CITY OF NOVI CITY COUNCIL
SEPTEMBER 14, 2026

SUBJECT: Approval of the request of Sri Venkateswara Temple for an Addendum to the Basilian Fathers PRO Agreement, for property located near 11 Mile and Taft Roads.

SUBMITTING DEPARTMENT: Community Development Department - Planning

BACKGROUND INFORMATION:

The applicant is requesting a minor revision to the PRO Agreement as it relates to the number of residents permitted. The PRO Agreement states a maximum occupancy of 14 residents; the applicant seeks to have up to 17 residents.

In 2007, the Basilian Fathers of Milford, Michigan submitted a Planned Rezoning Overlay request to accommodate the development of a 20,000 square foot residence for their priests. The multiple family zoning classification was found to be appropriate in the context of the proposed plan and use, and it was approved by City Council in 2008 (Liber 4036 Page 488).

Under the terms of the PRO Agreement, the development was restricted to "an approximately 20,000 square foot residential building to be used as a residence for a religious order including 14 individual sleeping quarters with communal kitchen, dining and living areas, and a chapel for the Basilian Fathers."

The residence is no longer needed by the Basilian Fathers, and they intend to sell the property to a new owner. The adjacent Sri Venkateswara Temple is interested in purchasing the site to use as a residence for their religious order. As the Temple's priests can be married, some reconfiguration of the interior of the building is required to change eight of the 1-bedroom units into four 2-bedroom units to accommodate the priests and their families. The proposed addendum would raise the maximum number of permanent residents from 14 persons to 17 persons. All other terms of the original PRO Agreement would remain in effect for the new owner beyond those described in the addendum.

The minor increase by 3 persons does not impact the available parking on the site, utilities, traffic, or other City services. The purchase of the property by another religious order for the same use maintains the character of the use and represents the best

possible outcome of the property changing hands. Staff has no objections to the proposed addendum.

RECOMMENDED ACTION: Approval of the request of Sri Venkateswara Temple for an Addendum to the Basilian Fathers PRO Agreement, with any final minor alterations required in the determination of the City Manager and City Attorney to be incorporated by the City Attorney's office prior to the execution of the final addendum.

This motion is made because the change does not materially affect the pro agreement.

MAPS

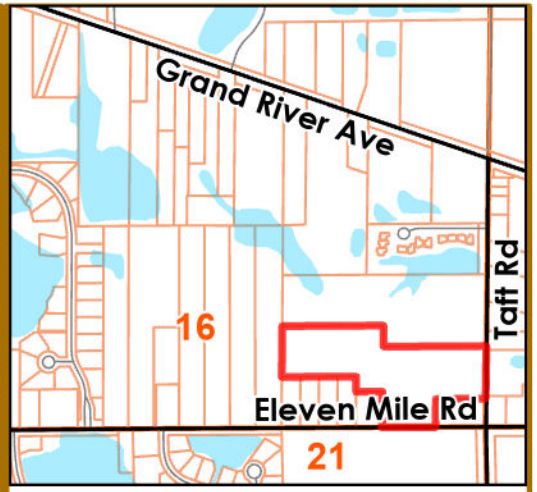
Location Map

Zoning Map

JZ26-36 Amendment of Basilian PRO for SV Temple

LOCATION





City of Novi
Dept. of Community Development
Novi City Hall
45175 Ten Mile Rd
Novi, MI 48375
cityofnovi.org

0 75 150 300 Feet
1 inch = 225.8 feet

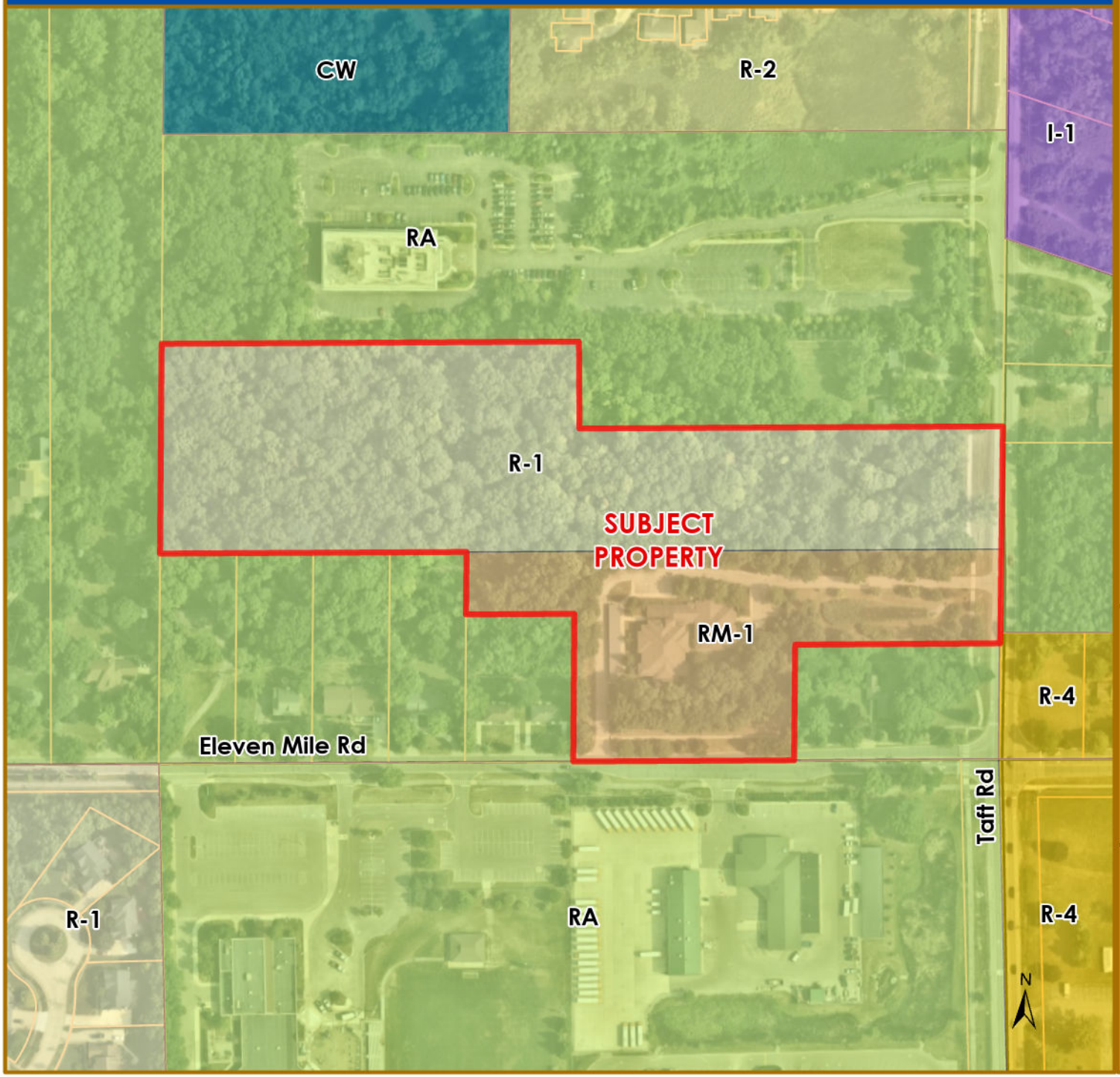
Map Author: Lindsay Bell
Date: 9/9/26
Project: Basilian Fathers PRO Addendum
Version #: 1

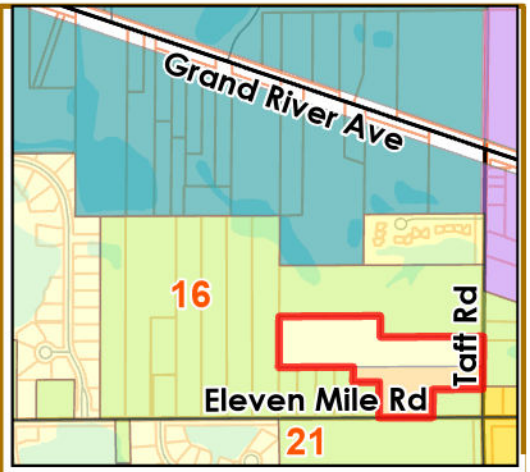
N

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

JZ26-36 Amendment of Basilian PRO for SV Temple

ZONING





Zoning District

- CW: City West
- I-1: Light Industrial
- R-1: One-Family Residential
- R-2: One-Family Residential
- R-4: One-Family Residential
- RA: Residential Acreage
- RM-1: Low-Density Multiple-Family

City of Novi
Dept. of Community Development
Novi City Hall
45175 Ten Mile Rd
Novi, MI 48375
cityofnovi.org

0 75 150 300 Feet
1 inch = 225.8 feet

Map Author: Lindsay Bell
Date: 9/9/26
Project: Basilian Fathers PRO Addendum
Version #: 1

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DRAFT PRO ADDENDUM

ADDENDUM TO PLANNED REZONING OVERLAY (PRO) AGREEMENT FOR THE BASILIAN FATHERS' RESIDENCE, RECORDED IN LIBER 40536 PAGE 488 OAKLAND COUNTY RECORDS

This Addendum to Planned Rezoning Overlay (PRO) Agreement ("PRO Agreement") is by and between the Sri Venkateswara Temple & Cultural Center, Inc. 26233 Taft Road, Novi, Michigan 48374, as successor and under the Agreement (herein "Assignee") and the City of Novi, 45175 West Ten Mile Road, Novi, Michigan 48375-3024 (herein "City").

RECITATIONS

I. In July of 2008, the PRO Agreement was executed by and between the Basilian Fathers of Milford, Michigan (referred to therein as "Developer") and the City that was recorded at Liber 40536 Page 488 of the Oakland County Records.

II. The PRO Agreement provided approval for the improvement and use of certain real property (hereinafter the "Property") in the City of Novi for an approximately 20,000 square foot residential building for the religious order known as the Basilian Fathers, including individual sleeping quarters for a maximum of 14 persons.

III. The Basilian Fathers now wish to sell the Property to Assignee for use by the Assignee as residential use for the religious order of Assignee.

IV. Because some of the Assignee's religious priests are married, Assignee has requested that the maximum number of residents allowed by the PRO Agreement be increased from 14 to 17.

DRAFT

V. Other than the alteration of the interior of the residential building on the Property, converting eight one-bedroom units to four two-bedroom units, no additional changes would be made to the interior of the residential building on the Property.

VI. There will be no changes to the exterior of the residential building or to the Property or site from that which was approved in the PRO.

VII. Assignee agrees to be bound by all of the conditions, obligations, Undertakings, and forbearances of Developer in the PRO Agreement, with the only exception being that the maximum number of permanent residents be increased from 14 persons to 17 persons.

VIII. Because the changes do not have any substantive impact on use on the Property, and do result in any visible changes to the approved use of the Property, the City has no objection to the adjustment requested by Assignee.

NOW THEREFORE, as an integral part of the approval of this Addendum to PRO, and in consideration of Assignee accepting and agreeing to be bound by all of the mutual covenants in the PRO except as set forth in this addendum, IT IS HEREBY AGREED AS FOLLOWS:

1. The City hereby acknowledges the assignment of the PRO by the Basilian Fathers (Developer) to Sri Venkateswara Temple & Cultural Center, Inc. (Assignee).

2. All of the provisions of the PRO, including, but not limited to, all conditions, obligations, Undertakings, forbearances and approvals will remain binding on the Assignee and in full force and effect unchanged as initially approved except as follows:

    a. The maximum number of residents set forth in the PRO, shall be increased from 14 to 17 permanent residents.

3. Assignee remains obligated to obtain all necessary permits for the alteration to the interior of the residential building.

4. This Addendum may be signed in counterparts.

[signatures on following page]

DRAFT

OWNERS:

SRI VENKATESWARA TEMPLE
& CULTURAL CENTER, INC.

_____
By:
Its:

STATE OF MICHIGAN)
) ss.
COUNTY OF _____)

On this ____ day of _____, 2026, before me appeared _____, on behalf of the Sri Venkateswara Temple & Cultural Center, Inc., who stated that they had signed this document of their own free will duly authorized on behalf of the company.

_____
Notary Public
_____ County, Michigan
Acting in the County of _____
My commission expires: _____

[additional signatures on following page]

DRAFT

CITY OF NOVI

By: _____
Justin P. Fischer
Its: Mayor

By: _____
Cortney Hanson
Its: Clerk

STATE OF MICHIGAN)
) ss.
COUNTY OF _____)

On this ____ day of _____, 2026, before me appeared _____ and _____ who stated that they had signed this document of their own free will on behalf of the City of Novi in their respective official capacities, as stated above.

_____
Notary Public
_____ County, Michigan
Acting in the County of _____
My commission expires: _____

DRAFT

APPLICANT REQUEST AND EXHIBITS

LAW OFFICES
LANDRY, MAZZEO, DEMBINSKI & STEVENS, P.C.
37000 GRAND RIVER AVENUE, SUITE 200
FARMINGTON HILLS, MICHIGAN 48335
www.lmdlaw.com

D. B. LANDRY
dlandry@lmdlaw.com

Office: (248) 476-6900
Direct: (248) 919-3783
Fax: (248) 476-6564

July 21, 2026

City of Novi Community Development Dept.
ATTN: Ms. Lindsay Bell
45175 West 10 Mile Road
Novi, MI 48375

Via: e-mail
lbell@cityofnovi.org

RE: Request for Adendum to PRO for Basilian Fathers Residence
26095 Taft Road, Novi, MI
PIN# 22-16-451-080

Dear Ms. Bell:

I represent the Sri Venkateswara Temple and Cultural Center, Inc. In 2008 the City of Novi approved a PRO for the Basilian Fathers residence building on the northwest corner of Taft Rd and Eleven Mile Rd. I have attached a copy of that PRO. The building was constructed and has been used as a residence for members of the Basilian Fathers religious order (priests) who teach at Novi Catholic Central High School. The Basilian Fathers have signed a Purchase Agreement to sell the property and residence to the Sri Venkateswara Temple (SVT), located next door and SVT wishes to utilize the building for the exact same purpose as the Basilian Fathers, as a residence for the Temple priests.

SVT has no intention of altering the exterior of the building or the site itself. The only change requested is to change the interior of the building from 12 one-bedroom apartments to 4 one-bedroom apartments and 4 two-bedroom apartments. I have attached copies of plans for such a change.

The change is required because some of the temple priests are married with a small child and thus a 2 bedroom unit would be required.

This is a very minimal change. The use would remain exactly the same, a residence for members of a religious order. However, as the PRO specifies that the premises would be "limited to a residential use for a religious order, for a maximum of 14 permanent residents" the PRO must be amended to allow for the requested use by SVT. Withe 4 one-bedroom units and 4 two-bedroom units the number of permanent residents may exceed 14 people if any of the 2-bedroom units are occupied by a temple priest who is married and has children. SVT requests that this be accomplished with a simple Addendum to the PRO to allow the premises to be used by a maximum of 17 residents.

We are hoping that in light of the fact that the nature of the use is not changing, the parking and room count still qualifies under the RM-1 zoning and the only change in the PRO is an increase of 3 additional residents for a maximum of 17 residents that an Adendum to the PRO could be approved by the City. Again, no exterior changes to the site are being requested and the nature of the use would remain as approved in the PRO.

I am providing along with this narrative letter an email with a Dropbox link containing the following:

Exhibit A	2008 PRO Agreement
Exhibit B	Plans for conversion of 8 one-bedroom units to 4-two bedroom units (8.5" X 11" format)
Exhibit C	A copy of portions of the 2008 Overall Site Plan (8.5 X 11" format)
Exhibit D	Draft PRO Addendum

Thank you.

Respectfully

LANDRY, MAZZEO, DEMBINSKI
& STEVENS PC

David B. Landry

David B. Landry

Cc: Ravindranath Gullapalli
Via e-mail

LIBER40536 PG488

154268
LIBER 40536 PAGE 488
$37.00 MISC RECORDING
$4.00 REMONUMENTATION
08/19/2008 12:01:58 P.M. RECEIPT# 72151

PAID RECORDED - OAKLAND COUNTY
RUTH JOHNSON, CLERK/REGISTER OF DEEDS

RECEIVED
AUG 15 2008
Ruth Johnson Register of Deeds
Oakland County, MI

PLANNED REZONING OVERLAY (PRO) AGREEMENT FOR THE BASILIAN FATHERS' RESIDENCE

AGREEMENT, by and among the Basilian Fathers of Milford, Michigan whose address is 28724 Five Mile Rd., Livonia, MI 48154 (referred to as "**Developer**"); and the City of Novi, 45175 West Ten Mile Road, Novi, MI 48375-3024 ("**City**").

RECITATIONS:

I. Developer is the owner of all legal and equitable title to the "Land" described on **Exhibit A**, attached and incorporated herein, and is the developer of a proposed Planned Rezoning Overlay ("PRO") encompassing the Land known as the Basilian Fathers' Residence.

II. Developer, for purposes of improving and using the Land for an approximately 20,000 square foot, residential building for the religious order known as the Basilian Fathers, including individual sleeping quarters for a maximum of 14 person, with communal kitchen, dining and living areas and a chapel, has petitioned the City for an amendment of the Zoning Ordinance, as amended, so as to reclassify the Land from R-1, One-Family Residential District, to RM-I, Low Density, Low Rise Multiple Family Residential District. The R-1 classification shall be referred to as the "**Existing Classification**" and RM-1 shall be referred to as the "**Proposed Classification.**"

III. The Proposed Classification would provide the Developer with certain material development options not available under the Existing Classification, and would be a distinct and material benefit and advantage to the Developer.

IV. At its meeting on January 23, 2008, the City Planning Commission reviewed and recommended approval to the City Council of the Developer's petition to amend the zoning district classification of the Land from the Existing Classification to the Proposed Classification under the terms of the Planned Rezoning Overlay (PRO) provisions of the City's Zoning Ordinance.

IV. At its meeting on February 4, 2008, the Council granted tentative approval of the Rezoning with Planned Rezoning Overlay, finding that the proposed use as a

O.K. - LG

residence for a religious order was appropriate even though it was near single-family for the following reasons:

A. The proposed use most closely resembles those uses permitted in the RM-1 District; in particular, independent and congregate elderly living facilities.

B. The proposed residence would be compatible with the existing uses in the area and can be designed to incorporate both the residential elements of the nearby single-family homes and the institutional elements of the nearby church and schools.

Further, the proposed use is appropriate because it is proposed to be limited to a set number of permanent residents, with individual sleeping quarters but otherwise communal living areas. Further, Council has reviewed the Developer's proposed PRO Plan, attached hereto and incorporated herein as **Exhibit B** (the "PRO Plan"), which is a conceptual or illustrative plan for the potential development of the Land under the Proposed Classification, and not an approval to construct the proposed improvements as shown; subject to certain proposed PRO conditions offered or accepted by the Developer. City Council granted tentative approval of the Rezoning with Planning Rezoning Overlay, subject to certain conditions, as set forth in the official minutes of said meeting.

V. In proposing the Proposed Classification to the City, Developer has expressed a firm and unalterable intent that Developer will develop and use the Land in conformance with the following undertakings by Developer, as well as the following forbearances by the Developer (each and every one of such undertakings and forbearances shall together be referred to as the "Undertakings"):

A. Developer shall develop and use the Land solely for an approximately 20,000 square foot residential building to be used as a residence for a religious order including 14 individual sleeping quarters with communal kitchen, dining and living areas, and a chapel for the Basilian Fathers (with appropriate parking and site improvements). In accordance with the PRO Plan, Developer shall forbear from developing and/or using the Land in any manner other than as authorized and/or limited by this Agreement.

B. Developer shall develop the Land in accordance with all applicable laws and regulations, and with all applicable ordinances, including all applicable height, area, and bulk requirements of the Zoning Ordinance as relates to the Proposed Classification, except as expressly authorized herein. The PRO Plan is acknowledged by both the City and Developer to be a conceptual plan for the purpose of depicting the general area contemplated for development. Certain minor deviations from the provisions of the City's ordinances, rules, or regulations that are depicted

in the PRO Plan are approved by virtue of this Agreement; however, except as to such specific deviations enumerated herein, the Developer's right to develop the residential building under the requirements of the Proposed Classification shall be subject to and in accordance with all applications, reviews, approvals, permits, and authorizations required under applicable laws, ordinances, and regulations, including, but not limited to, site plan approval, storm water management plan approval, woodlands and wetlands permits, façade approval, landscape approval, and engineering plan approval, except as expressly provided in this Agreement. The building layout shall be substantially similar (as determined by the City) to that submitted as part of the Developer's final approval request, as depicted in **Exhibit B**.

C. In addition to any other ordinance requirements, Developer shall seek, obtain approval for, and use best management practices and efforts with respect to all storm water and soil erosion requirements and measures throughout the site during the design and construction phases, and subsequent use, of the development contemplated in the Proposed Classification.

D. The following deviations from the standards of the zoning ordinance are hereby authorized pursuant to §3402.D.1.c of the City's zoning ordinance.

1. A 9-foot parking setback deviation (75 feet required, 66 feet provided).

2. A 9-foot deviation for front yard accessory structure setback (75 feet required, 66 feet provided).

3. A 20-foot deviation for side yard accessory structure setback (75 feet required, 55 feet provided).

E. The following PRO Conditions shall apply to the Land and/or be undertaken by Developer:

1. The permitted use on the land shall be limited to a residential use for a religious order, for a maximum of 14 permanent residents, with individual sleeping quarters, and communal kitchen, dining and living areas, and a chapel in accordance with this Agreement and the PRO conditions offered by the Developer.

2. Developer shall extend the 5-foot wide public sidewalk along Eleven Mile Road, and the 8-foot wide public sidewalk along Taft Road, as shown on the PRO plan.

3. Developer shall dedicate to the City of Novi road right-of-way along Eleven Mile Road (ten feet) and Taft Road (27 feet).

4. Developer will grant the City a Conservation Easement over certain undeveloped portions of the Land in an effort to preserve the mature tree stand, identified as the "Existing Wooded Area" on the attached Exhibit B.

VII. For the purpose of confirming the rights and obligations in connection with the improvements and other obligations to be undertaken in connection with the development of the Land, the parties have entered into this PRO Agreement.

NOW THEREFORE, as an integral part of the grant of rezoning of the Land, and as an integral part of the approval of the PRO, and inconsideration of the mutual covenants contained herein, *IT IS HEREBY AGREED AS FOLLOWS:*

1. The Land shall be developed only in accordance with: (i) this PRO Agreement, including a Conservation Easement over the Existing Wooded Area identified on the attached Exhibit B; (ii) the PRO Plan; (iii) the terms and conditions listed in the minutes of the January 23, 2008, Planning Commission meeting; (iv) the terms and conditions listed in the minutes of the February 4, 2008, City Council meeting; and (v) the terms and conditions listed in the minutes of the May 12, 2008, City Council meeting. Furthermore, all development of the Land shall be subject to and in accordance with all applicable City ordinances and any City approvals of a final site plan for the Land, and unless expressly stated otherwise in this Agreement, shall also be subject to all other approvals and permits required under applicable City ordinances and State laws.

2. The permitted land use shall be as described on the PRO Plan, to wit, an approximately 20,000 square foot, residential building for housing 14 priests, including individual sleeping quarters, with communal kitchen, dining and living areas, and a chapel. In the event Developer attempts to or proceeds with actions to complete improvement of the Land in any manner other than as shown on **Exhibit B**, the City shall be authorized to revoke all outstanding building permits and certificates of occupancy issued for such building and use.

3. Upon the Proposed Classification becoming final following entry into this Agreement:

   A. The Undertakings shall be carried out by Developer on and for the Land;

   B. Developer shall act in conformance with the Undertakings;

   C. Developer shall forbear from acting in a manner inconsistent with the Undertakings; and

D. The Developer shall commence and complete all actions necessary to carry out all of the PRO Conditions.

4. Developer acknowledges and agrees that the City has not required the Undertakings. The Undertakings have been voluntarily offered by Developer in order to provide an enhanced use and value of the Land, to protect the public safety and welfare, and to induce the City to rezone the Land to the Proposed Classification so as to provide material advantages and development options for the Developer.

5. All of the Undertakings represent actions, improvements, and/or forbearances that are directly beneficial to the Land and/or to the development of and/or marketing of the office or retail building on the Land. The burden of the Undertakings on the Developer is roughly proportionate to the burdens being created by the development, and to the benefit which will accrue to the Land as a result of the requirements represented in the Undertakings.

6. In addition to the provisions in Paragraph 2, above, in the event the Developer, or its respective successors, assigns, and/or transferees proceed with a proposal for, or other pursuit of, development of the Land in a manner which is in material violation of the Undertakings, the City shall, following notice and a reasonable opportunity to cure, have the right and option to take action using the procedure prescribed by law for the amendment of the Master Plan and Zoning Ordinance applicable to the Land to amend the Master Plan and zoning classifications of the Land to a reasonable classification determined appropriate by the City, and neither the Developer nor its respective successors, assigns, and/or transferees, shall have any vested rights in the Proposed Classification and/or use of the Land as permitted under the Proposed Classification, and Developer shall be estopped from objecting to the rezoning and reclassification to such reasonable classifications based upon the argument that such action represents a "downzoning" or based upon any other argument relating to the approval of the Proposed Classification and use of the Land; provided, this provision shall not preclude Developer from otherwise challenging the reasonableness of such rezoning as applied to the Land.

7. By execution of this Agreement, Developer acknowledges that it has acted in consideration of the City approving the Proposed Classification on the Land, and Developer agrees to be bound by the provisions of this Agreement.

8. After consulting with an attorney, the Developer understands and agrees that this Agreement is authorized by and consistent with all applicable state and federal laws and Constitutions, that the terms of this Agreement are reasonable, that it shall be estopped from taking a contrary position in the future, and, that the City shall be entitled to injunctive relief to prohibit any actions by the Developer inconsistent with the terms of this Agreement.

9. This Agreement shall be binding upon and inure to the benefit of the parties to this Agreement and their respective heirs, successors, assigns and transferees, and an affidavit providing notice of this Agreement may be recorded by either party with the office of the Oakland County Register of Deeds.

10. The Zoning Board of Appeals (ZBA) shall have no jurisdiction over the Property or the application of this Agreement until after site plan approval and construction of the development as approved therein.

10. No waiver of any breach of this Agreement shall be held to be a waiver of any other or subsequent breach. All remedies afforded in this Agreement shall be taken and construed as cumulative, that is, in addition to every other remedy provided by law.

11. This Agreement shall be governed by the laws of the State of Michigan, both as to interpretation and performance. Any and all suits for any and every breach of this Agreement may be instituted and maintained in any court of competent jurisdiction in the County of Oakland, State of Michigan.

12. This Agreement may be signed in counterparts.

WITNESSES:

Gregory G. Kreutzer

GREGORY G. KREUTZER
Print Name:

Print Name:

OWNERS:
BASILIAN FATHERS OF
MILFORD, MICHIGAN

J. O'Neill C.S.B.

By:
Its: Superior
Owner

STATE OF MICHIGAN)
) ss.
COUNTY OF OAKLAND)

On this 2nd day of July, 2008, before me appeared James O'Neill, C.S.B. on behalf of the Basilian Fathers of Milford, Michigan, who states that he has signed this document of his own free will duly authorized on behalf of the company.

MICHAEL D. WILSON
NOTARY PUBLIC, STATE OF MI
COUNTY OF OAKLAND
MY COMMISSION EXPIRES Oct 15, 2014
ACTING IN COUNTY OF Oakland, MI

Michael D. Wilson

, Notary Public
Oakland County, MI
Acting in Oakland County
My Commission Expires: 10-15-2014

WITNESSES:

Print Name: MARILYN S. TROUTMAN

Print Name:

Print Name: Cortney Brennan

Print Name:

CITY OF NOVI

By: _____
David B. Landry, Mayor

By: _____
Maryanne Cornelius, Clerk

STATE OF MICHIGAN)
) ss.
COUNTY OF OAKLAND)

On this 16th day of JULY, 2008, before me appeared David B. Landry and Maryanne Cornelius, who stated that they had signed this document of her own free will on behalf of the City of Novi in their respective official capacities, as stated above.

_____, Notary Public
OAKLAND County
Acting in Oakland County
My Commission Expires: OCT. 13, 2011

MARILYN S. TROUTMAN
NOTARY PUBLIC, STATE OF MI
COUNTY OF OAKLAND
MY COMMISSION EXPIRES Oct 13, 2011
ACTING IN COUNTY OF OAKLAND

Drafted by:
Kristin Bricker Kolb
30903 Northwestern Highway
Farmington Hills, MI 48334

When recorded return to:

Maryanne Cornelius, Clerk
City of Novi
45175 West Ten Mile Road
Novi, MI 48375-3024

1067783_1

EXHIBIT "A"

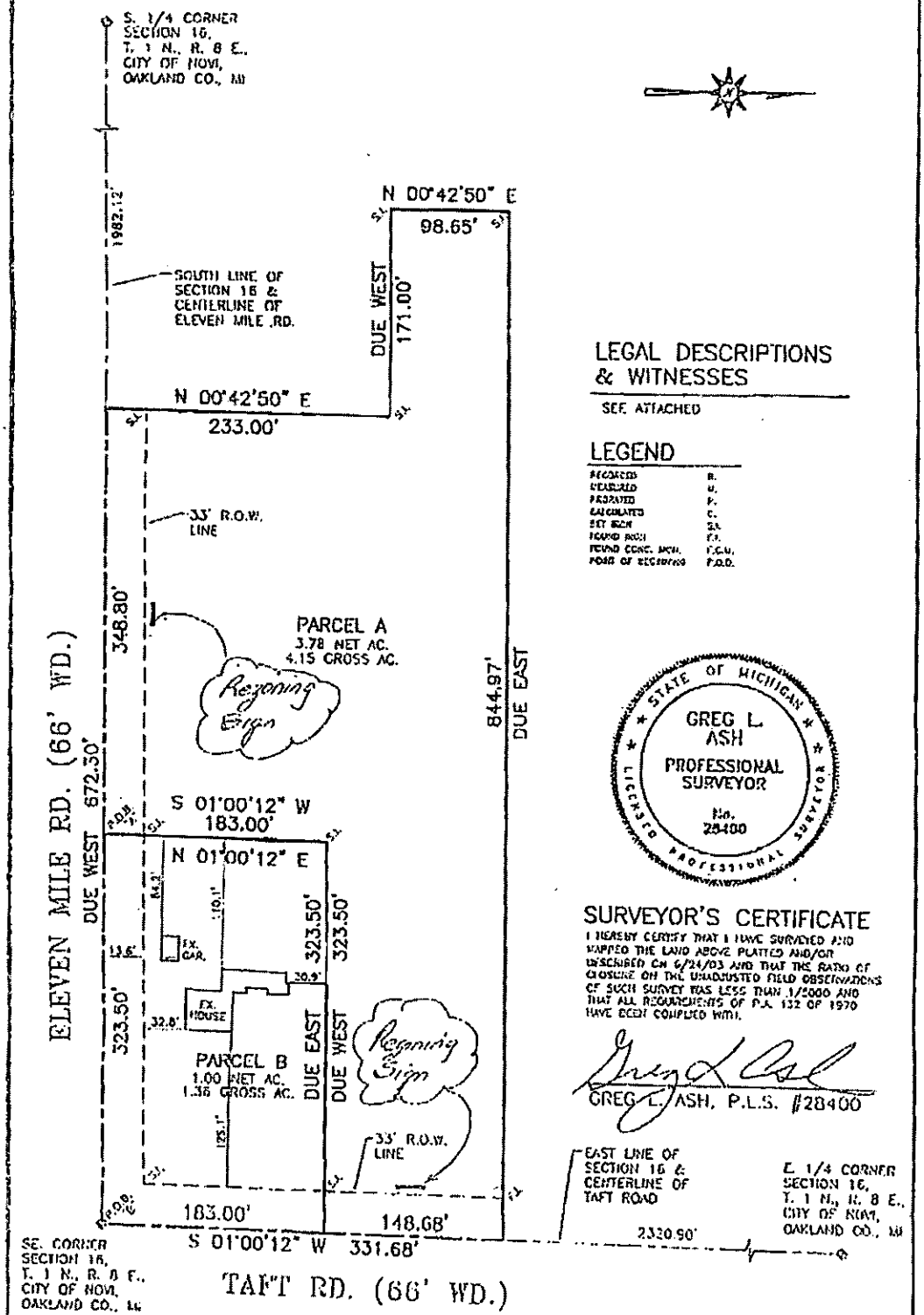
New Legal Descriptions
Parcel A

A parcel of land in the Southeast ¼ of Section 16, T. 1 N., R. 8 E., City of Novi, Oakland County, Michigan, described as:

Commencing at the Southeast corner of said Section 16; thence Due West 323:50 feet along the South line of said Section 16, said line also being the centerline of Eleven Mile Road (66 feet wide) to the POINT OF BEGINNING; thence continuing along said South line of Section 16 Due West 348.80 feet; thence N. 00° 42' 50" E. 233.00 feet; thence Due West 171.00 feet; thence N. 00° 42' 50" E. 98.65 feet; thence Due East 844.97 feet to a point on the East line of said Section 16; thence S. 01° 00' 12" W. 148.68 feet along said East line of Section 16, said line also being the centerline of Taft Road (66 feet wide); thence Due West 323.50 feet; and thence S. 01° 00' 12" W. 183.00 feet to the POINT OF BEGINNING. Containing 4.15 gross acres of land (3.78 net acres), more or less. Subject to the rights of the public over the South 33 feet for Eleven Mile Road (66 feet wide) and the East 33 feet for Taft Road (66 feet wide). Also subject to any and all easements or rights of way of record, if any.

22-16-451-076

CERTIFICATE OF SURVEY



LEGAL DESCRIPTIONS & WITNESSES

SEE ATTACHED

LEGEND

RECORDED	R.
MEASURED	M.
PRORATED	P.
CALCULATED	C.
SET IRON	S.I.
FOUND IRON	F.I.
FOUND CONC. MON.	F.C.M.
POINT OF BEGINNING	P.O.B.

STATE OF MICHIGAN
GREG L. ASH
PROFESSIONAL SURVEYOR
No. 28400
LICENSED PROFESSIONAL SURVEYOR

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I HAVE SURVEYED AND MAPPED THE LAND ABOVE PLATTED AND/OR DESCRIBED ON 6/24/03 AND THAT THE RATIO OF CLOSURE ON THE UNADJUSTED FIELD OBSERVATIONS OF SUCH SURVEY WAS LESS THAN 1/5000 AND THAT ALL REQUIREMENTS OF P.A. 132 OF 1970 HAVE BEEN COMPLIED WITH.

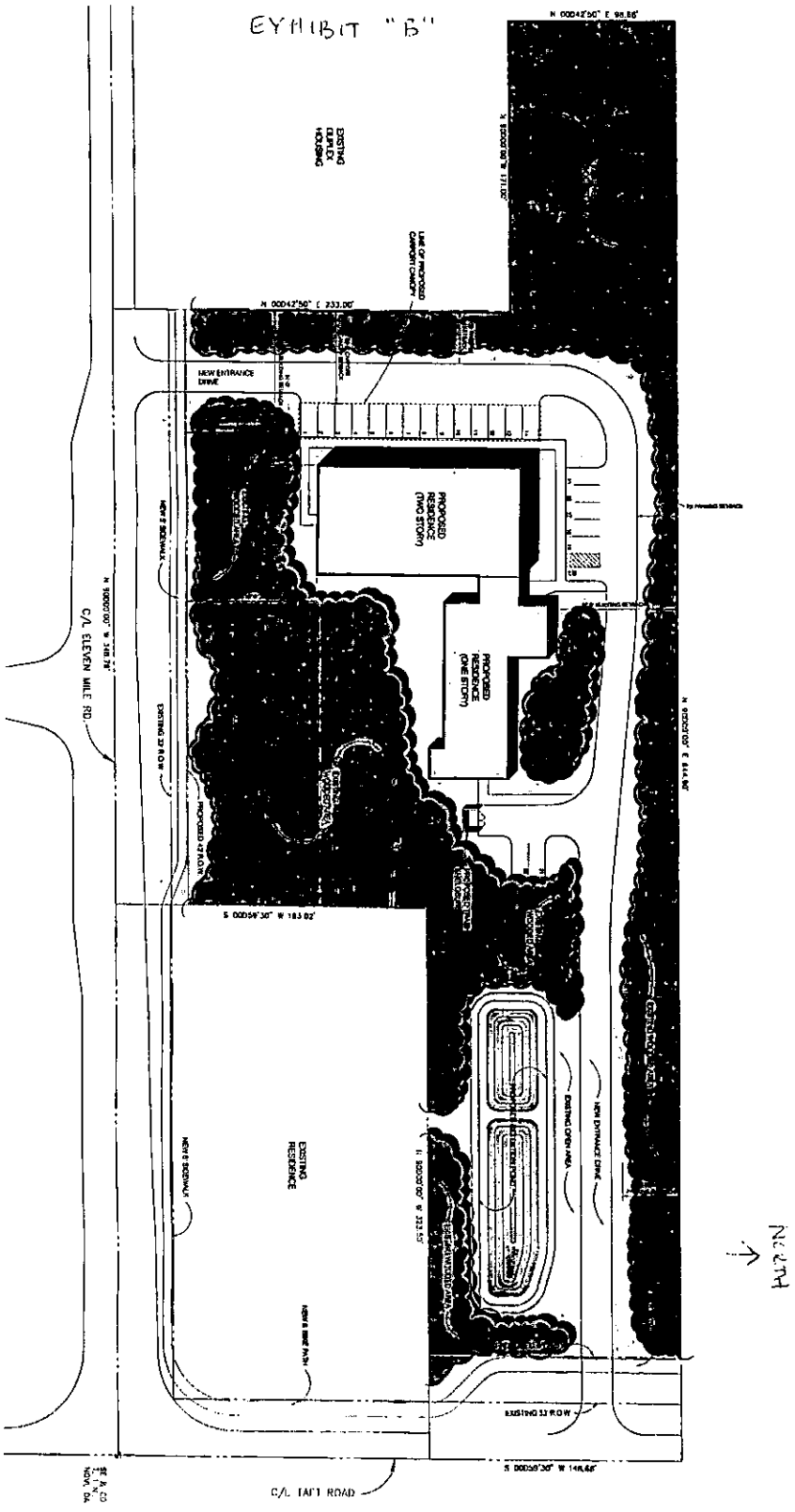
GREG L. ASH, P.L.S. #28400

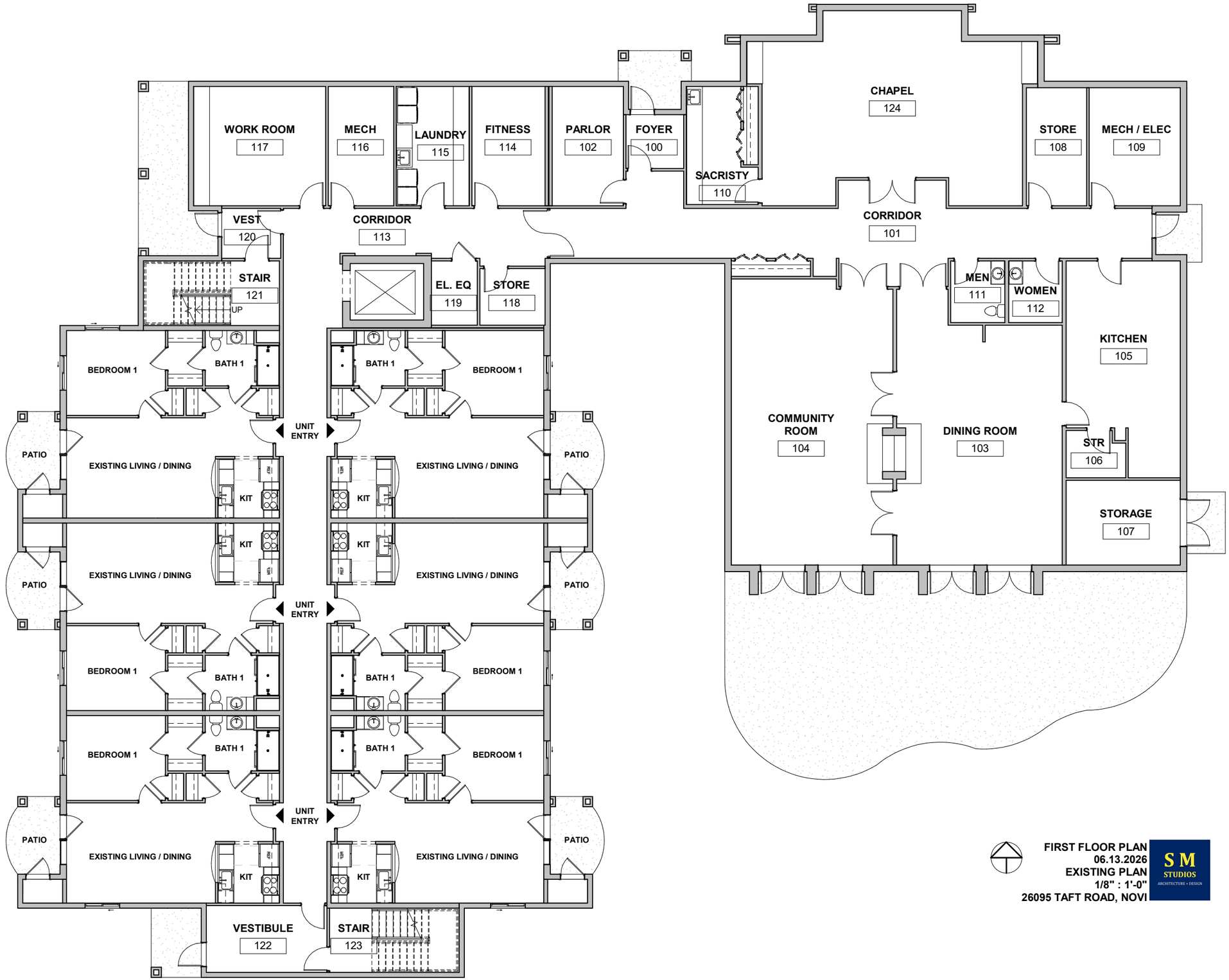
GL SURVEYORS & ENGINEERS
6134 COTTREDSON RD.
PLYMOUTH, MI 48170
PHONE: (734) 416-9650
FAX: (734) 416-9657
www.glsurveyor.com

CLIENT:
DAVID & KAREN KURTZ
45870 ELEVEN MILE RD.
NOVI, MI 48374

DATE:	JOB NO.	SCALE:	SHEET:	DRAWN BY:
07/30/03	278-004	1" = 100' (0, 100, 200)	1 OF 3	SAS2

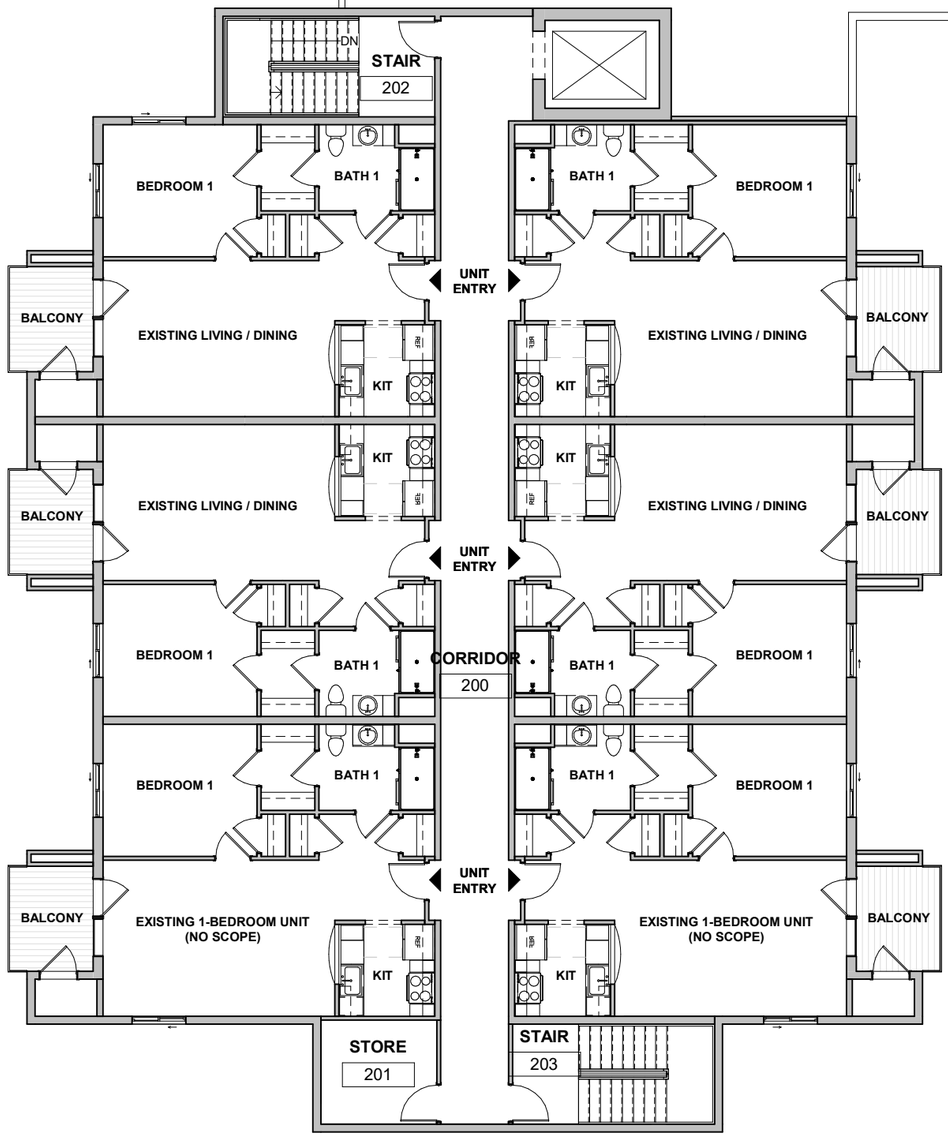
EXHIBIT "B"

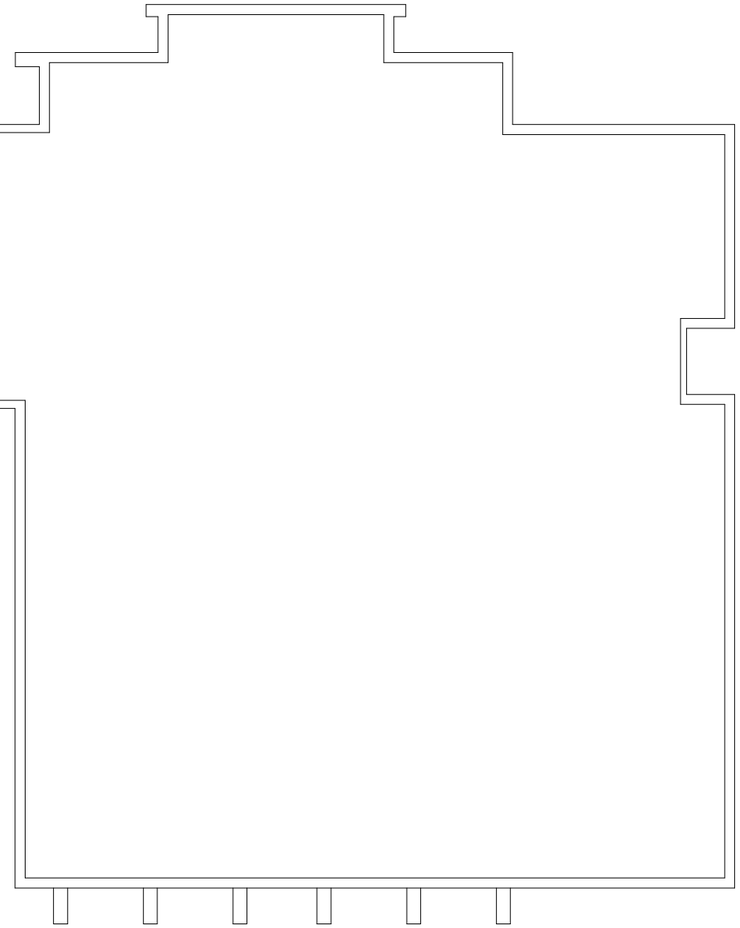

EXISTING OFFICE HOUSING
N 00°42'50" E 233.00'
NEW ENTRANCE DRIVE
PROPOSED RESIDENCE (TWO STORY)
PROPOSED RESIDENCE (ONE STORY)
C/L ELEVEN MILE RD
EXISTING 33' R.O.W.
PROPOSED 33' R.O.W.
S 00°59'30" W 183.02'
EXISTING RESIDENCE
NEW 6' SIDEWALK
NEW 8' BIKE PATH
EXISTING OPEN AREA
NEW ENTRANCE DRIVE
EXISTING 33' R.O.W.
S 00°59'30" W 148.66'
C/L TAFT ROAD
NORTH



FIRST FLOOR PLAN
06.13.2026
EXISTING PLAN
1/8" : 1'-0"
26095 TAFT ROAD, NOVI

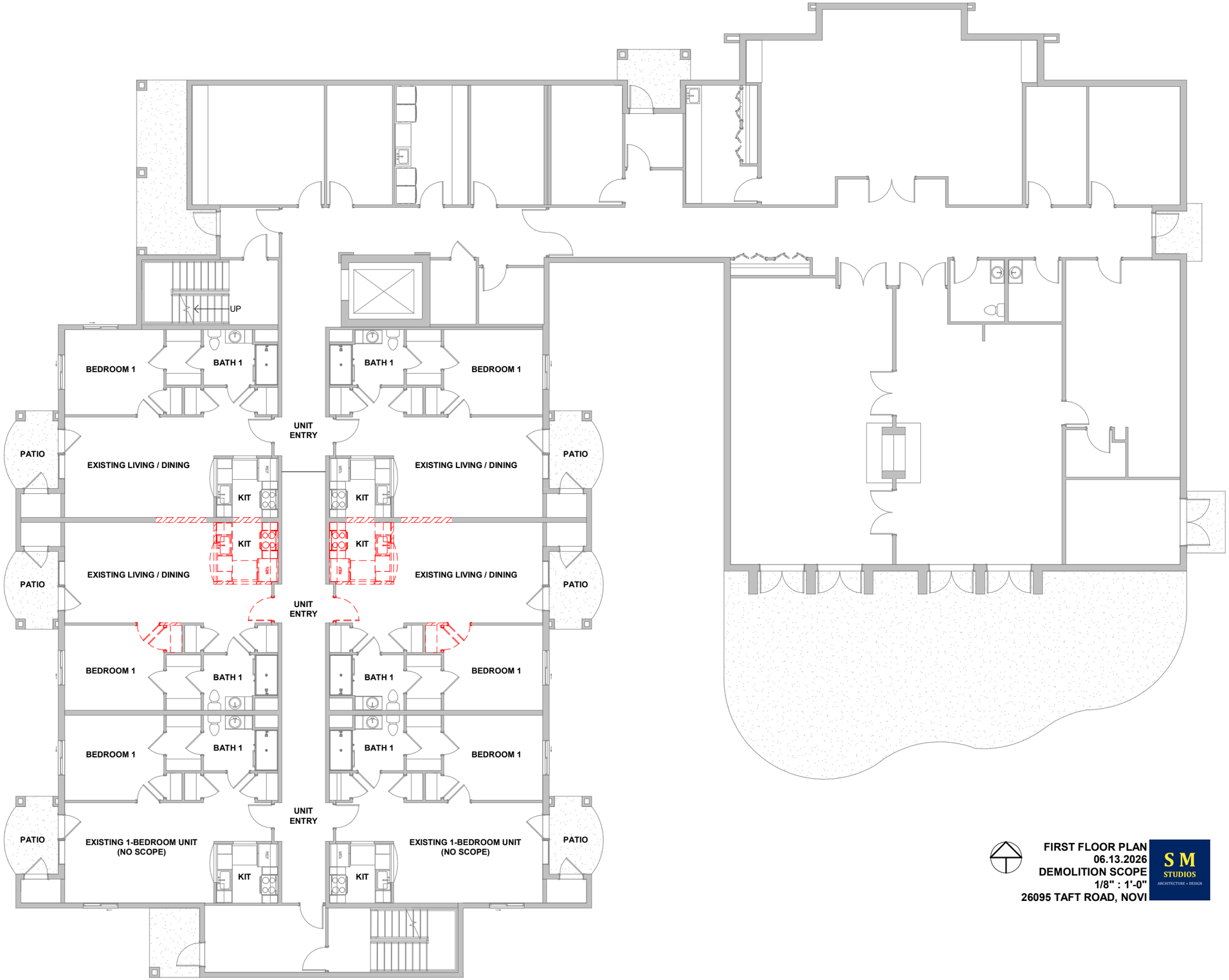
SM STUDIOS
ARCHITECTURE + DESIGN





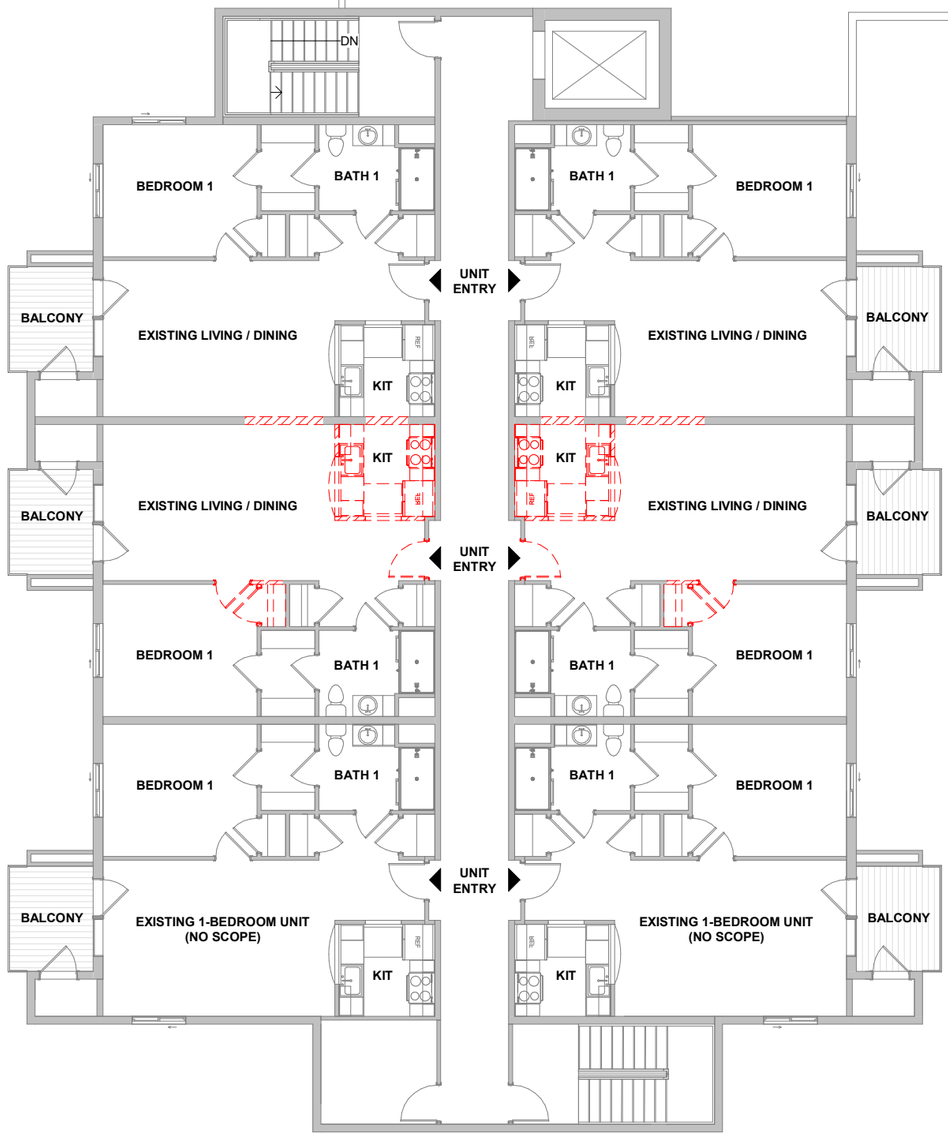
SECOND FLOOR PLAN
06.13.2026
EXISTING PLAN
1/8" : 1'-0"
26095 TAFT ROAD, NOVI

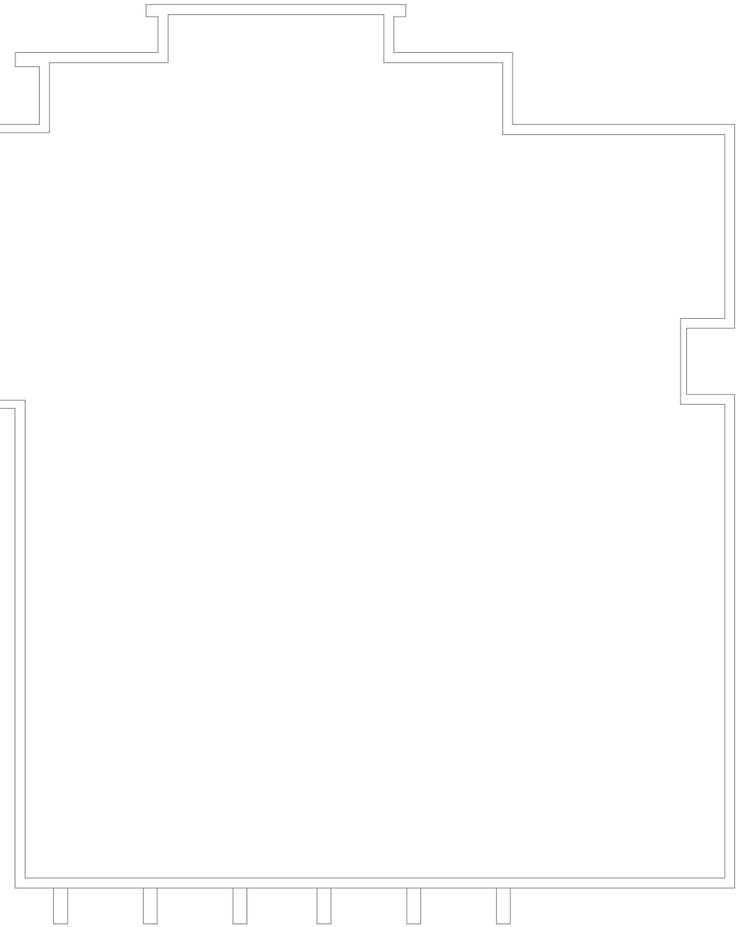
SM STUDIOS
ARCHITECTURE • DESIGN



FIRST FLOOR PLAN
06.13.2026
DEMOLITION SCOPE
1/8" : 1'-0"
26095 TAFT ROAD, NOVI

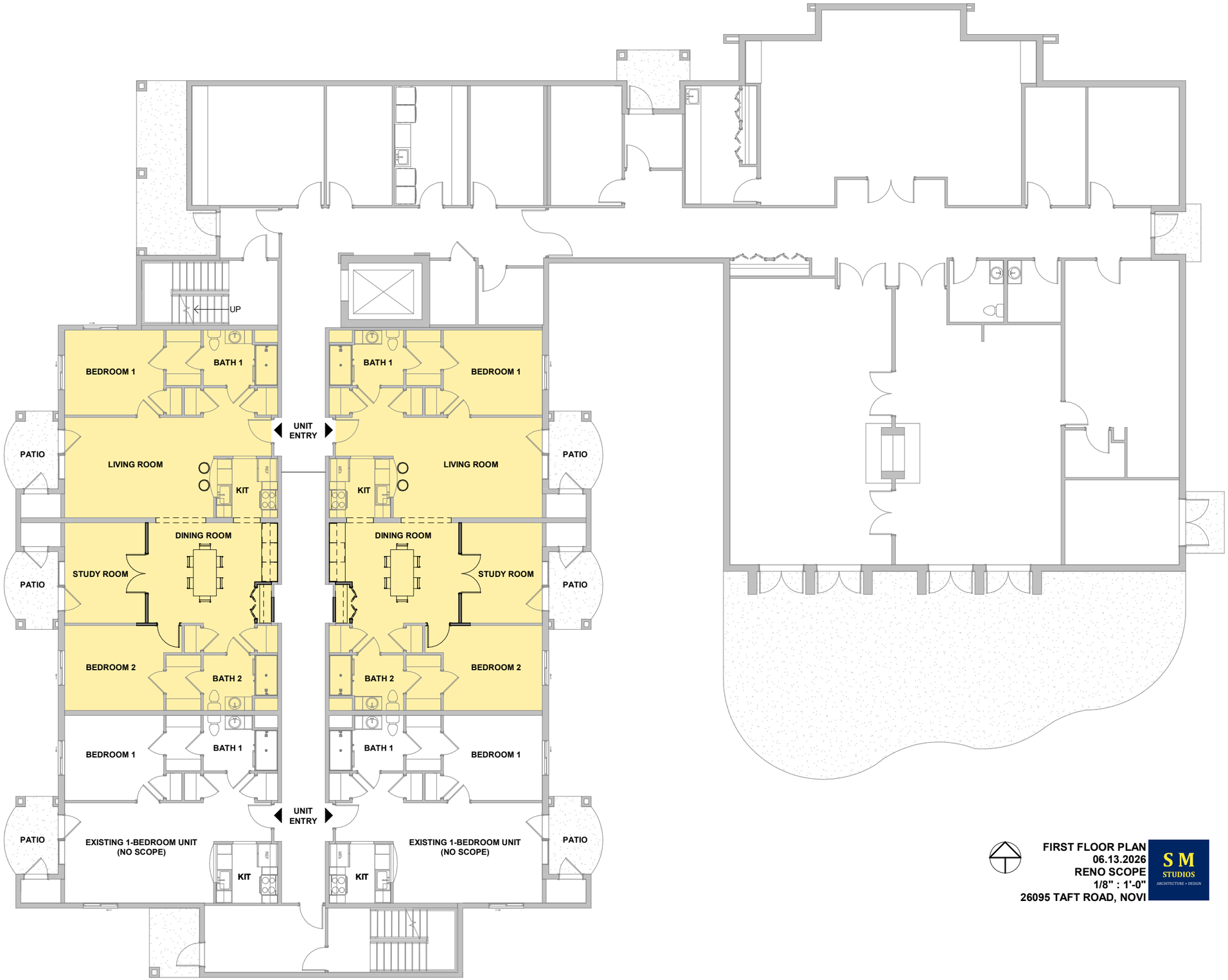
SM STUDIOS
ARCHITECTURE + DESIGN





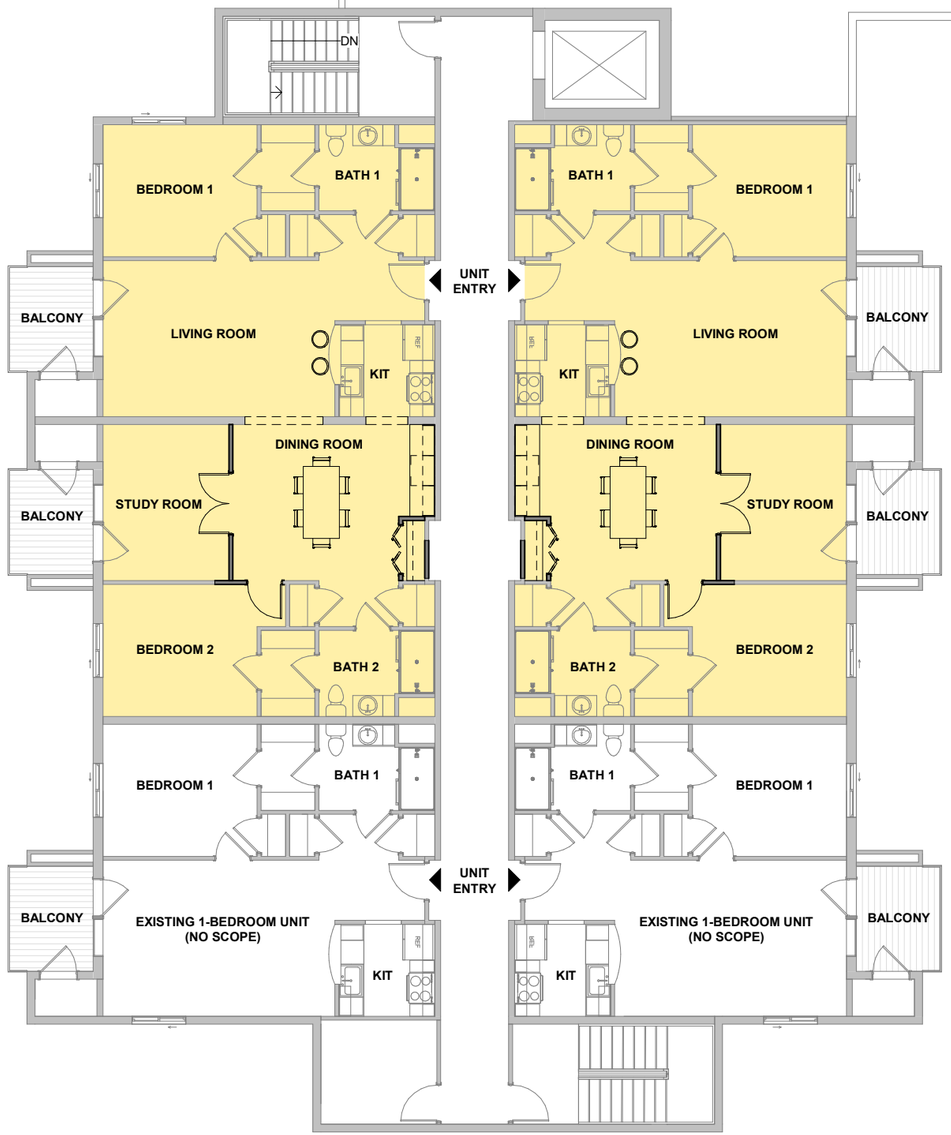
SECOND FLOOR PLAN
06.13.2026
DEMOLITION SCOPE
1/8" : 1'-0"
26095 TAFT ROAD, NOVI

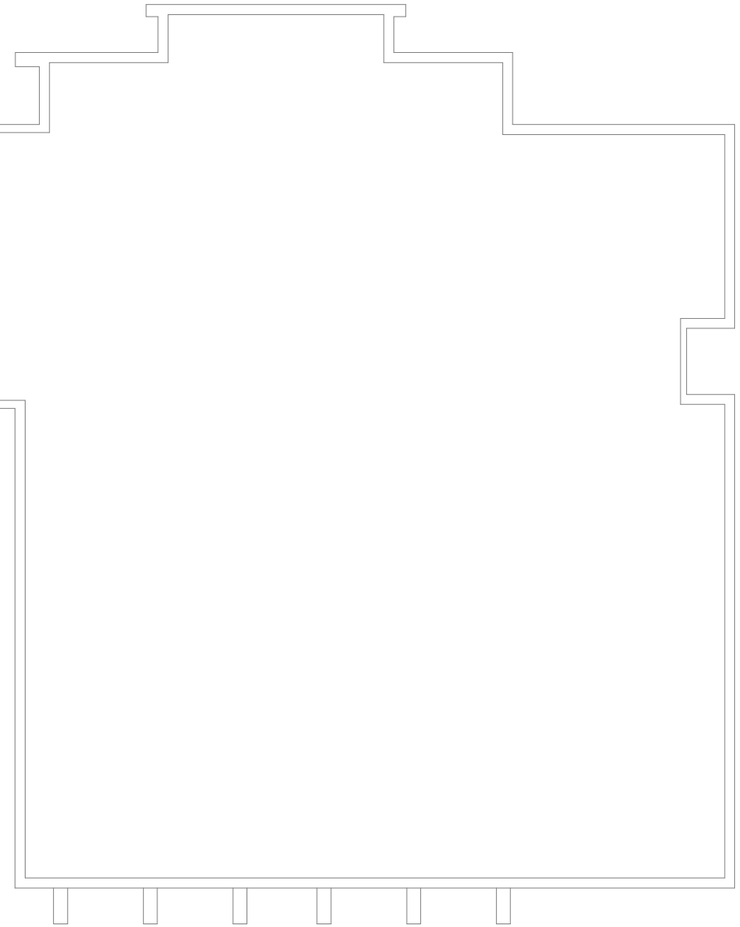
SM STUDIOS
ARCHITECTURE • DESIGN



FIRST FLOOR PLAN
06.13.2026
RENO SCOPE
1/8" : 1'-0"
26095 TAFT ROAD, NOVI

SM STUDIOS
ARCHITECTURE • DESIGN





SECOND FLOOR PLAN
06.13.2026
RENO SCOPE
1/8" : 1'-0"
26095 TAFT ROAD, NOVI

SM STUDIOS
ARCHITECTURE • DESIGN

NEW BASILIAN FATHERS RESIDENCE

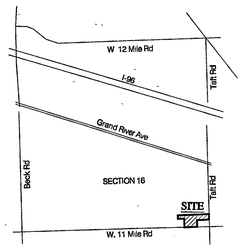
26095 TAFT ROAD

NOVI, MICHIGAN

BID PACKAGE NO. 2

BUILDING CONTRACT

LOCATION MAP



LOCATION MAP
SCALE: 1"=2000'

BUILDING DATA

BUILDING HEIGHT	USE GROUP "R-2" 24'-1"	USE GROUP "A-3" 15'-10"
GROSS SQUARE FOOT AREAS		
FIRST FLOOR	6,816 SQ. FT.	4,892 SQ FT.
SECOND FLOOR	5,651 SQ. FT.	
TOTAL FLOOR AREAS	12,467 SQ. FT.	4,892 SQ. FT.
TOTAL GROSS BUILDING AREA	17,359 SQ. FT.	
UNIT GROSS AREA	719 SQ. FT. (W/O FURNACE CLOSET)	
ONE BEDROOM/ONE BATHROOM	12 TOTAL UNITS	
BUILDING CODE DATA:		
BUILDING CODE	2006 MICHIGAN BUILDING CODE	
USE GROUPS	"R-2"/"A-3"	
CONSTRUCTION TYPE	5B FIRE SUPPRESSED "R-2" NFPA 13R SYSTEM "A-3" NFPA 13 SYSTEM	

DRAWING INDEX

DWG NO	DRAWING TITLE
G-0.01	COVER SHEET AND PROJECT STANDARDS
	CIVIL
S-1.01	BOUNDARY SURVEY (FOR REFERENCE ONLY)
C-1.01	OVERALL SITE PLAN (FOR RFERENCE ONLY)
C-1.02	TAFT ROAD SANITARY SEWER (FOR REFERENCE ONLY)
C-1.03	GRADING AND SOIL EROSION (FOR RERFERENCE ONLY)
C-1.04	DETENTION PLAN (FOR REFERENCE ONLY)
C-1.05	STORMWATER MANAGEMENT (FOR REFERENCE ONLY)
C-1.06	UTILITY PROFILES (FOR REFERENCE ONLY)
C-1.07	UTILITY PROFILES (FOR REFERENCE ONLY)
C-1.08	SOIL EROSION PLAN AND DETAILS (FOR REFERENCE ONLY)
C-1.09	VORTECHNICS DETAILS (FOR REFERENCE ONLY)
L-1.1	LANDSCAPE PLAN (FOR REFERENCE ONLY)
L-1.2	LANDSCAPE PLAN (FOR REFERENCE ONLY)
L-1.3	LANDSCAPE PLAN (FOR REFERENCE ONLY)
N-1.1	NATURAL FEATURES IMPACT (FOR REFERENCE ONLY)
N-1.1	NATURAL FEATURES IMPACT (FOR REFERENCE ONLY)
	CITY OF NOVI STANDARD DETAILS
D-1.1	WATER MAIN DETAILS (FOR REFERENCE ONLY)
D-1.2	WATER MAIN DETAILS (FOR REFERENCE ONLY)
D-1.3	SANITARY SEWER DETAILS (FOR REFERENCE ONLY)
D-1.4	O C D.P W SANITARY SEWER DETAILS (FOR REFERENCE ONLY)
D-1.5	STORM SEWER DETAILS (FOR REFERENCE ONLY)
D-1.6	PAVEMENT DETAILS FOR CITY OF NOVI ROADWAYS (FOR REFERENCE ONLY)
	ARCHITECTURAL
A-1	BUILDING FOUNDATION PLAN
A-2	BUILDING FIRST FLOOR PLAN
A-3	BUILDING SECOND FLOOR PLAN
A-4	BUILDING ROOF PLAN
A-5	BUILDING ELEVATIONS
A-6	BUILDING ELEVATIONS
A-7	BUILDING ELEVATION DETAILS
A-8	COMMONS AREA FLOOR PLAN
A-9	COMMONS AREA FLOOR PLAN
A-10	UNIT FLOOR PLANS AND WALL TYPES
A-11	SCHEDULES
A-12	BUILDING SECTION AND DETAILS
A-13	BUILDING SECTION AND DETAILS
A-14	WALL SECTIONS
A-15	WALL SECTIONS
A-16	STRUCTURAL FRAMING PLAN
A-17	STRUCTURAL FRAMING PLAN
A-18	REFLECTED CEILING FIRST FLOOR PLAN
A-19	REFLECTED CEILING SECOND FLOOR PLAN
A-20	INTERIOR ELEVATIONS AND DETAILS
A-21	TRASH ENCLOSURE, MONUMENT SIGN AND CARPORT DETAILS
	FOOD SERVICE
FSE-1	BUILDING FOUNDATION PLAN
FSE-2	BUILDING FIRST FLOOR PLAN
FSE-3	BUILDING SECOND FLOOR PLAN
FSE-4	BUILDING ROOF PLAN
FSE-5	BUILDING ELEVATIONS
	MECHANICAL
M-1	FIRST FLOOR PLAN - SANITARY
M-2	FIRST FLOOR PLAN - WATER
M-3	FIRST FLOOR PLAN - HVAC
M-4	SECOND FLOOR PLAN - HVAC
M-5	UNIT FLOOR PLANS - HVAC
M-6	RISERS DETAILS AND SCHEDULES
M-7	FIRST FLOOR PARTIAL PLANS - SANITARY AND WATER
M-8	MECHANICAL SCHEDULES
	ELECTRICAL
E-1	ELECTRICAL FLOOR PLANS
E-2	ELECTRICAL LIGHTING FLOOR PLANS
E-3	PARTIAL ELECTRICAL FLOOR PLANS AND SCHEDULES
E-4	ELECTRICAL RISERS, PANEL SCHEDULES AND DETAILS

cdpa architects
26600 Telegraph Rd. Suite 450
Southfield, Michigan 48033
T (248) 354-2441 F (248) 354-4214
E-mail: cdpa@cdpa-architects.com
www.cdpaarchitects.com

Key Plan: NO SCALE

N

Project Name and Client:
NEW BASILIAN FATHERS RESIDENCE
NOVI, MICHIGAN

BASILIAN FATHERS
NOVI, MICHIGAN

Seal:

Date	Issued For
09-29-08	BID PACK NO. 1
10/22/08	BID PACK NO. 2

Drawn: SJF
Checked: SJF
Approved: JPA

Sheet Title:
COVER SHEET DRAWING INDEX AND LOCATION MAP

Project Number.
07-140

Sheet Number:
G-0.01

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F:\Basilian Residence\Current\General\G-0.01 COVER SHEET.dwg, 10/24/2008 10:31:15 AM, sflickema

NOTES:

1. SUBJECT SITE DOES NOT FALL WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA PER THE NATIONAL FLOOD INSURANCE PROGRAM, FLOODWAY MAP COMMUNITY PANEL No. 26125C0626F WITH AN EFFECTIVE DATE OF SEPTEMBER 29, 2006.

