1728	Quercus velutina	Black Oak	18.8		Fair	Trumpet creeper vine.	Preserve	1793	Tilia americana	Basswood	6.1		Fair		Preserve	1859	Prunus serotina	Black Cherry	28.2	Good		Preserve	1914	Pinus strobus	White Pine	12.3	Fair	Preserve		
1729	Prunus serotina	Black Cherry	18.6		Fair		Preserve	1794	Quercus rubra	Red Oak	17.3		Fair		Preserve	1860	Prunus serotina	Black Cherry	7.6	Fair		Preserve	1915	Pinus strobus	White Pine	17.0	Fair	Preserve		
1730	Prunus serotina	Black Cherry	15.4		Very Poor	One trunk dead.	Preserve	1795	Prunus serotina	Black Cherry	13.0		Fair		Preserve	1861	Prunus serotina	Black Cherry	7.9	Good	Grape vine	Preserve	1916	Pinus strobus	White Pine	22.1	Poor	Oriental bittersweet vine.		
1731	Prunus serotina	Black Cherry	11.5	8.0	Fair		Preserve	1796	Populus tremuloides	Quaking Aspen	8.8		Fair		Preserve	1862	Juglans nigra	Black Walnut	7.9	Good		Preserve	1917	Pinus strobus	White Pine	11.3	Fair	Preserve		
1732	Malus pumila	Apple	8.7		Fair		Preserve	1797	Populus tremuloides	Quaking Aspen	9.0		Fair		Preserve	1863	Prunus serotina	Black Cherry	7.6	Fair		Preserve	1918	Pinus strobus	White Pine	10.3	Fair	Preserve		
1733	Prunus serotina	Black Cherry	9.8		Fair		Preserve	1798	Populus tremuloides	Quaking Aspen	8.5		Fair		Preserve	1864	Prunus serotina	Black Cherry	27.0	Fair		Preserve	1919	Pinus strobus	White Pine	7.5	Fair	Preserve		
1734	Prunus serotina	Black Cherry	14.6	7.0	Fair	3 trunks.	Preserve	1799	Populus tremuloides	Quaking Aspen	8.9		Fair		Preserve	1865	Juglans nigra	Black Walnut	13.3	12.0	Fair		Preserve	1920	Pinus strobus	White Pine	7.5	Fair	Preserve	
1735	Prunus serotina	Black Cherry	17.3		Fair		Preserve	1800	Populus tremuloides	Quaking Aspen	7.0		Fair		Preserve	1866	Juglans nigra	Black Walnut	14.1	11.9	Fair		Preserve	1921	Pinus strobus	White Pine	10.3	Fair	Preserve	
1736	Malus pumila	Apple	9.8		Fair		Preserve	1801	Populus deltoides	Cottonwood	8.8		Fair		Preserve	1867	Juglans nigra	Black Walnut	16.2	Fair		Preserve	1922	Pinus strobus	White Pine	18.3	Fair	Preserve		
1737	Rhamnus cathartica	Common Buckthorn	8.0		Fair	Multi-trunked.	Preserve	1802	Populus deltoides	Cottonwood	6.9		Fair		Preserve	1868	Juglans nigra	Black Walnut	16.2	Fair		Preserve	1923	Pinus strobus	White Pine	12.3	Fair	Preserve		
1738	Acer platanoides	Norway Maple	8.9		Fair		Preserve	1803	Populus deltoides	Cottonwood	8.9		Fair		Preserve	1869	Acer negundo	Box-elder	17.5	Good		Preserve	1924	Pinus strobus	White Pine	11.3	Fair	Preserve		
1739	Prunus serotina	Black Cherry	15.2	14.6	Fair	3 trunks.	Preserve	1804	Populus deltoides	Cottonwood	7.8		Fair		Preserve	1870	Juglans nigra	Black Walnut	14.0	Fair		Preserve	1925	Pinus strobus	White Pine	12.6	Fair	Preserve		
1740	Prunus serotina	Black Cherry	16.7	15.9	Fair	4 trunks.	Preserve	1805	Populus deltoides	Cottonwood	6.9		Fair		Preserve	1871	Juglans nigra	Black Walnut	8.8	8.1	Fair		Preserve	1926	Pinus strobus	White Pine	11.3	Fair	Preserve	
1741	Quercus velutina	Black Oak	12.4		Fair		Preserve	1806	Populus deltoides	Cottonwood	7.0		Fair		Preserve	1872	Prunus serotina	Black Cherry	14.8	Fair		Preserve	1927	Pinus strobus	White Pine	8.3	Fair	Preserve		
1742	Quercus velutina	Black Oak	18.0		Fair		Preserve	1807	Populus deltoides	Cottonwood	8.2		Fair		Preserve	1873	Prunus serotina	Black Cherry	8.2	Fair		Preserve	1928	Pinus strobus	White Pine	10.3	Fair	Preserve		
1743	Quercus velutina	Black Oak	17.0		Fair		Preserve	1808	Populus deltoides	Cottonwood	8.8	8.2	Fair		Preserve	1874	Juglans nigra	Black Walnut	7.1	Fair		Preserve	1929	Pinus strobus	White Pine	10.3	Fair	Preserve		
1744	Quercus velutina	Black Oak	17.0		Fair		Preserve	1809	Populus deltoides	Cottonwood	7.4	15.5	Good		Preserve	1875	Juglans nigra	Black Walnut	11.0	Fair		Preserve	1930	Pinus strobus	White Pine	7.5	Fair	Preserve		
1745	Quercus velutina	Black Oak	7.5		Fair		Preserve	1810	Populus deltoides	Cottonwood	8.1		Fair		Preserve	1876	Prunus serotina	Black Cherry	14.9	Good		Preserve	1931	Pinus strobus	White Pine	12.5	Fair	Preserve		
1746	Quercus velutina	Black Oak	8.3		Fair		Preserve	1811	Populus deltoides	Cottonwood	11.4		Fair		Preserve	1877	Juglans nigra	Black Walnut	17.5	Good		Preserve	1932	Pinus strobus	White Pine	11.4	Fair	Preserve		
1747	Quercus velutina	Black Oak	6.5		Fair		Preserve	1812	Populus deltoides	Cottonwood	7.3		Fair		Preserve	1878	Juglans nigra	Black Walnut	14.9	Good		Preserve	1933	Pinus strobus	White Pine	10.6	Fair	Preserve		
1748	Quercus velutina	Black Oak	10.1		Fair		Preserve	1813	Populus deltoides	Cottonwood	7.1		Fair		Preserve	1879	Prunus serotina	Black Cherry	28.0	Poor	Thin crown	Preserve	1934	Pinus strobus	White Pine	11.1	Fair</			



**LOCATION MAP**  
NOT TO SCALE



**PLANT SYMBOL LEGEND**

- 6 SKYLINE HONEYLOCUST  
*Gleditsia triacanthos inermis* 'Skyline'  
3" Cal., B&B, Spaced as shown
- 9 SWAMP WHITE OAK  
*Quercus bicolor*  
3" Cal., B&B, Spaced as shown
- 11 RED SUNSET RED MAPLE  
*Acer rubrum* 'Franseria'  
3" Cal., B&B, Spaced as shown
- 9 CRIMSON KING NORWAY MAPLE  
*Acer platanoides* 'Crimson King'  
3" Cal., B&B, Spaced as shown
- 2 CRIMSON SENTRY NORWAY MAPLE  
*Acer platanoides* 'Crimson Sentry'  
3" Cal., B&B, Spaced as shown
- 7 SHADBLow SERVICEBERRY  
*Amelanchier canadensis*  
10' Ht., Multi-stem, B&B, 20' o.c. min.
- 9 HERITAGE RIVER BIRCH  
*Betula nigra* 'Heritage'  
10' Ht., Multi-stem, B&B, 15' o.c. min.
- 8 CRAB APPLE  
To Match Existing on Site  
2" Cal., B&B, 18' o.c. min.
- 8 COLORADO BLUE SPRUCE  
*Picea pungens* var. 'glauca'  
10' Ht., B&B, 12' o.c. min.
- 8 NORWAY SPRUCE  
*Picea abies*  
10' Ht., B&B, 12' o.c. min.
- 8 WHITE PINE  
*Pinus strobus*  
10' Ht., B&B, 12' o.c. min.
- 8 DOUGLAS FIR  
*Pseudotsuga menziesii*  
10' Ht., B&B, 12' o.c. min.
- 8 CONCOLOR FIR  
*Abies concolor*  
10' Ht., B&B, 12' o.c. min.
- 66 DWARF BURNING BUSH  
*Eurovynus alata* 'Compacta'  
3" Ht., min., 4' o.c.
- 99 WARDS YEW  
*Taxus x media* 'Wards'  
24-30" Spread, 3' o.c.
- 17 SEA GREEN JUNIPER  
*Juniperus chinensis* 'Sea Green'  
24-30" Spread, 3' o.c.
- 42 ENDLESS SUMMER HYDRANGEA  
*Hydrangea macrophylla* 'Baltzer'  
30' Ht., 3' o.c.
- 14 DORIELAND SILVER GRASS  
*Miscanthus sinensis* 'Dorieland'  
3 Gal., 3' o.c.
- 32 FOUNTAIN GRASS  
*Pennisetum alopecuroides*  
1 Gal., 30' o.c.
- 26 FRANCEE HOSTA  
*Hosta* 'Francee'  
1 Gal., 30' o.c.
- 100 VISIONS ASTILBE  
*Astilbe chinensis* 'Visions'  
1 Gal., 18' o.c.
- 43 FINAL TOUCH DAYLILY  
*Heemerocallis* 'Final Touch'  
1 Gal., 18' o.c.

**LANDSCAPE BUFFER REQUIREMENTS**

A TYPE 'B' LANDSCAPE BUFFER IS REQUIRED ALONG THE WESTERN, EASTERN AND SOUTHERN PROPERTY LINES.

THERE IS EXISTING HEAVY BRUSH, UNDERSTORY, AND TREE COVER ALONG THE WESTERN AND EASTERN PROPERTY LINES. THESE SCREENS SHALL BE APPROPRIATELY PROTECTED, AS REQUIRED BY THE CITY OF ROCHESTER HILLS DURING CONSTRUCTION AND SHALL BE REPLACED BY THE OWNER, SHOULD ANY ACCIDENTAL DAMAGE OCCUR. ADDITIONALLY, DECIDUOUS AND EVERGREEN TREES HAVE BEEN ADDED TO FILL ANY GAPS AND TO PROVIDE SCREENING FROM THE NEIGHBORS.

REQUIREMENTS FOR THE EAST AND WEST PROPERTY LINES ARE AS FOLLOWS FOR A TYPE 'B' BUFFER (1,398' L.F.):

	REQD.	PR. EAST	PR. WEST
MINIMUM WIDTH:	10'	+/- 50'	+/- 35'
DECIDUOUS TREES (2 PER 100 L.F.):	29	59*	37**
ORNAMENTAL TREES (1.5 PER 100 L.F.):	21		
EVERGREEN TREES (2 PER 100 L.F.):	28	20*	16**
SHRUBS (4 PER 100 L.F.):	56		

\*TOTALS INCLUDE EXISTING TREES (34 DECIDUOUS AND 12 EVERGREEN) TO REMAIN. THE EXISTING UNDERSTORY VEGETATION IS EXTREMELY DENSE, HAS NOT BEEN TALLED AT THIS TIME, AND SCHEDULED TO REMAIN.

\*\*TOTALS INCLUDE EXISTING TREES (34 DECIDUOUS AND 12 EVERGREEN) TO REMAIN. THE EXISTING UNDERSTORY VEGETATION IS EXTREMELY DENSE, HAS NOT BEEN TALLED AT THIS TIME, AND SCHEDULED TO REMAIN.

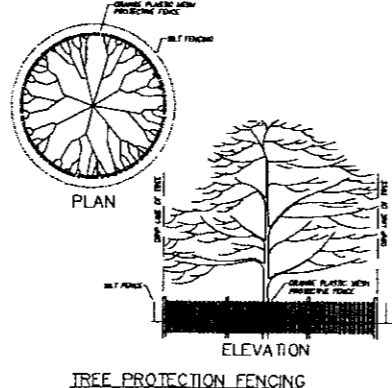
REQUIREMENTS FOR THE SOUTH PROPERTY LINE ARE AS FOLLOWS FOR A TYPE 'B' BUFFER (691' - 42' DRIVE = 649' L.F.):

	REQD.	PROVIDED
MINIMUM WIDTH:	10'	45'
DECIDUOUS TREES (2 PER 100 L.F.):	13	13***
ORNAMENTAL TREES (1.5 PER 100 L.F.):	10	10***
EVERGREEN TREES (2 PER 100 L.F.):	13	16***
SHRUBS (4 PER 100 L.F.):	26	29

\*\*\*TOTALS INCLUDE EXISTING TREES (1 DECIDUOUS, 2 ORNAMENTAL, AND 3 EVERGREEN).

**TREE PROTECTION/ REMOVAL NOTES**

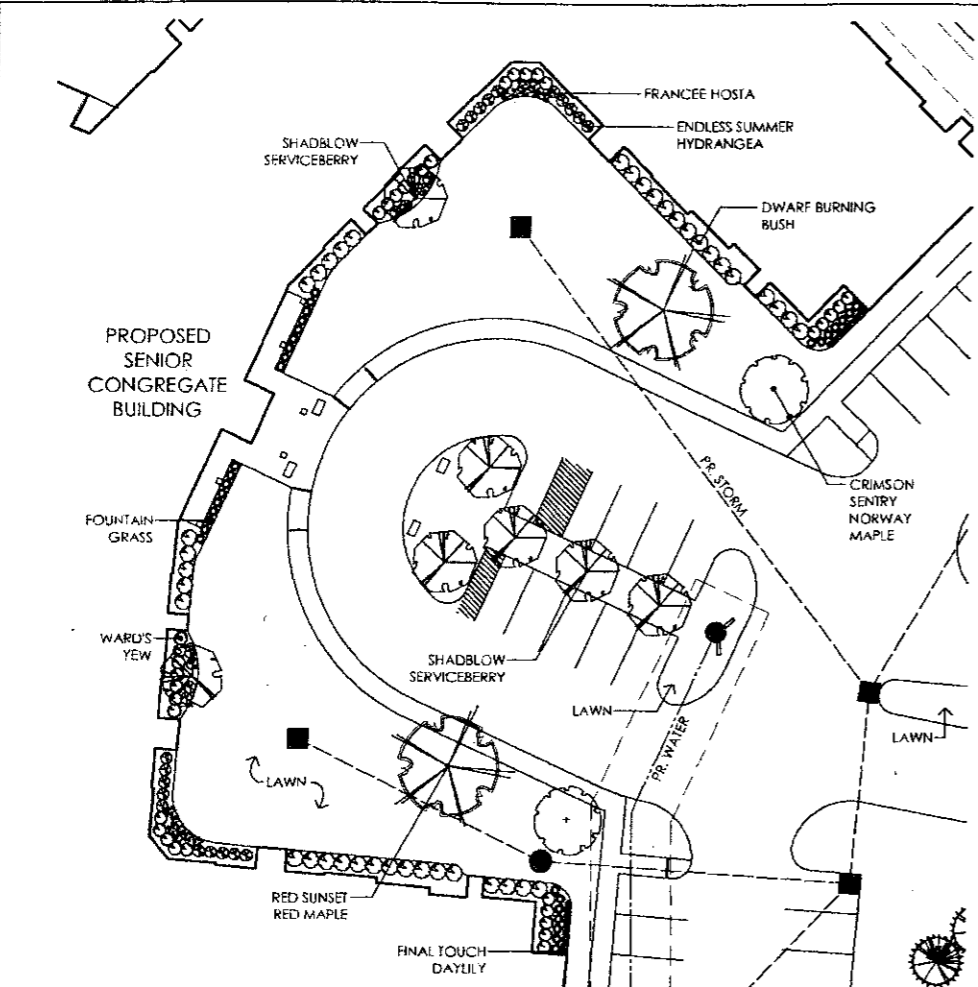
- APPROVED TREE PROTECTION SHALL BE ERECTED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE. THE CITY'S LANDSCAPE CONSULTANT SHALL BE NOTIFIED AFTER TREE PROTECTION IS IN PLACE, PRIOR TO CONSTRUCTION ACTIVITIES, INCLUDING DELIVERY OF MATERIALS.
- NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN, INCLUDING, BUT NOT LIMITED TO, PLACING SOLVENTS, BUILDING MATERIALS, CONSTRUCTION EQUIPMENT, OR SOIL DEPOSITS WITHIN THE DRIP LINES.
- GRADE CHANGES MAY NOT OCCUR WITHIN THE DRIP LINES OF PROTECTED TREES.
- DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY REMAINING TREE.
- ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING.
- SWALES SHALL BE ROUTED TO AVOID THE AREA WITHIN THE DRIP LINES OF PROTECTED TREES.
- IF TREE PROTECTION CANNOT BE MAINTAINED FOR A TREE THROUGHOUT THE CONSTRUCTION PERIOD, REPLACEMENT OF THAT TREE MAY BE REQUIRED PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY.
- REGULATED TREES LOCATED ON ADJACENT PROPERTY THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.



