

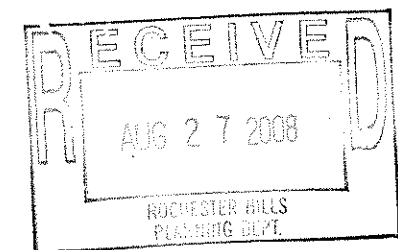


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C-400	OVERALL UTILITY PLAN	01, 03, 05, 06, 08
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CITY FILE NUMBER: 89-153.B

PARKING STRUCTURE EXPANSION

ROCHESTER HILLS, MICHIGAN
ROCHESTER, MICHIGAN



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Detroit, Michigan 48202-2798

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[Handwritten signature]
08/27/08

General Contract Work
Issue 8

Job Number 2530-AL

Kahn

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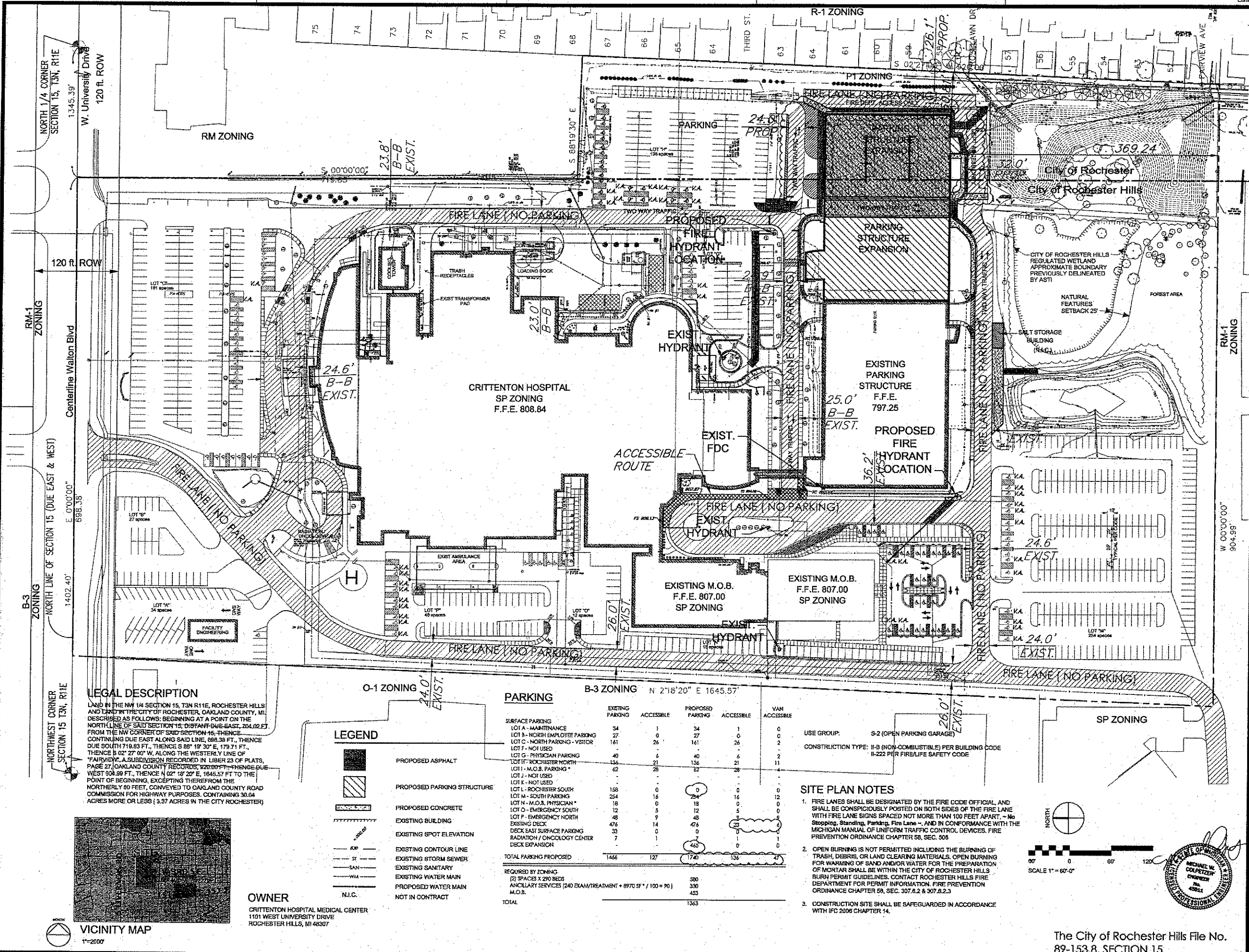
CRITTENTON HOSPITAL MEDICAL CENTER

PARKING STRUCTURE EXPANSION
 ROCHESTER HILLS, MI.
 ROCHESTER, MI.

In Charge	JJC
Designed	CAR
Drawn By	CAR
Checked	MWC
Approved	Date 5-9-07
Sheet Title	

OVERALL SITE PLAN

Job Number 02530-AL
 Sheet Number C-100



LEGAL DESCRIPTION
 LAND IN THE NW 1/4 SECTION 15, T3N, R11E, ROCHESTER HILLS AND LAND IN THE CITY OF ROCHESTER, OAKLAND COUNTY, MI DESCRIBED AS FOLLOWS: BEGINNING AT A POINT ON THE NORTH LINE OF SAID SECTION 15, DISTANT DUE EAST, 204.02 FT. FROM THE NW CORNER OF SAID SECTION 15, THENCE CONTINUING DUE EAST ALONG SAID LINE, 688.38 FT., THENCE DUE SOUTH 718.83 FT., THENCE S 86° 19' 30" E, 179.71 FT., THENCE S 02° 27' 00" W, ALONG THE WESTERLY LINE OF "FAIRVIEW," A SUBDIVISION RECORDED IN LIBER 23 OF PLATS, PAGE 27, OAKLAND COUNTY RECORDS, 820.00 FT., THENCE DUE WEST 904.99 FT., THENCE N 02° 18' 20" E, 1645.57 FT. TO THE POINT OF BEGINNING, EXCEPTING THEREFROM THE NORTHERLY 80 FEET, CONVEYED TO OAKLAND COUNTY ROAD COMMISSION FOR HIGHWAY PURPOSES, CONTAINING 30.04 ACRES MORE OR LESS (3.97 ACRES IN THE CITY OF ROCHESTER)

LEGEND

- PROPOSED ASPHALT
- PROPOSED PARKING STRUCTURE
- PROPOSED CONCRETE
- EXISTING BUILDING
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR LINE
- EXISTING STORM SEWER
- EXISTING SANITARY
- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- NOT IN CONTRACT

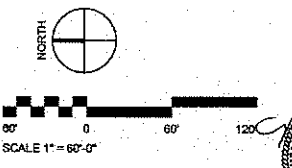
PARKING

SURFACE PARKING	EXISTING		PROPOSED		VAN ACCESSIBLE
	PARKING	ACCESSIBLE	PARKING	ACCESSIBLE	
LOT A - MAINTENANCE	34	1	34	1	0
LOT B - NORTH EMPLOYEE PARKING	27	0	27	0	0
LOT C - NORTH PARKING - VISITOR	141	26	141	26	2
LOT F - NOT USED	-	-	-	-	-
LOT G - PHYSICIAN PARKING	40	6	40	6	2
LOT H - ROCHESTER NORTH	134	21	134	21	11
LOT I - M.O.B. PARKING *	62	28	62	28	1
LOT J - NOT USED	-	-	-	-	-
LOT K - NOT USED	-	-	-	-	-
LOT L - ROCHESTER SOUTH	158	0	0	0	0
LOT M - SOUTH PARKING	254	16	254	16	12
LOT N - M.O.B. PHYSICIAN *	18	0	18	0	0
LOT O - EMERGENCY SOUTH	12	5	12	5	0
LOT P - EMERGENCY NORTH	48	9	48	9	0
EXISTING DECK	476	14	476	14	2
DECK EAST SURFACE PARKING	33	0	0	0	0
RADIATION / ONCOLOGY CENTER DECK EXPANSION	7	1	7	1	1
TOTAL PARKING PROPOSED	1466	127	1740	136	43
REQUIRED BY ZONING			580		
(2) SPACES X 290 BEDS			330		
ANCILLARY SERVICES (240 EXAM/TREATMENT + 8970 SF / 100 = 90)			453		
M.O.B.					
TOTAL			1363		

USE GROUP: S-2 (OPEN PARKING GARAGE)
 CONSTRUCTION TYPE: II-B (NON-COMBUSTIBLE) PER BUILDING CODE
 II-222 PER FIRE/LIFE SAFETY CODE

SITE PLAN NOTES

- 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 FEET APART. - No Stopping, Standing, Parking, Fire Lane -, AND IN CONFORMANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, FIRE PREVENTION ORDINANCE CHAPTER 58, SEC. 508
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- CONSTRUCTION SITE SHALL BE SAFEGUARDED IN ACCORDANCE WITH IFC 2006 CHAPTER 14.



MICHAEL W. COLPETZKY
 PROFESSIONAL ENGINEER
 No. 4584

VICINITY MAP

1"=2500'

OWNER
 CRITTENTON HOSPITAL MEDICAL CENTER
 1101 WEST UNIVERSITY DRIVE
 ROCHESTER HILLS, MI 48307

The City of Rochester Hills File No.
 89-153.8, SECTION 15

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ISSUE 03	• ISSUE	• 10-09-07
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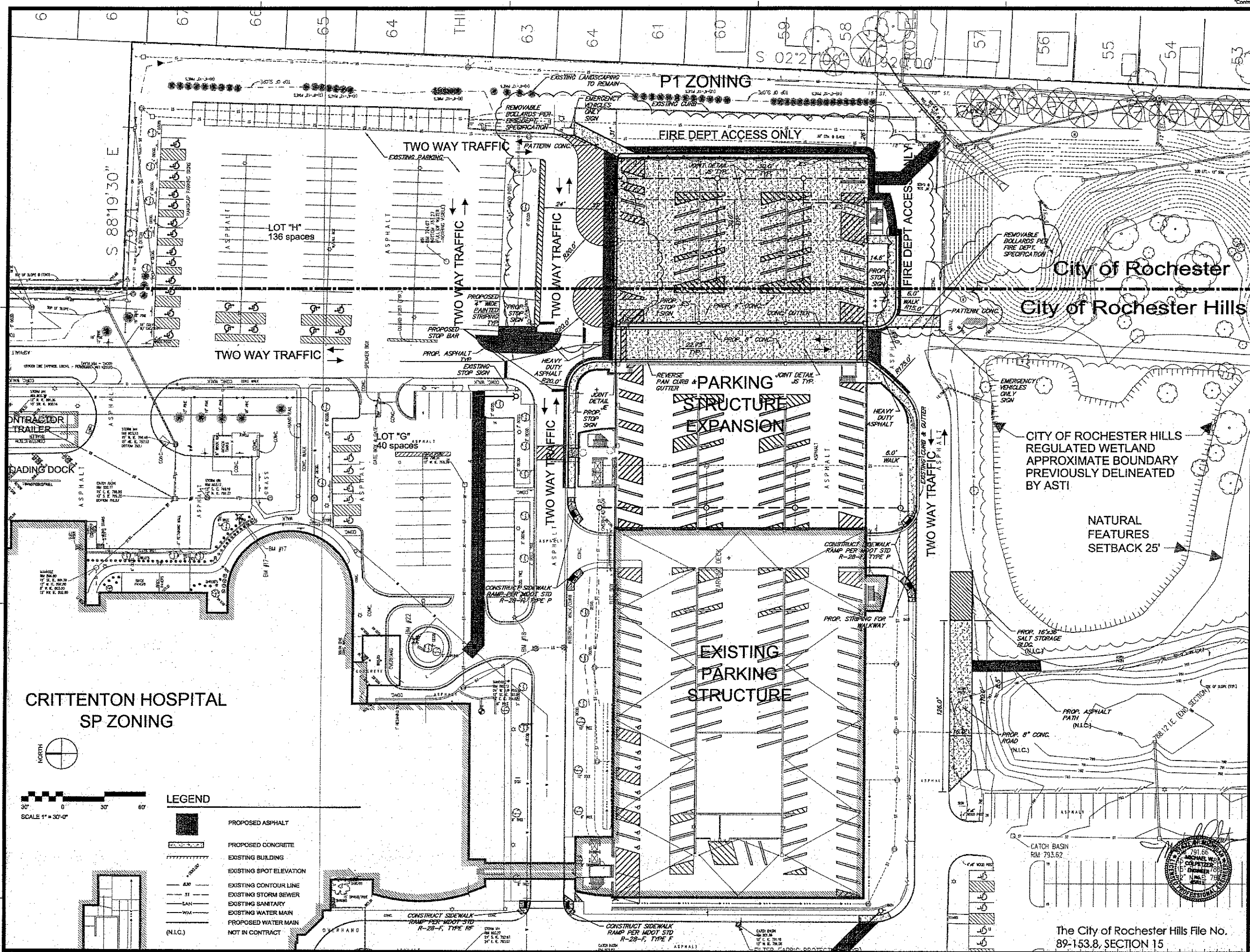


CRITTENTON HOSPITAL
MEDICAL CENTER
 PARKING STRUCTURE
 EXPANSION
 ROCHESTER HILLS, MI.
 ROCHESTER, MI.