   THE ABOVE FLOOD PLAIN STATEMENT IS FOR INFORMATION ONLY AND THIS SURVEYOR ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THE CITED MAP(S). IN ADDITION, THE ABOVE STATEMENT DOES NOT REPRESENT THIS SURVEYOR'S OPINION OF THE PROBABILITY OF FLOODING.

2. TERMS AND CONDITIONS EVIDENCED IN TEMPORARY CONSTRUCTION AS RECORDED IN L. 12752, P. 605 MAY HAVE BEEN TERMINATED.

3. THE PARCEL DESCRIBED IN THE "AS SURVEYED" LEGAL DESCRIPTION IS THE SAME PARCEL AS DESCRIBED IN THE TITLE SEARCH PROVIDED.

N
W E
S
SCALE: 1" = 30'
0 15 30 60

LEGAL DESCRIPTION (PER TITLE POLICY)

A PARCEL OF LAND IN THE SOUTHEAST 1/4 OF SECTION 16, T. 1 N., R. 8 E., CITY OF NOVI, OAKLAND COUNTY MICHIGAN DESCRIBED AS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 16; THENCE DUE WEST 323.50 FEET ALONG THE SOUTH LINE OF SAID SECTION 16; THENCE WEST 348.80 FEET; THENCE N. 00°42'50" E. 233.00 FEET; THENCE WEST 171.00 FEET; THENCE N. 00°42'50" E. 98.68 FEET (RECORDED 98.65 FEET MEASURED); THENCE EAST 844.97 FEET; THENCE S. 01°00'12" W. 148.68 FEET; THENCE WEST 323.60 FEET; THENCE S. 01°00'12" W. 183.00 FEET TO THE POINT OF BEGINNING.

LEGAL DESCRIPTION (AS SURVEYED)

A PARCEL OF LAND LOCATED IN PART OF THE SOUTHEAST 1/4 OF SECTION 16, T. 1 N., R. 8 E., CITY OF NOVI, OAKLAND COUNTY MICHIGAN BEING MORE PARTICULARLY DESCRIBED AS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 16 AND PROCEEDING ALONG THE SOUTH LINE OF SECTION 16, SAID LINE ALSO BEING THE CENTERLINE OF ELEVEN MILE ROAD (33 FEET WIDE. 1/2 WIDTH) DUE WEST 323.50 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING ALONG SAID SOUTH LINE AND CENTERLINE DUE WEST 348.80 FEET; THENCE N. 00°42'50" E. 233.00 FEET; THENCE DUE WEST 171.00 FEET; THENCE N. 00°42'50" E. 98.65 FEET; THENCE DUE EAST 844.97 FEET TO A POINT ON THE EAST LINE OF SAID SECTION 16, ALSO BEING THE CENTERLINE OF TAFT ROAD (33 FEET WIDE, 1/2 WIDTH); THENCE ALONG SAID SECTION LINE AND CENTERLINE S. 01°00'12" W. 148.68 FEET; THENCE DUE WEST 323.50 FEET; THENCE S. 01°00'12" W. 183.00 FEET TO THE POINT OF BEGINNING. CONTAINING 4.15 ACRES MORE OR LESS AND BEING SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD.

LEGEND

- BOUNDARY LINE
- PARCEL LINE
- SECTION LINE
- OVERHEAD WIRES
- UTILITY POLE
- GUY ANCHOR
- SIGN
- SECTION CORNER
- FCI, FIP
- FCI FOUND CAPPED IRON
- FIP FOUND IRON PIPE
- ℄ CENTERLINE
- R.O.W. RIGHT OF WAY
- ( ) STATE PLANE COORDINATES AND BEARINGS
- (G-06) STATE PLANE COORDINATES SECTION / 1/4 CORNER IDENTIFICATION CODE

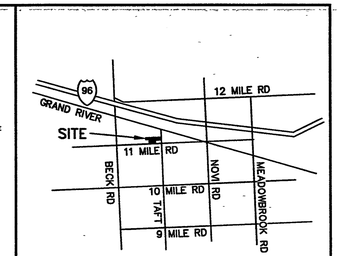
CERTIFICATION

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS," JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS IN 2005. PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA AND NSPS AND IN EFFECT ON THE DATE OF THIS CERTIFICATION, UNDERSIGNED FURTHER CERTIFIES THAT IN MY PROFESSIONAL OPINION, AS A LAND SURVEYOR REGISTERED IN THE STATE OF MICHIGAN, THE RELATIVE POSITIONAL ACCURACY OF THIS SURVEY DOES NOT EXCEED THAT WHICH IS SPECIFIED THEREIN.

DATE:

RICHARD HOFSESS
PROFESSIONAL SURVEYOR No. 47955

ZEIMET/WOZNIAK & ASSOCIATES
40024 GRAND RIVER AVE, SUITE 100
NOVI, MI 48375 PH: (248) 442-1101
FAX: (248) 442-1241



LOCATION MAP
NOT TO SCALE

(G-06)
E. 1/4 CORNER
SECTION 16
T. 2 N., R. 8 E.
CITY OF NOVI
OAKLAND CO., MI.
FD REMON DISC
#24598 IN
GRAVEL ROAD
(N 361,185.4622
E 13,358,270.54)

22-164-51-034
ZONED R-1
DUE EAST 844.97'

FD 1/2" IRON PIPE
N 00°42'50" E 98.65'
FD 1/2" IRON PIPE
FD 1/2" IRON PIPE
DUE WEST 171.00'
FD 1/2" IRON PIPE
22-164-51-023
22-164-51-076
ZONED R-1
22-164-51-024
ZONED R-A
N 00°42'50" E 233.00'
FD 1/2" IRON PIPE
DUE WEST 323.50'
AT&T FLAG
FD 1/2" IRON PIPE
PROPOSED 60' R.O.W. LINE
33' R.O.W. LINE
S 01°00'12" W 148.68'
S 01°00'12" W 2652.68'
(N 01°42'29" W 2652.39')
℄ TAFT RD. (33' WIDE 1/2 WIDTH) PUBLIC
(ASPHALT PAVING W/NO CURBS)
EAST LINE SEC. 16
22-164-51-077
ZONED R-A
S 01°00'12" W 183.00'
FD 1/2" IRON PIPE
10' TEMPORARY CONSTRUCTION EASEMENT
PROPOSED 43' R.O.W. LINE
33' R.O.W. LINE
GAS FLAG
FD 1/2" IRON PIPE
DUE WEST 348.80'
DUE WEST 323.50'
SOUTH LINE SEC. 16
℄ ELEVEN MILE RD. (33' WIDE 1/2 WIDTH) PUBLIC
(ASPHALT PAVING W/CONCRETE CURBS)
33' R.O.W. LINE
DUE WEST 2654.54'
(S 87°17'09" W 2654.11')
POINT OF BEGINNING
ZONED R-A

(F-07)
S. 1/4 CORNER
SECTION 16
T. 2 N., R. 8 E.
CITY OF NOVI
OAKLAND CO., MI.
FD REMON DISC
#24598 IN MON BOX
(N 358,408.5764
E 13,355,698.47)

(G-07)
S.E. CORNER
SECTION 16
T. 2 N., R. 8 E.
CITY OF NOVI
OAKLAND CO., MI.
FD REMON DISC
#24598 IN MON BOX
(N 358,534.2521
E 13,358,349.60)

FOR REFERENCE ONLY

TOP PRODUCER TITLE, LLC, COMMITMENT NO. PR35668, DATED JUNE 11, 2007.

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
PRELIM. SITE PLAN APPROVAL	5-28-08										
ENGINEERING SUBMITTAL	7-22-08										
STAMPING SET	9-8-08										
BID PACK #1	9-29-08										

ZEIMET WOZNIAK & ASSOCIATES
Civil Engineers & Land Surveyors
40024 GRAND RIVER AVE, SUITE 100
NOVI, MICHIGAN 48375
P: (248) 442-1101 F: (248) 442-1241 www.zeimetwozniak.com

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27225 WIXOM ROAD
NOVI, MI. 48374

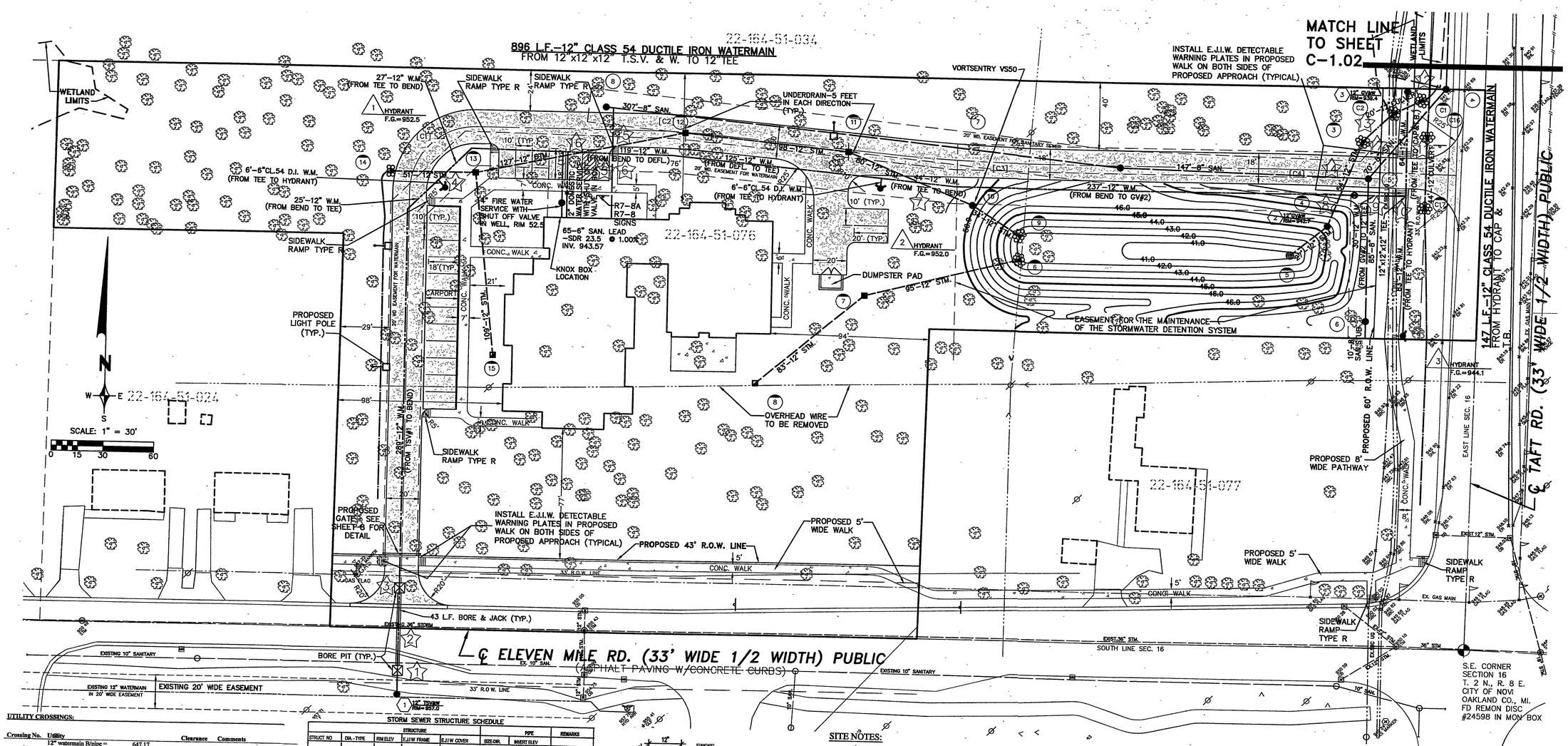
BOUNDARY SURVEY
BASILIAN RESIDENCE
CITY OF NOVI, SECTION 16 OAKLAND COUNTY MICHIGAN

FIELD BOOK 1420

DATE 2-15-08	SCALE HOR: 1" = 30' VER: 1" =
DESIGNED BY TRP	JOB NO. 07142
DRAWN BY PTG	SHEET S-1.01

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H:\Projects\07142\dwg\07142 BDY.dwg, BOUNDARY -SITE PLAN, 10/1/2008 10:46:41 AM, JHiggins



UTILITY CROSSINGS:

Crossing No.	Utility		Clearance	Comments
1	12" watermain B/pipe =	647.17		
	Ex 10" sanitary T/pipe =	941.67 (calc)	5.50'	
2	Ex 36" storm sewer B/pipe =	949 87 (calc)		
	12" watermain T/pipe =	948 37	1.50'	
3	Ex 6" gas main B/pipe =	952.5±		
	12" watermain T/pipe =	948.37	4.13'	
4	12" storm sewer B/pipe =	947.46		
	12" watermain T/pipe =	945.96	1.50'	lower watermain
5	12" storm sewer B/pipe =	946 00		
	12" watermain T/pipe =	944.50	1.50'	lower watermain
6	12" watermain B/pipe =	945.25		
	6" sanitary lead T/pipe =	943.75	1.50'	
7	12" storm sewer B/pipe =	942.70		
	12" watermain T/pipe =	941.20	1.50'	lower watermain
8	12" storm sewer B/pipe =	939.50		
	12" watermain T/pipe =	935.30	4.20'	
9	12" watermain B/pipe =	934.10		
	8" sanitary T/pipe =	932.21	1.89'	
10	Ex SBC underground bottom =	937±		
	12" watermain T/pipe =	933.30	1.70'	
11	12" watermain B/pipe =	932.79		
	8" sanitary T/pipe =	931.29	1.50'	
12	12" storm sewer B/pipe =	937.90		
	12" watermain T/pipe =	933 60	4.30'	
13	12" storm sewer B/pipe =	938 00		
	Ex SBC underground top =	936 5±	1.50'	
14	12" storm sewer B/pipe =	939.42		
	8" sanitary T/pipe =	932.23	7.19'	
15	12" storm sewer B/pipe =	945.83		
	6" sanitary lead T/pipe =	943.75	2.08'	
16	12" storm sewer B/pipe =	946.04		
	4"ø 2" water lead T/pipe =	944.54	1.50'	
17	Ex SBC underground bottom =	936.2±		
	8" sanitary T/pipe =	931.35	4.85'	
18	Ex SBC underground bottom =	932 5±		
	8" sanitary T/pipe =	926 20	6.2'	
19	Ex SBC underground bottom =	931.30		
	8" sanitary T/pipe =	926.40	4.9'	
20	Ex gas main bottom =	938.8±		
	8" sanitary T/pipe =	929.90	8.9'	
21	Ex 24" culvert B/pipe =	936.47		
	8" sanitary T/pipe =	930.97	5.5'	

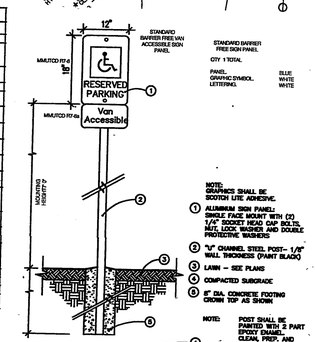
STORM SEWER STRUCTURE SCHEDULE

STRUCT. NO	STRUCTURE: DIA - TYPE	RIM ELEV	EJ I.W. FRAME	EJ I.W. COVER	PIPE: SIZE-DIR.	PIPE: INVERT ELEV	REMARKS
C1	12' E.S.	-	-	-	12" SW	938.00	
C2	12' E.S.	-	-	-	12" NE	938.20	
3	12' E.S.	-	-	-	12" SW	939.50	
4	4' M.H.	946.00		BAR GRATE	12" N	939.70	
					12" S	939.76	
5	36" STANDPIPE 48" STANDPIPE	945.00		BAR GRATE	12" E	939.90	INNER OUTER
6	12' E.S.	942.00	-	-	12" W	942.00	
7	4' M.H.	951 0	1040	TYPE N	12" E	942.26	4' SUMP
					12" W	945.66	
8	2' Inl.	950.5	1040	TYPE N	12" E	945.33	2' SUMP
9	12' E.S.	-	-	-	12" NW	942.00	
10	VORTSENTRY VS50	950 0	-	TYPE A	12" NW	942.34	
					12" SE	942.24	
11	4' C.B.	951.00	1040	TYPE M2	12" W	945.27	2' SUMP
					12" SE	945.90	
12	4' C.B.	950 00	1040	TYPE M2	12" W	945.71	2' SUMP
					12" E	945.71	
13	4' C.B.	952.00	1040	TYPE N	12" S	946.72	2' SUMP
					12" S	946.72	
					12" N	945.00	
14	12' E.S	949.50	-	-	12" E	949.50	
15	2' IN.	952.00	1040Z	TYPE N	12" N	948.35	
C16	12' E.S	—	-	-	12" S	939.50	
C17	12' E.S.	940 00	-	-	12" N	940.50	

QUANTITIES:

SANITARY SEWER (ON-SITE)	
8" SDR-26	619 L.F.
6" LEAD SDR 23.5	65 L.F.
4' MANHOLE	5 EA.
SANITARY SEWER (OFF-SITE)	
8" SDR-26	865 L.F.
4' MANHOLE	3 EA.
CONNECT TO EXISTING MANHOLE	1 EA.
RESTORATION	865 L.F.
SILT FENCE	900 L.F.
DRIVEWAY REMOVAL & REPAIR	2 EA.
WATER MAIN	
12" DUCTILE IRON CLASS – 54	1,043 L.F.
6" DUCTILE IRON CLASS – 54	12 L.F.
4" DUCTILE IRON CLASS – 54	38 L.F.
2" TYPE "K" COPPER	38 L.F.
HYDRANT ASSEMBLY	3 EA.
12" X 12"TAPPING SLEEVE VALVE & WELL	1 EA.
12" GATE VALVE & WELL	2 EA.
BORE ELEVEN MILE ROAD	43 L.F.
STORM SEWER	
12" C76-CLASS IV	823 L.F.
6" UNDERDRAIN	160 L.F.
4' MANHOLE	2 EA.
4' CATCH BASIN	4 EA.
2' INLET	2 EA.
OUTLET STRUCTURE	1 EA.
12" END SECTION W/ RIP – RAP	8 EA.
VORTSENTRY VS50	1 EA.
DITCHING	370 L.F.
SIGNS	
R7-8 (RESERVED PARKING)	1 EA.
R7-8A (VAN ACCESSIBLE)	1 EA.

SIGN NOTE:
ALL SIGNS SHALL CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.



TYPICAL SIGNAGE DETAIL
NOT TO SCALE

SITE NOTES:

1. THE SITE IS ZONED RM-1.
2. THE SITE CONTAINS 4.15 ACRES. (180,774.0 SQ. FT.±)
3. ALL DRIVES ARE PRIVATE.
4. ALL WATER MAINS AND FIRE HYDRANTS ARE TO BE INSTALLED AND BE IN SERVICE PRIOR TO CONSTRUCTION ABOVE THE FOUNDATION.
5. THE BUILDING ADDRESS IS TO BE POSTED FACING THE STREET THROUGHOUT CONSTRUCTION. THE ADDRESS IS TO BE A LEAST 3 INCHES HIGH ON A CONTRASTING BACKGROUND.
6. WATER MAIN SHALL BE PUBLIC, PLACED IN A 20' WIDE EASEMENT. ALL WATER SERVICE LEADS SHALL BE PRIVATE.
7. SANITARY SEWER SHALL BE PUBLIC, PLACED IN A 20' WIDE EASEMENT. ALL SANITARY SERVICE LEADS SHALL BE PRIVATE.
8. ALL STORM SEWER SHALL BE PRIVATE.
9. ALL WORK SHALL CONFORM TO CURRENT CITY OF NOVI STANDARDS AND SPECIFICATIONS.
10. A STORMWATER TREATMENT UNIT VORTSENTRY VS50 SHALL BE USED IN LIEU OF A FOREBAY.
11. PAVEMENT AREA: 22840 S.F. ON SITE

NUMBER OF PARKING SPACES REQUIRED
ONE PARKING SPACE FOR EACH UNIT IS REQUIRED
14 UNITS x 1 = 14 SPACES
20 SPACES ARE PROVIDED WITH ON VAN ACCESSIBLE SPACE

LEGEND

EXISTING		PROPOSED	
MANHOLE		MANHOLE	
CATCH BASIN		CATCH BASIN	
INLET		INLET	
CLEANOUT		CLEANOUT	
END SECTION		END SECTION	
ROOF DRAIN		ROOF DRAIN	
GATE VALVE		GATE VALVE	
HYDRANT		HYDRANT	
WATER SHUT-OFF		WATER SHUT-OFF	
UTILITY POLE		TREE REMOVAL	
GUY ANCHOR		SANITARY SEWER	
LIGHT POLE		STORM SEWER	
SIGN		WATER MAIN	
TREE		℄ DITCH	
TREE LINE		CONTOUR MAJOR	
SANITARY SEWER		CONTOUR MINOR	
STORM SEWER		x99.0 PROPOSED GRADE	
WATER MAIN		UTILITY CROSSING	
GAS MAIN			
ELECTRIC CABLE			
CONTOUR MAJOR			
CONTOUR MINOR			
+100.00 SPOT ELEVATION			

NOTE:

1. PROPOSED 8" SANITARY LEAD SHALL HAVE MINIMUM 5 FEET (5') OF COVER.
2. IF DEWATERING IS REQUIRED, A DEWATERING PLAN MUST BE SUBMITTED TO THE CITY.
3. IT IS THE DEVELOPER'S RESPONSIBILITY TO GRADE AND STABILIZE DISTURBED AREAS DUE TO INSTALLATION OF PUBLIC UTILITIES.
4. THE STORM WATER BASIN SHALL BE STABILIZED PRIOR TO STORM FLOW TO THE BASIN.
5. STREET SWEEPING AND DUST CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
6. VEGETATION SHALL BE ESTABLISHED WITHIN 5 DAYS OF FINAL GRADE OR WHENEVER DISTURBED AREAS WILL REMAIN UNCHANGED FOR 30 DAYS OR GREATER. 3–4" OF TOPSOIL WILL BE USED WHERE VEGETATION IS REQUIRED.
7. DIVERSION BERMS OR TERRACING SHALL BE IMPLEMENTED WHERE NECESSARY.
8. ALL DRAINAGE DITCHES SHALL BE STABILIZED WITH EROSION CONTROL BLANKET AND AND SHALL UTILIZE CHECK DAMS AS NECESSARY. DRAINAGE DITCHES STEEPER THAN 3% SHALL BE SODDED.
9. SLOPES STEEPER THAN 1V:6H (16%) SHALL BE STABILIZED WITH EROSION CONTROL BLANKET.

CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD
C1	61.26	39.00	90°00'00"	S45°00'00"W	55.15
C2	44.74	499.00	5°08'12"	N87°25'54"W	44.72
C3	89.65	1000.00	5°08'12"	S87°25'54"E	89.62
C4	17.51	1000.00	1°00'11"	N89°29'54"W	17.51

C.S.B. NOTES:
C.S.B. DENOTES SAND BACKFILL COMPACTED IN 6" LAYERS TO 95% OF MAXIMUM UNIT WEIGHT.
C.S.B. REQUIRED UNDER OR WITHIN A 1 ON 1 SLOPE OF EXISTING OR PROPOSED PAVEMENT AND AT ALL UTILITY CROSSINGS.

NOTICE:
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Project Name
BASILIAN RESIDENCE SECTION 16
NOVI, MICHIGAN

Client:
BASILIAN FATHERS -CATHOLIC CENTRAL HIGH SCHOOL
27225 WIXOM RD
NOVI, MI
(248) 596-3810

Seal:

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10/22/08	BID PACK NO. 2

Drawn: JH/JMB
Checked:
Approved:

Sheet Title:
OVERALL SITE PLAN

Project Number: ZWA 07142

Sheet Number: C1.01

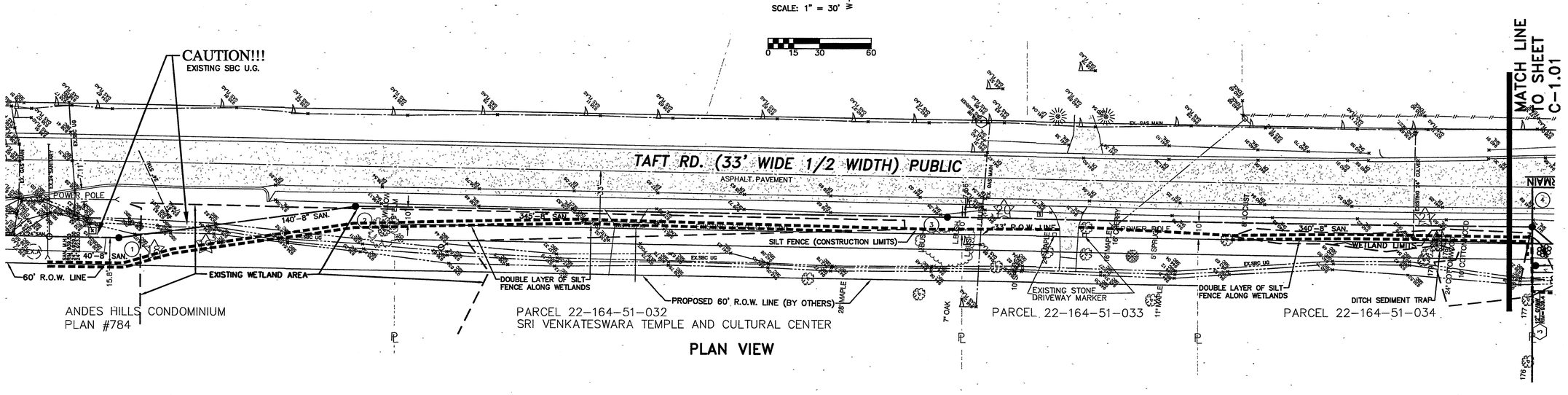
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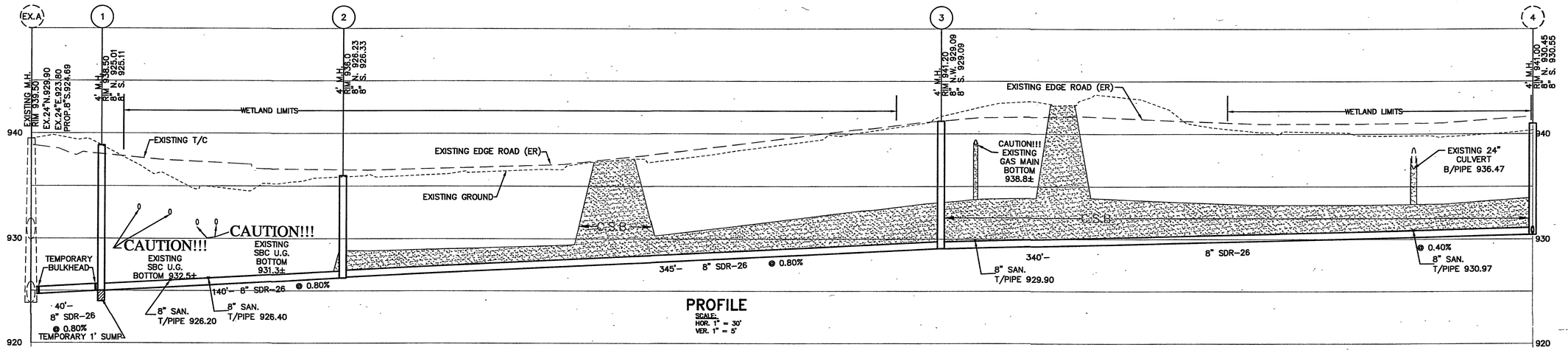
NOTE:
RESTORE ALL DISTURBED AREAS TO PRE CONSTRUCTION CONDITIONS OF BETTER

SCALE: 1" = 30'

0 15 30 60



PLAN VIEW



PROFILE

SCALE:
HOR. 1" = 30'
VER. 1" = 5'

NOTE:

1. IF DEWATERING IS REQUIRED, A DEWATERING PLAN MUST BE SUBMITTED TO THE CITY.
2. ANY DAMAGE TO TAFT ROAD PAVEMENT CAUSED BY CONSTRUCTION SHALL BE REPAIRED PER CITY STANDARDS AND SPECIFICATIONS.

SANITARY SEWER DESIGN FOR FUTURE DEVELOPMENT

AREA OF LAND ZONED RA IS 13.5 ACRES
AREA OF LAND ZONED R1 IS 12.1 ACRES

No. OF UNITS
13.5 ACRES @ 0.8 UNITS PER ACRE = 11 UNITS
12.1 ACRES @ 1.65 UNITS PER ACRE = 20 UNITS
TOTAL UNITS = 31 UNITS

31 REU x 3.5 PEOPLE/UNIT = 108.5 PEOPLE

AVERAGE DAILY FLOW
108.5 PEOPLE x 100 G.P.C.P.D. = 10,850 G.P.D.
10,850 GPD/(7.5x24x3600) = 0.017 CFS

PEAK DAILY FLOW
108.5 PEOPLE x 400 G.P.C.P.D. = 43,400 G.P.D.
43,400 GPD/(7.5x24x3600) = 0.07 CFS

SANITARY SEWER DESIGN FOR THE PROPOSED DEVELOPMENT:

12 BEDROOMS WITH A UNIT FACTOR OF
1 UNIT + 0.25 UNITS PER BEDROOM = 4.0 REU

4.0 REU x 3.5 PEOPLE PER REU = 14 PEOPLE

AVERAGE DAILY FLOW =
14 PEOPLE x 100 G.P.C.P.D. = 1400 G.P.D.
1400 G.P.D./(7.5 x 24 x 3,600) = 0.002 C.F.S.

PEAK DAILY FLOW =
14 PEOPLE x 400 G.P.C.P.D. = 5600 G.P.D.

5600 G.P.D. =
(7.5)(24)(3600) = 0.009 C.F.S.

AN 8" DIAMETER SANITARY SEWER AT 0.40% (MIN.)
HAS A CAPACITY OF 0.70 C.F.S.

C.S.B. NOTES:

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10/22/08	BID PACK NO. 2

Drawn: JH/JMB
Checked:
Approved:

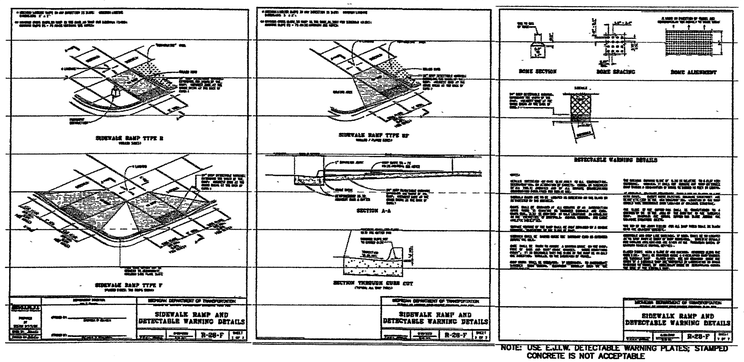
Sheet Title:
TAFT ROAD SANITARY SEWER

Project Number: ZWA 07142

Sheet Number:
C1.02

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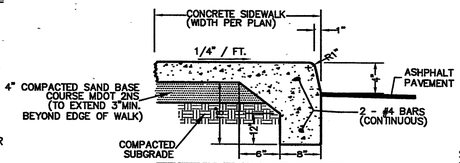
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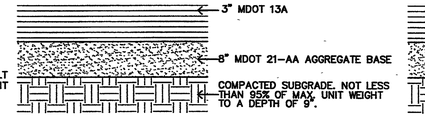
NOTE: USE E.J.I.W. DETECTABLE WARNING PLATES; STAMPED CONCRETE IS NOT ACCEPTABLE

EROSION CONTROL LEGEND

- GEOTEXTILE SILT FENCE
- ORANGE TREE FENCE
- GRAVEL MUD TRACKING MAT
- "SILT–SACK" INLET FILTER
- "STREAMGUARD EXERT II" OR "VERTI–PRO" INLET FILTER
- GRADING BUFFER
- SEED AND STAKED STRAW MULCH BLANKET
- SEDIMENT BASIN OUTLET FILTER

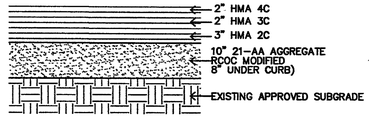


THICKENED EDGE SIDEWALK DETAIL
NOT TO SCALE



ONSITE ASPHALT SECTION
NOT TO SCALE

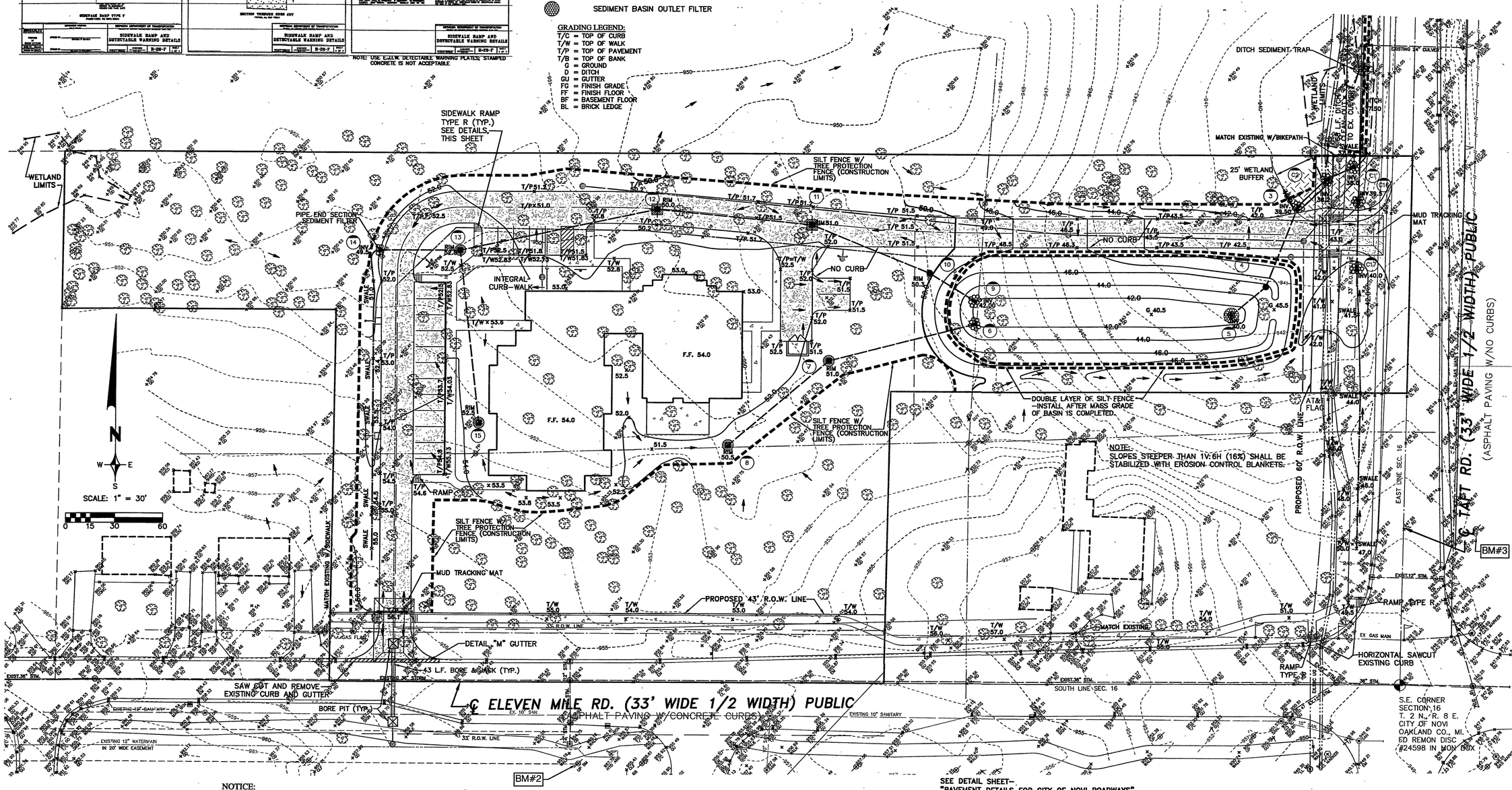
SEE DETAIL SHEET–
"PAVEMENT DETAILS FOR CITY OF NOVI ROADWAYS"



APPROACH ASPHALT SECTION
(TAFT ROAD AND 11 MILE)
NOT TO SCALE

GRADING LEGEND:

T/C = TOP OF CURB
T/W = TOP OF WALK
T/P = TOP OF PAVEMENT
T/B = TOP OF BANK
G = GROUND
D = DITCH
GU = GUTTER
FG = FINISH GRADE
FF = FINISH FLOOR
BF = BASEMENT FLOOR
BL = BRICK LEDGE



BENCHMARKS:

BM#2 MAG NAIL IN NORTH SIDE OF UTILITY POLE LOCATED ON SOUTH SIDE OF 11 MILE ROAD, 513' +/– WEST OF CENTERLINE OF TAFT ROAD
ELEVATION: 956.55
U.S.G.S. DATUM

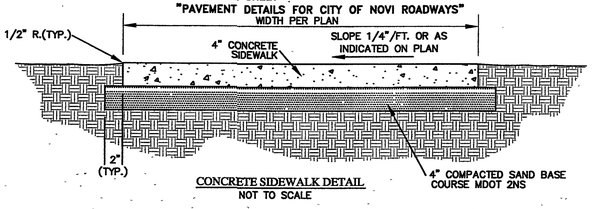
BM#3 MAG NAIL IN WEST SIDE OF UTILITY POLE LOCATED ON EAST SIDE OF TAFT ROAD, 98' +/– NORTH OF CENTERLINE OF 11 MILE ROAD
ELEVATION: 948.58
U.S.G.S. DATUM

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CONCRETE SIDEWALK DETAIL
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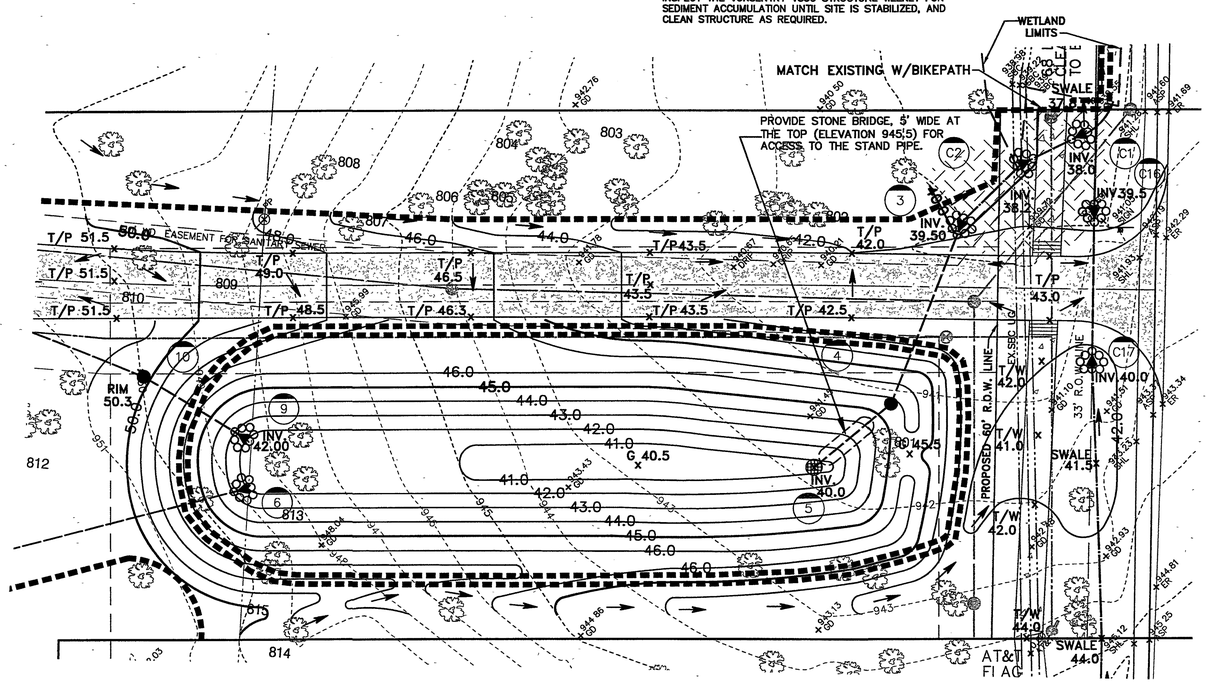
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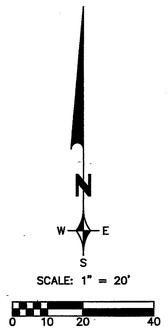
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GRADING & SOIL EROSION

Project Number: ZWA 07142

Sheet Number: C1.03

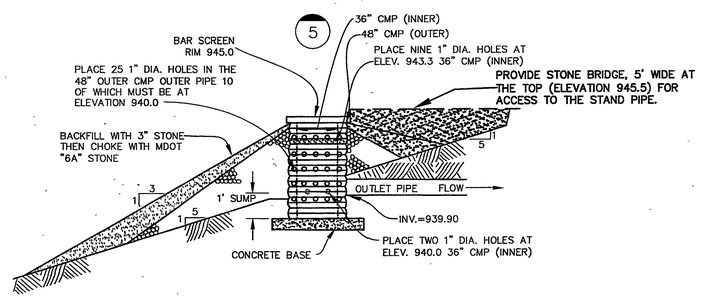
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NOTES:

1. OVER EXCAVATE THE DETENTION AREA BY TWO FEET (2') TO ALLOW FOR SEDIMENTATION TO SETTLE DURING THE CONSTRUCTION PHASE OF THIS PROJECT. AFTER CONSTRUCTION ON THE SITE IS NEARLY COMPLETE AND REVEGETATION OF THE DISTURBED AREAS IS UNDERWAY THE DETENTION AREA SHALL BE REGRADED TO FOUR INCHES (4") BELOW THE PROPOSED GRADES, THEN FOUR INCHES (4") OF TOP SOIL CAN BE PLACED ON THE DETENTION AREA PRIOR TO SEEDING AND MULCHING.
2. THE BANKS OF THE DETENTION AREA SHALL BE STABILIZED PRIOR TO DIRECTING FLOW TO THE BASIN.



STANDPIPE DETAIL
N.T.S.

RUNOFF COEFFICIENT CALCULATION:

Roof	0.4	Acres	@	0.95	=	0.38
Pavement	0.6	Acres	@	0.95	=	0.57
Grass	0.8	Acres	@	0.35	=	0.28
Woodland	1.2	Acres	@	0.15	=	0.18
	3.0	Acres				1.41

C = 1.41 / 3.0 = 0.47

Detention Calculations

100-Year

Q_A = 3.0 x 0.15 = 0.45 cfs
Q_O = 0.57 / (3.0 ac x 0.47) = 0.3191 cfs / Ac-imperv
T = -25 √ (10,312.5 + Q_O) = 154.75 min
V_S = [16,500 T ÷ (T + 25)– 40 T Q_O = 12,230 cf / Ac-imperv
V_T = 12,230 x 3.0 ac x 0.47 = 17,343 cf

Bankfull

5,160 x 3.0 ac x 0.47 = 7,275 cf

DETENTION BASIN

ELEV.	Area (s.f.)		Average Area (s.f.)		Depth (ft.)		Total Volume (c.f.)		Accumulated Volume (c.f.)
946.0									
945.0	7702								
		>	6842	x	1.0		6,842	=	17,805
944.0	5982								
		>	5175	x	1.0		5,175	=	10,963
943.0	4367								
		>	3616	x	1.0		3,616	=	5,788
942.0	2865								
		>	1877	x	1.0		1,876	=	2,172
941.0	888								
		>	296	x	1.0		296	=	296
940.0	0								

OUTLET DESIGN

Bank Full

The bank full elevation is 943.3

Q_{BF} = 7275 cf / (24 hr.)(3600 sec) = 0.08 cfs
$H_{2/3}$ = 2/3 (943.3 – 940.0) = 2.2
A = 0.08 / (0.62 [√2g (2.2)]) = 0.0108 sf

A 1-inch diameter hole has an area of 0.0055 sf

0.0108 sf / 0.0055 sf = 1.97

Therefore, place two 1" hole in the standpipe at elevation 940.0

100-Year

The 100-year elevation is at 945.0

Q_{BF} at elevation 945.0 is

Q_{BF} = 0.062 (2) (0.0055) x[√2g (5)]) = 0.12 cfs
Q = Q_A – Q_{BF} = 0.45 cfs – 0.12 cfs = 0.33 cfs
A = 0.033 cfs / (0.62 [√2g (945 – 943.3)]) = 0.0509sf

0.0509 sf / 0.0055 sf = 9.24

Therefore, place nine 1" hole in the standpipe at elevation 943.3

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FAX: (248) 354-4214
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www.zeimetwozniak.com

DEAK PLANNING + DESIGN, LLC
29000 inkster road, suite 120
southfield, michigan 48034
ph 248.357 7780 ph 248.436.3392
www.deakplanningdesign.com

Project Name
BASILIAN RESIDENCE
SECTION 16
NOVI, MICHIGAN

Client.
BASILIAN FATHERS -CATHOLIC CENTRAL HIGH SCHOOL
27225 WIXOM RD
NOVI, MI
(248) 596-3810

Seal

Date	Issued For
7-22-08	ENGINEERING SUBMITTAL
8-25-08	PER CITY REVIEW
9-8-08	STAMPING SET
9-29-08	BID PACK #1
10/22/08	BID PACK NO. 2

Drawn: JH
Checked:
Approved.

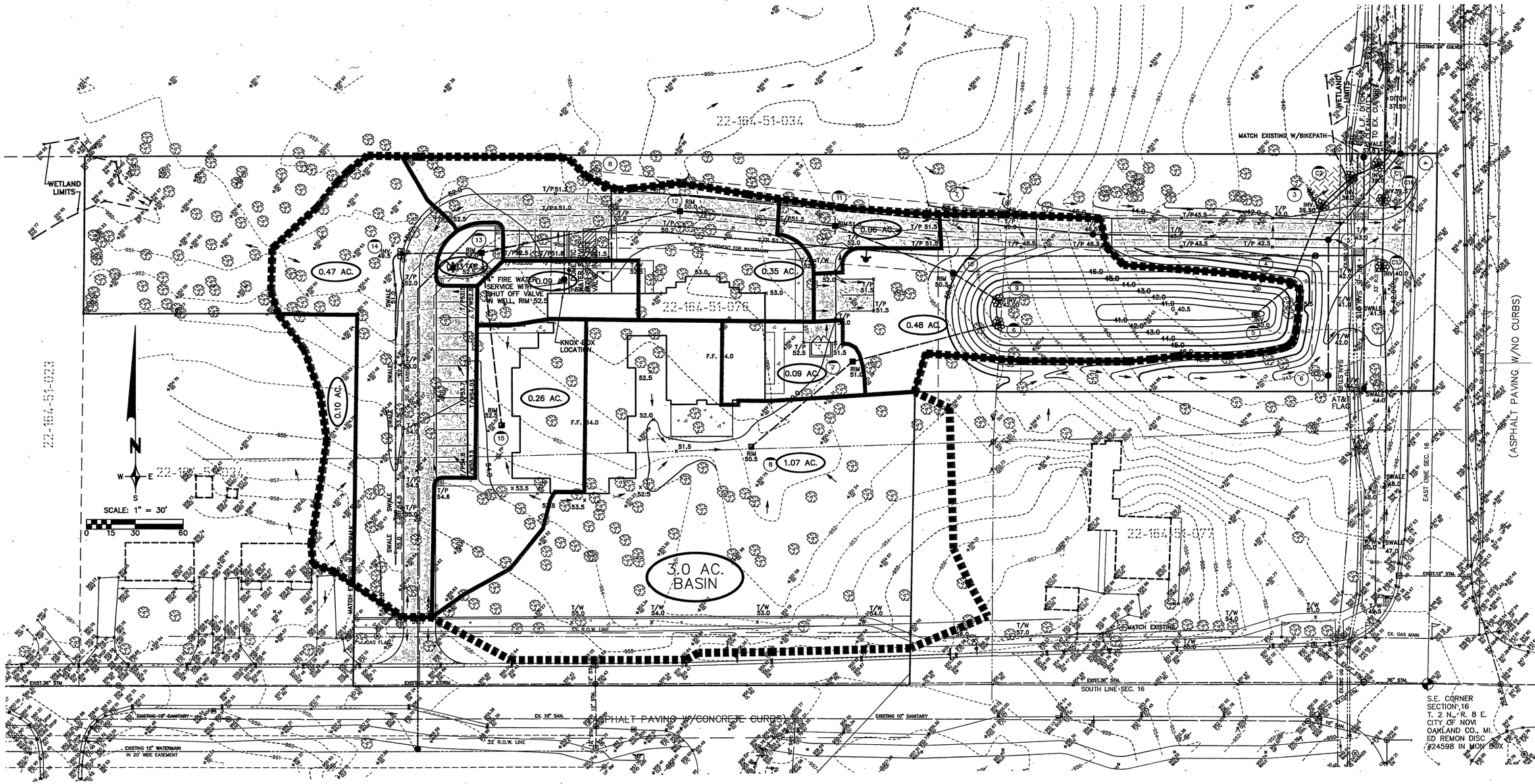
Sheet Title:
DETENTION PLAN

Project Number: ZWA 07142

Sheet Number:
C1.04

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ZEIMET\WOZNIAK																
I =	175/(T+25)	C=	0.47	T=	20	MIN.			SHEET	1	OF	1		April 11, 2008		
	10-year storm															
PROJECT:	Taft & Eleven Mile				JOB NO.	07142		COMMUNITY:		Novi			COUNTY:	Oakland		
FROM MH INPUT	TO MH	INCRE-MENT ACRES (A)	C	EQUIV. AREA 100% ACRES CA	TOTAL AREA 100% ACRES SUM CA	T TIME (MIN.)	I (IN PER HOUR)	Q=CIA C.F.S. FLOW	CAPAC-ITY OF SEWER (C.F.S.)	DIAM. OF PIPE (IN.)	LENGTH OF PIPE (FT.)	SLOPE OF PIPE (%)	SLOPE OF HG (%)	VEL. FLOW FULL (FT./ SEC.)	TIME OF FLOW (MIN.)	H.G. ELEV. UPPER END
14	13	0.57	0.47	0.27	0.27	20.00	3.89	1.04	8.4	12	51	5.50	5.50	10 6	0.1	
13	12	0.12	0.47	0.06	0.45	20.10	3.88	1.73	3.2	12	127	0.80	0.80	4.1	0.5	
12	11	0.35	0.47	0.16	0.61	20.60	3.84	2.34	2.4	12	98	0.45	0.45	3.0	0.5	
11	10	0.06	0.47	0.03	0.64	21.10	3.80	2.43	5.0	12	80	2.00	2.00	6.4	0.2	
10	9	0.00	0.47	0.00	0.64	21.30	3.78	2.43	3.0	12	34	0.70	0.70	3.8	0.1	
15	13	0.26	0.47	0.12	0.12	20.00	3.89	0.48	4.4	12	109	1.50	1.50	5.6	0.3	
8	7	1.14	0.35	0.40	0.40	20.00	3.89	1.55	2.0	12	83	0.32	0.32	2.6	0.5	
7	6	0.00	0.00	0.00	0.40	20.50	3.85	1.55	3.6	12	95	1.00	1.00	4.5	0.3	

NOTE:
THIS IS A DRAINAGE DISTRIBUTION PLAN. IT IS FOR REVIEW PURPOSES ONLY. IT SHALL NOT BE USED FOR CONSTRUCTION OR FIELD WORK.

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ph 248.357.7788 (f) 248.436.3200
e-mail: deak@deakdesign.com

Project Name
BASILIAN RESIDENCE SECTION 16 NOVI, MICHIGAN

Client:
BASILIAN FATHERS -CATHOLIC CENTRAL HIGH SCHOOL
27225 WIXOM RD
NOVI, MI
(248) 596-3810

Seal:

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Drawn: JH
Checked:
Approved:

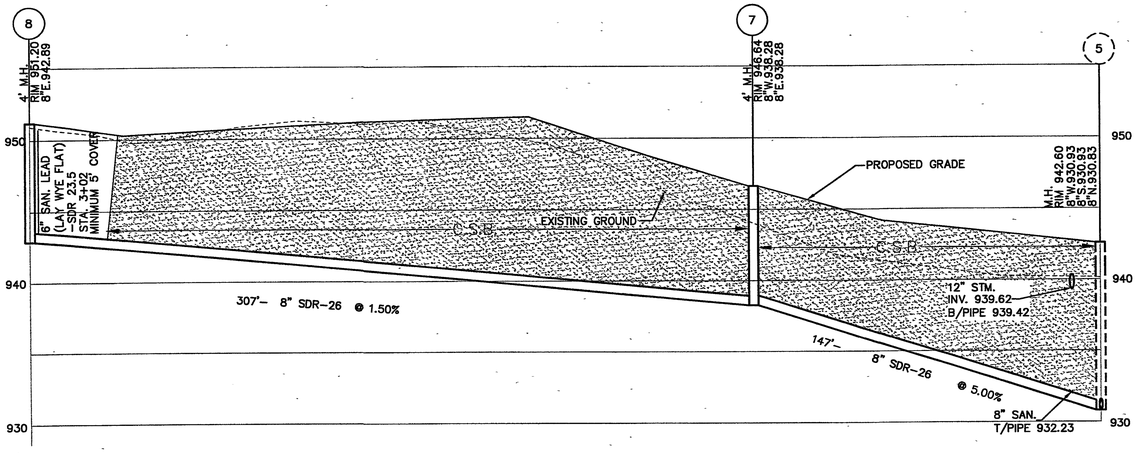
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STORMWATER MANAGEMENT

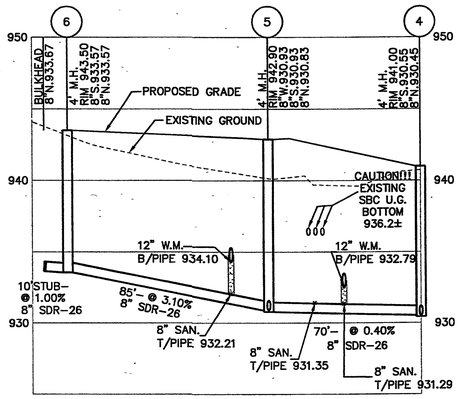
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Sheet Number:
C1.05

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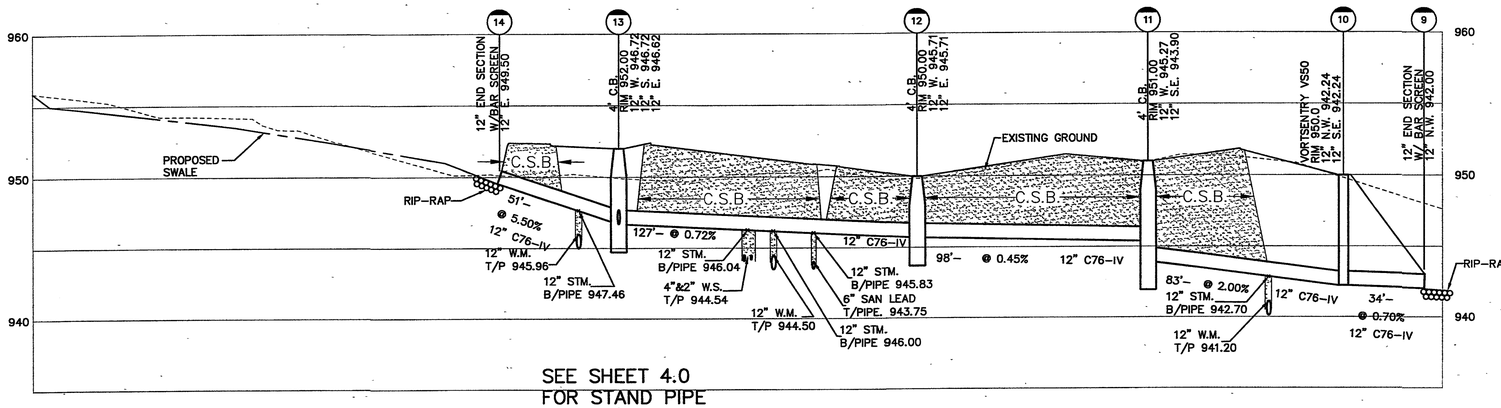
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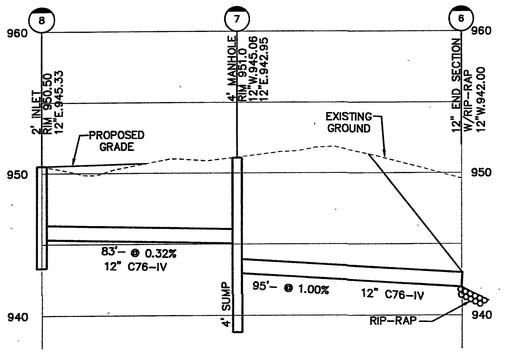


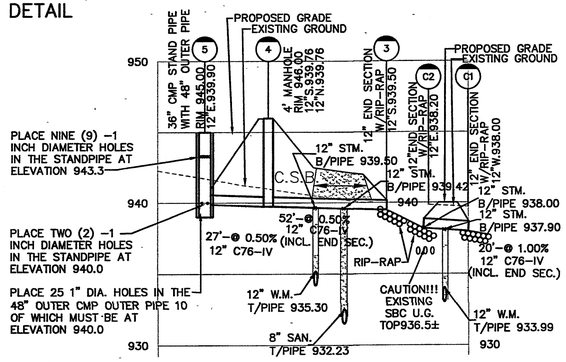
SANITARY SEWER

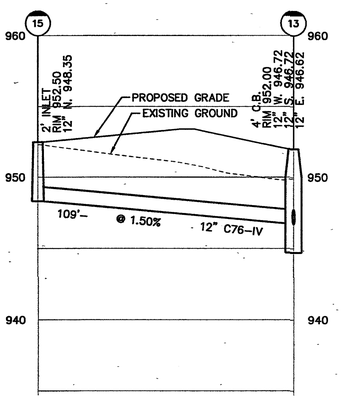
SCALE:
HOR. 1" = 30'
VER. 1" = 5'

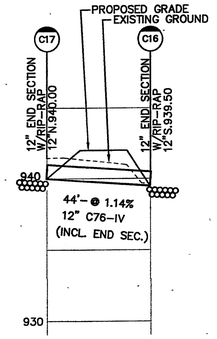


SEE SHEET 4.0
FOR STAND PIPE
DETAIL









NOTE:

1. THE 10–YEAR HGL FOR THE PROPOSED STORM SEWER SYSTEM IS WITHIN THE PIPES.

STORM SEWER

SCALE:
HOR. 1" = 30'
VER. 1" = 5'

ONE YEAR FLOW RATE

I = 1.6 inches/hour
Ac. = 0.61
Q = 1.6 x 0.61 = 0.97 c.f.s.

Therefore use VS 50 VortSentry

VortSentry Model	Water Quality Flow Rate cfs	l/s	Sediment Storage yd³	m³
VS30	0 - 0.3	0 – 7	0.8	0.6
VS40	0.3 – 0.6	7 - 15	1.4	1.1
VS50	0.6 – 1.1	15 - 30	2.2	1.7
VS60	1.1 – 1.8	30 - 50	3.1	2.4
VS70	1.8 – 2.7	50 - 75	4.3	3.3
VS80	2.7 – 3.9	75 – 110	5.6	4.3

C.S.B. NOTES:

C.S.B. DENOTES SAND BACKFILL COMPACTED IN 6" LAYERS TO 95% OF MAXIMUM UNIT WEIGHT.

C.S.B. REQUIRED UNDER OR WITHIN A 1 ON 1 SLOPE OF EXISTING OR PROPOSED PAVEMENT AND AT ALL UTILITY CROSSINGS.

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RESIDENCE
NOVI, MICHIGAN

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CENTRAL HIGH SCHOOL
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Seal:

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8-25-08	PER CITY REVIEW
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10/22/08	BID PACK NO. 2

Drawn: JH
Checked:
Approved.

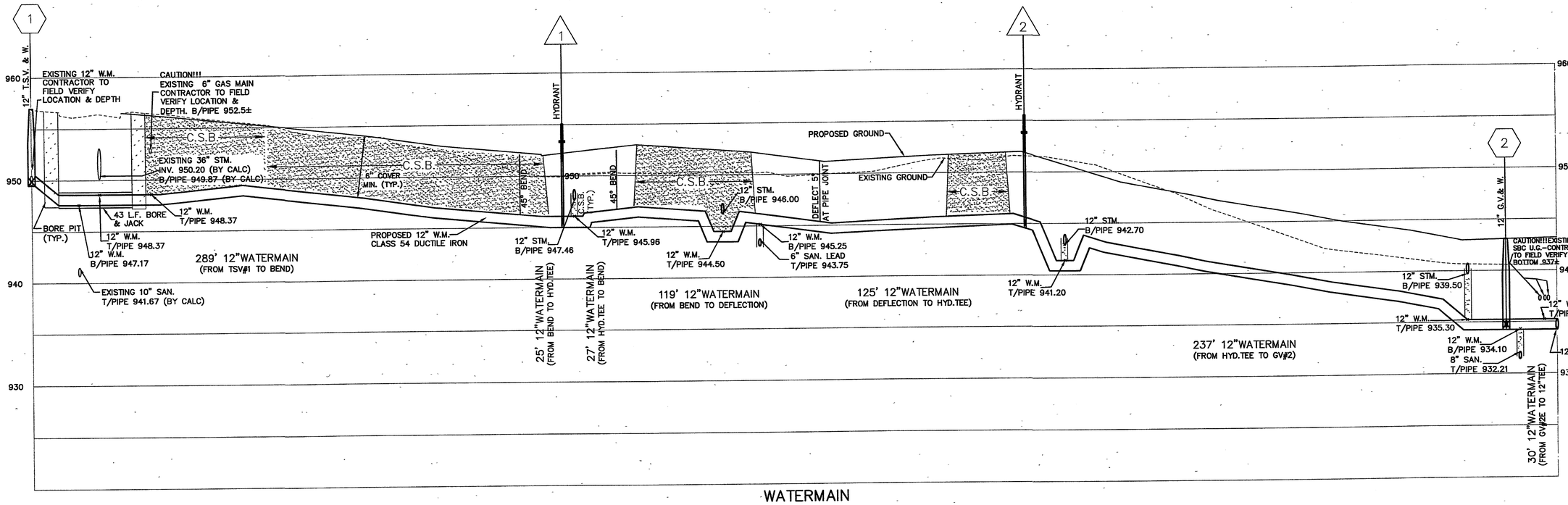
Sheet Title:
UTILITY PROFILES

Project Number: ZWA 07142

Sheet Number:
C1.06

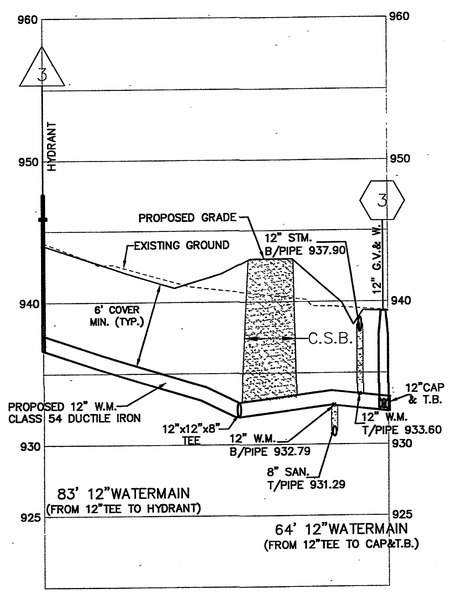
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WATERMAIN

SCALE:
HOR. 1" = 30'
VER. 1" = 5'



WATERMAIN

SCALE:
HOR. 1" = 30'
VER. 1" = 5'

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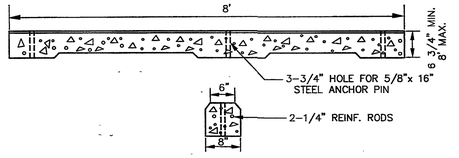
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Sheet Title:
UTILITY PROFILES

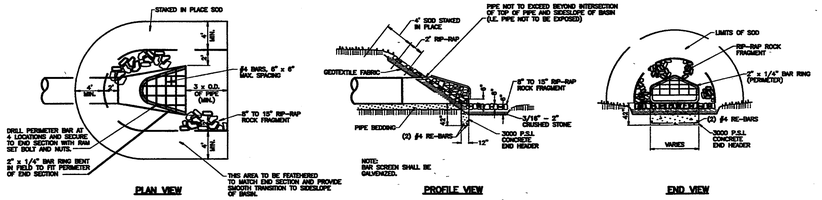
Project Number: ZWA 07142

Sheet Number:
C1.07

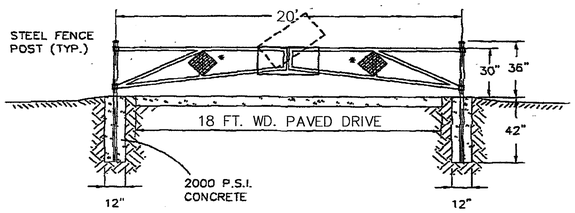
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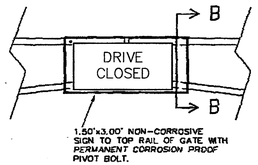
BUMPER BLOCK DETAIL
NOT TO SCALE



END SECTION AND BAR SCREEN DETAIL
NO SCALE



* AT EACH LOCATION, 2-12"x12" RED REFLECTORIZED DIAMOND PANELS, PLACED BACK TO BACK.

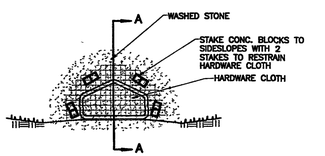


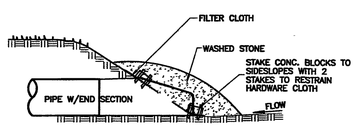
NOTE: IF A LOCKED GATE IS DESIRED (OPTIONAL) LOCKING MECHANISMS SHALL BE FURNISHED BY THE CITY.

GATE BARRICADE DETAIL
NO SCALE

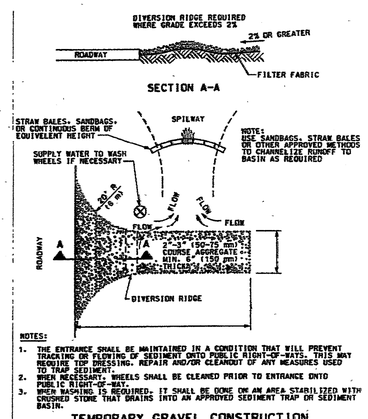


SECTION B-B





PIPE END SECTION SEDIMENT FILTER
NO SCALE



NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE / EXIT

SILTSACK®
SPECIFICATIONS

NOTED THE SILTSACK® WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS.

REGULAR FLOW SILTSACK®
(FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)

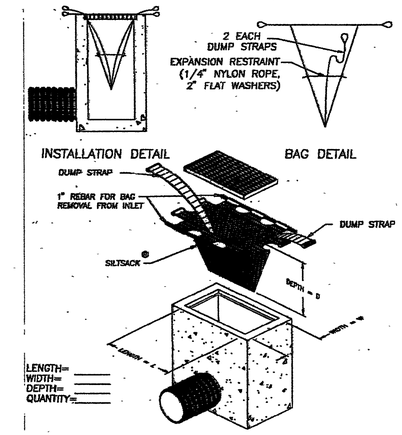
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	200 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	300 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.53 SEC -1

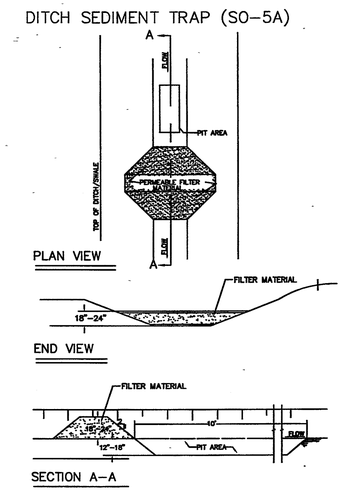
HI-FLOW SILTSACK®
(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

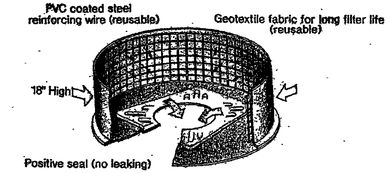
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	85 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	250 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

OIL-ABSORBANT SILTSACK®
(FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPILLS)

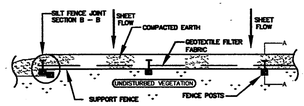
DEPENDING ON YOUR PARTICULAR APPLICATION, THE SILTSACK® CAN BE MADE FROM EITHER ONE OF THE ABOVE FABRICS WITH AN OIL-ABSORBANT PILLOW INSERT OR, MADE COMPLETELY FROM AN OIL-ABSORBANT SILTSACK® WITH A WOVEN PILLOW INSERT.

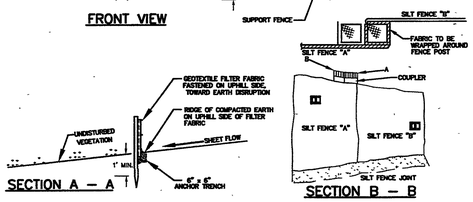




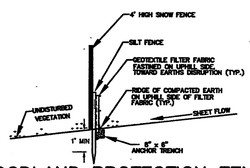


StreamGuard EX ERT II
FOR REAR YARD INLET PROTECTION





SILT FENCE



WOODLAND PROTECTION FENCING WITH SILT FENCE

SOIL EROSION NOTES:

1. The developer is responsible to grade and stabilize disturbances due to the installation of public utilities.
2. The banks of the storm water basin will be stabilized prior to directing flow to the basin.
3. Street sweeping and dust control shall be the responsibility of the contractor.
4. Vegetation shall be established within 5 days of final grade, or whenever disturbed areas will remain unchanged for 30 days or greater. 3-4" of topsoil will be used where vegetation is required..
5. Diversion berms or terracing shall be implemented where necessary.
6. All drainage ditches shall be stabilized with erosion control blankets and shall utilize check dams as necessary. Drainage ditches steeper than 3% shall be sodded.
7. Slopes steeper than 1v:6h (16%) shall be stabilized with erosion control blankets.
8. The silt fencing and tree protection fencing shall not occur prior to the initial City pre-construction meeting.

SOIL EROSION CONTROL SEQUENCE

1. Install woodland protection fence, perimeter silt fence, gravel ditch sediment trap in the Taft Road ditch and gravel mud tracking mat at the construction entrance.
2. Mass grade the site including the detention area. Install underground utilities including sanitary sewer, storm sewer, and watermain. Immediately after installation of the storm sewer, provide inlet filters on all inlets to the storm sewer and a pipe end section sediment filter on End Section 14.
3. Install aggregate base course for pavement. Repair or replace inlet filters disturbed during construction.
4. Construct building.
5. Install pavement. Repair or replace inlet filters as required.
6. Complete building construction. Upon completion of building construction, landscape site. Remove temporary erosion controls when site is stabilized. See landscape plans for details of permanent stabilization of landscaped areas.
7. Upon completion of construction, clean storm sewer and detention basin of any accumulated sediment and debris. The detention basin will be converted from a temporary sedimentation basin to a detention basin.
8. Additional soil erosion control measures may be required as determined in the field.

MAINTENANCE TASKS AND SCHEDULE DURING CONSTRUCTION
FOR THE STORMWATER MANAGEMENT AND EROSION CONTROL FACILITIES

TASKS:	COMPONENTS: Storm Sewer System	Catch Basin Sumps	Catch Basin and Inlet Castings	Outflow Control Structures	Rip-Rap	Storm Detention Basin	Vertiserty VS 50	SCHEDULE:
Inspect for sediment accumulation		X	X	X	X		X	X	Weekly prior to turnover Quarterly after turnover
Removal of sediment accumulation		X	X	X	X		X	X	As needed* & prior to turnover
Inspect for floatables and debris		X	X	X	X		X	X	Quarterly
Cleaning of floatables and debris		X	X	X	X		X	X	Quarterly and at turnover
Inspection for erosion					X	X	X		Weekly
Re-establish permanent vegetation on eroded slopes				X	X		X		As needed and prior to turnover
Replacement of gravel jackets					X				As needed
Mowing							X		0 to 2 times per year
Inspect structural elements of facilities		X	X	X	X	X	X	X	Annually and at turnover
Make adjustments repairs and or replacements as determined by pre-turnover inspection		X	X	X	X	X	X	X	As required

* "As needed" means when sediment has accumulated to a maximum of one foot depth in structures and to within 6" of the permanent water elevation in the detention basins.

FOR REFERENCE ONLY

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29000 inkster road, suite 120
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Project Name
BASILIAN RESIDENCE
NOVI, MICHIGAN

Client:
BASILIAN FATHERS -CATHOLIC CENTRAL HIGH SCHOOL
27225 WIXOM RD
NOVI, MI
(248) 596-3810

Seal

Date	Issued For
7-22-08	ENGINEERING SUBMITTAL
8-25-08	PER CITY REVIEW
9-8-08	STAMPING SET
9-17-08 -	REVISE PER SOIL EROSION AND SEDIMENTATION CONTROL REVIEW
9-29-08	BID PACK #1
10/22/08	BID PACK NO. 2

Drawn: JH
Checked:
Approved:

Sheet Title:
SOIL EROSION DETAILS & DETAILS

Project Number: ZWA 07142

Sheet Number:
C1.08

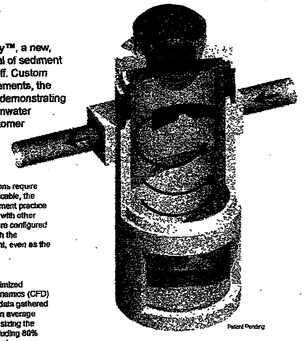
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Vortechnics knows that no two stormwater projects are alike.

That's why we are introducing VortSentry™, a new, engineered solution for the effective removal of sediment and free-floating pollutants from urban runoff. Custom designed to meet specific regulatory requirements, the VortSentry™ is another way Vortechnics is demonstrating its commitment to provide site-specific stormwater solutions backed by the industry's best customer service and unparalleled technical support.


Patent Pending

Effective Best Management Practice
Ideally suited for applications where stormwater regulations require that pollutants are reduced to the maximum extent practicable, the VortSentry™ can be used as a standalone best management practice (BMP) or as a pre-treatment system used in conjunction with other stormwater treatment devices. All VortSentry™ models are configured with a flow partition to ensure that the rate of flow through the treatment chamber will not cause pollutant re-entrainment, even as the total flow rate through the system increases.

New Lab-Tested Technology
The sizing and performance of the VortSentry™ was optimized through a combination of rigorous computational fluid dynamics (CFD) modeling and full-scale laboratory testing. Performance data gathered through testing of a silica-based sediment sample with an average particle size of 110 microns provides a solid baseline for sizing the VortSentry™ to meet specific regional requirements, including 80% total suspended solids (TSS) removal on a net annual basis.

Easy to Install & Maintain
The VortSentry™ features a round concrete manhole structure for easy installation (often without the use of a crane) and unobstructed maintenance access. With its small footprint, the VortSentry™ is ideal for tight sites and retrofits.

Learn More!

Call us at 877.907.8676 or visit us at www.vortechnics.com to find out if the VortSentry™ is right for your next stormwater project.