**LANDSCAPE NOTES**

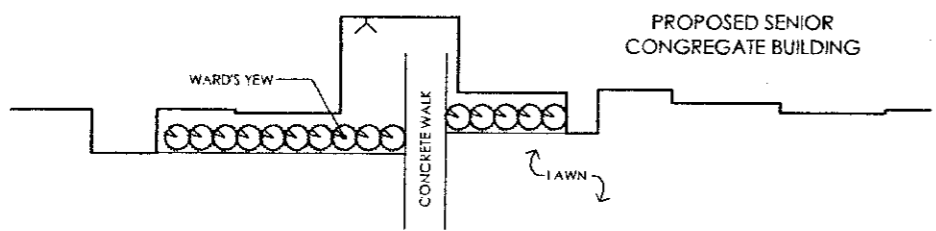
- ALL LAWN AREAS TO BE SODDED UNLESS OTHERWISE NOTED ON PLAN. SOD SHALL BE INSTALLED OVER AN EVENLY SPREAD LAYER OF TOPSOIL TO A GENTLY COMPACTED DEPTH NO LESS THAN 4".
- ALL LANDSCAPE BEDS TO BE DRESSED WITH SHREDDED BARK MULCH TO A MINIMUM DEPTH OF 4". ALL PROPOSED TREES IN LAWN AREAS SHALL HAVE A MULCH RING NOT LESS THAN 3" DIAMETER, TO A MINIMUM DEPTH OF 4".
- ALL LANDSCAPE BEDS TO BE EDGED WITH 1/2" x 4" ALUMINUM EDGING.
- ALL LANDSCAPE AREAS TO BE WATERED WITH AN UNDERGROUND AUTOMATIC IRRIGATION SYSTEM, PROVIDING 100% COVERAGE WHILE PLACING LAWN AREAS AND LANDSCAPE BEDS ON SEPARATE ZONES. THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY EXISTING IRRIGATION SYSTEM SHOULD DAMAGE OCCUR DURING INSTALLATION OF THE NEW SYSTEM. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING THE LANDSCAPE UNTIL THE IRRIGATION SYSTEM IS FULLY OPERATIONAL, AS APPROVED BY THE LANDSCAPE ARCHITECT AND/OR OWNER.
- ALL LANDSCAPE AREAS ARE TO BE MAINTAINED IN A HEALTHY GROWING CONDITION WITH A NEAT AND ORDERLY APPEARANCE. THE LANDSCAPE CONTRACTOR SHALL MONITOR ALL LANDSCAPE MATERIAL DURING THE WARRANTY PERIOD. ALL DEAD OR DECLINING PLANT MATERIAL SHALL BE REPLACED IN A TIMELY MANNER, NO LATER THAN THE FOLLOWING GROWING SEASON.
- THE LANDSCAPE CONTRACTOR SHALL PROVIDE TREE STAKING AND GUYING FOR ALL NEWLY PLANTED TREES, AS REQUIRED, IN ACCORDANCE WITH CURRENT LOCAL NURSERY AND LANDSCAPE STANDARDS. THE LANDSCAPE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE REMOVAL OF ALL TREE STAKING AND GUYING WHEN APPROPRIATE, AS APPROVED BY THE LANDSCAPE ARCHITECT AND/OR OWNER.
- LANDSCAPE CONTRACTOR SHALL REPAIR ALL EXISTING LAWN AREAS TO THEIR PRE CONSTRUCTION CONDITION IF DAMAGE OCCURS DURING THE CONSTRUCTION/INSTALLATION PROCESS.

NOTE: ALL QUANTITIES ARE LANDSCAPE ARCHITECT'S ESTIMATES. THESE QUANTITIES ARE NOT TO BE TAKEN AS DEFINING OR LIMITING THE AMOUNT OF WORK TO BE DONE UNDER THE CONTRACT. THE CONTRACTOR IS RESPONSIBLE FOR HIS OWN ESTIMATES. ALL DISCREPANCIES ARE TO BE REPORTED TO THE LANDSCAPE ARCHITECT'S OFFICE IMMEDIATELY. ALL DESIGNS, CONCEPTS, DETAILS, ETC. ARE THE PROPERTY OF JAMES C. SCOTT & ASSOCIATES, INC., AND MAY NOT BE DUPLICATED, PHOTOGRAPHED, OR REPRODUCED WITHOUT THE WRITTEN CONSENT OF JAMES C. SCOTT, OWNER. COPYRIGHT 2008



**CONGEGRATE BUILDING ENTRY DETAIL**

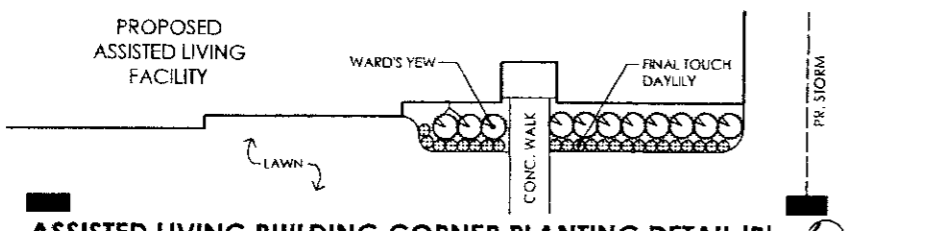
SCALE: 1" = 20' 0"



**CONGEGRATE BUILDING SIDE ENTRY DETAIL**

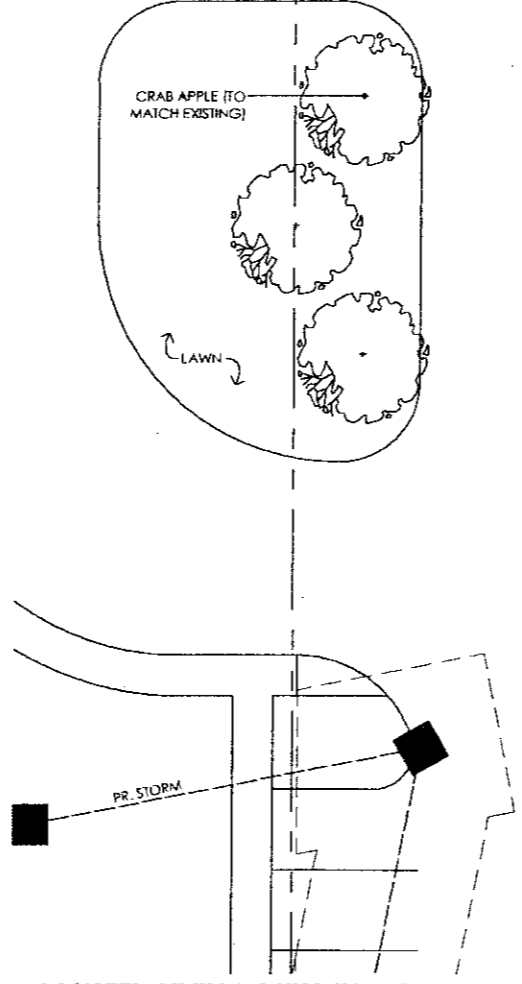
SCALE: 1" = 10' 0"

NOTE: THE SIDE ON ENTRY ON THE EAST SIDE OF THE CONGRFGATE BUILDING SHALL BE PLANTED THE SAME AS THE ONE SHOWN IN THIS DETAIL.



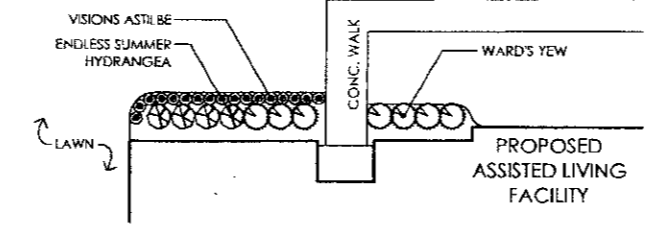
**ASSISTED LIVING BUILDING CORNER PLANTING DETAIL 'B'**

SCALE: 1" = 10' 0"



**ASSISTED LIVING BUILDING ENTRY DETAIL**

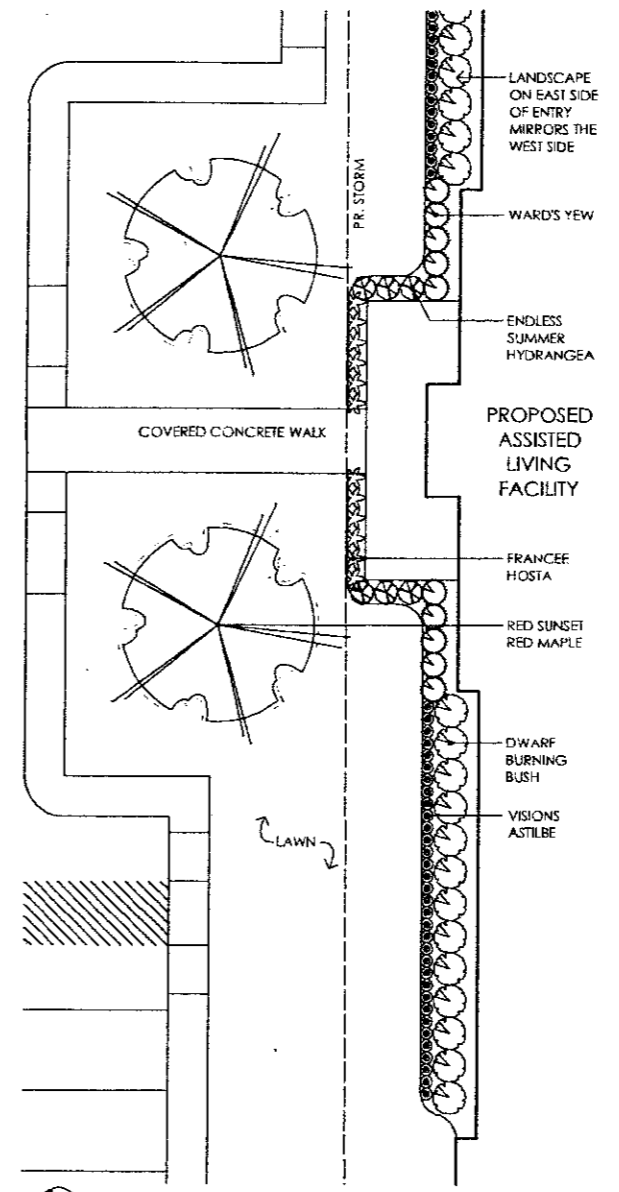
SCALE: 1" = 10' 0"



**ASSISTED LIVING BUILDING CORNER PLANTING DETAIL 'A'**

SCALE: 1" = 10' 0"

NOTE: THE OPPOSITE (SOUTH EASTERN) CORNER OF THE ASSISTED LIVING BUILDING SHALL BE PLANTED THE SAME AS THE ONE SHOWN IN THIS DETAIL, ONLY MIRRORRED.



**ADDITIONAL NOTES**

1. PRIOR TO THE RELEASE OF ANY PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS LANDSCAPE ARCHITECT MUST INSPECT ALL LANDSCAPE PLANTINGS INCLUDING, BUT NOT LIMITED TO, EXISTING TREES, REPLACEMENT TREES, BUFFER PLANTINGS, AND PARKING LOT ISLANDS. THE RIGHT-OF-WAY WILL BE INSPECTED BY THE FORESTRY DIVISION TO IDENTIFY ANY PLANTINGS, NEW OR EXISTING, THAT POSE A HAZARD TO THE SAFE USE OF THE RIGHT-OF-WAY. FORESTRY MAY REQUIRE THE DEVELOPER TO REMOVE, AND POSSIBLY REPLACE, ANY SUCH TREES.
2. PRIOR TO THE RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS FORESTRY DIVISION NEEDS TO INSPECT ALL TREES, EXISTING OR PLANTED, TO IDENTIFY ANY THAT POSE A HAZARD TO THE SAFE USE OF THE PUBLIC RIGHT-OF-WAY. FORESTRY MAY REQUIRE THE DEVELOPER TO REMOVE, AND POSSIBLY REPLACE, ANY SUCH TREES.
3. ALL TREES AND SHRUBS MUST BE PLANTED AT LEAST 10' FROM THE EDGE OF A PUBLIC ROADWAY. SHADE TREES AND SHRUBS MUST BE PLANTED AT LEAST 5' FROM THE EDGE OF A PUBLIC WALKWAY. EVERGREEN AND ORNAMENTAL TREES MUST BE PLANTED AT LEAST 10' FROM THE EDGE OF A PUBLIC WALKWAY. ALL TREES AND SHRUBS MUST BE PLANTED AT LEAST 10' FROM ANY FIRE HYDRANT. SHADE AND EVERGREEN TREES MUST BE PLANTED AT LEAST 15' FROM THE NEAREST OVERHEAD WIRE AND AT LEAST 10' FROM THE NEAREST UNDERGROUND UTILITY.
4. NO TREE OR SHRUB MAY BE PLANTED WITHIN THE TRIANGULAR AREA FORMED AT THE INTERSECTION OF ANY STREET RIGHT-OF-WAY AT A DISTANCE OF 25' FROM THEIR POINT OF INTERSECTION. NO TREE OR SHRUB MAY BE PLANTED IN THE TRIANGULAR AREA FORMED AT THE INTERSECTION OF ANY DRIVEWAY WITH A PUBLIC SIDEWALK AT A DISTANCE ALONG EACH LINE OF 15' FROM THEIR POINT OF INTERSECTION.
5. PRIOR APPROVAL IS REQUIRED TO PLANT ANY TREE OR SHRUB IN THE PUBLIC RIGHT-OF-WAY.
6. NO SUBSTITUTIONS OR CHANGES OF LOCATION OR PLANT TYPES SHALL BE MADE WITHOUT THE APPROVAL OF THE DEVELOPER AND THE CITY OF ROCHESTER HILLS LANDSCAPE ARCHITECT.
7. THE DEVELOPER AND/OR THE CITY OF ROCHESTER HILLS LANDSCAPE ARCHITECT SHALL HAVE THE RIGHT, AT ANY STAGE OF THE INSTALLATION, TO REJECT ANY WORK OR MATERIAL THAT DOES NOT MEET THE REQUIREMENTS OF THE PLANS OR SPECIFICATIONS.
8. REPLACEMENT TREES MAY NOT BE PLANTED WITHIN THE DRIP LINE OF EXISTING TREES.