In Charge: JJC
 Designed: CAR
 Drawn By: CAR
 Checked: MWC
 Approved: _____ Date: 7-11-07
 Sheet Title: _____

SITE PLAN

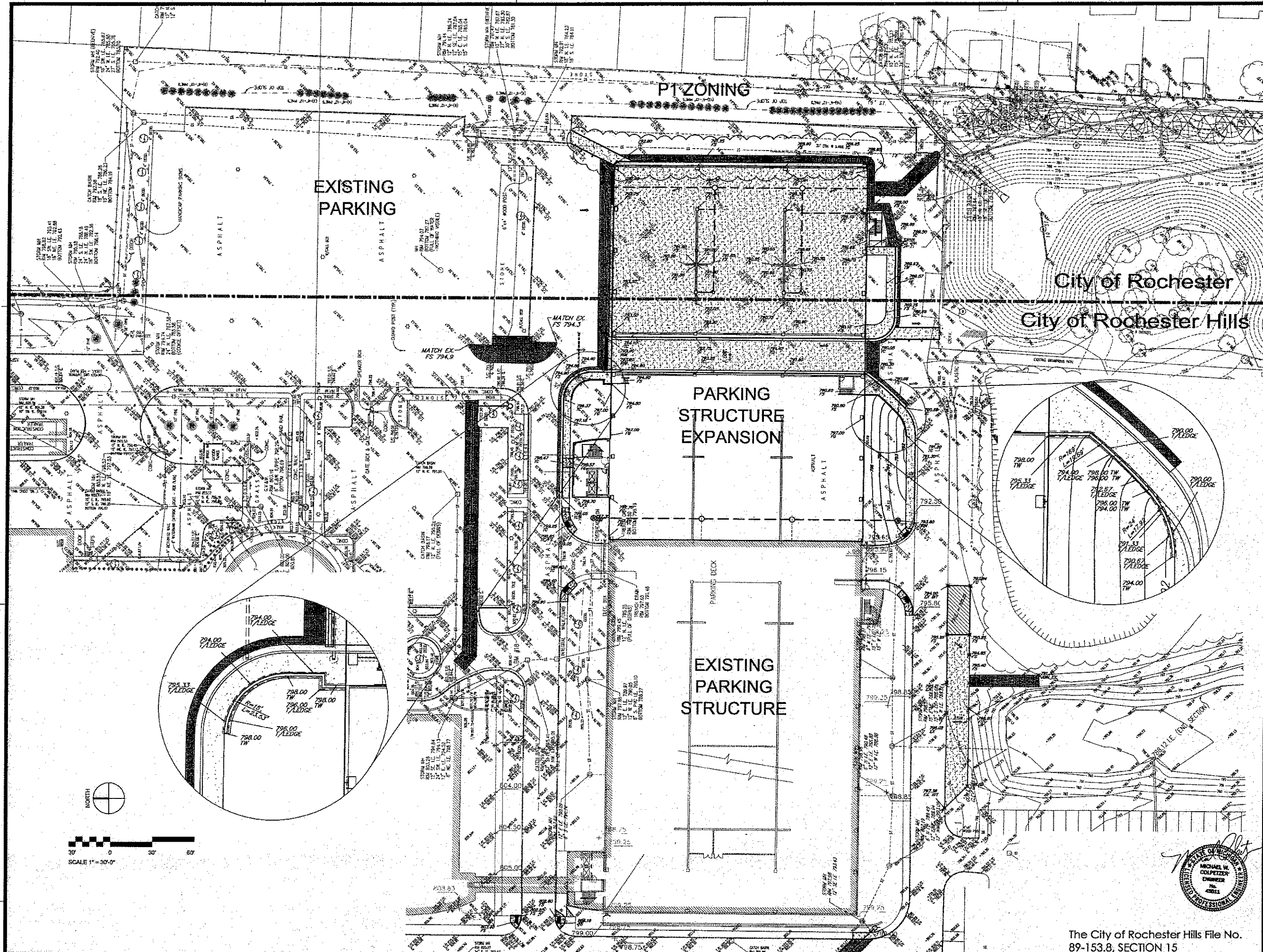
Job Number: 02530-AL
 Sheet Number: C-200



LEGEND

	PROPOSED ASPHALT
	PROPOSED CONCRETE
	EXISTING BUILDING
	EXISTING SPOT ELEVATION
	EXISTING CONTOUR LINE
	EXISTING STORM SEWER
	EXISTING SANITARY
	EXISTING WATER MAIN
	PROPOSED WATER MAIN
(N.L.C.)	NOT IN CONTRACT

The City of Rochester Hills File No.
 89-153.8, SECTION 15



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ISSUE 01	• ISSUE	• 07-26-07

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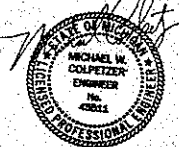
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**ORIENTON HOSPITAL
 MEDICAL CENTER**
 PARKING STRUCTURE
 EXPANSION
 ROCHESTER HILLS, MI.
 ROCHESTER, MI.

In Charge: JF	Designed: CAR	Drawn By: CAR	Checked: MWC	Approved: _____	Date: 7-11-07
Sheet Title: GRADING PLAN					
Job Number: 02530-AL	Sheet Number: C-300				

The City of Rochester Hills File No.
 89-153.8, SECTION 15



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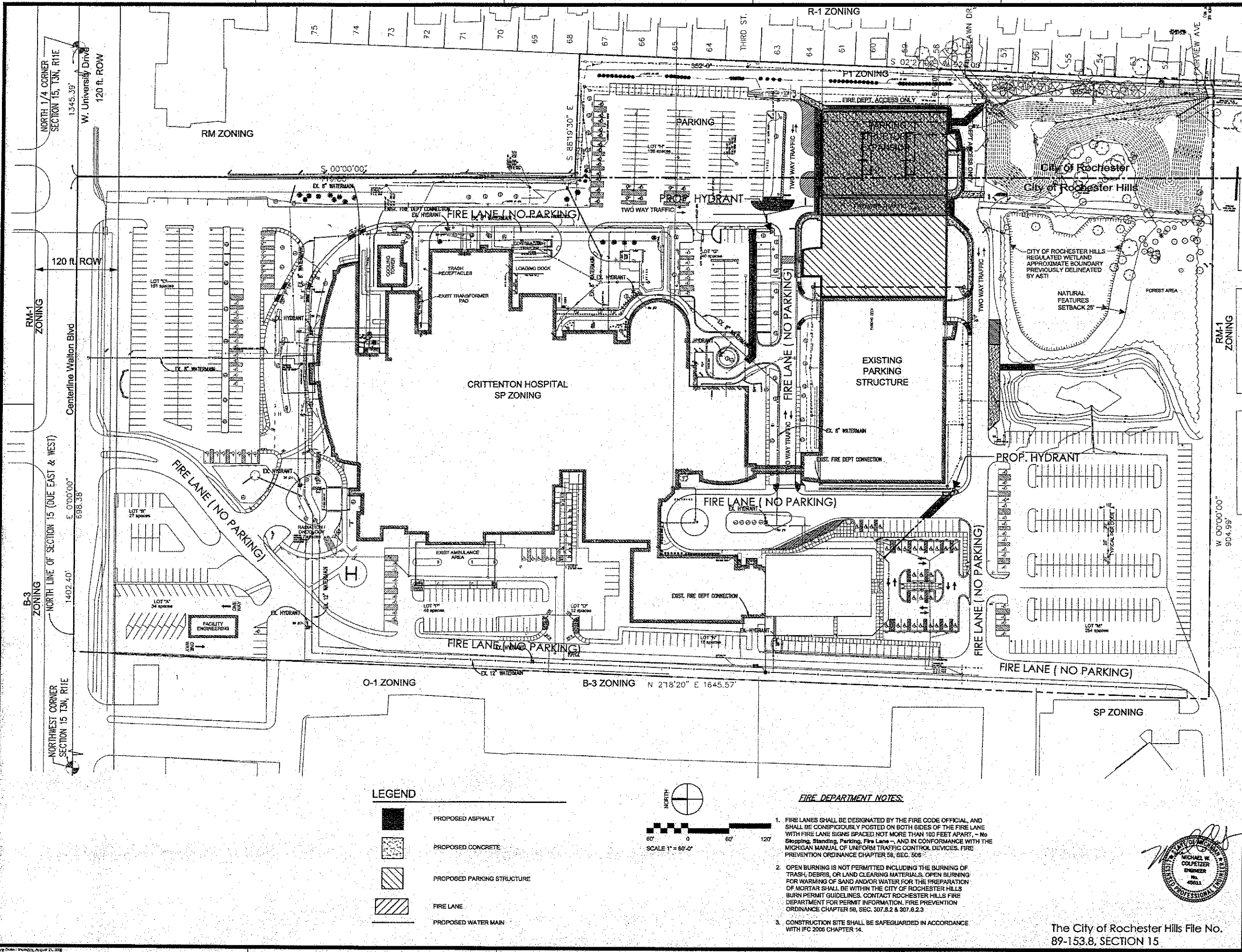
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



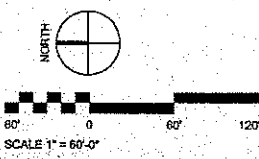
**Crittendon Hospital
 Medical Center**
 PARKING STRUCTURE
 EXPANSION
 ROCHESTER HILLS, MI.
 ROCHESTER, MI.

In Charge JJC	Designed CAR
Drawn By CAR	Checked MMC
Approved _____	Date 6-5-07
Sheet Title	
OVERALL UTILITY PLAN	
Job Number	Sheet Number
02530-AL	C-400