Committed to Clean Water®

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VortSentry™ at a Glance

- Round, lightweight, pre-manufactured concrete structure for easy installation (often without the use of a crane)
- Available in sizes ranging from 4 to 12 feet in diameter
- Designed to treat flow rates ranging from 0.5 to 8.0 cfs
- Capable of treating high flow rates while minimizing pollutant washout
- Provides unobstructed access for removal of pollutants using vacuum equipment



The VortSentry™ effectively captures pollutants from stormwater runoff.

1. Inlet
Stormwater runoff is conveyed into the unit through the inlet pipe

2. Inlet Aperture
At low flow rates, all runoff is directed through the inlet aperture where it enters the treatment chamber tangentially.

3. Treatment Chamber
Gravitational separation of floating and sinking pollutants is enhanced by the gentle swirling motion in the treatment chamber, which causes the settleable solids to slide and form a conical pile in the storage sump.

4. Treatment Chamber Baffle
Trash, hydrocarbons and other floating debris are retained in the treatment chamber by the baffle wall, which extends below the resting water surface elevation.


Patent Pending

5. Flow Partition
At higher flow rates, a portion of the runoff will be diverted over the flow partition and around the treatment chamber, while settleable solids are directed into the treatment chamber

6. Outlet Flow Control
Flow rates through the treatment chamber are limited by the outlet flow control orifice.

7. Head Equalizing Baffle
The head equalizing baffle allows operating rates in the treatment chamber to remain relatively constant even as flow rates in the inlet chamber increase substantially, which minimizes washout potential.

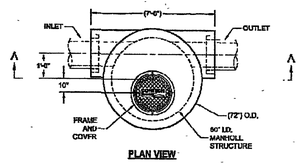
VortSentry™ Models & Dimensions

Model	Diameter		Depth (below invert)		Typical Inlet Pipe Size*	
	ft	mm	ft	m	in	mm
VS30	4	1,200	6.5	2.0	12	300
VS40						
VS50	6	1,800	8.3	2.5	18	450
VS70						
VS80	8	2,400	10.1	3.0	24	600

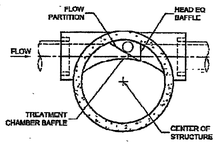
*Note: To ensure that the most appropriate VortSentry™ model size is selected, please contact a Vortechnics representative.

Committed to Clean Water®

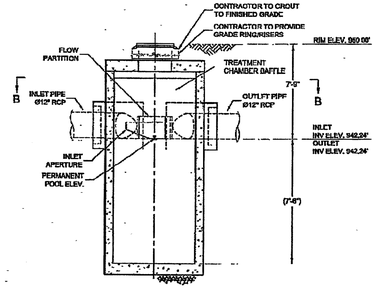
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PLAN VIEW



SECTION B-B



SECTION A-A

SUBMITTAL

VortSentry®

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MATERIALS LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
1	INTERNAL ALUM. COMPONENTS	CONTECH
1	SEALANT FOR JOINTS	CONTRACTOR
1	Ø26" X 4" FRAME AND COVER	CONTRACTOR

SITE DESIGN DATA

WATER QUALITY FLOW RATE	1.1 cfs
PEAK FLOW RATE	2.42 cfs
RETURN PERIOD OF PEAK FLOW	10 yrs

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH STORMWATER SOLUTIONS REPRESENTATIVE. www.contechstormwater.com
4. VORTSENTRY WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE AND CASTINGS SHALL MEET AASHTO H20 LOAD RATING.

INSTALLATION NOTES
1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE VORTSENTRY MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
3. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLY STRUCTURE.
4. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = 13,000 LBS

DRAWING NO.	VS50-SHELVING
SCALE:	NONE
DESIGNED	DRAWN
RJR	NJH
DATE	
03/04/08	

VORTSENTRY MODEL VS50 - 35809-01
BASILIAN RESIDENCE
NOVI, MI
SITE DESIGNATION: VS50

CONTECH STORMWATER SOLUTIONS
www.contechstormwater.com

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Project Name
BASILIAN RESIDENCE
SECTION 16
NOVI, MICHIGAN

VortSentry® Net Annual TSS Removal Efficiency Estimate

CONTECH STORMWATER SOLUTIONS

Basilian Residence
Novi, MI
Model VS50
System VS50

Design Ratio[1] = 1.36 acres x 0.47 / 98 ft3 = 0.007

Rainfall Intensity "/hr	Flow Rate cfs	Operating Rate[2] cfs/ft²	% Total Rainfall Depth[3]	Rmvl. Effcy[4] (%)	Rel. Effcy (%)
0.08	0.05	0.00052	34.4%	98.0%	33.7%
0.16	0.10	0.00104	18.2%	96.9%	17.6%
0.24	0.15	0.00156	9.4%	95.8%	9.0%
0.32	0.20	0.00208	5.7%	94.7%	5.4%
0.40	0.26	0.00260	3.3%	93.6%	3.0%
0.48	0.31	0.00313	3.1%	92.5%	2.9%
0.56	0.36	0.00365	2.2%	91.4%	2.0%
0.64	0.41	0.00417	3.1%	91.4%	2.9%
0.72	0.46	0.00469	2.1%	89.6%	1.8%
0.80	0.51	0.00521	1.6%	87.7%	1.4%
0.88	0.56	0.00573	2.0%	85.9%	1.6%
0.96	0.61	0.00625	1.0%	84.0%	0.9%
1.04	0.66	0.00677	1.5%	84.0%	1.3%
1.12	0.72	0.00729	1.2%	83.2%	1.0%
1.20	0.77	0.00781	1.3%	83.2%	1.1%
1.28	0.82	0.00833	1.1%	82.4%	0.9%
1.36	0.87	0.00885	1.0%	82.4%	0.8%
1.44	0.92	0.00938	0.8%	81.6%	0.6%
1.52	0.97	0.00990	0.8%	81.6%	0.7%
1.60	1.02	0.01042	0.3%	80.8%	0.2%
				Net Annual TSS Removal Efficiency =	91%

1 - Design Ratio = (Total Drainage Area x Runoff Coefficient) / VortSentry Treatment Volume
= The Total Drainage Area and Runoff Coefficient are specified by the site engineer.
2 - Operating Rate (cfs/ft²) = Rainfall Intensity ("/hr) x Design Ratio
3 - Based on 5.5 years of 15 minute precipitation data form NCDC station 2102 at Detroit City Airport in Detroit, MI
4 - Removal efficiencies are based on Vortechnics laboratory verified removal of OK-110, a commercially available silica gradation with a mean particle size of 110 microns, containing particles ranging from 53-150 microns

Calculated by: RJR Date: 09/04/08 Checked by: Date:

35809 ADS VS50 9/4/2008

VortSentry® Stage Discharge Calculations

CONTECH STORMWATER SOLUTIONS

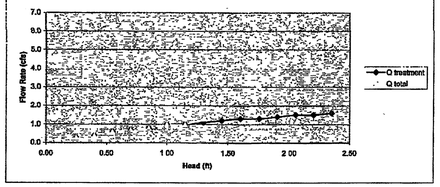
Basilian Residence
Novi, MI
Model VS50
System VS50

Treatment Chamber Outlet Orifice		Flow Partition Weir	
Orifice Area (ft²) =	0.299	Crest El. (ft) =	1.08
Discharge Coefficient =	0.56	Weir Crest Length (ft) =	1.11
		Discharge Coefficient =	3.33

Head (ft)	Elevation (ft)	Treatment Flow (cfs)	Bypass Flow Rate (cfs)	Total Flow Rate (cfs)
0.25	942.49	0.3	0	0.3
0.40	942.64	0.4	0	0.4
0.55	942.79	0.6	0	0.6
0.70	942.94	0.7	0	0.7
0.85	943.09	0.8	0	0.8
1.00	943.24	1	0	1
1.15	943.39	1	0	1
1.30	943.54	1.1	0.2	1.3
1.45	943.69	1.2	0.6	1.8
1.60	943.84	1.3	1.1	2.4
1.75	943.99	1.3	1.8	3.1
1.90	944.14	1.4	2.4	3.8
2.05	944.29	1.5	3.2	4.7
2.20	944.44	1.5	4	5.5
2.35	944.59	1.6	4.9	6.5

Calculated by: RJR Date: 9/4/2008 Checked By: Date:

Stage Discharge



35809 ADS VS50 9/4/2008

Client:
BASILIAN FATHERS -CATHOLIC CENTRAL HIGH SCHOOL
27225 WIXOM RD
NOVI, MI
(248) 596-3810

Seal:

Date	Issued For
9-8-08	STAMPING SET
9-29-08	BID PACK #1
10/22/08	BID PACK NO. 2

Drawn: JH
Checked:
Approved:

Sheet Title:
VORTECHNICS DETAILS

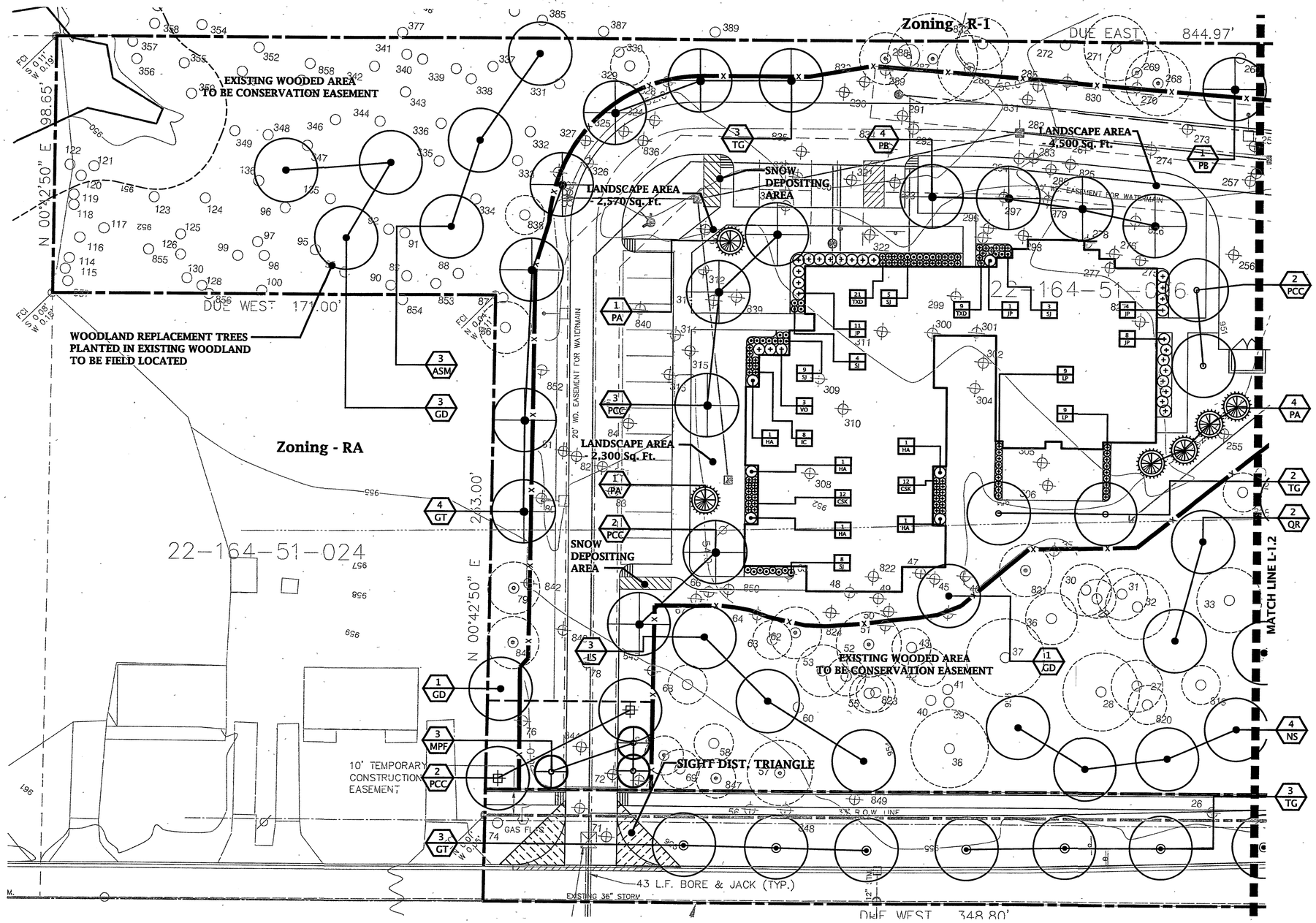
Project Number: ZWA 07142

Sheet Number:
C1.09

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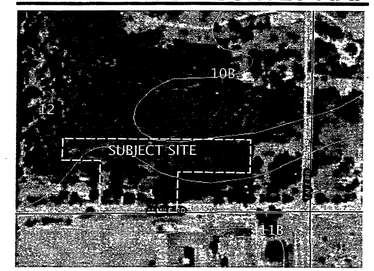
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SITE DATA

R.O.W. FRONTAGE	
Eleven Mile Road Frontage:	349 ln. ft.
Taft Road Frontage:	149 ln. ft.
Total Frontage:	**498'**
Trees Required (One Tree/ 35 ln. ft.):	11 Trees
Trees Provided:	**11 Trees**
Green Belt	
Eleven Mile	
Required Canopy Trees	2 Trees
Provided Canopy Trees	**2 Trees**
Required Subcanopy Trees	3 Trees
Provided Subcanopy Trees	**3 Trees**
Taft Road	
Required Canopy Trees	4 Trees
Provided Canopy Trees	**4 Trees**
Required Subcanopy Trees	6 Trees
Provided Subcanopy Trees	**6 Trees**
WOODLAND REPLACEMENT TREES	
Regulated Woodland Trees on Site:	416 Trees
Woodland Trees Removed:	119 Trees
Dead or Diseased Trees Removed:	42 Trees
Woodland Trees Impacted/Saved:	38 Trees
Woodland Replacement Trees Req.:	172 Trees
Woodland Replacement Trees Provided:	**25 Trees**
Woodland Replacement Credits Needed:	**147 Trees**
Woodland Replacement Tree Fund Donation:	**$58,800**
BUILDING LANDSCAPE REQUIREMENTS	
Required Landscaping (perimeter x 8):	5,728 Sq. Ft.
(716 Ln. Ft. Building Perimeter)	
Provided Landscaping:	**9,370 Sq. Ft.**
Required Landscape Trees (3 trees/unit):	18 Trees
(6 First Floor Dwelling Units)	
Provided Landscape Trees:	**18 Trees**
Frontage Foundation Coverage Required	60%
Frontage Foundation Coverage Proposed	**60.5%**
Drive Trees	
Required Drive Trees (One Tree/ 35 ln. ft.):	25 Trees
(887 Ln. Ft. interior Roads)	
Provided Drive Trees:	**25 Trees**
Retention Basin Landscaping	
Required Basin Rim Coverage:	70%
Provided Basin Rim Coverage:	**70%**
TOTAL TREES REQUIREMENTS	
Total Trees Required:	239 Trees
Total Trees Provided:	**103 Trees**

SOIL SURVEY MAP



12 – Brookston and Colwood Loams
11B – Capac Sandy Loam 0–4% Slopes
10B – Marlette Sandy Loam 1–6% Slopes

PLANT LIST

sym.	qty.	botanical name	common name	caliper	spacing	root	height	price	total
WOODLAND REPLACEMENT TREES									
ASM	3	Acer saccharum 'Majesty'	Sugar Maple	2.5"	as shown	B&B		$400.00	$ 1,200.00
GD	5	Gymnocladus dioica	Kentucky coffee tree	2.5"	as shown	B&B		$400.00	$ 2,000.00
LS	3	Liquidambar styraciflua	Sweet Gum	2.5"	as shown	B&B		$400.00	$ 1,200.00
NS	4	Nyssa Sylvatica	Sour Gum	2.5"	as shown	B&B		$400.00	$ 1,600.00
QR	2	Quercus rubra	Red Oak	2.5"	as shown	B&B		$400.00	$ 800.00
	4	4" Bark Mulch - 4' dia. Around Trunk	26 Trees: 4 c.y. required- units in cubic yards)					$ 20.00	$ 80.00
								Total	$ 6,880.00

sym.	qty.	botanical name	common name	caliper	spacing	root	height	price	total
SHADE TREES									
PCC	9	Pyrus calleryana 'Cleveland Select'	Cleveland pear	3" cal	as shown	B&B		$ 400.00	$ 3,600.00
GT	7	Gleditsia triacanthos 'Trueshade'	Trueshade honeylocust	3" cal.	as shown	B&B		$ 400.00	$ 2,800.00
PR	5	Platanus x a. 'Bloodgood'	Bloodgood London Plane tree	3" cal	as shown	B&B		$ 400.00	$ 2,000.00
TG	8	Tilia cordata 'Greenspire'	Greenspire linden	3" cal	as shown	B&B		$ 400.00	$ 3,200.00
EVERGREEN TREES									
PA	6	Picea abies	Norway spruce		as shown	B&B	7'	$ 325.00	$ 1,950.00
ORNAMENTAL TREES									
MPF	3	Malus 'Prairiefire'	Prairiefire crabapple	2 5" cal	as shown	B&B		$ 250.00	$ 750.00
SHRUBS - EVERGREEN									
JP	24	Juniperus ch Pfitzerana 'Compacta'	Compact pfitzer juniper		6' O.C.	B&B	36"	$ 50.00	$ 1,200.00
TXD	30	Taxus x.m. 'Densiformis'	Dense yew		4' O C.	B&B	30"	$ 50.00	$ 1,500.00
LARGE SHRUBS - DECIDUOUS									
HA	5	Hydrangea a. 'Annaelle'	Annabelle hydrangea		4' O C	B&B	30"	$ 50.00	$ 250.00
VO	3	Viburnum o. 'Compactum'	Compact European cranberrybush		4' O C.	B&B	36"	$ 50.00	$ 150.00
LP	18	Ligustrum Vulgare 'Lodense'	Lodense Privet		4' O.C.	B&B	36"	$ 50.00	$ 900.00
SMALL SHRUBS - DECIDUOUS									
CSK	24	Cornus s 'Kelseyi'	Kelseydwarf dogwood		4' O C	B&B	24"	$ 50.00	$ 1,200.00
IC	8	Ilex crenata 'Green Luster'	Green luster holly		2- 3' O C	B&B	18"	$ 50.00	$ 400.00
SJ	29	Spiraea j 'Little Princess'	Little Princess spiraea		2- 3' O C	B&B	30"	$ 50.00	$ 1,450.00
OTHER									
IRRIGATION									$ 10,000.00
SHREDDED HARDWOOD BARK MULCH- 18 C Y									$ 720.00
SEED- 26,000 Sq Ft.									$ 2,600.00
								Total	$ 32,070.00

NOTES

ESTIMATED PLANTING TIME
All plant material shall be installed from April 1st through November 15th startng in the first year the project is approved and grading/building permits have been issued.
NOTE: All plant material shall be grown in northern climate nurseryes
NOTE: All plant material shall be installed in accordance with ordinance #97-18.133 section 2509.
NOTE: All plant material shall be No. 1 grade trees and guaranteed for two(2) years from date of installation.
NOTE: Woodland protection signs indicating areas of protected woodlands shall be placed and maintained on the site at locations approved by the city.



LEGEND

- INTERIOR ROAD TREES
- GREEN BELT TREES
- STREET TREES
- BUILDING LANDSCAPING TREES
- WOODLAND REPLACEMENT TREES
- SUB-CANOPY ORNIMENTAL TREES
- BUILDING LANDSCAPING EVERGREEN TREES
- SHRUBS

FOR REFERENCE ONLY

0 5 10 20 40 80
scale: 1" = 20'

north

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Phone: (734) 354-0094
Fax: (734) 354-0095

Project Name
BASILIAN
RESIDENCE
NOVI, MICHIGAN

Client:
BASILIAN FATHERS -CATHOLIC CENTRAL HIGH SCHOOL
27225 WIXOM RD
NOVI, MI
(248) 596-3810

Seal:

Date	Issued For
RVSD. PER. ENG	5/28/08
Rvsd Per Cmnts	7/21/08
STAMPING SETS	9/8/08
Bid Pack #1	9/29/08
10/22/08	BID PACK NO. 2

Drawn: KD
Checked:
Approved:

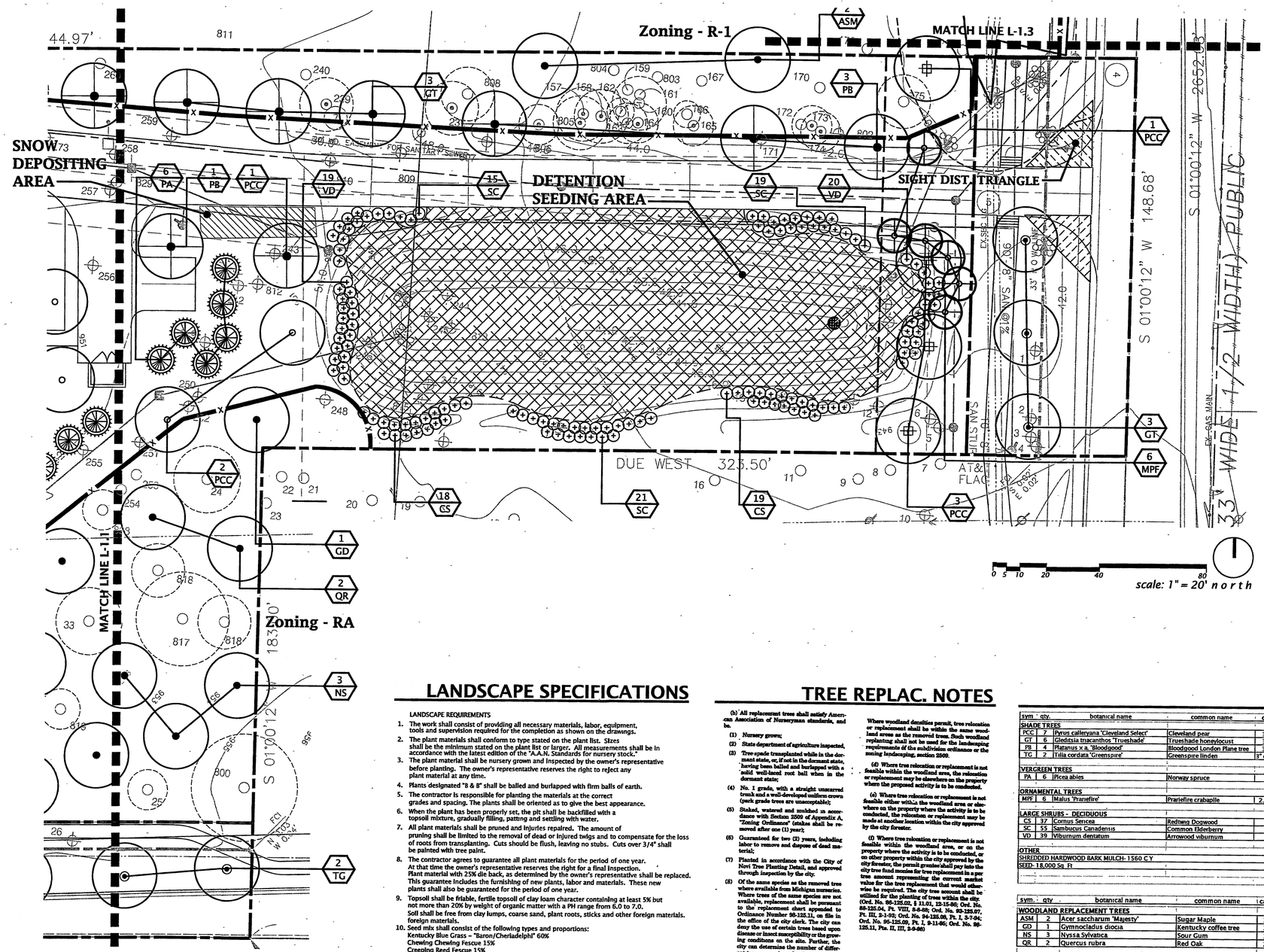
Sheet Title:
LANDSCAPE PLAN

Project Number: DPD - 30819

Sheet Number:
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LANDSCAPE SPECIFICATIONS

LANDSCAPE REQUIREMENTS

1. The work shall consist of providing all necessary materials, labor, equipment, tools and supervision required for the completion as shown on the drawings.
2. The plant materials shall conform to type stated on the plant list. Sizes shall be the minimum stated on the plant list or larger. All measurements shall be in accordance with the latest edition of the "A.A.N. Standards for nursery stock."
3. The plant material shall be nursery grown and inspected by the owner's representative before planting. The owner's representative reserves the right to reject any plant material at any time.
4. Plants designated "B & B" shall be balled and burlapped with firm balls of earth.
5. The contractor is responsible for planting the materials at the correct grades and spacing. The plants shall be oriented as to give the best appearance.
6. When the plant has been properly set, the pit shall be backfilled with a topsoil mixture, gradually filling, patting and settling with water.
7. All plant materials shall be pruned and injuries repaired. The amount of pruning shall be limited to the removal of dead or injured twigs and to compensate for the loss of roots from transplanting. Cuts should be flush, leaving no stubs. Cuts over 3/4" shall be painted with tree paint.
8. The contractor agrees to guarantee all plant materials for the period of one year. At 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. This guarantee includes the furnishing of new plants, labor and materials. These new plants shall also be guaranteed for the period of one year.
9. Topsoil shall be friable, fertile topsoil of clay loam character containing at least 5% but not more than 20% by weight of organic matter with a PH range from 6.0 to 7.0. Soil shall be free from clay lumps, coarse sand, plant roots, sticks and other foreign materials. foreign materials.
10. Seed mix shall consist of the following types and proportions:
    Kentucky Blue Grass – "Baron/Cheriadelphi" 60%
    Chewing Chewing Fescue 15%
    Creeping Reed Fescue 15%
    Perennial Rye Grass 10%
    Weed content shall not exceed 1%.
    The mix shall be applied at a rate of 200 lbs./acre
11. Sod shall be two year old "Baron/Cheriadelphi" Kentucky Blue Grass grown in a sod nursery on loam soil.

TREE REPLAC. NOTES

(b) All replacement trees shall satisfy American Association of Nurserymen standards, and be.

(1) Nursery grown;

(2) State department of agriculture inspected,

(3) Tree spade transplanted while in the dormant state, or, if not in the dormant state, having been balled and burlapped with a solid well-laced root ball when in the dormant state;

(4) No. 1 grade, with a straight unscarred trunk and a well-developed uniform crown (park grade trees are unacceptable);

(5) Staked, watered and mulched in accordance with Section 2509 of Appendix A, "Zoning Ordinance" (stakes shall be removed after one (1) year);

(6) Guaranteed for two (2) years, including labor to remove and dispose of dead material;

(7) Planted in accordance with the City of Novi Tree Planting Detail, and approved through inspection by the city;

(8) Of the same species as the removed tree where available from Michigan nurseries. Where trees of the same species are not available, replacement shall be pursuant to the replacement chart appended to Ordinance Number 98-125.11, on file in the office of the city clerk. The city can deny the use of certain trees based upon disease or insect susceptibility or the growing conditions on the site. Further, the city can determine the number of different tree species in a planting.

(c) The location of replacement trees shall be subject to the approval of the city and shall be such as to provide the optimum enhancement, preservation and protection of woodland areas

Where woodland densities permit, tree relocation or replacement shall be within the same woodland areas as the removed trees. Such woodland replanting shall not be used for the landscaping requirements of the subdivision ordinance or the zoning landscaping, section 2509.

(d) Where tree relocation or replacement is not feasible within the woodland area, the relocation or replacement may be elsewhere on the property where the proposed activity is to be conducted.

(e) Where tree relocation or replacement is not feasible either within the woodland area or elsewhere on the property where the activity is to be conducted, the relocation or replacement may be made at another location within the city approved by the city forester.

(f) Where tree relocation or replacement is not feasible within the woodland area, or on the property where the activity is to be conducted, or on other property within the city approved by the city forester, the permit grantee shall pay into the city tree fund monies for tree replacement in a per tree amount representing the current market value for the tree replacement that would otherwise be required. The city tree account shall be utilized for the planting of trees within the city (Ord. No. 96-125.05, § 11.01, 12-15-96; Ord. No. 98-125.04, Pt. VIII, 5-4-98; Ord. No. 98-125.07, Pt. III, 2-1-99; Ord. No. 94-125.08, Pt. I, 5-7-94; Ord. No. 96-125.09, Pt. I, 9-11-96; Ord. No. 98-125.11, Pts. II, III, 2-8-98)

PLANT LIST

sym.	qty.	botanical name	common name	caliper	spacing	root	height	price	total
SHADE TREES									
PCC	7	Pyrus calleryana 'Cleveland Select'	Cleveland pear	3" cal	as shown	B&B		$ 400.00	$ 2,800.00
GT	6	Gleditsia tracanthos 'Trueshade'	Trueshade honeylocust	3" cal.	as shown	B&B		$ 400.00	$ 2,400.00
PB	4	Platanus x a. 'Bloodgood'	Bloodgood London Plane tree	3" cal.	as shown	B&B		$ 400.00	$ 1,600.00
TG	2	Tilia cordata 'Greenspire'	Greenspire linden	3" cal	as shown	B&B		$ 400.00	$ 800.00
EVERGREEN TREES									
PA	6	Picea abies	Norway spruce		as shown	B&B	7'	$ 325.00	$ 1,950.00
ORNAMENTAL TREES									
MPF	6	Malus 'Prairefire'	Prairiefire crabapple	2.5" cal	as shown	B&B		$ 250.00	$ 1,500.00
LARGE SHRUBS - DECIDUOUS									
CS	37	Cornus Sericea	Redtwig Dogwood		6' O.C	B&B	30"	$ 50.00	$ 1,850.00
SC	55	Sambucus Canadensis	Common Elderberry		4' O.C	B&B	36"	$ 50.00	$ 2,750.00
VD	39	Viburnum dentatum	Arrowood viburnum		6' O.C	B&B	36"	$ 50.00	$ 1,950.00
OTHER									
SHREDDED HARDWOOD BARK MULCH- 1560 C.Y									$ 600.00
SEED- 18,000 Sq. Ft									$ 1,800.00
								Total	$ 18,200.00

sym.	qty.	botanical name	common name	caliper	spacing	root	height	price	total
WOODLAND REPLACEMENT TREES									
ASM	2	Acer saccharum 'Majesty'	Sugar Maple	2.5"	as shown	B&B		$400.00	$ 800.00
CD	1	Gymnocladus dioca	Kentucky coffee tree	2.5"	as shown	B&B		$400.00	$ 400.00
NS	3	Nyssa Sylvatica	Sour Gum	2.5"	as shown	B&B		$400.00	$ 1,200.00
QR	2	Quercus rubra	Red Oak	2.5"	as shown	B&B		$400.00	$ 800.00
	4	4" Bark Mulch - 4" dia. Around Trunk	25 Trees · 4 c.y. required- units in cubic yards)					$ 20.00	$ 80.00
								Total	$ 3,280.00

NOTES

ESTIMATED PLANTING TIME
All plant material shall be installed from April 1st through November 15th starting
In the first year the project is approved and grading/building permits have been issued.
NOTE: All plant material shall be grown in northern climate nurserys
NOTE: All plant material shall be installed in accordance with ordinance #97-18.133 section 2509.
NOTE: All plant material shall be No. 1 grade trees and guaranteed for two(2) years from date of installation.
NOTE: Woodland protection signs indicating areas of protected woodlands shall be placed and maintained on the site at locations approved by the city.

FOR REFERENCE ONLY



DETENTION SEED MIX

6. Detention Basin Seed Mix

Recommended Seed Rate 10-12 lb/acre

Designed for runoff retention basins that will retain water for one to two days. Soil moisture condition will vary from dry to saturated. This mix has been designed with a combination of plants that are adapted to a wide range of conditions. They are adapted to periodic inundation (flooding), but also tolerate dry conditions. The mix will contain at least twelve (12) of the following flower species and three (3) of the grass.

#Common Name	Scientific Name	Color	Bloom Time
Wild flowers			
New England Aster	*Aster novae-angliae*	Pr	JUL-OCT
Pale Indian Plantain	*Cacalia amplifolia*	W	JUL-SEPT
Boneset	*Eupatorium perfoliatum*	W	JUL-SEPT
Ox Eye Sunflower	*Heliopsis helianthoides*	Y	JUN-SEPT
Dense Blazingstar	*Liatris spicata*	Pr	JUL-SEPT
Great Blue Lobelia	*Lobelia siphilitica*	B	JUL-SEPT
Cardinal Flower	*Lobelia cardinalis*	R	JUL-SEPT
Bergamot (Beebalm)	*Monarda fistulosa*	P,L	JUL-AUG
Yellow Coneflower	*Rudbida pinnata*	Y	JUL-SEPT
Green-headed Coneflower	*Rudbeckia laciniata*	Y	JUL-SEPT
Black-eyed Susan	*Rudbeckia hirta*	Y	JUN-SEPT
Cupplant	*Silphium perfoliatum*	Y	JUL-SEPT
Ohio Goldenrod	*Solidago ohiensis*	Y	JUL-SEPT
Blue Vervain	*Verbena hastata*	B	JUL-SEPT
Culver's Root	*Veronicastrum virginicum*	W	JUL-SEPT
Ironweed	*Vernonia altissima*	Pr	SEPT-OCT
Grasses:			
Big Bluestem	*Andropogon gerardii*		
Canada Wild Rye	*Elymus canadensis*		
Dark Green Bulrush	*Scirpus atrovirens*		
Indian Grass	*Sorghastrum nutans*		
Prairie Cord Grass	*Spartina pectnata*		

R – Red P – Pink Pr – Purple W – White Ro – Rose
O – Orange B – Blue Y – Yellow L – Lavender

SEED MIX NOTES

SEED MIX AREA: 14,046 Sq. Ft. – .32 Ac.

SEED MIX REQUIRED: 4 lbs.
TOTAL COST: $208

1. Seed mixes shall be applied at the specified rates for each mix.
2. Must be installed to manufacturer specfications and requirements.

Manufacturer: Nativescape, LLC
P.O. Box 122
Manchester, Michigan 48158
www.nativescapes.net

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www.deakplanningdesign.com

King & MacGregor Environmental Inc.
45995 Koppernick Road
Canton, Michigan 48187
Phone: (734) 354-0554
Fax: (734) 354-0693

Project Name
BASILIAN RESIDENCE
NOVI, MICHIGAN

Client:
BASILIAN FATHERS -CATHOLIC CENTRAL HIGH SCHOOL
27225 WIXOM RD
NOVI, MI
(248) 596-3810

Seal:

Date	Issued For
RSVD. PER ENG.	5/28/08
Rvsd Per Cmnts	7/21/08
STAMPING SETS	8/8/08
Bid Pack 1	9/29/08
10/22/08	BID PACK NO. 2

Drawn: KD
Checked:
Approved:

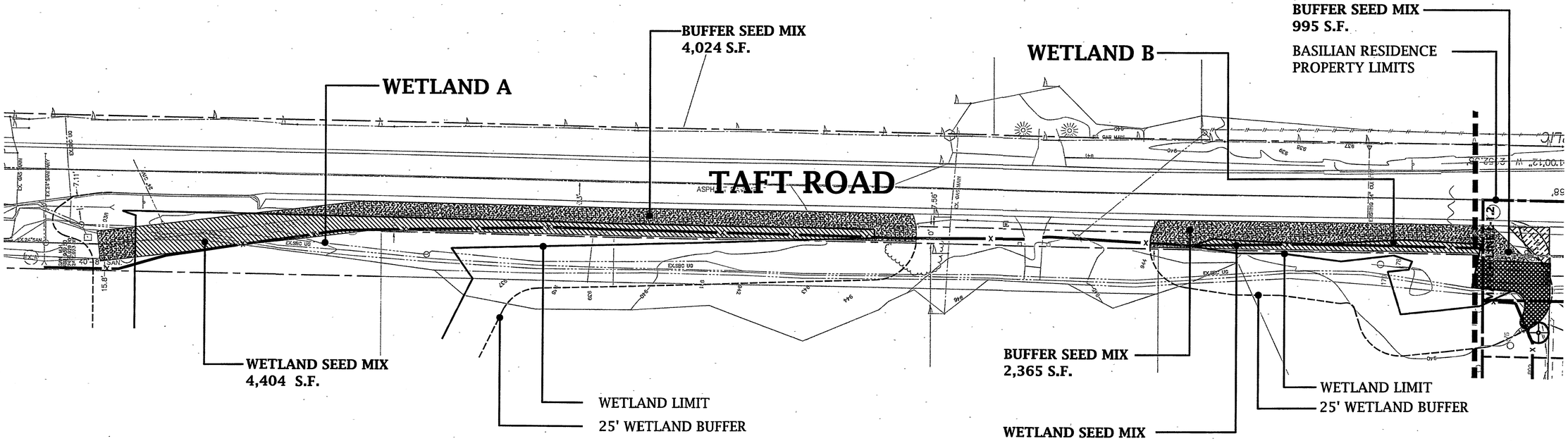
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Project Number: DPD 30819

Sheet Number:
L-1.2

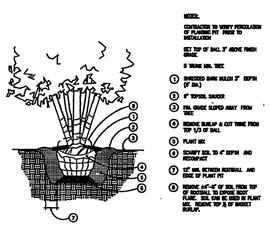
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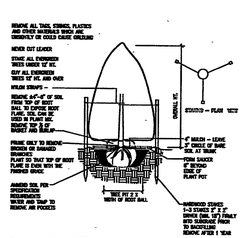
PLANT DETAILS



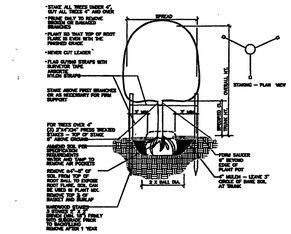
3 MULTISTEM TREE PLANTING DETAIL
NOT TO SCALE



4 SHRUB PLANTING
DETAIL - NOT TO SCALE



1 EVERGREEN TREE PLANTING
DETAIL - NOT TO SCALE

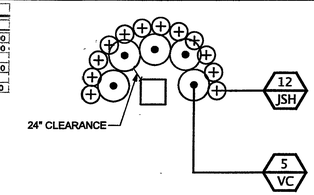


2 DECIDUOUS TREE PLANTING
SCALE: N.T.S.

TRANSFORMER TYP.

PLANT LIST: TRANSFORMER TYP.

sym	qty	botanical name	common name	caliber	spacing	root	height	price	total
VC	5	Viburnum carlesii	Korean Spice Viburnum		6' O.C.	B&B	36"	$ 45.00	$ 225.00
JSH	12	Juniperus sq "Holger"	Holger Juniper		4' O.C.	B&B	24"	$ 45.00	$ 540.00
	2	4" Bark Mulch	(2 c.y. required- units in cubic yards)					$ 20.00	$ 40.00
								Total	$ 765.00



BUFFER SEED MIX

Nativescape LLC
10380 Clinton Rd., Manchester, MI 48158
Phone 517-456-9696
Fax: 517-456-7245
info@nativescape.net

Dry Prairie Mix

This mix will contain at least (16) of the wildflower species (6) of the native grasses and sedges and (2) of the temporary grasses.

Common Name	Scientific Name	#'s / Acre
Temporary Grasses	50%	15
Seed Oats	*Avena sativa*	
Indian Tobacco	*Lobelia inflata*	
Annual Rye	*Lolium multiflorum*	
Native Grasses and Sedges	30%	9
Thickstyle Wheatgrass	*Agropyron dasystachyum*	
Sideoats Grama	*Bouteloua curtipendula*	
Prairie Oval Sedge	*Carex bicknellii*	
Plains Oval Sedge	*Carex brevior*	
Sand Bracted Sedge	*Carex muhlenbergii*	
Junegrass	*Koleria macrantha*	
Little Bluestem	*Schizachyrium scoparium*	
Indian Grass	*Sorghastrum nutans*	
Sand Dropseed	*Sporobolus cryptandrus*	
Prairie Dropseed	*Sporobolus heterolepis*	
Native Wildflowers	20%	6
Lead Plant	*Amorpha canescens*	
Thimbleweed	*Anemone virginiana*	
Butterfly Weed	*Asclepias tuberosa*	
Smooth Aster	*Aster laevis*	
Aztec-Lleaved Aster	*Aster sagittifolius*	
White False Indigo	*Baptisia leucantha*	
Wild Indigo	*Baptisia tinctoria*	
Lanceleaf Coreopsis	*Coreopsis lanceolata*	
Tall Coreopsis	*Coreopsis tripteris*	
Prairie Tick Trefoil	*Desmodium illinoense*	
Flowering Spurge	*Euphorbia corollata*	
Roundhead Bushclover	*Lespedeza capitata*	
Rough Blazing Star	*Liatris aspera*	
Lupine	*Lupinus perennis*	
Bergamot, Bee Balm	*Monarda fistulosa*	
Horse Mint	*Monarda punctata*	
Evening Primrose	*Oenothera berenis*	
Black-eyed Susan	*Rudbeckia hirta*	
Yellow Coneflower	*Ratibida pinnata*	
Rosinweed	*Silphium integrifolium*	
Compass Plant	*Silphium laciniatum*	
Prairie Dock	*Silphium terebinthinaceum*	
Tall Goldenrod	*Solidago altissima*	
Stiff Goldenrod	*Solidago rigida*	
Showy Goldenrod	*Solidago speciosa*	
Hoary Vervain	*Verbena stricta*	
American Vetch	*Vicia americana*	
Total Pounds Per Acre		30 lbs

WETLAND SEED MIX

Nativescape LLC
10380 Clinton Rd , Manchester, MI 48158
Phone 517-456-9696
Fax: 517-456-7245
info@nativescape.net

Wetland Drain Mix

This mix will contain at least (7) of the wildflowers (5) of the native grasses and sedge and (2) of the temporary grasses

Common Name	Scientific Name	#'s / Acre
Temporary Grasses	70%	21.0
Seed Oats	*Avena sativa*	
American Slough Grass	*Beckmannia syzigachne*	
Annual Rye	*Lolium multiflorum*	
Native Grasses and Sedges	25%	7.5
Big Bluestem Grass	*Andropogon gerardi*	
Lurid Sedge	*Carex lurida*	
Fox Sedge	*Carex vulpinoidea*	
Canada Wild Rye	*Elymus canadensis*	
Switch Grass	*Panicum virgatum*	
Wool Grass	*Scirpus cyperinus*	
Indian Grass	*Sorghastrum nutans*	
Prairie Cord Grass	*Spartina pectinata*	
Native Wildflowers -	5%	1.5
New England Aster	*Aster novae-angliae*	
Boneset	*Eupatorium perfoliatum*	
Joeeye Weed	*Eupatorium maculatum*	
Dense Blazing Star	*Liatris spicata*	
Yellow Coneflower	*Rietbida pinnata*	
Black-eyed Susan	*Rudbeckia hirta*	
Green-headed Coneflower	*Rudbeckia laciniata*	
Cup Plant	*Silphium perfoliatum*	
Blue Vervain	*Verbena hastata*	
Total Pounds Per Acre		30 lbs.

SEED MIX AMOUNT & COST

DRY PRAIRIE MIX BUFFER IMPACT)

TOTAL AREA (S.F.)	7,384
TOTAL AREA (Ac.)	.17
MIX AMOUNT (LBS.)	5.0
SEEDING COST ($52/LBS)	$260.00

WETLAND DRAIN MIX

TOTAL AREA (S.F.)	5,295
TOTAL AREA (Ac.)	.12
MIX AMOUNT (LBS.)	4
SEEDING COST ($52/LBS)	$208.00
TOTAL SEEDING COST	$468.00

WETLAND & BUFFER RESTORATION NOTES

1. Wetland plantings within detention & water quality basins shall be installed after the following steps:
   A. Only plant after sedimentation from the construction process is removed according to engineering plans and specifications.
   B. The planting areas within these areas shall be under cut 6" and lined with organic soil to meet final elevations shown on the grading plans.
2. The vegetation proposed provides a variety of wetland species. Normal colonization is expected and other species may compete with the proposed species.
3. Temporary wetland and buffer impacts shall be restored with existing organic soils from utility installation.

SEED MIX NOTES

1. Seed mixes shall be applied at the specified rates for each mix.
2. Must be installed to manufacturer specfications and requirements.

Manufacturer: **Nativescape, LLC**
P.O. Box 122
Manchester, Michigan 48158
www.nativescapes.net

FOR REFERENCE ONLY

CDPA
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www.zeimetwozniak.com

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Project Name
BASILIAN RESIDENCE
NOVI, MICHIGAN

Client:
BASILIAN FATHERS -CATHOLIC CENTRAL HIGH SCHOOL
27225 WIXOM RD
NOVI, MI
(248) 596-3810

Seal:

Date	Issued For
RSVD. PER ENG.	5/28/08
Rvsd Per Cmnts	7/21/08
STAMPING SET	9/8/08
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Sheet Title:
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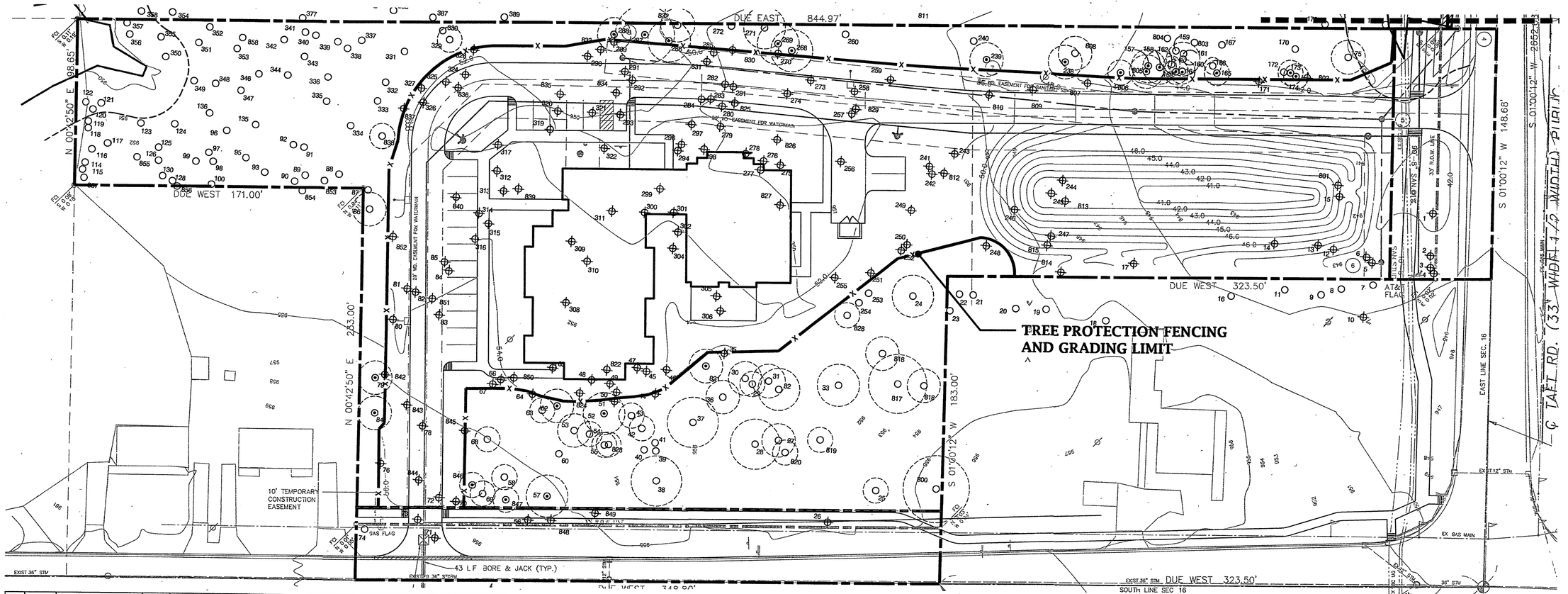
Project Number: DPD 30819

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T:\DPD Projects\Zeimet Wozniak\30819 Basilian Site Plan\30819 Landscape Plan\30819-L-1.3 Landscape Plan.dwg, 9/25/2008 3:28:37 PM, Adobe PDF.pc3

T:\DPD Projects\Detroit Wozniak\30819 Basilian Site Plan\30819 Landscape Plan\30819 9-04-08 Natural Features dwg, 9/21/2008 10:11:11 PM, Adobe PDF.pdf3



Tree ID #	Diameter	Species Name (Common - Scientific)	Health Condition*	Crown Spread*	Status	Save / Remove	Required Replacements
1	13	Black Locust - *Robinia pseudoacacia*	Good	20		Remove	2
2	12	Black Locust - *Robinia pseudoacacia*	Fair	20		Remove	2
3	11	Black Locust - *Robinia pseudoacacia*	Fair	15		Remove	1
4	8	Black Locust - *Robinia pseudoacacia*	Poor	15		Remove	1
6	9	Black Locust - *Robinia pseudoacacia*	Poor	15		Remove	1
11	11	American Elm - *Ulmus americana*	Dead	20	Dead	Remove	0
12	14	Black Locust - *Robinia pseudoacacia*	Poor	20		Remove	2
13	21	Black Locust - *Robinia pseudoacacia*	Fair	30		Remove	3
14	14	Colorado Blue Spruce - *Picea pungens*	Excellent	15		Remove	2
15	10	Colorado Blue Spruce - *Picea pungens*	Good	10		Remove	1
17	23	Black Locust - *Robinia pseudoacacia*	Good	35		Remove	3
23	9	American Elm - *Ulmus americana*	Dead	5	Dead		0
24	11.0	Sugar Maple - *Acer saccharum*	Good	20			
25	10	Balsam Fir - *Abies balsamea*	Good	10			
26	21	American Elm - *Ulmus americana*	Good	30		Remove	3
27	13	Black Locust - *Robinia pseudoacacia*	Good	15			
28	11	American Elm - *Ulmus americana*	Fair	25			
29	8	Black Locust - *Robinia pseudoacacia*	Fair	10			
30	11	Black Locust - *Robinia pseudoacacia*	Fair	15			
31	10	Black Locust - *Robinia pseudoacacia*	Fair	15			
32	11	Black Locust - *Robinia pseudoacacia*	Good	20			
33	10	American Elm - *Ulmus americana*	Good	20			
35	9	Black Locust - *Robinia pseudoacacia*	Poor	10		Remove	1
36	13	Sugar Maple - *Acer saccharum*	Excellent	15			
37	19	Black Locust - *Robinia pseudoacacia*	Fair	25			
38	12,11	Black Locust - *Robinia pseudoacacia*	Poor	25			
39	13	American Elm - *Ulmus americana*	Dead	30	Dead		0
40	13	American Elm - *Ulmus americana*	Dead	30	Dead		0
41	9	American Elm - *Ulmus americana*	Dead	15	Dead		0
42	9	Black Locust - *Robinia pseudoacacia*	Fair	10			
43	9	Black Locust - *Robinia pseudoacacia*	Poor	10			
44	10	Black Locust - *Robinia pseudoacacia*	Fair	20		Remove	1
45	9	American Elm - *Ulmus americana*	Good	20		Remove	1
46	10	Black Locust - *Robinia pseudoacacia*	Fair	15		Remove	1
47	10	Black Locust - *Robinia pseudoacacia*	Fair	15		Remove	1
48	9	Black Locust - *Robinia pseudoacacia*	Fair	10		Remove	1
49	9	Black Locust - *Robinia pseudoacacia*	Poor	15		Remove	1
50	9	Black Locust - *Robinia pseudoacacia*	Poor	10		Remove	1
51	10	Sugar Maple - *Acer saccharum*	Good	15		Remove	1
52	14	Black Locust - *Robinia pseudoacacia*	Fair	20		Remove	2
53	10	Black Locust - *Robinia pseudoacacia*	Fair	15			
54	9	Black Locust - *Robinia pseudoacacia*	Poor	10			
55	9	Black Locust - *Robinia pseudoacacia*	Fair	10			
56	10	Sugar Maple - *Acer saccharum*	Good	15		Remove	1
57	13,12	Black Locust - *Robinia pseudoacacia*	Fair	20		Remove	4
58	10	Black Locust - *Robinia pseudoacacia*	Poor	10			
60	8	American Elm - *Ulmus americana*	Dead	10	Dead		0
62	10	Black Locust - *Robinia pseudoacacia*	Fair	15		Remove	1
63	10	Black Locust - *Robinia pseudoacacia*	Fair	10			
64	14	Sugar Maple - *Acer saccharum*	Good	20		Remove	2
65	8	American Elm - *Ulmus americana*	Dead	5	Dead	Remove	0
66	8	American Elm - *Ulmus americana*	Dead	10	Dead	Remove	0
67	10	American Elm - *Ulmus americana*	Dead	15	Dead	Remove	0
68	8	American Elm - *Ulmus americana*	Dead	10	Dead		0
69	10	Black Locust - *Robinia pseudoacacia*	Fair	10			
70	9	Black Locust - *Robinia pseudoacacia*	Poor	10		Remove	1
71	16,10	Black Walnut - *Juglans nigra*	Good	25		Remove	3
72	10	Black Locust - *Robinia pseudoacacia*	Good	15		Remove	1
73	10	Black Walnut - *Juglans nigra*	Fair	15		Remove	1
74	18	Black Locust - *Robinia pseudoacacia*	Good	20			
76	10	American Elm - *Ulmus americana*	Poor	20		Remove	3
78	10	American Elm - *Ulmus americana*	Dead	10	Dead	Remove	0
79	9	Black Walnut - *Juglans nigra*	Good	20		Remove	1
80	13,12	Sugar Maple - *Acer saccharum*	Good	20		Remove	4
81	11	American Elm - *Ulmus americana*	Poor	20		Remove	1
82	12	Sugar Maple - *Acer saccharum*	Poor	20		Remove	2
83	17	American Elm - *Ulmus americana*	Good	30		Remove	3
84	10	American Elm - *Ulmus americana*	Dead	10	Dead	Remove	0
85	10	Cottonwood - *Populus deltoides*	Dead	15		Remove	1
86	12	Sugar Maple - *Acer saccharum*	Good	20			
87	13,8	White Mulberry - *Morus alba*	Dead	30	Dead		0
88	16	Black Locust - *Robinia pseudoacacia*	Fair	20			
89	15	Red Elm - *Ulmus rubra*	Dead	20	Dead		0
90	11	Black Walnut - *Juglans nigra*	Poor	20			
91	12	American Elm - *Ulmus americana*	Poor	25			
92	14,11	Black Walnut - *Juglans nigra*	Good	25			
93	12	Black Walnut - *Juglans nigra*	Fair	15			
95	12	American Elm - *Ulmus americana*	Poor	25			
96	9	Red Elm - *Ulmus rubra*	Poor	10			
97	12	Black Walnut - *Juglans nigra*	Poor	20			

Tree ID #	Diameter	Species Name (Common - Scientific)	Health Condition*	Crown Spread*	Status	Save / Remove	Required Replacements
98	17	White Ash - *Fraxinus americana*	Dead	15	Dead		0
99	9	American Elm - *Ulmus americana*	Fair	15			
100	9	Black Walnut - *Juglans nigra*	Very Poor	10	Damaged		0
114	16	White Ash - *Fraxinus americana*	Dead	10	Dead		0
115	12	Sugar Maple - *Acer saccharum*	Poor	15			
116	10	Sugar Maple - *Acer saccharum*	Poor	15			
117	12	White Ash - *Fraxinus americana*	Dead	10	Dead		0
118	8	Sugar Maple - *Acer saccharum*	Poor	15			
119	9	Sugar Maple - *Acer saccharum*	Poor	15			
120	9	Sugar Maple - *Acer saccharum*	Poor	15			
121	9	Sugar Maple - *Acer saccharum*	Poor	15			
122	19	White Ash - *Fraxinus americana*	Dead	25	Dead		0
123	10	Sugar Maple - *Acer saccharum*	Excellent	15			
124	10	Black Walnut - *Juglans nigra*	Fair	15			
125	12	Black Walnut - *Juglans nigra*	Good	20			
126	8	Sugar Maple - *Acer saccharum*	Dead	5	Dead		0
128	8	White Ash - *Fraxinus americana*	Dead	5	Dead		0
130	10	Black Walnut - *Juglans nigra*	Fair	10			
135	11	Black Walnut - *Juglans nigra*	Fair	10			
136	9,8	Black Walnut - *Juglans nigra*	Very Poor	10	Damaged		0
157	10	Aspen - *Populus spp*	Fair	15		Impctd/Save	1
158	12	Aspen - *Populus spp.*	Good	15		Impctd/Save	1
159	9	Aspen - *Populus spp*	Fair	10			
160	11	Sugar Maple - *Acer saccharum*	Good	15			
161	9	Aspen - *Populus spp.*	Fair	10		NOT IMPACTED	
162	8	Colorado Blue Spruce - *Picea pungens*	Poor	5		Impctd/Save	1
163	10	Colorado Blue Spruce - *Picea pungens*	Poor	10		Impctd/Save	1
164	10	Colorado Blue Spruce - *Picea pungens*	Poor	10		Impctd/Save	1
165	14	Colorado Blue Spruce - *Picea pungens*	Fair	10		Impctd/Save	2
166	12	Colorado Blue Spruce - *Picea pungens*	Poor	10			
167	9	White Ash - *Fraxinus americana*	Very Poor	15	Diseased		0
170	9	Aspen - *Populus spp*	Poor	10			
171	14	Colorado Blue Spruce - *Picea pungens*	Fair	10		Remove	2
172	9	Colorado Blue Spruce - *Picea pungens*	Very Poor	10	Damaged	Impctd/Save	0
173	8	Colorado Blue Spruce - *Picea pungens*	Poor	10		Impctd/Save	1
174	13	Colorado Blue Spruce - *Picea pungens*	Poor	10		Impctd/Save	2
175	10	White Mulberry - *Morus alba*	Poor	15			
176	16	American Elm - *Ulmus americana*	Dead	20	Dead		0
177	15	American Elm - *Ulmus americana*	Good	30			
238	11	Black Cherry - *Prunus serotina*	Poor	15		Impctd/Save	2
239	9	Sugar Maple - *Acer saccharum*	Good	15		Impctd/Save	1
240	11,8	American Elm - *Ulmus americana*	Good	25			
241	13	American Elm - *Ulmus americana*	Dead	20	Dead	Remove	0
242	8	American Elm - *Ulmus americana*	Dead	5	Dead	Remove	0
243	9	American Elm - *Ulmus americana*	Dead	10	Dead	Remove	0
244	9	American Elm - *Ulmus americana*	Dead	10	Dead	Remove	0
245	14	Siberian Elm - *Ulmus pumila*	Very Poor	15	Damaged	Remove	0
246	13	American Elm - *Ulmus americana*	Dead	20	Dead	Remove	0
247	10	Black Locust - *Robinia pseudoacacia*	Poor	15		Remove	1
248	8	White Mulberry - *Morus alba*	Fair	15		Remove	1
249	12,8	Sugar Maple - *Acer saccharum*	Excellent	25		Remove	3
250	10	American Elm - *Ulmus americana*	Dead	15	Dead	Remove	0
251	18,13	Black Locust - *Robinia pseudoacacia*	Good	30		Remove	4
252	8	American Elm - *Ulmus americana*	Dead	10	Dead	Remove	0
253	10	American Elm - *Ulmus americana*	Dead	15	Dead	Remove	0
254	8	American Elm - *Ulmus americana*	Dead	10	Dead	Remove	0
255	9	American Elm - *Ulmus americana*	Dead	15	Dead	Remove	0
256	12	American Elm - *Ulmus americana*	Good	20		Remove	3
257	10	Swamp White Oak - *Quercus bicolor*	Fair	15		Remove	1
258	11	Sugar Maple - *Acer saccharum*	Excellent	20		Remove	3
259	9	American Elm - *Ulmus americana*	Dead	5	Dead	Remove	0
260	8	White Ash - *Fraxinus americana*	Very Poor	15	Diseased		0
268	14	Black Cherry - *Prunus serotina*	Good	20		Impctd/Save	3
269	9	Red Elm - *Ulmus rubra*	Fair	20		Impctd/Save	1
270	10	American Elm - *Ulmus americana*	Good	20		Remove	1
271	13	Black Cherry - *Prunus serotina*	Fair	20			
272	8	American Elm - *Ulmus americana*	Dead	10	Dead		0
273	15	Black Cherry - *Prunus serotina*	Good	25		Remove	3
274	12	Black Cherry - *Prunus serotina*	Good	20		Remove	2
275	10	American Elm - *Ulmus americana*	Dead	15	Dead	Remove	0
276	16	White Ash - *Fraxinus americana*	Dead	20	Dead	Remove	0
277	17	White Ash - *Fraxinus americana*	Dead	25	Dead	Remove	0
278	11	White Ash - *Fraxinus americana*	Dead	15	Dead	Remove	0
279	9	White Ash - *Fraxinus americana*	Dead	10	Dead	Remove	0
280	13	White Ash - *Fraxinus americana*	Dead	15	Dead	Remove	0
281	13	White Ash - *Fraxinus americana*	Dead	15	Dead	Remove	0
282	9	American Elm - *Ulmus americana*	Poor	15		Remove	1
283	8	Cottonwood - *Populus deltoides*	Very Poor	10	Damaged	Remove	0
284	18	Cottonwood - *Populus deltoides*	Good	20		Remove	2
285	11	American Elm - *Ulmus americana*	Very Poor	25	Diseased	Remove	0

Tree ID #	Diameter	Species Name (Common - Scientific)	Health Condition*	Crown Spread*	Status	Save / Remove	Required Replacements
286	11	Sugar Maple - *Acer saccharum*	Good	20		Impctd/Save	3
287	13	Sugar Maple - *Acer saccharum*	Excellent	30		Impctd/Save	2
288	9	Sugar Maple - *Acer saccharum*	Good	15		Impctd/Save	1
289	8	American Elm - *Ulmus americana*	Dead	5	Dead	Remove	0
290	14	Black Cherry - *Prunus serotina*	Good	30		Remove	2
291	10	Black Cherry - *Prunus serotina*	Fair	10		Remove	1
292	12	American Elm - *Ulmus americana*	Fair	20		Remove	2
293	24	Cottonwood - *Populus deltoides*	Good	35		Remove	3
294	8	White Ash - *Fraxinus americana*	Dead	5	Dead	Remove	0
296	11	White Ash - *Fraxinus americana*	Dead	15	Dead	Remove	0
297	20	Cottonwood - *Populus deltoides*	Good	30		Remove	3
298	11	American Elm - *Ulmus americana*	Fair	20		Remove	2
299	11,10	White Ash - *Fraxinus americana*	Dead	15	Dead	Remove	0
300	11	Black Cherry - *Prunus serotina*	Good	20		Remove	1
301	10	American Elm - *Ulmus americana*	Good	15		Remove	1
302	9	American Elm - *Ulmus americana*	Dead	5	Dead	Remove	0
304	9	American Elm - *Ulmus americana*	Dead	5	Dead	Remove	0
305	11	American Elm - *Ulmus americana*	Very Poor	30	Damaged	Remove	0
306	11	Sugar Maple - *Acer saccharum*	Good	20		Remove	1
308	12,8	Black Cherry - *Prunus serotina*	Good	20		Remove	1
309	10	American Elm - *Ulmus americana*	Dead	15	Dead	Remove	0
310	9	American Elm - *Ulmus americana*	Dead	10	Dead	Remove	0
311	13	Cottonwood - *Populus deltoides*	Good	15		Remove	2
312	15	Black Locust - *Robinia pseudoacacia*	Good	20		Remove	2
313	17	Basswood - *Tilia americana*	Good	30		Remove	2
314	13	Cottonwood - *Populus deltoides*	Good	15		Remove	2
315	11,8	Red Maple - *Acer rubrum*	Fair	20		Remove	2
316	10	American Elm - *Ulmus americana*	Dead	5	Dead	Remove	0
317	8	White Ash - *Fraxinus americana*	Dead	10	Dead	Remove	0
319	17	Black Cherry - *Prunus serotina*	Fair	25		Remove	2
320	13	White Ash - *Fraxinus americana*	Dead	10	Dead	Remove	0
321	8	White Ash - *Fraxinus americana*	Dead	5	Dead	Remove	0
322	8	White Ash - *Fraxinus americana*	Dead	10	Dead	Remove	0
324	16	Cottonwood - *Populus deltoides*	Good	20		Remove	2
325	14	Black Cherry - *Prunus serotina*	Fair	20		Remove	2
326	10	White Ash - *Fraxinus americana*	Dead	10	Dead	Remove	0
327	9	White Ash - *Fraxinus americana*	Dead	10	Dead	Remove	0
328	10	American Elm - *Ulmus americana*	Dead	5	Dead	Remove	0
329	9	Black Cherry - *Prunus serotina*	Poor	10			
330	10	Sugar Maple - *Acer saccharum*	Good	15			
331	19,13	Black Cherry - *Prunus serotina*	Fair	30			
332	13	Black Cherry - *Prunus serotina*	Fair	20			
333	11	Black Locust - *Robinia pseudoacacia*	Good	15			
334	10	Black Locust - *Robinia pseudoacacia*	Poor	15			
335	11	Bitternut Hickory - *Carya cordiformis*	Fair	15			
336	9	Bitternut Hickory - *Carya cordiformis*	Fair	15			
337	12	American Elm - *Ulmus americana*	Fair	20			
338	15,8	Sugar Maple - *Acer saccharum*	Fair	20			
339	15	Sugar Maple - *Acer saccharum*	Good	20			
340	9	White Ash - *Fraxinus americana*	Dead	5	Dead		0
341	13	White Ash - *Fraxinus americana*	Dead	10	Dead		0
342	12	Black Walnut - *Juglans nigra*	Good	20			
343	13	Black Walnut - *Juglans nigra*	Fair	20			
344	10	Black Walnut - *Juglans nigra*	Poor	10			
345	13	Black Walnut - *Juglans nigra*	Fair	20			
347	11	American Elm - *Ulmus americana*	Fair	20			
348	10,9	White Ash - *Fraxinus americana*	Dead	10	Dead		0
349	12	Red Elm - *Ulmus rubra*	Good	25			
350	10	Red Elm - *Ulmus rubra*	Dead	5	Dead		0
351	10	Red Elm - *Ulmus rubra*	Dead	5	Dead		0
352	11	White Ash - *Fraxinus americana*	Dead	10	Dead		0
353	11	White Ash - *Fraxinus americana*	Dead	10	Dead		0
354	9	Red Elm - *Ulmus rubra*	Dead	5	Dead		0
355	8	White Ash - *Fraxinus americana*	Dead	10	Dead		0
356	16	Basswood - *Tilia americana*	Poor	20			
357	40	Black Walnut - *Juglans nigra*	Good	45			
800	17	American Elm - *Ulmus pumila*	Good	35			
801	8	Colorado Blue Spruce - *Picea pungens*	Good	10		Remove	1
802	8	Black Walnut - *Juglans nigra*	Good	10		Remove	1
803	8	Black Cherry - *Prunus serotina*	Very Poor	15	Damaged		0
804	8	Aspen - *Populus spp.*	Fair	10			
805	8	Aspen - *Populus spp.*	Poor	15		Impctd/Save	1
806	8	Aspen - *Populus spp.*	Good	10		Impctd/Save	1
807	8	White Mulberry - *Morus alba*	Fair	15		Remove	1
808	8	Sugar Maple - *Acer saccharum*	Good	15			
809	9	White Ash - *Fraxinus americana*	Poor	20		Remove	1
810	8	White Mulberry - *Morus alba*	Fair	15		Remove	1
811	9	Sugar Maple - *Acer saccharum*	Very Poor	25	Damaged	Remove	0
812	9	Sugar Maple - *Acer saccharum*	Good	15		Remove	1
813	8	Colorado Blue Spruce - *Picea pungens*	Good	10		Remove	1

Tree ID #	Diameter	Species Name (Common - Scientific)	Health Condition*	Crown Spread*	Status	Save / Remove	Required Replacements
814	8	Colorado Blue Spruce - *Picea pungens*	Excellent	10		Remove	1
815	10	Black Locust - *Robinia pseudoacacia*	Poor	15		Remove	1
816	13.9	White Mulberry - *Morus alba*	Fair	30			
817	9	White Mulberry - *Morus alba*	Fair	30			
818	9	American Elm - *Ulmus americana*	Good	15			
819	8	American Elm - *Ulmus americana*	Good	10			
820	8	American Elm - *Ulmus americana*	Fair	10			
821	8	Sugar Maple - *Acer saccharum*	Fair	15		Impctd/Save	1
822	8	American Elm - *Ulmus americana*	Fair	15		Remove	1
823	9	Black Locust - *Robinia pseudoacacia*	Poor	10			
824	8	Black Locust - *Robinia pseudoacacia*	Fair	10		Remove	1
826	8	American Elm - *Ulmus americana*	Poor	25			
827	9	White Ash - *Fraxinus americana*	Fair	20		Remove	1
827	8	Eastern Red Cedar - *Juniperus virginiana*	Fair	10		Remove	1
828	9	Black Locust - *Robinia pseudoacacia*	Fair	10			
829	9	Black Cherry - *Prunus serotina*	Fair	15		Remove	1
830	10	Apple - *Malus spp.*	Poor	10		Remove	1
831	8	American Elm - *Ulmus americana*	Very Poor	10	Diseased	Remove	0
832	8	American Elm - *Ulmus americana*	Fair	15			
833	8	Sugar Maple - *Acer saccharum*	Good	15		Remove	1
834	9	Black Cherry - *Prunus serotina*	Fair	15		Remove	1
835	8	American Elm - *Ulmus americana*	Good	15		Remove	1
836	8	Sugar Maple - *Acer saccharum*	Fair	15		Remove	1
837	9	Sugar Maple - *Acer saccharum*	Fair	10		Impctd/Save	1
838	8	Black Locust - *Robinia pseudoacacia*	Good	10			
839	8	Black Cherry - *Prunus serotina*	Poor	15		Remove	1
840	9	White Mulberry - *Morus alba*	Fair	15		Remove	1
841	8	American Elm - *Ulmus americana*	Good	15		Impctd/Save	1
842	9	American Elm - *Ulmus americana*	Poor	15		Impctd/Save	1
843	9	American Elm - *Ulmus americana*	Good	15		Remove	1
844	8	Black Locust - *Robinia pseudoacacia*	Fair	10		Remove	1
845	8	White Mulberry - *Morus alba*	Poor	15		Remove	1
846	8	Black Locust - *Robinia pseudoacacia*	Fair	10		Impctd/Save	1
847	8	Sugar Maple - *Acer saccharum*	Good	10		Impctd/Save	1
848	8	Sugar Maple - *Acer saccharum*	Good	15		Remove	1
849	8	Sugar Maple - *Acer saccharum*	Excellent	15		Remove	1
850	8	Sugar Maple - *Acer saccharum*	Fair	10		Remove	1
851	8	American Elm - *Ulmus americana*	Poor	15		Remove	1
852	8	American Elm - *Ulmus americana*	Good	10		Remove	1
853	8	American Elm - *Ulmus americana*	Fair	10			
854	8	American Elm - *Ulmus americana*	Fair	10			
855	8	Sugar Maple - *Acer saccharum*	Good	10			
856	8	American Elm - *Ulmus americana*	Poor	15			
857	9	Basswood - *Tilia americana*	Fair	15			
858	9	Black Cherry - *Prunus serotina*	Poor	10			
							172

NOTES

1. TREES MARKED AS "Impctd/Save" IN EXISTING WOODLAND TREE LIST ARE THOSE WHO'S DRIP-LINE ARE IMPACTED BY NEW UTILITIES OR GRADING. THESE TREES ARE ACCOUNTED FOR IN THE TOTAL REPLACEMENT TREES REQUIRED BUT ARE TO BE PRESERVED DURING DEVELOPMENT.

2. TREES #75, #77 #318 #303 #307 NO LONGER ON SITE ACCORDING TO JOHN P. MOSES REGISTERED FORESTER. TREES ARE THEREFORE, REMOVED FROM PLANS.

LEGEND

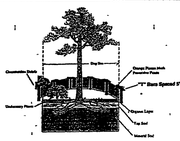
IMPACTED/SAVED TREES

PRESERVED TREES

REMOVED TREES

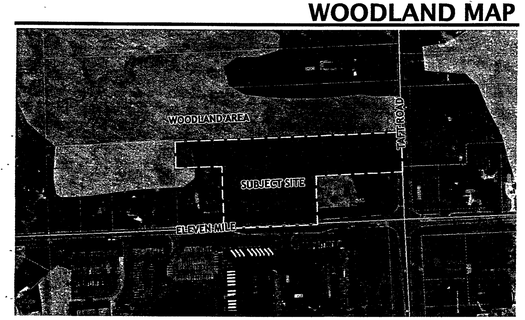
FOR REFERENCE ONLY

WOODLAND PROTECTION DETAIL



1. Approved tree protection shall be erected prior to start of construction activities, and shall remain in place until construction is complete. The City 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 be saved. including, but not limited to, placing solvents, building materials, equipment, or soil deposits
3. Grade changes may not occur within the the drip line of protected trees.
4. During construction, no person shall attach any device or wire to any remaining trees
5. All utility services requests must include notification to the installer that protected trees must be avoid All trenching shall occur outside of protective fencing
6. Swales shall be hand dug and routed to avoid the areas 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 issuance of the Certificate of Occupancy.
8. Regulated trees located on adjacent property that may be affected by construction activities must be protected.

WOODLAND MAP



0 5 10 20 40 80
scale: 1" = 20' north

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Project Name
BASILIAN
RESIDENCE
NOVI, MICHIGAN

Client:
BASILIAN FATHERS -CATHOLIC CENTRAL HIGH SCHOOL
27225 WIXOM RD
NOVI, MI
(248) 596-3810

Seal:

Date	Issued For
RSVD. PER ENG.	5/28/08
Resd Per Cmnts	7/21/08
STAMPING SET	9/8/08
Bid Pack # 1	9/29/08
10/22/08	BID PACK NO. 2

Drawn: KD
Checked:
Approved:

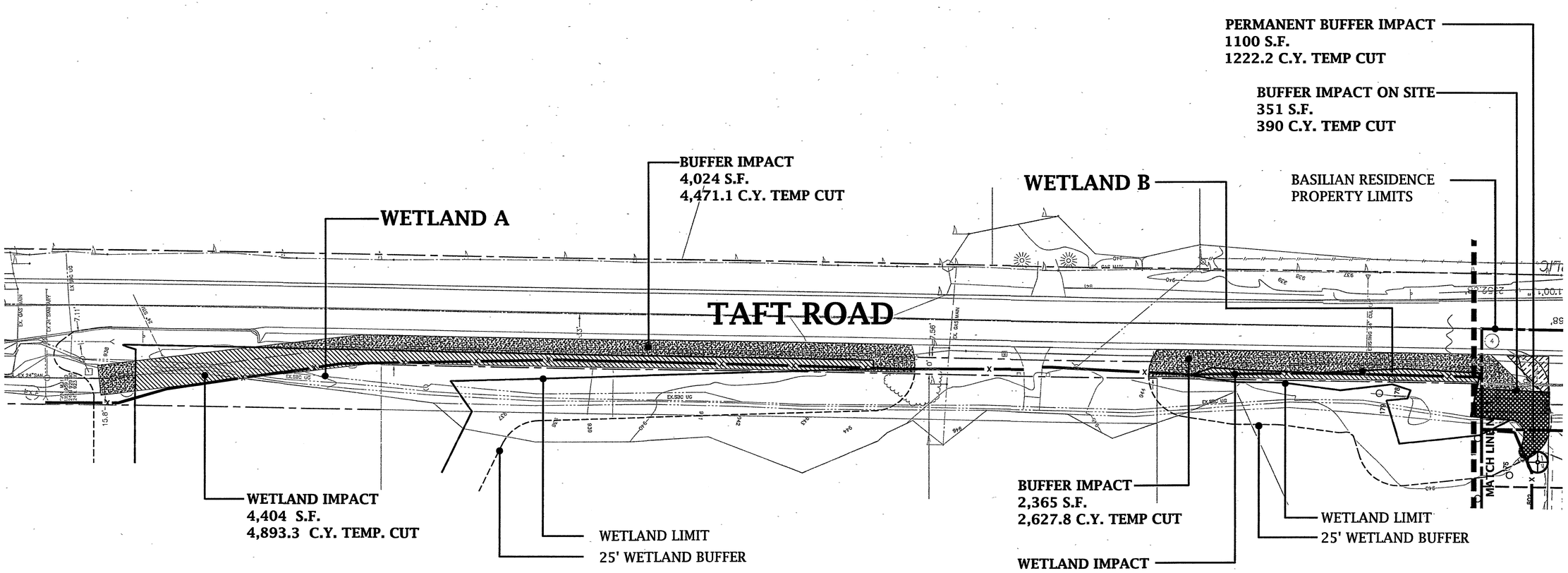
Sheet Title:
NATURAL FEATURES IMPACT PLAN

Project Number: DPD 30819

Sheet Number:
N-1.1

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WETLAND/ BUFFER IMPACTS

REGULATED/ESSENTIAL (Novi) WETLANDS				
WETLAND	TEMPERARY WETLAND IMPACT		TEMPERARY BUFFER IMPACT	
	Size	TEMP CUT FOR UTILITY	Size	TEMP CUT FOR UTILITY
OFF SITE				
A.	4,404 s.f.	4,893.3 c.y.	4,024 s.f.	4,471.1 c.y.
B.	891 s.f	990 c.y.	2,365 s.f.	2,627.8 c.y.
ON SITE				
B			351 s.f.	390 c.y.
TOTALS:				
OFF SITE	5,295 s.f.	5,883.3 c.y.	6,389 s.f.	7,098.9 c.y.
ON SITE			351 s.f.	390 c.y.