**PLANT SYMBOL LEGEND**

- 6 SKYLINE HONEYLOCUST  
*Gleditsia triacanthos inermis* 'Skyline'  
3" Cal., B.&B. Spaced as shown
- 9 SWAMP WHITE OAK  
*Quercus bicolor*  
3" Cal., B.&B. Spaced as shown
- 11 RED SUNSET RED MAPLE  
*Acer rubrum* 'Franksted'  
3" Cal., B.&B. Spaced as shown
- 9 CRIMSON KING NORWAY MAPLE  
*Acer platanoides* 'Crimson King'  
3" Cal., B.&B. Spaced as shown
- 2 CRIMSON SENTRY NORWAY MAPLE  
*Acer platanoides* 'Crimson Sentry'  
3" Cal., B.&B. Spaced as shown
- 7 SHADBLOW SERVICEBERRY  
*Amelanchier canadensis*  
10' Ht., Multi-stem, B.&B., 20' o.c., min.
- 9 HERITAGE RIVER BIRCH  
*Betula nigra* 'Heritage'  
10' Ht., Multi-stem, B.&B., 15' o.c., min.
- 8 CRAB APPLE  
To Match Existing on Site  
2" Cal., B.&B., 18' o.c., min.
- 8 COLORADO BLUE SPRUCE  
*Picea pungens* var. *glauca*  
10' Ht., B.&B., 12' o.c., min.
- 8 NORWAY SPRUCE  
*Picea abies*  
10' Ht., B.&B., 12' o.c., min.
- 8 EASTERN WHITE PINE  
*Pinus strobus*  
10' Ht., B.&B., 12' o.c., min.
- 8 DOUGLAS FIR  
*Pseudotsuga menziesii*  
10' Ht., B.&B., 12' o.c., min.
- 8 CONCOLOR FIR  
*Abies concolor*  
10' Ht., B.&B., 12' o.c., min.
- 66 DWARF BURNING BUSH  
*Eurymyia alata* 'Compacta'  
3' Ht., min., 4' o.c.
- 99 WARD'S YEWE  
*Taxus x media* 'Ward'  
24-30" Spread, 3' o.c.
- 17 SEA GREEN JUNIPER  
*Juniperus chinensis* 'Sea Green'  
24-30" Spread, 3' o.c.
- 42 ENDLESS SUMMER HYDRANGEA  
*Hydrangea macrophylla* 'Balmer'  
30" Ht., 3' o.c.
- 14 DIXIELAND SILVER GRASS  
*Miscanthus sinensis* 'Dixieland'  
3 Gal., 3' o.c.
- 32 FOUNTAIN GRASS  
*Pennisetum alopecuroides*  
1 Gal., 30" o.c.
- 26 FRANCEE HOSTA  
*Hosta 'Francee'*  
1 Gal., 30" o.c.
- 100 VISIONS ASTILBE  
*Astilbe chinensis* 'Visions'  
1 Gal., 18" o.c.
- 43 FINAL TOUCH DAYLILY  
*Heimerocallis* 'Final Touch'  
1 Gal., 18" o.c.

**LANDSCAPE NOTES**

1. ALL LAWN AREAS TO BE SODDED UNLESS OTHERWISE NOTED ON PLAN. SOD SHALL BE INSTALLED OVER AN EVENLY SPREAD LAYER OF TOPSOIL TO A GENTLY COMPACTED DEPTH NO LESS THAN 4".
2. ALL LANDSCAPE BEDS TO BE DRESSED WITH SHREDDED BARK MULCH TO A MINIMUM DEPTH OF 3". ALL PROPOSED TREES IN LAWN AREAS SHALL HAVE A MULCH RING NOT LESS THAN 3" DIAMETER, TO A MINIMUM DEPTH OF 3".
3. ALL LANDSCAPE BEDS TO BE EDGED WITH 1/2" x 4" ALUMINUM EDGING.
4. ALL LANDSCAPE AREAS TO BE WATERED WITH AN UNDERGROUND AUTOMATIC IRRIGATION SYSTEM, PROVIDING 100% COVERAGE WHILE PLACING LAWN AREAS AND LANDSCAPE BEDS ON SEPARATE ZONES. THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY EXISTING IRRIGATION SYSTEM SHOULD DAMAGE OCCUR DURING INSTALLATION OF THE NEW SYSTEM. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING THE LANDSCAPE UNTIL THE IRRIGATION SYSTEM IS FULLY OPERATIONAL, AS APPROVED BY THE LANDSCAPE ARCHITECT AND/OR OWNER.
5. ALL LANDSCAPE AREAS ARE TO BE MAINTAINED IN A HEALTHY GROWING CONDITION WITH A NEAT AND ORDERLY APPEARANCE. THE LANDSCAPE CONTRACTOR SHALL MONITOR ALL LANDSCAPE MATERIAL DURING THE WARRANTY PERIOD. ALL DEAD OR DECLINING PLANT MATERIAL SHALL BE REPLACED IN A TIMELY MANNER, NO LATER THAN THE FOLLOWING GROWING SEASON.
6. THE LANDSCAPE CONTRACTOR SHALL PROVIDE TREE STAKING AND GUYING FOR ALL NEWLY PLANTED TREES, AS REQUIRED, IN ACCORDANCE WITH CURRENT LOCAL NURSERY AND LANDSCAPE STANDARDS. THE LANDSCAPE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE REMOVAL OF ALL TREE STAKING AND GUYING WHEN APPROPRIATE, AS APPROVED BY THE LANDSCAPE ARCHITECT AND/OR OWNER.
7. LANDSCAPE CONTRACTOR SHALL REPAIR ALL EXISTING LAWN AREAS TO THEIR PRE CONSTRUCTION CONDITION IF DAMAGE OCCURS DURING THE CONSTRUCTION/INSTALLATION PROCESS.

NOTE: ALL QUANTITIES ARE LANDSCAPE ARCHITECT'S ESTIMATES. THESE QUANTITIES ARE NOT TO BE TAKEN AS DEFINING OR LIMITING THE AMOUNT OF WORK TO BE DONE UNDER THE CONTRACT. THE CONTRACTOR IS RESPONSIBLE FOR HIS OWN ESTIMATES. ALL DISCREPANCIES ARE TO BE REPORTED TO THE LANDSCAPE ARCHITECT'S OFFICE IMMEDIATELY. ALL DESIGNS, CONCEPTS, DETAILS, ETC. ARE THE PROPERTY OF JAMES C. SCOTT & ASSOCIATES, INC., AND MAY NOT BE REPLICATED, PHOTOGRAPHED, OR REPRODUCED WITHOUT THE WRITTEN CONSENT OF JAMES C. SCOTT, OWNER. COPYRIGHT 2009.

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**SCHEMATIC LANDSCAPE PLAN**  
**ENLARGEMENTS**  
 4/29/09  
 5/29/09  
 1/26/10  
 BMY  
 AS NOTED

L-4  
 Boulevard Hills, MI, 48304-0000

**TECHNICAL LANDSCAPE SPECIFICATIONS**

**1.1 CONTRACTOR QUALIFICATIONS**

The Landscape Contractor will be duly licensed by the appropriate authorities to handle plant material. He will be covered by Public Liability and Property Insurance and has employee's covered by Workmen's Compensation Insurance. He will, upon request, furnish a list of major projects your organization has completed in the last five (5) years. A list of major construction projects your organization has underway.

**1.2 SITE PREPARATION**

A. Trees, bushes or shrubs will not be pruned or removed from the site, except as directed by the Landscape Architect. Competent personnel shall do all pruning and removal. All tree wounds larger than one inch (1") shall be painted with approved tree paint. Debris resulting from pruning and removal shall be removed from the site.

B. If the Contractor is responsible for furnishing fill, the material will be clean and well draining, free of any organic matter, debris, trash and heavy clay. Fill shall be spread and compacted in layers that are not to exceed twelve inches (12") in depth and will be properly compacted by the contractor.

C. If the Contractor is responsible for rough grading he will grade the subgrade to within a rough grading tolerance to two inches (2") and to be true to line and section. All rocks, stumps and building debris will be removed prior to the spreading of topsoil. Every effort will be made to eliminate depressions, tracks, and soil spots.

D. The Contractor will be responsible for avoiding trench/fanels with all underground utilities, pipes and structures. Contractor shall take sole responsibility for cost incurred due to damage and replacement of said utilities.

E. The Contractor will verify all rights of way, easements, property lines and limits of work, etc. prior to commencing work.

F. The Contractor will coordinate all site layouts with Landscape Architect. Report any dimensional discrepancies to Landscape Architect prior to construction.

G. Any erosion and sedimentation from work on this site shall be contained on the site and not allowed to collect on any outside areas or waterways. Waterways include both natural and man-made open ditches, streams, storm drains, etc.

H. The Contractor is responsible for replacement of any existing materials that are damaged during construction.

**1.3 FINISH GRADING**

A. Over the accepted subgrade, topsoil shall be spread over all lawn areas a minimum of two inches (2") unless otherwise specified. All stones larger than one and one-half inch (1 1/2"), rubble, concrete, bricks, and other objectionable materials that are exposed during the raking, must be properly disposed of-site. The Landscape Architect shall make the final determination as to what constitutes objectionable material. The Contractor is required to meet finish grades.

**1.4 TREE PROTECTION**

A. Prior to the initiation of any construction activity approved tree protection shall be erected and will remain in place until construction is complete.

B. The following activities may not occur within the drip line of all protected trees on the site:

1. Storage of materials, building materials, soil deposits, equipment, both side and running, and vehicular parking.
2. Shipping of topsoil and any other sublayer material.
3. Grade changes of any kind.

C. During construction, no wires, lines, etc. may be fastened in any form to any protected tree.

D. Care should be taken to prevent damage to any regulated trees located on adjacent properties that could be affected during construction.

E. When contracting utility services, notification must be given of the protected trees and all trenching is to be performed outside of the drip lines.

**1.5 PLANT MATERIAL**

A. All plant material called for in the plant list as shown on the drawing will be of minimum size specified or larger. The height and spread will be measured according to the horizontal spread of the American Association of Nurserymen. Trees will not be accepted if the balls of earth are footloose or broken. All plants shall be healthy vigorous stock, free from disease and with well-developed root systems. They shall be nursery grown, inspected by the Department of Agriculture's Bureau of Plant Industry, and subject to approval by the Landscape Architect.

B. No substitutions or changes of location, or plant types shall be made without the approval of the Landscape Architect. The Landscape Architect shall be notified of any discrepancies between the plans and field conditions prior to installation.

C. The Landscape Architect will have the prerogative to request the source of supply for all plant material to be used, and delivery is assumed. When approval material is indicated or when the best interests of the Owner may be served, the Landscape Architect or their designee representative will have the right to inspect the material prior to delivery.

D. Only materials conforming to the requirements of these specifications or specimens approved by the Landscape Architect or authorized agents shall be used in the work. Any material that, after approval, has for any reason become unfit for use will not be incorporated into the work.

E. The Bidder will not modify his bid because of his inability to find a source of supply of plant material specified, if the Landscape Contractor can show satisfactory evidence before the contract is awarded that a particular species is not available, a substitution will be negotiated on the following basis:

1. Determine from the current catalog of the Lake County Nursery Exchange, Inc. Pruney, Ohio 44861 and/or Landscape Supply Co., Taylor, Michigan 48180 the price of one plant to be substituted.
2. The price to be paid the Landscape Contractor for furnishing, planting, and maintaining each substituted plant will be the same proportion to the bid price as the catalog price determined above.

NOTE: A particular nursery catalog is stipulated only to set-up, before the opening of bids, a root procedure for negotiating unit prices on material substituted in place of the specified material.

F. Trees will be measured in trunk diameter six inches (6") above ground line if the trunk is four inches (4") or less in diameter. Over four inches (4") in diameter, it shall be measured twelve inches (12") above the normal ground line. All trees shall have a straight trunk, except those otherwise indicated, and be free of branches and blemishes. The tree crown shall be well formed, structurally strong, sufficient leaf growth to insure proper growth of the tree. All limbs shall radiate in a normal manner from the trunk.

G. Small ornamental trees will be measured on an average from the ground line to the top of previous year's growth on the vertical branches. All plants, unless otherwise specified shall be heavy types and may be inspected on the site before Contractor installs the material.

H. Multi-stemmed trees and shrubs will be measured at the average distance across the body of the plant from tip to tip of branches in their natural position, and at the average height.

I. Plants will be handled properly and protected during transportation to insure satisfactory condition at destination point. The Landscape Architect reserves the right to reject any plants that do not meet the above specifications.

J. Bare root stock and balled & burlapped plants will be carefully protected with wet straw mulch, or other materials so that the plants will be stored with their roots in a moist and healthy condition, and shall be protected by weather conditions and the length of time that the root ball must remain above ground.

K. Trunks and branches of all trees will be carefully protected from injury of any kind during all operations of digging, loading and transporting. Any plants that are injured may be rejected by the Landscape Architect.

L. All plants as specified, will be balled and burlapped previous to shipment. Such plants shall be lifted from the ground in such a manner as to raise a firm ball of earth. The size of the ball will conform to AASD guidelines. Plants will not be accepted if the balls of earth are loosened or broken.

M. All plant material shall be planted promptly and at the correct depth, and shall be staked, pruned and wrapped, as soon as possible after planting. It will be at the discretion of the contractor to use the appropriate products and material so the plants will remain straight, properly aligned, and at the proper position for the guarantee period. The owner has the option of having the contractor remove all staking and guying material at the end of the guarantee period.

N. All planting will be performed on the job site by a competent planter. All broken branches and roots will be removed in an approved manner providing a clean cut.

O. The Contractor will trim bare root plants by removing 1/3 of their branching. This will be done in an arid fashion so as not to destroy the natural character of the plant. Shearing will not be accepted except on hedges where all plants will be pruned to a uniform height and width.

**1.6 SOIL PREPARATION AND PLANTING**

A. The Contractor shall prepare such quantities of planting soil as may be required to install plants in accordance with the accepted practice of the American Association of Nurserymen and to the satisfaction of the Landscape Architect. Deciduous, and evergreen trees and shrubs, perennials, groundcover and ornamental plants will be potted planted using a soil mixture of three (3) parts topsoil and one (1) part peat.

Note: The contractor will acidify the entiraceous soil with peat to attain a pH of 4.5.