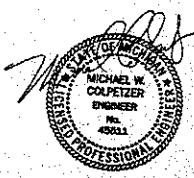


LEGEND

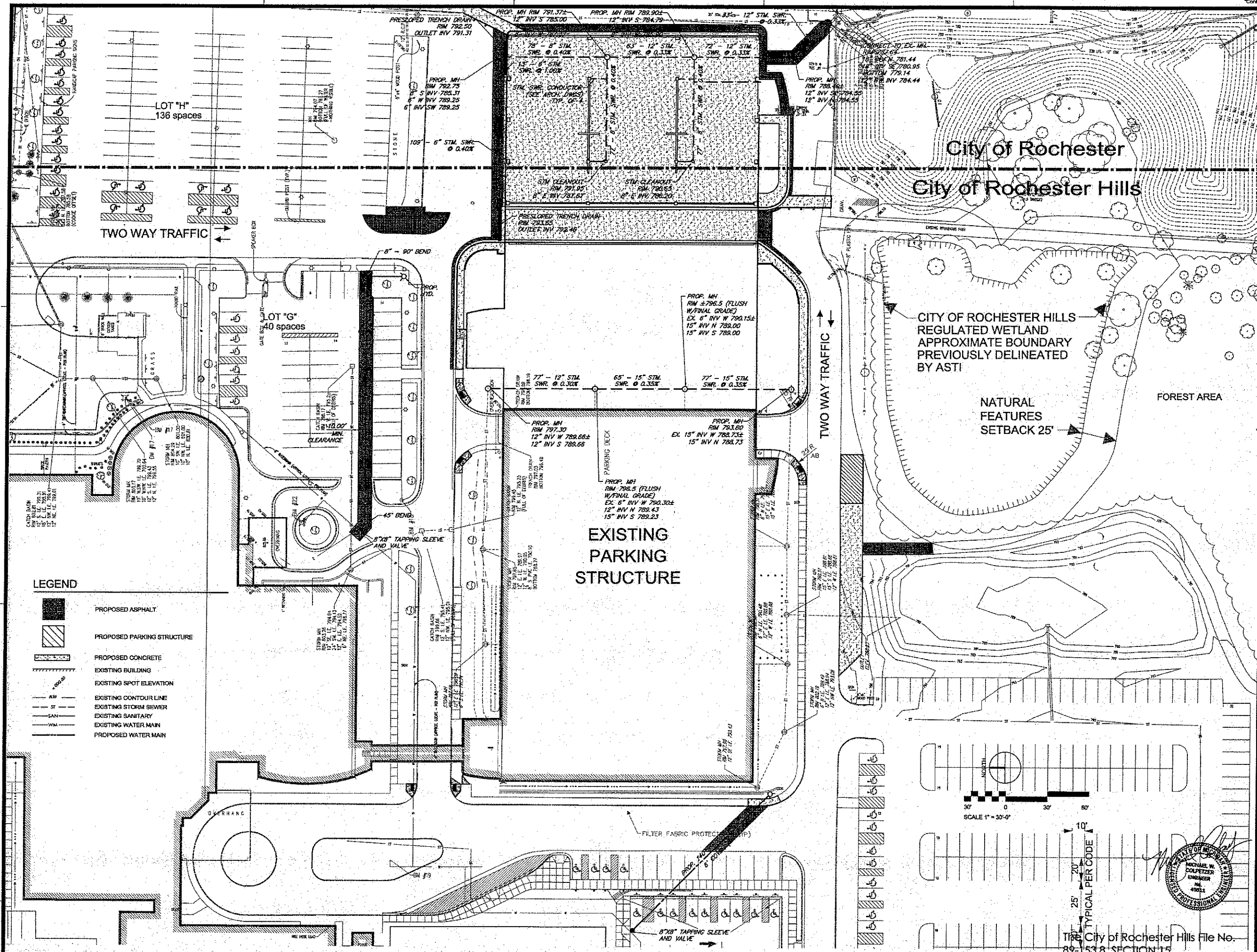
	PROPOSED ASPHALT
	PROPOSED CONCRETE
	PROPOSED PARKING STRUCTURE
	FIRE LANE
	PROPOSED WATER MAIN



- FIRE DEPARTMENT NOTES:**
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 3. CONSTRUCTION SITE SHALL BE SAFEGUARDED IN ACCORDANCE WITH IFC 2006 CHAPTER 14.



The City of Rochester Hills File No.
 89-153.8, SECTION 15



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CRISLER HOSPITAL MEDICAL CENTER

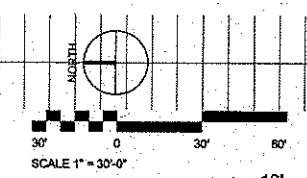
PARKING STRUCTURE EXPANSION
 ROCHESTER HILLS, MI.
 ROCHESTER, MI.

In Charge	JJC
Designed	CAR
Drawn By	CAR
Checked	MWC
Approved	Date 8-6-07
Sheet Title	

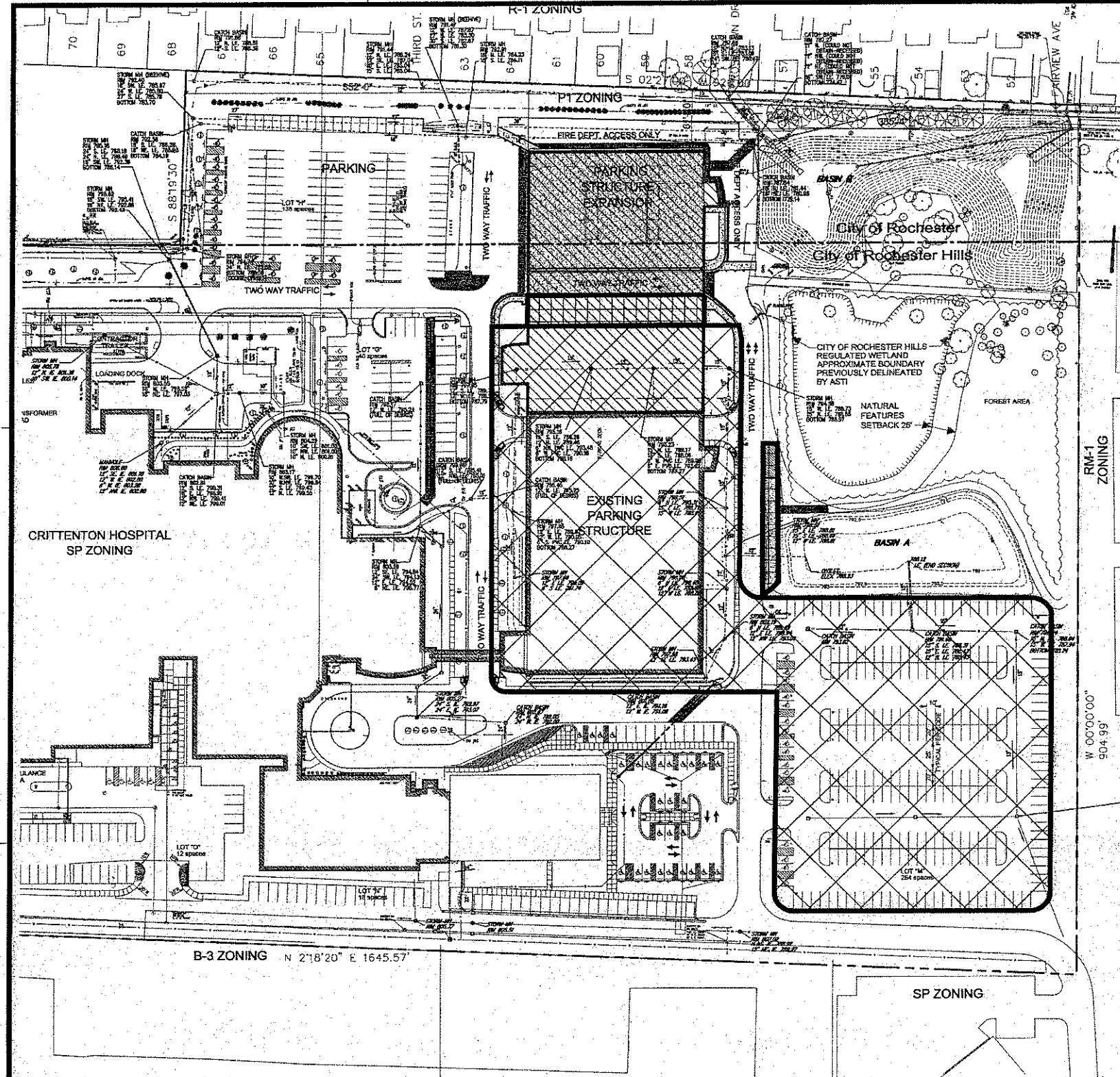
Job Number	Sheet Number
02530-AL	C-401

LEGEND

- PROPOSED ASPHALT
- PROPOSED PARKING STRUCTURE
- PROPOSED CONCRETE
- EXISTING BUILDING
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR LINE
- EXISTING STORM SEWER
- EXISTING SANITARY
- EXISTING WATER MAIN
- PROPOSED WATER MAIN



The City of Rochester Hills File No. 89-153.8, SECTION 15



NOTE

- PROPOSED CONSTRUCTION WILL CHANGE A NET 0.13 ACRES FROM IMPERVIOUS AREA (C=0.2) TO IMPERVIOUS (C=0.90) FOR PARKING STRUCTURE INFILL. ADDITIONALLY 0.06 ACRES OF PAVING AND BUILDING WAS ADDED (C=0.90) TO AN AREA PREVIOUSLY LAWN (C=0.2) FOR SALT STORAGE AND ASSOCIATED APPROACH CONCRETE.
- ORIGINAL DETENTION STORAGE VOLUMES CALCULATE THE POND VOLUME BOTTOM AREA AT ELEVATION 788.0. THE ACTUAL AS-BUILT POND BOTTOM WILL BE CONTROLLED BY OUTFLOW DOWN TO ELEVATION 788.42.

ORIGINAL STORM WATER DESIGN BASIN "A"
FROM APPROVED PLANS DATED 04-25-02.

DETENTION BASIN DESIGN FOR 10 YEARS RAINFALL
("A SIMPLE METHOD OF DETENTION BASIN DESIGN, CALCULUS METHOD")
(OAKLAND COUNTY METHOD)

- Amount of acreage contributing runoff to the basin:
Runoff Coefficient: C_u (average)
Average Coefficient based on:
a. 1.40 Acres of building with a $C=0.90$
b. 2.6 Acres of paved area with a $C=0.90$
c. 0.90 Acres of gravel area with a $C=0.75$
d. 0.2 Acres of landscaped area with a $C=0.20$
 $C_u = (1.40 \times 0.90 + 2.9 \times 0.90 + 0.00 \times 0.75 + 0.2 \times 0.20) / 4.5 = 0.87$
- Q_0 (Maximum Allowable Release Rate or outflow) = 0.17 cfs per acre
- Q_0 (Maximum Outflow per acre) = $Q_0 / C_u = 0.20 / 0.87 = 0.23$ cfs per acre
- Outlet type = orifice
- T (Maximum Storage Time) = $-25 + (6562.5 / Q_0)^{1/2} = 171$ minutes
- V_0 (Maximum Volume Storage per acre) = $(10500 \times T) / (T + 25) = 40 \times 10^3 \times T = 10500 \times 171 / (171 + 25) = 40 \times 10^3 \times 171 = 7998$ per acre
- V_1 (Total Volume of Storage Required for the entire site) = $V_0 \times A \times C_u = 7998 \times 4.5 \times 0.85 = 30592$ cf = 0.70 acre-foot

ORIFICE OULET (EXISTING)
Area: $A = 4.5$ acres
 Q_0 (Maximum Allowable Release Rate or outflow) = 0.20 cfs per acre
 Q_0 (Maximum Outflow per acre) = $Q_0 / C_u = 0.20 / 0.87 = 0.23$ cfs per acre
Outlet type = orifice
 $Q_0 \times A = 0.62a \times (2.44)^{5/2} = 2$ (Orifice formula) = 0.765
Area = $Q_0 / 0.62 \times (2.44)^{5/2} = 2 = 0.0581$ sq ft = 0.27 ft diameter =
Use existing 3" orifice
 $h = 7.0$ ft

Pond Volume
Area at Elev 788.00 = 8736 sq ft
Area at Water Surface Elev 791.5 = 16728 sq ft
Total Volume of Storage = $A_1 + A_2 / 2 \times \text{Depth} = 8736 + 16728 / 2 \times 2.5$ feet
= 31830 cf = 0.73 acre-foot

REVISED STORM WATER DESIGN BASIN "A"

DETERMINE ALLOWABLE DISCHARGE:

Drainage District		Asite
Contributing Drainage Area (acres)		qs = 0.2 cfs/ac
Unit Allowable Discharge (cfs/acres)		
Allowable Discharge (cfs)	0.94	Qa

DETERMINE REQUIRED STORAGE:

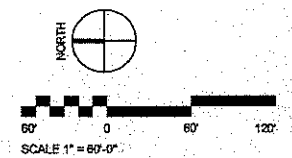
Cw Average C		Cw
1.9 Acres of Building C=0.90		Ai
2.6 Acres of Paving C=0.90	4.13	Aj
0.06 Acres Salt Storage C=0.90	$Q_0 / (A \times C_w)$	Qb
0.13 Acres of Landscaped Area C=0.20	0.227	Qc
Weighted runoff coefficient (C_u)		T
Proposed Impervious Acres (acres)	$(6562.5 / Q_0)^{1/2} - 25$	
Maximum Outflow per Impervious Acre (Q_0)	145	
Maximum Outflow per Impervious Acre (cfs/acres)		
Storage Time (T_0)		
Storage Time (minutes)		
Max. Vol. of Storage per Impervious Acre (V_{10})	$[(10500 \times T) / (T + 25)] \times (40 \times Q_0 \times T)$	Vs
Max Vol. of Storage per Impervious Acre (cu.ft./acre)	7,638	Vt
Total Volume of Storage Required for the Site (cu.ft.)	$V_s \times A \times C_w$	Vp
	31,522	
Total Volume of Storage Provided for the Site (cu.ft.)	$h/3 \times (A_1 + A_2 + (A_1 \times A_2)^{1/2})$	
A1 area at elev 788.5	8736	
A2 area at elev 791.5	16728	
h depth	3.0	
	37553	Vp

DETERMINE RESTRICTOR AREA BASED ON ORIFICE EQUATION

Head Differential (dH)		Feet
(Center of Orifice to Maximum Ponding Elevation)		
Area of orifice (a)	$Q_0 / [0.62(64.4(dH))^{1/2}]$	Square Feet
Area of orifice (a)	0.0770	
Maximum Circular Orifice Diameter	3.76	Inches

LEGEND

- AREA TRIBUTARY TO BASIN "A" PER CITY ROCHESTER HILL FILE NO. 89-153.8 SECTION 15 APPROVED 4-19-02 (4.5 ACRES)
- ADDITIONAL AREA PROPOSED TO BE ADDED TO BASIN "A" CURRENTLY TRIBUTARY TO BASIN "B" (0.2 ACRE)
- PROPOSED ASPHALT PARKING LAYOUT (CONCRETE CURBS WITH CONCRETE PAVING)
- PROPOSED CONCRETE PARKING LAYOUT (CONCRETE CURBS WITH ASPHALT PAVING)
- PROPOSED PARKING STRUCTURE



The City of Rochester Hills File No. 89-153.8, SECTION 15

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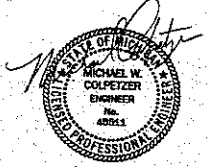
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Crittenton Hospital Medical Center
PARKING STRUCTURE EXPANSION
ROCHESTER HILLS, MI.
ROCHESTER, MI.