REGULATED/ESSENTIAL (Novi) WETLANDS				
WETLAND	PERMANENT WETLAND IMPACT		PERMANENT BUFFER IMPACT	
	Size	TEMP CUT FOR UTILITY	Size	TEMP CUT FOR UTILITY
ON SITE				
B			1100 s.f.	1222.2 c.y.
TOTALS:				
ON SITE			1100 s.f.	1222.2 c.y.

NOTE:
TOPSOIL LAYER EXCAVATED FROM THE TAFT ROAD WETLANDS FOR THE PURPOSE OF SANITARY SEWER INSTALLATION SHALL BE STRIPPED, STOCKPILED AND REPLACED FOLLOWING INSTALLATION AND BACKFILL OF THE PROPOSED SANITARY SEWER CONNECTION

LEGEND

WETLAND IMPACT

WETLAND BUFFER IMPACT

PERMANENT BUFFER IMPACT

0 7.5 15 30 60 120
scale: 1" = 30'
north

FOR REFERENCE ONLY

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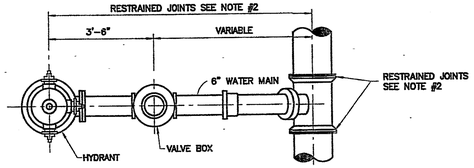
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Approved:

Sheet Title:
NATURAL FEATURES
MITIGATION

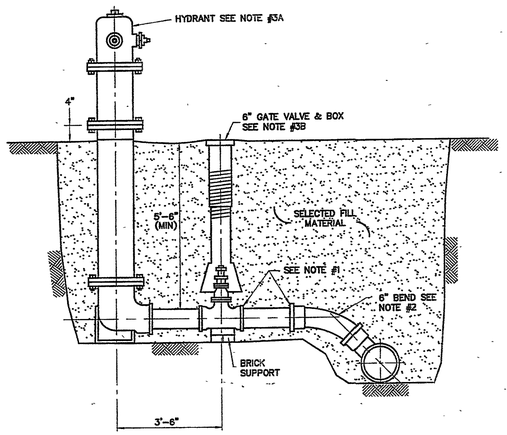
Project Number: DPD 30819

Sheet Number:
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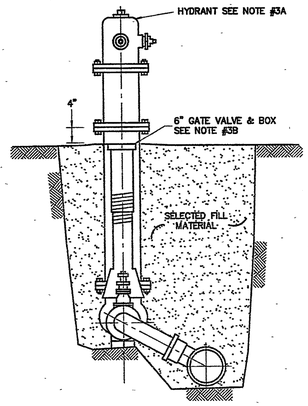


PLAN

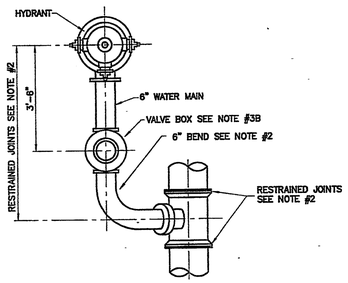


SECTION

TYPICAL HYDRANT SETTINGS

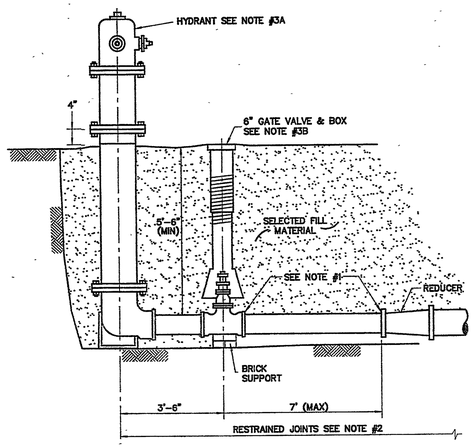


SECTION



PLAN

TYPICAL 90° HYDRANT SETTING



TYPICAL HYDRANT VALVE & BOX CONNECTION AT END OF WATER MAIN

1. TYPE OF JOINT SHALL BE APPROVED BY MUNICIPAL ENGINEER. (TYTON, SUPER BELL-TITE OR MECHANICAL, IN ACCORDANCE WITH ANSI A 21.11) OR APPROVED EQUIVALENT.
2. RESTRAINED JOINTS ARE REQUIRED IN LIEU OF THRUST BLOCKS. RESTRAINED JOINTS FOR PIPE SIZES UP TO 16" SHALL BE FAST GRIP GASKETS, MEGA LUG OR APPROVED EQUAL. RESTRAINED JOINTS FOR PIPE SIZES OVER 16" SHALL BE AMERICAN DUCTILE IRON FLEX-RING JOINT PIPE OR APPROVED EQUAL BOLTLESS SYSTEM.

   THRUST RESTRAINT DESIGN SHALL BE PER THE DUCTILE IRON PIPE RESEARCH ASSOCIATION MANUAL; THRUST RESTRAINT DESIGN FOR DUCTILE PIPE, CURRENT EDITION.
3. A. HYDRANTS SHALL BE EAST JORDAN MODEL TYPE 6BR.

   B. VALVE BOXES SHALL BE EAST JORDAN E-3002, OR APPROVED EQUIVALENT.
4. UNLESS OTHERWISE NOTED OR DIMENSIONED, HYDRANTS SHALL BE:

   A. MAXIMUM 15', MINIMUM 7' BEHIND EXISTING CURB.

   B. 30'± 1' FROM R.O.W. CENTERLINE IN STREETS WITH DITCHES.
5. HYDRANT DRAIN OPENING SHALL BE SECURELY PLUGGED.
6. PRIOR TO ACCEPTANCE:

   A. HYDRANT SHALL BE PLUMBED.

   B. VALVE BOXES SHALL BE PLUMBED AND IN LINE WITH THE VALVE.

   C. STEAMER CONNECTION OF THE HYDRANT SHALL FACE THE STREET CENTERLINE, OR AS DIRECTED BY THE FIRE MARSHALL.

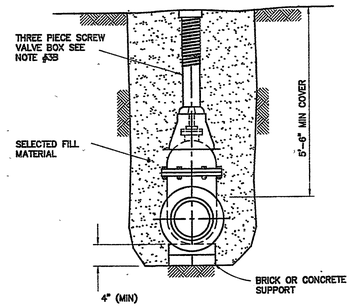
   D. HYDRANTS SHALL BE CLEANED AND PAINTED TO FIRE MARSHALL'S COLOR CODE. RUSTOLEUM FIRE HYDRANT RED, OR APPROVED EQUIVALENT.

   E. HYDRANTS SHALL BE CHARGED TO BE TESTED FOR LEAKAGE AND ANY LEAKS ARE TO BE REPAIRED.

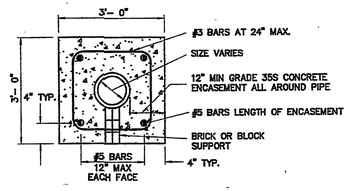
   F. HYDRANTS AND VALVE BOXES SHALL BE SET TO FINAL FINISHED GRADES.

   G. EXTENSION STEMS AND STEM GUIDES AS MANUFACTURED BY TRAVERSE CITY IRON WORKS, OR APPROVED EQUIVALENT SHALL BE PROVIDED IN EACH GATE WELL WHERE THE VALVE OPERATING NUT IS FURTHER THAN 5' BELOW THE TOP OF THE GATE WELL COVER OR VALVE BOX COVER. EXTENSION STEM SHALL EXTEND TO WITHIN 5' OF THE TOP OF COVER FINAL ELEVATION. EXTENSION STEMS WILL BE SECURED IN PLACE WITH BRACKETS ATTATCHED TO THE RISER SECTIONS.

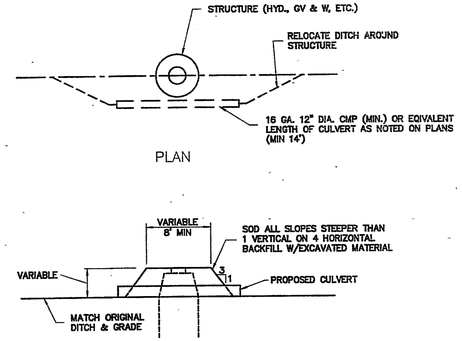
   H. ALL WATER MAINS ARE TO BE PRESSURE TESTED AND DISINFECTED IN ACCORDANCE WITH ANSI/AWWA C600-93 AND C651-92 STANDARDS.



VALVE BOX DETAIL



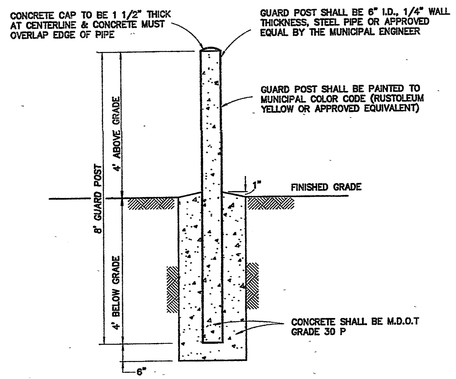
STANDARD ENCASEMENT FOR 12" & SMALLER WATER MAIN



PLAN

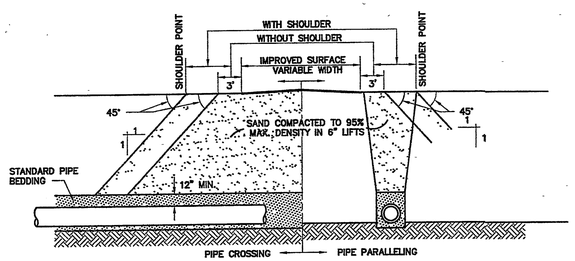
SECTION

DITCH RELOCATION & ENCLOSURE AROUND STRUCTURES



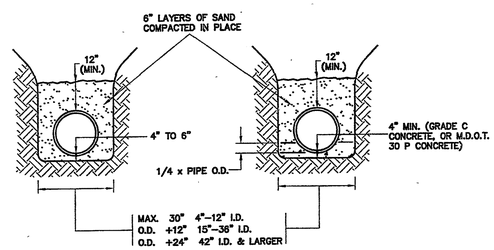
GUARD POST DETAIL

GUARD POST SHALL BE PLACED 4' FROM CENTERLINE OF HYDRANT OR AS PER PLAN



BACKFILLING IN THE AREAS OF STREETS, ALLEYS, SIDEWALKS, DRIVES & PARKING AREA

SEE NOTE # 2



CLASS "B" BEDDING CLASS "A" BEDDING

BEDDING & TRENCH WIDTH REQUIREMENT

FOR REFERENCE ONLY

JCK & ASSOCIATES, INC.
45650 GRAND RIVER AVENUE
NOVI, MICHIGAN 48376
PHONE: (248) 348-2680
FAX (248) 348-2777

WATER MAIN DETAILS

CITY OF NOVI

Revisions

Drawn
Designed
Checked

Scale: NO SCALE

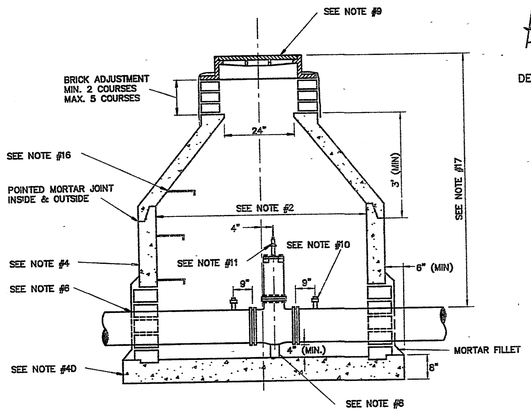
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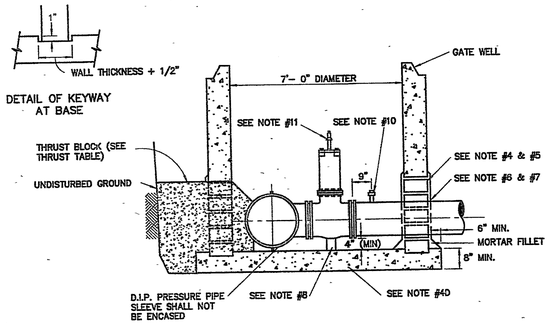
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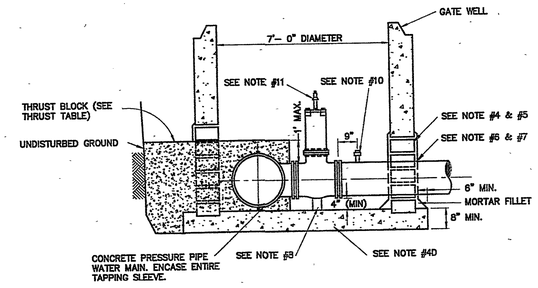
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DETAIL OF PRECAST CONCRETE GATE WELL



DETAIL FOR D.I.P.
TAPPING SLEEVE VALVE & WELL



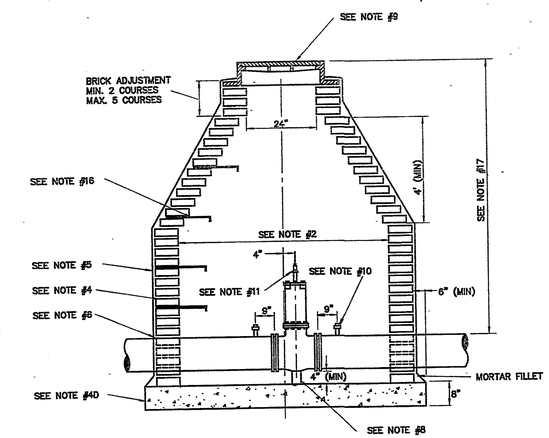
DETAIL FOR CONCRETE PIPE
TAPPING SLEEVE VALVE & WELL

THRUST TABLE	
MAIN SIZE	TEES
6"	4,250
8"	7,540
12"	16,970
16"	30,160
20"	47,120
24"	67,880
36"	152,680

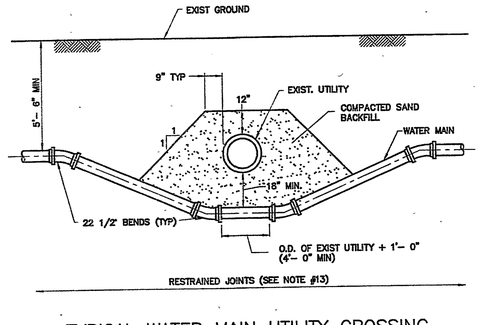
SOIL BEARING LOADS – HORIZONTAL THRUST	
TYPE OF SOIL	S.B.L. LBS/SQ. FT.
MUCK, PEAT, etc.	0
SOFT CLAY	1000
SAND	2000
SAND AND GRAVEL	3000
SAND AND GRAVEL CEMENTED W/CLAY	4000
HARD COMPACTED CLAY	5000

NOTE:
1. ALL THRUST BLOCKS SHALL EXTEND TO UNDISTURBED GROUND
2. CONCRETE SHALL BE M.D.O.T. GRADE 30P
3. THRUST TABLE DIVIDED BY SOIL BEARING LOADS EQUALS THRUST BLOCK SQUARED.

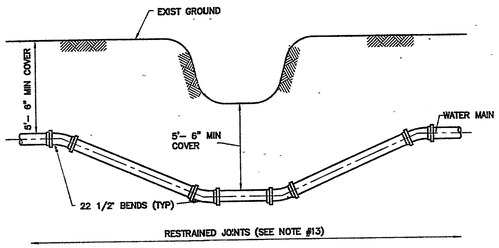
THRUST BLOCK TABLES
(FOR TAPPING SLEEVE VALVE & WELL ONLY)



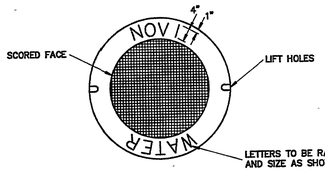
DETAIL OF BRICK GATE WELL



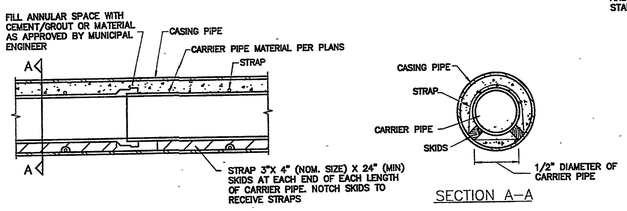
TYPICAL WATER MAIN UTILITY CROSSING
SEE NOTE # 12



DITCH AND STREAM CROSSING



COVER LETTERING DETAIL
(TYPICAL FOR ALL CASTINGS)
TYPE "A" COVER



CARRIER PIPE WITH CASING PIPE
SEE NOTE #14

DETAILED CONSTRUCTION NOTES

1. ALL GATE WELL STRUCTURES SHALL BE CONCENTRIC CONE TYPE UNLESS OTHERWISE APPROVED BY THE MUNICIPAL ENGINEER.
2. GATEWELLS SHALL BE BRICK, BLOCK OR PRECAST REINFORCED CONCRETE SIZED AS FOLLOWS:
   A. 6" THROUGH 10" PIPE SHALL BE 5' INSIDE DIAMETER.
   B. OVER 10" PIPE SHALL BE 6' INSIDE DIAMETER.
3. TAPPING WELLS SHALL BE BRICK, BLOCK OR PRECAST REINFORCED CONCRETE.
4. A. BRICK SHALL BE GRADE U–1 CONFORMING TO ASTM C–55.
   B. BLOCK SHALL BE GRADE N–1 CONFORMING TO ASTM C–139.
   C. PRECAST REINFORCED CONCRETE SECTIONS SHALL CONFORM TO ASTM C–478. LIFT HOLES SHALL BE POINTED INSIDE AND OUTSIDE AT THE TIME STRUCTURE IS ASSEMBLED.
   D. CONCRETE BASE SHALL BE MDOT GRADE 30P (MINIMUM).
5. BRICK OR BLOCK SHALL BE PLASTERED ON THE OUTSIDE WITH A MINIMUM OF 1/2" OF MORTAR.
6. THE PIPE OPENINGS SHALL BE WRAPPED WITH CADDILLOC WRAP, #30 MASTIC, OR APPROVED EQUIVALENT WITHIN THE WALL OF THE TAPPING SLEEVE AND VALVE WELL.
7. MORTAR FOR LAYING BRICK OR BLOCK, POINTING JOINTS AND PLASTERING OUTSIDE OF STRUCTURES SHALL BE COMPOSED OF 1 PART MASONRY CEMENT (TYPE II) AND 2 1/2 PARTS MASONRY SAND.
8. GATE VALVES SHALL BE E.J.I.W. IRON BODY, FULLY BRONZE–MOUNTED, DOUBLE DISC, PARALLEL SEAT TYPE, NONRISING STEM, OPENING COUNTERCLOCKWISE AND CONFORMING TO AWWA STANDARDS, OR RESILIENT SEATED GATE VALVES CONFORMING TO AWWA C–509. GATE VALVES AND FITTINGS SHALL BE SUPPORTED BY FORMED CONCRETE OR MORTARED BRICK BEARING ON THE FLOOR. (MINIMUM 4" CLEARANCE FROM FLOOR TO BOTTOM OF VALVE.)
9. EAST JORDON IRON WORKS #1040 AND TYPE A COVER (WITH LETTER AS PER DETAIL THIS SHEET) OR APPROVED EQUIVALENT PLACED ON A BED OF MORTAR. MORTAR SHALL EXTEND OVER BASE FLANGE.
10. CORPORATION STOPS
    A. 1–INCH MUELLER #H–15000, CLOW F–1280 OR APPROVED BY THE MUNICIPAL ENGINEER.
    B. ALL CORPORATION STOPS INSTALLED OUTSIDE OF GATEWELLS SHALL BE MADE WITH BRONZE DOUBLE–STRAP TAPPING SADDLE (CLOW F–1280 OR APPROVED BY THE MUNICIPAL ENGINEER).
11. EXTENSION STEM AND STEM GUIDE AS MANUFACTURED BY TRAVERSE CITY IRON WORKS OR APPROVED EQUIVALENT, SHALL BE PROVIDED IN EACH GATE WELL OR VALVE BOX WHERE THE VALVE OPERATING NUT IS MORE THAN 5 FEET BELOW THE TOP OF THE GATE WELL COVER (FINAL ELEVATION). EXTENSION STEMS AND GUIDES SHALL EXTEND VALVE OPERATING NUT TO WITHIN 5 FEET OF THE TOP OF COVER (FINAL ELEVATION). EXTENSION STEMS SHALL BE SECURED IN PLACE WITH BRACKETS ATTACHED TO THE RISER SECTIONS.
12. A. WHENEVER A WATER MAIN IS INSTALLED UNDER ANY EXISTING UTILITY LINE, PROVISIONS SHALL BE MADE TO PROPERLY SUPPORT OR DISTRIBUTE ANY CONCENTRATED LOADS TO AVOID ANY SETTLEMENT AND ALL POSSIBLE FAILURE OF THE LOWER MAIN. A VERTICAL SEPERATION OF AT LEAST 18 INCHES BETWEEN THE SEWER AND THE WATER MAIN SHALL BE PROVIDED (MEASURED BARREL TO BARREL).
    B. COMPACTED SAND BACKFILL SHALL EXTEND FOR 9 INCHES EACH SIDE OF EXISTING PIPE, AT 12 INCHES ABOVE EXISTING PIPE AND SHALL SLOPE AT A ONE ON ONE SLOPE TO THE BOTTOM OF THE TRENCH.
13. RESTRAINED JOINTS ARE REQUIRED IN LIEU OF THRUST BLOCKS. RESTRAINED JOINTS FOR PIPE SIZES UP TO 16" SHALL BE FAST GRIP GASKETS, MEGA LUG OR APPROVED EQUAL. RESTRAINED JOINTS FOR PIPE SIZES OVER 16" SHALL BE AMERICAN DUCTILE IRON FLEX JOINT PIPE OR APPROVED EQUAL BOLTLESS SYSTEM.

    THRUST RESTRAINT DESIGN SHALL BE PER THE DUCTILE IRON PIPE RESEARCH ASSOCIATION MANUAL; THRUST RESTRAINT DESIGN FOR DUCTILE PIPE, CURRENT EDITION.
14. CARRIER PIPE WITH CASING PIPE
    A. INSIDE DIAMETER OF CASING SHALL BE EQUAL TO THE OUTSIDE DIAMETER OF THE PIPE BELL PLUS 8 INCHES, UNLESS OTHERWISE NOTED ON CONTRACT DRAWINGS.
    B. UNLESS OTHERWISE SPECIFIED, CASING PIPE SHALL BE ASTM C–76 CLASS V R.C.P. OR ASTM A139 GRADE B WITH MINIMUM WALL THICKNESS OF 0.250 INCHES.
    C. ALTERNATE METHODS OF SUPPORTING AND MAINTAINING THE POSITION OF THE CARRIER PIPE WITH RESPECT TO THE CASING PIPE (IN LIEU OF THE USE OF TIMBERS) WILL BE CONSIDERED. THE CONTRACTOR SHALL SUBMIT DETAILS OF SUCH ALTERNATE METHODS FOR APPROVAL BY THE MUNICIPAL ENGINEER.
    D. THE ENDS OF THE CASING PIPE SHALL BE CLOSED WITH A MASONRY BULKHEAD.
15. A. WHERE A CONCRETE ENCASEMENT IS SPECIFIED, A 12 INCH MINIMUM LAYER OF MECHANICALLY COMPACTED SAND SHALL BE MAINTAINED BETWEEN EXISTING UTILITY AND TOP OF CONCRETE ENCASEMENT.
16. GATE WELL STEPS SHALL BE STEEL, ENCASED WITH POLYPROPYLENE PLASTIC, EQUIVALENT TO M.A. INDUSTRIES, INC., PS–1 FOR PRE–CAST WELLS OR PS–1B FOR BLOCK/BRICK WELLS OR APPROVED EQUIVALENT.
17. MINIMUM COVER
    A. 5'– 6" INCLUDING CROSSINGS THROUGH DITCH SECTIONS. WHEN INSTALLED PARALLEL TO A DITCH, MAINS SHALL HAVE 5'– 6" OF COVER MINIMUM, AS MEASURED FROM THE NEAREST POINT IN THE DITCH CROSS SECTION.
    B. 6'– 0" UNDER STREETS, ROADS, ALLEYS AND OTHER PAVED OR TRAVELED AREAS.
18. PRIOR TO ACCEPTANCE ALL WATER MAINS ARE TO BE PRESSURE TESTED AND AND DISINFECTED IN ACCORDANCE WITH ANSI/AWWA C600–93 AND C651–92 STANDARDS.

FOR REFERENCE ONLY

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CITY OF NOVI

WATER MAIN DETAILS

Revisions

Drawn
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Checked

Scale
NO SCALE

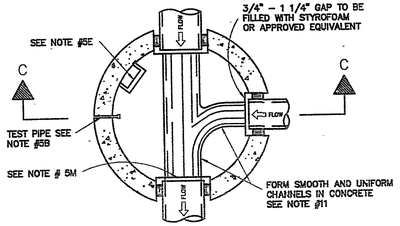
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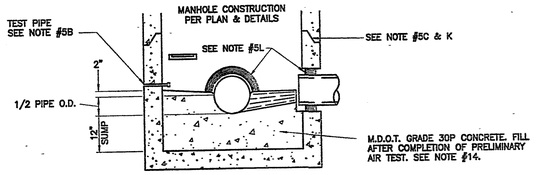
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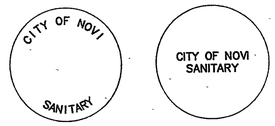
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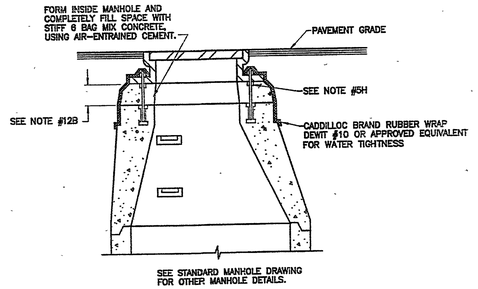
SECTION C–C

STANDARD SANITARY MANHOLE CHANNEL W/SUMP DETAIL

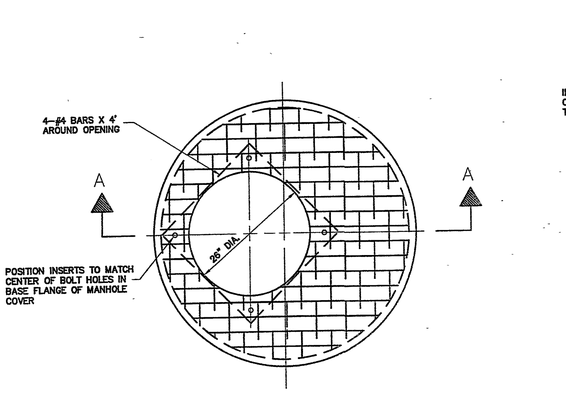


ALTERNATE LETTERING LAYOUT FOR MANHOLE COVERS

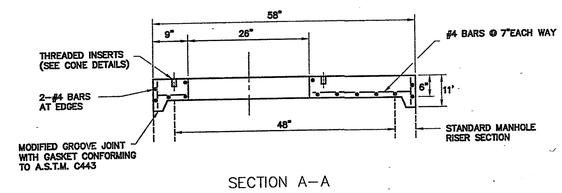
SEE NOTE #5J



CONSTRUCTION DETAILS FOR SANITARY MANHOLE TOPS WITHIN PAVEMENT AREAS

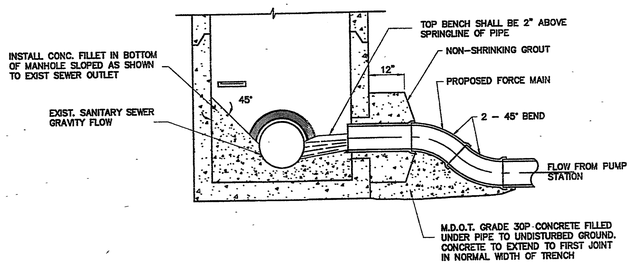


PLAN

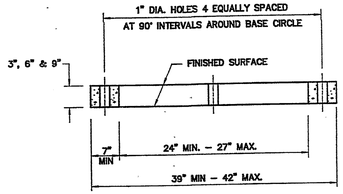


SECTION A–A

FLAT SLAB MANHOLE TOP



FORCEMAIN DISCHARGE TO EXISTING MANHOLE



ADJUSTMENT RING DETAIL

SEE NOTE #12A

DETAILED CONSTRUCTION NOTES

1. PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL TELEPHONE MISS DIG (800–482–7171) FOR THE LOCATION OF UNDERGROUND PIPELINE AND CABLE FACILITIES AND SHALL NOTIFY REPRESENTATIVES OF OTHER UTILITIES LOCATED IN THE VICINITY OF THE WORK.

2. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE LOCAL MUNICIPALITY AND THE OAKLAND COUNTY DRAIN COMMISSIONER (OCDC). ALL SANITARY SEWER CONSTRUCTION SHALL HAVE FULL–TIME INSPECTION SUPERVISED BY A PROFESSIONAL ENGINEER PROVIDED BY, OR CAUSED TO BE PROVIDED BY, THE LOCAL MUNICIPALITY. THE CONTRACTOR SHALL NOTIFY THE LOCAL MUNICIPALITY FOR INSPECTION 48 HOURS PRIOR TO THE START OF CONSTRUCTION (248–348–9005).

3. AT ALL CONNECTIONS TO OCDC SEWERS OR EXTENSIONS, AND BEFORE START OF CONSTRUCTION, THE CONTRACTOR MUST OBTAIN A SEWER INSPECTION PERMIT ISSUED BY OCDC. GRAVITY SEWER PERMIT CHARGES ARE $250 FOR EACH CONNECTION PLUS $25 FOR EACH MANHOLE CONSTRUCTED. PRESSURE SEWER PERMIT CHARGES ARE $250 PER 2460 L.F. OF FORCE MAIN WITH A MINIMUM PERMIT FEE OF $250. FAILURE TO PASS ANY TEST SEGMENT WILL RESULT IN AN ADDITIONAL CHARGE TO THE CONTRACTOR FOR EACH RETEST, IN ACCORDANCE WITH THE ABOVE PRICE SCHEDULE. THE CONTRACTOR SHALL ALSO HAVE POSTED WITH OCDC A $5,000 SURETY BOND AND $500 CASH DEPOSIT. THE CONTRACTOR SHALL NOTIFY THE LOCAL UNIT OF GOVERNMENT AND THE OCDC 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. FINAL AIR TESTS MUST BE WITNESSED BY COUNTY PERSONAL AND MUST BE SCHEDULED IN ADVANCED.

4. NO SEWER INSTALLATION SHALL HAVE AN INFILTRATION EXCEEDING 200 GALLONS PER INCH DIAMETER PER MILE OF PIPE IN A 24 HOUR PERIOD, AND NO SINGLE RUN OF SEWER BETWEEN MANHOLES SHALL EXCEED 250 GALLONS PER INCH DIAMETER PER MILE. AIR TESTS IN LIEU OF INFILTRATION TESTS SHALL BE AS SPECIFIED IN OCDPW "ACCEPTANCE TESTS", DATED SEPTEMBER 1972. ONLY MODIFIED GROOVE TONGUE, ASTM C–425, ASTM C–443, O–RING, UNILOC, AMVIT, NOBEL RING–TITE, FLUID–TITE OR EQUAL, AS APPROVED BY THE OAKLAND COUNTY DEPARTMENT OF PUBLIC WORKS MAY BE USED FOR SEWER JOINTS. ALL JOINTS SHALL MEET REQUIREMENTS OF ASTM C–425 OR C–443.

5. CONSTRUCTION OF MANHOLES

   ALL MATERIALS FURNISHED AND DELIVERED UNDER THIS SPECIFICATION SHALL CONFORM TO THE REQUIREMENTS OF SECTION 5.14.02 MICHIGAN DEPARTMENT OF TRANSPORTATION (M.D.O.T.) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND OAKLAND COUNTY DEPARTMENT OF PUBLIC WORKS STANDARDS AND SPECIFICATIONS FOR SANITARY SEWER CONSTRUCTION, EXCEPT AS OTHERWISE SPECIFIED HEREIN.

   A. PRECAST REINFORCED CONCRETE SECTIONS SHALL CONFORM TO ASTM C–478.

   B. THE MANUFACTURER SHALL INSTALL 1/2" DIAMETER STEEL PIPE AND CAP AT ELEVATION EQUAL TO THE CROWN OF THE SEWER, FLUSH WITH OUTSIDE WALL, AND EXTENDING 3 INCHES INTO MANHOLE FOR TESTING PURPOSES. CONTRACTOR TO SEAL AFTER COMPLETION OF TESTS.

   C. JOINTS BETWEEN PRECAST SECTIONS SHALL BE MODIFIED TONGUE AND GROOVE TYPE WITH RUBBER O–RING GASKET.

   D. RUBBER O–RING GASKETS SHALL CONFORM TO THE REQUIREMENTS OF ANSI/ASTM C–443, EXCEPT THAT THE GASKETS SHALL BE SYNTHETIC RUBBER ONLY. NATURAL RUBBER GASKETS ARE NOT ACCEPTABLE.

   E. MANHOLE STEPS SHALL BE STEEL, ENCASED WITH POLYPROPYLENE PLASTIC, EQUIVALENT TO M.A. INDUSTRIAL, INC., PS–1 OR PS–1B, AS APPROPRIATE.

   F. RESILIENT WATERTIGHT CONNECTORS BETWEEN MANHOLE AND PIPE SHALL CONFORM TO ASTM C–443 AND ASTM C–923, EXCEPT THAT ONLY SYNTHETIC RUBBER GASKETS SHALL BE PERMITTED. NATURAL RUBBER WILL NOT BE ACCEPTABLE.

   G. ANCHOR BOLTS SHALL BE INSTALLED IN FOUR THREADED INSERTS AT 90 DEGREES (NO. F–5 5/8 INCH "SURE GRIP" OR EQUIVALENT) IN PRECAST SECTION. INSERT TO BE PLACED WHEN CASTING OF CONE SECTION, NOT DRILLED AND GROUTED IN PLACE AFTER CURING.

   H. BOLTS SHALL BE FOUR CADMIUM–COATED 5/8 INCH THREAD STUDS, EACH WITH 3/4" X 2" X 1/16" NEOPRENE FLAT WASHER, 3/4" X 2" X 1/8" STEEL FLAT WASHER AND NUT.

   I. MANHOLE COVER SHALL BE A BOLTED, WATERTIGHT COVER AND EQUIVALENT TO EAST JORDAN IRON WORKS 1040–ZPT, WITH ANCHOR BASE FLANGE HOLES.

   J. NEW MANHOLES CONSTRUCTED DIRECTLY ON OAKLAND COUNTY DEPARTMENT OF PUBLIC WORKS SEWERS SHALL BE PROVIDED WITH COVERS READING "OAKLAND COUNTY–SANITARY" IN RAISED LETTERS. NEW MANHOLES BUILT OVER AN EXISTING SANITARY SEWERS SHALL HAVE MONOLITHIC POURED BOTTOMS.

   K. MORTAR FOR LAYING BRICK AND BLOCK, POINTING OF JOINTS, LIFT HOLES AND PLASTERING OUTSIDE AND INSIDE OF STRUCTURES SHALL BE COMPOSED OF 1 PART MASONRY CEMENT (TYPE II) AND 2 1/2 PARTS MASONRY SAND. NO LIME SHALL BE ADDED TO THE MORTAR.

   L. MANHOLES FOR PIPE SIZES 36 INCH DIAMETER AND SMALLER SHALL BE MANUFACTURED AND CONSTRUCTED AS "PRECAST FLEXIBLE–JOINT SEWER MANHOLES", UNLESS OTHERWISE DIRECTED BY THE MUNICIPAL ENGINEER.

   M. PIPE SHALL NOT EXTEND INTO A MANHOLE BEYOND THE INSIDE FACE OF THE MANHOLE WALL AS MEASURED AT THE SPRINGLINE OF THE PIPE. FIELD CUTTING OF PIPE TO BE USED AT MANHOLES SHALL BE PERFORMED IN A NEAT WORKMAN–LIKE MANNER, USING METHODS APPROVED BY THE MUNICIPAL ENGINEER. EXPOSED ENDS OF REINFORCING STEEL SHALL BE CUT FLUSH WITH THE PIPE END.

   N. MANHOLE STRUCTURES WHICH ARE TO BE LEFT OPEN OVERNIGHT SHALL BE SECURELY ENCLOSED WITH SUITABLE FENCING AND HAVE ADEQUATE LIGHTED BARRICADES, UNLESS OTHERWISE APPROVED BY THE MUNICIPAL ENGINEER.

6. DROP MANHOLES & TAPPING EXISTING MANHOLES:

   A. DROP MANHOLES SHALL BE OF THE SAME DESIGN AS STANDARD MANHOLES. DROP MANHOLES SHALL BE USED WHERE THERE IS AN 18 INCH DIFFERENCE IN PIPE INVERT ELEVATIONS. PIPE TO BE A MINIMUM 8 INCHES INSIDE DIAMETER UNLESS OTHERWISE DIRECTED. OMIT THE TEE AND USE AN APPROVED STOPPER IN THE RISER PIPE WHEN PLACING A BLIND DROP CONNECTION FOR FUTURE USE

   B. TAPS TO EXISTING MANHOLES SHALL BE MADE BY CORING. THE CONTRACTOR SHALL PLACE A KOR–N–SEAL BOOT OR APPROVED EQUAL AFTER CORING IS COMPLETED. BLIND DRILLING WILL NOT BE PERMITTED IN LIEU OF CORING.

7. WYES, RISERS AND BUILDING LEADS

   A. BUILDING LEAD RISERS SHALL BE INSTALLED ON DEEP SEWERS TO A DEPTH OF 10 FEET BELOW THE FINISHED SURFACE ELEVATION UNLESS OTHERWISE AUTHORIZED BY THE MUNICIPALITY. ALL RISERS THAT ARE INSTALLED WITHOUT BUILDING LEADS SHALL INCLUDE AN APPROVED STOPPER.

   B. ALL BUILDING LEADS AND RISERS SHALL BE 6 INCH SDR 23.5 ABS PIPE WITH CHEMICALLY FUSED JOINTS OR AN APPROVED EQUAL PIPE AND JOINT. BUILDING LEADS SHALL TERMINATE (WITH AN APPROVED STOPPER) AT THE PROPERTY LINE OR EASEMENT LINE, UNLESS OTHERWISE NOTED, AT A NOMINAL DEPTH OF 10 FEET.

   C. EACH RISER AND/OR BUILDING LEAD SHALL BE MARKED WITH A 2 INCH X 2 INCH X 12 FOOT LONG HARDWOOD MARKER, PLACED VERTICALLY AT THE END OF THE PIPE AND PAINTED WITH FLUORESCENT–TYPE PAINT.

   D. MONITORING MANHOLES ARE REQUIRED ON ALL NONDOMESTIC BUILDING LEADS IN EASEMENTS OR PUBLIC RIGHT–OF–WAY.

8. REPAIR FOR RISERS, WYES AND MAINLINE

   FERNCO–FLEXIBLE COUPLING, WATER MAIN REPAIR CLAMPS, SMITH–BLAIR, BAKER, FORD (ALL STAINLESS STEEL) OR EQUIVALENT SHALL BE USED WHEN MAKING TIE–IN TO TEE OR WYE, THESE FITTINGS SHALL BE USED IF PIPE ADAPTERS OR SADDLE TAPS ARE NOT AVAILABLE.

9. HOUSE LEAD CONNECTIONS TO MAIN SEWER

   WYE OPENING TO BE MADE BY PLACING APPROPRIATE SADDLE TAP OPENING PER MANUFACTURES SPECIFICATIONS.

10. CONNECTIONS

    A. WHEN CONNECTIONS ARE MADE WITH SEWERS OR DRAINS CARRYING FLUIDS, SPECIAL CARE MUST BE TAKEN THAT NO PART OF THE WORK IS BUILT UNDER WATER. A FLUME OR DAM MUST BE INSTALLED AND PUMPING MAINTAINED, IF NECESSARY, AND THE NEW WORK KEPT DRY UNTIL COMPLETED AND ANY CONCRETE OR MORTAR HAS SET UP.

    B. THE CONTRACTOR SHALL INSTALL A SUITABLE BULKHEAD TO PREVENT CONSTRUCTION WATER, SAND, SILT, ETC. FROM ENTERING THE EXISTING SEWER SYSTEM. SUCH BULKHEAD SHALL BE LEFT IN PLACE UNTIL SUCH TIME AS THE OAKLAND COUNTY DEPARTMENT OF PUBLIC WORKS AUTHORIZES THE CONTRACTOR TO REMOVE IT.

    C. NO GROUND WATER, STORM WATER, CONSTRUCTION WATER, DOWNSPOUT DRAINAGE OR WEEP TILE DRAINAGE SHALL BE ALLOWED TO ENTER ANY SANITARY SEWER INSTALLATION.

11. CHANNELING

    A PROPER CHANNEL SHALL BE CONSTRUCTED WITHIN THE EXISTING MANHOLE OR OTHER STRUCTURE AT WHICH THE CONNECTION IS TO BE MADE TO DIRECT THE FLOW TO THE EXISTING OUTLET IN A MANOR WHICH WILL TEND TO CREATE THE LEAST AMOUNT OF TURBULENCE. ANY PORTION OF THE EXISTING STRUCTURE WHICH WOULD INTERFERE WITH SUCH CONSTRUCTION SHALL BE REMOVED. CONCRETE CHANNELS FORMED INSIDE PRECAST FLEXIBLE–JOINT MANHOLES SHALL BE PLACED SO AS NOT TO INTERFERE IN ANY WAY WITH THE FLEXIBILITY OF THE JOINT. THE CHANNEL SHALL BE CONSTRUCTED THE SAME SIZE AS THE INSIDE DIAMETER OF THE EXISTING PIPE.

12. CASTING ADJUSTMENTS

    A. ADJUSTMENT TO MANHOLE CASTING SHALL BE ACCOMPLISHED BY USING RUBBER O–RING AND PRECAST CONCRETE ADJUSTMENT RING BOLTED TO THE CONCRETE SECTION WITH A MAXIMUM ADJUSTMENT OF TWO ADJUSTMENT RINGS NOT EXCEEDING 15 INCHES.

    B. MANHOLE CASTINGS LOCATED WITHIN PAVEMENT AREAS SHALL BE ADJUSTED A MAXIMUM OF 15 INCHES USING FOUR CADMIUM COATED 5/8 INCH DIAMETER THREADED STUDS WITH ADJUSTMENT SUPPORT NUTS FOR SETTING FRAME TO CORRECTED GRADE AS DETAILED ON THE CONTRACT DRAWINGS. THE VOID BETWEEN CASTING AND TOP OF CONE SECTION SHALL BE COMPLETLY FILLED WITH STIFF M.D.O.T. 30M OR 30P CONCRETE MIX. A CADDILLOC BRAND RUBBER WRAP FOR WATERTIGHTNESS SHALL BE APPLIED TO THE EXTERIOR OF THE ADJUSTMENT AFTER THE CONCRETE HAS TAKEN ITS INITIAL SET AND IS RESISTANT TO DAMAGE OR OTHERWISE SPECIFIED BY THE MUNICIPAL ENGINEER.

13. BORED AND JACKED CASING

    A. INSIDE DIAMETER OF CASING SHALL BE EQUAL TO THE OUTSIDE DIAMETER OF THE PIPE BELL PLUS 8 INCHES, UNLESS OTHERWISE NOTED ON CONTRACT DRAWINGS.

    B. UNLESS OTHERWISE SPECIFIED, CASING PIPE SHALL BE ASTM C–76 CLASS V R.C.P. OR ASTM A139 GRADE B WITH MINIMUM WALL THICKNESS OF 0.250 INCHES.

    C. ALTERNATE METHODS OF SUPPORTING AND MAINTAINING THE POSITION OF THE CARRIER PIPE WITH RESPECT TO THE CASING PIPE (IN LIEU OF THE USE OF TIMBERS) WILL BE CONSIDERED. THE CONTRACTOR SHALL SUBMIT DETAILS OF SUCH ALTERNATE METHODS FOR APPROVAL BY THE MUNICIPAL ENGINEER.

    D. THE ENDS OF THE CASING PIPE SHALL BE CLOSED WITH A MASONRY BULKHEAD.

14. TESTING

    ALL SANITARY SEWER SYSTEMS WILL HAVE PRELIMINARY AIR TESTS WITNESSED BY THE ENGINEER'S REPRESENTATIVE PRIOR TO A FINAL AIR TEST AND ACCEPTANCE BY THE OAKLAND COUNTY DEPARTMENT OF PUBLIC WORKS. ALSO, ALL STRUCTURES WILL BE COMPLETE AND IN SATISFACTORY CONDITION PRIOR TO FINAL ACCEPTANCE. ALL TESTING WILL BE IN ACCORDANCE WITH THE OAKLAND COUNTY DEPARTMENT OF PUBLIC WORKS STANDARDS AND SPECIFICATIONS. TELEVISING OF ALL SANITARY SEWER LINES WITH VIDEO TAPE WILL BE REQUIRED PRIOR TO SETTING UP THE FINAL AIR TEST. MANDRELLING MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER.

15. AT ALL CONNECTIONS TO AN EXISTING OCDC SEWER, OR EXTENSION THERETO, A WATERTIGHT BULKHEAD WITH A CAPPED ONE INCH DIAMETER PIPE TO PERMIT MEASURING INFILTRATION SHALL BE PROVIDED. A TEMPORARY 12–INCH DEEP SUMP SHALL ALSO BE PROVIDED IN THE FIRST MANHOLE ABOVE THE CONNECTION WHICH WILL BE FILLED IN AFTER SUCCESSFUL COMPLETION OF ANY ACCEPTANCE TEST UP TO THE STANDARD FILLET PROVIDED FOR THE FLOW CHANNEL.

FOR REFERENCE ONLY

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SANITARY SEWER DETAILS

CITY OF NOVI

Revisions

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SPECIFICATIONS FOR POLYVINAL CHLORIDE (PVC) PIPE SANITARY SEWERS

MATERIALS AND CERTIFICATIONS

PVC PIPE AND FITTINGS SHALL BE AS DESCRIBED UNDER ASTM DESIGNATION D-3034-81, STANDARD SPECIFICATIONS FOR POLYVINYL CHLORIDE SEWER PIPE AND FITTINGS. MINIMUM WALL THICKNESS SHALL BE SDR 35.

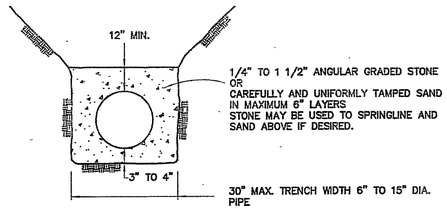
ALL PIPE SHALL BE CERTIFIED BY THE MANUFACTURER TO MEET THE APPLICABLE ASTM SPECIFICATION REQUIREMENTS. CERTIFICATION FORMS TOGETHER WITH A REPORT OF THE TEST RESULTS SHALL BE PROVIDED THE CONSTRUCTION INSPECTOR WITH PIPE DELIVERIES AND COPIES SHALL BE FORWARDED TO THE ENGINEER OR THE OWNER. CERTIFICATION FORMS SHALL INCLUDE PROJECT NAME, LOCATION, CONTRACTOR AND TEST LOT NUMBER. LOT SIZES SHALL BE ACCEPTABLE TO THE ENGINEER.

ALL PIPE AND FITTINGS SHALL BE SUITABLY MARKED TO PROVIDE MANUFACTURER'S NAME OR TRADEMARK, LOT OR PRODUCTION NUMBER, ASTM DESIGNATION, PVC CELL CLASIFICATION, SDR NUMBER, AND NOMINAL DIAMETER. FITTINGS, HOWEVER, NEED NOT CONTAIN LOT NUMBER, CELL CLASIFICATIONS, OR SDR NUMBER. PIPE SHALL HAVE A "HOME" MARK.

BEDDING

BEDDING FOR PVC PIPE SHALL BE IN ACCORDANCE WITH ASTM D 2321-74, EXCEPT (1) ONLY CLASS I AND CLASS II MATERIALS HAVING A MAXIMUM PARTICLE SIZE OF 1 1/2" MAY BE USED, (2) EMBEDMENT SHALL EXTEND TO MINIMUM 12" ABOVE TOP OF PIPE, AND (3) FLOODING OR PUDDLING SHALL NOT BE USED. IT IS ESSENTIAL THAT IT BE RECOGNIZED THAT THE SUCCESSFUL USE OF FLEXIBLE PIPE REQUIRES BEDDING THAT PROVIDES UNYIELDING SIDE SUPPORT AND COMPLETE BEDDING CONTACT UNDER PIPE HAUNCHES. BEDDING MATERIAL MUST BE PROPERLY PLACED AND COMPACTED TO PROVIDE LATERAL RESTRAINT AGAINST DEFLECTION IN THE PIPE DIAMETER. PIPE MUST BE BEDDED TO TRUE LINE AND GRADE THROUGHOUT ITS LENGTH. BELL HOLES SHALL BE PROVIDED WHERE REQUIRED.

PVC PIPE BEDDING DETAIL



WHERE UNSTABLE BOTTOMS ARE ENCOUNTERED, THE CONTRACTOR SHALL PROVIDE A FOUNDATION CONSISTING OF AN APPROVED GRADED PROCESSED ANGULAR STONE OR GRAVEL TO ACT AS AN IMPERVIOUS MAT TO PREVENT MIGRATION OR VERTICAL MOVEMENT OF UNSTABLE SOILS OR BEDDING METERIALS. WHERE TRENCH SHEETING, PLATES, OR A TRENCH BOX ARE USED DUE TO SEVERE GROUND CONDITIONS, ALL VOIDS TO THE SIDE AND BELOW THE TOP OF THE PIPE CAUSED BY THE SHEETING, PLATES, OR BOX WITHDRAWAL SHALL BE COMPLETELY FILLED OR THE SUPPORTS LEFT IN PLACE BELOW THE TOP OF THE PIPE.

CONCRETE CRADLE BEDDING SHALL NOT BE USED WHERE ALLOWABLE TRENCH WIDTHS ARE EXCEEDED. IN LIEU OF CONCRETE CRADLE BEDDING, STANDARD PIPE BEDDING SHOWN SHALL BE PROVIDED TO THE FULL WIDTH BETWEEN UNDISTURBED TRENCH WALLS OR AT LEAST TO 2.5 PIPE DIAMETERS ON BOTH SIDES OF THE PIPE.

DUE TO POTENTIAL DAMAGE TO EXTERIOR WALLS OF PLASTIC PIPE, PARTICULARLY UNDER COLD WEATHER CONDITIONS, IF ROCKS, FROZEN MATERIAL OR LARGE OBJECTS STRIKE THE PIPE, THE CONTRACTOR SHALL CAREFULLY AVOID DUMPING ANY MATERIALS OTHER THAN APPROVED BEDDING SAND OR STONE ON THE PIPE UNTILL 12" COVER IS PLACED ON IT. PIPE WALLS AND JOINTS SHALL ALSO BE PROTECTED FROM ABRASION AND DAMAGE DURING HANDLING, AND SHALL BE FULLY INSPECTED JUST PRIOR TO PLACING IN THE TRENCH.

CARE SHALL BE TAKEN DURING BEDDING COMPACTION TO AVOID DISTORTING THE SHAPE OF THE PIPE OR DAMAGING ITS WALL. MOBILE EQUIPMENT SHALL NOT BE USED OVER THE PIPE TRENCH UNTILL 48" OF COVER HAS BEEN PLACED.

HOUSE CONNECTIONS SHALL BE MADE TO WYE OR TEE FITTINGS. BEDDING FOR HOUSE CONNECTION SEWERS SHALL BE EQUAL TO THAT OF THE MAIN SEWER BEDDING. RISERS IN DEEP AND UNSTABLE TRENCHES SHOULD BE BEDDED IN CLASS I ANGULAR STONE TO AVOID SETTLEMENT. CONCRETE SHALL NOT BE USED FOR BEDDING. END CAPS OR PLUGS SHALL BE BRACED OR ANCHORED TO WITHSTAND AIR TEST PRESSURES. CAPS OR PLUGS SHALL NOT BE CHEMICALLY WELDED IN PLACE.

JOINTS

JOINTS FOR PIPE AND FITTINGS SHALL BE OF THE ELASTOMERIC GASKET PUSH-ON TYPE. SUCH JOINTS SHALL CONFORM TO ASTM DESIGNATION D 3212-81 AND THE PIPE MANUFACTURER SHALL FILE WITH THE OAKLAND COUNTY D.P.W. A COPY OF CERTIFIED TEST RESULTS OF ITS JOINTING SYSTEM PRIOR TO USE. GASKET JOINTS SHALL BE INSTALLED IN ACCORDANCE WITH PROCEDURES SPECIFIED BY THE PIPE MANUFACTURER. CARE SHALL BE TAKEN TO INSURE ALL JOINTS BEING PUSHED TO THE FULL "HOME" POSITION AND HELD TIGHTLY IN THE "HOME" POSITION DURING ANY GRADE OR LINE ADJUSTMENTS.

CUTTING AND HANDLING

CUTTING OF PIPE LENGTHS, WHERE REQUIRED, SHALL BE PERFORMED BY THE USE OF TOOLS OR EQUIPMENT THAT WILL PROVIDE A NEAT, PERPENDICULAR CUT WITHOUT DAMAGE TO THE PLASTIC. ALL BURRS SHALL BE REMOVED BY THE USE OF A FILE, KNIFE, OR ABRASIVE PAPER. SPIGOT ENDS ON CUT PIPE SHALL BE BEVELED SIMILAR TO FACTORY BEVELING TO OREVENT GASKET DAMAGE.

BOWING OR WARPING OF PLASTIC PIPE CAN OCCUR WITH TEMPERATURE FLUCTUATIONS. THE CONTRACTOR SHALL STORE AND PROTECT THE PIPE TO MINIMIZE BOWING. NOMINAL PIPE LENGTHS OF 10', 12'-6", OR 20' HAVING DEVIATIONS FROM STRAIGHT GREATER THAN 1" SHALL NOT BE USED.

SPECIAL CONDITIONS

THE COMPLETED INSTALLATION SHALL AT NO POINT HAVE OUT-OF-ROUND PIPE DEFLECTIONS GREATER THAN 7 1/2%. THE ENGINEER SHALL HAVE THE OPTION OF REQUIRING DEFLECTOMETER OR GO/NO-GO GAUGING TESTS RUN PRIOR TO ACCEPTANCE ON PIPELINES WHERE HIGH DEFLECTIONS ARE SUSPECTED.

ALL STANDARD OAKLAND COUNTY D.P.W. SPECIFICATIONS AND DETAILS SHALL APPLY TO THIS WORK EXCEPT WHERE COVERED OTHERWISE BY THESE SUPPLEMENTAL SPECIFICATIONS. OAKLAND COUNTY D.P.W. AIR TEST REQUIREMENTS SHALL BE MET. D.P.W. APPROVED FLEXIBLE MANHOLE JOINTS SHALL BE USED. TO MAINTAIN THE FLEXIBILITY OF THE PIPE MATERIALS, CONCRETE ENGASEMENT OF DROP CONNECTIONS SHALL NOT BE USED. WHERE ADAPTERS TO OTHER MATERIALS ARE REQUIRED, ONLY APPROVED ADAPTERS AND JOINTS MAY BE USED. WHERE CONNECTIONS ARE MADE TO EXISTING MANHOLES, A RUBBER WATERSTOP SHALL BE USED AROUND THE PIPE.

AS-BUILT PLANS SHALL BE PROVIDED THE OAKLAND COUNTY D.P.W. BY THE ENGINEER OR THE LOCAL UNIT OF GOVERNMENT AND AS-BUILT PLANS SHALL SPECIFICALLY DESIGNATE WHERE PVC SEWER PIPE WAS INSTALLED.

OCDPW 4/82

SPECIFICATIONS FOR TRUSS PIPE SANITARY SEWERS

MATERIALS AND CERTIFICATIONS

ARMCO TRUSS PIPE AND FITTINGS SHALL BE AS DESCRIBED UNDER ASTM DESIGNATION D2680-80, STANDARD SPECIFICATIONS FOR ACRYLONITRILE-BUTADIENE-STYRENE (ABS). COMPOSITE SEWER PIPINE. APPENDIX XI OF SAID SPECIFICATIONS SHALL BE AS MODIFIED BY THE BEDDING REQUIREMENTS OUTLINED BELOW.

SOLID WALL ABS PIPE FOR 6" HOUSE CONNECTION SEWERS SHALL BE SDR 35 OR SDR 23.5, CONFORMING TO ASTM DESIGNATION D 2751-80 STANDARD SPECIFICATION FOR ACRYLONITRILE-BUTADIENE-STYRENE (ABS) SEWER PIPE AND FITTINGS. SOLID WALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH BEDDING REQUIREMENTS OUTLINED BELOW.

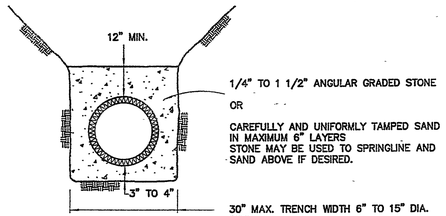
ALL PIPE SHALL BE CERTIFIED BY THE MANUFACTURER TO MEET THE APPLICABLE ASTM SPECIFICATION REQUIREMENTS. CERTIFICATION FORMS, TOGETHER WITH A REPORT OF THE TEST RESULTS, SHALL BE PROVIDED THE INSPECTOR WITH PIPE DELIVERIES AND COPIES SHALL BE FORWARDED TO THE ENGINEER OR THE OWNER. CERTIFICATION FORMS SHALL INCLUDE PROJECT NAME, LOCATION, CONTRACTOR, AND TEST LOT NUMBER. LOT SIZES SHALL BE ACCEPTABLE TO THE ENGINEER.

ALL PIPE AND FITTINGS SHALL BE SUITABLY MARKED TO PROVIDE MANUFACTURER'S NAME, LOT OR PRODUCTION NUMBER, ASTM DESIGNATION, ABS, NOMINAL DIAMETER, AND SDR NUMBER, WHERE APPLICABLE. FITTINGS, HOWEVER, NEED NOT CONTAIN LOT OR PRODUCTION NUMBER. PIPE SHALL HAVE A "HOME" MARK. TRUSS PIPE WITH AN ABSENCE OF FILLER MATERIAL AT THE ENDS GREATER THAN 1/4" DEEP SHALL BE SUBJECT TO REJECTION OR ACCEPTABLE REPAIR.

BEDDING

BEDDING FOR TRUSS PIPE AND ABS SOLID WALL PIPE SHALL BE IN ACCORDANCE WITH ASTM D2321-74 EXCEPT, (1) ONLY CLASS I AND CLASS II MATERIALS MAY BE USED, (2) EMBEDMENT SHALL EXTEND TO MINIMUM 12" ABOVE TOP OF PIPE, AND (3) FLOODING OR PUDDLING SHALL NOT BE USED. IT IS ESSENTIAL THAT IT BE RECOGNIZED THAT THE SUCCESSFUL USE OF FLEXIBLE AND SEMI-FLEXIBLE PIPE REQUIRES BEDDING THAT PROVIDES UNYIELDING SIDE SUPPORT AND COMPLETE BEDDING CONTACT UNDER PIPE HAUNCHES.

TRUSS AND SOLID WALL PIPE BEDDING MATERIAL



WHERE UNSTABLE BOTTOMS ARE ENCOUNTERED, THE CONTRACTOR SHALL PROVIDE A FOUNDATION CONSISTING OF AN APPROVED GRADED AND PROCESSED ANGULAR STONE OR GRAVEL TO ACT AS AN IMPERVIOUS MAT TO PREVENT MIGRATION OR VERTICAL MOVEMENT OF UNSTABLE SOILS OR BEDDING MATERIALS. WHERE TRENCH SHEETING, PLATES, OR A TRENCH BOX ARE USED DUE TO SEVERE GROUND CONDITIONS, ALL VOIDS TO THE SIDE AND BELOW THE TOP OF THE PIPE CAUSED BY THE SHEETING, PLATES, OR BOX WITHDRAWAL SHALL BE COMPLETELY FILLED OR THE SUPPORTS LEFT IN PLACE BELOW THE TOP OF THE PIPE.

CONCRETE CRADLE BEDDING SHALL NOT BE USED WHERE ALLOWABLE TRENCH WIDTHS ARE EXCEEDED. IN LIEU OF CONCRETE CRADLE BEDDING, STANDARD PIPE BEDDING SHOWN SHALL BE PROVIDED TO THE FULL WIDTH BETWEEN UNDISTURBED TRENCH WALLS OR AT LEAST 2.5 PIPE DIAMETERS ON BOTH SIDES OF THE PIPE.

DUE TO POTENTIAL DAMAGE TO EXTERIOR WALLS OF TRUSS PIPE, PARTICULARLY UNDER COLD WEATHER CONDITIONS, IF ROCKS, FROZEN MATERIAL OR LARGE OBJECTS STRIKE THE PIPE, THE CONTRACTOR SHALL CAREFULLY AVOID DUMPING ANY MATERIALS OTHER THAN APPROVED BEDDING SAND OR STONE ON THE PIPE UNTILL 12" COVER IS PLACED ON IT. PIPE WALLS AND ENDS SHALL ALSO BE PROTECTED FROM ABRASION AND DAMAGE DURING HANDLING, AND SHALL BE FULLY INSPECTED JUST PRIOR TO PLACING IN THE TRENCH.

CARE SHALL BE TAKEN DURING BEDDING COMPACTION TO AVOID DISTORTING THE SHAPE OF THE PIPE OR DAMAGING ITS EXTERIOR WALL. MOBILE EQUIPMENT SHALL NOT BE USED OVER THE PIPE TRENCH UNTILL 48" OF COVER HAS BEEN PLACED.

HOUSE CONNECTIONS SHALL BE MADE TO WYE OR TEE FITTINGS. BEDDING FOR HOUSE CONNECTION SEWERS SHALL BE EQUAL TO THAT OF THE MAIN SEWER BEDDING. RISERS IN DEEP AND UNSTABLE TRENCHES SHOULD BE BEDDED IN CLASS I ANGULAR STONE TO AVOID SETTLEMENT. CONCRETE SHALL NOT BE USED FOR BEDDING. END CAPS OR PLUGS SHALL BE BRACED OR ANCHORED TO WITHSTAND AIR TEST PRESSURES. CAPS OR PLUGS SHALL NOT BE CHEMICALLY WELDED IN PLACE.

JOINTS

JOINTS SHALL BE CHEMICALLY WELDED IN ACCORDANCE WITH THE MANUFACTURES RECOMMENDATION. ADDITIONALLY, ALL EXPOSED ENDS OF TRUSS PIPE SHALL BE FULLY AND THOROUGHLY COATED WITH PLASTIC JOINTING CEMENT PRIOR TO MAKING JOINTS SO AS TO SEAL ENDS TO ELIMINATE THE POSSIBILITY OF FALSE LOW PRESSURE AIR TESTS. CARE SHALL BE TAKEN TO INSURE ALL JOINTS BEING PUSHED TO THE FULL "HOME" POSITION AND HELD TIGHTLY IN THE "HOME" POSITION DURING ANY GRADE OR LINE ADJUSTMENTS. PIPE SHALL BE ROTATED DURING JOINT INSERTION TO INSURE A COMPLETE SPREAD OF JOINTING CEMENT. ABS PLASTIC CEMENT PRIMER AND ABS PLASTIC PIPE CEMENT SHALL ARRIVE AT THE JOB SITE IN SEALED AND LABELED CONTAINERS. "JOHNNY MOPS" OR SIMILAR SWAB TYPE APPLICATORS SHALL BE USED TO APPLY PRIMER AND CEMENT. OPENED CONTAINERS IN THE TRENCH SHALL BE PROTECTED FROM DIRT, WATER, AND OTHER CONTAMINANTS.

CUTTING AND HANDLING

CUTTING OF PIPE LENGTHS, WHERE REQUIRED, SHALL BE PERFORMED BY THE USE OF TOOLS OR EQUIPMENT THAT WILL PROVIDE A NEAT, PERPENDICULAR CUT WITHOUT DAMAGE TO THE PLASTIC OR THE FILLER MATERIAL. BOWING OR WARPING OF ABS PIPE CAN OCCUR WITH TEMPERATURE FLUCTUATIONS. THE CONTRACTOR SHALL STORE AND PROTECT THE PIPE TO MINIMIZE BOWING. NOMINAL 12'-6" PIPE LENGTHS HAVING DEVIATIONS FROM STRAIGHT GREATER THAN 1" SHALL NOT BE USED.

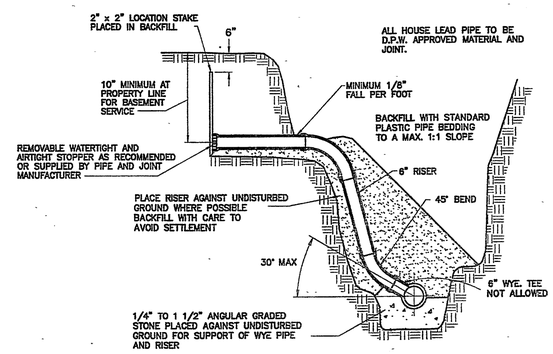
SPECIAL CONDITIONS

THE COMPLETED INSTALLATION SHALL AT NO POINT HAVE OUT-OF-ROUND PIPE DEFLECTIONS GREATER THAN 5%. THE ENGINEER SHALL HAVE THE OPTION OF REQUIRING DEFLECTOMETER OR GO/NO-GO GAUGING TESTS RUN PRIOR TO ACCEPTANCE ON PIPELINES WHERE HIGH DEFLECTIONS ARE SUSPECTED.

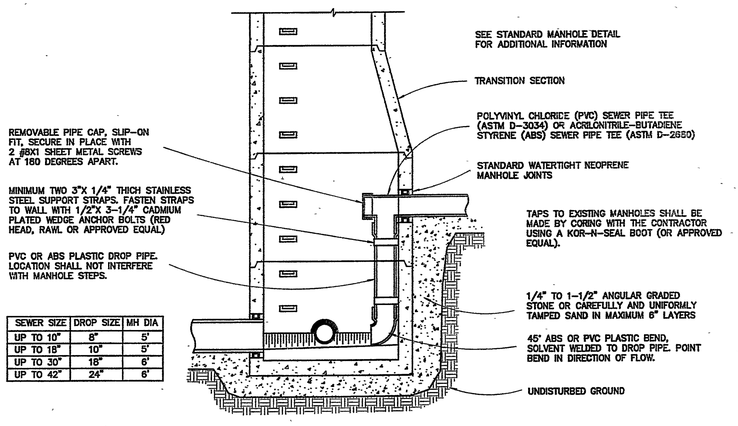
ALL STANDARD OAKLAND COUNTY D.P.W. SPECIFICATIONS AND DETAILS SHALL APPLY TO THIS WORK EXCEPT WHERE COVERED OTHERWISE BY THESE SUPPLEMENTAL SPECIFICATIONS. OAKLAND COUNTY D.P.W. AIR TEST REQUIREMENTS SHALL BE MET. D.P.W. APPROVED FLEXIBLE MANHOLE JOINTS SHALL BE USED. TO MAINTAIN THE FLEXIBILITY OF THE PIPE MATERIALS, CONCRETE ENCASEMENT OF DROP CONNECTIONS SHALL NOT BE USED. WHERE ADAPTERS TO OTHER MATERIALS ARE REQUIRED, ONLY APPROVED ADAPTERS AND JOINTS MAY BE USED. WHERE CONNECTIONS ARE MADE TO EXISTING MANHOLES, A RUBBER WATERSTOP SHALL BE USED AROUND THE PIPE.

AS-BUILT PLANS SHALL BE PROVIDED THE OAKLAND COUNTY D.P.W. BY THE ENGINEER OR THE LOCAL UNIT OF GOVERNMENT AND AS-BUILT PLANS SHALL SPECIFICALLY DESIGNATE WHERE ABS SEWER PIPE WAS INSTALLED.

OCDPW 4/82



HOUSE LEAD DETAIL
FOR
PLASTIC LEADS INSTALLED MORE THAN 16 FEET DEEP
(TO A MAXIMUM OF 35 FEET DEEP)



SEWER SIZE	DROP SIZE	MH DIA
UP TO 10"	8"	5'
UP TO 18"	10"	5'
UP TO 30"	18"	6'
UP TO 42"	24"	6'

DROP CONNECTION INSIDE LARGE DIAMETER MANHOLE
FOR DROP CONNECTIONS GREATER THAN 20 FEET DEEP

FOR REFERENCE ONLY

JCK & ASSOCIATES, INC.
46650 GRAND RIVER AVENUE
NOVI, MICHIGAN 48376
PHONE: (248) 349-2880
FAX: (248) 349-2777

JCK

O.C.D.P.W. SANITARY SEWER DETAILS

CITY OF NOVI

Revisions

Drawn
Designed
Checked

Scale
NO SCALE

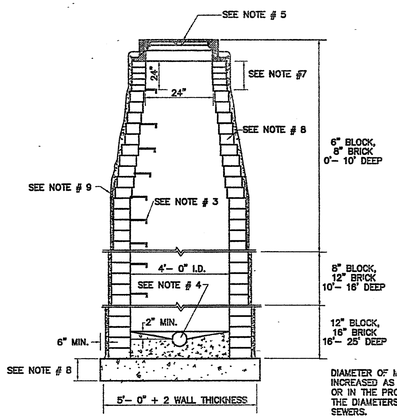
Date
6/15/98

Job No.

Sht. No.
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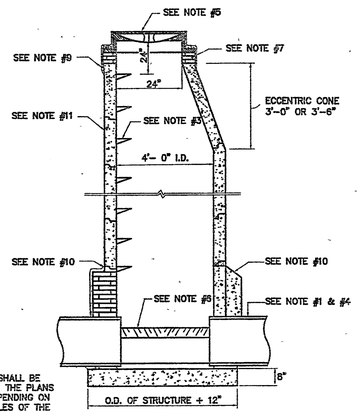
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DIAMETER OF MANHOLES SHALL BE INCREASED AS SHOWN ON THE PLANS OR IN THE PROPOSAL DEPENDING ON THE DIAMETERS AND ANGLES OF THE SEWERS.