B. A general guideline for selection of the plant pits follows:

SIZE	PLANT	PIT SIZE*	Bottom**
3" cal. or less	Deciduous Tree	8" x 8"	8"
More than 3" cal.	Deciduous Tree	12" x 12"	12"
6" cal. or less	Evergreen Tree	8" x 8"	8"
More than 6" cal.	Evergreen Tree	12" x 12"	12"
1/4" cal. stem	Tree-Like Shrub	8" x 8"	8"
Small to medium	Deciduous Shrub	6" x 6"	6"
Small to medium	Evergreen Shrub	6" x 6"	6"
1 gal. Plus	Perennials	3" x 3"	3"

\* Soil conditions could modify these sizes  
 \*\* After excavation, backfill with existing soil so that root ball sits at proper grade

The Landscape Contractor shall install 4-6" of clean planting mix around the rootball of all newly planted trees, at the discretion of the Landscape Architect.

C. Metal and foil paper containers shall be removed from all container grown plant material. Biodegradable paper marker covers may be left in place, but additional holes shall be punched through the sides to provide adequate drainage. The upper covers of such containers should be removed so they do not protrude above grade. The top or half of burlap shall be removed from the top of the plant ball. All nylon cord or plastic type ropes shall be removed from the trunk to prevent future girdling.

D. The Contractor is responsible for the proper placement, alignment and setting of all plants. Care shall be taken to place all plants at their proper depth. In wet situations balled and burlapped plants may be planted slightly higher than their original grade.

E. All newly planted trees shall be staked and guyed as illustrated on the planting details and in accordance with current local nursery and landscape standards. The Landscape contractor shall be responsible for removal of all staking and guying materials when appropriate, as approved by the Landscape Architect.

**1.7 SEEDING**

A. Spread commercial fertilizer (15-30-0) evenly with a mechanical spreader at the rate of 150 lbs/acre and thoroughly incorporate into the topsoil to a depth of two inches (2") immediately before seeding, rework and rewater the surface.

B. Seed will be planted at the uniform rate of six (6) pounds per one thousand square feet (1,000 sq. ft.). Seed will be clean, new crop seed composed of the following varieties:

Kentucky Blue	33%
Crested Red Fescue	33%
Fine Leaf Ryegrass	33%

(unless otherwise specified on the plan)

All seed shall have a 97% purity rating. Certification of the seed mix will be provided to the Landscape Architect prior to any seeding operation, if so requested.

C. Incorporate all seeding by use of a billion seeder with roller to a maximum depth of one-half inch (1/2") or approved equal.

D. All seeded areas will be mulched with straw mulch or hydro mulch. This will be left to the discretion of the Contractor.

E. Any part of this area that fails to show a uniform germination shall be reseeded at no additional expense to the Owner and such reseeded shall continue until a dense lawn is established.

F. It is the intent of these specifications to obtain a finished lawn surface free of bumps and depressions, and satisfactory for mowing with hand or mechanical mowers, and to establish an even dense, weed free turf of permanent grasses. Any part of the area that fails to show a uniform growth shall be reseeded by the Contractor until a dense lawn is produced. Damage to the lawn areas resulting from erosion or Contractor's operations shall be repaired by the Contractor until the lawn is reseeded.

**1.8 SOODING**

A. Seed mixture composition of the sod will be approved by the Landscape Architect prior to delivery on site. Sod will be laid over approved subgrade. Sod will have a uniform sodded thickness of 5/8" plus or minus 1/4". Sod shall be harvested, delivered and transported within 30 hours. Sod will be weed free and pre-soaked with water at the time of delivery.

B. Any area or amount of sod that does shall be replaced at no additional expense to the Owner.

C. It is the intent of these specifications to obtain a finished lawn surface free of bumps and depressions, and satisfactory for mowing with hand or mechanical mowers, and to establish an even dense, weed free turf of permanent grasses. Any part of the area that fails to show a uniform growth shall be reseeded by the Contractor until a dense lawn is produced. Damage to the lawn areas resulting from erosion or Contractor's operations shall be repaired by the Contractor until the lawn is reseeded.

**1.9 SEEDING AND SOODING MAINTENANCE**

A. Maintenance shall begin immediately after a portion of turf is installed and shall be the responsibility of the contractor for a period of 30 days. Also, one mowing of sodded lawn and two mowings of the seeded lawn will be required.

B. Maintenance shall also include, but not be limited to the watering, weeding, reseeding, raking, trimming and other operations as necessary. The area shall be kept watered with sprinklers or other approved methods during dry weather or when deemed necessary by the Landscape Contractor. The sod shall be thoroughly watered when initially laid. Note that a sprayer irrigation system is typically planned, so the system should be operable at the time of sod installation.

**1.10 FERTILIZING AND WATERING OF PLANT MATERIAL**

A. Fertilizing is left to the discretion of the Contractor. In no case should dry type conventional fertilizer be placed in the root zone, unless they are the pelletized slow-release type, designed for this purpose.

B. All plants will be thoroughly watered by the Contractor immediately after planting. Watering will be the Contractor's responsibility until the installation is accepted by the Owner. The Contractor will advise the Owner of the proper care of the new plantings and will be responsible for checking the condition of the plants as necessary and advise the Owner of any deficiency or excess of watering during the warranty period.

**1.11 EDGING**

A. Edging will be the type specified and installed where shown on the drawing.

B. All edging shall be installed uniform to the grade and in straight alignment.

C. Edging will be cut or perforated when installed in low areas, swales or any situation where drainage might be impeded.

D. Variation from the plan will not be allowed unless otherwise specified by the Landscape Architect.

**1.12 STONE MULCH**

A. All stone mulch specified on the plan will be of the type and size aggregate indicated and will be applied at the thickness specified on the plan.

B. The stone mulch material shall be consistent in size, shape, and color, will be of premium grade and washed clean prior to installation.

C. The stone mulch will be placed on top of Fabric Weed Barrier (Duroplon Type Syste #320) or equal) after the soil has been treated with an approved pre-emergent weed preventative. The pre-emergent weed preventative will be applied at a rate specified by the manufacturer.

**1.13 SHREDDED BARK MULCH**

A. All shredded bark indicated on the plan shall contain a layer of Shredded Bark Mulch. Mulch shall be applied at the thickness specified on the plans. The finish grade shall conform to the surrounding grade.

B. The mulch material shall have a dark brown, fine shred appearance with no large objectionable pieces. No wood chips will be allowed.

C. Approved pre-emergent weed preventative shall be applied to all mulched beds at a rate specified by the manufacturer.

D. All evergreen and deciduous trees in lawn areas will receive approximately ten (10) sq. ft. of Shredded Bark Mulch per tree at a four inch (4") minimum depth.

**1.14 WARRANTY/GUARANTEE**

A. The Contractor will guarantee in writing all plant material to be true to name and in vigorous condition at time of planting. In addition, he will guarantee the life of all plant material 100% for the period of one (1) year from the date of acceptance. Replacements shall be made during the next appropriate planting season.

B. The Contractor, at their discretion, may deem the guarantee void if plant failure is determined to be the result of any of the following conditions:

1. Storm and/or weather damage.
2. Failure to maintain per contractors written instructions.
3. Horizontal and/or insect damage by others.
4. Transplanting by others.

C. The Contractor shall be responsible for furnishing the Owner with complete maintenance, watering, and fertilizing schedules, as required. The Contractor shall also provide periodic site visits to assure Owner compliance.

D. All construction will be guaranteed in writing against faulty workmanship and materials for the period of one (1) year.

**1.15 ACCEPTANCE & PAYMENT**

A. The job will be accepted when completed to the satisfaction of the Landscape Architect and Owner. The Landscape Architect shall have the authority to reject any material that does not meet the specifications or is improperly placed or placed. All items resulting from the Landscape job will be removed and the beds properly graded and raked prior to acceptance.

All mud, dirt, and debris tracked onto existing roads from the site due to his construction shall be removed by the contractor.

Any damage caused by the Landscape Contractor to existing plants, structures, walks and lawns must be repaired prior to final payment.

B. Partial payments shall be made at various stages of the job as completed and accepted:

1. Construction
2. Planting
3. Seeding

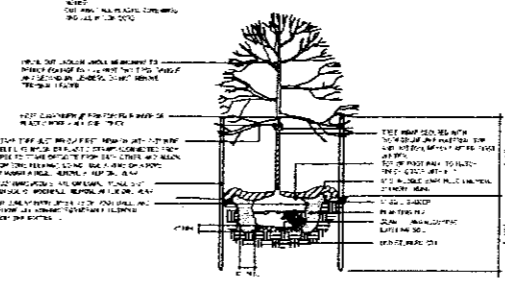
Ten percent (10%) of said payments shall be retained until the total contract is completed and accepted.

**1.16 MISCELLANEOUS NOTES**

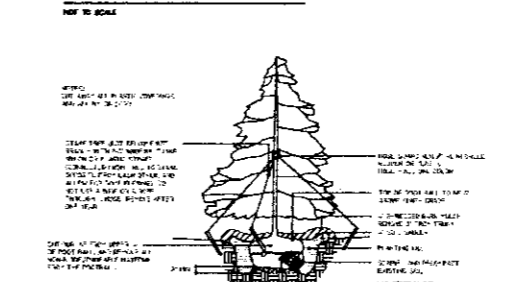
A. Care should be taken by Contractor not to plant under or over utility lines, and easements, or in any location where existing utilities will interfere with the growth of plant material.

B. Contractor shall be responsible for checking plant and material quantities to ensure quantities on drawings and plant list (if provided) are the same. In the event of a discrepancy, this quantity on the plans shall prevail.

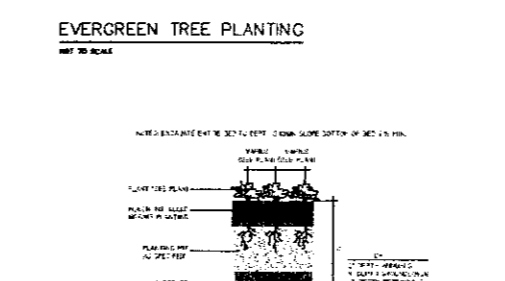
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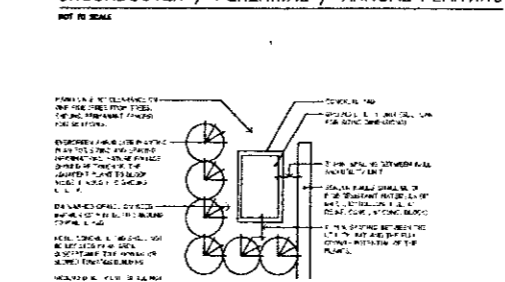
**DECIDUOUS TREE PLANTING**



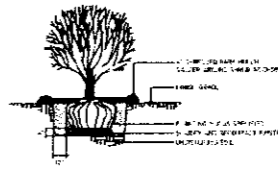
**EVERGREEN TREE PLANTING**



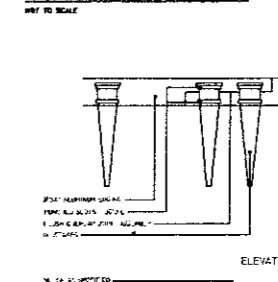
**GROUNDCOVER / PERENNIAL / ANNUAL PLANTING**



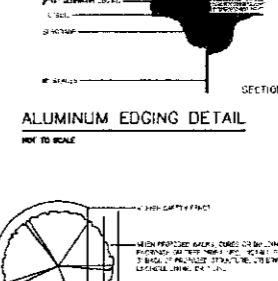
**TYPICAL GROUND UTILITY SCREENING DETAIL**



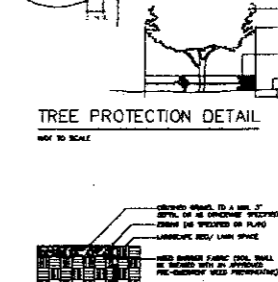
**SHRUB PLANTING DETAIL**



**ALUMINUM EDGING DETAIL**



**TREE PROTECTION DETAIL**



**MAINTENANCE STRIP DETAIL**

**TECHNICAL SPECIFICATIONS AND DETAILS**  
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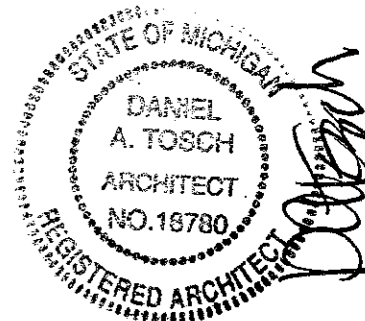


6/25/09  
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REVISED per CITY 6.26.09



Contractor:  
LIBERTY CONSTRUCTION

Developer:  
POMKAL ROCHESTER LLC

Project:  
OAKMONT Boulevard Hills / Independent Senior Living  
Rochester Hills, Michigan

Sheet Title:  
PROPOSED FIRST FLOOR PLAN

Project Number: 07-064  
Drawn: VC  
Checked: BT  
Date: 10.30.07  
Sheet Number: SK1

**GENERAL BLDG & CODE DATA:**  
THE STRUCTURE IS AN INDEPENDANT SENIOR CITIZEN APARTMENT BLDG AND INCLUDES ROOMS & SPACES FOR ACCESSORY AND INCIDENTAL USES. THE STRUCTURE IS DIVIDED INTO (3) SEPARATE BUILDINGS BY FIRE WALLS HAVING A (2) HOUR FIRE RESISTANCE RATING IN ACCORDANCE WITH NBC SECTION 705.

PROPOSED CONSTRUCTION TYPE "VA" - PROTECTED WOOD FRAME  
FIRE RESISTANCE RATING OF BLDG STRUCTURAL ELEMENTS:  
EXTERIOR WALLS (BEARING & NON-BEARING) (1) HOUR  
INTERIOR BEARING WALLS & COLUMNS (1) HOUR  
FLOOR/CEILING ASSEMBLIES (1) HOUR  
ROOF/CEILING ASSEMBLIES (1) HOUR

PROPOSED HEIGHT: (3) STORIES ABOVE GRADE  
FIRST FLOOR CONSTRUCTION = CONCRETE SLAB ON GRADE

**CORE:**  
PROPOSED USE GROUPS: A2, A3, B, & R2  
NON-REPEATED MIXED USE  
INCIDENTAL USES:  
STORAGE ROOMS > 100 SF  
MECH EQUIPMENT ROOMS HAVING ANY PIECE OF FUEL FIRED EQUIPMENT > 400,000 BTU INPUT  
BOILER ROOMS WHERE LARGEST PIECE OF EQUIPMENT IS OVER 1500 AND 10hp  
LAUNDRY ROOM > 100 SF

PROPOSED CORE AREA: 13,775 SQ FT \*  
11,900 FT<sup>2</sup> TABULAR AREA + 200% INCREASE FOR NFPA 13 SPRINKLER  
11,900 ft<sup>2</sup> + (11,900 ft<sup>2</sup> X 2) = 34,000 ft<sup>2</sup>

ALLOWABLE BLDG HEIGHT:  
(3) STORIES TABULAR, HGT + (1) STORY FOR NFPA 13 SPRINKLER  
(3) STORIES ALLOWED

**CORE FIRE PROTECTION SYSTEMS:**  
1. AUTOMATIC FIRE SPRINKLER SYSTEM PER NFPA 13 THROUGHOUT  
2. MANUAL FIRE ALARM SYSTEM  
3. PORTABLE FIRE EXTINGUISHERS  
4. SMOKE ALARMS WITHIN DWELLING UNITS

ALLOWABLE WALL OPENING AREA @ DINING ROOM / WEST WALL OF CORE  
FIRE SEPARATION DISTANCE = 10'  
ALLOWABLE UNPROTECTED OPENING AREA BASED ON TABLE 704.8 & SECTION 704.8.1 FOR BLDG W/ AUTOMATIC SPRINKLER SYSTEM PER NFPA 13 = 75%  
AREA OF DINING WALL: 42.37' x 8' = 339 SQ. FT.  
PROPOSED WINDOW: (6) 7'4" x 6' WINDOWS = 120 SQ. FT.  
120 / 339 = 36.36% < 75%, THEREFORE WINDOWS ARE ACCEPTABLE

FIRE RATING OF WEST WALLS OF CORE:  
PER TABLE 601, W/ FSD > 10', REQ'D FIRE RESISTANCE RATING = 1 HOUR  
BASED ON TYPE "VA" CONSTRUCTION ALL EXTERIOR WALLS ARE (1) HOUR FIRE RATED  
EXT WALLS HAVING GREATER THAN 3' FSD REQUIRE WALL TO BE RATED FROM INSIDE ONLY

**WING 'A' & 'C':**  
PROPOSED USE GROUP: R2  
INCIDENTAL USES:  
STORAGE ROOMS > 100 SF  
MECH EQUIPMENT ROOMS HAVING ANY PIECE OF FUEL FIRED EQUIPMENT > 400,000 BTU INPUT

FIRE PROTECTION SYSTEMS:  
1. AUTOMATIC FIRE SPRINKLER SYSTEM PER NFPA 13R  
2. FIRE ALARM SYSTEM  
3. PORTABLE FIRE EXTINGUISHERS  
4. SMOKE ALARMS WITHIN DWELLING UNITS

PROPOSED WING 'A' AREA: 16,464 SQ FT \*  
WING 'A' ALLOWABLE AREA CALCULATION:  
FRONTAGE INCREASE PER NBC 506.2:  
PERIMETER: 648'  
ACCESSIBLE PERIMETER: 506'  
WIDTH OF OPEN SPACE: 30'  
IF = (506 x 48.25) / 3030  
IF = 486 (48.6%)

ALLOWABLE AREA:  
A<sub>2</sub> = 12,000 FT<sup>2</sup> TABULAR AREA + (12,000 x 48%)  
A<sub>2</sub> = 17,856 SQ. FT.