In Charge JJC
Designed CAR
Drawn By CAR
Checked MWG
Approved _____ Date 6-4-07
Sheet Title
OVERALL STORM PLAN
Job Number 02530-AL
Sheet Number C-402



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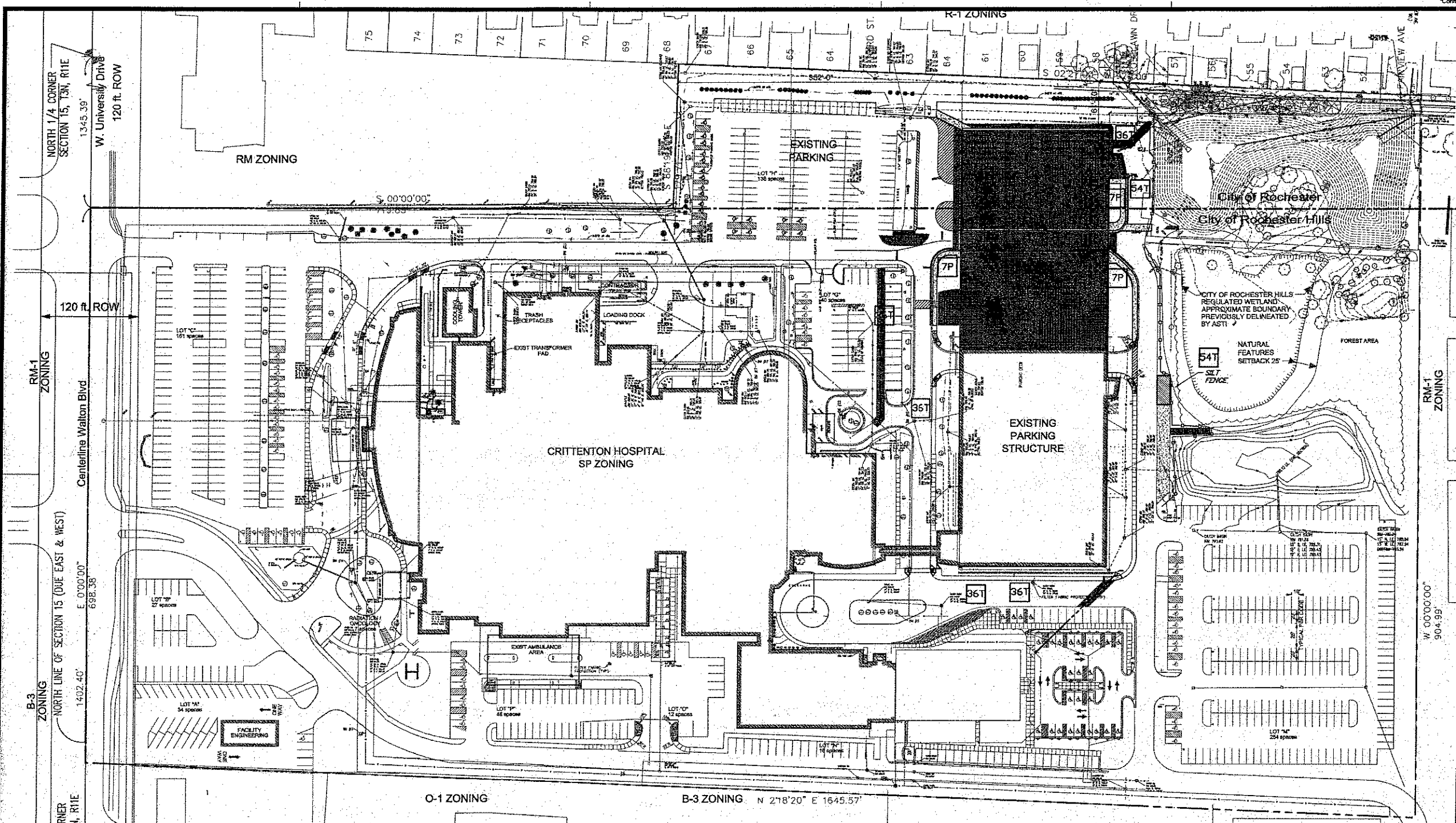


PARKING STRUCTURE EXPANSION
 ROCHESTER HILLS, MI
 ROCHESTER, MI.

In Charge: mic
 Designed: car
 Drawn By: car
 Checked: mmc
 Approved: _____ Date: 6-6-07
 Sheet Title: _____

SOIL EROSION CONTROL PLAN

Job Number: 02530-AL Sheet Number: C-500



SOIL EROSION AND SEDIMENTATION CONTROL PLAN

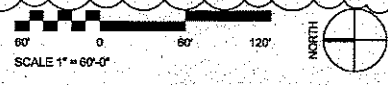
- GENERAL NOTES:**
- ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OF OAKLAND COUNTY AND THE CITY OF ROCHESTER HILLS.
 - DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR TO DETERMINE THE EFFECTIVENESS OF EROSION AND SEDIMENT CONTROL MEASURES AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY.
 - EROSION AND ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT IN ANY OFF-SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.
 - EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO, OR AS THE FIRST STEP IN, CONSTRUCTION. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTING OF SILT OFF THE SITE.
 - CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED AND AS DIRECTED ON THESE PLANS. HE SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES AND OTHER EARTH CHANGES HAVE BEEN ACCOMPLISHED.
 - PERMANENT SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 15 CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH CHANGES HAVE BEEN COMPLETED, WHICH IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGE ACTIVITY CEASES. TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED. ALL PERMANENT SOIL EROSION CONTROL MEASURES WILL BE IMPLEMENTED AND ESTABLISHED BEFORE A CERTIFICATE OF COMPLIANCE IS ISSUED.
 - ALL MUD/DIRT TRACKED ONTO EXISTING CITY/COUNTY ROADS FROM THIS SITE DUE TO CONSTRUCTION SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR/BUILDER. ALL MUD/DIRT TRACKED OR SPILLED ON PAVED ROADS SURFACES WITHIN THIS SITE SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR/BUILDER.
 - THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY THE GENERAL CONTRACTOR FOR THIS PROJECT.

SEQUENCE OF EROSION AND SEDIMENTATION CONTROL OPERATIONS:

- PRIOR TO OR AS THE FIRST STEP IN CONSTRUCTION, A PERIMETER DEFENSE AROUND THE BOUNDARIES OF THIS SITE AGAINST EROSION AND SEDIMENT WILL BE INITIATED WHICH WILL CONSIST OF MAINTAINING ALL EXISTING VEGETATION IN PUBLIC RIGHT-OF-WAY AND DIRECTING ALL RUNOFF ON SITE.
- DURING CONSTRUCTION OF THE STORM SEWER SYSTEM, THE ENDS OF ALL OPEN PIPES WILL BE PROTECTED BY STRAW BALES, STONE FILTERS OR OTHER APPROVED MEANS.
- PROMPTLY UPON THE BACKFILLING OF STORM STRUCTURES, STRAW BALES WILL BE PLACED IN A PERIMETER AROUND THE STRUCTURE PER DETAIL.
- ANY REMAINING DENuded AREA SHALL BE SEEDED AND MULCHED WITHIN 15 DAYS AFTER COMPLETION OF FINAL GRADING.
- REMOVE ALL DIRT AND DEBRIS FROM STORM SEWER SYSTEM WITHIN 30 DAYS AFTER COMPLETION OF FINAL GRADING.

CONSTRUCTION SCHEDULE AND SEQUENCING

	Sept 07	Oct 07	Nov 07	Dec 07	Jan 08	Feb 08	March 08	April 08	May 08	June 08	July 08	Aug 08
PLACE AND MAINTAIN TEMPORARY EROSION CONTROLS	[Arrow from Sept 07 to Aug 08]											
TOPSOIL STRIPPING AND STOCKPILING	[Arrow from Oct 07 to Dec 07]											
ON-SITE UTILITIES CONSTRUCTION	[Arrow from Nov 07 to Feb 08]											
SITE GRADING AND EARTHWORK	[Arrow from Dec 07 to March 08]											
CONSTRUCTION	[Arrow from Feb 08 to July 08]											
TOPSOIL SPREADING	[Arrow from April 08 to June 08]											
PERMANENT SEEDING	[Arrow from May 08 to July 08]											
FINAL INSPECTIONS AND REMOVE TEMPORARY EROSION CONTROLS	[Arrow from July 08 to Aug 08]											



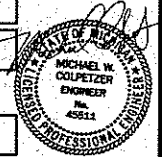
SOIL EROSION SYMBOLS

7P - DENOTES TEMPORARY MEASURES
 P - DENOTES PERMANENT MEASURES

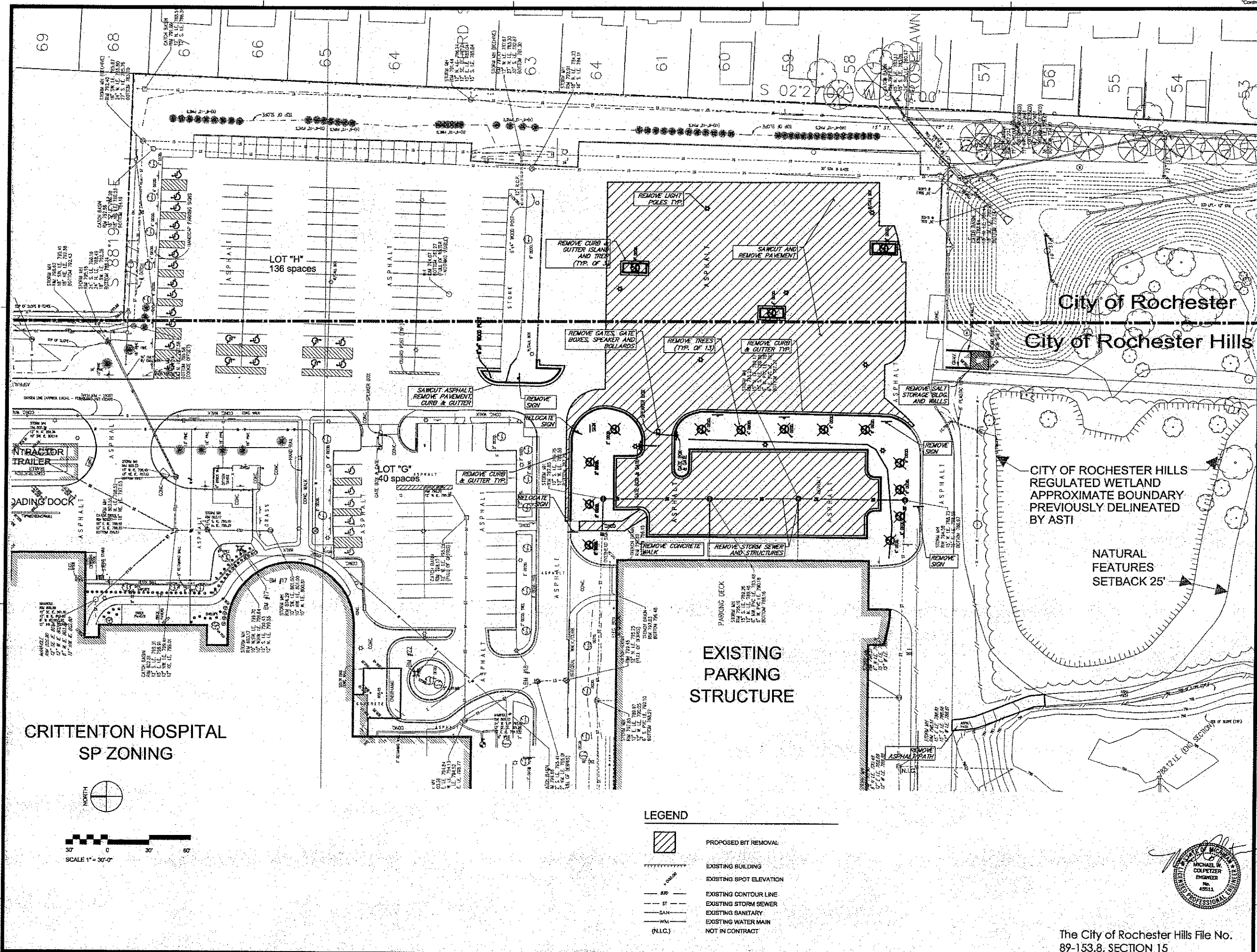
CONTRACTOR SHALL CONFORM TO SOIL EROSION AND SEDIMENT CONTROL ACT, PART 91 OF PUBLIC ACT 451 OF 1994, AS AMENDED. ALL CATCH BASINS AND INLETS ON THE SITE AND ADJACENT TO THE SITE, SHALL BE COVERED WITH CLOTH FILTERS FOR SOIL EROSION AND SEDIMENT CONTROL.