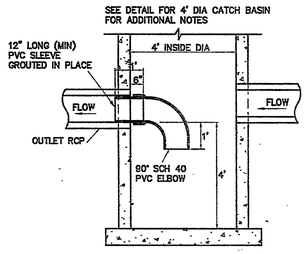
STANDARD MANHOLE BRICK OR BLOCK FOR PIPES 36" & SMALLER

SEE NOTE #12



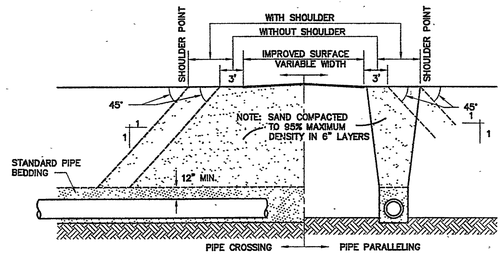
STANDARD MANHOLE PRECAST FOR PIPES 36" & SMALLER

SEE NOTE #12



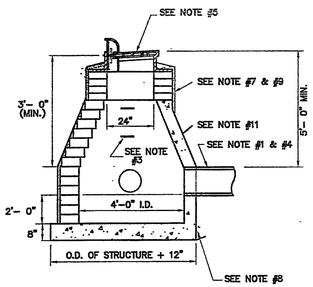
OIL/GAS SEPARATOR

FOR OUTLET PIPE DIAMETERS SMALLER THAN 18"



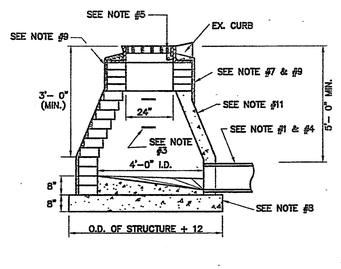
BACKFILLING IN THE AREAS OF STREETS, ALLEYS, SIDEWALKS, DRIVES & PARKING AREA

SEE NOTE # 2



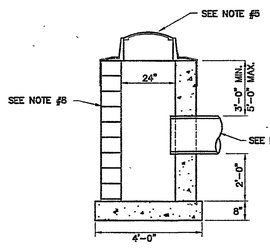
4' DIA. BRICK OR PRECAST CATCH BASIN

SEE NOTE #12



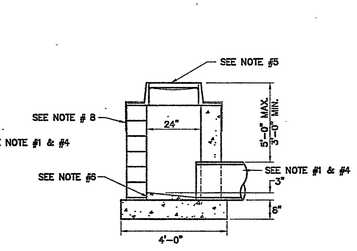
4' DIA. BRICK OR PRECAST INLET

SEE NOTE #12



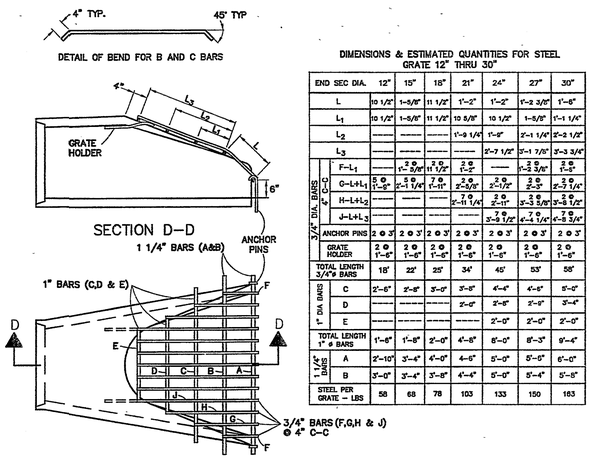
2' DIAMETER YARD BASIN & CATCH BASIN

SEE NOTE #12



2' DIAMETER INLET

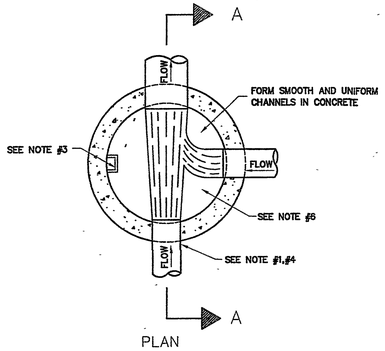
SEE NOTE #12



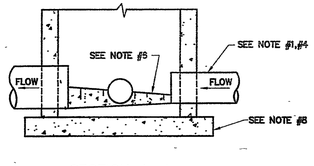
STEEL GRATE FOR PRECAST CONCRETE END SECTION

DIMENSIONS & ESTIMATED QUANTITIES FOR STEEL GRATE 12" THRU 30"

END SEC DIA.		12"	15"	18"	21"	24"	27"	30"
L		10 1/2"	1–3/8"	11 1/2"	1'–2"	1'–2"	1'–2 3/8"	1'–6"
L_1		10 1/2"	1–3/8"	11 1/2"	10 5/8"	10 1/2"	1–3/8"	1'–1 1/4"
L_2		———	———	———	1'–9 1/4"	1'–6"	2'–1 1/4"	2'–2 1/2"
L_3		———	———	———	———	2'–7 1/2"	3'–1 7/8"	3'–3 3/4"
3/4" DIA. BARS 4" C–C	F–L_1	2 0 1'– 5/8"	2 0 1'– 5/8"	2 0 1'– 7/8"	2 0 1'–2"	——	2 0 1'–3 3/8"	2 0 1'–5"
	G–L_1+L_2	5 0 1'–2"	5 0 1'–2 1/4"	7 0 1'–5"	2 0 2'–5/8"	2 0 2'–1/2"	2 0 2'–3"	2 0 2'–3 1/4"
	H–L_1+L_2	———	———	———	7 0 2'–11 1/4"	2 0 2'–11"	2 0 3'–3 3/8"	2 0 3'–3 1/2"
	J–L_1+L_2	———	———	———	———	7 0 3'–3 1/2"	7 0 4'–1 1/4"	7 0 4'–5 3/4"
	ANCHOR PINS	2 0 3'	2 0 3'	2 0 3'	2 0 3'	2 0 3'	2 0 3'	2 0 3'
	GRATE HOLDER	2 0 1'–6"	2 0 1'–6"	2 0 1'–6"	2 0 1'–6"	2 0 1'–6"	2 0 1'–6"	2 0 1'–6"
TOTAL LENGTH 3/4"ø BARS		18'	22'	25'	34'	45'	53'	58'
1" DIA BARS	C	2'–6"	2'–8"	3'–0"	3'–8"	4'–4"	4'–8"	5'–0"
	D	———	———	———	2'–0"	2'–8"	2'–9"	3'–4"
	E	———	———	———	———	2'–0"	2'–0"	2'–0"
TOTAL LENGTH 1" ø BARS		1'–8"	1'–8"	2'–0"	4'–8"	8'–0"	8'–3"	9'–4"
1/4" BARS	A	2'–10"	3'–4"	4'–0"	4–6"	5'–0"	5'–5"	6'–0"
	B	3'–0"	3'–4"	3'–8"	4'–4"	5'–0"	5'–4"	5'–8"
STEEL PER GRATE – LBS		58	68	78	103	133	150	163

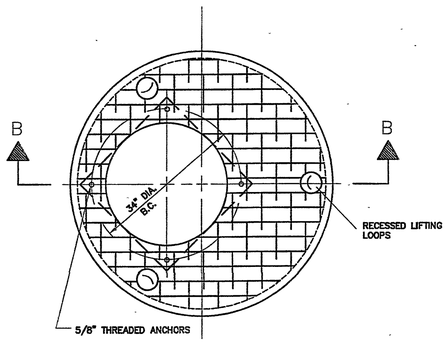


PLAN

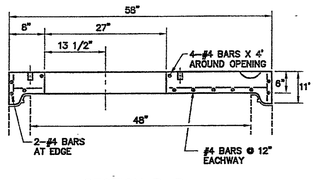


SECTION A–A

CHANNEL DETAIL

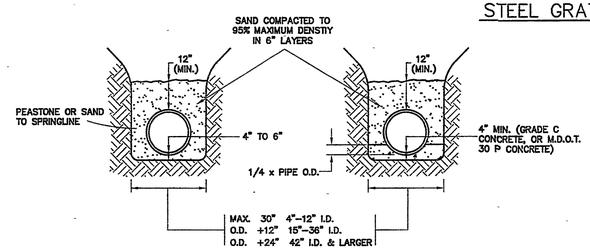


PLAN



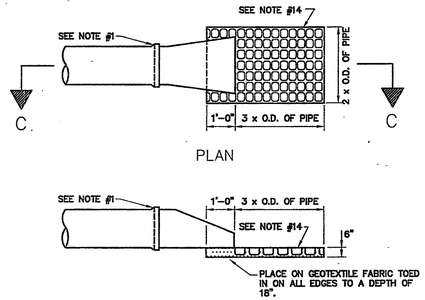
SECTION B–B

FLAT SLAB MANHOLE TOP



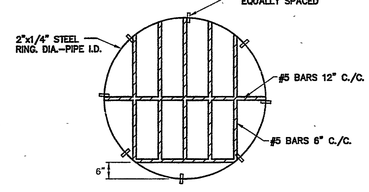
CLASS "B" BEDDING CLASS "A" BEDDING

BEDDING & TRENCH WIDTH REQUIREMENT



SECTION C–C

GROUTED RIP–RAP



INLET BAR SCREEN DETAIL 18"–36"

SEE NOTE #13

M.D.O.T. GRADE OF CONCRETE	M.D.O.T. REFERENCE SECTION NUMBER (1990 VERSION)	CLASS OF COARSE AGGREGATE	CEMENT TYPE	CEMENT CONTENT LBS. PER CU. YD.	CEMENT CONTENT SACKS (94 LB)CU. YD.	AIR ENTR. %	COMPRESSIVE PSI
40 S	5.03	6A	1A,1S–A	611	6.5	6± 1	4000
35 S	5.03 6.09 6.11 6.17	6AA 6A	1A 1S–A	564	6.0	6± 1	3500
30 P	4.25 4.50	6A	1A,1S–A	517	5.5	6± 1	3000
30 M	5.14 6.03 6.11 6.12	6A	1A 1S–A	517	5.5	6± 1	3000

CONCRETE MIXTURES

"STORM SEWER CONSTRUCTION NOTES"

1. PIPE TYPES AND PIPE JOINTS:
   - A. REINFORCED CONCRETE: PIPE SHALL CONFORM TO ASTM C–76. JOINTS SHALL CONFORM TO ASTM C–443.
   - B. ALL CATCH BASIN LINES AND INLET LINES SHALL CONFORM TO ASTM C–76, AND SHALL BE OF CLASS IV CONCRETE PIPE.
   - C. FOR SUMP MAIN(S) AND LEAD(S) A HEAVY WALL SCHEDULE 40 (CONFORM TO ASTM D3034) PREMIUM JOINTS PVC, ARMCO TRUSS PIPE OR PVC CORRUGATED WITH SMOOTH INTERIOR, MEETING THE REQUIREMENTS OF ASTM F–949. ALL PIPE MATERIALS SHALL BE PLACED IN CLASS "B" BEDDING (OR APPROVED EQUIVALENT).
   - D. THE INSIDE JOINTS OF PIPE SIZES OVER 27" DIAMETER SHALL BE POINTED UP WITH MORTAR UPON COMPLETION OF BACKFILLING OPERATIONS.
2. PIPE BEDDING AND BACKFILLING:
   - A. BEDDING SHALL BE OF CLASS "B" MATERIAL UNLESS OTHERWISE NOTED ON CONSTRUCTION DRAWING AND SHALL BE A MINIMUM OF 4" BELOW PIPE TO CENTERLINE OF THE PIPE. BEDDING SHALL BE UNIFORM IN GRADE.
   - B. BACKFILL SHALL BE OF CLASS "B" MATERIAL COMPACTED TO 1' ABOVE PIPE OR AS INDICATED ON CONSTRUCTION DRAWINGS. TRENCH BACKFILL SHALL BE OF A SUITABLE MATERIAL AND SHALL BE FREE OF ANY ORGANIC MATERIALS AND LARGE ROCKS. BACKFILL SHALL BE RAMPED INTO TRENCH AND COMPACTED WITH A SMALL DOZER OR OTHER APPROVED METHODS. WHERE TRENCH IS WITHIN 3' OF STREET, ALLEY'S, SIDEWALKS, DRIVEWAYS AND PARKING AREAS, BACKFILL SHALL BE GRANULAR MATERIAL MDOT CLASS II COMPACTED IN 9" LAYERS TO A DENSITY OF 95% AS DETERMINED BY AASHTO T99. ALL BACKFILL PLACED WITHIN 3' OF STRUCTURES SHALL BE APPROVED SAND, PLACED IN 1' LAYERS AND COMPACTED. NO FROZEN MATERIAL SHALL BE BURIED MORE THAN 4' BELOW THE FINAL ELEVATION OF THE GROUND.
   - C. TRENCHES WHICH ARE TO BE LEFT OPEN OVERNIGHT SHALL BE ENCLOSED WITH SUITABLE FENCING AND LIGHTED BARRICADES, UNLESS OTHERWISE APPROVED BY MUNICIPAL ENGINEER.
   - D. TRENCH COMPACTION REQUIREMENTS FOR PVC CORRUGATED WITH SMOOTH INTERIOR (ASTM F–949) ARE PER MANUFACTURES SPECIFICATIONS AND MUST BE STRICTLY ADHERED TO.
3. A. MANHOLE STEPS SHALL BE STEEL, ENCASED WITH POLYPROPYLENE PLASTIC OR APPROVED EQUIVALENT TO M.A. INDUSTRIES, INC., PS–1 FOR BRICK, OR PS–1B FOR BLOCK, EAST JORDAN IRON WORKS 8503 (OR APPROVED EQUAL).
   - B. CATCH BASIN AND INLET STEPS SHALL BE EQUAL TO EAST JORDAN IRON WORKS 8503 PLASTIC COATED (OR APPROVED EQUAL).
4. PIPE SHALL BE FLUSH WITH THE INSIDE WALL OF STRUCTURE AND NOT TO EXCEED 1" INSIDE THE STRUCTURE. PIPE SHALL BE POINTED UP WITH A SMOOTH FINISH.
5. A. MANHOLE FRAME AND COVER SHALL BE EAST JORDAN IRON WORKS 1040, TYPE "B" COVER OR AS PER CONSTRUCTION DRAWINGS.
   - B. CATCH BASIN AND INLET FRAME AND COVER SHALL BE:
     1. EAST JORDAN IRON WORKS 7045, TYPE "K" COVER WITH STRAIGHT FACE AND GUTTER (OR AS APPROVED EQUAL).
     2. EAST JORDAN IRON WORKS 7065 TYPE "C–4" COVER WITH MOUNTABLE CURB AND GUTTER AND INTEGRAL CURB AND GUTTER (OR AS APPROVED EQUAL).
     3. EAST JORDAN IRON WORKS 1040, TYPE "02" COVER FOR 4' DIA. STRUCTURES AND EAST JORDAN IRON WORKS 1030, TYPE "01" COVER FOR 2' DIA. STRUCTURES TO BE USED ON OPEN DITCHES AND SWALES, REAR YARD CATCH BASINS (OR APPROVED EQUAL).
     4. EAST JORDAN IRON WORKS 1030, TYPE "A" COVER TO BE USED ON ALL 2' DIA. CLEANOUT (OR APPROVED EQUAL).
     5. COVERS FOR THE 2' DIA. SUMP PUMP CLEAN–OUT LINES SHALL BE EAST JORDAN IRON WORKS 1030 OR 1070, TYPE A COVER (OR APPROVED EQUAL).
   - C. FRAMES SHALL BE SET IN FULL BED OF MORTAR AND THE SIDE SHALL BE OVERLAPPED TO PREVENT LEAKAGE.
6. A PROPER CHANNEL SHALL BE CONSTRUCTED WITHIN THE EXISTING MANHOLE OR OTHER STRUCTURE AT WHICH THE CONNECTION IS TO BE MADE TO DIRECT THE FLOW TO THE EXISTING OUTLET IN A MANNER WHICH WILL TEND TO CREATE THE LEAST AMOUNT OF TURBULENCE. THE CHANNEL SHALL BE CONSTRUCTED TO THE SAME SIZE AS THE INSIDE DIAMETER OF THE EXISTING PIPES, AND SHALL BE BUILT TO HEIGHT OF 1/3 THE EXISTING PIPE DIAMETER WITH A MINIMUM OF 2% SLOPE ON THE BENCHES.
7. STANDARD BRICK ADJUSTMENT: MINIMUM – 6", MAXIMUM – 18"
8. A. BLOCK USED FOR STANDARD CATCH BASIN, INLET, AND MANHOLE SHALL BE 8" AND BRICK SHALL BE 8", OR AS PER CONSTRUCTION DRAWINGS.
   - B. BLOCK SHALL BE GRADE U–1 CONFORMING TO ASTM C–139
   - C. BRICK SHALL BE GRADE N–1 CONFORMING TO ASTM C–55
   - D. PRECAST REINFORCED CONCRETE SECTION AS MINIMUM CONFORM TO ASTM C–478
   - E. CONCRETE BASE FOR MANHOLE, CATCH BASIN, AND INLET SHALL BE M.D.O.T. GRADE 30P (MIN.), 8" THICK, 3000 PSI.
9. PLASTER ALL OUTSIDE MASONRY SURFACES WITH 1:2 1/2 MASONRY CEMENT (TYPE 11) 1/2" THICK.
10. WHEN TAPPING INTO AN EXISTING STRUCTURE A BRICK COLLAR SHALL BE PLACED 12" THICK AROUND THE PIPE AND EXTENDED 12" BEYOND THE OPENING.
11. ALL PRECAST RISER(S) SHALL BE PLACED IN A FULL BED OF MORTAR. ALL JOINTS SHALL BE POINTED UP WITH MORTAR ON THE OUTSIDE AND INSIDE.
12. A. ALL STRUCTURE(S) SHALL BE 4' IN DIAMETER UNLESS INDICATED ON CONSTRUCTION DRAWINGS. 2' DIAMETER CATCH BASIN, AND INLET SHALL BE USED WHEN INDICATED ON CONSTRUCTION DRAWING.
    - B. A PERMANENT 4' DEEP SUMP IS REQUIRED FOR THE LAST STORM WATER STRUCTURE THAT IS MAINTENANCE ACCESSIBLE PRIOR TO RELEASE OFF–SITE TO A SEDEMENTATION OR STORM WATER HOLDING BASIN.
    - C. 4' DIA MANHOLES SHALL BE CONSTRUCTED WITH OIL AND GAS SEPERATORS AT THE LAST STRUCTURE PRIOR TO DISCHARGE INTO A DETENTION BASIN OR OPEN DRAINAGE COURSE AS DIRECTED BY THE MUNICIPAL ENGINEER.
13. INLET BAR SCREEN
    - A. ALL BARS SHALL BE WELDED TO THE RING AND TO THE HORIZONTAL BARS.
    - B. THE BAR SCREEN SHALL BE GALVANIZED.
14. END SECTION TREATMENT SHALL INCLUDE FIELD STONE OR BROKEN CONCRETE OF 4" MINIMUM THICKNESS AND A 8 SQUARE FOOT MINIMUM AREA AND SHALL BE MORTERED TO FORM A MONOLITHIC SLAB WITH A MINIMUM THICKNESS OF 6" AND SHALL BE PLACED ON GEOTEXTILE FABRIC.

FOR REFERENCE ONLY

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CITY OF NOVI

STORM SEWER DETAILS

Revisions

Drawn

Designed

Checked

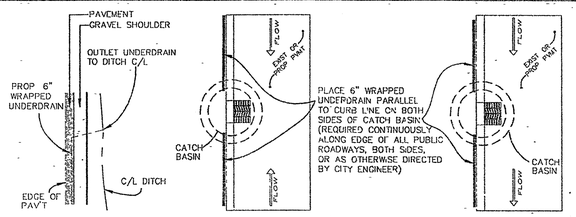
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Date 6/15/98

Job No.

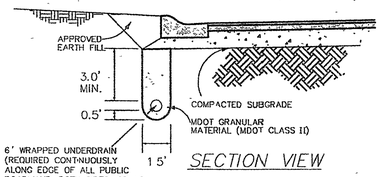
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DITCH OUTLET — LOW POINT — MID GRADE

PLAN VIEWS

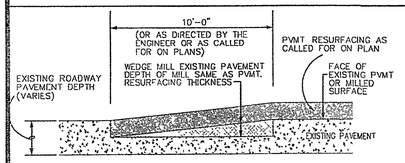


SECTION VIEW

NOTES
1) POLYETHYLENE PIPE SHALL CONFORM TO AASHTO #M-252. POLYVINYL CHLORIDE (PVC) PIPE SHALL CONFORM TO ASTM #F-800 ALL CONNECTIONS, END CAPS, TEES AND FITTINGS SHALL BE SIMILAR PIPE MATERIAL. 6" DIAMETER PIPE REQUIRED THE GEOTEXTILE WRAP SHALL CONFORM TO AASHTO #M-288
2) IF CONCRETE PAVEMENT ON CLAY GRADE IS PROPOSED, THE MDOT GRANULAR MATERIAL SHALL BE CONTINUED TO THE BOTTOM OF THE PAVEMENT OR CURB
3) IF SHOULDER IS PROPOSED, THE UNDERDRAIN SHALL BE PLACED DIRECTLY UNDER THE EDGE OF PAVEMENT

UNDERDRAIN DETAILS

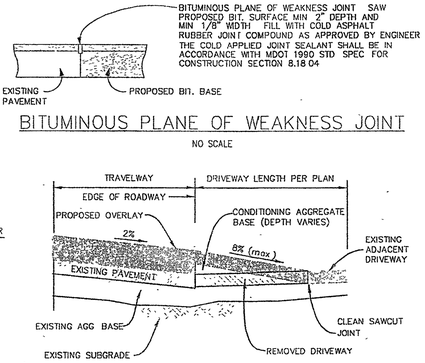
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NOTE
THE "MILLED JOINT" DETAIL SHALL APPLY TO ALL AREAS WHERE THE PROPOSED RESURFACING MEETS EXISTING STREETS AND ROADWAYS, OR AS CALLED FOR ON THE PLANS.

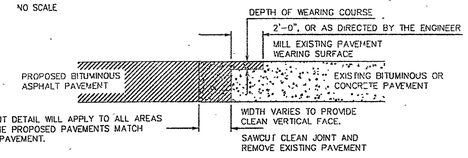
TRANSVERSE MILLED JOINT DETAIL

NO SCALE



BITUMINOUS PLANE OF WEAKNESS JOINT

NO SCALE



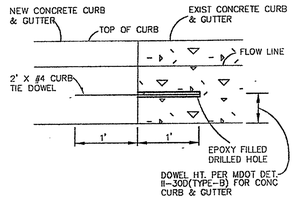
NOTE
BUTT JOINT DETAIL WILL APPLY TO ALL AREAS WHERE THE PROPOSED PAVEMENTS MATCH EXISTING PAVEMENT.

PAVEMENT BUTT JOINT

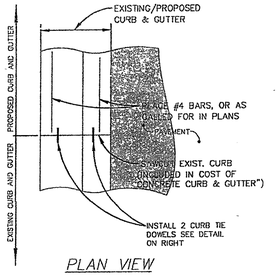
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DRIVEWAY TRANSITION DETAIL

NO SCALE



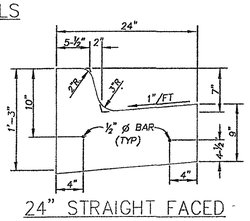
SECTION VIEW



PLAN VIEW

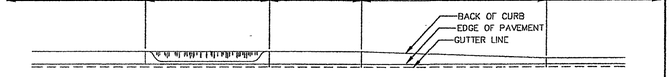
CURB TIE DOWELS

NO SCALE

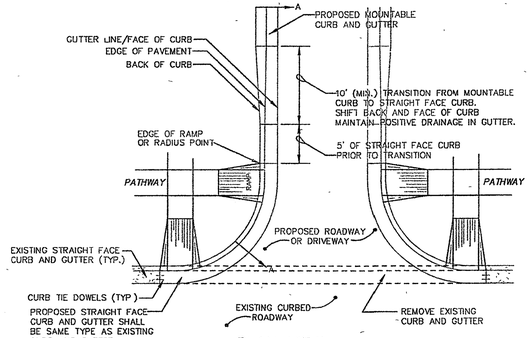


24" STRAIGHT FACED CONCRETE CURB & GUTTER (MDOT DETAIL C-4)

NO SCALE



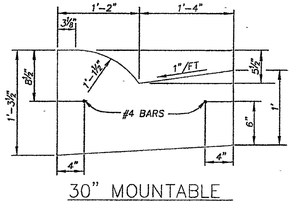
PROFILE VIEW A-A



PLAN VIEW

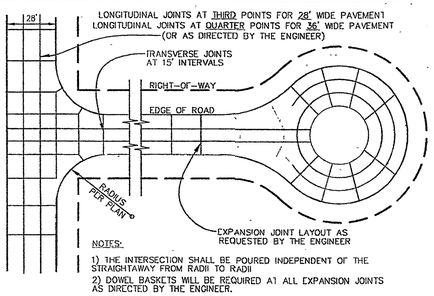
PROPOSED MOUNTABLE CURB AND GUTTER TO EXISTING STRAIGHT FACE CURB AND GUTTER TRANSITION

NO SCALE



30" MOUNTABLE CONCRETE CURB & GUTTER (MDOT DETAIL B-2, MODIFIED)

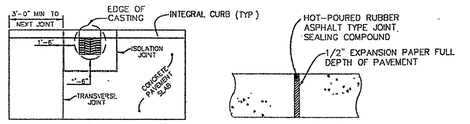
NO SCALE



NOTES:
1) THE INTERSECTION SHALL BE POURED INDEPENDENT OF THE STRAIGHTAWAY FROM RADII TO RADII
2) DOWEL BASKETS WILL BE REQUIRED AT ALL EXPANSION JOINTS AS DIRECTED BY THE ENGINEER.

TYP. CUL-DE-SAC/INTERSECTION JOINTING

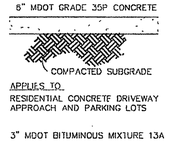
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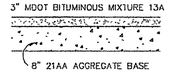
PLAN VIEW — CROSS SECTION VIEW

CATCH BASIN ISOLATION JOINTS

NO SCALE



APPLIES TO
RESIDENTIAL CONCRETE DRIVEWAY APPROACH AND PARKING LOTS



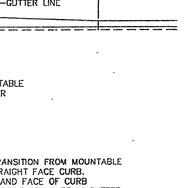
APPLIES TO
RESIDENTIAL BITUMINOUS DRIVEWAY APPROACH AND PARKING LOTS

NOTES:
1) COMMERCIAL DRIVE APPROACHES WITHIN PUBLIC R O W SHALL BE THE SAME MATERIAL AND THICKNESS AS INTERSECTING ROADWAY
2) FOR COMMERCIAL DRIVEWAY OPENINGS, AN MDOT DET M GUTTER SHALL BE USED AS REQUIRED FOR DRAINAGE PURPOSES
3) FOR RESIDENTIAL DRIVEWAY OPENINGS, AN MDOT DET. L GUTTER SHALL BE USED IF THE DRIVEWAY IS ADJACENT TO STRAIGHT FACE CURB AND GUTTER

DRIVEWAYS & PARKING LOT PAVEMENT THICKNESSES AND DRIVEWAY OPENINGS

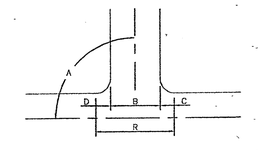
NO SCALE

CONCRETE PAVEMENT JOINT NOTES:
1) TRANSVERSE PAVEMENT JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MDOT R-39 SERIES, UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER
2) LOAD TRANSFER ASSEMBLIES FOR TRANSVERSE PAVEMENT JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MDOT R-40 SERIES, UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.
3) LONGITUDINAL PAVEMENT JOINTS FOR CONCRETE PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MDOT R-41 SERIES, UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.
4) CONCRETE PAVEMENT REPAIR SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MDOT R-44 SERIES, UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.



STORM WATER SPILLWAY

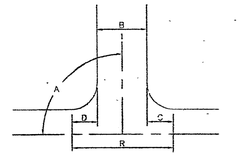
NO SCALE



DESIGN FEATURES		STANDARD	RANGE
INTERSECTING ANGLE	A	90°	70° to 110°
WIDTH (DRIVEWAY)	B	16'	12' to 35'
ENTERING RADIUS	C	10'	5' to 35'
EXITING RADIUS	D	10'	5' to 35'
TOTAL OPENING (B+C+D)	R	36'	22' to 105'

FIELD ENTRANCE AND UTILITY STRUCTURE DRIVEWAY

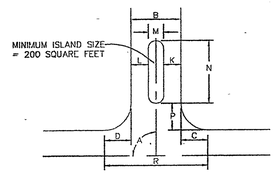
NO SCALE



DESIGN FEATURES		STANDARD	RANGE
INTERSECTING ANGLE	A	90°	90°
WIDTH *DRIVEWAY	B	30'	20' to 40'
*INDUSTRIAL STREET DRIVEWAY		36'	32' to 40'
*LOCAL STREET		28'	28' to 40'
ENTERING RADIUS *DRIVEWAY	C	20'	15' to 35'
*INDUSTRIAL STREET DRIVEWAY		35'	25' to 50'
*LOCAL STREET		25'	25' to 35'
EXITING RADIUS *DRIVEWAY	D	20'	15' to 35'
*INDUSTRIAL STREET DRIVEWAY		35'	25' to 50'
*LOCAL STREET		25'	25' to 35'
TOTAL OPENING (B+C+D) *DRIVEWAY	R	70'	50' to 110'
*INDUSTRIAL STREET DRIVEWAY		106'	82' to 140'
*LOCAL STREET		78'	78' to 110'

TWO-WAY DRIVEWAYS AND LOCAL STREETS

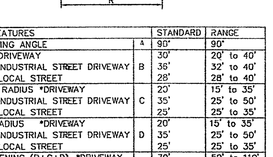
NO SCALE



DESIGN FEATURES		STANDARD	RANGE
INTERSECTING ANGLE	A	90°	
WIDTH (DRIVEWAY)	B	58'	56' to 78'
WIDTH (LOCAL STREET)		58'	56' to 78'
ENTERING RADIUS (DRIVE)	C	20'	20' to 35'
ENTERING RADIUS (LOCAL STREET)		25'	25' to 35'
EXITING RADIUS (DRIVE)	D	20'	20' to 35'
EXITING RADIUS (LOCAL STREET)		25'	25' to 35'
ENTRANCE DRIVE (DRIVE)	K	24'	22' to 27'
ENTRANCE DRIVE (LOCAL STREET)		24'	22' to 27'
EXIT DRIVE WIDTH	L	24'	22' to 27'
LOCAL STREET WIDTH		24'	22' to 27'
ISLAND WIDTH	M	10'	8' to 24'
NOSE OFFSET	P	12'	6' to 18'
ISLAND LENGTH	N	35'	30' to 100'
TOTAL OPENING (B+C+D) (DRIVE)	R	98'	90' to 148'
TOTAL OPENING (B+C+D) (LOCAL STREET)		108'	106' to 148'

DIVIDED COMMERCIAL DRIVEWAYS AND LOCAL STREETS

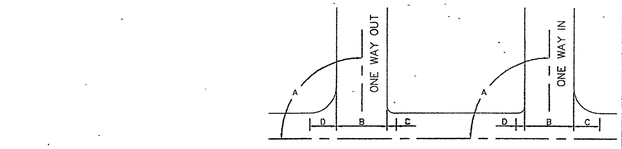
NO SCALE



DESIGN FEATURES		STANDARD	RANGE
INTERSECTING ANGLE	A	90°	70° to 110°
WIDTH (DRIVEWAY)	B	16'	10 to 25
ENTERING TAPER WIDTH	C	3'	2' to 15'
EXITING TAPER WIDTH	D	3'	2' to 15'
TAPER DEPTH	Q	10'	10' to 15'
TOTAL OPENING (B+C+D)	R	22'	14' to 55'

RESIDENTIAL DRIVES

NO SCALE

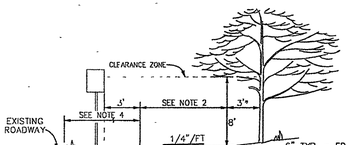


DESIGN FEATURES		STANDARD	RANGE
INTERSECTING ANGLE		A	90°	45° to 120°
DRIVEWAY WIDTH		B	15'	15' to 20'
ONE-WAY IN	ENTERING RADIUS	C	20'	20' to 35'
	EXITING RADIUS	D	5'	5' to 10'
ONE-WAY OUT	ENTERING RADIUS	C	5'	5' to 10'
	EXITING RADIUS	D	20'	20' to 35'

DRIVEWAY AND LOCAL STREET NOTES
1) THE STANDARD DIMENSION SHALL BE USED UNLESS THE CITY SPECIFIES, OR THE APPLICANT SHOWS CAUSE FOR, A DIFFERENT DESIGN VALUE. THE RANGE IN DIMENSIONS INDICATES THE WORKING VALUES FOR EACH DESIGN FEATURE
2) ALL DIMENSIONS ARE MEASURED BACK TO BACK OF CURB.
3) LOCAL STREETS INTERSECTING WITH ARTERIAL STREETS SHALL PROVIDE A 35' ENTERING AND EXITING RADIUS

ONE-WAY COMMERCIAL DRIVES

NO SCALE



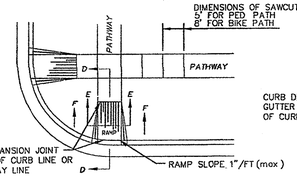
MINIMUM CLEARANCE
HORIZONTAL CLEARANCE = 3 FEET*
VERTICAL CLEARANCE = 8 FEET

NOTES:
1) PATHWAY MATERIAL: MDOT 35S CONCRETE, 4" THICK OVER COMPACTED SUBGRADE (TYPICAL)
2) PATHWAY WIDTH 8 FEET (TYPICAL), AND 6 FEET AT ROADWAY INTERSECTIONS FOR BICYCLE PATHS 5 FEET (TYPICAL) FOR PEDESTRIAN SAFETY PATHS.
3) DRIVE CROSSING DIMENSIONS RESIDENTIAL = 6 FEET WIDE x 6 INCHES THICK (BICYCLE PATHS ONLY) INDUSTRIAL = 8 FEET WIDE x 8 INCHES THICK
4) MINIMUM OFFSET FROM ROADWAY: UNCURBED = 12 FEET FROM EDGE OF TRAVELED WAY CURBED = 5 FEET FROM BACK OF CURB
5) MAXIMUM LONGITUDINAL SLOPE SHALL BE 8.3% FOR A MAXIMUM LENGTH OF 100 FEET.
6) THE CONCRETE FORMS MUST BE INSPECTED BY THE CITY PRIOR TO POURING CONCRETE.
7) JOINTS IN THE CONCRETE BICYCLE PATHS SHALL BE SAWCUT, JOINTS IN PED. SAFETY PATHS SHALL BE TOOLED. JOINT SPACING SHALL EQUAL THE WIDTH OF THE PATHWAY.
8) PREPARATION OF BASE, MIXING OF MATERIALS, PLACING AND FINISHING OF CONCRETE PAVING IS TO BE DONE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AS DETAILED IN THE CURRENT EDITION OF STANDARD SPECIFICATIONS FOR CONSTRUCTION PUBLISHED BY THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

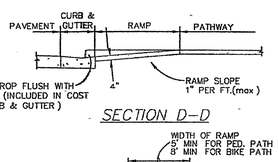
*WHERE PATHWAYS ARE BUILT OR REBUILT IN AN AREA THAT CONTAINS TREES GREATER THAN 6" IN DIAMETER, A SEPARATION OF 4' FROM SAID TREES SHALL BE PROVIDED WHEREVER FEASIBLE. WHERE THE PATH MUST BE CLOSER TO SUCH A TREE, A PHYSICAL BARRIER OR HERBICIDE IMPREGNATED BARRIER CLOTH MUST BE PLACED UNDER THE PATH TO PREVENT THE TREE ROOTS FROM HEAVING THE PATH.

STANDARD PLAN FOR PATHWAYS

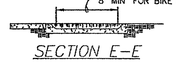
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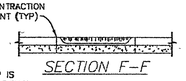
PLAN VIEW



SECTION D-D



SECTION E-E



SECTION F-F

NOTE: CONSTRUCTION OF PATHWAY RAMP IS INCLUDED IN THE COST OF CONCRETE SIDEWALK AND/OR CONCRETE BIKE PATH.

PATHWAY RAMP DETAIL (MDOT TYPE 4)

NO SCALE

FOR REFERENCE ONLY

CITY OF NOVI

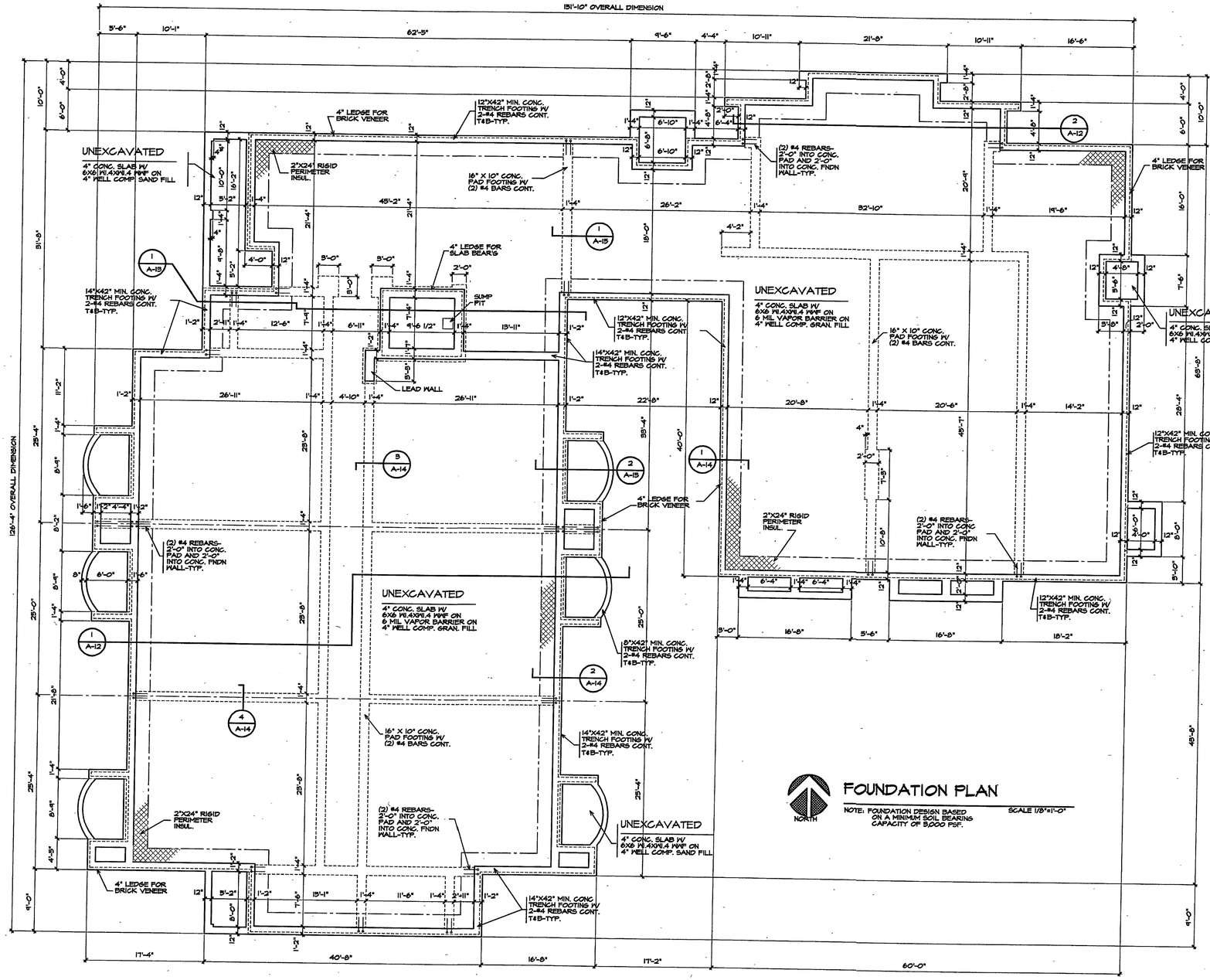
PAVEMENT DETAILS FOR CITY OF NOVI ROADWAYS

REVISION	DATE	REVISION	DATE

Drawn:
Designed:
Checked:

Scale: NO SCALE
Date: 12-15-00
Job No.:
Sht. No.: D - 1.6

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Key Plan: NO SCALE

Project Name and Client:

NEW BASILIAN FATHERS RESIDENCE
NOVI, MICHIGAN

BASILIAN FATHERS
NOVI, MICHIGAN

Seal:

Date	Issued For
10/22/08	BID PACK NO. 2

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Checked:	SJF
Approved:	JPA

Sheet Title:
BUILDING FOUNDATION PLAN

Project Number: 07-140

Sheet Number: A-1

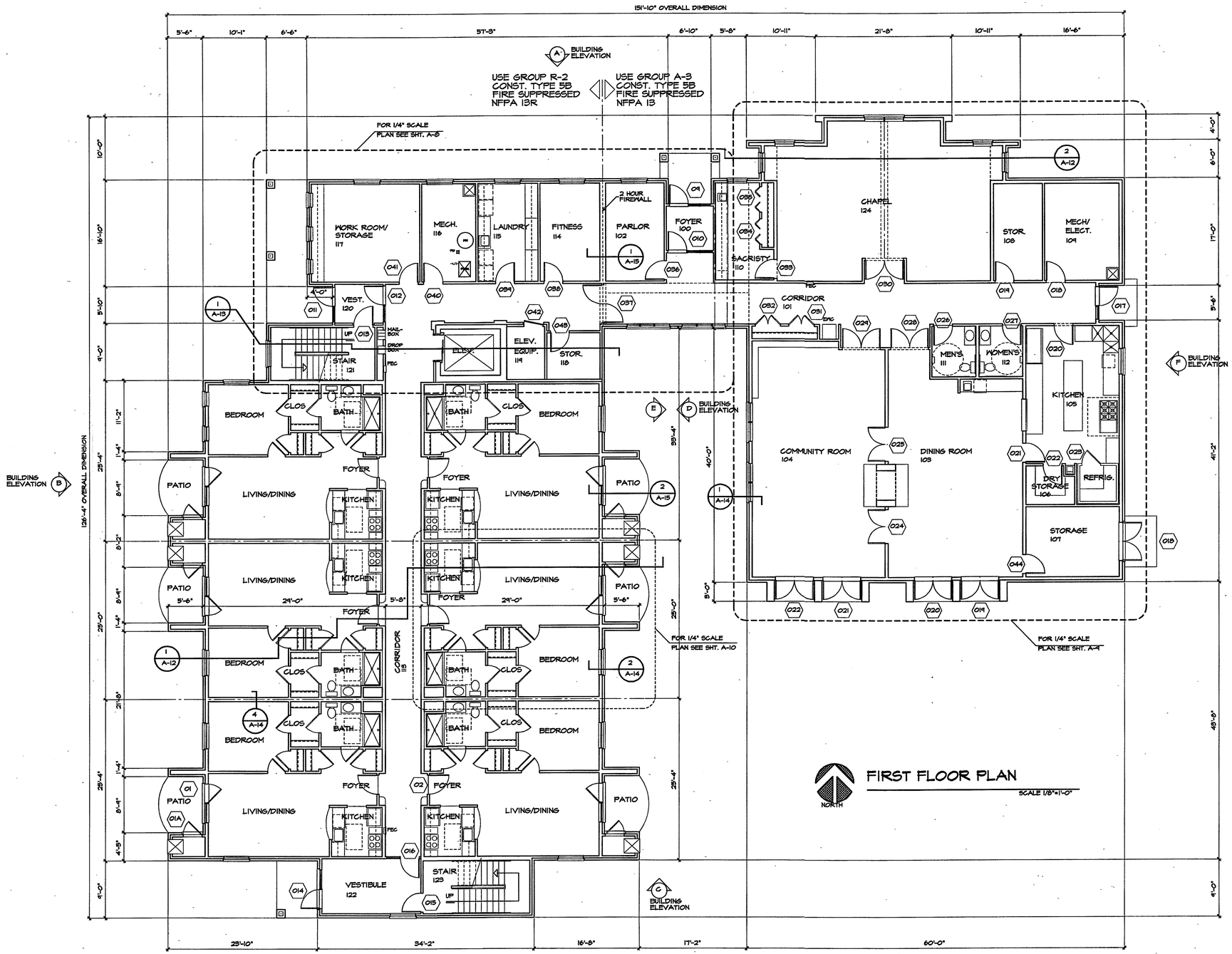
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Key Plan: NO SCALE

Project Name and Client:
NEW BASILIAN FATHERS RESIDENCE
NOVI, MICHIGAN



NORTH

FIRST FLOOR PLAN

SCALE 1/8"=1'-0"

BASILIAN FATHERS
NOVI, MICHIGAN

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Date	Issued For
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Approved:	JPA

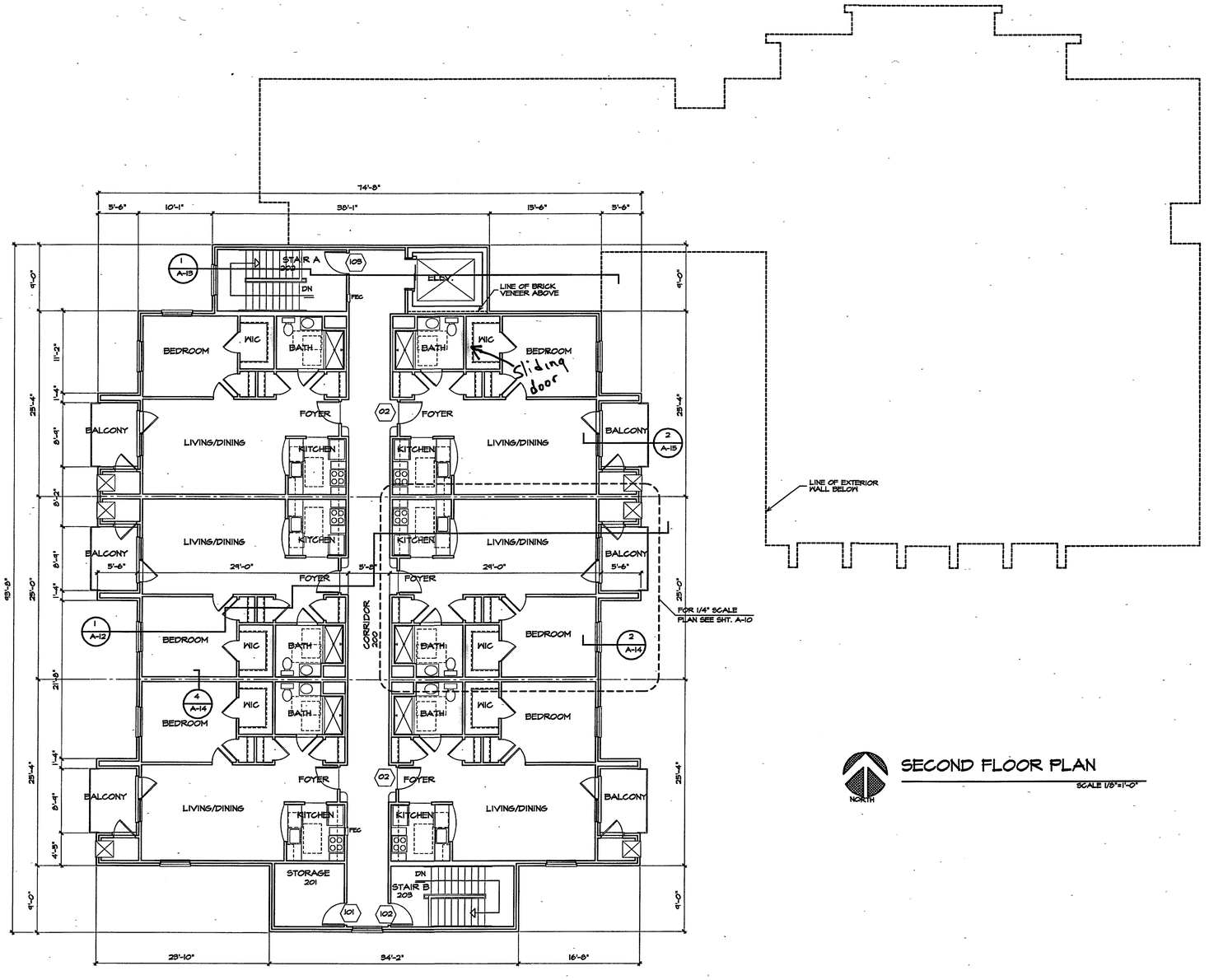
Sheet Title:
BUILDING FIRST FLOOR PLAN

Project Number: 07-140

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NORTH

SECOND FLOOR PLAN

SCALE 1/8"=1'-0"

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Key Plan: NO SCALE

Project Name and Client:

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BASILIAN FATHERS
NOVI, MICHIGAN

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Approved: JPA

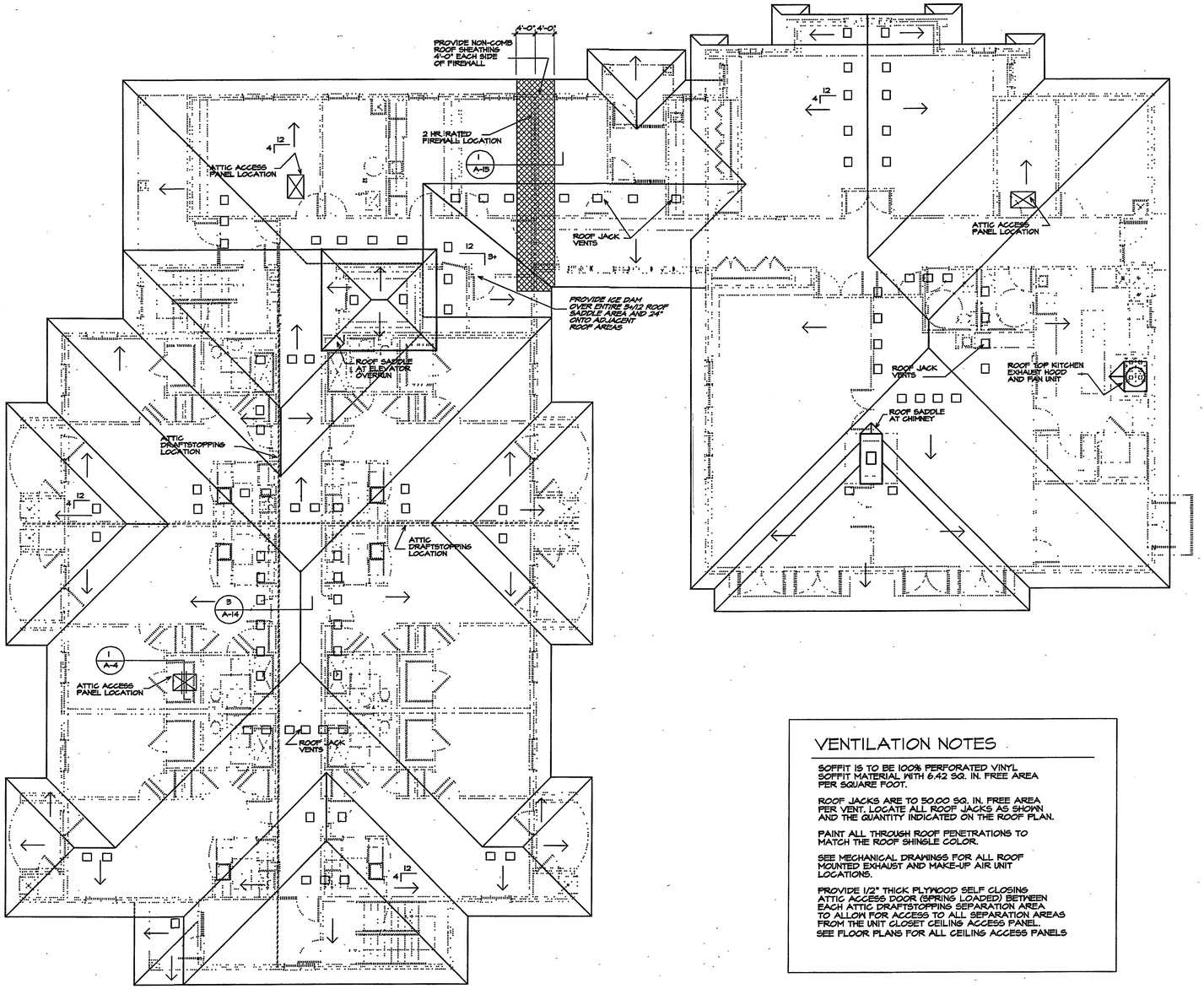
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BUILDING SECOND FLOOR PLAN

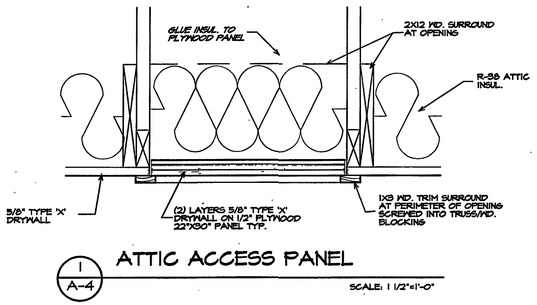
Project Number: 07-140

Sheet Number: A-3

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1 A-4 ATTIC ACCESS PANEL

SCALE: 1 1/2"=1'-0"

VENTILATION NOTES

SOFFIT IS TO BE 100% PERFORATED VINYL SOFFIT MATERIAL WITH 6.42 SQ. IN. FREE AREA PER SQUARE FOOT.

ROOF JACKS ARE TO 50.00 SQ. IN. FREE AREA PER VENT. LOCATE ALL ROOF JACKS AS SHOWN AND THE QUANTITY INDICATED ON THE ROOF PLAN.

PAINT ALL THROUGH ROOF PENETRATIONS TO MATCH THE ROOF SHINGLE COLOR.

SEE MECHANICAL DRAWINGS FOR ALL ROOF MOUNTED EXHAUST AND MAKE-UP AIR UNIT LOCATIONS.

PROVIDE 1/2" THICK PLYWOOD SELF CLOSING ATTIC ACCESS DOOR (SPRING LOADED) BETWEEN EACH ATTIC DRAFTSTOPPING SEPARATION AREA TO ALLOW FOR ACCESS TO ALL SEPARATION AREAS FROM THE UNIT CLOSET CEILING ACCESS PANEL. SEE FLOOR PLANS FOR ALL CEILING ACCESS PANELS

NORTH

ROOF PLAN

W/ ATTIC VENTILATION

SCALE 1/8"=1'-0"

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NOVI, MICHIGAN

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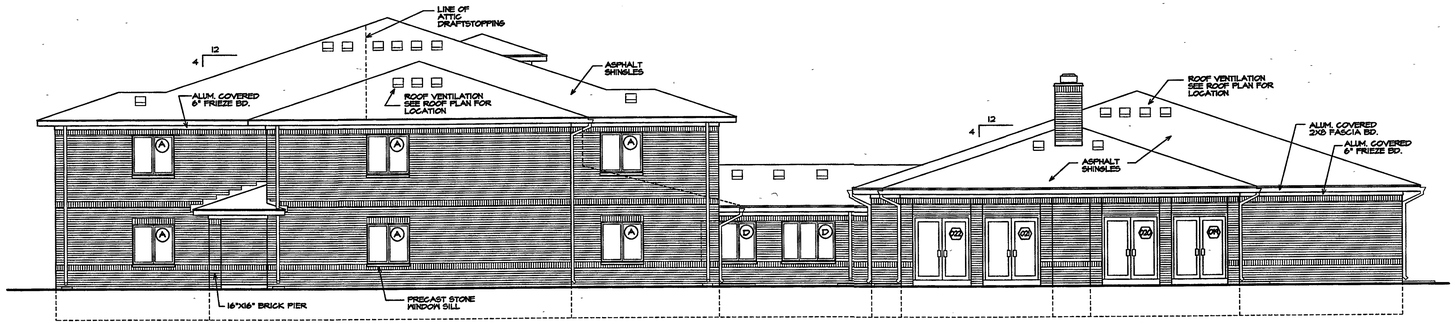
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BUILDING ROOF PLAN

Project Number: 07-140

Sheet Number: A-4

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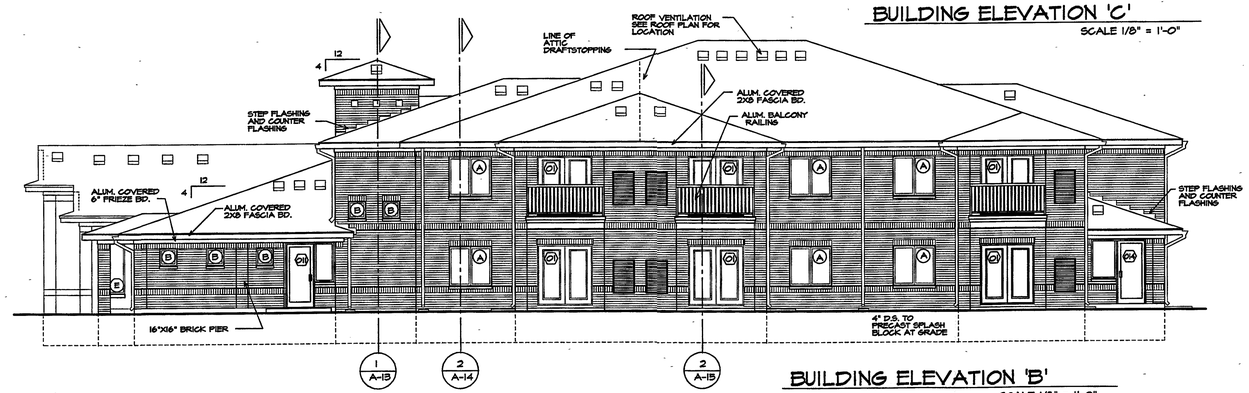
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looking N

BUILDING ELEVATION 'C'

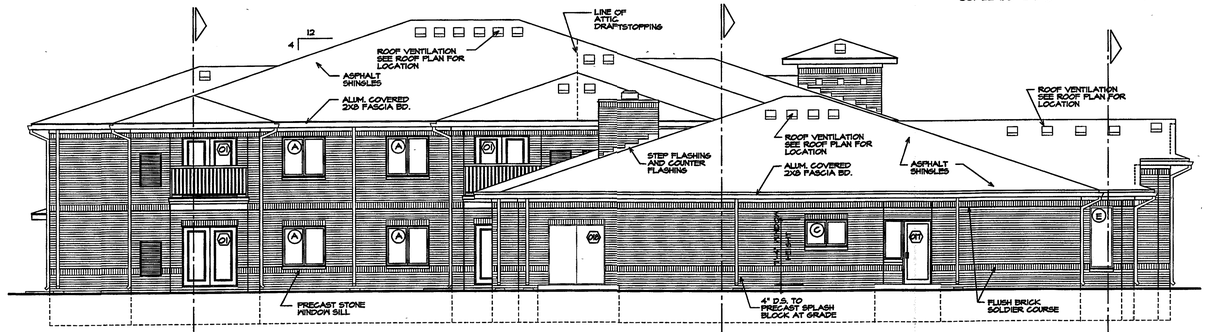
SCALE 1/8" = 1'-0"



looking E

BUILDING ELEVATION 'B'

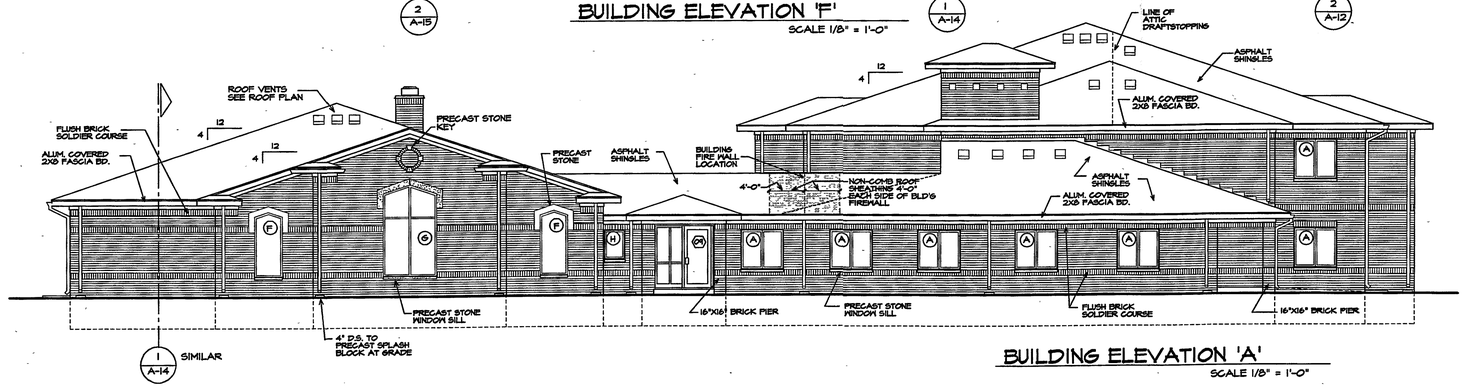
SCALE 1/8" = 1'-0"



looking W

BUILDING ELEVATION 'F'

SCALE 1/8" = 1'-0"



looking S

BUILDING ELEVATION 'A'

SCALE 1/8" = 1'-0"

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Key Plan: NO SCALE

Project Name and Client:

NEW BASILIAN FATHERS RESIDENCE
NOVI, MICHIGAN

BASILIAN FATHERS
NOVI, MICHIGAN

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Date	Issued For
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BUILDING ELEVATIONS

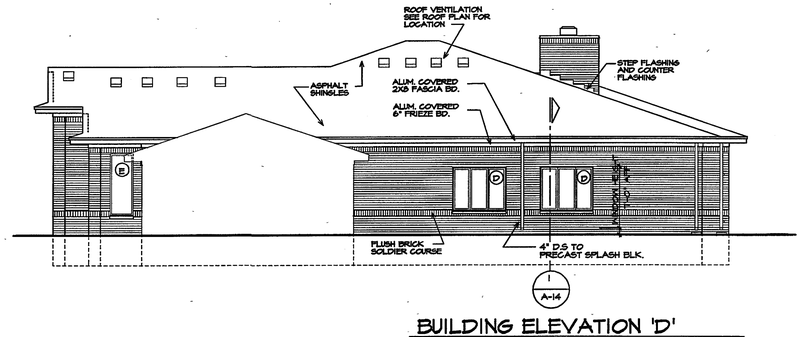
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07-140

Sheet Number:
A-5

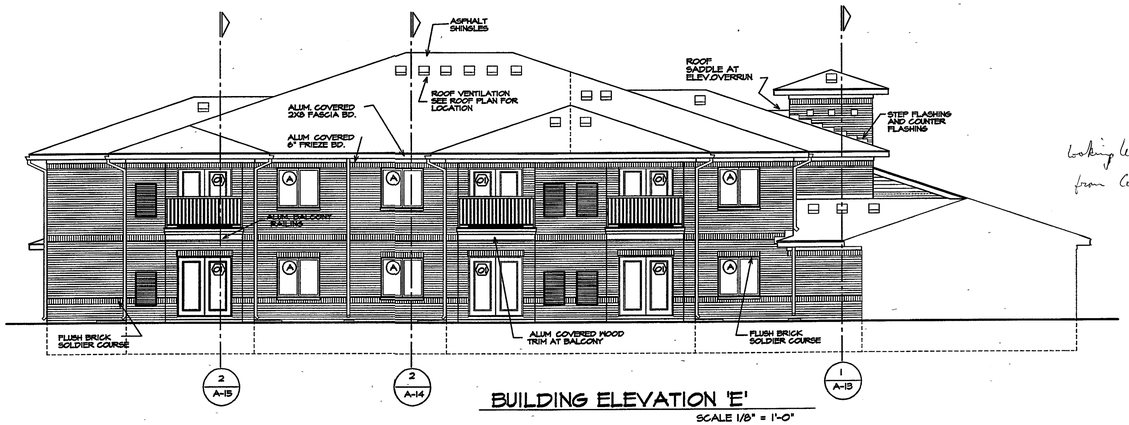
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BUILDING ELEVATION 'D'
SCALE 1/8" = 1'-0"



BUILDING ELEVATION 'E'
SCALE 1/8" = 1'-0"

looking W from Community Dr.

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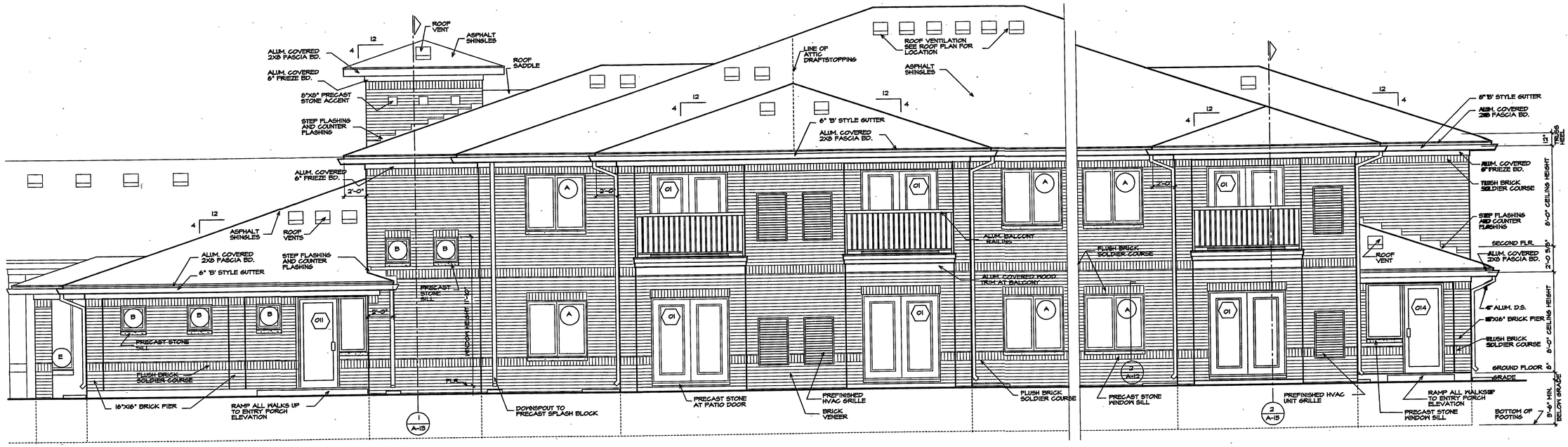
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Sheet Title:
BUILDING ELEVATIONS

Project Number: 07-140

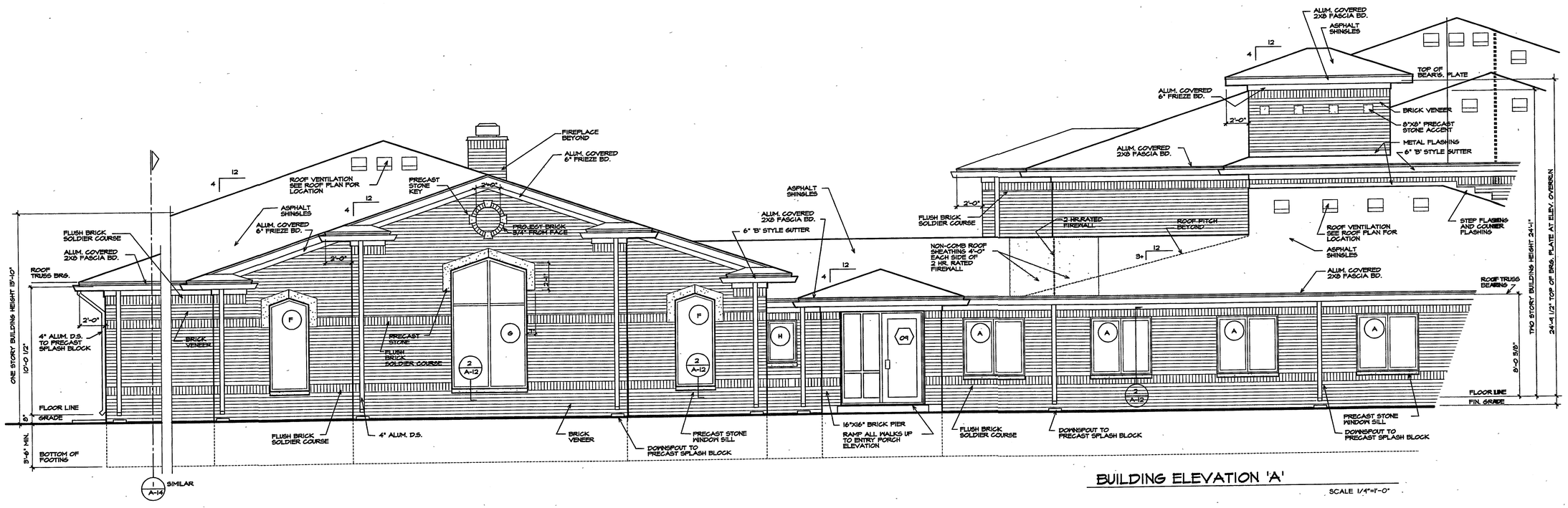
Sheet Number: A-6

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BUILDING ELEVATION 'B'

SCALE 1/4"=1'-0"



BUILDING ELEVATION 'A'

SCALE 1/4"=1'-0"

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NOVI, MICHIGAN

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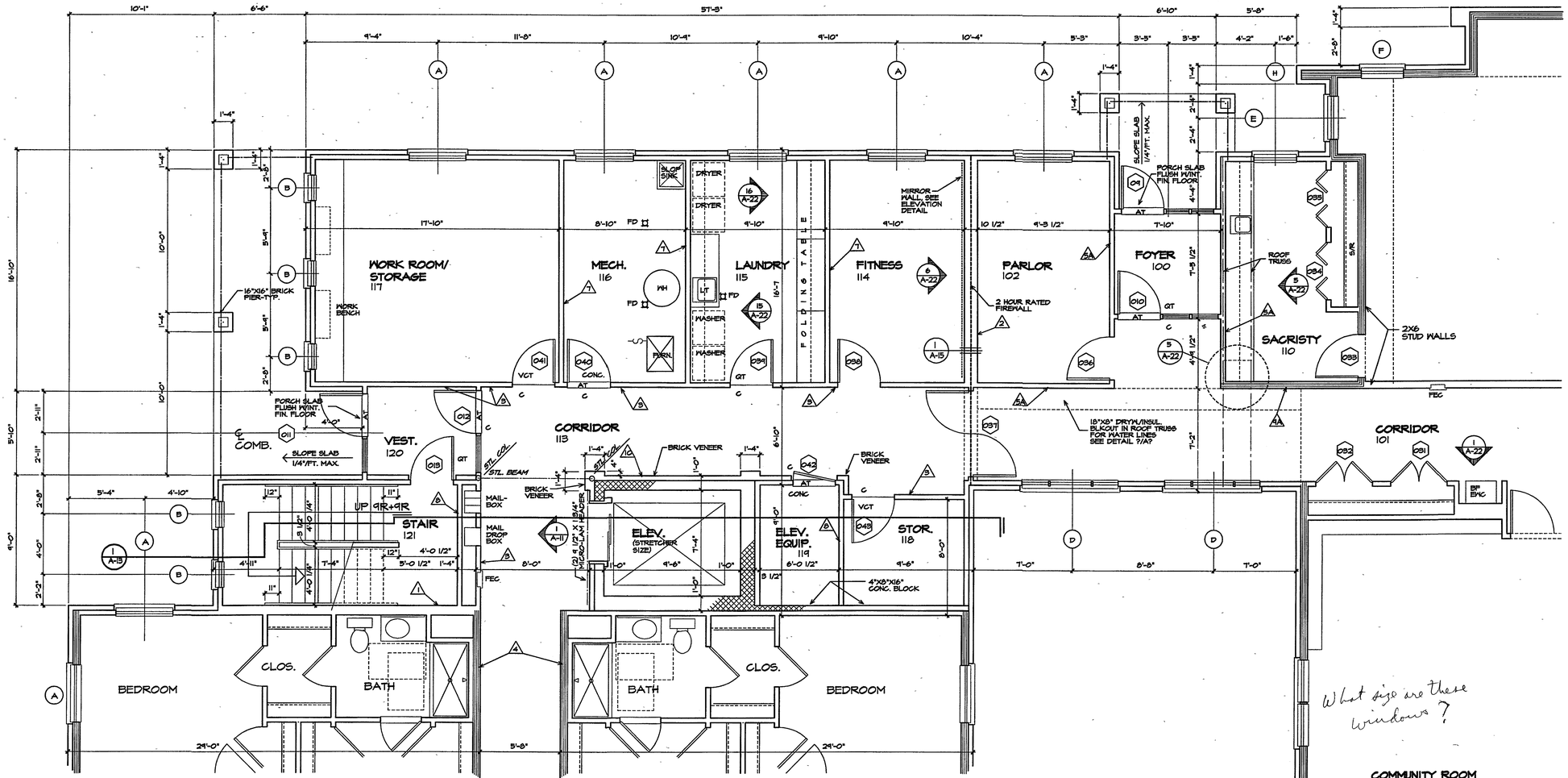
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BUILDING ELEVATION DETAILS

Project Number: 07-140

Sheet Number: A-7

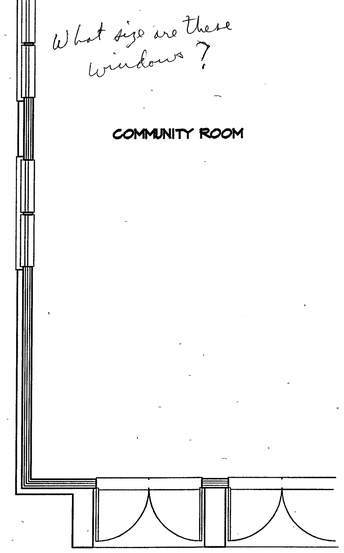
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PARTIAL
FIRST FLOOR PLAN

SCALE 1/4"=1'-0"



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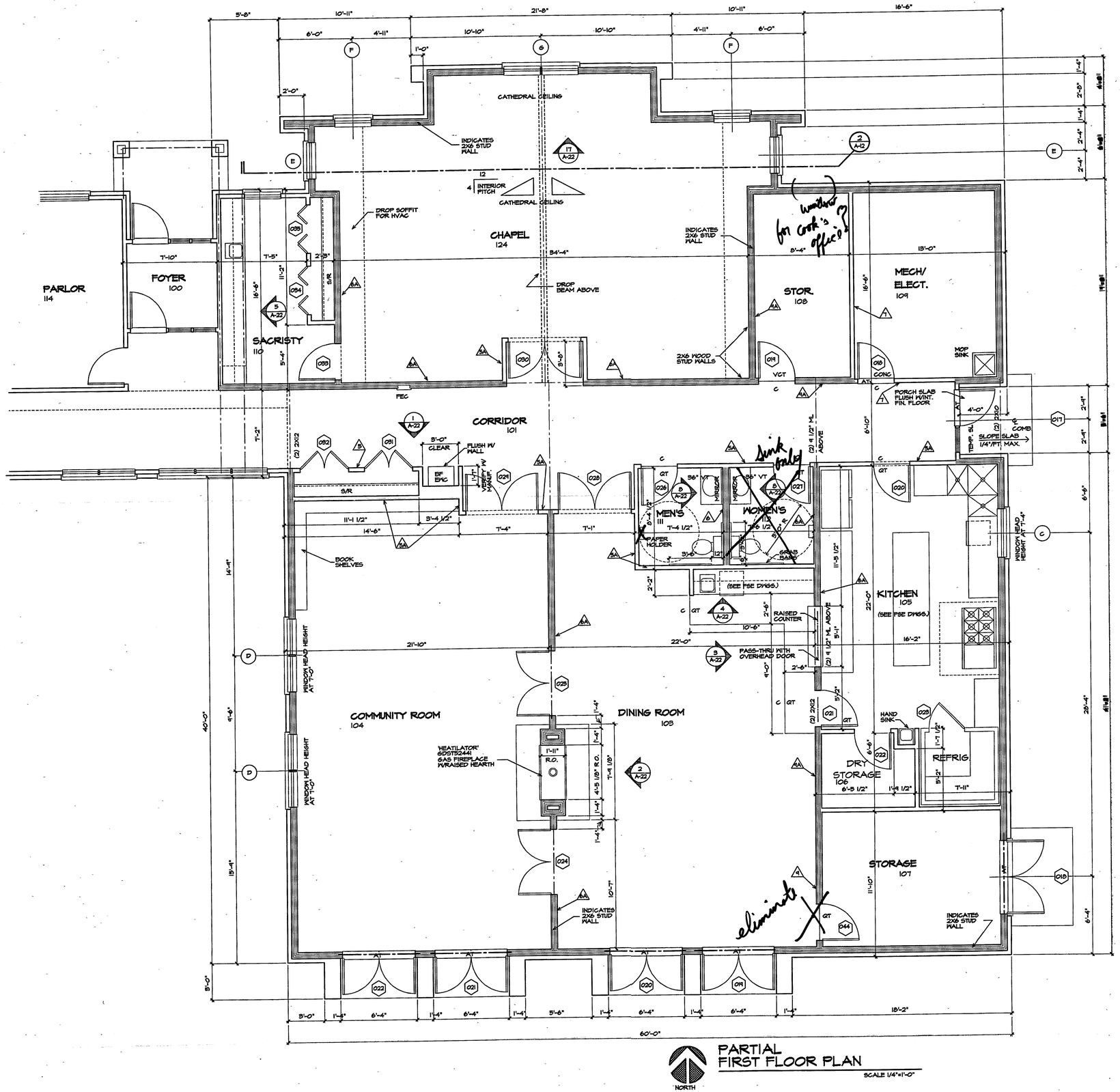
Sheet Title:
COMMONS AREA FLOOR PLAN

Project Number: 07-140

Sheet Number: A-8

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Key Plan: NO SCALE

Project Name and Client:

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NOVI, MICHIGAN

BASILIAN FATHERS
NOVI, MICHIGAN

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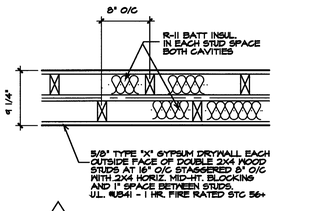
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COMMONS AREA FLOOR PLAN