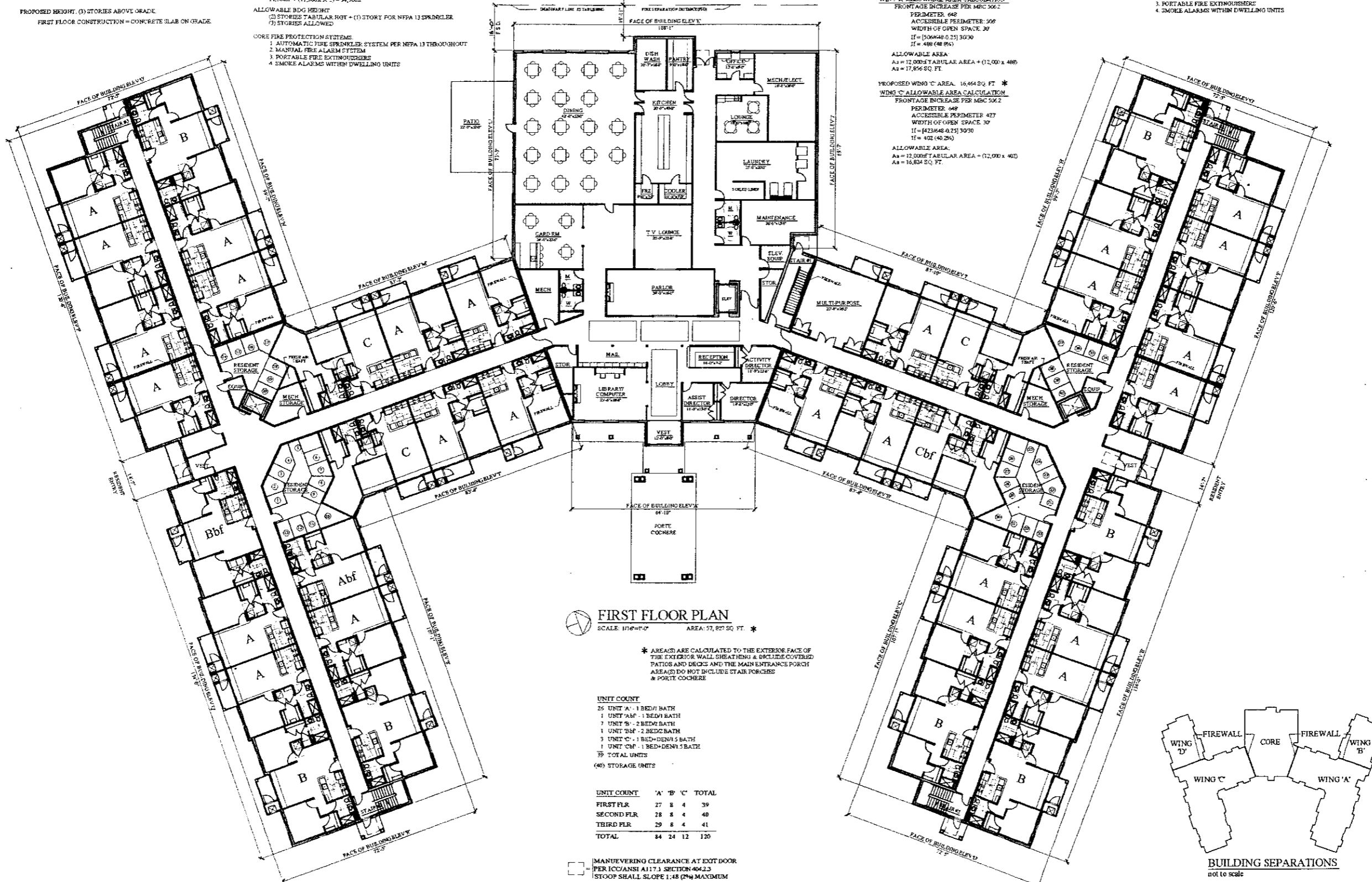
PROPOSED WING 'C' AREA: 16,464 SQ FT \*  
WING 'C' ALLOWABLE AREA CALCULATION:  
FRONTAGE INCREASE PER NBC 506.2:  
PERIMETER: 648'  
ACCESSIBLE PERIMETER: 477'  
WIDTH OF OPEN SPACE: 30'  
IF = (477 x 48.25) / 3030  
IF = 402 (40.2%)

ALLOWABLE AREA:  
A<sub>2</sub> = 12,000 FT<sup>2</sup> TABULAR AREA + (12,000 x 40%)  
A<sub>2</sub> = 16,800 SQ. FT.

**WING 'B' & 'D':**  
PROPOSED USE GROUP: R2  
PROPOSED WING 'B' AREA: 5,781 SQ. FT. \*  
ALLOWABLE WING 'B' AREA: 12,000 SQ. FT. / TABULAR AREA

PROPOSED WING 'D' AREA: 5,781 SQ. FT. \*  
ALLOWABLE WING 'D' AREA: 12,000 SQ. FT. / TABULAR AREA

FIRE PROTECTION SYSTEMS:  
1. AUTOMATIC FIRE SPRINKLER SYSTEM PER NFPA 13R  
2. MANUAL FIRE ALARM SYSTEM  
3. PORTABLE FIRE EXTINGUISHERS  
4. SMOKE ALARMS WITHIN DWELLING UNITS



**FIRST FLOOR PLAN**  
SCALE: 1/16" = 1'-0" AREA: 57,827 SQ. FT. \*

\* AREAS ARE CALCULATED TO THE EXTERIOR FACE OF THE EXTERIOR WALL SHEATHING & INCLUDE COVERED PATIOS AND DECKS AND THE MAIN ENTRANCE PORCH  
AREAS DO NOT INCLUDE STAIR PORCHES & PORTE COCHERE

**UNIT COUNT**

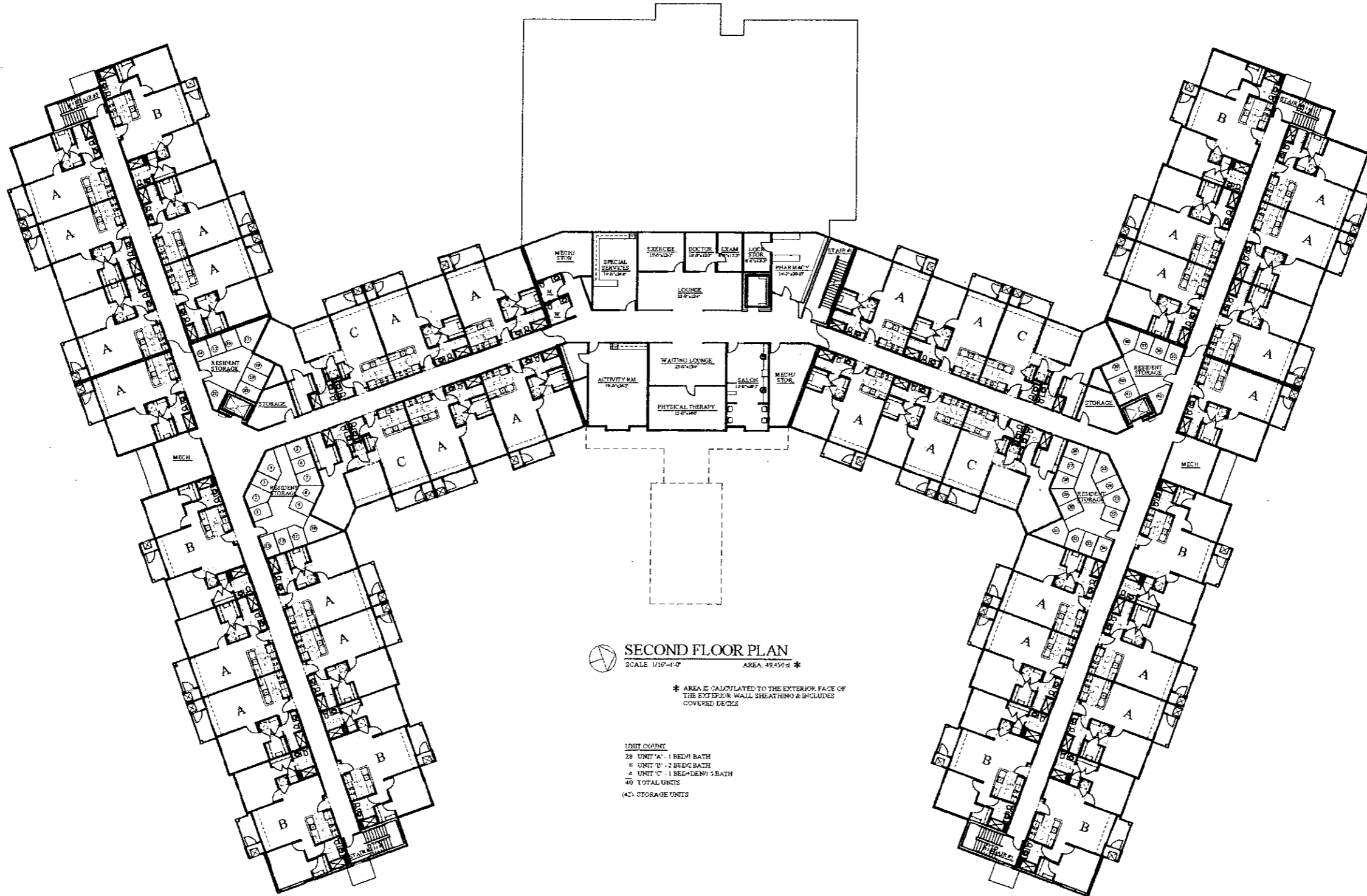
26	UNIT 'A' - 1 BED/1 BATH
7	UNIT 'A' - 1 BED/1 BATH
7	UNIT 'B' - 2 BED/2 BATH
1	UNIT 'B' - 2 BED/2 BATH
3	UNIT 'C' - 1 BED+DEN/1.5 BATH
1	UNIT 'C' - 1 BED+DEN/1.5 BATH
39	TOTAL UNITS
(40)	STORAGE UNITS

UNIT COUNT	'A'	'B'	'C'	TOTAL
FIRST FLR	27	8	4	39
SECOND FLR	28	8	4	40
THIRD FLR	29	8	4	41
TOTAL	84	24	12	120

MANEUVERING CLEARANCE AT EXIT DOOR  
PER ICC/ANSI A117.1 SECTION 404.2.3  
STOOP SHALL SLOPE 1:48 (2%) MAXIMUM

838 W. Long Lake #250  
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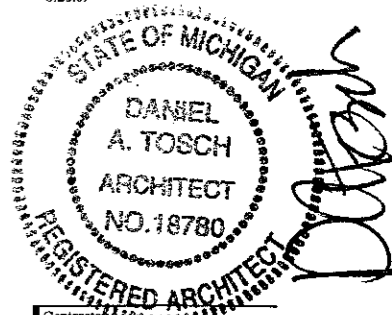


**SECOND FLOOR PLAN**  
 SCALE 1/16"=1'-0" AREA 49,450 SF \*

\* AREA IS CALCULATED TO THE EXTERIOR FACE OF THE EXTERIOR WALL SHEATHING & INCLUDES COVERED DECKS

**UNIT COUNT**  
 28 UNIT 'A' - 1 BED/BATH  
 8 UNIT 'B' - 2 BED/BATH  
 4 UNIT 'C' - 1 BED/DEN/1 BATH  
 40 TOTAL UNITS  
 (2) STORAGE UNITS

Issued For:
REVIEW
10.30.07
REVIEW
11.16.07
REVIEW
12.6.07
REVISED
12.13.07
REVIEW
3.5.08
REVIEW
9.3.08
REVIEW
1.20.09
REVIEW
2.11.09
REVIEW
3.6.09
REVIEW
3.25.09
REVISED
6.8.09
REVISED per CTFY
6.26.09