SOIL EROSION & SEDIMENTATION CONTROL MEASURES

KEY	DETAIL	CHARACTERISTICS
7	Perimeter	Effective on bare areas. Must be kept open to prevent blockage. Protection must be maintained. Must be replaced as needed.
36	Catch Basin, Cloth Filter	Collects high velocity concentrated runoff. Must have filter cloth over top.
54	Silt Fence	Designed and installed to filter out sediment. Must be installed on a slope of 1:1 or more. Must be installed on a slope of 1:1 or more. Must be installed on a slope of 1:1 or more.



The City of Rochester Hills File No. 89-153.8, SECTION 15



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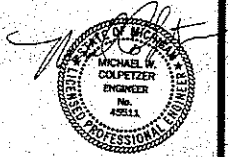
In Charge JJC
 Designed CAR
 Drawn By CAR
 Checked MWC
 Approved _____ Date: 7-11-07
 Sheet Title

SITE DEMOLITION PLAN

Job Number: 02530-AL Sheet Number: CD-100

LEGEND

- PROPOSED BIT REMOVAL
- EXISTING BUILDING
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR LINE
- EXISTING STORM SEWER
- EXISTING SANITARY
- EXISTING WATER MAIN
- NOT IN CONTRACT



The City of Rochester Hills File No.
 89-153.8, SECTION 15

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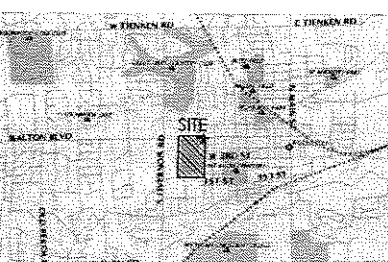
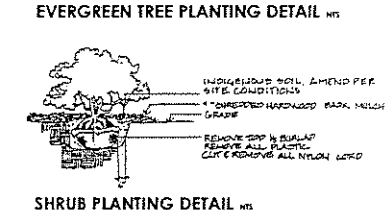
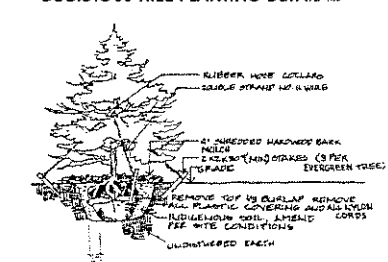
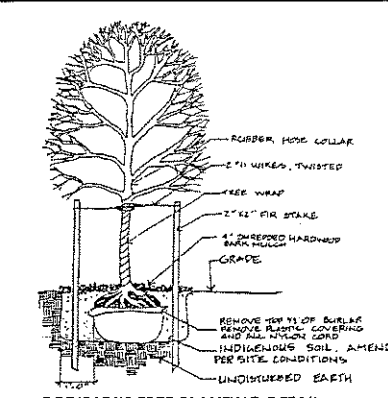
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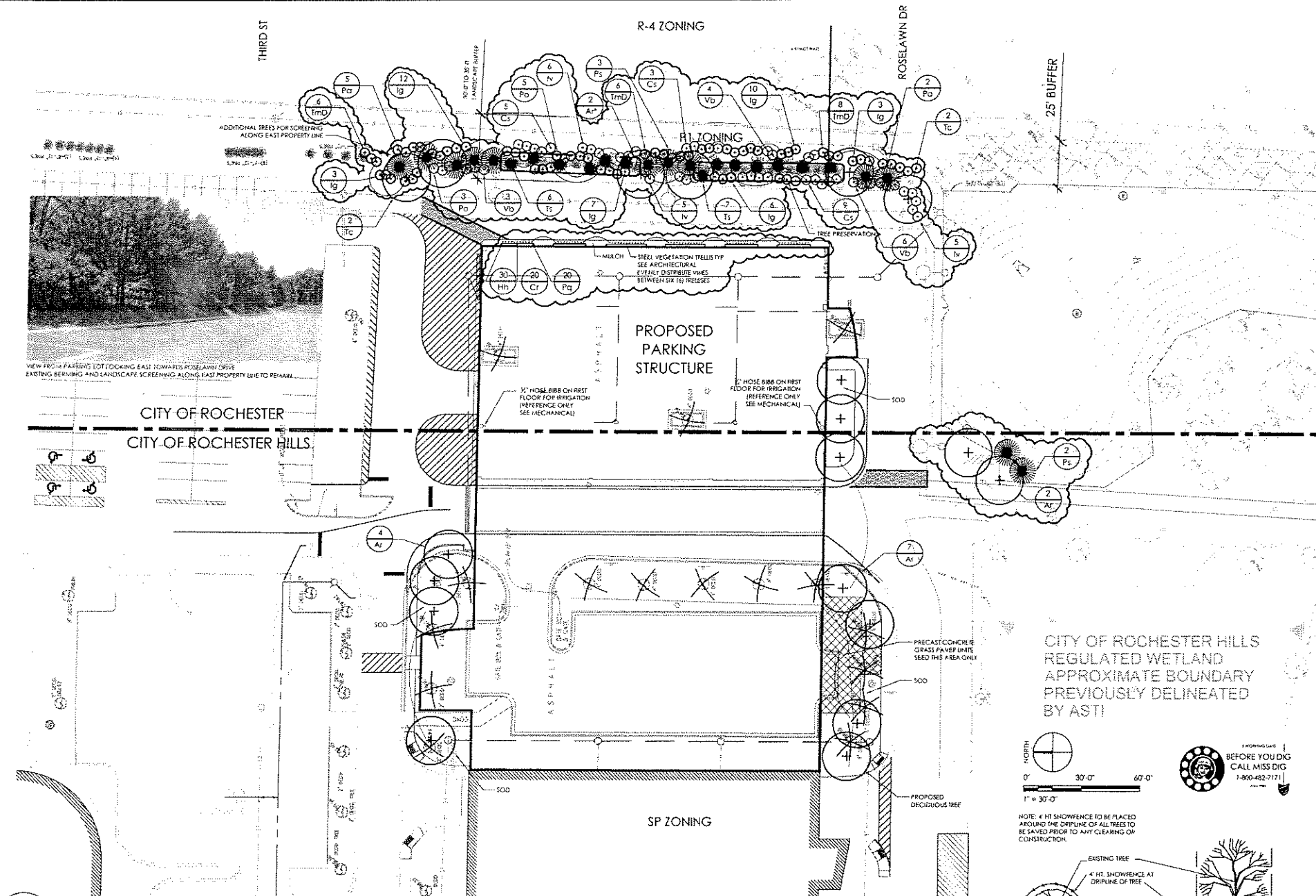
PARKING STRUCTURE EXPANSION
 ROCHESTER HILLS, MI.
 ROCHESTER, MI.

In Charge: A. COBB
 Designed: RMP
 Drawn By: EWM
 Checked: BH
 Approved: A. COBB Date: 7-26-07
 Sheet Title: LANDSCAPE AND TREE PRESERVATION PLAN
 Job Number: 02530-AL Sheet Number: L-100



PLANT LIST

Qty	Quan.	Scientific Name	Common Name	Size	Root	Remarks
DECIDUOUS TREES						
Av	2	Acer rubrum 'Red Sunset'	Red Sunset Maple	3 1/2" CAL	B&B	CLEAR TRUNK TO 5' MIN
Av	13	Acer rubrum 'Red Sunset'	Red Sunset Maple	2 1/2" CAL	B&B	CLEAR TRUNK TO 5' MIN
Tc	4	Ficus cordata 'Greenspire'	Greenspire Linden	3 1/2" CAL	B&B	CLEAR TRUNK TO 5' MIN
EVERGREEN TREES						
Pd	7	Picea canadensis	Norway Spruce	14'-0" HT	B&B	FULL PLANT TO GROUND
Pt	5	Pinus strobus	Eastern White Pine	14'-0" HT	B&B	FULL PLANT TO GROUND
Ts	13	Taxus canadensis	Eastern Hemlock	8'-0" HT	B&B	FULL PLANT TO GROUND
DECIDUOUS SHRUBS						
Cs	17	Cornus sericea 'Cardinal'	Red Twig Dogwood	36" HT	POT	3'-0" OC
N	16	Ilex verticillata	Michigan Holly	36" HT	POT	3'-0" OC 1 MALE PER MASS
Pa	8	Physocarpus opulifolius 'Diablo'	Diablo Ninebark	36" HT	POT	3'-0" OC
Vb	13	Viburnum x burkwoodii	Burkwood Viburnum	36" HT	POT	3'-0" OC
EVERGREEN SHRUBS						
Sg	41	Ilex glabra	Inkberry Holly	24" HT	POT	2'-0" OC 1 MALE PER MASS
Tmd	20	Taxus x media 'Densiformis'	Dense Yew	24" HT	POT	2'-0" OC
VINES						
Pa	20	Parthenocissus quinquefolia	Virginia Creeper	1 GAL	POT	1'-6" OC
Cr	20	Campsis radicans	Trompet Vine	1 GAL	POT	1'-6" OC
Iv	30	Hedera Helix	English Ivy	1 GAL	POT	1'-6" OC
PRESERVED TREES						
	26		Pine	6" - 12" DBH		



LANDSCAPE AND TREE PRESERVATION PLAN

L-100 SCALE 1" = 30'

LANDSCAPE SPECIFICATIONS

- THE CONTRACTOR WILL PROVIDE ALL MATERIAL, EQUIPMENT, TOOLS AND SUPERVISION FOR COMPLETION OF WORK.
- THE CONTRACTOR WILL COORDINATE ALL WORK WITH ANY SUB-CONTRACTOR TO COMPLETE THE WORK AS DESIGNED.
- THE CONTRACTOR MUST VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PIPES AND STRUCTURES PRIOR TO CONSTRUCTION. DAMAGE TO ANY SITE UTILITY DURING THE INSTALLATION OF THIS WORK IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE ESTABLISHMENT OF ALL PLANT MATERIAL. THIS RESPONSIBILITY INCLUDES PRUNING AND WATERING FOR THE FIRST YEAR.
- STAKE THE LOCATION OF ALL PLANT MATERIAL PRIOR TO INSTALLATION AND OBTAIN THE OWNER'S REPRESENTATIVE'S APPROVAL BEFORE PROCEEDING. THE OWNER'S REPRESENTATIVE MUST APPROVE ALL PLANT MATERIAL PRIOR TO INSTALLATION.
- NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY IF ANY DISCREPANCIES ARISE DURING THE STAKING OF ALL PLANT MATERIAL. FAILURE TO OBTAIN THE OWNER'S REPRESENTATIVE APPROVAL WILL RESULT IN THE RELOCATION OF THE PLANT MATERIAL AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR WILL GUARANTEE ALL LANDSCAPE MATERIAL FOR A PERIOD OF TWO (2) YEARS (24 CONSECUTIVE MONTHS). DURING THAT TIME THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT FOR A FINAL INSPECTION. PLANT MATERIAL WITH 25% DIE BACK, AS DETERMINED BY THE OWNER'S REPRESENTATIVE, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. THIS GUARANTEE INCLUDES FURNISHING OF NEW PLANTS, LABOR AND MATERIALS PLUS AN ADDITIONAL ONE YEAR (12 CONSECUTIVE MONTHS) WARRANTY ON ALL NEWLY REPLACED LANDSCAPE MATERIAL.