Project Number: 07-140

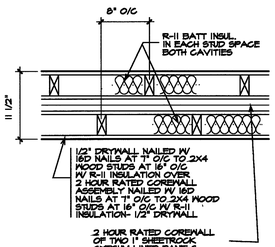
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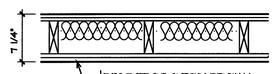
1 PARTYWALL PARTITION



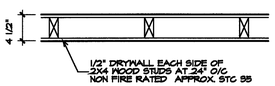
2 FIREWALL PARTITION



3 CORRIDOR WALL

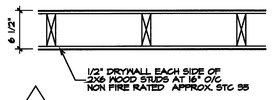


4 CORRIDOR WALL



5 INTERIOR PARTITION

5A W/R-11 INSULATION

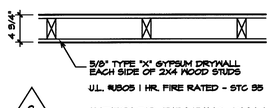


6 INTERIOR PARTITION

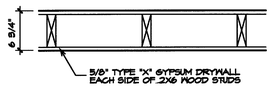
6A W/R-11 INSULATION



7 MECHANICAL ROOM PARTITION

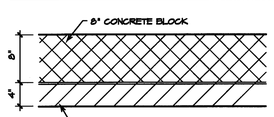


8 INTERIOR BEARING WALL



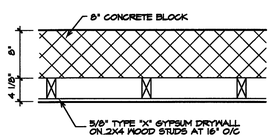
9 INTERIOR BEARING WALL

9A W/R-11 INSULATION



10 TWO HOUR ASSEMBLY-ELEVATOR

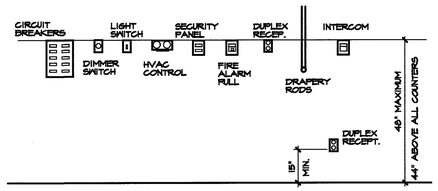
MICHIGAN MASONRY COUNCIL NOMINAL 8", 60% SOLID SINGLE WYTHE CONCRETE MASONRY PER ASTM C-90 OR C-145



11 TWO HOUR ASSEMBLY-ELEVATOR

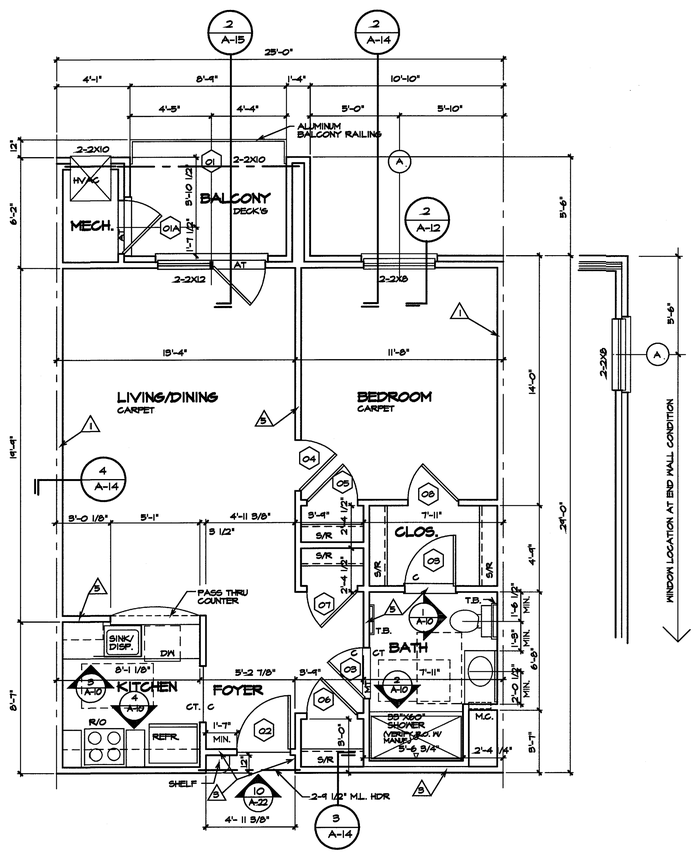
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PARTITION WALL TYPES



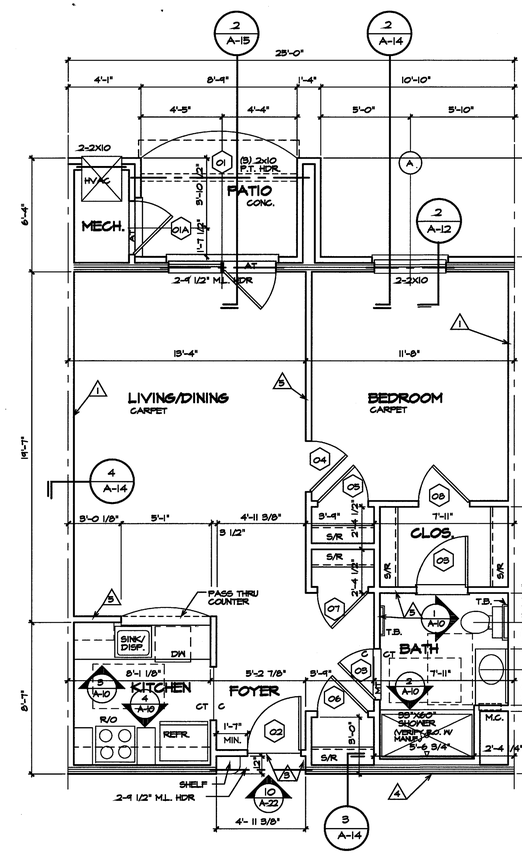
CONTROL MOUNTING HEIGHTS

MECHANICAL / ELECTRICAL CONTROLS



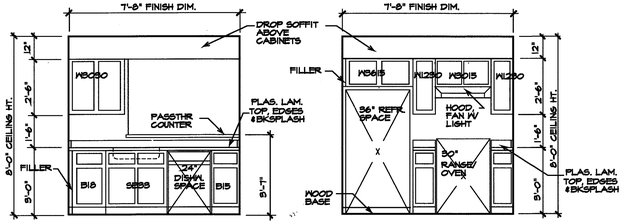
SECOND FLOOR PLAN

SCALE 1/4"=1'-0"



FIRST FLOOR PLAN

SCALE 1/4"=1'-0"

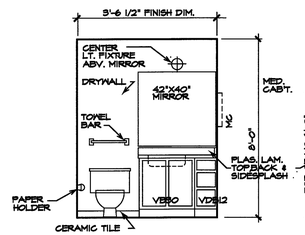


3 A-10 KITCHEN ELEVATIONS

3/8"=1'-0"

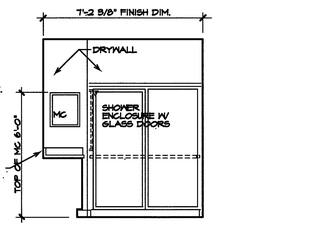
4 A-10 KITCHEN ELEVATIONS

3/8"=1'-0"



1 A-10 BATH ELEVATIONS

3/8"=1'-0"



2 A-10 BATH ELEVATIONS

3/8"=1'-0"

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Key Plan: NO SCALE

Project Name and Client:

NEW BASILIAN FATHERS RESIDENCE
NOVI, MICHIGAN

BASILIAN FATHERS
NOVI, MICHIGAN

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Sheet Title:
UNIT FLOOR PLANS AND WALL TYPES

Project Number: 07-140

Sheet Number: A-10

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F:\Basilian Residence\Current\Architectural\A-10 UNIT FLOOR PLANS AND WALL TYPES.dwg, 10/31/2008 9:02:50 AM, sflickema

WINDOW SCHEDULE

SYMB.	SIZE	TYPE	MATERIAL	GLASS	NOTES
A	4'-8"X 4'-8"	CASEMENT	WOOD VINYL CLAD	INSULATED	EGRESS WINDOW HARDWARE REQ'D.
B	2'-0"X 2'-0"	AWNING	WOOD VINYL CLAD	INSULATED	
C	4'-0"X 3'-0"	CASEMENT	WOOD VINYL CLAD	INSULATED	
D	6'-0"X 5'-0"	CASEMENT	WOOD VINYL CLAD	INSULATED	
E	SEE ELEVN.	FIXED SASH	WOOD VINYL CLAD	INSULATED	CUSTOM SASH DESIGN
F	SEE ELEVN.	FIXED SASH	WOOD VINYL CLAD	INSULATED	CUSTOM SASH DESIGN
G	SEE ELEVN.	FIXED SASH	WOOD VINYL CLAD	INSULATED	CUSTOM SASH DESIGN

ABBREVIATIONS

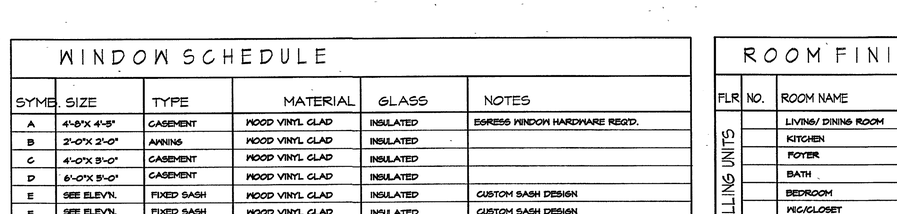
ACT	ABOVE COUNTER TOP
AFF	ABOVE FINISH FLOOR
ALUM	ALUMINUM
AP	ACCESS PANEL
AT	ACOUSTIC TILE
BS	BOTH SIDES
BRK	BRICK
C	CARPET
CLG	CEILING
CLO	CLOSET
COMP	COMPACTED
CONC	CONCRETE
CONT	CONTINUOUS
CT	CERAMIC TILE
DW	DRYWALL
DN	DOWN
DO	DITTO
D	DRYWALL
EF	EXHAUST FAN
ELECT	ELECTRICAL
ELEV	ELEVATION
EP	EPOXY PAINT
EXIST'G	EXISTING
EXT	EXTERIOR
FD	FLOOR DRAIN
FP	FLAT PAINT
FLR	FLOOR
FRP	FIBERGLASS REINFORCED PANELS
HDR	HEADER
HGT	HEIGHT
FURN	FURNACE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HVAC	HEATING VENTILN & AIR CONDITIONING
INSUL	INSULATION
LIN	LINEN
LW CONC	LIGHT WEIGHT CONC
MC	MEDICINE CABINET
MECH	MECHANICAL
MET	METAL
MIN	MINIMUM
MT	METAL THESHOLD
MTRK	METAL TRACK
OC	ON CENTER
PERIM	PERIMETER
PH	PHYSICALLY HANDICAPPED
PLAS LAM	PLASTIC LAMINATE
P.R	POWDER ROOM
QT	QUARRY TILE
REF	REFRIGERATOR
RS	ROUGH SAWN
SAF	SPRAYED ACOUSTIC FINISH
SGP	SEMI-GLOSS PAINT
SP	SATIN PAINT
STL	STEEL
SV	SHEET VINYL
T&G	TONGUE & GROOVE
TYP	TYPICAL
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VWC	VINYL WALL COVERING
W	WITH
WC	WATER CLOSET
W/D	WASHER-DRYER
WH	WATER HEATER

ROOM FINISH SCHEDULE

FLR	NO.	ROOM NAME	FLOOR	BASE	WALLS	CEILING MAT'L.	CEILING HGT.	PAINT WALL	PAINT CLG.	DETAIL SPECIFICATIONS
DWELLING UNITS		LIVING/ DINING ROOM	CARPET	WOOD	D	D	8'-0"	FP	SAF	
		KITCHEN	C.T.	WOOD	D	D	8'-0"	SGP	SAF	
		FOYER	CARPET	WOOD	D	D	8'-0"	FP	SAF	
		BATH	C.T.	C.T.	D	D	8'-0"	SGP	SGP	
		BEDROOM	CARPET	WOOD	D	D	8'-0"	FP	SAF	
		MIC/CLOSET	CARPET	WOOD	D	D	8'-0"	FP	SAF	
FIRST FLOOR AREAS	100	FOYER	QT	QT	D	D	8'-0"	FP	SAF	
	101	CORRIDOR	CARPET	WOOD	D	D	8'-0"	FP	SAF	
	102	PARLOR	CARPET	WOOD	D	D	8'-0"	FP	SAF	
	103	DINING ROOM	CARPET	WOOD	D	D	10'-0"	FP	SAF	
	104	COMMUNITY ROOM	CARPET	WOOD	D	D	10'-0"	FP	SAF	
	105	KITCHEN	QT	QT	D	AT	9'-0"	EP	—	WASHABLE CEILING TILES
	106	DRY STORAGE	QT	QT	D	AT	9'-0"	FP	—	
	107	STORAGE	VCT	WOOD	D	D	10'-0"	FP	SAF	
	108	STORAGE	VCT	WOOD	D	D	10'-0"	FP	SAF	
	109	MECH/ELECTRICAL RM.	EP	WOOD	D	D	10'-0"	FP	SAF	
	110	SACRISTY	CARPET	WOOD	D	D	8'-0"	FP	SAF	
	111	MEN'S LAVATORY	QT	QT	D	D	8'-0"	SGP	SGP	
	112	WOMEN'S LAVATORY	QT	QT	D	D	8'-0"	SGP	SGP	
	113	CORRIDOR	CARPET	WOOD	D	AT	7'-6"	FP	—	
	114	FITNESS ROOM	CARPET	WOOD	D	D	8'-0"	FP	SAF	
	115	LAUNDRY ROOM	QT	QT	D	D	8'-0"	FP	SAF	
	116	MECHANICAL ROOM	EP	WOOD	D	D	8'-0"	FP	SAF	
	117	WORK ROOM	VCT	WOOD	D	D	8'-0"	FP	SAF	
	118	STORAGE ROOM	VCT	WOOD	D	D	8'-0"	FP	SAF	
	119	ELEVATOR EQUIP. RM.	EP	WOOD	D	D	8'-0"	FP	SAF	
	120	VESTEBULE	QT	QT	D	D	8'-0"	FP	SAF	
	121	STAIR	CARPET	WOOD	D	D	VARIES	FP	SAF	
	122	VESTIBULE	QT	QT	D	D	8'-0"	FP	SAF	
	123	STAIR	CARPET	WOOD	D	D	VARIES	FP	SAF	
	124	CHAPEL	CARPET	WOOD	D	D	VARIES	FP	SAF	
SECOND FLR.	200	CORRIDOR	CARPET	WOOD	D	AT	7'-6"	FP	AT	
	201	STORAGE	VCT	WOOD	D	D	8'-0"	FP	SAF	
	202	STAIR	CARPET	WOOD	D	D	VARIES	FP	SAF	
	203	STAIR	CARPET	WOOD	D	D	VARIES	FP	SAF	

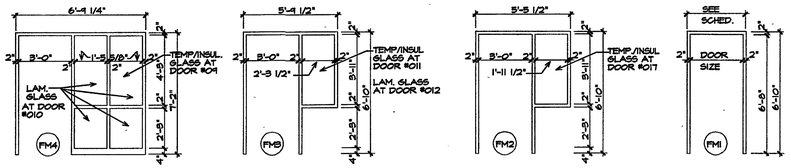
DOOR SCHEDULE

NO.	DOOR SIZE	DOOR: ELEVATION TYPE	Door Materials: Metal, insulated core (1)	Aluminum w/ Temp/insul Glass (2)	Solid Core Wood (3)	Wood Composition Panel (4)	Solid Core Wd. w/Wire Gl. (5)	Solid Core Wd. w/Temp. Gl. (6)	Wood/vinyl w/ temp. insul Gl. (7)	FRAME: Material/Finish: Aluminum Store-Front (1)	Wood Painted (2)	Hollow Metal Painted (3)	Weather Strip (4)	Frame by door manufr (5)	FRAME ELEVATION TYPE	Threshold: Aluminum (1)	Floor Tile Threshold (2)	Hardware Set	Fire Label Designation	GENERAL NOTES
01	3'-0"X6'-8"X1 3/4"	D-1							7					5	FM1	1				
01A	3'-0"X6'-8"X1 3/4"	B	1												FM1	1				
02	3'-0"X6'-8"X1 3/4"	C			3						2				FM1			20MIN.		RATED UNIT ENTRY DOOR
03	2'-10"X6'-8"X1 3/8"	A				4					2				FM1		2			
04	2'-10"X6'-8"X1 3/8"	A				4					2				FM1					
05	2'-10"X6'-8"X1 3/8"	A				4					2				FM1					
06	2'-10"X6'-8"X1 3/8"	A				4					2				FM1					
07	2'-10"X6'-8"X1 3/8"	A				4					2				FM1					
08	2'-10"X6'-8"X1 3/8"	A				4					2				FM1					
09	3'-0"XT'-0"X1 3/4"	E		2						1					FM4	1				
010	3'-0"XT'-0"X1 3/4"	E		2						1					FM4	1				
011	3'-0"XT'-0"X1 3/4"	E		2						1					FM3	1				
012	3'-0"XT'-0"X1 3/4"	E		2						1					FM3	1				
013	3'-0"X6'-8"X1 3/4"	F					5				2				FM3	1		1.5 HR.		B LABEL
014	3'-0"XT'-0"X1 3/4"	E		2						1					FM1	1				
015	3'-0"X6'-8"X1 3/4"	F					5				2				FM1	1		1.5 HR.		B LABEL
016	3'-0"XT'-0"X1 3/4"	E		2						1					FM2	1				
017	3'-0"XT'-0"X1 3/4"	E		2						1					FM2	1				
018	3'-0"X6'-8"X1 3/4"	C			3						2				FM1	1		1.5 HR.		B LABEL
019	(2) 3'-0"XT'-0"X1 3/4"	E		2						1					FM1	1		45 MIN.		C LABEL
020	(2) 3'-0"XT'-0"X1 3/4"	E		2						1					FM1	1				
021	(2) 3'-0"XT'-0"X1 3/4"	E		2						1					FM1	1				
022	(2) 3'-0"XT'-0"X1 3/4"	E		2						1					FM1					
023	3'-0"X6'-8"X1 3/4"	B	1										3		FM1					DOOR BY COOLER MANUFR.
024	(2) 3'-0"X6'-8"X1 3/4"	D						6			2				FM1					
025	3'-0"X6'-8"X1 3/4"	D						6			2				FM1					
026	3'-0"X6'-8"X1 3/4"	C			3						2				FM1		2			
027	3'-0"X6'-8"X1 3/4"	C			3						2				FM1		2			
028	(2) 3'-0"X6'-8"X1 3/4"	D						6			2				FM1					
029	(2) 3'-0"X6'-8"X1 3/4"	D						6			2				FM1					
030	(2) 3'-0"X6'-8"X1 3/4"	D						6			2				FM1					
031	(2) 2'-0"X6'-8"X1 3/8"	C			3						2				FM1					
032	(2) 2'-0"X6'-8"X1 3/8"	C			3						2				FM1					
033	3'-0"X6'-8"X1 3/4"	C			3						2				FM1					
034	4'-0"X6'-8"X1 3/8"	H				4								5						
035	4'-0"X6'-8"X1 3/8"	H				4								5						
036	3'-0"X6'-8"X1 3/4"	D						6			2				FM1					
037	(2) 3'-0"X6'-8"X1 3/4"	C			3						2				FM1			1.5 HR.		B LABEL
038	3'-0"X6'-8"X1 3/4"	D						6			2				FM1					
039	3'-0"X6'-8"X1 3/4"	D						6			2				FM1	1		45 MIN.		C LABEL
040	3'-0"X6'-8"X1 3/4"	C			3						2				FM1	1		1.5 HR.		B LABEL
041	3'-0"X6'-8"X1 3/4"	F					5				2				FM1	1		1.5 HR.		B LABEL
042	3'-0"X6'-8"X1 3/4"	C			3						2				FM1	1		1.5 HR.		B LABEL
043	3'-0"X6'-8"X1 3/4"	C			3						2				FM1	1		45 MIN.		C LABEL
044	3'-0"X6'-8"X1 3/4"	C			3						2				FM1	1		1.5 HR.		B LABEL
SECOND FLOOR DOORS																				
101	3'-0"X6'-8"X1 3/4"	C			3						2				FM1	1		1.5 HR.		B LABEL
102	3'-0"X6'-8"X1 3/4"	F					5				2				FM1	1		1.5 HR.		B LABEL
103	3'-0"X6'-8"X1 3/4"	F					5				2				FM1	1		1.5 HR.		B LABEL

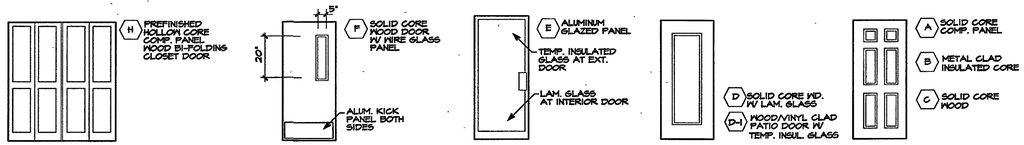


WINDOW ELEVATION TYPES

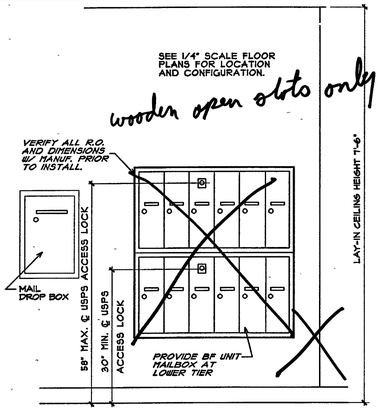
VINYL CLAD WOOD WINDOW SASH UNITS



DOOR FRAME ELEVATION TYPES

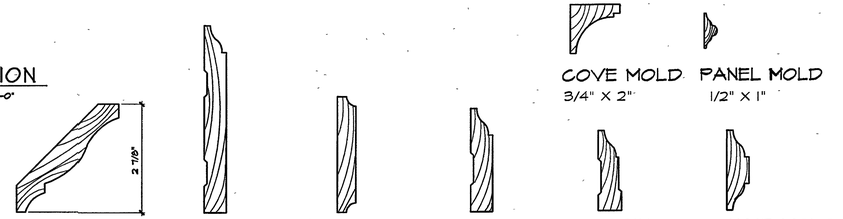


DOOR ELEVATION TYPES



1 / A-11 MAIL STATION ELEVATION

SCALE 3/4" = 1'-0"



WOOD TRIM

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Project Name and Client:

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NOVI, MICHIGAN

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NOVI, MICHIGAN

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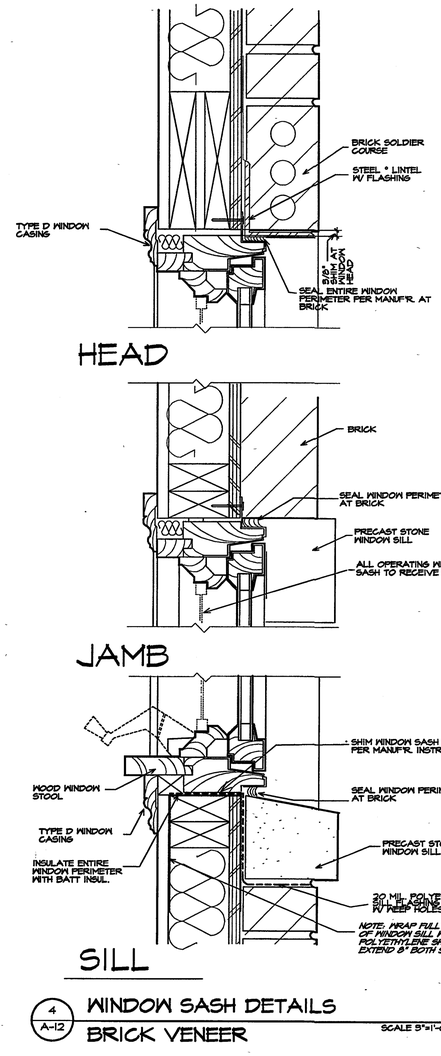
Sheet Title:
SCHEDULES

Project Number
07-140

Sheet Number:
A-11

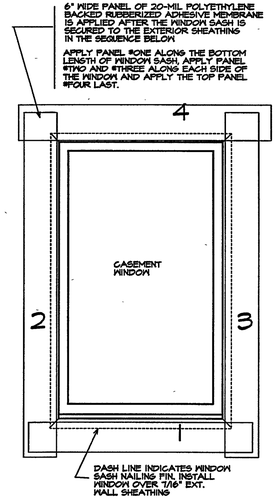
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4 / A-12 WINDOW SASH DETAILS BRICK VENEER

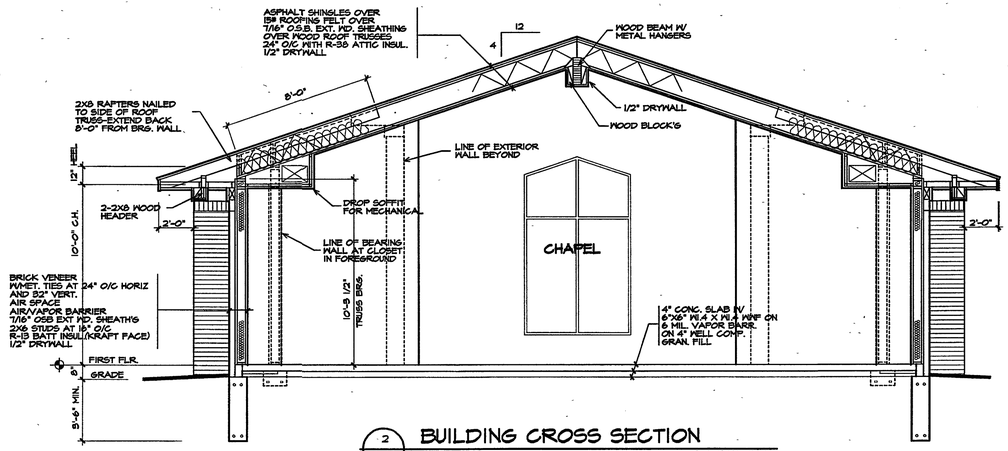
SCALE 3"=1'-0"



PLACE 6 MIL POLYETHYLENE SHEET MEMBRANE OVER WINDOW SILL PRIOR TO INSTALLING WINDOW UNIT IN FRAME WALL

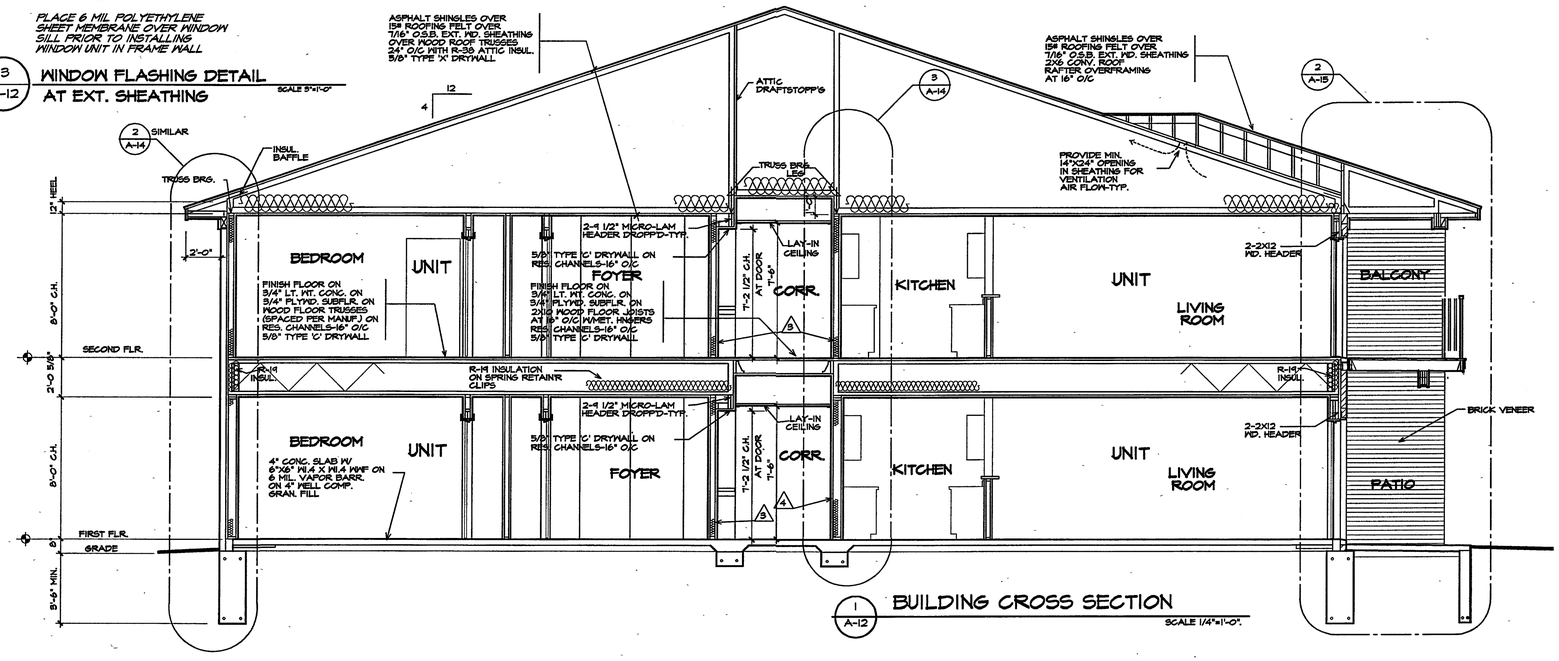
3 / A-12 WINDOW FLASHING DETAIL AT EXT. SHEATHING

SCALE 3"=1'-0"



2 / A-12 BUILDING CROSS SECTION

SCALE 1/4"=1'-0"



1 / A-12 BUILDING CROSS SECTION

SCALE 1/4"=1'-0".

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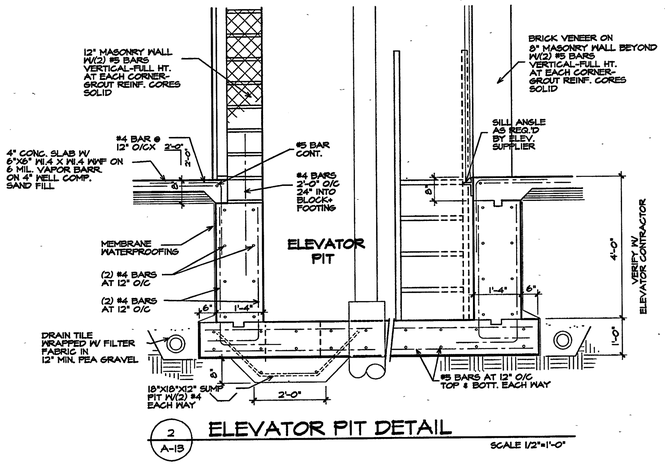
Sheet Title.
BUILDING SECTION AND DETAILS

Project Number: 07-140

Sheet Number: A-12

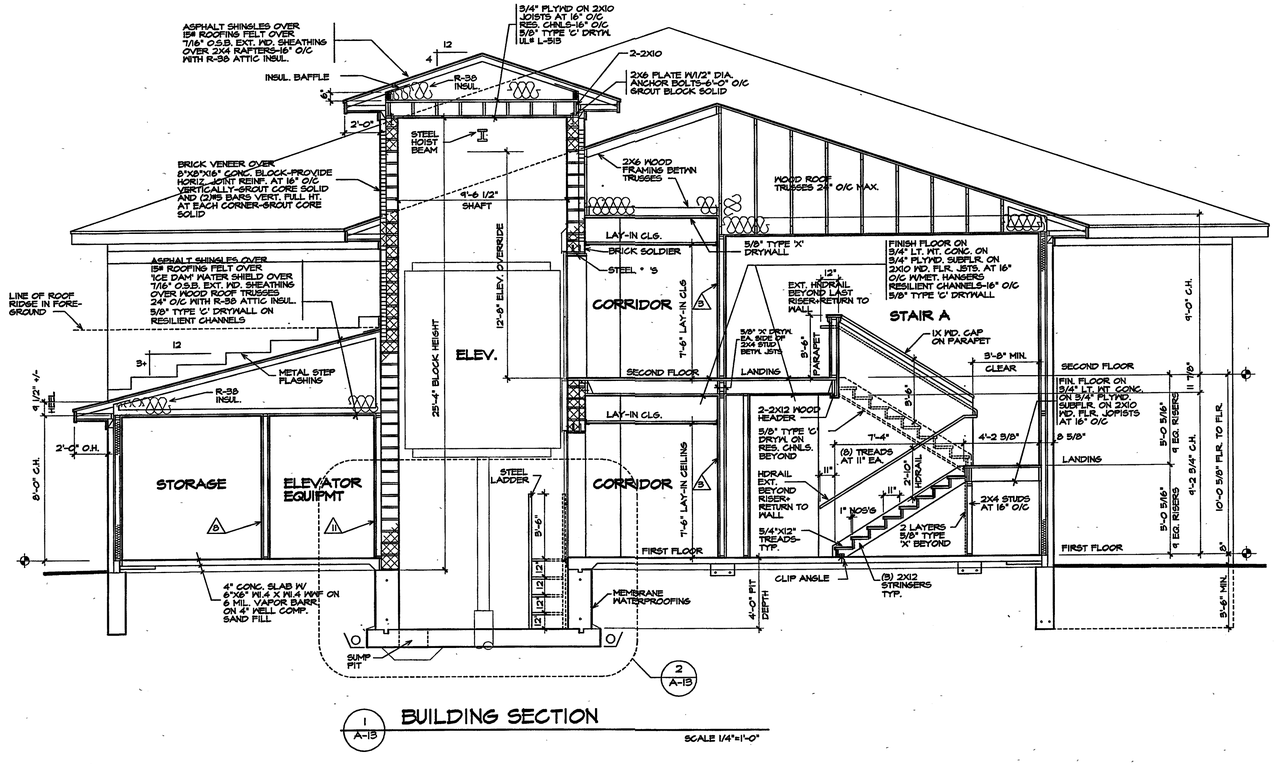
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2 A-13 ELEVATOR PIT DETAIL

SCALE 1/2"=1'-0"



1 A-13 BUILDING SECTION

SCALE 1/4"=1'-0"

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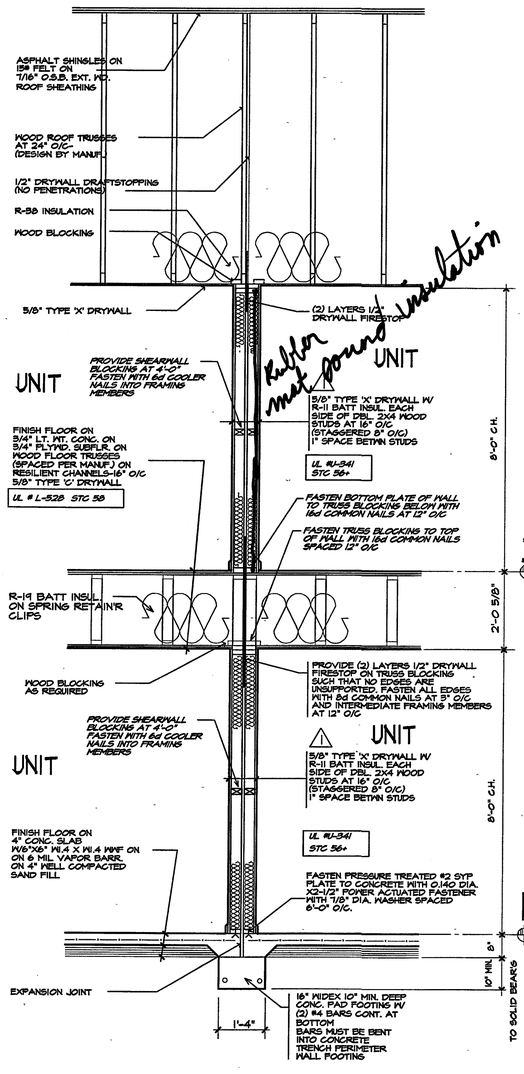
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Project Number.
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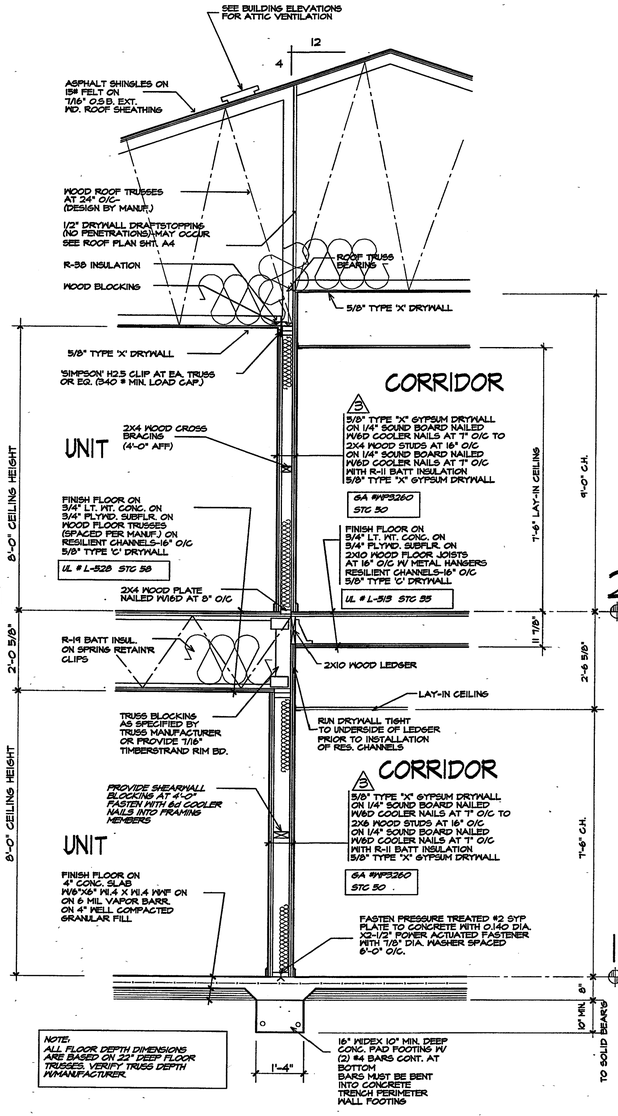
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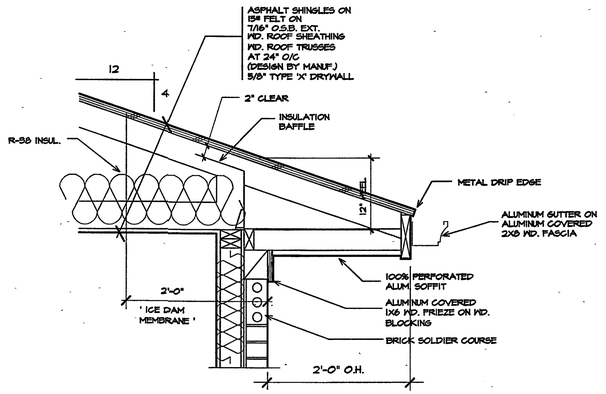
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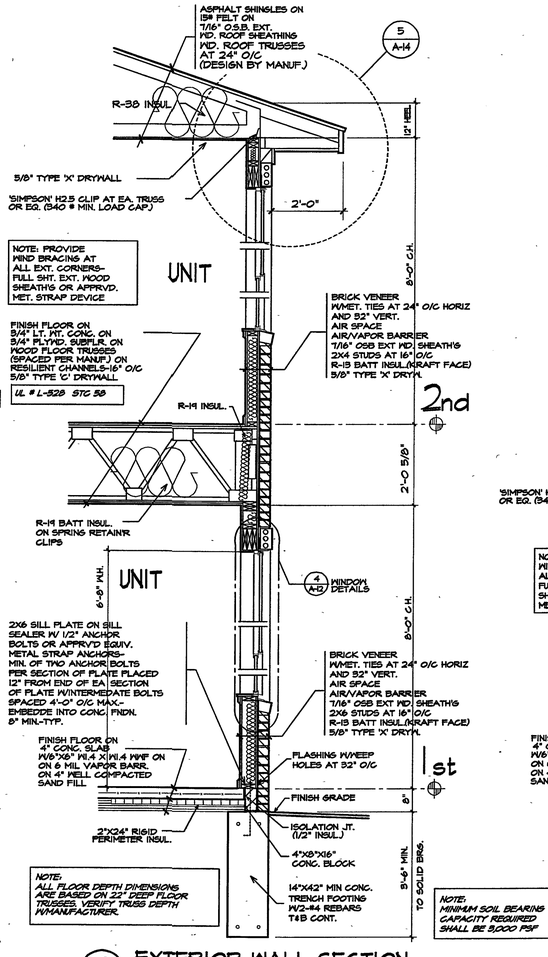
4 / A-14 FIRE PARTITION WALL
NON-BEARING WALL
SCALE 1/2"=1'-0"



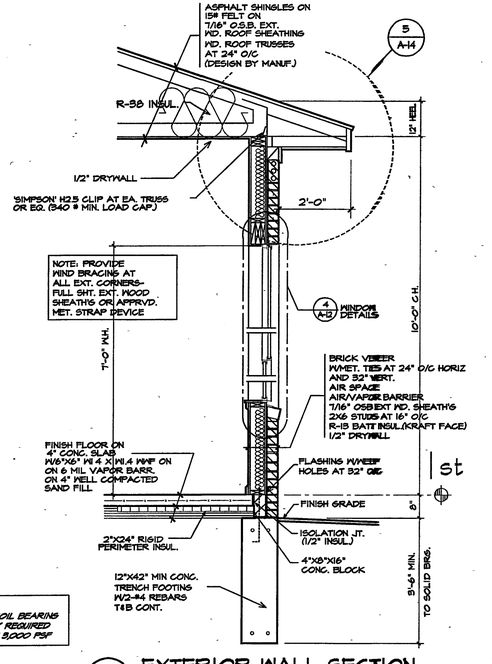
3 / A-14 FIRE PARTITION WALL
BEARING WALL AT CORRIDOR
SCALE 1/2"=1'-0"



5 / A-14 EAVE DETAIL
SCALE 1"=1'-0"



2 / A-14 EXTERIOR WALL SECTION
SCALE 1/2"=1'-0"



1 / A-14 EXTERIOR WALL SECTION
SCALE 1/2"=1'-0"

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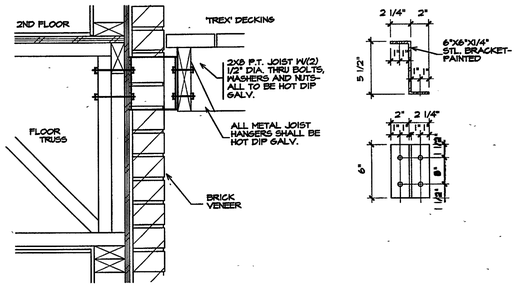
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WALL SECTIONS

Project Number: 07-140

Sheet Number: A-14

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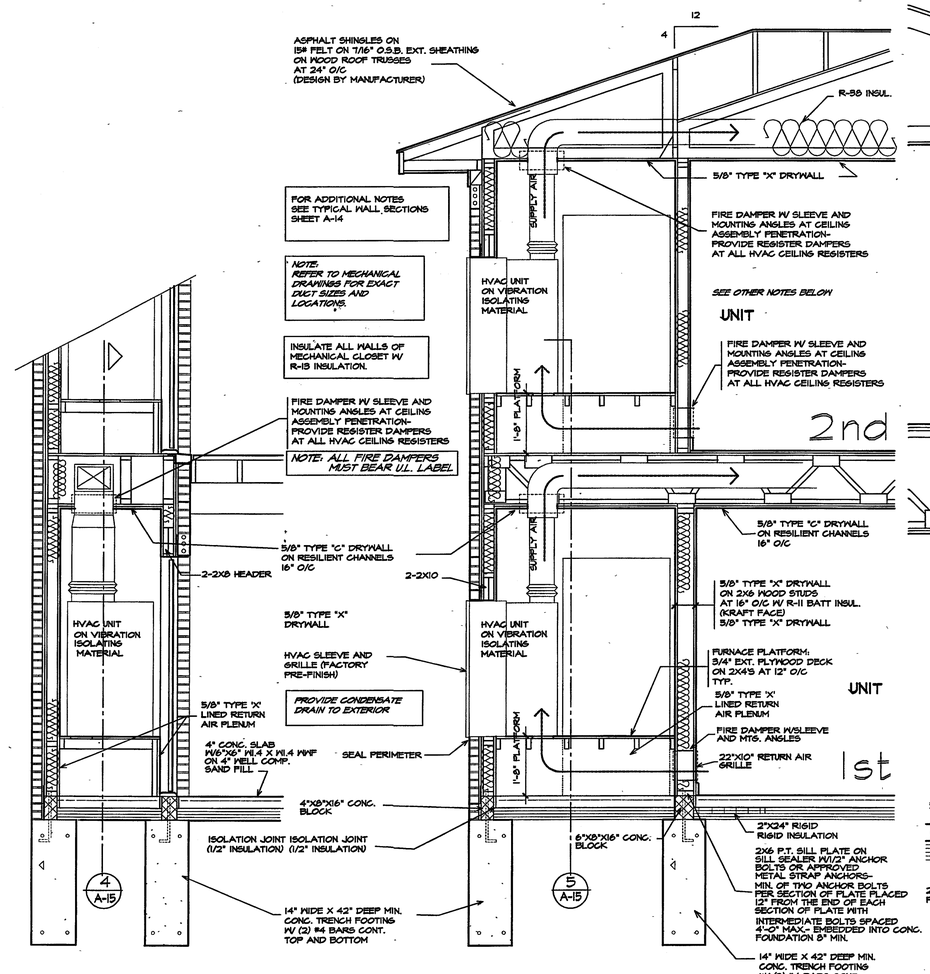
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3 / A-15 BALCONY BRACKET DETAILS

PROVIDE BRACKET AT EACH FLOOR TRUSS LOCATION.

SCALE 1 1/2"=1'-0"

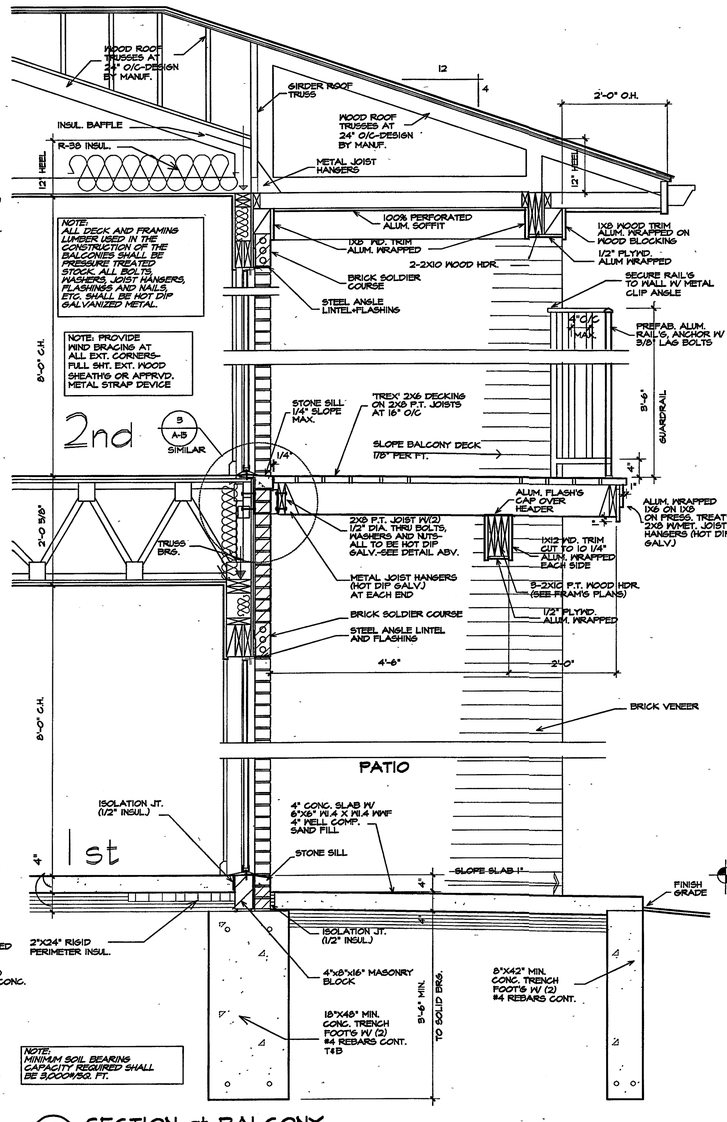


5 / A-15 HVAC CLOSET DETAIL

SCALE: 1/2"=1'-0"

4 / A-15 SECTION at HVAC CLOSET

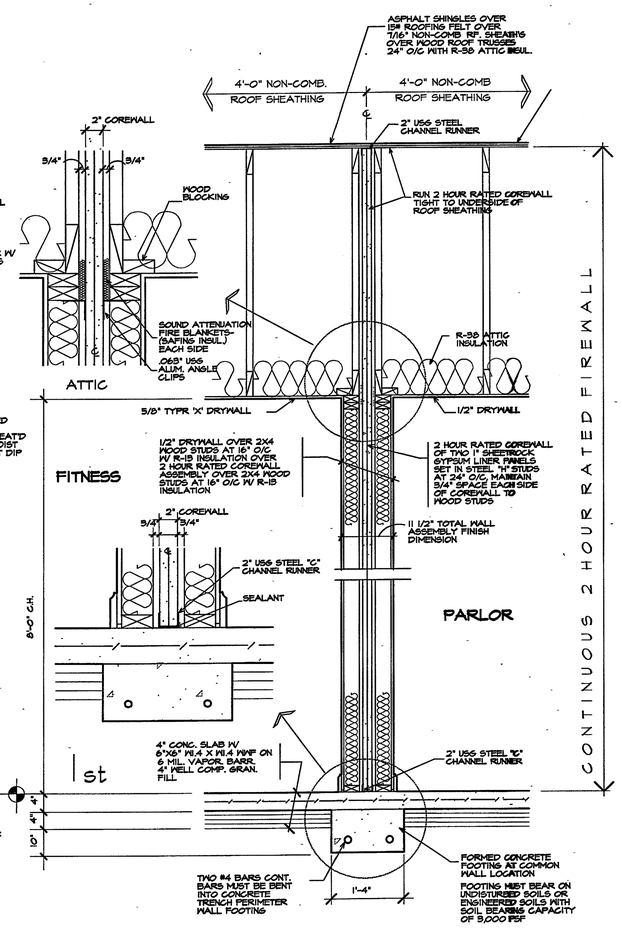
SCALE: 1/2"=1'-0"



2 / A-15 SECTION at BALCONY

FOR ADDITIONAL NOTES AND DIMENSIONS SEE SECTIONS SHEET A-14

SCALE 3/4"=1'-0"



1 / A-15 FIREWALL SECTION

FIRE RATING 2 HOUR - UL U-336

3/4"=1'-0"

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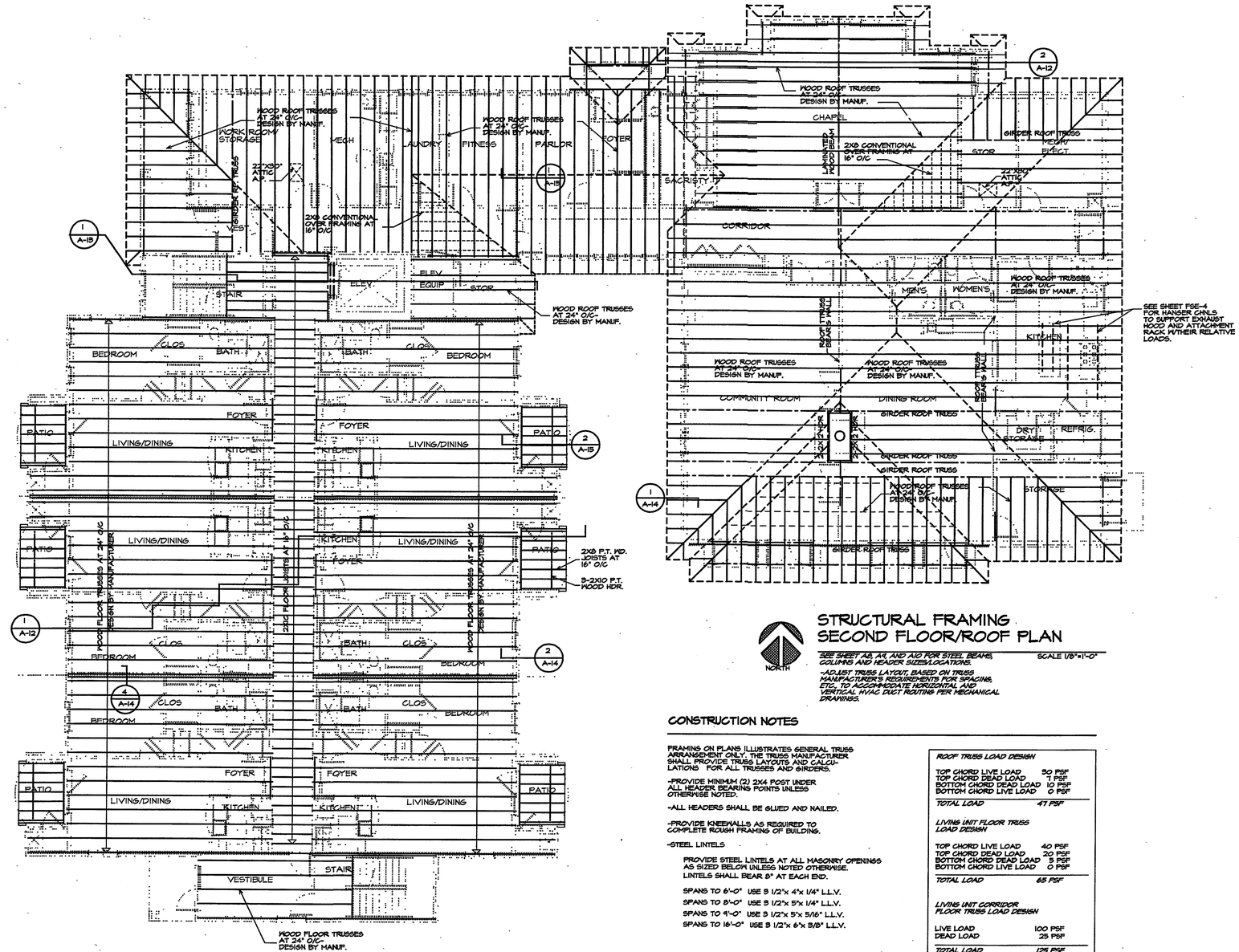
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WALL SECTIONS

Project Number: 07-140

Sheet Number. A-15

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NORTH

STRUCTURAL FRAMING SECOND FLOOR/ROOF PLAN

SEE SHEET A8, A9, AND A10 FOR STEEL BEAMS, COLUMNS AND HEADER SIZES/LOCATIONS.

-ADJUST TRUSS LAYOUT, BASED ON TRUSS MANUFACTURER'S REQUIREMENTS FOR SPACING, ETC., TO ACCOMMODATE HORIZONTAL AND VERTICAL HVAC DUCT ROUTING PER MECHANICAL DRAWINGS.

SCALE 1/8"=1'-0"

CONSTRUCTION NOTES

FRAMING ON PLANS ILLUSTRATES GENERAL TRUSS ARRANGEMENT ONLY. THE TRUSS MANUFACTURER SHALL PROVIDE TRUSS LAYOUTS AND CALCULATIONS FOR ALL TRUSSES AND GIRDERS.

-PROVIDE MINIMUM (2) 2X4 POST UNDER ALL HEADER BEARING POINTS UNLESS OTHERWISE NOTED.

-ALL HEADERS SHALL BE GLUED AND NAILED.

-PROVIDE KNEEWALLS AS REQUIRED TO COMPLETE ROUGH FRAMING OF BUILDING.

-STEEL LINTELS

PROVIDE STEEL LINTELS AT ALL MASONRY OPENINGS AS SIZED BELOW UNLESS NOTED OTHERWISE. LINTELS SHALL BEAR 8" AT EACH END.

SPANS TO 6'-0" USE 3 1/2"x 4"x 1/4" L.L.V.
SPANS TO 8'-0" USE 3 1/2"x 5"x 1/4" L.L.V.
SPANS TO 9'-0" USE 3 1/2"x 5"x 5/16" L.L.V.
SPANS TO 16'-0" USE 3 1/2"x 6"x 5/8" L.L.V.

ROOF TRUSS LOAD DESIGN

TOP CHORD LIVE LOAD	30 PSF
TOP CHORD DEAD LOAD	7 PSF
BOTTOM CHORD DEAD LOAD	10 PSF
BOTTOM CHORD LIVE LOAD	0 PSF
TOTAL LOAD	*47 PSF*

LIVING UNIT FLOOR TRUSS LOAD DESIGN

TOP CHORD LIVE LOAD	40 PSF
TOP CHORD DEAD LOAD	20 PSF
BOTTOM CHORD DEAD LOAD	5 PSF
BOTTOM CHORD LIVE LOAD	0 PSF
TOTAL LOAD	*65 PSF*

LIVING UNIT CORRIDOR FLOOR TRUSS LOAD DESIGN

LIVE LOAD	100 PSF
DEAD LOAD	25 PSF
TOTAL LOAD	*125 PSF*

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Southfield, Michigan 48033
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E-mail: cdpa@cdpa-architects.com
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Key Plan: NO SCALE

Project Name and Client.
NEW BASILIAN FATHERS RESIDENCE
NOVI, MICHIGAN

BASILIAN FATHERS
NOVI, MICHIGAN

Seal:

Date	Issued For
10/22/08	BID PACK NO. 2

Drawn: WC
Checked: SJF
Approved. JPA

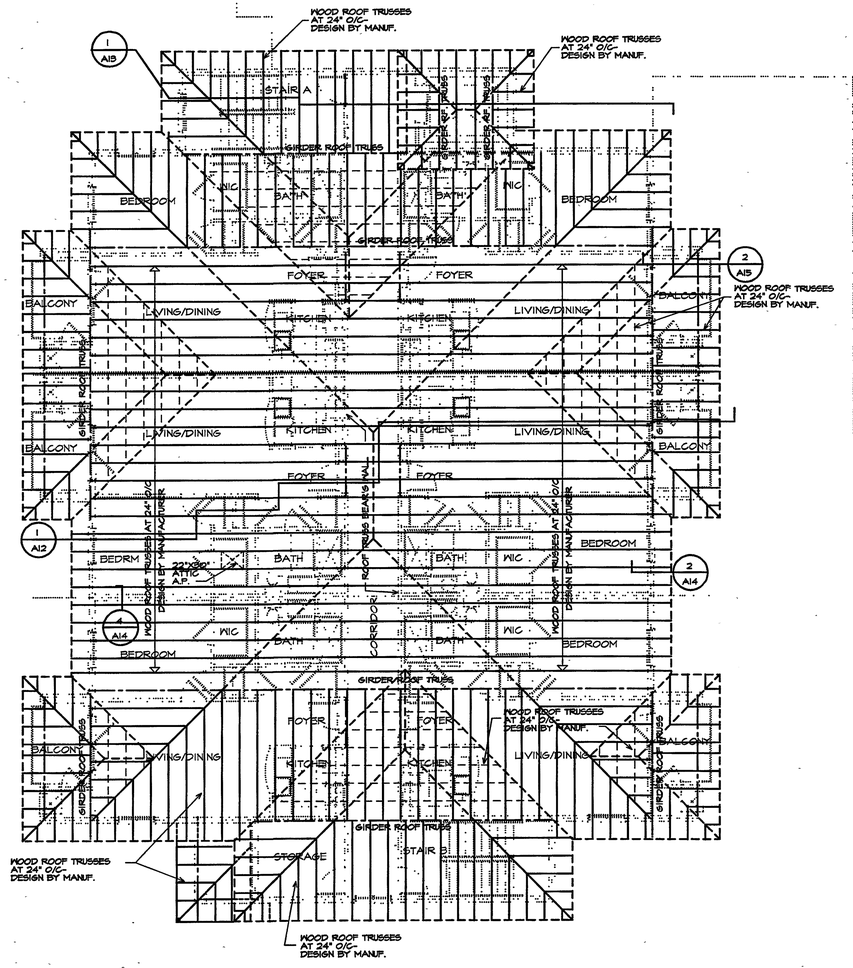
Sheet Title.
STRUCTURAL FRAMING SECOND FLOOR AND LOW ROOF PLAN

Project Number: 07-140

Sheet Number. A-16

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NORTH

STRUCTURAL FRAMING SECOND FLOOR ROOF PLAN

SEE SHEET A6, A9, AND A10 FOR STEEL BEAMS, COLUMNS AND HEADER SIZES/LOCATIONS.

SCALE 1/8"=1'-0"

-ADJUST TRUSS LAYOUT, BASED ON TRUSS MANUFACTURERS REQUIREMENTS FOR SPACING, ETC., TO ACCOMMODATE HORIZONTAL AND VERTICAL HVAC DUCT ROUTING PER MECHANICAL DRAWINGS.

CONSTRUCTION NOTES

FRAMING ON PLANS ILLUSTRATES GENERAL TRUSS ARRANGEMENT ONLY. THE TRUSS MANUFACTURER SHALL PROVIDE TRUSS LAYOUTS AND CALCULATIONS FOR ALL TRUSSES AND GIRDERS.

-PROVIDE MINIMUM (2) 2X4 POST UNDER ALL HEADER BEARING POINTS UNLESS OTHERWISE NOTED.

-ALL HEADERS SHALL BE GLUED AND NAILED.

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-STEEL LINTELS

PROVIDE STEEL LINTELS AT ALL MASONRY OPENINGS AS SIZED BELOW UNLESS NOTED OTHERWISE. LINTELS SHALL BEAR 8" AT EACH END.

SPANS TO 6'-0" USE 3 1/2"x 4"x 1/4" L.L.V.
SPANS TO 8'-0" USE 3 1/2"x 5"x 1/4" L.L.V.
SPANS TO 9'-0" USE 3 1/2"x 5"x 5/16" L.L.V.
SPANS TO 16'-0" USE 3 1/2"x 6"x 5/8" L.L.V.

ROOF TRUSS LOAD DESIGN	
TOP CHORD LIVE LOAD	50 PSF
TOP CHORD DEAD LOAD	7 PSF
BOTTOM CHORD DEAD LOAD	10 PSF
BOTTOM CHORD LIVE LOAD	0 PSF
TOTAL LOAD	*67 PSF*

LIVING UNIT FLOOR TRUSS LOAD DESIGN	
TOP CHORD LIVE LOAD	40 PSF
TOP CHORD DEAD LOAD	20 PSF
BOTTOM CHORD DEAD LOAD	5 PSF
BOTTOM CHORD LIVE LOAD	0 PSF
TOTAL LOAD	*65 PSF*

LIVING UNIT CORRIDOR FLOOR TRUSS LOAD DESIGN	
LIVE LOAD	100 PSF
DEAD LOAD	25 PSF
TOTAL LOAD	*125 PSF*

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Key Plan: NO SCALE

Project Name and Client:
NEW BASILIAN FATHERS RESIDENCE
NOVI, MICHIGAN

BASILIAN FATHERS
NOVI, MICHIGAN

Seal:

Date	Issued For
10/22/08	BID PACK NO. 2

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Checked:	SJF
Approved:	JPA

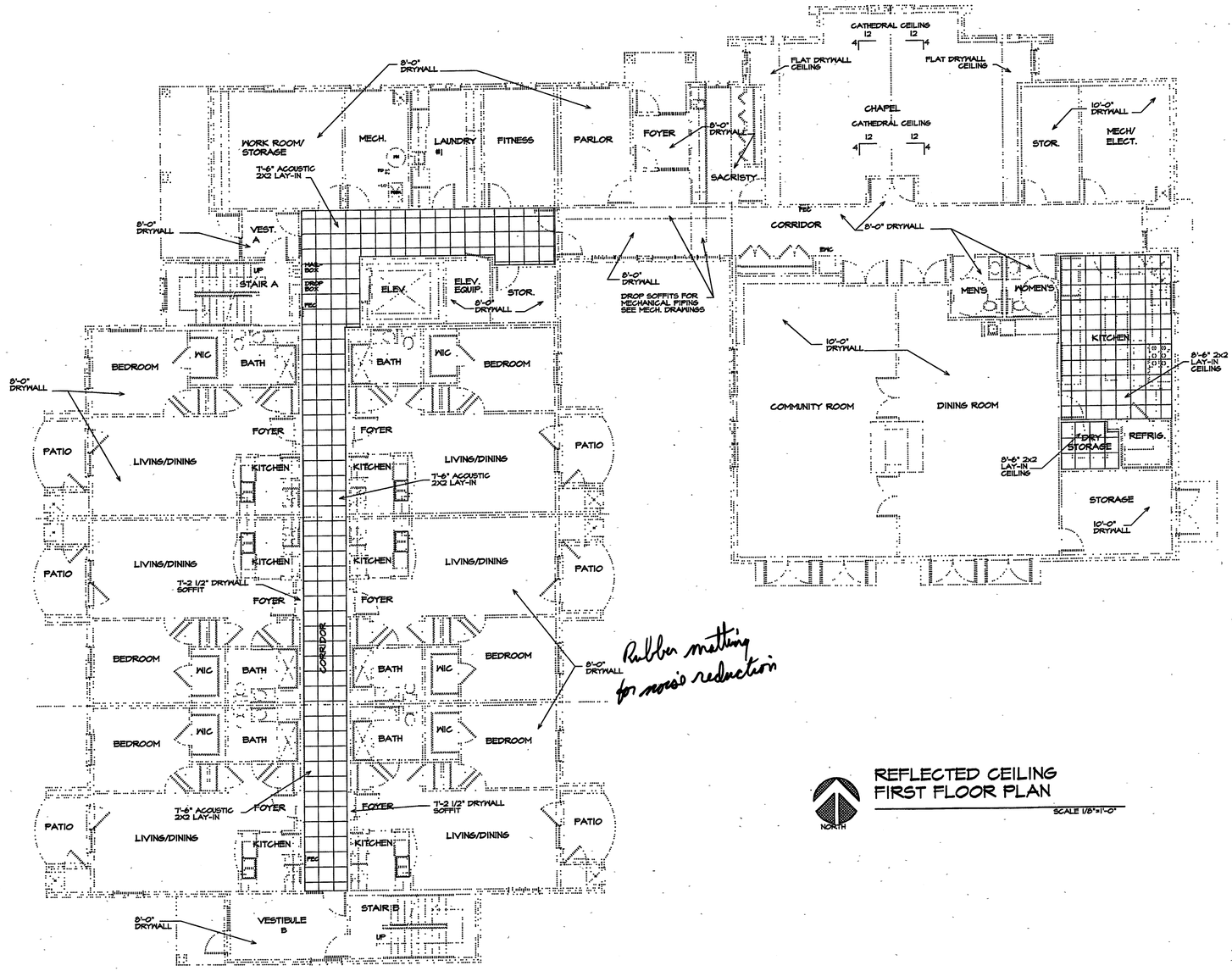
Sheet Title:
STRUCTURAL FRAMING SECOND FLOOR ROOF PLAN

Project Number: 07-140

Sheet Number: A-17

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NORTH

REFLECTED CEILING FIRST FLOOR PLAN

SCALE 1/8"=1'-0"

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Key Plan: NO SCALE

Project Name and Client.

NEW BASILIAN FATHERS RESIDENCE
NOVI, MICHIGAN

BASILIAN FATHERS
NOVI, MICHIGAN

Seal:

Date	Issued For
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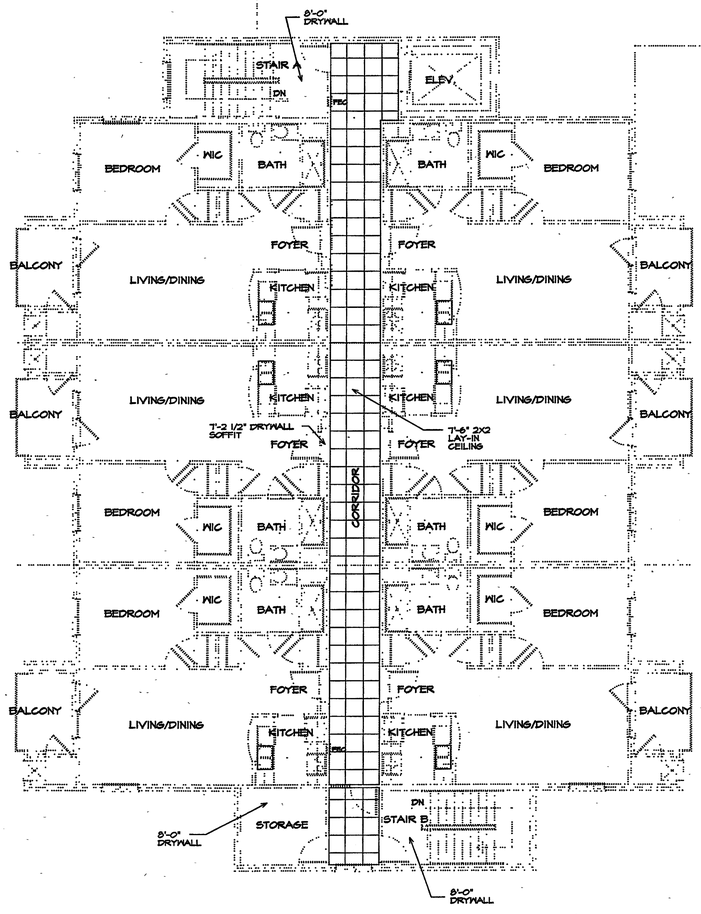
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REFLECTED CEILING FIRST FLOOR PLAN

Project Number: 07-140

Sheet Number: A-18

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NORTH

REFLECTED CEILING SECOND FLOOR PLAN

SCALE 1/8"=1'-0"

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www.cdpaarchitects.com

Key Plan: NO SCALE

N

Project Name and Client.