Contractor:  
**LIBERTY  
 CONSTRUCTION**

Developer:  
**POMKAL  
 ROCHESTER LLC**

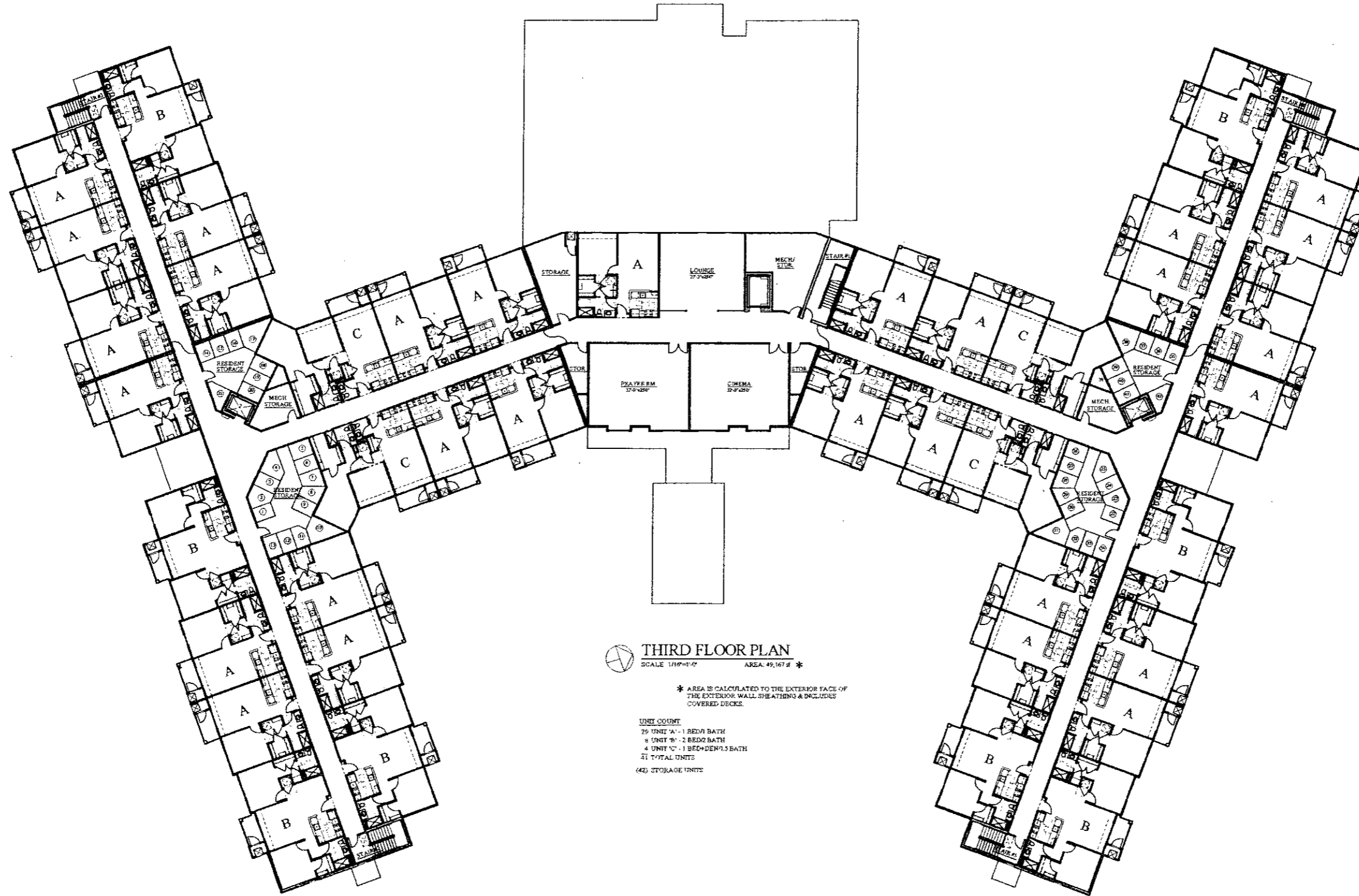
Project:  
**OAKMONT  
 Boulevard Hills /  
 Independent  
 Senior Living**  
 Rochester Hills, Michigan

Sheet Title:  
**PROPOSED  
 SECOND  
 FLOOR PLAN**

Project Number: **07-064**  
 Drawn: VC  
 Checked: DT  
 Date: 10.30.07  
 Sheet Number:

**SK2**

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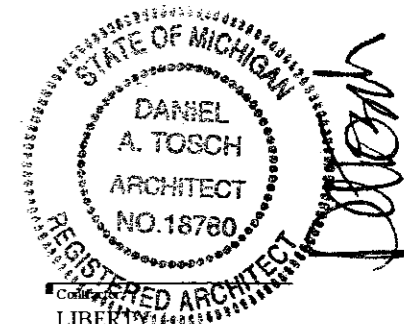


**THIRD FLOOR PLAN**  
 SCALE 1/16"=1'-0" AREA: 49,167 sq ft \*

\* AREA IS CALCULATED TO THE EXTERIOR FACE OF THE EXTERIOR WALL SHEATHING & INCLUDES COVERED DECKS.

UNIT COUNT:  
 29 UNIT A - 1 BED+1 BATH  
 8 UNIT B - 2 BED+2 BATH  
 4 UNIT C - 1 BED+DEN+1 BATH  
 41 TOTAL UNITS  
 (42) STORAGE UNITS

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REVIEW
10.30.07
REVIEW
11.16.07
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12.6.07
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REVIEW
3.5.08
REVIEW
9.3.08
REVIEW
1.20.09
REVIEW
2.11.09
REVIEW
3.9.09
REVIEW
3.25.09
REVISED
6.8.09
REVISED per CITY
6.26.09



LIBERTY  
 CONSTRUCTION

Developer:  
 POMKAL  
 ROCHESTER LLC

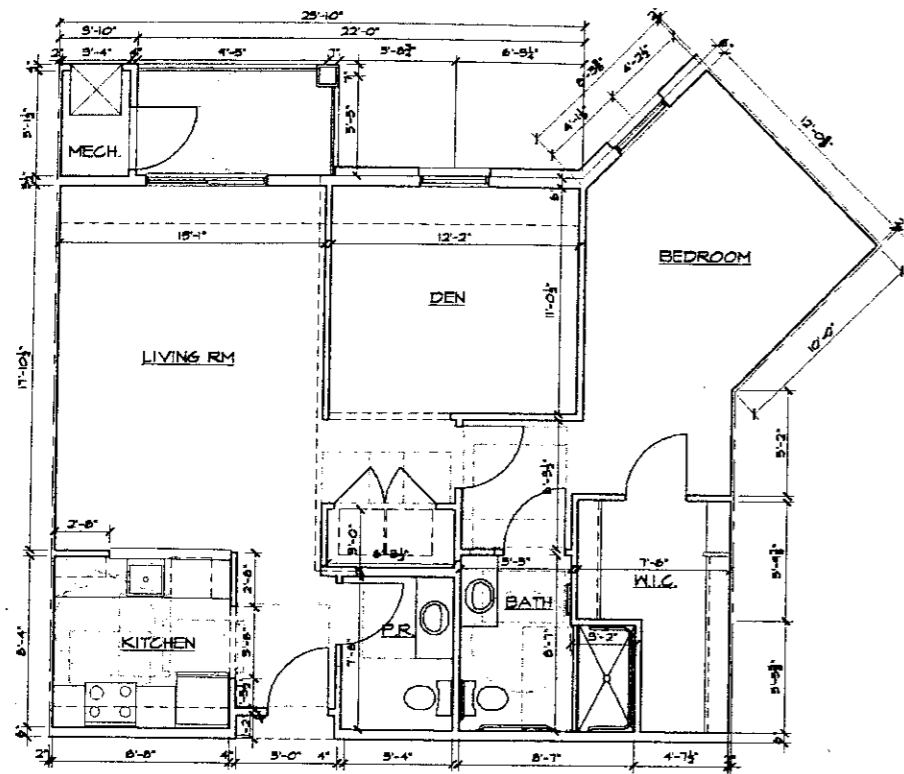
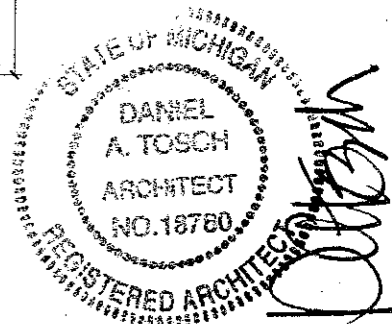
Project:  
 OAKMONT  
 Boulevard Hills/  
 Independent  
 Senior Living  
 Rochester Hills, Michigan

Sheet Title:  
 PROPOSED  
 THIRD  
 FLOOR PLAN

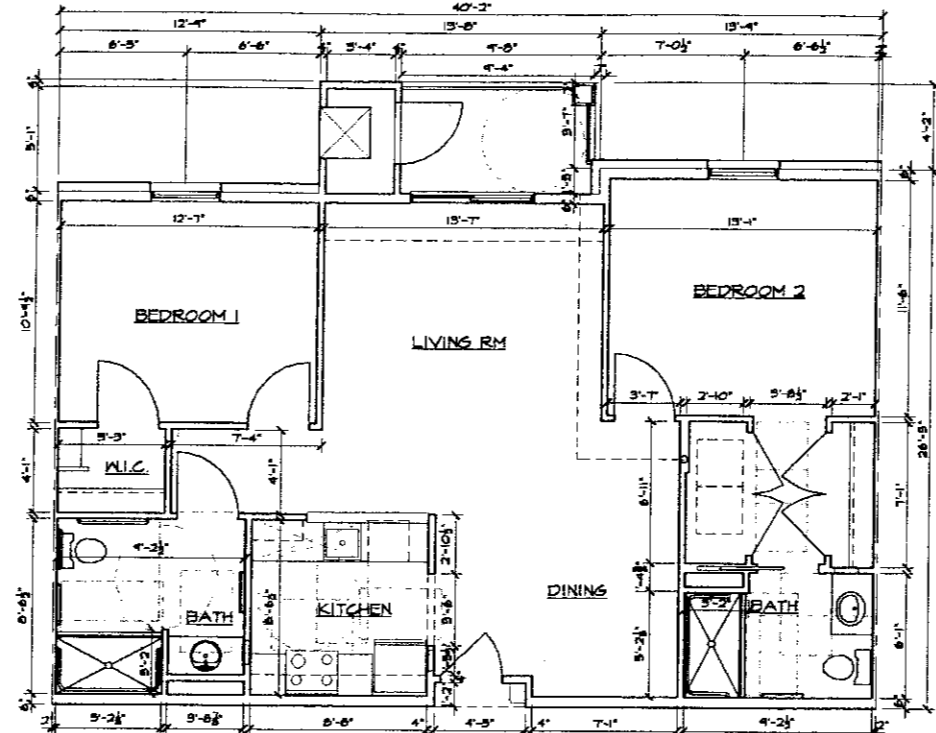
Project Number: 07-064  
 Drawn: VC  
 Checked: DT  
 Date: 10.30.07  
 Sheet Number: SK3

838 W. Long Lake #250  
 Bloomfield Hills, MI 48302  
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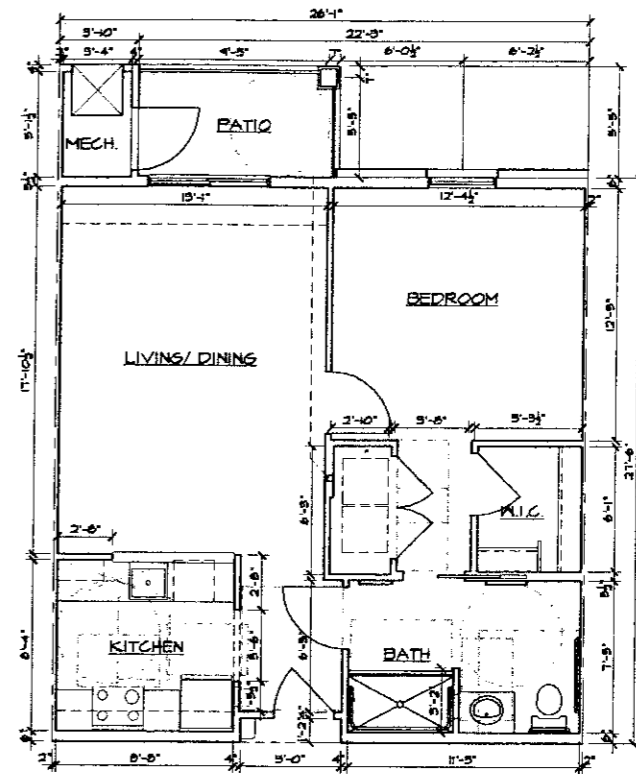
Issued For:
REVIEW
11.2.07
REVIEW
11.16.07
REVIEW
12.6.07
REVISED
12.13.07
SITE PLAN REVIEW
4.30.09
REVISED per CITY
6.26.09



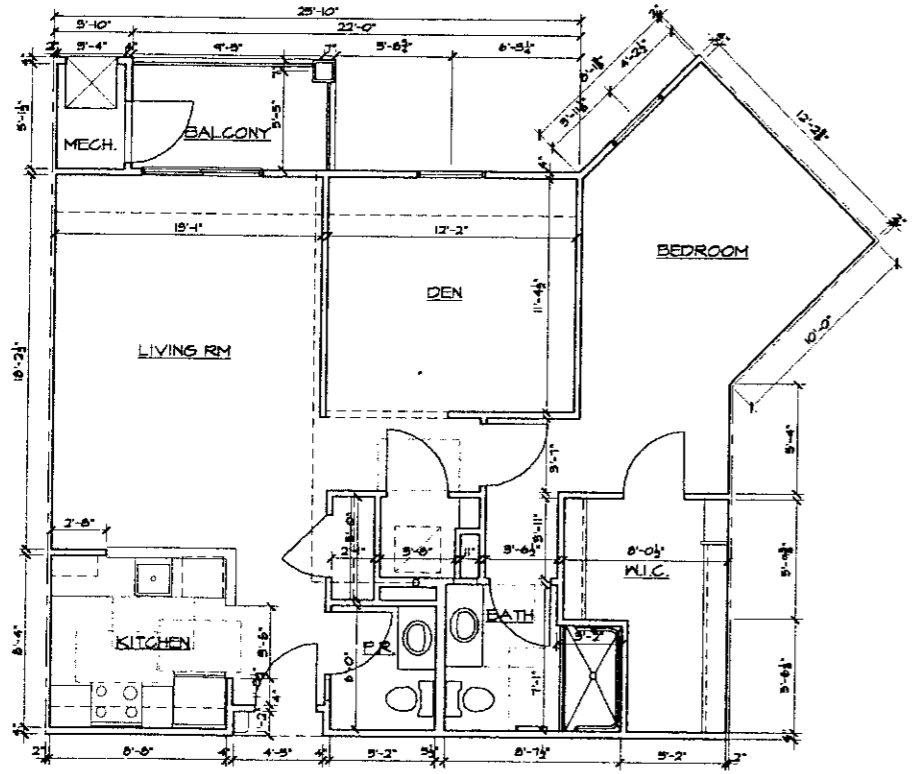
**BARRIER FREE**  
**UNIT TYPE Cbf**  
 SCALE: 1/4"=1'-0" AREA: 995sf



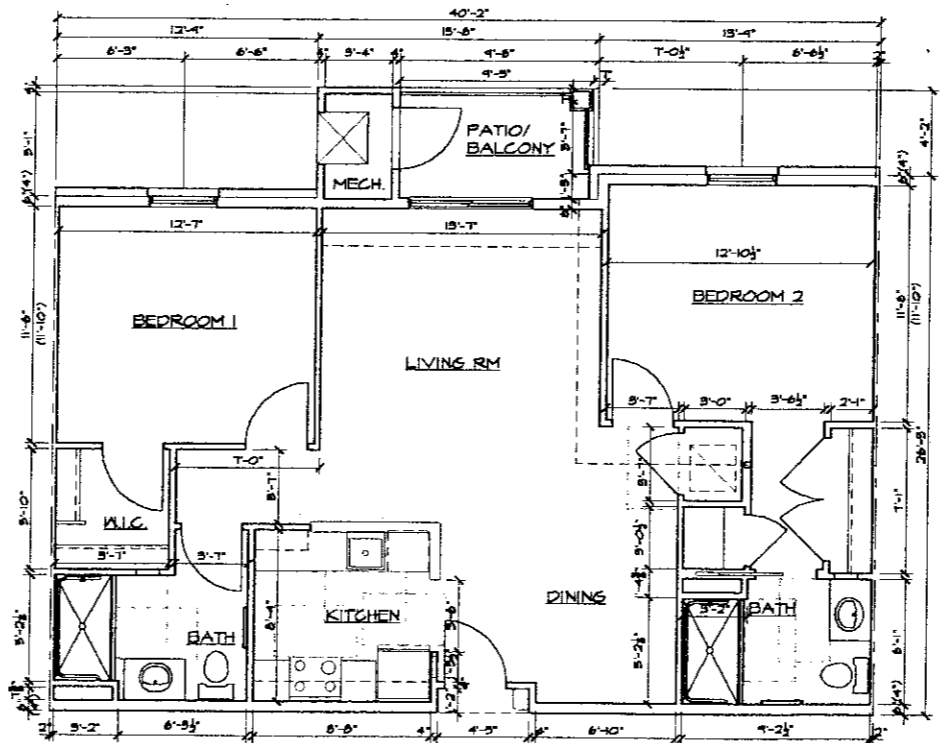
**BARRIER FREE**  
**UNIT TYPE Bbf**  
 SCALE: 1/4"=1'-0" AREA: 1050sf