PLANT MATERIAL:

- CONFORM TO TYPES STATED ON PLANT LIST.
- PLANT SIZE SHALL NOT BE LESS THAN STATED ON PLANT LIST.
- MEASUREMENTS WILL BE IN ACCORDANCE WITH "A.A.A. STANDARDS FOR NURSERY STOCK" (1996) AND HARDY TO THE PROJECT AREA.
- NURSERY GROWN AND INSPECTED BY THE OWNER'S REPRESENTATIVE BEFORE PLANTING.
- PLANT AT CORRECT GRADES AND SPACING. ORNAMENTALS TO GIVE THE BEST APPEARANCE.
- PLANTS DESIGNATED B&B SHALL BE BALLED AND BURLAPPED WITH A FIRM BALL OF EARTH.

- WHEN PLANT HAS BEEN PROPERLY SET, BACKFILL WITH A PLANTING SOIL MIX OF 2 PARTS EXCAVATED SOIL FROM THE PIT, 2 PARTS TOPSOIL AND 1 PART PEAT. GRADUALLY FILL, COMPACT AND SETTLE WITH WATER.
- PLANTING MATERIAL ONLY TO REMOVE DEAD OR INJURED TWIGS. CUTS WILL BE FLUSH, LEAVING NO STUBS.
- IN THE EVENT OF A QUANTITY DISCREPANCY BETWEEN PLANTING PLAN AND PLANT LIST, THE GREATER QUANTITY SHALL BE REQUIRED.

9. TOPSOIL:

- FRABLE, FERTILE, OF CLAY LOAM CHARACTER CONTAINING AT LEAST 3% BUT NOT MORE THAN 10% BY WEIGHT OF ORGANIC MATTER WITH A PH RANGE FROM 6.5 TO 8.0. TOPSOIL WILL BE FREE FROM CLAY LUMPS, COARSE SAND, PLANT ROOTS, STICKS AND OTHER FOREIGN MATERIALS.
- INSTALL A 10" MINIMUM DEPTH OF TOPSOIL IN ALL PLANTING BEDS. FINISH GRADE OF ALL PLANTING BEDS WILL BE 1.5" TO 2" BELOW TOP OF CONCRETE WALKS.
- INSTALL A 4" MINIMUM DEPTH OF TOPSOIL IN ALL TURF AREAS.
- TURF AREAS:
 - HYDROSEDDED MIX SHALL CONSIST OF THE FOLLOWING TYPES AND PROPORTIONS: KENTUCKY BLUE GRASS "BARON/CHEMAD/ELPH" 60% CHEWING RESCUE 15% CREEPING RED FESCUE 15% PERENNIAL RYE GRASS 10% WEED CONTENT SHALL NOT EXCEED 1%. THE MIX SHALL BE APPLIED AT A RATE OF 20 LBS/ACRE.
 - SOD SHALL BE TWO YEAR OLD "BARON/CHEMAD/ELPH" KENTUCKY BLUE GRASS GROWN IN A SOD NURSERY ON LOAM SOIL.
 - INSTALL 4" DEPTH OF SHEDDED HARDWOOD BARK MULCH IN PLANTING AREAS AS SHOWN ON THE DRAWINGS.
- REFER TO CIVIL PLANS FOR INSTALLATION OF SITE DRAINAGE.
- REFER TO THE SPECIFICATIONS FOR ALL PLANTING REQUIREMENTS, MATERIALS AND EXECUTION.

TREE PRESERVATION DETAIL

TREE PRESERVATION NOTES AS PER CITY OF ROCHESTER HILLS REQUIREMENTS:

- 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.

REGISTERED LANDSCAPE ARCHITECT: RICCARDO M. PAPPALÀ
 ADDRESS: ALBERT KAHN BUILDING 7430 SECOND AVE. DETROIT, MI 48202
 STATE REGISTRATION NUMBER: 1488
 PHONE NUMBER: 313-207-7544

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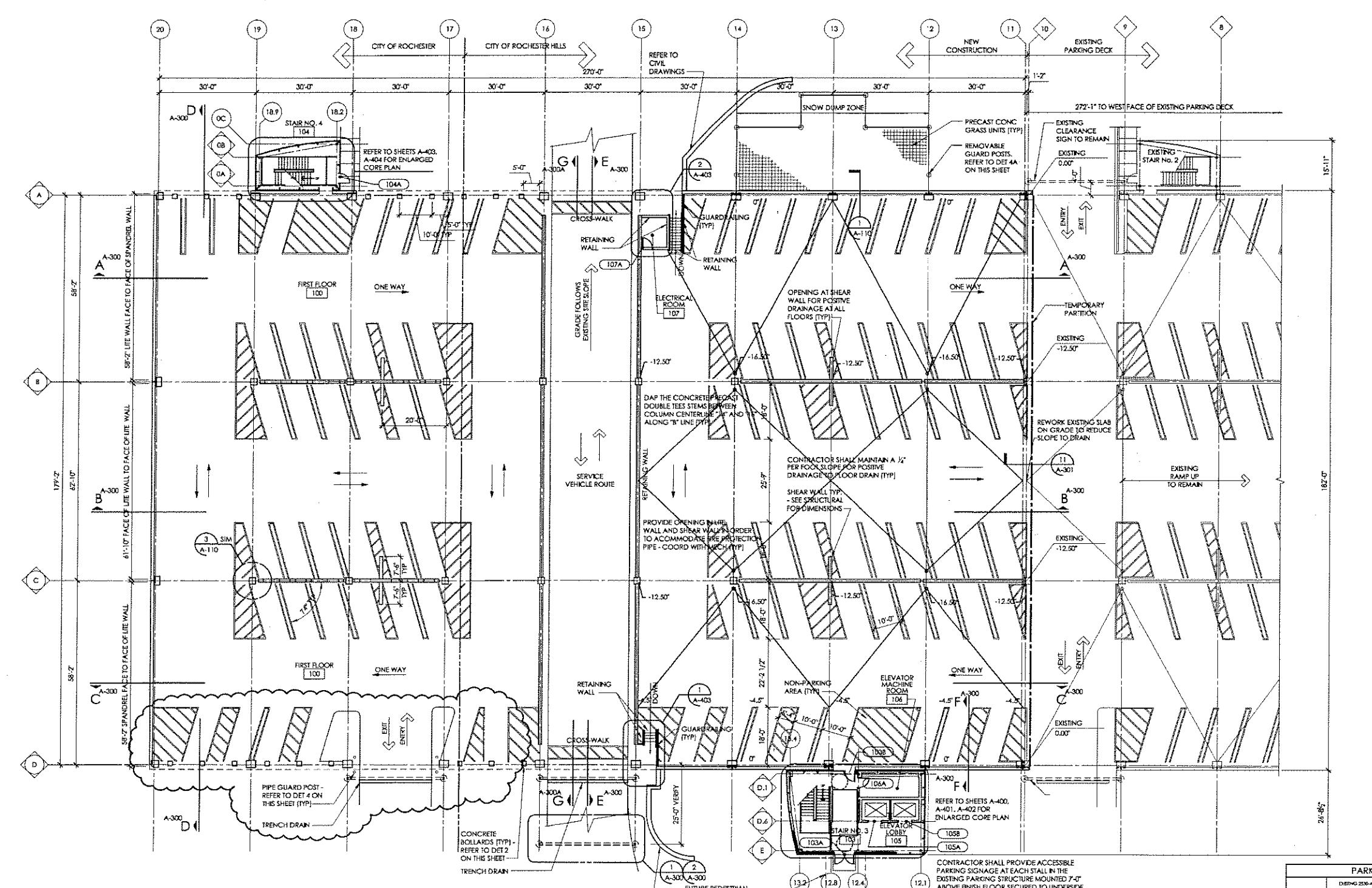
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 PARKING STRUCTURE
 EXPANSION
 ROCHESTER HILLS, MI.
 ROCHESTER, MI.

In Charge F. CALLS
 Designed F.C.
 Drawn By F.C. SS
 Checked W.D. FC, MLS
 Approved _____ Date 07/26/07
 Sheet Title

FIRST FLOOR PLAN

Job Number Sheet Number

02530-AL A-110



LEVEL	TOTAL LENGTH OF PERIMETER WALLS (FEET)	TOTAL LENGTH OF PERIMETER OPENINGS (FEET)	PERCENT OPEN LENGTH (40% MIN)	TOTAL AREA OF PERIMETER WALLS (SQUARE FEET)	TOTAL OPEN AREA (SQUARE FEET)	PERCENT OPEN AREA (20% MIN)
EXPANSION ONLY						
1	726	435	59.87	12706	5159	40.60
2	726	489	67.36	8228	2282	27.73
3	726	489	67.36	8228	2282	27.73
EXISTING DECK AND EXPANSION COMBINED						
1	1450	1046.92	72.2	23080	9284	39.7
2	1450	1151.25	79.4	16433	5372.5	32.7
3	1450	1151.25	79.4	16433	5372.5	32.7

FIRST FLOOR PLAN
 SCALE: 1/16"=1'-0"
 AUTOMATIC FIRE SUPPRESSION SYSTEM IS NOT REQUIRED

NOTE:
 REFER TO CIVIL DRAWINGS FOR NOTES AND DIMENSIONS - TYP.

BUILDING AND STRUCTURAL	MICHIGAN BUILDING CODE, 2003
FIRE/LIFE SAFETY	NFPA 101, 1997 LIFE SAFETY CODE
ACCESSIBILITY	MICHIGAN BARRIER FREE DESIGN BOARD GENERAL RULES (ANSI A117.1-1998), MICHIGAN CONSTRUCTION CODE RULES AMENDMENTS, PART 4, 2001
PLUMBING	INTERNATIONAL PLUMBING CODE, 2003
MECHANICAL	MICHIGAN MECHANICAL CODE, 2003
FIRE	INTERNATIONAL FIRE CODE, 2005
ELECTRICAL	NATIONAL ELECTRICAL CODE (NEC), 2002