NEW BASILIAN FATHERS RESIDENCE
NOVI, MICHIGAN

BASILIAN FATHERS
NOVI, MICHIGAN

Seal:

Date	Issued For
10/22/08	BID PACK NO. 2

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Approved:	JPA

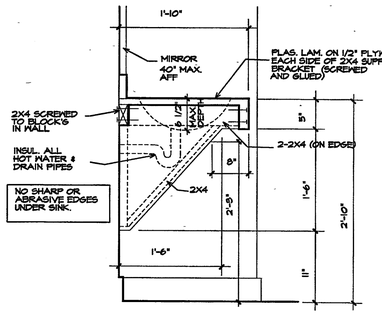
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Project Number.
07-140

Sheet Number:
A-19

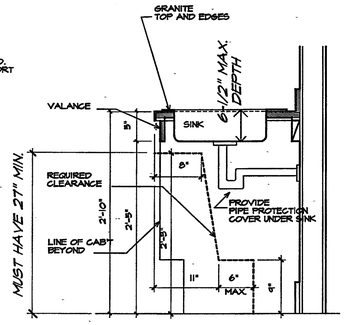
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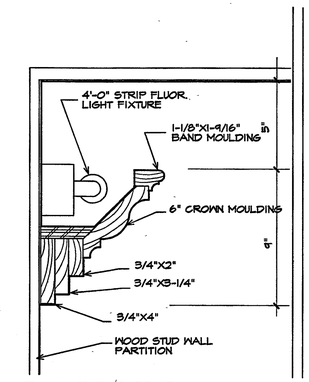
14 A-20 SECTION AT LAV. TOP

SCALE 1"=1'-0"



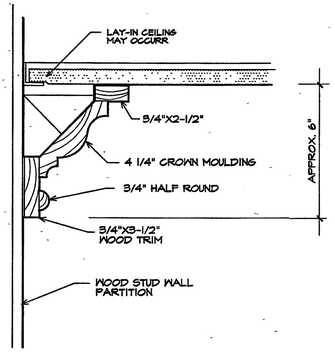
13 A-20 OPEN SPACE AT SINK DETAIL

SCALE:1"=1'-0"



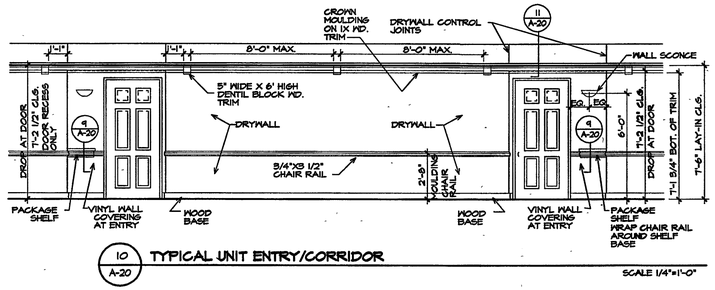
12 A-20 LIGHTING COVE DETAIL

SCALE 3"=1'-0"



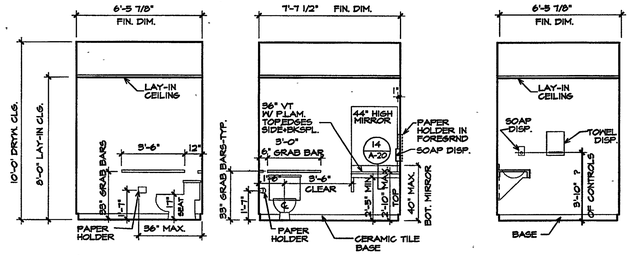
11 A-20 CEILING COVE TRIM DETAIL

SCALE 3"=1'-0"



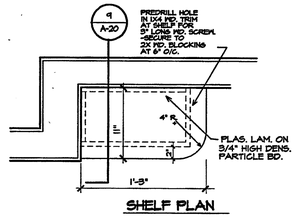
10 A-20 TYPICAL UNIT ENTRY/CORRIDOR

SCALE 1/4"=1'-0"

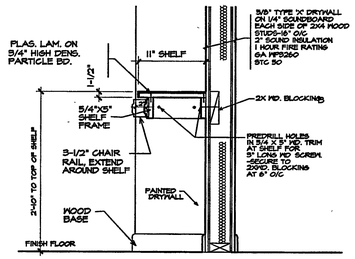


8 A-20 MEN'S / WOMEN'S LAVATORY BARRIER FREE

SCALE 1/4"=1'-0"

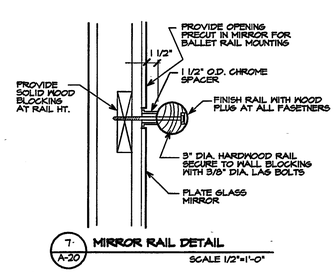


SHELF PLAN



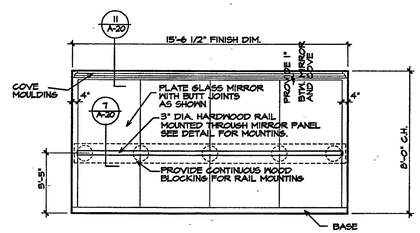
9 A-20 SECTION THRU PACKAGE SHELF AT UNIT ENTRY DOOR

SCALE 1 1/2"=1'-0"



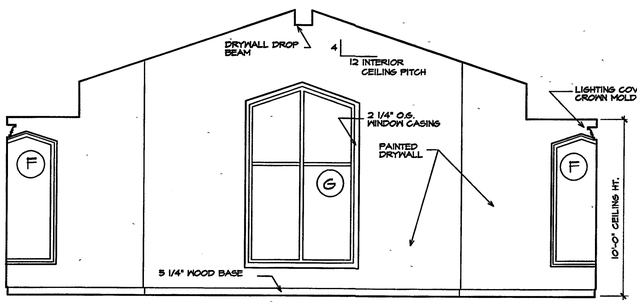
7 A-20 MIRROR RAIL DETAIL

SCALE 1/2"=1'-0"



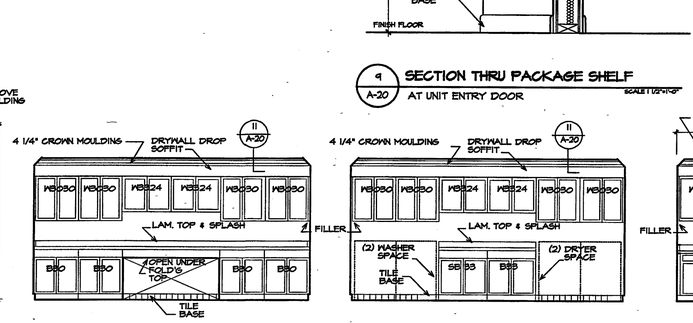
6 A-20 FITNESS ROOM ELEVATION

1/4"=1'-0"



17 A-20 CHAPEL ELEVATION

1/4"=1'-0"

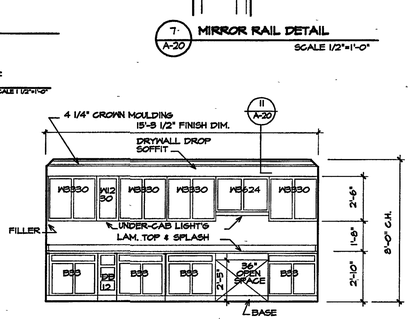


16 A-20 LAUNDRY ROOM ELEVATION

1/4"=1'-0"

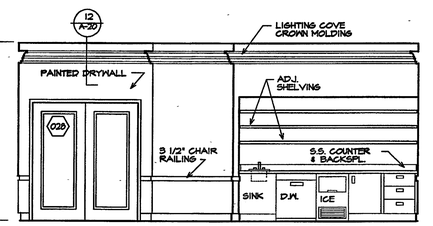
15 A-20 LAUNDRY ROOM ELEVATION

1/4"=1'-0"



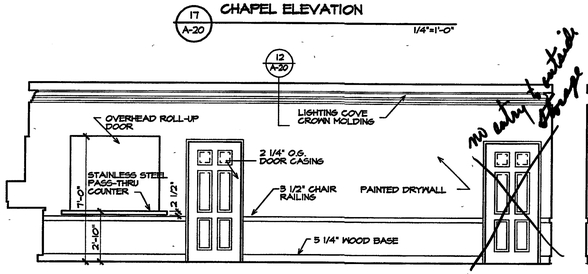
5 A-20 SACRISTY ELEVATION

1/4"=1'-0"



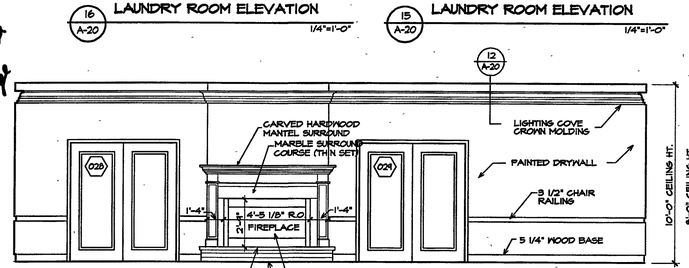
4 A-20 DINING ROOM SERVING ELEVATION

1/4"=1'-0"



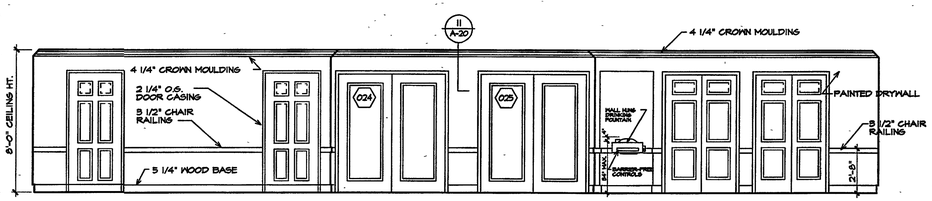
3 A-20 DINING ROOM ELEVATION

1/4"=1'-0"



2 A-20 DINING ROOM ELEVATION

1/4"=1'-0"



1 A-20 CORRIDOR ELEVATION

1/4"=1'-0"

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Key Plan: NO SCALE

Project Name and Client:

NEW BASILIAN FATHERS RESIDENCE
NOVI, MICHIGAN

BASILIAN FATHERS
NOVI, MICHIGAN

Seal:

Date	Issued For
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Drawn: WC
Checked: SJF
Approved: JPA

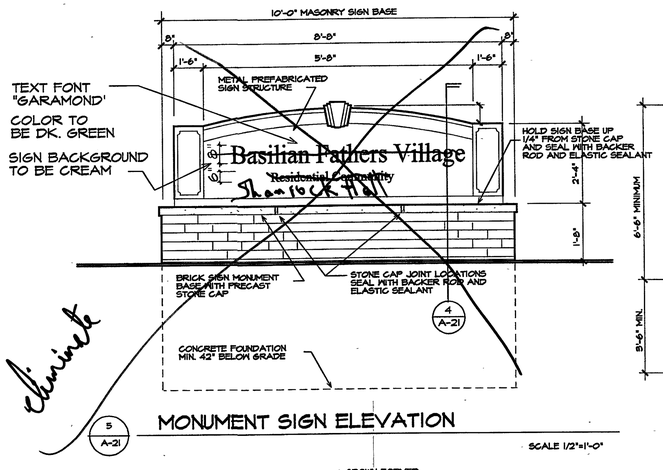
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INTERIOR ELEVATIONS AND DETAILS

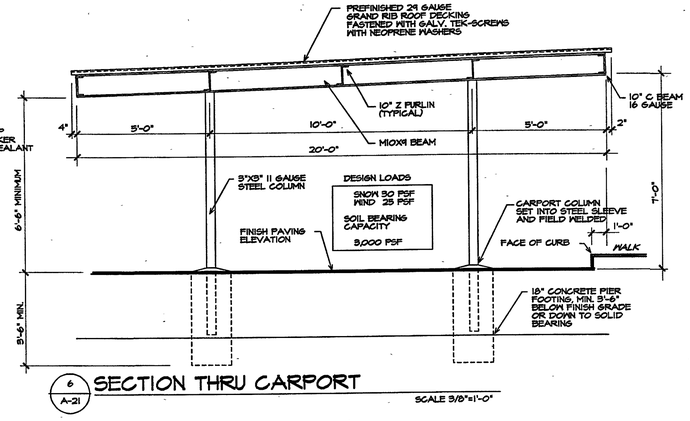
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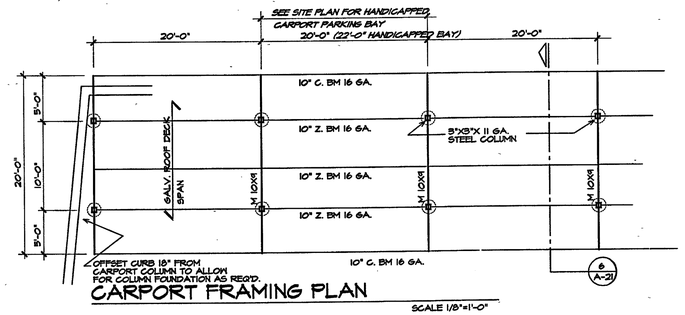
Sheet Number: A-20

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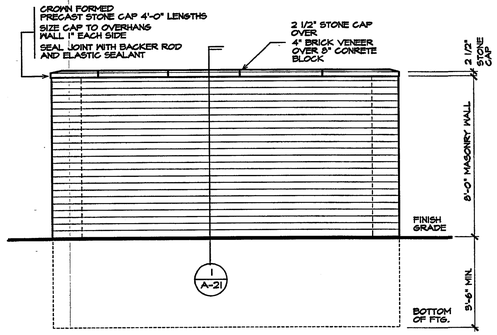






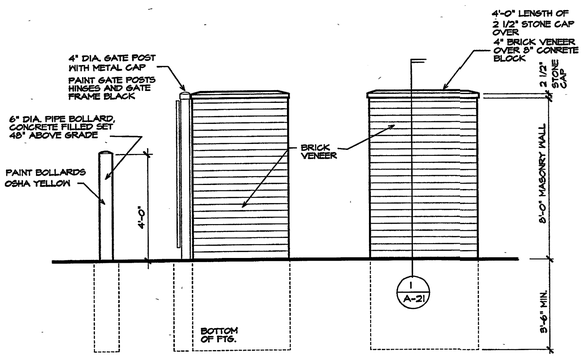
5 A-21 CARPORT STRUCTURE DETAILS

PREFABRICATED CARPORT STRUCTURE ASSEMBLED IN FIELD BY CARPORT STRUCTURES CORP. OR APPROVED EQUAL.



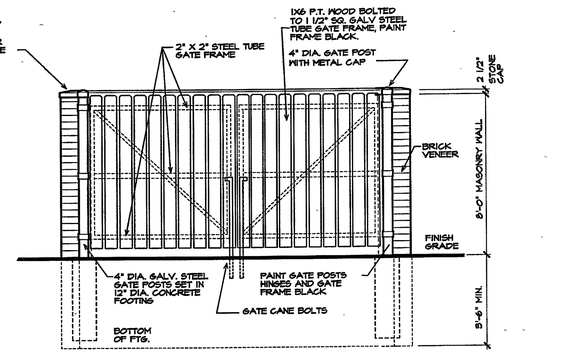
REFUSE ENCLOSURE REAR ELEVATION

SCALE 3/8" = 1'-0"



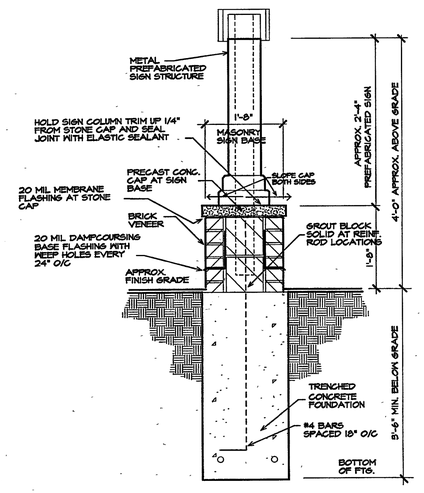
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SCALE 3/8" = 1'-0"

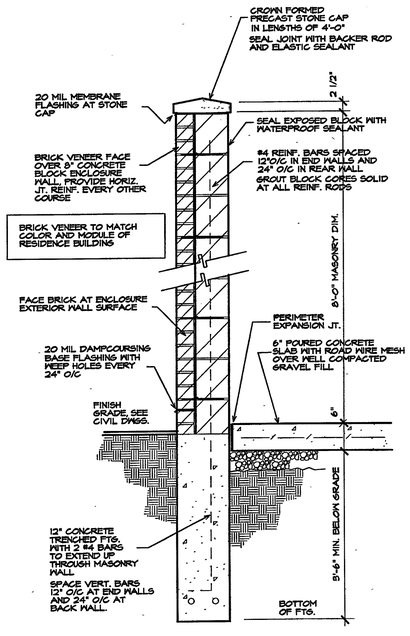


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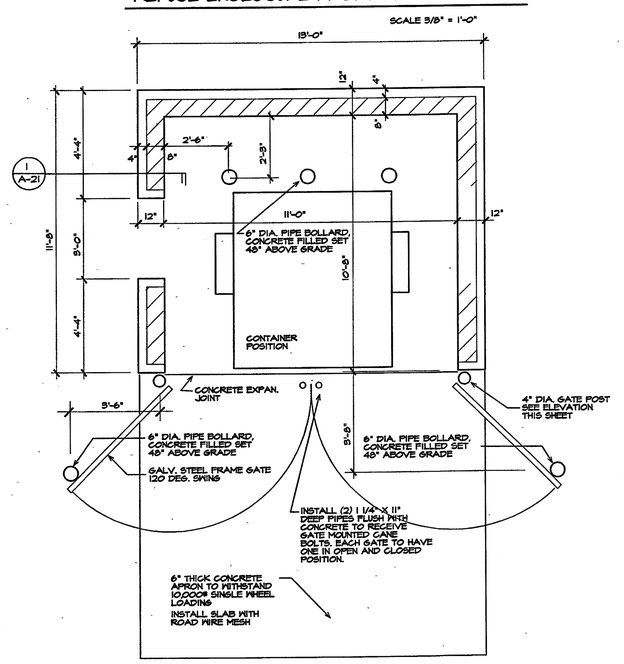
SCALE 3/8" = 1'-0"



4 A-21 SECTION THRU MONUMENT SIGN



1 A-21 SECTION THRU ENCLOSURE WALL



REFUSE CONTAINER ENCLOSURE PLAN

SCALE 3/8" = 1'-0"

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www.cdpaarchitects.com

Key Plan: NO SCALE

N

Project Name and Client.

NEW BASILIAN FATHERS RESIDENCE
NOVI, MICHIGAN

BASILIAN FATHERS
NOVI, MICHIGAN

Seal:

Date	Issued For
10/22/08	BID PACK NO. 2

Drawn:	WC
Checked:	SJF
Approved:	JPA

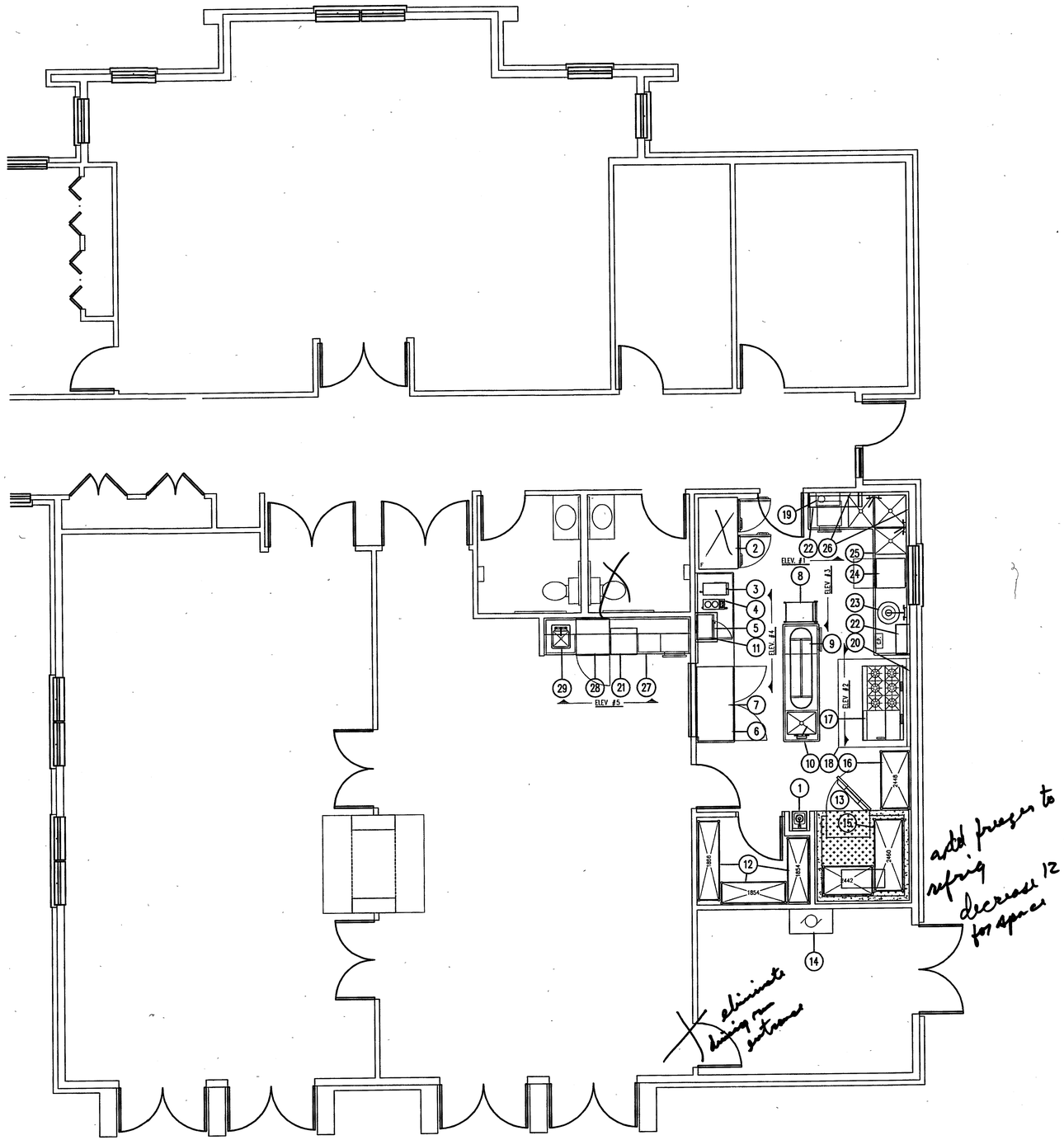
Sheet Title:
TRASH ENCLOSURE MONUMENT SIGN AND CARPORT DETAILS

Project Number: 07-140

Sheet Number: **A-21**

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F:\Basilian Residence\Current\Architectural\A-21 TRASH ENCLOSURE MONUMENT SIGN AND CARPORT DETAILS.dwg, 10/24/2008 7:53:25 AM, sflickema



ITEM	QTY	DESCRIPTION	DESCRIPTION
1	1	ST. ST. HAND SINK	ADVANCE TABCO
2	1	TWO SECTION REACH-IN FREEZER	VICTORY
3	1	ICED TEA MAKER	BY OPERATOR "NIC"
4	1	COFFEE MAKER	BY OPERATOR "NIC"
5	1	MICROWAVE OVEN	PANASONIC
6	1	ST. ST. WORK COUNTER	ST. ST. FABRICATOR
7	1	UNDERCOUNTER REFRIGERATOR	TRUE
8	1	PORTABLE THREE TIER CART	LAKESIDE
9	1	CEILING-HUNG UTENSIL RACK	ADVANCE TABCO
10	1	ST. ST. WORK TABLE W/ SINK	ST. ST. FABRICATOR
11	1	ST. ST. MICROWAVE SHELF	ADVANCE TABCO
12	1 LOT	DRY STORAGE SHELVING	METRO
13	1	WALK-IN REFRIGERATOR	KOLPAK
14	1	REFRIGERATION SYSTEM	KOLPAK
15	1 LOT	PORTABLE REFRIGERATOR SHELVING	METRO
16	1 LOT	STORAGE SHELVING	METRO
17	1	SIX BURNER/GRIDDLE W/ OVEN	SOUTHBEND
18	1 LOT	ST. ST. EXHAUST HOOD W/ SIDE PANELS	VENT TECH/ACCUREX
19	1 SYS	FIRE SYSTEM	ANSUL
20	1 LOT	ST. ST. WALL PANELING	ST. ST. FABRICATOR
21	1	UNDERCOUNTER ICE MAKER	MANITOWOC
22	1 LOT	WIRE WALL SHELVING	METRO
23	1	3 H.P. DISPOSER W/ PRE-RINSE	ISE
24	1	UNDERCOUNTER DISHWASHER	HOBART
25	1	ST. ST. THREE COMPARTMENT SINKS & TABLE	ST. ST. FABRICATOR
26	1 LOT	ST. ST. WALL PANELING	ST. ST. FABRICATOR
27	1	MILLWORK SERVICE COUNTER & SHELVES	MILLWORK FABRICATOR
28	1	UNDERCOUNTER REFRIGERATOR	TRUE
29	1	ST. ST. DROP-IN SINK	ELKAY
30	1 LOT	FIELD ERECTION LABOR	FSEC

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Key Plan: NO SCALE

Project Name and Client:
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NOVI, MICHIGAN

BASILIAN FATHERS
NOVI, MICHIGAN

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Approved: JPA

Sheet Title:
FOOD SERVICE EQUIPMENT LAYOUT AND SCHEDULE

Project Number.
07-140

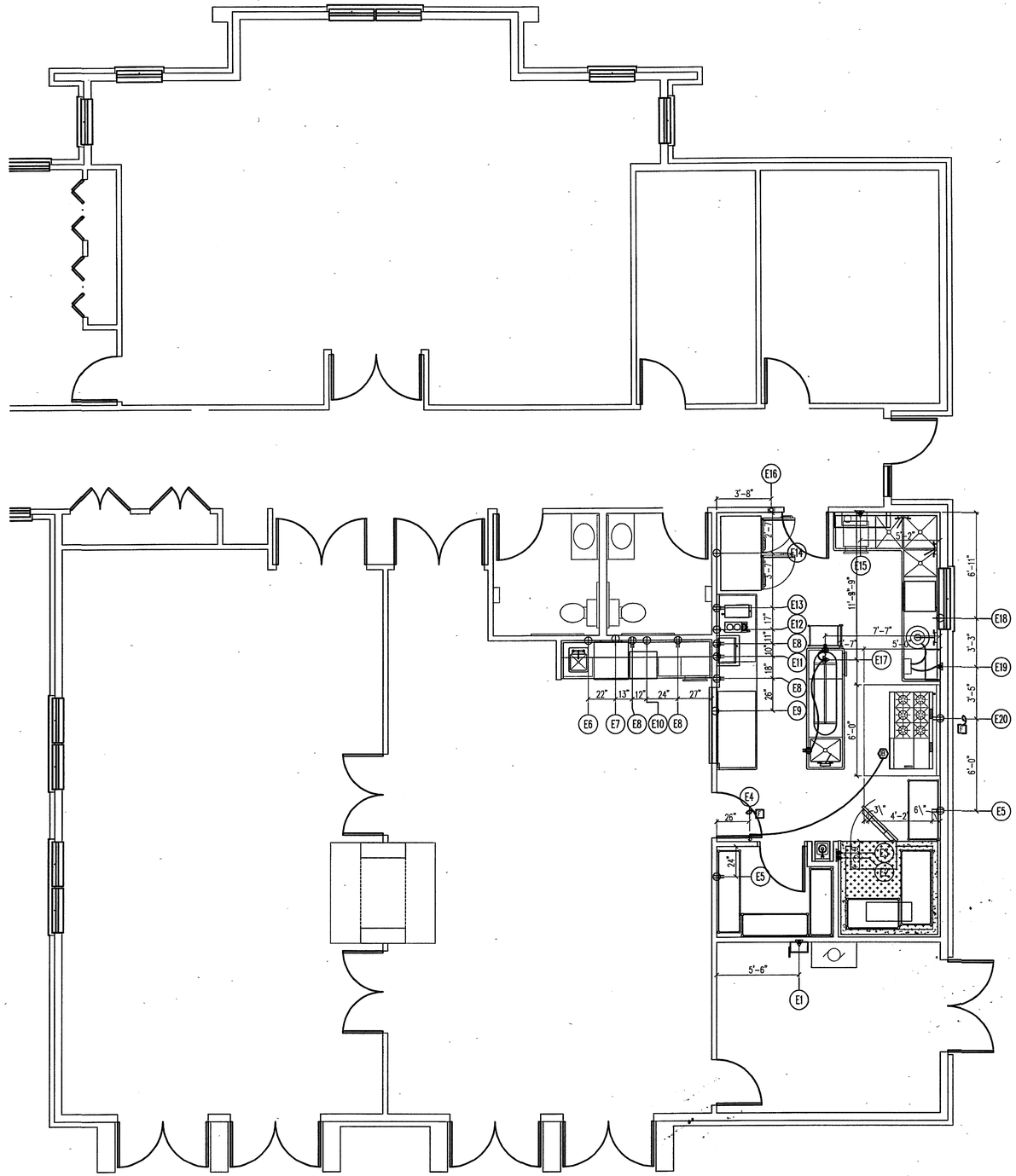
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F:\Basilian Residence\Current\Food Service\FSE-2 FOOD SERVICE EQUIPMENT ELECTRICAL ROUGH-IN PLAN.dwg, 10/20/2008 3:57:12 PM, sflickema



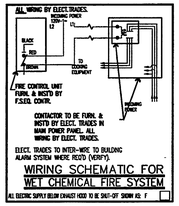
GENERAL NOTES for ROUGH-IN PLAN

FOOD SERVICE EQUIP. CONTR. IS TO ASSIST ELECTRICAL TRADES DURING PERIOD WHILE FINAL ROUGH-IN CONNECTIONS ARE BEING MADE. F.S.EQ. CONTR. SHALL FURNISH ALL NECESSARY WIRING DETAILS AS REQUIRED. F.S.EQ. CONTR. ALSO TO HAVE FIELD SUPERVISOR ON JOBSITE AT TIME OF FINAL CONN'S.

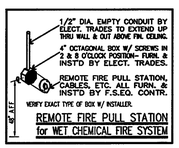
FOOD SERVICE EQUIP. CONTR. SHALL CONTACT ELECTRICAL ENGINEER BEFORE DRAWING ROUGH-IN PLAN TO VERIFY EXACT VOLTAGES AVAILABLE ON JOBSITE. THIS CHECK MUST BE MADE TO INSURE PROPER VOLTAGES TO ALL EQUIPMENT.

ELECTRICAL ROUGH-IN CODE

○	J.B.	JUNCTION BOX
▲	E.C.C.	ELECTRICAL CONDUIT CONNECTION
	H.P.	HORSE-POWER
	KW.	KILOWATT
	W.	WATT
	V.	VOLT
	1ph.	SINGLE PHASE
	3ph.	THREE PHASE
⇔	D.R.	DUPLEX RECEPTACLE
⇔	S.R.	SINGLE RECEPTACLE
⊖	D.F.R.	DUPLEX FLOOR RECEPTACLE
⊖	S.F.R.	SINGLE FLOOR RECEPTACLE
	F.D.S.	FUSED DISCONNECT SWITCH
	SW	SWITCH
	S.U.	STUB-UP
	D.F.A.	DOWN FROM ABOVE
	A.F.F.	ABOVE FINISH FLOOR
	B.T.C.	BRANCH TO CONNECTION
	E.T.	ELECTRICAL TRADES
	FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR

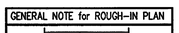


WIRING SCHEMATIC FOR WET CHEMICAL FIRE SYSTEM



REMOTE FIRE PULL STATION for WET CHEMICAL FIRE SYSTEM

GENERAL NOTE for ROUGH-IN PLAN



ALL SERVICES SHOWN WITH SYMBOLS CENTERED ON WALL SHOULD BE BROUGHT TO THAT POINT CONCEALED IN WALL & STUBBED-OUT AT HEIGHT SHOWN ON THIS DIMENSIONED ROUGH-IN PLAN. DO NOT STUB OUT OF FLOOR & RUN EXPOSED ON WALL.

ELECTRICAL NOTES

(E1) 3/4 H.P. 208V-3ph. E.C.C. S.U. +9'-0" A.F.F.- B.T.C. @ REFRIGERATOR COMPRESSOR.

(E2) 20 AMP (CIRCUIT) 120V-1ph. E.C.C. +8'-6" A.F.F.- B.T.C. @ WALK-IN. LIGHTS, SWITCHES & DOOR HEATERS PRE-WIRED BY FSEC TO J.B. ON TOP w/ FINAL CONN. BY E.T.

(E3) 20 AMP (CIRCUIT) 120V-1ph. E.C.C. +8'-6" A.F.F.- B.T.C. @ WALK-IN. BLOWER COIL (TO RUN CONTINUOUSLY) PRE-WIRED BY FSEC TO J.B. ON TOP w/ FINAL CONN. BY E.T.

(E4) 200 WATT 120V-1ph. SW. BY E.T. +48" A.F.F. FOR HOOD LIGHTS. LIGHTS PRE-WIRED BY FSEC TO J.B. ON TOP w/ FINAL CONN. BY E.T.

(E5) 120V-1ph. D.R. +18" A.F.F. FOR GENERAL USE.

(E6) SPARE - NOT USED

(E7) 1/4 H.P. 120V-1ph. S.R. RECESSED (CLOCK-TYPE) +18" A.F.F. FOR UNDERCOUNTER REFRIG.

(E8) 20 AMP (CIRCUIT) 120V-1ph. D.R. +50" A.F.F. FOR EQUIPMENT USE.

(E9) 1/2 H.P. 120V-1ph. S.R. RECESSED (CLOCK-TYPE) +18" A.F.F. FOR UNDERCOUNTER REFRIG.

(E10) 1/4 H.P. 120V-1ph. S.R. +18" A.F.F. FOR ICE MAKER.

(E11) 20 AMP (CIRCUIT) 120V-1ph. S.R. +72" A.F.F. FOR MICROWAVE OVEN.

(E12) 6.3 KW. 120/208V-1ph. S.R. +50" A.F.F. FOR COFFEE MAKER.

(E13) 20 AMP (CIRCUIT) 120V-1ph. D.R. +50" A.F.F. FOR ICED TEA MAKER.

(E14) 12 AMP (LOAD) 120/208V-1ph. S.R. +7'-3" A.F.F. FOR FREEZER.

(E15) 8.0 AMP (LOAD) 120V-1ph. E.C.C. +9'-0" A.F.F.- B.T.C. @ FIRE SYSTEM SHUT-OFF. ALL INTER-WIRING BY E.T. SEE DETAIL THIS SHEET.

(E16) 4" OCTAGON BOX BY E.T. +48" A.F.F. w/ SCREWS IN 2 & 8 O'CLOCK POSITION & 1/2" E.C.C. UP THRU WALL- OUT ABOVE FIN. CEILING FOR REMOTE PULL STATION BY FSEC. SEE DETAIL THIS SHEET.

(E17) 20 AMP (CIRCUIT) 120V-1ph. E.C.C. S.U. +6" A.F.F.- B.T.C. @ COUNTER D.R.'s (2). RECEPTACLES PRE-WIRED BY FSEC TO J.B. IN BASE w/ FINAL CONN. BY E.T.

(E18) 37.7 AMP (LOAD) 120/208V-1ph. S.R. +18" A.F.F. FOR DISHWASHER.

(E19) 3 H.P. 208V-3ph. E.C.C. +18" A.F.F.- B.T.C. @ DISPOSER. E.T. TO INTER-WIRE TO CONTROL PANEL & DISPOSER.

(E20) 20 AMP (CIRCUIT) 120V-1ph. D.R. +18" A.F.F. FOR RANGE.

NOTE...

ALL ADDITIONAL RECEPTACLES, CONN.'s, WIRING, ETC. TO BE SHOWN BY ELECT. ENGINEER.

ALL RECEPTACLES WITHIN KITCHEN AREAS MUST BE GFCI PROTECTED BY ELECT. TRADES.

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Key Plan: NO SCALE

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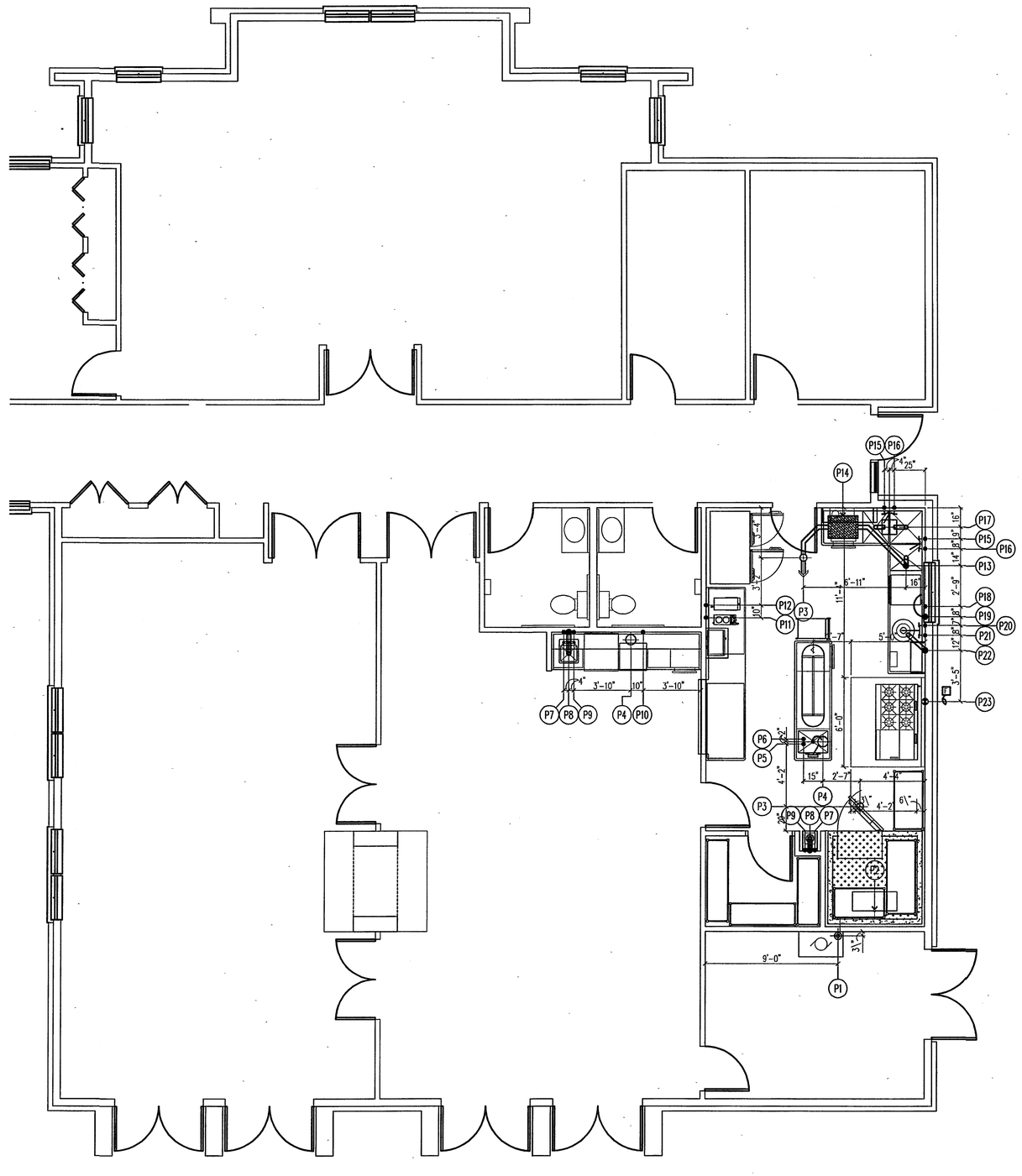
Sheet Title:
FOOD SERVICE EQUIPMENT ELECTRICAL ROUGH-IN PLAN

Project Number: 07-140

Sheet Number. FSE-2

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GENERAL NOTES for ROUGH-IN PLAN

FOOD SERVICE EQUIP. CONTR. IS TO ASSIST PLUMBING TRADES DURING PERIOD WHILE FINAL ROUGH-IN CONNECTIONS ARE BEING MADE. F.S.EQ. CONTR. SHALL FURNISH ALL NECESSARY PIPING DETAILS AS REQUIRED. F.S.EQ. CONTR. ALSO TO HAVE FIELD SUPERVISOR ON JOBSITE AT TIME OF FINAL CONN'S.

FOOD SERVICE EQUIP. CONTR. SHALL CONTACT PLUMB. ENGINEER BEFORE DRAWING ROUGH-IN PLAN TO VERIFY TYPE OF GAS ON JOBSITE. WHEN STEAM IS AVAILABLE, PRESSURE IS TO BE VERIFIED AND ALL EQUIPMENT TO BE FURNISHED ACCORDINGLY.

PLUMBING ROUGH-IN CODE

H.W.	HOT WATER
C.W.	COLD WATER
W.	WASTE
I.W.	INDIRECT WASTE
F.D.	FLOOR DRAIN
F.T.F.D.	FUNNEL-TYPE FLOOR DRAIN
F.S.	FLOOR SINK
G.	GAS (NATURAL)
A.F.F.	ABOVE FINISH FLOOR
S.U.	STUB-UP
D.F.A.	DOWN FROM ABOVE
P.T.	PLUMBING TRADES
FSEC	FOOD SERVICE EQUIPMENT CONTR.
A.T.	ARCH. TRADES / GEN. CONTR.

SYMBOL DENOTES DRAIN/WASTE/CONDENSATE LINE OF VARIOUS SIZE, TO BE FURNISHED & INSTALLED BY P.T.- RUN FROM EQUIPMENT TO NEAREST F.D./F.S./I.W./H.O. VERIFY EXACT SIZE WITH FSEC FINAL BUY-OUT BOOKLET.

GENERAL NOTE for ROUGH-IN PLAN

ALL SERVICES SHOWN WITH SYMBOLS CENTERED ON WALL SHOULD BE BROUGHT TO THAT POINT CONCEALED IN WALL & STUBBED-OUT AT HEIGHT SHOWN ON THIS PLAN. DO NOT STUB OUT OF FLOOR & RUN EXPOSED ON WALL.

GENERAL NOTE for FIRE SYSTEM

12"

PLUMB. TRADES TO FURN. & INSTALL REMOVABLE 12" SECTION OF PIPE IN MAIN GAS SUPPLY LINE (TO KITCHEN COOKING EQUIP. ONLY) LOCATED IN AN ACCESSIBLE AREA, AS CLOSE AS POSSIBLE TO COOKING EQUIP., FOR MECHANICAL-TYPE GAS SHUT-OFF VALVE. VALVE TO BE FURNISHED BY F.S.EQ. CONTR. & INST'D BY PLUMB. TRADES. F.S.EQ. CONTR. TO VERIFY GAS SUPPLY LINE ON JOBSITE AND FURNISH VALVE TO FIT ACCORDINGLY.

ALL GAS SUPPLY BELOW CHANGE HOOD TO BE SHUT-OFF SHOWN AS F

FLOOR DRAIN SCHEDULE

ALL BY P.T.- TYPICAL SIZES SHOWN.

TYPE #1: 6" DIA. W/ FULL NICKLE-BRONZE STRAINER. FLUSH W/ FINISH FLOOR.

TYPE #2: 6" DIA. W/ FULL NICKLE-BRONZE STRAINER & 4" HIGH NICKLE-BRONZE FUNNEL. FLUSH W/ FINISH FLOOR.

TYPE #3: 12" x 12" x 8 1/2" DEEP W/ FULL NICKLE-BRONZE GRATE TOP, ACID RESISTANT INTERIOR & PERFORATED REMOVABLE ENAMELED BASKET. FLUSH W/ FINISH FLOOR.

TYPE #4: 12" x 12" x 10" DEEP W/ FULL ST. ST. REMOVABLE GRATE TOP & REMOVABLE ST. ST. PERFORATED BASKET. FLUSH W/ FINISH FLOOR.

INDIRECT WASTE SCHEDULE

ALL BY P.T.- TYPICAL SIZES SHOWN.

TYPE #5: 6" DIA. W/ FULL NICKLE-BRONZE STRAINER & 4" HIGH NICKLE-BRONZE FUNNEL.

TYPE #6: 8 1/2" DIA. W/ WHITE PORCELIN INTERIOR & NICKLE-BRONZE INTERIOR DOME STRAINER.

TYPE #7: 12" x 12" x 10" DEEP NO GRATE TOP W/ ACID RESISTANT INTERIOR & NICKLE-BRONZE INTERIOR DOME STRAINER.

TYPE #8: 12" x 12" x 10" DEEP W/ 1/4 CUT-OUT NICKLE-BRONZE GRATE TOP, ACID RESISTANT INTERIOR & NICKLE-BRONZE INTERIOR DOME STRAINER.

WATER REQUIREMENTS for LISTED EQUIPMENT

TOTAL DISSOLVED SOLIDS:	LESS THAN 40 PPM
TOTAL ALKALINITY:	LESS THAN 20 PPM
SILICA:	LESS THAN 13 PPM
pH FACTOR:	7.0 TO 9.0
CHLORINE:	LESS THAN 30 PPM

PLUMBING NOTES

(P1) 6" DIA. I.W.- TYPE #5. SEE SCHEDULE THIS SHEET.

(P2) FSEC TO RUN DRAIN LINE FROM BLOWER COIL TO I.W.

(P3) 6" DIA. F.D.- TYPE #1. SEE SCHEDULE THIS SHEET. FLUSH w/ FIN. FLOOR.

(P4) 8 1/2" DIA. I.W.- TYPE #6. SEE SCHEDULE THIS SHEET.

(P5) 1/2" H.W. S.U. +6" A.F.F.- B.T.C. @ COUNTER FAUCET.

(P6) 1/2" C.W. S.U. +6" A.F.F.- B.T.C. @ COUNTER FAUCET.

(P7) 1/2" H.W. +21" A.F.F.- B.T.C. @ HAND SINK.

(P8) 1 1/2" W. +18" A.F.F.- B.T.C. @ HAND SINK.

(P9) 1/2" C.W. +21" A.F.F.- B.T.C. @ HAND SINK.

(P10) 1/2" C.W. +16" A.F.F.- B.T.C. @ ICE MAKER w/ FILTER SYSTEM FURN. BY FSEC & INST'D BY P.T.

(P11) 1/2" C.W. +50" A.F.F.- B.T.C. @ COFFEE MAKER.

(P12) 1/2" C.W. +50" A.F.F.- B.T.C. @ ICED TEA MAKER.

(P13) 2" W. S.U. +6" A.F.F.- B.T.C. @ (1) ONE SINK- RUN TO G.T.

(P14) G.T. BY P.T.- FLUSH W/ FIN. FLOOR & SIZED FOR (1) ONE 21" x 26" x 14" DP. SINK w/ F.D. TIED INTO DOWN-SIDE PER CODE.

(P15) 3/4" H.W. (140 deg.) +12" A.F.F.- B.T.C. @ POT SINK FAUCET.

(P16) 3/4" C.W. +12" A.F.F.- B.T.C. @ POT SINK FAUCET.

(P17) 12" x 12" I.W.- TYPE #7. SEE SCHEDULE THIS SHEET.

(P18) 1" H.W. (140 deg.) +16" A.F.F.- B.T.C. @ DISHWASHER. (53.0 GAL./HR. MAX @ 20 PSI).

(P19) 2" W. +10" A.F.F.- B.T.C. @ DISHWASHER. (10.0 GPM MAX).

(P20) 1/2" H.W. +16" A.F.F. — B.T.C. @ DISP., CONE, V.B.,

(P21) 1/2" C.W. +16" A.F.F. — C.P., SOLENOID & PRE-RINSE.

(P22) 3" W. +10" A.F.F.- B.T.C. @ DISPOSER. 1/4"/FT. MIN. SLOPE REQ'D.

(P23) 1 1/4" G. (352,000 BTU) +24" A.F.F.- B.T.C. @ RANGE w/ FLEX PIPE FURN. BY FSEC & INST'D w/ SHUT-OFF VALVE BY P.T.

NOTE...

PLUMB. TRADES TO RUN ALL DRAIN/WASTE/CONDENSATE LINES FROM EQUIPMENT TO NEAREST F.D./F.S./I.W./H.O.

ALL ADDITIONAL PIPING, DRAINS, F.D.'s, ETC. TO BE SHOWN BY MECH. ENGINEER.

ALL ADDITIONAL P.R.V.s, ATMOSPHERIC V.B.s, V.B.s, SHUT-OFF VALVES, SHOCK-STOPS, ETC., TO BE FURN. & INST'D BY PLUMB. TRADES.

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Sheet Title:
FOOD SERVICE EQUIPMENT PLUMBING ROUGH-IN PLAN

Project Number: 07-140

Sheet Number: FSE-3

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GENERAL NOTES for ROUGH-IN PLAN

ALL HVAC GRILLES SHOWN ARE IN SUGGESTED LOCATIONS ONLY. HVAC TRADES TO ENGINEER & VERIFY ALL LOCATIONS REQUIRED.

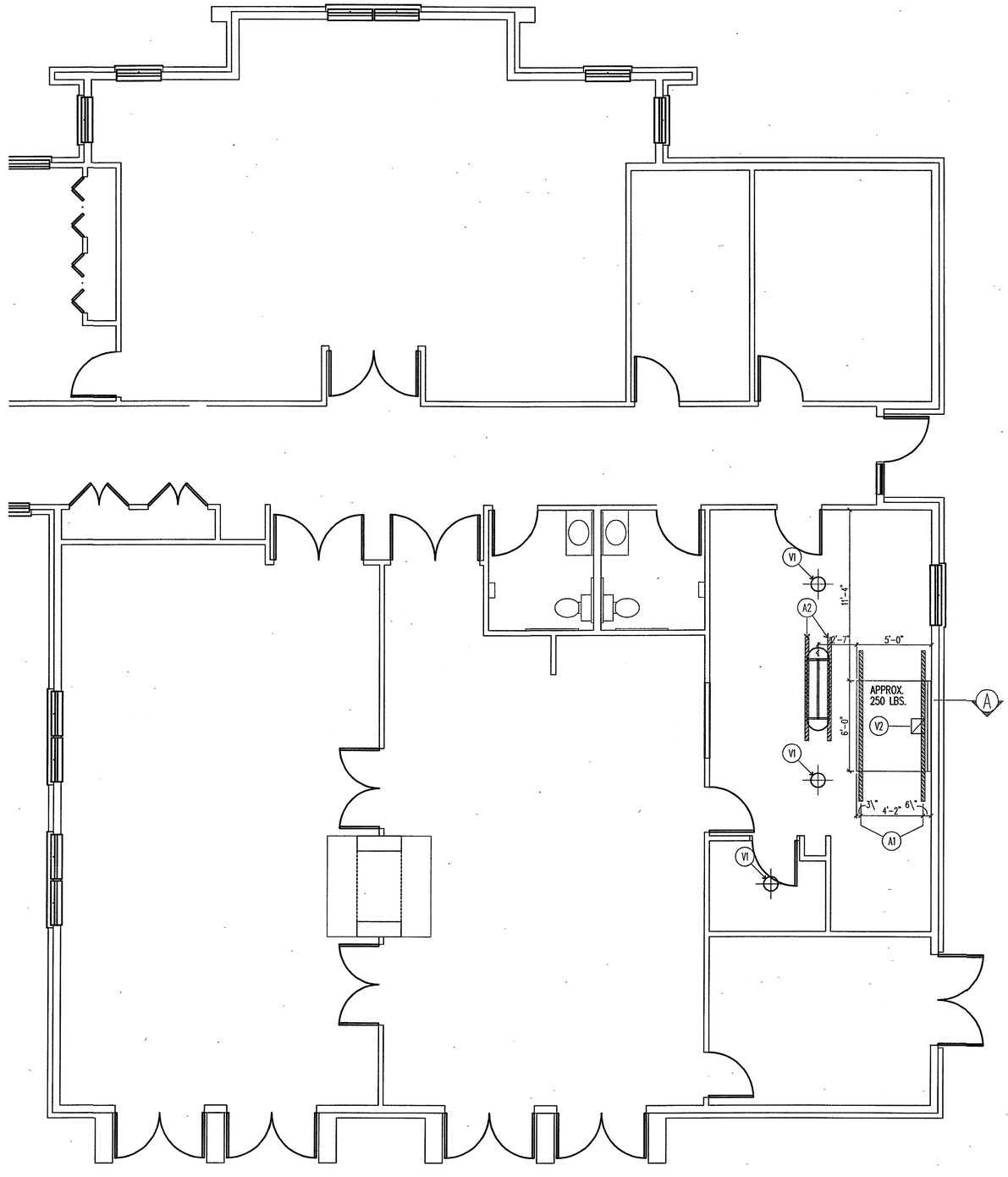
EXHAUST AIR QUANTITIES SHOWN ARE FOR COOKING EQUIPMENT EXHAUST HOODS ONLY. ADDITIONAL VENTILATION REQUIRED FOR KITCHEN AREAS TO BE ENGINEERED BY HVAC TRADES.

HVAC TRADES TO INTER-LOCK EXHAUST FANS W/ KITCHEN SUPPLY FANS.

HVAC ENGINEER TO WRITE HVAC SYSTEM SPEC FOR HVAC TRADES, TO CHECK & BALANCE KITCHEN VENTILATION. HVAC ENGINEER TO FILL-OUT & SUBMIT HEALTH DEPT. BALANCE REPORT. HVAC TRADES TO BE RESPONSIBLE FOR ADJUSTING AIR QUANTITIES TO EXACTLY AS SHOWN. HVAC TRADES TO BE A CERTIFIED TESTING CO.

VENTILATION ROUGH-IN CODE

D.F.A.	DOWN FROM ABOVE
A.F.F.	ABOVE FIN. FLOOR
B.I.C.	BRANCH TO CONNECTION
HVAC	HEATING/VENTILATING/ AIR-CONDITIONING TRADES
FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR



VENTILATION NOTES

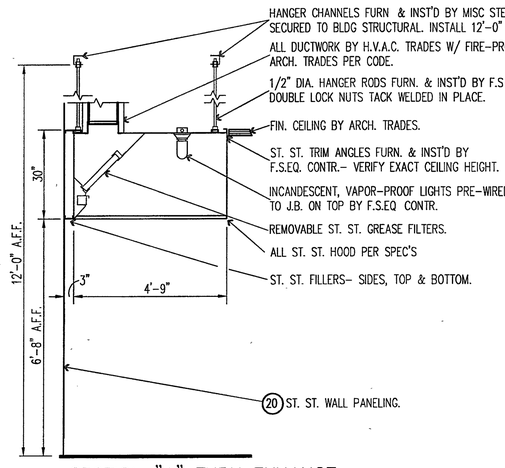
(V1) HVAC TRADES TO FURN. & INSTALL FLUSH, CEILING MT'D EXHAUST AND/OR SUPPLY GRILLES TO VENTILATE ALL ROOMS PER CODES (LOCATIONS ARE TYPICAL).

(V2) 12" x 11" EXHAUST DUCT- 1500 CFM (MIN.) TOTAL @ 0.578" S.P. AT DUCT COLLAR. NOTE... DUCTWORK STATIC MUST BE ADDED.

ARCHITECTURAL NOTES

(A1) (2) TWO HANGER CHANNELS FURN. & INST'D BY ARCH. TRADES- SECURED TO BUILDING STRUCTURAL TO SUPPORT EXHAUST HOOD (WEIGHT AS SHOWN) F.S.EQ. CONTR. TO VERIFY ALL SIZES & LOCATIONS. MOUNT 12'-0" A.F.F. (MAX.)

(A2) (2) TWO HANGER CHANNELS FURN. & INST'D BY ARCH. TRADES- SECURED TO BUILDING STRUCTURAL TO SUPPORT ATTACHMENT RACK SEE DETAILS ON SHEET FSE-5



SECTION "A" THRU EXHAUST HOOD - ITEM NO. 18
SCALE 1/2"=1'-0"

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FOOD SERVICE EQUIPMENT VENTILATION ROUGH-IN PLAN

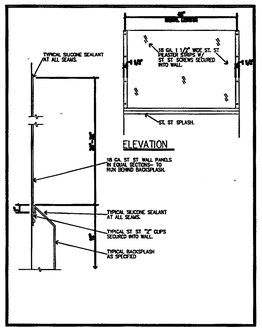
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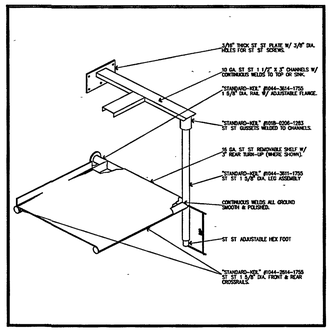
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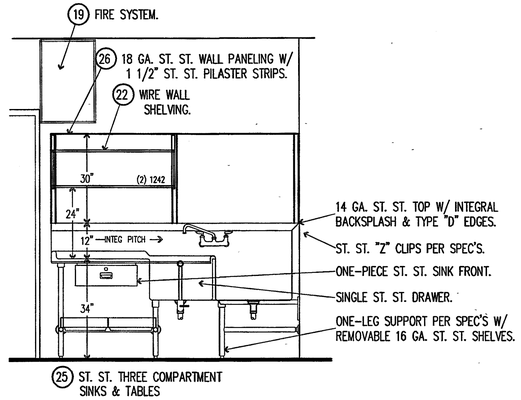
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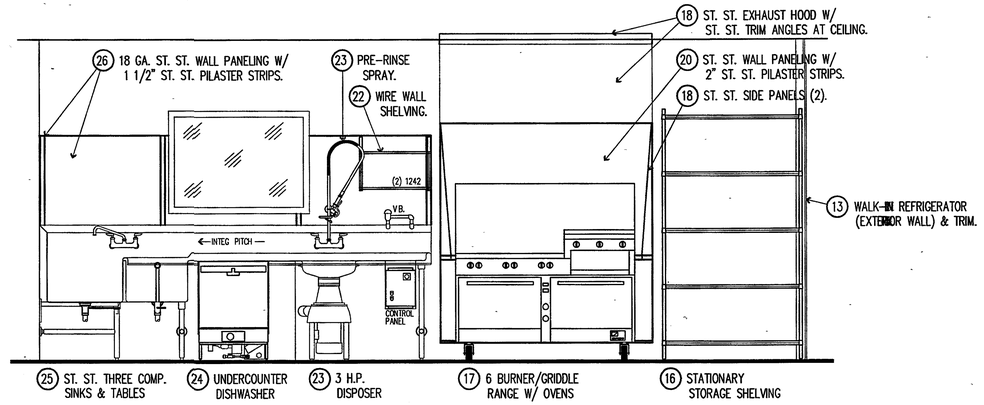
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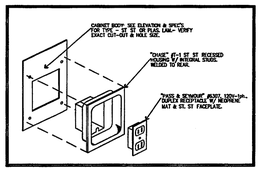
ONE-LEG SUPPORT DETAIL
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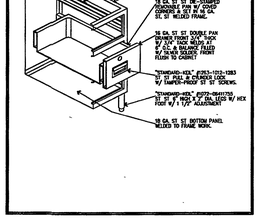
ELEVATION NO. 1
SCALE 1/2"=1'-0"



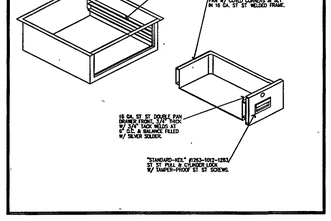
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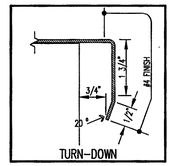
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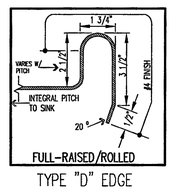
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SINGLE DRAWER DETAIL
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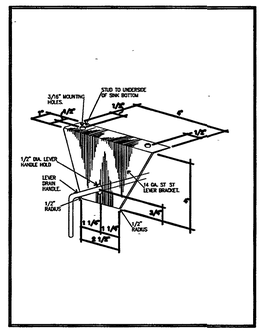


TYPE "A" EDGE

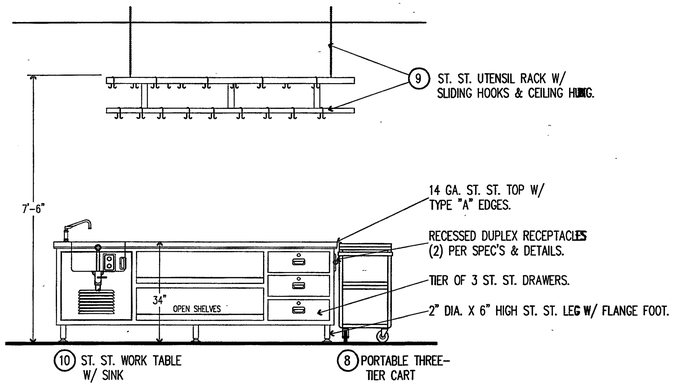


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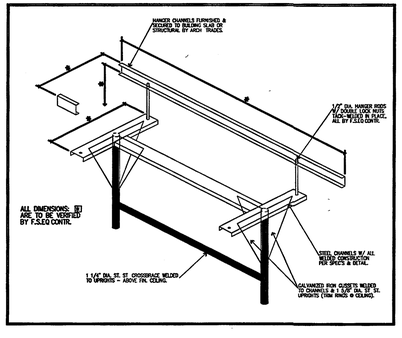
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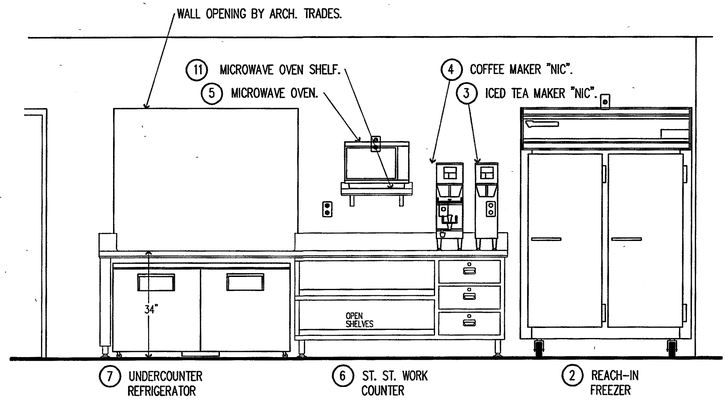
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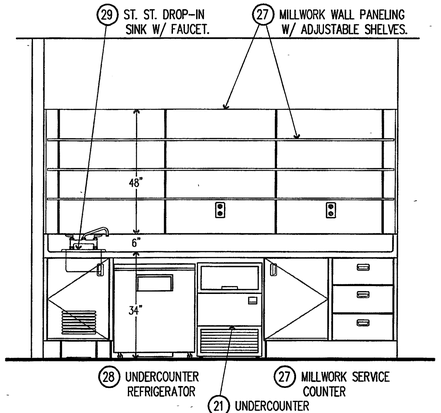
ELEVATION NO. 3
SCALE 1/2"=1'-0"



CEILING MT'D ATTACHMENT RACK DETAIL
NO SCALE



ELEVATION NO. 4
SCALE 1/2"=1'-0"



ELEVATION NO. 5
SCALE 1/2"=1'-0"

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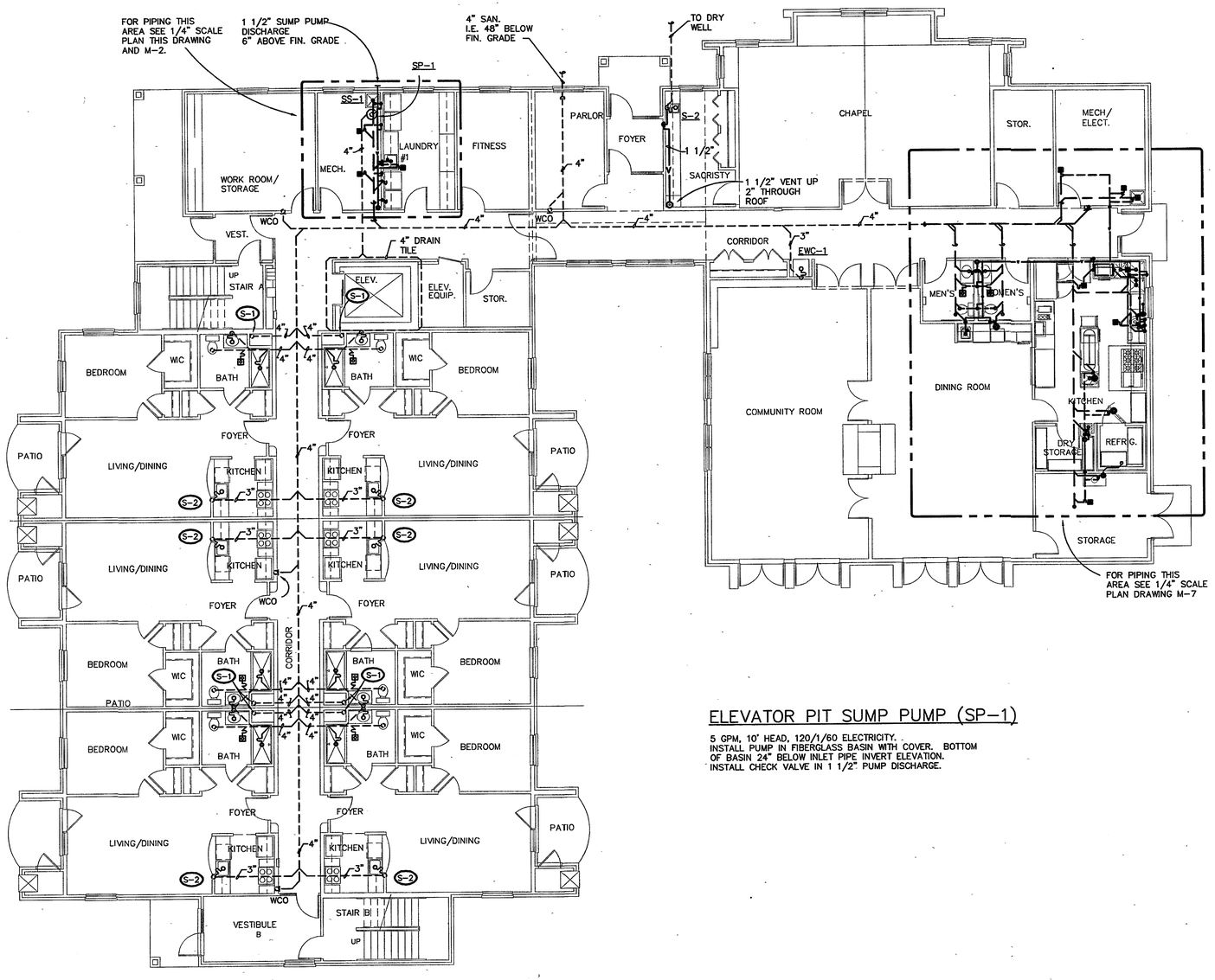
Sheet Title:
FOOD SERVICE EQUIPMENT ELEVATION DETAILS

Project Number: 07-140
Sheet Number: **FSE-5**

E. F. WHITNEY, INC.
Design Consultants of Food Service Facilities

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ELEVATOR PIT SUMP PUMP (SP-1)

5 GPM, 10' HEAD, 120/1/60 ELECTRICITY.
INSTALL PUMP IN FIBERGLASS BASIN WITH COVER. BOTTOM OF BASIN 24" BELOW INLET PIPE INVERT ELEVATION.
INSTALL CHECK VALVE IN 1 1/2" PUMP DISCHARGE.

FIRST FLOOR PLAN-SANITARY

SCALE 1/8"=1'-0"

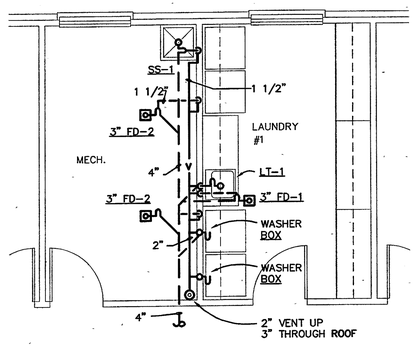
PLUMBING FIXTURE SCHEDULE		
FIXTURE	WASTE	VENT
WC-1	4"	2"
LAV-1	1 1/2"	1 1/2"
EWC-1	1 1/2"	1 1/2"
SS-1	1 1/2"	1 1/2"
SHR-1	2"	1 1/2"
S-1, S-2	1 1/2"	1 1/2"

NOTES

1. ALL HORIZONTAL VENT PIPES ARE ABOVE FINISHED CEILING UNLESS SHOWN OTHERWISE.
2. INSTALL TRAP SEAL PRIMER FOR ALL FLOOR DRAINS CONFORMING TO ASSE 1018.
3. SANITARY PIPES 3" AND LARGER SHALL BE SLOPED AT 1/8" PER FT. SANITARY PIPES 2 1/2" AND SMALLER SHALL BE SLOPED 1/4" PER FT.
4. INSTALL PIPE SLEEVES WHERE SANITARY PIPES CROSSES THE FOOTINGS.
5. FOR SANITARY PIPE RISER DIAGRAM SEE M-6.

GENERAL NOTES:

1. ALL PLUMBING AND HVAC SYSTEM INSTALLATION SHALL BE IN FULL CONFORMITY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CONSTRUCTION LAWS.
2. APPLY UL LISTED FIRE SEAL AROUND ALL PIPES PASSING THROUGH RATED WALLS AND RATED FLOORS. FIRE SEAL SHALL BE 3M OR FIBERFRAX (FIRE PUTTY).



PARTIAL FLOOR PLAN-SANITARY

SCALE 1/4"=1'-0"

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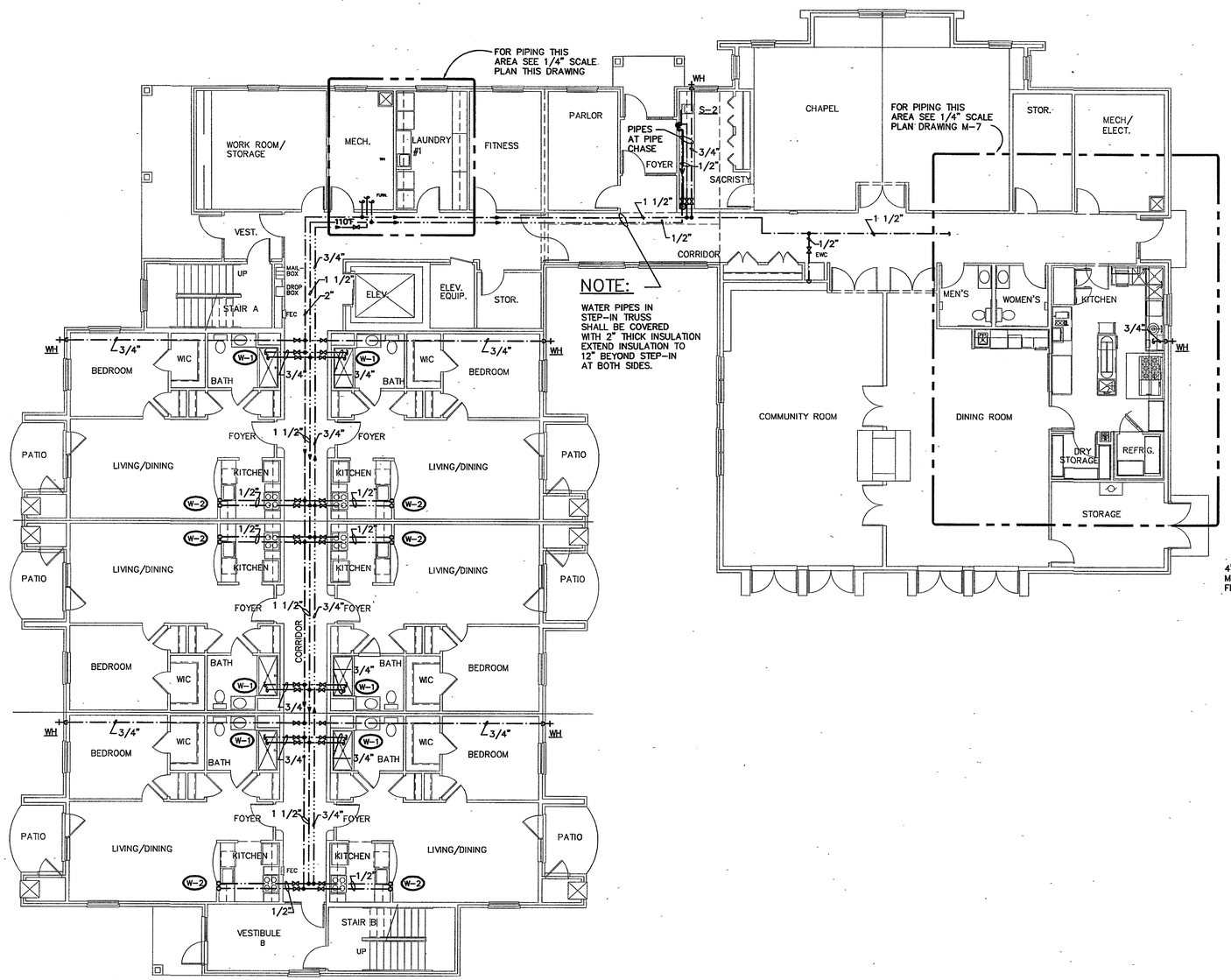
Sheet Title.
FIRST FLOOR PLAN - SANITARY

Project Number.
07-140

Sheet Number:
M-1

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NOTE:

WATER PIPES IN STEP-IN TRUSS SHALL BE COVERED WITH 2" THICK INSULATION EXTEND INSULATION TO 12" BEYOND STEP-IN AT BOTH SIDES.

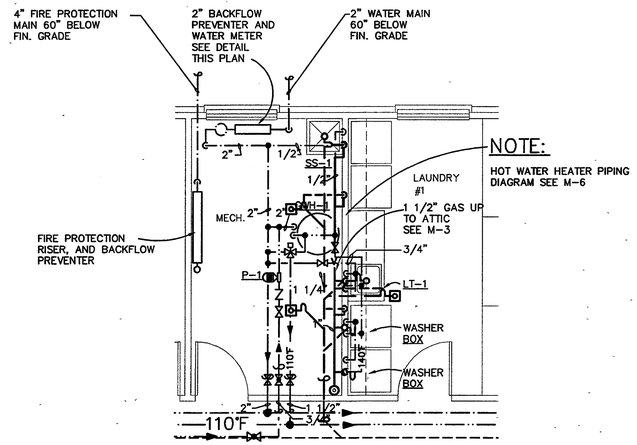
FIRST FLOOR PLAN-WATER

SCALE 1/8"=1'-0"

PLUMBING FIXTURE SCHEDULE		
FIXTURE	COLD WATER	HOT WATER
WC-1	1/2"	–
LAV-1	1/2"	1/2"
S-1, S-2	1/2"	1/2"
EWC-1	1/2"	–
SS-1	1/2"	1/2"
SHR-1	1/2"	1/2"

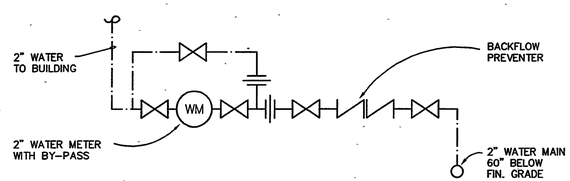
NOTES:

1. ALL HORIZONTAL HW, CW PIPES ARE ABOVE FIRST FLOOR FINISHED CEILING UNLESS NOTED OTHERWISE.
2. INSTALL SERVICE VALVES FOR ALL PLUMBIMG FIXTURES.
3. INSTALL WATER HAMMER ARRESTOR AT POINTS OF CONNECTIONS TO THE PLUMBING FIXTURES.
4. FOR WATER PIPE RISER DIAGRAM SEE M-6
5. FOR CONTINUATION OF CW, HW, PIPES SERVING TYPICAL UNITS SEE DRAWING M-5
6. WALL HYDRANT (WH) SHALL BE NON-FREEZE TYPE WITH VACUUM BREAKER, ZURN MODEL Z-1300.



PARTIAL FLOOR PLAN-WATER

SCALE 1/4"=1'-0"



WATER METER AND BACKFLOW PREVENTER DETAIL

NOT TO SCALE

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NOVI, MICHIGAN

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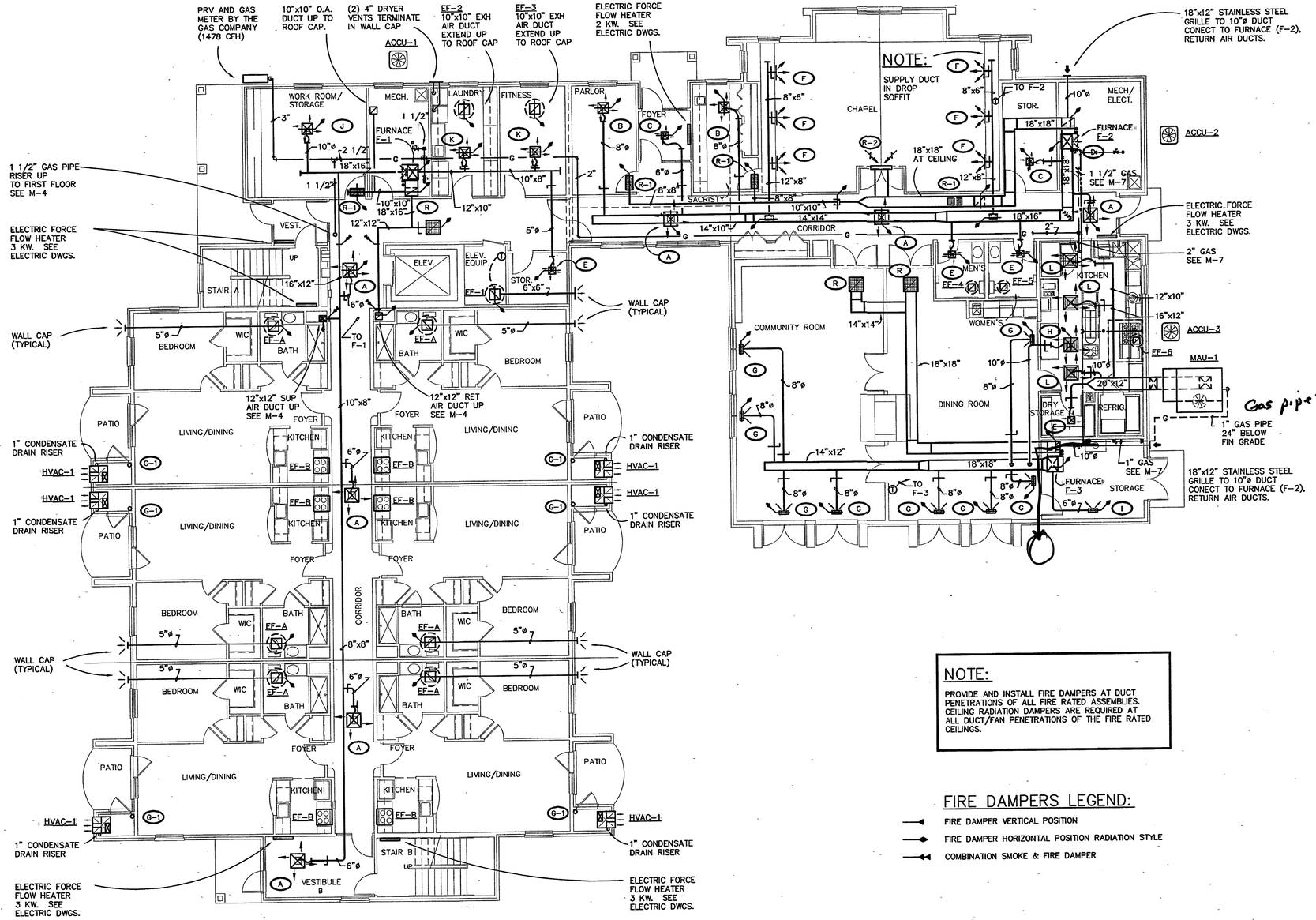
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FIRST FLOOR PLAN - WATER

Project Number: 07-140

Sheet Number. M-2

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FIRST FLOOR PLAN-HVAC

SCALE 1/8"=1'-0"

NOTE:

PROVIDE AND INSTALL FIRE DAMPERS AT DUCT PENETRATIONS OF ALL FIRE RATED ASSEMBLIES. CEILING RADIATION DAMPERS ARE REQUIRED AT ALL DUCT/FAN PENETRATIONS OF THE FIRE RATED CEILINGS.

FIRE DAMPERS LEGEND:

- FIRE DAMPER VERTICAL POSITION
- FIRE DAMPER HORIZONTAL POSITION RADIATION STYLE
- COMBINATION SMOKE & FIRE DAMPER

NOTES:

1. FOR TYPICAL UNIT HVAC PLAN SEE M-5.
2. HORIZONTAL GAS PIPES ARE IN ATTIC.
3. SUPPLY AIR DUCTS SERVING COMMUNITY-DINING ROOMS ARE IN ATTIC. INSULATE WITH 2" THICK INSULATION AND VAPOR BARRIER.
4. INSTALL 1" CONDENSATE DRAIN RISER FOR HVAC UNITS, TERMINATE 6" ABOVE FIN. GRADE.