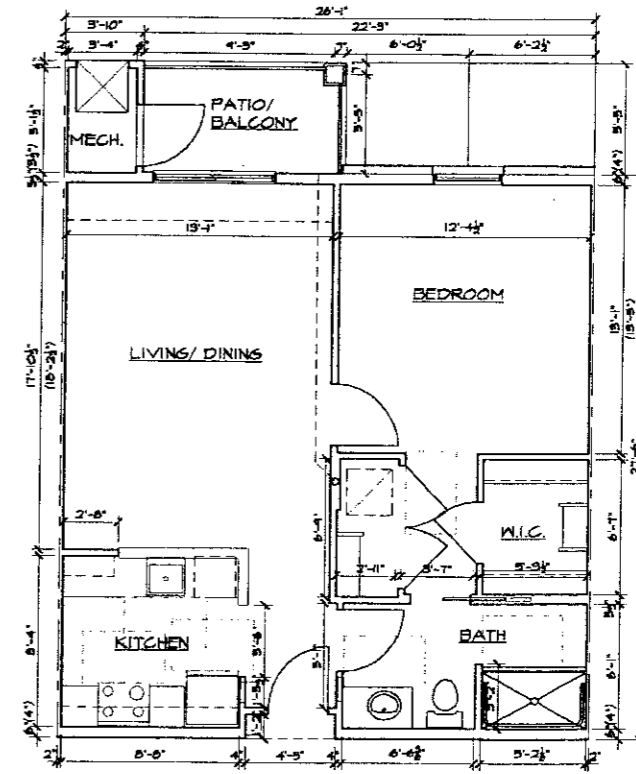
**BARRIER FREE**  
**UNIT TYPE Abf**  
 SCALE: 1/4"=1'-0" AREA: 138sf



**UNIT TYPE C**  
 SCALE: 1/4"=1'-0" AREA: 995sf



**UNIT TYPE B**  
 SCALE: 1/4"=1'-0" AREA: 1050sf



**UNIT TYPE A**  
 SCALE: 1/4"=1'-0" AREA: 138sf

Contractor:  
**LIBERTY CONSTRUCTION**  
 Developer:  
**POMKAL ROCHESTER LLC**

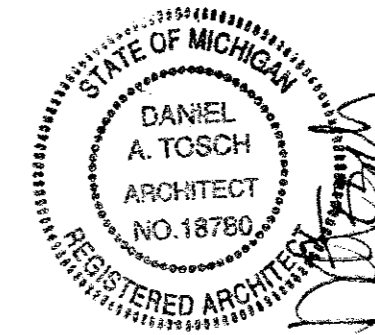
Project:  
**OAKMONT**  
 Boulevard Hills /  
 Independent  
 Senior Living  
 Rochester Hills, Michigan

Sheet Title:  
**TYPICAL INDEPENDENT UNIT PLANS**

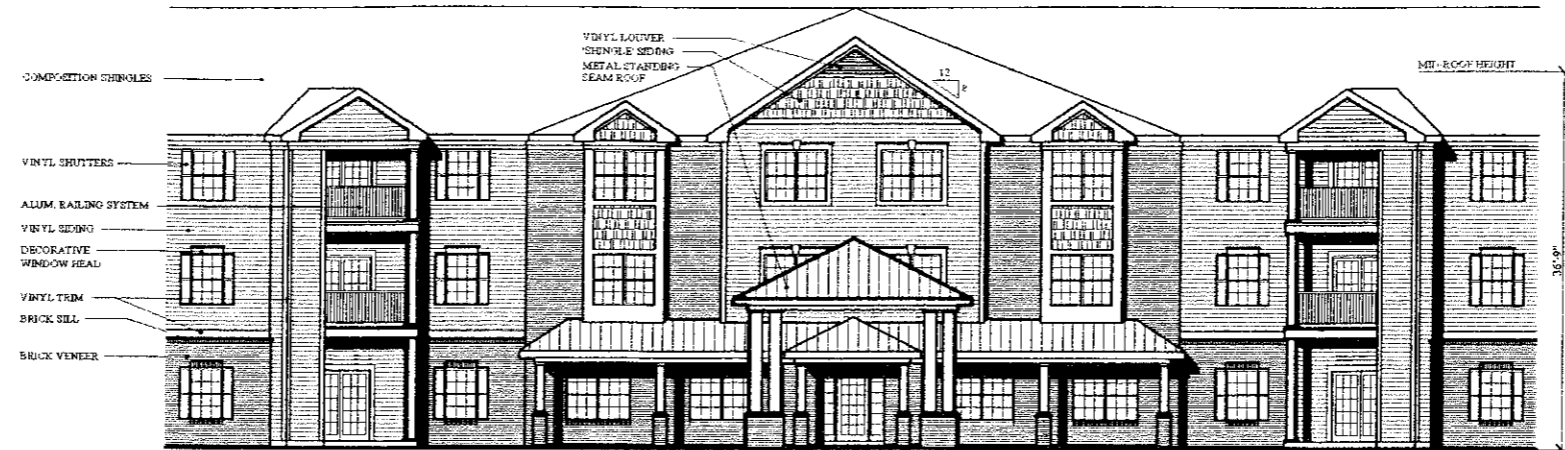
Project Number: 07-064  
 Drawn: PA  
 Checked: PA  
 Date: 11.2.07  
 Sheet Number:

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REVIEW	3.5.08
REVIEW	8.29.08
REVIEW	9.3.08
SITE PLAN REVIEW	4.30.09
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**FRONT ENTRY ELEVATION**  
 SCALE: 1/8"=1'-0"



**TYPICAL WING ELEVATION**  
 SCALE: 1/8"=1'-0"



**TYPICAL END ELEVATION**  
 SCALE: 1/8"=1'-0"

Contractor:  
**LIBERTY  
 CONSTRUCTION**

Developer:  
**POMKAL  
 ROCHESTER LLC**

Project:  
**OAKMONT  
 Boulevard Hills/  
 Independent  
 Senior Living**  
 Rochester Hills, Michigan

Sheet Title:  
**CONCEPT  
 ELEVATIONS**

Project Number: **07-064**  
 Drawn: **VC**  
 Checked: **DT**  
 Date: **10.30.07**  
 Sheet Number: **SK5**

838 W. Long Lake #250  
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Email: ciron@charter.net

**GENERAL BLDG & CODE DATA:**  
THE STRUCTURE IS A LICENSED "FRAME FOR THE AGED / ASSISTED LIVING BUILDING AND INCLUDES ROOMS & SPACES FOR ACCESSORY AND INCIDENTAL USES.  
THE STRUCTURE IS DIVIDED INTO (3) SEPARATE BUILDINGS BY FIRE WALLS HAVING A 2 HOUR FIRE RESISTANCE RATING IN ACCORDANCE WITH MEC SECTION 705.  
FIRE WALLS ALSO SERVE AS SMOKE BARRIER WALLS FOR THE PURPOSE OF COMPARTMENTALIZING THE BUILDING IN ACCORDANCE WITH MEC SECTION 407.4 & NFPA 101.97 SECTION 12.3.7

**PROPOSED CONSTRUCTION TYPE:**  
"VA" PROTECTED WOOD FRAME PER MEC VOL. 1, (1), PROTECTED WOOD FRAME PER NFPA 101-1997  
**FIRE RESISTANCE RATING OF BLDG STRUCTURAL ELEMENTS:**  
EXTERIOR WALLS (BEARING & NON-BEARING): (1) HOUR  
INTERIOR BEARING WALLS & COLUMNS: (1) HOUR  
FLOOR-CEILING ASSEMBLIES: (1) HOUR  
ROOF-CEILING ASSEMBLIES: (1) HOUR

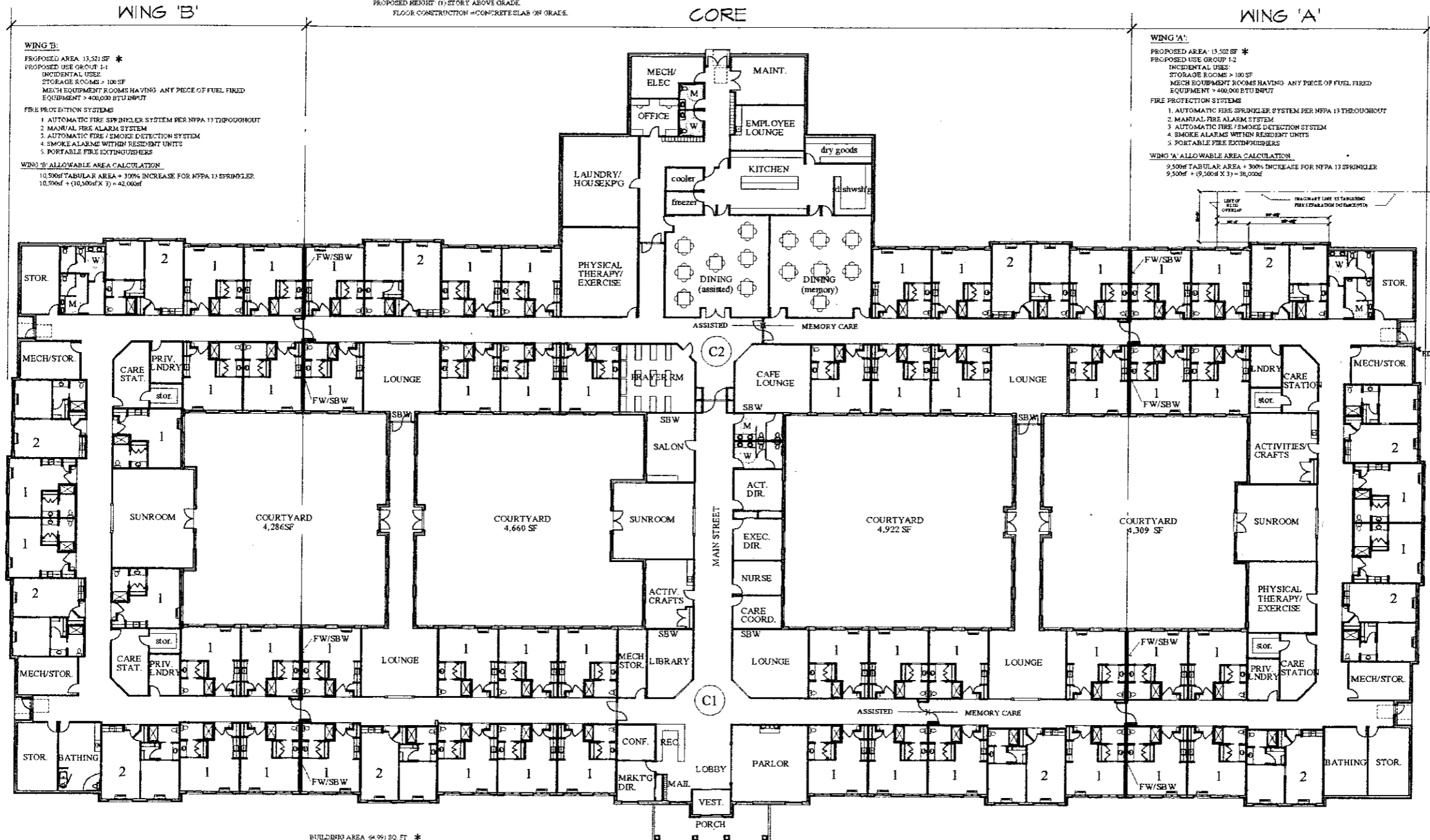
**PROPOSED HEIGHT:** (1) STORY ABOVE GRADE.  
**FLOOR CONSTRUCTION:** CONCRETE SLAB ON GRADE.

**CORE:**  
AREA 37,968 SF \*  
PROPOSED USE GROUPS: A2, A3, B, 1-1, 1-2  
NON-SEPARATED MIXED USE  
THE CORE IS FURTHER DIVIDED INTO (2) SMOKE COMPARTMENTS BY (1) HOUR SMOKE BARRIER WALLS IN ACCORDANCE WITH MEC SECTION 407.4 & NFPA 101-97 SECTION 12.3.7  
SMOKE COMPARTMENT C1 = 19,139 SF  
SMOKE COMPARTMENT C2 = 18,829 SF

**ALLOWABLE CORE AREA:** BASED ON MOST RESTRICTIVE USE (U2)  
9,500H TABULAR AREA + 300% INCREASE FOR NFPA 13 SPRINKLER  
9,500sf + (9,500sf x 3) = 38,000sf

**CORE FIRE PROTECTION SYSTEMS:**  
1. AUTOMATIC FIRE SPRINKLER SYSTEM PER NFPA 13 THROUGHOUT  
2. MANUAL FIRE ALARM SYSTEM  
3. AUTOMATIC FIRE / SMOKE DETECTION SYSTEM  
4. SMOKE ALARMS WITHIN RESIDENT UNITS  
5. PORTABLE FIRE EXTINGUISHERS

**ALLOWABLE WALL OPENING AREA @ S-W CORNER OF WING 'A' FACING THE CONGREGATE BUILDING:**  
FIRE SEPARATION DISTANCE = 16'  
ALLOWABLE UNPROTECTED OPENING AREA BASED ON TABLE 704.8 & SECTION 704.8.1 FOR BLDG W/ AUTOMATIC SPRINKLER SYSTEM PER NFPA 13 = 75%  
AREA OF WALL OVERLAP: 36" x 8' = 288 SQ. FT.  
PROPOSED WINDOWS: (2) 7'-6" x 5' WINDOWS + (1) 5' x 5' WINDOW = 100 SQ. FT.  
PROPOSED THRU-WALL AC UNITS: (2) 3'-2" x 1'-3" = 14 SQ. FT.  
TOTAL AREA OF OPENINGS = 114 SQ. FT.  
114 / 288 = .396, 39.6% < 75%, THEREFORE WINDOWS ARE ACCEPTABLE.  
**FIRE RATING OF WEST WALLS OF CORE:**  
PER TABLE 602, FOR FSD > 10' - 0" REQ'D FIRE RESISTANCE RATING = 1 HOUR.  
BASED ON TYPE "VA" CONSTRUCTION ALL EXTERIOR WALLS ARE (1) HOUR FIRE RATED.  
EXT WALLS HAVING GREATER THAN 5' FSD REQUIRE WALL TO BE RATED FROM INSIDE ONLY.