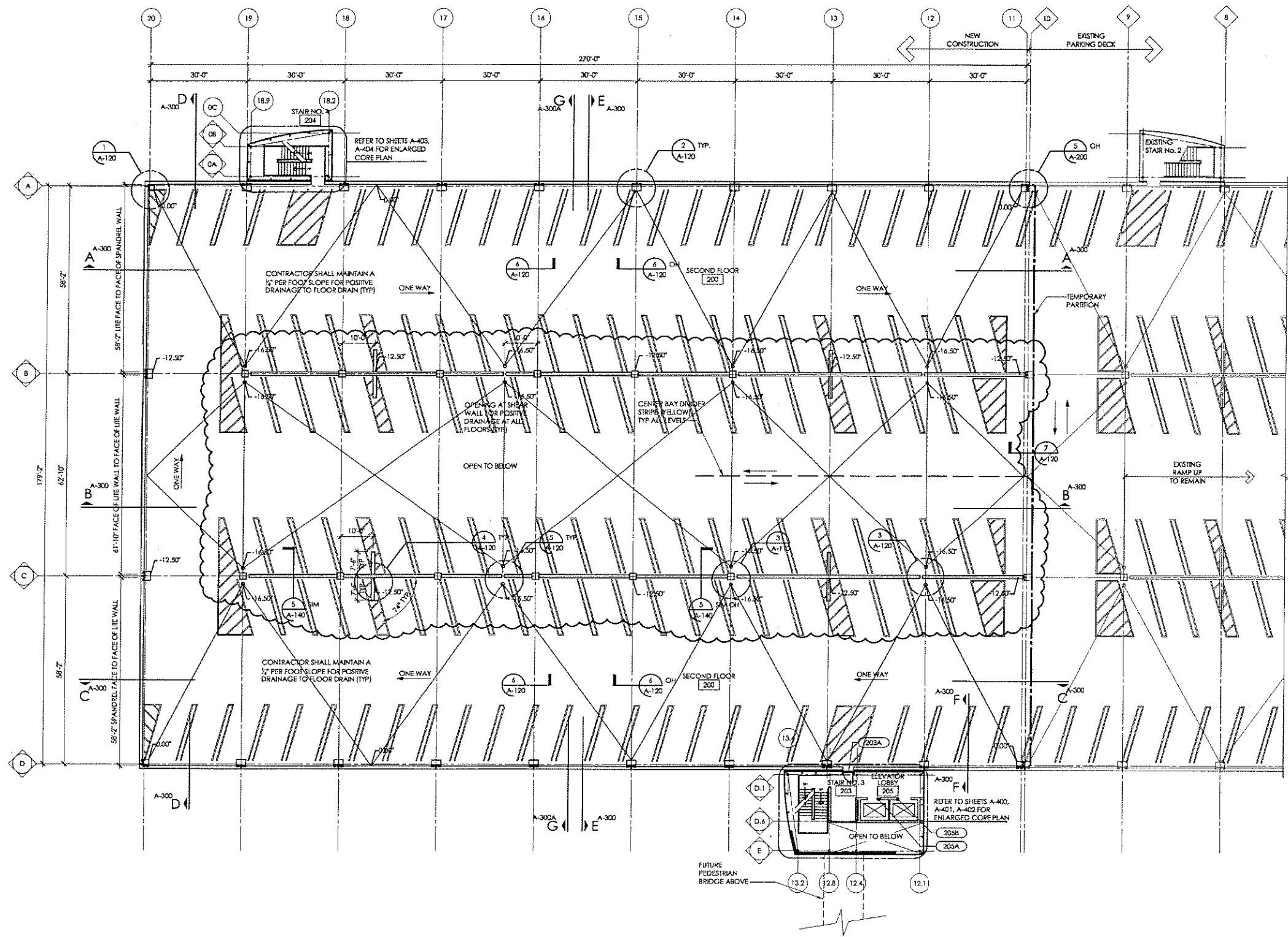
USE GROUP	S-2 (OPEN PARKING GARAGE)
CONSTRUCTION TYPE	I-B (NON-COMBUSTIBLE) PER BUILDING CODE TYPE I-B-222 PER FIRE/LIFE SAFETY CODE
HEIGHT (TIERS)	4 TIERS
AREA (ADDITION)	FIRST FLOOR - 51,082.59 SF SECOND FLOOR - 51,082.59 SF THIRD FLOOR - 45,622.59 SF FOURTH FLOOR - 45,622.59 SF TOTAL SF - 193,410.36 SF
	TOTAL SQUARE FOOTAGES AT EXISTING PARKING STRUCTURE IS 191,366.50 SQUARE FEET. THIS ADDED TO THE ADDITION EQUALS 382,733 SQ. FT.
	2003 MICHIGAN BUILDING CODE TABLE 406.3.4 SECOND PARAGRAPH 50 (200) (AREA PER TIER) TIMES 8 (TIERS) EQUAL 400,000 GROSS AREA MAX.
	CITY FILE NUMBER: 89-153.8

PARKING LEVEL	EXISTING 2530-AL		ADDITION 2530-AL		TOTAL
	HCP	VAN	HCP	VAN	
FIRST FLOOR	7	0	0	0	7
SECOND FLOOR	0	0	0	0	0
THIRD FLOOR	122	0	0	119	241
FOURTH FLOOR	0	0	0	119	119
TOTAL	129	0	0	238	367

CONTRACTOR SHALL ADD 9 ADDITIONAL BARRIER FREE SPACES TOTALING 23 SPACES WITH A MIN OF 4 VAN SPACES IN THE EXISTING PARKING STRUCTURE NEXT TO STAIR NO. 1



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SECOND FLOOR PLAN
 SCALE: 1/16"=1'-0"
 AREA: 51,082.59 SF

NOTE:
 CONTRACTOR SHALL PROVIDE
 CONTROL JOINT IN TOPPING AT ALL
 DOUBLE TEE JOINTS, TYP.



**NOT TO BE USED FOR
 CONSTRUCTION DOCUMENTS**

Issue No.	Description	Date
ISSUE 08	• SITE PLAN APPROVAL	• 08-26-08
ISSUE 06	• SITE PLAN APPROVAL	• 07-21-08
ISSUE 05	• CHANGES	• 01-28-08
ISSUE 03	• ISSUE	• 10-09-07
ISSUE 01	• ISSUE	• 07-26-07

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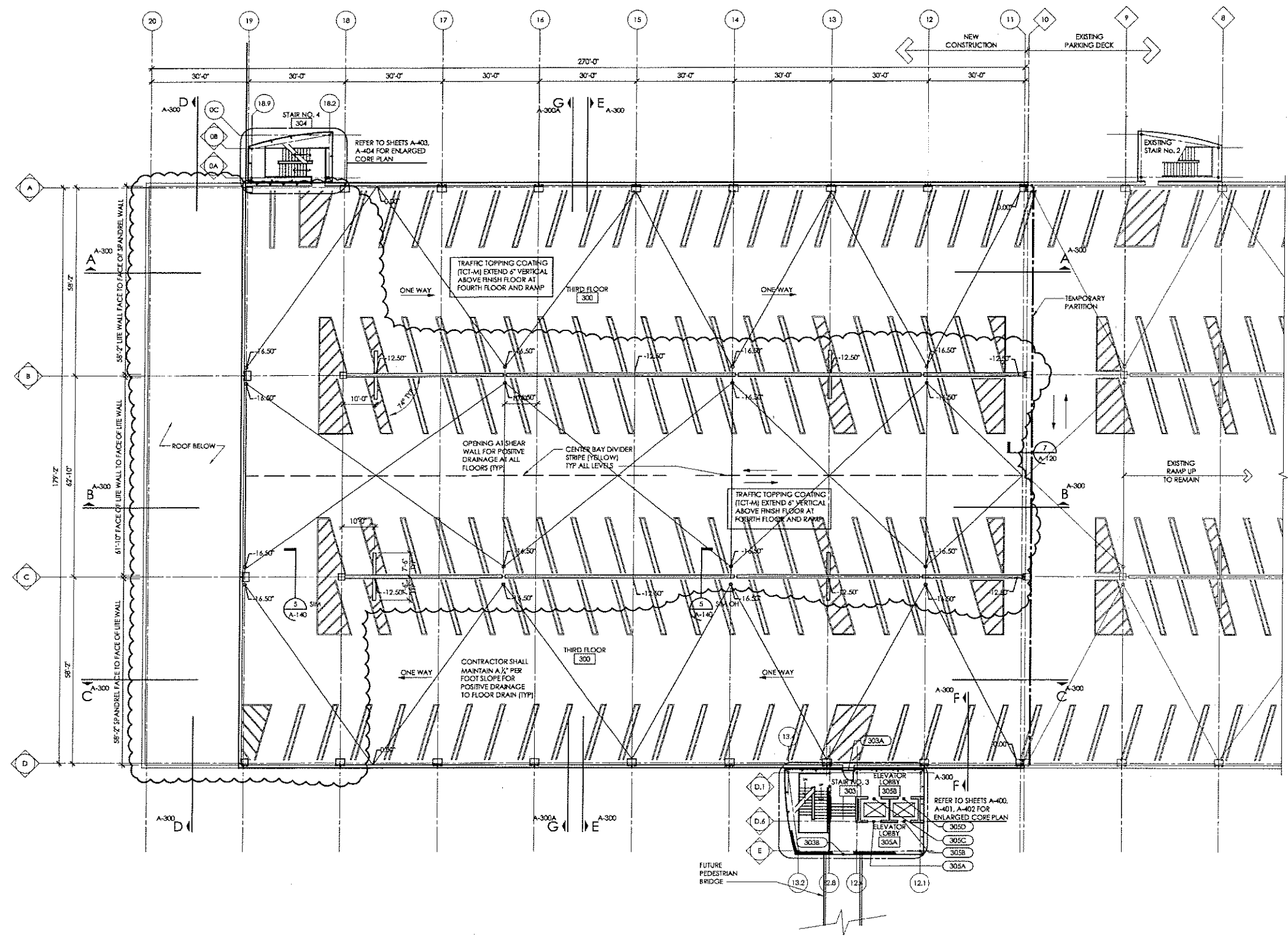
**CHRISTMAN HOSPITAL
 MEDICAL CENTER**
 PARKING STRUCTURE
 EXPANSION
 ROCHESTER HILLS, MI.
 ROCHESTER, MI.

In Charge F. CALLS
 Designed F.C.
 Drawn By F. c. ss
 Checked wo. MLB, FC
 Approved _____ Date 07/26/07
 Sheet title

SECOND FLOOR PLAN
 Job Number 02530-AL Sheet Number A-120

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THIRD FLOOR PLAN
 SCALE: 1/16"=1'-0"
 AREA: 51,082.59 SF



NOTE:
 CONTRACTOR SHALL PROVIDE
 CONTROL JOINT IN TOPPING AT ALL
 DOUBLE TEE JOINTS, TYP.

Issue No.	Description	Date
ISSUE 08	• SITE PLAN APPROVAL	• 08-26-08
ISSUE 06	• SITE PLAN APPROVAL	• 07-21-08
ISSUE 05	• CHANGES	• 01-28-08
ISSUE 03	• ISSUE	• 10-09-07
ISSUE 01	• ISSUE	• 07-26-07

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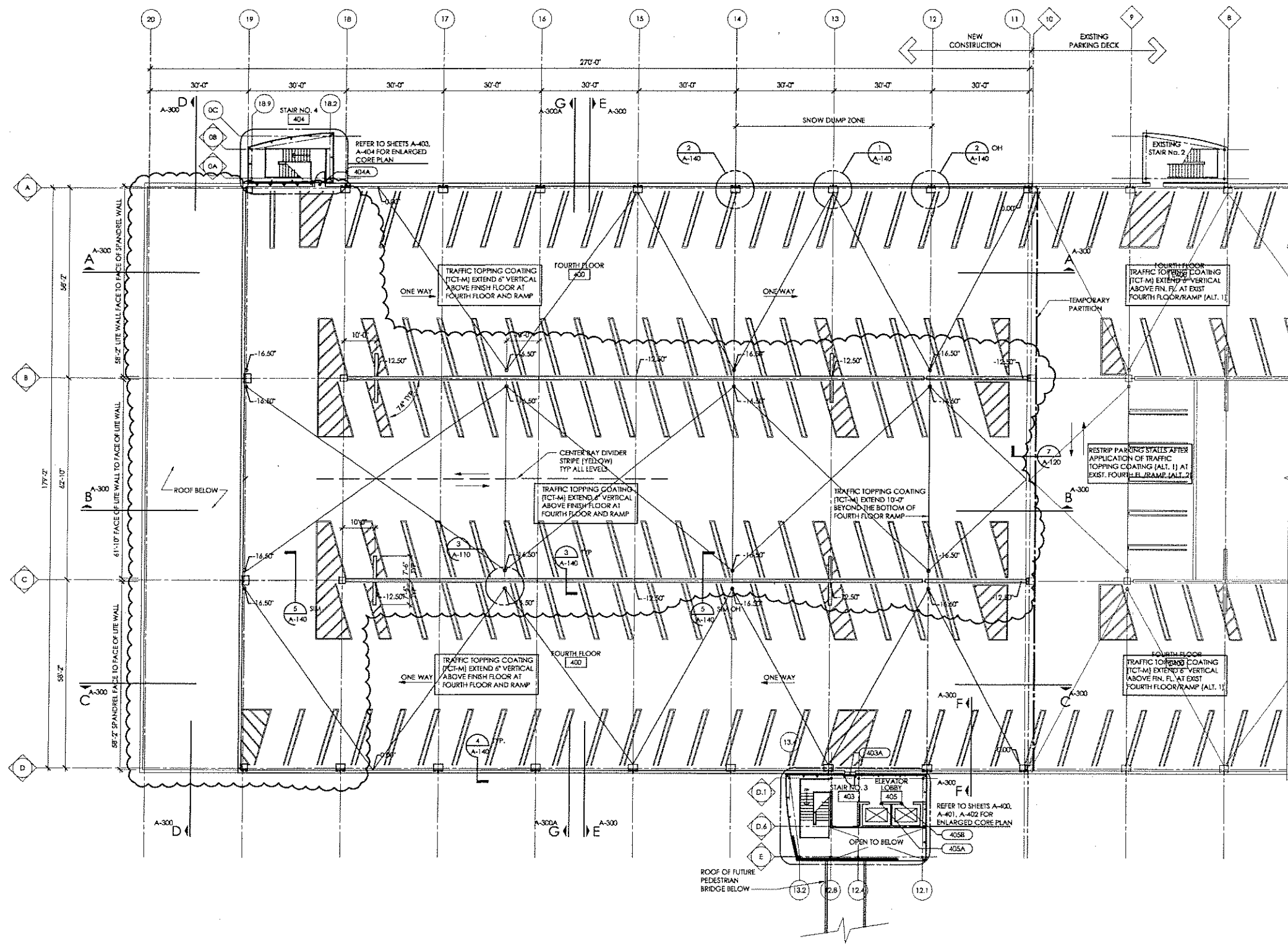
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 MEDICAL CENTER**
 PARKING STRUCTURE
 EXPANSION
 ROCHESTER HILLS, MI.
 ROCHESTER, MI.