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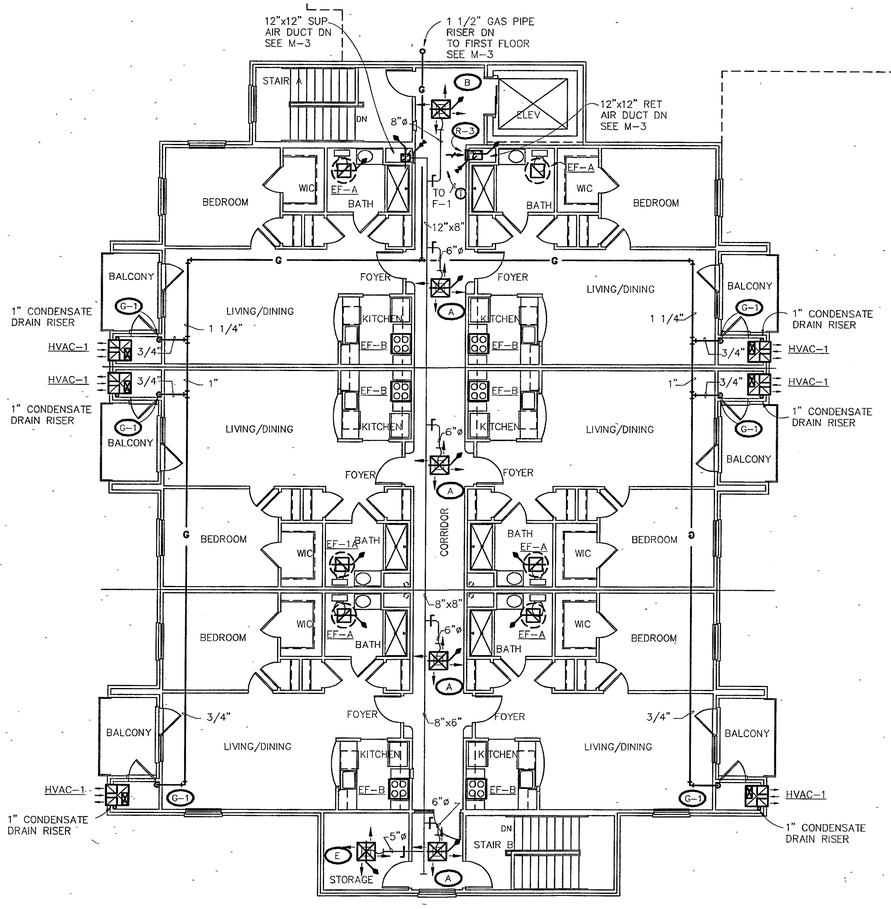
Sheet Title.
FIRST FLOOR PLAN - HVAC

Project Number: 07-140

Sheet Number. M-3

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SECOND FLOOR PLAN-HVAC

SCALE 1/8"=1'-0"

NOTES:

1 ALL HORIZONTAL SUPPLY AIR DUCTS ARE IN ATTIC

2 FOR TYPICAL UNIT HVAC PLAN SEE M-5

3 HORIZONTAL GAS PIPES ARE IN ATTIC.

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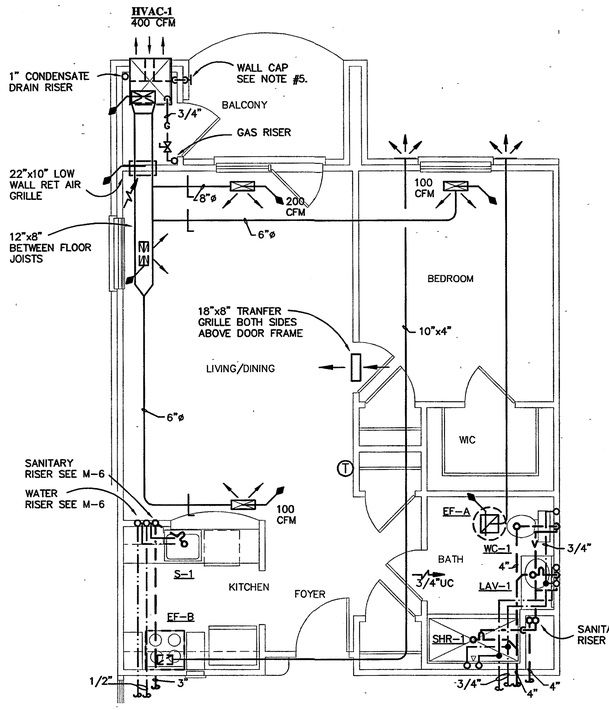
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SECOND FLOOR PLAN - HVAC

Project Number: 07-140

Sheet Number: M-4

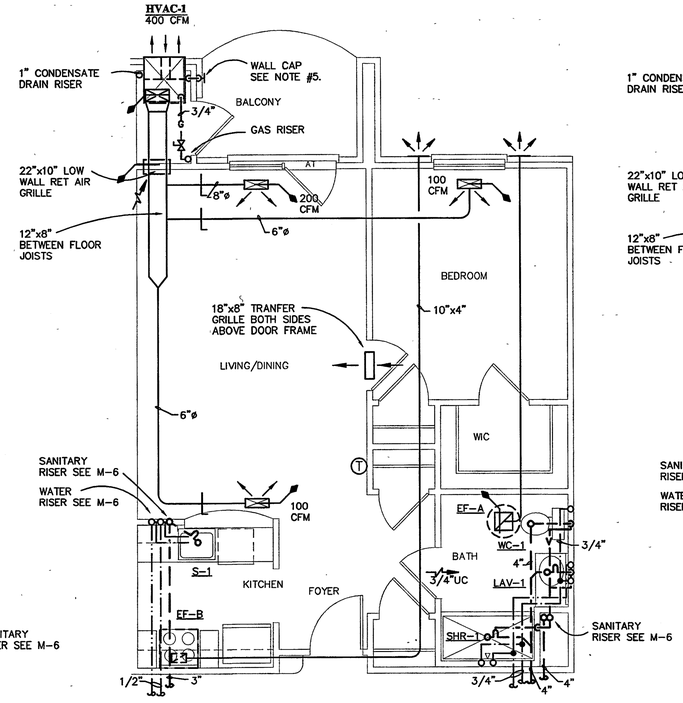
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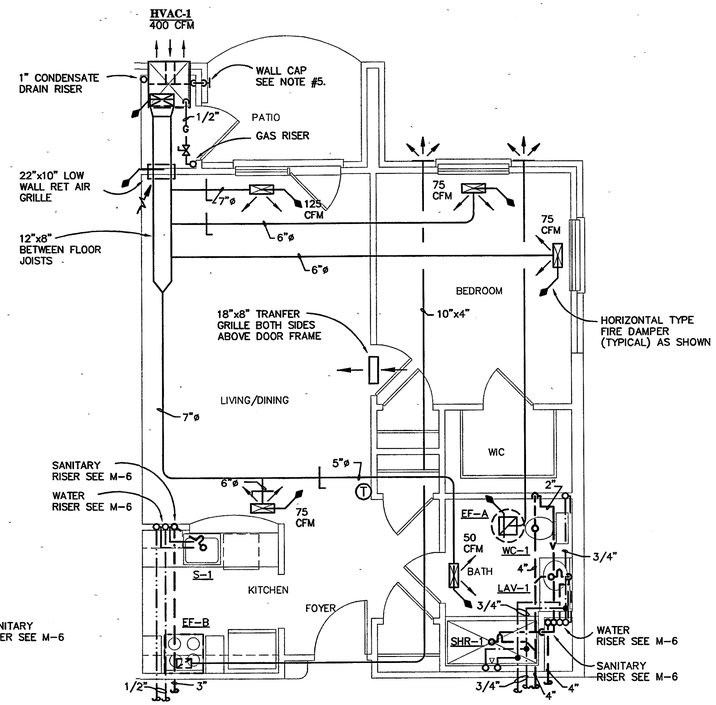
FIRST FLOOR PLAN - END UNIT

SCALE 1/4"=1'-0"



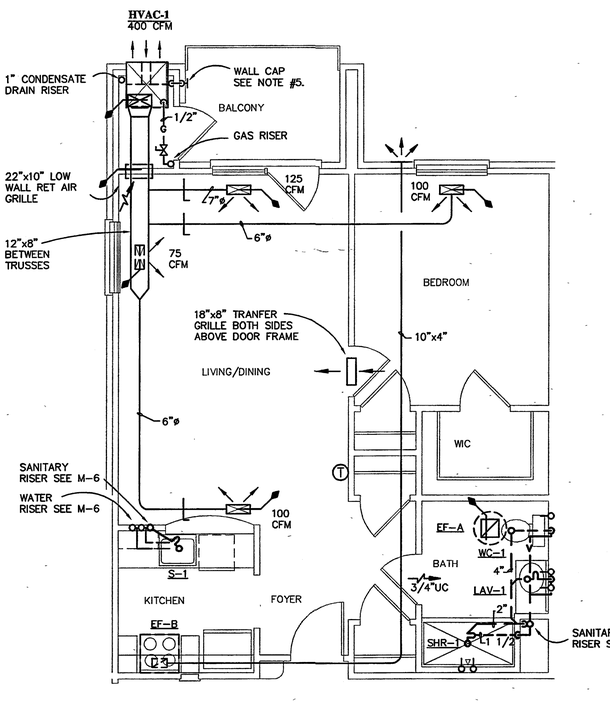
FIRST FLOOR PLAN

SCALE 1/4"=1'-0"



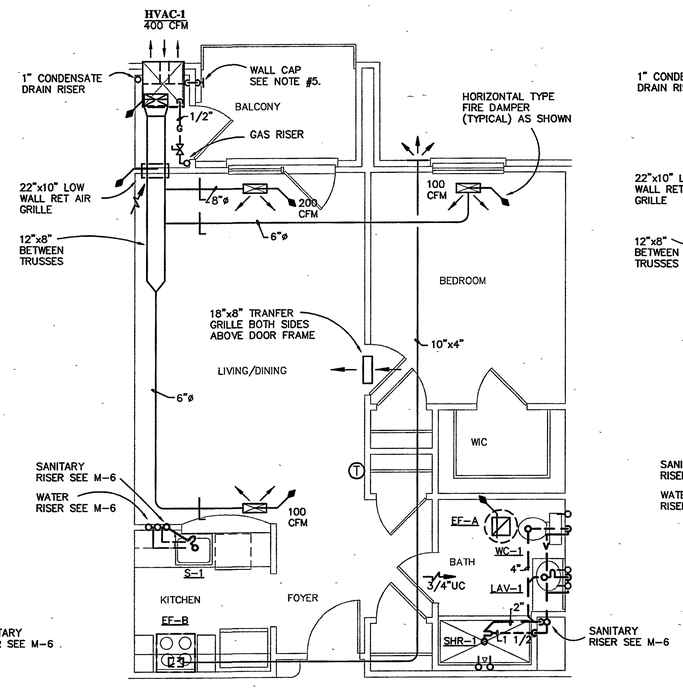
FIRST FLOOR PLAN - END UNIT

SCALE 1/4"=1'-0"



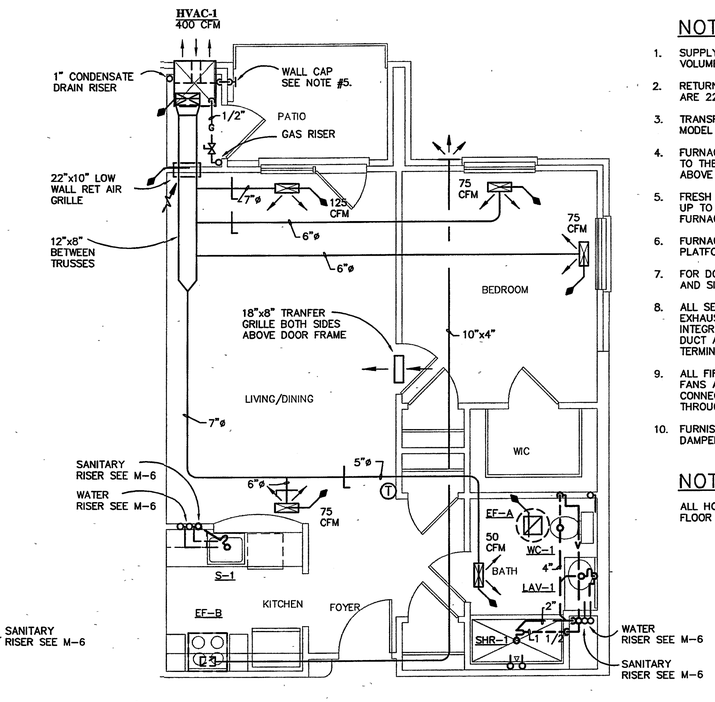
SECOND FLOOR PLAN - END UNIT

SCALE 1/4"=1'-0"



SECOND FLOOR PLAN

SCALE 1/4"=1'-0"



SECOND FLOOR PLAN - END UNIT

SCALE 1/4"=1'-0"

NOTES:

1. SUPPLY AIR REGISTERS ARE 10"x4". FURNISH WITH VOLUME CONTROL DAMPER. TITUS MODEL 272.
2. RETURN AIR GRILLES TO THE FURNACE UNITS ARE 22"x10" TITUS MODEL 23RL.
3. TRANSFER AIR GRILLES ARE 18"x8" TITUS MODEL 23 RL.
4. FURNACE 1" CONDENSATE DRAINS TO BE CONNECTED TO THE DRAIN PIPE RISER AND DISCHARGING 6" ABOVE FIN. GRADE.
5. FRESH AIR WALL CAP 24" AFTER FIN. FLOOR, 4" PIPE UP TO NEAR CEILING, THEN DOWN TO CONNECT TO THE FURNACE RETURN AIR PLENUM.
6. FURNACE UNITS TO BE INSTALLED ON 12" RAISED PLATFORM. PLENUM IS USED FOR THE RETURN AIR.
7. FOR DOMESTIC CW, HW MAIN PIPES LOCATION AND SIZES SEE M2
8. ALL SECOND FLOOR TOILET ROOMS EXHAUST FANS ARE CEILING TYPE WITH INTEGRAL GRILLE. CONNECT TO EXHAUST DUCT AND EXTEND THROUGH THE ROOF AND TERMINATE IN ROOF CAP.
9. ALL FIRST FLOOR TOILET ROOMS EXHAUST FANS ARE CEILING TYPE WITH INTEGRAL GRILLE. CONNECT TO EXHAUST DUCT AND EXTEND THROUGH THE WALL. TERMINATE IN WALL CAP.
10. FURNISH BATH EXHAUST FANS WITH RADIATION FIRE DAMPERS.

NOTE:

ALL HORIZONTAL SANITARY PIPES SHOWN ON SECOND FLOOR PLANS ARE AT FIRST FLOOR CEILING

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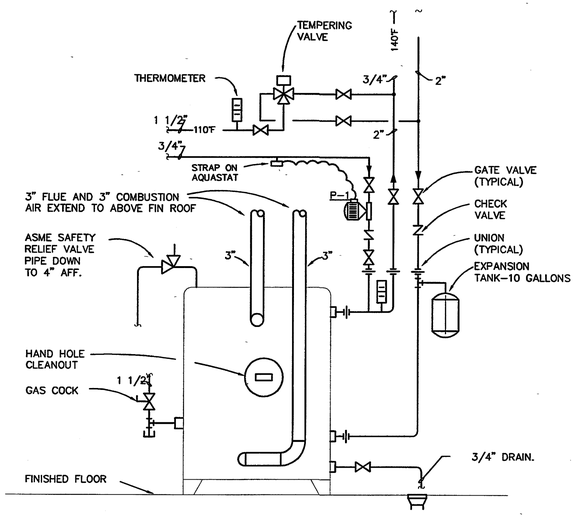
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UNIT FLOOR PLANS - HVAC

Project Number: 07-140

Sheet Number: M-5

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GAS WATER HEATER (GWH-1) PIPING DETAIL

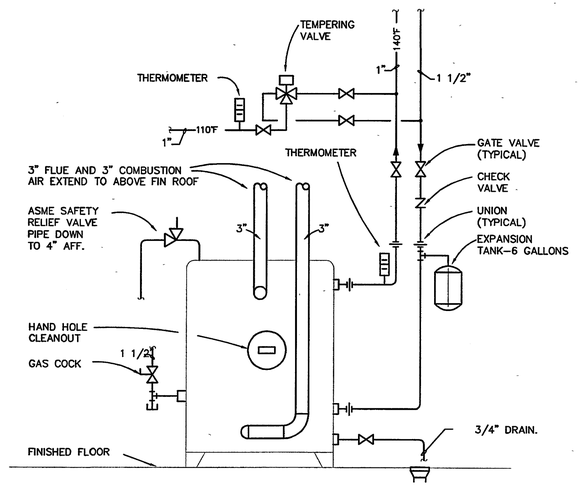
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GAS WATER HEATER (GWH-1)

GAS WATER HEATER SHALL BE SEALED COMBUSTION DESIGN. UP TO 98% THERMAL EFFICIENCY.
GLASS LINED TANK, 250000 BTUH INPUT, 297 GALLONS PER HOUR AT 100°F RISE, 100 GALLONS STORAGE TANK, FURNISH WITH ASME TEMPERATURE AND PRESSURE RELIEF VALVE.
LOCHINVAR TURBOCHARGER TNR 250-100.
INSTALL COMBUSTION AIR AND EXHAUST FLUE. TERMINATR ABOVE FIN ROOF.

CIRCULATING PUMP (P-1)

ALL BRONZE CONSTRUCTION, 7 GPM, 8 FT HEAD, 120/1/60.
INSTALL AQUASTAT TO CYCLE PUMP ON-OFF.

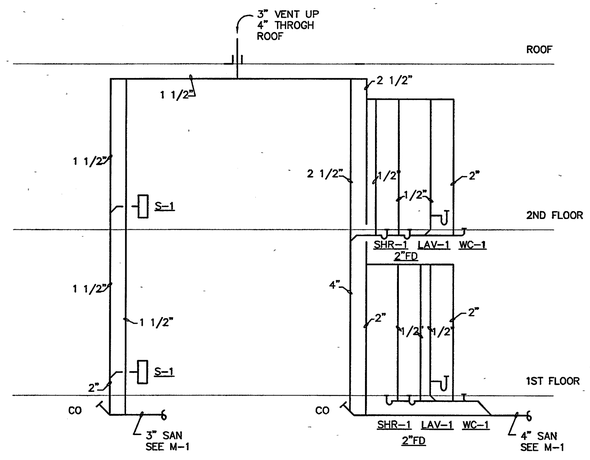


GAS WATER HEATER (GWH-2) PIPING DETAIL

NO SCALE

GAS WATER HEATER (GWH-2)

GAS WATER HEATER SHALL BE SEALED COMBUSTION DESIGN. UP TO 98% THERMAL EFFICIENCY.
GLASS LINED TANK, 150000 BTUH INPUT, 178 GALLONS PER HOUR AT 100°F RISE, 60 GALLONS STORAGE TANK, FURNISH WITH ASME TEMPERATURE AND PRESSURE RELIEF VALVE.
LOCHINVAR TURBOCHARGER TNR 150-060.
INSTALL COMBUSTION AIR AND EXHAUST FLUE. TERMINATR ABOVE FIN ROOF.



S-2 S-1

SANITARY RISERS

NO SCALE

PLUMBING FIXTURE SCHEDULE

Low-flow toilet high pressure.

WC-1 AMERICAN STANDARD, "CADET" #2168.100 WATER SAVER, VITREOUS CHINA, ELONGATED BOWL, SIPHON ACTION, CLOSED COUPLE FLUSHOMETER TANK, 1.6 GALLON FLUSH WITH 17-1/4" RIM HEIGHT. PROVIDE WITH OLSONITE CLOSED FRONT ELONGATED SEAT WITH COVER. NEW WATER CLOSET CENTER LINE OF OUTLET SHALL MATCH EXISTING FIXTURE OUTLET. CLOSET SEAT IN PUBLIC TOILET ROOM.

NOTE : PROVIDE OLSONITE #10 CC ELONGATED OPEN FRONT SEAT LESS COVER ON WATER

LAV-1 LAVATORY CRANE #1-287-V, SELF RIMMING WHITE CHINA WITH POP-UP DRAIN, P-TRAP WATTS 501 666PB, BRASSCRAFT 1/2" FIP x3/8" OD. ANGLE SUPPLIES WITH STOPS, DELTA 520 MPU SINGLE LEVER SUPPLY FITTING. WITH 2 GPM FLOW. INSTALL HOT WATER TEMPERING VALVE SET AT 110°. PROVIDE LAV GUARD UNDERSINK PROTECTIVE PIPE COVER FOR ALL EXPOSED WATER AND DRAIN PIPES. INSTALL 1 GPM AREATOR.

S-1 ELKAY # LR-2522, ONE COMPARTMENT STAINLESS STEEL SINK WITH # LK-2432 HI-ARK, TWO HANDLE, FAUCET, AND SWING SPOUT.

GARBAGE DISPOSAL: IN-SINK-ERATOR "BADGER 1", 1/3 HP, 115V, 1 PH, 60HZ, WITH PRE-WIRED 3 FOOT CORD WITH GROUNDED CONNECTOR FOR STANDARD WALL RECEPTACLE. PROVIDE AT EACH KITCHEN SINK UNLESS NOTED.

S-2 ELKAY # LR-2522, ONE COMPARTMENT STAINLESS STEEL SINK WITH # LK-2432 HI-ARK, TWO HANDLE, FAUCET, AND SWING SPOUT.

LT-1 LAUNDRY SINK: MUSTEE 10C OR FIAT DL-1, WHITE MODEL DROP IN SINK WITH 20 GALLON CAPACITY, APPROX. 23" x21" x12" DEEP, SOAP DEPRESSION, A-1 CHROME PLATED FAUCET "P" TRAP DISCHARGE.

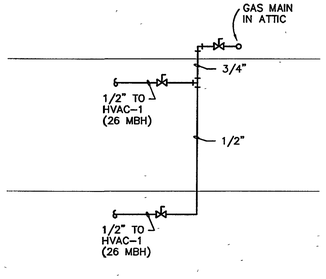
WASHER WALL BOX WASHER BOXES: OATEY OR GUY-GRAY BOX FITTING WITH 2" WASTE CONNECTION, 1/2" ANGLE SHUT-OFF VALVES WITH HOSE END AND VACUUM BREAKERS FOR HOT AND COLD WATER BOX TO FIT IN A 4" STUD SPACE.

SHR-1 SHOWER PANS SHALL BE WHITE FINISH ADA COMPLIANT FIBERGLASS WITH COLLAPSABLE THRESHOLD BEST BATH SYSTEMS MODEL APLCS6334A75B. PROVIDE WITH DELTA #1175143 PRESSURE BALANCED SHOWER VALVE (NON-SCALD) WITH 24" LONG SLIDE BAR, STOPS, 2.0 GPM HAND HELD SHOWER HEAD, HOSE HOOK, 60" HOSE, 3 GRAB BARS AND FOLDING CHAIR.

EWC-1 ELKAY #EBFA-8 BARRIER-FREE NO-LEAD SURFACE MOUNTED WATER COOLER WITH FRONT PUSH-BAR, FLEXI-GUARD BUBBLER AND STAINLESS STEEL CABINET.

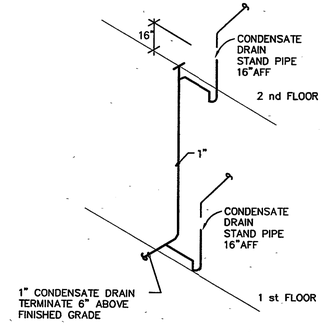
FD-1 ZN-415-6B ZURN FLOOR DRAIN WITH CAST IRON BODY, DOUBLE DRAINAGE FLANGE, WEEPHOLES AND ADJUSTABLE 6" DIAMETER NICKEL BRONZE STRAINER.

FD-2 Z-508 ZURN FLOOR DRAIN WITH CAST IRON BODY, MEMBRANE CLAMP AND 9" DIAMETER HEAVY DUTY CAST IRON LOOSE SLOTTED GRATE.



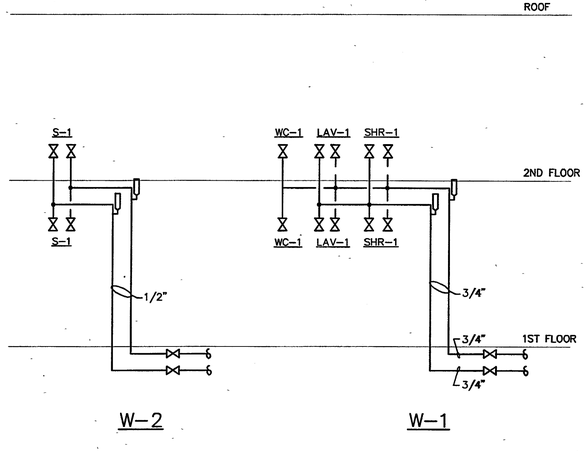
GAS RISER G-1

NO SCALE



UNIT FURNACE CONDENSATE DRAIN RISER.

NO SCALE



W-2 W-1

WATER RISERS

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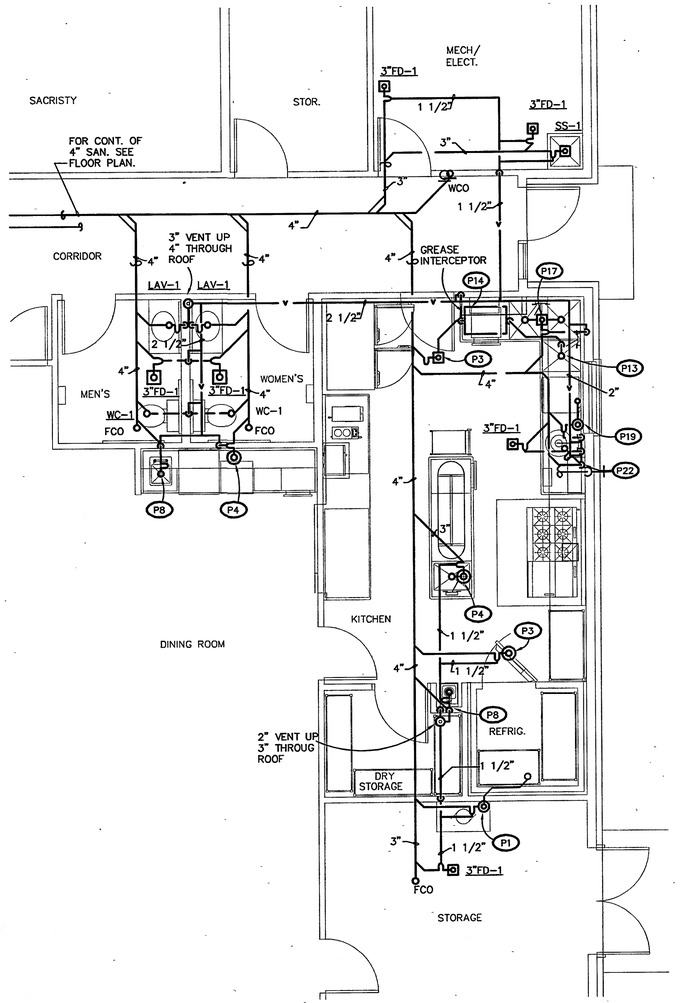
Sheet Title:
RISERS DETAILS AND SCHEDULES

Project Number: 07-140

Sheet Number: M-6

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FIRST FLOOR PARTIAL PLAN-SANITARY

SCALE 1/8"=1'-0"

KITCHEN EQUIPMENT SCHEDULE

ITEM	DESCRIPTION	CW	HW	WASTE	VENT	GAS	NOTES
P1	6" DIA I.W.	–	–	3"	1 1/2"	–	TYPE #5
P2	COND DRAIN	–	–	–	–	–	–
P3	6" DIA F.D.	–	–	–	–	–	TYPE #1
P4	8 1/2" DIA I.W.	–	–	–	–	–	TYPE #6
P5	WORK TABLE WITH SINK	–	1/2"	–	–	–	–
P6	WORK TABLE WITH SINK	1/2"	–	–	–	–	–
P7	HAND SINK	–	1/2"	–	–	–	INSTALL HOT WATER TEMPERING VALVE
P8	HAND SINK	–	–	1/2"	1/2"	–	–
P9	HAND SINK	1/2"	–	–	–	–	–
P10	ICE MAKER	1 1/2"	–	–	–	–	–
P11	COFFEE MAKER	1 1/2"	–	–	–	–	–
P12	ICE TEA MAKER	1 1/2"	–	–	–	–	–
P13	3-COMPARTMENT SINK	–	–	2"	1"	–	TO GRAESE TRAP
P14	GRESE TRAP	–	–	3"	1 1/2"	–	TO F.D.
P15	3-COMPARTMENT SINK	–	3/4"	–	–	–	140°F
P16	3-COMPARTMENT SINK	3/4"	–	–	–	–	TYPE #7
P17	12"x12" I.W.	1/2"	–	–	–	–	140°F
P18	DISHWASHER	–	1"	–	–	–	–
P19	DISHWASHER	–	–	2"	1 1/2"	–	–
P20	DISPOSER W/ PRERINSE	–	1/2"	–	–	–	INSTALL HOT WATER TEMPERING VALVE
P21	DISPOSER W/ PRERINSE	1/2"	–	–	–	–	–
P22	DISPOSER W/ PRERINSE	–	–	3"	1 1/2"	–	–
P22	6 BURNERS GRIDDLE W/OVEN	–	–	–	–	1 1/4"	352 MBH

NOTE:

REFER TO THE FOOD SERVICE EQUIPMENT DRAWING FOR COMPLETE LIST OF THE FIXTURES AND EQUIPMENT SCHEDULE.

KITCHEN HOT WATER REQUIRMENTS

1)	HAND SINK	5 GPH	70°F	RISE
2)	3-COMPARTMENT SINK	66 GPH	100°F	RISE
3)	DISHWASHER	53 GPH	100°F	RISE
4)	PREP SINK	15 GPH	70°F	RISE
5)	PRERINSE/GARBAGE DISPOSER	23 GPH	70°F	RISE
6)	MOP SINK	10 GPH	100°F	RISE
7)	DROP-IN SINK	5 GPH	70°F	RISE
8)	(2) LAVATORY	10 GPH	70°F	RISE
	TOTAL:	134 GPH	100°F	RISE
	TOTAL:	58 GPH	70°F	RISE

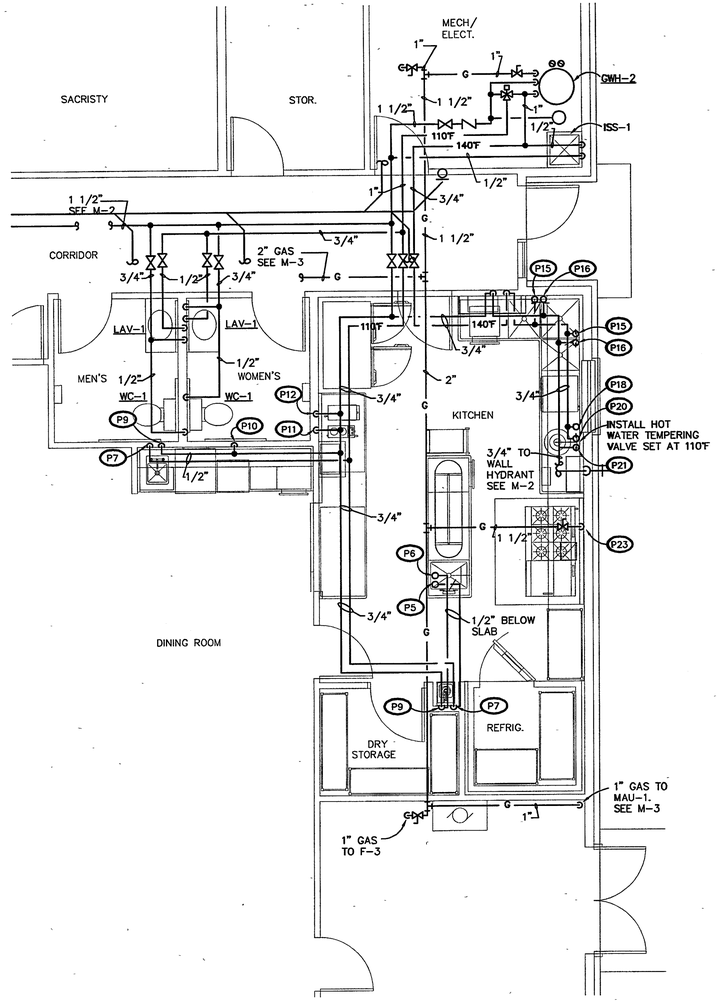
ENERGY INPUT: $\frac{(58x70°F+134x100°F)x\ 8.33}{.98\ EFFICIENCY}$ = 148400 BTUH

GREASE INTERSEPTOR

25 GPM CAPACITY WITH FLOW CONTROL VALVE. INSTALL EXTENSION COLLARS FOR COVER TO BE FLUSH WITH FLOOR. JR SMITH 8025.

NOTE:

INSTALL TRAP SEAL PRIMER FOR ALL COMMON AREAS FLOOR DRAINS, INCLUDING KITCHEN, MECHANICAL ROOMS, PUBLIC TOILET ROOMS, ETC.



FIRST FLOOR PARTIAL PLAN-WATER

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FIRST FLOOR PARTIAL PLANS - SANITARY AND WATER

Project Number: 07-140

Sheet Number: M-7

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TYPICAL UNIT FURNACE SCHEDULE (HVAC–1)

PLAN CODE	CFM	HEATING MBH		COOLING MBH	BLOWER HP	CONDENSER FAN HP	FUSE SIZE	MODEL No.
		INPUT	OUTPUT					
HVAC–1	400	26	20	12	1/3	1/8	15	26HWC124

NOTES:

1. FURNACES SHALL BE MAGIC–PAK OR APPROVED EQUAL.
2. INSTALL CONDENSATE DRAIN RISER DOWN TO LOWER LEVEL AND EXTEND THROUGH THE WALL TO OUTSIDE 6" ABOVE FIN. GRADE.
3. INSTALL 4"ø OUTSIDE AIR DUCT, 60 CFM. CONNECT TO WALL CAP WITH BIRD SCREEN AND FURNACE RETURN AIR PLENUM. SEE NOTE #5, DRAWING M–5.
4. EXTEND FLUE TO OUTSIDE PER CODE.
5. FURNACES SHALL BE INSTALLED ON RAISED RETURN AIR PLENUM.

DIFFUSERS, REGISTERS SCHEDULE

PLAN CODE	TYPE	CFM	NECK SIZE	MODULE	TITUS MODEL No.
A	DIFF	100	6"ø	24"x24"	TDCA–AA
B	DIFF	200	8"ø	18"x18"	TDCA–AA
C	DIFF	100	6"ø	12"x12"	TDCA–AA
D	REG	100	10"x4"	12"x6"	271RL
E	DIFF	50	6"ø	12"x12"	TDCA–AA
F	REG	150	24"x4"	26"x6"	CT581
G	REG	200	24"x4"	26"x6"	CT581
H	DIFF	300	8"ø	18"x18"	TMSA–AA
I	DIFF	100	4"x6"	6"x8"	271RL
J	DIFF	300	8"ø	18"x18"	TDCA–AA
K	DIFF	250	8"ø	18"x18"	TDCA–AA
L	DIFF	500	10"ø	24"x24"	TMSA–AA
R	REG	–	22"x22"	24"x24"	50F
R–1	REG	–	22"x4"	24"x6"	50F
R–2	REG	–	34"x10"	36"x12"	23RL
R–3	REG	–	16"x6"	18"x8"	23RL

NOTE:

FURNISH ALL CEILING SUPPLY REGISTERS WITH INTEGRAL DAMPER.

EXHAUST FAN SCHEDULE (EF)

EF–No.	CFM	T.S.P.	DRIVE	HP	MOUNT	ELECTRICITY	GRENNCHECK MODEL
EF–A	75	.30"	DIRECT	50 W	CEILING	120/1/60	SP–B90
EF–B	TYPICAL UNITS KITCHEN RANGE HOOD EXHAUST, SEE SPEC THIS DRAWING						
EF–1	100	.25"	DIRECT	80W	CEILING	120/1/60	SP–B110
EF–2	200	.25"	DIRECT	80W	CEILING	120/1/60	SP–A250
EF–3	200	.25"	DIRECT	80W	CEILING	120/1/60	SP–A250
EF–4	100	.25"	DIRECT	80W	CEILING	120/1/60	SP–B110
EF–5	100	.25"	DIRECT	80W	CEILING	120/1/60	SP–B110
EF–6	TYPICAL UNITS KITCHEN HOOD EXHAUST, SEE SPEC THIS DRAWING						

NOTES

1. (EF–A) IS TYPICAL FOR ALL UNITS BATH EXHAUST. INSTALL 5"ø DUCT, TERMINATE IN WALL CAP WITH BACKDRAFT DAMPER FOR FIRST FLOOR, TERMINATE IN ROOF CAP WITH BACKDRAFT DAMPER FOR SECOND FLOOR UNITS. FURNISH WITH RADIATION DAMPER.
2. FURNISH CEILING EXHAUST FANS WITH INTEGRAL GRILLE, BACHDRAFT DAMPER, DISCONNECT SWITCH AND RADIATION DAMPER.
3. ELEVATOR EXHAUST FAN (EF–1) TO BE THERMOSTATICALLY CONTROLED.

TYPICAL UNIT KITCHEN RANGE HOOD(EF–B)

RANGE HOODS SHALL BE COMPLETE WITH TWIN BLOWER DUCTED FAN, GREASE FILTER, LIGHT, TWO SPEED MOTOR. NUTONE MODEL RL6100 OR APPROVED EQUAL. COLOR TO BE SELECTED BY THE ARCHITECT, 30" WIDE.

RANGE HOODS TO BE DUCTED TO OUTSIDE

AIR DELIVERY SHALL BE 160 CFM, 120/1/60 ELECTRICITY, 2 AMPS.

KITCHEN HOOD EXHAUST FAN (EF–6)

EXHAUST FAN SHALL BE SPUN ALUMINUM, UP–BLAST, LISTED BY (UL–762) FURNISH EXHAUST FAN WITH: PITCHED ROOF CURB, AND DISCONNECT SWITCH. EXHAUST FAN SHALL HAVE CAPACITY OF 150 CFM, 1.0" STATIC PRESSURE, BELT DRIVE, 1/2 HP MOTOR.
COOK MODEL No. 165–V5B.

NOTES:

1. INTERLOCK EXHAUST FAN MOTOR STARTER WITH MAKE–UP AIR UNIT SUPPLY FAN MOTOR STARTER.
2. PROVIDE SERVICE PLATFORM WITH ASHA RAILING FOR THE EXHAUST FAN.
3. KITCHEN HOOD EXHAUST DUCT SHALL BE WELDED CONTRUCTION CONFIRMING TO SECTION 506 MICHIGAN MECHANICAL CODE.

MAKE–UP AIR UNIT

INSTALL UNIT ON 4" HIGH REINFORECED CONCRETE PAD. FURNISH UNIT COMPLETE WITH: SCROLL COMPRESSOR, HOT GAS BY–PASS, MANUAL RESET HIGH PRESSURE CUTT–OFF, RASED CURB FOR HORIZONTAL DISCHARGE, G90 GALVANIZED DOULE WALL CONSTRUCTION, SINGLE POINT POWER CONECTION, STAINLESS STEEL GAS HEAT EXCHANGER, GFI CONVINIENCE OUTLET, DISCONNECT SWITCH, SMOKE DETECTORS, PHASE–OUT PROTECTION, 2" PLEATED AIR FILTER WITH PRESSURE ALARM, CONDENSING COIL AND CONDENSING FANS.
MAKE–UP AIR UNIT SHALL HAVE CAPACITY OF:

AIR VOLUME	1550 CFM
HEATING INPUT	150000 BTUH
HEATING OUTPUT	120000 BTUH
BURNER	FULL MODULATING
COOLING	48000 BTUH
ELECTRICITY	208/3/60
MCA	27
FUSE SIZE	40
BLOWER MOTOR	2 HP

INTERLOCK MAKE–UP AIR UNIT FAN MOTOR STARTER WITH KITCHEN HOOD EXHAUST FAN MOTOR STARTER.
INSTALL 1" TRAPPED CONDENSATE DRAIN PAN.
AAON MODEL RM–04

FURNACE (F–1, F–2, F–3)

HIGH EFFICIENCY TYPE WITH SEALED COMBUSTION 88000 BTUH HEATING INPUT 83000 BTUH OUTPUT. INSTALL 60000 BTUH DX COOLING COIL IN DISCHARGE AIR PLENUM. INSTALL CONDENSATE DRAIN AND OVERFLOW DRAIN PIPES. INSTALL 10"ø OUTSIDE AIR DUCT. CONNECT TO RETURN AIR DUCT. EXTEND 10"ø DUCT TO OUTSIDE. INSTALL GAS PIPE WITH GAS VALVE AND DIRT POCKET. INSTALL COMBUSTION AIR AND EXHAUST FLUE, EXTEND TO OUTSIDE THROUGH CONCENTRIC ADAPTER FURNACE SHALL BE LENNOX MODEL G51MP–60. INSTALL REMOTE CONTROL CONSOL WITH PROGRAMMABLE THERMOSTAT. BALANCE FOR 400 CFM OUTSIDE AIR.

CONDENSING UNIT (ACCU–1, ACCU–2, ACCU–3)

INSTALL AIR COOLED CONDENSING UNIT ON 4" HIGH CONCRETE PAD. INSTALL REFRIGERANT PIPES AND CONNECT TO DX–COOLING COIL IN RESPECTIVE FURNACES. INSULATE REFRIGERANT PIPES WITH 3/4" THICK ARMAFLEX INSULATION. 5 TONS HEAT REJECTION.

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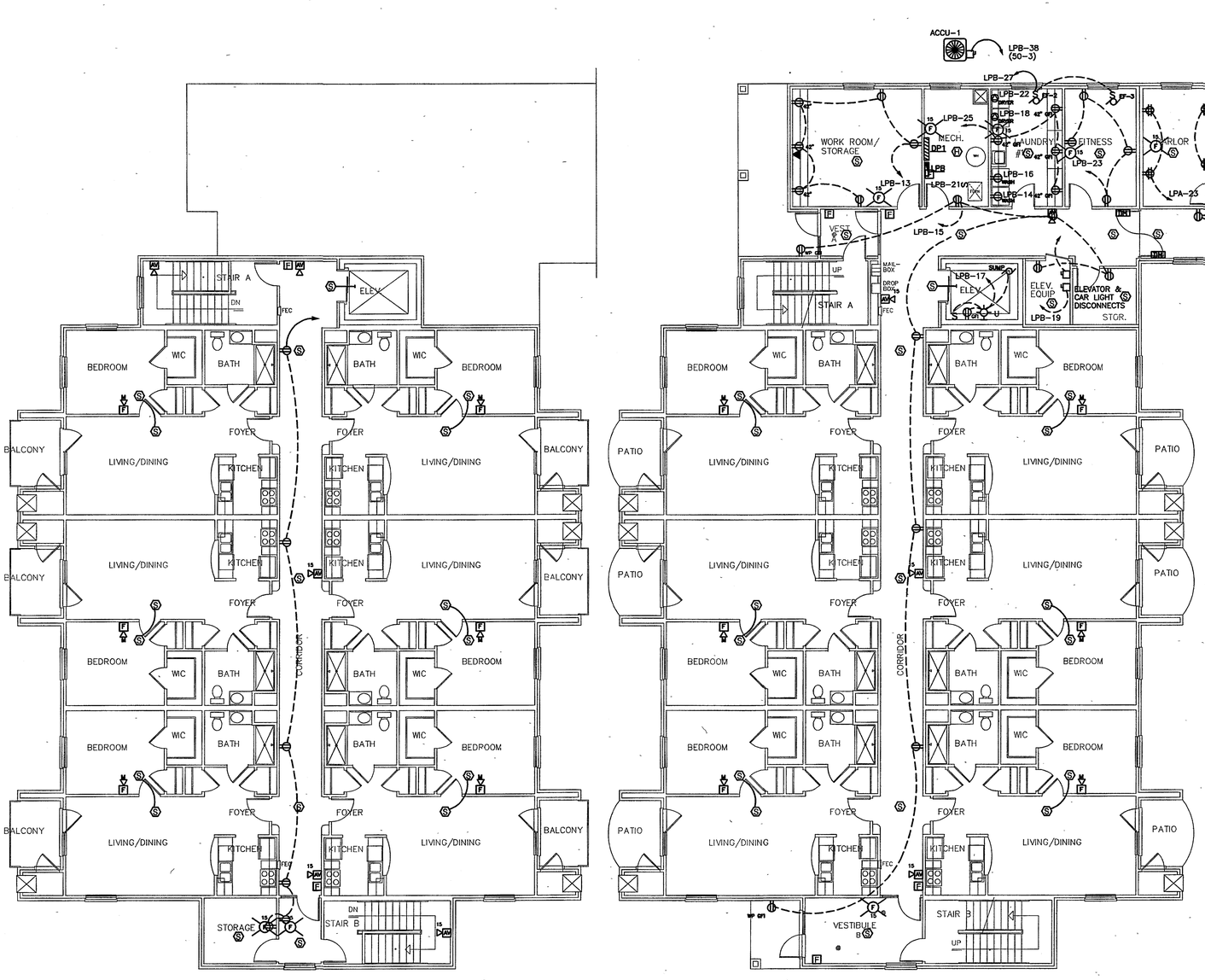
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MECHANICAL SCHEDULES

Project Number: 07-140
Sheet Number: M-8

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SECOND FLOOR ELECTRICAL PLAN

SCALE 1/8"=1'-0"

FIRST FLOOR ELECTRICAL PLAN

SCALE 1/8"=1'-0"

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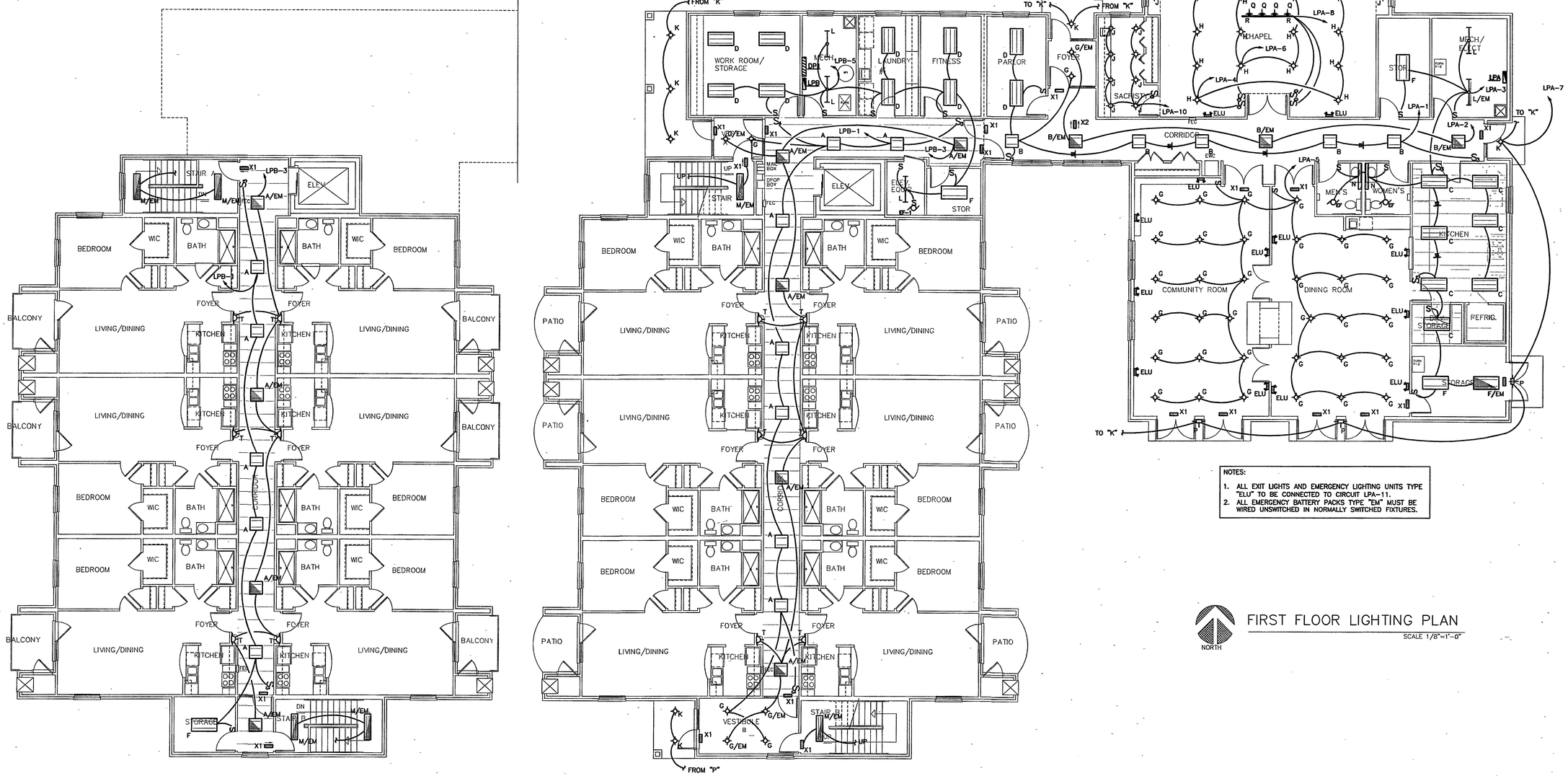
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Sheet Number: E-1

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SECOND FLOOR LIGHTING PLAN

SCALE 1/8"=1'-0"

NOTES:

1. ALL EXIT LIGHTS AND EMERGENCY LIGHTING UNITS TYPE "ELU" TO BE CONNECTED TO CIRCUIT LPB-2.
2. ALL EMERGENCY BATTERY PACKS TYPE "EM" MUST BE WIRED UNSWITCHED IN NORMALLY SWITCHED FIXTURES.

FIRST FLOOR LIGHTING PLAN

SCALE 1/8"=1'-0"

NOTES:

1. ALL EXIT LIGHTS AND EMERGENCY LIGHTING UNITS TYPE "ELU" TO BE CONNECTED TO CIRCUIT LPA-11.
2. ALL EMERGENCY BATTERY PACKS TYPE "EM" MUST BE WIRED UNSWITCHED IN NORMALLY SWITCHED FIXTURES.

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ELECTRICAL LIGHTING FLOOR PLANS

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Sheet Number: E-2

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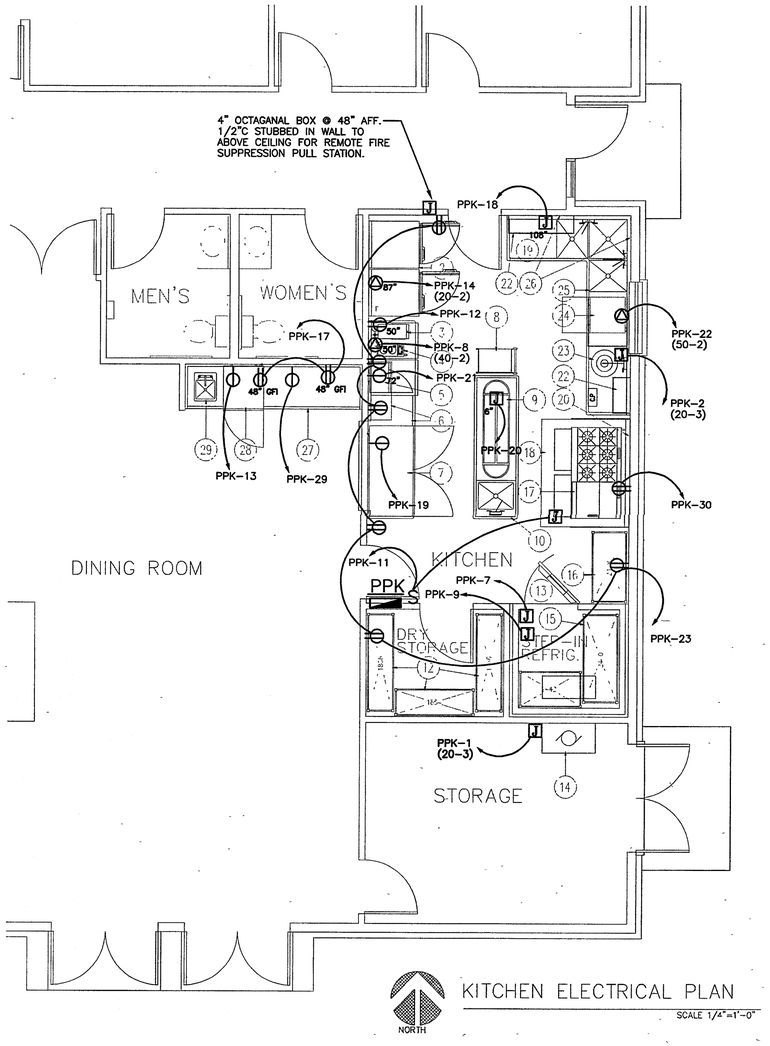
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ITEM	QTY	DESCRIPTION
1	1	ST. ST. HAND SINK
2	1	SINGLE SECTION REACH-IN FREEZER
3	1	ICED TEA MAKER
4	1	COFFEE MAKER
5	1	MICROWAVE OVEN
6	1	ST. ST. WORK COUNTER W/OVERSHELF
7	1	UNDERCOUNTER REFRIGERATOR
8	1	PORTABLE THREE TIER CART
9	1	CEILING HUNG UTENSIL RACK
10	1	ST. S.T WORK TABLE W/SINK
11	–	SPARE – NOT USED
12	1 LOT	DRY STORAGE SHELVING
13	1	WALK-IN REFRIGERATOR
14	1	REFRIGERATION SYSTEM
15	1 LOT	WALK-IN REFRIG. SHELVING
16	1 LOT	STORAGE SHELVING
17	1	SIX BURNER/GRIDDLE TOP RANGE W/OVEN BASE
18	1	ST. ST. EXHAUST HOOD
19	1	WET CHEMICAL FIRE SYSTEM
20	1 LOT	ST. ST. WALL PANELING
21	–	SPARE – NOT USED
22	1 LOT	WIRE WALL SHELVING
23	1	3 H.P. DISPOSER W/PRE-RINSE
24	1	UNDERCOUNTER DISHWASHER
25	1	ST. ST. THREE COMPARTMENT SINK
26	1 LOT	ST. ST. WALL PANELING
27	1	MILLWORK SERVICE COUNTER
28	1	UNDERCOUNTER REFRIGERATOR
29	1	ST. ST. DROP-IN SINK
30	1 LOT	FIELD ERECTION LABOR

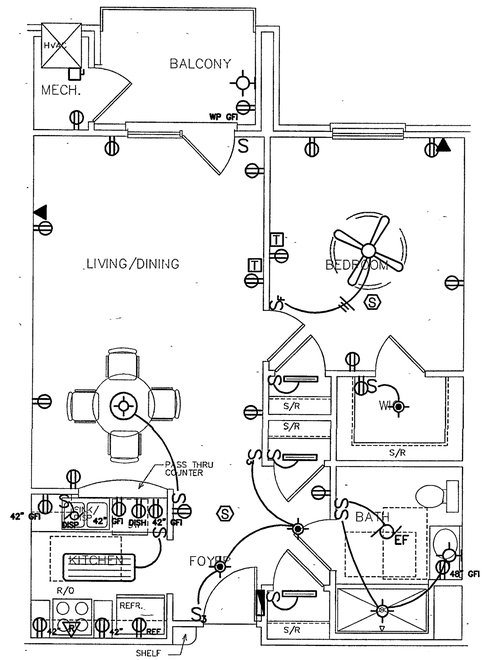
LIGHTING FIXTURE SCHEDULE

TYPE	BRIEF DESCRIPTION	LAMPS	WATTS	MANUFACTURER & CATALOG NO.	REMARKS
A	2'x2' Recessed Flourescent	2-FB032/835/6/ECO	96	Lithonia 2SP8G 2U316 A12 120 GEB	Grid
B	2'x2' Recessed Flourescent	2-FB032/835/6/ECO	64	Lithonia 2SP8F 2U316 A12 120 GEB	Flanged
C	2'x4' Recessed Fluorescent	3-FO32/835/ECO	96	Lithonia 2SP8G332-A12.125-120-GEB-GASKET	Grid
D	2'x4' Recessed Fluorescent	3-FO32/835/ECO	96	Lithonia 2SP8F332-A12-120-GEB	Flanged
ELU	Emergency Lighting Unit	-------	----	Lithonia ELM618-K0906	
EM	Fluorescent Emergency Pack	-------	---	Lithonia PS1400	
F	2'x4' Recessed Fluorescent	2-FO32/835/ECO	64	Lithonia 2SPF232-A12-120-GEB	Flanged
G	7" Compact Fluorescent Downlight	1-PL-T 32W/35/4P	32	Kurt Versen P931-R2	
G/EM	7" Compact Fluorescent Downlight	1-PL-T 32W/35/4P	32	Kurt Versen P931-R2-EM120	
H	7" Recessed A-Lamp Slope Clg Downlight	1-BC150BT15/HAL/W	150	Kurt Versen C7348-R2	
J	4" Recessed A-Lamp Downlight	1-BC100BT15/HAL/W	100	Kurt Versen C7319-R2	
K	Recessed HID Lens Downlight	1-MP50/U/MED	72	Lithonia LGH 50M 8 T73 120 GSKT	
L	4' Industrial Fluorescent	2-FO32/835/ECO	64	Lithonia LA 232 120 GEB	
M	1'x4' Surface Fluorescent	2-FO32/835/ECO	64	Lithonia AW232 120 GEB	
N	4' Wall Mtd. Fluorescent	2-FO32/835/ECO	66	Lithonia WS232 A12 120 GEB	
P	Wall Mtd. Area Light	1-MP50/U/MED	72	Lithonia WST-50M-WT-120-SF-DDBT	
Q	PAR38 Track Mtd. Lamp Holder	1-100PAR38/CAPIR/NFL25	100	Lithonia LTC PRSD PAR38 WH	
R	4' Two Ckt. Lighting Track	-----	--	Lithonia L2T4 WH	
T	Perforated Quarter Cylinder Wall Sconce	1-PL-T 32W/35/4P	32	Lithonia AVSP-1-32TRT-MDR-120	
U	Wall Mtd. Non-Metallic CF Vaporproof	1-PL-T32W/35/4P	32	Canlet GFWF 32H1G GPC	
X1	Universal LED Exit Light	-----	--	Lithonia LQM SW 3R 120/277 EL	



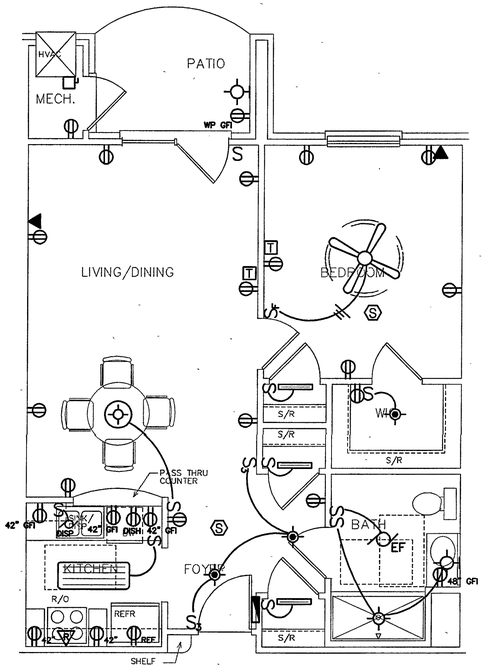
KITCHEN ELECTRICAL PLAN

SCALE 1/4"=1'-0"



TYPICAL SECOND FLOOR UNIT PLAN

SCALE 1/4"=1'-0"



TYPICAL FIRST FLOOR UNIT PLAN

SCALE 1/4"=1'-0"

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Key Plan: NO SCALE

Project Name and Client:

NEW BASILIAN FATHERS RESIDENCE
NOVI, MICHIGAN

BASILIAN FATHERS
NOVI, MICHIGAN

Seal:

Date	Issued For
10/22/08	BID PACK NO. 2

Drawn:	NAI
Checked:	SJF
Approved:	JPA

Sheet Title:

PARTIAL ELECTRICAL FLOOR PLANS AND SCHEDULE

Project Number: 07-140

Sheet Number: E-3

NEIL ADAMS, INC.
CONSULTING ENGINEERS • LIGHTING DESIGNERS
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(734) 426-0020 FAX (734) 426-9244

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RESIDENTIAL UNIT CALCULATIONS

	Unit	Bulding
		No. Units
□B		
Area	670	12
Bsm't	0	
A/C Tons	1	
Gen Ltg	2,010	24,120
Sm Appl	3,000	36,000
Laundry	0	0
Sub Tot	5,010	60,120
First 3K	3,000	3,000
Next 117K	704	19,992
Remainder	0	0
GL Total	3,704	22,992
Microwave	1,500	18,000
Dishwash	1,200	14,400
Disposal	1,176	14,112
Sump Pump	0	0
Dryer	0	0
Appl Sub	3,876	46,512
d.f.	1	1
Appl Tot	3,876	46,512
SUMMARY		
GL Total	3,704	22,992
Appl Tot	3,876	46,512
Range/Oven	8,000	27,000
Air Cond	1,900	22,800
TOTAL	17,480	119,304
Residence Amps	73	497

Optional Calculation

GL Total	60,120
Appl Tot	46,512
Dryer	0
Range	115,200
Air Cond	22,800
Furnace	0
TOTAL	244,632
d.f	0.41
Res. VA	100,299
SERVICE	100,299
Residence Amps	418

DISTRIBUTION PANEL SCHEDULE

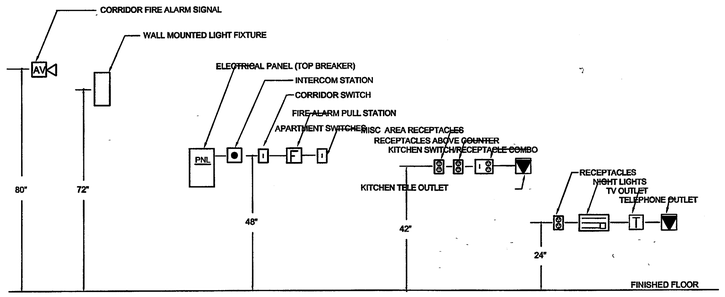
120/208V,3ph,4w — Panel MDP

ckt	Switch/fuse	Load Description	Con. KVA	Estimated Demand KVA
1	400A,3P/400FU	Panel DP1	210.0	100.8 PER DEMAND CALC.
2	200A,3P/200FU	Panel LPA	50.2	40.2
3	200A,3P/200FU	Panel LPB	37.9	30 3
4	200A,3P/200FU	Panel PPK	37.6	30.1
5	200A,3P/175FU	Elevator	43.2	34.6
6				
7				
8				
		Total	378.9	236.0
		Amperes Connected	1052.6	
		Amperes Demand		655 4

DISTRIBUTION PANEL SCHEDULE

400A M.L.O. — 120/208V,3ph,4w — Panel DP1

ckt	Switch/fuse	Load Description	Con. KVA	Estimated Demand KVA
1	100A,2P 100FU	Tenant Panel TPA	17.5	8.4
2	100A,2P 100FU	Tenant Panel TPB	17.5	8 4
3	100A,2P 100FU	Tenant Panel TPC	17.5	8.4
4	100A,2P 100FU	Tenant Panel TPD	17.5	8 4
5	100A,2P 100FU	Tenant Panel TPE	17.5	8.4
6	100A,2P 100FU	Tenant Panel TPF	17.5	8.4
7	100A,2P 100FU	Tenant Panel TPG	17.5	8.4
8	100A,2P 100FU	Tenant Panel TPH	17.5	8 4
9	100A,2P 100FU	Tenant Panel TPI	17.5	8.4
10	100A,2P 100FU	Tenant Panel TPJ	17.5	8.4
11	100A,2P 100FU	Tenant Panel TPK	17.5	8.4
12	100A,2P 100FU	Tenant Panel TPL	17.5	8.4
		Total	210.0	100 8
		Amperes Connected	583.3	
		Amperes Demand		280.0



MOUNTING HEIGHT DETAIL

DISTRIBUTION PANEL SCHEDULES

BRANCH PANEL SCHEDULE

Basilian Residence — 225A M.L.O. — 120/208V,3ph,4w — Panel LPA

Breaker A	Breaker P	DESCRIPTION	Circuit	Watt	No	Phase Loads A	B	C	Circuit No	Watt	Description	Breaker A	Breaker P
20	1	Corridor Lighting		544	1	768			2	224	Corridor Night Lights	20	1
20	1	Kitchen/Toilet/Storage Ltg		1320	3		2720		4	1400	Chapel Lighting	20	1
20	1	Community/Dining Lighting		1152	5			2352	6	1200	Chapel Lighting	20	1
20	1	Exterior Bldg Lighting		720	7	1120			8	400	Chapel Track	20	1
20	1	Exterior Site Lighting		1036	9		1836		10	800	Sacristy Lighting	20	1
20	1	Exit/Stair Lighting		300	11			300	12	0	Spare	20	1
20	1	Corridor Receptls		1400	13	2600			14	1200	EWC	20	1
20	1	Chapel Receptls		800	15		1800		16	1000	Dining/Toilet Receptls	20	1
20	1	Chapel Receptls		800	17			2000	18	1200	Community Receptls	20	1
20	1	Sacristy Receptls		600	19	1400			20	800	Storage Receptls	20	1
20	1	Parlor Receptls		800	21		1496		22	696	Furnace F-2	20	1
20	1	Parlor Receptls		800	23			1496	24	696	Furnace F-3	20	1
20	3	EFFH Wall Heater		1000	25	1000			26		Spare	20	1
"	"	" "		1000	27		1000		28		Spare	20	1
"	"	" "		1000	29			1000	30		Spare	20	1
					31	0			32		Spare	20	1
					33		0		34		Spare	20	1
					35			0	36		Spare	20	1
50	3	ACCU-2		4560	37	9120			38	4560	ACCU-3	50	3
"	"	" "		4560	39		9120		40	4560	" "	"	"
"	"	" "		4560	41			9120	42	4560	" "	"	"
						16008	17972	16268					

BRANCH PANEL SCHEDULE

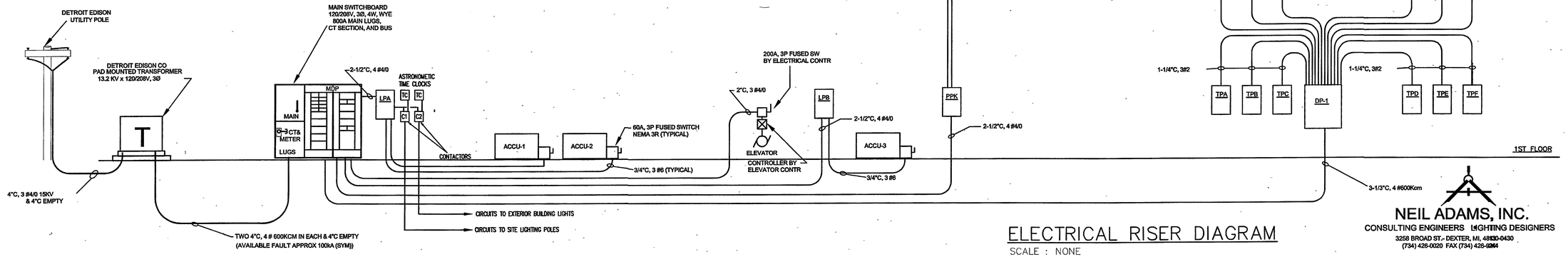
Basilian Residence — 225A M.L.O — 120/208V,3ph,4w — Panel PPK

Breaker A	Breaker P	DESCRIPTION	Circuit	Watt	No	Phase Loads A	B	C	Circuit No	Watt	Description	Breaker A	Breaker P
20	3	Refrigeration Compressor		444	1	1764			2	1320	Disposer	20	3
"	"	" "		444	3		1764		4	1320	" "	"	"
"	"	" "		444	5			1764	6	1320	" "	"	"
20	1	Walk-in Lights & Heaters		800	7	3950			8	3150	Coffee Maker	20	2
20	1	Walk-in Blower Coil		1200	9		4350		10	3150	" "	"	"
20	1	Hood Lights		200	11			1400	12	1200	Iced Tea Maker	20	1
20	1	U.C. Refrig		696	13	2136			14	1440	Freezer	20	2
20	1	Spare			15		1440		16	1440	" "	"	"
20	1	Counter Receptls		800	17			1760	18	960	Fire Suppression System	20	1
20	1	U.C. Refrig		1176	19	1976			20	800	Counter Receptls	20	1
20	1	Microwave		1200	21		1652		22	492	Dishwasher	20	1
20	1	Kitchen Receptls		1200	23			1652	24	492	" "	20	1
20	1	Spare		0	25	0			26		Spare	20	1
20	1	Spare		0	27		0		28	0	Spare	20	1
20	1	Ice Maker		696	29			1096	30	400	Range (Shunt Trip)	20	1
					31	0			32	0	Spare	20	1
					33		0		34				
20	1	Kitchen Hood Fan EF-6		1176	35			1176	36				
40	3	MUA-1		3240	37	3240			38				
"	"	" "		3240	39		3240		40				
"	"	" "		3240	41			3240	42				
						13066	12446	12088					

BRANCH PANEL SCHEDULE

Basilian Residence — 225A M.L.O. — 120/208V,3ph,4w — Panel LPB

Breaker A	Breaker P	DESCRIPTION	Circuit	Watt	No	Phase Loads A	B	C	Circuit No	Watt	Description	Breaker A	Breaker P
20	1	Corridor Lighting		928	1	1320			2	392	Exit/Stair Lighting	20	1
20	1	Corridor Night Lights		1056	3		1056		4	0	Spare	20	1
20	1	Work/Mech/Laund/Fitness Ltg		1024	5			1024	6	0	Spare	20	1
20	1	Spare		0	7	0			8	0	Spare	20	1
20	1	Spare		0	9		0		10	0	Spare	20	1
20	1	Spare		0	11			0	12	0	Spare	20	1
20	1	Work/Storage Receptls		1200	13	2700			14	1500	Washer	20	1
20	1	Corridor Receptls		1600	15		3100		16	1500	Washer	20	1
20	1	Elevator Pit		600	17			3480	18	2880	Dryer	30	2
20	1	Elevator Car Lights		200	19	3060			20	2880	" "	"	"
20	1	Furnace F-1		696	21		3576		22	2880	Dryer	30	2
20	1	Fitness Receptls		800	23			3680	24	2880	" "	"	"
20	1	Laundry Receptls		800	25	800			26				
20	1	Exhaust Fans EF-1/EF-2		400	27		400		28				
20	1	Spare		0	29			0	30				
20	1	Spare		0	31	0			32				
20	1	Spare		0	33		0		34				
					35			0	36				
					37	4560			38	4560	ACCU-1	50	3
					39		4560		40	4560	" "	"	"
					41			4560	42	4560	" "	"	"
						12460	12692	12744					



ELECTRICAL RISER DIAGRAM

SCALE : NONE

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Key Plan: NO SCALE

Project Name and Client:

NEW BASILIAN FATHERS RESIDENCE
NOVI, MICHIGAN

BASILIAN FATHERS
NOVI, MICHIGAN

Seal:

Date	Issued For
10/22/08	BID PACK NO. 2

Drawn: NAI
Checked: SJF
Approved: JPA

Sheet Title:
ELECTRICAL RISERS PANEL SCHEDULES AND DETAILS

Project Number: 07-140

Sheet Number: E-4

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F:\Basilian Residence\Current\Electrical\E-4 ELECTRICAL RISERS PANEL SCHEDULES AND DETAILS.dwg, 10/20/2008 10:05:47 AM, sflickema

ADDENDUM TO PLANNED REZONING OVERLAY (PRO) AGREEMENT FOR THE BASILIAN FATHERS' RESIDENCE, RECORDED IN LIBER 40536 PAGE 488 OAKLAND COUNTY RECORDS

AGREEMENT, by and among Sri Venkateswara Temple & Cultural Center, Inc. 26233 Taft Road, Novi, Michigan 48374 (herein "Assignee") and the City of Novi, 45175 West Ten Mile Road, Novi, Michigan 48375-3024 (herein "City").

RECITATIONS

I. In July of 2008, a Planned Rezoning Overlay Agreement was executed by and between the Basilian Fathers of Milford, Michigan (referred to therein as "Developer") and the City of Novi (referred to therein as "City") which was recorded at Liber 40536 Page 488 of the Oakland County Records. (hereinafter "PRO")

II. The PRO provided approval for the improvement and use of certain real property in the City of Novi for an approximately 20,000 square foot residential building for the religious order known as the Basilian Fathers, including individual sleeping quarters for a maximum of 14 persons (hereinafter "Property").

III. The Basilian Fathers now wish to sell the Property to Assignee for use by the Assignee as residential use for the religious order of Assignee.

IV. Because some of the Assignee's religious priests are married, Assignee requests that the maximum number of residents allowed by the PRO be increased from 14 to 17.

V. Other than the alteration of the interior of the residential building on the Property, converting eight one-bedroom units to four two-bedroom units, no additional changes would be made to the interior of the residential building on the Property.

VI. There will be no changes to the exterior of the residential building or to the Property or site from that which was approved in the PRO.

VII. Assignee agrees to be bound by all of the conditions, obligations, Undertakings, and forbearances of Developer in the PRO, with the only exception being that the maximum number of ~~permanent~~ residents be increased from 14 persons to 17 persons.

DRAFT

NOW THEREFORE, as an integral part of the approval of this Addendum to PRO, and in consideration of Assignee accepting and agreeing to be bound by all of the mutual covenants in the PRO except as set forth in this addendum, IT IS HEREBY AGREED AS FOLLOWS:

1. The City hereby acknowledges the assignment of the PRO by the Basilian Fathers (Developer) to Sri Venkateswara Temple & Cultural Center, Inc. (Assignee).

2. All of the provisions of the PRO including all conditions, obligations, Undertakings, forbearances and approvals will remain binding on the Assignee and the City except as follows:

    a. The maximum number of ~~permanent~~ residents set forth in the PRO, ~~paragraph 2~~wherever stated, shall be increased from 14 ~~permanent residents~~ to 17 permanent residents.

3. Assignee remains obligated to obtain all necessary permits for the alteration to the interior of the residential building.

4. This Addendum may be signed in counterparts.

OWNERS:

SRI VENKATESWARA TEMPLE
& CULTURAL CENTER, INC.

_____
By:
Its:

STATE OF MICHIGAN)
) ss.
COUNTY OF _____)

On this ____ day of _____, 2026, before me appeared _____, on behalf of the Sri Venkateswara Temple & Cultural Center, Inc., who stated that they had signed this document of their own free will duly authorized on behalf of the company.

_____
Notary Public
_____ County, Michigan
Acting in the County of _____

DRAFT

My commission expires: _____

DRAFT

CITY OF NOVI

By: _____

Its: Mayor

By: _____

Its: Clerk

STATE OF MICHIGAN)
) ss.
COUNTY OF _____)

On this ____ day of _____, 2026, before me appeared _____ and _____ who stated that they had signed this document of their own free will on behalf of the City of Novi in their respective official capacities, as stated above.

_____
Notary Public
_____ County, Michigan
Acting in the County of _____
My commission expires: _____

DRAFT