**WING 'B':**  
PROPOSED AREA: 13,521 SF \*  
PROPOSED USE GROUP: I-1  
INCIDENTAL USES:  
STORAGE ROOMS > 100 SF  
MECH EQUIPMENT ROOMS HAVING ANY PIECE OF FUEL FIRED EQUIPMENT > 400,000 BTU INPUT  
**FIRE PROTECTION SYSTEMS:**  
1. AUTOMATIC FIRE SPRINKLER SYSTEM PER NFPA 13 THROUGHOUT  
2. MANUAL FIRE ALARM SYSTEM  
3. AUTOMATIC FIRE / SMOKE DETECTION SYSTEM  
4. SMOKE ALARMS WITHIN RESIDENT UNITS  
5. PORTABLE FIRE EXTINGUISHERS  
**WING 'B' ALLOWABLE AREA CALCULATION:**  
10,500H TABULAR AREA + 300% INCREASE FOR NFPA 13 SPRINKLER  
10,500sf + (10,500sf x 3) = 42,000sf

**WING 'A':**  
PROPOSED AREA: 13,522 SF \*  
PROPOSED USE GROUP: I-2  
INCIDENTAL USES:  
STORAGE ROOMS > 100 SF  
MECH EQUIPMENT ROOMS HAVING ANY PIECE OF FUEL FIRED EQUIPMENT > 400,000 BTU INPUT  
**FIRE PROTECTION SYSTEMS:**  
1. AUTOMATIC FIRE SPRINKLER SYSTEM PER NFPA 13 THROUGHOUT  
2. MANUAL FIRE ALARM SYSTEM  
3. AUTOMATIC FIRE / SMOKE DETECTION SYSTEM  
4. SMOKE ALARMS WITHIN RESIDENT UNITS  
5. PORTABLE FIRE EXTINGUISHERS  
**WING 'A' ALLOWABLE AREA CALCULATION:**  
9,500H TABULAR AREA + 300% INCREASE FOR NFPA 13 SPRINKLER  
9,500sf + (9,500sf x 3) = 38,000sf

BUILDING AREA 64,991 SQ. FT. \*

\* AREAS ARE CALCULATED TO THE EXTERIOR FACE OF THE EXTERIOR WALL SHEATHING, EXCEPT THE AREA OF SMOKE COMPARTMENT 'C1' INCLUDES THE FRONT PORCH AREA.  
AREAS DO NOT INCLUDE THE COURTYARDS, EXIT PORCHES, THE PORTE COCHERE AND ITS CONNECTOR ROOF.

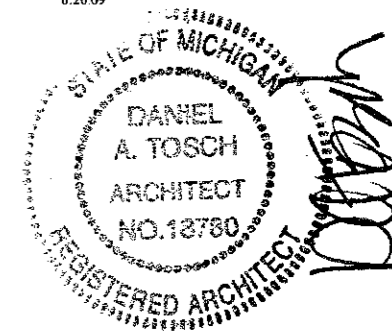
**FIRST FLOOR PLAN**  
SCALE: 1/8" = 1'-0"  
NORTH

UNIT COUNT	'1'	'2'	TOTAL
ASSISTED LIVING	31	6	37
MEMORY CARE	21	6	27
TOTAL	52	12	64

FW / SBW = (2) HR FIRE WALL; ALSO SERVING AS SMOKE BARRIER WALL  
SBW = (1) HR SMOKE BARRIER WALL  
MANEUVERING CLEARANCE AT EXIT DOOR PER ICC/ANSI A117.1 SECTION 404.2.3  
STOOP SHALL SLOPE 1:48 (2%) MAXIMUM

Issued For:

REVIEW	11.2.07
REVIEW	11.15.07
REVIEW	12.6.07
REVISED	12.13.07
REVISED	2.18.08
REVISED	12.22.08
REVISED	1.6.09
REVIEW	3.9.09
REVIEW	3.25.09
REVISED	6.8.09
REVISED per CITY	6.26.09



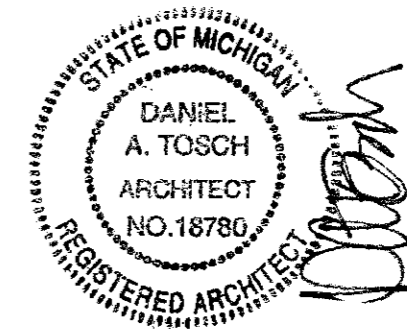
Contractor:  
**LIBERTY CONSTRUCTION**  
Developer:  
**POMKAL ROCHESTER LLC**

Project:  
**OAKMONT Boulevard Hills / Assisted Living**  
Rochester Hills, Michigan

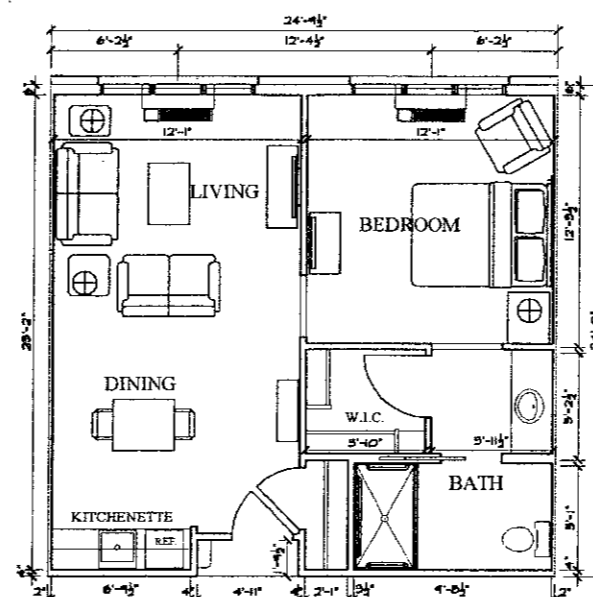
Sheet Title:  
**PROPOSED FIRST FLOOR PLAN**

Project Number: 07-064  
Drawn: PA  
Checked: PA  
Date: 11.2.07  
Sheet Number: **SK6**

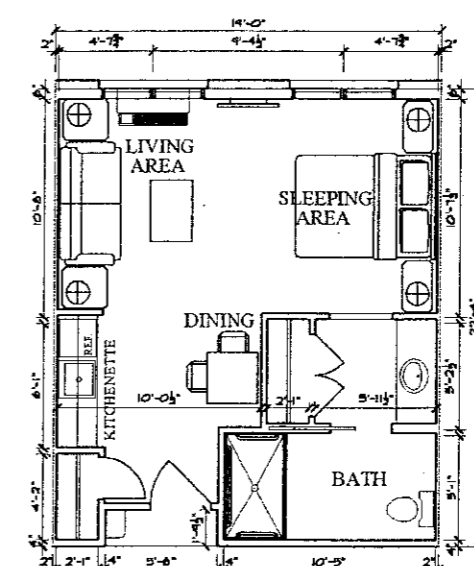
838 W. Long Lake #250  
 Bloomfield Hills, MI 48302  
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 1.6.09  
 REVIEW  
 3.9.09  
 SITE PLAN REVIEW  
 4.30.09  
 REVISED per CITY  
 6.26.09



FLOOR PLAN UNIT TYPE 2  
 SCALE: 1/4"=1'-0"  
 AREA: 586sf



FLOOR PLAN UNIT TYPE 1  
 SCALE: 1/4"=1'-0"  
 AREA: 414sf

Contractor:  
 LIBERTY  
 CONSTRUCTION

Developer:  
 POMKAL  
 ROCHESTER LLC

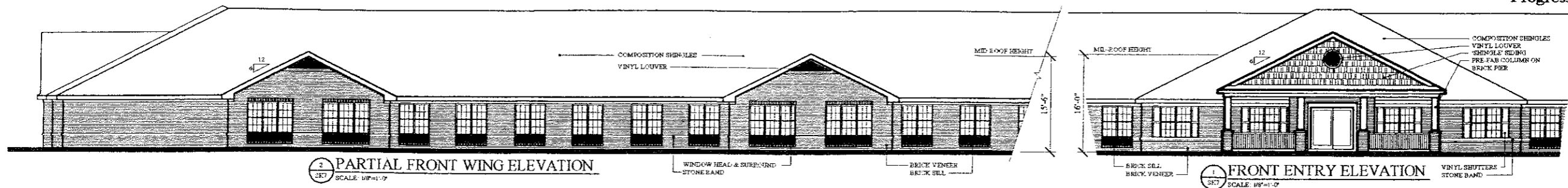
Project:  
 OAKMONT  
 Boulevard Hills  
 Assisted Living  
 Rochester Hills, Michigan

Sheet Title:  
 PROPOSED  
 UNIT PLANS

Project Number: 07-064  
 Drawn: PA  
 Checked: PA  
 Date: 11.2.07  
 Sheet Number:

SK6.1

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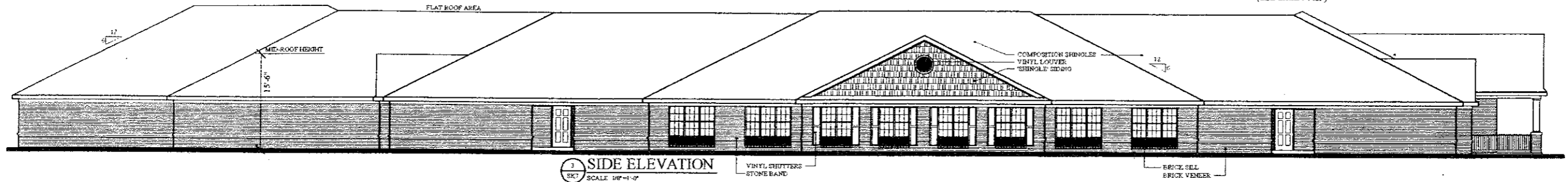


2 PARTIAL FRONT WING ELEVATION  
 SCALE: 1/8"=1'-0"

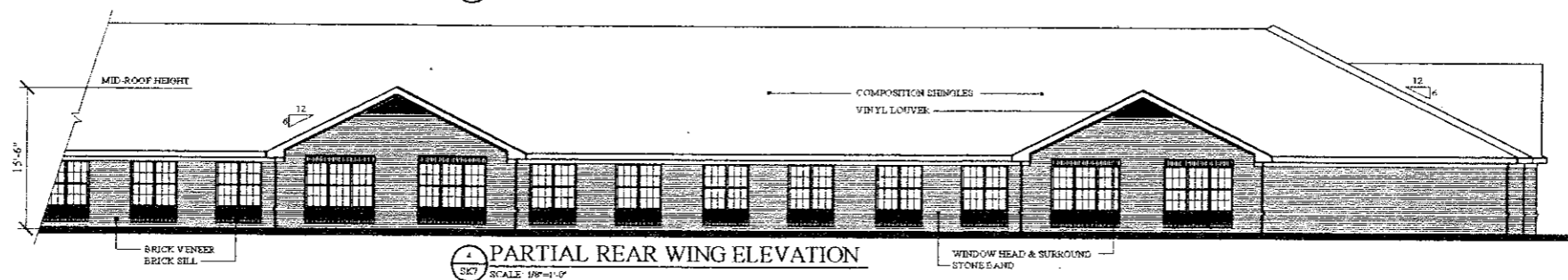
1 FRONT ENTRY ELEVATION  
 SCALE: 1/8"=1'-0"

NOTE: COVERED ENTRY (PORTE COCHERE)  
 NOT SHOWN.  
 PORTE COCHERE MIN CLEARANCE 13'-6" HT  
 (SEE SHEET ASP)

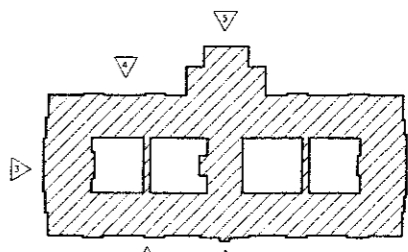
Issued For:	
REVIEW	1.2.07
REVIEW	1.7.09
REVIEW	3.09.09
REVIEW	3.25.09
SITE PLAN REVIEW	4.30.09
REVISED per CITY	6.26.09



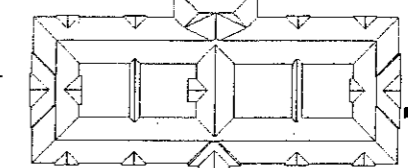
3 SIDE ELEVATION  
 SCALE: 1/8"=1'-0"



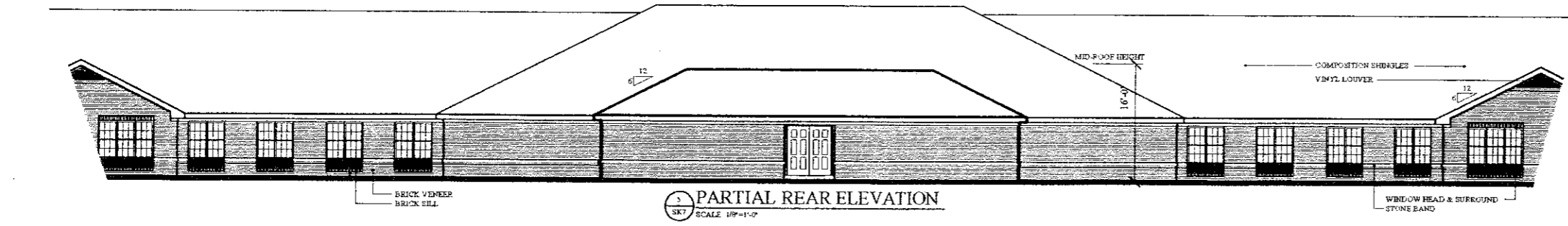
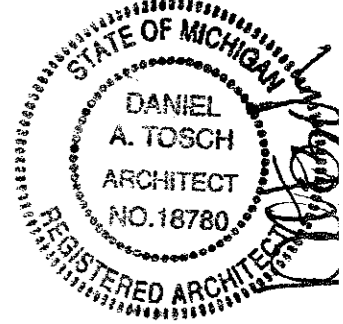
4 PARTIAL REAR WING ELEVATION  
 SCALE: 1/8"=1'-0"



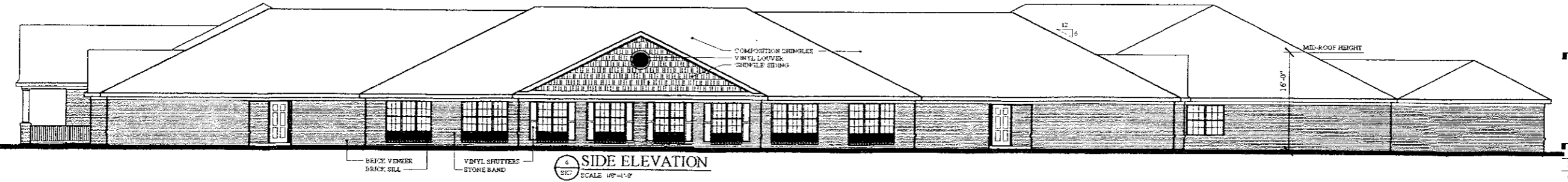
KEY PLAN  
 NTS



ROOF PLAN  
 NTS



5 PARTIAL REAR ELEVATION  
 SCALE: 1/8"=1'-0"



6 SIDE ELEVATION  
 SCALE: 1/8"=1'-0"

Contractor:  
**LIBERTY CONSTRUCTION**  
 Developer:  
**POMKAL ROCHESTER LLC**

Project:  
**OAKMONT**  
**Boulevard Hills /**  
**Assisted Living**  
 Rochester Hills, Michigan  
 Sheet Title:  
**CONCEPT ELEVATIONS**

Project Number: 07-064  
 Drawn: VC  
 Checked: DT  
 Date: 10.30.07  
 Sheet Number:

**SK7**