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In Charge F. CALLS	
Designed F.C.	
Drawn By F.C., SS	
Checked WO, MLB, FC	
Approved	Date 07/26/07
Sheet Title	

THIRD FLOOR PLAN
 Job Number 02530-AL Sheet Number A-130

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FOURTH FLOOR PLAN
SCALE: 1/16"=1'-0"
AREA: 38,118.69 SF



Issue No.	Description	Date
ISSUE 08	• SITE PLAN APPROVAL	• 08-26-08
ISSUE 06	• SITE PLAN APPROVAL	• 07-21-08
ISSUE 05	• CHANGES	• 01-28-06
ISSUE 03	• ISSUE	• 10-09-07
ISSUE 01	• ISSUE	• 07-26-07

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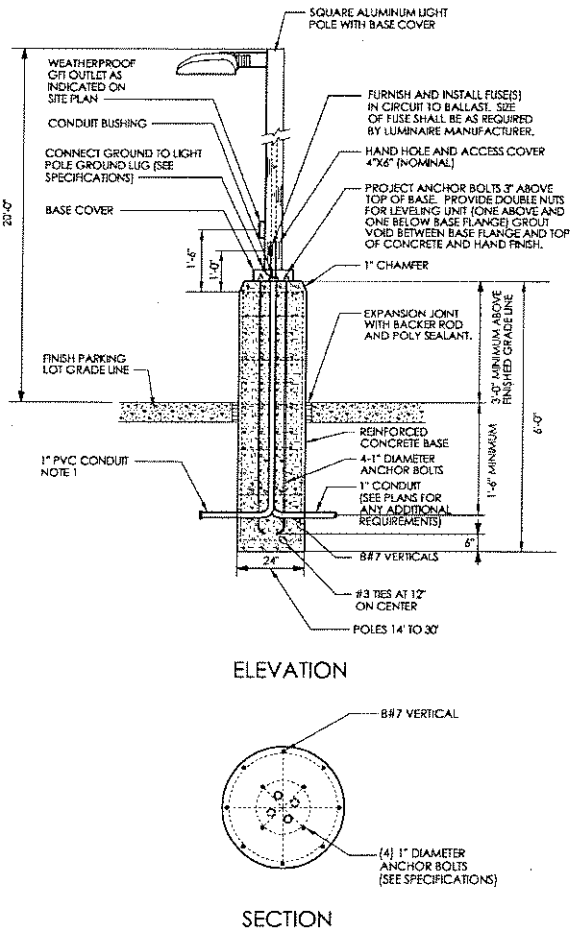
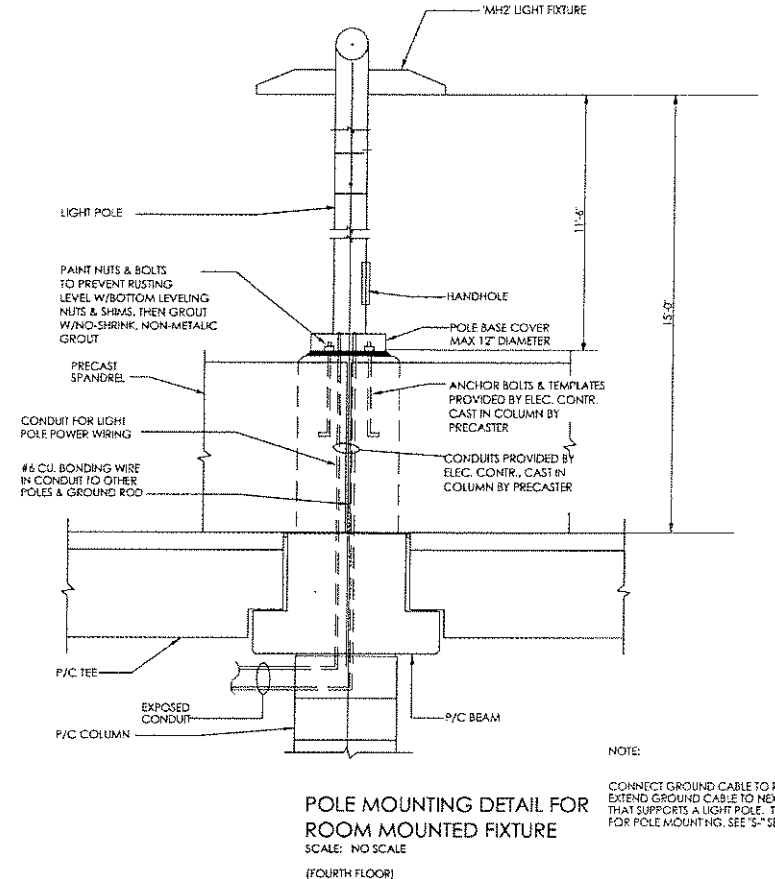
In Charge F.CALLS	
Designed F.C.	
Drawn By F.C. SS	
Checked WO, MLB, FC	
Approved	Date 07/26/07
Sheet Title	

Job Number	Sheet Number
02530-AL	A-140

FIXTURE SCHEDULE						
METAL HALIDE FIXTURES						
TYPE	VOLTAGE (WATTAGE)	SIZE AND MOUNTING	LAMPS	BALLAST	LENS, REFLECTOR, HOUSING, ETC.	MANUFACTURER
MH1	277V (310W)	28" LONG BY 18" WIDE BY 8" HIGH SINGLE MOUNTED LUMINAIRE	1-250 WATT T8 C12 CLEAR	ELECTRONIC	DE-CAST SINGLE-PIECE ALUMINUM HOUSING. DE-CAST DOOR FRAME. IMPACT-RESISTANT. TEMPERED GLASS LENS FULLY SEALED WITH ONE-PIECE TUBULAR SILICONE GASKET. ANODIZED SEGMENTED REFLECTORS. DARK BRONZE CORROSION-RESISTANT POLYESTER POWDER FINISH. SEGMENTED TYPE B ASYMMETRIC DISTRIBUTION. PROTECTIVE HOSE SIDE SHIELD.	LITHONIA "AS2" SERIES, OR PRE-APPROVED EQUAL.
MH2	277V (350W)	39.38"W TWIN MOUNTED LUMINAIRE	2-150 WATT T8 C12 CLEAR	ELECTRONIC	TWIN ASSEMBLY OUTDOOR LIGHTING FIX. DE-CAST ALUM. W/SHWEL ARM AND INTERNAL FULL SEMI-SPECULAR ANODIZED ALUM. FORWARD THROW OPTICAL SYSTEM SWIVEL ARM FOR HORIZONTAL TO VERTICAL. ANNO POSITIONS FULLY GASKETED FOR WEATHER TIGHT OPERATION IN ANY MOUNTING ORIENTATION USING A MOLDED SILICONE RUBBER O-RING. 1 1/2" POLE MFD ON 3/4" CONC. BASE. FIXTURE TO BE SUPPLIED WITH POLE BASE FUSING.	REGA "1488M" SERIES, OR PRE-APPROVED EQUAL.
MH3	277V (50W)	11" X 13" X 5" RECESSED MOUNT	1-70 WATT ED-17 CLEAR	SINGLE ELECTRONIC, PULSE START, > 30 PF, 1.50 IN. @ < 15% THD WITH PRIMARY FUSE	DE-CAST ALUMINUM HOUSING WITH INTEGRAL WIRING COMPARTMENT. RECESSED LUMINAIRE WITH WHITE SAFETY GLASS DIFFUSER SECURED WITH FOUR STAINLESS STEEL SCREWS. FIXTURE TO BE SUPPLIED FOR CONCRETE POUR. FINISH COLOR TO BE BLACK.	REGA "2820" SERIES OR PRE-APPROVED EQUAL.
MH4	277V (325W)	39.38"W TRIPLE HEAD POLE MOUNTED LUMINAIRE	3-150 WATT T8 C12 CLEAR	ELECTRONIC	TWIN ASSEMBLY OUTDOOR LIGHTING FIX. DE-CAST ALUM. W/SHWEL ARM AND INTERNAL FULL SEMI-SPECULAR ANODIZED ALUM. FORWARD THROW OPTICAL SYSTEM SWIVEL ARM FOR HORIZONTAL TO VERTICAL. ANNO POSITIONS FULLY GASKETED FOR WEATHER-TIGHT OPERATION IN ANY MOUNTING ORIENTATION USING A MOLDED SILICONE RUBBER O-RING. FIXTURE TO BE SUPPLIED WITH POLE BASE FUSING.	REGA "1488M" SERIES, LB-4000 OR PRE-APPROVED EQUAL.

GENERAL FIXTURE NOTES

- LAMPS SHALL BE FURNISHED WITH FOR ALL LIGHT FIXTURES WITHIN WORK AREA AND SHALL BE TO BE REPLACED (IF BURNED OUT) AT END OF JOB.
- ALL WET LOCATION FIXTURES SHALL HAVE GASKETING BETWEEN TRIM AND LENS.
- SQUARE ALUMINUM 1 1/2" POLE, FACTORY PAINTED WITH DARK BRONZE POLYESTER POWDER COAT FINISH COMPLETE WITH BRACKET ARM FOR FIXTURE ATTACHMENT.
- CHROME METAL HALIDE LAMPS SHALL HAVE A MINIMUM COLOR TEMPERATURE OF 4000K AND A MINIMUM COLOR RENDERING INDEX OF 90.
- SEE SPECIFICATIONS FOR ADDITIONAL FIXTURE REQUIREMENTS.



PARKING LOT LIGHTING BASE AND POLE DETAIL #1
SCALE: NONE

- NOTES
- STUB AND CAP CONDUIT AT LAST POLE FOR FUTURE EXTENSION.

LITHONIA LIGHTING

Architectural Area & Roadway Luminaires

AS2

METAL HALIDE: 200W-800W
HIGH PRESSURE SODIUM: 250W-400W
18" to 36" Mounting

AERIS

Specifications

EPA 1.22
Length: 20" (17.5)
Width: 14.5" (11.5)
Depth: 8.5" (7.0)
*Weight: 45 lbs (20.4 kg)
*Weight is without 4' shipping brace.

For shortest lead times, configure product using standard options (shown in bold).

Example: AS2 250M SRS TB SPA LM

AS2	250M	SRS	HS				
Model	250M	SRS	Ballast	Options	Mount	Finish	Lamp
AS2	250M	SRS	SPR	SPR	SPR	SPR	SPR

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ISSUE 008	• SITE APPROVAL	• 08-24-08
ISSUE 008	• ISSUE	• 07-21-08
ISSUE 005	• CHANGES	• 01-28-08
ISSUE 003	• ISSUE	• 10-09-07
ISSUE 001	• ISSUE	• 07-24-07

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ROCHESTER HILLS, MI.
ROCHESTER, MI.

In Charge: M. KAGA
Designed: M.K.
Drawn By: T.A.H.
Checked: T.P.
Approved: T. PARADEMOS Date: 07-26-2007
Sheet Title: SITE PLAN LEGEND, FIXTURE SCHEDULE AND DETAILS
Job Number: 02530-AL
Sheet Number: ES-500